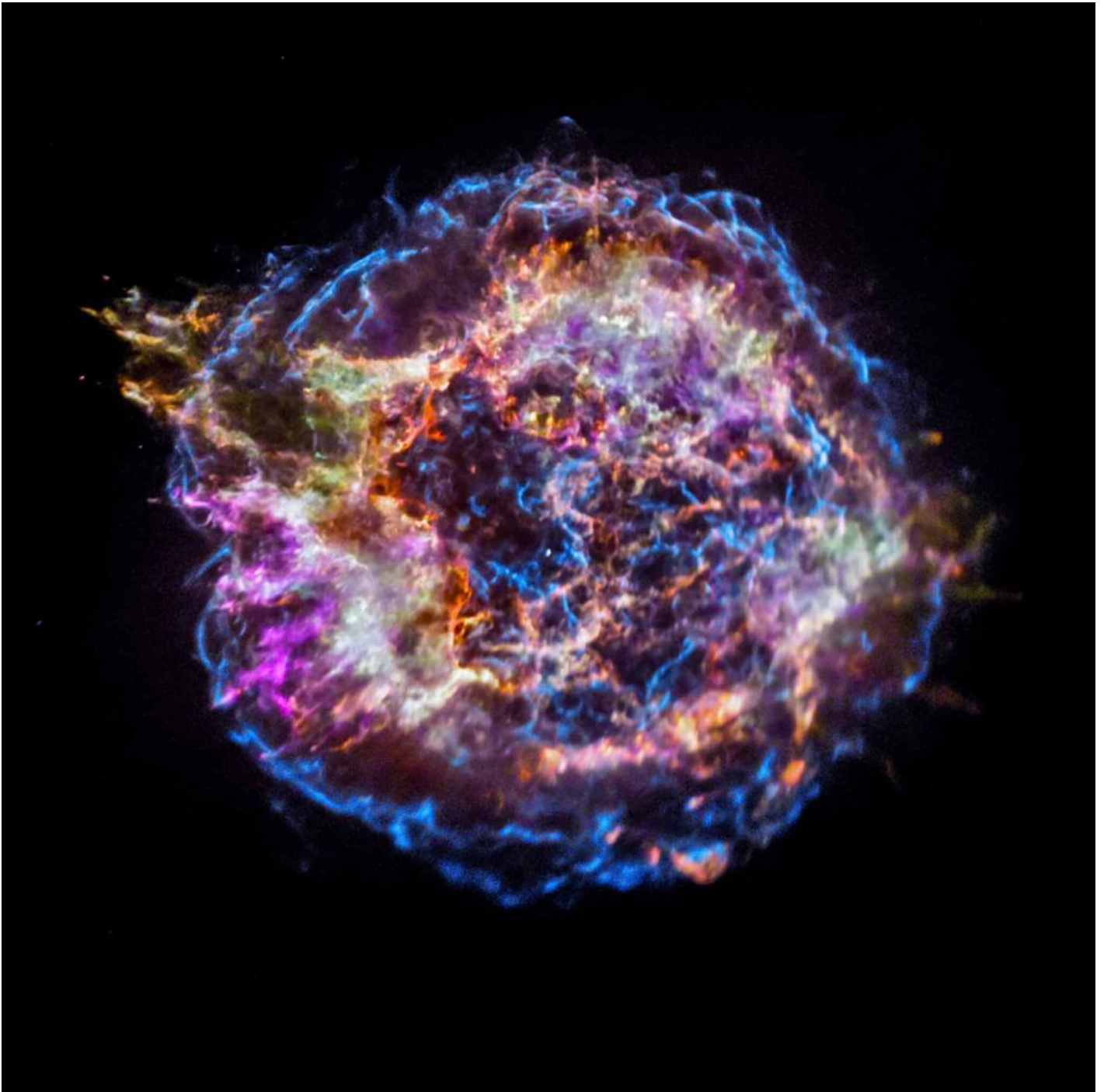


Cassiopeia A

April 9, 2023 • vajiramandravi.com



About Cassiopeia A:

- It is **a remnant of a massive star** that exploded some 340 years ago.
- It is the youngest remnant off the massive star in our galaxy known to mankind.

- Cas A belongs to the prototypical type of supernova remnant and has been extensively studied by a number of ground-based and space-based observatories,
- The remnant spans about **10 light-years** and is located 11,000 light-years away in the **constellation Cassiopeia**.
- It gives information related to the **supernovae phenomenon** and its complexities.

What is supernova explosion?

- It is the **explosion of a star** and is the largest explosion that takes place in space.
- It happens when **there is a change in the core, or center, of the star**. A change can occur in two different ways, with both resulting in a supernova.
- **The first type of supernova happens in binary star systems:**
 - Binary stars are two stars that orbit the same point. One of the stars, a carbon-oxygen white dwarf, steals matter from its companion star.
 - Eventually, the white dwarf accumulates too much matter. Having too much matter causes the star to explode, resulting in a supernova.
- **The second type of supernova occurs at the end of a single star's lifetime:**
 - As the star runs out of nuclear fuel, some of its mass flows into its core. Eventually, the core is so heavy that it cannot withstand its own gravitational force.
 - The core collapses, which results in the giant explosion of a supernova.

Q1) What is a constellation?

A constellation is a group of stars that appear to form a recognizable pattern or shape in the night sky when viewed from Earth. Some well-known constellations include Orion, Ursa Major.

Source: [NASA Telescope Captures Never-Before-Seen Details Of Remnant Of Star That Exploded 340 Years Ago](#)

Source: <https://vajiramandravi.com/current-affairs/cassiopeia-a/>

© Vajiram & Ravi. For personal use only.