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Ritualistic cyclicality in Indo–Greek astral science – Expressions for various modes of time measurement in the Yavanajātaka

Abstract – As a prototypical work of Greco–Indian astral science, the *Yavanajātaka*, in particular, its last chapter (Ch. 79) on mathematical astronomy, encapsulates some key concepts on time measurements which would later become the mainstream elements in the Indian tradition of *jyotiṣa*. Some of these key concepts include the large astronomical cycle known as *yuga*, the smaller cycles of year, season, month, planetary week, day and *tithi*. What distinguishes the *Yavanajātaka* from other extant treatises of the first millennium CE, however, is the fluidity of expression of these astronomical cycles in the text, which suggests the ambivalence of the author in his attempt to blend a heterogeneous body of Greek and Indian astronomical and astral concepts, and to express them in a sound, mathematical manner. Two features of this important chapter which have been overlooked in past studies are: 1) The Indian elements as exemplified by the close resemblance of *tithi*–based astronomical algorithm and the description of the water clock to those of the *Vedāṅgajyotiṣa* and the *Arthaśāstra* respectively; 2) The description of the Lords of year, *ayana*, season, month, week, day and hour which conclude the chapter before the colophon. In this presentation, I would like to suggest the expressions of cyclical time–measures in the text have an unexpressed ritualistic character, which lies beyond the scope of the Greco–Indian genethliacal astrology of the preceding 78 chapters. Beside his concern for comprehensiveness, its author Sphujidhvaja was clearly exposed to the ritualistic significance of these various time–measures from different traditions. While the computation of planetary longitude would be essential to the casting of horoscope, the reckoning of days (*ahargaṇa*) and various “Lords” suggests a synthesis of Greek and Indian rituals which focus on astral worship.