

EGU21-14715

<https://doi.org/10.5194/egusphere-egu21-14715>

EGU General Assembly 2021

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Pajala Fireball

Juha Vierinen^{1,5}, Torsten Aslaksen², Jorge Chau³, Maria Gritsevich⁷, Björn Gustavsson¹, Daniel Kastinen⁴, Johan Kero⁴, Alexandre Kozlovsky⁵, Derek McKay⁶, Steinar Midtskogen², Thomas Ulich⁵, and Ketil Vegum²

¹University of Tromsø, jvi019@uit.no

²Norwegian Meteor Network

³IAP Kühlungsborn

⁴Swedish Institute of Space Physics

⁵Sodankylä Geophysical Observatory

⁶University of Turku

⁷University of Helsinki

Meteoroids entering the Earth's atmosphere are associated with a number of phenomena including ablation, ambipolar diffusion, plasma transport, chemical reactions, shock waves, and plasma turbulence. A bright daylight fireball observed on 2020-12-04 13:30 UTC with two meteor cameras located in Skibotn and Sørreisa allowed the precise entry trajectory of the fireball to be determined. The path of the entering object is approximately between Angeli Finland and Pajala Sweden. Based on the brightness and entry trajectory, it is possible to estimate the approximate mass of the object, and associate it with a meteor shower (Northern Taurids). The effects of the fireball on the atmosphere were detected with a number of radar and radio instruments within the region, including ionosondes, meteor radars, an all-sky VHF imaging system, and an infrasound sensor. These observations allow a detailed study of the atmospheric interaction of a large meteoric body with the Earth's atmosphere to be made. In this talk, we will describe the observations of this fireball and discuss preliminary findings.