

INDIAN VIS-A-VIS ROMAN CALENDAR:
AN APPRAISAL IN COMPARISON

When we set on making a comparative appraisal of the Indian and Roman Calendars, we find that the aggregate number of days and months at present is the same in both, depending, as it does, on the exact scientific, geographical reasons. It is surprising that astronomical references to calendar are there in the *Vedas* proper, mostly in connection with the performances of sacrificial rituals, though a clear concept emerges as far later as in the *Sūtra* literature, especially that relating to *Sāmaveda* and we get there even precise data to determine the various systems of calendar in observance then. Nonetheless, it does not appear that they are the result of observations of heavens, rather they constitute the outcome of experiences gained and developments made by successive calculators of time¹.

Here it is relevant to mention that Vedic Indians had also some concept of the New Year's Day, perhaps occurring on *ekā-ṣṭaka* day i.e. eighth day of the dark half of the month of Māgha corresponding to the present December-January period of the Roman calendar². As for the relevant data in *Purāṇas*, there is conception of twelve suns for the twelve months of the year and in the *Vedas*, concomitant to this idea the concept of twelve Ādityas is there³. This might be, really, the fore-runner of the conception of

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1. R. SHĀMASĀSHTRY, *The Intercalary Month. The Vedic Calendar*, Gangā Publications, New Delhi, 1979, p. 1. Hereafter cited as *Vedic Calendar*.

2. *Vedic Calendar*, p. 1.

3. S.B. DIXIT, Tr. S.N. Jhāraḥandī, *Introduction, Bhāratiya Jyotiṣa*, Choukhambā Sanskrit Series Office, Benares, 1967, p. 4. Hereafter cited as *Bhāratiya Jyotiṣh*.

Ādityan or solar year including these twelve solar months. It is strange in this background to note in the *Taittirīya Brāhmaṇa* the idea of thirteen months, which prevailed later also, adding one *adhimāsa* or *adhikamāsa* i.e., intercalary (additional) month to the usual twelve⁴, and it was so, perhaps with the motive to make up time for the aforesaid New Year's Day to occur exactly every year.

As referred to above, not only the number and names of the days of the week in both the systems are the same, rather there is almost precise correspondence in import and meaning between them. Thus, Soma, Maṅgala etc. with 'vāra', meaning 'day', suffixed to them are the names of, or denote, respectively Moon, Mars etc.⁵. In Roman system also, the word 'day' remains tagged to the aforesaid names of planets. It is significant that by their names the days indicated in both the systems are sacred, in astrology, to the respective seven planets. In the Indian system these are the presiding deities of the signs of Zodiac (*rāśi*) As the particular planet is the presiding deity of the particular day, so after that presiding deity the particular day is named. The method of finding out these presiding deities is peculiar in Indian astrology: five planets from Maṅgala to Śani having been reckoned twice, and Ravi and Candra only once each, make up twelve for the twelve signs of the Zodiac⁶.

Again, as for how the days of the week originated and how they are put in the present order, there is a queer indication in the Indian system: if we draw a globe of the *brahmāṇḍa* or cosmos around the planetary orbit of earth, we find there are eight such

4. *Taittirīya Brāhmaṇa*, Coukhambā Amarabhāratī Prakāśana, Vārāṇasī-1, 1982, 3.10.1.

5. Cf. Somavāra = Monday (Moon-day), Maṅgalavāra = Tuesday (Tiwis-day), Budhavāra = Wednesday (Woden's-day), Brhaspativāra = Thursday (Thor's-day), Śukravāra = Friday (Frig-day), Śanivāra = Saturday (Saturn-day) and Ravivāra = Sunday (Sun-day).

N.B. Except Sunday, other appellative words in English syncopate, assimilate any of the letters or undergo metathetical or such other linguistic changes.

6. VARĀHAMIHIRA, *Rāśiprabhedādhyāya*, *Horāśāstra* with *Apūrvārthaprakāśikā* comm. Coukhambā Sanskrit Series Office, Benares, 1967, V. 6.

*Kṣītija-sitajña-candra-ravi-saumya-sitāvanijāḥ /
Suraguru-manda-sauriguravaśca gṛhāṁśapakāḥ //*

orbits, one after another in gradual order, starting from Moon and passing through Mercury, Venus, Sun, Mars, Jupiter and Saturn to the last one being that of constellations⁷. Proceeding from Saturn in the globe, leaving aside the uppermost and the lowermost, that is, northernmost and southernmost orbits, respectively of constellations and the earth, moving every time four orbitary patterns, each time starting from the last counted upon, we get the days or the names thereof after the particular planets said above to be the lords of the particular days⁸. Contrary to this, the order of the planets rotating round the earth would give rise to the days as Soma, Budha, Śukra, Ravi, Maṅgala, Bṛhaspati and Śani⁹.

In turn, these planets have relation to the signs of Zodiac¹⁰, though in reverse order¹¹, like Neptune having relation to Pisces or Mīna and Uranus to Acquarius or Kumbha etc. It is peculiar that Indian appellations of the signs of Zodiac means the same as Roman counterpart in respective order. Again, we find that all the planets shown to have relation with the signs of Zodiac except Neptune and Uranus, the two latterly discovered planets, correspond to the days of the week.

Now as to the comparative appraisal of the months in both the

7. BHĀSKARĀCĀRYA, *Golādhyāya-Bhuvanakośa*, *Siddhāntaśiromaṇi* ed. Pt. Gaṇapatideva Śāstrī, Coukhambā Sanskrit Series Office, Benares, 1929, v. 2:

*Bhūmeḥ piṇḍaḥ śaśāṅkajñakaviravikujejyārkinakṣatrakakṣā - /
Vṛttair vṛtto vṛtaḥ san mṛdanīlasalilavyomatejomayo'yam //*
Hereafter cited as *Siddhāntaśiromaṇi*.

8. VARĀHAMIHIRA, *Bhūgolādhyāya*, *Sūryasiddhānta*, ed. Pt. Kapileśwara Śāstrī, Coukhambā Sanskrit Series Office, Benares, 1946, p. 274, V. 78:

*Mandādadhah krameṇa syuṣcaturthā divasādhipāḥ /
Varṣādhipatayastadvat tṛtīyāḥ parikīrtitāḥ //*

9. BHĀRATĪYA JYOTIṢA, p. 519.

10. *Webster's New International Dictionary*, Vol. I, II, 1955: The twelve signs are reckoned eastward from the point of intersection of ecliptic and equator at the first point of Aries. Their names were originally the names of the constellations occupying severally the divisions of Zodiac.

Hereafter cited as *Webster's New*.

11. Cf. Neptune = Pisces (Fishes) / Mīna, Uranus = Acquarius (Waterman) / Kumbha, Saturn = Capricornus (Crocodile) / Makara, Jupiter = Sagittarius (Archer) / Dhanu, Mars = Scorpio (Scorpion) / Vṛścika & = Aries (Ram) / Meṣa, Venus = Libra (Balance) / Tulā and = Taurus (Bull) / Vṛṣa, Mercury = Virgo (Virgin) / Kanyā & = Gemini (Twins) / Mithuna, Sun = Leo (Lion) / Simha, Moon = Cancer (Crab) / Karka.

systems, what is striking is the fact that though there is nothing common, they present a curious and thought-provoking study in themselves, the Indian system certainly having more uniformity and scientific exactitude. The latter beginning from Caitra and ending with Phālguna, thus making up twelve, stand for constellations such as Citrā etc. derived from their Sanskrit names with *anī* suffixed, falling on the fullmoon day (*pūrṇimā* or *paurṇamāsī*)¹². For instance, Caitra would convey the name of the month in which Citrā falls on its *paurṇamāsī*¹³. But, as the constellations are numerically more than months it is just in the fitness of things that only a few of the former would coincide with the latter in course of their rotation.

As such, of the twentyseven constellations, the twelve corresponding to the twelve months, possibly remaining equidistant to each other, are the more shining stars of the group determining the particular months. In other words, the name of a particular month goes after that star or constellation where there being moon there is full-moon day in that particular month. For example, Caitra is that month in which the fullmoon day occurs at that particular point of time when moon remains near the constellation Citrā¹⁴. As for the position of these constellations falling in rotation every day in periods¹⁵, this is important only in finding out

12. BHATTOJI DIXIT, *Siddhāntakaumudī*, ed. Pt. Gopāla Śāstrī Nene, Coukhambā Sanskrit Series Office, Benares, 1967, p. 120, on Pāṇini 4/2/21:

Sāsmīn paurṇamāsī / Puṣyeṇa yuktā paurṇamāsī yasmin vāse sa pauṣo nāma māsaḥ /

Hereafter cited as *Siddhāntakaumudī*. Cf. *Amarasīṅha*, *Amarakoṣa*, Coukhambā Sanskrit Series Office, Benares, 1967, V. 14:

Puṣyayuktā paurṇamāsī pauṣe māse tu yatra sā /

Nāmnā sa pauṣo māghādyāścaivamekādaśāpare //

13. Cf. Citrā = Caitra, Kṛttikā = Kārttika, Mrgasīras = Mārgasīrṣa, Maghā = Māgha, Phalgunī (incorporating both Pūrvaphalgunī & uttaraphalgunī) = Phālguna, Viśākhā = Vaiśākha (also, Vaisākha), Jyesthā = Jyaiṣṭha, Āṣāḍha (incorporating both Pūrvāṣāḍha & Uttarāṣāḍha) = Āṣāḍha (there being no linguistic change as the word itself is originally having its first letter lengthened), Aświnī = ° Aświna, Śravaṇa = Śrāvaṇa, Bhādra = Bhādra (vide Āṣāḍha above).

14. GORAKHA PRASĀD, *Bhāratīya Jyotiṣa kā Itihāsa*, Coukhambā Sanskrit Series Office, Benares, p. 206. Hereafter cited as *Gorakha Prasād*.

15. *Siddhāntakaumudī* on Pāṇini 4/2/3:

Nakṣatreṇa yuktāḥ kālaḥ / Puṣyeṇa yuktāṁ pauṣamahāḥ / Pauṣī rātriḥ /

auspicious moments or periods of time. Only from the technical standpoint here one question as to how twentyseven constellations coincide with seven days is pertinent and significant.

In fact, besides the twentyseven constellations there is the twentyeighth named *Abhijit*¹⁶ made up of the interaction of *Uttarā-ṣāḍha* and *Śravaṇā*, not taking separate time in rotation. Thus, mathematically calculated, one sign of the Zodiac is equal to two and one fourth of constellations and nine periodic cycles (*caranos*), each constellation having four such periodic cycles¹⁷. Here it is noteworthy that as opposed to '*abhijit*' day comprising of the '*abhijit*' constellation, there is, in the *Vedas*, conception of '*Svara-sāman*' day or '*Viṣuvat*' day or '*viśvajit*' day, all seeming to fall in the middle of the year¹⁸. Here it is worth note that twentyseven constellations are formed out of intersection of the solar course into twentyseven equal divisions. The moon completes one rotation parallel or relative to these constellations in twentyseven and half days. Therefore, on the basis of astronomical calculations it is ascertained that it remains under the spell of one constellation roughly for a period of one day¹⁹.

Besides the common lunar and solar years, sometimes also bifurcated as sidereal and synodic parts, there is conception in the *Vedas* of '*Savana*' year, perhaps convented as such from the big, yearly soma-pressing ritual and of '*Nakṣatra*' year reckoned from the spiral rising of a constellation in a year after its union with the sun when at a sufficient distance therefrom. '*Ādityan*' year, as said above, is perhaps the Vedic name for solar year starting with *saṃkrānti* consisting of one revolution of earth round the sun beginning in *Caitra*, the month being the periodic time required for the sun to pass from one Zodiac sign to another, and lunar year has its months taking such time calculated from one full-moon to the

16. ANANTASUTARĀMĀCĀRYA, *Vivāhaprakaraṇa*, *Muhūrtacintāmaṇi*, *Harikṛṣṇa-nibandha-bhavana*, Benares-1, 1954, p. 344, V. 55:

*Riktāsārahitatīthau śubhēhni vaiśva-
prāntyāṅghriśrutitīthibhāgatōbhijitsyāt /*

17. DEOKINANDAN SINGH, *Jyotiṣaratnākara*, *Coukhambā Sanskrit Series Office*, Benares, p. 14.

18. *Lātyāyanaśrautasūtra*, *Comm. of Agnisvāmin*, IV. 6.12.

19. *Gorakha Prasād*, p. 240.

next. Since the orbit of the earth is elliptical, the duration of a solar month varies from twenty-nine to thirty-two days²⁰.

In the Roman system, on the other hand, we find that the year consists of a queer amalgam of the names of months, queerly formed and derived. Formerly in England, the legal year began on the Annunciation Day, March 25th. The change to January 1st took place on that day in 1762²¹. It seems that firstly the names were numerical derivatives in Latin ordinals in the old Roman calendar, then replacement finally occurred of the names before present September²², some previously and some afterwards, and then September and such months, going posterior by two months in the Julian and Gregorian calendar, stood for ninth month etc. instead of seventh month etc. which the Latin ordinal derivatives indicate.

Turning to the present names of twelve months in order, it is definite that January²³ is derived from and associated with Janus, the guardian god of doors who was an old Latin deity — the god of the sun and the year to whom the month was sacred, February from Februa (pl.)²⁴, the Roman festival of purification said to be introduced in Roman calendar by Numa, March²⁵ from Mars, the Roman god associated with cold winds. Likewise, April²⁶ is associated with alternations of sunshine and showers, May²⁷, perhaps akin to Maia, a goddess daughter of Atlas and mother of Mercury,

20. *Vedic Calendar*, p. 76.

21. *Webster's New*, p. 2361.

22. There are no Latin names available in ordinals for January etc. but for July we get the name 'Quintilis' (fifth month) as it was called in the old Roman Calendar.

23. *Webster's New*, p. 1156: Also may be derived from Januarius, a Christian Bishop martyred by decapitation.

24. *Webster's New*, p. 799: Originally, it was Februarius, the month of expiation because on 15th of this month the great feast of purification and expiation was held.

25. *Bryant*: The stormy March is come at last, with wind and cloud, and changing skies!

26. Cf. Latin: Aprilis; Middle English: Aerial; French: Avril.

Cf. CHAUCER, *The Prologue to Canterbury Tales*: When that Aprille with his showers sote (sweet). The drosht of March hath perced to the rote (root).

27. *Milton*: The flowery May.

by Jupiter, is associated with greenery, June derived from Junius, the name of Roman genius²⁸ having association with roses and midsummer. So July²⁹ is named in commemoration of either Julius Ceasar or Bishop Julian and August³⁰ goes after Augustus Ceasar and is associated with summer heat and the holiday seasons. Further, as pointed out earlier, September to December derived from Latin numerals, though meaning seventh to tenth³¹, stand for ninth to twelfth months respectively.

About the idea of a year in general, it is certain that it originally denoted the time of one apparent revolution of the sun around the ecliptic or the period occupied by the earth in making its revolution round the sun. In German, the equivalent word meant "a seasons, of the year especially spring time, or even part of the day or even hour"³². In Sanskrit the most popular word for year is *varṣa* meaning "that which rains, that is, rainy season". Therefore it seems that originally one rainy season to another counted one year. But later, like the German or the modern English phrase, even so long back as the Vedic Age, the names of the seasons such as Śarad etc. stood for year³³.

Thus, a Hindū year is related to the cycle of seasons while the Christian or even Mohammedan year has no such relation. The latter are not either relative to or dependent upon the full-moon day or the new-moon day for the purposes of calculation of months³⁴. As for beginning month of a year, we have seen above

28. *Webster's New*, p. 1172: This is the pseudonym under which a series of 69 remarkable letters (political) were published attacking all public characters of the date including royalty — said to be written by almost 50 persons among whom Sir Phillip Francis was chief.

29. Julius Ceasar was born in this very month.

30. It was called 'Sextilis' in the old Roman Calendar.

31. Cf. Latin-Sanskrit stems in respective order:
septem = *saptan*, *octo* = *aṣṭau*, *novem* = *navam*, *decem* = *daśan*.

32. *Webster's New*, p. 2361.

33. *Ṛgvedasāṁhitā*, 10/161/4, ed. Max Müller, Oxford Univ. Press, London, 1890:

Atharvavedasāṁhitā 20/96/9., ed. Pt. R.C. Śarmā, Murādābād, 1929:

Śatañjīva śarado vardhamānaḥ /
Śatañ hemantāñcchatamu vasantān //

34. *Gorakha Prasād*, p. 266.

that in Roman system it is January which, named after the guardian god of doors, might be said to be the door or commencement of the year. In Indian system we have already seen the Vedic method of the calculation of New Year's Day, which roughly comes up to the present Roman practice, but now in India though Caitra is generally accepted as this beginning month, let us see how it is so worked out in Indian astrology: Laṅkā (perhaps present Ceylon, but, then a city and not a country) is recognised and accepted as the presentday Greenwich for calculating astronomical data. It is said, at the very outset of creation, the first day the sun rose in that city was called Sunday and it was so in Caitra in the bright half of the month³⁵. Indeed, it is difficult to say how it came about, but it is still difficult to challenge it on scientific grounds either.

To sum up, the kernel of the idea of year lay in both the systems in an identical manner, and there is complete correspondance in regard to the number of days of the week and import in their names based on appellations of seven planets. Besides, relation of these planets to the signs of Zodiac is also the same. On the contrary, except in point of number, there is nothing common regarding months in the two systems at present. However, in Indian calendar, sometimes, there is the conception of thirteenth month and here twentyeighth constellation is also an accomplished fact. As for finding out the number, order and names of days and their presiding deities, the astrological methods employed are typically indigenous but cannot, perhaps, be refuted on scientific bases. All these bespeak of high scientific standards and judgement of ancient Indian ṛṣis to whom today our heads automatically bow down in reverence.

35. *Siddhātaśiromaṇi, Madhyamādhikāra, Kālamānādhyāya*, p. 8, V. 15:
Laṅkānagaryāmudayācca bhānostasyaiva vāre prathame bābhūva /
Madhoḥ sītāderdinamāsavarṣayugādikānām yugapatpravr̥t̥tiḥ //
 Cf. For detail, *Bhāratiya Jyotiṣa*, pp. 500, 503.

APPENDIX

Old view as well as modern view (as per diagrams appended) of the *Brahmāṇḍa* or Cosmos around the central planetary orbit of Earth or Sun respectively.

In Diagram No. 1, according to old view of Indian astrology, Earth is taken to be the centre of Cosmos round which there are eight orbits, one after another in gradual ascending order (as seen in the diagram), of Moon, Mercury, Venus, Sun, Mars, Jupiter, Saturn and the Stars or constellations (Vide Footnote Nos. 7 & 8).

Diagram No. 2 shows the modern view according to which Sun is the centre of the Cosmos and other orbits round the solar orbit in gradual order are: Mercury, Venus, Earth with the satellite Moon in the other orbit with Mars as the intermediary orbit, then Jupiter, Saturn, and the newly discovered Uranus, Neptune and Pluto.

Diagram 1

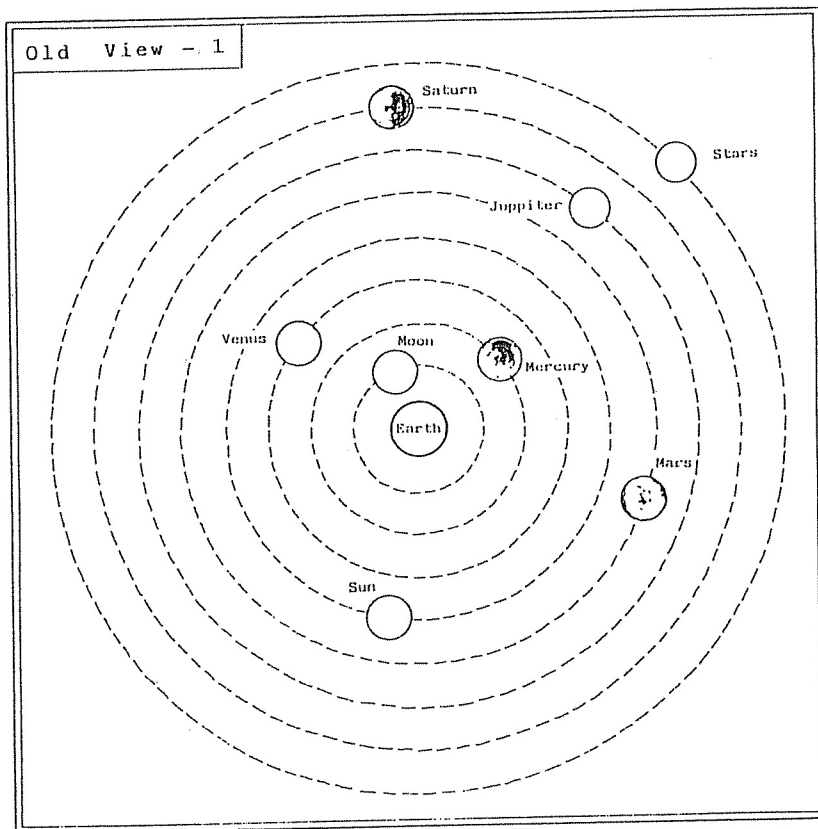


Diagram 2

