

A nearby galactic exemplar

September 8 2010



This picture of the spectacular southern spiral galaxy NGC 300 was taken using the Wide Field Imager (WFI) at ESO's La Silla Observatory in Chile. It was assembled from many individual images through a large set of different filters over many observing nights, spanning several years. The main purpose of this extensive observational campaign was to get an unusually thorough census of the stars in the galaxy, counting both the number and varieties of stars and marking regions, or even individual stars, that warrant deeper and more focused investigation. But such a rich data collection will also have many other uses for years to come. The images were mostly taken through filters that transmit red, green or blue light. These were supplemented by images through special filters that allow through only the light from ionized hydrogen or oxygen gas and

highlight the glowing clouds in the galaxy's spiral arms. The total exposure time amounted to around 50 hours. Credit: ESO

ESO has released a spectacular new image of NGC 300, a spiral galaxy similar to the Milky Way, and located in the nearby Sculptor Group of galaxies. Taken with the Wide Field Imager (WFI) at ESO's La Silla Observatory in Chile, this 50-hour exposure reveals the structure of the galaxy in exquisite detail. NGC 300 lies about six million light-years away and appears to be about two thirds the size of the full Moon on the sky.

Originally discovered from Australia by the Scottish astronomer James Dunlop early in the nineteenth century, NGC 300 is one of the closest and most prominent spiral galaxies in the southern skies and is bright enough to be seen easily in binoculars. It lies in the inconspicuous constellation of Sculptor, which has few bright stars, but is home to a collection of nearby galaxies that form the Sculptor Group. Other members that have been imaged by ESO telescopes include NGC 55, NGC 253 and NGC 7793. Many galaxies have at least some slight peculiarity, but NGC 300 seems to be remarkably normal. This makes it an ideal specimen for astronomers studying the structure and content of spiral [galaxies](#) such as our own.

This picture from the Wide Field Imager (WFI) at ESO's La Silla Observatory in Chile was assembled from many individual images taken through a large set of different filters with a total exposure time close to 50 hours. The data was acquired over many observing nights, spanning several years. The main purpose of this extensive observational campaign was to take an unusually thorough census of the stars in the galaxy, counting both the number and varieties of the stars, and marking regions, or even individual stars, that warrant deeper and more focussed

investigation. But such a rich data collection will also have many other uses for years to come. By observing the galaxy with filters that isolate the light coming specifically from hydrogen and oxygen, the many star-forming regions along NGC 300's [spiral arms](#) are shown with particular clarity in this image as red and pink clouds. With its huge field of view, 34 x 34 arcminutes, similar to the apparent size of the [full Moon](#) in the sky, the WFI is an ideal tool for astronomers to study large objects such as NGC 300.

NGC 300 is also the home of many interesting astronomical phenomena that have been studied with ESO telescopes. ESO astronomers recently discovered the most distant and one of the most massive stellar-mass black holes yet found in this galaxy, as the partner of a hot and luminous Wolf-Rayet star in a binary system. NGC 300 and another galaxy, NGC 55, are slowly spinning around and towards each other, in the early stages of a lengthy merging process. The current best estimate of the distance to the NCG 300 was also determined by astronomers using ESO's Very Large Telescope at the Paranal Observatory, among others.

Provided by ESO

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