

The background is a deep space scene. It features a bright, glowing purple and blue nebula or galaxy structure in the upper left. A large, dark, cratered sphere, resembling the Moon, is in the lower right. A bright, white star or galaxy core is visible in the lower center, emitting a lens flare. Several thin, white, curved lines represent orbital paths or celestial coordinates, some with small tick marks. The overall color palette is dominated by deep blues, purples, and blacks, with bright highlights from the celestial objects.

OCT 2026

COOL

SPACE/COSMOLOGY/ASTROPHYSICS
NEWS



Is there another Smart Telescope coming? The Sky-Watcher Orbis 60EDX

- 60 mm f/5 optical system
- Sony IMX585 (8.3 MP, 4K)
- Sony IMX662
- 128 GB onboard storage drive
- 10,000 mAh battery

ngEHT

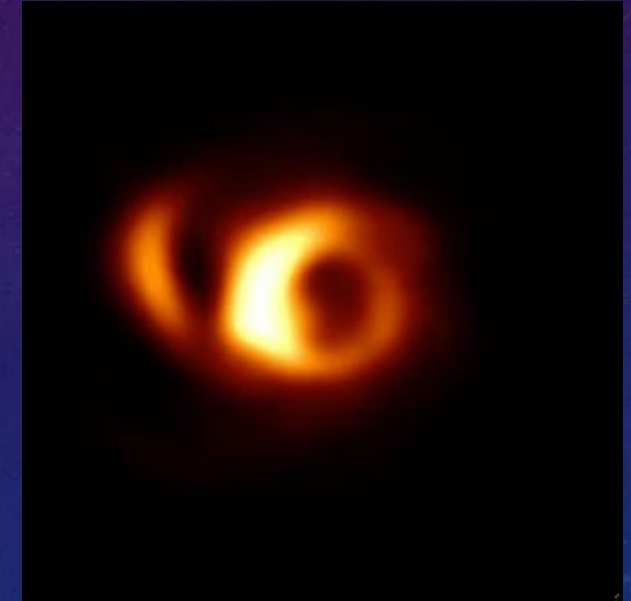
Next-Generation Event Horizon Telescope (ngEHT) is an international collaboration designed to dramatically upgrade the existing Event Horizon Telescope (EHT). While the original EHT captured the historic first-ever static images of supermassive black holes, the ngEHT aims to take the first real-time and time-lapse movies of black holes.

More Telescopes: The project plans to add roughly 10 new dishes across multiple continents, expanding the total network to around 20 sites. This fills gaps in data collection for drastically sharper image quality.

Two-Phase roll out, with fully upgraded global array expected to be online in 2030.

Phase 1 (Mid to late 2020's). Focusses on developing 6 new sites at optimal geographic locations and upgrading all current observatories to dual-band (230/345 GHz or 1.3/0.87 mm wavelength).

Phase 2 (about 2030). Will add about 4 more telescopes allowing simultaneous tri-band capabilities (86/230/345 GHz) or (3.45/1.3/0.87 mm wavelength) and transitioning the network into a year round, with a temporal sensitivity boost by **5 orders of magnitude** compared to initial setups, facilitating real-time network tracking. This will facilitate high-fidelity, continuous **time-lapse movies** of supermassive black holes like Sgr A* and M87*, capturing transient dynamics, accretion flows, and jet launching and other cool stuff.



Higgsino

Higgsino Dark Matter Interpretation of the LUX-ZEPLIN 248 keV Nuclear-Recoil Event.



The LZ Anomalous Event: The LUX-ZEPLIN (LZ) Dark Matter Experiment reported a single unusual nuclear recoil event with a reconstructed energy of 248 ± 23 (stat) ± 23 (sys) keV that occurred on June 16, 2023, and was announced in September 2026.

Observation: Detected during an extended search window up to 270 keV in a 2.84 tonne-year exposure by the detector located at the Sanford Underground Research Facility (SURF) in South Dakota.

Significance: Has a local significance of 3.4σ and a global significance of 2.6σ , indicating a roughly 0.5% chance of being a statistical background fluctuation rather than definitive evidence of a new phenomenon.

The Anomaly: Standard elastic spin-independent WIMP (Weakly Interacting Massive Particle) models predict that higher-energy recoils should be heavily outnumbered by thousands of lower-energy events, which were not observed.

Standard dark matter models cannot easily account for this high energy. Katie Freese has a candidate; The Higgsino.



Standard Model particles	Supersymmetric partners
u	$\tilde{u}$
c	$\tilde{c}$
t	$\tilde{t}$
g	$\tilde{g}$ gluino
d	$\tilde{d}$
s	$\tilde{s}$
b	$\tilde{b}$
γ	$\tilde{\gamma}$ photino
ν_e	$\tilde{\nu}_e$
ν_μ	$\tilde{\nu}_\mu$
ν_τ	$\tilde{\nu}_\tau$
Z	$\tilde{Z}$ zino
e	$\tilde{e}$
μ	$\tilde{\mu}$
τ	$\tilde{\tau}$
W	$\tilde{W}$ wino
H	$\tilde{H}$ higgsino
quarks	squarks
leptons	sleptons & sneutrinos
force particles	neutralinos $\tilde{\chi}^0$ & charginos $\tilde{\chi}^\pm$

<https://arxiv.org/pdf/2609.01583>

Japanese supercomputer simulations may explain Webb's Little Red Dots

Of all the discoveries from the James Webb Space Telescope, the multitude of Little Red Dots it has observed is among the most enigmatic. Now, simulations using the Japanese Supercomputer ATERUI III have explained the nature of the Little Red Dots without requiring any exotic assumptions. The simulations show that the Little Red Dots are black holes growing at a rate that would be impossible today because of conditions in the early universe.

In the study, [published](#) in the journal *Nature*, a research team led by Sunmyon Chon at the Max Planck Institute for Astrophysics used the ATERUI III supercomputer at the National Astronomical Observatory of Japan to conduct the most detailed cosmological simulations to date of conditions in the early universe.

The team's simulation started with the conditions surrounding a galaxy in the early universe, then zoomed in to individual gas clouds. These computationally intensive simulations were made possible by ATERUI III's high-resolution computing power.

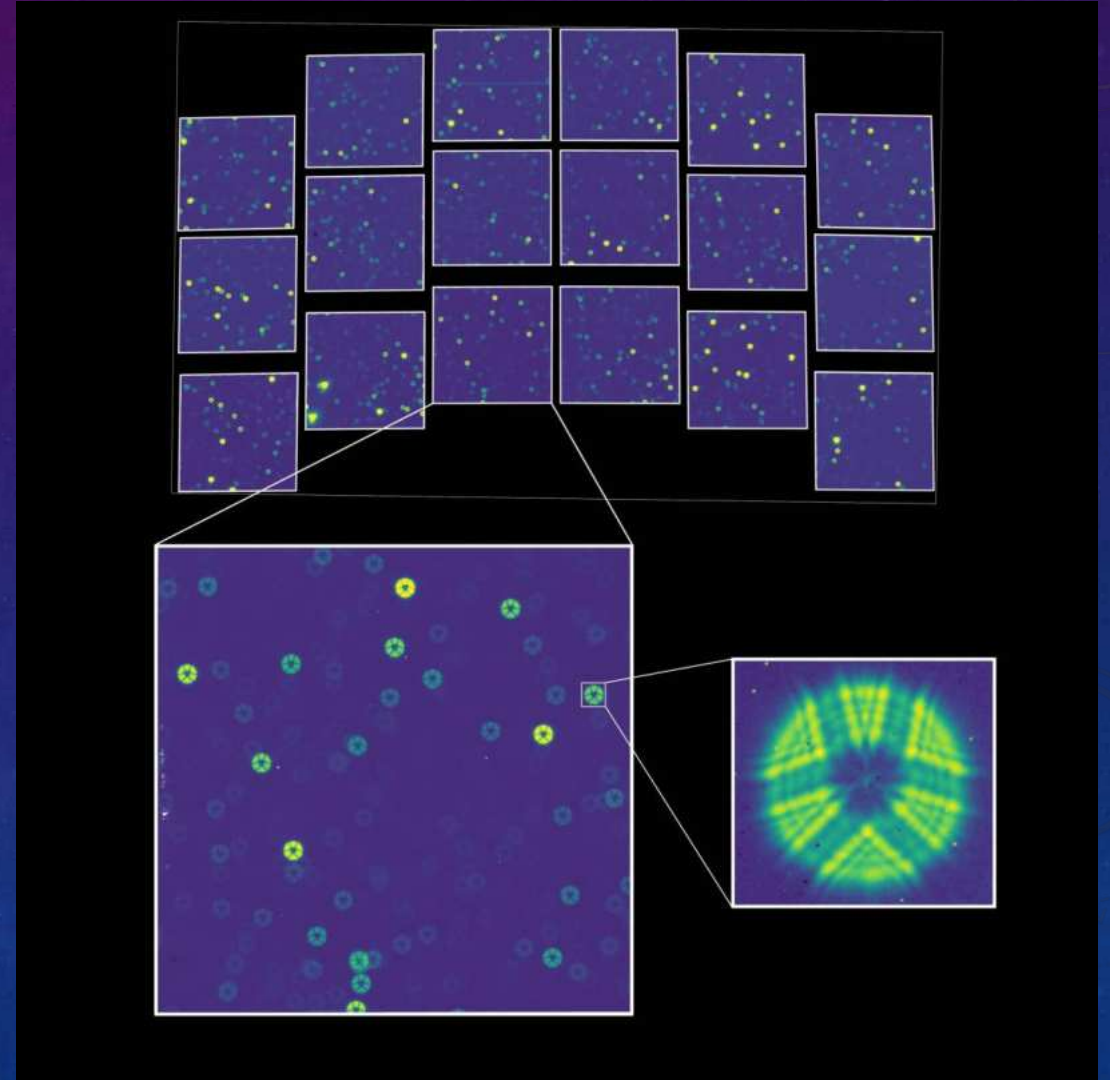


Credit: Sunmyon Chon, Takaaki Takeda, 4D2U Project, NAOJ

NASA Activates Roman's Primary Instrument, Checks Out Coronagraph

his test image captures the very first photons of starlight to reach the Wide Field Instrument on NASA's Nancy Grace Roman Space Telescope. It was taken as an initial performance assessment with the detector array still stowed as it was for launch, far from best focus.

The mission remains on track to release Roman's first science images by early 2027.



NASA'S MOON ORBITER SPOTS NEW, 'ONCE-IN-CENTURY' MOON CRATER

- It started as a routine data-quality check. But as Robert Wagner, a scientist with NASA's Lunar Reconnaissance Orbiter (LRO), scanned a giant Moon map on his computer screen, an unusually large bright spot circled by a dark halo caught his eye, as it implied that surface material in that area had been shaken up.
- "I just stopped, dropped everything, and started looking into what that spot was," said Wagner, an image-processing specialist from Intuitive Machines who works with data from the Lunar Reconnaissance Orbiter Camera (LROC) system.
- By comparing before and after images of the Moon, Wagner realized he had discovered the largest, newly formed crater ever found in the solar system, as scientists reported Wednesday in Science Advances. This discovery highlights the value of NASA's Moon orbiter data in studying a dynamic landscape as the agency advances a sustained human presence and expanded scientific and commercial activity on the Moon.



What's Up

<< September

October 2026

November >>

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27 	28 	29 	30 	1  Waning gibbous Visible: 73% ↓ Age: 19.90 days	2  Last quarter Visible: 63% ↓ Age: 20.99 days	3  Last quarter Visible: 51% ↓ Age: 22.07 days
4 	5 	6 	7 	8 	9 	10 
Last quarter Visible: 40% ↓ Age: 23.14 days	Waning crescent Visible: 29% ↓ Age: 24.21 days	Waning crescent Visible: 20% ↓ Age: 25.27 days	Waning crescent Visible: 12% ↓ Age: 26.32 days	Waning crescent Visible: 6% ↓ Age: 27.36 days	New Visible: 2% ↓ Age: 28.38 days	New Visible: 1% ↓ Age: 29.39 days
11 	12 	13 	14 	15 	16 	17 
New Visible: 1% ↑ Age: 0.84 days	Waxing crescent Visible: 4% ↑ Age: 1.80 days	Waxing crescent Visible: 9% ↑ Age: 2.74 days	Waxing crescent Visible: 15% ↑ Age: 3.65 days	Waxing crescent Visible: 22% ↑ Age: 4.56 days	Waxing crescent Visible: 31% ↑ Age: 5.45 days	First quarter Visible: 39% ↑ Age: 6.34 days
18 	19 	20 	21 	22 	23 	24 
First quarter Visible: 49% ↑ Age: 7.23 days	First quarter Visible: 58% ↑ Age: 8.13 days	Waxing gibbous Visible: 68% ↑ Age: 9.04 days	Waxing gibbous Visible: 77% ↑ Age: 9.98 days	Waxing gibbous Visible: 85% ↑ Age: 10.94 days	Waxing gibbous Visible: 92% ↑ Age: 11.94 days	Waxing gibbous Visible: 97% ↑ Age: 12.97 days
25 	26 	27 	28 	29 	30 	31 
Full moon Visible: 100% ↑ Age: 14.03 days	Full moon Visible: 100% Age: 15.12 days	Full moon Visible: 98% ↓ Age: 16.23 days	Waning gibbous Visible: 93% ↓ Age: 17.35 days	Waning gibbous Visible: 86% ↓ Age: 18.47 days	Waning gibbous Visible: 76% ↓ Age: 19.58 days	Last quarter Visible: 66% ↓ Age: 20.68 days

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Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 The Moon at perigee	2 Lunar occultation of Beta Tauri The Andromeda Galaxy is well placed	3 Moon at Last Quarter NGC 253 is well placed
4 Saturn at opposition Asteroid 2 Pallas at opposition The Small Magellanic Cloud is well placed	5 Conjunction of the Moon and Mars Mercury at highest altitude in evening sky Close approach of the Moon and Mars Lunar occultation of Mars Close approach of the Moon and M44 Conjunction of Venus and Mercury	6 October Camelopardalid meteor shower 2026 Conjunction of the Moon and Jupiter Close approach of the Moon and Jupiter Lunar occultation of Jupiter Lunar occultation of Regulus	7 NGC 362 is well placed	8	9 Draconid meteor shower 2026	10 New Moon Southern Taurid meteor shower 2026
11 Close approach of Mars and M44 δ-Aurigid meteor shower 2026 Conjunction of the Moon and Venus	12 Mercury at greatest elongation east Conjunction of the Moon and Mercury	13 Asteroid 4 Vesta at opposition The Moon at perihelion	14 Lunar occultation of Antares	15 The Triangulum Galaxy is well placed	16 The Moon at apogee	17 Lunar occultation of Sigma Sagittarii Mercury at dichotomy
18 Moon at First Quarter ε-Geminid meteor shower 2026	19	20	21 Orionid meteor shower 2026	22	23 The Moon at aphelion Venus at inferior solar conjunction	24 Close approach of the Moon and Saturn Conjunction of the Moon and Saturn Leonis Minorid meteor shower 2026
25	26 Full Moon The Perseus Double Cluster is well placed	27 136108 Haumea at solar conjunction Close approach of the Moon and M45	28 The Moon at perigee	29 Lunar occultation of Beta Tauri	30	31



The Moon is 20 days old, waning gibbous, and is approaching last quarter. From Stratford, it is visible from soon after it rises, at 21:05, until soon before it sets at 13:20.

Rise 21:05
Set 13:20

26 Sep 2026 - Full Moon
03 Oct 2026 - Moon at Last Quarter
10 Oct 2026 - New Moon
18 Oct 2026 - Moon at First Quarter



Mercury recently passed behind the Sun at superior solar conjunction. From Stratford, it is not observable – it will reach its highest point in the sky during daytime and is no higher than 1° above the horizon at dusk.

Rise 09:24
Set 19:45

05 Aug 2026 - Mercury at highest altitude in morning sky
05 Oct 2026 - Mercury at highest altitude in evening sky
12 Oct 2026 - Mercury at greatest elongation east
20 Nov 2026 - Mercury at highest altitude in morning sky



Venus will soon pass in front of the Sun at inferior solar conjunction. From Stratford, it is not observable – it will reach its highest point in the sky during daytime and is no higher than 1° above the horizon at dusk.

Rise 10:15
Set 19:33

14 Aug 2026 - Venus at greatest elongation east
09 Dec 2026 - Venus at highest altitude in morning sky
03 Jan 2027 - Venus at greatest elongation west
21 Mar 2028 - Venus at greatest elongation east



Mars is currently emerging from behind the Sun. From Stratford, it is visible in the dawn sky, rising at 01:30 (EDT) and reaching an altitude of 53° above the south-eastern horizon before fading from view as dawn breaks at around 06:37.

Rise 01:31
Set 16:27

23 Feb 2025 - Mars ends retrograde motion
10 Jan 2027 - Mars enters retrograde motion
19 Feb 2027 - Mars at opposition
19 Feb 2027 - Mars at perigee



Jupiter recently passed behind the Sun at solar conjunction. From Stratford, however, it is visible in the dawn sky, rising at 03:05 (EDT) and reaching an altitude of 41° above the eastern horizon before fading from view as dawn breaks at around 07:00.

Rise 03:05
Set 17:14

10 Mar 2026 - Jupiter ends retrograde motion
12 Dec 2026 - Jupiter enters retrograde motion
10 Feb 2027 - Jupiter at opposition
12 Apr 2027 - Jupiter ends retrograde motion



Saturn is currently approaching opposition. From Stratford, it is visible between 20:20 and 06:38. It will become accessible at around 20:20, when it rises to an altitude of 10° above your eastern horizon. It will reach its highest point in the sky at 01:29, 48° above your southern horizon. It will become inaccessible at around 06:38 when it sinks below 10° above your western horizon.

Rise 19:18
Set 07:39

26 Jul 2026 - Saturn enters retrograde motion
04 Oct 2026 - Saturn at opposition
10 Dec 2026 - Saturn ends retrograde motion
09 Aug 2027 - Saturn enters retrograde motion



Uranus is currently visible as a morning object. From Stratford, it is visible in the morning sky, becoming accessible around 23:36, when it reaches an altitude of 21° above your eastern horizon. It will then reach its highest point in the sky at 04:56, 67° above your southern horizon. It will be lost to dawn twilight around 06:11, 62° above your south-western horizon.

Rise 21:27
Set 12:24

10 Sep 2026 - Uranus enters retrograde motion
25 Nov 2026 - Uranus at opposition
08 Feb 2027 - Uranus ends retrograde motion
15 Sep 2027 - Uranus enters retrograde motion



Neptune recently passed opposition. From Stratford, it is visible between 21:00 and 04:49. It will become accessible at around 21:00, when it rises to an altitude of 21° above your eastern horizon. It will reach its highest point in the sky at 00:55, 46° above your southern horizon. It will become inaccessible at around 04:49 when it sinks below 21° above your south-western horizon.

Rise 18:53
Set 06:57

25 Sep 2026 - Neptune at opposition
12 Dec 2026 - Neptune ends retrograde motion
09 Jul 2027 - Neptune enters retrograde motion
28 Sep 2027 - Neptune at opposition



6 Oct 2026

