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Rocky Planets vs Giant Planets

Four small, solid worlds near the Sun and four huge worlds of gas and fluid farther out. Here is how they differ.

Rocky planets	Giant planets
WHICH PLANETS	
Mercury, Venus, Earth and Mars, also called the terrestrial planets	Gas giants Jupiter and Saturn; ice giants Uranus and Neptune
WHERE THEY ORBIT	
Inner Solar System, inside the asteroid belt: within about 1.5 AU of the Sun	Outer Solar System, beyond the asteroid belt: from about 5 AU to 30 AU
SIZE	
Small. Earth is the largest at 12,756 km across	Huge. Even Neptune, the smallest, is almost 4 times wider than Earth
MADE OF	
Rock and metal, with an iron-rich core. Dense: 3,900 to 5,500 kg/m³	Mostly hydrogen and helium, or water, methane and ammonia. Low density: 690 to 1,640 kg/m³
SURFACE	
Solid crust you could stand on, with craters, mountains and volcanoes	No solid surface. Gas gets thicker and hotter with depth until it acts like a liquid
MOONS AND RINGS	
Only 3 moons between them (Earth 1, Mars 2) and no rings	Over 450 known moons between them, and every one has rings

Gas giant or ice giant?

Jupiter and Saturn are mostly hydrogen and helium. Uranus and Neptune are smaller, and 80% or more of their mass is 'icy' water, methane and ammonia, as a hot, dense fluid around a rocky core.

NEXT IN THE SERIES
4. Moons, Dwarf Planets, Asteroids and Comets

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