



Panhandle Astronomy Club

"Amateur Astronomy & Education"



THE SCOPE

Volume 2 Issue 11

November 2007

GENERAL MEETING DATE

Tuesday, November 13

PAC Meeting
7:00 pm

Gering Public Library

Join us each month as we explore this fascinating hobby we call astronomy!

Our meetings offer you the opportunity to meet other amateur astronomers, share your experiences, get advice and discuss opportunities to get together and view some of the wonders nature has to offer each month.

November Presentation

Virginia Mues will be giving a presentation from our newest Night Sky Network Toolkit "Exploring the Solar System". Come and enjoy some fun and educational hands-on learning.

NASA Night Sky Network Banner

We have logged at least five events using the Night Sky network Outreach Toolkits and have earned the Night Sky Network Banner. This banner honors our commitment to astronomy outreach and designates our club as a member in good standing of the NASA Night Sky Network.

PANHANDLE ASTRONOMY CLUB

MEETING MINUTES

The October meeting was held on the 9th at the Gering Public Library. The meeting was called to order at 7:05 by Bruce Mues. Members present were: Jon Smith, Bruce Mues, Chris Olsen, Johnny Escamilla and Amanda Mues. Guests were Don and Shirley Edwards of Alliance. Jon Smith, treasurer, reported that we have a balance of 1409.63.

Bruce Mues gave a high level presentation of the Autostar Suite that comes with the Meade Deep Sky Imager Pro CCD camera.

The meeting was adjourned at 7:55 pm.

Twelve Month Tour of the Messier Catalog November Objects

This month we will search for seven more objects from the Messier Catalog. These include four globular clusters, the largest and the smallest planetary nebulas in the catalog, and a small oddity. Two of the objects are fairly easy in binoculars, while four others will require dark skies, patience, and keen eyes to find.

M57 This smallest planetary nebula in the Messier Catalog is the famous Ring nebula in the constellation Lyra. Low power telescope views show a very small blue/green disk, not much bigger than a star. Medium to high power will magnify the size of the nebula while leaving the surrounding stars the same size, confirming you have found it. Can be seen in binoculars as a faint star like point of light.

M56 Also in the constellation of Lyra we find our first globular cluster of the night. In a telescope look for a small round ball of light, slightly brighter in the center. This is a difficult binocular object appearing as a small fuzzy patch.

M27 Also known as the Dumbbell nebula, the largest planetary nebula in the Messier Catalog, M27 lies in the constellation Vulpecula. Fairly easy to see in binoculars as a small hazy patch. In small to medium scopes it appears as a rectangular patch of light. In large scopes it may even appear round in shape with a bright rectangular, or dumbbell shaped core.

M71 Lying in Sagitta, this globular cluster appears as a faint oval hazy patch of light in a telescope. This is a very difficult but possible binocular object, requiring dark skies and trained eyes.

M30 This globular cluster in Capricornus is tough but very possible to see in binoculars as a faint fuzzy star. Telescopes show a small fuzzy ball of light, bright in the center fading to the edges.

M72 This is a small faint globular cluster in Aquarius. Look for a faint oval patch of light, gradually brighter towards the middle. A very difficult binocular object.

M73 This asterism is located near M72 in Aquarius. In a low power telescope view it looks like a very small fuzzy patch of light at first glance. When stared at it reveals itself as a small collection of stars. Medium to high power shows the view best described by Messier "cluster of three or four stars...containing very little nebulosity".

OUTREACH OPPORTUNITIES

Western Nebraska Home Educators Network Astronomy Class

Monday November 5, 12 & 19
10:00 to 11:00 am
Gering Baptist Church

Club members are welcome to participate in or help with the homeschool astronomy class being taught by Virginia Mues. In the month of November we will cover the Sun, Mercury and Venus. If you are interested in helping with or participating in these classes please contact Virginia Mues at 641-1201.

Western Nebraska Home Educators Network Astronomy Class Observation Nights

November 7
Starts at 7:00 pm

Club members need to arrive at 6:30 pm to set up
Wildcat Hills Campground

There are nine teenage homeschoolers participating in a two semester long astronomy class offered through their homeschool cooperative. Observation nights have been scheduled to help the students learn the constellations in the night sky as well as observe objects they are studying in class. PAC members are welcome to attend these sessions. Volunteers with a knowledge of the night sky or scopes are also needed. If you are able to help please contact Virginia Mues at 641-1201.

CLUB OPPORTUNITIES

ATTENTION CLUB MEMBERS

**Club Observation Night
November 10th
Wildcat Hills Campground
7:00 pm**

Have questions about your scope, still learning the night sky, or working on an observing challenge? Come to the Club Observation Night and seek the help you need from your fellow amateur astronomers. Bring your binoculars, scopes, accessories, and lawn chair, if you have them. All club members are welcome with or without a telescope. Remember to bring extra clothing to change into as the nights are cooling off rather rapidly. Red flashlights are encouraged for this event. If you don't have one ask one of the club officers how you can make your white light red.

Panhandle Astronomy Club PUBLIC STAR PARTY Leonids Meteor Shower

**November 16th
Starts at 7:00 pm**

**Club members need to arrive at 6:30 pm to set up
Place: Wildcat Hills Campground**

This month brings us the return of the famous Leonid Meteor Shower, a meteor display that over the past several years has brought great anticipation and excitement to sky watchers around the world.

The Leonid meteors are debris shed into space by the Tempel-Tuttle comet, which swings through the inner solar system at intervals of 33 years. With each visit the comet leaves behind a trail of dust in its wake.

Meteor experts indicate that this year's peak activity should occur on the morning of Nov 18. While Leonid rates are unpredictable, it is unlikely that more than a dozen meteors per hour will be seen this year during peak activity, at least for viewer's with dark skies away from cities. Other meteor researchers, however, have examined Leonid prospects for this year and also suggest watching for some meteor activity on Nov 21st.

The meteors will appear to emanate from out of the so-called "Sickle" of Leo, but prospective viewers should not concentrate on that area of the sky around Leo, but rather keep their eyes moving around to different parts of the sky because Leo does not start coming fully into view until the after midnight hours.

The hours after midnight are generally best for watching for "shooting stars", because before midnight we are riding on the back side of the Earth in its orbit around the Sun, whereas after midnight we are on the front or advancing side. After midnight the only meteoroids escaping collision are those ahead of the Earth and moving in the same direction with velocities exceeding 18.5 miles per second. All others we will either overtake or meet head-on. But before midnight, when we are on the backside, the only meteoroids we encounter are those with velocities high enough to overtake the Earth.

Therefore, on the average, morning meteors appear brighter and faster than those we see in the evening. And because the Leonids are moving along in their orbit around the Sun in a direction opposite to that of Earth, they slam into our atmosphere nearly head-on, resulting in the fastest meteor velocities possible: 45 miles per second (72 kilometers per second). Such speeds tend to produce bright meteors, which leave long-lasting streaks or trails in their wake.

NEW MEMBERS

Gary Himes of Scottsbluff
&
Donald & Shirley Edwards of Alliance

Recent Observing Awards

None

As members of the Panhandle Astronomy Club you can earn a variety of observing awards through the Astronomical League. For more information on the awards log on to: www.astroleague.org/observing.html

When you have reached the requisite number of objects, your observing logs need to be turned into Bruce Mues and you will receive a certificate and pin to proclaim to all that you have reached your goal.

Night Sky Network Toolkits

Members are welcome to check out the Night Sky Network toolkits for outreach opportunities by calling Bruce Mues at 308-641-5874. We currently have the following toolkits available:

Shadows & Silhouettes covers topics on the shadow of the Earth, Phases of the Moon and Venus, Solar and Lunar Eclipses as well as transits of Mercury and Venus, detecting transiting planets around distant stars and NASA's Kepler Mission.

Black Holes Survival Toolkit explains how we survive in a galaxy full of black holes, how we survive an encounter with a black hole and how many amateur astronomers can survive all the questions we get about black holes. Appropriate for ages 6 to adult.

PlanetQuest the search for another Earth includes how we find planets around other stars, a telescope treasure hunt, where are the distant worlds and why we put telescopes in space.

Exploring the Solar System includes exploring strange new worlds, solar system models: sizes and distance, and exploring our solar system with accurately scaled orbits of the naked-eye planets.

Astronomy Quiz

1. What does NASA do?
2. How many miles away is the sun?
3. What is the Solar System?
4. What are sun spots?
5. Which color has short wave lengths?
6. Does Mercury orbit in a circle or in an oval around the sun?
7. What kind of planet is Mercury, terrestrial or gaseous?
8. What would the sky look like if you were on Mercury?
9. How many spacecraft have visited Venus?
10. What is special about the rotation of Venus?
11. Why does Venus go through phases?
12. What seven items make earth able to support life?
13. What are the four major sections of the earth?
14. What makes Mars look red?
15. What is the name of the biggest volcano in our solar system?
16. What are the names of Mars moons?
17. What is another name for a comet?
18. What is a meteor called when it hits the earth?
19. What is another name for a meteor?
20. Where on Earth have many meteorites been found?

ONLINE LIBRARY

Bruce Mues is currently in the process of producing an online library of astronomy materials. If you have items you are willing to loan to your fellow club members please email the title, author, publisher, and any other pertinent information to Bruce at bmues@charter.net.

Jon Smith has donated a copy of *Understanding the Universe: An Introduction to Astronomy* taught by Alex Filippenko to the club. This is a series of 96 (30 minute) lectures on DVD. If you are interested in checking these out contact Bruce.

Western Nebraska Star Gaze III
May 29, 30, 31 & June 1, 2008
Camp Clarke Raiders Black Powder Range
(near Bridgeport, Nebraska)



VISIT US ONLINE

Visit the Panhandle Astronomy Club web site at:

www.panhandleastronomyclub.com

or join our yahoo group at:

tech.groups.yahoo.com/group/PanhandleAstronomyClub

or see the latest club photo's at:

panhandleastronomyclub.myphotoalbum.com/albums.php

Updates on the 2008 Western Nebraska Star Gaze can be found:

tech.groups.yahoo.com/group/Western_Nebraska_Star_Gaze/

Night Sky Network

Astronomy Clubs bringing the wonders of the universe to the public



1. Builds equipment for studying space, trains astronauts and sends spacecraft into space.
2. Roughly 93 million miles.
3. The sun and all the objects orbiting the sun.
4. Places on the sun that are cooler than the rest of the sun.
5. Blue
6. Oval
7. Terrestrial
8. Black because an atmosphere is needed to make the sky have color and Mercury does not have an atmosphere.
9. 22
10. It is opposite that of most planets
11. Because of its orbit around the sun
12. Its distance from the sun, size, rotation, atmosphere, tilt, land and its magnetosphere.
13. Crust, mantle, outer core, inner core.
14. Rusted iron in the dirt.
15. Olympus Mons
16. Phobos and Deimo.
17. Dirty Snowball.
18. Meteorite.
19. Shooting stars or falling stars.
20. Antarctica.

Astronomy Quiz Answers

CLUB OFFICERS

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BENEFITS OF MEMBERSHIP

- Members receive the SCOPE, our monthly newsletter.
- Participation in monthly club observation nights and annual star parties.
- Each member is automatically a member of the Astronomical League, the only nation-wide organization for amateur astronomers.
- Free subscription to the Astronomical League's quarterly publication "The Reflector".
- 10% discount on astronomy books when purchased through the Astronomical League.
- Participation in both regional and national conventions through the Astronomical League.
- Membership in the Night Sky Network.

ANNUAL MEMBERSHIP DUES

Individual	\$ 20.00
Student	\$ 15.00
Family	\$ 30.00

Send your check to:

Panhandle Astronomy Club
 c/o Jon Smith, Treasurer
 PO Box 987
 Scottsbluff, Nebraska 69361

November 2007

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5 <i>WNHEN Astronomy Class 10 am</i>	6	7 <i>Outreach Homeschoolers Class Observation Night</i>	8	9	10 Club Observation Night Wildcat Hills Campground
11	12 <i>WNHEN Astronomy Class 10 am</i>	13 Club Meeting 7:00 pm Gering Public Library	14	15	16 Public Star Party Wildcat Hills Campground	17
18	19 <i>WNHEN Astronomy Class 10 am</i>	20	21	22 <i>Thanksgiving</i>	23	24 <i>Full Moon</i>
25	26	27 Newsletter Submissions Due	28	29	30	

Scottsbluff, Nebraska 69363-0987
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c/o Newsletter Editor
The Scope

Panhandle Astronomy Club

PANHANDLE ASTRONOMY CLUB

The Panhandle Astronomy Club was founded in the Fall of 2005. Anyone with an interest in astronomy is welcome. Members are not required to own any equipment or have prior knowledge of astronomy. For more information on the Panhandle Astronomy Club log on to any of the following:

PAC Email: info@panhandleastronomyclub.com

PAC Website: www.panhandleastronomyclub.com

PAC Discussion Forum: groups.yahoo.com/group/PanhandleAstronomyClub

The Scope

Virginia Mues, Newsletter Editor

The Scope is an official monthly publication of the Panhandle Astronomy Club.

Submissions to *The Scope* are due by the Fourth Tuesday of the month. Guest columns are welcome.

Subscriptions for *The Scope* are \$20.00 per year for Individual Membership, \$15.00 per year for Student Membership (under age 18) and \$30.00 per year for Family Membership. *The Scope* is printed year round, January 1 through December 31.

Contact the Panhandle Astronomy Club c/o Virginia Mues, Newsletter Editor at P.O. Box 987, Scottsbluff, Nebraska 69363-0987; 308-641-1201.

The views and opinions expressed in *The Scope* do not necessarily represent the views or opinions of any of the members of the Panhandle Astronomy Club. All mistakes are included for your entertainment!

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