

# Hubble's majestic spiral in Pegasus

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Credit: NASA

This NASA/ESA Hubble Space Telescope image shows a spiral galaxy known as NGC 7331. First spotted by the prolific galaxy hunter William Herschel in 1784, NGC 7331 is located about 45 million light-years

away in the constellation of Pegasus (the Winged Horse). Facing us partially edge-on, the galaxy showcases its beautiful arms, which swirl like a whirlpool around its bright central region.

Astronomers took this image using Hubble's Wide Field Camera 3 (WFC3), as they were observing an extraordinary exploding star—a supernova—near the galaxy's central yellow core. Named SN 2014C, it rapidly evolved from a supernova containing very little hydrogen to one that is hydrogen-rich—in just one year. This rarely observed metamorphosis was luminous at high energies and provides unique insight into the poorly understood final phases of massive stars.

NGC 7331 is similar in size, shape and mass to the Milky Way. It also has a comparable star formation rate, hosts a similar number of stars, has a central [supermassive black hole](#) and comparable spiral arms. The primary difference between this galaxy and our own is that NGC 7331 is an unbarred [spiral galaxy](#)—it lacks a "bar" of stars, gas and dust cutting through its nucleus, as we see in the Milky Way. Its central bulge also displays a quirky and unusual rotation pattern, spinning in the opposite direction to the galactic disk itself.

By studying similar galaxies we hold a scientific mirror up to our own, allowing us to build a better understanding of our galactic environment, which we cannot always observe, and of galactic behavior and evolution as a whole.

Provided by NASA

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