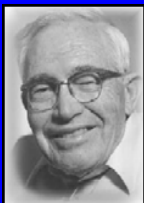




KU Astronomy has a long and storied history dating back to the 19th century. It includes many exceptional astronomers among its long list of alumni, most notably Clyde Tombaugh, discoverer of Pluto and, more recently, Dr. James Hesser of the Dominion Astrophysical Observa-



tory and astronaut Steve Hawley, both recipients of the CLAS Distinguished Alumnus Award. The continued successes of our alumni serve to remind us that the real test of the strength of a program (and KU) is tied to the quality and

character of the students it prepares for the challenges faced after leaving Lawrence. While our majors have always shared in the limited research data obtained by the faculty at the national observatories, the only facilities accessible to our students have been ill-equipped, amateur telescopes on campus. With the MLO 1.25-meter telescope, students will be able to obtain virtually unlimited research data while remotely operating the telescope at MLO from a control room in Malott Hall on the KU campus, signaling the start of a new and exciting era in KU Astronomy.

If you have any questions about the MLO Partnership Project, please don't hesitate to contact the Department of Physics & Astronomy or *Brandie Stormes*, KUEA Development Officer of the CLAS. A list of addresses and communications links for the Department and KUEA is supplied within this brochure.

Thank you again for your time and consideration.

Rock Chalk, Jayhawk!



Malott Hall

Department of  
Physics and Astronomy  
1082 Malott Hall  
1251 Wescoe Hall Drive  
University of Kansas  
Lawrence, KS 66045

Phone: 785-864-4626

Fax: 785-864-5262

E-mail: [physics@ku.edu](mailto:physics@ku.edu)

Web Site: [www.physics.ku.edu](http://www.physics.ku.edu)

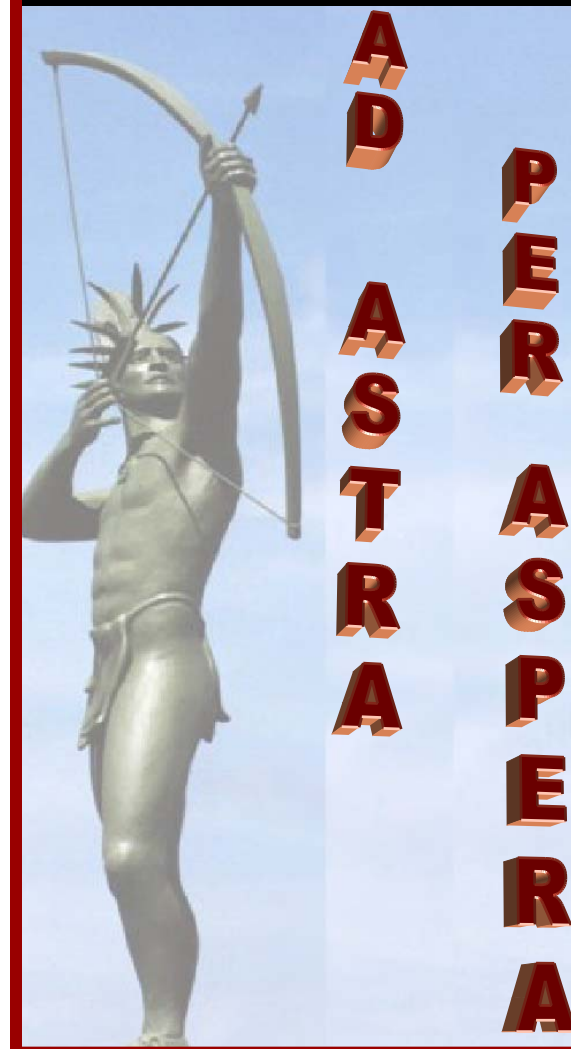
Brandie Stormes,  
KUEA Development Officer  
CLAS  
[BStormes@KUEndowment.org](mailto:BStormes@KUEndowment.org)  
785-832-7465  
800-444-4201

*KU Endowment Association*

*P.O. Box 928*

*Lawrence, KS 66044-0928*

Web Site: [www.kuendowment.org](http://www.kuendowment.org)



## The MLO 1.25-M Telescope Partnership

The Astronomy program at KU approaches an unprecedented milestone in its 120-year history in the Fall of 2008. With the addition of two new



faculty, extragalactic observer Greg Rudnick and KU alumnus and astronaut Steve Hawley, the Astronomy program will include

four full-time astronomers, working in conjunction with seven Physics faculty specializing in astrophysics research. Over the next five years, the expanded faculty will greatly enhance the undergraduate degree program in Astronomy, the only astronomy/astrophysics major within the Regent's system, while resurrecting the Masters degree in Astrophysics, making it the **only** graduate astronomy/astrophysics program in the state of Kansas.

A key element in the plan to take Astrophysics in Kansas to the next level is completion of the 1.25-meter telescope on Mt. Laguna Observatory (MLO), 45 miles east of San Diego, CA. When fully operational, this instrument will:

- Provide KU and Kansas astronomers with guaranteed access to a state-of-the-art astronomical research facility at one of the best observing sites in the continental US for the first time in the program's history.
- Dramatically expand the training opportunities for our exceptional undergraduates and future graduate students, making KU an attractive option for the best students locally and nationally.
- Place KU in an ideal position to take advantage of the research opportunities created by the next generation of large (8-10 meter) survey telescopes currently under construction. As emphasized by the *ReStar* Committee convened by the National Optical Astronomy Observatories at the request of the National Science Foundation:

*Small and mid-size telescopes continue to provide innovative science in themselves, and to provide precursor and follow-up observations that enhance the scientific productivity of larger telescopes.*

- Strengthen the collaboration with astronomy at SDSU, a program with strong similarities to KU astronomy, as they work to develop Mt. Laguna into one of the premiere astronomical research facilities in the continental US. Future plans for the MLO site include the construction of a 2.5-meter telescope.

## ULTRA

The **ULTRA (UltraLightweight Technology for Research in Astronomy)** Project was a collaborative research program involving KU, Dartmouth, San Diego State University, and a private technology firm in Tucson—CMA, Inc. Funded by the National Science Foundation Major Research Instrumentation division, the goal was to test the feasibility of making research-quality telescope mirrors from lightweight, composite materials, e.g., graphite, allowing more uniform mirrors to be made faster and cheaper and decreasing the design costs for engineering large and/or space-based telescopes. The primary role for KU and SDSU was to provide a working platform, a state-of-the-art observatory (telescope dome, mount, controls, and research instrumentation) that would test the capabilities of the mirrors in a dynamic research environment.



Using ~ \$1 million in NSF and matching funds, SDSU and KU have constructed a fully-equipped, Internet-accessible telescope at Mt. Laguna Observatory in the Cleveland National Forest 45 miles east of San Diego. Despite an additional investment of ~ \$1 million in CMA, after five years of effort, it appears that the lightweight technology will not be successful. Fortunately, the telescope platform was designed with this possibility in mind: we can remove the ULTRA mirrors and infrastructure and replace them with a traditional glass mirror 1.25 meters in diameter and steel infrastructure.

## COSTS

Due to the time between the mirror order and installation (16 - 21 months), the expected cost of the system upgrade is



~\$1 million, covered entirely by SDSU. To retain its 40% share of the telescope time, KU's contribution to the project amounts to \$450,000 to cover

new instrumentation and telescope operations. (SDSU already has its share of the upgrade costs in hand thanks to private donations to the observatory.) Because of the extraordinary opportunity this project represents for Astronomy/Astrophysics in Kansas, the College of Liberal Arts and Sciences has generously agreed to a dollar-for-dollar match to any donations made to this initiative, up to a limit of

**\$225,000.**