

Nīlakaṇṭha Somayāji (1444 - 1545)

In the 19th century, the prevailing belief among the historians of science was that Mathematics and Astronomy in the Indian subcontinent had gone into hibernation after .Bhāskarachārya in the 12th century. The credit for demonstrating that this was not so must surely go to Charles M Whish, Esq., a civil servant in the East-India Company. In 1832 he brought to the attention of the historians the magnificent achievements of the *Kerala School* which flourished from the 14th to 17th century. (Whish's paper, *On the Hindu Quadrature of the circle*, has been reproduced in *A modern introduction to ancient Indian mathematics*, T S Bhanumurthy, Wiley Eastern, as an appendix.) Among the major figures of this school are Mādhava (1350-1410) of Sangamagrāma , Parameśvara (1360-1455), Nīlakaṇṭha Somayāji (1444-1545) and Jyesthadēva (c.1500-1600) whose significant contributions to mathematics include infinite series expansions of trigonometric functions and very accurate approximations to π .

The most comprehensive work of the Kerala school available to us is the *Tantrasangraha* of Nīlakaṇṭha Somayāji along with commentaries on it by some of his followers. Fortunately the biographical details of Nīlakaṇṭha are well recorded. He was born on Wednesday, June 14, 1444, and was a resident of Trkkaṇṭiyūr (Sanskritised into Śrī - Kuṇḍapura), near Tirur, Ponnai taluk, South Malabar. His teachers were Ravi with whom he studied Vedānta , and Dāmodara , son of Parameśvara, who initiated him into Astronomy and the underlying mathematical principles. That Nīlakaṇṭha lived upto a ripe old age, even to become a centenarian, is attested by a contemporary reference made to him in a Malayalam work on astrology *Prasnasāra* composed in 1542-43.

Nīlakaṇṭha 's writings substantiate his knowledge of several branches of Indian philosophy and culture. It is said that he could refer to a Mīmāṃsā authority to establish his view-point in a debate and with equal felicity apply a grammatical dictum to the same purpose. Sundararāja , a contemporary Tamil astronomer, refers to Nīlakaṇṭha as *ṣaḍ - darśhanī - pārangata* , one who had mastered the six systems of Indian philosophy. Another major work of Nīlakaṇṭha is his *Bhāṣya* on *Āryabhaṭīyam* of Aryabhaṭa (476 A.D). The lucid manner in which difficult concepts and cryptic astronomical calculations from *Āryabhaṭīyam* are explained, the wealth of quotations, and the results of personal investigation amply justify Nīlakaṇṭha referring to his work as a *Mahābhāṣya* .

The *Tantrasangraha* of Nīlakaṇṭha Somayāji along with commentaries on it by some of his followers has been critically edited by K V Sharma. Another source book, also by K V Sharma, is *A History of the Kerala School of Hindu Astronomy* ; both these books have been published by the V V B Institute of Sanskrit and Indological Studies, Panjab University, Hoshiarpur, Punjab.