

# GRAA NEWSLETTER

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

Dec 2023/Jan 2024 <http://GoddardRetirees.org> 40th Year of Publication

**UPCOMING LUNCHEONS:** We meet at 11:15 AM on the 2<sup>nd</sup> Tuesday of each month at the American Legion Post #136 at 6900 Greenbelt Road. **Reservations are required;** please contact [graalunch@gmail.com](mailto:graalunch@gmail.com) (preferred) or call (410)-709-8889 **before Thursday, January 4th.**

December	<b>No Luncheon. Happy Holidays!</b>
January 9	<b>Ralph Kahn. Reducing the Uncertainty in Climate Predictions: Steps Toward Realizing the Potential of NASA’s Earth Observing System, and Reducing Aerosol-Related Climate-Forcing Uncertainty</b>

## COMMENTS FROM TONY COMBERIATE AND ARLIN KRUEGER

Our November speaker was **Michael Moreau**, Goddard’s OSIRIS-REx Deputy Project Manager and SRC Recovery Lead Science Mission Operations Project Mission Operations Manager. His presentation, entitled **To Bennu and Back—Return Sample from a Near Earth Asteroid** described the first NASA mission to return a sample from an asteroid back to the Earth. The concept of an asteroid retrieval mission was first introduced by Gerry Soffen in 1994 and the OSIRIS-REx mission concept began as a Discovery Mission in 2007 but was finally selected in 2011 as a New Frontiers Mission, managed by Goddard. Bennu, which was discovered in 1999, is a carbon-rich asteroid, with a mean diameter of 490 meters, in an inclined orbit that intersects with Earth each year. It is an ancient relic of our solar system’s early days, with more than 4.5 billion years of history.

OSIRIS-REx was launched on September 8, 2016, flew past Earth a year later, and rendezvoused with [Bennu](#) in December 2018. It spent the next two years analyzing the surface and finding a suitable site for an extraction sample. OSIRIS-REx touched down on Bennu on October 20, 2020 for 15 seconds, collected a sample by penetrating ½ meter into the surface and immediately lifting off. Its return mission to Earth culminated in a sample drop over the Utah desert last September. Besides the contained sample, which has yet to be opened, more than 70 grams of material were removed from outside of the sealed sample container. 14 materials have been identified from that sample. The sealed container, which is expected to contain 120 grams, was sent to JSC, where a thorough analysis of the official sample will occur over the next 2 years.

The OSIRIS-Rex spacecraft will continue its mission with a 0.5 AU solar fly-by in the December/January timeframe, and if it survives, will travel to another asteroid, Apophis, with a rendezvous expected in 2029. Although the orbits of these near-Earth asteroids are similar to Earth's orbit, and intercept it occasionally, the difference in inclination and orbital period cause OSIRIS-REx to travel over a billion miles for each encounter.

Michael pointed out that because these asteroids cross the Earth's orbit periodically, they will eventually hit the Earth, but that won't happen until around 2180 for Bennu. Apophis, however, will come within around 20,000 miles of Earth on April 13, 2029, but won't collide with Earth for more than 100 years. Although any asteroid over 1km in size is considered a planet killer, we are already demonstrating the ability to alter the orbit of these bodies and protect the Earth from such a collision.

**NEWSLETTERS.** Send your **email** address to [goddardretirees@gmail.com](mailto: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 their 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 Jan Kalshoven, Steven Smith, Robert Defazio, Patricia Hensel, and from John Purcell in memory of Jack VanZant and Edward Walker, Jr.

**FROM THE GODDARD ARCHIVES:** 30 years ago on December 2, 1993, Shuttle Endeavor STS-61 conducted the 1st Hubble Space Telescope Servicing Mission to repair telescope optics.

On January 26, 1978, Delta launched International Ultraviolet Explorer. It was a joint US, ESA, and UK mission operated from a geostationary orbit allowing continuous access to science data.

### **REMEMBERING OUR FORMER COLLEAGUES:**

**James "Jim" L. Baker**, 97, died on October 27, 2023. He was born on January 3, 1926, in Aberdeen MD. Jim joined the Navy in 1943, then worked at Harry Diamond Fuse Laboratories, where he helped develop the Honest John Rocket System. In 1961, he began work at Goddard, where he was the Systems Director for the world's first Geo-Synchronous satellites known as SYNCOM. Following that, he was involved in NASA's ATS synchronous satellite systems. As part of that job, he traveled to ground station locations around the world. After Jim had retired in 1976, he received a contract from NASA to develop a shipboard Satellite Location and communication device. Successful testing of the system occurred in both the Bahamas and the

mouth of the Chesapeake Bay. This system was the predecessor to the technology that became GPS and EPIRB's.

**William "Bill" Briddell Bott**, 75 of Jamesville, Virginia, died November 19 at Commonwealth Senior Living in Onancock. Bill was born in Salisbury, Maryland, in January 1948 and grew up in Seaford and Wilmington, Delaware. He graduated from the Virginia Military Institute (VMI) in 1970 and from the University of Virginia in 1972, earning both undergraduate and graduate degrees in Civil Engineering. Upon graduation from VMI, he commissioned in the U.S. Army and served in the Army Corps of Engineers, rising to the rank of captain. Bill began his career as an engineer in Chase City, Virginia, before moving to the Eastern Shore. There he worked first for Shore Engineering and then NASA. He was chosen as Group Lead for the Environmental office. After retiring from NASA in 2006, he was appointed by Virginia governor Tim Kaine to serve on the State Water Control Board in 2009.

**Clyde Henry Freeman**, 86, of Bowie, Maryland, died on December 8, 2023. Clyde was born in Illinois and graduated from the University of Illinois with a B.S. in Electrical Engineering. Clyde joined NASA in 1959, working first at the Washington Navy Yard and then the Goddard Space Flight Center where he worked as a computer engineer. Among the many contributions he made during his career at NASA, he assisted in the development of a technique for the determination of attitude of a spin-stabilized spacecraft and for differential correction methods in spacecraft attitude determination. He supported many early satellites, shuttle missions, until the loss of Challenger in 1986, and the International Space Station. He retired in 1993.

**James "Jim" Winton Gray**, 92, of Buxton, North Carolina, passed away on November 16, 2023. After graduating from high school, Jim spent several years serving in the United States Coast Guard and subsequently attended North Carolina State University to study electrical engineering. After graduation, he began working at the Wallops Flight Facility. He was head of the Wallops Electrical Engineering Branch (Code 569). He retired in 1993 and returned home to Buxton with his family.

**Nathan Heifetz**, 95, died on November 10, 2023 at Bishop Gadsden in Charleston, SC. Nathan was born on October 2, 1928, in Brooklyn, NY. He served in the Army of Occupation of Japan and Japan-occupied Korea. He was awarded the WWII Victory Medal and the Army of Occupation Medal. He moved to the Washington, DC area where Nathan began work at the David Taylor Model Basin in Carderock, MD. In 1958, Nathan began work as one of the first Goddard employees, where he managed data processing operations. He worked there for the ensuing thirty years, supporting multiple spaceflight missions which included Spacelab, Space Shuttle, and Apollo XI. He retired from NASA in 1988.

**Jack Ely Leibee**, 79, of Derwood, Md., died November 8, 2023. After graduating from the University of Michigan, Jack's career spanned over four decades on some of NASA's largest and highest visibility missions, including three flagship missions. Jack took great pride in his work on ground systems and satellite development, including the Solar Maximum Mission (SMM), the

Hubble Space Telescope (HST) and servicing missions, EOS Terra, the NPOESS Preparatory Project (NPP), the Gamma-ray Large Area Space Telescope (GLAST/Fermi), the Deep Space Climate Observer (DSCOVR) and the JDEM/WFIRST/Roman Space Telescope dark energy missions.

**Wilma Jean Leidig**, 79, of Nebraska, passed away on October 26, 2023, at Charlotte Hall Veterans Home. Wilma Jean Leidig attended Washington High School. She worked for NASA-Goddard Space Flight Center and Kiplinger Washington Editors.

**Richard Taylor McGeehan**, 91, passed away on Sunday, October 29, 2023 in Berlin, MD. Richard was born in Hazelton, PA, on June 11, 1932. After graduating from Johns Hopkins University as an engineer, he served in the Air Force and was on active duty during the Korean War. Following his service career he worked at the National Security Agency (NSA) until 1967 then for NASA, retiring from Goddard as an Aerospace Engineer in 1994. He directly worked on the third flight of the *Columbia* Space Shuttle and was recognized for his significant contribution to the success of the mission. After retiring from Goddard, he worked for Swales Aerospace and, later, A.I Solutions until 2007.

**Thomas Clay Moore**, 91, of Easton, Maryland passed away on October 17, 2023. Tom was born in Brooklyn, NY, on November 21, 1931. After serving in the Army during the Korean War, he joined Goddard in 1964, where he worked in the Mission and Data Operations Directorate as Missions Operation Support Manager and Mission Support Manager on several missions including: Beacon Explore, Interplanetary Monitoring Platform (IMP's), Orbiting Frog Otolith (OFO) Wallops Island Mission, SIRIO, ISEE A, B, and C, and the Global Geospace, Science (Wind) and Polar Plasma Laboratory (POLAR) missions. Tom retired in 1994. *(Thanks to Mrs. Moore for adding details of Tom's work at Goddard to the brief notice in the last Newsletter.)*

**Herbert Meyerson**, 106, of Fulton, MD, died on November 15, 2023. He was born in Brooklyn, NY in 1917. He served in the U.S. Navy during World War II as a Radio Technician on a destroyer escort. After the war ended, he attended George Washington University, graduating in 1949 with a B.S. in Electrical Engineering. After graduation, he went to work for the Civil Aeronautics Administration (CAA), the forerunner of the Federal Aviation Administration (FAA), and then the NRL, before going to work for the Navy Department's Special Projects Office in 1957. He joined GSFC in 1961, working on spacecraft integration and sounding rockets. He was the assistant project manager on Explorer 12, 14 and 26. In the late 60s and early 70s he worked on the Solar Pointing Attitude Control System (SPARCS) for sounding rockets and the Calibration Rocket program for Skylab/Apollo Telescope Mount (ATM). From 1973 to 1979 he was involved in satellite tracking and network repair and calibration, serving as Tracking and Data Acquisition manager for several satellite programs.

**Norman F. Ness**, 90, passed away on December 4, 2023. He was born April 15, 1933 in Springfield, MA, and attended MIT, receiving a BS degree (Geophysics) in 1955 and a PhD in Geophysics in 1959. He joined the newly formed NASA in 1960, initially as a National Academy

of Sciences—NASA Postdoctoral Resident Research Associate in the Theoretical Division at Goddard. In 1961 he transferred from the Theoretical to the Space Sciences Division where he developed a magnetometer used on the IMP series of 10 satellites launched between 1962 and 1973, and the lunar orbiting Explorer 35. In the 70's, he participated in the Mariner planetary exploration program, studying the magnetic fields of Mercury, Venus, and Jupiter. He was Principal Investigator (PI) for magnetic field studies on 18 spacecraft missions. Dr. Ness was Chief of the Laboratory of Extraterrestrial Physics from 1966 to 1986 and was elected to the National Academy of Sciences. In 1987, he retired to become President of the Bartol Research Institute at the University of Delaware.

**Robert “Bobby” Stuart Nock**, 81, of Chincoteague Island, VA passed away on November 20, 2023, in Salisbury, MD. Bobby was born in Newport News, VA, on May 6th, 1942. After graduating from Virginia Tech, he worked for NASA Wallops Flight Facility as an Aerospace Engineer in the Meteorology Department, working in the Balloon Program for over three decades. His career with NASA carried him all over the world. After Bobby retired from NASA, he opened “Bobby’s Music Shack” on Chincoteague, where he could share his passion and love of music with others.

**Robert Harold Peterson**, 100, of Warrenton, Virginia died on August 3, 2023. Bob served in the US Navy during World War II on the destroyer escort ship USS Hubbard protecting the waters from the North Atlantic to Guantanamo, Cuba. He worked at the Washington Navy Yard and the Naval Research Lab before coming to Goddard, where he was an instrument maker and machinist. His career involved development and assembly for NASA missions until retiring in 1976. He started a second 25-year career in private industry with Commonwealth Scientific of Alexandria, VA, retiring in 2002.

**Ray Hulen Pless**, 85, of Wattsville, VA passed away on October 29, 2023 at Riverside Shore Memorial Hospital. He was born in Harvey Cook, Illinois on June 26, 1938 and grew up and was educated in Tullahoma, TN. He was an engineer at the NASA GSFC Wallops Flight Facility from 1960 through 1997. He helped create and manage the NASA Sounding Rocket Program, serving as assistant chief of the Sounding Rockets Program Office (Code 810) for most of his career. He was also in the Army National Guard.

**Mary Rouland**, 79, died on Friday, October 13, 2023 at her home in Crownsville, MD. Mary Ann Dahlstrom was born on December 24, 1943 in Fargo, North Dakota. After moving to Maryland, she worked at Goddard as a mathematician on the Nimbus weather satellite program. She ceased working professionally in 1971 to raise her family.

**James Carrol Smith**, 74, of Severn, Maryland died on November 16, 2023. Jay graduated from Kubasaki American High School in Okinawa Japan in 1967. After graduating Jay enlisted in the U.S. Navy where he served in Vietnam. After four years of the Navy, Jay enrolled and earned a Bachelor of Science degree in Electrical Engineering from the University of Maryland. Jay had a 40+ year career as a Systems Engineer with NASA. He was involved in many projects and enjoyed mentoring students through the NASA Summer High School Apprenticeship Research

Program (SHARP) until his retirement in 2014. After retirement he played guitar in the “Just Because” bluegrass band. A Celebration of Life will be held for Jay at 11:00am on Saturday January 6th, 2024 at the Roland Park Community Center (5802 Roland Avenue, Baltimore, MD 21210).

**John M. Thole**, 93, of Redlands, died peacefully on November 6, 2023, at Plymouth Village after several months of illness. John had a long career in the design and development of spacecraft and rockets, mostly at NASA and at TRW (at Norton AFB). His work stretched from the very earliest days of satellite communications to ICBMs, and to innovative work in low earth orbit launch vehicles. His career started at the Naval Ordnance Lab in Maryland before joining Goddard in 1960, followed by a period at NASA Headquarters. He continued his satellite work at Fairchild Space and Electronics where he notably served as Deputy to Wernher von Braun.