

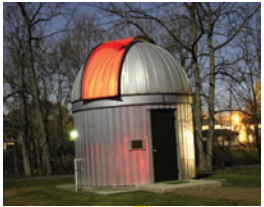
# Grainger Observatory Timeline 1989-2009

—Compiled by Nicole Pellaton

Exonians began exploring the phenomena of space 20 years ago, when Grainger Observatory first opened in October 1989. The original complex of two domed observatories and a classroom has grown since then—expanding the horizons for thousands of students, faculty and visitors.

In recent years, thanks to generous donations, Grainger Observatory has been able to add a robotic dome and convert the Chart House to a fully digital Harkness classroom and extensive astronomy library. The Observatory has also stayed current with technology—moving from film to electronic-imaging cameras of ever-increasing power, and from an entirely manual star-watching setup to robotic telescopes that can be controlled remotely via the Internet. The addition of a solar telescope in 1993 made both daytime and nighttime viewing possible.

Increasing numbers of Exonians take astronomy, and they go places. In recent years, two



PEA ARCHIVES

October 28, 1989

- Grainger Observatory opens with two domes—Alden and Kurtz—each housing a large telescope.
- The Chart House is home to five portable Questar 3.5-inch telescopes, a classroom and a darkroom for developing celestial images from film.
- Chris Harper is the observatory's first director.



PEA ARCHIVES

1992

- "Sky Watch," a program of celestial events and news presented by observatory proctors, debuts on WPEA. (February)



STEVE LEWIS

1992

- The Astronomy Club holds its first annual, all-night Messier Marathon to find all 103 Messier celestial objects.



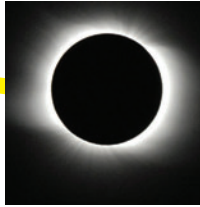
NASA

1992

- Will Letendre '92 and Matt Fates '92 create the first portfolio of observatory images, some in color, of deep-sky objects.
- The observatory acquires two additional 3.5-inch Questar telescopes.

1994

- Dubbed the "Year of the Sun" by Harper. On "Eclipse Day," hundreds observe a solar eclipse from Grainger Observatory under clear skies. (May)
- Students take images of asteroid Jokaster from the observatory. Exeter sends these ground-based images to NASA to supplement Hubble Telescope sky-based imagery on the asteroid. (October)



NASA

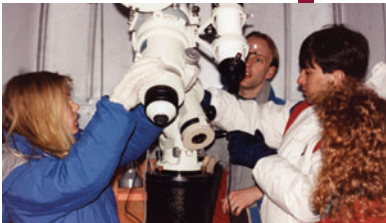


NASA



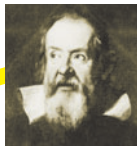
1991

- Architecture magazine profiles Exeter's observatory. (October)
- Observatory receives design awards from the American Institute of Architects New England Regional Council and the Boston Society of Architects.



1991

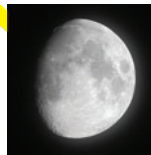
- All 139 preps spend evenings at the observatory, in groups of 30, as part of the newly launched Junior Studies program.
- They also read Brecht's play, Galileo.



LIBRARY OF CONGRESS

1993

- Dubbed the "Year of the Moon" by Harper.



1991

- The faculty approves a third astronomy course, Observational Astronomy, in response to increased student interest.



STEVE LEWIS

1993

- Harrison "Jack" Schmitt—one of 12 Apollo astronauts who walked on the moon—visits the campus to speak at assembly and meet with astronomy students. (October)

1993

- A solar telescope is installed, allowing close observation of the sun during daytime class hours. (November)



NASA

1993

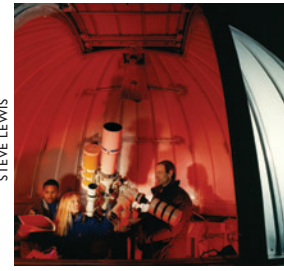
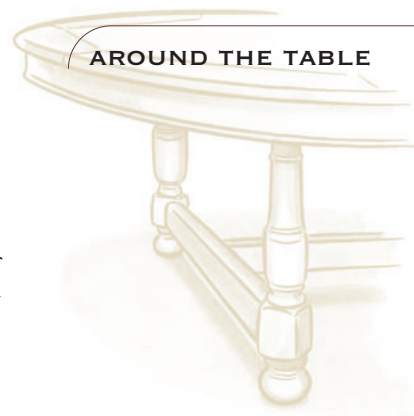
- Students observe a lunar eclipse from the observatory. (December)



groups of astronomy students traveled to famed Kitt Peak National Observatory, located on the Tohono O'odham Reservation in Arizona, to observe the stars, working with Grainger Observatory Director John Blackwell and Kitt Peak's professional researchers. A third group traveled to CalTech in Pasadena, CA, to work with data from NASA's Spitzer Space Telescope.

Fittingly, as the observatory celebrates its anniversary, 2009 is also the International Year of Astronomy, which marks a double 400th anniversary—Galileo's first use of a telescope to study the skies and Kepler's publication of *Astronomia Nova*.

In the words of Emeritus Science Instructor Chris Harper '45 (Hon.); P'85, P'87, P'88, the observatory's first director: "At Grainger Observatory, we have been privileged to look out into space and back into time. We have made the cosmic connection. We see, we measure, we wonder, and we imagine. And by reaching out, we learn."



STEVE LEWIS

**2002**

- The observatory gains a third dome with a robotic telescope that enables remote data capture over long periods. The new dome also introduces the first electronic-imaging camera.
- The film darkroom is replaced by a digitally-equipped Harkness classroom in Chart House.

**2005**

- The observatory receives electronic-imaging cameras for Alden and Kurtz domes. (May)
- Science Instructor Tony Maranto P'10 and students Michael Greer '06, Amy Weston '06 and John Preis '07 travel to CalTech in Pasadena to work with data from NASA's Spitzer Space Telescope. (July)
- Blackwell travels to Kitt Peak National Observatory in Arizona, where he studies active galactic nuclei using the 2-meter telescope and spectrograph. Blackwell's telescope training at Kitt Peak paves the way for future research trips with students.
- A Ritchey-Chretien 10-inch telescope, electronic-imaging camera, computer and software are installed in the robotic dome.



COURTESY JOHN BLACKWELL

**2007**

- PEA Astronomy Club accepted into the NASA/JPL/ASP Night Sky Network Program, which promotes public outreach in astronomy education. (April)
- The first weeklong Grainger Astronomy Conference for secondary school astronomy teachers is held. (June)
- A Takahashi FRC-300 Flat Field Ritchey-Chretien telescope is installed in Alden Dome. It provides imaging of very faint subjects in short time frames. (August)
- Student research on the eclipsing binary star U Pegasi is published in the *Research Based Science Education Journal*. (September)
- Students Grace du Pont '08, Kavanaugh McEachern '08 and Michael Carley '08 travel with Blackwell to Kitt Peak National Observatory to work on a new digital atlas of the Andromeda Galaxy, also known as M-31. (November)



COURTESY JOHN BLACKWELL



NASA

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009

**2004**

- Harper retires, and Science Instructor John Blackwell is appointed director of Grainger Observatory.



ART DURITY



NOAO/AURANSE

**2006**

- The observatory acquires a portable 12-inch Meade Dobsonian telescope, which allows quick views of faint deep-sky objects. (January)
- Blackwell and students Meredith Mead '07, Sean Leahy '07 and Olivia Claudio '07 travel to Kitt Peak National Observatory to observe the eclipsing binary star U Pegasi. They use the Coudé Feed Spectrograph to record time-series spectra of the star. (November)
- Blackwell and Hughes Pack at Northfield Mount Hermon Observatory collaborate on observation of the eclipsing binary star U Pegasi. Telescopes at both observatories record the star for five hours during the night of November 25.

**2008**

- Blackwell travels to Novosibirsk, Siberia, in the Russian Federation, to view and photograph the total solar eclipse. (August) He returns with hundreds of photographs to be used in astronomy classes.



ART DURITY

**2009**

- The robotic dome equipment is upgraded with a fast-imaging telescope and a new electronic-imaging camera that records 6.3 million pixels in an array of 3,072 pixels by 2,048 pixels, as well as filters, a computer system and software. The equipment lets astronomers operate the telescope remotely via the Internet. The observatory begins using Twitter (twitter.com/PEA\_Obs) to communicate the status of instrumentation availability, current weather restrictions and public observing events. (April)
- The second weeklong Grainger Astronomy Conference for secondary school astronomy teachers is held. (June)

