Water on white dwarf raises prospects of H2O-rich planets

Water delivery via asteroids or comets is likely to take place in many other planetary systems, just as it happened on Earth, new research strongly suggests. Published by the Royal Astronomical Society and led by the University of Warwick, the research finds evidence of numerous planetary bodies, including asteroids and comets, containing large amounts of water. The findings add further support to the possibility of delivering water to Earth-like planets via such bodies to create a suitable environment for life.

"Our research has found that, rather than being unique, water-rich asteroids similar to those found in our Solar System appear to be frequent. Accordingly, many of planets may have contained a volume of water, comparable to that



contained in the Earth," said lead researcher Roberto Raddi from the University of Warwick. "It is believed that the Earth was initially dry, but our research strongly supports the view that the oceans we have today were created as a result of impacts by water-rich comets or asteroids".

In observations obtained at the William Herschel Telescope in the Canary Islands, the astronomers detected a large quantity of hydrogen and oxygen in the atmosphere of a white dwarf (known as SDSS J1242+5226). The quantities found provide the evidence that a water-rich exo-asteroid was disrupted and eventually delivered the water it contained onto the star.

The asteroid, the researchers discovered, was comparable in size to Ceres – at 900km across, the largest asteroid in the Solar System. The amount of water is equivalent to 30-35 per cent of the oceans on Earth. The impact of water-rich asteroids or comets onto a planet or white dwarf results in the mixing of hydrogen and oxygen into the atmosphere. Both were detected in large amounts in SDSS J1242+5226. **PMB**

Pune Mirror, Pune, May 8, 2015. Pp.14