The First Surface Image of Planet Venus

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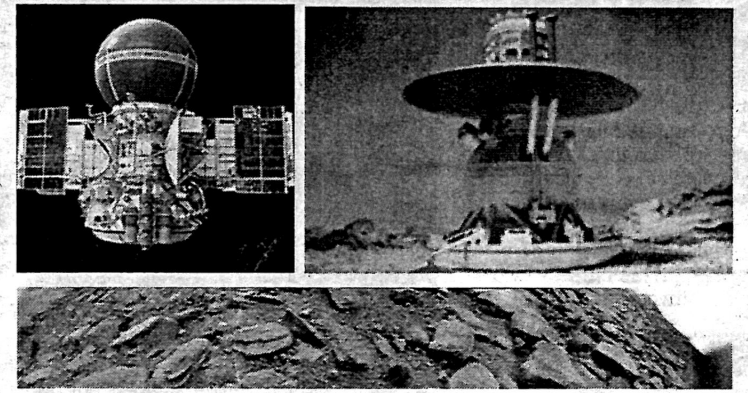
We admire Venus as a morning or evening 'star' having far greater brightness than a typical star in the sky. In fact, Venus is a planet and much closer to us than a typical star. Its brightness is due to the light scattered and reflected by it, light it receives from the Sun. Real progress in getting to know this planet closely was made, however, on October 22, 1975 when a USSR space probe actually landed on its surface.



The space mission to Venus began on June 8, 1975, when the Soviet spacecraft Venera 9 left the Earth for a rendezvous with Venus. Taking nearly four and a half months, it arrived at and began to orbit Venus. Surveying from above the spacecraft found the planet engulfed in clouds as thick as 30-40 kilometres at atmospheric heights of around 35 kilometres. These survey missions were wound up on the Christmas Day, December 25, 1975.

However, a more daring part of the Venus mission was that of landing on the planetary surface, which was carried out by an unmanned space probe or 'Lander'. Landing on the hitherto unknown territory, the lander found the ground air pressure to be as high as 90 atmospheres...that is 90 times the pressure of air on the Earth. The ground temperature was also high by terrestrial standards, 485 degrees Celsius. Thus, the Venus surface has a rather hostile environment, combining the high pressure of a gigantic pressure cooker with the high temperature of a big oven. The daylight on the planet resembled that on the tropical parts of the Earth on a cloudy day.



Clockwise from top: The Venera 9 spacecraft; Venera Lander; rocks on the surface of Venus.

Not surprisingly, the lander did not last long. It survived barely 53 minutes. But during its short lifetime, its instruments sent back useful new information about the planet. Studies of atmospheric chemicals including the hydrochloric acid, hydrofluoric acid, bromine and iodine were also carried out. Surface photography using black and white photographs, showed the Venusian surface as having shadows, no dust in the air and a variety of un-eroded rocks ranging up to around 30-40 centimetres.

Hence, Venus is not a habitable planet and we may have to search farther out from the Sun to get a planet enjoying an eco-friendly system. As the technology of space travel advances day by day, it is worth recalling that Venera 9 was the first spacecraft to send an image from the surface of another planet.

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Astrophysicist Jayant Narlikar and theoretical physicist Thanu Padmanabhan will contribute to DNA's special series through 2009, designated the International Year of Astronomy.