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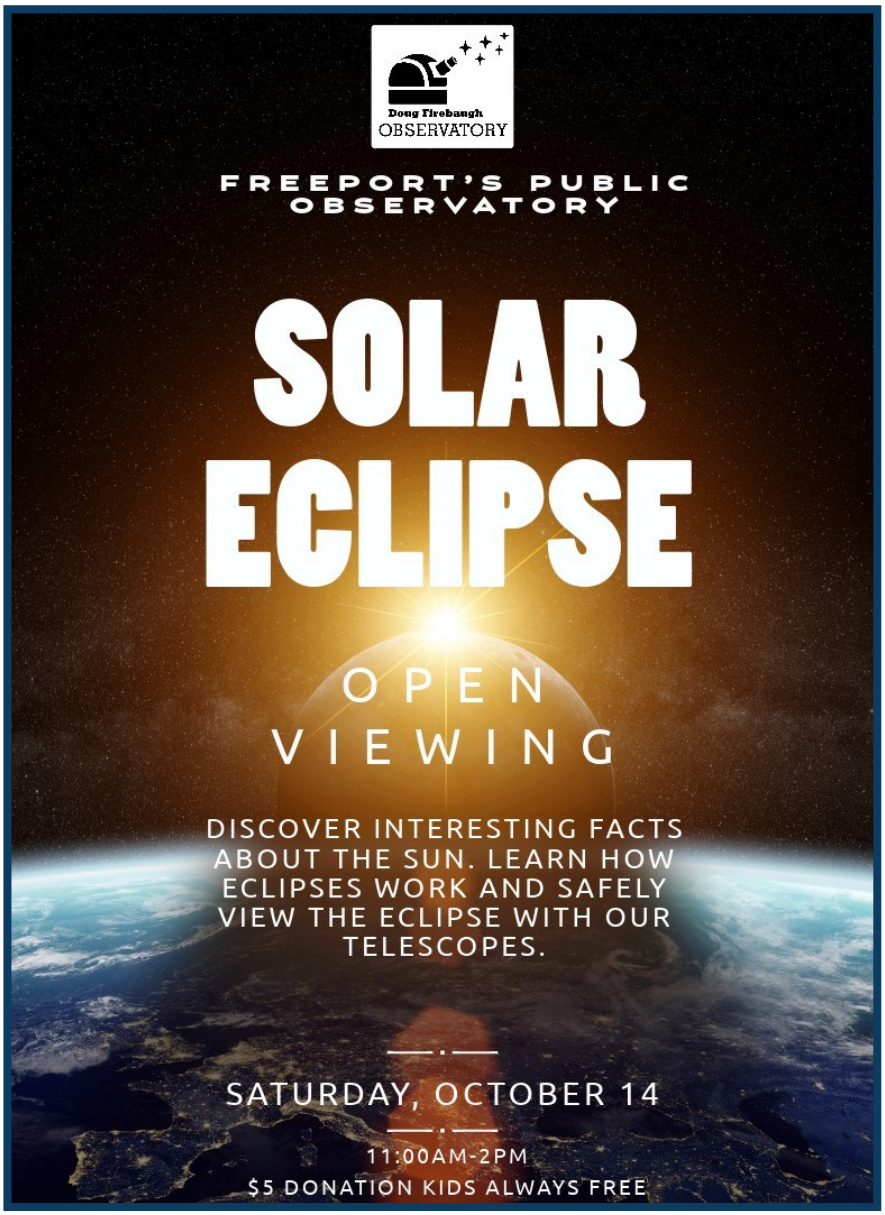
Fall 2023
Third Quarter

PSF NEWS

Planetary Studies Foundation

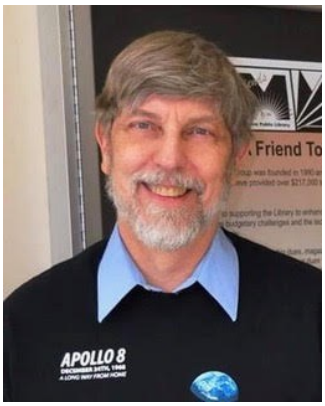
IN THIS ISSUE



Thank you to all the members that voted and
Congratulations to the newly elected
PSF Executive Board of Directors:

Jim Hagen, Ryan P. Nolan & Paul P. Sipiera

PRESIDENT'S MESSAGE



As the Third Quarter and the summer season of 2023 comes to an end, we find the Planetary Studies Foundation extremely well positioned for what the future may hold for us. As noted at the September 9th Annual Members Meeting, our organization is financially stable and enjoying the increased interest rates in our CD term deposits. In terms of accomplishments the first four months of the year were an extremely productive period. First in line was the April 22nd dedication event of the Christina Hollis Meteorite Exhibit at the Putnam Museum and Science Center in Davenport, IA. Since its opening, thousands of visitors have viewed the exhibit and commented on its excellent educational content. Then in a quick turnaround the 1,851 meteorites that comprised the PSF's Collection were shipped to the Yale Peabody Museum in New Haven, CT. This latest donation joins the over 1,000 meteorites that comprise our historic James M. DuPont Meteorite Collection. Now with these two major accomplishments behind us, the PSF will be seeking new opportunities in both educational and meteorite research. This summer has also been kind to our scheduled programs at the Doug Firebaugh Astronomical Observatory in Freeport, IL. Director Jim Dole and his dedicated team enjoy interacting with the public and sharing in their excitement especially when they see Saturn's rings for the first time. In addition to their efforts at the Firebaugh Observatory, Jim and his staff are also coordinating events with other regional astronomical organizations. One of PSF's Strategic Goals is to continue with "what we do best" and that will be our emphasis on observational astronomy and meteorite research.

Concerning PSF's continuing meteorite research, we will be concentrating on the inventory and classification of the over 500 remaining meteorites in the late Ted Bunch's research collection. Throughout his career, Ted welcomed the task of classifying new meteorite finds as they came in from various sources from around the world. His association with Jim Wittke at Northern Arizona University was an excellent partnership. Together they added hundreds of new North African (NWA) meteorites to the rapidly expanding Meteoritical Bulletin list. Over the past several years, Ted worked very closely with PSF's Senior Scientist, Tony Irving. Their collaboration identified many rare meteorite types and later transferred hundreds of his previously classified specimens to the PSF Collection. As with all good researchers, there never seems to be enough time to bring all their projects to a conclusion. This was also the case with Ted and his hundreds of "in progress" meteorites. As a tribute to Ted Bunch's meteorite legacy, PSF decided to take-on the task of completing his work. To accomplish this goal, Tony Irving took on the responsibility of inventorying and then coordinating the necessary research efforts for these remaining specimens. Once this is finished many of these specimens will be allocated to the PSF and eventually join the others at the Yale Peabody Museum in New Haven, CT.

Over the past 34 years, every now and then, PSF is asked how we measure the success of our many different programs. Listing the number of classified meteorites is an easy answer, as is counting the number of people that have enjoyed our STARLAB Planetarium programs over the years. One of the many goals of the PSF is to promote science education and to encourage young people to follow careers in science. Specifically tasked with this challenge was Diane Sipiera with her extremely innovated expertise in making science an enjoyable learning experience. One of PSF's more recent success stories is Ms. Evelyn Larson, a May 2023 graduate from Yale University majoring in Earth & Planetary Science. We first met Evelyn at our Earth & Space Science Museum in Elizabeth, IL. At that time she was a high school junior and eager to learn as much as she could outside of the traditional classroom. Six years later, she has become an integral part of our meteorite research program. We are proud to say that Ms. Larson's future goal is to pursue a Ph.D. program in Planetary Science, and we have no doubt she will achieve that goal.

Paul P. Sipiera

DONORS SPOTLIGHT

2023 Third Quarter Donations

Douglas Firebaugh
Astronomical Observatory

John Walt*
Northwest Illinois Audubon Society*

General/Operations Fund

Mary Sue Coates**
Jeff, Judith & Phillip Glenn*
Paul & Diane Sipiera***
Linda Virag*

* *Recognizes a donation of $50 to $499*
** *Recognizes a donation of $500 to $999*
*** *Recognizes a donation of $1,000 & up*

MEMBERS CORNER

NEW MEMBERS

Individual Membership

Vivian Engelhardt

RENEWING MEMBERS

Individual Membership

George A. Johnson

Family Membership

Leo & Karen Baran

Jeff, Judith & Phillip Glenn

86TH ANNUAL MEETING OF THE METEORITICAL SOCIETY — UCLA

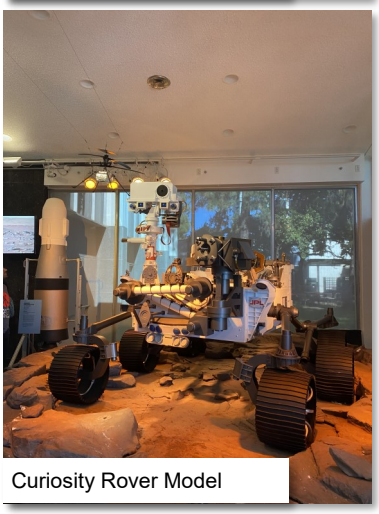
PSF IS PROUD TO HAVE SPONSORED PSF MEMBER AND RECENT YALE GRADUATE, EVELYN LARSON, TO ATTEND THE MEETING AT UCLA'S CAMPUS IN WESTWOOD, CALIFORNIA

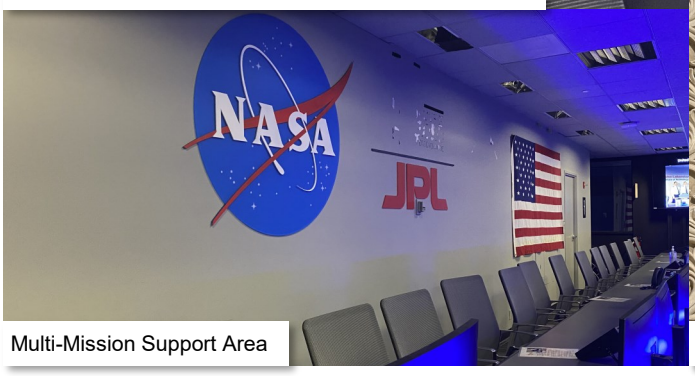
Evelyn Larson on a NASA Jet Propulsion Lab tour


Europa Clipper


Europa Clipper Clean Room

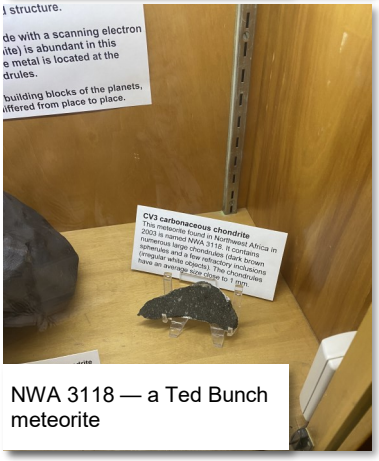

Voyager Model


Curiosity Rover Model



Multi-Mission Support Area


UCLA Geology Building



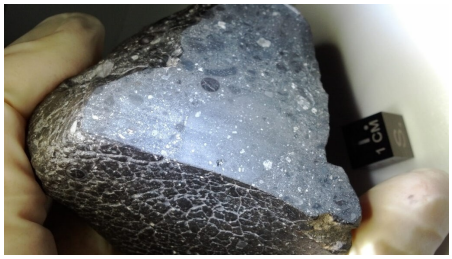
NWA 3118 — a Ted Bunch meteorite

REPRINT: ScienceNews (submitted to us by PSF Member, Leo Baran

Why you shouldn't use magnets when looking for meteorites

A popular tool for identifying meteorites can destroy scientific information

It's time to drop the magnets, meteorite hunters. The commonly used method for identifying space rocks can destroy scientific information.



Touching even a small magnet to a meteorite can erase any record the rock might have retained about the magnetic field of its parent body, researchers report in the April Journal of Geophysical Research: Planets. And the concern isn't theoretical: a subset of the oldest known Martian meteorites appear to have already had their magnetic memories wiped, the team showed.

Scientists often turn to meteorites to get a closeup look at other worlds, as well as understand our own. The space rocks can contain traces of planetary atmospheres, the chemical building blocks for life and more (SN: 1/26/21; SN: 4/26/22).

Planetary scientist Foteini Vervelidou uses meteorites from Mars — chunks of the planet that were blasted into space by an impact and later captured by Earth's gravity — to study its ancient past. Just a few hundred are known to exist. Rarer still are specimens that contain minerals carrying imprints of the Red Planet's magnetic field, which collapsed about 3.7 billion years ago (SN: 9/7/15). The oldest known Martian meteorites, which date to roughly 4.4 billion years ago, therefore present an "amazing chance to study the magnetic field," says Vervelidou, of MIT and the Institute of Earth Physics of Paris. But such opportunities can be readily squandered, Vervelidou and colleagues have shown. The team's numerical calculations and experiments with earthly rocks — stand-ins for meteorites — confirmed that bringing a hand magnet close to a rock can rearrange the spins of the rock's electrons. That rearrangement overwrites the imprint of a previous magnetic field, a process called remagnetization.

What's more, the process appears to happen frequently. The team examined nine meteorites found at different times and places on Earth. All of them are thought to have originated from the same oldest known chunk of Mars, which most likely broke up when it entered Earth's atmosphere. All had been remagnetized.

The finding is unfortunate, but it's not surprising, says Melinda Hutson, a meteoriticist at Portland State University in Oregon and the curator of the Cascadia Meteorite Laboratory who was not involved in the research. "Just about everyone wants to stick a magnet on the side of a potential meteorite."

It is possible to evaluate a meteorite without destroying its magnetic properties. Vervelidou uses a lab instrument called a susceptibility meter, which measures how an object would respond to a magnetic field. And portable versions exist: She and a team of meteorite researchers used one to find nearly 1,000 meteorites on a recent expedition in Chile. Hopefully, Vervelidou says, some of those space rocks will shed light on Mars' magnetic past.

FALL CELESTIAL CALENDAR

September 29 — Full Moon, Supermoon

The Moon will be near its closest approach to the Earth and may look slightly larger and brighter than usual.

October 14 — New Moon

The moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This is the best time to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

October 14 — Annular Solar Eclipse

An annular solar eclipse occurs when the Moon is too far away from the Earth to completely cover the Sun. This results in a ring of light around the darkened Moon. The Sun's corona is not visible during an annular eclipse. The eclipse path will begin in the Pacific Ocean off the coast of southern Canada and move across the southwestern United States and Central America, Columbia, and Brazil. A partial eclipse will be visible throughout much of North and South America.

October 20, 21 — Orionids Meteor Shower

The Orionids is an average shower producing up to 20 meteors per hour at its peak. It is produced by dust grains left behind by comet Halley. The shower runs annually from October 2 to November 7 and peaks this year on the night of October 20 and the morning of October 21.

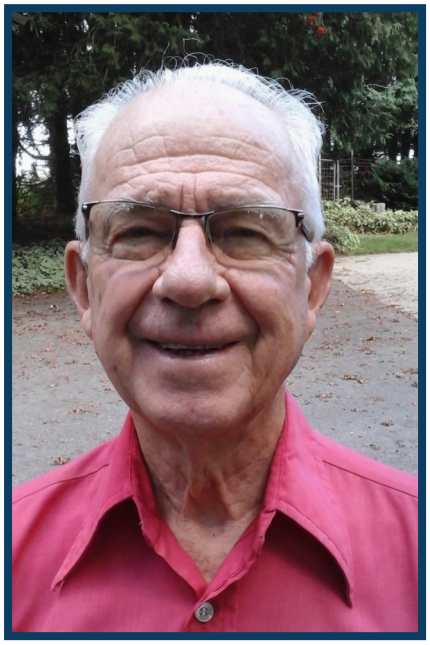
October 23 — Venus at Greatest Western Elongation

The planet Venus reaches greatest eastern elongation of 46.4 degrees from the Sun. This is the best time to view Venus since it will be at its highest point above the horizon in the morning sky. Look for the bright planet in the eastern sky before sunrise.

Find more sky events by following us on our Facebook page.

MEMBER SPOTLIGHT

Doug Firebaugh



PSF: Can you share a little about where you grew up and your upbringing?

Doug Firebaugh (DF): I grew up on a 100-acre farm and attended a one room school house with 16 other students. In 1958, I graduated from Freeport High school, and then attended Manchester College majoring in chemistry and secondary education, working 3 years as a chem lab assistant.

After graduation I received a National Science Foundation grant to the University of Utah where I received my Master's degree in Science Education. My chemistry professor was the author of the new method of teaching high school chemistry which was sweeping the country along with new methods of teaching physics and Biology. This Chem Study approach emphasized the lab approach which the Freeport School District was looking for, and I was hired to implement this method at Freeport. During my tenure of 36 years at FHS, I implemented a class in Advanced Chemistry and another class in Astronomy and became the director of the science club.

In my family life, my wife and I celebrated our 63rd wedding anniversary in August. We have 2 daughters; one is an accountant and the other is a civil engineer and 2 granddaughters. The oldest is a junior at West Point and the other is a Senior in high school in St. Louis.

PSF: Can you share how you got started in your career and what inspired you?

DF: My work as a lab assistant in college got me started on my teaching career. I found I really enjoyed working with students and explaining how science is related to all aspects of life. When I started at FHS the science club called the JETS (Junior Engineering Technical Society) was in the process of grinding a 12-inch mirror for a telescope. I became co-director and we began a fundraising drive to build our own observatory to house the 'scope.

The Park District offered us the use of their old club house on Park Hills golf course which we remodeled into the present observatory with the roll back roof. Since this was an ongoing project, we became a not-for-profit organization so donations would be tax deductible. This got the attention of the state and national JETS leadership and our club was selected as the best club in the state for 5 consecutive years and the best in the Nation one year.

The observatory officially opened in the Fall of 1967 and I initiated an astronomy class in the Fall of 1968. The class used the observatory several times each semester and several students became proficient in its use and served as "supervisors" during the Wednesday night open houses for the public during the summer. Each spring I would send selected students to the local grade schools to present a colored slide program on astronomy.

PSF: Our members know you best from the Freeport, IL observatory named in your honor, how did that come about?

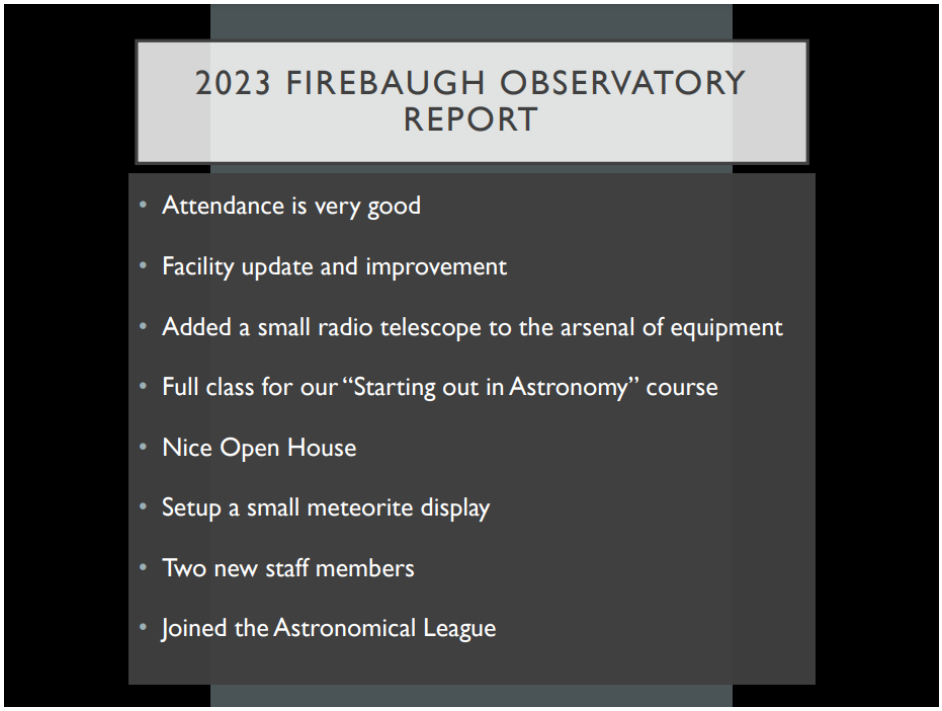
DF: After I retired in 1999 the observatory was used very little. One of my former astronomy students, PSF Member Jim Dole, took over the directorship of the observatory and it became associated with the Planetary Studies Foundation. Since the National JETS organization no longer existed, it was decided to change the name to The Doug Firebaugh Observatory to honor me as the original director. Under Jim's leadership (and his team) it has prospered and grown with the building of another observatory next to the original one (this one with a dome) which is 100% handicapped accessible housing another telescope hooked up to large TV monitors.

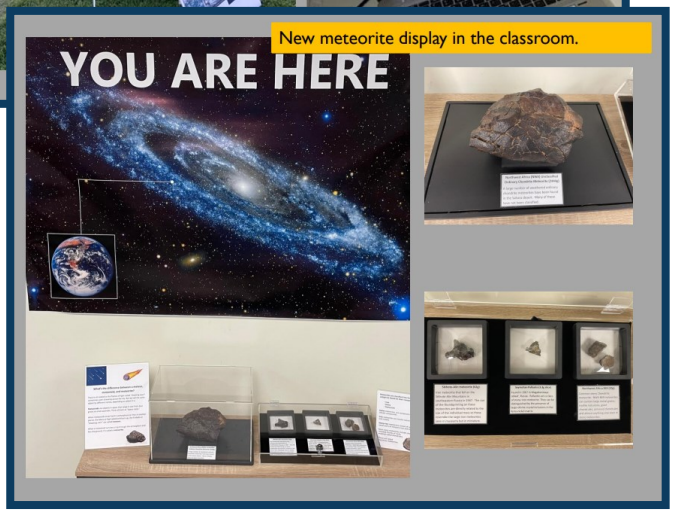
PSF: What's your favorite area of science and why?

DF: I enjoy all of the sciences, but astronomy to me is the most fascinating. It is something that all of us can appreciate and enjoy as we view the majestic night sky. The discoveries that are being made using new and better instruments keep on amazing us to the magnificence of the creator!

PSF: What advice would you give to our younger readers and science enthusiasts?

DF: My advice to young people would be to take advantage of every opportunity to learn. Every experience you have offers an opportunity to enrich your life in some way! ♦





Above are the graphics that Jim Dole, PSF Member and Director of the Firebaugh Observatory, shared at the Annual Members Meeting on Saturday, Sep. 9. As you can see, he and the team have been busy! Be sure to follow the observatory on Facebook.

MEMBERSHIP FORM

Regular Membership	____ $	20.00	1 year	**or** ____ $	35.00	for 2 years
Family Membership	____ $	35.00	1 year	**or** ____ $	60.00	for 2 years
Sponsoring Membership	____ $	50.00	1 year	**or** ____ $	90.00	for 2 years
Contributing Membership	____ $	100.00	1 year	**or** ____ $	180.00	for 2 years
Student Membership	____ $	10.00	1 year			
Life Membership	____ $	500.00				
Please accept this donation	____ $	_____				

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Please make checks payable to
Planetary Studies Foundation

Please mail the membership form along with a check to:

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10 Winterwood Lane, Unit B
Galena, IL 61036

Our mission is to promote the study of planetary science and astronomy with emphasis on meteorites; and to sponsor, encourage, and assist in the physical, astronomical, environmental, and cultural sciences so as to broaden man's knowledge of all phases of the universe.

For more information about our mission, articles and upcoming events, visit:

www.planets.org

Doug Firebaugh Observatory

Open rain or shine on the 1st and 3rd Saturdays, May through October at 8:00p.

2892 W Stephenson St
Freeport, IL

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