

Meteors from Halley's Comet

MEMORIES OF HALLEY'S COMET

(1P/Halley) come to mind each May when the Eta Aquariid meteor shower returns. Both this display and October's Orionids share the same famous parent: In spring, Earth passes through dust outgassed by the comet along the outbound portion of its orbit, and in October we cross the inbound track.

The Eta Aquariids typically have an extended peak, spanning both the mornings of May 5th and 6th, according to Robert Lunsford, Secretary General of the International Meteor Organization (IMO). The Moon is just past first-quarter phase and sets around the same time that the radiant, located in the Water Jar asterism in Aquarius, climbs high enough in the southeastern sky for the show to begin. Admittedly, the gap between moonset and morning twilight is brief — particularly for observers at mid-northern latitudes. Dawn gilds the eastern sky beginning around 4 a.m., constricting the observing window to about 2 hours. Moreover, the radiant remains rather low, so counts are typically in the range of 10 to 30 meteors per hour.

It's a different story from the tropics and the Southern Hemisphere. Aquarius climbs halfway up the eastern sky before dawn. With fewer meteors cut off by the horizon, the rate jumps to around 60 per hour, making this one of the best showers of the year.

Eta Aquariid meteoroids tear into Earth's upper atmosphere at 66 kilometers per second (150,000 mph) and can leave lingering, bright trails called *trains*. Occasionally, the display has outbursts, as it did in 2004 and 2013. During the 2013 shower, the zenithal hourly rate reached 135. Both outbursts were caused by gravitational effects from Jupiter, which assisted in concentrating particles shed by Halley's Comet. No strong outbursts are predicted for this year, but a surprise is always possible.

For many locations, morning temperatures in May are pleasant, and mosquitoes have yet to arrive. But if clouds threaten, don't lose hope. As Lunsford notes, "This shower and the Orionids have a plateau-like maximum in which strong activity can be seen for a solid week centered on the expected night of maximum activity."

