



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



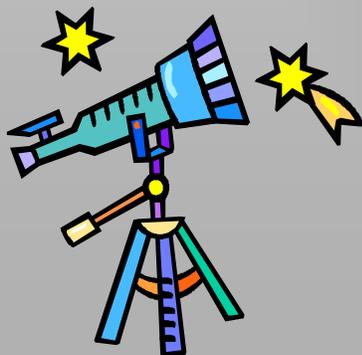
Nicholas E. Wagman Observatory

March 2010

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MARCH MEETING TOPIC

The next AAAP general meeting will be Friday, March 5th, 7:30 PM at the Carnegie Science Center. Our speaker will be Phil Creed with his presentation An Astronomical/Meteorological Approach to Site Selection for Stargazing.

Phil Creed is a longtime deep-sky and comet observer from Ohio. Phil contributed the article, Clear(er) Skies Ahead for the August 2008 edition of *Sky & Telescope* and was recently published in the February 2010 *Sky & Telescope* with an article titled Stargazing Forecasts.

DARK SKY FESTIVAL HARMONY, FLORIDA

By Bill Fife
Activities Director

We have a new part of the 7th Annual Dark Sky Festival at Harmony that has now been confirmed that I wanted to let you know about. As part of our Dark Sky weekend, we have now confirmed that Dr. Neil deGrasse Tyson will be visiting Harmony on Friday April 16th as part of the Dark Sky weekend. This event will not be open to the public; the only way in will be with a ticket.

Harmony is offering the first 70 astronomers that sign up to bring out their telescope for the main festival on Saturday evening festival a ticket to hear Dr. Tyson speak on Friday April 16th at 1pm in the Harmony High School Auditorium. Astronomers can sign up by visiting www.darkskyfestival.com and then clicking on the Astronomers tab. We have free camping areas available in one of the darkest areas in Central Florida according to the Bortle Light Pollution scale, or there are many local hotels that are offering discounts on rooms. We will also be hosting some Astronomers Only events on Friday.

The 7th Annual Dark Sky Festival at Harmony is right around the corner. This year's event is planned for April 17th, 2010. If you missed last year's event, we had over 4,500 people in attendance. We are putting a call out to all astronomers that are interested in attending this event. In addition to the public event that will have a variety of speakers, education exhibits, and more; we are also going to be offering some more in-depth "Astronomer Only" presentations.

Please visit <http://www.darkskyfestival.com> for more information on this event.

A TYPICAL NIGHT AT THE TELESCOPE

By Kurtis Williams, Professor Astronomy
<http://blog.professorastronomy.com/>

If you read enough comics (especially The Far Side), you'll eventually come across a sketch of an astronomer at the telescope. Inevitably, this astronomer is wearing a lab coat, sitting in a chair on the floor of the telescope dome, looking through an eyepiece and making notes in a notebook. Add in the likelihood that these cartoon astronomers are inevitably male and that the telescope sticks out the slit in the dome, and you have the picture that most people have when they think of astronomers. (Here's a good example incorporating almost all of those stereotypes: Off The Mark from January 16 2006 <http://www.offthemark.com/>).

However, this stereotype of astronomers and telescope observing is almost completely wrong.



Our observing team and observing support staff sitting in the Keck Observatory control room.
Image Credit: M. Bolte



This is Dr. Ivelina Momcheva, an astronomer at the Carnegie Observatories, taking data with the Magellan Telescopes at Las Campanas Observatory, Chile,

in February 2003. You'll note that Dr. Momcheva is not in a lab coat on a dome floor looking through an eyepiece (nor is she a balding middle-age male). Rather, she is sitting in front of a large bank of computer monitors watching digital images from the high-tech cameras download from the telescope. The telescope itself is in an angular dome behind the room wall, isolated from the heat and electronic noise of the control room.

A typical night of observing starts well before dark; in fact, it starts months beforehand when we apply to use a telescope. These applications, which we call proposals, specify what science we want to do, what objects we want to look at, and which telescope and instrument we want to use to take our data. A committee then evaluates each proposal on its scientific merits and technical feasibility, and time on the telescopes is allocated to the best proposals. Typical observing runs can be as short as a single night (especially on high-demand telescopes like the Keck Observatory) to as long as a week or two.

When an observing run draws near, we sit in our offices and make detailed plans. What objects are we going to look at on each night? How long do we need to look at each object? What do we do if the weather is bad, and how do we prioritize our observations? We prepare charts to help us find our targets. We check to see if there are any recent changes to observing procedures

or to the camera we will be using. And then we have to travel to the observatory, a trip that can be as short as walking down the hall to a remote control room or as far as the other hemisphere of the planet. Here in Austin, it involves an 8-hour drive across the plains and deserts of Texas.

In the afternoon before our first night, we go to the telescope control room and learn or re-familiarize ourselves with the camera and telescope controls. At many observatories, staff control the telescope movements, as it would be dangerous to let sleep-deprived, occasional users of a telescope play with tens or hundreds of millions of dollars worth of equipment. We then get to work taking whatever calibration data we need. This data is often some of the most crucial images we take, but they are also incredibly boring: pictures of blank white screens, exposures where we keep the camera shutter closed, and pictures of lamps taken through the filters and spectrometers we'll be using during the night. Each of these calibrations has their own purpose, and they have to be taken carefully.

After a break for supper and sunset, we can finally begin to take the pictures and spectra of our target stars, galaxies, and planets. The telescope and camera take minutes-to hours-long exposures while we sit in front of a computer, drink coffee, check email, write papers, blog, and check the quality of any completed exposures. We keep an eye on the quality of our data, the time of night, and the weather conditions. And we steadfastly refuse to wear lab coats.

Most people would probably find typical observing nights boring. Most of our discoveries will come later, back in the office, after careful analysis of the data we took. "Eureka!" moments at 3am are rare, though they do happen from time to time.

<http://obs.carnegiescience.edu/>
<http://obs.carnegiescience.edu/Magellan/>
<http://www.lco.cl/>

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THE SUN IS A VARIABLE STAR

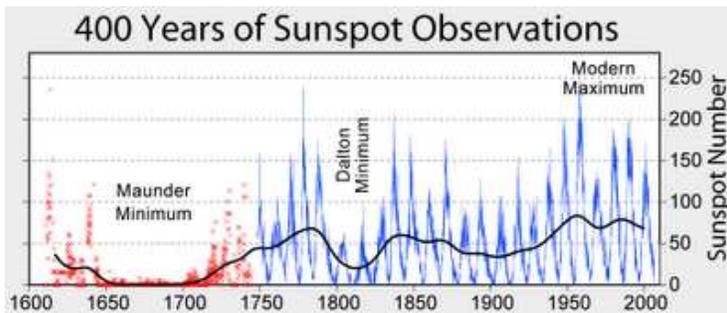
By Mike Simonsen, [Simostronomy](http://simostronomy.blogspot.com/)
<http://simostronomy.blogspot.com/>

That's right, I said it, and I'm not the only one. Officials at NASA are saying it too. It's one of the reasons we launched the Solar Dynamics Observatory last week, to study our dynamic changing star, the Sun. "Understanding solar variability is crucial," says Judith Lean of the Naval Research Lab in Washington DC. "Our modern way of life depends upon it."

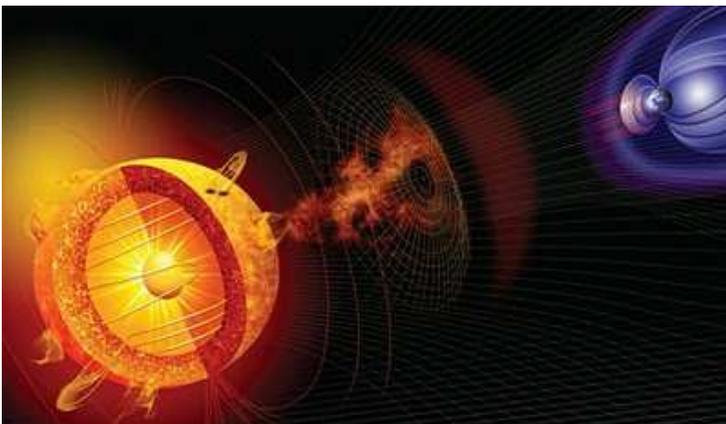
We depend on a complex network of high-tech systems for the basics of daily life. Power grids, GPS navigation, air travel, financial services and emergency radio communications can all be knocked out by intense solar activity. All this has led us to pay a lot closer attention to the daily activity of the Sun.

For several hundred years we've kept track of the number of sunspots on the surface of the Sun, revealing what most people have heard of as the '11-year sunspot cycle'. "It's not even 11 years," says Lika Guhathakurtha, of NASA headquarters, Washington, DC. "The cycle ranges in length from 9 to 12 years. Some cycles are intense, with many sunspots and solar flares; others are mild, with relatively little solar activity. In the 17th century, during a period called the 'Maunder Minimum,' the cycle appeared to stop altogether for about 70 years and no one knows why."

The last solar minimum, between 2008-2009, was surprisingly deep. The fact that no one expected that, or can explain it, just shows how far we have to go in our understanding of the Sun's variability.



More dramatic than the sunspot variations are the sudden and violent eruptions the Sun can produce on any given day. Solar flares explode with the power of a billion atomic bombs. Coronal mass ejections (CMEs), clouds of magnetized gas big enough to swallow the Earth break away from the stellar surface. Holes in the sun's atmosphere spew million mph blasts of solar wind. Our Sun is anything but the stable, constant, benevolent character we give him credit for.



This image is not to scale, but is a pretty dramatic representation of the violent nature of the Sun and its affect on the Earth. Credit: Science@NASA

When energy from the Sun interacts with the Earth's outer atmosphere, it excites oxygen and nitrogen molecules some 100 and 400km above the surface, respectively, emitting a green (oxygen) or red (nitrogen) glow. This in turn excites observers on the ground, who may see the auroral dance take on any of several characteristic forms.

There may just be a glow to the north (or south if you live in the southern hemisphere), just over the horizon; or you may see arcs or bands of light, sometimes with vertical rays spiking high into the night sky. During strong events you may witness the famous curtain effect, or the coronal effect where all the rays appear to converge almost directly overhead.

If you've ever seen the 'Northern Lights', as we call them in the northern hemisphere, really put on a show, it is something you never forget. It's as close to seeing real magic before your eyes as you can get.



Photo credit: David Fritts, Alaska

This content distributed by the [AAVSO Writer's Bureau](http://aavsowritersbureau.blogspot.com/)

WELCOME NEW MEMBERS

MICHAEL ARMENINI
NATHAN BARTON FAMILY
SANFORD B. BENDIX
DAN McKOSKY FAMILY
MERLE SHOTWELL

VP COLUMN

By Craig Lang

Once again bad weather caused us to alter our general meeting schedule. Almost last minute changes in both cases. So be sure that your email address is up-to-date with our membership secretary and that you watch the Yahoo group and Twitter services for the AAAP. If you need any assistance, contact our Twitter moderator, Mike Markiw, or the IT Chair, Michael Skowvron.

Some changes to our meeting speaker lineup have also occurred. Since we were forced to cancel the February meeting, Lou Coban will present his "What's Going On at Allegheny Observatory" topic at our April 9th meeting. The previously mentioned AccuWeather presenters will be unable to make our March 5th meeting, but don't fret, we have a great speaker in their place. Phil Creed, whose recent article can be found in the February *Sky and Telescope*, will speak. And to finish off our 2009 – 2010 season, Eric Fischer will present his January 1984 Grouping of Planets Rendering.

Hopefully as you read this the piles of snow have melted and power completely restored to those that lost it during the storm. Our observatories could probably use a little bit of attention once the worst is past, so if you have some spare time, give one of the directors a call and ask how you might be able to help out. Star party season is only a few months away.

Now get out there and start wondering...

FOR SALE

13.1 Coulter Dob mirror in good condition \$425. Call Bernie at 412-952-3788.

8-inch Mead SCT LX10 in great condition \$625. Call Bernie at 412-952-3788.

I've decided to sell my 8" f/5 Newtonian Reflector. It's on an alt-azimuth pipe mount and it's easy to use. The eyepiece/focuser is almost always in a comfortable position for observing whether you're observing at the zenith or near the horizon. I did most of the grinding and polishing. Glenn Winterhalter started the grinding and Wade Barbin and Bob Schmidt helped me with the figuring. They tested at about 1/10 of a wave. I'll include a good 18 mm Meade eyepiece that I've seldom used. It breaks down into three sections; the pipe base, the mount with the saddle and straps and the scope. It has a good 7 X 50 finder scope as well. I haven't used it much since I bought my 16-inch over twenty years ago. It has a two-inch focuser with and 1-1/4 adapter. I'm asking for the best offer around \$350 to \$400. Contact Tom Reiland at TRCassiopeia@aol.com.

FOR SALE

Non-member, Larry Mollica, is selling a
EDS Edmund Scientific SCI Telescope.
12-1/2" mirror

One eyepiece

Tube is made of wood and is 8 feet long.

It has been stored in his barn for a while.

Very good condition but needs a gentle cleaning.

No mount but it may be equipped with setting circles.

Larry would like \$350.00 for the unit.

He lives near Coraopolis.

Call Larry at 412-771-5559

MESSIER MARATHON

By Tom Reiland

The new Moon in March occurs on Monday the 15th. The weekend of March 12 -14 will be a good time of the year to observe 109 out of 110 Messier objects in one night. Friday and Saturday offer the best chance for those members who work during the week. I prefer Sunday, March 14. March 15-17 will be good nights during the week. Previous experience observing all 110 Messier objects is suggested to attempt this marathon along with a good, dark sky with unobstructed east and west horizons. This is an observing event that tests one's stamina and starhopping skills. You can try it with Goto scopes, but it is not considered a regular Messier Marathon. It would be like entering the Pittsburgh Marathon on a motorcycle.

M74, M77, M33, M31, M32, M110, M76, M79 and M34 are the difficult objects in the evening sky. M55, M75, M15, M2, M72 and M73 are the hard ones just before dawn. M30 will not be visible.

Good luck and start planning now. It will take you ten hours to complete this observing challenge.

Eight-inch diameter scopes or larger are recommended.

ASTRONOMY WEEKEND AT THE CARNEGIE SCIENCE CENTER VOLUNTEERS NEEDED

Volunteers are needed to help at the Carnegie Science Center's Astronomy Weekend on March 26, 27 and 28th. If you can help, please contact Ed Moss at:

president@3ap.org

IMPORTANT DATES

- March 2**—PBS Nova: The Pluto Files
Saturn 8° north of Moon
- March 3-16**—Globe at Night
- March 5**—7:30 p.m. AAAP Meeting Carnegie Science Center
- March 7**—Last quarter Moon 3:42 p.m.
- March 11**—Mars appears stationary
- March 12**—Moon at apogee
- March 13**—Neptune 4° south of Moon
- March 14**—Daylight Savings time
Mercury in superior conjunction
- March 15**—New Moon 9:01 p.m.
- March 17**—Uranus in conjunction with Sun
Venus 7° south of Moon
- March 19-21**—The Planets Pittsburgh Symphony concert
- March 20**—Vernal Equinox
- March 21**—Saturn at opposition
- March 22**—Saturn at opposition
- March 23**—First quarter Moon 11:00 a.m.
- March 25**—Mars 5° north of Moon
- March 26-28**—Astronomy Weekend at Carnegie Science Center
- March 28**—Moon at perigee
- March 29**—Saturn 8° north of Moon
- March 30**—Full Moon 2:25 a.m.
- April 6**—Last quarter Moon 9:37 a.m.
Pluto appears stationary
- April 8**—Mercury at greatest elongation 19° east
Moon at apogee
- April 9**—7:30 p.m. AAAP Meeting Carnegie Science Center
Neptune 4° south of Moon
- April 11**—Jupiter 6° south of Moon
- April 12**—Uranus 6° south of Moon
- April 14**—New Moon 12:29 p.m.
- April 15**—Mercury 1.5° south of Moon
- April 16**—8 p.m. Mingo public star party
Wagman public star party
Venus 4° south of Moon
- April 16-24**—Lyrid meteor shower
- April 17**—Frick Park Earth Day
Mingo public star party
Wagman public star party
- April 18**—Mercury appears stationary
- April 21-May 1**—Eta Aquarids Meteor shower
- April 21**—First quarter Moon 6:20 p.m.
- April 22**—Earth Day
Mars 5° north of Moon
- April 24**—AAAP Demo and AAAP Pittsburgh Zoo
Moon at perigee
- April 25**—Saturn 8° north of Moon
- April 28**—Full Moon 12:18 p.m.
Mercury in inferior conjunction

MARCH: Mars and Saturn are the planets to watch this month. Mars still shines brightly and is very high in the south at sunset. A waxing gibbous Moon is nearby on the 24th. Saturn reaches opposition on the 21st, and appears high in the south at midnight. A waxing gibbous Moon is nearby on the 28th. Jupiter, Mercury and Venus are all close to the Sun this month, with Venus emerging from the Sun's glare in the west at sunset at month's end.

APRIL: Venus and Mercury are now evening objects, very low and very close together in the west at sunset. Jupiter becomes a morning object this month, very low in the east before sunrise. A waning crescent Moon is above it on the 11th. Mars is setting earlier each night but is still high in the south at sunset. A first-quarter Moon passes by on the evening of the 21st. Saturn is high in the south at local midnight throughout the month, above a waxing gibbous Moon on the 24th.

Taken from *the year in SPACE 2010* desk calendar

Think Spring!



Amateur Astronomers Association of Pittsburgh, Inc.

Founded June 9, 1929 by

Chester B. Roe and Leo J. Scanlon

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- Guide Star Editors: **Bill & Maureen Moutz**
gseditor@3ap.org

AAAP Member Dues*:

AAAP Dues:	\$24.00
Student Membership (K-12 & full time college student):	\$16.00
Family Membership	\$40.00

***Basic Procedure for Paying Dues:**

1. Make check payable to "AAAP Inc."
2. Send check to Michael Meteney, Treasurer, 1070 Sugar Run Road; Venetia, PA 15367-1514



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

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