



the Skyscraper

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July 2012

Amateur Astronomical Society of Rhode Island ★ 47 Peepoad Road ★ North Scituate, Rhode Island 02857 ★ www.theSkyscrapers.org



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Saturday Potluck & July Meeting with Dr. Peter Schultz

Saturday, July 7
Seagrave Observatory

5:30pm Saturday Summer Potluck Dinner

Summer Meetings will include a 'pot luck' dinner and I have volunteered to coordinate these. It is important to RSVP to me by email (kathys5@cox.net) if you plan to attend and to indicate what you will be bringing. That way, we can try to avoid too much duplication. We need some appetizers, 'main'-type dishes, salads and desserts. We will provide coffee and cold drinks and we will have some ice and a cooler.

AstroAssembly will take place on September 28 & 29. During the July and August meetings, admission tickets will be sold at a discount price of \$17 per person to members of Skyscrapers. After the August meeting, the price will be \$20 per person. Banquet tickets will be sold separately.

Starting this month, members will be asked to fill some of the volunteer jobs needed at AstroAssembly. This is a team effort and everyone is important to our event's success.

7:30pm Dr. Peter Schultz presents "My Moon"

Dr. Peter Schultz, Director of both the Rhode Island Space Grant Program and the Northeast Planetary Data Center at Brown University, will give a presentation on lunar geology and what you can expect to observe. See "My Moon" on page 3.

9:00pm Seagrave Observatory Open Night

Join us for a night of observing at Seagrave Memorial Observatory after the July meeting presentation.

Seagrave Memorial Observatory Open Nights

Saturday 9:00-11:00 pm - weather permitting

President's Message

Ed Haskell

This month I will continue discussing the various initiatives enumerated in the June issue, but first there are two matters that deserve your attention.

The June meeting was the first of three new format summer meetings. We began with a pot luck supper at 5:30pm, followed by a technical meeting featuring a Long Program by member Dr. Savvas Koushiappas professor of Physics at Brown University and two Short Programs, the first by Gerry Dyck on his experiences traveling west to observe the annular eclipse of the sun, and the second by Tom Thibault, Jim Hendrickson, and Jack Szelka on the Transit of Venus and other observing. Second VP Kathy Siok coordinated the pot luck supper and the entire event was a rousing success.

The second matter is the Society's new website, <http://www.theskyscrapers.org> which is a complete rewrite of the older site that has served us for a number of years. In both cases these sites are the work of Board member Jim Hendrickson. The new site demonstrates better than words can describe that Jim is a web developer of quite exceptional ability and talent. I encourage you to connect to the site and see for yourself what a great asset this new site is to Skyscrapers.

Last month I identified four broad areas to which the Board's attention would be focused this year, each of which has multiple aspects. Then I wrote in detail about one of those aspects, the changed meeting format, which has already been put into place. This

month I want to explain an approach to improving access to the Observatory instruments.

Some years ago when the 16" instrument was obtained it was with the intent to automate its operation and to make it available over the Internet. Subsequent events apparently were considered of more immediacy and nothing was accomplished on the automation. I have appointed a committee chaired by past president Tom Thibault with members Bob Napier, Bob Forgiel, and Rob Bazinet. All of these members have experience in one or more of the disciplines required to analyze and plan an undertaking to bring the use of this instrument into the homes of all members. They have been charged with accomplishing this before the next Annual Meeting. This is an ambitious target for an all volunteer organization. If you are called upon by the committee to help please try to do so.

In my instructions to the committee I described how I visualized a solution might look. A member could either sign up for a block of time with a specified observing objective or electronically "look over the shoulder" of another members' time block. Whichever of these cases is involved, a member would connect to a members-only website and either begin controlling the observing session or watch the session being controlled by another member. Any number of members could be in this over the shoulder category simultaneously. My objective is to give all members access to the 16" Meade every clear night of the year from the comfort and convenience of their own home.

As you might well imagine there are quite a number of issues to be analyzed and solutions found before this dream can be



The Skyscraper is published monthly by Skyscrapers, Inc. Meetings are usually held on the first Friday of the month. Public observing is usually held every Saturday night at Seagrave Memorial Observatory, weather permitting.

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Directions

Directions to Seagrave Memorial Observatory are located on the back page of this newsletter.

Submissions

Submissions to The Skyscraper are always welcome. Please submit items for the newsletter no later than **July 16** to Jim Hendrickson, 1 Sunflower Circle, North Providence, RI 02911 or e-mail to jim@distantgalaxy.com.

E-mail subscriptions

To receive The Skyscraper by e-mail, send e-mail with your name and address to jim@distantgalaxy.com. Note that you will no longer receive the newsletter by postal mail.



Skyscrapers Skill Set Project

Only a half-dozen members responded to President Haskell's request asking the membership to provide a list of any skill that could benefit Skyscrapers to further the mission of our organization.

Therefore, at the July monthly meeting I will be passing out individual Skyscrapers Skill Set worksheets for you to fill out. You will return them to me that evening upon completion.

This information could be very useful when Skyscrapers needs to discuss an upcoming project. We'd like to first tap our membership for consultation about a specific topic before venturing outside the organization for assistance.

Thank you in advance for your cooperation.

David A. Huestis, Personnel Chair

realized. Some steps are much easier than others. For example, all of the physical and most if not all of the electronic facilities are already in place to control the 16" telescope and to feed its images to the meeting hall for display on the screen. This could be a significant enhancement to our public observing nights and is realizable in short order.

Some of the other areas requiring investigation are how to bring Internet access back to the Observatory (we had free access for several years but it was not used and, sadly, was removed), how to automate the roll off roof from the 16" observatory building, how to secure the site from unintended

damage when in use but not manned (rain, vandals, etc.), how to secure the web site from being breached by someone intent on damaging the instrumentation, procedures for choosing observing programs, how much this will cost and how we pay for it, what access, if any, is offered to others (educational institutions, students, organizations), how this might affect the workload of the Trustees, how the nature of the public sessions might change and be enhanced, which software control programs should be used, and so on.

The committee has already met informally and there is a preliminary understanding

of the various categories of work required to be performed. An early deliverable is a plan that outlines each of the major steps involved and quantifies the effort and expense of each as well as interim deliverables such as the display of live images in the meeting hall described above. At a suitable time I will ask Tom to present a report on the committee's work at a regular meeting.

In a future President's Letter I will cover additional initiatives we are undertaking to improve the value of your membership in Skyscrapers.

Thanks for all you do for Skyscrapers.

"My Moon"

Peter Schultz

The lunar surface is covered with a wealth of different types of features preserved and visible, 4 billion years later. Most of these features can be easily seen through modest-size telescopes: ancient craters, lava plains, volcanoes, cracks, and ridges. The advantage of telescopic viewing is that you can pick your illumination. The first-quarter Moon reveals the enormous Apennine Mountains (rim of the Imbrium Basin) that formed in minutes. Full Moon captures the long crater rays, subtle contrasts in color, and geologic boundaries. The last quarter reveals the vast lava plains of Oceanus Procellarum, floor-fractured craters, and fields of volcanic cones. During the waning Moon (early in the morning), the enigmatic Reiner Gamma formation becomes much more apparent. This is a featureless swirly pattern once called Galileo in order to minimize his significance in the world. Ironically, these swirls are now the topic of serious lunar research. But

there's more. Color filters can bring out different composition lava flows pouring into the Imbrium Basin. This becomes obvious with digital imaging of the same area with a red, then a blue filter.

There are several strategies to study the Moon. One is to challenge your ability to see the smallest discernible features. Then go to "Google Moon" and see what it looks like close up. Another is to have a contest to see who sees the waxing Moon first during the daytime (honor system). Or try to map geologic units through the telescope. With the dates of just a couple of large craters (known from Apollo samples), you can begin understanding the evolution of the surface. You also can determine relative ages by the fading of bright lunar crater rays. One of my favorite exercises is to estimate the frequency of extinction-making impacts on the Earth.

For the serious observer, there are serious challenges. Lunar Transient Phenomena (LTP) no longer represent a dirty name. Over the last half-dozen years, professional astronomers have been using amateur-

available telescopes to watch for impact flashes in the lunar night. The Moon gets the same meteor showers as the Earth. With digital monitoring and free-ware from NASA, an amateur could actually detect a fresh new crater, which would have significant scientific use. It all depends on who's looking when. Or with different filters, you could be the first (or second, depending on who you believe) to watch a degassing event. Five years ago, I knew 4 excellent sites to monitor. There are now more than two-dozen sites where the lunar surface has clearly been changed by internal activity (most likely released cool gas, not volcanoes). Although most of features are tiny, the dust thrown above the surface may be visible with the right instruments (and a lot of luck).

My first look through a telescope grabbed my imagination. It hasn't lost its magic for me -- more than a half century later. I still look up and marvel. The Earth is very fortunate to have a large mirror revealing its distant past, unlike other terrestrial planets.

AstroAssembly to be held on September 28 & 29

Kathy Siok

Save the date for our Annual AstroAssembly on September 28 and 29, 2012. We encourage every member to attend! Plans for the program include an introduction and examination of the ways in which each and every interested person can participate in astronomical projects. This is sometimes called 'Citizen Science' and requires only your interest and some of your time. We are currently lining up our

speakers and will be publishing a schedule within the next month.

You can help out at AstroAssembly by volunteering to be part of the team. There are opportunities in the following areas: Parking, Registration, Lunch Detail – preparation, cooking and selling, Prizes, Setting up on Friday afternoon, Cleanup crew, Banquet set up. We work together to make things go smoothly, but we need

you to participate. Let me know what you would like to do.

Our Annual raffle is held at this event. If you can donate an item or service for this raffle, please contact me.

Contact me at my email address (kathys5@cox.net) to volunteer in any way.

Kathy Siok
2nd Vice President

Astronomical Potpourri in July

Dave Huestis

What's shorter than a fuse on a Fourth of July firecracker? This column! During the last couple of months my columns have been fairly lengthy to inform the reader adequately about special astronomical events. July is a relatively quiet month astronomically speaking, so I will briefly suggest a few sky events one should strive to observe. And you won't require binoculars or a telescope to enjoy the view.

While it may appear counter intuitive to northern hemisphere residents, the Earth is at aphelion (farthest from the Sun) on July 4 at about 94,510,232 miles. It just so happens that the tilt of the Earth's polar axis has the northern hemisphere tipped toward the Sun at that time, providing more direct sunlight for us. At perihelion (Earth closest to the Sun) back on January 4, the Earth-Sun distance was 91,406,283 miles. The difference, just over three million miles (or 7 percent), has little effect on our planet. However, northern hemisphere summer is warmer than its southern hemisphere counterpart because there is much more land mass north of the Earth's equator to absorb the solar radiation.

During the first week of July casual stargazers can get a glimpse of Mercury. On July 1 this hellish world can be found about 12 degrees above the western horizon during bright evening twilight. Each successive night it will be found closer and closer to the horizon. Soon it will be lost in the Sun's glare.

Also, high in the southwestern sky after sunset you can still see Mars and Saturn. At the beginning of the month they will about 23.5 degrees apart. By month's end they will have narrowed that distance to only eight degrees. If you have a telescope Saturn will still display a great image. However, Mars will be quite small and show little or no detail, since it will be so far away (132,480,564 miles on July 1 and still increasing).

The morning sky will have its share of beautiful scenes to view as well. Jupiter and Venus will be brilliant beacons in morning twilight. Both can be found in the constellation of Taurus.

And finally, there are two meteor showers at the end of July. These shooting star displays are spread out over a couple of days and therefore overlap. Though a waxing

gibbous Moon will pose some interfering moonlight before midnight, once it sets you'll have several hours of dark sky to observe a few meteors blaze across the sky.

The first meteor shower, the Delta Aquarids, peak from July 28-30, with the morning of the 29th being the best time to observe. Once the Moon sets around 1:46 am EDT, an observer well away from light polluted skies can expect to see about 20 bright, yellow meteors per hour. Because these meteors nearly broadside the Earth, their speed is a moderate 25.5 miles per second.

The second meteor shower you should observe comes a day later on the morning of July 30 with the peak of the Capricornid meteor shower. The Capricornids are also yellow meteors and are noted for producing brilliant fireballs. They are slow interplanetary interlopers, hitting our atmosphere at around 15 miles per second. You can expect only 15 meteors per hour once the bright Moon sets around 2:48 am EDT on the morning of the 30th.

Aquarius and Capricornus, the constellations from which these shooting stars appear to emanate from, will be just less than halfway between the southern horizon and zenith (straight up) around 2:00 am. And don't forget — wait until the bright waxing gibbous Moon sets so you can maximize your viewing pleasure.

Though it doesn't get sufficiently dark to observe until after 9:15 pm or so during July, two fine observatories remain open during the summer months for observing the heavens. Ladd Observatory (<http://www.brown.edu/Departments/Physics/Ladd/>) in Providence will be closed during July for annual maintenance. However, Seagrave Memorial Observatory in North Scituate (<http://www.theskyscrapers.org>) is open every clear Saturday night for observing. And if you wish to observe from perhaps the darkest skies in Rhode Island, grab your passport, pack an overnight bag, and make the trip down to Charlestown and visit Frosty Drew Observatory (<http://www.frosty-drew.org/>) on any clear Friday night. Please visit the respective websites for details.

As always, keep your eyes to the skies.

1 Mercury at greatest eastern elongation

3  Full Moon

4 Earth at aphelion

6 Moon near Neptune

9 Venus near Aldebaran

10  Last Quarter Moon

10 Moon near Pallas and Uranus

12 Venus at greatest illumination

13 Uranus is stationary

15 Moon, Venus, Jupiter & Aldebaran form a distinct grouping



19  New Moon

24 The Moon is near Mars

25 The Moon is near Spica & Saturn



26  First Quarter Moon

28 Mercury at inferior conjunction

28-30 Delta Aquarid meteor shower peaks

30 Capricornid meteor shower peaks

July's Apollo Moon

Francine Jackson

This month's Full Moon will have passed before the next meeting, but it still has meaning for us all; after all, for all of you hunters, it is the time when the antlers of male deer push out of their foreheads in coatings of velvety fur. This gives us the Full Buck Moon. Also, even though we have already had a fair share of thunderstorms this early summer season, it appears as if July is ripe for them; hence, we can also look up and enjoy the Full Thunder Moon, that is, if there aren't too many storms limiting our views of the sky. This is also often referred to as the Full Hay Moon, for obvious reasons.

With July now here, many of us probably think of taking a summer vacation. If you

happen to decide to travel to the Cape, you might be amazed to realize that this region was actually one of several places that, in the 18th and 19th centuries, was home to a rather lazy form of pirates: The Mooncussers. In the past centuries, lighthouses weren't as common as today; they were very few and far between. As such, there were many more shipwrecks occurring than we thankfully have today. But, to appear to "aid" ships nearing a coast, these dastardly demons, under cover of a night with no or a very tiny Moon, would ride on horseback alongside the sea, planting decoy lanterns at certain points. When they would see a ship in distress, they would grab the lanterns and wave them around, as if welcoming the ship to a safe harbor. Once the ship had run aground, it was a very fast job to do away with the crew and take whatever cargo was aboard before any rescuers came on the scene. Of course, if the Moon were

in a gibbous or full phase, the night would be too light for these scoundrels to do their work, giving them the name Mooncussers. In fact, if this sounds a bit familiar, some of you may recall a Disney show which featured this horrendous part of history, and the ballad:

The Mooncussers cursed the Moon
When it was shining bright,
Because the Mooncussers' dirty work
Could only be done on a dark and moonless night.

Also, these days, nothing should prevent our creating our own Moon lore. As 2012 marks the 40th anniversary of the last landing on the Moon, perhaps we should honor the astronauts who made the dazzling tour from Earth to our nearest neighbor. From now on, we should declare, in addition to the traditional names, July as having the Full Apollo Moon.

The Lunar-X

Glenn Chaple's
Sky Object of the Month

The moon – what a royal pain in the butt! For a week or so around its full phase, the moon floods the nighttime sky with a natural form of light pollution, frustrating experienced backyard astronomers who try in vain to view faint deep-sky objects. Its only value, they claim, is to the novice skygazer who seeks an easy target for his or her first telescope.

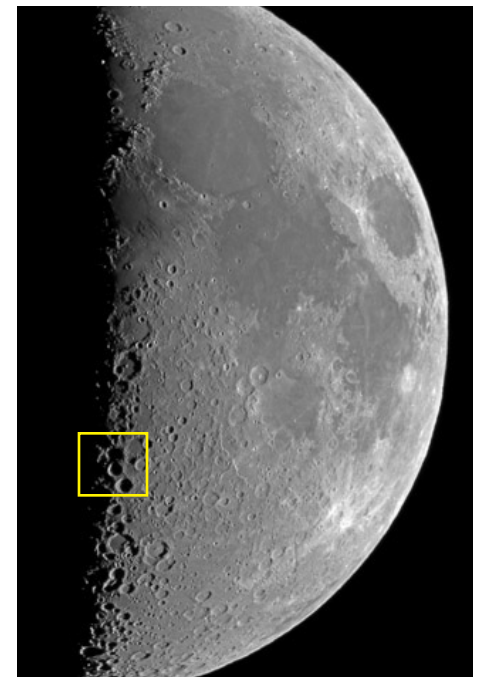
We need to rethink that attitude. Like it or not, the visual splendor of the moon far exceeds that of the finest Messier and NGC objects. It's much more than just a "cosmic playpen" for the beginner or a stagnant "been there, done that" object. In fact, a number of serious amateur astronomers religiously observe and study the moon. To them, the moon is a world replete with thousands of intricate features that constantly change in appearance as sunlight wends its way across the lunar surface.

Some of the more intriguing lunar sights are transient features – short-lived phantoms formed by shadows cast by crater rims or by high-altitude areas capturing the glint of the rising sun. Many of these occur near the lunar terminator. One of the most remarkable is the "Lunar X" which appears around the time of first quarter moon. I first learned about the X while reading

Philip Harrington's book *Cosmic Challenge*. It results when light from the rising sun first strikes an elevated area formed by the conjunction of four craters near the crater Werner.

Harrington's write-up included a timetable of Lunar X appearances. Tipped off by this information, I decided to see the Lunar X for myself. Peering into the eyepiece, I was amazed at how readily visible the X was. How had I missed it? How, for that matter, had legions of other amateur astronomers failed to see it, or at least announce its existence? Although it appears on a number of early lunar photographs, the Lunar X wasn't formally introduced to the public until 2004 when it was described by Canadian amateur astronomer David Chapman in an issue of *SkyNews Magazine*. Perhaps the Lunar X was lost in the overwhelming amount of detail the first quarter moon presents.

The accompanying photograph shows the location of the Lunar X (look about one third of the way up from the lunar south pole). **In July it will be visible on the 25th for several hours centered on 6:34pm. Lunar X will again appear on Sep 22 at 5:46pm and Nov 20 at 9:25pm.** By coincidence, another letter appears near the terminator at the same time as the Lunar X. Can you spot it?



Images by Jerry Lodriguss (www.astropix.com)

Skyscrapers on Display at the Gloucester Manton Library

Dave Huestis

Back in 2010, Skyscrapers was invited to post a display about our organization in a display case in the foyer of the Gloucester Manton Library located on Main Street in Chepachet. Tom Thibault and I created a fantastic display highlighting Seagrave Memorial Observatory and Skyscrapers. It was so well received that its run was extended.

About a month and a half ago, a library representative contacted me asking if we would be interested in displaying at the library again. The library's invite is a great opportunity to pique the interest of young children in the science of astronomy, and also hopefully to inspire them to become Junior members of Skyscrapers. My answer was a resounding absolutely!

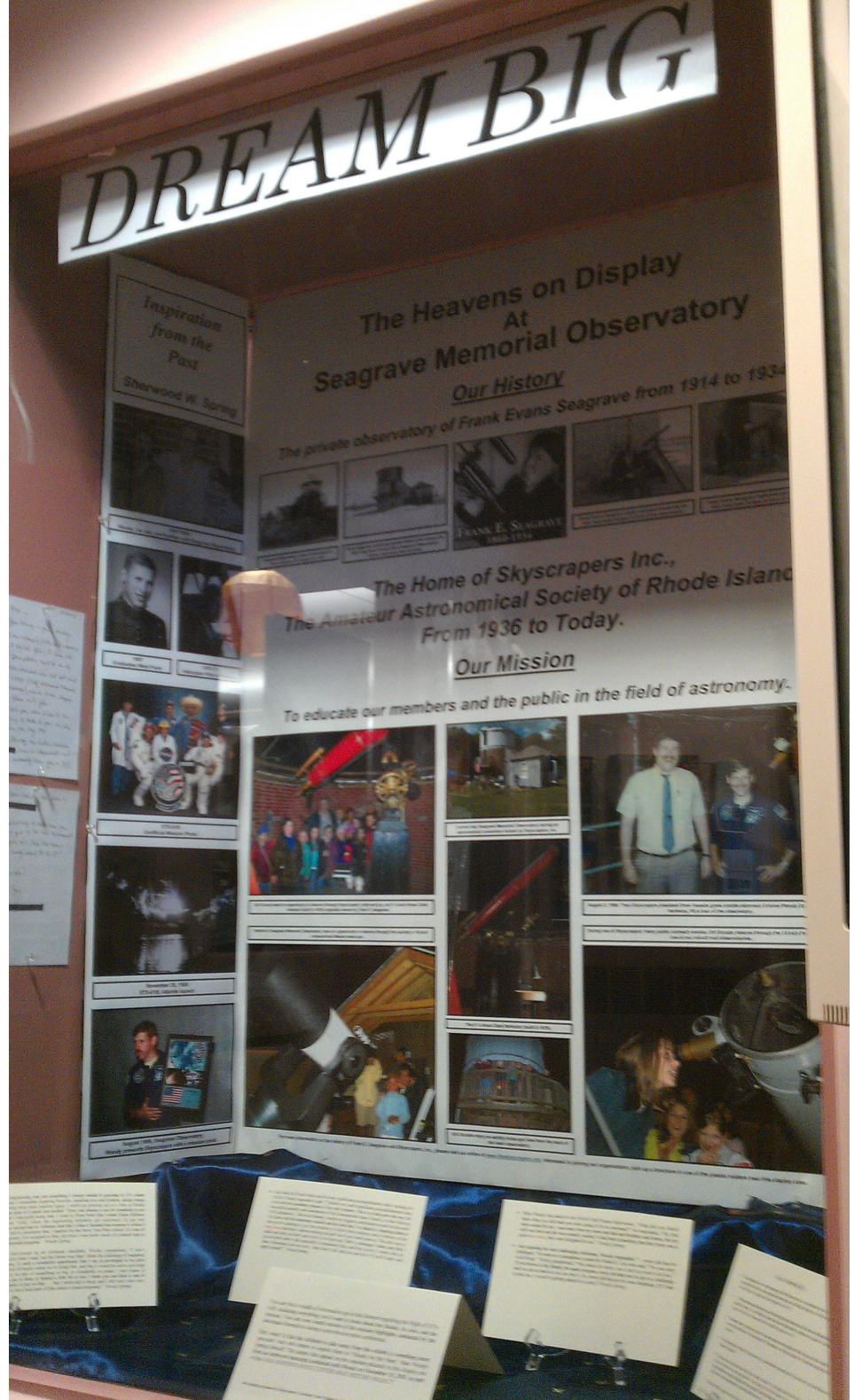
Each year libraries throughout the United States participate in a "Summer Reading Program." The 2012 theme is Dream Big.

I hadn't given much thought to the theme until it was time to begin to plan out the display. I decided to repeat the main center panel which showcases what our organization is all about. The side panels, which frame the main one, could be easily changed to reflect the Dream Big theme.

One night after finishing up another project, I sat down to think about the library display. How could I tie Skyscrapers into the summer reading program theme? Then it hit me. It's amazing sometimes how that spark of creativity can literally flash into your mind.

Who do we know in Skyscrapers who is dreaming big — our youngest member, Alex Bergemann. And who inspired Alex to set his goals to aspire to become an astronaut? Harmony, Rhode Island's own Sherwood "Woody" Spring! Woody was a mission specialist on the Space Shuttle Atlantis, STS-61B, from November 26 through December 3, 1985. Once permission was granted from Alex and his mom, the project began.

I contacted Woody and got his permission to use anything available about his life and journey into orbit. He was also kind



enough to send along a few private images that are not available up on the Web. A few of these were used for the display.

As you face the display, Woody is profiled on the left panel, while Alex is profiled on the right. To the side of the Woody panel is a copy of the first letter Woody sent in response to a letter by Alex. To the side of the Alex panel is a copy of the letter Woody sent to Skyscrapers recommending Alex's election to membership.

In front of the display are four placards on stands. Three contain quotes from

Woody that we hope will inspire young people to "reach for the stars." The fourth one contains quotes from Alex. I have included both Woody's and Alex's quotes for your enjoyment. Tom Thibault has provided a couple of low-resolution images of the display to accompany this story.

This project was a team effort by Tom and myself. It would have been difficult to achieve the success we did without Tom's many resources and drive for perfection.

We hope the display will encourage everyone who views it to Dream Big.

Charlestown Approves Town Lighting Ordinance

Francine Jackson

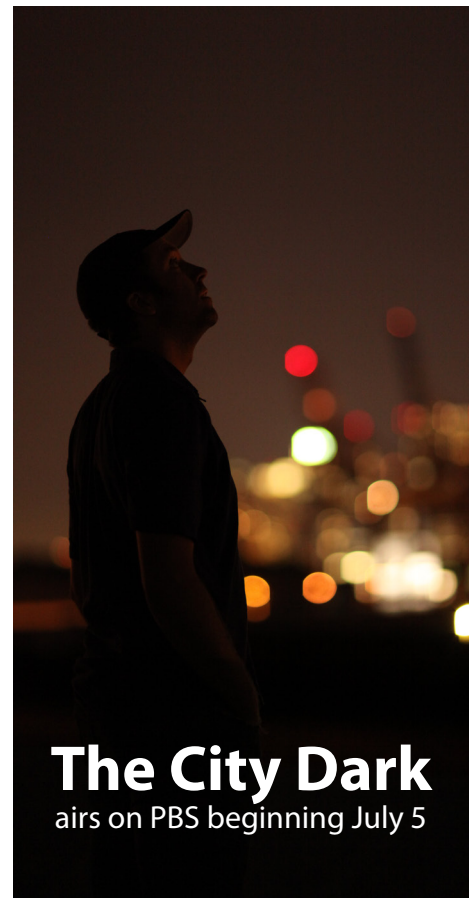
Some of you may be aware that the Charlestown Town Council just this past month unanimously voted a town lighting ordinance. As Frosty Drew Observatory has designated itself as having the darkest skies on much of the Eastern Seaboard, this was a great occasion. The Town Council had been arguing this for over a year, and to finally have it happen was a tremendous relief to all of us associated with Frosty Drew.

The Observatory seemed a natural complement to the Frosty Drew Nature Center, named in honor of Edwin, "Frosty" Drew, who was one of those responsible for preventing the beautiful Ninigret Park from becoming the site of a nuclear power plant. Six years after the dedication of the Nature Center, the first building to be opened in the Park, astronomy lovers, led by URI Professor William Penhallow, dedicated the Frosty Drew Observatory. It was a beautiful spot to set a telescope, and the skies were perfect.

Unfortunately, although the skies are still reminiscent of the inside of a planetarium

when the Moon is not in the sky, local cities and towns have begun to increase the amount of light, and it is starting to infringe upon the night. However, by the Town's acceptance of a lighting ordinance, this gives us the ability to attempt to introduce other communities to the importance of keeping the night sky dark, if only as a money-saving tool. To do so, the Charlestown Planning Commission has gifted to us a copy of the very popular movie *The City Dark*. As it has been shown at a previous meeting, many of you are aware of what this movie can offer. My request to you is that if any members are aware of or know anyone within their city/town governments or other organizations, we would love to show it to as many groups as possible.

Frosty Drew Observatory is committed to astronomy programming within the darkest conditions possible in Rhode Island. Please help us to do so, for, as Charlestown's sky remains dark, perhaps your neighborhood could likewise.



The City Dark
airs on PBS beginning July 5



Seagrave Observatory in the moonlight. June 30, 2012 by Jim Hendrickson.

June Reports

Tom Thibault, Secretary
Lloyd Merrill, Treasurer

Board of Directors Meeting Minutes May 21, 2012

Attendees: Ed Haskell, Bob Horton, Kathy Siok, Tom Thibault, Jim Hendrickson, Steve Siok, Conrad Cardano and Dave Huestis.

Meeting called to order at 7:00PM at the home of Ed Haskell.

Items discussed:

Ed requested all reports to be posted in the Monthly Newsletter to be turned in by the 16th of the prior month. Reports will be posted to WordPress Web Site for review. Discussion followed identifying required reports and other responsibilities. • 1st Vice President (Activities Committee) to provide information regarding upcoming speakers and committee updates. • 2nd Vice President to provide information regarding AstroAssembly updates and activities. • Secretary (Facilities Committee) to provide Meeting Minutes and committee updates. • Treasurer to provide monthly financial report. • Historian (Membership Committee) to provide committee updates such as Skills Survey and responses to date. • Trustee's to provide information regarding any activities associated with the equipment and facilities at Seagrave.

The Board of Directors has been tasked with protecting the organization and its assets, providing value to the membership, and facilitating the continuation of Skyscrapers into the future.

Discussions concerning member trips were once again reviewed. Currently trips per se sponsored by "Skyscrapers" are not occurring and other matters are being focused on at this time. It was again stated that any member can promote and initiate such activities with other members and are welcome to have it announced at the members meetings, web site, and in the newsletter.

Day trips to local attractions in which members meet at the location will be reviewed.

Board of Director insurance coverage will be reviewed for liability coverage.

Pricing was provided from 3 Porta-John vendors and selection was made for a 5 month rental.

A scaled plot and property plan was presented and available for use by the organiza-

tion.

Trustee's requested the procurement of a riding lawn mower. A search for a used mower will occur.

Meeting adjourned at 9:50PM

Submitted by Tom Thibault - Secretary

Skyscrapers May Meeting Minutes June 9, 2012

The June Meeting began at 5:30 with a Pot Luck meal. The membership provided a grand assortment of dishes enjoyed by many.

President Ed Haskell called the Skyscraper June Meeting to Order at 7:30PM.

Ed informed the membership of the format of the meeting and then turned the floor over to 1st VP Bob Horton.

Bob Horton introduced our speaker for the evening, fellow member Prof. Savvas Koushiappas. Savvas's presentation "From Astronomy to Astrophysics: Understanding Light" was well received by all in attendance. In addition as a excellent tie into Prof. Savvas's presentation, Prof. Ian Dell' Antonio demonstrated a Sbig spectrograph on Skyscrapers' 16" telescope, examining stellar spectra from different classes of stars.

A 15 minute break was taken prior to



Gerry Dyck's presentation "Chasing the Shrine of the Sun" and sharing photo's from his recent trip that included observations of the annular solar eclipse from New Mexico. Gerry was followed by Jim Hendrickson and Jack Selka sharing their photo's and experiences of the Transit of Venus that occurred on June 5th. Jim covered the transit as seen

YTD Budget 4/1/2012 - 6/23/2012	2012-2013 Budget	Actual	Difference
INCOME			
Astroincome	\$3,500.00	\$0.00	-\$3,500.00
Cookoutinc	\$450.00	\$0.00	-\$450.00
Donation, Other	\$300.00	\$185.05	-\$114.95
Dues	\$3,310.00	\$1,430.00	-\$1,880.00
Interest Inc	\$60.00	\$3.91	-\$56.09
Starparty Donations	\$200.00	\$111.00	-\$89.00
TOTAL INCOME	\$7,820.00	\$1,729.96	-\$6,090.04
EXPENSES			
Astroexp	-\$2,750.00	\$0.00	-\$2,750.00
Cookoutexp	-\$400.00	\$0.00	-\$400.00
Corporation, State Fee	-\$22.00	\$0.00	-\$22.00
Domain Name	-\$15.00	\$0.00	-\$15.00
Donations	-\$50.00	\$50.00	\$0.00
Electric	-\$175.00	\$25.46	-\$149.54
Other Insurance, Property	-\$2,600.00	\$0.00	-\$2,600.00
Postage and Delivery	-\$225.00	\$0.00	-\$225.00
Presidents Fund	-\$150.00	\$0.00	-\$150.00
Printing and Reproduction	-\$83.00	\$0.00	-\$83.00
Propane	-\$100.00	\$80.25	-\$19.75
Property Maint Fund	-\$200.00	\$0.00	-\$200.00
Refreshment Expense	-\$350.00	\$77.94	-\$272.06
Trustee Exp	-\$700.00	\$652.54	-\$47.46
TOTAL EXPENSES	-\$7,820.00	\$886.19	-\$6,933.81
Cash Assets			
Citizens	\$8,577.96		
Capital One	\$12,265.07		
Total	\$20,843.03		

from Mt. Wilson, Ca. and Jack from his home in AZ.

Ed Haskell closed the formal meeting and indicated, that our telescopes were open

for the members viewing pleasure, as well as Prof. Ian Dell' Antonio demonstration of a Sbig spectrograph on Skyscrapers' 16" telescope. A number of the membership

took advantage of both offerings which culminated in what could only be described as a wonderful evening of Skyscrapers activities.

Submitted by Tom Thibault - Secretary



How Many Discoveries Can You Make in a Month?

By Dr. Tony Phillips

This year NASA has announced the discovery of 11 planetary systems hosting 26 planets; a gigantic cluster of galaxies known as "El Gordo;" a star exploding 9 billion light years away; alien matter stealing into the solar system; massive bullets of plasma racing out of the galactic center; and hundreds of unknown objects emitting high-energy photons at the edge of the electromagnetic spectrum.

That was just January.

Within NASA's Science Mission Directorate, the Astrophysics Division produces such a list nearly every month. Indeed, at this very moment, data is pouring in from dozens of spacecraft and orbiting observatories.

"The Hubble, Spitzer, Chandra, and Fermi space telescopes continue to make groundbreaking discoveries on an almost daily basis," says NASA Administrator Charlie Bolden.

NASA astrophysicists and their colleagues conduct an ambitious research program stretching from the edge of the solar system to the edge of the observable Universe. Their work is guided in large part by the National Research Council's Decadal Survey of Astronomy and Astrophysics, which identified the following priorities:

Finding new planets—and possibly new life—around other stars.

Discovering the nature of dark energy and dark matter.

Understanding how stars and galaxies have evolved since the Big Bang.

Studying exotic physics in extreme places like black holes.

Observing time on Hubble and the other "Great Observatories" is allocated accordingly.



Artist's concepts such as this one are based on infrared spectrometer data from NASA's Spitzer Space Telescope. This rendering depicts a quadruple-star system called HD 98800. The system is approximately 10 million years old and is located 150 light-years away in the constellation Crater. Credit: NASA/JPL-Caltech/T. Pyle (SSC)

Smaller missions are important, too: The Kepler spacecraft, which is only "medium-sized" by NASA standards, has single-handedly identified more than 2300 planet candidates. Recent finds include planets with double suns, massive "super-Earths" and "hot Jupiters," and a miniature solar system. It seems to be only a matter of time before Kepler locates an Earth-sized world in the Goldilocks zone of its parent star, just right for life.

A future astrophysics mission, the James Webb Space Telescope, will be able to study the atmospheres of many of the worlds Kepler is discovering now. The telescope's spectrometers can reveal the chemistry of distant exoplanets, offering clues to their climate, cloud cover, and possibilities for life.

That's not the telescope's prime mission, though. With a primary mirror almost 3 times as wide as Hubble's, and a special sensitivity to penetrating infrared radiation, Webb is designed to look into the most distant recesses of the universe to see how

the first stars and galaxies formed after the Big Bang. It is, in short, a Genesis Machine.

Says Bolden, "We're on track in the construction of the James Webb Space Telescope, the most sophisticated science telescope ever constructed to help us reveal the mysteries of the cosmos in ways never before possible." Liftoff is currently scheduled for 2018.

How long will the list of discoveries be in January of that year? Stay tuned for Astrophysics.

For more on NASA's astrophysics missions, check out <http://science.nasa.gov/astrophysics/>. Kids can get some of their mind-boggling astrophysics questions answered by resident Space Place astrophysicist "Dr. Marc" at <http://spaceplace.nasa.gov/dr-marc-space>.

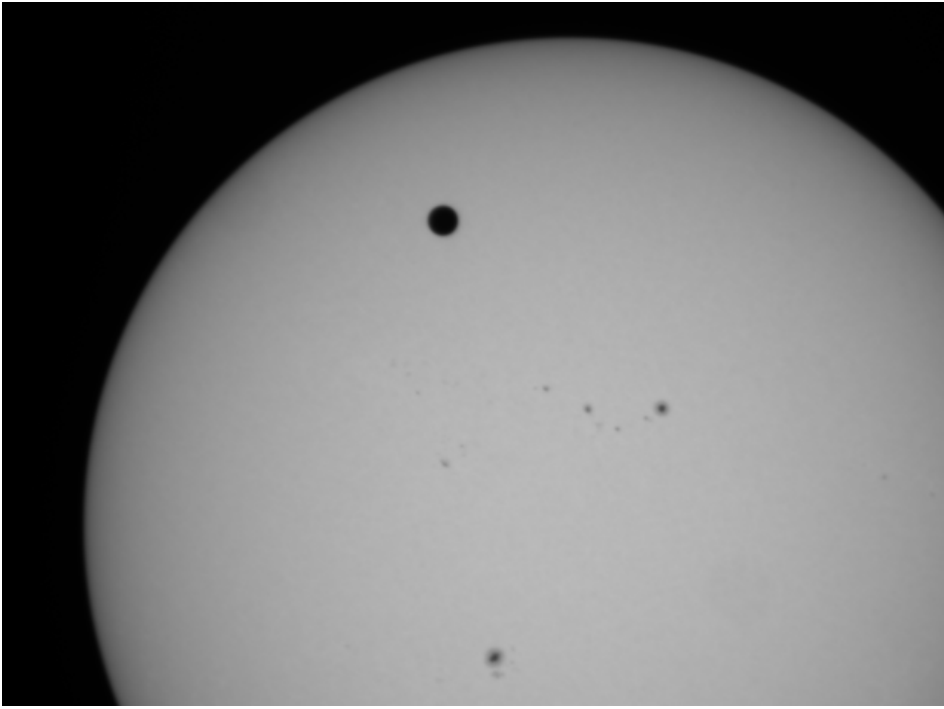
This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Transit of Venus 2012

Cloudy skies over New England broke for brief periods during the afternoon and evening of Tuesday, June 5 allowing most observers to get a momentary glimpse, while separate expeditions in Arizona and California were treated to spectacular weather from first contact to sunset.



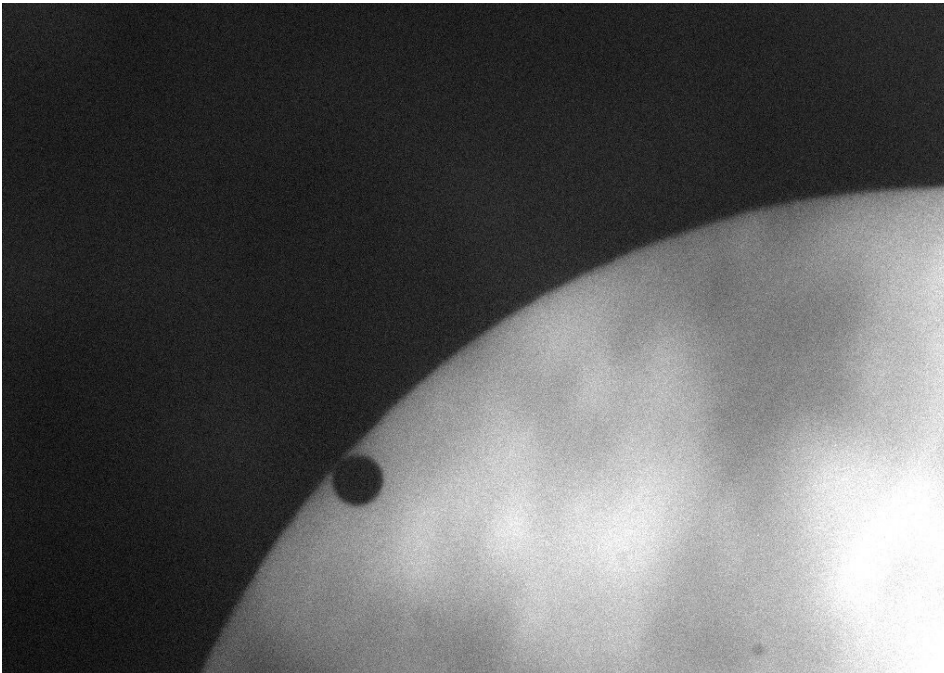
Dan Lorraine captured the transit at sunset with 4" Celestron refractor with a glass solar filter. The transit was on June 5th and we were in Chino Valley, AZ where the weather was just perfect!



Transit of Venus by Jim Hendrickson. Composite of 80 frames stacked, Imaging Source camera with mini-Borg telescope @ 400mm..



Transit of Venus by Steve Hubbard. Cloudy all day, then about 6pm local time, it broke a bit. Some decent sized sucker holes for a short time. At least I got to see the start of the transit, then the heavy dark clouds returned. Just enough time to look and shoot a couple of quick shots with a 200mm zoom. Wish I had more time to set up more stuff.



We caught one very brief glimpse of Venus. This photo was taken by a modern digital camera attached to the historic telescope. The image was taken through the clouds 6:21:38 PM EDT. — Mike Umbricht at Ladd Observatory.

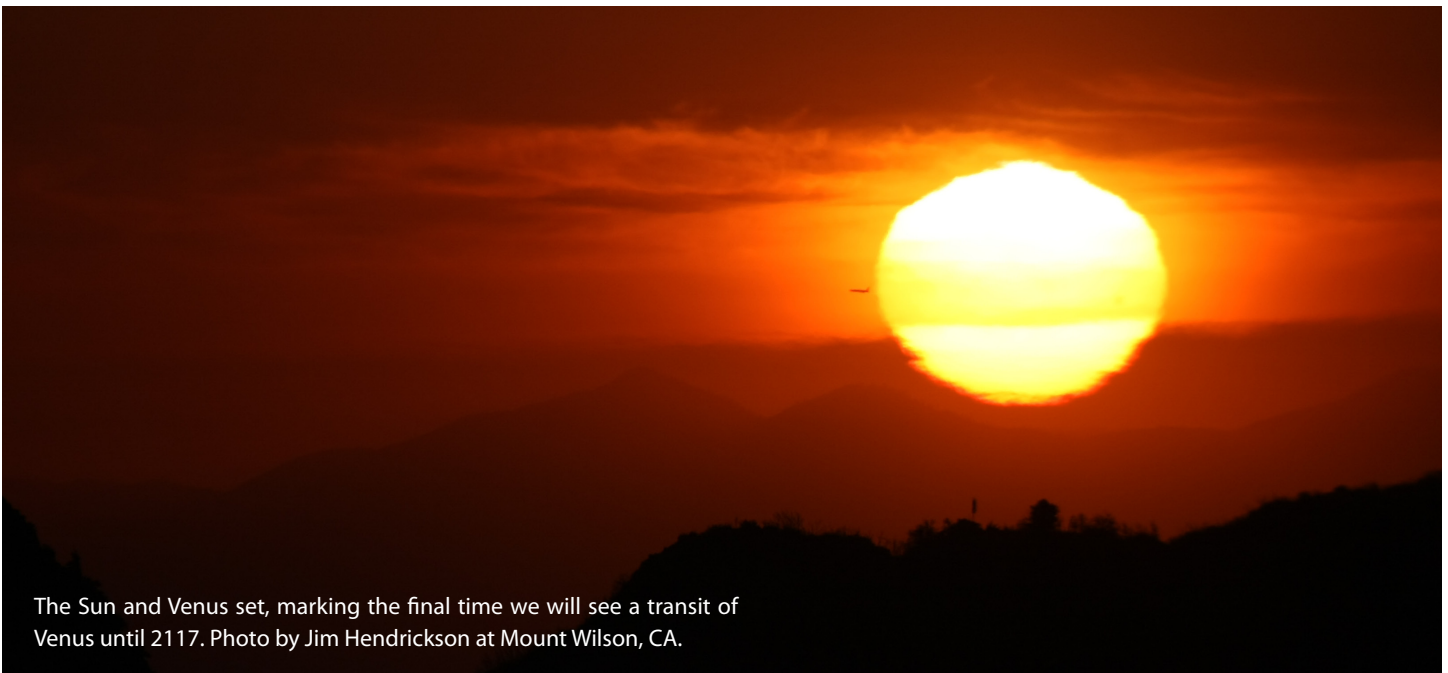
Transit of Venus image sequence by Tom Thibault.



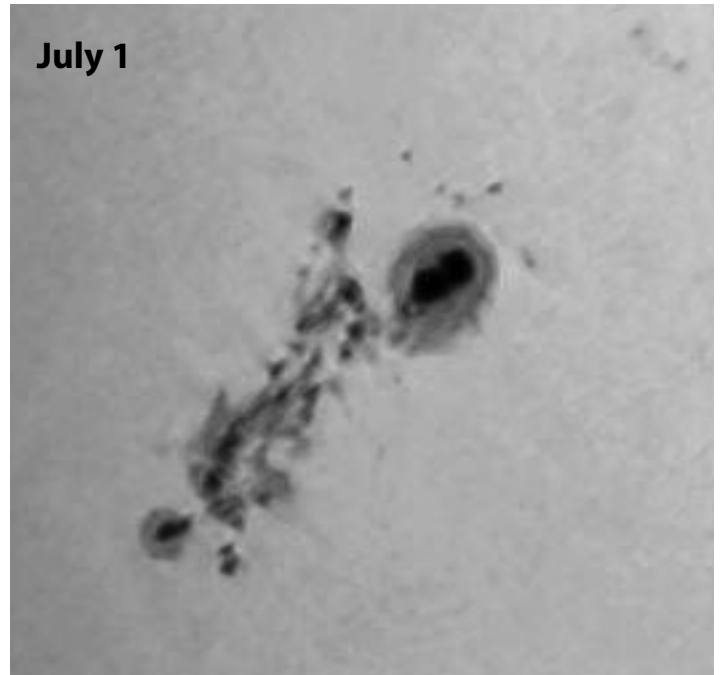
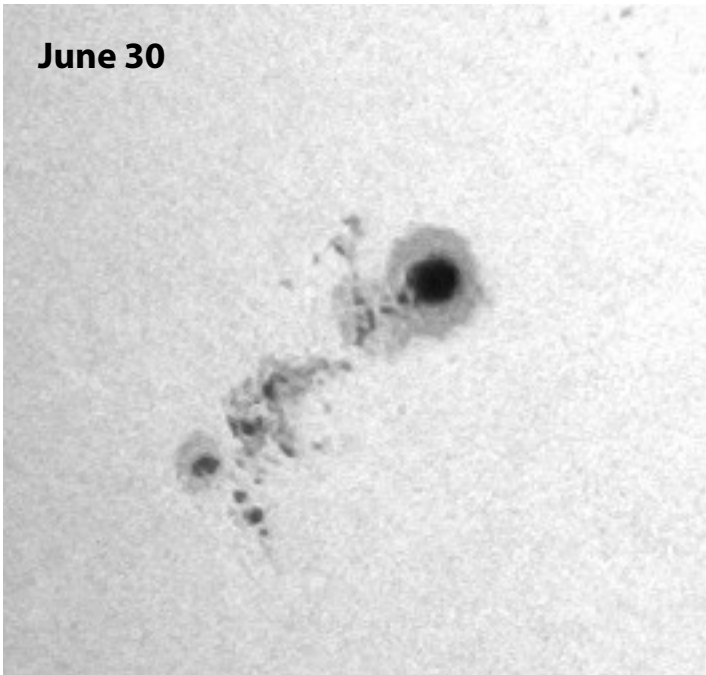


Francine Jackson enjoys a view of the transit through eclipse glasses from Mount Wilson.

Laptop screens used for image capture are difficult to see in midday sunlight so Jim Hendrickson and Tom Thibault go "under the hood" during the early stages of the transit of Venus at Mount Wilson. Even though his imaging session was ultimately successful, Tom had some initial equipment frustrations around the time of first contact and produced this light-hearted cartoon .



The Sun and Venus set, marking the final time we will see a transit of Venus until 2117. Photo by Jim Hendrickson at Mount Wilson, CA.



Steve Hubbard captured this fantastic sunspot group on June 30 & July 1. Huge flares with H alpha scope were also visible. Images taken with a 6" F8 Konus refractor, imaging source camera and run through Registax 6

Lisa Thibault holds up the Moon in San Francisco on June 3.



Directions to Seagrave Memorial Observatory

From the Providence area:

Take Rt. 6 West to Interstate 295 in Johnston and proceed west on Rt. 6 to Scituate. In Scituate bear right off Rt. 6 onto Rt. 101. Turn right onto Rt. 116 North. Peeptoad Road is the first left off Rt. 116.

From Coventry/West Warwick area:

Take Rt. 116 North. Peeptoad Road is the first left after crossing Rt. 101.

From Southern Rhode Island:

Take Interstate 95 North. Exit onto Interstate 295 North in Warwick (left exit.) Exit to Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.

From Northern Rhode Island:

Take Rt. 116 South. Follow Rt. 116 thru Greenville. Turn left at Knight's Farm intersection (Rt. 116 turns left) and follow Rt. 116. Watch for Peeptoad Road on the right.

From Connecticut:

- Take Rt. 44 East to Greenville and turn right on Rt. 116 South. Turn left at Knight's Farm intersection (Rt. 116 turn left) and follow Rt. 116. Watch for Peeptoad Road on the right.
- Take Rt. 6 East toward Rhode Island; bear left on Rt. 101 East and continue to intersection with Rt. 116. Turn left; Peeptoad Road is the first left off Rt. 116.

From Massachusetts:

Take Interstate 295 South (off Interstate 95 in Attleboro). Exit onto Rt. 6 West in Johnston. Bear right off Rt. 6 onto Rt. 101. Turn right on Rt. 116. Peeptoad Road is the first left off Rt. 116.



47 Peeptoad Road
North Scituate, Rhode Island 02857