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A new image from NASA's Galaxy Evolution Explorer shows that a galaxy once thought to be rather plain and old is actually endowed with a gorgeous set of young spiral arms.

The unusual galaxy, called NGC 4625, is a remarkable find because it is relatively nearby. Until now, astronomers had thought that this kind of youthful glow in galaxies was a thing of the past.

"This galaxy is an amazing surprise," said Dr. Armando Gil de Paz of the Carnegie Observatories, Pasadena, Calif., lead author of a paper appearing in the July issue of Astrophysical Journal Letters. "We are practically up-close and personal with a galaxy undergoing an evolutionary stage that was thought to occur only at the dawn of the universe, in very young and faraway galaxies."

The image can be found at http://www.galex.caltech.edu/MEDIA. It offers astronomers their best look yet at what our Milky Way galaxy might have looked like in earlier times.

"We do not fully understand how stars were created in our galaxy," said Dr. Barry Madore of the Carnegie Observatories, co-author of the new paper. "This nearby galaxy represents one of our possible histories, in which stars developed first in the galaxy core and then later in the arms."

Previous visible-light images of NGC 4625 showed only an oval-shaped ball of light, with very faint hints of a halo of spiral arms. These arms were finally revealed to the ultraviolet eyes of the Galaxy Evolution Explorer. Their intense brightness indicates that the arms are teeming with hot, newborn stars, which shine primarily with ultraviolet light.

"The stars in the arms are about one billion years old, while the stars in the body are about ten times older," said Gil de Paz.

NGC 4625's spiral arms are very lengthy, extending four times beyond the size of the core of the galaxy. They represent the largest ultraviolet galactic disk discovered so far.

Also of interest in the new Galaxy Evolution Explorer image is a nearby companion galaxy, which looks very similar to NGC 4625, yet has no arms. How could this galactic duo have turned out so differently? Astronomers do not know, but some theories hold that the presence of the armless galaxy was required for NGC 4625 to grow a set.

"We know that interactions between galaxies can spur the creation of stars, but it is not clear why only one galaxy ended up with arms," said Dr. Chris Martin of the California Institute of Technology in Pasadena, Calif, principal investigator for the Galaxy Evolution Explorer.

Previous studies of the gas distribution around the two galaxies indicate that NGC 4625 might have developed in a more dynamically stable environment, while the armless galaxy grew up in a more chaotic and turbulent setting.

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Caltech leads the Galaxy Evolution Explorer mission and is responsible for science operations and data analysis. NASA's Jet Propulsion Laboratory, Pasadena, Calif., manages the mission and built the science instrument. The mission was developed under NASA's Explorers Program managed by the Goddard Space Flight Center, Greenbelt, Md. South

Korea and France are the international partners in the mission.

For images and information about the Galaxy Evolution Explorer on the Internet, visit http://www.galex.caltech.edu.

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