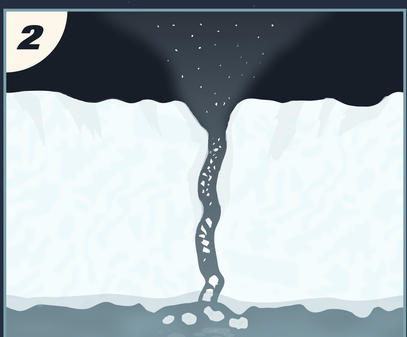
8 REAL WORLD SCIENCE FACTS: ENCELADUS

Enceladus is a small ocean world covered in ice — one of more than 60 confirmed moons orbiting Saturn. It's 25 times smaller than Earth and almost 10 times as far from the sun, yet in recent years, it's given scientists many reasons to think it should be the next target in our search for worlds where extraterrestrial life could exist. So what has scientists so stoked about Enceladus? Here are some of the most intriguing findings scientists have made about Enceladus using data from NASA's Cassini spacecraft at Saturn.

1 YOUNG AND RESTLESS

A highly active world with surfaces that are still in their adolescence (less than 100 million years old), Enceladus may have big surprises in store the further we explore.

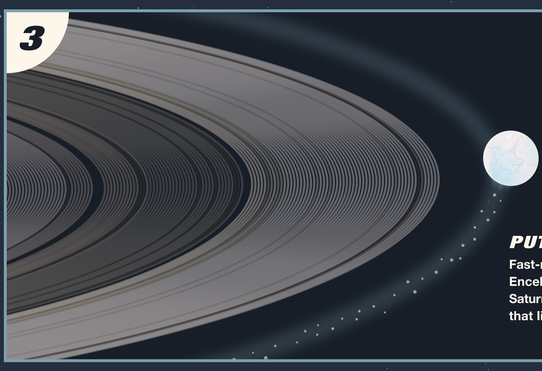
2



INSIDES ERUPTING OUT

Jets of water vapor and ice particles erupt from Enceladus' underground ocean through deep icy crevasses called Tiger Stripes near the moon's south pole, providing clues about its inner-workings.

3



PUTTING A RING ON SATURN

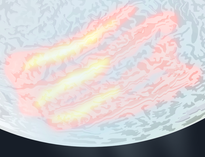
Fast-moving ice particles escaping from Enceladus' jets feed and replenish one of Saturn's rings, called the E ring — a faint halo that lies beyond the brighter main rings.

4 SLIPPING AND SLIDING

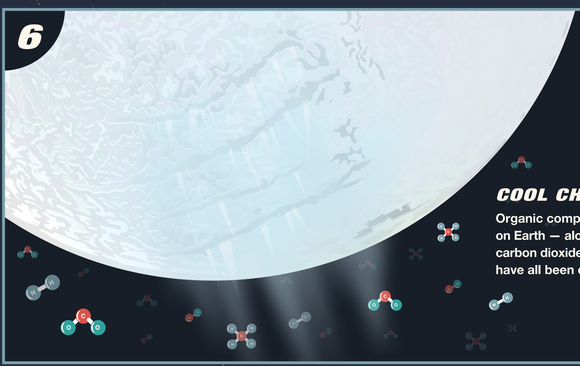
The icy, cracked terrain stretching across Enceladus' active south pole is in constant motion, stretching in some places and buckling in others as the cracks pinch and pull from gravitational forces.

5 TOO HOT TO HANDLE

An unusual amount of heat emanates from Enceladus' south polar region in the same areas where jets spray from massive cracks. The moon's ability to generate so much internal heat remains a mystery, but it bodes well for habitability.



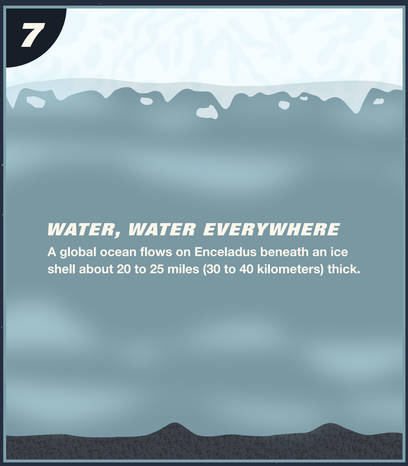
6



COOL CHEMISTRY

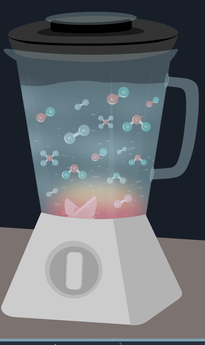
Organic compounds — the building blocks of life on Earth — along with volatile gases, water vapor, carbon dioxide, carbon monoxide, salts and silica have all been detected in Enceladus' plume.

7



WATER, WATER EVERYWHERE

A global ocean flows on Enceladus beneath an ice shell about 20 to 25 miles (30 to 40 kilometers) thick.

8 INGREDIENTS FOR LIFE

With its global ocean, unique chemistry and internal heat, Enceladus has become a promising lead in our search for worlds where life could exist.