

OCEAN WORLDS

Earth isn't the only ocean world in our solar system. Oceans could exist in diverse forms on moons and dwarf planets, offering clues in the quest to discover life beyond our home planet.

The worlds shown here represent the best known candidates in our search for life in the solar system—because where there is water, there is the potential for life. As you dive in, take note of each body's ocean world status and its potential to sustain life as we know it.





SIZE COMPARISON

1 AU

 DISTANCE FROM SUN

ACTIVE

 Dynamic ocean, known to support life

OCEAN WORLD STATUS

TERRESTRIAL PLANET

EARTH

Our home planet, Earth, is the only body known to have life. Called the "ocean planet", Earth's surface land-to-water ratio is 29% land to 71% water.



MOON OF JUPITER

EUROPA

Scientists strongly suspect that a subsurface salty ocean lies beneath Europa's icy crust. Tidal heating from its parent planet, Jupiter, maintains this ocean's liquid state and could also create partially melted pockets, or lakes, throughout the moon's outer shell.



SIZE COMPARISON

5.2 AU

 DISTANCE FROM SUN

LOCKED

 Trapped ocean, unlikely to support life

OCEAN WORLD STATUS

MOON OF JUPITER

GANYMEDE

Ganymede is the largest moon in our solar system, and the only moon with its own magnetic field. Recent studies indicate a large, underground saltwater ocean is present at the Jovian moon. Ganymede could in fact have several layers of ice and water sandwiched between its crust and core.



MOON OF JUPITER

CALLISTO

Callisto's cratered surface lies at the top of an ice layer, which is estimated to be about 60 miles (100 km) thick. An ocean, which is thought to be at least 6 miles (10 km) deep, could be directly beneath the ice.



SIZE COMPARISON

9.5 AU

 DISTANCE FROM SUN

ACTIVE

 Dynamic ocean, could support life

OCEAN WORLD STATUS

MOON OF SATURN

ENCELADUS

Scientists predict that a regional reservoir about 6 miles (10 km) deep lies under a shell of ice 20 to 25 miles (30 to 40 km) thick at Enceladus' south pole. This underground ocean is thought to feed the moon's impressive jets, which spray from deep fissures (called "tiger stripes") in the moon's surface.



MOON OF SATURN

TITAN

Titan is believed to have a salty subsurface ocean—as salty as the Dead Sea on Earth—beginning about 30 miles (50 km) below its ice shell. It is also possible that Titan's ocean is thin and sandwiched between layers of ice, or is thick and extends all the way down to the moon's rocky interior.



SIZE COMPARISON

5.2 AU

 DISTANCE FROM SUN

ACTIVE?

 Possibly a dynamic ocean, could support life

OCEAN WORLD STATUS





SIZE COMPARISON

5.2 AU

 DISTANCE FROM SUN

LOCKED

 Trapped ocean, unlikely to support life

OCEAN WORLD STATUS





SIZE COMPARISON

9.5 AU

 DISTANCE FROM SUN

LOCKED?

 May have a trapped ocean, unlikely to support life if ocean is trapped

OCEAN WORLD STATUS