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Literarische Stoffe und ihre Gestaltung
in mitteliranischer Zeit

Herausgegeben

von

Desmond Durkin-Meisterernst,
Christiane Reck und Dieter Weber

WIESBADEN 2009

DR. LUDWIG REICHERT VERLAG

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von Werner Sundermann

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TAFELN

The Return of the Fravashis in the Avestan Calendar

ALMUT HINTZE, Cambridge

1. Introduction

In¹ the study of Old Iranian calendars it is fairly widely assumed that the original calendar of the Avesta was a 360-day year consisting of twelve months of 30 days dedicated to 30 Yazatas but with the periodic insertion of an additional month.² This is referred to by Bērūnī as the *pēšdādi* calendar and is believed to have been in use until the early Achaemenid period, when it was reformed under Xerxes by the addition of the five so-called Gatha days, to create a solar year of 365 days.

The assumption of an Avestan 360-day calendar, however, is at odds with the Avesta itself, where a year is explicitly said to have 365 days. Some scholars discard the evidence of the relevant Āfrīnagān passage as “Sasanian”, but this is unjustified.³ Further support for an Av. 365-day solar year comes from the names of the six festivals, all of which are connected with the season in which they are celebrated:

1 I am grateful to François DE BLOIS and Raymond MERCIER (both Cambridge) for discussions of various topics dealt with in this article.

2 Such a view was proposed by MARKWART 1905, 206 and TAQIZADEH 1938, 15-17 and reinforced by MARSHAK 1992, 146, 149ff. and BOYCE 1970, 515-517; 1982, 244f. fn. 151; 1999, 544 and 2005, 3, 7, 10, but rightly criticized by DE BLOIS 1995, 39 with n.6 and 2006, 12 according to whom the “fictitious *pēšdādi* calendar has caused much havoc among modern writers on Zoroastrian chronology”.

3 Each of the six paragraphs of A 3.7-12 is divided into two sections. The first names the feast, the number of days between it and the next, and the offering by which a ‘prize’ (*mīžda-*) is earned. The second section mentions the feast name again, but without the number of intervening days, and states the punishment for not making the offering, see HINTZE 2000, 163f., 316-319. Both sections are found in some mss., including the very valuable ms. H2 dating from 1415 C.E. (see GELDNER 1889-1896 I, p. iii), but several others, including the important Khorde Avesta E1, omit the first and only give the second half of each of the six sections, thus mentioning the feasts but not the number of days between them. E1 (as well as eight other mss.) give the Av. text of the beginnings of each of the first sections (mentioning the number of days) in the Pazand version of A 3.

Since the first halves of A 3.7-12 (indicating the number of days) are found in only seven out of the 29 (31 according to HERTEL) mss. used by GELDNER 1889-1896, II 271, HERTEL 1934, 22f. and 47 considers them to be a later, Sasanian addition. He suggests that the shorter version is original and the enlarged one with the number of days a quotation from the Hāddōxt Nask which, as emerges from Dēnkard 8.45.3, contained a section on the seasonal feasts. His view is widely accepted, for instance by TAQIZADEH 1938, 12 with fn. 1; BOYCE 1970, 523 with fn. 41 and PANAINO 1990, 662.

maidiiōi.zarəmaia- ‘having spring at its centre’ in mid-spring,
maidiiōi.šma- ‘having summer at its centre’ at the summer solstice,
 and *maidiiāirīia*- ‘mid-year’ at the winter-solstice.

These names indicate that the feasts were timed according to the position of the sun. Moreover, two further feast names derive, respectively, from seasonal agricultural and pastoral customs:

paitiš.hahīia- is celebrated at the mid-year ‘corn-bearing’ time on day 180 (as counted from the spring equinox) and
aiiāθrima- fraouruuāēštrima- varšniharšta- ‘home-coming characterized by the return (of cattle and) the release of rams’ at the end of summer on day 210 when cattle are driven home from the summer pastures and rams allowed access to the sheep.

As we shall see, the name of the sixth festival, *hamaspaθmaēdaiia*-, also describes the sun’s position. Thus, in view of the transparency of all these forms, Avestan speakers are likely to have understood their meaning, so that it is inconceivable, for instance, that they would have celebrated the mid-summer festival in winter. As Willi HARTNER has put it, the festivals mark “six well-defined solar dates forming the solar “skeleton” of the year”.⁴ This implies that the Avestan people had a fixed calendar and managed to keep their feast times in permanent correspondence with the solar year. But the question is, how?

In this article I propose to review the Avestan evidence for the Old Iranian calendar. First we shall look at the structure of a month and then at that of a year, and I shall put forward a new explanation for the much debated name *hamaspaθmaēdaiia*-. After looking at the Fravashi festival celebrated at the time, I shall conclude that the Avestan people turned a 355-day lunar year into a 365-day solar one by means of the ten days of the *hamaspaθmaēdaiia*-festival, while periodically inserting an additional day into one of the five 29-day winter months.

2. Structure of the Avestan month

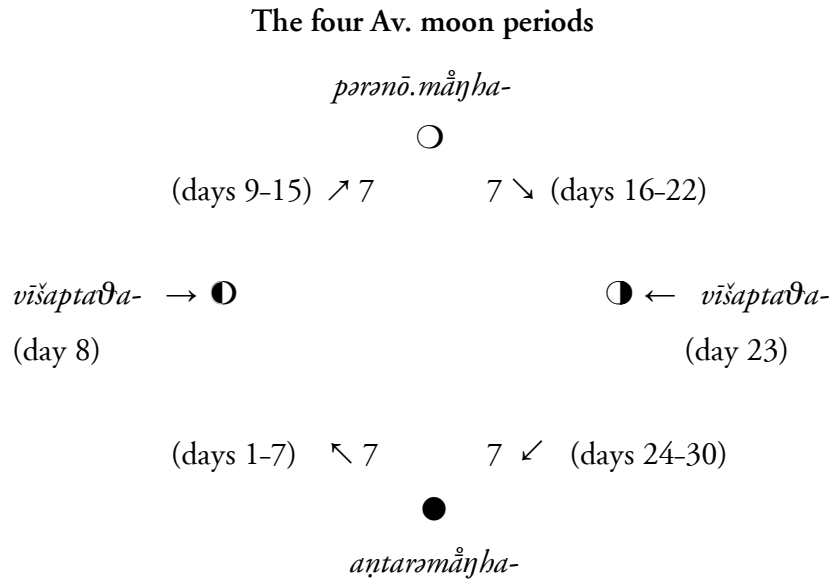
Human experience of the rhythm of day and night together with the phases of the moon are the most fundamental ones lending themselves to the measurement of time.⁵ This was also true for the Avestan people, who according to the stages of the waxing and waning moon between

⁴ HARTNER 1985, 750. On pp. 749-756 he further suggests that the seasonal holidays were fixed on the basis of observations made at Persepolis on the rising and setting of different stars in the late 6th century, cf. PANAINO 1990, 662.

⁵ HARTNER 1985, 714.

two successive new moons (lunation), distinguished three different month times: *aṅtarəməñha-*, *pərənō.māñha-* and *višaptaθa-*. *Aṅtarəməñha-* means '(time) between the moons' and denotes the two 7-day periods preceding and following the new moon, while *pərənō.māñha-* 'belonging to the full moon', refers to the same intervals either side of the full moon.

As the diagram below shows, the month is divided into four sections the boundaries of which are demarcated by the full and new moons and the two waxing and waning half moons. Two such sections belong to the new moon (*aṅtarəməñha-*) and two to the full moon (*pərənō.māñha-*) phases:⁶



If these periods were of equal length, there would be four phases of seven days each, making 28 in all. In reality, however, the periods are irregular so that a lunation is comprised of either 29 or 30 days.⁷ A brief look at the moon phases in 2006 illustrates the point.

In 2006 there are 12 lunations five of which are of 29 and seven of 30 days. Ten of the 24 half moon phases, corresponding to Av. *aṅtarəməñha-* and *pərənō.māñha-*, are made up of 15 days, while there are eight of 14, five of 16 and one of 13 days. The length of the quarter phases also varies. Twenty-five of them last for seven days, twenty-one for eight, and two for six days. The twelve lunations of 2006 are both preceded and followed by 5 days belonging to the moon phases of 2005 and 2007 respectively and this makes up a full solar year of 365 days.

⁶ BIELMEIER 1992, 56-58.

⁷ BICKERMAN 1983, 778.

Moon Phases in 2006

Moon phase	no.	date in 2006	no. of days between quarters	no. of days between half moons	no. of days in 2006
●		31 Dec. 05	6		5 (1-5 Jan.)
◐	1	6 Jan.	8	16	30
○		14 Jan.	8		
◑		22 Jan.	7	14	
●		29 Jan.	7		
◐	2	5 Febr.	8	16	29
○		13 Febr.	8		
◑		21 Febr.	7	13	
●		28 Febr.	6		
◐	3	6 March	8	16	30
○		14 March	8		
◑		22 March	7	14	
●		29 March	7		
◐	4	5 April	7	15	30
○		13 April	8		
◑		21 April	8	15	
●		27 April	7		
◐	5	5 May	7	15	29
○		13 May	8		
◑		20 May	7	14	
●		27 May	7		
◐	6	3 June	7	15	29
○		11 June	8		
◑		18 June	7	14	
●		25 June	7		
◐	7	3 July	8	16	30
○		11 July	8		
◑		17 July	6	14	
●		25 July	8		
◐	8	2 August	8	15	29
○		9 August	7		
◑		16 August	7	14	
●		23 August	7		
◐	9	31 August	8	15	30
○		7 Sept.	7		
◑		14 Sept.	7	15	
●		22 Sept.	8		
◐	10	30 Sept.	8	15	30
○		7 Oct.	7		
◑		14 Oct.	7	15	
●		22 Oct.	8		
◐	11	29 Oct.	7	14	30
○		5 Nov.	7		
◑		12 Nov.	8	16	
●		20 Nov.	8		
◐	12	28 Nov.	7	14	29
○		5 Dec.	7		
◑		12 Dec.	8	15	
●		20 Dec.	7		
◐		27 Dec.	7		5 (to 31 Dec.)
○		3 Jan. 07			365 days

A glimpse at the moon phases in 2006 shows that the greatest variation is found with regard to the halves and quarters of lunations. In the Avesta such variation is dealt with by the third category of month times, the one known as *višaptaθa-*. As a Bahuvrīhi compound of *vī-* ‘apart’ and *haptaθa-* ‘seventh’ (= Ved. *saptátha-* ‘seventh’), the noun means ‘located between two seven-day periods’, cf. AV 13.2.31 *vy-adhvá-* ‘half way (between zenith and the earth)’.⁸

The moon quarters which together constitute a month correspond to the four groups in which the day names of a month are given in the Avestan *Sīrōze* and in *Yasna* 16.3–6.⁹ Out of the 30 days, however, only 28 bear their own names. It has been suggested that originally all 30 days had their own names, but that “three much venerated Yazatas were deprived of the dedications of their days — the 8th, 15th and 23rd — to allow these to be devoted instead to ‘the Creator’ (*daθušō*), that is, to Ahura Mazda under this aspect, who thus received 4 day dedications”.¹⁰ More compelling, however, is Wilhelm GEIGER’s observation that those 28 days suggest four seven-day periods which were subsequently enlarged by two additional days. In his currently unrivalled work of 1882, *Ostirānische Kultur im Altertum*, he argues that the fixed 30-day Zoroastrian month of the solar year was preceded by the concept of a lunar month of varying length. He suggests that originally there were names only for each day of the two 14-day half months. An additional day was inserted in the middle of the first half month to achieve a month of 29 days and a further one in the middle of the second half to produce a month of 30 days. These additional days were dedicated to the ‘creator’.¹¹

On the basis of GEIGER’s observations Roland BIELMEIER suggests that the *višaptaθa-* days are the inserted days and mark the halves of the waxing and waning moons respectively.¹²

8 Cf. BIELMEIER 1992, 56f. with fn. 102. On *vyadhvā-* see WACKERNAGEL (& DEBRUNNER) II 1, 285.

9 The Av. names of the thirty day month are conveniently listed by NARTEN 1982, 6–7 and, in addition with their Pahlavi and New Persian forms, by HARTNER 1985, 792.

10 BOYCE 2005, 9.

11 GEIGER 1882, 319.

12 BIELMEIER 1992, 57f. By contrast, ROTH 1880, 710 with fn. 1 (following Thomas HYDE), interprets *višaptaθa-* as denoting one of the four weeks of a month, two of which have seven and two eight days. According to BOYCE 1973, 264 fn. 5 and DE BLOIS 2006, 10 with fn.36, *višaptaθa-* refers to the third quarter of a lunation, roughly the 7 days after full moon. Such an interpretation, however, is less probable because the latter 7-day period belongs to the full moon time, and KELLENS’ 1996, 79 translation of the term as ‘les sept jours de décroissance’ is at odds with the fact that the period during which the moon wanes consists of 14–15 rather than 7 days. Based on the concept of a 30-day month, Yt 7.2 states explicitly that the moon both waxes and wanes for fifteen days. Moreover, the interpretation that *višaptaθa-* denotes a 7-day period does not do justice to its meaning (see above). The fact that the three types of month times (*aṅtarəməñha-*, *pərənō.māñha-*, *višaptaθa-*) are always listed in the same order does not warrant the assumption that they denote three periods which occur in that chronological order. While *aṅtarəməñha-* and *pərənō.māñha-* designate two periods forming a contrasting pair, *višaptaθa-* denotes two days inserted into each of them and

Accordingly, a *vīšaptaθa*-day is one that is inserted between periods of seven days. By analogy with the name of the month's first day, *aburahe mazdā* and with that of the 15th, full moon day, *daθušō*, the two *vīšaptaθa*- days 8 and 23 were also dedicated to the 'Creator',¹³ so that three of the four periods started with the day *daθušō*. By insertion of a day 8, the original day 15, dedicated to Mithra, became day 16, while the original day 14 of the 'Creator' (*daθušō*) became day 15 and thus replaced Mithra as the name of the first day of the second half month.¹⁴

BIELMEIER further suggests that two *vīšaptaθa* days were inserted during the seven summer months, thus yielding seven 30-day months, and one in the winter producing five 29-day months. Since every lunar year has five lunations of 29 and seven of 30 days, the months of 29 and 30 days respectively were clearly identifiable. As a result, the Zoroastrian 30-day month consists of two 7-day periods followed by two 8-day ones, as listed both in Y 16.3-6 and in Siroze 1 and 2, while a 29-day month consists of two 7-day periods followed by one 8-day and one 7-day period. The *vīšaptaθa*- days were thus an indispensable means of keeping a skeleton month of four equal 7-day periods in agreement with a moon phase of 29 or 30 days.

While twelve moon phases make up a lunar year of 354 to 355 days, the earth makes a complete rotation around the sun in 365¼ days. Therefore, the solar year is longer than twelve lunations by between ten and twelve days, and a purely lunar year would soon be out of sync with the seasons. For this reason, those who reckoned the year by twelve lunar months had to adjust it to the seasons by adding extra days. Usually, as in the case of the Babylonian lunar calendar, this was done by inserting an extra month every few years. In this way the Babylonians ensured that their New Year on 1 Nisannu always fell in the early spring-time, while the beginning of every month roughly agreed with the new moon.¹⁵ All calendars share two main features: a lunar element defining smaller, but not strictly equal time units, and a

divides a period of 14 days into two halves of 7 days each at the moment of the waxing and waning half moons respectively.

13 BIELMEIER 1992, 54 fn. 93 accepts KELLENS' contention that Ahura Mazdā "n'est pas un dieu créateur" (in C.-H. DE FOUCHÉCOURT & PH. GIGNOUX (eds.), *Études irano-aryennes offertes à Gilbert Lazard*. Paris 1989 (Studia Iranica, cahier 7), 217-228), and therefore translates *daθušō* as "Ordner". However, KELLENS' arguments are not convincing, see HINTZE 2007, 162-167.

14 In Vedic astronomy a month is comprised of twenty-seven or twenty-eight stars or groups of stars (*nakṣatra*), one of which is supposed to conjoin with the moon each night. There are twenty-eight names of *nakṣatra*, each being associated with a deity (see PINGREE 1978, 535), and it is perhaps no coincidence but rather IIr. heritage that the fifteenth is dedicated to Mitra.

15 BICKERMAN 1983, 778f. According to him, by the time of the Persian conquest in 539 BC, the Babylonians were already aware that 235 months = 19 solar years, and from the beginning of the 5th century had established a cycle of seven intercalations every nineteen years.

solar one measuring the cyclical recurrence of the seasons. The (apparent) movements of the sun regulate the succession of the seasons, which in turn regulate human life and, in particular, agricultural activity.¹⁶

3. Structure of the Av. year

According to an Av. gloss in the Pahl. translation of Vd 1.3, the Avestan year is divided into two major seasons, a summer of seven months and a winter of five:

Gloss of Vd 1.3 *hapta hənti haminō māṅha paṅca zaiiana aškarə*

It is manifest¹⁷ that there are seven summer months (and) five winter (months).

The two seasons are punctuated by six feasts which are invoked, always in the same order, in eight chapters of the Yasna, and twice respectively in the Visperad and Āfrīnagān.¹⁸ As we saw above on p. 100, three of the feast names describe the position of the sun. A fourth, which likewise could refer to its course, is that of the sixth feast celebrated around the spring equinox, *hamaspaθmaēdaiia-*.

4. The name *hamaspaθmaēdaiia-*

The name *hamaspaθmaēdaiia-* has been subject to extensive debate, but is still considered to be unexplained.¹⁹ In the Pahlavi literature the sound sequence *-spaθ-* is understood as representing Middle Persian *spāh* ‘army’. For instance, in the Pahlavi commentary on A 3.12 *hamaspaθmaēdaiia-* is interpreted as *hamāg spāh* ‘the whole army’ and in IrBd. 1a 21 as *hāmspāh-rawišnīh* ‘advance of the whole army’.²⁰ Accordingly DARMESTETER identifies the syllable *-spaθ-* with Av. *spāda-/spāda-* ‘army’, analyses the compound as *hama-spāda-maētha-* ‘reunion of the armies (i.e. of souls)’ and considers it to be based on the Gathic words in Y

¹⁶ HARTNER 1985, 714.

¹⁷ BARTHOLOMAE 1904, 1553 translates *aškarə* as ‘they have passed’, considering it to be the 3pl. preterite act. of the verb ²*sac* ‘to pass’ with the preverb *ā*. However, since elsewhere this root always forms a thematic present, *aškarə* should be a root aor. (the latter was BARTHOLOMAE’s earlier view, see BIELMEIER’s 1992, 16f. fn. 5 survey of the debate on this word). HOFFMANN 1968, 287 with fn. 14 (= *Auf*. I 226) rightly rejects this because there is no evidence for *r*-endings in the Av. aorist and therefore prefers DARMESTETER’s 1892-93, III 34 suggestion that *aškarə* is a misspelling of Pahl. *āškār* ‘it is manifest’.

¹⁸ The passages are Y 1.9, 2.9, 3.11, 4.14, 6.8, 7.11, 17.8, 22.11, Vr 1.2, 2.2 and A 3.2, 3.7-12. ROTH 1880, 699-708, esp. 707f. interprets the six *gāhānbār* as seasons, but GEIGER 1882, 320 fn.1 rightly identifies them as the names of feasts, cf. BIELMEIER 1992, 26f.

¹⁹ Cf. e.g. KELLENS 1996, 77 fn. 31; BOYCE 2005, 5 with n. 24.

²⁰ ANKLESARIA 1956, 28f. translates it as ‘military-congress’. The Pahl. passages are quoted by BIELMEIER 1992, 32 with fn. 36 and 37. On the Pahl. interpretation of the Av. name cf. also BAILEY 1959, 138.

44.15 *hēm spādā ... jamaētē*.²¹ A connection of *-spaθ-* with *spāda-/spāda-* ‘army’ could be supported by the latter’s YAv. collocation with *maidiiāna-*, *maidiiāna-* ‘middle’ in Yt 10.36. However, the main obstacles to identifying the word *spāda-/spāda-* ‘army’ in the compound *hamaspaθmaēdaiia-* are of a morpho-phonemic nature. Apart from the fact that the compound has a form with a short *a* and with *θ*, not *δ*, one would expect it to preserve the thematic vowel of *spāda-/spāda-*. Moreover, even if allowance was made for the stem forming vowel to drop, the cluster *dm* would become *nm* in YAv., cf. OAv. *dāmāna-* ‘house’, YAv. *nmāna-*.²² For these reasons *-spaθ-* in *hamaspaθmaēdaiia-* cannot be *spāda-/spāda-* ‘army’. The assonance of the Gathic words *hēm spādā ... jamaētē* with *hamaspaθmaēdaiia-* is purely accidental and the connection of the name with *spāh* ‘army’ in the Middle Persian literature is the product of a popular etymology which may have been inspired by the Gathic passage.²³

In 1938, Ernst HERZFELD adduced the form *spāθmaida-* which he read in the OP inscription DNb 30-31 and rendered as ‘military camp’. This was believed to provide decisive support for the equation of Av. *-spaθ-* with MP *spāh*.²⁴ For over forty years the OP ghost word then misled scholars until in 1979 Ilya GERSHEVITCH demonstrated that it was based on a wrong reading of the OP signs and therefore non-existent.²⁵ GERSHEVITCH himself interpreted *hamaspaθmaēdaiia-* as ‘the time of bestirment’, an agricultural term marking “the end of retirement or the end of the off-season, and the beginning of outdoor or field work” (p. 294) viewing it as a compound **ham-ā-spat-ma-idaia-*. He considered the first term to be a *man-* derivative from the verb **ham-ā-spat-* ‘to bestir oneself’ and the second, **idaia-* meaning ‘time’, an *-aia-* derivative from the root *i* ‘to go’ subsequently enlarged by an Indo-Iranian suffix **-dh-*. However, this explanation has also remained unconvincing not only because there is no evidence in Indo-Iranian for an enlarged root **idh-*,²⁶ but also because the meaning ‘time’ is pleonastic since *hamaspaθmaēdaiia-* itself is an adj. which characterizes a word for ‘time’, *ratu-*.

21 DARMESTETER 1892-93, I 40f. with fn. 15 (“réunion des armées [des âmes]”) and 292 fn. 46.

22 On the treatment of *dm* in YAv. see HOFFMANN & FORSSMAN 1996, 97.

23 That the Pahlavi interpretation of *hamaspaθmaēdaiia-* results from popular etymology has been suggested by several scholars, but without reference to the Gathic passage as its source: see the references by BIELMEIER 1992, 34.

24 HERZFELD 1938, 8, 310-315.

25 GERSHEVITCH 1979, 291 instead reads *spāya(n)tiyāyā*, which was adopted by SCHMITT 2000, 34, 36, 39, 40 and translated ‘in battle’; on the reading of the OP signs see also SCHMITT 1997, 271-273. Based on HERZFELD’s reading of the OP word, BAILEY 1959, 138-140 interprets *hama-spaθ-maēdaiia-* as ‘gathering to a beer feast’ in autumn, but later relinquishes the connection of *hama-* with Skt. *samitā* ‘wheat-flour’ (*Prolexis to the Book of Zambasta*. Cambridge: CUP 1967, 408). KELLEN’S, *Noms-racines* 15 fn. 2 discussion of *hamaspaθmaēdaiia-* is another example of how the OP ghost word misled scholars.

26 Cf. BIELMEIER 1992, 37f., who on pp. 34-36 discusses other explanations that have been proposed for *hamaspaθmaēdaiia-*.

The last etymological attempt was made in 1992 by Roland BIELMEIER, who segments **hamaspat-maidya-ya-*. Assuming that *-at* represents *-āt*, he interprets *hamaspat* as the abl.sg. of a thematic compound **hama-spa-*, whose first term he considers to be the noun **hama-* ‘summer’ and the second an otherwise unattested Av. **spa(h)-* corresponding to the Ved. *śvās* ‘tomorrow’. He reconstructs a Bahuvrīhi **hamaspa-* ‘whose tomorrow is the summer’ and interprets the second term *-maēdaiia-* as representing **maidīaia-*, a *īa-* derivative from **maidīa-* ‘middle’ (YAv. *maidīia-*). According to BIELMEIER, the expression *hamaspaθmaēdaiia- ratu-* is unverbated from **hama-spat maidīaia- ratu-** and means literally ‘the in-between (the years) time from the point of view of which the summer is the next day’ or, translated more freely, ‘the in-between time which is followed by summer’.²⁷ BIELMEIER’s analysis of the compound’s first term, however, is hardly convincing²⁸ because the abl. case is unmotivated. If *hamaspaθmaēdaiia-* did denote the idea postulated by him, one would rather expect a form meaning ‘the middle time whose tomorrow is summer’.

By contrast, his explanation of the compound’s second term *°maēdaiia-* as ‘belonging to the middle’ is attractive. However, it requires the assumption that *°maēdaiia-* represents **maidīaia-*. In his edition of the Avesta, GELDNER always edits the name of the feast as *hamaspaθmaēdaii°* regardless of whether or not it is attested. The mss. offer a great variety of readings, which are as follows:²⁹

gen. sg.	Vr 1.2	A 3.2	A 3.12
<i>hamaspaθmaēdaiiehe</i>	G	G	G Jm4 K36
<i>hamaspaθmaēdiehe</i>	K4; F11		K18 J15
<i>hamaspasmaēdaiiehe</i>	Mf2		
<i>hamaspaθmaēdaiiabe</i>	Jp1		
<i>hamaspaθmaēdaiiehe</i>	K7a (sec. m.) J15	K36	
<i>hamastaθamaiīiaie</i>		E1	
<i>hamaspaθamaēdaiiabe</i>		Jm4	
<i>hamaspatmaēdaiiabe</i>			E1
<i>hamaspaθamaiīiabe</i>			Pt1 P13
<i>hamaspaθmaidiehe</i>			F2
<i>hamaspiθmaidīiabe</i>			L25

dat. sg.	Y 1.9	Y 7.11	Y 22.11
<i>hamaspaθmaēdaiiāi</i>	G Pt4	G	G (Mf2 Jp1 K4; F11 Kh1) ³⁰

27 BIELMEIER 1992, 38–41: “der zwischen (den Jahren) liegende Zeitraum, von dem ab der Sommer am folgenden Tag bevorsteht’, oder freier ‘der zwischen den Jahren liegende Zeitraum, auf den der Sommer folgt” (p. 40).

28 Cf. also the sceptical comment by KELLENS 1996, 77 fn. 31.

29 In the following table a semicolon separates mss. belonging to different groups and a colon those of different sub-groups.

30 GELDNER 1889–1896, II 3 gives some of the variant readings of Y 22.11 in round brackets in Vr 1.2 no.8,

dat. sg.	Y 1.9	Y 7.11	Y 22.11
<i>hamaspāθmaēdīiāi</i>		Pt4	
<i>hamaspāθmaēdīiāi</i>			Pt4
<i>hamaspāθmaidīiāi</i>	Mf1, J2 (corr. to ° <i>maidaiiāi</i>); J5		
<i>hamaspāθmaidīiāi</i>	K5	K5	
... <i>maspadmaēdīiāi</i>		J2	
<i>hamaspāθmaēdīiāi</i>	J3		
<i>hamaspāθmaidīiāi</i>	P11		
<i>hamaspāθmaidīiāi</i>	C1		
<i>hamaspāθmaēdīiāi</i>	H1		
<i>hamaspāθmaidīiāi</i>	J6		
<i>hamaspāθmaidīiāi</i>	O1		
<i>hamaspati. maidīiāi</i>	P6		

acc. sg.	Yt 13.49	Y 2.9	Vr 2.2	Y17.8	A 2.4
<i>hamaspāθmaēdaēm</i>	G	G Pt4, K5 J2, J3	G Jp1 K4; Kh1		F2 H2 J9 Jm4 ³¹
<i>hamaspāθmaēdaēm</i>	F1 E1 Pt1				
<i>hamaspaθmaēdaēm</i>	Mf3 K13 K38				
<i>hamaspāθmaēdām</i>	L18				
<i>hamaspāθmaēdīm</i>		Mf1	F11		
<i>hamaspāθmaidāem</i>		H1			
<i>hamaspāθmaidāem</i>		J6			
<i>hamaspāθmaēdām</i>		J7			
<i>hamaspāθmaēdīiāiēm</i>				K 7b	

It emerges from this survey that *mai-* is well attested in addition to *mae-* and *maē-*, and that at the end of the word the variant readings support both the stems *-aiia-* and *-iia-*. Moreover, confusion of *-aiia-* and *-iia-* is common elsewhere in the mss.³² If the last term of the compound represents **maidīaiā-*, the spellings with *-mai-* are more correct. The *-i-* of *mai-* is then an epenthetic vowel which developed after *-ma-* became part of the diphthong and eventually resulted in the variant readings with *-maē-*. Such a development is parallel to that of OAv. *paouruuiia-* ‘first’ (< Pr.Ir. **parūiā-*), in which, as emerges from its YAv. form *paoiriia-*, epenthetic *-u-* was interpreted as part of a diphthong.³³ In addition, the spelling *-maēd-* instead of *-maid-* could be due to the influence of the acc. sg. ending *-aēm* (< **aiām*) on the vocalism of the preceding syllable. A comparable phenomenon occurs in Vd 13.37 and 15.6, where *maēye* is to be corrected to *maiye*, the loc. sg. of *maγa-* ‘pit, hole, hollow’.³⁴

where the word occurs in the gen. sg. The formula is in the dat. in Y 22.1 and Y 66.2-16 (= Y 7.5-19). In Y 66 the mss. abbreviate.

31 GELDNER 1889-1896, II 179 gives these variant readings in Yt 13.49 no. 4.

32 See HINTZE 1994, 399 with fn. 149.

33 On OAv. *paouruuiia-*, YAv. *paoiriia-* see HOFFMANN & FORSSMAN 1996, 52. Since anaptyctic *u* is older than anaptyctic *i*, the reinterpretation of *-maid-* as *-maēd-* must have happened at a later stage of the language development.

34 KELLENS 1974, 80f.; HOFFMANN & FORSSMAN 53. As convincingly argued by KELLENS, the corruption is

Corruption of *-ai-* to *-aē-* is fairly common in the Avestan mss. Variant readings with *-aē-* of the word *maidīia-/maīīdia-* ‘middle’ are found, for instance, in Y 42.4 *maidim*, where the Sanskrit Yasna S1 has *maē...m* and P6 *maedim*. It also occurs in the variant reading *raēθīm* of J2 and other mss. in Y 50.6 *raiθīm* (acc.sg. of *raiθī-* ‘charioteer’, = Ved. *rathī-*) and in Y 40.1 *mauuāēθəm*. The latter is the reading of most mss. and adopted by GELDNER, *Avesta* I 136, but the form is probably to be corrected to ^x*mauuaiθīm*, the acc.sg. of the stem **ma-ua-t-ia-* ‘belonging to someone like me’.³⁵

As to the stem forming suffix, haplology of **maidīiaia-* to *maidīa-* is to be assumed. Such a phenomenon is also found in the Ved. adv. *madhyā* ‘in between’, which derives from **madhyayā* and is formed with the adverbial suffix *-yā* attached to the stem *mādhyā-* ‘middle’.³⁶ From a morphological point of view, **maidīiaia-* is a derivative of the Pr. Ir. stem **madīa-* ‘middle’ with the suffix *-ia-* and serves the function of an adjective.

This leaves *hamaspaθ-* as the first term. Since such a word does not exist in Avestan, it must itself be a compound. This, however, means, that *hamaspaθmaēdaiia-* consists of three terms. Although in Ved. and Av. they usually combine in twos, there are instances of compounds with three terms, e.g. RV 2.9.1 *ādabdhā-vrata-pramati-* ‘caring for unbroken observances’ and YAv. *maidīiōi.paitištāna-* ‘being inbetween the legs’, *ciθrō.paiti.daiia-* ‘provided with a distinctive feature’ and *hamō.xšaθrō.xšaiiamna-* ‘ruling as an overall-ruler’. Words of three terms usually result from the combination of nouns two of which already form a compound.³⁷

On the basis of the assumption that *hamaspaθmaēdaiia-* consists of three parts, it may be analysed as *hamas-paθ-maēdaiia-*. The last term is **maidīiaia-* ‘belonging to the middle, mid-’, as discussed above, and the predominant spelling with unlenited *-d-* suggests that it is an OAv. loanword.³⁸ The first half of the word, *hamaspaθ-*, could be a compound of the stem *paθ-* ‘path’ and *hamas°*. The latter looks like the nom.sg. of the adj. *hama-* which means either ‘all’ or ‘the same’, but that is not possible because of the lack of justification for that particular case ending. Compounds with their first member in *-a* are either left unsplit and then have the stem in *-a* (i.e. one would expect **hamapaθ°*) or are split and then have compositional *-ō* (**hamō.paθ°*), cf. the adj. *hamagaona-*, *hamō.gaona-* ‘of the same colour’ (*AirWb.* 1774).³⁹

probably due to the influence of the forms *cāiti* and *vaēmi* that follow in the context of both passages.

35 See NARTEN, *YH* 274f. and HINTZE 2007, 289-291.

36 See BARTHOLOMAE 1889, 21 fn. (at the end) and WACKERNAGEL (& DEBRUNNER) III 76, I 279, II 1 21.

37 WACKERNAGEL (& DEBRUNNER) II 1, 26 §7e.

38 DE VAAN 2003, 154.

39 DUCHESNE-GUILLEMIN 1936, 8ff.; on compositional *-ō*, see NARTEN 1986, 274f.; DE VAAN 2003, 433-436.

Thus, *hamas*^o is either an *s*-stem or an inflected case form. If the latter, it could be the gen.sg. of the masc. root noun *ham-* ‘summer’ and so qualify the second term *paθ-* ‘the path of summer’. Although inflected case forms are rarer than stems as first terms of compounds, they are found in many IE languages, e.g. Grk. Διόσκουροι ‘sons of Zeus’, δεσπότης ‘house-lord’ (which results from univerbation, cf. Av. *dāng pati-*),⁴⁰ OHG *windisbrūt* ‘bride of the wind’ and the YAv. Bahuvrīhi *zāmasciθra-* ‘having the seed of the earth’ (an epithet of the stars).⁴¹ They are particularly frequent in Old Indian,⁴² where the Tatpuruṣa *apāṃnātha-* ‘lord of the waters’ (BÖTHLINGK & ROTH 1855–1875, I 301) indicates that compounds with an inflected first term could also be created at a later stage in the history of a language.

Alternatively, *hamaspaθ-* ‘path of summer’ could belong to the common type of stem compounds if *hamas*^o represents an *s*-stem. While the latter is not found elsewhere in Av., it could be attested in the Ved. adv. *aiśamas* ‘this year’.⁴³ The *s*-stem *hamas-* would then coexist with the thematic *hama-*, which occurs in the adj. *maidīiōiśama-* ‘mid-summer’, with the root noun *ham-/^ośam-*, and the Ved. fem. *ā*-stem *sāmā-* ‘year’.

Either of the two explanations of *hamas*^o appears to be possible, and in both of them the syntactic relationship between the first and second terms is that of a genitive of sphere. The expression *hamaspaθmaēdaiia- ratu-* accordingly means ‘the time belonging to the middle of the path of summer’. Since *hamaspaθmaēdaiia-* denotes the feast at the vernal equinox, it refers to the time when the sun has reached the middle point of its path from the winter to the summer solstice. The term then contrasts with a hypothetical ‘path of winter’ (**zimō paθ-**), on which the sun moves back from the summer to the winter solstice. The genitives *hamō* ‘of the summer’ and *zimō* ‘of the winter’ form a contrasting pair in

Vd 9.6 *paoirīm upa mayəm niθβərəsōiš*
pasca hamō aiβi.gaitīm
duua ərəzu nismabe
pasca zəmō isaoš aiβi.gaitīm
yaθa caθβārō ərəzuuō

40 HUMBACH 1955, 42. RICHTER 1898, 216–224 discusses Ir. compounds with gen. as first term and *pāti-* as second.

41 See BRUGMANN 1906, 53f., 69f., 94. On a different interpretation of *zāmasciθra-* see SOUDAVAR 2006, 167 fn. 49.

42 WACKERNAGEL (& DEBRUNNER) II 1, 45 §19b. On Post-Vedic compounds with gen. as first term, see RICHTER 1898, 228–231.

43 Usually *aiśamas* is directly connected with the *ā*-stem *sāmā-*, see MAYRHOFER 1986–2001, I 275 with references.

After the beginning of summer
 you shall dig the first hole
 of two fingers depth,
 after the beginning of the icy winter⁴⁴
 of four fingers (depth).

The division of the year into two halves according to the ‘path’ of the sun is also found in Vedic astronomy. There the year consists of two *dyana-*, each of which is comprised of six months and denotes the half-revolutions of the sun between two successive solstices. In the *dakṣiṇāyana-* ‘southern progress’, the sun travels south from the summer to the winter solstice, while in the *uttarāyana-* ‘northern progress’ it returns north from the winter to the summer one.⁴⁵ Kauṣītaki Brāhmaṇa 19.3 states that the sun stands still after it has travelled south for six months in order to turn round to travel north, and quotes the following verse:

Ordaining the days and nights,
 Like a cunning spider,
 For six months south constantly,
 For six north the sun goeth.⁴⁶

If the explanation of *hamaspāθmaēdaiia-* proposed here is correct, then not only three, but four out of the six Av. feast names describe the sun’s position in the course of a year.

5. The Fravashis and the ‘paths’ of the heavenly bodies

There is ample Av. evidence for the idea that the path on which the sun, moon and stars move is denoted by the nouns *pāθ-* or *aduuān-*, for instance in the Gathic hymn about the origin of the cosmos:

Y 44.3 *kasnā xʷəng + strēmca dāt aduuānəm*

Who has established the path of the sun and stars?

In the first Karde of the YAv. Fravardin Yašt, the Fravashis are praised for providing crucial support to Ahura Mazdā when he organized the cosmos spreading out the sky, earth and waters, made the plants grow on earth and put together embryos in the wombs. It is because of the Fravashis that the heavenly bodies travel on their assigned paths:

44 GELDNER 1889-1896, III 72 adopts the form *zəmō*, which is the reading of the mss. here and in other attestations of the gen.sg. of *zim-*, cf. BARTHOLOMAE 1904, 1699f. That the form represents *zimō* emerges not only from its opposition to *hamō* but also from the Pahlavi translation *zmstʼnʼ*.

45 Cf. fig.3b in WITZEL 1984, 272, and KIRFEL 1920, 26f. The astronomical aspects of the two *dyana-* are discussed by BURGESS 1935, 118-121 (commentary on *Sūrya-Siddhānta* 3.12).

46 THIBAUT 1899, 10; PINGREE 1978, 535. The passage above is quoted from KEITH 1920, 452.

Yt 13.16 *āṅhəṃ raiia xʷ arənaṅhaca*
huuarə auua paθa aēiti
āṅhəṃ raiia xʷ arənaṅhaca
mā auua paθa aēiti
āṅhəṃ raiia xʷ arənaṅhaca
stārō auua paθa yeiṅti

Because of their [i. e. the Fravashis'] wealth and glory
the sun goes on that path;
because of their wealth and glory
the moon goes on that path;
because of their wealth and glory
the stars go on that path.

It is also stated in this Karde that, but for the support of the Fravashis, deceitful Angra Mainyu would have prevailed in the material world. If one assumes that the basic meaning of *frauuašai-* is 'choice',⁴⁷ such a statement may be interpreted as indicating that the 'choices' of truthful men and women assist Ahura Mazdā in making his cosmic plan to overcome Evil succeed. The 'choices' by truthful people contribute towards the fight against disorder, destruction and deceit, and show the way in which the material world evolves towards its own perfection in Frašō.kərəti. With regard to the heavenly bodies, this is stated in stanzas 57–58:

Yt 13.57 *ašāunəṃ vaṅ^v hiš^š sūrā spəntā*
frauuašaiiō yazamaide
yā^š strəṃ māṅhō hūrō
anayranəṃ raocəṅhəṃ
paθō daēsaiiən ašaoniš
yōi para ahmāt hame gātuuō
darəṅəm hištənta afrašimantō
daēuuanəṃ parō tbaēšəṅhaṭ
daēuuanəṃ parō draomōbu

We worship the good, strong, bounteous
choices of the truthful (men and women),
the truthful ones who pointed out the paths
of the stars, the moon, the sun
(and) of the lights without beginning,
which before that stood still in the same place

⁴⁷ See HINTZE 2007, 171-177.

for a long time, without moving forwards,
 prior to the hostility of the demons,
 prior to the incursions of the demons.

Yt 13.58 *āaṭ tē nūrām frauuazənti*
dūraēuruuaēsəm aδβanō
uruuaēsəm nāšəmna
yim frašō.kərətōiṭ vaṅhūiiā

But now they move forwards
 towards the distant turning point of the path,
 in order to reach the turning point
 of Good Perfection.

6. The Return of the Fravashis

Besides being the feast of the spring equinox, the second most salient characteristic of the *hamaspaθmaēdaiia-* time is its connection with the Fravashis. For ten consecutive nights the ‘choices’ of departed ancestors are said to come and visit the homes of their respective families, who then provide them with food and clothing, as stated in Yt 13.49–52:

Yt 13.49 *ašāunəm vaṅ^vhiš sūrā^ā spəntā*
frauuašaiiō yazamaide
yā^ā vīsāda āuuaiieṇti
hamaspaθmaēdaēm paiti ratūm
āaṭ aθra vīcarənti
dasa pairi xšafnō
auuaṭ auuō zixšnāṅhəmnā

We worship the good, strong, bounteous
 choices of the truthful (men and women),
 who, at the time of the mid-point of the (sun’s) summer path,
 fly to the dwelling.

There they wander about
 for ten nights
 wanting to know the following:

Yt 13.50 *kō nō stauuāt kō yazāite*
kō ufiāṭ kō frīnāṭ
kō paiti.zanāṭ
gaomata zasta vastrauuata

aša.nāsa nəmanha
kabe nō ida nāma āyairiiāt
kabe vō uruuā frāiieziiāt
kahmāi nō taṭ dāθrəm daiiāt
yaṭ hē aṇhaṭ x^oairiiān ajiiamnəm
yaūuāēca yaūuāētātaēca

Who will praise, who will worship us?

Who will laud, who will please (us)?

Who will receive (us)

with a hand proffering meat and clothes,

with order-obtaining veneration?

Which of our names will be welcomed here?

Which of your souls will be worshipped?

To which of us will be given such an offering which, while being eaten, will be undiminishable to him

for ever and ever?⁴⁸

The blessings showered on a man who duly worships the Fravashis are described in the following stanzas 51–52. It emerges from this text that certain rites were performed during the ten nights referred to earlier. Such rites probably continued practices of an ancient ancestor cult and may well be referred to in Vr 1.2 and 2.2 by the attribute of *hamaspaθmaēdaiia-*, *arətō.kərəiθina-* ‘characterized by the performance of rites’, cf. the Pahlavi translation *yazišn kardārīb*.⁴⁹ The compound’s first term *arətō.*^o is a variant form of the noun *aša-* ‘order, truth’. It retains the cluster *-rt-* and exhibits the same phonetic characteristic as ^x*arəitīmca*, the acc.sg. of *aši-* ‘reward’ attested in Purs. 39.⁵⁰ As already noted by BARTHOLOMAE, *AirWb.* 193, the adj.

48 On this stanza’s philological problems and interpretation see HINTZE 2000, 35–37.

49 BARTHOLOMAE 1904, 193 posits the adj. as *arətō.kərəiθina-* ‘characterized by the fulfilment of religious duties’ (“wofür die Erfüllung der religiösen Pflicht bezeichnend ist”), but KLINGENSCHMITT 1968, 120 (no.361) rightly prefers ms. readings that suggest *arətō.kərəiθina-* convincingly analysing it as a derivative of a substantive **arətō.kərəiθa-* ‘performance of ritual’, from the root *kar* ‘to do, make’, with the suffix *-ina-*. KELLENS 1974, 15 fn.2 adduces as a parallel the Ved. expression *ṛtām ky* ‘to perform a sacrifice’, but, unfortunately, fails to indicate where such an expression occurs. Ved. passages where *ṛtā-* denotes the ritual include RV 1.105.4c *kvā ṛtām pūrvyāṃ gatām* ‘where has the earlier ritual gone?’, see GRASSMANN 282 no.12. By contrast, BIELMEIER 1992, 42 translates *arətō.kərəiθina-* as ‘correcting, putting in order’ (“berichtigend, in Ordnung bringend”) and interprets it as referring to the five epagomenal days that were inserted when the calendar was changed from a hypothetical 360-day luni-solar calendar to the 365-day solar one. Apart from the fact that there are not five, but ten *hamaspaθmaēdaiia-* days, the meaning posited by BIELMEIER is improbable because the suffix *-ina-* forms not agent nouns but adjectives meaning ‘provided with’ (WACKERNAGEL (& DEBRUNNER) II 2, 350f.).

50 BARTHOLOMAE’s 1904, 192f. emendation of the transmitted *ārəitīmca* to ^x*arəitīmca*, which he considers to

arətō.kərəiθina- refers to the Fravashi feast which is celebrated according to prescribed rites:

Vr 1.2 *niuuāēdaiiemi haṅkārāiemi*
hamaspaθmaēdaiiebe + *arətō.kərəiθinabe*
ašaonō ašabe raθβō

I announce, I celebrate

(the worship) of the truthful time of truth

of the mid-point of the (sun's) summer path characterized by the performance of rites.

Moreover, the annual return of the Fravashis at the time when the sun has completed the first half of its journey to the summer solstice, could have inspired the idea that the Fravashis assisted Ahura Mazdā when he designed the paths of the heavenly bodies.

It has long been recognized that the *hamaspaθmaēdaiia*-festival is the most important of the six seasonal feasts.⁵¹ Several factors are responsible for this. One is its position at the spring equinox, when the revival of nature provides an obvious metaphor for the renewal of life. Another is the role of the Fravashis, which represent both the individual choices of past and present truthful people and those parts of departed ancestors with which families establish a physical link at the *hamaspaθmaēdaiia*-time. Furthermore, it is the longest festival. In Yt 13.49 the Fravashis are said to stay for ten nights in the homes of their families. Since the other five feasts are supposed to have originally lasted for only one day, it has been suggested that the ten nights are an early Sasanian alteration of “the night” or “one night” carried out by “some priestly authority”.⁵² This assumption of a deliberate change to the Avestan text, however, is in itself highly problematic. Moreover, the Avestan month structure reviewed above, p. 100ff. suggests that ten additional days were in fact required in order to bring the lunar year of 355 days into line with the 365-day solar year. I submit that those ten days were the *hamaspaθmaēdaiia*- time.

be a variant of *aši-* ‘reward’, is widely accepted, see NARTEN 1986, 246 with fn. 193. JAMASPĀSA & HUMBACH 1971, I 60f. (note f) explain **arəitīmca* instead of *ašimca* as being caused by a shift of accent due to the enclitic *-ca*, but HOFFMANN 1986, 169 rightly objects that there are numerous instances of *š* retained before such an enclitic. The latter therefore considers **arəitīmca* to be a loan word from a dialect where **arti-* remained unchanged, such as Median. CANTERA 2003, 261, by contrast, explains **arəitīmca* as representing the OAv. acc.sg. **arəitīmca* of *aši-*. The same noun occurs in the plural in Y 60.2, where, according to CANTERA, the OAv. form was replaced by the YAv. *ašaiiasca*. Neither HOFFMANN nor CANTERA discuss the cluster *-rt-* in the adj. *arətō.kərəiθina-*. On *aša-* cf. also HINTZE 2007, 53-58.

51 BOYCE 2005, 9.

52 BOYCE 2005, 8 and 1999, 544. DE BLOIS, 1996, 49 with n. 96 suggests that the Farwardīgān festival was originally celebrated for five days but extended to ten during the first half of the 5th cent B.C. when the Achaemenids introduced a solar calendar based on the Egyptian model. The *hamaspaθmaēdaiia*-feast is described by BOYCE 2005, 5, 24f. (on the Parsi Muktd festival).

7. The Avestan solar year

According to the model proposed here, the Avestan year was organized in such a way that there were seven summer months of 30 days and five winter months of 29 followed by the ten days of the Fravashi festival. The principle of bridging the gap between the lunar and solar years by means of a special ritual time has a parallel in Vedic culture where a ceremony lasting for twelve days (*dvādaśāhā-*) is performed during the period between the years.⁵³ The annual insertion of twelve days at the end of the lunar year was an alternative to the periodic intercalation of a thirteenth month (*adhimāsa-*), which later became the prevalent method.⁵⁴ The *dvādaśāhā-* ritual extends over a ten-day period (*daśāhā-*) and two *atirātrā-*, the first and twelfth days.⁵⁵ The ten days are further subdivided into three three-day sections (*trirātrā-*) followed by the tenth, *agniṣṭomasāman-* day.⁵⁶ According to the account of the origin of the *dvādaśāhā-* ritual given in Aitareya Brāhmaṇa IV 24–25, the twelve-day ceremony was the oldest and best of all sacrifices. It was first performed by the seasons and months at the request of Prajāpati, who represents the year, but subsequently the roles were reversed and Prajāpati performed it for the seasons and months. As a result, the months and seasons, and with them the year, became firmly established.⁵⁷ However, because of the annual insertion of extra ritual days outside the months, the latter were not always in agreement with the moon phases, and both the Ved. and

53 FALK 2002, 77. The noun *dvādaśāhā-* (i.e. *dvādaśa-ahā-*) is a dvigu compound denoting a run of twelve days which constitute one unit, see WACKERNAGEL (& DEBRUNNER) II 1, 305. Attestations of *dvādaśāha-* in Vedic Prose and later are listed by MYLIUS 1995, 19 and 80.

54 ZIMMER 1879, 360, 366; HILLEBRANDT 1897, 5f.; GINZEL 1906–1914, 314. According to WEBER 1859, 388 and 1885, 224f. the practice of inserting additional days at the end of the lunar year is an Indo-European inheritance which is also continued in the Germanic “twelve nights”. The latter in turn are reminiscent of the twelve months of the year. This emerges, for instance, from TS 5.6.7, which enjoins that consecration should be for twelve nights, because there are twelve months in a year. According to PB X.3.11, the year culminates in the *dvādaśāhā-* ritual: ‘These days, forsooth, are the force and strength in the year: the twelve full-moon-days, the twelve *ekāṣṭakās*, the twelve new-moon-days. The whole force and strength that is in the year he reaches and obtains by this twelve-day-rite’ (translation by CALAND 1931, 233). HAUDRY 1983, 31 and 1988, 230f. adduces evidence for the Twelve Days from Vedic, Germanic and Greek traditions. According to him, the twelve-day sleep of the Vedic *Ṛbbus* at *Āgohya* corresponds to the twelve-day feast of the Elves in Germanic mythology. Cf. also NILSSON 1920, 22. THIBAUT 1899, 9f., however, rejects the idea of annual extra days outside the months on the grounds that there is no Vedic evidence either for the solar year or for the importance of the 12 nights at the end of the lunar year, but these objections are unjustified.

55 RENOU 1954, 79.

56 PB X.5.17, translated by CALAND 1931, 239. The ten days of this rite are described in great detail in Pañcaviṃśa Brāhmaṇa X–XV, translated by CALAND 1931, 228–425.

57 AB IV 24–25, see AUFRECHT 1879, 112f., KEITH 1920, 214f. and the summary by GONDA 1984, 83. AV 4.11.11 states that the ‘twelve nights’ (*dvādaśa nātrayas*) are dedicated to Prajāpati, the major deity of the *dvādaśāhā-* ritual.

Av. calendars following that system were therefore not luni-solar, but solar.⁵⁸

Since the earth completes its orbit around the sun in 365 days and a quarter, in the Av. calendar an additional *višaptaθa-* day had to be inserted into the second half of one of the winter months at periodic intervals. Such an interpolation posed no problem because it followed an established pattern, the only difference being the reason for its inclusion. For it was added not to keep the number of month days in agreement with that of a moon phase, but the year in sync with the seasons.⁵⁹

If the etymology proposed here is correct, Avestan speakers are likely to have been aware of the meaning of *hamaspaθmaēdaiia-* as denoting the mid-point of the sun's summer path. Its meaning would then have been as intelligible as those of the other three feasts named after the sun's course. If this was so, the name *hamaspaθmaēdaiia-* itself would have linked that time to the spring equinox. The transparency of the meanings of most, indeed all, of the feast names could thus have ensured that as long as Avestan was a spoken language efforts would be made to ensure that the calendar did not move throughout the year. We know that this was the case in the Babylonian-style Old Persian luni-solar calendar of the early Achaemenid period when the months and festivals were tied to specific seasons and consequently always fell at the same point in the tropical year.⁶⁰ Thus, in the Avestan solar and early Achaemenid luni-solar calendars the Zoroastrians had in two different ways achieved almost perfect correspondence between the lunar and solar years.

58 WEBER 1885, 224f. describes the function of the *dvādaśābhā-* time along similar lines as postulated for the *hamaspaθmaēdaiia-* festival in the present article, but then doubts that the Proto-Indo-Europeans already had such a correct understanding of the lunar and solar years prior to their contacts with the Semitic people: "Und wenn sich nun die Frage erhebt, was denn wohl etwa diesen zwölf Tagen eigentlich zu Grunde liegen mag, so liegt jedenfalls der Gedanke nahe, sie als den Versuch anzusehen, zwischen dem 354 jährigen (sic!) Mondjahr (unstreitig wohl der ältesten Form der Jahresrechnung) und dem 366 tägigen Sonnenjahr eine Ausgleichung herzustellen, durch welche trotz der im Volke üblichen Rechnung nach Mondzeit doch eben auch dem factischen Sachverhalte, wonach der »Lauf der Sonne« den Umfang des Jahres bestimmt, Rechnung getragen werden sollte. Man verlegte die zwölf überschüssigen Tage an den Schluss des Mondjahres und gewann so in ihnen theils ein Correctiv für die Zeitrechnung, theils eine *heilige Zeit*, die für das je kommende Jahr als vorbedeutsam galt. Bedenken freilich macht eine solche Auffassung darum, weil wir dann durch die Uebereinstimmung, die in Bezug auf die Zwölften zwischen Indern und Germanen vorliegt, genöthigt werden, ein so richtiges Verständniss der Mond- und der Sonnen-Zeit bereits für die *idg. Urzeit* anzunehmen, was dann eben doch immerhin seine nicht geringe Schwierigkeit hat, da man den Trägern derselben eine solche Kenntnis doch wohl schwerlich auf Grund eigener Beobachtungen zutrauen darf, sie ihnen vielmehr nur etwa auf Grund ihrer Beziehungen zu ihren *semitischen* Nachbarn zuzuschreiben haben würde."

59 By contrast, DE BLOIS 2006, 9-13 argues for an Avestan luni-solar calendar with months fluctuating between 29 and 30 days and the occasional intercalation of a 13th month for which, however, he admits the lack of any Avestan textual evidence.

60 DE BLOIS 1996, 49; BOYCE 2005, 7.

Unfortunately, this was lost as a result of the Achaemenid reform around the time of Xerxes in the early fifth century, when, as shown by François DE BLOIS, a solar calendar of exactly 365 days was introduced based on the Egyptian model.⁶¹ Such a year consisted of twelve months of 30 days plus five additional days. This type of calendar was similar to that of the Avesta in so far as it also had days that were outside the months, with the difference that the number of additional days was five instead of ten. However, since in the Egyptian-style calendar each of the twelve months had 30 days, there was no space left for inserting an additional one to account for the quarter of a day by which a solar year exceeds 365. Thus, no provision was made for intercalation and therefore from then on the beginning of the year slipped back relative to the natural year by one day every four years and one month every 120, resulting in the gradual, but inexorable displacement of the Zoroastrian feasts with respect to the seasons.

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⁶¹ DE BLOIS 1996, 49.

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