



JOURNAL OF THE LACKAWANNA ASTRONOMICAL SOCIETY

KJC Observatory, Fleetville, Pa.

Everhart Museum, Scranton, Pa.

Volume 5, No. 1

VERNAL EQUINOX ISSUE

March 1977

OBSERVATORY BUILDING PROGRESS REPORT

It has finally been decided to put up a roll-off roof, instead of building or purchasing a dome. This decision was based on an assessment of costs, our finances, the size of the society and the skills of its members. A tentative set of plans have been drawn up by John Sabia. Phone calls, price quotations, and estimates have lead us to believe the roll-off roof will cost from \$200 to \$300. This is much more feasible than the \$6,000 a commercial dome would have cost us.

During the warmer weather, it is hoped that Bill Mecca will be able to find the time to finish off the walls and lay the concrete floor. The LAS has been very fortunate that Bill has made his professional skills available to us. He has done most of the work on the building alone, during lulls between his paying jobs.

John Sabia

DUES ARE DUE!

If you haven't as yet paid your 1977 dues, this will be the last ECLIPTIC you will receive. To avoid this situation simply mail you checks to Ken Mason

R. D. #1

Factoryville, Pa. 18419

Dues, to refresh your memory, are \$5.00 for regular members, \$10.00 contributing members, \$7.50 married couples, and \$3.00 for junior members.

AUSTRALIAN ECLIPSE SOB STORY #2

Editor's note: This is from a letter from Michael Goode of Indiana, Ham call letters WA9RJI, who I met while in Tahiti on the way to the eclipse. Michael is primarily a solar observor. He's had photos of the eclipse in Perth, 1974, published in "Astronomy" magazine.

"Melbourne was rainy and cold, the only thing I liked there were the electric trollics. I was in the northern part of the city on eclipse day. The clouds were thin enough to see the partial phases, but totality was completely obscured. At this point I was tired of lousy weather so I headed for Alice Springs. When I stepped off the airplane it was 98° and not a cloud in sight!"

Michael Goode

GEMINID REPORT

The Geminid meteor shower is the most reliable showers next to the Perseids of August. Both have actual rates close to fifty meteors per hour. In 1976 the peak was predicted around 10:00 p.m. EST, December 13, the same day the moon was of last quarter phase. This provided some three hours of dark sky before the moon would rise over the eastern horizon.

December 13 proved to be an exceptionally dark clear sky with a limiting magnitude of +6.2. It too was very cold. Temperatures were down to single numbers in degrees Fahrenheit. I started observing from Keystone Observatory at 7:36 EST (0:36 UT).

That first hour resulted in 24 meteors. Geminids were the predominate number, thirteen in all. I also noted three sporadics and eight suspected from the minor shower of X-Orionids. At 8:32 EST one spectacular -3.0 magnitude blue sporadic appeared. It travelled less than four degrees and did not leave a train.

The second hour was more fruitfull with thirty-two Geminids blazing across the sky of which eight obtained 1st magnitude or better. The average was around third magnitude. Two sporadics were seen in this hour.

In the final third continuous hour of observing the Geminids an almost exact duplication of the previous hourly total was noted thirty-one Geminids, two sporadics. Near the end of this time, (10:36 EST), the moon had just crept up over the horizon and was about to begin the end of my observing for the night. That and the cold, numb fingers, frost-covered ski mask, and partially frost-covered eye lashes.

In total that night ninety-one meteors were recorded, of which 76 were Geminids and 15 from minor showers or sporadic. Of the 76 Geminids, six left trains that lasted up to two and three seconds duration. From the data record on forms in terms of color the most dominate was blue - 40.78%, followed by yellow - 31.57%, white - 19.73%, red - 3.94%, orange 2.63%, and yellow/green - 1.31%. Also from this small sample of data can be determined that as magnitude rates 36.8% were fourth magnitude or fainter, 27.6% near third magnitude, 19.73% first or brighter, and 14.5% near second magnitude. These figures are very misleading at times, and only represent one persons data.

In all the Geminids were a very strong display worth braving the cold to view. This year (1977) the moon will be 3 days past new and will be out of the sky early that evening.

John D. Sabia

WOMEN IN ASTRONOMY: CAROLINE HERSCHEL

Editor's note: This article is reprinted from the February 1976 edition of Starlite, Peoria (Illinois) Astronomical Society. It was written by George Nelson.

Caroline Lucretia Herschel was born March 16, 1750, in Hanover, Germany. Her father, isaac, was an oboist in the regimental band of the Hanoverian Foot Guards, a job with low pay which did, however, enable him to send his four sons and two daughters to the garrison school. So Caroline received an education - an uncommon thing for women in that time. William, twelve years older, had emigrated and established himself as an organist and choirmaster in Bath, England. To develop Caroline's talent for siging, he brought her to England in 1772 to begin training. In three years, she made her debut as a concert singer, performing in oratorios and on the state in Bath

and Bristol. Thus both were established in music and seemed settled in life -- until William was bitten by the astronomy bug! He started observing with a small telescope, then made his own, with which he discovered Uranus in 1781. This discovery made him famous and converted both him and Caroline to full-time astronomers. She was not only his computer but his collaborator, both on construction and use of telescopes, for forty years. With her own seven-foot focus reflector she discovered three nebulae in 1783 and eight comets in the years 1786-1797. As William mounted the platforms of his great telescopes (including the 48-inch reflector with 40-foot focus) Caroline would be in the room below, recording the observing that he called out in the darkness and reducing the observations by laborious logarithmic computation. She described these nocturnal activities: "I could give a pretty long list of accidents which were near proving fatal to my brother as well as to myself. To make observations with large machinery, where all around is darkness, is not unattended with danger, especially when personal safety is the last thing with which the mind is occupied." On one occasion she fell and was caught on a large hook, which held her helplessly suspended above the snowy ground until William could rescue her: "I left two ounces of my flesh on the hook," she later wrote.

After William's death in 1822, she returned to Hanover, where she continued to scan the heavens, observing the comet of 1824. She was made an honorary member of the English Royal Astronomical Society in recognition of her accomplishments. Probably the greatest work of her life was the reduction of the positions of 2,500 nebulae to the epoch 1800.0. For this monumental labor she received the Copley medal of the Royal Astronomical Society in 1828. In 1864, the King of Prussia recognized her contributions by awarding her a Gold Medal for Science. She continued her astronomical work and her wide scientific correspondence until shortly before her death on Jan. 9, 1848, in her ninety-eighth year. She has a crater on the moon named after her.

OBSERVER'S NOTEBOOK

Saturn Has anyone been observing Saturn this apparition? The ring system has noticeably closed, as expected, but the most interesting changes have been in the South Polar Region. From my own records, the SPR has brightened from the dark black of 1975/76 to a bright orange, blinding with the rest of the ball of the planet. This can be clearly seen with a 3" or larger telescope. It will be interesting to follow the progress of this brightening effect. Who knows what may happen next? This was a major change in itself!

Mira For the beginning astronomer, the early part of February was an excellent opportunity to witness the "new star" in the south western sky. I'm speaking of Mira, of course. This famous long period variable reached peak brightness in late January, early February, and it was quite an amazing performance. The period of Mira is around 332 days so the next peak will be in the winter months, again, by the end of this year.

John D. Sabia

ASTRONOMY IQ TEST REVISITED

Questions

1. A scale has a platform large enough for a horse to stand on. If a man and a horse are weighed separately and their weights added, the sum would be a trifle more than if the man climbs on the horse and the two are weighed together. Why?

2. A certain table weighs ten pounds. If you put it in outer space then placed the earth on top of it, how much would the earth weigh on top of it?
3. One time, while riding on an airplane, I found myself seated between two ladies. One said she came from Mars and the other said she came from Venus. Could they be telling the truth?
4. The 694th asteroid to be discovered was named Ekard by its discoverer. Although the discoverer is permitted to name it whatever he or she wants, Ekard seems like a very odd name. What does it stand for?
5. Last but not least, in zero gravity what happens to the air space inside a closed, half-filled or half-empty bottle of water?

And now the answers you have been waiting for!

1. A man sitting on a horse is higher above the earth's surface than when standing on the ground, because there is less gravity the farther you move from the earth he weighs a tiny amount less.
2. Ten pounds. Did it occur to you that you can actually do this experiment? Just turn a table upsidedown. According to Newton's law of gravity, any two objects attract each other with equal force. Therefore, if the earth pulls on the table with a force of ten pounds, the table is simultaneously pulling on the earth with a force of ten pounds.
3. The ladies could indeed have been from Mars and Venus. There is a Mars in Pennsylvania, and a venus in Pennsylvania, Florida, Nebraska and Texas.
4. Ekard is Drake spelled backwards. The discoverer was a student at Drake University in Des Moines, Iowa when he made his discovery.
5. The air in the bottle would form a perfect sphere in the center of the bottle. This was actually tested by the Russian astronaut, Pavel R. Popovick during his space flight in 1962. He reported that, "It (the air) stayed there even when I shook the bottle."

Frank Adams Jr.,
Librarian

FOR SALE -

A 4" Criterion Newtonian-style reflecting telescope, f/12 mirror. Price includes the mount, tripod, finder scope, five eyepieces consisting of 27mm Kellner, 18 mm Huygens, 16.3 Eilfle, 9mm and 7mm Achromatic Ramsdens. These eyepieces have an O.D. of .946" making them slightly narrower than Japanese oculars. \$50.00 buys all. Contact Jc-Ann Pluciennik 346-3268.

PARTIAL LUNAR ECLIPSE APRIL 3

Anyone wanting to observe this event in a group, can meet at about 8:00 p.m. near the flagpole in Nay Aug Park. We expect to have coffee and maybe even doughnuts to sustain the hardy souls who show up. Donations greedily accepted. Weather permitting, we'll see the maximum eclipse at 11:18 EST.

JOURNEY TO THE STARS

This puzzle contains 25 constellations. The constellations are "spaced" in all directions. Here are a few to get you started. Cassiopeia, Ursa Major, Aquarius, Pleiades, Perseus, Aquila

P S E I R A A N E L K C I S N P A
E Q M A J T U C B I T Y S U O S C
G G U I S R L I Q B D G V X P A F
A B T E E P T E K B S N Z U N E S
S Q N P T L E O M A E U R I D A U
U G U O S U B J O S D S S M R Z R
S M P I H O I U J W A M Q S Q S U
J A J S L D C X N M I E R U B U A
F D I S R A V R A N E U W O C I T
R E N A N V G J O Y L O M I Z R B
T M C C H I O R L N P L V P I A G
H O E I E R U F Q K I C N R K U S
B R A Z G G Y I R Y X M P O J Q E
C D W O R O J A M S I N A C T A C
t n b c v q h p e r s e u s c l s
S A D Z X F U P E Y K D O W R H I
A R Y L A N R O C I R P A C R U P

Editor's Note: Come on! Please send in articles, observations, cartoons, jokes, etc. for the summer edition by May 15. We'd like to hear from more of you out there. You needn't write up technical works -- why not just some of your experiences while observing, building telescopes, or observations. Keep in mind our members range from those with highly technical interests to those who love astronomy for the beauty of the night sky.

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