



# the Skyscraper

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August 2016

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

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**Skyscrapers  
Board Meetings  
Third Monday of the Month  
All Members Welcome**

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## Phases of the Moon

- New Moon**  
August 2 20:45
- First Quarter Moon**  
August 10 18:21
- Full Sturgeon Moon**  
August 18 09:27
- Last Quarter Moon**  
August 25 03:41

## Saturday, August 13, 6:30pm at Seagrave Memorial Observatory

### Solar Eclipse Presentations

**6:30pm Refreshments (Bring a dessert to share)**

**7:00 pm Presentations on Solar Eclipses**, Our first featured speaker will be long time Skyscrapers member Steve Hubbard. Steve and his wife and fellow Skyscraper member Sue undertook an exciting and truly memorable journey to the other side of the Earth this past March to view a total eclipse of the Sun.

This journey required travel thru San Francisco to Hong Kong to Singapore to meet a cruise ship traveling to Indonesia. Additional days of travel on board the Holland America Line MS Volendam brought them to a remote site on the ocean between the islands of Borneo and Sulawesi where they successfully viewed the eclipse in a mostly clear sky.

Steve's talk will highlight some of the beautiful and fascinating sights of Singapore and Indonesia, touch on general thoughts and suggestions for preparing for a trip such as this and oh yes...provide a number of photographs and descriptions of the eclipse itself.

Following Steve's presentation, Sky-



scrapers member Ian Dell'Antonio will outline the prospects for the Total Solar Eclipse next year on August 21 that will cross the entire United States.

Any members considering attending are encouraged to share their plans.

**9:00 pm Observing the skies through the 138-year-old Alvan Clark Refractor** at Seagrave Observatory. In June, the planets Mars and Saturn will be well-placed for observing. (weather permitting)



Seagrave Memorial Observatory  
Open Nights

Saturdays at 9:00 pm  
weather permitting

# Upcoming Star Parties

Skyscrapers, Inc., has been invited to conduct two star parties. The first, slated for Wednesday, August 17th, will be in Pascoag, RI, at a camp for children with degenerative heart disease. The estimated number of people is now about 55.

The second, at River Bend Farm in Uxbridge, MA is part of the Blackstone Valley GO program, is on Friday, September 9th (not a meeting night) and is headed by Kent Cameron.

For each, so far, we have about four persons willing to help, but these are always a lot of fun, and the more telescopes we have, the better it is.

If you are available for either or both nights, please let Francine Jackson ([Francine Jackson@brown.edu](mailto:Francine_Jackson@brown.edu)) know for August, and Kent Cameron ([kentcameron48@gmail.com](mailto:kentcameron48@gmail.com)) for the September 9th event.

## Friday, August 12: Two Small Pieces of Glass at the URI Planetarium

University of Rhode Island Planetarium  
Upper College Road, Kingston, RI  
Friday, July 8th, 2016 6:00 P.M.  
Contact: Francine Jackson: 401-527-5558

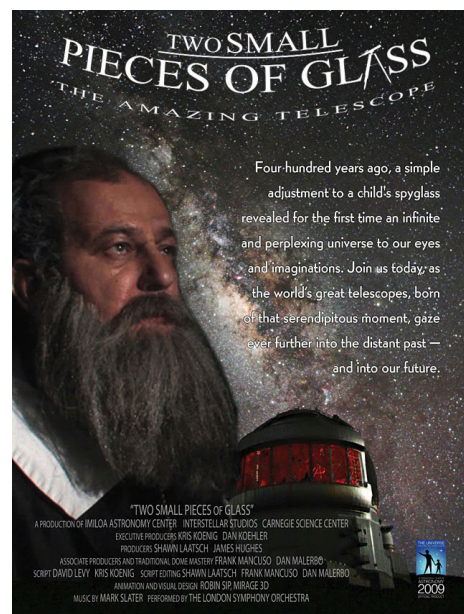
Come enjoy a tour of the Seven Wonders of the Ancient World! These incredible features were built before modern-day equipment was even a thought, and yet, today, one of these is still a major feature. Why were these made? How? Come learn of the beauty and majesty of the Seven Wonders of the Ancient World. In addition, learn what are considered the Seven Wonders of the Universe, through the beauty of

21st century technology.

In addition to the featured presentation, *Losing the Dark*, a short introduction to light and its problems in our society will be given, as well as a tour of The Skies above the URI campus.

Admission to this presentation is \$5.00, to benefit the URI Planetarium Fund. The URI Planetarium is on Upper College Road, at the end of Engineering Row and across the parking lot from East Hall.

The University of Rhode Island Planetarium is available for programs of many varied topics of astronomical interest. For more information, please call 401-527-5558.



*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 **August 15** to Jim Hendrickson, 1 Sunflower Circle, North Providence, RI 02911 or e-mail to [jim@distantgalaxy.com](mailto: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](mailto:jim@distantgalaxy.com). Note that you will no longer receive the newsletter by postal mail.

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# The Sun, Moon & Planets in August

This table contains the ephemeris of the objects in the Solar System for each Saturday night in August. Times are in Eastern. Time calculated for Seagrave Observatory (41.845N, 71.590W).

Object	Date	RA	Dec	Const	Mag	Size	Elong	Phase(%)	Dist(S)	Dist(E)	Rise	Transit	Set
<b>Sun</b>	<b>6</b>	9 05.7	16 37.9	Cnc	-26.8	1892.2	-	-	-	1.01	05:45	12:52	19:58
	<b>13</b>	9 32.3	14 35.7	Leo	-26.8	1894.4	-	-	-	1.01	05:52	12:51	19:48
	<b>20</b>	9 58.4	12 22.1	Leo	-26.8	1896.9	-	-	-	1.01	05:59	12:49	19:38
	<b>27</b>	10 24.1	9 59.0	Leo	-26.8	1899.6	-	-	-	1.01	06:07	12:47	19:27
<b>Moon</b>	<b>6</b>	11 26.6	3 33.2	Leo	-10.1	1823.9	37° E	10	-	-	09:33	15:51	22:01
	<b>13</b>	16 59.4	-18 13.2	Oph	-12.2	1815.2	115° E	71	-	-	16:07	21:08	02:08
	<b>20</b>	23 21.5	-5 41.4	Aqr	-12.7	1940.7	159° W	97	-	-	20:29	02:23	08:25
	<b>27</b>	5 52.3	17 30.0	Tau	-11.4	1896	66° W	30	-	-	01:19	08:44	16:10
<b>Mercury</b>	<b>6</b>	10 42.5	8 04.0	Leo	0.1	6.3	25° E	66	0.45	1.06	07:58	14:29	20:59
	<b>13</b>	11 13.0	3 40.7	Leo	0.2	7.0	27° E	57	0.47	0.96	08:16	14:31	20:45
	<b>20</b>	11 35.9	0 05.7	Leo	0.4	7.8	27° E	46	0.46	0.86	08:24	14:26	20:26
	<b>27</b>	11 48.7	-2 43.3	Vir	0.8	8.9	25° E	32	0.45	0.76	08:18	14:10	20:01
<b>Venus</b>	<b>6</b>	10 12.2	12 42.2	Leo	-3.8	10.4	17° E	96	0.72	1.63	07:10	13:59	20:47
	<b>13</b>	10 44.7	9 31.0	Leo	-3.8	10.5	18° E	95	0.72	1.61	07:27	14:04	20:40
	<b>20</b>	11 16.6	6 07.5	Leo	-3.8	10.7	20° E	94	0.72	1.58	07:43	14:08	20:31
	<b>27</b>	11 48.0	2 35.8	Vir	-3.8	10.9	22° E	93	0.72	1.55	08:00	14:12	20:22
<b>Mars</b>	<b>6</b>	15 54.0	-23 13.0	Sco	-0.7	12.5	107° E	87	1.43	0.75	15:05	19:38	00:10
	<b>13</b>	16 06.9	-23 47.6	Sco	-0.6	11.9	104° E	86	1.42	0.79	14:53	19:23	23:53
	<b>20</b>	16 21.2	-24 21.1	Sco	-0.5	11.3	100° E	86	1.42	0.83	14:43	19:10	23:38
	<b>27</b>	16 36.9	-24 51.7	Sco	-0.4	10.8	97° E	85	1.41	0.87	14:34	18:59	23:24
<b>1 Ceres</b>	<b>6</b>	2 20.6	2 12.3	Cet	8.8	0.5	100° W	97	2.92	2.57	23:55	06:05	12:15
	<b>13</b>	2 24.1	2 11.9	Cet	8.7	0.5	106° W	97	2.92	2.47	23:31	05:41	11:51
	<b>20</b>	2 26.7	2 06.4	Cet	8.6	0.5	112° W	97	2.91	2.38	23:07	05:16	11:26
	<b>27</b>	2 28.3	1 55.8	Cet	8.4	0.5	118° W	98	2.91	2.29	22:41	04:50	10:59
<b>Jupiter</b>	<b>6</b>	11 36.1	3 48.6	Leo	-1.6	31.7	39° E	100	5.45	6.2	09:04	15:19	21:35
	<b>13</b>	11 41.0	3 16.1	Vir	-1.6	31.4	34° E	100	5.45	6.26	08:43	14:57	21:11
	<b>20</b>	11 46.1	2 42.5	Vir	-1.5	31.1	28° E	100	5.45	6.32	08:23	14:34	20:46
	<b>27</b>	11 51.4	2 08.1	Vir	-1.5	30.9	23° E	100	5.45	6.36	08:02	14:12	20:22
<b>Saturn</b>	<b>6</b>	16 33.7	-20 18.1	Oph	0.3	17.3	116° E	100	10.04	9.55	15:31	20:16	01:01
	<b>13</b>	16 33.5	-20 19.2	Oph	0.4	17.1	109° E	100	10.04	9.66	15:03	19:48	00:33
	<b>20</b>	16 33.7	-20 21.1	Oph	0.4	16.9	102° E	100	10.04	9.77	14:36	19:21	00:06
	<b>27</b>	16 34.1	-20 23.6	Oph	0.5	16.8	96° E	100	10.04	9.89	14:09	18:54	23:38
<b>Uranus</b>	<b>6</b>	1 31.6	8 54.5	Psc	5.8	3.6	109° W	100	19.95	19.59	22:42	05:16	11:50
	<b>13</b>	1 31.4	8 53.0	Psc	5.8	3.6	116° W	100	19.95	19.49	22:14	04:48	11:23
	<b>20</b>	1 31.1	8 50.7	Psc	5.8	3.6	123° W	100	19.95	19.38	21:46	04:20	10:54
	<b>27</b>	1 30.5	8 47.6	Psc	5.7	3.7	130° W	100	19.95	19.29	21:19	03:52	10:26
<b>Neptune</b>	<b>6</b>	22 52.5	-8 06.6	Aqr	7.8	2.4	153° W	100	29.95	29.05	21:05	02:37	08:10
	<b>13</b>	22 51.9	-8 10.7	Aqr	7.8	2.4	159° W	100	29.95	29	20:37	02:09	07:42
	<b>20</b>	22 51.2	-8 14.9	Aqr	7.8	2.4	166° W	100	29.95	28.97	20:09	01:41	07:13
	<b>27</b>	22 50.5	-8 19.3	Aqr	7.8	2.4	173° W	100	29.95	28.95	19:37	01:09	06:41
<b>Pluto</b>	<b>6</b>	19 06.7	-21 13.3	Sgr	14.2	0.3	152° E	100	33.15	32.26	18:07	22:48	03:29
	<b>13</b>	19 06.1	-21 15.1	Sgr	14.2	0.3	145° E	100	33.15	32.32	17:39	22:20	03:01
	<b>20</b>	19 05.6	-21 16.8	Sgr	14.2	0.3	138° E	100	33.16	32.4	17:11	21:52	02:33
	<b>27</b>	19 05.1	-21 18.4	Sgr	14.2	0.3	131° E	100	33.16	32.49	16:43	21:24	02:05

# A Shower of Comet Dust: Get Ready for the Perseids

by Dave Huestis

Some events by their nature require advance planning. Weddings, anniversary celebrations and vacations are just a handful of activities everyone has had to prepare for well ahead of the scheduled date. Well, astronomers have very unique sky events that we are aware of years or even decades in advance that we may wish to observe.

One of those spectacular events will occur just over a year from now on August 21, 2017. It is being dubbed The Great American Eclipse of 2017. This total solar eclipse will be visible along a 2,500 mile long track, at maximum only 68 miles wide, that extends diagonally across the United States from Oregon to coastal South Carolina. (See the following website for an interactive map: <http://eclipse.gsfc.nasa.gov/SEgoogle/SEgoogle2001/SE2017Aug21Tgoogle.html>.) The maximum duration of totality will be two minutes and forty seconds. I've known about this eclipse since I first became interested in astronomy, and like many of my associates, will make every effort to be within the path of totality.

Millions of people will have the opportunity to observe one of Mother Nature's most beautiful astronomical events as the Moon completely covers the Sun and reveals our star's ghostly corona and magnificent red prominences of hydrogen. Unfortunately here in Rhode Island we are quite far from the path of totality and will only see about two-thirds of the Sun covered by the Moon.

So if you have a strong desire to be a part of this great experience, you must plan now, otherwise you'll be sleeping in your car in a parking lot. Hotels within totality's path are already booked, and rumor has it that some establishments are price gouging. I'll be writing a lot more about this eclipse as we get closer to the date.

While the 2017 solar eclipse is a special event, perhaps once-in-a-lifetime for some people, there are many other sky happenings that appear with clockwork regularity. And though I do not have psychic abilities, I can predict what many amateur astronomers and casual stargazers alike will be doing on the night of August 11-12, 2016. If the skies are clear, sky enthusiasts will be looking towards the heavens to see shooting stars associated with the Perseid meteor shower blaze across the sky.

The Perseid meteor shower is the most widely observed meteor shower of the year. This ranking is because families are spending more time outdoors during the summer season, enjoying cookouts, camping, or any other assortment of late evening activities. And years ago when there were still a few drive-in theaters around southern New England, you could always glimpse quite a few Perseids while watching the movie screen.

Though the December Geminids are the more productive shower of the year for us in the northern hemisphere, locally colder temperatures tend to keep all but the die-

hards inside warm homes. Too bad, because I'd rather try to stay warm than constantly swat at mosquitoes!

While much of the literature on meteor showers often states that the Perseids are fairly consistent, I beg to differ. More often than not it seems the Perseids fail to deliver a good display of shooting stars at the predicted time. It's very frustrating for me. When I provide you the shower specifics in this column I have checked more than half a dozen sources before publishing a suggested time to maximize your chances in observing as many meteors as possible. (For most meteor showers that I write about I do try to spend a few hours observing them as well. One, because I never tire of watching them—and two, because I want to see how well the predictions come to fruition.)

However, though I am occasionally discouraged, if the weather cooperates you can be assured I will be out under the heavens scanning the sky for the annual shooting stars of August to perform well. Here's what you can expect.

For 2016 the Perseids peak on a Thursday night (11th) thru the pre-dawn hours of Friday (12th). Unfortunately we will have to contend with a waxing gibbous Moon (first quarter on the 10th) that will set just after midnight. This situation is not entirely horrible, as the Moon and the radiant for the shower will be at opposite sides of the sky. Besides that point, the Perseids are usually best after midnight anyway.

The Perseids are so named because they appear to radiate from an area of sky, called the radiant point, in the constellation Perseus. Perseus is well up in the northeast sky after midnight. (See accompanying finder chart.) If you can locate a pattern of stars that looks like a sideways "M" or "W" (that's Cassiopeia), Perseus is below it so you're looking in the correct direction. You know you've seen a Perseid if you can trace the path of a meteor back to the radiant point.

Most of the Perseids one observes are no larger than a thumbnail as they plunge into our atmosphere at 134,222 miles per hour (37 miles per second) and disintegrate. The August Perseids, which occur around the same time each year, are the remnants of Comet 109P/Swift-Tuttle that were stripped off the comet's surface and deposited in



“streams” throughout its orbit about the Sun. When the Earth passes through a stream we experience a display of shooting stars.

You can expect to observe 60+ shooting stars per hour in a light pollution-free sky once the Moon sets, so choose your viewing location carefully. I expect the best viewing opportunity will occur between moonset and dawn’s early light, which begins around 4:15 a.m. EDT. For fun, and to stay alert, keep a mental, written or recorded count of meteors per hour. You should note an increase as the morning progresses. Also take note of the colors of the shooting stars. They are usually green, red or orange, and a few may become brilliant exploding meteors called fireballs. See a video of a fireball over Maine on May 17, 2016: <http://www.golocalprov.com/news/huestis-fireball-over-new-england-tuesday-morning-was->

[bright-one.](#)

If the weather does not cooperate or you are unable to observe on peak night, try your luck on the nights before and after. You won’t see 60 meteors per hour, but you may catch a couple of dozen or so. The best time to observe will still be between midnight and dawn’s early light.

Cross your fingers that the sky gods favor us with a decent display of meteors for the 2016 Perseid meteor shower. And if you happen to see a stationary meteor (think about it—it’s headed directly at you), don’t forget to duck!

While you do not require a telescope to observe a meteor shower, don’t forget to explore astronomical objects far beyond our protective atmosphere at each of the following facilities. Seagrave Memorial Observatory (<http://www.theskyscrapers.org>) in North Scituate is open every clear Satur-

day night. Ladd Observatory (<http://www.brown.edu/Departments/Physics/Ladd/>) in Providence is open every clear Tuesday night. The Margaret M. Jacoby Observatory at the CCRI Knight Campus in Warwick (<http://www.ccri.edu/physics/observatory.htm>) is open every clear Wednesday night. Frosty Drew Observatory (<http://www.frostydrew.org/>) in Charlestown is open every clear Friday night. Check the respective websites for open times.

Good luck and keep your eyes to the skies.



*Dave Huestis is Skyscrapers Historian and has been contributing monthly columns to local newspapers for nearly 40 years. See more at <http://theskyscrapers.org/dave-huestis>*

## Dog Days

by Francine Jackson

Whenever we think of this time of year, invariably we’ll hear the term “dog days,” an apparent reference to the fact that our cute little canine companions are often lying on the floor, with their tongues hanging out, in desperate attempts to cool themselves off. Of course, the dictionary defines dog days (plural) as a “period marked by lethargy, inactivity, or indolence,” or, “the sultry part of the summer, supposed to occur during the period that Sirius, the Dog Star, rises at the same time as the sun.” Of course, neither definition is right, especially the first, as the original dog days were marked by a period of great activity, not inertia. We’ve merely forgotten because we’ve mainly lost our agrarian roots.

In the midst of the hottest time of the year, the waters from the mountaintop would run down, join up with the Nile River, creating a time for the farmers around the Nile to have an abundance of water for their crops. They just had to know when to construct canals for the water to enter their fields. Their reference was the two stars near to the Sun in the morning: Sirius and Procyon, in the constellations the dogs.

When a celestial object, normally a star or a planet, is first visible in the morning sky, because it is just far enough away from the Sun to be seen, it is in its heliacal rising. The previous day it was too close to the Sun, but now the Sun has moved just enough to



August 15, 30 minutes before sunrise, facing southeast

the east, allowing the object to be resolved. Sirius, our brightest nighttime star, and the brightest in the constellation Canis Major, the Big Dog, has its heliacal rising just about now, which, if you haven’t noticed, is really warm.

It was also observed that another star, not as bright as Sirius, but fairly easy to see, had its heliacal rising just a couple days before Sirius; because of this, it became the indicator for Sirius to arrive, and was referred to as the star that rises “before the dog,” or Procyon. It is the brightest star in the tiny constellation Canis Minor, the Little Dog, made up, at least in our skies, of basically two stars, Procyon and Gomeisa, although it is often believed to contain at least six other stars, none of which appear brighter

than 4th magnitude.

Like other sayings that have come down through the ages, dog days is another that has its origins in the sky. If any of you are able to wake early in the morning before dawn the next few days, and have a good eastern horizon, please confirm that, once again, our language does contain within it a piece of our sky.



*Francine Jackson is Skyscrapers Public Relations Spokesperson, writes the weekly newsletter for Ladd Observatory and serves as planetarian at the University of Rhode Island. See more at <http://theskyscrapers.org/francine-jackson>*



# Venus and Jupiter prepare for their close-up this August

by Ethan Siegel

As Earth speeds along in its annual journey around the Sun, it consistently overtakes the slower-orbiting outer planets, while the inner worlds catch up to and pass Earth periodically. Sometime after an outer world—particularly a slow-moving gas giant—gets passed by Earth, it appears to migrate closer and closer to the Sun, eventually appearing to slip behind it from our perspective. If you've been watching Jupiter this year, it's been doing exactly that, moving consistently from east to west and closer to the Sun ever since May 9th.

On the other hand, the inner worlds pass by Earth. They speed away from us, then slip behind the Sun from west to east, re-emerging in Earth's evening skies to the east of the Sun. Of all the planets visible from Earth, the two brightest are Venus and Jupiter, which experience a conjunction from our perspective only about once per year. Normally, Venus and Jupiter will appear separated by approximately  $0.5^\circ$  to  $3^\circ$  at closest approach. This is due to the fact that the Solar System's planets don't all

orbit in the same perfect, two-dimensional plane.

But this summer, as Venus emerges from behind the Sun and begins catching up to Earth, Jupiter falls back toward the Sun, from Earth's perspective, at the same time. On August 27th, all three planets—Earth, Venus and Jupiter—will make nearly a perfectly straight line.

As a result, Venus and Jupiter, at 9:48 PM Universal time, will appear separated by only 4 arc-minutes, the closest conjunction of naked eye planets since the Venus/Saturn conjunction in 2006. Seen right next to one another, it's startling how much brighter Venus appears than Jupiter; at magnitude  $-3.80$ , Venus appears some eight times brighter than Jupiter, which is at magnitude  $-1.53$ .

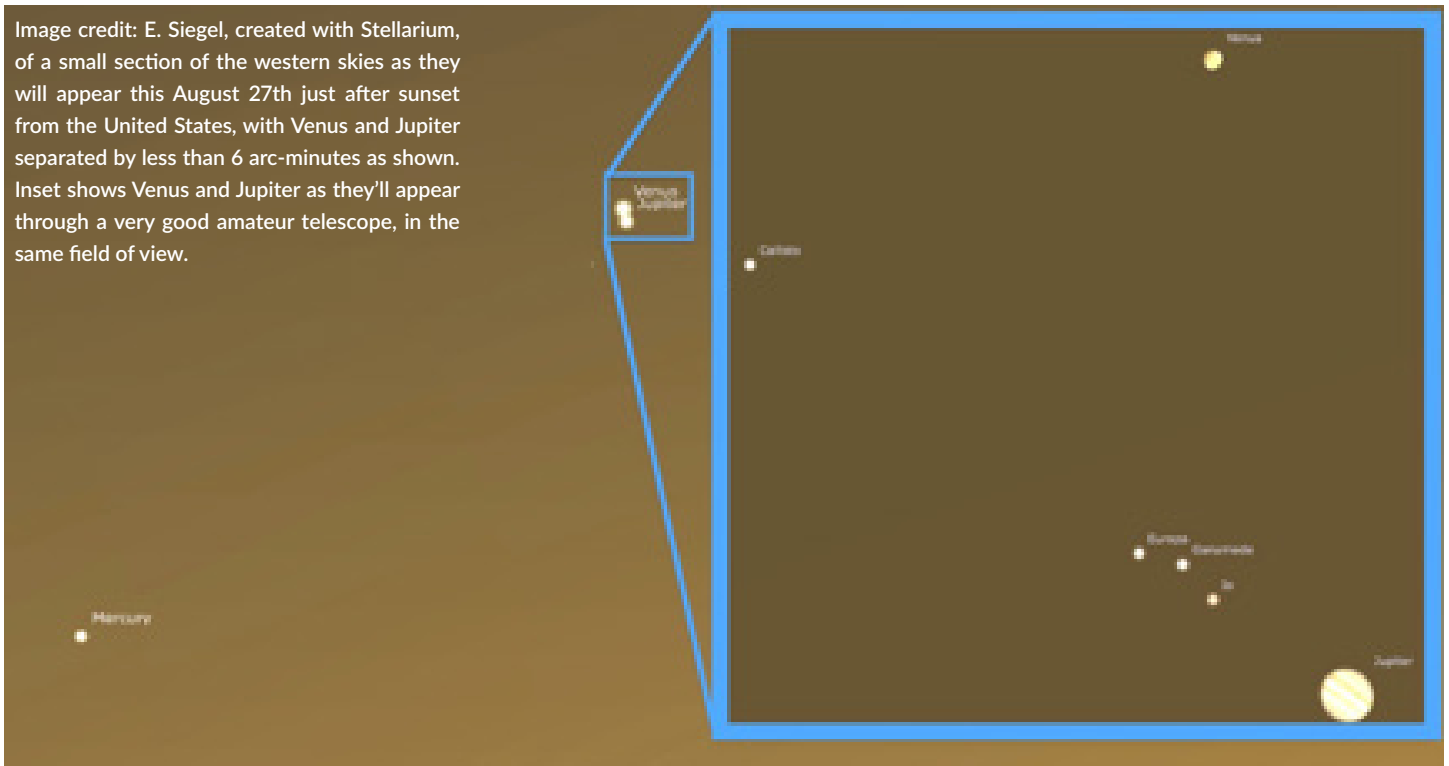
Look to the western skies immediately after sunset on August 27th, and the two brightest planets of all—brighter than all the stars—will make a dazzling duo in the twilight sky. As soon as the sun is below the horizon, the pair will be about two

fists (at arm's length) to the left of the sun's disappearance and about one fist above a flat horizon. You may need binoculars to find them initially and to separate them. Through a telescope, a large, gibbous Venus will appear no more distant from Jupiter than Callisto, its farthest Galilean satellite.

As a bonus, Mercury is nearby as well. At just  $5^\circ$  below and left of the Venus/Jupiter pair, Mercury achieved a distant conjunction with Venus less than 24 hours prior. In 2065, Venus will actually occult Jupiter, passing in front of the planet's disk. Until then, the only comparably close conjunctions between these two worlds occur in 2039 and 2056, meaning this one is worth some special effort—including traveling to get clear skies and a good horizon—to see!

*This article is provided by NASA Space Place. With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology. Visit [spaceplace.nasa.gov](http://spaceplace.nasa.gov) to explore space and Earth science!*

Image credit: E. Siegel, created with Stellarium, of a small section of the western skies as they will appear this August 27th just after sunset from the United States, with Venus and Jupiter separated by less than 6 arc-minutes as shown. Inset shows Venus and Jupiter as they'll appear through a very good amateur telescope, in the same field of view.



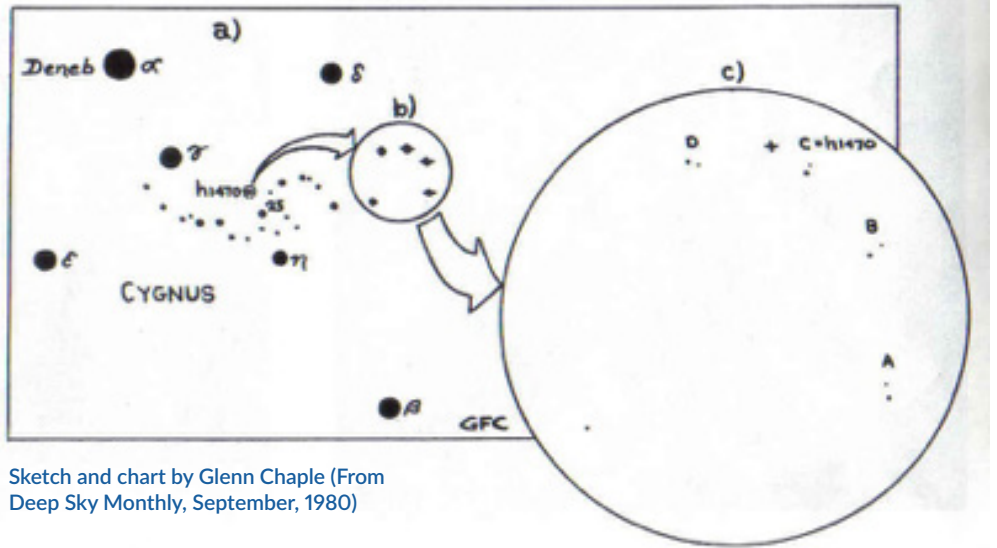
# Asterism in Cygnus

## Chaple's Arc/ Fairy Ring

Magnitude 7, Size 22'

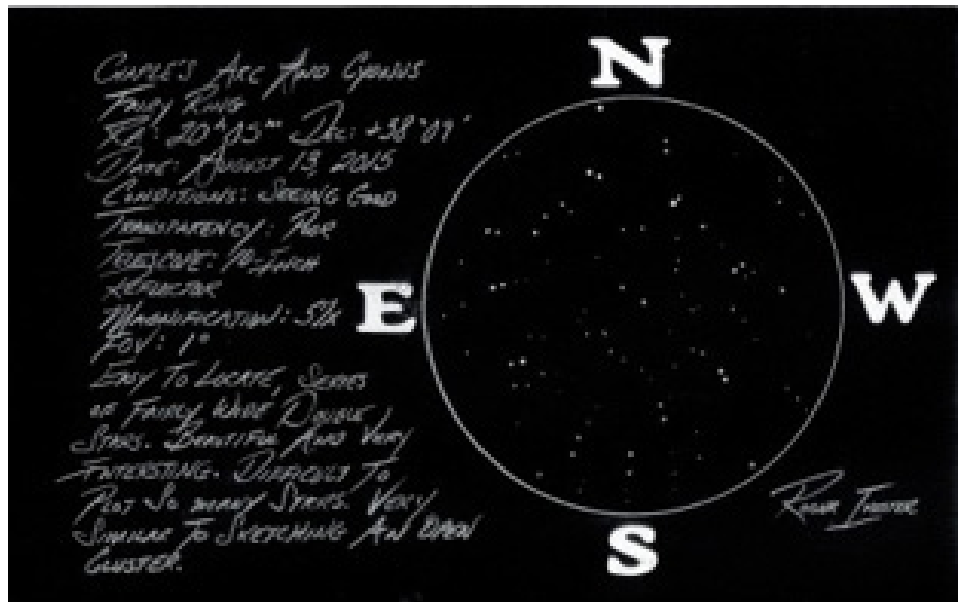
by Las Vegas Astronomical Society

This striking arc-shaped arrangement of four double stars was found by amateur astronomer Glenn Chaple during a search for the pair h1470 (one of the four) with a 3-inch reflecting telescope. He eventually reported the group in the September, 1980, issue of Deep Sky Monthly, and a reader dubbed it "Chaple's Arc." The group was independently found by Utah amateur Kim Hyatt, who was also looking for h1470. With a 10-inch scope, he added several fainter pairs that, with the Arc, formed a ghostly ring. He christened it the "Fairy Ring" and reported it to his friend Brent Watson. Watson included the Fairy Ring in his booklet Finder Charts of Overlooked Objects. Today, the asterism bears both names.



Sketch and chart by Glenn Chaple (From Deep Sky Monthly, September, 1980)

The purpose of the LVAS Observer's Challenge is to encourage the pursuit of visual observing. It is open to everyone that is interested, and if you are able to contribute notes, drawings, or photographs, the LVAS will be happy to include them in our monthly summary. If you would like to contribute material, submit your observing notes, sketches, and/or images to either Roger Ivester (rogerivester@me.com) or Fred Rayworth (queex@embarqmail.com). To find out more about the LVAS Observer's Challenge or access past reports, log on to [lvastronomy.com/observing-challenge](http://lvastronomy.com/observing-challenge).



Sketch by LVAS member Roger Ivester



Image by Rick Kazmierki

# Observing Reports



## **Saturday, July 23 Seagrave Observatory Night**

After thunderstorms passed through the area on Saturday, July 23 Seagrave Observatory opened for viewing of Mars and Saturn. Bob Horton, Francine Jackson and Jim Hendrickson entertained a half-dozen guests (including some of Jim's relatives) during an evening when the clouds never fully departed. Viewing opportunities included Saturn, Mars and the double star Alberio in Cygnus.

## **Friday, July 29 A stormy night by Dave Huestis**

Despite the forecast for scattered showers and t-storms, I decided to visit Frosty Drew Observatory (FDO) at Ninigret Park in Charlestown. I wanted to update information about the facility for an upcoming column about this gem of an observing site in South County.

As I left my house in Pascoag I noted the

cumulus clouds beginning to form north and west. I had checked the weather radar before leaving, and that showed only a few storms northwest of Albany.

Left the house about 5:55 pm. Arrived at FDO about 7:10 pm..

Onshore breeze, 15-20 mph gusts. Kept mosquitoes at bay. About 81 degrees. Clear but hazy. Quite muggy.

Before sunset we could see the towering clouds towards the north and northwest, quite a distance away. No lightning initially. But that soon changed. Not sure of the time, but started to see flashes behind the clouds from our vantage point, then as the front moved towards us we saw cloud to cloud and ground strokes. It was beautiful.

The sky in that direction was constantly flashing. It was the "warm up act" for folks waiting in line to observe Jupiter and then Saturn.

The front continued in our direction, but it did not progress to our location. I

suspect the onshore cooler wind may have held it off, because it slid by to our north. The lightshow continued until I started my journey back to Pascoag around 10:30pm. I realized I was most likely going to intercept the storm somewhere along my route, and I was trying to figure out when that would happen.

I traveled Route 1 north, seeing lightning very frequently. Once I got to the Wakefield area and now heading due north I could see the extensive lightning flashes. As you come up Route 1 you do get expansive views of the sky. The lightning was incredible. I almost decided to get off onto Route 138 and go over to Jamestown to enjoy the view, but by now it was getting late. It started to rain, but it was not very heavy at the time.

When I got to Route 4 it really started to come down, and the stretch between Division Road and Route 95 the rain teamed down.

The lightning became almost constant. I took the exit for 295 north and all hell broke loose. The Rhode Island Mall is to the left, and the sky above and just to the south of this area was rockin' and rollin'. Sometimes the lightning was blinding. Between here and Route 37, it poured and the lightning was unbelievable. I have a new Nissan Rogue, and I was hoping I would not encounter any hail. I also scanned the skies during the lightning flashes to check for funnel clouds. The lightning and heavy rain continued until I got to the Route 6/195 interchange. I could see the lightning in my side and rear view mirrors, but the rain quickly ceased. By the time I got to Route 44, the rain had stopped.

It hadn't even rained at the Crossings on 44. And no rain all the way home. I could still see the lightning flashes almost all the way home.

Finally back at home in Pascoag about 11:40 pm. Not a drop of rain.

It was quite an experience driving through these cells. I haven't seen such frequent lightning in I don't know how long. I only wish I had had a camera with me. Then I would have stopped off in Jamestown to obtain a fantastic view to the north where most of the activity was occurring.

It was a memorable lightshow.

Dave Huestis PS. Visitors to FDO had great views of Jupiter and Saturn through a variety of telescopes.





Saturn appears just north of Antares this year, with Mars to the west. Photo from May 29.

# Skywatching for a Saturn Year

by Jim Hendrickson

Most skywatchers remember their first ever view of Saturn. If there is one single object (besides the Moon) that meets or even exceeds an unexperienced viewer's expectations when viewed through a telescope, it is the ringed planet.

Upon first gazing upon our solar system's second-largest planet, even at low power, it's shape is immediately apparent. The pale yellow globe surrounded by a beige disk so intricately defined through the eyepiece is often credited with getting many "hooked" on astronomy.

Saturn appears so lifelike through even the smallest telescopes that many viewers will often ask if we are looking at the real thing or if they are being tricked by looking at a slide or a sticker at the end of a tube.

Saturn is the outermost of the five classical planets (those visible to the naked eye). At a distance of over 1.4 billion kilometers from the Sun, it takes 29.5 years to complete an orbit. It will therefore return to the same spot in our sky after nearly three decades.

Where was Saturn the first time you saw it?

Francine Jackson's article from May 2016 "Remembering Comet Halley: 30 Years Later" got me thinking about my quest to explore the sky in the hopes of finding comet Halley back in 1985-86. While I never did see the comet, I consider 1986 to be my "year of discovery" as it was the time when my knowledge of the night sky increased drastically and when I enjoyed my first views of many celestial objects, including the planet Saturn.

In the summer of 1986 my father and I visited my local "open sky" site, which was the south parking field for Spring Lake Beach, a little over 200 meters from home (I had no southern sky from our lakefront yard). Our mission for the night, look at Saturn. Already knowing what to expect and where to look, I quickly set up my 60mm "department store" refractor (which I still own), pointed it to a pale yellow "star" just north of Antares, and focused the highly

magnified contraption until I saw the beautiful elliptical form come into view. I contained my enthusiasm, despite this being my first ever view of Saturn, as I presented it to Dad. "Take a look, you can see Titan and everything" I recall saying with intentionally little emotion. I'll never forget the "wow" he uttered at first glance.

Sharing this first view of Saturn remains one of the most memorable observing experiences I've ever had. Today, Saturn has returned to its "home" position, and has completed one full cycle of seasons for me, marking what I consider to be a special milestone in my life as an amateur astronomer.

Do you have any worthwhile experiences you'd like to share?



*Jim Hendrickson is newsletter and web editor and has been a member for 20 years. See more at <http://theskyscrapers.org/jim-hendrickson>*

## Minutes Of The Executive Board July 18 2016

In attendance: 15 people

Financial Report:

60 membership units have paid. 12 Family dues, 25 Regular dues, 23 Senior dues. About 35 unpaid, more reminders will go out.

Linda Bergmann, Bob Napier and Lloyd conducted the financial audit. All numbers look to be ok. Lloyd has placed \$20,000 in a CD leaving about 9,000 in checking.

Our incorporation status did not get updated with the state this year. Kathy and Steve Siok delivered a letter of good standing from the Div of taxation to the secretary of state's office, paid the appropriate fee and we are once again in good standing.

Steve Siok asked for a couple of people to get together and make a list of all things such as insurance, tax filings, incorporation filings and so forth that are necessary for the society to take care of on an annual basis.

Saturday Night Closing Protocol

There was discussion about the best way to handle this. Various formats were discussed, it was decided that Jim Crawford would put his ideas together in a proposal for us to discuss at the next meeting.

Work Sessions:

Work parties will be starting up again in August. There are roof and siding repairs needed on the double roll off building. The loose step on the pavilion next to the meeting hall has been supported and secured. We have permission to take down some of the brush growing up in the areas that trees were taken down from. Some finish work consisting of puttying and painting of the

windows in the meeting hall will be done.

Star Parties:

Beavertail, July 22. Communications with the people from D.E.M. have been difficult. Bob Horton will try to talk more with them and clarify.

Pascoag Children's Camp:

August 17 or 18? For kids with congenital heart problems. Maybe 65 kids, Francine will formalize details and get back to us

Riverbend Farm, September 9:

Blackstone corridor star party/ Uxbridge. We did an event there last year and will occur at the dock side facilities. A staff member will stay while we are there.

Astroassembly:

Kathy Siok reported that we have 3 speakers and the main evening speaker set. Pretty much the same format as last year. We will have the same caterer who was very popular for the evening banquet with an Italian themed dinner.

Speakers are: Dr. Dennis Conti, Mike Rudenko, Jeff Norwood and Scott McNeil.

The overall theme will be the changes and improvement in amateur astronomy technology over the last few decades.

Flyers will be ready to print out and bring to Stellafane

August Meeting:

After some discussion it was decided that based on the poor attendance at the July cookout that we would change the format of the August meeting to be more of an informal social time starting at 6:30 instead of 7pm with desserts to share.

This would be instead of a full cookout.

Next Board of Director's Meeting = Monday August 15 at 7pm.

Submitted by Steve Hubbard, Secretary

## Cash Flow YTD 2016

4/1/2016 through 7/31/2016

Category	4/1/2016-7/31/2016
<b>INFLOWS</b>	
Donation	
Misc Donation	1,780.70
TOTAL Donation	1,780.70
Dues	
Family	480.00
Regular	950.00
Senior	525.00
TOTAL Dues	1,955.00
Misc Income	
Interest Inc	3.05
TOTAL Misc Income	3.05
Star Party Donations	70.00
Subscription Income	
Astronomy	102.00
Sky & Telescope	65.90
TOTAL Subscription Income	167.90
<b>TOTAL INFLOWS</b>	<b>3,976.65</b>
<b>OUTFLOWS</b>	
Corporation, State Fee	125.00
Misc Expenses	96.68
PayPal Fee	37.17
Postage and Delivery	48.72
Subscription Payments	
Astronomy	102.00
Sky & Telescope	65.90
TOTAL Subscription Payments	167.90
Trustee Expense	
Property Maintenance	501.50
TOTAL Trustee Expense	501.50
Utilities	
Electric	39.14
Internet	279.96
Porta-John	99.00
Propane	80.25
TOTAL Utilities	498.35
<b>TOTAL OUTFLOWS</b>	<b>1,475.32</b>
<b>OVERALL TOTAL</b>	<b>2,501.33</b>

## Cash and Bank Accounts - As of 7/31/2016

Account	7/31/2016 Balance
<b>Bank Accounts</b>	
PayPal Account	180.28
PCU CD	20,008.88
PCU Checking	8,472.18
<b>TOTAL Bank Accounts</b>	<b>28,661.34</b>
<b>OVERALL TOTAL</b>	<b>28,661.34</b>



Arthur Wallace



Skyscrapers Summer Potluck Dinner



## First Light:

**Dick Parker & Al Hall complete 3/4 scale reproduction Clark telescopes**

Culminating eight years of meticulous design, engineering & fabrication work, Dick Parker & Al Hall have completed their 6-inch refracting telescopes, nearly identical replicas of Seagrave Observatory's 1878 Alvan Clark telescope, which the pair of skilled telescope makers restored in 2010.

The First Light party took place at Al's house in Ellington, CT on Saturday, July 3 and included about 35 guests from Skyscrapers, Inc, Springfield Telescope Makers and Astronomical Society of Greater Hartford.

Sky conditions were favorable and views of Jupiter, Mars & Saturn were enjoyed by all in attendance. "It focuses!" were Dick's first words as he turned his scope to Mars.

The telescopes will be presented at this year's Stellafane convention in Springfield, VT.

# Photo Gallery

Ok....so after many months of struggle with equipment, guiding and Flat Frames and thanks to Tom T and Bob Napier here is the result of my tenacity. M51 Whirlpool, guided, 15 exposures at 5 min ea. Some minor post processing with Power director Photo Suit. The sky in Portsmouth was clear but some very minor haze. Did not use PEC or Syc Up, by Jim Crawford.

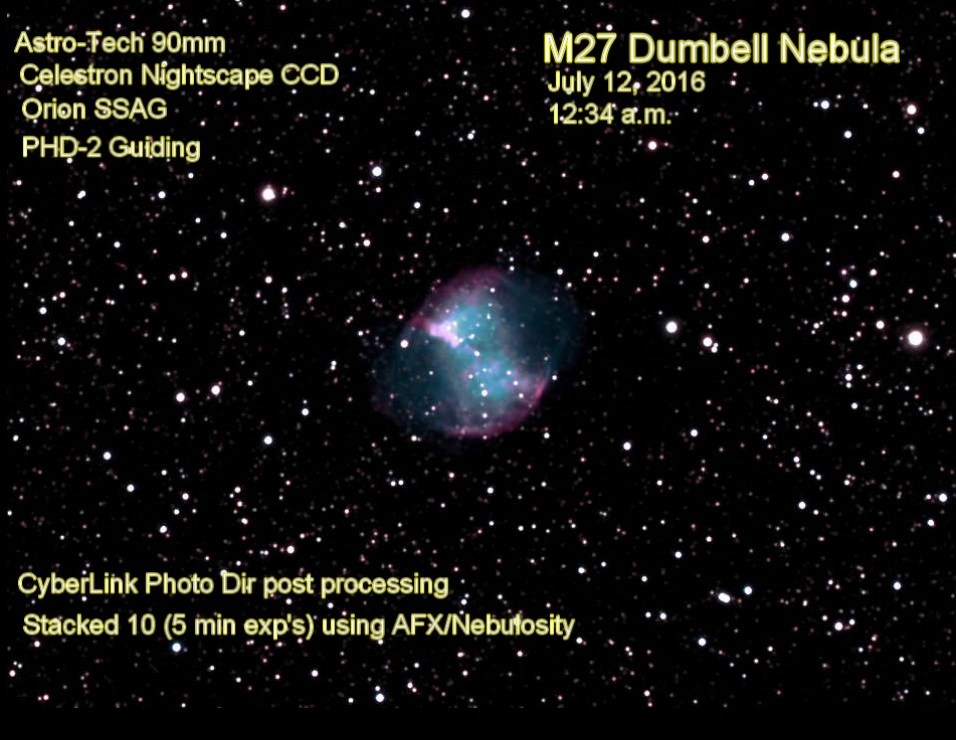


Astro-Tech 90mm  
Celestron Nightscape CCD  
Orion SSAG  
PHD-2 Guiding

**M27 Dumbbell Nebula**  
July 12, 2016  
12:34 a.m.

This pic was processed thru Nebulosity and the Celestron AFX. Then post processed with CyberLink Photo Director. I looked on line again for many M27 samples and many showed more green hue in center.

This was my first Guided photo. Will try for the Veil soon. by Jim Crawford



CyberLink Photo Dir post processing  
Stacked 10 (5 min exp's) using AFX/Nebulosity



Pluto on July 27 from Seagrave Observatory. This was taken with a Canon SLR camera attached to a 3-inch telescope. A tracking mount is required for the 20 second exposure. Effective focal length 400mm. Image by Jim Hendrickson



M16 & M17 by Steve Hubbard. Both are screen captures with no processing taken with my 14" SCT and a MallinCam Xterminator camera

Trifid & Lagoon Nebulae, stack of 10 frames 15s each using Canon SLR on 80mm telescope, by Jim Hendrickson from Seagrave Observatory





# AstroAssembly 2016 Sept. 30 & Oct. 1

47 Peeptoad Road North Scituate, Rhode Island

www.theskyscrapers.org/astroassembly2016

## How Technology Has Changed Amateur Astronomy

### Friday Evening Talks & Stargazing at Seagrave Observatory

If you would like to give a Friday Evening Talk, please contact Kathy Siok (kathys5@cox.net).

### All day Saturday at Seagrave Observatory

Poster Session, Swap Table (please bring your own table), Solar Viewing, Astrophotography Contest, Homemade Telescopes (bring yours!), Famous Astro Bake-off Contest!

**10:00am** Poster Session begins. Please contact Steve Siok (ssiok@cox.net) to present

**12:00pm** Lunch at the Skyscrapers Grille

**1:15pm** Recent Developments in Optical and Astronomical Equipment by **Jeffrey Norwood**, Camera Concepts

**2:30pm** The Elephant in the Dark Room: The Rise of Astrophotography by **Scott MacNeill**, Frosty Drew Observatory

**3:45pm** Near-Earth Objects: Finding Them Before They Find Us by **Michael Rudenko**, Minor Planet Center

### Saturday Evening Program at North Scituate Community Center

**5:15pm** Reception (antipasto bar with salad and real Italian accompaniments)

**6:00pm** Evening Banquet (pre-registration required) chicken parmesan, pastas, sauces, dessert and coffee catered by Quik Stop

**7:15pm** Words of Welcome, Awards, Raffle Drawing

**7:30pm** Detecting Other Worlds with a Backyard Telescope by **Dennis Conti**, American Association of Variable Star Observers

### 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:** 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.

\_\_\_\_\_ Registrations x \$25 each = \$ \_\_\_\_\_

Name \_\_\_\_\_

\_\_\_\_\_ Registrations (Skyscrapers Member) x \$20 each = \$ \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_ Registrations (Children under 14) Free \_\_\_\_\_

\_\_\_\_\_ Banquet Tickets x \$25 each = \$ \_\_\_\_\_

Email \_\_\_\_\_

\_\_\_\_\_ Banquet Tickets (Children under 14) x \$15 each = \$ \_\_\_\_\_

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

Linda Bergemann  
41 Ross Hill Road  
Charlestown, RI 02813-2605

Total = \$ \_\_\_\_\_

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47 Peeptoad Road  
North Scituate, Rhode Island 02857