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ABSTRACT

9. Significance of Moon Sentences in Indian Astronomy by Prof. S.Gopalakrishnan Unnithan, Principal [Retd.], Sree Ayyappa College Chengannur

Though computation of true longitude of planets was very difficult, ancient Indian astronomers developed a system of vākyas called Cāndravākyas (Moon Sentences) to determine the longitudinal position of Moon with accuracy. A Fourier sine series expansion is suitable for elliptic motion of planets and it is compared with ancient Indian planetary model of Moon. It is seen that ancient Indian Cāndravākyas resembles a Fourier series model. Differences arising can be reduced by developing revised Cāndravākyas using modern parameters. It also establishes that Mādhava's Cāndravākyas are more accurate than those of Vararuci.

A comparative study of Cāndravākyas of Vararuci and Cāndravākyas of Mādhava of Saṅgamagrāma establishes the improvement of mathematical tools used by ancient Indian astronomers during a period of a thousand years from 4th Century AD to 14th Century which are fairly accurate. The resultant sine curves based on three or four Cāndravākyas can be used to determine the true longitude of both the ancient and modern Moon.