

The Skyscraper

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Amateur Astronomical Society
of Rhode Island

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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 November 15 to Jim Hendrickson, 1
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The Skyscraper

November 2007

November Meeting with Historian Dave Huestis

FRIDAY, NOVEMBER 2ND AT SEAGRAVE MEMORIAL OBSERVATORY

JOURNEYS INTO THE SHADOWZONE: BROWN UNIVERSITY AND SKYSCRAPERS COLLABORATE ON TOTAL SOLAR ECLIPSE EXPEDITIONS (A FEW OF THEIR EARLY ADVENTURES.)

This talk will highlight the worldwide travels of Skyscrapers members to perform scientific experiments during total solar eclipses under the direction of our founder, Charles H. Smiley.

Dave has been a Skyscrapers member since January 1975 and is the historian of our organization. Dave's interest in astronomy was sparked in the 6th grade (1964) by reading a book on the possibility of extraterrestrial life. Dave also enjoys writing astronomy columns to enlighten both Skyscrapers members and the public about the wonders of the universe, including meteor showers, comets and eclipses.

NOVEMBER 2007

2 7:30PM **November Meeting**
FRIDAY Seagrave Observatory

3 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

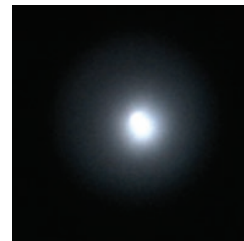
10 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

17 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

24 7:00PM **Public Observing Night**
SATURDAY Seagrave Observatory,
weather permitting

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Comet 17P/Holmes underwent an outburst, increasing from 17th magnitude to 2.5 magnitude, making it a naked eye object in Perseus. All 4 images taken on October 25-26 during full moon. From left to right, Tracey Haley, Dan Lorraine, Bob Forgiel, Jim Hendrickson.

President's Message

Glenn Jackson, President

Location, location, location. That says it all. Last month I spent in the wilds of Pennsylvania where the Milky Way reached the horizon. This month I am in Chicago where the limiting magnitude is +2 on a good night. However, astronomy in Chicago is not dead. I spent several hours with D. Erickson of the Sidewalk Astronomy Club. The club was set up at four of the busiest intersections in the city. "See Craters on the Moon" and "See the Moons of Jupiter" were the come-ons displayed at each location. On a busy Saturday night, when everyone is out for dinner or the comedy club, there was a steady stream of interested viewers. The club is there every Saturday night weather permitting, with many returning visitors.

The Adler Museum hosts a star party once a month in addition to a "Full Moon" walk around the Museum Campus each month. Just north of the city at Northwestern University there is observing and/or a tour every Friday night rain or shine. Northwestern is the home of the historic 18.5 inch Dearborn Telescope.

Closer to home we have a star party at the Callahan School hosted by Dave Huestis on November

16th. With 200-250 possible school age observers we need multiple volunteer telescope operators. Come share your passion with the kids and their parents. In the past this session has always been well attended and appreciated by the school. Farther ahead we have a Girl Scouts star party at Seagrave Memorial Observatory on December 12th. If all goes well we are planning an imaging workshop at Seagrave Memorial Observatory on December 16th. Plenty of opportunities for you to share your passion for the night skies.

If you haven't started to track Mars now is the time. Its up late but it is up late and will continue to grow larger each day until it reaches its closest approach to Earth on December 18th with a diameter of 15.9 arc seconds. Not as good as 2003 with a 25.1 arc seconds or 2005 with a 20.2 arc seconds but this is the best that we will have until 2016. Get out the telescopes and the red filters.

Our next monthly meeting on November 2nd will feature our own Dave Huestis who will present "Brown University/Charles Smiley/Skyscrapers Solar Eclipse Expeditions". This is an insight into the Skyscrapers of the past, long before our trips out west to visit notable astronomy sites.

Hope to see you there.

Excellent Prospects for November's Meteor Showers

Dave Huestis

On any clear night you can expect to observe one or two sporadic meteors per hour. These shooting stars are just random specs of space debris not associated with any major or minor meteor stream.

But if you want to increase your chances of seeing more than just a couple of meteors per hour without having to spend an inordinate amount of time doing so, then it's prudent to wait for those dates and times when the Earth is predicted to pass through a known stream of cometary debris.

During the week of November 5-12, the Earth encounters the remnants of Comet 2P/Encke. The Moon will be New in the middle of this week, so it will not hamper seeing as many meteors as possible. Therefore, as long as you position yourself well away from city lights you will perhaps observe five to ten Taurid meteors per hour.

Fortunately the Taurids are slow meteors, entering our atmosphere at only 17-miles per second. Therefore these shooting stars are also bright. More often than not they are yellow in color. Fairly frequently they become fireballs that fragment into multiple meteors.

The best meteor shower display of November, the Leonids, peaks on the night of the 17th to the early morning of the 18th. There seems to be some difference of opinion among researchers as to what level of activity will happen this year.

Some astronomers believe there may be a modest enhancement of activity, while others insist that the Leonids will be back to their normal peak level of from 15 to 20 meteors per hour. Who is correct? We'll know for sure once the Sun rises on the 18th, for the peak is scheduled for about 11:00pm or so on the 17th. This display occurs on a weekend, so most of you should be able to set aside an hour or two to scan the skies for a few shooting stars.

We are also fortunate that the Moon will set around 11:15pm and will not brighten the sky. However, with the shower's peak time so early, Leo, the constellation from where the meteors appear to radiate, will be just rising above the east-northeast horizon at that time. So the number of meteors we see here will likely be somewhat less than anyone's estimate.

What we may see is quite a few Earth-grazers

around the peak time. These meteors will shoot halfway across the sky as they skim our atmosphere. Earth-grazers are fun to watch, so I encourage everyone to go out and take a look.

Leonid meteors are usually very bright since they blaze across the sky at an amazing speed of 44 miles per second. Most appear to be green or blue in color as they disintegrate in our upper atmosphere.

About half of them leave trains of dust which persist for minutes.

Again, make sure you maximize your chances of seeing as many meteors as possible by observing from a dark sky location. Also, be comfortable and stay warm, but try not to fall asleep! Hopefully a few fireballs now and then will encourage you to stay awake.



The Red (Hot?) Planet

By Patrick L. Barry

Don't let Mars's cold, quiet demeanor fool you. For much of its history, the Red Planet has been a fiery world.

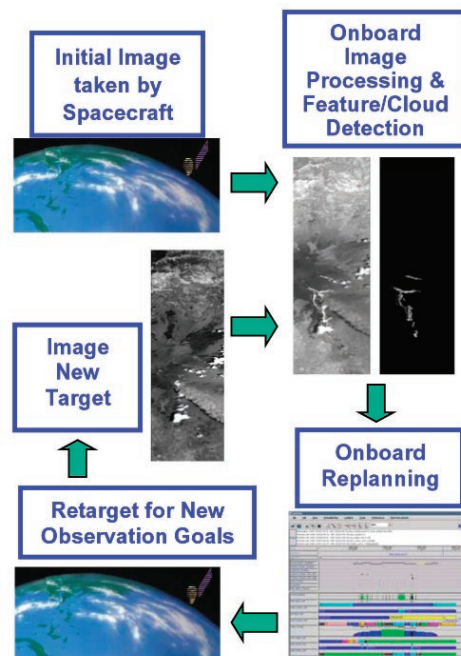
Dozens of volcanoes that dot the planet's surface stand as monuments to the eruptions that once reddened Mars's skies with plumes of glowing lava. But the planet has settled down in its old age, and these volcanoes have been dormant for hundreds of millions of years.

Or have they? Some evidence indicates that lava may have flowed on Mars much more recently. Images of the Martian surface taken by orbiting probes show regions of solidified lava with surprisingly few impact craters, suggesting that the volcanic rock is perhaps only a million years old.

If so, could molten lava still occasionally flow on the surface of Mars today?

With the help of some artificial intelligence software, a heat-sensing instrument currently orbiting Mars aboard NASA's Mars Odyssey spacecraft could be just the tool for finding active lava flows.

"Discovering such flows would be a phenomenally exciting scientific finding," says Steve Chien, supervisor of the Artificial Intelligence Group at JPL. For example, volcanic activity could provide a source of heat, thus making it more likely that Martian microbes might be living in the frosty



Just as changing cloud patterns on Earth were identified using Earth Observing-1's Advanced Land Imager along with ScienceCraft software, the THEMIS instrument with ScienceCraft on the Mars Odyssey spacecraft can avoid transmitting useless images.

soil.

The instrument, called THEMIS (for Thermal Emission Imaging System), can "see" the heat emissions of the Martian surface in high resolution—each pixel in a THEMIS image represents only 100 meters on the ground. But THEMIS produces about five times more data than it can transmit back to Earth.

Scientists usually know ahead of time which THEMIS data they want to keep, but they can't plan ahead for

unexpected events like lava flows. So Chien and his colleagues are customizing artificial intelligence software called ScienceCraft to empower THEMIS to identify important data on its own.

This decision-making ability of the ScienceCraft software was first tested in Earth orbit aboard a satellite called Earth Observing-1 by NASA's New Millennium Program. Earth Observing-1 had already completed its primary mission, and the ScienceCraft experiment was part of the New Millennium Program's Space Technology 6 mission.

On Odyssey, ScienceCraft will look for anomalous hotspots on the cold, night side of Mars and flag that data as important. "Then the satellite can look at it more closely on the next orbit," Chien explains.

Finding lava is considered a long shot, but since THEMIS is on all the time, "it makes sense to look," Chien says. Or better yet, have ScienceCraft look for you—it's the intelligent thing to do.

To learn more about the Autonomous ScienceCraft software and see an animation of how it works, visit <http://ase.jpl.nasa.gov>.

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



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

Executive Meeting. Nov. 7th.

The society was distressed to learn of the serious illness of Rev. Crawford, its president. Mr. Hagar suggested buying a book rest for him. He was asked to shop for it. Mr. Hagar was nominated as 2nd. Vice*President. Elected by unanimous vote.

Regular meeting called to order at 7:50. Miss Weston, Miss Miller and Mrs. Hagar were voted into membership. It was moved to authorize Mr. Hagar to buy the book rest for Rev. Crawford. Treasurer was instructed to pay him for it. The Museum offered to loan him its science magazines. Mr. John Euart spoke on Meteors.

Lecture notes:

Meteors sometimes follow comet orbits. May possibly be broken up comets. Biela's comet of 1826 shows remarkable connection. Has a 5 and 6/10 year orbit. 1846, head split in 2. 1852 split farther apart. Never seen since but in after years at right time, dense swarms of meteors were seen.

Other meteors tag after comets. Luminosity caused by immense speed of 40 miles a second. Checked in our atmosphere. Heat 50,000 degrees making brilliant white light. Some only the size of a pin head. Few mm. 20,000,000 meteors fall on the earth a day. Pin heads several miles apart considered "dense".

Meteors contain iron, nickel, silica. Iron survives atmosphere better. All 30 elements found in them also found on earth. Usually have a thin crust caused by fusing in earth's atmosphere.

Perry found a 36 ton meteor in Greenland. How at A.M.N.H. in NYC.

50 ton meteor in South Africa.

One huge crater in Arizona 3/4 miles across. Origin questionable, but meteorites all around.

Skyscraper, 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.

There was a great meteor shower in 1903 in Siberia. 20-30 miles devastated. Craters 300 feet across. Ana Vara. Man felled by heat wave. Air bubble carried to earth by meteors bursts with great explosion. Roar heard 400 miles. Wiped out a herd of reindeer.

Meteor trains have lasted 15 minutes. Plot on sky map. Ruler useful. Note direction and position of meteor. Trail lasts only fraction of second. 40 per hour is good record. 6- per hour expert.

Radiant not stationary as a general rule.

Perseid most important shower. July 15- Aug. 15.



Spiral Galaxy M33 in Triangulum taken from Seagrave Observatory on October 12. DS12 color camera on AT66ED, 1½ hours of 5½ min exposures stacked. Photo by Bob Forgiel.

September Meeting Notes

Nichole Mechnig, Secretary

Monthly Meeting, September 7, 2007, Seagrave Observatory

Meeting Started - 7:33 PM Steve Hubbard Introduced the featured speaker. Caleb Fassett, Brown University who spoke about "The Evolution of the Martian Surface Environment over Time" the role of water and Ice. A Hi-Rise 50cm aperture telescope was used to study Mars it was the largest telescope flown outside the Earth's orbit. Mars has been (and is) less geologically active than Earth. The Northern Polar Cap is geologically modern in Composition, water ice and dust, transient CO₂. Southern Polar Cap is slightly older CO₂ (perm) + H₂O and Dust.

Business Meeting 9:05PM

Secretary Report: Accepted

Treasure's Report: Accepted with \$ 1,592.88 in checking account

1st Vice President: AstroAssembly is coming soon September 28 & 29 • November 2, 2007 Dave Huestis will be our guest speaker • December 1, 2007 which is a Saturday will be our Holiday Party at the Community Center

2nd Vice President: Kathy Siok went home sick • She is still looking for volunteers for AstroAssembly • Hat and t-shirts are on the front desk in the Meeting hall

Historian Dave Huestis: 75th Anniversary book now has a target date of Christmas

Librarian Tom Barbish: No new books have been donated • plenty of books to check out

Star Party Coordinator: Still looking for a member to step into Ted Ferneza shoes • Women's wilderness weekend October 19, 2007 looking for volunteers

Hospitality: Volunteers still needed with helping set up before our monthly meetings monetary contributions for Christmas Holiday Party November 2nd meeting

Trustee's Report: Work Party September 16 & 23 at 9:00am • September 27, 2007 will be tent set up for AstroAssembly 4:00-6:00pm, also darkening the tents • The Spectroscope was recently cleaned by

John Briggs "Thank You" • The Trustees would like to display this wonderful piece but would like some input by the members security purpose locking bolt to the door temporary exhibit during special times putting special glass in the case • All suggestions will be taken back to the trustee's and discussed

Building Expansion: grant letter is ready to be mailed • Glenn Jackson will sign the letter and sent out September 12, 2007 • Skyscrapers fieldtrips sign-ups sheets are available by Joe Sarandrea • America's Stonehenge September 22, 2007, it will be a full day \$ 7.00 admission • Bay Queen Cruise Columbus Day Weekend • Hayden Planetarium bus trip November TBA \$ 17.00 per person and \$ 45.00- \$ 50.00 per person for the bus • Hartness House Weekend end of February/March TBA

New Business: New Members Pat Moonan (Internet), David Eichern (Ladd), Svetlana Ivanova (family), Bill Weber • all new members will be sworn in at our next monthly meeting

Old Business: Tabled motion to replace lamp for the LCD projector • motion to provide a year membership and subscription to Sky and Telescope to the winner of the State Science Fair-motion passed

Good of the Organization: Hot line going into effect to the observatory • Yahoo discussion group (Members only) • December 1, 2007 is Saturday @ the community center • Frosty Dew Observatory is looking for a director • a Meade eyepiece is for sale \$40.00 • No E-board meeting September, October, November and December • NO MONTHLY MEETING IN OCTOBER

Meeting Adjourned at 9:44 PM

Mirror-Making Workshop

Ed Turco would like to start a mirror-making class. Anyone interested, please contact Ed at ed_turco@yahoo.com.

Treasurer's Report

4/1/2007 - 10/24/2007

Jim Crawford, Treasurer

INFLOWS	
Uncategorized	3.33
Anniversaryinc	1248.00
Astro Ass'y Registration and Banquet	4020.45
astroincome	
Other astroincome	1309.00
TOTAL astroincome	1309.00
cookoutinc	442.00
Collationdonation	41.00
Other donation	125.00
TOTAL donation	166.00
dues	
Contributing	886.00
Family	820.00
Junior	10.00
Regular	1600.00
Senior	160.00
TOTAL dues	3476.00
Interest Inc	20.40
magincome	
Astronomymaginc	230.00
skytelmagincome	428.35
TOTAL magincome	658.35
Starparty	112.00
TOTAL INFLOWS	11455.53
OUTFLOWS	
Uncategorized	38.50
Anniversaryexp	2270.12
astroexp	
Astrocater	1050.00
Astrorestroom	110.00
Astrosupplies	128.76
Speaker Fee	100.00
T-Shirts	386.10
Tentrental	585.00
Other astroexp	1105.00
TOTAL astroexp	3464.86
Auto	
Fuel	20.00
TOTAL Auto	20.00
collation	250.00
Cookoutexp	650.00
Corporationfee	30.00
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	36.17
Trusteexp	787.59
Utilities	
Electric	111.16
Propane	423.15
TOTAL Utilities	534.31
TOTAL OUTFLOWS	8978.49
OVERALL TOTAL	2477.04
SAVINGS \$15,676.95	

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