

Project would recreate Roman monument

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When the autumnal equinox peaks at 3:23 p.m. (PDT) on Thursday, Sept. 22, a University of Oregon team working to reconstruct one of the world's most famous solar clocks will savor - and record - the moment by making another observation at a test site on campus.

Historian John Nicols and physicist Robert Zimmerman have joined with architects James Tice and Virginia Cartwright to lead a group of scholars and students seeking to create a replica of the Horologium / Solarium of Augustus, a 60-foot granite obelisk erected at Heliopolis in the seventh century B.C. by Psammetichus II and brought to Rome by Augustus in 10 B.C. The obelisk was to be used as the "gnomon" (the staff against which the shadow is projected from the sun to the ground) of a new solar calendar and "clock."

"It was a momentous event in the history of time, for it marks the revolutionary shift in time-keeping from the lunar to a solar-based system we now use," said Nichols, who specializes in ancient history and the history of science.

"What makes the Augusti solarium so significant is that it was the first attempt in the West to display the hours of the day and the days of the month - as well as the months and the seasons - in an astronomically correct way. Previous calendars were based primarily on the lunar cycle which created a 355-day year."

The obelisk was toppled in late antiquity, rediscovered in the Renaissance, and set up again - without the face of the dial - in front of

the Italian Parliament in Rome. About 20 years ago, a team of German archaeologists located the "face" of the sun, which measures roughly 300 by 200 feet, 18 feet below the current street level of Rome. Nicols said the scholars and students hope to lay out the gnomon, or obelisk, for the solarium on a half-scale model. Hours of the day, days of the month, and the seasons will all be clearly marked.

"There is nothing like this monument anywhere in the world," Nicols said.

Sandra Penny, an undergraduate student in physics, has worked out the mathematics of the solar time-keeping system with Zimmerman. Students from many departments have helped to paint in the grid on the test site at McKenzie Plaza, 1101 Kincaid St., Eugene, Ore.

The project is a byproduct of an award from the university's Williams Fund allowing a number of scholars in physics, history and humanities to develop a set of courses dealing with the process of culture and scientific discovery.

When completed, the replica will represent the shared creative work of astronomers and physicists, historians, literary scholars, classicists and archaeologists.

Cost is estimated at \$100,000, though it may not be an exact replica in one respect. Plans call for building it of green granite rather than the original reddish black stone, as a nod to the university's school colors.

Source: University of Oregon

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