What's up in Astronomy By Eric Erickson

Offered Title: Goodbye Cassini

Cassini (Cassini-Huygens) Launched on October 15, 1997…what were you doing then? What was I doing then? I sure don't remember; not sure I want to know.

By the time you read this article the Cassini spacecraft will have taken a death dive into the most beautiful planet in our solar system…Saturn. Unless it's final hurrah is delayed Cassini will enter Saturn's atmosphere on September 15, 2017, burning up, spreading its molecules in Saturn's cloud decks. Not going down without a purpose, Cassini will be collecting and sending data until the end. NASA and the ESA (European Space Agency) have a way of squeezing everything out of a mission.

Cassini's mission was to collect every bit of data possible about Saturn, her rings, moons, and on arrival on July 1, 2004 started a 13-year binge. Oh, by the way, Cassini's mission was planned to end after 4 years. The stuff it sent us was too good.

One of the highlights and a major mission plan was sending the ESA probe named Huygens through Titan's atmosphere, collecting data, then landing on/in some mushy stuff. Huygens took photo as it descended, giving us a look at the only other world in our solar system (that we know of) with surface lakes. Well, not the kind of lakes for waterskiing…hmmm, what would that be like? The lakes on Titan are mainly liquid methane, with other organic components such as propane and ethane. Imagine a methane rainstorm! Water is present in ice form and hard as rocks. The atmosphere of Titan is mostly nitrogen but has methane and other organic gases and when mixed with nitrogen and exposed to ultraviolet light from our Sun, form interesting organic compounds. These organic compounds are responsible for Titan's hazy atmosphere and some of the compounds are building blocks for prebiotics such as amino acids.

Cassini recorded so much…a few other highlights:

Iapetus, a distant moon, has a dark and bright white side. Not because of sunlight, because of composition. It also had a big equatorial ridge spanning its circumference.

Enceladus is a frozen water moon, kind of like Jupiter's Europa. Unlike Europa, Enceladus has widespread geysers of water and molecular hydrogen. Europa has few water plumes. Both moons appear to have subsurface oceans of briny water. What might be lurking in their depths?

And of course, there's Saturn. It's ring system is intricate and even looks delicate, but sharp as a razor seen from its edge. The rings are ice and rock, some held together by "shepherd moons", tiny moons in the rings that help keep the stuff from taking off. Cassini confirmed a reported spoke pattern in its rings. Saturn also has a hexagonal shaped cloud pattern at its north pole and no one knows why.

Goodbye Cassini.

What's in the Sky?

Early risers look to the east before dawn, again. September 18-20 has Venus, Regulus, a thin Moon, Mars, and Mercury lined up. Binoculars help.