

## The Nakṣatra System in the Vedic Calendar

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1. [Here is a sequel to “The Vedic Calendar and the Rituals (1)” JIBS 58-3, 2010, 1117ff.]

In the Vedic calendar until about the 5<sup>th</sup> century B.C., the date is determined by the moon’s phase and position relative to the stars on or near its path. Special importance is set on two nights: *amāvāsyā-rātrī* (later *rātri-*) ‘the night in which the moon stays overnight (*vas*) at home (*amā*),’ i.e. ‘the night of the moon’s conjunction with the sun,’ and *paurṇamāsī-rātrī* (*rātri-*) ‘the full moon night in which the moon is in opposition to the sun.’ These are the sacred nights for *upavasathā-* ‘staying overnight near the sacrificial fire with religious observance’ (hence, the Uposatha in the Buddhism/Jinism) and, the next morning, the New or Full moon sacrifice as well as other Śrauta rituals are performed (cf. ĀpŚS X 2,8, etc.).

It is, however, not easy to decide the Amāvāsyā or Paurṇamāsī night. The period between two successive conjunctions with the sun (i.e. lunation = synodic month) is on average about 29.53 solar days. The moon’s conjunction and opposition may occur any time, in the night as well as in the daylight. In the latter case a vexed question arises whether the preceding or the following night is valid as the Amāvāsyā or Paurṇamāsī. It becomes all the more difficult as various factors change independently, i.e. time of sunset/-rise, time of moonrise/-set, angle between the horizon and the ecliptic, divergence of the moon’s orbit from the ecliptic. The problem is more serious for the Amāvāsyā night, for the thin moon in the twilight just before and after the conjunction may easily escape from the naked eye, even not disturbed by the weather. This difficulty required to watch the moon every night with careful attention, which brought forth the knowledge on its movement with reference to the sun and the fixed stars: after the conjunction with the sun, the newly appeared moon moves from west to east in its orbit, approaching every night a different star or star-group, until it joins again with the sun. The nights in which the moon is visible number on average 28 in a synodic month. The moon was thus considered to visit every night a different star (-group) situated on its path during 28 nights and to stay at home with the sun in the Amāvāsyā night. The stars as well as the sun at which the moon stays are named *nakṣatra-* nt.

‘place (suffix *-tra/-atra-*)<sup>1)</sup> to which [the moon] attains (*nákṣa-*)<sup>2)</sup> (commonly translated “Mondstation,” “Mondhaus” or “lunar mansion”). While the star in general is expressed by the word of Indo-European origin (*\*h<sub>2</sub>stér-*), *stár-* (RV: *stṛbhīh*, *tārāh*), later *tārakā-* (AV + ) and *tārā-* (Cl. Skt.), *nákṣatra-* means ‘the heavenly bodies of special kind related to the moon,’ originally inclusive of the sun as attested in the Ṛgveda [RV] (→ 2.), then ‘the remarkable star(-group)s situated approximately equidistant on or near the moon’s path.’<sup>3)</sup> This notion itself must go back to very old times beyond Vedic age, maybe to those of the Indo-European common stage, as the Nebra Sky Disk in the European Bronze Age (completed ca. 1600 B.C.) suggests.<sup>4)</sup>

As above mentioned, the moon visits 28 Nakṣatras (except the sun) in a synodic month, from which results the system of 28 Nakṣtras. This model accessible to the common people seems have been favored in popular ceremonies (→ 3., 6., 7.). On the other hand, the observer of celestial bodies recognized another cycle of the moon’s movement related to the star, i.e. the sidereal month (on average ca. 27.32 solar days), which lead to the system of 27 Nakṣatras. This more scientific model have prevailed among the priest-scholars (→ 4., 5.). Each system has a defect: the 28 Nakṣatras based on the synodic month is disaccord with the moon’s relation to the stars, while the 27 Nakṣatras based on the sidereal month diverges from the date of synodic month. Efforts to resolve this contradiction are revealed in the Yajurveda [YV] texts examined below. Leaving questions of the number aside, members of the Nakṣatras seem to have been not fixed in their early stage except for several important and characteristic star(-group)s such as Kṛttikās. They seem to have been systematized as the popular worship of the Nakṣatras developed and to have been partly taken into the Śrauta rituals (→ 2.). *nákṣatra-* in pl. is sometimes used in generalized meaning as synonym for *stár-/tārakā-* (→ 2.).<sup>5)</sup> For the heliacal rising, s. 6.

2. The RV, which has a strong tendency to avoid mentioning what concerns the night or darkness, does not inform us much of the stars. Beside *stár-* (7 times in pl.), *nákṣatra-* are attested 10 times: all the 6 forms in sg. (VI 67,6 masc.; VII 81,2; 86,1; X 88,13; 111,7; 156,4.) imply the sun (*sūrya-*); of the 4 forms in pl. (I 50,2; III 54,19; X 68,11; 85,2), the sense ‘lunar mansion’ is evident in X 85,2 of the Sūkta on the Moon’s marriage with Sūryā, in which two Nakṣatra names are mentioned: X 85,13 *aghā-* ‘evil’ f.pl. and *árjunī-* ‘silver colored’ f.du. (~ AV XIX 1,13 *maghā-* and *phalgunī-*; → 3.), s. Ved,Cal. (1) 3.2. Two vocatives *pu-narvasu* and *revatīh* in X 19,1 have nothing to do with the Nakṣatra; the former is an epithet of Agni and Soma, the latter of the cows. *tiśyā-* m.sg. in V 54,13 and X 64,8 is consid-

ered as a different star from the 6<sup>th</sup> Nakṣatra *tiṣyā-*/*tiṣya-*.<sup>6)</sup> The enigma hymn I 164,16 implies *kṛttikā-* f.pl. ‘spinner women,’ but not as a Nakṣatra.<sup>7)</sup>

It is striking that the Nakṣatras are enumerated only in supplementary parts of the Atharvaveda [AV] and the Black YV (mantra- and prose-portion). They all begin with Kṛttikās (identified as Pleiades situated at the spring equinox about 2300 B.C.) and show a remarkable affinity to each other with regard to members, their order and divinities; they are divided into two groups: 28 Nakṣatras with Abhijit and 27 without it, s. Synopsis at the end.<sup>8)</sup> Though Abhijit is identified as Vega (Lyra *a*) by the classical astronomy, it is yet an open question which star the Vedic Abhijit is, for different stars are called by the same name as *tiṣyā-* and *rohini-*. Vega (ecliptic latitude + 61° 44' in A.D. 2010) is too remote from the moon's orbit to be a Nakṣatra. Cf. Abhijit TB<sup>P</sup> I 5,2,3 (→ 7.), *abhijāyat* and *abhijitam* TB<sup>P</sup> I 5,1,4 (→ 6.). It is also the name of a Soma sacrifice performed in the 6<sup>th</sup> month of the Gavāmayana.

3. A list of 28<sup>9)</sup> Nakṣatras appears in AV XIX 7 in the Śaunaka recension. This hymn for daily worship of Nakṣatras (→ 7.) belongs to the latest stratum of the AV.

1. *citrāṇi sākām divi rocanāni* | *sarīṣpāṇi bhīvane javāni* | *turmiśam* (Ed, VISHVA BANDHU with v.l. *turmīcham*, WHITNEY emends to *aṣṭāvīṃśam* according to XIX 8,2 → n.9) *sumatīm icchāmāno* | *āhāni gīrbhīḥ saparyāmi nākam* || 2. *suhāvam me kṛttikā rōhiṇī cā-* | *astu bhadrām mṛgāsīraḥ śam ārdrā* | *pūnarvasū sūnīṭā cāru pūṣyo* (Ed, W *puṣyō*) | *bhānūr āśleṣā āyanam maghā me* || 3. *pūnyam pūrvā phālgunyaw cātra hāstas* | *citrā śivā svātīḥ sukhō me astu* | *rādho viśākhe suhāvā-nūrādāḥ* |  *jyēsthā sunākṣatram āriṣṭam mūlam* || 4. *ānam pūrvā rāsantām me aṣādhā* | *ūrjam devy ūttarā* (Ed, W *yē hy ūttara*) | *ā vahantu* | *abhijit me rāsantām pūnyam evā* | *śrāvaṇaḥ śrāvīṣṭhāḥ kurvatām supuṣṭim* || 5. *ā me mahāc chatābhiṣag vāriya* | *ā me dvayā prōsthapadā suśarma* | *ā revātī cāśvayūjav bhāgam ma* | *ā me rayim bhāranya ā vahantu* ||

1. To [the Nakṣatras which are] conspicuous, shining altogether in heaven, swift and repeating to creep in the universe, desiring protection (? *turmiśam*; s. above text and n.9) and favor, I pay homage day by day to the celestial vault (*nāka-*) with songs of welcome. 2. Kṛttikās ‘spinner women’ (No.1: f.pl.) and Rōhiṇī ‘reddy (cow)’ (No.2: f.sg.) be for me easy to call, Mṛgāsīras ‘head of a beast (esp. antelope)’ (No.3: n.sg.) be lucky, Ārdrā ‘moist woman’ (No.4: f.sg.) be auspicious, Pūnarvasū ‘two men who have again wealth’ (No.5: m.du. → 2.) be virile (*sūnīṭa-*), Pūṣya ‘one who is to blossom’ (No.6: m.sg.) be lovely, Āśleṣās ‘clinging women’ (No.7: f.pl.) be radiance, Maghās ‘well-doing ones’ (No.8: m./f.pl.; RV *aghā-* → 2.) be my way! 3. The former [and latter] Phālgunyaw ‘two pale men’ (No.9–10: m.du.; RV *ārjuni-* → 2.) and Hāsta ‘hand’ (No.11: m.sg.) be prosperous here, Citrā ‘conspicuous woman’ (No.12: f.sg.) be friendly, Svātī ‘one who has good ducks’ (No.13: m./f.sg.; *nīṣṭya-* ‘outside one’ in other lists) be comfortable for me! Viśākhe ‘two-forked couple’ (No. 14: n./f.du.) be success! Anurādāḥ ‘woman causing welfare’ (No.15: f.sg.) be easy to call! Jyēsthā ‘the eldest woman (the principal wife)’ (No.16: f.sg.) be possessed of a good

Nakṣatra, Mūla ‘root’ (No.17: n.sg.) be not to be hurt! 4. Let the former Aṣādhās ‘unconquerable women’ (No.18: f.pl.; cf. AiGr I 224f.) bestow food upon me, let the latter [Aṣādhās] (No.19: f.pl.), oh goddess (sg.), bring [me] nourishment! Abhijit ‘victorious one’ (No.20: m./f.sg.) bestow the very merit upon me! Let Śrávaṇa ‘ear’ (No.21: m.sg.) and Śráviṣṭhās ‘the most famous women’ (No.22: f. pl.) produce great prosperity! 5. Let Śatabhiṣaj ‘healer of hundred (persons)’ (No.23:m./f.sg.) [bring] me great liberty, let two twofold Prōṣṭhapadā ‘two twofold feet of a camping bed’ (No.24–25:m.f.du.) (4 feet in total) [bring] me good shelter, let Revāti ‘wealthy (woman)’ (No.26: f.sg. → 2.) and Aśvayujau ‘two persons who yoke horses’ (No.27: m./f.du.) [bring] me a good share, let Bháranys ‘bringing women’ (No.28: f.pl.) bring me wealth!

4. The 27–29 Nakṣatras are enumerated with their divinities in the mantras for the bricks symbolizing each a Nakṣatra (*nakṣatreṣṭakā-*) piled on the 5<sup>th</sup> layer of the fire-alter for the Agnicayana (Agniciti): in the Maitrāyaṇī Samhitā [MS], Kāṭhaka-Samhitā [KS] and Taittirīya-Samhitā [TS] of the Black YV, but neither in the Kapiṣṭhala-Kāṭha-Samhitā, nor the White YV. Cf. the mantras in the Taittirīya-Brahmaṇa [TB] I 5,1 (→ 5.). For each brick, a Nakṣatra, a divinity and a common formula to all the bricks are uttered.

KS<sup>m</sup> XXXIX 13:130,14–131,10 shows the most simple form with 27 Nakṣatras:

*agnir devātā, kṛttikā nākṣatram, prajāpatir devātā, rohiṇī nākṣatram. ... yamó devātā. „pabhāraṇīr nākṣatram. ‘agné rúcaḥ stha, prajāpates sómasya dhātūr. bhūyāsam prajāniṣṭiya, téna brāhmaṇā téna cchāndasā tāyā devātayā-. „ṅgirasvād dhruvās sīdata.’*

The divinity [of this brick] is Agni, the Nakṣatra is Kṛttikās. The divinity is Prajāpati, the Nakṣatra is Rohiṇī. ... The divinity is Yama, the Nakṣatra is Apabhāraṇis. ‘You (the Nakṣatra bricks) are radiances of Agni, of Prajāpati, Soma, [and] Dhātṛ. **May I have more descendants!** With this formula with realizing power (*brāhmaṇ-*), with this metre, with this divinity, **sit (pl.) steadily like Aṅgiras.**’ (The mantras in quotation marks are repeated for each brick.)

MS<sup>m</sup> II 13,20:165,12–166,12 mentions 29 Nakṣatras corresponding to a synodic month:  
*kṛttikā nākṣatram, agnir devātā-. „gné rúcaḥ stha prajāpateḥ sómasya dhātūr. ṛcé tvā, rucé tvā. bhāse tvā. jyōtiṣe tvā. téna cchāndasā téna brāhmaṇā tāyā devātayāṅgirasvād dhruvā sīda, rohiṇī nākṣatram, prajāpatir devātā. ... abhijit nākṣatram, brahmā devātā. ... bhāraṇīr nākṣatram, yamó devātā. brāhmaṇó nākṣatram, sómo devātā-. „gné rúcaḥ stha ... dhruvā sīda.*

The Nakṣatra [of this brick] is Kṛttikās, the divinity is Agni. ‘You (pl. the Nakṣatra bricks) are radiances of Agni, of Prajāpati, Soma [and] Dhātṛ. **For the hymn, [I place] you (sg. a Nakṣatra brick). For the radiance, [I place] you. For the brightness, [I place] you. For the light, [I place] you.** With this metre, with this formula with realizing power, with this divinity, **sit (sg.) steadily like Aṅgiras.**’ The Nakṣatra is Rohiṇī, the divinity is Prajāpati. ... The Nakṣatra is **Abhijit**, the divinity is **Brahmán** ... The Nakṣatra is Bhāraṇis, the divinity is Yama. The Nakṣatra is **Brahmin (brāhmaṇá-)**, the divinity is **Soma**. ‘You are radiances ... sit steadily like Aṅgiras.’

28 Nakṣatras are similar with those in the AV. The 29<sup>th</sup> N° is not a heavenly body but the

Brahmin on earth, which implies that the moon in the Amāvāsyā night stay with the sun in the sacrificial fire by the Brahmin for the Upavasatha and the New moon sacrifice (→ 1.). Cf. the common concept that the sun stays overnight in the fire (RV X 88,6; TB<sup>P</sup> II 1,2,9; ŚB II 3,1,3, etc.). The Brahmin as a Nakṣatra appears also TB<sup>P</sup> I 5,3,4 (→ 6., Synopsis). The divinity for Abhijit is God Brahmán (masc.), personified from the nt. *brāhmaṇ-*. This suggests relative late origin of this passage (cf. WEBER Nakṣatra II 379). God Bráhmaṇ is attested also in MS<sup>m</sup> II 9,1 [Agniciti] which, however, seems an interpolation from younger texts.

TS<sup>m</sup> IV 4,10,1–3 enumerates 27 Nakṣatras but adds two mantras (in pratika) for Paurṇamāsi and Amāvāsyā taken from the New and Full moon sacrifices (TS<sup>m</sup> III 5,1ab ~ AV VII 79,1; 80,1; MānŚS VI 2,3,8) in order to adjust the Nakṣatra number to a synodic month. Both the 2<sup>nd</sup> and 16<sup>th</sup> Nakṣatras are called Rohiṇí; Indra appears 3 times as divinity (Citrá, the 16<sup>th</sup> Rohiṇí, Śatabhiṣaj). The common formulas to all the bricks lack the last important part. All these indicate to the secondary modification made by the Taittirīyas:

*kṛttikā nákṣatram, agnir devātā-. agné rúca stha, prajāpater dhātūh sómasya. 'rcé tvā dyuté tvā. bhāse tvā. jyótiṣe tvā. rohiṇí nákṣatram, prajāpatir devātā. ... rohiṇí nákṣatram, indro devātā. ... apabhāraṇīr nákṣatram, yamó devātā. pūrṇā paścād. yát te devā ádaduh.*

The Nakṣatra [of this brick] is Kṛttikās, the divinity is Agni, 'You (pl. the Nakṣatra bricks) are radiances of Agni, of Prajāpati, Soma [and] Dhātṛ. For the hymn (*fc-*), [I place] you (sg. a N° brick). For the lightning, [I place] you (sg.). For the brightness, [I place] you (sg.). For the light, [I place] you (sg.).' The Nakṣatra is Rohiṇí, the divinity is Prajāpati. ... The N° is Rohiṇí, the divinity is Indra. ... The N° is Apabhāraṇis, the divinity is Yama. 'Full in behind (west) ...' (mantra for Paurṇamāsi). 'When the gods fixed you [a share] ...' (mantra for Amāvāsyā).

How to pile the bricks is prescribed in the Śrauta-Sūtras, which deviates much or less from the Mantras: [Mānava-ŚS VI 2,3,8 (Maitrāyaṇīya school)] 13 Nakṣatra bricks + 1 Paurṇamāsi brick + 15 Nakṣatra bricks beginning Visākhe + 1 Amāvāsyā brick = 30 bricks; [Baudhāyana-ŚS X 46 and Āpastamba-ŚS XVII 6,5–10 (Taittirīya school)] the 1<sup>st</sup> Paurṇamāsi brick + 14 Nakṣatra bricks till Visākhe + 1 Amāvāsyā brick + 13 Nakṣatra bricks + the 2<sup>nd</sup> Paurṇamāsi brick = 30 bricks. The 30 bricks symbolize the ideal month of 30 nights (→ Ved.Cal. (1) 3.1.). MŚS omits the 29<sup>th</sup> Nakṣatra in the MS and cites the hymns for Paurṇamāsi and Amāvāsyā under the influence of the Taittirīyas. In the BŚS and ĀpŚS, a month begins with the full moon night as in later calendar and two Paurṇamāsi bricks are used. In actual performance of the Agnicayana, 30 pebbles (*śarkara-*) instead of bricks are put on the surface of the 5<sup>th</sup> layer, since the ŚS prescribes much more than the necessary bricks for the construction of the fire altar (cf. STAAL, Agni I 493–495). The man-

tras for the Nakṣatra bricks are thus considered as a secondly interpolation taken from the formulas for some secular cult of the Nakṣatras such as to be found in TB<sup>m</sup> I 5,1 (→ 5.).

5. TB<sup>m</sup> I 5,1 contains 27 Nakṣatras with their divinities as well as the mantra-pratīkas for Paurṇamāsī and Amāvāsyā like TS<sup>m</sup> IV 4,10, but lacks the formula common to all the Nakṣatra bricks. This mantra-collection describes what is yonder (or after) and underneath (or before) each Nakṣatra, which concerns popular ceremonies rather than Śrauta rituals. Though long discussed, whether this text belongs to the Agnicayana (→ 4.) or the Nakṣatra-iṣṭis TB III 1 (→ 7.) (cf. WEBER nakṣtra II 304f.; KEITH TS lxxvi, lxxxii), it is considered to be independent from both the rituals and to serve for another kind of Nakṣatra worship.

*agnēḥ kṛttikāḥ | śukrām parāstāj jyōtir avāstāt | ... pitr̥ṇām maghāḥ | rudāntaḥ parāstād apabhram̄ sō 'vāstāt | aryamnāḥ pūrve phālgunī | jāyā parāstād ṛṣabhō 'vāstāt | bhāgasyōttare | vahatāvāḥ parāstād vāhamānā avāstāt || ... viśveṣām devānām ūttarāḥ | abhijāyat parāstād abhijitam avāstāt | ... pūrṇā paścād yāt te devā ādadhuḥ ||* Kṛttikās belong to Agni. The white-bright one [is] yonder (or: after), the light [is] underneath (or: before). ... Maghās belong to the Fathers. The crying people (in the funeral) [are] yonder, falling down (of the dead) [is] underneath. Two former Phālugunī belong to Aryaman. The wife is yonder, an ox (for the wedding feast) is underneath. Two latter [Phālugunīs] belong to Bhaga. The goods as dowry [are] yonder, those who bring [the bride] [are] underneath. ... Two latter [Aśādhās] belong to the All-gods. What is conquering (nt. *abhijāyat*) [is] yonder, the conquered (*abhijitam*) [is] underneath, ... 'Full in behind (west) ...' 'When the gods fixed you [a share] ...' (For the Phālugunī and the marriage, cf. RV X 85,13 [→ 1.; Ved.Cal. (1) 3.2.], Kauśika-Sūtra 75,5; Āpastamba-Gṛhyasūtra I 3,1ff.)

6. TB<sup>p</sup> I 5,2 and I 5,3 have no relation to the preceding TB<sup>m</sup> I 5,1 but give various explanations of the Nakṣatras which seem to have developed outside the Śrauta rituals: observation of heliacal rising of a Nakṣatra probably for the Amāvāsyā night and the following daytime (→ Ved.Cal. (1) 2.), Prajāpati composed of Nakṣatras, characteristics of each Nakṣatra inclusive of Abhijit, theological etymology of *tārakā-* and *nākṣatra-* (→ n. 2), division of the Deva-Nakṣatras (Kṛttikās ~ Viśākhe) and the Yama-N<sup>o</sup> (Anurādhās ~ Apabhāraṇīs), auspicious days and day-parts, Brahmin as the 28<sup>th</sup> Nakṣatra (→ 4., Synopsis), etc.

I 5,2,1ff. *yāt pūnyam nākṣatram | tād bāt kurvitopavyuṣām | yaḍā vai sūrya udēti | ātha nākṣatram naiti | yāvati tāra sūryo gacchet | yātra jaghanyam paśyet | tāvati kurvīta yatkarī syāt | pūnyāha evā kurute | evām ha vai yajñeṣum ca śatādyumnaḥ ca mātsyo niravasāyayām cakāra ||1|| ... abhijñ nā ma nākṣatram | upāriṣṭād aśādhānām | avāstāc chroṇāyai | devāsuraḥ sāmyattā āsan | té devās tāsmin nākṣatre 'bhyājayan ||3||* ... What is an auspicious Nakṣatra, one should confirm (*bāt* 'truly/ really!' + *kurute*; cf. K. HOFMANN Aufs. 355) that when the dawn is approaching (just before the sunrise). As soon as the sun rises, [one's sight] does not go to the Nakṣatra. If there is one who

does that (astronomical observation) as his task (*yatkāri*), one should do [one's task], as long as the sun would go where the last [star] would be seen. [It follows that] one does [one's task] on the very auspicious day. In this way, verily, Mātsya made Yajñeṣu and Śatadyumna to start from the settlement [for migration] (*niravasāyayāṁ cakāra*; cf. RAU Staat 14). ... The Nakṣatra **Abhijit** by name [is] above (or: after) Aṣādhās, and below (or: before) Śroṇā. The Devas and the Asuras were confronted, The Devas conquered at this Nakṣatra. ...

7. TB III 1,1–3 (mantra) and 4–6 (prose) treat the Nakṣatra-iṣṭis, i.e. the daily offerings to the 28 Nakṣatras and the moon, sun, etc. during a month. According to the BaudhŚS XXVIII 3–4, this ritual begins at the Amāvāsyā night before the full moon situated at the 14<sup>th</sup> N° Viśākhā (Libra  $\alpha \beta$ ) which occurs around the spring equinox about 900 B.C. Here is a month long festival centering on the full moon at the spring equinox, cf “Passover”.

1) Cf. AiGr II-2 701ff., 170f. 2) The etymology of *nakṣatra*- was variously explained: from *nakṣ* ‘attain (to heaven)’ TB<sup>p</sup> I 5,2,5, Nirukta 3,20, GRASSMANN; \**ná-kṣatra*- Pāṇini VI 3,75 (comp. with negative *ná*; schol. from *kṣar* ‘flow’ or *kṣi* ‘perish,’ i.e. “imperishable”), ‘having no governing power’ ŚB II 1,2,18f. (cf. Nirukta 3,20); \**nakt-tra*- “die Nacht schützend” AUFRECHT, WEBER; \**nákt-kṣatra*- “Herrschaft über die Nacht habend” BRUGMANN, AiGr III 233, etc. 3)

In the Jyotiṣa, the notion of the *nakṣatra*- was transformed into the equally spaced 27 zones of the ecliptic.

4) The 32 stars inclusive of the Pleiades beside the crescent and the full moon are recognized by H. MELLER Die Himmelscheibe von Nebra, Der Geschmiedete Himmel 22–31, spec. 28f.; SCHMIDT-KALER Acta praehistorica et archaeologica 40, 2008, 17f. The Babylonian list of 17 (or 18) constellations that the moon touches (MUL.APIN’s list VI, HUNGER and PINGREE MUL.APIN, Archiv für Orientforschung, Bh. 24, 67–71, 144) is dated much later than the other main lists of MUL.APIN and is supposed to have originated under the influence of the Indian Nakṣatras. For the converse view, cf. PINGREE MUL.APIN and Vedic Astronomy, Fs. Sjöberg, 440, 444f. and HUNGER and PINGREE, Astral Science in Mesopotamia, 31, 72f. Cf. further Chinese “xiu (sieou)” (28 unequal divisions of the celestial sphere based on stars near the equator) and Arabian 28 lunar mansions.

5) From the elliptic pl. ‘stars represented by the Nakṣatras’; for opposite views, cf. WEBER Nakṣatra II 267ff., GRASSMAN Wb. RV s.v., THIBEAU Astronomy 12f., etc. 6) RV *tiśyā*- corresponds to jav. *tiśtriia*- (m.) name of the star Sirius as divinity, s. FORSSMAN KZ 82, 1968, 57ff.

7) Cf. THIEME Fs. Schneider 329–336 = Kl.Schr. 956–963. 8) The view that the 27 Nakṣatra system is original to which Abhijit is added is widely shared, cf. WEBER Nakṣatra II 274–280.

9) The number 28 of the Nakṣatras is mentioned in the following hymn XIX 8,2 (only Śaunaka): *aṣṭāviṁśāni śivāni śagmāni sahā yōgam bhajantu me* ‘Let the friendly and helpful [Nakṣatras] composed of 28 share together in my migration (→ 6.) !’

(Key words) astronomy, calendar, Veda, *nakṣatra*, *amāvāsyā*, *paurṇamāsī*, Agnicayana

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Synopsis of the Nakṣatras (Nakṣatra-names are cited in nom. form; the divinities are not mentioned in the AV and the TB<sup>p</sup> I 5.2)

Number	AV-S XIX 7.1-5	MS <sup>m</sup> II 13.20	KS <sup>m</sup> XXXIX 13	TS <sup>m</sup> IV 4.10	TB <sup>m</sup> 15.1	TB <sup>m</sup> III-6	TB <sup>p</sup> I 5.2
1. f.pl.	28	29	27	27	27 (28)	28	28 (?)
2. f.sg.	kṛttikās rōhiṇī	kṛttikās (agnī-) rohiṇī (prajāpati-)	id. id.	id. id.	id. id.	id. id.	kṛttikās —
3. n.sg.	mṛgāśiras	inavā (marūt- pl.)	inavā (marūt- pl.) = MS	mṛgāśiraṇ (soma-) ārdrā	inavā (soma-) bāhū du.	mṛgāśiraṇ (soma-) ārdrā	— —
4. f.sg.	ārdrā	bāhūs m.sg. (rudrā-)	= MS	ārdrā	bāhū du.	ārdrā	—
5. n.du.	pūnarvasū	pūnarvasur sg. (āditi-)	= MS	pūnarvasū du.	= TS	= TS	—
6. m.sg.	pūṣyas	tīṣyas (bṛhaspātī-)	= MS	tīṣyās	= TS	= TS	—
7. f.pl.	āśleṣās	āśleṣās (sarpa- pl.)	= MS	āśreṣās	= TS	= TS	—
8. f.pl.	maghās	maghās (piṭṭ- pl.)	id.	id.	id.	id.	—
9. m.du.	pūrvā phālgunyah	phālgunīs f.pl. (bhāga-)	= MS	phālgunī f.du. (aryamān-)	= TS	phālgunīs pl. (aryamān-)	—
10.	(not mentioned)	phālgunīs f.pl. (aryamān-)	uttarāḥ phālgunīs (aryamān-)	phālgunī f.du. (bhāga-)	uttare du. (bhāga-)	phālgunīs pl. (bhāga-)	—
11. m.sg.	hāstas	hāstas (savitīḥ-)	hāstau du.	hāstas	= TS	= TS	hāstas
12. f.sg.	citrā	citrā (svāstīḥ-)	id.	id. (indra-)	id. (indra-)	id. (svāstīḥ-)	citrā
13. m./f.sg.	svāstās	mīṣyaṇ n. (vāyū-)	mīṣyaṇ n.	svāst f.	mīṣyā f.	mīṣyā	mīṣyā
14. n./f.du.	visākthe	visāktam n.sg. (indrāgnī du.)	= MS	visākthe du.	= TS	= TS	visākthe

[KS visāktā f.sg. in KEITH/MACDONELL Vedic Index I s.v. Nakṣatra.]

[TB<sup>p</sup> I 5.2.6-9: The Deva-Nakṣatras = kṛttikās ~ visākthe; The Yama-Nakṣatras = anūrādhās ~ apabhāranīs]



15. f.pl.	<i>anūrādhās'</i> ( <i>mītrā-</i> )	<i>anūrādhās</i>	id.	id.	<i>anūrādhās</i>
16. f.sg.	<i>jyeṣṭhā</i>	<i>jyeṣṭhā</i> ( <i>indra-</i> )	<i>rohini</i> ( <i>indra-</i> )	id.	<i>jyeṣṭhaghñā</i>
17. n.sg.	<i>mūtam</i>	= MS <i>mūtam</i> ( <i>mītrā-</i> )	<i>vicītau</i> f.du. ( <i>pīṭṭ-</i> pl.)	= MS/KS	<i>mūlavārhaṇī</i>
18. f.pl.	<i>pūrvas aṣādhās</i>	<i>aṣādhās</i>	<i>aṣādhās</i>	<i>aṣādhās</i>	<i>aṣādhās</i>
19. f.pl.	<i>ūtatarās</i> ( <i>aṣādhās</i> )	<i>ūtatarā aṣādhās</i>	<i>aṣādhās</i>	<i>aṣādhās</i>	<i>aṣādhās</i>
20. sg.	<i>abhijit</i>	—	—	<i>abhijit</i>	<i>abhijit</i>
21. m.sg.	<i>śrāvanyas</i>	<i>śroṇā</i> f. ( <i>viṣṇu-</i> )	<i>śroṇā</i>	<i>śroṇā</i>	<i>śroṇā</i>
22. f.pl.	<i>śrāvīṣṭhās</i>	id.	id.	id.	<i>śrāvīṣṭhās</i>
23. sg.	<i>śatābhīṣaj</i>	<i>śatābhīṣaj</i> ( <i>vāruṇa-</i> )	<i>śatābhīṣaj</i> ( <i>indra-</i> )	= TS	<i>śatābhīṣaj</i>
24./25.m.du.	<i>āvayā</i> <i>proṣṭhapadā</i>	<i>proṣṭhapadās</i> pl. <i>proṣṭhapadās</i>	<i>proṣṭhapadās</i>	<i>pūrve</i> <i>proṣṭhapadās</i>	<i>proṣṭhapada-</i> pl. <i>proṣṭhapadās</i>
26. f.sg.	<i>revāṭī</i>	( <i>āhi-</i> budhnyā-) <i>proṣṭhapadās</i>	( <i>ajā-</i> ēkapad-) <i>proṣṭhapadās</i>	( <i>ajā-</i> ēkapad-) <i>proṣṭhapadā</i>	( <i>āhi-</i> budhnyā-) <i>revāṭī</i>
27. du.	<i>asvayijau</i>	id.	id.	id.	id. <i>asvayij- du.</i>
28. f.pl.	<i>bhāraṇyas</i>	<i>bhāraṇīs</i> ( <i>yamā-</i> )	<i>apabhāraṇīs</i>	<i>apabhāraṇīs</i>	<i>apabhāraṇīs</i>
29.	—	<i>brāhmaṇās</i> ( <i>soma-</i> )	—	—	—

[TB<sup>1</sup> I 5.3.4 *brāhmaṇo vā aṣṭāviṃśo nakṣatranām* 'The Brahmin is, verily, the 28<sup>th</sup> Nakṣatra,' cf. MS<sup>m</sup> II 13.20 (the Brahmin is the 29<sup>th</sup> Nakṣatra)]