

Newsletter of the Baton Rouge Astronomical Society

[www.brastro.org](http://www.brastro.org)

July 2013

**What's in this issue:**

|                                     |    |
|-------------------------------------|----|
| PRESIDENT'S MESSAGE .....           | 2  |
| NOTES FROM THE VICE PRESIDENT ..... | 3  |
| MESSAGE FROM THE HRPO.....          | 5  |
| CONSTELLATION OF THE MONTH .....    | 6  |
| JULY ASTRONOMICAL EVENTS.....       | 9  |
| PREVIOUS MEETING MINUTES.....       | 10 |

## PRESIDENT'S MESSAGE

Hey Everyone,

Just a brief message for this July issue of the newsletter. If you are like me, you've been getting tired of trying to second guess the weather forecasts looking for a good night to do some observing. It seems like every time the prediction is "mostly clear", the sky is full of clouds. But when it calls for clouds and I don't make plans, they never come and I miss a good night of observing. That's the hot, humid summer of Louisiana for you.

I've had several people express interest in paying a visit to our dark sky site. I am keen to get out there, myself. As soon as we see an upcoming string of good, clear nights, I think we should pick one in the middle and get out there. For those that have never been to the dark sky site, it's not too bad. A relatively short drive from Baton Rouge and we get a large patch of sky that is dark enough to see the Milky Way cloud. Being that that part of the sky is rising high a couple hours after sunset, now is a good time to get out there if you want to see that sort of thing. Be prepared to fight off the bugs. It is on the edge of the swamp, after all.

That's all for now. I hope you are all enjoying the summer so far. Please join us for our monthly meeting if you are in town. Maybe we'll get one of those rare, cloudless nights and have a chance to take a look at Saturn or some of the nice globulars that are up this time of year. Also, as always, feel free to invite a friend. We could always use more members!

Clear Skies,  
Ben Toman  
BRAS President



## NOTES FROM THE VICE PRESIDENT

Our July BRAS meeting will be a little different. First off, Ben has some topics he wants to discuss with the club for your input - a loner scope program, lifetime membership options, and a couple of other items. For the remainder of the program, a few BRAS members have found some very interesting astronomy websites that can occupy those summer days (and nights) when it is too hot to go outside. We will do a tour of a few of those sites and what you can do on them. If you have any new ones you have stumbled across, send me a message at [merrilhess@gmail.com](mailto:merrilhess@gmail.com).

Now for the news. Go here to read about the latest updates on the Chelyabinsk meteorites: <http://www.skyandtelescope.com/news/home/Chelyabinsk-Megameteor-A-Status-Report-212987401.html>

And, while not exactly astronomy, I thought this Space.com article was quite interesting.

## Cave Art Reveals Ancient View of Cosmos

by Miriam Kramer, Staff Writer

Date: 27 June 2013 Time: 03:00 PM ET

<http://www.space.com/21755-cave-art-reveals-ancient-view-of-cosmos.html>

Some of the oldest art in the United States maps humanity's place in the cosmos, as aligned with an ancient religion.

A team of scientists has uncovered a series of engravings and drawings strategically placed in open air and within caves by prehistoric groups of Native American settlers that depict their cosmological understanding of the world around them.

"The subject matter of this artwork, what they were drawing pictures of, we knew all along was mythological, cosmological," Jan Simek, an archaeologist at the University of Tennessee said. "They draw pictures of bird men that are important characters in their origin stories and in their hero legends, and so we knew it was a religious thing and because of that, we knew that it potentially referred to this multitiered universe that was the foundation of their cosmology."

Simek and his team studied art from 44 open-air locations and 50 cave sites. The earliest depiction of this kind of cosmological stratification dates to around 6,000 years ago, but most of the art is more recent, from around the 11th to 17th centuries.

The researchers noticed that certain kinds of drawings and engravings only appear in specific areas of the plateau. For instance, open-air spots in high elevations touched by the sun feature "upper world" artistic renderings that include depictions of weather forces, heavenly bodies and characters that can exert influence on humans.

"Lower world" drawings and engravings are found in dark areas like caves that are hidden from the sun. Usually, this layer of the world is associated with death, darkness and danger.

The "middle world" is representative of the reality that surrounded prehistoric humans on a daily basis. These drawings were found in both open-air environments and caves, but for the most part, they were found in the middle elevations of the plateau.

"This layered universe was a stage for a variety of actors that included heroes, monsters and creatures that could cross between the levels," Simek said in a statement.

Although depictions of many of the actors were found in low, high and middle elevations, color relates the overall cosmological structure of the universe, Simek said. Characters drawn in red — the color of life — are found in higher elevation sites, while black was used to draw figures found in the lower world.

"The dominant things we see all together are human images, what we call anthropomorphs," Simek told LiveScience. "They're not all human; some of them are clearly mythological people or people who blend animal and human characteristics."

These depictions of the universe can also help inform an understanding of the modern world.

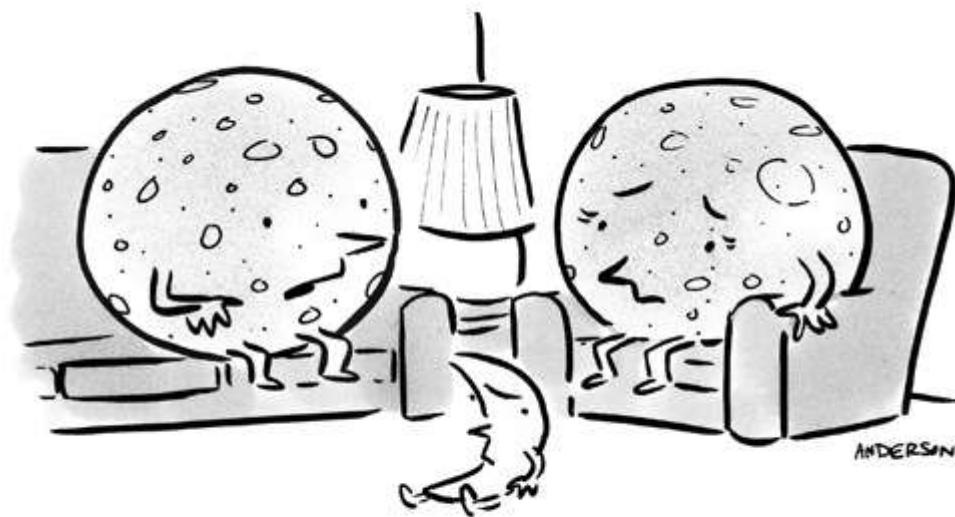
"It's a very common human conception that there are different levels of being and different levels of cognition and different levels of connectivity with the human condition," Simek said. "I think all people at one level or another do that."

Merrill Hess

BRAS Vice President

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"Don't worry, it's just a phase."

## MESSAGE FROM THE HRPO

### FRIDAY NIGHT LECTURE SERIES

*all start at 7:30pm*

12 July: "Wonders of the Summer Sky"

19 July: "Beliefs about UFOs"

26 July: "Getting Started in Astronomy"

### CALL FOR VOLUNTEERS: ON SITE

\* Saturday, 3 August from 6pm to 10pm. *Two volunteers in addition to regular BRAS compliment, each for two-hour shift.* **Evening Sky Viewing Plus.** Marshmallow roast, demo and clock tables; small telescope; setup and takedown. Easy; training provided.

### LIGHT POLLUTION UPDATE

The Unihedron SQM-L has arrived here in Baton Rouge. Geoff hand-delivered to HRPO. Those involved are finalizing plans right now to start taking preliminary measurements at HRPO and in New Roads, where a promise was made to gauge the night sky as soon as possible. Guidelines that mandate minimum sky cover and time of night recordings occur will soon be in existence.



**"To prepare for the long hours of boredom traveling to Mars, the astronauts will drive back and forth across Texas!"**

## CONSTELLATION OF THE MONTH

### Ophiuchus - The Serpent Bearer or Snake Handler

#### Position in the sky

Right Ascension 17 H, Declination. -8

#### Named Stars:

Rasalhague (Alpha Oph) "The Head of the Serpent Charmer", mag. 2.09, Position 17 32 6 N12 36, has an unseen companion

Cebelrai (Beta Oph) "The Sheppard's Dog", also called Cheleb, mag. 2.77, position 17 41 0 N04 35

Sabik (Eta Oph), mag. 2.46, position 17 07 5 S15 40, a close binary, 0.8° to SW is R Oph, a long term variable

Yed Prior (Delta Oph), mag. 2.72, position 16 11 7 S03 34 and

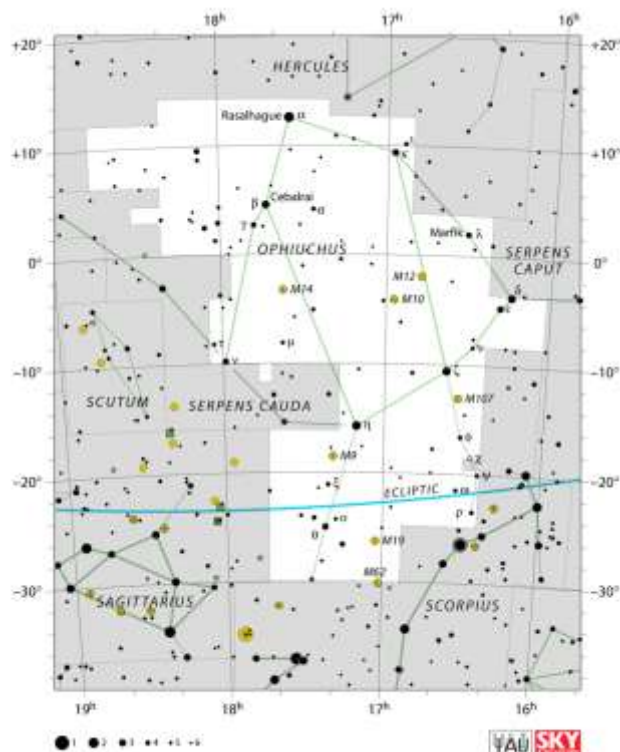
Yed Posterior (Epsilon Oph), mag. 3.72, position 16 15 7 S04 3, both are Red Giants, and are a naked eye pair 1.5° separation

Helkath (Kappa Oph) "Battlefield", mag. 3.2, position 16 55 3 N09 27

Imad (Theta Oph) "Pillar", mag. 3.26, position 17 18 9 S24 57, a spectral variable of 3.37 hours. The Pipe Nebula (B65,66,67,77,78) is a few deg, South, and the S Nebula (B72) is 1.5° North

Sinistra (Nu Oph) "Left or Left Hand", mag. 3.34, position 17 56 3 S09 46, has a brown dwarf companion, NGC 6517 is 1° to the NE

Marfik (Lambda Oph) "The Elbow", mag. 4.2 to 5.2 – a triple star, with mag. 3.8, 5.2, 11.1, with 1.5° separation of double star



#### Deep Sky Objects

M9 (NGC 6333), mag. 7.3, position 16 57 1 S04 06, a globular cluster with a diameter of 9', 3.5° SE from Eta Oph. NGC 6342, position 17 21 2 S19 35 at a diameter of 5', is 1.2° to the SE, and NGC 6356 is 80' to the NE. It has 13 variable stars.

M10 (NGC 6254), mag. 6.7, position 16 54 5 S04 02, diameter of about 19', is 1° ESE of 30 Oph, and has 3 variable stars.

M12 (NGC 6218), mag. 6.6, position 16 47 2 S01 57, is about 3.4° NW of M10, and has 13 variable stars.

M14 (NGC 6402), mag. 7.7, position 17 37 6 S03 15, is 16° S of Alpha Oph, with 72+ variable stars. A nova appeared in 1938- a 16<sup>th</sup> mag. star, with a peak brightness of mag. 10 or 11.

M19 (NGC 6273), mag. 6.6, position 17 02 6 S26 16, it is 8° due East of the star Antares. A few deg. SE is a dark cloud called 'The Pipe Nebula'. It has 4 variable stars. NGC 6293, position 17 10 2 S26 35, is 1.5° to the ESE at mag. 8.4. NGC 6284, mag. 9.7, position 17 04 5 S24 46, is 95' to the NNE.

M62 (NGC 6266), mag. 6.6, position 17 01 2 S30 07, is 6° SW of Theta Oph, 1° to the WSW is variable star RR Scorpii, at mag. 5.1 to 12.0.

M107 (NGC 6171), mag. 8.5, position 16 32 5 S13 03, located 3° SSW of Zeta Oph.

NGC 6633, position 18 27 7 N06 34 12, an open cluster 26' in diameter.

NGC 6240, position 16 52 59 N02 24 02, an ultra luminous infrared galaxy, formed from a merger of 2 small galaxies whose super massive black holes are 3000 light years apart, forming a butterfly shape.

NGC 6517, position 18 01 9 S08 57, 1° SW of Nu Oph, has a diameter of 3.3'.

NGC 6572, mag. 9, position 18 12 1 N06 51, 11" in diameter.

IC 4603-4604, mag. 5, position 16 25 6 S24 28, they surround Rho Oph, 4603 is 19' x 19' in diameter, 4604 is 60' x 25'.

IC 4634, mag. 12, position 17 01 6 S21 50, has a diameter of 8".

IC 1257, position 17 24 5 S07 03, 1' diameter.

IC 4665, mag. 6, position 17 46 3 N05 44, 1.4° NE of Beta Oph, 55' diameter.

Mamajek 2 cluster, near Mu Oph.

B63, position 17 16 0 S21 23, a dark cloud 1.7° x 0.3° in diameter.

B68, position 17 22 6 S23 41, diameter of 0.4 light years.

B77 and B78, "The Pipe Nebula", B77 is the bowl of the pipe in position 17 30 0 S26 00, a dark cloud about 2° in diameter, 2° SE of Theta Oph, with a length of 7°. The stem of the pipe is formed by B59, B65, B66, and B67- a formation of dark masses extending westward.

B72, "The S Nebula", position 17 21 0 S23 35, 1.5° NNE of Theta Oph, with a diameter of 30'.

Wolf 1061, a red dwarf star.

Supernova 1604 (V 843 Oph), called Kepler's Star, position 17 27 6 S21 26, near Xi Oph. A supernova first observed on the night of October 9, 1604. On that night, Jupiter and Mars were in conjunction only a few degrees from the nova position. Kepler made a special study of the supernova, hence, Kepler's Star. Estimated peak magnitude was about -2.25. Light of the supernova was seen for 18 months.

Barnard's Star "The Runaway Star", mag. 9.53, position 17 55 4 N04 24. A faint Red Dwarf 60 light years from Earth. Known for having the greatest known apparent motion (proper motion) of any known star – 140 Km/sec. Annual motion is 10.29", and in 351 years it moves 1° in the sky. It has at least 1 companion, with a separation of 24'. Located 3° E of Beta Oph.

RS Oph – A recurrent nova, mag. 4.3 to 11, location 17 47 5 S06 42. One of the two brightest recurrent novae, is a binary - a red giant and a white dwarf.

70 Oph, mag. 4.01, position 18 02 9 N02 32. Part of an obsolete V-shaped asterism known as the "Bull of Paniatowsky". The other 3 stars in the asterism are 66, 67, and 68 Oph. 70 Oph is a binary with the 2<sup>nd</sup> star at mag. 5.9. Separation varies from 6.7" to 1.7". Both are dwarf stars 16.5 light years from Earth. It is suspected that 70 Oph has a planet orbiting it.

### Variable Stars

XX Oph, mag. 11 to 9, position 17 41 3 S06 15. An irregular variable, 1.5° WNW of recurrent nova RS Oph.

U (38 Oph), mag. 6-13, position 17 14 0 N01 16. A short period eclipsing binary star, orbiting in a period of 1.677347 days, with a center to center separation of about 5.5 million miles.

X Oph, mag. 6 to 9, position 18 36 0 N08 47. A long term variable, a pulsating red giant with a period of 334 days. It has a faint companion, mag. 9, 0.3" from the primary.

Chi Oph, mag. 4.2 to 5.0, a variable star.

R Oph, a variable star 3/4° SW of Eta Oph. A pulsating variable, 10 month cycle. AAVSO predicts maximum on July 20<sup>th</sup>.

### Binary Stars

Lambda Oph, mag. 4.2 and 5.2. Separation is 1.5".

Xi Oph, mag. 4.5 and 9.0. Separation is 3.7".

Rho Oph, mag. 5.3 and 6.0. Separation is 3.1".

Tau Oph, mag. 5.2 and 5.9. Separation is 1.7".

36 Oph, mag. 5.1 and 5.1. Separation is 4.9"

Struve 2276, mag. 7.0 and 7.4. Separation is 6.9".

Ophiuchus has 126 Double and Multiple Stars, 55 Variable Stars, and over 31 Star Clusters, Nebulae, and Galaxies.

In 2007, the Swedish built ODIN satellite detected clouds of molecular oxygen in space after observing Ophiuchus.

In 2009, star GJ 1241 was observed to undergo repeated, cyclic dimming with a period of about 1.5 days -0 consistent with the transit of a small planet.

## **Meteor Showers associated with Ophiuchus**

Ophiuchus, Theta Ophi, Northern May, and Southern May.

OPHIUCHUS, pronounced off-ee-YOO-cuss, represents a man with a huge snake coiled around his waist. He holds the head of the snake in his left hand and its tail in his right hand. The snake is represented by the constellation SERPENS (Caput and Cauda).

The Greeks identified him as Asclepius, the god of Medicine. Asclepius was the son of Apollo and Coronis (although some say his mother was Arsinoe). The story goes that Coronis two-timed Apollo by sleeping with a mortal, Ischys, while she was pregnant by Apollo. A crow brought Apollo the news, but instead of the expected reward, the crow, which until then had been snow white, was cursed by Apollo and turned black.

In a rage of jealousy, Apollo shot Coronis with an arrow. Rather than see his child perish with her, Apollo snatched the unborn baby from its mother's womb as the flames of the funeral pyre engulfed her, and took the infant to Chiron, the wise centaur (represented in the sky by the constellation Centaurus).

Chiron raised Asclepius as his own son, teaching him the arts of healing and hunting. Asclepius became so skilled in medicine that not only could he save lives, he could also raise the dead. On one occasion in Crete, Glaucus, the young son of King Minos, fell into a jar of honey and drowned while at play. As Asclepius contemplated the body of Glaucus, a snake made towards it. He killed the snake with his staff, and then another snake came along with an herb in its mouth and placed it on the body of the dead snake, which magically returned to life. Asclepius took the same herb and laid it on the body of Glaucus, whereupon the magical effect was repeated. Because of this incident, says Hyginas, Ophiucus is shown in the sky holding a snake, which became the symbol of healing from the fact that snakes shed their skin every year and are seemingly reborn.

Others, though, say Asclepius received from the goddess Athene the blood of Medusa, the Gorgon. The blood that flowed from the veins on her left side was poison, but the blood from her right side could raise the dead.

Another of the men whom Asclepius supposedly resurrected was Hippolytus, son of Theseus, who died when he was thrown from his chariot (some identify him with the constellation Auriga the Charioteer). Reaching for his healing herbs, Asclepius touched the boy's chest three times, uttering healing words, and Hippolytus raised his head.

Hades, god of the underworld, began to realize that the flow of dead souls into his domain would soon dry up if this technique became widely known. He complained to his brother god Zeus, who struck down Asclepius with a thunderbolt. Apollo was outraged at this harsh treatment of his son and retaliated by killing the three Cyclopes who forged the thunderbolts of Zeus. To mollify Apollo, Zeus made Asclepius immortal (in the circumstances he could hardly bring him back to life again) and set him among the stars as the constellation Ophiucus.

*From "Star Tales" by Ian Ridpath*

**BRAS Dark Site Viewing Dates**  
**Primary July 6th, Secondary July 13th**



## JULY ASTRONOMICAL EVENTS

- July 1<sup>st</sup> Pluto reaches opposition and peak visibility is this evening at mag. 14.0 in Sagittarius.
- July 3<sup>rd</sup> One hour after sunset, low in the WNW, Venus will be on the edge of M44 – the Beehive Cluster.
- July 6<sup>th</sup> The crescent moon will be a few degrees to the upper left of Mars. Zeta Taurii will be between them.
- July 10<sup>th</sup> A slender crescent moon will be 7° from Venus, to Venus's lower left.
- July 15<sup>th</sup> First quarter moon will pass 0.3° North of Spica at midnight, EDT.
- July 16<sup>th</sup> The moon will pass 3° South of Saturn at 8:00PM CDT, and Spica will be to the right.
- July 16<sup>th</sup>/17<sup>th</sup> Jupiter and Mars will be 2.2° apart, low in the ENE an hour before sunrise, M35 is 1/2° above Mars.
- July 19<sup>th</sup>/20<sup>th</sup> A waxing gibbous moon's invisible dark limb will creep up to and occult Xi Oph (mag. 4.4) at approximately 11:10PM CDT.
- July 21<sup>st</sup> Dusk Regulus (mag. 1.4) will be 1 1/4° to the lower left of Venus (mag. -3.9) 45 minutes after sunset.
- July 22<sup>nd</sup> Dawn Mars glimmers 3/4° to upper left of Jupiter at 1:00AM CDT. Regulus will be 1 1/4° below Venus at 12:00AM CDT.
- July 25<sup>th</sup> The Moon passes 6° North of Neptune at 1:00AM CDT.
- July 27<sup>th</sup> The Moon passes 3° North of Uranus at 5:00PM CDT.
- July 28<sup>th</sup> Mercury will be 7° below Mars.
- July 29<sup>th</sup> An orange star in Aries (mag. 9.1) will vanish for up to 3 seconds behind the invisibly faint asteroid 1047 Beljawska within a few minutes of 8:56 UT.
- July 30<sup>th</sup> Mercury is at its greatest western elongation (20°) at 4:00AM CDT and will reach almost mag 0.
- July 30<sup>th</sup> Delta Aquarid meteor shower peaks and one might see an early Perseid meteor.

### All during July

- Venus is low (only 10° above horizon) in the West at dusk, and sets ½ hour after the Sun.
- Mars is low (only 8° high) in the ENE at dawn- at mag. 1.5 30 minutes before sunrise.
- Saturn is visible from dusk until after midnight at mag. 0.5 to 0.6. Titan (mag. 8) will be due north of Saturn on July 1<sup>st</sup> and on July 17<sup>th</sup>, and due south on July 9<sup>th</sup> and July 25<sup>th</sup>. A 4 inch telescope will reveal mag.10 satellites Thethys, Dione, and Rhea close to Saturn, while further out Iapetus (mag.12) will be 9° east of Saturn on July 8<sup>th</sup>, and will brighten to mag.11 by the time it passes 2' south of Saturn on July 28<sup>th</sup>.
- Mercury (mag.1) will be 7.5° below Mars and 5° above the horizon 45 minutes before sunrise on July 25<sup>th</sup>.
- Uranus (mag.5.8) in mid July will rise around midnight local daylight time and will climb high in the SE before dawn in Pisces. Delta Piscium (mag.4.4) will be 3.5° north of Uranus.
- Neptune (mag.7.8) will be in Aquarius, which rises mid evening and appears highest in the south as morning twilight begins. Sigma Aquarii (mag.1.8) will be 0.7° SE of Neptune on July 1<sup>st</sup>, and 1.1° east on the 31<sup>st</sup>.
- Pluto reaches opposition on July 1<sup>st</sup> at mag.14.0. It will require a large telescope (10 inches or larger) to see it in northern Sagittarius approximately 2.7° E of M25 and 4.3° NNE of M22. This region is highest in the south around 1:00AM local daylight time in early July.
- Main belt asteroid 6 Hebe will be in Serpens – start at Mu Serpens (mag.3.5) and slide 2° NNW to 25 Serpens (mag.5). 6 Hebe will be about ½ ° north on July 16<sup>th</sup>, and about 1/2° south on July 21<sup>st</sup>.
- Meteor showers in July: the Alpha Capricornids; the Piscis Austrinids; and the Delta Aquarids, both Northern and Southern.

John Nagle  
BRAS Observing Chairman

## PREVIOUS MEETING MINUTES

### Minutes of June meeting

7:15 - Meeting called to order

7:16 - Trevor talked about a program to make telescopes available for checkout by public library patrons. and made a motion to initiate this program. After discussion, it was agreed that the club should buy a telescope and donate it to the library. The motion was deferred until the details can be worked out.

7:31 - Ben's letter to the Reflector magazine was published and shown.

7:33 - Ben suggested that members look for candidates for the BRAS dark sky award and reminded members about paying dues.

7:34 - Announcement of the passing of Dale Treleaven, a BRAS member.

7:39 - Chris reminded everyone to be careful when turning into the observatory from Highland Road. He talked about the lack of response by BREC supervisors regarding lighting issues; and mentioned that a Baton Rouge traffic engineer is interested in cooperating to reduce light pollution in the area. He is also looking into changing the sign at the observatory entrance.

7:52 - John Nagle gave a talk on the use of filters in astronomy.

Merrill Hess brought two pair of binoculars to be given away as door prizes.

Meeting adjourned.