

January-February
2010
Volume 58
Issue 1

The Observer

The Newsletter of Central Valley Astronomers of Fresno

In this Issue:

Welcome in the New Year!

Profiles in Astronomy:
Benjamin Gould

NASA's very WISE mission

The Air Force's X-37B
space plane

SOFIA makes its first test
flight

England's Royal Society is
350 years old!

The President weighs
NASA's future



CVA Calendar

January 16-Star party at
Hensley Lake(weather per-
mitting)

January 30-CVA monthly
meeting 7pm CSUF

February 13-Star party at
Hensley Lake(weather per-
mitting)

February 27-CVA monthly
meeting at 7pm CSUF

Astronomical Image of the Month

The beautiful Rosette Nebula, NGC-2237, glows in Monoceros. It is a frequently overlooked object in the winter skies. Nearby is the Cone Nebula, also often by-passed in searches for more familiar winter objects. Image from NAOJ/AURA

Quote of the Month:

Human beings are explorers. It is written into our genes.

-Daniel Goldin, NASA chief administrator 1992-2001



New Moon January 15



Full Moon January 30



New Moon February 13



Full Moon February 28

Important Notices for CVA Members! See Inside!

The Observer is the
newsletter of Central Valley
Astronomers of Fresno
Established 1952

Web Address:
www.cvfresno.org
Webmaster
Aaron Lusk 559-332-3102
admin@caservers.net

Officers and Directors for 2010:

President
Steve Harness 559-292-2753
sharness@sbcglobal.net

Vice-president
Dale Iohrman 559-260-9992
dlohman@digisolaz.com

2d Vice-president
Fred Lusk 559-436-1833
Fel3@pacbell.net

Treasurer
Bryan Spicci 559-594-4936
quizzler2@netscape.net

Secretary
Casey Chumley

Star Party Coordinator
Brian Bellis 559-264-2645
pandb91@comcast.net

Historian
Larry Parmeter 559-276-8753
lanparmeter3@hotmail.com

Director
Lynn Kliewer 559-251-3656
lelliottk@att.net

Director
Steve Britton 559-897-4529
sbritton@cvip.net

Director
Clarence Noell 559-271-9304
xmascn@sbcglobal.net

Director
Dave Artis 559-658-8016
dave.artis@direcpc.com

Director
Greg Morgan 559-348-1160
gmorgan@oldstarlight.com

Director
Randy Steiner 559-252-0130
astrigeo@cvip.net

Director
Sharon Barrett

The Observer January-February 2010

President's Message-

Another year has come and gone. As we begin the new year I want to thank all of the club members, especially the officers and board of directors. I feel that I am in good company. We are all energetic and enthusiastic about astronomy. We all want to share our interest with each other and the general public.

Two club members were elected to office. Casey Chumley has agreed to become our club secretary. He will replace Debi Lusk who has been at this position for a long time. Also Sharon Barrett was nominated to the board of directors. The other positions will remain as they were.

Don't forget the January meeting will be gadget night. Hopefully you were good and Santa brought you some cool astronomy gadgets. Bring them to the meeting and share with us.

We will begin our River Park Star parties in March. I encourage as many of you as possible to come out and help. If you enjoy showing the general public the objects through your telescope, then this is the place to be. There are large numbers of people with many, many questions and lots of excitement. We are also adding a Star Party at Eastman Lake this summer. It is not much further than Hensley Lake. The rangers and campers really appreciated us last year and we decided to go again this year. It was a great sky and there was only one street lamp that the rangers told us they could turn off.

So while I enjoy the cold weather, foggy nights, and the much needed rain, I can't wait until the conditions get better so I can get out and see the bright winter skies. Each of the seasons offers unique objects to the astronomer.

Enjoy the new year, 2010, and do lots of stargazing!

Clear skies...

Steve

Central Valley Astronomers of Fresno, est 1952

Our Goals:

- Provide a place for those interested in astronomy to come together and share their hobby
- Share the wonders of astronomy with the public
- Be a source of astronomy education and information for our schools, the public, and the media

Our Interests:

- To learn about astronomy and related topics
- To enjoy the night sky with the unaided eye, telescopes, and binoculars
- To learn from others and share what we know about astronomy from others

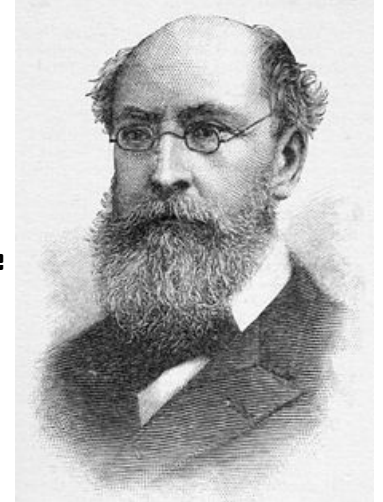
Profiles in Astronomy

Benjamin Gould 1824-1896

Gould was born and raised in Boston, Massachusetts, attended Harvard College, and after graduation, traveled to Germany to study mathematics and astronomy at Gottingen University. There, he was the first American to earn a doctorate in astronomy. Afterwards, he returned to the U.S., where he worked for the U.S. Coastal Survey for several years, then became director of the Dudley Observatory in New York. In 1868, at the request of the Argentine government, he established the Cordoba Observatory, and spent the next seventeen years surveying the southern skies. In 1885, Gould returned to Boston, and lived there for the rest of his life.

Although he is relatively unknown today, Gould's influence on astronomy and space sciences has been enormous. While as a young man in Europe, he visited various European science centers to see what he could do to spur astronomical research in America. As a result, he started the *Astronomical Journal* in 1849, and was its editor and publisher until 1861. It is still in print today. In 1859, he wrote and published an atlas of the places and proper motions of circumpolar stars to be used by the Coast Survey. In 1861, he took on the task of organizing and publishing the astronomical records of the U.S. Naval Observatory, and in 1864 set up his own private observatory. In Argentina, he became the first director of the Cordoba Observatory, and in 1879, wrote and published the *Uranometria Argentina*, an atlas of over 25,000 stars in the southern skies. In 1884, he made the last sighting of the Great Comet of 1882, and before leaving Argentina in 1885, helped establish the Argentine National Weather Service. In 1885, he published another catalogue of 32,000 stars, and made the first serious photographic studies of stellar objects.

Gould was awarded many honors for his work, including the Royal Astronomical Society's gold medal in 1883, and the James Craig Watson Medal in 1887. One of the small arms, which he first observed, of the Milky Way galaxy is now named the Gould Belt in his honor, and a crater on the Moon is also named for him.







Don't Forget! The CVA Online Store!

On it, we have a wide variety of merchandise with the CVA logo, including shirts, sweatshirts, hats, mugs, magnets, and other mementos. Some of the clothing items come in several colors, but you have to go to the individual product pages to see them.

Each product includes a donation to CVA

The CVA Online Store:
<http://www.cafepress.com/CVAFresno>

CVA Calendar for January and February 2010

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 New Year's Day	2
3	4	5	6 Christmas Day in Eastern Orthodox Church-Feast of the Epiphany	7 400th anniversary of Galileo's discovery of Jupiter's 4 large moons	8	9
10	11	12	13	14 Annular Solar Eclipse	15 New Moon 	16 CVA Star Party at Hensley Lake
17	18 Martin Luther King, Jr. Day	19	20	21	22	23
24 24th anniversary of Voyager 2's flyby of Uranus	25	26	27 43d anniversary of Apollo 1 fire	28 24th anniversary of destruction of shuttle Challenger	29 Mars' closest approach to Earth in 2010	30 CVA meeting 7pm CSUF Full Moon 
31	Feb 1 7th anniversary of destruction of shuttle Columbia	2 Groundhog Day	3	4	5 47th anniversary of discovery of redshift of quasars by Maarten Schmidt	6
7	8	9	10	11	12	13 New Moon CVA Star Party at Hensley Lake 
14 Valentine's Day Chinese New Year Day-Year of the Tiger	15 Presidents' Day	16 Mardi Gras Day "Fat Tuesday"	17 Ash Wednesday	18 80th anniversary of discovery of Pluto by Clyde Tombaugh	19	20
21	22	23 Anniversary of discovery of Supernova 1987 A	24 42d anniversary of the discovery of pulsars	25	26	27 CVA meeting 7pm CSUF
28 Full Moon 	March 1	2	3	4	5	6

What's New in Space

The Air Force's Space Plane

In November 2009, the U.S. Air Force and Boeing revealed that they had been working on a prototype unmanned space plane, which will have its first test flight in April 2010. Work on the vehicle, designated the X-37B, was begun in 2002; it is a winged craft about half the size of the space shuttle. The first launch will take place at Cape Canaveral, with a modified Atlas 5 as the booster rocket. The craft will make one orbit of the Earth, then reenter the atmosphere and land in California. Although the Air Force is giving out little information about the first mission, indications are that the landing site will be either at Edwards AFB or Vandenberg AFB. Subsequent test flights may last up to three weeks in orbit, according to sources connected with the project. The Air Force says that the purpose of the space plane is to test



new technologies and designs for possible future space craft. There was no word on rumors that the Air Force might be working on a manned version of the X-37B, but many in the aerospace industry believe that that may well be its eventual goal.

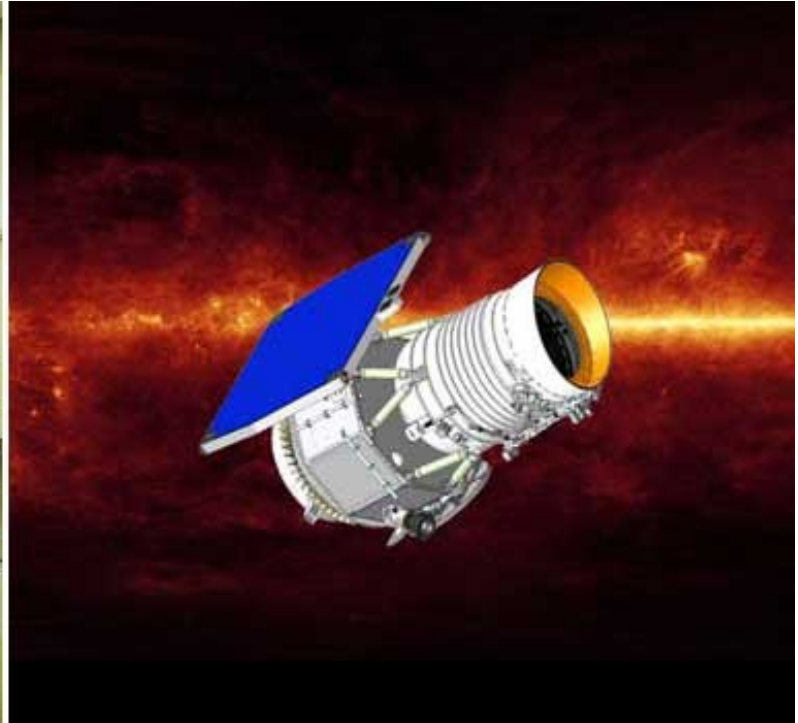
As a matter of history, the Air Force has always wanted to have its own manned space program, one completely separate from NASA's. In the late 1950s, the Air Force had plans for a whole series of manned space vehicles, among them the X-15B, a low Earth orbital version of the X-15; the X20 DynaSoar, which was also an LEO space plane, and was cancelled in 1963, the Manned Orbiting Laboratory, a military space station which would have used a modified Gemini spacecraft, and was cancelled in 1969; and also the "Blue Shuttle" program of the 1980s. The Air Force had planned to launch military space shuttle missions from Vandenberg Air Force Base starting in March 1986. The Blue Shuttle program was cancelled in the wake of the Challenger explosion in January 1986. So, it's not surprising that the Air Force is now involved in a possible manned space plane. When it will eventually be launched, though, is anyone's guess.

Meeting on the Future of the Space Program



On December 18, 2009, President Obama had a long meeting with NASA head Charles Bolden, to go over the Constellation report and options for NASA's manned space plans over the next several years. The President's aides have emphasized that he has not yet made any decisions on the future of the Aeries I rocket or NASA's plans to land men on the moon by 2019. However, rumors are that the President will approve at least \$1 billion in addition funding for the Constellation program; also, that the Aeries I rocket, which has been plagued by huge cost overruns and developmental delays, will be cancelled in favored of a current expendable launch vehicle like the Atlas or Delta. So far, there is no word as to whether the President will extend funding for the Shuttle program, which is now scheduled to end in September with the launch of STS-134.

If the Shuttle program is ended in 2010, NASA will use the Russian Soyuz to take Americans to and from the International Space Station. NASA currently has an agreement with RKA, the Russian Space Agency, to send 6 American astronauts a year, at \$50 million each, to ISS, starting in 2011. The Russians are planning on 4-5 Soyuz missions a year to ISS from now on, to keep the space station permanently staffed with 6 crewmembers at a time.



A WISE Mission for NASA

NASA's latest space telescope was launched Monday, December 14, 2009. The Wide-field Infrared Survey Explorer, WISE spacecraft will use an infrared camera to detect objects emitting energy in the infrared range that other orbiting space telescopes like the Hubble might miss. WISE will spend the next nine months in orbit 326 miles above the Earth in a polar, north-south, orbit. Its task will be to map the entire sky 1 ½ times. This will require it to take a picture every 11 seconds. The last time such a survey was completed was in 1983 by IRAS. WISE will be 500,000 times the sensitivity of the COBE/DIRBE mission and 500 times the sensitivity of the IRAS mission.

The WISE mission will study objects both found in our solar system, in the Milky Way, and beyond into intergalactic space. Astronomers working with the WISE mission expect to locate hundreds of Earth-orbiting asteroids and comets. These objects will cross the Earth's orbit and could impact us in the future. Using infrared data scientists can determine the object's size and composition. That data can help to determine how often the Earth can expect to be hit by an object. "Great shades of Armageddon!" Quoted by Steve Harness.

There will be countless numbers of other objects outside the solar system to be discovered. The mission will measure the space density, mass function, and formation history of brown dwarf stars in the solar neighborhood and identify the closest stars to the sun. WISE will also measure the very faint end of the luminosity function of protostars in nearby star formation regions

Scientists will study the nature and evolutionary history of ultra-luminous IR galaxies, and identify the most luminous galaxies in the universe; map clusters of galaxies and large scale structure within 7-billion light-years. These objects are too dim to be seen with optical telescopes and emit too little energy to be detected by X-ray telescopes. The difference between the Wise telescope and other infrared telescopes is the area covered. Other space telescopes focus on actual objects while the Wise will give us the big overall picture.

The mission will be completed in a 9 month period. However it may be extended up to 15 months. The reason for the relative short time frame is due to the nature of the instruments. An infrared telescope measures heat given off from objects. To do this the instruments must be very cold. The temperature must be kept at -430° F /15 Kelvin. That's only 15 degrees above absolute zero. So within the short time frame, Wise will collect over 1,500,000 images containing hundreds of millions of objects. The mission will continue to expand our knowledge of the sky.

Astronomical Trivia

Last issue's astronomical trivia question:

Last issue's trivia question-

What, specifically, did the Catholic Church object to when charging Galileo with heresy for his telescopic observations?

Chris Denny explained part of it. Galileo was ordered by the Catholic Church not to discuss the then-new theory of the heliocentric solar system. Instead, Galileo wrote a quasi-fictional work on two people discussing the heliocentric vs. the geocentric system. This was enough to get him into trouble with the Church. Also, Galileo observed mountains on the Moon. The Church's position was that, since the Moon was God's handiwork, it could not be "flawed" with mountains; therefore, his finding was considered heresy.

This issue's astronomical trivia question-

Who persuaded Isaac Newton to organize his papers and findings into what would eventually become the great *Principia*?

Larry Parmeter is the editor of
The Observer

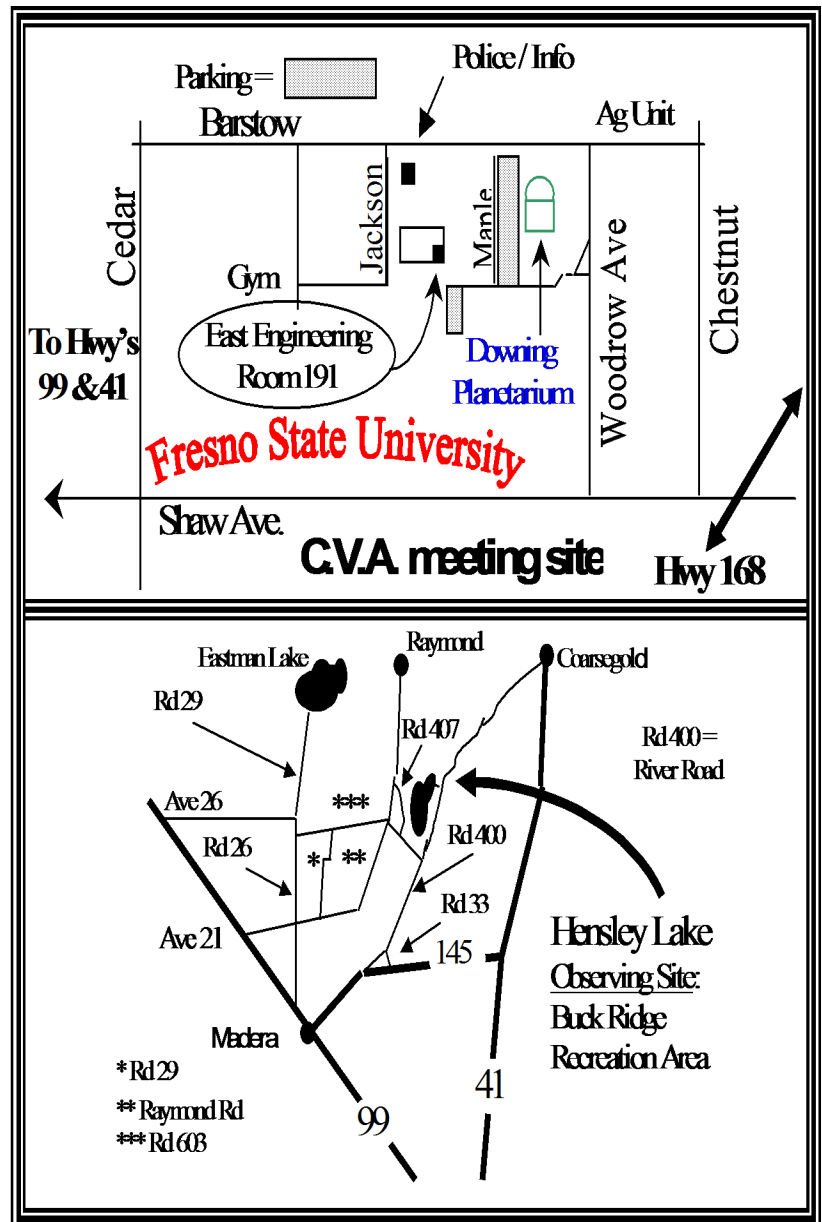
phone # 559-276-8753

E-mail lanparmeter3@hotmail.com

Deadline for articles submission for the
March-April 2010 issue-
February 15

In Memoriam

Two long time members of the CVA family passed away in the last few months, J.R. Rice, who joined the club in the 1980s and was active for many years, died on October 24 at the age of 58. Meredith Revis, wife of founding member Glynn Revis and a CVA life member, died on November 29 at age 92. Both will be missed by Central Valley Astronomers and the astronomy community. Also, it was learned that CVA member Roger Vincom died recently as well.



Royal Society Celebrates its 350th

2010 is the 350th anniversary of England's Royal Society, arguably the foremost scientific organization in the world. It was founded in 1660 in London by a group of English academics who wanted to share knowledge and information in their areas. Among its earliest members were Isaac Newton, Edmund Halley, William Harvey, and Robert Hooke. Over the years, the Society's ranks have also included William Herschel, Benjamin Franklin, Charles Darwin, Thomas Huxley, Paul Dirac, and, more recently, Stephen Hawking. The Copley Medal, which the Society gives annually for the most important discovery in science that year, is second only to the Nobel science prizes in prestige and honors.

The Society will honor the anniversary by holding several special exhibits and instituting a new website that will display the original manuscripts of famous discoveries by its members over the years.

Central Valley Astronomers Membership Form-2010

New Member Renewing Member

Name _____ Phone # _____

Address _____ City _____ Zip _____

State _____ E-mail Address _____

Membership Category

Student \$15

Regular \$30

Family \$35

Reduced rate magazine subscriptions

Astronomy add \$34

Sky and Telescope add \$32.95

What are your areas of astronomical interest? _____

Mail this application with check to: Central Valley Astronomers, Inc.

c/o Bryon Spicci

30669 Hamilton Drive

Exeter, Ca 93221

Two important notices for CVA members:

1. Due to increased costs, especially with our insurance, membership dues will be raised for the first time in several years. In particular, the regular membership is going up from \$25 to \$30. CVA is still a bargain, though, and don't miss it! Sign up for the 2010 year now. Use the renewal form above.

2. As one cost-cutting measure, the CVA newsletter, *The Observer*, will go online for members starting with the March-April 2010 issue. If you still want a hard copy delivered to your residence, contact me, Larry Parmeter, the editor, by February 15, 2010. My e-mail address is lanparmeter3@hotmail.com, or by phone at 559-276-9753. Otherwise, I will assume that you'll get the newsletter at the CVA website, and I will not mail you a copy.

NASA FLIGHT TESTS UNIQUE JUMBO JET; PLANE'S AIRBORNE TELESCOPE WILL BE USED TO UNLOCK SECRETS OF THE COSMOS

A NASA jumbo jet that will help scientists unlock the origins of the universe with infrared observations reached a milestone Friday, December 18, when doors covering the plane's telescope were fully opened in flight.

The Stratospheric Observatory for Infrared Astronomy, a modified 747 jet known as SOFIA, flew for one hour and 19 minutes, which included two minutes with the telescope's doors fully opened. The goal was to allow engineers to understand how air flows in and around the telescope. It was the first time outside air has interacted with the part of the plane that carries the 98-inch infrared telescope.

"Today we opened the telescope cavity door, the first time we have fully exposed the telescope and the largest cavity ever flown while in flight," said Bob Meyer, SOFIA program manager at NASA's Dryden Flight Research Center in Edwards, Calif. "This is a significant step toward certifying NASA's next great observatory for future study of the universe."

Besides these test flights of the airplane, two flights to operate and verify the scientific capabilities of the telescope assembly are planned for spring 2010. Telescope systems such as the vibration isolation system, the inertial stabilization system and the pointing control system will be tested during daytime flights.

These flights will prepare the telescope assembly for the first flight with the telescope operating. That first flight will be the initial opportunity scientists have to use the telescope and begin the process of quantifying its performance to prepare for SOFIA's planned 20-year science program.

SOFIA is a joint venture of NASA and the German Aerospace Center. NASA supplied the aircraft. The telescope was built in Germany. Dryden manages the SOFIA program. The aircraft is based at NASA's Dryden Aircraft Operations Facility in Palmdale, Calif. NASA's Ames Research Center at Moffett Field, Calif., manages SOFIA's scientific program. The Universities Space Research Association, in Columbia, Md., and the German SOFIA Institute in Stuttgart, Germany, operate SOFIA's scientific program.

Video from SOFIA's flight will air on NASA Television.



Text and images from NASA

