

Meteor stream activity. IV.

Meteor outbursts and the reflex motion of the Sun.

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Abstract (from CDS): A third meteor outburst of Aurigids was observed in 1994, similar to two previous events in 1935 and 1986. Again, the parent comet was far from perihelion. In search of a cause for these outbursts, the role of planetary perturbations was examined. It is found that the Aurigid outbursts, and other such outbursts, occur when the position of the planets Jupiter and Saturn are in two different configurations that are nearly equivalent in barycentric displacement of the Sun at the time of the outburst. It is proposed that the Sun's reflex motion is a (distorted) image of the displacement of a trail of dust relative to the Earth's orbit. It is found that existing numerical models of meteor stream formation feature this inferred motion of the stream. One implication is that future returns can now be anticipated with greater confidence.

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