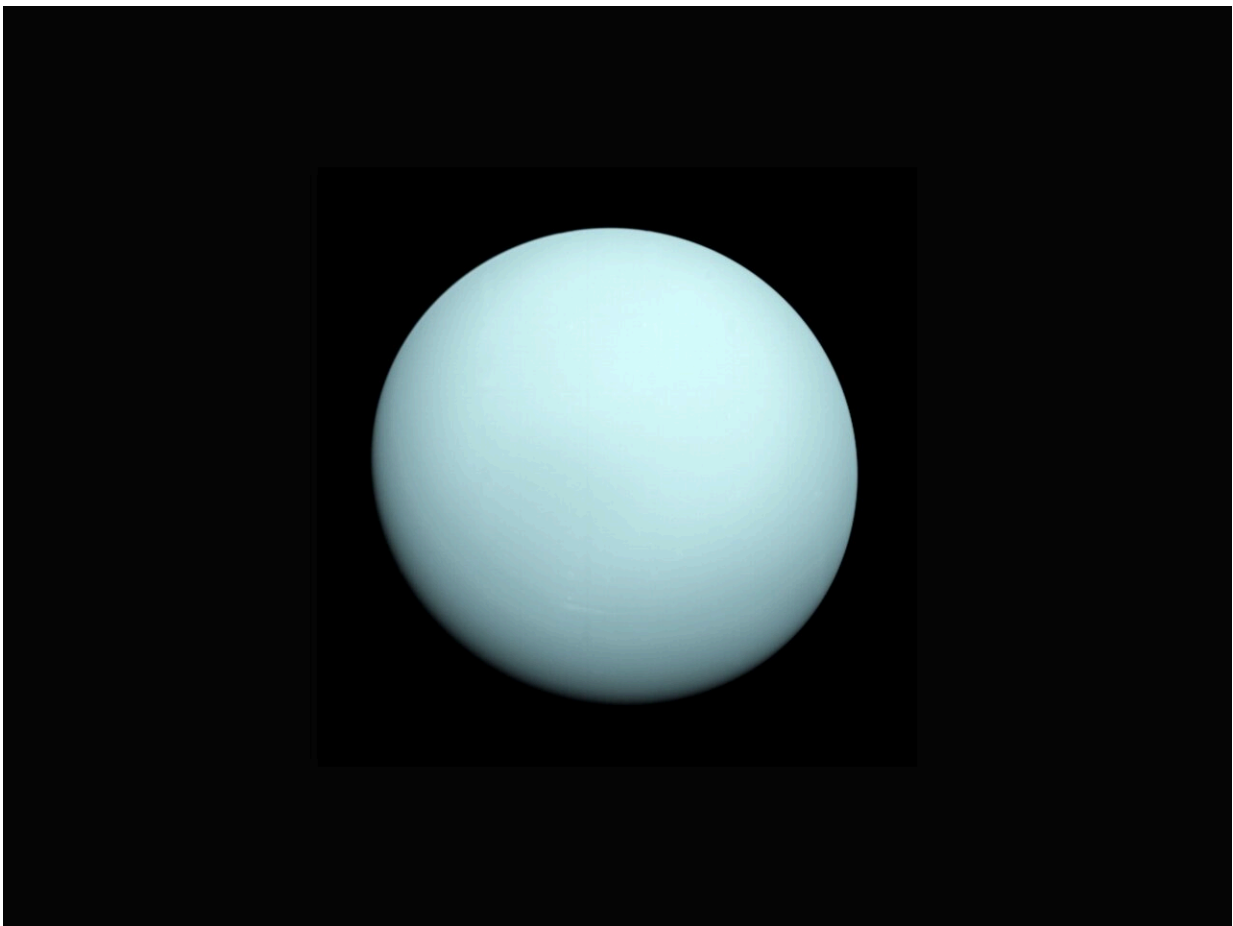


Planetary scientist lays out arguments for sending a dedicated probe to Uranus (Update)

February 17 2023, by Bob Yirka



Uranus as seen by Voyager 2. Credit: Unsplash/CC0 Public Domain

Kathleen Mandt, a planetary scientist at Johns Hopkins University's Applied Physics Laboratory has published a Perspectives piece in the journal *Science* arguing that NASA should send a dedicated probe to the planet Uranus. She notes that a window is opening in 2032 for the launch of such a probe.

Planetary scientists have spent far more time studying Mars than they have other planets, partly due to its [close proximity](#) and partly due to the fact that Mars has a surface upon which craft can land. Planets that have thick atmospheres, on the other hand, are more difficult to study, especially if they provide no place to land.

Still, Mandt argues, such research is important. And initiating the development of a [probe](#) to study Uranus, she adds, would be a good start. She further notes that now would be a good time to begin such plans because the next good window for launching a Uranus probe would be in 2032, when Jupiter's alignment with Earth will allow a slingshot maneuver toward Uranus. She even suggests a name for the probe: the Uranus Orbiter and Probe (UOP).

Uranus is considered to be the odd duck of the solar system because of its 90-degree tilt relative to its orbit path—its tilt gives it the appearance of rolling along a plane. The tilt also gives the planet extreme seasonal variation as it circles the sun once every 84 years. And it makes observations from Earth cloudy and hazy, which is not very conducive to research efforts. Only one craft has ever ventured to Uranus—Voyager II, back in 1986—and it only flew by on its way to Neptune.

Uranus is considered an ice giant because of the two [heavy elements](#) that make up the bulk of its atmosphere: helium and hydrogen. It also has 27 moons that circle the planet, following its odd tilt. Uranus also has what Mandt describes as "strange rings."

She also notes that not much else is known about the planet, which is why NASA needs to place a probe into permanent orbit around it. The probe would reveal the true nature of the planet's atmosphere, determine if its core is made of rock or ice, and perhaps explain how it came to have such a strange tilt. It also might help in efforts aimed at learning how ice giants form.

More information: Kathleen E. Mandt, The first dedicated ice giants mission, *Science* (2023). [DOI: 10.1126/science.ade8446](https://doi.org/10.1126/science.ade8446)

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