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SPACE FORCE: THE SIXTH BRANCH OF THE US MILITARY

AN INTRODUCTION TO THE NEWEST ADDITION TO THE U.S. MILITARY
BY DIANE M. SIPHERA

Space Force was launched in December 2019 as the sixth branch of the U.S. military by former President Donald Trump. Its mission is to provide freedom of operations in, from, and to space. This branch is purely military compared to NASA, which is civilian, but has carried out often classified or covert military operations in the past.



After Sputnik I was launched on October 4, 1957 by the Soviet Union, the U.S. realized that the Cold War was on and had to join the Space Race in order to maintain status as a superpower country. Thus, NASA was born out of a need for military dominance. Six decades later, China and other countries are adding satellites for communications, weather forecasting, banking, surveillance, and many other needs. Meanwhile, NASA has grown past its military origins to become our main scientific apparatus in a variety of fields.

Many believe that the U.S. now needs a military presence in space in order to maintain our interests there. Much of what the Space Force does is classified and is responsible for operating and defending military satellites and ground stations that provide communications, navigation and Earth observation, such as the detection of missile launches.

It also operates the network of Global Positioning System, or GPS, satellites that was originally developed by the Air Force, but made available to the public contributing more than \$1 trillion to the American economy. The U.S. also has many assets in space now that most things are done digitally, including banking and the stock exchange. In fact, all stock exchange operations are carried out through a geostationary satellite. If that satellite were put out of commission, the global economy would be in serious danger.

In addition for the need to protect our assets against countries like Russia and China, there's also a new Space Race to take advantage of lunar and other extraterrestrial resources. According to a *New York Times* article published on June 15:

"After years of promises and some limited cooperation, Russia and China have begun to draw up ambitious plans for missions that would directly compete with those of the United States and its partners, ushering in a new era of space competition that could be as intense as the first."

Between the new Space Race and the critical importance to protect some of our country's most valuable assets, the need for these guardians has never been greater. It will be interesting to see how it all unfolds.

PRESIDENT'S MESSAGE

The second quarter of 2021 seems to be on track to return your Planetary Studies Foundation and the country too back to a state of “New Normal” after a very difficult 2020. On the planning side we are moving ahead with the development of an excellent meteorite display for the Putnam Museum and Science Center in Davenport, Iowa. On the drawing board since January 2020 the meteorite exhibit has now reached the point where the preliminary design has been completed and most of the specimens have been selected to represent all aspects of meteorite science. When completed the exhibit will be dedicated to the late Christina Hollis, a former PSF Executive Board Member and avid meteorite collector. The majority of the specimens in the exhibit will be from her collection that she donated to PSF several years ago. A second exhibit featuring PSF’s efforts in meteorite recovery in Antarctica will follow later this year. The exhibit will also highlight the importance of Antarctica’s role in preparing for future missions to the Moon and Mars.



It is also with great pleasure that I can announce the reopening of our Doug Firebaugh Astronomical Observatory in Freeport, IL. Thanks to the dedicated efforts of its director Jim Dole and his excellent staff our facility will once again be open to the public this summer and fall. Public Nights to resume starting on July 17th and continue on the regular schedule of the 1st and 3rd Saturdays of the month through October. We also had another “Return to Normal” event take place on June 12th & 13th at the Putnam Museum and Science Center. PSF members Grant Harkness, Dino Milani and Dave Smith participated in the Putnam’s Introduction to Space Weekend offering their expertise with several educational exhibits featuring meteorites and other exciting astronomical topics. This event was especially exciting for me since it was over two years ago since I presented a program on Antarctic meteorites before an audience. It was also nice to see many familiar faces from the Popular Astronomy Club and the Quad Cities Astronomical Society interacting with a very enthusiastic mix of adults and children. One demonstration in particular attracted a great deal of attention. Grant Harkness, who is also the president of our educational affiliate The Organization for the Proliferation of Space Studies (TOPSS), conducted a meteorite cutting demonstration that literally amazed his audience. Seeing a rather ordinary-looking brown stone be cut in half and than revealing a splattering of metal grains and light-colored rounded chondrules was truly an amazing sight. Hopefully with more people being vaccinated and the infection rates continuing to decline, PSF will be able to participate in many more events like this one at the Putnam Museum.

In closing I’d like remember the passing of one of our long-term members William (Bill) Coates. He and his wife Mary Sue have left us with so many fond memories of them from their participation in so many of our past Astronaut Dinners and museum events. On behalf of the PSF and the Sipiery Family in particular I offer Mary Sue our sincere condolences.

Paul P. Sipiery

DONORS SPOTLIGHT

- SPRING 2021 DONATIONS -

Douglas Firebaugh Astronomical Observatory

Lawrence Heinrich**

General/Operations Fund

Paul & Diane Sipiera***

* Recognizes a donation of \$100 to \$499

** Recognizes a donation of \$500 to \$999

*** Recognizes a donation of \$1,000+

RENEWING MEMBERS

Contributing Membership

Cecelia M. Cooper

Sponsoring Membership

Joseph & Bonnie Garrity

Family Membership

Randy Rice & Rebecca Shriver

Individual Membership

Alicia Anzaldo

Doug Firebaugh

Nancy J. Heggem

Steve Hoyer

PICTURES FROM THE PUTNAM MUSEUM — JUNE 12, 2021



MEMBER SPOTLIGHT: Dave Smith

Planetary Studies Foundation (PSF): Where did you grow up?

Dave Smith: I lived in Moline, IL until I was 10 years old, then we moved to Orion, IL where I graduated from high school in 1973.

PSF: What college(s) did you attend and what was your primary area of study?

Dave: I attended Black Hawk College (BHC), in Moline, as a geology major and astronomy minor. After BHC, I had planned to pursue a degree in geology and wanted to get into astronautics, but was sidelined by economics and politics. At 50 years of age, I applied for and received an experiential Bachelor of Science degree in Planetary Geology from now-defunct Alameda University.

PSF: What is your current profession and what inspired you to follow that career?

Dave: I'm a parts inspector for John Deere in Milan, IL. Since I was tied to the Quad Cities area, my inspiration was strictly need. I had previously been an environmental geology technician for a Fortune 500 geotech consultant.

PSF: What is your favorite area of science and why do you find it interesting?

Dave: I have been interested in rocks, minerals, and fossils for as long as I can remember. I've been collecting them for over 60 years. I started collecting and studying meteorites in 1986. I've been interested in the manned space program since John Glenn made his first flight in 1962. I saw geology as a door to becoming an astronaut,

especially since NASA was sending men to the MOON during the Apollo Program! That's where I wanted to go.

PSF: What was your role in the Osiris-Rex mission, and how did you become involved? What was your favorite aspect of that experience?

Dave: Since I had been a member since 1996, I received an email from The Planetary Society, looking for volunteers to view and characterize high-resolution photos of the asteroid Bennu. As a member of the Bennu mapping team, I enjoyed studying the photos, assisting in the landing site selection process. After a short, online training session, I was sent random photos of various areas to characterize for boulders, craters and rough terrain. The variety of geography on such a small body was surprising and fascinating.

PSF: How did you become involved with the Planetary Studies Foundation?

Dave: I was internet surfing, one day, looking for meteorite-related organizations. I came across the Planetary Studies Foundation being located in Elizabeth and having a meteorite museum, too. How cool is that?! Sometime later, my wife, Peggy, and I were out on our motorcycles, headed toward Galena, and I asked her if she would like to drop down to Elizabeth. I toured the



museum, while she took a nap under a tree.

PSF: What is one thing you like most about being a member of the Planetary Studies Foundation?

Dave: Just having a connection with one of the largest meteorite collections in the world, and knowing PSF does so much worthwhile research on them, is justification, enough.

PSF: What communities are you involved with in the Quad Cities?

Dave: Around home, I'm a member of the Popular Astronomy Club of the Quad Cities (PAC), and also the

Quad Cities Creation Science Association. Both organizations have public outreaches that I try to get involved with, if my schedule permits.

PSF: What are some of your hobbies?

Dave: I collect meteorites, of course. I have nearly 400 different specimens in my collection, with my planetary specimens (i.e. Lunar, Martian, HED, and Mercurian) being my favorites. I actually buy and sell them and set up a table of meteorites for sale at the local gem and mineral shows in Davenport. I also study local sports history, mostly baseball (minor and major league) and Tri-Cities Blackhawks basketball. I also have an Orion 14" Dobsonian GoTo telescope that I set up occasionally for our public outreaches.

PSF: Where is your favorite place you have traveled and what makes it so memorable?

Dave: I think Barbados has, so far, been my all time favorite place, because it was so beautiful. We went there in 1986 as one of the stops on a Caribbean cruise. Meteor Crater has to be one of my favorites, also, just because it's the earthly epitome of my geological interests.

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

Dave: If it is at all in your control, get your college education as early as is practical. Stay focused on your goal!

A Special Thanks to Dave!



SUMMER CELESTIAL CALENDAR

June 24 — Full Moon, Supermoon

July 28-29 — Delta Aquarids Meteor Shower

This shower is an average shower that can produce up to 20 meteors / hour at its peak. The shower runs annually from July 12 to August 23, but peaks on the night of the 28th. Best viewing will be from a dark location after midnight.

August 2 — Saturn at Opposition

The ringed planet will be at its closest approach to Earth and its face will be visible all night long. This is the best time to view and photograph Saturn and its moons.

August 12-13 — Perseids Meteor Shower

This shower is one of the best meteor showers to observe, producing up to 60 meteors / hour at its peak with a large number of bright meteors. Best viewing will be from a dark location after midnight.

August 19 — Jupiter at Opposition

The giant planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. This is the best time to view and photograph Jupiter and its moons since it will be at its brightest and visible all night long.

August 22 — Full Moon, Blue Moon

This rare calendar event only happens once every few years, giving rise to the term "once in a blue moon."



CALLING ALL AMAZON SHOPPERS!

In addition to donations and dues, you can contribute to the PSF by participating in Amazon's charitable program.

SELECT THE PSF: Search Amazon Smile and select the Planetary Studies Foundation as your charity.



START SHOPPING: Be sure to start each purchase at smile.amazon.com and the PSF will receive .05% from all eligible purchases. You can bookmark the webpage to make sure you don't forget this important step.



SPREAD THE WORD: Encourage your family and friends to choose the PSF, too. Amazon earned over \$386 billion in net sales in 2019 alone — help us receive a tiny piece of that pie! — it's free to you and helps us earn valuable funds.

ANNUAL MEMBER'S MEETING: SEP. 11 @ 1P

Similar to last year, this year's Annual Member's Meeting will be hosted virtually on September 11th at 1:00 p.m. If you are interested in participating in the meeting, please send Diane Sipiera an email at dsipiera@planets.org. We will then add you to a guest list and an email with instructions will be sent to you prior to the meeting. Please note: there will not be an opportunity to vote on the day of the meeting, so members who wish to cast their vote will have to do so through email or mail by Wednesday, September 1st.

Meet the 2021 Candidates for the Board of Directors



JOE A. AUER, JR.

Joe serves as Chairman of the Board of the Foundation. He brings a unique blend of senior level experience in industry, government, academia and not-for-profit organizations to the Foundation. Joe is one of PSF's longest members and has always taken a great interest in its mission to advance science education. Recently retired, he hopes to shortly get to practice his Kitt Peak imaging training.

"If reelected to the Board, I would like to more actively provide my planetary physics education and prior multi-faceted work experience to help further both the educational and scientific missions of the Foundation."



LIZ LARSON

Liz Larson has been a graphic designer since 1991 and has owned her own design studio since 2005. She is also the Art Director at the Galena ARC, where she teaches art to ages 3-14 and develops and oversees youth and adult art programs. Over the years, she has served on several boards, including the Friends of the Galena Public Library, the Galena Rails to Trails Initiative, and the Youth Arts Festival of Jo Daviess County. For the past 30 years she has assisted many boards, event committees and businesses with their marketing and design goals. She recently redesigned the PSF website to help redefine PSF's digital presence.

"Through my daughter, Evelyn, I have an increased interest in science, planets, meteorites and an interest in seeing the PSF organization grow. I believe my background, experiences and energy could be a contributing asset to the PSF board."



HERBERT WINDOLF

Herb serves as Director-at-Large and is Vice President Emeritus to the PSF. He has been engaged with two small German machine tool manufacturers since 1964 in positions ranging from Technical Operations Assistant to Managing Director, and Vice President of the American Affiliate, eventually becoming importer of their products to North America until 2008. In addition to supporting the PSF in a multitude of ways, among which are his past articles on scientific subjects and travels published in the PSF Newsletters, he has enjoyed the interesting people he has met through the organization. He has a great love of science and a broad knowledge of life. His knowledge is a great asset for the organization.

"At age 84 I'm still of sound mind which I hope to retain through my occasional input to PSF matters as a Director-at-Large, my continuing monthly discussions with doctoral friends, and my writing of poetry. It is my sincere regret that traveling to Board meetings is no longer possible due to health reasons and the covid affair."

YOUR VOTE MATTERS! Included with your copy of the newsletter is a ballot to cast your vote for this year's election of Directors. Please send in your vote electronically (preferred) to dsipiera@planets.org or via standard mail to:

Planetary Studies Foundation, 10 Winterwood Lane, Unit B, Galena, IL 61036.



**FIREBAUGH OBSERVATORY
OPENING AGAIN
JULY 3**



- **OPEN HOUSE:** The 2021 Open House is scheduled for Saturday, July 3 from 6-11 p.m. This event is weather permitting, rain date of the following Saturday. This event will include many family-friendly activities including sky and solar viewing and presentations.
- **PUBLIC NIGHTS:** Public nights to resume on Saturday, July 17 and continue on the regular schedule of the 1st and 3rd Saturdays of the month through October.
- **HEALTH PRECAUTIONS:** All visitors over 14 years old should be COVID-19 vaccinated before using the telescope observing rooms. Masks are not required, but visitors are of course welcome to wear them. Signs will indicate room capacities and sanitation wipes will be available to clean shared equipment.
- **CONTACT US:** More information can be found on the Doug Firebaugh Observatory Facebook page or call (815) 291-3072.

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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Doug Firebaugh Observatory

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- **START SHOPPING:** Be sure to start each purchase at smile.amazon.com and the PSF will receive .05% from all eligible purchases. You can bookmark the webpage to make sure you don't forget this important step.
- **SPREAD THE WORD:** Encourage your family and friends to choose the PSF, too. Amazon earned over \$386 billion in net sales in 2019 alone — help us receive a tiny piece of that pie! — it's free to you and helps us earn valuable funds.