



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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Photo courtesy of NASA

Dr. Kosowsky of Pitt, will discuss Near Earth Objects, or NEOs, the asteroids and comets that swing by Earth's neighborhood; current programs to detect them; impact probabilities; and what to do if we see one heading for us!

He'll also briefly discuss the Large Synoptic Survey Telescope and how it will help in the asteroid detection effort. This is an 8.4 meter telescope to be built in Northern Chile, which is scheduled to go online in 2014. Dr. Kosowsky says it "really is quite an amazing telescope, easily the most ambitious ever built. It will image half of the entire sky to 25th magnitude in 4 bands *every three nights*, producing 20 Terabytes of data each night. This will open up completely new vistas in detecting anything that varies in time, including supernovas, variable stars, gamma ray bursts, along with asteroids, and Kuiper belt objects."

There is a Pittsburgh connection! Pitt, CMU, and the Pittsburgh Supercomputing Center are part of the consortium building the Large Synoptic Survey Telescope, and Pittsburgh is expected to play a major role in analyzing the data coming from the telescope.

ASTRONOMY WEEKEND AT THE CARNEGIE SCIENCE CENTER MARCH 29TH AND 30TH

By Ed Moss—President AAAP

The weekend of March 29th and 30th we have our annual Astronomy Weekend at the Carnegie Science Center. I would like to ask as many of you as possible to attend. This year's speakers and topics will be:

- * MESSENGER Mission to Mercury, "Rediscovery of the Iron Planet" by Dr David Blewett, John's Hopkins University Applied Physics Lab.
- * The Large Synoptic Survey Telescope, "A New Window to the Universe" by Dr Andrew Zentner, University of Pittsburgh.
- * "UFO's Unmasked: The Atmospheric Phenomenon of Red Sprites" by Filmmaker Peter McLeish.

All talks will be in the Digital Dome Planetarium. See the schedule for times at the Science Center. All talks will be on Saturday, March 29th.

Topic of Next Meeting:

Saving Earth from Asteroids and Comets

By Ann Norman



Photo courtesy of JadziaKathryn

Friday, March 14, at 7:30 PM in the Carnegie Science Center main auditorium the AAAP is pleased to present Professor Arthur Kosowsky, speaking on "Near Earth Objects: Addressing the Danger."

All members who can volunteer to help out, please email me at edward.moss@verizon.net. Please let me know if you are bringing telescopes, and whether you have some sort of presentations or displays to bring.

LIGHT POLLUTION COMMITTEE

By Ed Moss-President AAAP

Some members have been talking about a Light Pollution Committee for the AAAP. I have received an email with an offer of help from a light pollution group near Philadelphia. If anyone is interested in helping out with our light pollution problems, please email me at edward.moss@verizon.net.

WAGMAN WINTERFEST PHOTOS

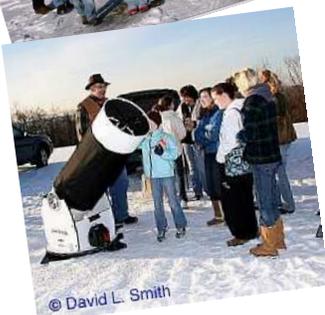
By Pete Zapadka

Thanks to everyone for making the 15th annual Wagman Winterfest another big hit. We had beautiful skies, a wonderful ISS space shuttle pass, a brilliant Iridium flare, and some great views of the winter sky. Starting with the public that arrived around 4 PM., I'd say we probably had about 225 or so visitors. I truly appreciate ALL of you and your wonderful help. The winter star party has brought our club more publicity and notoriety than nearly anything else we have done and when I got home, I got this email from someone who attended. THIS is why we have Wagman Winterfest:

"I hope I'm sending this to the right person. You talked with me and two girls. I'm sorry I'm not sure of your name, but you did tell us that you came up with the idea for the Winterfest. I wanted to thank you for taking the time to answer our questions and taking the time to educate people. It is a wonderful program".

Thanks, Christine. She took the time to look up an email address and send this nice note. I think this speaks volumes about what you folks did under the winter stars at Wagman. So mark you calendars for Wagman Winterfest XVI -- 4 p.m. Saturday, March 7, 2009. By the way, I'll be putting a slideshow together; I'll let you know when it's online. Many, many, many thanks—and may all your skies be clear, dark and filled with stars!

Sue and James Schultheis said, "we had a nice time at Winterfest last night. We enjoyed showing (mostly James did the work) the public the night sky through our grab n' go 8-inch Orion XT. We set up next to Bill Hayslip. It was nice to put a name with a moon-shadowed face! Most of the objects we showed were: NGC 457-ESR Cluster, the Eskimo Nebula, Saturn, NGC 2169-the "37" Open Cluster, M81 and M82 and we ventured onto Luna for a quick look".



NOTES OF INTEREST

From U\$X Federal Credit Union

All members of the Amateur Astronomers Assoc. of Pittsburgh and members of their families are eligible for membership in U\$X FCU. Here's a look at another great service available exclusively from **YOUR** Credit Union.

How to Reduce Frequent Fill-ups

With fuel prices climbing ever higher, many drivers are suffering major financial collisions. Thankfully, many vehicle-associated costs are within your control. You can save a lot of money by making a few changes to the way you drive and use gas.

Consider downsizing

Large, heavy vehicles can burn up to three times as much fuel as small car; so if it's time for a trade-in, consider a vehicle that is built to get good gas mileage.

Maintain your vehicle

Preemptive maintenance not only makes for a safer, more secure ride, but keeping all your vehicle's parts in tiptop shape will extend fuel usage over time.

Drive smart

Before taking off, look for unnecessary, heavy objects you may be carrying both on the exterior and interior of the vehicle.

Drive less

Reduce unnecessary trips by combining errands, and bike, walk, use public transportation whenever possible and carpool.

Other ways to save

- * Chart your course carefully
- * Turning the car off rather than idling
- * Warming up newer vehicles
- * Use cruise control on the open road
- * Coast down hills
- * Accelerate slowly when leaving stoplights
- * Drive the speed limit
- * Roll down the window at lower speeds

Smart Financing with U\$X Federal Credit Union

The Fed has recently **SLASHED** interest rates and so have we. If you've been putting off purchasing a new or used vehicle, now is an excellent time to trade-in that old "gas guzzler" and buy a more fuel efficient model. U\$X FCU has interest rates as low as **3.75% APR*** for new and used vehicles. Get Pre-approved for your vehicle loan and become a "cash buyer" and shop for the best possible deal on your new vehicle knowing you're getting a great interest rate from your credit union

To join the credit union and apply for your new or vehicle loan, please visit our website, our Cranberry Twp branch office location or call one of our member service representatives for assistance at (724) 776-3550.

*Annual Percentage Rate. Interest rate given based on credit worthiness, other rates and terms available.

BOOK REVIEWS

By Mark Schomer



I just finished reading "Seeing In The Dark" by Timothy Ferris. I must say this is one of the most enjoyable books I've ever read. First of all, it is a book about Astronomy; however, it is written like a novel, which might explain why it is such an enjoyable book. The author weaves his own personal experiences with expert commentary from lifelong amateurs to professional astronomers. You not only get an education from this book; you also get that same feeling you get when reading a good novel of not being able to put the book down. There is also a mention of James Keeler at Allegheny Observatory in Pittsburgh providing observational evidence to support James Clark Maxwell's claim that the rings of Saturn are made up of small particles. I highly recommend this book to anyone looking for a good read on these cold, cloudy nights.

John Moser says, "This was the book I selected as a door prize at the AAAP holiday party in December and thoroughly enjoyed it. I want to thank the AAAP member who donated this book as a door prize for the party".

Astronomy for the Visually Challenged

By Kathy DeSantis

Noreen Grice has given the visually impaired a feel for the universe. With a background in astronomy, and more than 20 years of experience exploring the stars under a planetarium sky, she sees astronomy as an amazing science for people of all abilities. A graduate of Malden (Massachusetts) High School, Boston University and San Diego State University, Noreen grew up in a federal housing project and knew what it was like to be "shut out". Recalling great enjoyment as a child borrowing library books on astronomy and she was dismayed to learn Braille astronomy texts lacked photographs. That is how she came to create the Braille/Large print books, *Touch the Sun* (2005), *Touch The Stars* (2002), *Touch The Stars II* (2002) and *Touch The Universe: A NASA Braille Book of Astronomy* (2002). Doreen's tactile additions to celestial images, including Hubble photographs, open the visual wonder of astronomy to those otherwise denied. Read more about Doreen Grice, and her books, at her website <http://noreengrice.com/> and in a Smithsonian Magazine article, To Touch the Heavens,

<http://www.smithsonianmag.com/science-nature/10010311.html> , and hear, featured January 16, 2008, National Public Radio story, at <http://www.npr.org/templates/story/story.php?storyId=18137734> .

LUNAR ECLIPSE OBSERVATIONS

Tom Reiland: Posted to the listserver February 21, 2008. I arrived at Wagman Observatory about 7:45 tonight after driving through snow showers on the way to the eclipse. There were at least fifteen cars on the hilltop when I pulled in, but only three belonged to members. Ventures Outdoors had about twenty people up there for a winter hike. Some of them stayed around to observe the eclipse. At first, we weren't going to open up the scopes, but the clearing was getting better sometime after 9 PM and I decided to open the Manka roof and use the 5-inch Refractor to observe this event. That way we didn't have to climb the ladder and get hit in the face with the brutally cold wind. This scope offered a nice view at 25X and a two-degree field of view. Larry Sneider said that he came up about 4:30 PM. Mike Nizinski showed up after him followed by Pete. Flac and Don Hoecker came over near the beginning of totality and a member named Andy brought friends over to look at the eclipse. We had seven members and close to 35 visitors on a bitterly cold night. Transparency was excellent. I was surprised to find Comet Holmes almost by accident while scanning the sky with my 10 X 50's. I did a mini-binocular Messier Marathon observing twenty-three objects and several other deep sky wonders as well. I saw M3, 31, 34, 35, 36, 37, 38, 41, 42(43), 44, 45, 46, 47, 48, 50, 51, 52, 63, 81, 82, 93, 94 and 103. I forgot to try for M1, M78, M79 and M67. I could not see M32, M33, M110 and M101. I picked up the Double Cluster in Perseus, NGC 1981, near the Orion Nebula, NGC 663, NGC 2392, the Hyades and Mel 11 (The Coma B. Star Cluster). Seconds after I got out of my car I observed the -8 mag Iridium satellite pass through a thin patch of clouds. I watched the eclipsed Moon occult an 8 mag star shortly after 10:37 PM. As much as I hate being outside on nights this cold, it was worth the trip for all the great observations, plus we probably picked up a couple of new members. I hope many of yinz got to see this fine show. The next one isn't until 3:18 AM EST on Dec. 21, 2010.

Jim Klueber: Posted to the listserver February 21, 2008 . I just got back from Metzgar Elementary School after our star party tonight for the lunar eclipse. Despite the weather, we had about 25 3rd-5th grade students and their parents show up for the eclipse. We had some clear breaks through the clouds just about up to the start of the Moon's entry into our umbral shadow. We had a little break just before 9:00 where we could see the shadow begin its transit across the Moon's face. We started to lose people shortly after that as a few light snow squalls came through and the wind seemed to pick up, but about ten people stuck it out until 10:00 catching glimpses of it through the clouds and the occasional break in the clouds. Around 10:00, we started to get some bigger breaks and got some nice views of a mostly coppery-colored

Moon. Shortly afterwards, everyone left except me. I don't think the last person was gone five minutes when the sky completely cleared and I had a gorgeous view. I stayed and watched the eclipse until it was well back into the penumbra around 12:30 before packing it in and heading home. I took about 26 pictures (slides), most of which were from 10:20 and later. I took shots approximately every ten minutes through my telescope as well as some wide-angle and telephoto shots. The view from 10:20 until about 10:50 was stunning. The best views were through my 15x70 binoculars and 210 mm telephoto lens where I had these great views of the coppery Moon surrounded by stars. In my telephoto lens, Saturn and Regulus shepherded the Moon along with a few stars. Particularly in the binoculars, this yields a truly three-dimensional view of the event. Hope others got a chance to see the eclipse since we won't have another chance like this for almost three years. It was a bit cold out there. I checked the thermometer when I got home and it was 6 degrees!

John Cheng: Posted to the listserver February 21, 2008. Winter's eclipses seem to stay in the memory. Luna is high enough to clear the limbs of naked trees. It often shares the sky with running clouds and blowing snow. Precious optics are exposed to bitter cold and time signals can get lost in gusting winds. Joints, both mechanical and human, complain. The frozen ground crunches beneath observers huddled around their scopes debating if the Moon is copper or brick red, earth's shadow edged with grey or gun-metal blue. Totality's the time to pause, pull the collar tight and view the tinted Moon against familiar winter constellations, to capture an image with the eye, the field of view encompassing everything in sight. Someone may bring warm coffee or chocolate as the full Moon's light returns to cast cold shadows on the ground. Packing away equipment, the eclipse gets safely tucked away in memory. My first "serious" eclipse was December 1963 and it was just the first of a number of winter eclipses, each memorable for some combination of good people, dramatic skies, or hard conditions. Tonight's was no exception. One could do worse than be a viewer of eclipses.

Mary DeVaughn: Posted to the listserver February 20, 2008. Woo hoo! Socked in no more! Cool red Moon, with Saturn & Regulus as escorts. I looked through the big binoculars and Saturn's rings were easily visible.

James Schultheis: Posted to the listserver February 21, 2008. The TLE was visible down here in Scottsdale, PA although the clouds were a problem once totality commenced. I did observe some deep sky objects and one that I plotted and observed was Hidden Treasure 41(HT 41) from James O'Meara's new book, "*Hidden Treasures*". It is NGC 2440, which is also known as Albino Butterfly, Kiss Nebula or the Little Lips Nebula . I had no problem locating it just below M46 in Puppis as a hazy stellar object, and I must say it took magnification well in my Orion 8-inch XT Dob revealing some very nice bipolar structure. Just as I was observing this object, the clouds rolled in and I decided to call it a night. Sue and I did watch the TLE from 8:45 till about 10:30. It was a very nice show that Mother Earth put on.

LUNAR ECLIPSE PHOTOS

By Mary Jean Kancel

Thursday, February 21, 2008

Four Lunar Eclipse Photos taken from Leesburg, Florida with 8" Dobsonian telescope, Nikon Coolpix 4300



OTHER OBSERVATIONS

James Schultheis: Posted to listserver February 5, 2008. Well, I guess the triangle of clouds followed Sue and I here to Maui but at least we did get some naked-eye observing in last night and I must say it was very difficult to figure out the sky down here. For example, Orion was at zenith and Polaris was at about 20 degrees at 9:00 PM. We are here at my sister's house on the north side of Maui at about 3000 feet elevation. The sky is dark but it is cloudy. My brother-in-law has a Mead 12" SC with GPS align, which he has never used and Sue and I are cleaning the mold off of the 90-degree diagonal mirror and the front glass "lens". I have never used a scope like this and the manual is about a half inch thick but I got it to align and are hoping for clear skies.

Posted to the listserver February 07, 2008. Observations From Maui Hawaii: Well I got up this morning at 5:30 AM and looked out through the bedroom window and I was amazed. There were hundreds of steady, sharp stars painted on a velvet black background. It looked like Cherry Springs and probably darker! I did not have enough time to roll out the 12-inch Mead on its Scope Buggy so I grabbed the 18 x 50 image stabilized binoculars. Again, walking outside, I was blown away. It took about five minutes to identify the constellations due to the quantity of stars visible and the change of sky layout due to being at 20 degrees above the equator. Amazingly, I was able to observe scads of Messier objects with the 18x50 IS's. For example, M51 with its companion Ursa Major, M104, Corvus M4, M80, and Scorpius. The Virgo cluster of galaxies looked like cottage cheese with all the puffs in a clump. Sagittarius looked like the sky in a war zone with all the star clusters and nebula through the trees.

Larry McHenry: Posted to the listserver February 04, 2008. After a long two months of cloudy holidays and weekends (and scheduling conflicts), the Sun gods finally were appeased and gave me a decent day for solar viewing! There was even a small sunspot group visible in white-light, (AR-10982), an interesting limb prominence and several disk filaments in H-alpha. The sunspot group was barely observable, a class B group with just a few tiny spots. I have to admit, if I hadn't previewed Spaceweather and known its approximate location, I probably would have missed it with the C8's Baader white-light filter (having a Baader solar-continium eyepiece filter helped). But, the active region was quite prominent with both the CaK and in H-alpha. The video feed from the PST Cak showed a bright splash of plage slightly off-center of the disk surrounding the small group. In H-alpha, (with both the PST and Daystar), the plage was more subdued, but a number of dark disk filaments made up for it. There was one very large filament extending almost from the plage, running northward. Spaceweather had a really nice image of it from the 3rd:

<http://www.spaceweather.com/swpod2008/03feb08/Emielveldhuis1.jpg?PHPSESSID=190fsd8rush18ispfu529o3qh4>. Also, along the SW limb, there was a large hedgerow prominence! Here are three views of the Sun from Saturday February 3, 2008:

White-Light (PST detuned) <http://home.comcast.net/~lemsolar/images/pstviews/pst-wl-020308.jpg>

Calcium II (PST CaK) <http://home.comcast.net/~lemsolar/images/pstviews/pst-cak-020308.jpg>

H-alpha (PST Ha on band) <http://home.comcast.net/~lemsolar/images/pstviews/pst-ha-020308.jpg>

Hi Res image of AR10982 made with the Daystar .6A H-alpha filter on the 8" SCT: <http://home.comcast.net/~lemsolar/images/daystar/haspot1-020308a.jpg>

Nearby large filament: <http://home.comcast.net/~lemsolar/images/daystar/haspot1-020308b.jpg>

Both: <http://home.comcast.net/~lemsolar/images/daystar/haspot1-020308c.jpg>

Sketch: <http://home.comcast.net/~lemsolar/images/sketches/s020308.gif>

To view the three PST images side-by-side, and for a complete observing report visit: "Big Woodchuck Solar Observatory" (BWSO) <http://home.comcast.net/~lemsolar/Bwwso1.htm>

50 YEAR ANNIVERSARY Vanguard One Satellite By Dan Peden

On March 17, 2008, the Vanguard One satellite, the oldest object in space from Planet Earth, will celebrate its 50th year in Earth orbit. A small group of former U.S. Naval Research Laboratory and NASA folks have been in communication, and a number of government agencies have been asked to commemorate the event. At this writing, there are no formal celebrations scheduled for this event. The National Academy of Sciences has scheduled some seminars to mark the 50th anniversary of the International Geophysical Year, but at this time, this is the only official observance known.

MIT Team to Plant Radio Telescope Array on the Far Side of the Moon By Kathy DeSantis

MIT will plant an array of radio telescopes on the far side of the Moon, NASA announced, February 15, 2008. The goal of this proposed array of hundreds of telescopes is to probe the billion years shortly after the Big Bang

when the uniform soup of dark matter collapsed into clumps of the basic structures of our universe, from stars and black holes to entire galaxies. LARC (Lunar Array for Radio Cosmology) is headed by Jacqueline Hewitt, professor of physics and director of MIT's Kavli Institute for Astrophysics and Space Science, and includes nine other MIT scientists and several other institutions. These telescopes would be arrayed over up to two square kilometers, would pick up very-low-frequency radio signals, and be positioned by automated vehicles. Planting a radio telescope on the Moon overcomes two earth-bound obstacles to observing the "cosmic Dark Ages," the Earth's ionosphere, a high altitude layer of charged gas (ions), and radio background interference from radio and television produced everywhere on Earth. Cheerfully, this low-frequency telescope array is one of the easiest to build, according to Hewitt, because detecting long wavelengths does not require particularly accurate placement, nor fail if individual antennae malfunction and is not sensitive to lunar dust. On the far side of the Moon always facing away from Earth shielded from both, these radio telescopes are expected to reveal the formation of the vast majority of matter in the universe, dark matter, testing current theories about how the universe formed and evolved. In addition, the new telescopes will be well placed to study coronal mass ejections on the Sun, sometimes responsible for communication and electrical disruptions on Earth. Other research may involve the study of space weather, the radio emissions from other planets and emissions from galactic collisions. Currently NASA has awarded a \$500,000 grant to be divided between the MIT-led team and a similar one at the Naval Research Laboratory. The present plan is for a one-year study, to develop a detailed plan, whose construction would not begin until 2025, and cost more than \$1 billion dollars. See the following websites:

<http://web.mit.edu/newsoffice/2008/ moonscope-0215.html>

<http://www.sciencedaily.com/releases/2008/02/080219132146.htm>

http://www.moondaily.com/reports/MIT_To_Lead_Development_Of_New_Radio_Telescope_Array_On_Lunar_Farside_999.htm

http://space.mit.edu/res_area.html

20 X 80 BINOCULAR MOUNTING ON TRIPOD By Dave Smith

Having a lot of experience doing professional photography, I have used heavy cameras up to 8" x 10." A lot of my work was with a 120 and 4" x 5" cameras. The better tripods are rated by camera size and/or weight. Just as in astrophotography, the camera has to remain absolutely steady to get sharp images. Sometimes one would

need to re-cock the camera and change settings for multiple exposures. I know one photographer that would use two tripods to keep his view camera steady, one at each end of the monorail. I see a lot of people using too small a tripod for their camera or telescope.

My tripods cost much more than the 20 x 80mm. I have Gitzo tripods. My heaviest one was around the \$600.00 range. It was purchased used from a friend in the 80's.

Now for the problem of looking overhead, Gitzo makes a series of different size side arms that can also fit other tripods like Bogen/Monfrantto (These are also good tripods). See this website for one of their side arms at B&H:

www.bhphotovideo.com/c/product/20801-REG/Gitzo_G532_G532_Side_Arm.html

This is mounted where the tripod head would go, then one puts the head on the side arm.

The Gitzo tripod also has a removable column so one could sit in a lounge chair with the side arm on the tripod and the tripod legs spread over the chair. There are smaller and cheaper Gitzo tripods that would still work. Just check the rating. I think Kathy said it should be one designed to support an older style VHS camera. One for a 120 camera might be okay, although most video tripods don't go up as high.

COOL WEBSITES

Light into matter & back to light again <http://www.news.harvard.edu/gazette/2007/02.08/99-hau.html>

Here is a link to AAAP member Pete Zapadka's piece in the Pittsburgh Post-Gazette. Pete interviews AAAP member Eric Fischer for the article:
<http://www.post-gazette.com/pg/08044/856942-115.stm>

Satellite shoot down video and ISS and Shuttle pictures:
<http://www.breitbart.tv/html/50894.html>

<http://www.astroewers.de/indexbneu.htm>

live webcasts of the eclipse
<http://www.xs4all.nl/%7Ecarlkop/maaneclips2008/leclips2008.html>

http://www.ccssc.org/observatory/lunar_eclipse/lunar_webcam/eclipsecam.html

George Dyson: Let's take a nuclear-powered rocket to Saturn: <http://www.ted.com/index.php/talks/view/id/221>

Jim Klueber's Venus & Jupiter conjunction taken on 1-31-08 at 6:33 AM:
<http://al-paslow.smugmug.com/photos/251035050-XL.jpg>

John Pane's 2001 photos of the Leonids meteors:
<http://leonids.johnpane.com>

AN EVENING WITH THE STARS NORTH HILLS JUNIOR HIGH SCHOOL SATURDAY, MAY 17, 2008

By Dennis Morton

I wanted to invite everyone to participate in our next orchestral concert that is dedicated to the night sky. It is on Saturday, May 17, 2008 and it is called "An evening with The Stars". Below is the letter that provides details of the concert. We hope to see you there!

"An Evening with the Stars" with the Pittsburgh Philharmonic www.pittsburghphilharmonic.org

My name is Dennis Morton and I've been a member of the AAAP for about 6 years. During the daytime, I am a string teacher/musician. I've organized several star parties at North Allegheny and Camp Kon-O-Kwee for the elementary students and I always appreciate the members that have helped at these offsite events. This year the Pittsburgh Philharmonic, in which I am a member, is doing a special concert called "An Evening with the Stars." The Pittsburgh Philharmonic has over 300 people in attendance at each concert.

Concerts take place at the North Hills Junior High School, 55 Rochester Road, Pittsburgh, PA 15229-1189.

This is an invitation to attend/participate at the concert on Saturday, May 17, 2008 at 7:00 pm. We picked this weekend to avoid AAAP meetings and scheduled star parties. This concert is for anyone who has an appreciation for the night sky and loves great music. There is a "night objects" theme woven throughout the music that will be performed (i.e., Jupiter Symphony, selections from E.T. and Star Wars, Stars and Stripes, The Planets and more).

During the concert, we want to show a PowerPoint presentation of night objects. I know that there was an astrophotography competition and it would be great to include any photos that you would want to be shown at this concert. I originally was going to just take photos from the NASA website, but after viewing the photos from the competition, it would be better to use local photographers. I've already talked to Fred Klein about this opportunity, but it would be nice to open it up to all members who would be interested. Please email your photos to dmorton@northallegheny.org and I will try to include them in our PowerPoint presentation.

Finally, if you want to bring your telescope to this concert, it would be great to have a few on display in the foyer as people are arriving to the concert. A few members could also pass out the summer flyers regarding the 2008 star parties. When audience members leave the concert around 9:00 PM, some members could set up outside to view the Moon, Saturn and Mars. If it is cloudy, then the telescopes could stay inside and people could look at the different instruments/information as they leave.

If you want to participate in this fun concert in any way, please email me at dmorton@northallegheeny.org. The North Hills High School Amateur Astronomy Club will also be on hand. It would be nice for them to observe our members participating at this event. I hope to hear from some of you soon. Please send any pictures to the email above if you would like your photos to be included in the PowerPoint presentation. Thank you.

2008 SOUTH JERSEY SPRING STAR PARTY

APRIL 4-6, 2008

By Ray Maher

Mark your calendar now for the 2008 South Jersey Spring Star Party April 4-6, 2008 at Belleplaine State Forest, Cape May County, NJ.

Save the date, and make plans now to attend the 2008 South Jersey Spring Star Party! This "no frills" event will take place over the April 4-6, 2008 weekend at beautiful Belleplaine State Forest in northern Cape May County, NJ. Bring your tent, supplies and telescope—weather permitting, the Star Party features some of the best dark-sky viewing conditions in the region!

There's camping on the five-acre observing field, and nearby you'll find plenty of other campsites, hot showers and other amenities. The area is famous for its ecology and natural beauty, and there are plenty of attractions to see during the day. Pre-register now and get 50% off the regular registration cost of the Star Party! Visit <http://www.sjac.us> and click on the South Jersey Star Party. Sign up now to reserve your space!

More information: <http://www.sjac.us> or contact Ray Maher, President of SJAC at rp2099@aol.com

IMPORTANT DATES

March 1—Globe at Night
March 2—Globe at Night
 Jupiter 4° north of Moon
March 3—Globe at Night
 Mercury at greatest elongation (27° west)
March 4—Globe at Night
March 5—Globe at Night
 Mercury and Neptune 0.2° north of Moon
 Venus 0.2° south of Moon
March 6—Globe at Night
 Venus 0.6° south of Moon
March 7—Globe at Night
 New Moon
March 8—Globe at Night
 Uranus in conjunction with Sun
 Mercury 0.9° south of Neptune
March 9—Daylight Savings Time begins 2 AM
March 10—Moon at Perigee

March 14—Membership Meeting CSC

First-quarter Moon

Mars 1.7° south of Moon

March 17—St. Patrick's Day

March 19—Regulus 0.8° north of Moon

Saturn 3° north of Moon

March 20—Spring Equinox 1:48 AM

March 21—Full Moon (Crust Moon)

March 23—Easter

Mercury 1° south of Venus

March 26—Moon at Apogee

March 27—Antares 0.5° north of Moon

March 29—Astronomy Weekend at CSC

March 30—Astronomy Weekend at CSC

Jupiter 3° north of Moon

April 4—Pittsburgh Regional Science Fair

April 5—Pittsburgh Regional Science Fair

April 6—New Moon

April 11—Wagman & Mingo Public Star Parties

April 12—Wagman & Mingo Public Star Parties

April 13—Mingo Work Session

April 18—Membership Meeting CSC

April 19—Wagman Private Star Party

April 20—Full Moon

April 21—Youngwood WCCC Public Star Party

WELCOME NEW MEMBERS

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James L. Dolfi

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FOR SALE

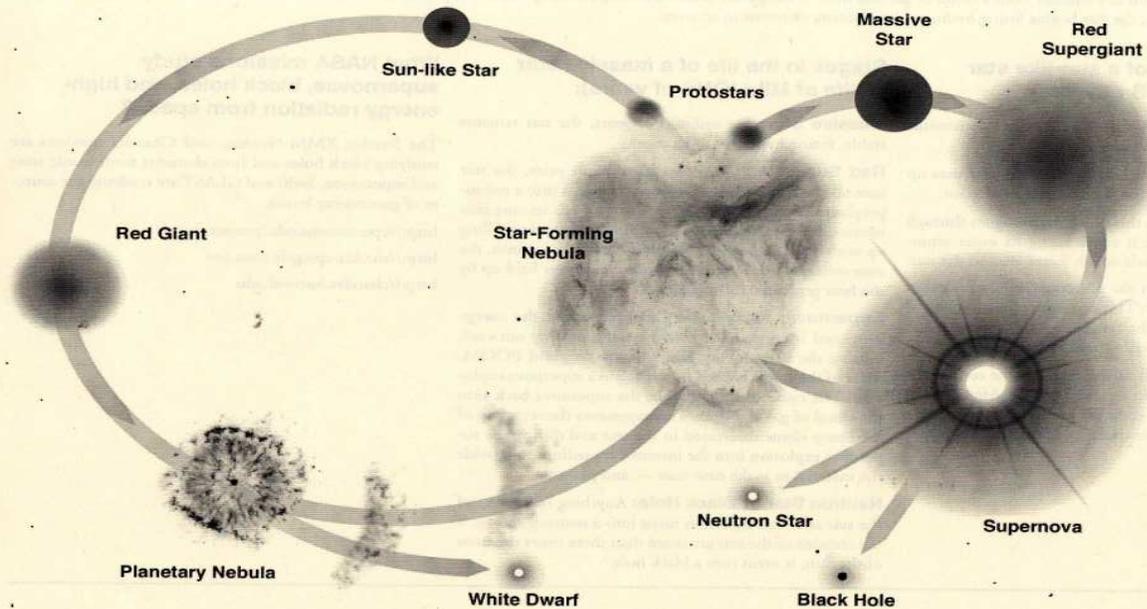
Metal tripod for Celestron C-11 scope. Good shape, no wedge. Best offer—call Dave 412-673-6797



Please submit any articles for the Guide Star to the Guide Star Editors at gse-ditor@3ap.org by the 20th of each month

Courtesy of NASA Night Sky Network

National Aeronautics and Space Administration



the lives of stars

THE LIVES OF STARS

What is a red giant, a white dwarf, or a supernova? Where do these fit into the lives of stars? Follow the arrows on the drawing and discover the stages in the life of a small Sun-like star compared to the stages in the life of a massive star.

Stars of all sizes can be born as *Protostars* from a cloud of gas and dust in our galaxy (a *Star-Forming Nebula*). When the protostar compresses under the force of gravity and its core becomes hot enough, the star begins fusing hydrogen into heavier elements in its core.

Stages in the life of a sun-like star (A life of BILLIONS of years):

Sun-like Star: For billions of years, the star remains stable, fusing hydrogen in its core.

Red Giant: After several billion years, the star uses up the hydrogen in its core, and it turns into a red giant.

Planetary Nebula: At this point the star goes through an unsettled stage where it starts losing its outer atmosphere in a planetary nebula which forms around the star.

The cycle continues from the planetary nebula back into the cloud of gas and dust. This represents the recycling of the elements created in the star back into the interstellar medium to provide material to make new stars.

White Dwarf: When all fusion ceases at the core of the star, it cools off and shrinks to a white dwarf. After billions of years, the white dwarf cools off so much that it no longer glows and becomes the dark, cold remains of the star.

Stages in the life of a massive star (A life of MILLIONS of years):

Massive Star: For millions of years, the star remains stable, fusing hydrogen in its core.

Red Supergiant: After several million years, the star uses up the hydrogen in its core and it turns into a red supergiant. The star continues to fuse atoms in its core into heavier and heavier elements until the core starts filling up with iron. Because the fusion process stops at iron, the core collapses under its own weight, no longer held up by the heat generated during fusion.

Supernova: An explosive shock wave and the energy generated from the core collapse starts moving outward, heating the surrounding layers of the star, and BOOM. Most of the star is blasted into space in a supernova explosion. The cycle continues from the supernova back into the cloud of gas and dust. This represents the recycling of the heavy elements created in the star and during the supernova explosion into the interstellar medium to provide the material to make new stars — and planets.

Neutron Star or Black Hole: Anything remaining of the star after the explosion turns into a neutron star or, if the remains of the star are more than three times the mass of the Sun, it turns into a black hole.

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

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

<http://epo.sonoma.edu/projects.html>

<http://suzaku-epo.gsfc.nasa.gov>

<http://chandra.harvard.edu>

Amateur Astronomers Association of Pittsburgh, Inc.

*Founded June 9, 1929 by
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