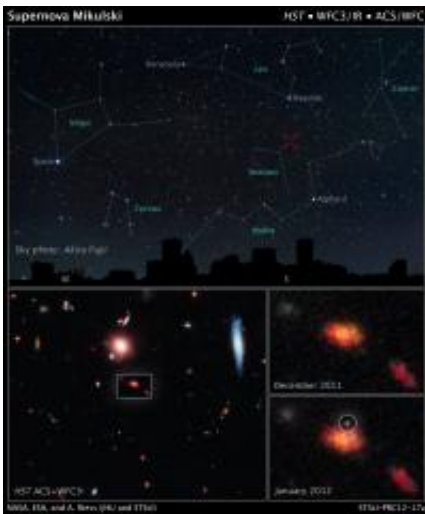


# Space astronomy archive, distant supernova, named in honor of U.S. Senator

April 6 2012, By Ray Villard

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Credit: NASA, ESA, and A. Riess (JHU and STScI)

(Phys.org) -- One of the world's largest astronomy archives, containing a treasure trove of information about myriad stars, planets, and galaxies, has been named in honor of the United States Senator from Maryland, Barbara Mikulski.

Called MAST, for the Barbara A. Mikulski Archive for Space Telescopes, the huge database contains astronomical observations from 16 NASA space astronomy missions, including the Hubble Space Telescope.

"In celebration of Sen. Mikulski's career-long achievements, and particularly this year, becoming the longest-serving woman in U.S. Congressional history, we sought NASA's permission to establish the Senator's permanent legacy to science by naming the optical and ultraviolet data archive housed here at the Institute in her honor," said Matt Mountain, director of the Space Telescope Science Institute (STScI) in Baltimore, Md.

STScI is the science operations center for Hubble, and its upcoming successor, the James Webb Space Telescope.

In addition, an exploding star that the [Hubble Space Telescope](#) spotted on Jan. 25, 2012, has been named Supernova Mikulski by [Nobel Laureate](#) Adam Riess and the supernova search team with which he is currently working. The supernova, which lies 7.4 billion light-years away, is the titanic detonation of a star more than eight times our Sun's mass.

"I'm humbled and honored to be recognized by our nation's top scientists and innovators as a fighter for science and research," Sen. Mikulski said. "I believe in American exceptionalism; not just because we say we are, but because of our investment in innovation. Through innovation, America has led the way in scientific breakthroughs and discoveries, which inspire future scientists, inventors, and entrepreneurs. I am proud to be the namesake of the archive at the [Space Telescope](#) Science Institute, which is the enduring legacy of Hubble, and will allow us to peer even further into the [origins of the universe](#) after the launch of the [James Webb Space Telescope](#)."

MAST is NASA's repository for all of its optical and ultraviolet-light observations, some of which date to the early 1970s. The archive contains information from the golden age of astronomy, spanning the past three decades. An armada of space telescopes has surveyed the

universe across a broad spectrum of energies. Data from such groundbreaking missions as the planet-hunting Kepler Observatory and the Galaxy Evolution Explorer are part of the MAST archive.

MAST presently contains approximately 200 terabytes of data, which is nearly the size of the content in the U.S. Library of Congress.

The observational data in MAST are used and reused many times by astronomers. New data are constantly flowing into the archive, but even more data is flowing out. Today, more than half of the published scientific papers containing Hubble data used archival observations. This number has increased steadily over the past five years.

Now that Hubble has amassed nearly 22 years of data, astronomers are searching the archive to help them address new research areas that were never envisioned by the original observers. MAST archival data have been used to help discover extrasolar planets and distant supernovae.

"As one of the most widely used astronomical resources in the world, significantly more data is extracted from MAST by researchers than the volume of newly ingested data," said Mountain. "What's more, amateur astronomers and educators are becoming more heavily involved in astronomical research than ever because of the 'democratization' of [space](#) via a huge publicly accessible astronomical database like MAST. The consequences are that we are on the cusp of a knowledge explosion in astronomy where discoveries are expanding at an unprecedented rate."

Due to its distance, Supernova Mikulski was too faint to have been monitored by ground-based telescopes and required Hubble's unique resolution and sensitivity. Supernovae are natural "time capsules," providing astronomers with a record of past conditions in the universe. Hubble has now undertaken a three-year project to observe the most distant of these stellar explosions. Supernovae are important to

understanding the origin of mysterious dark energy, which now dominates the universe, and this work was last year recognized by the award of the Nobel Prize in Physics to two supernova search teams, led by Saul Perlmutter, Brian Schmidt, and Adam Riess.

"We are in a remarkable period for modern astrophysics research," remarked Dr. William Smith, president of AURA, "and it is fitting that Senator Mikulski's persistent championship on behalf of science be permanently recognized by today's events."

Provided by ESA/Hubble Information Centre

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