WHICH ARE THE MOST LIKELY PLACES FOR ALIEN LIFE IN OUR SOLAR SYSTEM?

We continue to scan the length and breadth of the universe for signs of life, glossing over the fact that in our own solar system there are places offering conducive conditions for microscopic life-forms to thrive. And the best part is that we could visit them during our lifetime. Here’s our rundown of the best bets...

1. EUROPA

Jupiter’s biggest moon is possibly the most habitable of all the moons of the gas giant. Its icy surface is peppered with geysers喷射), which are currently believed to be made of water and ice. These geysers erupt from underneath the moon’s crust, suggesting that there is liquid water below. Scientists estimate that Europa’s ocean could be three times the volume of Earth’s oceans combined, and where there could contain more water than all of Earth’s oceans combined. The amount of liquid water in Europa’s ocean could be comparable to the total amount of water in all of the Earth’s oceans. This makes Europa a prime target for the search for extraterrestrial life. But recent studies suggest that Europa may not be as habitable as once thought, due to the presence of sulfuric acid in its liquid water.

2. ENCELADUS

Saturn’s sixth-largest moon is home to a global ocean of liquid water under its icy surface. The Cassini-Huygens mission revealed the existence of a global ocean of liquid water beneath the moon’s icy crust, which is heated by the radioactive decay of isotopes. This ocean is thought to be several kilometers deep and contains more water than all of Earth’s oceans combined. The presence of liquid water on Enceladus makes it a possible habitat for life, especially if there are hydrothermal vents releasing heat and nutrients into the ocean.

3. GANYMEDE

Jupiter’s largest moon, Ganymede, is the largest moon in the solar system and is home to a global ocean of liquid water. The Galileo spacecraft observed plumes of water vapor and ice coming from the moon’s surface, suggesting the presence of a subsurface ocean. Scientists estimate that Ganymede’s ocean contains more water than all of Earth’s oceans combined. The presence of liquid water and organic compounds suggests that Ganymede could be a potential location for extraterrestrial life.

4. TITAN

Saturn’s largest moon, Titan, is the only moon in the solar system with a significant atmosphere. The atmosphere of Titan is mostly composed of nitrogen, with methane and other hydrocarbons also present. The outer surface of Titan is heavily cratered and covered in ice, but the atmosphere contains liquid hydrocarbons, including liquid甲烷. These liquids could provide a habitat for life, similar to the conditions on Earth’s early surface. However, the surface of Titan is extremely cold and windy, making it challenging to support life. But recent studies suggest that Titan could be a potential location for extraterrestrial life, especially if there are subsurface oceans or lakes of liquid hydrocarbons.