LOS ANGELES ASTRONOMICAL SOCIETY

BULLETIN

volume 83, issue 10 *October 2009*

Inside this issue

OUR 82nd YEAR OF ASTRONOMY IN LOS ANGELES

Los Angeles Astronomical Society

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Editor's Corner

We have a "situation" concerning the remaining Mt Wilson night in October. As of press time, the September Mt Wilson night was canceled due to the Station fire and lack of free movement through the Angeles forest roads. Some members who reserved for that night have been allowed to join the October 16th night, making that night fully subscribed. The October 16th night will go forward if roads are open to the public. If the session is canceled, our treasurer will contact those who made reservations to see how they wish to use those funds or if they wish a refund.

Wouldn't you know! The August public star party at Horsethief Canyon in San Dimas was pretty effectively clouded out thanks to the only two days in August that seemed to have any significant clouds ! Dave Sovereign did try to brave it out.

To my surprise, there was NO TV media presence at Dr. Aldrin Day at Griffith, and only one radio station showed up. This was apparently due to the fires and other things distracting the media during that week. However, I and several others braved the heat and smoke to give the public a view of the Moon and Jupiter. My thanks to Grant Mills, John O'Bryan, Steve Wissler, Roger Keen, and Sheri Breaux for their support.

(Continued on page 3)

Our outreach program always needs volunteers, especially those who live in the San Gabriel valley, and with and without equipment. For all public outreach, whether at Griffith Observatory or other locations, we need volunteers without equipment to help with crowd control, to answer questions from the public, to lend assistance to the telescope operators, and give them the chance to visit the restroom, grab a drink, et al. Please consider donating your telescope and/or time. I did the Aug 4th Whittier college event and met some very bright and intelligent middle school girls, who asked very intelligent and thoughtful questions. It was a very rewarding experience, as is every Griffith public star party.

Speaking of which, the policy for attending the Griffith public star parties has changed for some time, and we've not updated our pages to reflect this. Please see page 12 for the new details, but they're essentially the ones we've been operating under for the past year or so.

Concerning next year's RTMC and when it will be held, that decision has not been finalized yet. We'll try and keep everyone informed.

The 2010 annual banquet will be held at the Monterey Hill Restaurant in the San Gabriel valley, Monterey Park, on January 24th Sunday. See page 10 for details.

Articles, short news or story items, and photographs and images are welcome as long as they're focused on LAAS interests. Articles need to be 1,500 words or less. Please submit only a few images at one time, and please supply a caption for each. Include such information as camera type, telescope or other equipment used, and exposure times. The deadline for submitting bulletin material is the 10th of each month. If possible, please submit electronically to: BulletinEditor@laas.org

Material may be sent to the LAAS address listed at the top of the column at left, but timely reception and publication cannot be guaranteed. ✧

David Nakamoto

President's Message

The last few public star parties at Griffith Observatory have been quite successful and well attended by the public. There have been lines at every telescope, even the small ones. The Society's 26-inch telescope has attracted crowds clear across the lawn, with the guests enjoying views of the Moon and Jupiter. On the other side of the coin, support by LAAS members at these events has been slight over the past few months. The next public star party will be on Saturday, October 24th. This will be an early crescent Moon. For those members who have not yet been to one of these public star parties, we encouraged you to attend one of these events as they are a good way to show our interest in and knowledge of Astronomy and science. Hope to see you there! ✧

David Sovereign

Outreach Program

Come on out to the school and show all the enthusiastic kids, parents, and teachers the night sky. They always appreciate it. And if you get WOW's when they look through you scope, you'll feel good. If no scope, come out anyway and help up set up or answer questions from the kids. So, Outreach volunteers, let's pitch in. I'm sure the kids and adults will appreciate our effort.

Thanks !
Outreach@laas.org (818) 891–3087 ✧

(Editors Note: Be aware that often these requests come with very little advanced notice. Therefore, we won't post any events in the bulletin. The best way to get news of these events is to use the Internet and either join the LAAS Yahoo group or access the LAAS website. To join the LAAS Yahoo group, see page 16)

Don DeGregori

Omicron Ceti

By Timothy Thompson

The planet Omicron Ceti III was featured in the original Star Trek series, in an adventure entitled This Side of Paradise. A perfectly suitable looking planet for colonization, it turned out to be bombarded by dreaded "Berthold rays". The Starship Enterprise, and our heroic Captain Kirk were dispatched to find out if any colonists had survived, and adventure, as usual, ensued.

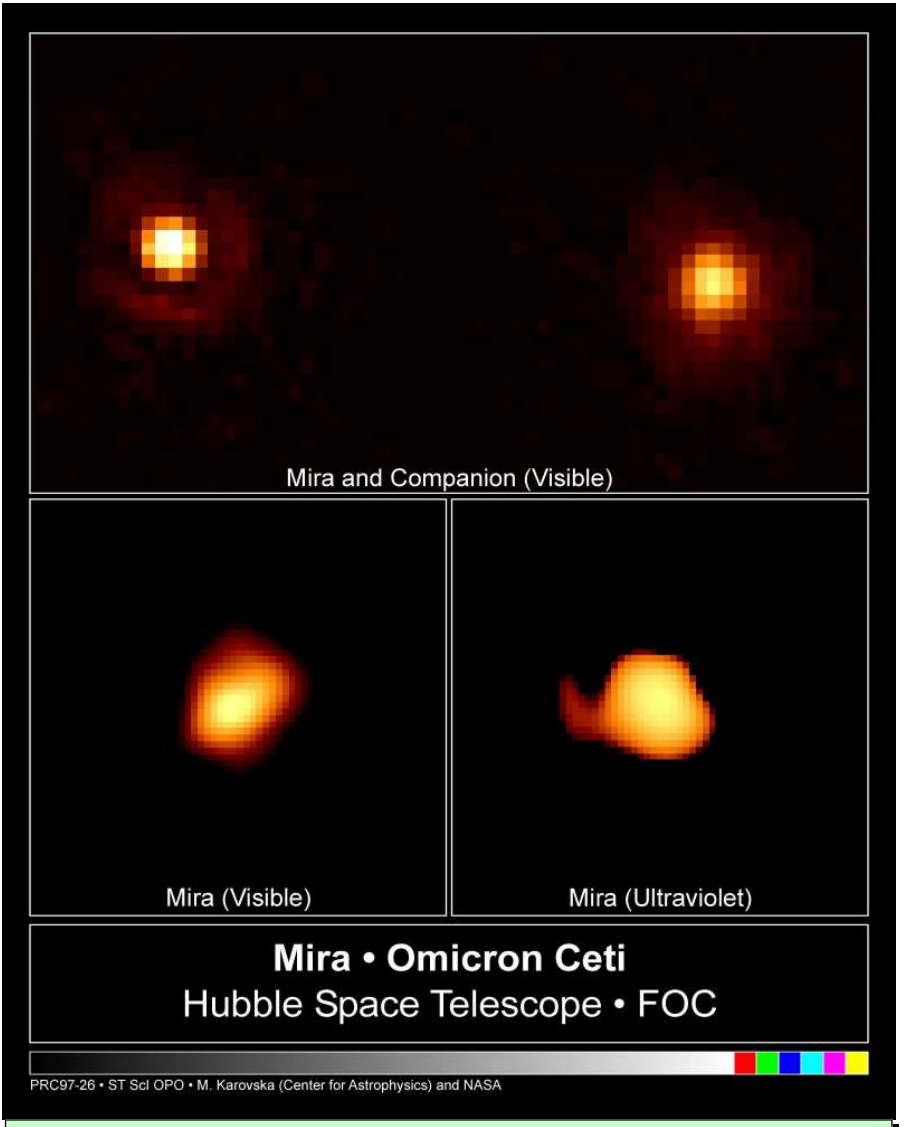
Omicron Ceti turns out to be an asymptotic giant branch (AGB) star, about 1.5 solar masses, which has already been through its red giant stage. As is typical for an AGB star, it has a significant stellar wind, roughly 10-7 solar masses per year, and is highly variable in brightness, with a period of 332 days, and a minimum luminosity not unlike our sun, but a maximum luminosity anywhere from 700 to 1500 solar luminosities. With a star next door that shines at least 700 times brighter than the sun, about once every 11 months, "Berthold rays", whatever they are supposed to be, would seem to be the least of problems.

Omicron Ceti is a Mira class variable star. In fact, it's not just in the Mira class; it is Mira. Apparently, the Dutch amateur astronomer David Fabricius (1564-1617) first observed Mira in August 1596, when he observed it as it was increasing in brightness, and thought it was a nova. It was designated Omicron Ceti by Johann Bayer in 1603. It was another Dutch astronomer, Johann Fokkens Holwarda (1618-1651), who rediscovered Mira in 1638, and determined its period to be 11 months. Finally, it was the astronomer (and Mayor of Gdansk, the Polish city otherwise known as Danzig) Johannes Hevelius (Jan Heweliusz in Polish, 1611-1687) who gave omicron Ceti the name Mira (meaning "wonderful" in Latin) in his 1662 book Historiola Mirae Stellae.

Today, Mira is one of the more studied variable stars. It varies from magnitude 9 to magnitude 3.5, so it is easily visible to the eye when it is bright, but invisible when at its low point. This explains why some of the early astronomers mistook it for a nova. But one of the exceptional aspects of Mira is that aside from being a highly variable star, it is also a fast moving star. It has a high proper motion on the sky of 0.226 arcseconds per year, and at a distance of 107 parsecs (348.8 light years), that translates into 130 km/second, with respect to its own surrounding interstellar medium. Its variability and high speed have landed Mira in the news.

A turbulent wake as a tracer of 30,000 years of Mira's mass loss history, by D. Christopher Martin, et al., appeared in the 16 August 2007 issue of the British

(Continued on page 7)



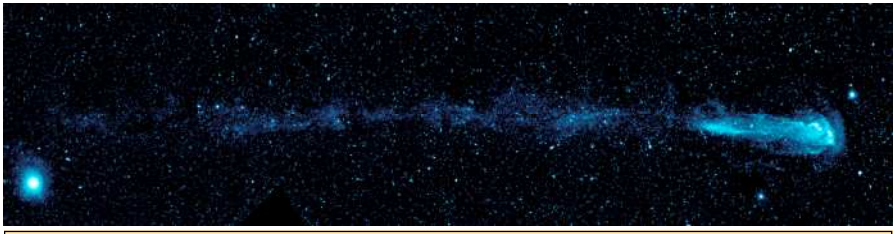
The top panel of this HST image shows Mira A on the right, and Mira B, about 6 arc seconds on the sky to the left. The ultraviolet image in the lower right shows a streamer of dense wind coming from Mira A.

science journal Nature. GALEX is a satellite that makes observations in the ultraviolet, originally intended to study the evolution of galaxies (hence the name Galaxy Evolution Explorer or GALEX). But it can be used to look at anything, and images from GALEX disclosed the presence of a 4 parsec (13 light year) long comet like tail of stellar debris, stretching out behind Mira. The fascinating images reveal the bow shock wave of the star plowing through its surrounding medium. And variations in density along the tail of debris allow astronomers to reconstruct the strength of Mira's stellar wind over the last 30,000 years. High resolution images not only reveal details in the long tail, but also numerous features in close to the star, and behind the shock wave.

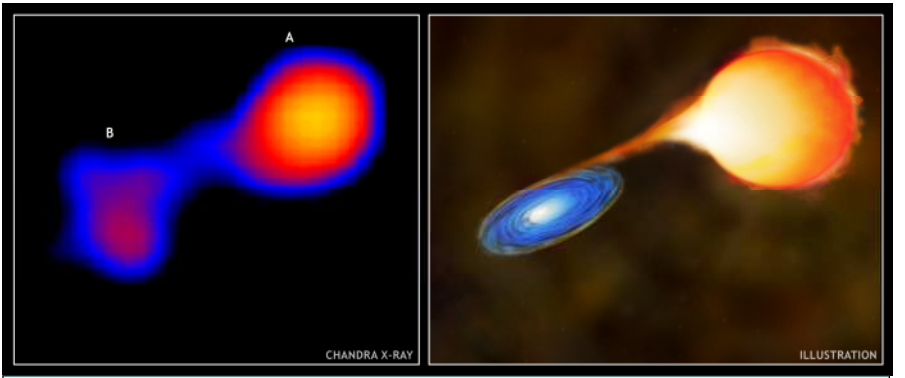
Mira is not alone. It has a companion (Mira B), about 70 AU away, that is shrouded in an envelope of captured wind from our Mira (Mira A). Mira B is about half as massive as our sun, and has enough gravity to grab onto a chunk of the slow moving but dense wind from Mira A. It was thought that the companion was a white dwarf star, but it is now believed that Mira B is a main sequence star. As the wind from Mira A accretes onto Mira B it becomes hot enough to emit X-rays, which have been observed by the Chandra X-ray telescope. In X-ray & ultraviolet, we can see streamers of wind from Mira A falling onto Mira B.

Mira A is a good example of the way the sun will look, in 5 billion years or so, when it has already passed through the red giant stage. I talked about this last April, in my article Final Destiny. When the sun becomes an AGB star, it will look & act like Mira A. It will destroy Earth in the process, but Jupiter will likely survive. Jupiter is not as large as Mira B, but may still be able to make its presence known to distant observers, by its ability to interfere with the AGB wind from the sun. ✧

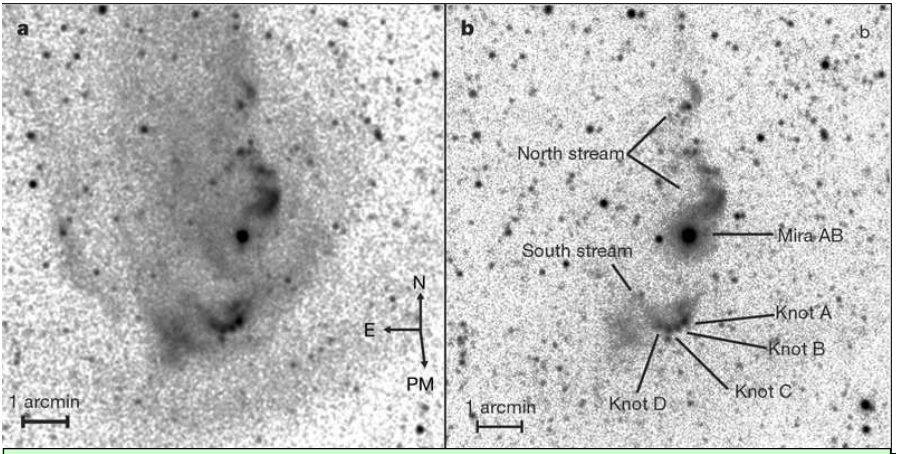
(More images of Mira are on the following page — Editor)



This is an ultraviolet image from the GALEX instrument, which shows the tail of stellar wind left behind by Mira AB. The tail is 13 light years long, and is created as Mira AB streaks through space, leaving gas behind that came from the dense stellar wind of Mira A. The tail was created over the last 30,000 years.



This is an X-ray image from the CHANDRA X-ray telescope. The left panel shows the X-ray image of Mira A on the right and Mira B on the left. The X-rays from Mira A come from the star's active corona, whereas the X-rays from Mira B are generated by the accreting wind from Mira A. The right panel shows an artists rendition of what is physically happening in the X-ray image.



These are high resolution images of a 10x10 arc-minute field around Mira AB; far UV on the left, near UV on the right. The images reveal numerous knots and other features in the gas near the stars. In the left image, arrows indicate north, east, and the direction of proper motion of the stars. Image copyright 2007, Nature Publishing Group.

David Pinsky took this image of the pyrocumulus cloud caused by the Station Fire. From Griffith you could see the aircraft activity when the fire was on the Los Angeles side of the mountains, especially the large DC plane spreading fire retardant on mountainside. Pinsky using a Canon PowerShot at 1/10th of a second at f5 and iso 200.

2010 Annual Banquet

Here are the current details for the 2010 annual banquet. Please check future bulletins for any updates and changes.

Date : Sunday, Jan 24th

Time : 5:00pm for the bar
6:00pm for dinner

Location : Monterey Hill Restaurant
3700 Ramona Blvd., Monterey Park
http://www.montereyhillrestaurant.com/

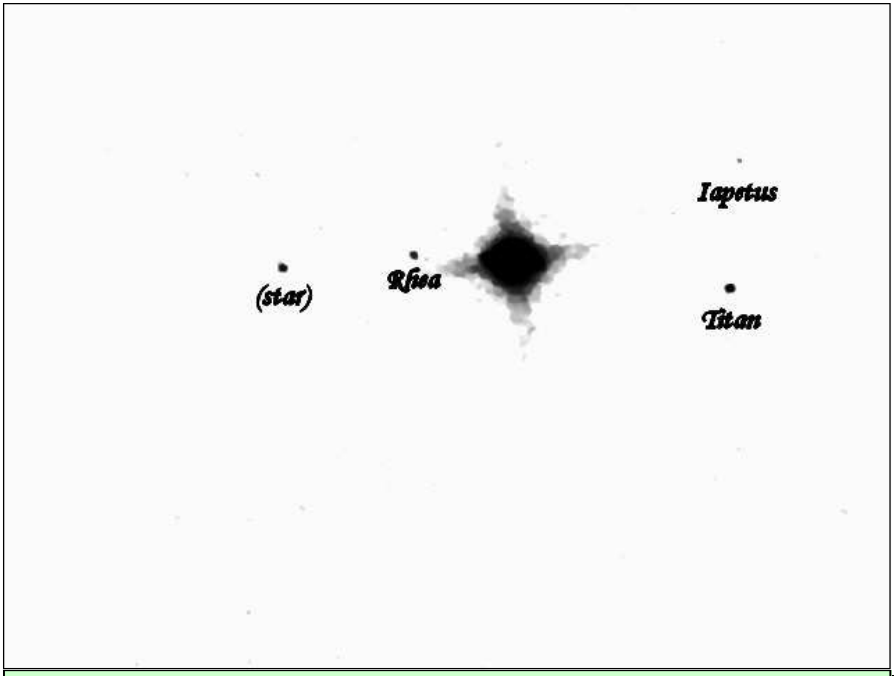
Cost : $45 per person
$20 for children under 13

Mail reservations and checks to LAAS Treasurer at
P.O. Box 56084
Sherman Oaks, CA 91413

Make checks out to Los Angeles Astronomical Society. On the note line, write "2010 banquet reservation".

See ya there !

David Nakamoto



This is one frame from a video taken on July 16th through a 10-inch Newtonian Dob mounted on a tracking platform with a Philips SPC 900N webcam. Despite not being able to bring the camera to focus (notice the fat spikes coming off of Saturn), Iapetus was amazingly visible in the raw video. According to Starry Night Pro, it was shining at 11.3 mag at the time. The image is a negative of the original to improve the visibility of Iapetus.

This suggests that once the system has been adjusted to bring the image to focus, Enceladus Dione, and Tethys should be visible as long as they're far enough away from Saturn's glare. It also suggests that the brighter deep sky objects should be within range of this combination, something the author will pursue in the coming months. One disadvantage of this telescope/camera combination is the small field of view; the above image is only 7 minutes, 17 seconds wide ! ✧

David Nakamoto

Griffith Observatory
Public Star Party Procedure

The rules have changed for some time now. Please forgive the lack of any updates to this column in quite a while.

Signups are no longer required.

When you arrive, show your LAAS badge or card to the traffic control person at the fork at the top of Vermont road just before you reach the tunnel. You'll be allowed to drive up East Observatory Rd. Once at the top of the road, temporarily park your car on the side nearest to the observatory and unload your equipment. Roger Keen should be available with a cart to facilitate moving your equipment if you need it. Once you've unloaded your equipment at the spot where you wish to set up, Roger will oversee your equipment while you park along East Observatory Rd. Then you can set up your equipment.

I've been alerted to the fact that sometimes the personnel at the Greek Theater did not allow LAAS members to come up to the observatory. I'll work with the Griffith management to prevent this from happening in the future.

You can also volunteer for the event without equipment to aid those with equipment so they can take breaks, or help out with crowd control. Lately this has been an issue, especially with the society's 26-inch telescope.

It should be understood by any LAAS member who volunteers their time towards the public star party that the main focus is to be of service to the patrons at Griffith Observatory and show them the delights of the nighttime sky. New Members are not expected to adhere to this policy.

Please check the LAAS website and Yahoo list for changes and updates in any LAAS event, as there are many communication mediums and some are missed.

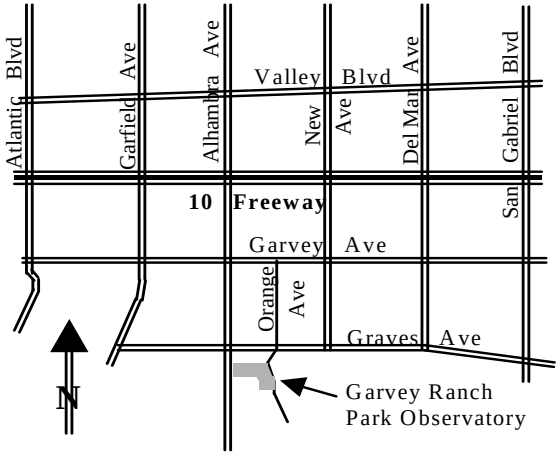
Have fun and enjoy! ✧

PJ Goldfinger & *David Nakamoto*

This image of the crescent moon was taken by David Pinsky using a Canon PowerShot at 1/10th of a second at f5 and iso 200. The location was the LAAS Lockwood Valley site.

Map to Monterey Park Observatory

(The place to build your telescope)



LOANER CORNER

There have been some minor changes to the accessories for the instruments in the loaner program. All telescopes are equipped with three eyepieces. Reflectors come with a simple collimation tool and refractors come with a star diagonal.

LAAS-4

LAAS-2

LAAS-1: 4.5" f/8 Celestron reflector on a Polaris equatorial mount

LAAS-2; 4.5" f/8 upgraded Tasco reflector on a driven Edmund equatorial mount

LAAS-4: 6" f/5 Telescopics reflector on a short Dobsonian mount

LAAS-6: 10" f/4.5 Discovery reflector on a Dobsonian mount. This is the largest telescope in the collection.

LAAS-9: 80mm F/6.25 refractor which has beenre-mounted on a heavy-duty Celestron camera tripod. This alt-azimuth style mount is good for this fine Rich Field Telescope.

For more information call: David Sovereign at (626) 794—0646. ✧

David Sovereign

EVENTS CALENDAR

Date	Event	Location and Information
Oct 7th (Wed)	Board Meeting	Garvey Ranch Park Class Room. 8:00 pm to 10:00 pm
Oct 17th (Sat)	Dark Sky Night	Lockwood Valley
Oct 19th (Mon) NOTE !!! SPECIAL NIGHT	General Meeting	Griffith Observatory Leonard Nimoy Event Horizon Theater Speaker to be announced later 7:45 pm to 9:45 pm
Oct 24th (Sat)	Public Star Party	Griffith Observatory 2:00 pm to 10:00 pm See pg 12 for details on how to attend.
Nov 4th	Board Meeting	Garvey Ranch Park Class Room. 8:00 pm to 10:00 pm
Nov 9th (Mon)	General Meeting	Griffith Observatory Leonard Nimoy Event Horizon Theater Speaker to be announced later 7:45 pm to 9:45 pm
Nov 14th (Sat)	Dark Sky Night	Lockwood Valley
Nov 21st (Sat)	Public Star Party	Griffith Observatory 2:00 pm to 10:00 pm See pg 12 for details on how to attend.

LAAS Home Page: ***http://www.laas.org***
LAAS Bulletin Online: ***http://www.laas.org/Resources_Newsletter.htm***

LAAS Yahoo Group—how to join

The group is private, and therefore does not come up in a search. To join, send email to: LAAS-subscribe@yahoogroups.com. Include your full name so the moderator can verify your LAAS membership. Your full name is necessary so we can check our records to see if you really are a LAAS member. If approved, you will receive further instructions via email. ✧

Sky and Telescope Subscriptions

Sky and Telescope subscriptions renewals should be sent directly to Sky Publishing. To start a Sky and Telescope subscription, contact the LAAS Treasurer (see the contact information on page 2) directly to get the club rates, then thereafter send the renewal bills directly to Sky Publishing. ✧

Astronomy Magazine Subscriptions

For those that subscribe to Astronomy Magazine through the LAAS, the rate has gone up to $34 a year, $60 for two years. ✧

Membership Annual Dues:

Youth	$ 20.00
Regular (18-65)	$ 45.00
Senior Citizen (65 and up)	$ 30.00
Senior Family	$ 40.00
Family	$ 60.00
Life	$ 500.00
Additional fees:	
Charter Star member	$ 30.00
Star member, with pad	$ 70.00
Star member, no pad	$ 60.00
Printed Bulletin	$ 15.00

(Membership due date is indicated on the mailing label)

HANDY PHONE LIST

LAAS Answering Machine ..... (213) 673-7355
Griffith Observatory
Program..... (213) 473-0800
Sky Report.....unavailable for now
Lockwood Site ..... (661) 245-2106
(not answered, arrange time with caller.
Outgoing calls – collect or calling card)
Mt. Wilson Institute..... (626) 793-3100