



Mingo Creek Park Observatory

The Guide Star

Newsletter of the Amateur Astronomers Association of Pittsburgh, Inc.

Founded June 9, 1929 by Chester B. Roe and Leo J. Scanlon

Website: 3ap.org



Nicholas E. Wagman Observatory

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Topic of Next Meeting: NIGHT SKY NETWORK SUPERNOVA

By Bill Moutz

Bill Moutz will do a presentation on Supernova by Night Sky Network at the next business meeting at the Carnegie Science Center on April 18, 2007 at 7:30. In addition to a 20-minute PowerPoint presentation, Bill will show hands-on materials provided by Night Sky Network that are utilized to explain what the universe would be like without supernova. Bill has been a member of 3AP since June 2002. In addition to Bill's participation in public star parties at Wagman, he participates in many away star parties.

This particular supernova toolkit is one of many that the Night Sky Network has provided free of charge to our club to be utilized by members for outreach to the community. These kits are available to all members of the club who are NSN members and any member can join NSN.

EARTH DAY CELEBRATION FRICK PARK APRIL 19TH

By Kathy DeSantis

April 19, is the regional Earth Day celebration at Frick Park. They are interested in interactive exhibitors and invited us. If we sign up soon, we can get the 10 foot x 10 foot tent and 10-foot table they provide. So we would not have to set up a tent or table ourselves. I am wondering if anyone is interested. Maybe some astronomy related hand/face painting (FLo Rusch does that and I know there is someone who does it when the club sets up at CSC Astronomy Weekend). If you have time, look at the link to lesson plans. It will describe some of the possibilities if you are not familiar with them. As well, there are lots of interactive demos supplied by NSN. Maybe some of you with young children would like to work out shifts and bring your families. Consider the tent/table will be put up and taken down by our host. Also Frick Park does something in the fall called Night Explorers and Patty Himes, Frick Park, thought we might be able to bring Telescopes. Frick Environmental Center:

http://www.city.pittsburgh.pa.us/parks/html/the_frick_center.html

UV Beads: Here is a lesson plan:

<http://solar-center.stanford.edu/activities/uv.html>

Here is a source: They are the size and shape of pony beads but go from translucent white to any of a rainbow of colors. Sometimes they are in assorted colors or some suppliers sell them in individual colors.

<http://www.arborsci.com/detail.aspx?ID=1138>

These beads are sensitive to UV light and change from white to a bright array of colors when they are exposed to sunlight or UV rays.



Photo courtesy of NOAA

A TALE OF THE LEFTOVER-WOOD DOB

By Dan McKeel



It took a while to get this written up, but I wished to share an observing session I had. It was a wonderful, clear night on a Wednesday with the just-finished Dob I built, which provided some of the best skies I have had here at home in some time.

Saturn had belts on the globe, the rings were clean and crisp, and Cassini was visible around the rings.

There was a pale, yellow tint to the planet and rings, and the view held pretty steady at about 400x, which was a wonderful verification for the optics. This was one of the finer views I have been given the opportunity to see.

I got to look at Mars, and when the seeing allowed, I was able to glimpse surface detail, which when I looked at Cal sky's previewer, showed features in the right place from what I had seen.

Orion was straight out from my side porch and the 10-inch gave me excellent views of the nebula. There were parts that looked like pulled apart cotton and the nebula stretched out with two wisps forming at 2 o'clock and around 7 o'clock and going out to the limits of the field of view in the 18mm eyepiece I had in.

I had used Polaris to test the inner and outer focus star images before I viewed Orion and the planets. The images were as close to the same in both directions as I could tell with the seeing that night. There was also good snap to focus. Stars were not refractor-like by any means but looked very nice in ten inches of scope.

The 12-inch had to go away—bills you know. I wished I could replace it with a good sized, good optics Dob, but not likely. What would you like for your birthday, dear? I would like money, honey. I got some old parts out and sold them to raise some more cash. So with a few hundred dollars burning a hole in my pocket I was off looking for astro stuff.

Eyepiece? Camera stuff? Books? Decisions, decisions. I glanced at the ATM section at Astromart and hello, there were optics for sale, 10 inches of coated mirror. Wow, is that a secondary too. And a spider and holder for the secondary. Gasp—a 2-inch focuser too. The owner said the

mirror was tested at Woden Optics at close to 1/10th wave. Should I go for it and take a chance? I hesitated for all of 15 seconds, and then an "I will take it" went out. I sent him the cash and waited. The box came and all the parts looked good.

Weekend one:

I got a concrete form from Home Depot for \$8.00 and made a plywood mirror cell. I got carriage bolts, springs, and wing nuts for the cell. I put it together, attached the mirror, and dropped it in the tube. Springs provided the collimation ability for the main mirror. The spider contains a three-screw adjustment for the secondary mirror and needed a plywood ring to stiffen the thin concrete tube enough to tighten the spider.

Weekend two:

I got the freeware Newt program to layout where the secondary mirror goes, and that defines where to cut the large hole for the focuser—measure twice cut once. OK, measure four times. Alright, measure six times, cut once. Ahh, just right. The four or five inches of tube in front of the secondary is good to help with dew and stray light. The tube has mirror, secondary, and focuser. Time to collimate. It looks like it's close. I tested it on the distant trees across the valley. I got the old Barlow and took off the optics end to provide extension above the focuser. I brought the focus point well above the stock focuser requiring an extension to achieve focus with an eyepiece, but it allows my cameras to focus. It was a pain to balance the focus while not causing vignetting. I think I got it, but still need to check it out with flat field images.

Weekend three:

There is a bunch of leftover 1/2" plywood from other home projects and shipping pallets. Looks like an altitude bearing box to me. Two hours, and there is the first pass at the box. Screws no glue. Altitude bearings with Formica from an old Dob that never got finished are added and I'm done for now. Assorted scraps of 1/2" plywood and 2x4s will make the base and a place for the Teflon pads for the altitude bearings to run on. In the back of the garage is the Formica sink cutout I had planned to throw out at every garage cleanup for the last twenty-four months.

Glad I did not. The Formica became the bearing surface for the bottom Teflon pads, and now I had everything but the ground board. More looking in the junk/leftover pile and there at the bottom of a bunch of cutoffs is 1/4" plywood just big enough for the ground board. Three blocks of two-inch thick mahogany from the dumpster, when a lab was renovated at work one year, for three feet, and the mount for the tube was ready to paint. Let's see. I got some gloss black enamel from the porch chairs. Looks good to me! Plus there was just enough for the base. OK, on to the tube. I wanted royal blue. I found a nice gallon of white latex house paint. The tubes should be white, I guess, and it's already in stock! White tube looks good. Alright, that's that.

Weekend four:

Final touches. The altitude box needs a bit more clearance, as there is some drag on it at close to zenith. A bit of belt sander and it's all better. Nice smooth motions from horizontal to vertical. Balance is just about correct. I have an hour to do a quick star test and adjust the mirrors. I wonder if it will hold. One thing about the tube from Home Depot, it's really too thin to be stiff enough without the large altitude bearing box. That thing is almost as heavy as the optical tube itself, and needs a date with a hole saw at some point. It works though, and the OTA and box can be carried with one hand using the LARGE handle I bolted on it. It's not fun but works and the scope and mount base can be moved together when I feel the need. Don't get me wrong—not moving yards, just a few feet. It is by no means an ultra light.

The views are all I had hoped. The scope lives on the porch. That was the goal after giving it some thought. I wanted a quick-look scope of reasonable size. It takes about one minute to set the scope up. It's already at ambient temperature since it's outside all the time. When monsoon season here at the ranch is over, the base can stay in the yard all the time. Hope it does not look to much like a planter. Alas, some risk must be accepted.

The scope is cheap in terms of investment and if lost (I hope not!), I will be in pain. It's a great scope, but I'm not bankrupt, as the total investment for a 10-inch f4.7 telescope is a couple hundred dollars plus less than twenty dollars in hardware total spent, and more room in the garage for more scrap wood cut to size. I did not desire a masterpiece. I wanted basic mechanical goodness and a good mirror.

It is something I would not fear leaving out on the porch. I admit I slapped it together and it was fun to do that way. It came out better than I hoped. Not a bad deal at all.

**UNIQUE MOON PICTURE**

By Robert Anderson



Moon Article by Al Paslow

This is a beautiful image of the Jura Mountain tops in sunlight on the Moon, which surrounds the Bay of Rainbows (Sinus Iridum). This actually creates a phenomenon known as "Golden Handle".

The contrasty view of the Bay in shadow while sunlight illuminates the tops of the Jura Mountain Range is exactly what you have photographed. When visible it looks like a handle, perhaps of a teacup glowing in the light of the Sun—hence the name.

I have watched for this sight since first seeing it in perhaps the late 1960s after reading about it in a book by Patrick Moore on the Moon and it is quite beautiful. It does occur somewhere around the ninth to perhaps the eleventh day old Moon. Conditions must be right to see, as viewing happens at times in the daylight sky, and therefore, isn't visible at the right time for us every month.

Photos of it are even not that common. I found one online a few years back & saved it on my image storage site. One of the best is here:

http://al-paslow.smugmug.com/photos/211922419_8oSRB-XL.jpg

Here's one with labeled features:

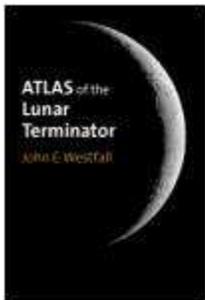
http://al-paslow.smugmug.com/photos/211923608_7ZLBB-X2.jpg

Late last year I provided some information on visibility of the Golden Handle that eventually was posted in the Guide Star. Lastly, here's one from a lower power:

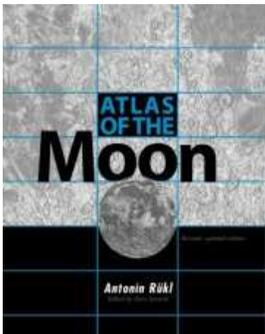
http://al-paslow.smugmug.com/photos/211922535_xLaMF-L.jpg

I believe the next viewing for our area will be about April 15.

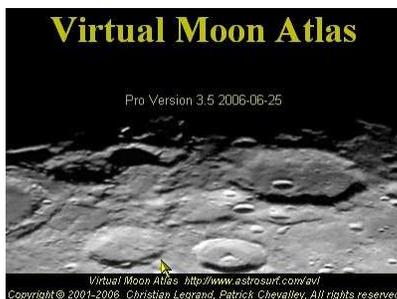
MOON BOOKS



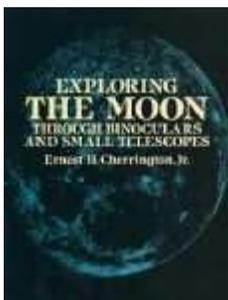
By Bill Hayslip: A couple of Christmas's ago, I got the "Atlas of the Lunar Terminator" by John E. Westfall, which shows sections along the different terminators, and close ups of the craters and an index in the back showing which section (colongitude) to look at any date until the end of 2010.



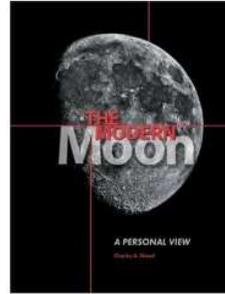
By John Cheng: Rukl Chart Numbers seem to be the standard locators used throughout a number of texts and software packages so having a Rukl Atlas of the Moon in your reference library is a pretty good idea. Rukl also has sections on lunar libration, which truly affect what can be seen at any given time. Rukl's Atlas of the Moon looks to be going out of print — last time that happened, copies were being sold for \$400.00.



The Virtual Moon Atlas— a free software package - has a feature that allows the user to ask what features are on the terminator and the software produces four lists of features rated according to four degrees of interest.

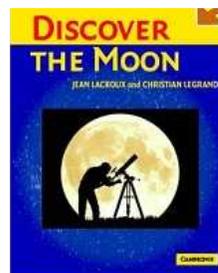


Ernest Cherrington's "Exploring the Moon through Binoculars and Small Telescopes", an inexpensive Dover publication, is organized by days of lunation listing what can be seen to advantage at each day of the lunar cycle.



OK, but now I'll mention a book which really enhances lunar observing— Charles Wood's *The Modern Moon*. It's not an atlas or an observing list, but a breakdown of the lunar surface by regions. Features are described in a way that allows the observer to appreciate the significance of what s/he is observing. When Rilles, Maria, Cones, etc. become signposts helping to understand how Luna was formed, our Moon becomes more than just a nuisance hindering deep-sky observing.

Dan McKeel: In addition to all the other fine books mentioned, here is one also. The book is called "Discover the Moon" written by Lacroux and LeGrand. It starts with basic information about the Moon, some tips and equipment information. Observing is divided into days and features are listed for each day. It works well as a basic guide to peruse the Moon.



http://www.amazon.com/gp/reader/0521535557/ref=sib_dp_pt/105-5531101-9931650#reader-link

The above link from Amazon allows a preview of the book's format.

http://www.lpod.org/?page_id=591

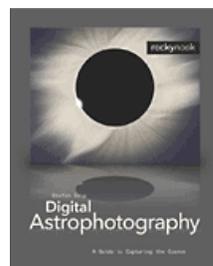
The above link is to Chuck Wood's old Lunar Photo of the Day booklist site.

A Recent Book: Digital Astrophotography Posted to listserver by John Cheng

Many of us have been impressed by the images made by Stefan Seip, an astro-photographer based in Stuttgart Germany. His shots of Comet Machholz against the Pleiades and Venus at inferior conjunction framed by wispy clouds are stunning examples of what digital imaging technology can produce when directed by a discerning eye.

View his work at:

http://www.photomeeting.de/astromeeing/_index.htm



So, even though I'm a committed visual observer, when Seip's "Digital Astrophotography: A Guide to Capturing the Universe" became available (It was first published in German under the title "Astrofotografie Digital") I thought what better photographer to acquaint me with what's become such a huge part of the astronomy hobby. And I was right. As an intro, it's superb.

His book is an attractive soft cover volume, profusely illustrated in color and printed on a heavyweight glossy paper with lots of open margins for notes. It enjoys two clear advantages over some other digital astrophotography texts.

First, it does not limit itself to one particular type of digital tool/photography and two, being published this year, its camera and software references should be up to date.

A short introductory chapter, "Before You Start" addresses some basics and presents some terms and concepts which will figure in later discussions.

Then comes the heart of the book: four chapters, each treating a type of camera available to today's digital astro-imager:

- Compact Digital Cameras
- Webcams
- Digital Single Lens Reflex Cameras (DSLR)
- Charged Coupled Device Cameras (CCD)

Within each chapter, Seip explains:

- The characteristics of the specific camera type and mentions its advantages and disadvantages.
- Mentions the types of photographs suited to it, e.g., only webcams are recommended for planetary imaging while CCD cameras are unsurpassed for deep sky objects.
- Gives tips on purchasing, e.g., webcams with a CCD sensor are better than those with a CMOS sensor for astrophotography
- Recommends accessories, e.g., his chapter on CCD cameras mentions software, autoguider connections, filter wheels, focal reducers, portable power supplies, etc.
- Takes the reader, step by step, through the process of capturing an image and processing it. Understandably, to do this, Seip necessarily uses specific equipment and software in his explanations, e.g., his webcam chapter is geared to the Celestron NexImage camera and Registax software. The CCD chapter utilizes MSB's Astroart software. Adobe Photoshop is used throughout the book.

As Seip progresses from simpler to more complex cameras, the discussion of digital imaging itself becomes more sophisticated and the reader's grasp of the whole topic becomes deeper. Later chapters discuss topics that definitely would be of concern to intermediate level imagers, e.g., thermal noise, spectral sensitivity, format conversion, field flatteners, coma correctors, etc.

I was impressed that the book was able to educate me about a seemingly complicated subject in a painless way. Plus, I kept thinking should I ever decide to take the plunge into digital imaging, I'll have what amounts to a "cookbook" reference.

The book has an internet tie-in to Stefan Seip's website.

The actual images used to illustrate software photo processing techniques can be downloaded, so the reader can duplicate the steps shown in the book. Also three documents, one on how to treat dust and pixel defects, another telling how to remove a satellite trail from an image and the last listing selection criteria for a CCD camera are available as PDF's.

There is an appendix containing some useful information, a glossary (which comes in handy for a visual observer when a term such as "resolution", for example, takes on a definition which differs from the one that applies to telescope optics alone), a list of resources and reading suggestions and last, but not least, entries giving the exposure info and equipment used for each of the images used to illustrate the book.

MASON DIXON STAR PARTY

By Cindy Tavares
YCAS Secretary

2007-2008 Mason Dixon Chairperson
Posted to listserver by Gary Shannon

Hi all you crazy stargazers. Our 2008 star party is July 30th through August 3, 2008. Once again, this is a family-oriented star party. Our keynote speaker is Tom Trusock of the Cloudy Nights forum. Tom is from Michigan and this is the first time he will be speaking at a star party on the East Coast. Tom is a prolific equipment reviewer and is the one of the chief content architects of www.cloudynights.com.

Tom also writes for Astronomy Magazine. Everyone is welcome to go to our website, www.ycas.org to see the events of the 2007 MDSP along with photo galleries showing the fun that was had by all. Just click on the Mason Dixon icon in the upper left hand corner of the YCAS homepage. Hope to see you at the star party.

HIDDEN HOLLOW STAR PARTY

Posted by Fred Klein



Hidden Hollow Star Party will be held May 2-4, 2008 this year, rather than in the fall as usual. Bonus—free talk by Mike Unsold, author of Images Plus that I use for my astrophotos. Visit the following website for more information:

<http://www.wro.org/HiddenHollow2008Files/HiddenHollow08.htm>

OBSERVATIONS

Larry McHenry: Posted to the listserver—solar observations on Sunday 03/03/08: A nice long break in the clouds rolled in shortly after lunch allowing a few hours of solar observing (after brushing the snow off the flip roof). Not much happening in white-light today, just a few small faculae near the limbs. H-alpha in the PST and C8 Daystar showed a much more interesting view. There were a number of filaments visible near center disk on the Sun's Southern Hemisphere. Also, there were several prominences on the Western Limb. The Cak showed scattered areas of plage, mostly in the Southern areas.

Here are three views of the Sun from Saturday, March 3, 2008:

White-Light (PST detuned):

<http://home.comcast.net/~lemsolar/images/pstviews/pst-wl-030308.jpg>

Calcium II (PST CaK):

<http://home.comcast.net/~lemsolar/images/pstviews/pst-cak-030308.jpg>

H-alpha (PST Ha on band):

<http://home.comcast.net/~lemsolar/images/pstviews/pst-ha-030308.jpg>

Image of a Filament made with the Daystar .6A H-alpha & 8" SCT:

<http://home.comcast.net/~lemsolar/images/daystar/ha01-030308.jpg>

For a complete observing report visit: "Big Woodchuck Solar Observatory" (BWSO):

<http://home.comcast.net/~lemsolar/Bwwo1.htm>

Al Paslow: Posted to the listserver March 03, 2008: Leaving work today from Waynesburg and just over the county line into Washington County, PA - I spied a single, very bright sundog at approx 4:40PM. This was one of the most colorful sundogs I have seen in a long time. The object diminished in brightness and color as I pulled over along route 79 to take a picture but it was breathtaking to watch.

Click on the images below to enlarge:

http://al-paslow.smugmug.com/photos/261691344_3P3es-XL.jpg

Here's another shot as the colors greatly diminished:

http://al-paslow.smugmug.com/photos/261691262_Jczb2-XL.jpg

Last shot a little more color and distance:

http://al-paslow.smugmug.com/photos/261691358_FwXwr-XL.jpg

Sundogs are interesting objects to look for being composed of ice particles in the atmosphere, they never wonder far from the sun, and are best visible late in the afternoon. They often can be found actually on both sides of the Sun, so when looking for them, check to the left and right of the "home star".

James Schultheis: Posted to the listserver March 14. I had some time this a.m. to do some observing with my grab-n-go Orion ST-80 on its camera tripod. I usually have to get re-acustomed to its 3.1 inches of aperture as opposed to the 8-inch or the 15-inch that I normally use. I thought I would take a look in Cygnus and observe Alberio. I must say that Alberio is my favorite double star with its bright gold and slightly less radiant azure blue companion. In retrospect, I find the real Alberio more appealing than the "winter" Alberio. I then panned over trying to find the open cluster M-29 but I had forgotten where it was so I ran back into the house and looked at my Deep Sky 600 Map thus burning out my dark adaptation. When I got back to the scope, I did locate M29 and I was for the first time struck with the observation of M29 looking like a stubby dipper and upon further investigation, come to find out that the five hottest stars are giants. I then observed M-11, the Wild Duck Cluster at 45X with the 9mm Nagler I was able to resolve about eight or so stars out of the mist of the 100's. Maybe it was my imagination, but I think I could discern the distinctive V shape in all the stars. I think I spent about 20 minutes observing then I packed er in.

Tom Reiland: Sent to the listserver March 13. I arrived at Wagman about 1 a.m. DLT and prepared the Manka scope for observing. I had two new objects that I wanted to bag before I stopped observing or it clouded up. There is a 14 mag Supernova in NGC 4490 and Nova Cygni 2008. I started my session with M94 and hopped over to NGC 4490 and its companion, NGC 4485. I had very little trouble spotting the SN at 115X and it was easy at 212X. It is still on the rise. I put it at 13.8 mag. I had to wait at least ninety minutes for Nova Cygni to climb high enough to observe it with some ease. I viewed a couple of doubles in Canes Venatici, Struve 1632 and Cor Caroli, one of my favorites. I spent some time on galaxies in Leo, Ursa Major, CVN, Coma B, and Virgo. The highlight of the night was M51, The Whirlpool Galaxy. At 115X, I could get a hint of the spiral arms that give this object its nickname. They were easily visible at 212X. I was able to get a hint of the spiral arms of M101 as well. Saturn's moons are starting to line up similar to Jupiter's, making it easier to pick them out and locating more of them. Titan and Rhea were west of Saturn and Enceladus. Tethys and Rhea were on the east. I started looking for Nova Cygni at 3:20 a.m. and found and confirmed my observation at 3:24 a.m. John Bortle was right, it peaked and is declining in brightness. There is a star nearby that is around 8th magnitude and the Nova is almost a magnitude fainter. I give it a rough estimate of 9.0 or brighter. My chart didn't have magnitudes to help me with my estimate. I finished off my

star viewing with M27, M4, M10, M12 and 61 Cygni. I timed my session well because clouds started to roll in just about the time I quit. Transparency and seeing were both good, which surprised me.

Gary Shannon: Sent to the listserver March 11. Donna and I watched the Space Shuttle launch at 2:28 this a.m. I wasn't sure exactly how bright it would be from here, or even if we would see it. At exactly 2:28 the sky actually turned bright red as the Shuttle came up from the center of the brightness. We watched through binoculars for probably five minutes until it was lost in the stars on the Eastern horizon. What is amazing is that we are over 300 miles as the crow flies away from it.

Jim Klueber: Sent to the listserver March 1. My son and I both saw the solar pillar Friday morning while waiting at his bus stop. It was really impressive from our perspective near New Alexandria—really tall and fiery red and orange. My son said he watched it all the way to school and I was able to watch it in my rearview mirror for 10-15 minutes on my way to work in Monroeville.

James Schultheis: Posted to the listserver March 24. Markarian 421. Conditions did get good last night and Sue and I set out to observe an object that we have never seen before. The object is a blazer or a type of Quasar, Markarian 421, which I located in the 15-inch in a sort of kite-shaped asterism in Ursa Major. Sue also located it in her 12.5-inch using the 24mm Panoptic at 68x. (about 12th mag). This object is about 360 million light years from us and it looked at low power to be a very dim star with a slight haze around it. We then took the magnification up in increments until we got to 680x using the 5mm Nagler with a Barlow in the 15-inch. At this magnification, I was able to see that there is a host galaxy almost touching the blazer and feeding the black hole causing the blazer to "shine". Really not much to look at but pretty far out to ponder what it is.

Wallace Watson: Sent to the listserver March 13. Well, this Newbie can't report anything nearly this impressive, but I did enjoy planet viewing last night from my Edgewood driveway with my 5-inch reflector—including Mars and my first good look at the rings of Saturn (not to mention the nicely lit craters on Luna). Also, I came closer than ever to recognizing the overall shape of Leo in our light-polluted sky.

COOL WEBSITES

Avalanches on North Polar Scarps:

http://www.nasa.gov/mission_pages/MRO/multimedia/mro20080303a.html

Watch images in real time from LandSat:

http://earthnow.usgs.gov/earthnow_app.html?sessionId=91372627c2670dd03c534bb22d6>>a834794904

A new comet was discovered in Perseus @ 10.7 Mag. with

2.6' Coma. It can be observed in a small scope. Finder Chart (From Greg Crinklaw SkyHound) :

http://www.cometchasing.skyhound.com/comets/2008_C1.gif

Carnegie International presenting Life on Mars new and compelling works by artists from around the world.

<http://www.cmoa.org/exhibitions/ci08press/npress163.asp>

Pittsburgh Post-Gazette article:

<http://www.post-gazette.com/pg/08053/859448-42.stm>

"Fighting to Launch Cosmic-Ray Detector" article in New York Times:

<http://thelede.blogs.nytimes.com/2008/02/29/fighting-to-launch-cosmic-ray-detector/index.html?ref=science>

NOSS Satellite Observation:

<http://www.satobs.org/noss.html>

Red goggles:

http://www.telescope.com/control/product/~category_id=optical_aids/~category=accessories/~product_id=05942

APOD March 25 image M81 versus M82:

<http://apod.nasa.gov/apod/>

How big are Earth, Sun, and Moon?

<http://www.uen.org/Lessonplan/preview.cgi?LPid=10987>

First glimpse of star flip:

<http://www.physorg.com/news123256103.html>

Clear Sky Clock now has a new name:

<http://www.cleardarksky.com/csk/faq/0.html>

This is an animation showing all the segments of the Space Station, the modules and the international partners that have helped create it:

<http://www.tietronix.com/anim/MoviePlayer.asp?myMovie=movies/assembly640x360.swf>

Lunar CRater Observation and Sensing Satellite (LCROSS):

<http://lcross.arc.nasa.gov/mission.htm>

A nice article about the February Lunar eclipse was posted at this link under the addendum to Selenology Today #9 link, which is a PDF file:

<http://digilander.libero.it/glrgroup/journal.htm>

Cassini spacecraft to dive into water plume of Saturn moon:

<http://www.jpl.nasa.gov/news/news.cfm?release=2008-040>

CONSIDERATION FOR NOMINATION

AAAP officer election coming in May. If you or anyone you know would like to be considered for nomination as an officer, please contact Bill Yorkshire at 412-793-9552 or email wdyork@aol.com

NEW MEMBERS

Alex Ward
 Michael E. Yeager
 Gregory M. Bruno
 Robert W. Eshbaugh
 Patrick G Laing MD
 Jill J. Yeager
 Beth M. Buccigrossi
 Rae Ann Unger

Welcome to the club!

FOR SALE

Meade Starfinder 8-inch motorized with several upgrades. JMI electric focuser etc., etc.—\$900 or best offer. Phone 724-457-7048 or email:

frankpastin2@verizon.net

Meade 8-inch for sale. F4.5, two eyepieces, excellent condition. Best offer. Call Daryl Lang at 412-856-1185.

After acquiring a new telescope, I've decided to sell my old one. It is an Orion Spaceprobe 130 f/6.9. It is complete with the EQ2 mount, 10mm and 25mm EP's, GSO neutral density filter, 6x30 finder and collimation cap. It has only been used a couple dozen times and it is in perfect shape. I have the manual, but no boxes. I've upgraded it with the following: collimation knobs flocking of the entire OTA, homemade EP holder fastened to the tripod tray.

I am asking \$150 and will deliver within a reasonable distance. This would be a great first telescope or to complement a larger one. I have pictures to anybody interested. Rob Golden rgolden5@windstream.net

IMPORTANT DATES

April 2—Neptune 0.002° south of Moon
April 4—Pittsburgh Regional Science Fair
 Uranus 3° south of Moon
 Venus 5° south of Moon
April 5—Pittsburgh Regional Science Fair
April 6—New Moon 11:55 p.m.
April 11—Mingo Public Star Party
 Wagman Public Star Party
April 12—Mingo Public Star Party
 Wagman Public Star Party
 Mars 1.2° south of Moon 2:32 p.m. 1st quarter Moon
April 13—Mingo Work Party
April 15—Regulus 0.9° north of Moon
 Saturn 3° north of Moon
April 16—Mercury in superior conjunction
April 18—Mingo Work Party
 CSC Membership Meeting
April 19—Earth Day

April 20—Full Moon 6:25 a.m.

April 21—Lyrid Meteor Shower
 WCCC Youngwood Star Party

April 22—Lyrid Meteor Shower
 Earth Day

April 24—Moon at Apogee
 Antares 0.3° north of Moon

April 27—Jupiter 3° north of Moon

April 28—Last Quarter Moon 10:12 a.m.
 Mars 5° south of Pollux

April 29—Neptune 0.3° south of Moon

April 30—CSC Space Out

May 29-June 1—Cherry Springs Star Party

June 28—AAAP Picnic



<http://www.fredkleinastro.com/images/SolarPillar3-24-08.jpg>



<http://www.fredkleinastro.com/images/OrionNebula3-20-08b.jpg>

Courtesy of NASA Night Sky Network

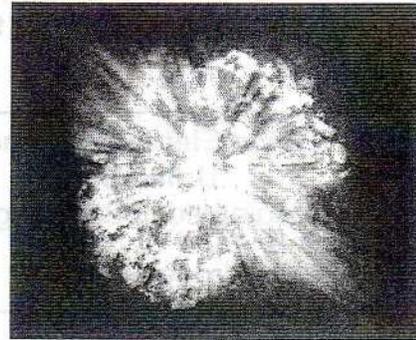
National Aeronautics and Space Administration



SUPERNOVA!

What is a supernova?

One type of supernova is the explosion caused when a massive star dies (exhausts its fuel) and collapses. Only stars that contain more than about 8 – 10 times the mass of our Sun will go supernova. During the explosion, the star will blow off most of its mass. The remaining core will form a neutron star or a black hole. Supernova explosions are among the most energetic events in the Universe, and they forge elements such as calcium, silver, iron, gold, and silicon. Supernovae scatter the elements out into space. These are the elements that make up stars, planets, and everything on Earth – including us!



Will our Sun go supernova?

No, smaller stars like our Sun end their lives as dense hot stars called white dwarfs. Only stars that contain more than about 8 – 10 times the mass of our Sun will go supernova.

Why do stars go supernova?

A massive star continues to fuse atoms at its core into heavier and heavier elements until the core starts filling up with iron. Iron is the end of the line for fusion. So, when the core begins to fill with iron, energy production decreases. With the drop in energy, there is no longer enough energy to hold up the rest of the star. The star begins to collapse. The atoms fall toward the center of the star and smash into each other, forming neutrons that pack closely together until they suddenly stop. This sudden stop combined with the stored up energy released from forming neutrons causes an explosive shock wave to travel out from the core that blasts the majority of the star out into space.

If a star goes supernova near us, is it dangerous?

Only if it's really close. If a supernova happened within 30 light years, Earth might be hit with a dangerous flood of high-energy radiation. But the nearest star likely to go supernova is over 250 light years away. The nearest stars likely to go supernova within the next few million years are Betelgeuse or Antares. Both are over 400 light years away. Another VERY massive star, Eta Carinae, visible in the southern hemisphere, could go even sooner. But it is 7,500 light years away. Earth's atmosphere and magnetic field protect us from most of the high-energy radiation from space.

What's a GRB?



A Gamma-Ray Burst (GRB) is a short burst of very high-energy radiation from space. Astronomers have had a lot of ideas about what causes GRBs. Evidence is mounting that one source is supernovae where most of the gamma-ray energy released in the explosion is focused into narrow beams, with one of the beams pointed in the direction of Earth. Like the difference between a 100W light bulb and a 100W metal cutting laser pointed at you. GRBs have been detected in very distant galaxies, more than a billion light years away, too far away to harm us here on Earth. Like that same laser placed more than twice the distance of the Moon away from us.

What NASA missions study supernovae and high-energy radiation from space?

Swift and GLAST are studying the sources of gamma-ray bursts. The Suzaku, XMM-Newton, and Chandra missions are studying black holes and how elements form inside stars and supernovae.

<http://epo.sonoma.edu/projects.html> <http://suzaku-epo.gsfc.nasa.gov/> <http://chandra.harvard.edu/>

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***Basic Procedure for Paying Dues:**

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