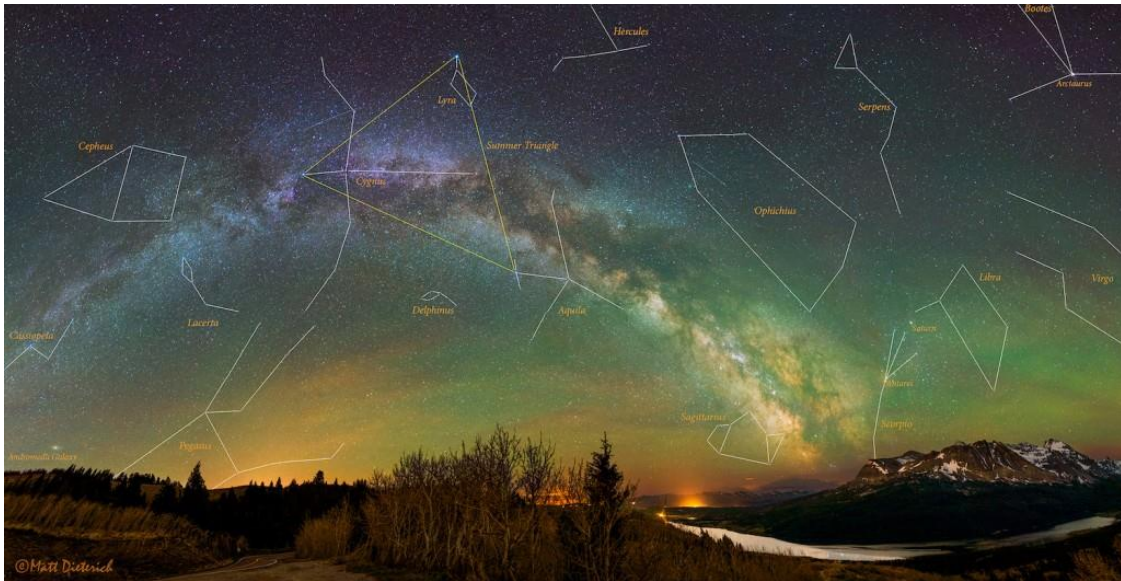


What's Up in the Night Sky for AUGUST



Presented by

Photonverse

August 2025 Night Sky - Meteors, Planets & Deep Sky Objects

<https://www.youtube.com/watch?v=H8JGYam6uUc>

MindFull

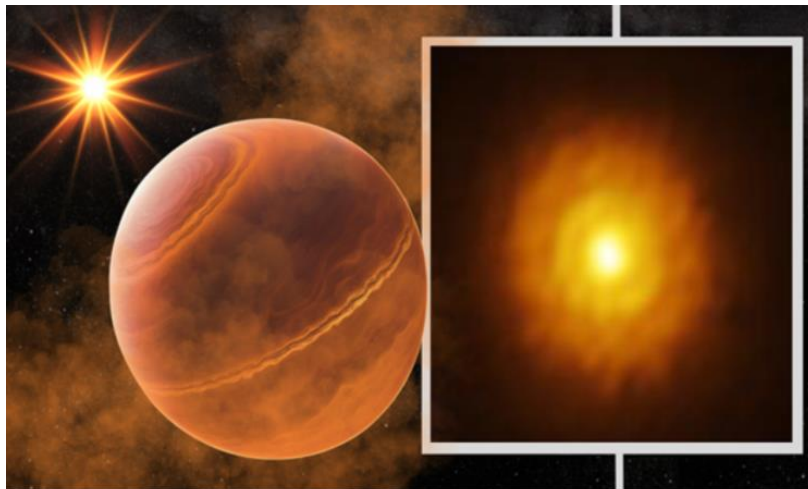
Don't Miss These Sky Events in August 2025!

Planets, Meteors & Space Missions

<https://www.youtube.com/watch?v=m6NY7qwDOlg>

Recent Developments in Exoplanet Research

- A "Monster" Exoplanet Hiding in Stellar Fog



Large orange planet inset next to a foggy orange disk around a bright yellow dot (Image credit: ALMA(ESO/NAOJ/NRAO)/A. Ribas et al/Robert Lea (created with Canva))

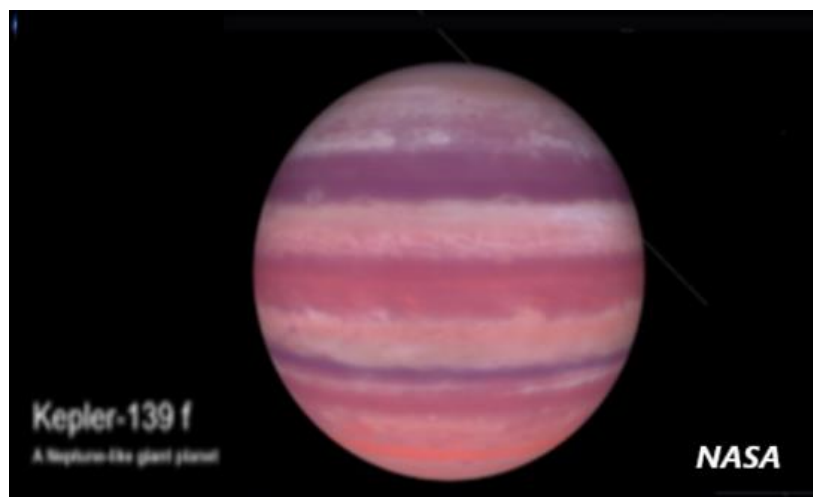
Astronomers recently discovered a gas giant, potentially up to ten times the size of Jupiter, emerging from the protoplanetary disk of a young star called MP Mus. This marks the first time the Gaia spacecraft has detected an exoplanet within a protoplanetary disk, utilizing a combination of Gaia's precise star movement data and ALMA's deep observations of the disk.

Prior observations of the roughly 13 million-year-old star MP Mus (also known as [PDS 66](#)) located around 280 light-years away had failed to distinguish features in the swirling cloud of gas and dust, or [protoplanetary disk](#), that surrounds it.

However, when astronomers reexamined the apparently featureless protoplanetary disk of this star using combined data from the [Atacama Large Millimeter/submillimeter Array](#) (ALMA) and the European Space Agency (ESA) [Gaia mission](#), they found it may not be quite so lonely after all.

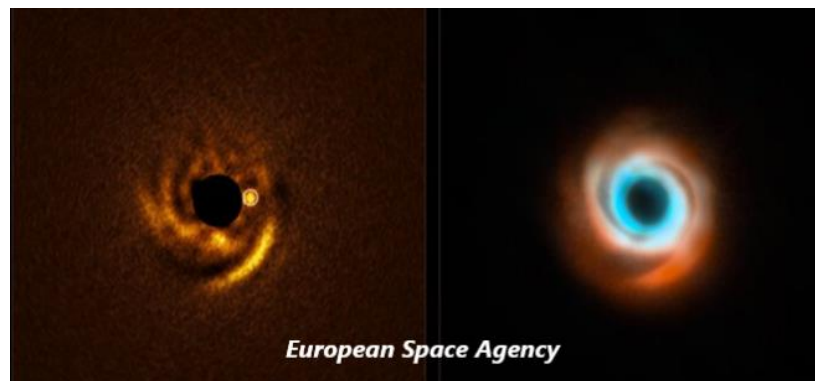
The team detected a huge [gas giant](#) dwelling in the protoplanetary disk of MP Mus, which had been previously hidden. This represents the first time Gaia has spotted an extrasolar planet or "exoplanet" sitting in a protoplanetary disk, the disks of material around young stars that birth planets.

- **Kepler-139f: A Giant Exoplanet Found in a Known System**



A hidden exoplanet, Kepler-139f, has been detected in the Kepler-139 star system, which was previously known to host three rocky super-Earths and a fourth gas giant. Kepler-139f is roughly twice the mass of Neptune and 35 times the mass of Earth. Its detection was made possible by examining gaps and discrepancies in the orbits of the known planets, combining radial velocity and transit timing variation (TTV) data.

- **Possible Newborn Planet Sculpting its Protoplanetary Disk**



The image to the left, taken with ESO's Very Large Telescope ([VLT](#)), shows a possible planet being born around the young star HD 135344B. This star, located around 440 light-years away, is surrounded by a disc of dust and gas with prominent spiral arms. Theory predicts that planets can

sculpt spiral arms like these, and the new planet candidate is located at the base of one of the arms, just as expected.

The image was captured with a new VLT instrument: the Enhanced Resolution Imager and Spectrograph ([ERIS](#)). The central black circle corresponds to a coronagraph — a device that blocks the light of the star to reveal faint details around it. The white circle indicates the location of the planet.

The image to the right is a combination of previous observations taken with the SPHERE instrument also at the VLT (red) and the Atacama Large Millimeter/submillimeter Array ([ALMA](#), orange and blue). These and other previous studies of HD 135344B did not find signatures of a companion, but ERIS may have finally unveiled the culprit responsible for the star's spiral disc.

Recent Developments in Astrobiology Research

- **Origin of Life Potentially Started in Space:** Observations of the young V883 Orionis system using ALMA have revealed signatures of complex organic compounds like ethylene glycol and glycolonitrile. These are considered potential precursors to amino acids, DNA, and RNA, suggesting that the building blocks of life may form widely throughout the Universe under suitable conditions, not just on planets.
 - **Mars' Seasonal Frost Could Briefly Host Liquid Water:** A recent study, drawing on 50-year-old data from NASA's Viking 2 lander and advanced computer simulations, suggests that seasonal frost on Mars could briefly melt to create small patches of briny (salt-rich) liquid water under specific conditions. This research could help scientists better understand past or even present life on Mars.
 - **NASA Research Shows Path Toward Protocells on Titan:** New research indicates that cellular "pockets" — the initial step toward protocells (precursors to life) — could form in the methane seas of Saturn's moon Titan.
 - **Retraction of 2010 "Arsenic-Eating Bacteria" Study:** The prestigious journal *Science* formally retracted a controversial 2010 NASA study that claimed to have discovered a bacterium capable of thriving on arsenic by integrating it into its DNA. The retraction was based on a change of standards and ongoing controversy, as independent teams were unable to replicate the results. While a retraction, it is a significant development in the scientific discourse surrounding extremophiles and the definition of life.
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Worlds Beyond and Astrobiology Insights - Blog #13

Other Life on a Purple World

Christopher S. Centi July 29, 2025



My previous blog dated June 28, delved into the search for possible life on worlds using a different type of photosynthesis. Research by Lgia Fonseca Coelho's paper "Purple is the New Green: Biopigments and Spectra of Earth-like Purple Worlds," is fundamentally challenging this green-centric perspective. This work suggests that alien life might not be green at all, but rather a spectrum of other colors, with purple emerging as a particularly strong contender.

If a planet's primary photosynthetic life forms were purple (meaning they absorb green light and reflect/transmit red and blue), the evolution of other life, including animals and insects, would be fascinatingly different from Earth.

Here's how other life might be possible and how they could evolve:

Click on the link to read the blog: <https://www.centiastro.space/blog-1>



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