The astronomical foundations of the Romulean calendar and its relationship with the Numan calendar: an hypothesis

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ABSTRACT

The astronomical foundations of the Romulean calendar, based on observations of two phenomena – the winter solstice and the vespertine rising of Arcturus – and the transition from the Romulean to Numan calendar: an hypothesis.

The Romulean year is described thus by Macrobius:

> There was a time when the Romans, thanks to Romulus, had their own 10-month year, beginning in March and lasting 304 days: six months – i.e. April, June, August, September, November and December – were 30 days long; four months – i.e. March, May, July and October – were 31 days long[1].

From an astronomical standpoint, a 304-day year makes no sense at all: it is neither solar nor lunar, and it doesn't even last a whole number of lunations. There is also the fact that 31-day months are not compliant with lunations, which last around 29.5 days. It would make far more sense for 30-day months alternating with 29-day months, or 31-day months with 28-day months. In consequence, it is generally believed that the Romulean year was not astronomically-based.

And yet in another comment from Macrobius – a further important yet neglected comment, much like the rest of his writings on the Numan cycle[2] – we discover that a link does indeed exist between month and season in the Romulean year:

> Given that this number [304 days: author's note] agrees neither with the motion of the Sun nor the rhythm of the Moon, at times it occurred that the cold part of the year took place in the summer months or, vice versa, the hot part of the year in the winter months. When this happened, a number of days as large as those necessary to return the season of the year to the particular climate of that month was allowed to be lost, without any monthly name[3].

This comment leaves absolutely no room for doubt: every month in the Romulean calendar is associated with "the particular climate of that month, *caeli habitus instanti mensi aptus*" – that is, the appropriate type of weather – which means that the Romulean year is indeed bound up with the motion of the Sun. In consequence, no 304-day year can be followed by a new 304-day year without a break – as is the case today in parts of the world where a purely lunar calendar is still in use. Without such a break, eve-

ry month would slide backwards through the entire solar year, and could not therefore be associated with a specific "climate" or season: a Year One lasting 10 months from March to December would be followed by a Year Two in which March starts when January had started the previous year; in Year Three, March would be where November had been two years previously, and so on. The obvious consequence is that it would be impossible to associate a season with any given month in any stable form.

Macrobius' observation shows that the Romulean calendar covers 304 days of the solar year, sub-divided into ten numbered months, but leaves out 61 days "without any monthly name, *sine ullo mensis nomine.*"

A similar system existed in a different culture and tradition coeval with the first kings of Rome. In *Works and Days*, the Greek poet Hesiod writes:

> When Zeus [the Sun; author's note] has finished sixty wintry days / after the solstice, then the star / Arcturus leaves the holy stream of Ocean, /