

Eagle Nebula



## Eagle Nebula

The three columns of dust and gas in this Hubble Space Telescope image are located in the Eagle Nebula.

The Nebula contains hydrogen and microscopic dust particles, the raw materials for building new stars.

The Eagle gets its name because to some the Nebula resembles the bird of prey with outstretched wings and talons bared.

### Uncovering New Stars

Off the top of this picture, there are young, hot, massive stars that shine very brightly. The stars' powerful radiation heats the surrounding gas, making it glow. This intense radiation is responsible for sculpting the columns; it erodes more tenuous gas in the columns through a process called photoevaporation. The erosion reveals denser gas globules surrounding newly formed stars (see close-up, right). Scientists call them "Evaporating Gaseous Globules" or EGGs.

### Star Birth

Stars are born when clouds of dust and gas collapse because of gravity. As more and more material falls onto the forming star, it finally becomes hot and dense enough at its center to trigger the nuclear fusion reactions that make stars, including our Sun, shine. Photoevaporation in the Eagle Nebula has cut newly forming stars off from the cloud feeding them.

While some of the EGGs are large enough to eventually become stars, others may never make it.

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### About the Image

The Eagle Nebula was photographed by Jeff Hester and Paul Scowen of Arizona State University using the Wide Field and Planetary Camera 2 on board NASA's Hubble Space Telescope on April 1, 1995. The color picture is made up of three separate color images: red shows light from sulfur atoms in the cool gas at the edge of the clouds, blue shows light from ionized oxygen atoms in the hot, evaporated halos, and green shows light from hydrogen atoms.

### Definitions

**Nebula:** a cloud of interstellar gas and dust, seen either as a luminous patch or light or a dark hole in a bright background. The term was coined to describe objects that appeared fuzzy when viewed through early telescopes.

**Nuclear Fusion:** two or more light nuclei join together to form a heavier nucleus, releasing energy in the process.

**Photoevaporation:** a process where intense light from hot stars eats away the surface of dense clouds.

**Light Year:** the distance light travels in a year ( $6 \times 10^{12}$  or 5 trillion 900 billion miles)

### Fast Facts

#### Age

The Eagle Nebula is two million years old, the EGGs will live for another 10-20,000 years.

#### Location

In the constellation Serpens, the Serpent, alongside the southern Milky Way

#### Distance from Earth

7,000 light years

#### Size

Our Solar System would fit comfortably inside an EGG. The right column is about one light year from top to bottom.

### Electronic Addresses

You can get images and other information about the Hubble Space Telescope using the Internet.

Using the World Wide Web (Netscape Navigator, Microsoft Internet Explorer, and other browsers), use URL <http://opposite.stsci.edu/public.html> and follow links from there.

Using ftp, connect to [ftp.stsci.edu](ftp://ftp.stsci.edu) and find files and directories in /pubinfo.