

SKYWATCHER NEWSLETTER



APOD 8 October 2026 "Happy New Year!" No, wait, this is not a fireworks display. This image shows Nebula Pa 30, observed with the Gemini North Telescope in Hawai'i. It is likely the remnant of an old supernova explosion.

SPACE
com

Astronomers detect most distant supermassive black hole-powered blazar ever: a cosmic beacon from the dawn of time

By: Robert Lea 7 Oct 2026

"Around 11 billion years ago, the universe experienced a period of peak activity known as the 'Cosmic noon,' characterized by an intense rate of star and galaxy formation."

Astronomers have discovered the most distant and earliest blazar, comprised of an erupting supermassive black hole aiming its plasma jets directly at Earth.

Blazars occur when supermassive black holes are surrounded by vast amounts of gas and dust that they feed on, in regions called active galactic nuclei (AGNs). The immense gravity of these cosmic titans causes the surrounding gas and dust to glow brightly, meaning that AGNs can outshine the combined light of every star in the galaxies that house them. But that isn't all; matter that isn't feasted upon is channeled to the poles of the black hole, from where it is blasted out as twin jets of plasma moving at near-light speed.

These events are called quasars, but when the jets are directed straight down our line of sight, the quasar is classified as a blazar.

LATEST NEWS

The nights are drawing in but hopefully you have been able to take advantage of the milder evenings and start viewing the dark sky! One great event to plan for are the Orionid Meteor Shower. See p.4 for more information.

Recently I stumbled upon an old favourite... APOD (Astronomy Picture of the Day). Perhaps you remember this great daily update of beautiful images and info bites. Well, it is still producing great content every day. Check out <https://science.nasa.gov/apod/> You can also sign up to have the latest APOD emailed directly to you!

Until next month ~SLK



An illustration of supermassive black hole-powered blazar (Image credit: Robert Lea (created with Canva))

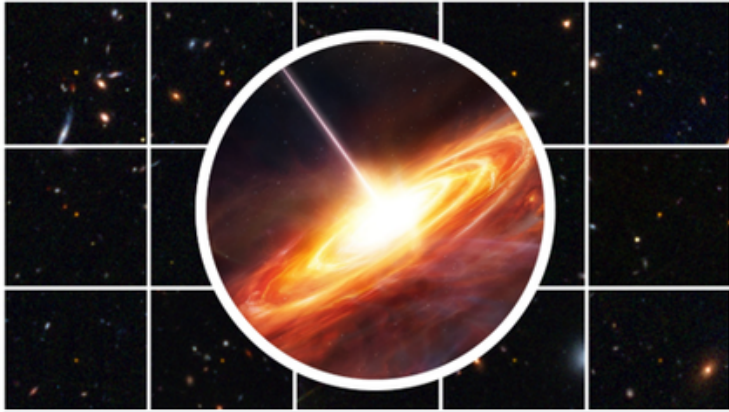
LOCAL EVENTS

- 15 Oct - SAS - Astronavigation - From Petroglyphs to Pulsars - Prof Nik Whitehead
- 18 Oct - NLO - Sidmouth Science Festival: NLO Sunday Funday
- 21 Oct - FA - Left in Space - Guest Speaker Dr Lilian Hobbs
- 22 Oct - NLO - Public Observatory Tour: The Autumn Sky
- 29 Oct - SAS- Astronavigation - From Petroglyphs to Pulsars - Prof Nik Whitehead
- 3 Nov - WAS - Herman Bender - Lakota & Cheyenne Star Knowledge - Zoom only
- 18 Nov - FA - Astro-Bible Crossover. Part 2! - Club Speaker Ken Pitts
- 1 Dec - WAS - Members Talks

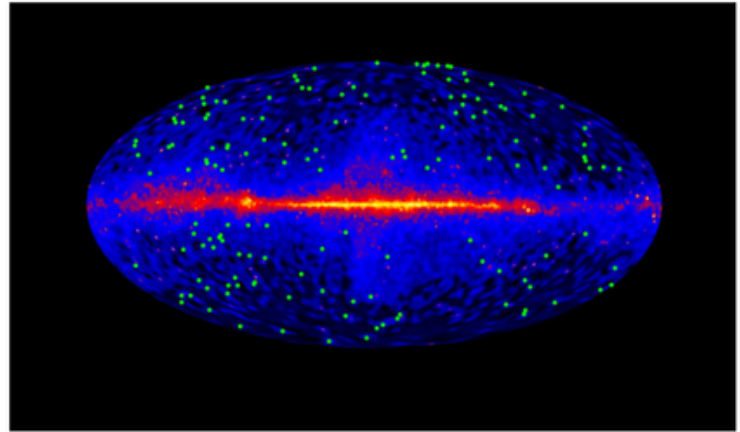
**COMING
SOON**
Stay Tuned

VISIT OUR WEBSITE FOR THE LATEST CLUB INFORMATION

Blazar - Continued from page 1



[Scientists have discovered the oldest quasar ever seen, and it shines with the light of a trillion suns](#)



This plot shows the locations of 150 blazars (green dots) used in the EBL study. Image released Nov. 1, 2012. (Image credit: NASA/DOE/Fermi LAT Collaboration)

That emission was first observed in December 2023, with astronomers following up on the discovery with the Large-Sized Telescope (LST-1) prototype and the Major Atmospheric Gamma-ray Imaging Cherenkov (MAGIC) telescope, both of which are located at the Roque de los Muchachos Observatory, La Palma, Spain.

This revealed high-energy gamma-rays originating 8 billion light-years away. The analysis of these gamma-rays revealed how the supermassive black hole at the heart of this blazar is acting as a cosmic particle accelerator.

As these gamma rays traversed the cosmos, they interacted with the total accumulated radiation from all the stars, galaxies, and other AGNs throughout cosmic history, known as the extragalactic background (EBL).

When gamma rays interact with this fossil light, they create electron-positron pairs, a process known as pair production. This depletes the number of gamma-ray photons in this signal. Using the LST-1 and MAGIC, the team was able to characterize this depletion, revealing that the intense gamma-ray emission was fueled by a dense population of so-called 'relativistic' electrons. Relativistic means travelling at speeds near that of light, with the blazar's central supermassive black hole as the engine that accelerated these particles.

"In what is known as the leptonic scenario, electrons have been accelerated to speeds close to the speed of light within a powerful plasma jet ejected by the central supermassive black hole of OP 313," team member Domenico Della Volpe of the University of Geneva said. "Upon colliding with lower-energy photons surrounding the black hole, the electrons transfer part of their considerable energy to these photons, thereby propelling them to energy levels corresponding to very high-energy gamma rays."

That means these findings could represent a major step forward for our understanding of quasars, some of the most powerful cosmic events ever detected by humanity.

The team's research was published on Tuesday (Oct. 6) in the journal *Astronomy & Astrophysics*.

<https://tinyurl.com/fr8u4n5n>

APOD image - Continued from page 1



APOD: 2026 October 7 - Supernova Remnant Pa 30

Discover the cosmos! Each day a different image or photograph of our fascinating universe is featured, along with...

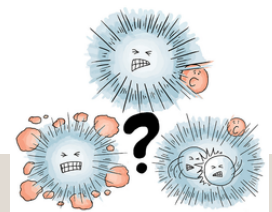
NASA Science / Oct 7



APOD: 2026 October 6 - A Complete Auroral Oval from SMILE

Discover the cosmos! Each day a different image or photograph of our fascinating universe is featured, along...

NASA Science / Oct 7



WAC Upcoming Events

13 NOV - PAUL FELLOWS - SEARCHING FOR THE SUN'S SISTERS (IN-PERSON AND ZOOM)

11 DEC - GEOFF KIRBY - 70 YEARS OF STARGAZING (IN-PERSON AND ZOOM)

MEMBERS SECTION



The skies are getting darker quickly since the autumnal equinox. The nice part is that the evenings are still relatively mild and the brightest stars appear during civilised hours!

For example in the upper image, if you wake before sunrise, Orion and Gemini can easily be spotted.

If you are out mid evening, the Summer triangle is easily seen high above.

Fortunately, the Sun still has some activity despite what appears to be quickly slipping out of Solar Max in 2025. AR4549 (central) has already triggered aurora in the northern latitudes. More to come!

Widefield images - Samsung A34

Solar image - Seestar s50 single frame



ORIONIDS 2026

In 2026 the Orionid meteor shower is active from 2 October - 7 November and will peak on the night of 21 October between midnight and dawn. However, you should be able to see the shower for several days on either side of this 'maximum' date.

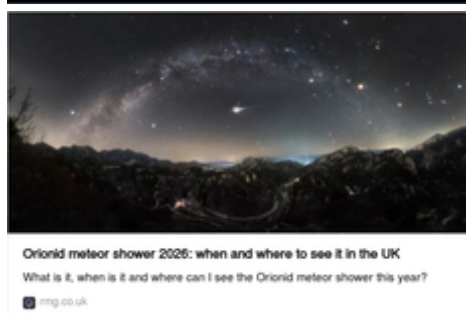
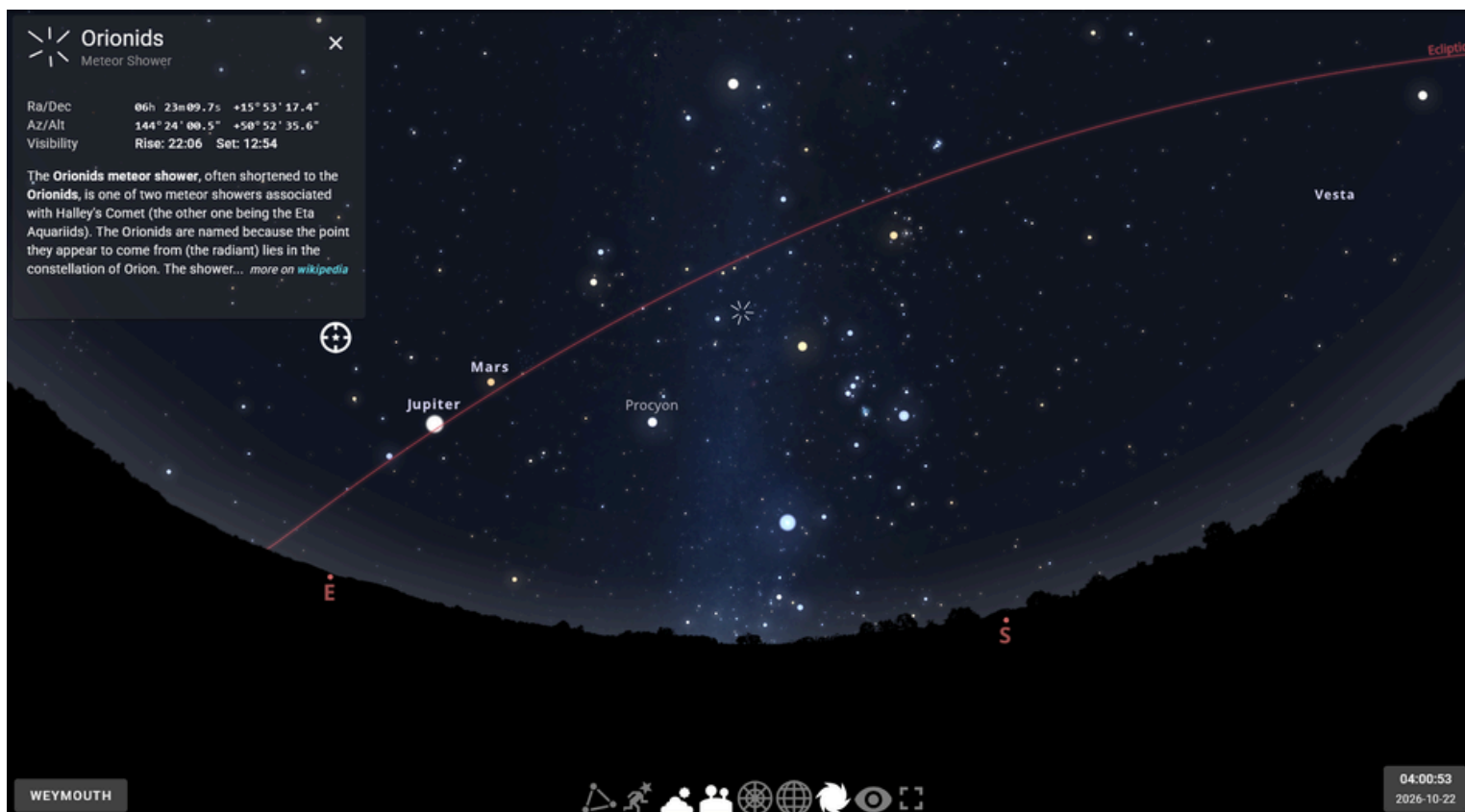
What is the Orionid meteor shower?

Some people view the Orionids as extra special because the meteors are actually pieces of Comet 1P/Halley, famously known as Halley's Comet. The comet swings by Earth once every 75-76 years, but this annual shower provides some compensation for those who may miss that once-in-a-lifetime event.

As the comet follows its path around the Sun, it leaves a path of tiny debris. The cometary debris enters our planet's atmosphere at speeds of around 41 miles per second and vaporises from friction with the air, which causes the streaks of light we call meteors.

If you trace the path that the Orionid meteors take, they seem to originate from a point in the constellation of Orion - hence the name.

The beautiful streaks we see in the night sky can actually be caused by particles as small as a grain of sand! The cometary debris enters our planet's atmosphere at speeds of around 41 miles per second.



Orionid Meteor Shower: Peaks October 21–22 with fast meteors from Halley's Comet debris.

Best time: Midnight to dawn.

Viewing tip: A waxing gibbous moon may block fainter meteors, so pre-dawn hours after the moon sets are best. Expect roughly 10–20+ meteors per hour in dark skies

Skymaps.com—Feel free to download the full article directly each month.

