

Offered Title: Ultima Thule is Far Out-The Perseids are Far In

On January 1, 2019 our New Horizons space craft flew past Ultima Thule (pronounced Ultima Too-lee), the most distant object a space probe has visited. It really is far out, about a billion miles beyond Pluto.

When New Horizons paid a visit to Pluto way back in 2015 it was eye opening. Leave it to lowly Pluto to turn the astronomy world upside down. Pluto, and its biggest satellite Charon have proven to be big time exciting with the discovery of tholins, large deposits of tholins on both. OK, so what's the big deal? Tholins are hydrocarbons that can be configured into amino acids. Amino acids are building blocks of proteins, the machinery of living things.

Guess what, Ultima Thule is also laden with tholins.

Taking a couple of steps back, we're talking about far out objects. Pluto is at the outer edge of our planetary system, and the inner edge of what we call the Kuyper Belt. The Kuyper Belt is loaded with objects, some of which are large enough to be spheroid but still small, like Pluto. It's like another solar system outside the planet's realm. It's very dim and very cold (-397 degrees F) where Ultima Thule calls home. It is a Kuyper Belt Object (KBO). That's what makes them so interesting, they're so far out and cold, yet contain abundant organics. Oh, yes, and water ice. On Earth, where there's water in any form, there's life. But Ultima Thule is not Earth of course.

Ultima Thule is a lobed object, about 22 miles long. It appears to have been formed by two KBOs slowly merging and getting stuck to each other, called a contact binary. The larger piece is named Ultima, and the smaller one Thule. The smaller is shaped like a walnut, the larger is more flattened, like a thick pancake. The two pieces are connected at a narrow neck and the whole thing rotates once every 16 hours. Because of the tholins present, it is brownish-red in color.

The Perseid meteor shower is coming! Unfortunately, there will be a bright Moon interfering. The upside is the Perseids are known to produce very bright meteors, called fireballs. They can be brilliant. If we're lucky it will produce a bolide or three. Bolides are fireballs that explode in the upper atmosphere. Fireworks!

The Perseid shower originates from comet Swift-Tuttle, co-discovered in July 1862 by Lewis Swift and Parnell Tuttle. Comet Swift-Tuttle is a periodic comet, returning about every 133 years, its next apparition will be August 24, 2126. Don't wait up. Like most meteor showers, the Perseids is the result of our Earth slamming into the comet's tail remnants. It's composed of debris such as ice, dust, pebbles and stones. It's called the Perseids because its meteors appear to originate from the constellation Perseus.

What's in the Sky?

August 12-13; late night into dawn; north-northeast: The Perseid Meteor Shower