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Al-Qirqisānī's account of historical Jewish calendars and its dependence on the commentary on Genesis by Saʿadya Gaon: a study of *Kitāb al-Anwār* VII.1[1]

Nadia Vidro

Jacob al-Qirqisānī's *Kitāb al-Anwār wal-Marāqib*, "Book of Lights and Watchtowers," (Babylonia, 927 CE[2]) is one of the earliest Qaraite legal codes and the most important representative of Babylonian Qaraite literature. While most Qaraite works are still in manuscript, *Kitāb al-Anwār* has been published in a critical edition by Leon Nemoy.[3] Nemoy reconstructed the text of *Kitāb al-Anwār* almost in its entirety, but his edition has a number of major lacunae. Some of these lacunae can now be filled on the basis of manuscripts from the Firkovitch Collection in the National Library of Russia which were not known to Nemoy, and which at this time are digitally accessible through the International Collection of Digitized Hebrew Manuscripts Ktiv.[4]

One important lacuna is found at the beginning of the discourse on the calendar (discourse VII), from the beginning of the discourse up to the middle

1 This article was researched and written as part of the project "Qaraite and Rabbanite calendars: origins, interaction, and polemic" funded by the Fritz Thyssen Foundation. I am grateful to Professor Sacha Stern (UCL) for commenting on an earlier version of the article. I thank Dr Amir Ashur (Tel Aviv University) for his help with assessing the manuscripts' handwriting.

2 For this date, see B. Chiesa, "Yaʿqūb al-Qirqisānī come fonte storiografica," in *Yaʿqūb al-Qirqisānī on Jewish Sects and Christianity* (eds. B. Chiesa and W. Lockwood), Frankfurt am Main 1984, pp. 15–47, esp. 17–23.

3 L. Nemoy, *Kitāb al-Anwār wal-Marāqib = Code of Karaite Law*, New York 1939–1943.

4 Ktiv is housed by the National Library of Israel: web.nli.org.il/sites/nlis/en/manuscript

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of chapter 3 (VII.0–3.5 in Nemoy's notation).[5] In Nemoy's edition the title of discourse VII and parts of the index of chapters are conjectures (this material is numbered by Nemoy as chapter zero), chapters VII.1 and VII.3.1–3.5 are lacunose and chapter VII.2 is missing altogether. The missing parts of *Kitāb al-Anwār* VII.0–3.5 can now be reconstructed using newly identified manuscripts, some of which are described on Ktiv as copies of *Kitāb al-Anwār*, others simply as "calendar." Of the newly reconstructed material, chapter VII.1 is of particular importance for the study of historical Jewish calendars. While the material in chapters VII.2 and VII.3 is to a large extent exegetical, chapter VII.1 lists various schemes for setting months and identifies Jewish groups throughout history who supported these schemes. In addition to its important calendrical-historical contents, this chapter exhibits clear parallels with Saʿadya Gaon's works *Kitāb al-Tamyīz* and commentary on Genesis 1:14[6] and contributes to the elucidation of intertextual relationships between Saʿadya and al-Qirqisānī.

In this article, I reconstruct the beginning of discourse VII of *Kitāb al-Anwār*, which is missing in Nemoy's edition, and present a critical edition and an English translation of discourse VII, chapter 1. The decision to edit only chapter VII.1 and not all of the newly identified material is based primarily on the importance of its calendrical contents and its close links with Saʿadya's works and, to a lesser degree, on space considerations. I then provide a brief commentary on the listed calendars[7] and examine intertextual connections between *Kitāb al-Anwār*, chapter VII.1 and Saʿadya's works *Kitāb al-Tamyīz* and commentary on Genesis 1:14.

5 In this notation the Roman numeral stands for the discourse, the first Arabic numeral for the chapter within the discourse and the second Arabic numeral (if present) for the paragraph within the chapter. In the following, references to Nemoy's edition are given according to discourse, chapter and paragraph number and not according to volume and page number. Discourse VII is found in Nemoy, *Kitāb al-Anwār*, vol. 4, pp. 789–850.

6 Saʿadya's commentary on Genesis has been published by M. Zucker (M. Zucker, *Saadya's Commentary on Genesis*, New York 1984) [in Hebrew]. *Kitāb al-Tamyīz* is still unpublished apart from a fragment edited by Zucker in Appendix 2 to his edition of the commentary on Genesis (Zucker, *Saadya's Commentary*, pp. 436–441 [text], 441–447 [translation]).

7 For a detailed study of non-Rabbanite medieval Jewish calendars as they are presented by al-Qirqisānī and Saʿadya see N. Vidro, "Non-Rabbanite Jewish calendars in the works of Jacob al-Qirqisānī and Saadia Gaon," *Aleph: Historical Studies in Science and Judaism* 21, no.1 (2021), pp. 149–187 (forthcoming).

Reconstruction of discourse VII.0–3.5

The beginning of discourse VII can be fully reconstructed from the following manuscripts, none of which were used in Nemoy's edition:[8]

Section	Manuscripts	Title and contents
Title of discourse VII	RNL[9] Evr Arab I 1161, fol. 1v.	*Discourse VII on the beginning of months and the aviv. It consists of 21 chapters: 15 chapters on the beginning of months and six chapters on the aviv*[10]
Index of chapters	RNL Evr Arab I 1161, fols. 1v–3r; RNL Arab-Yevr 15, fols. 1r–1v.	Titles of all 21 chapters in discourse VII
Chapter 1	RNL Evr Arab I 1161, fols. 3r–5v; RNL Arab-Yevr 15, fols. 1v–3v; RNL Arab-Yevr 79, fols. 16.1r[11]–17r.	*Chapter 1 which tells how people are divided regarding the beginning of months and what each group says*[12] This chapter gives a listing of various schemes for setting months supported by Jewish groups.

8 For a list of manuscripts used by Nemoy in editing chapters VII.0–3.5, see Nemoy, *Kitāb al-Anwār*, vol. 5, p. 15. Sigla and folio numbers of manuscripts are not recorded in Nemoy's apparatus (*Kitāb al-Anwār*, vol. 1, preface). It was beyond the scope of my research to establish and check the exact manuscript folios used by Nemoy in his edition of chapters VII.0–3.5.

9 RNL stands for The National Library of Russia, St. Petersburg, Russia.

10 RNL Evr Arab I 1161, fol. 1v: אלמקאלה אלסאבעה פי רווס אלשהור ואלאביב והי אחד [ועשרון באבא] מנהא כמסה עשר באבא פי רווס אלשהור וסתה אבואב פי אלאב[י]ב

11 The folio is unnumbered and found on the scan between folios 16 and 17.

12 RNL Evr Arab I 1161, fol. 1v: אלבאב אלאול פי חכאיה מא אפתרק אלנאס פי רווס אלשהור וקול כל פרקה

Chapter 2	RNL Evr Arab I 1161, fols. 5v–8v;	*Chapter 2 mentioning the arguments of those who make the moon the cause of the month by which it is known and which measures months and distinguishes one month from the other*[13]
	RNL Arab-Yevr 15, fols. 4r–6v; RNL Arab-Yevr 79, fols. 17v–19v; RNL Evr Arab I 717, fols. 14r–15v.	This chapter gives textual proofs from the Bible and rabbinic literature that any Jewish calendar must be synchronized with the moon. This can be by observing various phases of the moon, by calculating conjunctions or by predicting lunar visibility.
Chapter 3.1–5	RNL Evr Arab I 717, fols. 15v–17v; RNL Evr Arab II 550, fols. 52r–54r, 56r–56v.	*Chapter 3 telling about the arguments used by proponents of observation in support of their opinion*[14] This chapter is focused on exegetical and philosophical arguments in favor of observing the lunar crescent.

A comparison of the new manuscripts with Nemoy's edition demonstrates that the text edited by Nemoy as chapter VII.3.1–3.5 belongs to two different chapters. Paragraphs VII.3.1–3.4 belong in the middle of chapter 2 and correspond to RNL Evr Arab I 1161, fols. 6r–7v; RNL Arab-Yevr 15, fols. 4r–5v; RNL Arab-Yevr 79, fols. 17v–19r. Paragraph VII.3.5 belongs to chapter 3 and corresponds to RNL Evr Arab II 550, fols. 53v–54r.

13 RNL Evr Arab I 1161, fol. 1v: אלבאב אלת̇אני פי ד̇כר מא אחתג̇ בה מן ג̇על אלקמר עלה אלשהר ובה יערף והו אלד̇י יכיל אלשהור וימייז שהרא מן שהר

14 RNL Evr Arab I 1161, fol. 1v: אלבאב אלת̇אלת̇ פי חכאיה מא אחתג̇ בה מן קאל באלרויה לאת̇באת קולה. A slightly different title is given in RNL Evr Arab I 717, fol. 15v: אלבאב אלת̇אלת̇ פי חכאיה מא אחתג̇ו בה לאת̇באת אלרויה″ "Chapter 3 telling about the arguments in support of observation."

Manuscripts used for this reconstruction are:

RNL Arab-Yevr 15: in Arabic characters with sporadic Arabic vocalization; biblical verses are in Arabic script. The manuscript is identified on Ktiv as "calendar." Textual overlap between RNL Arab-Yevr 15, fols. 1v–2v and Nemoy, VII.0–1.4 proves that the manuscript is a copy of *Kitāb al-Anwār*.

RNL Arab-Yevr 79: in Arabic characters with sporadic Arabic vocalization; biblical verses are in Arabic script. The manuscript is identified on Ktiv as "calendar." Textual overlap between RNL Arab-Yevr 79, fols. 16.1r–16.1v and Nemoy, VII.1.2–1.4 proves that the manuscript is a copy of *Kitāb al-Anwār*.

RNL Evr Arab I 717: in Hebrew characters, tentatively datable on paleographic grounds to the 11th–12th century. The manuscript is identified on Ktiv as a fragment of *Kitāb al-Anwār*. Textual overlap between RNL Evr Arab I 717, fol. 14r and RNL Arab-Yevr 15, fol. 6v, RNL Arab-Yevr 79, fol. 19v, as well as between RNL Evr Arab I 717, fols. 14v–15v and RNL Evr Arab II 550, fols. 56r–56v (see next manuscript) confirms that the manuscript is a copy of *Kitāb al-Anwār*.

RNL Evr Arab II 550: in Hebrew characters with partial Arabic vocalization, tentatively datable on paleographic grounds to the 14th century. The manuscript is identified on Ktiv as a fragment of *Kitāb al-Anwār*. Textual overlap between RNL Evr Arab II 550, fol. 53v–54r and Nemoy, VII.3.5 confirms that the manuscript is a copy of *Kitāb al-Anwār*.

RNL Evr Arab I 1161: in Hebrew characters with isolated Arabic vocalization, copied by Obadiah b. Joseph al-Kāzarūnī in the 14th century.[15] The manuscript is identified on Ktiv as a fragment of *Kitāb al-Anwār*. Textual overlap between RNL Evr Arab I 1161, fols. 3r–4v and Nemoy, VII.0–1.4 confirms that the manuscript is a copy of *Kitāb al-Anwār*.

15 This date is based on the colophon of RNL Evr Arab I 4451, according to which Obadiah b. Joseph al-Kāzarūnī copied Yefet b. 'Eli's *Book of Commandments* in 1388 CE.

Edition and translation of *Kitāb al-Anwār*, chapter VII.1

The base text used for the present edition is RNL Arab-Yevr 15, fols. 1v–3v. This manuscript contains the full text of VII.1 and is well preserved. The manuscript is in Arabic script. The text of RNL Arab-Yevr 15, fols. 1v–3v was collated with RNL Evr Arab I 1161, fols. 3r–5v, RNL Arab-Yevr 79, fols. 16.1r–17r, and Nemoy's partial edition of VII.1 based on RNL Evr Arab I 1687, fol. 78r–78v.[16] All textual variants are recorded in the critical apparatus. In Nemoy's edition of *Kitāb al-Anwār* chapters are divided into numbered paragraphs. Inasmuch as these divisions are not found in any manuscripts used by me, and also because the chapter is short, I did not divide the text into paragraphs. The edition reproduces the spelling of the manuscripts, no attempt has been made to follow modern standard spelling conventions (e.g. the spelling of hamza, etc.)

الباب[17] الاول في حكاية ما افترق[18] الناس في روس الشهور وقول كل فرقة.
افترقت الامة في معرفة روس الشهور ثلثة[19] فرق فرقة[20] قالت ان الهلل هو عِلّة الشهر وعلامته وبه تعرف روس الشهور دون غيره. وفرقة ثانية انكرت ذلك ولم تجعل للقمر في[21] راس الشهر[22] ومعرفته سببا بتة. وفرقة ثالثة جعلت ذلك واوجبته في بعض الشهور ولم تجعل ذلك في كل الشهور بل نسقتها عليه. وافترق من جعل القمر علة الشهر اربعة فرق فقالت فرقة بان معرفة[23] ذلك تكون برؤية الهلل في المغرب في اخر النهار بعد مغيب الشمس وذلك يكون بعد ان بغيب[24] في المغرب[25] فاذا هو رُؤِي[26]

16 Nemoy, *Kitāb al-Anwār*, vol. 4, pp. 790–791.
17 RNL Arab-Yevr 15, fol. 1v; RNL Evr Arab I 1161, fol. 3r
18 Nemoy: + فيه
19 Nemoy, RNL Evr Arab I 1161: ثلث
20 Nemoy: ففرقة
21 RNL Evr Arab I 1161, fol. 3v
22 RNL Arab-Yevr 15, fol. 2r
23 Nemoy: عرفة
24 In RNL Arab-Yevr 15 the diacritic is not marked on the tooth element. RNL Evr Arab I 1161: **יגיב**. Nemoy, p. 790: بَغيب, based on the reading **תגיב** in RNL Evr Arab I 1687, fol. 78r. See below, 'The sighting of the lunar crescent'.
25 Expected reading: المشرق. See below, 'The sighting of the lunar crescent'.
26 RNL Evr Arab I 1161: **ראי**

كان ذلك الوقت الذي يُرى فيه اول يوم من الشهر فهُم يطلبونه لتسعة وعشرين من رويته فان رأوه وإلّا اتخذوا الشهر ثلثين[27] وكان يوم الواحد وثلثين[28] هو راس الشهر الاخر[29] وهو مذهب عانان واكثر القرايين القدما وجميع قرايي[30] هذا العصر ويُقال ان بيتوس الذي ذكرناه في صدر هذا الكتاب وقلنا انه *كان هو وصاذوق*[31] تلميذين لانطيغانوس[32] كان يقول بهذا القول وهو[33] ايضا كان مذهب الربانين القدما اصحاب المشنا وهو مدون فيه وسنوضح[34] ذلك فيما بعد. والفرقة الثانية اصحاب الاجتماع والمفارقة فانهم يقولون[35] ان القمر اذا اجتمع مع الشمس ثم فارقها كان ذلك علامة راس الشهر[36] وهو ما انتقل اليه الربانيون من القول بروية الهلل[37] قبل ان يحدثون هذا العِبّور الذي هم عليه الان على ما ذكر قوم وهو ايضا مذهب اسمعيل العكبري وموسى التفليسي[38] وقد كان يذهب اليه دانيال القومسي قبل[39] يقول بالروية وكذلك جماعة قرايين[40] البصرة القدما والخراسانية[41] وقد يسمونه المولد اي ان القمر اذا فارق الشمس فقد وُلِد. وهم فيه على قولين منهم من يزعم ان المفارقة اذا وقعت من اول اليوم الى ستماية واحد واربعين دقيقة من الساعة السادسة التي هي نصف النهار كان ذلك اليوم هو راس الشهر وان وقعت *بعد ذلك*[42] بدقيقة واحدة الى ما بعد كان راس الشهر من غد لان القربان قد فات. وقال اخرون منهم ان ذلك اي وقت وقع من اليوم كان ذلك اليوم هو راس الشهر ولم[43] يبق من النهار إلّا دقيقة واحدة اذ كان لا يجوز ان يكون[44] قد وقعت العِلة التي بها يتجدد[45] الشهر فيكون ذلك اليوم الذي وقعت فيه عتيقا وهذا مذهب اسمعيل

27 Nemoy: + [يوما]
28 RNL Evr Arab I 1161: ואלתלתין
29 Missing in RNL Evr Arab I 1161
30 Nemoy: قرائين
31 RNL Evr Arab I 1161: וצדוק כאנא. Asterisks mean that a note in the critical apparatus relates to all words included between the asterisks.
32 RNL Evr Arab I 1161: לאנטגניס
33 RNL Evr Arab I 1161: והדא
34 RNL Arab-Yevr 79, fol. 16.1r (the folio is unnumbered and is found in the scan between fols. 16 and 17)
35 RNL Evr Arab I 1161: + בהדא אלקול
36 RNL Evr Arab I 1161, fol. 4r
37 RNL Arab-Yevr 15, fol. 2v. Here and in all other places RNL Arab-Yevr 79 spells plene: الهلال.
38 Nemoy: الزعفرانى(؟)
39 Nemoy: + [ان]
40 RNL Evr Arab I 1161: קראיי
41 RNL Evr Arab I 1161: אלכראסאניין
42 RNL Arab-Yevr 79: بعده
43 RNL Evr Arab I 1161: ולו לם. Nemoy reconstructs the same: و[لو] لم.
44 RNL Evr Arab I 1161: תכון
45 RNL Evr Arab I 1161: תתגדד

العكبري والتفليسي[46] والشهر عندهما تسعة وعشرين[47] يوما واثنتي عشرة[48] ساعة وسبعماية وثلث وتسعين دقيقة وحيث ينتهي الحساب يخرج الشهر ويدخل الشهر ال[اخر][49] ويقال[50] ان ذلك ايضا مذهب السامرة وانها تزعم انها نقلته.[51] والفرقة الثالثة ممن قال ان القمر علامة الشهر[52] وبه يعرف[53] البدرية وهم المغارية الذين قدمنا ذكرهم في صدر الكتاب يزعمون ان الهلل اذا ابدر كان ذلك اليوم يوم راس الشهر. والفرقة الرابعة *ما حكي عن قوم فانهم*[54] يزعمون ان القمر اذا غاب في المشرق كان ذلك اليوم الذي يغيب فيه هو يوم راس الشهر. فاما الفرقة الثانية التي لم تجعل للقمر سببا[55] في الشهر فانهم افترقوا على جهتين احديهما الصدّوقية فانهم يزعمون ان الشهور كلها ثلثين ثلثين يوما لا يتغير ذلك. والثانية ما انتقلت اليه الربانيون من العِبّور المبني على لا بدو فاسح وهو ما عليه الجماعة الى هذه الغاية. والفرقة الثالثة من الاصل الذين يجعلون القمر علّة الشهر في بعض الشهور *وفي بعضها لا*[56] فانهم ايضا فريقين احدهما بنيامين النهاوندي فانه يزعم ان الشهور ابدا على نظام ثلثين وتسعة وعشرين ما خلا نيسان[57] وتشرين فانهما على روية الهلل فان لم يُرى فيهما اجريا ايضا على[58] النظام المذكور فعلى مذهبه انه ر[بما استتر][59] الهلل فجعل الشهر تسعة وعشرين وذاك بان يكون تشرين قد رُاي[60] لتسعة وعشرين فيثبُت *اذار اي الثاني*[61] لثلثين ويصير نيسان مع الاستتار تسعة وعشرين.[62] والفريق الثاني[63] اصحاب سيوان وهم قوم حُكي عنهم بانهُم يقولون بقول بنيامين في تسعة وعشرين وثلثين غير ان المُمتحن عندهُم هو شهر سيوان وهو يعدل السنة وانما مالوا اليه لنقا الجوّ[64]

46 RNL Evr Arab I 1161, fol. 4v

47 RNL Arab-Yevr 79, fol. 16.1v

48 Nemoy, RNL Arab-Yevr 79, RNL Evr Arab I 1161: اثني عشر

49 Confirmed by RNL Arab-Yevr 79, RNL Evr Arab I 1161 and Nemoy.

50 RNL Arab-Yevr 15, fol. 3r

51 Nemoy's edition of VII.1 ends here.

52 Missing in RNL Evr Arab I 1161

53 RNL Evr Arab I 1161: + הם

54 RNL Evr Arab I 1161: קום חכי ענהם אנהם

55 RNL Arab-Yevr 79: سبيل

56 RNL Evr Arab I 1161: דון בעצהא. RNL Evr Arab I 1161, fol. 5r

57 RNL Arab-Yevr 79, fol. 17r

58 RNL Arab-Yevr 15, fol. 3v

59 Confirmed by RNL Arab-Yevr 79, RNL Evr Arab I 1161

60 RNL Arab-Yevr 79: رؤى. RNL Evr Arab I 1161: רוי

61 This appears to be a mistake. The correct reading is اذار. See below, 'Calendars that set the beginning of some months by the moon'. RNL Evr Arab I 1161: אדא רוי אלתאני.

62 Expected is: لتسعة وعشرين. See below, 'Calendars that set the beginning of some months by the moon'.

63 RNL Evr Arab I 1161: + הם

64 RNL Arab-Yevr 79: الجوا

عندهُم فيه وعدم الغيم فهم يطلبون الهلل في اوله فيتّخذونه على روية ويتخذون ساير الشهور بعده على ما قلنا شهر تسعة وعشرين وشهر ثلثين. ومن اصحاب الروية قوم حدثوا يقولون بالتقويم وذلك انهم لمّا رأو[65] من اختلاف مناظر الهلل في البلدان واوجبوا مع ذلك انه اذا صح عندهم انه[66] قد رُأى[67] في اقليم ما اتخذوه راس الشهر وعلِموا[68] ايضا انه رُبّما لم يظهر بالعِشي ويظهر من غد بعد زوال الشمس الزموا انفسهم العمل بالتقويم تكون[69] جملة ما افترقوا فيه[70] الاصول مع الفروع على تسعة وجوه.

Chapter 1 which tells how people are divided regarding beginnings of months and what each group says

The nation is divided into three groups with regard to knowing beginnings of months. One group said that the crescent is the cause of the month and its sign, and that beginnings of months are known by it and by nothing else. The second group rejected this and did not at all make the moon the means of knowing when to begin a month. The third group obligated doing it in some months but did not do it in all months, arranging the following [months][71] in a sequence.

Those who make the moon the cause of the month are divided into four groups. One group said that [the beginning of a month] can be known by sighting the crescent in the west at the end of the day after sunset. And [the sighting] must be after it disappears in the west.[72] If [the crescent] was sighted, the time at which it was sighted is the first day of the month. They seek it when 29 [days] have passed since its [previous] sighting. If they see it, [they declare a new month]. Otherwise they make the month 30 [days], and the 31st day is the beginning of the next month. This is the approach of ʿAnan, of most early Qaraites and of all Qaraites of this time. It is said that Baytus – whom we mentioned in the beginning of this book and said that he and Sadoq were students of Antigonus[73] –

65 RNL Arab-Yevr 79: راوا
66 RNL Evr Arab I 1161, fol. 5v
67 RNL Arab-Yevr 79: رؤى. RNL Evr Arab I 1161: רוי
68 RNL Evr Arab I 1161: ועלמוה
69 RNL Evr Arab I 1161: יכון
70 RNL Evr Arab I 1161: + מן
71 Square brackets in the translation signify my additions.
72 Expected is "in the east." See below, 'The sighting of the lunar crescent'.
73 *Kitāb al-Anwār* I.2.7.

said the same thing. This was also the approach of early Rabbanites, who followed the Mishna, and it is recorded therein. We will explain this later.

The second group are supporters of the conjunction and the separation. They say that if the moon gets into conjunction with the sun and then separates from it, this is the sign of the beginning of the month. People say that the Rabbanites had shifted from sighting the crescent to this before they innovated the calendar that they follow now. This is also the approach of Ismāʿīl al-ʿUkbarī and Mūsā al-Tiflīsī. Daniel al-Qūmisī had taken this approach before he started to support the sighting, and so did all early Qaraites of Baṣra and the Khorāsānians. They sometimes call it the *molad*, meaning that when the moon separates from the sun, it is born. They say two [different] things about it. Some of them maintain that if the separation occurs between the beginning of the day and 641 parts after (lit. from) the sixth hour, which is midday, this day is the beginning of the month. But if it occurs after it, by one part or more, the beginning of the month is on the next day because the [time for a new month] sacrifice had already passed. Others said that whatever time of day it happens, this day itself is the beginning of the month, even if only one part remains of that day. This is because it is not permissible that the cause of renewing the month has occurred but the day on which it occurred is old (i.e. belongs to the old month). This is the approach of Ismāʿīl al-ʿUkbarī and of al-Tiflīsī. According to them the month is 29 days 12 hours and 793 parts long. At the end of this count the month ends and another month begins. It is said that this is also the approach of the Samaritans and that they maintain that they have transmitted it.

The third group among those who said that the moon is the sign of the month by which [its beginning] can be known are supporters of the full moon. They are the Maghārians, whom we mentioned above in the beginning of the book.[74] They maintain that when the moon becomes full, that day is the beginning of the month.

The fourth group *are people about whom it is told*[75] that they maintain that when the moon disappears in the east, that day is the beginning of the month.

74 *Kitāb al-Anwār* I.2.8, I.7.

75 This translation follows RNL Evr Arab I 1161, fol. 4v. See footnote 54 in the edition. RNL Arab-Yevr

The second [major] group, which does not make the moon the means of [knowing the beginning of] the month, is divided in their approach into two. The first [approach is that of] the Sadducees. They maintain that all months are 30 days long and that this does not change. The second one is the calendar based on *lo badu pesaḥ*[76] to which the Rabbanites shifted and which the community follows until now.

The third major group are those who make the moon the cause of the month in some months but not in others. They are also in two groups. The first one is Benjamin al-Nahāwandī. He maintains that months always follow the sequence of 30–29 [days], except Nisan and Tishri. These two [months are set] by sighting the crescent. If it was not sighted, then they, too, are made to follow the mentioned order. In his approach it can happen that when the crescent is concealed, the month is made 29 [days]. That is, it can be that [the crescent of] Tishri was sighted when 29 [days have passed of Elul]. Then Adar, *i.e. the second,*[77] will be set when 30 days [have passed], and Nisan will be *29 [days]*[78] in case [the moon] is concealed. The second group are supporters of Sivan. They are people about whom it is reported that they say what Benjamin said about 29- and 30-[day months] except that according to them one should examine the month of Sivan, which balances out the year. They leaned towards it only because in their opinion the air in it is clear and without clouds. They seek the crescent at the beginning of it. Then they set it according to the sighting and they set the rest of the months that follow it as we said – one month 29 [days], one month 30 [days].

Among supporters of sighting are people who innovated and argue for establishing the true astronomical position [of the moon]. That is, they saw that the view of the crescent is different in [different] countries, and so they obligated the following: if it appeared to them correct that [the crescent] was sighted in some clime, they took it as the beginning of the month. They knew,

15, fol. 3r reads: "the fourth group of what is told about people."

76 For an explanation of this rule, see below 'The Rabbanite calendar with postponements'.

77 This appears to be a mistake. The correct month should be Adar. See below, 'Calendars that set the beginning of some months by the moon'.

78 Expected is "when 29 [days have passed of Adar]." See below, 'Calendars that set the beginning of some months by the moon'.

too, that it might not be visible that evening but could be visible on the morrow in the afternoon, [but] they imposed upon themselves a duty to fix [months] in accordance with the true astronomical position. Thus, all major divisions and their sub-divisions are nine.

Analysis

In the chapter edited here al-Qirqisānī divides all calendars into three major groups, depending on how closely they follow the moon. In calendars of the first group, the moon is "the cause of the month" so that "beginnings of months are known by it and by nothing else." To make the moon the cause of the month means to synchronize the calendar with some aspect of the moon on a monthly basis without considering factors that are not related to the moon. This is done by observing one of the phases of the moon or by calculating its astronomical parameters. In calendars of the second group, the moon is never the reason to begin a new month. This means that all months are regulated by factors external to the behavior of the moon. This includes having all months of a pre-determined length and postponing beginnings of months from the day dictated by the moon due to factors that are not related to the moon. In calendars of the third group, some months are set by the moon and others are not – these calendars combine the approaches of the first and the second groups.

Calendars that set the beginning of all months by the moon only

All groups in this division agree that months should be regulated by the moon to the exclusion of other factors. They differed as to what "sign" (*ʿalāma*), i.e. what aspect of the moon should indicate the beginning of a month: the first visibility of the lunar crescent (either actual or predicted), the conjunction of the moon with the sun, the full moon, or the disappearance of the old moon at the end of the month.

The sighting of the lunar crescent

The procedure for setting months by sighting the crescent (*ru'ya al-hilāl*) is described by al-Qirqisānī as follows (VII.1, VII.4.1, VII.14.1). The new crescent is sought at the end of the 29th day of the month. If it is sighted, that night is the beginning of a new month. If the crescent is not sighted, be this due to astronomical or weather conditions, the month is made 30 days and the next, 31st day is made the beginning of a new month. Al-Qirqisānī formulates three conditions for sighting the crescent at the end of the 29th day of the month (VII.1). The crescent must be sighted:

1) in the west
2) at the end of the day after sunset
3) after it disappears in the west.

Conditions 1 and 2 follow from the fact that the new crescent is first visible just after sunset close to the western horizon. The third condition poses a textual problem. The verb "it becomes absent" or "it disappears" is attested in Judeo-Arabic witnesses of chapter VII.1 both in the feminine form *taġīb* (RNL Evr Arab I 1687, fol. 78r)[79] implying the feminine *šams*, "sun," and in the masculine form *yaġīb* (RNL Evr Arab I 1161, fol. 3v) implying the masculine *qamar*, "moon." In the Arabic-script manuscript RNL Arab-Yevr 15 no diacritic appears on the tooth element, making the form ambiguous. If the authorial reading is *taġīb*, condition 3 requires that the crescent be sighted after the sun sets in the west and, thus, repeats condition 2. This repetition seems unnecessary and unlikely. It seems more probable that the correct reading is *yaġīb* in the masculine, meaning the moon's disappearance at the end of the month. This, however, requires a textual emendation "in the east" instead of "in the west" because the old crescent is last visible in the east. The condition would then require that the new moon is sighted after the old moon stopped being visible in the east. This emendation is supported by readings in other places in *Kitāb al-Anwār* and in al-Qirqisānī's Bible commentary *Kitāb al-Riyāḍ wal-Hadā'iq*, for example:[80]

79 Nemoy's edition of VII.1.1–4 is based on this manuscript (Nemoy, *Kitāb al-Anwār*, vol. 5, pp. 12–13).

80 On this work, see B. Chiesa, "A new fragment of Al-Qirqisānī's 'Kitāb Al-Riyāḍ'," *The Jewish Quarterly Review* 78, no. 3/4 (1988), pp. 175–186.

> [the month] can only be set by observing [the crescent] in the west after it disappeared in the east (*Kitāb al-Anwār* VII.3.1)[81]
>
> The moon serves as an indicator of the month [...] by rising in the west after it disappeared in the east. If it rises in this way, it is known that one month ended and another began (*Kitāb al-Riyāḍ* on Genesis 1:14).[82]

With this emendation, the crescent must be sighted 1) in the west; 2) at the end of the day after sunset; 3) after the old moon stopped being visible in the east. If such a sighting does not take place on the 30th night, the 31st night is taken as the beginning of the month without seeking the crescent.

Sighting the lunar crescent is associated in *Kitāb al-Anwār* VII.1 with ʿAnan,[83] most early Qaraites,[84] all Qaraites of al-Qirqisānī's time, "early Rabbanites, who followed the Mishna"[85] and Baytus.[86] The inclusion of ʿAnan among supporters of lunar observation is a new insight afforded by the chapter edited here. It was previously thought that al-Qirqisānī did not associate witnessing the crescent with ʿAnan. This notion was used by M. Rustow to support her argument that ʿAnan b. David did not in fact practice lunar observation.[87] Rustow argued that

81 RNL Evr Arab I 717, fol. 15v: לם יגז אן יכון אלא ברויתה פי אלמגרב בעד אן יעדם פי אלמשרק

82 British Library, Or MS 2492, fol. 23v–24r: באן יטלע פי אלמגרב בעד [...] ודלאלה אלקמר עלי שהר מגיבה פי אלמשרק ואדא טלע עלי הדה אלסביל עלם אן שהר כרג ודכל אכר

83 In the absence of evidence to the contrary, I assume that ʿAnan here is the 8th-century founder of the Ananite movement ʿAnan b. David and not his late 9th-century great-grandson ʿAnan b. Daniel. Al-Qirqisānī does not explicitly distinguish between the two ʿAnans. In the sections dedicated to the history and doctrines of ʿAnan (I.13), he talks about ʿAnan as exilarch (*raʾs al-jalūt*) in the days of the 8th-century caliph Abū Jaʿfar al-Manṣūr. No specific references are given in *Kitāb al-Anwār* to ʿAnan b. Daniel. M. Gil assumed that some non-specific references to ʿAnan in *Kitāb al-Anwār* are to ʿAnan b. Daniel (M. Gil, "The origins of the Karaites" in *A Guide to Karaite Studies: The History and Literary Sources of Medieval and Modern Karaite Judaism* (ed. M. Polliack), Boston 2003, pp. 73–118, esp. p. 105).

84 The Qaraites of Baṣra and Khorāsān are said to have set their calendar by "conjunction and separation," see below, 'The conjunction'.

85 The rabbinic procedure for setting months by sighting the crescent is described in Mishna, tractate Rosh Hashanah and some other rabbinic sources. See S. Stern, *Calendar and Community: A History of the Jewish Calendar, Second Century BCE-tenth Century CE*, Oxford-New York 2001, pp. 157–158.

86 On Baytus, see "Boethusians," in *Encyclopaedia Judaica*, 2nd ed. (2007), vol. 4, pp. 33–34. Consulted on *Gale eBooks*.

87 M. Rustow, *Heresy and the Politics of Community. The Jews of the Fatimid Caliphate*, Ithaca, NY 2008, p. 59.

this practice was adopted later in the history of Qaraism and was retrospectively projected to ʿAnan b. David.[88] While it is now clear that al-Qirqisānī did include ʿAnan among supporters of lunar observation in VII.1 edited here, it does not necessarily challenge Rustow's conclusions.[89] Chapter VII.1 is the only place in *Kitāb al-Anwār* where ʿAnan or ʿAnanites are mentioned (in passing) in the context of lunar observation. Observation is not mentioned among ʿAnan's distinctive practices in I.13. Al-Qirqisānī never refers to ʿAnan when presenting arguments in favor of observation or defending it against supporters of the calculated calendar (VII.3, VII.13). It is possible that in this particular passage al-Qirqisānī drew on Saʿadya when including ʿAnan among supporters of lunar observation. Saʿadya's works are the earliest sources extant that ascribe lunar observation to ʿAnan.[90] Among them is Saʿadya's commentary on Genesis 1:14.[91] As will be demonstrated below, 'Textual comparison with Saʿadya', al-Qirqisānī was closely familiar with this commentary and integrated some parts of it into chapter VII.1. He would have been glad to accept Saʿadya's claim that ʿAnan set months by sighting the crescent.

Predicted visibility of the lunar crescent (establishing the true astronomical position of the moon)

A variant of sighting the lunar crescent is the method of predicting its visibility by astronomical calculations (*taqwīm*, end of VII.1, VII.10.5). The group who followed this method is not identified, but al-Qirqisānī tells us that they were *aṣḥāb al-ruʾya* "people of observation," a term often used for Qaraites. It is possible that this method was practiced by some Babylonian Qaraites.

The word *taqwīm*, a verbal noun of *qawwama*, means "to establish something precisely" and, in the astronomical context, "to determine the true

88 Rustow, *Heresy*, pp. 57–63.

89 See, however, Vidro, "Non-Rabbanite Jewish calendars," pp. 182–184. for additional evidence that might support ʿAnan's association with lunar observation.

90 His earliest work attributing lunar observation to ʿAnan appears to be *Kitāb al-Radd ʿalā ʿAnan* composed in 915 CE (Seewald, "*Kitāb al-Radd ʿalā ʿAnan* le-Rasag," *Qovetz Hitzei Giborim* 9 (2016), pp. 1–80, esp. pp. 37 (text), 54 (translation) [in Hebrew].

91 Zucker, *Saadya's Commentary*, pp. 41–42 (text), 237–238 (translation).

positions of the sun, the moon and the planets."[92] The method of this group was to predict by way of astronomical calculations when the crescent would first be astronomically visible and to begin the month on that day. Their main goal in relying on predicted rather than actual physical sighting was to always begin the month on the day when astronomical conditions were met for the crescent, the indicator of a new month, to be visible in the sky in some location on earth ("in some clime").[93] Al-Qirqisānī remarks that supporters of predicted visibility had to accept the fact that it is not always confirmed by actual sighting. Actual sighting of the crescent depends on astronomical, atmospheric and geographical conditions. The sighting can be delayed by clouds or dust in the sky, mountains obstructing the horizon, the geographical position of a given location where the crescent is seen a day later than in other places. All these can lead to negative sightings even when astronomical conditions are met for the crescent to be visible in the sky. The particular problem mentioned by al-Qirqisānī, namely, that the crescent might not be visible on the evening of predicted visibility but could be sighted on the morrow in the afternoon is as follows. If the evening sky is clouded (or covered due to other atmospheric factors), or if the moon almost but does not quite reach the required distance from the sun to be visible in a given location in the evening of the 29th day, the crescent will not be observed. The crescent may then be sighted on the following day shortly before sunset, when the sky is already darkening but the day has not yet ended. This creates a dilemma whether to sanctify a new month retroactively or profane the day on which the crescent, the indicator of a new month, appeared in the sky. A calendar based on the predicted visibility of the crescent allowed this dilemma to be avoided because it focused on astronomical conditions and disregarded all other factors.

The conjunction

"Supporters of conjunction (*ijtimāʿ*) and separation (*mufāraqa*)" defined the

92 M. Hofelich, D.M. Varisco, "Taḳwīm," *Encyclopaedia of Islam, 2nd edition* (consulted online); D.A. King, J. Samśo, B.R. Goldstein, "Astronomical handbooks and tables from the Islamic world (750–1900): an interim report," *Suhayl* 2 (2001), pp. 9–105, esp. pp. 24, 26, 84.

93 For the concept of the seven climes see A. Miquel, "Iḳlīm," *Encyclopaedia of Islam, 2nd edition* (consulted online).

beginning of a month as the time when the moon gets into conjunction with the sun and then separates from it (I.15.2, I.16, VII.1, VII.7, VII.8). Some of them called this moment the *molad* (the birth of the moon). The terms "conjunction and separation," "conjunction," "separation" and *molad* appear to be synonymous in *Kitāb al-Anwār*.[94] In what follows I will use the term "conjunction."

The conjunction is a moment when the moon, moving along its orbit, passes between the sun and the earth. This monthly event, also known as "the true conjunction," cannot be observed (except in case of a solar eclipse) and must be established by calculation. Calculating true conjunctions is a complex astronomical procedure because the time between one conjunction and the next, known as a "lunation," changes from month to month. A much simpler procedure is used to calculate mean conjunctions, which are based on the mean lunation, a value established by averaging a large number of true lunations. The mean lunation is reckoned in the Jewish calendar literature as 29 days 12 hours and 793/1080 parts of an hour (in the Jewish calendar the hour is divided into 1080 parts). Al-Qirqisānī's statement that supporters of the conjunction made the month 29 days 12 hours and 793 parts long confirms that their calendar was based on the mean conjunction.

The mean lunation of 29 days 12 hours and 793 parts of an hour and the term *molad* are firmly associated with the Rabbanite calendar today and formed its basis already in al-Qirqisānī's time. However, al-Qirqisānī's Rabbanite contemporaries are not the intended group here. This is because the Rabbanite calendar has additional rules that preclude Rosh Hashanah and Passover from falling on certain days and, as a consequence, cause beginnings of months to be postponed from the day of the conjunction.[95] Al-Qirqisānī tells us that Rabbanites temporarily adopted the conjunction method after they gave up lunar observation but before they accepted the calendar with the postponements. This claim is unhistorical because the postponements are the earlier element of the

94 Whereas in VII.1 al-Qirqisānī talks about "conjunction and separation," elsewhere he refers to the same groups as "supporters of separation" (I.15.2, I.16). In VII.8.8–10 al-Qirqisānī seems to use "conjunction," "separation" and *molad* interchangeably.

95 See below, 'The Rabbanite calendar with postponements'.

fixed Rabbanite calendar.[96] Some early Qaraites are also said to have supported the method of the conjunction: al-Qirqisānī mentions Qaraites in the Babylonian cities Baṣra and Khorāsān as well as the founder of the Qaraite center in Jerusalem, Daniel al-Qūmisī (second half of the 9th century),[97] who is said to have supported the conjunction before his opinion shifted to lunar observation. In addition to Rabbanites and Qaraites, who are said to have abandoned the calculation of conjunctions in favor of other methods, three groups are listed as supporters of the conjunction: the followers of Ismāʿīl al-ʿUkbarī (early 9th century, Babylonia),[98] the followers of Abū ʿImrān Mūsā al-Tiflīsī (9th century, Babylonia and Armenia)[99] and the Samaritans. That Mūsā al-Tiflīsī practiced a calendar based on the mean conjunction but without the Rabbanite postponements is also stated by the Qaraite exegete Yefet b. ʿEli (10th century, Palestine).[100] Al-Qirqisānī's claim that Samaritans based their calendar on the mean lunation of 29 days 12 hours and 793 parts is likely erroneous. Indeed, the division of the hour into parts is not known in the Samaritan calendar. More importantly, their calendar is based on a calculation of true (and not of mean) conjunctions that appears to have been in use already in the 10th century.[101]

96 While the postponements are recorded in talmudic literature, the first hints of the *molad* calculation appear in the 8th century and the calculation itself is first described in the 9th century (Stern, *Calendar and Community*, pp. 165–170, 205; S. Stern, "A primitive rabbinic calendar text from the Cairo Genizah," *Journal of Jewish Studies*, 67, no. 1 (2016), pp. 68–90, esp. 73–76.)

97 L. Nemoy, *Karaite Anthology: Excerpts from the Early Literature, Translated from Arabic, Aramaic and Hebrew Sources,* New Haven 1963, pp. 30–31; B.D. Walfish, "Daniel al-Qūmisī," N.A Stillman (ed.), *Encyclopedia of Jews in the Islamic World* (consulted online); Gil, "The Origins of the Karaites," pp. 111–112.

98 Y. Erder, "Ismāʿīl al-ʿUkbarī," N.A Stillman (ed.), *Encyclopedia of Jews in the Islamic World* (consulted online). For Ismāʿīl al-ʿUkbarī's distinctive practices see *Kitāb al-Anwār* I.15.

99 Y. Erder, "Abū ʿImrān al-Tiflīsī," N.A Stillman (ed.), *Encyclopedia of Jews in the Islamic World* (consulted online). For Abū ʿImrān Mūsā al-Tiflīsī's distinctive practices see *Kitāb al-Anwār* I.16.

100 Commentary on Leviticus 23:4–8, RNL Evr Arab I 73, fol. 99v: פתבעהם אלתפליסי פי אן יעמל עלי אלמולד ולם יואפקהם פימא אשתרטו בה מן אלדחויות פהדא אלפרק בין מדהב אלתפליסי ומדהב אלרבאנין. "Al-Tiflīsī followed them (the Rabbanites) in that he used the *molad* but did not agree with them with regard to their postponement rules. This is the difference between the approach of al-Tiflīsī and the Rabbanite approach."

101 S. Powels, *Der Kalender der Samaritaner anhand des Kitāb Ḥisāb As-Sinīn und anderer Handschriften*, Berlin, New York 1977 (reprint 2020), pp. 32, 74–90; S. Powels, "The Samaritan calendar and the roots of Samaritan chronology," in *The Samaritans*, ed. A.D. Crown, Tübingen 1989, pp. 702, 723–724.

Supporters of the conjunction calculated conjunctions of every month of the year.[102] They used the calculated values in two different ways. The groups of Ismāʿīl al-ʿUkbarī and Mūsā al-Tiflīsī started the month from the day of the conjunction, regardless of the time when the conjunction occurred. A separate group postulated that in order for a new month to begin, the conjunction should occur before or shortly after midday (no later than 641/1080 parts of the hour after midday).[103] If the conjunction occurred later, the month was set to begin on the following day. This limit took liturgical considerations into account: the group argued that after this time it would be too late for the new moon sacrifice and, by extension, for the new moon prayer.

The full moon

Supporters of the full moon (the *badriyya*) maintained that the day on which the moon becomes full (*badr*) is the beginning of the month (I.7, VII.1, VII.5). Al-Qirqisānī identifies this group as the Maghārians ("people of the caves"), an ancient Jewish sect.[104] Scholars are divided on the nature of the Maghārian calendar, some regarding it as lunar,[105] others as solar.[106] In the chapter edited here, al-Qirqisānī explicitly counts the Maghārians "among those who said that the moon is the sign of the month," giving additional evidence in favor of the lunar calendar interpretation. That the *badriyya*/Maghārian calendar was lunar, or at least was considered lunar in the 10th century, is also confirmed by Saʿadya, who explains that the *badriyya* start the month from the night of the full moon

102 In the Rabbanite calendar only Tishri or Nisan are set by calculating their *molad*, the rest of the months following from there. See below, 'The Rabbanite calendar with postponements.'

103 The limit of 6 hours and 641 parts of the day is also known from the Palestinian tradition of the Rabbanite calendar (see, e.g., Stern, *Calendar Controversy*, pp. 65–67).

104 N. Golb, "Who were the Maġārīya?," *Journal of the American Oriental Society* 80, no. 4 (1960), pp. 347–59; Y. Erder, *The Karaite Mourners of Zion and the Qumran Scrolls: On the History of an Alternative to Rabbinic Judaism,* Turnhout 2017, pp. 147–165; H. Ben-Shammai, "Some methodological notes concerning the relationship between the Karaites and ancient Jewish sects," *Cathedra: For the History of Eretz Israel and Its Yishuv* 42 (1987), pp. 69–84, esp. p. 80–81 [in Hebrew]; Stern, *Calendar and Community*, pp. 104–105, and further literature cited in these sources.

105 Stern, *Calendar and Community*, p. 105; Golb, "Who were the Maġārīya?," p. 349.

106 Erder, *The Karaite Mourners of Zion*, p. 10, 159. Ben Shammai regarded the solar calendar hypothesis as "not impossible" (Ben Shammai, "Some methodological notes," p. 81).

rather than first visibility of the crescent "because they are worried about the mistakes associated with sighting the crescent," i.e. because the full moon is easier to observe.[107]

The disappearance of the old moon

Al-Qirqisānī's fourth group took the day when the moon "disappears in the east" as the beginning of the month. This refers to the fact that at the end of the lunar month the moon is last visible just before sunrise above the eastern horizon. Its invisibility the next morning was taken by the group as a sign that a new month has begun (VII.1, VII.9). The identification or even the existence of this group is uncertain. In *Kitāb al-Anwār* this group is unnamed and their opinion is transmitted on the authority of others. Saʿadya does not mention this group in his lists of Jewish calendars.[108] The only identification of this opinion known to me is given by the 12th-century Byzantine encyclopedist Judah Hadassi, who attributes the method to Mūsā al-Tiflīsī.[109] It is almost certain that Hadassi's identification of the method of the disappearance of the old moon with Mūsā al-Tiflīsī is fictitious. As mentioned above, al-Qirqisānī lists Mūsā al-Tiflīsī among supporters of conjunction and separation and so do Saʿadya and Yefet b. ʿEli.[110] Of particular weight is the testimony of Yefet b. ʿEli who writes that Mūsā al-Tiflīsī's method of calculating conjunctions was still practiced in his day.[111] It is likely that the method of the disappearance of the old moon was introduced into the classification in order to discuss comprehensively all states of the moon

107 *Kitāb al-Tamyīz* (Zucker, *Saadya's Commentary*, p. 439 (text), p. 445 (translation)).

108 For a list of calendars discussed by Saʿadya, see below, 'Textual comparison with Saʿadya'.

109 *Eshkol ha-Kofer*, alphabet 98 (D.J. Lasker, J. Niehoff-Panagiotidis, D.E. Sklare, *Theological Encounters at a Crossroads: An Edition and Translation of Judah Hadassi's Eshkol Ha-kofer, First Commandment, and Studies of the Book's Judaeo-Arabic and Byzantine Contexts*. Leiden 2019, p. 685 (text), 684 (translation).

110 Commentary of Genesis 1:14 (Zucker, *Saadya's Commentary*, p. 41 (text), p. 237 (translation)); *Kitāb al-Tamyīz* (Zucker, *Saadya's Commentary*, pp. 440–441 (text), p. 447 (translation)). For Yefet b. ʿEli's description of Mūsā al-Tiflīsī's calendar see above, footnote 100.

111 Commentary on Leviticus 23:4–8, RNL Evr Arab I 73, fol. 99v: וליס פי זמאננא הדא גיר ג מדאהב והי מדהב אלרבאנין ומדהב אלתפליסי ומדהב אלקאילין באלרויה "In our time there are only three approaches [to setting months] – the approach of the Rabbanites, the approach of al-Tiflīsī, and the approach of supporters of observation."

that could, in theory, be seen as signs of the beginning of a lunar month: the conjunction, the first visibility of the new moon, the full moon and the non-visibility of the old moon.

Calendars that do not determine beginnings of months by the moon

This division includes calendars in which no causal relationship exists between the monthly behavior of the moon and the beginning of the month, at least in the opinion of al-Qirqisānī. These calendars either have all months of a pre-determined length or postpone beginnings of months from the day dictated by the moon due to external factors.

The Sadducee calendar

A calendar with months of a pre-determined length is ascribed in *Kitāb al-Anwār* to the Sadducees, a Jewish sect of the Second Temple period (I.6, VII.1, VII.4.1).[112] Al-Qirqisānī reports that in this calendar all months were 30 days long and that this rule was derived from the story of the Flood where 5 months are equated with 150 days (Genesis 7:11, 8:4). Equal-length 30-day months are found in some solar calendars,[113] and this is how al-Qirqisānī's report is usually interpreted.[114] However, al-Qirqisānī himself never calls the Sadducee calendar "solar" and explicitly contrasts the 366-day "solar year" with the 360-day long "year of those Sadducees" (VII.4.3).[115] In contrast, Saʿadya did identify the Sadducee calendar

112 M. Mansoor, "Sadducees," *Encyclopaedia Judaica*, 2nd ed. (2007), vol. 17, pp. 654–655 (consulted on Gale eBooks); Erder, *The Karaite Mourners of Zion*, pp. 109–147 and the literature cited there.

113 For example, the Persian Zoroastrian calendar (S. Stern, *Calendars in Antiquity: Empires, States, and Societies,* Oxford 2012, pp. 179–180) and the Egyptian calendar (Stern, *Calendars in Antiquity*, pp. 125, 128).

114 Erder, *The Karaite Mourners of Zion,* pp. 117–118; Stern, *Calendar and Community*, pp. 20–21.

115 It is interesting to note in this regard that Abraham Ibn Ezra believed that the Sadducee calendar was lunar (commentary on Leviticus 25:9).

as "solar" but maintained that some of their months were 30- and others 31-days long.[116] The historical validity of either of these reports is uncertain.[117]

The Rabbanite calendar with postponements

The second calendar classed by al-Qirqisānī among those that "did not at all make the moon the means of knowing when to begin a month" is the calendar of his Rabbanite contemporaries. That the Rabbanite calendar is said to not determine beginnings of months by the moon is surprising. Indeed, by the 10th century the Rabbanite calendar was (and still is) based on a calculation of mean conjunctions (*moladot*) that uses a scientifically precise mean lunation of 29 days 12 hours and 793/1080 parts of an hour.[118] The same calculation was used by the supporters of the conjunction, who were counted by al-Qirqisānī as setting months by the moon. The claim that the Rabbanite calendar does not follow the moon was contested by Yefet b. ʿEli in his commentary on Leviticus 23:4–8: "One person maintained that the Rabbanite calculation has no relation to the moon. This is a worthless [claim] and deviates from what Jews say."[119]

Al-Qirqisānī's claim is clearly polemical. Nonetheless, its logic can be explained. Indeed, the Rabbanite calendar stays synchronized with the moon over long periods of time but is not designed to exactly follow the moon in any given month. Ten out of its twelve months have a fixed length (11 out of 13 in an intercalated year) and the length of the remaining two months, Marḥeshvan and

116 *Kitāb al-Tamyīz*. This passage is missing in Zucker's edition but can be reconstructed on the basis of RNL Evr Arab II 1189/12, fol. 39r with minor lacunae filled on the basis of Strasbourg 4845.11v: אלמדהב אלתאני מדהב צדוק והו אול מן אבדע פי אמר אלאעיאד זעם [הדא] אלרגל אן אלשהור תתכד בחסאב אלשמס והו אן יכון בעצהא ל יומא [ובעצהא ל]א יומא "The second approach is the approach of Sadoq, who was the first to invent in the matter of the festivals. This person maintained that months are set by a calculation of the sun, namely, that some of them are 30 days and others are 31 days."

117 Stern, *Calendar and Community*, pp. 20–21.

118 The mean lunation of the Rabbanite calendar derives from the *Almagest*, a classical Hellenistic astronomical work of the 2nd c. CE (Stern, *Calendar and Community*, p. 207). For a description of the Rabbanite calendar as it is practiced today and was practiced already in the 10th century, see Stern, *Calendar and Community*, pp. 191–194; Stern, *Calendar Controversy*, pp. 58–63; R. Sar-Shalom, *Gates to the Hebrew Calendar*, Netanyah 1984 [in Hebrew].

119 RNL Evr-Arab I 73, fol. 99v: פאמא מן זעם אן ליס לחסאב אלרבאנין תעלק באלקמר פהו מבטל כארג עמא תקולה אליהוד. This refutation is not necessarily a direct reaction to al-Qirqisānī's statement.

Kislev, is not determined by the behavior of the moon in these same months.[120] The calculation of mean conjunctions is used only to set Tishri or Nisan, the rest of the months following from there. More importantly for al-Qirqisānī, the Rabbanite calendar has additional rules that preclude Rosh Hashanah and Passover from falling on specific days of the week (known as postponements, *deḥiyyot*). The importance accorded by al-Qirqisānī to these rules is evident from his referring to the Rabbanite calendar as "the calendar (*ʿibbur*) based on *lo badu pesaḥ*" (VII.1). The rule *lo badu pesaḥ* means that Passover may not fall on Monday (day two, *bet*), Wednesday (day four, *dalet*) or Friday (day six, *vav*) and must be postponed. It is counterpart with the postponement *lo adu rosh*, which stipulates that Rosh Hashanah may not fall on Sunday (day one, *aleph*), Wednesday (day four, *dalet*) or Friday (day six, *vav*). The rules disrupt the connection of the Rabbanite calendar with the moon in two ways. Firstly, their rationale has nothing to do with the moon – for religious purposes the rules prevent the Day of Atonement from falling on a Friday or a Sunday and the Day of the Willow from falling on a Saturday.[121] Secondly, these postponements are not implemented by simply moving the festivals or the beginning of the months in which they occur one day forward. Instead, the course of the whole year is shifted in order to avoid Rosh Hashanah and Passover falling on their proscribed days.[122]

It is helpful to compare the Rabbanite procedure described above with that in the calendar of supporters of the conjunction. Both these calendars are based on an accurate calculation of mean conjunctions and (at least in the case of a subgroup of supporters of the conjunction) employ postponements. The difference between them is that the supporters of conjunction and separation calculated mean conjunctions in each month and did not have months of fixed lengths.[123] They postponed beginnings of months due to a moon-related factor – the time

120 See below, near footnote 122 and the footnote itself.

121 On the rationale of the postponements see Stern, *Calendar and Community*, pp. 166–167, 194–195.

122 This is achieved in particular by varying the length of the months Marḥeshvan and Kislev (Stern, *Calendar Controversy*, p. 60; Stern, *Calendar and Community*, pp. 192–193).

123 See above 'The conjunction'. See also *Kitāb al-Tamyīz* where Saʿadya points out the following about the calendar of Mūsā al-Tiflīsī: ליס י מן שהורהם מחכמה מתל אלגמאעה "unlike the Rabbanites, their calendar does not have 10 fixed months" (Zucker, *Saadya's Commentary*, p. 440 (text), missing in the translation on p. 447).

of the conjunction in comparison with the time of the new moon sacrifice.[124] This postponement was observed by simply moving forward the beginning of one particular month, without ramifications for other months. Inasmuch as al-Qirqisānī's classification takes into account how closely each month of a year is conditioned by the behavior of the moon, these differences explain why he could claim, if only for the sake of polemic, that the people of conjunction and separation set months by the moon whereas the Rabbanites did not.

Previously, al-Qirqisānī was taken by Rustow to say in *Kitāb al-Anwār* I.3.27 that Rabbanites in his days fixed new months by lunar observation and to complain about their inconsistency in using empirical methods in fixing months but mathematical ones in fixing years.[125] This is in clear contradiction with al-Qirqisānī's claim in VII.1 that Rabbanites do not fix months by the moon. However, Rustow's interpretation of I.3.27 is inaccurate.[126] *Kitāb al-Anwār* I.3.27 reads:

> They acknowledge that the first day of the months should be fixed by the observation of the new moon; but contradict it by adopting intercalation based on the maxim: "Not on the second, fourth, or sixth," for which there is no reason to make it obligatory...[127]

Rustow's understanding hinges on two things. Firstly, her assumption that those who "acknowledge that the first day of the months should be fixed by the observation of the new moon" are al-Qirqisānī's Rabbanite contemporaries. Secondly, her understanding of the phrase "intercalation based on the maxim: 'Not on the second, fourth, or sixth'" as referring to intercalating the year, i.e. inserting a 13th month following the so-called 19-year cycle of intercalations. These both assumptions are incorrect. The phrase "intercalation based on the maxim: 'Not on the second, fourth, or sixth'" translates *al-ʿibbur al-mabnī ʿalā*

124 A postponement caused by the time of the conjunction also exists in the Rabbanite calendar (Stern, *Calendar Controversy*, p. 59; Stern, *Calendar and Community*, p. 192).

125 Rustow, *Heresy*, p. 59–60 and p.60n59. Rustow used this interpretation to support her argument that rabbinic calendation methods in the 10th century were not based solely on calculation.

126 See also Stern, *Calendar Controversy*, p. 530n12.

127 Chiesa, Lockwood, *Yaʿqūb al-Qirqisānī*, p. 114. Rustow's translation in *Heresy*, p. 59–60 is compatible with Lockwood's but ends after "by adopting intercalation."

lo badu, "calendar based on *lo badu*." As mentioned above, the postponement *lo badu pesaḥ* is achieved by moving the beginning of certain months of a year and has nothing to do with intercalation. The term *'ibbur*, understood by Rustow in its narrow sense "intercalation," was used by al-Qirqisānī to refer not only to adding an intercalary month in certain years of the 19-year cycle, but to the entire Rabbanite calculated calendar.[128] That it included setting months by calculation is made clear by chapter VII.1 edited here, which states that al-Qirqisānī's Rabbanite contemporaries adopted the "calendar (*'ibbur*) based on *lo badu*" as their method of setting months. What al-Qirqisānī actually says in *Kitāb al-Anwār* I.3.27 is that rabbinic sources prescribe that new months be fixed by lunar observation, but in his day, Rabbanites abandoned this practice and use a calculated calendar. This interpretation is confirmed by *Kitāb al-Anwār* VII (especially VII.11), where discrepancies between rabbinic sayings on the calendar and Rabbanite contemporary practice are highlighted (al-Qirqisānī refers the reader to this discourse in I.3.31).

Calendars that set the beginning of some months by the moon

Calendars in this division combined elements of calendars in the first two divisions. In them the majority of months followed a sequence of fixed alternating lengths of 30 and 29 days, and a small number of months were set by sighting the lunar crescent. The purpose of this combined approach was to synchronize the year of alternating months with the moon, and different views were expressed as to when it is best done. In the calendar of Benjamin al-Nahāwandī (9th century, Babylonia),[129] the synchronization was performed in Nisan and Tishri, which are the most important months of the Jewish liturgical year (I.14.2, VII.I).[130] In

128 *Kitāb al-Anwār* VII.1 and *passim*. This was also Sa'adya's usage in *Kitāb al-Tamyīz*, see RNL EVR ARAB II 1189/12, fol. 26r.

129 Y. Erder, "Benjamin al-Nahāwandī," N.A Stillman (ed.), *Encyclopedia of Jews in the Islamic World* (consulted online); Erder, *The Karaite Mourners of Zion*, pp. 64–74; Nemoy, *Karaite Anthology,* pp. 21–23. On Benjamin al-Nahāwandī's distinctive practices, see *Kitāb al-Anwār* I.14.

130 Al-Nahāwandī's calendar is known from a short surviving excerpt of his own Book of Commandments (A. Harkavy, *Aus den ältesten karäischen Gesetzbüchern (von Anan, Beniamin Nehawendi und Daniel*

the calendar of the so-called supporters of Sivan, "balancing out the year" was performed in Sivan, due to the clear sky and lack of clouds in this month, the best atmospheric conditions for sighting the lunar crescent (VII.1).

Al-Qirqisānī highlights a peculiarity of al-Nahāwandī's calendar: "In his approach it can happen that when the crescent is concealed, the month is made 29 [days]." In the standard Qaraite method and in the rabbinic observational calendar if lunar observation in the 30th night is impossible due to clouds, the old month is made 30 days and the new month begins on the 31st day. In al-Nahāwandī's approach, al-Qirqisānī tells us, if the crescent of Nisan or Tishri cannot be observed due to clouds, the old month, Adar (Adar II in an intercalated year) or Elul, may end up being 29 days if this is required by the order of alternating month lengths. The following example is given in *Kitāb al-Anwār* VII.1:

> وذاك بان يكون تشرين قد رُاي لتسعة وعشرين فيثبُت اذار اي الثاني لثلثين ويصير نيسان مع الاستتار تسعة وعشرين
>
> That is, it can be that [the crescent of] Tishri was sighted when 29 [days have passed of Elul]. Then Adar, i.e. the second, will be set when 30 days [have passed], and Nisan will be 29 [days] in the case that [the moon] is concealed.

This example is problematic on two counts. Firstly, the length of Nisan should not be of any interest here. In al-Nahāwandī's calendar, the *end* of Nisan is not determined by lunar observation, and it is the length of Adar (and, in an intercalated year, of Adar II) that should be discussed in this context. A textual emendation *li-tisʿa wa-ʿišrīn* "when 29 [days have passed]" for *tisʿa wa-ʿišrīn* "29 [days]" seems required here. With this emendation the example says that Nisan will begin when 29 days have passed of the previous month. This emendation is confirmed by a near-verbatim parallel in Saʿadya's commentary on Genesis 1:14, where the same feature of al-Nahāwandī's calendar is discussed:[131]

Kummissi), St. Petersburg 1903, pp. 176–177). See also Stern, *Calendar and Community*, p. 20; Vidro, "Non-Rabbanite Jewish calendars," pp. 173–175. Zvi Ankori's assumption that al-Nahāwandī counted 30-day months except Nisan and Tishri (Z. Ankori, *Karaites in Byzantium: The Formative Years, 970-1100*, New York, Jerusalem 1959, p. 274) is refuted in Stern, *Calendar and Community*, p. 20.

131 Zucker, *Saadya's Commentary*, p. 42 (text), p. 238 (translation).

ודאך באן יכון תשרי קד רי לכ֗ט פיתבת אדר אלב֗ לתלתין וי[ת]בת ניסן מע אלאסתתאר לכ֗ט[132]

> That is, it can be that [the crescent of] Tishri was sighted when 29 [days have passed]. Then Adar II will be set when 30 days [have passed], and Nisan will be set when 29 [days have passed] in the case that [the moon] is concealed.

The second problem with this example, present both in *Kitāb al-Anwār* and in Saʿadya's commentary on Genesis 1:14, is its reference to Adar II. This reference is badly worded in *Kitāb al-Anwār*, where the reading is اذار اي الثاني "Adar, i.e. the second" instead of the more usual اذار الثاني "the second Adar," suggesting that this may be an interpolation. More importantly, the example does not work with two Adars. If Elul is 29 days, both Adars follow the sequence of 29- and 30-day months, and the crescent of Nisan is concealed, then the beginning of the second Adar and Nisan presupposed by both texts is wrong. Indeed, these conditions result in the following sequence of month lengths: Elul–29 days, Tishri–30, Marḥeshvan–29, Kislev–30, Ṭevet–29, Shevaṭ–30, Adar I–29, Adar II–30. This means that Adar II will begin on the 30th day of Adar I and not on its 31st day (i.e. "when 30 days [have passed]"). This also means that Adar II will be 30 days long, making the example irrelevant for demonstrating the point that in al-Nahāwandī's calendar a month can be 29 days even if sighting the crescent is impossible. The example with two Adars works only if we assume that the rabbinic rule of intercalating a 30-day month in Adar I also applied in al-Nahāwandī's calendar. In this case Elul is 29 days, Tishri is 30, Marḥeshvan–29, Kislev–30, Ṭevet–29, Shevaṭ–30, Adar I–30 days, Adar II–29 days. Here Adar II begins when 30 days have passed of Adar I, and Nisan begins when 29 days have passed of Adar II. However, this rule certainly did not apply in al-Nahāwandī's calendar. The talmudic rationale for intercalating a 30-day month in Adar I is that Nisan and Tishri must always begin after a 29-day month.[133] In contrast, in al-Nahāwandī's calendar Nisan

132 Quoted here according to Paris, AIU VIII.E.35v. Zucker's edition (*Saadya's Commentary*, p. 42) of this passage is truncated. See below, 'Textual comparison with Saʿadya'.

133 Babylonian Talmud, *Rosh Hashanah* 19b and 32a, Palestinian Talmud, *Rosh Hashanah* 3:1 (58c). See Stern, *Calendar and Community*, pp. 165–166.

was, in principle, set by observing the new crescent and the length of the month preceding it was not fixed. This means that the intercalary month did not need to be in Adar I, interrupting the sequence of 29- and 30-day months. Besides, intercalation in al-Nahāwandī's calendar was based on the state of barley crops.[134] In this method the intercalary month was always Adar II, not Adar I. The example works better in a year with only one Adar. If the crescent of Tishri is sighted when 29 days have passed of Elul and the crescent of Nisan cannot be sighted due to clouds, Elul is 29 days, Tishri–30, Marḥeshvan–29, Kislev–30, Ṭevet–29, Shevaṭ–30, Adar–29 days. In this sequence, Adar begins when 30 days have passed of Shevaṭ and Nisan begins when 29 have passed of Adar. This fits the numbers in the example and demonstrates the point that unlike in the Qaraite and rabbinic observational calendars, in al-Nahāwandī's calendar a month can be 29 days when the sky is clouded. An example of al-Nahāwandī's calendar for a year with one Adar is, indeed, given by Saʿadya in *Kitāb al-Tamyīz*:

> כאנה יכון אלהלל לתשרי קד ראי פי עשיה כט מן אלול ثم לא ירי הלל ניסן פי עשיה כט פיעמל אדר כט מע אלאסתתאר
>
> That is, it can be that the crescent of Tishri was sighted in the evening of the 29th day of Elul (i.e. at the end of this day) and then the crescent of Nisan is not sighted in the evening of the 29th [day]. So Adar is made 29 days in the case that [the moon] is concealed.[135]

If so, "Adar, i.e. the second" (*Kitāb al-Anwār* VII.1) and "Adar II" (Saʿadya's commentary on Genesis 1:14) should read "Adar." In sum, I suggest the following emended reading for the example of al-Nahāwandī's calendar in *Kitāb al-Anwār* VII.1:

134 If the barley crop was ripe by the time the omer offering had to be made, that month was declared Nisan. If it was not, an intercalary month Adar II was added to the year, and the following month was declared Nisan (Harkavy, *Aus den ältesten karäischen Gesetzbüchern*, p. 176). In this method it is impossible to know whether the month following Adar is Adar II or Nisan until some time after the beginning of the month.

135 Quoted here according to T-S Ar.51.235r, left. A shorter version of this example is attested in other manuscripts of *Kitāb al-Tamyīz* and in Zucker's edition (*Saadya's Commentary*, p. 440). See Vidro, "Non-Rabbanite Jewish calendars," p. 175 footnote 97.

وذاك بان يكون تشرين قد رُاي لتسعة وعشرين فيثبُت اذار لثلثين ويصير نيسان مع الاستتار لتسعة وعشرين

That is, it can be that [the crescent of] Tishri was sighted when 29 [days have passed]. Then Adar will be set when 30 days [have passed], and Nisan will be when 29 [days have passed] in the case that [the moon] is concealed.

Textual comparison with Saʿadya Gaon

Lists of historical calendars similar to *Kitāb al-Anwār* VII.1 are found in Saʿadya's calendar treatise *Kitāb al-Tamyīz* and his commentary on Genesis 1:14.[136] To the best of my knowledge, lists of calendars are not included in other currently identified works by Saʿadya.[137] Saʿadya describes in *Kitāb al-Tamyīz* and his commentary on Genesis 1:14 how months were set in the following calendars:[138]

1) the calendar of Abū ʿImrān (Mūsā) al-Tiflīsī;
2) the Samaritan calendar;
3) the calendar of the Sadducees;
4) the calendar of the Baytusians;
5) the calendar of the supporters of the full moon;
6) the calendar of ʿAnan;
7) the calendar of Benjamin al-Nahāwandī;
8) the calendar of the supporters of Sivan;
9) the calendar based on a calculation of the moon's true astronomical position;

136 For the list of historical calendars in the Genesis commentary, see Zucker, *Saadya's Commentary*, pp. 41–42 (text), pp. 237–238 (translation). For a large part of the list in *Kitāb al-Tamyīz* see Zucker, *Saadya's Commentary*, Appendix 2, pp. 436–441 (text), pp. 441–447 (translation). The entire section on historical calendars in *Kitāb al-Tamyīz* (with a small lacuna in the beginning) can be reconstructed on the basis of Cairo Genizah fragments Strasbourg 4845.11–4845.12, T-S Misc.35.83, T-S Ar.51.235 and a fragmentary copy of *Kitāb al-Tamyīz* in RNL Evr Arab II 1189/12, fols. 33r–39v.

137 For a revised list of Saʿadya's works on calendar with references to editions or currently identified manuscripts of these works, see Stern, *Calendar Controversy*, pp. 97–99.

138 The calendars are listed here in the order of the groups in the Genesis commentary; the order is somewhat different in *Kitāb al-Tamyīz*.

10) the Rabbanite calculated calendar.

It is obvious that Saʿadya discusses the same calendars as al-Qirqisānī, even if the groups are divided somewhat differently (in *Kitāb al-Anwār* the calendars of ʿAnan and Baytus are grouped together and so are the calendars of Abū ʿImrān al-Tiflīsī and the Samaritans). A comparison of al-Qirqisānī and Saʿadya's texts demonstrates that there are some striking textual parallels between the description of the calendars of Benjamin al-Nahāwandī, the supporters of Sivan and the supporters of the moon's true astronomical position in *Kitāb al-Anwār* VII.1 and Saʿadya's commentary on Genesis 1:14. These three calendars are described in different words in *Kitāb al-Tamyīz*. Descriptions of other calendars do not display such close textual affinity.

In what follows I present a parallel edition of the sections on the calendars of Benjamin al-Nahāwandī, the supporters of Sivan and the supporters of the moon's true astronomical position in *Kitāb al-Anwār* VII.1 and Saʿadya's commentary on Genesis 1:14. The text of *Kitāb al-Anwār* VII.1 follows my edition above (without the critical apparatus). To ease comparison, I re-transcribe the relevant sections into Hebrew characters, keeping the spelling reflected in the Arabic manuscripts but without vowel signs and other diacritics. The text of Saʿadya's commentary on Genesis 1:14 is based on a fresh reading of Genizah fragments, one of which was not used in M. Zucker's edition of the commentary.[139] This new reading is particularly important for the section on the supporters of the moon's true astronomical position, which is lacunose in the edition. My base text for Saʿadya's commentary is Paris, AIU VIII.E.35, which contains all three sections discussed here. Lacunae in the base manuscript (marked by square brackets) are filled on the basis of Oxford, Bodleian, Heb.d.61.21v (in the sections on Benjamin al-Nahāwandī and the supporters of Sivan) and T-S NS 183.1 (in the section on the supporters of the moon's true astronomical position). Identical passages in *Kitāb al-Anwār* VII.1 and Saʿadya's commentary on Genesis 1:14 are highlighted (minor differences that amount to mere scribal variations are ignored).

139 Zucker's edition of the relevant sections (*Saadya's Commentary*, p. 42) is based on Oxford, Bodleian, Heb.d.61.21 (cited as *Bodl. 161.21*) and Paris, AIU VIII.E.35 (cited as *AIU in Paris*). An additional fragment partially covering these sections is T-S NS 183.1.

Sa'adya, commentary on Genesis 1:14

ואלז[140] בני[מ]ן ואצחאבה קאלו באן [אלשהור אבדא] עלי נט[אם] הו *ל וכט*[141] מא כלא נ[י]סן ותשרי פאנהמא [עלי רויה אלהלאל] פאן לם ירי[142] פיהמא אגריא איצא עלי אלנטאם אלמ[דכור] פעלי מדהבה רב[מא] אנסתר[143] אלהלאל פיגעל[144] אל[ש]הר כט ודאך באן יכון[145] תשרי קד[146] רי לכט[147] פיתבת אדר אלב לתלתין[149] וי[ת]בת ניסן מע אלאסתתאר לכט

The seventh is Benjamin and his supporters. They said that months always follow the sequence of 30–29 [days], except Nisan and Tishri. These two [months are set] by sighting the crescent. If it was not sighted, then they, too, are made to follow the mentioned order. In his approach it can happen

***Kitāb al-Anwār* VII.1**

Benjamin al-Nahāwandī

אחדהמא בניאמין אלנהאונדי פאנה יזעם אן אלשהור אבדא עלי נטאם תלתין ותסעה ועשרין מא כלא ניסאן ותשרין פאנהמא עלי רויה אלהלל פאן לם ירי פיהמא אגריא איצא עלי אלנטאם אלמדכור פעלי מדהבה אנה רבמא אסתתר אלהלל פגעל אלשהר תסעה ועשרין ודאך באן יכון תשרין קד ראי לתסעה ועשרין פיתבת אדאר אי אלתאני לתלתין ויצ׳יר ניסאן מע אלאסתתאר <ל>תסעה[148] ועשרין

The first one is Benjamin al-Nahāwandī. He maintains that months always follow the sequence of 30–29 [days], except Nisan and Tishri. These two [months are set] by sighting the crescent. If it was not sighted, then they, too, are made to follow the mentioned order. In his

140 Paris, AIU, VIII.E.35v

141 Oxford, Bodleian, Heb.d.61.21v: כט ול

142 Oxford, Bodleian, Heb.d.61.21v: ירי

143 Oxford, Bodleian, Heb.d.61.21v: אסתתר, as in *Kitāb al-Anwār*

144 Oxford, Bodleian, Heb.d.61.21v: פגעל, as in *Kitāb al-Anwār*

145 Oxford, Bodleian, Heb.d.61.21v: יכן

146 Missing in Oxford, Bodleian, Heb.d.61.21v

147 The description of the method in Oxford, Bodleian, Heb.d.61.21v is truncated due to a homeoteleuton between two instances of לכט (see the end of the quotation) and ends here. Zucker's translation of this passage (*Saadya's Commentary*, p. 238) reflects the version in Oxford, Bodleian, Heb. d.61.21v.

148 For this emendation (marked by angular brackets) see above 'Calendars that set the beginning of some months by the moon'.

149 The description of the method in Zucker's edition of the passage (*Saadya's Commentary*, p. 42) ends here.

approach it can happen that when the crescent is concealed, the month is made 29 [days]. That is, it can be that [the crescent of] Tishri was sighted when 29 [days have passed of Elul]. Then Adar, i.e. the second, will be set when 30 days [have passed], and Nisan will be *when 29 [days have passed]*[150] in case [the moon] is concealed.

that when the crescent is concealed, the month is made 29 [days]. That is, it can be that [the crescent of] Tishri was sighted when 29 [days have passed of Elul]. Then Adar II will be set when 30 days [have passed], and Nisan will be set when 29 [days have passed] in case [the moon] is concealed.

Supporters of Sivan

ואלחׂ אצח[אב] סיון פאנהם יקולון במתׂל קול בני[מן] באן[151] [אל]שהור עלי נטׂאם ל וכׂט ואן] אלממתחן הו שהר סיון והו י[עדל] אלסנה ומאלו[152] אליה לנקא אלגׂו ענדה[ם] פיה ועדם אלגים

The eighth are supporters of Sivan. They say, similar to what Benjamin said, that the months follow a sequence of thirty and twenty-nine [days] and that one should examine the month of Sivan, which balances out the year. They leaned towards it because the air in it is clear and without clouds.

ואלפריק אלתׂאני אצחאב סיואן והם קום חכי ענהם באנהם יקולון בקול בניאמין פי תסעה ועשרין ותׂלתׂין גיר אן אלממתחן ענדהם הו שהר סיואן והו יעדל אלסנה ואנמא מאלוא אליה לנקא אלגׂו ענדהם פיה ועדם אלגים פהם יטלבון אלהלל פי אולה פיתכׂדׂונה עלי רויה ויתכׂדׂון סאיר אלשהור בעדה עלי מא קלנא שהר תסעה ועשרין ושהר תׂלתׂין

The second group are supporters of Sivan. They are people about whom it is reported that they say what Benjamin said about 29- and 30-[day months] except that according to them one should examine the month of Sivan, which balances out the year. They leaned towards it only because

150 This translation follows my emendation (see footnote 148).

151 Oxford, Bodleian, Heb.d.61.21v: פי אן

152 Oxford, Bodleian, Heb.d.61.21v: פימילו

in their opinion the air in it is clear and without clouds. They seek the crescent in its beginning. Then they set it according to the sighting and they set the rest of the months that follow it as we said – one month 29 [days], one month 30 [days].

Supporters of the moon's true astronomical position

ואלטֿ אהל אלתקוים פאנהם למא ע[למו מן] אכֿתלאף .... אלהלאל פי אלבלדאן ואוגֿבו מע דֿלך אנה אדֿא ... [אנה קד רי] פי אקלים מא אן יתכֿדֿוה ראס שהר [ועלמו] איצֿא א[נה רבמ]א[153] לם יצֿהר באלעשי פיטֿהר בעד זוא[ל אלשמס אלזמו] אנפסהם אלעמל עלי אלתקוים פיעמלון וסטה [ויעדלונה ויאכֿדֿון] ערצֿה [וגֿמיע[154] מא י]חתאג֗ אליה מן[155] עמל א[לרויה פ]אדֿא [חצ]ל להם אנה ירי פ[י מדינה מא אתֿבתו]ה ראס אלשהר

The ninth are people of the true astronomical position [of the moon]. They knew about the differences ... the crescent in [different] countries, and so they obligated the following. If ... that it was sighted in some clime, they took it as the beginning of the month. They knew, too, that it might not be visible that evening but could be visible in the

ומן אחצאב אלרויה קום חדֿתֿוא יקולון באלתקוים ודֿלך אנהם למא ראו מן אכֿתלאף מנאטֿר אלהלל פי אלבלדאן ואוגֿבוא מע דֿלך אנה אדֿא צח ענדהם אנה קד ראי פי אקלים מא אתכֿדֿוה ראס אלשהר ועלמוא איצֿא אנה רבמא לם יטֿהר באלעשי ויטֿהר מן גד בעד זואל אלשמס אלזמוא אנפסהם אלעמל באלתקוים

Among the supporters of sighting are people who innovated and argue for establishing the true astronomical position [of the moon]. That is, they saw that the view of the crescent is different in [different] countries, and so they obligated the following. If it appeared to them correct that it was sighted in some clime, they took it

153 T-S NS 183.1: **רב**
154 Paris, AIU VIII.E.35r
155 T-N NS 183.1: **פי**

as the beginning of the month. They knew, too, that it might not be visible that evening but could be visible on the morrow in the afternoon, [but] they imposed upon themselves a duty to fix [months] in accordance with the true astronomical position [of the moon].

afternoon, [but] they imposed upon themselves a duty to fix [months] in accordance with the true astronomical position [of the moon]. They calculate its (the moon's) mean motion and rectify it and take its latitude and everything that is necessary for him who calculates visibility. If the outcome of their [calculation] is that it can be sighted in some city, they establish it as the beginning of the month.

Similar textual parallels are obvious in al-Qirqisānī and Saʿadya's refutations of the calendar based on the moon's true astronomical position.

***Kitāb al-Anwār* VII.10.5**

פאמא אצחאב אלתקוים פאן כאן קצדהם טֿהור אלהלאל לאהל אלארץ פאנה רבמא חדתֹ גים פי דֿלך אלאקלים פלם ירי ואן כאן קצדהם טֿהורה פי אלסמא ואן לם יטֿהר לאהל אלארץ פהו אבדא טֿאהר פי אלסמא

As for supporters of the moon's true astronomical position: if they intend the visibility of the crescent to people on earth, perhaps there were clouds in that clime and it was not seen. And if they intend its visibility in the sky even if it was not visible to people on

Saʿadya, commentary on Genesis 1:14

פאן כאן האולי אל[קום] [קצדו טֿהור אלהלאל פי אלארץ פ... כאן גים פי דֿלך אלאקלים פלם יר ואן כאן][156] קצדהם טֿהורה [פי אל]סמא פהו אבדא פי אלסמא *בדר אעני אן יכון נצף גֹסמה*[157] מצֹיא עלי מא שרחנא

If these people intend the visibility of the crescent on earth, then ... were clouds in that clime and it was not seen. And if they intend its visibility in the sky, then it is always in the sky as a full moon, i.e. half of its body is illuminated, as we have explained.

156 Missing in Paris, AIU VIII.E.35

157 Missing in T-S NS 183.1

earth, then it is always visible in the sky.

The above parallel edition makes it clear that significant parts of the text are repeated *verbatim* or near *verbatim* in *Kitāb al-Anwār* VII.1, VII.10.5 and in Saʿadya's commentary on Genesis 1:14. The overlap is particularly strong in the sections on Benjamin al-Nahāwandī and on the supporters of the moon's true astronomical position, although in the latter case al-Qirqisānī omits technical details of the calculation. It is possible that Saʿadya and al-Qirqisānī borrowed these sections from a shared source. Yet it is more likely that al-Qirqisānī borrowed from Saʿadya. Al-Qirqisānī's close familiarity with and dependence on Saʿadya's works have been long known. Saʿadya's commentary on Genesis was identified as one of the sources of al-Qirqisānī's Pentateuch commentary *Kitāb al-Riyāḍ*, in its short and long versions, most noticeably so in the commentary on the Torah portion *Bereshit* (Genesis 1:1–6:8). [158] Saʿadya is also often quoted in *Kitāb al-Anwār*, either by name or anonymously.[159] It has been conjectured that quotations in *Kitāb al-Anwār* almost always stem from Saʿadya's exegetical works and especially from his commentary on Genesis;[160] at least one quotation from the commentary on Genesis has been firmly identified.[161] In light of these facts, textual parallels between *Kitāb al-Anwār* VII.1, VII.10.5 and Saʿadya's commentary on Genesis 1:14 are best explained as additional cases of al-Qirqisānī's borrowing from Saʿadya. Unlike other previously identified references to Saʿadya in *Kitāb al-Anwār*, the sections borrowed in *Kitāb al-Anwār* VII.1, VII.10.5 are not identified as quotations presented in order to support or reject another author's opinion but are fully integrated into the text.[162] This was previously known to be al-Qirqisānī's

158 For the short version of *Kitāb al-Riyāḍ* see Zucker, *Saadya's Commentary*, pp. יא and 29, כחn12, 44n59, 45n62, 50n88, 67n172, 74n232. For the long version of *Kitāb al-Riyāḍ* see Chiesa, "A new fragment." See also H. Hirschfeld, *Qirqisani Studies*, London 1918, p. 9.

159 Nemoy, vol. 5, p. 75 (voc. Saʿadiah al-Fayyūmī); Chiesa, "A new fragment," p. 182.

160 Chiesa, "Yaʿqūb al-Qirqisānī come fonte storiografica," p. 22 and p. 39n48.

161 In *Kitāb al-Anwār* II.14 (Zucker, *Saadya's Commentary*, p. 13 and p. 13n65).

162 Note, however, that al-Qirqisānī transmits information on the supporters of Sivan on the authority of others ("They are people about whom it is reported that...").

approach to Saʿadya's text in his Pentateuch commentary *Kitāb al-Riyāḍ*[163] but not in *Kitāb al-Anwār*.

When looking at intertextual relationships between *Kitāb al-Anwār* and Saʿadya's commentary on Genesis it is useful to bear in mind the date of composition of these works. *Kitāb al-Anwār* is traditionally dated to 937 CE. Bruno Chiesa convincingly demonstrated that the traditional date arose as a mistake of early 20th-century scholars of Qaraite literature and argued for an earlier composition date in 927 CE.[164] Saʿadya's Genesis commentary is undated. Its *terminus post quem* is determined by the fact that it mentions *Kitāb al-Tamyīz* in the commentary on Genesis 8:3 (unless, of course, this reference is a later addition).[165] *Kitāb al-Tamyīz* was most probably composed in 926/7 CE.[166] To be quoted by al-Qirqisānī in 927 CE, the Genesis commentary had to be composed in the same year at the latest. If these estimated dates are correct, then the very close time of composition of *Kitāb al-Anwār* and of the Genesis commentary may explain why there are notable differences between what al-Qirqisānī says about the calendars of some groups in discourses I and VII. As is well known, al-Qirqisānī included information on the calendar of many sects whose practices he described in discourse I. For some groups calendar information in discourse I is repeated and extended in discourse VII. These are the Sadducees (I.6), the Maghārians (I.7), Benjamin al-Nahāwandī (I.14.2), Ismāʿīl al-ʿUkbarī (I.15.2) and Mūsā al-Tiflīsī (I.16). In contrast, different information is supplied in discourses I and VII on the calendars of Baytus, the Samaritans and ʿAnan. All that al-Qirqisānī says about Baytus's calendar in I.2.7 and I.7 is that he always celebrated Pentecost on a Sunday. This must be based on rabbinic sources where

163 Chiesa, "A new fragment."

164 Chiesa, "Yaʿqūb al-Qirqisānī come fonte storiografica," pp. 17–23. See also G. Margoliouth, "Ibn Al-Hītī's Arabic chronicle of Karaite doctors," *The Jewish Quarterly Review* 9, no. 3 (1897), pp. 429–443, esp. p. 437 and footnote 1 there. The date 927 CE is based on Ibn Al-Hītī's chronicle, where it is stated that *Kitāb al-Anwār* was composed in the year 1278 of the Seleucid Era (966/7 CE) corresponding to the year 315 of the Hijra (927/8 CE). The Seleucid date is too late and appears to be a mistake.

165 Zucker, *Saadya's Commentary*, p. 340 and p. 340n17.

166 S. Poznański, "The anti-Karaite writings of Saadiah Gaon," *The Jewish Quarterly Review* 10, no. 2 (1898), pp. 238–276, esp. p. 245. This date is based on a quotation from *Kitāb al-Tamyīz* in Abraham Bar Ḥayya's *Sefer ha-Ibbur* (12th century), see H. Filipowski, *Sefer ha-Ibbur le(...) Avraham bar Ḥayya*, London 1851, pp. 96–97.

information on Baytus's calendar is limited to his offering the omer on the first Sunday after Passover and, as a result, always celebrating Pentecost on a Sunday.[167] The Samaritans are said in *Kitāb al-Anwār* I.5 to "take beginnings of months according to their calendar (*ʿibbur*) that is said to be the calendar of Jeroboam." The "calendar" or "intercalation" (*ʿibbur*) of Jeroboam is likely to be a reference to Jeroboam's institution of a festival in the 8th instead of the 7th month (1Kings 12:32), which some Qaraites interpreted as a decision to intercalate the year (*Kitāb al-Anwār*, I.2.1). In discourse I al-Qirqisānī does not specify how months were established in the calendar of Jeroboam. [168] Only intercalation is discussed among ʿAnan's distinctive practices (I.13), but not his way of setting months. In VII.1, on the other hand, al-Qirqisānī lists Baytus and ʿAnan among supporters of lunar observation, and explains that the Samaritans follow the same approach as those who calculate lunations of 29 days 12 hours and 793 parts. Information on Baytus and the Samaritans in VII.1 is given on the authority of others: "It is said that Baytus ... said the same thing," "It is said that this is also the approach of the Samaritans and that they maintain that they have transmitted it." This other authority is most likely Saʿadya and, more specifically, his commentary on Genesis 1:14. In the commentary, separate divisions are introduced for the calendars of Baytus, ʿAnan and the Samaritans.[169] Baytus is said to have fixed months by lunar observation, ʿAnan by lunar observation with certain additional conditions, and the Samaritans by calculating lunations of 29 days 12 hours and 793 parts. Saʿadya adds that the Samaritans "maintain that they transmitted this on the authority of the Israelites."[170] The same information is also provided in *Kitāb al-Tamyīz* but the Samaritan claim of transmitting their calendation method on the authority

167 For references see *Encyclopaedia Judaica*, voc. "Boethusians" and Stern, *Calendar and Community*, p. 10n51.

168 An anonymous reviewer of this article suggested that the main purpose of al-Qirqisānī's reference to Jeroboam's practices in I.2 is to say that his actions represent the beginning of Rabbanite Judaism. This may mean that when al-Qirqisānī wrote that the Samaritans "take beginnings of months according to their calendar that is said to be the calendar of Jeroboam" (I.5), he implied that Jeroboam's months were regulated in the same way as in the Rabbanite calendar. This, however, is not explicitly stated and remains conjectural.

169 Zucker, *Saadya's Commentary*, p. 41 (text), pp. 237–238 (translation).

170 Zucker, *Saadya's Commentary*, p. 41: ויזעמון אנהם נקלו דלך ען בני ישראל. Compare *Kitāb al-Anwār* VII.1: وانها تزعم انها نقلته.

of the Israelites is worded differently, making *Kitāb al-Tamyīz* a less likely source of *Kitāb al-Anwār*.[171] It is possible that information on how months were set in the calendars of Baytus, ʿAnan and the Samaritans was not supplied in the first discourse of *Kitāb al-Anwār* because al-Qirqisānī did not yet have Saʿadya's commentary before him when working on discourse I but became familiar with it by the time of writing of discourse VII.[172]

Concluding remarks

In this article I reconstructed from unpublished and partly unidentified manuscripts the beginning of discourse VII of al-Qirqisānī's legal code *Kitāb al-Anwār*, missing in Leon Nemoy's standard edition of the code. I presented an annotated edition and translation of *Kitāb al-Anwār*, discourse VII, chapter 1. This chapter is important for the study of historical Jewish calendars because it contains a listing of various schemes for setting months and identifies Jewish groups who supported these schemes. A comparison of *Kitāb al-Anwār*, discourse VII, chapter 1 with Saʿadya's commentary on Genesis 1:14 demonstrates significant *verbatim* overlap between the two texts and suggests that al-Qirqisānī embedded in *Kitāb al-Anwār* passages from Saʿadya's commentary on Genesis without identifying them as quotations. That al-Qirqisānī borrowed passages from Saʿadya's commentary, possibly written in the same year, highlights how quickly books in 10th-century Babylonia were read and integrated into the scholarly discourse. Importantly, these borrowings transcended Qaraite and

171 Zucker, *Saadya's Commentary*, p. 441: וענד מסאילתהם ליס יאתון פיה בקיאס אכתר מן אן יקולון כדי נקלנא ען בני יסראיל "When one asks them, they do not give a proof from analogy but simply say: We transmitted thus on the authority of the Israelites."

172 An anonymous reviewer of this article suggested that al-Qirqisānī may have continued modifying the text of *Kitāb al-Anwār* after its original composition, so that there may never have been a final version of the work (arguments in favor of this position will be presented in the introduction to the reviewer's forthcoming Hebrew translation of *Kitāb al-Anwār*). The reviewer commented that "the chronology of the works of al-Qirqisānī is not necessarily connected to the possibility that he used Saʿadya's works or copied from them." While I agree that there may be other ways to account for differences in the description of some calendars in discourses I and VII of *Kitāb al-Anwār*, the explanation suggested above appears to me worth considering.

Rabbanite divisions. It is fascinating to consider that al-Qirqisānī may have depended on Saʿadya for information about ʿAnan and Benjamin al-Nahāwandī – figures usually seen as precursors of Qaraism.