HUBBLE GETS GLASSES



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Before Hubble's mirror was repaired, the orbiting telescope had blurry vision. This "before/after" image reflects "the fix." NASA tells us more: "This comparison image of the core of galaxy M100 shows the dramatic improvement in the Hubble telescope's view of the universe. The new image (right) was taken with the second generation Wide Field and Planetary Camera (WFPC2), which was installed during the STS-61 Hubble Servicing Mission." Credit: NASA, STScl.

To $\underline{\text{fix}}$ Hubble's $\underline{\text{blurry vision}}$, NASA sent the shuttle $\underline{\text{Endeavour}}$ on a repair trip in December of 1993. The mission - $\underline{\text{STS}}$ -61 - was the fifty-ninth time a shuttle was launched into space.

During the eleven-day trip, astronauts set a record of five space walks, spanning more than <u>thirty-five hours</u>. They <u>worked on</u> the <u>telescope</u> as it was "<u>docked</u>" in the shuttle's <u>payload bay</u>.

<u>Astronauts</u> have made four more trips <u>to Hubble</u>, upgrading, <u>servicing</u> and then <u>releasing</u> one of the world's most treasured <u>sources</u> of space information. A famous picture of the telescope, as it appears during <u>its</u> <u>working state</u>, was taken in February, 1997, as the shuttle *Discovery* neared the orbiting observatory.

Atlantis, in mission STS-125, made a "final" repair trip to the orbiting space telescope. A risky mission, due to space debris in Hubble's orbit, NASA officials ordered *Endeavour* to stand-by - on the launch pad - in case Atlantis, or the crew, encountered difficulties.

After Hubble's <u>vision was corrected</u>, it began to send clear electronic images to its base in Maryland. One of the <u>most stunning</u> is of the <u>Eagle Nebula</u> - also <u>called</u> <u>M16</u> - in the <u>Serpens</u> constellation.

What, exactly, is a nebula? And...what are some of the most notable?

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Media Stream



<u>Hubble - Repairs in Space</u> Image online, courtesy NASA.

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<u>Hubble Repairs</u>

Image online, courtesy NASA.

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Shuttle Docked with Hubble

Image online, courtesy NASA.

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Space Shuttle Endeavour Docked with Hubble

NASA/STScI photo, online courtesy NASA.

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Shuttle Solar Arrays

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Astronaut Michael Massimino Working on Hubble

Image online, courtesy NASA.

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<u>Shuttle View of Hubble Orbiting Telescope</u> Image online, courtesy NASA.

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Hubble - Servicing the Orbiting Telescope in Space

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Deploying Hubble from the Shuttle

Image online, courtesy the National Geographic website via NASA.

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Hubble - Source of Information about Space

Image online, courtesy NASA.

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Hubble - Its Working-State Configuration

Image online, courtesy NASA.

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Eagle Nebula - An Early Image from Hubble
Image online, courtesy NASA.
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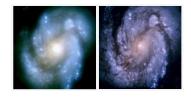


Eagle Nebula - Stunning Hubble Image with Identifiers
Image online, courtesy NASA.
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M16 - Eagle Nebula Image
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<u>Hubble Telescope - Vision Repair</u> Online, courtesy NASA.

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