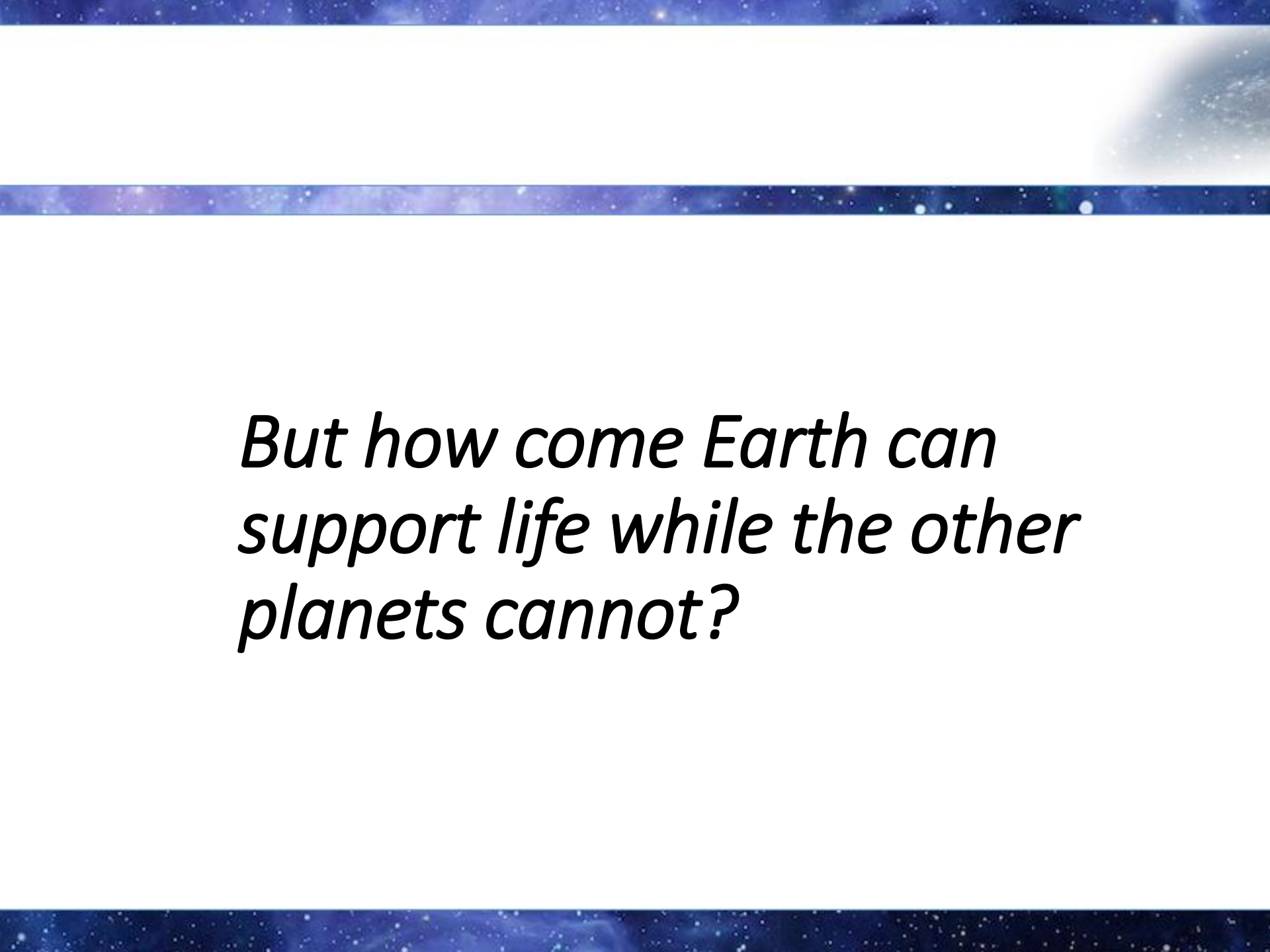


Earth
as the
only habitable
planet

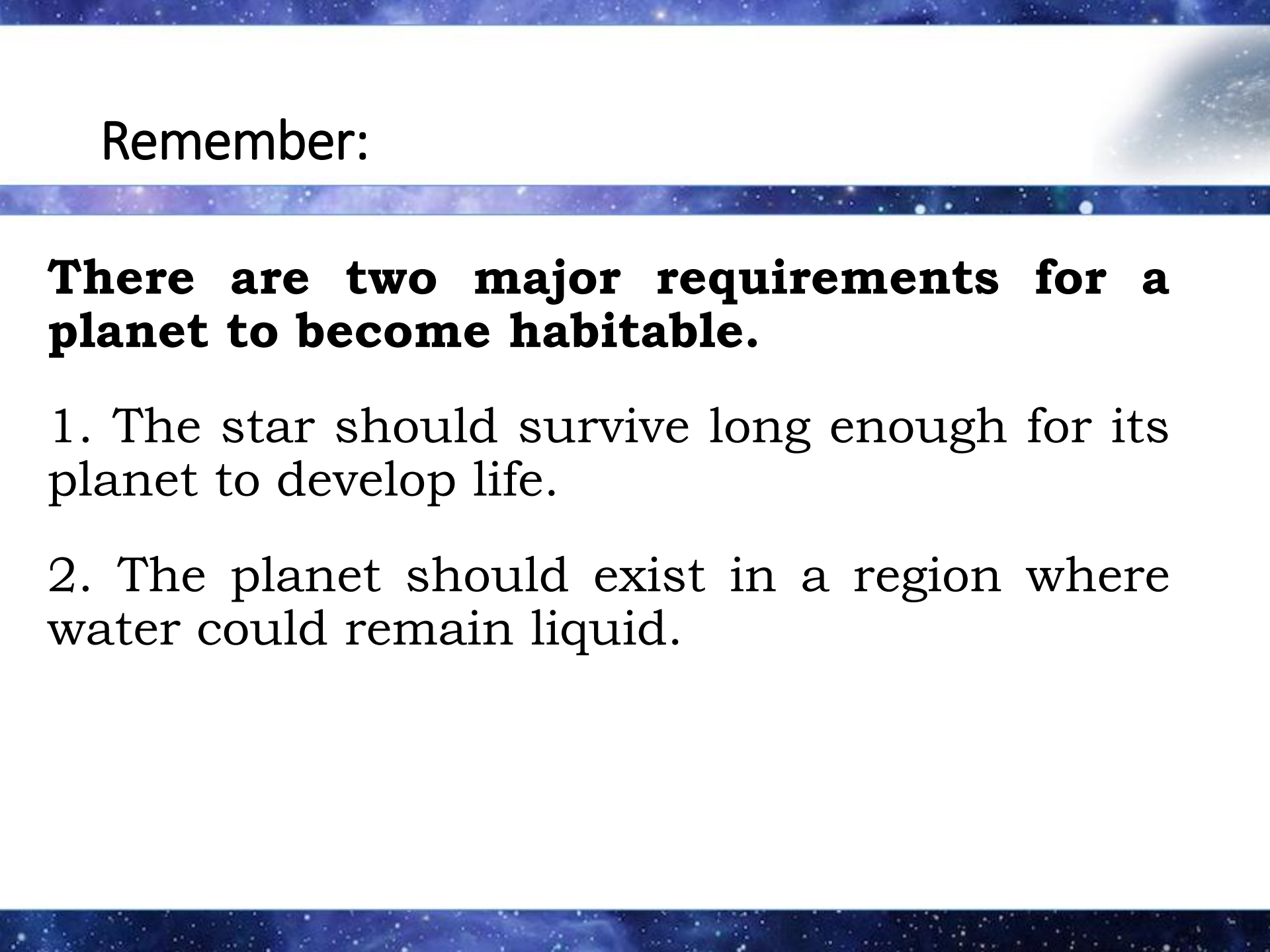


EARTH SUPPORT LIFE

The **Solar System**, is composed of the **sun** and **the eight planets** revolving around it. Among the eight planets, only one can support life: **EARTH**.



*But how come Earth can
support life while the other
planets cannot?*



Remember:

There are two major requirements for a planet to become habitable.

1. The star should survive long enough for its planet to develop life.
2. The planet should exist in a region where water could remain liquid.

1. The star should survive long enough for its planet to develop life

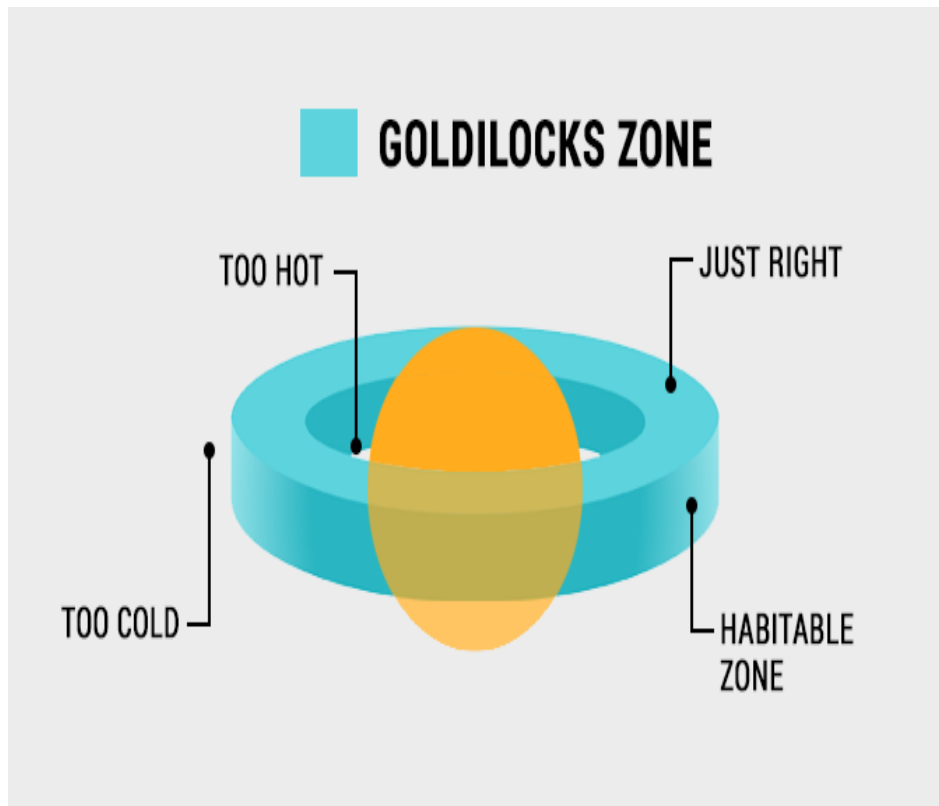
- The first requirement indicates that massive stars would have the least possibility of being habitable since they can only live for a relatively short period.
- Compared to medium-mass stars, such as the sun, which can survive long enough for life to develop



2. The planet should exist in a region where water could remain liquid

- The second requirement entails that the planet must be located in the Goldilocks Zone.
- Goldilocks zone maintain heat and cold that is tolerable.
- Excessive heat can damage every organisms life.

The planet should exist in a region where water could remain liquid



The planet should exist in a region where water could remain liquid

- For the inner planets, **Mercury** and **Venus**, since they are too close, the energy received from the sun is **too much**, contributing to the increase in temperature of their surfaces.
- For the outer planets, such as **Mars**, **Jupiter**, **Saturn**, **Uranus** and **Neptune**, their distances from the Sun are so far that the energy they receive is very little, making these planets very cold.

The Jovian Planets

Jupiter, Saturn, Uranus, Neptune



JOVIAN PLANETS

JOVIAN PLANETS

- The Jovian Planets, on the other hand, are mainly **composed of gases**. Therefore there is **no land** where organisms can live.
- With these features, it can be seen how Earth is the only planet compatible with life





The capability of early Earth to sustain liquid water dramatically increased the possibility of life.