

The Observer

SAN

BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member of The Astronomical League

<http://sbvaa.org/>



Volume #54, Issue 2

Since 1958

February, 2012

Meeting:

February 11, 2012

Location:

San Bernardino County
Museum, 7:00 p.m.
Redlands, CA. California
St. exit, I-10 Fwy.

Pre-meeting Dinner, 5:00
p.m.,

The Sizzler
1800 So. Waterman
Ave.
San Bernardino, CA

After the meeting telescopes
will be set up for viewing
and members will be
available to answer
questions. Bring your
telescope to observe with us.

*No telescope is too humble,
and beginners are always
made welcome!*

After viewing the group will
head for Coco's in Redlands,
Tennessee exit, I-10 Fwy.

Program

The Local Galaxy Group

SBVAA member Mike Ratcliff will present a talk on "The Local Galaxy Group". The local galaxy group makes up our nearest neighbors of galaxies including our own Milky Way galaxy, the great Andromeda galaxy, and a host of other smaller ones. After an introduction on galaxies and other objects visible to amateurs like us, we'll look at our nearest neighbors from a telescope's point of view. The Local Group has some of the easiest and most difficult objects that we can observe (or not observe). We'll also look at some of the latest science. It turns out that our Milky Way and our neighbors have some surprises.



SBVAA Officers

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Vice President:

Treasurer: Fidel Hernandez 909-864-0615

Secretary - Educational Outreach: Chris Clarke
909-384-8539 Work
909-875-6694 Home

Star Party Coordinator: Tom Lawson
909-8828198

SBVAA Webmaster: Steve Miller 626-859-7776

Newsletter Editor: Jim Sommer 909-792-3587

Calendar of Upcoming Events

February 18, star party, Johnson Valley

March 10, club meeting at the Museum

March 24, Messier Marathon at GMARS or,
at the Wildlands Conservancy, Oak Glen

March 25, (during the day) Dark Skies Presentation
at the Museum

April 14, club meeting at the Museum

April 21, star party, Afton Canyon or star party/public
outreach, Wildlands Conservancy, Oak Glen

May 12, club meeting at the Museum

March Outreaches!

By Chris Clarke

On **Thursday, March 1**, we'll be visiting Yucaipa Elementary School in Yucaipa. The address is 12375 California St. Sunset is 5:45 pm, so setup is around 6:00 with viewing going on from 6:30 to 8:00 pm. Lots of excited kiddies and parents will be attending. We'll view a first-quarter moon, Jupiter and Venus.

On **Thursday, March 8**, we'll be setting up our scopes at Lincoln Elementary School in Colton. This venue usually brings in a few hundred children and parents, so the more telescopes, the better! The school is located on Olive St., just off Mount Vernon Ave. in Colton. The address is 444 E. Olive. We set up on the playground and there is a side street off Olive that turns into the back of the school for access.

We'll have the full moon, Jupiter and Venus to view. Sunset is at 5:53 p.m., so setup is around "6:00-ish," p.m. with viewing from 6:30 to 8:00 p.m. It's always fun, so come on down and share the wonders of the universe with our Colton neighbors!

Looking for Someone to do Astronomy with Kids

By Chris Clarke

I was recently contacted by Matthew Douglas, Recreation Coordinator for the City of San Bernardino, to see if anyone in the astronomy club would be interested in becoming involved with their new mobile astronomy program. He is looking for someone who would like to work with kids and share astronomy with them at various places in the area.

The individual only needs basic astronomical knowledge/skills and the ability to operate a telescope. They have acquired a new telescope and equipment to do this, so you wouldn't be using your own.

The willing individual would be donating their time and the frequency of doing it would be about twice a month. If you are interested, please contact Matthew at (909) 384-5233. If you have the time, work well with children and have a desire to share astronomy, this is a nice opportunity.

Mars Rover *Opportunity* Turns Eight

It was on January 25, 2004 that the rover *Opportunity* — swaddled in its cocoon of shock-absorbing air bags — bounced down on Mars for a mission designed to last a minimum of three months and a maximum of just a year or two. Eight years later, *Opportunity* is slower, creakier and much, much dirtier, and yet it's still at work, hunkering down on the crater rim as it prepares to ride out another bitter Martian winter. When the relative warmth and sunlight of spring return, the golf-cart-sized rover will resume its wanderings, adding to the mass of data it's already collected about Mars's wet, balmy, and perhaps biologically active past.



To keep the very high-tech *Opportunity* going, NASA is relying on some very low-tech methods. The rover is parked on a sunward side of Endeavour crater, at an outcropping called Greeley Haven. The little trickle of solar warmth that reaches the vehicle should prevent it from freezing over during the winter, and the tiny bit of light that makes it through the dust that now covers its solar panels should provide its systems the minimum power they need to keep going. If the rover is going to get moving again, it must rely on the springtime winds to blow the panels clean, something that has reliably happened every Martian year (about two Earth years) since 2004.

But the wintertime downtime is not going to waste. Engineers will analyze the tiny

fluctuations in the rover's radio signals to try to learn more about the slight wobbles the planet experiences as it spins — which in turn provides clues to its interior structure. *Opportunity* will also continue to scan the terrain around it, studying how the wind sculpts the Martian soil.

"Wind is the most active process on Mars today," says Diana Blaney, deputy project scientist. "It is harder to watch for changes when the rover is driving every day. We are taking advantage of staying at one place for a while."

(Article from "Time/Science." To read more go to:
http://www.time.com/time/health/article/0,8599,2105371,00.html?hpt=hp_c2)



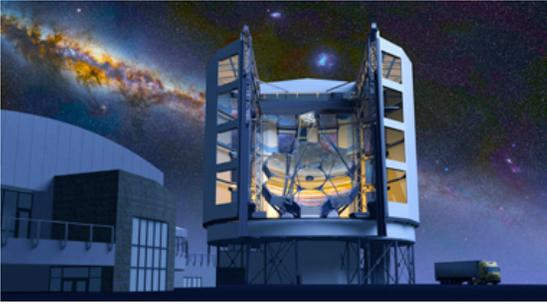
Club Meeting Dates for 2012

February 11
March 10
April 14
May 12
June 9
July 14
August 11 (ann. BBQ)
September 8
October 20
November 17
December (tbd) ann. holiday dinner

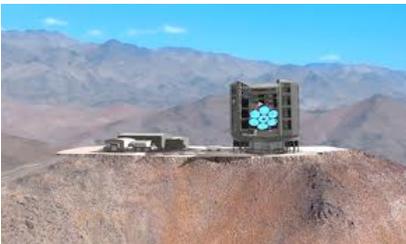
The Carnegie Observatories, Part 4

The Giant Magellan Telescope

The Giant Magellan Telescope project is an international effort to design and build an innovative 25 meter (82-ft.) astronomical telescope that will provide a powerful new window on the universe. The Giant Magellan Telescope, or GMT, will be far larger than any telescope ever built, will produce images 10 times sharper than the Hubble Space Telescope, and will answer many of the questions at the forefront of astrophysics today.



The GMT will open new discovery space in terms of depth of detection (the faintest, farthest objects), improved angular resolution (sharper, clearer images), and access to the thermal infrared (wavelengths of light that optimize the data gained in optical observations). It will probe the centers of distant galaxies and their black holes in unprecedented detail; improve our understanding of exploding stars, supernovae, and gamma-ray bursts; directly image planets around other stars and possibly even detect signs of life; and enable observations that explore the mysteries of dark matter and dark energy, the enigmatic features that comprise some 96% of the matter and energy budget of the universe, and about which we know almost nothing. Because it will be a long lived instrument, it will also tackle key questions that we cannot even formulate yet.



The institutions designing and building the GMT are among the world's leading astronomical research organizations. Together, they represent hundreds of years of experience constructing and operating some of the most advanced and productive observatories on the ground and in space. Much of our knowledge of the expanding universe and its structure and evolution has come from their facilities, which are spread across the globe.

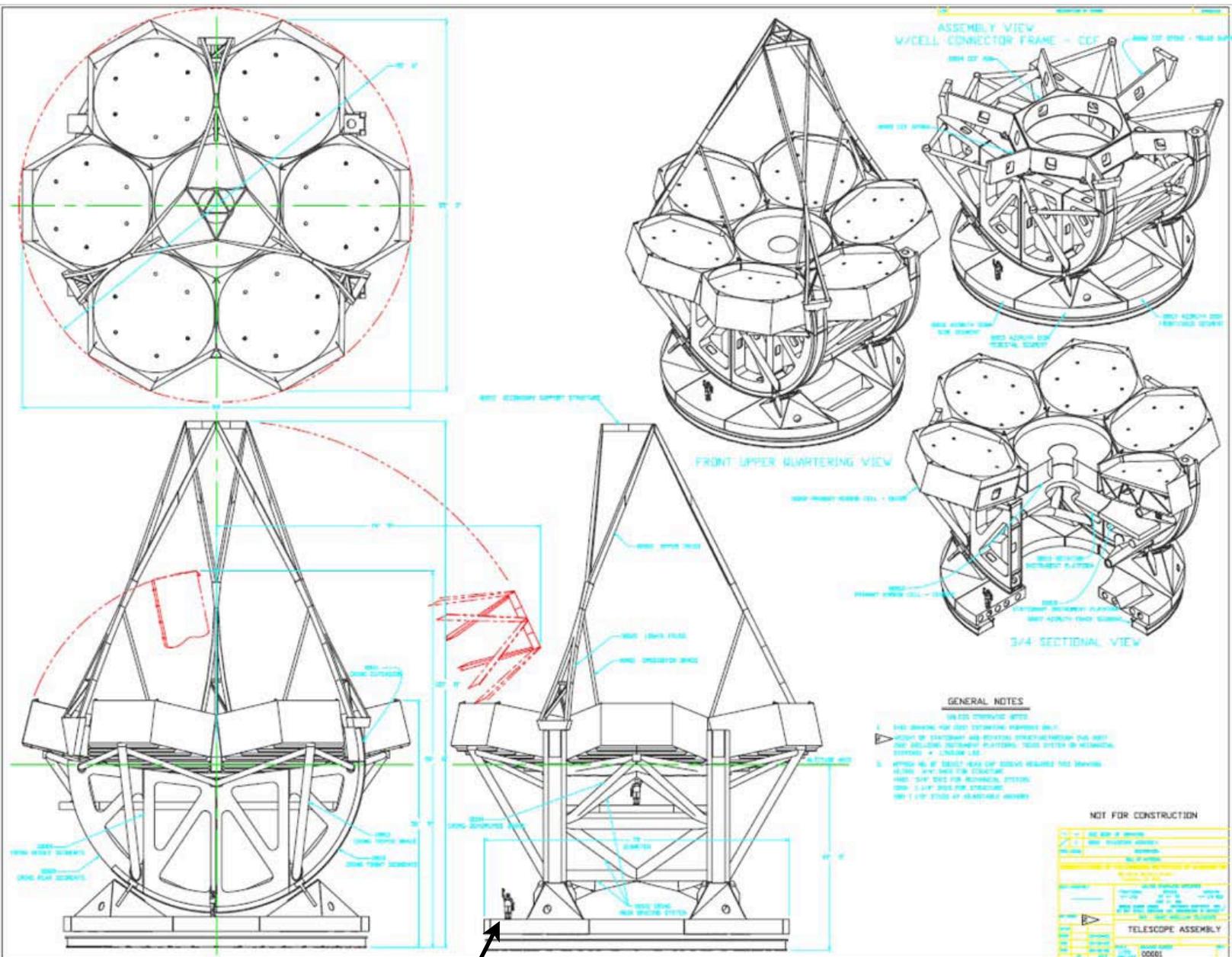
The GMT Partnership

Astronomy Australia Limited
Australian National University
Carnegie Institution for Science
Harvard University
Korea Astronomy & Space Sci. Inst.
Smithsonian Institution
Texas A&M University
University of Arizona
University of Texas at Austin

The GMT's advanced design is essential to unraveling the mysteries outlined by its science goals. The GMT's primary mirror is composed of seven 8.4 meter (28-ft.) diameter mirror segments; six "off-axis" segments surrounding a central on-axis segment. Light from distant objects is gathered by these giant primary mirror segments, reflected onto smaller secondary mirrors, and directed through a hole in the central mirror to a suite of advanced cameras and spectrographs for scientific analysis.



The GMT is currently in its detailed design phase. Construction of the telescope, which will be located at Carnegie's Las Campanas Observatory in Chile, is expected to be completed by 2019 at a cost of \$700M. These funds are coming from a mixture of private and public sources, and they represent a true investment in the scientific discoveries of tomorrow.



Engineering drawings of the Giant Magellan Telescope

For a sense of scale, note the man drawn on the left side of the platform in the lower center drawing