

9.18: A Comet Impacts a Planet

Except for seeing meteors enter our atmosphere, no contemporary astronomer had ever observed an impact on another world until 1994. **Comet Shoemaker–Levy 9, S-L 9**, was discovered in March 1993 by astronomers Eugene and Carolyn Shoemaker and David Levy. Carolyn’s first impression of the discovery photo was it “looked like a squashed comet.” This description was due to the fact that the comet had been broken apart by the gravitational pull of Jupiter. The largest cometary fragment was 2 kilometers or 1.2 miles across.



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After determining the comet’s orbit, it was found that Shoemaker–Levy 9 fragments would impact Jupiter over several days, 22–26 July 1994. The question became if the impacts would be visible to astronomers and orbiting satellites, like the Hubble Space Telescope.

Over the five-day period, twenty-one (21) distinct impacts were observed by satellites like the Hubble Space Telescope, as well as Earth-based telescopes. Fireballs resembling an atomic bomb mushroom cloud were seen at Jupiter’s horizon. Dark spots were seen in the upper atmosphere of Jupiter after impact; these were visible even in small amateur telescopes. Some of these spots were as big as Earth. The black impact features were visible on Jupiter for months; some likened them to a black eye. Due to the S-L 9 series of impacts, astronomers were better able to explain rows or chains of craters found on the Moon and other objects, like Jupiter’s moon Ganymede.



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