



THE SOMBRERO GALAXY

This photo of the Sombrero Galaxy (Messier 104) was obtained on January 30, 2000, with the FORS1 (FOcal Reducer and Spectrograph) instrument mounted at the Cassegrain focus of ANTU, the first 8.2-m VLT Unit Telescope at the ESO Paranal Observatory.

This galaxy is located in the constellation Virgo (The Virgin), at a distance of about 50 million light-years. It is notable for its dominant nuclear bulge, composed primarily of mature stars, and its nearly edge-on disk of stars, gas, and intricately structured dust. The complexity of this dust is most apparent directly in front of the bright nucleus, but is also visible in the dark absorbing lanes throughout the disk.

A large number of small, slightly diffuse light sources can be seen as a swarm around the halo of this galaxy. Most of these objects are globular clusters, similar to those found in our own Galaxy, each containing as many as one million stars.

A number of background galaxies are also visible in the field.

Observational evidence indicates that the Sombrero Galaxy has a black hole of about 1000 million solar masses at its center. The interaction between the black hole and the matter it is slowly accreting is the source of the energetic phenomena observed at the center.

The FORS project is carried out under ESO contract by a consortium of three German astronomical institutes: the Heidelberg State Observatory and the University Observatories of Göttingen and Munich.

FORS1, with its twin (FORS2 at VLT KUEYEN), is the product of one of the most thorough and advanced technological studies ever made of a ground-based astronomical instrument. It measures 3 x 1.5 metres and weighs 2.3 tonnes.

Profiting from the large mirror area and the excellent optical properties of the VLT telescopes, the FORS instruments have been designed to investigate a great variety of objects in the universe, including stars and nebulae in the Milky Way and some of the most distant galaxies. These powerful astronomical instruments are real workhorses for advanced astronomical studies.

Technical information: This photo of the Sombrero Galaxy is based on a composite of three CCD images taken behind three different filters: V (wavelength 554 nm, exposure 2 min), R (667 nm, 2 min) and I (768 nm, 4 min). The image quality is 0.6 - 0.7 arcsec. The field measures about 6.8 x 6.8 arcmin, with North at the top and East to the left.

More information about ESO can be found at URL: <http://www.eso.org>

