

# Lonely star glitters in the background of an amorphous galaxy in the eyes of the Hubble telescope

Time to wait, yet another stunning image sent back to Earth by the Hubble Space Telescope this week, including two different merged exposures, shows the star's dramatic moment BD+17 2217 shines in the background of the amorphous galaxy Arp 263.

An amorphous galaxy is a galaxy that has no definite shape, unlike elliptical or spiral galaxies like our own Milky Way. They also do not fall into any of the morphological classifications of regular galaxies, and are often chaotic in appearance.



Arp 263 (also known as NGC 3239) is a typical amorphous galaxy. It shows up with a 'patchy' appearance with giant clouds of gas and dust interspersed with numerous regions glowing brightly due to intense star formation,

while other regions are almost empty. These galaxies are often formed by interactions with other galaxies, which can happen when a large galaxy passes by a smaller galaxy and distorts it. Some of the amorphous galaxies are small spiral galaxies that are distorted by the gravity of their larger neighbors.

In the case of Arp 263, scientists think this irregular shape is the result of a process where two galaxies merge. This galaxy is located about 25 million light-years away in the constellation Leo.

What's unusual about the image above is the way it was produced and the effect it has on the distinctive diffraction spikes that come from bright objects. These spikes are caused by the geometry of the mirrors that Hubble uses to observe distant objects. Typical images taken by the Hubble telescope often have four diffraction spikes (compared to the six prominent diffraction spikes seen in images from the James Webb Space Telescope), but in this case, you eight spikes diffracted from the brightest objects can be seen. This is likely because two sets of data were combined to create the image, each taken at a different angle, so you'll see a doubling in the number of diffraction spikes.

The interlocking foreground star, BD+17 2217, is adorned with two sets of crisscrossed diffraction spikes. The interaction of light with Hubble's internal structure means that concentrated bright objects, such as stars, are surrounded by four prominent bright spikes. All contribute to a beautiful picture of the universe.

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