



SNAKE RIVER SKIES

A PUBLICATION OF THE MAGIC VALLEY ASTRONOMICAL SOCIETY

September 2008

Monthly Newsletter

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This month's news letter is published later than was expected due to some various technical issues. The editor apologizes to all member's for this minor inconvenience.

Pomerelle Mountain Star Party Review

With over 200 attendees, the second annual Pomerelle Mt. Star Party was held last month. The attendees were able to build and then launch bottle rockets at the beginning of the day's events at mid afternoon and also participate in solar viewing through two solar telescopes which were set up near the lodge.

Chris Anderson's astronomy talk was presented in the early evening. Chris presented "The Summer Skies" along with information about viewing conditions guests could expect when viewing through the telescope.

Improving upon last year and trying to avoid the dust. MVAS president Terry Wofford had laid out some large tarps in the

viewing area at the top. Rick Widmer and Terry had also set up some red lights to assist the stargazer's when they came off of the lift to the viewing area. This greatly improved the viewing as it avoided the white light that was used last year.

The lines did seem a little long at times, but everyone did manage a few views of various objects.

Once again the Stellacam from the SHARE equipment was put to use, but with some technical issues the only views offered were of Jupiter.

Terry said he has already begun the planning for the next Pomerelle Mt. Star Party. Hoping to keep improving upon previous successes. Pomerelle may just become an much sought after venue.

Idaho Star Party Review

The Idaho Star Party was held the first weekend of September at Bruneau Dunes State Park. On Friday evening participants enjoyed a presentation by astronaut Barbara Morgan. The skies for Friday night

were clouded out with a few sucker holes scattered throughout. Saturday morning and throughout the day the participants were able to solar gaze, visit with various fellow participants and of course

exchange various tall tales of viewing.

Chris Anderson also spoke to the attendees and presented information about the 100 year anniversary of the Tunguska event in Siberia, Russia

Two main vendors were present this year and offered various items to tempt everyone present to leave with a lighter wallet. BAS did a great job once again for their annual Idaho Star Party.

An Evening with Astronaut Barbara Morgan by Pamela A. Olsen

On September 5, 2008 the attendees of the Idaho Star Party at Bruneau Sand Dunes State Park were delighted and awed by the account given by Barbara Morgan of her journey on the Space Shuttle Endeavour with the crew of STS-118. This was a mission to restock and add to the International Space Station.

Ms. Morgan began by describing the launch of the shuttle in great detail including her own personal sensations. She was told to expect a great deal of pressure in the chest area and some difficulty breathing. What she was not prepared for was the feeling of the "shuttle attempting to fly straight through my back and taking me with it."

Ms. Morgan showed a short video of the launch from the perspective of cameras located on the solid rocket boosters and inside the crew cabin. Some technical difficulty was encountered in the education building and we were not able to hear the associated audio to the video. This did not really distract from the enjoyment of watching the video and hearing Ms. Morgan describe the launch from her perspective. She then went on to cover various aspects of the mission in some detail, recounting her delight in speaking with Idaho school children from space and answering

their questions about the mission and things related to space travel. She also described her own personal tasks on the shuttle including moving supplies to the space station and moving the addition to the space station with the robotic arm.

Ms. Morgan recounted losing her glasses inside the shuttle and the commander finding them stuck to the air filtration system, where apparently many lost items are eventually located. She also misplaced her personal scissors and on the last night in space while she was determined to stay awake to experience the shuttle at night when all is quiet, she noticed her scissors floating past a crew member and not wanting to chance waking her up, noted where the scissors drifted to and retrieved them the next morning. Ms. Morgan then recounted the landing of the shuttle and her personal delight in a well-completed mission for her and her crew members.

After relating the events of her shuttle mission, Ms. Morgan answered questions from the group. Since there was another program to be held in the education building the group retired to the picnic pavilion at the campground. There the group was allowed to continue the question and answer period. Ms. Morgan stayed to converse

with the group for nearly two and one-half hours. She also posed for pictures and signed autographs including many commemorative t-shirts from the star party which depicted the launch of the Shuttle Endeavour.

I found Ms. Morgan to be very humble and personable, very much a person whom you would like to have as a personal friend. She seemed truly pleased to speak to the group and was able to explain the most complex facets of her tasks on the shuttle in a manner that even the young children present did not become bored or restless. She is very much a capable educator and Boise State University is quite lucky to have her as a faculty member. As an Idahoan I am proud to have her represent us and glad to have her back home, so that we may all benefit from her knowledge, experiences and humble presence. Thanks to the Boise Astronomical Society for the opportunity to attend this event and listen to Barbara Morgan present her experiences.

You know, there's a great sense of pride to be able to be involved in a human endeavor that takes us all a little bit farther. When you look down and see our Earth, and you realize what we are trying to do as a human race, it's pretty profound. - Barbara Morgan, August 22, 2007

The Eye - The Telescope

Editor's Note: This article was written by Dr. Jay A. Hartwell, O.D. to provide a better understanding of the most important organ that we astronomer's use, the human eye. This will be a three part series.

Anterior Chamber

The cavity in the front part of the eye between the lens and cornea is called the Anterior Chamber. It is filled with Aqueous, a water-like fluid. This fluid is produced by the ciliary body and drains back into the blood circulation through channels in the chamber angle. It is turned over every 100 minutes.

Chamber Angle

Located at the junction of the cornea, iris, and sclera, the anterior chamber angle extends 360 degrees at the perimeter of the iris. Channels here allow aqueous fluid to drain back into the blood circulation from the eye. This drainage area may be obstructed in glaucoma.

Ciliary Body

A structure located behind the iris (rarely visible) which produces aqueous fluid that fills the front part of the eye and thus maintains the eye pressure. It also allows focusing of the lens.

Conjunctiva

A thin lining over the sclera, or white part of the eye. This also lines the inside of the eyelids. Cells in the conjunctiva produce mucous, which helps to lubricate the eye.

Cornea

The transparent, outer "window" and primary focusing element of the eye. The outer layer of the cornea is known as epithelium. Its main job is to protect the eye. The epithelium is made up of transparent cells that have the ability to regenerate quickly. The inner layer of the cornea is also made up of transparent tissue, which allows light to pass.

Iris

Inside the anterior chamber is the iris. This is the part of the eye which is responsible for one's eye color. It acts like the diaphragm of a camera, dilating and constricting the pupil to allow more or less light into the eye.

Pupil

The dark opening in the center of the colored iris that controls how much light enters the eye. The colored iris functions like the iris of a camera, opening and closing, to control the amount of light entering through the pupil.

Lens

The part of the eye immediately behind the iris that performs delicate focusing of light rays upon the retina. In persons under 40, the lens is soft and pliable, allowing for fine focusing from a wide variety of distances. For individuals over 40, the lens begins to become less pliable, making focusing upon objects near to the eye more difficult. This is known as presbyopia.

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The Eye—The Telescope

Macula

The part of the retina which is most sensitive, and is responsible for the central (or reading) vision. It is located near the optic nerve directly at the back of the eye (on the inside). This area is also responsible for color vision.

Optic Disc

The position in the back of the eye where the nerve (along with an artery and vein) enters the eye corresponds to the "blind spot" since there are no rods or cones in this location. Normally, a person does not notice this blind spot since rapid movements of the eye and processing in the brain compensate for this absent information. This is the area that the ophthalmologist studies when evaluating a patient for glaucoma, a condition where the optic nerve becomes damaged often due to high pressure within the eye. As it looks like a cup when viewed with an ophthalmoscope, it is sometimes referred to as the Optic Cup.

Optic Nerve

The optic nerve is the structure which takes the information from the retina as electrical signals and delivers it to the brain where this information is interpreted as a visual image. The optic nerve consists of a bundle of about one million nerve fibers.

Retina

The membrane lining the back of the eye that contains photoreceptor cells. These photoreceptor nerve cells react to the presence and intensity of light by sending an impulse to the brain via the optic nerve. In the brain, the multitude of nerve impulses received from the photoreceptor cells in the retina are assimilated into an image.

Sclera

The white, tough wall of the eye. Few diseases affect this layer. It is covered by the episclera (a fibrous layer between the conjunctiva and

sclera) and conjunctiva, and eye muscles are connected to this.

Vitreous

Next in our voyage through the eye is the vitreous. This is a jelly-like substance that fills the body of the eye. It is normally clear. In early life, it is firmly attached to the retina behind it. With age, the vitreous becomes more water-like and may detach from the retina. Often, little clumps or strands of the jelly form and cast shadows which are perceived as "floaters". While frequently benign, sometimes floaters can be a sign of a more serious condition such as a retinal tear or detachment and should be investigated with a thorough ophthalmologic examination.

The Eye – How It Works

The human eye is remarkable. It accommodates to changing lighting conditions and focuses light rays originating from various distances from the eye. When all of the components of the eye function properly, light is converted to impulses and conveyed to the brain where an image is perceived.

Light rays enter the eye through a transparent layer of tissue known as the cornea. As the eye's main focusing element, the cornea takes widely diverging rays of light and bends them through the *pupil*, the dark, round opening in the center of the colored iris.

The *lens* of the eye is located immediately behind the pupil. The purpose of the lens is to make the delicate adjustments in the path of the light rays in order to bring the light into focus upon the *retina*, the membrane containing photoreceptor nerve cells that lines the inside back wall of the eye. The photoreceptor nerve cells of the retina change the light rays into electrical impulses and send them through the optic nerve to the brain where an image is perceived.

The individual components of the eye work in a manner similar to a camera. Each part plays a vital role in providing clear vision.

The Normal Eye

The normal eye without a refractive error is a perfect sphere, like a tennis ball. Light enters the eye through the clear cornea (the "windowpane" of the eye) and the pupil to form an image on a film in the back of the eye. This film is called the retina.

Nearsighted (Myopia)

People who are nearsighted have a cornea that is too steep, or the globe of the eye is too long. Light is focused on the front of the retina; making images in the distance seem blurry.

Farsighted (Hyperopia)

Farsightedness occurs when the cornea is too flat, or the globe of the eye is too short, and light comes to focus at a point somewhere behind the retina. Both distant and near images are blurry.

Astigmatism

Astigmatism is a condition where the shape of the cornea is oval like a football, rather than spherical, like a tennis ball. Light entering the eye is focused at multiple points on the retina, causing an image to have a "ghosting" effect. Both nearsighted and farsighted people can have astigmatism.

Presbyopia

Presbyopia is an age-related condition in which the natural crystalline lens that helps focus light rays becomes rigid. Because of this natural aging process, most normal sighted or farsighted people and many nearsighted people need to use reading glasses to see close objects. Due to the increase rigidity the lens will become less clear and develop cataracts (lens opacities) and may also change color to a yellow or yellow brown. This will alter the sensitivity of the eye to light and color.

Part two will be in next month's newsletter.

Did you Know?

The National Aeronautics and Space Administration (NASA) is officially fifty years old this year. U.S. President Eisenhower signed the National Aeronautics and Space Act into law on July 29, 1958, thus creating NASA.



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Members Dark Sky Party

The Magic Valley Astronomical Society needs to have its own star party without the general public in attendance. No this not to discourage anyone from attending, but rather to give members a chance to gather before the winter season is upon us. After speaking to several individuals, the consensus is to hold the event at the Jerome Rod and Gun Club. As September begins to wane the weather is definitely cooling. Of course with cooler weather and more stable skies viewing should be great.

Though an official date has not been set, the board will meet the night of the meeting and decide upon a date soon. Members will be notified by e-mail.

A Star-B-Que of our own has been suggested.

Planetarium Shows for Sept. / Oct 2008

Tues, Fri, Sat evenings 7:00pm Hubble Vision

Friday Nights 8:15 Pink Floyd—The Dark Side of the Moon

Saturday Afternoons 2:00pm Cowboy Astronomer

Saturday Afternoons 4:00pm Sky Quest with a Live Sky Tour

Saturday Nights 8:15 Pink Floyd—The Wall

Beginning October 1st will be the return of the Halloween Show Anthems of Ghoulish Delight.

Please note as of Sept. 15th there will be an increase in ticket prices. General and Student Admissions will increase by 50¢ and the entertainment shows (like Pink Floyd) will be for all ages.

Family pricing will become the general admission prices.