CONCEPTIONS OF STARS AND PLANETS IN ANCIENT LATIN LITERATURE

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Introduction

Ancient astronomy was mainly a Greek and Mesopotamian development. However, learned Romans writing in Latin also expressed cosmological interests on a less technical level. Their texts offer an interesting mixture of natural philosophy, religion, and practical applications.

For my PhD thesis, I am studying **Latin vocabulary used for describing the appearance and supposed material properties of planets and stars**. The texts date roughly from 200 BCE to 200 CE. This study is a **combination of linguistic and historical research**: by studying the meanings and uses of words, the goal is to view the writers and their texts in a wider historical context.

Background

The dominant world view in Antiquity was **geocentric**. The Earth was usually thought to reside in the centre of a finite universe, surrounded by the Moon, Sun, and the rest of the planets and stars. Traditionally, the world was viewed as composed of four **elements**: earth, water, air, and fire. However, the conceptions of heavenly bodies were more **ambiguous**: are they made of earth, fire, air, a distinct element, or something immaterial? In addition, the atomistic philosophy with its microscopic particles and an infinite universe provided a rival world view. Importantly, Latin writers relied heavily on Greek sources in philosophy.
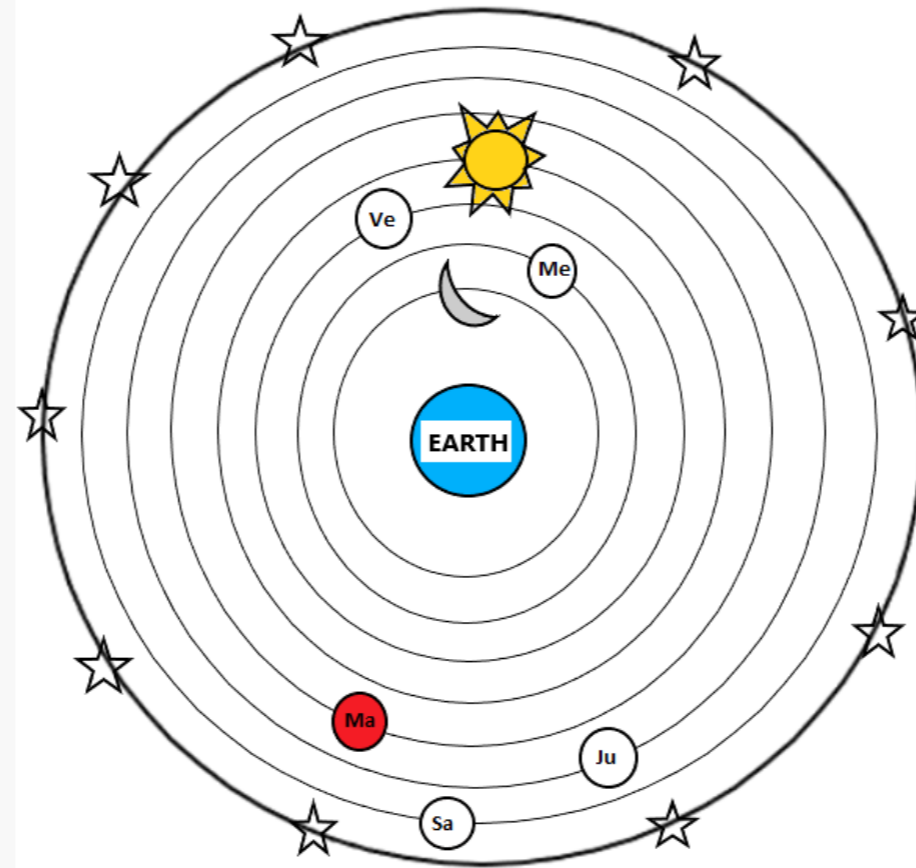
A simple representation of the ancient geocentric world view in its most common form (not in proportion). The outermost sphere is the firmament of fixed stars inside of which the planets revolve around the stationary Earth.

Methods and Initial Results

TEXTUAL CORPUS	
authors (incl. anonymous & uncertain)	68
works (incl. fragmentary)	147
tokens (total sum of words)	2.8 million
unique tokens (lemmata) *)	75 092
hapax (lemmata occurring only once) *)	48 %
most relevant words studied	2 158
*) high proportion due to imperfect lemmatising (as yet)	

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Linguistic Aspects

The study is mostly carried out using **digital texts**. The texts are studied both **qualitatively** ("close reading" by human eye) and **quantitatively** ("distant reading" by computer). With computational tools, it is possible to achieve greater validity than by manual scrutiny of a limited sample of texts alone. The analyses comprise descriptive statistics and text mining tools (e. g. correspondence analysis, vector space model), under the assumption of distributional hypothesis.

The focus is on **semantics**: What is the semantic definition of a word when used in connection with stars and planets? Are some definitions predominant? Which words are (typically) used to describe planets and their physical properties? Can these words be unambiguously interpreted in given contexts? Which factors seem to affect the usage of terminology?

Historical aspects

The **context**: What lies behind and between written texts? How are they related to each other? Who were the authors and to whom did they write? When and for what purpose did they write? What do the authors say explicitly and what have they left unmentioned?

Conclusion and Further Aspects

Stars and planets, as well as other cosmological themes, appear in many types of Latin literature. The interpretation of many such passages is still **uncertain**, but **fire** seems to be a frequent connotation with heavenly bodies. More information about the Romans' world view could be gained by combining linguistic and historical research, and by using computational methods in particular. Extending the **time period** under scrutiny and incorporating **Greek (and other)** texts would be the next logical steps.

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