

Our Night Sky in July 2016

Jupiter, Mars and Saturn which have been with us during the past nights, will be setting about midnight, while Venus and Mercury are too close to the Sun to be visible. Keep looking out for the Noctilucent clouds though, because they will no longer be visible after next month.

The spacecraft Cassini, which has been orbiting Saturn for the last 12 years, and which has returned not only superb images of the planet and its moons, but also a wealth of data which will keep scientists occupied for many years to come. However, all good things must come to an end, and for Cassini, that is planned for September next year. Before then, scientists have planned some last daring experiments, the last two of which will be guiding the spacecraft between the inner ring and Saturn's upper atmosphere. This orbit will provide unprecedented images of the icy particles that comprise the rings, but to avoid the hazard of colliding with them, the spacecraft will turn its high-gain antenna towards the direction of motion, so that it will provide some protection for the vulnerable instruments.

It is a requirement for all planetary probes such as Cassini to be totally destroyed to prevent any possible microbes carried by them contaminating the planet or its moons. In Saturn's case, the moon Enceladus, although no bigger than Britain, appears to harbour an ocean below its icy surface and, where there is water, there is also the possibility, no matter how remote, of some form of life. One of the final experiments will be to fly Cassini through the plumes of material being ejected from Enceladus, to determine exactly what they are made of. Cassini's final orbit will take it onto a collision course with Saturn, where it will come to a fiery end in the planet's thick atmosphere. In space exploration, we have become used to superlatives when describing some of the achievements of the last 70 years, and there is little doubt that Cassini will feature among those; it has not only provided scientists with incomparable material, but have given the general public a feast of beautiful images. It will be greatly missed by scientists and the public alike.

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