



the Skyscraper

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January 2014

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



January Meeting & New Year's Party

Friday, January 3
at North Scituate Community Center

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7:00PM Dessert Buffet

Contact Kathy Siok (kathys5@cox.net) to report what dessert you plan to bring. (Beverages and paper goods will be provided)

Bring your Astronomical Photos to Display

A Night at Wishing Star Observatory by Pete Peterson

Join me for a night of "scientific observing" out of the Wishing Star. Based upon the log of December 12th - a most amazing night of observing when one thing just keep leading to another.

I've been stargazing for more than 60 years, and am still learning. The "awe" is still there, and while sharing it through classes run out of the observatory & through public events, I've drifted ever deeper into astrometry and photometry, with a recent concentration on TNOs and exoplanets.

Cosmic Inspiration: Lovecraft's Astronomical Influences by Mike Umbricht

H.P. Lovecraft was a frequent visitor to the Ladd Observatory. This talk provides a glimpse into the environment where Lovecraft spent a great deal of time during his teenage years. The expeditions of Brown University astronomer Prof. Winslow Upton, a friend of the Lovecraft family, are described in detail. Upton made four ascents to the summit of the dormant volcano El Misti while on sabbatical in 1896-97 at the southern station of the Harvard College Observatory in Arequipa, Peru.

Michael Umbricht is the Curator of the Ladd Observatory at Brown University where he has presented public education programs and researched the history of science and technology since 2004. Prior to that he was the Coordinator of the Cormack Planetarium at the Museum of Natural History for 15 years.



President's Message

Ed Haskell

I hope you are all enjoying the holiday season (not yet quite over as I write this missive) and can put off for a few more days resuming the serious pursuits that have happily been out of mind for the past few weeks. I, on the other hand, am hard at work preparing my Letter for January.

Knowing how much all of you hang on my every word here (well maybe a few of you, then) it is possible that some of you will feel what I am about to convey sounds quite familiar. In fact I wrote about the same subject in the January, 2013 *the Skyscraper*, only this time I need to use new words to express old ideas. I gave serious consideration to starting a tradition like that of the *New York Sun*, which for one hundred and sixteen years has printed the same editorial by Francis Pharcellus Church, commonly known as "Yes, Virginia, there is a Santa Claus". Unfortunately, or fortunately depending upon one's perspective, our worthy Editor nixed the idea. I suppose he feels that he is paying so much for these Letters that it is only right that I give him new words each month.

Church saw the opportunity to rise above answering the simple question and went on to address the philosophy behind it. In many of my Letters I have tried to follow Church's practice and address the philosophical underpinning of how your Board has addressed the issues facing us. The subject this month (I'll bet you thought I

had forgotten what I was supposed to write about!) is the annual process of nominating members to the various elective positions on the Board and the Trustees.

The facts about nominations may be found in last year's Letter at: <http://www.theskyscrapers.org/january-2013-message> and the philosophical considerations will follow.

It requires a lot of dedicated, hard working volunteers to keep Skyscrapers functioning. This is not limited to just the Board and Trustees but extends to members of various committees, both standing and ad hoc, members who transport themselves and their telescopes to star parties, others still who stand watch on Saturday night Open Houses at Seagrave, others who write columns for the media, those who speak at schools and other venues, and still others who faithfully show up regularly to handle other tasks like lawn mowing and building maintenance. It is my estimate that about forty percent of the membership is involved in these and other extra-meeting functions. This is a much higher proportion of membership involvement than most organizations can hope for.

It is not a lack of humility that makes me observe that among the hardest and most burdensome of these jobs are found on the Board of Directors and the Trustees. These functions at Skyscrapers are fundamentally different from the leadership of "clubs" not



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.

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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 **January 24** 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.



Seagrave Memorial
Observatory
Open Nights

Saturdays at 7:00 pm
weather permitting



only from the time commitments but the potential consequences of the actions of these bodies. Skyscrapers has a considerable asset base, some of which is priceless and absolutely irreplaceable. You have entrusted those you elect with not only diligently studying matters that are of concern, but when they act of “getting it right”, so that the Society does not suffer but instead flourishes.

Finding candidates to fill these important positions is the responsibility of the Nominating Committee. If you believe you have something to offer on one of these boards it is your responsibility to make your feelings known to members of that committee. If you have been impressed

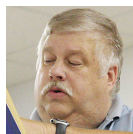
with some other member then you should bring that person to the attention of the Committee. If you are not prepared for one of the elected positions but are interested in developing your knowledge of the Society for a future position you should talk to the Committee as one of their collateral responsibilities is to identify members who might develop into future leaders.

About this point you might be asking why anyone in their right mind would take on these tasks. I assure you that all of us on the Board and the Trustees have asked ourselves that question once or twice. While the burdens are great, so are the benefits. The nurturing instinct is strong in the human species and taking care of Skyscraper

ers strikes that chord powerfully. There is a strong feeling of satisfaction from helping the Society improve its lot. Association with talented and dedicated members serving in the elected positions is very rewarding, frequently leading to lifetime friendships. And there is the old saw “you get out of it what you put into it”, which is an old saw because it has truth to it. I wouldn't trade the four plus terms I have served on the Board for anything. So whether you may be ready for an elected position or one of the many other positions that might lead you to an elected office come along and join the fun. You won't regret it.

Thanks for all you do for Skyscrapers.
Ed Haskell, President

Meteor Shower Prospects for 2014 & Other Astronomical Highlights



Dave Huestis

It happened about 28 years ago when I turned 33. Some cosmological constant in the universe changed. It wasn't noted by any scientist, but my perception of the passage of time was altered somehow. A week passed by as if it were a single day. A month flew by as if it were a week. And now another year has gone into the history books, and I am presenting you with a preview of meteor showers and other astronomical highlights for 2014. At this rate you will be reading another column here in a “month,” previewing astronomical events for 2015!

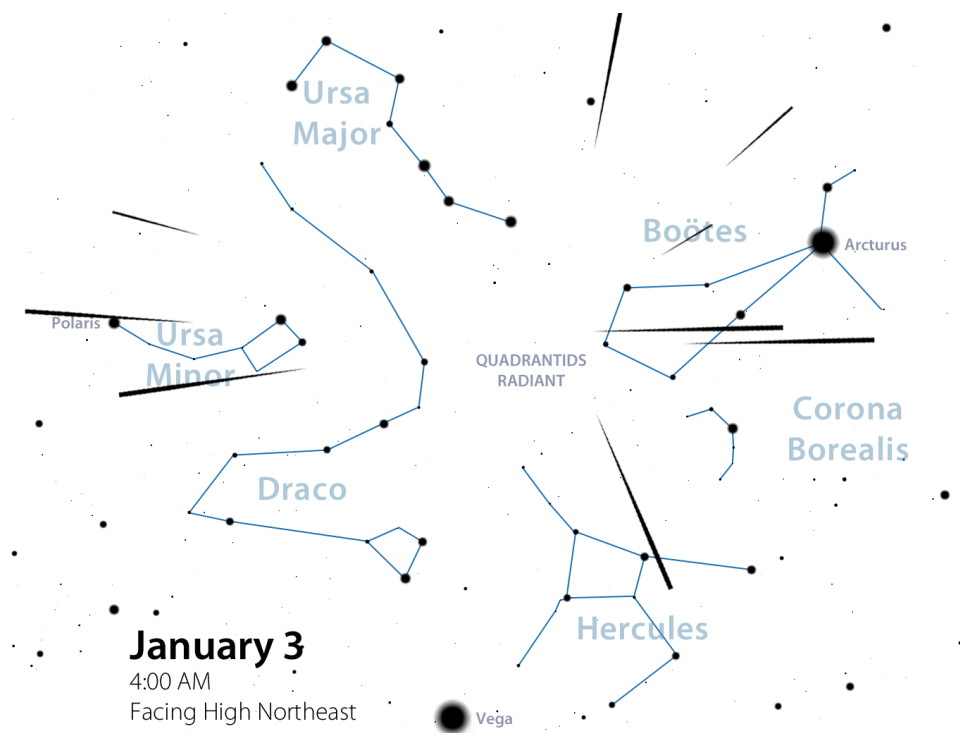
But let's not get that far ahead of ourselves. Every year has its fair share of items of interest for both the more experienced amateur astronomer and the casual stargazer alike. Let's take a brief chronological peek into what 2014 has in store for stargazing enthusiasts here in southern New England.

First up is the annual Quadrantid meteor shower during the pre-dawn hours of January 3. While a thin waxing crescent Moon will set early on the night of the 2nd and not diminish this shower of shooting stars, observing the Quadrantids can be challenging for several reasons. For 2014 the peak of activity occurs during daylight hours for us here in southern New England. Combine that scenario with the fact that the Quadrantids display has a very sharp peak lasting only about two hours means we will not observe the normal peak

rate of possibly 60-100 meteors per hour. Also, the likelihood of below freezing temperatures will add to the degree of difficulty in observing the Quadrantids.

The radiant point, the area of sky from where the meteors appear to originate, is not far from the end star (Alkaid) of the Big Dipper's handle. From midnight till dawn this area of sky will rise higher and higher above the north-east horizon, and by 4:00

a.m. it will be almost at zenith (directly overhead). Select an observing location as far from interfering lights as possible. In addition, please dress warmly if you plan on spending more than a just a few minutes outdoors viewing the Quadrantids. Don't simply stare at one particular area of the sky. Scan around to maximize your chances of seeing as many meteors as possible. The Quadrantids are often blue and frequently



blaze more than halfway across the sky at 25.5 miles per second.

The observing prospects for the rest of the major meteor showers for 2014 are not the greatest, but also not the worst we have seen in the past either. As usual, all we have to do is hope for cloud-free skies so we can enjoy the shooting star displays when they occur. See the table at the end of this column for the schedule of major meteor showers for 2014.

In addition, here are a few items of interest that will await us as the year progresses. Some of these astronomical objects and events may be the focus of a future column.

On January 1, Jupiter will already be well-placed for telescopic observing from the local observatories before 9:00 p.m. If you have never viewed this giant world through a telescope I encourage you to do so at your earliest opportunity. Jupiter's atmospheric bands and zones will be readily apparent, as will be his four Galilean moons. Jupiter will remain in the constellation of Gemini during this observing "season," which will last until mid- to late-May, depending upon each observatory's western horizon.

If you have never seen our solar system's innermost planet Mercury, then you might wish to attempt an observation on February 1. Mercury never reaches a high altitude above one's horizon, and on this date it will be less than ten degrees (a fist held at arm's length provides this measurement) above it. While locating this hellish world can be a challenge, that evening a waxing crescent Moon will be about 8.5 degrees above Mercury after sunset.

Mars will be an exciting planet to view for a portion of 2014 (through mid- to late-July). The Earth has been approaching

our neighbor and the telescopic apparent size of the red planet has been increasing. On April 14th Mars will be at its closest distance from the Earth at approximately 57,406,300 miles, and it will shine at magnitude -1.5. While this distance is not one of Mars' closest approaches, telescopes will still be able to provide images of dusky surface features and possibly glimpses of its then diminished shrinking northern polar cap. (Summer began in Mars' northern hemisphere on February 15.) At 9:00 p.m. EDT that evening it will be about 25 degrees above the south-southeast horizon. If you need a guide to locate Mars on that date, the Full Moon will be about 6.5 degrees below the red planet.

There will be a total lunar eclipse on April 15, the partial phase beginning at 1:58 a.m. Totality occurs at 3:06 a.m. and ends at 4:24 a.m. Locally, the Moon will set while the outgoing partial phase is still underway. For all you photographers out there, this event is a great opportunity to capture some beautiful images. All times are EDT.

During mid- to late-May beautiful Saturn will be rising earlier in the evening, allowing this magnificent planet to be observed during the public nights at the various observatory facilities throughout Rhode Island. Saturn's rings will be wide open, allowing an observer to see them in all their glory. The image of Saturn through many of the larger telescopes will simply evoke oohs and aahs among the observers.

Unfortunately one of the best meteor showers of the year, the August Perseids, will be severely hampered by moonlight this year.

On October 8, once again during the early morning hours, another total lunar eclipse will occur. Regrettably, we will see

only the partial phase before totality and only 31 minutes of totality here in Rhode Island, as totality begins at 6:25 a.m. EDT and the Moon sets at 6:54 a.m. EDT. Regardless, such an event is still well worth watching.

Two weeks later on October 23 there will be a partial solar eclipse that will begin just after sunset. Unfortunately this event will not be viewable from Rhode Island. However, if you travel to Hartford, Connecticut, and you can find an absolutely dead horizon, you'll be able to see just a tiny sliver of the Sun disappear as the Moon begins to slide in front of the solar disk. The farther west and northwest one travels, more of the Sun will be covered. At maximum obscuration just less than two-thirds of the Sun will be covered by the Moon. So head west if you wish to experience one of Mother Nature's special astronomical events.

In conclusion, please remember that the local observatories do remain open year-round to provide incredible views of the heavens with their wonderful telescopes. These facilities are unheated, so dress warmly. Seagrave Memorial Observatory (<http://www.theskyscrapers.org>) in North Scituate is open every clear Saturday night. Ladd Observatory (<http://www.brown.edu/Departments/Physics/Ladd/>) in Providence is open every Tuesday night. Frosty Drew Observatory (<http://www.frostydrew.org/>) in Charlestown is open every clear Friday night. Snow or ice can force closures, so please check the respective websites for any cancellation notices before venturing out for a visit. Currently the winter hours for Seagrave and Ladd are 7-9 p.m., while Frosty Drew begins at 6:00 p.m. with no set end time.

Please clip and save the following chart showing the observing prospects for the 2014 meteor showers. These displays of shooting stars only require your eyes, dark skies, and patience to enjoy.

Keep your eyes to the skies for 2014 and always.

Happy New Year!

Meteor Shower Prospects for 2014

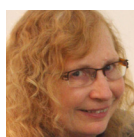
Month	Shower	Date	Moon Phase
January	Quadrantids	3-4	Waxing Crescent
April	Lyrids	22-23	Last Quarter
May	Eta Aquarids	5-6	First Quarter
July	Delta Aquarids	28-30	Waxing Crescent
July	Capricornids	29-30	Waxing Crescent
August	Perseids	12-13	Waning Gibbous
October	Orionids	20-21	Waning Crescent
November	Leonids	16-17	Last Quarter
December	Geminids	13-14	Last Quarter

Seagrave Memorial Observatory Centennial 2014 Calendar

There are a limited number of calendars still available. See Dave Huestis (dhuestis@aol.com) for details.



Knowing that we are closest to the Sun this time of year may help you feel warmer, but our axial tilt gives us less solar radiation, and lower temperatures.



Happy Perihelion!

Francine Jackson

This has got to be one of the trickiest, and most confusing times of the year. As we here in the north are struggling to stay as warm as possible, we are experiencing what to many is not possible: Being as close to the Sun as the Earth can be.

In the early 17th century, Johannes Kepler, in utilizing the observations of his former boss, Tycho Brahe, realized that Brahe's observations could not be mathematically satisfied using circular orbits for the planets. His calculations only worked if the orbits were elliptical. Almost a decade after Brahe's unfortunate death - the reason for it still has to be confirmed - Kepler, in 1609, introduced the first two of his three laws of planetary motion:

1. Planets travel around the Sun in elliptical orbits, with the Sun at one of the focus points;

2. As planets move this way, they create equal areas in equal times.

These two led to his mathematical understanding of the positions of the planets as they revolve around the Sun, and his third law, almost a decade later:

3. The planets' periods are proportional to their distances from the Sun.

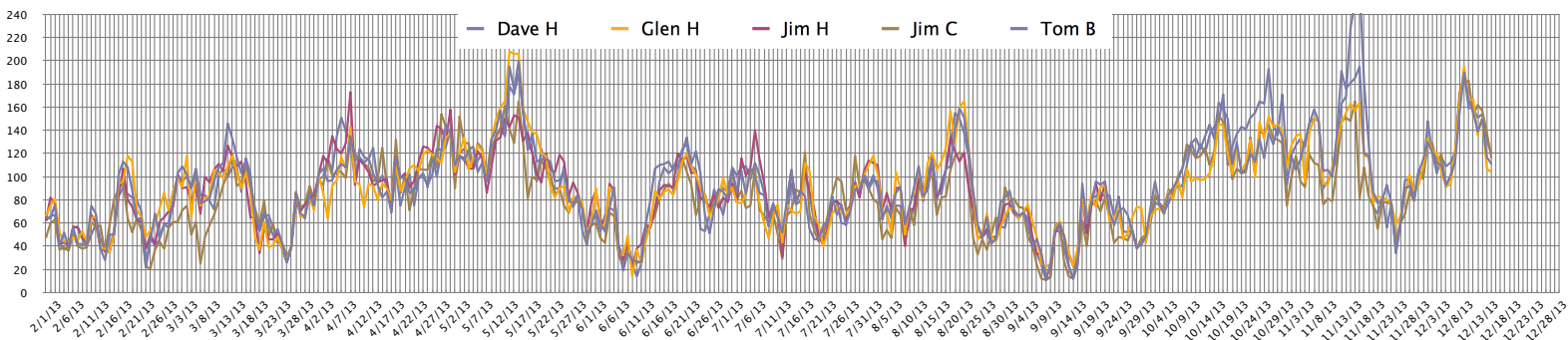
The time a planet takes to revolve around the Sun in years squared is directly proportional to its radius from the Sun cubed (using the standard measurement for the solar system - the astronomical unit, defined as the average distance between the Earth and the Sun). Take any planet and do the math. Remember: although the numbers will be the same (or very close), this is not a direct mathematical equation, because the units are different on both sides.

Coming back to perihelion: Ask most

people what causes the seasons, and almost everyone will say it is because of the differing distances between the Earth and the Sun, that the Sun is closest to us in summer, so it must be hotter. In fact, in an experiment done by a Massachusetts educational company in the late '90s, a group of scientists went to a Harvard graduation and asked many of the students that question, and received that answer. The graduates were surprised to learn that wasn't the case. The Sun reaches its closest to the Sun, perihelion, in early January, normally our coldest time of year. And, yes, it is summer in the Southern Hemisphere right now, but the actual change in distance, only about 5% during the course of the year, doesn't make their summers warmer than ours.

If you truly want to believe in this concept, wait until the Sun/Earth distance is the greatest, in early July, and notice how "cold" it is then. In the meantime, Happy Perihelion!

Skyscrapers 2013 Sunspot Numbers





Bob's Aurora Borealis

Mark Sweberg

Bob liked to talk about one thing and one thing only: the aurora borealis. He could tell you anything you could ever possibly want to know about the northern lights, and then some. He might go on for hours in his monotone voice, if allowed. His knowledge was so substantial, the minutia so detailed, that I doubt most postdoctoral fellows could easily follow along with his discourse. I couldn't.

Bob was a young man whose work I supervised in a sheltered workshop decades ago in Greenwich Village. A few years my senior, he assembled and boxed silver plated butter dishes. It was very difficult for him to do so, let alone quickly and efficiently. It was difficult to know how to screw the knob on the cover, difficult to place the cover on the base, and difficult to wrap the assembled product in tissue paper. Properly placing the finished product in a box for the next person to close was the hardest step of all. Often frustrated and agitated, he would like to talk about the aurora to divert his attention from this obscure and incomprehensible task at hand.

This juxtaposition of intense knowledge of a subject and lack of ability elsewhere has a name for it; back then, it was a degrading and dark connotation. Yet, suffice it to say that I looked upon Bob in awe; he awakened me to the profound and wonderful possibilities of human differences, and the limitless potential of the human mind, more than anyone had before.

I've never seen the aurora borealis in person; I doubt he had. But, I've seen images, such as this: Time lapse of aurora borealis. <http://vimeo.com/16917950>

As Bob would explain, the aurora borealis is a natural phenomenon occurring in the northern hemisphere that is purported to be truly awe inspiring. Observed since ancient times, these ethereal displays of bright, gossamer, dancing lights are the result of collisions between gaseous particles in the Earth's atmosphere with charged particles released from the Sun.

Temperatures above the surface of the Sun reach millions of degrees Celsius. At this intense heat, collisions between gas molecules occur frequently and explosively. Free protons and electrons are thrown from the Sun's atmosphere by its swift rotation and escape through holes in its magnetic

field. These charged particles are blown towards the Earth through the workings of the solar wind, and are mostly deflected by the Earth's magnetic field. However, due to Earth's magnetic field being weak at the North Pole, some particles are able to enter the atmosphere and collide with gas particles. These collisions emit the beautiful dancing lights of the aurora borealis, generally extending from 50 miles (80 kilometers) to as high as 400 miles (640 kilometers) above the Earth's surface.

The various displays of color are due to the type of gas particles that are colliding. The most common, a pale yellowish-green, is produced by oxygen molecules located about 60 miles above the Earth. All-red auroras are produced by high-altitude oxygen, at heights of up to 200 miles, and are rarer. Nitrogen produces blue or purplish-red aurora. Auroras tend to be more frequent and spectacular during high solar sunspot activity, which cycles over approximately eleven

years.

Many legends and myths abound in northern cultures to explain the northern lights, and their effects. For instance, the Japanese people believe that conceiving children under an aurora borealis will bring good luck. They flock to Alaska in the wintertime and the hotels are booked up years in advance.

Some of us will have the awesome experience of viewing the northern lights in Alaska in the wintertime. It is something I look forward to myself. I look forward to viewing the amazing displays of dancing lights, and of having my breath taken away, as so frequently occurs among fascinated viewers.

As well, I look forward to reminiscing on my days with Bob so many years ago. I look forward to reflecting on this mosaic known as humanity, this beautiful tapestry, knowing that everyone, everywhere, is a needed and important part, and has something substantial to teach.

So, please, if you see me in Alaska in the wintertime, say hello.

I'm reserving a frozen smile, and an icicle encrusted moustache.

The last time a major auroral display was seen in southern New England was on October 30, 2003. Photo by John Kocur.





Double Star in Cetus Kaffaljidhma (γ Ceti)

Glenn Chaple

We open the New Year with a double star that's as easy to split as it is to pronounce its Arabic name, Kaffaljidhma. We'll simply refer to it by the Bayer designation, gamma (γ) Ceti. Discovered by the German-Russian astronomer F. G. W. Struve in 1825 (it bears the Struve Catalog identity $\Sigma 299$), gamma Ceti is the southernmost member of a cirlet of stars that forms the head of the celestial Whale.

Gamma Ceti's component stars are separated by 2.3 arcseconds, putting them at the resolution limit of a 2-inch scope. However, the primary is 9 times brighter than its partner (magnitudes 3.6 and 6.2), making them a challenge for telescopes with twice the aperture, even under ideal seeing conditions. My first split of gamma Ceti was accomplished with a 5-inch f/12 Maksutov-Cassegrain and a magnifying power of 250X. The companion appeared as a bump on the primary diffraction ring of the main star.

There's an interesting twist to the colors observers report when viewing gamma Ceti. Most note colors of yellowish and blue – the opposite of what you'd expect for a pair whose spectral classes are A3 and F3. These impressions are likely illusory – a result of a contrast effect between a bright primary and fainter companion.

As they say in the TV ads, "But wait, There's more!" A 10th magnitude K-type dwarf situated 14 arcminutes to the northwest shares the same proper motion as the main pair. All three lie about 80 light years away.

Gamma Ceti is just 3 degrees north of

the M77. If you happen to be visiting this galaxy and the seeing conditions are favorable, don't depart without giving Kaffal-whatchamacallit a try.

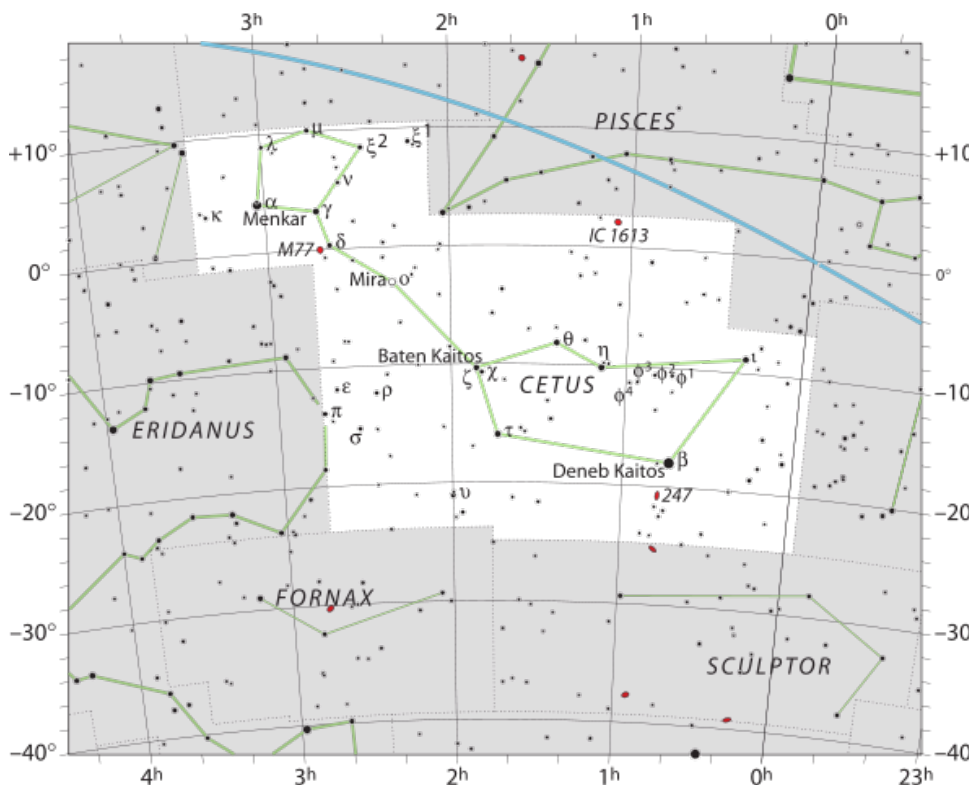


Chart from IAU and Sky and Telescope. Sketch by P. J. Anway (doublestarobserver.com). Both are oriented with North at the top and West to the right.



M45 The Pleiades by Tom Thibault. Canon T3i on an Astrotech 65mm with a 4 min exposure at ISO 100.

DECEMBER REPORTS



Secretary
Tom Thibault

Skyscrapers December 14 Meeting was cancelled due to a snow storm



Treasurer
Linda Bergemann



Steve Siok, Dave Huestis, Matt White, Conrad Cardano, Jim Crawford and Bob Horton gathered on Saturday, December 21 to cut and clear the trees from the driveway after one fell during a recent wind storm.



Cash Flow YTD as of December 22, 2013
(4/1/13 through 12/22/13)

INFLOWS

AstroAssembly	
Banquet	\$1,220.00
Grill	\$421.50
Misc	\$30.00
Raffle	\$506.00
Registration	\$1,540.00
TOTAL AstroAssembly	\$3,717.50
Centennial Calendar	\$560.00
Donation	
Misc Donation	\$263.00
Refreshment Donation	\$172.20
TOTAL Donation	\$435.20
Dues	
Contributing	\$154.05
Family	\$300.00
Junior	\$15.00
Regular	\$1,240.00
Senior	\$650.00
TOTAL Dues	\$2,359.05
Misc Income	
Sale of Items	\$630.00
TOTAL Misc Income	\$630.00
Star Party Donations	\$74.00
Subscription Income	
Astronomy	\$358.00
Sky & Telescope	\$230.65
TOTAL Subscription Income	\$588.65
FROM Preservation Fund (See note below)	\$96.30
TOTAL INFLOWS	\$8,460.70

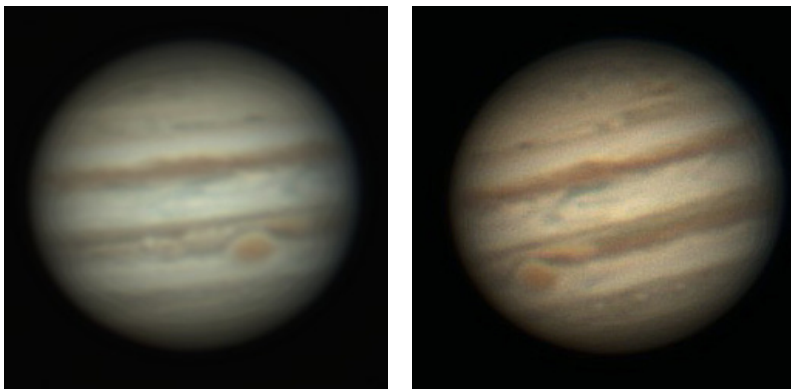
OUTFLOWS

Astro Assem Exp	
Caterer	\$1,000.00
Grill	\$244.13
Misc	\$68.90
Raffle	\$5.00
Reception	\$138.31
Tent Rental	\$670.00
TOTAL Astro Assem Exp	\$2,126.34
Centennial Calendar Production	\$299.60
Corporation, State Fee	\$30.00
Postage and Delivery	\$18.40
Property Insurance	\$419.00
Refreshment Expense	\$138.59
Subscription Payments	
Astronomy	\$392.00
Sky & Telescope	\$230.65
TOTAL Subscription Payments	\$622.65
Trustee Expense	\$1,252.79
Utilities	
Electric	\$155.00
Porta-John	\$693.00
Propane	\$80.25
TOTAL Utilities	\$928.25
TO Preservation Fund (See note below)	\$96.30
TOTAL OUTFLOWS	\$5,931.92
OVERALL TOTAL	\$2,528.78

Note: Designated Preservation Fund monies used to digitize photos for archive.

Cash and Bank Accounts - As of 12/22/2013

Capital One Bank	\$12,326.21
Checking	\$13,208.07
TOTAL Bank Accounts	\$25,534.28



Jupiter reaches opposition on January 5. Steve Hubbard captured these images about 2 1/2 hours apart on the evening of December 30 using a 14" Meade SCT and ZWO camera, processed by stacking 1 minute AVIs.



The Big Picture: GOES-R and the Advanced Baseline Imager

By Kieran Mulvaney

The ability to watch the development of storm systems – ideally in real time, or as close as possible – has been an invaluable benefit of the Geostationary Operational Environmental Satellites (GOES) system, now entering its fortieth year in service. But it has sometimes come with a trade-off: when the equipment on the satellite is focused on such storms, it isn't always able to monitor weather elsewhere.

“Right now, we have this kind of conflict,” explains Tim Schmit of NOAA’s National Environmental Satellite, Data, and Information Service (NESDIS). “Should we look at the broad scale, or look at the storm scale?” That should change with the upcoming launch of the first of the latest generation of GOES satellites, dubbed the GOES-R series, which will carry aloft a piece of equipment called the Advanced Baseline Imager (ABI).

According to Schmit, who has been working on its development since 1999, the ABI will provide images more frequently, at greater resolution and across more spectral bands (16, compared to five on existing GOES satellites). Perhaps most excitingly, it will also allow simultaneous scanning of both the broader view and not one but two concurrent storm systems or other small-scale patterns, such as wildfires, over areas of 1000km x 1000km.

Although the spatial resolution will not be any greater in the smaller areas than in the wider field of view, the significantly greater temporal resolution on the smaller scale (providing one image a minute) will allow meteorologists to see weather events unfold almost as if they were watching a movie.



The Advanced Baseline Imager. Credit: NOAA/NASA

So, for example, the ABI could be pointed at an area of Oklahoma where conditions seem primed for the formation of tornadoes. “And now you start getting one-minute data, so you can see small-scale clouds form, the convergence and growth,” says Schmit.

In August, Schmit and colleagues enjoyed a brief taste of how that might look when they turned on the GOES-14 satellite, which serves as an orbiting backup for the existing generation of satellites.

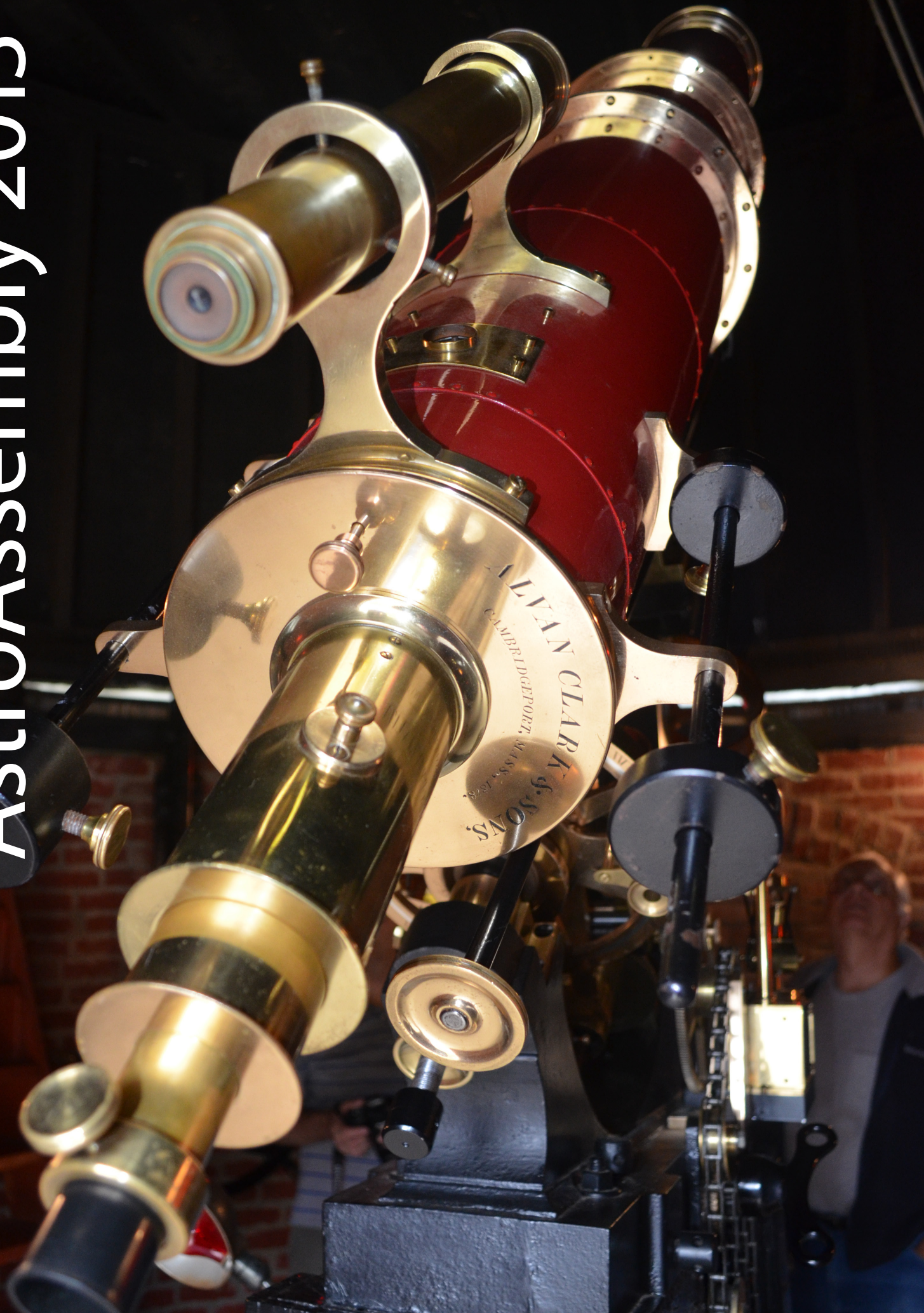
“We were allowed to do some experimental imaging with this one-minute imagery,” Schmit explains. “So we were able to simulate the temporal component of what we will get with ABI when it’s launched.”

The result was some imagery of cloud formation that, while not of the same resolution as the upcoming ABI images, unfolded on the same time scale. You can compare the difference between it and the existing GOES-13 imagery here: http://cimss.ssec.wisc.edu/goes/blog/wp-content/uploads/2013/08/GOES1314_VIS_21AUG2013loop.gif

Learn more about the GOES-R series of satellites here: <http://www.goes-r.gov>.

Kids should be sure to check out a new online game that’s all about ABI! It’s as exciting as it is educational. Check it out at <http://sci-jinks.gov/abi>

AstroAssembly 2013



Every fall, at about the time the foliage has turned its most brilliant colors, astronomy enthusiasts have enjoyed gathering at AstroAssembly, for a day of talks, exhibits and camaraderie.

Skyscrapers first hosted AstroAssembly in 1952, and while the event was not held in 1953 and 1954, it has continued each fall ever since.

Although there are a number of astronomical conventions being offered by other organizations throughout the calendar year, all of them unique, there is something very special about AstroAssembly. One might even use the word 'charming' to describe it. Year after year, we continue to make new friends and welcome back old friends, some who have been attending AstroAssembly for decades.

Our theme for AstroAssembly 2013 was Automated Observatories and Remote Observing, which included a blend of historic perspectives, amateur projects, and the most recent astronomical discoveries. Besides the talks, one could check out the entries in the astrophotography contest, examine the homemade telescope exhibit, admire the restored 1878 Alvan Clark refractor, buy an astronomical goodie at the swap table, or to simply take time to relax, sit outside, and chat with friends.

It takes many volunteers to run AstroAs-

sembly. We start planning for the event in the spring of each year, by searching for speakers. This is followed by work sessions during the summer to any make any necessary repairs, and to clean the buildings and grounds. We then turn our attention to advertising our event, printing programs, and collecting registrations. During AstroAssembly, volunteers are busy running the grill at lunch, selling raffle tickets, and setting up chairs and tables. Afterwards, we have to spend some time cleaning up the grounds and buildings, putting things away for the following year.

We wish to thank our speakers and all of you who helped out this year. AstroAssembly 2013 was a big success, and could not have happened without all of us working together.

Soon we will be planning for AstroAssembly 2014, which will include a celebration of Seagrave Observatory's centennial. If you would like to volunteer to help out in any way, it would be greatly appreciated. It is certainly a rewarding experience for those involved!

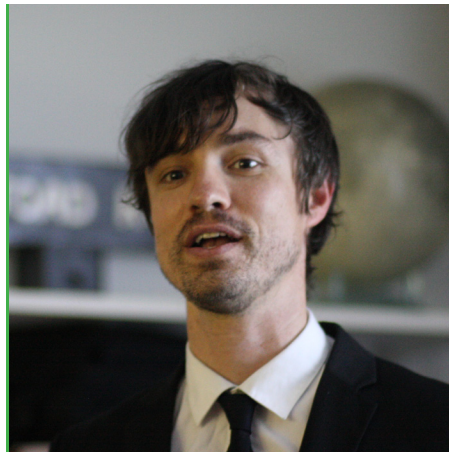
In the mean time, enjoy the photos of AstroAssembly 2013. We look forward to seeing all of you next year.

Bob Horton and Kathy Siok,
Co-chairs, AstroAssembly 2013

This was probably the most documented AstroAssembly in history.. No fewer than five photographers contributed to the effort. Thanks to Matt White, Bob Derouin, Steve Hubbard, Jim Crawford, and Jim Hendrickson for contributing the following photos.



Josh Lake



Brendan Britton



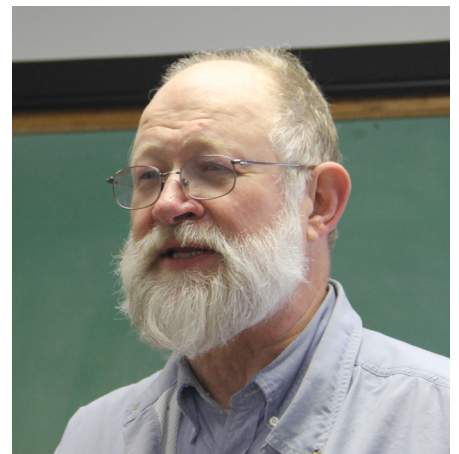
Bob Horton



Tony Costanzo



Kerry Hurd



Bill Luzader





Ed Turco



Scott MacNeill



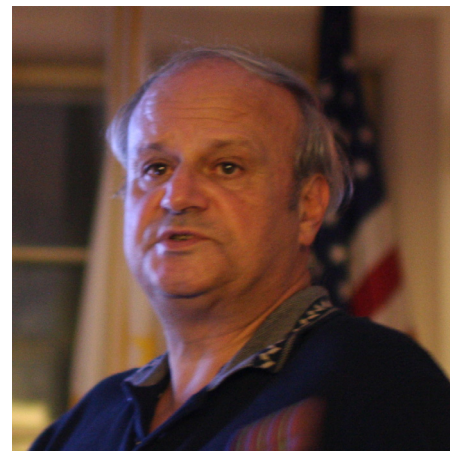
Zachory Berta-Thompson



Robert Gendler



Frank Sienkiewicz



Mario Motta





Steve & Kathy Siok and Bob Horton, AstroAssembly organizers.

Sue Hubbard, Linda Bergemann and Alex Bergemann at the registration and raffle table.





Steve Siok, Tina Huestis, Kathy Siok and Conrad Cardano help prepare lunch at the Skyscrapers grill.

Kim Arcand and Rob Gendler sign books during AstroAssembly.



In what was probably the most photographed gathering in Skyscrapers history, past and present officers of the society gathered in front of Seagrave Observatory.





Home-made telescopes on display: John Leonelli's 6" f/8, Bob Horton's 4.25" f/6.3, Glenn Jackson's 6" f/5, Jim Brenek's 8" f/4.8 & equatorial mount, and Dick Parker's 4" f/10 achromat doublet.



While cloudy most of the day, the sky did clear for a brief time in the late afternoon, offering views (and photographs) of the Sun through Tony Costanzo's Questar.

Jack Szelka sells some of his camera gear at the swap table before moving to Arizona later this year.



A meeting of master telescope makers: Ed Turco, Dick Parker and Al Hall confer over lunch.



Banquet buffet and raffle prizes. Jack Szelka wins a Tele Vue eyepiece.





Historian Dave Huestis introduces the Centennial calendar and Julie Kaufman wins the Astro-BakeOff prize.



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