

Galaxy Centaurus A

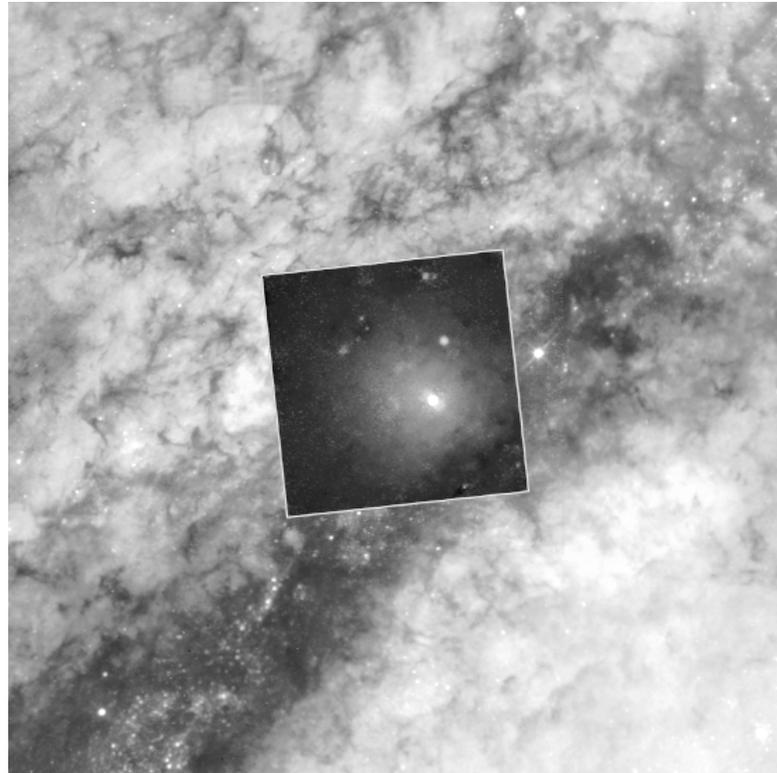


**Feeding a Black Hole**  
Astronomers got an unprecedented look at a black hole hidden at the center of nearby giant elliptical galaxy, Centaurus A (NGC 5128). The black hole contains the mass of perhaps a billion stars compacted into a small region of space not much larger than our Solar System. Astronomers think it is feeding on the fresh remains of a small spiral galaxy that had collided into the peculiarly shaped elliptical millions of years ago. Scientists are not sure whether the black hole always existed or whether it is the product of a merger between two smaller black holes that once resided in two once-separate galaxies.

**Cauldron of Starbirth**  
While rare today, galactic collisions were common in the early universe. When the two galaxies collided, the shock of the crash compressed interstellar gas and ignited a flurry of star formation. In the image on the front, blue clusters of newborn stars are clearly resolved along the edge of a dark dust belt girdling the galaxy. This dust belt is believed to be the remains of the smaller spiral galaxy.

**The Inside Story**  
Using Hubble's infrared vision, astronomers penetrated the wall of dark dust for the first time to see a twisted disk of hot gas swept up in the black hole's gravitational pull. Centaurus A, located relatively nearby at just 10 million light-years away from Earth, offers astronomers a special laboratory for understanding the behavior of supermassive black holes fueled by galaxy collisions.

## Galaxy Centaurus A



### About this image

The central image on the front is a mosaic of two Hubble Space Telescope images taken with the Wide Field Planetary Camera 2 on August 1, 1997 and January 10, 1998. It shows a dark lane of dust thought to be the remains of a smaller spiral galaxy that collided with the larger elliptical galaxy. The surrounding image, from the Cerro Tololo Inter-American Observatory in Chile, shows more of the galaxy. Astronomers used Hubble's Near Infrared Camera and Multi-Object Spectrometer (seen above) to peer past the dust disk to find a ball of hot gas encircling the suspected black hole (inset).

### Definitions

**Black Hole:** A region containing a huge amount mass compacted into an extremely small volume, making its gravitational pull so strong that nothing —not even light— can escape its grasp.

**Constellation:** A geometric pattern of bright stars that appear grouped in the sky. Ancient astronomers named them after gods, heroes, animals, and mythological beings.

**Elliptical Galaxy:** A galaxy having an elliptical or near-spherical shape.

**Infrared:** Electromagnetic radiation with slightly longer wavelengths and slightly smaller frequencies. Unlike visible light, dust and gas do not absorb infrared radiation.

### Fast Facts

#### Location

Centaurus A, also known as NGC 5128, can be seen in the southern sky in the constellation Centaurus

#### Distance from Earth

10 million light-years

#### Galaxy Type

Large active elliptical that collided with a smaller companion spiral

### Electronic Addresses

You can get images and other information about the Hubble Space Telescope on the World Wide Web.

Point your browser (Netscape Navigator, Microsoft Internet Explorer, and others), to URL <http://hubble.stsci.edu/> and follow links from there.