



Artemis & NASA News

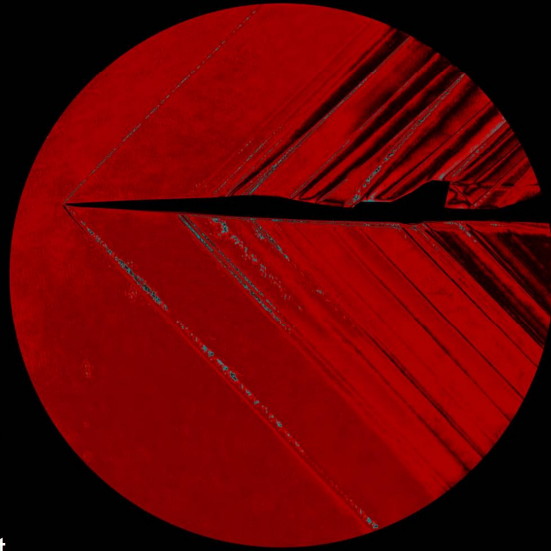


Tom Heisey
Solar System Ambassador
June 25, 2026

X-59 Quesst



- Quesst – QuiET SuperSonic Transport
 - Design an aircraft that reduces sonic booms
- Three Phases
 - 1 built and test (now)
 - 2 Test Range
 - 3 Public Testing
- Timeline
 - Feb 2016 Contract awarded
 - Jun 2019 Construction start
 - Nov 2024 First flight
 - Jun 5, 2025 1st Mach+ flight



While not directly space news, the X-59 quiet supersonic test plane flies at the edge of space and some of the data recorded in these test could be applied to future space vehicles to reduce stress and sonic booms. I find it very interesting and I hope you do, too!

The image is a Schlieren https://en.wikipedia.org/wiki/Schlieren_photography photo of a supersonic wind tunnel test of the X-59 showing

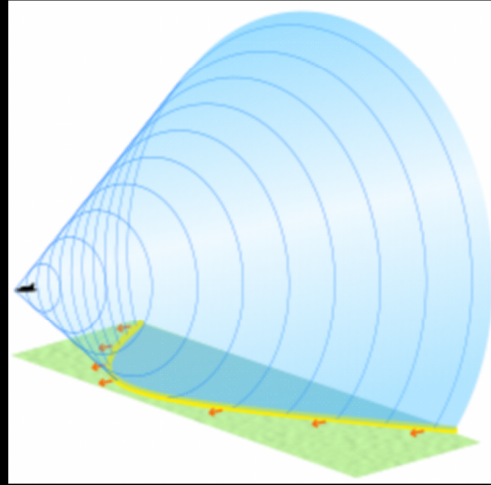
<https://www.nasa.gov/mission/quesst/>
Quesst – QuiET SuperSonic Transport

Three Phases

- 1) Build and first test flights (current) to validate safe flight and aircraft function
- 2) Acoustic Validation over Armstrong Flight Research Center at Edwards AFB. Acoustic stations on the ground will record supersonic passes to verify the sound levels of each pass, probably with fighter aircraft passing over the area as controls. Ground stations will also use the Sun for Schlieren photos of the shock waves coming off the X-59 in flight.
- 3) If the test range results show the reduced acoustic pressure, they will begin flights over populated areas, asking for residents' feedback on noise levels.

Sonic Booms

- High speed airplane
- pressure waves build up in front of obstructions
 - Air can't move out of the way
 - Higher speeds start compressing the air
- At the speed of sound, the waves merge into one wave
 - Compressed air releases the energy as pressure & sound
 - The wave eventually hits the ground with a thud that can damage buildings



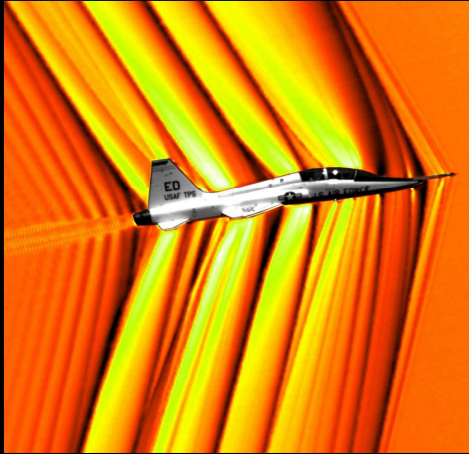
I'm very familiar with sonic booms from my time in the Air Force. While low-level sonic booms are usually prohibited, Turkey had no rules against it, so Turkish and American pilots would sometimes streak across the plains, rattling windows before landing. The daily C-130 flight would do a low-level pass over my house in the village every day, with pressure waves from the props rattling windows.

Famously, the Concorde airliner threw off a huge boom that led to being banned over the US and many other countries. Since the Concorde was designed for Mach cruise, it was very inefficient at subsonic speeds, fuel costs and ticket prices so this ban was a major contributing factor to its demise and prevented a newer supersonic airliner from being designed.

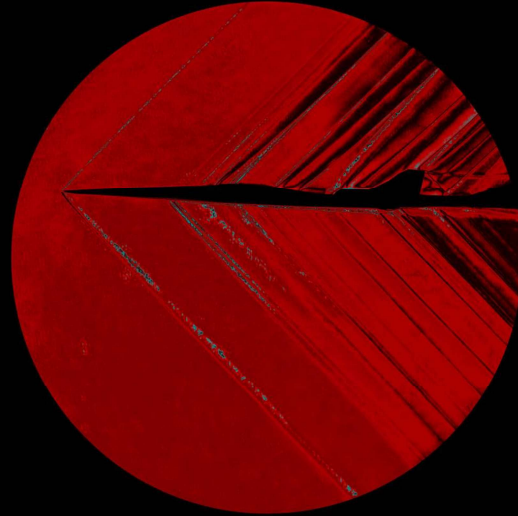
QueSST is an attempt to spread the pressure waves to reduce sound levels.

https://en.wikipedia.org/wiki/Sonic_boom

Note the difference



T-38



Quesst

<https://www.nasa.gov/mission/quesst/>

<https://www.popsci.com/technology/how-fast-is-supersonic-flight/>

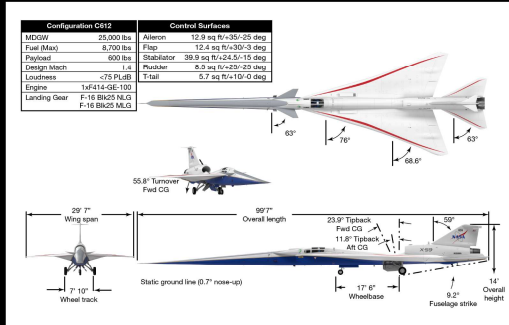
Major differences

- The T-38 has strong downward waves off the nose, engine inlets, wings, tail, and engine. These combine to a strong boom that rattles windows on the ground.
- The X-59 has most obstructions on top of the wings, so most of the pressure waves are directed up. Only the wave off the tail is audible on the ground and it has much less energy than the combined waves off the bottom of the T-38. The extremely long nose reduces the nose pressure wave by providing a gentle slope that doesn't provide an obstruction to generate a pressure wave.

Specifications

- **Weights:**
 - Max Takeoff 32,300 lbs
 - Payload 600 lbs
 - Fuel (max) 8,700 lbs
 - Thrust 22,000 lbs

- **Size:**
 - Length - 99'7"
 - Wheelbase 17'6"
 - Wheel track 7'10"
 - Nose - 33.2'
 - Wingspan 29'7"
 - Tail Height 14'

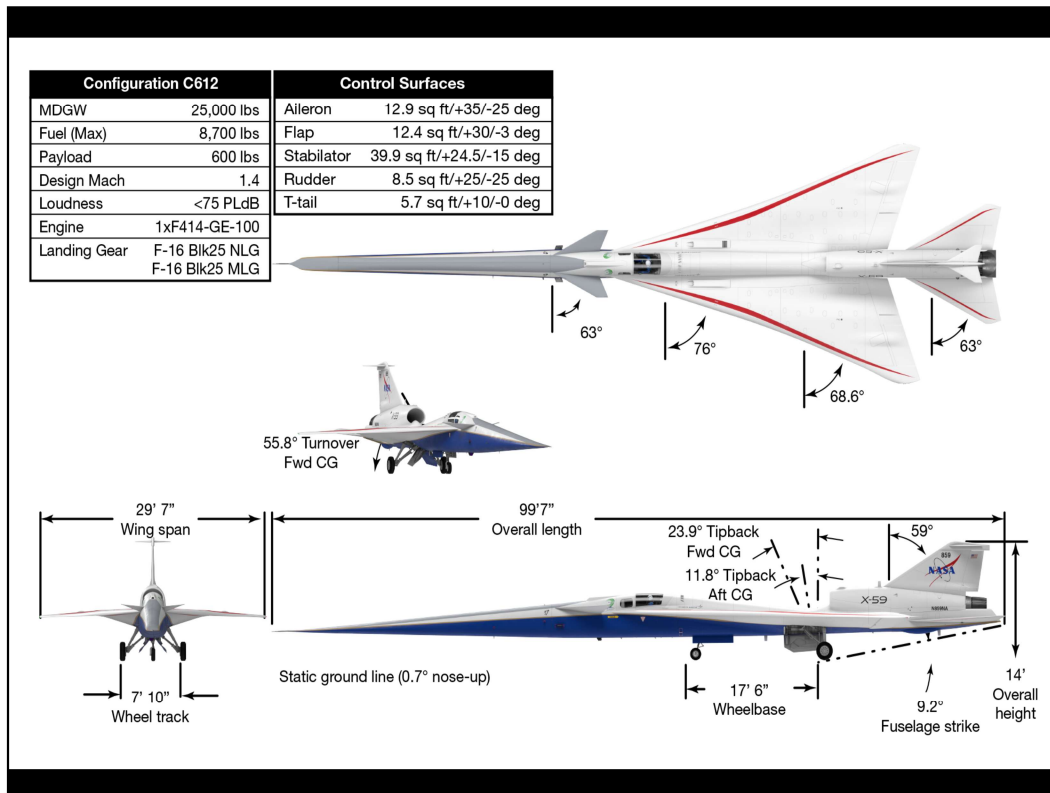


- **Flight Cruise**
 - Mach 1.42 (937mph)
 - 55,000 ft
 - Sonic boom just 75EPNdB

The max weight is 32,000 lbs with “just” 22,000 lbs of thrust, so this won’t perform vertical climbs like a fighter, but that’s not the purpose of this aircraft. That thrust is enough to push the aircraft to Mach 1.4 in the thin air of 55,000 feet. I would expect sea level speeds to be subsonic only, but I could be wrong.

<https://www.nasa.gov/quesst-the-aircraft/>

Wikipedia: It is designed to create only a low 75 [effective perceived noise level](#) (EPNdB) thump in order to re-evaluate the viability of [supersonic transport](#), since one of the main reasons previous supersonic aircraft such as the [Concorde](#) were retired was due to their extremely loud [sonic booms](#).

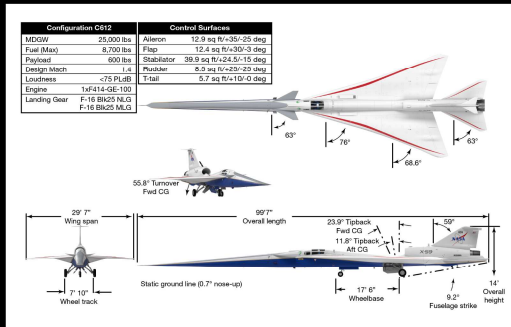


<https://www.nasa.gov/quesst-the-aircraft/>

Here's a better look at this crazy aircraft. The odd form factor is made to spread out the shock cone and deflect it up, so the nose is flat on the bottom, as is most of the body. Most of the obstructions and the engine (noise maker) are above the wings, which will direct the sound upwards.

Design

- Lockheed Martin Skunk Works
- Cost saving:
 - T-38 Cockpit & ejection seat
 - F-16 landing gear
 - F/A-18F Ge F414 engine
 - Collins Aerospace avionics
- No forward window
 - Forward - EFS 4k camera
 - Landing Collins EVS-3600

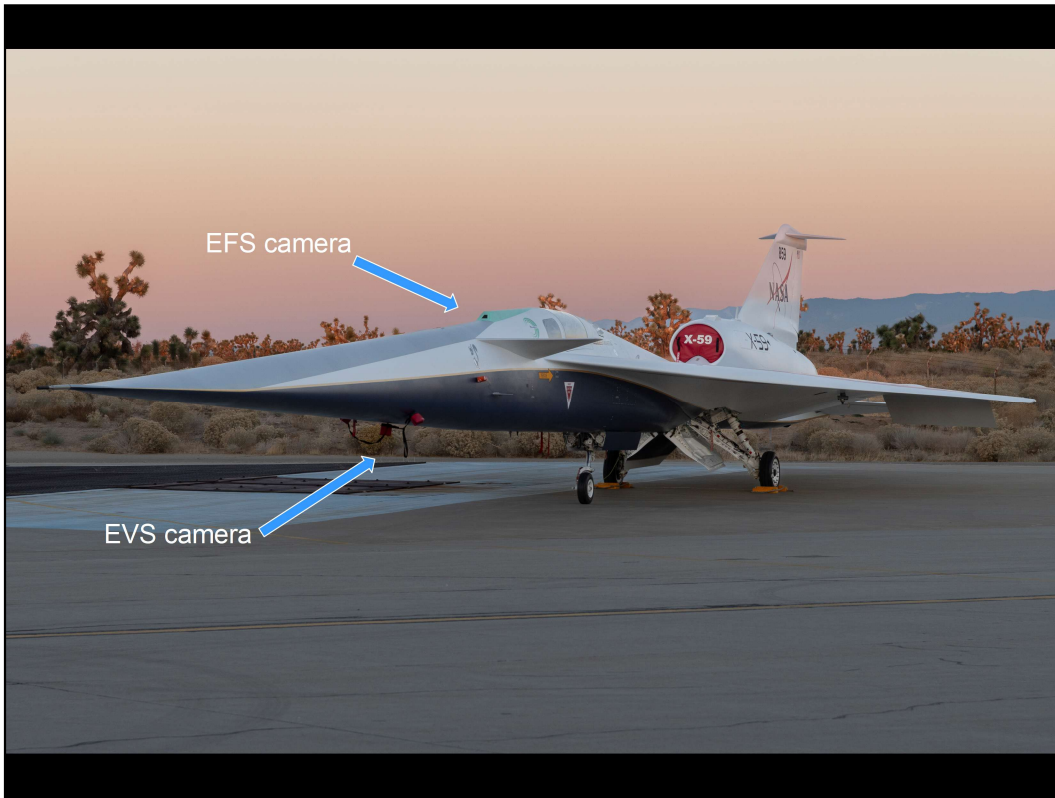


<https://www.nasa.gov/quesst-the-aircraft/>

As a test plane, it was built with a combination of off-the-shelf basic gear and a custom-built air frame. It took some time to plan and test models, but the build was reasonably quick for an experimental airplane.

Off-the-shelf items:

- T-38 cockpit, controls, and ejection seat
- F-16 landing gear
- F/A-18F engine and control electronics
- Collins Aerospace glass cockpit avionics
- Forward and landing cameras



<https://www.nasa.gov/quesst-the-aircraft/>

Camera positions. Note there is no glass on the forward portion of the nose. The gentle slope reduces the front shockwave. A bubble canopy would create a strong wave and a window in this slope would have extremely poor visibility, so cameras were the only way to get forward visibility in this fuselage design.

X-59



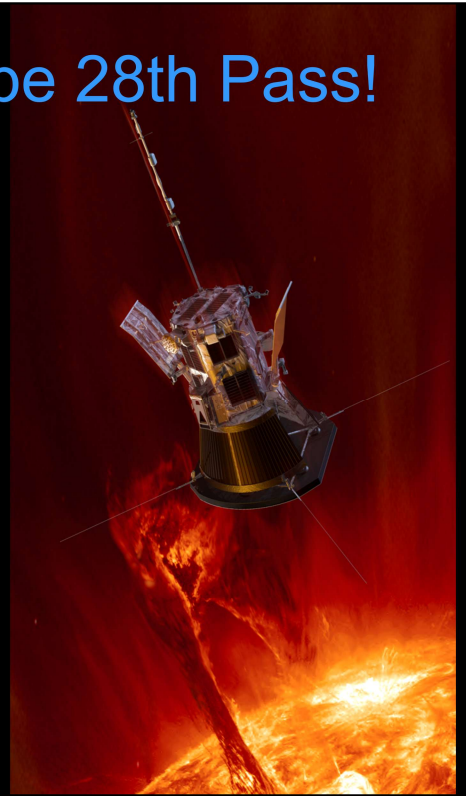
- Jun 12 – 1st Max cruise flight Mach 1.4 & 55,000 ft.
- Flight evaluation for maneuvering & stability
- F-15 chase planes were too loud to record sound!
- Testing is progressing smoothly
- Pilot's camera view →



The first flight to test the X-59 took place June 12 and it achieved the goals of Mach 1.4 at 55,000 ft. Everything went well in the initial maneuver testing. The design is quiet enough that the F-15 chase planes were too loud to conduct acoustic testing!

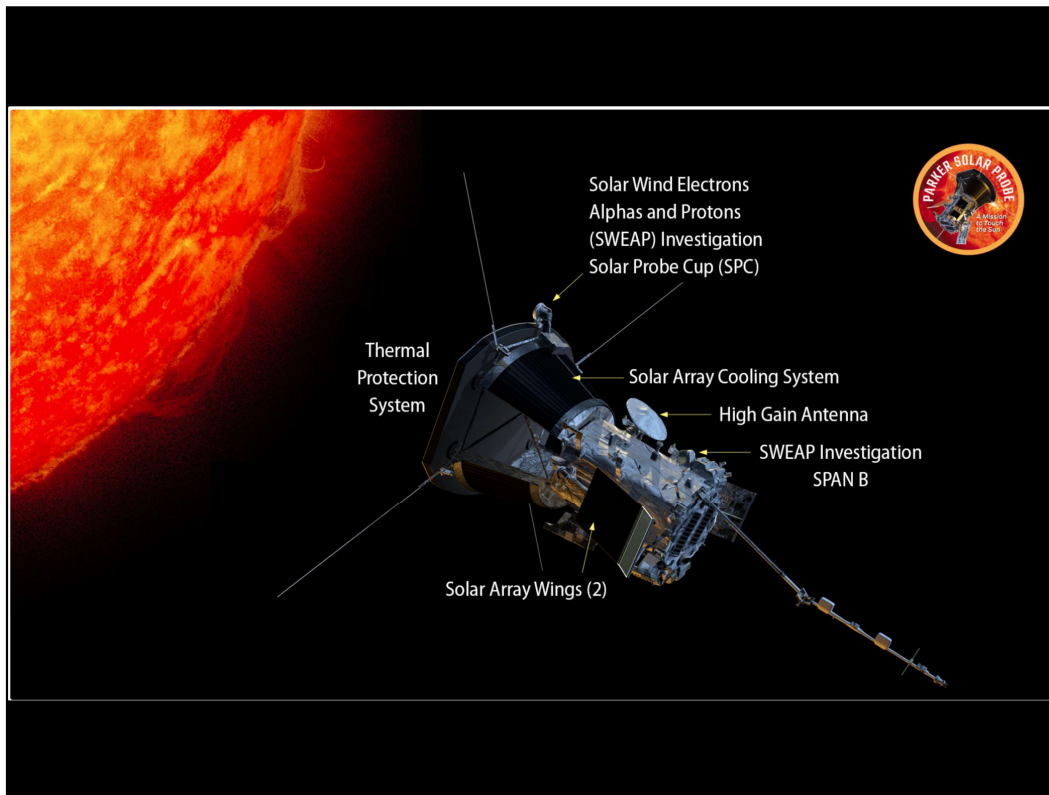
Parker Solar Probe 28th Pass!

- June 3-13
 - Telemetry contact Jun 14
 - Data upload Jun 17-30
- Matches records
 - First set Dec 24, 2024
 - Following & future passes will meet these records
 - close pass 3.8 million miles
 - Speed 430,000 mph
- In excellent shape & returning data



<https://science.nasa.gov/blogs/parker-solar-probe/2026/06/11/parker-solar-probe-makes-28th-close-pass-of-sun/>

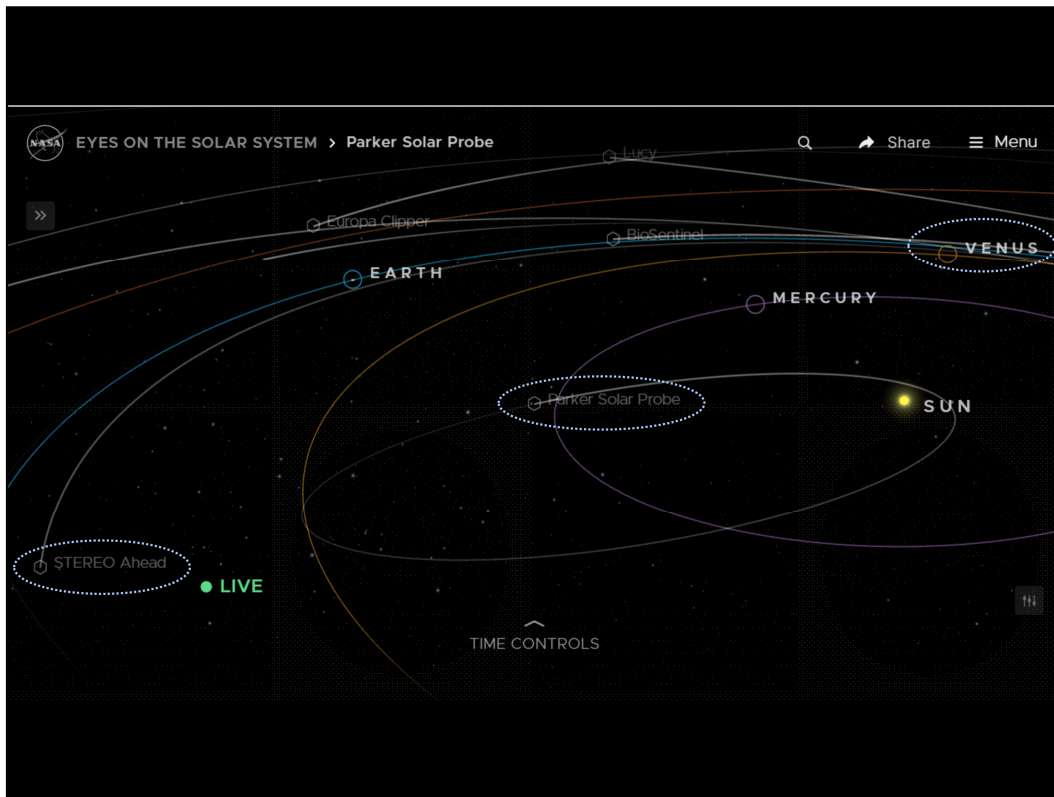
The PSP has been working like a champ with a total of (now) 28 passes down to 3.8 million miles from the Sun - 1/10th the distance of Mercury (36 million miles from the Sun). It has already exceeded the initial mission's 24 orbits and it's still going strong revealing the Sun's secrets.



I've added this slide to add some of the questions and answers from the meeting.

<https://science.nasa.gov/mission/parker-solar-probe/>
<https://parkersolarprobe.jhuapl.edu/Spacecraft/index.php>

The thermal protection system is made of a 4.5" thick carbon-composite and carbon-foam shield to withstand the 2,500° F heated particles streaming from the Sun. The probe stands off from the shield to avoid conducting heat through the shield. When in the Sun's atmosphere, nothing sticks out from behind that shield, so the heated particles don't hit the probe itself. Away from the Sun, the solar panels and some antennas fold out to perform their duties.



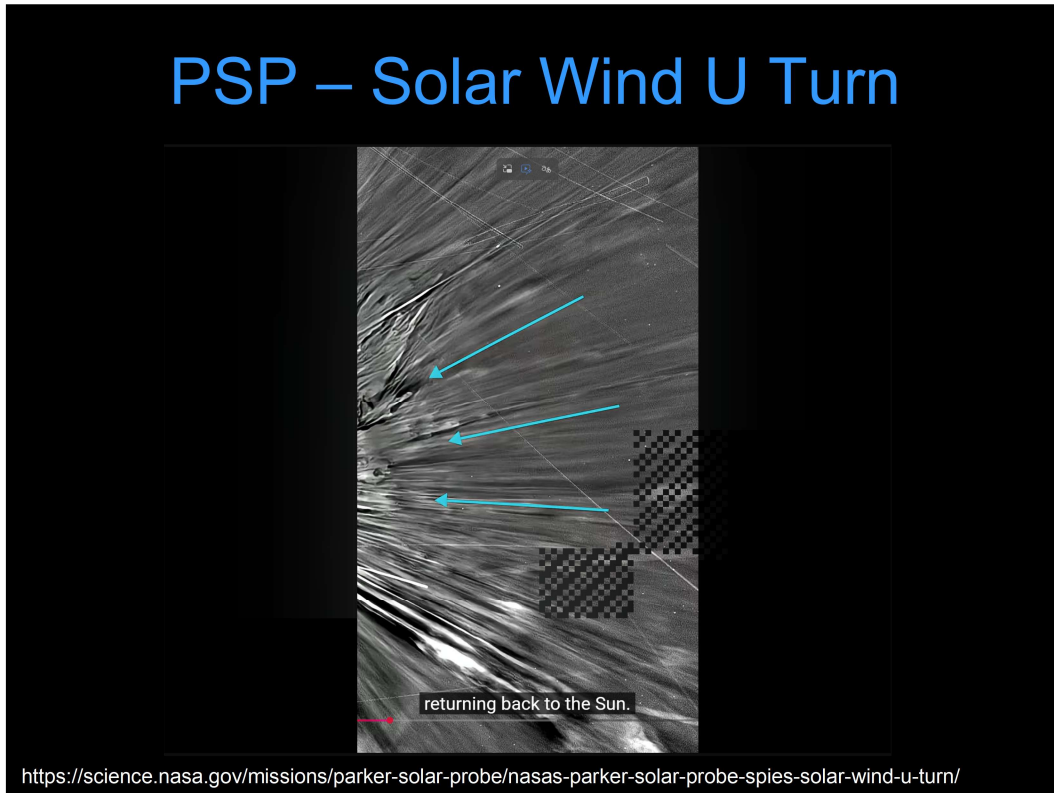
<https://science.nasa.gov/mission/parker-solar-probe/>

PSP's orbit extends out just past Venus' orbit to the Sun's atmosphere and back in roughly 88 days.

Also note the position of the STEREO A* probe. STEREO A was behind the Sun from PSP's viewpoint during its last close pass. With probes spread across the solar system like this, we get a more complete snapshot of the Sun's activity. STEREO A has a role to play in a few slides.

* STEREO A was originally paired with STEREO B, (Behind) for all-Sun imaging. "A" was ahead of Earth in Earth's orbit and "B" was Behind the Earth. Unfortunately "B" ceased working. "A" still provides good data.

PSP – Solar Wind U Turn



<https://science.nasa.gov/missions/parker-solar-probe/nasas-parker-solar-probe-spies-solar-wind-u-turn/>

See the web site and movie at <https://science.nasa.gov/missions/parker-solar-probe/nasas-parker-solar-probe-spies-solar-wind-u-turn/> for the full explanation.

From the article:

As Parker Solar Probe swept through the Sun’s atmosphere on Dec. 24, 2024, just 3.8 million miles from the solar surface, its Wide-Field Imager for Solar Probe, or WISPR, observed a CME erupt from the Sun. In the CME’s wake, elongated blobs of solar material were seen falling back toward the Sun. This type of feature, called “inflows”, has previously been seen from a distance by other NASA missions including SOHO (Solar and Heliospheric Observatory, a joint mission with ESA, the European Space Agency) and STEREO (Solar Terrestrial Relations Observatory). But Parker Solar Probe’s extreme close-up view from within the solar atmosphere reveals details of material falling back toward the Sun and on scales never seen before.

Magnetic Reconnect Surprises

- 2022, PSP passed between the Sun and a magnetic reconnection
- Flew through a Sun-directed jet of particles
- Ions and protons were expected to accelerate the same
 - Protons dispersed beam like a flashlight
 - Ions formed a tight beam like a laser.



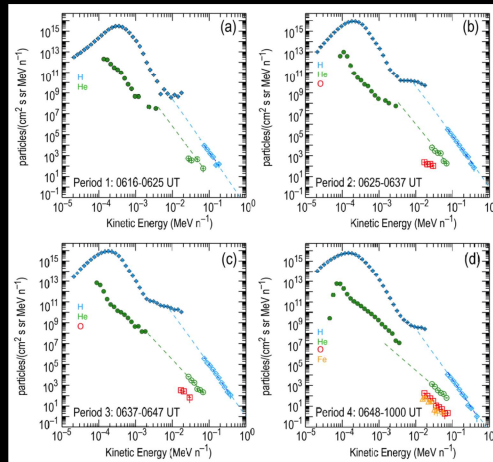
<https://science.nasa.gov/blogs/science-news/2026/04/15/science-nasa-gov-parker-solar-probe-finds-explosive-surprises-on-sun/>

<https://iopscience.iop.org/article/10.3847/1538-4357/ae48f2/pdf>

One of the recent scientific papers revealed another surprise in the solar atmosphere. It flew through a jet of particles rising from the Sun and the instruments detected something unexpected – Ions and Protons were expected to be accelerated the same, but protons spread out like a flashlight and ions kept a tight beam like a laser.

Mag. Reconnect Paper

- Encounter 14 in 2022
- Radial distance 16.25 R_{sun} !
- Protons at 400 keB roughly 1000 times normal
- Graph shows dispersion of protons curved (blue) very differently from ions.



- **Protons**
- **Helium**
- **Iron**
- **Oxygen**

<https://iopscience.iop.org/article/10.3847/1538-4357/ae48f2/pdf>

This paper was pretty dense and I didn't take the time to decode, but the graphs helped to show the difference. In the four graphs at top show the particle intensity on the vertical axis and kinetic energy on the horizontal. Note the difference between the blue proton arcs (spread beam) at the top and the particle lines (beams) below them.

You can read the paper your self for free:

<https://iopscience.iop.org/article/10.3847/1538-4357/ae48f2/pdf>

Closest Photos of Sun's Atmo.



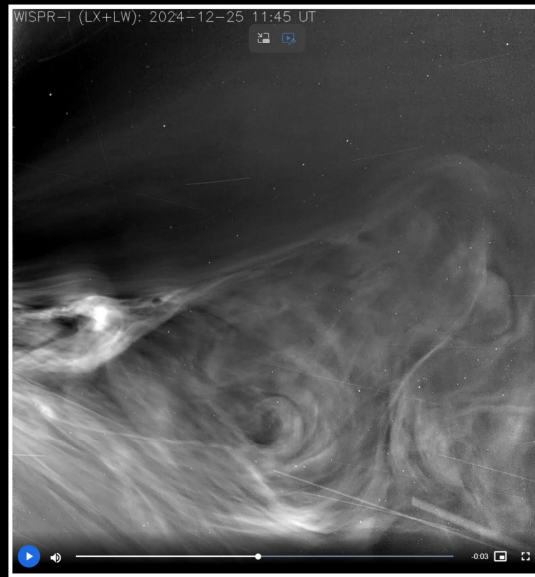
“In these images, we’re seeing the CMEs basically piling up on top of one another,” said Angelos Vourlidas, the WISPR instrument scientist at the Johns Hopkins Applied Physics Laboratory, which designed, built, and operates the spacecraft in Laurel, Maryland. “We’re using this to figure out how the CMEs merge together, which can be important for space weather.”

When CMEs collide, their trajectory can change, making it harder to predict where they’ll end up. Their merger can also accelerate charged particles and mix magnetic fields, which makes the CMEs’ effects potentially more dangerous to astronauts and satellites in space and technology on the ground. Parker Solar Probe’s close-up view helps scientists better prepare for such space weather effects at Earth and beyond.

<https://science.nasa.gov/science-research/heliophysics/nasas-parker-solar-probe-snaps-closest-ever-images-to-sun/>

CME Mergers

- WISPR images show what happens to the solar wind leaving the corona
- CMEs collide and as the magnetic fields merge, the direction changes
- Hopefully, this will lead to better space weather protections.



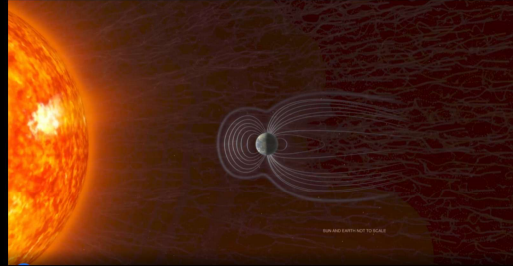
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Solar Wind Source

- PSP found the corona has a chaotic fringe
- 15 mil miles - Zig-zag magnetic fields
- 8 Million miles complex boundary zone
- Magnetic Switchbacks launch solar wind
 - Fast - “normal” wind
 - Slow - 1/2 speed, 2x as dense as fast



<https://science.nasa.gov/science-research/heliophysics/nasas-parker-solar-probe-snaps-closest-ever-images-to-sun/>

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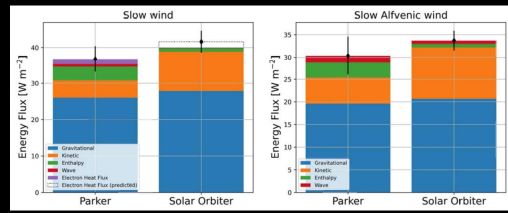
At Earth, the solar wind is mostly a consistent breeze, but Parker Solar Probe found it's anything but at the Sun. When the spacecraft reached within 14.7 million miles from the Sun, it encountered zig-zagging magnetic fields — a feature known as switchbacks. Using Parker Solar Probe's data, scientists discovered that these switchbacks, which came in clumps, were more common than expected.

When Parker Solar Probe first crossed into the corona about 8 million miles from the Sun's surface in 2021, it noticed the boundary of the corona was uneven and more complex than previously thought. As it got even closer, Parker Solar Probe helped scientists pinpoint the origin of switchbacks at patches on the visible surface of the Sun where magnetic funnels form. In 2024 scientists announced that the fast solar wind — one of two main classes of the solar wind — is in part powered by these switchbacks, adding to a 50-year-old mystery. However, it would take a closer view to understand the slow solar wind, which travels at just 220 miles per second, half the speed of the fast solar wind.

“The big unknown has been: how is the solar wind generated, and how does it manage to escape the Sun's immense gravitational pull?” said Nour Rawafi, the project scientist for Parker Solar Probe at the Johns Hopkins Applied Physics Laboratory. “Understanding this continuous flow of particles, particularly the slow solar wind, is a major challenge, especially given the diversity in the properties of these streams — but with Parker Solar Probe, we're closer than ever to uncovering their origins and how they evolve.”

Slow Solar Wind

- Two varieties of slow solar wind were known.
- PSP verified two varieties based on magnetics
- Non-Alfvénic
 - Helmet streamers may generate this wind
 - Large magnetic loops between active regions
- Alfvénic
 - Generated by the switchbacks



<https://iopscience.iop.org/article/10.3847/1538-4357/ada699/pdf>

<https://science.nasa.gov/science-research/heliophysics/nasas-parker-solar-probe-snaps-closest-ever-images-to-sun/>

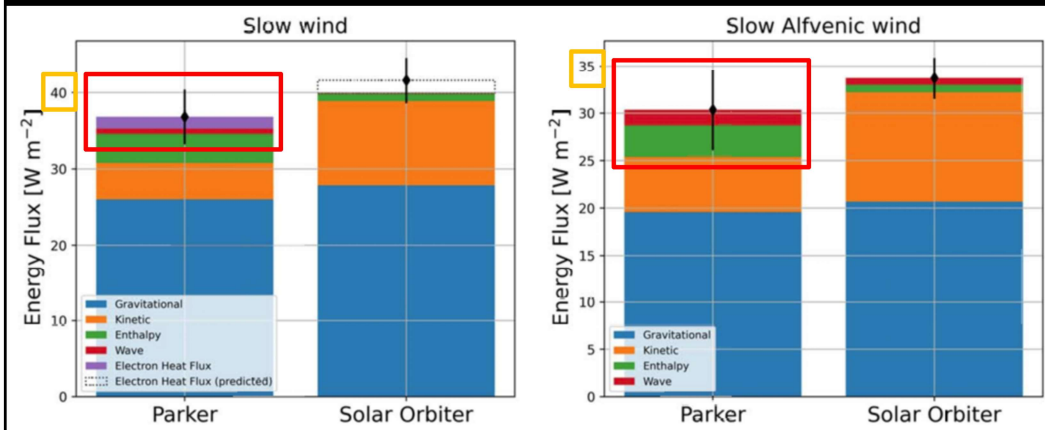
Slow Alfvénic wind has more wave energy, less electron flux, more kinetic energy, and more variable energy.

In the graphs, total energy of both winds is composed of:

- Gravitational (blue)
- Kinetic (orange)
- Enthalpy (green)
- Wave (Red)
- Electron Heat Flux (purple)

ESA’s Solar Orbiter has an eccentric orbit with perihelion inside Mercury’s orbit and looping out to Earth. The orbit is also inclined at 20° (increasing to 33° in 2029). The difference in the distance (PSP 3.8 million miles vs. 26 million miles.) and detectors explains the difference in the detected energy levels of the columns in each graph.

Slow Solar Wind Energies



Slow wind has more total energy

Slow Alfvénic wind has more wave energy, less electron flux, more kinetic energy, and more variable energy.

<https://iopscience.iop.org/article/10.3847/1538-4357/ada699/pdf>

*ESA Solar Orbiter

<https://iopscience.iop.org/article/10.3847/1538-4357/ada699/pdf>

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Record-Breaking Radio Burst

- Solar radio bursts usually last a few hours or days
- An August 2025 burst lasted 19 days
 - 4x longer than prev. record
 - Multiple probes to investigate
- Identified as Type IV
 - Mag. fields trap electrons
 - Same fields can cause CMEs
 - Called **Helmet Streamers**
- Source: 3 CMEs in same area!
- Parker Solar Probe
- STEREO A (Solar Terrestrial Relations Obs.) – B orbiter died 2014, but A continues
- ESA/NASA Solar Orbiter
- NASA Wind (1994 solar wind probe at L1)

<https://science.nasa.gov/blogs/science-news/2026/05/14/nasa-missions-track-record-breaking-radio-burst-from-sun/>

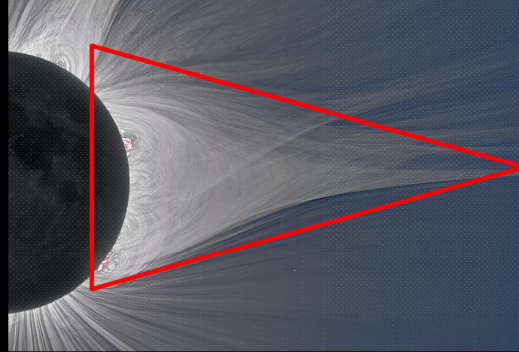
From the article:

These types of radio bursts, called Type IV bursts, emerge from reservoirs of electrons trapped by the Sun's magnetic fields. While the radio waves themselves are harmless, the same magnetic environments also can produce solar activity that sends dangerous particles toward Earth, which can affect satellites and spacecraft.

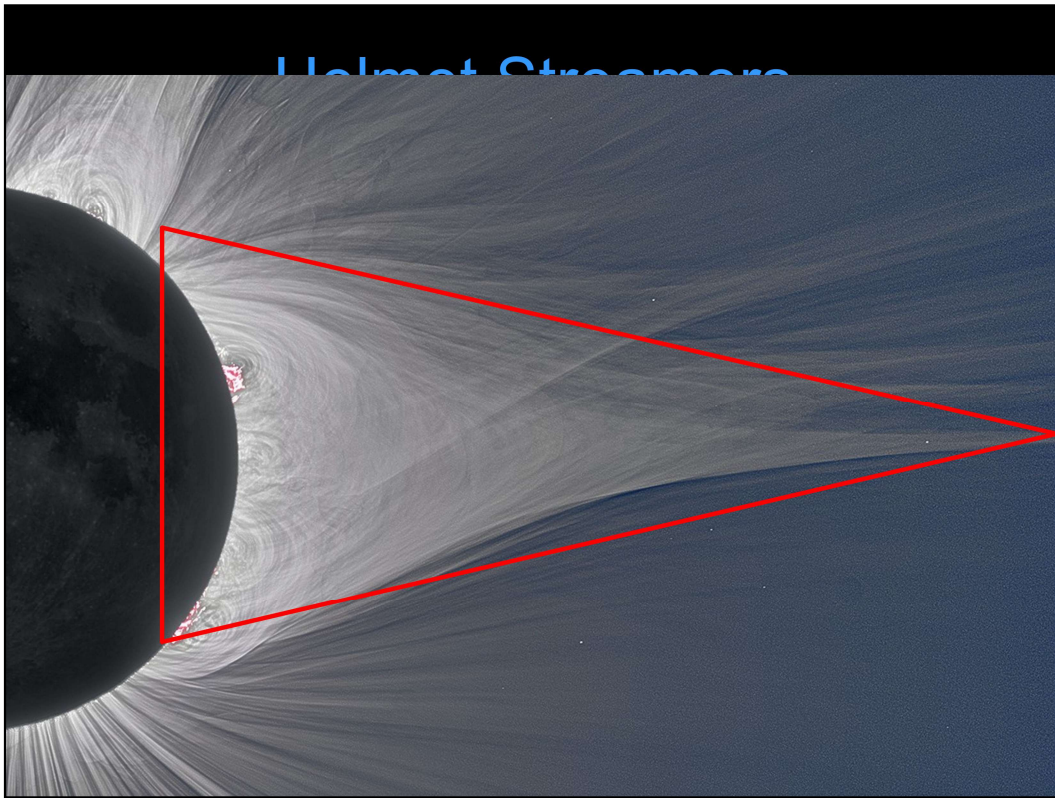
To analyze the event, researchers combined data from NASA's STEREO (Solar Terrestrial Relations Observatory), Parker Solar Probe, and Wind missions as well as ESA (the European Space Agency) and NASA's Solar Orbiter. Each mission observed the radio burst for a few days over its 19-day duration as the Sun's rotation carried the burst into view of the different spacecraft, which were spread across the inner solar system. The scientists developed a new technique using data from STEREO to pinpoint the source of the radio burst to a large magnetic feature in the Sun's atmosphere called a helmet streamer. The scientists think a trio of explosive outbursts, called coronal mass ejections, in the same region may have fueled the long-lasting event.

Helmet Streamers

- AKA coronal streamers
- Closed magnetic loops linking opposite magnetic poles in active surface areas
- Visible during total eclipses



<https://science.nasa.gov/blogs/science-news/2026/05/14/nasa-missions-track-record-breaking-radio-burst-from-sun/>



Helmet streamers are the very large cone-shaped features that can be seen during total eclipses, such as this photo.

NASA Logo Design Symbology

TIP OF THE A +

The tip of the A of Artemis points beyond the Moon and signifies that our efforts at the Moon are not the conclusion, but rather the preparation for all that lies beyond.

BLUE EARTH CRESCENT +

The crescent shows missions from our audience's perspective. From Earth we go. Back to Earth all that we learn and develop will return. This crescent also visualizes Artemis' bow as the source from which all energy and effort is sent.



MOON +

The Moon is our next destination and a stepping stone for Mars. It is the focus of all Artemis efforts.

RED TRAJECTORY +

The trajectory moves from left to right through the crossbar of the "A" opposite that of Apollo. Thus highlighting the distinct differences in our return to the moon. The trajectory is red to symbolize our path to Mars.

A +

The A symbolizes an arrowhead from Artemis' quiver and represents launch.

<https://www.nasa.gov/humans-in-space/artemis/>



April 6, 2026, just three minutes before the Orion spacecraft and its crew lost contact with Earth

April 6, 2026, just three minutes before the Orion spacecraft and its crew went behind the Moon and lost contact with Earth



Earthrise,
Shot April 6, 2026 at the
start of the flyby of the Moon

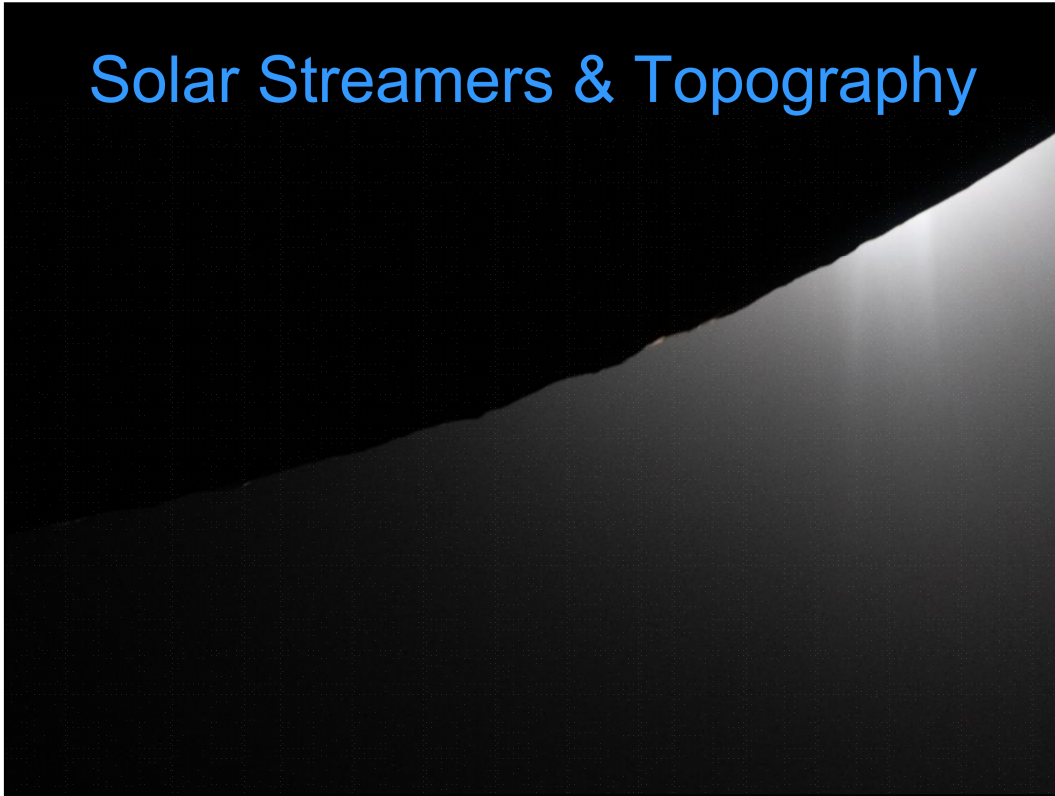
<https://www.nasa.gov/blogs/missions/2026/04/07/artemis-ii-flight-day-7-crew-makes-long-distance-call-begins-return/>

Moon Eclipsing the Sun



<https://www.nasa.gov/blogs/missions/2026/04/07/artemis-ii-flight-day-7-crew-makes-long%e2%80%91distance-call-begins-return/>

Solar Streamers & Topography



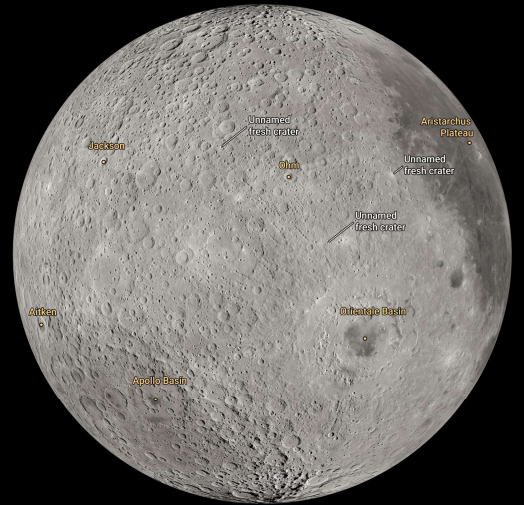
art002e010782 (April 6, 2026) - In this view captured by the Artemis II crew on the Orion spacecraft, a wedge of the Moon in nighttime is visible in the foreground, as the Sun is setting on the opposite side. This image captures the beginning of a total solar eclipse that astronauts were able to observe at the end of their lunar observation period during Orion's closest approach to the Moon on April 6, 2026. Unlike minutes-long eclipses as viewed from Earth, the Artemis II crew witnessed the Sun hide behind the Moon for nearly an hour. Because the astronauts were so near the Moon, it appeared much larger than the Sun; because of this, it took longer for the Sun to make its transit across the Moon and peek out the other side. From Earth, in contrast, the Moon and Sun appear about the same size, so even small changes in their alignment quickly bring the Sun back into view, making totality much shorter. The bright rays of light, or streamers, that are running outward towards the bottom of the Moon disk are part of the Sun's corona. The corona is the outermost layer of the Sun's atmosphere and is only visible during a total solar eclipse. It is normally hidden by the bright light of the Sun's surface. In addition, the jagged edge of the Moon visible in this image reveals the topography of backlit mountains on the horizon.

Image Credit: NASA

<https://www.nasa.gov/image-detail/amf-art002e010782/>

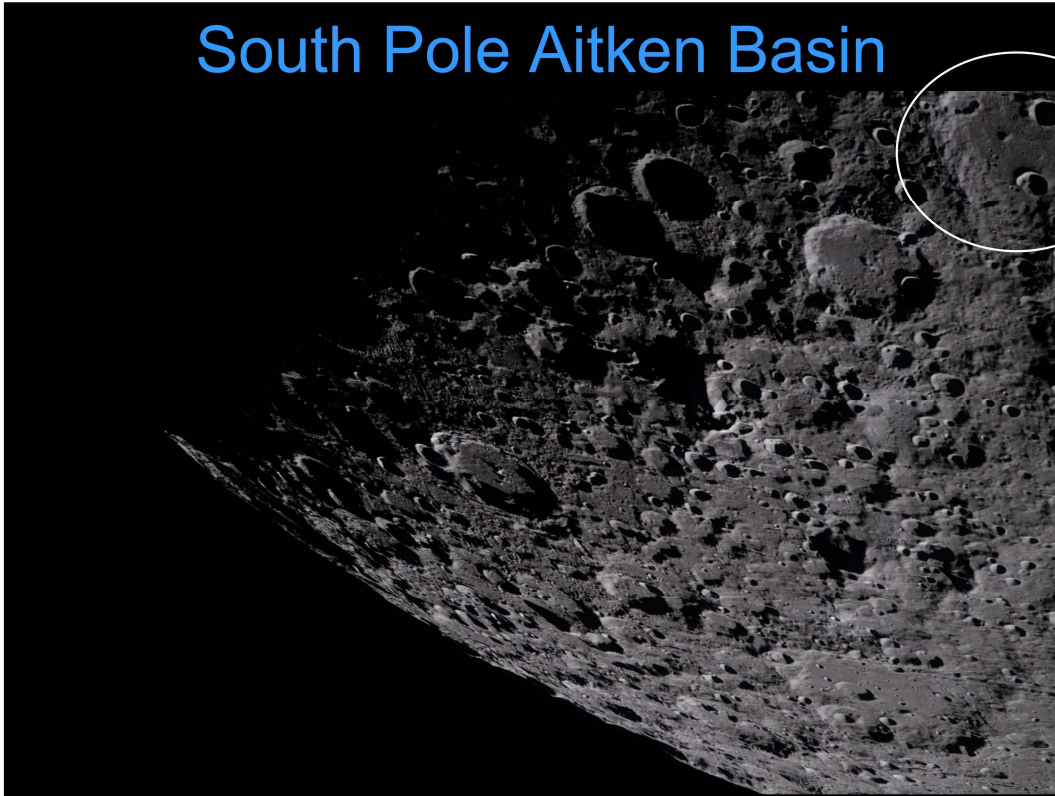
Naming Craters

- Integrity in honor of their capsule
- Carroll in honor of Reid Weisman's late wife



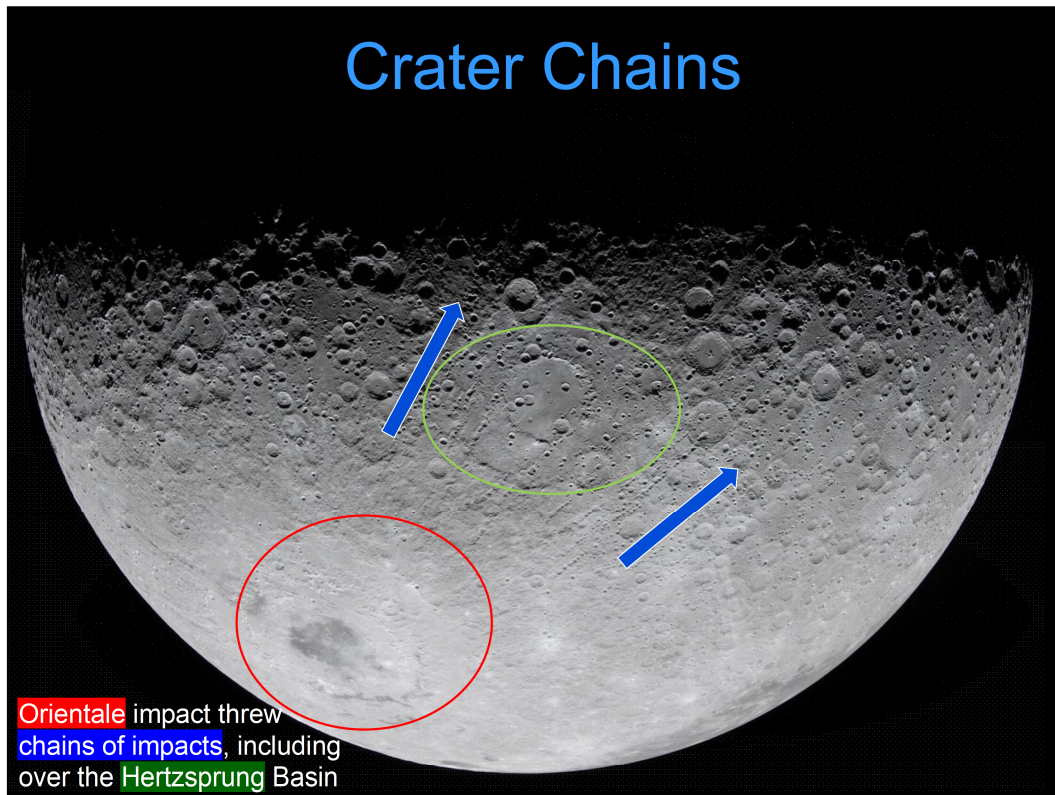
<https://www.nasa.gov/blogs/missions/2026/04/06/artemis-ii-flight-day-6-lunar-flyby-updates/>

South Pole Aitken Basin



Captured by the Artemis II crew, the heavily cratered terrain of the eastern edge of the South Pole-Aitken basin is seen with the shadowed terminator – the boundary between lunar day and night – at the top of the image. The South Pole-Aitken basin is the largest and oldest basin on the Moon, providing a glimpse into an ancient geologic history built up over billions of years.

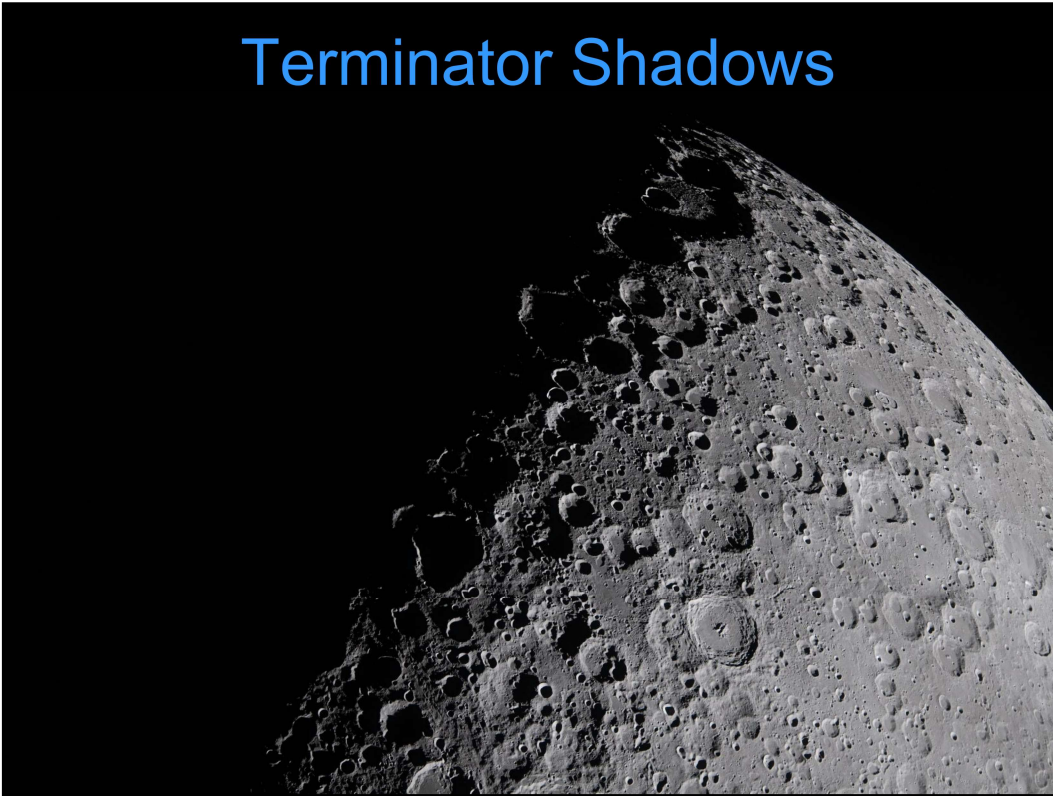
<https://www.nasa.gov/image-detail/amf-art002e009283/>



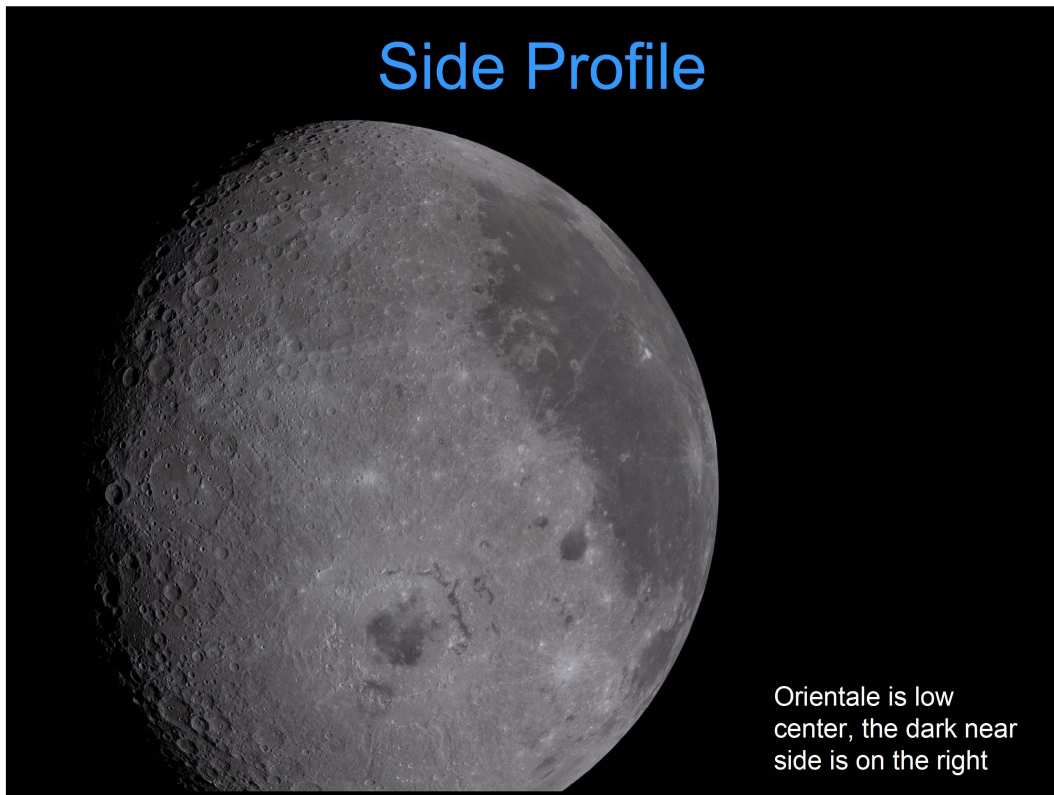
art002e010208 (April 6, 2026) - As the Artemis II crew flew over the terminator, the astronauts described this boundary between day and night as "anything but a straight line." Crater rims along the terminator stand out as "islands" in the night. Giant chains of craters emanating from the 3.7-billion-year-old Orientale basin can be seen scouring the surface, stretching almost to the terminator. This tells a geologic story: these crater chains produced by the Orientale impact event mar the surface of the relatively flat Hertzprung Basin (center of this image), which means that Hertzprung Basin must be even older than Orientale!

<https://www.nasa.gov/image-detail/amf-art002e010208/>

Terminator Shadows



art002e009281 (April 6, 2026) – The Artemis II crew captures a portion of the Moon coming into view along the terminator – the boundary between lunar day and night – where low-angle sunlight casts long, dramatic shadows across the surface. This grazing light accentuates the Moon's rugged topography, revealing craters, ridges, and basin structures in striking detail. Features along the terminator such as Jule Crater, Birkhoff Crater, Stebbins Crater, and surrounding highlands stand out. From this perspective, the interplay of light and shadow highlights the complexity of the lunar surface in ways not visible under full illumination. The image was captured about three hours into the crew's lunar observation period, as they flew around the far side of the Moon on the sixth day of the mission.



Capture My Good Side –The Moon

art002e012183 (April 6, 2026) - On the first shift during the lunar flyby observation period, the Artemis II crew captured more than two-thirds of the Moon showcasing the intricate features of the nearside. The 600-mile-wide impact crater, Orientale basin, lies along the transition between the near and far sides and is sometimes partly visible from Earth. The round black spot northeast of Orientale is Grimaldi crater, known for its exceptionally dark mare lava floor and heavily degraded rim. Credit: NASA

Image Credit: NASA

<https://www.nasa.gov/image-detail/amf-art002e012183/>

Shadows Across Vavilov Crater



art002e009282 (April 6, 2026) - A close-up view taken by the Artemis II crew of Vavilov Crater on the rim of the older and larger Hertzprung basin. The right portion of the image shows the transition from smooth material within an inner ring of mountains to more rugged terrain around the rim. Vavilov and other craters and their ejecta are accentuated by long shadows at the terminator, the boundary between lunar day and night. The image was captured with a handheld camera at a focal length of 400 mm, as the crew flew around the far side of the Moon.

<https://www.nasa.gov/image-detail/amf-art002e009282/>

Orientele basin at Noon



art002e012090 (April 6, 2026) - In this view of the Moon, the Artemis II crew captured an intricate snapshot of the rings of the Orientale basin, one of the Moon's youngest and best-preserved large impact craters on his first shift during the lunar flyby observation period. Credit: NASA

<https://www.nasa.gov/image-detail/amf-art002e012090/>

Poynting & Keeler Craters

- Poynting crater (larger) well-defined rim, smooth interior means material settled after impact.
- Keeler crater (smaller) textured interior shaped by impacts and ejecta.



art002e012702 (April 6, 2026) – Poynting crater and Keeler crater are visible side by side in the lower right portion of this image of the Moon's far side highlands. Poynting, positioned above, is a large impact crater with a well-defined rim and relatively smooth interior, indicative of material that has settled following the initial impact. Just below it, Keeler crater appears slightly smaller, with a sharply outlined rim and a more textured interior shaped by subsequent impacts and ejecta. Both features lie within the densely cratered far side highlands, preserving a record of ancient impacts that have shaped the lunar surface over billions of years.

Image Credit: NASA

<https://www.nasa.gov/image-detail/amf-art002e012702/>

Birkhoff Crater

Reduced exposure reveals subtle textures on the surface that brighter exposures fail to show



art002e012723 (April 6, 2026) – A close-up view of the Birkhoff crater on the Moon's far side, captured by the Artemis II crew, shows the surface under low-light conditions. Located within the lunar highlands, Birkhoff is an impact crater shaped by billions of years of collisions. In this underexposed image, reduced brightness reveals subtle variations in texture and topography that are often less visible in brighter views. The lighting emphasizes differences in surface roughness and ejecta patterns, providing a clearer look at the crater's structure and the surrounding terrain.

Image Credit: NASA

<https://www.nasa.gov/image-detail/amf-art002e012723/>

Orientele Basin Annular Ring



Swoon at the Moon

art002e012273 (April 6, 2026) - This view of the southwest portion of Orientale Basin highlights its prominent annular ring—a sweeping arc of mountainous terrain formed by the immense energy of an ancient impact. The ring structure rises above the surrounding surface, tracing the basin’s outer boundary and revealing the layered, multi-ring nature of one of the Moon’s most well-preserved impact features. Apollo-era observers nicknamed this formation “the kiss,” reflecting its distinctive, curved shape.

Image Credit: NASA

<https://www.nasa.gov/image-detail/amf-art002e012273/>

Variety of Lunar Geology

Bright Aristarchus
Marius Hills with volcanic domes
Dark Grimaldi crater



art002e012114 (April 6, 2026) - A diverse set of lunar features is visible in this view, including the brightly colored Aristarchus crater, whose high reflectivity stands out against the surrounding terrain. Nearby, the Marius Hills region reveals a field of volcanic domes and cones, evidence of past lunar volcanism. The sinuous Reiner Gamma swirl contrasts with the darker mare surface, while rays from Glushko crater streak across the plains. At the bottom of the frame, the dark-floored Grimaldi crater anchors the scene.

Image Credit: NASA

<https://www.nasa.gov/image-detail/amf-art002e012114/>

Crater of Remembrance

Carroll, after
Commander Reid
Wiseman's late wife.
About 3.5 miles across



art002e012153 (April 6, 2026) - The small, bright spot in the center of the image is the crater that the Artemis II crew have proposed as Carroll, after Commander Reid Wiseman's late wife. About 3.5 miles across (5.6 km in diameter), the proposed Carroll crater is on the nearside of the lunar surface on the western edge and would be visible from Earth with powerful telescopes.

Image Credit: NASA

<https://www.nasa.gov/image-detail/amf-art002e012153/>