

The Skyscraper

Vol. 34 no. 12

The monthly publication of



Amateur Astronomical Society
of Rhode Island

47 Peepthead Road
North Scituate, RI 02857

www.theskyscrapers.org

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See back page for directions to
Seagrave Observatory.

Submissions

Please submit items for the newsletter
by December 15 to Jim Hendrickson, 1
Sunflower Circle, North Providence, RI
02911 or email to jim@distantgalaxy.com

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The Skyscraper

December 2007

December Meeting & Holiday Party

SATURDAY, DECEMBER 1ST AT NORTH SCITUATE COMMUNITY CENTER

Member Gerry Dyck will do an encore presentation of "A Child's Christmas in Wales" by Dylan Thomas. Also, member John Kocur will be presenting a PowerPoint presentation of some of the highlights of Skyscrapers activities over the past year.

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.

DECEMBER 2007

1 7:00PM **December Meeting & Holiday Party**
SATURDAY North Scituate Community Center

8 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

15 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

22 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

29 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

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President's Message

Glenn Jackson, President

"Wow!", "Awesome!", "Mom look at this!" boy am I a sucker for star parties. Last weekend 15 members of Skyscrapers put on a star party for Callahan School. It was great to see 15 telescopes lined up and the camaraderie among the members of Skyscrapers. It was also inspiring to see 200 plus elementary students lined up to see the wonders of the universe. Who knows maybe there was a Mars Astronaut among them or maybe a future scientists that will find the key that unlocks the secrets of the universe. Sharing my passion for astronomy always leaves me wondering "what astronomical seeds did I sow tonight?"

December, and the end of another year is

approaching rapidly. As I look back there have been many bright moments this past year in the annuals of Skyscrapers. We celebrated our 75th anniversary with an outstanding banquet. We have had many fine speakers and meetings. We had a very successful AstroAssembly, we had the opportunity to observe an early morning lunar eclipse, we were treated to a surprise visit by comet 17P/Holmes, and Mars just keeps getting larger and brighter.

It is also time for resolutions, new goals for the coming year. I hope that increased involvement in Skyscrapers is one of your New Year's resolutions. Act upon your passion!

From my family to your family I wish you all the best at this Holiday Season and may the New Year be filled with clear skies.

Marvelous Mars

Dave Huestis

More than likely many of you received an email this past July or August stating that the planet Mars was going to come so close to the Earth in August that it would appear as large as the Full Moon in our sky!! Since the message didn't mention the use of a telescope, it implied Mars would appear that large to the naked-eye. I received many inquiries regarding this sensational story and was busy sending many responses to correct that very inaccurate prediction.

It all started back in 2003 when Mars did indeed make a close approach to the Earth. On August 27 of that year, Mars came as close as 34,646,418 miles. This passage was the closest it would come in 60,000 years. Practically everyone who observed Mars through our telescopes at Seagrave Observatory not only saw the southern polar ice cap, but they also were able to discern dark surface features that often elude us amateur astronomers when Mars is much further from the Earth.

The story had stated that with a certain sized telescope at a specific power/magnification, Mars would appear the same size as the Full Moon. Someone either read it and incorrectly mis-stated it, or they deliberately misrepresented the facts and the Mars hoax was born. About every two years Mars does make a close approach to the Earth. Some are closer than others.

Some folks were taken in by the hoax. Others realized that something was amiss. If Mars ever appeared that large in our sky without optical aid we'd be in deep trouble. It would make the premise of the movie "Deep Impact" seem insignificant by

comparison.

So don't be fooled by this hoax again.

Though the 2007 close approach of Mars (December 19; 54,797,448 miles) will not be as good as the ones in 2003 or 2005 (43,137,588 miles on the night of October 29-30 in 2005) were, this will be the closest Mars and the Earth will be until 2016. Despite the fact that Mars will be still quite distant from the Earth, its path across the sky will take it almost directly overhead. This circumstance will keep the planet well above much of the Earth's atmospheric turbulence. As long as we have clear skies and steady seeing we will be able to coax a lot of detail from the images our telescopes provide.

If you'd like to observe Mars with your own backyard telescopes, you first must know where you can find Mars in the sky. During December, Mars will be the bright reddish/orange object residing in Gemini near Castor's right knee. By 10:00 pm Mars will be more than halfway up the eastern sky. By month's end (December 30), Mars crosses constellation boundaries and moves into Taurus the Bull.

When we observe Mars this December we will be looking at the planet nearly equator-on. The North Polar Cap (NPC) will be tilted just slightly towards the Earth. The NPC should be large since Mars' northern hemisphere is just coming out of Winter (northern hemisphere Spring begins on December 9). As time passes, an observer should be able to notice the NPC shrinking and breaking up. Mars' image will be fairly small, so one should wait for steady seeing conditions to observe as much detail as possible. Don't expect to

see the South Polar Cap. It will be tilted away from our view and it would have “melted” considerably during the southern hemisphere’s summer (autumn begins on December 9 in the southern hemisphere).

While the NPC should be rather apparent, the rest of the planet will appear as a rust-colored beach ball. However, several dark features can also be seen. These are the underlying rock exposed by the shifting sands during intense dust storms. The relatively small image will make it somewhat of a challenge to identify much detail and the dark surface features may be fleeting. Despite this handicap a keen-eyed observer should be able to catch a few glimpses of a dark feature like Syrtis Major or a bright area like Hellas Basin.

If you would like to be better prepared for the upcoming Martian observing experience, Mars surface maps that help identify Martian landscape features are available on the internet.

In conclusion, be patient when observing Mars.

The planet’s disk will be small. Wait for steady seeing conditions. Don’t try observing Mars if the stars are twinkling. Take your time in observing this fascinating planetary neighbor and your efforts will be well rewarded.

If you don’t own your own telescope, or the view through the one you do own is too small to see much detail, plan on visiting Seagrave Observatory (<http://www.theskyscrapers.org>) on Peeptoad Road in North Scituate on any clear Saturday night (7-10pm). You can also visit Ladd Observatory (<http://www.physics.brown.edu/physics/commonpages/ladd/>) located on Hope Street on Providence’s East Side on any clear Tuesday night (7-9pm).

Once Mars clears the treetops to the east of either of these facilities our weekly focus will be on the red planet. So dress warmly and take advantage of the views our larger telescopes can provide. Check the above web sites for any cancellation notices.

Keep your eyes to the skies.

Geminid Meteor Shower and other Interesting Astronomical Events for December

Dave Huestis

This past year we have been fortunate to have observed quite a few meteor showers. I think we’ve seen more meteors in 2007 than we have during the past several years combined. I know I did. And as I write this column, the favorable Leonids meteor shower is still more than a week away.

But perhaps the best display of shooting stars during 2007 will occur on the night of December 13-14 for us here in New England. That is the time for the peak activity of the Geminid meteor shower. Though you will have to be prepared for the cold weather, this meteor display always produces a good show, and the best thing is that you can begin observing before midnight.

You can begin observing the Geminids around 10:00 pm since Gemini will be rising on its side (looks like two human stick figures) and will be about halfway up off the eastern horizon by that time. The meteors will appear to radiate from a point in the constellation near Castor, a white star and the fainter of the twins (Pollux being the brighter and yellow-orange in color).

You should notice the number of meteors increasing as the night progresses and Gemini climbs higher into the sky. At around 1:00 am, the twins will be directly overhead. Between then and dawn’s early light you could possibly see up to 100 meteors per hour blaze across the sky.

For once the Moon will not pose any problems with observing as many meteors as possible, for the waxing crescent sets around 7:15 pm on the 13th. You won’t have to worry about its light affecting your observing conditions.

The Geminids are fairly bright and moderate in speed, hitting our atmosphere at 21.75-miles per second. The Geminids are characterized by their multicolored display (65% being white, 26% yellow, and the remaining 9% blue, red and green). They also have a reputation for producing exploding meteors called fireballs. The Geminids are the most dependable display because they are an old shower and therefore the individual meteors are evenly distributed throughout the meteor stream.

If the weather doesn’t cooperate on the night of the 13th - 14th, you can still expect to see a fair amount of meteors the following night. The display declines very sharply after peak, so expect the number of meteors to be no more than about 25 per hour at best. That is still a respectable show worth watching.

Good luck with the December Geminids.

While you’re scanning the sky for shooting stars, please note the bright reddish/orange object residing in Gemini near Castor’s right knee. That is our neighbor Mars. On December 19, Mars will be at its closest approach to the Earth (approximately 54,797,448 miles) until 2016. Despite Mars’ distance

from us, we should be able to observe some surface details. And on December 30, Mars crosses constellation boundaries and moves into Taurus the Bull.

Also check out the almost Full Moon on the 21st about 35 degrees above the eastern horizon between 4:45 pm and 5:00 pm. For us here in New England the Moon will have just finished its passage in front of the brighter stars of the Pleiades star cluster (also known as the Seven Sisters). Check out the view with a pair of binoculars or a small telescope. You may observe

a few fainter stars of the cluster emerge from behind the edge of the lunar surface.

And finally, the Winter Solstice occurs at 1:08 am on December 22. Notice how far south the Sun arcs across the sky.

Please note that Seagrave Observatory will be closed on Saturday, December 1st. Don't forget to regularly check the Skyscrapers web site at <http://www.theskyscrapers.org> for snow/ice cancellations throughout the winter season.

Happy holidays and clear skies to you all.



Going My Way?

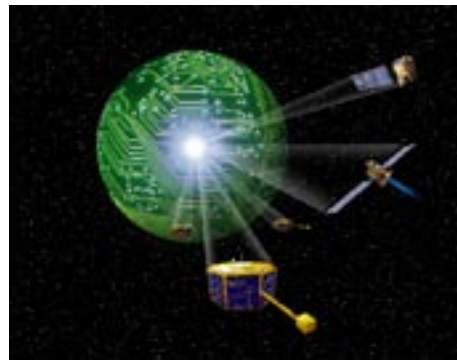
By Diane K. Fisher

Not many endeavors require that you plan the mode of transportation before you even know what it is you are transporting. But weighing the physics and economics of getting any sort of cargo to space is a major part of designing a space mission.

It's one of the first issues that NASA's New Millennium Program (NMP) considers when planning a new mission. NMP has the forward-looking job to identify promising new technologies for space exploration. It then helps to mature the technology so it will be available to space missions of the future. If the technology cannot be tested adequately on Earth, the last part of this process is to actually send the technology into space. With carefully documented test results, future mission planners can confidently incorporate the new technology into their designs.

But where to begin? On call from the start, Linda Herrell is the New Millennium Program Architect. Given a list of proposed technologies, she has the job of figuring out the feasibility of wrapping a mission around them.

"We might be considering six or more technologies, anything from solar panels to imagers to masts for solar sails to more intelligent software. Of those, we may choose four. My job is to answer the question—can the selected technology be transported to and operated in space within the constraints of



NASA's New Millennium Program selects breakthrough technologies that will be of the greatest use to future space and Earth science missions and that are perceived to be risky to the first user.

a low-cost technology validation project?"

Along with the list of possible mission payloads (the technologies), Linda also has a list of spacecraft to put them on, as well as a list of launch vehicle parameters. All she has to do is try them out in every possible combination (of which there are thousands) and see what might work.

"Fortunately, we have a software tool to help with this analysis," says Linda. When it comes down to it, her job is primarily to figure out how to get the technologies into space.

"Sometimes, it's like figuring out how to get across town when you don't have your own car. You have to get creative."

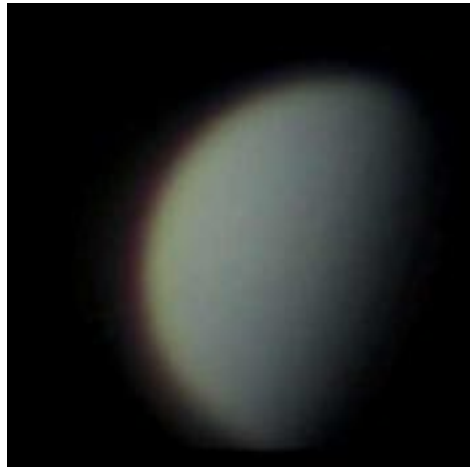
She keeps a database of all possible options, including riding piggyback on another spacecraft, hitching a

ride on a launch vehicle as a secondary payload, or sharing a launch vehicle with other NASA, Department of Defense, or even commercial payloads.

Her assessment is but one of a gazillion factors to be considered in planning a mission, but it is indeed one of the very first "details" that forms the foundation for the rest of the mission.

Find out some of the technologies that NMP has already validated or is considering at nmp.nasa.gov/TECHNOLOGY/innovative-tech.html. Kids will enjoy watching Linda's cartoon alter-ego talk about her job at spaceplace. nasa.gov/en/kids/live.

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



Gallery

Top: Moon - Canon Rebel DSLR, Prime focus, ISO 100, 50 sec exposure, 8" IX200 f/6.3 SCT, Taken, 11/23/07 at 19:20 hrs.
Left: Comet 17p/Holmes Canon Rebel DSLR, Prime focus, ISO 100, 50 sec exposure, 8" IX200 f/6.3 SCT, Taken 11/23/07 at 19:28. Above: Venus - DBK firewire CCD camera 1600 frames processed to 865 frames 1/1750 seconds each 30 frames per second. Photos by Tracey Haley.



From the Archives

Dave Huestis, Historian

Even before the 75th anniversary committee ever met, I had already begun to plan for the 75th anniversary (May 5, 2007) celebration of Skyscrapers.

One of the ideas was to reproduce the minutes from every meeting for the first year of the society's existence (May 1932 - April 1933), so current members could get a sense of how Skyscrapers formed and how quickly it evolved.

So, starting with the May 2007 issue of The Skyscraper,

December Meeting. Dec. 7th. Wilson Hall.

It was decided that secretary will do advance publicity and Mr. Huddy the follow-up.

Membership committee reported 7 names, 6 adult and 1 junior. Voted on.

Committee on gift reported that the reading table had been bought for \$6.50. The treasurer paid Mr. Hagar for it. Rev. Crawford's letter of thanks was read aloud.

Mr. Leon Campbell of Harvard College Observatory spoke.

Lecture notes:

Hopes we will scrape the skies ourselves. There is much work for interested amateurs. Meteors, counted, plotted on charts, photography, etc. Hundreds of meters photographed in direction of radiant by amateurs. Other phases for amateur star photography require driving clock.

Looking for "Novae" worthwhile accomplishment. Ex. as in Perseus. One must be very very familiar with the constellations. Dr. Anderson of Edinburg saw 3 (2 originally). 1918 "Novae" seen by scores of observers in Aquila, on date of eclipse in Western United States. Gold medal to be awarded for next not found on photo. plate.

Discovering comets is a thrill. We need to know more concerning comets. Then men like Prof. A. compute orbits.

Keeping track of lunar occultations for time. Prof. Brown of Yale has studied intensely. Thinks moon acts queerly because of action of earth.

Variable stars. Even desultory observations may be of critical value.

Attendance 54-60.

Date of Jan. meeting to depend upon Miss Leah B. Allen's dates in city.

our webmaster and newsletter editor Jim Hendrickson began to publish scanned images of the monthly meeting minutes for the first year of our great society.

Once you've read the minutes from the first year I suggest you begin to read "A Quarter Century of Skyscraping," a summary of the first 25 years of Skyscrapers history. You can find a copy of this book, published in 1957, on our web site.

The last meeting of the Skyscrapers was held in Wilson Hall on December 7, 1932, at 7:45 p.m.

It was decided that the Club Secretary should have charge of the advance publicity for the meetings.

The Membership Committee reported seven names to be voted upon: 6 adults and one junior member. These names were accepted.

The Gift Committee reported on the reading table presented to Rev. Crawford and a letter of thanks from him was read.

Mr. Leon Campbell, of Harvard University Observatory, gave the address of the evening. His subject was "Practical Observing For Amateurs."

He hopes that the members of the Club will scrape the sky themselves. Mr. Campbell believes that amateurs can find entertainment in counting and plotting meteors charts. There is also a chance for amateur photographers to try their luck at taking pictures of meteors.

Looking for NOVAE is another thing to do. In 1918 a Nova was seen by many observers, in Aquila, on the date of the eclipse in the Western U. S.

Other suggestions were discovering new Comets; keeping track of lunar occultation; watching variable stars.

Plans for the time and place for the next meeting of the Skyscrapers were postponed until the speaker's date could be obtained.

At the close of the meeting, the Secretary collected more dues.

Attendance. 57.

November Meeting Notes

Nichole Mechnig, Secretary

Monthly Meeting, November 2, 2007, Seagrave Observatory

Meeting started at 7:33 pm

Steve Hubbard introduced Dave Huestis as the guest speaker. Dave Huestis' presentation was on "Journeys to the Shadow Zone: the study of Solar Eclipses." It was a slide show about C. Smiley's journeys to document how solar eclipses. Unfortunately C. Smiley was clouded out on a lot of his journeys to faraway lands.



Meeting

Skyscrapers field trips
Joe Sarandrea • Hartness House Weekend February/March TBA

New Business
• New Members • David Lowe (family) • Albert Aubin • will be voted in at the next meeting

Motion for cutting down the trees at a cost of \$500.00 was made by Jerry Jeffrey

Old Business • New Members • Pat Moonan • David Eichhorn • Svetlana Ivanova (family) • Bill Weber • All were accepted to Skyscrapers Congratulations and Welcome

Good of the Organization • Yahoo group is up and running • December 1st meeting is on a Saturday @ the Community Center • Imaging workshop TBA • Membership is @ 103 • Mars 3-D at Roger Williams Museum until November 12th

President Information • E-board meeting December 13th • Astro Assembly Review • Suggestion to Increase food/Decrease Food at meetings • Capital One Money Market Account • Insurance for the organization • Elections/Nominations committee

Meeting adjourned at 9:26pm

Secretaries report for September was accepted

Financial report for September was accepted

1 V.P. Steve Hubbard presented the next following guest speakers • December 1-John Kocur "Year in Review" plus Jerry Dyck "Holiday Poem" • January 4-Member Night • February 1-Geoffrey Collins • March 7-Ken Launie • April 4-Alan Guth • May 2-Arne Herndon • June TBA • July 12-Father Doug McDonagle

2nd V.P. Kathy Siok was unable to attend but the reviews were for the Astro Assembly • Income \$4,735.50, Expense \$3,199, Total \$1,536.50

Historian Dave Huestis • 75th book should be here by December meeting, at a cost of \$20.00

Librarian Tom Barbish • Donated book "Space 50 years and Counting" by Sky and Tel, Please come by a pick up a book to read

Star Party Coordinator Bob Forgiel • November 16th Callahan School @ Burrillville with Dave Huestis • December 12th Girl Scouts • March 1st Warwick ALAP with Ted Ferneza

Hospitality Dolores Rinaldi • Holiday Christmas Party looking for donations • Need a Co-Chair to help with meetings

Trustees: Thanks for the handrail outside to meeting hall door • Insect update? • \$500.00 is needed to cut down a couple of trees to the South of the meeting hall

November 15th Building Expansion

Treasurer's Report

4/1/2007 - 11/26/2007

Jim Crawford, Treasurer

INFLOWS	
Uncategorized	3.33
Anniversary inc	1,248.00
Astro Ass'y Regiistration and Banquet	4,020.45
astroincome	
Other astroincome	1,309.00
TOTAL astroincome	1,309.00
cookoutinc	442.00
Collationdonation	116.00
Other donation	125.00
TOTAL donation	241.00
Donation, Xmas Party dues	75.00
Contributing	891.00
Family	870.00
Junior	10.00
Regular	1,720.00
Senior	200.00
TOTAL dues	3,691.00
Interest Inc	23.23
magincome	
Astronomymaginc	230.00
skytelmagincome	428.35
TOTAL magincome	658.35
Starparty	112.00
TOTAL INFLOWS	11,823.36
OUTFLOWS	
Uncategorized	38.50
Anniversaryexp	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 Fuel	20.00
collation	350.00
Cookoutexp	650.00
Corporationfee	30.00
Zurich Insurance	2,397.00
Meals & Entertn	100.00
membersubscriptions	
Astronomymagexp	136.00
Skytelexp	404.39
Other membersubscriptions	126.95
TOTAL membersubscriptions	667.34
Misc	94.60
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	-399.37
Capital One Acct.	101.76
SAVINGS	15,679.78

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