

The Kirkwood Society

A Newsletter for Alumni and Friends of the
Astronomy Department at Indiana University

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The Name

Even a newsletter as irregular as ours needs a name. Observing and teaching at Kirkwood Observatory is an experience that ties together both undergraduate and graduate alumni of the Department, as well as students and faculty from many generations. It's a name I think we can all identify with, but it is not original. The Kirkwood Society was the name adopted by a group of astronomy students at Indiana in the 1950's whose purpose and activities are mostly lost in the vagueness of time. I do recall hearing that a consuming passion for the group was to convince the powers-that-be to provide a set of stone lions at the entrance to Kirkwood Observatory. There are still no stone lions flanking the observatory and the original Kirkwood Society, as far as I know, is no longer active. So we will adopt the orphaned name and hope that some of the members of the original Kirkwood Society might enlighten us about the members and activities of the original group.

Rochester AAS Meeting

This summer meeting of the American Astronomical Society was relatively nearby and Indiana was well represented. Four graduate students and two undergraduates presented papers, and several Indiana faculty also attended and gave papers. Many traveled to the meeting in a rented van, stopping by Niagara Falls on the way. Most of the student travel was funded by gifts from alumni and friends! Alumni spotted at the meeting include Zoltan Levay, Arne Henden, Arlo Landolt, Bob Milkey, and Terry Oswald.



Left to right in this picture taken at the Dinosaur Barbecue in downtown Rochester are graduate students Todd Hillwig, Steven Margheim, Aaron Steinhauer, Angela Sarrazine, and alumnus Arne Henden.



Left to right in this picture taken at Niagara Falls are students Steve Margheim, Todd Hillwig, Aaron Steinhauer, Laura Hainline, Angela Sarrazine.

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Summer research in Bloomington

Going on to graduate school in astronomy nowadays almost demands some research experience, and we find increasing numbers of our undergraduates staying in Bloomington for a summer to do research with faculty and graduate students. In the picture below two of the six students pursuing undergraduate research this summer are busy reducing and analyzing data.



Rising senior Emily Freeland (left) and senior Emily Blecksmith.

Research Highlight: The QUEST Project

QUEST (QUasar Equatorial Survey Telescope) is a collaboration among the Physics and Astronomy departments at Yale, the Physics and Astronomy Departments at Indiana, the Centro de Investigaciones de Astronomia in Merida, Venezuela, and the University de Los Andes also in Merida, Venezuela. The project acquires and analyzes survey data from Schmidt telescopes with the aim of increasing our sample of a number of different kinds of faint objects of interest to stellar astronomy, solar system astronomy, galactic structure, and cosmology. The original motivation, and still the primary goal, is to catalog larger numbers of faint quasars in order to find gravitational lenses whose properties can be used to refine fundamental parameters of cosmology. To this end, the 1-meter Schmidt telescope at 11,000-foot Llano del Hato in the Venezuelan Andes has been equipped with a large custom array of CCDs used in drift-scan mode. This technique works best for fields near the celestial equator and at Llano del Hato the celestial equator passes nearly overhead. The current array is a set of sixteen 2048-pixel CCDs, and a later version is to incorporate 112 CCDs. The quasar work is the most demanding of the QUEST projects however, and other related efforts have produced the earliest QUEST results. Many faint RR Lyrae stars have been found whose spatial, kinematic, and chemical distributions will be important for galactic structure studies. Recently a new bright Kuiper Belt object with a Pluto-like orbit was found by QUEST, as well as the optical identification of a gamma-ray burst. Dozens of faint supernovae are also being found whose redshifts and

magnitudes will help determine the deceleration parameter of the Universe.

At Indiana the QUEST work has concentrated on the design and construction of the CCD controllers, on software for variability analysis, and on a variability survey for quasars. Professor Patricia Rosensweig from the Universidad de Los Andes spent her sabbatical at Indiana this last year doing QUEST-related work and other research. Graduate student Adam Rengstorf is using QUEST variability data to find faint quasars, and confirming them spectroscopically using the wide-field multiple object spectrograph on the WIYN telescope. The survey capabilities of QUEST, coupled with the wide field capabilities of WIYN, are a powerful combination, which the QUEST collaboration hopes to use to advantage.

Status of Kirkwood Observatory

In the last newsletter we mentioned the renovation of Kirkwood Observatory and a possible alumni celebration for the 100 year anniversary. The building is pretty run down and so is the telescope. The most serious situation is with the old wooden dome, which is now so unreliable that we cannot use the nighttime telescope for scheduled events such as classes or Open House. The project has been complicated by the often-competing needs of modern instruction in astronomy and historical preservation issues that would tend to turn Kirkwood into a well-preserved museum. It is proving to be time consuming to find the path that will best satisfy teaching as well as preservation.

Because of the condition of the Kirkwood dome and telescope, the observational techniques course last fall was taught using two CCD-equipped Meade 8-inch telescopes on the rooftop of Swain Hall West. It was useful to have the better computer capabilities and more modern CCDs that this setup provided--certainly better than Kirkwood--and the trees at Kirkwood were not a problem either from the tall roof of Swain Hall. However, the wide shake and the vibration from walking on the roof, the burden of installing and taking down the telescopes each evening, and the modest telescope apertures made it clear that this is not a good permanent solution.

The current plan (and this is only tentative) is to remove the Kirkwood telescope and send it away for refurbishment while the dome and building renovations are made. As soon as the dome and building work is completed, a modern 16-inch-class telescope would be installed in the Kirkwood dome for use by the observational techniques class. When a permanent teaching telescope can be acquired and installed at some yet-to-be-determined location, the refurbished Kirkwood refractor would be reinstalled in the Kirkwood dome, to be used again for student viewing and Open Houses.

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If this tentative plan is adopted then we will probably depend on contributions for the telescope renovation, with the more expensive building renovation being funded by the University. The considerable uncertainties regarding the plan and the schedule make setting a date for an alumni event for the observatory very problematical. We will do the best we can and let you all know.

Faculty News

Professor Emeritis Hollis Johnson and wife Grete just completed an 18-month church mission in Ghana. They expect to return to Bloomington later this summer. Before leaving, they established the Hollis and Greta Johnson Endowment to address special and unexpected needs in the Astronomy Department.

Many of you probably know that Margaret Edmondson died in Bloomington in January of 1999. For over four decades Frank and Margaret were a highly effective and respected team for astronomy at Indiana University. Frank and Margaret had begun initial funding of a Kirkwood Professorship in 1985, and Frank recently completed the endowment via a charitable gift annuity arrangement. Daniel Kirkwood is the most famous astronomer to be associated with Indiana University and his name graces several campus and city landmarks. It is entirely appropriate that his name also be associated with a Professorship in the Astronomy Department, helping to keep his name and memory alive.

We are fortunate to have retired faculty whose generosity reflects their esteem and affection for Indiana University and the Astronomy Department. Thank you, Edmondsons and Johnsons, both for your recent gifts and for your efforts over the years to maintain astronomy at Indiana at a consistently high level.

We regret to report the death of two former faculty members, Jim Cuffey was on the faculty 1946-1966 and died in Bloomington in May 1999. John Irwin was a professor here in the Astronomy Department from 1948-1964 and died in April 1997 in Tucson.

Alumni News

Jim Brunkella (B.S. 1968) returned to campus this spring to ride in the Little 500 Alumni Race in connection with the Little 500 anniversary. Jim is a project engineer at Hughes Aircraft in CA and is also President of Starsplitter Telescopes.

Don Fernie (Ph.D. 1958) recently retired from the faculty of the Astronomy Department at the University of Toronto, and is still happily engaged in research there as Professor Emeritus.

Forrest Hamilton (B.S. 1987) works at Space Telescope Science Institute doing programming, spacecraft monitoring, and target acquisitions. He is also Webmaster for the International Dark-Sky association.

Martha Haynes (Ph.D. 1978) was elected to the National Academy of Sciences this year. Martha is a professor at Cornell and works on large-scale structure in the Universe. Congratulations Martha!

Bob LaFara (M.A. 1950) is retired from the Naval Avionics Facility in Indianapolis. In his earlier job at the White Sands Proving Grounds in NM, he worked for a time with Clyde Tombaugh, discoverer of Pluto and a memorable individual for everyone who came into contact with him.

Carl O. Lampland (B.S. 1902; M.S. 1905; LL.D 1930) is the co-author of a 1999 paper in the *Astrophysical Journal* on motions in the jet of R Aqr, for which he took the original 1921 photographs. Carl has been dead for 47 years, but Indiana alumni just keep on producing!

Zoltan Levay (B.S. 1975) is in the Office of Public Outreach at Goddard Space Flight Center in Maryland. He is principally responsible for most of the Hubble Space Telescope images that are available via the Web and the news media.

Douglas Love (B.S. 1972) teaches astronomy at Bowie State University in Maryland.

Terry Oswald (B.S. 1974) is on leave from his faculty position at Florida Institute of Technology to serve as Program Officer for the Stellar Astronomy and Astrophysics Section of the NSF Division of Astronomical Sciences.

Russell Palma (B.S. 1974) is on the faculty at Sam Houston State University in Huntsville TX. He spends much of his research time at the University of Minnesota working on analysis of lunar ilmenite and metal grains, to examine the isotopic composition of argon in the solar wind.

Michael Smolek (B.S. 1977) received his Ph.D. in Optometry in 1986 and manages the laboratory for refractive surgery and corneal topography research at Louisiana State University. He still does astronomy on the side and also writes jokes for Rodney Dangerfield (really!).

Michael Weasner (B.S. 1970) left the Air Force in 1983 and works for TRW Inc. as a systems engineer in Redondo Beach, CA. He was on campus this spring recruiting for TRW and dropped by the department. Mike is Webmaster for the popular Meade ETX telescope site at <http://members.aol.com/extastro>.

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James White II (Ph.D. 1993) has been named Executive Director of the Astronomical Society of the Pacific. Prior to this he has been Editor of the ASP's Mercury magazine, and on leave from the faculty at Middle Tennessee State University.

David Williams (B.S. 1989) completed his Ph.D. in geology at the Univ. of Alabama and is a post-doc in the planetary geology group at Arizona State University, working on Jupiter satellite spacecraft imaging.

Kay Brewer (Woods) (B.S. 1998) lives in England and is working with archaeo-astronomer Michael Hoskin at Cambridge, exploring astronomical alignments of megalithic tombs in France, Spain, and Northern Africa.

Shelby Yang (Ph.D. 1992) is with Software Technologies Corp. in Monrovia, CA. He works on GUIs and on "middleware" for database integration.

Reminders

Be sure to drop us a note when you have news about changes in your life, or just want to bring us up-to-date. Also, please visit our newly improved departmental web site at <http://www.astro.indiana.edu>.

