

The Skyscraper

Vol. 35 no. 1

The monthly publication of



Amateur Astronomical Society
of Rhode Island

47 PeepToad Road
North Scituate, RI 02857

www.theskyscrapers.org

President

Glenn Jackson

1st Vice President

Steve Hubbard

2nd Vice President

Kathy Siok

Secretary

Nichole Mechnig

Treasurer

Jim Crawford

Members at Large

Jim Brenek

Joe Sarandrea

Trustees

Tracey Haley

Bob Horton

Jerry Jeffrey

Librarian

Tom Barbish

Editor

Jim Hendrickson

See back page for directions to
Seagrave Observatory.

Submissions

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

Email subscriptions:

To receive The Skyscraper by email, send
email with your name and address to
jim@distantgalaxy.com. Note that you
will no longer receive the newsletter by
postal mail.

© 2007 Skyscrapers, Inc.

The Skyscraper

January 2008

January Meeting & Member Presentations

FRIDAY, JANUARY 4TH AT NORTH SCITUATE COMMUNITY CENTER

Remote and Robotic Observatories, Observe While You Sleep

by Bob Napier

3D Astronomy presentation

by Gerry Dyck

40 Years of Comet Observing

by Rick Lynch

DIRECTIONS TO THE COMMUNITY CENTER: From Seagrave Observatory: North Scituate 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, in N. Scituate. Famous Pizza is on the corner of that intersection. Parking is across the street from the Community Center.

JANUARY 2008

4 7:30PM **January Meeting**
FRIDAY North Scituate Community
Center

5 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

12 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

19 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

26 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

IN THIS ISSUE

PRESIDENT'S MESSAGE Glenn Jackson	2
METEOR SHOWER PROSPECTS FOR 2008 Dave Huestis	2
WINTER DOUBLE STARS: GEMINI Glenn Chaple	3
ULTRAVIOLET SURPRISE PATRICK L. BARRY & TONY PHILIPS	4
DECEMBER MEETING NOTES STEVIE HUBBARD	5
TREASURER'S REPORT JIM CRAWFORD	5

President's Message

Glenn Jackson, President

January, what a great month. Early sunsets, crystal clear skies, and if only the temperatures would cooperate. I hope that everyone took advantage of the recent clear skies to observe the Geminids. Not as spectacular as promised but worth the time spent out under the skies. I have had the opportunity to be out several times with different groups in the past weeks. Even in my light polluted area of Warwick the skies have been cooperating.

January is also a time of reflection. As I prepare to set my goals for the coming year, the year just completed was a good one for Skyscrapers. We had three very successful large meetings, AstroAssembly, July cookout, and the Holiday party. Many of our members participated in a trip out west to visit various astronomical sites and Mystery Hill in Massachusetts. Skyscrapers were fortunate to have John Briggs conduct an outstanding workshop on spectrometry.

We were host to a multitude of star parties, lots of chat at the Yahoo group and we even had a few member nights only sessions. Improvements to the property were also undertaken. Many trees have been removed for better horizons, the Meade scopes have been tuned up, and we now have an Anteroom that displays many of our treasures. These are lasting improvements that will be enjoyed by everyone for years to come.

As I look at this above list of "Happenings" at Seagrave Memorial Observatory, I am truly impressed and grateful for all the time and dedication of so many of our members. It is the members that make this such a vibrant and active organization. Thanks to all who have contributed your valuable time to bring so many astronomy opportunities to the membership.

I would like to extend my best wishes at this special time of year to all members of the organization. May you enjoy some warm nights by the fire and some chilly nights under the stars.

Meteor Shower Prospects for 2008

Dave Huestis

Meteor shower observing is most often problematic, especially when it comes to the predictions for the year's major displays of shooting stars. Researchers do their best to "forecast" a shower's peak activity based upon its historic performance. Many factors contribute to the accuracy of a peak prediction, including the visual reports of amateur and professional astronomers whose meteor counts help to define a meteor shower's activity profile.

Despite everyone's best efforts though, sometimes a forecast may not come to fruition. So when you read that a meteor shower will peak at a specific time, please take that forecast with a grain of salt. When I relate that kind of specific time and date information in one of my columns on meteor showers, I research several publications and compile their best scenarios to inform you. Sometimes they are right on target, and other times, well, they fall quite short of the mark. Don't forget that when that happens you are in good company, for I am out there on many of those occasions as well waiting to see a decent meteor shower display.

This past year (2007) wasn't too bad. I observed more meteors than I have during 2005 and 2006 combined! In looking ahead to the meteor shower prospects for 2008, I'd say that a pretty good meteor shower observing year is coming up. Perhaps 75 percent of the major displays will not be severely

hampered by interfering moonlight when they reach their peak activity. All we have to hope for is cloudless skies.

We start out the new year with favorable conditions for the Quadrantid meteor shower on January 3-4. This sharp-peaked display (a couple of hours only) is predicted to peak at 1:40 am on the 4th. A waning crescent Moon, rising around 4:00 am, will not diminish the number of meteors seen. An observer in a dark sky location can possibly see up to 100 fast and often blue Quadrantids blaze more than halfway across the sky at 25.5 miles per second. A small number of them leave persistent dust trains in the atmosphere. For the Quadrantids I usually face north and scan from the northern horizon to zenith (directly overhead).

Clip and save the 2008 meteor shower prospects chart below and use it to plan your observing schedule for the coming year. Good luck with your meteor observing efforts.

Let's also hope the skies are clear for the February 20-21 total lunar eclipse. Here in the northeast we will be able to watch the entire event. Totality will last from 10:06 pm to 10:52 pm. That's only 46 minutes - a short duration because the Moon will not be passing through the central portion of the Earth's dark shadow. I'll provide more details about this lunar eclipse in a future column.

Winter Double Stars: Gemini

Glenn Chaple

It's appropriate that the constellation Gemini, the Twins, should be home to a numerous collection of double stars. Here are ten stellar – pardon the pun - examples (data from the Washington Double Star Catalog (WDS)).

mu Geminorum mags 2.9 and 9.4, sep 121.7", P.A. 141° (1899). The M-type primary of this wide optical pair displays a distinct ruddy color.

nu Geminorum mags 4.1 and 8.0, sep 111.6", P.A. 331° (2002)

15 Geminorum magnitudes 6.7 and 8.2, separation 25.2", Position Angle 203° (2004). Both pairs are part of an attractive low-power field that includes 16 Gem. 15 Gem's K-type primary sports a golden yellow hue. A fine sight!

20 Geminorum mags 6.3 and 6.9, sep 19.7", P.A. 211° (2002). An easily resolved pair located roughly midway between nu and gamma Gem. Both white.

epsilon Geminorum mags 3.1 and 9.7, sep 110.6", P.A. 95° (2002). On the evening of April 7, 1976, this star drew plenty of attention when it was occulted by the planet Mars. Even without Mars to spice things up, epsilon Gem is a nice, wide double.

38 Geminorum mags 4.8 and 7.8, sep 7.3", P.A. 146° (2004). An exquisite little pair! Use a magnification of 100x to separate the faint companion from the yellowish primary. An interesting note: the WDS gives a P.A. of 326°, while earlier sources cite a P.A. that differs by 180°! A quick check with my 3-inch reflector shows that the WDS is in error.

zeta Geminorum mags 3.6v, 7.7, sep 100.7", P.A. 349° (2000). The primary is a Cepheid variable star (magnitude range 3.6-4.2) with a 10-day period. This wide optical pair is easily split at 20-30x.

delta Geminorum mags 3.6 and 8.2, sep 5.8", P.A. 227° (2003). This slow-moving binary has thus far eluded my 3-inch reflector. The separation is within this scope's reach, but the magnitude difference means that the secondary gets lost in



the glare of the main star. This winter I'll be pursuing delta Gem with a bigger scope (a 127mm Mak-Cas) and a magnification of at least 150x.

alpha Geminorum (Castor) mags 1.9 and 3.0, sep 4.2", P.A. 62° (2004). The close pair is binary (P = 510 years). A showpiece, arguably the finest double star visible in the northern sky. The separation has steadily increased since a minimum of 1.8" in the mid-1960s. Currently, these two white stars are easily resolved in a 60mm refractor at 100x. A 9.8 magnitude companion, located 71.0" from the main pair, is a physical member of the system. In fact, each of these stars is a spectroscopic binary, making Castor a sextuple star!

kappa Geminorum mags 3.7 and 8.2, sep 7.2", P.A. 241° (2002). Like delta Gem, this close, unequal pair has escaped my 3-inch reflector. A 4 or 5 inch scope on an evening of steady seeing should capture kappa Gem. Again, high power and steady seeing conditions are a must!

DATE	SHOWER	MOON PHASE
January 3-4	Quadrantids	Waning Crescent
April 21-22	Lyrids	Full Moon
May 4-5	Eta Aquarids	New Moon
June 14-16	Lyrids	Waxing Gibbous
July 27-29	Delta Aquarids	Waning Crescent
July 29-30	Capricornids	Waning Crescent
August 11-12	Perseids	Gibbous
October 20-21	Orionids	Last Quarter
November 16-17	Leonids	Waning Gibbous
December 13-14	Geminids	Full Moon



Ultraviolet Surprise

By Patrick L. Barry and Tony Phillips

How would you like to visit a universe full of exotic stars and weird galaxies the likes of which astronomers on Earth have never seen before?

Now you can. Just point your web browser to galex.stsci.edu and start exploring.

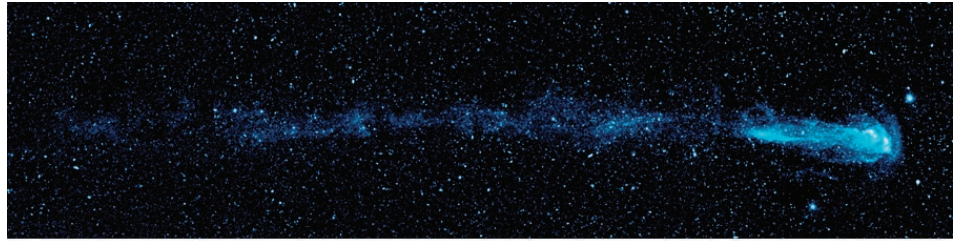
That's the address of the Galaxy Evolution Explorer image archive, a survey of the whole sky at ultraviolet wavelengths that can't be seen from the ground. Earth's atmosphere blocks far-ultraviolet light, so the only way to see the ultraviolet sky is by using a space telescope such as NASA's Galaxy Evolution Explorer.

About 65% of the images from the all-sky survey haven't been closely examined by astronomers yet, so there are plenty of surprises waiting to be uncovered.

"The Galaxy Evolution Explorer produces so much data that, beyond basic quality control, we just don't have time to look at it all," says Mark Seibert, an astronomy postdoc at the Observatories of the Carnegie Institution of Washington in Pasadena, California.

This fresh view of the sky has already revealed striking and unexpected features of familiar celestial objects. Mira is a good example. Occasionally visible to the naked eye, Mira is a pulsating star monitored carefully by astronomers for more than 400 years. Yet until Galaxy Evolution Explorer recently examined Mira, no one would have guessed its secret: Mira possesses a comet-like tail 13 light-years long.

"Mira shows us that even well-observed stars can surprise us if we



Astronomers looking at new ultraviolet images from the Galaxy Evolution Explorer spacecraft were surprised to discover a 13-light-year long tail on Mira, a star that has been extensively studied for 400 years.

look at them in a different way and at different frequencies," Seibert says.

Another example: In April, scientists announced that galaxies such as NGC 1512 have giant ultraviolet spiral arms extending three times farther out into space than the arms that can be seen by visible-light telescopes. It would be like looking at your pet dog through an ultraviolet telescope and discovering his ears are really three times longer than you thought!

The images from the ultraviolet space telescope are ideal for hunting new phenomena. The telescope's small, 20-inch primary mirror (not much bigger than a typical backyard telescope) offers a wide field of view.

Each image covers 1.2 degrees of sky — lots of territory for the unexpected.

If someone combing the archives does find something of interest, Seibert advises that she or he should first search astronomy journals to see whether the phenomenon has been observed before. If it hasn't, email a member of the Galaxy Evolution Explorer science team and let them know, Seibert says.

So what are you waiting for? Fire up your web browser and let the discoveries begin!

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

Steve Hubbard, Acting Secretary

Monthly Meeting, December 1, 2007, North Scituate Community Center

The program for the evening was provided by two members of Skyscrapers. First, **Gerry Dyck** presented his version of the poem "A Child's Christmas in Wales." Secondly, **John Kocur** presented a slide show of the year in review. Both presentations were appreciated and enjoyed by the members.



Photo by Jim Crawford

The meeting was called to order by 1st VP Steve Hubbard

Secretary's Report: The secretary was absent so there was no action on the previous months secretary's report.

Treasurer's Report: The treasurer's report was accepted as published in the December issue of The Skyscraper Newsletter.

New Business: None.

Old Business: 1. New members **David Lowe** and **Albert Aubin** were unanimously accepted into membership. 2. Motion to approve \$500 for the removal of trees near meeting house was approved by the membership.

Good of the Organization: 1. Star

party for Girl Scouts December 12th at 7pm. 2. Executive Board Meeting December 13th at 7pm. 3. **Dave Huestis** and **Jim Hendrickson** presented the 75th Year Book and passed out order forms. The book looks fantastic. 4. **Dave Hurdis**, as an executive member of AAVSO, presented **Gerry Dyck** with an award for completing 150,000 variable star observations. Only 8 other members of AAVSO have accomplished this mark. Gerry started his observations in 1983 which now encompasses about 1% of all the AAVSO observations. Congratulations to Gerry from all the member of Skyscrapers.



Photo by Jim Crawford

Meeting was adjourned to enjoy the feast. **Dolores Rinaldi** once again provided the membership with a Holiday Feast to be remembered. There were 43 members in attendance and enough food for 100. Thank you Dolores for all your efforts in providing this holiday tradition.



Photos by John Kocur

Treasurer's Report

4/1/2007 - 12/17/2007

Jim Crawford, Treasurer

Category	Description	
INFLOWS		
Anniversary	inc	1,248.00
Astro Ass'y	Registration and Banquet	4,020.45
Astroincome		
	Other astroincome	1,309.00
	TOTAL astroincome	1,309.00
Cookout	inc	442.00
Donation		
	Collation	116.00
	Other donation	150.00
	TOTAL donation	266.00
	Donation, Xmas Party	50.00
Dues		
	Contributing	891.00
	Family	920.00
	Junior	10.00
	Regular	1,760.00
	Senior	200.00
	TOTAL dues	3,781.00
Interest	Inc	26.56
Magincome		
	Astronomymaginc	230.00
	Skytelmagincome	461.30
	TOTAL Magincome	691.30
Starparty		347.00
TOTAL INFLOWS		12,181.31
OUTFLOWS		
Uncategorized		38.50
Anniversary	exp	2,270.12
Astroexp		
	Astrocater	1,050.00
	Astrorestroom	110.00
	Astrosupplies	128.76
	Speaker Fee	203.18
	T-Shirts	386.10
	Tentrental	585.00
	Other astroexp	1,148.03
	TOTAL astroexp	3,611.07
Auto		
	Fuel	20.00
	TOTAL Auto	20.00
Collation		350.00
Cookout	exp	650.00
Corporation	fee	30.00
Insurance		
	Other Insurance	2,397.00
	TOTAL Insurance	2,397.00
Meals & Entertn		100.00
Membersubscriptions		
	Astronomymagexp	136.00
	Skytelexp	404.39
	Other membersubscriptions	126.95
	TOTAL membersubscriptions	667.34
Misc		
	Portajohn	35.00
	Postage and Delivery	41.50
	Trusteexp	1,373.68
Utilities		
	Electric	120.77
	Propane	423.15
	TOTAL Utilities	543.92
TOTAL OUTFLOWS		12,222.73
OVERALL TOTAL		-41.42
SAVINGS ACCT.		15,682.36
CAPITAL ONE ACCT.		102.39

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