



The Skyscraper

Vol. 36 No. 9

September 2009

Amateur Astronomical Society Of Rhode Island · 47 Peepetoad Road North Scituate, RI 02857 · www.theSkyscrapers.org



Seagrave Memorial Observatory is open to the public weather permitting



Saturdays 8:00pm - 10:00pm
See www.theSkyscrapers.org
for updates.

Register Today for AstroAssembly 2009

Friday, October 2
& Saturday, October 3
Seagrave Memorial Observatory

Speakers: Ronald Florence, Thomas Levenson, Mike Mattei, William Sheehan

Friday Night Informal Talks
Solar Observing • Swap Tables • On-Site Vendor • Raffle & Door Prizes
Evening Reception • Buffet Dinner
Observing at Seagrave Observatory

September 2009

	4 Full Moon
	11 Last Quarter Moon
	17 Uranus at opposition
	Saturn at superior conjunction
	18 New Moon
	20 Venus 0.5° N of Regulus
	20 Mercury at inferior conjunction
	22 Autumnal Equinox
	26 First Quarter Moon

September Meeting with Brendan Hermalyn

Friday, September 4 at Seagrave Memorial Observatory

Skyscrapers' September monthly meeting will feature a talk by Brendan Hermalyn on NASA's upcoming Lunar CRater Observing and Sensing Satellite (LCROSS) Mission.

Brendan Hermalyn is a graduate student at Brown University in Planetary Sciences, and is a science team member on the LCROSS mission with Dr. Peter Schultz. His graduate work is focused on understanding the ejecta distribution resulting from hypervelocity impacts.

In 1999, the Lunar Prospector mission detected hydrogen signatures in permanently shadowed craters on the poles of the moon. These signatures may indicate the presence of water ice in some form on the surface of the moon. The goal of the LCROSS mission

is to confirm the presence or absence of water ice in a permanently shadowed region on the moon, and to constrain the properties of the lunar regolith in that region. On October 9th, 2009, LCROSS will use the upper stage of the launch vehicle as a kinetic impactor to form a crater and excavate of sub-surface material. The impact and resulting ejecta will be viewed and analyzed by a suite of instruments on a shepherding spacecraft as well as a comprehensive earth-based observational campaign. The ejecta curtain is expected to be viewable on earth by 10-12 inch telescopes or larger, providing a unique opportunity for amateur observation. This talk will go over the details of the mission and expected observation possibilities.

President's Message

Bob Horton

On behalf of Skyscrapers, I would like to thank Dick Parker, Craig Cortis and Bob Forgiel for providing us with their wonderful presentations at our last monthly meeting. Many of our members have been requesting more practical amateur astronomy level talks, and based on all the positive comments I have heard, it sure seems that everyone really enjoyed hearing about their observing and astrophotography projects.

It was great to see so many of our members attending Stellafane this year. The weather for all three days was perfect, and we enjoyed some of the best observing conditions so

far this summer. Although past its peak, the Perseid Meteor Shower was still active, and we saw many bright meteors streaking across a beautiful, star filled sky with the brilliant Milky Way stretching overhead.

Both Jack Szelka and myself entered telescopes in the telescope making competition. Although neither of us won any awards, we sure had a lot of fun using our homemade scopes under those wonderful skies. Congrats to Al Hall who picked up a special award for a lens testing device he entered in the mechanical competition.

Check out the images of Stellafane in the Gallery section of our web site.

As much fun as Stellafane can be, I always look forward to Astro Assembly each year, which is now rapidly approaching on October 2nd and 3rd. Now over 50 years old, our annual Astro Assembly offers a nice program of speakers, exhibits and observing, along with an opportunity to get together with many old and new friends. Mr. 2nd V.P. Steve Hubbard has put together a wonderful lineup of speakers for us this year - check out the flyer in this issue of the Skyscraper for more details.

Getting ready for a big event like Astro Assembly requires a lot of help from members like you. The Trustees will be scheduling some work sessions this month to prepare the buildings and grounds, so please consider helping out if you can. We're also going to need volunteers to help out with various tasks during Astro Assembly. If you are willing to help, please see Steve Hubbard or myself at the September meeting.

Clear Skies,
Bob Horton

Epsilon Pegasi: The Pendulum Star

Glenn Chaple

This month, we're going to pay a visit to epsilon Pegasi (Enif), the "Pendulum Star." It's an optical double star comprised of magnitude 2.5 and 8.7 component stars separated by 144 seconds of arc. Pairs this wide usually don't merit much consideration, but wait! Epsilon Pegasi has a surprise for us.

After centering this pair in the eyepiece field (60-100x is the recommended magnification), mentally trace a line between them. While keeping your eye at the eyepiece, gently jiggle the telescope back and forth so that the two stars move at right angles to the imaginary line. While the golden yellow primary (a K-type star) travels serenely back and forth, the little companion seems to swing wildly to and fro, like a clock pendulum. It's one of the most amazing telescopic optical illusions you'll ever witness.

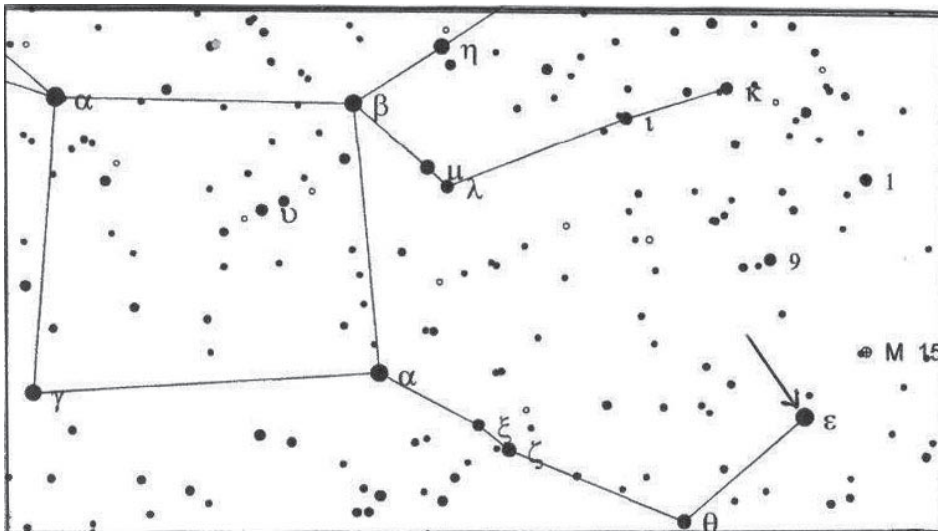
What's happening? According to Sir John Herschel, who was among the first to describe the "Pendulum Star," the oscillations are due to the longer time it takes light from the faint star to affect the retina. We detect the

motion of the primary a split second earlier, so the companion seems to lag behind. Rapid back and forth movement of the telescope generates the illusion of pendulum-like motion.

The Pendulum Star received plenty of recognition in astronomy guidebooks written in the late 19th and early 20th century – a time when double stars enjoyed tremendous popularity. Nowadays, with attention directed towards nebulae, clusters, and galaxies, epsilon Pegasi receives scant notice.

The finder chart shows the location of epsilon Pegasi. If you hunt down deep-sky objects by the star-hop method, you may recognize it as a pointer (with nearby theta Pegasi) to the globular cluster M15. Next time you plan to visit M15, take a moment to check out epsilon Pegasi. This star will put on a show that's sure to dazzle!

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



Finder chart for epsilon Pegasi
(From Cartes du Ciel)



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.

President

Bob Horton stargazerbob@aol.com

1st Vice President

Bob Napier bob_napier@hotmail.com

2nd Vice President

Steve Hubbard cstahs@yahoo.com

Secretary

Jim Crawford jcrawford@cox.net

Treasurer

Lloyd Merrill lbmerrill@cox.net

Members at Large

Tom Thibault tpthibault@cvs.com

Roger Forsythe galaxy-77@cox.net

Trustees

Jim Brenek jbrenek@cox.net

Steve Siok kathys5@cox.net

Tom Barbish labtjb@verizon.net

Star Party Coordinator

Bob Forgíel bforgiel@cox.net

Librarian

Bruce Merrill bruzer2010@cox.net

Historian

Dave Huestis dhuestis@aol.com

Editor

Jim Hendrickson jim@distantgalaxy.com

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 20** to Jim Hendrickson, 1 Sunflower Circle, North Providence, RI 02911 or email to jim@distantgalaxy.com.

Email subscriptions

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

The Pleasures of Jupiter

Dave Huestis

As you may recall from an earlier column, I reported that the United Nations General Assembly had designated 2009 as the International Year of Astronomy. This year-long celebration was designed and initiated to focus attention on astronomy — 400 hundred years after Galileo first trained his telescope on the heavens.

And one of the first heavenly objects Galileo observed was Jupiter. On January 7, 1610, Galileo observed Jupiter through one of his improved 30 power telescopes. He noticed three smaller bodies in Jupiter's vicinity arranged in a straight line. After watching Jupiter for several nights he noted that the positions of these bodies changed. And soon a fourth one became visible.

Galileo realized that these bodies were moons orbiting Jupiter. Two months later Galileo published his observations in *Sidereus Nuncius* (*Sidereal Messenger*): "I therefore concluded, and decided unhesitatingly, that there are three stars in the heavens moving about Jupiter, as Venus and Mercury around the Sun; which was at length established as clear as daylight by numerous other subsequent observations. These observations also established that there are not only three, but four, erratic sidereal bodies performing their revolutions around Jupiter."

Today those four moons are called the Galilean moons or satellites in Galileo's honor.

These observations proved the Earth-centered view of the universe (Aristotelian view) was incorrect. The Jovian system was a solar system in miniature. The Sun, like Jupiter, was at the center of the system (Copernican theory) with the planets revolving about it.

If you want to observe Jupiter with your own telescope you first need to know where it can be found in the sky. Monthly magazines, sky charts and many web sites provide this information. But on September 2 you can let the waxing gibbous Moon be your guide in the southeastern sky. Jupiter will be just two degrees (about

four full moon diameters) to the lower right of the Moon.

This sky scene will be quite beautiful to the naked-eye. But before you focus your telescope on Jupiter (and/or the Moon); try observing the pair with binoculars. The Moon will be quite bright. If you have a pair of 10 X 50 binoculars you can even spot one or two of Jupiter's moons. However, to appreciate all the beauty and dynamic events this system has to offer requires a telescope.

Even if you have a small inexpensive telescope, your optics are much better than those Galileo used to conduct his observations. Your telescope mounting may be rickety, making it difficult to keep Jupiter centered in the eyepiece, but the optics are capable of providing a fair to good image.

And one of the first things that will catch your eye will be Jupiter's Galilean satellites. They are: Io, Europa, Ganymede and Callisto. When two or more are visible they line up in the plane of Jupiter's equator. While these satellites parade around Jupiter many interesting events occur for us earth-bound astronomers to observe.

When a moon passes in front of

Jupiter and casts a shadow onto the Jovian cloud tops, it is called a transit. Besides seeing the satellite's shadow, you may also see the bright disk of the satellite traversing Jupiter's clouds at the same time, though this event is more difficult to observe. A moon may also pass behind the planet, which is called an occultation. Jupiter's shadow can even eclipse a satellite as well; gradually the moon will either blink out or reappear. Also, it's fun to watch all four moons line up on one side of the planet. As you can see there's much to observe in Jupiter's vicinity.

In addition, you'll easily notice the more prominent dark bands/belts and lighter zones in Jupiter's cloud tops. The once dominant feature of Jupiter (from at least Galileo's time thru the mid 1970s) was the famous Great Red Spot (GRS). It is nothing more than a giant storm in Jupiter's clouds that has been active for more than 400 years. Unfortunately the storm's not as red or great as it once was, so it might be difficult to detect in smaller instruments without special filters to enhance the image. In recent years the red coloration has come back somewhat, making the GRS a little easier to see than it had



Photo of Jupiter with three Galilean moons processed from a 20 second video taken on August 2nd at 2:20 AM with an Orion Starshoot Camera through a C11 SCT with a 2x Barlow. The video was 149 frames, processed through RegiStax, followed by MaxIm DL, and then finally with Photo-Shop.

The small black spot on the right side of the center white band is Europa's shadow, Europa can be seen to the right of the shadow as a small white

spot on the edge of the planet. The white spot to the right of the planet is the moon Ganymede, which had emerged from behind Jupiter. Lastly, the small red spot to the left, is the moon Io.

Additionally, the Great Red Spot (GRS) can be easily seen to the bottom left. The GRS is a giant storm in the atmosphere like a hurricane that has been raging for hundreds of years. The storm is so large that earth could fit within it's area easily.

Photo by Tom Thibault.

The Pleasures of Jupiter

continued

been for 15 years or more.

And did you hear that Jupiter was struck once again by a comet or asteroid on July 19? Fifteen years ago over 20 fragments of Comet Shoemaker/Levy-9 slammed into Jupiter's cloud tops leaving impact scars, some of which persisted for weeks. This time the object (one estimate pegged it at about $\frac{1}{2}$ to $\frac{1}{4}$ mile wide) left an impact scar about the size of the Earth. Poor weather here in New England prevented us from viewing the aftermath of this collision.

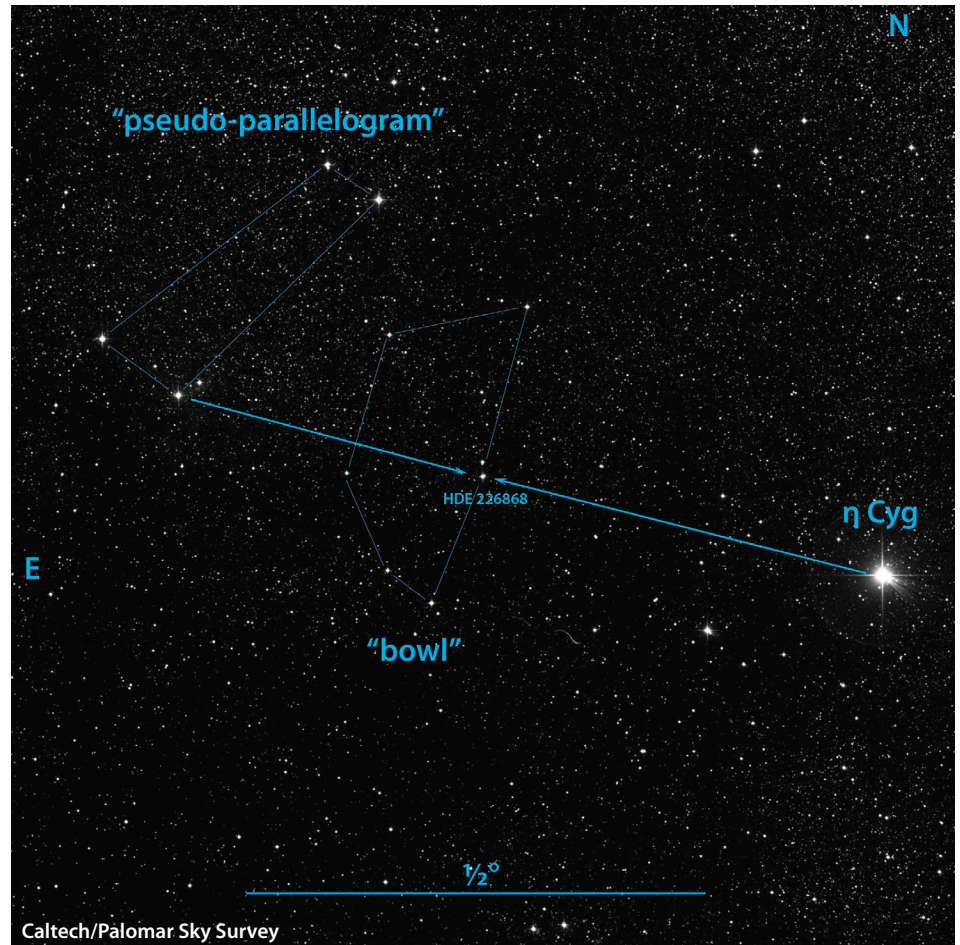
So you never know what to expect when observing Jupiter. I guess the mantra is: expect the unexpected!"

Keep in mind that Jupiter rotates once in 10 hours, making it possible to see the entire planet in one or two nights of observing. Even under low magnification the view will be rewarding.

You can get some splendid detailed views of Jupiter and his moons through the telescopes at Seagrave Memorial Observatory (<http://www.theskyscrapers.org>) on PeepToad Road in North Scituate every clear Saturday night. Or visit Ladd Observatory (<http://www.brown.edu/Departments/Physics/Ladd/>) on the corner of Hope Street and Doyle Avenue in Providence every clear Tuesday night. Check out their websites for the public night schedules. There is no admission fee to these facilities on those nights.

Knowledgeable astronomers will be on hand to share their love of the heavens with you.

As always, keep your eyes to the skies.



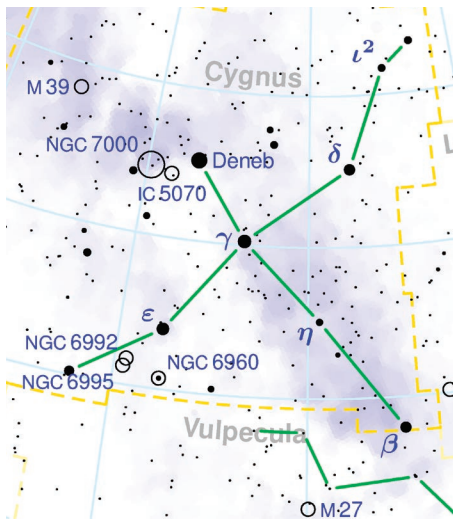
Cygnus X-1

A Black Hole You Can Find!

Craig Cortis

Unusual celestial objects having bizarre or extreme astrophysical properties often make highly desirable observing targets for amateur astronomers wishing to find things outside the scope of the usual, customary star party "menu". Last February in this newsletter, I wrote a piece detailing how to locate and observe the most easily seen white dwarf star, Omicron 2b Eridani. Sure, that's a star having light we can actually *see*, quite unlike a black hole, which emits no light in the visible band of the electromagnetic (EM) spectrum and is therefore *invisible*. So how do you find something that even the Hubble can't image, in visible light? The answer is surprisingly simple and is my topic for this month.

The conspicuous Northern Cross asterism forming the main outline of Cygnus is the key to easily isolating a specific part of the sky from which to begin our star-hop. First, note the central star of the cross, magnitude 2.2 Gamma Cygni, also called Sadr. Second, pick out magnitude 3.0 Beta Cygni, the well-known Albireo. This stunning, color-contrasting double (wide and easy – a favorite for many) marks the head or "beak" of the swan and is at the SW end of the Northern Cross, marking the bottom or "foot" of the cross; this point is nearly on the border with the constellation Vulpecula to the south. Third, locate the brightest star roughly mid-way along the line joining Albireo and Sadr – it actually



lies a bit off the middle of this imaginary line, closer to Sadr than Albireo. This is Eta Cygni, magnitude 3.9, which means you need a reasonably dark and clear sky to make it out with the naked eye. That's the easy part of the star-hop, because Cygnus X-1 lies only about 0.5 degree to the ENE of Eta, albeit invisible. The black hole has a binary companion, though: a magnitude 9.0 blue supergiant star known as HDE 226868 located at R.A. 19h 58m 22s, Dec. +35° 12'. Isolating this star will be tricky and is difficult to describe, but I'll do my best for you readers.

A finder chart with sufficient limiting magnitude and detail would be ideal; such a chart would be available perhaps somewhere on the web or on certain sky atlas/planetarium software that some of you might have. Volume two of *Burnham's Celestial Handbook* devotes pages 793-795 to Cygnus X-1. The photograph on page 795 clearly identifies HDE 226868 with a small ring encircling the star, a great help due to the fairly close proximity of another star of similar color and brightness. I'm used to picking out this star, but patterns and shapes noted within a starfield by one observer may not at all appear the same to another. Plus, it's impossible for me to know the orientation with respect to Eta Cygni by which your scope would show you this starfield, as opposed to whatever layout I might see. (There are a few good reasons why this potential difference might be so; I'll forego all the details here.)

Roughly 0.75 degree to the ENE of Eta Cygni lies a 5-star asterism that resembles a long, slender parallelogram having its long sides slightly tapered, with two stars at one end and three at the opposite end. Four of these stars are of similar brightnesses and, in fact, will stand out as among the brightest stars within this specific starfield. The side of this asterism facing Eta Cygni has a separate little form rising (towards Eta) that, to me, looks like a little soup bowl seen from the side. This "bowl" has its bottom touching the side of the not-quite parallelogram and is tilted markedly with respect to the other asterism - the bowl isn't setting evenly or upright on its base. Five or six stars mark this bowl-shaped form, but not evenly - one section is not quite "filled-in", and your ability to distinguish one end of the top line (widest part) from the other will depend on seeing what I mean by the incompleteness of the bowl's outline. The side that looks "fuller", with more bright stars outlining its shape, is key. Still with me? We're almost there.

Now try to picture the top edge of this little bowl, which is almost directly facing Eta Cygni only 0.5 degree away. (You might notice a small, square-shaped asterism mid-way between the top line of the bowl and Eta Cygni; three of its corners have stars of similar magnitudes but one - near Eta - is much brighter.) Concentrate on an imaginary line which would form the top edge of the bowl, bearing in mind that I'm describing the bowl as seen from its side. You'll see two stars fairly close to each other near the mid-point on this line. This pair will look like a wide double star, with similar white colors but slightly uneven magnitudes. A line joining these stars will be slightly off-parallel to the line forming the bowl's top edge, but not by much. There won't be any other conspicuous stars along this line other than the two marking each end of the very top edge of the bowl. If you can positively identify these two stars you now only have to distinguish one to know you're seeing HDE 226868!

Note the side of the bowl that is more completely outlined by stars than

its opposite side. (This should be easily done.) Go to that side's upper end and use the imaginary line across the top of the bowl - of the pair of stars near the middle, the first one you come to working from this starting point along the top line will be the correct star. It's the brighter of the pair and also is the one farthest from the exact mid-point of the bowl's top line. (Whew!)

Cygnus X-1 lies perhaps 18 to 19 million miles from the visible companion star, just 0.2 AU away. Distance to the system may be roughly 6,000 light years, meaning the magnitude 9 visible star is a real powerhouse of luminosity to be seen this easily from such a great distance. How do we know a black hole is the likely object so close to HDE 226868? The visible star itself wouldn't generate X-rays to the high intensity detected at this precise point on the sky; a massive, compact, invisible body therefore must exist very close to the star, an object responsible for such concentrated X-ray emission. The hole is probably not "stripping" matter away from the visible star; instead, the star (which is slightly variable) is expelling its own mass gradually through its solar wind. Some of this gas would naturally be captured in an accretion disk orbiting the hole. Motion of such matter as it whirls around the event horizon at a fantastic orbital speed created tremendous friction among constituent particles in the trapped gas, raising its heat to the multiple millions of degrees by which X-rays are generated so copiously.

Cygnus X-1 is probably the very best of all known "candidates" for being an actual black hole. Readers interested in learning more about its discovery, history of observation, and astrophysical research can easily find such information among numerous astronomy sources. Best of luck to those who try my suggested star-hop. I think the effort is very worthwhile. (Don't forget *Burnham's Celestial Handbook* - the "finder photograph" can be a huge help.)

A Planet Named Easterbunny?

You know Uranus, Neptune, and Pluto. But how about their smaller cousins Eris, Ceres, Orcus, and Makemake? How about Easterbunny?

These are all names given to relatively large “planet-like” objects recently found in the outer reaches of our solar system. Some were just temporary nicknames, others are now official and permanent. Each has a unique story.

“The names we chose are important,” says Caltech astronomer Mike Brown, who had a hand in many of the discoveries. “These objects are a part of our solar system; they’re in our neighborhood. We ‘gravitate’ to them more if they have real names, instead of technical names like 2003 UB313.”

Nearby planets such as Venus and Mars have been known since antiquity and were named by the ancient Romans after their gods. In modern times, though, who gets to name newly discovered dwarf planets and other important solar-system bodies?

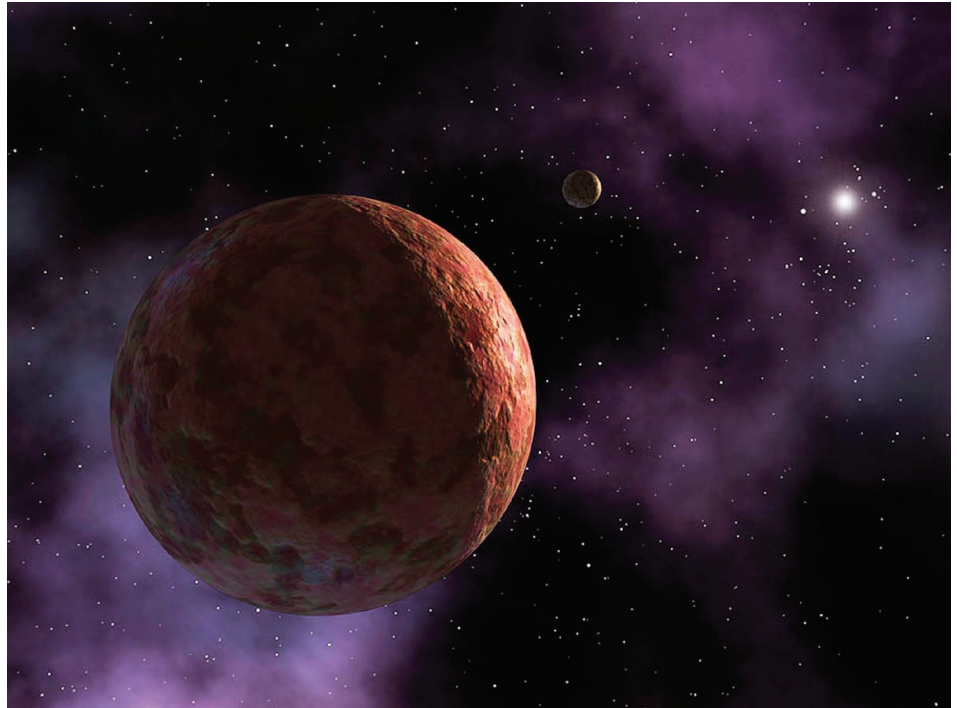
In short, whoever finds it names it. For example, a few days after Easter 2005, Brown and his colleagues discovered a bright dwarf planet orbiting in the Kuiper belt. The team’s informal nickname for this new object quickly became Easterbunny.

However, ever since its formation in 1919, the International Astronomical Union (IAU) ultimately decides whether to accept or reject the name suggested by an object’s discoverers. “Easterbunny” probably wouldn’t be approved.

According to IAU guidelines, comets are named after whoever discovered them—such as comet Hale-Bopp, named after its discoverers Alan Hale and Thomas Bopp. Asteroids can be named almost anything. IAU rules state that objects in the Kuiper belt should be given mythological names related to creation.

So Brown’s team started brainstorming. They considered several Easter-esque names: Eostre, the pagan mythological figure that may be Easter’s namesake; Manabozho, the Algonquin rabbit trickster god.

In the end, they settled on Makemake



Artist’s rendering of dwarf planet MakeMake, discovered around Easter 2005. Unlikely to gain acceptance their nickname Easterbunny, the discoverers named it for the god of humanity in the mythology of Easter Island.

(pronounced MAH-kay MAH-kay), the creator of humanity in the mythology of Easter Island, so named because Europeans first arrived there on Easter 1722.

Other names have other rationales. The dwarf planet discovered in 2005 that triggered a fierce debate over Pluto’s status was named Eris, for the Greek goddess of strife and discord. Another dwarf planet with an orbit that mirrors Pluto’s was dubbed Orcus, a god in Etruscan mythology that, like Pluto, ruled the underworld.

Brown says he takes “this naming business” very seriously and probably spends too much time on it. “But I enjoy it.” More tales of discovery and naming may be found in Brown’s blog MikeBrownsPlanets.com.

Constellations have also been named after ancient gods, human figures, and animals. Kids can start to learn their constellations by making a Star Finder for this month at spaceplace.nasa.gov/en/kids/st6starfinder/st6starfinder.shtml. There you will also find a handy explanation of why astrology has no place in science.

This article was provided by the

Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Executive Committee Meeting: Wednesday, September 2 7:00pm at Seagrave Observatory All Members Welcome

Agenda:

- 1) AstroAssembly**
- 2) New sign to be posted near the inner stone wall. We need to discuss design and content.**
- 3) Scituate’s plans for the new soccer field. Light pollution problems for us?**



August Meeting Notes

Friday, August 7, 2009; Seagrave Observatory
Jim Crawford

Monthly Meeting 7:30 p.m.

Bob Horton welcomed all members.

Bob Napier introduced Guest Speakers: **Dick Parker**- Chiefland Astronomy Village Observing Site In Florida • **Craig Cortis**- The Summer Milky Way Points of Interest • **Bob Forgiel**- Astro-Imaging Equipment and Procedures

Business Meeting 9: p.m.

Secretary's Report: July minutes amended to reflect that the Guest Speaker was introduced by Steve Hubbard and not Bob Napier. Amendment seconded and excepted by members.

Financial Report: Bob Horton suggested we return to reporting the budget on a monthly cycle rather than the current yearly cycle. Membership agreed.

1st VP Bob Napier: Skyscrapers' September monthly meeting will feature a talk by Brendan Hermalyn on NASA's upcoming Lunar Crater Observing and Sensing Satellite (LCROSS) Mission. • Brendan Hermalyn is a graduate student at Brown University in Planetary Sciences, and is a science team member on the LCROSS mission with Dr. Peter Schultz. His graduate work is focused on understanding the ejecta distribution resulting from hypervelocity impacts. • In 1999, the Lunar Prospector mission detected hydrogen signatures in permanently shadowed craters on the poles of the moon. These signatures may indicate the presence of water ice in some form on the surface of the moon. The goal of the LCROSS mission is to confirm the presence or absence of water ice in a permanently shadowed region on the moon, and to constrain the

properties of the lunar regolith in that region. On October 9th, 2009, LCROSS will use the upper stage of the launch vehicle as a kinetic impactor to form a crater and excavate of sub-surface material. The impact and resulting ejecta will be viewed and analyzed by a suite of instruments on a shepherding spacecraft as well as a comprehensive earth-based observational campaign. The ejecta curtain is expected to be viewable on earth by 10-12 inch telescopes or larger, providing a unique opportunity for amateur observation. This talk will go over the details of the mission and expected observation possibilities.

2nd VP Steve Hubbard: Reported on Astro Assembly 2009. The reception will be held at the community center. Members are requested to donate items for the raffle and also volunteer to help out with the set up and clean up. Scheduled, Guest Speakers are: Al Hall, Reconstruction of the Clark Drive at Seagrave. • Thomas Levinston, Historical facts about Issac Newton. • Bill Sheehan, Observations of Mars around the early 19th century. • Mike Mattei, Strange Cloud Formations on the Terminator of Venus. • Ronald Florence, Development of Big Science in early 20th century.

Historian Dave Huestis: Ruth Allen was the winner of the drawing to purchase the last 75th Anniversary Book from the 1st printing.

Librarian Bruce Merrill: No report.
Star Party Coordinator Bob Forgiel: No parties at this time. Next star party may be in October.

Trustee Jim Brenek: Reported that he received two eye pieces donate by Steve Hubbard. Jim also did a nice job of cleaning up and painting the old

Treasurer's Report

7/31/2009 through 8/25/2009
Lloyd Merrill

INFLOWS

75th Yr T-Shirt Sales	100.00
Astroincome	
Astro-banquet	68.00
Astro-registration	68.00
TOTAL Astroincome	136.00
75th Anniversary Book 2nd Print	30.00
Cookoutinc	23.00
Dues	
Regular	80.00
Senior	20.00
TOTAL Dues	100.00
Starparty	30.00
TOTAL INFLOWS	419.00

OUTFLOWS

Refreshment Expense	12.27
Trusteexp	36.25
Electric	11.74
TOTAL OUTFLOWS	60.26

OVERALL TOTAL 358.74

Banking Accounts

Citizens Bank Checking	6,537.08
Capital One Money Market	16,245.46
Total Cash	22,782.54

telescope mount located just outside the meeting hall.

Bob Horton and the members express their appreciation for all the hard work Jim has done to improve the grounds and buildings.

New Business: New member, Vincent Chrzanouski was introduced to the membership. He will be voted into the organization at September meeting.

Old Business: None.

Good of the Organization: Al Hall suggested viewing Perseid Meteor shower and its estimated that you could see up to 100/hr on August 12 around 2-4am.

Bob Horton scheduled the E-Board meeting for August 8th at 4 p.m. All members were invited to attend.

The Spectroscopy workshop was re-scheduled for August 29th.

Bob Horton also asked if there is any interest in a Mirror Making Workshop for the fall months. The workshops would be held at the meeting hall.

Meeting Adjourned at 10: pm



Top, right: Jack Szelka sets up his 12' Dobsonian. **Middle:** Al Hall built this lens-testing equipment. **Bottom:** Dick Parker gives a presentation during the Saturday afternoon talks at Stellafane. Photos by Jim Hendrickson.



Frank Dubeau, Al Hall, and Bob Horton at



Camp Skyscrapers at Stellafane. Photo by Lloyd Merrill.



Apollo 12 astronaut Captain Alan Bean gives a talk at the Hartness House. Bean was the keynote speaker at Stellafane. Photo by Jim Hendrickson.



One of three clear nights at Stellafane. Photo by Steve Hubbard.



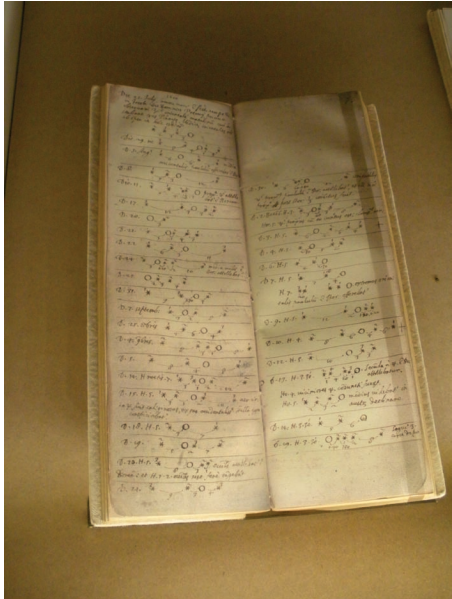
A series of lectures on the History of the Telescope took place at the Hartness House on Thursday, August 13. The event was attended by Skyscrapers John Briggs, Jim Hendrickson, Dan Lorraine, and Glenn Jackson. Photo by Ken Spencer.



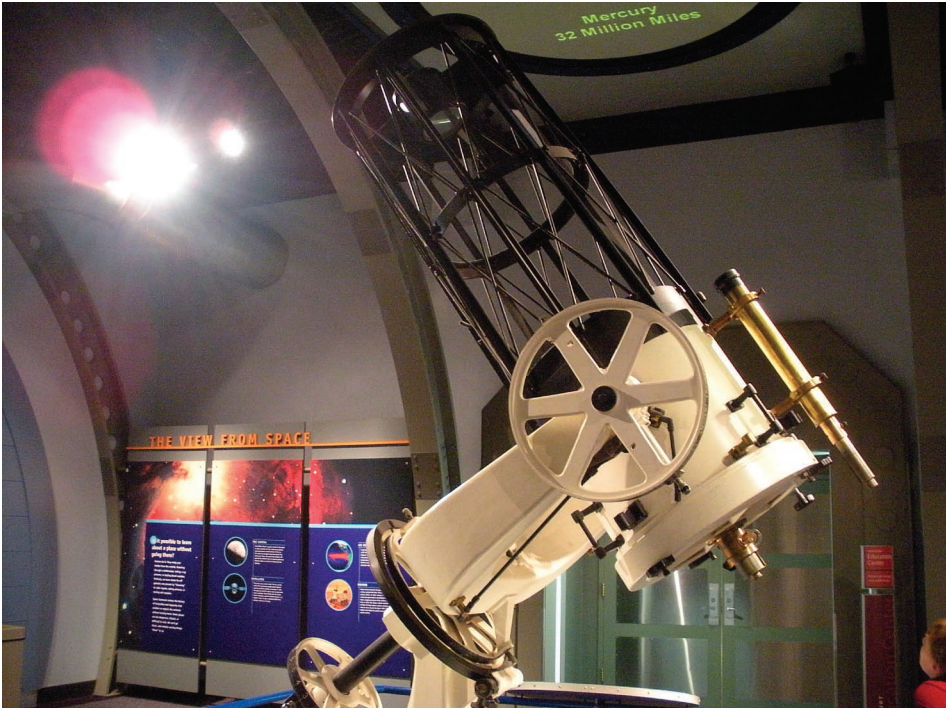
Jack Szelka, Joe Sarandrea, Steve Hubbard, Jim Hendrickson, and Glenn Jackson visit the Moon Tree in Washington Square in Philadelphia. This sycamore tree was planted on May 6, 1975 from a seed carried to the Moon by Apollo 14 astronaut Stuart Roosa. This was the first official Moon Tree planted to celebrate the nation's bicentennial. Photo by Dan Lorraine.



Jack Szelka checks out an antique refractor in the lobby at the Franklin Institute. Photo by Jim Hendrickson.



Above, top: One of Galileo's original telescopes at the Franklin Institute in Philadelphia. **Above, bottom:** a reproduction of Galileo's observation notebook showing the positions of the four large moons of Jupiter. Photos by Dan Lorraine.



Left: The 24-inch reflector telescope, manufactured by J.W. Fecker of Pittsburgh, was a convertible Newtonian/Cassegrain instrument with focal ratios of 14.4 and 7, respectively. The reflector was used for deep-sky observations, including the first recovery sighting of Comet Halley in the fall of 1985. City light pollution eventually rendered it ineffective, and the scope was moved to the Franklin Institute's Space Command exhibit. Photo by Dan Lorraine.



Charles Smiley (right) and Don Reed (left) with phototheodolite on the second floor balcony of the Atlantis Motor Inn in Bass Rocks (Cape Ann), Massachusetts. The October 2, 1959 total solar eclipse began here at sunrise. Unfortunately the remnants of hurricane Gracie brought rain and cloud cover to the area and no eclipse images were taken. Scanned from the Smiley Slide Collection by Dave Huestis.



Top: Double Cluster in Perseus. **Bottom:** Comet Christensen. Photos by John Kocur. These shots were taken at Shady Pines Campground, Rockland Astronomy Club Summer Star Party, Savoy Mass, Aug 17 – 20. All shots are single shot unguided 1 min 30 second exposures f/6.25. ISO 400 for the Double Cluster, ISO 800 for Comet Christensen, magnitude 8.2 in Sagitta. Equipment used - 80mm Orion Eon, Canon XSi, Meade LXD75 mount. Live View controlled by Canon EOS Utilities software via laptop.





SKYSCRAPERS INCORPORATED PRESENTS

ASTROASSEMBLY 2009

Friday, October 2 & Saturday, October 3
at Seagrave Memorial Observatory

Ronald Florence

Author of "The Perfect Machine, The Building Of The Palomar Telescope."

Ronald Florence is a historian and novelist. Educated at Berkeley and Harvard, where he received a PhD in French and German history. Before turning to full-time writing, he taught at Harvard, Sarah Lawrence College, and SUNY; was a senior researcher at the Century Foundation; and was executive director of the New York Council for the Humanities.

Thomas Levenson

"The (Criminal) Education of Issac Newton"

Professor Levenson is the winner of the Peabody Award (shared), New York Chapter Emmy, and the AAAS/Westinghouse award and currently the interim head of the Writing and Humanistic Studies department at MIT

William Sheehan

"A Centennial Observed: E.M. Antoniadi and Mars"

William Sheehan is one of the world's leading students of the planet Mars. Sheehan's first book, "Planets & Perception", published in 1988, was a Book-of-the-Year Selection of the Astronomical Society of the Pacific. Other critically acclaimed books include: "Worlds in the Sky" (1992), "The Immortal Fire Within: the life and work of Edward Emerson Barnard" (1995), and "In Search of Planet Vulcan" (1997).

Mike Mattei

"Strange Cloud Formations on the Terminator of Venus."

Mike Mattei has been an active observer for many decades and a member of ALPO and AAVSO. He worked at Harvard Observatory's Agassiz Station (now Oak Ridge Obs.), and met his future wife (Dr. Janet Akyuz Mattei 1943 -2004) at AAVSO. He became very active in optics and amateur telescope making, and later went professional, specializing in the fabrication of aspherical optics at Space Optics Research Labs, and Optical Systems and Technology Inc (O.S.T.I.). There he worked on optics for space exploration such as an Ultraviolet Telescope for Goddard Space Flight Center. Eventually Mike was asked to join the staff at Lincoln Labs to work on special Government 'Star Wars' projects using Laser Imaging Optical Radar Systems. He also worked at MIT's Wallace Astrophysical Observatory. He taught courses at University of Hawaii and spoke at local club events Mike is possibly best known for his hundreds of nights teaching beginners the art and craft of mirror making at the ATMoB workshop in Westford, Massachusetts. He still works full time at Lincoln Labs, and continues to spend his nights searching for Novae for the AAVSO in his home-built observatory in Littleton, MA.

Friday Evening Informal Talks

Contact Steve Hubbard if you would like to give a talk

A Fabulous Saturday Evening Reception followed by a Sumptuous Catered Banquet

You must pre-register for this banquet

Raffle & Door Prizes

Name _____

Address _____

Email _____

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

Steve Hubbard
AstroAssembly Registrar
45 Church Street
Auburn, MA 01501

(508) 832-8746
cstahs@yahoo.com

Registrations at \$17.00 each

Total \$ _____

Banquet tickets at \$17.00 each

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

Total \$ _____

Total \$ _____

- I would like to give a short 20-minute talk on Friday evening:
Indicate the title of your talk below. AstroAssembly registrar Steve Hubbard will contact you via email to confirm your talk.

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, RI 02857

