

Hubble's great gifts



WASHINGTON: Stunning images that depict the life cycle of stars have been released to celebrate 18 years of the Hubble Space Telescope.

The first shot captures the Orion nebula — a dense cloud of gas about 1,500 light years from Earth — within which new stars are forming.

Stars are born in clouds of cold hydrogen gas, chaotic neighbourhoods where energy from young stars sculpt fantasy-like landscapes in the gas.

The second picture shows young blue stars surrounded by leftover natural gas in the Large Magellanic Cloud, a nearby dwarf galaxy composed of up to several billion stars — a small number compared to our own Milky Way's 200 to 400 billion stars.

The third image in the montage features an evolving star known as V838 Monocerotis whose past flashes have illuminated material that was ejected in an early stellar wind.

In the fourth a planetary nebula forms as a dying star sheds its outer layers, leaving behind the white dwarf at its centre.

Writing in the science journal *Nature* to mark the launch of the International Year of Astronomy, Professor Julianne Dalcanton, an astronomer at Washington University, said Hubble has "captured the public's imagination" with the estimated 900,000 pictures it has taken since its launch on April 24 1990.

The telescope's deep, clear views are not masked by the Earth's turbulent atmosphere, giving it unprecedented resolution when imaging the brightness and structure of objects in deep space.

Among Hubble's greatest achievements is a set of observations of supernovas that shows the universe is not just expanding, but doing so at an ever-increasing pace. — DM

