

4-D dust trail calculations of 1998 Bootid outburst and 1972 Giacobinid absence

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June Bootid out bursted in 1998, but its mechanism has not been known well. We made the first 4-D dust trail calculation for the meteor shower and revealed that several dust trails yielded in the 19th century close encountered to the earth to show the meteors. The minimum velocity ejected from 7P/Pons-Winnecke is 10 m/s, and the peak time and the arc of the activity can be explained clearly. Also, the 4-D dust trail calculation revealed the mechanism of 1972 Giacobinid. Giacobinid was expected to show the activity in 1972 but almost no activity. This is because that the minimum ejection velocity from the parent comet was 60m/s which is over the sublimation velocity of H₂O.

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