

### Comets can be deceiving

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The comet is coming, the comet is coming. While in ancient days that may have served as a notice of impending doom, for us today it means we may be in for a spectacular showing of dark sky splendor put on by an icy visitor from the outer reaches of our solar system.

Comet C/2012 S1—or ISON for short—has been in the telescopic sights of astronomers since September 2012 when it was discovered on photographic plates by two Russian astronomers using the International Scientific Optical Network (ISON) of telescopes designed to hunt for asteroids.

A comet is basically an amalgamation of dirt, rock, ice, and frozen gasses; the leftover stuff after our solar system formed. Generally they reside in the outer regions of the solar system out beyond the orbit of Pluto in a place called the Oort Cloud.

These are generally long period comets whose orbits around the Sun take 200 years or more.

Short period comets with orbits of less than 200 years generally reside in a place called the Kuiper Belt located out beyond the orbit of Neptune.

Halley's Comet is probably the most famous short period comet with an orbit of 76 years. Its most recent visit was in 1986. It won't return until 2062

Another famous comet was Shoemaker-Levy 9 which broke up into 21 pieces and slammed into the surface of the planet Jupiter giving astronomers a different kind of spectacular show.

Another spectacular show associated with comets is a meteor shower.

Meteor showers happen when Earth's orbit takes it through the stream of the bits of stuff melted off of the icy nucleus of a comet. When these bits strike the upper atmosphere they cause a streak of light. These bits are no larger than a grain of sand or piece of gravel.

In early August we experienced one of the best meteor showers of the year—the Perseid shower—which was leftovers from Comet 109P/Swift-Tuttle. If it wasn't cloudy like it was here in Nebraska that is.

Because Comet ISON was so bright, so far out when it was discovered beyond the orbit of Jupiter, some people, who should have known better, started to call it the “comet of the century” expecting it to attain a brightness that could be visible even in daylight.

As with any comet, predictions of brightness are next to impossible because astronomers never really know what will happen to the comet on its way into the inner solar system to orbit around the Sun and then return to the outer regions.

One particularly notable such comet was Comet Kohoutek in 1973. It too was predicted to be a “Comet of the Century.” However, after rounding the Sun its brightness was far below what had been predicted.

Such may very well be the case with ISON. This too is its first trip around the Sun and some of the volatile gasses may be burned off a lot more quickly resulting in a dimmer comet.

At the end of August the comet became visible again after being behind the Sun. It was not as bright as it could have been so astronomers have toned down the "comet of the century" talk and are now taking a wait-and-see attitude.

On Sept. 1, ISON crossed the so-called "frost line." That place in space where the heat of the Sun will begin to affect the frozen matter in a comet. That is where the rubber will meet the road, to see if all the predictions for brightness will be fulfilled or fizzled.

SKY WATCH: New moon Sept. 8, and a four-day old moon very near bright Venus after sunset in the west; the next day a slightly thicker crescent moon near Saturn.

NEXT WEEK: More about ISON and more astronomical blathering.uttle. If it wasn't cloudy like it was here in Nebraska that is.