

Grade 12 Earth and Space Science

SES4U

Qinghao Hu

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Chapter 2

Our Solar System

2.1 The wonders of the Solar System: Episode: 5

- After he sees the tubeworms at the bottom of the ocean... The underwater city is one of the most bizarre environments on our planet. It's built around a **Hydrothermal bent**, a volcanic opening in the Earth's crust that pumps out clouds of sulphurous chemicals water heated to nearly 300 Celsius.

For life to exist, we only need three things:

- right **chemistry** set. Human body is made up with 40 elements, but actually 96% of human is only made of four of them, carbon, nitrogen, oxygen and hydrogen.
- We need a **power source**. We need a battery, something to make a flow of electrons that powers the processes of life. Most life on Earth uses the power of the sun.
- We need some kind of **medium** for life to play itself out in, for process to happen. On the Earth, the medium is **water**.

What is the **fundamental link** that is driving the search for life in our solar system?

- The link between liquid water and life.

For life to get a foothold, you need more than that. You need areas of **standing water**.

So large deposits of gypsum on the surface of Mars tells you that there must have been big areas of **water**.

What gas has been detected in the atmosphere of Mars? **Methane**

Which of the Jupiter's moons has the greatest chance of finding life? **Europa**