
Time and Cosmos in Greco-Roman Antiquity edited by Alexander R. Jones with contributions by James Evans, Dorian Gieseler Greenbaum, Stephan Heilen, Alexander Jones, Daryn Lehoux, Karlheinz Schaldach, John Steele, and Bernhard Weissner

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From 19 October 2016 to 23 April 2017, an extraordinarily rich exhibition of over 100 items related broadly to time was held at the Institute for the Study of the Ancient World (ISAW) at New York University. The objects came from 26 international museums and collections, and included sundials of varying types, scale, and materials; clepsydras; star-globes; calendars and paraegmata; inscriptions; mosaics; sarcophagi; statuettes, reliefs; tablets; seal stamps; an altar; vessels; papyri; gems; rings; coins; and a cameo (have I missed anything?!). This book is the catalog for the exhibition.

As anyone working in the museum profession will know, it would have been a huge undertaking to get permissions to exhibit this range and type of material, to acquire the funding to underwrite and transport the objects in safety, and to plan, design, and mount the exhibits. Not surprisingly, Jennifer Y. Chi, exhibitions director and chief curator at ISAW, states in her acknowledgements to *Time and Cosmos* that the exhibition was five years in the making, and involved numerous overseas trips by herself and the curator/editor, Professor Alexander Jones, to negotiate the loans. I can only stand in awe of what they must have achieved in the actual exhibition and, since I did not manage to see it in person, be ever grateful for the exquisite catalog that accompanied the display.

The catalog includes essays by leading scholars, with an introduction by Alex Jones that situates the successive chapters in the context of the study of astronomy in antiquity.

John Steele covers Babylonian astronomy, writing in characteristically clear fashion on the means of keeping track of time from day to day *via* calendars, and on time-intervals of less than a day *via* water clocks, sundials, and the

stars. He rounds his chapter off with a discussion of the development of the zodiac and its role in Babylonian astrology.

Karlheinz Schaldach, the leading international authority on Greek and Roman sundials, provides a chapter on his speciality. He starts with a brief history of the development of sundials, including the recent work on the new dial found in Olympia.¹ The middle of his chapter is devoted to close analyses of seven varied examples that draw us back to the exhibition itself: the Delian sundial ship; the globe sundial from Prosymna; the double vertical sundial of Delos; the oldest sundial from Pompeii; a horizontal sundial, as a prototype of Buchner's well-known reconstruction of the so-called Horologium on the Campus Martius in Rome;² the roofed spherical sundial from Carthage; and the astronomical clock from Salzburg. The article ends with a discussion of portable sundials³ and the purposes of sundials.

Daryn Lehoux delivers a paper on the various ways in which calendars and cosmic cycles were incorporated into material objects and so included in daily life among the Greeks and Romans. He includes the cultic calendars of the Greeks; the Metonic Cycle of the Antikythera Mechanism; the Roman religious feast-day calendars (*ferialia*) and 'farmers' calendars' ('menologia rustica'); his speciality, the *parapegmata*; objects incorporating the week-day-cycle, at one end of the time spectrum, and, at the other extreme, the 'great year' cycles when all of the planets would return to a particular configuration. He ends with a description of the Antikythera Mechanism and a Byzantine descendant, as examples of objects that 'mechanized' the cosmos.⁴

With the end of Lehoux's chapter we are starting to tread on territory that is more metaphysical in character, and the next chapter, by Stephan Heilen and Dorian Gieseler Greenbaum, takes us more fully into this world *via* a discussion of the development of astrology in the Greco-Roman world. They use a variety of objects to illustrate different aspects of this ancient

¹ For more detail on this, see [Herrmann, Sipsi, and Schaldach 2015](#).

² On this, see the recent work by [Frischer, Fillwalk, Albèri Auber, Dearborn, Kajava, and Floris 2016–2017](#).

³ A complete list of such dials appears at the end of the chapter, while [Talbert 2016](#) is now the *vade mecum* for such dials.

⁴ See [Allen, Ambrisco, Anastasiou, Bate, Bitsakis, Crawley, Edmunds, Gelb, Hadland, Hockley, Jones, Malzbender, Mangou, Moussas, Ramsey, Seiradakis, Steele, Tselikas, and Zafeiropoulou 2016](#); [Jones 2018](#); [Lehoux 2018](#); [Evans and Carman 2019](#); and [Freeth 2019](#) for some recent work on the Antikythera Mechanism.

practice—notably the unique wooden zodiacal boards from Grand (Vosges) in France and the marble version (*Tabula Bianchini*) from Rome that were used by astrologers, but also the gems with their exquisite, miniature engravings of the planetary gods; and other astrologically related symbols. Horoscopes themselves are represented by examples on papyrus from the Louvre in Paris. Heilen and Greenbaum deal not only with birth-horoscopes, with which readers would be most familiar from their survival to the present day, but also with the lesser known iatromathematics (concerned with predictions on the causes, severity, and appropriate therapy of illnesses); elections (dealing with choosing the right time to begin an action); and interrogations (to do with seeking further information beyond simply the best time for an action).

Jim Evans is best known as an outstanding historian of ancient astronomy, whose work is characterized by a deep understanding of the mathematical bases of the science. In this catalog, however, he shows another side of his broad knowledge of astronomy as he discusses a wide range of material objects for their inclusion of astronomical symbols. These include diverse images of the celestial globe (as in the Farnese Atlas) or images which incorporate the globe (as on coins); sundials (which can signify the ephemeral character of human life); astrological apparatus on gems (a continuation of Heilen's and Greenbaum's discussion); and representations of the gods, planets, and weekdays (extending Lehoux's discussion).

The last chapter, by Bernhard Weissner, looks at the imagery of time and the cosmos in the Roman empire through a numismatic lens. The coins from the exhibition form the focus of his discussion; and, within that corpus, the image of the Capricorn is used as a hook on which to hang a wide-ranging discussion of its symbolic value. The zodiacal sign was famously adopted as a personal symbol by Augustus after his horoscope had been delivered to him by the astrologer Theogenes, and Weissner notes the growing support for the view that Augustus may have chosen this sign because it was the sign under which he was conceived, rather than the one under which he was born (which should be Libra). Other symbols discussed include the *sidus Iulium*, the comet which appeared during the funeral games for Julius Caesar held by Octavian (the future Augustus), and the zodiac.⁵

⁵ Ramsey and Licht 1997 should still be noted as a major discussion on this phenomenon, particularly with regard to the astronomical context.

The Exhibition Checklist of all objects displayed follows this final chapter, and includes details of material, scale, provenance, and date. A generally up-to-date bibliography of sources in a variety of languages and a list of photography and drawing credits round off the book.

It is not uncommon for multi-authored books to be criticized for the lack of communication between the various chapters. This is not the case with this book. Not only does Jones in his introduction neatly integrate all the chapters together around the central theme of the exhibition, but each chapter references others that have relevance to its themes.

This is an outstanding catalog for what must have been visually an outstanding exhibition. The editor and his authors are to be congratulated for accessible analyses and discussions. The staff of ISAW and of Princeton University Press also deserve high praise for the quality of the publication: the photographic illustrations are uniformly of a very high standard. This book is a pleasure to see and read.

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