

Hubble Space Telescope glimpses spiral galaxy UGC 9684

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This image from the NASA/ESA Hubble Space Telescope highlights the spiral galaxy UGC 9684. Credit: ESA/Hubble & NASA, C. Kilpatrick

The celestial object showcased in this image from the NASA/ESA Hubble Space Telescope is the spiral galaxy UGC 9684, which lies

around 240 million light-years from Earth in the constellation Boötes. This image shows an impressive example of several classic galactic features, including a clear bar in the galaxy's center, and a halo surrounding its disk.

The data for this Hubble image came from a study of Type-II supernovae host galaxies. These cataclysmic stellar explosions take place throughout the universe, and are of great interest to astronomers, so automated surveys scan the night sky and attempt to catch sight of them. The [supernova](#) which brought UGC 9684 to Hubble's attention occurred in 2020. It has since faded from view and is not visible in this image, which was taken in 2023.

Remarkably, the 2020 supernova isn't the only one that astronomers have seen in this galaxy—UGC 9684 has hosted four supernova-like events since 2006, putting it up there with the most active supernova-producing galaxies. It turns out that UGC 9684 is an active star-forming galaxy, calculated as producing one solar mass worth of stars every few years. The most massive of these stars are short-lived, a few million years, and end their days as supernova explosions. This high level of star formation makes UGC 9684 a veritable supernova factory, and a galaxy to watch for [astronomers](#) hoping to examine these exceptional events.

Provided by NASA

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