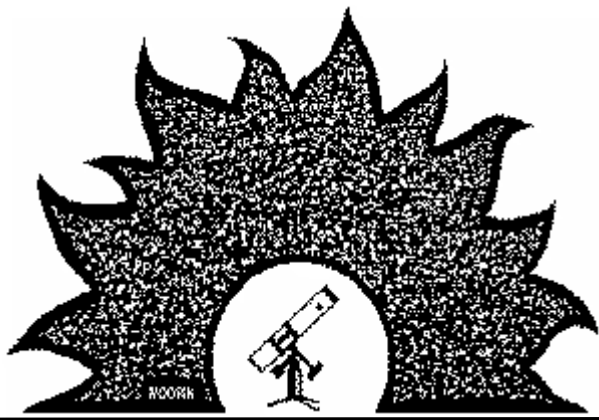




PAStimes

Phoenix Astronomical Society
www.pasaz.org

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PHOENIX ASTRONOMICAL SOCIETY — ESTABLISHED 1948

No January Meeting

Because of the Social at the end of January, there is no meeting on the first Thursday of January.

The plans are almost finalized for the Social. Those of you who are

getting a printed copy of this newsletter should find an enclosed 2 page letter from Terri Finch explaining the what and the where of the party.

Those of you who get the newsletter electronically need to go the downloads page of the website and download the file named "PAS Social & White Dwarf."

Botanical Gardens Star Party December 9

By Jeff Hopkins

I arrived around 5 PM. None of the others were there yet. Shawn was nowhere to be seen. I met a young lady named Jane who is staff. She helped greatly. The area they wanted the telescopes was beyond the pavilion and on the walkway through the garden. There was no way we could drive anywhere close to the area. Jane provided some motorized carts to help move the equipment. Sam showed up then Rod and Don.

The actual star party went well. I estimate over 100 looked through my scope. We looked at the Pleiades (M45), M31 and

M42. I had 50 handouts and all but a couple were left. Most observers were couples and I gave one handout to each couple. Rosalie was with me and helped. Jane came by a couple of times to look through the telescopes. She seemed interested and excited.

The night was lovely, very clear and fairly warm. There were fireworks not too far to the south (baseball game). The area was fairly dark and mostly shielded from any bright lights. Shawn wandered by a couple of times and seemed to be enjoying her wine. When it came time to leave she was nowhere to be found. Again Jane came to our rescue. She provided a couple of hand

carts and even carried equipment herself. Without her things would have been much more difficult. If you should contact anyone there, please be sure to tell them what a great job she did.

By Don Boyd

This was indeed a good party. Everyone had a great time. I showed the Pleiades, M42 and the Double Cluster. I think the crowd favorite was the Pleiades...mainly because my scope was able to show the whole cluster in the field of view. I would estimate we had around a hundred or so visitors in the 3 hours we were setup.***

Theta Orionis eclipse December 1/2

By Jeff Hopkins

The eclipse of theta A Orionis went as scheduled late Friday/early Saturday. Gene Lucas and I spent some 5 hours braving the cold in shifts to get around 300 BVRI images of theta Orionis.

It will be several days before the data is reduced, but for those interested an out-of-eclipse and in-eclipse image taken with a V filter can be seen at: <http://www.hposoft.com/Astro/TOE.JPG>

The images were 0.5 second exposures through a V photometric filter using a 12" LX200 GPS and modified DSI Pro CCD camera with Meade AutoStar software.

Both theta A and B can be seen in eclipse. Theta B eclipses around every 5 days where theta A eclipses around 65 days. For comparison look at theta D before and during eclipse and compare to theta A. Out-of-eclipse theta A and D are both around 6.7 magnitude.

If any one else observed this I would be interested in hearing from them and if they have data, see the data. Gene and I plan to attempt the next eclipse in February in hopes of getting a more complete set of light curves. If anyone would like to learn more about CCD photometry and give us a hand, it could prove beneficial to all. Doing all night photometry in revolving shifts makes work much easier.

PAS December Meeting Review

By Terri, Prez

We had an awesome meeting in December. Our guest Speaker, Chet Schuler, was absolutely fantastic! The meeting began with a few announcements. I was telling everyone about the upcoming PAS Social on Jan 27th. For it we need 3 door prizes. What would you donate to be a door prize? An astronomy related little item, such as a calendar, a game, a photograph, lithographs, or some other really cool item that doesn't cost you much but would be really nice to award someone for their efforts at the social for the several games and item we have going on at the party. So, if you would like to donate an item, we would appreciate it, and I need to know you are donating something for this cause, as soon as possible. We need an item for the main Door prize. Jerry has agreed to supply this item. I need a prize for the Dart Board Game. Mike has said he can provide one item for this. I need one for a special thing we are having. And we want a few spares. So, if you can help out, tell me today!

I wish to thank Steve Snyder for fetching the awesome sub sandwiches, and to thank Ed, Dave, and Mike for using the funds from the Astronomy department at PVCC to pay for the sandwich.

Mike also brought to my attention that there is an error on the dues sheet, so fairly soon, the new dues sheet will be posted on line. Please download the new copy at your convenience so you have a copy for handing out.

We discussed having or canceling the Adobe MT. Star party on Dec 27th. So far, no one volunteered to help out at that star party. [We heard that there were four people who volunteered to help with this. Thanks to those who did.]

Jerry asked me to talk about the upcoming rocket launch that Saturday. If you are interested in rocket launches, please go to the website to find out when and where they will be <http://ahpra.com/>.

I reminded everyone we do not have a PAS meeting in January. Instead

we have the PAS Social. Please read the info about the social prior to Jan 15th (the RSVP Deadline) so that you can be involved in our party. The location of this year's event will be 10401 N Cave Creek Rd, which is about 1 block south of Peoria.

We also voted, at the meeting, to skip the December Meeting of the Minds. There was just too many things going on this month to hold a MOM, and we only had 2 topics listed, so we decided to skip it until January.

I wish to thank John Pulis for being such an awesome Host. He is so good at having everyone sign in. I want to remind everyone of the importance of signing in. If I already have your address, all you need to do is write first and last name on the sign in sheet. So, current PAS members, do not bother with all the details. However, if you are a new visitor, I request you supply me with everything the page asks for. Why? Because as a newbie to the meeting, I send your name to our editor, and he sends you a current issue of the newsletter, unless there is an email address, in which I add you to the Digest list so you

can receive the next newsletter.

So, then we turned it over to Chet. Chet has a very organized, informative, entertaining presentation for us. He did an excellent job on it and was very energetic. You missed a really good, informative meeting. I wish to thank Chet for doing the presentation. It is really odd, but he said that this was his first ever PAS meeting. He's attended the Meeting of the Minds, almost every month since he became a member, but never attended our meetings. Welcome to our meetings, Chet, we hope to see more of you at all PAS events! And thank you for the fantastic presentation. I totally enjoyed it and i'm sure several others did as well.

The 50/50 raffle was won by Bruce Wurst, who used the funds to join the club. Jerry Belcher donated 3 calendars to the 50/50 raffle, and those were won by three other folks. \$58 were brought in by the raffle and divided. Thank you for the calendars Jerry!

Thank you to all who attended. We hope to see you at the February PAS meeting with Dennis Young as our presentation. ***



Chet Schuler

Space Weather for Air Travelers

By Dr. Tony Phillips

At a time when much of the airline industry is struggling, one type of air travel is doing remarkably well: polar flights. In 1999, United Airlines made just twelve trips over the Arctic. By 2005, the number of flights had grown to 1,402. Other airlines report similar growth.

The reason for the increase is commerce. Business is booming along Asia's Pacific Rim, and business travel is booming with it. On our spherical Earth, the shortest distance from Chicago to Beijing or New York to Tokyo is over the North Pole. Suddenly, business travelers are spending a lot of time in the Arctic.

With these new routes, however, comes a new concern: space weather.

"Solar storms have a big effect on polar regions of our planet," explains Steve Hill of NOAA's Space Weather Prediction Center in Boulder, Colorado. Everyone knows about the Northern Lights, but there's more to it than that: "When airplanes fly over the poles during solar storms, they can experience radio blackouts, navigation errors and computer reboots—all caused by space radi-

ation."

In 2005, United Airlines reported dozens of flights diverted from polar routes by nasty space weather. Delays ranged from 8 minutes to nearly 4 hours, and each unplanned detour burned expensive fuel. Money isn't the only concern: Pilots and flight attendants who fly too often over the poles could absorb more radiation than is healthy. "This is an area of active research—figuring out how much exposure is safe for flight crews," says Hill. "Clearly, less is better."

To help airlines avoid bad space weather, NOAA has begun equipping its GOES weather satellites with improved instruments to monitor the Sun. Recent additions to the fleet, GOES 12 and 13, carry X-ray telescopes that take spectacular pictures of sunspots, solar flares, and coronal holes spewing streams of solar wind in our direction. Other GOES sensors detect solar protons swarming around our planet, raising alarms when radiation levels become dangerous.

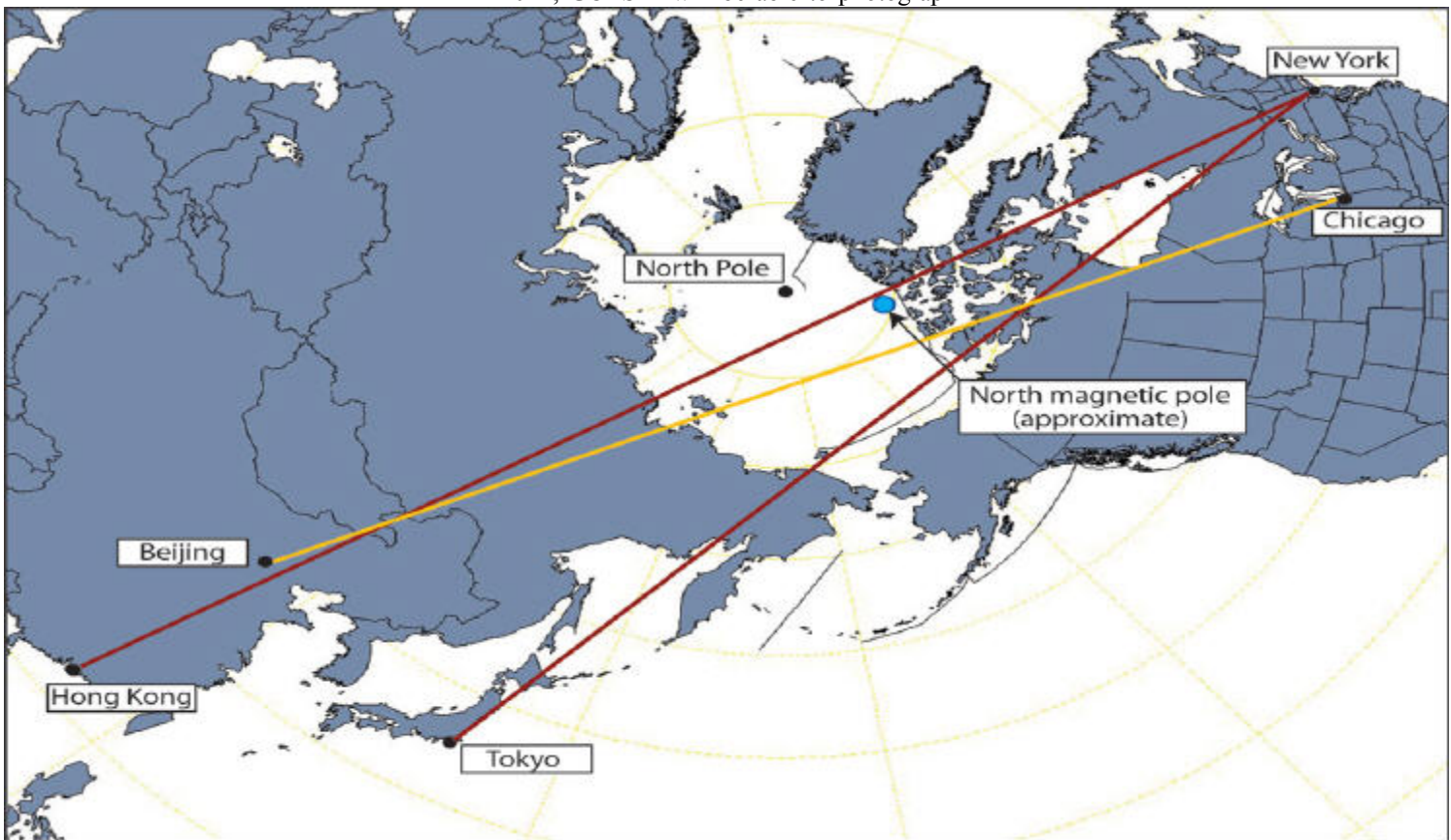
"Our next-generation satellite will be even better," says Hill. Slated for launch in 2014, GOES-R will be able to photograph

the Sun through several different X-ray and ultra-violet filters. Each filter reveals a somewhat different layer of the Sun's explosive atmosphere—a boon to forecasters. Also, advanced sensors will alert ground controllers to a variety of dangerous particles near Earth, including solar protons, heavy ions and galactic cosmic rays.

"GOES-R should substantially improve our space weather forecasts," says Hill. That means friendlier skies on your future trips to Tokyo.

For the latest space weather report, visit the website of the Space Weather Prediction Center at <http://www.sec.noaa.gov/>. For more about the GOES-R series spacecraft, see http://goespoes.gsfc.nasa.gov/goes/spacecraft/r_spacecraft.html. For help in explaining geostationary orbits to kids—or anyone else—visit The Space Place at http://spaceplace.nasa.gov/en/kids/goes/goes_poes_orbits.shtml.

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



The shortest airline routes from the Eastern U.S. to popular destinations in Asia go very near the magnetic North Pole, where space weather is of greatest concern

My New Frankenscope

First off a little description of exactly what i got. It is a Celestron 6 inch Newt on a Meade LXD 75. This not what I really wanted but nobody had a Meade LXD75 6 in Newt without the AutoStar as it has been discontinued by Meade. Woodland Hills Camera in California was willing to put a Celestron 6 inch newt on the Meade mount...so I bought it. There are some things I like about the Celestron and some I don't.

The things I like are:

1. The collimation system seems like it might hold better than the Meade. The Celestron uses a push pull system with no springs and 6 screws, while the Meade uses springs and only 3 screws actually are used for collimation. The Meade is easier to adjust...but I think the Celestron will stay longer.

2. The eyepiece holder unscrews to reveal a t-mount...all you have to do is screw on the adapter for your camera and it is in the correct position for photography.

3. The finder scope adjustment is very easy.

Things I don't like:

1. The focuser only takes 1.25 in eyepieces.

2. The Celestron saddle plate does not have the adjustments that the Meade one has. The Meade plate has height adjusters on each end which the Celestron does not have...this is only a big deal if you are serious about astro photography, and is also easily remedied by buying the Meade plate...which I need anyway to mount the 4.5 in to the mount.

Now on to how the scope performed. In one word awesome. One thing you need to be aware of is that this is still an inexpensive goto mount and it will need some work to get the goto working. Mine had 3 of 4 set-screws not tight. After I tightened these the gotos were very good. Most were in the eyepiece of a 32 mm eyepiece. The mount is very stable. I looked at the moon thru a 4

mm eyepiece and a barlow for 375 power and while the contrast was low...features could be made out and the view was rock solid. The focuser is the best I have ever used...even at that high a power it was solid and stable and did not rock in and out. I also looked at the double cluster and the Hyades. I went in before the Orion Neb and Saturn came up. . The motors move the scope perfectly and are much faster than the motors in my old scope. In the old one the fastest speed was useable with a low power eyepiece...the new one's high speed is almost to fast with the finder and is totally worthless thru the eyepiece. This scope is also much shorter than my old scope 750 mm versus 910 mm. I like this most of the time as it gives a great view of the Pleiades and other large objects. The double cluster looked small in a 32 mm 60 degree eyepiece...and looked good in an 11.8 mm wide field eyepiece.

I am very pleased with the scope.***

Sally Ride Science Festival

By Terri, Prez

11am - 4:15pm Feb 25th features street fair with experiments, food, music, appearance by Sally ride, the first American woman in space, and workshops. For girls in Grades 5-8. Gamage Auditorium, Mill Ave & Apache Blvd, Tempe.\$18 inclues lunch, asugammage.com 1-800-561-

5161.

PAS will need volunteers for this event. Please RSVP with Terri by Feb1, please. Past events have been outdoors, under awnings we bring, showing solar views, showing different telescopes, daytime views of planets or moon if it is available. We usually have tons of handouts, and

about 500+ girls & their families visit our table. We get breakfast and lunch, in most cases. Would love to have you join us for this event. An RSVP is required so that the Sally Ride committe can make you a name tag that says you belong there that day. This is a Sunday. If you can come help, it would be greatly appreciated! Thanks. ***

Leonids Meteor Star Party

By Sam Insana, PAS member.

On the evening of November 18th, 10 people gathered at Mike Marron's place in Carefree for the Leonids star party. Earlier in the day five of us, MikeMarron, John Pulis, Sam Insana, Frank Insana, and Astronomy Professor Ed Rosenthal, went to the Grace Museum in Carefree for a 2 hour tour. It had memorabilia covering the 230 year history of our country. It was a miniature Smithsonian experience. The 101 year old Grace was a treat to meet and I would recommend the tour to anyone.

Then we went on a hike and Mike

showed us Native American Petroglyphs. That evening 5 more people joined us, including Mike's friend Chris, and four astronomy class students from PVCC. Although only a few meteors were seen, there was one fireball that most of us were able to see and enjoy.

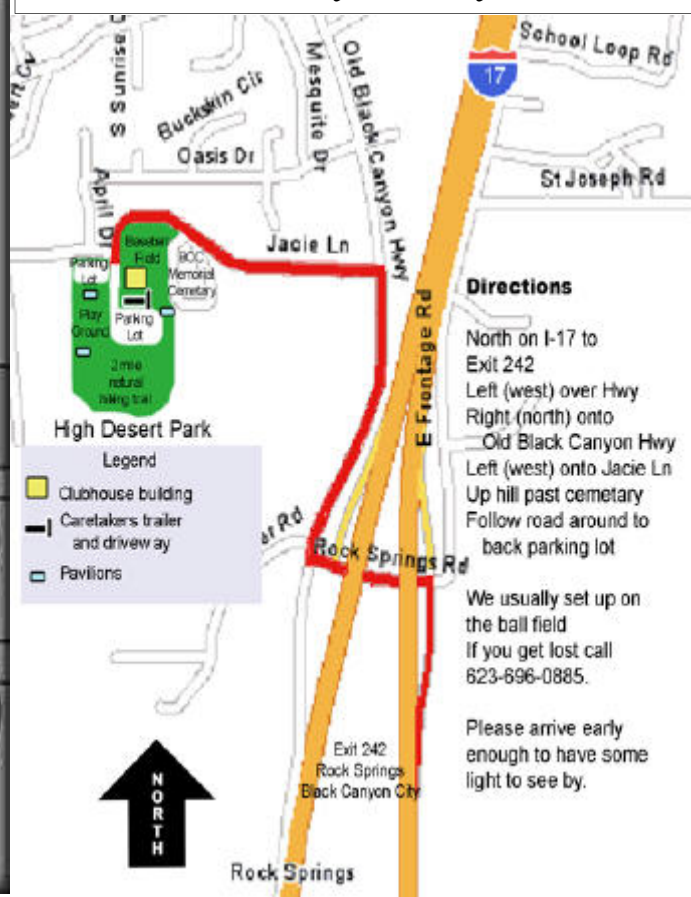
I also set up my 8 inch meade reflector telescope in the dark skies behind Mike's home. We looked at the Andromeda Galaxy, the Ring Nebula, the Orion Nebula, the double open cluster in Perseus, the galaxy pair M81 and M82, and the hard to see M33 spiral galaxy. 4 of us spent the night at

Mike's and I got up at 3 am to see Saturn, with its rings starting to flatten. I also saw the constellation Leo and 3 small meteors in 3 minutes.

That morning Chris made the 4 of us a great breakfast buffet. Frank and Mike went on a hike and obtained an interesting collection of rocks. During the visit to Carefree we saw Mule Deer, Javelina, hawks, and may other interesting wildlife. We all wish to thank Mike for his generous hospitality and the chance to see some really dark skies.



Black Canyon City Site



January 5 Friday	6 pm to 10 pm	Arizona Science Center Heritage Square	PAS Adult Night Out Public Star Party "Topic", Speaker, Affiliation *** Volunteers Needed *** RSVP with Terri Finch to attend or to help out. * Weather Permitting *
January 7 Sunday	2:30 pm to 4:30 pm	Bookman's Back room 8034 North 19th Avenue Phoenix, AZ 85021-5101	PAS Bookman's Free Indoor Telescope Workshop I-17 & Northern - Bookman's back room R.S.V.P. is required by email to Terri Finch or by phone at 602-561-5398 to attend or help out.
January 13 Saturday	Sundown to Moonrise	High Desert Park Jacie Lane Black Canyon City, AZ 85324	PAS 3rd Quarter Moon Star Party All are Welcome! \$2 per car donation request. RSVP with Barbara Hartman to attend. * Weather Permitting *
January 14 Sunday	2:30 pm to 4:30 pm	Bookman's Back room 8034 North 19th Avenue Phoenix, AZ 85021-5101	PAS Bookman's Free Indoor Telescope Workshop I-17 & Northern - Bookman's back room R.S.V.P. is required by email to Terri Finch or by phone at 602-561-5398 to attend or help out.
January 20 Saturday	7 pm to 10 pm	Paradise Valley Comm. College	PAS Meeting of the Minds No children please (business meeting)
January 27 Saturday	5 pm to Late	The Club House 10401 N Cave Creek Rd Phoenix, AZ	PAS Social Members only R.S.V.P. Is required with Terri
February 1 Thursday	7 pm to 9:30	Paradise Valley Comm. College	PAS General Meeting Dennis Young, Sirius Lookers, Sedona Astronomy Club "Collimating a Telescope"

For more details and the latest information please visit the events page of our website

www.pasaz.org

Ads in PAStimes

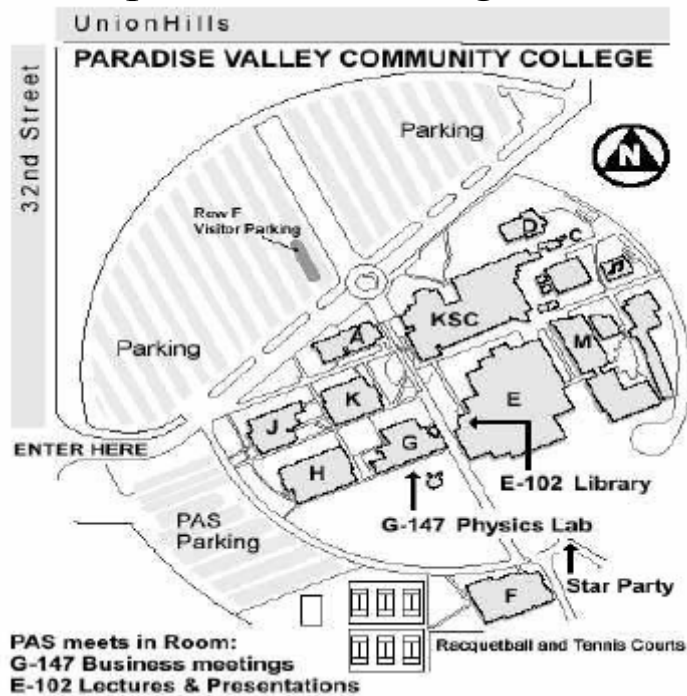
Ads in PAStimes run for a month and may be renewed on a month by month basis, if submitted by deadline, space permitting.
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Don Boyd PASTimes Editor
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To:

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Map To PAS Meeting Location



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Rocketry Liaison	Jerry Belcher	623-328-9290	http://ahpra.org/launches.html

Upcoming PAS Meetings

- February 1 Dennis Young Sirius Lookers, Sedona Astronomy Club "Collimating a Telescope"
March 1st: Don Garnett "A Close Up Look at Our Neighbor Galaxy M33 With the Hubble Space Telescope"
April 5 Larry Wasserman, U.S. Geological Survey "Kuiper Belt Asteroids"

January 15, 2007

Sunrise: 7:30

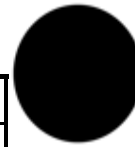
Sunset: 5:44



Full: January 3



Q3: January 10



New: January 18



Q1: January 25

Astro Events

January 3-4: Quadrantid meteor shower (60-200 per hour) but full moon will wash most out. Peak is just before dawn

January 6: Saturn .9° south of Moon

January 16: Jupiter 5° north of Moon

January 20: Venus .8° north of Moon