

SAW Three-Month Workshop:

Mathematical Practices in relation to the Astral Sciences

Abstract

January 23, 2015

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Operations on sexagesimal fractions described inside and outside astronomical texts: a comparison

Abstract: Between 1320 and 1330 in Paris, a handful of astronomers shaped the Parisian Alfonsine Tables which were used in Europe as the main astronomical computational tool for the next two centuries. An important part of their work focused on the numbers used in astronomical computations, their relation to measurements and quantities and the procedures applied to them in order to perform fundamental arithmetical operations. Several writings bear witness to these reflections: some of them are directly included in the Canons of astronomical tables, while others are presented in a more mathematical genre of texts called *Algorismus*. For the former we are going to consider John of Murs's *Tabule permanentes* and John of Lignières's *Tabule magne*, and for the latter John of Lignières's *Algorismus minutiarum* and John of Murs's *Tabule magne*. By analysing the distribution of topics between these documents and contrasting the presentation they display, we want to address two questions: what relations can we describe, from these documents, between the type of numbers and quantities found in astral sciences and those found in mathematics? How do actors work with an inherited number system and transform it?