

THE FLIGHT PLAN

The Newsletter of AIAA Albuquerque Section
 The American Institute of Aeronautics and Astronautics

MICRO TO MACRO EXPERIMENTATION, DIAGNOSTICS, AND FIRES

By Robert Malseed, Treasurer

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The Thermal Test Complex (TTC) was designed to serve as an international resource for validation of fire physics models as well as the nuclear weapons complex hardware qualification facility for fires. This \$40-million facility, completed in the winter of 2005, offers one-of-a-kind capabilities and positions SNL as a technical leader in the fire science community. Experimental fire research, validated modeling tools, and phenomenological model development capabilities form the basis of an integrated capability to solve high-consequence problems in fire prevention, fire consequence analysis, and fire mitigation (firefighting). At our December meeting staff Scientist, Dr. Caroline Winters, gave an overview of this facility and the advanced diagnostics being deployed and developed. The meeting was held at the Q Station on Central Avenue.

Dr. Caroline Winters specializes in advanced optical diagnostics. She has applied these diagnostics for quantitative measurements of radical species and temperature in plasma-assisted combustion reactors, high-temperature shock tube facilities, and pool fires. Her first exposure to AIAA was in 2011, when she competed in the Design, Build, Fly challenge as her Senior Capstone Project at Rose-Hulman Institute of Technology. She has continued to support AIAA as an active and contributing member, since 2015.



CALENDAR

Local Section Events

Next General meeting TBD

Hybrid Meeting In-Person & Zoom

Meet & Greet 5:45 pm

Presentation Start 6:00 pm

Presentation End 7:00 pm

National AIAA Events

[33rd AAS/AIAA Space Flight Mechanics Meeting](#)

14 JANUARY - 19 JANUARY 2023
Austin, Texas, USA

[2023 AIAA Science and Technology Forum and Exposition \(AIAA SciTech Forum\)](#)

23 JANUARY - 27 JANUARY 2023
National Harbor, MD & Online

[Tech Talk Series: Advances in Flight Mechanics Modeling and Simulation with Dr. Rafael Lugo](#)

12 JANUARY 2023 1100 - 1230
(UTC)

[48th Annual Dayton-Cincinnati Aerospace Sciences Symposium \(DCASS\)](#)

28 FEBRUARY 2023
Dayton, Ohio, USA

[2023 IEEE Aerospace Conference](#)

4 MARCH - 11 MARCH 2023
Big Sky, Montana, USA

[2023 Region IV Student Conference](#)

31 MARCH - 1 APRIL 2023
Las Cruces, New Mexico, USA

Upcoming U.S. Launches

Dec 28 Falcon 9 • Starlink 5-1

Dec 28/29 27 Falcon 9 • EROS C3

Jan 18 Falcon 9 • GPS 3 SV06

Jan Falcon 9 • Starlink 2-4

Jan Falcon Heavy • USSF 67

Jan Falcon 9 • Worldview Legion 1&2

Feb 19 Falcon 9 • Crew 6

Feb Falcon 9 • Inmarsat 6 F2

Early 2023 Falcon 9 • SES 18 & SES 19

NET Jan Falcon Heavy • ViaSat 3 Americas

1st Quarter Falcon 9 • O3b mPOWER 3&4

1st Quarter Vulcan Centaur • Peregrine

TBD Starship • Orbital Test Flight

TBD Falcon 9 • Starlink 2-2

ALBUQUERQUE SECTION OFFICER NEEDED

By Robert A. Malseed, Treasurer

Your Albuquerque Section needs you to serve on the section Council. Our **Communications** position is currently vacant. (It would be nice to return to monthly newsletters.)

“The **Communications Officer** shall be responsible for the Section publication activities including, but not limited to, the periodic preparation and distribution of the Section newsletter and any other print or social media required to support Section activities.”



WE WANT YOU!

AIAA NAMES 2023 ASSOCIATE FELLOWS

By Stephen Seiffert, Honors and Awards

AIAA Announcement of 2023 Associate Fellows

AIAA national recently announced the membership awards of Associate Fellow for 2023, for Region IV – South Central, AIAA Albuquerque Section. Associate Fellows are distinguished as having accomplished or been in charge of important engineering and scientific work; having done original work of outstanding merit, or have otherwise made outstanding contributions to the arts, sciences, and technologies affiliated with aeronautics or astronautics, consistent with the interests and goals of AIAA nationally. The Albuquerque Section's new 2023 Associate Fellow awardees are:

Daniel Guildenbecher, Sandia National Laboratories, For seminal technical achievements in the development of state-of-the-art optical diagnostics supporting DOE/DOE applications in spray physics, combustion/propulsion, fragment tracking, and hypersonic flows.

Bryan Kelchner, Teknikare, Inc., For significant contributions in the development and testing of ground and airborne electro-optical and laser systems.

Scott Kowalchuk, Sandia National Laboratories, For innovative contributions and leadership in model-based design for hypersonic flight test vehicles, and exceptional mentorship and development of the next generation of aerospace engineers.

Seth Lacy, U.S. Air Force, For contributions to the science and practice of spacecraft control, and the development of novel spacecraft position, navigation, and timing techniques.

Our congratulations, from the Albuquerque Section AIAA, upon selection your awards as AIAA 2023 Associate Fellows. The Associate Fellow member recognition is indeed an individual accomplishment, both professionally and personally.

CALL FOR SCIENTIFIC CLASSROOM EQUIPMENT GRANT (SCEG) APPLICATIONS

By Elfego Pinon, STEM K-12 Outreach Officer

The American Institute of Aeronautics and Astronautics (AIAA) is the principal society and voice serving the aerospace profession. Its primary purpose is to advance the arts, sciences, and technology of aeronautics and astronautics, and to foster and promote the professionalism of those engaged in these pursuits. The Albuquerque Section, consisting of over 440 members, holds monthly technical/social meetings with invited technical speakers. We also endeavor to promote Science, Technology, Engineering, or Mathematics (STEM) education at all levels. One of our educational initiatives at the K-12 levels is the Scientific Classroom Equipment Grant (SCEG).

The AIAA Albuquerque Section is now accepting proposals for the 2022-2023 Scientific Classroom Equipment Grant. This year, one \$400 grant will be awarded. The grant provides funding to purchase materials or equipment used for STEM-related projects in your class/school. Past winners have used funds to purchase LEGO robotics kits and to pay for Explora Museum Classroom Explorations outreach visits. The winner will be selected by a panel of AIAA officers based on scientific and/or engineering merit, and potential benefit to students.

We realize how valuable and limited your time is so applications for this grant should be limited to one page and should include:

- an overview of the project
- a list of the equipment/materials needed
- projected cost
- a description of how the project will benefit students

Examples of past grant applications are available upon request.

Also, please include your name, school, grade, subject, address, and phone number (and e-mail address, if applicable).

Upon project completion, the Albuquerque Section requests a one-page project report (and photos, when possible) that will be included in our monthly newsletter in the May 2023 timeframe.

Proposals must be received by 31 January 2023. An award will be made by 7 February 2023 and arrangements to distribute the funds will be made immediately after that date.

Proposals may be: e-mailed to elfego.pinon@inemergent.com or mailed to AIAA Scientific Classroom Equipment Grant C/O Elfego Pinon III 7015 Kayser Mill Rd NW Albuquerque, NM 87114

If you have questions about the Scientific Classroom Equipment Grant or to request example grant applications, please contact Elfego Pinon III at the email address listed above or by phone at (505) 600-1519.

Elfego Pinon III, Ph.D.

STEM K-12 Outreach Officer AA Albuquerque Section

OCT, NOV, DEC IN AIR & SPACE HISTORY**ANNIVERSARIES -- OCTOBER 2022****140 Years Ago – 1882**

October 5: Robert H. Goddard born in Worcester, Massachusetts.

80 Years Ago - 1942

October 3: First successful V2 flight, Peenemünde, Germany

75 Years Ago - 1947

October 14: X-1 first supersonic flight, Capt. Charles E. Yeager, Edwards AFB, CA.

65 Years Ago - 1957

October 4: Sputnik 1 launched, first earth satellite, 184 pounds, 22.8 inches in diameter, 1912 UTC, Baikonur, USSR.

October 11: First successful flight of Thor, Cape Canaveral, Fla.

60 Years Ago – 1962

October 2: Explorer 14 launched by Thor Delta, 6:11 p.m., EDT, Cape Canaveral, Fla.

October 3: Mercury/Atlas 8, Sigma 7 launched, astronaut Wally M. Schirra, 8:15 a.m., EDT, Cape Canaveral, Fla.

October 18: Ranger 5 launched by Atlas Agena, 11:59 a.m., EDT, Cape Canaveral, Fla.

October 22: Explorer 15 launched by Thor Delta, 7:15 p.m., EDT, Cape Canaveral, Fla.

55 Years Ago - 1967

October 3: Fastest X-15 flight, 4,520 mph, mach 6.7, pilot William J. "Pete" Knight, Dryden Flight Research Center (DFRC), CA.

October 9: Lunar Orbiter 3 intentionally crashed on Moon.

October 11: Lunar Orbiter 2 intentionally crashed on Moon.

October 18: Venera 4 Landing on Venus.

October 18: OSO 4 launched by Thor Delta, 11:58 a.m., EDT, Cape Canaveral, Fla.

50 Years Ago – 1972

October 15: NOAA 2/Oscar 6 launched by Delta, 1:19 p.m., EDT, Vandenberg AFB.

October 27: Mariner 9 mission ended as attitude control gas exhausted.

45 Years Ago – 1977

October 9: USSR launched Soyuz-25 aboard a Soyuz rocket from Baikonur at 02:40 UTC. Ferry flight to Salyut-6 space station. Failed docking. Early return. Cosmonauts: Vladimir V. Kovalyonok and Valeri V. Ryumin.

October 22: ISEE 1 & 2 launched by Delta, 19:53 a.m., EDT, Cape Canaveral, Fla.

40 Years Ago - 1982

October 30: DSCS II & III launched, 2:05 a.m., EDT, Cape Canaveral, Fla. First use of Titan 34D and IUS launch vehicle and stage.

30 Years Ago - 1992

October 22: STS-52 (Space Shuttle *Columbia*) launched from KSC at 1:09 p.m., EDT. Crew: James D. Wetherbee, Michael A.

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OCT, NOV, DEC IN AIR & SPACE HISTORY

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Baker, Charles L. Veach, William M. Shepherd, Tamara E. Jernigan, and Steven G. MacLean (Canada). Deployed LAGEOS II on October 23, and CTA (Canadian Target Assembly) on October 31 from cargo bay. Landed November 1, 9:05 a.m. EST at KSC. Mission Duration: 9 days, 20 hours, 56 minutes.

25 Years Ago – 1997

October 15: Cassini/Huygens (Saturn Orbiter probe using Titan lander) launched at 08:43 UTC from Cape Canaveral Air Force Station using a U.S. Air Force Titan IVB/Centaur launch vehicle.

20 Years Ago – 2002

October 7: STS-112 (Space Shuttle *Atlantis*) launched from KSC at 3:46 p.m., EDT. Crew: Sandra H. Magnus and David A. Wolf, Pilot Pamela A. Melroy, Jeffrey S. Ashby, Piers J. Sellers, and cosmonaut Fyodor N. Yurchikhin. International Space Station (ISS) Flight 9A. Delivered S-1 (S-One) Truss. Landed on October 18 at 11:44 a.m. EDT at KSC. Mission Duration: 10 days, 19 hours, 58 minutes.

October 30: Russian Soyuz TMA-1 spacecraft launched by a Soyuz-U rocket from Baikonur at 03:11 UTC. The fourth Soyuz taxi flight, it carried a crew of two Russian cosmonauts (Sergei V. Zalyotin and Yuri V. Lonchakov), and one Belgian (Frank De Winne) to automatically dock with the International Space Station (ISS). This new Soyuz TMA-1 is a larger craft that has more comfortable space and ergonomic furniture than the previous TM models.

15 Years Ago – 2007

October 10: Russia launched Soyuz TMA-11 by a Soyuz-FG rocket from Baikonur at 13:22 UTC to dock with the International Space Station (ISS) Zarya module. Crew consisted of a Russian, Yuri I. Malenchenko; an American, Peggy A. Whitson; and a Malaysian, Shukor A. Muszaphar.

October 23: STS-120 (Space Shuttle *Discovery*) launched from KSC at 11:38 EDT. Crew: Pamela A. Melroy, Daniel M. Tani, George D. Zamka, Douglas H. Wheelock, Scott E. Parazynski, Stephanie D. Wilson and Paolo Nespoli (ESA-Italy). International Space Station (ISS) Flight 10A. Installed Harmony Node 2 connecting module to the station to facilitate connecting, in future missions, the European *Columbus* laboratory and the Japanese *Kibo* laboratory. Landed: on November 7 at 1:01 p.m. EST, KSC. Mission Duration: 15 days, 2 hours, 23 minutes.

October 24: Chang'e 1, a People's Republic of China (PRC) lunar orbiter, was launched by a Long March 3A rocket at 10:05 UTC from Xichang launch center. The first of a planned series of Chinese missions to the Moon, it entered lunar orbit on November 7. Chang'e 1 will orbit the Moon for a year to test the technology for future missions and to study the lunar environment and surface geology.

October 25: STS-120 Commander Pam Melroy and Expedition 16 Commander Peggy Whitson made history when the hatch between the space shuttle and orbiting outpost was opened. They became the first female spacecraft commanders to lead space shuttle and space station missions concurrently.

10 Years Ago – 2012

October 7: The first operation mission of the Dragon spacecraft under the NASA COTS program launched from Cape Canaveral at 8:35 p.m. with a Falcon 9 launch vehicle. It successfully docked with the ISS and delivered its cargo.

October 14: The Space Shuttle *Endeavour*, mounted atop an overland transporter, arrived at its new home - -the California Science Center near downtown Los Angeles.

October 23: Soyuz-TMA 06M launched from Baikonur cosmodrome by a Soyuz-FG launch vehicle at 10:51 UTC. It carried Russian cosmonauts Oleg Novitskiy (Commander) and Evgeny Tarelkin (Flight Engineer). Along with astronaut Flight Engineer Kevin Ford to the International Space Station (ISS).

5 Years Ago – 2017

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October 5: First meeting of the newly reestablished National Space Council was held at the Smithsonian National Air and Space Museum's Steven F. Udvar-Hazy Center in Chantilly, Va. The National Space Council, chaired by Vice President Mike Pence, heard testimony from representatives from civil space, commercial space, and national security space industry representatives.

October 19: NASA-funded Pan-STARRS1 telescope discovered the first confirmed object to travel through our solar system from another star. The historic discovery revealed the interstellar interloper to be a rocky, cigar-shaped object with a ratio of length to width unlike any asteroid or comet observed in our solar system.

ANNIVERSARIES -- NOVEMBER 2022

65 Years Ago - 1957

November 3: Sputnik 2 launched, carried dog "Laika", 0224 UTC. Baikonur, USSR

60 Years Ago - 1962

November 9: X-15, No. 2, piloted by John B. McKay crashed, Dryden Flight Research Center (DFRF), CA.

November 16: SA-3 (Saturn I rocket) launched, 12:45 pm., EST, Cape Canaveral, Fla.

55 Years Ago - 1967

November 5: ATS 3 launched by Atlas Agena, 6:37 p.m., EST, Cape Canaveral, Fla.

November 7: Surveyor 6 launched by Atlas Centaur, 2:39 a.m., EST, Cape Canaveral, Fla.

November 9: Apollo 4 launched, 7:00 a.m., EST, KSC. First successful launch and flight of Saturn V launch vehicle.

November 10: ESSA 6 launched by Thor Delta, 2:53 p.m., EST, Vandenberg AFB.

November 10: The Applications Technology Satellite (ATS-3) sent us the first pictures of the entire globe of the Earth.

November 15: X-15, No. 3 piloted by Major Michael J. Adams crashed, Dryden Flight Research Center (DFRF), CA.

November 29: Wresat 1 launched 4:49 UTC at Woomera, first Australian satellite.

50 Years Ago - 1972

November 9: Anik 1 (Telesat 1) launched by Delta, 8:14 p.m., EST, Cape Canaveral, Fla.

November 16: Explorer 48 (aka SAS-2 or B) launched by Scout, 5:13 p.m., EST (November 15 EST) San Marco Facility, Kenya, Indian Ocean.

45 Years Ago - 1977

November 23: Meteosat 1 launched by Delta, 8:35 p.m., EST, Cape Canaveral, Fla.

40 Years Ago - 1982

November 11: STS-5 (Space Shuttle *Columbia*) launched, 7:19 a.m., EST, KSC. Crew: Vance D. Brand, Robert F. Overmyer, Joseph P. Allen, and William B. Lenoir. First Shuttle operational mission deployed two commercial communications satellites, SBS 3 for Satellite Business Systems and Anik C 3 (Telesat 5) for Telesat Canada. Landed November 16, 6:33 a.m., PST, Edwards Air Force Base (EAFB), CA.

35 Years Ago - 1987

November 24: NASA released a report to the Congress on an extended-duration Space Shuttle orbiter. The report examined key aspects of a program that would allow the Shuttle to perform Earth-orbital missions for as long as 16 days.

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30 Years Ago – 1992

November 8: Germany launched the Maxus sounding rocket from Kiruna, Sweden. The Maxus Program was the result of collaboration between Germany and Sweden that was sponsored by the European Space Agency. The rocket's payload allowed for up to eight microgravity experiments to be conducted in 12 to 13 minutes.

25 Years Ago – 1997

November 19: STS-87 (Space Shuttle *Columbia*) launched, 2:46 p.m. EST, KSC. Crew: Steven W. Lindsey, Kevin R. Kregel, Winston E. Scott, Kalpana Chawla, Takao Doi (Japan), and Leonid K. Kadenyuk (Ukraine). Carried United States Microgravity Payload (USMP-4). Landed December 5, 7:20 a.m. EST, KSC. Mission Duration: 15 days, 16 hours, 35 minutes.

20 Years Ago – 2002

November 23: STS-113 (Space Shuttle *Endeavour*) launched 7:50 p.m. EST, KSC. Crew: Paul Lockhart, James B. Wetherbee, Michael E. Lopez-Alegria, John B. Herrington, Kenneth B. Bowersox, Donald R. Pettit and cosmonaut Nikolai M. Budarin. International Space Station (ISS) Flight 11A. Delivered P1 (P-One) Truss and exchanged the Expedition Five and Six crews. Landed Dec. 7 at 2:37 p.m. EST, KSC. Mission Duration: 13 days, 18 hours, 47 minutes.

November 26: NASA set a world record for the largest balloon successfully launched, when it flew a 60 million cubic foot balloon carrying a 1,500 pound scientific payload to the fringes of space.

15 Years Ago – 2007

November 7: Japan's Selene lunar orbiting spacecraft Selene (or Kayuga) captured first high definition photos of Earth rise and Earth set.

10 Years Ago – 2012

November 2: Space Shuttle *Atlantis* arrived at its new home at the Kennedy Space Center Visitor Complex.

5 Years Ago – 2017

November 18: MiRaTA (Microwave Radiometer Technology Acceleration) launched at 09:47:00 UTC by a Delta II 7920 from Vandenberg AFB. MiRaTA is an Earth observation technology demonstration CubeSat mission developed at MIT Lincoln Lab to test a miniaturized multi-band microwave radiometer and compact GPS occultation payload that could build the foundation of a future CubeSat constellation for the collection of global weather data at very rapid revisit intervals. The MiRaTA project is part of NASA's InVEST (In-Space Validation of Earth Science Technologies) Program aiming to develop and test small instruments and remote-sensing subsystems that can advance the current state of technology to enable relevant Earth science measurements via smaller satellite platforms.

ANNIVERSARIES -- DECEMBER 2022

105 Years Ago – 1917

December 16: Science fiction writer Arthur C. Clarke born. "2001: A Space Odyssey" is one of his most well known works. He was also the first to propose the concept of geostationary satellites.

75 Years Ago – 1947

December 23: Transistor invented by Drs. John Burdeen, Walter H. Brattain, and William Shockley at AT&T.

65 Years Ago - 1957

December 6: Vanguard (TV-3) failed to launch, exploded on the launch pad, 11:45 a.m., EST, Cape Canaveral, Fla.

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December 17: First successful firing of Atlas ICBM, Cape Canaveral, Fla.

60 Years Ago - 1962

December 13: Relay 1 launched by Thor Delta, 6:30 p.m., EST, Cape Canaveral, Fla.

December 14: Mariner 2 flew past Venus. First successful planetary flyby.

December 16: Explorer 16 launched by Scout, 0:33 a.m., EST, Wallops Flight Facility, VA.

55 Years Ago - 1967

December 13: Pioneer 8/TTS-1 launched by Thor Delta, 9:08 a.m., EST, Cape Canaveral, Fla.

50 Years Ago - 1972

December 7: Apollo 17 launched aboard a Saturn V (SA-512) rocket from Cape Canaveral at 12:33 EST. Landed on Moon on December 11 in the Taurus-Littrow region. Crew: Eugene A. Cernan, Ronald E. Evans, and Harrison H. Schmitt. Last Apollo moon mission.

December 7: "Blue Marble" photograph taken by Apollo 17 crew.

December 11: Nimbus 5 launched by Delta, 2:56 a.m., EST, Vandenberg AFB.

December 16: Aeros 1 (A) launched aboard a Scout rocket from Vandenberg AFB, CA at 3:24 PST.

December 20: Last flight of M2-F3 program, Dryden Flight Research Facility (DFRF), CA.

45 Years Ago - 1977

December 10: USSR launches Soyuz 26 aboard a Soyuz rocket from Baikonur. Ferry flight to Salyut-6 space station. Cosmonauts: Yuri V. Romanenko and Georgi M. Grechko.

35 Years Ago - 1987

December 21: USSR launches Soyuz TM-4 aboard a Soyuz rocket from Baikonur. Ferry flight to Mir space station. Cosmonauts: Vladimir G. Titov, Musa K. Manarov, and Anatoli S. Levchenko.

30 Years Ago - 1992

December 2: STS-53 (Space Shuttle *Discovery*) launched, 8:24 a.m., EST, KSC. Astronauts David M. Walker, Robert D. Cabana, Guion Bluford, Jr., James S. Voss, and Michael R. Clifford. Classified Department of Defense primary payload. Landed at Edwards Air Force Base, CA, 3:43 p.m., EST. Mission Duration: 7 days, 7 hours, 19 minutes.

December 9: EAFB CA. Final DoD mission. Mission duration: 7 days, 7 hours, 19 minutes.

December 8: Galileo, 2nd Earth flyby.

25 Years Ago - 1997

December 22: Launch of Intelsat 804 aboard Ariane 42L rocket from Kourou, French Guiana at 00:17:00 UTC.

20 Years Ago - 2002

December 10: TDRS-10 (TDRS-J), for Tracking Data and Relay Satellite, launched aboard an Atlas 2A rocket from Cape Canaveral at 9:42 EST.

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December 14: Adeos 2, also known as Midori 2 (“Green”), a Japanese (NASDA) remote sensing spacecraft. Launched by a H-2 rocket from Tanegashima Space Flight Center at 8:31 EST along with three other satellites: Fedsat, Micro-labsat, and WEOS. It carried five instruments to monitor the global climate trends. Contact was lost on Oct. 25, 2003.

December 29: Shenzhou 4 (meaning Divine Vessel), a Chinese (PRC) unmanned test satellite launched from Jiuquan Satellite Launch Center in northwestern China by a Long March 2F rocket at 16:40 UTC. It carried a retrievable crew module with all furnishings, test equipment, and dummy astronauts to assess its viability for a manned launch.

10 Years Ago – 2012

December: The Messenger spacecraft discovers water ice in Mercury’s polar regions.

December 19: Soyuz-TMA 07M launched from Baikonur cosmodrome by a Soyuz-FG launch vehicle at 12:12 UTC. It carried Russian cosmonaut Roman Romanenko, Canadian astronaut Chris Hadfield, and US astronaut Tom Marshburn to the International Space Station (ISS).

5 Years Ago – 2017

December 17: Soyuz MS-07 launched at 07:21:00 UTC by a Soyuz FG launch vehicle from Tyuratam (Baikonur Cosmodrome), Kazakhstan. Crew: U.S. astronaut Tingle, Russian Anton Shkaplerov, and Norishige Kanai of the Japan Aerospace Exploration Agency. (ISS Expedition 54).

NEW FREE AIAA HIGH SCHOOL MEMBERSHIP NEW

By Robert Malseed—Treasurer

Our section currently has two members in the new High School Student grade.

MEMBERSHIP IS FREE AND INCLUDES:

- AIAA Mentor Match
- STEM-focused webinars and on-demand content
- Access to our exclusive Engage community platform
- Online subscription to *Aerospace America*
- Discounts to AIAA forums and events

IMAGES OF THE QUARTER



MOON ECLIPSING EARTH AS SEEN FROM ARTEMIS 1



SPACEX FALCON 9 SECOND STAGE LAUNCHING 53 STARLINK SATELLITES FROM VANDENBERG SFB. PHOTOGRAPHED BY YOUR NEWSLETTER EDITOR FROM TUCSON, ARIZONA ON 28 OCT 2022.

PARTING THOUGHTS

The first principle is that you must not fool yourself and you are the easiest person to fool.

Richard P. Feynman

**SECTION
INFORMATION**

AIAA ALBUQUERQUE

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AIAA MISSION AND VISION STATEMENT

AIAA’s mission is to inspire and advance the future of aerospace for the benefit of humanity. AIAA’s vision is to be the voice of the aerospace profession through innovation, technical excellence, and global leadership.