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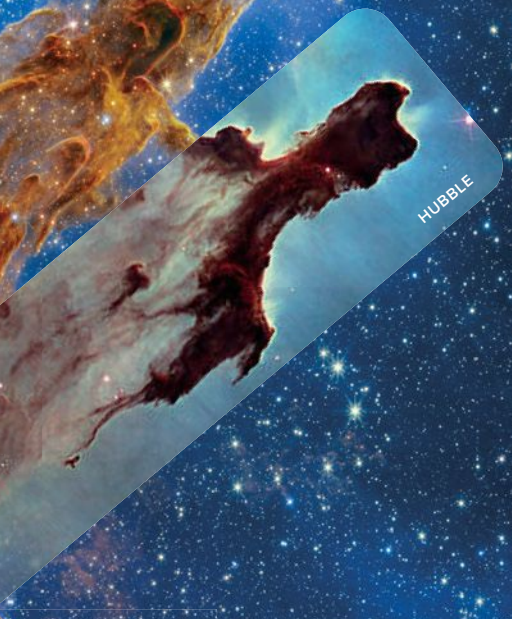
2022 YEAR IN REVIEW

The Pillars of Creation from the Webb telescope



NASA'S DART MOVES AN ASTEROID

NASA'S SLS ROCKET NAILS ITS DEBUT

DECEMBER 2022 | A publication of the American Institute of Aeronautics and Astronautics | aerospaceamerica.aiaa.org

AIAA
SHAPING THE FUTURE OF AEROSPACE

James Webb Space Telescope and Artemis I launch top year's accomplishments

BY BEN SARAO

The **History Committee** works to preserve the record of aerospace advances and recognize their impacts on modern society.

In July, after nearly 30 years in development, NASA's **James Webb Space Telescope** recorded its first view of the universe. The telescope's **Near- Infrared Camera** is one of the four scientific research instruments housed in the Integrated Science Instrument Module. Researchers and engineers at the **University of Arizona** led by principal investigator Marcia Rieke teamed up with **Lockheed Martin** to construct NIRCam in 2002. The Webb telescope detects objects up to a hundred times fainter than the Hubble Space Telescope.

Webb was initially known as the **Next Generation Space Telescope**. In September 1989, NASA held a workshop for the new telescope at the Space Telescope Science Institute before the launch of Hubble. Astronomers attending the workshop realized that more data could be captured in the infrared wavelengths than by Hubble's detectors designed to capture ultraviolet and visible light, as the European Space Agency had proven with the launch of the Infrared Astronomical Satellite in January 1983.

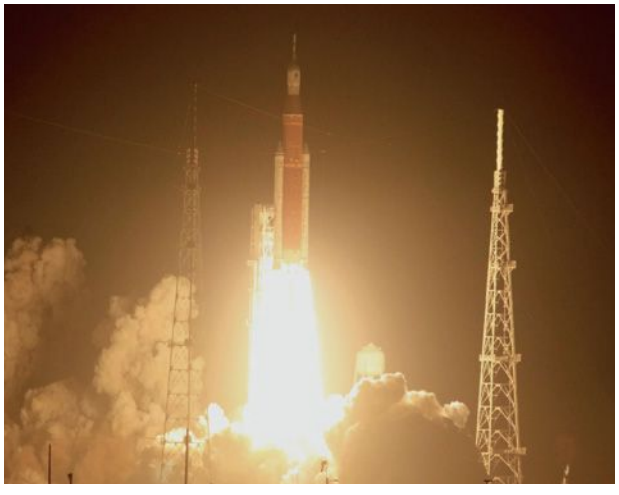
In 2002, **NASA Administrator Sean O'Keefe** renamed the Next Generation Space Telescope in honor of James Webb, NASA's second administrator. A controversy arose within the scientific community within the last few years, with some calling for NASA to again rename the telescope due to allegations that Webb, as under secretary of the U.S. State Department in the early 1950s, participated in what later become known as the Lavender Scare in which government employees were fired or pressured to resign due to their sexual orientation. NASA directed its History Office to investigate, and in a report released in November, investigators said they "found no evidence that [James] Webb was either a leader or proponent of firing government employees for their sexual orientation." In a press release, NASA says it therefore does not plan to change the name. Presently, the Webb telescope, developed in partnership with ESA and the Canadian Space Agency, is operated by the Association of Universities for Research in Astronomy's **Space Telescope Science Institute**.

In November, NASA conducted the inaugural launch of a **Space Launch System** rocket, starting the **Artemis I** mission, a slingshot around the moon with an uncrewed **Orion** capsule. Orion was scheduled to land in December, splashing down in the Pacific Ocean. Initial launch preparations concluded in August, but fuel leaks scrapped two launch attempts on Aug. 29 and Sept. 3. **Artemis II**, a similar lunar flyby with two astronauts aboard, is scheduled for 2024. NASA is targeting 2025 for the **Artemis III** crewed moon landing.

December is the 50th anniversary of **Apollo 17**, NASA's last crewed moon mission and the last time humans visited the lunar surface. January marked 50 years since then-U.S. President Richard Nixon, along with then-NASA Administrator James C. Fletcher, announced that the space shuttle program had the "go" to proceed. February was the 50th anniversary of when **NASA's Mariner 9** spacecraft completed its basic objective of mapping nearly 70% of the Martian surface with two television cameras. Mariner 9 was the first spacecraft to orbit another planet.

Notable international aerospace events this year included the **China National Space Administration**'s plan to break the world record for the number of space launches in one year with 60 launches. This included the six crewed launches required to complete its massive **Tiangong** space station with three modules. Six astronauts will be able to live together on the space station.

In July, **Roscosmos** announced plans to exit from the **International Space Station** in 2024 to focus on building its own space station. Three months earlier, ESA notified Roscosmos that it had suspended work on the **Luna 25, Luna 26 and Luna 27** missions due to the ongoing Russia-Ukraine war. Russia's Luna 25, which was planned to launch in September, was postponed due to the technical failure of its Doppler speed and distance sensor. According to Russian news agency TASS, Luna 25 is now scheduled to launch in September 2023. ★



NASA's Space Launch System rocket lifted off from Kennedy Space Center in November, nearly 50 years after NASA launched the last Apollo lunar landing mission, Apollo 17.

John Tylko for Aerospace America