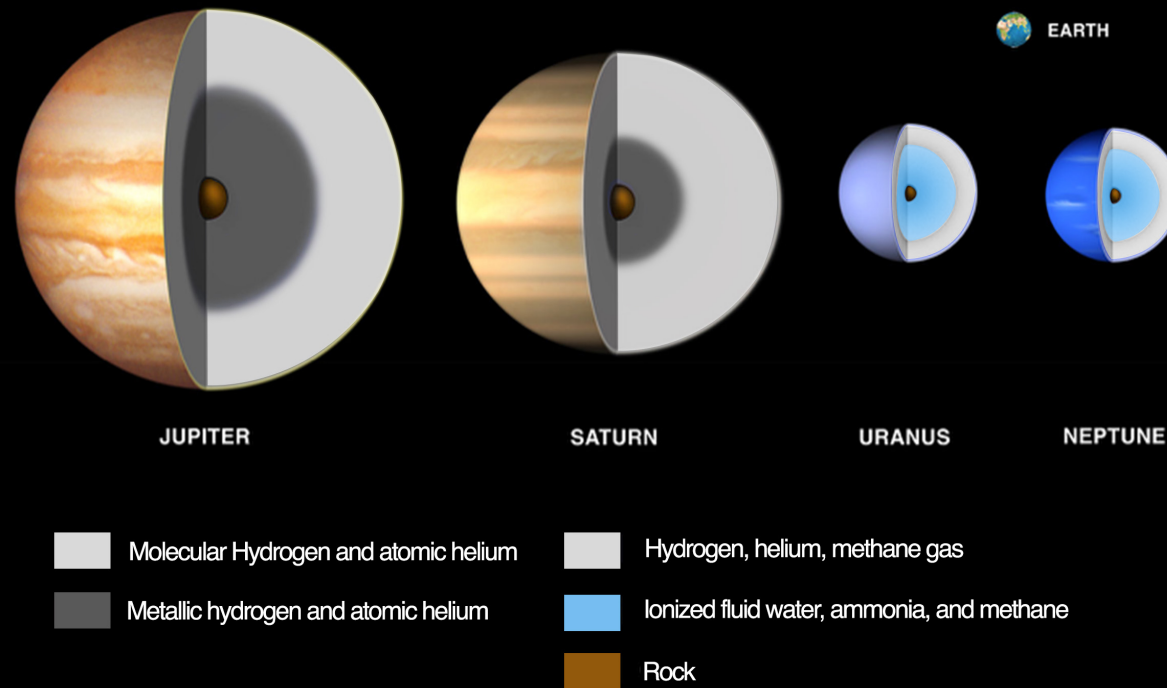


# Uranus and Neptune: Poorly Understood Planets



Current models of planet formation do not sufficiently explain Ice Giants, and there are many surprising features of these Outer Solar System planets.

- Formation of rocky planets like Earth or gas planets like Jupiter is well understood, but the Ice Giants, Uranus and Neptune, are different.

*Hofstadter et al., (2019) Plan. Sp. Sci.*

- The Ice Giants are thought to be 2/3 water and are large enough that they should have trapped huge amounts of Hydrogen and Helium as well. How they avoided becoming Gas Giants like Jupiter and Saturn is unclear.
- Models of solar system formation predict Ice Giants should be rare, but our star has two of them, and they are common around other stars as well.
- Additionally, their magnetic fields are strangely complex, their rings are different than those around Jupiter or Saturn, and some of their satellites are geologically active.