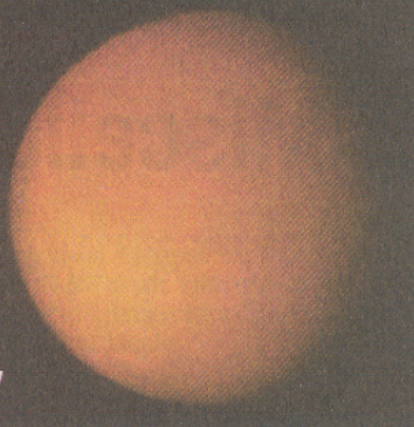


Probe Lands on Titan 350 Years After its Discovery



AFTER a seven-year, four-million-kilometre journey, the European Space Agency (ESA)'s Huygens probe is now sitting on Titan, Saturn's largest moon. The probe landed on Titan's surface Jan 14, 350 years after it was discovered. The probe has begun sending data, including first pictures and audio, which sounds like some celestial heartbeat. "Huygens is mankind's first successful attempt to land a probe on another world in the outer solar system," said Jean-Jacques Dordain, ESA's director general. "This is a great achievement for Europe and its US partners in this ambitious international endeavour to explore Saturn system." Though Titan is classified as a moon, it is larger than the planets Mercury and Pluto. It has a planet-like atmosphere that is denser than those of Mercury, Earth, Mars and Pluto. "Titan was always the target in the Saturn system where the need for 'ground truth' from a probe was critical. It is a fascinating world and we are now eagerly awaiting the scientific results," said David Southwood, director of ESA's scientific programme.

Spider Silks

The Intelligent Materials of the Future

THE distinctive toughness of spider silk could allow manufacturers to improve wound-closure systems and plasters, and to produce artificial ligaments and tendons for durable surgical implants. The silk could also be woven into



strong textiles to make parachutes, body armour, ropes and fishing nets. A whole range of ecological materials could emerge from the industrial production of spider silk. Thomas Scheibel, from the Department of Chemistry of the Technische Universität in München explains that there are currently over 34,000 described species of spider, each with a specific tool-kit of silks with different mechanical properties serving specific purposes. For example, major ampullate silk, a very tough silk with a tensile strength comparable to Kevlar, is used for the primary dragline or scaffolding of the spider's web. Minor ampullate silk with its very low elasticity is used to reinforce the web, while the strong and stretchy flagelliform silk forms the capture spiral of the web. "The future objective might not be to prepare identical copies of natural silk fibres but rather to capture key structural and functional features in designs that could be useful for engineering applications" explains the author.

Albatrosses Fly Non-stop and in Sleep



THE albatross, traditionally regarded as a sign of good luck for sailors, can fly across 25,000 miles, sometimes making non-stop trips around the southern half of the globe. Until recently, little was known about where the massive seabirds -- which breed on islands north of Antarctica -- went during the non-breeding season. According to the study, 12 of the birds were seen to have circled the globe at a latitude just south of Africa and South America, with some birds even circling twice. The

birds, with wingspans of six and half feet, need little energy for flight. Albatrosses fly at night and sometimes seem to sleep on their wings, said biologist and lead researcher John Croxall. Some albatrosses flew nearly 600 miles a day, and one of them made a 13,000-mile trip in 46 days, he continues. Albatrosses are among the world's most endangered birds, in part because an estimated 75,000 are snagged on hooks used by long-line fishing boats. One solution could be the weighting of fishing lines to keep baited hooks away from the birds, he said.