The Skyscraper
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The monthly publication of

Amateur Astronomical Society of Rhode Island

47 Peeptoad Road
North Scituate, RI 02857

www.theskyscrapers.org

See back page for directions to Seagrave Observatory.

Submissions
Please submit items for the newsletter by October 15 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 Skyscraper

October 2007

October 2007

6 Saturday	8:00PM	**Public Observing Night** Seagrave Observatory, weather permitting
13 Saturday	8:00PM	**Public Observing Night** Seagrave Observatory, weather permitting
20 Saturday	8:00PM	**Public Observing Night** Seagrave Observatory, weather permitting
27 Saturday	8:00PM	**Public Observing Night** Seagrave Observatory, weather permitting

Note: There is no regular monthly meeting in October.

In This Issue

President's Message

Glenn Jackson, President

Skyscraper AstroAssembly 2007 is now in the history archives. From all of the reports that I have received everyone enjoyed the speakers, the camaraderie, and the FOOD! I am pleased that the Skyscrapers upheld the famous Rhode Island tradition of good food and lots of it. Of course the AstroAssembly could not have happened with out numerous volunteers, way to many to name individually. All of the volunteers, you know who you are, my deepest gratitude for your support for this event. The entire weekend went very smoothly and with out any problems. Hats off to Kathy Siok for a wonderful event. Anyone that missed the AstroAssembly this year mark your calendar for next year October 3rd and 4th, don't miss two in a row.

In the works are several Star Parties, October 17th, 18th, and 19th. Please take this opportunity to support your organization and share your love of the mysteries of the night skies. Who knows a future Mars traveler or astronomer may be influenced by your enthusiasm for the night skies.

Following the tradition of Frank Seagrave, the executive board is making an effort to bring back science at Seagrave Memorial Observatory. In that light we have several workshops planned for the future. Friday November 16th an Elementary Imaging Workshop will be conducted by Tracy Haley, John Kocur and Rick Lynch. If all goes well all participants will go home with a CCD image of the moon or one of the planets and some knowledge of how to process these images at home on their own telescopes. In March, Bob Forgiel will demonstrate capturing a CCD image using some very sophisticated equipment. Participants will gain first hand knowledge of all that is involved in CCD imaging so that you can make a educated decision if this is a path for you to follow on your own. Following a monthly meeting presentation on May 2nd by Arne Herndon, director of AAVSO, Scott Tracy, Gerry Dyck, and Dave Hurdis will conduct a hands on workshop to visually observe variable stars on Saturday May 3rd. Science at Seagrave is back. I hope that all of you take advantage of these workshops to increase your knowledge and appreciation for the mysteries of the night skies.

Our next monthly meeting on November 2nd will feature our own Dave Huestis who will present "Brown University-Charles Smiley/Skyscrapers Solar Eclipse Expeditions". Perhaps someday in the future current Skyscrapers could follow in the paths of Charles Smiley on our own solar expedition. Hope to see you there..

I'm proud to be a part of "Skyscrapers Astronomical Society of Rhode Island."

October Meteor Showers

Dave Huestis

Perhaps you were one of the fortunate observers who finally viewed a few of the Perseids back in mid-August. It seems some folks caught quite a number of them on the Friday night of August 10, two days before either of the two known peaks this meteor shower can display. That's good, because on the next night the number of meteors seen was fairly small. Then, depending upon your location in southern New England, many of us were beset by clouds in the early morning hours of the 13th when the peak of activity was to occur.

In a few hours of observing during the early morning of Sunday the 12th, I only counted less than a dozen Perseids. Many of the shooting stars I did see originated from the north-east near the constellation Perseus and streaked down the Milky Way. It was good to see a few bright Perseids after all the many years we have been clouded or mooned out.

Well, October provides us with two meteor showers that are well worth your time to observe.

First up is the Draconids. Though this shower of cometary particles is a minor one, the Moon will be in a waning crescent phase (a couple of days before New) on the night of peak activity, October 8-9. Therefore it will not hinder observation of the faintest of the meteors, provided you observe from a dark sky location.

Look towards the northern sky during the early evening hours of the 8th, for the constellation Draco is highest in the sky at that time. The meteors will appear to radiate from that direction. Locate the Big Dipper (Ursa Major), and you'll be looking in the

right direction. The Draconids are fairly slow moving meteors, hitting our atmosphere at only 12.5 miles per second. Expect a maximum of no more than ten meteors per hour during the peak.

The second meteor shower of the month is a major shower of shooting stars, the Orionids. On the night of October 20-21, these remnants of Halley's Comet intercept the Earth's orbit nearly head- on at 41.6 miles per second. Unfortunately the waxing Moon (just past First Quarter), will brightly illuminate the sky until it sets around midnight, thereby hindering our view of all but the brightest of these fast shooting stars until it does so.

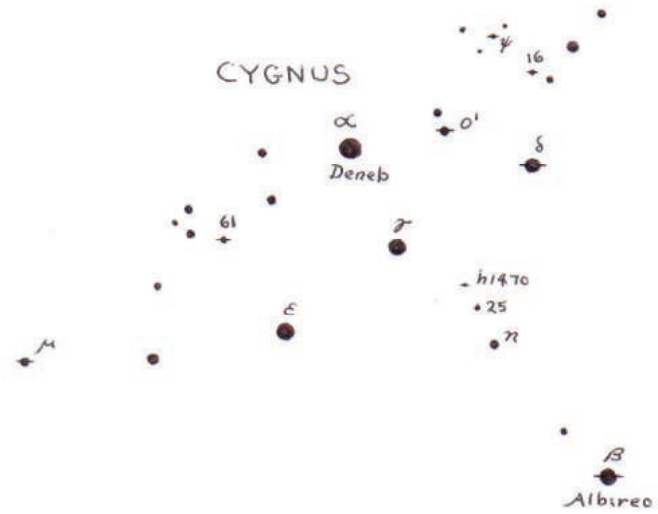
I would begin observing around midnight. Locate the mighty hunter Orion in the sky. Earlier in the evening this giant constellation will be in the east-southeast sky. As the night progresses Orion will rise higher and higher, and so will the point in the sky from which the meteors will appear to radiate. At approximately 3:30 am Orion will be due south of your location and about halfway up off the southern horizon.

Typically the shower produces about 15-20 yellow and green meteors per hour during peak. They are also noted for producing fireballs that create persistent dust trains high in the atmosphere. You may get lucky and see a few of the brighter meteors as they disintegrate.

If you begin observing before the Moon sets, by all means block its bright glare by using some trees or buildings as a shield. The greatest number of meteors will be seen once the Moon dips below the western horizon.

In addition, while looking at Orion, please notice a bright red star-like object up and to the left of Orion, nestled among the stars of Gemini. This object is not a star, but our neighboring planet Mars. Mars will be closest to the Earth in December (about 57 million miles). This close approach, called opposition, will not be a grand one, but I will write a future column about what one might see through the larger telescopes at Ladd Observatory in Providence and at Seagrave Observatory in North Scituate.

Remember, Seagrave Observatory is open to the public every clear Saturday night (except September 29). Check our web site at http://www.theskyscrapers.org for further information, and always keep your eyes to the skies.



Autumn Double Stars: Cygnus

Glenn Chaple

Although it's a Summer Triangle constellation, Cygnus remains well-seen throughout the autumn months. Located in the star-rich fields of the Milky Way, the Swan is home to numerous double stars. Here are eight of the most noteworthy (data from the Washington Double Star Catalog (WDS):

beta Cygni (Albireo) magnitudes 3.4 and 4.7, separation 34.7", Position Angle 55° (2003)

Arguably the finest double star in the northern sky, Albireo boasts hues of topaz yellow and sapphire blue. Colors actually appear more vivid in small scopes.

16 Cygni mags 6.0 and 6.2, sep 39.1", p.a. 134º (2003)

Attractive set of yellowish "twins." About a degree eastward is the bright planetary nebula NGC6826.

delta Cygni mags 2.9 and 6.3, sep 2.5", P.A. 225° (2004)

Slow-moving binary (P ~ 830Y), delta Cyg is a small-scope challenge, due to the difference in the magnitudes of its component stars. Use at least 100X on a night when the seeing is steady.

psi Cygni mags 5.0 and 7.5, sep 2.9", P.A. 178° (2003)

Like delta Cyg, difficult for small-aperture instruments.

h1470 Cygni mags 7.4 and 9.2, sep 28.6", P.A. 340° (2002)

I featured this pair in my "Observing Basics" column in the September 2006 issue of Astronomy Magazine. This colorful gold and blue pair is part of a striking arc comprised of four double stars of similar appearance. Find "Chaple's Arc" by tracing a line from eta Cyg to 25 Cyg and extending it a degree or so beyond.

omicron1 Cygni mags 3.8, 7.0, and 4.8, seps 107" and 338", P.A. 328° and 173° (2000)

A wide optical triple, best seen in binoculars and small rich-field scopes. Fine contrast between the golden orange main star and its bluish companions.

61 Cygni mags 5.4 and 6.1, sep 31.1", P.A. 151° (2004)

This binary pair (P ~ 650Y) is of historical significance as the first star whose distance was accurately determined (Bessel – 1840). Both are orange K-type stars. Dist = 11 LY.

mu Cygni mags 4.8 and 6.2, sep 1.9", P.A. 312° (2004)

Slow-moving binary pair (P ~ 500Y) that's gradually closing. The primary star forms a nice binocular pair with a 7th mag star located 200" away.

NASA's Space Place

A Missile in Your Eye

By Patrick L. Barry

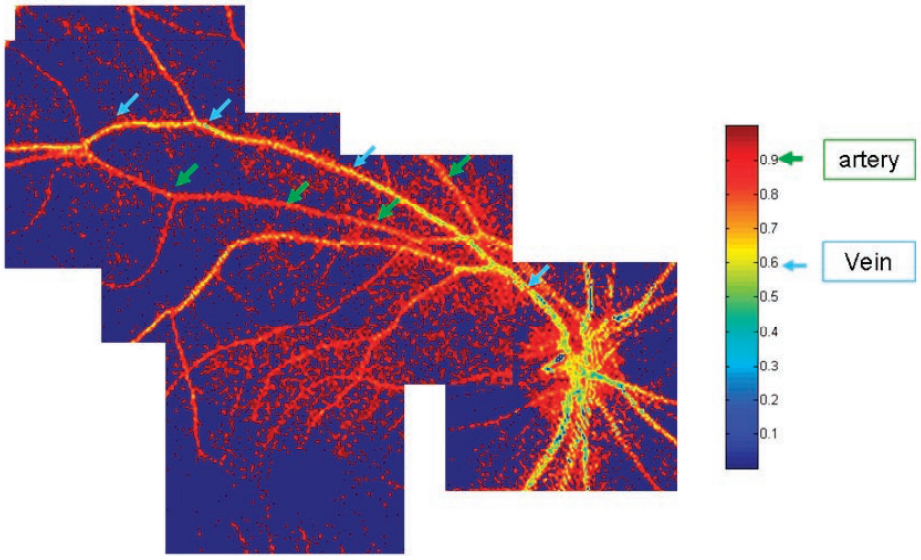
Satellite technology designed to catch ballistic missile launches may soon help doctors monitor the health of people's eyes.

For the last 15 years, Greg Bearman and his colleagues at JPL have been working on a novel design for a spectrometer, a special kind of camera often used on satellites and spacecraft. Rather than snapping a simple picture, spectrometers measure the spectrum of wavelengths in the light coming from a scene. From that information, scientists can learn things about the physical properties of objects in the photo, be they stars or distant planets or vegetation on Earth's surface.

In this case, however, the challenge was to capture snapshots of short-lived events—like missile launches! The team of JPL scientists designed the new spectrometer, called a computed tomographic imaging spectrometer (CTIS), in collaboration with the Ballistic Missile Defense Organization as a way to detect missiles by the spectral signatures of their exhaust.

But now the scientists are pointing CTIS at another fast-moving scene: the retina of an eye.

Blood flowing through the retina has a different spectral signature when it is rich in oxygen than when it is oxygen deprived. So eye doctors can use a spectrometer to look for low oxygen in the retina—an indicator of disease. However, because the eye is constantly moving, images produced by conventional spectrometers would have motion blurring that is difficult to correct.



This three-color composite image from the computed tomographic imaging spectrometer shows the oxygenation of the blood in the arteries and veins of a human retina. (Arteries appear red, veins appear yellow.)

The spectrometer that Bearman helped to develop is different: It can capture the whole retina and its spectral information in a single snapshot as quick as 3 milliseconds. "We needed something fast," says Bearman, and this spectrometer is "missile-quick."

CTIS is even relatively cheap to build, consisting of standard camera lenses and a custom, etched, transparent sheet called a grating. "With the exception of the grating, we bought everything on Amazon," he says.

The grating was custom-designed at JPL. It has a pattern of microscopic steps on its surface that split incoming light into 25 separate images arranged in a 5 by 5 grid. The center image in the grid shows the scene undistorted, but colors in the surrounding images are slightly "smeared" apart, as if the light had passed through a prism. This separation of colors reveals the light's spectrum for each pixel in the image.

"We're conducting clinical trials now," says Bearman. If all goes well, anti-missile technology may soon be catching eye problems before they have a chance to get off the ground.

Information about other NASA-developed technologies with spin-off applications can be found at http://www.sti.nasa.gov/tto .

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

September Meeting Notes

Nichole Mechnig, Secretary

August 30, 2007, Seagrave Observatory

Executive Committee Meeting started at 7:04 pm local. Members in attendance: Glenn Jackson, Steve Hubbard, Kathy Siok, Dave Huestis, Tom Barbish, Jim Brenek, Bob Horton, Dolores Rinaldi, Jim Crawford, Jerry Jeffrey, Jim Hendrickson and Nichole Mechnig

First order of business • Al Hall motion to have approved a 1 year membership to the family and a subscription to Sky and Tel magazine for the State Fair winner • The board approved the motion with a change of a 1 year subscription to Astronomy magazine.

Second order of business • For AstroAssembly web page links to those donors that have provided prizes it will be a 1 year link no flashy gimmicky ad alphabetical listing will start this year for 2007.

Third order of business • Jerry Jeffrey provided a typed copy of the new grant proposal to the members that were at the meeting and was asked to look it over for any typos.

Forth order of business • Meetings for the next couple of months September 7,2007 - monthly meeting, no e-board meeting in September • October no meetings • November 2, 2007 – monthly meeting no e-board meeting • December 1,2007 – monthly meeting at the Community Center this is our abbreviated meeting due to it also being the Christmas Party, no e-board meeting • Donations for the Christmas Party will be announced at the November meeting • Steve Hubbard will be running that meeting • Jerry Dyck will be doing the Christmas Carol • Glenn Jackson would like for a member to put a montage of "Looking Back at Skyscrapers 2007" Please see Steve Hubbard if interested.

Fifth order of business • Kathy Siok gave a brief rundown of what was left to do for Astro-Assembly giving out flyers at the next meeting for signing up to attend Astro-Assembly, work party will be scheduled for the Thursday September 27,2007 for 4:00-6:00 • Still looking for volunteers to sign up to assist with assorted work station.

Sixth order of business • per Glenn Jackson do not use the abbreviations "SGO" or "the club" we are not a club and SGO is not listed any where please use the terms the observatory or Seagrave Memorial Observatory.

Meeting adjourned at 8:19 pm local

Treasurer's Report

4/1/2007 - 9/21/2007

Jim Crawford, Treasurer

INFLOWS	
Uncategorized	3.33
Anniversaryinc	1,248.00
astroincome	1,309.00
TOTAL astroincome	1,309.00
cookoutinc	442.00
Collationdonation	41.00
Other donation	125.00
TOTAL donation	166.00
dues	
Contributing	886.00
Family	820.00
Junior	10.00
Regular	1,520.00
Senior	160.00
TOTAL dues	3,396.00
Interest Inc	17.71
magincome	
Astronomymaginc	230.00
skytelmagincome	395.40
TOTAL magincome	625.40
Starparty	112.00
TOTAL INFLOWS	7,319.44
OUTFLOWS	
Uncategorized	38.50
Anniversaryexp	2,270.12
astroexp	
T-Shirts	386.10
TOTAL astroexp	386.10
Auto Fuel	20.00
TOTAL Auto	20.00
collation	250.00
Cookoutexp	650.00
Corporationfee	30.00
Meals & Entertn	100.00
membersubscriptions	
Astronomymagexp	136.00
Skytelexp	371.44
Other membersubscriptions	126.95
TOTAL membersubscriptions	634.39
Misc	94.60
Portajohn	35.00
Postage and Delivery	36.17
Trusteexp	787.59
Utilities	
Electric	77.80
Propane	423.15
TOTAL Utilities	500.95
TOTAL OUTFLOWS	5,833.42
OVERALL TOTAL	1,486.02
Savings	15,674.26

From the Archives

Dave Huestis, Historian

Even before the 75th anniversary committee ever met, I had already begun to plan for the 75th anniversary (May 5, 2007) celebration of Skyscrapers.

One of the ideas was to reproduce the minutes from every meeting for the first year of the society's existence (May 1932 - April 1933), so current members could get a sense of how Skyscrapers formed and how quickly it evolved.

So, starting with the May 2007 issue of The Skyscraper, our webmaster and newsletter editor Jim Hendrickson began to publish scanned images of the monthly meeting minutes for the first year of our great society.

Once you've read the minutes from the first year I suggest you begin to read "A Quarter Century of Skyscraping," a summary of the first 25 years of Skyscrapers history. You can find a copy of this book, published in 1957, on our web site.

Oct. 5th. Meeting. 8 O'clock.

Report of the membership committee.
Members elected:
Miss V. Atwell
Mr. Wakefield of Worcester.
Etta L. Lavett
Mr. and Mrs. Estes.
Mr. Frank Sherman.
Mr. Ralph Lombardo.
Mr. and Mrs. Kunkel.
Miss Edna Carlson.
Mr. Robert F. Day.
Stuart Sherman, Jr. Member.
Business meeting adjurned.

Prof. Koopman spoke.

Vega has 2 trailers, both double stars, one visible to the naked eye.
No.star looks higher in Maine. Why ?
Vega was once the Pole Star, 13,000 years ago. It pulls Southern Cross up so could be seen from Norway.
A spiral nebula is"creation caugh in the act."
49 light years across.
Algol is called the Demon Star.
Double star cluster in the sword of Perseus.
Capella like our sun. Same type of star. Opposite pole from Vega. Moon can half cover the Pleides.
Rigel, 450 light years away.
Betelgeuse, 100 light years away.
The earth was once where Orion is.
Castor and Pollux each a six fold star.
Gemini has interesting planatery nebula.
Sirius is 26x sun in brightness.
Sirius is 4x Betelgeuse.
Sirius is 5th. nearest us. Only 9 light years away. Flickers and changes colors.
Sirius's companion is only 3x earth, yet its mass is about one third of Sirius. A knife made of that material would weigh tons.

Regulus in Leo is a double star.
Arcturus is 1000x our sun and 40 light yrs. away.

Cassiopea is rich in star clusters and double stars. 360 years ago discovered 1st. new star.

There will be a talk on meteors, the first Monday in November.

Mr. Rodman Allen's picture shown.

The interest in comets recently reminded me of the time in 1940 when Comet Cunningham made its appearance. Someone in Skyscrapers innocently invited the public to view it through the Seagrave telescope on New Year's Day. The notice gave a possible viewing time of 45 minutes starting at 5 :00 P.M.

January 1, 1941 was a beautiful day, moderate temperature with a clear blue sky. There was very little if any snow on the ground. It was just the kind of day to take a ride and end up seeing a comet.

My father and I left our house in Providence early enough to observe the comet which was low in the west. When I turned into Peep Toad Road I was amazed at the number of cars. I remarked to my father that someone must be having a big New Year's Day party. Someone was: Skyscrapers.

I stopped our car to talk to the State Trooper on duty, identified myself as a Skyscraper, and showed him my key to the observatory. He found us a place to park and my father and I walked past the long line of interested observers. When we reached the head of the line the people waiting told us to go back to the end of the line. I said "If I do you won't get in because I have the key." That brought a laugh. I asked them to wait until I had prepared the observatory.

I opened the dome, placed the big ladder in position and brought the telescope around. Don Reed and his wife Connie had now arrived and after the telescope was focused we let them in single file through the meeting room to the stairs and into the dome. They were asked to take only a quick look as we had so many to accommodate in a short time. They were very orderly, very cooperative, and very appreciative. Phil Newmarker had come in and he made it enjoyable for all of us.

John L. Euart, one of the group of founding members. Born December 4, 1910; died April 14, 2003.

AstroAssembly 2007 Photo Gallery

Top: left Friday night presentations. Gerry Dyck gave some powerpoint presentations, including Skyscrapers 75th anniversary slideshow. Photo by John Kocur. Top right: Rick Lynch sets up for a video presentation given by Dave Huestis. The video consisted of video from Skyscrapers first ever visit to Seagrave's Observatory, including film of Frank E Seagrave himself. Also on the video were shorts from trips to other observatories and eclipse trips. Bottom left, Don Rethke, "Dr. Flush," gives a presentation on Saturday. Photo by Dan Lorraine. Bottom right: Peter Schultz gives a lecture about lunar geology, speculating on whether there is still activity on the moon. Photo by John Kocur.

Clear skies both Friday and Saturday nights allowed Bob Forgiel to give astroimaging demonstrations. Top photo by John Kocur. M27, the Dumbbell Nebula (left), and M57, the Ring Nebula were captured on Friday and Saturday nights, respectively.

Orion Nebula, M42, on September 16th about 5:15am. Tracey Haley took this image at prime focus with Meade 8" LX200 f/6.3 SCT mounted on a Meade Wedge on homebuilt pier. The camera is a Canon Rebel 8.5 megapixel DSLR. Exposure: ISO 800, TV 30 seconds single frame.

The anteroom to the Clark dome has recently been redecorated to highlight the history of Skyscrapers and Seagrave Memorial Observtory. Photo by Dan Lorraine.

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