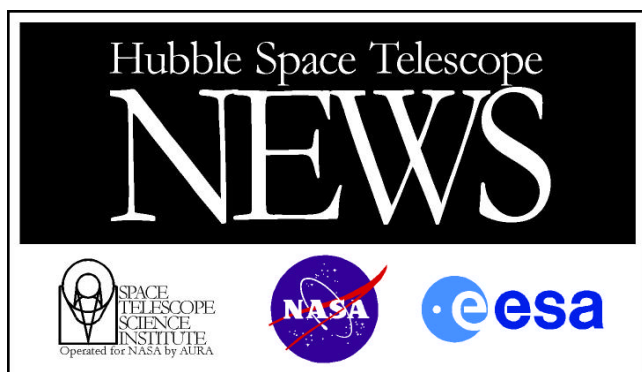


Globular Cluster NGC 1818
Hubble Space Telescope • WFPC2



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PHOTO NO.: STScIPRC9816



HOT WHITE DWARF SHINES IN YOUNG STAR CLUSTER

A dazzling "jewel-box" collection of over 20,000 stars can be seen in crystal clarity in this NASA Hubble Space Telescope image, taken with the Wide Field and Planetary Camera 2. The young (40 million year old) cluster, called NGC 1818, is 164,000 light-years away in the Large Magellanic Cloud (LMC), a satellite galaxy of our Milky Way. The LMC, a site of vigorous current star formation, is an ideal nearby laboratory for studying stellar evolution.

The circled star is a young white dwarf star, which has only very recently formed following the burnout of a red giant. Based on this observation astronomers conclude that the red giant progenitor star was 7.6 times the mass of our Sun. Previously, astronomers have estimated that stars anywhere from 6 to 10 solar masses would not just quietly fade away as white dwarfs but abruptly self-destruct in torrential explosions.

Hubble can easily resolve the star in the crowded cluster, and detect its intense blue-white glow from a sizzling surface temperature of 50,000 degrees Fahrenheit.

IMAGE DATA

Date taken: December 1995

Wavelength: natural color reconstruction from three filters (I,B,U)

Field of view: 100 light-years, 2.2 arc minutes

TARGET DATA

Name: NGC 1818

Distance: 164,000 light-years

Constellation: Dorado

Age: 40 million years

Class: Rich star cluster

Apparent magnitude: 9.7

Apparent diameter: 7 arc minutes

Credit: Rebecca Elson and Richard Sword, Cambridge UK, and NASA
(Original WFPC2 image courtesy J. Westphal, Caltech)

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