

Our Sky in March 2014

Jupiter continues to shine brightly in the southern sky after dark, setting in the north-west about 2am. Mars rises about 8pm and Saturn at about 11 pm. Venus greets the early risers in the dawn sky at about 5am.

There has been some exciting news about Europa, one of Jupiter's Galilean moons, and the one most likely to have an ocean under a layer of ice. Clay type minerals have just been detected on the surface of the moon, after analysis of archived observations from NASA's spacecraft Galileo. The importance of this observation is that the minerals might contain organic compounds that could have seeded life on the moon. The source of these minerals can be only from an asteroid or comet impact, and they occur in a broken ring about 25 miles wide 75 miles from the centre of a crater. Comets have long been thought to be the source of water on those planets and moons which still retain it in the form of oceans as on Earth, and ice elsewhere in the Solar system far from the Sun's warmth. They come from the far reaches of the Solar system in the Oort cloud, and are displaced from there by the gravitational interference of the outer planets or even a passing star, and come wandering into the inner Solar system, sometimes to crash catastrophically into one of the inhabitants; this happened regularly in the early life of the Solar system, but is now, thankfully, rare.

The other major European discovery by the Hubble Space Telescope is of clouds of water vapour above the South Pole, providing the first strong evidence of water plumes erupting from the surface, like those observed on Saturn's moon Enceladus. If these plumes are associated with the ocean underneath the surface ice, it would mean that scientists could examine the chemical make-up of Europa's potentially habitable environment, without drilling through miles of ice to reach it.

Meanwhile, the spacecraft Rosetta is homing in on a comet with an unpronounceable name, and scientists plan to land it on the surface in November. More details next month.

I hope to keep you informed of progress on all these exciting subjects, as we welcome the Sun back to the Northern hemisphere on the 21st of March from its winter excursion.

Bill Turnill