



# AU AstroNews

## The Newsletter of the Astronomical Unit

December 2003

Sponsored by the Santa Barbara Museum of Natural History

### **Club Elections - Members Night - Auction**

The next meeting, on Friday December 5, will start with elections for next year's AU officers, so if you are interested in helping the club, please volunteer! You can get a list of the duties for each of the positions from Chuck ([macpuzl@west.net](mailto:macpuzl@west.net)). After the election we will continue with Members Night, with AU members giving brief presentations. This year features Jim Williams talking about astronomy education in third world countries, Gail Massey showing Mars video images, Ken Pierskalla discussing star names, Tom Bun describing his experience of over 60 years as an amateur astronomer, Jiri Polivka on the large millimeter telescope in Mexico, Warren Bitters about double star observing, and John Boyd showing solar photos. After the presentations we will hold a silent auction to benefit the club, so bring something to donate. Finally, a benefit of coming *early* to the next meeting is that anyone interested in seeing the current night's sky in the planetarium are welcome to see the free show between 7:00 to 7:15 PM.

At our last meeting, members of the Quasars to Seastars teen program at the SBMNH entertained and educated us with a special planetarium show they wrote and produced themselves. Thanks to Fabian Garcia (Dr. Dark Matter), Daniel Johnson (Asteroid Mowers), Jacqui Brown (Luna Klips), Meaghan Cook (Aurora Australis), Paul East (Winston Pluton and tech crew), Karina Murillo (Polla), Jackie Vasquez (Castra), and tech crew members Janeya Campbell and Marisa Krystian for a great show.

A quick "heads up" for the January meeting is that it will be on Friday, January 2 at 7:30 PM. Escape from the New Year's football games and come to Fleischmann Auditorium for a free presentation by Dr. Alex Filippenko. He's been an AU speaker before, and now by popular demand, he's back! He will present the current theory about how our universe formed, "The Big Bang: Truth or

Nonsense?" From this, he will conclude by describing the current work on the frontiers of the big bang theory, such as repulsive gravity and the idea of multiple universes. So, come and bring lots of folks with you (Fleischmann can seat 300), put the football games on video, and enjoy Alex's presentation!

### **AU Holiday Party and Banquet**

One of the most fun social activities of the year is the AU Holiday Party and Banquet. This year, thanks to Bob Michael's efforts, we will once again meet at the Beachside Café in Goleta Beach Park. The date is Thursday, December 11, beginning at 6:00 PM or so with a no-host bar. Dinner will be served at 7:00, and you have your choice of the Taurus (prime rib), Pisces (salmon hollandaise), or Pavo (chicken breast California). Dinner is a fixed price of \$32 including tax and tip, and comes with vegetables, smashed potatoes, rolls, clam chowder or Caesar salad, and coffee or tea. For \$4 extra you can have a dessert of crème brulee with berries. Bob does not recommend dessert because the portions are large, and we will probably have a cake. There will be an optional gift exchange after dinner. If you want to participate, bring a gift (preferably astronomy related) with a value of not much more than \$10, and we will draw names to exchange our little bundles of joy and mirth. To make your reservations for the banquet, please choose a dinner option and mail your check to Bob Michael, 1320 Laguna St. #6, Santa Barbara, CA 93103. **Please send your check by December 1.** Bob's phone number is 963-5614 if you have any questions.

### **November Outreach Volunteers**

AU outreach volunteers Tim Crawford, Joe Doyle, Art Harris, Pat & Chuck McPartlin, Edgar Ocampo, Helen Osenga, Ron Pembleton, Craig & Kenyon Prater, Jim Williams, and Tim Wittenburg, plus Vince Tobin from the Vandenberg Astronomical Society, showed the splendors in the sky to 593 customers since the last report.

## AU Events for December

Monday, December 1 – RSVP for Holiday Party!

Friday, December 5, 7:30 PM – Monthly AU meeting in Farrand Hall at SBMNH, preceded by a free planetarium show from 7:00 to 7:15. We will have club elections, member presentations, and a silent auction to benefit the club (bring something).

Monday December 8, setup 6:30 PM – Slide show and telescopes for Franklin School.

Thursday, December 11, 6:00 PM – AU Holiday Party and Banquet at the Beachside Bar & Cafe at Goleta Beach. **Get your check to Bob Michael (phone 963-5614) by December 1.**

Saturday, December 13, 5:30-6:30 PM – AU Planning Meeting at SBMNH in the classroom next to Krissie's office. All members are encouraged to help plan future AU activities.

Saturday, December 13, 7:00 PM – Monthly Public Star Party at SBMNH. The peak of the Geminid meteor shower is at 8:30 AM on the 14th, but the Moon is unfavorable for viewing this year.

Friday, December 19, 7:00 PM – Westmont College Monthly Public Observation at Van Kampen Observatory.

Saturday, December 20, all night – Dark sky observing. Contact Paul Winn ([strg8zn@cox.net](mailto:strg8zn@cox.net)) or Joe Doyle ([jdoyle@mrl.ucsb.edu](mailto:jdoyle@mrl.ucsb.edu)) to find out where and when.

Sunday, December 21, 11:02 PM – Winter Solstice! (But no parades...)

Tuesday, December 30, setup 6:30 PM – Slide show and telescopes for Ojai Elderhostel. This event is still tentative, so check with Chuck.

Wednesday, December 31, noon – Saturn at opposition. It's about as close as it gets, and the rings are near maximum tilt, so go look at it tonight!

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.

## Local Seeing

In the following, Joe Doyle shares his observations on local seeing conditions. Thanks, Joe!

It is sad to say, but the Santa Barbara area is famous for not having good seeing. We had a window of darn good seeing late last summer, just coincident with the close approach of Mars. And we can often have good seeing in the early morning hours before dawn. Some tips to improve your seeing are looking at objects high in the sky, not looking over warm buildings, and making sure your own scope is at ambient temperature. There is an interesting article entitled "Beating the Seeing" at the Sky & Telescope web page: [http://skyandtelescope.com/howto/scopes/article\\_136\\_1.asp](http://skyandtelescope.com/howto/scopes/article_136_1.asp) A warm mirror produces bad images similar to bad seeing. This article describes testing for this problem and many others.

If you want to get out of town, often the Winchester Gun Club has better seeing, but rarely is it great. The Gun Club does have a wide open horizon and is darker than town. And it is close and easy. Figueroa Mountain is pretty dark, and often has fair seeing, but rarely has great seeing. Figueroa is about 75 minutes away. Some people report that Refugio Beach can have great seeing. I have been there twice and had great seeing once. The best local seeing that I am aware of is at Mount Pinos, but that is a two hour and fifteen minute drive, and it is only open to mere mortals about 6 months of the year.

Finally, keep an eye on the Clear Sky Clock. It is the best predictor of seeing that I have encountered.

<http://cleardarksky.com/c/SaBarbCAkey.html?1>

<http://cleardarksky.com/c/FiguerPCAkey.html?1>

<http://cleardarksky.com/c/MtPinoskey.html?1>

## 2004 Astronomy Calendars are Here!

For only \$12, buy one, or two or more at the next AU meeting, Friday, December 5, 2003. The photos are spectacular! Make your check out to the AU and see Bob Brown, 2003 Treasurer, for your calendar(s). They make great Christmas gifts! Thanks Bob!



## Stardust

by Patrick L. Barry and Dr. Tony Phillips

Philosophers have long sought to "see a world in a grain of sand," as William Blake famously put it. Now scientists are attempting to see the solar system in a grain of dust-comet dust, that is. If successful, NASA's Stardust probe will be the first ever to carry matter from a comet back to Earth for examination by scientists. It would also be the first time that any material has been deliberately returned to Earth from beyond the orbit of the Moon. And one wouldn't merely wax poetic to say that in those tiny grains of comet dust, one could find clues to the origin of our world and perhaps to the beginning of life itself. Comets are like frozen time capsules from the time when our solar system formed. Drifting in the cold outer solar system for billions of years, these asteroid-sized "dirty snowballs" have undergone little change relative to the more dynamic planets. Looking at comets is a bit like studying the bowl of leftover batter to understand how a wedding cake came to be. Indeed, evidence suggests that comets may have played a role in the emergence of life on our planet. The steady bombardment of the young Earth by icy comets over millions of years could have brought the water that made our brown planet blue. And comets contain complex carbon compounds that might be the building blocks for life. Launched in 1999, Stardust will rendezvous with comet Wild 2 (pronounced "Vilt" after its Swiss discoverer) on January 2, 2004. As it passes through the cloud of gas and dust escaping from the comet, Stardust will use a material called aerogel to capture grains from the comet as they zip by at 13,000 mph. Aerogel is a foam-like solid so tenuous that it's hardly even there: 99 percent of its volume is just air. The ethereal lightness of aerogel minimizes damage to the grains as they're caught. Wild 2 orbited the sun beyond Jupiter until 1974, when it was nudged by Jupiter's gravity into a Sun-approaching orbit-within reach of probes from Earth. Since then the comet has passed by the Sun only five times, so its ice and dust ought to be relatively unaltered by solar radiation. Some of this pristine "stuff" will be onboard Stardust when it returns to Earth in 2006, little dusty clues to life's big mysteries. To learn more about Stardust, see the mission website at [stardust.jpl.nasa.gov](http://stardust.jpl.nasa.gov) Kids can play a fun trivia game about comets at [spaceplace.nasa.gov/stardust](http://spaceplace.nasa.gov/stardust)

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