



AU AstroNews

The Newsletter of the Astronomical Unit

April 2006

Sponsored by the Santa Barbara Museum of Natural History

Outreach Summary

We've had a lot of clouds and rain since the last report, but AU volunteers Andy Allen, Marciano Chan, Bill Clausen, Krissie Cook, Tim & Jason Crawford, Art Harris, Jürgen Hilmer, Dale Lowdermilk, Pat & Chuck McPartlin, Edgar Ocampo, and Javier Rivera showed cool astronomy stuff to 286 customers.



The AU sets up at Laguna Blanca School.

April Events

Here are the April outreach events scheduled so far. Outreach events are subject to change as additions and cancellations occur. To get the latest information, or directions to an event, just contact Chuck at 964-8201 or macpuzl@west.net. And remember to set your clocks ahead on April 2, no fooling!

Monday, April 3, setup 7 PM

Slide show and telescopes for Happy Valley School in Ojai.

Friday, April 7, 7:30 PM

Monthly AU meeting in Farrand Hall at SBMNH. Michael McEachen will speak about his work on a solar sail project.

Saturday, April 8, 6:30 PM

Planning meeting in the classroom next to Krissie's office at SBMNH. All members welcome!

Saturday, April 8, 8 PM

Monthly Public Star Party at SBMNH.

Tuesday, April 11, 5 PM

Science night at Mountain View School. Set up and have dinner at 5 PM, show the sights from 6 to 8 PM.

Thursday, April 13, setup 5 PM

Science Night at Hope School from 5:30 to 8 PM.

Thursday, April 13, 7:30 PM (scopes 9 PM)

Lecture on Black Holes in Fleischmann Auditorium at SBMNH by Dr. Omer Blaes of UCSB. Admission \$6 for Museum Members, \$12 for non-members, but free for AU members who bring a scope to set up for public viewing at 9 PM.

Friday, April 21, 8 PM

Monthly Public Telescope Night at Westmont College. The new dome is up, but no big scope yet, so we'll be setting up our own scopes on the lawn.

Wednesday, April 26 - Sunday, April 30

We need volunteers to man an information table about astronomy at the Santa Barbara Fair and Expo (The Sky's the Limit) at Earl Warren Showgrounds!

Friday, April 28, 8:30 – 10 PM

Telescopes for the Critter Constellations evening event at the Santa Barbara Zoo.

Looking Ahead...

Saturday May 6 Astronomy Day SBMNH

May 26-28 RTMC

Friday June 2 Annual AU Potluck

Looming on the Horizon...

A cometary "string-of-pearls" will fly past Earth in May closer than any comet has come in almost 80 years. In 1995, Comet 73P/Schwassmann-Wachmann 3 did something unexpected: it fell apart. For no apparent reason, the comet's nucleus split into at least three "mini-comets" flying single file through space. Astronomers watched with interest, but the view was blurry even through large telescopes. "73P" was a hundred and fifty million miles away.

We're about to get a much closer look. In May 2006 the fragments are going to fly past Earth closer than any comet has come in almost eighty years.

"This is a rare opportunity to watch a comet in its death throes from very close range," says Don Yeomans, head of NASA's Near Earth Object Program at JPL. There's no danger of a collision. "Goodness, no," says Yeomans. "The closest fragment will be about six million miles away—or twenty-five times farther than the Moon." That's close without actually being scary.

The flyby is a big deal. "The Hubble Space Telescope will be watching," says Yeomans. "Also, the giant Arecibo radar in Puerto Rico will 'ping' the fragments to determine their shape and spin." Even backyard astronomers will be able to take pictures as the mini-comets file through the constellations Cygnus and Pegasus on May 12. Ironically these comets, so nearby, will not be very bright. The largest fragments are expected to glow like 3rd or 4th magnitude stars, only dimly visible to the unaided eye.

"Remember," says Yeomans, "these are mini comets." They're not like the Great Comets Hayutake and Hale-Bopp of 1996 and 1997. Those could be seen with the naked eye from light polluted cities. The fragments of 73P, on the other hand, are best viewed from the countryside—and don't forget your binoculars.

The number of fragments is constantly changing. When the breakup began in 1995 there were only three: A, B and C. Astronomers now count at least eight: big fragments B and C plus smaller fragments G, H, J, L, M and N. "It looks as though some of the fragments are themselves forming their own sub-fragments," says Yeomans, which means the number could multiply further as 73P approaches.

No knows how long the "string of pearls" will be when it finally arrives.

Bonus: There could be a meteor shower, too. This is very uncertain, and indeed, forecasters consider it unlikely. But an expanding cloud of dust from the 1995 break-up of the comet could brush past Earth in May 2006 producing a display of meteors. Astronomer Paul Wiegert at the University of Western Ontario has studied the possibility:

"We believe the cloud is expanding too slowly to reach Earth only eleven years after the break-up," he says, "but it all depends on what caused the comet to fly apart - and that we don't know." "The most likely explanation is thermal stress, with the icy nucleus cracking like an ice cube dropped into hot soup: the comet broke apart as it approached the Sun after a long sojourn the frigid outer solar system," he explains. "If this is truly what happened, then the debris cloud should be expanding slowly, and there will be no strong meteor shower."

On the other hand, what if "the comet was shattered by a hit from a small interplanetary boulder?" A violent collision could produce faster-moving debris that would reach Earth in 2006.

Wiegert expects to see nothing, but he encourages sky watchers to be alert. It wouldn't be the first time a dying comet produced a meteor shower: "One outstanding example is comet Biela, which was seen to split in 1846, and had completely broken apart by 1872," he says. "At least three very intense meteor showers (3000-15000 meteors per hour) were produced by this dying comet in 1872, 1885 and 1892."

Assuming a thermal breakup for 73P, Wiegert and colleagues have calculated the most likely trajectory of its dust cloud. Their results: dust should reach Earth in 2022, "producing a minor meteor shower—nothing spectacular. However," he adds, "the ongoing splitting of the comet means new meteoroids are being sent in new directions, so a future strong meteor shower from 73P remains a real possibility."

The watch begins on May 12th.

Just a click away...

Why is the sky blue? Why does the sky sometimes turn red at sunset? Every curious child will ask this question at some point. Are you ready to give scientifically correct and simple answers? Visit SciJinks to refresh your memory. The SciJinks Web site targets young people of middle school age. It is a joint effort of the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA). The new "Why is the sky blue?" page can be found in the How & Why menu on the SciJinks Weather Laboratory home page, scijinks.gov.

Astronomical Arts Corner

SATURN

By Nancy Rohrer

Watching the stars at night
I see one with yellowish light.
If I squint very hard
There are ears sticking out far
So said Galileo in sixteen ten.

It was first seen way back then.
Since then we've had a better look
It can be found in a book.
The ears are thousands of rings
Made up of ice, dust and things
Some as big as an elephant.
Could they be little astro-phants?
There's more than have been counted
As well as many moons.

Titan takes the most room.
Interest in Enceladus will grow fast
As icy geysers are seen to blast
By Cassini as it glides around.
Water's been found, what does it mean?
Could it be life past, present and future
On one of Saturn's moons.
Saturn is second largest planet
Sixth from the Sun, a big ball of gas
Like us all, as gassy mass.
It is lighter than water
We could not swim in that matter
But would sink down 'til rock we hit
I think it would hurt a bit.
What more will we learn of this Planet
As Cassini flies around 'til he's had it.

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April 2006						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
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2	3 Happy Valley School 7PM	4	5 ☾	6	7 AU Meeting 7:30 PM	8 AU Planning Meeting 6:30 PM SBMNH Star Party 8PM
9	10	11 Mountain View School 5PM	12	13 ☽ Hope School 5PM + SBMNH 7:30PM	14	15
16	17	18	19	20	21 8 PM ☾ Westmont College	22
23	24	25	26 SB Fair and Expo	27 ● SB Fair and Expo	28 SB Fair and Expo + SB Zoo	29 SB Fair and Expo
30 SB Fair and Expo						

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