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## Muñjāla

Narahari Achar

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### Alternate name

Mañjula

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*Flourished* **Deccan, (India), possibly 900**

Muñjāla was the author of a remarkable work, the *Laghumānasa*, which is an abridged version of a larger work called *Bṛhanmānasa*. Very little is known about the life of Muñjāla, except that he was a *brāhmaṇa* belonging to the *Bhāradvājagotra*, and that he lived in Deccan.

The *Laghumānasa* was very popular among the astronomers from Kerala, and it is mentioned by **Bīrūnī**. **Parameśvara** wrote a commentary on it, and quotations from it are found in the works of Bhāskaraçārya and Muniśvara.

The *Laghumānasa* appears to be the first siddhāntic text to treat the precession of the equinoxes. Muñjāla gives the number of “ayana” revolutions to be 199,669 in a kalpa, and the “ayanāśa” to be 6° 54' in 932 and the year of zero “ayanāśa” as 522. Muñjāla was the first Indian astronomer to introduce corrections to the Moon's equation that account for what today is called evection. Muñjāla anticipates Bhāskaraçārya in understanding that the sine and cosine are related in a way that we would express today by saying the derivative of a sine function is a cosine function.

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