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Digital Humanities and Artificial Intelligence: Methodological Developments in the Study of Astronomical Sources

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Relevance and Objectives

Since antiquity, astral sciences have been cultivated in diverse historical contexts, often involving complex processes of knowledge transmission and cross-cultural interaction. Consequently, studying their development requires a broad and comprehensive corpus of sources, as well as advanced analytical methodologies capable of addressing the diversity of materials.

The rise of Digital Humanities and Artificial Intelligence is reshaping the accessibility of historical sources, as well as the methods used for their analysis, editing, and interpretation. These technological transformations present both opportunities and challenges for research communities in the history of science. In recent years, scholars have launched collective initiatives to explore these issues, leading to the emergence of new tools, methodologies, and research avenues in the history of astral sciences.

This workshop aims to:

1. Present and discuss recent advancements in the application of DH and AI to the study of astronomical sources.
2. Share knowledge and technical expertise regarding new digital tools.
3. Critically assess the strengths and limitations of these approaches.
4. Explore potential directions for future methodological development.

Methodology

The session will begin with a brief overview of the opportunities and challenges associated with the integration of DH and AI methodologies into the study of the history of astral sciences. A survey of key ongoing projects in the field will be presented, followed by a focused examination of two specific projects led by the History of Astral Sciences team at LTE–Paris Observatory.

Both projects are centered on the analysis of non-discursive elements in historical sources related to the astral sciences, encompassing a broad range of documents from the 8th to the 18th centuries in multiple languages, including Chinese, Sanskrit, Persian, Arabic, Turkish, Hebrew, Latin, and Greek.

Project 1: DISHAS (dishas.obspm.fr)

The DISHAS project is dedicated to the digital study and critical edition of astronomical tables, with the aim of reconstructing the computation scenario employed by historical actors. By providing tools for analyzing the structure and transmission of these tables, DISHAS enables scholars to better understand the mathematical practices embedded within them.

Project 2: EIDA (eida.hypotheses.org)

The EIDA project focuses on the study and digital edition of diagrams used in the astral sciences. It examines both the material aspects of astronomical diagrams—such as their modes of production, visual conventions, and circulation patterns—and their epistemic dimensions, including their relationships with accompanying texts and their roles in reasoning and argumentation. EIDA aims to develop a critical framework for understanding diagrammatic transmission while also creating digital representations that support these analyses by providing new scholarly tools for visualizing, editing and publishing astronomical diagrams.

Throughout the workshop, we will demonstrate these tools in an interactive and informal manner, engaging participants in hands-on exploration. Additionally, we will discuss the forthcoming developments of these projects and their broader relevance not only to historians of mathematical astronomy but also to researchers in adjacent fields, including contemporary astronomy.

At least one-third of the session will be dedicated to open discussion, allowing participants to engage in dialogue about the opportunities and challenges presented by these methodologies and to explore potential future directions for research.

Target Audience

This workshop is primarily designed for early-career researchers, but all scholars interested in the application of Digital Humanities and Artificial Intelligence to historical research are welcome to participate.

Maximum number of participants: 20

Keywords

Digital humanities, Artificial Intelligence, History of Astronomy

E-mail

matthieu.husson@obspm.fr

Affiliation

LTE-Observatoire de Paris

Position

Researcher

Short Biography**Somkeo Norindr (LTE–Observatoire de Paris)**

Somkeo Norindr is the Digital Project Manager for the History of Astral Sciences team at the LTE–Paris Observatory. He is in charge of the digital team of the EIDA project, supervising the development of pipelines for automatic extraction and transcription, and the creation of digital tools to assist humanities researchers.

Matthieu Husson (LTE–Observatoire de Paris)

Matthieu Husson is a historian of astronomy within the History of Astral Sciences team at the LTE–Paris Observatory. His research focuses on three main areas: the history of astronomy in Europe (1200–1600); historiographical practices among astronomers and the global history of astronomy; and the critical analysis of astronomical sources through Digital Humanities (DH) and Artificial Intelligence (AI).

Primary authors: Matthieu Husson (LTE-Observatoire de Paris, CNRS); Somkeo Norindr (LTE-Observatoire de Paris)

Presenters: Matthieu Husson (LTE-Observatoire de Paris, CNRS); Somkeo Norindr (LTE-Observatoire de Paris)

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