



# The Skyscraper

Vol. 36 No. 1

January 2009

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



## Seagrave Memorial Observatory is open to the public weather permitting



**Saturdays 7pm - 10pm**

Please note that the observatory may be inaccessible for several weeks following a winter storm.

See [www.theSkyscrapers.org](http://www.theSkyscrapers.org) for updates.

### North Scituate Community Center

All of our winter meetings (Dec-Mar) are held at the Community Center. From Seagrave Observatory, the Community Center is the first building on the right side going south on Rt. 116 after the intersection of Rt. 6 Bypass (also Rt. 101) and Rt. 116. Parking is across the street.

## January 2009

**2-3** Quadrantid Meteor Shower peaks

 **4** First Quarter Moon

**4** Mercury at greatest Eastern elongation

**4** Earth at Perihelion

 **10** Full Moon

**14** Venus at greatest Eastern elongation

 **17** Last Quarter Moon

 **26** New Moon

## January Meeting Members' Potpourri Friday, January 2 at North Scituate Community Center

### Dave Hurdis

Trip to William Herschel's house in England

### Dick Parker

Telescope/mirror making talk and demo

### Tom Thibault

Heaven's View Observatory

### Craig Cortis

Observing at the Everglades

## From the president



2009, another milestone has been reached. 2009 is the International Year of Astronomy. The IYA coincides with the 400th anniversary of Galileo's use of the telescope to study the night skies and Jonas Kepler's publication of *Astronomia Nova*. Events will be held world wide to celebrate these milestones as well as many others. Some of the events planned nationwide are Side Walk Astronomy days, Star Counting observing campaigns Epsilon Aurigae observing campaign, Saturn and Lunar observing campaigns. In the works locally we are planning an Astronomy Day event as well as participating in the Scituate Library Summer Fest. We are looking for members interested in organizing these events or any other events that may be of interest to the public.

The International Year Of Astronomy 2009 might be just the time for you to get out your telescope and become reacquainted with the beauties of the night sky. Don't have a telescope? Skyscrapers have several telescopes available as loaners or even better become

a key holder as Seagrave Memorial Observatory. The process is simple, any key holding member can train you in the operation of the various telescopes. All that is needed is a commitment from you to put in the time and effort to learn the safe handling and operation of the telescopes. This is a win-win situation. You as a key holding member have access to the telescopes at Seagrave Memorial Observatory and Skyscrapers gain a new member of the observing committee to assist with Public Nights. The IYA is a great time for you to get more involved in Astronomy and a great time to introduce a family member or friend to astronomy.

400 years of astronomy, where will we be in the next 400 years? What great achievements will we have accomplished? What great places will we have visited? Who will be our new friends? But the big question is what role did you play in promoting Astronomy in 2009? Hope to see you soon at one of the upcoming Skyscraper events.

Happy New Year to you and your family, I wish you the very best.

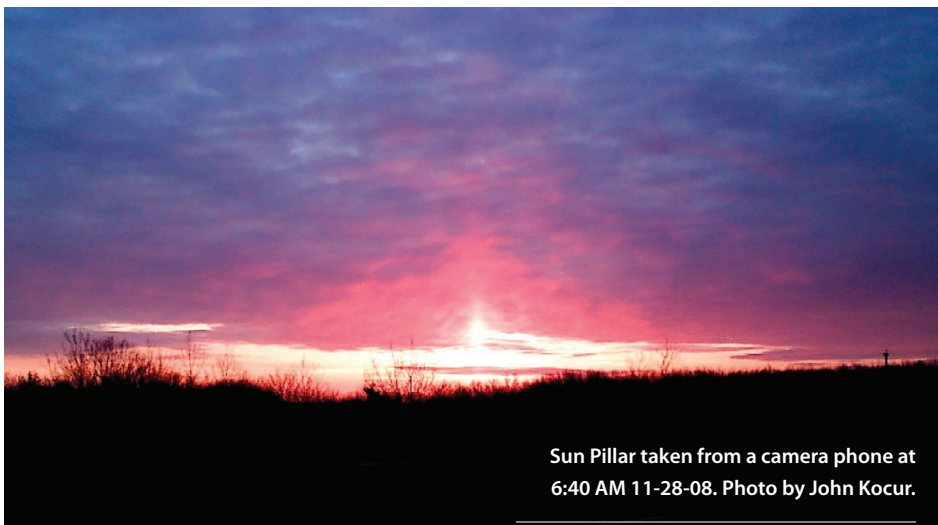
—Glenn Jackson, President

# Star Party Schedule

Bob Forgiel

We have several star parties scheduled for the coming weeks. We always enjoy sharing our views of the Universe with our guests. Contact [bforgiel@cox.net](mailto:bforgiel@cox.net).

Date	Location	Group	Count
Mon, January 5 <small>rain date January 7</small>	Seagrave Observatory	Scouts	30+
Tue, January 6 <small>rain date January 8</small>	Seagrave Observatory	Scouts	15+
Week of January 12-15	TBA	Scouts	
Fri, January 23	Alton Jones Campus	Women's Wilderness Weekend	
Wed, January 28			
Tue, February 3	Seagrave Observatory	Scouts	30+
Mon, February 9	Community Center (Merit Badge Presentation)	Scouts	



Sun Pillar taken from a camera phone at 6:40 AM 11-28-08. Photo by John Kocur.



**How I Became an Amateur Astronomer:** January 16, 1984, my father presents me with 60mm telescope for my 10th birthday. As we celebrate the International Year of Astronomy, I look to 2009 as the quarter century mark of this magical moment. I do still have the telescope, but it has not seen moonlight or starlight in about 14 years. Jim Hendrickson



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

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**Editor**

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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 by January 15 to Jim Hendrickson, 1 Sunflower Circle, North Providence, RI 02911 or email to [jim@distantgalaxy.com](mailto:jim@distantgalaxy.com).

**Email subscriptions**

To receive *The Skyscraper* by email, send email 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.

# Meteor Shower Prospects for IYA2009

Dave Huestis

The United Nations General Assembly has designated 2009 as the International Year of Astronomy. You will hear of many worldwide initiatives, as well as local ones, designed to focus attention on astronomy — 400 hundred years after Galileo first trained his telescope on the heavens.

Skyscrapers Inc., The Amateur Astronomical Society of Rhode Island, will be increasing its public outreach programs as a small but important contribution to the IYA2009 celebration. When specific plans have been finalized you will be informed through the local media.

We look forward to sharing the beauty of the universe with you.

One interesting activity you can participate in from your own backyard is meteor observing. Meteor showers are always fun to watch if you can do so when one of the ten more productive displays listed below are at peak levels.

As always, the Moon can be a problem with about half of the year's more prominent showers. Then take into account the chances for poor weather conditions and you might see only 25 percent of the major displays.

The upcoming year is no exception. The only thing we can hope for is some good luck from Mother Nature to provide clear skies during the nights when the meteor showers are at their peak. Then the best we can hope for is 50 percent.

Well, that's not entirely true. Even with a bright Moon in the sky you can still catch a few of the brighter shooting stars. Or, depending upon the shower's peak time, you can wait until the Moon sets before observing or begin before it rises. So perhaps we can raise the odds to 75 percent. However, you may tire easily and fall asleep if the meteors are few and far between. If you're looking for the best ratio of meteors-to-time spent observing, then concentrate on those showers with no or least intrusive Moonlight.

We start out the new year with favorable conditions for the Quadrantid meteor shower on January 2-3. The almost First Quarter Moon will set

Date	Shower	Moon Phase
January 2-3	Quadrantids	First Quarter
April 21-22	Lyrids	Waning Crescent
May 5-6	Eta Aquarids	Waxing Gibbous
June 14-16	Lyrids	Last Quarter
July 27-29	Delta Aquarids	First Quarter
July 29-30	Capricornids	Waxing Gibbous
August 11-13	Perseids	Waning Gibbous
October 20-21	Orionids	Waxing Crescent
November 16-17	Leonids	New Moon
December 13-14	Geminids	New Moon

around midnight, so from then until dawn will be the best time to scan the northern skies to a point directly overhead (zenith).

These fast moving (25.5 miles per second) shooting stars, often blue in color, can blaze halfway across the sky. A small number of them leave persistent dust trains in the atmosphere as they disintegrate. You should see the number of Quadrantids rise to their peak just before dawn.

Clip and save the 2009 meteor shower prospects chart below and use it to plan your observing schedule for the coming year. I will highlight the specifics of each shower in my monthly columns throughout the year. Good luck with your meteor observing efforts.

It's always a good year when we get some clear and transparent skies to do any astronomical observing. There are many objects to look for in the sky: the Sun, Moon, planets, clusters, galaxies, double/multiple and variable stars, nebulae and comets!

Saturn will be interesting to observe in 2009 because his rings will be narrowly tilted to our line of sight. As the year progresses they open up slightly, then begin to close until September 4 when they will be edge-on. Unfortunately when that happens Saturn will be too close to the Sun to be seen in a dark sky from the Earth. Professional and amateur astronomers may try to observe Saturn during the daytime to see if they can detect any hint of the rings at all. The challenges to do so will be very difficult, but I'm sure someone will accomplish the feat.

And while there are six eclipses in 2009 (two solar and four lunar), in Southern New England we are positioned on the edge of visibility of only two penumbral lunar eclipses. In both instances the Moon will be sliding only very slightly into the Earth's lighter shadow. But since the first one occurs at moonset on July 7 and the second one at moonrise on August 6, we will not be able to detect either event here.

I hope you will continue to visit Seagrave Observatory in North Scituate and Ladd Observatory in Providence to view and marvel at the many beautiful wonders of the universe through the telescopes.

**Executive Committee Meeting: Wednesday, January 28 7:30pm at North Scituate Community Center All Members Welcome**



# Sometimes Binoculars are Best: Part 2 of 2

Craig Cortis

Part 1 of this article appeared in the November issue. I had intended this follow-up segment to be printed in the December issue; things didn't work out. Reading a continuation of a two-part article after a lapse of two months could be a bit problematic, so I suggest, for those interested, that you retrieve (if possible) Part 1 from November and reread it now. Sorry about any confusion.

I wrote about my notions regarding why many amateurs seem disinclined to use binoculars on the night sky and urged those who don't to give bino observing a try. Most of Part 1 dealt with features that binoculars for astronomy should have and why celestial objects generally are more demanding of optics than typically-viewed terrestrial scenes like sporting events, bird watching, etc. Very little of importance was omitted from a listing of guidelines to use when choosing binoculars as a first-time purchase, although I didn't mention a recommended price range, "image-stabilized" models (very expensive, heavy, low battery life, usually available only in medium-to-smaller apertures), or inexpensive models touted as having ultra-wide fields. (Some of these have inferior optics with very poor star images near the edge of the field!) Binocular viewing devices for telescopes also were not mentioned, although their popularity keeps rising as ever more models become available. Many telescope owners love these bino-viewers as an adjunct to conventional single-eyepiece observing, but they don't function as true binoculars—they are "beam splitting" devices which divide the light coming from one optical tube assembly so that two images are formed. Standard hand-holdable binoculars are the subject of this article.

I'd like to preface my list of reasons as to why binos have a number of advantages over telescopes with a separate listing of many of the reasons that amateurs can have for what might be called "astronomy burn-out." This happens to many of us from time to time; sometimes people end up thinking that it just isn't a pleasant or worthwhile

experience any longer and they give up on observing altogether. Some of you will know exactly what I mean. Here are my ideas regarding some thoughts that might occur to a typical amateur astronomer undergoing this burn-out: 1) I'm sick of freezing in the winter and having to dress like a grizzly bear just to go outside for observing. Bad enough if the air is calm, but any wind at all makes it unbearable! 2) I can't handle mosquitoes any more during summer and it's too much work having to mess with sprays, lotions, etc. The warmer and more humid it is, the more torture insects inflict on me. 3) Speaking of summer, it doesn't get adequately dark for observing until at least 10:00pm around the June solstice and I have to get up for work by 5:30, which is too late to catch certain morning objects. Daylight saving time is a killer in summer! 4) There's a bright Moon tonight—why bother? 5) Wasn't it supposed to be clear? I'm not gonna bother setting up just to try snatching glimpses of stuff through "sucker holes" in clouds. Why can't we ever seem to get a decent night with no clouds when it's not close to a full Moon? 6) The local skyglow keeps getting worse and there's yet another big box store due to be put in near my house—you can't win! 7) My neighbor just put up one of those killer security lights that beams out over his yard directly into my face when I'm trying to spot stuff in the only good direction I've got left for viewing from my yard. (Naturally, it's on all night. I give up!) 8) My observing buddy moved to Arizona last month and it's no fun doing astronomy alone, particularly where I used to like going. 9) I can't do any observing from my porch or yard and I'm tired of always having to drive to places for astronomy. 10) Just lost my favorite observing site to development—what's the use? 11) I just can't seem to learn the sky and can't find things to look at, other than the Moon, a couple of bright planets (when they're up), parts of Orion, and the Pleiades. (Don't have a go to scope that initializes itself.) It's frustrating! 12) I've seen nearly all the worthwhile objects that my scope can show. How

many times can you keep looking at the same things?

All of this was bad enough, but here's possibly the single biggest reason for burn-out. Your scope and mount seem to somehow keep getting heavier, more time-consuming to set up, and more of a nuisance than it's all worth, particularly if you don't have a handy "grab-n-go" instrument with a simple alt-az type mount that would take only five minutes or less to get set up. Remember the winter cold and summer mosquito situations? If you're tired of lugging stuff around and fussing with equipment just to begin an observing session, factor in the cold or bugs that seem to bother you all the more while you're wrestling with gear and you'll have to admit that your exasperation and impatience get even worse during these times of the year. Come to think of it, I didn't even mention the huge hassles of ice and snow that winter can bring to the northeast, in addition to the cold! Anyway, one potential remedy for burn-out is a binocular, which is the first and best reason to use as a beginning to our list as to why a bino can be a great idea as an alternative to telescopes. Here we go:

1) Binoculars can be a fine burn-out remedy. 2) Low power, wide field views you'll get with a bino will reveal wonderfully rich and expansive sections of the night sky that can't possibly be compared to what would be seen in a "rich field" short focal length telescope. Rich star clouds along the Milky Way (or clustered masses of stars anywhere else) become beautiful, glistening scenes in a good bino, with a brightness and sharpness that can literally be dazzling. Your naked-eye view along can't show you the magnified and enhanced detail; telescopes can only yield a much-constricted, tiny section of the sky in an eyepiece. 3) For the same reason, large, scattered star clusters or stellar associations (like the Pleiades or the Perseus OB association highlighted by Alpha Persei, Mirphak) can only truly be viewed in their entirety and fully enjoyed in the generous field given by a binocular. Such objects need to be seen surrounded by plenty of sky

to be appreciated—only a bino will show such a view. The second and third nearest star clusters to our Sun—the Hyades in Taurus and Melotte 111, the Coma Cluster, in Coma Berenices—are the classic examples of objects much too large, extended, and straggling to be seen in even an Edmund Astroscan scope. True, you’d see parts of these clusters in such an instrument, but you’d have to sweep it around in order to take in the whole thing, section by section. The Coma Cluster spans about 5° but a 7-power bino should enable you to enjoy a view showing the entire group all at once! The closest cluster to our system is way too big to be viewed in a binocular. Five of its members are the five middle stars within the seven-star Big Dipper asterism. This is such a scattered and dispersed cluster that it is termed a “moving group”: the Ursa Major Moving Group, with its five Big Dipper members at an average distance from us of only 78 light years. (Alkaid, the star marking the outer end of the handle, and Dubhe, the lead “pointer” star at the upper, end corner of the Dipper’s bowl, are not involved.)

4) Binoculars are so small and light in weight that they can be transported (easily when flying) or stored in a car or home almost effortlessly. The compact size and ease of use of a bino, particularly a hand-holdable model, means zero set up time, unless you include a few seconds to withdraw from a case and pull the lens covers off. In other words, no muss, no fuss! If you’re mingling with friends at a star party, you can just carry a bino around the site with you, something not so readily done with most telescope/mount combinations. Want to spot something in the sky? Take just five seconds or so to raise the bino to your eyes and point towards whatever catches your interest. You can even track apparently slow-moving objects like the space station or shuttle, and those rarely-seen big meteors that take many seconds to move across the sky as they “skip” across the atmosphere. Such sights are a real treat and don’t have to be missed by the observer armed with a binocular. Remember my point about compactness and ease of carrying: An amateur

taking a plane flight to anywhere having enticing night skies might not want to pack along a scope with mount if it’s inconvenient and more expensive to do so, but your bino can be popped into a carry-on bag with ease.

5) Unless a telescope is equipped with what’s called an “Amici” prism diagonal (these don’t yield images of the quality expected by most amateurs), the image seen will be inverted and/or a “mirror” image showing something having its natural orientation reversed. Generally, astronomers don’t really mind this effect, but it can get tedious and very confusing at times, especially when doing low-power star-hopping while trying to locate a specific star or other object. It’s also tricky when you’re trying to identify features on the Moon, as many of you know. Here’s where binoculars really shine: The internal prisms are designed so as to yield a “correct image” to the user, meaning you see things as they naturally appear. Up and down, left and right, the view matches the object’s true orientation with no confusion.

6) A binocular is really a paired assembly of two short-focus telescopes, one for each eye. Since both of your eyes are used simultaneously when viewing, the net effect is better color perception for most people, meaning more attractive starfields. Also, the image your brain forms is a combination of two optical receptors that are separated by a small distance from each other—the center-to-center spacing of your eyes, enhanced even more by Porro prism binoculars, those having the 90° offset in each barrel. This is stereoscopic in effect, rendering a view that actually can seem almost three-dimensional on certain sky objects. It’s as if you begin to sense depth perception in astronomy, an experience nearly impossible to achieve when using a telescope with a single eyepiece. (The Pleiades cluster, M45, and the Moon are perhaps the best two examples.)

7) A good binocular for astronomy can be bought for roughly \$100 to \$250. The lower end of that price range will get you a better quality instrument than a comparably-priced telescope. Many inexpensive telescope/mount combi-

nations are so poor in quality as to be nearly unusable.

8) The light weight and hand-holdability of most binos make them ideal for “sweeping” around the sky, something you’ll especially enjoy when viewing those richer sections of the Milky Way. Low power, wide-field images contribute to this ease of use when contrasted with a telescope. Here’s another related advantage that just occurred to me. When you look into the eyepiece of a scope, you’re generally not looking up at the sky, but somewhere downwards or angled-off sideways, etc. With a binocular, you end up looking in the exact same direction that you would with your naked eyes. In other words, binoculars are much more easily “pointable,” even while viewing through them. A bino can seem to be a natural extension of your eyes.

9) Low surface brightness objects like the galaxy M33 in Triangulum are tough to make out in many telescopes, even in a dark area on a good night. Using both eyes simultaneously in a wide-field bino, such difficult targets can become more readily seen. In fact, some deep-sky objects will actually reveal themselves far better in a bino than in a telescope—two eyes are better than one!

10) If you’re tired of optics on your scope becoming dewed-up in fifteen minutes or so on humid summer nights, consider this: used with a little common sense, a bino can escape dewing altogether. (Just keep lens caps on between views—they’re quick to detach.) Plus, the heat from your own hands gripping the barrels can serve to work as natural “dew heaters” for the lenses.

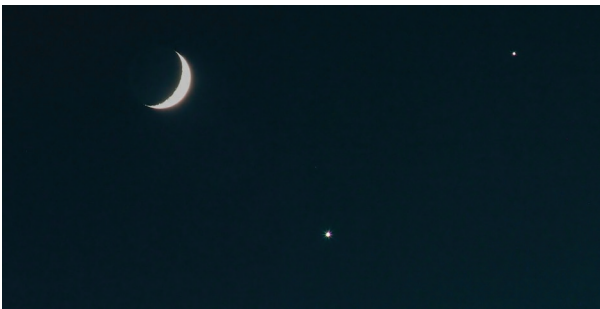
Perhaps I’ll add a bit more to this binocular astronomy subject in a future article. Observing or object lists might be included, along with brief descriptions of more good books on bino viewing. (Remember my praise for Phil Harrington’s *Touring the Universe through Binoculars*? I mentioned Phil’s book in Part 1.) In closing, I hope at least a few readers will be able to see binoculars for amateur astronomy in a new light, and then go out and use them.

# Moon-Venus-Jupiter Conjunction

December 1, 2008







Clouds nearly dashed our spectacular views of the waning crescent moon joining the conjunction of Venus and Jupiter on a mild December night. **Opposite:** The stunning twilight view was captured by John Kocur. **Top:** Jupiter & Venus & Moon taken with a Fuji digital camera on a tripod with an automatic "night setting." Photo by Gerry Dyck. **Above:** Tom Thibault obtained this photo, which along with Earthshine on the moon, also resolves (**inset**) the moons of Jupiter. **Left, top:** Dave Huestis took this image from Buck Hill with a digital camera and no tripod. **Bottom:** Close up view showing craters on the moon, by John Kocur.



# Superstar Hide and Seek

by Dr. Tony Phillips

It sounds like an impossible task: Take a star a hundred times larger in diameter and millions of times more luminous than the Sun and hide it in our own galaxy where the most powerful optical telescopes on Earth cannot find it.

But it is not impossible. In fact, there could be dozens to hundreds of such stars hiding in the Milky Way right now. Furiously burning their inner stores of hydrogen, these hidden superstars are like ticking bombs poised to 'go supernova' at any moment, possibly unleashing powerful gamma-ray bursts. No wonder astronomers are hunting for them.

Earlier this year, they found one.

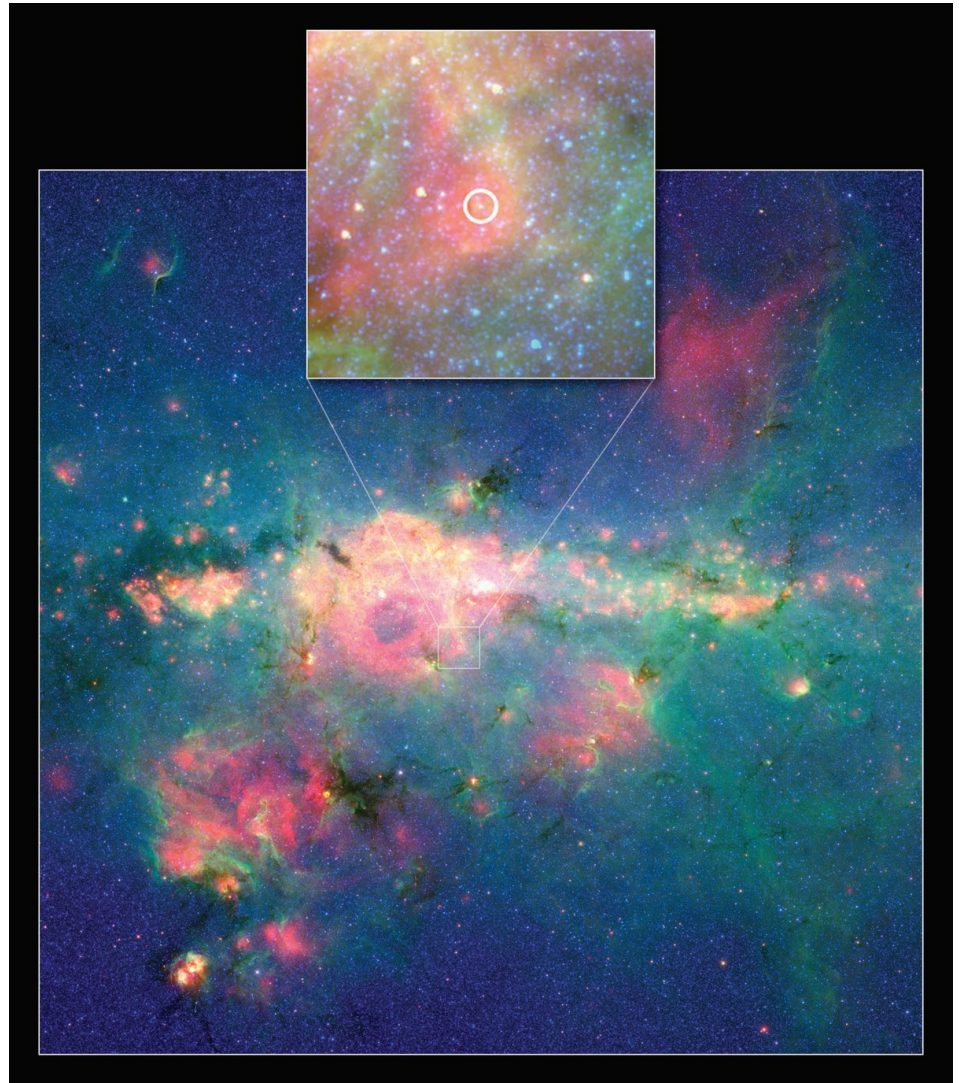
"It's called the Peony nebula star," says Lidia Oskinova of Potsdam University in Germany. "It shines like 3.2 million suns and weighs in at about 90 solar masses."

The star lies behind a dense veil of dust near the center of the Milky Way galaxy. Starlight traveling through the dust is attenuated so much that the Peony star, at first glance, looks rather dim and ordinary. Oskinova's team set the record straight using NASA's Spitzer Space Telescope. Clouds of dust can hide a star from visible-light telescopes, but Spitzer is an infrared telescope able to penetrate the dusty gloom.

"Using data from Spitzer, along with infrared observations from the ESO's New Technology Telescope in Chile, we calculated the Peony star's true luminosity," she explains. "In the Milky Way galaxy, it is second only to another known superstar, Eta Carina, which shines like 4.7 million suns."

Oskinova believes this is just the tip of the iceberg. Theoretical models of star formation suggest that one Peony-type star is born in our galaxy every 10,000 years. Given that the lifetime of such a star is about one million years, there should be 100 of them in the Milky Way at any given moment.

Could that be a hundred deadly gamma-ray bursts waiting to happen? Oskinova is not worried.



The "Peony Nebula" star is the second-brightest found in the Milky Way Galaxy, after Eta Carina. The Peony star blazes with the light of 3.2 million suns.

"There's no threat to Earth," she believes. "Gamma-ray bursts produce tightly focused jets of radiation and we would be extremely unlucky to be in the way of one. Furthermore, there don't appear to be any supermassive stars within a thousand light years of our planet."

Nevertheless, the hunt continues. Mapping and studying supermassive stars will help researchers understand the inner workings of extreme star formation and, moreover, identify stars on the brink of supernova. One day, astronomers monitoring a Peony-type star could witness with their own eyes

one of the biggest explosions since the Big Bang itself.

Now that might be hard to hide.

Find out the latest news on discoveries using the Spitzer at [www.spitzer.caltech.edu](http://www.spitzer.caltech.edu). Kids (of all ages) can read about "Lucy's Planet Hunt" using the Spitzer Space Telescope at [spaceplace.nasa.gov/en/kids/spitzer/lucy](http://spaceplace.nasa.gov/en/kids/spitzer/lucy).

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



# December Meeting Notes

Saturday, December 6, 2008; North Scituate Community Center

Nichole Mechnig

Meeting was called to order at 7:33pm by Glenn Jackson • Glenn Jackson then turned the meeting over to Steve Hubbard • Steve Hubbard introduced our guest speaker for the evening

**Dr. Kristine M. Larsen** Professor of Physics and Astronomy • Women and Astronomy was the subject matter for the evening • Many women who were greatly involved with astronomy were so because of male members of their family. And to think that in the late 1800's women were paid 1/3 of their male counterparts. Dr. Larsen mentioned many great women who made significant contributions to the study of astronomy due to the fact that many women were very patient in studying the many slides that were processed. Dr. Larsen mentions Maria Mitchell the first Women Astronomer in the U.S. and how she had discovered a comet in 1847. Maria Mitchell was also voted into the American Academy of Arts and Sciences as the first woman in 1848 and the following year the Association for the Advancement of Science in 1850. Many other great women were mentioned and it goes without saying that many more women will hold their place among these great women.

Since this was our Christmas party our break was a little longer than usual

**Secretary's report** for November was accepted by the members

**Treasurer's report** for November was accepted by the members • Monthly Income for April 1, 2008-November 25, 2008 was \$10,805.21 • Monthly outflow for April 1, 2008-November 23, 2008 was \$9364.16

**1st V.P. Steve Hubbard:** January 2nd Members Presentations • February 6th Dr. Padma Venkatraman "Caroline Herschel" • March 6th Jim Zebrowski "NASA Ambassador" • April 3rd Dr. Sara Seager "Exo-planets Atmosphere"

**2nd V.P. Kathy Siok:** Clean slate

**Historian Dave Huestis:** 75th Anniversary book 2nd Edition going well

versary book 2nd Edition going well

## Librarian Tom Barbish

If our members are holding onto books please note that there will not be an additional charge for doing so as long as notified in advance • If you are looking for a title please e-mail labtjb@verizon.net and will try to have at the next meeting • Please continue to use Skyscrapers Website to review the library contents

## Star Party Coordinator Bob Forgiel

December 8th Scouts in Thompson CT • December 11th @

Seagrave

December 15th Thompson Rain date

• January 23rd Women's Wilderness Weekend

## Trustees Tracy Haley, Jim Brenek, Steve Siok

Public nights please sign up the hours are 7-10 • 16" Meade is under repair • If you would like to be trained on any of the scopes please contact a key holder • If you are up at Seagrave and feel the need to warm up in the meeting hall please keep the doors locked even if you are right there

**Nomination Committee Jack Szelka, Joel Cohen and Jim Hendrickson:** All



positions are open for election if you have an interest in serving contact the committee • Ballot March meeting, Vote April meeting, new officers end of May meeting

**New members:** Kenneth Botelho and family • Peggy Satti

**Old Business:** New members Accepted into the membership: Constance Silva • John and Mary Deluca • Maria Deluca • Money for the Meade motion to purchase 2 motors for \$905.48 Motion was accepted by the membership

**President Info:** Cancellations for upcoming events please check e-mail, radio station WJAR or TV 10 • Security at Seagrave • Please watch the upper door in the Clark the latch was not secure • Ante room dead bolt • Missing 2 lap top computers • E-board meeting is Wednesday December 17th at 7pm at the Community Center, Agenda: Nominations (if necessary); Purge the membership list; Movie nights

**Good of the Organization:** Movie night Proposals; Skyscrapers Holiday Movie Event "Journey to Palomar"; Celebrate the 40th Anniversary of Apollo 8 December 21-27th 1968; December 16th at 7:30 pm IMAX \$6.00 • June 6th Star Con ASGH

Help with the Clean-up

Screen and projection tables back to Seagrave • Garbage taken out • Coffee pots and bins back to Seagrave • LCD projector back to Seagrave • Do not move the tables and chairs; someone will come in and clean those up

Meeting adjourned at 9:34 pm

Author	Title	Copyright
Morrissey, Frank	1 8x10 Of The 12 Inch Scope At Ladd	
Schindler, Kevin	100 Years Of Good Seeing - Lowell	1996
Morrissey, Frank	6 8x10's Of His Telescope	
Rice Laban Lacy	Amateurs Astronomers Manual	1955
Mogey, William & Sons Inc.	Astronomical Telescopes	1936
Tirion, Wil	Bright Star Atlas 2000.0	1990
Sagan, Carl	Broca's Brain	1981
Ptak Science Books	Notes On The Telescope: Alvan Clark & Sons	1892
Mayal, R. Newton & Margaret	Olcott's Field Book Of The Skies	1954
Hirshfeld, Alan	Parallax: The Race To Measure The Cosmos	2001
Malville, J Mckim & Putnam, Cluadia	Prehistoric Astronomy In The Southwest	1991
Skyscrapers, Inc.	Seagrave Renovations 1992	1992
Motz, Lloyd & Nathanson, Carol	The Constellations	1988
Tirion, Will	The Deep Sky Field Guide	1996
Preiss, Byron, Ed	The Planets	1985
Tudge, Colin	The Time Before History	1996
Rosen, Edward	Three Copernican Treatises	1959
Time-life	To The Edge Of The Universe	1986

This table contains a list of items missing from the Skyscrapers library during this year's inventory. If you are holding onto any of the materials listed here, please return them to Tom Barbish.

# Directions to Seagrave Memorial Observatory

## From the Providence area:

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

## From Coventry/West Warwick area:

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

## From Southern Rhode Island:

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

## From Northern Rhode Island:

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

## From Connecticut:

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

## From Massachusetts:

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



47 Peeptoad Road  
North Scituate, RI 02857

