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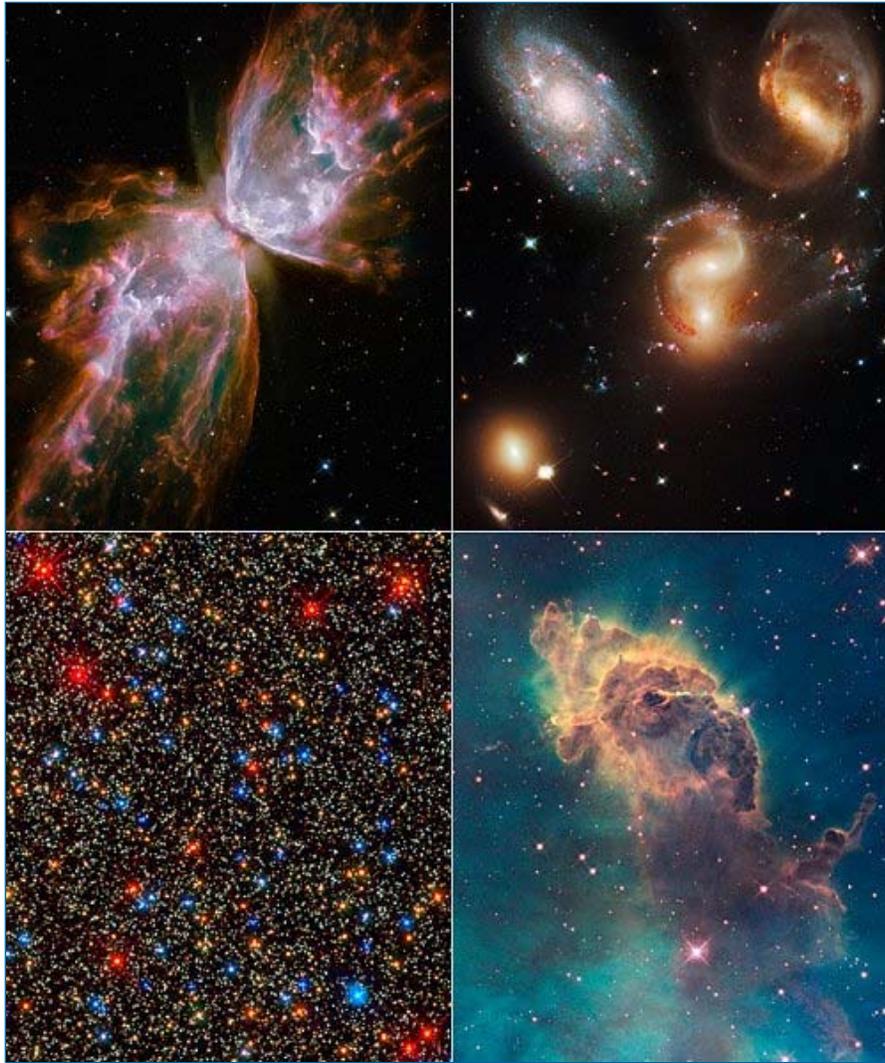
Spectacular First Images from the Rejuvenated Hubble Space Telescope

09.08.2009

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September 9, 2009: Astronomers have declared NASA's Hubble Space Telescope a fully rejuvenated observatory with the release of observations from four of its six operating science instruments. Sen. Barbara Mikulski of Maryland unveiled the images today at NASA Headquarters in Washington, DC.

"This marks a new beginning for Hubble," said Ed Weiler, associate administrator for NASA's Science Mission Directorate. "The telescope was given an extreme makeover and now is significantly more powerful than ever, well-equipped to last into the next decade."



Above: A selection of images from the rejuvenated Hubble: [more](#).

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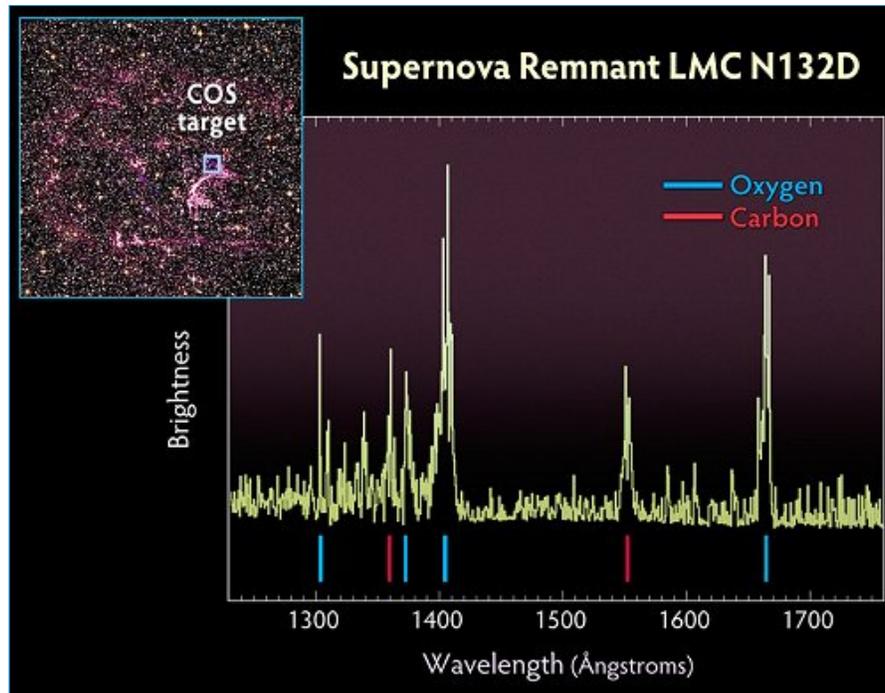
Topping the list of new views are colorful, multi-wavelength pictures of far-flung galaxies, a densely packed star cluster, an eerie "pillar of creation," and a "butterfly" nebula. Hubble's suite of new instruments allows it to study the universe across a wide swath of the light spectrum, from ultraviolet all the way to near-infrared. In addition, scientists released spectroscopic observations that slice across billions of light-years to probe the cosmic-web structure of the universe and map the distribution of elements that are fundamental to life as we know it.

"I fought for the Hubble repair mission because Hubble is the people's telescope," said Mikulski, chairwoman of the Commerce, Justice and Science Appropriations Subcommittee that funds NASA. "I also fought for Hubble because it constantly rewrites the science textbooks. It has more discoveries than any other science mission. Hubble is our greatest example of our astronauts working together with scientists to show American leadership and ingenuity."

"I want to salute Team Hubble -- everyone who worked on Hubble from the Goddard Space Flight Center and Space Telescope Science Institute scientists in Maryland, to the ground crew at the Kennedy Space Center, to the Johnson Space Center where the astronauts train, and to the astronauts who were heroes in space," she concluded.



The new instruments are more sensitive to light and, therefore, will improve Hubble's observing efficiency significantly. It is able to complete observations in a fraction of the time that was needed with prior generations of Hubble instruments. The space observatory today is significantly more powerful than it ever has been.

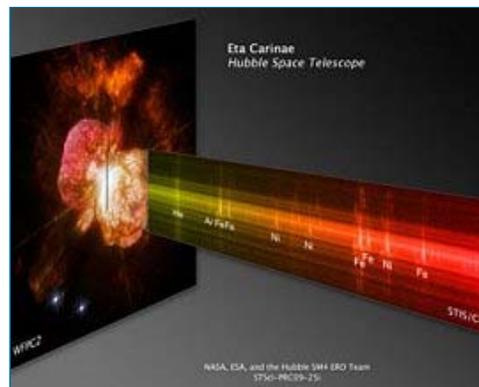


Above: A sample spectrum obtained by Hubble's new Cosmic Origins Spectrograph (COS). More examples of COS data may be found [here](#) and [here](#).

The new results are compelling evidence of the success of the STS-125 servicing mission in May, which has brought the space observatory to the apex of its scientific performance. Two new instruments, the Wide Field Camera 3 and Cosmic Origins Spectrograph, were installed, and two others, the Advanced Camera for Surveys and Space Telescope Imaging Spectrograph, were repaired at the circuit board level. Mission scientists also announced that the Near Infrared Camera and Multi-Object Spectrometer have been brought back into operation during three months of calibration and testing.

Right: Hubble's newly repaired Space Telescope Imaging Spectrograph (STIS) has revealed a stream of charged particles emerging from doomed star Eta Carina. [[more](#)]

"On this mission we wanted to replenish the 'tool kit' of Hubble instruments on which scientists around the world rely to carry out their cutting-edge research," said David Leckrone, senior project scientist for Hubble at NASA's Goddard Space Flight Center in Greenbelt, Md. "Prior to this servicing mission, we had only three unique instrument channels still working, and today we have 13. I'm very proud to be able to say, 'mission accomplished.' "



Hubble now enters a phase of full science observations. The demand for observing time will be intense. Observations will range from studying the population of Kuiper Belt objects at the fringe of our solar system to surveying the birth of planets around other stars and probing the composition and structure of extrasolar planet atmospheres. There are ambitious plans to take the deepest-ever near-infrared portrait of the universe to reveal never-before-seen infant galaxies that existed when the universe was less than

500 million years old. Other planned observations will attempt to shed light on the behavior of dark energy, a repulsive force that is pushing the universe apart at an ever-faster rate.

Hubble is back and better than ever. Let the observing begin!

For images and more information about the Hubble Space Telescope, visit <http://www.nasa.gov/hubble>

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The Hubble Space Telescope is a project of international cooperation between NASA and the European Space Agency. Goddard manages the telescope. The Space Telescope Science Institute conducts Hubble science operations. The institute is operated for NASA by the Association of Universities for Research in Astronomy Inc. in Washington, and is an International Year of Astronomy 2009 program partner.

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