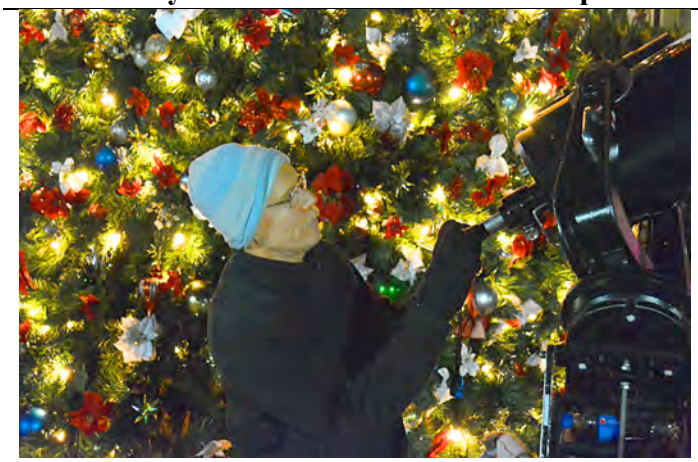
AU AstroNews

The Newsletter of the Astronomical Unit

January 2014 **Sponsored by the Santa Barbara Museum of Natural History**



Tom Totton brings some Christmas cheer to the Camino Real Market Place. Photo: Bruce Murdock.

OUR JANUARY MEETING

Our first Friday meeting of the year will feature Professor Ben Mazin from UCSB. Ben will present his research on a unique detector technology called Microwave Kinetic Inductance Detectors (MKIDs) for astronomy in the near infrared, optical, ultraviolet, and X-ray. These special detectors allow determination of both the energy and arrival time of individual photons. The applications of this technology range from detecting earth-like planets around nearby stars to untangling the emission mechanisms of pulsars. This should be an interesting and thought-provoking talk!

DECEMBER OUTREACH

Since the last newsletter, AU volunteers Ann Townley & Peter Angeloff, Karleen & Dennis Cowan, Tim Crawford, Mike Farris, Ruben Gutierrez, Art Harris, Sergio Lopez, Zanna Lucy, Pat & Chuck McPartlin, Janet & Martin Meza, Amir Moshar, Bruce Murdock, Max Neufeldt, Edgar Ocampo, Javier Rivera & the Quasars, David Salvia, Tom Totton, Barry White, and Tom Whittemore showed cool astro stuff to ***720*** visitors. *A quick look at our totals for 2013 (not all events have happened yet) shows that we had another good year for public attendance, with a total of over 18,000 in 210 events. A big THANK YOU to all the hard working outreach volunteers!*

OUTREACH REPORT

Here's what's scheduled so far for January. Just help out at six AU outreach events in a year, and your membership gets extended a year. What a deal! Remember, events are subject to change, so for the latest updates, contact Chuck at 964-8201 or macpuzl@west.net.

FRIDAY, JANUARY 3, 7 PM

Catch a quick planetarium show by Javier, followed by our first monthly meeting of the year in Farrand Hall at SBMNH. Professor Ben Mazin of UCSB presenting his research on a unique detector technology called Microwave Kinetic Inductance Detectors (MKIDs) for astronomy in the near infrared, optical, ultraviolet, and X-ray.

SATURDAY, JANUARY 4, SETUP 6 PM

Telescopes for Bacara Resort and Spa. We set up on the Miro Lawn.

FRIDAY, JANUARY 10, SETUP 6 PM

Telescopes for Bacara Resort and Spa. We set up on the Miro Lawn.

SATURDAY, JANUARY 11, 5 PM

Monthly AU planning meeting in the classroom outside Javier's office. Come help your club plan its activities for the coming year.

SATURDAY, JANUARY 11, 7 PM

Monthly SBMNH Star Party. Bring a scope, or just come out and mooch some views of the winter sky.

TUESDAY, JANUARY 14, 7 PM

Telescope Tuesday at the Camino Real Marketplace in Goleta. We set up in the plaza by the theater.

FRIDAY, JANUARY 17, SETUP 6 PM
Monthly Westmont Public Telescope Night at the observatory, next to the baseball field. To check the status of the viewing if the weather looks iffy, call the Westmont Telescope Viewing Hotline at (805) 565-6272.

SATURDAY, JANUARY 18, SETUP 6 PM
Telescopes for Bacara Resort and Spa. We set up on the Miro Lawn.

WEDNESDAY, JANUARY 22, SETUP 4:30 PM
Telescopes for Science Night at McKinley School, at 350 Loma Alta Drive near SBCC.

THURSDAY, JANUARY 23, SETUP 4:30 PM
Telescopes for Science Night at Monte Vista School, at 730 North Hope Avenue in Santa Barbara. We set up on the south side of the campus, near the kindergarten playground. Pizza for volunteers.

FRIDAY, JANUARY 24, SETUP 6 PM
Telescopes for Bacara Resort and Spa. We set up on the Miro Lawn.

SATURDAY, JANUARY 25, SETUP 6 PM
Telescopes for Bacara Resort and Spa. We set up on the Miro Lawn.

THURSDAY, JANUARY 30, SETUP 5 PM
Telescopes for Science Night at Brandon School, at 195 Brandon Drive in Goleta. We set up in their central courtyard. Buffet food for volunteers.

FRIDAY, JANUARY 31, SETUP 6 PM
Telescopes for Bacara Resort and Spa. We set up on the Miro Lawn.

From the Workshop...
Tim Crawford
Greetings from the workshop! Our mirror class, originally created by our own Tom Whittemore, is now in its eleventh year! It seems like just yesterday we were at the Broder Building gathering for our first encounter with grinding a working mirror to be integrated into a hand-crafted Newtonian-type telescope. For many of us these are Dobsonian scopes utilizing John Dobson's famous, simple and elegantly-designed scopes.

Our goal is to keep you abreast of the most current techniques which Amateur Telescope Makers (ATMs) can offer.

Now, most of you are very proficient with telescopes. Still, I hope to give you a first-hand example of what may happen when you are encouraged to make your own telescope mirror and, when this is done, to design and build a telescope.

First you are handed an 8" disc of Pyrex. Next you are given a ceramic grinding tool made essentially from bathroom tile. Since your grinding tool has the same hardness as does your mirror, the tool will wear down the glass when silicon carbide is used as an abrasive between the two. This is how you start to make a truly fine mirror!

Eleven years ago, along with some patient instruction from Tom, this is all we were given. But, in the meantime, many of us went on to complete our mirror-and-telescope making projects. In future editions of the "joys of mirror making and telescope building," I will get into some of the finer details of making a research-grade telescope mirror. Please stay tuned!

Happy New Year!


A cold evening of outreach in early December at Bacara Resort. Photo: Bruce Murdock.

Upcoming Lecture...
Wednesday January 8, 2014 from 12:00 to 1:30PM Science and Engineering Council Luncheon Talk: Directed Energy Planetary Defense. Speaker: Dr. Phil Lubin, UCSB. Synopsis: "Asteroids and comets crossing Earth's orbit pose a credible risk of impact, with potentially severe disturbances to society. Numerous mitigation strategies have been

proposed, most involving sending spacecraft to the threatening object. Dr. Lubin's group proposes an orbital planetary defense system capable of heating the surface of potentially hazardous objects to the vaporization point. They call the system DE-STAR (for Directed Energy System for Targeting of Asteroids and exploRation). Dr. Lubin will describe DE-STAR and show results from a laboratory test unit.
DE-STAR has the potential for a number of other applications, including powering ion propulsion systems, active asteroid illumination searches, down-linking power to the Earth via millimeter or microwave, and long range communications." See: http://www.deepspace.ucsb.edu/projects/directed-energy-planetary-defense

Globe At Night...
For 2014, the Globe at Night light pollution monitoring project will be collecting observations during particular dates each month, roughly between 8pm-10pm local time, when the Moon is not up. Those dates are:
- January 20-29
- February 19-28
- March 21-30
- April 20-29
- May 19-28
- June 17-26
- July 16-25
- August 15-24
- September 15-24
- October 14-23
- November 12-21
- December 11-20

We look forward to your participation in the campaign! Visit www.globeatnight.org for more information.

AU Information Box

President:	Mike Farris president@sbau.org	637-3300
Vice President:	Tom Totton vicepresident@sbau.org	562-8795
Secretary:	Colin Taylor dancingmagpie@cox.net	967-8140
Treasurer:	Tim Wittenburg treasurer@sbau.org	
Equipment:	Art Harris n6is@cox.net	968-4017
Outreach:	Chuck McPartlin outreach@sbau.org	964-8201
Newsletter:	Tom Whittemore kometes@aol.com	687-2025
Refreshments:	Janet & Martin Meza	450-8383
Webmaster:	Paul Winn webmaster@sbau.org	886-2319

SBMNH Astronomy Programs Manager
Javier Rivera 682-4711x173
jrivera@sbnature2.org

AU AstroNews, the monthly publication of the **Astronomical Unit (AU)**, is mailed to the AU membership. For publishing consideration for the next month, submit astronomical items by the 20th of the current month!

AU annual membership rates:
Single = $15 Family = $25

AU mailing address:
Astronomical Unit
c/o Santa Barbara Museum of Natural History
2559 Puesta Del Sol Road
Santa Barbara, CA 93105-2998

On the Web: http://www.sbau.org

January 2014						
Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
			1	2	3 SBAU General Meeting 7PM	4 Bacara Resort 6PM
5	6	7	8 ◐	9	10 Bacara Resort 6PM	11 Planning Meeting 5PM Star Party 7PM SBMNH
12	13	14 Camino Real Marketplace 7PM	15 ○	16	17 Westmont College 6PM	18 Bacara Resort 6PM
19	20	21	22 McKinley School 4:30PM	23 ◑ Monte Vista School 4:30PM	24 Bacara Resort 6PM	25 Bacara Resort 6PM
26	27	28	29	30 ● Brandon School 5PM	31 Bacara Resort 6PM	

The Astronomical Unit
c/o Santa Barbara Museum of Natural History
2559 Puesta Del Sol Road
Santa Barbara, CA 93105-2998