



THE CENTAURUS A RADIO GALAXY

This photo of the Centaurus A radio galaxy was obtained on January 31, 2000, with the FORS2 (FOcal Reducer and Spectrograph) instrument mounted at the Cassegrain focus of the second 8.2-m VLT Unit Telescope (KLEYEN) at the ESO Paranal Observatory.

Centaurus A is located in the southern constellation of Centaurus, at the distance of 10-13 million light-years (3-4 Mpc). The apparent visual magnitude is about 8, or about 5 times too faint to be seen with the unaided eye.

This galaxy possesses an active nucleus. At the very centre is the smallest known extragalactic radio source, only 10 light-days across. A jet of high energy particles from this centre is observed in radio and X-ray images. The core probably contains a supermassive black hole with a mass of about 100 million solar masses.

On optical images like this one, thick dust layers almost completely obscure the galaxy's centre. There is strong evidence that Centaurus A is a merger of an elliptical with a spiral galaxy, since elliptical galaxies would not have had enough dust and gas to form the young, blue stars that are seen to cluster along the outer edges of the dust lane.

This image of Centaurus A was obtained during the FORS2 commissioning period. 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.

FORS2, with its twin (FORS1 at VLT ANTU), 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 Centaurus A is based on a composite of three CCD images taken behind three different filters: B (wavelength 429 nm; 5 min exposure; 0.60 arcsec image quality), V (554 nm; 4 min, 0.60 arcsec) and R (655 nm; 4 min, 0.55 arcsec). The field measures about 6.8 x 6.8 arcmin. North is up; East is to the left.

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

