



Looking Back on 2024 and Forward to 2025

December 2024

By Kathy Ferrare, Vice President and Programs Chair

Fall has flown by and the holiday season is upon us! Where has the time gone! We've had several fascinating speakers these past few months exploring NASA's culture, travel adventures around the world, and thoughts on the NewSpace revolution. We started off with Charlie Camarda talking about our NASA culture and safety concerns and ideas on how to correct them. Charlie's enthusiasm and passion for helping NASA solve critical issues shined throughout his presentation. It made us want to roll up our sleeves and get to work. Tony Pototzky's New Zealand vacation with his son

and Ray and Susan Rhew's Africa vacation presentations provided us with gorgeous pictures and tips that helped them have fabulous, lower-stress vacations. We ended our Fall speakers with John Olds talking to us about his journey through the NewSpace revolution where he gave us all something to think about ... is commercial space really sustainable? If you missed any of these presentations, their recording and slides can be found on our [LAA website](#).

The reminder list on [page 5](#) provides a quick view of our 2025 activities that include a wide range of infor-

mation from speakers both inside and outside of Langley. Some of the topics include upcoming volunteer activities, The Ninety-Nines International Organization of Women Pilots, Langley's security activities, and a presentation from Acting Center Director Dawn Schaible.

Please feel free to contact me via email at kferrare@verizon.net or by phone at 757-880-8676 with potential speakers and program or tour ideas that you'd like to help with. Working together we can have another great line-up of speakers and activities for 2025! ♦

Behind the Scenes

By Olaf Storaasli, President

While we plan LAA's future, I am continuing to serve as the main [official tour guide](#) for [Oak Ridge National Laboratory](#) and a volunteer for the [Oak Ridge History Museum](#) and the [American Museum of Science and Energy](#).

However, two significant events gave us a new perspective. First, [our granddaughter, Zoe](#), was selected to participate as a [deploying team member](#) in the [United States Antarctic Program](#) for the NSF via Vanderbilt University's [VAMPIRE](#) Antarctic research project.

Second, a member of our extended family, David Baker (my nephew's brother-in-law), won half of the [Nobel Prize in Chemistry for 2024](#). [David's father](#), who nearly won the Nobel Prize in Physics, proudly received

the news at 3:23 am on his computer screen. On October 9, our Storaasli WhatsApp was busy as David found out and shared [photos, videos, and links](#), making us all so proud. ORNL's [High Flux Isotope Reactor](#) (HFIR), where I give tours, helped David's fantastic achievement. ♦



Related links:

- [UW Prize Announcement](#)
- [David, Seattle Garfield HS Alum's student paper interview](#)
- [UW Medicine Press Release](#)



IN THIS ISSUE

Looking Back on 2024	1
Behind the Scenes	1
President's Report	2
Treasurer's Report	2
Badging Update for Members...	3
Crewed Mission to Mars	4
Three Pillars of Rocketry	6
Europa Clipper Launch.....	8
VASBA Update	9

2024 LAA OFFICERS

President

Olaf Storaasli

Vice President & Programs Chair

Kathy Ferrare

Treasurer

Ray Rhew

Secretary

Mary DiJoseph

Communications Officer

Richard Hueschen

COMMITTEE CHAIRS & OFFICIALS

Membership Committee

David Hinton

Nominating Committee

Vacant

Hall of Honor Committee

Website & Newsletter Committee

Olaf Storaasli	Rick Ross
Wayne Richie	Dick Hueschen

IT Committee

Rick Ross	Olaf Storaasli
Dan Palumbo	Geoff Tennille

Education and Outreach

Ad Hoc Committee

Liliana Richwine

Langley Representative

Jessica Friz

Immediate Past President

Dan Palumbo

LAA BOARD OF DIRECTORS

Class of 2025

Stan Cole	Dave Hinton
Wes Goodman	Liliana Richwine
Melvin Ferebee	Domenic Maglieri

Class of 2026

George Allison	George Finelli
Charles Cockrell	Wayne Richie
Kathy Ferrare	

Class of 2027

Geoffrey Tennille	Susan McClain
Craig Ohlhorst	Mary DiJoseph
Tony Pototzky	Ray Rhew
Rich Antcliff	

President's Report

By Olaf Storaasli, President

LAA had a great 2024! We had terrific monthly speakers and events (thanks, Kathy!). One of our monthly meetings had over 100 attendees! We ended the year with 244 members and a treasury of over \$16K. We had strong support from our NASA representatives, Melanie Robinson, Angela McGill, and Jessica Friz, who we truly appreciate for their efforts to strengthen the partnership between LAA and NASA Langley. Thanks to our new Education and Outreach Chair, Lil Richwine, we had a strong STEM program and outreach initiatives.

Be sure to tell your friends about LAA and to join now. Remember—the first calendar year of dues are free, so those who join in January will enjoy free membership throughout the year.

We enjoyed seeing everyone at the July picnic and we all had a great time. Unfortunately, we will miss the December luncheon and the Director's Reception because my wife, Barbara, broke her ankle.

Looking forward to our annual meeting on January 14, 2025, we will hear two speakers at our January meeting (see the reminder list on this page). Thanks to efforts led by Charlie Cockrell, with many contributions by our Board and our membership, we will be approving revised by-laws and a new policy and procedures document. We will also be voting in new Board of Director members to replace the outgoing Class of 2025: Stan Cole, Wes Goodman, Melvin Ferebee, Dave Hinton, Lil Richwine, and Domenic Maglieri. Thanks to all of you for your service!

Finally, we will vote in our new officers for 2025, then I will turn the gavel over to our new LAA President. I have enjoyed serving as your LAA President and will keep involved by continuing to serve as the LAA Webmaster.

See the *Behind the Scenes* article on [page 1](#) for related activities on a more personal note. ♦

Treasurer's Report

By Ray Rhew, Treasurer

The financial status of the organization is strong and well positioned to execute a 2025 spending plan, which is currently in development. This strong position is due to the support of our members and leadership over the years. Many thanks, from me personally to all of you, for getting us in this position to provide more for our community and members. Please let others know about the LAA who may be interested in joining.

Additionally, I want to give a big **thank you** to Yvonne Dellapenta for conducting our 2023 audit and for providing valuable input to ensure we are in good standing and to improve for the future.

Finally, it is that time of year for the annual dues call. Therefore, be on the lookout for an email on payment options to meet the January 31 due date. ♦

Important Updates on Badging for LAA Members

By Dave Hinton, Membership Chair

We continue to get a steady influx of new members. Please continue your outreach to your retiring colleagues to consider the LAA!

We are increasing the collaboration between LAA and Langley for news of events that our members may want to participate in and also to identify opportunities for us to volunteer our expertise to support educational outreach and other Center events. This provides greater opportunity for you to connect with NASA colleagues and to give back to the next generation by volunteering your expertise.

One such event was an invitation to attend a “Pizza talk” in the NACA Room. This is a series of employee talks around a topic of interest. I attended a talk by Chris Jones on “Artificial Intelligence in SACD: What We’ve Learned So Far.” The talk was excellent, fast paced, engaging, and well attended. While the intended audience are NASA employees, the talk topic dealt with the state of AI, what it is currently good at and what it is not so good at. The technical level I believe would have been very engaging to many of our members. More information about events such as this will be coming out.

Opportunities are coming up to volunteer for student mentoring (HUNCH) and also for the slate of LAA Board members in 2025. Please consider outreach to any Board officer with your desire to help support. We need helping hands!

Regarding badges, we have good news. We have recently met with the Office of Director and with the Chief of Security to update them on the experience with our revised badging process and to address outstanding policy and workflow issues, with the intent being to ensure continued

alignment with NASA policies and to streamline the workflow where possible. The Center’s confidence in our process and self-discipline has grown and we can now report a somewhat relaxed policy on uses of our activity badges. A revision to our Badge Policy is posted to our web site.

We were previously asked to only use the badge for LAA purposes and in open areas such as the first floor of the IESB, and to request a Visitor Badge from a NASA host for other purposes. With certain caveats (below) we may now forgo the Visitor Badge request if a NASA employee or a Langley Exchange Activity has asked us to come in for an event—for example, a retirement party held in office spaces. The caveats are:

- 1) We need to be escorted in the other facilities by NASA. Many NASA employees assume our badges (non-PIV) carry the same privileges as their PIV badges. Activity badges do not grant unfettered access, and we need to let them know that we need to be escorted as if we had a visitor badge.
- 2) We need to realize that when we are on the Center with this activity badge for other purposes, we are still representing the LAA. This is important and if any security incidents occur the repercussions will fall on both the member and the LAA. Activity badge holders have been barred from Center access.

This does not mean that the LAA will request activity badges for members that are not active in the LAA itself. The badges remain a privilege for LAA members who are actively participating in the LAA. But those who have a badge will now have more latitude in using it for other visits.

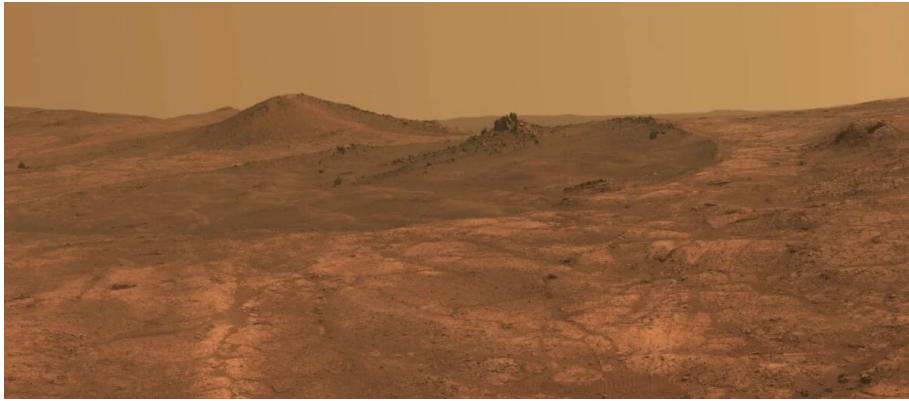
We are still working to streamline badge pickup at Badge and Pass. At this time please realize:

- 1) I will attempt to email you when your badge is being processed and when to go in for pickup. However, I cannot verify that the badge is processed. If you have a significant drive to the Center, you may call Badge & Pass before going in, but their workload does not always allow them to work the phone. My email to you will provide their phone number and the hours when they are least busy for pickup or phone calls.
- 2) Avoid going to B&P (or phoning) on a Monday or the first day back from a holiday. They tend to be swamped those days.
- 3) When we request a Visitor Badge for you, or a new Activity Badge (not a renewal), you will get an email from Identity.Manager requiring you to enter additional information. You **must** accurately reply to this or your badge will not be processed. You must use your exact name as it appears on your government ID. Errors or typos on this form can prevent successful badge processing.
- 4) If you have requested a visitor’s badge, then find out that you will not be able to come to the Center, please let us know. It’s not necessary to do this if your plans change on the day of the visit, but if earlier, it may help prevent some work on the part of NASA staff if we cancel the ask.

Please be sure to sign the attendance roster at LAA monthly meetings. These are used to document the attendance requirement for badge renewals. We cannot get into a situation where names are not showing up on the roster and the member emails to say they have been attending. We have denied badge renewals for lack of physical LAA meeting attendance and that is determined by the names on the sign-in sheets. If you did not sign the sheet during the meeting, please seek it out before leaving. ♦

Crewed Mission to Mars in the 2030s to Unlock Geologic Mysteries

By Joel S. Levine, Research Professor, Department of Applied Science, William & Mary



*Mars' craters come from ancient collisions during the formation of the solar system.
NASA/JPL-Caltech/Cornell University/Arizona State University via AP*

NASA plans to send humans on a scientific round trip to Mars potentially as early as 2035. The trip will take about six to seven months each way and will cover up to [250 million miles \(402 million kilometers\) each way](#). The astronauts may spend as many as 500 days on the planet's surface before returning to Earth.

NASA's Artemis program plans to return humans to the Moon this decade to practice and prepare for a Mars mission as early as the 2030s. While NASA has several reasons for pursuing such an ambitious mission, the biggest is scientific exploration and discovery.

I'm [an atmospheric scientist and former NASA researcher](#) involved in establishing the scientific questions a Mars mission would investigate. There are lots of mysteries to investigate on the red planet, including why Mars looks the way it does today, and whether it has ever hosted life, past or present.

Mars geology

Mars is [an intriguing planet](#) from a geological and atmospheric perspec-

tive. It formed with the rest of the solar system [about 4.6 billion years ago](#). Around 3.8 billion years ago, the [same time that life formed on Earth](#), early Mars was very Earth-like. It had [abundant liquid water](#) on its surface in the form of oceans, lakes and rivers and possessed a denser atmosphere.

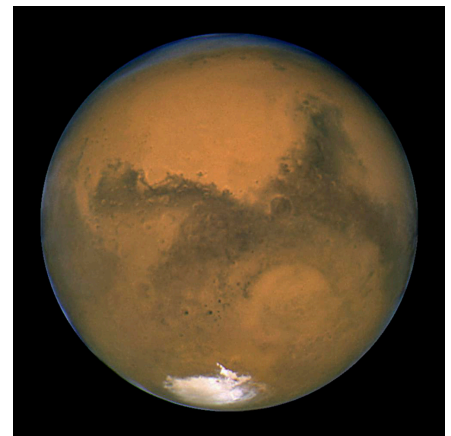
While Mars' surface is totally devoid of liquid water today, scientists have spotted evidence of those past lakes, rivers and even an ocean coastline on its surface. Its north and south poles are covered in frozen water, with a thin veneer of frozen carbon dioxide. At the south pole during the summer, the carbon dioxide veneer disappears, leaving the frozen water exposed.

Today, Mars' atmosphere is very thin and [about 95% carbon dioxide](#). It's [filled with atmospheric dust](#) from the surface, which gives the atmosphere of Mars its characteristic reddish color.

Scientists know quite a bit about the planet's surface from sending robotic missions, but there are still many interesting geologic features to inves-

tigate more closely. These features could tell researchers more about the solar system's formation.

The northern and southern hemispheres of Mars look very different. About one-third of the surface of Mars—mostly in its northern hemisphere—is 2 to 4 miles (3.2–6.4 kilometers) lower in elevation, called the [northern lowlands](#). The northern lowlands have a few large craters but are relatively smooth. The southern two-thirds of the planet, called the [southern highlands](#), has lots of [very old craters](#).



*Studying Mars can tell researchers more about the formation of the solar system.
J. Bell/NASA via AP*

Mars also has the [largest volcanoes](#) that [scientists have observed](#) in the solar system. Its surface is peppered with [deep craters](#) from asteroid and meteor impacts that occurred during the early history of Mars. Sending astronauts to study these features can help researchers understand how and when major events happened during the early history of Mars.

Asking the right questions

NASA formed a panel called the Human Exploration of Mars Science

continued on [page 5](#)

Crewed Mission to Mars in the 2030s to Unlock Geologic Mysteries (cont'd)

continued from [page 4](#)

Analysis Group to plan the future mission. I co-chaired the panel, with NASA scientist James B. Garvin, to develop and assess the [key scientific questions about Mars](#). We wanted to figure out which research questions required a human mission to address, rather than cheaper robotic missions.

The panel came up with recommendations for several important scientific questions for human investigation on Mars.

One question asks whether there's life on the planet today. Remember, life on Earth formed about 3.8 billion years ago, when Earth and Mars were similar-looking planets that both had abundant liquid water and Mars had a denser atmosphere.

Another question asks what sort of environmental changes led Mars to lose the widespread, plentiful liquid water on its surface, as well as some of its atmosphere.

These questions, alongside other recommendations from the panel, made it into [NASA's architectural plan for sending humans to Mars](#).

How do you get to Mars?

To send people to Mars and return them safely to Earth, NASA has developed a new, very powerful launch vehicle called the [Space Launch System](#) and a new [human carrier spacecraft called Orion](#).

To prepare and train astronauts for living on and exploring Mars, NASA established a new program to return [humans to the Moon](#), called the [Artemis program](#).

In mythology, [Artemis was Apollo's twin sister](#). The Artemis astronauts



The Artemis program plans to return humans to the Moon, in anticipation of eventually sending humans to Mars. Click thumbnail above to play video.

will live and work on the Moon for months at a time to prepare for living and working on Mars.

The [Space Launch System and Orion](#) successfully launched on November 16, 2022, as part of the Artemis I mission. It made the Artemis program's first uncrewed flight to the Moon, and once there, Orion orbited the Moon for six days, getting as close as 80 miles (129 kilometers) above the surface.

Artemis I splashed back down to Earth on December 11, 2022, after its 1.4 million mile (2.2 million kilometer) maiden journey.

[Artemis III](#), the first mission to return humans to the lunar surface, is [scheduled for 2026](#). The Artemis astronauts will land at the Moon's south pole, where scientists believe there may be [large deposits of sub-](#)

[surface water](#) in the form of ice that astronauts could mine, melt, purify and drink. The Artemis astronauts will set up habitats on the surface of the Moon and spend several months exploring the lunar surface.

Since the Moon is a [mere 240,000 miles \(386,000 km\) from Earth](#), it will act as a training ground for the future human exploration of Mars. While a Mars mission is still many years out, the Artemis program will help NASA develop the capabilities it needs to explore the red planet. ♦



Remember!

Dec 10: Holiday Luncheon-Crab Shack (RSVP by Dec 2)

Jan 14: Elections
Chris Carter (Volunteer opportunities) & Langley Security Chief Gary Bright

Feb 11: Dawn Schaible Acting Langley Center Dir

March 11: Linda Bangert (The Ninety-Nines Int'l Org of Women Pilots)



LANGLEY ALUMNI ASSOCIATION

A tax-exempt organization

The LAA Newsletter is published quarterly. Please submit articles for publication to rick.ross@verizon.net no later than the 10th of February, May, August, or November for publication the following month. Please contact mhueschen@gmail.com to subscribe or unsubscribe.

The Three Pillars of Rocketry Culminating in Human Spaceflight

By Associate Professor Steven A. E. Miller, Ph.D., Theoretical Fluid Dynamics and Turbulence Group
University of Florida, Department of Mechanical and Aerospace Engineering
saemiller@gmail.com / saem@ufl.edu



Konstantin Tsiolkovsky, 1924, public domain

*"The Earth is the cradle of humanity, but one cannot live in the cradle forever."
—Konstantin Tsiolkovsky*

Modern rocketry began with foundational work by pioneers such as Tsiolkovsky, Oberth, Goddard, and the American Rocket Society. Their theoretical and experimental advances led to the V-2 program and ultimately enabled the Apollo missions to the moon through Dr. von Braun.

Born in September 1857 in the village of Izhevskoye, Russia, Tsiolkovsky was the fifth child in a family of Polish descent. A bout of scarlet fever at the age of ten left him with significant hearing loss, limiting his formal education. Undeterred, he became an autodidact. The imaginative works of Jules Verne, "From the Earth to the Moon," ignited his fascination with space travel. Tsiolkovsky was a schoolteacher.

In 1883, Tsiolkovsky came up with an idea for reactive propulsion with the principle that a vehicle could propel itself by expelling part of its mass at

high-speed in the opposite direction. He created the fundamental equation of rocket motion, now known as the Tsiolkovsky Rocket Equation, which is taught today to freshman in aerospace internationally.

In 1903, Tsiolkovsky published his seminal work, "Exploration of Outer Space by Means of Rocket Devices," in the Russian magazine *Science Review* (*Nauchnoye Obozreniye*). He proposed using liquid hydrogen and oxygen as rocket propellants and envisioned multi-stage rockets, space stations, airlocks for spacewalks, and colonization of the solar system. His thoughts were unrecognized and remained within a small circle in Russia.

In 1919, his contributions were formally acknowledged when he was elected to the Socialist Academy, the precursor to the USSR Academy of Sciences. His research inspired Sergei Korolev, the chief designer of the Soviet space program, who was almost entirely unknown in history until much later.

"To boldly go where no man has gone before."—Hermann Oberth

Hermann Oberth held a place alongside Russia's Konstantin Tsiolkovsky and the United States' Robert H. Goddard. Born on July 25, 1894, in Hermannstadt, Transylvania (Romania), Oberth was captivated by space from an early age, drawing inspiration from Jules Verne's science fiction, notably "From the Earth to the Moon" and "Around the Moon." Oberth proposed liquid-fueled rockets as a means for long-range missiles to the



Oberth and von Braun (right).
NASA MSFC picture 9131101.

German War Department. His ideas were dismissed.

In 1922, Oberth formalized his concepts in his doctoral dissertation, "Die Rakete zu den Planetenräumen" ("By Rocket into Planetary Space"), which the University of Heidelberg rejected as speculative. Oberth self-published in 1923. His research demonstrated that rockets could reach space, detailed the feasibility of liquid propellants, oxygen and hydrogen, proposed multi-stage rockets for increased velocities, and identified navigation and life support problems.

To advance Oberth's vision, the Verein für Raumschiffahrt (VfR), (German Society for Space Travel), was established in 1927. The VfR began conducting experimental rocket tests in 1929. The society attracted notable members, including Wernher von Braun, a young engineering student who became Oberth's assistant and protégé.

Oberth's mentorship influenced von

continued on [page 7](#)

The Three Pillars of Rocketry Culminating in Human Spaceflight (cont'd)

continued from [page 6](#)

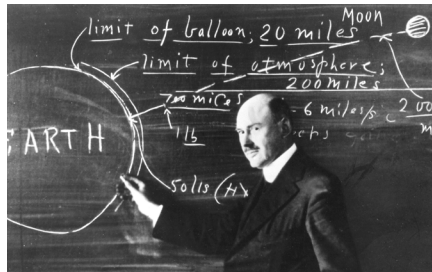
Braun, who later directed Germany's rocket development efforts during World War II. Leveraging Oberth's theories, Germany developed the V-2 rocket, the world's first long-range guided ballistic missile. They knew of the work of Tsiolkovsky and Goddard in America.

"The dream of yesterday is the hope of today and the reality of tomorrow."
—Robert H. Goddard

Born on October 5, 1882, in Worcester, Massachusetts, Dr. Robert H. Goddard's life shared similarities with Konstantin Tsiolkovsky. Like Tsiolkovsky, he was an avid physicist and mathematician, convinced that rockets were the key to space flight, and he worked in obscurity for most of his life. However, there was a significant difference between them: while Tsiolkovsky's contributions were purely theoretical, Goddard transformed theory into practice by developing the world's first liquid-fueled rocket that worked.

Goddard was educated in Worcester, graduating from South High School in 1904, obtaining a bachelor's degree from Worcester Polytechnic Institute in 1908, and earning a doctorate in physics from Clark University in 1911. He became a professor of physics at Clark University, where he began to apply science and engineering to space flight. He determined that liquid hydrogen and liquid oxygen would be highly efficient rocket propellants. In July 1914, he was granted patents on rocket combustion chambers, nozzles, propellant feed systems, and multistage rockets.

While Dr. Robert H. Goddard was advancing rocketry through private experiments, another group of Amer-



Dr. Goddard at Clark University.
NASA image GPN-2002-000130.

ican enthusiasts independently pursued space exploration. Formed in the early 1930s, the American Rocket Society (ARS) emerged as an organization that envisioned the potential of rockets and tested them.

The ARS originated from the American Interplanetary Society (AIS), which was established in New York City by science fiction enthusiasts and amateur scientists David Lasser, G. Edward Pendray, and H. Winfield Secor. AIS members actively engaged in experimental rocketry, designing and testing rockets while fostering a professional network to support space exploration. In 1934, the AIS was renamed the American Rocket Society.

In 1963, recognizing the need for a unified professional body to represent the aerospace industry, the ARS merged with the Institute of the Aerospace Sciences to form the American Institute of Aeronautics and Astronautics (AIAA).

The combined contributions of Tsiolkovsky, Oberth, Goddard, and the ARS laid the groundwork for modern rocketry, leading to the V-2 and subsequent space initiatives at NACA and NASA. Tsiolkovsky's mathematical models defined spaceflight's theoretical foundation, while Goddard's liquid-fueled engines

launched American programs. In Germany, Oberth turned speculative science into reality, mentoring Dr. Wernher von Braun, who would drive the V-2 program and later the U.S. space program.

The Apollo moon landings ultimately rested on the foundational work of these pioneers from the U.S., Germany, and Russia. From this historical viewpoint, the outcome was truly an international effort for the benefit of all mankind. ♦

References

- Tsiolkovsky, K. S. (1903). Exploration of outer space by means of rocket devices. *The Science Review*, 5.
- Kosmodemyansky, A. (2000). *Konstantin Tsiolkovsky: His life and work*. The Minerva Group.
- Siddiqi, A. A. (2000). *Challenge to Apollo: the Soviet Union and the space race, 1945–1974* (Vol. 4408). National Aeronautics and Space Administration, NASA History Division, Office of Policy and Plans.
- Lasser, D. (1931). *The Conquest of Space*. Penguin Press.
- Springer, A. (2001). The development of an aerospace society—The AIAA at 70. In *39th Aerospace Sciences Meeting and Exhibit* (p. 177).
- Oberth, H. (1984). *Die Rakete zu den Planetenräumen*. Oldenbourg Wissenschaftsverlag.
- Anderson, M. (Ed.). (2012). *Pioneers in Astronomy and Space Exploration*. Britannica Educational Publishing.
- Neufeld, M. J. (1995). *The rocket and the Reich: Peenemünde and the coming of the ballistic missile era*. Simon and Schuster.

Viewing the Europa Clipper Launch

Article and photos by Odilyn Luck

On Monday, October 14, 2024, at 12:06 pm Eastern Daylight Time (EDT), the Europa Clipper spacecraft launched out of Kennedy Space Center (KSC) on a mission to study Jupiter's moon, Europa. LAA member Odilyn Luck and her son Henry (10) joined a large group of invited guests at the KSC Banana River viewing area. This viewing area is beside the Saturn V building of the KSC Visitor Center.



Europa Clipper spacecraft lifts off atop a SpaceX Falcon Heavy launch vehicle

The spacecraft was originally scheduled to launch the previous week, on Thursday, October 10. The launch was postponed due to an approaching hurricane that had formed in the Gulf of Mexico. Hurricane Milton swept through the Cape Canaveral area around 5:00 am EDT on October 10, after devastating the western part of Florida. Kennedy Space Center was closed for two days, on October 10 and 11.

After assessing hurricane damage or any other factors that would affect launch readiness, a new launch date of October 14 was announced. Launch day was a beautiful, sunny day with very few high clouds, perfect for liftoff. During the countdown, there was mention of an anomalous



Henry Luck enters the Banana Creek Viewing Area

temperature reading in the second stage of the launch vehicle, but it was not a showstopper and the SpaceX Falcon Heavy lifted off right on time to loud cheers from everyone in the stands.

NASA's \$5.2 billion Europa Clipper Mission, managed by the Jet Propulsion Laboratory (JPL), was given the "green light" in 2015. The spacecraft will first travel to Mars for a gravity assist, then to Earth for another gravity assist, and arrive at Jupiter in April 2030. The spacecraft will then orbit Jupiter and fly by Europa 49 times. Europa Clipper's nine science instruments will gather data during these 49 flybys. Scientists will assess the data for signs that the European environment is suitable to support life, or contains the elements that would be favorable to form life.

Many of the invited guests were from JPL, and many others were part of the teams that built the instruments, built the spacecraft, and integrated all the parts together. Some of the instruments teams wore matching shirts, with their logos proudly displayed, as did the Assembly, Test,

and Launch Operations (ATLO) team. One person wore a t-shirt with the Europa Clipper logo and the words, "Europa Clipper Launch, Milton version," referring to Hurricane Milton. All were in good spirits to witness the beginning of the journey after ten or more years of working on concepts, designs, planning and execution of this flagship mission.



Odilyn and Henry Luck at the Banana Creek Viewing Area

To learn more about the Europa Clipper Mission, visit: <https://science.nasa.gov/mission/europa-clipper>.



Mission team members and their families fill the stands at the viewing area

For the inside story, David W. Brown's 2021 book, *The Mission: A True Story* tells the story of the Europa Clipper Mission in a wonderfully unique and entertaining manner. ♦

Virginia AeroSpace Business Association (VASBA)

By Jack Schlank

VASBA held our annual Gala on October 3rd at the City Center Marriott. It is the annual fundraising event that allows us to provide our yearly STEM-related scholarships and sponsorships. Once again, it was held in conjunction with the AUVSI three-day symposium.



The event was emceed by Nicole Livas, past local TV news anchor and the Chief Communications and Community Engagement Officer for Virginia Beach City Public Schools.



Another featured speaker during the event was Mr. Eric Hamlett. Eric is from Gretna, Virginia, and recently graduated from Averett University this past May. For the past two years, he has been awarded one of our VASBA scholarships, using those funds to achieve a double major in Aviation Business and Aviation Flight. Eric is now a licensed flight instructor at Averett. After the Gala, Eric returned home, then jumped in a plane and flew much needed supplies to folks in North Carolina who were digging out of the aftermath of Hurricane Helene.



As always, our dinner was accompanied by the Strolling Silver Strings. They are a joint program of the Music Education and Programs for the Gifted organizations of Norfolk Public Schools. The members of this ensemble are students in the five Norfolk High Schools. They thrilled us by wandering amongst our tables, playing famous pieces of music that spanned many genres.



To conclude the evening, our keynote speaker, Dr. Peter Brookes, presented "A World of Uncertainty: Global Flashpoints & Hotspots." Dr. Brookes gave us a very enlightening story, calling on his decades of experience working in foreign policy and national security at the Pentagon, on Capitol Hill, at the State Department, the CIA, and in the Navy to speak to these challenges.

VASBA is also the Virginia Chapter of the Aerospace States Association (ASA). This past June, VASBA attended the ASA's annual meeting, held in New Orleans. The event included a tour of NASA's Michoud Assembly Facility and panel discussions about Space Tourism, Hypersonics, Work-



force Development, and Space Debris and Exploration. Next year in July 2025, we're looking forward to Virginia hosting the 2025 Annual Meeting at the historic Cavalier Hotel in Virginia Beach, Virginia.



Other upcoming VASBA events include our annual Members Mixer in December where we will be electing board members and enjoying an evening of networking and comradery. We have also started preparations for Aerospace Day 2025. This event has members of the Commonwealth's aerospace community traveling to Capitol Hill in Richmond and meeting with Virginia senators and representatives. VASBA plays a key role in scheduling the meetings and presenting the local aerospace community's interests to the lawmakers in those meetings.

For information on joining VASBA, or on attending any of the upcoming events, contact Jack Schlank, jschlank@sierralobo.com. Merry Christmas, Happy Holidays, and happy and healthy New Year to all of the Langley Alumni Association! ♦