

What happened in Comet 17P/Holmes ?

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Comet 17P/Holmes underwent an unprecedented outburst in brightness that rapid increase in magnitude of 2 from 17 on October 25, 2007. Because the spectrum in the first phase of the outburst was almost continuum, the principal ingredient was dust. The scene of the diffusing dust made the structure that opened in the anti-solar direction when the radiation pressure of the sun began to be effective though was observed the appearance that diffused roughly keeping the spherical symmetry. A distinctive dust cloud moving away from the nucleus was observed. This cloud was accelerated by the radiation pressure of the sun, and thought to be closely related to the outburst beginning judging from the motion. In the spectroscopic observation of the SUB-ARU telescope, the crystal silicate feature of 11.2 microns has been detected in both central condensation and the dust cloud in the vicinity of the nucleus. Moreover, the irregular ion tail was temporarily generated about 10 days after the outburst, and it disappeared rapidly on several days. It seems that the volatile material discharged as dust becomes a gas all together and the ion tail was made.

Comparing with the outburst 115 years ago is included while considering these various observation results overall, we introduce the result of considering what happened in Comet 17P/Holmes.