Comet breaking up on flight by Earth caught by Slooh members

February 14 2017

Comet 73P/Schwassmann-Wachmann breaking apart as captured in Slooh's Chile Observatory feed on February 13th, 2017. Credit: Slooh

Comet 73P/Schwassmann-Wachmann has experienced a breakup on its journey past the Earth on its way toward the Sun. On the night of

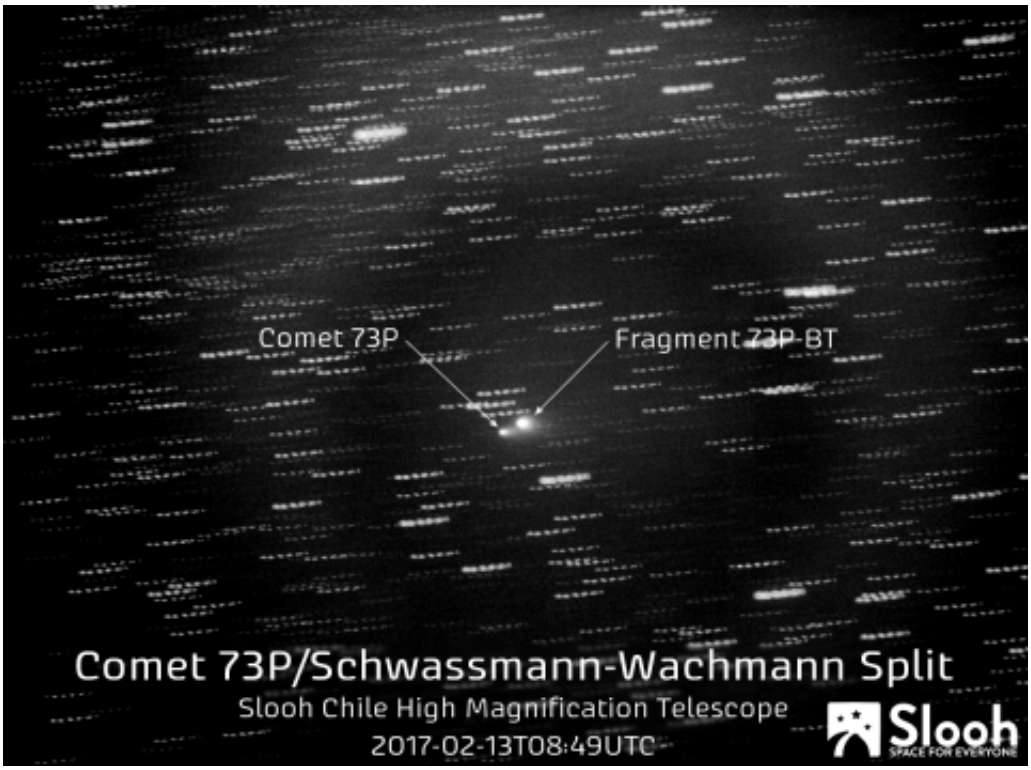
February 12th, Slooh members using the company's telescopes in Chile were able to view the comet as it broke into two pieces. This seems to be the continuation of a process that was first witnessed in 1995, then again in 2006.

Slooh members were among the first to confirm that the nucleus of comet 73P/Schwassmann-Wachmann had split into at least two large pieces. "They immediately pointed Slooh's telescopes to capture the event," says Slooh Astronomer, Paul Cox. "Members will continue to monitor the comet live over the coming weeks—assuming the comet survives that long."

In the coming months—and years—the comet will face its two greatest challenges to survival. First, the Sun. 73P will reach Perihelion, its closest approach to the Sun, on March 16th.

"This puts the comet's nucleus under tremendous stress from the Sun's gravitational forces—and it appears that this may have been responsible for carving up the nucleus in two," explains Cox.

The question is: will 73P survive perihelion, or will this particular comet be demoted to the annals of astronomical history? If it does, it will have to contend with its second challenge: the gas giant Jupiter. In 2025, 73P will come within 31 million miles of the planet. Jupiter, meanwhile has been known to chew up comets due to its intense gravitational field.



Animation showing Comet 73P/Schwassmann-Wachmann as it flies through Slooh's Telescopes on February 13, 2017. Credit: Slooh

"It certainly feels like it's only a matter of time before comet 73P is destroyed, disintegrating into a trail of cosmic dust," Cox continues.

This isn't the first time Slooh members have witnessed this kind of cometary activity. In fact, in 2006 they watched amazed as 73P fragmented into at least 30 different pieces as it approached the Sun. It also showed similar signs of breakup in late 1995.

According to Slooh astronomers, there are three main drivers for this kind of cometary breakup:

1. Comets are made up of ice, dust and rocky material (the leftover builder's rubble from the formation of our solar system). It

doesn't take much to disrupt this loose conglomeration.

2. 73P is a "Jupiter-family" comet. The gravitational influence of the gas giant planet, together with that of the Sun, can simply rip these comets apart. The best example of which was comet Shoemaker-Levy 9 which broke apart before smashing into Jupiter in 1994.
3. Solar radiation and the solar wind continuously bombard the comet's nucleus—disrupting the surface layers and generating the comet's coma and tails.

Comet 73P/Schwassmann-Wachmann captured in the Slooh telescopes in 2006. Credit: Slooh

Slooh members will be monitoring the comet over the next days and weeks, using both Slooh's Chile and Canary Islands Observatories.

Comments Cox, "One thing is certain—if the end-is-nigh for this lump of primordial space rock, Slooh members will be the first to see its demise live in Slooh's telescopes."

Provided by Slooh

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