

# The world's most expensive telescope captures stunning views of the famous supernova remnant

Named SN 1987A, this is a supernova that occurs when a giant star runs out of fuel and collapses at the end of its life.

One of the Milky Way's important satellite galaxies, the Large Magellanic Cloud, is famous for containing the closest supernova to Earth recorded in the history of human astronomy research.

Named SN 1987A, this is a supernova that occurs when a giant star runs out of fuel and collapses at the end of its life, causing a huge explosion that creates shock waves so powerful that they can reshape dust, and the gas surrounding it for millions of miles in all directions.

Due to the huge impact of the explosion, SN 1987A left behind a ring-shaped structure, which was created when the shock wave propagated outward over time. This glowing ring has been observed regularly since the supernova was first seen in 1987. But not until now, thanks to the development of science and technology and observation systems as advanced as the James Webb Space Telescope, astronomers have had the opportunity to access the most detailed images of this beautiful structure, created from a destructive explosion.

Picture 1 of The world's most expensive telescope captures stunning views of the famous supernova remnant

The image above of SN 1987A, taken with the James Webb Space Telescope's NIRCam system, shows a keyhole-shaped structure, the center of which is filled with dust and gas emitted by the star as it reaches its end stage life cycle. Although James Webb's infrared instruments were useful in seeing through the dust to detect structures below, in the center of the remnant the dust was so dense that even infrared light could not penetrate through. That's why there's a dark area in the middle.

Rings of material around the central position are also seen in more detail, as bright dots, which are hot spots created by shock waves from the supernova hitting rings of material that were previously removed, there.

A famous supernova, SN 1987A has previously been observed many times, including by space-based instruments such as the Hubble Telescope and the Chandra X-ray Observatory, as well as ground-based instruments such as Atacama Large Millimeter/Submillimeter Array.

Picture 2 of The world's most expensive telescope captures stunning views of the famous supernova remnant

The image above shows a combination of data from these three observatories, operating at optical, X-ray and radio wavelengths, respectively. Such observations reveal structures similar to James Webb's images, but in less sharp detail.

You finished reading the article "**The world's most expensive telescope captures stunning views of the famous supernova remnant**" edited by the [TipsMake](#) team. We hope this article has provided you with many useful tech tips and tricks. You can search for similar articles on tips and guides. Thank you for reading and for following us regularly.

---