



the Skyscraper

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September
2011

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

September Meeting with Alan Sliski

Friday, September 9, 7:30pm
Seagrave Memorial Observatory

Alan Sliski has been interested in mechanics and electronics from a young age. He built his first tube amplifier in 6th grade. Astronomy has always been a passion as well, traveling to Prince Edward Island in 1972 and Kenya in 1973 to photograph solar eclipses. Alan received a BS in Physics from the University of Massachusetts at Amherst in 1978. He has 28 patents issued, and for the last 20 years has designed medical equipment for treating cancer with radiation. More recently, he has been getting more involved with astronomy at home, with 2 sons interested in astronomy. He has a reasonable collection of modern telescopes from 80mm to a C14. He is also a member

of the Antique Telescope Society and also hosts informal meetings of local antique telescope collectors. He has several classic telescopes, in whole or in parts. The most recent project involves the restoration of a 9.5 inch Warner and Swasey mount built in 1916. He maintains a complete machine shop and lab at his home for projects such as this.

Alan will talk about the men, Worcester Warner and Ambrose Swasey, their training

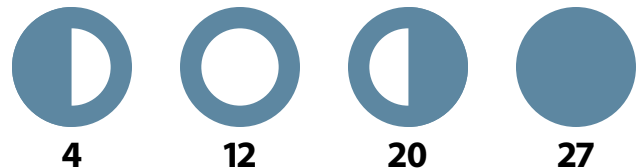
and the early history of their company. He will show some of their astronomy related works, then get into the history of the telescope he's presently restoring. Alan will also explain their revolutionary design of the controls for the equatorial mount. Alan's talk will include pictures of the restoration in various stages of progress, and finally the design of a new lens and cell for the telescope.



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Phases of the Moon



Other notable events: Mercury is at greatest western elongation (18°) on the 2nd. Ceres is at opposition on the 16th. Autumnal equinox is on the 23rd. Uranus is at opposition on the 25th.

Seagrave Memorial Observatory
is open to the public

weather permitting

Saturdays: 8:00-10:00 pm

President's Message

Tom Thibault

Dear Skyscrapers Members,

September is upon us and hopefully all have been enjoying the warm summer. Well I'm sure everyone was pleased to see our weather this summer had improved from the constant snow, rain, and cloud cover we had to endure this past winter and spring. Our summer turned out pretty well with a good number of hot days and clear skies.

Skyscrapers have had busy summer as well. Our July Cookout was a great success and we couldn't have had a finer day. On July 30th, we joined Professor Donald Lubowich of Hofstra University in sharing the wonders of the universe with hundreds of people at the Newport Folk Festival. Prof. Lubowich has been displaying his Music and Astronomy Program music festivals for a number of years throughout the country. Prof. Lubowich contacted Skyscrapers earlier this year requesting our assistance. Skyscrapers members Bob Forgiel, Bob Horton and wife Betty, Dave Huestis, Jim Crawford, Gerry Dyck, and our youngest member Alex Bergemann answered the call. What a fantastic day we had, we had a number of scopes set up for solar viewing. The cloud free skies and the abundance of solar activity provided hundreds of people with magnificent views of sunspots and solar prominences. I'm sure the number of members participating would have been greater if not for the fact Stellafane was also occurring that weekend.

As has been the tradition for many years, Skyscrapers had a contingent of members attending Stellafane this year. In fact, the Hartness House workshop was organized by our very own John Briggs and Dan Lorraine. My hope is that our Newsletter will include an article of both events in the very near future.

Our August meeting featured a presentation by yours truly on the "Merits of Maintaining an Observing Log" followed, by Craig Cortis with an example of his log of objects viewed during his last trip to Florida. Gerry Dyck also shared with us a number of volumes of his personal log books. I would urge all to consider maintaining their own logs. What a wonderful way to record your experiences and look back on them in the future.

Our business meeting followed and I was able to announce on behalf of 1st VP John Briggs, that our September speaker will be Alan Sliski. Our 2nd VP Kathy Siok updated the group on our fast approaching AstroAssembly. I would urge all members to attend, registration forms are on our web site at the following link, <http://www.theskyscrapers.org/astroassembly/> and will be available at our meetings. Kathy is putting the final touches on the event and is searching for volunteers to assist with a number of items. A sign-up sheet will be available at our September Meeting, but feel free to contact Kathy if you would like to help out this year. She has also received a number of donation items for the raffle, if anyone would like to donate an item for the raffle, let Kathy know, it would be greatly appreciated.

Steve Siok, on behalf of our Trustees, proposed a program, or let's say a challenge, to our entire membership. It would be the Uranus-Neptune Challenge, Steve would like for all our members to visit Seagrave on a Public Night over the next few months and view these planets though one of our scopes. We will have a log available and challenge the entire membership to come up and add their names and comments to the log.

Linda Bergemann announced the results of our Special Election for Trustee with John Leonelli being elected to the open position. First let me thank Tom Barbish for his years of service as a Skyscrapers Trustee from the entire membership. Secondly, let me congratulate John Leonelli and welcome him to his position as Trustee. We ended the evening with Dave Huestis our historian sharing some newly discovered photo's of Frank E. Seagrave, as well as some of Frank's original observation logs. Great stuff Dave.

My final note is a reminder to all: 2011/2012 membership dues were payable beginning in April. If you haven't remitted your dues please do so at your earliest convenience to continue your support of Skyscrapers. Dues can be mailed to Skyscrapers Inc., 47 Peeptoad Road, North Scituate, RI. 02857, Attn: Jim Crawford, or feel free to see Jim personally during any of our functions he is in attendance.

Clear Skies

Tom Thibault, President



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 **September 23** 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.



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The Constellations in September

Francine Jackson

At this time of year, even though the season of summer ends this month and fall begins, the sky takes a little longer to shift to its next season. The Summer Triangle is still in a beautiful observing position, not really giving the fall constellations a chance to come to full view. So, while we're waiting, it might be good to turn back to the north and see what is happening there.

The most visible shape, the Big Dipper, is slowly moving toward the northern horizon, which places the legs of the Big Bear, the constellation containing the Dipper, below ground. For the American Indians, this was a rather useful placement, because it explained a change that occurred on Earth. In their myth, the three stars of the Big Dipper's handle were braves who were hunting the bear. When he was in this position, the Indian with the bow shot the bear, wounding him seriously, but not

mortally; however, he lost a lot of blood, which, because of where he is, could only flow downward onto the Earth, coating the leaves on the trees. A perfect answer to why the leaves change color at this time of year.

Just above the Big Dipper lies the tail of one of the easier constellations to picture: Draco, the Dragon. Often thought to be one of Hercules's labors, wherein he had to slay the dragon to retrieve golden apples of Hesperides which it was guarding, Draco also is the guardian of the golden fleece, which Jason must kill in order to procure that. In early Christian cultures, it represented the serpent that tempted Adam and Eve, causing them to be ejected from the Garden of Eden. Although its stars aren't very bright, its shape, a backwards "S" beginning above the Big Dipper and following the curve of the Little Dipper, then backtracking on itself, ending at a crooked rectangle often called the asterism the Lozenge, isn't very difficult to find.

Following the end of the pan of the Big Dipper to Cassiopeia, you might notice that the "M" or "W" shape you normally see is now sideways. Actually, this represents the chair that Cassiopeia is sitting on. At this time of year, the chair is upside-down, the sign that the Queen, who was placed in the sky for her vanity, must sit with her head

downward in humility. If you now look at her top two stars, draw a line through them and follow that line to the left, or west, you'll find yourself in the middle of a very dim square. Below the square is another dim star that, when you connect them all together, will look a lot like a clown hat or a house. That's Cassiopeia's husband, Cepheus, placed there to keep her company as she moves around the north pole in the sky.

The last of our traditional northern constellations, in the group deemed circumpolar which, for us, means they are always present in our sky, is Camelopardalis. This is one of the rather newer star patterns, apparently being unknown before the 17th century. Its name is a shortened form for camel and leopard, although it is usually called the Giraffe, but to spot an actual shape here, you need a good imagination.

Although not circumpolar, Lacerta the Lizard is often included with the northern set of constellations because his head lies very close to both Cassiopeia and her husband Cepheus. In early times it was thought to represent the rock that their daughter Andromeda was chained to in waiting for her fate. Now it's usually thought to be just a tiny little lizard that also requires you to use your imagination to find.

Reason for the Season: The Autumnal Equinox

Dave Huestis

September—finally! The end of a brutally hot and humid summer. Well, not exactly. Meteorology-wise, the summer months include June through August. Astronomy-wise, this year summer began at 1:16 p.m. on June 21st (summer solstice) and doesn't end until fall begins at 5:05 a.m. on September 23 (autumnal equinox).

Here in Southern New England, September usually brings us cooler and less humid days, and local amateur astronomers look forward to observing earlier and earlier in the evening. Hazy skies are replaced with transparent ones, which improve the view of the heavens dramatically.

While most everyone links the weather with the seasonal changes, I'm sure many more individuals don't know the astronomical reason for those changes. Let's start with

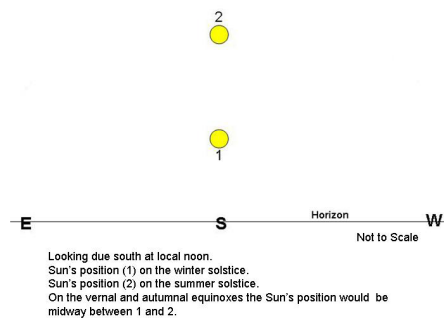
summer and cycle through the seasons one by one.

Have you ever noticed how high the Sun arcs across the sky during the summer, or how low it arcs during the winter? It's an astronomical cycle that only requires one's eyes to observe, plus a little bit of time. I'm sure you've noticed the Sun rising/setting

at various locations along your horizon during the year. One month it may be rising or setting directly in front of you, while at other times it may be either north or south of that same position. Astronomical circumstances account for the occurrence of the four seasons.

Also, with due respect to our neighbors in the southern hemisphere, our association of the seasons with the weather—summer (hot); winter (cold)—is strictly northern hemisphere biased, more particularly mid-latitude.

Here are some important facts to remember: The Sun does not physically move across the sky. For this discussion the Sun essentially rotates in space at a fixed position. The Earth (and all the other bodies of the solar system) orbit about it. Because the Earth rotates from west to east, the Sun appears to move in a westerly direction through our sky. Also, the Earth's poles are tilted 23 1/3 degrees from the perpendicular and always point at the same fixed position in space. (During the nighttime hours we can observe the stars rotating around that point near the pole star Polaris.) In addition,



there is an imaginary line in space called the celestial equator, an extension of the Earth's equator projected onto the sky.

Therefore, when the Earth orbits the Sun, the north and south poles are alternately tilted towards or away from the Sun. This simple graphic will help you to understand the cycle (<http://www.creatorsfingerprints.com/images/aaak.jpg>). The apparent effect in our sky is that the Sun appears to move north and south. See the accompanying artwork depicting this variation.

When the north pole is tilted towards the Sun, the northern hemisphere experiences summer, while the southern hemisphere experiences winter. (There's that bias again.) On June 21st or 22nd, the Sun is as high in the sky as it can get. This event is called the summer solstice. Also, since the pole is tilted 23 1/3 degrees, a person at a latitude of 23 1/3 degrees north on the Earth's surface will see the Sun pass directly overhead at local noon. This line of latitude can be found on any Earth globe...it's called the Tropic of Cancer.

After the summer solstice the Sun will begin moving farther south in the sky, the result of the north pole tilting away from the

Sun. This year, on September 23rd, at 5:05 a.m., the Sun crosses the celestial equator, signaling the autumnal equinox—the beginning of fall for the northern hemisphere. A person standing on the Earth's equator will see the Sun pass directly overhead at local noon. On this date the Sun rises due east and sets due west. This time is ideal to determine what direction east/west is without using a compass. Day and night are also of equal length.

The Sun continues its southern migration until December 20th or 21st, when winter begins in the northern hemisphere. Called the winter solstice, the Sun is then as far south in the sky as it can get. Just the opposite of the summer solstice, a person standing at latitude 23 1/3 degrees south will see the Sun pass directly overhead at local noon. For the southern hemisphere summer begins. This line of latitude is called the Tropic of Capricorn, and it can also be found on an Earth globe.

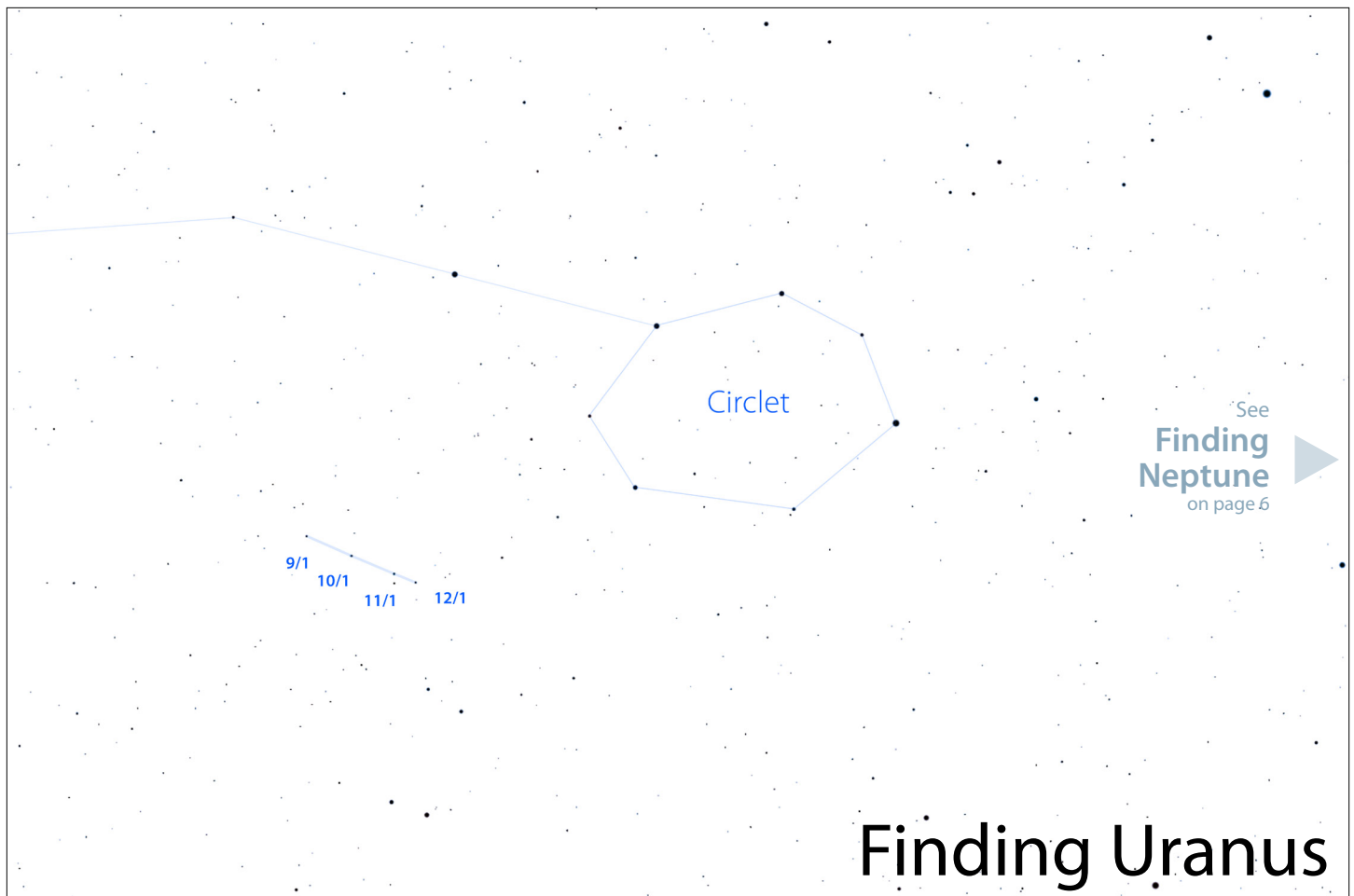
The Sun then begins its welcome migration north again as the south pole tilts away from the Sun. When it crosses the celestial equator again, spring begins for the northern hemisphere. Occurring on March 20th or

21st, this event is called the vernal equinox. The Sun continues north until it once again reaches its highest position the sky on June 20th or 21st, the summer solstice.

So now that you have a better understanding of how the Earth's axial tilt and orbit about the Sun affects the Sun's seasonal position in the heavens, keep your “eye to the sky” and note its north and south migration during the course of a year. Become more aware of the sky events around you that most people take for granted.

Though you will not require a telescope to welcome in the fall season, there are still many astronomical delights to observe at Rhode Island's fine observatories. Seagrave Memorial Observatory (<http://www.theskyscrapers.org>) in North Scituate is open to the public every clear Saturday night. Also, Ladd Observatory (<http://www.brown.edu/Departments/Physics/Ladd/>) in Providence is open every clear Tuesday night. Frosty Drew Observatory (<http://www.frostydrew.org/>) in Charlestown is open every clear Friday night year-round. Be sure to check all the websites for the public night schedules and opening times before visiting these facilities.

Keep your eyes to the skies.



Glenn Chaple's
Sky Object of the Month

M56

Globular Cluster in Lyra

In July, we looked at M92, a fine globular cluster in Hercules that's overlooked in favor of the easier-to-find M13. The same misfortune has befallen another globular cluster - M56 in Lyra. M56 is often bypassed by backyard astronomers who favor the plan-

etary nebula M57, conveniently positioned midway between the stars beta (β) and gamma (γ) Lyrae.

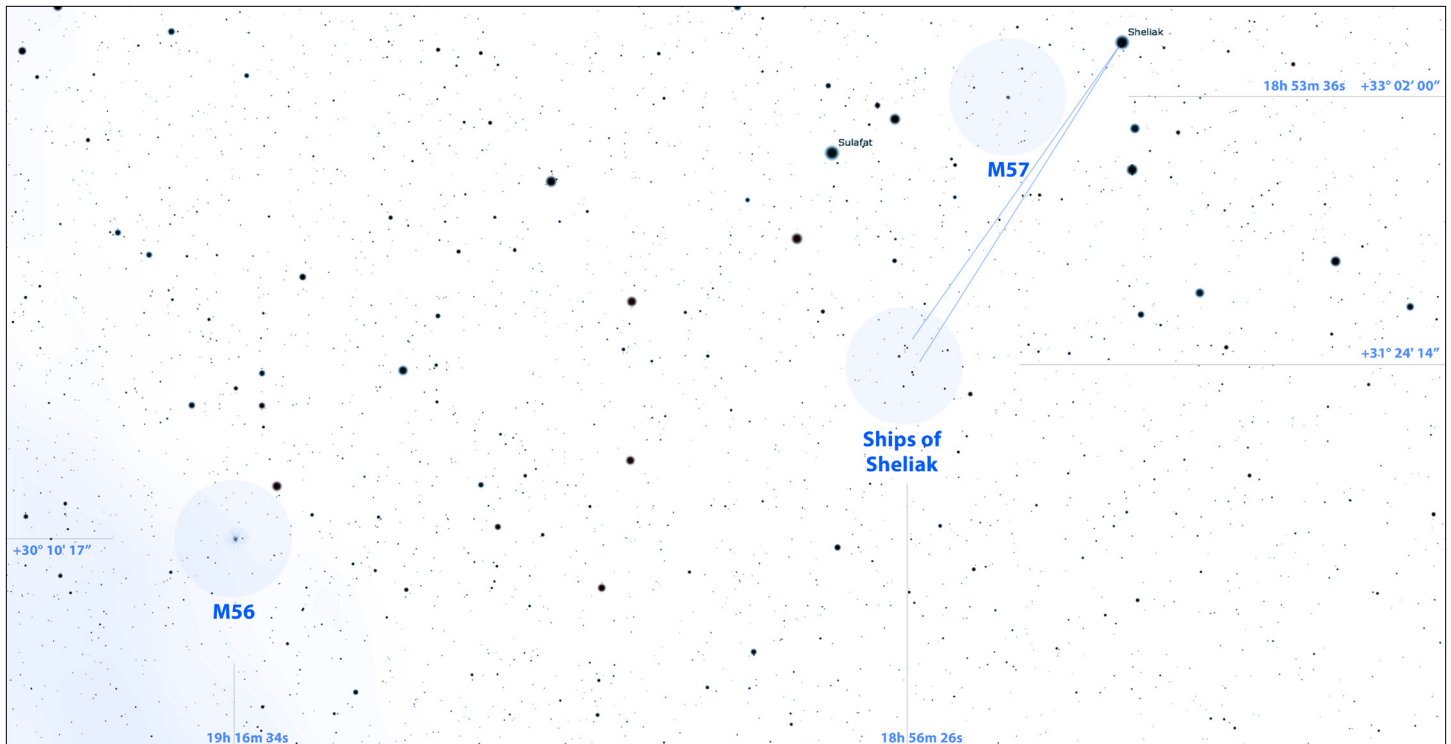
Locating M56 isn't as difficult as you might think. Aim your telescope towards a point roughly midway between gamma Lyrae and Albireo (somewhat closer to Albireo) and begin a low-power search. You should come across a small roundish puffball quite similar in appearance to a tail-less comet.

Admittedly, M56 doesn't rank among the finest deep-sky objects in the Messier Catalog. At a magnitude of 8.3 and angular size of 7', it pales in comparison with M13 and M92. Recently, I viewed M56 with

a variety of instruments. Through 10X50 binoculars, it resembled an out-of-focus star. A 4.5-inch f/8 reflector at 150X showed the barest hint of resolution. 200X with a 10-inch Dob resolved much of the cluster, although the center still appeared hazy.

M56 was discovered on the evening of January 19, 1779, by Charles Messier - the same night he independently discovered the Comet of 1779. Recent distance studies put this globular cluster at about 30,000 light-years from Earth, corresponding to an actual diameter of some 60 light-years.

Your comments on this column are welcome. E-mail me at gchaple@hotmail.com



The Ships of Sheliak

Jim Hendrickson

After two and a half decades of seriously observing the night sky, I have come to the realization that Lyra has become my favorite constellation. For one, it contains my favorite star, Vega, which has been a beacon of summer since before I knew anything about the galaxy we live in or even our own solar system. Vega's brilliant blue-white light shines directly down on us during the summer evenings, accompanied by the sound of crickets and frogs, and when I lived at Spring Lake, a bullfrog on the other

side. Another welcoming aspect of Lyra is its strategic placement well to the north and at around 18 hours of right ascension (where the ecliptic is at its farthest point south), which permits it to be observed well into the early winter months despite its placement at the westernmost point of the Summer Triangle.

Extending a hand-width to the south of Vega is one of the most conspicuous constellations in the entire sky—a near perfect parallelogram four degrees long by two degrees wide, consisting of third and fourth magnitude stars including a notable eclipsing binary star that varies between third and fourth magnitude about every 12 days.

Lyra is a splendid constellation to explore casually with binoculars or an easily slewed small telescope. Located several degrees from

the galactic equator, it lacks the “milkyness” of lying among the densest part of the Milky Way yet it contains an above average density of relatively bright stars which provide a pleasing contrast against Lyra's darker and more distant backdrop. I find that Lyra is best explored using a wide-field eyepiece that gives a 2.5 to 3 degree field of view.

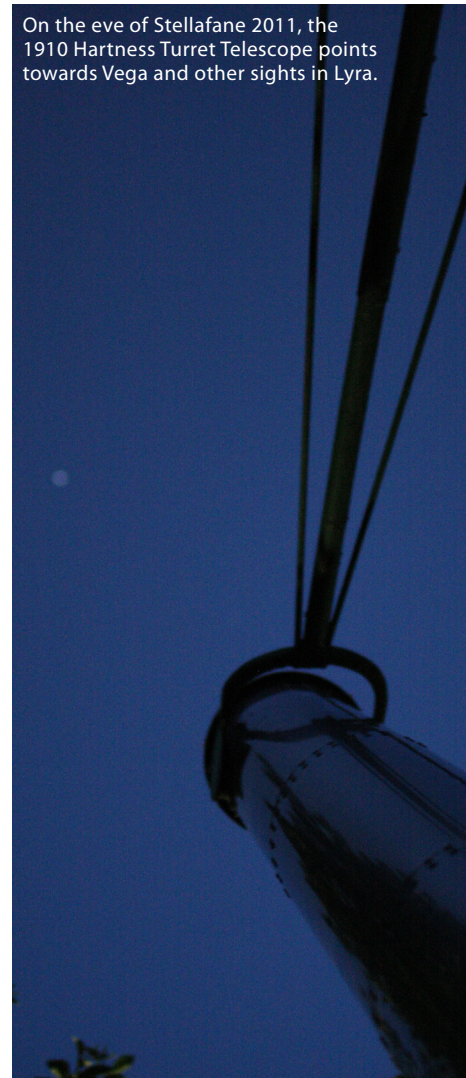
For backyard explorers, the best-known telescopic destination within Lyra, and for good reason, is M57, the Ring Nebula. M57 is conveniently located between Sulafat (gamma Lyrae) and Sheliak (beta Lyrae), and bright enough to be seen in the smallest of telescopes and even in binoculars as small as 10x50mm. Our target for this tour is a pair of nearly-symmetric asterisms not far from the Ring Nebula.

Anyone who has seen Lucasfilm's *Star Wars Episode IV: A New Hope* recalls the

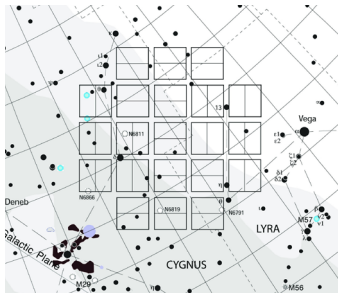
opening scene where Princess Leah's ship is being overtaken by the imperial star destroyer just before it is boarded by Darth Vader. A pair of these slender, wedge-shaped ships can be seen flying away from Sheliak and in the direction of Altair. Each "ship" is a trio of 9th magnitude stars approximately 10 minutes long by 2 minutes wide. They are situated parallel to each other at an angular distance of slightly more than the length of one ship and staggered such that the tip of the northernmost triangle is even with the "back" or smallest leg of the southern triangle. They are staggered in such a way as to be aligned roughly with a line extend-

ing back towards Sulafat. The northern one forms an isosceles triangle while the southern one is marked by one star being slightly out of position when compared to the northern triangle. Together, their similar proportions, orientation, and brightness gives them a conspicuous appearance that stands out easily against the otherwise random starfield surrounding them.

The next time you visit the Ring Nebula, take a side trip about three Moons away to the Sheliak-Altair line. There you will find several distant suns that present themselves along our line of sight as a pair of interstellar travellers of the science fiction kind.

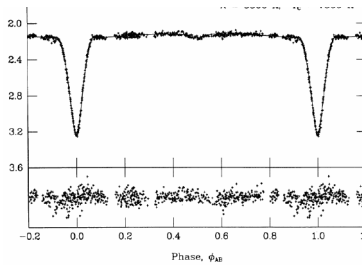


On the eve of Stellafane 2011, the 1910 Hartness Turret Telescope points towards Vega and other sights in Lyra.

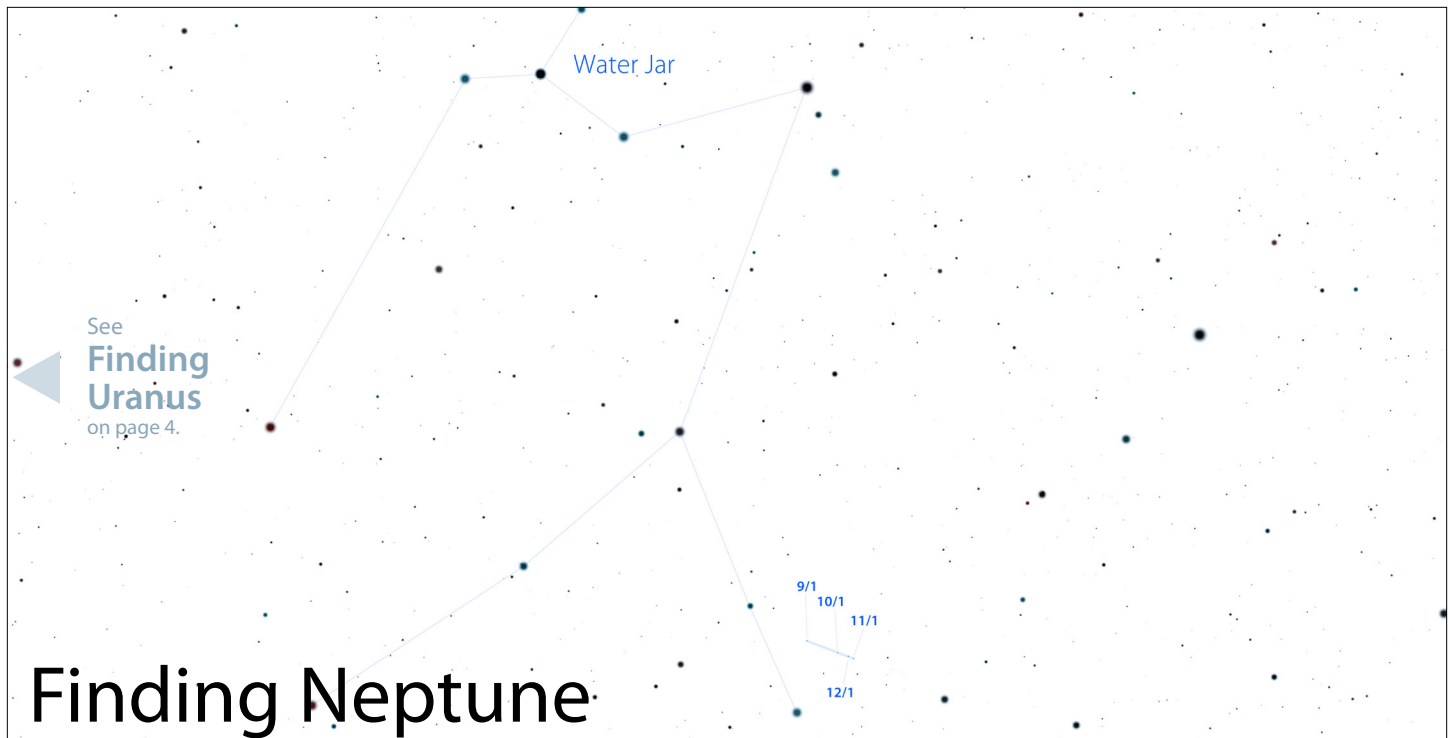


Vega is about as bright as Arcturus to the west and Capella to the east. The only star visible from the northern hemisphere that outshines them is Sirius.

Just a few degrees to the northeast of Vega is the large patch of sky being studied by the Kepler Space Telescope to learn the properties of exoplanets.



Sheliak (beta Lyrae) is an eclipsing binary star, varying from magnitude 4.6 to 3.4 every 12.9075 days. It is 882 light-years away, placing it 25 times more distant than our beacon of summer.



Finding Neptune

NASA's Space Place

Solar System Size Surprise

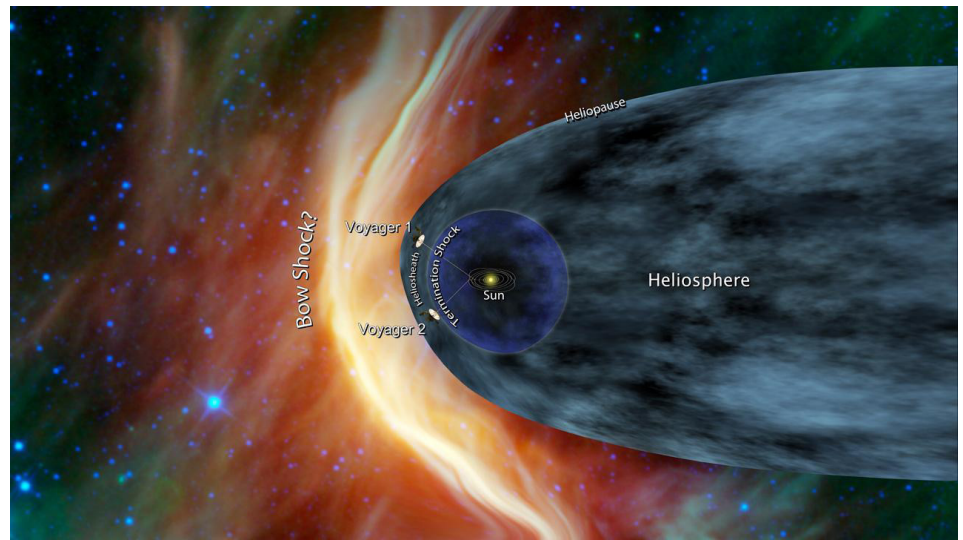
Dr. Tony Phillips

News flash: You may be closer to interstellar space than you previously thought.

A team of researchers led by Tom Krimigis of the Johns Hopkins University Applied Physics Laboratory announced the finding in the June 2011 issue of *Nature*. The complicated title of their article, “Zero outward flow velocity for plasma in a heliosheath transition layer,” belies a simple conclusion: The solar system appears to be a billion or more kilometers smaller than earlier estimates.

The recalculation is prompted by data from NASA's Voyager 1 probe, now 18 billion kilometers from Earth. Voyagers 1 and 2 were designed and built and are managed by NASA's Jet Propulsion Laboratory. Aging but active, the spacecraft have been traveling toward the stars since 1977 on a heroic mission to leave the solar system and find out what lies beyond.

To accomplish their task, the Voyagers must penetrate the outer walls of the heliosphere, a great bubble of plasma and magnetism blown in space by the solar wind. The heliosphere is so big, it contains all the planets, comets, and asteroids that orbit the sun. Indeed many astronomers hold that the heliosphere defines the boundaries of the solar system. Inside it is “home.” Outside lies the Milky Way. For 30+ years, the spacecraft have been hurtling toward the



This artist's concept shows NASA's two Voyager spacecraft exploring a turbulent region of space known as the heliosheath, the outer shell of the bubble of charged particles around our sun. Image credit: NASA/JPL-Caltech.

transition zone. Voyager 1 is closing in.

Much of Voyager 1's long journey has been uneventful. Last year, however, things began to change. In June 2010, Voyager 1 beamed back a startling number: zero. That's the outward velocity of the solar wind where the probe is now.

“This is the first sign that the frontier is upon us,” says Krimigis.

Previously, researchers thought the crossing was still years and billions of kilometers away, but a new analysis gave them second thoughts. Krimigis and colleagues combined Voyager data with previously unpublished measurements from the Cassini spacecraft. Cassini, on a mission to study Saturn, is nowhere near the edge of the solar system, but one of its instruments can detect atoms streaming into our solar system from the outside. Comparing data from the two locations, the team concluded that the edge

of the heliosphere lies somewhere between 16 to 23 billion kilometers from the sun, with a best estimate of approximately 18 billion kilometers.

Because Voyager 1 is already nearly 18 billion kilometers out, it could cross into interstellar space at any time—maybe even as you are reading this article.

“How close are we?” wonders Ed Stone, Caltech professor and principal investigator of the Voyager project since the beginning. “We don't know, but Voyager 1 speeds outward a billion miles every three years, so we may not have long to wait.”

Stay tuned for the crossing.

For more about the missions of Voyager 1 and 2, see <http://voyager.jpl.nasa.gov/>. Another Voyager project scientist, Merav Opher, is the guest on the newest Space Place Live cartoon interview show for kids at <http://spaceplace.nasa.gov/space-place-live>.

August Reports

Ed Haskell, Secretary
Jim Crawford, Treasurer

Meeting Minutes August 5, 2011

Program

President Tom Thibault introduced the speaker, **Mr. Tom Thibault**, speaking on The Merits of Maintaining an Observing Log. Tom began with a review of his interest in

astronomy which has spanned much of his life but only blossomed in the past half dozen years. He described his odyssey which began with an inexpensive scope poorly mounted on a lightweight tripod and moved through a 4.5" Tasco reflector to a Celestron 8" SCT, all portably mounted.

About the same time as the 8" was acquired Tom began keeping a systematic log of his observations and other incidents bearing on his observing program. For example, he recorded the daily progress on the building of his Heavens View Observatory to house the 8". Tom showed many excerpts from the log to illustrate the breadth and depth of topics covered in each entry including many hand drawn figures and photographs.



The Log is a very impressive record of daily activities and findings. It is an example of good scientific procedure. I am sure many in the audience were envious of this work and perhaps inspired to emulate it in the future.

Business Meeting

Secretary's Report adopted with no changes from floor.

Treasurer's Report was heard.

Trustees. The tree cutting around the north and east sides of the observatory is now complete and the horizon in those directions is tremendously improved. The stumps and other debris remaining is a safety hazard and will be cordoned off with construction tape. Several work sessions will be organized when the weather cools.

The new Observing Committee structure appears to be working well. Members are reminded that active participation in the OC is not limited to Key Holders. All interested members are welcome at committee meetings.

Uranus and Neptune are coming into view and the Trustees will organize a project to encourage all members to attend observing sessions over the next three or four months to see these difficult in small scope objects.

If you have a mower and trailer and can help with grass cutting please contact Steve Siok.

1st Vice President reports that the September 9th meeting will feature Alan Sliski a member of the Boston Amateur Telescope Makers and restorer of antique telescopes. Mr. Sliski is the father of David Sliski our speaker at the January, 2011, meeting. The title for the talk was not announced.

2nd Vice President reviewed plans for AstroAssembly, which occurs on the first weekend in October, and this year has the theme Fifty years of Space Exploration. The speaker list is well in hand although some additional short talks from members for Friday night would be welcome. Volunteer positions are now being filled. Needed are members to help with parking, grilling, and cleanup. Donations of prizes are solicited. Please remember that it "Is important for members to attend, not only to help out when needed but to show our support for our principal annual event."

Outreach Coordinator Bob Forgiel was not able to attend but sent word that the Society's participation at the Newport Folk Festival went very well. The day was ideal

for solar observing and several hundred members of the public got what was, for many of them, their first view of the sun through optical instruments. Old Sol responded well to this attention by providing live views of prominences and sunspot groups here and there across his fiery countenance. See the report in an upcoming issue of the Newsletter.

For the Good of the Organization

Election to fill the vacancy. A special election was held to fill a one year vacancy on the Trustees left by the resignation of Tom Barbish. Thirty Nine ballots were received, five of which were invalid for various reasons set forth in the Standing

Rules. The thirty four valid ballots were all cast for John Leonelli who will serve until the next general election.

It was announced that October 8, is National Observe the Moon Night.

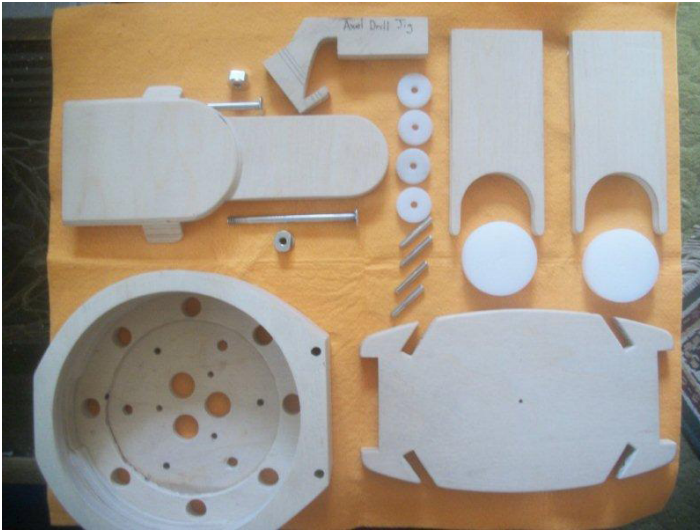
The University of New Hampshire is sponsoring a new type of astronomy convention. New England astronomy clubs have been invited to make member presentations at a "convention" for the public on October 14, at UNH.

Adjourned at 9:45 pm.

Respectfully submitted

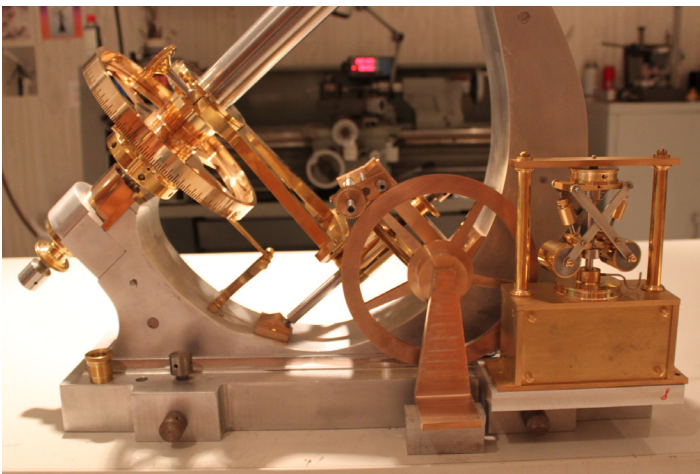
Ed Haskell, Secretary

Budget as of 8/10/2011	2011-2012 Budget	Actual YTD	Difference
INCOME			
Astroincome	\$3,500.00	\$0.00	-3,500.00
Cookoutinc	\$500.00	\$554.00	54.00
Donation, Other	\$300.00	\$510.00	210.00
Dues	\$3,075.00	\$2,040.00	-1,035.00
Interest Inc	\$125.00	\$20.29	-\$104.71
Starparty Donations	\$500.00	\$37.00	-\$463.00
TOTAL INCOME	\$8,000.00	\$3,161.29	-4,838.71
EXPENSES			
Astroexp	\$2,750.00	\$0.00	\$2,750.00
Cookoutexp	\$423.00	\$524.30	-\$101.30
Corporation, State Fee	\$22.00	\$22.00	\$0.00
Domain Name	\$15.00	\$15.00	\$0.00
Donations	\$50.00	\$50.00	\$0.00
Electric	\$175.00	\$49.59	\$125.41
Insurance, Property	\$2,625.00	\$0.00	\$2,625.00
Postage and Delivery	\$225.00	\$11.25	\$213.75
Presidents Fund	\$150.00	\$25.00	\$125.00
Printing and Reproduction	\$140.00	\$0.00	\$140.00
Propane	\$375.00	\$80.25	\$294.75
Refreshment Expense	\$350.00	\$20.29	\$329.71
Trustee Exp	\$700.00	\$85.00	\$615.00
TOTAL EXPENSES	\$8,000.00	\$882.68	\$7,117.32
Cash Accts			
Citizens Checking	\$8,926.67		
Capital One	\$11,490.18		
Total	\$20,416.85		

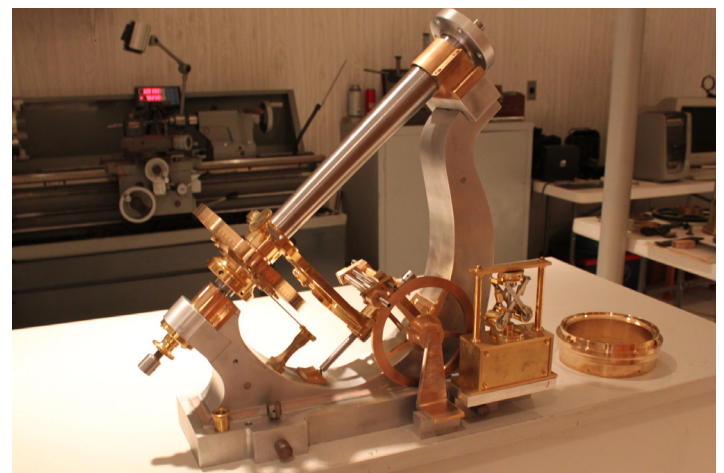
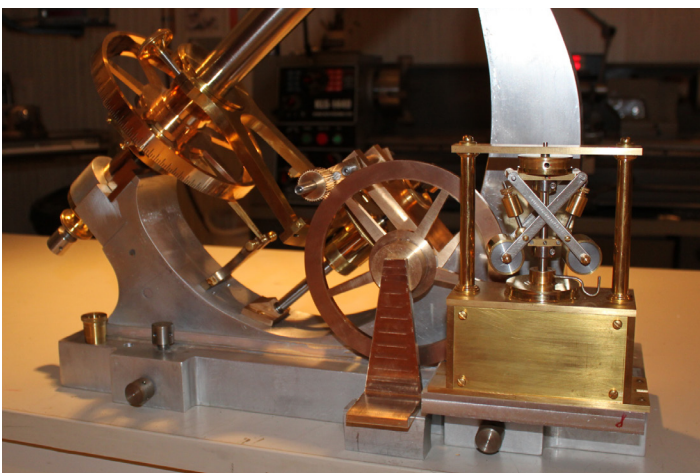


ATM Update by Jim Brenek

I am waiting to receive a length of carbon fiber tubing to be used as my secondary mirror holder. I want to make another holder rather than the one I received in the kit. I am leaning towards the use a helical type focuser also. When that is all assembled I will have an idea where my center of gravity will be, hence I will mount my frictions in close to the right spot and also cut down the height of their supports so when I pivot the mirror the wood holder will just clear the base. This is my phase of completion until now.



ATM Update by Al Hall



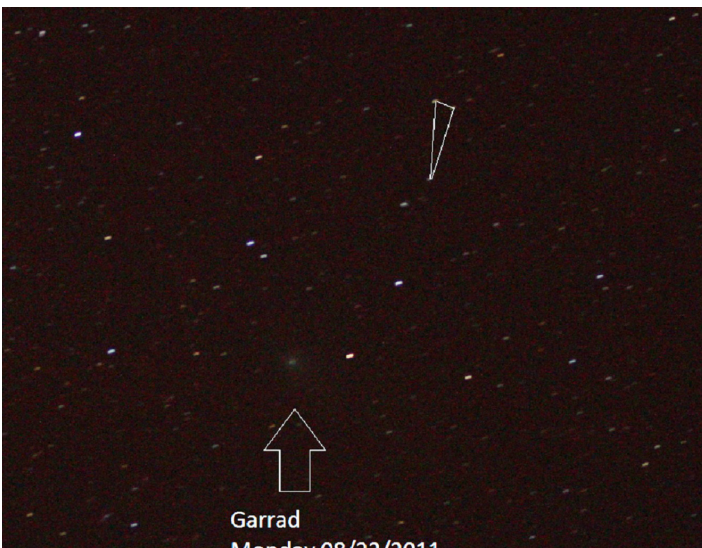


Mallincam Photos by Steve Hubbard

Dumbell, larger format of the crescent and comet Garradd all done with my 80mm Apogee refractor. 56 second exps each. Little fuzzies are part of Abell 2125, the Hercules galaxy cluster and center around NGC 6041. That one done with the 12" LX200, 56 sec exposure.

Comet Garradd by Conrad Cardano

These 2 photos were taken one day apart. There is a little triangle in the photo that people can use as a reference point. They were taken with an Astro Tech 72mm ED scope and a Canon Ts1 camera. Each photo was 5 seconds at 1600 ISO.





Skyscrapers, Inc. Presents

AstroAssembly 2011

Friday September 30 & Saturday October 1

Commemorating 50 Years of Space Exploration



Friday Evening Program: Informal talks: Contact Kathy Siok
(kathys5@cox.net) if you would like to give a talk.

Saturday Morning Program
All day Saturday: H-alpha solar observing, swap tables

John Briggs HUT Observatory
Then and now: Adventures in Colorado
Astrophotography, 1985-2011

Skyscrapers member John W. Briggs moved to Colorado in late 1984 and soon began assisting master astrophotographer Professor Edgar Everhart of the University of Denver. A particle physicist turned telescope maker and astronomer, Everhart discovered two comets from Connecticut before his own move to Colorado circa 1970. Everhart went on to pioneer optimum techniques for hypersensitizing the remarkable Kodak 2415 Tech Pan emulsion. Applying Everhart's methods, including the use of custom tracking hardware, Briggs performed cometary astrometry and recorded an image of Comet Halley that made the cover of Sky & Telescope. All this was just before the CCD revolution. In 2010, after many intervening projects, Briggs returned to Colorado to operate another 16-inch telescope optimized for astrophotography. Now at the HUT Observatory in Eagle, Colorado, John is exploring modern CCD astrophotography and moving-body astrometry. The technical advances are amazing and are especially wonderful to anyone familiar with the common limitations of the old days. John will relate some of the interesting things he's now learning and will share recent results. He will also wax a bit nostalgic regarding the old days of films, plates, and dark rooms -- a photographic technology of which Briggs was once a proud practitioner, but now near totally obsolete!

Saturday Afternoon Program
Lunch Grill

Dr. Sergei Khrushchev Watson Institute, Brown University
To the Stars: Yuri Gagarin and the Launch
of Manned Space Exploration

Sergei Khrushchev, the son of the former Soviet Premier Nikita Khrushchev, is a Senior Fellow at Brown University's Watson Institute for International Studies. Working in the Soviet's space program Design Bureau, Dr. Khrushchev has a very unique perspective on the efforts to launch cosmonauts into Earth orbit and then eventually to the Moon. Dr. Khrushchev will focus his talk on the legacy of Yuri Gagarin's historic flight aboard Vostok 1.

Dr. John Mustard Brown University
What's Next for Mars Exploration

The most technologically advanced and ambitious rover ever built will be launched to go the surface of Mars in late November of this year. The goal of the mission is

to assess the habitability of the landing site (to be announced this week!) using the rover's sophisticated instruments designed to measure the chemistry and mineralogy of the surface. The rover also includes an instrument to determine if there are organic molecules and compounds. Dr. Mustard will provide an overview of the current state of Mars exploration for habitability, and some key aspects of the rover mission.

Prof. David Latham Harvard College Observatory
Super-Earths and Life

Transiting planets are special. The amount of light blocked by the planet as it passes in front of its host star sets the size of the planet (relative to the star). If an orbit can be derived from Doppler spectroscopy of the host star, the light curve also provides the orientation of the orbit, leading to the mass of the planet (again relative to the star). The resulting density for the planet can be used to constrain models for its structure and bulk properties. We are on the verge of using these techniques to characterize a population of Super Earths, planets in the range 1 to 10 Earth masses that may prove to be rocky or water worlds. Space missions such as Kepler, Plato, and TESS promise to play key roles in the discovery and characterization of Super Earths. Transiting planets also provide remarkable opportunities for spectroscopy of planetary atmospheres: transmission spectra during transit events and thermal emission throughout the orbit, calibrated during secondary eclipse. Spectroscopy of Super Earths will not be easy, but is not out of the question for the James Webb Space Telescope. Our long-range vision is to attack big questions, such as "Does the diversity of planetary environments map onto a diversity of biochemistries, or is there only one chemistry for life?" A giant first step would be to study the diversity of global geochemistries on super-Earths and Earth analogs.

Saturday Evening Program
Held at North Scituate Community Center
Catered Banquet Dinner

Dr. Peter Schultz Planetary Data Center, Brown University
Two Comet Tails: Results from the DIXI and Stardust-NExT Missions

On November 4, 2010 and February 14, 2011, two separate but related missions made close encounters with the nuclei of one new (109P/Hartley 2) and familiar comet (9P/Tempel 1). These two missions established a new perspective on how comets evolve with time. The recommissioned Deep Impact Flyby Spacecraft visited Comet Hartley, which is termed a hyperactive comet because of its extraordinary activity for such a small nucleus. The recommissioned Stardust-Next mission returned to Comet Tempel and imaged not just the other side of the nucleus but also the crater produced by the Deep Impact collision in 2005. We'll look in more detail at the results from both missions and what it may mean for our general understanding of how comets evolve. DIXI revealed a new paradigm for the release of water into the coma. Stardust-NExT documented changes in the nucleus and evidence for surface activity leading to widespread deposits.

× **Registrations at \$17.00 each**

Registration cost is \$17 per person through September 15. After September 15, registration cost is \$20.

Name _____

Total \$ _____

× **Banquet tickets at \$17.00 each**

Banquet tickets must be pre-ordered. No tickets will be sold the day of the event.

Address _____

Total \$ _____

Total \$ _____

I would like to give a short 20-minute talk on Friday evening:

Indicate the title of your talk below. Kathy Siok (kathys5@cox.net) will contact you via email to confirm your talk.

Email _____

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.
- 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