# *Time and Cosmos in Greco-Roman Antiquity*: An Exhibit Review

**by Bob Frishman, FNAWCC (MA)**

The Greek title translates to "The ninth hour has caught up," or as we today would say, "It's 3 p.m. already." These words atop a colorful fourth-century Roman mosaic, depicting a man rushing to dinner past a pedestal-mounted sundial, illustrate that humanity's obsession with time did not originate with our industrial revolution or the proliferation of mechanical timekeeping.

**Figure 1.** Portable universal sundial, bronze, 2.5" X 2.4". Possibly near Bratislava, first century-fourth century CE. © Museum of the History of Science, University of Oxford. COURTESY OF ISAW.

This stone mosaic is just one of more than a hundred objects, most more than 2,000 years old, in the exhibit titled *Time and Cosmos in Greco-Roman Antiquity* at New York University's Institute for the Study of the Ancient World, open through April 23, 2017.

The sundials, calendars, astrologer's boards, and more—rarely on display in their home countries—were borrowed from international museums and collections. Without traveling to Italy or Greece or seeking permission to enter museum storerooms, visitors to the institute have a unique opportunity to learn about ancient telling time from actual artifacts.

On November 10, 2016, I visited the institute on Manhattan's East 84th Street and chatted with Exhibit Curator and Institute Interim Director Alexander Jones, who is professor of the history of exact science in antiquity. He shared insights even beyond what may be read in his introduction to the 208-page exhibit catalog. He explained that Egyptians and Babylonians had sundials for religious and astrological purposes, but the Greeks were the first to use them for public and personal use, harnessing new understandings of science, geometry, and astronomy. The Romans went even further, associating the ownership and display of timekeepers with wealth, scholarship, and sophistication, as was the case more than a thousand years later when European cities and nobility displayed mechanical clocks to demonstrate elevated social status.

Jones also spoke about Romans carving sundials on tombs as symbols of mortality and time's passage, as Western European artists did during the next millennium with sundials, hourglasses, and clocks symbolizing each person's limited years on Earth. He noted that sundials have a direct visible connection to the

**Figure 2.** Statuette of Atlas bearing a marble ornamental spherical sundial, 20.48". Tor Paterno near Ostia, possibly second century CE. © Sir John Soane's Museum, London. COURTESY OF ISAW.

local cosmology that creates the advancing shadow, unlike mechanical clocks whose science is hidden and disconnected from the movement of the sun and stars overhead. Considering the Earth to be at the center of their universe and strongly relying on their astrologers, people believed that events in the heavens had important effects on their daily lives.

Jones told me that he was glad he could display so many important artifacts, even though the Antikythera mechanism could not be included because it is far too fragile and valuable to leave its display case in Athens. The exhibit does include a digital depiction of that complicated bronze device, which is considered one of the world's most important artifacts of ancient science.

**Figure 3.** Roman mosaic depicting the Seven Sages referred to as Plato's Academy, stone, 33.8" X 33.4". Villa of Titus Siminius Stephanus, Pompeii, ca. first century BCE-first century CE. © Museo Archeologico Nazionale di Napoli. COURTESY OF ISAW.

Also on view are fragments of Egyptian clepsydra known as water clocks and six portable sundials (Figure 1), including one from a first-century Italian physician's tomb. To indicate the depth and detail of the exhibit catalog, page 91 presents a list of all 25 known portable sundials from antiquity, complete with the age of each, the place for which it was calibrated, and its present location. Unlike large heavy stone sundials from those eras, these small costly instruments were like today's wristwatches that can travel with their owners. All of these sundials displayed seasonal hours of unequal lengths, not equal hours told by our ticking timepieces.

By good fortune, on that same day that I toured the exhibit, I attended an evening lecture at the institute by James Evans, physics professor at the University of Puget Sound in Tacoma, WA. An expert on ancient science and astronomy, he contributed an essay to the printed catalog titled "Images of Time and Cosmic Connection." In a previous article by Evans, Jones learned of the existence of these ancient timekeeping artifacts, not just texts about the subject, and this sparked the exhibit's creation.

In his lecture Evans reported that 600 ancient stone sundials are known and that they represent the majority of ancient scientific instruments remaining for study. In his History of Ancient Astronomy course, his students make sundials to learn the underlying principles. Excavations at Pompeii in Italy revealed more than 30 decorative private garden sundials, which confirmed that those citizens had an understanding of spherical geometry (Figure 2). Used as more than basic timekeepers, those elaborate sundials often reflected metaphorical notions of the emperor as a sun figure and his empire as the cosmos.

Perhaps because of my Horology in Art pursuits, I was most interested in the artistic images of mosaics and other artworks showing sundials, as mentioned at the beginning of this review. Another exhibit mosaic depicted the Seven Sages or Plato's Academy (Figure 3); centered in its background is a pillar topped by a sundial. Yet another artwork is a small and delicate terracotta Greek statuette of a grieving slave leaning against a pedestal sundial.

The institute was founded in 2006. For information about the free exhibit and to order the catalog, *Time and Cosmos in Greco-Roman Antiquity*, edited by Jones (New York, NY: Institute for the Study of the Ancient World, 2016), which has 188 color illustrations and several relevant essays, visit www.isaw.nyu.edu.