National Aeronautics and Space Administration

Eagle Nebula (M16)

Hubble Revisits Famous Pillars in Eagle Nebula

The Hubble Space Telescope has revisited the famous "Pillars of Creation" in the Eagle Nebula, providing astronomers with a sharper and wider view of the giant structures where young stars are being born. The image was issued in anticipation of Hubble's 25th anniversary.

The original Hubble photo, taken in 1995, revealed never-before-seen details of three giant pillars of cold gas bathed in the ultraviolet light from a cluster of young, massive stars.

In fact, that bright star cluster was the first object discovered almost 370 years ago in what is now the Eagle Nebula. The discoverer, Jean-Philippe Loys de Chéseaux, could only see the glow of the stellar grouping when he recorded his finding in 1745-1746.

Twenty years later, Charles Messier catalogued the cluster as Messier 16, or M16. Astronomers later named the region the "Eagle Nebula," because it looked like an eagle with outstretched wings.

The Hubble image of the tall pillars of gas, taken in visible light in 1995, made the Eagle Nebula famous. Astronomers had seen the pillar-like structures in ground-based images, but not in detail. Because it is relatively nearby, the Eagle Nebula gives astronomers a clear and up-close view of these kinds of star-making pillars.

In 2014, Hubble again observed the Eagle Nebula, this time with one of its new cameras, the Wide Field Camera 3. The versatile camera took images of the pillars in visible and in near-infrared light.

The near-infrared view reveals the pillars as wispy silhouettes seen against a background of stars. Near-infrared light can penetrate much of the gas and dust, revealing stars behind the nebula as well as hidden away inside the pillars. Some of the gas and dust clouds are so dense that even near-infrared light cannot penetrate them. By using both types of light, astronomers can get a more complete picture of where and how stars are forming in the nebula.

Astronomers say they have caught the pillars at a very unique and short-lived moment in their evolution. The ghostly bluish haze around the dense edges of the pillars is material getting heated up and evaporating away into space.

More infrared images like this one await us with NASA's James Webb Space Telescope. Astronomers hope that Webb will help yield more information on how stars form.

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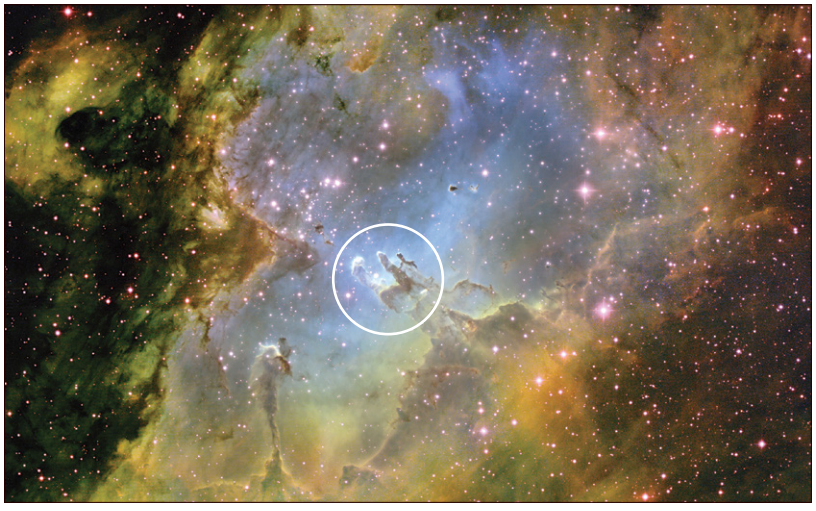

A ground-based view inside the Eagle Nebula

This wide-field image of the Eagle Nebula, a vast star-forming region, reveals a cluster of bright stars surrounded by dust and gas. The three pillars at the center of the image (circled) are the famous Pillars of Creation.

The image was taken at the National Science Foundation's 0.9-meter telescope on Kitt Peak with the NOAO Mosaic CCD camera.

Credit: T.A.Rector (NRAO/AUI/NSF and NOAO/AURA/NSF) and B.A.Wolpa (NOAO/AURA/NSF)

Credit: NASA, ESA, and The Hubble Heritage Team (STScI/AURA)

VOCABULARY

Nebula: A cloud of gas and dust located between stars and/or surrounding stars. Nebulae are often places where stars form.

You can get images and other information about the Hubble Space Telescope on our website, **http://hubblesite.org/**

The corresponding classroom activity for this lithograph can be found at: **http://amazing-space.stsci.edu/eds/tools/type/pictures.php**, or may be obtained by contacting the Office of Public Outreach at the Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, MD 21218.