



# AU AstroNews

## The Newsletter of the Astronomical Unit

November 2003

Sponsored by the Santa Barbara Museum of Natural History

### Special Planetarium Show at Next Meeting

At the next AU meeting, members of the Quasars to Seastars teen program at the SBMNH will be giving a special planetarium show they have written and produced themselves. They will also be sharing a little bit about the informal astronomy education they offer to Museum visitors. The Quasars to Seastars program started in 1992. It offers high school students a chance to work with scientists at the Museum over the summer, and share what they've learned with the Museum visitors. They choose different research groups which can include marine invertebrate zoology, ethnobotany, forestry, vertebrate zoology, exhibit design and production, and of course astronomy. They also help staff the summer exhibit and many special events. Several of the teens participating in this show have become regular planetarium presenters on weekends. Like the AU, the Quasars are valuable resources in getting astronomy information and excitement to the general public. Astronomy Programs Coordinator Krissie Cook joined Quasars in 1995, and chose to work in Astronomy. She has been at the museum ever since!

**Thanks to Brother Laurence Harms** for sharing highlights of his 2002 trip to Africa at our last meeting. He told stories and showed some stunning slides of the countryside and the total solar eclipse. Below is a picture of Laurence teaching the Bitters family origami skills at the AU campout last month.



### October Outreach Volunteers

AU volunteers Warren Bitters, Bill Clausen, Joe Doyle, Dora Drake, Janie & Marv Johnson, Nicole Lemaster, Pat & Chuck McPartlin, Edgar Ocampo, Helen Osenga, Kathy & Ken Pfeiffer, Craig & Kenyon Prater, Jim Williams, Paul Winn, and Tim Wittenburg showed cool stuff in the sky to 290 customers at observations held during the last month.

Roving reporter Guido Parsec made it to **CALSTAR** this year at Lake San Antonio. He says it was warm, clear, and dark, and the participants were very friendly. He is still trying to recover from exposure to the dizzying array of astro equipment, including an 8" refractor, Steve Kennedy's excellent 24" Dob, and a 30" Starmaster. He saw a few AU members there too, including Joe Doyle, Art Harris, Chuck McPartlin, Edgar Ocampo, Kathy and Ken Pfeiffer, and Tim Wittenburg.

### AU Events for November

We have some big school events scheduled for November, so **we'll need extra volunteers this month!** In particular, the Goleta Valley Junior High event on the 13<sup>th</sup>, the La Colina Junior High event on the 18<sup>th</sup>, and the Santa Barbara Junior High event on the 19<sup>th</sup> will have a lot of students and their families, so come on out and help if you can!

Friday, November 7, 7:30 PM – Monthly AU meeting in Farrand Hall at SBMNH.

Saturday, November 8, sunset to 8:30 PM – Total lunar eclipse. The Moon rises at 4:58 PM (if you have a flat eastern horizon) already partially eclipsed. The eclipse is total between 5:06 and 5:31 PM, and then remains partially eclipsed until 8:22 PM. The best vantage point would be someplace like Shoreline Park.

Saturday, November 8, 5:30-6:30 PM – AU Planning Meeting at SBMNH, Krissie's office. All members are encouraged to help plan future AU activities.

Saturday, November 8, 7:00 PM – Monthly Public Star Party at SBMNH.

Sunday, November 9, setup 7:00 PM – Ojai Elderhostel outreach. Contact Chuck for details.

Thursday, November 13, setup 6:00 PM – Goleta Valley Junior High School Astronomy Night. Setup in sunken circle in main courtyard.

Tuesday, November 18, all day – Possible secondary peak of Leonid Meteor shower. Watch for fireballs!

Tuesday, November 18, setup 6:00 PM – La Colina Junior High School Astronomy Night. Setup on eastern side of main building.

Wednesday, November 19, setup 6:00 PM – Santa Barbara Junior High School Astronomy Night. Setup on northern side of main building.

Friday, November 21, 7:00 PM – Westmont College Monthly Public Observation at Van Kampen Observatory.

Saturday, November 22, all night – Dark sky observing. Contact Paul Winn ([strg8zn@cox.net](mailto:strg8zn@cox.net)) to find out where and when.

Scheduled events are subject to change and additions with little notice! For the latest and greatest, contact Edgar Ocampo ([eocampo26@earthlink.net](mailto:eocampo26@earthlink.net)) or Chuck McPartlin ([macpuzl@west.net](mailto:macpuzl@west.net)) for the latest developments.

### **AU Elections**

The AU elections are coming up in December, and we need candidates for the offices of President, Vice President, Secretary, and Treasurer. This is your club, so help to keep it operating! It's fun and satisfying, and the duties aren't onerous. Grab a list of the responsibilities for each of the club's offices at the November meeting, or contact Chuck. Unless you speak up and volunteer, we won't know you're willing to contribute!

### **Total Lunar Eclipse**

On the evening of Saturday, November 8 (the same night as the Monthly Star Party), there will be a total eclipse of the Moon visible from Santa Barbara. The Full Moon will rise at 4:58 PM (if your eastern horizon is flat) already partially eclipsed by the Earth's shadow. Between 5:06 and 5:31, the Moon will be totally within the umbra, or darkest portion of

the Earth's shadow. It will remain partially eclipsed until 8:22 PM. The best view will be from a spot like Shoreline Park, with an unobstructed horizon.

### **Leonid Meteor Shower**

We all enjoyed the spectacle of the last two annual Leonid Meteor Showers, especially the meteor storm levels of two years ago. Storm levels aren't expected again for a long time, and early predictions for the shower this year were bleak for our location. However, some recent predictions based on filaments of debris left behind by comet Tempel-Tuttle hundreds of years in the past look more encouraging. All of the times have been converted to Pacific Standard Time. On Thursday, November 13, between 5 and 11 AM we'll pass through a filament from 1499 — guess we won't see much of that! The center of the traditional peak will occur on Sunday, November 16, at 10:28 AM — not much luck here, either. However, there is a predicted peak from debris left behind in 1533, lasting up to 24 hours, for Tuesday, November 18, starting at 5:30 AM. Another prediction for the same filament puts the peak at 9:30 PM. Get out and take a look that evening, and see whether the meteor mavens have it all figured out! Expect a maximum rate of one meteor per minute from a dark site. The Moon won't interfere until the wee hours of the morning.

### **AU's New Solar Scope on Order**

At the last meeting we voted to buy a new Coronado Maxscope 70 for solar viewing. The scope is now on order and we hope to have it operational by mid-November. Last month two giant sunspots showed up, one of which is about as wide as the planet Jupiter! Continued exceptional solar activity is forecast, so the arrival of our new scope is particularly timely. Craig Prater found a very informative link for solar enthusiasts, [www.spaceweather.com](http://www.spaceweather.com), which gives information about solar activity including flares, sunspots, and the solar wind. There is also an eye popping collection of aurora pictures on the site.

### **Link of the Month**

Check out this link for a dazzling slide show of some of the best shots from the Hubble Space Telescope (be sure to turn on your sound): <http://wires.news.com.au/special/mm/030811-hubble.htm>



## Hurricane Team Work

by Dr. Tony Phillips

On a gray breezy day last month thousands of people got in their cars and reluctantly left home. U.S. east coast highways were thick with traffic. Schools were closed. Businesses shut down. Perfect! When powerful Hurricane Isabel arrived some 38 hours later, nearly everyone in the storm's path had fled to safety. Days later Vice Admiral Lautenbacher, in a briefing to President Bush, praised the National Atmospheric and Oceanic Administration (NOAA): "Without NOAA's excellent track forecasts, hurricane Isabel's toll on lives and property would have been even more devastating. This is NOAA's first year of providing 5-day forecasts—and the 5-day forecast for Isabel was as good as our 2-day forecasts have been over the last decade." Many people in NOAA played a role. A team of pilots, for instance, flew Gulfstream-IV High Altitude Surveillance jets right up to the approaching hurricane, logging 25,000 miles in the days before landfall. Their jets deployed devices called dropsondes—little weather stations that fall toward the sea, measuring pressure, humidity, temperature, and wind velocity as they plummet. The data were radioed back to the aircraft, and transmitted to forecasters on shore. While two Gulfstream-IV crews flew night and day around the storm, a NOAA satellite named GOES-EAST monitored Isabel from above. (GOES is short for Geostationary Operational Environmental Satellite.) From an orbit 22,300 miles above the Atlantic Ocean, GOES-EAST had a unique view. "It could see the entire hurricane at once," says Ron Gird of NOAA. "Scientists used infrared spectrometers onboard the satellite to estimate the height of the storm clouds, their temperature and water content. GOES can also measure the temperature of the ocean surface—the source of power for hurricanes." Constant streams of data from GOES and the Gulfstream aircraft were fed to supercomputers at NOAA's Environmental Modeling Center in Maryland, where sophisticated programs developed over the years by meteorologists and programmers calculated the storm's most likely path. Supercomputers. Satellites. Jet airplanes. Scientists. Programmers. Pilots. It took a big team using a lot of tools to predict where Isabel would go—accurately and with time to spare. Says Vice Admiral Lautenbacher: "I hope everyone at NOAA shares the pride of being part of a team effort that so effectively warned the public of impending danger, and enabled citizens to take action to protect themselves and their loved ones." Well done, indeed. To learn more about the GOES, see [www.oso.noaa.gov/goes/](http://www.oso.noaa.gov/goes/) For

kids, the SciJinks Weather Laboratory at [scijinks.nasa.gov](http://scijinks.nasa.gov) has lots of fun activities and fascinating facts about the wild world of weather.

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