GRAA NEWSLETTER

P.O. Box 1184, Greenbelt, MD 20768-1184

March 2024 **https://GoddardRetirees.org** **40th Year of Publication**

UPCOMING LUNCHEONS: We meet at 11:15 AM DST (10:15 if you forgot to change your clock!) on March 12 at the American Legion Post #136 at 6900 Greenbelt Road. **Reservations are required;** please contact graalunch@gmail.com (preferred) or call (410)-709-8889 **before Thursday, March 7th.**

March 12	**Nickalaus Pinkine,** JHAPL, PSP Mission Operations Manager, "Parker Solar Probe: Mission Operations Challenges during Commissioning and Beyond".
April 16 One week delay!!	**TBD…. Eclipse photos? Note the changed luncheon date!**

COMMENTS FROM TONY COMBERIATE AND ARLIN KRUEGER

Our February speaker was Dr. **Matt Greenhouse,** a recently retired Laboratory for Observational Cosmology Astrophysicist, and JWST Project Scientist for Science Instruments. Matt's presentation, entitled "The James Webb Space Telescope Mission" began with a captivating account of how starlight is stretched from ultraviolet into infrared wavelengths as the universe expands. JWST (or Webb) was conceived in the early 1990s to connect dots between COBE's microwave observation of the oldest light in the universe (300,000 years after the Big Bang), and Hubble's visible/UV observation of the Universe after it was a billion years old. This gap, called the Cosmic Dark Zone, is when the first stars and galaxies were formed, and what JWST's IR telescope is designed to observe. The first results show an early universe loaded with galaxies of unexpectedly diverse shapes.

JWST is studying how stars are formed. Hubble's famous Pillars of Creation image in the Eagle Nebula shows backlit opaque clouds of hydrogen gas and dust at visible wavelengths. Webb's IR wavelengths can penetrate the dust to see the newly forming stars. Webb has seen 50 new stars similar in mass to our Sun in the closest star-forming region, about 390 light years away. Planetary systems form in circumstellar discs created in star formation. Webb is looking at the circumstellar disc of our Solar System, the Kuiper belt of ice and rocks, first explored with New Horizons, which found rocks fused in low-speed collisions.

Most of the liquid water in our solar system may not be on the Earth. Europa (a Jupiter moon) and Enceladus (a Saturn moon) are believed to contain large oceans covered by ice. Webb has

discovered a ring of water escaping from Enceladus' ocean. Rings of ice and rock have also been found around Jupiter and Uranus. There are tens of billions of potentially habitable exoplanets in our galaxy and Webb is searching for life through changes in the spectrum when the planet passes in front of the star. The spectral lines of gases like water, methane, carbon dioxide, and possibly dimethyl sulfide, would suggest conditions for life.

Webb required a telescope 7 times larger than HST for a similar spatial resolution in the near IR. The mirror, made of beryllium (for a low coefficient of expansion at low temperatures), has 18 hexagonal segments folded to fit in the nosecone, with mechanisms to focus each segment after deployment. It needs to be very cold (~40K) to avoid interference by its own IR emission. In an L2 orbit, heat from the Sun, Earth, and Moon comes from a single direction. A tennis court-sized, 5-layer Kapton curved sunshade, with an SPF of one million, protects the telescope while it cools to near absolute zero. In this attitude, Webb can cover 35% of the sky at any time, and the whole sky in 6 months.

Webb was NASA's first spacecraft to be transported by ship to the launch site in Kourou, French Guiana. ESA's Ariane rocket flew perfectly, saving enough fuel on Webb for a 20-year lifetime. Deployment of the sunshade involved 140 single-point failure devices, that all worked!

Webb is giving humanity its first high-definition view of the infrared universe, seeing early Universe galaxy morphologies and a supermassive black hole formed by direct collapse, and will continue to amaze us with these Cosmic Dark Zone discoveries. Matt reminded us, "Travelling back in time is science fiction but looking back in time is scientific fact."

ELECTION OF GRAA BOARD OF DIRECTORS:

The election of the seven GRAA Board of Directors is scheduled for the **May 14, 2024** luncheon. We strongly encourage GRAA members to **nominate a willing GRAA member or themselves** to be included on the ballot. Up to two Board positions may be open. Please email goddardretirees@gmail.com with the name(s) to be added to the ballot **before Tuesday, April 30.** If you value GRAA and its contributions to maintaining Goddard's legacy, please consider running for the Board.

Serving on the Board is only one of several ways to help. Other needed service areas include recruiting new retirees, editing the GRAA Newsletter and Directory, improving the GRAA website, and maintaining membership records.

NEWSLETTERS: Send your **email** address to goddardretirees@gmail.com. to get our monthly Newsletters. Past Newsletters and links to videos of the talks are on our website https://goddardretirees.org. ***Quarterly abstracts*** of the Newsletters are mailed to the retirees with *only* residential addresses in our files.

GRAA MEMBERSHIP DIRECTORIES, updated every 2 years, are mailed to all members with home addresses in our files. For privacy reasons only hardcopies are available. We depend on retirees to furnish their addresses to be listed, and to receive the Directory. Please send your **address,** as well as donations to support the mailings, to **P. O. Box 1184, Greenbelt, MD 20768-1184**.

TREASURER'S REPORT: Treasurer Jackie Gasch received donations from: James Barrowman, John Haberman. Dave Havrilla and Rick Obenschain in memory of Ray Saxton.

FROM THE GODDARD ARCHIVES: Forty years ago on April 6, 1984, Shuttle Challenger STS-41C crew retrieved and repaired the Solar Maximum Mission satellite. This was the first time a satellite was successfully repaired in space, allowing five more years of scientific research.

REMEMBERING OUR FORMER COLLEAGUES:

Vernon Christian Eisenhardt, 96, passed away on January 7, 2024, in Wardensville, WV. Vernon was born in Baltimore and worked at Goddard for twenty years.

Charles "Charlie" Rowley Gunn, 89, of Potomac, MD and Cocoa Beach, FL, passed away on February 5, 2024. Born in Washington, DC on April 23, 1934, he received his BS and MS in Aeronautical Engineering at the Univ. of Michigan in 1957 and attended the Senior Executive Program at MIT in 1985. He spent 35 years at NASA ELV and in Space Shuttle management and technical direction. In the 1970s he became Project Manager of Delta Launch Vehicle and Landsat-D Spacecraft at Goddard before becoming NASA HQ Director of Space Shuttle Operations in 1979. He was awarded the NASA Distinguished Service Medal in 1976 and 1994 as well as the NASA Outstanding Leadership Medal in 1992.

Mary Patricia J. Jones, 96, passed away on February 11, 2024 in Alexandria, VA. She was the wife of **Alton Emmett Jones** (July 21, 1926 - October 14, 2019), who was born in Alamogordo, NM. He earned a BS in electrical engineering in 1950 in Las Cruces, NM and worked at the Naval Research Lab, then NASA for 35 years on the Vanguard program and ECHO, Relay, Telstar & SYNCOM communication satellites. He became Director of Flight Assurance at Goddard.

Eugene "Gene" Francis Kadar, age 84, of Annapolis, passed away on January 31, 2024. He was born August 16, 1939 in McKeesport, PA. Gene began his career at Rocketdyne, then joined NASA as a solid rocket propulsion engineer, and later worked at Goddard as a sounding rocket engineer.

Henning Leidecker, 82, passed away on October 30, 2023. Born on September 9, 1941, he earned bachelor's and Ph.D. degrees in physics from Catholic U, then was awarded a professorship at American U. He joined Goddard in 1985 where he was best known as a Failure Analyst for incidents including the Challenger disaster. He received the NASA Exceptional

Service Medal, NASA Outstanding Leadership Award, and Robert H. Goddard Award of Merit. He chaired the GSFC Senior Fellows group.

Arthur R. Newberry, 93, passed away on January 11, 2024, in Seaford, DE. He was born on April 19, 1930, in High Shoals, NC and served as a supervisor at Goddard.

Donald M. Perry, 79, passed away on February 9, 2024. He was born on January 15, 1945 in Washington D.C. After graduating from the University of Maryland, he worked for Goddard and the White Sands Ground Terminal.

Walter Anthony Plesniak, 82, of Mt. Airy, Maryland, passed away in Frederick, Maryland, on December 22, 2023. Walt graduated from Glassport High School class of '59 in Glassport, Pennsylvania, and worked for 47 years at Goddard as an engineering technician in the Thermal and Vibration Test Lab.

Theresa Mae Sagin, 89, passed away on December 14, 2023, in Solomons, MD. Theresa was born on December 24, 1933, in Johnstown, PA, and worked for the Earth Sciences Procurement Office at Goddard.

Henry Preston Sampler, 75, passed away on January 12, 2024. Born April 24, 1948 in Hyattsville, MD, he was an Optical Physicist at Goddard, recognized for his major contributions to the Hubble Space Telescope, Cosmic Background Explorer (COBE), the Energetic Gamma Ray Experiment, the James Webb Space Telescope (JWST), and more. He was an award-winning leader in his field.

Fredric Ronald "Ron" Sawyer, 87, passed away in Salisbury, MD on January 29, 2024. Born on May 13, 1936 in Bunkie, LA, Ron worked at NASA's Wallops Flight Facility during the dawn of the space age. As the only chemical engineer at Wallops, he formed a new safety organization and dedicated his 37-year career to that field. He established the first quantitative chemistry lab at Wallops as NASA began to work with liquid propellants. Ron received a NASA Exceptional Service Award.

Loberta (Bryan) Staley, 84, passed away January 4th, 2024. She was born on March 6, 1939 in Winchester, VA Her career began at the Pentagon as a Transportation Analyst where she arranged for the transfer of U.S. hostages from the U.S. Embassy in Laos. She later transferred to Goddard, where she served on the procurement support team for the Apollo missions.

Theodore "Ted" Clifford Standish, Jr., 76, of Clinton, MA died on January 26, 2024. Ted was born in New York City on June 15, 1947, and graduated from Williams College in Williamstown, MA in 1969 with a bachelor's degree in physics. He worked for Goddard in support of the Apollo 11 mission that landed men on the moon in July 1969.

Richard Stolarski, 82, passed away on February 22, 2024 in Crofton, MD. With a Ph.D. in physics from the U. of Florida, he worked at the U. of Michigan and NASA JSC before joining Goddard in 1976. He was a 34-year Atmospheric Chemistry and Dynamics Branch member, serving as Chief for 6 years and as Emeritus after retiring in 2010. His research in atmospheric ozone chemistry and trends contributed to the international agreement to eliminate chlorine sources responsible for the Antarctic Ozone Hole. He received a NASA Exceptional Achievement Medal, the Robert H. Goddard Award of Merit, the EPA Stratospheric Ozone Protection Award, and the UNEP Global Ozone Award. A memorial service will be on March 16, 2024 at Beall Funeral Home, 6512 Crain Hwy., Bowie, MD. 2-3 PM: Visitation, 3-4 PM: Memorial Service.

H. Wade Stonesifer, 89, passed away on February 6, 2024 in Palm Coast, FL. Born on April 18, 1934 in Brooklyn, NY, he graduated from Johns Hopkins University in 1956 with a degree in Physical Science. Wade worked in Goddard's Network Operations Division before joining the TDRS Project, as the Missions Operations Manager, including several years in Las Cruces, NM. Famous for his caricatures of retiring staff members, as an avid sailor on Chesapeake Bay, and an amateur radio operator, he retired after 31 years with the U.S. Government.