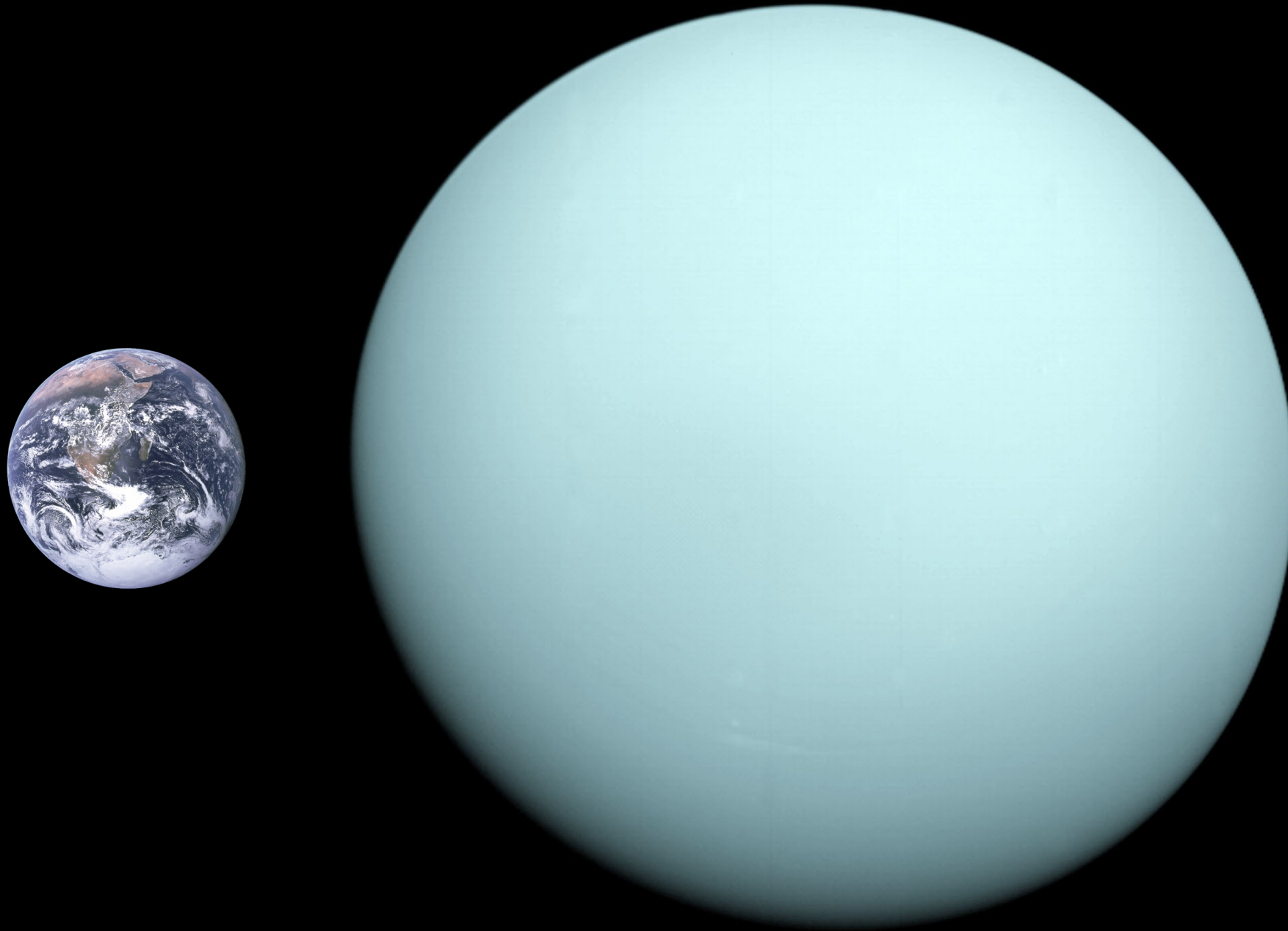
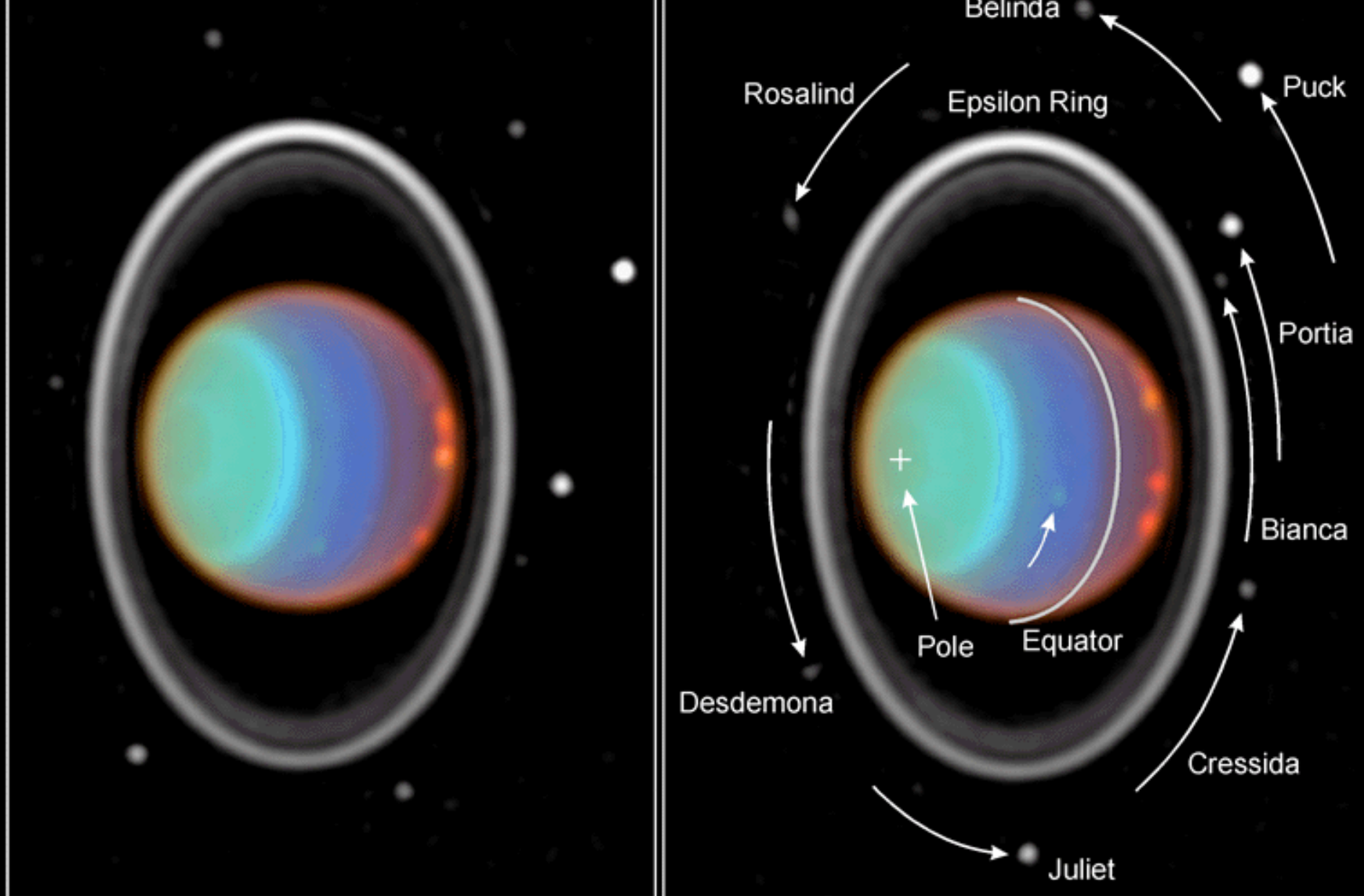




Uranus is the seventh planet from the Sun. It has the third-largest planetary radius and fourth-largest planetary mass in the Solar System. Uranus is similar in composition to Neptune, and both have different bulk chemical composition from that of the larger gas giants Jupiter and Saturn. For this reason, scientists often classify Uranus and Neptune as "ice giants" to distinguish them from the gas giants.



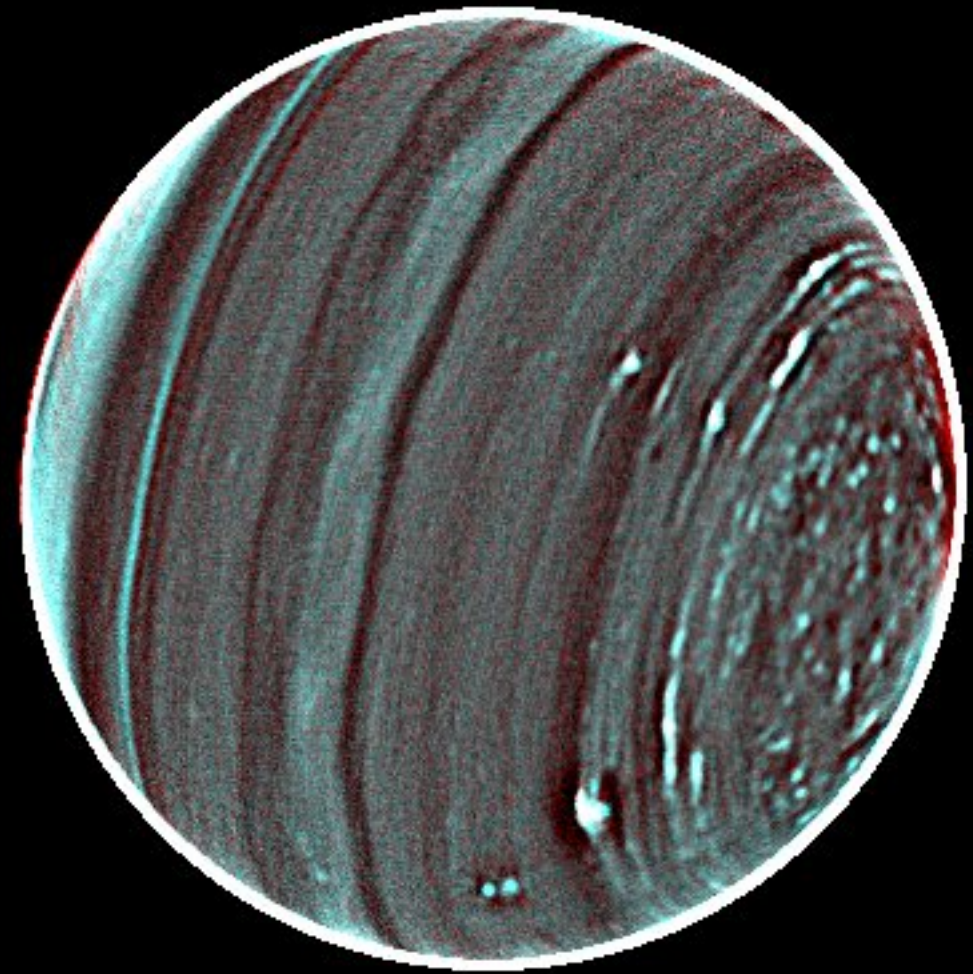
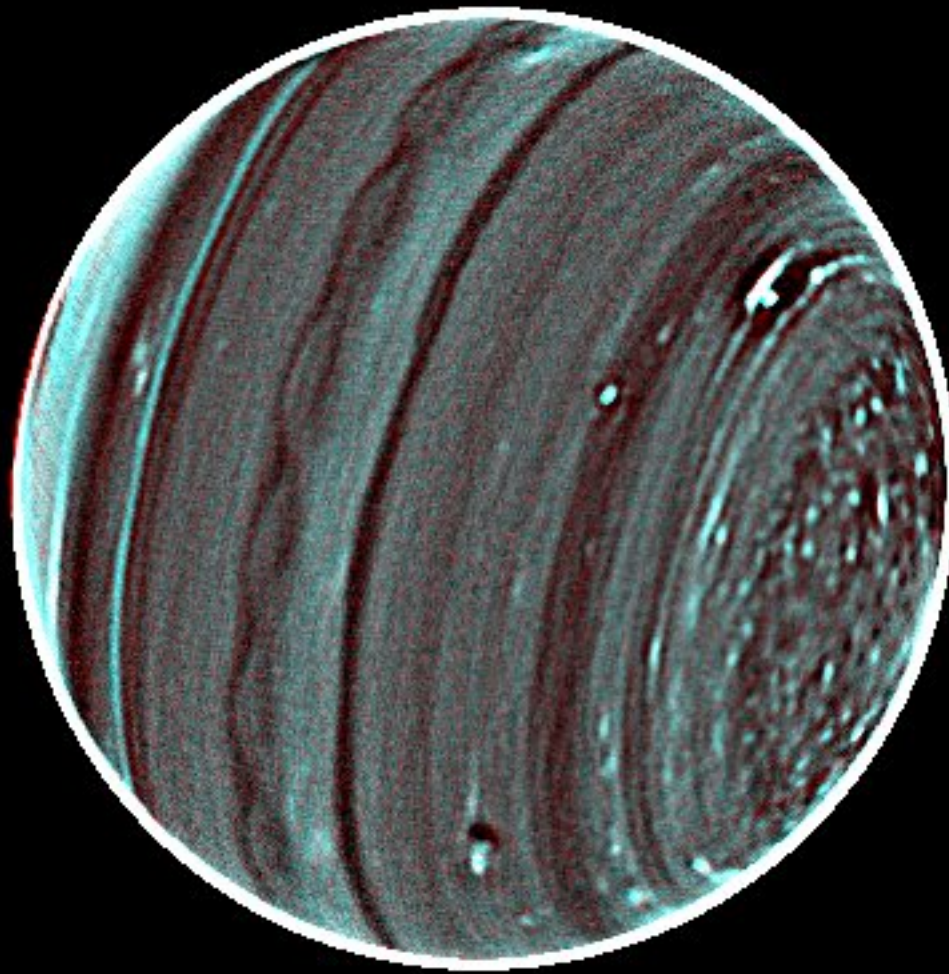
Uranus • July 28, 1997

PRC97-36a • November 20, 1997 • ST ScI OPO

E. Karkoschka (University of Arizona Lunar & Planetary Lab) and NASA

HST • NICMOS

Uranus orbits the Sun once every 84 years. Its average distance from the Sun is roughly 20 AU (3 billion km; 2 billion mi). The difference between its minimum and maximum distance from the Sun is 1.8 AU, larger than that of any other planet, though not as large as that of dwarf planet Pluto. The intensity of sunlight varies inversely with the square of distance, and so on Uranus (at about 20 times the distance from the Sun compared to Earth) it is about 1/400 the intensity of light on Earth. The rotational period of the interior of Uranus is 17 hours, 14 minutes.

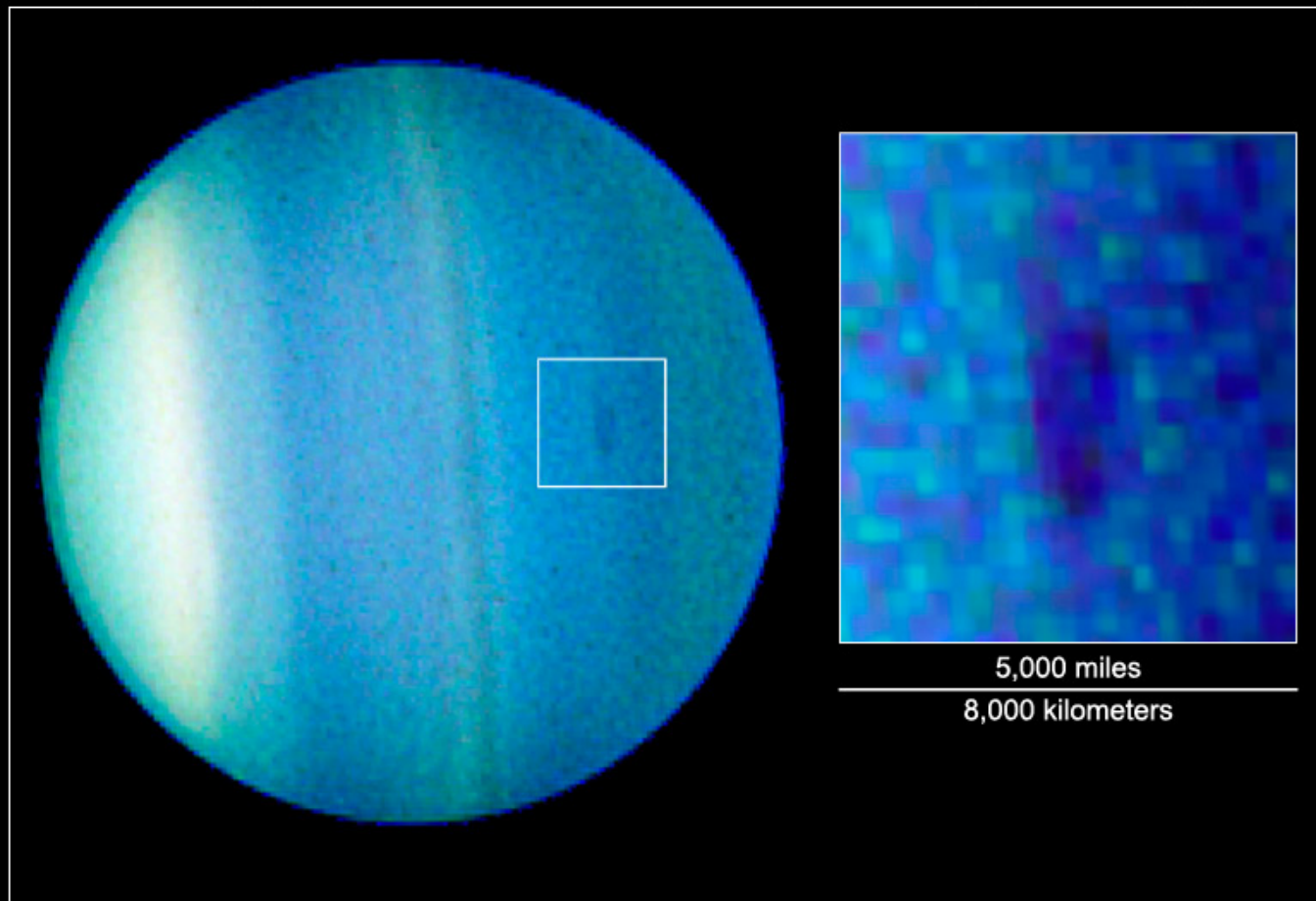


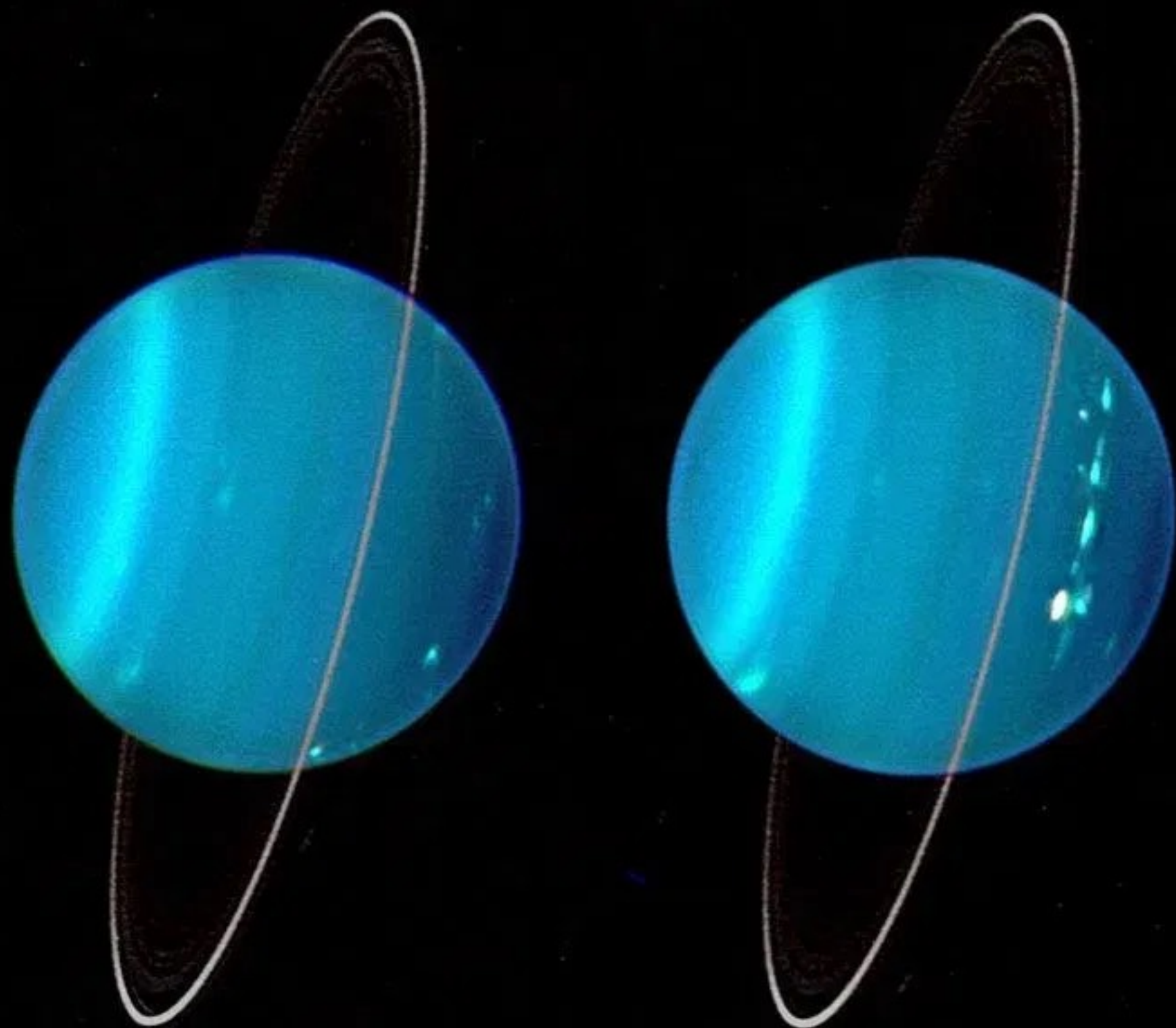
SMWD= 9 RED RANGE= -7 15 BG RANGE= -12 24

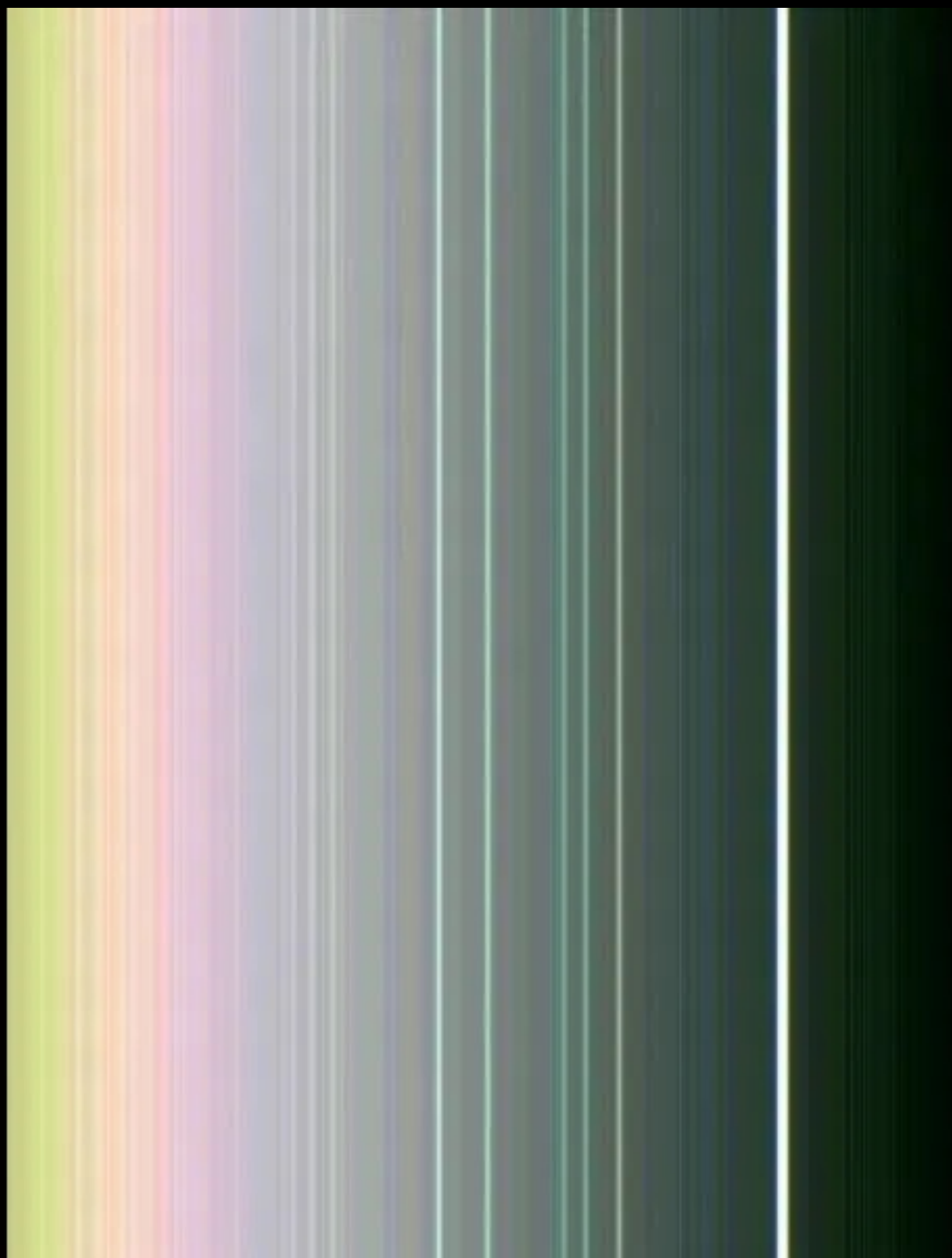
The atmosphere of Uranus is composed of 83% hydrogen, 15% helium, 2% methane and small amounts of acetylene and other hydrocarbons. Methane in the upper atmosphere absorbs red light, giving Uranus its blue-green color. In the inner Jovian worlds (Jupiter and Saturn), ammonium hydrosulfide dominates the coloration of atmospheres with its red's and yellows. But as the temperature drops below 70 K, ammonia gas freezes into ice crystals and drops out of the atmosphere. Methane becomes more dominate and, being a blue gas, the outer Jovian worlds (Uranus and Neptune) go from blue-green to deep blue in their coloration. Note also that methane, CH₄ is a greenhouse gas.

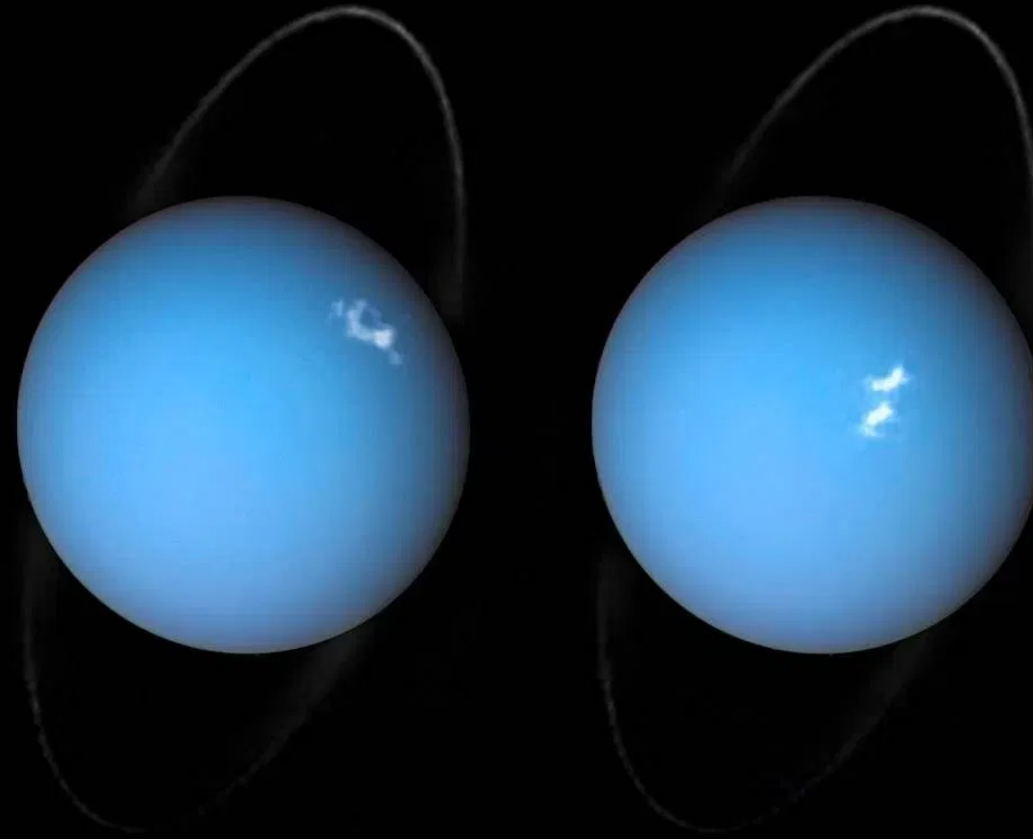
Uranus Dark Spot

Hubble Space Telescope ■ ACS

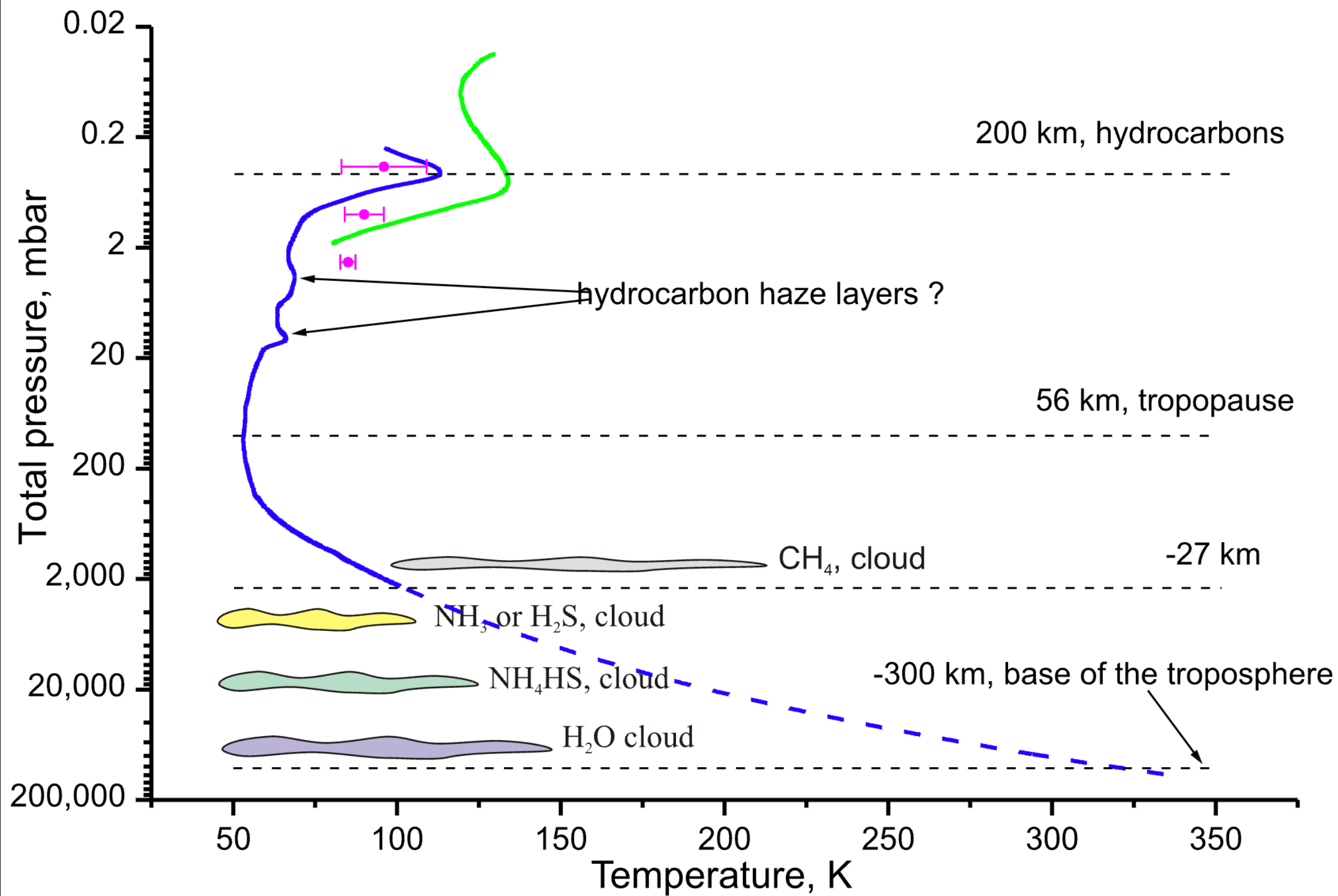


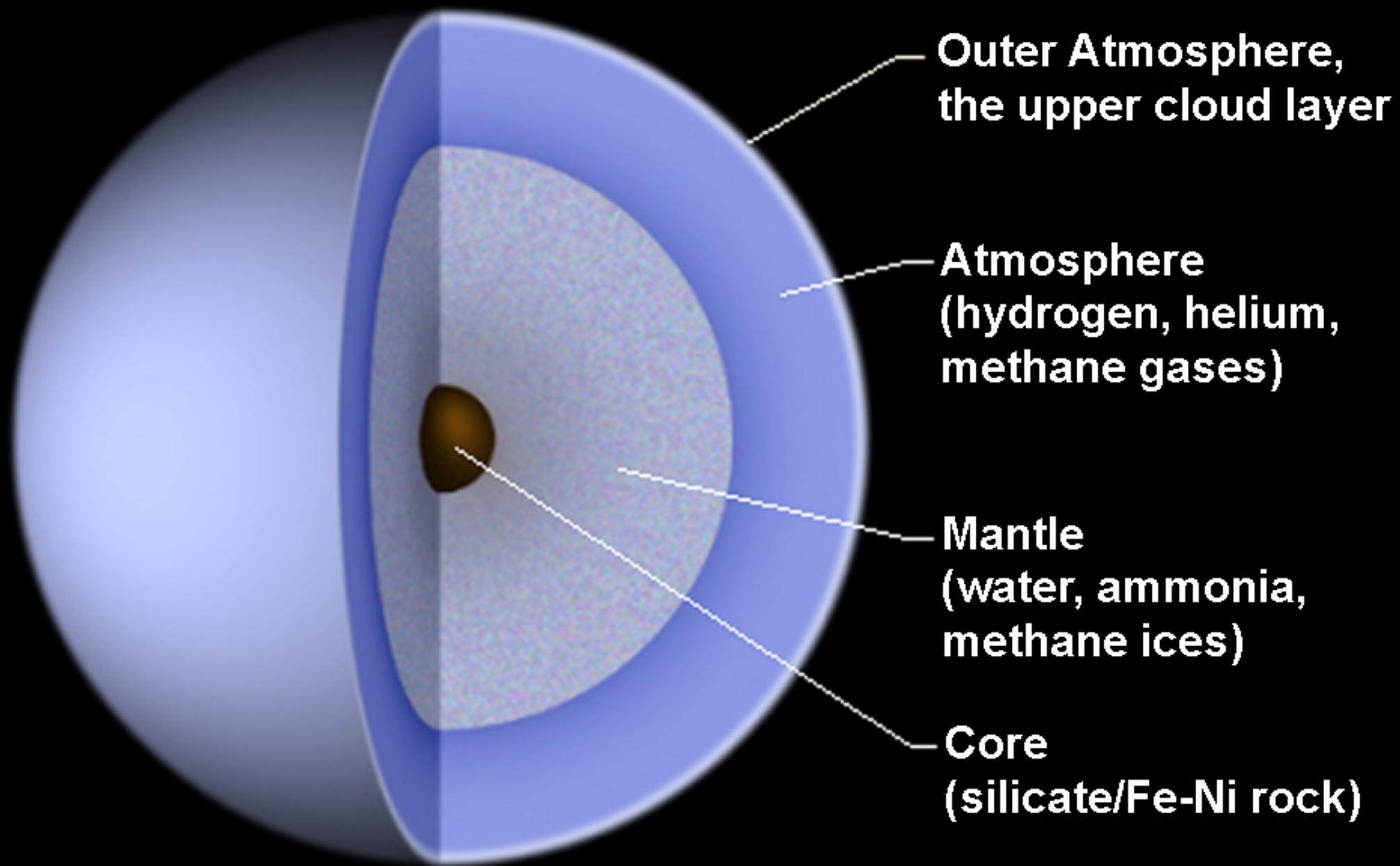


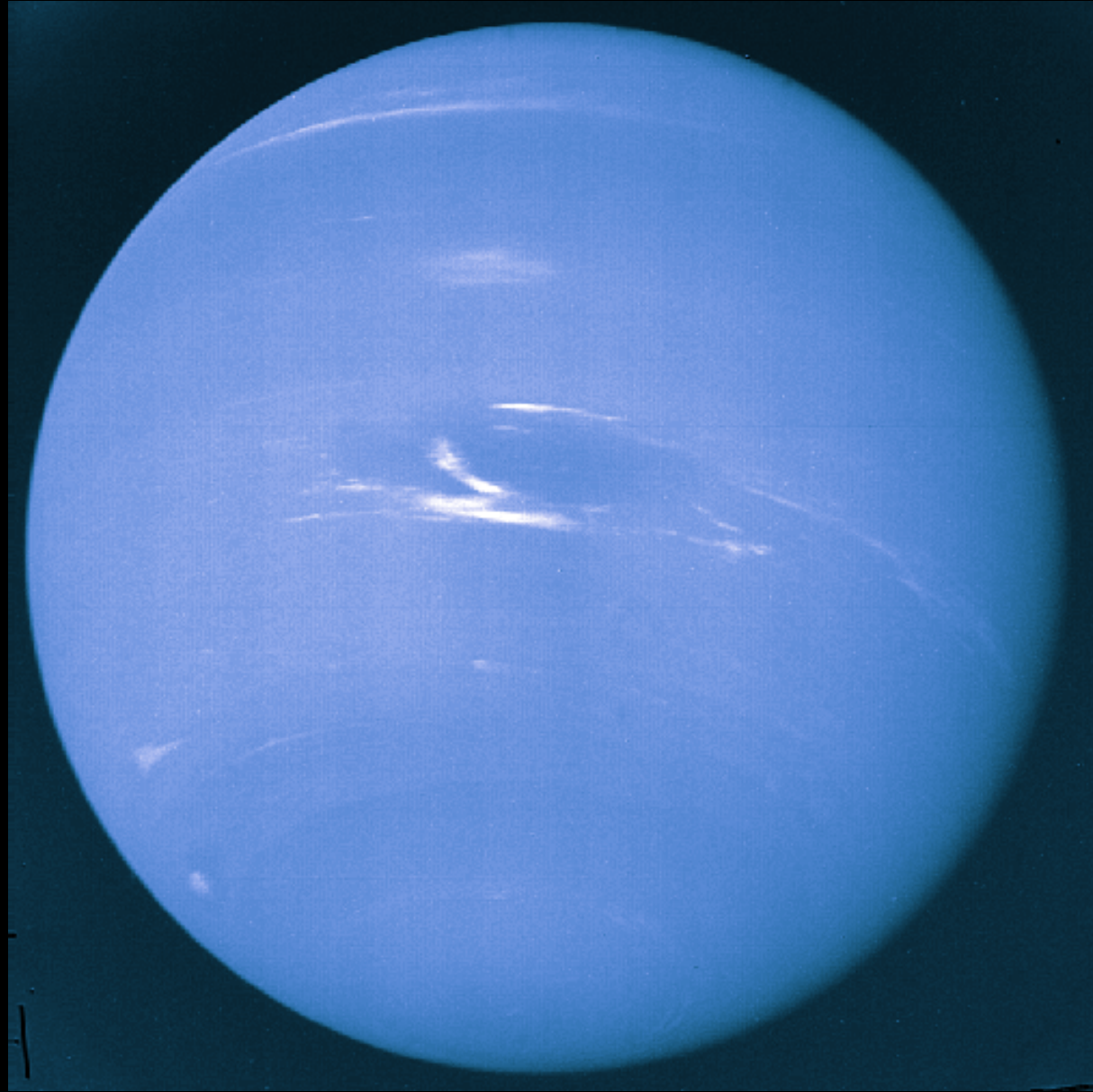




In 2011, the NASA/ESA Hubble Space Telescope became the first Earth-based telescope to snap an image of the aurorae on Uranus.

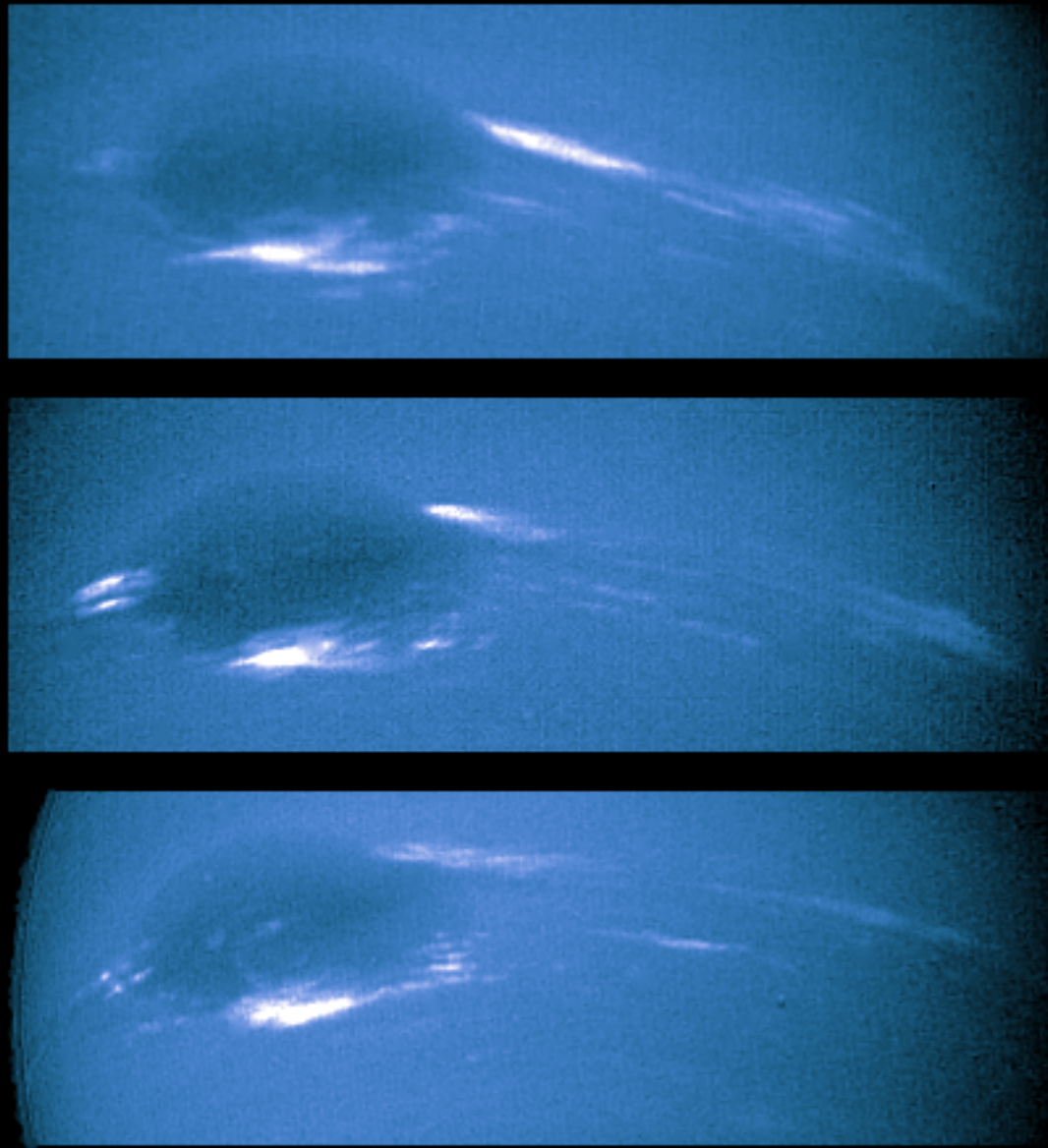


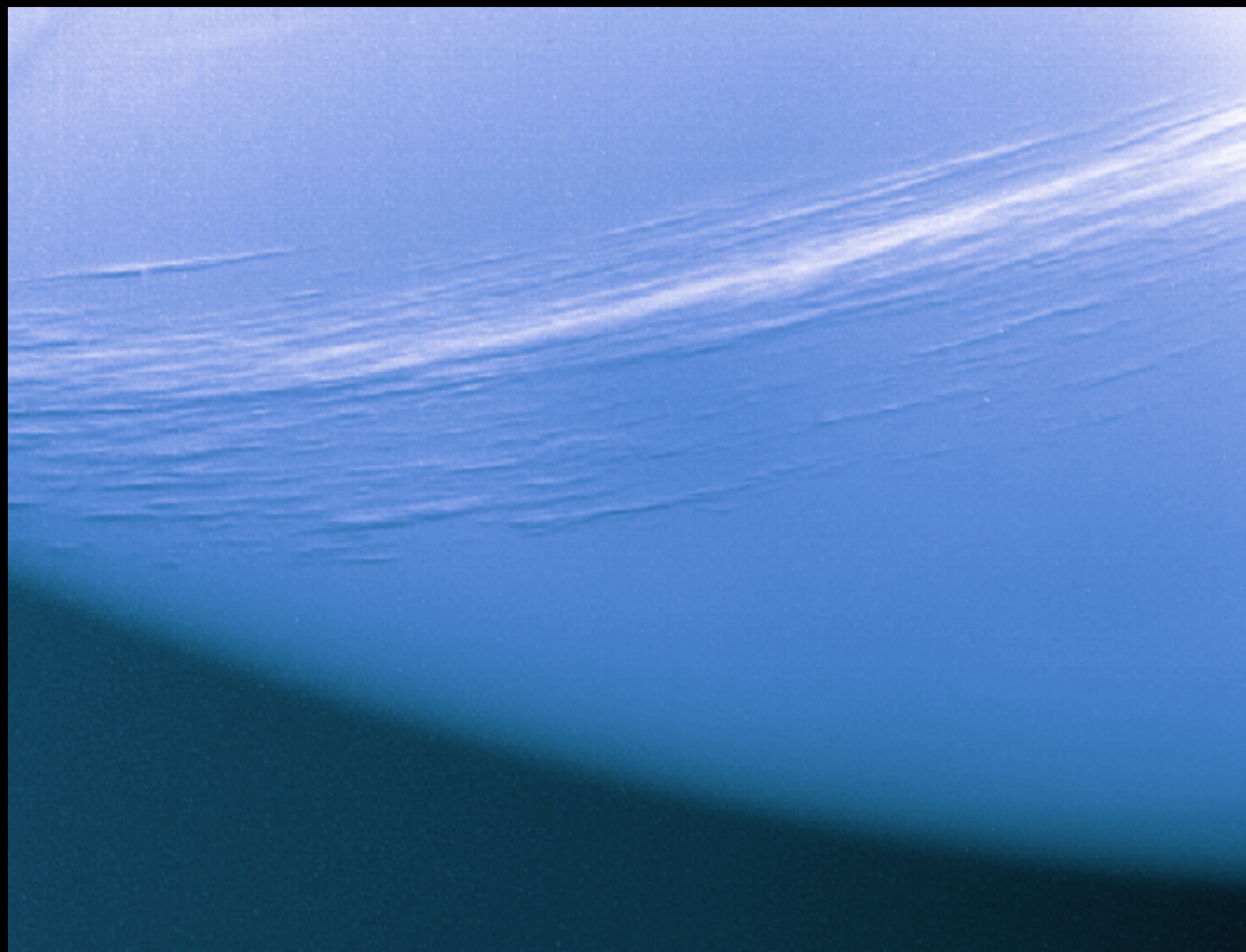




Neptune is the eighth and farthest known planet from the Sun in the Solar System. In the Solar System, it is the fourth-largest planet by diameter, the third-most-massive planet, and the densest giant planet. Neptune is 17 times the mass of Earth and is slightly more massive than its near-twin Uranus, which is 15 times the mass of Earth and slightly larger than Neptune.

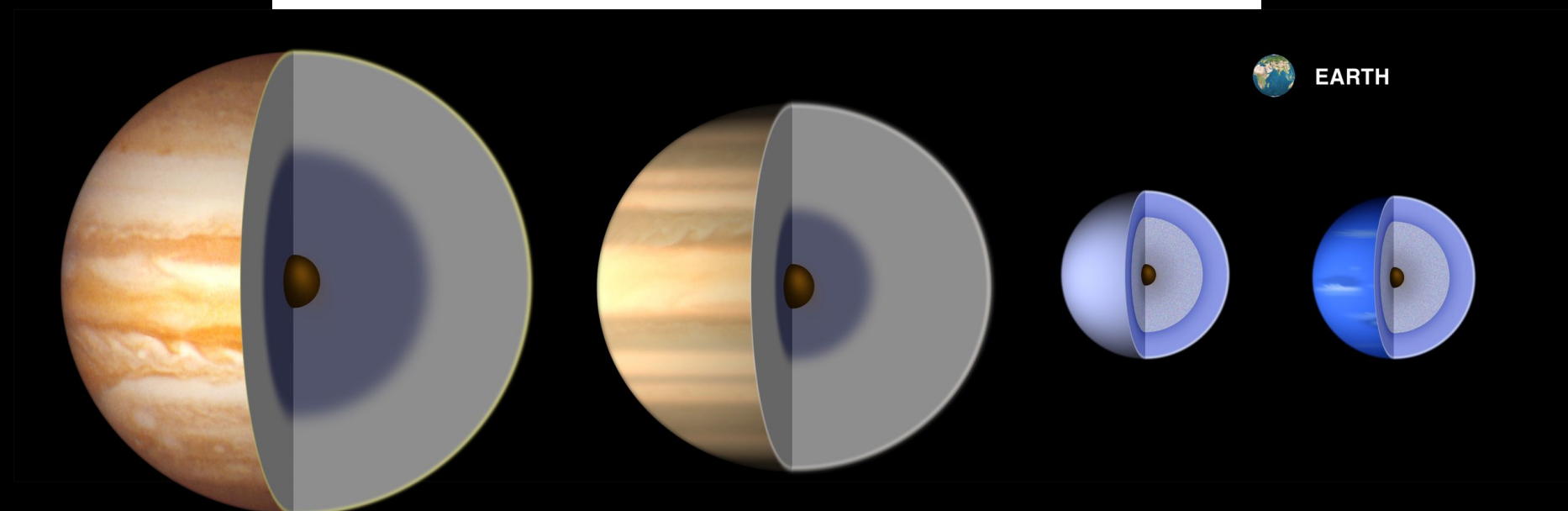
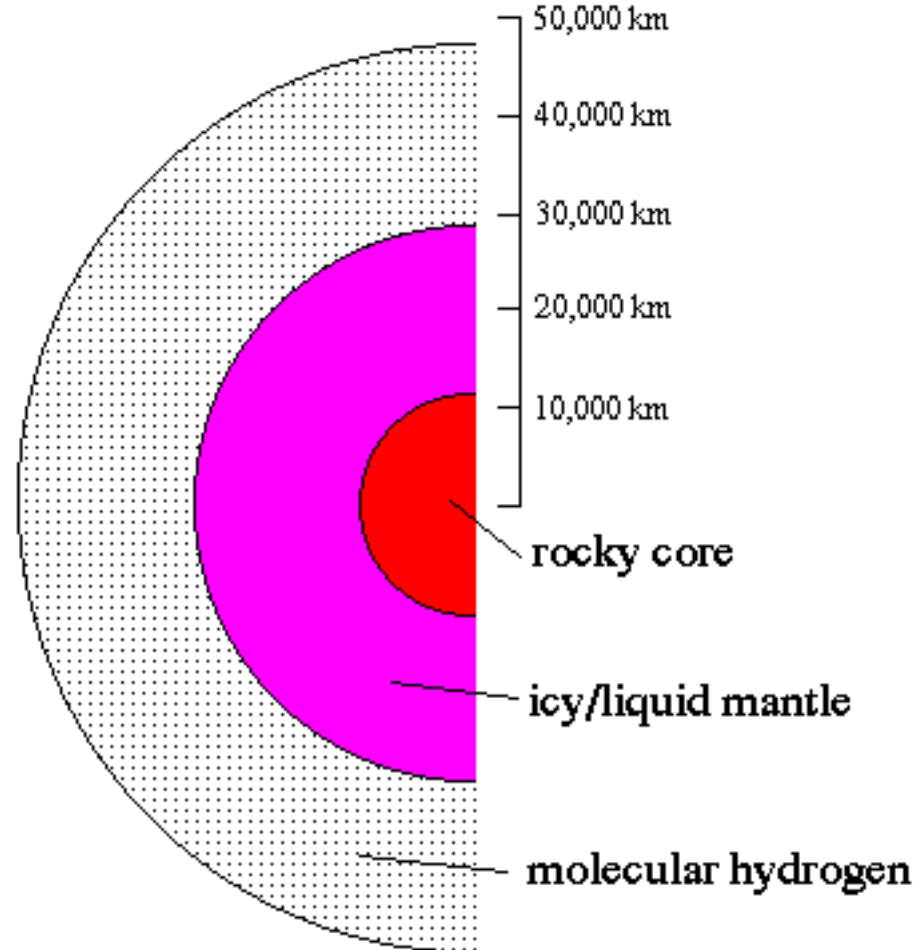
Unlike Uranus with its lack of atmospheric features, Neptune is a dynamic planet with several large, dark spots reminiscent of Jupiter's hurricane-like storms. The largest spot, known as the Great Dark Spot, is about the size of the earth and is similar to the Great Red Spot on Jupiter.





Long bright clouds, similar to cirrus clouds on Earth, were seen high in Neptune's atmosphere. At low northern latitudes, Voyager captured images of cloud streaks casting their shadows on cloud decks below.

The strongest winds on any planet were measured on Neptune. Most of the winds there blow westward, opposite to the rotation of the planet. Near the Great Dark Spot, winds blow up to 1,200 miles an hour.



JUPITER

SATURN

URANUS

NEPTUNE

 Molecular hydrogen
 Metallic hydrogen

 Hydrogen, helium, methane gas
 Mantle (water, ammonia, methane ices)
 Core (rock, ice)

Magnetic and Rotational Axis for Jovian worlds

