On Our State Of Knowledge About Venus & Proposed Missions To Explore It

Size & Atmosphere: Because of its surface and atmospheric characteristics, Venus reflects more than 70% of all light it receives from the Sun. Due to that high albedo of around 0.75, Venus has been known for its extraordinary brightness that led it being named after the famous Roman female figure who resembled the pinnacle of magnificence and tenderness.

Like a diamond in the twilight, the planet Venus is stunningly beautiful, but the reality of it is that it is full of storms & infernos unlike any other planet in our solar system, giving it the closest possible resemblance to an actual hell as far as we know. Venus, the second planet from our sun, and the third brightest object in the night sky after the Sun and the Moon. The strength of its brightness is so much so that some people might mistake it for an airplane when they see it. In fact, some stargazers even report it as a UFO.

Like Mercury, Venus never gets far from the Sun; at best, it can reach about 45 degrees away. is somewhat like Earth from a fair distance. Yet, when we try to examine it closely, we are surprised and astonished by how different and dissimilar it is. With a very rocky crust, hot mantle, and iron core, we can say that Venus' structure is closer to that of Earth, along with its size that is only slightly smaller than that of our planet. Interestingly, though, the crust of Venus is unique enough because it is full of impact craters and volcanic structures that can get tall at some areas of our sister planet.

Venus also has a very thick and dense atmosphere that can be characterized with numerous clouds that shower the planet with sulfuric acid and has pretty active atmospheric wind that moves its multilayered clouds at high speeds that can exceed 220 miles/hour, which is extremely fast compared to normal wind speeds and atmospheric activity on Earth. The dense and thick atmosphere creates a very harsh environment on the surface of Venus and contributes to a high surface pressure that is tens of times higher than that on Earth at sea level. Consequently, any attempt to send astronauts to Venus would be considerably difficult giving that such pressure can crush the human body almost instantly.

The Venusian atmosphere is composed of some known greenhouse gases, such as CO_2. The abundance of these gases, along with Venus' proximity to the Sun, contributes to high temperature that can reach and exceed 870 degrees Fahrenheit, which wins Venus the title of the hottest planet in our solar system. The distinctively difficult and harsh conditions of Venus make it impossible for humans to survive and challenging for spacecrafts to explore, if they can successfully land on its surface to start with. Nonetheless, it is hypothesized that the temperatures on Venus has not been always this high.

In fact, some scientists argue that the planet might have been cooler than present-day Earth at some point in its history. Going thusly, and as usual, some scientists proposed that, millions of years ago, the surface of Venus might have contained some surface water that could have supported life. According to these proposals, some forms of life may still exist in the atmosphere of the hot planet, only miles above the surface. The reason behind that goes back to the range of temperatures and atmospheric pressures that are closer to those at Earth. One of the

observations that can support that theory of life on Venus are the darker lines that seem absorb ultraviolet radiation and exist in the Venusian atmosphere. This pattern of absorption corresponds to behaviors linked to primitive and simple microbial life that are like those on Earth.