Titania

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Titania is the largest of the moon of Uranus and the eighth largest moon of the Solar System. It was discovered by William Herschel in 1787. The named Titania where come after the queen of fairies in Shakespeare's 'A Midsummer Night's Dream' and it's orbit lies inside Uranus magnetosphere. Titania consists of approximated equal amounts of ice and rock and it is differentiated into a rocky core and an icy mantle. A layer of liquid water may be present at the core mantle boundary. The surface of Titania,which is relatively dark and slightly red in colour, appear to have been shaped by both impacts and endogenic processes. The Uranian system has been shaped by both impacts and endogenic processes. The Uranian system has been studied up close only once by the spacecraft Voyager-2 in January,1986. It took several images of Titania. Titania was discovered by William Herschel on January 11, 1787. It was initially referred to as 'The first satelite of Uranus' and in 1848 was given the designation Uranus 1 by William Lassell, although he something used William Herschel numbering. In 1851 Lassell eventually numbered the satellites in order of their distance from the planet by Roman numerals and then Titania has been designated Uranus III. Titania orbits Uranus at the distance of about 436,000 km, being the second farthest from the planet among its five major moons. Titania orbit has a small eccentricity and in inclined very little relative to the equator of Uranus. Its orbital period is around 807 days coincident with its rotational period. And also Titania is a synchronous or tidally locked satelite with one fall always pointing towards the planet. Titania orbit lies completely inside the Uranian magnetosphere. Scientist have recognised three classes of geological feature of Titania: craters, chasmata (canyons) and rupes (scarps). Titania's craters range in diameter from a few kilometres to 326 km in the case of largest Known Crater,Gertrude. Some craters are surrounded by bright impact ejecta(rays) consisting of relatively fresh ice. All large craters on Titania have flat floors and central peaks. The presence of Carbon dioxide on the surface suggests that Titania may have a tenuous seasonal atmosphere of CO2 much like that of Jovian moon Callisto. Other gases like nitrogen on methane,are unlikely to be present because Titania weak gravity could not prevent them from escaping into space.

Titania is throughout to have formed from an acceleration dices sub-nebula: a dise of gas and dust that either existed around Uranus for sometime after for some time after formation or was created by the great impact that most likely gave Uranus its large obliquely.Titania acceleration probably lasted for several thousand years. The impacts that accompanied acceleration caused heating of the moon's outer layer. Also the initial acceleration heating together continued decay radioactive elements were probably strong enough of melt the ice if some anti-freeze like ammonia or salt was present. The only close up image of Titania have been from the Voyager-2 probe ,which photographed the moon during its flyby of Uranus in January,1986. At the time of the flyby,the southern hemisphere of Titania was pointed towards the sun. Now,no other spacecraft has even visited the Uranian system on Titania and no mission is current planned.