

## **Starry-eyed Hubble celebrates 20 years of awe and discovery**

April 23 2010



This craggy fantasy mountaintop shrouded by wispy clouds looks like a bizarre landscape from Tolkien's The Lord of the Rings. The NASA/ESA Hubble Space Telescope image, which is even more dramatic than fiction, captures the chaotic activity atop a pillar of gas and dust, three light-years tall, which is being eaten away by the brilliant light from nearby bright stars. The pillar is also being assaulted from within, as infant stars buried inside it fire off jets of gas that can be seen streaming from towering peaks. This turbulent cosmic pinnacle lies within a tempestuous stellar nursery called the Carina Nebula, some 7500 light-years away in the southern constellation of Carina. The image celebrates the 20th anniversary of Hubble's launch and deployment into orbit around Earth. Credits: NASA/ESA/M. Livio & Hubble 20th Anniversary Team (STScI)

(PhysOrg.com) -- The most prolific space observatory will zoom past its



20-year milestone this weekend. On 24 April 1990, the Space Shuttle and its crew released the NASA/ESA Hubble Space Telescope into Earth orbit. What followed is one of the most remarkable sagas of the space age.

Hubble's unprecedented capabilities have made it one of the most powerful science instruments ever conceived, and certainly the one most embraced by the public. Hubble's discoveries have revolutionised nearly all areas of astronomy, from <u>planetary science</u> to cosmology. And its pictures are unmistakably out of this world.

At times, Hubble's starry odyssey has played out like a <u>space</u> soap opera: with broken equipment, a bleary-eyed primary mirror and even a <u>Space</u> <u>Shuttle</u> rescue/repair mission cancellation. But the ingenuity and dedication of Hubble scientists, engineers and NASA and ESA astronauts have allowed the observatory to rebound time and time again. Its crisp vision continues to challenge scientists with exciting new surprises and to enthral the public with ever-more evocative colour images.

NASA, ESA and the Space Telescope Science Institute (STScI) are celebrating Hubble's journey of exploration with a stunning new picture. Another exciting part of the anniversary will be the launch of the revamped European website for Hubble, spacetelescope.org. ESA will also be sponsoring the <u>Hubble Pop Culture Contest</u> that calls for fans to search for examples of the observatory's presence in everyday life.

The brand new Hubble anniversary image highlights a small portion of one of the largest observable regions of starbirth in the galaxy, the <u>Carina Nebula</u>. Towers of cool hydrogen laced with dust rise from the wall of the nebula. The scene is reminiscent of Hubble's classic Pillars of Creation photo from 1995, but even more striking in appearance.



The image captures the top of a pillar of gas and dust, three light-years tall, which is being eaten away by the brilliant light from nearby bright stars. The pillar is also being pushed apart from within, as infant stars buried inside it fire off jets of gas that can be seen streaming from towering peaks like arrows sailing through the air.

Hubble fans worldwide are being invited to share the ways in which the telescope has affected them. They can send an email, post a <u>Facebook</u> <u>message</u> or use the Twitter hashtag #hst20. Or, they can visit the Messages to Hubble page on hubblesite.org, type in their entry and read selections from other messages that have been received.



This is a NASA Hubble Space Telescope near-infrared image of a pillar of gas and dust, three light-years tall, that is being eaten away by the brilliant light from nearby stars in the tempestuous stellar nursery called the Carina Nebula, some 7500 light-years away in the southern constellation of Carina. The image marks the 20th anniversary of Hubble's launch and deployment into an orbit around



Earth. The image reveals a myriad of stars behind the gaseous veil of the nebula's wall of hydrogen, laced with dust. The foreground pillar becomes semitransparent because infrared light from background stars penetrates through much of the dust. A few stars inside the pillar also become visible. The false colours are assigned to three different infrared wavelength ranges. Hubble's Wide Field Camera 3 observed the pillar in February/March 2010. Credits: NASA/ESA/M. Livio & Hubble 20th Anniversary Team (STScI)

Fan messages will be stored in the Hubble data archive along with the telescope's many terabytes of science data. Future researchers will be able to read these messages and understand how Hubble had such an impact on the world.

To date, Hubble has looked at over 30 000 celestial targets and amassed over half a million pictures in its archive. The last heroic servicing mission by astronauts to Hubble in May 2009 made the telescope 100 times more powerful than when it was launched.

In addition to its irreplaceable scientific importance, Hubble brings cosmic wonders into millions of homes and schools every day. For the past 20 years the public have become co-explorers with this wondrous observatory.

Provided by European Space Agency

Citation: Starry-eyed Hubble celebrates 20 years of awe and discovery (2010, April 23) retrieved 28 April 2024 from <u>https://phys.org/news/2010-04-starry-eyed-hubble-celebrates-years-awe.html</u>

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