

“NEW MOON AFTER NEW MOON AND SABBATH AFTER SABBATH”
THE TENSION BETWEEN CULTURE AND NATURE IN THE CYCLES OF
SABBATH AND MOON IN ANCIENT JEWISH CALENDARS

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by

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For Laura
רות בינה בת שרה ואברהם

“May the Lord make this woman who is coming into your house like Rachel and like Leah, both of whom built up the House of Israel” (Ruth 4:11)

The catechism of the Jew consists of his calendar

Rabbi Samson Raphael Hirsch, *Judaism Eternal*

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ABBREVIATIONS

Abbreviations of Terms

364DC	364-day calendar
AB	Astronomical Book of <i>1 Enoch</i>
BT	Babylonian Talmud
CDM	<i>Calendrical Documents/Mishmarot</i> (in reference to <i>Calendrical Documents/Mishmarot A, B and C</i> (4Q320, 4Q321, 4Q321a))
CLC	Calculated Lunisolar Calendar
DSS	Dead Sea Scrolls
OLC	Observational Lunisolar Calendar
PT	Palestinian Talmud

Abbreviations of Journals and Reference Titles

ABD	<i>Anchor Bible Dictionary</i> . Edited by D. N. Freedman. 6 vols. New York, 1992
AJSL	<i>American Journal of Semitic Languages and Literature</i>
ASOR	American Schools of Oriental Research
Bib	<i>Biblica</i>
CANE	<i>Civilizations of the Ancient Near East</i> . Edited by J. Sasson. 4 vols. New York, 1995
EncJud	<i>Encyclopaedia Judaica</i> . 16 vols. Jerusalem, 1972
ErIsr	<i>Eretz-Israel</i>
HUCA	<i>Hebrew Union College Annual</i>
IDB	<i>The Interpreter's Dictionary of the Bible</i> , Edited by G. A. Buttrick. 4 vols. Nashville, 1962
JANESCU	<i>Journal of the Ancient Near Eastern Society of Columbia University</i>
JAOS	<i>Journal of the American Oriental Society</i>
Jastrow	<i>Jastrow, M. A Dictionary of the Targumim, the Talmud Babli and Yerushalmi, and the Midrashic Literature</i> . 2d ed. New York, 1903
JBL	<i>Journal of Biblical Literature</i>
JQR	<i>Jewish Quarterly Review</i>
JSOT	<i>Journal for the Study of the Old Testament</i>
NABU	<i>Nouvelles assyriologiques breves et utilitaires</i>
NJPS	<i>Tanakh: The Holy Scriptures: The New JPS Translation according to the Traditional Hebrew Text</i>
VT	<i>Vetus Testamentum</i>
ZAW	<i>Zeitschrift für die alttestamentlich Wissenschaft</i>

NOTE ON TRANSLATION AND STYLE

I have used the following as my base texts for English translations of ancient Jewish texts:

Tanakh: A New Translation of The Holy Scriptures according to the Traditional Hebrew Text. (Philadelphia: The Jewish Publication Society, 1985).

The Mishnah: A New Translation with a Commentary by Pinhas Kehati, Pinhas Kehati, ed. (Jerusalem: Eliner Library, Dept. for Torah Education and Culture in the Diaspora of the World Zionist Organization, 1992-1994).

Hebrew-English Edition of the Babylonian Talmud. Isidore Epstein, ed. (London: Soncino Press, 1983).

The Talmud of the Land of Israel, Jacob Neusner, ed., (Chicago: University of Chicago Press, 1988).

The Book of Jubilees, James C. VanderKam, ed. (Corpus Scriptorum Christianorum Orientalium Vol. 511/Scriptores Aethiopici Vol. 88. Lovanii: Peeters, 1989).

In addition to the above texts (some of which contain the original language as well as the translation) I have also consulted the following Hebrew source documents:

Shisha Sidrei Mishnah, Albeck, H., ed. (Jerusalem and Tel Aviv: The Bialik Institute, Dvir, 1988).

Tosephta: Based on the Erfurt and Vienna Codices, Zuckermann, M. S., ed. (Jerusalem: Wahrman, 1970).

The Tosefta: According to Codex Vienna, with Variants from Codices Erfurt, London, Genizah MSS, and Editio Princeps (Venice 1521), Lieberman, Saul, ed. (Jerusalem: The Jewish Theological Seminary of America, 1992).

Talmud Yerushalmi: Reprint of the Krotoschin edition based on the Venice edition. (Jerusalem: Shilo, 1969).

When a translation is unreferenced, it is to one of these texts; occasionally, I adapt the text in these translations to improve the consistency of spelling for names or transliterated terms, but any bracketed explanations are from the source I have used unless noted. When I have chosen to use other translations, or chosen to do my own (when the point I wish to make is obscured by existing translations) these are clearly noted.

Stylistically, I have endeavored to use the guidelines specified in *The SBL Handbook of Style*, especially spelling, titles, and abbreviations. However, the reader will find numerous other versions in attributed passages, where I have preserved the work of the scholar being quoted; the context usually makes these obvious. Similarly, I generally capitalize “Sabbath” since it is a proper name of a sacred observance, but many authors do not capitalize it, so the reader will find an inconsistency here that is a function of inconsistent general usage.

Abstract of Dissertation Presented to the Graduate Theological Union in Partial
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SABBATH AND MOON IN ANCIENT JEWISH CALENDARS

By

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This dissertation explores different cultural understandings of the relationship between humans, God and nature as embedded in ancient Jewish calendars from the beginning of the Second Temple through the composition of the Talmud, focusing on the tension between two cycles of time: the seventh-day Sabbath that defines the week and is not found in nature, and the 29.5-day lunation (or lunar month) which is natural and observable. A methodology distinguishing “tame” and “wild” time is derived from environmental thought to contrast natural versus artificial temporal rhythms and applied to analyze the ideologies of these calendars.

While there are great similarities between the 364-day calendar traditions known from *I Enoch*, the Dead Sea Scrolls, and *Jubilees*, this study proposes that important variations are best explained diachronically. It is argued that a 364-day calendar was used not only at Qumran but in the Second Temple itself, that the *Mishmarot* calendars found

among the Dead Sea Scrolls represent the work-schedule of the priests, and that Nehemiah introduced a calendar of this type as part of the cultic reforms described in the Bible. The Sabbath is the primary temporal rhythm of these calendars, as reflected by *Jubilees'* purging of the lunar element in response to the observably untenable three-way concordance between Sabbath, solar year and lunation. It was the role of humans to conform to the unchanging, divinely revealed synchronic rhythms of heaven and earth based on the tame time of the Sabbath.

The fundamental rhythm of the observational lunisolar calendar described in rabbinical texts is the lunar month, while the Sabbath perpetually repeats in its own independent rhythm. The wild time of the new moon, an uncertain natural occurrence, is more important than the Sabbath, violations of which are encouraged if the new moon is sighted. Rabbinic texts construe time as mutable, with God granting humans the right to determine the calendar.

These two calendar traditions correspond to different negotiations of the balance between humans, God and nature, reflected in how tame and wild temporal cycles are construed and sacred time is determined. The conclusion includes an environmental critique of Heschel's Sabbath doctrines.

CHAPTER 1
INTRODUCTION: THE SABBATH AND LUNATION AS CYCLES OF JEWISH
TIME IN ANCIENT JEWISH CALENDARS

Understanding Jewish Time: The Overall Aim and Plan of this Study

The aim of this dissertation is to explore the different cultural understandings of the relationship between humans, God and nature as embedded in and projected by ancient Jewish calendars over the course of about 1,000 years, from the beginning of the Second Temple (about 500 B.C.E.) through the composition of the Talmud (about 500-600 C.E.).¹

Different calendars and their ideologies describe and construct different views of how humans should live with temporal rhythms, both natural and artificial. Of particular interest in this examination of Jewish calendars will be the tension between two cycles of time that have been central to Jewish calendrical practice since antiquity: the seven-day cycle of the Sabbath that defines the week and is not found in nature, and the 29.5-day cycle of the moon (the lunation or lunar month). The source of the tension lies in the facts that, firstly, the lunation is irregular (lasting either 29 or 30 days), and secondly, that the Sabbath cycle and lunar cycle do not easily synchronize. Various resolutions concerning these cyclical conflicts are central to the ancient calendars that will be examined. The relative priority given to the artificial cycle of the Sabbath and the natural cycle of the

¹ While I would prefer to use a more gender neutral term such as “God/dess” to avoid the implicit gendering of “God” as masculine, I have chosen to simplify the discussion by adhering to the conventional term “God.” This is largely to be stylistically consistent with most writers on the topics which will be considered, who use the term “God” either because an author assumes God is gendered male, or because the author is adopting the gendering process of Hebrew that usually constructs God as masculine, or the author believes “God” is a gender-free term.

lunation will give us an indication of the relative importance of artificial versus natural times, and I will focus on the ideologies given to justify varying practices. The cycles of Sabbath and lunation are still present in the Jewish calendar used today; thus, the legacy of these ancient calendars and their makers remains in the depths of the Jewish cultural unconscious, where calendars tend to function as an unexamined backdrop forming the temporal structure for a culture.² It is the legacy of these calendrical developments, conflicts and resolutions that have bequeathed what might properly be called “Jewish time” as famously expressed by Hirsch’s observation, “The catechism of the Jew consists of his calendar.”³

The ensuing discussion will therefore constantly interweave two inquiries: First, what do we know about ancient Jewish calendrical practices? Second, what does this reveal about the associated ideology concerning the relations of humans, God and nature? The latter question will drive the inquiry, yet the former question will necessarily receive the most attention.

The answers to both of these questions are fraught with difficulties. The chief limitation is imposed by our sources, almost all of which are literary. While the Bible, Dead Sea Scrolls (DSS) and rabbinic texts contain a great deal of material, which I will take advantage of, it must be noted at the outset that they are fundamentally incomplete as an historical record. Most of the texts at our disposal were edited over various lengths of time, and there is great scholarly debate concerning the dating of the texts together

² I use the terms “culture” and “human” almost interchangeably, for I agree with Geertz that “there is no such thing as a human nature independent of culture.” Clifford Geertz, *The Interpretation of Cultures* (New York: Basic Books, 1973), 49.

³ Samson Raphael Hirsch, *Judaism Eternal: Selected Essays From the Writings of Rabbi Samson Raphael Hirsch*, trans. I. Grunfeld, vol. 1 (London: The Soncino Press, 1956), 3.

with the practices and ideas they describe. There are many basic questions not answered by the texts, and significant historical periods that the extant texts do not seem to cover. Nevertheless, these are the records we have available and I, like other scholars, do our best to note these limitations while working within them. We are all dealing with a jigsaw puzzle where many of the pieces are missing; my aim is to move some of these pieces into a new arrangement, thereby allowing a different picture to emerge from this puzzle.

Most important in this context are the DSS, often called the Qumran texts (the name of the location they were found), which have only been fully published and made generally available to the scholarly community as a whole over the last decade. About 400 years elapsed between the composition of the last biblical texts and the earliest rabbinic texts. As Eilior has recently written,

Some bearers of historiographic traditions preferred to forget and even suppress those years. Many works were composed in and before that period, as is clearly evident from the finds from the Qumran library, which testify to some 650 different works, not counting biblical manuscripts, of which some 250 were discovered. All this voluminous material was condemned to oblivion.⁴

As A. Baumgarten has written, the recovery of the DSS provides a significant opportunity to reconsider what we think we know about various subjects:

The Qumran texts are the gift to scholars of our generation, provoking a new round of critical reflection on what can be learned from the Rabbis. Much which we thought we knew with certainty will have to be reconsidered, while some of the information preserved by the Rabbis which we rejected as blatantly unhistorical will be seen in a new light, as we take up the challenge of comparing and integrating the new information with the old.⁵

⁴ Rachel Eilior, *The Three Temples: On the Emergence of Jewish Mysticism*, trans. David Louvish (Oxford: The Littman Library of Jewish Civilization, 2004), 12.

⁵ Albert I. Baumgarten, "Rabbinic Literature as a Source for the History of Jewish Sectarianism in the Second Temple Period," *Dead Sea Discoveries* 2, no. 1 (1995): 57.

In what follows, I suggest that we reconsider some of what we understand from the Bible as well as from rabbinic sources. The general scholarly approach to the DSS calendrical texts has been to see how they fit into previous knowledge of Jewish calendars derived mainly from the Bible and rabbinic texts, respectively composed before and after the DSS. My approach will invert this procedure, foregrounding the 364DC of the DSS and seeing how biblical and rabbinic calendar texts fit with this information. Therefore, I begin with an examination and interpretation of the DSS and related calendrical texts which are still relatively unknown outside the field of DSS scholarship. In this section I will engage with the extant scholarship on the DSS calendar texts while advocating particular interpretations and new readings of both calendar theory and practice. Based on this, I then turn to engage in a re-reading of already well-known biblical and rabbinic calendar texts, to see how our understanding of them might change in light of this previously unknown material.

To foreshadow a bit of what is to come, the 364-day calendar (364DC) testified to in the DSS was a strictly calculated calendar; indeed, some of the DSS calendar texts (4Q320-321) represent one of the earliest extant examples of a *schedule*, which coordinates future activities in time with the occurrence of events determined exclusively by calculation. In contrast, the observational lunisolar calendar (OLC) described in the Mishnah (especially in *m. Rosh HaShanah*) is dependent on the observation of natural events, such as the appearance of the first crescent of the new moon to declare the new month or the appearance of seasonal flora and fauna to determine the intercalation of an additional lunar month into the year.

Judaism and Environmental Thought: The Meta-Question

Besides using the DSS to provide a platform for taking a new look at old materials and old questions (e.g., what calendar was used when and by whom), I am also seeking to ask different questions of both the old and newly available texts. What I think of as the “meta-question” driving this project is: What can we learn about ancient Jewish understandings of the relationships between nature and humanity? This question derives from environmental thought and my approach to answering it will make use of concepts and methods developed in that field. I propose to make use of ancient Jewish calendars as a lens for answering this question, which will require some methodological adjustments and refocusing for this purpose. The balance of this chapter is aimed at explaining the methodological principles upon which this attempt is based and the terminology I will be employing in this exploration.

In particular, before going any further we must immediately bring in a third party – God – to the relationship dynamic, for Jewish thought of the period I will be examining is characterized by an intrinsically theological quality. This is particularly the case when it comes to calendrical time, as exemplified by the foundational text of Gen 1:14: “God said: ‘Let there be lights in the expanse of the sky to separate day from night; they shall be for signs and for set times and for days and for years.’”⁶ Therefore, the meta-question

⁶ I have adjusted the translation of 14b, והיו לאות ולמועדים ולימים ושנים. The NJPS translation reads “they shall serve as signs for the set times – the days and the years”; Fox translates, “that they may be for signs – for set-times, for days and years”; Everett Fox, *The Five Books of Moses: Genesis, Exodus, Leviticus, Numbers, Deuteronomy: a new translation with introductions, commentary, and notes* (New York: Schocken Books, 1995), 14. Abrahams translates, “let them be for signs and for seasons and for days and years”; Umberto Cassuto, *A Commentary on the Book of Genesis - Part One: From Adam to Noah, Genesis I-VI 8*, trans. Israel Abrahams (Jerusalem: Magnes Press, 1961), 42. Particularly due to the independent importance given the term “signs” in the DSS, I have adapted this last as a more literal approach, which treats each of these four items (signs, set times, days, years) independently rather than making the latter two or three terms as subordinate to and descriptive of the former.

must be modified and focused to ask: *What can we learn about ancient Jewish understandings of the relationships between humans, God and nature by examining the theory and practice of ancient Jewish calendars?* Answering this question will necessarily require a re-reading of the historical record, with the result that the answers offered to the meta-question will be interwoven with a more conventional historical and literary interpretation of the available sources.

In a general way it can be said that the genesis of this meta-question can be traced back to White's famous 1967 essay assigning responsibility for the Western world's mistreatment of the environment to the Bible:

Christianity inherited from Judaism not only a concept of time as nonrepetitive and linear but also a striking story of creation....God planned all of this [creation] explicitly for man's benefit and rule: no item in the physical creation had any purpose save to serve man's purposes....Christianity is the most anthropocentric religion the world has seen....Christianity, in absolute contrast to ancient paganism...not only established a dualism of man and nature but also insisted that it is God's will that man exploit nature for his proper ends....By destroying pagan animism, Christianity made it possible to exploit nature in a mood of indifference to the feelings of natural objects.⁷

While most forcefully an attack on Christianity, ancient Judaism was also implicated, and has subsequently been seen as equally "guilty" by many environmentalists who lump together the "Judeo-Christian" tradition.⁸ Many Jewish and Christian writers took issue not only with White's focus on religion, but also with White's reading of both the Bible and of traditions of biblical interpretation.⁹ Whatever

⁷ Lynn White, "The Historical Roots of Our Ecological Crisis," in *This Sacred Earth: Religion, Nature, Environment*, ed. Roger S. Gottlieb (New York: Routledge, 1996), 189.

⁸ Of course, the "Judeo" part for these critics, as well as White, was the traditional Christian focus on the pre-Christian Judaism that Christianity "inherited"; post-Christian and post-biblical Judaism is almost ignored.

⁹ Among the more extensive responses, see Jeremy Cohen, *"Be Fertile and Increase, Fill the Earth and Master It": The Ancient and Medieval Career of a Biblical Text* (Ithaca, N.Y.: Cornell University Press,

the merit of White's critique of the biblical understanding of the relationship of humans, God and nature, it can certainly be said that it marked the beginning of a continuing discussion taking place at the intersection of history, politics, religion and environmental thought which brings together fields with varying perspectives and methods. My aim here is not to directly enter into the discussion engaged in by White and his respondents concerning the culpability of Judaism or Christianity for contemporary environmental problems; I merely point to that discussion as the historical starting point of a more general inquiry into the religious aspect of cultural attitudes toward the environment, of which this study is a part.

My contention is that by studying Jewish calendars we can add a new aspect to the discussion that takes place at this intersection of concerns addressed by perspectives from various fields. It might be said that this is a work concerning the history of religion written under the sign of environmental thought. More particularly, the subject matter and sources are usually dealt with in the field of Jewish studies – broadly construed as the history of Jewish religion and culture – while the questions and methodology are primarily drawn from the field of environmental thought,¹⁰ where special attention is focused on cultural constructs of the relationship and interaction between humans and the non-human natural world. My aim is to join the lens of environmental thought to the field of Jewish studies by focusing on Jewish calendars. My thesis is that changing calendrical practices can be read as a narrative about time that changes through time, reflecting and

1989); Theodore Hiebert, *The Yahwist's Landscape: Nature and Religion in Early Israel* (New York: Oxford University Press, 1996); the essays collected in Roger S. Gottlieb, ed., *This Sacred Earth: Religion, Nature, Environment* (New York: Routledge, 1996) and Martin D. Yaffe, ed., *Judaism & Environmental Ethics: A Reader* (Lanham, Md.: Lexington Books, 2001).

¹⁰ For brevity's sake I use the term "environmental thought" to refer to the related aspects of environmental history, philosophy and ethics.

constructing a culture's understanding of the relations between the human, divine, and natural realms.

Some may ask whether Judaism even has a concept of “nature” since a term comparable to this is not found in either biblical or rabbinic Hebrew.¹¹ I do not think this makes my use of “nature” methodologically problematic.¹² As related in the cosmogony of Genesis 1:1, God creates “the heavens and the earth,” that is, the terrestrial realm of land and water, and the sky realm above it.¹³ Humans are created at the last stage of this process, at the end of the sixth day (Gen 1:26-31). Thus, at the mythical moment before the creation of humans, all of the heavens and the earth had existed *without* humans; created last, humans may have “dominion” (Gen 1:26, 28) over living creatures, but are also dependent upon them for food.¹⁴ Human superiority to the rest of creation is also not unqualified; the last place of humans in the sequence of creation is interpreted in the Babylonian Talmud (BT) as follows: “Our Rabbis taught: Adam was created on the eve

¹¹ Yaffe, ed., 13; Tikva Frymer-Kensky, *In the Wake of the Goddesses* (New York: Fawcett Columbine, 1992), 214-215; David Ehrenfeld and Philip J. Bentley, “Judaism and the Practice of Stewardship,” *Judaism* 34, no. 3 (1985): 303.

¹² If that is the case, I have plenty of company. For recent discussions of nature and Judaism, see for example the essays collected in Yaffe, ed., Hava Tirosh-Samuels, ed., *Judaism and Ecology: Created World and Revealed Word* (Cambridge, Mass.: Harvard, 2002), Arthur Waskow, ed., *Torah of the Earth: Exploring 4,000 Years of Ecology in Jewish Thought*, 2 vols., vol. 1 (Woodstock, Vt.: Jewish Lights, 2000). A particularly relevant example is Elijah, who uses the term “nature” extensively in her recent analysis of the priestly world-view embedded in the DSS and 364DC; see Elijah.

¹³ The long-standing debate about whether this was creation *ex nihilo*, or made out of some primordial material, is irrelevant in this context. For a brief discussion of these two views, see Robert D. Sacks, “Commentary on the Book of Genesis, Chapter 1,” in *Judaism & Environmental Ethics: A Reader*, ed. Martin D. Yaffe (Lanham, Md.: Lexington Books, 2001), 144-145. Similarly, the meaning of “heaven” is somewhat ambiguous, since in the Bible it sometimes refers not only to the visible sky, but to the unseen abode of God and the angels above the sky. Nevertheless, in the Genesis 1-2:4a cosmogony it seems that the reference is to the visible sky into which are placed the heavenly lights (Gen 1:14-15) and birds (Gen 1:30).

¹⁴ Although in Genesis 1:29 this only refers to seeds and fruit, after the flood humans are permitted animal products (Gen 9:2-9:4).

of Sabbath. And why?...In order that, if a man's mind becomes proud, he may be reminded that the gnats preceded him in the order of creation” (*b. Sanhedrin* 38a).

Perhaps the lack of a term precisely equivalent to “nature” indicates that human’s were conceived of as embedded in God’s creation as part of it, not in opposition to it, as seems to be the bias in the Greek (and later Christian) tradition.¹⁵

Of course, like many fields in the social sciences and humanities today, Jewish studies and environmental thought are themselves multi-disciplinary.¹⁶ Therefore, methods borrowed from other disciplines that are often used in these fields will also be used here, especially perspectives adapted from history, history of religions, sociology, politics, anthropology, archaeology, and literary criticism. These will generally come into play in an effort to understand what I will call “local-questions” – in contrast to the “meta-question” mentioned above – concerning the interpretation of particular texts as I seek to establish a basis on which to further evaluate what we can learn in relation to the meta-question guiding this inquiry. The resulting discussion is therefore consciously multilayered as questions and issues are addressed on both the local and meta dimensions.

Perspective One: Terrain and Time in Environmental Thought

The Relationship of Nature and Culture

Environmental thought is one aspect of this intersecting conversation. Broadly speaking, the subject of environmental thought is the study of the interaction between

¹⁵ Ehrenfeld and Bentley, 303; Frymer-Kensky, 214-215. Below I will more fully address the issue of whether humans are opposed to nature or embedded in nature.

¹⁶ I prefer the term multi-disciplinary, alluding to multiple *approaches* to material, to the more common term “interdisciplinary,” which focuses on the *topic* approached in multiple ways; of course, they are two sides of the same coin.

humanity and the natural environment, where the “environment” is understood as nonhuman nature, both animate and inanimate, which would exist even if humans did not. Yet the environment today is stamped by human impact. Nature certainly has a past and, if we accept contemporary concepts of planetary and biological evolution, most of nature’s historical timeline occurred before the appearance of *Homo sapiens*. While this history of nature is studied by fields such as biology, geology, ecology and cosmology – usually considered natural sciences – environmental history focuses on the mutual affect and influence between humans and nature.¹⁷ Environmental thought recognizes that humans – like many other species – are co-creators of their environment through conscious or instinctive actions aimed at achieving their needs and desires. Cronon notes, for example, “All human history has a natural context...cultural and environmental systems powerfully interact, shaping and influencing each other.”¹⁸

Environmental history focuses on these interactions because of humanity’s vast ability to affect the environment, an ability that has increased rapidly since the industrial revolution. But even pre-industrial indigenous peoples have had impressive effects on the environment; not all have been “wise-users” of nature and its resources. The human past – both “history” and “prehistory” – is replete with examples of species destroyed by “indigenous” humans, such as the megafauna of Australia and the Americas, and of destructive agriculture, such as the fertile crescent of the Near East and the Hohokam of Arizona. Similarly, disease has had an occasionally devastating impact on human

¹⁷ Ecology, which is the scientific discipline focusing on the interrelationship between organisms and their environment in living systems, strongly informs environmental thought but is not identical to it.

¹⁸ William Cronon, “The Uses of Environmental History,” *Environmental History Review* 17, no. 3 (Fall 1993): 13.

populations, either directly – for example, the effect of European diseases upon the American Indians or the bubonic plague in Europe – or indirectly through effects on the food supply – from locusts to potato disease.¹⁹ The awareness that various human cultures have utilized and affected their environment – often, the same territory – in different ways leads environmental historians to examine the whole interplay of human culture with nature – that is, the dialectic of the effect environment has on politics, philosophy, religion, art, etc., and the reciprocal effect that these cultural constructs have in directing human action upon nature.

The origin of environmental thought is to be found in the nineteenth century conservation movement, which grew out of romanticism and spawned the conservation politics of the early twentieth century progressive movement. Much of previous Western thought and history consisted of the distinction between humans and nature, and the struggle of one with the other. This is found amongst the Greeks (e.g., Aristotle’s definition of human’s as those who live in a *polis*, apart from the natural world), the Bible (e.g., Gen 1:26, “God said: Let us make humankind, in our image, according to our likeness! Let them have dominion over the fish of the sea, the fowl of the heavens, animals, all the earth, and all crawling things that crawl upon the earth!”²⁰), and the Sumerians (e.g., in the epic of *Gilgamesh*, after the wild man Enkidu is civilized he

¹⁹ Recent studies addressing these issues include Diamond, who discusses species extinction, failed agriculture and disease on a worldwide scale (Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (New York: W. W. Norton, 1997)), Krech, who discusses these phenomena in the context of North American Indians (Shepard Krech, *The Ecological Indian: Myth and History* (New York: W.W. Norton & Company, Inc., 1999)). Merchant and Cronon address these issues in the specific context of the New England Indians, (Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England* (Chapel Hill: The University of North Carolina Press, 1989) and William Cronon, *Changes In the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983)).

²⁰ Fox, 15.

becomes destructive of nature). In contrast, the major principle of the conservation movement was the intent to save “nature” from “humans.” National parks are a notable result of this view, which is still dominant in contemporary public policy today and is typified in the United States by the *Wilderness Act of 1964*, in which a “wilderness” area is defined as “an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area...which generally appears to have been affected primarily by the forces of nature.”²¹

Nevertheless, the notion of unspoiled *nature* as something that can be separated and preserved from the ravages of human *culture* has been criticized on many fronts. In particular, the terminology of the discussion has been problematized by various strains of environmental thought which foreground a critique of the very terms “nature” and “culture.” These views claim that dualistic patterns of thought are not a reflection of reality, but rather a cultural phenomenon itself that is part and parcel of a long tradition of dualism that has dominated Western thought since antiquity and creates a socially determined reality. Generally implicit in dualistic thinking is its hierarchical character, i.e., one side of the diptych is consistently considered superior to the other, namely the “culture” side of the ledger. Binary thinking has resulted in a whole series of hierarchical dualisms typifying Western thought, with each pair correlating to the others. Some of

²¹ “The Wilderness Act of 1964,” in *The Great New Wilderness Debate*, ed. J. Baird Callicott and Michael P. Nelson (Athens, Ga.: The University of Georgia Press, 1998), 121. The issue has been complicated recently by the recognition that human impact on the terrestrial environment has now gone on for so long, and to such an extent, that it is hard to discern a “natural” landscape. Indeed, the concept of “wilderness” – as a place untrammelled by humans – has come under criticism as an artificial creation, for wilderness areas are the recent creation of humans who have set aside reserves, often at the expense of native peoples who have been forcibly removed from those areas. In addition to the anthology edited by Callicott and Nelson, see for example Mark David Spence, *Dispossessing the Wilderness: Indian Removal and the Making of the National Parks* (New York: Oxford University Press, 1999).

these pairs include the following (although lists assembled by various authors will vary a bit):²²

Nature	Culture
Women	Men
Feminine, female	Masculine, male
Non-white peoples and races	European/white peoples and races
Body	Mind
Flesh	Spirit/soul
Biological reproduction	Mechanical production; science, machine
Subjective	Objective
Emotion	Reason
Irrational	Rational
Disorder, chaos, unruliness	Order, control, administration
Passive	Active
Submissive	Dominant
Holism	Mechanism, reductionism
Mercy	Judgement
Natural	Artificial
Dark	Light
Left	Right
Wild	Tame, domesticated

In recent decades dualistic thought has come under criticism on many fronts as a way of thinking that has served to justify the expansion and dominance of Euro-American-white-male-centric civilization over others, such as women, non-white peoples and non-human nature as a whole. A particular problem is its hierarchical aspect, i.e., in general the right column is valorized while the left column is denigrated, to such an extent that the right and left columns are generally identified, respectively, with the dualism of good vs. evil. Noting that “nature-culture dualism is a key factor in Western civilization’s advance at the expense of nature,” Merchant suggests that if “nature and

²² See for example Carolyn Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution* (San Francisco: HarperSanFrancisco, 1990), 143-144; Daniel Boyarin, *Carnal Israel: Reading Sex in Talmudic Culture* (Berkeley: University of California Press, 1993), 237-238; Judith Plaskow, *Standing Again at Sinai: Judaism from a Feminist Perspective* (San Francisco: Harper & Row, 1990), 153-154, 192-194.

women, Indians and blacks are to be liberated from the strictures of this ideology, a radical critique of the very categories *nature* and *culture*, as organizing concepts in all disciplines must be undertaken.”²³ Environmental thought has, therefore, moved away from the nineteenth century conservationist model that conceived of nature as separate from culture, towards various models that emphasize the embeddedness of humans in the natural environment, where nature and culture are both actors and subjects in systemic interactions.²⁴

In my view, we need to remember that culture is not inevitably “artificial” and in opposition to “nature.” As Geertz has written, humans “unmodified by the customs of particular places do not in fact exist, have never existed, and most important, could not in the very nature of the case exist.”²⁵ What this means is that culture is the nature of humans; therefore, since humans are embedded in nature, the only way humans ever encounter nature is necessarily mediated through culture. It is therefore impossible for humans to encounter unmediated, raw “nature.” Our particular cultural perspective inevitably limits whatever we think of as “nature.” Still, I share an assumption common to environmental thought (which it has inherited from the natural sciences) that – as mediated as it may be by human culture and mind – there is nevertheless a reality that exists beyond, and largely in indifference to, human beings. The opposite view, that nothing exists beyond the constructions of the human mind, is mere anthropocentric hubris. The way this external, natural environment is conceived of by any particular

²³ Merchant, *The Death of Nature: Women, Ecology and the Scientific Revolution*, 143-144.

²⁴ See especially Merchant’s blending of Marxian dialectics, history of science, and systems theory in Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England*, 1-26.

²⁵ Geertz, 35.

culture is the result of culturally specific negotiations between humans and their encounter with the natural environment.

Time and Environmental Thought

In general it can safely be said that environmental thought has been focused on issues concerning terrestrial space, that is, the earth's terrain in its broadest sense including land, water and atmosphere, which is the usual meaning of "the environment." Wilderness, for example, describes a *place*. When time is brought into consideration, it is generally done in the sense of changes in a terrain induced by human activity,²⁶ or the hard to see temporal dimensions of human action on the earth's environment.²⁷

The way in which I want to adapt environmental thought to the project at hand is to shift the focus from terrain to time. That is to say, just as humans are embedded in nature with respect to place, they are also embedded in nature with respect to time. There is a continuum between the realms of space and time, not Einstein's but the one defined by earth's living beings that exist in both dimensions. Indeed, the temporal realm has been much less affected by human activity than the terrestrial realm: while humans have actively modified the earth's terrain, so far humans have had no discernable effect on the naturally occurring cycles of day, lunation, and year which are controlled by the orbits of

²⁶ See the studies referenced above in note 19. Cronon's study of the transformation of the American mid-west is an excellent example of this focus on terrain; William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W.W. Norton & Company, 1991).

²⁷ See for example Adam's concept of a "timescape" as a complement to a "landscape" as a way to focus on "temporal interdependencies and absences, ... to grasp environmental phenomena as complex temporal, contextually specific wholes"; Barbara Adam, *Timescapes of Modernity: The Environment and Invisible Hazards* (New York: Routledge, 1998), 54.

the earth, moon and sun. At the same time, most life on earth – including human life – continues to respond to these temporal cycles over which we have no control.²⁸

In the realm of biotic communities, the field of chronobiology has shown that human beings, along with almost all organisms on earth, pulse with rhythms that are linked to movements of the earth, moon and sun. From daily cycles of diurnal and nocturnal activity, to creatures of the shore that have adapted to the tides ruled by the lunation, to annual cycles of seasons that determine migration and reproduction, it has become clear that temporal cycles are an essential dimension of biotic relationships and ecological understandings of them. Young observes that the mis-matched cycles of day, month and year, which are such “a nightmare for human calendar makers,” have been “a great stimulus to complexity” in living systems, where creatures have adapted “to take advantage of and occupy one of the multitude of ecological niches in time that such a complicated natural timing system provides.”²⁹ Adam, who extends environmental thought to include time, claims that these temporal rhythms

mark us as creatures of this earth. Those environmental changes from dark to light, warm to cold, wet to dry set the developmental pattern for all living forms on this planet, to be internalized and adapted for specific evolutionary and environmental niches. From cells to organs and even brain activity, our physiology is tied to those periodicities. Women’s reproductive cycles are tuned to it and so are our collective activity and rest patterns, all superbly timed and orchestrated into a symphony of rhythms.³⁰

²⁸ Of course, since the prehistoric days when humans began building structures of various sorts there has been an effort at climate control in those environments for both humans and their domesticated plants and animals, but this only points to the artificial aspect of these efforts.

²⁹ Michael Young, *The Metronomic Society* (Cambridge, Mass.: Harvard University Press, 1988) 23. Chapter Two of this book provides a good summary of the findings of chronobiology. See also Chapter Two of Jeremy Rifkin, *Time Wars: The Primary Conflict in Human History* (New York: Simon & Schuster, 1987).

³⁰ Barbara Adam, *Timewatch: The Social Analysis of Time* (Cambridge: Polity Press, 1995), 16-17.

While humans may be fooled into thinking that we can control our environment by our amazing ability to modify the earth's surface, there is far less ability to change the cosmic clocks to which humans, together with all life, are entrained. As Young writes, "We are not outside the cosmic rhythms but part of all of them.... Time is not only outside us, it is also inside us, in the form of our internal clocks and their consequences."³¹ The natural environment of human life and culture therefore contains a temporal as well as terrestrial dimension, one that links terrestrial nature to the movements of the cosmos,³² providing a basis for expanding environmental thought into the dimension of time as well as space.

Natural Time and Clock-Time

But while humans cannot control the natural rhythms of time, there is a possibility to structure and regulate the individual and social experience of time. This is especially apparent today, when clocks are ubiquitous. Indeed, time can now be measured more accurately than distance, and length is defined in units of time.³³ "The clock," wrote Mumford, "is the key-machine of the modern industrial age."³⁴ The clock permits the quantification, segmentation and sequencing of time, resulting in the ability to schedule, coordinate, and plan social activities. Social historians find the root of this approach to time in the Benedictine monasteries during the sixth century C.E., following the fall of

³¹ Young, 30.

³² Here I am thinking of "nature" in the broadest sense; weather and geological change, for example, will take place even in the absence of biological life forms.

³³ In 1983 the standard length of a meter was redefined as the distance traveled by light in a vacuum during a particular interval of time. William B. Penzes, "Time Line for the Definition of the Meter," (National Institute of Standards and Technology), n.p. [cited September 22, 2003 2003]. Online: www.me1.nist.gov/div821/museum/timeline.htm.

³⁴ Lewis Mumford, *The Human Prospect*, ed. Harry T. Moore and Karl W. Deutsch (London: Secker and Warburg, 1956), 5.

the Roman Empire.³⁵ As Mumford writes, “One is not straining the facts when one suggests that the monasteries...helped to give human enterprise the regular collective beat and rhythm of the machine; for the clock is not merely a means of keeping track of the hours, but of synchronizing the actions of men.”³⁶ By the thirteenth century clocks and the attendant coordination and regimentation they facilitated began to spread beyond the monastery in Europe, eventually to become a central practice and metaphor of bourgeois capitalism,³⁷ wherein owning a watch became a symbol of success and “time is money” became the watchword.³⁸ It was only with the advent of the mechanical clock that the measure of time called the “hour” became of constant length; previously the day and night had each been divided into 12 “temporal” hours whose length varied with the seasons. This shift created the basis for clock time as mechanical and regular, independent of the length of the day that had been its origin.³⁹

Thus, sociologists have drawn a distinction between “clock time” and “event time,” which in many ways mirrors the nature/culture dualism.⁴⁰ Levine writes that, “Under clock time, the hour on the timepiece governs the beginning and ending of activities. When event time predominates, scheduling is determined by activities. Events begin and

³⁵ In addition to Mumford, see, for example, David S. Landes, *Revolution in Time: Clocks and the Making of the Modern World* (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1983), 61-62.

³⁶ Mumford, 4-5.

³⁷ Landes, 67-84.

³⁸ Mumford, 7-8; Adam, *Timewatch: The Social Analysis of Time*, 64-65.

³⁹ Landes, 75-78.

⁴⁰ Mumford makes the distinction between the resulting “mechanical time” and “organic time”; Mumford, 7.

end when, by mutual consensus, participants ‘feel’ the time is right.”⁴¹ The “events” of event time are usually related to commonly observable natural events, such as sunrise or seasons. In some languages, the qualities of these times – e.g., darkness, heat – are indistinguishable from time as an objective quantity; summer *is* hot, night *is* dark. This is in contrast to Western languages, such as English, which use “time” as a noun, treating it as an independent objective entity.⁴² This abstract notion of time is itself a result of clock time, which intrinsically dissociates time from any natural events.⁴³

Our ability to invent and transform socially practiced time into a form that is independent of natural time serves to reify the distinction between nature and culture, and increase the perceived polarity of these realms, just as the terrain of a city that abuts and is bounded by a large wilderness area or park serves to make concrete the same polarity in spatial terms.⁴⁴ As Rifkin writes, the “accelerated time frame of the modern age... is beginning to drive a permanent wedge between the rhythms of culture and the rhythms of nature.”⁴⁵ In particular, Rifkin condemns the sped-up rhythms of today’s computer age “nanosecond culture”⁴⁶ – the accentuation of the industrial revolution’s clock-determined

⁴¹ Robert Levine, *A Geography of Time* (New York: Basic Books, 1997), 85-86.

⁴² *Ibid.*, 87-94.

⁴³ Of course, the measurement of abstract time itself continues its quest for ever increasing accuracy by seeking natural measurements. The original basis of measurements in the natural cycles of the day was long ago left behind by the atomic clock, just as the analog clock’s dial – which emulates the cycles of day and night – has given way to digital timepieces. But while based in nature, the rhythm of the atomic clock bears no correlation to the cycles of biological or geological time; thus the new basis of clock-time on the rhythm of atomic vibrations bears no relationship to any actually experienced natural rhythm, but merely serves to naturalize what is at essence an abstract, artificial quantity.

⁴⁴ For example, see the photograph of Belo Horizonte, Brazil in Virginia Morell, “Rio’s Backyard Rain Forest,” *National Geographic*, March 2004, 11.

⁴⁵ Rifkin, 58.

⁴⁶ *Ibid.*, 19.

rhythms – that conflict with the natural clocks embedded in the biology of our bodies and surrounding us in the natural environment.

Adam suggests that clock time is not cultural time per se, but a particular phenomenon she labels *industrial* time:

Industrial time is centrally structured to a) the invariable beat of the clock; b) the economic commodification of time and c) the scientific use of time as measure of abstract motion. In this triple configuration, industrial time is central to the discussions on environmental economics and politics. . . . time becomes a quantifiable resource that is open to manipulation, management and control, and subject to commodification, allocation, use and abuse.⁴⁷

One way Adam contrasts artificial and natural forms of time is as repetition versus rhythmic, where the former facilitates quantification and measurement while the later does not. “Clock time,” writes Adam, “is based on the principle of repetition without change. Distanced from the variable rhythms and contextual differences of living systems it recasts time in an atemporal form. . . . In contrast to commodified time, however, the rhythmically constituted process of ecological transactions and reproduction are not easily quantified and decontextualized.”⁴⁸

Adam provides a good example of the dilemma in which many environmental theorists (including myself) find themselves today. On the one hand she claims, “From a temporal perspective there is no nature-culture duality: we are nature, we constitute nature and we create nature through our actions in conditions that are largely pre-set for us by evolution and history.”⁴⁹ Nevertheless, as we have already seen, she inevitably and unavoidably talks of dualities as she seeks to overcome them. This is because thinking

⁴⁷ Adam, *Timescapes of Modernity: The Environment and Invisible Hazards*, 11.

⁴⁸ *Ibid.*, 14.

⁴⁹ *Ibid.*, 13.

dualistically is an almost unavoidable heuristic method of immense utility. Nevertheless, we must always keep in mind that such dualisms do not exhaust the possibilities of thought or reality, nor should they necessarily imply a particular hierarchical preference. Reminders of holistic connections must balance a dualistic focus on distinctions.

Today, just at the point when environmental thought is increasingly emphasizing the ultimate embeddedness of humanity in nature, we have continuing socio-economic processes that are creating and heightening the contrast and perceived distance between humans and nature. We live in a reality characterized by a temporal tension between what at this point I will call *artificial* time and *natural* time, where artificial time is a strictly calculated rhythm characterized and marked by clocks while natural time is characterized by events marked by biological or cosmological rhythms.

Calendar Time: An Intersection of Culture and Nature

In addition to shifting the focus of environmental thought from terrain to time, I want to further refine this shift by focusing not on time as marked by clocks or events but by calendars. Just as it is impossible for humans, as intrinsically cultural beings, to live exclusively either in a “nature” stripped of culture or in an artificial culture without nature, so too humans live somewhere on the temporal scale between artificial and natural time. What is of particular interest to me about calendars is that they are cultural creations that represent particular negotiations between artificial and natural time.

Durkheim’s sociological perspective is of help here, for he contends that calendars are an essential part of every society: “A calendar expresses the rhythm of the collective activities, while at the same time its function is to assure their regularity.”⁵⁰ Nevertheless,

⁵⁰ Emile Durkheim, *The Elementary Forms of the Religious Life*, trans. Joseph Ward Swain (New York: Collier Books, 1961), 23.

calendars are usually tied to natural phenomena “such as the recurrence of such or such a star or the alternation of the seasons” so that the calendar’s times seem “objective” and “intelligible to all.”⁵¹ Still, for Durkheim human society is the true source of human concepts, and among these he claims, “It is the rhythm of social life which is at the basis of the category of time.”⁵² Thus, the calendar’s true function is a social one, because periodic gatherings are necessary for “collective renewal.”⁵³

While Durkheim emphasizes the social dimension of the calendar, I want to equally emphasize the natural aspect; that is, in my view calendars are not random social constructs that are tied to nature in order to legitimize socially constructed time by making it seem objective. Although I agree with Durkheim that their natural aspect serves to legitimize them, I contend that the origins of calendars lie in the effort of humans to make sense of natural time, to understand it by making it socially meaningful. Calendars negotiate with the nature’s raw temporality to construct patterns of time useful for coordinating social, political, economic and religious time; because they are a given dimension of the human condition, every calendar inevitably overlays onto those found cycles a culturally specific interpretation of their significance. In this sense, every calendar is a unique cultural construction that is a narrative *of* time that mediates the phenomenological experience of time itself.

We find some form of calendars in virtually every culture because humans universally find themselves embedded in the temporal dimension of the natural

⁵¹ Ibid., 491.

⁵² Ibid., 488.

⁵³ Ibid., 491.

environment. This is why every culture has its calendar, its map of time. While clocks are a relatively new development, calendars date to the earliest records of humanity. Even cultures that lacked an alphabet have left evidence of sophisticated calendrical systems, such as the Neolithic stone circles of Great Britain (like Stonehenge) and the stone structures attributed to the Ancestral Puebloans (also called the Anasazi) of the American southwest (such as Hovenweep and Chaco Canyon).⁵⁴ Early calendars represent humanity's effort to understand and predict the chronological dimension of natural events that affected their lives. It may even be that these maps of time predate maps of terrain; the complexity of constructing a calendar may have been a spur to abstract conceptualization and mathematics.⁵⁵

The natural aspect of calendars is that they necessarily start with the observed phenomena of days, lunations and solar/stellar years, relating these patterns to periods of light and dark, warm and cold, dry and wet, activity and rest, growth and dormancy, life and death. The movements of the heavenly bodies – the earth, sun, moon and stars that define the rhythms to which humans and the rest of the earth are subject, yet over which

⁵⁴ Kristen Lippincott, ed., *The Story of Time* (London: Merrell Holberton, 1999), E.G. Richards, *Mapping Time: The Calendar and Its History* (New York: Oxford University Press, 1998) and Evan Hadingham, *Early Man and the Cosmos* (Norman, Okla.: University of Oklahoma Press, 1985) provide recent overviews. See also Martin P. Nilsson, *Primitive Time-Reckoning* (Lund: C.W.K. Gleerup, 1920). For more detail on Stonehenge see John North, *Stonehenge* (New York: Free Press, 1996). For the American Southwest see Ray A. Williamson, *Living the Sky: The Cosmos of the American Indian* (Norman, Okla.: University of Oklahoma Press, 1987), and J. McKim Malville and Claudia Putnam, *Prehistoric Astronomy in the Southwest*, Revised ed. (Boulder, Col.: Johnson Books, 1993).

⁵⁵ This seems to be the case in Mesopotamia, for example, where the importance attached to celestial divination was a spur to mathematical methods used for astronomical prediction. See Francesca Rochberg, "Astronomy and Calendars in Ancient Mesopotamia," in *CANE*, ed. Jack M. Sasson (New York: Scribner, 1995); Marvin Powell, "Metrology and Mathematics in Ancient Mesopotamia," in *CANE*, ed. Jack M. Sasson (New York: Scribner, 1995).

humans have no physical control – create the raw observational phenomena that calendars must take into account.⁵⁶

This has led many cultures to worship the heavenly lights as divine beings, for it seemed they had power over the life of humans and the entire earthly biosphere. While rabbinic Judaism denigrated “worshippers of stars” as idolaters,⁵⁷ the environmental truth of this deification of the heavenly lights is that they do have a decisive role in the conduct of terrestrial life, including human; indeed, the theological argument was not about the power of the heavenly lights, about which there was substantial agreement, but over whether they were independent gods (the idolatrous point of view) or witnesses to the even greater power of the single God who created them. While modern science teaches that the relative rotations, declinations, and orbits of the earth, moon and sun interact to create the days, tides and seasons, to ancient observers it seemed that it was only the celestial bodies themselves that moved over an unmoving earth, thereby indicating and causing the rhythms manifested. Chronobiology merely gives us a modern scientific form of this ancient wisdom, which industrial clock time has pushed away from our awareness.

The cultural aspect of calendars is that they inevitably include humanly imputed meanings and decisions attached to these astronomical rhythms. For example, while calendars tend to agree about the cycles caused by the observable movements of the heavenly bodies, they often differ on the beginnings and endings of these endless cycles. When does each day begin and end? Or the lunation? Or the year? Calendars differ in

⁵⁶ I say “physical control” because, of course, a great deal of religious activity involves attempts to communicate with the God(s) that do have such control, in an attempt to make things go favorably for humans.

⁵⁷ This is a common term for idolatry in the BT.

these ways, and these differences embody and project differing cultural mediations of natural time, ways of dividing the unending cycles of natural time into periodicities of relevance to human life. In addition, different calendars often reflect the social organization and territory inhabited by the society, as annual festivals are often marked in relation to a particular activity, such as a migration or harvest.

What we find in calendars are cycles of time determined either by observation or calculation. I think that the contrast developed in the previous section between natural/event time versus artificial/clock time can be applied to calendars with this slight shift in terminology. An event time driven calendar is intrinsically dependent on the occurrence of observable events, usually natural. The dependence on observation both reflects and creates an attitude of uncertainty; for example, while a particular solar or stellar alignment might indicate the beginning of a season, the timing of the precise appearance of such an alignment is assumed to be uncertain, hence requiring the observation. In contrast, temporal cycles based on calculation mark time at standard intervals. While such calculations may seek to emulate and predict natural cycles that are observable, once a calculated temporal scheme is developed it can operate independently of natural events; a strictly calculated calendar can be followed regardless of the temporal rhythms of nature. The calculated Julian calendar, for example, was followed for centuries despite its increasing variation from the true solar year. Such an artificial system can be repetitive and mathematical without being mechanical; thus, the artificiality of clock-time was anticipated by mathematically based calendars.

While it seems that calendars universally began as observational, throughout the history of Western culture there has been a steady shift towards calculation. This has

involved two aspects, both reflected in the Gregorian calendar. One aspect has been the emulation and prediction of natural cycles, such as the cycles of years and leap-years; indeed, the impetus for the sixteenth century Gregorian reform was the accumulation of errors in the Julian calendar; of course, the need for reform assumed that the goal of the calendar was to accurately predict natural rhythms so that religious holidays would fall on the dates ostensibly decreed by God and indicated by the movements of the heavenly lights. The second impetus was the marking of cycles that have no connection to natural cycles, such as the schematic (i.e., purely mathematical) weeks and months of the Gregorian calendar.

Calendars are models of and for the human experience of time; they provide a conceptual scaffolding for a social understanding of time, making possible the coordination of activities between people over time and distance for mundane and sacred activities, from market days to harvest festivals, from military campaigns to taxes. Once in place, calendars take up residence in a culture's unconscious, structuring its temporal rhythms, directing its behavior and attitudes. But calendars do not only provide for social coordination; they create an experience of time for each individual in a society, as intimate a part of the individual's psychic reality as language, and one that is taken just as much for granted. Like language, a calendar becomes not only a way of describing reality, but also defines the parameters within which that reality is both lived and limited. Much like the Saussurian grammatical categories of *langue* and *parole*, a calendar is a kind of cultural grammar: a generally understood, unquestioned, and assumed pattern underlying the life of a culture, the *langue* that gives structure and meaning to the *parole* of actions and events that take place within its framework. The same action done at

different times could have radically different cultural significance, such as a gift given, a prayer said, or a food eaten at a different time of day or time of year.

My assumption, then, is that every calendar is a particular cultural negotiation between natural rhythms of the biosphere and the cosmos, on the one hand, and the social meanings attached to them, on the other. In this fashion the perceptions of environmental thought, as adjusted to focus on the temporal dimension, bring us a new perspective on the discussion taking place at the intersection of history, politics, religion and environmental thought.

Wild and Tame Time: A Rubric for Calendrical Analysis

As I proceed with my analysis of calendars from the perspective of environmental thought, I want to introduce a particular terminology that I will make use of in my analysis. It is derived from the writings of Thoreau, one of the earliest environmental thinkers as well as one of the earliest to seek both the inversion and collapse of the dualism of nature and culture. In the opening line of his 1862 essay “Walking,” Thoreau writes, “I wish to speak a word for Nature, for absolute freedom and wildness, as contrasted with a freedom and culture merely civil – to regard man as an inhabitant, or a part and parcel of Nature, rather than a member of society.”⁵⁸ The first part of the sentence inverts the traditional dualism by valorizing nature rather than culture, while the end of the statement subverts the dualism by claiming humans cannot ultimately separate themselves from the natural world. Indeed, we are dependent on the unruly life-force of “Nature,” a quality he attempts to capture in the terms “Wild” and “Wildness.” “In Wildness is the preservation of the World. Every tree sends its fibres forth in search of

⁵⁸ Henry David Thoreau, “Walking,” in *The Great New Wilderness Debate*, ed. J. Baird Callicott and Michael P. Nelson (Athens, Ga.: The University of Georgia Press, 1998), 31.

the Wild. The cities import it at any price. Men plough and sail for it.”⁵⁹ While the conservation movement sought to save humans and nature by preserving wilderness, this is a misinterpretation of Thoreau’s argument: while *wilderness* is a place, *wild* is a quality of nature that he contrasts with the tame quality of culture.

I suggest that the contrast of tame and wild as qualities of nature can be applied not only to place but also to *time*. The rhythms of day, lunation and year, determined by our fortuitous location in a particular corner of the universe, can properly be termed *wild*. Despite the fact that these rhythms may seem tame because they can be analyzed by modern astronomy into predictable cycles, they take place regardless of the action or recognition of humans, and humans (so far) are unable to affect them. In addition, while each cycle is fairly regular by itself, they act simultaneously on spaceship earth, resulting in a great complexity of uncontrollable, independent forces whose effects are not totally understood. While the cycles may be predictable, the results can nevertheless be experienced as surprising and awesome, such as the high tide that (inconveniently) arrives at the time of a hurricane. In contrast, *tame* time consists of rhythms that are mathematically calculable *and* not correlated to natural temporal rhythms. Clock-time is a good example of tame time.

Why use an innovative terminology rather than simply use terms I have already discussed, such as artificial vs. natural or clock time vs. event time? I do not want to use the term “clock time” or “mechanical time” (Mumford’s term) because I will be addressing an historical period and context that preceded the invention of the mechanical clock. While the terms “artificial” and “natural” are perhaps closer to what I have in

⁵⁹ Ibid., 37.

mind, these terms have been so overused in so many contexts that they are in many ways general and imprecise.

I find the terminology of tame and wild appropriate for two reasons. First, it derives from environmental thought, reminding us of the discipline from which these terms emerge and the source of my “meta-question.” Second, it focuses us on two qualities of time that reflect different attitudes toward the natural world, the attempt to dominate vs. the acceptance of what is given and beyond human control. These attitudes reverberate throughout a culture’s relationship to its environmental context; by using these terms I focus on the echo of these themes that appear in calendrical rhythms.

Perspective Two: Calendars and Sacred Time

Calendars almost universally began as tools used by religious leaders; this is certainly the case with the Jewish calendars I will be discussing. Thus, religious studies (including, for this purpose, both the history of religions and anthropological studies of religion) have addressed issues of time and calendars.

Frequently a deity or deities are pointed to as the creator and maintainer of the temporal patterns recognized in the calendar, as is famously the case in Genesis 1:14. This serves to legitimate the temporal rhythms enshrined in a calendar. Durkheim argues that all calendars designated special times as a temporal manifestation of a broader “classification of all things, real and ideal” into two categories, the sacred and the profane.⁶⁰ In the dimension of time, sacred times exclude the activities of profane time. “Thus feast days are born. There is no religion, and, consequently, no society which has

⁶⁰ Durkheim, 52.

not known and practiced this division of time into two distinct parts.”⁶¹ While Durkheim claims that gods are not necessary in order to make this distinction, only the idea that sacred times (or things) exist; properly set apart, “anything can be sacred.”⁶²

Nevertheless, in most cases – and certainly the case of Judaism – sacred time is inextricably attributed to and associated with divine power, and the theory and practice of calendrical time takes place within a theological framework attributing the creation of temporal cycles to a divine power.

Eliade greatly elaborates the distinction between sacred and profane made by Durkheim, emphasizing its religious aspect, especially as it applies to time and calendar. In Eliade’s typology, “nonreligious” and “religious” perspectives constituted different “existential attitudes and behaviors.”⁶³ The modern, nonreligious person lives in the “historical present,” which always represents a human experience; regardless of variation in temporal rhythms and intensity, this begins with birth and ends with the annihilation of life in death. The religious person, in contrast, seeks to overcome this “profane” time.

Hence religious man lives in two kinds of time, of which the more important, sacred time, appears under the paradoxical aspect of a circular time, reversible and recoverable, a sort of eternal mythical present that is periodically reintegrated by means of rites. This attitude in regard to time suffices to distinguish religious from nonreligious man; the former refuses to live solely in what, in modern terms, is called the historical present; he attempts to regain a sacred time that, from one point of view, can be homologized to eternity.⁶⁴

⁶¹ Ibid., 347.

⁶² Ibid., 52.

⁶³ Mircea Eliade, *The Sacred and the Profane: The Nature of Religion*, trans. Willard R. Trask (San Diego: Harcourt Brace Jovanovich, 1959), 70.

⁶⁴ Ibid., 70.

The distinction between sacred and profane leads Eliade to suggest another typology, which distinguishes between linear and cyclical time. This is aptly summarized by Zerubavel: “Whereas profane time is *historical* and is best represented in a *linear* fashion, sacred time is essentially *ahistorical* and is best represented in a *cyclical* manner.”⁶⁵ Zerubavel further observes that “both modalities of temporality can and do exist – albeit in varying proportions – within one and the same society or culture.”⁶⁶

Calendars are a technology that can be used to represent both linear and cyclical time. On the one hand, linear historical thinking involves chronology, a linear sequence of dates that can never repeat; every date must include the year in a consistent sequence of years. In contrast, annual holidays recur year after year on the same date in a cyclical fashion, just as a particular day of the week recurs each week. In principle, holidays are the same every time they are observed: a remembrance of something that took place at that time of the year in another year prior to this one (whether the event is historical, mythic, or natural is irrelevant). For the memorialist, every year is the same; what is important are the observances of the year that recur (which are usually of a “religious” nature, but can also be secular). While both the historian and the memorialist may use the same calendar, their goals are not the same.⁶⁷

The origins of the calendar are no doubt in the needs of the religious memorialist (not the historian), who learned from nature the characteristics of sacred time. Key

⁶⁵ Eviatar Zerubavel, *Hidden Rhythms: Schedules and Calendars in Social Life* (Berkeley: University of California Press, 1985), 112.

⁶⁶ *Ibid.*, 113.

⁶⁷ For an extensive and influential consideration of this issue, with particular regard to Jewish history and culture, see Yosef Hayim Yerushalmi, *Zahor: Jewish History and Jewish Memory* (Seattle: University of Washington Press, 1982).

transitional moments in the cycles of sun, moon and stars as observed from the earth are quite commonly marked by special religious observances among many cultures. These frequently include dusk and dawn, the solar solstices and equinoxes, the new and full moon, and the return of particular star patterns to a set point on the horizon. The endlessly repeating rhythms of nature are for Eliade a model of the cyclical aspect of sacred times, which religious calendars facilitate by the anticipation of their return.

Religious man experiences two kinds of time – profane and sacred. The one is an evanescent duration, the other a “succession of eternities,” periodically recoverable during the festivals that made up the sacred calendar. The liturgical time of the calendar flows in a closed circle; it is the cosmic time of the year, sanctified by the works of the gods. And since the most stupendous divine work was the creation of the world, commemoration of the cosmogony plays an important part in many religions. The New Year coincides with the first day of Creation. The year is the temporal dimension of the cosmos....At each New Year the cosmogony is reiterated, the world re-created, and to do this is also to create time – that is, to regenerate it by beginning it anew....The religious experience of the festival – that is, participation in the sacred – enables man periodically to live in the presence of the gods...it is by virtue of this eternal return to the sources of the sacred and the real that human existence appears to be saved from nothingness and death.⁶⁸

Sacred time has the quality of eternity; it is not linear time, which is infinite and lasts forever, but is rather a momentary experience of an eternal present, which is eternal because it regularly returns. As Geertz writes (in a slightly different context), the endless cycles of time “don’t tell you what time it is; they tell you what kind of time it is.”⁶⁹

Despite various critiques of Eliade’s work,⁷⁰ this basic conceptual distinction between the

⁶⁸ Eliade 104-107.

⁶⁹ Geertz, 393.

⁷⁰ While I agree with the J. Z. Smith’s critique of Eliade’s overarching ahistoricism, in which Smith contends that the sacred is a dynamic social construct, I believe that Eliade’s distinction between sacred and profane time is useful and applicable in the study of ancient Jewish calendars. See Jonathan Z. Smith, *Map is Not Territory: Studies in the History of Religions* (Chicago: The University of Chicago Press, 1978) 291-293. I also disagree with Eliade’s assertion that Judaism’s great innovation was that “time has a beginning and will have an end” (Eliade 110-111) because God manifests himself in irreversible historical time; for a critique of Eliade on this topic see Zerubavel, 114; for a critique of the Hegelian roots of the broader school Eliade represents on this subject see Theodore Hiebert, “Rethinking Traditional Approaches to Nature in

sacred and profane – I prefer the term “mundane” because it carries fewer negative connotations – has had wide-ranging influence. More importantly for this study, it is a key distinction assumed by ancient Jewish calendar makers. While there were changes and conflicts concerning the proper determination of sacred time, Jewish calendarists can be said to have generally shared an anxiety about getting sacred times right (a concern shared by the much later Gregorian reform), a feeling that is pithily described by the second century B.C.E. author of *Jubilees* who does not want to “make a day of testimony something worthless and a profane day a festival” (*Jub.* 6:37).

Perspective Three: Political Uses of Calendars

The key role played by calendars in human culture has not gone unnoticed by those with an interest in political power. As Rifkin has aptly observed, “Whether sacred or secular, every calendar expresses the essential politics of a culture. No other device in the entire political repertoire is as critical as the calendar in forging a sense of group cohesion.”⁷¹ Whether intentional and conscious or not, calendars are almost always a tool used to support certain power relations. A dominant calendar projects the ideology, practice and authority of the dominant group. In the past usually a priest(ess) or monarch – often claiming to be the representative(s) of the divine powers on earth – would impose a calendar presented as divinely ordained. In European civilization, for example, the major definition of its calendar was decided upon by Julius Ceasar when he was the Roman Emperor (hence the name “Julian calendar”); the most recent major revision to this calendar was made by Pope Gregory in 1582 (hence the name “Gregorian calendar”),

the Bible,” in *Theology for Earth Community: A Field Guide*, ed. Dieter Hessel (Maryknoll, N.Y.: Orbis Books, 1996), 25-26 and Hiebert, *The Yahwist's Landscape: Nature and Religion in Early Israel*, 3-29.

⁷¹ Rifkin, 85. As we shall see, Talmon has made a similar perspective the bedrock of his analysis of the Qumran calendar’s effect on the “Qumran sectarians.”

a reform that was never adopted by the Eastern Orthodox Christian churches, who still use the Julian Calendar. Conquerors usually impose their own calendar as part of their empire-building; the standardized use of the Gregorian calendar in world commerce and politics today is a legacy of European expansion and colonialism over the past five centuries. Thus, many people use two (and sometimes more) calendars: the standard Gregorian calendar for world-wide coordination of communication and commerce, and another calendar traditionally used for local cultural and religious purposes.⁷²

Today the control of the Gregorian calendar has been turned over to scientific specialists who determine the Coordinated Universal Time (UTC), popularly known as Greenwich Mean Time (GMT).⁷³ This delegation of a traditional priestly role to technologists is fully consistent with the substitution of scientist for priest as the authority who constructs and projects cultural paradigms of “reality” for a global, secular, technological society. The celestial motion of the earth is no longer the standard by which time is defined, but that movement itself is measured by ever more precise atomic clocks which are essential for standardized world-wide time-keeping services that make possible global telecommunications and location services (GPS).

Yet, precisely because the effects of a calendar are so ramified, affecting every person at an intimate level as well as virtually every cultural practice, calendars are notoriously resistant to change, and history is full of failed reforms. England and its colonies, for example, did not adopt the Gregorian calendar of 1582 until 1752. More

⁷² An excellent overview of various calendrical systems and issues is Richards. An exhibition catalog on the same subject, including many photos, is Lippincott, ed.

⁷³“What is Universal Time?,” (U.S. Naval Observatory Astronomical Applications Department), n.p. [cited 16 February 2003]. Online: <http://aa.usno.navy.mil/faq/docs/UT.html>.

modern reforms, such as the calendars imposed in the wake of the French and Russian Revolutions, have also failed despite the power of the state, as did the proposed “World Calendar” which was supported by business interests as a way to improve efficiency.⁷⁴ Thus, calendrical change – or conflict – most frequently takes place as an aspect of deep cultural crisis, sometimes as an effect but sometimes as a cause.⁷⁵

In my examination of ancient Jewish calendars it will become apparent that there were abundant political aspects to calendrical conflicts; calendars were key political tools wielded by the priests who ran the Temple in Jerusalem and by the Rabbis after the Temple’s destruction in 70 C.E. I will especially focus on the conflict during the late Second Temple period between proponents of the 364DC, of which the Sabbath was the primary temporal cycle, and the advocates of the OLC, for whom the lunation was a more important temporal cycle. Theories of sacred time emphasizing these contrasting patterns of tame and wild time were central to their ideology and polemical positions. Particular practices therefore enhanced the power of certain groups, while calendrical polemics always had a political dimension. Struggles over the proper interpretation and application of calendrical time, and who had the authority to enforce particular practices, were simultaneously theological and political.

⁷⁴ Richards 117-123; Meredith N. Stiles, *The World's Work and the Calendar* (Boston: The Gorham Press, 1933). The “World Calendar,” which consisted of exactly 52 weeks plus one or two “blank” days is surprisingly similar to the 364DC expressed through the DSS. The major opposition to the World Calendar came from religious authorities defending the concept of the seven-day week, a rhythm the blank days would upset. If the World Calendar had just gathered the “blank days” into an occasional “blank week” of seven days, they would have had a solution virtually identical to that of the 364DC, as will be discussed below. This only goes to show the limited number of solutions available if a calendar aims to reconcile multiple periodicities.

⁷⁵ See also Levine’s discussion of “time wars” over clock and calendar reforms; Levine, 76-79.

Jewish Time: The Key Rhythms of Jewish Calendars

We learn in Genesis 1:5 that, “There was setting, there was dawning: one day.”⁷⁶ It has long been noted that while all the subsequent days of the creation story of Genesis 1-2:4a use ordinal numbers (second, third, etc.), the end of the first day of creation is indicated by a cardinal number. For calendrical purposes this has been understood to indicate that the day is the fundamental unit of time and is measured from sunset to sunset.⁷⁷ This is further elaborated on in Genesis 1:14, which sets the basic parameters for Jewish calendars by designating the “lights in the dome of the heavens” as “signs – for set-times, for days and years.” Thus, days and years are determined by the heavenly lights, although we are not told how many days are in a year, (an ambiguity that will be of great importance). Similarly while “set-times” indicates days of importance determined by the heavenly lights, the specific days thereby designated are left ambiguous. It is especially worth noting that the two cycles of particular focus in this study – the lunation and the Sabbath – go unmentioned, leaving ample scope for later interpretation and conflict.

The Lunation

The lunation is a cycle included in many calendar systems; the origins of the lunar months still used by the Jewish calendar today go back to ancient Mesopotamia. Many scholars have attributed great importance to the lunation as the origin of human concepts of time. In a characteristic, and influential, analysis of “primitive time-reckoning,”

⁷⁶ Fox, 13. NJPS notes that “one day” is an option, but chooses to use “a first day.”

⁷⁷ Sacks, 147.

Nilsson argues that the lunation is the basic model for how time as a process was perceived and marked by the earliest humans:

As well as the sun and the fixed stars the moon appears in the heavens. It does not entirely vanish before the sunlight like the fixed stars, in the night-time its light eclipses that of the smaller stars. Its shape, the strength of its light, and the time of its appearance vary quite perceptibly from day to day. As long as the human race has existed, man's attention must have been drawn to the moon. The course of the moon, thanks to the rapid revolution of the planet round the earth, forms a shorter unit, which steps in between day and year. The shorter interval of time defined by it, unlike the too lengthy period of the year, is easily kept in mind and taken in at a glance. This unit has further its peculiar characteristics. In the first place it has nothing to do with the natural phases conditioned by the course of the sun: it is in fact incommensurable with the seasons. In the second place it immediately obtrudes itself into notice as a unit. The time-reckoning according to the moon is in its nature continuous....The phases of the moon represent a gradual waxing and waning, a continuous development. The principle of continuous time-reckoning, is therefore suggested by the moon, in opposition to the time-indications from natural phases and from the stars....The moon is indeed the first chronometer, and this fact is due to the nature of its concrete appearance, which draws attention to the duration, and not to the point, of time. And this, as always, is the starting-point: practically everywhere the month as a unit of enumeration or a measure is denoted by the same word as the moon....All peoples know the moon and use it for time-reckoning.⁷⁸

Nilsson also points out that the “the first appearance of the crescent of the new moon in the evening twilight, and the full moon” are especially prominent, and “joyfully greeted and celebrated among many peoples” with festivals and celebration.⁷⁹ Indeed, this is related to “a very wide-spread idea that things which are to prosper and grow should be undertaken during the time of the waxing moon, and that anything begun when the moon is on the wane will dwindle and die.”⁸⁰

⁷⁸ Nilsson, 147-148.

⁷⁹ Ibid., 151.

⁸⁰ Ibid., 341.

Eliade builds on Nilsson's observations, not only contending that the moon is the most ancient measure of time among all of nature's phenomena, but that its phases were the model and symbol of life's process within a cyclical structure of time:

It is through the moon's phases – that is, its birth, death, and resurrection – that men came to know at once their own mode of being in the cosmos and the chances for their survival or rebirth. . . . We may even speak of a metaphysics of the moon, in the sense of a consistent system of "truths" relating to the mode of being peculiar to living creatures, to everything in the cosmos that shares in life, that is, in becoming, growth and waning, death and resurrection. For men must not forget that what the moon reveals to religious man is not only that death is indissolubly linked with life but also, and above all, that death is not final, that it is always followed by a new birth.⁸¹

Of particular relevance to my focus on Jewish calendars is the appearance of the first crescent of the new moon. This is especially uncertain; even for modern astronomy the appearance of any particular first crescent is still unpredictable, not merely owing to meteorological or geographical variability, but due to the uncertainty of the multiple complex systems involved.⁸² Robbins notes, for example, that the "correct determination of the beginning of the new month. . . was a source of considerable anxiety in the ancient Near East."⁸³ At most we can predict the lunation and mark particular moments of its cycle, but only the "average" lunation is easily calculable (which is part of why by late antiquity it eventually supplanted the observance of the new crescent in the Jewish calendar). The lunation is therefore an especially *wild* time, with the appearance of the first crescent being unpredictable and uncontrollable.

⁸¹ Eliade, 156-157. See also Mircea Eliade, *The Myth of the Eternal Return; or, Cosmos and History*, trans. Willard R. Trask, Corrected ed., Bollingen Series XLVI (Princeton: Princeton University Press, 1965), 86.

⁸² Sacha Stern, *Calendar and Community: A History of the Jewish Calendar, Second Century BCE - Tenth Century CE* (New York: Oxford University Press, 2001), 110-11; Kim Long, *The Moon Book* (Boulder, Col.: Johnson Books, 1998), 43-47.

⁸³ Ellen Robbins, "Studies in the Prehistory of the Jewish Calendar" (Dissertation, New York University, 1989), 136. I will discuss this anxiety as expressed in Talmud below in Part III.

The Seventh-Day Sabbath

While the moon may be the archetype of cyclical time, the biblical seven-day week is also a version of cyclical time, for it is an endless recapitulation of a sacred cosmogony, God's creation of the universe of space and time described in Gen. 1-2:4a. So, the contrast between the Sabbath and the lunation is not an issue of linear versus cyclical time. Rather, I suggest it is a question of *wild time* versus *tame time*.

In the temporal realm I contend that the seventh-day Sabbath is *tame*; it is the product of civilization – calculable, predictable, orderly. In short, the Sabbath is artificial; it only exists if people mark it. Indeed, the biblical editors indicate their understanding of the Sabbath as a non-natural event by the terminology used in the two versions of the Sabbath command in the Decalogues: one must “remember-זכור” (Exod 20:8) to “preserve-שמור” (Deut 5:12) the Sabbath, for otherwise it does not exist. The Sabbath is theoretical, abstract time, the result of counting; the Sabbath rest rules must be enforced to create the Sabbath, rules that govern only human behavior. Wild nature knows nothing of the seventh-day Sabbath; non-human “rest” does not occur on a seven-day rhythm.

The observance of the seventh-day Sabbath is the origin of the seven-day week. In Hebrew, the first six days of the week are referred to by their sequential number; only the seventh day – the Sabbath – has a name indicating its character. Technically, the term “weeks” refers to a set grouping of days less than a lunation in length (usually between three to ten days). These are found throughout the world, with their origin commonly thought to be in the need for periodic gatherings for the purpose of to market wares and produce.⁸⁴ In his study of the seven-day week, Zerubavel notes that while “quasi-week”

⁸⁴ Nilsson, 333.

is an approximation of a fraction of the lunation (which are variable due to the variable number of days in a lunation, either 29 or 30), a true week is “entirely dissociated from the lunar cycle. It is essentially defined as a precise multiple of the day, quite independently of the lunar month.”⁸⁵ He further notes that, “A continuous seven-day cycle that runs throughout history paying no attention whatsoever to the moon and its phases is a distinctively Jewish invention.”⁸⁶

While it is popular to attribute the origins of the seven-day week to a quarter phase of the lunation,⁸⁷ in operation the distinctive quality of the seventh-day Sabbath is its *dissociation* from the lunation. As Zerubavel observes, “Only by being based on an entirely *artificial mathematical rhythm* could the Sabbath observance become totally independent of the lunar or any other natural cycle.”⁸⁸ He lauds this aspect of the Sabbath, comparing its invention to the later invention of the clock:

The dissociation of the seven-day week from nature has been one of the most significant contributions of Judaism to civilization. Like the invention of the mechanical clock some 1,500 years later, it facilitated the establishment of what Lewis Mumford identified as “mechanical periodicity,” thus essentially increasing the distance between human beings and nature....The invention of the continuous week

⁸⁵ Eviatar Zerubavel, *The Seven Day Circle: The History and Meaning of the Week* (New York: The Free Press, 1985), 9.

⁸⁶ *Ibid.*, 11. For a more complete discussion of the origin of the seven-day week see Part II.

⁸⁷ These speculations go back in the scholarly literature at least to the nineteenth century. Wellhausen argued, “Probably the Sabbath was originally regulated by the phases of the moon”; Julius Wellhausen, *Prolegomena to the History of Israel*, Scholars Press Reprints and Translations Series (Atlanta: Scholars Press, 1994; reprint, with new prefatory matter. Edinburgh: Adam & Charles Black, 1885), 112. S. Langdon similarly hypothesized that “the old Hebrew scheme” involved adding “one or two extra days” so that each month began “with the first day of the first week”; S. Langdon, *Babylonian Menologies and the Semitic Calendars* (London: Oxford University Press, 1935), 89. But other scholars have expressed skepticism about this connection. F. H. Colson, for example, counters that these arguments do not rise “above the region of speculation”; F. H. Colson, *The Week: An Essay on the Origin and Development of the Seven-Day Cycle* (Cambridge: Cambridge University Press, 1926), 3.

⁸⁸ Zerubavel, *The Seven Day Circle: The History and Meaning of the Week*, 11.

was therefore one of the most significant breakthroughs in human beings' attempts to break away from being prisoners of nature and create a social world of their own.⁸⁹

The Sabbath, then, results in a culturally invented way of marking time not anchored in a natural phenomenon,⁹⁰ but in a pattern nevertheless construed as divinely ordained. As Zerubavel notes, and I will examine in more detail, the rise of the Sabbath cult in post-exilic Judaism was associated with the devaluation of the lunation as a time cycle and the development of a theology in which God was above nature, neither touched nor personified by natural phenomena.

In his influential essay, *The Sabbath*, Heschel emphasizes its importance to Judaism, celebrating the Sabbath as the source of Judaism's distinctiveness: "Holiness in space, in nature, was known in other religions. New in the teaching of Judaism was that the idea of holiness was gradually shifted from space to time, from the realm of nature to the realm of history, from things to events. The physical world became divested of any inherent sanctity."⁹¹ According to Heschel, "Judaism is a *religion of time* aiming at *the sanctification of time*."⁹² Heschel clearly sees the Sabbath as the model for sacred time. This can be seen in the one passage where he briefly recognizes that the Jewish "architecture of time"⁹³ includes Jewish festivals other than the Sabbath, festivals whose timing is linked to "life in nature. Passover and the Feast of Booths, for example,

⁸⁹ Ibid., 11.

⁹⁰ Of course, in all of this discussion, I recognize that the Sabbath is dependent on the natural cycle of the day – but this temporal unit is never an issue in calendrical debates, except for the question of when the day "begins," which I am not addressing here; the calendrical disputes of the late Second Temple period are always about how *days* are to be grouped.

⁹¹ Abraham Joshua Heschel, *The Sabbath* (New York: Farrar, Straus and Giroux, 1951), 79.

⁹² Ibid., 8.

⁹³ Ibid., 8.

coincide with the full moon, and the date of all festivals is a day in the month, and the month is a reflection of what goes on periodically in the realm of nature, since the Jewish month begins with the new moon, with the reappearance of the lunar crescent in the evening sky.”⁹⁴ Yet Heschel clearly favors the abstract time manifested in the Sabbath, for he immediately follows this passage by writing, “In contrast, the Sabbath is entirely independent of the month and unrelated to the moon. Its date is not determined by any event in nature, such as the new moon, but by the act of creation. Thus the essence of the Sabbath is completely detached from the world of space...Six days a week we live under the tyranny of things of space; on the Sabbath we try to become attuned to *holiness in time*.”⁹⁵

For Heschel the non-natural aspect of the Sabbath cycle is what allows Judaism to separate from the tyranny of space and nature, becoming “a *religion of time* aiming at the *sanctification of time*.” Yet, Heschel’s celebration of the de-sanctification of nature and Zerubavel’s lauding of how the Sabbath liberates humans from being “prisoners of nature” can be turned on its head: the Sabbath’s temporal distancing of humans from nature was a critical step in Western cultural history toward separating humans from nature, with the later consequence of utilizing strictly calculated time and schedules as a tool for the human subjugation of nature, of making nature the “prisoner” of humans. Like the later invention of the mechanical clock, the artificial rhythm of the Sabbath was not an unqualified boon but a mixed blessing.

⁹⁴ Ibid., 10.

⁹⁵ Ibid., 10.

This description of the Sabbath as an artificial temporal rhythm might lend further strength to the now common impression among environmentalists that the Bible is *the* source in Western culture for the widespread environmental exploitation and degradation perpetrated by the Western world. While I think blaming the Bible – as well as Judaism and Christianity, the biblically-based Western religions – for the environmental crisis is too simplistic, I also think we can make the following statement regarding calendars in general: although calendars inevitably mediate the human experience of time, they vary in the degree to which they align cultural rhythms to those of nature, to wild or tame time. To the extent that they emphasize the observable temporal cycles of nature, or seek to calculate these cycles, they attune humans to the wild rhythms of nature, thereby recognizing humanity’s dependence on, and embeddedness within, the wildness of the natural world. To the extent that calendars utilize temporal cycles that are not observable in nature, which are exclusively calculated and tame, they increase the human experience of separation from the rhythms of nature and the natural world as a whole.

The lunation and the Sabbath represent these two types of time, wild and tame. They both symbolize and manifest two ways of temporally relating to the more-than-human cosmos in which we find ourselves.⁹⁶ As regarding the dualism of nature vs. culture, I believe that the establishment of the seventh-day Sabbath was an important step in the process of distancing human culture from nature in the ancient world, the consequences of which we are still living with. But this shift was neither simple nor

⁹⁶ I have adapted this from Abram’s use of “more-than-human world” in preference to “nature”; while I agree with the embeddedness this terminology indicates, I find the locution unfortunately awkward, and have therefore stayed with the overused term “nature.” See David Abram, *The Spell of the Sensuous: Perception and Language in a More-Than-Human World* (New York: Vintage Books, 1996).

straightforward; it involved certain understandings of how the natural world worked, and the interrelationship of humans, God and nature.

I believe that the tension between the cycles of lunation and Sabbath that we see in the conflicts between ancient Jewish calendars can reveal larger differences in ways of relating to the natural world as a whole. Calendars not only incorporate and impose certain rhythms, but they also overlay particular cultural understandings of the significance of those cycles. In the following chapters, I will pay particular attention to the ways in which the changes in the calendar reflect changes in the perception and construction of the divine, human, and natural realms.

PART I
364-DAY CALENDAR TRADITIONS IN THE SECOND TEMPLE ERA

Now you command the Israelites to keep the years in this number – 364 days

The Book of Jubilees

CHAPTER 2 THE DSS CALENDAR TEXTS

The Significance of the 364-Day Calendar

It is well established that the contemporary Jewish (or Hebrew) calculated lunisolar calendar, unchanged since the ninth century C.E., derives from an observational lunisolar calendar described in the Mishnah (edited at the start of the third century CE). It is also the long held scholarly consensus that the calendar used during the First Temple period (up until the Babylonian exile) was an observationally based lunisolar system, similar to calendars used throughout the ancient Near East, from Canaan to Mesopotamia.¹ Thus, it had been generally assumed that this lunisolar calendrical practice had continued, in some form, during the Second Temple period, perhaps with the modification that Ezra had brought the practice of using Babylonian month names (rather than ordinal month names) when he led a group of returnees from Babylon to Jerusalem during the Persian period.²

¹ For recent surveys, see Mark E. Cohen, *The Cultic Calendars of the Ancient Near East* (Bethesda: CDL Press, 1993); Rochberg ; James C. VanderKam, "Calendars, Ancient Israelite and Early Jewish," in *ABD*, ed. David Noel Freedman (New York: Doubleday, 1992).

² The traditional Jewish view of calendar continuity is that "the names of the months came up with them from Babylonia" (*y. Rosh HaShanah* 2:3 (56d), i.e., the lunisolar calendar practice has been continuous back to the pre-exilic period; only the names of the months have changed along the way. Modern scholars who take this view include Bickerman (Elias J. Bickerman, *Chronology of the Ancient World*, Second ed. (Ithaca, N.Y.: Cornell University Press, 1980), 24); Goudoever (J. Van Goudoever, *Biblical Calendars*, Second Revised Edition ed. (Leiden: E. J. Brill, 1961), 4); Herr (M.D. Herr, "The Calendar," in *The Jewish People in the First Century*, ed. S. Safrai and M. Stern, *Compendia Rerum Iudaicarum ad Novum Testamentum* (Assen/Amsterdam: Van Gorcum, 1976), 834-838; Vaux (Roland de Vaux, *Ancient Israel: Its Life and Institutions*, trans. John McHugh (New York: McGraw-Hill, 1961), 183-185); Finegan (Jack Finegan, *Handbook of Biblical Chronology*, Revised ed. (Peabody, Mass.: Hendrickson, 1998), 34).

Given this background, a strictly calculated 364-day calendar (364DC), at first, seems quite anomalous. Nevertheless, it is my contention that this calendar was used for some length of time during the Second Temple period as the temporal regime of the priests operating the Jerusalem Temple.³ The principles of this calendar, and its contrast with the biblical and rabbinic calendars that preceded and succeeded it, can tell us much about the differing and changing theological and cultural constructs of the relationship of humans, God and nature.

While evidence of the theory and practice of this calendar is amply found among the DSS found near Qumran, my view (which will be developed in detail below) is that the 364DC was not exclusively a “Qumran” calendar. It seems clear there are multiple 364DC traditions testified to in this material, that they were composed over a long period of time, and some of them preceded the habitation of the archeological site of Qumran. While the 364DC may have ended as a “sectarian” practice at Qumran, it began its career as the “normative” Temple calendar for some period of time during the Second Temple period.

The ability to divide the 364DC into exactly 52 weeks of seven-days (which also divides into four seasons of thirteen weeks) made it particularly useful and meaningful for the Temple priests who implemented the seventh-day Sabbath practices (re)instituted by Nehemia.⁴ The 364DC became, therefore, a tool supporting both the theory and practice of the priesthood.⁵

³ While I am not alone in this view, it will be seen that some of my reasons are different than others have assembled.

⁴ Nehemia’s reforms of the Temple cult and calendar will be discussed in Part II.

⁵ Elio similarly notes that the priests “dealt with the overt and covert qualities of sacred place, sacred time, and sacred service”; Elio, 5. The virtue of Elio’s recent study is that it understands the DSS texts as

Furthermore, I suggest that the differences between texts that support a 364-day year are best understood as displaying historical evolution, as problems with the practice of the 364DC were encountered and addressed. Various descriptive terms used by scholars, such as “solar,”⁶ “Qumran,” “concordant” or “synchronic” are applicable to particular strands among the 364DC traditions, but do not accurately describe all strands and have mainly served to obscure the diversity of these traditions. These evolving elements of the 364DC traditions include both practical and theological aspects that will help us to elucidate changing cosmologies and the importance attributed to the temporal rhythms of the seventh-day Sabbath, the lunation, and the solar year.⁷

As the 364DC tradition evolves, we find an increased emphasis on the rhythm of the Sabbath and a decreased emphasis on the lunation. This inverse relationship is not

expressing the beliefs of the Second Temple priesthood, especially their mystical doctrines and the central role played by the 364DC. This places the DSS texts as central, rather than marginal, to an understanding of Second Temple Jewish thought, which is quite different from many DSS scholars, who restrict the importance of the DSS to a marginal sect headquartered at Qumran. The study’s severe shortcoming, however, is that Eilior provides few references to the DSS secondary literature, often not even acknowledging controversies about issues on which she takes a position, and makes suggestions about calendrical connections that she does not support with textual references to primary sources or secondary scholarship. She also follows the view of Talmon and others in assuming all the 364DC texts describe a single calendar rather than identifying different traditions (whether synchronic or diachronic) within this practice; as will be discussed presently, I differ on this assessment.

⁶ Talmon, for example, continues to describe this as a “364-day Solar Calendar”; see Shemaryahu Talmon, Jonathan Ben-Dov, and Uwe Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, ed. Emanuel Tov, Discoveries in the Judaean Desert, vol. XXI (Oxford: Clarendon Press, 2001), 4. For a few other examples of this usage, see also Eilior, 41; Michael Wise, Martin Abegg, and Edward Cook, *The Dead Sea Scrolls: A New Translation* (San Francisco: HarperSanFrancisco, 1996), 297; Annie Jaubert, *The Date of the Last Supper*, trans. Isaac Rafferty (Staten Island, N.Y.: Alba House, 1965), 21. While I agree that this is an apt description for the *Jubilees* calendar, I contend it is important to distinguish this from other versions of the 364DC; calling all of those “solar” is an anachronistic use of the perspective of *Jubilees*.

⁷ I have therefore chosen to make use of the more neutral term 364DC, which I have adapted from suggestions by Callaway and Glessmer; see Phillip R. Callaway, “The 364-Day Calendar Traditions at Qumran,” in *Mogilany 1989: Papers on the Dead Sea Scrolls offered in memory of Jean Carmignac*, ed. Zdzislaw J. Kapera (Krakow: The Enigma Press, 1993), and Uwe Glessmer, “Calendars in the Qumran Scrolls,” in *The Dead Sea Scrolls After Fifty Years: A Comprehensive Assessment*, ed. Peter W. Flint and James C. VanderKam (Leiden: Brill, 1999), 230-231. The reader will note, however, that many of the quotations from other scholars will refer to the 364DC by various terms, including: solar, Qumran, concordant, synchronic.

accidental, but a result of the increasing importance of calculation at the expense of observation, which in turn is the result of the increased importance of the ostensibly revealed sacred rhythm of the Sabbath (as against the natural time of the lunation)⁸ as a time propitious for direct communion with the heavenly realms. The Sabbath was the lynchpin of a strictly calculated calendar that was not modified by observation at all. Rather than solar or synchronic, if any adjective can be used to describe the trajectory of this tradition, it is increasingly *sabbatarian*. Thus, the 364DC tradition develops a calendar that increasingly valorizes the tame time of the Sabbath (justified, of course, by divine revelation) while devaluing the wild time of the lunation.

In order to lay the groundwork for my discussion of these issues, in the balance of this chapter, I will give a brief outline of the unique features defining the 364DC and a brief review of the evolving scholarship on the 364DC and the DSS in order to place in context the significance of the historical and theological reconstruction I am proposing.

Description and Practicality of the 364DC

Description of the 364DC

While there are important details that allow us to distinguish between different 364DC traditions (which will be addressed below),⁹ they are mostly consistent with the following annual calendar elements and features:¹⁰

⁸ As will be addressed below, the length of the solar year was also a problem that was addressed, since 364-days does not match the observed year, which is closer to 365¼.

⁹ Glessmer and Snyder highlight the varieties between various strands of 364DC traditions, the position I agree with; see Glessmer, 231; George Snyder, “Mishmarot Calendars from Qumran Cave 4: Congruence and Divergence” (Dissertation, Hebrew Union College - Jewish Institute of Religion, 1997), 346. In contrast, Talmon prefers to conflate these into one calendrical scheme in the *editio princeps*; Talmon, Ben-Dov, and Glessmer, eds., 17-28. Also see below, note 90.

¹⁰ *I Enoch* is somewhat of an exception, as it does not make any mention of the days of the week or annual holidays, and its months are slightly different (as will be discussed below).

1. The Year:
 - a. The calendar includes 364 days (which is exactly 52 weeks).
 - b. To our knowledge it is based on calculation, and not adjusted for astronomical observation.
 - c. The year begins on or near the vernal equinox.
 - d. The year begins on the fourth day of the week (Wednesday), the day of the creation of the heavenly luminaries in Gen 1:14-10.
2. The Months:
 - a. There are 12 months in the year, referred to by ordinal number only, e.g. “the first month,” the second month,” etc.
 - b. The months are grouped into four quarters of the year, each with 91 days (=13 weeks) divided into three months of 30, 30 and 31 days.
 - c. The months are “schematic” (i.e., calculated), having no relation to the lunation.
 - d. The first day of the month never falls on a Sabbath.
 - e. Table 1 summarizes the pattern of the months for each quarter of the year:¹¹

Months 1, 4, 7, 10							Months 2, 5, 8, 11							Months 3, 6, 9, 12						
Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa
			1	2	3	4						1	2	1	2	3	4	5	6	7
5	6	7	8	9	10	11	3	4	5	6	7	8	9	8	9	10	11	12	13	14
12	13	14	15	16	17	18	10	11	12	13	14	15	16	15	16	17	18	19	20	21
19	20	21	22	23	24	25	17	18	19	20	21	22	23	22	23	24	25	26	27	28
26	27	28	29	30			24	25	26	27	28	29	30	29	30	31				

Table 1: Schematic Months in the 364-Day Calendar

3. The Festivals:
 - a. The festivals never fall on a Sabbath, which avoids difficulties regarding the appropriate sacrifices; rather, they occur annually within a temporal rhythm established by the weekly repetition of the seventh-day Sabbath. This lack of overlap highlights the independent importance of the Sabbath.
 - b. The Day of Atonement always falls on the sixth day of the week (Friday); this makes sense in terms of the priestly tradition, which calls it the “Sabbath of Sabbaths - שבת שבתון” (Lev 16:31; 23:32), for it effectively doubles the length of the Sabbath.¹²

¹¹ This is derived from Jaubert’s work and has been reproduced often in the literature on Qumran calendar texts. See Jaubert 27; J. T. Milik, *Ten Years of Discovery in the Wilderness of Judaea*, trans. J. Strugnell (London: SCM Press, Ltd., 1959), 107; Robert Eisenman and Michael Wise, *The Dead Sea Scrolls Uncovered* (New York: Penguin Books, 1993), 107; Roger T. Beckwith, *Calendar and Chronology, Jewish and Christian* (New York: E. J. Brill, 1996), 95; James C. VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time* (New York: Routledge, 1998), 55.

¹² Talmon and Knohl point this out, noting that “this timing was presumably hailed by the adherents to the solar calendar of 364 days as the proper observance of the Day of Atonement.” Shemaryahu Talmon and Israel Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot* B^a (4Q321),” in *Pomegranates and*

- c. Waving the Sheaf is observed on the day following the Sabbath following the week of Passover.¹³
- d. The festivals that fall on the full moon in the lunisolar calendar – especially the spring and autumn holidays of Passover and Booths – will only incidentally fall on a full moon.
- e. The ritual significance of having exactly 52 weeks is that each annual holiday falls not only on the same date every year, but on the same day of the week. See Table 2:¹⁴

Day	Month/Date	Holiday
Tuesday	1/14	Passover
Sunday	1/26	Waving the Omer
Thursday	2/14	Second Passover
Sunday	3/15	Festival of Weeks
Wednesday	7/1	Day of Remembrance
Friday	7/10	Day of Atonement
Wednesday	7/15	Festival of Booths

Table 2: Pentateuchal Festival Days and Dates in the 364-Day Calendar

Could the 364DC Have Been Used? The Problem of Intercalation

The practical problem, of course, is that the true solar year is actually 365¼ days long, not 364; thus, if the 364DC was in practice for any length of time, it would be necessary to intercalate the missing days during some type of “leap year” if the holidays were not to cycle out of the seasons appropriate for their agricultural offerings.

Golden Bells, ed. David P. Wright, David Noel Freedman, and Avi Hurvitz (Winona Lake, Ind.: Eisenbrauns, 1995), 396 n. 6.

¹³ This is in contrast to the practice of both the rabbis, who celebrated it after the first day of Passover, and their opponents, the Boethusians, who observed it after the Sabbath that takes place during the week of Passover (*b. Menachoth* 65a).

¹⁴ Similar tables appear in Michael Chyutin, *Milhemet luhot-ha-shanah bi-tekufat Bayit Sheni va-'arikhat mizmore Tehilim 'al-pi luah-ha-shanah [The War of the Calendars in the Period of the Second Temple and the Redaction of the Psalms According to the Calendar]* (Tel Aviv: Modan, 1993) 30; VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 78.

Unfortunately, there is no Qumran document that explicitly addresses this problem, although it has been suggested that 4QOtot (4Q319) is such a text.¹⁵

Based on the lack of a clear intercalation method, there are many scholars who discount the possible use of this calendar; they consider it at most a theological construct. Even if it was used at Qumran, it could not be used for the Temple, whose cultic practice depended on synchronization with the agricultural seasons of the solar year. This view tends to rely heavily on the antiquity of the lunisolar calendar, asserting its normative status in both the first and second Temple periods.¹⁶ Beckwith, for example, relegates the 364DC to Qumran, describing it as “a very ingenious piece of exegesis.”¹⁷

On the other hand, various scholars have proposed a number of possible intercalation schemes all based around some multiple of seven days in order to maintain the “complete weeks” aspect of the calendar in an effort to show that this calendar could have been used.¹⁸ The practicality of the 364DC has been shown by Wise, who suggests

¹⁵ Uwe Glessmer, “The Otot-Texts (4Q319) and the Problem of Intercalations in the Context of the 364-Day Calendar,” in *Qumranstudien: Vorträge und Beiträge der Teilnehmer des Qumranseminars auf dem internationalen Treffen der Society of Biblical Literature, Münster, 25.-26. Juli 1993*, ed. Heinz-Josef Fabry, Armin Lange, and Hermann Lichtenberger, Schriften des Institutum Judaicum Delitzschianum (Göttingen: Vandenhoeck & Ruprecht, 1996); VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 80-84.

¹⁶ Examples of this view is J.B. Segal, “Intercalation and the Hebrew Calendar,” *VT* VII (1957): 251-253 and Philip R. Davies, “Calendrical Change and Qumran Origins: An Assessment of VanderKam’s Theory,” *Catholic Biblical Quarterly* 45 (1983).

¹⁷ Beckwith, 104. This view also underlies Beckwith’s attempt to synchronize the OLC’s month names with the 364DC (*Ibid.*, 90); this exercise is highly speculative, for there is no 364DC text that supports such coordination. See also Herr.

¹⁸ Zeitlin suggested that the “Jubilee” year was not a year, but a 49 day block inserted every 49 years as an intercalation device; Solomon Zeitlin, “Some Stages of the Jewish Calendar,” in *Solomon Zeitlin’s Studies in the Early History of Judaism* (New York: Ktav, 1973), 186. Glessmer develops a possible intercalation scheme based on the sabbatical and shmitta cycle; Glessmer, “The Otot-Texts (4Q319) and the Problem of Intercalations in the Context of the 364-Day Calendar.” Vanderkam suggests that 35 days (5 weeks) could have been intercalated every 28 years; James C. VanderKam, “The Origin, Character, and Early History of the 364-Day Calendar: A Reassessment of Jaubert’s Hypotheses,” *The Catholic Biblical Quarterly* 41 (1979): 406. Beckwith also surveys the approaches to this problem; Beckwith, 126-127.

an intercalation system that shows how “the concordant calendars tie in very well with observed reality for over sixty years. They retain a certain accuracy for nearly ninety. That figure compares favorably with other ancient lunar calendars.”¹⁹ The newest proposal has been made by Gardner, who hypothesizes that a week was intercalated every six years, with an additional week intercalated every 84 years, thereby synchronizing weeks, lunations and the solar year over an 84 year cycle, which can be linked to the time spans indicated in 4QOtot.²⁰

This dispute over the practicality of the 364DC overlaps related disputes over the origins of the 364DC, the DSS and the identity of those who assembled the DSS in the Judean desert near the Dead Sea site of Qumran.

Scholarship Concerning the 364DC and the DSS – A Frayed Consensus

The Origins of the Dead Sea Community (the Yahad) and the DSS

Although discovered in the late 1940’s, the full publication of the DSS was not completed until 2002. The full publication, allowing access to anyone interested, has led to what A. Baumgarten has described as a “dying consensus”²¹ about who wrote the scrolls, gathered the Qumran library, and their relationship to the rest of the Jewish community, especially the political and religious authorities in Jerusalem, the capital and site of the Second Temple.

¹⁹ Michael O. Wise, “Second Thoughts on *duq* and the Qumran Synchronistic Calendars,” in *Pursuing the Text: Studies in Honor of Ben Zion Wacholder on the Occasion of his Seventieth Birthday*, ed. John C. Reeves and John Kampen (Sheffield: Sheffield Academic Press Ltd, 1994), 109. Wise suggests an intercalary scheme based on adding four weeks to the solar calendar periodically, thereby preserving the coordination with the lunar cycle.

²⁰ Bruce K. Gardner, *The Genesis Calendar* (New York: University Press of America, 2001), 266-271. Gardner tries to show how this calendar is encrypted in Genesis 1-11; nevertheless, he admits that it “is easier to construct a sum of long cycles, to unite the cycles perfectly in theory, than it is to execute that perfection on the ground...,” *Ibid.*, 305.

²¹ Albert I. Baumgarten, “Crisis in the Scrollery: A Dying Consensus,” *Judaism* 44, no. 4 (1995).

The early mainstream scholarly consensus was that the documents found at Qumran were part of the library maintained at the site by a Jewish sect that separated itself from the Jewish mainstream of its period under the leadership of the “Teacher of Righteousness,” which is roughly from the mid-second century B.C.E. until the revolt against the Romans, during which Qumran was destroyed in 68 C.E.²² Early DSS scholars also sought to identify this group with one of the Jewish sects known from other ancient sources; the most popular thesis identified this group with the Essenes.²³ The dissident attitudes expressed in some of the earliest published scrolls, such as the Damascus Document and the Community Rule, created the view that this was a community that had withdrawn from mainstream Judaism, establishing itself as a “sect.” Many of the DSS identify the authors with the ancient Zadokite priesthood, the “sons of Zadok” that had controlled the Jerusalem Temple from its earliest days.²⁴ The Hasmonean family, who led the successful Maccabean revolt, displaced the Zadokites; thus, many scholars saw the creation of the Qumran community as a withdrawal by the defeated Zadokites in opposition to the usurpation of the priesthood.

²² Perhaps the best-known dissident to this consensus is Golb, who argues that the DSS were originally from the library of the Second Temple, which was moved to Qumran for safekeeping during the war against the Romans; see Norman Golb, *Who Wrote the Dead Sea Scrolls?* (New York: Scribner, 1995).

²³ See for example, Frank Moore Cross, *The Ancient Library of Qumran*, Third ed. (Sheffield: Sheffield Academic Press, 1995); James C. VanderKam, *The Dead Sea Scrolls Today* (Grand Rapids: Eerdmans, 1994); Hartmut Stegemann, *The Library of Qumran* (Grand Rapids, Mich.: William B. Eerdmans Publishing Co., 1998); Gabriele Boccaccini, *Beyond the Essene Hypothesis* (Grand Rapids, Mich.: Eerdmans, 1998). For more recent examples see, James C. VanderKam, *The Book of Jubilees*, ed. Michael A. Knibb, *Guides to Apocrypha and Pseudepigrapha* (Sheffield: Sheffield Academic Press, 2001), 142; Philip R. Davies, George J. Brooke, and Phillip R. Callaway, *The Complete World of the Dead Sea Scrolls* (London: Thames & Hudson, 2002), 58. Schiffman dissents, arguing that the legal texts mark the sect as closer to the Sadducees, but his view is not widely shared; Lawrence H. Schiffman, *Reclaiming the Dead Sea Scrolls* (New York: Doubleday, 1995).

²⁴ The Bible attributes this to the time of King David and King Solomon (1 Chr 29:22-23).

The majority of scholars who have studied the scrolls over the last half-century have been Christians and Jews, many of whom have become interested in the DSS for what they can tell us about an important period that immediately preceded the development of Christianity and Rabbinic Judaism.²⁵ The identification of the Qumran community as a “sect” that innovatively rejected “mainstream” Judaism was a view that conveniently dovetailed with certain pre-existing views of these scholars, particularly the metaphor of Christianity being a “daughter” religion of Judaism.²⁶ At the same time, identifying the closeness of its views with those of the Zadokite priests that endowed this group with a biblical lineage. On the one hand, scholars of early Christianity could see in this community a dissident offshoot of Judaism with apocalyptic views that was a precursor to the early Christian community, which was seen as a dissident offshoot from the Jewish mainstream at the end of the Second Temple period.²⁷ On the other hand, scholars focusing on the history of Judaism could see in the dissident “sectarianism” of the Qumran community an affirmation of “normative” rabbinic Judaism as the true successor to the mainstream of late Second Temple Judaism, of which the Qumran sect was not part.²⁸ In my view, for both sets of scholars there were hidden issues of lineage

²⁵ The previously extant major historical sources include Maccabees I & II and Josephus.

²⁶ For a critique of this terminology see Daniel Boyarin, *Dying for God: Martyrdom and the Making of Christianity and Judaism* (Stanford: Stanford University Press, 1999), 1-2.

²⁷ Jaubert’s hypothesis that the 364DC was an ancient priestly calendar supported by the Bible, and which may also help elucidate the dating of the last supper, typifies this point of view; Jaubert. At the same time that it attracted strong criticism, especially from Jewish scholars, e.g. Joseph M. Baumgarten, “The Calendar of the Book of Jubilees and the Bible,” in *Studies in Qumran Law*, ed. Joseph M. Baumgarten, *Studies in Judaism in Late Antiquity* (Leiden: Brill, 1977), Ben Zion Wacholder and Sholom Wacholder, “Patterns of Biblical Dates and Qumran’s Calendar: The Fallacy of Jaubert’s Hypothesis,” *HUCA* LXVI (1995).

²⁸ Schiffman, for example, has criticized the “Christianized interpretation of the scrolls,” seeking to reclaim their Jewish origins; see Schiffman, xxiii-xxiv. Talmon has long been a prime proponent of the view that the Qumran group were “sectarians” who parted company with “normative Judaism”; see Shemaryahu

and legitimacy in the scholarly process of tracing back Christian and Jewish traditions to groups that existed during the Second Temple period, perhaps even echoes of 2,000 year-old Christian-Jewish polemics concerning the descent of the “true” Israel. Defining the DSS as “sectarian” served both these purposes.

But today some scholars question this consensus as being a bit too neat and tidy. Some texts, such as the *Prayer for Welfare of King Jonathan* (4Q448), the *Halakhic Letter* (4QMMT) and *Pesher Habakkuk* (1QpHab), indicate a sympathetic relationship with a Hasmonean ruler.²⁹ Some texts, of which there are multiple copies, show an evolution of editing; once careful attention was paid to different versions of *The Community Rule*, it turned out that the identification of the authors with the “sons of Zadok the priests” was a later interpolation, not a foundational element. As A. Baumgarten concludes, “Very little is left of the earlier claim that the Qumran group arose in protest against the usurpation of the priesthood by the Maccabees.”³⁰ Given the lack of certainty regarding the identity of the Qumran community, I agree with the practice of some scholars who have abandoned seeking to identify it with the Essenes or

Talmon, “The Calendar Reckoning of the Sect from the Judean Desert,” in *Aspects of the Dead Sea Scrolls*, ed. C. Rabin and Y. Yadin, Scripta Hierosolymitana 4 (Jerusalem: Magnes, 1958), 162 and more recently, emphasizing the phenomenon of the “Covenanters’ secession from the protopharisaic mainstream” Shemaryahu Talmon, “Calendar Controversy in Ancient Judaism: The Case of the ‘Community of the Renewed Covenant,’” in *The Provo International Conference on the Dead Sea Scrolls: Technological Innovation, New Texts, and Reformulated Issues*, ed. Donald W. Parry and Eugene Ulrich, Studies on the Texts of the Desert of Judah (Boston: Brill, 1999), 395 On a separate note, it is, therefore, hard to understand Eilior’s comment that “Talmon objects to the use of the word ‘sect’” (Eilior, 27), when Talmon has been so consistent over the years about categorizing the contrast between Qumran and the rest of the Jewish community as between dissident and mainstream.

²⁹ See the analytical summary in Baumgarten, “Crisis in the Scrollery: A Dying Consensus,” 403-405. See also Baumgarten, “Rabbinic Literature as a Source for the History of Jewish Sectarianism in the Second Temple Period,” 48.

³⁰ Baumgarten, “Crisis in the Scrollery: A Dying Consensus,” 407.

any group known from other sources, simply adopting the term *Yahad* – Community, a term used as a self-description in the *Community Rule*.³¹

As an alternative, Wise, Abegg and Cook suggest that Qumran “sect” under the “Teacher of Righteousness” formed not upon the accession of the Hasmoneans in the mid-second century B.C.E. but about a century later, in the early first century B.C.E.³² “After the Pharisees came to power under [Queen] Salome [Alexandra], they persecuted the Teacher’s group, which was sympathetic to the Sadducean establishment, eventually hounding the Teacher into exile.”³³ In their view, the Qumran community was not a group of “insular, monastic dropouts”³⁴ but actively involved conservative activists, supporting older legal and calendrical positions against Pharisaic innovations undertaken during the late Hasmonean reign of Queen Salome (ruled 76-67 B.C.E.) and her son Hyrcanus II (ruled 67-63 B.C.E.).³⁵ This proposal has much in its favor. If this Teacher appeared later than the initial establishment of Qumran, it could help explain the variety of sectarian and non-sectarian texts contained in its library. In addition, it can help organize a sequence to the development of the Qumran community, explaining language

³¹ Talmon prefers to use the English term “Covenanters”; see for example Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*. Eilior also endorses this position, although prefers the term “secessionist priests”; see Eilior, especially 24-28.

³² Wise, Abegg, and Cook, *The Dead Sea Scrolls: A New Translation*, 26-34.

³³ *Ibid.*, 32.

³⁴ *Ibid.*, 28.

³⁵ Ilan has recently argued that the biblical book of Esther (along with the apocryphal books of *Judith* and *Susanna*) was “created as propaganda” to promote the reign of Salome Alexandra; see Tal Ilan, *Integrating Women into Second Temple History* (Peabody, Mass.: Hendrickson, 2001), 127-153. If so, it would give a nice historical reason (as opposed to mere chance) for the absence of Esther from the DSS (the only biblical text missing), for the Qumran sectarians were opposed to Pharisaic practices. Talmon’s contention that Esther was known of at Qumran, but not considered canonical, does not diminish the force of Ilan’s argument; see Shemaryahu Talmon, “Was the Book of Esther Known at Qumran,” *Dead Sea Discoveries* 2 (1995).

in earlier texts that seems sympathetic to the early Hasmonean rulers while the post-Teacher texts are increasingly oppositional and sectarian. An example is the conflict between the “Wicked Priest” and the “Teacher of Righteousness” reported in *Peshet Habakkuk*: clearly the “Wicked Priest” failed in his goal of suppressing the divergent calendar practices of the “Teacher of Righteousness,”³⁶ for the sectarian settlement at Qumran continued to exist until the Judean revolt against the Romans in the first century C.E., when the Romans destroyed Qumran. This would support the later dating of the conflict for this was an era of increasing instability and inability of the Hasmonean regime to impose its will.³⁷ Shortly thereafter the Romans became involved, under whom a variety of sects flourished.³⁸

This new view of the development of Qumran and its texts leads to a similar re-evaluation of the development of the 364DC and its relationship to the Qumran community.

The Importance of the 364DC: From the “Enoch Circle” to Qumran

Until quite recently the scholarly consensus about the 364DC was that it was an anomalous and marginal phenomenon in ancient Judaism. Prior to the discovery of the

³⁶ Talmon pointed out the calendrical conflict embedded in this text. Shemaryahu Talmon, “Yom Hakippurim in the Habakkuk Scroll,” *Bib* 32 (1951).

³⁷ Wise, Abegg and Cook (Michael Wise, Jr. Martin Abegg, and Edward Cook, *The Dead Sea Scrolls: A New Translation* (San Francisco: HarperSanFrancisco, 1996, 30) make the argument that, although circumstantial, this view may also be supported by the interesting fact that the only identifiable historic personages mentioned in any DSS with dates associated are names from this late Hasmonean period, including Queen Salome, her son Hyrcanus and the Roman General Amelios. See 4Q332 and 4Q333 in Joseph Fitzmyer, “4QpapHistorical Text C, 4QHistorical Text D, 4QHistorical Text E,” in *Qumran Cave 4, XXVI: Cryptic Texts and Miscellanea, Part 1*, ed. Stephen J. Pfann and et. al., Discoveries in the Judean Desert (Oxford: Clarendon Press, 2000), 283-5, 288-9.

³⁸ For a study of this phenomenon, see Albert I. Baumgarten, *The Flourishing of Jewish Sects in the Maccabean Era: An Interpretation*, ed. John J. Collins, Supplements to the Journal for the Study of Judaism (New York: Brill, 1997).

DSS, the 364DC was known primarily from the books of *1 Enoch* and *Jubilees*, both of which were preserved in Ethiopic translations by the Ethiopic church and re-discovered by Europeans in the mid-nineteenth century.³⁹ Based on a study *Jubilees* in the 1950's, Jaubert derived the format of its strictly calculated 364DC, a description confirmed shortly thereafter by the first publication of DSS calendar texts by J. Milik. Nevertheless, mainstream scholarly opinion was summarized by M. D. Herr, who wrote that these texts originated in "a very small circle within Second temple Judaism, the so-called Enoch circle,"⁴⁰ and that the Observational Lunisolar Calendar (OLC) had been utilized throughout the first and second temple period, just as the Talmudic Rabbis implied.

Since the 364DC was seen as a marginal phenomenon, it was also assumed that the various texts supporting this calendar described one calendar. In part because of the anti-lunar and pro-solar calendar polemics in *Jubilees*, and the solar ephemeris described in *1 Enoch* chapters 71-82 (known as the *Astronomical Book (AB)*) scholars came to describe the 364DC expressed in these texts as "solar," (despite the fact that the *AB* also described a lunar ephemeris).

It was the discovery of the DSS in 1947, and especially their full availability to all scholars in the 1990s, which has led some scholars to re-evaluate the significance of the 364DC. Among the works (often in multiple copies), found at Qumran in which the calendar figures prominently are the books of *Jubilees*, *1 Enoch*, the *Temple Scroll* (11Q19), *Pesher Habakkuk* (1QpHab), the *War Scroll* (1QM), the *Rule of the Community*

³⁹ R.H. Charles wrote the most used English translations in the late nineteenth and early twentieth century. R. H. Charles, ed., *The Book of Jubilees or The Little Genesis* (London: Adam and Charles Black, 1902); R. H. Charles, ed., *The Book of Enoch, or 1 Enoch* (Jerusalem: Makor, 1970).

⁴⁰ Herr, 839.

(1QS), the *Psalms Scroll* (11Q5), the *Damascus Document* (CD), and *Songs of the Sabbath Sacrifice* (4Q400-407). While they vary in their details, these (and other Qumran texts) might be described as theological works that assume and/or justify the 364DC, but are not calendrical texts or calendars per se; that is, the 364DC is embedded in a larger discussion. In addition, there are documents that are more directly calendrical; that is, they are lists that address the sequence of days, weeks, months and years, some of which correlate the timing of the Sabbaths, new moon observance, and annual Festivals with the Priestly service in the Temple, along with calculated movements of the sun and moon. Originally termed the *Mishmarot* texts, the *editio princeps* published in 2001 has adopted the broader terminology of Calendrical Texts.⁴¹ “More than any other single element, the calendar binds these works together. It is the calendar that makes the scrolls a collection. The calendar is the intentional element. No matter who wrote the scrolls or put them in the caves, the manuscripts do, in some sense, form a library because they all embrace one particular type of solar calendar and its ancillary developments.”⁴² One result is that in addition to being described as a “solar” calendar, the 364DC came to be described as the “Qumran” calendar, although strictly speaking this term relates only to the location where an abundance of evidence concerning the calendar was discovered. Indeed, some texts of the 364DC tradition were also found at Masada, which is not far from Qumran and was destroyed in 73 C.E., a few years after the destruction of Qumran.⁴³

⁴¹ Talmon writes that “the term *mishmarot* was introduced into the discussion by J. T. Milik,” while he has entitled the *editio princeps* as *Calendrical Texts*; see Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 9.

⁴² Wise, Abegg, and Cook, *The Dead Sea Scrolls: A New Translation*, 297.

⁴³ Fragments of *Jubilees* and *Songs of the Sabbath Sacrifice* were found at Masada, and there is a debate about whether they may have been brought from Qumran or from another source. See Emanuel Tov, “A Qumran Origin for the Masada Non-Biblical Texts?,” *Dead Sea Discoveries* 7, no. 1 (2000): 64.

The 364DC as the Catalyst for the Formation of the Qumran Community

Most scholars agree that the discovery of this ancient 364DC is critical in Qumran studies, “One of the keys, if not the very Rosetta itself, in explaining the independent existence of the Qumran sect.”⁴⁴ Other than this, however, there is a great divergence.

One argument, typified by the views of Talmon and VanderKam, has been going on since the early discovery that a 364DC was integral to the DSS. Both views support the older consensus of Qumran as an isolationist community, arguing that the desire to follow a 364DC was a central motivation for the withdrawal of the Yahad from mainstream Judaism. The difference is that Talmon has argued that the 364DC was an innovation of the Yahad, while VanderKam argues that 364DC was an older priestly calendar that was replaced when the Zadokites were removed from the Temple by the Hasmoneans.

Talmon contends that the 364DC was unique to Qumran, and that its adoption by the Qumran sect “caused the members of the sect to withdraw from the Temple and its cult.”⁴⁵ Talmon points out that in both the *Damascus Document* (CD 3:13-15; 6:17-19) and the *Community Rule* (1QS 1:13-15) calendrical polemics are prominent, indicating a disagreement with other contemporary practices. Indeed, the *Damascus Document* points out that God rewards his faithful by “revealing to them hidden matters in which all Israel had gone astray: his holy sabbaths and his glorious feasts” (CD 3:13-15).⁴⁶ This would

⁴⁴ Martin G. Abegg, “Does Anyone Really Know What Time it Is: A Reexamination of 4Q503 in Light of 4Q317,” in *The Provo International Conference on the Dead Sea Scrolls: Technological Innovation, New Texts, and Reformulated Issues*, ed. Donald W. Parry and Eugene Ulrich, Studies on the Texts of the Desert of Judah (Boston: Brill, 1999), 396.

⁴⁵ Talmon, “The Calendar Reckoning of the Sect from the Judean Desert,” 164.

⁴⁶ Florentino García Martínez, *The Dead Sea Scrolls Translated: The Qumran Texts in English*, Second Edition ed. (New York: E. J. Brill, 1996), 35.

support the view that only the minority of Israel who joined the “New Covenanters” (as Talmon calls them, derived from a phrase in CD) have the true revelation. It is therefore this unique revelation that causes the Qumran sectarians to split off from the normative Judaism of its day. In support of this, Talmon observed that a calendrical conflict was reported in *Pesher Habakkuk XI 4-8*: the “Teacher of Righteousness,” one of Qumran’s leaders, was pursued by the “Wicked Priest” on Yom Kippur, clearly indicating that they observed different calendars. Talmon either assumes that the “official”⁴⁷ or “mainstream”⁴⁸ calendar was the OLC, or infers it since the sectarians utilized a form of the 364DC. The “Wicked Priest” sought to enforce both his authority and communal unity because “diversity in the calendar constituted a danger to the continuity of Jewish society as a whole.”⁴⁹ For the sectarians, their divergent calendar was key element of their identity: “The adherence to a solar calendar of 364 days per annum was a major factor in the final breaking away of the ‘Community of the Renewed Covenant’ ...from mainstream Judaism.”⁵⁰

Talmon sees this as one of a number of examples of calendrical deviation from the norm that characterized splits from this mainstream. “Viewed in comparison with other separatist movements, in biblical as well as post-biblical times, deviation from the official calendar is found to constitute a standard feature in Jewish sectarianism, especially during the centuries immediately preceding the Christian era and during the early

⁴⁷ Talmon, “Yom Hakippurim in the Habakkuk Scroll.”

⁴⁸ Talmon, “Calendar Controversy in Ancient Judaism: The Case of the ‘Community of the Renewed Covenant,’” and Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*.

⁴⁹ Talmon, “Yom Hakippurim in the Habakkuk Scroll,” 558.

⁵⁰ Talmon, “Calendar Controversy in Ancient Judaism: The Case of the ‘Community of the Renewed Covenant,’” 385.

Christian period.”⁵¹ In particular, Talmon claims that the DSS calendrical texts were part of the covenanters’ visualization of “Jerusalem as it would be after their victory” and restoration to the Temple.⁵²

Recently Talmon has slightly modified his earlier position that this calendar was a de-novo creation by the Teacher of Righteousness. He accedes that many of the documents found at Qumran were not uniquely sectarian, but “were most probably part of the literary heritage of Judaism generally before the turn of the era.”⁵³ Among those texts he includes *Jubilees* and *1 Enoch*.

Behind *Jubilees* and *1 Enoch* stand undeterminable groups in ancient Judaism of the “Enoch circles” type. In contrast, the Qumran documents emanate from a structured socioreligious entity. The authors of *1 Enoch* and *Jubilees* concern themselves predominantly with “calendar-orthodoxy”; Qumran authors with “calendar-praxis.” The apocryphal works echo theory; the Qumran writings breathe actuality.⁵⁴

Thus, while admitting the antiquity and possible biblical source of “the solar calendar of 364 days,” he now claims it was “an ancient tradition the Jerusalem priesthood had abandoned”⁵⁵ and that its renewed or continued adherence still explains the breaking away of the Qumran sect. “The firm adherence to the 364-day solar calendar, and the adamant belief in its exclusive legitimacy, was the prime cause of the Covenanters’ secession from the protopharisaic mainstream that riveted the Temple cult

⁵¹ Talmon, “Yom Hakippurim in the Habakkuk Scroll,” 563.

⁵² Talmon, “The Calendar Reckoning of the Sect from the Judean Desert,” 168-169.

⁵³ Talmon, “Calendar Controversy in Ancient Judaism: The Case of the ‘Community of the Renewed Covenant,’” 391.

⁵⁴ Shemaryahu Talmon, “A Calendrical Document from Qumran: Cave 4 (mišmarot D, 4Q325),” in *Solving Riddles and Untying Knots: Biblical, Epigraphic, and Semitic Studies in Honor of Jonas C. Greenfield*, ed. Ziony Zevit, Seymour Gitin, and Michael Sokoloff (Winona Lake, Ind.: Eisenbrauns, 1995), 344.

⁵⁵ Shemaryahu Talmon, “Qumran Studies: Past, Present and Future,” *JQR* 85 (1994): 28. For a recent presentation of his views, see Talmon, “Calendar Controversy in Ancient Judaism: The Case of the ‘Community of the Renewed Covenant.’”

and the life of the individual Jew to the misleading lunar ephemeris of 354 days.”⁵⁶

Despite observing that the calendrical lists have the aura of practicality, Talmon asserts that they were only used by the covenanters of Qumran and never by any “mainstream” Jewish group, who had good reason to try to repress the practice: “The community and its leaders will view the dissenters’ adherence to a different ephemeris as an outright declaration of civic rebellion.”⁵⁷ For Talmon, the Qumran calendrical lists are uniquely sectarian, determining “the life pattern of the individual Covenanter and of the community.”⁵⁸ This view is again reflected in the highly polemical tone adopted in the recently published *editio princeps* of these texts.⁵⁹

VanderKam agrees that the Qumran calendar was a key element in the schism that ultimately led to the founding of the Qumran sect, but provides a different picture than Talmon. As part of her original analysis of *Jubilees*’ 364DC, Jaubert had hypothesized that this was an ancient priestly calendar, and argued that the biblical texts supported this calendar.⁶⁰ While this hypothesis has drawn criticism,⁶¹ VanderKam endorses it, arguing

⁵⁶ Talmon, “Calendar Controversy in Ancient Judaism: The Case of the ‘Community of the Renewed Covenant,’” 395. See also Talmon, “The Calendar Reckoning of the Sect from the Judean Desert,” and most recently Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 6.

⁵⁷ Talmon, “Calendar Controversy in Ancient Judaism: The Case of the ‘Community of the Renewed Covenant,’” 381.

⁵⁸ Talmon, “A Calendrical Document from Qumran: Cave 4 (mišmarot D, 4Q325),” 327.

⁵⁹ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts* ; see examples of Talmon’s polemics on pages 14, 34, 36. These polemics, sadly, are characteristic of the history of Qumran scholarship. It would seem to me that the tone set for an *editio princeps* should be a clear presentation of what is certain together with an even handed portrayal of various speculations/interpretations, while the particular position of the editor(s) should be published separately. Indeed, in this case most of the academic polemics were previously published.

⁶⁰ Jaubert, 31-38.

⁶¹ For critical assessments aside from Talmon see, Baumgarten, “The Calendar of the Book of Jubilees and the Bible,” Wacholder and Wacholder.

that there is ample evidence that the 364DC “was known for a long period, from the exile to the first century of the Christian era (and beyond)” and it “was probably the official cultic calendar during the early centuries of the second temple.”⁶² In this he echoes Milik’s earlier position that “the calendar question... provides a thoroughly satisfactory reason for the Essene schism. But only the fact that such a calendar had been in use before, and was later dropped, would have sufficed to cause a schism.”⁶³

If the 364DC had been used in the Temple, when did the lunisolar calendar supplant it, and why? VanderKam suggests that it was during the period of the Maccabean revolt that the luni-solar calendar supplanted the 364-day calendar, claiming that indications of this are found in 2 Maccabees and Daniel. He claims that this was also the source of the calendar polemics found in *Jubilees*, which he believes was written at about this time. Moreover, VanderKam hypothesizes that it was conservative priestly circles that advocated the continued use of the old 364-day cultic calendar, while the Hasmoneans advocated the use of the luni-solar calendar – which “was precisely the Selucid and generally Hellenistic one. It too was an old calendar, since the Seleucids had inherited it from their Macedonian homeland and from the Mesopotamian empires which preceded them.”⁶⁴ VanderKam suggests that when Jonathan the Maccabee assumed the high priesthood in 150-149 B.C.E., usurping the long-standing prerogative of the Zadokites, part of the new regime’s pro-Seleucid policy of the time was to use the

⁶² VanderKam, “The Origin, Character, and Early History of the 364-Day Calendar: A Reassessment of Jaubert’s Hypotheses,” 411. For a recent reconfirmation, see VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*.

⁶³ Milik, 111.

⁶⁴ James C. VanderKam, “2 Maccabees 6, 7A and Calendrical Change in Jerusalem,” *Journal for the Study of Judaism* 12 (1981): 68. VanderKam has recently reasserted this hypothesis in VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 113-116.

Seleucid calendar. While it may seem odd that the Maccabees would have implemented a foreign calendar, VanderKam argues, “It must be remembered that Judeans probably lived with two calendars from the time of the exile onwards. The cultic one was the Zadokite 364-day system, while the civil one was a lunisolar arrangement that coincided with the calendar of the nation that happened to be ruling the land at any one time.”⁶⁵ Indeed, using the luni-solar calendar “in the cult as well as in civil matters simplified the calendrical situation of the nation.”⁶⁶ The ousted High Priest – who may have been Qumran’s “Teacher of Righteousness” – withdrew to found what became the Qumran sect.⁶⁷ Thus, calendrical issues and polemics became a cornerstone of the ideology and practice of the Qumran sectarians.

What we have in the positions exemplified by Talmon and VanderKam are two views which agree on the critical nature of the calendrical dispute for the creation of the Qumran sect, but disagree about the causality: VanderKam believes the Qumran sect founders left Jerusalem in order to *maintain* an ancient Jewish 364DC which was supplanted by the Seleucid luni-solar calendar, while Talmon sees the *innovative* use of the 364DC as the reason for the split of the Qumran sectarians from the Jewish mainstream who used the luni-solar calendar.⁶⁸

⁶⁵ VanderKam, “2 Maccabees 6, 7A and Calendrical Change in Jerusalem,” 71.

⁶⁶ Ibid.

⁶⁷ Ibid., 72-74. In this VanderKam is following the speculation of Stegemann, Bunge and Murphy-O’Connor in identification of the Teacher as an ousted High Priest.

⁶⁸ If the documents found at Qumran are from the Jerusalem Temple, as contended by Golb, then there is an even stronger reason to infer that the 364DC was used in the Temple itself.

Are the 364DC Texts Sectarian?

While it seems certain that the Yahad followed this calendar, it seems to me that Talmon's insistence on the distinctively "sectarian" nature of this varied and ramified literature seems unwarranted. In general, scholars have begun to make distinctions among the DSS texts showing that only some of the non-biblical texts can properly be described as "sectarian."

Dimant attempts to determine authorship by way of dividing the Qumran corpus into two groups distinguished by the use of "terminology linked to the Qumran Community."⁶⁹ This terminology was derived from the major texts about which there is consensus concerning their origins within the Community.⁷⁰ Based on these criteria, Dimant places all the calendrical texts in the "No Community Terminology" category, together with *Jubilees* and the *Temple Scroll*, while placing *Songs of the Sabbath Sacrifice* in the "Community Terminology" category.⁷¹

Newsom, however, feels this kind of categorization is too mechanical, and prefers to categorize the texts based on "rhetorical purpose," arguing "some self-conscious reference to separation from the larger religious community would be necessary to identify the text as sectarian."⁷² In particular, she contends that the *Songs of the Sabbath Sacrifice*, which she edited, is a non-sectarian work in terms of rhetoric and authorship,

⁶⁹ Devorah Dimant, "The Qumran Manuscripts: Contents and Significance," in *Time to Prepare the Way in the Wilderness: Papers on the Qumran Scrolls by Fellows of the Institute for Advanced Studies of the Hebrew University, Jerusalem, 1989-1990*, ed. Devorah Dimant and Lawrence H. Schiffman, Studies On The Texts Of The Desert Of Judah; V. 16. (Leiden: E. J. Brill, 1995), 26.

⁷⁰ *Ibid.*, 29, n.17.

⁷¹ *Ibid.*, 34.

⁷² Carol A. Newsom, "'Sectually Explicit' Literature from Qumran," in *The Hebrew Bible and Its Interpreters*, ed. William H. Propp, Baruch Halpern, and David N. Freedman (Winona Lake, Ind.: Eisenbrauns, 1990), 178-179.

and that their use of language that Dimant claims as “Community Terminology” only means that it was “an adopted or naturalized text within the sectarian perspective of the Qumran community.”⁷³ Eilior has appropriately described the contrast as between texts that were “preserved” or “produced” by the Qumran Community, with the former including the major calendrically relevant texts of *Enoch*, *Jubilees*, the calendrical texts, the *Temple Scroll*, *Songs of the Sabbath Sacrifice* and the *Psalms Scroll*.⁷⁴

Therefore, while the 364DC was important to the Qumran community, this does not mean that all the DSS Calendar texts were the creation of a sectarian community. Despite their differences, both Dimant and Newsom conclude that the DSS Calendrical texts do not betray any use of sectarian terminology, nor do *The Temple Scroll*, *Jubilees*, or the *AB* texts in which the 364DC is a key element. If one refrains from assuming that the 364DC is inherently sectarian I believe we can gain a great deal of insight into the development of the 364DC as the *normative* priestly calendrical practice during the Second Temple period. There is no doubt that this calendar was “adopted” by the Qumran Community as a central element of its praxis, and plays a role in a number of texts that are certainly sectarian, such as the *Damascus Document*, the *Rule of the Community*, and *Pesher Habakkuk*. Nevertheless, this later use says little about the initial origins, authorship and purpose of the 364DC, and more about its later users and readers.⁷⁵

⁷³ Ibid., 185.

⁷⁴ Eilior, 11, 50. In any case, it should be remembered that the existence and physical/paleographic dating of a Qumran manuscript only indicates the latest possible date of composition; none are considered to be original autographs.

⁷⁵ Wise, Abegg and Cook also suggest that readers/collectors of older documents may have attributed other meanings to them than earlier authors and readers, helping to explain why the DSS collection shows such variation; see Wise, Abegg, and Cook, *The Dead Sea Scrolls: A New Translation*, 32.

The Bible as an Enabler of Calendrical Diversity

While often overlooked, the Bible is a key source, or at least an *enabler*, of calendrical diversity and conflict.

Whether a result of imprecise authorship, intentional vagueness, or the result of generations of editors aiming at textual harmonization, the texts that eventually became the “Bible” in the post-Second Temple period are sufficiently ambiguous about the definition and functioning of the calendar that both the advocates of the 364DC and the OLC claimed them as their foundation and appealed to them as their prooftexts. Not only did they not see any contradiction between biblical texts and their own calendrical practice, but all parties seem to have claimed the texts that become the Bible as their own heritage.⁷⁶

An especially relevant ambiguity is the key biblical text of Gen 1:14-19:

God said, “Let there be lights in the expanse of the sky to separate day from night; they shall be for signs and for set times and for days and for years; and they shall serve as lights in the expanse of the sky to shine upon the earth. And it was so. God made the two great lights, the greater light to dominate the day and the lesser light to dominate the night, and the stars. And God set them in the expanse of the sky to shine upon the earth, to dominate the day and the night, and to separate light from darkness. And God saw that this was good. And there was evening and there was morning, a fourth day.”⁷⁷

Note that *no mention is made of months*, let alone how they should be determined!

This provided an opportunity for a variety of conflicting definitions concerning the month, and its relationship to the day and year (which *are* mentioned in Genesis), that is at the heart of the conflict between various calendars.

⁷⁶ Except perhaps the Book of Esther, which was not found at Qumran.

⁷⁷ Concerning this translation see, Chapter 1 note 6.

Regardless of whether Jaubert is correct in her hypothesis that there is an ancient priestly 364-day calendar assumed in many biblical texts, I would argue that there is at minimum a *plausible interpretability* and *consistency* between a 364-day calendar and the biblical texts. Thus, I believe we should be very cautious about concluding that the Bible supports the OLC or the 364DC, or describing one calendar or the other as “normative” or “sectarian.” It was – and remains – a matter of interpretation, position and perspective.

The Importance of the 364DC: From Qumran to the Second Temple

The view represented by VanderKam and Jaubert, that the 364DC was a priestly calendar dating back to the early days of the Second Temple and was merely supported and preserved by the Qumran community seems, therefore, to better fit the available data.⁷⁸

Nevertheless, both Talmon and VanderKam agree that from the time of Qumran’s founding in the mid second century B.C.E. onward, the 364DC was primarily championed by the “sectarian” group headquartered at Qumran. This is consistent with the older consensus that assumed that the Yahad withdrew from the Temple into the desert, founding Qumran, especially motivated by the desire to use the 364DC to determine the times of their holiday observances.

However, if the Yahad is no longer a group of “insular, monastic dropouts,” how might this effect our evaluation of when the 364DC stopped being used in the Temple? Glessmer has suggested a different approach that does not assume that the 364DC necessarily separated and isolated the Yahad from a hypothetical “mainstream” Judaism,

⁷⁸ Sharing this view, Eilior sees the 364DC as element integral to the practice of the Zadokite priesthood in the Second Temple until their replacement by the Hasmoneans, at which point they withdrew to Qumran; Eilior, 8, 85.

one that meshes with the revised chronology of the Qumran sect proposed by Wise, Abegg and Cook. He starts by following VanderKam's position concerning the origins of the 364DC, claiming "it is now clear that the 'Qumran-calendar' was not the unique possession of a group at the Qumran settlement, since the roots of the 364DC go back at the very least into the third century B.C.E."⁷⁹ But he dissents from VanderKam's hypothesis concerning when the 364DC stopped being used in the Temple, claiming that the various Qumran texts indicate an evolving and varied situation over time, indicating "a more complicated development than a single change between two calendar systems by the time of Antiochus IV."⁸⁰ In particular, if the Yahad was not always in sharp conflict with the Hasmoneans in control of the Jerusalem Temple it is not so obvious how "sectarian" the 364DC was. In particular, Glessmer suggests that the DSS calendrical texts could represent stages of calendar reforms initiated under the Hasmonean regime, which for nationalistic reasons could have adopted a version of the reformed 364DC proposed by *Jubilees*. This would certainly mesh with the view of scholars who claim that *Jubilees* was pro-Hasmonean, containing elements of early Hasmonean "propaganda."⁸¹ The aim of these reforms would have been to help unify their expanding kingdom and reach out to the Jewish diasporas by creating or reviving practices that would project an image linking them to the biblical kingdoms of David and Solomon.⁸² This may have been one of the Sadducean practices reported (negatively) in Josephus and

⁷⁹ Glessmer, "Calendars in the Qumran Scrolls," 233. See also Schiffman, 304-305.

⁸⁰ Glessmer, "Calendars in the Qumran Scrolls," 274.

⁸¹ Philip S. Alexander, "Jerusalem as the *Omphalos* of the World: On the History of a Geographical Concept," *Judaism* 46 (1997).

⁸² Glessmer, "Calendars in the Qumran Scrolls," 273.

rabbinic literature, while the OLC may have come into Temple use during the period of Pharisaic dominance under the reign of Queen Salome Alexandra (76-67 B.C.E.).⁸³

According to this picture, the 364DC was used in the Second Temple, not only during the Persian period and the Hellenistic period prior to the Maccabbean revolt, but also afterwards under the early Hasmoneans. As will be discussed below in Part III, a close reading of the rabbinic texts shows that the rabbinic calendar determined Temple observances only during the last century, perhaps even the last few decades of the Second Temple. Therefore, I suggest that the 364DC may even have been used during Herod's rule during the late first century B.C.E. and by the Boethusian priests of the early first century C.E.

The "Enoch circle" no longer seems so small and insignificant. Indeed, it was probably the dominant calendrical praxis of the whole Second Temple period.⁸⁴ But this requires a shift in thinking away from emphasizing the "sectarian" nature of the DSS literature and the 364DC traditions,⁸⁵ but also with regards to the metaphor used for thinking about the link between post-Second Temple Christianity and Judaism and the religion practiced in the Second Temple. As scholars of early Jewish-Christian relations have begun suggesting, rather than conceiving of Christianity as the "daughter" of

⁸³ Ibid., 273-274.

⁸⁴ Elijor places the Enoch literature as a whole at the center of Zadokite priestly ideology; see Elijor, especially chapter 4, "Enoch Son of Jared and the Solar Calendar." She agrees with VanderKam, that the Zadokite's withdrew from Jerusalem after being replaced by the Hasmonians; thus, she constantly refers to the Qumran community as a Zadokite "secessionist priesthood" (e.g., Elijor, 8). Although I agree with her position that "sectarian" is an inappropriate term, I think "secessionist" is only a partial improvement because it re-enforces the isolationist picture of the Qumran community, a picture that is no longer the consensus. I prefer to leave open the possibility that the 364DC continued to be used in the Temple at times during the Hasmonean and Roman period.

⁸⁵ Elijor's notable effort to de-marginalize this priestly literature, including the key element of the 364DC, and "relocate it within the literary corpus of its period" has a similar thrust, although I part company with her on a number of issues, as will be made clear; see Elijor, 7.

Judaism, it seems more appropriate to see both Christianity and rabbinic Judaism as the twin progeny of Second Temple Judaism.⁸⁶ This allows us to leave behind the desire to encapsulate the Yahad and the DSS in an effort to protect “normative” Judaism from “sectarian” infection. By taking at least the non-sectarian texts of the DSS, including the 364DC traditions, as reflecting the concepts and practices of the Second Temple priesthood, we can have a richer insight into both that era and the religious configuration in relation to which both Christianity and rabbinic Judaism dialectically defined themselves. I will now turn to the development of the 364DC tradition of the Second Temple priesthood.

The Variety of 364-Day Calendar Traditions

Early and continuing DSS scholarship has tended to focus on the conflict between the proponents of the OLC and 364DC calendars.⁸⁷ The effort to decipher the details of the 364DC texts, combined with the view that the “Enoch circles” were peripheral to Second Temple Judaism and isolated in Qumran caused a tendency to assume that the various 364DC texts describe different dimensions of a single calendar. Talmon, for example, contends that the purpose of these varied texts was “to provide relevant information and instructions for the diverse Covenanter echelons.”⁸⁸ This view is reflected in the convenient and ostensibly helpful calendar published by Talmon in the

⁸⁶ Boyarin, *Dying for God: Martyrdom and the Making of Christianity and Judaism*, 2; Alan F. Segal, *Rebecca's Children: Judaism and Christianity in the Roman World* (Cambridge, Mass.: Harvard University Press, 1986), 1.

⁸⁷ For recent examples, see Shemaryahu Talmon, “Anti-Lunar-Calendar Polemics in Covenanters' Writings,” in *Das Ende Der Tage Und Die Gegenwart Des Heils*, ed. Michael Becker and Wolfgang Fenske (Leiden: Brill, 1999) and Elijor. Elijor differs significantly from Talmon in attributing much of the 364DC literature to the pre-Hasmonean Zadokite priests of the Second Temple period, but she shares Talmon's tendency to synthesize all the 364DC traditions into a single composite calendar.

⁸⁸ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 14. See also Talmon, “Calendar Controversy in Ancient Judaism: The Case of the ‘Community of the Renewed Covenant,’” 394.

editio princeps, which combines all the holidays mentioned in various 364DC texts into one scheme.⁸⁹ However, this conflation masks differences between the texts, assuming rather than proving that they are, in fact, referring to one unified calendar rather than different stages, versions, or traditions of the 364DC.⁹⁰

Other recent scholarship has refused to lump together all the 364DC texts. Major differences among the 364DC texts are seen as evidence of different schools advocating different versions of the 364DC, related either diachronically or synchronically. Glessmer adopts a diachronic view, suggesting that there might have been “different regional developments of calendrical concepts” that were blended by the Hasmoneans and used at various times during their rule.⁹¹ This echoes the hypothesis of Jaubert, who hypothesizes a “gradual modification” of the 364DC over time.⁹² Alternatively, Snyder suggests that while the Qumran calendar texts represent sectarian practice, he suggests they reveal “a consistent pattern evidencing two calendar families” which “possibly communicates an intrasectarian calendar debate.”⁹³

⁸⁹ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 17-28.

⁹⁰ While in the *editio princeps* Talmon reiterates this perspective concerning the purposes of the “pluriformity” of calendrical texts, he also leaves open the possibility that the variations among the DSS, the *AB* and Jubilees indicate the kind of historical development I am suggesting by concluding his introductory essay with the following: “The possibility that certain variances among the Covenanters’ calendar-related documents may reflect a synchronous use of somewhat-differing chronometric schedules or evidence diachronic developments of the calendrical system by which they abided must also be taken into account”; *Ibid.*, 14.

⁹¹ Glessmer, “Calendars,” 273-275. While I am generally sympathetic to Glessmer’s views, I find the hypothesis of different regional developments unconvincing.

⁹² Jaubert, 45-46.

⁹³ Snyder, 346-351. Snyder groups the calendar texts into two major families, “Enoch” and “Jubilees,” plus a neutral category that could fit in either. My main methodological difference is that I have separated his Enoch family into two (Enoch and Enochic Mishmarot) in order to emphasize the differences between them.

It seems to me that these various explanations are not necessarily mutually exclusive. That is, historical developments led to the different versions of the 364DC, which were subsequently preserved at Qumran, possibly for use by different echelons of the Yahad. This can be elucidated by grouping the non-sectarian 364DC texts into four “families” based on certain criteria that can best explained as stages in the development of the 364DC tradition used in the Second Temple:⁹⁴

1. Enoch family:
 - a. Include a 354-day cycle of 12 lunations as part of the calendar.
 - b. Texts include only the Astronomical Book (*AB*) of *I Enoch*.
2. Enochic Mishmarot family:
 - a. Include a 354-day cycle of 12 lunations as part of the calendar.
 - b. Festival observances only include Pentateuchal festivals.
 - c. Texts describe the weekly priestly courses-mishmarot, the duty shifts of the priests.
 - d. Texts include the *Calendrical Documents/Mishmarot A, B and C (CDM)*.⁹⁵
3. Jubilean family:
 - a. Do not include the lunation as part of the calendar.
 - b. Includes both Pentateuchal and non- Pentateuchal festivals.
 - c. Texts include *Jubilees*, the *Temple Scroll* (11Q19).
4. Neutral family:
 - a. Are consistent with both the Enochic Mishmarot and Jubilean families.
 - b. Texts include *Songs of the Sabbath Sacrifice* (4Q400-407), the *Psalms Scroll* (11Q5).

At this juncture, I want to underline a different and significant distinction between the “families”: the texts of the Enoch and Enochic Mishmarot families are neither

⁹⁴ Thus, I am borrowing Snyder’s “family” methodology, with changes and combining this with Glessmer’s diachronic perspective, but reaching much further back in time to the Persian period.

⁹⁵ It should be noted that with the publication of the *editio princeps* the official descriptive sigla of the Qumran Calendar texts has been significantly revised; 4Q320, 4Q321, 4Q321a, which had been labeled by Milik as *Mishmarot A*, *Mishmarot B^a* and *Mishmarot B^b*, were renamed by Talmon as *Calendrical Document/Mishmarot A*, *Calendrical Document/Mishmarot B*, *Calendrical Document/Mishmarot C* (respectively), “in order to highlight the fact that the fragments in question stem from independent documents, and not from copies of one common source” (Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 2). Unfortunately, this just adds to the confusion of the non-specialist, as most scholarship refers to the old sigla. For the latest comprehensive list of the designations and descriptions of the Qumran texts, see Emanuel Tov, “Appendix F: Texts from the Judean Desert,” in *The SBL Handbook of Style*, ed. Patrick H. Alexander et al. (Peabody, Mass.: Hendrickson, 1999).

sectarian nor polemical. There is no active debate in these texts against lunar reckoning, and there is no contradiction between their contents and the observance of the Sabbaths, festivals, or lunations prescribed in the Pentateuch. In contrast, the “Jubilean family” is explicitly or implicitly polemical in its anti-lunar stance, and possibly proto-sectarian in the sense that either certain Pentateuchal observances are purged (those related to the lunation) or otherwise unattested holidays are added.

My contention is that the three families I have designated – Enoch, Enochic Mishmarot, Jubilean – represent three stages in the historical development of the 364DC. At the center of the evolution of the 364DC are changes in the relative importance of the lunation and Sabbath. In these three stages of the 364DC we see shifts in emphasis between the lunation and the Sabbath that are inversely related, with the importance of the lunation steadily decreasing while the importance of the Sabbath steadily increases.

In the *AB* the moon is of equal status to the sun and the stars as a heavenly light while the Sabbath is not even mentioned. While the *AB* says the sun and stars follow a 364-day year, it will be shown that the moon was the origin of this system.

In the *CDM* texts the lunation is still observed and coordinated with the year, but its stature is diminished: while its full and first crescent phase are marked, the lunation is no longer referred to as a “month-*hodesh*,” a term used only for the schematic months of the solar/stellar year. In contrast, the Sabbath is the most important temporal element through which the lunation, schematic months, and annual holidays are all coordinated with the weekly work schedule of the priests.

In *Jubilees* the lunation is vehemently purged because it does not fit the sabbatarian 364-day year's *annual* temporal pattern.⁹⁶ In contrast, the sabbatarian pattern is re-enforced in the *Temple Scroll* by the timing of its additional non-Pentateuchal holidays.

In the chapters that follow I will provide an analysis of the main texts representing each of these families in support of both this historical thesis and the implications for the changing ideas of the relationship of humans, God and nature as embedded in the shifting status of the wild time of the lunation versus the tame time of the Sabbath.

A comparison of the calendars expressed in certain key texts that I will be discussing is summarized in Table 3 (“x” or a note indicates the observance is marked).

⁹⁶ An ironic turn for a calendar whose 364-day pattern was *derived* from the lunation.

Calendar: (month/day)	Biblical (Post-Exilic)	364DC AB of 1 Enoch	364DC DSS: CDM	364DC Jubilees	364DC DSS: Temple Scroll	OLC Rabbinic
Major Proponent	Nehemia/ Priests	Priests (?), Qumran	Priests, Qumran	Priests, Qumran	Priests, Qumran	Rabbis
Textual sources	Bible	Enoch AB, DSS: Enastr	DSS:CDM	Jubilees	DSS: Temple Scroll	Mishnah, Talmud
Length of year	Number of days unknown, 12 months	364 days (12 schematic months of 30 days + four seasonal days)	364 days (52 weeks, 12 schematic months of 30,30, 31 days)	364 days (52 weeks, 12 schematic months of 30,30, 31 days)	364 days (52 weeks, 12 schematic months of 30,30, 31 days)	12 or 13 lunar months (354- 383/384 days)
7th Day Sabbath	x	x	x	x	x	x
Monthly Events:						
Names Used for months	Ordinal, Babylonian	Ordinal	Ordinal	Ordinal	Ordinal	Babylonian
First Lunar Crescent	x	lunation begins	<i>duqah/ duqo</i>			Rosh Hodesh
Full Moon	x	x	Lunation begins: "X day"			
First of Schematic Month		x	x		x	

Table 3: Comparison of Observances Marked in Ancient Jewish Calendars
(Continued on next page)

Calendar: (month/day)	Biblical (Post-Exilic)	364DC <i>AB of I Enoch</i>	364DC DSS: <i>CDM</i>	364DC <i>Jubilees</i>	364DC DSS: <i>Temple Scroll</i>	OLC Rabbinic
Annual Holidays:						
First Day of First Month: 1/1			?	Day of Season	x	
Priestly Investiture	?			x	x	
Passover (Including Passover & Unleavened Bread): night of 1/14, 1/15-21	x		x	x	x	x
Waving the Sheaf	Date uncertain		1/26	1/26	1/26	16 Nisan
Second Passover	x		2/14		2/14	x
Weeks	Date uncertain		3/15	3/15	3/15	50 days after 16 Nisan (Atzeret)
First of Fourth Month				Day of Season		
Wine	?			x	5/3	
Oil	?			x	6/22	
Wood	?				6/23-6/29	
Day of Remembrance: 7/1	x		x	Day of Season	x	x (Rosh Hashanah)
Day of Atonement: 7/10	x		x	x	x	x
Booths: 7/15-22	x		x	x	x	x
First of Tenth Month				Day of Season		
Purim: Adar 14-15	Book of Esther					x
Hanukah						x
Days of Seasons		3/31, 6/31, 9/31, 12/31		1/1, 4/1, 7/1, 10/1		

Table 3: Comparison of Observances Marked in Ancient Jewish Calendars

CHAPTER 3
THE ASTRONOMICAL BOOK (*AB*) OF *1 ENOCH*

Description of the Text of the *AB*

The scholarly consensus is that *1 Enoch* 72-82, known as the Astronomical Book (*AB*), is the oldest Jewish text clearly delineating a 364DC, and that its astronomical concepts derive from Mesopotamian sources. Ostensibly revealed to Enoch by the angel Uriel during a tour of heaven, and which Enoch has written down for his son Methuselah (*1 En.* 82:1), the *AB* is mainly an ephemeris describing the synchronized movement of the sun, moon and stars throughout a 364-day solar year, although there are also sections on meteorological phenomena and geography (*1 En.* 76-77).

In the course of the solar year, the lunar cycle falls behind the sun by ten days (a ten-day epact). While the Ethiopic text is vague about whether the cycles of sun, moon and stars are synchronized, the DSS texts have provided missing passages that show that these cycles were indeed a synchronized whole: the solar year begins the day after the vernal equinox, the lunar year begins on the same day, and an additional lunation is intercalated every 3 years¹ to adjust for the 10 day epact per year (this is the same intercalation methodology as in the *CDM* texts, which will be discussed in the next chapter). The *AB* is certainly the earliest Jewish text of any kind that gives a definitive answer concerning the length of the year and methods of lunar intercalation.

¹ J. T. Milik and with the collaboration of Matthew Black, eds., *The Books of Enoch: Aramaic Fragments of Qumran Cave 4* (Oxford: Clarendon, 1976) 273-297, especially 294-295.

Each solar “month” is described as 30 or 31 days long, with the two thirty day months followed by a thirty-one day month in each of four seasons of 91 days that comprise the 364-day year (*1 En.* 72:8-34). The year begins on the day following the vernal equinox, with daylight and nighttime of equal lengths; the length of daylight then varies proportionally until it is a 2:1 or 1:2 ratio at the solstices.² The text describes 12 months, and during each month the sun moves within one of six “gates” of the heavens (i.e., the sun moves back and forth twice through the six gates during the course of a year, traversing a total of twelve gates; *1 En.* 72).

The moon is similarly described as passing through the same six gates, but at a different rate, for Enoch recognizes that six lunar months are 29 days long, and six are 30 days long (*1 En.* 78:5-6). The lunar “month” begins with the appearance of the first crescent (*1 En.* 73:4; 78:12), becomes full on the 14th or 15th day (depending on whether it is a 29 or 30 day month, *1 En.* 78:6-7) and ends with the darkness of the conjunction 15 days later (*1 En.* 78:8). Enoch uses simple ratios to describe the portion of the moon illuminated on each day of the lunar cycle, dividing the face of the moon into half, and each half into seven portions, for a total of fourteen portions that are progressively illuminated during the waxing phase, and progressively darkened during the waning phase, for a total of 28 days of illumination (*1 En.* 78:6-14). In addition, there is one day of darkness at the conjunction, making for a 29-day lunar month. For the 30 day lunar months, in which there are 29 days of illumination, how an extra “portion” fits into the

² This ratio was commonly used in Mesopotamian astronomical texts, including MUL.APIN; see the discussions of Otto Neugebauer, “The ‘Astronomical’ Chapters of the Ethiopic Book of Enoch (72 to 82),” in *The Book of Enoch or 1 Enoch: A New English Edition*, ed. Matthew Black, *Studia in Veteris Testamenti Pseudepigrapha* (Leiden: E.J. Brill, 1985), 393-394 and Uwe Glessmer, “Horizontal Measuring in the Babylonian Astronomical Compendium MUL.APIN and in the Astronomical Book of 1En,” *Henoch* 18 (1996): especially 273-277.

mathematical scheme of fourteenth's is not explained; *I En.* 78:7 just says that in those months the waxing moon increases by "fifteen parts" (presumably instead of fourteen).³

Less information has survived concerning the paths of the stars, but it seems clear from what remains in *I En.* 82:10-20 that the stars "rule" the seasons (i.e., not the sun or moon). The movements of the stars are guided by a hierarchy of angels assigned to them (*I En.* 82:10), whose purpose is to make sure the divisions between units of time – days, months, seasons – takes place. While the Ethiopic text describes phenomena characteristic of the spring and summer seasons, it appears that one of the DSS texts, 4QEnastr^d, adds some information concerning the winter season and the movement of the stars through the gates, probably coordinating their movements through a 360-degree celestial sphere with the sun's 364-day cycle.⁴ An angel rules each season of 91 days; under this "leader" of the season are three subordinate angels who rule for 30 day "months" (*I En.* 82:9) which overlap with the solar months, but the 91st day (the 31st day of the third solar month each quarter) is ruled directly by the angel in charge of that season to "separate the four seasons of the year," the four cardinal days (the solstices and equinoxes) which complete each season of the year (*I En.* 82:11-12).

It is worth noting that the seasons *end* with the cardinal days; thus, the New Year begins the day *after* the vernal equinox, as the sun moves into a new gate. This construction of a new cycle beginning after the point of balance is parallel to – and

³ See the discussions in E. J. C. Tigchelaar and F. García Martínez, "4QAstronomical Enoch^{a-b} ar," in *Qumran Cave 4, XXVI: Cryptic Texts and Miscellanea, Part 1*, ed. Stephen J. Pfann and et. al., Discoveries in the Judaean Desert (Oxford: Clarendon Press, 2000); Snyder, 15-34; Neugebauer; Daniel C. Olson and in consultation with Archbishop Melkesedek Workeneh, *Enoch, A New Translation: The Ethiopic Book of Enoch, or 1 Enoch, Translated with Annotations and Cross-References* (North Richland Hills, Tex.: Bibal Press, 2004), 164.

⁴ Milik and Black, eds., *The Books of Enoch: Aramaic Fragments of Qumran Cave 4*, 296-297.

perhaps derived from – the construction of the lunar month,⁵ which is complete and “ends” with the darkness of conjunction, while the new lunar month “begins” with the illumination of the first crescent.

When read carefully, the 364-day year of the *AB* is not a “solar year”; rather, it is the stars that define the changing seasons of the year. The solar cycle is coincident with this stellar year, but is mainly characterized by its movement across the horizon and the changing proportions of light and darkness. Therefore, the *AB*’s year is better described as a *stellar/solar* year.

Dating the *AB*

The Ethiopic and DSS Texts

Scholars agree that the extant Ethiopic text of the *AB* is an incomplete and muddled version of what was once a larger and independent composition; the DSS finds include part of the existing text, but also supplement it.⁶ VanderKam, evolving the theories of Charles and others, sees the original *AB* as including *I En.* 72-79 and 82, i.e., excluding 80-81, which are seen as a later addition due to their ethical focus (especially concerning the fates of those who do not follow the correct calendar), which is at variance with the rest of the *AB*.⁷ In contrast, Olson proposes a rearrangement based on hints given by the DSS fragments whereby all the chapters of the Ethiopic *AB* are internally consistent, with

⁵ The solstices appear balanced because the sun at the solstice seems to stop its motion there for a day, as it begins its trip back across the heavens.

⁶ For a review of various scholarly positions, see Florentino García Martínez and Eibert J. C. Tigchelaar, “*I Enoch* and the Aramaic Fragments from Qumran,” *Revue de Qumran* 14 (1989): 132-136.

⁷ VanderKam suggests the chapter order as: 72-78, 82:9-20, 79, 82:1-8. James C. VanderKam, *Enoch and the Growth of an Apocalyptic Tradition* (Washington: The Catholic Biblical Association of America, 1984), 105-109. See also García Martínez and Tigchelaar, “*I Enoch* and the Aramaic Fragments from Qumran,” 133.

no need to conjecture that *1 En.* 80-81 is a later interpolation.⁸ In particular, Olson describes the passage in 80:2-8 describing the catastrophic environmental events during the “days of the sinners” as “satiric” of those who follow an incorrect (probably 360-day) calendar, for all of “the calamities mentioned here involve *timing*.”⁹

The precise date of the *AB*’s composition is uncertain. Portions of the *AB* are among the oldest manuscripts among the DSS, written in Aramaic and dating to the late third or early second century B.C.E., pushing the latest possible date for its composition to the late third century B.C.E.¹⁰ In contrast, the later writers of *Jubilees* and most of the DSS prefer to use Hebrew, possibly for anachronistic, nationalistic and theological reasons.¹¹ The fact that it was written in Aramaic, the language common to the Persian Empire, together with its contents has led many scholars (including Milik, Nickelsburg, and Bickerman) to conjecture that this was indeed the period of its creation.¹² Wacholder also asserts “the background for this document may go back to the 6th or 5th century

⁸ Daniel C. Olson, “1 Enoch,” in *Eerdmans Commentary on the Bible*, ed. James D.G. Dunn (Grand Rapids, Mich.: Eerdmans, 2003), 927, 930 and Olson and Workeneh, *Enoch, A New Translation: The Ethiopic Book of Enoch, or 1 Enoch, Translated with Annotations and Cross-References*, Appendix 7.

⁹ Olson and Workeneh, *Enoch, A New Translation: The Ethiopic Book of Enoch, or 1 Enoch, Translated with Annotations and Cross-References*, 176; see also Olson, “1 Enoch,” 931. Olson suggests the chapter order as: 72:1-78:16, 79:3-5, 78:17, 79:1-2, 82:7-20, 79:6-80:1 81:1-82:6, 80:2-8.

¹⁰ García Martínez and Tigchelaar, “1 Enoch and the Aramaic Fragments from Qumran,” 135; Milik and Black, eds., *The Books of Enoch: Aramaic Fragments of Qumran Cave 4*, 273; VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 105. Tigchelaar and García Martínez.

¹¹ See Steven Weitzman, “Why Did the Qumran Community Write in Hebrew?,” *JAOS* 119, no. 1 (1999).

¹² Milik and Black, eds., *The Books of Enoch: Aramaic Fragments of Qumran Cave 4*, 8, 17; George W.E. Nickelsburg, “The Qumran Fragments of 1 Enoch and Other Apocryphal Works: Implications for the Understanding of Early Judaism and Christian Origins,” in *Jewish Civilization in the Hellenistic-Roman Period*, ed. Shemaryahu Talmon (Philadelphia: Trinity Press International, 1991), 182; Elias J. Bickerman, *The Jews in the Greek Age* (Cambridge, Mass.: Harvard University Press, 1988), 212.

BCE,” indicating the origins of the 364DC are in the early post-exilic period.¹³

VanderKam is more cautious, arguing that while this interpretation lacks firm support, it is possible, noting that the 250-year period between Nehemiah and Antiochus Epiphanes is one for which there is very little historical material, making it “among the most obscure in the second-temple period.”¹⁴

The 364DC’s Origins in the Mesopotamian Lunisolar Calendar Tradition

As to the date of the astronomical knowledge used in the *AB*, there is general consensus that it dates to Mesopotamian theories of a much earlier period.¹⁵ The theories are contained in cuneiform astronomical texts such as *MUL.APIN* and the omen tablets *Enuma Anu Enlil*, whose earliest extant tablets date to the 7th century B.C.E. but whose contents extend back to the second millennium B.C.E.¹⁶ These texts describe an ideal Mesopotamian 360-day year (12 lunar months of 30 days), which included marking the four cardinal days of the solar year on the full moon of day 15 in lunar months 1, 4, 7,

¹³ Ben Zion Wacholder, “Calendar Wars Between the 364 and the 365-Day Year,” *Revue de Qumran* 20, no. 2 (2001): 214.

¹⁴ James C. VanderKam, “The 364-Day Calendar in the Enochic Literature,” in *Society of Biblical Literature 1983 Seminar Papers*, ed. Kent H. Richards (Atlanta: Society of Biblical Literature, 1983), 159. See also, VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 79-88. The use of solar “months,” which have no parallel in Mesopotamian astronomy, has led some writers to speculate that this reflects Egyptian influence, possibly indicating a Hellenistic period composition; see the discussion in VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 94. Beckwith also claims an Egyptian and Hellenistic origin for the *AB*; see Beckwith, 105-110. However, even if this does indicate the possibility of Egyptian influence on the *AB* this does not necessitate a Hellenistic dating, for there was ample contact between Mesopotamia and Egypt (and Judea) during the Persian period since Egypt was a subject of the Persian Empire during much of that time.

¹⁵ VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 91-103; Neugebauer, 387; Glessmer, “Horizontal Measuring in the Babylonian Astronomical Compendium *MUL.APIN* and in the Astronomical Book of 1En,”

¹⁶ Hermann Hunger and David Pingree, *MUL.APIN: An Astronomical Compendium in Cuneiform* (Horn, Austria: Verlag Ferdinand Berer & Sohne Gesellschaft, 1989), 9; Erica Reiner and in collaboration with David Pingree, *Babylonian Planetary Omens: Part Two; Enuma Anu Enlil, Tablets 50-51*, ed. Giorgio Buccellati, *Bibliotheca Mesopotamica* (Malibu: Undena Publications, 1981), 71; Wayne Horowitz, “The 360 and 364 Day Year in Ancient Mesopotamia,” *JANESCU* 24 (1996): 39. See also, Hermann Hunger and David Pingree, *Astral Sciences in Mesopotamia* (Boston: Brill, 1999).

and 10.¹⁷ The fact that this 360 day ideal year did not match the reality of a twelve-month lunar year of 354-days or of the solar year is reflected in intercalation schemes that involved the observation of the moon versus the rising of certain stars.¹⁸ Thus, the stars are assumed to be the fixed objects against which the movements of the sun and moon are measured.¹⁹ As Hunger and Pingree observe, “In theory, the difference between the actual date of the occurrence of one of these phenomena and the ideal date is the epact; when the epact equals thirty days, an intercalary month is needed.”²⁰ MUL.APIN assumes a 10-day epact per year, which means that in theory a month was added every three years: “You find 10 additional days, the amount for one year. In three years (variant: the third year) you proclaim (this year) a leap year.”²¹ The additional lunar month was added prior to Nisannu, the first month of the year, with the goal of having the vernal equinox occur during Nisannu.²²

¹⁷ Hunger and Pingree, *MUL.APIN: An Astronomical Compendium in Cuneiform*, 139-140.

¹⁸ Tablet II Gap A 8-15; Tablet II ii 1-17. *Ibid.*, 89-95.

¹⁹ The Babylonian “year” is always sidereal; no distinction was made between sidereal, tropical and anomalistic years. It was only much later that Ptolemy defined the “year” as “tropical.” See Otto Neugebauer, *The Exact Sciences in Antiquity*, Second ed. (Providence: Brown University Press, 1957; reprint, Harper Torchbooks), 140.

²⁰ Hunger and Pingree, *MUL.APIN: An Astronomical Compendium in Cuneiform*, 151-152.

²¹ Tablet II ii 16-17. *Ibid.*, 95.

²² Hunger and Pingree, *Astral Sciences in Mesopotamia*, 75-79; Hunger and Pingree, *MUL.APIN: An Astronomical Compendium in Cuneiform*, 11-12, 75-76, 151. This, of course, is the origin of the Hebrew Calendar’s scheme of intercalation, which adds an “extra” Adar to make sure Nisan is the month of the spring festival Passover, which takes place on the full moon of Nisan; in the ideal Mesopotamian calendar, the full moon of Nisan was also the vernal equinox. There is evidence, however, that an earlier calendar placed the cardinal points a month earlier, with the vernal equinox on 15 Addaru; see Hunger and Pingree, *Astral Sciences in Mesopotamia*, 47. Glessmer suggests that this shift of one month in the calculation of the Mesopotamian year may have an echo in 1 Kgs 12:33 which describes a calendar reform of Jeroboam; see Glessmer, “Horizontal Measuring in the Babylonian Astronomical Compendium MUL.APIN and in the Astronomical Book of 1En,” 272 n. 41, but compare the different theory of Shemaryahu Talmon, “The Cult and Calendar Reform of Jeroboam I,” in *King, Cult and Calendar in Ancient Israel* (Jerusalem: The Magnes Press, 1986).

This interrelationship of three apparently independent units – those of the sun, moon, and stars – provides an important background to the similar mention of all three of these elements in both Gen 1:16 and in the *AB*. The fixed stars were the standard against which the other two were measured; in an important sense, the lunar or solar “year” existed only in relationship to the stellar year.

Unlike the 360-day Mesopotamian calendar tradition reflected in MUL.APIN, the *AB* describes a 364-day calendar, with no obvious intercalation scheme. However, a number of scholars have recently shown that the ideas of 364DC in the *AB* correspond to Mesopotamian practice of the seventh century B.C.E. in which 364 was the average of a lunisolar year cycle that intercalated a 30 day lunation every 3 years.²³ This is consistent with MUL.APIN which, as discussed above, assumes a ten-day epact per year; this is precisely what is accounted for in the 364-day year. Horowitz points out that “the 364 day year was known in Mesopotamia not only in the seventh century before the establishment of the Jewish exilic community, but also...in post-Nebuchadnezzar II Babylonia – a time and place where it would have been available to ancient Israel. Thus, it would appear that the Mesopotamian 364 day year is the ultimate source for the 364 day year found in the Apocrypha and Qumran texts.”²⁴ This is most likely the source of

²³ See Horowitz, 41; Glessmer, “Horizontal Measuring in the Babylonian Astronomical Compendium MUL.APIN and in the Astronomical Book of 1En,” 281; Glessmer, “Calendars in the Qumran Scrolls,” 234.

²⁴ Horowitz, 41. See also Wayne Horowitz, “The 364 Day Year in Mesopotamia, Again,” *NABU* (1998). Glessmer similarly argues that since “the astronomical concept of the *AB* has a real background, then the ideal-year of the *AB* and its use for a calendar also should be considered not as a seven-oriented schematism only, but against the background and problems of practical use and its historical developments”; see Glessmer, “Horizontal Measuring in the Babylonian Astronomical Compendium MUL.APIN and in the Astronomical Book of 1En,” 281. But compare Olson, who argues that Horowitz’s evidence falls short of describing a “true Babylonian parallel” to the *AB*; Olson, “1 Enoch,” 927.

not only the *AB* ephemeris but also the 6-year cycle of the *CDM* texts (see below), which is a simple doubling of the 3-year cycle of the Mesopotamian 364-day calendar.

For the users of the 364DC the stellar/solar year and the lunation were synchronized, but the lunation took precedent. Indeed, the key reason to shift from the 364-day and 360-day was to better fit the observed reality of the lunation. The 360-day calendar assumed an ideal 30-day lunation, but this was easily seen not to be the case: the lunation was shorter (only about 29.5 days) and the stellar/solar year was longer, causing the (ostensible) 10-day epact.²⁵ Thus, the *AB* ephemeris modifies the 360-day calendar by subtracting a day from the 30-day lunar cycle every other month and adding four days to the year, one each season (i.e., $360 + 4$ seasonal days = 364 days in solar year, while $360 - 6$ lunation days = 354 days in 12 lunar months). This still reflected the cultural predisposition that gave primacy to the moon over the sun as the key building block of the calendar, plus the key assumption that there was a synchronous relationship between the lengths of the lunation, the stellar year, and the solar year.²⁶

Indeed, the main polemic in the *AB* is against this 360-day year (*I En.* 75:1-2; 82:4-6).²⁷ VanderKam suggests that the *AB* seems to be a transition between the 360 and 364 day year: while the latter is comprised of four quarters of 91-day months, portions of the text include calculations that assume a 360-day year and statements that the four epagomenal days added to 30 day months “are not counted in the reckoning of the year”

²⁵ The fact that an 11-day epact was not considered – although it was known in Egypt, which used a 365-day solar year - itself indicates the importance of synchronizing with the lunation in the Mesopotamian tradition.

²⁶ Note that the movements of the planets, the wandering stars, seem to be totally ignored in the *AB* (unlike MUL.APIN).

²⁷ VanderKam, “The 364-Day Calendar in the Enochic Literature,” 164.

(*1 En.* 75:1).²⁸ Olsen's proposed rearrangement shows that even *1 En.* 80-81 can be read as part of this polemic against those who follow the wrong calendar of 360 days (*1 En.* 82:4-6), which results in various events like crops and rain coming "late," because the 360-day calendar is too short (*1 En.* 80:2-8). Countering Neubauer's assessment that the *AB* describes "a rigid schematism unrelated to reality,"²⁹ Glessmer contends that the astronomy of the *AB*, with its description of the ratio of light to darkness and movement of the sun through various gates on the horizon, is linked to the praxis of "the scientific tradition as found in MUL.APIN."³⁰ This includes an emphasis on the four cardinal days of the year, and its description coordinating the cycles of the sun, moon and stars. The author(s) of the *AB* must have been convinced that the 364-day solar cycle matched the stellar year.

The likelihood that the *AB* describes a stage in the development of a fundamentally *lunar* calendar is also strengthened by noting that the 30-day idealized length of the lunar month in the 360-day year serves as the model for the length of the "months" of the stars (30-days) and the sun (30 or 31 days). Of these three cycles, only the lunation has a clearly observable cycle of "30 days" and certainly the origin of the term "month" is in the lunation, with the meaning later evolving into a generic term for portions of the solar and stellar cycles.³¹ The idea that there still must be 12 months in the stellar/solar year no doubt flows from the 12 idealized 30-day lunar months in the 360-day year.³²

²⁸ VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 97-98.

²⁹ Neugebauer, "The 'Astronomical' Chapters of the Ethiopic Book of Enoch (72 to 82)," 387.

³⁰ Glessmer, "Horizontal Measuring in the Babylonian Astronomical Compendium MUL.APIN and in the Astronomical Book of 1En," 260.

³¹ In this way the *AB* is different from the Calendrical Texts 4Q319-4Q330, where the term month-שנה is only used in reference to the schematic (or "solar") months (see the concordance and texts in Talmon, Ben-

Therefore, the genesis of the 364-day “solar year” (so-called) described in the *AB* was not the observed movement of the sun (or the stars), but the sun and stars were fit into the more important and more easily observed cycle of the moon. Perhaps because this ostensible synchronization derives from a lunar priority, the *AB* finds it necessary to insist that “the sun and the stars bring in all the years exactly, so that they do not advance or delay their position by a single day unto eternity; but complete the years with perfect justice in 364 days” (*1 En.* 74:12).³³

By setting the 364DC within the context of the Mesopotamian cosmological and calendar tradition we can make two important conclusions. The first is that the 364-day year did not begin as a sabbatarian invention, and we can now rule out the hypotheses that the 364DC was a “Jewish”³⁴ or “sabbatarian”³⁵ adjustment of either the 360-day Mesopotamian or 365-day Egyptian calendars toward a scheme that was favorable to the seventh-day Sabbath cycle.³⁶ While later forms of the 364DC, especially the polemics of

Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*). The extant DSS of Aramaic Enoch preserve two appearances of the term month-ܫܚܐ, both in texts parallel to extant passages of previously known Ethiopic Enoch, clearly referring to the lunar month (4Q209 25,4; 28,1). See Tigchelaar and García Martínez, 162, 165.

³² The fact that all other 364DC texts support schematic months like the *AB*'s solar months of 30, 30, and 31 days per quarter, no longer making the distinction of the four cardinal days that are not part of the stellar months; this implies that the *AB* represents a stage between the 360-day calendar and these other texts.

³³ Charles, ed., *The Book of Enoch, or 1 Enoch*.

³⁴ Neugebauer, “The 'Astronomical' Chapters of the Ethiopic Book of Enoch (72 to 82),” 387.

³⁵ VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 98.

³⁶ Zeitlin speculated that the 364-day year was used during the pre-exilic period, and was a sabbatarian adjustment of the 365-day year used in Egypt. Zeitlin even proposed that the “Jubilee year” was a short 49-day intercalary year inserted after every 49 years to make up for the missing day while preserving the important sabbatarian pattern of seven. Zeitlin ; Sidney B. Hoenig, “Sabbatical Years and the Year of Jubilee,” *JQR* 59 (1969). Chyutin recently reiterated the hypothesis of an Egyptian source, adjusted to reflect a sabbatarian rhythm; Chyutin, 53.

Jubilees, may have become anti-lunar and pro-solar, it is now clear that at its origins the 364DC was not a *solar* calendar tradition, but was merely a stage in the evolution of the *lunisolar* calendar; i.e., the lunation was still primary for its creators, as would be expected from a Mesopotamian calendar.³⁷ The change from a 360-day calendar to a 364-day calendar was therefore much more of an incremental step than previously conceived, not a radical rejection of the *lunisolar* calendar tradition.

Secondly, we can be more certain about dating the *AB*'s ephemeris to the early Persian period, which seems more consistent with other analyses concluding that the astronomical perspective of the *AB* reflects this earlier period. VanderKam comments that while the *AB* discusses the "correct" number of days in periods of three, five, and eight years, which were the common patterns used for lunar intercalation, "Nothing in the *AB* indicates the author's acquaintance with the later and more accurate 19-year cycle which was known in Greece (the Metonic cycle) and Babylon in the fifth century."³⁸ Echoing Neugebauer's comment that "there is no visible trace of the sophisticated Babylonian astronomy of the Persian or Seleucid-Parthian period," García Martínez and Tigchelaar

The idea that the 364-day calendar may date to the pre-exilic period has recently received renewed support, based on Jaubert's hypothesis that it is an ancient priestly calendar. Eior endorses this, and further re-suggests Zeitlin's proposal of intercalating a week every sabbatical year (although without any apparent awareness of similar previous proposals, nor with any supporting discussion other than claiming it is "more plausible"); Eior, 43, 50. Olson has similarly suggested that the *AB*'s scheme may date to the pre-exilic period because of its apparent agreement with the Pentateuchal holidays together with recent scholarship that dates many of the P texts of the Pentateuch to the pre-exilic period; Olson, "1 Enoch," 927.

³⁷ Although Talmon claims to accept Horowitz's findings, writing that the 364DC "probably had its origin in ancient Mesopotamia," he continues to insist that this is a "solar ephemeris of 364 days"; see Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 3. This is despite Horowitz's clear description in that this was "a Mesopotamian ideal mean lunar year of 364 days" (Horowitz, "The 360 and 364 Day Year in Ancient Mesopotamia," 35) that is found "in both stellar and lunar contexts" (Ibid., 41). Responding to an inquiry of mine, Devorah Dimant confirmed to me in a private communiqué (dated July 16, 2002) that Horowitz's article has shifted the thinking of Qumran scholars towards the Mesopotamian origins of the 364DC.

³⁸ VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 102 n. 78. The 19-year Metonic cycle of lunar intercalation, which seems to have been in place by 380 B.C.E. at the latest; see Rochberg, 1938.

comment that “the author of the Enochic work was either ill-informed, or he deliberately ignored the much more sophisticated and complex astronomical knowledge that is attested in the Babylonian texts of the Persian and Seleucidic periods.”³⁹ But García Martínez and Tigchelaar are thereby assuming a date of composition close to the late third century B.C.E. date of the Qumran manuscripts. In contrast, it seems that ignorance or aversion to new information is less likely than the alternative, which is that the origin of the *AB* is in the early Persian period of the sixth to fifth century B.C.E.

The Message of the *AB*

The Synchronic Cosmos

We can now see that the 364DC was a development of the lunisolar Mesopotamian tradition; indeed, we might even say that it is an example of arrested development, for it did not evolve to take into account the later development of the Metonic cycle. A consideration of the *AB*'s picture of the cosmos helps us understand why.

The *AB* describes a cosmos whose harmony can be seen in the perfectly synchronized movement of the sun, moon and stars that control the seasons and the weather. It presents a universalistic perspective on the cosmos, rather than a uniquely Jewish revelation, and “assumes a positive stance toward the possibility of human knowledge of natural laws.”⁴⁰ Thus, the revelation is given to humanity in general via Enoch and Methuselah, for the heavenly bodies rule over the whole of God's creation. The universe God has set in motion is orderly and symmetrical: all of the cycles included

³⁹ García Martínez and Tigchelaar, “*I Enoch* and the Aramaic Fragments from Qumran,” 134.

⁴⁰ VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 90 n. 45.

are mathematically expressed and calculable.⁴¹ The *AB*'s description of the four seasons and the sources of weather phenomena reflect not just a concern with the motions of the heavens, but a practical concern with how these phenomena seem to effect the livelihood of an agricultural society.

While another composition collected in *I Enoch*, The Book of Watchers (*I En.* 1-36) contrasts the glory and regularity of the heavens with the disorderliness and corruption of the human world (*I En.* 2:2-5), this is not the case in the *AB*.⁴² There is almost no moralistic, theological, or nationalistic material, except for the references to “sinners” who use a different calendar in *I En.* 80-81.⁴³ There is certainly no evidence of any calendrical dispute concerning use of either the lunar or solar aspects (which we find in later texts such as *Jubilees*), only with those using a 360-day calendar. In a sense, the purpose of the *AB* seems to be to translate Mesopotamian astronomical concepts into a Jewish vernacular, with “scientific” material translated into Jewish “mythological dress.”⁴⁴ While the information is presented as a revelation to Enoch, its focus is not on

⁴¹ Notably absent is any discussion of the planets or astrology; *Ibid.*, 103.

⁴² Olson and Workeneh, *Enoch, A New Translation: The Ethiopic Book of Enoch, or 1 Enoch, Translated with Annotations and Cross-References*, 180 n. 4; Charles, ed., *The Book of Enoch, or 1 Enoch*, 8; VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 109.

⁴³ As mentioned above, some scholars believe that the chapters *I En.* 80-81 were secondary material inserted at a later time. If that is the case (which is by no means certain), the motivation could have been to explain away problems with the 364DC not matching observed reality. As described by Beckwith, “the authors had reconciled themselves to the unpalatable discovery that the 364-day year did not, in fact, agree with the natural phenomena, and they had started offering theological explanations of the discrepancy,” Beckwith, 108. These explanations blame “sinners” (whether human or angelic is unclear) who have thrown the cosmos out of balance: “And in the days of the sinners the years shall be shortened...” (*I En.* 80:2). Baumgarten endorses Beckwith’s view on this point; see Joseph M. Baumgarten, “The Calendars of the Book of Jubilees and the Temple Scroll,” *VT* 37, no. 1 (1987): 76. Using sin as a reason for undesirable events, from crop loss to defeat in war, is a standard explanation used in the Bible. However, in the *AB* it seems that this phrase more likely refers to a faulty use of a short 360-day year (as Olson has suggested) rather than a reference to an observation of phenomena not matching the 364DC theory (as Beckwith would have it) or an eschatological future.

⁴⁴ VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 103.

some transcendent reality or eschatological future, but rather a theory for understanding what is humanly observable.⁴⁵

The *AB* gives no hint of uncertainty concerning the appearance of the new moon, nor any provision for uncertainty that would require intercalation of either the solar or lunar cycles to adjust them to fit properly with the stars. There seems to be absolute certainty about the astronomical calculations as both descriptive and prescriptive of God's order in the cosmos. This may be less an expression of hubris concerning their own astronomical and mathematical abilities than it is faith in a divine order in the heavens.

It is this aspect of the *AB*, its confident calculation, which is in sharp contrast to the uncertainty at the heart of the variable length Mesopotamian year of MUL.APIN. This earlier Mesopotamian tradition is dependent on the uncertain appearance of the new moon (as with the OLC of the rabbis, to be considered below in Part III), and copes with the erratic, wild time of the new moon by using an observational methodology. The *AB* represents an important step away from this towards a universe of tame time by its focus on the calculable, synchronic, and symmetrical movements of the observable cosmos. As we will discuss in the following chapter, the calculated symmetry of the 364DC became a central element in both the theology and practice of the priesthood, providing a strong incentive to maintain the system.

⁴⁵ In this sense, it is questionable whether Enoch qualifies as an "apocalypse." See the discussion in *Ibid.*, 106-109; John J. Collins, *The Apocalyptic Imagination: An Introduction to Jewish Apocalyptic Literature*, Second ed. (Grand Rapids, Mich.: Eerdmans, 1998), 59-62.

The Lunation and the Sabbath

Even though the cosmology of the *AB* is clearly Mesopotamian, this has been Judaized in various ways, including references to angels (rather than gods) in charge of the motions of the heavenly luminaries, and inclusion of the biblical characters Enoch and his son Methuselah.⁴⁶ Nevertheless, the most important aspect of the *AB* is that it is quite strictly an ephemeris, a description of the movements of the heavenly bodies, containing no mention of the Sabbath or holidays; even the four cardinal days that conclude each season are not ascribed any special cultic significance.

The lack of any information that is directly cultic, especially timings for holiday and ritual observances, makes it possible that the *AB* had its origins outside of priestly circles; the use of Aramaic may also indicate this. There are few references to unspecified “festivals” determined by the stars (*I En.* 82: 7, 9) and “weeks” (*I En.* 79:2, 4) as a period of time,⁴⁷ all of which may be later glosses since they are non-essential to the main thrust of describing the coordinated movements of “sun, moon, stars” (*I En.* 82:8).⁴⁸ Yet, the astronomical concerns of the *AB* certainly were part of priestly knowledge throughout the ancient Near East, and we know that the *AB* was important to later Jewish priestly circles, as reflected by its significance to the author of *Jubilees* and its preservation at Qumran.⁴⁹ Thus, we should treat the *AB* as part of the corpus of

⁴⁶ VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 101-102.

⁴⁷ The Ethiopic word generally translated here as “week” also means “Sabbath,” but the *AB* indicates no knowledge of the Sabbath as a special day.

⁴⁸ The likelihood that these are glosses is particularly evident in *I En.* 79:4, which describes the length of half the lunar year as “till one hundred and seventy-seven days are accomplished: reckoned according to weeks, twenty-five (weeks) and two days.” Translation from Charles, ed., *The Book of Enoch, or I Enoch*.

⁴⁹ The *AB* provided theological justification for practitioners of a 364DC calendar; indeed, the author of *Jubilees* explicitly appeals to Enoch in this fashion, embellishing the account of the *AB* to include the

Second Temple priestly literature; even if priestly groups didn't originally compose the *AB* it nevertheless became important to the priests.⁵⁰

A 364DC has obvious advantages for a priesthood with a sabbatarian ideology, since this divides evenly into 13 weeks per season and 52 weeks per year. However, it is not obvious that the *AB* has any interest in the Sabbath, or even awareness of it; the Sabbath is simply missing. There are passages where the number seven is used in various ratios, such as claiming the sun's light is "sevenfold brighter than that of the moon" (*I En.* 72:37),⁵¹ and steps of increasing or decreasing illumination of the moon are described in halves of sevenths (*I En.* 73:4-8). While this may be a practice that derives from Isaiah 30:26, as VanderKam suggests,⁵² alternatively it could be a simplified description of the periods of increasing and decreasing illumination during the lunar cycle.⁵³

Sabbath, something of concern to *Jubilees* but apparently not to the *AB*: "He [Enoch] was the first of mankind who were born on the earth who learned (the art of) writing, instruction, and wisdom and who wrote down in a book the signs of the sky in accord with the fixed pattern of their months so that mankind would know the seasons of the years according to the fixed patterns of each of their months. He was the first to write a testimony. He testified to mankind in the generations of the earth: The weeks of the jubilees he related, and made known the days of the years; the months he arranged, and related the Sabbaths of the years, as we had told him" (*Jub.* 4:17-18).

⁵⁰ Olson suggests that the *AB* is of priestly providence since the "priestly element is most obvious in the extensive attention given to the calendar in the *AB*"; Olson, "1 Enoch," 906. Elioer treats the Enochian literature as a whole as integral to the traditions of the Zadokite priesthood; Rachel Elioer, "Ha-Luah ha-Yehudi ve-ha-Zman ha-Mysti [The Jewish Calendar and Mystical Time]," in *Luah ha-shanah ha-Ivri*, ed. Uriel Simon and Rachel Elioer, *Hug Bet ha-nasi la-Tanakh veli-mekorot Yisra'el ; kuntres 5* (Jerusalem: Bet ha-nasi, 1995), 14-15. In a private discussion, Olson has also suggested that liturgical concerns may not have been included for exegetical reasons, i.e., Methuselah might not have "needed" to know this information because, according to biblical chronology, he supposedly lived well before Abraham or Moses, the ostensible founders of the Jewish people.

⁵¹ Charles, ed., *The Book of Enoch, or 1 Enoch*.

⁵² VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 100.

⁵³ This may be re-enforced by Olson's re-reading of the seemingly corrupted passage of *I En.* 78:9 as "On certain specified months, the moon is there for each of 29 days, and sometimes for 28." See Olson and Workeneh, *Enoch, A New Translation: The Ethiopic Book of Enoch, or 1 Enoch, Translated with Annotations and Cross-References*, 165 and his comments on 164.

In the end we are left with the obvious: while the *AB* shows great interest in the lunation as part of the synchrony of the cosmos, it displays no interest in the Sabbath. I will consider some implications of this omission in Part II; for now we can say that in the next stage of its development, the basic model of the universe described in the *AB* was adapted by the priesthood during the Persian period and integrated with the biblical festivals into a synchronic whole uniting heaven and earth through the 364-day liturgical calendar of the priests.

CHAPTER 4
THE DSS *CALENDARICAL DOCUMENTS/MISHMAROT* TEXTS

Description of the *Calendarical Documents/Mishmarot A, B and C*¹

A number of explicitly calendrical texts have been identified among the DSS found at Qumran. Written in Hebrew, the calendrical texts are different from other Qumran texts in that they tend to be very terse lists of dated events that take place in the course of days, weeks, months, or years. While not laid out in a matrix of rows and columns, like modern calendars, these lists are true calendars in the sense that they describe events that take place on different days in the course of a year. They do not list every day of the calendar but only days that are of some significance, such as the beginning of a month or the observance of a Sabbath or holiday. They also vary in their level of detail and the types of events listed. Most are only partly preserved, but some are very well preserved, allowing a full reconstruction.

While all of the calendrical DSS describe (or, if fragmentary, are consistent with) a 364DC, they can be separated into the different 364DC traditions described in Chapter 3: an Enochic Mishmarot family, a Jubilean family, and a Neutral family. In this chapter I will focus on the Enochic Mishmarot family of texts, which include descriptions of a six-year calendar that includes a lunar cycle, or descriptions of longer cycles of years that are related to the six-year lunation pattern:

¹ This section is a summary of the findings presented in Appendix B, which provides a more extensive technical discussion of the textual issues and secondary literature concerning the reading and interpretation of the DSS Calendarical document.

- 4Q320, 4Q321, 4Q321a (the *Calendrical Documents/Mishmarot A, B and C (CDM)*)² are well-preserved lists that coordinate the twenty-four weekly priestly courses with the lunation over a six-year cycle of the 364DC.
- 4Q319 (4QOtot) is a well-preserved text that coordinates the six-year cycle of priestly courses with the seven-year-šemitah cycle and the forty-nine-year jubilee cycle.³
- 4Q330 lists only the priestly shift on duty for the first day of the year for consecutive years, including a seven-year cycle of the šemitah, similar to 4Q319.⁴

The *CDM* texts share certain elements with the *AB* of *I Enoch*, especially an underlying 364-day calculated year that includes the intercalation of an additional 30-day lunation every three years.⁵ Apart from this, they are radically different from the *AB* in form, content and purpose. Unlike the *AB* or *Jubilees*, there is no theory or discussion of why this calendar is set up the way it is; it is simply there. It is clear that the emphasis of the texts is cultic because they assign dates to only the sacred days of the year: the weekly Sabbath, two points in each lunation, the beginnings of the schematic months, and the annual holidays mentioned in the Pentateuch. The rest of the year's days are ignored altogether.

² While there are some differences between these three documents, hence their different designations, it is generally agreed that they are slight variants of the same calendar that includes the synchronization of solar, lunar and weekly elements. 4Q320 also includes passages of shorter, summary calendars similar to some of the other calendrical documents. For purposes of the discussion that follows I will draw on individual passages from 4Q320-321a as examples of the calendar they describe in common. For brevity, I will use “*CDM*” as an abbreviation for “*Calendrical Documents/Mishmarot*.”

³ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 201.

⁴ *Ibid.*, 151-154.

⁵ I prefer to use the terms “calculated” or “schematic” with reference to the year and the months; in contrast, many scholars describe these as “solar,” largely based on the similarity of the *AB* and *Jubilees*. But since (a) there is no clear reference to the sun (or the stars) in the *CDM*, (b) there is no evidence of intercalation to align it with the true stellar/solar year of 365¼ days, and (c) I showed in the previous chapter that the 364DC is at its origins a lunar calendar (not a “solar” calendar), I prefer to use these terms that emphasize the contrast of the 364DC with calendars based on observation.

In addition to the cycles of the 364-day year and the lunation, the *CDM* integrate another temporal rhythm, namely the seventh-day Sabbath. This is expressed through the inclusion of a new element, the twenty-four week cycle of priestly courses in the Temple; these are listed in Chronicles (1 Chr 24:7-18)⁶ and called “shifts - *mishmarot*” in Nehemiah (Neh 13:30).⁷ Based on the Qumran documents, scholars have completely reconstructed a six-year calendar.⁸ In addition to the general features of the 364DC listed above in Chapter 2, the *CDM* calendar lists include the following:

1. The weeks are named for the priestly family on duty that week. Thus, “the second in Abijah” would refer to the Monday of the week of Abijah. It appears that the priests actually changed shifts on the Sabbath afternoon, and the Sabbath was named for the family that began its shift that day, based on evidence in the Bible, Talmud and Josephus.⁹ The Qumran texts are consistent with this, labeling both the Sabbath and the six days of the week following it for the same family on duty.
2. The *CDM* lists show a six-year cycle, probably because it takes six years until the 24 priestly courses cycle back to their starting place. That is,
 - a. Solar/stellar cycle: 6 years x 364 days = 2184 days = 312 weeks.
 - b. Sabbath cycle: 52 weeks x 6 years = 24 priestly families x 13 cycles = 312 weeks = 2184 days.

⁶ Milik, *Ten Years of Discovery in the Wilderness of Judaea*, 41; cf. Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 9. While the list of 24 priestly families is in the same sequence in both the DSS Calendrical texts and Chronicles, the starting points are different. In Chronicles the list starts with Jehoiarib, while all the DSS Calendrical texts begin with Gamul, which was 22nd on the Chronicles list. No convincing reason has been proposed for this difference, although some have suggested it has to do with a shift in the new year from the autumn to the spring; see for example Eisenman and Wise, 109; Beckwith, 91; Gardner, 304-305.

⁷ Talmon relates that “the term *mishmarot* was introduced into the discussion by J. T. Milik.” While most of the secondary literature refers to these as “*mishmarot*,” Talmon has changed their official description in the *editio princeps* to “Calendrical Documents/*Mishmarot*”; see Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 9. As noted by Talmon, the use of “*mishmarot*” needs to be qualified by the fact that the Qumran texts do not use this or any other technical term to refer to these priestly courses.

⁸ This has been conveniently included in *Ibid.*, 17-32; it must be noted, however, that Talmon has amalgamated multiple documents into a composite “Covenanters’ Calendar,” which includes non-Pentateuchal festivals that are only listed in some of the Qumran calendar texts, and are *not* listed in 4Q320-321a. For a complete reconstruction of 4Q321, see Talmon and Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot B*^a (4Q321).”

⁹ Talmon and Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot B*^a (4Q321),” 296; VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 72-73.

- c. Two three-year calculated lunar intercalation cycles: $2 \times ((6 \text{ lunations} \times 30 \text{ days} + 6 \text{ lunations} \times 29 \text{ days}) \times 3 \text{ years} + 30 \text{ day intercalary lunation}) = 74 \text{ lunations} = 2184 \text{ days} = 312 \text{ weeks}$.¹⁰
3. They consist of two lists – one for lunations and another for annual festivals, each of which is referenced to the week named for a priestly family.
 4. The first list coordinates two phases of the moon with the priestly courses during alternating lunations of 30 and 29 days. At the end of 36 lunations, a 30-day lunation is added, which makes up for the “lost days” versus the 364DC, i.e., 364 (days in the 364DC) \times 3 (years) = 354 (days in the 12 lunations of the lunar calendar) \times 3 (years) + 30 (days). This pattern is then repeated to match the six-year cycle of priestly courses.
 - a. There is no term used in the texts to refer to the lunations; two phases are simply indicated (about which more will be said below). While the Hebrew term *ḥodesh*–month (with either the defective spelling *חֹדֶשׁ* (see for example 4Q320) or the full spelling *חֹדֶשׁ* (see for example 4Q321)) always means “lunar month” in rabbinic terminology and is generally assumed to mean the same thing in the Bible, in the *CDM* it refers exclusively to the twelve schematic months.¹¹ The use of ordinal numbers for the schematic months of the priestly course lists and the priestly writings of the bible tie these texts together, at least exegetically if not historically.
 - b. The lunar cycle wanders through the year regardless of the schematic months, similar to our experience living with the Gregorian calendar, but unlike the rabbinic lunisolar calendar.
 - c. The lunations of the Qumran calendar are based exclusively on calculation, requiring – and, seemingly, allowing for – no adjustment due to observation.
 5. The second list describes the occurrence of the annual Pentateuchal holidays, giving the months and date with reference to the priestly courses. The months of 30, 30, and 31 days per quarter are of the same length as the solar months of the *AB*; the special status of the last day of each quarter in the *AB*’s count of the stellar year, as the cardinal day that separates the seasons, has disappeared, leading to the conclusion that *CDM* are a development subsequent to the *AB*.

¹⁰ Compared to the contemporary astronomical length of 29.5306 days/lunation \times 74 lunations = 2185.2644 days, an excess of 1.26 days per 6 years; Gardner, 277.

¹¹ One reason I prefer the technical term “lunation” to “lunar month” is because the meaning of the term “month” is not self-evident; it is part of what is being argued about, both in the texts and by contemporary scholars studying the texts. Because the DSS Calendrical Texts never use the term “month - *חֹדֶשׁ*” in reference to lunar months (see the concordance and texts in Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*), I have significant reservations concerning Beckwith’s analysis of the Qumran 364DC, for he assumes an equivalence between the *CDM* ordinal months and the rabbinic lunar month names which are rarely mentioned in the DSS, and never in the Qumran calendrical documents. See for example Beckwith, 90-91.

The calculated pattern of this six-year calendar thus perfectly synchronizes not only the three cycles of the observable cosmos described in the *AB* – the stars, sun and moon – but adds in the seven-day week defined by the Sabbath, a cycle *not* marked in the heavens. Indeed, the *CDM* texts describe a hierarchical organization of time that makes the Sabbath, represented by the priestly course, into the primary temporal pattern. For example, a restored excerpt from 4Q321 4 IV, 8-9 reads as follows (with descriptive comments added):

8. The fir]st [year]: (The first day of) [the fir]st mo[nth] (falls) in (the week of) Ga[mul; on the th]ird (day) in (the week of) Mo[‘aziah] in it (falls)
9. [the Passah; in (the week of) Jeda‘iah in it (falls) the Waving of the Omer. The (first day of the) second (month falls) in (the week of) Jeda‘iah; in] (the week of) Se‘orim [in it (falls) the Second Passah.]¹²

The beginning of a (schematic) month or a holiday is dated by reference to the priestly course on duty, e.g., “On the third day in the week of Mo‘aziah in it falls the Passah.” The hierarchical organization of time embedded in the calendar of these texts is therefore: year; week (in the form of the priestly course); schematic month; day. Even though the *CDM* preserve the cosmic cycles of the *AB*, the Sabbath is now of higher importance than the stellar/solar months or lunations; indeed, the year is defined as much by its 52 weeks as by the other cycles. It is the priestly course that coordinates and unites the two lists of the *CDM* texts, the lunar phases and the annual holidays. While in the *AB* the lunation still drove the 364-day solar/stellar year as the three-year average of 37 lunations, and was co-equal to the sun and stars as markers of time, in the *CDM* the lunation is no longer even described as a “month.”¹³ The Sabbath has not merely been

¹² Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 75. See also Talmon and Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot B*^a (4Q321),” 288.

¹³ See Chapter 3, note 31.

added to the cosmic synchronism of the *AB*'s ephemeris; the *CDM* texts describe a *sabbatarian* calendar where the Sabbath is the lynchpin of the synchronous cosmos.

Dating of the *CDM* Calendar

For purposes of dating the *CDM* calendars, it is significant that the annual holidays include only the Pentateuchal holidays; they do not include the non-Pentateuchal holidays of Wood, Oil, Wine and Priests' Installation prescribed in the *Temple Scroll* (and perhaps alluded to in *Jubilees*), nor utilize the 26 priestly courses reported in the *Temple Scroll* and alluded to in the *War Scroll*.¹⁴ While the *AB* is an ephemeris describing the movements of the heavenly bodies, the *CDM* texts prescribe the times for cultic observance orchestrated by the priests. The first is discursive, explanatory and theoretical while the second is a terse, practical schedule with little or no explanation. The similarities and differences between the *CDM* and the *AB*, on the one hand, and the Jubilean family of texts, on the other, lead me to believe that the *CDM* calendar represents a stage of development between the *AB* and *Jubilees*, probably dating to the Persian period.¹⁵

¹⁴ I prefer to use the term "Pentateuchal holidays" rather than "biblical" (see for example Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 7) to indicate that while most scholars see the holidays of Wood, Oil, Wine and Priests' Installation as unique to the Qumran sect, since there is minimal other evidence of their observance, it is nevertheless possible that they were observed in a non-sectarian context. In particular, they are at least exegetically connected to observances mentioned in the Bible, and some scholars believe that Nehemiah knew of these holidays (see discussion in the next chapter concerning the *Temple Scroll*). Therefore, even the inclusion of these festivals in a calendrical document does not guarantee that it is an exclusively "sectarian" text authored by the Qumran sect, but a stage of the priestly calendar's evolution subsequent to the *CDM* calendar. See the more extensive discussion in the following Chapter.

¹⁵ There are further differences between the *AB* and the *CDM* texts, which are addressed in Appendix B. and discernible from Table 3 in Chapter 2. My hypothesis concerning the date when the *CDM* calendar was instituted will be discussed at greater length in Part II.

Purpose of the *CDM* Texts

The Practical Aspect: The Work-Schedule of the Priests

While there are some differences between the ephemeris of the *AB* and that of the *CDM* texts,¹⁶ the overall philosophy of time in the *CDM* is an evolution of that found in the *AB*: if the purpose of the *AB* was to describe the motions of the sun, moon and stars in a perfectly balanced cosmos, the purpose of the *CDM* is to insert the theory and practice of the Temple cult managed by the priests into the very texture of this synchronic cosmos. The focus on the sabbatarian priestly course cycle shifts the emphasis from Enoch's angelic tour of the heavens to the work of priests who see their efforts as integral to maintaining the fabric of creation. Various biblically prescribed observances are integrated and dated by reference to the priestly course on duty: the Sabbaths, the annual festivals, the "new month" (understood as the beginning of the schematic month, not the "lunar month"); the lunar phases of full moon and first crescent (an observance derived from Psalm 81:4-5).

What scholars have noticed less than the obvious theological dimension is the practical side of the *CDM* calendar. They describe not merely a calendar, but one of the earliest examples of a particular type of calendar, a *schedule*. In my view the *CDM* texts are the *work schedules* of the priests operating the Second Temple. They are utilitarian documents describing who has to do what, and when they have to do it, reflecting the practical needs of the priests. Theology and practice are combined in a priestly praxis that homologizes the Temple cult with the heavens, from which authority is derived as a

¹⁶ The main differences concern the lunation: in the *CDM* texts the year begins with the full moon rather than the new moon (as seems to be the case in the *AB*), and the cycle of full-moon/first-crescent is separated by a different number of days in the two texts (although the alternating pattern of the lunation between 29 and 30 days, and intercalation of a 30-day lunation every three years is identical); these differences are addressed in Appendix B

means to enhance their power and promote their ideology via the timing of religious activities. This schedule integrates the work of the priests into the temporal architecture of the cosmos.

For example, the way the weeks are named for the priestly courses reflects this. We know that the priestly course change took place on Sabbath afternoon, with one shift ending and a new one beginning.¹⁷ Logically, one could name the Sabbath either for the name of the course that was ending its shift or the course beginning its shift. Given the sabbatarian theology of the Temple cult, one might logically think that the Sabbath should be named for the course that *ended* its work week with the morning sacrifices on the Sabbath; after all, this would echo the complete week of creation described in Genesis 1-2:4a. Nevertheless, the Sabbaths are named for the course *beginning* its shift on the Sabbath, before the next week has begun. Why? I think it is because this was an important day for the priestly course that was to begin its week of service: *they had to show up for work*.

The Theological Aspect: Connecting Heaven and Earth

The *CDM* texts clearly represent a theological transformation from the ephemeris of the *AB*. As Albani has rightly noted, the “basic idea of the calendrical arrangement represented in the 4QMishmarot texts is the concept of a correspondence between heaven and earth, according to which the circuits of the stars and the cycles of the priestly courses have a common origin. This universalizing of the temple cult to the farthest

¹⁷ Talmon and Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot B*^a (4Q321),” 296; Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 10, VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 72-73.

horizon of the creation naturally could have sprung only from the theological interests of priestly circles.”¹⁸

Aside from the Sabbaths and holidays specified in the *CDM* calendar, the starting-point of the calendar was an important way priestly rhythms were theologically inscribed into those of the cosmos. The calendar begins on a Wednesday, a link to the Genesis creation story that recounts the creation of the heavenly luminaries on the fourth day of the primordial week:

God said: “Let there be lights in the expanse of the sky to separate day from night; they shall be for signs-תקן and for set times and for days and for years” (Gen 1:14).¹⁹

The opening lines of both 4Q320 and 4QOtot refer to this fourth day of creation, which, as Ben-Dov notes, aims “to integrate the list they introduce into the fabric of the biblical text”:²⁰

1. []to its being seen (or: appearance) from the east
2.]to[sh]ine[in]the middle of the heavens at the foundation of
3. [Creatio]n from evening until morning on the 4th (day) of the week
4. [of Ga]mul in the first month in [the fir]st
5. year vacat (4Q320 1 I, 1-5)²¹

10.]its light (came forth) on the fourth day of the wee[k
11. [the] Creation in the fourth (day) in Ga[mul; Sign of Shekariah in the fourth (year); Sign of Gamul in the (year of the) release;] (4QOtot 1-3g IV, 10-11)

In both DSS texts we see that creation takes place on the forth day of a week that would have been the priestly course of the priestly shift of Gamul. This projects the priestly courses back to the moment of creation; indeed, the date of creation – like all

¹⁸ As translated by VanderKam in VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 74.

¹⁹ Concerning this translation see, Chapter 1 note 6.

²⁰ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 208.

²¹ *Ibid.*, 43-44.

other days that must be observed according to the *CDM* – is marked with reference to the priestly course on duty (or, in this case, that would have been on duty). These texts presume that the Sabbaths themselves exist only in conjunction with the priestly courses, and that creation itself takes place *in the context* of the divinely ordained priestly rotation. This may even imply that the *scheme* of priestly courses theoretically came into being with the beginning of the week of creation, even if the counting of calendrical time only began on the fourth day.²²

The term “sign-ארת” alludes to the configuration of the heavenly luminaries on the fourth day of creation and their purpose as markers of time.²³ This configuration reappears every three years, when the three-year lunar cycle returns to its starting point, which is the same configuration of the sun, moon and stars at the time of creation, understood in the *CDM* calendar as the full-moon at sunset on the vernal equinox (when the moon appears in the east and shines throughout the night, as described above in 4Q320 1 I, 1-3).²⁴ In the six-year cycle of the *CDM*, the beginning of each three-year period alternates between the priestly courses of Gamul and Shekariah. But 4QOtot adds to the significance of this moment by introducing long-term calculations that correlate “three discrete time-reckoning devices: the standard Qumran six-year *mishmarot* cycle,

²² Along these lines, *Jubilees* even claims that the Sabbath was created in heaven before the creation of the observable cosmos, although the *mishmarot* are not mentioned; see below in the section on *Jubilees*.

²³ For an extensive discussion of the meaning of sign-ארת see Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 208-213.

²⁴ For a full technical discussion of the significance and timing of the schematic month, the lunar phases, and the interpretation that the sign-ארת year signifies a full-moon vernal equinox, see Appendix B.

the seven-year-*šemitah* cycle, and the forty-nine-year jubilee cycle. In order to achieve a full integration of these cycles, a time span of six jubilees is required ($49 \times 6 = 294$).²⁵

While Gen 1:14 sets up the sun, moon and stars as the determiners of time by way of their observable “signs,” the exegetical link made by 4QOtot implicitly claims the same moment of divine creation as the origin for these culturally unique cycles of time that must be calculated in order to be observed; indeed, 4QOtot *is* that calculation.²⁶

Elior proposes that the 364DC was an integral element in the priestly doctrines related to the vision of the Merkavah. It is based on the Chariot throne of the cherubim, which resided in the First Temple’s holy of holies and was conceived of as the earthly archetype of the heavenly Temple, providing the connection between heaven and earth. After the destruction of the First Temple, it was transformed in the reported visions of the prophet Ezekiel into an image constituting “a multifaceted cosmic reality, unifying place, time, and ritual.”²⁷ Sacred mathematical patterns were involved that echoed throughout

²⁵ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 201. 4QOtot (4Q319) appears to be a compendium containing at least four types of calendrical lists, three of which are similar or parallel to those found in 4Q320-330; the unique section of this text is known as the “Otot” (signs) list. See also Snyder, 353-366. Ben-Dov (whose general position echoes Talmon’s) claims there is a connection between the terminology of the “signs” and the *mishmarot* in the calendrical texts 4QOtot and 4QCalDoc A, and the clearly sectarian *War Scroll* (1QM), taking this to demonstrate that the calendrical texts are therefore sectarian; Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 209. In my view the direction of dependency is a very open question. In particular, the *War Scroll* mentions an anomalous scheme of 26 *mishmarot*, but does not name any of them (see 1QM II 1-2); this seems much more like late sectarian eschatological theory, in contrast to the practicality of the *CDM* texts. In addition, it is agreed 4QOtot was part of a scroll that contained a version of the clearly sectarian *The Rule of the Community* (4Q259), but any other connection between the two texts is uncertain; see Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 196.

²⁶ The functional purpose of the Otot list has been much discussed but is uncertain; while Glessmer and VanderKam think it may imply a practical system of intercalation, Ben-Dov is of the opinion that it is an attempt to synchronize an innovative three-year “sign” cycle of the 364DC with already “existing systems of *mishmarot* and jubilees.” Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 210; VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 84; Glessmer, “The Otot-Texts (4Q319) and the Problem of Intercalations in the Context of the 364-Day Calendar,” ; Glessmer, “Calendars in the Qumran Scrolls,” 262-268.

²⁷ Elior, *The Three Temples: On the Emergence of Jewish Mysticism*, 41.

priestly theology and practice, especially multiples of four, twelve and seven. For example, there were four creatures/faces of the Merkavah,²⁸ the four directions, four winds, four foundations of the world, four seasons (of 91 days each). There were twelve months, twelve signs of the zodiac, twelve tribes of Israel, twelve stones on the vest of the High Priest. Most significantly, there were seven days of creation, seven days in the week defined by the Sabbath, seven days served by each priestly course, festivals observed for seven days, seven branches of the menorah, seven priestly vestments.

The Merkavah tradition, then, established a chronotopic synchronization between the fourfold cycle and the sevenfold cycle, in regard to sacred time and sacred place alike, as a manifestation of the creative process of nature; the eternal, cyclic, cosmic order was preordained in terms of set times and testimonies, a divine pattern maintained by angelic forces. This tradition was preserved by priests and angels, all observing a hallowed solar calendar based on these two cycles, to which ritual and liturgy conformed in both the earthly Temple and supernal Heikhalot [sanctuaries]. Thus, sacred time was reflected on a microcosmic ritual scale by the natural cosmic order and the divine order in the calendar of seasons, weeks, and set times (= festivals), correlated with a cyclic order of liturgy; while sacred place was similarly reflected by various sevenfold, fourfold, and twelvefold ritual representations linking the Earthly Temple with the supernal worlds. All these elements came together in the sacred service as performed on earth by the priests and in the heavens by the angels, all guardians of the sacred heritage.²⁹

The Priestly Liturgy

A brief consideration of two liturgical texts - *Songs of the Sabbath Sacrifice* and the *Psalms Scroll* – can help to flesh out the probable content of priestly practice utilizing the 364DC of the *CDM*. Not only are they examples of the kind of liturgy used by the priests, but also give insight into the importance the priests imputed to their responsibilities in the temple cult to maintain the link between heaven and earth, not only

²⁸ Ezek 1:5-6, 8, 10, 15-18; 10:9-14, 21.

²⁹ Elior, *The Three Temples: On the Emergence of Jewish Mysticism*, 31.

through performing the sacrificial cult in the right place and manner, but also at the right time.

The Songs of the Sabbath Sacrifice³⁰

This meshing of theology, cosmology and cultic practice can be seen in *Songs of the Sabbath Sacrifice*, a text found in multiple copies at Qumran and Massada.³¹ The text is comprised of a collection of songs for each of the first 13 Sabbaths of the 364DC,³² in which the Sabbath worship of the human priesthood is synchronized temporally with the worship of an angelic priesthood in heaven. The texts describe visions of the seven levels of the heavenly sanctuary and the activities of the heavenly angelic priesthood, certainly placing it within the Merkavah tradition.³³ The character of the texts suggest they were

³⁰ The many copies of this text found at Qumran have led to a scholarly consensus that *Songs of the Sabbath Sacrifice* was part of the liturgical practice of the Qumran sectarians; while this is probably true, if the texts predate Qumran or evolved from texts that preceded Qumran, so would the practice. Since the *Songs of the Sabbath Sacrifice* are only for the Sabbath, it is possible that they could be used with a calendar that did not include the lunations marked in the CDM (as advocated by *Jubilees*, but obviously would not preclude their use with the CDM calendar. Newsom, who initially categorized these texts as “sectarian” in her initial publication, now contends that these were probably pre-Qumran texts transmitted at Qumran, which means they probably reflect priestly thought and practice that developed prior to Qumran. See the initial publication in Carol A. Newsom, *Songs of the Sabbath Sacrifice: A Critical Edition*, Harvard Semitic Studies, vol. 27 (Atlanta: Scholars Press, 1985), 1-4, where she claims its sectarian provenance. For her revised opinion, see Newsom, “‘Sectually Explicit’ Literature from Qumran,” especially 179-185. But compare Dimant, who continues to claim they are sectarian and does “not understand the hesitations of C. Newsom in ascribing this work to the Qumran community,” in Dimant, 40 n. 15. Tov argues that the Massada texts were from Qumran; if true this might argue against their widespread use outside of Qumran, but this does not address either why the texts would have then been taken to Massada, nor their original origins of the texts; see Tov, “A Qumran Origin for the Masada Non-Biblical Texts?” See also the discussion in Henry Wolfgang Leathem Rietz, “Collapsing of the Heavens and the Earth” (Dissertation, Princeton Theological Seminary, 2000), 103-112, who finds the evidence concerning their sectarian nature inconclusive.

³¹ 4Q400-4Q407, 11Q17, Mas1k. Newsom, *Songs of the Sabbath Sacrifice: A Critical Edition* and Carol A. Newsom, “Shirot Olat HaShabbat,” in *Qumran Cave 4, VI: Poetical and Liturgical Texts, Part 1*, Discoveries in the Judaean Desert (Oxford: Clarendon Press, 1998); see also Tov, “A Qumran Origin for the Masada Non-Biblical Texts?”

³² While it is clear that the cycle of 13 Sabbaths refers to only for the first quarter of the year, some have speculated that the cycle may have been repeated for each season of the year. See the discussions in Newsom, *Songs of the Sabbath Sacrifice: A Critical Edition*, 5-21; James R. Davila, *Liturgical Works*, ed. Martin G. Abegg Jr. and Peter W. Flint, Eerdmans Commentaries on the Dead Sea Scrolls (Grand Rapids, Mich.: Eerdmans, 2000), 88-90.

used as a means to bring the users of this text into contact with the divine realm,³⁴ and that the Sabbath – especially the time of the sacrifice – was considered a particular auspicious time for this activity.³⁵

Snyder has also pointed out that one song in particular “brings together Enoch’s astral terminology and Sabbath Sacrifice’s temple liturgy. The angels passing through the heavenly temple are the solar bodies entering and leaving by the eastern and western gates, rising to perform their daily function and then setting upon its completion”.³⁶

8. Whenever the gods of knowledge enter by the portals of glory, and whenever the holy angels go out to their dominion,
9. The portals of entrance and the gates of exit make known the glory of the King, blessing and praising all the spirits of
10. God at (their) going out and at (their) coming in by the ga[t]es of holiness. There is none among them who omits a law; and never against the commands
11. Of the King do they set themselves. They do not run from the way or tarry away from His territory (4Q405 23 I, 8-11).³⁷

³³ Eilior, *The Three Temples: On the Emergence of Jewish Mysticism*, 256.

³⁴ See the recent discussion in Rietz, 112-132. Rietz’s focus is on the theology and practice of the Qumran community, but to the extent that texts found at Qumran pre-date Qumran, they could reflect earlier priestly practice, and in any case are likely descendents of earlier trends.

³⁵ Newsom, *Songs of the Sabbath Sacrifice: A Critical Edition*, 21; see also Davila, 90-93.

³⁶ Snyder, 347.

³⁷ Newsom, “Shirot Olat HaShabbat,” 356-357.

The Psalms Scroll³⁸

We can see a similar kind of liturgical praxis reflected in the *Psalms Scroll* (11QPs^a), which contains a variety of psalms and other texts, including many from the biblical book of Psalms, as well as otherwise unknown compositions. Like *Songs of the Sabbath Sacrifice* there is an identification with the 364DC, but in this case it is in an explicit passage found towards the end of this long scroll, in which the composition is attributed to King David (also the purported author of the canonical Psalms), but specifying the author's adherence to the 364DC:

2. And David, son of Jesse, was wise, and a light like the light of the sun, and learned
3. and discerning, and perfect in all his paths before God and men. And
4. YHWH gave him a discerning and enlightened spirit. And he wrote psalms:
5. three thousand six hundred; and songs to be sung before the altar over the perpetual
6. offering of every day, for all the days of the year: three hundred
7. and sixty-four; and for the Sabbath offerings: fifty-two songs; and for the offerings of the first days of
8. the months, and for all the days of the festivals, and for the Day of Atonement: thirty songs.
9. And all the songs which he spoke were four hundred and forty-six. And songs
10. to perform over the possessed: four. The total was four thousand and fifty. (11QPSa XXVII, 2-10)³⁹

³⁸ As with many DSS, there is debate concerning whether this is a "sectarian" text. Flint contends it is not, arguing the *Psalms Scroll* "attests to a widespread type of Judaism which may have included the Sadducees"; Peter W. Flint, *The Dead Sea Psalms Scrolls and the Book of Psalms*, ed. F. García Martínez and A. S. Van der Woude, *Studies on the Texts of the Desert of Judah*, vol. XVII (New York: Brill, 1997), 199-200. Talmon advocates a sectarian interpretation; Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 3-4, 15; Shemaryahu Talmon, "The Covenanters' Annularium According to King David's Compositions in the Psalms Scroll from Cave 11 (11QPs^a XXVII)" [Hebrew], in *Yovel le-heker megilot Yam ha-melah (Fifty Years of Dead Sea Scrolls Research)*, ed. Gershon Brin and Billah Nitsan (Jerusalem: Yad Yitshak Ben-Tsevi, 2001). Snyder also claims that the "thirty songs include one for each supplemental summer festival," although he doesn't specify a list; Snyder, 349. Flint references Goshen-Gottstein and Haran as adherents of this school as well; see Flint, 209. A large part of the debate depends on what counts as the thirty "days of the festivals." VanderKam notes that the text is ambiguous; James C. VanderKam, "Studies on 'David's Compositions' (11QPs^a 27:2-11)," *ErIsr* 26 (1999): 218*. This ambiguity has allowed for debate among modern scholars, and possibly for multiple interpretations by ancient readers as well, for the festivals can either be strictly Pentateuchal or include the non-Pentateuchal festivals of the *Temple Scroll*, depending on how you count.

³⁹ Translation from Florentino García Martínez and Eibert J. C. Tigchelaar, *The Dead Sea Scrolls Study Edition*, 2 vols. (Leiden: E. J. Brill, 2000), 1179. Compare J. A. Sanders, ed., *The Psalms Scroll of Qumran Cave 11*, *Discoveries in the Judaean Desert of Jordan*, vol. IV (Oxford: Clarendon Press, 1965), 91-93.

Thus, there are ostensibly songs for many events, including the daily and additional offerings at the altar; needless to say, but thousands of psalms have not come down to us, if they ever existed. Nevertheless, Flint contends that it “originally contained 52 Psalms plus four pieces that serve to assert Davidic authorship of the entire document.”⁴⁰ Thus, it seems quite likely that the Psalms were used in the Temple liturgy, at least on the 52 Sabbaths, and possibly on other holidays as well.

The Socio-Political Aspect: Projecting a Priestly Perspective About Connecting the Heavens and the Earth

Synchronizing worship of the priests in the Jerusalem temple with the angels in the heavenly Temple – as in *Songs of the Sabbath Sacrifice* – constructs the Temple as the focus of human contact with the divine realm, and means that the priests themselves join with the angels when proper worship is conducted.⁴¹ Put simply, it was the role, task, privilege and responsibility of the temple priests to connect heaven and earth. To the extent this purported heavenly connection was accepted by the populace as a whole, it would certainly be a powerful tool enforcing the authority and power of the priesthood in general. This is a perfect example of Durkheim’s comment concerning the objectification

⁴⁰ Flint, 192.

⁴¹ This observation is borrowed from Reitz, who observes that in the sectarian *Rule of the Community* (1QS), “By synchronizing its worship with the angels, the Community becomes the locus for the collapsing of the heavens and the earth, the mingling of the human and the divine”; Reitz, 239. It seems to me that, to the degree the DSS texts discussed above are at their root pre-Qumranian, the importance attached to correct calendrical practice in order to achieve its social and spiritual goals would be a tradition of the priesthood inherited, preserved, and possibly evolved at Qumran, but was not invented there. As we have seen, Elior suggests a similar perspective about Zadokite priestly doctrine and the priests’ role in connecting heaven and earth, attributing it to the Merkavah tradition. The work of Eliade provides ample examples of how this concern with sacred time and sacred space was common in the Near East of this period (even if one must be cautious in universalizing his theories for other times and places); see for example Eliade, *The Sacred and the Profane: The Nature of Religion*. See also discussion of these doctrines in the context of the ancient Near East in Elior, *The Three Temples: On the Emergence of Jewish Mysticism*, 37.

of social time constructs: “If these critical instants [of collective renewal] are generally attached to some material phenomenon, such as the regular recurrence of such or such a star or the alternation of the seasons, it is because objective signs are necessary to make this essentially social organization intelligible to all.”⁴²

The conflation of natural and cultural temporal rhythms – i.e., times observable by *all* humans as indicated by the sun, moon and stars plus times that can exist *only* if properly implemented by the priests – by claiming their simultaneous creation by God has a number of important implications. The divine authorization of the seven-fold cycles – Sabbath priestly courses, *šemitah* and jubilee – is back-dated to the creation of the universe, rather than to unique commandments to the Israelites, thereby raising the status of these calculated cultural/cultic cycles to the same level of importance as the natural cycles of the heavenly bodies. Indeed, asserting their simultaneous divinely ordained origins at creation blurs the distinction between cultural cycles and natural cycles. On the one hand, the effect is to “naturalize” the calculated cultural cycles, while on the other hand the motions of the heavenly bodies are not the exclusive determinants of the “signs” for purposes of the religious cult, because the calculable cultic cycles have their origin at the same moment. The “sign-אות” that marks the beginning of the calendar and recurs every three years is an echo, reminder, and validation of that initial moment of harmony between cosmos and cult, and the divine authorization of their joint synchrony. The result is that only the priests – whose priestly courses mark, maintain, and observe the Sabbath – can mark correct time, in all its dimensions.

⁴² Durkheim, 491.

This vision of the centrality and importance of the Temple cult seems to have been widely accepted during the Second Temple period; even differences amongst various “sects” concerning the Temple did not involve rejection of the Temple or the institution of the priesthood, but criticism of the conduct by priests in power who performed what was construed as incorrect practices.⁴³ That is, even the critics’ focus was on *correct* worship, because the general consensus was that proper Temple practice mattered.

Examining the way they and the nation understood the basis of their separate status can elucidate the self-image and world-view of the priests. Eilberg-Schwartz has suggested that their view of social classification and cosmological creation were related. As part of a hereditary caste the status of a priest was “fixed and immutable” because it was “conferred by God.”⁴⁴ This was similarly reflected in the priestly vision of “the world as divided into a set of fixed and unalterable relationships. In their conception of reality, everything has a clearly defined place that God had determined at creation itself.”⁴⁵

The *CDM* calendar was a practical manifestation of this self-understanding, wherein the unchanging rhythm of the cosmos moved in lock step with the priestly courses, both of which were organized by the sacred pattern of the Sabbath. As Eilberg-Schwartz comments, “This eternal order was maintained by the priestly courses, each serving in

⁴³ Much of the Qumran sectarian literature shows this, such as the *Damascus Document* or *Peshar Habakkuk*; some rabbinical literature also shows opposition to certain practices of their opponents, but is rarely directly critical of the Temple or priesthood. See the discussion in E. P. Sanders, *Judaism: Practice & Belief, 63 BCE- 66CE* (Philadelphia: Trinity Press International, 1992), 51-54, 393-398.

⁴⁴ Howard Eilberg-Schwartz, “Creation and Classification in Judaism: From Priestly to Rabbinic Conceptions,” *History of Religions* 26, no. 4 (1987): 379.

⁴⁵ *Ibid.*, 379.

rotation for one particular week.”⁴⁶ On the cosmological level, the primordial chaos (see Gen 1:2) was overcome by God, whose temporal architecture of the cosmos manifests the ordered and predictable movements of the heavenly lights. On the personal level, the perpetual cycle of weekly priestly courses in the Temple would have manifested this reality in the lives of individual priests, who derived not only their social standing, but all or part of their livelihood from their Temple service. On the societal level, this weekly praxis reinforces the key role of the priests in maintaining cosmic harmony, both to themselves and others, thereby enhancing their status.

Wild Time and the Crisis of the *CDM* Calendar

While the *AB* ostensibly *described* the cosmos, the central role of the priestly courses in the *CDM* calendar meant that the priests role was now essential to *maintaining* the calendar and all it meant, namely the sacred rhythms of the cosmos and the continuing life-process of the world.

As discussed in the prior chapter, the *AB* was a step away from the wild time of the observational lunisolar calendar towards the tame time of a synchronous, calculable cosmos by providing an ostensibly accurate portrayal of how the cycles of sun, moon, and stars all meshed through symmetrical, mathematical cycles. With the *CDM* calendar the seven-day Sabbath cycle was inserted into this system, inscribing the priestly courses as the fundamental rhythm of the cosmos. While the *AB* ephemeris portrays its cycles as the true mathematics of the natural, *observable* cosmos, the Sabbath cycle of the *CDM* calendar (and the various sevenfold cycles that were modeled on it, including festivals, sabbatical years and jubilees) is a sacred pattern revealed to the priests and not

⁴⁶ Elior, *The Three Temples: On the Emergence of Jewish Mysticism*, 106.

discernable in nature, but is nevertheless construed as a “divine precondition for the eternal cycles of nature.”⁴⁷ The *AB*’s symmetrical division of the 364-day year into exactly 4 quarters of 91 days was surpassed in importance by the symmetry of dividing the year into 52 weeks per year, subdividing into 4 quarters of 13 weeks. In contrast to the increased importance of the Sabbath, the stature of the lunation – which had determined the patterns of the *AB* ephemeris – was diminished, but not eliminated.

With the insertion of the Sabbath into the root cycles of the cosmos the *CDM* calendar is thoroughly linked to the artificial, tame time of the Sabbath. The Sabbath is the heart of this system, in both theory and practice. While from a theological perspective the priests’ aligned their liturgy with the rhythms of the cosmos (as they understood them), this linkage also worked the other way: from a socio-political perspective the rhythms of the cosmos were aligned in the service of the priesthood. And because the Sabbath is not modeled on natural time but on divine time, it can never be “out of synch” with nature. Based on its assumption that its concordant cycles are an accurate representation of the cosmos, the *CDM* calendar portrays a cosmic synchrony of tame time that integrates both observable natural time and the revealed time of the Sabbath into a temporal map that connects the heavens and the earth.

The close integration of cultic practice with theology and cosmology leads me to conclude that an institutionalized practice based on the 364DC would have been fairly resistant to change, since it embodied their whole reality paradigm, blending a mystical vision of the heavens with a Temple calendar and liturgy linking them to the angels serving in the heavenly Temple. Because it was based on revelation it could never “go

⁴⁷ Ibid., 83.

wrong”; this put them in a theological straightjacket. Therefore, despite the difficulties of aligning this calendar with the true motions of the heavens – which would probably turn out to be at variance with its scheme sooner or later – one can nevertheless understand the priestly motivations for maintaining a form of the 364DC; it was both an orthodoxy and orthopraxis. The synergy between the beautifully synchronized heavenly and priestly cycles would possess a momentum hard to break without a crisis that was at once social, theological, and cosmological. And, as is well documented, calendars are notoriously resistant to change and difficult to reform.⁴⁸

The difficulty, as is the fate of many too perfect systems, was that the theory behind the *CDM* calendar did not sufficiently match observed reality. While it was better than the 360-day calendar, it was not faultless. While both the *AB* and the *CDM* texts take into account the lunation in the framework of a 364-day year but do not mention any intercalary methodology, this silence does not preclude the likelihood of the use of some intercalary system – just as in the case of the Bible, which also makes no mention of any intercalary methodology.

While various intercalary systems for the 364DC have been proposed – and some system probably was followed – the best systems would have floundered at some point. Wise suggests a scheme that would more closely match the lunation for about 90 years, but would eventually diverge from observed reality.⁴⁹ Under Gardner’s hypothesis, which seems the most promising intercalary scheme yet proposed, an extra week would be added every sixth year, plus an additional week intercalated every 84th year. In

⁴⁸ See the discussion in the “Introduction”; see also Richards 117-123.

⁴⁹ Wise, “Second Thoughts on *duq* and the Qumran Synchronistic Calendars,” 109.

particular, it would mean that for many of these 84 years the lunation would *not* match the simplified cycles of the new and full moon indicated in the *CDM* texts, even though it would re-synch at the end of the cycle.⁵⁰ This might work in theory, but the implementation of this over the long term would have been a challenge.⁵¹

While some scholars interpret certain passages of the *AB* to mean there was an awareness of the flaws in its calendar,⁵² there is no awareness of this displayed in the *CDM* texts. Nevertheless, we know there was a calendar crisis at some point in the early second century BCE because of the strident anti-lunar polemics found in *Jubilees*. While it has been commonplace to interpret these polemics as directed against the use of an observational lunisolar calendar in the Second Temple, they are also an implicit critique of the *CDM* and the *AB*, both of which include the lunation as an integral element. The sacred sabbatarian temporal rhythms ostensibly governing the universe were more important than the observable motions of the heavenly lights themselves. In this sense, in the next chapter we will see that *Jubilees* is a testimony (to borrow one of its favorite terms) to what happens when the “map” becomes more important than the “territory.”

⁵⁰ Gardner, 277.

⁵¹ Gardner admits the challenge of implementation; see *Ibid.*, 305.

⁵² See previous Chapter.

CHAPTER 5 THE JUBILEAN FAMILY

The Jubilean Family: Eliminating the Lunation

The characteristic of the texts grouped under the heading “Jubilean family” is that they eliminate any calendrical use of the lunation at the same time that they strongly advocate the use of a 364DC. The main texts to be considered are *Jubilees*, which contains a strong anti-lunar polemic, and the *Temple Scroll*, which provides a complete annual holiday cycle that adds a number of non-Pentateuchal holidays at the same time that it ignores the lunation. Both of these texts seem to have been written prior to the formation of the Qumran sect, although they seem to have carried great authority at Qumran. While both texts contain a great deal of non-calendrical material, my focus will be on the calendrical elements and what this tells us about their construction of time as reflected in their treatment of the Sabbath and the lunation.

The Book of Jubilees: *Description of the Text*

The book of *Jubilees* is an edited retelling of Genesis 1 to Exodus 12, with significant additions and deletions. Based on the Qumran finds, it is certain that it was originally written in Hebrew. Most scholars date it to sometime between 170 and 150 B.C.E., the period preceding and during the Hasmonean (Maccabean) revolt against the Seleucid empire, although some are convinced that it was written about 125 B.C.E., in the middle Hasmonean period.¹ Composed in the genre of “rewritten Bibles,” *Jubilees*

¹ Nickelsburg favors the date 168 B.C.E.; see George W.E. Nickelsburg, *Jewish Literature Between the Bible and the Mishnah* (Philadelphia: Fortress Press, 1981), 78-79. VanderKam prefers 160-150 B.C.E.; see James C. VanderKam, ed., *The Book of Jubilees*, Corpus Scriptorum Christianorum Orientalium Vol.

recapitulates large portions of Genesis and Exodus with numerous additions, subtractions and rearrangements. But the genre also shares with the *AB* the form of an angelic revelation to a biblical figure, in this case dictated to Moses by an angel (*Jub.* 1:27),² who read it from “heavenly tablets.”³

The general scholarly consensus today is that it is a unified book written by one author.⁴ He was probably a priest whose purpose was to counter the assimilationist tendencies of Hellenizing Jews, including groups among the priests, and that its emphasis reflects a broad priestly orientation.⁵ This program for cultural reform reflects a position of “restorative reformers, struggling against adaptation and assimilation” by means of extending priestly purity regulations to the entire community.⁶ While *Jubilees* is an extremely polemical work, both explicitly and implicitly, it is generally agreed that it is not a sectarian work like some of the DSS texts because it does not express awareness of

511/Scriptores Aethiopici Vol. 88 (Lovanii: Peeters, 1989) and VanderKam, *The Book of Jubilees*, 21. Wintermute suggests the range of 161-140 B.C.E.; see O. S. Wintermute, “Jubilees,” in *OTP*, ed. James H. Charlesworth, The Anchor Bible Reference Library (New York: Doubleday, 1985), 43-44. For the later dating to 125 B.C.E., see Doron Mendels, *The Rise and Fall of Jewish Nationalism: Jewish and Christian Ethnicity in Ancient Palestine* (New York: Doubleday, 1992), 44.

² VanderKam, ed., *The Book of Jubilees*. Except where noted, all quotes and references to *Jubilees* are from this translation. Although there has long been scholarly debate about whether the angel or Moses was the scribe, the Qumran manuscripts confirm the fact that Moses was the putative scribe for the dictation of the angel. See James C. VanderKam and Jozef T. Milik, “Jubilees,” in *Discoveries in the Judaean Desert XIII: Qumran Cave 4, VIII Parabiblical Texts Part 1*, Discoveries in the Judaean Desert (Oxford: Clarendon Press, 1994), 12.

³ For a recent discussion of the meaning of this term, see Florentino García Martínez, “The Heavenly Tablets in the Book of Jubilees,” in *Studies in the Book of Jubilees*, ed. Matthias Albani, Jorg Frey, and Armin Lange, *Texte und Studien zum antiken Judentum 65* (Tubingen: Mohr Siebeck, 1997).

⁴ VanderKam, *The Book of Jubilees*, 18.

⁵ Today’s consensus is that the author of *Jubilees* was a priest, in contrast to Charles’ earlier position that *Jubilees* was written by a Pharisee; see James C. VanderKam, “The Origins and Purposes of the Book of Jubilees,” in *Studies in the Book of Jubilees*, ed. Matthias Albani, Jorg Frey, and Armin Lange, *Texte und Studien zum antiken Judentum 65* (Tubingen: Mohr Siebeck, 1997), 9; Wintermute, 48; Schiffman, 188.

⁶ John C. Endres, *Biblical Interpretation In the Book of Jubilees*, The Catholic Biblical Quarterly Monograph Series; 18 (Washington, D.C.: The Catholic Biblical Association of America, 1987), 248.

a schism between various groups.⁷ Its earlier composition, as well as its later importance to the authors of some of the sectarian texts found at Qumran, is demonstrated by the many copies of *Jubilees* found among the DSS, as well as an explicit reference to it in the Damascus Document (*CD* 16:3-4).⁸ As VanderKam observes, “*Jubilees* was almost certainly one of those older authoritative works inherited by the Qumran community.”⁹

The Sabbath is of pre-eminent importance in *Jubilees*, reflecting a priestly preoccupation with Sabbath regulations and observance. Indeed, the Sabbath is of far greater importance in *Jubilees* than in the Bible, and in *Jubilees* the use of various patterns of sevens reflect, extend and construct a vision where the Sabbath is the underlying architectural pattern of God’s creation of space as well as time. This is reflected in *Jubilees*’ direct and indirect discussion of the patterns of the universe; the creation, purpose, and behavior of Israel; and the chronology of Israel and the world. For *Jubilees*, the Sabbath is the “first law” (*Jub.* 2:24), given to the angels at creation and later revealed to Moses at Sinai,¹⁰ not merely the conclusion of the first week of creation as in Gen 1-2:4a.

⁷ VanderKam, *The Book of Jubilees*. 21.

⁸ The original name of *Jubilees* is given at the beginning of the text: “These are the words regarding the divisions of the times of the law and of the testimony, of the events of the years, of the weeks of their jubilees throughout all the years of eternity.” This is almost certainly referenced by *CD* XVI, 3-4: “The book of the divisions of the periods according to their jubilees and their weeks.” *CD* III, 13-15 also uses language that seems adapted from *Jubilees* to a sectarian purpose: “God established his covenant with Israel for ever, revealing to them hidden matters in which all Israel had gone astray: his holy Sabbaths and his glorious feasts” (García Martínez and Tigchelaar, *The Dead Sea Scrolls Study Edition*, 555). The sectarian adaptation is the reference to “hidden matters,” i.e., the correct calendar is now only known to the initiates, while for *Jubilees* this knowledge had been available to everyone, although perhaps forgotten (*Jub.* 6:35).

⁹ VanderKam, “The Origins and Purposes of the Book of Jubilees,” 3.

¹⁰ As Doering points out, Sabbath observance even supersedes the commandment of Gen. 1:28 to procreate the first commandment spoken to humans in the Bible, a commandment that is *omitted* from *Jubilees* account of the sixth day of creation in *Jub.* 2:14. Lutz Doering, “The Concept of the Sabbath in the Book of

The use of sevens as a model for space is reflected in the pattern of things created: the angel tells us that God made “seven great works on the first day” (*Jub.* 2:3).¹¹ By the end of the sixth day, this creation had taken place in seven locations: “He finished all his

Jubilees,” in *Studies in the Book of Jubilees*, ed. Matthias Albani, Jorg Frey, and Armin Lange, *Texte und Studien zum antiken Judentum* 65 (Tubingen: Mohr Siebeck, 1997), 187 n. 39.

¹¹ There are a number of text-critical issues regarding exactly what comprises the “seven great works” listed in *Jub.* 2:2 The following table compares the Ethiopic translations of VanderKam, ed., *The Book of Jubilees*, Wintermute, and Charles, ed., *The Book of Jubilees or The Little Genesis* with 4Q216 from Qumran, (in VanderKam and Milik, “Jubilees”):

VanderKam	Wintermute	Charles	4Q216 [et-ገጸ]
Heaven	Heaven	Heavens	Heaven
Earth	Earth	Earth	Earth
Waters	Waters	Waters	Water
Spirits who serve	Ministering spirits	Spirits which serve	Spirits who serve
Depths	Depths	Abysses	Depths
Darkness and light	Darkness (evening and night)	Darkness (eventide and night)	
Dawn and evening	Light (dawn and daylight)	Light (dawn and day)	

Comparison of *Jubilees*’ “Seven Great Works”

As can be seen, Wintermute follows Charles’ translation, while VanderKam gives an alternative. The issue at stake here is what are the two pairs of oppositions: darkness and light, dawn and evening – which would emphasize a difference between a pair of concepts and a pair of astronomical phenomena – or darkness (including evening and night) vs. light (including dawn and daylight) – which would associate the physical manifestations with the concepts.

One would hope that the one Qumran witness to this passage would help, but it seems only to blur the issue. But 4Q216 (reconstructed by VanderKam) only has five appearances of *et-ገጸ*, which seems to designate the first five “works.” As reconstructed, the rest of the text does not include *et-ገጸ* and reads differently than either of the these earlier translations that did not take into account 4Q216:

End of 4Q216 V, 9: the dept[hs,]
 Beginning of 4Q216 V, 10: darkness, dawn, [light, and evening which he prepared through] his [know]ledge.

The translation is constrained by the extent text that reads “darkness, dawn” and doesn’t allow for an [et] between these words. But a different reconstruction of the text may be possible and deserves further attention.

works on the sixth day: everything in *heaven* [day 1], on the *earth* [day 1], in the *seas* [day 3], in the *depths* [day 1], in the *light* [day 1], in the *darkness* [day 1], and in *every (place)* [day 1].”¹² The number seven appears again in *Jubilees*’ version of the flood: “The Lord opened the *seven* floodgates of heaven and the openings of the sources of the great deep – there being seven openings in number” (*Jub.* 5:24, emphasis added).

Jubilees strongly supports a 364DC made up of 12 schematic months in the same sequence of 30, 30 and 31 days in the *AB* and *CDM* calendars (*Jub.* 6:30-32). The major difference is that the lunar cycle is eliminated along with the related triennial cycle of sign-אִוֹת years; *Jubilees* rejects the lunation as a “corrupt” (*Jub.* 6:36) time-keeping device while nominating “the sun as a great sign” (*Jub.* 2:9) determining the course of the calendar.

The annual holidays in *Jubilees* are almost totally consistent with those in the *CDM* calendar. Although *Jubilees* re-writes Genesis and part of Exodus, this re-writing includes the antedating of numerous holidays that were only revealed later in the Pentateuchal chronology. This includes the Festivals of Weeks (celebrated by Noah, *Jub.* 6:17-22), Passover and Booths (celebrated by Abraham, *Jub.* 18:18-19; 16:20-31), Atonement (celebrated by Jacob, *Jub.* 34:17-19); which are all consistent with the *CDM* calendar. *Jubilees* mentions all the annual holidays marked in the *CDM* calendar except the Second Passover (which is only a make-up holiday for those who couldn’t observe the first one) and Waving the Sheaf, which can be backdated from Weeks by 50 days.

Similar to the *AB*, but unlike the *CDM* calendar (which marks the first days of all months but indicates nothing unique about the beginning of the quarters of the year), the

¹² *Jub.* 2:16, emphasis added and day created added.

cardinal days of the year are marked. While in the *AB* these were the last days of each 91-day season, in *Jubilees* the “days of the seasons” which mark the “four divisions of the year” are deferred by one day and take place on the first day of each season, i.e., the first day of months 1, 4, 7, 10 (*Jub.* 6:23-28).

The sabbatarian temporal pattern of the 364DC is greatly expanded in *Jubilees* into the area of chronology; this is the distinctive feature of *Jubilees*, which groups years into year-weeks (seven-year groups which *Jubilees* calls a “week-שבוע”) ¹³ and jubilees (seven weeks of years, or forty-nine years). ¹⁴ In contrast to the ambiguity of biblical dates, *Jubilees* is distinguished by its meticulous attention to chronological detail. As VanderKam notes, the “first hints that the author considered the correct reckoning of times to be extremely important – a fundamental part of the covenantal relationship – already surface in the first chapter which serves as a homiletic introduction to the rewritten biblical stories that follow.” ¹⁵ In *Jub.* 1:10 he foretells the Israelites abandonment of the festivals and Sabbaths, and in *Jub.* 1:14 he predicts the mistaken reckoning of the months, Sabbaths, festivals, and jubilees. Nevertheless, God promises to Moses that the Israelites will return to the commandments (*Jub.* 1:23-24). As Jaubert notes, “In the mentality which presides over the drawing up of these accounts the history of the holy people is rendered sacred throughout. It is adapted to *the rhythm of a liturgical cycle.*” ¹⁶ This “liturgical cycle” is the Sabbaths and holidays of *Jubilees*’ 364DC.

¹³ For example 4Q219 II, 35; see VanderKam and Milik, “Jubilees,” 47.

¹⁴ This chronological focus is the source for the English name given this text.

¹⁵ VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 28.

¹⁶ Jaubert, 30.

The Temple Scroll (11Q19): Description of the Text

The Temple Scroll is the longest of all the surviving DSS and presents itself as taking up where *Jubilees* left off, that is, as a revelation to Moses that recapitulates parts of Exodus and later parts of the Pentateuch.¹⁷ Opinions about the dating of the text vary from fourth-second century B.C.E.¹⁸ There is little that marks the text as sectarian as it lacks any sectarian language or explicit polemics in the text indicating a conflict between groups,¹⁹ something that is even apparent in the pre-sectarian *Jubilees*. Much of the text is devoted to a description of an idealized Jerusalem Temple, both the physical structure and the activities that should take place there. The scholarly consensus is that *The Temple Scroll* reflects a vision of either how the Temple should have been built in the past or will be built in the future, but was preserved by the Qumran sectarians because it was a vision of what the future Temple would be after they regained power in Jerusalem.²⁰ Some scholars have suggested that the ideas of this text influenced the major temple

¹⁷ Although in *Jubilees* the revelation is through an angel, in the *Temple Scroll* the revelation is directly from God. See James C. VanderKam, "The Temple Scroll and the Book of Jubilees," in *Temple Scroll Studies*, ed. George J. Brooke (Sheffield: JSOT Press, 1989), 232.

¹⁸ Yigal Yadin, who published the text, dated the composition of the scroll to the sectarian period at Qumran during the period of the Hasmonean ruler John Hyrcanus (mid to late second century B.C.E.), which would place its composition after *Jubilees*, although he cautions that certain sections and traditions of the scroll may "have originated in an earlier period"; Yigael Yadin, *The Temple Scroll*, 3 vols. (Jerusalem: Israel Exploration Society, 1983), I, 390. Jacob Milgrom shifts this emphasis, suggesting that while the final editing of the text we have took place at Qumran, it was based on older documents; George J. Brooke, ed., *Temple Scroll Studies* (Sheffield: JSOT Press, 1989), 14-15. Stegemann argues for dating it to the early fourth century B.C.E., during the Persian period, because it is "free from Hellenistic influence"; Hartmut Stegemann, "The Literary Composition of the Temple Scroll and its Status at Qumran," in *Temple Scroll Studies*, ed. George J. Brooke (Sheffield: JSOT Press, 1989), 126-131 and Stegemann, *The Library of Qumran*, 96. Johann Maier would date it to the late Persian or early Hellenistic period (prior to the second century B.C.E.) based on both literary and architectural elements; Johann Maier, "The Architectural History of the Temple in Jerusalem in Light of the Temple Scroll," in *Temple Scroll Studies*, ed. George J. Brooke, *Journal for the Study of the Pseudepigrapha. Supplement Series 7* (Sheffield, England: JSOT Press, 1989), 23.

¹⁹ Dimant, 31, 34; Stegemann, "The Literary Composition of the Temple Scroll and its Status at Qumran," 131.

²⁰ VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 65.

enlargement and rebuilding that took place under King Herod,²¹ and that the renovated Temple may have been designed to serve as a solar observatory for establishing “the four divisions of the year” (*Jub.* 6:23).²² Clearly, its contents reflect a priestly concern with correct ritual practice, and it seems to be in the “same legal and exegetical tradition”²³ as *Jubilees*.

A substantial portion of the text is devoted to a description of the temple cult, including the holidays and their associated sacrifices; the most distinctive element is the addition of a number of holidays not explicitly mentioned in the Pentateuch (which are italicized below). Stegemann appropriately notes, “This ‘festival calendar’ is not outlawing the parallel biblical evidence, but mainly completing it.”²⁴ Not all the dates are clear from the text, but those missing can be confidently inferred. These observances include:²⁵

1. Daily offerings (XIII, 10-17)
2. The weekly Sabbath (XIII, 17-XIV:7)
3. The first day of the (schematic) month (XIV, 7-8)
4. Annual holidays:
 - a. Seven days of consecration for the ordination of priests (XV, 3-XVII:4), some time between 1/1 (the new year) and 1/14 (Passover).
 - b. Passover (XVII, 6-9) is dated to 1/14 (as in the Pentateuch).

²¹ See for example, Mathias Delcor, “Is the Temple Scroll a Source of the Herodian Temple?,” in *Temple Scroll Studies*, ed. George J. Brooke, Journal for the Study of the Pseudepigrapha. Supplement Series 7 (Sheffield, England: JSOT Press, 1989); Maier.

²² Margaret Barker, “The Temple Measurements and the Solar Calendar,” in *Temple Scroll Studies*, ed. George J. Brooke, Journal for the Study of the Pseudepigrapha. Supplement Series 7 (Sheffield, England: JSOT Press, 1989).

²³ VanderKam, “The Temple Scroll and the Book of Jubilees,” 232.

²⁴ Stegemann, “The Literary Composition of the Temple Scroll and its Status at Qumran,” 137.

²⁵ The column references in this section are all to 11QT^a (11Q19). For further discussion and dating see Yadin, 89-136; VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 65-70.

- c. Second Passover is not mentioned, but is hypothesized to have been part of a lost section.²⁶
- d. Festival of Unleavened Bread (XVII, 10-16) lasting seven days beginning on 1/15 (as in the Pentateuch).
- e. Waving the sheaf of barley (XVIII, 2-10) on 1/26, which may have counted as the first fruits of barley. This festival is commanded in the Pentateuch, although the date is ambiguous and it was not described as a “first fruits” festival.²⁷
- f. The Festival of Weeks (XVIII, 10-XIX, 9) on 3/15, which also counted as the first-fruits of wheat. Because this takes place after seven weeks of waving the sheaf, the date of this biblically commanded festival is also ambiguous.
- g. First fruits of new wine (XIX, 11-XXI, 10) on 5/3. The pattern of this non-Pentateuchal festival was based on the 50-day pattern between Waving the Omer and Weeks.
- h. First fruits of new oil (XXI, 2-XXIII, 02), on 6/22. This non-Pentateuchal holiday is also patterned on the Festival of Weeks, as a first fruits holiday 50 days after the prior one for new wine.
- i. Festival of wood offering (XXI, 03-XXV, 01), This non-Pentateuchal six day holiday probably fell between 6/23-6/29 (excluding the Sabbath). On each day, two of the twelve tribes bring an oil offering.
- j. Day of Remembrance (XXV, 3-10), on 7/1. As in the Pentateuch, this was to be marked by the blowing of trumpets.
- k. The Day of Atonement (XXV, 10- XXVII, 10) on 7/10, as in the Pentateuch.
- l. The Festival of Booths (XXVII, 10-XXIX, 1), an eight-day observance beginning on 7/15. As in the Pentateuch, it appears to call the eighth day Atzeret, although it is not clear if this was considered part of the Booths or an additional Festival.²⁸

The Relation of the Temple Scroll and Jubilees

Although there are differences in opinion about which was written first, the general consensus is that there is a close and complimentary connection between the *Temple Scroll* and *Jubilees*.²⁹ It is clear that *The Temple Scroll* festival dating follows the 364DC,

²⁶ Yadin, 99; VanderKam, “The Temple Scroll and the Book of Jubilees,” 217.

²⁷ Yadin, 102-103.

²⁸ *Ibid.*, 135.

²⁹ See the review of various positions in VanderKam, “The Temple Scroll and the Book of Jubilees,” 212-213. Wacholder also argues that there was a close connection between the texts, at least for the Qumran sectarians: “If the traditional Pentateuch was canonical, *Jubilees* and the *Temple Scroll* were super-

and that its lack of any lunar observance related to the lunation places it in close association with the calendar of *Jubilees*. The contrast between the two is that the anti-lunarism is very overt in *Jubilees* while in the *Temple Scroll* the lunation is simply ignored.

The most notable calendrical aspect of the *Temple Scroll* is its addition of otherwise unknown holidays: the ordination of priests, new wine, new oil, and wood. While these additional festivals are not clearly delineated in the biblical texts, they could have reasonably been arrived at by exegesis, for these items were key agricultural products and tithed for use in Temple ritual.³⁰ The timing of these additional holidays is strongly sabbatarian: the Priest's Ordination is one week long. Wine takes place on the first day of the week, seven weeks after the festival of Weeks; similarly, Oil is observed on the first day of the week, seven weeks after Wine. The six-day Wood offering begins the day after Wine and concludes on the Sunday one week after Wine (it is presumed that the six days do not include the intervening Sabbath).³¹

Although these observances are not directly mentioned in *Jubilees*, there may be an allusion to these non-Pentateuchal festivals in *Jub.* 32:12: "For the seed is to be eaten in its year until the time for harvesting the seed of the year; the wine (will be drunk) until the time for wine; and the olive (will be used) until the proper time of its season." Both

canonical," Ben Zion Wacholder, "Jubilees as the Super Canon," in *Legal Texts and Legal Issues*, ed. Moshe Bernstein, Florentio García Martínez, and John Kampen (New York: Brill, 1997), 211.

³⁰ VanderKam reviews the likely exegesis in VanderKam, "The Temple Scroll and the Book of Jubilees," 222-225.

³¹ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 166.

Yadin and VanderKam point to the similarity between this passage and 11QT IV, 3-12,³² which would at least indicate a common source and tradition.

There are a few poorly preserved DSS calendar texts that can be categorized as belonging to the “Jubilean family” because they do not display any lunar element and do display the special festivals of the *Temple Scroll*. These include:

- 4Q325 (4QCalendrical Document/Mishmarot D) is a fragment coordinating the annual holidays with the months and priestly courses; since it refers to the Wood offering, it may also have included other holidays known from The Temple Scroll.³³
- 4Q326 is a list of Sabbaths not coordinated with the priestly courses, but possibly includes a reference to the Priests investiture mentioned in the Temple Scroll.³⁴
- 4Q394 1-2 does not mention the priestly courses, but does mention the feasts of Oil and Wood sacrifice, possibly summary statements pertaining to the four quarters of the year. Pentateuchal festivals don’t appear, but are probably just missing.³⁵

4QCalendrical Document/Mishmarot D (4Q325) is of particular interest because it is like the second list of the *CDM* texts, which coordinates the holidays with the *mishmarot* and does not mention the lunation; however, this text adds the festivals of Wine, Oil and Wood known from the *Temple Scroll*, unlike the *CDM* texts.³⁶ If I am right

³² Yadin, vol. I, 114-115; VanderKam, “The Temple Scroll and the Book of Jubilees,” 225.

³³ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 129.

³⁴ *Ibid.*, 133, 137.

³⁵ *Ibid.*, 157-166. This text was formerly designated 4Q327 and considered part of MMT; see also James C. VanderKam, “The Calendar, 4Q327, and 4Q394,” in *Legal Texts and Legal Issues*, ed. Moshe Bernstein, Florentio García Martínez, and John Kampen (New York: Brill, 1997), 192.

³⁶ See also the comments of Talmon, Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 127, 128. Despite the inclusion of the *Temple Scroll*’s holiday cycle it is worth noting that, like the *CDM* texts, 4Q325 lists only the Passover holiday (4Q325 1 I, 1); this is unlike the *Temple Scroll*, which separately lists the Festival of Unleavened Bread that starts the next day. Perhaps the difference is that 4Q325, like the other strictly calendrical DSS texts, lists only the *beginning* of each holiday period because, as work-schedules, the priests needed only to know the starting point – they then automatically knew what came next. It seems that this calendrical custom of the priests might actually be the *source* of the amalgamation of the two holidays – Passover and Unleavened Bread – into one holiday

about the *CDM* calendar being in use prior to the writing of *Jubilees*, then 4Q325 would show the adaptation of these additional festivals to the *CDM* format.³⁷

The explicit mention of the “beginning of the third month - ר"ש החודש השלישי” (4Q325 1 I, 6) with reference to the first day of a schematic month, together with the lack of lunation, shows that the followers of the *Jubilees* version of the 364DC interpreted the commands in the Bible concerning “new months - ראשי חודשיכם” (cf. Num 10:10; 28:11) and the apparent command in the *Temple Scroll* concerning the “beginnings of your months - ראשי חודשיכמה” (11Q19 XIV, 7) as referring to the schematic months, not the lunations.³⁸ This would be consistent with the practice I have suggested for those who used *CDM* calendar.

While *Jubilees* describes the first days of each calendar quarter as “memorial days and days of the seasons” (*Jub.* 6:23), the *Temple Scroll* does not mark the first days of the fourth and tenth months at all, and does not explicitly associate the first days of the first or seventh months with seasonal purpose: 1/1 seems to be the day of the new year (and

season named for Passover, simply because it was the first of the two observances, but this requires a separate investigation.

³⁷ While Talmon assumes the close relationship of 4Q325 to the *CDM* texts in the synthetic DSS calendar he presents in the *editio princeps*, I am arguing that they can be separated into these two families, “Enochic Mishmarot” and “Jubilean,” with 4Q325 representing a later adaptation of the *CDM* format to the festivals mentioned in the *Temple Scroll*. See Chapter 2, n. 9.

³⁸ I say “apparent command” because the text of 11QT XIV, 7-10 is broken; nevertheless it includes the terms ראשי חודשיכמה, לחודשי השנה, and באחד לחודש. Yadin translates ראש חודש as “New Moon,” which is wrong; see for example, Yadin, 56. This is similar to the mistakes made by Charles in his translation of *Jubilees*, where he assumed the months were lunar (Charles, ed., *The Book of Jubilees or The Little Genesis*) and J. Sanders in his translation of the *Psalms Scroll 11QPs^a XXVII, 7-8* (Sanders, ed., *The Psalms Scroll of Qumran Cave 11, 92*).

seems to be modeled on 7/1), while 7/1 is marked as the “Day of Remembrance,” and in this sense may be in concert with *Jubilees*’ “memorial days.”³⁹

VanderKam argues that the differences between the texts can be attributed to the “simple fact that they are based upon different parts of the *Torah*. That is to say, *Jubilees* builds upon Genesis to mid-Exodus, while the Temple Scroll deals with the material from mid-Exodus through Deuteronomy.”⁴⁰ Despite the different emphases and style, VanderKam argues that the differences are more complimentary than incompatible, for the texts “never conflict with one another regarding festivals, and agree almost completely about the sacrifices and procedures for their holidays.”⁴¹

Taken together, *Jubilees* and the *Temple Scroll* are also complimentary in terms of calendrical practice: while the *Temple Scroll* provides the practical cultic prescriptions and sacrificial calendar, *Jubilees* provides the theoretical framework and reasoning for a thoroughly sabbatarian framework of time for the performance of that cult which will resonate with the temporal and spatial structure of creation. Their common position against the calendrical use of the lunation should be seen in the context of the importance of the Sabbath.

The Calendrical Purpose of *Jubilees*: Resolving the Cosmological Crisis of the Lunation and the Sabbath

So far in this chapter I have mainly reviewed the textual evidence defining the Jubilean family of the 364DC tradition in contrast to the Enoch and Enochic Mishmarot

³⁹ VanderKam suggests that the author of *Jubilees* borrowed the term “memorial” from its use in Lev 23:24 (which is also used in 11QT 25:3). See VanderKam, “The Temple Scroll and the Book of Jubilees,” 219.

⁴⁰ *Ibid.*, 217.

⁴¹ *Ibid.*, 231.

families. In this section I will propose an historical reason and setting for this step in the evolution of the 364DC.

Jubilees and the AB

While *Jubilees* polemic against the lunation is usually understood as against a lunisolar calendar – which it surely is – the 364DC calendar promoted is similar to the calendars found in the *AB* and *CDM* texts, but stripped of their lunar element. While the *AB*, like Gen 1:14, includes the sun, moon and stars as calendrical markers, *Jubilees* eliminates the role of the moon and stars, elevating the sun and expanding the list of its calendrical functions: “The Lord appointed the sun as a great sign above the earth for days, sabbaths, months, festivals, years, sabbaths of years, jubilees, and all times of the years” (*Jub.* 2:9). This passage is also the source for the common scholarly description of *Jubilees*’ version of the 364DC as “solar,” since it sets up the sun as the primary sign.⁴² *Jubilees* attributes to Enoch knowledge of “the weeks of the jubilees” and “the sabbaths of the years” (*Jub.* 4:17-18), items that are not found in the known versions of the *AB*. While it is possible that the author of *Jubilees* had access to another version of the *AB*, it is more likely that he had no qualms about taking as many liberties re-writing *Enoch* as he did with the Pentateuch.⁴³

Since *Jubilees* knows of Enoch it is obvious that *Jubilees* was written after the *AB*. Moreover, despite differences with the *AB*, Enoch is held in such high regard by *Jubilees*’ author (and possibly by his target audience) that he wanted to place himself in the Enochian lineage by claiming Enoch as a predecessor and authority. To the extent that

⁴² See Chapter 2, notes 6 & 7.

⁴³ It is more likely that the author of *Jubilees* had access to a larger version of the *AB* than we have, as testified to the DSS, rather than one where the lunation – evident in both the DSS and the Ethiopic *AB* – was missing.

the author of *Jubilees* actively seeks to inherit Enoch's mantle of authority, this would tend to indicate that the calendrical views of the *AB* extended beyond a limited circle and possessed an aura of authority. Yet, at the same time that *Jubilees* seeks to assume Enoch's mantle, it purges the lunar element that was so important to the *AB* (as well as the *CDM* texts). I claim *Jubilees* does this because the lunation was a problem for the temporal pattern that was most important to *Jubilees'* author, the Sabbath.

Erroneous Calendrical Practice and the Lunation

Jubilees' anti-lunar polemic is most pronounced in the following key section (passages in italics will be quoted in the discussion below):

6:32 Now you command the Israelites to keep the years in this number – 364 days. Then the year will be complete and it will not disturb its time from its days or from its festivals because *everything will happen in harmony* with their testimony. They will neither omit a day nor disturb a festival. 6:33 If they transgress and do not celebrate them in accord with his command, then all of them will disturb their times. The years will be moved from this; *they will disturb the times and the years will be moved*. They will transgress their prescribed pattern. 6:34 *All the Israelites will forget and will not find the way of the years*. They will forget the first of the month, the season, and the sabbath; they will err with respect to the *entire prescribed pattern of the years*. 6:35 For I know and from now on will inform you – not from my own mind because this is the way the book is written in front of me, and the divisions of times are *ordained on the heavenly tablets*, lest they *forget the covenantal festivals and walk in the festivals of the nations*, after their error and after their ignorance. 6:36 There will be people who *carefully observe the moon with lunar observations* because it is *corrupt* (with respect to) the seasons and *is early from year to year by ten days*. 6:37 Therefore years will come about for them when they will disturb (the year) *and make a day of testimony something worthless and a profane day a festival*. Everyone will join together both holy days with the profane and the profane day with the holy day, for they will err regarding the months, the sabbaths, the festivals, and the jubilee.

6:38 For this reason I am commanding you and testifying to you so that you may testify to them because after your death *your children will disturb (it) so that they do not make the year (consist of) 364 days only*. Therefore, they will err regarding the first of the month, the season, the sabbath, and the festivals. They will eat all the blood with all (kinds of) meat.

For *Jubilees* there is harmony in the 364-day year because it embodies the sabbatarian pattern of creation. Humans – that is to say, Israel – have a role in

maintaining the harmony of this creation. While the angels observe the Sabbath in the heavenly realms, Israel's holy task is to keep the Sabbath and festivals on the earth. If they succeed, then "everything will happen in harmony" (6:32). If they fail, then they will "make a day of testimony something worthless and a profane day a festival" (6:37). As the saying goes, timing is everything.

Furthermore, it is predicted that Israel will fail, transgressing "the entire prescribed pattern of the years" (6:34). The failure, according to *Jubilees*, is caused by "lunar observations" (6:36). The moon is "corrupt" (6:36) because the lunar year of 354 days (12 lunar months) is "early from year to year by ten days" (6:36) in comparison to *Jubilees'* 364 day calendar; i.e., it is out of phase and disharmonious with the sabbatical pattern. Because the moon is "corrupt," observing the moon and making it part of the calendar causes Israel to "forget the covenantal festivals and walk in the festivals of the nations" (6:35). Whether this means totally giving up the Israelite religion or celebrating Israelite festivals while using a different calendar is not clear from the context, but either would be a problem for *Jubilees'* author.⁴⁴ While the problem with celebrating non-Israelite festivals is obvious, there are also multiple problems with celebrating the Israelite festivals according to an observational lunisolar calendar (OLC). Not only would the calculated day of a festival's observance be different, but the festivals whose observance is determined by dates of the month would fall on different days of the week each year, occasionally and irregularly fall on a Sabbath, thereby violating the primacy and distinctiveness of Sabbath observance.

⁴⁴ For a discussion of the meaning of this phrase see Moshe J. Bernstein, "Walking in the Festivals of the Gentiles' 4QpHosea^a 2.15-17 and *Jubilees* 6.34-38," *Journal for the Study of the Pseudepigrapha* 9 (1991).

The Target of Jubilees' Polemic Against Lunar Observation

The polemic against those who “carefully observe the moon” (6:36) is clearly an argument against an OLC, and the statement that “all the Israelites will forget and will not find the way of the years” (6:34) implies that an observational lunisolar calendar had been the official calendar in use for some undefined period of time. But this incorrect lunisolar calendar, which makes “a day of testimony something worthless and a profane day a festival,” (6:37) results in more than simply confusion. The error, corruption, transgression and sin of the Israelites (implied by eating blood, a forbidden act) mean that “they will disturb the times and the years will be moved” (6:33). That is to say, the calendrical transgressions of the Israelites have created havoc in the “heavenly firmament” (*Jub.* 2:8), disturbing the order of the celestial bodies that have been shifted from their correct paths.⁴⁵

Most scholarly writers who focus on the polemic against the moon interpret this passage be a protest against a variable length OLC that was in use in the Temple, and I agree that this is the situation to which *Jubilees* is referring. Since *Jubilees* was written around 160 B.C.E., this means that at least for some period of time prior to that a lunisolar calendar was used in the Temple. A piece of evidence supporting this is the book of Sirach, which is often pointed to as alluding to the use of a lunar calendar in Jerusalem during the period of Simon II as High Priest, the late third to early second

⁴⁵ While Vanderkam claims that in *Jubilees* “no violation of natural law is anticipated, only human miscalculation of the year,” (VanderKam, *Enoch and the Growth of an Apocalyptic Tradition*, 106), my reading, in which incorrect observance causes disharmonious celestial motion, is supported by Baumgarten who writes, “The dire result is that the heavenly bodies, themselves, have begun to deviate from their prescribed courses.” Baumgarten, “The Calendars of the Book of Jubilees and the Temple Scroll,” 77.

century B.C.E.⁴⁶ Although we don't know details of festival observance during this period, Sirach tells us that after the destruction of Jerusalem and parts of the Temple during its conquest by the Seleucids from the Ptolemies in 198 B.C.E., Simon rebuilt the city and the Temple, and apparently observed the festivals on the full moon (Sir 43:6-8, 50:1-21).⁴⁷ It seems to me that this political crisis, including the rebuilding of the Temple, would have been a likely opportunity for a calendar reform of this type, i.e., the adoption by Simon II of a lunisolar calendar.⁴⁸

However, the polemic in *Jubilees* is phrased in such a way that it clearly contends that this OLC was itself an innovation away from an earlier practice which used a 364DC calendar in the Temple. If we take this contention seriously – which I do, based on the discussion of the *AB* and the *CDM* in earlier chapters⁴⁹ – we need to ask ourselves: why would the calendar of the *CDM* need to be reformed? I propose that it was because the *CDM*'s idealized synchronization of sun, moon, stars and Sabbath eventually failed to represent observed reality.⁵⁰ When the facts don't match the theory the basis is laid for the kind of crisis that can produce social and scientific paradigm shifts.⁵¹ For the

⁴⁶ Scholars who support the view of the lunisolar calendar as “normative” often point to Sirach; see for example, Herr, 839. Compare Jaubert, 45, 144-145.

⁴⁷ If Simon II shared the lunisolar calendrical practice of the Mishnaic rabbis, this could be one of the reasons they trace their lineage to him; see Bickerman, *The Jews in the Greek Age*, 145; *m. Avot* 1:2.

⁴⁸ My overall idea is similar to VanderKam's theory of the change following the Maccabean conflict, but I date it to a war about a half-century earlier due to the information in both Sirach and *Jubilees*. Cf. VanderKam, “2 Maccabees 6, 7A and Calendrical Change in Jerusalem,” and VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 113-116.

⁴⁹ In this I am obviously supporting Jaubert's theory concerning the “continuity of calendars”; Jaubert, 38.

⁵⁰ As previously noted, Gardner proposes a sophisticated, long-term intercalation procedure that may have worked, but would have been hard to maintain over long periods of time. See Chapter 2, note 20.

⁵¹ The seminal work on this process of paradigm change is Thomas S. Kuhn, *The Structure of Scientific Revolutions*, Third ed. (Chicago: The University of Chicago Press, 1996). A much similar, although much

priesthood, this challenge to the Enochian synchronistic cosmology would have created a crisis that was both theological and practical.⁵²

Alternative Solutions to a Calendrical Crisis

If such a crisis occurred, what were the alternative solutions? There seem to have been two roads taken, each one sacrificing one dimension of the three-way synchronization of year, lunations, and Sabbath.

One solution was a calendar like the Mishnaic OLC; that is, if the *calculations* are incorrect regarding the lunation and the seasons, revert to a system based on *observation* similar to the Mesopotamian tradition reflected in MUL.APIN. The OLC breaks the three-way synchronization of the *CDM* calendar by de-linking the Sabbath cycle, which now runs its own independent temporal course based on counting, from celestial phenomena and heightens the link between year and lunation because each year is made up of complete lunations rather than the *CDM's* triennial lunar intercalation. This probably was the kind of system used during the pre-exilic period. Even if that earlier calendar had been forgotten, there would have been a similar alternative ready at hand, the lunisolar calendar used by the political authorities (whether they be Persian or Seleucid).⁵³ I propose that this is the type of calendar reportedly used by the High Priest Simon II according to Sirach, and which evolved into the Mishnaic OLC.

later, crisis caused the Gregorian reforms to the Julian calendar when it was shown by observation to be incorrectly marking the vernal equinox, and therefore causing an “incorrect” observance of Easter.

⁵² This is the type of crisis proposed by Milik, Talmon, VanderKam and others as a key element in the split of the Qumran sect from Jerusalem; whether or not they are correct about the origins of the Yahad, such crises need not have occurred just once, and calendrical difficulties are likely to have been but one of a nexus of issues in conflict.

⁵³ While here I am proposing an alternative to VanderKam’s hypothesis that the Hasmoneans adopted the Seleucid calendar, I agree with his view that multiple calendars were in use. See VanderKam, “2 Maccabees 6, 7A and Calendrical Change in Jerusalem,” and VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 113-116.

The problem with this solution for the author of *Jubilees* is that a lunisolar calendar option is anathema. Why is this? It is most likely because this solution lowers the importance of the Sabbath, which is not the key temporal cycle of the OLC. The OLC caused a sinful walking “in the festivals of the nations,” in which they “make a day of testimony something worthless and a profane day a festival.” This judgement may in part be due to the way that annual festivals in the OLC wander through the weeks, falling on various days of the week including the Sabbath.

The second solution, preferred by *Jubilees*, is to maintain the synchrony between the year and Sabbath while eliminating the lunation, i.e., a 364DC purged of the lunation. In this sense, while many scholars have described the calendrical position of *Jubilees* as advocating a *solar* calendar, in my view it is the author of *Jubilees* who definitively supercedes the sabbatarian synchronism of the *CDM*'s 364DC into an even more rigidly and emphatically *sabbatarian* calendar. Assuming that the *Temple Scroll* and *Jubilees* are mutually supportive texts, then the timing of the *Temple Scroll*'s additional holidays – all related to events or items necessary to the priests' work in the Temple – further reflects and projects a sabbatarian temporal rhythm.

This strict sabbatarianism seems to preclude intercalation of any kind (even to make up the gap between the 364 and 365¼ day year): as Wacholder aptly summarizes, for *Jubilees* “the setting of time is eternal and cannot be changed by any human authority or by watching the new moon.”⁵⁴ In order to better understand the solution advocated by *Jubilees*, we need to examine what seems to be the problem.

⁵⁴ Wacholder, “Calendar Wars Between the 364 and the 365-Day Year,” 215.

How did *Jubilees* understand the disturbance in the firmament? While most attention has focused on the polemic against the moon and “lunar observations” (*Jub.* 6:36), it seems that the problem for *Jubilees* is not only that the lunar year is ten days too short, but that the actual solar year is now too long: “Your children will disturb (it) so that they do not make the year (consist of) 364 days only” (*Jub.* 6:38). Therefore, I suggest that it is likely that the author of *Jubilees* was aware that the lunar observers were responding to two problems: not only that the triennial cycle of lunar intercalations didn’t quite work, but also that the year was longer than 364 days long.⁵⁵ While he explicitly blames the problem on the lunar observers, he implicitly recognizes the systemic problem to the tradition of the *AB* and *CDM* by advocating a different solution, eliminating the coordinating lunar aspect. *Jubilees*’ appeal to the sun as the “great sign” (*Jub.* 2:9) that determines the times serves to give a naturalistic imprimatur to this sabbatarian ideology, both its anti-lunarism and its assertion that the year should only be 364-days long.⁵⁶

Nevertheless, eliminating the need for lunar synchronization of the 364DC does not address the problem of the observed year being longer than 364 days. Yet, his strong advocacy of a 364DC (stripped of lunar reckoning) indicates that the author of *Jubilees* still assumes that the sabbatarian theory of cosmic synchrony is correct. He therefore (unscientifically) deduces that there must be something wrong with the observed facts. There must be a *cause* for the observed disharmony in the heavens.

⁵⁵ Thus, I would claim that the author of *Jubilees* was clearly aware of later, more “sophisticated and complex astronomical knowledge” than reflected in the *AB* or *CDM* (the quote is from comments concerning the obsolescence of the *AB*’s astronomical knowledge in García Martínez and Tigchelaar, “*I Enoch* and the Aramaic Fragments from Qumran,” 134).

⁵⁶ This is a clear example of Durkheim’s observation, discussed in Chapter 1, that calendars are often made to seem objective by tying them to “the recurrence of such or such a star or the alternation of the seasons.” Durkheim, 491.

His conclusion is that the problem is due to human sin: Israel's "corrupt" lunar observations have disturbed the year, *causing* the problem through the incorrect timing of holiday observances. To rectify this situation, the author of *Jubilees* admonishes the Israelites to return to a correct observance of Sabbath and holidays according to the 364-day calendar "ordained on the heavenly tablets." The clear implication is that this will shift the celestial bodies to back to their original correct paths according to the 364-day year, restoring the pristine sabbatarian harmony of the cosmos at creation. Thus, the Israelites have the ability to repair the damage they have created through proper ritual actions, which will re-harmonize the heavens.⁵⁷

While to our modern scientific ways of thinking this theological approach may seem a somewhat surprising approach, *Jubilees* merely adapts a traditional biblical mode of environmental thought. Buber has discussed how Leviticus and Deuteronomy (especially Deut. 11:13-17) display an awareness of a moral universe of reciprocity, where the heavens and earth are in bountiful harmony when Israel loves and serves God, but crops will fail if Israel is sinful.⁵⁸ More recently, Hiebert has similarly shown how the J document, the oldest in the Bible, reflects the concerns of farmers in the Mediterranean highlands with its focus on the tie of humans to the earth and its dependence on the seasonal rains, particularly in contrast to the P (priestly) documents, most famously Genesis 1-2:4a, which are more concerned with cosmological issues.⁵⁹

⁵⁷ There is an interesting parallel between *Jubilees*' ideas about the human role in harmony and disharmony of the heavenly firmament and similar theurgic themes brought up in a later moment of cultural crisis by Lurianic kabbalah in the 16th century, especially its concept of *tikkun* (repair). There is little likelihood of any direct connection, but it may reflect the constancy of certain themes, elements and possibilities within Jewish theology and cosmology.

⁵⁸ Martin Buber, *On Zion: The History of an Idea* (Edinburgh: T. & T. Clark Ltd., 1985), 10-30.

⁵⁹ Hiebert, *The Yahwist's Landscape: Nature and Religion in Early Israel*.

What we see in these different texts reflects the different contexts and concerns of their authors: the texts referred to by Buber and Hiebert reflect the concerns of farmers while *Jubilees* displays a more priestly focus on calendar, cult, and purity.⁶⁰ While there is a common assumption of a relationship between the inhabitants of heaven and earth that can either be in or out of balance, and that the status of this relationship is manifested in the effect on seasonal rhythms, Deuteronomy is concerned with the rain that comes from the heavens (השמים)⁶¹ to water the land for human benefit while *Jubilees* has an additional focus on the harmonious movement of the celestial bodies in the heavenly firmament (רקיע השמים).⁶² In Deuteronomy disharmony manifests through an environmental crisis that takes place on earth while in *Jubilees* disharmony manifests as a crisis in the heavens as well as on the earth.⁶³ Both believe that an ethical problem in the human realm is causing a disruption in the relationship of heaven and earth and that appropriate human action can rectify the situation. In the case of *Jubilees*, this correct action is about performing the proper sacrifices at the proper *time*, which will induce the heavenly luminaries – who mark time – back into their orderly sabbatarian rhythms.

Given the dating of *Jubilees*' composition and the many copies found at Qumran, it seems likely that the version of the 364DC followed by the Yahad combined the

⁶⁰ Even when comparing to the *AB* there is a shift in emphasis: in the *AB* the tasks of the angels are related to bringing in the stars and seasons at their proper time, while in *Jubilees* the angels are focused on sabbatarian timekeeping with God in their unseen heavenly abode.

⁶¹ Deut 11:17.

⁶² According to VanderKam's restoration; VanderKam and Milik, "Jubilees," 16.

⁶³ Jub. 23:17-20 includes traditional terrestrial repercussions consequent to sin: "For all have acted wickedly... There will be no produce from the vine and no oil... All will be destroyed together – animals, cattle, birds, and all fish of the sea – because of mankind... For they have forgotten commandment, covenant, festival, month, sabbath, jubilee, and every verdict."

observances mentioned in the *Temple Scroll* with the calendar of *Jubilees*. The Yahad may have preserved the *CDM* calendars as an ideal that would be restored once the 365-day observable year realigned to 364 days, or simply as a document inherited from earlier times. If a version of the 364DC was used in the Temple at times during the Hasmonean and Roman periods,⁶⁴ it seems more likely to have been this version, given that it seems to be a response to events of the second century B.C.E.

The Opposite Fates of Sabbath and Luration in the 364DC: The Consequences of Assuming a Synchronous and Symmetrical Cosmos

The entire 364DC tradition shares a presumption that the rhythms of time established by God that both govern and connect the heavens and the earth are synchronous and symmetrical.⁶⁵ The main difference between different formulations of the 364DC has to do with which temporal elements are synchronized. As the 364DC tradition moves from the *AB* to the *CDM* and then *Jubilees* forms of the 364DC we find an inverse relationship between the importance of the luration and the Sabbath: a) in the *AB* the triennial intercalary cycle of the luration is the source for the 364 day length of the calendar and the Sabbath does not exist; b) in the *CDM* the Sabbath and festivals are added, and c) in *Jubilees* the luration is eliminated while the Sabbath is elevated to the “first law.”

⁶⁴ See the discussion in Chapter 2.

⁶⁵ This predilection, which assumes there is an elegant mathematical description of nature’s behavior, is not that different from the aesthetic preferences of modern physicists. In particular, the ancient penchant for symmetry, and the difficulty of discarding it when mistaken, has a long-lived legacy in astronomy. A prominent example was the assumption that the planets moved in circular orbits, even after the paradigm shift to the heliocentric solar system. This survived until the 17th century, when Kepler was able to break the mold and imagine that the orbits of the planets were elliptical. On Kepler, see for example, David Koch, “Johannes Kepler: His Life, His Laws and Times,” (NASA), n.p. [cited November 11, 2003]. Online: <http://www.kepler.arc.nasa.gov/johannes.html#anchor778225>.

Using the terminology I developed in Chapter 1 it can be seen that each stage is a step that increases the *tame* dimensions of time at the expense of the wild and unpredictable rhythms of nature. The *AB* purports to be an accurate calculator and predictor of the cycles of the sun, moon and stars, where observation (as in the 360-day Mesopotamian calendar) has been supplanted by mathematical calculation; nevertheless, the calculations are meant to be descriptions of natural cycles. The *CDM* calendar adds in the Sabbath cycle that can, in principle, never be out of synch with nature because it is based on an ostensibly divine cycle not observable in nature. Because the Sabbath cycle had become central to both the orthodoxy and orthopraxis of the priests, the synchronous functioning of the 364DC “map” of time became more important than the “territory” of the observable movements of the heavenly lights. *Jubilees* amplifies the sabbatarian emphasis of the *CDM* calendar: temporal measurement is separated from its origins in the motion of the heavenly lights (per Gen 1:14) by valorizing the Sabbath as not only a sacred cycle, but as the source of created space and time. Therefore, if the heavenly lights don’t match the sabbatarian theory, it is a problem with observed reality, not with the theory. Consequently, *Jubilees*’ solution to the disturbance in the synchrony between the heavens and the earth was to eliminate a source of the disturbance from the synchrony – the natural, wild time of the lunation – at the same time that the artificial, tame time of the Sabbath becomes the ground for a synchrony not only of temporality, but also of chronology. Each of the three stages of the 364DC is a movement toward a calendar of tame time and further away from wild time.

I suggest that this is part of the motivation for *Jubilees*’ emphasis on chronology; the cyclical cosmogonic pattern of Sabbaths and jubilees is redirected for use as the

template for the sacred history of the Israelites. For *Jubilees*, the Israelites and the Sabbath are inseparably linked, both cultically and historically. While most commentators on *Jubilees* presume that its author is concerned with presenting a sacred sabbatarian chronology in order to validate Israel's sacred status as God's chosen people,⁶⁶ I believe this can *also* be read as a justification of the importance of the Sabbath as a sacred cycle uniquely revealed to the Israelites. It is precisely the awareness of the author about the problems with the 364DC – i.e., with the unnaturalness of the Sabbath – that helps explain why chronology is so important to *Jubilees*, for it serves to validate the sacredness of the Sabbath in contrast to the natural cycles of the heavens. This represents the elevation of (a mythical) historical chronology, as opposed to the “eternal return” of a fully synchronous cosmos that is simultaneously natural and sacred (as in the *CDM* calendar and the multidimensional associations of the Merkavah), as the manifestation of God's sacred temporality.⁶⁷

Within the 364DC traditions we can see the evolving displacement of natural time by calculated time, most specifically the shift of primacy from the lunation to the Sabbath. In order to explain and justify this move, the Sabbath is invested with a sacred character greater than other festivals.⁶⁸ In the process, the natural time (especially the lunation) is demoted while the calculated Sabbath is promoted as the most propitious and

⁶⁶ See for example Jaubert, 30; VanderKam, *The Book of Jubilees*, 94-96; VanderKam, “The Origins and Purposes of the Book of Jubilees,” 16-17.

⁶⁷ It seems to me that Eliade's discussion of the “eternal return” is quite applicable to the 364DC traditions (see Chapter 1, “Perspective Two: Calendars and Sacred Time”). While I think Eliade and others are wrong in general about ancient Israel's invention of linear time (see Chapter 1, n. 70), I think that the centrality of chronology to *Jubilees* may indicate a stage in the transition of conceptions of time from cyclical to sequential, a stage in the construction of a human world more separate from, and less dependent upon, temporal rhythms found in nature. See also the discussion on “The Seventh-Day Sabbath” in Chapter 1.

⁶⁸ The Sabbath, for example, is the only holiday mentioned in the Decalogue.

frequent time for human-divine connection, as reflected in *Songs of the Sabbath Sacrifice* and the *Psalms Scroll*.

Ironically, the calculated aspect of the Sabbath seems to have dialectically sowed the seeds for the decay of the power of its priestly promoters, for while the Sabbath was implemented and promulgated as integral to the Temple cult, in the final analysis a *calculated* Sabbath does not require priests to determine its timing, only its ritual content; everyone can count to seven. Once internalized by the whole people, the periodicity of the Sabbath became a common denominator of all forms of Second Temple Judaism, even as it came to be observed differently by various groups.⁶⁹ Indeed, in all the calendrical controversies of the Second Temple era there seems to be no disagreement about the correct timing of the Sabbath. These factors were no doubt at work in the Hasmonean and Roman periods during which sects multiplied in a period of displacement and urbanization.⁷⁰

⁶⁹ See the discussion in Sanders, *Judaism: Practice & Belief, 63 BCE- 66CE*, 190-212.

⁷⁰ For an extensive discussion of these phenomena, see Baumgarten, *The Flourishing of Jewish Sects in the Maccabean Era: An Interpretation*.

PART II
THE BEGINNINGS OF THE 364-DAY CALENDAR AND THE ESTABLISHMENT
OF THE SABBATH

I censured the nobles of Judah, saying to them,
“What evil thing is this that you are doing, profaning the Sabbath day!”

I...arranged for the priests and the Levites to work each at his task by shifts

Nehemiah 13:17, 30

CHAPTER 6
THE BIBLICAL SABBATH, NEHEMIAH'S REFORMS AND THE 364-DAY
CALENDAR

Tame Time, Nature and the Biblical Sabbath

The Unnatural Rhythm of the Sabbath

Despite numerous hypotheses regarding possible predecessors, it seems certain that the seventh-day Sabbath is a uniquely biblical idea. As Hallo summarizes, “The uniquely biblical conception of the week and the sabbatical cycle stand out equally by virtue of its pervasiveness in biblical laws and letters, as by its absence from the surrounding Near East.”¹ While there are many theories about when and why the seventh-day Sabbath appeared,² by the time the Pentateuch emerged from its last major redaction during the Persian period the Sabbath was the temporal cycle both unique and central to Jewish observance. The Sabbath is the culmination of the creation story that begins the Bible, wherein “God blessed the seventh day and declared it holy” (Gen 2:3), while the heavenly lights created on the fourth day are neither blessed nor hallowed. Gen 2:1-4a is

¹ William W. Hallo, “New Moons and Sabbaths: A Case-study in the Contrastive Approach,” in *HUCA* (Cincinnati, Ohio: Hebrew Union College, 1977), 15. Among others who endorse this view are Uriel Simon, “Kedushat ha-Makom ve-Kedushat ha-Zman ba-Mikra [Holiness of Place and Holiness of Time in the Bible],” in *Luah ha-shanah ha-Ivri*, ed. Uriel Simon and Rahel Elijor, Hug Bet ha-nasi la-Tanakh velimekorot Yisra'el ; kuntres 5 (Yerushalayim: Bet ha-nasi, 1995), 19; Vaux, 188; Mayer Gruber, “The Source of the Biblical Sabbath,” in *The Motherhood of God and Other Studies*, ed. Mayer Gruber (Atlanta: Scholars Press, 1992), 119.

² The inquiry into the origin and meaning of the seven-day Sabbath observance promulgated in the Bible has attracted a great deal of academic attention over the last century, accompanied by a plethora of conflicting theories. For summaries of theories regarding non-Israelite predecessors or sources for the perpetual seventh-day Sabbath see Gnana Robinson, *The Origin and Development of the Old Testament Sabbath* (New York: Peter Lang, 1988), 27-37; Niels-Erik A. Andreasen, *The Old Testament Sabbath: A Tradition-Historical Investigation*, Dissertation Series, no. 7 (Missoula, Mont.: Published by Society of Biblical Literature for the Form Criticism Seminar, 1972), 1-16; Robert North, “The Derivation of Sabbath,” *Bib* 36 (1955); Vaux, 475-483.

then used intertextually in the Decalogue of Exod 20:11 as the etiology justifying why the Sabbath is so important that it is the only observance – and the only element described as “sacred” – worthy of mention in the Decalogue.³ Both Decalogues decree, “The seventh day is a Sabbath of Yahweh your God” (Exod 20:10; Deut 5:14). Lang observes that “the Sabbath is subordinate to the first commandment, ‘you shall have no other gods to set against me’, and exists to promote its observance. One may even say that in the ‘sabbath of Yahweh’ the first commandment is given a tangible, practical, and, as it were, sacramental form.”⁴ The cumulative result is that, as Robinson comments, the Sabbath is “the central commandment, . . . obedience to which is equivalent to the fulfillment of all the commandments.”⁵ The consequence is, as Cooper observes, “Sabbath observance defines Jewish identity in the post-exilic community.”⁶

Many commentators have noticed the artificial periodicity of the Sabbath, particularly in contrast to the lunation that was the key cycle of the Mesopotamian lunisolar calendar. Simon, for example, writes, “The Sabbath is not anchored in any astronomical, climatic, or chronological event.”⁷ Hallo claims that “the importance of the Sabbath must be seen in the context of the continuing deemphasis of the lunar festivals. . . . the ancient Mesopotamian year was based on the month, and the worship of

³ Moshe Weinfeld, “God the Creator in Gen. I and in the Prophecy of Second Isaiah” [Hebrew], *Tarbiz* 37 (1968): 109.

⁴ Bernhard Lang, *Monotheism and the Prophetic Minority*, The Social World of Biblical Antiquity Series, 1 (Sheffield: The Almond Press, 1983), 43.

⁵ Robinson, 342.

⁶ Alan Cooper and Bernard R. Goldstein, “The Development of the Priestly Calendars (I): The Daily Sacrifice and the Sabbath” (paper presented at Biblical Icons of Israelite Religion conference, New York University, N.Y., 2001), 24.

⁷ Simon, 18.

the moon went hand in hand with it. The Israelite year was based on the week.”⁸ Cassuto even argued “that the Israelite Sabbath was instituted in *opposition* to the Mesopotamian system...Israel’s Sabbath day shall not be...connected with the phases of the moon...but it shall be the *seventh day*...in *perpetual* order, independent and free from any association with the signs of the heavens and any astrological concept. It shall not be a day for the worship of the hosts of the heavens, but one sanctified to Him who created the heavenly hosts and the universe as a whole.”⁹

The key rhythm of time used in the Jerusalem Temple during the Persian period had shifted decisively – if not totally – away from synchronizing religious observances with the unending cycle of the moon toward another unending cycle, that of the seventh-day Sabbath. The key difference is that the lunation is a phenomenon of *wild time*, a natural cycle marked in the heavens and observable by all, a rhythm to which the priests aligned themselves as a way of legitimizing their religious authority over the rest of the people. In contrast, because the sun, moon and stars do not know the Sabbath, its observance is exclusively dependent upon human action, a cultural institution whose rhythm had to be marked by the priestly authorities who were actually counting the days, a phenomenon of *tame time* with no need for recourse to the moon or other astronomical body to legitimate and confirm the count. Thus, we can see that the tension between the Sabbath and the lunation as cycles of time is not merely calendrical, but an aspect of a cultural change involving a distancing of culture from nature.

⁸ Hallo, 16.

⁹ Cassuto, 68.

In describing the Sabbath as a rhythm of tame time, I am not speaking merely about calculation, for natural cycles can be described mathematically with varying degrees of precision (e.g., the Gregorian calendar that models the solar year, or the Metonic cycle used for a calculated lunisolar calendar). Rather, the Sabbath is an example of tame time because it is a temporal rhythm that does not seek to describe or predict a natural cycle, but rather expresses – and commands the observance of – an artificial rhythm not found in nature. As the culmination of the week of creation, it is positioned as the final piece of cosmic ordering that God imposes, a strictly controlled rhythm in contrast to the chaos that was “unformed and void – תהו ובהו”¹⁰ (Gen 1:2) that preceded God’s creative work.

The placement of the Sabbath at the end of the creation story of Gen 1-2:4a expresses a tension between two aspects of sabbatarian theology. On the one hand it represents an attempt to legitimize the Sabbath by naturalizing it so that it seems integral and equivalent to the other elements of nature created by God. As Gruber observes, “This new unit of time was based, therefore, on the idea set forth in Gen. 2:1-3 that the Sabbath holy to both God and man was also part of the natural order.”¹¹ On the other hand, it is equally clear that the creation of the Sabbath on the seventh day emphasizes its *difference* from natural processes, especially natural time marked by the heavenly lights created on the fourth day. As Weinfeld writes, while “pagan myth... was connected with dramatizations of natural processes, there is no connection to the self-renewal of nature in our creation story. Like the Sabbath itself, so also the text which is connected to it is

¹⁰ Alternatively, Fox translates “wild and waste”; Fox.

¹¹ Gruber, 118. As far back as the nineteenth century Wellhausen similarly saw this as an attempt to naturalize the Sabbath, “a statute that presents itself with all the rigour of a law of nature, having its reason with itself, and being observed even by the Creator”; Wellhausen, 115. This projection of the Sabbath into the workings of the universe was taken to its logical and extreme conclusion by the author of *Jubilees*, as discussed in Part I.

liberated from any relation to climatic or solar-lunar factors, and is transformed into a cultic-religious experience which recurs every seventh day and comes to commemorate the act of Creation and the enthronement of God.”¹²

Priestly Concerns with the Cosmos

The issues concerning both the heavens and temporality are particular concerns of the priestly class and the P(riestly) document in the Pentateuch. This is in contrast to the Garden of Eden creation story of Gen 2:4b-3:24, considered an older J (Yahwist) document text. The purpose of the latter is to present an etiology of humanity’s role and relation to terrestrial nature. Adam is an agriculturalist who is made of the soil (*adamah*) and returns to it upon death, while Eve is the “mother of all the living” (Gen 3:20). The struggles of each are related to their task: Adam produces food from the soil by hard toil, while Eve gives birth in pain.

As Hiebert has noted, there is a significant distinction in the views of P and J regarding the relationship of humans, God and nature:

For P, the quintessential fact about human nature is that it bears the image of God (Gen 1:26-27)...in this regard it distinguishes the human clearly from all other forms of life. This special status in relation to God is echoed in Psalm 8, a hymn with parallels to Genesis 1, in which humans are placed between God and other life, “a little less than God (or divine beings),” but with “everything under their feet” (vv 6-7, Eng vv 5-6).

By contrast, the quintessential fact about human nature for J is that it derives from the arable soil (2-7). Humans are made from this soil, they return to it at death, and they cultivate it during their lives. In their basic nature, therefore, humans are

¹² Moshe Weinfeld, “Sabbath, Temple and the Enthronement of the Lord - The Problem of the Sitz im Leben of Genesis 1:1-2:3,” in *Melanges bibliques et orientaux en l'honneur de M. Henri Cazelles*, ed. A. Caquot and M. Delcor (Kevelaer: Butzon & Bercker, 1981), 511-512. Weinfeld and many others contend that the creation pericope of Gen 1-2:4a was used in Temple liturgy, certainly by the time of the Second Temple (he references *m. Ta’anit* 4:2-3 and *t. Ta’anit* 4 (3) 3-4). See also Andreasen, 187 and the references cited there.

associated with the earth rather than with the deity, with creation rather than with the creator.¹³

The archetypal human in P is “a priestly figure...[who] shares many of the characteristics of the priestly role itself. This was the role of a distinct, elite party in Israelite society, closely allied to royalty, that regarded itself as the mediator of divine rule to Israel and creation itself.”¹⁴ In contrast, the archetypal human in J is “a typical Israelite farmer, the role of the majority in Israelite society and the role attributed to its ancestors.”¹⁵ The P human is a steward of God who is master/subduer-כבש of the earth (Gen 1:28), while the farmer of the J document is in an important sense subservient to the earth he serves/tills-עבד (Gen 2:5, 15; 3:23).

The Sabbath is a reminder and a commemoration of the P creation story that is not synchronized with any natural cycle in which creation itself is apparent, in contrast to the New Year festivals of the ancient Near East that were synchronized to the agricultural seasons.¹⁶ The Sabbath is not linked to any agricultural cycle nor is it innately part of the life of the farmers, but makes sense as a divinely attributed temporal rhythm of concern to a priestly class whose special concern, responsibility and privilege is the human connection with the heavens. The agricultural festivals also exist in the Bible, but are qualitatively different from the Sabbath. As Tsevat has observed,

All regularly recurring events in ancient Israel were bound up with the cyclical changes of nature – the seasons or the revolutions of the moon or the sun. The impact of the climactological and astronomical divisions of time on the economic, social, and

¹³ Hiebert, *The Yahwist's Landscape: Nature and Religion in Early Israel*, 156.

¹⁴ *Ibid.*, 158.

¹⁵ *Ibid.*, 159.

¹⁶ For a discussion of the holiday cycles in calendars of the ancient Near East, see Cohen, *The Cultic Calendars of the Ancient Near East*.

religious life of Israel, as anywhere in the ancient Near East, was overwhelming and elicited significant responses. Man who structured social time in accordance with the natural divisions of time was likely to be in harmony with nature. The structure all but guaranteed that the rhythm of society and culture should beat in unison with the rhythm of heaven, earth, and underworld.

For the sabbath, however, there is no room in this physico-human periodicity. Having no bond with nature other than the change by day and night, the sabbatical is indifferent to the harmony of the universe. It represents a neutral structuring of empty time. Since the rhythm of the sabbath is the only exception to this prevailing natural rhythm, and since the exception in no way derives from time as such nor is traceable to any aspect of time experienced in the ancient Near East, it is likely that the dichotomy between the sabbath on the one hand and nature on the other hand was not unintentional.¹⁷

Monotheism, the Sabbath, and Nature

What, then, was the intent, the purpose of the *unnaturalness* of the seventh-day Sabbath? For this we must look to the special connection of the Sabbath to monotheism. There is a long-held scholarly consensus that, in its final form, the biblical Sabbath is polemically aimed at emphasizing the absolute superiority and sovereignty of God the creator as against the worship of any other Gods, especially astral deities.¹⁸ This is the likely motivation for the euphemistic use of “greater light” and “lesser light” for sun and moon (Gen 1:16); the P editor knows that the terms for sun and moon have meanings related to the pagan gods associated with those orbs, and wants no hint of them.¹⁹ In contrast, the one God who creates “the heavens and the earth” is before time and beyond space, a transcendent creator of the heavenly lights (that some humans mistake for gods),

¹⁷ Matitiah Tsevat, “The Basic Meaning of the Biblical Sabbath,” *ZAW* 84 (1972): 456-458.

¹⁸ See for example, Theophile James Meek, “The Sabbath in the Old Testament,” *JBL* 33 (1914): 210; Robinson, 242; Andreasen, 251; Zerubavel, *The Seven Day Circle: The History and Meaning of the Week*, 11; Lang, 43; Weinfeld, “God the Creator in Gen. I and in the Prophecy of Second Isaiah” [Hebrew], 110; Cassuto, 68.

¹⁹ As observed by Cyrus H. Gordon, “The Biblical Sabbath: Its Origin and Observance in the Ancient Near East,” *Judaism* 31 (1982): 14-15.

which mark both time and the boundary of space. In contrast to astral worshippers among both foreigners and mistaken Israelites, this transcendent God could not be identified with any of these elements. As Zerubavel observes, “Not being personified as any particular natural force, the Jewish god was to be regarded as untouched by nature in any way. Accordingly, the day dedicated to this god was to be regarded as part of a divine temporal pattern that transcends even nature itself.”²⁰ The Sabbath became, as Robinson succinctly summarizes, “The symbol for Yahweh’s sovereignty and thus the symbol for the negation of all other gods.”²¹ In the realm of actual religious action and observance, therefore, “Keeping the sabbath is acceptance of the sovereignty of God,” as Tsevat writes.²²

The seven-day rhythm of the Sabbath was a direct revelation to humans, not a “set-time” revealed by observation of the heavenly lights as intermediaries between God and humans;²³ the direct connection was construed as making it holier than the set-times linked to the heavenly lights, for it was the responsibility of humans (especially the priests) to observe it. This direct connection of humans and God, without intermediaries, is a key characteristic of biblical monotheism. In a discussion of the shift from

²⁰ Zerubavel, *The Seven Day Circle: The History and Meaning of the Week*, 11.

²¹ Robinson, 341.

²² Tsevat, 455.

²³ Despite the fact that the components of the seven-day week are days, and that the beginning and end of the day of the Sabbath is a function of the natural daily cycle of dark and light, these transitional twilight phenomena mark *any* day, not merely the Sabbath; it is not the beginning and end of the Sabbath day that is unnatural, but the continuous seven-day count which is its distinguishing element. See also the comments concerning the boundaries of the Sabbath in Zerubavel, *Hidden Rhythms: Schedules and Calendars in Social Life*, 125-127.

polytheism to biblical monotheism, Frymer-Kensky describes the profound change in the relationship between humans, God and nature that this signifies:

Ancient thought sees nature, the animals, humanity and divinity as lying along a continuum, with the gods, in a sense, mediating between humanity and nature:

HUMANITY -- GODS – NATURE

In the Bible, the diagram is different:

NATURE -- HUMANITY – GOD

God's actions towards nature depend on human activity...In effect, humans determine what God does, not by prayers and manipulation, but by their behavior. In this way, humanity mediates between God and nature.²⁴

This is similar to the shift that Hiebert sees between the P and J documents of the Pentateuch, wherein humans move from being subservient to superior to non-human nature. In Frymer-Kensky's view, humans now mediate between God and nature, putting both increased power and increased responsibility in the hands of humans: "The ultimate responsibility for what happens to the natural world rests on the behavior of human beings towards nature, towards God, and towards each other."²⁵ God may be the Creator, but humans are the actors to whom God responds – often as a consequence of humanity's errors, such as in the story of the flood. A transcendent God becomes more distant from terrestrial nature as humans take on more God-like responsibility. Frymer-Kensky admits that this is an "essentially anthropocentric" view, but contends, despite this, that the "biblical theory of God's reactivity is biblical monotheism's way of grounding humanity in its interconnectedness with nature and its ultimate responsibility for nature's well-

²⁴ Frymer-Kensky, 105.

²⁵ Ibid., 105.

being and survival.”²⁶ Indeed, the bible has a fairly severe view of Israel’s responsibility in its own disasters.²⁷

Nevertheless, it seems to me that while Frymer-Kensky is correct about the monotheistic view of humanity’s abiding responsibility for the fate of the earth, there is a progressive shift, apparent in the biblical text itself, from humans being an equal participant *with* nature towards being stewards *of* nature. The monotheistic distancing of humans from nature is both reflected in, and reinforced by, the close association between the seventh-day Sabbath, a rhythm of tame time, with the transcendent deity of biblical monotheism. A God beyond nature is worshipped in a rhythm independent of nature. Certainly nature has less of an aura of divinity and nature’s times are no longer the primary venue for encountering the divine, but are diminished relative to a rhythm dependent exclusively on human counting (especially by the priests) that now determines the timing for the divine-human encounter. Thus, it seems that not only is there a strong association between the seventh-day Sabbath and monotheism, but that both the Sabbath and monotheism entail a cultural distancing of humans from nature. The importance of nature as a venue for divine-human contact is not eliminated – the daily, new moon and annual observances still exist – but they are demoted in importance.²⁸

²⁶ Ibid., 107.

²⁷ E.g., Lev 18:25-28; 20:22-23; Kings 1 14:15-16.

²⁸ Temporality in human cultures is not experienced as homogenous; as Zerubavel notes, “It is essentially through interrupting the continuity of nature, by transforming an undifferentiated continuum into discrete classes and categories that we manage to transform nature into culture” (Zerubavel, *Hidden Rhythms: Schedules and Calendars in Social Life*, 111). It is the recognition and significance of cycles of time that is culturally constructed, especially the distinction between sacred and profane time. What I am focusing on here is not the fact of cultural construction, but the differences between the raw material used for that construction; virtually all scholars of the calendar, and of the Sabbath, make the distinction between “natural” rhythms that is part of the universal experience of life on earth and “artificial” rhythms that are not matched to a rhythm observed in nature and are therefore unique to a particular culture. The point of this discussion of the Sabbath is that it is precisely its non-natural rhythm that is significant.

In particular, we can see that the observance of the lunation, at least in the clearly identifiable form of observance of the new moon, decreases in importance. While it appears likely that there were Temple sacrifices held at the new moon,²⁹ the new moon observance is absent from the holiday list in Lev 23, an indication of its reduced status at the same time that the Sabbath's importance is emphasized.³⁰ Possibly related to the declining status of the lunation is the attempt to repress ancestor worship in ancient Israel, for such worship may have taken place at the new moon and Remembrance Day (the only annual holiday to fall on a new moon in the lunisolar calendar).³¹ If this was the situation, it seems clear that promotion of the seventh-day Sabbath at the expense of the lunation would have been an element in the struggle of monotheists against a persistent ancestor cult that included elements of astral worship.³²

Sabbatarian doctrine and practice reflects a dramatic change in cultural values and concepts that construct the place of humans in the world, and their relation to the divine

²⁹ Num 10:10, 28:11-15.

³⁰ Cooper and Goldstein, 23, who consider this a post-exilic Priestly text. Even Wellhausen commented on the process of less lunar observances as the seventh-day sabbath gained in importance; see Wellhausen, 113-114.

³¹ There is a long-standing debate in biblical studies concerning the possibility and persistence of ancestor worship in ancient Israel; certainly it is frequently condemned in the Bible, which many see as evidence of its practice. For a summary of the scholarship on biblical ancestor worship see Charles A. Kennedy, "Dead, Cult of the," in *ABD*, ed. David Noel Freedman (New York: Doubleday, 1992). For a recent scholarly exchange, see Barry M. Gittlen, ed., *Sacred Time, Sacred Place: Archaeology and the Religion of Israel* (Winona Lake, Ind.: Eisenbrauns, 2002), 139-217. For a recent treatment relying heavily on comparison to Babylonian practices, see Karel van der Toorn, *Family Religion in Babylonia, Syria and Israel*, ed. B. Halpern and M. H.E. Weippert, *Studies in the History and Culture of the Ancient Near East* (New York: E.J. Brill, 1996), especially 206-235. For a treatment with an emphasis on archeological artifacts, see Elizabeth Bloch-Smith, *Judahite Burial Practices and Beliefs about the Dead*, ed. David J.A. Clines and Philip R. Davies, *Journal for the Study of the Old Testament Supplement Series 123, JSOT/ASOR Monograph Series 7* (Sheffield: JSOT Press, 1992).

³² A 364-day calendar like that of the *CDM* texts or *Jubilees*, which changed the observance of the "new month" away from the first lunar crescent, could be seen as an even more emphatic polemic against perceived idolatrous worship on the new moon.

and natural worlds. While the lack of linkage to nature may make the Sabbath “an isolated and strange phenomenon, not only in the world but also in Israel itself,”³³ as Tsevat writes, its persistence and success mean that we should not ignore the fact that it established a new construction of tame time, based on calculation rather than observation of nature.

The reasons for the successful establishment of the Sabbath are to be found in the way it was institutionalized and integrated into the life of the priests and the people. This was done via the priestly courses and the attempts to enforce the Sabbath on the populace at large. There was a synergy between monotheistic theology and ritual practice, centralizing worship in the Temple, the power and status of the priests, the organization of the priests, and the importance of Sabbath observance. As an unnatural rhythm it had to be continually reinforced by the authorities, institutionalized both in and out of the Temple, and justified theologically by attributing this rhythm of time to God the Creator of Heaven and Earth, who ostensibly inscribed it into the architecture of creation (Gen 1-2:4a and the Decalogues).

The Biblical Sabbath and the 364DC

The sabbatarian aspect of a 364DC would have made it a very helpful tool for the institutionalization of biblical Sabbath practice; indeed, there is a clear functional synergy between the centrality of the Sabbath in the Bible and the *CDM* version of the 364DC. In addition, in my view there is an historical synergy. On the one hand, it is generally agreed that the final editing of the Pentateuch, and many of the other books of the Bible, took

³³ Tsevat, 458.

place during the Persian period.³⁴ On the other hand, as I discussed in Part I, I support the position (first proposed by Jaubert) that the texts we have of the 364DC are part of an ancient priestly calendar tradition in which a form of the 364DC was used in the Jerusalem Temple.³⁵ I further argued that it is plausible that both the *AB* and the *CDM* calendars date to the Persian period. Putting all this together, it is my view that this is also the period during which a version of the 364DC was introduced into the Temple.

I want to take this as my starting point for re-reading the Bible, especially the historical texts written in the Second Temple period. Is there any hint about when a 364DC may have been introduced? Since the Sabbath was at the core of the 364DCs advocated by the Enochic Mishmarot and Jubilean families of texts, I think that if we focus on reports about Sabbath observance – and lack thereof – we can find an answer. This, I suggest, points us to Nehemiah, the Persian Jew who was governor of the province of Judea in the mid-fifth century B.C.E., the middle of the Persian period. My thesis is that Nehemiah’s cultic reforms, which centered on the reinvigorating Sabbath observance, were a likely setting for the introduction of a 364DC into use in the Temple.

³⁴ Friedman, for example, contends that Ezra was the last redactor of the Pentateuch; see Richard Elliott Friedman, *Who Wrote the Bible?* (New York: Summit Books, 1987), 223-225, 232, 244.

³⁵ Jaubert argued that the dated elements of the priestly texts of the Hexateuch were internally consistent with the 364DC, thereby confirming the use and status of this calendar at least by the time these books were edited; Jaubert, 31-52. VanderKam endorsed this view, that the 364DC “was probably the official cultic calendar during the early centuries of the second temple”; VanderKam, “The Origin, Character, and Early History of the 364-Day Calendar: A Reassessment of Jaubert’s Hypotheses,” 410. Given this, Olson suggests that the 364DC “represents the official calendar of preexilic Israel,” since recent scholarship has pushed the dating of the P(riestly) texts of the Bible to the pre-exilic period (whereas earlier scholars had tended to date them to the post-exilic period); Olson, “1 Enoch,” 927. Eilior also suggests that the 364DC was used by “the Zadokite priests, who had officiated as high priests from the time of the First Temple”; Eilior, *The Three Temples: On the Emergence of Jewish Mysticism*, 61. (While Eilior references VanderKam’s article, her assertion that the 364DC was used in First Temple times is not supported by that article, nor by Jaubert.) None of these propose a time, place or reason for the implementation of this calendar. The one recent suggestion is by Chyutin, who attributes the 364DC to King Solomon at the founding of the First Temple – but this opinion is anomalous and has received no support; Chyutin, 53.

Nehemiah's Reform of the Cult and Calendar: A Proposal

Nehemiah's Report of His Activities in Jerusalem

As part of a career at the Persian court, Nehemiah served as the Persian governor of the province of Judea beginning in 444 B.C.E.³⁶ The scholarly consensus is that significant parts of the biblical book of Nehemiah are based on a memoir composed by Nehemiah himself, augmented and edited by a subsequent editor.³⁷ The Bible reports that Nehemiah was a political and religious reformer. He sought to increase a sense of Judean identity by rebuilding the city walls, campaigning against mixed marriages, centralizing worship in the Jerusalem Temple, and ousting various political opponents. In the temple he introduced a number of administrative and doctrinal and administrative reforms. In short, Nehemiah was a key player in establishing what would become characteristic practices of late-Second Temple Judaism.

Of particular relevance are Neh 13:15-31, passages of the "Nehemiah Memoir" that conclude the biblical book. Here we learn about Nehemiah's struggle to institutionalize the seventh-day Sabbath during his second term as governor, something about which he is particularly proud:

15. At that time I saw men in Judah treading winepresses on the Sabbath, and others bringing heaps of grain and loading them onto asses, also wine, grapes, figs, and all sorts of goods, and bringing them into Jerusalem on the Sabbath. I admonished them there and then for selling provisions.

³⁶ There are disputes in the secondary literature concerning whether Nehemiah served one or two times, and whether he preceded or followed Ezra. See H. G. M. Williamson, *Ezra, Nehemiah* (Waco, Tex.: Word Books, 1985), xxiv-xxviii, xxxix-xliv; Joseph Blenkinsopp, *Ezra-Nehemiah: A Commentary* (Philadelphia: The Westminster Press, 1988), 41-47. These issues, however, do not bear on the present discussion.

³⁷ The "Nehemiah Memoir" is generally thought to include Neh 1-7, parts of 12:27-43, 13:4-31; see Williamson, *Ezra, Nehemiah*, xxiv; Lester L. Grabbe, *Ezra-Nehemiah* (New York: Routledge, 1998), 154-156.

16. Tyrians who lived there brought fish and all sorts of wares and sold them on the Sabbath to the Judahites in Jerusalem.
17. I censured the nobles of Judah, saying to them, “What evil thing is this that you are doing, profaning the Sabbath day!
18. This is just what your ancestors did, and for it God brought all this misfortune on this city; and now you give cause for further wrath against Israel by profaning the Sabbath!”
19. When shadows filled the gateways of Jerusalem at the approach of the Sabbath, I gave orders that the doors be closed, and ordered them not to be opened until after the Sabbath. I stationed some of my servants at the gates, so that no goods should enter on the Sabbath.
20. Once or twice the merchants and the vendors of all sorts of wares spent the night outside Jerusalem,
21. but I warned them, saying, “What do you mean by spending the night alongside the wall? If you do so again, I will lay hands upon you!” From then on they did not come on the Sabbath.
22. I gave orders to the Levites to purify themselves and come and guard the gates, to preserve the sanctity of the Sabbath. This too, O my God, remember to my credit, and spare me in accord with your abundant faithfulness.
23. Also at that time, I saw that Jews had married Ashdodite, Ammonite, and Moabite women;
24. a good number of their children spoke the language of Ashdod and the language of those various peoples, and did not know how to speak Judean.
25. I censured them, cursed them, flogged them, tore out their hair, and adjured them by God, saying, “You shall not give your daughters in marriage to their sons, or take any of their daughters for your sons or yourselves.
26. It was just in such things that King Solomon of Israel sinned! Among the many nations there was not a king like him, and so well loved was he by his God that God made him king of all Israel, yet foreign wives caused even him to sin.
27. How, then, can we acquiesce in your doing this great wrong, breaking faith with our God by marrying foreign women?”
28. One of the sons of Joiada son of the high priest Eliashib was a son-in-law of Sanballat the Horonite; I drove him away from me.
29. Remember to their discredit, O my God, how they polluted the priesthood, the covenant of the priests and Levites.
30. I purged them of every foreign element, and arranged for the priests and the Levites to work each at his task by shifts (mishmarot),
31. and for the wood offering at fixed times and for the first fruits. O my God, remember it to my credit!

Nehemiah is concerned with purity, of the people and of the cult. His struggle for purity of the people is expressed in Neh 13:23-28, where intermarriage is condemned. He reports his conflicts with nobles (Neh 13:17) and priests (Neh 13:4-9; 28-29). He also

reinvigorates the Temple administration in order to meet the cultic requirements of operating the Temple, which are also the needs of the priests, by enforcing the collection of a wood offering (Neh 13:31), the first fruits (Neh 13:31), gifts of grain, fruit, wine and oil (Neh 13:12).³⁸

In terms of the cult, it is important to note that the violation of the Sabbath (Neh 13:15-22) – not any other holiday observance – is what most angers him, and it becomes central to his reform program. Nehemiah shares the post-exilic theological view that the exile was the result of ignoring the Sabbath.³⁹ By Nehemiah’s own account we can be sure that observance of the seventh-day Sabbath was either lax or non-existent when he arrived in Jerusalem.⁴⁰

³⁸ As I discussed in Part I, the appearance in the *Temple Scroll* and other Qumran calendar texts of specific dates for the festivals of the wood offering, the first fruits of wine and oil seem connected to these elements in Nehemiah, either historically or exegetically. While Talmon insists on the innovative institution of these festivals by the Qumran “Covenanters,” both Yadin and Milgrom are of the opinion (which I share) that Neh 13:31 indicates that Nehemiah probably knew these holidays. Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 165; Yadin, vol. I, 86; J. Milgrom, “First Fruits, OT,” in *IDB* (New York: Abingdon Press, 1976), 337. See also VanderKam, “The Temple Scroll and the Book of Jubilees,” 235, n. 37.

³⁹ Neh 13:17-18. As expressed in Jer 17: 27, “But if you do not obey My command to hallow the sabbath day and to carry in no burdens through the gates of Jerusalem on the sabbath day, then I will set fire to its gates; it shall consume the fortresses of Jerusalem and it shall not be extinguished.” See also Lev 26: 34-35, 43. On Nehemiah’s basis on Jeremiah, see Michael A. Fishbane, *Biblical Interpretation in Ancient Israel* (Oxford: Clarendon Press, 1984), 131-134.

⁴⁰ There is a very old and unresolved scholarly debate concerning whether the seventh-day Sabbath was a post-exilic innovation or a pre-exilic practice. Among those who argue for a pre-exilic seventh-day Sabbath are Andreasen ; Gerhard F. Hasel, “‘New Moon and Sabbath’ in Eighth Century Israelite Prophetic Writings (Isa 1:13; Hos 2:13; Amos 8:5),” in *Wünschet Jerusalem Frieden*, ed. Matthias Augustin and Klaus-Dietrich Schunck (Frankfurt am Main: Peter Lang, 1988); Gerhard Hasel, “Sabbath,” in *ABD*, ed. David Noel Freedman (New York: Doubleday, 1992); Hallo, “New Moons and Sabbaths: A Case-study in the Contrastive Approach” (although he qualifies this opinion in William W. Hallo, *Origins: The Ancient Near Eastern Background of Some Modern Western Institutions* (Leiden: Brill, 1996), 127); Vaux, 480. Those who advocate the thesis that the seventh-day Sabbath was a post-exilic innovation generally argue that during the pre-exilic period the Sabbath was a full-moon festival. Among those who have supported this view have been Wellhausen, 115-116; Marcus Jastrow, “The Day After the Sabbath,” *AJS* 30 (1914); Naphtali H. Tur-Sinai, *Ha-Lashon veva-Sefer: Be'ayot Yesod be-Mad'a ha-Lashon uvi-Mekoroteha ba-Sifrut*, 3 vols., vol. 3 (Jerusalem: Mosad Bialik, 1955), 205-228; Abraham E. Millgram, ed., *Sabbath: The Day of Delight* (Philadelphia: The Jewish Publication Society of America, 1965), 337-342; Robinson, Lang, 43; Cooper and Goldstein; Fishbane, 145-151. If the latter school is correct this would enhance my argument, for Nehemiah’s calendar reform might also have been when the continuous seventh-day Sabbath

In response Nehemiah introduced, organized, and enforced a new religious regime in the city and the Temple, one that he may have thought was an old one (and, at least, promoted as an old one) but which was innovative at that time. For the city as a whole, transport and commerce were forbidden to all on the Sabbath, and the collection of tithes for the Temple was reinvigorated (Neh 13:10-12). It seems that Nehemiah's Sabbath reforms were effective because this is the last time that any conflicts concerning Sabbath observance are reported. Subsequent to Nehemiah it seems the Sabbath was marked continuously in the Temple every seven days and became a key aspect of Jewish religious practice,⁴¹ for despite the many late Second Temple calendrical conflicts there is no evidence of disagreement about the day observed as the Sabbath. Clearly, at least since Nehemiah, the perpetual seventh-day Sabbath was a vital element in Jewish time keeping.

These various aspects of cultic reform mentioned in Nehemiah's Memoir are also mentioned in Neh 10:1-40, a public reaffirmation of the people to Nehemiah's reforms.⁴² This includes affirmations to follow the Sabbath, the Sabbatical year, bring first fruits and gifts of produce to the Temple. Taken as a whole, then, Nehemiah was able to

was itself introduced, finalizing a shift away from a pre-exilic full-moon Sabbath. Indeed, it could even be argued that the 364DC and the seventh-day Sabbath were implemented simultaneously.

However, I need not enter into this debate for purposes of the present discussion, nor resolve whether Nehemiah should be seen as re-enforcing what had become a lax observance (e.g., Morton Smith, *Palestinian Parties and Politics that Shaped the Old Testament* (London: SCM Press, 1971) 102, 109, 198 n. 53.), expanding the rigor of the Sabbath (e.g., Williamson, *Ezra, Nehemiah*, 394-396; Blenkinsopp, 359; Grabbe, 173) or imposing a previously unknown observance (e.g., Cooper and Goldstein, 25). Rather we need only note that in Nehemiah's view the Sabbath was not being properly observed, prompting the reforms he undertakes.

⁴¹ See, for example, Sanders, *Judaism: Practice & Belief, 63 BCE- 66CE*, 208-211. See also Shaye J. D. Cohen, *The Beginnings of Jewishness: Boundaries, Varieties, Uncertainties* (Berkeley: University of California Press, 1999), 91.

⁴² Despite its earlier location in the biblical text, it is generally seen as a subsequent event and a later editorial insertion because it presupposes Nehemiah's reforms. See Blenkinsopp, 311-312; Williamson, *Ezra, Nehemiah*, 325-331; Fishbane, 130.

institutionalize a thorough reform and invigoration of the Temple cult; as Grabbe concludes, these “were not just miscellaneous *ad hoc* decisions. Rather, they seem to have been part of a complete programme. In that sense, Nehemiah was very much a reformer.”⁴³ I suggest this provides a likely context for calendar reform.

Nehemiah’s Sabbath Reforms as the Origin of the 364-Day CDM Calendar

Nehemiah reports that he “arranged for the priests and the Levites to work each at his task by shifts (*mishmarot*)” (Neh 13:30).⁴⁴ While the work shifts in the Temple go back to pre-exilic times,⁴⁵ it appears that Nehemiah mentions this because he has to establish or reform this practice. It seems likely that Nehemiah organized the weekly rotation of priests synchronized with the seventh-day Sabbath that he aimed to enforce; a priestly duty shift change on the Sabbath would have been an administrative structure

⁴³ Grabbe, 175. Grabbe further points out that Nehemiah’s project of rebuilding the city wall would have served socio-political functions beyond simple defense: “A city whose gates could be shut against outsiders could also serve to minimize contact with unacceptable ethnic and religious groups, and even influences and ideas. In a real sense, Nehemiah was creating his own religious and ideological ghetto. Thus the city wall ... was essential to Nehemiah’s reforms.” *Ibid.*, 176. See also the evaluation of Nehemiah’s career in Smith, *Palestinian Parties and Politics that Shaped the Old Testament*, 96-112.

⁴⁴ The Hebrew term for these shifts varies in the literature. In Neh 13:30 and in Rabbinic literature (see for example *b. Sukkah* 56b; *b. Ta’anit* 27a,b; *b. Ketubbot* 27a; *b. Berakhot* 12a) the Hebrew word translated as “shifts” is *mishmarot* – משמרות; a more literal translation would be “watches,” which correctly gives a military connotation of being on guard duty (as in Neh 13:22, where the Levites are assigned to “guard the gates, to preserve the sanctity of the sabbath”). Here the emphasis is on the priests’ (and Levites’) duty to protect and enforce the sanctity of the Temple and its cult. As discussed above, this term was adopted by Milik to describe some of the Qumran calendar texts; see Milik, *Ten Years of Discovery in the Wilderness of Judaea*, 41. Talmon also discusses this terminology, although without reference to Nehemia, in Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 9.

In the book of Chronicles (especially in 1 Chron 23:6, 24:1, 26:1, 12, 19; 2 Chron 8:14, 31:2) the synonymous term *machlakot* – מחלקות, translated as “divisions,” “detachments,” or “courses,” is used in the discussion of how the priests and Levites were “divided” into groups for service in the Temple; this term emphasizes the process of division and organization rather than the task which was to be performed.

⁴⁵ Solomon is said to have established an administrative system of “twelve prefects governing all Israel, who provided food for the king and his household; each had to provide food for one month in the year” (1 Kings 4:7). Chronicles (1 Chr. 27:1) confirms that these administrative shifts took place monthly, but implies that this was different in the Temple, where the Sabbath shifts (1 Chr. 9:32) took place every seven days (1 Chr. 9:25).

supporting the institutionalization of Sabbath observance in the Temple. These shifts were probably identical to the list of 24 clans reported in 1 Chr 24:7-18, which figure prominently in the Enochic Mishmarot family of DSS calendar texts. If we understand the *CDM* calendar as the work schedule for the priests (as I have proposed), I believe we can read Nehemiah's arrangement of the priestly courses as describing the introduction of the *CDM* calendar.

The establishment of the priestly courses was likely connected to the power struggle over Nehemiah's administrative reforms (Neh 13:29-30), where he claims that the priesthood was "polluted" and that he "purged" it. The proximate cause mentioned in the text is the marriage of Jews, including priests, to foreigners, but this purge probably affected the leadership and organization of the priests, including the weekly priestly courses that refocused the cult on the Sabbath. Indeed, the weekly rotation of priestly courses would have also served to minimize the influence of any particular priestly clan, something Nehemiah would have found desirable after purging the priesthood.

Nehemiah's reorganization of the priesthood provides an auspicious historical moment for the introduction of a sabbatarian 364-day calendar, a situation that describes both the motivation and opportunity for such a change. For those with a theological focus on the Sabbath, such as Nehemiah, the 364-day year – developed in Babylonia at about the time of the exile without regard to the seven-day Sabbath, and echoed in the *AB* – provided great advantages, for the year (52 weeks) and the seasons (4 seasons of 13 weeks each) could be seen as multiples of the seventh-day Sabbath.⁴⁶ With a few

⁴⁶ While Glessmer points out the likely attraction of the 364-day year to those you used a seven-day week, he does not take this any further; see Glessmer, "Horizontal Measuring in the Babylonian Astronomical Compendium MUL.APIN and in the Astronomical Book of 1En," 280.

modifications the additional elements of the seventh-day Sabbath, the priestly duty roster, and the annual festivals all fit easily and synchronously. Therefore it seems to me that in broad outline the *CDM* calendar combines the 364-day ephemeris of the *AB* with Nehemiah's sabbatarian cultic reforms.⁴⁷ This can be summed up in the following conceptual formula:

The *AB* of *I Enoch* + Nehemiah's Sabbath reforms =

The cultic calendar of *Calendrical Documents/Mishmarot A, B and C*.

All the key elements were available at the time of Nehemiah:⁴⁸

- Astronomical: knowledge of a 364DC similar to the *AB* (i.e., non-cultic)
- Theological: reform of the cult with special emphasis on the Sabbath

⁴⁷ While the non-Pentateuchal holidays common to Nehemiah and the *Temple Scroll* are not mentioned in the *CDM* texts, this probably indicates that they were not accorded the same status as the Pentateuchal holidays. Talmon infers a similar hierarchy of importance; Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 14.

⁴⁸ I want to be clear about how I am phrasing this: I am *not* claiming that precisely the *AB* and the *CDM* texts that we know are exactly those used in Nehemiah's era, but that the *beginnings* of these respective astronomical and cultic traditions can probably be dated to the early or middle of the Persian period era. As both Smith and VanderKam note, there is very little historical material for the 250-year period between Nehemiah and Antiochus Epiphanes. Therefore, I am careful to suggest only that the *origins* of the calendar tradition expressed in the *CDM* texts was in the Nehemian period, i.e., earlier variations of a similar calendar may have existed (for example, showing a different starting point of the *mishmarot* cycle, one of the differences between the list in Chronicles and the *CDM*), although evidence of them has not survived. See Smith, *Palestinian Parties and Politics that Shaped the Old Testament*, 113-115; VanderKam, "The 364-Day Calendar in the Enochic Literature," 159. Similarly, this would provide a likely scenario for a historical situation where the specific form of 364-day calendar which Gardner deciphers from Genesis 11 may have been introduced; see Gardner.

Furthermore, if I am correct about the simultaneous implementation of the seventh-day Sabbath and a *CDM*-like calendar by Nehemia, this could help clarify a number of puzzling issues about the *AB*. Given the antiquity and Babylonian origin of the *AB*'s cosmology, it is conceivable that it predates the (re)establishment of the seventh-day Sabbath by Nehemiah and possibly predates the final redaction of Gen 1-2:4a – or, at least, the understanding of Gen 1-2:4a as referring to a seven-day week culminating in a rest day named the Sabbath. The *AB* may have its origins in non-sabbatarian circles that pre-dated Nehemiah's reforms; this may have included priests, for the movements of the heavens and the calendar were, after all, the responsibility of the priests throughout the ancient Near East. (See note 40 above concerning the academic dispute about the origins of the continuous seventh-day Sabbath.) This could help explain why the lunation begins with the first crescent in the *AB*, while in the *CDM* the full moon seems to begin the lunar cycle (see Part I), with the *CDM* system being part of Nehemiah's reform. This even raises the possibility that a 364-day year was used in the early Persian period, brought back with the early returnees from Babylon but before the seventh-day Sabbath had become a core element of post-exilic Judaism.

- Administrative: the arrangement of the priestly courses
- Political: Nehemiah's purge of the priesthood
- Economic: the collection of "gifts, the first fruits, and the tithes" (Neh 12:44)

Most importantly, introducing a calendar with the seventh-day Sabbath built into its temporal structure would have been attractive both administratively and theologically; it would have been attractive to the priests who had to make the process work, at the same time that it would make the Sabbath itself seem to have been built into the divine architecture of the cosmos, into its very nature.⁴⁹

For a reform like this to take root it must have the force not only of ideology, but also be integrated into daily life and serve the interest of various power groups. The introduction of the sabbatarian focused *CDM* calendar for use in the Temple would have served this purpose.⁵⁰ In the socio-political context of the Persian period, the priests and Temple were encouraged as a local leadership that would become an intermediary between the local populace and the Persian Empire.⁵¹ The seventh-day Sabbath not only became central to the priests' own practice, but also increased the frequency of possible contact between the populace and the Temple authorities. As noted by Berquist, by "linking religious devotion with the cycles of work and production, the religion and ritual creation of reality enforced the Persian imperial goals of intensification of

⁴⁹ The observation that the Sabbath is integral to Priestly ideology concerning the nature of the cosmos reaches back at least to Wellhausen, who observed that, "the Sabbath... presents itself with all the rigour of a law of nature, having its reason with itself, and being observed even by the Creator." Wellhausen, 115. Similarly, Cooper and Goldstein claim that this association of Sabbath with holiness in Lev 23:3 embodies the principles that "organize all of reality," Cooper and Goldstein, 24. Most recently, see Eilior, who focuses on priestly mystical doctrines; Eilior, *The Three Temples: On the Emergence of Jewish Mysticism*.

⁵⁰ That is to say, this was a reform of the cultic calendar; the civil calendar of the Persian Empire continued to be used, as evidenced by references to Babylonian month names found in Neh 1:1, 2:1, 6:15.

⁵¹ On the centralization of worship in the rebuilt Second Temple, despite resistance from the local population, and how this simultaneously served the purposes of the Persian empire and increased status and power of the temple priesthood see Jon L. Berquist, *Judaism in Persia's Shadow* (Minneapolis, Minn.: Fortress Press, 1995), 60-65, 142-143, 147-157.

productivity.”⁵² The active enforcement of simultaneous rest on the Sabbath (which Nehemiah instigates) made it easier to access temple worship. In turn, this Sabbath observance increased the power of the centralized authorities through the regular payments of taxes, tithes and sacrifices (to the government and the priests), which were all collected in the Temple. The priesthood utilized the seventh-day Sabbath to consolidate and project their power; the seventh-day Sabbath practice, which became one of the most important observances in Second Temple Jewish religion, also served to increase the importance and power of the Temple.

Whether or not I am right that Nehemiah instituted the *CDM* calendar into the Temple, it is clear that he instituted measures to strengthen the observance of the Sabbath that were successful in the long-term. This practical level is matched on the theoretical level by the focus of the Bible, which reflects a sabbatarian theological position consistent with Nehemiah’s reforms

Nehemiah’s Reforms and the Lineage of the “Calendar Wars”

It is a well-known rabbinic tradition that “the names of the months came up with them from Babylonia” (*y. Rosh HaShanah* 1:2 (56d)), implying that the Babylonian month names used in the rabbinic OLC were brought back to Judea with the returnees but that the calendar itself was unchanged. It might be said that my thesis concerning Nehemiah’s institution of a 364DC inverts this: Nehemiah brought a 364DC using ordinal month names back from Babylonia and installed it for use in the Temple. However, I think this is only half of the picture. In fact, it is more likely that Nehemiah operated with *two* calendars, the 364DC for local religious purposes and the Standard

⁵² *Ibid.*, 143.

Mesopotamian Calendar for political and administrative purposes in his role as the governor representing the Persian Emperor.⁵³

As is common today throughout most of the world,⁵⁴ coping with multiple calendars seems to have been standard in the ancient Near East from the days of both the Mesopotamian and Egyptian Empires, and double dating is common among Jewish documents from the Persian period, such as at Elephantine and in the post-exilic biblical texts.⁵⁵ It was common for various locales within the empire to have the liberty to keep their own calendar (especially for religious reasons) in addition to the standard administrative calendar of the Empire. This would explain the use of both types of dates in the biblical Book of Nehemiah.⁵⁶

⁵³ As discussed in Part I, VanderKam has put forward a similar theory that there were two calendars in use during the Seleucid period, a 364DC for the Temple cult and the Standard Mesopotamian Calendar for administrative needs of the Empire. He proposes that in the wake of the Maccabean revolt the Hasmoneans introduced the Mesopotamian calendar into use at the Temple; in response, those who rejected this change broke off to preserve the old 364DC practice and founded the Qumran sect (see VanderKam, “2 Maccabees 6, 7A and Calendrical Change in Jerusalem,” and VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 113-116). While I don’t especially agree with VanderKam’s scenario for the timing of this calendrical shift (I think it may have happened a few years earlier, as discussed in Part I), I nevertheless agree with his concept that two calendars were in use during the Second Temple period, one for religious/cultic purposes, and one for non-cultic trade, communication, and legal needs. The difference is that while VanderKam is describing a scenario for the *demise* of a 364DC’s use in the Temple, I am describing a scenario for the *beginning* of a 364DC’s use in the Temple.

⁵⁴ It is commonplace today, for example, to describe the holidays of the Jewish calendar as coming “late” or “early,” unconsciously assuming that the Gregorian calendar is an appropriate standard. Obviously, this reflects the reality of a minority living in a multicultural society.

⁵⁵ The double dating in the documents found at the Egyptian site of Elephantine, where a Jewish garrison served the Persian Emperor, is between Egyptian and Persian calendars. Porten has recently re-examined the Elephantine documents and concluded that “there is no evidence for a Jewish calendar at Elephantine as distinct from the Babylonian calendar,” Bezalel Porten, “The Calendar of Aramaic Texts from Achaemenid and Ptolemaic Egypt,” in *Irano-Judaica II*, ed. Shaul Shaked and Amnon Netzer (Jerusalem: Ben-Zvi Institute, 1990), 32. For a summary of Porten’s conclusions see VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 15-16.

⁵⁶ References to Babylonian month names can be found in Neh 1:1, 2:1, 6:15. I am tempted to simplify by saying that Nehemiah “brought” two calendars. No doubt he did, but it is likely that the Standard Mesopotamian Calendar was already in use for non-Temple purposes such as politics and trade. Stegemann makes a similar argument for the differential use of international and local religious calendars; Stegemann, *The Library of Qumran*, 171.

I therefore agree with Wacholder's suggestion that the evidence indicates *both* the 364DC and the OLC using Babylonian month names came into Jewish usage at about the same time, in the early Persian period.⁵⁷ One of the reasons I contend that a 364DC was in use during the Persian period is that the Bible seems unconcerned with any potential overlap or conflict between the Sabbath observance and other holidays; this is consistent with the *CDM* calendar, which arranges these so that the Sabbaths and annual holidays never overlap. In contrast, these overlaps are a significant problem for the practitioners of the OLC described in the Talmud, as we shall see in Part III.

⁵⁷ We differ, however, on which calendar was the one used in the Temple; I am arguing that it was the 364DC while Wacholder's main aim is to show that the OLC became the Temple calendar early in the Persian period, a polemic against VanderKam's thesis of the OLC's entry into the Temple with the Maccabees; see Wacholder, "Calendar Wars Between the 364 and the 365-Day Year."

PART III
RE-READING THE RABBINICAL CALENDAR TEXTS IN LIGHT OF THE 364-
DAY CALENDAR

For two months they violate the Sabbath: for Nisan and for Tishrei, for in them the messengers went forth to Syria, and by them they determined the holy days; and when the Temple was in existence, they violated all of them, because of the determination of the sacrifice.

Mishnah Rosh HaShanah 1:4

CHAPTER 7
RABBINICAL TEXTS AS PROBLEMATIC SOURCES FOR THE HISTORY OF
CALENDAR PRACTICE IN THE LATE SECOND TEMPLE PERIOD

The Rabbinic Calendar Texts and the Historians

Treating History in Rabbinic Texts with Goodwill or Suspicion

There is little doubt that the observational lunisolar calendar (OLC) described in the rabbinic texts is the precursor to the calculated Jewish calendar in use today. These texts, compiled between the third – sixth centuries C.E., provide a wealth of information concerning the social practices of the Jewish community during the Hellenistic and Roman periods, including calendrical matters. Included among these rabbinical texts are the Mishnah, the Tosefta, the Jerusalem Talmud and the Babylonian Talmud.

For traditional Judaism, and most Nineteenth and Twentieth century historians, the rabbinic texts were assumed to contain an accurate description of Jewish practice not only during the rabbinic period, but also for the period of the Second Temple not described in the Bible. We might describe this as a positivist historical approach to the texts which used, what Schwartz has called “a hermeneutics of goodwill, as opposed to the hermeneutics of suspicion now widespread among non-Israeli scholars. According to this model, rabbinic prescriptions could be used to *describe* Jewish life, rabbinic disagreements were thought to reflect deeper social and political conflicts among the Jews, and so on.”¹

¹ Seth Schwartz, *Imperialism and Jewish Society, 200 B.C.E. to 640 C.E.* (Princeton: Princeton University Press, 2001), 6.

While rabbinic texts clearly contain historical elements, over the last 30-40 years and especially since the early 1980's, this "hermeneutics of suspicion" has become the new scholarly norm. A scholarly consensus has developed that because these texts have been subject to substantial editing over many years, by many hands, for a multitude of purposes, their use as primary sources for historical practices must be handled in a reserved, qualified, and judicious fashion. Therefore, the information needs to be considered in relationship to other historical sources, and the motives and interests of the editors must be kept in mind. As Boyarin has written,

We can assume with confidence neither that a given passage quoted from a particular authority represents an expression of that authority's time and place, nor that it doesn't and that it only belongs to the culture in which the text was put together... Indeed, even the redaction of the midrashic and talmudic texts cannot be assigned with any certainty to a particular time, place, or set of persons. Even within the individual texts, there is evidence that different sections received their final forms in very different historical moments.²

Given the uncertainty of the material there are two general scholarly tendencies.

The first is to focus almost exclusively on the literary activity itself; Lieberman described this approach as follows:

I have not, in my discussion of the literary transmission, concerned myself with investigations of the credibility of certain historic traditions in rabbinic literature... our interest was fixed on literary activity, not on historic truth. In examining what the Rabbis report concerning by-gone times what was important to us was *not* the historic fact, but the view which the Rabbis held and their reaction to it.³

Neusner has been a prominent advocate of the literary approach, arguing that rabbinic texts reflect a general ahistorical approach of rabbinic thinking. What the editors chose to include was determined by their search for "the discovery and presentation of

² Boyarin, *Carnal Israel: Reading Sex in Talmudic Culture*, 25.

³ Saul Lieberman, *Hellenism in Jewish Palestine*, Second ed. (New York: Jewish Theological Seminary, 1962; reprint, 1994), xv.

recurrent norms or patterns” that are paradigmatic of their own views of Jewish practice.⁴ In particular, while the “Temple is the only locus of history, and the cult the only focus of sustained narrative, for the Mishnah,”⁵ we should be cautious because narrative history has been included not for its own sake but as legal exposition, an “ahistorical framework” into which history was “absorbed.”⁶ The “history” that appears in the texts is reconstructed and invented to serve the needs of the later authors or editors such that it can only tell us about the views of these editors and little or nothing about the ostensibly historical characters and situations.

The second tendency is to make cautious use of the rabbinic materials for historical purposes. Halivni argues that it is possible to establish a hierarchy of “reliability” concerning “the greatest fidelity to the actual statements enunciated by the respective authors”: the Mishnah, Tosefta, halachic midrashim, apodictic legal rulings and discursive passages (in that order) in the Gemara (the commentaries to the Mishnah collected in the Talmuds).⁷ This roughly matches the historical sequence of their redaction, and is generally accepted as a rough guideline. But even relative authenticity concerning statements by the early Sages (the Rabbis of the first and second century C.E. who appear by name) does not necessarily mean the statements themselves should be taken at face value. In his work on Second Temple Jewish sectarianism A. Baumgarten cautiously suggests that,

⁴ Jacob Neusner, *The Presence of the Past, The Pastness of the Present: History, Time, and Paradigm in Rabbinic Judaism* (Bethesda: CDL Press, 1996), 74.

⁵ *Ibid.*, 72.

⁶ *Ibid.*, 75.

⁷ David Weiss Halivni, *Midrash, Mishnah, and Gemara: The Jewish Predilection for Justified Law* (Cambridge, Mass.: Harvard University Press, 1986), 103-104.

We can still maintain the relative accuracy of the earliest layers of Rabbinic sources in their testimony concerning the identity of sectarian disputants. These presuppositions are not arbitrary and have some basis in reality. Nevertheless, caution should dictate a sense of restraint. The evidence about the identity of groups which disagreed is more problematic than that concerning points under dispute. This sense of reserve should increase as we take up points for which our Rabbinic sources of information are texts from the later layers of Rabbinic literature.

When we come to investigate Rabbinic accounts of the motivations or ideology of the various groups in the Second temple period, the evidence is definitely least reliable...Centuries later, when those who held rejected opinions had long passed from the scene, who cared much about their motivations or ideology, other than perhaps to criticize or caricature them?⁸

My purpose in this chapter is to evaluate the historical veracity of the rabbinic reports concerning calendrical practices of the late Second Temple period through a consideration of rabbinic texts, primarily Tannaitic texts that relate to the first generation of Rabbis, known as the Sages or *Tannaim*, especially the Mishnah, which is the earliest rabbinic text.⁹ My approach is to read the rabbinical texts “against the grain”¹⁰ with a hermeneutics of suspicion that is based on two views discussed above. The first is to note that the kind of calendrical information preserved was determined by the unique dynamics of how and why historical events were included in the texts. As described by Neusner, “The determination of the calendar provides one fine instance of how the interests of the cult determined the inclusion of a historical explanation for a matter of law. And once historical circumstance enters into deliberations on the law, then the

⁸ Baumgarten, “Rabbinic Literature as a Source for the History of Jewish Sectarianism in the Second Temple Period,” 30-31. See also A. Baumgarten’s extensive bibliography in on the historiographical use of rabbinic texts in Baumgarten, “Rabbinic Literature as a Source for the History of Jewish Sectarianism in the Second Temple Period,” 14, n. 2.

⁹ These include the Mishnah, Tosefta, and portions of the Talmuds known as baraitot.

¹⁰ As famously phrased by Benjamin; Walter Benjamin, *Illuminations*, ed. Hannah Arendt, trans. Harry Zohn (New York: Schocken, 1969), 257.

circumstance will be preserved and described.”¹¹ Therefore, it is appropriate to be cautious about attributing historical accuracy to the events described; only the “history” required for establishing the law is preserved. There is no reason to presume even-handedness on the part of the Rabbis when they are presenting their opponents views; it was not essential, and perhaps undesirable.

Secondly, I take seriously the likelihood that a form of the 364DC was used for some time in the Second Temple, possibly into the Hasmonean and Roman periods (second century B.C.E. – first century C.E.), as discussed at length in Part I. While scholars of the DSS and the 364DC have made use of the rabbinic reports of calendrical conflict with the aim of understanding the calendar polemics reported by the 364DC tradition texts (as discussed above in Part I), the converse has not been done, largely because of the idea that the use of the 364DC was a sectarian project limited to Qumran. Yet, as A. Baumgarten has suggested, the Qumran texts provide us with a perspective that should cause us to question prior historiographical assumptions: “When one's picture of the past is based on a single set of texts, the encounter with a new source of information is likely to provoke much reflection and revision, as the data from the different sets of evidence are compared to each other.”¹²

The Positivist Historical View of the Rabbinic Calendar

It is remarkable the extent to which the questioning of the historical veracity of rabbinic texts in general has *not* penetrated the scholarship concerning the rabbinic calendrical texts, a discussion that continues to be dominated by the “hermeneutics of

¹¹ Neusner, 74.

¹² Baumgarten, “Rabbinic Literature as a Source for the History of Jewish Sectarianism in the Second Temple Period,” 57.

goodwill.” This has been re-enforced by scholars of the DSS calendar texts, who have brought a surprisingly uncritical approach to their use of the rabbinic calendar texts, tending to presume that the rabbinic texts describe not only an alternative calendrical practice to the 364DC traditions, but that the rabbinic texts describe the normative and dominant calendrical practice during the late Second Temple period. On the other hand, most scholars who have approached rabbinic texts with a “hermeneutics of suspicion” have not addressed calendrical issues.

Positivist historians of the rabbinic OLC have utilized rabbinic texts in a straightforward way to determine the history and function of the calendar. The procedures for managing the OLC and observing the holidays take up a substantial portion of the Mishnah and Talmud; clearly the subject was of great concern to the creators of those texts. Let me provide a few examples of this approach to the key questions concerning the OLC, namely who used it and when it was used.

In the most recent and extensive prominent exposition of the functioning and festivals of the OLC as a whole, Tabory provides a detailed reconstruction of the procedures described in the rabbinic texts, all the while assuming they are historically accurate:

In the period of the Sages we have detailed testimony about the way in which the Hebrew calendar was determined. The determination of the calendar was based on the determination of the new month and on the determination of the number of months in the year....The sources show that the calendar was not fixed, but that they calculated the calendar from time to time depending on the astronomical situation... The determination of the calendar and its calculation was considered a religious matter, and there was a tight connection between the beginning of the month and the operation of the Temple. The month began only when the court declared its

beginning, and therefore this action was called the “sanctification of the new month.”¹³

Tabory is basically following in the path laid down by Alon, one of the foremost historians of the rabbinic period, who sums up the dominant perspective:

While the Temple still stood, it was the Great Sanhedrin in Jerusalem that managed the Jewish calendar. From its chambers word went forth whether the month was to remain 29 days long, or be extended to 30 days. Most especially, it was the Sanhedrin that promulgated Leap Years, adding a month at the end of the winter when necessary to keep the lunar and the solar cycles balanced.

After the Destruction this prerogative was taken over by the High Court at Yavneh (and subsequently at Usha and the other places to which it wandered). Control of the calendar was one of the important means of keeping the Jewish communities of the whole Land of Israel united around the national-religious center, wherever it might be located.¹⁴

In a detailed exposition of the OLC, M. D. Herr cautions that, “Except for some material from the writings of Philo and Josephus most of our information regarding the Jewish calendar in the first century C.E. comes from rabbinic sources, particularly from the early strata of Tannaitic literature; it is often very difficult, however, to distinguish these strata from later accretions.”¹⁵ Despite this cautionary word, he then goes on to a detailed reconstruction of the calendar with almost no questioning of its historical veracity, recounting the monthly process of the witnesses arrival at court, their examination and validation, spreading the word by flares and messengers, and the problems encountered with false witnesses.¹⁶

¹³ Joseph Tabory, *Mo'ade Yisra'el bi-tekufat ha-Mishnah vaha-Talmud [Jewish Festivals in the Time of the Mishnah and Talmud]*, Third Revised and Enlarged ed. (Jerusalem: The Hebrew University Magnes Press, 2000), 20 (the translations from Tabory are all my own).

¹⁴ Gedaliah Alon, *The Jews in Their Land in the Talmudic Age (70-640 C.E.)*, trans. Gershon Levi (Cambridge, Mass.: Harvard University Press, 1984), 237.

¹⁵ Herr, 843.

¹⁶ *Ibid.*, 843-857.

Other scholars similarly take the historical reports as reflecting ancient reality. Wacholder and Weisberg contend “the system of calendation preserved in 1st or 2nd century rabbinic texts preserves a system which was in use before 481 B.C.E. and continued in use even after a new one was introduced in Babylonia.”¹⁷ Schürer agrees, claiming astonishment yet justifying this continuity: “It is remarkable that the purely empirical procedure survived so long when the Greeks and the Babylonians...had for centuries possessed a fixed calendar based on accurate computation. Only the association of the calendar with the religious cult, and the stubborn opposition of the cult to all scientific reforms, make such a state of affairs comprehensible.”¹⁸ Bickerman assumes a similar posture, claiming that the “improvised empirical year was unavoidable as long as the Temple stood with its sacrificial service and pilgrimages. After 70 C.E. the tradition, economic interest, and later the power of the patriarchs, who naturally disliked losing the prerogative of fixing the calendar, prevented its reform for almost three centuries.”¹⁹

Talmon’s focus is less on the operation of the OLC, and more on the how the calendar conflicts reported in the rabbinic literature can help to understand the conflicts described in the DSS texts (including *I Enoch* and *Jubilees*). In particular, his theoretical argument is that “deviation from the official calendar is found to constitute a standard feature in Jewish sectarianism, especially during the centuries immediately preceding the

¹⁷ Ben Zion Wacholder and David B. Weisberg, “Visibility of the New Moon in Cuneiform and Rabbinic Sources,” in *Essays on Jewish Chronology and Chronography* (New York: Ktav Publishing House, 1976), 71.

¹⁸ Emil Schürer, *The History of the Jewish People in the Age of Jesus Christ (175 B.C. - A.D. 135)*, ed. Geza Vermes and Fergus Millar, Revised ed., vol. 1 (Edinburgh: T. & T. Clark, 1973), 594.

¹⁹ Elias J. Bickerman, “Calendars and Chronology,” in *The Cambridge History of Judaism*, ed. W.D. Davies and Louis Finkelstein (Cambridge: Cambridge University Press, 1985), 65.

Christian era and during the early Christian period.”²⁰ Despite the different times of composition, he takes a methodological leap by arguing that the DSS and rabbinic texts can be seen as describing two views of an ongoing polemical conflict: “In contrast to the Covenanters’ pre-Christian writings, the evidence pertaining to mainstream Judaism is preserved in sources from the early (and later) centuries C.E. It can be assumed, however, that they reflect a situation which was most acute in the heighdays (sic) of the Second Temple period.”²¹ Talmon assumes the rabbinical texts redacted over a century after the destruction of the Temple are historically accurate descriptions, which he then relates to events and positions over the course of two centuries prior to the Temple’s destruction. “Again the rabbis answered in kind. Their counterattack is delivered with a certain reserve, which bears the stamp of historical authenticity.”²²

In contrast to this positivist tradition of seeking to read rabbinic texts as a guide to historical practice, Stern has recently brought a skeptical approach to evaluating both rabbinic and extra-rabbinic sources in a comprehensive re-evaluation of the development of the Jewish calendar from the second century B.C.E. to the tenth century C.E. His thesis is that “Jewish calendar reckoning in Antiquity was characterized by its diversity,”²³ with the “rabbinic calendar” constituting only one category “within the broader spectrum of early Jewish calendars.”²⁴ This is at odds with most previous scholarship and the rabbinic

²⁰ Talmon, “Yom Hakippurim in the Habakkuk Scroll,” 563.

²¹ Talmon, “Anti-Lunar-Calendar Polemics in Covenanters’ Writings,” 29-30.

²² Talmon, “The Calendar Reckoning of the Sect from the Judean Desert,” 191.

²³ Stern, 119.

²⁴ *Ibid.*, 156. Stern’s major thesis, not directly related to my discussion, is that the calculated rabbinic calendar only gradually evolved from the OLC over the course of the first millennium, and that the spread of the rabbinic calculated Jewish calendar is a marker of the slow geographic expansion of the rabbinic

sources' assumption that there is only one Jewish calendar, an assumption that "has adversely affected the perspective of modern historians."²⁵ But the diversity he claims to find is mainly differences in implementation of a decentralized OLC: while "it is reasonable to assume that an empirical lunar calendar of the kind described in the Mishnah would have been observed by Judaeans throughout the Tannaitic period," the decisions of the rabbis "were not always universally heeded."²⁶ He adheres to the scholarly consensus that "the Jewish calendar of Judaea in the Hasmonaean, Herodian, and early Roman periods is likely to have been similar to that of the Mishnah: a lunar, empirical calendar that had been inherited from the Babylonian calendar of the Persian and Seleucid empires."²⁷ Nevertheless, he questions whether the rabbinic court had any power to determine the calendar of the Temple during the Hasmonaean and Roman period: "In the Hasmonaean period, calendrical decisions are more likely to have been under the control of the ruling dynasty, as had been the practice in the Persian and Seleucid empires, than under the control of some rabbinic court. Even after the loss of Jewish political autonomy in the Roman period, the high priest is most likely to have been in charge of the calendar, until 70 CE."²⁸

community from Palestine to Babylon, Egypt, North Africa, and Europe until it gained hegemony and unified the whole of world Jewry in the middle ages; Stern, 211.

²⁵ Stern, 156.

²⁶ Ibid., 163-4.

²⁷ Ibid., 162. As I argued in Parts I and II above, I disagree with Stern's view that the Qumran "solar" calendar 364DC tradition was impractical and perhaps only "followed by marginal, sectarian groups"; nevertheless, he is appropriately cautious in his conclusion that "both solar and lunar calendars were variously observed, in a relationship that remains somewhat unclear."²⁷ Stern, 4.

²⁸ Stern, 163.

Stern's questioning of the hegemony of the rabbis concerning calendrical matters is sympathetic and complementary to the perspective I will present below; the difference is that while he bases his skepticism mainly on non-rabbinic evidence, my emphasis will be to point out the evidence of limited rabbinical control in the late Second Temple period visible in the rabbinic texts themselves.²⁹ Another difference is that he is much more skeptical than I about the probable importance of the 364DC during this period.

In contrast to this positivist perspective, my goal in this chapter is not to harmonize but to problematize the historicity of the rabbinic calendar texts. I believe this will lead us to understand the rabbinic calendar texts in a significantly different fashion than has been the norm thus far. My conclusion will be close to the inverse of the usual readings: the Mishnaic OLC was much less normative, and the 364DC traditions were much less marginal, than generally thought. I contend that even if the rabbinic materials have an element of historical accuracy, by its own testimony rabbinic calendar practice was in no way hegemonic or normative during the late second Temple period.

Indeed, it needs to be noted that while the rabbinical texts claim, and scholars concur, that there is a continuity between the rabbis of the post-Temple period (known from the rabbinic texts) and the Pharisees of the late Second Temple period (known from the first century C.E. texts of Josephus and the Christian Bible, as well as the rabbinic texts), the connection between the earlier and later group is not totally clear.³⁰ While the Romans granted certain political and taxing authority to the rabbinic movement under the

²⁹ This is somewhat surprising, because Stern extensively interrogates the rabbinical texts to prove another thesis of his, that the calculated rabbinic calendar evolved slowly over the course of the first millennium out of the "complex relations...between the Palestinian and Babylonian rabbinic communities"; *Ibid.*, 241.

³⁰ See Schwartz, 110-116.

Patriarchate in the early third century C.E. (the period of the Mishnah's composition),³¹ the Pharisees during the late Second Temple period of the first century C.E. held little or no political power, and probably had little direct power over the Temple itself, which was run by the priests. While some priests were Pharisees (e.g., Josephus claims this himself), the leadership (Gamaliel the Elder and his son Simon) was not.³² In contrast, their opponents the Sadducees were primarily a priestly group (mentioned by both Josephus and rabbinic texts); the Boethusians (mentioned in rabbinic texts) seem to have been another mainly priestly group, possibly similar to the Sadducees. The Qumran group was at least led by priests; and the Essenes (mentioned by Josephus) were similar to the Qumran group, if not identical.³³

It is the Sadducees and Boethusians whom the rabbinical texts, especially the calendar texts, identify as opposing rabbinic practices while the Temple stood; this opposition seems to have significantly abated in the post-Temple period. The proponents of the rabbinic perspective are not labeled as Pharisees, but rather as a “Court – בית דין,” that sat at a location known as Beit Yazek (*m. Rosh HaShanah* 2:5). Avoiding any

³¹ See the discussions in *Ibid.*, 110-123; Chaim Milikowsky, “Authority and Conflict in Post-Destruction Roman Judea: The Patriarchate, the Rabbis, the People, and the Romans,” in *Authority, Power and Leadership in the Jewish Polity*, ed. Daniel J. Elazar (New York: University Press of America, 1991).

³² The relationship between the Tannaim and priests is a complex one; many scholars now contend that in the Tannaitic period the priests remained active despite the demise of the Temple through the institution of the Synagogue, while the rabbis's institutional home was the Academy (*Beit Midrash*); see for example Lee I. Levine, *The Ancient Synagogue* (New Haven: Yale University Press, 2000), 496-500, 440-470. During the late Second Temple period the opposition of the Pharisees to the priests is clearer; it has long been recognized by scholars that the chain of tradition as preserved in *m. Avot* 1 minimizes or omits priests, which “can only be explained as part of an anti-priestly orientation”; Baumgarten, *The Flourishing of Jewish Sects in the Maccabean Era: An Interpretation*, 120. As will be seen, this critical view of priestly calendrical practice comes through in the texts examined in this Chapter.

³³ See the extensive discussions of these groups in Baumgarten, *The Flourishing of Jewish Sects in the Maccabean Era: An Interpretation*; Sanders, *Judaism: Practice & Belief, 63 BCE- 66CE*; Schwartz, 91-99; Yaakov Sussmann, “The History of Halakha and the Dead Sea Scrolls: Preliminary Observations on *Miqsat Ma'ase Ha-Torah* (4QMMT)” [Hebrew], *Tarbiz* 59 (1989).

specific identification with the Pharisees serves to imply, without explicitly stating, that this was the calendar court of the Temple and that its authority was constant and continuous with the post-Temple rabbinical calendar court. This is part of an overall strategy whereby the rabbinic texts attempt to efface or minimize the differences between practices of the post and pre-destruction periods, consistently retrojecting later practices into the earlier period in an attempt to legitimate the latter by constructing a lineage to the pre-destruction era about 150 years earlier; my aim will be to reveal some of the contradictions that crept into the texts despite the editors attempts at harmonization.³⁴

While it is tempting to identify the late Second Temple era of the rabbinic calendar tradition as “Pharisaic,” I will be more cautious and use the term “Beit Yazek” to refer to this period of the rabbinical calendar court tradition since the texts themselves provide this name and we cannot be sure how much of the functioning of this Court’s activity was a later attribution by the Mishnaic editors.

Calendar Practices According to the Rabbinic Texts

The rabbinic OLC was designed to cope with two uncertainties:

- The beginning of the new month. The designation of the new month depended upon the sighting of the first crescent of the new moon. The uncertainty was whether the new moon would be sighted 30 or 31 days after the prior sighting; since the new sighting was counted as day one of the next month, this would make the month just completed consist of 29 or 30 days, respectively. The 30-day month, (which was considered the “norm,” as in Babylonia) was termed “full - מלא,” while the 29-day month was described as “defective/hollow - חסר.”³⁵ Two witnesses were

³⁴ It is worth noting that Gandz held a skeptical view concerning the rabbinic calendrical accounts, suggesting that the priests had a fixed calendar that was different from that of the Pharisees, that the Pharisaic “calendar-reform” was resisted by the priests and “a failure from the very outset.” Solomon Gandz, “Studies in the Hebrew Calendar II: The Origin of the Two New Moon Days,” *JQR* 40 (1950):, 275-276. Having no knowledge of the DSS, Gandz assumed that the conflict was between two lunisolar methodologies. Nevertheless, his suspicious reading of the rabbinic texts is a rare contrast to the dominant positivistic scholarship, in which no echoes of Gandz’s views are found.

³⁵ Tabory, 21.

required in order for the court to declare the new month. The body that makes this decision is consistently referred to in the Mishnah as “the Court – בית דין” and it was constituted by a minimum of three members.³⁶

- The occasional intercalation of an additional (thirteenth) month into the calendar in so that the annual holidays stayed aligned with the agricultural seasons of the solar/stellar year.

The determination of these events is given great importance in the rabbinic texts because they in turn establish the observance of the annual holidays.

While the calendrical procedures seem to most accurately describe what was in contemporary use among rabbinical groups at the time of the texts’ composition, the material clearly assumes that these same procedures were used in Jerusalem before the destruction of the Temple in 70 C.E., except when specific changes were made, for the reasons and in the manner that the texts describe. Most of the material is from the Tannaitic period, either in the Mishnah or baraitot,³⁷ and I will focus on these texts.

Some of these passages appear fairly clear, while some are rather cryptic; in both cases there is a voluminous commentary and interpretation that has accrued since the Tannaitic period. I will group the passages into six primary sections, although there is some overlap:

A. The witnesses: their travel, reliability and types of people acceptable.

³⁶ See *m. Sanhedrin* 1:2 and *m. Rosh HaShanah* 3:1. While we saw above that Alon claims the Sanhedrin determined the calendar, the Mishnah mentions uses only the term “Court” with reference to calendrical decisions.

³⁷ *Baraitot* is plural of *baraita*, which literally means “external,” referring to a Tannaitic teaching outside of the Mishnah that appears in the Talmuds, usually with the formulaic introduction “our rabbis taught” or “it was taught” to a Hebrew passage. Recent scholarship has shown that many of these passages in the BT are probably not reliable transmissions from the Tannaitic period to which they are traditionally attributed, having been changed or fabricated by authors/editors from later periods who sought to justify their own views by retrojecting them into the past. This makes the historiographic use of baraitot especially difficult; Rubenstein notes that this has misled modern scholars who have “often based historical conclusions on these sources”; Jeffrey L. Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture* (Baltimore: Johns Hopkins University Press, 1999), 262. See also Jeffrey L. Rubenstein, *The Culture of the Babylonian Talmud* (Baltimore: Johns Hopkins University Press, 2003), 10.

- B. The location of the court, the examination of the witnesses concerning their observation of the moon, and the court's official declaration of the new month.
- C. Procedures for officially announcing the new month.
- D. Procedures for intercalation.
- E. Conflicts among the Rabbis concerning the recognition of the new month.
- F. Conflicts between the Rabbis and other groups concerning the declaration of the new month, and proper timing and observance of the festivals.

Within each of these sections I will present relevant rabbinic texts, give examples of previous historiographical use of these materials, and present my own re-reading of the rabbinic texts.

A. The Witnesses: Their Travel, Reliability and Types of People Acceptable

The Rabbinic Texts

On six months the messengers go forth: on Nisan, because of Pesah; on Av, because of the fast; on Elul because of Rosh Hashanah; on Tishrei, because of the determination of the holy day; on Kislev, because of Hanukkah; and on Adar because of Purim. And when the Temple was in existence, they went forth also on Iyar, because of *Pesah Katan*. (*m. Rosh HaShanah* 1:3)

For two months they violate the Shabbat: for Nisan and for Tishrei, for in them the messengers went forth to Syria, and by them they determined the holy days; and when the Temple was in existence, they violated for all of them, because of the determination of the sacrifice. (*m. Rosh HaShanah* 1:4)

Whether it was seen clearly, or it was not seen clearly, they violate the Shabbat on it. Rabbi Yose says, If it was clearly visible, they do not violate the Shabbat on it. (*m. Rosh HaShanah* 1:5)

It once happened that more than forty pairs passed, and Rabbi Akiva detained them in Lod. Rabban Gamaliel sent to him, If you detain the many, you cause them to sin in the future. (*m. Rosh HaShanah* 1:6)

If a father and his son saw the New Moon, they go, not that they are paired together, but if one of them is disqualified, the second one will join with another. Rabbi Shimon says, A father and his son, and all the relatives, are eligible for the testimony of the New Moon. Rabbi Yose said, It once happened that Tovia the Physician saw the New Moon in Jerusalem, he and his son and his freed servant, and the priests accepted him and his son, but they disqualified his servant. And when they came before the Court, they accepted him and his servant, and they disqualified his son. (*m. Rosh HaShanah* 1:7)

And these are the ineligible: the player with the *kubiya*, loaners for interest, fliers of pigeons, and dealers in *shevi'it*, and servants. This is the general rule: any testimony which the woman is ineligible to give, they are also ineligible to give. (*m. Rosh HaShanah* 1:8)

If a person saw the New Moon and is unable to walk, they bring him on an ass, or even on a bed; and if any lie in wait for them, they take sticks in their hands; if the way is long, they take food in their hands, because for a journey lasting a night and a day they may violate the Shabbat, and they go forth to give testimony about the New Moon, as it is written, *These are the festivals of the Lord, which you shall proclaim* (Lev 23:4). (*m. Rosh HaShanah* 1:9)

If they do not know him, they send another with him to testify about him. Originally they accepted testimony of the New Moon from any man; after the sectarians' evil practices,³⁸ they enacted that they should accept only from those they knew. (*m. Rosh HaShanah* 2:1)

There was a large courtyard in Jerusalem which was called Beit Yazek, and all the witnesses would gather there, and the Court would examine them there. And they would make big meals for them, so that they should make it their habit to come. Originally they would not move from there the entire day; Rabban Gamaliel the Elder enacted that they might walk two thousand *amot* in any direction. And not only these, but also the midwife who comes to assist in a delivery, and the person who comes to save from a fire or from troops, or from the river, or from a collapsed building, all these are as the people of the city, and have two thousand *amot* in any direction. (*m. Rosh HaShanah* 2:5)

Historiography

Tovia the Physician and the Priestly Calendar Court

Both Herr and Tabory presume the historicity of these passages, providing a reconstruction based upon them.³⁹ The event described in *m. Rosh HaShanah* 1:7

³⁸ The usual translation of מינין - *minin* is "sectarians" or "heretics" (see, *The Mishnah: Translated from the Hebrew with Introduction and Brief Explanatory Notes*, trans. Herbert Danby (Oxford: Oxford University Press, 1933), 189), but the group or groups referred to by the term is uncertain and can vary by context. Candidates include Sadducees, Boethusians, Samaritans (cf. *m. Rosh HaShanah* 2:2 for the parallel construction referring to Samaritans), Jewish-Christians and Christians, possibly changing its valence over time and location. See D. Sperber, "Min," in *EncJud* (Jerusalem: The Macmillan Company, 1971); Reuven Kimelman, "Birkat Ha-Minin and the Lack of Evidence for an Anti-Christian Jewish Prayer in Late Antiquity," in *Jewish and Christian Self-Definition: Volume Two: Aspects of Judaism in the Graeco-Roman Period*, ed. E. P. Sanders, A. I. Baumgarten, and Alan Mendelson (London: SCM Press, 1981), 228-232.

³⁹ Herr, 845-848; Tabory, 19-34.

wherein Tovia the Physician and his son were accepted as witnesses by “the priests,” while Tovia and his servant were accepted by the rabbinical Court, is of particular relevance to determining the its authority. Like the discussion of this passage in the Talmud (*b. Rosh HaShanah* 22a), Herr focuses on the question of which witnesses testimony is acceptable. “The priests allowed the testimony of close relations regarding the new moon, but they excluded the testimony of former slaves, as the priests were very scrupulous in matters of birth and social status. The rabbinical court, however, in contrast with the priests but in accordance with the Halakah, refused the joint testimony of father and son but admitted that of the former slave.”⁴⁰ Tabory gives basically the same interpretation and emphasis.⁴¹ The following passage, *m. Rosh HaShanah* 1:8, also concerns itself with the eligibility of witnesses.

In my view, however, this focus on the qualities of legitimate witnesses by both the Talmudic interpreters and modern scholars misses an amazing revelation: according to the text, the priests had their own calendrical court independent of the rabbinical calendrical court. This is the most direct admission in the rabbinical texts of the use of another calendar by a Jewish group. While we will see below that other groups are in conflict with the rabbinical calendar calculations, this is the only passage that labels the competition explicitly as “the priests.” It is probably reasonable to infer that, like those other conflicts, the historical setting for this event is during the Second Temple period, i.e., before the Temple’s destruction. Even if the quote attributed to Rabbi Yose is authentic, he could not have been an eyewitness to this event since he supposedly lived in

⁴⁰ Herr, 846- 847.

⁴¹ Tabory, 23.

the mid-second century.⁴² The calendar court of the priests appears indirectly, merely as a foil for the main message, which has to do with the correct quality of witnesses, and this seems to be the only reference in any rabbinical or non-rabbinical source to a priestly calendar court. Therefore, it would seem that we should be cautious about how to evaluate this court, especially whether the priests used the same methodology as the rabbinic OLC in their own court, as implied by the passage; this may be an anachronistic projection of the familiar rabbinic procedure used in post-Temple times by Rabbi Yose (or his Mishnaic editor). Indeed, the very existence of such a priestly calendar court might be a Mishnaic fiction, although this would be an odd invention since it would admit to competition not from some group portrayed as malcontents who seek to mislead the Sages but from the priests of the Temple, a group that retains its legitimacy in rabbinic texts. If we are simply read the text on its own terms, I contend we are being told that the priests kept their own calendar – and since they ran the Temple, this means that their calendar, not the rabbinic OLC, was used there.

The Witnesses of the New Moon

The observance of the new moon was considered so important that the Mishnah rules that the Sabbath laws could be “violated” in order for witnesses to travel to the calendar court; *m. Rosh HaShanah* 1:4-1:6, 9 is traditionally read in this way (although on the surface of it the Sabbath violations seem to be related to the messengers; see below section C). Tabory, for example, simply reports that this was the practice: “A special problem arose when the moon appeared on the sabbath, since if the witnesses would arrive during the day that they saw it and witnessed after the sabbath, the month would be

⁴² Herr, 846. I say “supposedly” because some scholars doubt the historicity of these figures; but this question is not the focus here.

full in opposition to the natural situation. Therefore, they allowed every witness within walking distance of a day and a night from the court to violate the Sabbath in order to witness concerning the sighting of the moon.”⁴³ While Herr comments that, based on *m. Rosh Hashanah* 1:6, “Many witnesses came to Jerusalem, and to Jabneh following the destruction of the Temple,”⁴⁴ Tabory is more cautious, reading this passage as emphasizing Rabban Gamaliel’s desire not to discourage witnesses from coming. Tabory notes that many of the rabbinic passages reflect anxiety concerning the witnesses, especially when they needed to violate the Sabbath in order to appear. “Because it wasn’t easy to find witnesses that saw the appearance of the new moon, various devices were put in place in order to accustom and motivate the witness to appear before the court.”⁴⁵ Tabory notes that *m. Rosh HaShanah* 2:5 describes how “a warm reception was arranged for the witnesses” at “Beit Yazek” including “big meals,” and a relaxation of Sabbath rules (by Rabban Gamaliel) concerning their movements.⁴⁶ He goes on to note that *m. Rosh HaShanah* 2:6 (see below) describes “one psychological device... which was to examine all the witnesses who arrived, at least at the beginning, so that they would not have the feeling that their journey to the court was pointless and wouldn’t leave with deflated spirits.”⁴⁷ All this was done “with the intent to motivate them to come regularly,”⁴⁸ as also described in *m. Rosh HaShanah* 2:6, in which all the pairs of

⁴³ Tabory, 24.

⁴⁴ Herr, 847.

⁴⁵ Tabory, 24.

⁴⁶ *Ibid.*, 25.

⁴⁷ *Ibid.*, 24.

⁴⁸ *Ibid.*, 25.

witnesses who arrived would be examined even if they were no longer needed so “that they should make it their habit to come.”⁴⁹ Yet, despite all these incentives, there is uncertainty concerning the reliability of the witnesses; *m. Rosh HaShanah* 2:1 asserts that the court had to tighten their rules and accepted testimony only from witnesses known to the court (either directly or indirectly), a response to false testimony by “sectarians.”⁵⁰

The difficulty in persuading witnesses to appear at the rabbinical court in Jerusalem, combined with the problems encountered with false testimony, I think these texts tell us two things about the historical situation. First, there probably was some sort of rabbinic court that operated an OLC in Jerusalem during the latter days of the Second Temple. Second, the rabbinic court probably had little or no say over the calendar used in the Temple itself (although this influence may have varied during different periods). Both points are supported by the reported difficulties with the witnesses. These difficulties are more likely to have actually occurred because there would be no clear benefit to inventing them: if the rabbinic calendar court was merely a Tannaitic practice anachronistically projected back to the days of the Temple, there would be no reason to invent reports of difficulties and false witnesses, for this only undermines the claim to an ancient, normative lineage that is being asserted. But the problems with the witnesses undercut the claim that rabbinic calendar practice was normative among Second Temple

⁴⁹ *M. Rosh HaShanah* 2:6.

⁵⁰ In this passage the “sectarians” are usually understood as Boethusians-בייתוסין (e.g., Tabory, 24), as is specified in *t. Rosh HaShanah* 1:15, *y. Rosh HaShanah* 2:1 (57c), *b. Rosh HaShanah* 22a. In a comparative analysis of these passages, Harari reminds us that the Mishnah is ambiguous, and the other texts do not explain how the actions of the Boethusians would achieve the calendrical goals hypothesized; see Raymond Harari, “Rabbinic Perceptions of the Boethusians” (Dissertation, New York University, 1995), 235-253. The printed Vilna Talmud substituted “Boethusians” in the BT version of this Mishnah, probably due to censorship; see Saul Lieberman, *Tosefta Ki-Fshutah: A Comprehensive Commentary on the Tosefta* [Hebrew], Second ed. (Jerusalem: The Jewish Theological Seminary of America, 1992), 1072, n. 28.

Jews, especially in the Temple. In my view, the various difficulties reported with the witnesses contradict the implicit assertion that the rabbinical calendar court was in charge of the Temple's calendar. Indeed, what we have is a situation where we can see cracks in the text's narrative that are probably due to conflicting aims of the later editors to, on the one hand, explain the origins of their own calendar practice while, on the other hand, asserting that their practice was legitimate because it was also used in the Temple.

The expectation that the calendrical court would “know” the witnesses (or those who accompanied them, as stated in *m. Rosh HaShanah* 2:1) sets a very high bar for a legal proceeding in a city the size of Jerusalem in the first century C.E. with a population in the tens of thousands.⁵¹ I suggest this indicates that this was a proceeding conducted by and for a small group rather than the general populace, which is consistent with recent scholarship that sees all the “parties” of the late Second Temple period as relatively small groups comprised mainly of relatively affluent and educated males.⁵² The reported changes in the rules regarding the witnesses indicate that the procedures were still getting worked out (e.g., changing the qualifications of the witnesses (2:1); changing how far they might move during the Sabbath (2:5)); this also is more typical of an innovative practice rather than an ancient, established routine. Also, while names of Sages are often used when discussing events that followed the destruction of the Temple, only Rabban Gamaliel the Elder is ever named concerning events relating to the rabbinic calendar

⁵¹ Various estimates place the population of Jerusalem in the tens or hundreds of thousands; see the discussion of population figures in Sanders, *Judaism: Practice & Belief, 63 BCE- 66CE*, 125-128 and Schwartz, 93-95.

⁵² See the discussions of Sanders and A. Baumgarten about the relatively small size of the “parties” of the late Second Temple period. Sanders, *Judaism: Practice & Belief, 63 BCE- 66CE*, 412; Baumgarten, *The Flourishing of Jewish Sects in the Maccabean Era: An Interpretation*, 42-51. Schwartz thinks their relative size was bigger than Sanders and Baumgarten, but concurs that they and their conflicts were relatively marginal; Schwartz, 91-99.

court of the Second Temple period (2:5).⁵³ As we already saw, *m. Rosh HaShanah* 1:7 tells us that the priests ran their own calendar system, and of course the priests ran the Temple. Thus the rabbinical calendar court did not utilize the Temple, but hosted its witnesses and held court elsewhere, at Beit Yazek.

These passages all intimate that the Beit Yazek court had very limited authority and power. The major difficulty no doubt had to do with the problem of finding Jews who would violate the Sabbath in order to travel to Jerusalem with their testimony concerning the new moon. It is well established that the Sabbath was one of the major identifying practices of Jews during this period;⁵⁴ yet these passages make it clear that the rabbinic OLC demanded the *deseccration* of the Sabbath if the new moon was sighted. If it was so difficult to get witnesses to show up at Beit Yazek, this probably means that there were few willing to violate the Sabbath, and therefore few Jews who followed this calendar. If the Beit Yazek court was really in control, there would have been an ample supply of witnesses, and they wouldn't have had to provide snacks as an incentive. The need to resort to such incentives is never mentioned by rabbinic texts discussing the operation of the calendar court during the post-Temple period, when its prestige and influence seems to have been much higher. Indeed, the shift is such that, rather than *enticing* witnesses to show up, there are stories from the post-Temple period in which the rabbinical calendar

⁵³ The title of "Rabban" as applied to Gamaliel the Elder is clearly an anachronism, used in this case as a way to increase the ostensible authority of the Beit Yazek court. As Milikowsky discusses, the title "Rabban" came into use only at the end of the second century C.E., when the Patriarchate as an institution was granted some political authority over the Jewish community by the Romans; see Milikowsky, 95-101.

⁵⁴ See, for example Sanders, *Judaism: Practice & Belief, 63 BCE- 66CE*, 208-211; Cohen, *The Beginnings of Jewishness: Boundaries, Varieties, Uncertainties*, 91.

Court has the power to *coerce* witnesses to declare the sighting of the new moon at desired times.⁵⁵

B. The Location of the Court, the Examination of the Witnesses Concerning Their Observation of the Moon, and the Court's Official Declaration of the New Month

The Rabbinic Texts

How do they examine the witnesses? The pair that came first, they examine first, and they bring in the elder among them, and they say to him, "Tell us, how did you see the moon, facing the sun or behind the sun? To the north of it or to the south of it? How high was it and in which direction was it leaning? And how wide was it?" If he said, "Facing the sun," he said nothing. And afterwards they would bring in the second and they examine him. If their words were found to correspond, their testimony stood. And all the other pairs, they ask them the main points, not that they required them, but so that they would not go away disappointed, and that they should make it their habit to come. (*m. Rosh HaShanah* 2:6)

The head of the Court says, "It is sanctified!" And all the people answer after him, "It is sanctified, it is sanctified!" Whether it was seen at its proper time, or whether it was not seen at its proper time, they sanctify it. Rabbi Eleazar ben Zadok says, If it was not seen at its proper time, they do not sanctify it, for Heaven has already sanctified it. (*m. Rosh HaShanah* 2:7)

If the Court and all Israel saw it, the witnesses were examined, and they did not manage to proclaim "It is sanctified!" until nightfall - then this is intercalated-מעבר. If only the Court saw it, two should stand up and testify before them, and they should say, "It is sanctified, it is sanctified!" If three saw it and they are the Court, two should stand up and seat of their colleagues beside the single one, and they should testify before them, and say, "It is sanctified, it is sanctified!" for a single person is not considered trustworthy. (*m. Rosh HaShanah* 3:1)

Originally they used to accept testimony about the New Moon the entire day. Once the witnesses tarried in coming, and the Levites went wrong in the song. They then enacted that they should accept only until the *Minhah*. And if witnesses came after *Minhah* - they observed that day as sanctified and the following day as sanctified. After the Temple was destroyed, Rabban Yohanan ben Zakkai enacted that they should accept testimony about the New Moon the entire day. Rabbi Yehoshua ben Korha said, Rabban Yohanan ben Zakkai also decreed that wherever the head of the Court might be, the witnesses should go only to the meeting place. (*m. Rosh HaShanah* 4:4)

⁵⁵ *B. Rosh HaShanah* 20a-b; this will be discussed in the next chapter.

Historiography

These passages discuss the process by which the Mishnah claims the new month was officially declared. As Herr summarizes, “The thirtieth day of each month was of doubtful status, as before nightfall the court might perhaps proclaim that it was really the first of the next month.”⁵⁶ Nevertheless, regardless of who saw the first crescent – only two witnesses or “the Court and all Israel” (*m. Rosh HaShanah* 3:1) – and when it was reported during the day, the declaration of the court and the response of those present – “It is sanctified, it is sanctified!” – was the key element. Herr claims, “These stories serve to emphasize the authority and sovereignty which was ascribed to the court – its decisions were taken to constitute facts.”⁵⁷ I would say, in contrast, that these stories testify to the anxiety about whether the court’s procedures and rulings were in fact authoritative.

Tabory points out that if the new month were not declared on the thirtieth, then the new month would automatically fall on the next day, and that there is a difference of opinion among the Tannaim about whether the court needed to officially declare that day as a new month, or whether this was unnecessary because “Heaven has already sanctified it,” as Rabbi Elazar ben Zadok claimed (*m. Rosh HaShanah* 2:7).⁵⁸ It seems that this discrepancy in claims concerning the procedure of the court – whether it is an argument of Tannaitic times, or a Tannaitic argument about Second Temple period practice is unclear, but not essential here –underscores the newness of the process, for this is a

⁵⁶ Herr, 847.

⁵⁷ *Ibid.*, 848. Herr also points out that *t. Rosh HaShanah* 2:1 supports the authority of the court, even if it ruled in error due to erroneous testimony, deliberate or not. See also Tabory, 28.

⁵⁸ Tabory, 30.

situation that would have arisen, and had to be resolved, whenever this procedure began to be used on a continuous basis.

The disruptions to the Temple cult reported in *m. Rosh HaShanah* 4:4 due to the anticipation of witnesses who get delayed is a problem that gets resolved at a time when the OLC is in use in the Temple.⁵⁹ However, it seems to me that the episode itself indicates that this was probably an innovative introduction of the OLC into the Temple during the Beit Yazek period, since the entire procedure was still being worked out.

There is also a question about which court was controlling the calendar. Some historians have taken this court to be the Sanhedrin, such as Alon and Talmon.⁶⁰ This court, the “greater Sanhedrin,” was supposedly made up of 71 judges (*m. Sanhedrin* 1:6). Yet, some scholars question whether the Sanhedrin really existed during the Second Temple period, at least in the form described in the rabbinic literature. Goodblatt strongly argues that “the great sanhedrin is clearly an idealized or utopian institution,”⁶¹ while “what the ancient sources clearly indicate is a regime of priestly monarchy in which the high priest is at the apex of Judean self-government.”⁶² E. P. Sanders similarly critiques the Mishnaic description, concluding that even if such a court existed in the first century C.E., it would have been appointed by the effective rulers, such as the chief priests, the

⁵⁹ The PT explains: “Once an alarm spread in town, and the Saracens came and took them [the witnesses], and the Levites became disordered in their singing.” (*y. Rosh HaShanah* 4:4.1 (59b)). Rashi comments that “the Boethusians and the Samaritans would lie in wait for them [the witnesses to the new month] and detain them in order to mislead the Sages” (*b. Rosh Hashanah* 22a).

⁶⁰ Alon, 237; Talmon, “Calendar Controversy in Ancient Judaism: The Case of the ‘Community of the Renewed Covenant,’” 384.

⁶¹ David Goodblatt, *The Monarchic Principle: Studies in Jewish Self-Government in Antiquity* (Tubingen: J.C.B. Mohr (Paul Siebeck), 1994), 129.

⁶² *Ibid.*, 130.

oligarchs, and/or the political ruler.⁶³ Prior to this period, during the first century B.C.E. it is most likely that the Hasmoneans and Herod controlled the legal system and the Temple. In addition, the rabbinic texts themselves generally describe the calendar tribunal as a “Court - בית דין,” not a “Sanhedrin - סנהדרין.” *M. Rosh HaShanah* 4:4 describes the court as “the gathering - הוועד”, perhaps implying a subcommittee of a larger court;⁶⁴ but this passage in any case refers to the period after the Temple was destroyed and the calendrical court was no longer located in Jerusalem. It seems that the calendar court initially only needed three members (*m. Rosh HaShanah* 3:1, *m. Sanhedrin* 1:2) and that later it may have been expanded to seven (*m. Sanhedrin* 1:2) or ten (*y. Sanhedrin* 1:2).⁶⁵ This increase may indicate an increasing importance attached to this function in the Tannaitic and Amoraic periods, which in turn serves to highlight its status during the Beit Yazek period as a small court without a great deal of control. Supporting this view is Stern’s observation that, “The exclusion of the king and high priest from the calendrical court, according to *T. Sanh.* 2:15...may be no more than a rabbinic polemic; this would only confirm the hypothesis that at one time, the high priest was in charge of the calendar.”⁶⁶

⁶³ Sanders, *Judaism: Practice & Belief, 63 BCE- 66CE*, 481-488.

⁶⁴ *y. Rosh HaShanah* 4:5 (59c) refers to הוועד של חודש. Goldman translates this as “the meeting place for declaring the New Moon” (Edward A. Goldman, ed., *The Talmud of the Land of Israel: Volume 16 Rosh Hashanah*, ed. Jacob Neusner (Chicago: University of Chicago Press, 1988), 105), but Tabory suggests that it should be understood more in the sense of “the committee of the new month,” a “special court that sat for the sanctification of the new month,” a smaller court rather than the full Sanhedrin; see Tabory, 22. My suggestion is that while there may have been a special calendar court that met in the second century C.E. Tannaitic period, the assumption that the Beit Yazek court was similarly a subcommittee of the Sanhedrin in Second Temple times is an anachronism.

⁶⁵ See also Tabory, 22.

⁶⁶ Stern, 163 n. 29.

C. Procedures for Officially Announcing the New Month

The Rabbinic Texts

Originally they would light flares; after the Cutheans' evil practices, they enacted that messengers should go forth.⁶⁷ (*m. Rosh HaShanah* 2:2)

How did they light the flares? They brought long poles of cedar-wood, and reeds and shemen wood, and chips of flax, and he tied together with rope, and he went up to the top of the hill and he set fire to them, and he waved to and fro and he raised and lowered until he saw his fellow doing likewise on the top of the second hill, and so, too, on the top of the third hill. (*m. Rosh HaShanah* 2:3)

And from where did they light the flares? From the Mount of Olives to Sarteba, and from Sarteba to Agrippina, and from Agrippina to Havran, and from Havran to Bet Biltin; and from Bet Biltin they did not move, but he waved to and fro and he raised and lowered until he would see the whole of the Diaspora before him like a mass of fire. (*m. Rosh HaShanah* 2:4)

Historiography

M. Rosh HaShanah 2:2-4, and the Talmudic commentary on those passages, focus on the process of the signal flares, which were supposedly used to announce the court's declaration of the new month, and on the reason why they were discontinued. Herr and Tabory describe the technicalities of the signal flare process, taking the texts (both the Mishnah and commentaries to it) at face value. Tabory includes a map of the sites where the beacons were lit according to *m. Rosh HaShanah* 2:4,⁶⁸ although Herr more cautiously notes that "the locations of most are unclear."⁶⁹ Alon also accepts the historical veracity of the announcement of the new month via signal flares and messengers. He suggests that because the chain of signal flares described in *m. Rosh HaShanah* 2:4 starts in Jerusalem, at the Mount of Olives, this refers "to the time when

⁶⁷ The Cutheans are identified as Samaritans; see below section F for a discussion of their "evil practices."

⁶⁸ Herr, 850-852; Tabory, 30-32.

⁶⁹ Herr, 851.

the Temple still stood,”⁷⁰ and that they “had surely terminated with the Destruction” of the Temple and been replaced by messengers.⁷¹

Nevertheless, there is some scholarly skepticism about whether this system was ever really in place; Stern cautions that “whether the procedures described in *M. RH* and in *T. Sanhedrin* were ever fully implemented in all their details remains anyone’s guess. It is questionable, for instance, whether the beacon procedure was ever really carried out, and if so, whether it could have been effective.”⁷² The meaning of *m. Rosh HaShanah* 2:4 was obscure even to the later rabbinic commentators, who try to identify the locations (see *b. Rosh HaShanah* 23a-23b), or add supplemental locations. Even they knew that the reference in *m. Rosh HaShanah* 2:4 to “whole of the Diaspora” being lit up didn’t make sense, asking and explaining (with a clearly Babylonian perspective):

What is meant here by “Diaspora”? Rabbi Joseph said: This is Pumbeditha. What is meant [then] by “like a mass of fire?” A Tanna taught: “Every inhabitant [of Pumbeditha] takes a torch in his hand and goes up on to his roof” (*b. Rosh HaShanah* 23b).

Another glaring problem with the rabbinic description of the signal flare methodology is addressed, albeit apologetically, by Alon, who notes that in the rabbinic sources concerning calendrical practice the “Diaspora” seems to only include “countries north and east of Israel – i.e., Syria and Mesopotamia. They never speak of lands to the

⁷⁰ Alon, 238.

⁷¹ *Ibid.*, 239. Bickerman back-dates the use of messengers for purposes of establishing the new month to a letter from the Hasmoneans in Jerusalem to the Jews of Egypt, written in 124 B.C.E. and recorded in 2 Macc 1:9, which instructs the Egyptians to observe Hanukkah. While the missive is calendrical, it seems to be a one-time extraordinary calendrical event concerning the observance of a new holiday, unconnected to any routine process related to the declaration of the new month. See Bickerman, “Calendars and Chronology,” 66.

⁷² Stern, 162-163.

south and the west, especially the great Jewish community of Alexandria.”⁷³ Could this mean “the Jews of Egypt did not depend in calendrical matters on the decisions of the Jerusalem Sanhedrin, but managed these things in their own way?”⁷⁴ Alon rejects this out of hand, claiming it is an “*argumentum e silentio*, which proves nothing.”⁷⁵ He also points to a passage from *y. Eruvin*, in which the Rabbi Yose writes to the Alexandrians concerning the order of the festivals: “Rabbi Yose sent them a letter: although they have written to you the order of festivals, do not change the custom of your fathers” (*y. Eruvin* 3:9, (21c)).⁷⁶ But if such a letter was written, it was long after the destruction of the Temple. Indeed, Stern interprets this passage in the opposite fashion, taking it to indicate, along with other material, that the Alexandrians used their own calendar independent of the rabbinic calendar court.⁷⁷ Thus, what Alon describes as “something peculiar about the sources”⁷⁸ quite probably reflects the lack of the rabbinic calendar court’s authority over the calendar of the Jewish communities to the south and west of Judea in the Beit Yazek period and for a long time into the post-Temple era.

D. Procedures for Intercalation

There are many rabbinic passages that discuss the procedure for intercalating a thirteenth month, which would be added prior to the month in which Passover is observed. There is no need in this context to go into the details, which are complex and

⁷³ Alon, 237.

⁷⁴ *Ibid.*, 237. Alon attributes this view to unnamed “scholars.”

⁷⁵ *Ibid.*, 237.

⁷⁶ As noted by Stern, 173.

⁷⁷ *Ibid.*, 119, 172-175, 244-245.

⁷⁸ Alon, 237.

evolved over time.⁷⁹ In brief, the procedure is similar to that for the new month: a court of at least three was to determine the need for intercalation, and in Tannaitic times the court was chaired by the *Nasi*.⁸⁰

This was determined yearly, based on criteria summarized by a baraita: “Our Rabbis taught: A year may be intercalated on three grounds: on account of the premature state of the corn-crops; or that of the fruit-trees; or on account of the lateness of the Tekufah (season) Any two of these reasons can justify intercalation, but not one alone” (*b. Sanhedrin* 11b). All three criteria are observational; the first two are agricultural, while the third is the astronomical observation of the equinox, similar to the observation of the new moon. In the case of intercalation the court itself made the determination without the assistance of witnesses.⁸¹ The following talmudic passage concerning intercalation describes this process:

It once happened that Rabban Gamaliel was sitting on a step on the Temple-hill and the well known Scribe Johanan was standing before him while three cut sheets were lying before him. ‘Take one sheet’, he said, ‘and write an epistle to our brethren in Upper Galilee and to those in Lower Galilee, saying: “May your peace be great! We beg to inform you that the time of ‘removal’ has arrived for setting aside [the tithe] from the olive heaps.” Take another sheet, and write to our brethren of the South, “May your peace be great! We beg to inform you that the time of ‘removal’ has arrived for setting aside the tithe from the corn sheaves.” And take the third and write to our brethren the Exiles in Babylon and to those in Media, and to all the other exiled [sons] of Israel, saying: “May your peace be great for ever! We beg to inform you that the doves are still tender and the lambs still too young and that the crops are not yet ripe. It seems advisable to me and to my colleagues to add thirty days to this year.”’ (*b. Sanhedrin* 11b; also see similar versions in *t. Sanhedrin* 2:6 and *y. Sanhedrin* 1 (18d))

⁷⁹ For an extensive analysis see Stern, 47-98. Cf. Segal, “Intercalation and the Hebrew Calendar,” and Herr, 852-857.

⁸⁰ *B. Sanhedrin* 11a.

⁸¹ *B. Sanhedrin* 11a-b.

Although it is clearly an Amoraic composition, this passage is widely cited by scholars who generally read it as a quote from an actual letter.⁸² While the Talmud itself follows this with a comment indicating its belief that Rabban Gamaliel of Yavneh is referred to, Alon argues that “there is no doubt that Rabban Gamaliel the Elder is meant,” an interpretation echoed by Herr.⁸³ The significance is that Gamaliel the Elder lived during the first half of the first century C.E., while Gamaliel of Yavneh was active during the post Temple period in Yavneh; if it is the latter, it seems unlikely that he would be “sitting on a step on the Temple-hill.” But none of these scholars have questioned the historical reliability of the letter itself: while it seems plausible that such letters may have existed,⁸⁴ this passage as a whole seems to be an Amoraic reconstruction written entirely in the Aramaic language – even the ostensible quotes from the three letters are written in Aramaic.⁸⁵ In contrast, the Mishnah itself as well as Talmudic citations from the Mishnah and baraitot are always in Hebrew, which is certainly the language we would expect for the letters written to the Galilee, if not to the South or to Babylon.⁸⁶ Therefore, it seems more likely that the setting of Rabban Gamaliel and the Scribe Johanan on the Temple-hill (note that they are not *in* the Temple) is an anachronistic idealization of Amoraic

⁸² See Alon, 239; Herr, 856-857; VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 40.

⁸³ Alon, 239; Herr, 856.

⁸⁴ According to y. Megillah 1:7 (71a) such letters were reportedly “found” by the exilarch Mar Uqva (third century C.E.); Alon thinks they had been preserved in the local “archives”; Alon, 239. Stern argues that this “suggests the reception of such letters was actually quite rare”; Stern, 245, 162 n. 27.

⁸⁵ Goodblatt also casts doubt on the early dating of this event, suggesting that it is more likely to date to the late second century C.E. rather than the Second Temple period. Goodblatt, 211-212.

⁸⁶ While the reference to “the South” may be directed at southern Judea, it may also be a rare reference to the Egyptian Jewish community, which the rabbis of the Amoraic period were trying to persuade to adhere to their calendrical system; see Stern, 244-245, 211.

editors, and we cannot be sure about whether, or from what precise location, intercalary pronouncements might have been sent during the Beit Yazek period.

E. Conflicts Among the Rabbis Concerning the Recognition of the New Month

Rabbinic texts

Rabban Gamaliel had images of shapes of the moon on a tablet and on the wall in his upper chamber, which he showed to the commoners (who came to testify), and he said, “Did you see (the moon) like this, or like this?” It once happened that two came and said, “We saw it in the morning in the east and in the evening in the west.” Rabbi Yohanan ben Nuri said, “They are false witnesses!” When they came to Yavneh, Rabban Gamaliel accepted them. And another time two came and said, “We saw it at its proper time (the evening of the thirtieth day, also called the intercalary day), and on the night following its intercalary day (i.e., the next night) it was not seen” - and Rabban Gamaliel accepted them. Rabbi Dosa ben Harkinas said, “They are false witnesses! How can they testify about a woman that she gave birth, and on the next day her belly is between her teeth?”⁸⁷ Rabbi Yehoshua said to him (Rabbi Dosa), “I see your words.” (*m. Rosh HaShanah* 2:8)

Rabban Gamaliel sent to him (Rabbi Yehoshua): “I decree upon you that you come to me with your staff and with your money, on the Day of Atonement that falls according to your calculation.” Rabbi Akiva went and found him distressed; he said to him, “I can demonstrate that whatever Rabban Gamaliel has done is valid, for it says: *These are the festivals of the Lord, sacred occasions that you shall proclaim* (Lev 23:4) - whether at their proper time, or not at their proper time, I have no festivals save these.” He (Rabbi Yehoshua) came to Rabbi Dosa ben Harkinas; he (Rabbi Dosa) said to him, “If we come to reconsider the Court of Rabban Gamaliel, then we must reconsider each and every Court that has stood from the time of Moses

⁸⁷ The literal phrase “her belly is between her teeth – כרסה בין שניה” has the meaning that “she is obviously pregnant,” (see *b. Ketubbot* 13b and 16a. Skittish translators explain this oddly: “her stomach reaches up to her teeth” in the Soncino edition (*b. Ketubbot* 16a; Isidore Epstein, ed., *Hebrew-English Edition of the Babylonian Talmud*, 18 vols. (London: Soncino Press, 1983)) is quite illogical, as gravity of course makes the stomach go down; the Schottenstein edition explains, “This is an exaggerated expression: ‘The woman’s belly is so distended that it reaches to her teeth!’” (*b. Rosh HaShanah*. 25a¹, n. 9; Abba Zvi Naiman and others, eds., *Talmud Bavli: Tractate Rosh Hashanah*, ed. Hersh Goldwurm, Yisroel Simcha Schorr, and Chaim Malinowitz, *Talmud Bavli: The Gemara: the classic Vilna edition with an annotated interpretive elucidation. The Schottenstein Edition* (Brooklyn: Mesorah Publications, 1999)). This latter is closer to the original meaning of the expression, but with the important qualifier that the belly is “distended” downward and “teeth” probably refer to the labia. On this see Fonrobert, who also contends that since “teeth” is used as a metaphor to refer to various kinds of protrusions, it is therefore not exclusively “an allusion to the myth of the *vagina dentata* which famously bespeaks male anxiety about being devoured.” Charlotte Fonrobert, *Menstrual Purity: Rabbinic and Christian Reconstructions of Biblical Gender* (Stanford, Calif.: Stanford University Press, 2000), 54-56; 237-238, n. 43-48. In *b. Niddah* 41b the location described as “between the teeth” is considered inside the body rather than exterior to it. Thus, Rabbi Dosa probably means that the new moon is still hidden inside the “pregnant – מעובר – old moon, and is not yet visibly “born.”

until now, for it says: *Then went up Moses, and Aaron, Nadav, and Avihu, and seventy of the elders of Israel* (Exod 24:9). And why are the names of the elders not expressly mentioned, if not to teach that each and every three that have stood as a Court over Israel, behold, it is like the Court of Moses?" He took his staff and his money in his hand, and went to Yavneh, coming to Rabban Gamaliel on the day that the Day of Atonement fell according to his calculation. Rabban Gamaliel stood and kissed him on his head, and said to him, "Come in peace, my master and my disciple; my master in wisdom, and my disciple because you accepted my words." (*m. Rosh HaShanah* 2:9)⁸⁸

Historiography

Historians have used these oft-cited passages as evidence that there was calendrical conflict even within the rabbinic camp during the Tannaitic period (the passages are clearly set during the post-Temple era).⁸⁹ In particular, Talmon points to this episode as depicting a calendar dispute similar to the one implied in *Pesher Habakkuk* found at Qumran, where the "Teacher of Righteousness" and the "Evil Priest" seem to observe the Day of Atonement on different days (as discussed above in Part I).⁹⁰ Of course, from the texts it seems that Rabbi Yehoshua is merely concerned that the new moon be declared on the correct day, while the conflict in *Pesher Habakkuk* was probably between versions of a 364DC and a lunisolar calendar.⁹¹

Talmon's thesis is that these similar episodes indicate that, "deviation from the official calendar is found to constitute a standard feature in Jewish sectarianism."⁹² The

⁸⁸ My translation of *m. Rosh HaShanah* 2:8-9.

⁸⁹ I will take up this passage again in the next Chapter.

⁹⁰ Talmon, "Yom Hakippurim in the Habakkuk Scroll," 561-563; Talmon, "The Calendar Reckoning of the Sect from the Judean Desert," 167-168.

⁹¹ I agree with the consensus that follows Talmon concerning *Pesher Habakkuk*, that the conflict it alludes to is probably between practitioners of a 364DC and an OLC; see Talmon, "Yom Hakippurim in the Habakkuk Scroll." But Stern suggests that the conflict in *Pesher Habakkuk* could be just like that described in *m. Rosh HaShanah* 2:8-9, namely between different observations of the new moon; see Stern, 17.

⁹² Talmon, "Yom Hakippurim in the Habakkuk Scroll," 563.

Mishnaic story, which is set somewhere between 100-250 years after the conflict described in *Pesher Habakkuk* (given the possible range of dating both incidents), indicates that calendrical unity was still not something that could be taken for granted. Talmon observes that there is a key difference in the outcome of the two stories:⁹³ the Teacher of Righteousness did not submit to outside authority while Rabbi Joshua bows to rabbinical authority, even though his own calculation may be superior. The value of communal discipline is the obvious lesson that is usually drawn from the Mishnaic story,⁹⁴ and it is one from which Talmon draws an expansive conclusion: “The endeavour of the religious and civil Jewish authorities to establish one exclusive legal calendar should therefore be viewed as a fight for national self-preservation. Any diversity in the calendar constituted a danger to the continuity of Jewish society as a whole.”⁹⁵

Despite the post-Temple setting of the Mishnaic story, Talmon takes it as exemplary of the situation in the Beit Yazeq period, during which he believes the rabbinic calendar was normative. While providing no historical motivation, he claims that there was a shift in calendrical control from the Sadducees to the Pharisees: “As regards the Sadducees, the fight over the prerogative of the determination of the calendar is part of the struggle between two classes in Jewish society. The fixing of the calendar had been the hereditary privilege of the priests. But by and by they have to concede this token of civil and religious authority to the ascending class of the Rabbis.”⁹⁶

⁹³ Ibid., 563; Talmon, “The Calendar Reckoning of the Sect from the Judean Desert,” 168.

⁹⁴ See for example, Jeffrey L. Rubenstein, ed., *Rabbinic Stories* (New York: Paulist Press, 2002), 85-87.

⁹⁵ Talmon, “Yom Hakippurim in the Habakkuk Scroll,” 558.

⁹⁶ Ibid., 561.

The problem is that Talmon provides no evidence of this transformation, and no mechanism explaining why those in power in the Temple, i.e., the chief priests, would voluntarily relinquish their position and signs of authority. He also presumes that the Pharisees and their practice are identical with the nation as a whole. But there is little evidence that the Pharisees were in control of the Temple or “any aspect of Judaism before 70, except during the reign of Salome Alexandra,”⁹⁷ as E. P. Sanders puts it. Indeed, as Sanders argues, the Pharisees were popular as a “focal point for anti-establishment sentiment”⁹⁸ precisely because they were out of power, and were only brought into positions of leadership during the revolt against the Romans.⁹⁹ The war – which saw the destruction of the Temple, of Jerusalem, and of Qumran – is the more likely catalyst for the demise of the Rabbis’ opponents, who are only dimly remembered by the time of the Mishnah’s redaction about 150 years later.¹⁰⁰ And while these Mishnaic passages discuss issues of calendrical dissent, the issue is not a conflict between different parties advocating the 364DC versus the lunisolar calendar, as is probably the case in *Peshet Habakkuk*, but over the correct observance of the new moon. There is nothing to make us think that Rabbi Yehoshua was a proto-sectarian, unless the rabbinic movement and authorities are defined as identical with “Jewish society as a whole,” something which we have seen many contemporary historians would not agree with.

⁹⁷ Sanders, *Judaism: Practice & Belief, 63 BCE- 66CE*, 412. In general I agree with E. P. Sanders’ minimalist view of the Pharisees’ power before 70 C.E.; however, he virtually ignores the subject of the calendar (the exception is on *Ibid.*, 334, but he makes no concrete hypothesis about what calendar was used).

⁹⁸ *Ibid.*, 412; see also 402-404 and *Ant.* 13.288, 298.

⁹⁹ *Ibid.*, 386, which he bases on Josephus.

¹⁰⁰ For Sander’s comments on the demise of the aristocrats and Sadducees, see *Ibid.*, 318.

F. Conflicts Between the Rabbis and Other Groups Concerning the Declaration of the New Month, and Proper Timing and Observance of the Festivals

The texts previously considered point to various groups who disrupted the procedures of the rabbinic calendar court: the Cutheans (Samaritans), sectarians, and Boethusians. The Cutheans appear, in *m. Rosh HaShanah* 2:2, which describes that the signal flares were replaced by messengers due to the “Cutheans’ evil practices - משקלקלו הכותים.”¹⁰¹ While the BT is silent on the substance of what took place, the PT explains that the Samaritans were lighting beacons at different times:

And what disorder occurred there? That these were lighting beacons on this day, and these were lighting beacons the next day, and they used to think that the Bet Din had changed their mind to intercalate, and they became disordered. (*y. Rosh HaShanah* 2:1 (58a))

The motivation for this practice on the part of the Samaritans is not given. The medieval commentator Rashi claimed “they signaled when it was not the time of the new month to deceive Israel...and displayed the signals from their mountaintops.”¹⁰² While both Tabory and Herr follow Rashi’s explanation concerning the actions causing the disruption, they do not attribute a deceptive intent to the Samaritans.¹⁰³ Herr even claims that the Samaritans used a similar OLC, but that because their “reckoning did not always coincide with that of the Jews...when the Samaritans innocently waved their flares, it misled the Jews.”¹⁰⁴

¹⁰¹ Talmon reports that at least one manuscript reads “Boethusians” rather than “Cutheans”; Talmon, “The Calendar Reckoning of the Sect from the Judean Desert,” 197.

¹⁰² Rashi to *b. Rosh HaShanah* 22b (my translation).

¹⁰³ Tabory, 32; Herr, 851.

¹⁰⁴ Herr, 851.

The rabbinic texts related to calendar issues use both the terms “sectarians” and “Boethusians,” but the ambiguous term “sectarians” is often understood as the latter.¹⁰⁵ The Boethusians appear only in rabbinic stories related to the pre-70 C.E. period and do not appear in non-rabbinic texts. Scholars tend to identify them as the Sadducees or a Sadducean-type group with close priestly affiliation; some suggest that they are possibly followers of Simon ben Boethus who was made High Priest by Herod in 25 B.C.E. or as the Essenes.¹⁰⁶

The conflicts with the Boethusians concern the timing of certain festivals, which in the rabbinical texts are related to the declaration of the new month.

Counting the *Omer* and the Feast of Weeks

Some of the conflicts over the declaration of the new month are related by the rabbinic texts to a conflict between Beit Yazek and the Boethusians concerning the beginning of the counting of the *omer* (sheaf of grain) and the subsequent observance of Weeks, based on differing interpretations of the Lev 23:15: “Now you are to number for yourselves, from the morrow of the Sabbath, from the day that you bring the elevated sheaf, seven Sabbaths-of-days, whole (weeks) are they to be.”¹⁰⁷ While the Rabbis

¹⁰⁵ See above, note 49.

¹⁰⁶ See the general discussion of the scholarship on the subject of the Boethusians in Harari, 1-9. The rabbinic text *Abot de-Rabbi Natan* reports that both the Sadducees and Boethusians arose simultaneously as two separate groups that broke away from the mainstream two generations after the High Priest Simon II, who lived at turn of the third-second century B.C.E.; see the discussion in *Ibid.*, 16-40. The identification of the group with Simon ben Boethus was put forward in the nineteenth century by Abraham Geiger, and is the standard scholarly view. Some, like Schiffman, disagree with this “completely unproven” theory; he takes a more traditional view that the Boethusians may date to an even earlier period, and are an offshoot of the Sadducees; Schiffman, 75-76. Others suggest identifying the Boethusians with the Essenes and the Qumran sect; see Y. M. Grintz, “The Yahad Sectarians, Essenes, Beth(e)sen” [Hebrew], *Sinai* 32 (1954); Sussmann, 54.

¹⁰⁷ The translation of this passage is fraught with difficulty, and depends somewhat on the varying and conflicting interpretations that are to be discussed at this point. This is Fox’s translation, which seems more literal than the NJPS.

observed this as the day following the first day of Passover and the 364DC tradition observes this as the Sunday after the Sabbath following the conclusion of the Passover week, all we know about the Boethusians is that they observed it on a Sunday. There are two issues here that need to be addressed: 1) what does the reported conflict with the Boethusians indicate about whether the rabbinic calendar was “normative” during the Second Temple period; 2) Did the Boethusians follow a variety of the OLC (as assumed by the Rabbis), or might they have followed a variety of the 364DC? ¹⁰⁸

As discussed above, *m. Rosh HaShanah* 2:1 reports that the sectarians’ “evil practices - משקלקלו המניין” caused the Beit Yazek court to accept testimony “only from those they knew.” What were these disruptions? A baraita to this mishnah in the BT explains that it concerned witness tampering by the Boethusians:

Our Rabbis taught: What disruption did the Boethusians adopt? Once the Boethusians sought to mislead the Sages. They hired two men for four hundred zuzim, one belonging to our party and one to theirs. The one of their party gave his evidence and departed. Our man [came and] they said to him: Tell us how you saw the moon. He replied: I was going up the ascent of Adumim and I saw it couched between two rocks, its head like [that of] a calf, its ears like [those of] a hind, and its tail lying between its legs, and as I caught sight of it I got a fright and fell backwards, and if you do not believe me, why, I have two hundred zuzim tied up in my cloak. They said to him: Who told you to say all this? He replied: I heard that the Boethusians were seeking to mislead the Sages, so I said [to myself], I will go myself and tell them, for fear lest untrustworthy men should come and mislead the Sages. They said: You can have the two hundred zuzim as a present, and the man who hired you shall be laid out on the post. There and then they ordained that testimony should be received only from persons who were known to them. (*b. Rosh HaShanah* 22b; see similar versions in *y. Rosh HaShanah* 2:1 (57d-58a), *t. Rosh Hashanah* 1:15) ¹⁰⁹

While the PT and BT versions agree that the Boethusians are to blame, they are silent about the motivations of the Boethusians beyond sheer mendacity. However, the

¹⁰⁸ See Harari, 221-223.

¹⁰⁹ The similarity of the sources argues that the core of this story is indeed Tannaitic. For a close comparison of the versions, see *Ibid.*, 235-253.

Tosefta's version of this story adds the motivation, "For the Boethusians do not agree that Atzeret should be except after the Sabbath."¹¹⁰ Rashi's medieval commentary claims that this baraita refers to a situation where, by having the Beit Yazek court declare the new month a day early, this would cause the second day of Passover to fall on a Sunday, making the Boethusians count (and the subsequent observance) of Weeks coincide with that of Beit Yazek. Thus, Rashi infers that the Boethusians' motivation was to get the court of Beit Yazek to validate their interpretation of Lev 23:15.¹¹¹ This view is also based on Amoraic attempts at interpreting the meaning of these passages, which arrive at the idea that the Boethusians began the count of the *omer* after the Sabbath during the week of Passover.¹¹² Talmon endorses Rashi's view as does Herr, who concludes that

¹¹⁰ My translation; see Lieberman, *Tosefta Ki-Fshutah: A Comprehensive Commentary on the Tosefta* [Hebrew].

¹¹¹ In contrast to the baraita to *m. Rosh HaShanah* 2:1, which is an example of the Boethusians seeking to have the month declared a day early, Rashi interprets a passage in *m. Rosh HaShanah* 1:9, "and if any lie in wait for them" as implying that the Boethusians and Samaritans sought to detain witnesses in order to delay the declaration of the new month; thus there are examples of attempts to both accelerate and delay the declaration; see Rashi to *b. Rosh HaShanah* 22a.

¹¹² For example, in *b. Menahot* 65a-b we read: "For the Boethusians held that the Feast of Weeks (Atzeret) must always be on the day after the Sabbath. But R. Johanan b. Zakkai entered into discussion with them saying, 'Fools that you are! whence do you derive it?' Not one of them was able to answer him, save one old man who commenced to babble and said, 'Moses our teacher was a great lover of Israel, and knowing full well that the Feast of Weeks lasted only one day he therefore fixed it on the day after the Sabbath so that Israel might enjoy themselves for two successive days'. [R. Johanan b. Zakkai] then quoted to him the following verse, 'It is eleven days' journey from Horeb unto Kadesh-Barnea by the way of mount Seir. If Moses was a great lover of Israel, why then did he detain them in the wilderness for forty years?' 'Master', said the other, 'is it thus that you would dismiss me?' 'Fool', he answered, 'should not our perfect Torah be as convincing as your idle talk!' The babbling old man is considered to be a Boethusian (see Tabory, 136).

Later on in *b. Menahot* 65b we read: "R. Yose b. Judah says, Scripture says, 'Ye shall number fifty days' (Lev 23:16), that is, every time that you number it shall not be more than fifty days. But should you say that the verse refers to the morrow after the Sabbath of Creation [i.e., the weekly Sabbath], then it might sometimes come to fifty-one and sometimes to fifty-two and fifty-three and fifty-four and fifty-five and fifty-six." These calculations assume that the "Sabbath of Creation" observed would be the Sabbath during Passover, with the result that Weeks according to this method would then fall at a variable length of time greater than the rabbinic count, which starts after the first day of Passover. But this is mixing and matching two systems, for the Boethusians would not include the days between the beginning of Passover and the following weekly Sabbath in their count of fifty days.

this baraita proves that “the Boethusians basically followed the calendar” of Beit Yazek.¹¹³ The difference was that the Boethusians “held that the reference [in Lev 23:15] was to the morrow of the sabbath within the feast itself. This sabbath could fall in the intermediate days of Passover (*hol ha-moed*), the last day of the festival, or on its first day; in the latter case, the Boethusians date for Pentecost would be identical with that of the rest of Israel.”¹¹⁴ Herr agrees with the Rashi’s understanding that the calendar court had to become more selective in its witness acceptance program in response to a new problem caused by the Boethusian’s odd interpretation and surprising efforts at disruption.¹¹⁵

However, the astronomical/calendrical situation described would happen only occasionally; in most years, the first day of Passover according to the OLC would not fall within one day of the sabbath (it would vary over the seven days of the week), so in most years the counting of the *omer* could *not* fall on a Sunday, even with the help of false witnesses. In addition, whether the Boethusian or rabbinic interpretation of “the morrow of the Sabbath” was the innovative or dissenting view is not clarified by this passage. Therefore, while the rabbinic texts, Rashi and his modern followers assume the Boethusians are working within the framework of the OLC, and simply aiming to manipulate it for their own theological ends regarding the counting of the *omer*, it seems

¹¹³ Herr, 859; Talmon, “Yom Hakippurim in the Habakkuk Scroll,” 560-561; Talmon, “The Calendar Reckoning of the Sect from the Judean Desert,” 174. Harari also observes that the rabbinical texts assume the Boethusians are operating within the framework of the OLC; Harari, 224-225.

¹¹⁴ Herr, 858. This is the conventional scholarly view, derived from the rabbinical texts; see Harari, 222-223.

¹¹⁵ Herr, 846.

to me that this fails to understand the Boethusians' calendar and their motivations, which must be found elsewhere.

My suggestion is that it has to do with a conflict over the proper observance of the Sabbath; if the Boethusians disagreed with the rabbinic authorization concerning violating the Sabbath to report (and perhaps promulgate) the new month, they may have sought to accelerate or defer the witnesses in order to prevent their desecration of the Sabbath (i.e., accelerate a declaration to Friday or defer a declaration until Sunday). This does not, however, necessarily imply that the Boethusians recognized the legitimacy or authority of the Beit Yazek court, but simply that they sought to impose their own “correct” views concerning proper Sabbath observance on their fellow Jews.¹¹⁶

The Mishnah provides another extensive account of a situation in which the Beit Yazek court is in conflict with the Boethusians. In this case the focus is on the proper interpretation of the commandment to “put the sickle to the grain” (Deut 16:9) to cut the *omer* for the purpose of waving and counting it. The Mishnah tells us that in its view, “The precept requires that it be reaped by night; if it was reaped by day, it is valid. And it overrides the Sabbath” (*m. Menahot* 10:9). According to the OLC, the eve of Passover on the 15th of Nisan will always be a full moon – and the evening afterwards, when the *omer* would be reaped, would also be by the light of the (almost) full moon. Thus, it would be easy to see in the evening (given the proper weather), and would be an auspicious time to ceremonially begin the harvest. Indeed, it would continue the celebrations begun the previous night during the Passover Seder.

¹¹⁶ In present day Jerusalem, for example, the “ultra-orthodox” often seek to impose rules on their fellow citizens, precisely because they do *not* respect the legitimacy of other practices.

How did they proceed? The Court's emissaries went out on the eve of the Festival, and tied them into bunches while unrealed to simplify the reaping. And all the neighboring towns assembled there that it might be reaped with great ostentation. Once it became dark, he said to them: "Has the sun set?" they said, "Yes." "Has the sun set?" They said, "Yes." "This sickle?" They said, "Yes." "This sickle?" They said, "Yes." "This basket?" They said, "Yes." "This basket?" They said, "Yes." On the Sabbath he said to them: "On this Sabbath?" They said, "Yes." "On this Sabbath?" They said, "Yes." "Shall I reap?" And they said to him, "Reap!" "Shall I reap?" And they said to him, "Reap!" Three times for each item, and they said to him, "Yes, yes, yes." Why to such an extent? Because of the Boethusians who declared that the reaping of the *omer* is not performed at the conclusion of the Festival day. (*m. Menahot* 10:3)

This ceremonial reaping of the *omer* sounds like something between a demonstration and a party – and it was probably both.¹¹⁷ Even the Mishnah asks itself, "Why to such an extent?" I suggest that such a demonstration indicates that the calendar of Beit Yazek did *not* have hegemony, and that this was a protest against the practice of others, here identified as the Boethusians. It is well to remember that people came from around the country to the Temple for the Passover pilgrimage, and it was therefore an opportunity for propagandizing their position. If the supporters of the Beit Yazek calendar wanted to engage in a political struggle for adherents and against other groups, this would be an ideal time. In addition, "On the Sabbath he said to them: 'On this Sabbath?'" clearly refers to the instances when the reaping would occur on eve of the weekly Sabbath, after the first day of Passover fell on a Friday. This would thereby constitute another instance where the desecration of the Sabbath was justified, as in the case of the new moon witnesses – and in this case, the desecration was being publicly and demonstratively proclaimed.

¹¹⁷ Goudoever similarly observes that in this passage "we get a lively picture of the reaping of the *omer*, with a ceremony directed against the Boethusians." Goudoever, 17.

This account also doesn't indicate *when* the Boethusians observed the beginning of the *omer* count; it only says that they “declared that the reaping of the *omer* is not performed at the conclusion of the Festival day.” However, this is somewhat clarified by *m. Hagigah* 2:4, which mentions “those who say: the Feast of Weeks is after Shabbat,” without attributing this to a particular group. The Gemara to *m. Menahot* 10:3 joins these passages together by explaining that “the Boethusians held that the Feast of Weeks must always be on the day after the Sabbath” (*b. Menahot* 65a). The Feast of Weeks, of course, is a function of the day when the waving of the *omer* begins, as Weeks falls exactly seven weeks later on the same day of the week.

But the Tannaitic literature does not clearly define the Boethusians' Sabbath for purposes of counting the *omer* as the Sabbath during the week of Passover. Even Tabory is cautious: “We do not know if their intent was for the Sunday during Passover, or the Sunday that fell before Passover, or the one afterwards, or perhaps even the Sunday related to the beginning of the harvest – with no connection to a permanent date at all.”¹¹⁸

If we consider the importance to the Boethusians of beginning the *omer* count and the consequent observance of Weeks on the day after the weekly Sabbath, I believe this is strong indication that the calendar of the Boethusians was probably the same as the 364DC of Qumran. In particular, while the rabbinic texts have no memory of the 364DC, it is clear (as shown in Part I) that this was a major calendrical tradition; at the same time there is no evidence of the Boethusians from non-Rabbinic sources. The one thing we can

¹¹⁸ Tabory, 136. Harari also observes, “Nothing in rabbinic sources can conclusively decide this issue”; Harari, 22. Goudoever also analyses all these various options for beginning the *omer* count, and attempts to show how various historical groups used each possibility, including many, such as the Karaites and Falashas that are much later than the period under discussion. As to the Boethusians, he follows the traditional identification along with Talmon and Herr; see Goudoever, 15-29.

be certain of is that both the Boethusians and the 364DC traditions both marked the first day of the *omer* as a Sunday. Indeed, Schiffman appears certain of this identification based exclusively on the similar interpretation of “the morrow of the Sabbath”: “We now know from the Qumran evidence that this was the Sunday after the last day of the Festival.”¹¹⁹

The similarity, and possible identity, of the 364DC with the Boethusians’ calendar means they are alike in another way: both aspects of Lev 23 are easily and clearly fulfilled: a) that the count begins the day after the Sabbath and b) that seven complete Sabbaths, understood as complete weeks, will be fulfilled. As Tabory points out, “it is possible to find support for the method of the Boethusians in the Torah’s demand to count ‘seven complete Sabbaths.’ – because a week is only ‘complete’ when it starts on Sunday and ends on Sabbath.”¹²⁰ For the 364DC, in which the week is the fundamental and overriding time structure, the completion of precisely seven weeks of seven days is especially important, and the holidays never conflict with the weekly Sabbath. In contrast, the challenges involved in explaining how the conflicts between Sabbath and holiday observance are coordinated takes up three pages of the Talmud, *b. Menahot* 65a-66a, part of which consists of mocking attacks on the Boethusians, and by implication the 364DC, in a fashion that indicates the Amoraim have no concept of the structure of the 364DC.

¹¹⁹ Schiffman, 304. Yaakov Sussman also supports this position, endorsing the hypothesis of Y. Grintz that identifies the Boethusians with the Yahad and Essenes; Sussmann, 54.

¹²⁰ Tabory, 138.

If the Beit Yazek court had to demonstrate against Boethusian practices, it seems that the Boethusians were in a position of some power;¹²¹ and if the Boethusian calendar was a version of a 364DC, then it was being used by a group in Jerusalem (not exclusively at Qumran). Furthermore, it is the use of this 364DC against which Beit Yazek was protesting by going out into the fields; once again, we see their efforts taking place outside of the Temple.

The Beating of the Willows and the Feast of Booths

Similar problems seem to have arisen during the Beit Yazek period in regards to the Feast of Booths, especially with regards to when the first or last day of the seven day holiday fell on the Sabbath, which would then require reconciliation between the Sabbath rest laws and the requirements of the holiday to carry the *lulav* (a bundle of three tree branches plus a citron) on the first day and beating willow branches on the last day. In a failed attempt to resolve this conflict the Mishnah reports a riot that erupted in the Temple one Sabbath:

How is the *mitzvah* of *lulav*? If the first day of the Festival fell on Shabbat they would bring their *lulavim* to the Temple Mount and the attendants received them and placed them in order on the top of the portico and the elders would leave them in the office. And they teach them to say: “My *lulav* is given as a gift to the person into whose hand it may fall.” On the next day, they would rise early and come and the attendants would throw them before them. And they would snatch and beat one another. And when the Court saw this was becoming dangerous they ordained that everyone should perform the *lulav* ritual at home. (*m. Sukkah* 4:4)

The procedure according to this account is that, in order to avoid violating the Sabbath rule against carrying things, the *lulavim* had to be brought to the Temple on Friday, and then reclaimed on Saturday. The problem is that the requirement was for each person to use their own *lulav* (based on the verse, “You shall take to yourself on the first

¹²¹ Harari also notes the Boethusians are pictured as a powerful group; Harari, 252.

day – וּלְקַחְתֶּם לָכֶם בַּיּוֹם הַרְאֲשׁוֹן” Lev 23:40), but with the large number of people at the Temple (which could be in the tens of thousands for a holiday in the first century C.E.) it would not be practical for each person to reclaim the one they brought the previous day earlier. Therefore a legal formula was devised to solve this problem, essentially “gifting” the *lulavim* to each other (although it is not stated who created this formula, perhaps we can infer that it was the Beit Yazek court). However, the implementation was a failure, causing a riot. As a result, the Court rules that the *lulavim* should no longer be brought to the Temple, but only “taken” at home.¹²²

It is a certainty that *lulavim* were brought to the Temple during Hasmonean times, based on Josephus’ report of the holiday crowd pelting the Hasmonean King and High Priest Alexander Jannaeus with their citrons.¹²³ Therefore, the decree of the Beit Yazek Court removing them must be subsequent to the early first century B.C.E. Clearly, the failed concept of bringing the *lulavim* to the Temple a day ahead of time was an innovation, as there had not been a problem before. But why would this need have arisen? Clearly, *lulavim* had been brought to the Temple on the Feast of Booths for hundreds of years. The Mishnah itself identifies the cause of the problem: the coincidence of the Sabbath with the beginning of the Feast of Weeks. Since this caused what seems to be a new problem, I suggest that it is reasonable to conclude that this overlap of the Sabbath and Weeks was also new, which can best be explained as a consequence of the

¹²² The Mishnah does not clearly state whether this revision applies every year, or only when the holiday falls on the Sabbath; Pinhas Kehati’s interpretation is that it only applied when the first day of the Festival coincided with the Sabbath; Pinhas Kehati, ed., *The Mishnah: A New Translation with a Commentary by Pinhas Kehati* (Jerusalem: Eliner Library, Dept. for Torah Education and Culture in the Diaspora of the World Zionist Organization, 1992-1994).

¹²³ Atiq. 13:5 (372). Josephus, *Works*, trans. H. St J. Thackeray, Ralph Marcus, and Louis Feldman (Cambridge, Mass.: Loeb Classical Library, 1929-1965).

innovative introduction of the OLC into the Temple. In contrast, the overlap of the Sabbath and the festival, with the consequent problems, would never occur with the 364DC. If this event did in fact take place, it may indicate that the Beit Yazek court had gained some control of the Temple's calendar – at least enough to attempt this innovative procedure – but that this was an innovation which probably took place at a late date, during the first century C.E.

The Mishnah describes a similar situation for the seventh-day of the Feast of Booths, when the willow branches were brought to the Temple ahead of time (although without the report of a riot):

As it [the beating of the willows] was performed on weekdays so it was performed on Shabbat. Except that they would gather them on the eve of the Sabbath and place them in golden basins so that they should not wither. (*m. Sukkah* 4:6)

Nevertheless, in this instance the Gemara reports a conflict with the Boethusians, who tried to sabotage the Pharisaic observance of the willows by hiding the willow branches they had brought ahead of time:

He raised an objection against him: The rite of the *lulav* overrides the Sabbath on the first day, and that of the willow-branch on the last day. On one occasion the seventh day of the [ceremonial of the] willow-branch fell on a Sabbath, and they brought saplings of willows on the Sabbath eve and placed them in the courtyard of the Temple. The Boethusians, having discovered them, took and hid them under some stones. On the morrow some of the common people discovered them and removed them from under the stones, and the priests brought them in and fixed them in the sides of the altar. [The reason for hiding the willows was that] the Boethusians do not admit that the beating of the willow-branch overrides the Sabbath. (*b. Sukkah* 43b)

“They” who brought the willows (presumably the followers of Beit Yazek) felt that “the beating of the willow-branch overrides the Sabbath.” However, it seems that all the other identified parties did not follow this practice: the Boethusians who discovered and

hid the branches, the “common people”¹²⁴ who discovered them and brought them to the priests, and the priests who fixed the willows by the altar, thereby preventing their use. In this instance, it clearly seems that the priests are in charge of the Temple, for the commoners turn to them with their discovery of the willows. It appears that the priests and the common people shared the view of the Boethusians, against the overriding of the Sabbath by the beating of the willows; perhaps they did not agree with the practice of beating the willows at all,¹²⁵ or did not agree with the date of the holiday being observed by the followers of Beit Yazek. In any case, Beit Yazek was clearly not in charge, and their willingness to violate the Sabbath was not shared by the other groups. While no explicit calendar problem is noted here, unlike the case of the *lulavim*, this problem could similarly be due to an innovative OLC that caused the overlap between the holiday and the Sabbath. Again, this conflict does not occur with the 364DC.¹²⁶

To summarize the findings of this section concerning conflicts between different groups:

In their conflicts with other parties, especially the Boethusians, it seems that the Beit Yazek court (presumably the Pharisees, projected as the Rabbis’ predecessors) was

¹²⁴ The meaning of the term translated here, “common people,” literally “people of the land - עַם הָאָרֶץ,” has been a topic of scholarly controversy. The term, borrowed from the books of Ezra and Nehemiah (where it refers to the Israelites who remained in Judea and were not among the exiles and returnees), is used in various contexts in rabbinic literature, but always referring to Jews who do not follow the rulings of the rabbis. See Rubenstein, *The Culture of the Babylonian Talmud*, 123-142; Aharon Oppenheimer, *The 'Am Ha-Aretz*, trans. I. H. Levine (Leiden: E. J. Brill, 1977).

¹²⁵ It is stated in the Gemara that “the *lulav* is Pentateuchal...the willow-branch is rabbinical” (*b. Sukkah* 44a, my translation).

¹²⁶ Talmon argues that since all the Jewish groups agreed on the count of the week and the Sabbath, unlike the conflicts over the timing of the holidays, these conflicts were only about “certain actions permissible” on the Sabbath. The Sectarians were stricter because their 364DC allowed them to avoid these problems. Where I disagree with Talmon is on which calendar was normative and which innovative. See Talmon, “The Calendar Reckoning of the Sect from the Judean Desert,” 185.

not in charge of the calendar of the Temple, nor of practices that took place there, although they may have had some influence during the first century C.E. The description of problematic conflicts concerning holiday observances on the Sabbath leads to the conclusion that these were new problems that arose due to the innovative use of the OLC in the Temple.

The motivations, and therefore the views, of Beit Yazek's opponents, often identified as Boethusians, are less obvious; in some instances simple mendacity is attributed, in others it is simply stated that they disagreed with rabbinic practice. Still it seems that different attitudes towards the sanctity of the Sabbath are the key, for this is common in all the cases. The rabbinic texts are explicit about the fact that some of their practices conflict with and override the standard Sabbath rules:

- Witnessing (and perhaps promulgation) of the new month;
- Putting the sickle to the grain and waving the omer;
- Carrying the lulav and beating the willows.

Ultimately, the conflicts boil down to a tension between the priority of observance between the Sabbath vs. the lunar month, for these monthly and annual events in the OLC are “moveable” with respect to the Sabbath, and will therefore occasionally overlap and conflict with the Sabbath. The sabbatarian priority of the Boethusians seems to reflect an attitude that is quite close to those who used the 364DC, in which the Sabbath is the most important temporal rhythm. If we identify the Boethusians with the Essenes of Qumran, as some scholars have done, this would elegantly explain the conflicts in the rabbinic texts between Beit Yazek and their opponents, especially their opposition to rabbinic

practices that violate the Sabbath.¹²⁷ The advantage of this is, on the one hand, the 364DC is the only Jewish calendar about which there is evidence external to the rabbinic texts; on the other, it is clear that the rabbinic texts have totally forgotten or purged any knowledge of the 364DC. Thus, rabbinic portrayals of Boethusian motivations and practices are subject to tendentious garbling, especially the rabbinic assumption that the Boethusians used a form of the OLC. To quote again from A. Baumgarten, “Centuries later, when those who held rejected opinions had long passed from the scene, who cared much about their motivations or ideology, other than perhaps to criticize or caricature them?”¹²⁸

Why Was the Rabbinic Calendar Based on Observation? – A Hypothesis

In Part II above I agreed with Wacholder’s proposal that both the 364DC and the OLC have their origins in the early Persian period. At that time it is likely that the technique of the OLC was adopted from Babylonian observational procedures. In a widely cited article, Wacholder and Weisberg show the parallels in the process between the ancient Babylonian Akkadian and rabbinic observational procedures:

Procedure	Babylonian (Akkadian sources)	Rabbinic sources
Witnesses sight the new moon	Sighting by professional observers appointed by the king	Sighting by members of the public
Information is brought to the authorities	Message from priests to the king	Witnesses are qualified and examined by the rabbinic court

¹²⁷ Although Schiffman is even less cautious that I about the identification of the Boethusian and Qumran calendars, he does not follow through on what seems to me the logical conclusion, that this meant that the 364DC was used in Jerusalem, probably including the Temple. On the one hand, he is certain that the Boethusians used the 364DC of Qumran. On the other hand, despite his agreement that the Boethusians were closely identified with the Sadducees, who were in control of the Temple during the Herodian era and much of the first century C.E., he nevertheless claims that the 364DC was at best only used briefly by “sectarian groups”; Schiffman, 75-76, 304. Like Talmon, Herr and others, he too is convinced (or, perhaps, he is too convinced) that the rabbinical calendar was normative.

¹²⁸ Baumgarten, “Rabbinic Literature as a Source for the History of Jewish Sectarianism in the Second Temple Period,” 31.

Authorities affirm and proclaim the new month	The king declares	Rabbinic court declares
Messengers are sent out to announce the new month	Written word is sent to temples for proclamation and observance	Messengers are sent to all Jewish communities for observance

Table 4: Comparison of Babylonian and Rabbinic Observational Procedures¹²⁹

However, both of these calendars were superseded by calculated lunisolar calendars; indeed, the scholarly consensus is that the calculated rabbinic calendar is a descendent of the calculated Babylonian calendar, especially its 19-year cycle of intercalation.¹³⁰ The strange part is that while the calculated Babylonian calendar seemed to become standard in the Persian Empire by the fifth or fourth century B.C.E. at the latest,¹³¹ it seems that the calculated rabbinic calendar did not become standard until the fourth century C.E.,¹³² at the earliest – a gap of about 800 years. At best we might shorten this gap to about 500 years if we give credence to Mishnaic and Talmudic reports of calculations being used by Rabban Gamaliel and others as a means to verify the witness’ testimony and determine an intercalary year.¹³³

The question, however, is: Why didn’t the rabbinic OLC shift to a calculated system earlier? It would seem that there would have been a good incentive to do so, given the various difficulties they encountered. As Gardner puts it, “Why did the Hebrews, with

¹²⁹ Drawn from Wacholder and Weisberg, “Visibility of the New Moon in Cuneiform and Rabbinic Sources,” 61-66.

¹³⁰ Ibid., 66-74. See also Stern, 27-31.

¹³¹ Wacholder and Weisberg, “Visibility of the New Moon in Cuneiform and Rabbinic Sources,” 72. See also Rochberg, 1938.

¹³² Most recently see Stern, 170-181.

¹³³ See above *m. Rosh HaShanah* 2:6, 2:8; also *b. Rosh HaShanah* 7a, 20b, 24a-25a; *y. Rosh HaShanah* 2:6-8 (58a-b); see also Ibid., 180. How much of this should be attributed to the Tannaitic period, as opposed to later interpolations, is disputed. For example, Alon believes that calculation was known in the early rabbinic period (Alon, 247-248), while Herr disputes this and attributes the knowledge only to a later era (Herr, 848-849).

their religious courts, their disputed sightings, their equivocal and conflicting witness statements (i.e., their haggling over dates) seem to be so far behind in their calendrical development in comparison to surrounding cultures?”¹³⁴ Various answers have been given to this “historical problem.”¹³⁵

Schürer and Gardner both reasonably discount the possibility of simple ignorance of their neighbors’ calendars in the cosmopolitan Hellenistic-Roman era.¹³⁶ The “hermeneutics of goodwill” scholarly position follows the rabbinic tradition, claiming that this is how it always was, back to the origins of the Jewish people during the Exodus,¹³⁷ or at least to the post-exilic period.¹³⁸ In this case, one can only answer that it was “tradition” or “intransigence,” two opinions about the same phenomenon; as Schürer-Vermes puts it, “Only the association of the calendar with the religious cult, and the stubborn opposition of the cult to all scientific reforms, make such a state of affairs comprehensible.”¹³⁹ Gardner similarly argues that the resistance was intentional, but suggests that the situation was more complex: “The reasons were likely to have been

¹³⁴ Gardner is referring to the rabbinic texts that describe the OLC that I have been discussing in this chapter. Gardner, 6-7. Schürer also poses this question; Schürer, 594.

¹³⁵ Gardner, 123. Geller also briefly notes this, without hypothesizing a reason; M. J. Geller, “The Influence of Ancient Mesopotamia on Hellenistic Judaism,” in *CANE*, ed. Jack M. Sasson (New York: Scribner, 1995), 46-47. Indeed, this is a problem whether one contends the OLC was the “official” calendar throughout the Second Temple period, or that it was introduced into the Temple in place of a 364DC at some point between the second century B.C.E. – first century C.E., for in both cases calculational techniques were available by the fourth century B.C.E.

¹³⁶ Schürer, 594; Gardner, 111, 121-122.

¹³⁷ See Exod 12:1-2, cited frequently as a talmudic prooftext, e.g., *b. Rosh HaShanah* 7a, 20a, 22a, 25b.

¹³⁸ Wacholder and Weisberg, “Visibility of the New Moon in Cuneiform and Rabbinic Sources,” 61; see also the well-known citation, “The names of the months came up with them from Babylonia,” *y. Rosh HaShanah* 1:2 (56d).

¹³⁹ Schürer, 594.

cultic, political and social: there was a *deliberate* discontinuity between Babylon's calendar and that of Jerusalem."¹⁴⁰

Politically, Gardner correctly points out that "calendrical contingency made the Jewish world more subject to religious authority" of those who controlled the OLC, "which led inevitably to increased power for the decision-makers."¹⁴¹ He points to the Talmudic era tension between the Palestinian and Babylonian rabbinic communities regarding authority over the calendar as an example of this dynamic.¹⁴² As Stern has shown, the tension between these rabbinic communities can explain the process that produced both an adherence to an observational methodology (by the Palestinian rabbis) and a push toward calculation (by the Babylonian rabbis);¹⁴³ but this does *not* explain the earlier resistance of the Tannaim, the Beit Yazek court, or their possible predecessors to the adoption of a calculated calendar, even when the rabbinical texts imply that at least some of the techniques were already known.

The Relative Importance of the Sabbath and New Moon

I suggest that if we examine the different resolutions of the tension between the Sabbath and the lunation in the OLC and 364DC traditions we will better understand the reason.

In the rabbinical texts we find a very odd and surprising situation: while it is commonplace to explain the multiple levels of rabbinic law as part of their efforts at

¹⁴⁰ Gardner, 122. Like most writers, Gardner assumes that the rabbinic calendar is hegemonic in "Jerusalem" and the "Hebrew" or "Jewish world"; while I disagree with this, his points are helpful if we understand them as applying to the rabbinic OLC.

¹⁴¹ Ibid., 122.

¹⁴² Ibid., 122-123.

¹⁴³ Stern.

protecting the essentials of Jewish practice by making “a fence around the Torah,”¹⁴⁴ especially the Sabbath.¹⁴⁵ Indeed, the Mishnah is aware of the precariousness of the Sabbath regulations because the rabbis added many laws not found in the Torah: “The laws of the Sabbath...are as hills suspended by a hair, for there is very little in the Torah and there are many laws” (*m. Hagigah* 1:8). But in this one context we have multiple examples of the rabbis justifying not just the *weakening* Sabbath laws, but *desecrating* Sabbath laws. This hyper-emphasis on getting the correct observance of the new moon during the Beit Yazek period shows the high relative importance of the lunation vis a vis the Sabbath.¹⁴⁶ Yet, the Sabbath was one of the Ten Commandments, was one of the most distinctive Jewish practices in the ancient world.

I propose that the blatant emphasis on multiple demonstrative desecrations of the Sabbath on account of conflicts with the declaration of the new lunar month and annual festivals of the OLC makes the most sense if we infer that the conflicts of Beit Yazek were with proponents of a version of the 364DC. As explored in Parts I and II, the Sabbath is the main temporal element of the 364DC, and a far-reaching sabbatarianism seems to reflect the beliefs of its users. Therefore, it is easy to understand how the Sabbath desecrations of Beit Yazek would have infuriated the sabbatarian oriented Jews who advocated the 364DC, quite possibly prompting the kind of activities attributed to Beit Yazek’s opponents in the rabbinic texts discussed above. On the other hand, the

¹⁴⁴ *M. Avot* 1:1.

¹⁴⁵ Tannaitic rules concerning Sabbath work restrictions are discussed in *m. Shabbat*, including 39 types of work that are prohibited (*m. Shabbat* 7:2); *m. Betzah* 5:2 adds rules that “one may not climb a tree, ride on an animal, swim in the water, clap, slap, or dance.”

¹⁴⁶ The conflict between Rabbi Joshua and Rabban Gamaliel described in *m. Rosh HaShanah* 2:8-9 moves the issue *away* from observation and towards calculation; this probably represents a stage in the post-Temple evolution of the calculated rabbinic calendar, as will be discussed in the following chapter.

observation of the new moon and associated *deseccrations* of the Sabbath caused by the OLC served as a political rallying point of Beit Yazek against their opponents who advocated a calculated, sabbatarian 364DC. This would especially have been the case if the 364DC in use (certainly at Qumran and possibly the Temple) during the Beit Yazek period had purged the lunar element, as advocated by *Jubilees*. Furthermore, the heavy emphasis on lunar observation in both the Mishnah and *Jubilees* (respectively pro and con) lends weight to the likelihood that a *Jubilees*-style calendar reform had been implemented in the Temple at some point during the Hasmonean-Roman period and had become a topic of controversy between Beit Yazek and others (Priests, Sadducees, Boethusians, Essenes, the Qumran Yahad – the precise label is uncertain).¹⁴⁷

I therefore suggest that the main reason for the great emphasis placed on the uncertain *observation* of the new moon is because it was a part of a polemic against the strictly *calculated* 364DC which the Beit Yazek advocates of the OLC sought to delegitimize. The problems of the 364DC would have provided an important opportunity to polemicize not only this calendar, but also its advocates, for a malfunctioning calendar would imply that their traditions and doctrines were also wrong. As Schürer-Vermes comments in comparing the OLC favorably to the 364DC traditions, “Primitive as this calendar is, its great advantage was that it avoided the serious and permanent inaccuracies that necessarily appear in the course of the years in a calendar based on inexact

¹⁴⁷ The later practice of rabbinic calendar *calculation* shows that the rabbis knew the political and cultic advantages of calculating the calendar – but according to their chronology, this comes *after* they gain more control following the destruction of the Temple; during the Beit Yazek period, the OLC is strictly observational. This shift from observation to calculation in the rabbinic calendar will be discussed in the following chapter.

calculation.”¹⁴⁸ Whether a 364DC was used only at Qumran or also at the Temple, there would have been opportunity enough for Beit Yazek to engage in such polemics.

Controlling the Calendar

In this polemical context it is enlightening to consider not only the similarities, but the *differences* between the Babylonian and rabbinic lunisolar observation procedures reported by Wacholder and Weisberg. The Akkadian texts describe a special official (possibly a priest?) reporting the sighting of the new moon to the king, while the rabbinic texts allow anyone to report sighting the new moon to a rabbinical court. The king’s official is an educated specialist in the subject, who is taken as trustworthy; the rabbinic witnesses are often ignorant or false, so must be qualified and examined.

The rabbinic picture of waiting for witnesses from the general population to spot the new moon so the Temple cult could get on with its work is at odds with the ancient Near East practice of the political and religious elite determining the calendar. Why would anyone in control of the Temple be willing reduce its authority and compromise its power, given the bureaucratic, organizational, economic, and ritual purity issues at stake, let alone issues of class? Any ongoing uncertainty about the possible arrival of witnesses is the kind of thing that would upset the rhythm of the Temple cult; indeed, such an instance and its resolution is reported in *m. Rosh HaShanah* 4:4 (see above). The High Priest was in charge of the Temple, and it is most likely that he determined its calendrical practice, not the leader of the Beit Yazek Court.

The importance of controlling the calendar was such that the Akkadian texts show that for the Babylonians the final decision maker was the king, the political ruler of the

¹⁴⁸ Schürer, 594.

country. In the post-Temple period the rabbinic texts construe control of the calendar as a marker of political authority, with the *Nasi* serving both as chair of the court and the (ostensible) ruler of the Jews.¹⁴⁹ However, the leader of the Beit Yazek Court was not the political and religious leader of the Jews during the late Second Temple period, for this role belonged to the High Priest.

It therefore seems that these differences between the Babylonian and rabbinic observation procedures tend to indicate that the Beit Yazek court rarely was in a position to determine Temple practice. On the contrary, it seems that the observation procedure of Beit Yazek was actively critical of existing priestly authority, and part of its campaign to gain power – a clear indication that Beit Yazek was *not* in control of the situation.¹⁵⁰

Rather, the most likely scenario for calendar practice in the Second Temple from the Hasmonean period on is that it went “back and forth at various times, according to rulers and their political alliances.”¹⁵¹ The periods in which the Pharisaic OLC was used in the Second Temple are most likely during the brief rule of Salome Alexandra and during the waning days of the Second Temple. After the destruction of the Temple, during the

¹⁴⁹ For instance, a baraita reports: “Our Rabbis taught: A year cannot be intercalated unless the *Nasi* sanctions it. It once happened that Rabban Gamaliel was away obtaining permission from the Governor in Syria, and, as his return was delayed, the year was intercalated subject to Rabban Gamaliel's later approval. When Rabban Gamaliel returned he gave his approval with the result that the intercalation held good” (*b. Sanhedrin* 11a). This pericope shows Rabban Gamaliel serving as leader in both capacities.

¹⁵⁰ It also seems to me that their lunisolar calendrical practice could be one of the reasons the Rabbis trace their lineage to the High Priest Simon II, who preceded the Hasmonean dynasty and apparently used a lunisolar calendar (as implied in *Sir* 43:6-8, 50:1-21) (see Bickerman, *The Jews in the Greek Age*, 145; *m. Avot* 1:2). If the Pharisees of Beit Yazek were opposing the calendar practice of the Temple, as I have argued, then their claim of this lineage would be part of their polemic with the aim of endowing their OLC with a certain anachronistic legitimacy.

¹⁵¹ This is a suggestion by Wise, to which VanderKam agrees, as reported in a conference discussion. See James C. VanderKam, “Calendrical Texts and the Origins of the Dead Sea Scroll Community,” in *Methods of Investigations of the Dead Sea Scrolls and the Khirbet Qumran Site: Present Realities and Future Prospects*, ed. Michael O. Wise et al. (New York: The New York Academy of Sciences, 1994), 388.

Tannaitic period and afterwards, the rabbinic movement used its calendar as a way to project its influence and increase its authority in the situation created by the demise of the Temple.

The Legacy of the Calendrical Conflict between the 364DC and the OLC

The Jewish War against the Romans, which brought the destruction of the Second Temple in 70 C.E. along with a great deal of Judean society, destroyed the socio-political context which gave force to the “War of the Calendars.”¹⁵² After the destruction there is no explicit evidence of the use of the 364DC, while a variety of locally based lunisolar calendars seem to have been followed.¹⁵³ But not only does the 364DC cease to be used; the OLC also begins to be transformed into a calculated calendar. In a sense, without the conflict between them, both calendars lose the impetus to keep going. However, rather than simply evaporating, both calendars leave different but continuing legacies that live on in later Judaism, lasting echoes of this ancient conflict.

Postponement Rules of the Calculated Rabbinic Calendar

The transformation of the OLC into a calculated lunisolar calendar is based on mathematical calculations of the average astronomical “new moon” based on the conjunction rather than the sighting of the first crescent. In addition, however, a number of rules evolved for adjusting the calendar (called suspensions or postponements - *dehiot* - דחיית) that can shift the observance of the new month by one or two days away from the theoretical occurrence of the new moon.¹⁵⁴ I think that at least one of these seems to be a

¹⁵² To borrow the titles of Chyutin’s book on the subject and Wacholder’s article. Chyutin ; Wacholder, “Calendar Wars Between the 364 and the 365-Day Year.”

¹⁵³ Here I am following Stern’s analysis; see Stern, especially 47-154.

¹⁵⁴ Ibid., 191-196.

delayed reverberation of the earlier calendar conflicts which are preserved (even if somewhat garbled) in the texts and traditions available to the later rabbis who developed the calculated calendar. This is the rule that Rosh Hashanah cannot fall on Sunday, Wednesday, or Friday; if it would fall on these days according to the calculated new moon, then the first of Tishrei, the date of Rosh Hashanah, is deferred.¹⁵⁵

The reason given for postponing Rosh Hashanah from Sunday to Monday is so that the last day of Booths, the day of Beating the Willows (21 Tishrei), will not fall on the Sabbath.¹⁵⁶ No reason is given for the desirability of this adjustment, but in *b. Sukkah* 42b-43b a long discussion takes place concerning the need to “suspend the Sabbath – דחיה שבת” in the case of overlap of the Sabbath with either the first or last day of Booths, the days of the Lulav and Willow. It is in the context of this discussion that the riot over the *lulavim* in the Temple (*m. Sukkah* 4:4) and the conflict with the Boethusians over the hidden Willow branches is reported (see above, section F). But the language here is ambiguous. While in other places (such as *b. Rosh HaShanah* 20a) the main term used for violation of the Sabbath is “desecrate - מחללין”, the term used in *b. Sukkah* 42b-43b is *dehiah* - דחיה which can refer either to actions that override the Sabbath rules *and/or* to the postponement of the first day of Tishrei.¹⁵⁷ In this case the discussion has slid from one concerned with appropriate violations of the Sabbath to reasons to defer Tishrei on account of conflicts with the Sabbath. It seems reasonable to infer that both these deferrals would be desirable as a way to avoid the difficulties encountered in both these

¹⁵⁵ This rule is known by the mnemonic, “לא אדני ראש – לו ADU Rosh” Ibid., 192.

¹⁵⁶ *Y. Sukkah* 4:1 (54b); Stern notes that this was not consistently followed until perhaps the seventh or eighth century C.E.; Ibid., 194-195.

¹⁵⁷ Marcus Jastrow, “דחיה,” *Jastrow* (1903): 292.

instances. However, while the proposal to defer Rosh Hashanah from Sunday to Monday eventually became standard, the simultaneous proposal to defer Rosh Hashanah from Sabbath to Sunday (on account of the first day of Booths, which always falls on the same day of the week as Rosh Hashanah) was not; if both rules had been accepted, Rosh Hashanah would have regularly been deferred for two days, from Sabbath to Monday (since neither Sabbath nor Sunday would have been acceptable), which was probably seen as too restrictive. In this case, a discussion of what practices suspend the Sabbath restrictions – a legacy of conflict and polemics with proponents of a 364DC – became a reason for adjusting the day for observing Rosh Hashanah.

The result of the second rule that defers Rosh Hashanah from Wednesday and Friday is so that the Day of Atonement (10 Tishre) will not fall adjacent to the Sabbath on either a Friday or a Sunday (respectively). The reasons for this rule, given by Amoraim of the third-fourth century C.E., is that it was difficult to keep food fresh or not bury a corpse over two consecutive days.¹⁵⁸ However, it seems to me that it is no accident that in the 364DC Rosh Hashanah and the Festival of Booths *always* fell on a Wednesday and the Day of Atonement *always* fell on Friday; deferring Rosh Hashanah from Wednesday would eliminate this possibility, thereby affirming a difference from the 364DC.¹⁵⁹

¹⁵⁸ *B. Rosh HaShana* 20a; *y. Avodah Zarah* 1:1 (39b); *y. Megillah* 1:2 (70b). See also Stern, 166-167.

¹⁵⁹ I have not been able to ascertain a reason for deferring the Day of Atonement from Sunday other than that given by the Talmud. Elijah gives a more expansive account of this phenomenon, claiming that all the postponements of the rabbinic calendar are arranged so that the holidays will never fall on the days of the week observed in the 364DC. Unfortunately, this is not argued in sufficient detail, and does not seem to be accurate by my calculations; for example, the postponements are such that Passover cannot be on Monday, Wednesday or Friday – this makes Tuesday a likely possibility, precisely the day of Passover in the 364DC. Elijah, *The Three Temples: On the Emergence of Jewish Mysticism*, 221-222.

Changing the Names of Holidays

The different names used by the Rabbis for certain holidays, in contrast to the names used in the Pentateuch and the 364DC traditions – *Rosh Hashanah* (New Year) instead of *Yom HaZikaron* (Day of Remembrance) and *Atzeret*-עצרת (Assembly) instead of *Shavuot* (Weeks) – also probably have their origins in the polemics with the proponents of the 364DC. In both cases, the Rabbinic terms are secondary to the biblical terms used in the 364DC.

Rosh Hashanah was probably used because it emphasized the different New Year adhered to by the OLC, near the autumnal equinox, in contrast to the unnamed beginning of the year in the 364DC prior to Passover near the vernal equinox. This was especially propitious for the OLC, for *Rosh Hashanah* is the only annual holiday that begins on the first of a month, coinciding with the new moon/month, thereby emphasizing the importance of its observance.

In the Pentateuch *Atzeret* describes the conclusion of Booths (Num 29:35).¹⁶⁰ In Tannaitic literature the term is redirected and used in place of Weeks.¹⁶¹ This redefines the holiday as the end of the Passover season holiday, annexing Weeks to Passover via the counting of the *omer*, which was a direct function of Passover because it began on the day after Passover according to their calculation. This demotion of Weeks is reinforced by the fact that unlike other festivals, there is no tractate devoted to it in the Mishnah.

The name change was also an implicit polemic against the understanding of *Shavuot* in

¹⁶⁰ Its root meaning is to close, detain, gather, restrain, and relates to stopping of work; see Francis Brown, S. R. Driver, and Charles A. Briggs, *The Brown-Driver Briggs Hebrew and English Lexicon* (Peabody, Mass.: Hendrickson, 1999); William L. Holladay, *A Concise Hebrew and Aramaic Lexicon of the Old Testament* (Leiden: E. J. Brill, 1971).

¹⁶¹ Marcus Jastrow, “עצרת,” *Jastrow* (1903): 1103. Tabory notes that while the biblical term means a gathering of the people, the tannaitic literature uses it to mean the end of the Passover holiday; Tabory, 147.

the DSS not as “Weeks” but as “Oaths,” the day on which vows of faithfulness to God were renewed in the Qumran Community,¹⁶² and possibly their predecessors in the Temple itself, a polemic that was so successful that, as Elior notes, these meanings were “completely obliterated” by the rabbis.¹⁶³

The Mystical Legacy of the 364DC

While the Qumran Community did not survive the Jewish War, the sabbatarian time patterns of the 364DC find their remnant in later traditions of Jewish mysticism. The cause of the “scientific” failure of the 364DC, its inflexible sabbatarian theology, was also the basis for its reuse as a source for esoteric Jewish mystical speculation. While it may not represent the movements of the heavens in this sinful world, the mystical adept might access the sabbatarian structure of time and space that characterizes the heavenly realm unseen by normal senses. As Elior has pointed out, “in the Heavenly Halls literature, a large portion of which was written by circles that maintained a strong connection to the memory of the Temple and its priests in the first centuries CE, after the struggle over the calendar was decided and after the destruction of the Temple, there are still mythological themes that stand under the sign of the solar calendar and are influenced by its sabbatarian division in relation to the structure of the heavens and the

¹⁶² It is thought that 4Q266, 16-18 refers to the timing of this ceremony, which is described in detail in the first two and one half columns of 1QS, the *Rule of the Community*. See Davies, Brooke, and Callaway, *The Complete World of the Dead Sea Scrolls*, 85; VanderKam, *The Dead Sea Scrolls Today*, 111. Tabory also points out that it is possible that the use of this term was a polemic “against the system of the Boethusians,” which especially makes sense if the Boethusians used a 364DC, as discussed above; Tabory, 147.

¹⁶³ Elior, *The Three Temples: On the Emergence of Jewish Mysticism*, 210.

image of the angels.”¹⁶⁴ These sabbatarian patterns continue to be an intrinsic element of “kabbalistic literature in all generations.”¹⁶⁵

Historiographic Conclusion – or, “Why to Such an Extent?”¹⁶⁶

One final topic, then, concerns historiography: Why has an argument critical of traditional historiography about the rabbinic calendar not been previously attempted along the lines proposed? I suggest the reluctance has to do with a symbiosis of certain approaches to the DSS and rabbinic sources that preserve a particular picture of Judaism in antiquity. The symbiosis is this: as long as the 364DC can be isolated from “normative”¹⁶⁷ Second Temple period Jewish practice by labeling it an innovative “quaint calendar”¹⁶⁸ unique to a separatist sectarian group of “zany zealots,”¹⁶⁹ then the Mishnaic OLC that evolved into the calculated Jewish calendar can be considered normative for the Second Temple period. This greatly strengthens the historical view that claims an essential continuity of “official” or “normative” Judaism from the pre-destruction era, dominated by the Pharisees, to the rabbinic Judaism of the Mishnah and later (as we have seen, for example, with Alon, Herr, Talmon and Tabory). If, in contrast, the OLC was *not* normative practice (i.e., used in the Temple) during much or most of the

¹⁶⁴ Elijor, “Ha-Luah ha-Yehudi ve-ha-Zman ha-Mysti [The Jewish Calendar and Mystical Time],” 40 (my translation).

¹⁶⁵ Ibid., 41 (my translation). See also the chapter on “Heikhalot Literature” in Elijor, *The Three Temples: On the Emergence of Jewish Mysticism*, 232-265.

¹⁶⁶ My reuse of the tannaitic question posed in *m. Menahot* 10:3 (cited above), which attributes the need to demonstratively reap the *omer* to the conflict with the Boethusians.

¹⁶⁷ For example, Talmon uses this descriptive term; see Talmon, “The Calendar Reckoning of the Sect from the Judean Desert,” 198.

¹⁶⁸ Bickerman, *The Jews in the Greek Age*, 212.

¹⁶⁹ Ibid., 211.

Second Temple period, this removes a key element from this picture, and implies that rabbinic Judaism may represent much less continuity than many would like to think.

The problem, I think, ultimately – and unfortunately – comes down to claims of lineage and legitimacy.

It is commonplace to recognize and laud how much rabbinic Judaism re-formed Judaism after the Temple's destruction. But scholars of the rabbinic calendar have tended to construct it as one of the distinctive markers of ancient Judaism and a point of continuity between pre- and post- destruction Judaism. This is especially important in contrast to Christianity, which eventually blended the seven-day week with the Julian calendar, intentionally forsaking the “Jewish” lunisolar calendar. The common characterization of Christianity as a “daughter” religion of Judaism is dependent on the idea that at the time of “birth” there was a coherent and distinct Judaism from which Christianity diverged, while Judaism maintained its own singular trajectory. The rabbinic calendar has been one of the essential elements of this Judaic trajectory.

If, however, the calendrical hegemony of the OLC during the Second Temple period is questionable, then it can possibly undo this picture of a continuous, identifiable Judaism. Jaubert's theory that there is “*a fundamental continuity between the Jewish fixed-day calendar [364DC] and the Christian calendar*”¹⁷⁰ and that there is thus a link between the early Christian liturgical calendar and the priestly 364DC is very disruptive to those who contend that the OLC was normative Jewish practice from the Second Temple through the Talmudic period. This weakens the claim of Judaism to primacy in

¹⁷⁰ Jaubert, 65; see especially 60-66, 119-121.

the millennia-old polemic between Judaism and Christianity concerning ancient lineage and legitimacy.

At the same time, this analysis strengthens the picture of the Temple's destruction as a real break in Jewish history, after which we find a multiplicity of Jewish efforts at continuity, of which Roman sponsored Christianity and Rabbinic Judaism only become dominant in the fourth century through a process of mutual influence and definition. I believe that this result supports the impetus of some contemporary scholars who are trying to move beyond Christian-Jewish polemics by viewing the first through fourth centuries C.E. as a period in which, as Boyarin suggests, "We need to speak of a twin birth of Christianity and rabbinic Judaism as two forms of Judaism, and not of a genealogy in which one – Judaism – is parent to the other – Christianity."¹⁷¹

If, as I have argued, the "normative" calendar of the Second Temple was for most of its history *not* the Mishnaic OLC, I do not see this weakening the legitimacy of rabbinic Judaism, or a debunking of it, any more than I believe that everything reported in the Bible must be historically true in order for it to have importance. Indeed, in my view, the success of the rabbinic movement in reformulating Judaism in the post-destruction era, including the building of conceptual bridges to the past (even if only

¹⁷¹ Boyarin, *Dying for God: Martyrdom and the Making of Christianity and Judaism*, 2. Boyarin's formulation of "twin birth" is influenced by the earlier work of Segal, *Rebecca's Children: Judaism and Christianity in the Roman World*, 1. See for example Segal's brief observations concerning how both rabbinic Judaism and Christianity differently reworked the meanings of the Pentateuchal holidays, *Ibid.*, 140-141. Yuval has analyzed the mutual Jewish and Christian influences in the development of Passover and Easter in the post-Temple Roman period; Israel J. Yuval, "Easter and Passover as Early Jewish-Christian Dialogue," in *Passover and Easter: Origin and History to Modern Times*, ed. Paul F. Bradshaw and Lawrence A. Hoffman (Notre Dame, Ind.: University of Notre Dame Press, 1999). On a more theological level, but with a special emphasis on the Jewish and Christian reworkings of the holidays of the Second Temple period, see Bruce Chilton, *Redeeming Time: The Wisdom of Ancient Jewish and Christian Festal Calendars* (Peabody, Mass.: Hendrickson, 2002).

partly true by the standards of historical thinking), makes it all the more remarkable and worthy of study and respect for its inventiveness and creativity.

CHAPTER 8 WILD AND TAME TIME IN THE RABBINIC CALENDAR TEXTS

While the previous chapter focused on calendrical practice near the end of the Second Temple period as described in the rabbinic texts, especially the Mishnah, in this chapter I want to extend the diachronic range to include not only the Second Temple period, but the Tannaitic and Amoraic periods as well.

While the previous chapter dealt mainly with issues concerned with calendrical practice – how it worked, the difficulties encountered, etc. – here I will consider the *way* calendrical issues, especially disputes, are reported in the rabbinic texts by focusing on the kind of language and imagery used. My aim here is to address questions with which this inquiry began concerning the culturally constructed relations of humans, nature and the divine realms. In order to address these issues, in this chapter I will take a more literary approach to the texts, shifting from examining rabbinic calendar practice via re-reading the rabbinic calendar texts (as in the prior Chapter) to reading the texts themselves as discursive practices; that is, to examine not only *what* the texts say about the calendar, but *how* they say it. While we cannot be certain that the specific events described took place, we can aim to understand the meanings and significance attached to the stories of those purported events by those who composed, preserved, read and commented on them.

The approach I take here has been greatly influenced by Boyarin, who has proposed and demonstrated a methodological approach to rabbinic texts that he terms “cultural poetics.” This draws on the work of Foucault, as exemplified by what has been called

“new historicism,” in its emphasis on the way ideology is implicitly embedded in cultural practices through various types of discourse which covertly construct the power relations within a cultural formation.¹ “Discourse” in this sense in an inclusive term that points beyond language to encompass all the many-layered processes of interactions in a society. Boyarin approaches rabbinic literature

as (necessarily failed) attempts to propose utopian solutions to cultural tensions. The tensions are what interest me, so using the sensibilities and even techniques of the various hermeneutics of suspicion, I hope that by observing the effects of the energy expended by the culture in attempting to suppress or (put more positively) deal with the tensions, the underlying strains and pressures can be brought to light. Like astronomers who discover heavenly bodies too small for their eyes to see by observing the distorting effects of such bodies on other entities, the equivocations in the texts will be taken as evidence for tensions in the society....I assume that both the halakha and the aggada represent attempts to work out the same cultural, political, social, ideological, and religious problems.²

It is this approach that I will apply to a close reading of certain rabbinic stories that feature calendrical issues. Indeed, to extend Boyarin’s astronomical metaphor, my aim is to train this methodological “telescope” on the rabbinic discourse about the moon, and focus on what this reveals not only about calendrical ideology, but also about covertly embedded constructs of the human relationship to the divine and natural realms.³ My assumption is that the relatively large rabbinic preoccupation with the calendar marks it as a nexus of tensions within the culture that attracted a multi-layered discourse concerning issues such as power, communal unity, morality, and gender. While each of these topics is worthy of in depth attention, I will only address them to the extent that

¹ Boyarin, *Carnal Israel: Reading Sex in Talmudic Culture*, 11-16; Boyarin, *Dying for God: Martyrdom and the Making of Christianity and Judaism*, 148, n. 91.

² Boyarin, *Carnal Israel: Reading Sex in Talmudic Culture*, 15.

³ It must be noted that when I use the term “human” in this context, it refers to a male, androcentric version of normative “human” as understood by the Rabbis who wrote these texts.

they are relevant to my main inquiry into the construction of sacred time as the meeting point of the human, natural and divine realms.

My goal is to highlight the tensions and turning points in the calendrical texts as ways of cautiously discerning the seams that can help to differentiate different historical phases and the changing ideologies that accompany them.⁴ In this effort, I will make cautious use of the conventional dating of the composition and redaction of various Tannaitic and Amoraic materials,⁵ together with a focus on the changing points under dispute and their likely cause, as suggested by A. Baumgarten.⁶ In addition, I will make use of studies of the rabbinic calendar that are more historical in nature, especially a recent study by Stern,⁷ who convincingly theorizes that Jewish calendar practice in the Tannaitic and Amoraic period was far from unified, and that it only gradually evolved from an observational procedure to the calculated procedure currently used over the course of the first millennia. While I believe that Stern gives too much credibility to the historicity of certain passages attributing calendrical practices to particular rabbis as a means for dating those passages,⁸ I believe that his findings are, nevertheless, of value in

⁴ This is similar to what Boyarin describes as his effort to “try to show how a given discourse actually develops from one layer to another.” Boyarin, *Dying for God: Martyrdom and the Making of Christianity and Judaism*, 149 n. 7. My metaphor of “seams” is intentional allusion to the Hebrew term for tractate, מסכת, which literally means “fabric,” akin to the Latin *textus*, derived from “weaving”; see H. L. Strack and Günther Stemberger, *Introduction to the Talmud and Midrash*, trans. Markus Bockmuehl, Second ed. (Minneapolis: Fortress Press, 1996), 110. Fonrobert also makes a similar use of this metaphor as she aims at “Reading Ruptures in the Massekhet/Fabric of Niddah”; Fonrobert, 68.

⁵ As discussed, among others, in Strack and Stemberger, and Halivni.

⁶ See Baumgarten, “Rabbinic Literature as a Source for the History of Jewish Sectarianism in the Second Temple Period,” 30-31, and the discussion in the previous chapter.

⁷ Stern.

⁸ For example, while citing *b. Rosh HaShanah* 20a and 22b, Stern writes “(‘Ulla: Babylonian Amora, early 4th c.). ‘Ulla was apparently reporting an actual calendrical decision of the Palestinian court, as he is said to have done on other occasions.” *Ibid.*, 165, n. 38.

identifying stages of calendrical evolution, even if we allow for the possibility of later editing and anachronistic attribution of sayings to particular rabbis. This qualification results in less certainty about the dating of particular changes while still giving a sequence to the developmental stages of rabbinic calendrical theory.

Just as I argued in Part 1 that there were various stages of development of the 364DC, so here part of my argument is that the rabbinic texts themselves display shifting attitudes about the theory and practice of the rabbinic calendar that can be roughly associated with three historical phases.⁹

1. Beit Yazek¹⁰ – In this stage the accurate observation and reporting of the new moon is of critical importance in order to declare the new month. This is the period of the late Second Temple period discussed in the previous Chapter, where I argued that this OLC developed in active conflict with advocates of the 364DC. While I acknowledge that it is particularly difficult and problematic to identify these Second Temple elements in the Mishnah, I contend that events, practices and attitudes more appropriate to the historical setting of the late Second Temple period are presented.¹¹

⁹ I want to emphasize that when I use the term “development” I do not imply any sense of progress or establishment of a necessarily better or more “advanced” situation, something often assumed in the history of science, whose assumptions have often been applied to the “development” of calendars. Representative of this way of thinking is an overview of the history of the Hebrew calendar by Gandz, who states, “The stage, however, that of a purely solar year of 365 days was never reached by the Jewish Synagogue” (Solomon Gandz, “The Calendar of Ancient Israel,” in *Homenaje a Millás-Vallicrosa* (Barcelona: Consejo Superior de Investigaciones Científicas, 1954), 646). Gardner poses the question, “Why did the Hebrews, with their religious courts, their disputed sightings, their equivocal and conflicting witness statements (i.e., their haggling over dates) seem to be so far behind in their calendrical development in comparison to surrounding cultures?” (Gardner, 6-7). His explanation that “the reasons were likely to have been cultic, political and social” (Ibid., 122) is the correct approach, although he does not propose any reasons in detail. My approach is to focus on the historical circumstances and dynamics of the Jewish community – both external and internal – that induce changes in calendrical theory and practice. Stern’s approach, which focuses on the internal dynamics of the rabbinic and Jewish community, is much closer to my perspective, but external considerations – especially the context of Roman pagan and Christian culture – also need to be considered. Thus, while the sequential nature of the historiographical perspective brings attention to development in the sense of chronological sequence, I do not presume that there is any sense of “progress” or etiologial context defining a beginning and end goal.

¹⁰ For my purpose here, it doesn’t matter if “Beit Yazek” (mentioned in *m. Rosh HaShanah* 2:5; see previous Chapter) ever really existed – in the text it functions as a symbol of a certain ideology concerning how calendar procedures should be done during a particular phase in the development of the OLC.

¹¹ Although, as discussed in the previous chapter, I do not take the texts’ description at face value. It is especially hard to know whether the portraits of the Second Temple period are preserved from that time or retrojected to that time. This is another reason it is more cautious to use the term “Beit Yazek,” which appears in the Mishnaic calendar texts, rather than the term “Pharisees,” which does not appear.

- I prefer to use the term “Beit Yazek” since it appears in the Mishnah, although most historians would agree that the group identified with those activities and views were the Pharisees.
2. Tannaitic – In this stage the focus shifts to the authority of the Court to declare the new month, regardless of the accuracy of observation; this is the view of the Mishnah, which expresses this especially through the actions of Rabban Gamaliel. The Tannaitic redactors of the Mishnah rejected some of the calendrical views of Beit Yazek (phase 1), but nevertheless sought to explain their revisions as continuous with earlier practice. Thus, we find the earlier position of Beit Yazek preserved in the Mishnah, if only in order to be refuted.
 3. Amoraic – In this stage the observational element of the calendar becomes pro-forma as a calculated methodology takes its place. In this phase the importance of the rabbinic community in Babylonia comes into prominence.¹²

What we find is a step-by-step process by which calendrical time shifts from wild to tame as the calendar shifts from one based on empirical observation to calculation. The declaration of the new month is gradually de-linked from sighting of the new moon. While historians of the rabbinic calendar have long discussed the changes in practice from an observational to a calculated methodology, less focus has been placed on the accompanying ideological changes. In what follows I will attempt to pick this apart as I focus on the ideological changes that accompanied these shifts in the rabbinic approach to setting sacred time. This is especially challenging because the later rabbinic texts claim continuity with earlier texts as a way of legitimizing their changed practices and attempt to efface differences. Nevertheless, the abundance of texts and the quotation and reuse of earlier texts in later texts makes the analysis of the diachronic transmission and evolution of ideas much easier and more certain than with the 364DC texts, allowing for a more pervasive literary and cultural analysis of rabbinic calendar ideology.

¹² While I have borrowed these labels from terminology commonly used to describe different historical stages of the rabbinic movement associated with different layers of texts, my purpose is to indicate in which stage and literature we find a shift in ideas. None of these three stages are univocal; we find evidence of earlier views still present in the literature of the later stages.

Calendars and Sacred Time

The 364DC and the OLC: Calculation vs. Observation of the First Crescent of the New Moon

The different procedures used by the 364DC and the OLC reflect two different attitudes towards time. As Elijor points out, “What was at stake was not the calendar *per se*, but the very foundations of the perception of sacred time, place, and cult.”¹³ The strictly calculated 364DC expresses an experience of *tame time*, whereby the movements of the cosmos are expected to validate a divinely ordained sabbatarian symmetry that was revealed once for all time. In sharp contrast, for the OLC the appearance of the new moon – and the timing of the annual holidays which it determines – exemplifies *wild time*, for in principle the length of the lunation and the year are inherently uncertain and unpredictable, revealed anew every month.

In both the 364DC and the OLC, the lunation lasted either 29 or 30 days; the difference is that while the 364DC held to a strictly calculated alternation between 29 and 30,¹⁴ the Beit Yazek OLC in principle depended on the appearance and observation of the

¹³ Elijor, *The Three Temples: On the Emergence of Jewish Mysticism*, 107. While I agree with Elijor concerning the fundamental differences between the constructions of time in the 364DC and the OLC, and laud her efforts as one of the first scholars to take seriously the implications the use of the 364DC in the Temple, I believe she fails to take into account different stages of development within the rabbinic calendar tradition (which I will address below), just as she does not take into account the different stages of development within the 364DC tradition (as addressed above in Part I). In both cases I propose a more nuanced view of each calendar’s history and development. I also place more emphasis on the Sabbath as the key rhythm of the 364DC. In addition, while Elijor follows the view that the use of the 364DC in the Temple ended with the Hasmonean usurpation of the Zadokite priesthood and their creation of a “secessionist priesthood” at Qumran, I entertain the possibility that the 364DC was used in the Temple at times during the Hasmonean-Roman period (as discussed in the previous Chapter).

¹⁴ Except for the additional lunation of 30 days intercalated after 36 lunations – see Part 1. Of course, in the 364DC the lunations were not the “months,” which were schematically calculated and either 30 or 31 days long.

first crescent of the new moon, which did not have to strictly alternate between 29 and 30 day months; because it is based on observation, it is automatically self-correcting.¹⁵

In terms of sacred time, the differing calendrical practices reflect a clear difference in priorities vis-à-vis recognition of temporal events: for the 364DC the Sabbath takes precedence over all other times and holidays are set according to the dates of the schematic months (which are keyed to the Sabbath, as discussed in Part 1); the lunation is a calculated cycle that is marked in the *CDM* calendar, but has no influence on the Sabbath or annual holidays. In contrast, because the OLC used lunar months to date the annual holidays, determining the appearance of the new moon was a serious matter for rabbinic theory and practice because it signaled the beginning of the month, which was key for proper temporal observance. The Sabbath in the OLC ran along on its own independent cycle, which had no link to any other observance.¹⁶ At stake for both sides in this conflict is their theological and cosmological understanding of the connection of the human and the divine, of heaven and earth, through proper ritual at the proper time.

For the followers of the 364DC, proper times were a function of the Sabbath, and their cosmos was an unchanging structure organized by sabbatarian sacred patterns and geometries. The heavens that God created were mathematically calculable and predictable; any variation in this cosmic symmetry and balance was a disaster due to human sin. Elijah points out that the advocates of the 364DC saw it as an unchangeable temporal structure determined in heaven, “a time concept founded on the laws of nature,

¹⁵ Nevertheless, the old pattern of alternating 29 and 30 day lunations found in the 364DC reappears in later Tannaitic writings as a guideline for those who cannot receive word from the calendrical Court in a timely fashion; see t. *Arakin* 1:8 (quoted below).

¹⁶ This needs to be qualified only insofar as rabbinic calendrical practice evolved the “postponement” rules in the Amoraic period to avoid the certain holidays falling on certain days, as was briefly addressed in the prior Chapter.

on divine revelation as reflected in the cosmic order of annual seasons and hours of light; a cyclic time, measured out in sabbaths, featuring an eternal, immutable, mathematical structure, whose liturgical and cultic cycles were witnessed, celebrated, and preserved by priests and angels in concert.”¹⁷

In contrast, for the Beit Yazek OLC it was also humanity's task to align itself with the sacred rhythms of the heavens created by God, but these were not totally predictable by mathematics, nor were they a function of the sabbatarian pattern. Rather, the movement of the heavenly lights was in principle uncertain, and the key uncertainty was the appearance of the new moon. The result, as Elijah observes, is that OLC was fundamentally changeable, “based on unstable human observation and eyewitness reports, on variable calculations and sanctification by human beings.”¹⁸ The importance of lunar observance was such that, for Beit Yazek, it was humanity’s task to align itself with the heavenly lights, especially the moon, for these are God’s signs.

In both cases, then, nature was mobilized in support of their respective calendars: in the 364DC natural time was defined as stable and predictable, while in the OLC it was defined as unstable and unpredictable. As was discussed in Part I, the 364DC assumed the primacy of the Sabbath as the basic temporal pattern of the cosmos. Therefore, although the Sabbath is a rhythm that is only observed by humans (and angels), it is paradoxically construed as nature’s time, in principle perfect and unchangeable because God created it. Naturalizing the Sabbath legitimates it.¹⁹ In contrast, we will see in this

¹⁷ Elijah, *The Three Temples: On the Emergence of Jewish Mysticism*, 107.

¹⁸ *Ibid.*, 108.

¹⁹ See the discussion in Part I and of Durkheim and Eliade in the Introduction.

Chapter that, for the OLC, the uncertainty and changeableness of the lunation created by God is the center of cosmic sacred time to which humans must adapt – even by violating the Sabbath. Yet, if taken seriously, this uncertainty encourages a focus on ritual observances taking place at *precisely* the proper time and anxiety about how to insure this. Paradoxically, this gives more responsibility to humans, for it is humans who must observe the first crescent, report it, and declare it – which becomes a source of power for those who take on this responsibility, namely the Beit Yazek Court and its rabbinical successors. While nature (in the form of the moon) is initially seen as the God-given marker of sacred time (in the Beit Yazek period), humans become an essential partner in the process because proper times only exist when humans recognize them (in the Tannaitic period). God's time is no longer exclusively determined by nature, but becomes subject to human decision, ultimately leading to a calculated lunisolar calendar (in the Amoraic period).

In brief, we have two paradoxes that mirror each other. In the 364DC, artificial time is justified by claiming it to be divine and validated by nature. Contrarily, in the OLC natural time is destabilized as an objective reality because it is construed as uncertain and, therefore, subject to human decision, a right given to humans by God.

The Rabbinical Arrogation of Authority Over Sacred Times: The Dispute Between Rabbi Yehoshua and Rabban Gamaliel

An especially important text addressing the question of Rabbinical attitudes toward nature and time is *m. Rosh HaShanah* 2:8-9, the story I will call “The Dispute Between Rabbi Yehoshua and Rabban Gamaliel.” As the longest sustained Mishnaic story, it was not only significant to the redactors of the Mishnah, but its themes and characters became

implicit and explicit intertextual referents for other rabbinic stories.²⁰ Although it is dubious whether such an event actually occurred, the story was no doubt composed and preserved because it addressed issues of concern to authors and readers of the text. In the discussion that follows, I will refer to the characters in the story, but my understanding is that they represent not historic persons but perspectives that were likely to have been held by some members of the rabbinic community at the time of the text's redaction, viewpoints that needed to be considered and addressed.²¹

Given its importance, I will recapitulate the text here, but parse it according to stages in the story.²²

[A] Rabban Gamaliel had images of shapes of the moon on a tablet and on the wall in his upper chamber, which he showed to the commoners (who came to testify), and he said, "Did you see (the moon) like this, or like this?"

[B] It once happened that two came and said, "We saw it in the morning in the east and in the evening in the west." Rabbi Yohanan ben Nuri said, "They are false witnesses!" When they came to Yavneh, Rabban Gamaliel accepted them.

²⁰ Below I will point to a connection with "The Oven of Akhnai" (*b. Bava Metzi'a* 59a-59b), a connection also noted but not elaborated upon by Rubenstein (Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 261, 393 n. 66). Rubenstein also points to a link with the story describing the deposition of Rabban Gamaliel in *b. Berakhot* 27b (Ibid., 255), which is analyzed by Shapira as a literary construct from various earlier sources that betrays its various sources and correspondingly changing political messages (Haim Shapira, "The Deposition of Rabban Gamaliel - Between History and Legend" [Hebrew], *Zion* 64 (1999)). In addition, Rubenstein points to thematic links with the attempted deposition of Rabban Shimon ben Gamaliel in *b. Horayot* 13b-14a (Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 186, 364 n. 25). Rubenstein shows that it was the process of literary redaction of the BT that created these links, which are less evident or non-existent in the PT (Ibid., 255). See also the discussion of Goodblatt concerning both the redactional history of this story as well as the historical context depicted in the story; Goodblatt, 204-208.

²¹ This approach has been well described by Boyarin: "I believe that one can derive meaning by studying together the stories about a particular Rabbi or other figure because these named characters are themselves a kind of sign or emblem, almost embodied complexes of particular ideas or possibilities for thought (sometimes even impossibilities for thought) with the religious world of the Rabbis and the communities with which they were embedded." Boyarin, *Dying for God: Martyrdom and the Making of Christianity and Judaism*, 32.

²² Parentheses provide supplemental explanations of words or phrases in this and following citations. While the following translation is my own, I have parsed the text into scenes following the suggestion of Rubenstein; see Rubenstein, ed., *Rabbinic Stories*, 86-87.

[C] And another time two came and said, “We saw it at its proper time (the evening of the thirtieth day, also called the intercalary day), and on the night following its intercalary day (i.e., the next night) it was not seen” - and Rabban Gamaliel accepted them. Rabbi Dosa ben Harkinas said, “They are false witnesses! How can they testify about a woman that she gave birth, and on the next day her belly is between her teeth?” Rabbi Yehoshua said to him (Rabbi Dosa), “I see your words.” (*m. Rosh HaShanah* 2:8)

[D] Rabban Gamaliel sent to him (Rabbi Yehoshua): “I decree upon you that you come to me with your staff and with your money, on the Day of Atonement that falls according to your calculation.”

[E] Rabbi Akiva went and found him distressed; he said to him, “I can demonstrate that whatever Rabban Gamaliel has done is valid, for it says: *These are the festivals of the Lord, sacred occasions that you shall proclaim* (Lev 23:4) - whether at their proper times, or not at their proper times, I have no festivals save these.”

[F] He (Rabbi Yehoshua) came to Rabbi Dosa ben Harkinas; he (Rabbi Dosa) said to him, “If we come to reconsider the Court of Rabban Gamaliel, then we must reconsider each and every Court that has stood from the time of Moses until now, for it says: *Then went up Moses, and Aaron, Nadav, and Avihu, and seventy of the elders of Israel* (Exod 24:9). And why are the names of the elders not expressly mentioned, if not to teach that each and every three that have stood as a Court over Israel, behold, it is like the Court of Moses?”

[G] He took his staff and his money in his hand, and went to Yavneh, coming to Rabban Gamaliel on the day that the Day of Atonement fell according to his calculation. Rabban Gamaliel stood and kissed him on his head, and said to him, “Come in peace, my master and my disciple; my master in wisdom, and my disciple because you accepted my words.” (*m. Rosh HaShanah* 2:9)

As seen in the preceding chapter, this story appears in the context of the overall Mishnaic discussion concerning the theory and practice of the OLC, including the problems and conflicts encountered. Its placement in this context makes sense because the story’s plot concerns the resolution of a conflict about the correct observance and declaration of the new month (presumably of Tishrei) that in turn determines the tenth day of the month, on which the Day of Atonement is observed. The obvious theme of the

story concerns the power of the Patriarch and the Court,²³ and how the calendar becomes a site for the assertion of authority; the calendar becomes a plot device because there must have been anxiety and uncertainty about marking time correctly, and the Court *could* make decisions on the matter (at least for those who acknowledged its authority).

The common interpretations of this story have focused on this political dimension and the socio-political importance of the power of the Patriarch to enforce calendrical unity among the Jewish community.²⁴ My focus here will be different: I believe that a close reading of this story and others related to it can teach us about the way rabbinic calendrical theory and practice evolves as it negotiates and re-negotiates the relations of humans, God and nature. From this perspective, the importance of this story is that it describes a turning point in which the attitudes and practices of Beit Yazek give way to those of the Tannaim.

Prolog to the Conflict: A Debate About Sacred Time

The Problem with Rabban Gamaliel's Acceptance of Possibly False Testimony

M. Rosh HaShanah 2:8 serves as a prolog to the story of conflict related in the subsequent mishnah (2:9), and follows a number of mishnayot (*m. Rosh HaShanah* 1:7-2:7) that focus on the calendar process, but imply that the setting is the court at Beit

²³ Milikowsky points out that the historical setting for this conflict is within the rabbinic community, and that the Patriarchate as an institution recognized and endowed with some political authority by the Roman's only came into existence at the end of the second century with Yehuda the Patriarch; thus, Rabban Gamaliel could not have been a Patriarch, but rather the leader of the rabbinic community. Milikowsky, 95-101. Nevertheless, even if the attribute "Patriarch" is applied anachronistically to Rabban Gamaliel, this merely overstates his leadership role, thereby emphasizing that the stories told about him are vehicles of later generations to talk about the proper relationship between leader and followers.

²⁴ Rubenstein and Milikowsky, for example, emphasizes the aspect of political authority while Talmon emphasizes the need for unity of social practice; see Rubenstein, ed., *Rabbinic Stories*, 85-86; Talmon, "Yom Hakippurim in the Habakkuk Scroll," 561-563; Milikowsky, 99-103; Talmon, "The Calendar Reckoning of the Sect from the Judean Desert," 167-168; Talmon, "Calendar Controversy in Ancient Judaism: The Case of the 'Community of the Renewed Covenant,'" 383-384.

Yazek in Jerusalem while the Temple stood. Passage A of *m. Rosh HaShanah* 2:8 shifts the time and place of the scene to Rabban Gamaliel's "upper chamber" in Yavneh during the late first century C.E. following the destruction of the Temple and Jerusalem. "Rabbinic sources associate the upper-story [or chamber] either with Patriarchal power and privilege, especially that of Rabban Gamaliel, or with significant rabbinic gatherings, typically involving votes, edicts, and divine pronouncements."²⁵ Thus, the setting implies the importance of the calendrical court and its association with the Patriarch. While no head of the court at Beit Yazek is ever named, in Yavneh it is clear that Rabban Gamaliel is the Patriarch and exercises his authority. The setting implies the mutual importance of the calendrical court and the Patriarch: control of the calendar is an important power of the Patriarch as much as it is as an affirmation of the Patriarch's power, while the association of the calendar with the Patriarch also serves to promote its importance as a social practice and ideological element.

Rabban Gamaliel examines witnesses by questioning what they saw by referencing diagrams of the moon. Passages B and C set up the conflict that follows by reporting two situations where the reports of the witnesses were patently impossible, but Rabban Gamaliel accepts them anyway. Two different Rabbis have dissented in each of these situations; Rabbi Yehoshua agrees with the second protestor, Rabbi Dosa, and makes his only statement in the whole story, "I see your words."²⁶

²⁵ Rubenstein points this out, giving the gathering to intercalate the calendar described in *b. Sanhedrin* 74a as an example; Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 186.

²⁶ The phrase I have literally translated as "I see your words" (following Rubenstein in Rubenstein, ed., *Rabbinic Stories*, 86) is understood as meaning that Rabbi Yehoshua agrees with Rabbi Dosa's point. Therefore it is often translated differently, e.g., "I approve your words" in Kehati, ed.

Why would Rabban Gamaliel have accepted obviously false testimony? The BT answers by recounting two baraitot (*b. Rosh HaShanah* 25a):

[H] It has been taught: Rabban Gamaliel said to the Sages: “Thus I have received a tradition from the house of my father’s father: Sometimes it (the moon) traverses (the heavens) by a long course and sometimes by a short course.”

[I] Our Rabbis taught: Once the heavens were covered with clouds and the likeness of the moon was seen on the twenty-ninth of the month. The public were minded to declare the new Month, and the Court wanted to sanctify it, but Rabban Gamaliel said to them: “Thus I have received a tradition from the house of my father’s father: the renewal of the moon takes place after not less than twenty-nine days and a half and two-thirds of an hour and seventy-three halakin.”²⁷ On that day the mother of ben Zaza died, and Rabban Gamaliel made a great funeral oration over her, not because she had merited it, but so that the public should know that the Beth din had not sanctified the month.²⁸

These passages tell us that Rabban Gamaliel had received knowledge (“from the house of my father’s father”) of some kind of astronomical calculations concerning the possible variation in the length of the lunation that he used to corroborate the witnesses’ testimony as reasonable, just as he used “images of shapes of the moon” (passage [A]).²⁹ Nevertheless, Rabbis Yohanan, Dosa and Yehoshua were convinced that because the whole picture described was impossible, the witnesses were unreliable and should, therefore, be rejected – also not an unreasonable position. Their emphasis was on the reliability of the actual sighting, while Rabban Gamaliel seems to have been satisfied if the testimony fit his expectations based on calculation.

²⁷ Stern points out the scholars have for some time considered the last phrase, “and a half and two-thirds of an hour and seventy-three halakin” as a later interpolation, because it precisely describes the length of the lunation according to the present-day rabbinic calendar. The original text then would have merely indicated that the month could not be shorter than 29 days. Stern, 201-202.

²⁸ Rashi notes that funeral orations would not be given on a holiday, including the New Month.

²⁹ Stern comments that *m. Rosh HaShanah* 2:6, 8 suggest “that calculations were already made as part of the Mishnaic calendrical procedure: visibility of the new moon must have been calculated and predicted in order to verify the testimony of witnesses”; Stern, 180.

Unlike other passages of *m. Rosh HaShanah*, which focus on the process of validating witnesses,³⁰ this is merely the stepping off point for the story's main theme, which concerns the legitimacy and authority of the Court to establish sacred time. The dispute focuses on the proper role of the Court: to *endorse* sacred time marked in the heavens by the moon, or to *determine* sacred time for the rabbinic community here on earth. The problem for Rabban Gamaliel's critics was that they believe the heavens determine sacred time which needs to be observed accurately, and in their estimation Rabban Gamaliel and the Court were making mistakes, with the consequences that the new month (and ensuing festivals) would be observed at the wrong time. For the dissenters, the whole purpose of the complex procedure instituted for declaring a new moon (discussed in the previous Chapter) was to accurately synchronize the months and their festivals with the lunation.

Excursus: Female Imagery in Rabbinic Calendar Literature

Rabbi Dosa's Metaphor of the Moon as a Pregnant Woman

A key metaphor used in this debate is Rabbi Dosa's comparison of the new moon's appearance to the birth of a child (passage C). Rabbi Dosa satirizes the testimony of the false witnesses by comparing it to a claim that a birth has taken place, but the next day the mother is still visibly pregnant; his meaning is that like a baby, either the moon has been "born" or not, and neither result can be reversed. For Rabbi Dosa, what characterizes both events is the indeterminacy of their arrival, together with the certainty once they have appeared. Rabbi Dosa's comparison alludes to – and is supported by – the way the Mishnah deals with the uncertain timing of both events. Just as the Sabbath may

³⁰ *M. Rosh HaShanah* 1:7-1:8, 2:1; see the previous Chapter.

be desecrated (as described in the previous chapter) to allow for the witnessing of the new moon and declaration of the new month, so both the birth of a child and the circumcision of a male child eight days later are justifications for desecrating the Sabbath:

[J] And one may deliver a woman on Shabbat, and call for her a midwife from place to place, and profane the Shabbat for her, and tie the umbilical cord. Rabbi Yose says: One may even cut. And all the needs of circumcision may be performed on Shabbat. (*m. Shabbat*, 18:3)

[K] Rabbi Yose says, Great is circumcision, which overrides the stringency of the Sabbath. (*m. Nedarim* 3:11)

Rabbi Dosa's statement creates a link between the life process of birth to the cosmological appearance of the new moon. Although one process takes place on earth while the other takes place in the observable heavens, Rabbi Dosa is asserting that both are processes established by God the creator over whose timing humans have no control. It can also be inferred that Rabbi Yose's comment about circumcision being so important that it overrides the Sabbath (passage K) is equally applicable to birth and the new moon since they also override the Sabbath. Birth and the new moon are also similar in that they can be anticipated and prepared for, but any response must await their actual arrival at a specific moment that is uncertain. In the case of the calendar, Rabbi Dosa is claiming that the Court should respond by aligning the calendar with the lunation upon the sighting of the new moon. Through his linkage of the uncertainty of the lunation and birth, processes of the heavens and life on earth, I suggest that Rabbi Dosa is emphasizing the limits of human control over processes that we have come to call *nature*, the realm of God's creation in which humans participate but have only partial power.

Rabbi Dosa's linkage of the life process on earth to the lunation is not unique; Eliade discusses how this is common among many cultures and usually freighted with religious connotations.

It is through the moon's phases – that is, its birth, death, and resurrection – that men came to know at once their own mode of being in the cosmos and the chances for their survival or rebirth. . . . We may even speak of a metaphysics of the moon, in the sense of a consistent system of “truths” relating to the mode of being peculiar to living creatures, to everything in the cosmos that shares in life, that is, in becoming, growth and waning, death and resurrection.³¹

Eliade's emphasis is on how human cultures see the moon's continuous cycle as a metaphor for life, and in this way see the moon as participating in the same biological life-cycle of earthly beings. Rabbi Dosa is asserting this same homology, but reverses the direction of the link: while Eliade's focus is on what the moon teaches about the life process, Rabbi Dosa's focus is on what the life process teaches about the lunation.

Pregnancy, Birth and the Life Process, in Rabbinic Calendar Terminology

Rabbi Dosa's use of the birthing metaphor is not accidental; it is a play on the technical terminology used by the rabbis in reference to phases of the new moon, which were borrowed from birthing. In his studies of the this terminology, Gandz points out that while the Amoraic and later rabbinic tradition preferred the fairly clear terms “defective – חסר” and “full - מלא” to refer, respectively, to months of 29 or 30 days in length,³² the earlier Tannaitic texts use a different terminology which focuses on the appearance of the new moon in relation to the previous month's new moon. If the new moon appeared on the 30th (i.e., after sunset following the 29th day, thus completing a 29 day month) it was

³¹ Eliade, *The Sacred and the Profane: The Nature of Religion*, 156-157. See also Eliade, *The Myth of the Eternal Return; or, Cosmos and History*, 86.

³² See Solomon Gandz, “Studies in the Hebrew Calendar I: A Study in Terminology,” *JQR* 39 (1949): 270, who points to *b. Rosh HaShanah* 19b-20a as an example of this usage.

described as “in its time - בזמנו,” otherwise it would by default fall a day later on the 31st, completing a 30 day month which was described as “intercalated - מעובר.” The former has the implication of appropriateness, meaning “in its *proper* time,”³³ while the latter term derives from an original meaning of “pregnant, with child.” Both terms refer to the day of the new moon, the first day of the new month (which begins in the evening, when the moon would be sighted), the difference being the length of the previous month which the new moon’s appearance brings to a close. The antonyms of both terms also were used: “that is not in its time - שלא בזמנו” meant the same as intercalated, while “that is not intercalated - שאינו מעובר” meant the same as “in its proper time.”³⁴ In this view, it was considered “normal” to see the new moon on the 30th. “Otherwise, when the new moon was not seen until the night of the 31st day, everything was irregular and out of order. The old month became pregnant, מעובר, and lasted 30 days, the new moon was late, שאינו מעובר, and the new moon day was observed upon the 31st day, which was called ביום העיבור, the day of postponement and intercalation.”³⁵ Similar terminology was used to describe an intercalary year (“עיבור השנה - impregnating the year”), for example in *Mekilta* to Exod 12:2,³⁶ which led Gandz to observe that “we have here a clear

³³ I have therefore added “proper” to my translation of *m. Rosh HaShanah* 2:8-9, as is usually done; cf., *The Mishnah: Translated from the Hebrew with Introduction and Brief Explanatory Notes*, Kehati, ed., Rubenstein, ed., *Rabbinic Stories*, 86-87.

³⁴ Gandz points to an example in *t. Arakhin* 1:8, “Wherever the people do not know when the new moon day was proclaimed, the custom is to observe alternately one intercalated – מעובר and one non-intercalated – שאינו מעובר month.” Gandz, “Studies in the Hebrew Calendar I: A Study in Terminology,” 268-269.

³⁵ *Ibid.*, 269-270. Gandz also points out that parallel terminology was used in relation to an intercalary year.

³⁶ “We see that the month is made full by intercalation and the year is made full by intercalation, we may therefore conclude as follows: Just as the month is made full by adding one of its units’ to it, so also the year by the addition of one of its units; and just as in the case of the month the intercalary addition (of one day) is inserted at its end, so also in the case of the year the intercalary addition (of one month) is inserted at its end.” *Mekilta* to Exod 12:2, cited by Gandz, *Ibid.*, 264-265.

definition of the intercalation as a process of impregnation and enlargement of the old year, respectively the old month, by adding to each of them one of their respective units at the end, which is characterized as the intercalary addition תוספת העיבור.³⁷

This use of birthing imagery with reference to lunar events continued even when calculation began to supersede observation in importance and the terms “defective” and “full” were preferred to “in its proper time” and “intercalated.” For the calculated lunisolar calendar the beginning of the lunation is marked not from the appearance of the first crescent, but from the calculated moment of astronomical conjunction.³⁸ In one baraita the calculation of the lunar conjunction is discussed using the terms “rebirth - תולדה” and “born - נולד”: “We calculate its rebirth, if it is born before midday” (*b. Rosh HaShanah* 20b).³⁹ In post-Talmudic literature the term “birth – מולד” replaces “rebirth – תולדה”.⁴⁰ Other terms become used during the medieval period; Maimonides, for example, uses “gathering - קיבוץ,” a translation of the Greek technical term *synodos*, from which “synodic month” (the period between conjunctions) is derived.⁴¹

³⁷ Ibid., 265.

³⁸ The time interval between the conjunction and the visibility of the new crescent ranges between 15 hours and over two days. For a discussion of these different methods, see Stern, 99-102.

³⁹ Gandz therefore infers that this terminology may date to the Tannaitic period. Solomon Gandz, “The Problem of the Molad,” in *Studies in Hebrew Astronomy and Mathematics*, ed. Shlomo Sternberg (New York: Ktav Publishing, 1970), 133.

⁴⁰ Ibid., 132-136. Talmon has also noted and discussed the use of birth terminology in relation to the new moon. However, he is not as careful as Gandz in distinguishing the periods in which certain terms appear in the rabbinic literature. In particular, Talmon focuses on the term “birth – מולד,” and suggests that it appears in some of the DSS texts not in its biological meaning but in a calendrical sense as part of DSS anti-lunar calendar polemics. Gandz’s analysis, which shows that this term only appears in post-Talmudic rabbinic calendar texts, casts doubt on Talmon’s thesis. Talmon, “Anti-Lunar-Calendar Polemics in Covenanters’ Writings,” 33-40.

⁴¹ Gandz, “The Problem of the Molad,” 122, 128-129; Moses Maimonides, *The Code of Maimonides [Mishneh Torah] Book 3, Treatise 8: Sanctification of the New Moon*, ed. Julian Obermann, trans. Solomon Gandz, Yale Judaica Series (New Haven: Yale University Press, 1956), VI, 1, 3.

I want to suggest the possibility of one additional terminological link between women's biology and the lunation beyond what Gandz has described. The term "in its proper time - בזמנו" (in both masculine and feminine forms) is used in various contexts in the rabbinic literature to indicate appropriate timing, not only with reference to the new moon.⁴² In the context of the present discussion its use in one particular phrase to indicate the onset of menarche for a girl, "her time to see - זמנה לראות,"⁴³ is especially suggestive. In this context, what she will "see" for the first time is menstrual blood.⁴⁴ While the linguistic link here is not as certain as for the other terms, due to the more diverse use of "in its proper time," it may be that this term was similarly borrowed for astronomical use from terminology used to describe women's biology, in this case to describe the day when the first crescent was sighted on the 30th day of the month (ending a 29 day month). The compounding of the term "her time" with "to see" is particularly suggestive: just as the girl is (according to the Rabbis' understanding) on the look-out for the uncertain appearance of her first blood, so too this is the day of the month that the new moon witnesses would be on the look-out for the uncertain appearance of the first crescent. Thus, if the term "pregnant" described the arrival of the new moon on the 31st day of the month (ending a 30 day month), then "in its proper time" as its compliment

⁴² It often refers to a ritual time, e.g., in *b. Megillah* 5a "its proper time" refers to when the book of Esther should be read.

⁴³ See e.g., *m. Niddah* 10:1; *t. Niddah* 1:5, 9:6; *y. Berakhot* 2:6 (5b); *y. Niddah* 1:2 (49a), 4 (49c), 6 (49 c); *b. Ketubbot* 6a; *b. Niddah* 5a, 9b, 10b, 64b, 65a. In contrast to uncertainty of this first "time to see," the onset of regular monthly menstruation is termed "her hour – שעתה" (e.g., *m. Niddah* 1:1-7) or "her regular hour – שעת וסתה" (e.g., *m. Niddah* 4:7).

⁴⁴ In the BT "her proper time" is used to refer to when a woman should immerse herself, seven days after the onset of menstruation (e.g., *b. Niddah* 30a, 67b). This usage is unlikely to have affected Mishnaic calendrical terminology, but may have been borrowed at a later date from calendrical terminology; in particular, we find the relatively rare phrase "in her proper time, or not in her proper time" in *b. Niddah* 67b, which parallels Rabbi Akiva's phrase in *m. Rosh HaShanah* 2:9 (passage E above).

describing the shorter month (arriving on day 30 to end a 29 day month) was adapted from meaning a “first-time menstruant,” i.e., one that was certainly *not* pregnant.

Using Female Images to Think About the Lunation

Clearly, then, rabbinic terminology for describing key moments of calendrical time, especially the lunation, drew heavily on feminine biological metaphors of pregnancy and birth. Because the rabbinic texts were androcentric discourses produced by and for the male Rabbis, the appearance of women as images is noteworthy and, in this instance, can teach us much about the experience of time being expressed and about rabbinic ideas concerning women and nature.

Boyarin has worked with the idea that when the rabbis claim to be talking about “women,” this is often “a tool for thought about men’s own bodies and their affect – fears, desires, and ideologies about sexuality.”⁴⁵ I believe we can take this idea of using “women” as a “tool for thought” in a different direction: in calendrical texts, “women” are being used by men as a way to think about and develop a male construct of time. More particularly, I suggest female images are being used as *signs* in the analogical thought process of the rabbis in a fashion described by Levi-Strauss, whereby signs are “a link between images and concepts. In the union thus brought about, images and concepts play the part of the signifying and signified respectively. Signs resemble images in being concrete entities but they resemble concepts in their powers of reference.”⁴⁶ In contrasting modern with pre-modern scientific thought, Levi-Strauss claims that the former works by means of concepts while the latter works by means of signs: “Whereas

⁴⁵ Boyarin, *Carnal Israel: Reading Sex in Talmudic Culture*, 77.

⁴⁶ Claude Lévi-Strauss, *The Savage Mind* (Chicago: The University of Chicago Press, 1966), 18. Levi-Strauss is careful to say that he derives these concepts from Saussure.

concepts aim to be wholly transparent with respect to reality, signs allow and even require the interposing and incorporation of a certain amount of human culture into reality.”⁴⁷ Signs are borrowed from concrete experience and reused in different contexts as a way of pointing to underlying concepts.⁴⁸ This type of thinking is characteristic of a non-modern mode of encountering the natural world which is “adapted to discoveries of a certain type: those which nature authorized from the starting point of a speculative organization and exploitation of the sensible world in sensible terms.”⁴⁹

I suggest that this non-modern mode of analyzing nature is at work in these rabbinic calendar texts and that female characters and terminology are used as *signs* referencing concepts related to “life-process,” a tradition that goes back to the Bible: “The man named his wife Eve, because she was the mother of all the living” (Gen 3:20). In the calendar texts the sign of “women” as life-process is integrally linked to two temporal elements that uniquely define the boundaries of the life-process: the uncertainty and uncontrollability of the *timing* of birth and death. It is with these moments that female characters are associated: in passage C, the pregnant woman is an allusion to the uncertain timing of birth,⁵⁰ while in passage I the death of ben Zaza’s mother alludes to the uncertain timing of death. Both images are associated with the lunation: in passage C the pregnant woman is linked to the birth of the new moon while in passage I the dead woman is linked to the death of the old moon (i.e., Rabban Gamaliel’s funeral oration is

⁴⁷ Ibid., 20.

⁴⁸ Levi-Strauss compares this to the work of the ‘bricoleur’ who reuses items at hand in doing his work rather than analyzing the job and obtaining precisely the materials and tools best adapted. Ibid., 16-21.

⁴⁹ Ibid., 16.

⁵⁰ The permission given the midwife to desecrate the Sabbath in order to deliver a baby (*m. Shabbat*, 18:3, passage J above) also points simultaneously to the uncertainty of birth together with its female association.

meant to indicate that the new moon has not yet been born). That “women” are being used as signs is especially evident in these texts, for there is little pretext that the rabbis are discussing real women. The pregnant woman of passage C is clearly not a particular woman but merely an abstract image. In passage I, the dead “mother of ben Zaza” is denigrated as a specific person (we are told that she did not “merit” a “great funeral oration”), which turns her into an abstract sign for Rabban Gamaliel to use to convey a message that has nothing to do with her.

The rabbis, then, have adopted the female experiences of pregnancy and birth as a way to think about the lunation and temporality. In particular, this conveys the uncertainty and lack of control that humans – especially males – have over both processes. The length of pregnancy and the moment of birth were impossible to know with precision; the Mishnah expresses this awareness by allowing the desecration of the Sabbath to accommodate human birth. The rabbis then use this life experience to describe stages of the lunar cycle. Indeed, it seems that the terms “in its proper time” and “pregnant” for the appearance of the new moon on days 30 and 31 have the sense of “born as expected” and “still pregnant.”

Rabbinic Efforts to Control Women and Time

I suggest that the deployment as “technical” terminology of language drawn from what was constructed by the rabbis as the feminine realm of birth, death and menstruation is no accident. The use of feminine imagery relates to the basic worldview of a culture in which the place of women and the determination of the calendar both involve the legitimation of authority and the deployment of power. A number of recent studies have

focused on the gendered discourse about women in rabbinic texts,⁵¹ explicating the methods by which the patriarchal, homosocial rabbinic community sought to exert control over women. While none of these studies has discussed the use of feminine terminology in calendrical texts, Fonrobert's study of rabbinic texts concerned with menstruation and women's anatomy shows how women's bodies were objectified in an attempt to establish rabbinic authority and control over women.⁵² The rabbis' desire to exert control of time through the calendar was facilitated by their use of female images in calendrical discourse. In both cases the rabbis were seeking to exert control over fundamentally uncontrollable temporal events by deploying rules and linguistic formulations aimed at constructing a framework for regulating these events. This claim of male authority over both time and women required continuous efforts to maintain rabbinic power through asserting rabbinic authority and knowledge. The description of temporal processes by means of female imagery depicts time, like women, as a realm of *wildness* over which the rabbis endeavored to gain jurisdiction and power.

While women and gender issues are not the focus of the calendrical texts (nor of this study), their indirect and symbolic appearance is an example of how knowledge of gender was produced by creating a gendered ambiance that permeated discussions only tangentially associated to relations of women and men. The use of female imagery in calendrical discourse simultaneously reinforces their efforts – and reveals their anxieties

⁵¹ Among these are Boyarin, *Carnal Israel: Reading Sex in Talmudic Culture*; Miriam B. Peskowitz, *Spinning Fantasies: Rabbis, Gender, and History* (Berkeley: University of California Press, 1997); Fonrobert; Judith R. Baskin, *Midrashic Women: Formations of the Feminine in Rabbinic Literature* (Hanover: Brandeis University Press and University Press of New England, 2002); Cynthia M. Baker, *Rebuilding the House of Israel: Architectures of Gender in Jewish Antiquity* (Stanford: Stanford University Press, 2002).

⁵² Fonrobert points out that this is not a completely successful attempt. Fonrobert, 212-213.

– aimed at controlling women, providing an example of what Peskowitz describes as “mechanisms that made certain notions of masculinity and femininity – and the differences between the two – seem persuasive, ordinary, and natural.”⁵³ The desire of the Rabbis to tame women and tame time, and the conflation of the two in the calendrical texts, reflects the difficulties faced in controlling and predicting the behavior of both, and helps explain the tenacity and continuity of efforts in both areas.

Why was the New Month Identified as a Women’s Observance?

In the last generation, the traditional marking of the new month has been adopted by feminist Jewish women as a specifically women’s observance within Jewish tradition.⁵⁴ As Agus writes, “for many Jewish feminists, Rosh Chodesh became a ‘room of one’s own,’ a room that did not require leaving our homes within Judaism.”⁵⁵ The earliest reference to the new month as a specifically women’s observance is in the PT: “Women who are accustomed not to do work...on the beginning of the new month, this is a custom” (*y. Ta’anit* 1:6 (64c)). There are later midrashic justifications in *Pirke Rabbi Eliezer* 45 and Rashi’s similar commentary on *b. Megillah* 22b, relating that women were awarded this holiday for refusing to give their husbands jewelry to create the golden calf (although this doesn’t appear in the biblical story, Exod 32:2-4). It is commonplace in the

⁵³ Peskowitz, 9.

⁵⁴ For a survey of this phenomenon, see Ron Feldman, “‘On Your New Moons’: The Feminist Transformation of the Jewish New Moon Festival,” *Journal of Women and Religion* 19 (2001). A few of the main books on this subject includes Penina V. Adelman, *Miriam’s Well: Rituals for Jewish Women Around the Year*, Second ed. (New York: Biblio Press, 1990); Susan Berrin, ed., *Celebrating the New Moon: A Rosh Chodesh Anthology* (Northvale, New Jersey: Jason Aronson Inc., 1996); Carol Diament, ed., *Moonbeams: A Hadassah Rosh Hodesh Guide* (Woodstock, Vt.: Hadassah and Jewish Lights Publishing, 2000).

⁵⁵ Arlene Agus, “Examining Rosh Chodesh: An Analysis of the Holiday and Its Textual Sources,” in *Celebrating the New Moon: A Rosh Chodesh Anthology*, ed. Susan Berrin (Northvale, N.J.: Jason Aronson Inc., 1996), 4.

feminist Rosh Chodesh literature to hypothesize a link between the lunation and the menses as an explanation for the origins of women's association with the new month, but these early rabbinical sources do not mention such a connection. As for many issues relating to the history of Jewish women, we are faced with a lack of information, a vacuum that invites speculation.⁵⁶

Does the above analysis about the use of feminine biology as terminology used in rabbinic discourse about the lunation give us any hints as to why the PT might identify the new month as a women's observance? While it is clear that women's biology was used as a source for ways to talk about the lunation, I do not know of clear evidence for the reverse, i.e., to conclude that the Rabbis, therefore, thought of the moon as especially feminine or having a special affinity towards women (e.g., the moon is always gendered masculine in the calendrical discourse). Nevertheless, the use of terminology for menstruation and pregnancy to indicate days of the lunation is a possible linkage that is suggestive and has not been previously considered.

Conflict Stage 1: The Order to Conform

In m. Rosh Hashanah 2:9 we find the story of Rabban Gamaliel's effort to force Rabbi Yehoshua to conform to his declaration. This section begins with passage D, which contains Gamaliel's demand of Yehoshua to take actions that are flagrant violations of the regulations governing the Day of Atonement: carrying the staff, money and traveling to see Rabban Gamaliel. From the previous mishnah (passage C) we can infer that the day Yehoshua reckons as the Day of Atonement will be the day following the Day of

⁵⁶ I want to be clear that the I am not against speculation, or what some call modern midrash, to create meaningful contemporary religious practices; I am merely making a distinction between creative conjecture aimed at filling in the voids and scholarship made on the basis of textual sources.

Atonement according to Gamaliel's count (because Yehoshua's month of Tishrei would start a day later). The calendrical issue at stake between Rabban Gamaliel versus Rabbis Dosa and Yehoshua is, respectively, whether the just completed month of Elul is 29 or 30 days long.⁵⁷

The personalities and the date in conflict work together to heighten the drama. Why has Rabban Gamaliel, the highest figure of the court, challenged Rabbi Yehoshua rather than Rabbi Dosa? It is possibly because Rabbi Dosa agrees to submit to Rabban Gamaliel's ruling despite his misgivings (passage F). It is also possibly because Rabbi Yehoshua is considered one of the leading Sages of the era. The conflict of these high profile characters heightens the drama of the story, for Yehoshua's active dissent could result in fracture and sectarianism.⁵⁸

The focus of the calendrical dispute on the Day of Atonement also serves to heighten the tension, for this was considered the holiest day of the year, not only among the Rabbis, but also among those who had earlier produced the DSS thus, observing it at the proper time is emblematic of the correctness of the calendar as a whole. Talmon insightfully pointed to the similarities between this conflict and one reported in *Pesher Habakkuk* between the "Teacher of Righteousness" of the Qumran sect and his opponent

⁵⁷ Because of the critical nature of knowing the proper days for Rosh Hashanah and the Day of Atonement, one of the earliest rules of the fixed calendar was an effort to make Elul consistently 29 days, dating to the Amoraim of the third through fourth centuries C.E.; see Stern, 165-166; 170-172.

⁵⁸ There is even a tradition that Rabbi Yehoshua served for a time as the second highest official of the court, expressed in the Gemara to *b. Bava Qamma* 74b Although this is from the Amoraic period, it is the traditional interpretation; see comments to *m. Rosh HaShanah* 2:9 in Kehati, ed. This interpretation is also central to Talmon's theory concerning the importance of preventing calendrical dissent; see Talmon, "Yom Hakippurim in the Habakkuk Scroll,"; Talmon, "The Calendar Reckoning of the Sect from the Judean Desert," 167-168; Talmon, "Calendar Controversy in Ancient Judaism: The Case of the 'Community of the Renewed Covenant,'" 383-384.

the “Wicked Priest” took place on the Day of Atonement.⁵⁹ Talmon was careful to say these were not the same episode, but the similar motif indicates that calendrical conflicts were a theme in ancient Judaism, and the Day of Atonement was a particular focus of strife. Although *m. Rosh HaShanah* 2:9 was written about 200-300 years after *Pesher Habakkuk*, the reappearance of a similar conflict means that the observance of the proper Day of Atonement was a long-standing motif that would be familiar to the authors, listeners, and readers of this story. The use of a familiar practice as a motif also makes it more likely that *m. Rosh HaShanah* 2:8-9 is a literary invention reflecting Tannaitic concerns than the report of an actual historical incident. Calendrically, those concerns involved the serious question of deciding the correct sacred time God has commanded for observances.

Conflict Stage 2: Rabbi Akiva Brings Rabbi Yehoshua a Midrash

A Conflict Between Beit Yazek and Tannaitic Calendar Ideologies

Passage E reports that Rabbi Yehoshua is distressed by the order from Rabban Gamaliel; we are led to infer that he is torn between a) faithfulness to correctly observe God’s sacred times as best he can and b) faithfulness to the rabbinic community, for these are the issues addressed by his interlocutors, Rabbi Akiva and Rabbi Dosa, in passages E and F.

Rabbi Akiva tries to act as an intermediary; Akiva is an appropriate choice because, in the stories of the Tannaim, he was a student of Yehoshua.⁶⁰ Perhaps Rabban Gamaliel

⁵⁹ 1QpHab XI, 4-8. Talmon, “Yom Hakippurim in the Habakkuk Scroll,” 262.

⁶⁰ *Avot de Rabbi Nathan A*, 6 relates that Rabbi Akiva was a student of both Rabbi Yehoshua and Rabbi Eliezer; Solomon Schechter, ed., *Avot de Rabbi Nathan* (Vienna: Ch. D. Lippe, 1887). We find a literary parallel in the story of “The Oven of Akhnai,” which will be discussed below, where the character of Rabbi Akiva is similarly put in the role of intermediary.

sent him, but this is not certain; what is clear is that Rabbi Akiva tries to convince Rabbi Yehoshua to conform to Rabban Gamaliel's order. His method is that of midrash halakha, where a passage from the Bible is brought as proof of a particular point of view in a legal question. Rabbi Akiva virtually inverts the biblical intent of Lev 23:4, *These are the festivals of the Lord, which you shall proclaim*, by claiming that the only "festivals" that exist are the ones declared by humans in the form of the Court, because God has said that "you shall proclaim" – and therefore, whether they are declared for the astronomically proper time or not, these are the only ones that exist. God, according to Rabbi Akiva, has handed over the power to declare "proper times" to humans. Furthermore, because humans are flawed and observations may be uncertain, there is no choice but for everyone to adhere to the decision of the Court that has been given the authority to proclaim the proper times. But Rabbi Akiva is also subtly shifting the meaning of "proper time" – here Akiva is emphasizing the question of *accuracy* with reference to the annual festivals, while previously it was used as a technical term (in *m. Rosh HaShanah* 2:7-8) for sighting the new moon on the thirtieth day of the month (in contrast to the thirty-first day, called "pregnant," i.e., "intercalated"). For Akiva the *declaration* of the new month is what is important because the Court has the authority to control the timing of the annual festivals by declaring – and thereby creating – "proper time," regardless of the moon's *actual* appearance.

Akiva's interpretation relies on Lev 23:4; but this biblical passage is also used in *m. Rosh HaShanah* 1:9, which interprets it in a quite different way as justification to "violate the Sabbath" in order to "give testimony about the New Moon".⁶¹

⁶¹ Translation adapted from Kehati, ed.

If a person saw the New Moon and is unable to walk, they bring him on an ass, or even on a bed; and if any lie in wait for them, they take sticks in their hands; if the way is long, they take food in their hands, because for a journey lasting a night and a day they may violate the Shabbat, and they go forth to give testimony about the New Moon, as it is written, *These are the festivals of the Lord, which you shall proclaim* (Lev 23:4). (*m. Rosh HaShanah* 1:9)

In *m. Rosh HaShanah* 1:9 the “festivals of the Lord” are interpreted to mean the occurrences of the new moon, which overrides the rules governing the seven day cycle of the Sabbath. Despite the fact that the Sabbath is divinely ordained, it is a calculated cycle *not* visible in any natural phenomena. In the case of conflict between these two sacred times, the observable natural phenomenon of the first crescent – also, of course, considered to be established by God – is given priority over the Sabbath. The importance of accurately observing both sacred *times* is given greater importance than adhering to all the Sabbath restrictions.

It is precisely here, in the divergent midrashic uses to which the same biblical verse is put, that we can clearly see the tension and transformation of rabbinic thought on sacred time: *m. Rosh HaShanah* 1:9 represents the Beit Yazek position that emphasizes the importance of accuracy in observance of the new moon and human conformation of the sacred times it marks, the position taken by the characters of Rabbis Dosa and Yehoshua (passage C). In contrast, the character of Rabbi Akiva in *m. Rosh HaShanah* 2:9 represents the Tannaitic position that emphasizes the difficulty of such accuracy, and contends that it is the human Court – not the moon – that has been given the authority to declare sacred times, regardless of whether the declaration is accurate. While both views operate within the context of the OLC, the importance of the actual observation of the first crescent has diminished: for Beit Yazek accuracy was so important it justified

violations of the Sabbath, while for the Tannaim accuracy is now secondary to the decrees of the Court.

This intertextual tension not only highlights a shift in meaning but also probably reflects a changed historical and political situation. As discussed in the previous chapter, during the time of the Temple the observational accuracy of the OLC was an important argument for Beit Yazek in their conflict with the proponents of the 364DC. The shift in emphasis from accurate observation to accepting the authority of the rabbinical Court indicates that this earlier political and ideological conflict seems to have ended some time between the late first and early third century C.E. (the range of time between the ostensible setting of *m. Rosh HaShanah* 2:8-9 and when the Mishnah was edited), while the new focus is on seeking to legitimate and project the decisions of the rabbinical Court. While in the Beit Yazek period the purpose of the calendar Court had been to test the witnesses to confirm the accurate observation of the “proper times” declared by the heavens, the argument being made by Rabbi Akiva arrogates increased discretion, and, therefore, increased power, over sacred time to the rabbinical Court. The emphasis has shifted from accurate observation of the heavens to legal decisions of the Court.

The choices available were not random: any month can only be either 29 or 30 days long. Nevertheless, giving the Court absolute discretion, as opposed to being merely a rubber-stamp for the heavenly signs, is a change in fundamental perspective. As Rubenstein writes about this passage, “God has given human beings the authority to set the calendar and to determine the dates of the festivals....The Jewish festivals follow the decrees of the human court, not an objective celestial reality.”⁶² In this, Rubenstein is

⁶² Rubenstein, ed., *Rabbinic Stories*, 86.

merely following the traditional view succinctly expressed by Maimonides: “For it was not the observation of the new moon but the official pronouncement, ‘It is sanctified,’ by the Court which legally initiated the new month.”⁶³ Humans are in control of sacred-times, not merely taking orders from God; the heavenly lights are desanctified, losing their monopoly on marking time bestowed in Gen 1:14. Paradoxically, one result is that while the decision of the Court becomes even more important, it becomes even *less* predictable: barring a generally known system of calculation, any individual’s sighting (or not sighting) of the new moon does not allow a guess as to the Court’s likely decision.⁶⁴

Conflict Stage 3: Rabbi Yehoshua Turns to Rabbi Dosa for a Midrash

After listening to Rabbi Akiva’s midrash in passage E, Rabbi Yehoshua’s response is to visit Rabbi Dosa. I suggest that this is because Rabbi Yehoshua was not persuaded by Rabbi Akiva’s Tannaitic re-interpretation of Lev 23:4, and still adheres to the Beit Yazek interpretation represented by *m. Rosh HaShanah* 1:9 and by Rabbi Dosa, whereby the moon establishes sacred times that the Court merely validates. At a minimum, we are lead to consider that Rabbi Yehoshua may be wondering how the same biblical verse can be used to prove the importance of following the decision of the Court (passage E), when that Court *violates* the precise observation of the new moon which *m. Rosh HaShanah*

⁶³ Maimonides, *Sanctification of the New Moon* 2:8. Translation adapted from Maimonides, 9.

⁶⁴ A passage in the Tosefta addresses this conundrum, and how to cope with it: “Wherever the people do not know when the new moon day was proclaimed, the custom is to observe alternately one intercalated and one non-intercalated month. This is also the regular custom in the Dispersion, namely to observe alternately one intercalated and one non-intercalated month. In case it so happened that Tammuz had been observed as a regular month and Av as an intercalated one, and it became then known that Av was made a regular month [by the proclamation of the Palestinian Court], let them leave Av in this state [as regular] and begin to count from then on a new series of one intercalated and one non-intercalated” *t. Arakin* 1:8; translation adapted from Gandz, “Studies in the Hebrew Calendar I: A Study in Terminology,” 268-269.

1:9 considers so important. He therefore actively seeks out Rabbi Dosa for further advice (in contrast to Rabbi Akiva, who came to visit Rabbi Yehoshua), since Rabbi Dosa had convinced him in the first place (passage C) that Rabban Gamaliel was mistaken.⁶⁵

The issue has both theological and political dimensions. The vignette with Rabbi Akiva (passage E) addressed theological concerns about the mechanisms God set in place for the establishment of sacred time, justifying the greater authority of humans vis-à-vis the heavenly lights. Rabbi Yehoshua's second visit with Rabbi Dosa (passage F) addresses a purely political dimension: Who has the communal authority to make decisions? It is significant that Rabbi Dosa voices this opinion: he had persuaded Rabbi Yehoshua that Rabban Gamaliel was wrong in point of fact (passage C), and therefore bears some responsibility for triggering their conflict. Yet, unlike Rabbi Yehoshua, Rabbi Dosa was not called to account by Rabban Gamaliel, implying that he may have found a reason for quieting his dissent.

Rabbi Dosa does not recant his earlier argument concerning the false witnesses. Rather, he shifts the focus to the legitimacy of the legal process itself, not the facts of the case. He asserts that regardless of the Court's mistakes or lack of qualification, the rulings of Rabban Gamaliel's Court must be observed because they have divine authority by virtue of their lineage. Rabbi Dosa justifies this via a midrash halakha on Exod 24:9,

⁶⁵ My suggestion is the opposite of the traditional interpretation, which is based on a baraita that amplifies on passage E by reporting a conversation between Rabbi Akiva and Rabbi Yehoshua during which Yehoshua is convinced by Akiva's argument, proclaiming "Akiva, you have comforted me, you have comforted me" (*b. Rosh HaShana* 25a). Since a similar version appears in the PT (*y. Rosh Hashanah* 2:8 (58b)), this is probably a Tannaitic interpolation that was added in order to strengthen the impression that Rabbi Akiva's argument has won the day. However, if this were the original intent of the Mishnah passage F could easily be skipped, for there would be no need for Rabbi Yehoshua to seek out Rabbi Dosa. Therefore, I contend this indicates that in the Mishnaic story Rabbi Yehoshua was *not* persuaded and was *not* comforted by Rabbi Akiva's argument.

which the rabbis considered the founding moment of their lineage that is traced back to Moses.⁶⁶

It is this moment that represents the surrender of the Beit Yazek perspective on the proper role of the Court. Yet it is only a partial surrender: Rabbi Yehoshua is not being asked to change his opinion (nor is Rabbi Dosa), only his actions. Verbal dissent and divergent opinions are tolerated, but behavior must conform. For Rabbi Dosa, the decisions of the rabbinical Court outweigh the accurate observation of celestial reality (in this case, of the new moon), implying that humans can overrule nature's time when communal unity is at stake; otherwise chaos and schism could result.

A Political Resolution: Rabbi Yehoshua as Disciple and His Submission to Rabban Gamaliel

Rabbi Yehoshua is apparently convinced by Rabbi Dosa's argument, because he conforms to Rabban Gamaliel's demands (passage G). Rabbi Yehoshua's actions are significant: in an inversion of *m. Rosh HaShanah* 1:9, which described the desecrations allowed if a new moon is sighted on the Sabbath, Rabbi Yehoshua performs some of these same exact acts – carrying a staff in his hand, traveling – in order to come before Rabban Gamaliel. That is, the same violations of the Sabbath that were initially permitted because the natural phenomenon of the new moon took precedence are now employed to invert that hierarchy, giving precedence to the decisions of the Court, even when they are in error.

In what appears as a sign of respect, Rabban Gamaliel stood and kissed Rabbi Yehoshua on the head, declaring: "Come in peace, my master and my disciple; my master

⁶⁶ This argument also alludes to the genealogy of rabbinic authority to interpret the Torah given in *m. Avot* 1:1, "Moses received Torah from Sinai, and transmitted it to Joshua, Joshua to the Elders, the Elders to the Prophets, and the Prophets transmitted it to the Men of the Great Assembly."

in wisdom, and my disciple because you accepted my words.” While standing and kissing on the head indicates respect and admiration, it is also an indication of relative status when a superior kisses an inferior, usually a youth, child or woman.⁶⁷ In this case, kissing Rabbi Yehoshua on the head symbolizes both respect and the subordination of Rabbi Yehoshua, as expressed by Rabban Gamaliel in passage G: “Come in peace, my master and my disciple; my master in wisdom, and my disciple because you accepted my words.” Both the words and the gesture of the kiss are used by Rabban Gamaliel to assert a master-disciple relationship which is out of place and probably humiliating to Rabbi Yehoshua who is the elder of the two.⁶⁸ Rabban Gamaliel’s posture also asserts his power and authority as “standing” in the lineage of Moses, for the word “stood” parallels Rabbi Dosa’s comments concerning all the Courts that have “stood” over the generations.

Here we also have a deft play on words using the very word, “words”: the only words attributed to Rabbi Yehoshua in the whole passage are in response to Rabbi Dosa’s initial observation about the false witnesses (passage C): “I see your words.” This is what triggers the conflict with Rabban Gamaliel, a conflict resolved when Rabbi Yehoshua accepts Rabban Gamaliel’s “words” instead of Rabbi Dosa’s. But Rabbi Yehoshua’s silence strongly implies that he *does not* agree with Rabban Gamaliel’s words concerning the facts of the matter; rather, Rabbi Yehoshua has been convinced by Rabbi Dosa of the

⁶⁷ Compare the following examples: Rabbi Yehoshua ben Hanina kissing a little boy (*b. Eruvin* 53b); Moses’ father kissing Moses’ mother (*b. Megillah* 14a; *b. Sotah* 13a); Rabban Gamaliel kissing the young Rabbi Hanina (*t. Niddah* 5:6; *y. Nazir* 4:6 (53d); *b. Nazir* 29b); Simon the Just kissing a Nazirite youth (*y. Nazir* 1:5 (51c); *b. Nedarim* 9b; *b. Nazir* 4b); Rabbi Yohanan ben Zakkai kissing his student Rabbi Eleazar ben Arakh (*y. Hagigah* 2:1 (77a); *b. Hagigah* 14b); a captor kissing two captives and then releasing them (*b. Sanhedrin* 104b).

⁶⁸ In his analysis of “The Oven of Akhnai,” Rubenstein observes that postures can be read as conveying levels of status and power relations: standing indicates the assertion of authority while prostration indicates submission. Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 34-63.

overriding importance of submitting to the authority of the court, and, therefore, agrees to silently *behave* in a way that demonstrates acceptance of Rabban Gamaliel's words.

Submission to authority is no doubt the main political moral of the story: Rabbi Yehoshua is re-accepted into the circle of the Rabbis because he submits to the ruling of the Court and demonstrates it by his action.⁶⁹ Rabbi Yehoshua has decided to accept his subordinate role; on this very simple but important level, behavioral discipline is valorized as essential to the rabbinic community and, by analogy, the Jewish community as a whole. Politically, the story projects a vision of "correct" community structure and discipline for generations of Jews to come who studied this story. The Court's possible mistakes, and the criticism this engenders (exemplified by Rabbi Yehoshua, but also Rabbi Dosa and Rabbi Yohanan ben Nuri), highlight this lesson. The conclusion of the story is that legal process and authority has precedence over the specifics of the case.

A Theological Resolution: Rabbi Yehoshua's "Wisdom" and the Shift in Relationship Between Humans, God and the Natural World

It is, nevertheless, left unclear in what way Rabban Gamliel considered Rabbi Yehoshua his "master in wisdom" (passage G). The "wisdom" may refer to Gamaliel's desire to show respect for his older colleague or toward his intellectual superior (which may not be the same thing), or it may refer to Rabbi Yehoshua's wisdom in deciding to accept his role as disciple. The latter seems to be the position of the Gemara, which gives only a cryptic interpretation by way of a baraita, with no further amplification: "My

⁶⁹ This is emphasized by the Gemara in both *b. Rosh Hashanah* 25b and *y. Rosh Hashanah* 2:9 (58b), which focus on the proper relationship between leaders and followers. Almost nothing is said about Rabbi Yehoshua's "wisdom."

master because you have taught me Torah in public” (*b. Rosh HaShanah* 25b).⁷⁰ Rabbi Yehoshua’s wisdom is equated to the public teaching of Torah, i.e., his concession to Rabban Gamaliel at the conclusion of the story. This amplification is consistent with the Gemara’s main political concern: wisdom consists of following the rulings of the leaders and the Court as they interpret Torah.

However, I believe that the theological conclusion is not so clear-cut, and that the respect shown to Rabbi Yehoshua’s wisdom can be interpreted differently. It is possible that Rabban Gamaliel is implicitly recognizing not only the legitimacy of Rabbi Dosa’s initial critique (to which Rabbi Yehoshua agreed), but the theological position that the role of the Court is to merely confirm the sighting of the new moon. This is the worldview of Rabbi Dosa and Rabbi Yehoshua, who are concerned with the accuracy of reporting the natural phenomenon of the new moon; it is this they share – and in this story are representing – the worldview of Beit Yazek, which is expressed in passages that emphasize the importance of witnessing the new moon (*m. Rosh HaShanah* 1:3-9; 2:1, 5, discussed in the previous Chapter). They presume that there is an absolute truth promulgated by God that is not relative and subject to interpretation – in this case, either the new moon is “born” or not (passage C). The motions of the heavenly lights were taken as archetypical of this, for they were set by God and not subject to human intervention; the human role is to accurately observe their motions. Following the tradition of Genesis 1:14 – which describes the sun, moon and stars as God’s temporal “signs” – the heavens were seen as determining the temporal patterns of the earth upon

⁷⁰ The same baraita is also playing with the word “sees”: “When he [Rabban Gamaliel] saw him [Rabbi Yehoshua], he stood”. This is in contrast to the beginning of the conflict, where Rabbi Yehoshua “sees” Rabbi Dosa’s words.

which humans lived during the cycles of day and night, the moons and the seasons. Humanity's task was to weave itself into the fabric of creation, in part by correctly observing the sacred times prescribed by God.

As discussed in the previous Chapter, this was the position of the Beit Yazek Court, which emphasized the accurate observation of the new moon as a polemic against the supporters of a 364DC. Although they had different solutions to the question of how to determine sacred times, the advocates of both the OLC and the 364DC shared an anxiety about getting sacred times right and believed they were determined by God who established the movement of the heavenly lights: the author of *Jubilees* does not want to “make a day of testimony something worthless and a profane day a festival” (*Jub.* 6:37), which is the same concern expressed by Rabbi Dosa and Rabbi Yehoshua, who believe the Day of Atonement should be observed on a different day. This explains why Rabban Gamaliel's order to Rabbi Yehoshua was so onerous that Rabbi Akiva found him in “distress” (passage E): Rabbi Yehoshua wasn't commanded to *observe* the Day of Atonement according to Rabban Gamaliel's calculation, but to *desecrate* the Day of Atonement according to his own calculation.

In contrast, Rabbi Akiva claims that the only “festivals” that exist are the ones that are recognized by humans, whether they are correct or mistaken. It is the Court's *declaration* of the new month that has precedent, not the *observation* of the new moon. In this sense Rabbi Akiva and Rabban Gamaliel are shifting the balance of power between humans, God and nature when it comes to setting sacred time, claiming more power for humans at the expense of both God and nature. Rabbi Akiva argues that while humans may make errors (“whether at their proper times, or not at their proper times”), human

decisions and human actions constitute the world as we experience it (“I have no festivals save these”). Certainly the times declared by humans should approximate nature and not glaringly contradict it – which was the essence of Rabbi Dosa’s critique – but for Rabbi Akiva sacred time has become subject to human manipulation, not an autonomous temporality marked by the heavenly lights. In the end Rabbi Yehoshua and Rabbi Dosa conform to Rabban Gamaliel’s decisions, giving priority to community solidarity over solidarity with the rhythms of nature. They do not give up the Beit Yazek’s older point of view, which is honored (at least in name) by calling it “wisdom,” but in practice it is subordinated and repressed by the decisions of those in power. Rabban Gamaliel is successful in his effort to gain control over time as socially practiced, a victory symbolically sealed with a kiss. This, in turn, sets the stage for the next shift in calendrical thought as developed by the Amoraim.

From Tannaitic Authority to Amoraic Activism

In Amoraic sources we find a new shift in calendrical ideology from the Tannaitic to a new Amoraic position. The authority of the calendar Court is no longer an issue; what is at stake is the methodology used, observation or calculation. In these texts we can follow the ideological shift that takes place. This is well illustrated by two stories that appear in both the PT and BT as Gemara that comment and amplify on *m. Rosh HaShanah* 2:8-9. Since the PT is generally considered the earlier composition, we can take a diachronic view of the development of calendrical thought.

The Story of Rabbi Hiyya and What He Saw

Theme	y. Rosh HaShanah 2:5 (58a)	b. Rosh HaShanah 25a
Rabbi Hanina goes to En Tav	[Pa] It is like this: Rabbi Hanina went to Ein Tav to the blessing of the New Moon and the weather was cloudy. He said, now they will say: how heavy is the weather of this old man! So the Holy One Blessed be He punctured it for him like a sieve, and it appeared through it.	
Rabbi Hiyya observes the old moon	[Pb] Rabbi Hiyya the Great walked in the light of the old moon for four miles.	[Bb] Rabbi Hiyya once saw the (old) moon in the heavens on the morning of the twenty-ninth day.
Throwing at the moon	[Pc] Then he ⁷¹ started to cast stones at it and he said:	[Bc] He took a clod of earth and threw it at it, saying
Rebuke of the Moon	[Pd] “Don’t embarrass the sons of your master. This evening we must see you at such and such a place; and you are seen now in this place?!”	[Bd] “Tonight we want to sanctify you, and are you still here! Go hide yourself.”
Consequence of Rebuke	[Pe] Immediately, the moon disappeared.	[Be] Rabbi ⁷² thereupon said to Rabbi Hiyya, “Go to Ein Tav and sanctify the month, and send me the watchword, ‘David king of Israel is alive and vigorous.’”

⁷¹ Note that the standard printed (Venice) edition and the Leiden manuscript do not read “Then he” but “Rabbi Abon.” Goldman, however, translates “Then he” based on previous scholarship and parallel texts. Nevertheless, there is not a large impact on my discussion here if in fact the PT known to the BT redactors read “Rabbi Abon”: it would merely be one more element in the story being re-worked in the BT, just as Ein Tav is transferred as a location of walking from Rabbi Hanina to Rabbi Hiyya. Edward A. Goldman, “A Critical Edition of Palestinian Talmud Tractate Rosh Hashana, Chapter Two,” in *HUCA* (Cincinnati, Ohio: Hebrew Union College, 1976), 206; Goldman, ed., *The Talmud of the Land of Israel: Volume 16 Rosh Hashanah*, 67, n. 104.

⁷² A name for Yehuda the Patriarch, the redactor of the Mishnah.

As can be seen, the two versions of this story concerning Rabbi Hiyya are very similar, except that the beginning of the PT version, passage (Pa), has been changed and moved to the end of the BT version. The three passages that are similar in the two versions (b, c, d) show only a slight variation in the basic story, which presents the essence of the tension between nature and culture as embodied by the tension between *observing* the new moon versus *declaring* the new month. On the one hand, the predictability of the phases of the moon is asserted to be inherently uncertain; while the Court wants to declare the new month that evening,⁷³ Rabbi Hiyya is angered by the old moon's appearance in the early morning because this means the new moon will not yet be visible the following evening. Throwing the stones (or dirt clod) seems to express his frustration at the same time that it demonstrates that the moon is truly not subject to human control. The moon's undesirable appearance is *interfering* with the desire of the Court, and Rabbi Hiyya is upset about it.

In the last passage, (Pe) and (Be), the stories diverge, with important consequences. In the PT version, the moon miraculously disappears, apparently in response to Rabbi Hiyya's action (throwing stones) and words (the rebuke). This bit of fantasy, in which the moon obeys human desires, allows the Court to remain in synch with nature while it satisfies its wish to sanctify the new month. While in this story the moon miraculously responds to Rabbi Hiyya's protest, the main point is that the Court's decision is still dependent upon the new moon's appearance, which is why Rabbi Hiyya wants the old moon to move along and disappear. This represents the position of Tannaim, as argued by

⁷³ The reason is not stated, but it should be presumed that it reflects the desire to avoid certain holidays falling on certain days, as discussed in the previous Chapter. This is consistent with the medieval commentaries of Rashi and the Tosafot to the BT version, which infer that this is because the Court didn't want the Day of Atonement adjacent to the Sabbath.

Rabbi Akiva (passage E above): in principle the calendar was aligned to the new moon, but since the sighting of the new moon was inherently uncertain everyone had to follow the Court's decision for the sake of communal solidarity, even if it made an error.

In the BT conclusion (passage Be) we find a completely different ending. While the result is the same – the Court is able to declare the new month as it desires – the ending of the PT version (passage Pe, in which the moon disappears) itself disappears. The location of Ein Tav is borrowed from passage (Pa), but Rabbi Hiyya goes there rather than Rabbi Hanina, and Rabbi's character and statement is added.⁷⁴ To resolve the problem of the old moon's appearance the BT version does not resort to divine miracles but to human decision. The Patriarch Rabbi sends Rabbi Hiyya to another location, Ein Tav, where he will declare the month regardless of the fact that he has just seen the moon at the wrong time. Thus, the Court will disregard the physical evidence and do what it wants; observation is less important and is becoming a fiction. Indeed, the name of this location is possibly a pun: while “Ein Tav - עין טב” would commonly mean “good

⁷⁴ Beginning with the post-Yavneh period (after the Bar Kochba revolt), and certainly in the time of Yehudah the Patriarch, the location where the new month was declared and the location of the main court were not the same. Therefore, a watchword was sent from the calendar court's location to the main Court to inform them that the month had been declared. Shmuel Safrai, “The Localities of the Sanctification of Lunar Months and the Intercalation of Years in Palestine After 70 C.E.” [Hebrew], *Tarbiz* 35 (1965): 32. Rashi suggests that the watchword “David king of Israel is alive and vigorous,” is used due to Ps 89:38, which compares David's kingdom to the moon. Some modern scholars have suggested that this alludes to the claims by Yehudah the Patriarch of descent from King David (see Ephraim E. Urbach, *The Sages: Their Concepts and Beliefs*, trans. Israel Abrahams (Cambridge, Mass.: Harvard University Press, 1987), 678; Alon, 717). Meir is not convinced that this is the intent of the watchword, although she allows it as a possibility; Ofra Meir, *Rabi Yehudah ha-Nasi* (Tel Aviv: ha-Kibuts ha-Meuhad, 1999), 91, 361 n. 50. Goodblatt gives more credence to this possibility in the context of his general discussion about the claim of the Gamalielian patriarchate to Davidic descent; Goodblatt, 131-175, especially 164-165. Goodblatt also discusses the related possibility that Yehudah I was the focus of messianic agitation and propaganda, based on Davidic terminology used in reference to him. I suggest that another calendrical watchword reported in the PT (*y. Rosh HaShanah* 3:1 (58d), “גואלינו – our redeemer,” conveys a similar messianic message. While Goodblatt takes into account Christian sources as historical records attesting to the Davidic claims of the patriarchate, it seems to me that that these messianic claims must also be considered in the context of Jewish-Christian polemics of that era, a time when the use of Jewish calendar became an increasingly important element of Jewish vs. Christian identity. But this requires a discussion that would take us far afield.

spring,” – i.e., good drinking water – it could also mean “good eye,” implying that Rabbi Hiyya will need a *very* good eye indeed to see the new moon at the desired time.⁷⁵

The BT conclusion (passage Be) to the story of Rabbi Hiyya expresses a second turning point in the development of rabbinic calendar ideology. In this Amoraic stage we find a consolidation and extension of the Court’s authority and power as it actively seeks to fulfill certain calendrical goals: while both the PT and BT express the desire of the Court to declare the new month in passages Pd and Bd, only the BT describes the execution of such a plan in way that does not depend on the moon but on the Court’s actions: “Go to Ein Tav and sanctify the month.”

The Story of Rabbi Akiva and What He Said to Rabbi Yehoshua

The Amoraic view that the Court has the power to determine the calendar is also expressed in another portion of the Gemara to *m. Rosh HaShanah* 2:8-9, where we again find two similar versions in the PT and BT that appear shortly after the story of Rabbi Hiyya. Once again, the slight changes from the earlier PT to the later BT are significant.

Theme	y. Rosh HaShanah 2:8 (58b)	b. Rosh HaShanah 25a
Rabbi Akiva goes to visit Rabbi Yehoshua, who is lying in bed	[Pf] To whom did he send? From that which is taught: Rabbi Yehoshua said, “It would have been better for me to lie [dead] on the bed, Rabban Gamaliel not having sent this thing.” This indicates that it was sent to Rabbi Yehoshua.	[Bf] ‘Rabbi Akiva went and found Rabbi Yeshoua while he was in great distress. He said to him, “Master, why are you in distress?” He replied: “Akiva, it were better for a man to be on a sick-bed for twelve months than that such an injunction should be laid on him.”
Rabbi Yehoshua is	[Pg] At the hand of whom was it sent? From that which is taught in	[Bg]

⁷⁵ This is the only appearance of “Ein Tav” in the BT, enhancing the possibility of its use as a pun in this context; the term does appear in the PT as a place name, and the later BT commentators (Rashi and Tosafot) assume it refers to a location where the calendrical Court would meet. According to Safrai’s analysis of the literature, this was the last location of the calendrical court mentioned in the Amoraic sources, which would also fit the Amoraic stage of calendrical ideology as I am suggesting; Safrai, 37.

Theme	y. Rosh HaShanah 2:8 (58b)	b. Rosh HaShanah 25a
comforted by Rabbi Akiva	these words: he said to him, “You have comforted me, Akiva.” This indicates that it was sent at the hand of Rabbi Akiva.	
Rabbi Akiva brings a teaching	[Ph] What did he [Akiva] have to teach? Rabbi Yose said: ⁷⁶ “We know that if they sanctified without witnesses, it is still sanctified.	[Bh] He said to him, “[Master,] will you allow me to tell you something which you yourself have taught me?” He said to him, “Speak.”
The Court has the right to fix the festivals, even if in error	[Pi]	[Bi] He then said to him: “The text says, ‘you’, ‘you’, ‘you’, three times, to indicate that ‘you’ [may fix the festivals] even if you err inadvertently, ‘you’, even if you err deliberately,
The Court’s sanctification is valid even if they were misled	[Pj] “So what did he come to attest? That if they sanctified it and afterwards the witnesses were found to be lying, behold this is a valid act of sanctification.”	[Bj] ‘you’, even if you are misled.”
Rabbi Yehoshua is comforted by Rabbi Akiva	[Pk]	[Bk] He replied to him in these words: “Akiva, you have comforted me, you have comforted me.”

While the BT version of this story has been reworked, it contains all the material in the PT version, in virtually the same order, except that the passage relating that Akiva has comforted Yehoshua has been moved from its position at Pg to the conclusion in Bk.

While both versions agree that the Court’s declaration of the new month is determinative, even if in error, especially due to the possibility of being misled (passages Pj and Bj), the BT passage Bj (which has no PT parallel) also asserts the right of the Court to declare the

⁷⁶ Goodblatt notes that this Rabbi Yose is a fourth century Amora, not the Tanna mentioned in *m. Rosh HaShanah* 1:5; Goodblatt, 206 n. 70.

month in error, whether that error was inadvertent or *deliberate*. This assertion of the right to intentionally *not* align with the sighting of the new moon dovetails with the previously discussed BT story of Rabbi Hiyya being sent to declare the month at Ein Tav regardless of how the moon appeared (passage Be). It is less a question of how to resolve accidental errors, and more a desire to give a justification to actively set the calendar.

We, therefore, see two transition points as calendar ideology shifts through three stages, from (a) the Beit Yazek approach focused on faithfulness to the actual appearance of the new moon, to (b) a Tannaitic approach that emphasizes the authority of the Court to establish sacred time even if “mistaken”, which opens the way to (c) an Amoraic approach in which there is no longer the pretext of faithfulness to observation.

In the case of both transitions – from the Beit Yazek view to the Tannaitic and from the Tannaitic to the Amoraic – we find parallel literary structures: in the Mishnaic “Dispute between Rabbi Yehoshua and Rabban Gamaliel” and the BT version of the story of Rabbi Hiyya we have a distinguished older Rabbi (Yehoshua or Hiyya) still clinging to the older way of doing things that focuses on the sighting of the new moon, while the Patriarch (Gamaliel or Rabbi) is instituting the changes.

The end result gives ideological legitimacy to the development of a strictly calculated calendar. As it moves through these stages, rabbinic calendar ideology shifts away from depending on the testimony of nature and becomes increasingly assertive of human authority to tame the unpredictable wildness of the new moon. The result lays the ideological basis for eventually disregarding the appearance of the first crescent and moving exclusively to a calculated lunisolar calendar based on the calculated conjunction rather than the appearance of the first crescent.

An Epistemology of Seeing

The different stages of calendrical ideology are also related to shifts in epistemology concerning sources of knowledge. The 364DC tradition was based on the idea of divine *revelation* of calendrical time. *Jubilees*, for example, describes “heavenly tablets” that are read by an angel of the presence to Moses, who copies them down, a tradition that itself builds on the revelation of the two tablets of the law in Exodus. The Beit Yazek stage of the OLC is based, instead, on *observation*, of seeing. I have discussed the calendrical emphasis on seeing the new moon and mentioned the preoccupation with seeing menstrual blood; even Rabbi Yehoshua’s only comment in *m. Rosh HaShanah* 2:8-9 emphasizes this epistemology, for he says, “I see your words,” even though one would assume that in conversation with Rabbi Dosa he didn’t *see* them but *hear* them. It is *seeing* that leads to knowledge; one should see the new moon in order to declare the new month. This epistemology shifts by the Amoraic stage, where interpretation and decisions of the calendrical Court take precedence; seeing the new moon is no longer necessary. As will be discussed below about “The Oven of Akhnai,” the evidence one sees outside the academy – even supernatural miracles – does not constitute an argument in the proper interpretation of Torah. Eyes are still used, but they have turned from seeing the world toward reading the book.⁷⁷

Calendrical Competition Between Babylonian and Palestinian Rabbis

The ideological differences between the BT and PT versions of these two stories is also consistent with the well known historical conflict between the rabbinic communities

⁷⁷ The implications of such a change are enormous but cannot be more than hinted at in this context. For provocative recent discussions of this shift see Abram ; Leonard Shlain, *The Alphabet Versus the Goddess: The Conflict Between Word and Image* (New York: Viking, 1998).

of Babylon and Palestine concerning authority over the calendar.⁷⁸ The Palestinian rabbis sought to preserve their prerogative to operate the calendar Court and determine the calendar; their power was greater to the extent that their decisions were unpredictable, which gave them an incentive to favor the actual observation of the new moon. In contrast, the Babylonian rabbis sought to advance the development of a calculated calendar that would allow them to both predict the timing of the holidays in advance and decrease their dependence upon, and subordination to, the Palestinian Court. In the BT the desire to declare the new month on certain dates even leads to an extensive discussion with no parallel in the PT that matter-of-factly discusses the situations under which it was appropriate to “intimidate - מאיימין” witnesses to testify that they had seen the new moon on either the 30th or 31st (for a 29 or 30 day month, primarily so that Nisan and Tishrei would come out as desired).⁷⁹

In the end the historical development was clearly in the direction of a calculated calendar; in the Amoraic period we find the development of calendrical calculations and rules for shifting the calendar so that certain holidays will only fall on certain days.⁸⁰ Observation increasingly becomes a pro-forma exercise, as the rabbinic calendar develops towards a calculated lunisolar calendar during the fourth century C.E.⁸¹ The political advantage of unpredictability to the Palestinian calendrical Court was, in the

⁷⁸ Stern, 241-264.

⁷⁹ *B. Rosh HaShanah* 20a-b.

⁸⁰ Stern, 165-170.

⁸¹ *Ibid.*, 170-175. It should be stressed that this is not the ultimate version of the calendar still in use today.

end, outweighed by the desire for unity of practice in rabbinic communities separated by great distances; the advantage of a calculated calendar for this purpose is quite clear.⁸²

The Amoraic Inversion of 364DC Temporal Ideology

It may seem that with the calculated lunisolar calendar (CLC) we have returned full-circle to the place we started from with the 364DC: both the CLC and 364DC are fully calculated models of time, and both are efforts to tame time by imposing human models on the movements of the cosmos, regardless of actual observation. Nevertheless, there is a significant difference in the way their proponents conceive of their efforts, and therefore the way they construct the relationship of humans, God and nature. The priestly proponents of the 364DC claim to only be conforming to synchronic temporal patterns that were divinely determined by God, revealed by angels, and testified to (or should be testified to, if human sin hadn't messed things up) by the structure and movements of the heavenly lights. In contrast, the rabbis self-consciously assert their power as humans over sacred time, starting with Rabbi Akiva's assertion in the Mishnah (passage E) and its development in the BT (passages Bf through Bk) that this authority has been handed by God to humans, as mediated through the Court. We can gain insight into these differences by comparing texts that describe similar heavenly settings but portray strikingly dissimilar temporal and power relations between the human and divine realms.

The BT tells us in a baraita that on Rosh Hashanah, "the heavenly Court does not assemble for judgment until the Court on earth has sanctified the month" (*b. Rosh HaShanah* 8b). The Gemara in the PT colorfully elaborates on this Tannaitic image:⁸³

⁸² Ibid., 253-256.

⁸³ An even more elaborate version appears in *Pesiqta de-Rab Kahana* 5:20; see Ibid., 230.

The Court said: today is Rosh Hashanah. The Holy One Blessed be He says to the ministering angels: set up the platform, let the defenders rise and let the prosecutors rise; for my children have said, today is Rosh Hashanah. If the Court changed to make the month full (so that Rosh Hashanah will fall on the morrow), the Holy One Blessed by He says to the ministering angels: remove the platform, remove the defenders, and remove the prosecutors; for my children have decided to make the month full (making Rosh Hashanah fall on the morrow). What is the proof? *Therefore it is a statute for Israel, an ordinance of the God of Jacob* (Psalms 81:5). If it is not a *statute for Israel*, as though it were possible, it is not an *ordinance of the God of Jacob*. (y. Rosh HaShanah 1:3 (57b))⁸⁴

Thus, God follows the rulings of the earthly calendrical Court; the earthly Court declares the *statute*, which becomes an *ordinance* for God to follow.

In two of the important 364DC tradition texts previously discussed (see Part 1) we find a significantly more reverential tone, but a similar setting and theme. In the seventh *Song of the Sabbath Sacrifice* we find descriptions of God being praised in His heavenly sanctuary on the Sabbath by the assembled councils of divine spirits, where He dispenses justice in truth and righteousness:

By the instructor. Song of the sacrifice of the seventh Sabbath on the sixteenth of the month. Praise the God of the lofty heights, O you lofty ones among all the elim of knowledge. For H[e is God of gods] of all the chiefs of the heights of heaven and King of ki[ngs] of all the eternal councils....[For He is] God of all who rejoice... forever and Judge in His power of all the spirits of understanding....And they make acceptable their knowledge according to the judgments of His mouth and their confessions (do they make acceptable) at the return of His powerful hand for judgments of recompense... With these let all the f[oundations of the hol]y of holies praise, the uplifting pillars of the supremely lofty abode, and all the corners of its structure. Sin[g praise] to Go[d who is Dr]eadful in power, [all you spirits of knowledge and light] in order to [exa]lt together the splendidly shining firmament of [His] holy sanctuary...the godlike spirits (are) round about the abode of the King of truth and righteousness. (4QShirShabb^d (4Q403) 1 I 30-46)⁸⁵

⁸⁴ The PT is essentially inverting the meaning of the Ps 81:5 by reinterpreting the meaning of one letter, the prepositional ל in יעקב לאלהי, from “of the God of Jacob” to “for the God of Jacob.” The earthly Court decides the law that God must follow.

⁸⁵ Translation from Newsom, *Songs of the Sabbath Sacrifice: A Critical Edition*, 211-213.

In *Jubilees* the Angel of the Presence relates the creation and importance of the Sabbath to Moses:

He [God] gave us the sabbath day as a great sign so that we should perform work for six days and that we should keep sabbath from all work on the seventh day. He told us – all the angels of the presence and all the angels of holiness (these two great kinds) – to keep sabbath with him in heaven and on earth. He said to us: ‘I will now separate a people for myself from among my nations. They, too, will keep sabbath. I will sanctify the people for myself and will bless them as I sanctified the sabbath day. I will sanctify them for myself; in this way I will bless them....I will tell them about the sabbath days so that they may keep sabbath from all work on them.’ In this way he made a sign on it by which they, too, would keep sabbath with us on the seventh day to eat, drink, and bless the creator of all as he had blessed them and sanctified them for himself as a noteworthy people out of all the nations; and to keep sabbath together with us....It was granted to these that for all times they should be the blessed and holy ones of the testimony and of the first law, as it was sanctified and blessed on the seventh day....Now you command the Israelites to observe this day so that they may sanctify it, not do any work on it, and not defile it for it is holier than all (other) days. (*Jub.* 2:17-2:26)

Both the similarities and differences between the rabbinic and 364DC texts (which complement each other for purposes of this discussion) can teach important lessons about the way these different cultural formations constructed the relationship between humans and the divine realm. Both sets of texts share the heavens as a setting in which justice is meted out and sacred time is observed, a temporality that is shared with earth. Yet, it is precisely within this framework that we find significant differences.

First, in the 364DC texts the Sabbath is the focus of sacred time while the rabbinic texts focus on Rosh Hashanah, which is the most important – and therefore paradigmatic – new moon/month of the rabbinic calendar. The mention of Rosh Hashanah also emphasizes the contrast with the 364DC in that the rabbinical “new year” in the autumn that is most definitely *not* the new year of the 364DC, which falls in the spring. In addition it points to the rabbinic innovation of renaming the biblical holiday of Remembrance-*Yom HaZikaron* as Rosh Hashanah.

Secondly, in *Jubilees* we find that God and the angels observed the Sabbath in the heavens *before* it was observed on earth. In fact, the purpose of singling out the Israelites as God's own people was for them to observe the Sabbath, the first law, as it was already being observed in the heavens. That is to say, Israel's task is to follow and emulate heavenly practice. In this sense the Beit Yazek calendrical ideology has more in common with the presumptions of the DSS than the Tannaitic and Amoraic positions; while Beit Yazek differs with the 364DC on the relative priority of the Sabbath vs. the new moon, there is agreement on the principle that humans are to adjust to the sacred times determined by God. In a radical inversion of this perspective, the Tannaitic position argues that God has handed over power to the Court, and the Amoraic texts assert that it is God and the angels that *follow* the practice of Israel as determined by the earthly Court. Even the time for judgement is now conditioned by human actions.

Although there is no direct evidence that the rabbinical authors of these Talmudic passages knew of these 364DC texts and were responding directly to them, there is a clear continuity of motifs. These have been adapted in the rabbinical discourse not only to legitimize a different calendar, but to reverse the relations of power between the human and divine realms. It is not only that the rabbis assert authority over earthly time regardless of whether it is accurately synchronized with the new moon, but over the divine time of God and the angels as well. This is a radical departure not only from earlier Jewish conceptions of the relation of these two realms, but also from the whole tradition of the ancient Near East which saw the divine realm as the model for the earthly realm. Rather than conforming to sacred times set by God, the rabbis are asserting their authority to determine those times.

These texts also illustrate how the 364DC and rabbinic texts conceive of the key temporalities of their respective calendar systems, the Sabbath and the new moon. The 364DC traditions project a temporal picture of tame time by describing a cosmos that is a model of regularity and balance founded on the seven-day rhythm of the Sabbath, echoing on earth the temporality of heaven. The rabbinic text inverts this synchrony, with heaven conforming to human time, which is variable and unpredictable rather than synchronous and stable. While in the Beit Yazek view humans were dependent on the uncertain appearance of the new moon, a wild time that God controlled and to which humans had to conform, the Amoraic view has tamed time by turning the tables. The Court now has the authority to decide what had previously been a heavenly prerogative. While this enables humans to tame time, this is achieved by creating uncertainty in the heavens, where even God does not know what the Court will decide, and the moon no longer plays an essential role. Power over time shifts from God and nature to humans, i.e., the male Rabbis.⁸⁶

⁸⁶ Stern has made similar observations. For Stern, “the Mishnaic, empirical calendar... was the basis of an entire ideology and world-view. On the one hand, it meant that man – or more specifically, Israel, and more specifically still, the rabbinic court – was empowered over time and the cosmic order. On the other hand, it implied a concept of time that was flexible, man-made, and in a sense, *sacred*.” Stern, 231. Indeed, he suggests that the “ability of the rabbinic court to interfere with time, the cosmos, and the Divine explains perhaps why the determination of new months is referred to in the Mishnah (M. RH 2:7, 3:1, etc.) as an act of ‘sanctification’.” Ibid. In contrast, a calculated calendar – which is being justified in the Amoraic stage – redefines the experience of time: “Because the calendar was now governed by fixed, mathematical rules, time was eventually to be experienced as rigid, objective, and ‘desacralized’.” Ibid. While I make a slightly different distinction between different stages of development of the OLC, I agree with Stern’s emphasis on the human empowerment over time that is the main trend we see in the texts. However, I disagree with his description of a fixed calculated calendar as inherently “desacralized.” We have seen in the discussion of the strictly calculated 364DC (see Part 1) that a fixed and rigid calendar can structure sacred time in a very effective way. The key element, I believe, is whether a calendar seeks to synchronize with natural rhythms or becomes detached from those rhythms (see the Introduction for a more complete discussion of this contrast). I would say that in the rabbinical CLC the postponement rules most clearly reveal an attitude that humans have the authority to re-arrange sacred time.

Nature, the Divine, and the Human Court: The Intertextual Relationship of “The Dispute Between Rabbi Yehoshua and Rabban Gamaliel” and “The Oven of Akhnai”

While the rhythm of natural time was demoted, it was not totally forgotten. Despite the victory of the Tannaitic and Amoraic views over the Beit Yazek calendrical ideology, the concerns expressed by Rabbi Dosa and Rabbi Yehoshua were preserved, dialectically embedded in the text. While the qualms they symbolize do not reappear in the directly calendrical texts, I believe there is a significant, but overlooked, calendrical link between “The Dispute Between Rabbi Yehoshua and Rabban Gamaliel” and another well known and widely discussed story in the BT referred to as “The Oven of Akhnai” (*b. Bava Metzi’a* 59a-59b).⁸⁷ The link comes in a passage at the end of the story describing the death of Rabban Gamaliel, who is the antagonist in both of these stories. “The Oven of Akhnai” is certainly a later composition since it is brought as a commentary to a Mishnaic passage; here I want to focus on the elements that link it to the earlier story. The main portion is reported as a baraita:⁸⁸

[L] We learned there: If he cut it (an oven) into segments and placed sand between the segments, Rabbi Eliezer rules that it is pure and the sages rule that it is impure. And this is the oven of Akhnai (*m. Kelim* 5:10)...On that day Rabbi Eliezer responded with all the responses in the world, but they did not accept them from him. He said to them, “If the law is as I say, let the carob (tree) prove it.” The carob uprooted itself from its place and went one hundred cubits – and some say four cubits. They said to him, “One does not bring proof from the carob.” The carob returned to

⁸⁷ Rubenstein has an extensive bibliography about “The Oven of Akhnai” in Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 314-315, n. 1. Also see Boyarin’s more recent discussion in Boyarin, *Dying for God: Martyrdom and the Making of Christianity and Judaism*, 29-41.

⁸⁸ Rubenstein provides a synoptic comparison and analysis of the PT and BT versions of this story; see Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 34-63. Ilan notes that passage L is in Hebrew, and therefore probably tannaitic, while passage O (below) is in Aramaic, and therefore an amoraic gloss; Tal Ilan, *Mine and Yours are Hers: Retrieving Women's History from Rabbinic Literature* (New York: Brill, 1997), 114. However, such inferences are overly simplistic; Hebrew passages may easily have been composed later for various reasons and motives, and cannot be treated as a certain indicator of tannaitic provenance. Rubenstein argues, for example, that passage N (below) is a “pseudo baraita”; see note 96 below.

its place. He said to them, “If the law is as I say, let the aqueduct prove it.” The water turned backwards. They said to him, “One does not bring proof from water.” The water returned to its place. He said to them, “If it (the law) is as I say, let the walls of the academy prove it.” The walls of the academy inclined to fall. Rabbi Yehoshua rebuked them. He said to them, “When sages defeat each other in law, what is it for you.” It was taught: They did not fall because of the honor of Rabbi Yehoshua, and they did not stand because of the honor of Rabbi Eliezer, and they are still inclining and standing. He said to them, “If it is as I say, let it be proved from heaven.” A heavenly voice went forth and said, “What is it for you with Rabbi Eliezer, since the law is like him in every place?” Rabbi Yehoshua stood up on his feet and said, “*It is not in heaven*” (Deut 30:12). What is, “It is not in heaven”? Rabbi Yirmiah said, “We do not listen to a heavenly voice, since you already gave it to us on Mt. Sinai and it is written there, *Incline after the majority*” (Exod 23:2). (*b. Bava Metzi’a* 59a-b)⁸⁹

The consequence is that Rabbi Eliezer is excommunicated.

Although the protagonist in this story changes to Rabbi Eliezer (who doesn’t appear in the Mishnaic story I have called “The Dispute Between Rabbi Yehoshua and Rabban Gamaliel”), the two stories share the main theme, which in both cases concerns the authority of the rabbinical Court to make and impose its decisions, as well as many other characters – Rabbi Yehoshua, Rabbi Akiva, Rabban Gamaliel, the court (representing the rabbis as a collective). While in the earlier story Rabbi Yehoshua may have been implicitly threatened with the ban,⁹⁰ here it is imposed on Rabbi Eliezer. In both cases they are publicly shamed.

However, I want to focus on another way the stories are similar: both are about defining and constructing the boundaries of the human world.⁹¹ The main difference is

⁸⁹ While I have simplified the parsing of the sections, the translation of *b. Bava Metzi’a* 59a-59b is adapted from Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 37-38.

⁹⁰ The possible consequence of Rabbi Yehoshua not complying with Rabban Gamaliel’s directive in *m. Rosh HaShanah* 2:8-9 is not stated.

⁹¹ Other scholars have used the spatial metaphors of boundaries and borders, and the associated notions of crossing or building these, to discuss cultural ways of creating or blurring distinctions of various types. This has recently been applied in the field of rabbinic studies by Hassan-Rokem in studying gender (see Galit Hasan-Rokem, *Tales of the Neighborhood: Jewish Narrative Dialogues in Late Antiquity* (Berkeley: University of California Press, 2003), 7) and Boyarin in studying the relationship of Judaism and Christianity (Boyarin, *Dying for God: Martyrdom and the Making of Christianity and Judaism*, 29). Here I

that while “The Dispute Between Rabbi Yehoshua and Rabban Gamaliel” focused on the rabbinic border-building between the human and natural realms, “The Oven of Akhnai” concerns setting the boundary between the human and divine realms. This helps explain the significance of Rabbi Yehoshua’s role change from the first story to the second: while in “The Dispute Between Rabbi Yehoshua and Rabban Gamaliel” he opposes the Court’s ruling and is largely silent, now he is the voice of the Court.⁹² This role reversal emphasizes that it is rabbinic authority rather than some absolute notion of “truth” that is at issue.⁹³ In “The Oven of Akhnai” Rabbi Yehoshua appears to have been convinced by Rabbi Dosa’s midrash concerning the authority of the court (passage F), for the biblical passage he brings as midrash halakhah (passage L) points to the same founding myth of the Rabbis, that the Torah was given at Sinai (passage F) and is subject to interpretation by the rabbinical Court.

In this story, however, it is not the testimony of nature (in the form of the new moon’s appearance) that is unimportant, but Rabbi Eliezer’s supernatural miracles. There is no question that, for the Rabbis, God stood behind both the natural and supernatural events. The difference is that the natural world might be called the site of “everyday” or “normal” divinity, while the supernatural represents the direct intervention of God that is notable because it is contrary to nature (everyday divinity), and, therefore, an

am claiming that the same type of cultural process takes place with regards to both temporality and the definitions of nature and the divine.

⁹² Both stories are part of larger tradition of rabbinical stories involving Rabbi Yehoshua. I am not suggesting an historical continuity in these stories of a man named Rabbi Yehoshua – which is the conceit of the rabbinical texts – but am observing the significance of way the character of Yehoshua is deployed in these texts.

⁹³ This observation is adapted from the comments of Christine Hayes who, as quoted by Boyarin, observed the same kind of role reversal for a different Rabbi in another context; Boyarin, *Dying for God: Martyrdom and the Making of Christianity and Judaism*, 159-160, n. 62.

extraordinary demonstration of God's power.⁹⁴ The three "miracles" performed by Rabbi Eliezer – the carob, the waters, the walls – are all contrary to the forces of nature. Rabbi Eliezer violated both the bounds of the humanly constructed social order (by submitting unacceptable legal argument) and God's natural order (through supernatural miracles) as the rabbis defined them. It was for this dual transgression that he is excommunication.⁹⁵

As in "The Dispute Between Rabbi Yehoshua and Rabban Gamaliel," Rabbi Akiva serves as the intermediary, this time delivering the news of the ban to Rabbi Eliezer, who responds by assuming a posture of mourning, removing his shoes, sitting on the ground, and crying. As a consequence,

[M] The world was smitten in one third of the wheat, one third of the olives and one half of the barley. And some say that even the dough in the hands of women swelled up. It was taught: It [the destruction] was so great on that day that every place where Rabbi Eliezer cast his eyes immediately was burned.

But the more direct links to "The Dispute Between Rabbi Yehoshua and Rabban Gamaliel" come after this point, in a baraita (passage N) about Rabban Gamaliel and in a concluding Gemara (passage O) about his death:⁹⁶

[N] Also Rabban Gamaliel was on a ship. A wave of the sea stood to drown him. He said, "It seems to me that this is because of (Rabbi Eliezer) the Son of Hyrcanus." He stood up on his feet and said, "Master of the universe. I acted not for my honor, nor

⁹⁴ The demonstration of God's presence and desire through supernatural acts has a long tradition; perhaps the best-known group of examples is in the book of Exodus.

⁹⁵ In this position I am following the recent analysis of Boyarin. But while his emphasis is on the "nature of the divide between Christians and Rabbis in the third century," with particular attention to the similarity of the magical abilities of Rabbi Eliezer to Jesus as being a reason for his excommunication, my aim is to learn something else from the text by emphasizing the rabbinic border-building between the human, natural and divine realms; see Boyarin, *Dying for God: Martyrdom and the Making of Christianity and Judaism*, 29-41.

⁹⁶ Rubenstein argues that passage N is not a true tannaitic baraita but a "pseudo baraita": it is not introduced by the usual "our sages said," and probably resulted from BT storytellers borrowing motifs from other tannaitic sources that were in Hebrew. Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 321 n. 77.

did I act for the honor of my father's house, but I acted for your honor, in order that disagreements do not multiply in Israel." The sea immediately rested from its anger.

[O] Ima Shalom, the wife of Rabbi Eliezer, was the sister of Rabban Gamaliel. After the event (excommunication) she never allowed him (Eliezer) to fall on his face. That day was the beginning of the new month⁹⁷ and a poor man came and stood at the door.⁹⁸ While she was giving him bread she found that he (Eliezer) had fallen on his face. She said, "Stand up. You have killed my brother." Meanwhile the shofar (blast) went out from the House of Rabban Gamaliel (signaling that he had died). He said to her, "How did you know? She said to him, "Thus I have received a tradition from my father's father's house: 'All the gates are locked except for the gates of (verbal) wronging.'" (*b. Bava Metzi'a* 59b)

Passage N joins the two stories together, for in both Rabban Gamaliel wields the ban (or the threat of it) to coerce behavioral conformity with the goal of preventing sectarianism.⁹⁹ As far as the BT is concerned, these are his final words; we should consider them his epitaph. In both cases the authority of the court has been imposed, but

⁹⁷ I translate the Aramaic term "רִישׁ יָרֵחַ – *beginning* of the new month," a more literal translation than Rubenstein, who translates "new month."

⁹⁸ Here I am following the text of Rubenstein, in which he accepts the arguments of Elon that MS. Munich 95 is superior to all other manuscripts and printed editions, which are corrupt in their reading: "That day was the new month. She became confused as to whether it was full or deficient. Others say a poor man came..." Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 63. Elon discusses how traditional interpreters and modern scholars have all assumed that prostration was a part of daily prayers but was not part of the prayers on the new month day; this is the reason given for why Ima Shalom would have felt she could relax her guard over Rabbi Eliezer and attend to the poor man. Elon argues that prostration was *not* part of daily prayers, and that the manuscript variations referring to Ima Shalom's confusion about the new month crept in at a later date, when prostration was a daily practice; Ari Elon, "Hasimbolizatsia shel markivei ha'alila basipur hatalmudi [The Symbolization of the Components of the Plot in the Talmudic Story]" (Master's Thesis, Hebrew University, 1982), 30-39. I have adopted the reading of Rubenstein and Elon for purposes of this presentation.

However, if the traditional reading were to hold (contra Rubenstein and Elon), this would not change the thrust of my argument. In fact, this would strengthen my argument, for it would open up the possibility that Rabbi Eliezer adhered to a divergent new month observance, like Rabbis Dosa and Yehoshua in passage C, while Ima Shalom's calculation of the new month could be inferred to be the same as Rabban Gamaliel's; that is, Ima Shalom thought it was the new month (as did Rabban Gamaliel and the anonymous editor who tells us "that day was the beginning of the new month" (passage O)), but Rabbi Eliezer thought it had not yet arrived and would be the next day (the same situation as passage C). In that case, the new month, rather than the poor man's appearance, would be the proximate cause of Rabban Gamaliel's death.

⁹⁹ Strictly speaking, the text does not state who imposed the ban, but it is clear that Rabban Gamaliel bears responsibility for he embodies rabbinic authority as the Patriarch. See also Rubenstein's comments, Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 44.

at the cost of shaming Rabbi Yehoshua and Rabbi Eliezer. At this point, the lesson of the baraita (passage N) is quite similar to the lesson of “The Dispute Between Rabbi Yehoshua and Rabban Gamaliel”¹⁰⁰: the authority of the Patriarch must be followed in order to maintain group unity. While his motive is laudable, and thereby saves Rabban Gamaliel from the divine anger at the ban of Rabbi Eliezer, this was only a temporary reprieve, indicating that it was insufficient. Rubenstein insightfully shows how the trauma of shame is an important theme to the final redactor of “The Oven of Akhnai,” and how Rabban Gamaliel’s death is due to the intense shame experienced by Rabbi Eliezer, as expressed in the final line of passage O.¹⁰⁰

However, I think we can also learn something from the story’s mention of Rabban Gamaliel’s death falling on a new month day. The catalyst for distracting Ima Shalom from her vigilance over Rabbi Eliezer is the appearance of the poor man at the door seeking handouts.¹⁰¹ For Ima Shalom it was an obligation to help the poor, so she is caught in a no win situation;¹⁰² this was a particular obligation since it was Rabbi Eliezer who had destroyed the crops and dough (passage M).¹⁰³ The consequence was that Rabbi Eliezer was freed to prostrate himself and pour out his anguish to God. But what is the significance of this taking place on the new month? The approach of the poor man could

¹⁰⁰Rubenstein’s main thesis is that the shaming of Rabbi Eliezer is the cause of Rabban Gamaliel’s death; Ibid. 34-63. While I accept this interpretation, I suggest this is also an intertextual link to “The Dispute Between Rabbi Yehoshua and Rabban Gamaliel,” where Rabbi Yehoshua is shamed by Rabban Gamaliel. We might say that Rabban Gamaliel has a pattern of repeated shaming.

¹⁰¹ Elon shows how the appearance of a poor man in a doorway is a regular plot device indicating a moment of crisis in talmudic stories; Elon, 115.

¹⁰² This is pointed out by Elon; Ibid., 116.

¹⁰³ This connection between the destroyed crops and scarcity of food is pointed out by Rubenstein; Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 46.

have happened at any time. I suggest that the declaration of the new month was a function especially associated with Rabban Gamaliel in a number of talmudic stories, and is a special intertextual reference to “The Dispute Between Rabbi Yehoshua and Rabban Gamaliel,” which is the earliest and most elaborate of these. In both this story and “The Oven of Akhnai” Rabban Gamaliel’s position is manifestly wrong – if one appropriately noted the observed evidence of the moon or of miracles – but is enforced by shaming esteemed colleagues on the grounds that it was necessary to impose unity on the community. Thus, Rabban Gamaliel’s death was the consequence of disregarding the arguments of both Rabbi Eliezer and Rabbi Yehoshua based on evidence from both the divine and natural worlds. I suggest that the irony of Rabban Gamaliel dying on the day of the new moon’s “birth” is hardly accidental.

Both stories are also connected by the appearance of the formula, “Thus I have received a tradition from my father’s father’s house,” which appears not only in passage O, but twice in baraitot to “The Dispute Between Rabbi Yehoshua and Rabban Gamaliel” (passages H and I).¹⁰⁴ Since Ima Shalom is Rabban Gamaliel’s sister we are led to infer that they would both be aware of the same family traditions,¹⁰⁵ referring to the

¹⁰⁴ Here I have used ““my father’s father’s house” as in the printed versions to highlight this connection, while Rubenstein claims that the manuscript version reads “my father’s house.” Ibid., 38, 286. However, this would not substantially affect my argument concerning the posited familial traditions of Ima Shalom and Rabban Gamaliel creating intertextual allusions from “The Oven of Akhnai” to “The Dispute Between Rabbi Yehoshua and Rabban Gamaliel.”

¹⁰⁵ Safrai argues that these familial relationships are a literary invention unique to the Bavli; Shmuel Safrai, “Tales of the Sages in the Palestinian Tradition and the Babylonian Talmud,” in *Studies in Aggadah and Folk-Literature*, ed. Joseph Heinemann and Dov Noy, Scripta Hierosolymitana 22 (Jerusalem: Magnes Press, 1971), 229. Ilan points out that in general “these relationships were cemented through women who became wives or sisters or daughters of the important persons” – and in this story in particular it is Ima Shalom; Ilan, *Mine and Yours are Hers: Retrieving Women’s History from Rabbinic Literature*, 109-118. Rubenstein notes that the name Ima Shalom means “Mother Peace,” which serves as a literary “mode of characterization: like a good mother, she strives to keep the peace between brothers (in-law)”;
Rubenstein, *Talmudic Stories: Narrative Art, Composition, and Culture*, 45.

calculation of the calendar and the pain of shame. This link also alludes to Rabban Gamaliel's funeral oration over ben Zaza's mother (passage I), which was insincere and shaming since we are told she did not "merit" the eulogy but was only being used as an opportunity to prove it was not the new month. In contrast, Rabbi Eliezer makes his own prayers in a sincere fashion, the opposite of Rabban Gamaliel's shameful behavior.

Thus, Rabban Gamaliel is caught in a pincers movement: He has sought to expand the authority of the human Court over both the natural and divine realms and thereby expand the autonomy of the human realm. However, this is a form of hubris that ultimately kills him, for these realms are both under the control of God.

As we have seen, the main theme of these two stories is to legitimate the authority of the rabbinic Court and valorize the humanly constructed world at the expense of the natural and divine realms. Both stories exemplify what Boyarin has aptly described as "a community in which interpretation was the central, definitive act of religion and therefore of culture."¹⁰⁶ The calendar and the law were both means for constructing and projecting this worldview. While most commentators have emphasized this aspect – as have I in my discussion here about the development of rabbinical calendar ideology – I believe that in "The Oven of Akhnai" we find a subtext that counters and offsets this primary theme, a covert voice of hesitancy that displays a consciousness of limits.¹⁰⁷ This undertone reveals the anxieties of the authors concerning this ongoing process of boundary building

¹⁰⁶ While Boyarin's comments come in a discussion of "The Oven of Akhnai," they apply equally well to the earlier story of "The Dispute Between Rabbi Yehoshua and Rabban Gamaliel"; Daniel Boyarin, *Intertextuality and the Reading of Midrash*, ed. Herbert Marks and Robert Polzin, Indiana Studies in Biblical Literature (Bloomington, Ind.: Indiana University Press, 1990), 36.

¹⁰⁷ This phenomenon of contrary arguments disrupting established frameworks of thought has been pointed out by others; see for example Fonrobert, who finds in the Talmudic discourse about women instances where previous formulations are subverted, with the result that the "discussions open up alternatives rather than congealing into a closed, discursive universe." Fonrobert, 212-213.

and their awareness of its contingent nature, which required ongoing maintenance. The preservation and study of these stories, composed at different times in different communities, illustrates both the diachronic and synchronic efforts that needed to be made on this score.¹⁰⁸

Rabban Gamaliel's death is the symbolic opposite of Rabbi Dosa's image of the pregnant woman (passage C), a kind of final bookend: birth and death define humans as mortal and embedded in nature, but the times of these events cannot be calculated, just like the appearance of the new moon. Once again we find a female image present at death (cf. passage I), in this case Ima Shalom, who is wiser than both her husband and brother in the ways of the life-process of birth and death, as well as in the ways of properly respecting each other.¹⁰⁹ She gives dignity to her family's house and lineage, which Gamaliel has betrayed.

While the boundaries of human authority can be expanded, this must be done with caution and modesty, qualities that Rabban Gamaliel lacked. The Torah may not be in heaven (passage L) and the calendar may similarly have been handed over to the Rabbis and not be dependent on the heavenly lights (passage E), but human power is still limited by the power of nature, symbolized by the death of Rabban Gamaliel (passage O), and the power of the divine, symbolized by the inclined walls of the academy (passage L). The humanly constructed world aggrandizes and separates itself from nature and the

¹⁰⁸ Boyarin makes a similar comment in a different context about the presence of both diachronic and synchronic elements of boundary-building in the rabbinic texts; Boyarin, *Dying for God: Martyrdom and the Making of Christianity and Judaism*, 156, n. 38.

¹⁰⁹ The character of Ima Shalom is connected to birth, sex and women's bodies in two other rabbinic passages, *t. Niddah* 6:8 and *b. Nedarim* 20a-b. On this, see Ilan, *Mine and Yours are Hers: Retrieving Women's History from Rabbinic Literature*, 112-113; Fonrobert, 145; David Biale, *Eros and the Jews* (New York: Basic Books, 1992), 51, 249 n. 110.

divine at its own peril; these are realms of power that must be respected and given their due. The fate of Rabban Gamaliel remains as a warning to those who may disregard the realities of these worlds that are ultimately beyond human control and understanding.

CHAPTER 9
CONCLUSION: TAME AND WILD TIME, THEN AND NOW

The environment is not a Jewish issue.

Anonymous American Jewish leader¹

Tame Time and Wild Time in the 364DC and Lunisolar Calendars

When people think about calendars they tend to think about them as schedules, i.e., what will happen when. In this sense, a calendar is a way to organize activities, when one-time or repetitive events happened or will happen. In this study, which has focused on ancient Jewish calendars, the focus has been different; it has not been on the events – call them observances or holidays – that fill the calendar, but the *structure* of the calendar. To use a spatial metaphor, if calendars are like maps, then I have focused on the coordinate system, of how one designates the (temporal) location of a particular destination (the date) rather than describing the destination itself (e.g., the rituals done during a holiday observed on a given date).

Today the Gregorian calendar has become a global standard, and the Jewish calendar has not changed in over a thousand years. Holidays – typically days of celebration or memorial – are frequently, and fairly easily, added to (or eliminated from) these frameworks. However, the frameworks themselves go unquestioned and largely unexamined.

¹ Quoted by Hava Tirosh-Samuelsan at the Gaia and the Sacred conference, Graduate Theological Union, Berkeley, June 2003.

In the past this was not so. This study has contrasted two Jewish calendar traditions, each of which went through developmental stages that have left us with evidence of two families of calendars, the 364DC traditions and the lunisolar calendar traditions, along with evidence of conflict between advocates of both systems. Although both systems agreed on when the Sabbath fell and had very similar lists of annual holidays, they differed on when these annual holidays were to be observed because their temporal coordinate systems were different. Thus, we have seen how the advocates of a 364DC and a lunisolar calendar both observed Yom Kippur on the tenth day of a month, but because they defined the month and year differently they would not find themselves observing Yom Kippur on the same day because the coordinate system of their calendars was different. Both groups agreed that the timing of Yom Kippur was of paramount importance because they agreed that particular times were more sacred than others; the key difference of opinion was over how to determine when that would occur.

In this study I have highlighted the temporal rhythms that have been central to the structure of Jewish calendars: the day, the seven-day week, the month, and the year. While there was consensus between the calendars studied about the beginning and length of the day and the week, the definitions and length of the month and year varied significantly, depending upon whether the year was constructed to be a multiple of the sabbath (the 364DC) or a multiple of the lunation (the lunisolar calendar). In the 364DC, the schematic month was disconnected from the lunation in order for the Sabbath to be the determining temporal rhythm, while for the lunisolar calendar, the Sabbath was disconnected from the year in order for the lunation to be the basis of the year. These were different solutions to the same problem, which was that neither the seventh-day

Sabbath nor the lunation divides evenly into the observable solar/stellar year. The 364DC gave priority to the Sabbath while the lunisolar calendar gave priority to the lunation. For comparison purposes, the Julian/Gregorian calendar gives priority to the solar/stellar year; the weeks do not divide evenly, and the schematic months have no relation to the lunation.

Since both these Jewish calendar families assume a similar distinction between sacred and mundane time, this characteristic does not get us very far in helping to understand the theoretical differences between them. By making use of the concepts of tame and wild time, derived from environmental thought, I have endeavored to show how different attitudes concerning the relations of humans, God and nature are reflected in the temporal structure of these two families of calendars (the 364DC and the lunisolar), as well as the distinctions between different stages of development within each family.

The different procedures used by the 364DC and the OLC reflect two different attitudes towards time. The strictly calculated 364DC expresses an experience of *tame time*, whereby the movements of the cosmos are expected to validate a divinely ordained sabbatarian symmetry. In sharp contrast, for the OLC, the appearance of the new moon – and the timing of the annual holidays which it determines – exemplifies *wild time*, for in principle the length of the lunation and the year are inherently uncertain and unpredictable.

In both the *CDM* version of the 364DC and the lunisolar traditions, the lunation lasted either 29 or 30 days; the difference is that while the *CDM* calendar held to a

strictly calculated alternation between 29 and 30,² the Mishnaic OLC in principle depended on the appearance and observation of the first crescent of the new moon, which did not have to strictly alternate between 29 and 30 day months; because it is based on observation, it is automatically self-correcting.³

In terms of sacred time, the differing calendrical practices reflect a clear difference in priorities vis-à-vis recognition of temporal events: for the 364DC traditions the Sabbath takes precedence over all other times and holidays are set according to the dates of the schematic months (which are keyed to the Sabbath, as discussed in Part 1); the lunation is a calculated cycle that is marked in the *CDM* calendar, but has no influence on the Sabbath or annual holidays. In contrast, because the OLC used lunar months to date the annual holidays, determining the appearance of the new moon was a serious matter for rabbinic theory and practice because it signaled the beginning of the month, which was key for proper temporal observance. The Sabbath ran along on its own independent cycle, which had no link to any other observance.⁴

At stake for both sides in this conflict is their theological and cosmological understanding of the connection of the human and the divine, of heaven and earth, through proper ritual at the proper time. For the priestly followers of the 364DC traditions, proper times were a function of the Sabbath, and their cosmos was an

² Except for the additional lunation of 30 days intercalated after 36 lunations – see Part 1. Of course, in the 364DC the lunations were not the “months,” which were schematically calculated and either 30 or 31 days long.

³ Nevertheless, the old pattern of alternating 29 and 30-day lunations found in the 364DC reappears in later tannaitic writings as a guideline for those who cannot receive word from the calendrical Court in a timely fashion; see t. *Arakin* 1:8 (quoted below), and becomes typical for the CLC. The Jewish calendar does not strictly alternate between 29 and 30-day lunations in order to accommodate the imprecision of this pattern.

⁴ This needs to be qualified only insofar as rabbinic calendrical practice evolved in the amoraic period to avoid the overlap of the Sabbath and certain annual holidays, as was briefly addressed in Part 3.

unchanging structure organized by sabbatarian sacred patterns and geometries. The heavens that God created were mathematically calculable and predictable; any variation in this cosmic symmetry and balance was a disaster due to human sin. In contrast, for the Beit Yazek Pharisees, it was also humanity's task to align itself with the sacred rhythms of the heavens created by God, but these were not totally predicable by mathematics, nor were they a function of the sabbatarian pattern. In particular, the appearance of the new moon was in principle uncertain. According to the Beit Yazek view embodied in the OLC, it is humanity's task to align ourselves with the heavenly lights, especially the moon, for these are God's signs.

As was discussed in Part I, the 364DC traditions assumed the primacy of the Sabbath as the basic, divinely ordained, temporal pattern of the cosmos. Therefore, although the Sabbath is a rhythm that is only observed by humans on earth (along with God and angels in the unseen heavens), it is paradoxically construed as nature's time, in principle perfect and unchangeable because God created it. This effort at naturalizing the Sabbath, claiming it is validated by nature, is a common strategy used to legitimate calendrical patterns.⁵

In contrast, as was discussed in Part III, for the OLC the uncertainty and changeableness of the lunation created by God is the center of cosmic sacred time to which humans must adapt – even by violating the Sabbath. Yet, if taken seriously, this uncertainty encourages a focus on ritual observances taking place at *precisely* the proper time and anxiety about how to insure this. Paradoxically, this gives more responsibility to humans, for it is humans who must observe the first crescent, report it, and declare it –

⁵ See the discussion of Durkheim and Eliade in the Introduction.

which becomes a source of power for those who take on this responsibility, and an ideological basis for the evolution of the OLC to the calculated lunisolar calendar (CLC). While nature (in the form of the moon) is initially seen as the God-given marker of sacred time, humans become an essential partner in the process because proper times only exist when humans recognize them. God's time is no longer exclusively determined by nature, but becomes subject to human decision.

In brief, we have uncovered two paradoxes that mirror each other. In the 364DC traditions artificial time is justified by claiming it to be divine and validated by nature. In the Jubilean version of the 364DC, the lunation was completely purged because it destabilized the idealized sabbatarian symmetry of the 52 Sabbaths and four seasons of the year. We can describe this as an attempt to make calculated tame time seem aligned to wild time.

In the lunisolar calendar family we find an opposite development. At first, in the Pharisaic OLC natural time is valorized in the wild time of the new moon's first crescent, whose appearance takes precedence over the Sabbath. I have suggested that this was partly a polemic against advocates of a version of the 364DC, an argument that the 364DC was not truly aligned with the heavenly lights, and that the OLC was a superior tool for aligning to sacred time as indicated by the heavenly lights because it was based on observation of the wild time of the lunation. The Sabbath still exists, but as a divinely decreed rhythm that is not validated by nature; it therefore does not form part of the coordinate system for the OLC. Yet, we then find a paradoxical move away from wild to tame time, as the very uncertainty of the first crescent's appearance is interpreted as destabilizing natural time as an objective reality: it becomes a human decision (made by

the calendrical Court) to recognize the new month, regardless of the actual sighting of the first crescent. This provides the theoretical basis for the CLC, including the Jewish calendar in use today. Ultimately, this shifts the basis of the calendar from the observed first crescent to the calculated conjunction, a theologically justified move from wild time into tame time.

The end result, the Jewish calendar in use today, is the heir to these traditions and conflicts. The day remains a cycle of wild time, still keyed to the changing time of sunset. The week remains a cycle of tame time, based on the calculated rhythm of seven-day cycles that has been uninterrupted at least 2,500 years. The month is a compromise between tame and wild time, for it is a calculation that aims in principle to emulate the lunation.⁶ The year is similarly a compromise between tame and wild, for although it is calculated, it varies drastically in length because it remains based on the lunation, either 12 or 13 months.

The Sabbath vs. the Lunation as Cycles for Environmental Awareness

It has become commonplace to claim that after the destruction of the Second Temple in 70CE and the elimination of its sacrificial cult, the decline of the Jewish community in the Land of Israel and the growth of the Diaspora, Judaism slowly evolved into a religious culture concerned more with time than space, and that the Sabbath played a key role in this transformation.⁷ As Heschel writes, “The Sabbath itself is a sanctuary which we build, *a sanctuary in time*,”⁸ the key element in making Judaism “a *religion of*

⁶ Subject to certain rules of postponement, which were discussed in Part 3.

⁷ See, for example, Zerubavel, *Hidden Rhythms: Schedules and Calendars in Social Life*, 105-108.

⁸ Heschel, 29.

time aiming at the sanctification of time.”⁹ Numerous observers have claimed that the centrality of the Sabbath has been critical to the survival of the Jewish community and culture over the generations, because both its periodicity and regulations have served to separate and solidify Jewish culture.¹⁰ Ahad Ha’Am observed from a sociological slant that, “One can say without exaggeration that more than Israel has kept the Sabbath, the Sabbath has kept Israel.”¹¹ Similarly, from a religious point of view Hayyim Nahman Bialik observed that, “The Sabbath is indeed the cornerstone of Judaism.”¹² From a political point of view, Rifkin writes that the Sabbath was “a revolutionary act. Through its observance, the Jew is able symbolically to overthrow the temporal order of whatever culture he or she is in and take part in another realm of time altogether....The Sabbath stands as the oldest and most effective form of institutionalized rebellion in Western experience.”¹³

As I noted in the Introduction, Heschel’s theology of the Sabbath as “the day on which we learn the art of *surpassing* civilization”¹⁴ has been particularly influential among scholars, non-scholars, and social critics. In addition to the Sabbath’s role in Jewish culture, Heschel discusses what he sees as the broader theological and ethical dimensions of the Sabbath. The prohibitions against work on the Sabbath are central to its qualitative difference:

⁹ Ibid., 8.

¹⁰ See for example, Rifkin, 85-87.

¹¹ Millgram, ed., 253.

¹² Ibid., 254.

¹³ Rifkin, 87.

¹⁴ Heschel, 27.

On the Sabbath we live, as it were, independent of technical civilization: we abstain primarily from any activity that aims at remaking or reshaping the things of space. Man's royal privilege to conquer nature is suspended on the seventh day....The seventh day is the armistice in man's cruel struggle for existence, a truce in all conflicts, personal and social, peace between man and man, man and nature, peace within man.¹⁵

Writing at about the same time as Heschel, Fromm independently reached a very similar position:

To begin with, the concept of work underlying the biblical and later Talmudic concepts is not one of physical effort, but it can be defined thus: "Work" is any interference by man, be it constructive or destructive, with the physical world. "Rest" is a state of peace between man and nature. Man must leave nature untouched, not change it in any way, either by building or by destroying anything. Even the smallest change made by man in the natural process is a violation of rest. The Sabbath is the day of complete harmony between man and nature. "Work" is any kind of disturbance of the man-nature equilibrium.¹⁶

The idea of Sabbath as a time of peace between humans and nature has had a significant impact on environmental thinkers, especially those who are Jewish. The command for Sabbath rest (along with its related periodicities, the seventh year sabbatical and the fiftieth year jubilee) has been taken as a model for ways to repair the relationship of humans with the environment. In particular, the origins of these rhythms in the Genesis cosmogony gives them religious resonance and cultural legitimacy.

Waskow points out that "Fromm and Heschel suggested that the practice of Shabbat in some form might be profoundly important to the entire human race – not to the Jewish people alone – in redeeming the world from the threat of technology run amok."¹⁷ Waskow proposes that perhaps every seventh day could be observed

¹⁵ Ibid. 28-29.

¹⁶ Erich Fromm, *You Shall Be as Gods: A Radical Interpretation of the Old Testament and Its Tradition* (New York: Holt, Rinehart and Winston, 1966), 196.

¹⁷ Arthur Waskow, *Down-to-Earth Judaism* (New York: William Morrow and Company, 1995), 371-372.

worldwide “with minimum use of fossil fuels like gasoline and coal, so that the earth’s atmosphere could rest from being drenched in carbon dioxide.”¹⁸ Similarly, he proposes a “*techno-shmitah*” in which “every seventh year engineers and scientists would suspend work (except for work on mortal diseases)” and business would refrain from introducing new products and services.¹⁹

Eisenberg also draws on themes we find in Fromm and Heschel when he connects the quality of wildness with the Sabbath:

On the Sabbath, both humans and animals are freed from the grind of domestication; all technology, right down to the kindling of fire, is taboo. In the sabbatical year, the land itself is allowed to revert to a state of wildness. Sabbath, sabbatical, and jubilee are all eruptions of wildness into the humdrum of the technical and economic order.²⁰

Eisenberg then suggests extending what he sees as the “wildness” of the Sabbath into the realm of space:

If the Sabbath is a wilderness in time, then wilderness is a Sabbath in space. Why not use the interlocked cycles of Sabbath, sabbatical, and jubilee as a model for the way wildness ought to be distributed in space? Take any geographic unit – country, state, province, county, town, borough, precinct, block, backyard. Let each unit devote one-seventh of its land to wilderness, or something as close to wilderness as circumstances permit. If the wilderness is there already, let it be preserved; if not, let it be created.²¹

I think these proposals to extend the concept of the Sabbath as a time for humans to restrain ourselves from the exploitation of nature are laudable and worth considering.

Nevertheless, Heschel notes that the rhythm of the Sabbath is “entirely independent of the month and unrelated to the moon. Its date is not determined by any event in nature, such

¹⁸ Ibid., 372.

¹⁹ Ibid., 372.

²⁰ Evan Eisenberg, *The Ecology of Eden* (New York: Vintage Books, 1998), 130.

²¹ Ibid., 408.

as the new moon, but by the act of creation.”²² It is the “dissociation of the seven-day week from nature,”²³ as described by Zerubavel, freeing the seven-day Sabbath from any link to the quarters of the lunation, that provides the basis for Heschel’s Sabbath observer “to become attuned to *holiness in time*.”²⁴

Thus, it seems to me that we find ourselves with two contradictory claims concerning the character of the Sabbath. On the one hand is the claim that the Sabbath is a time of peace and harmony between humans and nature (Heschel and Fromm). On the other hand, “The physical world became divested of any inherent sanctity”²⁵ because the Sabbath’s strictly calculated rhythm liberated sacred time from the natural cycle of the lunation (Heschel and Zerubavel). It seems to me that this later process hardly seems like a moment of peace between “man and nature” or “complete harmony between man and nature.” While it may be a time of “peace” due to practices that restrain human activity, the rhythm is not natural and has nothing to do with the needs of nature.

I suggest that this contradiction has its source in the confusion between the *periodicity* of the Sabbath and the *rest laws* of the Sabbath i.e., between the Sabbath’s temporal structure vs. its ritual content. The rest practices largely involve a withdrawal from this world as a way of moving into closer communion with God facilitated through prayer, study and community, disengagement with the world in order to engage with the divine. While I agree that Sabbath rest limits human exploitation of nature, these rules are not unique to the Sabbath, as exemplified by the fact that they are also in place for a

²² Heschel, 10.

²³ Zerubavel, *The Seven Day Circle: The History and Meaning of the Week*, 11.

²⁴ Heschel, 10.

²⁵ *Ibid.*, 79.

number of annual holidays, such as Rosh Hashanah, Yom Kippur, Passover, Booths, and Weeks (even if Sabbath rest is used as the model for these by Rabbinical Judaism). The posited “peace” between humans and nature experienced on the Sabbath – even Heschel describes it as an “armistice”²⁶ – is totally dependent on the Sabbath restrictions against work, not on its seventh-day periodicity *per se*.

In contrast, the seven-day rhythm of the Sabbath is rhythm of tame time; it is artificial, itself a work of civilization, a disturbance in the natural flow of time as marked by the earth, moon and sun. As I noted in the Introduction, Heschel severely diminishes the importance of the annual holidays, because the “the date of the month assigned for each festival in the calendar is determined by the life in nature.”²⁷ The lunation is problematic as a temporal paradigm because of this dependence on nature; Heschel prefers the Sabbath *because* its cycle is independent of nature. For Heschel, the withdrawal from interaction with the natural world is enhanced by the artificial periodicity of the Sabbath.

Like Waskow, Eisenberg and many others, I have been strongly influenced by Heschel’s compelling portrayal of the Sabbath. After many years of being enthralled to Heschel’s idea of the Sabbath, my examination of tame and wild time in ancient Jewish calendars has lead me to the conclusion that from an environmentalist perspective Heschel was wrong in his preference for the Sabbath at the expense of the lunation and its associated annual festivals. If Heschel valorized the Sabbath, I want to valorize the

²⁶ Ibid., 29.

²⁷ Ibid., 10.

lunation. To paraphrase Thoreau, “I wish to speak a word for the wildness of the new-moon.”²⁸

The Sabbath did not start out as a conscious attempt to measure abstract time, or to separate humans from nature; rather, it seems to have begun as a way of conceiving of the temporal dimension of the divine structure of “the heavens and the earth.” It began with a religious purpose, to identify holy times for religious activity by regularly recapitulating the time-pattern of sacred cosmogony, the creation of the universe as recounted in Genesis 1-2:4a. As I have tried to show (see especially Part I), to its early practitioners the seventh-day Sabbath seemed to be the root pattern of cosmic temporality and they thought it was the basis for the observable cycles of the sun, moon and stars. But since at least the 2nd century BCE (the date of the composition of *Jubilees*), Jews knew that the cycle of the Sabbath did not match the cycles of nature.

I believe that there is a tension between the cycles of Sabbath and lunation found in today’s Jewish calendar that is somewhat mirrored in the ancient conflict between the 364DC and the lunisolar calendar: while Heschel’s defense of the Sabbath as a divinely decreed non-natural rhythm is similar to the views expounded by the author of *Jubilees* who saw his 364-day sabbatarian calendar as divinely decreed, I want to emphasize the position of the Rabbis who advocated the OLC as they sought to reconnect with a reality from which 364DC had moved too far. The Rabbis sought to engage with the rhythms of the natural world in which we live, on which we depend; even as the OLC evolved toward calculation rather than observation, its basis in the lunation rather than the

²⁸ “I wish to speak a word for Nature, for absolute freedom and wildness...” Thoreau, 31. See also the discussion in Chapter 1.

Sabbath as the basic structure of time did not change, as God's presence was seen in the cycle of the moon:

Rabbi Aha ben Hanina also said in the name of Rabbi Assi in Rabbi Yohanan's name: Whoever blesses the new moon in its due time welcomes, as it were, the face of the Shechinah [Divine Presence]....In the school of Rabbi Ishmael it was taught: Had Israel inherited no other privilege than to greet the face of their Heavenly Father every month, it would be sufficient. (*b. Sanhedrin 42a*)²⁹

In his emphasis on the Sabbath at the expense of the lunation Heschel has minimized what seems to me a more complex situation. When Heschel claims, "Time is God's gift to the world of space,"³⁰ I want to remind him that the sacred times of Rabbinic Judaism included both the Sabbath *and* those determined by the moon. As even he admits, Judaism's "*architecture of time*"³¹ includes both the Sabbath and the new moon. The Jewish calendar in use today preserves both types of time and the unruly lack of fit between them. There is a temporal tension between the wild rhythms of nature embodied in the festivals linked to the cycles of lunation and year versus the tame rhythm of culture manifested by the weekly Sabbath. While time may be central to Jewish religion and culture, and the calendar a key to its survival, this calendar preserves rhythms of both the Sabbath and the lunation, both tame time and wild time. If Judaism is a "religion of time," as Heschel claims, it is a religion of *both* tame and wild time, for it sanctifies not only the act of creation – recounted every Sabbath – but the living creation itself, the days, months and years marked by the heavenly luminaries, which according to Genesis were created for this purpose on the fourth day of the primordial week. As Hirsh

²⁹ I have modified the translation to clarify the similarity and difference between the two adjacent passages.

³⁰ Heschel, 100.

³¹ *Ibid.*, 8.

wrote, “The catechism of the Jew consists of his calendar”³² – and he was talking of the whole calendar, not just the Sabbath.

In the ancient world it was the Sabbath that seemed odd about Jewish time; paradoxically, in the contemporary world it is the Jewish lunisolar calendar that seems odd and out of place. Ironically, it is the dominance of the Gregorian calendar that has made the Jewish Sabbath seem tamer, and the annual holidays wilder, despite the fact that the lunar months of the Jewish calendar have been calculated at least since the ninth century CE at the latest, if not earlier. Courtesy of the world wide reach of the Gregorian calendar that accompanied European expansion over the last 500 years, the seventh-day Jewish Sabbath conveniently fits into “weekends.” If one chooses to “remember” to “keep” the Sabbath, it is simply a choice – a choice to schedule-in a withdrawal from daily schedules and activities in favor of the obligations of Sabbath “rest.”

In contrast, the Jewish holidays – dependent on the lunation – are commonly experienced as coming “early” or “late,” conveniently on the weekend or inconveniently in mid-week; every year is different from the last. In the context of the Gregorian calendar, the Jewish holidays are experienced as irregular, disorderly, inconvenient and a nuisance disrupting our schedules. In this sense, despite the fact that the contemporary Jewish calendar is calculated, thanks to its basis in the lunation the annual holidays are, nevertheless, experienced as unruly and wild.³³ Of course, the holidays of the Jewish

³² Hirsch, 3.

³³ Unfortunately, in my view, some Jewish congregations have responded to this problem by shifting the celebration of some holidays to a nearby weekend, when it is more convenient - and more people may attend!

calendar are never “early” or “late” – they simply fall when they fall, matching the rhythm of the moon.

The contemporary Jewish calendar maintains an uneasy symbiosis between two cycles of time, which run independently of each other: the Sabbath and the lunation, as Heschel admitted. In my view, the Jewish calendar preserves the possibility of connecting to the wild rhythms of nature via the observance of the new moons and the annual holidays that are determined by the lunations and the agricultural seasons of the earth: this is also a means of “*surpassing* civilization,”³⁴ not by escaping from the world into the tame time of the Sabbath, but by embracing the wild rhythms of nature repressed by our clock driven culture. One cannot “surpass” human civilization by observing a rhythm of time that exists only when it is observed by humans. It is not enough to withdraw from our weekday rhythms of work on the Sabbath in order to make peace with nature, to reach toward God via a withdrawal from nature. Our urban, technological civilization has so removed us from the natural rhythms of life that we need to *engage* with the rhythms of sun, moon and earth via the wild timing of the annual holidays determined by the lunation. These too have been traditionally seen as divinely created moments of closeness to God, *through* the natural rhythms of the world God created.

In my view, the dualism of nature and culture is both false and true. It is false inasmuch as humans are unavoidably part of and dependent upon wild nature. It is also false when it is used as a dichotomy to valorize one side and denigrate the other. On the other hand, it is true that humans *are* different; it is true inasmuch as human civilization, at least as it exists today, seems to inevitably spoil nature. As Eisenberg points out, the

³⁴ Heschel, 27.

myth of Eden contains the truth that, at least since the agricultural revolution, “as soon as we become fully human, we begin to ‘fill the earth and subdue it.’ We begin to destroy Eden, and thereby expel ourselves.”³⁵

For human culture, there must be a balance of wild and tame, an interpenetration of the two for culture to exist, both spatial and temporal. We need both predictability and randomness, neither monotony nor chaos but a healthy balance of both. The Jewish calendar preserves ancient rhythms of nature and culture, of lunation and Sabbath, overlapping and intertwined. By preserving both wild and tame rhythms of time, it seems to me that the Jewish calendar provides a provocative model for living with the cycles of nature. To the extent that the calendar is the “catechism” of Jewish life, then the issue of the proper way for humans to live in the natural environment is a concern embedded in the core of Judaism.

Observing the holiday patterns of the lunisolar year temporally connects us to wild rhythms of nature. Yet, while the tame rhythm of the Sabbath removes one from nature, a practice of rest – whether on the weekly Sabbath or the annual holidays – is perhaps more necessary today than ever before, as Heschel suggests. For our nanosecond culture, it may be just as important for an individual’s well being to lay down our high-tech tools for a day and slow down our own rhythms as it is for us as a society to refrain from exploiting nature. In our urban society where people generally leave home to go work inside somewhere else, staying home, “working” in the garden, cooking a meal rather than eating “take-out,” and spending time with family while silencing our gadgets may constitute a more “religious” experience than spending more time indoors, even if it is in

³⁵ Eisenberg, 94.

prayer or study. Both lunation and Sabbath can be helpful in living a human life in balance with – and in engagement with – the more than human cosmos.

APPENDIX A SOME ASTRONOMICAL BASICS

In modern astronomy the relative orbits and rotations of the sun, earth, and moon define the solar and lunar cycles of the day, the lunation, and the solar year. These orbits are, at least in the time span of life on earth, essentially never ending and never changing, without beginnings or endings. It is the human experience of the effect that these movements have on the earth that generates the desire of both modern and ancient humans to categorize these experiences in ways that are useful to describe the effects. To understand how the ancients perceived time by expressing it in terms of certain natural patterns, we should first be clear about our own terminology, assumptions and understandings.

The Day

The day is the length of time it takes for the earth to rotate on its axis one time. Due to the inclination of the earth's axis, the lengths of the periods of daytime (from sunrise to sunset) and nighttime (from sunset to sunrise) vary in length, changing daily throughout the year: as one increases, the other similarly decreases.

The Solar Year

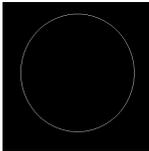
In modern astronomy the amount of time necessary for the earth to return to the same location in its orbit around the sun is known as the tropical or solar year, with a length of 365 days, 5 hours, 48 minutes, 45.975 seconds,¹ or approximately 365¼ days.

¹ Finegan, 17.

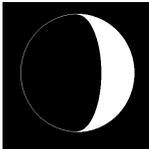
The Gregorian calendar observes the beginning and end of this cycle on January 1, although this is a date of no special astronomical significance. During the year, the inclination of the earth's axis causes the occurrence of the summer and winter solstices and spring and autumn equinoxes. As the earth orbits the sun on an annual basis, different stars appear to the nighttime observer; over time these came to be associated with the seasonal changes (e.g., the signs of the zodiac).

The Lunation

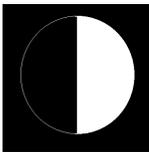
In modern astronomy the average lunation² is measured as 29 days, 12 hours, 44 minutes, 2.8 seconds, although its true length varies from 29.26 to 29.80 days. (FN Finnegan and Halton) According to the U.S. Naval Observatory, the average lunation of 29.5 days is typically divided into 8 phases:³



New Moon - The Moon's unilluminated side is facing the Earth. The Moon is not visible (except during a solar eclipse).



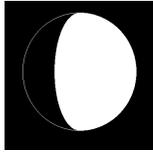
Waxing Crescent - The Moon appears to be partly but less than one-half illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is increasing.



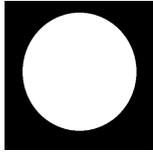
First Quarter - One-half of the Moon appears to be illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is increasing.

² Also known as the synodic month.

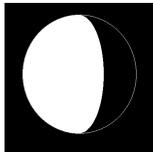
³ "Phases of the Moon and Percent of the Moon Illuminated," (U.S. Naval Observatory Astronomical Applications Department), n.p. [cited 23 April 2002]. Online: http://aa.usno.navy.mil/faq/docs/moon_phases.html.



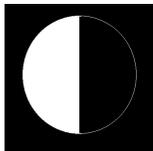
Waxing Gibbous - The Moon appears to be more than one-half but not fully illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is increasing.



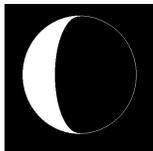
Full Moon - The Moon's illuminated side is facing the Earth. The Moon appears to be completely illuminated by direct sunlight.



Waning Gibbous - The Moon appears to be more than one-half but not fully illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is decreasing.



Last Quarter - One-half of the Moon appears to be illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is decreasing.



Waning Crescent - The Moon appears to be partly but less than one-half illuminated by direct sunlight. The fraction of the Moon's disk that is illuminated is decreasing.

The U.S. Naval Observatory also notes the month of the “ancient Hebrew calendar” (like the Islamic calendar still in use today) begins “when the thin crescent Moon is actually sighted in the western sky after sunset within a day or so after New Moon.”⁴ The prediction of the first sighting of the waxing crescent is a very difficult problem even for contemporary astronomy that includes the physics of planetary motion, light absorption and scattering in the atmosphere, the physiology of human vision, as well as such obvious variables such as weather, the observer’s location and local topography.⁵

⁴ G. H. Kaplan, “Crescent Moon Visibility and the Islamic Calendar,” (U.S. Naval Observatory Astronomical Applications Department), n.p. [cited 23 April 2002]. Online: <http://aa.usno.navy.mil/faq/docs/islamic.html>.

⁵ Ibid.(n.p. [cited.

The beginning of the synodic month is marked from the precise moment when the moon passes between the earth and sun, occasionally causing a solar eclipse; in fact, the number of lunations between solar eclipses was what led to increasingly refined estimates of the average length of the lunation. This moment is the astronomical “conjunction,” which is also the moment used by the current calculated Hebrew calendar as the beginning of the “new moon” and hence the “new month,” the moment the cycle begins again. It is important to note that this is different from the earlier Hebrew calendar described in the Mishnah, which relied on the observance of the first crescent, with a difference of about 1-2 days (the length of the darkness of the moon at conjunction). In contrast, during the full moon a lunar eclipse will occasionally take place when the earth passes between the sun and moon.

The period of darkness of the new moon usually lasts 1-2 days; similarly the moon may appear full for 1-2 days. While the length of time separating the conjunction and the full moon is therefore approximately $14\frac{3}{4}$ days, it should be noted that the length of time between the appearance of the first crescent (about 1-2 days after the conjunction) would be 13-14 days later, while the subsequent sighting of the next first crescent would be 16-17 days later.⁶

Since the lunation is continuous, the description of the lunar cycle as beginning with the conjunction is a cultural construct; the lunar cycle could be measured from any other moment, just as with the Gregorian calendar’s “New Year.” As we will see, ancient

⁶ Contra both Finegan and Morgenstern (who Finegan cites), who seem to mistake the conjunction with the first crescent by claiming that “the exact moment of the fullness of the moon would come approximately fourteen and three quarter days after the moment of the appearance of the new moon.” Julian Morgenstern, “Supplementary Studies in the Calendars of Ancient Israel,” in *HUCA* (Cincinnati, Ohio: Hebrew Union College, 1935), 25; Finegan, 15. This will be significant in my discussion of the Qumran calendar texts.

astronomers and calendar makers seem to have chosen not only the conjunction (i.e., the dark moon), but also the appearance of the first crescent and the full moon as moments to begin their count of the lunation.

APPENDIX B
THE THEORY, PRACTICE AND CONTEXT OF THE *CDM* CALENDAR

In this appendix my aim is to examine the detailed workings of the *CDM* calendar, including addressing and working out some of the problems that scholars have encountered in trying to see the 364DC as a real-life priestly practice. I will discuss the theory and practice of the *CDM* calendar, as well as reasons for placing it in a historical sequence of 364DC calendar development between the *AB* and *Jubilees*.

Overview of the DSS Calendrical Texts

A number of explicitly calendrical texts have been identified among the DSS found at Qumran. Written in Hebrew, the calendrical texts are different from other Qumran texts in that they tend to be very terse lists of dated events that take place in the course of days, weeks, months, or years. While not laid out in a matrix of rows and columns as are modern calendars, these lists are true calendars in the sense that they describe events that take place on different days in the course of a year. They do not list every day of the calendar but only days that are of some significance, such as the beginning of a month or the observance of a Sabbath or holiday. They also vary in their level of detail and the types of events listed. Most are only partly preserved, but some are very well preserved, allowing a full reconstruction

We can sort the texts into different 364DC traditions (as discussed in Chapter 2): the Enochic Mishmarot, Jubilean and Neutral families.

Enochic Mishmarot:

Included here are texts that describe a six-year calendar that includes a lunar cycle, or texts that mention longer cycles of years that are related to the six-year lunation pattern.

- 4Q320, 4Q321, 4Q321a (the Calendrical Documents/Mishmarot A, B and C (CDM))¹ are well-preserved lists that coordinate the twenty-four weekly priestly courses-mishmarot, the duty shifts of the priests, with the lunation over a six-year cycle of the 364DC.
- 4Q319 (4QOtot) is a well-preserved text that coordinates the six-year cycle of priestly courses with the seven-year-šemitah cycle and the forty-nine-year jubilee cycle.²
- 4Q330 lists only the priestly shift on duty for the first day of the year for consecutive years, including a seven-year cycle of the šemitah, similar to 4Q319.³

Jubilees:

All of these texts are poorly preserved. Nevertheless, they are grouped here because they do not display any lunar element and do display the special festivals of the *Temple Scroll*.

- 4Q337 is probably a roster of Sabbaths similar to 4Q324b.⁴
- 4Q325 is a fragment coordinating the annual holidays with the months and priestly courses; since it refers to the Wood offering, it may also have included other holidays known from The Temple Scroll.⁵

¹ While there are some differences between these three documents, hence their different designations, it is generally agreed that they are slight variants of the same calendar that includes the synchronization of solar, lunar and weekly elements. 4Q320 also includes passages of shorter, summary calendars similar to some of the other calendrical documents. For purposes of the discussion that follows I will draw on individual passages from 4Q320-321a as examples of the calendar they describe in common. For brevity, I will use “CDM” as an abbreviation for “*Calendrical Documents/Mishmarot*.”

² Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 201.

³ *Ibid.*, 151-154.

⁴ *Ibid.*, 156.

⁵ *Ibid.*, 129.

- 4Q326 is a list of Sabbaths not coordinated with the priestly courses, but possibly includes a reference to the Priests investiture mentioned in the Temple Scroll.⁶
- 4Q394 1-2 mentions the feasts of Oil and Wood sacrifice, possibly summary statements pertaining to the four quarters of the year. Biblical festivals don't appear, but are probably just missing.⁷

Neutral:

These are grouped here because they display neither the lunar cycle nor the special festivals of the *Temple Scroll*.

- 4Q322,⁸ 4Q323,⁹ 4Q324,¹⁰ 4Q324a, are very fragmentary texts that seem to mention the priestly courses, but seem to be summaries listing just the sequence of Sabbaths.
- 4Q324b seems to be the “remains of a calendrical document, in which the annual Sabbaths were sequentially enumerated.”¹¹ This may possibly including language similar to the Temple Scroll, but may simply be the remains of a weekly mishmarot list (like 4Q324a).
- 4Q324c may be a fragmentary piece of a mishmarot register like 4Q321.¹²
- 4Q328, 4Q329 and 4Q319 VII list the priestly shifts serving during the first week of each year in the six-year cycle, and then the first week of each season.¹³
- 4Q329a lists only the priestly shift on duty for Passover in the sequence of the six-year cycle.¹⁴

⁶ Ibid., 133, 137.

⁷ Ibid., 157-166. This text was formerly designated 4Q327 and considered part of MMT; see also VanderKam, “The Calendar, 4Q327, and 4Q394,” 192.

⁸ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 93-97.

⁹ Ibid., 99-101.

¹⁰ Ibid., 103-106.

¹¹ Ibid., 116-117.

¹² Ibid., 119-122.

¹³ Ibid., 139.

¹⁴ Ibid., 147.

The variety found among the fragmentary calendar lists – some listing holidays or Sabbaths, some coordinating with the priestly courses, some listing the additional holidays found in *The Temple Scroll*– hint at various levels of detail and purpose. As discussed earlier,¹⁵ various scholars have advocated different solutions, including the needs of diverse echelons of the Qumran sect, historical or regional developments, and different schools of the 364DC. It seems to me that the various explanations are not necessarily mutually exclusive, i.e., I suggest that historical developments may have initially led to the different versions of the 364DC, and that they were preserved or used at Qumran by different echelons.

However, the focus of my discussion will be the most detailed calendars, the *CDM*, which most closely related to the *AB*. They are of particular interest because they are concordant calendars that synchronize the lunar, stellar/solar and Sabbath cycles that display a vision of practical and cosmic harmony, with no apparent polemical element. As a result, my thesis is that they reflect the actual priestly calendar of the Second Temple, representing a stage between the *AB* and *Jubilees*.

Description of the *Calendrical Documents/Mishmarot A, B and C*

The *CDM* texts share certain elements with the *AB* of *1 Enoch*, especially an underlying 364-day calculated year that includes the intercalation of an additional 30-day lunation every three years. Apart from this, they are radically different from the *AB* in form, content and purpose. Unlike the *AB* or *Jubilees*, there is no theory or discussion of why this calendar is set up the way it is; it is simply there. It is clear that the emphasis of

¹⁵ See above Chapter 2, “The Variety of 364-Day Calendar Traditions.”

the texts is cultic because they assign dates to only the sacred days of the year: the weekly Sabbath, two points in each lunation, the beginnings of the schematic months, and the annual holidays mentioned in the Pentateuch. The rest of the year's days are ignored altogether.

In addition to the cycles of the 364-day year and the lunation, the *CDM* integrate another temporal rhythm, namely the seventh-day Sabbath. This is expressed through the inclusion of a new element, the twenty-four week cycle of priestly courses in the Temple listed in 1 Chr 24:7-18.¹⁶ This list was probably the reason why Milik labeled these “*mishmarot*” texts.¹⁷ Based on the Qumran documents, scholars have completely reconstructed a six-year calendar.¹⁸ In addition to the general features of the 364DC listed above, the *CDM* calendar lists include the following:

1. The weeks are named for the priestly family on duty that week. Thus, “the second in Abijah” would refer to the Monday of the week of Abijah. It appears that the priests actually changed shifts on the Sabbath afternoon, and the Sabbath was named for the family that began its shift that day, based on evidence in the Bible, Talmud and

¹⁶ Milik, *Ten Years of Discovery in the Wilderness of Judaea* 41; cf. Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 9. While the list of 24 priestly families is in the same sequence in both the DSS Calendrical texts and 1 Chr 24:7-18, the starting points are different. In Chronicles the list starts with Jehoiarib, while all the DSS Calendrical texts begin with Gamul, which was 22nd on the Chronicles list. No convincing reason has been proposed for this difference, although some have suggested it has to do with a shift in the new year from the autumn to the spring; see for example Eisenman and Wise, 109; Beckwith, 91; Gardner, 304-305.

¹⁷ Talmon suggests that “the term *mishmarot* was introduced into the discussion by J. T. Milik.” While most of the literature refers to these as “*mishmarot*,” Talmon has changed their official description in the *editio princeps* to Calendrical Documents/Mishmarot; see Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 9. As noted by Talmon, the use of “*mishmarot*” needs to be qualified by the fact that the Qumran texts do not use this or any other technical term to refer to these priestly courses.

¹⁸ This has been conveniently included in *Ibid.*, 17-32; it must be noted, however, that Talmon has amalgamated multiple documents into a composite “Covenanters’ Calendar,” which includes non-Pentateuchal festivals that are only listed in some of the Qumran calendar texts, and are *not* listed in 4Q320-321a. For a complete reconstruction of 4Q321, see Talmon and Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot B^a* (4Q321).”

- Josephus.¹⁹ The Qumran texts are consistent with this, labeling both the Sabbath and the six days of the week following it for the same family on duty.
2. The *CDM* lists show a six-year cycle, probably because it takes six years until the 24 mishmarot cycle back to their starting place. That is,
 - a. Solar/stellar cycle: 6 years x 364 days = 2184 days = 312 weeks.
 - b. Sabbath cycle: 52 weeks x 6 years = 24 priestly families x 13 cycles of shifts = 312 weeks = 2184 days.
 - c. Two three-year calculated lunar intercalation cycles: 2 x ((6 lunations x 30 days + 6 lunations x 29 days) x 3 years + 30 day intercalary lunation) = 74 lunations = 2184 days = 312 weeks.²⁰
 3. They consist of two lists – one for lunations and another for annual festivals, each of which is referenced to the week named for a priestly family.
 4. The first list coordinates two phases of the moon with the priestly courses during alternating lunations of 30 and 29 days. At the end of 36 lunations, a 30-day lunation is added, which makes up for the “lost days” versus the 364DC, i.e., 364 (days in the 364DC) x 3 (years) = 354 (days in the 12 lunations of the lunar calendar) x 3 (years) + 30 (days). This pattern is then repeated to match the six-year cycle of priestly courses.
 - a. There is no term used in the texts to refer to the lunations; two phases are simply indicated (about which more will be said below). While the Hebrew term *ḥodesh*–month (with either the defective spelling *חֹדֶשׁ* (see for example 4Q320) or the full spelling *חֹדֶשׁ* (see for example 4Q321)) always means “lunar month” in rabbinic terminology and is generally assumed to mean the same thing in the Bible, in the *CDM* it refers exclusively to the twelve schematic months.²¹ The use of ordinal numbers for the schematic months of the mishmarot lists and the priestly writings of the bible tie these texts together, at least exegetically if not historically.
 - b. The lunar cycle wanders through the year regardless of the schematic months, similar to our experience living with the Gregorian calendar, but unlike the rabbinic lunisolar calendar.
 - c. The lunations of the Qumran calendar are based exclusively on calculation, requiring – and, seemingly, allowing for – no adjustment due to observation.

¹⁹ Talmon and Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot B^a* (4Q321),” 296; VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 72-73.

²⁰ Compared to the contemporary astronomical length of 29.5306 days/lunation x 74 lunations = 2185.2644 days, an excess of 1.26 days per 6 years; Gardner, 277.

²¹ One reason I prefer the technical term “lunation” to “lunar month” is because the meaning of term “month” is not self-evident; it is part of what is being argued about, both in the texts and by contemporary scholars studying the texts. Because the DSS Calendrical Texts never use term month-*חֹדֶשׁ* in reference to lunar months (see the concordance and texts in Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*), I have significant reservations concerning Beckwith’s analysis of the Qumran 364DC, for he assumes an equivalence between the *CDM* ordinal months and the rabbinic lunar month names which are rarely mentioned in the DSS, and never in the Qumran calendrical documents. See for example Beckwith, 90-91.

5. The second list describes the occurrence of the annual Pentateuchal holidays, giving the months and date with reference to the priestly courses. The months of 30, 30, and 31 days per quarter are of the same length as the solar months of the *AB*; the special status of the last day of each quarter in the *AB*'s count of the stellar year, as the cardinal day that separates the seasons, has disappeared, leading to the conclusion that *CDM* are a development subsequent to the *AB*. In addition, it is safer to describe these months as "schematic" since, unlike the *AB*, there is no explicit reference to the sun and no reference to any marking of the four cardinal days of the year.
6. The resulting calculated pattern of this six-year calendar thus perfectly synchronizes three cycles: the lunations, the 364-day stellar/solar year, and the week.

While the exact wording in each text is slightly different, the dates recorded are consistent and have allowed complete restoration of the texts.²² In order to examine the structure of the texts more closely, let's examine excerpts from 4Q321.²³

The first list in the document (4Q321 I, 1-8) reads as follows:²⁴

1. [on the first in Jedaiah on the tw]elfth in it. On the second in Abija[h on the twenty fifth in the eighth; and duqah on the third]
2. [in Mijamin on the twelfth] in it. On the third in Jakim on the twen[ty-fourth in the ninth; and duqah on the fourth]
3. [in Shecaniah on the eleven]th in it. On the fifth in Immer on the twe[n]ty-third in the te[n]th; and duqah on the sixth in Je]shebeab
4. on the tenth in] it. On the [si]xth in Jehezekel on the twenty-second in the eleventh month; and [duqah Sabbath of] Pethahiah
5. [on the ninth in it]. On the first in Jehoiarib on the t[w]enty-second in the twelfth month; and [duqah on the seco]nd in Delaiah
6. [on the ninth it. vac The] se[cond year]: The first. On the sec[on]d in Malchijah on the tw[entieth in the first; and] duqah
7. on the third in Harim on the seventh] in it. On the fou[r]th in Jeshua [on] the twentieth in the second; and [duqah on the fifth in] Hakkoz on the seventh
8. [in it. On the fifth in Huppah on the nine]teenth in the third; and duqa[h] on the six[th in E]l[iashi]b on the [si]xth [in it. Sabba]th in Aphses²⁵

²² Talmon and Knohl, "A Calendrical Scroll from a Qumran Cave: *Mišmarot B^a* (4Q321)," ; Shemaryahu Talmon and Israel Knohl, "A Calendrical Scroll from Qumran Cave 4: *Mišmarot B^b* (4Q321^a)," in *Texts, Temples, and Traditions: A Tribute to Menahem Haran*, ed. Victor Avigdor Hurowitz Michael V. Fox, Avi Hurvitz, Michael L. Klein, Baruch J. Schwartz, and Nili Shupak (Winona Lake, Ind.: Eisenbrauns, 1996).

²³ I use 4Q321 because it marks two points on the lunar cycle, while 4Q320 marks only one of these points. In addition, it notes the beginning of each schematic month, while 4Q320 does not.

²⁴ I have followed the convention that square brackets [] indicate reconstructed text and (parentheses) indicate explanatory comments.

²⁵ This is my own literal translation, based largely on the translation of Talmon and Knohl (who initially published the text), and emphasizes the terseness of the text. Talmon and Knohl, "A Calendrical Scroll

In order to unpack the meaning of this brief text, let us take line 6-7 as an example, where the beginning of the list for the second year is listed, and add descriptive comments:

6. The] se[cond year] (of the six year cycle): The first (schematic month of the year). (X takes place) on the sec[on]d (day - Monday)in (the week of the course of) Malchijah on the tw[entieth in the first (month); and] duqah
7. (takes place)on the third in (the week of) Harim on the seventh] in it (it = the first schematic month).

The day indicated but not named (which Talmon and Knohl term “X-day”) and *duqah* – דוקה are two types of days that need to be noted during alternating lunations of 30 and 29 days.²⁶ The interpretation and significance of these terms has been controversial, and will be addressed more fully below.

The second list records the dates of the holidays and the beginnings of the schematic months in the context of the priestly courses and the 364DC. A restored excerpt, 4Q321 4 IV, 8-9 reads as follows with descriptive comments added:

8. The fir]st [year]: (The first day of) [the fir]st mo[nth] (falls) in (the week of) Ga[mul; on the th]ird (day) in (the week of) Mo[‘aziah] in it (falls)
9. [the Passah; in (the week of) Jeda‘iah in it (falls) the Waving of the Omer. The (first day of the) second (month falls) in (the week of) Jeda‘iah; in] (the week of) Se‘orim [in it (falls) the Second Passah.]²⁷

from a Qumran Cave: *Mišmarot B^a* (4Q321),” 282-283. See also Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 69-70. No punctuation exists in the text, and it is possible to construct the sentences differently, resulting in significantly different reading, as in García Martínez, *The Dead Sea Scrolls Translated: The Qumran Texts in English*, 454-455.

²⁶ The day referred to as *duqah*-דוקה in 4Q321 appears as *duqo*-דוקו in 4Q321a, and does not appear in 4Q320.

²⁷ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 75. See also Talmon and Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot B^a* (4Q321),” 288.

The Needs of the Priests: Reconsidering the Purpose of the *Calendrical Documents/Mishmarot* Lists

Temporal Cycles and the CDM: A Sabbatarian Calendar

The key question is: What is the purpose of these lists?

VanderKam explains these lists as part of the theology and liturgical practice of the Qumran covenanters:

The calendars are, with few exceptions, oriented towards worship. In the case of the priestly divisions, it seems as if the covenanters worked with this institution because they anticipated a return to the Jerusalem sanctuary and to service in it according to what they believed was the divine will. The group seemed to have been confident that their exile from the temple was only temporary.... The liturgical and theological emphases of the Qumran calendars betray a heavy influence from priests and priestly traditions.²⁸

Talmon claims that, “The momentous importance of the proper division of time is further evinced by the large number of fragments of a variety of calendrical compositions found at Qumran, which are apparently attuned to the diverse needs of discrete strata of the [Renewed] community.”²⁹ The texts that mention the *mishmarot* “are the priesthood’s special, and possibly exclusive, concern.”³⁰ Talmon also focuses on the provenance of their discovery and the dating of their paleography to the first or second century B.C.E. to attribute the *CDM* texts to the Qumran sectarians.³¹

²⁸ VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 112.

²⁹ Talmon, “Calendar Controversy in Ancient Judaism: The Case of the ‘Community of the Renewed Covenant,’” 394. While in the *editio princeps* Talmon reiterates this perspective concerning the purposes of the “pluriformity” of calendrical texts, he also leaves open a small possibility that the variations among the DSS, the *AB* and Jubilees indicate the kind of historical development I am suggesting by concluding his introductory essay with the following: “The possibility that certain variances among the Covenanters’ calendar-related documents may reflect a synchronous use of somewhat-differing chronometric schedules or evidence diachronic developments of the calendrical system by which they abided must also be taken into account”; Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 14.

³⁰ Talmon, “Calendar Controversy in Ancient Judaism: The Case of the ‘Community of the Renewed Covenant,’” 394.

³¹ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 41, 68.

While I agree that these texts betray a heavy priestly emphasis, that calendrical issues are important to those who gathered the Qumran library, that the 364-day solar calendar may have been used at Qumran, and even that a calendar dispute quite possibly prompted the creation of the Qumran sect as portrayed in the sectarian documents, I do not believe that we therefore must conclude that these texts are part of the sectarian corpus of Qumran or were originally authored by the sectarians. Importantly, the DSS Calendrical texts do not betray any use of sectarian terminology.³² In fact, it is important to note that the *CDM* texts include only the Pentateuchal holidays; they do not include the non-Pentateuchal holidays of Wood, Oil, Wine and Priests' Installation prescribed in the *Temple Scroll*, nor utilize the 26 *mishmarot* reported in the *Temple Scroll* and alluded to in the *War Scroll*.³³ Therefore, there is no need to conclude that they are original sectarian compositions. In fact, based on the following discussion, my contention is that the copies found at Qumran are witnesses to much older priestly practices that preceded Qumran, probably from the Persian period hundreds of years earlier than the occupation of Qumran.

I think that we can get a new perspective on the purpose of the *CDM* texts if we adhere closely to the text itself and try to understand how the information it provides would be of use, and to whom.

³² See the discussion above concerning "What is a 'Sectarian' Text?"

³³ I prefer to use the term "Pentateuchal holidays" rather than "biblical" (see for example Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 7) to indicate that while most scholars see the holidays of Wood, Oil, Wine and Priests' Installation as unique to the Qumran sect since there is minimal other evidence of their observance, it is nevertheless possible that they were observed in a non-sectarian context. In particular, they are at least exegetically connected to observances mentioned in the Bible, and some scholars believe that Nehemiah knew of these holidays (see discussion below on the *Temple Scroll*). Therefore, even the inclusion of these festivals in a calendrical document does not guarantee that it is an exclusively "sectarian" text authored by the Qumran sect.

The texts themselves are made up of lists, but they are odd lists for those of us accustomed to modern calendars. Our calendrical convention marks time with the following order of increasing specificity: year; month; day (within the month). In the Gregorian calendar the year is fixed, the months within a year are fixed, the date within the month. Events are marked within that time grid. Weeks are a separate, independent cycle that groups the days, but while the days of the week have importance, the week itself has no name and little importance in comparison.

I believe the *CDM* texts describe a different framework whose significance has been overlooked. The hierarchical organization of time embedded in the calendar of these texts is: year; week (in the form of the *mishmar*); schematic month; day. The day is given in reference to both the *mishmar* and the month. That is to say: while in contemporary America, for example, we typically date events to the day in a particular month and year (e.g., Independence Day to July 4, 1776) and occasionally by day of week and month (e.g., Thanksgiving to the third Thursday of November), the Qumran calendar marks events in relation to the *mishmar*. The week is the fundamental temporal pattern of this calendar; everything else is defined in terms of these weeks, which are named for the *mishmar* on duty.³⁴ In the list of holidays, the beginnings of the schematic months and the biblical feasts are dated in reference to the *mishmar*; similarly, the listing of the lunar cycle is marked in relation to the *mishmar* and the schematic month.

³⁴ An echo of the importance accorded the weekly *mishmarot* might be found today in the Jewish practice of naming the weeks of the Hebrew lunisolar calendar for the portion of the Torah read at the end of that week in the synagogue. Similarly, the ancient practice of Jews in the land of Israel to follow a three-year cycle of Torah readings (in contrast to the Babylonian one-year cycle) may be related to the three-year cycle of lunar intercalation in the 364DC. These are only speculations at this point, and will require an additional investigation.

The best description of this calendar is *sabbatarian*. While most scholars have tended to describe this as a “solar” calendar, due to the focus on a supposed “solar” year of 364 days, and even though I have emphasized that the 364-day year is better seen as an average of three lunar years that supposedly synchronizes with the sun and stars, it seems that for the composers and users of the DSS Calendar texts the *primary* cycle was that of the Sabbath.

The Work Schedules of the Priests

Since Milik’s first publication of these texts, scholars have emphasized the importance of the Sabbath in this calendar. They have noted that the annual holidays and the first day of the months *never* fall on a Sabbath, suggesting that this reflects a theology that highlights the importance of the weekly Sabbath, for it is never overshadowed by a comparatively rarer annual observance.³⁵

However, I want to emphasize a number of factors that help us both to understand both the workings of this calendar and the practical side of the religious activities it regulates; it is this practical aspect that makes it seem more likely that this calendar was actually used in the Second Temple. The lack of overlap between the holidays and Sabbaths, for example, makes the planning and administration much easier because you never have overlapping sacrifices.

I suggest that the reason there are two lists in the *CDM* texts – one for the lunar cycle and the other for holidays – is due to function and convenience. The holiday list is simple because the holidays fall on the same day of the week and the same date of the same schematic month each year; what varies during the six-year cycle is the priestly

³⁵ This is particularly consistent with the emphasis on the Sabbath known from *Jubilees*.

course in charge of that week of the year. The other list reports the lunation, which varies year-to-year within a three-year cycle (which is repeated twice in the six-year priestly cycle), with reference to the priestly courses in charge of each week during the six-year cycle. Thus, both the holiday and lunar cycle lists are described in reference to the priestly courses; it is through the priestly courses that they are correlated. While today we date events to months and years because that is how we construct our framework for measuring time, the *mishmarot* texts imply that for this 364DC the sequence of the priestly courses was the unvarying framework for marking time within which the other events took place.

Why?

The role of the priestly courses in coordinating these two lists leads me to the following hypothesis: the *mishmarot* texts are the work schedules of the priests operating the Temple. They are simple, utilitarian documents describing who has to do what, and when they have to do it. They are eminently practical, listing just what a functioning priesthood would need to know in order to plan ahead so that each priestly family could prepare for the observances for which they would be responsible.

Let's consider the practical context, the life setting of the Second Temple, where the cult was centralized in Jerusalem. Most of the priests lived throughout the countryside and on the week of their course each priest traveled to the Temple to take their turn.³⁶ Of course, it was easy to keep track of when the turn for your family was due, every 24 weeks. What the *mishmarot* texts allowed the priests to do was plan ahead: they were able to anticipate and prepare. The weeks – not the months or years – were the primary

³⁶ A well-known example of this weekly shift is reported in Luke 1:5-9.

temporal cycle by which the priests regulated and managed their activity. If this was how the priests scheduled their work, no wonder there was a priestly emphasis.

It is worth considering the fact that throughout the ancient Near East the astronomical and calendrical reckonings were the domain of the priests. While it is clear that a sabbatarian ideology is a prominent feature of the Qumran calendar, another important characteristic is that *it makes life much easier for the priests*. Given the sabbatarian orientation of the Jewish cult, it would make practical sense for the priests to maintain a calendar that was oriented around their organizational and administrative needs, particularly subsequent to Nehemia's (re)enforcement of the seventh-day Sabbath (see Neh 13:15-31).

The way the weeks are named for the *mishmar* (both here and in Rabbinical texts) also testifies to the practical nature of the *mishmarot* texts. We know that the duty shift change took place on Sabbath afternoon, with one priestly course ending and a new one beginning.³⁷ Logically, one could name the Sabbath either for the name of the course that was ending its shift or the course beginning its shift. Given the sabbatarian orientation of the Temple cult, one might logically think that the Sabbath should be named for the course that *ended* its work week with the morning sacrifices on the Sabbath; after all, this would echo the complete week of creation described in Genesis 1-2:4a. Nevertheless, the Sabbaths are named for the course *beginning* its shift on the Sabbath, before the next week has begun. Why? I think it is because this was an important day for the priestly course that was to begin its week of service: *they had to show up for work*. If they didn't

³⁷ Talmon and Knohl, "A Calendrical Scroll from a Qumran Cave: *Mišmarot B*^a (4Q321)," 296; Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 10, VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 72-73.

live in Jerusalem, they would have to make arrangements to travel and arrive there before the Sabbath.

While it would be easy enough to have a calendar that simply listed the annual holidays with reference to the month of the year (and some of the briefer, poorly preserved Qumran calendar texts seem to do so), the *mishmarot* calendars list the annual holidays with reference to the weekly shift changes. This is because each family's shifts changed through the six-year cycle, equalizing the work, both in terms of burden and benefits. As Glessmer has pointed out, a system like this which shifts "the starting point of the rotation every year four positions has the advantage of distributing the economical possibilities to each priestly group to be on duty on festivals more or less equal."³⁸ Therefore, the *mishmarot* texts have a list that lets them know for which holiday they had to plan. Similarly, the first day of the schematic month is noted, probably because this was considered the observance of the "new month – ראש חדש," at which time the Bible prescribed the blowing of trumpets and special sacrifices (cf. Num 10:10; 28:11).³⁹

The 364DC and Historical Events

Fragments of texts that use the priestly courses as a way of dating events with identifiable historical figures simultaneously demonstrate the practical use of the 364DC and the primacy of the weekly priestly courses in the construction of time. 4Q331-333

³⁸ Glessmer, "The Otot-Texts (4Q319) and the Problem of Intercalations in the Context of the 364-Day Calendar," 144.

³⁹ The term used in Num 10:10 and 28:11 is ראש חדש, which is usually translated as "new moon," the Talmudic and traditional Jewish understanding. Nevertheless, while the term is not used in the *CDM*, it seems that this meaning is fairly certain given that the term "רוש החודש" is preserved in 4Q325 in reference to the beginning of a schematic month (4Q325 1, 6; 2, 4; 3, 2); see Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 126-130.

mentions identifiable historical characters active during 76-63 B.C.E.,⁴⁰ but date them by reference to the priestly courses, in a fashion similar to the holiday dating lists of *CDM*. For example, 4Q333 mentions murders by Amelios, a general in Pompey's Roman army, which are referenced to dates in the weeks of Jehezkel and Gamul.⁴¹ 4Q332 mentions Salome and Hyrcanus, most likely referring to Queen Salome Alexandra and her son Hyrcanus II, and alludes to a conflict, probably the one between Hyrcanus II and his brother Aristobulus:⁴²

1. [to]give him honour among the Arab[s]
2. [on the n]inth of Shebat, this (is)[]
3. [] which is the [tw]entieth in the month[of]
4. []with secret counsel Salome came []
5. [] to confront the[]
6. [] Hyrcanus rebelled[against Aristobulus]
7. []to confront[] (4Q332 2, 1-7)

The use of the 364DC to record secular, historical events would lend weight to the view that the calendar was actually used, not merely a theological construct. Indeed, his passage clearly reveals the simultaneous use of both the lunisolar and 364DC calendars during the first century B.C.E. While this is during the Qumran period, my main point here is that the 364DC could have been used in a practical way.

Besides the historical context – or, perhaps because of it – we probably have one of the few references in the DSS to the lunisolar calendar, which is mentioned in the context of double dating between the lunisolar calendar and the 364DC, a rare instance of *true* calendar “concordance.” Line 2 references the ninth of “Shebat,” a month of the lunisolar

⁴⁰ Wise, Abegg, and Cook, *The Dead Sea Scrolls: A New Translation*, 313. See also, Fitzmyer, 274-289.

⁴¹ Fitzmyer, 288-9.

⁴² *Ibid.*, 283-5. See also the discussions in Snyder, 193-264 and VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 86.

calendar. In line 3 is the coordinating term “this is,” designating the equivalent date as “the twentieth” in a “month” whose description is missing; this is likely a month of the 364DC because fragment 1 of the same document (4Q332 1, 1-3) contains references to both a priestly course and ordinal month names of the 364DC.⁴³ As Talmon points out, the priestly courses were also used as a dating device in rabbinic literature, but here we have an example of the priestly course and schematic month of the 364DC being coordinated with the rabbinic calendar.⁴⁴ It also appears that in these documents, the term “month” is only used in reference to the schematic months of the 364DC, not the Babylonian month names. While this is a very small sample, this use is consistent with the *CDM*'s use of the term “month” exclusively with the schematic months, and not the lunations.

The Needs of the Priests, the Lunar Cycle and the Meaning of duqah/duqo

But, what about the *mishmarot* list devoted to describing and marking two days of the lunar cycle? What is its purpose?

There have been a number of scholarly speculations. The early perspective was that these were tables for coordinating a 364-day “solar” calendar with the “standard” lunisolar calendar (most extensively described in the Mishnah). Thus, the Qumran texts were described as “synchronistic” or “concordant” calendars, implying a need for the Qumran “sectarians” to synchronize their “solar” calendar with a “lunar” calendar that was normative in Jerusalem, and to coordinate “solar months” with “lunar months.”⁴⁵

⁴³ Fitzmyer, 282.

⁴⁴ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 12-13.

⁴⁵ Examples of use of these terms include: Wise, “Second Thoughts on *duq* and the Qumran Synchronistic Calendars,” 98; Milik, *Ten Years of Discovery in the Wilderness of Judaea*, 108; VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 58.

The main problem with this hypothesis is that if the presumed proto-Rabbinic calendar was based on *observation* (as reported in the Mishnah), the *calculated* lunar cycle tables in the Qumran *mishmarot* texts would be of little use for coordination.

It is worth noting that the Qumran calendar texts use the word *hodesh* exclusively in reference to the schematic month, much as in English we use the term “month” to refer to a schematic month unrelated to its etymological source in the word “moon.” Thus, the use of the term “lunar month” rather than a more neutral term like “lunation” led scholars astray, just as the term “solar year” has misled scholars from the underlying lunisolar form of the 364DC.

There are other scholars who also emphasize the “solar” perspective of the 364-day calendar; but in this case, why would the lunar cycle be important? Why isn’t it just eliminated? When they published 4Q321, Talmon and Knohl argued that these texts are strictly sectarian, writing that the

moon is portrayed as the source of the dark days of evil....the dichotomy between ‘darkness,’ represented by the waning moon, the omen of ‘evil,’ and ‘light,’ represented by the sun, the symbol of ‘good.’ The synchronization of the lunar nights (and days) of darkness with the parallel dates in the solar calendar is intended to enable the Covenanters [of Qumran] to beware of these negative periods of time in the lunar month.⁴⁶

This position was similarly restated in the subsequent publication of the *editio princeps*.⁴⁷ However, I think this interpretation is highly speculative and unlikely; indeed, the authors bring no supporting evidence from any related texts, simply asserting that, “In

⁴⁶ Talmon and Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot B^a* (4Q321),” 299. See also Talmon and Knohl, “A Calendrical Scroll from Qumran Cave 4: *Mišmarot B^b* (4Q321^a),” 409. My position agrees with that of VanderKam, who argues that the “text does not support at all the opinion of Talmon and Knohl”; see VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 122 n. 27.

⁴⁷ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 35-36, 79.

many cultures, the waning moon is conceived as a portent of danger and doom,” followed by a reference to Eliade.⁴⁸

The Meaning of *duqah/duqo*

I suggest, rather, that if we think of these as the work schedules for the priests and think of their needs we will get a better answer. I suggest that the reason two days are marked in each lunation is that the priests needed to ritually mark the occurrence of the new and full moons, based on an interpretation of Psalm 81:4-5: “Blow the horn on the new moon, on the full moon for our feast day. For it is a law for Israel, a ruling of the God of Jacob.”⁴⁹

The priests had to do something: *sound the shofar*. That’s why it is noted on the *CDM* calendar lists. The calculations of “X-day” and *duqah/duqo* in the *CDM* texts can be understood as two moments of the lunation that were important to the priests in order to perform their duties: the new moon and the full moon.⁵⁰ The lunations do not fall neatly in a sabbatarian or annual scheme; thus they require a list separate from that of the annual holidays. Indeed, something is being a “coordinated,” but not lunar and solar calendars; rather, the annual holidays and lunations are being coordinated with priestly courses.⁵¹

⁴⁸ Ibid., 79. Elio agrees with Talmon and Knohl, presenting it as part of the symbolism of light vs. dark as good vs. evil adopted by the Yahad, but similarly fails to show how this symbolism is intrinsic to the lunation as described in either the *AB* or the *CDM* texts; Elio, *The Three Temples: On the Emergence of Jewish Mysticism*, 134.

⁴⁹ This translation is from the NJPS. While there is scholarly debate about the meaning of the Hebrew in Ps 81:4 – which I will address in the next section below – the end result is the same for the purpose of this discussion.

⁵⁰ I will discuss my proposal for their understanding in the next section.

⁵¹ This is similar to VanderKam’s observation that “the Qumran community operated with both solar and lunar data, not just the solar calendar, and synchronized the two with the weekly duty of the twenty four priestly divisions in the temple,” VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 86. I’m

If we look at the at the *CDM* as the work-schedule of the priests in relationship to the calculations of “X-day” and *duqah/duqo*, this can both clarify the identity of those lunar phases and re-enforce the practical nature of these texts. The meaning of these two terms has been much debated by scholars. *Duqah/duqo* follows the X-day by 16 days in a 29-day lunar cycle or 17 days in a 30-day lunar cycle, and the next X-day always follows the *duqah/duqo* by 13 days.⁵² The first day of the *CDM* calendar is also an X-day,⁵³ with the first *duqah/duqo* day coming on the 17th of a 30-day lunar cycle.

As Talmon and Knohl state, “the term דוקה is a hapax legomenon in the published Qumran writings. It is not attested in Biblical or Rabbinic Hebrew.”⁵⁴ While Milik claims that *duqah/duqo* is related to “the root *dwq* meaning to ‘examine, observe’”⁵⁵ and therefore refers to the observation of the new moon, Talmon and Knohl counter that, “the term should not be etymologically derived from דוק but rather from דקק, ‘to be thin’. The word דוקה thus pertains to the time when the moon begins to wax thin.”⁵⁶

The interpretation first proposed by Milik (and supported by others such as VanderKam, Wacholder and Abegg) deduces that the X-day is the full moon, and that the

just not certain we can be so sure about what the “Qumran community” used, as there are multiple 364DC traditions, or that the calendar reflected in 4Q321-4Q321a was limited to the “Qumran community.”

⁵² These 29 and 30 day lunar cycles alternate, to adjust for the actual length of the lunar revolution about the earth of approximately 29.5 days.

⁵³ As well as an ארת-sign day, according to 4Q319 and 4Q320; see more on this below in the section on the vernal equinox.

⁵⁴ Talmon and Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot B^a* (4Q321),” 297.

⁵⁵ Milik, *Ten Years of Discovery in the Wilderness of Judaea*, 152, n. 5.

⁵⁶ Talmon and Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot B^a* (4Q321),” 298. This view is reiterated in Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 35-36.

duqah/duqo is the new crescent moon.⁵⁷ This is largely based on a reading of the preamble to the calendar list in 4Q320:

1. []to its being seen (or: appearance) from the east
2.]to[sh]ine[in]the middle of the heavens at the foundation of
3. [Creatio]n from evening until morning on the 4th (day) of the week
4. [of Ga]mul in the first month in [the fir]st
5. year vacat (4Q320 1 I, 1-5)⁵⁸

Abegg argues that “the Qumran theologians reckoned that the moon was created full,”⁵⁹ and VanderKam, supporting Milik, argues that the opening passage of 4Q320 gives weight to interpreting the X-day that starts the lunar cycle is also the beginning of the lunar “month”⁶⁰ in this calendar. This interpretation is also based on the appearance in 4Q320 and 4Q319 (4QOTot) of the term “*אֵרֶת-סִיגְנָה*” as the designation for the first day of each three-year cycle which is always identical with an X-day; this seems to indicate the return of the lunar cycle to the moment associated with its creation, for the term *אֵרֶת-סִיגְנָה* is clearly an allusion to Gen 1:14, which uses this term as a description of the divine purpose of the heavenly luminaries.

By contrast, Talmon and Knohl contend that the X-days refer “to the last day in every single lunar month, that is, to the days of the moon’s eclipse. It follows that *דּוֹקָה*, which as said precedes X by thirteen days, designates the onset of the moon’s waning in

⁵⁷ Milik, *Ten Years of Discovery in the Wilderness of Judaea*, 152, n.5; Ben Zion Wacholder and Martin G. Abegg, *A Preliminary Edition of the Unpublished Dead Sea Scrolls: The Hebrew and Aramaic Texts from Cave Four. Fascicle One* (Washington, D.C.: Biblical Archaeology Society, 1991), 60.

⁵⁸ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 43-44.

⁵⁹ Abegg, 406.

⁶⁰ VanderKam, “Calendrical Texts and the Origins of the Dead Sea Scroll Community,” 381.; VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 79.

mid-month.”⁶¹ Wise gives this a slight twist, contending that the lunar “month begins at or near the conjunction, and special attention is paid to the day of the full moon and to the final day of visibility.”⁶² The following table summarizes the three views of X-day and *duqah/duqo*-דוקה/דוקו:

Lunar Cycle	Milik, VanderKam, Wacholder/Abegg	Talmon/Knohl	Wise
X-day	Full moon	Dark moon (conjunction)	Last crescent
16 or 17 days later (for a 29 or 30 day lunar cycle)			
<i>duqah/duqo</i> -day	New crescent	Waning (day after full)	Full
13 days later			
X-day	Full moon	Dark moon	Last crescent

Table 5: Three Views of X-day and *duqah/duqo*-דוקה / דוקו

If the *CDM* texts are practical, of the pairs of days on this chart only the first column – the full moon and the new crescent – could be counted as astronomical phenomena which the priests needed to know, i.e., when to blow the shofar. Neither of the pairs of days suggested by Talmon/Knohl or Wise fit that need of marking full and new moon, regardless of whether the “new” lunar cycle was thought to begin at conjunction, first crescent or full. My reading therefore supports the view of Milik, VanderKam, Wacholder and Abegg. Even if one were to agree with Talmon and Knohl’s

⁶¹ Talmon and Knohl, “A Calendrical Scroll from a Qumran Cave: *Mišmarot B^a* (4Q321),” 298. Talmon took the opportunity of publishing the *editio princeps* to reiterate and elaborate his position; see Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 13-14, 30-36, 67-68. Despite paying special attention to the lunation for many moons, at least *I* find it very difficult to distinguish the astronomical full moon from the moon that appears one day later, even when I know that moment astronomically. Long says this is because the moon “will appear full for at least a day before and after the exact moment when it is astronomically ‘full’ – and sometimes for two or three days – because its spherical shape does not immediately begin to show the shadow lingering on the left side just before the full moon or the shadow on the right side just after full moon,” Long, 48.

⁶² Wise, “Second Thoughts on *duq* and the Qumran Synchronistic Calendars,” 119.

proposed etymology of דוקה from דקק, it seems more likely that this refers to the thinness and delicate appearance of the first crescent.⁶³

Archeologists have found evidence of a site from which the priests actually did blow horns in the Temple well into Herodian times in the form of a large stone discovered near the southwestern corner of the Temple with a niche in it. On it is inscribed, “For the place of blowing to dec[lare] – [ריז] לבית התקיע להכ[ריז].”⁶⁴ It is worth noting the linguistic link, in that the same word is used in both the archeological find and Ps 81: “blow - תקע.” This could be the place from which Josephus reports that a trumpet was sounded to signal the beginning and end of the Sabbath,⁶⁵ but it is also likely that this spot was used for signaling other observances as well, such as Remembrance Day (later called Rosh Hashanah by the rabbis), and the new and full moon.

A Proposed Priestly (and Qumranian) Understanding of Psalm 81:4-5

But why do *two* days of the lunation need to be marked? It seems odd, given that Rabbinical Judaism is famous for marking one day, the first crescent of the new moon. In this section I want to elaborate on my proposal that the priests needed to ritually mark the occurrence of the new and full moons based on an interpretation of Psalm 81:4-5:

תקעו בחדש שופר בכסה ליום חגנו

כי חק לישראל הוא משפט לאלהי יעקב

Blow the horn - שופר on the new moon - חדש (?), on the full moon - כסה (?) for our feast day

⁶³ Snyder comes to a similar conclusion supporting the position of Milik, et. al., but arrives at it based on a comparative analysis by running the patterns backward to the purported first day of creation. See Snyder, 168-186. Glessmer also supports this position, after reconsidering the various arguments; see Glessmer, “Calendars in the Qumran Scrolls,” 240-252.

⁶⁴ Hershel Shanks, *Jerusalem: An Archaeological Biography* (New York: Random House, 1995), 157.

⁶⁵ Josephus, *J.W.* 4.582.

For it is a law for Israel, a ruling of the God of Jacob (NJPS translation)

The challenge is that the meaning (and, hence, the proper translation) of this passage has been varied and controversial among scholars ancient and modern. The issue depends a great deal on the interpretation of the two terms in Ps 81:4 indicated by question marks, כסה and חדש.

Keseh-כֶּסֶה appears only twice in the Bible, in Ps 81:4 and Prov 7:20, and its meaning is controversial. As Freehof observes, all the traditional Jewish commentators agree on one meaning, namely the *new* moon, while virtually all modern, academic commentators translate it as *full* moon.⁶⁶ Klein admits this lack of clarity by defining *keseh* as “new moon or full moon.”⁶⁷

Prov 7:20 helps clarify the meaning of *keseh* in only in the sense that it is a particular day of the month:

ליום הכסה יבא ביתו

He will return on the day of the *keseh*

The uncertainty concerning the meaning of *keseh* is also illustrated by Gandz’s suggestion that a generally unrecognized third reference appears in Job 26:9. Most translations interpret כסה as כֶּסֶה, an alternative spelling of כִּסֵּה-*kiseh*-throne, but Gandz contends this should be read as כֶּסֶה-*keseh*-full-moon, and that the verse, therefore, refers

⁶⁶ Solomon B. Freehof, “Sound the Shofar – ‘Ba-Kesse’: Psalm 81:4,” *JQR* 64 (1974): 225.

⁶⁷ Ernest Klein, *A Comprehensive Etymological Dictionary of the Hebrew Language for Readers of English* (Jerusalem: Carta Jerusalem, The University of Haifa, 1987), 281. Both positions are reviewed in detail by Norman Snaith, *The Jewish New Year Festival: Its Origins and Development* (London: Society for Promoting Christian Knowledge, 1947), 99-103; Freehof; and more recently by Othmar Keel, *Goddesses and Trees, New Moon and Yahweh*, *Journal for the Study of the Old Testament, Supplement Series* 261 (Sheffield: Sheffield Academic Press, 1998), 106-107. Keel suggests that Ps 81 is “most probably post-exilic”; although Keel does not give a reason for this conjecture, I think it is supported by the other two appearances of *keseh*, in the post-exilic texts of Proverbs and Job.

to a lunar eclipse.⁶⁸ I agree that Gandz’s translation, which replaces “throne” with “moon,” makes more sense of the passage, but I believe we are no closer to deciding whether this means *full* or *new* moon; it is just as reasonable to invert Gandz’s proposal, and understand the passage as concerning the hiddenness of the *new* moon:

מֵאֲחֹז פְּנֵי כִסֵּה פָרָשׁוֹ עָלָיו עָנְנָו

He shuts off the view of His throne, Spreading His cloud over it (NJPS)

He covers the face of the full-moon, Spreading His cloud over it (ala Gandz)

He covers the face of the new-moon, Spreading His cloud over it (my suggestion, inverting Gandz).

Therefore, the various hypotheses for *keseh* mainly turn on the interpretation of the couplet in Psalm 81:4.

Fortunately, there are only a limited number of options for the solution to this question. As Snaith puts it, the question here is whether this is a synthetic couplet, where both terms are referring to the same event, or an antithetical couplet, where the terms are referring to two sides or parts of an event.⁶⁹ The four possibilities, then, would be the following (the advocates of these interpretations are noted and explained below):

- A. Synthetic: *Hodesh* -שִׁיָּהּ = new month & first crescent, the same day as the *keseh* = first crescent (Rabbis)
- B. Antithetical: *Hodesh* -שִׁיָּהּ = new month & first crescent while *keseh* = full moon (Modern scholarly consensus)
- C. Synthetic: *Hodesh* -שִׁיָּהּ = new month, the same day as the *keseh* = full moon (Snaith)
- D. Antithetical: *Hadash* -שִׁיָּהּ = full moon while *keseh* = first crescent (my suggestion for the DSS *CDM*)

⁶⁸ Gandz, “The Calendar of Ancient Israel,” 632.

⁶⁹ Snaith, 99.

A. The Rabbis' Interpretation

The traditional Jewish etymology links *keseh* to the word כָּסָה-*kasah*, which means covered, hidden, concealed.⁷⁰ This view is expressed in *b. Rosh Hashanah* 8a-b where, following a quotation of Ps 81:4, it reads:

איזו חג שהחדש מתכסה בו הוי אומר זה ר"ה

On which festival is the moon (literally, “month”) covered? You must say this is Rosh Hashanah.

The Rabbis assume that both Rosh Hashanah (*b. Rosh HaShanah* 26b) and Rosh Ḥodesh (*b. Sanhedrin* 41b) are marked by the blowing of the shofar, even though the only instrument ever designated for announcing the “the fixed festivals and new months” is the metal trumpet (Num 10:10).⁷¹ Since Rosh Hashanah is the only annual observance on a new moon, the Rabbis make the leap that both **Error!odesh - ׀Error!Error!** - new month/moon and festival - חג refers to Rosh Hashanah, despite the fact that in the Bible “festival – חג” is reserved for the three pilgrimages. Astronomically, if the new moon is the first crescent, then it is not *totally* obscured, as at conjunction. Rashi dealt with this problem by explaining that the sliver of new moon may be visible in one locality, but not in others farther away, thus justifying the understanding of *keseh* as “covered”.⁷²

Freehof argues that possibly “our feast day” refers to the new moon, but even if it is instead referring the festival of Sukkot (as the scholarly consensus has it – see below), this does not mean *keseh* must mean full moon. Rather, he points out that “the end of the

⁷⁰ See Freehof, 225 and Snaith, 101 for additional references.

⁷¹ The shofar, however, is designated for announcing the jubilee year (Lev 25:9-10).

⁷² Freehof, 225. This may also be an attempt to bridge the gap between the Mishnaic OLC, which marked the beginning of the new month with the appearance of the first crescent, and the medieval calculated calendar, which began the month at the calculated mean conjunction of total darkness.

verse does not say ‘B’Yom Chagenu,’ but it says ‘L’Yom chagenu,’ *for* our festival.”⁷³

He argues that the shofar was blown to indicate the beginning of the new month in the OLC in order to indicate whether the month ending was a defective (29 day) or full (30 day) month, and that the importance of this was to set the observances for the coming month. Thus, he suggests the translation should be, “Sound the Shofar on the New Moon; in the dark of the moon for (fixing) the date of our festivals.”⁷⁴ This is certainly an elegant argument for the Rabbinic position, which emphasizes the link between observing the new moon and setting the calendar.

B. Modern Scholarly Consensus

The modern view, expressed in most translations (such as in the NJPS, used above) as well as Brown-Driver-Briggs is option (b), which starts with the idea that festival - חג refers to one of the three pilgrimage festivals, two of which (Passover and Sukkot) fall on the full moon.⁷⁵ Like the Rabbis, they assume that in Ps 81:4 this is equivalent to Rosh Hashanah, the day of “sounding the horn” commanded in Num. 29:1 and Lev. 23:24 (where the term “sounding-תרוע-” is used rather than the term “blow-תקע-”), for it falls on a new moon.⁷⁶ Fishbane supports this reading of *kesh* for a different reason, arguing that the contrasting of *hodesh* with *kesh* represent the two phases of the moon, similar to the

⁷³ Ibid., 228. Note, however, that Freehof mistakenly describes the months as “plain” or “intercalated” when what he means is “defective” or “full.”

⁷⁴ Ibid., 228.

⁷⁵ See also Snaith, 102; Freehof, 226.

⁷⁶ For example, see Louis Jacobs, “Rosh Ha-Shanah,” in *EncJud* (Jerusalem: The Macmillan Company, 1971), 306-7. For other references, see also Hallo, “New Moons and Sabbaths: A Case-study in the Contrastive Approach,” 9.

pairing of *ḥodesh* with *shabbat* in the latter's pre-exilic meaning of full-moon.⁷⁷

Stylistically, one must simply argue that in this one couplet the Psalmist was being antithetical.

Another reason that modern scholars tend to identify *keseh* with the full moon is the evidence linking ancient Near Eastern observances of the full moon with the moon God. In particular, a linguistic connection is claimed between *keseh* and the Akkadian word *kuseu* designating the crown of the moon-god. While this association is strongly held by biblical scholars,⁷⁸ recent research seems to indicate that the association of the crown of the Mesopotamian moon-god exclusively with the *full* moon is ambiguous:

1. Iconographic depictions of the moon-god commonly show him with a crescent moon (indeed, it is by this symbol that scholars are certain that these images represent the moon god!), and a staff topped with a crescent was a common symbol of the moon god.⁷⁹ More uncertain are circular symbols, which could logically symbolize either full moon or sun, although some scholars now think that some images “previously thought to depict the sun god should, in fact be seen as representing the moon god.”⁸⁰
2. Texts describing the moon also typically refer to it in its crescent form, from the Sumerian until Persian periods.⁸¹ Stol has recently written that:
 - a. In the Sumerian rites for the full moon it is named “crescent of the fifteenth day”. In Akkadian context this ideogram not only stands for “crescent” (*uskarum*) but also for “*Sîn*” [the moon god]....Our conclusion is that the typical form of the moon is the crescent, even when the moon is full and shaped as a circle. It also served as symbol for the moon god.⁸²

⁷⁷ Fishbane, 149-150.

⁷⁸ Brown, Driver, and Briggs. See also Snaith, 99.

⁷⁹ Recent studies, including illustrations, can be found in Othmar Keel and Christoph Uehlinger, *Gods, Goddesses, and Images of God in Ancient Israel*, trans. Thomas H. Trapp (Minneapolis: Fortress, 1996); Keel, *Goddesses and Trees, New Moon and Yahweh*; and Dominique Collon, “The Near Eastern Moon God,” in *Natural Phenomena: Their Meaning, Depiction and Description in the Ancient Near East*, ed. Diederik Meijer (New York: North-Holland, 1992).

⁸⁰ Collon, 28. See also Keel and Uehlinger, *Gods, Goddesses, and Images of God in Ancient Israel*, 50-53, 144-145, 162.

⁸¹ Marten Stol, “The Moon as Seen by the Babylonians,” in *Natural Phenomena: Their Meaning, Depiction and Description in the Ancient Near East*, ed. Diederik Meijer (New York: North-Holland, 1992), 245-246.

⁸² *Ibid.*, 246.

3. “Crown” seems to be associated with both the new and full moon. “The grey part of the moon that can be seen at New Moon, complementing the crescent,” is called “crown.”⁸³ This is the phenomenon of earthshine, where the light of the earth is reflected off the dark portion of the moon.⁸⁴ The full moon, when the crown has changed in color from gray to white, is called the “crown of splendor,” to distinguish it from the grayish part of the new moon.⁸⁵

Thus, we can see that the Mesopotamian association of *keseh* with the crown of the moon-god does not necessarily imply a reference to the full moon; indeed, even on these grounds it could refer to the new moon, just as the traditional Jewish commentators thought (although for different reasons).

C) Snaith’s Position

Snaith’s dissenting view takes elements from both the Rabbis and modern scholars. He argues that Ps 81:4 is probably a synthetic couplet because all the other couplets in the psalm are synthetic.⁸⁶ Nevertheless, he disagrees with the Rabbis’ “synthetic” understanding, arguing instead in favor of option (c), because “evidence in comparative Semitic languages that *keseh* means ‘full moon’ is strong and certain.”⁸⁷ In addition, Snaith takes an unorthodox view by arguing that in the pre-exilic period *hodesh* referred “to the renewing of the month, and not to the renewing of the moon,” and that the month was counted from the full moon.⁸⁸ He concludes, then, that this verse “is a survival from

⁸³ Ibid., 249.

⁸⁴ Ibid., 255.

⁸⁵ Ibid., 250.

⁸⁶ Snaith, 99.

⁸⁷ Ibid., 99.

⁸⁸ Ibid., 97.

pre-exilic times”⁸⁹ and refers to one day, the beginning of Sukkot, which thereby qualified to be referred to by all three terms: *hodesh*, *keseh*, and *chag*.⁹⁰

D) A Suggested Qumran exegesis

I believe that the DSS 364DC, especially the *CDM*, indicate a probable adherence to the fourth possible interpretation of Ps 81:4, option (d). We can be fairly certain that the DSS understand *keseh* as meaning “to cover” or “to obscure” because the word is used in the verb form numerous times with reference to the phases of the moon in the DSS Aramaic fragments of the *AB*.⁹¹ This, for example, is the passage from 4QEnastr^b 6:7:

[ובלילה] תמניה ועשרין בה כסה שביעין שתה ופלג ובציר מנה [וריה]

[...And in night] twenty-eight of this (month) it is covered by six-and-a-half-sevenths. And there is subtracted from [its] lig[ht]

Therefore, it is much more likely that the DSS understanding of Ps 81:4 would be of *keseh* as first crescent. This would be similar to that of the Rabbis, but is chronologically much earlier than the rabbinic or even Pharisaic movements; in all probability, this is a *precedent* for the later rabbinical understanding of *keseh*.

But one of the uncertain issues in scholarship about the *CDM* is the meaning of the unnamed “X-day” and *duqah/duqo*. What is clear is that *two* different days are being marked (unlike the Rabbinic synthetic interpretation described above, which believes only *one* day is being referred to), but no cogent reason has been given concerning why

⁸⁹ Ibid., 102. In contrast, Keel concludes that Ps 81 is “most probably post-exilic”; although no clear reason is given, it may be because he contends that the reference to celebrating the new moon in Num 28:11-14 is “a late addition to the Priestly Code”; see Keel, *Goddesses and Trees, New Moon and Yahweh*, 106-107.

⁹⁰ Snaith, 102.

⁹¹ 4QEnastr^b 6:7 and 4QEnastr^b 7 ii:3, 6, 8, 11; Tigchelaar and García Martínez, 143-146. See also Milik and Black, eds., *The Books of Enoch: Aramaic Fragments of Qumran Cave 4*, 278-281, 284.

two days should be marked. I suggest that the authors/users of the *CDM* calendar understood Ps 81:4 antithetically, as full moon and first crescent, and that this is the likely textual basis for marking *two* phases of the lunation in the *CDM* texts. Of the two days marked, it seems that *keseh*, which means “obscured”, would refer to the same day as *duqah/duqo*, which means “thin”, both referring to the day of the first crescent; the terms are complementary, describing either the small sliver of light on the moon’s surface or the predominant darkness of that same surface.

But the Qumran calendar would have then understood the X-day as the full moon. How is this possible? In the *CDM* texts, the term *hodesh* refers to a schematic month; it is never used in reference to the lunar phases. Therefore in Ps 81:4 they would not have read שֶׁדֶּח as *hodesh*- שֶׁדֶּח –first crescent “new” moon, the beginning of the lunar month, but probably would have read the passage with different vowels as *hadash*- שֶׁדֶּח –new, referring to the state of the moon as created, which they saw as full.⁹² The ambiguity of spelling is matched by an ambiguity in meaning: “new” is not a physical description of the moon (as is *duqah/duqo*-thin), but rather a cultural interpretation of when to mark the beginning of the endless cycle of the lunation. This would have avoided any connection of Ps 81:4 to their schematic month, or to the holidays of the seventh month (either Remembrance/Rosh Hashanah or Sukkot), for in the 364DC the festivals are dated using the schematic months with no relation to the lunation. Their interpretive leap would have been to understand *hagenu*-our feast day as referring to one or both of these two lunar phases that needed to be announced by blowing the shofar.

To sum up, I’m suggesting that the *CDM* calendars imply the following view:

⁹² This is at variance with the *AB*, which uses the term *hodesh* to refer to the lunar month; see the section below entitled, “The lunar cycle of the *CDM* and the *AB*.”

Full moon = *hadash* = “X-day”

First crescent = *keseh* = *duqah/duqo*.

Of course, this hypothesis begs another question: why didn’t they use the terms *hadash* and *keseh* in their calendars? My speculation is that they chose not to use a term for the “X-day” so as not to confuse it with *hodesh*, which they used for the schematic month. Perhaps they used *duqah/duqo* in place of *keseh* as a technical term that they felt was clearer, since it emphasized what can be seen (the crescent) rather than what is obscured; this also avoided any possible allusions to the moon-god.

The following table summarizes the various interpretive options reviewed and proposed:

	חדש	כסה	חגנו
Talmudic Rabbis	“month” = new lunar month = first crescent	Obscured moon/first crescent	New moon or Rosh Hashanah
Modern scholarly consensus	“month” = new lunar month = first crescent	Full moon	Sukkot (or possibly Passover)
Snaith	“new month” = full moon	Full moon	Sukkot
Qumran <i>CDM</i> tests (my hypothesis)	“new moon” = moon as newly created = full moon	Obscured moon/first crescent	Full moon and/or first crescent

Table 6: Alternate Interpretations of כסה and חדש in Psalm 81:4

The Beginning of the Year on the Full-Moon Vernal Equinox

Yet, even if there is a rationale for marking two days of each lunation, why would the six-year cycle of the *CDM* texts begin with the full-moon? Those scholars who contend that the day that begins the six-year cycle is the first crescent also point out that

the *AB* of *1 Enoch* clearly describes the starting point of the ideal year as having two features:⁹³

- It is the day after the solar equinox: “The night is equal to the day and the year is exactly as to its days three hundred and sixty-four.”⁹⁴ (*1 En.* 72:32-33)
- The lunation begins with the first crescent (which means that the prior day was the conjunction): “And on the first day she is called the new moon, for on that day the light rises upon her” (*1 En.* 78:12-13). In the ideal year this takes place on the equinox:⁹⁵ “And when the sun goes forth from the fourth portal she [the moon] goes forth seven days, until she goes forth from the fifth and turns back again in seven days into the fourth portal and accomplishes all her light [i.e., is full].” (*1 En.* 74:7)

Marking the start of the lunar cycle at the first crescent is consistent with all we know about the Mesopotamian astronomical tradition. So, it would seem to make sense that the ideal year in the *CDM* would also start with the new moon; having a lunar cycle start “on the full moon is highly unusual in its near-eastern context, where the new moon was generally considered to begin the month, as the prevalent biblical appellation חודש proves.”⁹⁶ Indeed, even among those scholars who agree that the *CDM* start with the full moon, no coherent reason has been proposed to account for this variance with the *AB*. For example, Milik simply states that they computed “the beginning of *their* lunar month

⁹³ Most recently, see Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 47.

⁹⁴ This reference is to the last day of the year; in this sense it is also one of the four seasonal days that are intercalated at the end of each 90-day period.

⁹⁵ The reason we must qualify the appearance of the first crescent at the equinox as the *ideal year* is that the *AB* makes clear that the moon falls behind the sun 10 days per year, requiring an additional lunation every three years (*1 En.* 74:13-14); thus, the coincidence of the new moon falling on the solar equinox would only occur in one of three years. This three-year intercalation cycle matches that of the triennial sign-ארת years. I am using the term “ideal year” in a way that is derived from, but slightly different from, the “ideal” year of Mesopotamian (and later Rabbinic) astronomy, which refers to a regular 12-month year in contrast to an intercalated or embolismic 13-month year.

⁹⁶ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 210.

from the full moon, not the new moon”⁹⁷ while Albani notes that “the data in 4QMishmerot (sic) basically agree with the Astronomical Book. One has only to exchange the full moon with the new moon to arrive at the system of the Astronomical Book.”⁹⁸

One reason it seems that the year begins with the full moon in the *CDM* is that the language of 4Q320 concerning the first evening of the year is very similar to the *AB*’s description of the full moon:

1. []to its being seen (or: appearance) from the east
2.]to[sh]ine[in]the middle of the heavens at the foundation of
3. [Creatio]n from evening until morning on the 4th (day) of the week
4. [of Ga]mul in the first month in [the fir]st
5. year vacat (4Q320 1 I, 1-5)⁹⁹

She becomes full moon exactly on the day when the sun sets in the west, and from the east she rises at night, and the moon shines the whole night through till the sun rises over against her and the moon is seen over against the sun. (*1 En.* 78:13)¹⁰⁰

The scholarly debate about the excerpt from 4Q320 is this: what is shining? Is it the full moon or new moon? Clearly, 4Q320 has exegetically linked this event to the creation story of Gen 1-2:4a (since the calendar starts with the fourth day of the week when the heavenly luminaries were created). But what would be the reason for the “exchange” of full moon for new moon that Albani posits? I suggest that if we separate the notion of the beginning of the “solar year” from the beginning of the “lunar month” and “lunar year”

⁹⁷ Milik, *Ten Years of Discovery in the Wilderness of Judaea*, 152, n. 5.

⁹⁸ As quoted and translated by VanderKam, VanderKam, *Calendars in the Dead Sea Scrolls: Measuring Time*, 121, n. 9.

⁹⁹ Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 43-44.

¹⁰⁰ Charles, ed., *The Book of Enoch, or 1 Enoch*, 169.

we can find an explanation for this apparent anomaly of beginning the lunar “month” with the full moon.

Table 7 will help elucidate the situation by comparing the calendars of the *AB* and the *CDM* with Babylonian calendrical traditions as represented by *MUL.APIN* and other texts, which are the earlier and common source for these Jewish texts. If we first compare *MUL.APIN* with the *AB*, we will see a significant difference: while both mark the beginning of the ideal lunar year with the appearance of the first lunar crescent, they differ about when the solar equinox falls. While the *AB* has the solar equinox corresponding to the first crescent of the new moon, the Mesopotamian tradition is consistent in its view that the ideal solar equinox takes place on the full moon of the first lunar month.¹⁰¹ For some reason, the *AB* shifted the solar equinox from the full moon of the first month (in *MUL.APIN*) to the new crescent of the new moon/new year (in the *AB*). Put another way: the ideal “lunar year” in *MUL.APIN* always precedes the “solar year” by 15 days while the *AB* has the ideal lunar and solar years starting at the same time.

¹⁰¹ The second or early first millennium text *MUL.APIN* has the equinox in the middle of the first month of the year, Nisannu. Indeed, the intercalation mechanism of *MUL.APIN* is aimed at maintaining the full moon in mid-Nisannu. Hunger and Pingree, *Astral Sciences in Mesopotamia*, 75-79; Hunger and Pingree, *MUL.APIN: An Astronomical Compendium in Cuneiform*, 11-12, 75-76, 151.

	MUL.APIN	<i>AB</i>	<i>CDM</i> (My Hypothesis)
Point of lunation when ideal year begins	First crescent	First crescent	Full moon (X-day)
Point of lunation on vernal equinox	Full moon	Conjunction prior to the first crescent	Full moon (X-day)
Day of the year of the vernal equinox	15 th of first month	Last day of year	First day of year

Table 7: Comparison of Lunation and Vernal Equinox

This is not as radical a change as one might think; remember that even in the 364-day ephemeris (as well as in our reality of the 365¼ day year), the moon slips behind the solar/stellar cycle about 10 days per year (about 11 for a 365 day year). The result is that in the course on any three-year period the new moon and full moon will alternate between which is “closer” to the actual equinox.

But, when did the vernal equinox occur in the calendar of the *CDM*? We don’t know for sure because it is not clearly mentioned (ergo, this discussion). However, I think it is reasonable to believe that it fell on the first day of the solar year.¹⁰² Thus, the first day would be the vernal equinox beginning the solar year, similar to the *AB*,¹⁰³ while the lunation would be at the equinoctial full-moon, as in MUL.APIN. This would blend the *AB* and the tradition of MUL.APIN in a way that de-emphasizes but retains the lunation. On the one hand, the dominance of the solar cycle of the *AB* would be included, but it would also be a full moon day to signify its importance and status as the equinox. After all, the goal of every Mesopotamian lunisolar intercalation scheme was to keep the

¹⁰² Ben-Dov assumes as much: “the beginning of the solar year, i.e. the vernal equinox, again falls on the same day as the lunar phase X.” Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 209.

¹⁰³ There is actually a one day adjustment, for the vernal equinox in the *AB* is one day earlier, the last day of the year; see the chapter on the *AB* above.

first month of the lunar year aligned with the vernal equinox as marked by the stellar year, and the users of the 364DC (as reflected in the *AB*) seemed to feel they had a superior solution to this problem.

As regards the four cardinal days highlighted in the *AB*, it is appropriate to note at this point that the *CDM* calendar texts do not take special note of these four days; at most it might be inferred that they are indeed noted since they are the first day of a month, but there is nothing to distinguish them from the way the first day of every schematic month is noted.

In addition, in 4Q320 and 4QOtot (4Q319) the first day of the calendar, as well as the first day of each three-year cycle, is referred to by the term sign-ארת, which is generally agreed to be an allusion to the moment of their creation, for this is the same term used in Gen 1:14 with reference to the purpose for which the luminaries were created.¹⁰⁴ The sign-ארת is the beginning of a three-year cycle and is designated by the priestly course that begins the first and fourth year of the six-year cycle described in the *CDM* texts. An X-day always begins the sign-ארת year; indeed, the sign-ארת year only has meaning in the context of the three-year lunation cycle embedded in the *CDM* calendar, in which the X-day begins every third year.

I suggest that to the creators and practitioners of the calendar described in the *CDM*, it was obvious that at the moment of their creation the sun and moon were not only in opposition, with the full moon rising on the first evening, but that this was also the

¹⁰⁴ 4QOtot (4Q319) appears to be a compendium containing at least four types of calendrical lists, three of which are similar or parallel to those found in 4Q320-330; the unique section of this text is known as the “Otot” (signs) list.; see Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 201. For an extensive discussion of the meaning of ארת-sign in these texts, see Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 208-213.

vernal equinox; indeed, it could be said that it was a full moon *because* it was the vernal equinox. On the equinox, the length of daylight and nighttime are the same.

Astronomically, the moon rises at its shallowest angle to the horizon, which both makes it appear larger and means that on successive nights it “may rise only about 15 minutes later each day, compounding its already powerful image. When the full moon occurs very close to the equinox, the effect is magnified even further.”¹⁰⁵ A full moon at the equinox also highlights the fact that the apparent size of the sun and moon are the same as seen from earth,¹⁰⁶ an amazing phenomenon which modern astronomy can explain only as the result of random chance; the odds against this happening are truly astronomical.

Therefore, the sign-אות in the *CDM* calendar indicates a three-way coincidence of cycles at their balance points, which it assumes is identical to the configuration at the moment of creation (a configuration that it claims recurs triennially): Wednesday is mid-way through the week’s seven-day cycle; the full moon is mid-way through its cycle (assuming it starts with the first crescent); the solar/stellar year is at the equinox, the balance point of the annual cycle, when the length of night and day are equal. This overall configuration depicts the heavens at their most glorious, balanced, and harmonious; a synchrony of sacred temporality uniting the observable (sun, stars, moon) and revealed (sabbatarian).

The differences in the lunar cycles of the *CDM* and the *AB*

If X-day is the full moon equinox and a sign-אות day, it is clearly an important celestial event. However, what about the *duqah/duqo*?

¹⁰⁵ Long, 49.

¹⁰⁶ This is also noted in the *AB*, *1 En.* 72:37.

One of the reasons that would argue against *duqah/duqo* being the new moon is the difference in timing between the two phases described in the *CDM* versus the full and new moon *AB*. If the *duqah/duqo* is the new crescent, the length of time between new and full moon in the *CDM* texts is defined as 13 days (not 14 or 15 as in the *AB*) and the length of time from full moon to new crescent is 16 or 17 days (not 15 as in the *AB*); this is presented in Table 8.

Day in 30 day lunation	<i>AB</i>		<i>CDM</i>		Day in 29 day lunation	<i>AB</i>		<i>CDM</i>	
1	1st Crescent	1		16	1	1st Crescent	1		15
2		2	duqah	17	2		2	duqah	16
3		3		1	3		3		1
4		4		2	4		4		2
5		5		3	5		5		3
6		6		4	6		6		4
7		7		5	7		7		5
8		8		6	8		8		6
9		9		7	9		9		7
10		10		8	10		10		8
11		11		9	11		11		9
12		12		10	12		12		10
13		13		11	13		13		11
14		14		12	14	Full Moon	14		12
15	Full Moon	15	X-day	13	15		1	X-day	13
16		1		1	16		2		1
17		2		2	17		3		2
18		3		3	18		4		3
19		4		4	19		5		4
20		5		5	20		6		5
21		6		6	21		7		6
22		7		7	22		8		7
23		8		8	23		9		8
24		9		9	24		10		9
25		10		10	25		11		10
26		11		11	26		12		11
27		12		12	27		13		12
28		13		13	28		14		13
29		14		14	29	Conjunction	15		14
30	Conjunction	15		15					

Table 8: Comparison of Calculated Phases of *AB* and *CDM* in 30 Day and 29 Day Lunations

While the total length of the lunation is the same as in both systems (either 29 or 30 days), the timing of the phases and the terminology used is different. What we see is a one day postponement of the observance of the *duqah/duqo* in the *CDM* when compared to the first crescent of the *AB*. I suggest that this is another element that illustrates the practical nature of the *CDM* lunar observances: the conjunction will often last longer in reality than the idealized one day assumed in the *AB*. Thus, the calculated cycle of the *CDM* “cheats” a bit by shifting the *duqah/duqo* to a day when it is more likely to be observed.

This leads me to note a subtlety whose significance seems to have been largely overlooked:¹⁰⁷ while the *CDM* refer to the schematic months as *ḥodesh*, this term is *never* used to describe the lunation, while in the *AB* *ḥodesh* is used in relation to the lunar month.¹⁰⁸ I believe this means that the *CDM* do not think of the lunation as a lunar “month” in the way the *AB* does;¹⁰⁹ rather, there is only a reference to two particular moments of the lunar cycle (the “X-day” and *duqah/duqo*), and it appears that the lunar cycle is initiated when the moon is full. In a sense the *CDM* is modifying continuous cycles of time to fit its theological construction of time: just as the first day of the calendar is the *middle* of Gamul’s weekly course, so the first day of the year might be the

¹⁰⁷ Ben-Dov, for example, makes the common mistake of assuming the *CDM* texts are describing a lunar “month”: “If correct, the practice of beginning the month on the full moon is highly unusual in its near-eastern context, where the new moon was generally considered to begin the month, as the prevalent biblical appellation חודש proves” Talmon, Ben-Dov, and Glessmer, eds., *Qumran Cave 4, XVI: Calendrical Texts*, 210. Another example is the translation of חדש as “new moon” and ירחים as “months” in 1QS X, 3-5 (see García Martínez and Tigchelaar, *The Dead Sea Scrolls Study Edition*, 94-95), when they likely mean just the opposite.

¹⁰⁸ Hence my aversion to use the term “lunar month,” which can be misleading in this context.

¹⁰⁹ The DSS of Aramaic Enoch show two appearances of the term month-חדש, both in texts parallel to extant passages of previously known Ethiopic Enoch and clearly referring to the lunar month (4Q209 25,4; 28,1). See Tigchelaar and García Martínez, 162, 165.

middle of a traditional lunar “month” that begins with the first crescent.¹¹⁰ It therefore seems that while the *CDM* is similar to the *AB* in its assumption of the dependable and predictable appearance of the lunar phases, the lunar “month” is a far less important time keeping element in the *CDM* than in the *AB*; this would make sense for a calendar where the Sabbath is the primary temporal element.

This brings up a broader question concerning the relationship of the cosmology in the *AB* to that of the *CDM*. In general scholars have tended to group them together due to their common 364-day year and the three-year lunar intercalation cycle.¹¹¹ Yet, as various aspects have been compared in detail, it seems that while the *CDM* calendar draws on the cosmology of the *AB*, many of the specifics have been altered for both theological and practical reasons, e.g., the length of the schematic months, the lunar phase that starts the lunar cycle, the number of days between full moon and first crescent, the phase of the moon at the equinox, the use of the term **Error!***odesh*, the elimination of the cardinal days. Glessmer suggests, due to the lack of marking the cardinal days, the *CDM* “must be considered to be in *discontinuity* to the tradition-line from the *AB*.”¹¹²

I suggest, rather, that this divergence is related to the fundamental difference between them: the *AB* is an ephemeris while the *CDM* calendar is designed for use. The first describes the movements of the heavenly bodies while the second prescribes the

¹¹⁰ Of course, it should be remembered that marking the “beginning” of the lunation with the first crescent is merely a cultural construction used in Mesopotamian calendars.

¹¹¹ See for example Snyder, 346-351.

¹¹² Glessmer is directly commenting on the lack of marking of the cardinal days in the *CDM*; see Uwe Glessmer and Mathias Albani, “An Astronomical Measuring Instrument from Qumran,” in *The Provo International Conference on the Dead Sea Scrolls: Technological Innovation, New Texts, and Reformulated Issues*, ed. Donald W. Parry and Eugene Ulrich, Studies on the Texts of the Desert of Judah (Boston: Brill, 1999), 282.

times for cultic observance orchestrated by the priests. The first is discursive, explanatory and theoretical while the second is a terse, practical schedule with little or no explanation.¹¹³ Therefore, the makers/users of the *CDM* calendar adapted the *AB* ephemeris for practical ritual use, adapting it to the needs of the priests running the Temple.

¹¹³ Although 4Q320 provides slightly more verbiage than 4Q321-4Q321a.

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