



WNCC Foundation (WNAS)
2201 West College Parkway
Carson City, NV 89703



Janus - Saturn's Strange Moon

Events Calendar

	SUN	MON	TUE	WED	THU	FRI	SAT
January		1	2	3 Full Moon	4	5	6 Star Party
	7	8	9	10	11 Last Qtr Moon	12	13 Star Party
	14	15	16	17 BOG MEETING	18 WNAS MTG, New Moon	19	20 Star Party, Dark Sky*
	21	22	23	24	25 First Qtr Moon	26	27 Star Party
	28	29	30	31			

	SUN	MON	TUE	WED	THU	FRI	SAT
February					1 Full Moon	2	3 Star Party
	4	5	6	7	8	9	10 Star Party, Last Qtr Moon
	11	12	13	14	15 BOG/OPS MEETING	16	17 Star Party, New Moon, Dark Sky*
	18	19	20	21	22	23 First Qtr Moon	24 Star Party
	25	26	27	28			

Dates to Remember:

January, 2006

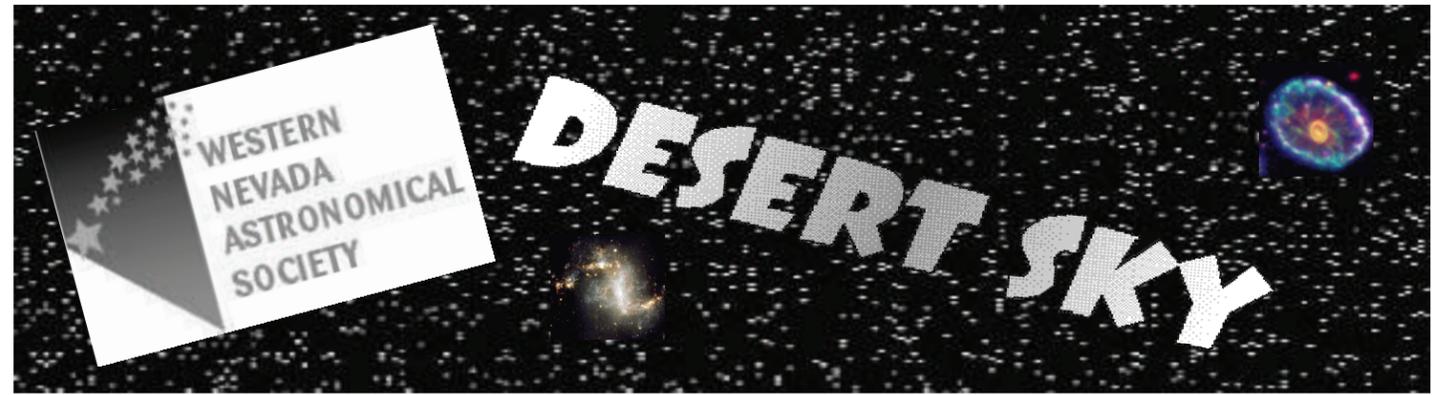
3rd Full Moon Rise, 4:55 pm
11th Last Qtr Mn Rise, 12:15 am
17th BOG Meeting, 7:00 pm
18th New Moon Rise, 7:19 am
18th WNAS Meeting, 7:00 pm
25th First Qtr Mn Rise, 10:45 am

January 18th WNAS General Membership Mtg 7:00 p.m.

February, 2006

1st Full Moon Rise, 4:56 pm
10th Last Qtr Mn Rise, 1:07 am
10th Saturn at Opposition
15th BOG/OPS Meeting, 7:00 pm
17th New Moon Rise, 7:01 am
23 First Qtr Mn Rise, 9:54 am

*These are the best dark sky weekends for observing faint objects.



Volume 6, Number 1

January/February 2007

President's Corner

The past fall semester at the JCDO was a whirlwind of both educational and observational activity. The interface of WNAS volunteers reacting to helping people with their personal telescopes, greeting the public and answering a huge variety of questions related to what they actually saw through our telescopes, and signing off on celestial observing logs that area teachers and professors provide their students to record their observations were a part of the experiences at JCDO.

I was particularly awed by the observational summary one of my good students enrolled in AST 110 (Stellar Astronomy) last semester. Although she did not want me to use her name, the student gave me permission to reprint her comments and I am sure you will be encouraged and perhaps stimulated by the following:

Attending the Saturday night observations is an extremely pertinent activity for this course. All semester long we have learned extremely interesting information about stellar astronomy, but it has been confined to the pages of a book. We have learned about everything from the birth of stars, the evolution of their lives, to the various ways they die out. As fascinating as these topics are, they can seem very distant from us in our daily lives. In the momentary reality of one evening at a time, my trips to the Observatory have taken the seemingly unattainable and actually made it a part of my life. Even before it became an assignment, I gained a lot from what these observations offered me. I got to see one of our most distant neighboring planets that otherwise I would have had no access to see (Uranus and Neptune). Back in September, within the same evening, I saw the calculated steadiness of a globular cluster along side the excited, youthful caprice of an open cluster. No amount of reading can really create the same impression. Having seen them with my own eyes, learning about them later on became enhanced, even though it was very far away, I had something physical that I could reference. I have seen stars that formed not very long ago right next to planetary nebulae that marked the death of other stars. Also among my observations is the remarkable dynamic of binary systems. It causes such wonder to think how that the relationship can dramatically alter one or even both members of the system. I have also has a chance to see other galaxies, which puts the information we have learned about them into a perspective that otherwise I'm not sure I would have gained. Most recently we have learned about black holes, dark matter, and dark energy. To handle this information, I have to make my mind think in ways it has never had to before. When dealing with these subjects, the forces and amounts involved are beyond anything that can be referenced here on Earth. I think it will be proved a good exercise for me later on to allow my mind to attempt to fathom such information. My trips to the Observatory gives me an outlet where these references can be made, they no longer seem out of place or unreachable because when comparing it to the vastness of the universe that can be seen, they seem proportional and natural.

Thanks to All WNAS volunteers for helping to enrich the lives of past, present, and future users of the Observatory....Happy New Year 2007!!!

Inside the Newsletter

Ask Jack	2
Saturn's Moon - Janus	2
WNAS Information Board	2
WNAS Meeting	3
Horsehead Nebula	3



WNAS Officers

- President**
Robert Collier
collier@wncc.edu
- Vice President**
Jack L. Davis
jackldavisdo@excite.com
- Treasurer**
Dana Luterick
djl1959@775.net
- Secretary**
Barry Morgan
Barry-morgan@sbcglobal.net
- Newsletter Editor**
Brian Guerin
zapkgbg@msn.com

Webmaster
Ryan Collier
rdcollier@gmail.com

Director-JCD Observatory
Robert D. Collier
collier@wncc.edu

WNAS web site:
<http://western-Nevada-astronomical-society.com>

Ask Jack

This is the memberships column to ask questions about WNAS activities, the JCD Observatory and the field of astronomy. Please submit questions to the Editor at www.zapkgbg@msn.com or at the next WNAS membership meeting on *January 18th*.

Q: What is meant by star populations? In 1944, U.S. astronomer Walter Baade divided stars into two classes. Although now known to be oversimplified, this classification was useful for first explaining how age, dynamics and element production in stars and galaxies are related. Population I stars include the hottest and most luminous stars. These stars are relatively young and are located in the disk or spiral arms of galaxies. Population II stars are relatively old stars and are found in globular clusters and near the nucleus of galaxies. They are made almost entirely of hydrogen and helium.

Q: What is a sunspot? Sunspots are temporary, dark, relatively cool blotches on the Sun's bright photosphere. They usually appear in groups of two or more. Individual sunspots last anywhere from a few hours to a few months. Sunspots were first observed and recorded by the Chinese about 800 B.C. Sunspots are normally about the size of Earth but can be many times larger.

Q: How are a solar and sidereal day different? A solar day measures the time interval of the Earth's rotation using the sun for reference and a sidereal day uses a star. A solar day is 24 hours long, the length of time required for two successive meridian transits by the Sun. A sidereal day is 23 hours, 56 minutes, 4 seconds long, the length it takes a star to cross your meridian two times successively. A solar day is about 4 minutes longer than a sidereal day because while the Earth rotates on its axis it also moves along in its orbit around the sun. Earth must complete slightly more than one whole turn in space before the Sun reappears on your meridian.

Janus - Saturn's Strange Moon

Janus is one of the stranger moons of Saturn. First, Janus travels in an unusual orbit around Saturn where it periodically trades places with its sister moon Epimetheus, which typically orbits about 50 kilometers away. Janus is potato shaped and at its greatest diameter is about 190 kilometers across. Next, Janus is covered with large craters but strangely appears to lack small craters. A possible explanation of this is a fine dust that might cover the small moon. Our cover photo of Janus was captured by NASA in September.

WNAS Information Board - Past and Future Events

First off, I would like to remind all members that Thursday, **January 18th** will be the next general membership meeting of the WNAS. We hope to see a good crowd and it would be great if everyone could arrive by 7:00 pm at the Observatory. Robert is tentatively planning to give a lecture on the ten most interesting physics and astronomy events of 2006.

Special events at the Observatory and the WNAS slowly down during the last two months. It appears everyone was quite busy with Thanks Giving and the Holiday Season. Many of the Saturday night star parties were either rained out or clouded in, which left a lot of us giving extended tours of the Observatory, instead of looking at the stars!

As a reminder to all members, we are still in need of Saturday night volunteers for our weekly star parties. If any of you have an interest in imaging the night sky the C-400 and BRC-250 are now fully operational! This is a great time of the year to come up to our weekly Saturday night star party, so try not to let another summer slip by without visiting the observatory. Right now the volunteers can still show you the principle attractions in the summer sky!

Objects in the Night

Objects in the Night Sky answers: Upper right is the Cartwheel Galaxy, Left center is the Starburst Galaxy



Cartoon provided by permission of Jack Kramer

Note from the Editor

As many of you may have noticed the WNAS website hasn't been updated in quite a while. We are looking for a webmaster if anyone is interested let one of the officers know! We are currently only putting the articles from past newsletters on the website. With our current programs we are unable to post the entire newsletter with photos and all. We anticipate that in the near future we will go to a PDF format for the newsletters. If any of the members are familiar with this format and would like to tackle a newsletter or two let me know!

WNAS November General Meeting Minutes

Robert Collier opened the November 16th meeting of the WNAS general membership 7:00. After welcoming the 10 attendees, the minutes from the last meeting were approved. Dana Luterick followed with a treasury report, the Association has approximately \$3500.00 in funds available.

Topics of discussion:

Robert discussed once again the status of the observatories light blocking wall. Progress is being made on this topic and we will hopefully see actual work on the wall in the near future. This will be a real improvement for the regular Saturday night star parties.

The new Jack C. Davis Observatory website is in final stages of development and should be launched in a couple of weeks. Robert is hoping to enlist the help of John Bradley. Meanwhile the WNAS website is badly in need of a webmaster, if any members are interested please contact one of the officers. For now, the WNAS website is getting very little attention or updating, because of the lack of volunteers.

A discussion on the future of the WNAS was brought up by Barry Morgan. Currently there are several Astronomical Societies supporting the interest of amateur astronomers in the Reno, Sparks, Carson and Minden areas. The point was made that the WNAS is basically a support arm for the Jack C. Davis Observatory and may better serve its members and the Observatory if this fact is formalized. Discussion of this topic will be continued at the next WNAS meeting and we encourage as many members as possible to be present.

A common discussion was again brought up concerning an increase in the number of WNAS meetings and newsletters. Currently we have six WNAS and six newsletters every year. Increasing this to every month would bring up the issue of finding more volunteers, which has not been very successful. Average WNAS meeting attendance is currently running at about 8 to 12 individuals.

The possibility of \$500.00 scholarships from the WNAS funds was discussed, as was a visiting scholar program. It was concluded these would have to be approved or discussed in more detail by the wider membership.

The guest lecturer was this evenings program was retired chemical engineer Harold Mason. The topic of discussion was Celestial Navigation. Harold started the lecture with the most basic to the most advanced forms of terrestrial navigation as an introduction to the subject of celestial navigation. It was a great lecture, enjoyed by all and the WNAS membership thanks Harold for his participation in our meeting.

Robert adjourned the meeting at 8:30 pm. The next WNAS meeting will be March 15th at 7:00 pm.

The Horsehead Nebula in Orion's Belt



One of the most identifiable nebulae in the sky, the [Horsehead Nebula](#) in Orion, is part of a large, dark, molecular cloud. The cloud is also known as Barnard 33. The unusual shape was first discovered on a photographic plate in the late 1800s. The red glow originates from hydrogen gas predominantly behind the nebula, ionized by the nearby bright star Sigma Orionis (the most Eastern star in Orion's belt). The darkness of the Horsehead is caused mostly by thick dust, although the lower part of the Horsehead's neck casts a shadow to the left. Streams of gas leaving the nebula are funneled by a strong magnetic field. Bright spots in the Horsehead Nebula's base are young stars just in the process of forming. Light takes about 1500 years to reach us from the Horsehead Nebula.

This black and white image of the Horsehead Nebula was taken at the Jack C. Davis Observatory last year with the observatories Takahashi C-400 and Apogee 16e CCD camera. The image hasn't been processed or enhanced, demonstrating the telescope and cameras incredible ability to image dim objects. Image taken by Jack L. Davis.