



the Skyscraper

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

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Friday, November 7, 7pm at Seagrave Memorial Observatory

The Worlds of Giordano Bruno by Dr. Alan Powers

What is NASA's latest estimate of habitable planets in our Milky Way Galaxy alone? Kepler himself, for whom NASA's space telescope is named, said that Galileo owed the idea of other habitable worlds to Giordano Bruno, the subject of my talk. It took four hundred years for Bruno's idea to be on the verge of proof. My powerpoint slides tour Europe where Bruno lived and lectured, in Naples, Rome, Venice, Toulouse, Paris, London, Oxford, and six German cities. NASA now enlists online help to deal with the thousands of pages of data generated by the Hubble and especially the Kepler telescope--which perhaps should be named the Bruno.

Dr. Powers is a teacher, poet and historian with interests including: Shakespeare, Giordano Bruno and the language of birds. His talk will expand our understanding of the life and influence of Bruno, who was one of the first people to come up against the Catholic Church's teachings about the model of the solar system and the Universe.

Library Book Sale Continues at November Monthly Meeting

During late July the Skyscrapers library was downsized. Since then we have sold a few of the many volumes displayed for sale. At our November monthly meeting on November 7 the remaining books will be available for purchase.

Please stop by early to browse the selection and make your purchases. These books are very reasonably priced for quick sale. While a handful of titles are being offered for \$10 each, most of the titles range from \$1-\$5 each.

Also, during our centennial celebration at AstroAssembly, commemorative coffee mugs were offered for a donation of \$5 each. We have a few of these remaining for those of you who were not able to attend.

In addition, commemorative postcards were also created by Jim Hendrickson and myself. Your donation of \$1 will secure one of these momentos for your collection.

Please bring small denomination bills for your donations.

Dave Huestis & Alex Bergeman



Jupiter now rises before midnight. Steve Hubbard took this image on October 27.



Seagrave Memorial
Observatory
Open Nights

Saturdays at 7:00 pm
weather permitting



President's Message

Bob Horton

In this issue of the Skyscraper you will find some nice photos of AstroAssembly 2014. This year's event marked the centennial of Seagrave Observatory, and what an enjoyable time we had – perfect weather, great talks, interesting exhibits, and wonderful camaraderie!

Noteworthy for this year's centennial celebration was that we had a couple of Frank Seagrave relatives in attendance. Sharon (Seagrave) Vetter of Wisconsin made the journey to Rhode Island with her long-time friend and travelling companion Linda Baumgartner. Mark Seagrave came from Millbury, Massachusetts with his fiancée Mary LaRue and her daughter Em-

ily. Sharon and Mark trace their ancestry back to Revolutionary War Capt Edward Seagrave (1722-1793) of Uxbridge, Mass. Linda (Seagrave) Ventres and John Ventres (husband and wife) made the short journey from Burlington, Connecticut. Linda is a more direct Frank Seagrave relative. She is the great, great niece of Frank. Her great, great grandfather was Frank's brother, Clifford.

All of our Seagrave guests enjoyed their visit very much, and were thrilled to see what a special place Seagrave Observatory has become. A special thanks to Dave Huestis for arranging their visit.

Another surprise was the exhibit of

a beautifully restored 1914 Model T Ford, driven from West Warwick to Seagrave by George Taber, a friend of one of our members, Ernie Ross. It was fun to imagine Frank Seagrave driving such a car 100 years ago, from his home in Providence out to his private observatory in North Scituate. Thank you Mr. Taber, for making our day even more memorable.

As always, it took many volunteers handling all of the tasks necessary to organize and operate our annual event.

Kathy and Steve Siok were our co-chairs this year, putting together a nice program of speakers.

Linda Bergemann once again took care of registrations and handling our expenses.

Tina Huestis and Alex Bergemann helped manage the registration table and sold books, coffee mugs, and raffle tickets.

Conrad Cardano cooked many hamburgers and hotdogs, and he was assisted by a number of our members in running the lunch grill.

Dave Huestis arranged the printing of commemorative postcards and "Seagrave" coffee mugs available for sale.

Trustees Tom Thibault, Jim Crawford and Conrad Cardano, along with Bob Stahlbush and other members of the Observatory Committee, did a great job painting our buildings, reorganizing the inside of the meeting hall, cleaning the telescopes and preparing the grounds. On a number of occasions, Tom Thibault's son, Adam, and Jim Crawford's son, Brian, assisted their fathers in making many of the improvements to our property, so a special thanks goes out to them as well.

Many other people helped out as well, both at AstroAssembly and during the months before. On behalf of Skyscrapers, I would like to thank each and every one of you that helped make AstroAssembly such a great success.



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

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 **November 21** 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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Friday, November 14

Let's Go "Back to the Moon for Good" at the URI Planetarium

University of Rhode Island Planetarium
Upper College Road
Kingston, RI

Friday, October 14th, 2014
6:00 and 7:00 P.M.

Contact: Francine Jackson: 401-527-5558

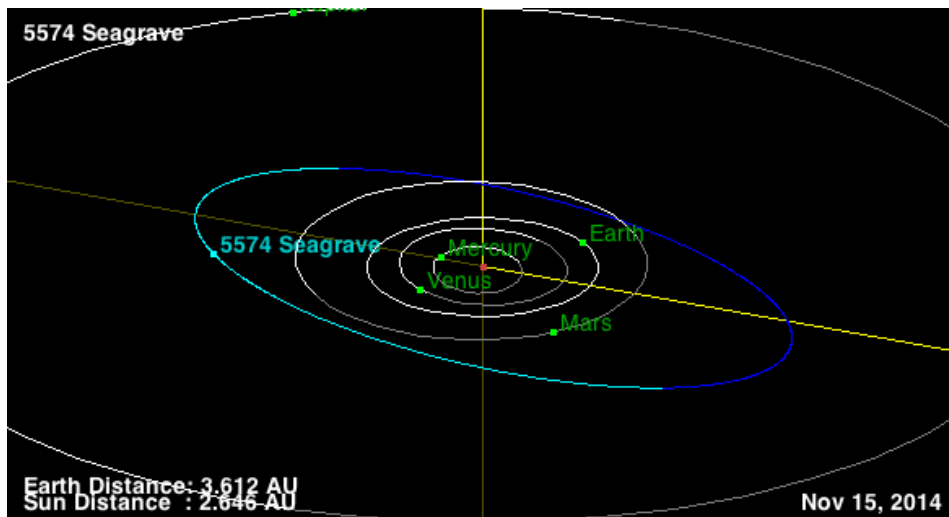
It's been over 45 years since humans have walked on the Moon. But, are there plans to go back? Should we? Could we? How could this happen? Please join the URI Planetarium as it debuts this award-winning show about the possibility of returning to our one and only natural satellite. "Back to the Moon for Good" will be

shown Friday, October 10th, at 6:00 and 7:00 P.M. In addition, a short program on Light Pollution will be shown, then The Skies of the URI campus, a live introduction to the night sky.

Admission is only \$5.00, to benefit the University of Rhode Island Planetarium Fund.

The University of Rhode Island Planetarium is located on Upper College Road, on the Kingston campus, across from the Art Center.

The University of Rhode Island Planetarium is available for programming for schools and other organizations. For more information, please contact Francine Jackson at 401-527-5558.

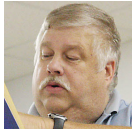


5574 Seagrave (1984 FS)

Skyscrapers, Inc., the Amateur Astronomical Society of Rhode Island, is pleased to announce that asteroid 5574 (a main belt asteroid 5.6 miles in diameter orbiting between Mars and Jupiter) was recently named Frank Evans Seagrave. Skyscrapers petitioned The Minor Planet Center, an International Astronomical Union (IAU) division under the auspices of the Smithsonian Astrophysical Observatory at the Center for Astrophysics in Cambridge, Massachusetts, to bestow this recognition. The IAU made the decision in September, just in time for the centennial anniversary of Seagrave Memorial Observatory (1914-2014). Asteroid 5574 will now live on for billions of years as a lasting tribute to Frank Evans Seagrave.

<http://ssd.jpl.nasa.gov/sbdb.cgi?sstr=5574;orb=1;cov=0;log=0;cad=0#orb>





Astronomical Highlights for November

Dave Huestis

Before we review some of the astronomical highlights for November, a key ritual to remind everyone about occurs on the second day of the month at 2:00 a.m. That Sunday morning is when most of the United States falls back one hour from Daylight Saving Time to Standard Time. While this biannual resetting of clocks (“spring ahead and fall back/behind”) was simply designed to make better use of available daylight hours during predominantly summer months, its continuance in the modern age has been called into question. Since it is not observed throughout the world (even in the United States Hawaii and parts of Arizona don’t observe it), the time change causes more problems than perceived benefits.

During the first few days of November you can catch a glimpse of the planet Mercury within ten degrees of the east-southeast horizon at dawn. On the 1st Mercury will be about five and a half degrees to the upper left of Virgo’s bright star Spica. Each morning this closest planet to our Sun will be found lower in the sky and will soon be lost in bright twilight.

While Jupiter will finally be rising before midnight in November, you’ll still need to wait a few hours for it to climb above most local tree lines. It will be more reasonably placed in the sky at a more convenient

time for most casual stargazers in December, though then you’ll have to deal with the colder temperatures. However, Jupiter is well worth the wait.

Now would be a good time to view our solar system’s two most distant planets—Uranus and Neptune. Both worlds will be visible at least through the rest of 2014. Without a computer-aided telescope, a dark sky is a necessity to locate these worlds. In non-light polluted skies they can be easily found using sky charts. However, if you are unfamiliar with the sky and don’t know how to star-hop, it’s best to visit one of the local observatories and allow the telescope operators to find Uranus and Neptune for you. Currently Uranus is located in the constellation of Pisces, while Neptune can be found in the constellation of Aquarius.

When viewed through a telescope an observer can see the bluish-green disks of these planets. You won’t be able to see any details of these cloud-enshrouded worlds, but how many people can say they actually observed Uranus and Neptune? With a ten-inch telescope one can observe Ariel and Umbriel, two of Uranus’ five major (out of 27 known) moons. That same telescope will reveal Neptune’s largest of 13 known moons, Triton.

Finder charts for Uranus and Neptune

can be found on the Skyscrapers website at: <http://www.theskyscrapers.org/>.

And finally, the only meteor shower of any consequence this month occurs on the night of November 17-18. Though the Leonid peak activity occurs during daylight hours for us in the United States, between midnight and dawn on the 18th we can expect perhaps 10-15 bright shooting stars per hour to blaze across the sky. And I do mean blaze!. The meteors associated with this shower are the fastest known, hitting the Earth’s atmosphere nearly head-on at about 44 miles per second. For this reason the display produces many fireballs, with about half of them leaving trains of dust which can persist for minutes.

While the usually green or blue meteors can be seen practically anywhere in the sky, you know you’ve spotted a Leonid if you can trace the meteor’s path back to the shower’s radiant point (where the meteors appear to emanate from) in the Sickle (backwards question mark) asterism in Leo. See accompanying finder chart.

The waning crescent Moon will rise around 2:30 a.m. locally, but its slight illumination will not overshadow many of the Leonids. So though it may be a little chilly to watch this display of shooting stars, should sky conditions be favorable you’ll want to spend an hour or two scanning the skies.

While one does not require a telescope to observe a meteor shower, the local observatories do provide excellent views of the Moon, planets and deep sky objects like nebulae, star clusters and galaxies. Explore the riches of our Milky Way galaxy or peer into the farthest reaches of our universe.

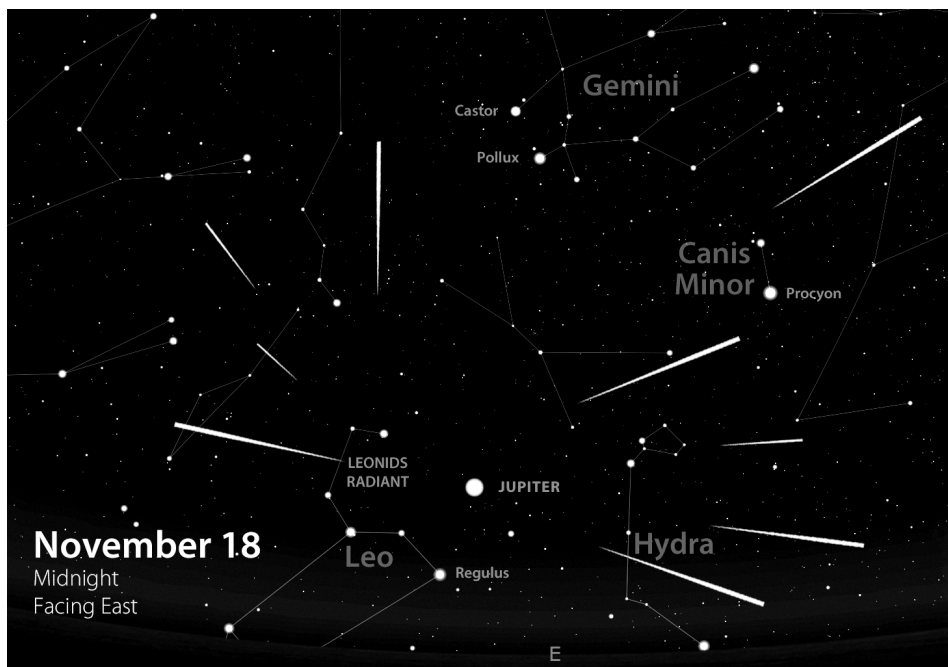
Seagrave Memorial Observatory (<http://www.theskyscrapers.org>) in North Scituate is open to the public every clear Saturday night.

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 the websites of these facilities before venturing out for a visit.

Keep your eyes to the skies.





M31 image by Tom Thibault



The Great Galaxy in Andromeda

Francine Jackson

Our eyes are truly amazing. Left alone, in a dark sky, we can look up and view an object two million light years away; that's a lot of empty space our vision is slogging through, but it's worth it to observe such an amazing sight: a giant Q-tip. However, resolved, it forms a galaxy, M31, similar in shape and size, if not larger, to our home Milky Way. It doesn't take much magnification to discern a distinct oval shape, complete with a brightening in the center - our massive neighbor's core. But, it takes a lot of resolution to realize what an incredible object this is.

First considered a diamond ring on the hand of Andromeda as she was being set up to be eaten - jewelry for all occasions - this puffball was originally classified with

all similar-looking objects as seen through early, small telescopes: a nebula, a giant mass of dust and gas. But, then, in the 1920's Edwin Hubble photographed Cepheid variables, standard measuring stars throughout the Milky Way, using the 100-inch telescope at Mt. Wilson, the largest of its kind back then, which pushed M31 straight out of our own galaxy, giving it the distinction of being the first ever separate and distinct galaxy. With one set of photographs Hubble doubled the size of our universe.

One point of observing M31 that I've always found amazing is that yes, we are looking over 2.5 million light years back in time; but, this galaxy isn't just a flat surface. We are seeing it tilted at an angle of about

13 degrees. What that means for us is that, not only are we observing it very far away, but also 3-dimensionally, we are looking straight across to the other edge.

It's estimated that we, moving within our great Milky Way, will rendezvous with M31 in about a billion years or so. What type of impact will result? Theories range from not at all, as stars are far enough away from each other to pass directly through, to massive giant explosive realms as stars do clash. Either way, incredible star birth will occur, from the interactions of the two behemoths' massive amount of dust and gas. Sorry we won't be around when it happens.

Planetary Nebula in Cepheus

NGC 40

Glenn Chaple



Our November deep-sky target, NGC 40, could be featured any month of the year. Just 17.5 degrees from the North Celestial Pole, it's circumpolar from mid-northern latitudes. But it's during mid autumn that NGC 40's parent constellation Cepheus rides highest above the northern horizon after sunset.

NGC 40 was discovered by Sir William Herschel on November 25, 1788, and bears the Herschel Catalog designation H IV-58 (his 58th Class IV [Planetary Nebulae] entry). A more recent designation, C2, reflects its inclusion in Sir Patrick Caldwell-Moore's 1995 Caldwell Catalog – his compilation of the finest 109 non-Messier deep-sky objects. NGC 40 is also nicknamed the Bow-Tie Nebula, a moniker it shares with the planetary nebula NGC 2440 in Puppis and the Hubble-imaged protoplanetary nebula PGC 3074547 in Centaurus.

Finding NGC 40 is problematic, as it lies in a star-poor region of Cepheus. The accompanying Telrad chart shows its location about one-third of the way from gamma (γ) Cephei (labeled Errai) to kappa (κ) Cassiopeiae. Center your finderscope on the area and begin a low-power search (about 50X should suffice) until you come to what looks like an out-of-focus 12th magnitude

star midway between and slightly west of a pair of 9th magnitude stars. NGC 40 can be glimpsed with a 4-inch scope under dark skies, but you'll need twice that aperture to capture significant detail. Magnifications of 150X and up will reveal a slightly oval 35 X 38 arc second haze surrounding a star of 11.6 magnitude.

If you gaze at NGC 40's central star, the surrounding nebulosity seems to disappear. Look to the side, and the nebulosity pops into view. The effect mirrors that of NGC 6826 (the "Blinking Planetary" in Cygnus. At a distance of 3500 light years, NGC 40 is about one light year in diameter.

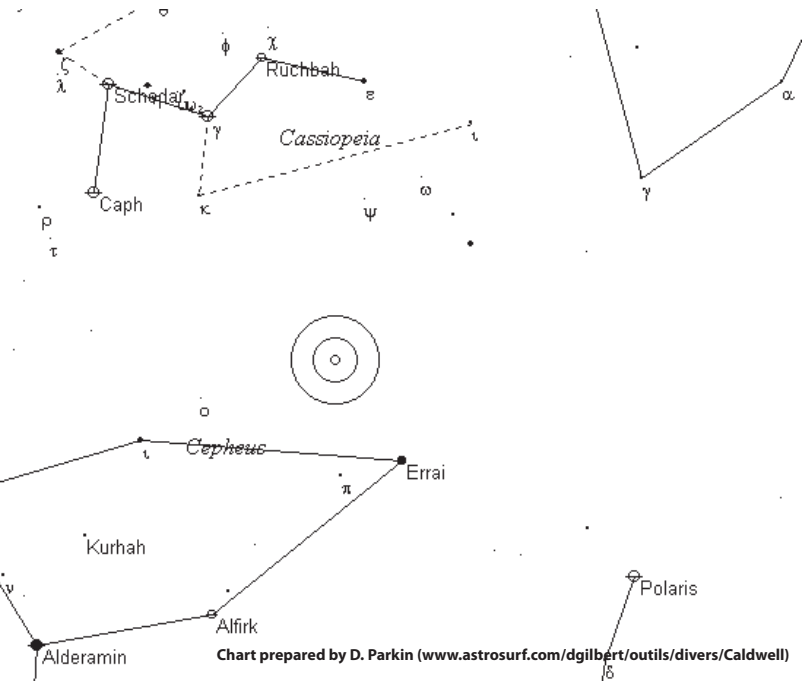
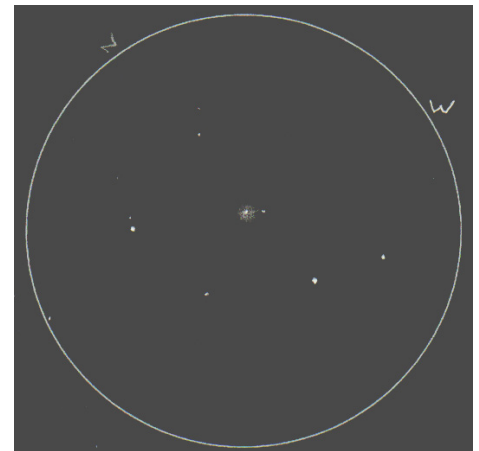
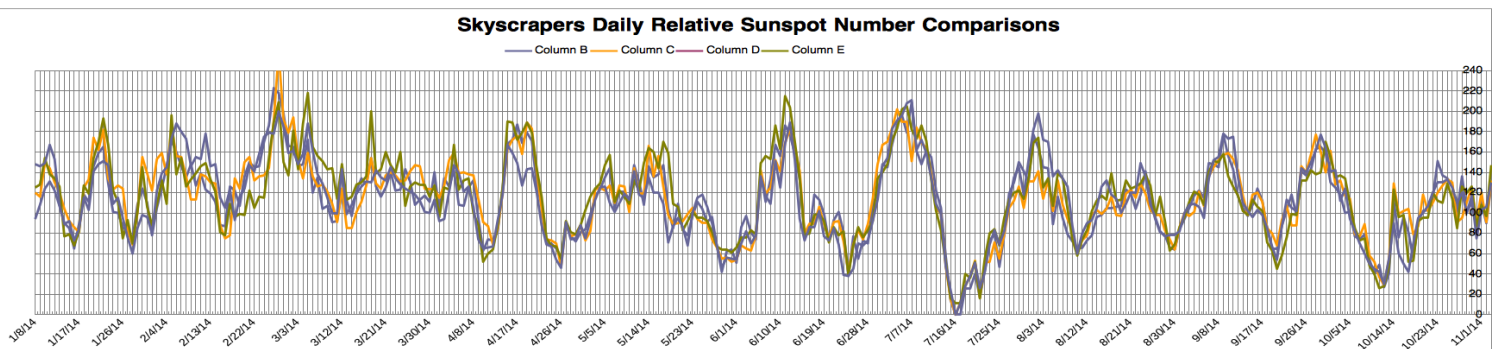


Chart prepared by D. Parkin (www.astrourf.com/dgilbert/outils/divers/Caldwell)



sketch by author on 12/3/2012, using 10" f/5 reflector at 208X

Skyscrapers Daily Relative Sunspot Number Comparisons





AstroAssembly 2014

Photo Album

Celebrating 100 Years of Seagrave Observatory

Photos by Matt White, Bob Derouin, Steve Hubbard and Jim Hendrickson





The AstroAssembly Friday Night program consisted of socializing followed by a presentation by local historian Ray Wolf, who gave a presentation about the villages of Scituate lost when the Scituate Reservoir was built. After the presentation, Al Hall showed us his 1st Place Gold Medal in the M55 Javelin competition of the North, Central American, Caribbean World Masters Athletics Championships in San Jose, Costa Rica. Al threw the javelin 47.37 meters. Congratulations, Al! Skies remained clear and about 15 members and guests stayed at least an hour for observing with the 8-inch Clark telescope.







Saturday's weather is the best we've had in years with clear skies and temperatures in the low 70s. Many telescopes had been brought for display and solar observing. Later in the day we also got a look at the waxing crescent Moon.

Bob Horton checks the collimation of his Stellafane 1st Place Optical prize-winning 4.25" Newtonian telescope.



Rick Arnold observes with Gerry Dyck's solar spectroscope.





A poster session was set up in the meeting hall with entries by Steve Hubbard, Lloyd Merrill, Steve Siok and others. In the courtyard, terrestrial viewing through Dennis Kelly's refractor, Kent Cameron demonstrating his AWB reflector, and Steve Hubbard brought his Lunt 100mm solar telescope.





Linda Bergemann and Ed Turco at the registration table

AstroAssembly 2014 coordinators Kathy & Steve Siok



Enjoying lunar views with Dave Kelly's Maksutov-Newtonian telescope



Presentations under the tent included the Seagrave Observatory Centennial presentation by Skyscrapers historian Dave Huestis. Rich Sanderson talked about the history of the Korkosz brothers, makers of the planetarium starball at the Springfield Science Center. Dr. Andrew Szentgyorgyi gave a presentation about searching for Earth-like planets using the forthcoming Giant Magellan Telescope.





Skyscrapers lunch grill, Astro-Bakeoff cookies & vendors







Saturday evening at the North Scituate Community House, attendees had a banquet dinner catered by Sweet Sophistications. A cake was ordered commemorating the 100th anniversary. Several items were donated for our raffle, and Bob Napier won the grand prize Tele Vue eyepiece.





Scott Tracy made the introductions for the evening program. Francine Jackson presented a tribute to Bill Luzader, which can be watched at <http://youtu.be/10T6EI30g4g>. Bob Horton announced the naming of asteroid 5574 Seagrave, and Dave Huestis gave a light-hearted presentation for the centennial which included artwork by Tom Thibault.



Dr. Owen Gingrich gave a presentation about the state of astronomy in 1914.



All Members Invited to Attend Next Board Meeting: Thursday, November 20

Our next Board of Directors Meeting will be held at Seagrave on Thursday, Nov 20th, from 7 to 9pm.

At the last board meeting, we began discussing how to get "younger" members involved in Skyscrapers. More definitively, the question might be - "What should we do in order for Skyscrapers to remain an active organization in the future?"

One approach that was brought up was having Skyscrapers collaborate with several

colleges and universities in our area, with the most involved collaboration being with Brown. This could lead to submitting grants to make substantial improvements to our facilities and equipment. Keep in mind that was only one approach; other ideas will also need to be considered.

All members are encouraged to attend the next board meeting and be part of this discussion.

Bob Horton, President

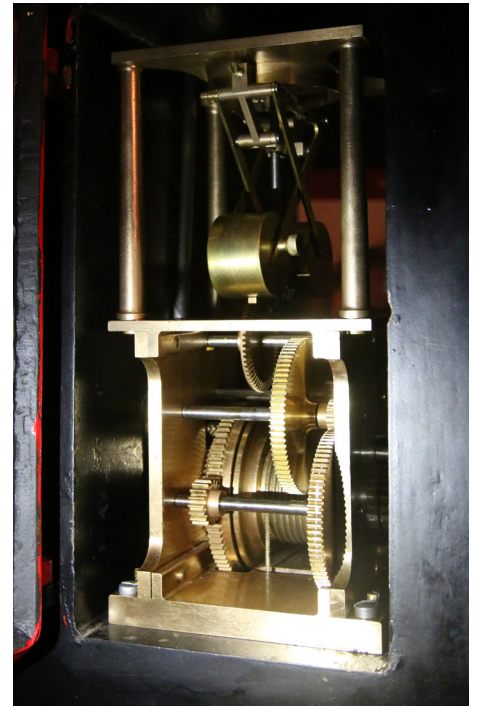
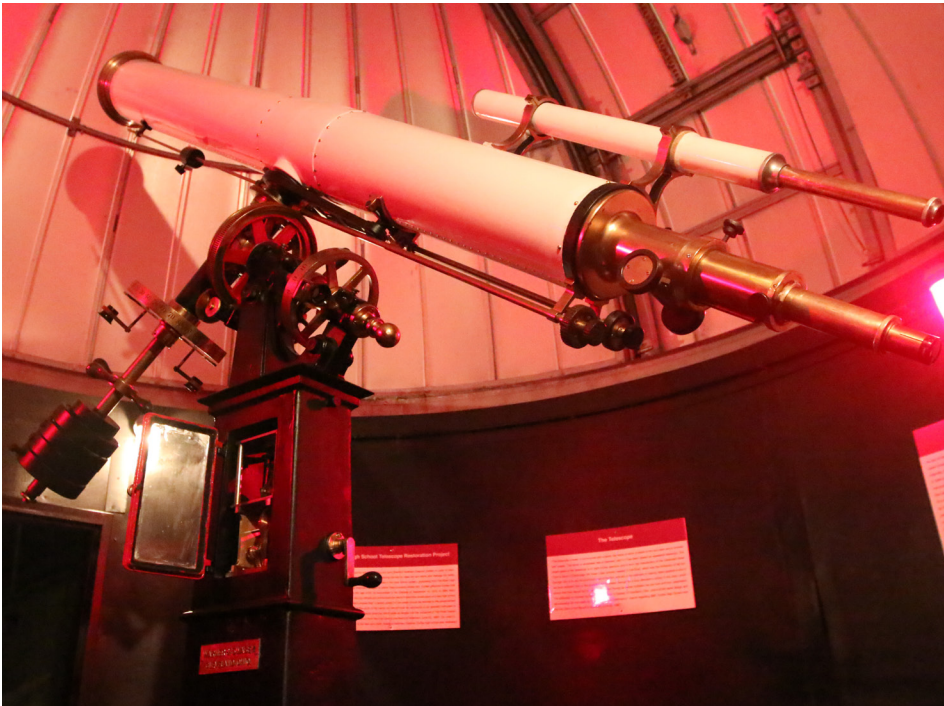
Phases of the Moon

Full Beaver Moon
November 6 22:23

Last Quarter Moon
November 14 15:16

New Moon
November 22 12:32

First Quarter Moon
November 29 10:06



Skyscrapers was invited to attend the opening of the newly restored telescope at Durfee High School in Fall River on Friday, October 24 by Jerry Trahan of the Astronomical Society of Southern

New England. Jerry spearheaded the restoration of the 1887 telescope which was built by Warner & Swasey and has an Alvan Clark lens. The weight drive was restored by David Gow, who recently worked on the drive for the refractor at Ladd Observatory. The skies didn't cooperate but four Skyscrapers members joined about 20 other telescope enthusiasts for the opening night. In attendance were Jim Crawford, Pete Peterson, Francine Jackson and Jim Hendrickson.

For more information: <http://www.telegram.com/article/20141005/NEWS/310059930/1052>

Directions to Seagrave Memorial Observatory

From the Providence area:

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

From Coventry/West Warwick area:

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

From Southern Rhode Island:

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

From Northern Rhode Island:

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

From Connecticut:

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

From Massachusetts:

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



47 Peeptoad Road
North Scituate, Rhode Island 02857