

The Skyscraper

Vol. 34 no. 2

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 February 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
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The Skyscraper

February 2007

February Meeting with Dr. Steve Schneider

FRIDAY, FEBRUARY 2ND AT NORTH SCITUATE COMMUNITY CENTER



DARK MATTER AND FIVE COLLEGE OBSERVATORY

Dr. Schneider headed a project to present a new view of “nearby” galaxies, probing the way that galaxies cluster together over distances of hundreds of millions of light years. The map for the first time covers the whole sky including the part ordinarily hidden by our own galaxy, the Milky Way, and reveals a complicated network of galaxies surrounding us.

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 2007

2

FRIDAY

7:30PM

February Meeting
North Scituate Community
Center

3

SATURDAY

7:00PM

Public Observing Night
Seagrave Observatory,
weather permitting

10

SATURDAY

7:00PM

Public Observing Night
Seagrave Observatory,
weather permitting

17

SATURDAY

7:00PM

Public Observing Night
Seagrave Observatory,
weather permitting

24

SATURDAY

7:00PM

Public Observing Night
Seagrave Observatory,
weather permitting

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President's Message

Dave Huestis, President

Well, Winter has finally arrived. And with somewhat of a vengeance. Most of us knew we couldn't get away with the mild weather for too long.

So I feel I must repeat my Weather/Snow Cancellation Update!!!

Rhode Island broadcasters have teamed up to provide more comprehensive notification of weather/snow cancellations or delays.

Once I provide the cancellation notice to a central system, participating broadcasters will provide the notice.

Generally, the television stations will only provide cancellations for a group like Skyscrapers on their web sites. The radio stations will broadcast the cancellation notice over the air.

Here is the list of participating broadcasters. I have not verified where the cancellation notice will appear on any of the television web sites. They obviously all have different formats. Check out your favorite station in advance to see where the closings, etc are posted.

In addition, for those of you who have email, should I have to cancel a meeting, I will send an email as soon as I make the go/no go decision.

Don't forget that our February and March meetings will be held at the North Scituate Community Center.

Elections are coming up in April for seven Executive Committee Members and one Trustee. If you are running for a second term or would like to be considered for an office in the Skyscrapers organization, please see Bobby Napier at the February monthly meeting. Nominations will be presented at

the March meeting, so don't delay in your decision.

Dr. Steve Schneider from the University of Massachusetts Department of Astronomy will talk about mapping the distribution of galaxies.

As many of you may be now aware, Skyscrapers will be celebrating its 75th anniversary on May 5, 2007. We are currently in the planning stages to properly commemorate this milestone achievement. There'll be a banquet, special lectures and 75th anniversary "collectibles".

As Skyscrapers' historian, more than a year and a half ago I began researching and writing a 75 year history summary of the Skyscrapers organization that we plan on publishing in book form (similar to that of our 25 year book published back in 1957).

We are reserving some space in this work for contributions from our members. We do plan on reprinting the "How I Became an Amateur Astronomer" articles that some of you contributed to the newsletter.

I would further like to ask for some contributions of some short stories of your observing experiences, etc while a member of Skyscrapers. I'm sure some of you long-time members may also have funny story or two you can relate. Or even a brief anecdote.

Please email your contributions to me at the address below, or if you prefer snail mail, send them to my attention at our Seagrave address. The deadline for submissions is April 6, the date of our April monthly meeting.

I look forward to hearing from you.

Start getting excited as Skyscrapers celebrates 75 years of stargazing.

Book and Video Reviews CONCERNING COMET IMPACTS WITH THE EARTH

JERRY JEFFREY

The following article and others in the future concerning bodies impacting the Earth, and in the SF literature other planets as well, are sequels to the three articles about the science of impactors published in *The Skyscraper* in the fall of 2006. I will begin with a book that was published by the author as true science.

Ragnorok; The Age of Fire and Gravel; by Ignatius Donnelly copyright 1883.

Ragnorok was the first book to address in a scientific (sic) fashion possible impact events as

major earth changing catastrophes.

Its major premise was that a comet or comets impacted the earth in prehistoric times but after humans were here and caused the effects known as drift (we now call them tillites). Drift is a pile of rocks or gravel that we now attribute to glaciers. Donnelly's big point was that these drifts did not occur all over the Earth but essentially in that quarter of the Earth encompassed by a triangle from the North Pole south to about Colorado thence east to about France and then North back to the pole and were caused by

ejecta from a large impact.

We now know this to be truly the effect of global glaciation caused by ice sheets covering essentially the entire Earth at some point in the remote past about 700 to 800 million years ago. These ice sheets laid down numerous piles of striated rock and gravel over much of the Earth and left their effects even in RI.

As a large part of his proof that the drift was caused by impacts Donnelly used myths from the dawn of man, which depicted several Earth destroying events from the sky that could be interpreted as comets. He actually got most of the effects right for a large impact but his proof was from a different event(s). At the end of the book he even went so far as to say that one or more of these events destroyed the mythical city state of Atlantis.

The word Ragnorok has been used in the genre to mean the end of everything usually caused by a massive war as in Operation Ragnorok in the book Bolo by David Weber. Ragnorok is also the title of several war playing games.

This is a good read, but is only available on the internet since the book has been out of print for over a hundred years. The science is a little sketchy. If anyone wants to read it I have downloaded and printed a complete copy and will loan it out.



There is a trip tentatively planned for the week of **May 12-19, 2007** (Sat-Sat). We would fly into Phoenix and drive rental cars to a hotel in Tucson.

Possible options being researched include: Kitt Peak National Observatory • Meeting and observing with David Levy • University of Arizona Observatory • Tombstone • Kartchner Caverns • Bisbee Mining & Historical Museum • Observing with Tucson Amateur Astronomy Association • Pima Air & Space Museum • And more

Hotel rates, airfare and car rental rates are in the beginning research stages at the moment. As has been done in the past, we are trying to get the best rates possible for our group (preferably around \$1000.00 per person).

If interested please see Dolores Rinaldi at the February meeting to sign up.

A meeting will be held in the near future with all interested parties to go over details.

**RHODE ISLAND
BROADCASTERS ASSOCIATION
INCLEMENT WEATHER
CANCELLATION PROGRAM**

2006-7 PARTICIPATING MEMBERS

TELEVISION

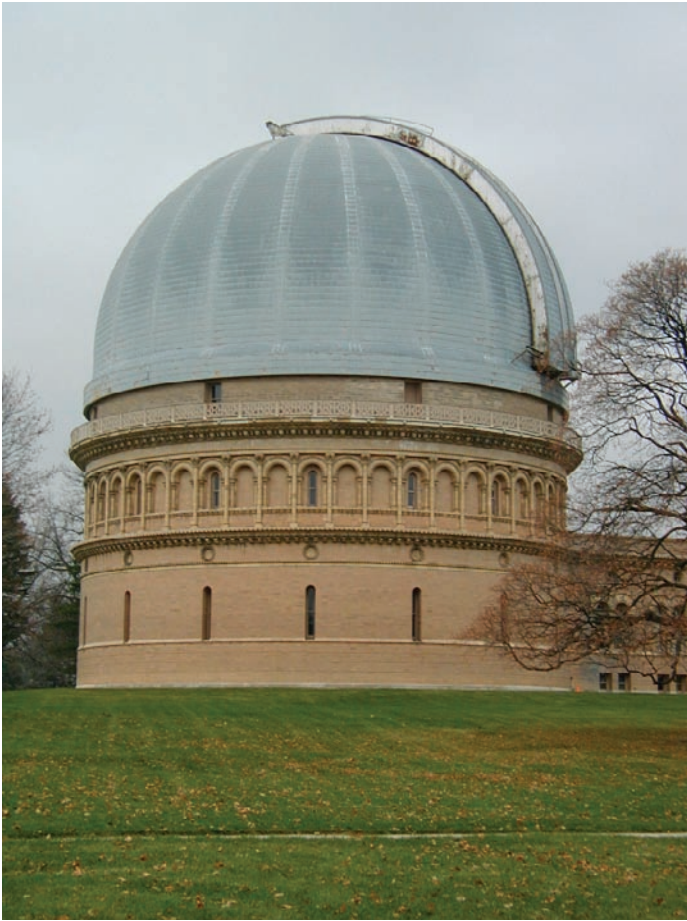
WLNE ABC6 www.abc6.com	CW28 www.cw28tv.com
WJAR NBC10 www.turnto10.com	RI PBS / Channel 36 www.ripbs.org
WPRI CBS12 www.wpri.com	WNAC FOX64 www.fox64.com

RADIO

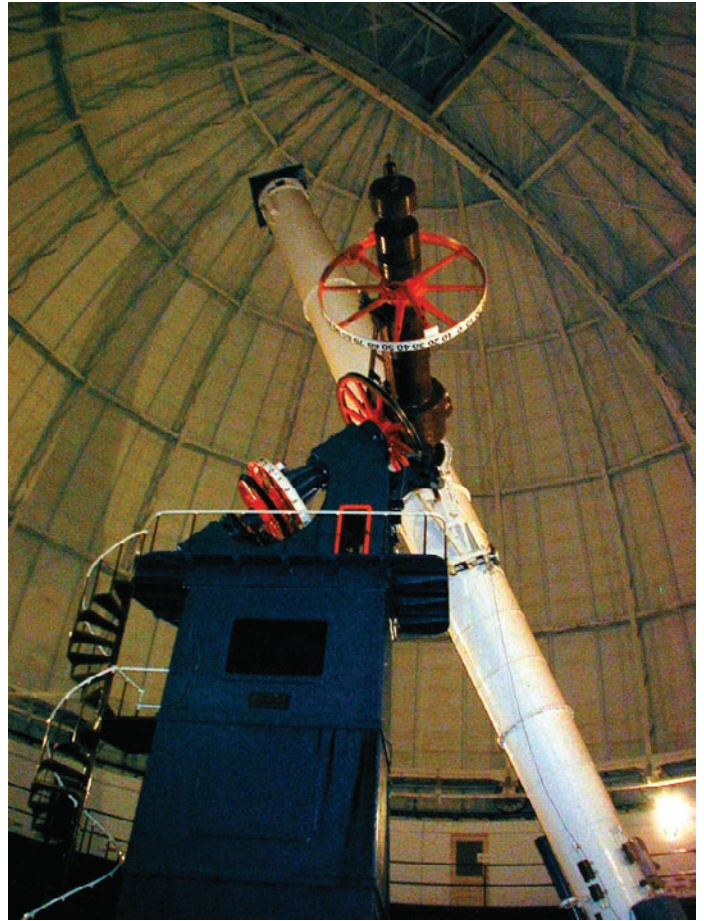
FM	AM
92.3 WPRO www.92profm.com	1590 WARV www.warv.net
93.3 WSNE www.wsne.com	630 WPRO www.630wpro.com
94.1 WHJY www.whjy.com	790 WSKO www.scoreamfm.com
95.5 WBRU www.wbru.com	920 WHJJ www.whjjam.com
98.1 WCTK www.wctk.com	1110 WPMZ www.poder1110.com
99.7 WSKO www.scoreamfm.com	1180 WCNX www.wcnx1180.com
100.3 WKKB www.latina1003.com	1240 WOON www.onworldwide.com
101.5 WWBB www.b101.com	1290 WRNI www.wrni.org
102.7 WAKX www.festivaljazz1027.com	1450 WLKW www.wnbh.com
105.1 WWLI www.litrock105fm.com	1540 WADK www.wadk.com
106.3 WWKX www.hot1063.com	1590 WARV www.warv.net

Yerkes Observatory Photo Essay

Glenn Jackson



Yerkes 41" Observatory is under going a transition from research to educational outreach, School children, deaf students, and blind students are being introduced to astronomy. 1892-2006



Yerkes 41" refractor with Alvin Clark lenses. The largest refractor in the world.



Richard Dreiser of Yerkes looks inside of the photo plate changing cabinet.



Room dedicated to the memory of Wm Morgan. Morgan, working at Yerkes definitely proved that the Milky Way Galaxy had spiral arms. 1906-1994



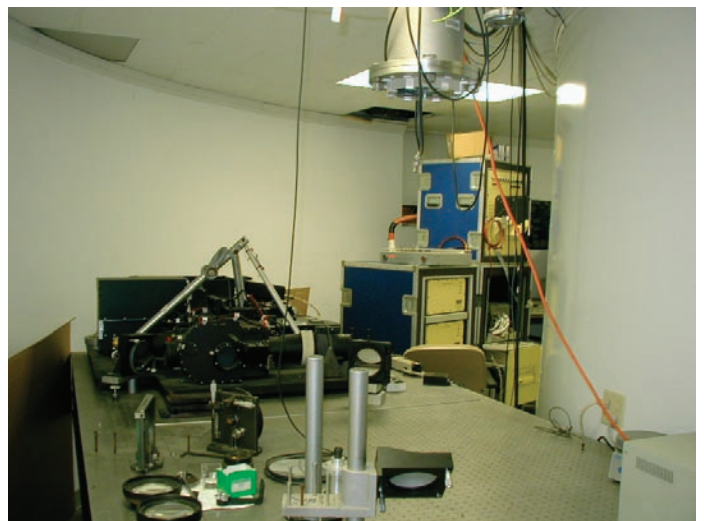
Moon globe where individual plates of moon objects were projected onto the globe for a "Consolidated Moon Atlas" by Gerard Kuiper



Base of the Yerkes 41" telescope. The opening was designated a "Bomb Shelter" and stocked with food and water during the Cold War.



The Yerkes Library has many original early astronomy related books. Rich hold an original copy of Barnard's Atlas of Selected Regions of the Milky Way. Original version had actual photo's glued into the book.



What ever happened to "Star Wars"? It's in the basement of Yerkes. Adaptive mirror assembly on left was to be hoisted into the shuttle. Computer support is in background.



Also being constructed in the basement at Yerkes is H.A.W.C. A 2.7 meter infra-red High resolution Airborne Wide band Camera, which is being built by the University of Chicago. The HAWC will fly on the NASA S.O.F.I.A. 747 upon completion.



Chandra won the 1983 Nobel Prize for Physics. "Chandraekhar Limit" "stars with mass greater than 1.4 X Sun will collapse past the stage of white dwarfBlack Holes"



The building and its contents constitute a fascinating example of the architecture and technological accomplishments of the late 19th century.



Research at Yerkes:

Edward E. Barnard photographic atlas of the Milky Way is a classic work.

Sherburne W. Burnham measured orbits of stars around each other.

Otto Struve made major contributions in the field of stellar spectroscopy.

Bengt Stromgren added greatly to our understanding of interstellar gas clouds

Gerard Kuiper discovered carbon dioxide in the atmosphere of Mars; he also discovered the fifth moon of Uranus, and the second moon of Neptune.

W. Albert Hiltner discovered that interstellar dust particles cause a slight polarization of starlight.

Subrahmanyan Chandrasekhar, "The Chandrasekhar Limit". He won the Nobel Prize in Physics in 1983 for his theoretical studies of the physical processes concerning the structure and evolution of stars.

William W. Morgan established precise classification systems for the spectra of stars and the forms of galaxies., Morgan deduced the spiral nature of the Milky Way Galaxy.

George Ellery Hale invented a spectroheliograph when he was a student at MIT, before Yerkes Observatory even existed. Hale brought the spectroheliograph with him when he came to Yerkes.

Frank Schlesinger, developed the techniques used here and everywhere else for fundamental photographic measurement of stellar distances (parallax).

The Astrophysical Journal was founded at Yerkes by Hale and James Keeler in 1895, and it is even still an important journal.



Yerke's Observatory financed by Charles Yerke who made his fortune in financing Chicago's Electric Rail System. He bought into the idea that he would be remembered for all times for building the "The Largest Telescope In The World"

A Great Big Wreck

By Dr. Tony Phillips

People worry about asteroids. Being hit by a space rock can really ruin your day. But that's nothing. How would you like to be hit by a whole galaxy?

It could happen. Astronomers have long known that the Andromeda Galaxy is on a collision course with the Milky Way. In about 3 billion years, the two great star systems will crash together. Earth will be in the middle of the biggest wreck in our part of the Universe.

Astronomer John Hibbard isn't worried. "Galaxy collisions aren't so bad," he says. A typical spiral galaxy contains a hundred billion stars, yet when two such behemoths run into each other "very few stars collide. The stars are like pinpricks with lots of space between them. The chance of a direct hit, star vs. star, is very low."

Hibbard knows because he studies colliding galaxies, particularly a nearby pair called the Antennae. "The two galaxies of the Antennae system are about the same size and type as Andromeda and the Milky Way." He believes that the Antennae are giving us a preview of what's going to happen to our own galaxy.

The Antennae get their name from two vast streamers of stars that resemble the feelers on top of an insect's head. These streamers, called "tidal tails," are created by gravitational forces—one galaxy pulling stars from the other. The tails appear to be scenes of incredible violence.

But looks can be deceiving: "Actually, the tails are quiet places," says Hibbard. "They're the peaceful suburbs of the Antennae." He came to this conclusion using data from GALEX, an ultraviolet space telescope launched by NASA in 2003.

The true violence of colliding galaxies is star formation. While individ-



This GALEX UV image of the colliding Antennae Galaxies shows areas of active star formation, which is not in the tidal tails as one might expect. magnetic North Pole, where space weather is of greatest concern.

ual stars rarely collide, vast interstellar clouds of gas do smash together. These clouds collapse. Gravity pulls the infalling gas into denser knots until, finally, new stars are born. Young stars are difficult to be around. They emit intensely unpleasant radiation and tend to "go supernova."

GALEX can pinpoint hot young stars by the UV radiation they emit and, in combination with other data, measure the rate of star birth. "Surprisingly," Hibbard says, "star formation rates are low in the tidal tails, several times lower than what we experience here in the Milky Way." The merging cores of the Antennae, on the other hand, are sizzling with new stars,

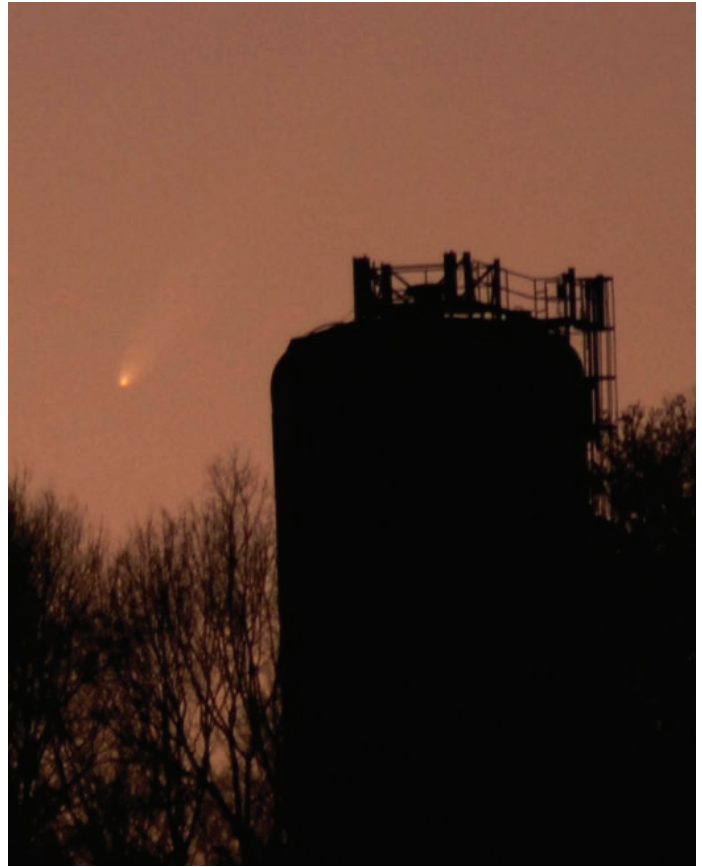
ready to explode.

So what should you do when your galaxy collides? A tip from GALEX: head for the tails.

To see more GALEX images, visit www.galex.caltech.edu. Kids can read about galaxies and how a telescope can be a time machine at spaceplace.nasa.gov/en/educators/galex_puzzles.pdf.

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

Comet McNaught



Left: Tracey Haley; January 11, 2007; 5:13pm; Kent View Drive overlooking Scituate Reservoir Imager: Canon Rebel XT DSLR Shooting Mode: Program AE TV (Shutter Speed) 1/20sec AV (Aperture Value) 5.6 Exposure Compensation -1 1/3 ISO: 800 Focal Length: 300mm White Balance Mode: Auto. Right: McNaught from the hills of Connecticut on Jan 10 by Bill Guca.



Although it didn't hit mainstream media, the "brightest comet in 30 years" appeared briefly in our sky during the last few days. Its sudden brightness caught astronomers somewhat off-guard.

The attached image was taken from the roof of Clay Science Center just after sunset of January 10th, in difficult conditions with a tripod-mounted telephoto lens. As my wife Elizabeth said, "It's nice to have the photo, but there's nothing like the beauty of seeing it through binoculars." One had to share the sight to fully appreciate Liz's good point. (It was indeed wonderful to see, even through clouds.)

The day before, I'd been on duty for the afternoon study hall. Browsing the Web that period (thanks to the new wireless link) I was astonished to learn how the comet had erupted. Minutes later, some students and I managed to see it, using binoculars from the little side room, right there on Clay's 2nd floor.

The following dawn, I came in to see it at sunrise. The comet and tail were actually visible through binoculars even at the moment of sunrise. But photography wasn't possible until the following sunset, when conditions were still difficult. At least my wife and kids were then able to see it with me.

I don't know if this image will reproduce in any useful way, but I'll be delighted if you can use it somehow. (Probably it will look better on a WWW page than it would printed.) In any case, if you can ever use it, I can supply more details if you want, even including some astronomy projects & collaborations I'm working on, as a new teacher here.

Cheers, -John Briggs

January Meeting Notes

Dave Hurdis, Acting Secretary

January 5, 2007, North Scituate Community Center

Featured Speaker: Mr. **Noah Petro**, a doctoral candidate in the Brown University Department of Geological Sciences, presented a fascinating talk entitled "Lunar Geology and Upcoming Lunar Missions." He stated that, due to its lack of water, atmosphere, and tectonic activity, the surface of the Moon is now very



much as it was when it formed over four billion years ago. Early volcanic activity and occasional impacts have been the only processes to modify the surface of the Moon from its primordial state. Therefore, it holds a unique, and nearly complete, record of the early Solar System in the vicinity of Earth's orbit. He described four upcoming (2007-2008) lunar missions that will investigate lunar geology in unprecedented detail.

Business Meeting: President Huestis called the business meeting to order at 9:05 p.m.

Secretary's Report: The Secretary's minutes of the December meeting were approved as published in the January issue of *The Skyscraper*.

Treasurer's Report: The Treasurer's Report was approved as published in the January issue of *The Skyscraper*.

Trustees' Report: Trustee **Richard Arnold** requested that members update their email addresses with him, because he receives notifications of delivery failure whenever he sends out notices about Saturday night public observing. He requested volunteers to help move the new dome on Saturday, January 6. Trustee **Tracey Haley** stated that the parking lot is very muddy and will need low places to be filled in. Also, it was requested that members not drive their cars into the courtyard (inside the stone wall). It's so muddy that the lawn would be damaged.

Upcoming Speakers: First Vice President Glenn Jackson pointed out that the list of upcoming speakers is posted in the calendar section of our web site. The speaker for the February 2 meeting will be Dr. Steve

Schneider of UMass, who will talk about "Dark Matter."

Librarian: Member Dan Lorraine has donated two books to the library: *Observing Variable Stars*, 2nd Ed. by David H. Levy, and *Guide to the Stars* by Leslie C. Peltier.

Historian: No report.

Old Business: The pending motion to admit Charles Piso into membership was passed.

New Business: The following applicants for membership were announced: **Chris Chapman, Kathy Cyr, Frank Dubeau, Bob Forgiel, David Hintz** and **George Strayer**. The motion to admit them will be voted upon during the February meeting.

Good of the Organization: **Gerry Dyck** reported that he has completed a slide show in honor of next May's 75th anniversary of Skyscrapers' founding. Dave Huestis announced that a meeting to plan the 75th anniversary celebration will be held Thursday, January 11 at Seagrave Observatory.

Presidential Announcements: President Dave Huestis made several announcements:

(1) The February 2 meeting will be held in the North Scituate Community Center.

(2) Cancellations due to inclement weather would be announced on the local radio stations listed in the January issue of *The Skyscraper*.

(3) **Bob Napier** has agreed to chair this year's Nominating Committee. The slate of candidates will be presented at the March 2 meeting.

(4) **Bob Horton** has cleaned up the anteroom. He and **Rick Lynch** are working on creating a display of Skyscrapers history for that space, and would welcome help.

(5) Members of the Scituate Historical Society have offered to help with the archiving of old documents in our possession.

(6) The Executive Board will meet on Friday, January 19 at Seagrave Observatory.

TREASURER'S REPORT

Al Schenck, Treasurer

April 1, 2006 - Jan 22, 2007

INFLOWS

astroincome	
Astroad	90.00
astrobanquet	1,615.00
astrogrille	328.15
astroraffle	1,176.00
astroregistration	1,978.00
TOTAL astroincome	5,187.15
Bookincome	750.00
cookoutinc	441.00
donation	
Collationdonation	37.00
Other donation	152.57
TOTAL donation	189.57
dues	
Contributing	986.00
Family	950.00
Senior	181.00
Other dues	2,080.00
TOTAL dues	4,197.00
Interest Inc	50.47
magincome	
Astronomymaginc	267.95
skytelmagincome	494.25
TOTAL magincome	762.2
magsales	11
Starparty	425
TOTAL INFLOWS	12,013.39
OUTFLOWS	
astroexp	
Astrocafer	1,170.00
astrogrillexp	129.69
Astroprinting	136.21
Astroreception	259.78
Astrorefund	34.00
Astrorestroom	110.00
Astroshuttle	25.00
Astrosupplies	148.00
Hallrental	150.00
Raffle	5.00
Tentrental	500.00
TOTAL astroexp	2,667.68
bldgandgrounds	140.00
Bookexp	802.50
Clarkproject	300.00
clubsubscription	60.00
collation	243.51
Cookoutexp	503.13
Corporationfee	20.00
Discretionary	25.00
Insurance	
Other Insurance	2,322.00
TOTAL Insurance	2,322.00
membersubscriptions	
Astronomymagexp	238.00
Skytelexp	560.15
Other subscriptions	34.00
TOTAL subscriptions	832.15
Newsletter	8.58
Portajohn	100.00
Postage and Delivery	6.63
Stevebellfunction	99.59
Trustexp	200.00
Utilities	
Electric	128.61
Propane	49.86
TOTAL Utilities	178.47
TOTAL OUTFLOWS	8,509.24
OVERALL TOTAL	3,504.15

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