

4.7 Occurrence of the extra full moon day or adhi poya

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ABSTRACT

Poya day is a well known phenomenon in Sri Lanka and in some eastern countries. However in some years there is an extra Poya day. For each two and half to three years, an extra lunar month arises and an extra Full Moon day called Adhi Poya occurs due to the difference in a mean solar month (30 solar days) and a lunar month (about 29.5 solar days).

However in Astrology or in Astronomy there does not seem to be a conceptual frame work to determine that extra poya day (Adhi Poya). In this paper we have formulated a method to determine and name the Adhi Poya in advance. We have first identified the twelve normal lunar months using the Amantha method¹ (the method where a lunar month is supposed to begin with a New Moon day and to end with the following New Moon day) and by considering the lunar months in the period from 1988 to 2008², we have shown that each lunar month has different zodiacal signs of the sun, at the beginning and at the end of the lunar month in a normal year (an year without an extra poya day).

It was found that in a year an extra Poya day and a lunar month (Adhi Masa - the lunar month in which the extra poya occurs) occur, the Adhi Masa begins and ends with the sun having the same zodiacal sign. As an example, consider the year 2007. We can tabulate the zodiacal sign of the sun at the beginning and at the end of the particular lunar month, as follows.

| Lunar month | Zodiacal sign of the sun at the beginning of the lunar month | Zodiacal sign of the sun at the end of the lunar month |
|-------------|--|--|
| Duruthu | Sagittarius | Capricorn |
| Nawam | Capricorn | Aquarius |
| Madin | Aquarius | Pisces |
| Bak | Pisces | Aries |
| Vesak | Aries | Taurus |
| Adhi Posen | Taurus | Taurus |
| Poson | Taurus | Gemini |
| Esala | Gemini | Cancer |
| Nikini | Cancer | Leo |
| Binara | Leo | Virgo |
| Vap | Virgo | Libra |
| Ill | Libra | Scorpio |
| Uduvap | Scorpio | Sagittarius |

In order to identify an Adhi Masa one has to find out whether there is a lunar month that begins and ends with the Sun in the same zodiacal sign using Astronomical calculations³ based on the motion of the Sun along the ecliptic. Having identified an Adhi Masa one has the problem of naming it. In other words one has to decide whether the extra month should be called after the succeeding month, say as Adhi Poson or after the preceding month, say as Adhi Vesak, as the case may be. As it was observed that in every normal year the lunar month of Vesak begins, when the Sun is in the zodiacal sign of Aries and the month of Poson begins when the Sun is in the zodiacal sign of Taurus and so on, Aries was identified with Vesak (in the sense that the Sun is in Aries when the month of Vesak begins), Taurus with Poson and so on. If the Sun is in the Taurus, at the beginning (and of course at the end as well in the case of an extra month) of an extra lunar month, we call this month, Adhi Poson rather than Adhi Vesak, in order to tally with the zodiacal sign of the Sun, at the beginning of the normal lunar month of Poson.

Thus we may define an extra lunar month or Adhi Masa, as a lunar month in which the sun is at the same zodiacal sign at the beginning and at the end of the month. We name the Adhi Masa in general by observing the zodiacal sign of the sun when the Adhi Masa begins, and adding the prefix Adhi to the lunar month in a normal year which begins with the sun in the same zodiacal sign.

As an exercise we have found the year and the particular lunar month of the next Adhi Poya, and name it. After considering the years 2008, 2009, 2010, it is found that the Sun would be in the Aries at the beginning and at the end of the lunar month following the lunar month of Bak in the year 2010². As the sun is in the Aries, at the beginning of the extra lunar month, we call this month Adhi Vesak rather than Adhi Bak, in order to tally with the zodiacal sign of the sun at the beginning of the normal lunar month of Vesak. Therefore the next Adhi Poya will dawn in the year 2010 after the month of Bak and will be called Adhi Vesak.

References

1. Lahiri A.K; Lahiri's Indian Ephemeris of Planet's Positions According to the Nirayana or Sidereal system for 2001A.D; Prepared by the ASTRO-RESEARCH BUREAU, under the supervisor of A.K. Lahiri; Published by Lahiri M.K, Astro Research, Bureau, 17, Brindaban Mullick 1st Lane, Calcuta; (2000).
2. Lanka Ephemeris and Almanac of the years 1988, 1989 1991, 1993, 1996, 1999, 2004, 2007, 2008, 2010.
3. Branley F.M, Wimmer H.K, Chatrand M.R; Astronomy; Thomas Y. Crowell Company, New York; (1975).