



THE OBSERVER

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

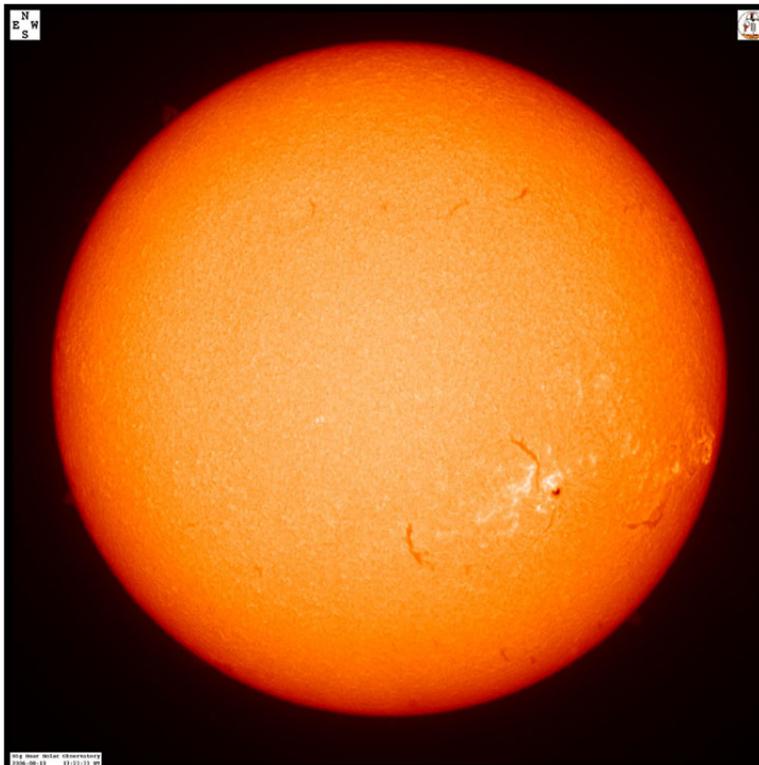
Member THE ASTRONOMICAL LEAGUE

"Celebrating Forty-Eight Years of Amateur Astronomy"

VOLUME #48 ISSUE #09

SEPTEMBER 2006

**A Video examining Global Warming
"Too Hot Not to Handle" will be presented.
Grandview II will be discussed.**



The Big Bear Solar Observatory (BBSO) is located in Big Bear Lake, California is operated by the New Jersey Institute of Technology (NJIT). Our main interest is the physics of the Sun and we observe solar phenomena with our dedicated telescopes and instruments. In addition to our own instruments we host an important helioseismology experiment: a GONG telescope from the Global Oscillation Network Group. The Center for Solar-Terrestrial Research at NJIT also studies the Sun in radio wavelengths at the Owens Valley Radio Observatory.

BBSO full disk H-alpha image: The image was recorded with a 14-bit, 2032 x 2032 pixel Apogee KX4 CCD camera. The image was recorded at 17:23:33 (UT) on September 13, 2006.

MEETING: SEPTEMBER 16, 2005--7:00PM

"Bring Scopes for Lunar and Planetary Observing"

SAN BERNARDINO COUNTY MUSEUM

CALIFORNIA STREET EXIT FROM INTERSTATE 10

PRE-MEETING DINNER: 5:00PM HOMETOWN BUFFET, LOMA LINDA

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SBVAA WEBSITE:
www.sbvaa.org

SEPTEMBER MEETING:

A video, "To Hot Not to Handle", examining the most current theories of global warming will be presented.

Grandview II, 2006 planning will be discussed.

CALENDARS

The 2007 "Deep Space Mysteries" calendars are here. It will be available for sale starting with the club meeting on September the 16th. We have 30 for sale on a first come first served basis. The retail for this calendar is \$12.95 plus \$1.00 tax or \$13.95 altogether. Your cost, through the club, is \$10 a savings of \$4. See Fidel, the club treasurer, at the back of the room to make your purchase.

Moon Party at Asistencia

By Chris Clarke

On Tuesday, October 3, we will have a public outreach at the Redlands Asistencia. We will be sharing views of the waxing gibbous

SBVAA

CALENDER OF EVENTS 2006

Meetings held at the
 San Bernardino County Museum
 For information, call Chris Clarke at (909)
 888-6511, ex.1458

September 16.....Meeting (3rd Saturday)
 September 22-24.....Star Party (Grandview)
 October 14.....Meeting (3rd Saturday)
 October 21.....Star Party
 November 11.....Meeting (2nd Saturday)
 November 18.....Star Party
 December 9.....Holiday Get-Together
 (2nd Saturday)
 December 16.....Star Party

moon from 7:00 to 9:00 pm.

Setup time is 6:30 pm. Depending on the viewing conditions, other objects like Alberio, M31, M57, the "Double-Double" in Lyra and other interesting things, may be glimpsed as well. Bring your telescopes and share the view with others. Even if you don't have a scope, you can assist others who do. Everyone has a great time, and it's a good excuse

to just dust off your scope and take it out and use it! The Asistencia is located on Barton Road, just east of California St. in Redlands (you can't miss it's beautiful bell tower).

See you there!

SBVAA
Officer Elections
to be held
October, 2006

President's Message

By Martin L. Carey
martincarey@sbcglobal.net

It is a relief to me that summer is over; somehow the school year's regular schedule is conducive to rolling out the telescope as often as I can. I haven't been in contact with but a few of you, so I want to know how you are all doing.

At the August star party, we had six people show up for one of the best skies I have seen at Johnson Valley. Every object was at its best, including the Veil and the Helix nebulae. Tom, Paul, Terrence, and myself were there with the 12" telescope brigade. We got a little raucous and stayed late. Somehow I stayed between the lines and made it home.

This summer has been also a time of battling astronomy hoaxes and disinformation. You probably have seen the great Mars e-mail, which every summer tells us that Mars is again the closest it's been in 60,000 years, and will appear the size of the full moon. People ask if I have observed this, and how they can see this amazing sight. It is a challenge to convey the excitement of astronomy in an atmosphere of sensationalism.

There is also the story told of a Texas-sized object that threatens all life on earth (no, they weren't talking about presidential elections). A near-earth asteroid named 99942 Apophis is predicted to make a very close flyby in 2036. Some orbital measurements had Apophis actually hitting us on that date, but the probability now appears very small, with new measurements. Apophis is about 1000 ft wide, according to a Harvard website. If it were to impact earth, it would inflict severe but local damage wherever it landed.

We were saddened by the tragic death of Steve Irwin, the "Crocodile Hunter." He was definitely one of a kind in his unashamed enthusiasm and fearlessness. You could say he was very foolhardy, but I will say that he was our antidote to the sneering pseudo-sophisticate who wouldn't dream of stepping into a mud puddle. There are some lessons for us in astronomy. It is a hobby where, if we want to really enjoy and share it well like Steve did with wild animals, in that we will take risks, look foolish, and get dirty. What would you do for this hobby?

My friend Bob is unable to attend with his 25" scope, so sad. He has to present two assemblies on that Friday. One of these days we'll get him and scope up on the mountain.

Well, see you at the meeting!

99942 Apophis Asteroid

99942 Apophis (previously better known by its provisional designation 2004 MN4) is a Near-Earth asteroid that caused a brief period of concern in December 2004

because initial observations indicated a relatively large probability that it would strike the Earth in 2029. However, additional observations provided improved predictions that eliminated the possibility of an impact on Earth or the Moon in 2029. A future impact on April 13, 2036, is still possible, keeping the asteroid at level 1 on the Torino impact hazard scale as of September 2005, with an estimated impact-probability of 1 in 5,560.

Apophis is expected to come close enough that on April 13, 2029 (Friday the 13th) it will become as bright as magnitude 3.3 (easily visible to the naked eye). This close approach will be visible from Europe, Africa, and western Asia. Throughout recorded history, no other closely-approaching objects of this size have been visible to the naked eye. As a result of its close passage, it will move from the Aten (see below) to the Apollo class.

Apophis remains at level one on the Torino scale because of a very low but non-zero probability of impact in 2036. However, the approach in 2029 will substantially alter the object's orbit, making predictions uncertain without more data. "If we get radar ranging in 2013 [the next good opportunity], we should be able to predict the location of 2004 MN4 out to at least 2070." said Jon Giorgini of JPL.

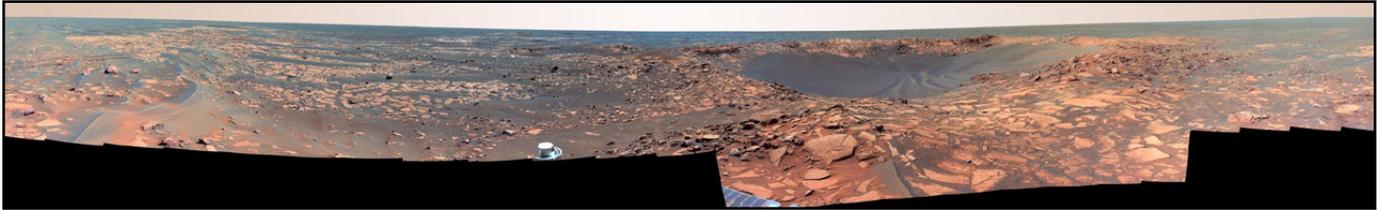
In July 2005, former Apollo astronaut Rusty Schweickart, as chairman of the B612 Foundation, formally asked NASA to investigate the possibility that the asteroid's post-2029 orbit could be in orbital resonance with the Earth, which would increase the probability of future impacts. For this to happen, Apophis would have to pass precisely through a certain very narrow region of space during the 2029 close approach, a "gravitational keyhole" no more than about 600 m across. Schweickart asked for an investigation of the necessity of placing a transponder on the asteroid for more accurate tracking of how its orbit is affected by the Yarkovsky effect.

Naming

When first discovered, the object received the provisional designation 2004 MN4 (sometimes written 2004 MN4), and news and scientific articles about it referred to it by that name. When its orbit was sufficiently well calculated it received the permanent number 99942 (on June 24, 2005), the first numbered asteroid with Earth-impact solutions. Receiving a permanent number made it eligible for naming, and it promptly received the name "Apophis" as of July 19, 2005. Apophis is the Greek name of the Ancient Egyptian god Apep, "the Destroyer", who dwells in the eternal darkness of the Duat (underworld) and tries to destroy the Sun during its nightly passage.

Although the mythical Greek god may be appropriate, Tholen and Tucker (two of the co-discoverers of the asteroid) are reportedly fans of the TV series Stargate: SG-1. In the first several seasons the show's main antagonist was an alien named Apophis who took the name for the Egyptian god and sought to destroy earth.

MARS ROVERS UPDATES



OPPORTUNITY UPDATE: Finishing Up Scuff Work and Heading for 'Emma Dean' - sol 928-935, September 12, 2006:

Opportunity is healthy and just over 100 meters (328 feet) from "Victoria Crater." The rover completed robotic arm work on a scuff mark it made on sol 919. On sol 929 (Sept. 4, 2006), Opportunity almost got a hole-in-one by driving 100.31 meters (329 feet) to the small crater "Emma Dean." The rover arrived just 5 meters (16 feet) short of Emma Dean. On sol 931 the rover photographed the bit of the rock abrasion tool (RAT) to help engineers estimate how many more grinds might be possible with the tool. The hazard avoidance camera took several high-resolution images at different angles. The RAT engineers are examining them to see how much "bite" is left in the RAT. Also on sol 931, a short bump to an ejecta rock was attempted in the hopes of grinding it. Another bump (tentatively scheduled for sol 937) will have to be attempted before the rover can actually grind it. The remainder of the week had Opportunity acquiring remote-sensing science at Emma Dean.

SPIRIT UPDATE: Spirit Monitors Dust and Searches for Clouds - sol 950-956, September 08, 2006:

Spirit is healthy and continues to make progress on the rover's winter science campaign. During the past week, Spirit continued filling in sections of the rover's deck as part of the "Deck Pan" mosaic of panoramic images.

Electrical power from the rover's solar array has continued to hold steady at approximately 280 watt-hours per sol (a hundred watt-hours is the amount of electricity needed to light one 100-watt bulb for one hour).

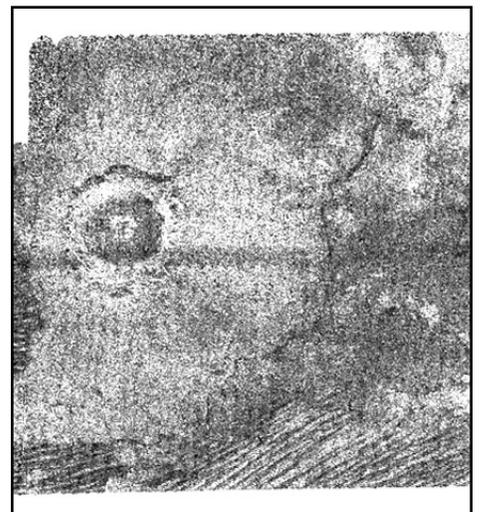
CASSINI UPDATE

The TITAN CRATER

This image from Cassini's radar instrument shows an impact crater with a diameter of 30 kilometers (19 miles) on the surface of Saturn's moon Titan.

Cassini data have only revealed three definite impact craters on Titan so far, so each new discovery adds significantly to our body of knowledge. Impact craters are particularly important, as their shapes give scientists insight into the structure of the crust beneath Titan's surface. The difference in overall appearance between this crater, which has a central peak, and those without, such as Sinlap, (see PIA07368), indicates variations in the conditions of impact, thickness of the crust, or properties of the meteorite that made the crater. The dark floor indicates smooth or highly absorbing materials.

This image was acquired by the Cassini radar instrument in synthetic aperture mode during a Sept. 7, 2006, flyby of Titan. The image is centered at 70 degrees west longitude, 10 degrees north latitude, and measures about 150 kilometers high by 190 kilometers wide (93 by 118 miles). The smallest details in this image are about 500 meters (about 550 yards) across.



The Planetary Society

Human Spaceflight (2006)

Space Shuttle Atlantis Begins Return to ISS Assembly

By A.J.S. Rayl
September 9, 2006

After a series of nerve-wracking postponements, Atlantis – STS-115 -- lifted off today just seconds before 11:15 am Eastern Daylight Time (8:15 am Pacific Daylight Time, 15:15 Greenwich Mean Time) from the Kennedy Space Center, on a 12-day mission to resume building the international space station (ISS).

On this Return to Assembly mission, NASA gets down to the business of completing the construction of the ISS. The STS-115 astronauts will deliver and install the 17.5-ton, bus-sized P3/P4 integrated, girder-like truss segment on the station. The truss, which includes a set of giant solar arrays, batteries, and associated electronics, will provide one-quarter of the total power-generation capability for the completed station, and, if everything goes according to plans, will

be completed in 3 spacewalks. Mission Specialists Stefanyshyn-Piper, Burbank, and MacLean are all slated to make their first spacewalks during this flight.

The ever-expanding cost of the ISS — now estimated at around \$100 billion dollars for development, assembly, and operating costs for 10 years – has also been a source of controversy internationally. It is shared, however, over a period of almost 30 years between the participants, the United States, Russia, Canada, Japan, and 10 of the 17 European nations who are part of the European Space Agency (ESA).

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An Invitation To Join

The San Bernardino Valley Amateur Astronomers

- Monthly Meetings/Speakers
- Monthly Star Party
- The Observer Newsletter
- Learn about Astronomy
- Learn about Telescopes
- Learn about Astrophotography

Fill out and mail this form along with \$30.00 Annual Membership Fee. Add an additional \$33.00 to include a one (1) year subscription to "Sky and Telescope" magazine and or \$29.00 for one (1) year subscription to "Astronomy" Magazine.

Make check payable to: San Bernardino Valley Amateur Astronomers.

Mail to: **Fidel Hernandez, SBVAA Treasurer,**
27799 21st St, Highland, CA, 92346

Name _____
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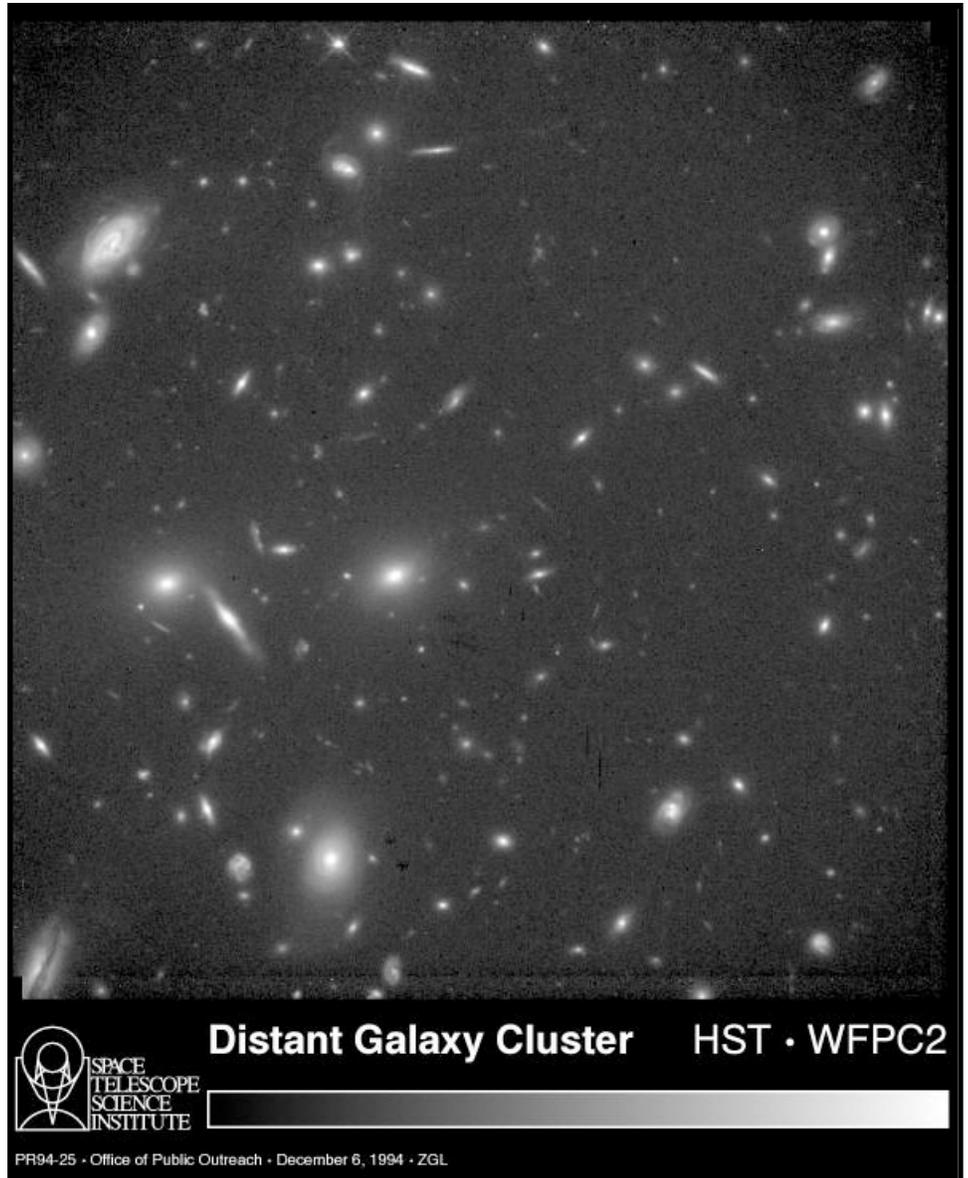
Remote Galaxy Clusters: Lost Ancestors to Our Milky Way Galaxy

STScI-PRC1994-52d

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This NASA Hubble Space Telescope (HST) image of the central portion of a remote cluster of galaxies (CL 0939+4713) as it looked when the universe was two-thirds of its present age. Hubble's high resolution allows astronomers to study, for the first time, the shapes of galaxies as they were long ago.

The Space Telescope pictures are sharp enough to distinguish between various forms of spiral galaxies. Most of the spiral, or disk, galaxies have odd features, suggesting they were easily distorted within the environment of the rich cluster. Hubble reveals a number of mysterious "fragments" of galaxies interspersed through the cluster.

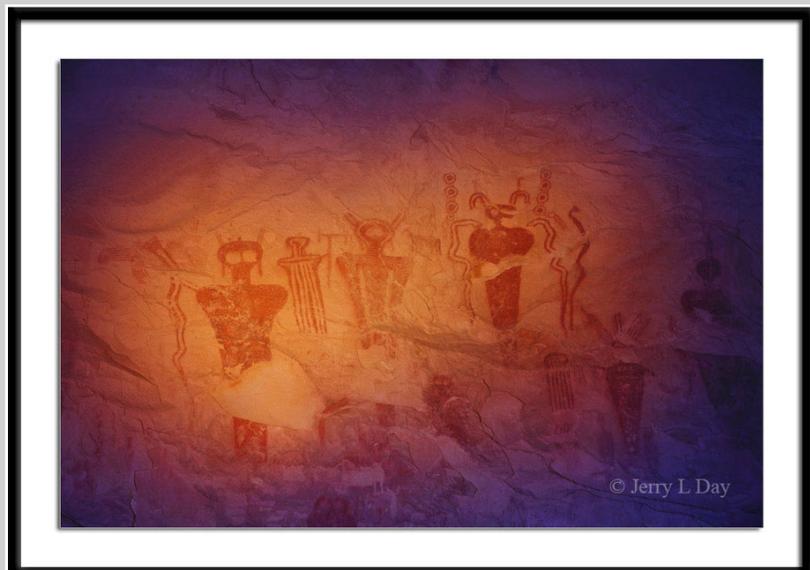


The HST picture confirms that billions of years ago, clusters of galaxies contained not only the types of galaxies dominating their descendant clusters today, but also several times as many spiral galaxies. These spiral galaxies have since disappeared through mergers and disruptions, as evident in the Hubble image.

This visible light image was taken with HST's Wide Field Planetary Camera 2 in Wide Field Camera mode, on January 10 and 12, 1994.

Credit: Alan Dressler (Carnegie Institution) and NASA

Member Gallery: Jerry Day



GRANDVIEW II

SEPTEMBER 22-24, 2006

See Tom Lawson, Star Party Coordinator,
to receive club online updates and color PDF Newsletter.

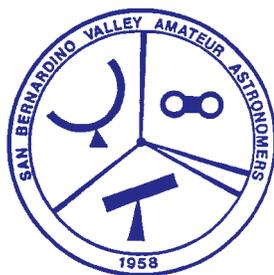
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2024 ORANGE TREE LANE, REDLANDS, CA
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