The Skyscraper

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Amateur Astronomical Society of Rhode Island

47 Peeptoad Road North Scituate, RI 02857

www.theskyscrapers.org

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

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The Skyscraper

February 2006

February Meeting with Ron Dantowitz

FRIDAY, FEBRUARY 3RD AT NORTH SCITUATE COMMUNITY CENTER

PENCILS TO ROCKETS: EDUCATION AND RESEARCH AT THE CLAY CENTER OBSERVATORY

The presentation brings together images, techniques and videos from the from the following expeditions: Space Ship One: X-Prize Flights, STS-114 Launch and Reentry (travel to Costa Rica), Laser Experiment with NASA and the ISS, Stardust Reentry (NASA/Ames, SETI and travel to Nevada) Fourier Transform Spectrometer (with the USNO), Techniques about high speed video, filtering, stacking, etc., and Astronomy with 25" f/9.6 RC at the Clay Center Observatory.

Ron Dantowitz is Director of the Clay Center Observatory at the Dexter and Southfield Schools in Brookline. He has worked for NASA, the Charles Hayden Planetarium, and directed the Gilliland Observatory at the Boston Museum of Science. He holds a B.S. in Aeronautical Engineering from Embry-Riddle Aeronautical University.

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.

February 2006 7:30_{PM} February Meeting North Scituate Community FRIDAY 7:00PM Public Observing Night Seagrave Observatory, SATURDAY weather permitting 7:00PM Public Observing Night Seagrave Observatory, SATURDAY weather permitting 7:00PM Public Observing Night Seagrave Observatory, SATURDAY weather permitting 7:00PM Public Observing Night Seagrave Observatory,

weather permitting

SATURDAY

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President's Message

Dave Huestis, President

Many thanks to our January speaker, Skyscraper member Gerry Dyck. Gerry has always presented some interesting programs in the past, but this time he surpassed everything he's accomplished previously. Gerry, we hope you will not remain idle during your retirement because we want to experience more of your creativity. It is certainly is a treasure to behold.

Response has been good to my search for members to tell us their stories on "How I Became an Amateur Astronomer." Steve Hubbard's story is in this issue, with Bob Howe following in March and Gerry Dyck in April. Please email me or see me at one of our meetings to reserve a month for your story.

Coming up in April, Skyscraper members will be asked to vote for a slate of officers to run the society for the 2006-2007 year. Every position is technically open, though a few officers are planning on running for a second term. However, we do have a few vacancies due to our "two consecutive year" term limit. To round out the ballot we need the following positions to be filled: Secretary, Treasurer, and Member-at-large.

If you can volunteer your expertise for a year or two,

we'd love to have you join our executive board. Please contact Dan Lorraine or myself for more information or to add your name to the ballot.

For our February monthly meeting Skyscrapers is pleased to present Ron Dantowitz, Director of the Clay Center Observatory at Dexter and Southfield Schools in Brookline, Massachusetts. His primary interests are astronomy education and developing techniques for ultra-high resolution telescopic imaging.

Ron is an old friend of mine from the Boston Museum of Science where he worked at the Charles Hayden Planetarium. For many years he was my course assistant when I taught astronomy classes at the museum. Even then he was tinkering with high resolution imaging using video, the "new" CCD cameras, and satellite tracking programs for computer controlled telescopes.

And please be reminded that February and March meetings will be held at the North Scituate Community Center. If weather is an issue on a meeting night, those with email will be so informed. WPRO AM, WPRO FM and B101 will carry any necessary cancellation announcement as well. You can find other meeting cancellation information on our web site.

Hope to see you at our February monthly meeting.

My Life as an Amateur Astronomer

Stone Huhhard

When I was younger, I received a telescope for Christmas one year. It had to be sometime in the early to mid 1960's and had a long white tube, a wooden tripod and nice wooden box. It was a 60mm Tasco refractor.

I distinctly remember the excitement of seeing the box with the scope inside of it, with all it's eyepieces and associated stuff and then it somehow promptly disappeared from my life and memory for the next 10 years or so. I never used it, nor did I do any skywatching with it, binoculars or even my eyes. I do remember being fascinated with the space program and avidly watching as many of the launches of various missions as I could, but going out to see some of the places that we all dreamed the astronauts would someday go, just wasn't in the cards at that time.

Flash forward about 10 years to my sophomore year of high school. I was walking down one of the

corridors in school one day, and bumped into a friend. He told me about an Astronomy club at the school and how there was a meeting that afternoon of the group being run by the physics teacher. Something about this must have caught my attention, because I showed up for that meeting and found myself unexpectedly immersed in nerd heaven. Here were others just like me, pale, pasty, un athletic and terribly interested in the sky. It was like a door had just been unlocked.

Shortly after discovering and joining the club, I got to attend my first observing session. We went to a local elementary school and set up in the yard in back. In those days, you could actually do something like this and not have blinding, poorly pointed security lights spoil the view. After a 10 year hiatus, my old Tasco refractor finally got to see first light. I was part of a crew that had a couple of pairs of binoculars, another small refractor and best of all, one of the members had a 6 inch Criterion reflector. It was hugely impressive

at the time and I was hooked. I don't remember what I saw thru my scope those first few times, but I do have distinct memories of not being able to find much at first. I didn't know the constellations and couldn't find anything other than the brightest objects.

Not long after this, I found out about Sky and Telescope magazine. I used the star charts in the middle of it to slowly and painfully work my way around the sky, starting from the Big Dipper out. Gradually I got a basic working knowledge of much

of the sky and started working towards a goal that I had set. I desperately wanted to see the globular cluster, M13. I had seen a picture of it and a description somewhere, either in Sky and Telescope or in a book I found in my parent's library, "The Fascinating World of Astronomy by Robert S. Richardson, which I still have to this day. For whatever reason, I was just fascinated by the thought of M13 and no matter how, had to find it for myself and see it with my little telescope.

Eventually, the time came and one night, I finally managed to locate the keystone in Hercules and then... there it was, M13! Small, but bright against an inky black backround, I could just barely start to resolve some of it's individual stars. As jaded as I've become over the years after

seeing it resolved to the core many times in much larger scopes, nothing can take away from the thrill of finding and seeing it for the first time.

Time went on, the little Tasco eventually fell by the wayside in favor of an 8 inch Criterion reflector that I got a year or so later and then larger and ever more different scopes seemed to keep coming and leaving. Over time, I went thru an 8 inch Cave Cassegrain, then a 10 inch, a 6 inch Jaegers refractor, then a 4 inch and eventually a 16 inch reflector, which has been the only one that I've consistently kept. As to how I discovered the Skyscrapers, one of the members of my high school Astronomy club, had an uncle who was a member of a club in the then far off state of RI. In case you haven't guessed, the club was the Skyscrapers and the uncle was John Bacon, some of you reading this will perhaps remember him. Until

that time, I had no idea that such a thing as astronomy clubs even existed. My first visit to N. Scituate was in 1972. I was hooked. For a teenager, the old antique Clark refractor, the clubhouse and the observatory building were irresistible. There was even a real, legitimate outhouse in the woods on the grounds! I became a member and have spent a large part of both my remaining teenage years and my adult life at the grounds with friends that I have now known for over 30 years.



Steve Hubbard at the Crooked Creek Research Station during the 2004 White Mountain trip. Photo by Dan Lorraine

For me, the discovery of my love of astronomy has opened me to a fantastic world of incredible sights, travel to far off places and the ability to meet people who's fame will fade long after that of the so called "stars" of today's world.

So what do I remember from the past 30+ years as an amateur? Well, there was the incredibly bright comet West in 1976 with it's blue green tail and bright coma. There was the time that a group of us went to Brown University to see Stephen Hawking speak. I will never forget the thrill of seeing the great man roll by my seat down the aisle, just a couple of feet away from me.

Another great memory was the trip a group of us took to Canada in 1979 to see a total eclipse of the sun. I have gotten

to meet the discoverer of Pluto, Clyde Tombaugh, I have met the discoverer of the microwave backround radiation, Robert Wilson.

I learned how to grind telescope mirrors thanks to the generous instructions of member Ed Turco. I received awards for the scopes I made at Stellafane .

There have been numerous meetings, Astroassemblies, trips and other events, none of which would have happened without the existence of Skyscrapers.

As quickly as the past 30 years have flown by, I take comfort in knowing that Skyscrapers will be there and that there are lots more speakers, trips and huge amounts of food to look forward to.

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Mid-Winter Astronomy Treats

Dave Huestis

As I write this column in early January, the outside temperature is in the mid 50's, with the possibility of one 60 degree day ahead. What a far cry from early December with the bitterly cold weather and all the snow (at least up here in Burrillville). We also received four inches of snow on New Year's eve, and another foot of heavy wet snow just after that.

If the current warm conditions prevail for a while, I may even see my front lawn before February. But this is New England, and I know better. We're going to pay for these balmy conditions.

Lately we amateur astronomers have not had any major astronomical events happening in February. And when the temperatures usually dip into the teens and below, it requires a dedicated individual to venture outdoors to simply do some casual observing. This February is no exception. No major astronomical event is forthcoming.

But, if you just received a telescope for Christmas, I'm sure you're getting anxious to set it up and put it to good use collecting the light of the universe. And for a novice to this fascinating hobby of amateur astronomy, there are many beautiful objects to "discover" for the first time.

Perhaps your first target should be the Moon. It will start out as a thin crescent at the beginning of the month. On the 5th it will be at First Quarter. This phase is a good time to focus on the area known as the terminator (the line that separates the sunlit portion of the lunar surface from the dark). If you were standing anywhere along the terminator, you would see the sun rising. From the Earth we can see a lot of detail along this line because of the long shadows cast by the rising Sun.

Also on the 5th you can easily spot the red planet Mars just two degrees from the Moon. A telescope will reveal a tiny disc that is getting smaller and smaller each night as the Earth quickly recedes from our desert neighbor.

The Moon can also be used as a beacon to find the Pleiades star cluster on the following evening. Also known as the Seven Sisters, the Pleiades are a group of six hot blue stars that resemble a little dipper, for which they are usually misidentified. The stars in this cluster are fairly young, having been born from a cloud of dust and gas in this region of space within the last 100 million years. They are a beautiful sight to behold under low magnification.

And, one day later, the Moon will be at its closest to the Earth for the entire year - 217,000 miles. We can expect large tides on that date, which can cause serious erosion should an ocean storm threaten any seacoast.

Almost everybody's favorite planet is Saturn, and this beautiful world is well placed for observing during February. An observer can find this magnificent ringed planet, bright and with a yellow hue, about halfway up the eastern sky around 8:00 pm. From a dark sky you will notice a fuzzy patch near Saturn. Perhaps your eye will detect 10 to 12 stars in this region of space. Binoculars or a small telescope will reveal 40 to 50 stars. Saturn will remain near this open star cluster, called the Beehive, until both are lost in the solar glare sometime during late July or so.

Even a low power eyepiece will reveal Saturn's ring system. From Earth we are looking at the southern surface of the rings, as the planet is tipped away from us. It's really amazing that we see the rings at all at a distance of over one billion miles, since they are only about 100 yards thick (300 feet). A small telescope may reveal one or two divisions in the ring system. A larger instrument shows much more, though our atmosphere must be steady for any telescope to perform well enough to discern great detail. Don't forget to look closely for any of Saturn's moons. The biggest and brightest of them is Titan, and it can be easily seen.

And finally, want to get a glimpse of the closest planet to the Sun, Mercury? In February it will be quite easy if you have a good view of the western horizon. On February 23-24, Mercury will be 18 degrees above the western horizon during twilight. This time is optimum to observe Mercury, but you should begin your exploration of this world about two weeks before and continue until about a week and a half later.

To find Mercury, note where the Sun sets on any given evening. About half an hour after sunset you should notice Mercury in the darkening sky above the sunset point (between WSW and West). You can watch Mercury quickly run through phases like the Moon. On Feb 12 Mercury will be 90% lit; on the 16th - 80%; 20th - 67%; 24th - 50%; 28th - 31% and March 4, 15%. This appearance of Mercury, away from the

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Skyscrapers Trip to the Land of Enchantment

New Mexico 2006

Rick Lynch & Dan Lorraine

And we're off again! This time it's to the beautiful state of New Mexico. There's still time to sign up if you haven't already. We'll leave on Saturday April 22 and return the following Saturday April 29. As always, we try to keep the cost to a minimum and it looks like the total cost for this trip will be between \$1,000-\$1,100. The price includes airfare from Providence, hotel (double occupancy), SUV rental, gas, meals, and miscellaneous admission fees. The southwest is a great place to buy hand crafted Native

American jewelry and pottery, so plan your personal budget accordingly.

On Saturday January 21 we had our first organizational meeting and here is the tentative itinerary with links to more information about some of the destinations:

If you're interested, contact Rick Lynch (HstrclRsch@aol.com) or Dan Lorraine (DWLorraine@aol.com).

SATURDAY	Depart Providence and fly into Albuquerque, New Mexico; Check into hotel in Albuquerque; Lode Star Planetarium and Old Towne Albuquerque; Astronomical observing with the Albuquerque astronomy group	
	Links http://www.lodestar.unm.edu/ http://www.taas.org/	
Sunday	Chaco Canyon: visit all ruins – only moderate walking; OR Chaco Canyon: visit two major ruins (Pueblo Bonito & Cherto Ketle) and then hike 2 miles each way to Penesco Blanco, site of the famous petroglyph depicting the crab nebula nova in 1054 AD	
	Links http://www.nps.gov/chcu/ http://www.jqjacobs.net/southwest/html http://www.colorado.edu/Conferences/chaco/tour/blanco.htm	
MONDAY	Shopping in Santa Fe, Bandilier Ruins, and La Cienega petroglyphs; Astronomical observing with the Albuquerque group	
	Link http://www.santafe.org/	
Tuesday	Leave hotel and head south – we will stay in either Roswell or Alamogordo; Apache Peak Astronomical Observatory and the National Solar Observatory	
	Links http://www.apo.nmsu.edu/ http://www.sunspot.noao.edu/index.html	
WEDNESDAY	UFO Museum in Roswell; 3 Rivers petroglyph site, and Carlsbad Caverns	
	Links http://www.iufomrc.com/ http://www.nps.gov/cave/ http://www.desertusa.com/mag98/mar/poi/du_3rivers.html	
Thursday	Check out of hotel and head back towards Albuquerque; VLA (Very Large Array) Radio Telescopes and Acoma Pueblo; Check into hotel in Albuquerque	
Î	Links http://www.desertusa.com/mag98/mar/poi/du_3rivers.html	
FRIDAY	Zuni Pueblo (featuring the famous Spanish Mission from the 1600's with life size murals by Alex Seotowa) and El Moro monument; OR Tram-way to the top of the Sandia Mountains and the Turquoise Trail	
	Link http://www.crystalinks.com/zuni.html	
SATURDAY	Return to Providence	

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Mid-Winter Astronomy Treats

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glare of the Sun, is a very favorable one for us, so try your luck in seeing this planet named for the fleetfooted messenger of the gods.

Good luck in all your observing endeavors. Let's

hope Mother Nature is kind to us for the remaining winter months.

Keep your eyes to the skies.

Secretary's Report

Joel Cohen, Secretary Monthly Meeting January 6, 2006, North Scituate Community Center

Meeting Start - 7:40 PM

Secretary's Report - Accepted as published

Treasurer's Report - Accepted as read (sec's note, a check was sent to Meade to cover the insurance policy which also covers the repairs to both telescopes)

Trustee's Report - Jack Szelka suggested we close the Observatory and grounds for the winter or at least until the snow is gone. Dave suggested we try to open when possible and use the website to publicize closures.

Jack also asked for additional volunteers for public observing. Jack said many of the broadcast e-mails he sends out have bounced back because members update those addresses without sending notices to other Skyscraper members.

Programs - Upcoming speakers are now listed on the Skyscraper Website with a separate devoted area in the monthly Skyscraper. Again, kudo's to Jim Hendrickson (and Newfangled Web Factory) for taking advantage of the medium to deliver a worthwhile message. February, Rob Dantrowicz; March, Dr. Steven D'Hondt; April, Dr. Arthur Upgren; May, Dr, George Greenstein; June, Dr. Miguel Morales.

Librarian's Report - Dan said he had two telescopes available to sign out for members to use during the winter months. He added that he would be happy to drive up to the Meeting Hall right after the end of the meeting to get the items out for any members interested in borrowing them.

NominationCommittee-none(seePresidentialannouncements in Good of the Organization)

New Business - Membership applications were received from Larry Gould and family, Steve Massarone, and Gregory LaQuadra

Old Business - none

Good of the Organization - Joe Sarandrea mentioned the 400th anniversary of the invention and first use of the telescope publicized in Sky and Tel magazine. Jerry Dyck mentioned an actor who plays Galileo and Dan said he is available through the Science Museum. Glenn said he would follow up on that. Dave thanked John Kocur and Greg Shanos for their recent articles and Jerry Dyck for his book review of "The Planets" all published in the Skyscraper. Dan Lorraine gave a short presentation on the upcoming Skyscrapers trip

to New Mexico planned for the first week of May, 2006. Rick Lynch presented a slide show on some of the sites to be visited during the trip. They include Albuquerque, Roswell, the Clyde Tombaugh Planetarium, Apache Peak, the VLA and more. The first organizational meeting is to be held January 21 at Rick's home.

Dave announced that Dan Lorraine would chair the Nomination Committee.

Dave also announced that Bob Horton will lead a committee aimed at an update of the by-laws since functions and responsibilities are different today than when the by-laws were initially drafted.

Dave further announced that notices of meeting cancellations will be broadcast on WPRO AM, FM and B101 FM and available on the WJAR website under weather and that the meetings for February and March will be held at the Scituate Community Center. Dave noted that there will be an E-Board meeting January 23 to discuss a budget for Astro Assembly among other items.

Adjournment - 8:18 PM

Following a break for refreshments, Jerry Dyck presented four short PowerPoint programs on various astronomical subjects. All four programs were very well done and quite entertaining. I'm sure the members present each had their own favorite of the four.

Snowstorm on Pluto

by Dr. Tony Phillips

There's a nip in the air. Outside it's beginning to snow, the first fall of winter. A few delicate flakes tumble from the sky, innocently enough, but this is no mere flurry.

Soon the air is choked with snow, falling so fast and hard it seems to pull the sky down with it. Indeed, that's what happens. Weeks later when the storm finally ends the entire atmosphere is gone. Every molecule of air on your planet has frozen and fallen to the ground.

That was a snowstorm—on Pluto.

Once every year on Pluto (1 Pluto-year = 248 Earth-years), around the beginning of winter, it gets so cold that the atmosphere freezes. Air on Pluto is made mainly of nitrogen with a smattering of methane and other compounds. When the temperature dips to about 32 K (-240 C), these molecules crystallize and the atmosphere comes down.

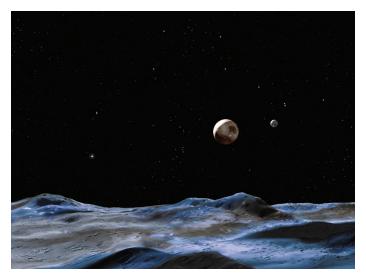
"The collapse can happen quite suddenly," says Alan Stern of the Southwest Research Institute. "Snow begins to fall, the surface reflects more sunlight, forcing quicker cooling, accelerating the snowfall. It can all be over in a few weeks or months."

Researchers believe this will happen sometime during the next 10 to 20 years. Pluto is receding from the warmth of the Sun, carried outward by its 25% elliptical orbit. Winter is coming.

So is New Horizons. Stern is lead scientist for the robotic probe, which left Earth in January bound for Pluto. In 2015 New Horizons will become the first spacecraft to visit that distant planet. The question is, will it arrive before the snowstorm?

"We hope so," says Stern. The spacecraft is bristling with instruments designed to study Pluto's atmosphere and surface. "But we can't study the atmosphere if it's not there." Furthermore, a layer of snow on the ground ("probably a few centimeters deep," estimates Stern) could hide the underlying surface from New Horizon's remote sensors.

Stern isn't too concerned: "Pluto's atmosphere was discovered in 1988 when astronomers watched the planet pass in front of a distant star—a stellar occultation." The star, instead of vanishing abruptly at Pluto's solid edge, faded slowly. Pluto was "fuzzy;" it had air. "Similar occultations observed since then



This artist's rendering shows how Pluto and two of its possible three moons might look from the surface of the third moon. Credit: NASA/ESA and G. Bacon (STSci)

(most recently in 2002) reveal no sign of [impending] collapse," says Stern. On the contrary, the atmosphere appears to be expanding, puffed up by lingering heat from Pluto's waning summer.

Nevertheless, it's a good thing New Horizons is fast, hurtling toward Pluto at 30,000 mph. Winter. New Horizons. Only one can be first. The race is on....

Find out more about the New Horizons mission at http://pluto.jhuapl.edu . Kids can learn amazing facts about Pluto at spaceplace.nasa.gov/en/kids/pluto.

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

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.



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