

## Seminar SAW History of Science, History of Text, 2011-2016 SAW Three-day Meeting

### How do writings in the astral sciences document mathematical practices and the practitioners?

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*Amateur astronomers learning with tables: the case of the Equatorie of the Planetis*

**Abstract** - Peterhouse, Cambridge MS 75.I, known as the Equatorie of the Planetis, is a rich testament to medieval mathematical practices.<sup>1</sup> Its controversial attribution to the poet Geoffrey Chaucer by its first editor, Derek de Solla Price, has meant that much of the scholarship on the manuscript has focused on the authorship question, but it has far more to tell us about the ways that astronomers designed and used instruments, compiled tables, and carried out calculations.

The manuscript, dated c. 1393, consists of three sets of astronomical tables, written in two hands. In some ways these overlap, but in others they are very different. They are followed by a treatise explaining how to make a planetary equatorium (according to a design unique to this manuscript), and how to use it with the foregoing tables.

Close reading of the manuscript's physical features reveals much about the ways it was used. For example, the tables of mean motions were computed to a striking degree of precision. Yet one can observe that the compiler added an extra column of data to one table, writing in smaller figures after it had been rubricated. This seems to have been done in order to reduce apparent errors of rounding in the final column, but such tiny errors were invisible on the instrument for which the tables were supposedly compiled.

Why did the compiler make such amendments to his tables? And why do discrepancies (for example radices for inconsistent locations and dates) appear among the tables? I will discuss a number of mistakes in the tables, some of which were corrected, and make some suggestions for what this tells us about the author's (changing) expertise.

Fascination with the manuscript began when Price discovered, half-buried in the manuscript's binding, a reference to "Chaucer". Yet Chaucer is not the only astronomer cited by the author. Two marginal annotations refer to Profatius and Arzachel, apparently as the sources of planetary parameters whose use the author wished to justify. Elsewhere, marginalia appear in a simple cipher. Why did the author make such marginal additions to his treatise and tables?

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Half of the tables are in the same hand as the treatise; the remainder have been annotated by that hand. This suggests that the author of the treatise also compiled the tables (though cross-references between folios within the manuscript indicate that it may originally have been ordered differently). In places the author has explicitly noted that a table was for use with “the equatorium”, presumably the one described in the treatise. Such notes can allow us to reconstruct the process of compilation, as well as the uses that the author made of his tables.

I believe that the evidence mentioned above suggests that this compilation was produced by an astronomer still in the process of learning his art, and of finding uses for it, whether mathematical or astrological. If so, it has much to tell us about the ways and situations in which astronomy was studied in the medieval period. It even forces us to reconsider the authorship argument. Looking at the evidence on both sides of that argument with this fresh perspective may shed new light on the question of whether this manuscript is indeed, as Price supposed, the final part of the *Treatise on the Astrolabe*.