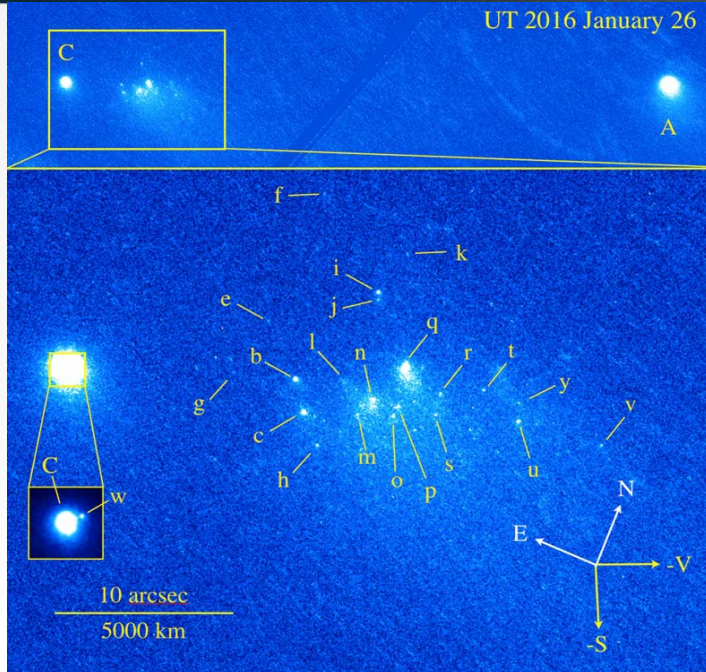


Disintegrating Comet Observed by Hubble



Hubble captured images of the comet 332P/Ikeya-Murakami fragmenting as it approached the Sun.

- This 4.5 billion year old short period comet has survived a 10 million year journey into the inner solar system from the Oort cloud. Only a few of these relatively rare comets are detected each century.
- When observed in late 2015 it had split into two pieces. The environment in the inner solar system is very different from the one where the comet originated – it is warmer and there are more extreme gravitational forces – both of which contributed to the break up of this loosely-associated comet.

- Closer observations on three subsequent nights in January 2016, right before perihelion (closest approach to the sun) in March 2016 show that in addition to the two main pieces (A and C in the image above), there was a whole cloud of fragments (lowercase letters at left). The main body of the “C” piece of the comet is relatively small, <275m in radius, and the rest of the pieces, which are between 10-30m in radius, add up to a single sphere of radius 65m.
- Measurements of the size and speed of these pieces indicates that they were not released at a single time and the small size of the comet indicates that a rapid spin-up may have ejected the pieces via centripetal forces caused by uneven outgassing.
- The close observations of 332P allows scientists the opportunity to better understand the chemistry and composition of the rare Oort cloud comets.