

*Manuscript descriptions and survey of texts, tables and other items for the study of Alfonsine astronomy*

Observatoire de Paris, January, 29-31

Salle du Conseil

**Organisation:** Matthieu Husson, Richard Kremer, José chabás, ALFA team

**Rationale**

Alfonsine astronomy is arguably among the first European scientific achievements. It shaped a scene for actors like Regiomontanus or Copernicus. There is however little detailed historical analysis encompassing its development in its full breadth. ALFA addresses this issue by studying tables, instruments, mathematical and theoretical texts in a methodologically innovative way relying on approaches from the history of manuscript cultures, history of mathematics, and history of astronomy.

Relying on these approaches the main objectives of ALFA are thus to:

- Retrace the development of the corpus of Alfonsine texts from its origin in the second half of the 13th century to the end of the 15th century by following, on the manuscript level, the milieus fostering it;
- Analyse the Alfonsine astronomers' practices, their relations to mathematics, to the natural world, to proofs and justification, their intellectual context and audiences;
- Build a meaningful narrative showing how astronomers in different milieus with diverse practices shaped, also from Arabic materials, an original scientific scene in Europe.

Manuscripts and manuscript collections will be central to the project in order to attain these different aims and will thus be analysed in multiple ways. More precisely, ALFA intend to consider manuscripts in ways that go beyond the traditional, and still essential, view of manuscripts as text witness providing us information about content, variations and circulation of Alfonsine works taken individually. ALFA will develop also the view that manuscripts attest astronomical practices especially when considered conjointly in their material and intellectual dimensions. For instance in the case of a student manuscript these practices are attested both in the making and the use of the manuscript. In this respect each manuscript can be metaphorically considered as a specific archaeological site to be analysed on its own. As a last instance in this open list ALFA also want to explore the view that manuscripts as collection of texts and historical collections of manuscripts provide clues with respect to the relations between the various milieus which fostered Alfonsine astronomy, for instance with the provenance of the works gathered in the collections, the time and place of their copy or the way in which they are bounded.

These different possible views of manuscripts addressed in the specific context of astronomical documents, which have their own way of exploring the possibilities offered by the medieval codex, are related to very general issues in modern manuscript studies including: That of rethinking the purpose, aims and format of critical editions; that of describing and analysing the relation of different layers of a manuscript (material, decorative, intellectual...); that of addressing the seemingly opposite demand of describing large corpus with their dynamic and having the possibility to use refined description tools for each document.



Finally these questions need also to be addressed very concretely in the rapidly evolving context of Digital Humanities as current and forth coming tools and standards impose constrains and opportunities which must be taken into account.

In order to find collective answer pertinent to the project, in tune with current research in manuscript studies and up to the best practices of digital humanities ALFA will organise a first2 days workshop in Paris Observatory on 29-30 January 2018 inviting experts from and outside the ALFA team to present case studies, showing what can be done with a specific manuscript or set of manuscripts, both in astronomical/mathematical topics or related topics, with approaches from history, manuscript studies and digital humanities.



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**Program**

**Monday 29, January 2018**

**9h15-9h30**

*Welcome*

**9h30-10h45**

**José Chabás (Pompeu Fabra University Barcelona)**

*The Tabule Parisiensis for 1368*

**10h45-11h00**

*Coffee break*

**11h00-12h15**

**Jean-Patrice Boudet (IRHT, Université d'Orléans)**

*A History of Astronomy by Texts in the Fifteenth Century: MS Paris, BNF, lat. 7281*

**12h15-13h30**

*Lunch break*

**13h30-14h45**

**Alena Hadravová, Centre for the History of Sciences and Humanities, ICH, Academy of Sciences of the Czech Republic, Prague**

*Recent Progress in the Research of Prague and Cracow Alfonsine Manuscripts*

**14h45-16h00**

**Galla Topalian (CNRS-Observatoire de Paris, chef de projet Numérique ALFA) & Jean-Baptiste Camps (PSL-Université Paris IV)**

*The Text Encoding Initiative (TEI) as a resource for manuscript description: outline and practical application*

**16h00-16h15**

*Coffee break*

**16h15-17h15**

*General discussion 1*



**Tuesday 30, January 2018**

**9h15-9h30**

*Welcome*

**9h30-10h45**

**Richard Kremer (Dartmouth College)**

*Geometrical tools and mathematical practices: An exploration of instruments and diagrams in BSB Cod.icon. 182 (c. 1505-1520)*

**10h45-11h00**

*Coffee break*

**11h00-12h15**

**Matthieu Husson (CNRS, PSL-Observatoire de Paris-SYRTE, ALFA project)**

*Astronomical manuscripts as the result of astronomical practices: two manuscripts of Conrad Heingarter from the BnF*

**12h15-13h30**

*Lunch break*

**13h30-14h45**

**Caroline Chevallier (Bibliothèque de l'Observatoire de Paris)**

*Delisle's archive at Paris Observatory Library: an EAD-catalogue of scientific bundles of notes*

**14h45-15h00**

*Coffee break*

**15h00-16h00**

*General discussion 2*



**Wednesday 31, January 2018**

**9h15-9h30**

*Welcome*

**9h30-10h45**

**Laure Miolo (CNRS, PSL-Observatoire de Paris-SYRTE, postdoc ALFA)**

*Johannes de Muris in margine A case study for the analysis and processing of marginalia in manuscript descriptions*

**10h45-11h00**

*Coffee break*

**11h00-12h15**

**Laura Fernández (Universidad Complutense de Madrid)**

*Alfonso the X's Libro del Saber de Astrología, Ms. 156 BH-UCM: codicological description and history of the manuscript.*

**12h15-13h30**

*Lunch break*

**13h30-14h45**

**Marie-Madeleine Saby (Université Pierre Mendès France)**

*Editing the tables of John of Lignières for 1322 Canons: one or several base manuscripts? Descriptions of some manuscripts and discussion about criterions for choice.*

**14h45-15h00**

*Coffee break*

**15h00-16h00**

*General discussion 3*



## Title and Abstracts

(Alphabetical order)

### Jean-Patrice Boudet (IRHT, Université d'Orléans)

*A History of Astronomy by Texts in the Fifteenth Century: MS Paris, BNF, lat. 7281*

Lat. 7281 is one of the most important astronomical manuscripts of the BNF. Copied in the middle of the fifteenth century, perhaps in Cambrai, by someone we only know the initials of his name, "Jo. B.", it contains 27 texts, including 26 relating to astronomy, arranged in an approximate chronological order, of which about fifteen belonging to Alfonsine astronomy, with in particular the *Expositio* of John des Murs, a series of canons of Jean de Lignères, John of Genoa and John of Saxony, the *Investigatio eclipsis Solis anno Christi 1337°* of John of Genoa, the Parisian *Expositio Tabularum Alfonsii* of 1347, the canons on the Oxford tables of 1348, as well as a treatise referring to the radix of 1420, *anno completo*, attributed by Jo. B. to Jean de Troyes. We will focus on this famous codex by asking the question of who this mysterious Jo. B might be, before highlighting the most remarkable aspects of his anthology, bought in 1487 by the former dean of the Faculty of Medicine of Paris Jean Avis, superficially known by his friend Simon de Phares and annotated in the sixteenth century.

### José Chabás (Pompeu Fabra University Barcelona)

*The Tabule Parisiensis for 1368*

The *Tabule Parisiensis* are an anonymous adaptation of the *Tabule anglicane* or Oxford Tables (1348), which directly links the two main centers of Alfonsine astronomy at the time, Paris and Oxford. The *Tabule Parisiensis* were recomputed for the meridian of Paris and the radices set for 1368, complete. They are extant in manuscripts in Latin and in Hebrew, as is the case with the Oxford Tables themselves, and a part of this set went into print. This raises the problem of how to deal with Alfonsine items that have survived in manuscripts in languages other than Latin or in print.

### Caroline Chevallier (Bibliothèque de l'Observatoire de Paris)

*Delisle's archive at Paris Observatory Library: an EAD-catalogue of scientific bundles of notes*

The archive of Joseph-Nicolas Delisle (1688-1768), though much later than the corpus of texts ALFA focuses on, will serve as a case study to see how one can handle and catalogue a large amount of scientific manuscripts (ca 16 linear meters). This material, consisting mainly in unbound bundles, is the result of one man's work: Delisle's own research and observations, as well as his predecessors' and fellow astronomers', which he meticulously collected during his lifetime. The challenge, facing this huge archival material, has been to organize its intellectual content in a coherent, hierarchical way, in order to describe it, using the international XML standard "EAD" (Encoded Archival Description). This has been the occasion for reflections and choices regarding, for instance, the level of description of each unit, the modernizing – or not – of the vocabulary used in the documents, their indexation, or the addition of references between records. All this, with the constant concern to provide the scholars with a good overview and tools that enhance the retrieval of relevant information.



**Laura Fernández (Universidad Complutense de Madrid)**

*Alfonso the X's Libro del Saber de Astrología, Ms. 156 BH-UCM: codicological description and history of the manuscript.*

The *Libro del Saber de Astrología (LSA)*, the book of knowledge of astrology, is a compilation of several treatises, designed to provide the essential tools for the observation and study of the stars. The aim of the book, as clarified in one of these treatises, the *Cuento de las estrellas*, was to gather together all the existing knowledge related to the observation of celestial bodies, so that it would not be necessary to consult other sources in order to have the essential information for the study of astrology. This book is a cornerstone for understanding the scientific production related to Alfonso X and the role that Islamic manuscripts played on its development.

Unfortunately, the text from the Regal Chamber, nowadays at the Historical Library of Complutense University (BH Ms. 156), has suffered mutilations and damages which have altered its structure, preventing us from part of its original textual and iconic content. However, the copies conserved have allowed for a total reconstruction of the manuscript text and its figurative repertoire. In this paper I will analyze the structure of the book, the relationship between text and image, the "mise en page" and other codicological aspects of the manuscript.

**Alena Hadravová (Centre for the History of Sciences and Humanities, ICH, Academy of Sciences of the Czech Republic, ALFA project, Prague)**

*Recent Progress in the Research of Prague and Cracow Alfonsine Manuscripts*

In the course of last four months, which have passed from our previous meeting at the kickoff conference (26th – 30th of September 2017), I focused my study of concrete manuscripts on two selected types of canons of *Alfonsine tables*.

(1) Canons of *Alfonsine tables* calculated to the Prague and Wrocław meridian in the ms. Prague, NL X B 3, fol. 73ra–78vb, between 1435–1465, and in the ms. Cracow, BJ 610, fol. 352ra–357vb, a. 1440 (inc.: "Mirabilis in altis Dominus..."). Texts of both mss. are identical, they differ in details only in the critical apparatus and in the fact that in the place where Bohemian copy names Prague, Polish copy names Wrocław ("civitas Pragensis" × "civitas Wratislaviensis"). Prague manuscript contains also tables, which are unfortunately missing in the Polish copy. – Currently the text of Cracow ms. is transcribed and can be prepared for display on the www-pages of ALFA project in the near future.

(2) Canons of *Alfonsine tables* by Iohannes de Lineriis (inc.: "Quia ad inveniendum loca planetarum...") in the ms. Cracow, BJ 548, fol. 30ra–33va, and ms. Cus 212, fol. 65ra–66vb.

From preliminary results it seems that the text "Quia ad inveniendum..." in the Cracow ms. is completely different from the text with the same incipit which we can find in ms. Cus 212 and these texts cannot be merged into a single edition with usual variant readings.



**Matthieu Husson (CNRS, PSL-Observatoire de Paris-SYRTE, ALFA project)**

*Astronomical manuscripts as the result of astronomical practices: two manuscripts of Conrad Heingarter from the BnF*

In this presentation the view that that, at least in some contexts, actors were learning, fostering and promoting mathematical astronomy also by producing manuscripts is explored here. This chapter seeks a better understanding of the articulations between the activity of producing astronomical manuscripts and other kind of astronomical practices in the specific context of late medieval Europe.

Our intention is to engage in this problematic by focusing on two manuscripts both related to Conrad Heingarter a second half of the 15th century astrologer/physician in France. Both manuscripts contains a version of the Alfonsine tables and a copy of John of Saxony 1327 canons. However the analysis will show that the two manuscripts were produced in rather distinctive ways, at different moments in the career trajectory of Conrad Heingarter and for different purposes. The first, BnF lat. 7197, was produced while Conrad Heingarter was learning mathematical astronomy and astrology. The second, BnF lat. 7432, was produced latter in Conrad Heingarter career in order to demonstrate and promote his competences to a patron.

**Richard Kremer (Dartmouth College)**

*Geometrical tools and mathematical practices: An exploration of instruments and diagrams in BSB Cod.icon. 182 (c. 1505-1520)*

Historians of early modern mathematical instruments (astronomical, cosmographical, geodetic, etc.) usually study surviving brass exemplars, texts describing how to make and use such devices, or images of instruments as depicted in contemporary works of art, frontispieces, etc. In this paper, I investigate a 95-leaf manuscript filled exclusively with drawings of astronomical, mathematical, cartographic and geometrical instruments, a “sketchbook” genre of which only one or two other exemplars are known from early modern Europe. By attending closely to physical clues in the manuscript, I will argue that it was created around 1505 by a student in Vienna who attended the university lectures of Andreas Stiborius. The drawings demonstrate what I call “geometrical tools,” i.e., isolated solutions to given problems that are more general than any particular instrument realized in brass. Such tools can tell us much about the mathematical practices of early modern astronomers, mathematicians and instrument-makers.

**Laure Miolo (CNRS, PSL-Observatoire de Paris-SYRTE, postdoc ALFA)**

*Johannes de Muris in margine A case study for the analysis and processing of marginalia in manuscript descriptions*

*Marginalia* constitute the most significant aspect of an active reading and use of manuscripts and works by medieval readers. They are important witnesses of scientific practices and work methods. It remains necessary to consider more closely the annotations in a manuscript description, as a part of the *codex* history as well as a work tradition. Most of the time *marginalia* are anonymous, but can be dated and situated geographically by a paleographical analysis. Although they remain anonymous, it is important to study them, as they offer us an important amount of informations especially on the reception of a text and *milieus* in which a work was disseminated. Furthermore, some annotators can be surely identified



according to their particular *ductus*. It is the case of Jean des Murs, his very recognisable handwriting is known since Stephen Victor. Several manuscripts can be linked to Jean through his annotations. He annotated actively his manuscripts as well as Sorbonne's *codices*. He certainly took a part of his sources from works contained in these volumes. This paper will focus on Jean des Murs as an annotator of manuscripts. The corpus of the manuscripts studied is covering a part of quadrivial science : arithmetic, astronomy and astrology. As a case study, a sample of his annotations will show how to treat *marginalia* in manuscript descriptions, and to analyse them as the essential part of medieval scholars intellectual background.

**Galla Topalian (CNRS-Observatoire de Paris, chef de projet Numérique ALFA) & Jean-Baptiste Camps (PSL-Université Paris IV)**

*The Text Encoding Initiative (TEI) as a resource for manuscript description: outline and practical application*

Among the different standards that allow to describe manuscripts (e.g., EAD, DACS), TEI has the advantage of describing both material and intellectual content. It is also extensively used in human sciences. Based on the work of the European MASTER project (1999-2001), the “manuscript description module” contains a great number of hierarchically and logically ordered elements that allow a fine description of the manuscript. In this regard, the TEI standard should not only be seen as a technical format of digital encoding for manuscript edition, but also as a conceptual framework for codicological study. Although this module was first created for describing European medieval manuscripts, the scheme is evolving to be broad enough for any kind of <text bearing> primary source.

This presentation outlines the TEI Guidelines and their application to manuscript description. It will be accompanied by a working example: the description of medieval French epic manuscripts, as part of the Geste project. Emphasis will be placed on the dependent relationship between data modelling and corpus-based codicological analysis.

**Marie-Madeleine Saby (Université Pierre Mendès France)**

*Editing the tables of John of Lignières for 1322 Canons: one or several base manuscripts? Descriptions of some manuscripts and discussion about criterions for choice.*

