



the Skyscraper

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August 2012

AMATEUR ASTRONOMICAL SOCIETY OF RHODE ISLAND * 47 PEEPTOAD ROAD * NORTH SCITUATE, RHODE ISLAND 02857 * WWW.THESKYSCRAPERS.ORG

Saturday, August 4, 7:30pm
at Seagrave Observatory

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Ed Ting

Introduction to Webcam

Astrophotography: A basic primer on how to do planetary imaging with webcams

Ed will cover the basics of webcam astrophotography, including theory, hardware, and software. Learn why this the easiest (and most fun!) of the branches of astrophotography. Sample images, both from our local club, and from "Master" imagers, will be shown.

Ed Ting has been involved with amateur astronomy for 35 years. He is a past president of the New Hampshire Astronomical Society. He has been on New Hampshire Public Radio, on the Manchester NH television show Star Hop, and has written for *Amateur Astronomy*, *Night Sky*, and *Sky & Telescope* magazine. He is a frequent speaker at local schools in northern New England. He is probably best known for his web site, scopereviews.com where he discusses equipment.

5:30pm Members Pot-Luck Dinner

Summer Meetings will include a 'pot luck' dinner and I have volunteered to coordinate these. It is important to **RSVP** to Kathy 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.

9:00pm Double Star Challenge

For our August meeting, **members are encouraged to bring their telescopes to Seagrave** for a "Double Star Challenge", and we can have some fun testing the optical limits of various telescopes, whether commercially or home-made. Many of us believe that our 8" Clark telescope to have some of the finest optics to be found. Let's see how well the Clark performs compared to other telescopes. Perhaps someone's telescope has even better optics? Check out the September *Sky & Telescope* for a great article on double star observing. The "Double Star Challenge" will begin after the evening program, around 9pm.



President's Message

Ed Haskell

I had planned to use this month's Letter to extend my thanks, and I think that of all of you, to a number of people who deserve it. I could thank Kathy Siok for all the work she is doing on AstroAssembly. I could thank Bob Horton for all the work he is doing arranging fine meeting programs and chairing the Activities Committee. I could thank the Trustees for their hard work and dedication to preserving the Society's property. I could thank Bob Forgiel for tireless effort handling our public outreach programs. I could thank Dave Huestis for trying to catalog the various skills possessed by our members so that when we need help or advice we know who among us may have skills bearing on that need. I am not going to thank any of them, or others deserving of our gratitude, in this letter even though such thanks are richly earned, because two items of more immediacy require addressing.

The first of these is to bring to your attention a long article with photos of many Skyscrapers' members in *Sky & Telescope* magazine for August (p. 66-69), recounting the history of our Clark refractor and the extraordinary restoration it has undergone over the past few years. This is something all of our membership should take pride in, knowing that they all have access to such a gem of a telescope. If you don't subscribe it is worth looking at a copy of the August issue at your local library or news stand.

The second is the difficulty Dave Huestis is having fulfilling the request of the Board that we create and maintain an inventory of skills possessed by our membership. Only a very few members have returned the survey Dave prepared. In reflecting on why this might be it occurred to me that in this era of misuse of personal information you might feel the questions were an unreasonable invasion of your privacy. But really, what harm is likely to come from the Society knowing you are a wizard at controlling model trains and a pretty good electrician to boot, although you do neither for a living? Or that you are a star insurance executive for a successful brokerage. Or that you bake the world's best apple pie. Or that you are an electrical engineer who works hard at your profession but really got into it because you love tinkering. Or that you are a trained attorney who wishes you were really a veterinarian. Or that you are an internal auditor.

Or a skilled carpenter. Or a botanist. Or, or, or ..., well I think you get the idea.

Whether that was the reason so many did not participate, you might also have wondered why Skyscrapers needed the information. Knowing that these types of expertise exist within the organization is invaluable when a problem comes up and none in leadership positions has relevant experience to bring to bear. How much better it is for us to call on a trusted source for advice than to employ an outside "expert", or just bluff our way through and hope for the best.

Of course you run the risk that if your skills are known you might be asked to do something for Skyscrapers. Well, so what? If you have the time wouldn't you help out? And if you don't, then "no" is the easiest to pronounce and earliest learned of English words. I assure you that any of the leaders who might have occasion to ask for your help are, themselves, so busy that they are completely sympathetic to you not having time to do anything more than maybe advance an opinion based on experience.

The other potential use for this information is to guide the Nominating Committee in who might be a reasonable candidate for office. Now in this case I freely admit some considerable work would be involved but see my comments about the use of "no" above. And wouldn't it be nice to know that some of your fellow members think highly enough of you to suggest that you should be one of the leaders?

I suppose there might be other reasons as well, but won't you please think it over and supply the kind of information suggested above? I assure you it won't be used to your detriment and won't be seen by anyone other than the Personnel Committee and a few Board members. In my relatively brief time on the Board there have been at least a dozen times when we have wondered aloud whether some member didn't have the skills to shed light on some issue before us.

Since I've departed from the form this Letter has taken recently I should go on and remind you that Dues are due the First of April. If you have paid them already, thank you, if this has slipped your mind please take care of it at your earliest convenience. Dues are an important source of the funds needed to cover the Society's expenses.

Thanks for all you do for Skyscrapers.



The Skyscraper is published monthly by Skyscrapers, Inc. Meetings are held monthly, usually on the first or second Saturday of the month. Seagrave Memorial Observatory is open every Saturday night, 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 **August 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.





AstroAssembly Update

Kathy Siok

Please join us on Friday, September 28 & Saturday, September 29 as we commemorate six decades of AstroAssembly with a program devoted to “Citizen Science and Astronomy.”

Plans for AstroAssembly 2012 (September 28 & 29th) are really coming together. The theme this year is “Citizen Science and Astronomy“. Our program will feature several speakers.

Gerry Dyck, Skyscrapers member and AAVSO observer since 1978, will present a summary of the contribution which our namesake Frank E. Seagrave made to the AAVSO International Database.

Dr. Carie Cardamone is the associate director of the Sheridan Center for Teaching and Learning at Brown University. Her research focuses on the properties of distant Active Galactic Nuclei (AGN) and their host galaxies. Her paper, “Galaxy Zoo Green Peas: Discovery of A Class of Compact Extremely Star-Forming Galaxies,” focuses on an exciting result from the Galaxy Zoo project.

Dr. Meg Schwamb, a postdoctoral fellow at Yale University, is interested in the outer solar system and looking for planets orbiting around other stars, participating in a project called Planet Hunters. Those involved look at changes in star brightness using data collected by NASA's Kepler spacecraft.

Dr. Bethany Cobb Kung, assistant professor of honors and physics at George Washington University, will share her work on gamma ray bursts and cataclysmic variables and how citizen scientists have been involved through AAVSO.

We will be bringing back the **Astro-photo Competition** and the unique **Astro Bake-off**, in which participants present clever astronomy-related edible (mostly) treats. The banquet on Saturday night promises to be another delicious meal and time to connect with old friends.

All members are encouraged to attend and tickets will be available for last year's admission price of \$17 to all members until September 1st (after that the price for all participants will increase). We also invite you to become part of the AstroAssembly team, helping in some way with the activities involved in this annual 2-day event. We are also looking for member donations to be included in our raffle and speakers for our Friday Night talks.

Contact Kathy Siok (kathys5@cox.net) for further information – to get a ticket, to volunteer in some way, or to donate an item.

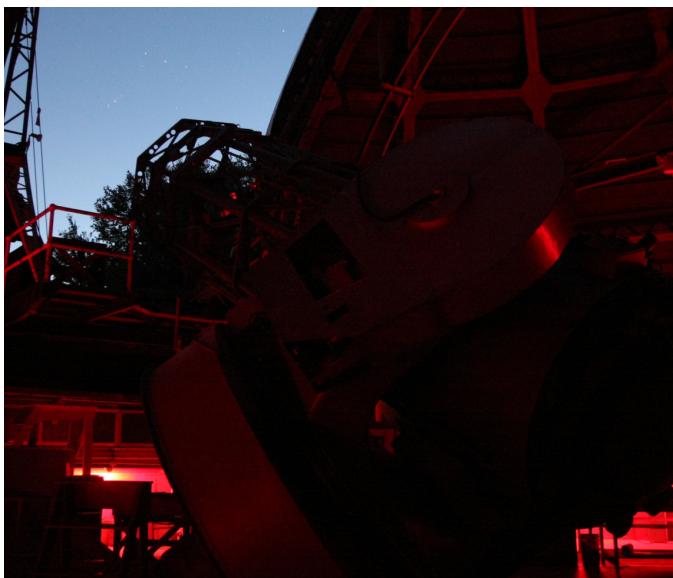
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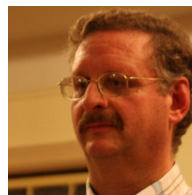
Skyscrapers 75th anniversary book: *75 Years of Skyscrapers* is now available for download!

theSkyscrapers.org/75book

Written by Skyscrapers historian Dave Huestis, and contributed to by 9 other members, the book was published in two editions in 2007 (100 first editions and 25 second editions) and chronicles three quarters of a century of The Skyscrapers.



Saturday, September 8, 7:30pm
at Seagrave Observatory



Steve Hubbard

Observing at Mount Wilson Observatory April 2012 trip also included visits to Palomar Observatory and Deep Space Network Goldstone Station.



Asteroids, Meteors, & the Dog Days

Jim Hendrickson

August begins with the heart of the Milky Way passing over due south just after darkness, and **Mars** is within 8° of **Saturn**. The two evening planets form an isosceles triangle with **Spica** that becomes nearly equilateral on the 8th of the Month. The three objects form a line on the 13th and 14th when Mars passes between them. Another nearly equilateral arrangement of the three objects is joined by the waxing crescent Moon on the 18th.

Venus and **Jupiter** continue to dominate the morning sky, with the Moon passing between them between the 11th and the 14th. This is around the same time of the peak of the Perseids meteor shower. Also making a favorable appearance in the morning sky during mid-month is **Mercury**, which

reaches greatest elongation (19° west) on the 16th.

Spot the first four asteroids during August

The first three minor planets to be discovered, 1 Ceres, 2 Pallas, and 3 Vesta can all be easily spotted in binoculars and small telescopes during August using our solar system's more well-known members to guide the way. Asteroid 4 Juno is also visible, but in a "remote" region of sky devoid of solar system bodies as well as bright stars.

The asteroid **Vesta**, currently being orbited by the Dawn mission, passes just 11" north of **Aldebaran** on August 5 & 6. Vesta shines at magnitude 7.6, making it an easy binocular object. Aldebaran is a magnitude 1.5 spectral type K5III (orange giant) star that shines 500 times as luminous as the Sun at a distance of 65 light years.

On the morning of the 12th, the peak of the **Perseids**, the waning crescent Moon will guide you to **Ceres**, the largest of the main belt asteroids, and Dawn's next destination on the 12th. Ceres is shining at magnitude 8.3.

You may want to try a third asteroid, **Pallas**, which lies within 4° of **Uranus** throughout the month. Uranus (magnitude 5.8) and Pallas (magnitude 8.9) are in an area of the sky devoid of relatively bright stars, posing a bit of a challenge to locate them. You'll have best results by first locating Uranus and familiarizing yourself with the starfield surrounding it. Uranus crosses the meridian at 4:30 at the beginning of the month and 2:30 at the end, so this is a late evening/early morning adventure. As Pallas loops around the field just to the east of



Uranus throughout the month, it will also brighten from magnitude 9.3 to 8.9. The waning gibbous Moon passes the pair on the 5th and 6th, which may make Pallas a bit more difficult to pick up in binoculars.

If you want to round out the list of the first 4 minor planets, challenge yourself by spotting 3 **Juno**, which was at opposition back on May 20 and still hovers near the border of Libra and Serpens and shines at about magnitude 10.7.

Sometime during mid-month, probably a few short days after the peak of the Perseids, you may notice that you can see a bright star low in the southeast in the morning dawn. If you notice how it lies in line with Orion's belt, you will recognize this as **Sirius**, the brightest star besides the sun in our sky. Sirius is also known as the Dog Star, due to its position in the constellation Canis Major, the big dog. When the Dog Star first becomes visible in our morning sky, this begins the dog days of August. Now that you know that Sirius can be seen in the warm month of August beyond the symphonies of the crickets (we most often see it during the cold months when it is visible early in the evening sky), wouldn't it be fun to challenge yourself to see how early in August you can spot it?

Neptune reaches opposition on August 24th, the same date in 1989 when it was visited by Voyager 2. That was also the date that I first observed the (then and now) most distant planet in our solar system. (In 1989, Pluto was still considered to be the ninth planet, but was actually slightly closer to the Sun than Neptune.)

Phases of the Moon

Full Moon

August 2 3:27

Last Quarter Moon

August 9 18:55

New Moon

August 17 15:54

First Quarter Moon

August 24 13:54

Full Moon

August 31 13:58



The Moon, Jupiter, and Aldebaran will help you find 2 of the largest asteroids on the morning of August 12.



August Moons

Francine Jackson

This month's Full Moon is very early, happening late the night of August 1st, one of our cross quarter days. The August Full Moon has often been called the Full **Sturgeon Moon** by tribes around the Great Lakes because these fish were at their most plentiful at this time of year. Also, a lot of people referred to it as the Red moon, because of the Full Moon's ruddy color as it rises through the hazy atmosphere of this hottest time of year. However, the red color could also refer to the embarrassment bestowed upon astronomer John Herschel beginning August 25, 1835.

Without the immediate news access we have today, the 19th century depended on local newspapers for their up-to-the-minute information. One of the penny newspapers in New York City, *The Sun*, learning that Herschel was at the Cape of Good Hope studying Halley's Comet, created a telescope that allowed Herschel to observe surface features on the Moon, such as rivers, trees, beaches. And, taking advantage of the lunar terrain were huge man-sized beavers, unicorns, and man-bats. According to "reporter" Dr. Andrew Grant, he had been

traveling with Herschel, and saw through this new telescope all that he had described firsthand. After six of these articles, the author declared that the telescope had been destroyed by the Sun, but in the meantime, the paper's circulation skyrocketed.

Herschel was unaware of this new research he was alleged to be doing, but, on learning that he had been the victim of such a hoax, was amused, until his work was disrupted by the public, who, believing this to have been true, constantly asked him to explain his work concerning the Moon.

Because our August full Moon occurs so early in the month, we have a second one literally a couple hours before the end, at 9:57 P.M. EDT the 31st. Traditionally this second one is called a **Blue Moon**, allegedly because of the bluish tinge it has, which I, and no one else I know, has ever noted. However, it does give us the adage of incidents happening "once in a Blue Moon," although the one afterwards is only about three years away. The next one will be in July, 2015, not a very long time to wait at all.



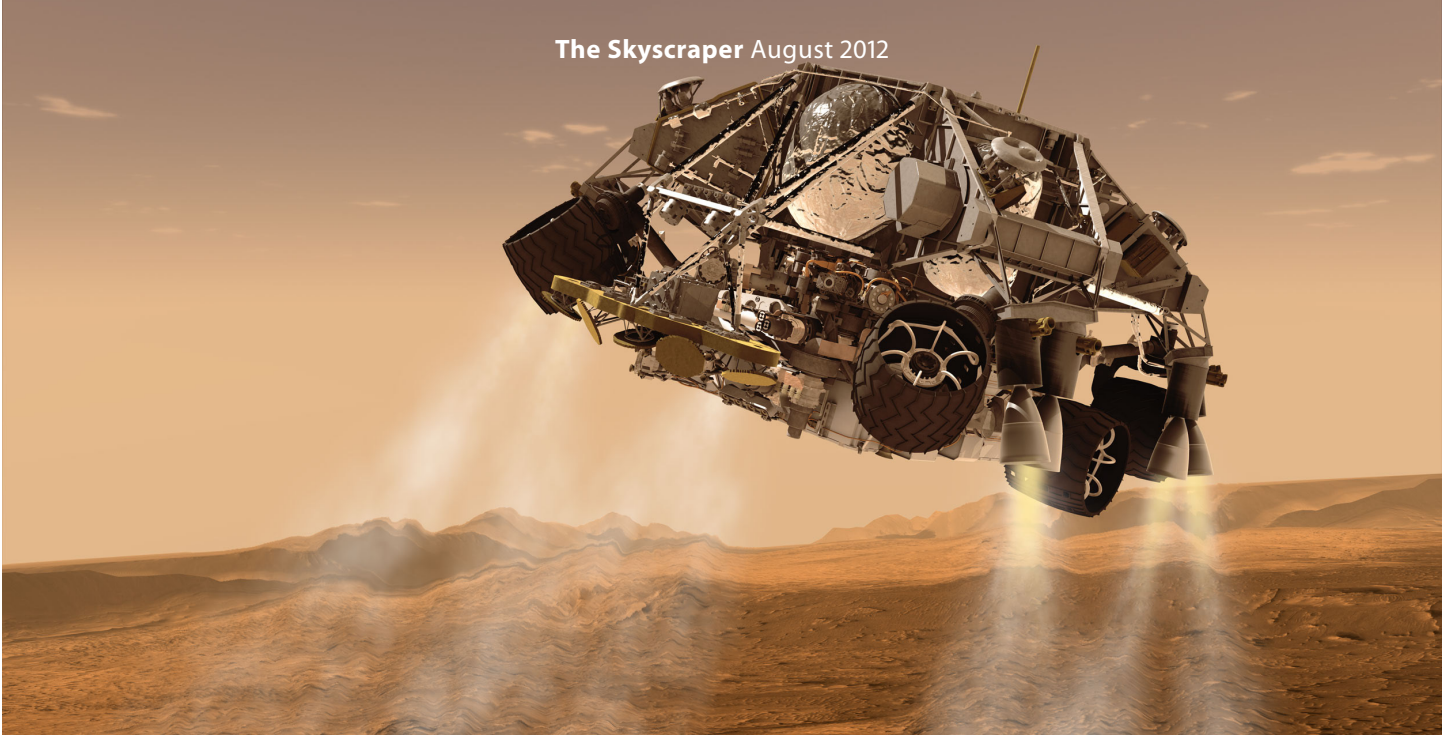
In the ongoing series **Backyard Observatories**

Tom Thibault and Gerry

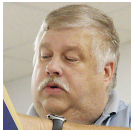
Dyck have shared their experiences in building and using their observatories.

Please share your backyard observatory story:

jim@distantgalaxy.com



NASA/JPL-Caltech



Curiosity to Explore Mars

Dave Huestis

The next generation of Mars exploration has already begun.

On November 26, 2011, an Atlas V rocket lifted NASA's Mars Science Laboratory from Cape Canaveral for just over an eight-month journey to Mars. Soon, on **August 6, at 1:31am EDT**, a new rover called Curiosity will land in Mars' Gale Crater to begin another era in exploration of this world.

Curiosity will follow in the "footsteps" of two other famous rovers, Spirit and Opportunity. While their missions were primarily geologic, Curiosity will be searching for evidence of life, both past and hopefully present. Either of these discoveries would most definitely change our perspective about our place in the universe. It would be an event of historic proportions should it come to fruition.

Curiosity is a 1,984 pound rover the size of a small SUV. It is 10 feet long, 8.8 feet wide, and stands 7.2 feet tall with its mast. Here's an image of the vehicle in a clean room being prepped for the mission: http://www.nasa.gov/mission_pages/msl/multimedia/pia15181.html. (Note the technician for scale.) Curiosity contains a variety of scientific instruments to help with its exploration as it "roves" the Martian terrain under the direction of controllers back here on Earth.

Though the initial mission is scheduled to last almost two years, Spirit and Oppor-

tunity survived for eight! So who knows what the future holds in store, especially if a major discovery is made early in the mission.

I'd also like to note that Jim Bell, the lead scientist for Curiosity's cameras, is a former



member of Skyscrapers, Inc., The Amateur Astronomical Society of Rhode Island. Bell was also responsible for the cameras aboard Spirit and Opportunity.

We will all be anxiously awaiting news of Curiosity's successful landing in Gale Crater as it begins a new chapter in the exploration of Mars and the search for evidence of life on the planet.

Some websites that provide a wealth of information about this very important mission:

Mars Science Laboratory Curiosity home page

www.nasa.gov/mission_pages/msl

MSL Curiosity launch video

www.nasa.gov/multimedia/videogallery/index.html?collection_id=77461&media_id=122049781

"7 Minutes of Terror" video simulation of MSL Curiosity entry, descent, and landing on August 6.

youtu.be/Ki_Af_o9Q9s

This awesome (yeah, I did use the word) **animation** shows the mission from leaving Earth orbit to the landing on Mars and conducting some experiments:

youtu.be/P4boyXQuUlw

Explore Your Curiosity allows you to explore 3D models of the rover and its landing site Gale Crater. Also try to land your own Mars rover with a free game on Xbox Kinect.

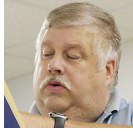
mars.jpl.nasa.gov/msl/participate

Watch MSL Curiosity landing live during the early morning hours of August 6, Curiosity's landing will be broadcast on one of JPL's Ustream channels and on NASA TV.

www.ustream.tv/nasajpl

www.ustream.tv/nasajpl2

www.nasa.gov/ntv



Perseid Meteor Shower Peaks in August

Dave Huestis

The upcoming Perseid meteor shower of August is the most widely observed meteor shower of the year. This ranking is because families are spending more time outdoors during the summer season, enjoying cook-outs, camping, or any other assortment of late evening activities.

Years ago I remember seeing many meteors one summer while watching a screen at a drive-in theater. While not the most productive meteor shower of the year (the December Geminids hold that title), the Perseids are a fairly consistent display of shooting stars.

Unfortunately last year the Full Moon ruined our viewing of the Perseids. However, for 2012 we will be much more fortunate. The peak of activity occurs on the night of August 11-12. That date puts the best part of the display on Saturday night through dawn's early light on Sunday morning, with

the majority of shooting stars seen after midnight. Though a waning crescent Moon will rise around 1:00 am in the same general direction of the Perseids radiant point (area of sky from where the meteors appear to radiate), it should only slightly diminish the number of meteors to be seen.

Perseus is well up in the northeast sky after midnight. If you can see a pattern of stars that looks like a sideways "M" or "W" (that's Cassiopeia), Perseus is below it so you're looking in the correct direction.

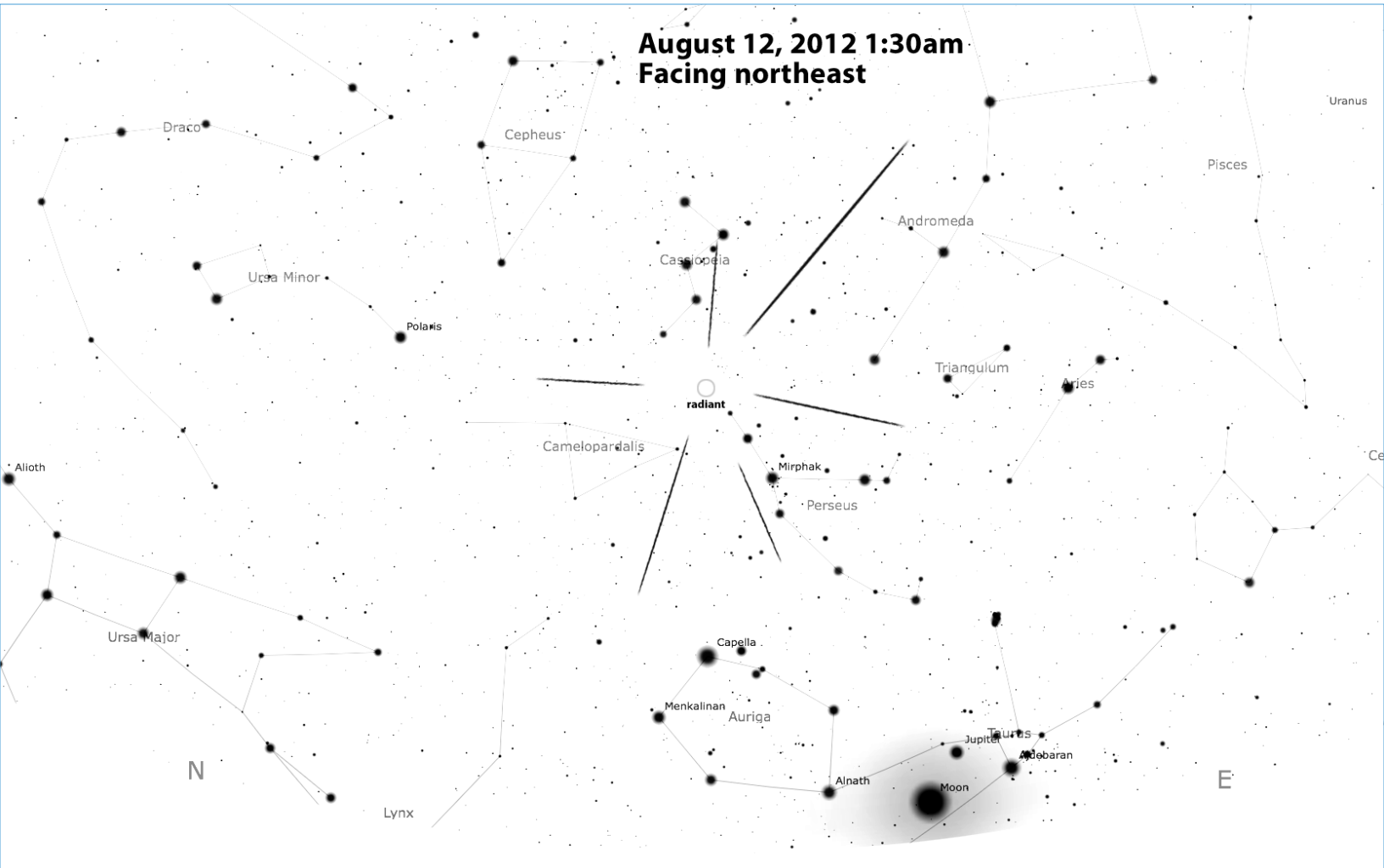
We can only hope that the weather will cooperate and provide us with a shower of meteors and not one of rain.

The Perseids occur at the same time each year when the Earth intercepts a stream of particles that was liberated from the surface of Comet 109P/Swift-Tuttle and left in orbit around the Sun. Most of the meteors an observer sees are no larger than a thumb-

nail. They become visible as they plunge into our atmosphere at 134,222 miles per hour and disintegrate as they blaze across the heavens.

Also, the Perseids are usually green, red or orange in color, and some members of this shower are bright and often produce exploding fireballs. From a dark sky location one should be able to count possibly a little less than 60 meteors per hour due to the proximity of the Moon.

While you will be able to count some meteors before midnight, the number of meteors will dramatically increase after the midnight hour. Once that pesky Moon rises above your horizon and tree-line, it would be best to try to block it from view in some manner. Then observe in a direction some distance away from the radiant and the Moon. While other minor meteor showers occur at the same time, and of course there



are sporadic meteors or other random space junk entering the atmosphere all the time, you know you've seen a Perseid if you can track its streaking trail back to the radiant.

If the weather does not cooperate or you are unable to observe on peak night, try your luck on the nights before and after. You won't see 60 meteors per hour, but you may catch a couple of dozen or so. The best time to observe will still be between midnight and dawn.

If you happen to stay out and observe until early in the morning I want you to take note of a couple of other interesting



Our hearts go out to the first woman, and the then-youngest NASA astronaut, **Sally Ride**, who died July 23 at age 61. As a crew member on the STS-7 in 1983, she broke the "glass ceiling" for young girls everywhere. A lifelong advocate for science education, she also flew once more on STS-41-G, finally retiring from NASA in 1987.

Francine Jackson



STS-7
June 18-24, 1983
Challenger



STS-41G
October 5-13, 1984
Challenger

www.SallyRideScience.com

astronomical sights.

Even before you finally see the Moon rise above your tree-line you will also notice a bright star-like object. That will be Jupiter. In addition, a little later you will see an even brighter object rise below the Moon. That will be brilliant Venus. And although it will still be late summer, the eastern sky will be full of winter constellations and asterisms, like Taurus, the Pleiades, the Hyades, along with mighty Orion. After most likely swatting mosquitoes all night you might wish that it was winter already!

Round off your observing session with a look to the west to see the band of starlight that stretches towards the western horizon. It's our home galaxy, the Milky Way. And finally look towards the north to see Ursa Major (the Big Bear/Dipper) as it skims the horizon.

Then retire for the morning and get some well deserved sleep, knowing that you were one of perhaps thousands of stargazers who observed one of Mother Nature's beautiful displays.

While you don't require a telescope to observe a meteor shower, the local observatories do provide some great instruments with which to explore other wonders of the universe. Saturn will continue to be the primary focus for the visitors to these facilities. Please check the websites for further

Round off your observing session with a look to the west to see the band of starlight that stretches towards the western horizon. It's our home galaxy, the Milky Way.

details.

Seagrave Memorial Observatory (<http://www.theskyscrapers.org>) in North Scituate is open for public viewing every clear Saturday night. Our summer hours are from 9:00 – 11:00 pm, weather permitting.

Ladd Observatory (<http://www.brown.edu/Departments/Physics/Ladd/>) in Providence continues to be closed for maintenance.

The darkest skies in Rhode Island are available to stargazers every clear Friday night at Frosty Drew Observatory (<http://www.frostydrew.org/>) in Charlestown.

Good luck and keep your eyes to the skies.



Nova Sagittarii 2012 No. 4

Discovery date: 7/7/2012 @ magnitude 7.7 / Last known mag. 9.0
Photo by Bill Guca on 7/12-13; Sony DSC F-707, afocal through 40mm EP, 152mm Antares refractor, 30s, ISO400; Magnification: 25x



Lunar X by Steve Hubbard
July 25; 15 second AVI with 6" F8 refractor. Run thru
Registax, then Gimp and NeatImage.



For Sale

I am selling off some equipment as I have just purchased a new Celestron 800 CPC EQ and need to make room. I have attached two photos of the equipment



Orion SkyView Newtonian 8" f/4.9 on SkyView EQ mount with 6x30 finder, clock drive with paddle — \$500



Meade LXDS5 EMC 5" f/9.3 achromat refractor tube assembly with 8x50 finder and tube rings — \$250

Both telescopes will fit on the same mount and I will sell the two together as a **package deal for \$700** or separately at the prices listed. This combination offers two excellent choices for planetary and lunar observing and deep sky observing. Both are in excellent condition. Prices are firm and interested parties can call me at 401-954-3829 or email me at hstrclrsch@aol.com

RICK LYNCH

July 28: Hi Guys, I finally was able to make some adjustments to my solar scope focuser by cutting it down that allow me to do imaging. It took a hacksaw and a drill, but as you can see, everything works fine for imaging and fortunately visual is fine too.

There were a few huge upright prominences with lots of detail.

These are all 5 second AVIs since I don't have a drive with the solar scope and then run thru registax. Very hard to get the surface and the prominences in the same view due to the contrast/ brightness difference.

Steve Hubbard

ATM UPDATES



First Assembly of my 6" f/5 July 20
Glenn Jackson



Made good progress on the DEC Housing this week!

May 19

Al Hall



See the drive in action:

You <http://youtu.be/b8Er65fzFe0>

Tube <http://youtu.be/NtXL-Gp5RUE>

JULY REPORTS



Secretary

Tom Thibault

Board of Directors Meeting Minutes – 6/25/12

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

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

Items discussed:

The following discussions occurred:

Ed Haskell, President: Discussed and Approved notifying Gene Allen of Skyscrapers approval to allow the Riding School access to his property via Seagrave with stipulation that the stable has liability insurance and cleans up any donations by the horses.

Ed noted the tremendous efforts and outstanding results of Jim Hendrickson's work and release of the updated Skyscrapers Web Site, great job Jim.

2nd Vice President, Kathy Siok: Working to finalize AstroAssembly Program; To provide Jim Hendrickson material for program flyer; Fee structure; Early contact of previous attendees; Astro Photo and Bake-off Contests

Secretary (Facilities Committee), Tom Thibault: Porta John Rental arranged for 5 months; Lawn Mower purchased; Lawn Mower shelter completed; Remote access of 16" Meade was discussed, Phase 1 connection to meeting hall to be pursued; Measurements taken for improving current property barrier.

Historian (Membership Committee), Dave Huestis: Will present and request membership to fill out the Skills Survey at the July Members Meeting.

Treasurer, Lloyd Merrill: To review our current insurance rate and investigate competitive pricing; A friendly reminder will be emailed to all members that are past due on this year's membership payment.

Meeting adjourned at 9:45PM

Submitted by Tom Thibault - Secretary



Skyscrapers July Meeting Minutes – 7/7/12

The July Meeting began at 5:30 with a Pot Luck meal. The 2nd in the summer series of pot luck dinner membership meetings was well attended.

President Ed Haskell called the Skyscrapers July Meeting to Order at 7:30PM.

Ed outlined the meeting format and noted the following items to the membership:

Membership Dues are past due and submittals allow Skyscrapers to continue operating our society in the manner that we are accustomed too.

Our August Meeting will be held on August 4th at Seagrave.

The membership will be notified of the status of the Sept. and Oct. Meetings. Discussions will occur to determine that status due to the upcoming AstroAssembly.

Ed then turned the floor over to 2st VP Kathy Siok.

2st VP Kathy Siok

AstroAssembly is being held the week-end of Sept. 29th.

Members can purchase tickets until Sept. 1st at the discounted rate of \$17.00.

Volunteers are needed for a number of activities; please approach Kathy if you can assist.

This year theme is "Citizen Science".

Our speaker for the evening was long time friend **Prof. Peter Schultz**. Prof. Peter Schultz was introduced by the Siok duo. Kathy and Steve noted the many years of

Peter's work in the planetary sciences and his close relationship with our organization. Peter's presentation "My Moon" was a marvelous look at our closest neighbor and its geology. Peter noted what a wonderful subject the moon is to view and that its wonders are within grasp of anyone with the most modest of equipment.

Upon completion of Prof. Peter Schultz's presentation, President Ed Haskell noted Peter would be available to address question from our membership. Ed then turned the floor over to Dave Huestis. Dave addressed and requested the membership to participate in the efforts to ascertain the possible skill sets possessed by our members. Dave had prepared a survey sheet for this purpose and requested all present to participate in completing the survey. Dave noted this information would be kept confidential and would be utilized by the Board of Directors when determining possible resources for future Skyscrapers activities.

Ed Haskell closed the formal meeting at 9:15PM and indicated that **our telescopes were open** for the viewing pleasure of the membership.

Submitted by Tom Thibault - Secretary



Treasurer

Lloyd Merrill

YTD Budget 4/1/2012 - 7/16/2012	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	\$292.05	-\$7.95
Dues	\$3,310.00	\$1,800.00	-\$1,510.00
Interest Inc	\$60.00	\$12.04	-\$47.96
Starparty Donations	\$200.00	\$230.00	\$30.00
TOTAL INCOME	\$7,820.00	\$2,334.09	-\$5,485.91
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	\$39.15	-\$135.85
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	\$198.00	-\$2.00
Refreshment Expense	-\$350.00	\$129.00	-\$221.00
Trustee Exp	-\$700.00	\$772.12	\$72.12
TOTAL EXPENSES	-\$7,820.00	\$1,268.52	-\$6,551.48
Net Cash Flow		\$1,065.57	
Cash Assets			
Citizens	8,890.63		
Capital One	\$12,265.07		
Total	\$21,155.70		



M22: Globular Cluster in Sagittarius

Glenn Chaple

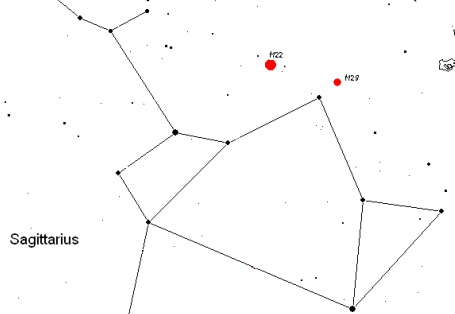
What's the most spectacular globular cluster in the northern sky? Most backyard astronomers would pick the Great Cluster M13 in Hercules. If you wish to view the finest globular cluster visible from the entire New England sky, however, you'll have to travel south of the celestial equator to the constellation Sagittarius and its showpiece globular cluster M22.

M22 outclasses M13 in a number of categories. It's brighter (magnitude 5.1, versus 5.6), larger (24' to 16'), and more readily resolved. I viewed both with a 4-inch f/4 RFT (Edmund Scientific's Astoscan) at 75X, and M22 showed more of a sprinkling of stars. I also noted that it seems somewhat elongated.

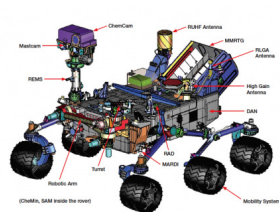
Truth be told, M22 has an unfair ad-

vantage over M13. At a distance of 10,000 light-years, it's over two times nearer to the earth than M13. In reality, M13 is a giant whose 140 light-year diameter and population of some one million stars are twice those of M22.

The reason M22 is overlooked in favor of M13 is its far-south location (-24°



Announcement



Are you curious?

Check out this link before the next meeting to find out more... (members only)

www.theSkyscrapers.org/marscuriosity

DAVE HUESTIS

declination) and its presence in a cluttered region of the Sagittarius Milky Way. Nevertheless, M22 is relatively easy to find. In binoculars or finderscopes, look for a fuzzy ball 2 1/2° NE of lambda (λ) Sagittarii (the top star in the lid of the Sagittarius "Tea Pot"). If you're in a dark-sky region, you might even be able to spot it with the unaided eye. The accompanying finder chart shows the location of M22, as well as the position of the neighboring globular cluster M28 (mag 6.9, size 11').

An interesting story surrounds the circumstances of M22's discovery. Most sources attribute the discovery to the little-known German astronomer Abraham Ihle in 1665. In his classic 1844 guide *Cycle of Celestial Objects*, Admiral William Henry Smyth opines that the spelling of the last name may have been in error and the true discoverer was likely the English astronomer Abraham Hill. It's possible that the German-Polish astronomer Johannes Hevelius saw M22 even earlier.

Be sure to put M22 on your must-see list this month, especially if your summer plans include a visit to the Stellafane Convention in Springfield, Vermont. It should be an astonishing sight in those clear Green Mountain skies, particularly through one of those large-aperture Dobs that appear on Breezy Hill during Stellafane weekend.



My Favorite Double Star

Mike Simonsen, AAVSO Writer's Bureau

If you have spent any time looking through binoculars or telescopes you have undoubtedly come across a double star or two. Someone probably showed you Alberio (beta Cygni) at a star party or tried to impress you with a view of epsilon Lyrae, the famous Double Double in Lyra. One of my favorites is Rigel, the lower foot of Orion. Not many observers know Rigel is actually a double star. It has a 6.8 magnitude companion, Rigel B, 9 arc seconds away. This would be an easy double to separate in most small telescopes, but Rigel is the seventh brightest star in the sky. As such, it is some 400 times brighter than its companion, so Rigel B gets lost in the glare of its primary. Once you know where to look it's easy to find.

Double stars are interesting to people for a number of reasons. Some like the challenge of splitting close pairs with the smallest instrument possible. Others like to measure the characteristics, such as separation, position angle and magnitudes. But what really delights most people is a pair that exhibits a striking color combination. Some of the more popular pairs include Alberio (gold/sapphire), gamma Andromedae (gold/blue), xi Bootis (yellow/red) and alpha Herculis (red/green). I don't want to

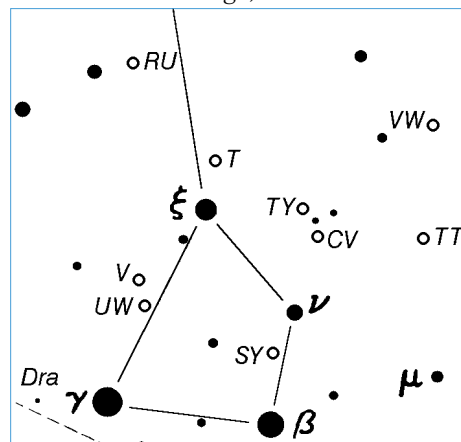
get into a debate about the perceived colors of these pairs. Your mileage may vary.

My favorite double has them all beat. It is a very colorful pair, with a blue-white primary and a deep red secondary. But the best part is this. It looks different every time you look at it, because the deep red secondary is a variable star! That's right, my favorite double star is also a variable.

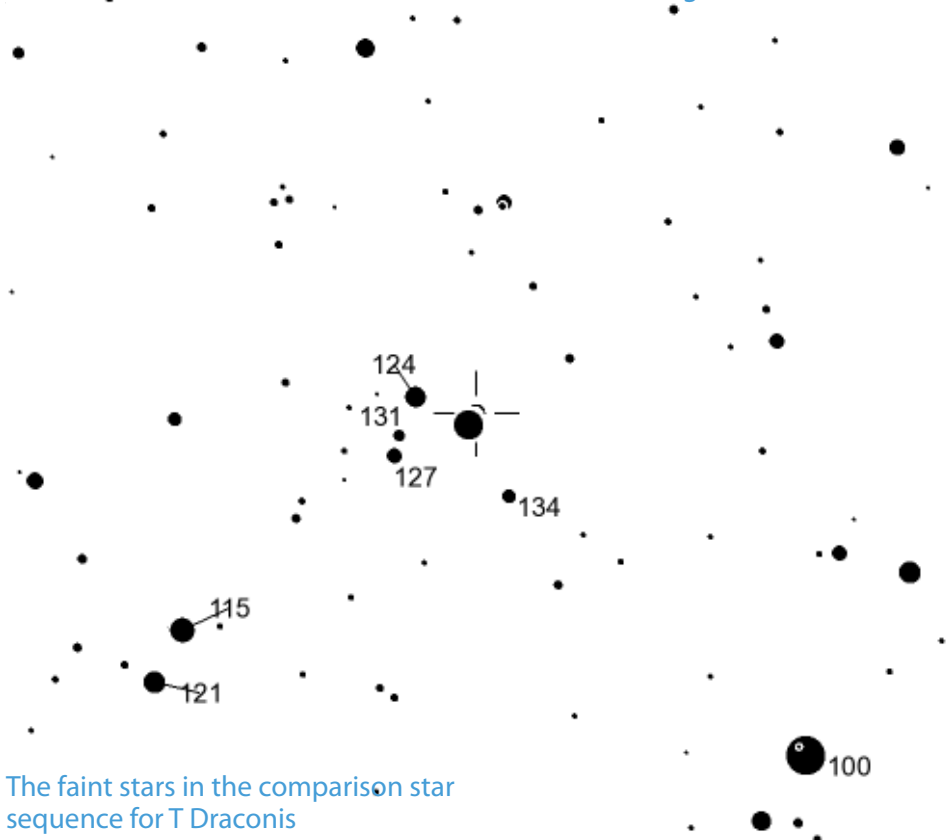
You knew that was coming, right?

Okay, okay, I'll end the suspense. My favorite double is the Mira variable T Draconis.

As variable stars go, it couldn't be much



T Draconis resides just north of the head of the dragon.

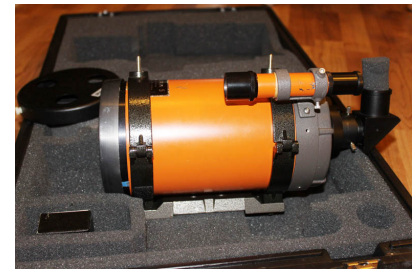


The faint stars in the comparison star sequence for T Draconis

better. It's easy to find, located just north of epsilon Dra in the head of the dragon. It varies quite a lot, from 6.7 to 13.2V, and has an excellent sequence. Several of the comparisons from 11th down to 13th magnitude are located very close in to the pair, making it very easy to estimate when its fainter than the blue companion. The next time you find double stars on your observing program for the night, try out T Draconis. Take the time to make an estimate of its brightness and submit it to the AAVSO. Who knows, you just might get hooked. And there are plenty of other interesting double variable stars- TU Aql, T CMi, ST Aur, Z Tau, R Cyg...

This content distributed by the AAVSO Writer's Bureau.

For Sale



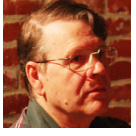
Vintage C5 for sale. It comes with a: diagonal, finderscope, Antares 0.5x focal reducer, Thousand Oaks solar filter, hard carrying case, no eyepieces or mount - \$275



10" f/6 dobsonian for sale: full thickness pyrex mirror, JMI 2" eyepiece holder, Tel-Rad finder, lightweight design, laser collimator - \$500

Call me at 828-0702 (evenings)

CONRAD CARDANO



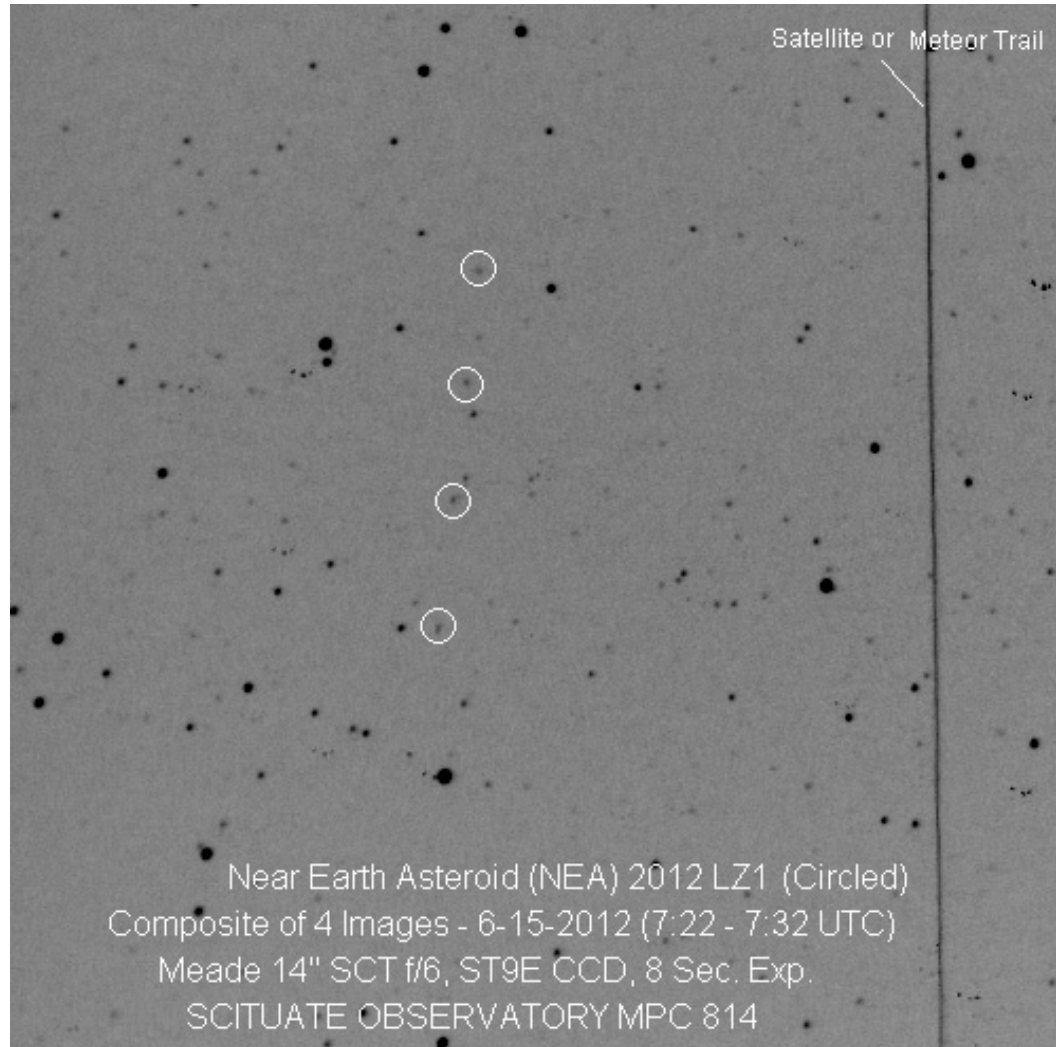
2012 LZ1: Tracking A Fast Moving Near Earth Asteroid Across the Sky

Bob Napier

A good write up of this relatively large Near Earth Asteroid (NEA) encounter can be found at this URL: <http://www.space.com/16263-asteroid-2012lz1-size-earth-flyby.html>

An object of this nature, passing so close to the earth, moves across the sky relatively quickly. In this composite of 4 images taken approximately 2 to 3 minutes apart, the asteroid travelled about half the field of view of my CCD on the Meade 14" SCT operating at f/6, or about 8 arc-minutes. In order to place the telescope on the correct coordinates at the correct time requires a good prediction of where 2012 LZ1 will be at a specific time (These images were taken on the morning of June 15, 2012 from Scituate Observatory).

NASA's portal for NEOs (Near Earth Objects - includes comets and asteroids) is a good resource for this purpose. You must create the portal's information for the specific telescope's topographic location on the surface of the earth, usually your observing site. This is necessary because of the rapid motion of the object across the sky and nearness to earth and parallax must be taken into account in order to get the corrected RA and DEC coordinates to track the object with your telescope. My NASA Horizons web portal was used to generate an ephemeris of the NEA's position for the date at 15 minute intervals. Using this data and interpolating the position between time intervals, Remotely, via an Internet web browser connection, I entered the coordinates into the software server interface that controls the positioning of the telescope and taking the images with the CCD camera. Later, during the day, I can use other software to reduce multiple CCD image data to astrometric positions that can subsequently be used to compute and refine the orbital elements for the NEA.



Explore more on Near Earth Objects

The **Minor Planet Center** in Cambridge, MA announces newly discovered NEOs and collects astrometric data for all known and newly discovered asteroids and comets.

www.minorplanetcenter.org/iau/MPEph/MPEph.html

Use the **JPL Horizons** web portal to plot ephemeris for observations:

ssd.jpl.nasa.gov/horizons.cgi

Here is the NASA **Near Earth Object Program** web page that shows quite a few NEOs that are known:

neo.jpl.nasa.gov/ca/

Of course, ones that are NOT known are the really interesting ones. The **Minor Planet Center NEO confirmation page** will give info on latest discovered that need follow up imaging and astrometry to see just how close they will come to earth. The response time for these objects is often just a matter of days or they may be gone before sufficient data is collected to derive a reliable orbit.

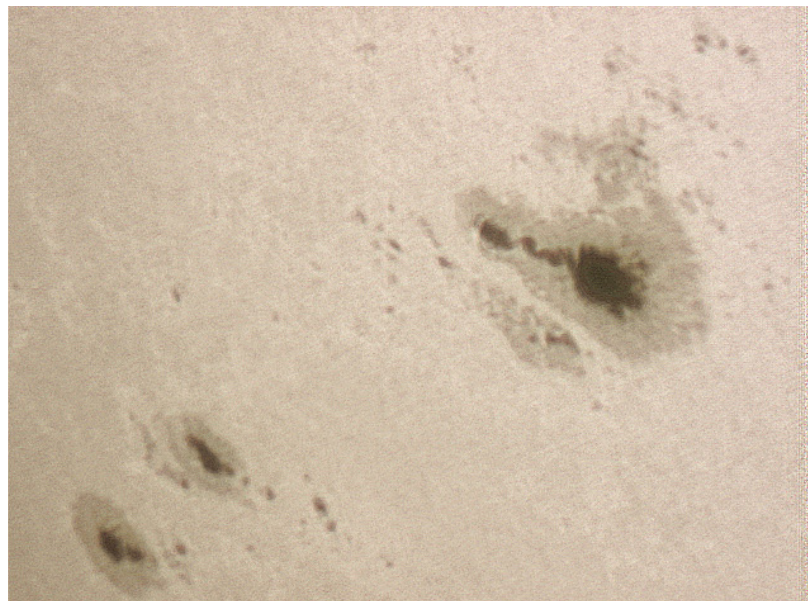
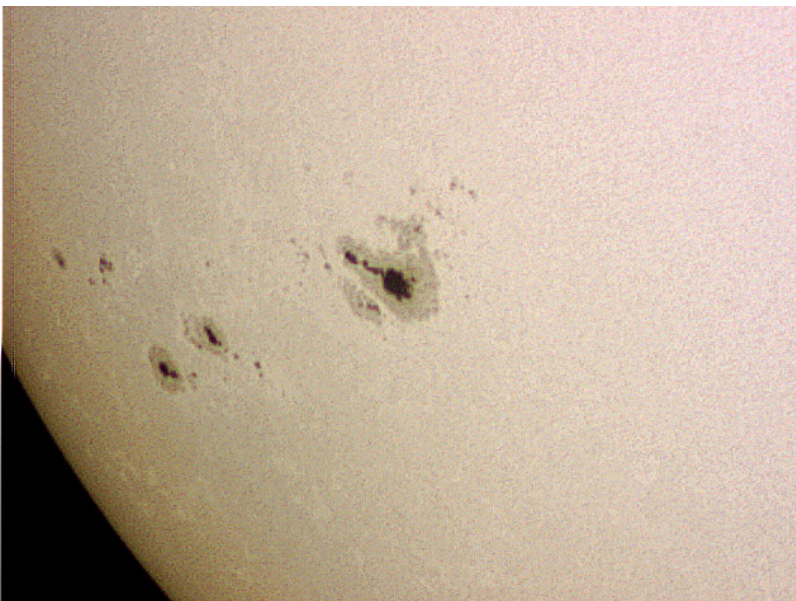
<http://www.minorplanetcenter.net/iau/NEO/ToConfirm.html>



Jupiter, Venus and the Moon
before dawn July 15. **Aldebaran** is
dimly seen to the right of Venus.

On July 15, Steve Hubbard imaged the
four brightest celestial objects.

A real enormous spot group early this am before the clouds
rolled in; 6" f/8 refractor and an Imaging Source camera; 15
sec. AVI's run through Registax and another program after.





Skyscrapers, Inc. Presents

AstroAssembly 2012

Friday & Saturday, September 28 & 29 Citizen Science & Astronomy

7:30pm Friday Evening Informal Talks at Seagrave Memorial Observatory

9:00am Saturday Program at Seagrave Memorial Observatory

All day: H-alpha solar observing, raffle, vendor, swap table,
Astrophotography Contest & Astro Bake-Off

11:00am **Ed Turco** Skyscrapers, Inc.

Amateur Astronomy Equipment in 1961 - Early Citizen Science in Astronomy

1:00pm **Gerry Dyck** Skyscrapers, Inc.

The Variable Star Observations of Frank E. Seagrave

1:15pm **Dr. Carie Cardamone** Brown University

An Introduction to Citizen Science

Dr. Cardamone is actively involved in Citizen Science as a member of the Galaxy Zoo science team (www.galaxyzoo.org).

2:30pm **Dr. Meg Schwamb** Yale Center for Astronomy and Astrophysics

Searching for Exoplanets with 340,000 Eyes

Dr. Schwamb is a project scientist for Planet Hunters a citizen science project searching for the signatures of extrasolar planets in the public data obtained from NASA's Kepler mission. Using the results from Planet Hunters classifications she studies planet formation and evolution.

3:45pm **Dr. Carie Cardamone** Brown University

The Green Pea Galaxy Project

5:30pm Reception at North Scituate Community Center

6:15pm Buffet Dinner (pre-registration required)

7:30pm Introductions, Raffle, Prizes

8:15pm **Dr. Bethany Cobb Kung** George Washington University

Dr. Kung is involved with time-domain astronomy, primarily studying gamma-ray bursts and also cataclysmic variables and will highlight this research and the involvement of AAVSO observations in this work.

Name	x Registrations at \$17 each Members only, \$20 for non-members & after September 1	Total \$
Address	x Children under 12 - FREE x Banquet tickets at \$20 each Banquet tickets must be pre-ordered. No tickets will be sold the day of the event.	Total \$
Email	x Banquet tickets for children under 12 at \$10.00 each	Total \$
		Total \$

Send completed form and check (made payable to Skyscrapers Inc.) to:

Linda Bergemann
41 Ross Hill Road
Charlestown, RI 02813-2605

lbergemann@aol.com

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.
- or • 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