

A picture-perfect pure-disc galaxy (w/ Video)

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This picture of the spiral galaxy NGC 3621 was taken using the Wide Field Imager at ESO's La Silla Observatory in Chile. NGC 3621 is about 22 million light-years away in the constellation of Hydra (the Sea Snake). It is comparatively bright and can be well seen in moderate-sized telescopes. The data from the Wide Field Imager on the MPG/ESO 2.2-meter telescope at ESO's La Silla Observatory in Chile used to make this image were selected from the ESO archive by Joe DePasquale as part of the Hidden Treasures competition. Credit: ESO and Joe DePasquale

(PhysOrg.com) -- The bright galaxy NGC 3621, captured here using the

Wide Field Imager on the 2.2-metre telescope at ESO's La Silla Observatory in Chile, appears to be a fine example of a classical spiral. But it is in fact rather unusual: it does not have a central bulge and is therefore described as a pure-disc galaxy.

NGC 3621 is a spiral galaxy about 22 million light-years away in the constellation of Hydra (The Sea Snake). It is comparatively bright and can be seen well in moderate-sized telescopes. This picture was taken using the [Wide Field Imager](#) on the MPG/ESO 2.2-metre [telescope](#) at ESO's [La Silla Observatory](#) in Chile. The data were selected from the ESO archive by Joe DePasquale as part of the Hidden Treasures competition. Joe's picture of NGC 3621 was ranked fourth in the competition.

This galaxy has a flat pancake shape, indicating that it hasn't yet come face to face with another galaxy as such a galactic collision would have disturbed the thin disc of stars, creating a small bulge in its centre. Most astronomers think that galaxies grow by merging with other galaxies, in a process called hierarchical galaxy formation. Over time, this should create large bulges in the centres of spirals. Recent research, however, has suggested that bulgeless, or pure-disc, spiral galaxies like NGC 3621 are actually fairly common.

This galaxy is of further interest to astronomers because its relative proximity allows them to study a wide range of astronomical objects within it, including stellar nurseries, dust clouds, and pulsating stars called Cepheid variables, which astronomers use as distance markers in the Universe. In the late 1990s, NGC 3621 was one of 18 [galaxies](#) selected for a Key Project of the Hubble Space Telescope: to observe Cepheid variables and measure the rate of expansion of the Universe to a higher accuracy than had been possible before. In the successful project, 69 Cepheid variables were observed in this galaxy alone.

Multiple monochrome images taken through four different colour filters were combined to make this picture. Images taken through a blue filter have been coloured blue in the final picture, images through a yellow-green filter are shown as green and images through a red filter as dark orange. In addition images taken through a filter that isolates the glow of hydrogen gas have been coloured red. The total exposure times per filter were 30, 40, 40 and 40 minutes respectively.

Provided by ESO

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