The Newsletter of the United Astronomy Clubs of New Jersey.

www.uacnj.org

The FOCUS

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UACNJ Collaborates with NJIT

Andrew J. Gerrard, Ph.D.
Associate Professor, New Jersey Institute of Technology

United Astronomy Clubs of New Jersey (UACNJ) has teamed up with the New Jersey Institute of Technology (NJIT) to expand its astronomical instrumentation into the realm of atmospheric and space sciences. Working with faculty and research staff in the Center for Solar-Terrestrial Research (CSTR) at NJIT, the UACNJ field site at Jenny Jump will soon be augmented with four new instruments for both professional and amateur development.

A 48-inch fully-steerable optical telescope donated to NJIT by the United States Air Force will be used by NJIT personnel as a receiver for a molecular-aerosol light detection and ranging (LIDAR) system to study lower and middle atmospheric gravity wave propagation, sub-visible cirrus cloud evolution, and technological advances in daytime wind measurements. The telescope will be available approximately 50% of the time for UACNJ members to use for astronomical viewing. A new building to house this telescope is being erected at the Jenny Jump site; pouring of the foundation and construction of the building is scheduled for October 2008, with the telescope to arrive soon thereafter. The LIDAR system is already operational at NJIT.

A passive radio telescope is also being installed at the UACNJ site. This system was previously used at Alcatel-Lucent (Bell Labs) to study solar flares in the 1-18 GHz portion of the electromagnetic spectrum and will continue its operations under NJIT-UACNJ auspices. The footing for the radio telescope is already constructed at Jenny Jump and the concrete foundation will be poured at the same time as the optical telescope foundation. Relocation of the receiver electronics is expected to occur in November 2008.

Two other instruments recently installed at the UACNJ site are a fluxgate magnetometer that measures nano-Tesla fluctuations in the earth's magnetic field, and a dual-frequency Global Positioning System (GPS) receiver to measure ionospheric scintillation. The magnetometer is behind the UACNJ house (down a steep hill and out of sight) and is currently taking data. Visitors are invited to look at real-time magnetometer recordings, poster displays, and a magnetometer demo in the UACNJ museum. The GPS receiver antenna is mounted behind the house and it is hoped that another monitor will be connected shortly to also provide a real-time data display. These two instruments are being used by NJIT faculty to study magnetospheric waves and space weather indices, and to potentially measure atmospheric gravity waves. Data from all these instruments are available on request to UACNJ members.

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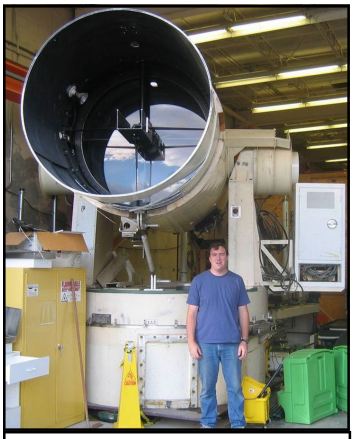


48-inch optical telescope

2008 Statistics

Observing Teams: 6

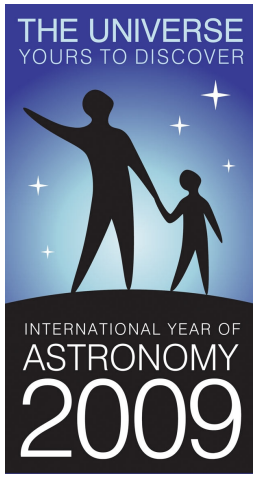
UACNJ Observers: 44

Sustaining Observers: 15

Supporting Clubs: 9

Visitors to Observatory so far this season: over 700

See www.uacnj.org if your club is interested in joining UACNJ as a Supporting Club.



International Year of Astronomy

Kevin Conod, North Jersey Astronomical Group (NJAG)

The International Year of Astronomy (IYA) is a global effort initiated by the International Astronomical Union and the UN Educational Scientific Cultural Organization. It is a yearlong celebration of astronomy, stargazing, and the beauty of the night sky. IYA will have a number of key components known as Keystone Projects.

Perhaps the most prominent of those projects is **100 Hours of Astronomy**. This 100 hour long event will be held April 2 – 5, 2009. One of the main goals is to get as many people as possible to look through a telescope. It will feature live broadcasts from observatories, sidewalk astronomy, and star parties presented by astronomy clubs, educational activities in schools, and other outreach programs.

The aim of the **Galileoscope** project is to get inexpensive yet good quality telescopes into the hands of as many stargazers as possible. These would be distributed in the form of an easy to assemble kit, thus promoting amateur telescope making as well as astronomy. Project leaders hope to be able to produce one million of them. These would be a refractor utilizing a 50 mm diameter achromatic glass lens with a focal length of 500 mm. It would come with an 18 mm eyepiece that would give 28X. The focuser would allow use of standard 1.25-inch eyepieces. The Galileoscope is expected to cost about $10.

Dark Skies Awareness is also an important keystone of IYA. According to the UN, as of this year half the world's population now lives in an urban environment. As such, more than 3 billion people currently live under light polluted skies. To promote awareness of light pollution, IYA will promote a number of 'star count' programs to get students and the general public involved in measuring local light pollution.

These are just a few of the many projects that will be taking place next year as part of IYA 2009. To learn more about these projects and how your club can get involved, visit the US IYA website at http://astronomy2009.us.

Solar System Ambassador

UACNJ Observer Ray Shapp is one of 523 Solar System Ambassadors (SSA) in the US. The Jet Propulsion Laboratory and NASA sponsor this network of volunteers who share the excitement of space exploration missions with people in their local communities.

Ray uses materials provided by SSA to prepare lectures for College For Kids classes at Union County College, Amateur Astronomers, Inc. (AAI) and UACNJ, giving about a dozen talks each year.

For more information about the SSA program, see http://www2.jpl.nasa.gov/ambassador/.

How Many Stars Can You See?

assuming excellent viewing conditions

Naked eye—nine to 65 thousand
50mm binoculars—4 million
4-inch telescope—20 million
8-inch telescope—110 million
16-inch Greenwood telescope—590 million
25-inch Midkiff telescope—1.7 billion
48-inch ITEK telecope—8.1 billion

UACNJ in the News

- Gil Jeffer was on WRNJ radio with Dave Kelber on September 19. They talked about UACNJ, the new equipment being placed at UACNJ by NJIT, and the symposium.
- Andy Gerrard was featured in an online article at FirstScience.com published on September 15. The article includes links to the UACNJ and Jenny Jump State Forest websites and information about the 48-inch telescope project.
- Kevin Conod, Karl Hricko, Andy Gerrard, and Gil Jeffer were all interviewed by reporter Lynn Olanoff for an article entitled "Giant telescope puts more eyes toward skies: New Jersey state park to receive retired Air Force stargazer. " that appeared in *The Express-Times* on April 25, 2008.
- Lynn Olanoff also interviewed Alan Midkiff for an article about his observatory and the astronomy club he helped start at North Warren Regional High School that was published by *The Express-Times* on April 21, 2008.