



AU AstroNews

The Newsletter of the Astronomical Unit

December 2002

Sponsored by the Santa Barbara Museum of Natural History

New Triple Star System!!!

At 10:36 on the morning of November 6, a double star system well-known to the AU became a triple system. Emma Brinser (9.2 pounds) has joined Greg and Gretchen as our newest AU member.

Thanks, Dr. Mason

We had a really cool (less than 5 Kelvins) lecture last month by Dr. Peter Mason. There's no place like Antarctica for low-temperature physics, unless you go to space.

Election 2002

The elections for AU club officers will take place at the start of our monthly meeting. So far we have Craig volunteering to stay as Secretary, and Paul Winn as Webmaster. Bill Buzin opted for Vice President, Chuck is willing to stay on as Newsletter Editor, and Edgar is staying as Outreach Coordinator, along with Chuck. Pat may be persuaded to try for President. That leaves us with vacancies for Treasurer and Refreshments Coordinator.

Members' Night

After the elections, the rest of the meeting is devoted to Members' Night, with short presentations by club members on astronomical topics. This year, we will hear from: Jim Billig – “**Sundials and Making Calendars**”; Ken Pierskalla – “**Basic GPS**”; and Wayne Rothermich – “**Lord Rosse's Leviathan of Parsonstown**”.

November Outreach Volunteers

Since the last newsletter, volunteers Bob Brown, Joe Doyle, Art Harris, Marv Johnson, Pat McPartlin, Edgar Ocampo, Ron Pembleton, and Jim Williams showed the night sky to **481** customers at AU events.

AU Events for December

Thursday, December 5, setup 6:30 PM – Telescopes and a slide show for Santa Barbara Junior High School.

Friday, December 6, 7:30 PM – Monthly meeting in Farrand Hall at SBMNH. **Elections and Members' Night.**

Saturday, December 7, all night – Dark Sky observing. Contact Paul Winn (strg8zn@cox.net) to find out where and when.

Wednesday, December 11, 5 PM – Telescopes for El Camino School. Setup whenever you can get there—Mark and Paul are going at the early time, but the rest of us will probably arrive after 6 PM.

Saturday, December 14, 4 PM – AU Planning Meeting at SBMNH. Meet outside Farrand Hall. Come put your \$0.02 in.

Saturday, December 14, 6 PM – Monthly Public Star Party at SBMNH. **Note the earlier start!**

Thursday, December 19, 6:30 PM – **AU Holiday Banquet** at the Beachside Bar & Grill, Goleta Beach.

Friday, December 20, 7:30 PM – Monthly Public Observation at Westmont College's Van Kampen Observatory.

Monday, December 30, setup 7 PM – Telescopes and slide show for Elderhostel at Camp Ramah in Ojai.

Remember that outreach events often change at the last minute. Contact Edgar or Chuck for the latest developments.

Holiday Party

The AU's annual **Holiday Banquet** will be held again this year at the Beachside Bar & Grill at Goleta Beach, on Thursday, December 19. Arrive at 6:30 PM to socialize, and we'll start eating at 7.

The price has gone up a little since last year. A \$32 fixed price gets you dinner, tea or coffee, tax, and tip. Dessert is optional, with an extra \$4 charge.

Alcoholic beverages are optional at extra charge (no host bar).

The entrée selections are: Roast Prime Rib of Beef (the **Taurus Plate**), Salmon Hollandaise (the **Pisces Plate**), and Pecan Crusted Chicken (the **Pavo Plate**). Included with each entrée are fresh vegetable, garlic parmesan whipped potatoes, sourdough rolls, and clam chowder or Caesar salad.

Seating is limited, so sign up now. Bob Michael, who did a great job arranging this whole shebang, needs your money, **a final attendance count, and your entrée preference no later than Thursday, December 12.** Mail it to him at 872 Highlands Dr, Apt #6, Santa Barbara CA 93109-1340, or call 963-5614.

Twin Spring Comets

It looks like we will get two nice comets in the spring. 2001 Q4 NEAT and 2002 T7 LINEAR, both discovered by near-Earth asteroid search programs, are predicted to reach easy naked-eye brightness levels by May. They are being called the RTMC Twin Comets, because they should be visible during the annual Riverside Telescope Makers Conference gathering at Big Bear Lake over the Memorial Day weekend. Of course, we all know about comet predictions: **“Comets are like cats; they have tails and behave as they please.”**

Leonids Report

Five die-hard AU fanatics spent the entire night of the Leonid shower up on West Camino Cielo this year. The bright Full Moon really wiped out the many dim meteors compared to last year, but the show was still worth staying up for. There were several interesting meteors right in the Sickle of Leo that left short, wide, green trails. The skies were transparent and still for nice views of Saturn, Jupiter, M42, Mars (pretty small yet), and a spectacularly bright thin crescent Venus just before dawn.

Geminids

Coming up on Saturday, December 14, is the annual Geminid Meteor Shower, with a predicted peak at 2 AM. This shower's broad distribution shows increased meteor levels for 6 to 10 hours around the peak time, so Friday night at more reasonable hours may still be productive, but the Moon doesn't set until slightly after 2 AM. This is a consistently good shower, with rates as high as two meteors per minute visible from dark sites. This shower's meteoroids are

derived from asteroidal fragments, so they take longer to burn up as they cruise through our atmosphere.

Steve in Faraway Texas

Steve Schmidt has the job as Planetarium Director at Central Texas College in Killeen, Texas. □ The planetarium is currently being built, but should be ready in a couple of months. □ He is in the process of trying to get together a three person staff, and inspecting the construction as it goes along.

Saturn Photo-Op

This month Saturn is at its biggest and brightest in its nearly 30 year journey around the Sun. The rings are tilted as close to face-on toward us as they can get. And, coming up early in the new year is a pretty cool astrophotography opportunity: between 3 AM on the morning of January 4 and 5 AM on the morning of January 5, Saturn will appear superimposed on the Crab Nebula in the horns of Taurus. Your challenge will be to overcome the tremendous difference in brightness between the two, perhaps by compositing short and long exposure images. Even visually, the glare of Saturn may overwhelm the supernova remnant.

Jupiter Moon Events

Jupiter is currently the King of Moons in our solar system, with a total of 39 of them, ranging in size from Ganymede (bigger than Mercury) to little ice balls less than a mile across. Every 6 years, and lasting a few months, the plane of the orbits of the four large Galilean moons is presented edge-on to Earthbound viewers. When this happens, the Galilean moons can undergo mutual eclipse and occultation events. Check out the latest issues of Sky & Telescope or Astronomy magazine, or their web pages, to find out when you can catch one of these neat little displays.

For Sale

AU member R. Puff has a Meade ETX-60AT computer-controlled telescope for sale, brand new in box. The Amazon.com price is \$299, but call and make an offer at 965-1408.

Dave is Gone

Late breaking news : David Totzke, the Museum's Astronomy Programs Coordinator, has left his position as of November 21. **Good luck, Dave.** The Museum is starting a search for his replacement.



Enlightened by the Darkness

By Diane K. Fisher

On the clearest of nights, I may see a dozen stars from my suburban backyard near Los Angeles. Unfortunately, my studies of space and astronomy have been confined to books and the pictures taken by others. Seldom have I experienced for myself a truly dark, clear, moonless sky.

One of those rare times was a summer camping trip in Bryce Canyon, Utah. I lay on my sleeping bag in an open area away from trees. I saw millions of stars (so it seemed) and the cloud of the Milky Way streaking across the sky. Nothing of planet Earth was in my view. It was then I glimpsed my true situation in the universe, a speck of dust clinging to a tiny stone hurtling through the darkness of a cold, infinite universe. I was awestruck by the beauty of the stars and the darkness-and terrified! In the light of day and a more "down-to-Earth" state of mind, I wondered: With around 100 billion galaxies out there, why is it still so dark out there?

Until the 20th century, astronomers thought the universe was infinite. They were perplexed though, because in an infinite universe, no matter where you look in the night sky, you should see a star. Stars should overlap each other and the sky should be blazing with light and hot as the sun. This problem became known as "Olber's Paradox."

Astronomers now realize that the universe is not infinite. A finite universe-that is, a universe of limited size-even one with trillions of stars, just wouldn't have enough stars to light up all of space.

Although a finite universe is enough to explain the darkness, the expansion of the universe also contributes. As light travels from a distant galaxy to us, the space through which the light is traveling is expanding. Therefore, the amount of energy reaching us dwindles all the time, thus causing the color of the radiation to be "redshifted." (The wavelength is stretched out due to cosmic expansion.) The more distant the galaxy, the more redshifted the light. The largest redshift astronomers have measured comes from radiation that was emitted when the Universe was only 300,000 years old. This radiation has taken over 12 billion years to reach us and although it began as infrared radiation, it is now seen as the microwave background radiation.

GALEX (Galaxy Evolution Explorer) is a NASA space telescope that will survey the universe, including galaxies with redshifts that indicate their light has been traveling for up to 10 billion years (or 80% of the history of the universe). Read about GALEX at www.galex.caltech.edu/

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Refreshments: **Position Vacant!**
Do you want to help out?

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SBMNH Astronomy Program Coordinator
Position Vacant!

SBMNH Astronomy Program Tape
Updated weekly 682-4711x405

AU AstroNews is the monthly publication of the **Astronomical Unit (AU)**, mailed to the general membership. Submit stuff by the 20th of the month!
Current annual membership rates are:

Single \$15 Family \$25

Our address is:

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Silent Auction at the December Meeting

In addition to elections and Members' Night presentations, there will be a silent auction of astronomy paraphernalia at the December meeting. Proceeds go to the club treasury.

Gift Exchange at the Holiday Banquet

At the banquet on December 19, we will once again be having a gift exchange for those who wish to participate. Bring along a wrapped gift worth \$10 or less. Deposit your gift at the exchange table, and take a numbered slip of paper from the 'Randomize' box. After we're finished eating, the master of ceremonies will call out a sequence of numbers. When your number is called, get up and go to the gift table and select one of the gifts. Unwrap the gift, and explain to everyone else how the gift would be astronomically useful to you, which may require some fast thinking if it's a gag gift. Subsequent players after the first victim have the option of stealing a previously revealed gift from its owner, or selecting an unopened gift from the table. If your gift is stolen, you go back to the table and select another gift, or steal from someone else. A gift may only be stolen once, or we could get into an infinite loop.