

Tithikarmaguṇa in *Gārgīyajyotiṣa*:

Tithi Worship According to a Number of Early Sources

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1. Introduction

Within the *jyotiṣa* tradition of India, Garga has long been considered one of the most important, if not the earliest authorities on a variety of subjects in the astral science.¹ The oldest materials attributed to Garga were dated to around the first century CE and possibly older. References to Garga are found in Mīnarāja's *Vṛddhayavanajātaka* (fourth century CE?) and Varāhamihira's works (sixth century CE).² According to Pingree's survey, there are no less than thirty-four distinct works of the *jyotiṣa* genre bearing a title associated with Garga.³ The exact relations between these works, with topics ranging from planetary omens and bird divination to horoscopy and astronomy, await further investigation.⁴ Among the most extensive works of Garga in terms of both scope and size is the *Gārgīyajyotiṣa*, which Pingree called the "first *Gargasamhitā*" (G1).⁵ The particular redaction of the *Gargasamhitā* we examine here is described as a dialogue on astral omens between Krauṣṭuki (mss. Kroṣṭuki) and Garga. The two manuscripts we have consulted for this paper, considered by Pingree and Mitchiner the most legible, are as follows:⁶

Bh	BORI, Pune 542 of 1895/1902. 226 ff. CESS A2, 117.
G	Cambridge Trinity College, Cambridge R.15.96. 109 ff. CESS A2, 117.

2. Astral Omens and Tithi Worship in the *Gārgīyajyotiṣa*

Astral omens constitute one of the main, if not the most important topics in most of the extant works attributed to Garga.⁷ Among the most archaic materials in the *Gārgīyajyotiṣa*, besides those dealing with the *nakṣatras*, are those found in the chapter titled "Tithikarmaguṇāḥ" in forty-four verses, which forms a part of the first *aṅga*, titled "Karmaguṇāḥ". As the introductory passage explains (vv. 2–4), the chapter describes the

fifteen *tithis* conceived as a cycle of time, in either white or dark *pakṣa*, with each *tithi* associated with a deity and the corresponding auspicious and inauspicious acts for a Brahmin in service to a king (vv. 11–44). The materials described therein appear to be the source of a number of later works.⁸⁾ Particularly noteworthy are the names of the fifteen *tithis*, attested in the Buddhist sources (Table 1), but seem to have become obsolete by the time of Varāhamihira, who identified the presiding deities for each *tithi*, but provided only the names of the first five *tithis*, repeatedly applied to the remaining ten.⁹⁾ The rationale behind this underlying tripartite structure which in fact appears to determine the general character of a particular *tithi*, and the connection between the cyclical *tithi* omens, worship, rituals and the rest of the *Gārgīyajyotiṣa* remain topics to be investigated. According to Pingree, the Indian *tithi* “seems likely” a concept borrowed from Mesopotamia though he admits that its origin remains obscure.¹⁰⁾ Within the Indian context, the *tithi* was likely conceived originally as a means to keep track of the phases of the Moon, with the assumption that a lunar month from one Full Moon to the next is always made up of thirty *tithis*.¹¹⁾ A *tithi* was thus defined as one thirtieth of a synodic month (c. 29.5 days), resulting in an average *tithi* being slightly less than a day. In our text, the *tithis* are enumerated from after the Full Moon and a *tithi* is defined as a day less two *lavas* (*dvilavonam*, v. 6),¹²⁾ resulting inevitably in the *tithis* beginning from different parts of the day. Inconvenient as it is, the *tithi* is none-

Table 1. Names and Presiding Deities of the Fifteen *tithis*

Texts	1	2	3	4	5	6	7
<i>Garga</i>	Nandā	Bhadrā	Balā	Riktā	Pūrṇā	Vṛddhi ^{Bh} /Somā ^G / Māsā? ^U	Mitrā
ŚKA	Nandā	Bhadrā	Calā	Riktā	Pūrṇā	Aśiti	Mitrā
宿曜上(下)	建(建名)	得財	威力	惡業(猛武)	圓滿	求名	朋友
BS 98.1 ^U	Brahma	Vidhātṛ	Hari	Yama	Śaśāṅka	Skanda	Śakra
8	9	10	11	12	13	14	15
Mahābalā	Ugrasenā	Sudhārmīnī	Ānandā	Yaśā	Jayā	Ugrā	Saumyā
Mahābalā	Ugrasenā	Sudharmā	Mānyā	Yaśā	Jayā	Ugrā	Siddhā
力戰	凶猛	善法	慈猛	名聞	最勝	勇猛	吉相
Vasavaḥ	Bhujaga	Dharma	Īśa	Savitṛ	Kāma	Kali	Viśve ^(f.m.) /Pitṛs ^(n.m.)

theless an important concept not only in Indian calendrics, astrology and rituals, but also later in Indian astronomical computation as a fundamental unit (as in the *Vedāṅgajyotiṣa*), and was eventually established as one of the five components of the traditional *pañcāṅga*.¹³⁾ From an astronomical standpoint, such “mean” *tithi* is a useful device as it is based on the mean synodic month, disregarding its actual varying length due to the Moon’s anomalistic movement.¹⁴⁾ Most likely for the same reason, the same principle was adopted in the Babylonian lunar tables, although the unit was never spelt out explicitly and was referred to simply as “day” in Babylonian texts.¹⁵⁾ Beside the lack of a specific designation, the concept of *tithi* itself has no counterpart in Babylonian sources in terms of astrological or ritual applications, and was never used for astronomical computation in any fundamental way. In the case of Hellenistic astral science, there has so far been no evidence of any concept comparable to the *tithi* at all.¹⁶⁾

The fifteen *tithis* [G8v6, Bh10v5, U=BS 98.1–3, pp. 1037 ff.]¹⁷⁾

nandā pratipadā proktā praśastā	riktā cōktā caturthī tu kṣudrakarma
dhruvakarmasu/ jñānasya ca samārambhe	prayojayet/ gograhaṃ dāruṇaṃ karma
pravāse ca vigarhitā//11//	kūṣasākṣyaṃ samārabhet//17//
dānaṃ dadyāt tapaḥ kuryāt puṣṭisaubhāgyam	kuryāt sām̐vatsarāṇy atra abhigātāśrayāṇi
eva ca/ janma cātrottamaṃ vidyāt	ca/ grāmasenāvadhaṃ kuryāt yamaṃ vidyāc
svayambhūś cātra devatām//12//	ca daivatam//18//
bhadrety uktā dvitīyā ca śilpavyāyāminām	pūrṇaṃ tu pañcamīm āhuḥ praśastāṃ
hitā/ ārambhe bheṣajānām ca pravāse ca	dhruvakarmasu/ navānnāgrayaṇānām ca
pravāsinām//13//	śayanāsanaveśmanām//19//
vivāhavyavahārārthe vāstukṣetraḡrāhādiṣu/	janmakṣetra vibhūśārthā
puṣṭikarmasu ca śreṣṭhā devatā ca	vyavahārausadhikriyāḥ/ praśastāṃ pauṣṭikaṃ
bṛhaspatiḥ//14//	karma somaṃ vidyāc ca daivatam//20//
balety uktā tṛtīyā ca balaṃ syāt tatra kārayet/	ṣaṣṭhī somātithir nāma praśastā
gośvakuñjarabhṛtyānām damyānām	dhruvakarmasu/ kṣetrārambhaṃ ḡrhaṃ
damanāni ca//15//	kuryād devatāyatanāni ca//21//
kuryāc ca sarvakarmāṇi bījāny apī ca	kārayet samśrayed vāpī gopurādyaīlayāni ca/
vāpayet/ balakarmārambhed vāpī viṣṇuṃ	adhvānaṃ ca na kartavyaṃ kumāraś cātra
vidyāc ca daivatām//16//	daivatam//22//

saptamī mitrā nāmā tu mitrakāryādhruvāni ca/ kuryād rājño dhvajam chatram āsanam śayanāni ca//23//	koṣṭhāgārāni yuñjīta nidhānam ca nidhāpayet/ ṛṇam cātra na grhñiyād ādityaś cātra daivatā//34//
ratnāni maṇimuktāni vastrāny ābharaṇāni ca/ dhārayed bhūṣaṇārthāya devāḥ saptarṣayaḥ smṛtāḥ//24//	jayām trayodaśim āhuḥ kartavyam vāstuveśanam/ vastramālyam alaṅkāram citrāny ābharaṇāni ca//35//
mahābalāṣṭamī proktā kuryād balanidaṁśanam/ adhikārān prayuñjīta yantrakāṁś ca dhanūṁṣi ca//25//	saubhāgyakaraṇam strīṇām kanyāvaram eva ca/ maṅḍalam copavasanam kāmam vidyāc ca daivatām//36//
kuryāc ca nagare guptim suruṅgān parikhān tathā/ hastyaśvāmś ca prayuñjīta vasavaś cātra devatā//26//	ugrām caturdaśim vidyād dāruṇāny atra kārayet/ bandhanam svaripūnām ca pravāsam cātra varjayet//37//
ugrasenā tu navamī rodhane vadhabandhane/ amitradamanārthe ca hitā śatru- vadhārthinām//27//	pūrvābhighātanam caiva dāruṇam viśaghātīnam/ grāmasenāvadam kuryād vidyād rudro 'tra devatā//38//
adhvānam ca na gaccheta proṣyam na praviśed grham/ saharodhaviśādīni rudrāni cātra devatā//28//	amāvāsya tu siddhārthā pitṛyajño 'tra śasyate/ daivakāryāgnikāryāni gokolāni niveśayet//39//
sudharmām daśamīm prāhur dhruvam kuryād yaśaskaram/ kūpān khaṇa nadīś caiva kūpam puṣkaraṇīyutam//29//	purohitam ca vasyeta kuryād yajñakriyāś tathā/ balimś cāropahārāmś ca pitarāś cātra devatā//40//
ārāmān nagarīś caiva kṣetrāni ca grhāni ca/ puṇyaśālām sabhām kuryād dharmam vindyāc ca daivatam//30//	kalyāni paurṇamāśi ca devakarmādhi- kārakam/ viprakāryāgnikārye ca gavām ghoṣān niveśayet//41//
sunandaikādaśim āha dhruvam vindyān mahānasam/ niveśanagarāmayajña- viprasabhāś tathā//31//	rājñām purohitān kuryād yajñāni vividhāni ca/ śubham karma ca kartavyam somam vidyāc ca devatām//42//
strīṣu cāgram pravarteta dāsakarmakareṣu ca/ gūḍhārtham na prayuñjīta kāmāsatruś ca devatā//32//	etāś tu tithayaḥ sarvāḥ parivarttate cakravat/ śuklapakṣe ca kṛṣṇe ca śuklacandrama- sāvṛtāḥ//43//
dvādaśim tu yamām āha dhruvam vindyād yaśaskaram/ maṅgalāny atra kurvīta mantropanayanāni ca//33//	apramattaḥ satām yukto brāhmaṇaḥ susamāhitaḥ/ tithayo nirdiśet samyag gārgasya vacanam yathā//44//

Translation

(11) The first [*tithi*] is said to be Nandā. It is auspicious for firm acts, for the commencement of learning; traveling on a journey is however forbidden. (12) One should give gifts, perform asceticism. Birth on this [*tithi*] is the best, characterized by prosperity and fortune. Its deity is Svayambhū. (13) The second [*tithi*] is said to be Bhadrā. It is good for craft and athletic contest, for starting medical treatment, and for the travelers traveling on a journey. (14) ...for betrothal, marriage, properties, fields and houses. It is excellent to perform nourishing acts. Br̥haspati is the deity. (15) The third [*tithi*] is said to be Balā. One may have an army on this [*tithi*]. One should perform the taming of tamable cows, horses, elephant and servants. (16) One should perform all kinds of rites and sow seeds. Or, one should engage in the act of strength. One should know Viṣṇu as the deity. (17) The fourth [*tithi*] is called Riktā. One should perform menials act, capture oxen, do cruel things and make false witnesses. (18) On this [*tithi*], one may engage in the annual raid of shelters. One should destroy village armies. One should know Yama as the deity. (19) The fifth *tithi* is called Pūrṇā. One should perform firm acts, of the ceremony of consuming new grain, oblation of the first fruits, and of beds, seats and houses. (20) [One should engage in] activities related to birth, fields, ornaments, wealth, commerce and medicine. Works of nourishing nature are auspicious. One should know Soma as the deity. (21) The sixth *tithi* is called Somā (Vṛddhi?/Māsā?). It is auspicious for firm acts. One should engage in agricultural works, build houses and temples for deities. (22) One should build or take refuge in buildings such as the city-gates. Journey should be avoided. The deity for this [*tithi*] is Kumāra (Skanda). (23) The seventh *tithi* is called Mitrā. One should engage in gentle activities performed for friends, make king's banner, parasol, throne and beds. (24) One should put on jewels, gems, pearls, clothes and ornaments for the purpose of embellishment. The deities are known as the seven ṛṣis. (25) The eighth [*tithi*] is called Mahābalā. One should make army armors, appoint officials, and [produce] military machines and bows. (26) He should make fortification, as well as underground passages and ditches in the city. He should employ elephants and horses. The Vasus are the gods on this [*tithi*]. (27) The ninth [*tithi*] is Ugrasēnā. It is good for creating obstacles, killing and capturing, as well as for the subjugation of enemies and for the slaying of enemies. (28) One should not go on the road, to the foreign land or enter a house with corrosive poisons and so on. Rudrāṇī is the deity on this [*tithi*]. (29) The tenth [*tithi*] is said to be Sudharmā. One

should perform [deeds which are] firm and glorifying. One should dig wells and channels, and [make] a well fastened with a bucket. (30) One should make gardens, cities, fields, houses, almshouses, assembly halls. One should know Dharma as the deity. (31) The eleventh [*tithi*] is said to be Sunandā. One should make firm [acts], kitchen, houses, towns, villages, sacrifices and assembly halls for Brahmins. (32) One should choose the best among women and servants. One should not hide money. Śiva (enemy of Kāma) is the deity. (33) The twelfth [*tithi*] is called Yamā. One should perform [deeds which are] firm and glorifying. One should undergo auspicious acts and applications of mantras. (34) One should prepare storehouses and bury treasures. One should not take a loan. The Sun is the deity on this [*tithi*]. (35) The thirteenth [*tithi*] is called Jayā. One should make houses, buildings, clothes, garlands, decoration and colorful ornaments. (36) [One should] please women and even choose a bride. [One should make] a *maṇḍala* and perform fasting (*upavasanam*). One should know Kāma as the deity [on this *tithi*] (37) One should know the fourteenth [*tithi*] as Ugrā. On this [*tithi*] one should perform cruel deeds and capture one's enemies. On this [*tithi*] one should avoid travel. (38) One should engage in preemptive attack, horrific killing by poisons and destruction of regional factions (lit. village army). One should know Rudra as the deity on this [*tithi*]. (39) The New Moon is Siddhārthā. The worship of ancestors is praised on this [*tithi*]. One should enter sanctuaries (*gokulāni*) where there are holy rites and fire rites. (40) One should appoint a Purohita and perform sacrificial rites, make offerings and occasional oblations. The ancestors are the deity on this [*tithi*]. (41) The Full Moon is Kalyāṇī. [One should engage in] duties for the gods, acts for the Brahmins and kindle the sacrificial fire. One should devote to the sounds of the cattle. (42) One should appoint Purohitas and perform various rites for the kings. Auspicious acts should be performed. One should know Soma as the deity. (43) Here are all the *tithis* covering the Full Moon (i.e., from one Full Moon to the next). It revolves like a wheel in both the bright fortnight and the dark fortnight. (44) A Brahman, proper, very attentive among the good people, should teach the *tithis* completely, [based on] such as Garga's teaching.

Notes

- 1) Weber 1852: 225; Pingree 1963: 232–33, 1981: 69–71, 1987: 295; Mitchiner 2002: 92–94. 2) Pingree 1981: 71–72. 3) *CESS* A2, 115–117; A3, 29–30; A4, 78–80; A5, 78–84. 4) Geslani, Mak et al. 2017. 5) Pingree 1987: 293; Mitchiner 2002: 113–126. 6) Mitchiner 2002: 24–28; Pingree 1987: 293–294. In addition, a helpful but not always reliable transcription of G by Pingree is kept at the

American Philosophical Society. 7) For the sources and transmission of the work, see Geslani, Mak et al. 2017: 163–165. 8) BS 98, ŚKA 202–3, Taishō (1299) 21.393 ff.; Yano 1986: 109–110. 9) BS 98.2 cd: *nandā bhadrā vijayā riktā pūrṇā ca tās trividhāḥ*// 10) Pingree 1963: 231. 11) Plofker and Knudsen 2011: 62. 12) *tataḥ prakṣīyamāṇasya tithir evaṃ ca saṃjñitā/ dvilavonam ahorātram etasya paramā gatiḥ*//6// While later traditions often define a *tithi* as “a day less 1/64,” the conversion here is unknown. The unit *lava* is defined generally by Buddhists as 1/900 of a day, and less by Brahmanical authors (Hayashi 2017). 13) Plofker and Knudsen 2011: 61. 14) Neugebauer 1957: 186–187, fn. 2. 15) Neugebauer 1957: 128; 1975: 349, 358, 360. 16) Neugebauer 1957: 186. 17) Apparatus not provided here due to space constraint.

Abbreviations

BS *The Brhatsamhitā with the Commentary of Bhaṭṭotpala*. Ed. Sudhakāra Dvivedin. 2 vols. Varanasi: Varanaseya S. V., 1968.
 CESS *Census of the Exact Sciences in Sanskrit*. Ed. David Pingree. 5 vols. Philadelphia: American Philosophical Society, 1970–1994.
 ŚKA *The Śārdūlakaṛṇāvadāna*. Ed. Sujitkumar Mukhopadhyaya. Santiniketan: Visvabharati, 1954.

Bibliography

Geslani, Marko, Bill M. Mak, Michio Yano, and Kenneth Zysk. 2017. “Garga and early astral science in India.” *History of Science in South Asia* 5 (1): 151–191.
 Hayashi, Takao. 2017. “The Units of Time in Ancient and Medieval India.” *History of Science in South Asia* 5 (1): 1–116.
 Kern, H. 1865. *The Brhat Saṃhitā of Varāha-Mihira*. Calcutta: Baptist Mission Press.
 Mak, Bill M. 2015. “The Transmission of Buddhist Astral Science from India to East Asia: The Central Asian Connection.” *Historia Scientiarum* 24 (2): 59–75.
 Mitchiner, John E. 2002. *The Yuga Purāna*. 2nd rev. ed. Calcutta: Asiatic Society.
 Neugebauer, Otto. 1957. *The Exact Sciences in Antiquity*. 2nd ed. Providence: Brown University Press. Reprint, New York: Dover, 1969.
 ———. 1975. *A History of Ancient Mathematical Astronomy*. Berlin/New York: Springer.
 Pingree, David. 1963. “Astronomy and Astrology in India and Iran.” *Isis* 54 (2): 229–246.
 ———. 1973. “The Mesopotamian Origin of Early Indian Mathematical Astronomy.” *Journal for the History of Astronomy* 4: 1–12.
 ———. 1981. *Jyotiḥśāstra: Astral and Mathematical Literature*. Wiesbaden: Harrassowitz.
 ———. 1987. “Venus Omens in India and Babylon.” In *Language, Literature, and History: Philological and Historical Studies Presented to Erica Reiner*, ed. Francesca Rochberg-Halton, 293–315. American Oriental Series 67. New Haven: American Oriental Society.
 Plofker, Kim and Toke L. Knudsen. 2011. “Calendars in India.” In *Calendars and Years II: Astronomy and Time in the Ancient and Medieval World*, ed. John M. Steele, 53–68. Oxford, UK: Oxbow Books.
 Weber, Albrecht. 1852. *Indische Literaturgeschichte*. Berlin: F Dümmler.
 Yano Michio 矢野道雄. 1986. *Mikkyō senseijutsu* 密教占星術. Tokyo: Tokyo bijutsu.

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