

Central Bureau for Astronomical Telegrams
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PERSEID METEOR SHOWER OUTBURST 2021

P. Jenniskens, SETI Institute and NASA Ames Research Center, reports that CAMS video-based meteoroid orbit survey networks in the United States detected an outburst of Perseids between 6h and 11h UT on Aug. 14. This outburst was not anticipated from known 109P/Swift-Tuttle dust trail encounters. Early results from the new CAMS Texas network (coordinated by W. Cooney and including D. Selle, F. Cyrway, and J. Brewer) in mostly clear skies and the CAMS California network (P. Jenniskens, D. Samuels, J. Albers, E. Eglund, B. Grigsby, and J. Wray) in clear skies show an activity profile with peak Zenith Hourly Rate (ZHR) 130 ± 20 meteors/hr on top of normal ZHR = 40 Perseids/hr in average annual activity (cf. URL <http://cams.seti.org/FDL/> for date of August 14). The full-width-at-half-maximum of the fitted Lorentzian profile is 0.08 ± 0.01 degrees solar longitude. The peak occurred at solar longitude 141.474 ± 0.005 degrees (equinox J2000.0), corresponding to 8h.2 UT. The combined magnitude distribution index was 3.59 ± 0.36 , compared to 2.94 ± 0.04 for the annual component in other years at this solar longitude.

P. Martin, visually observing from Ottawa, Canada, reports "multiple Perseids per minute with many bursts, sometimes 3-4 in a second", starting at 6h UT; he observed until 9h UT under clear skies with limiting stellar magnitude 6.7. From his 5-minute interval counts, K. Miskotte of the Dutch Meteor Society calculated a peak ZHR of 210 ± 20 meteors/hr at solar longitude 141.474 ± 0.005 deg.

This also confirms radio forward-scatter meteor observations posted by H. Ogawa of the International Project for Radio Meteor Observation (cf. URL <https://www.iprmo.org/flash/perseids-2021.html>), in which 49 observers in fourteen countries saw the detection count increase above normal levels after 6h.4 UT (141.40 deg solar longitude) and peak at about 8h.8 UT (141.49 deg) at a level three times the Perseid peak level, before declining to normal levels at 12h.5 UT (141.65 deg solar longitude). Combined ZHRs peaked around ZHR = 210 meteors/hr (cf. website URL <http://www5f.biglobe.ne.jp/~hro/Flash/2021/PER/index-e.htm>).

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