

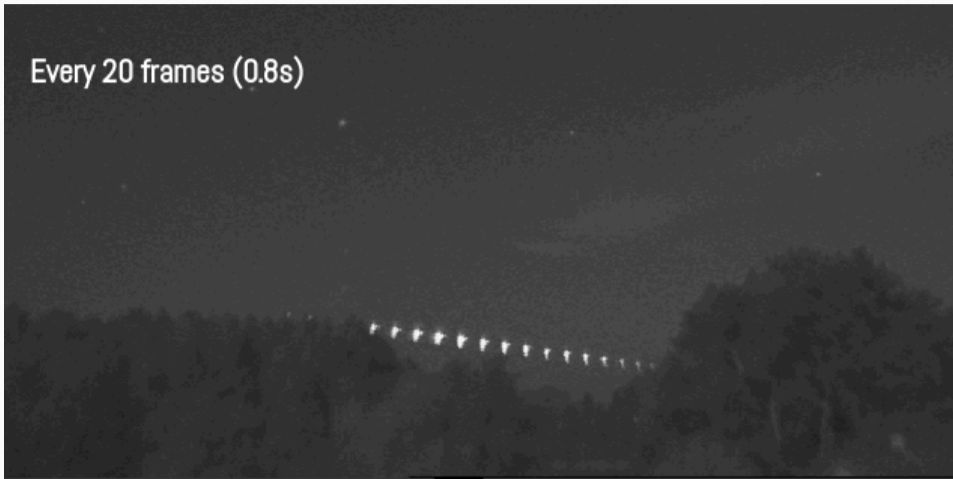
Fireball over Germany and Poland 6-th October 2017

Trajectory and orbit

Przemysław Żołądek, Arkadiusz Olech, Mariusz Wiśniewski, Marcin Stolarz, Dieter Heinlein, Anastasios Margonis, Sirko Molau, Jurgen Oberst

31 August 2018





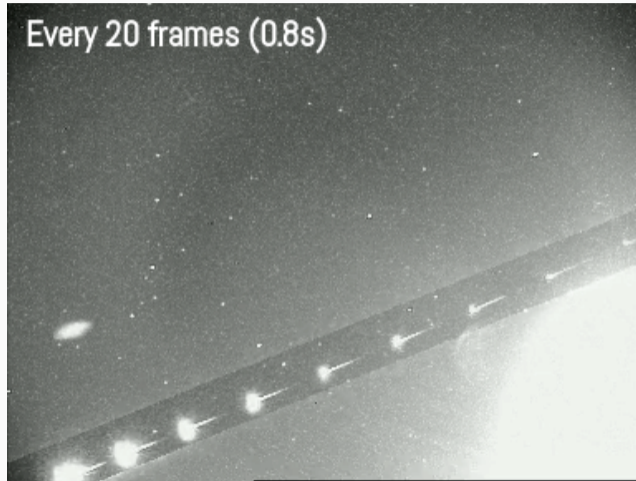
Video Data Summary - PFN52



- Frames: 333
- FPS: 25
- Length: 13.32 s
- Detection time: 20:19:53.93 UT
- Beginning point – not observed, late detection
- Terminal point - not observed, obscured by tree
- Manual measurements, frame by frame. Centroid manually determined due to heavy coma



Operated by: Sirko Molau



Operated by: Sirko Molau

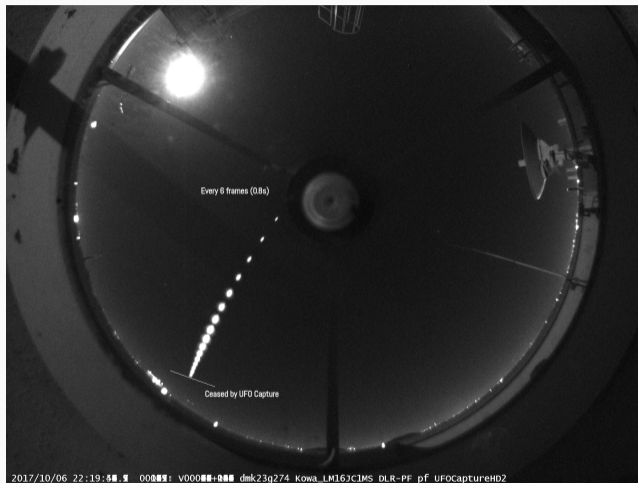
Video Data Summary - REMO1



- Frames: 173
- FPS: 25
- Length: 6.92 s
- Detection time: 20:19:50.71 UT
- Beginning point – not observed, out of FOV
- Terminal point - not observed, out of FOV
- Automated astrometry by MetRec



Operated by: Anastasios Margonis



Operated by: Anastasios Margonis

Video Data Summary - DLR

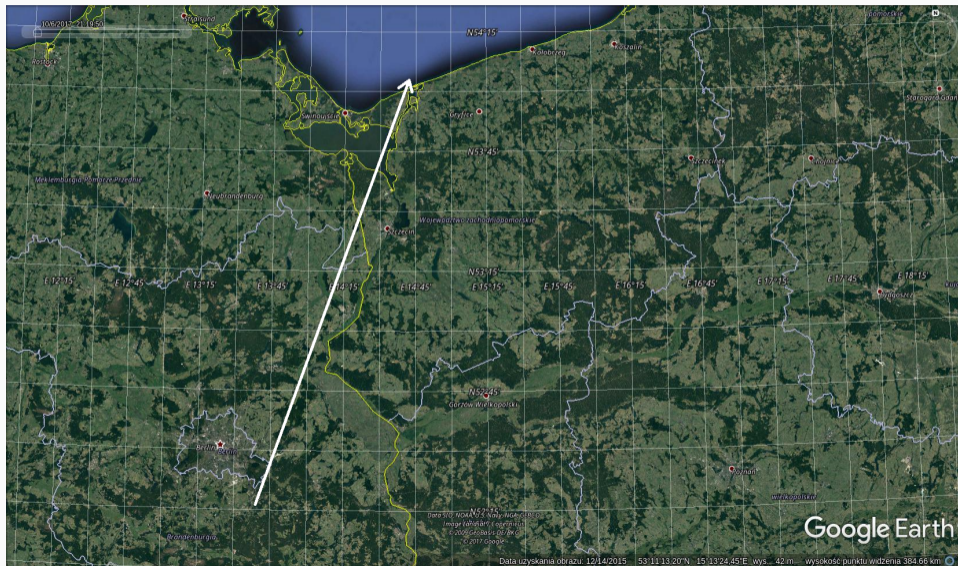


- Frames: 91
- FPS: 7.5
- Length: 12.1 s
- Detection time: 20:19:46.5 UT
- Beginning point – not observed, behind the camera mounting
- Terminal point - terminated by UFO Capture due to low angular speed at 20:19:58.6 UT
- Manual measurements, frame by frame

Fireball stations on the map



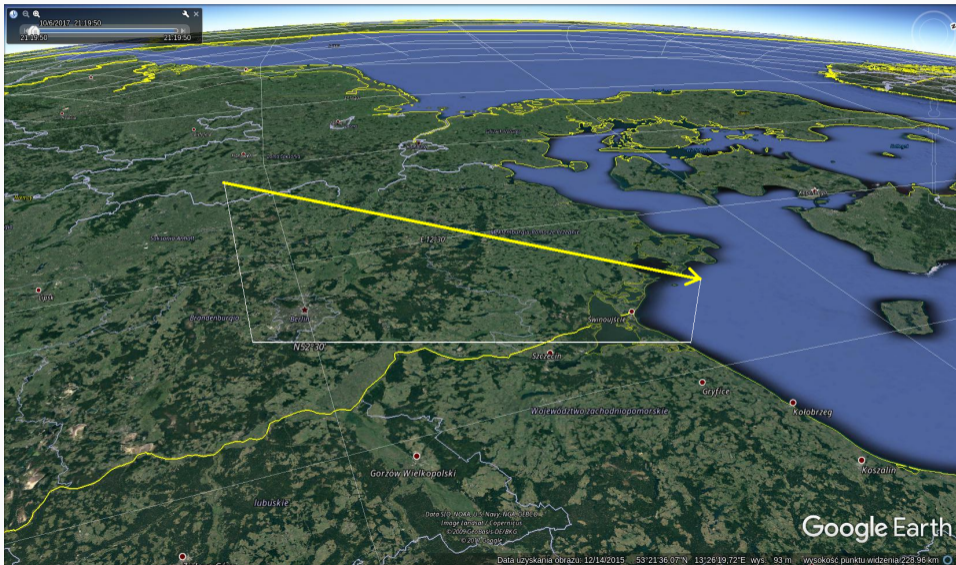
Fireball trajectory



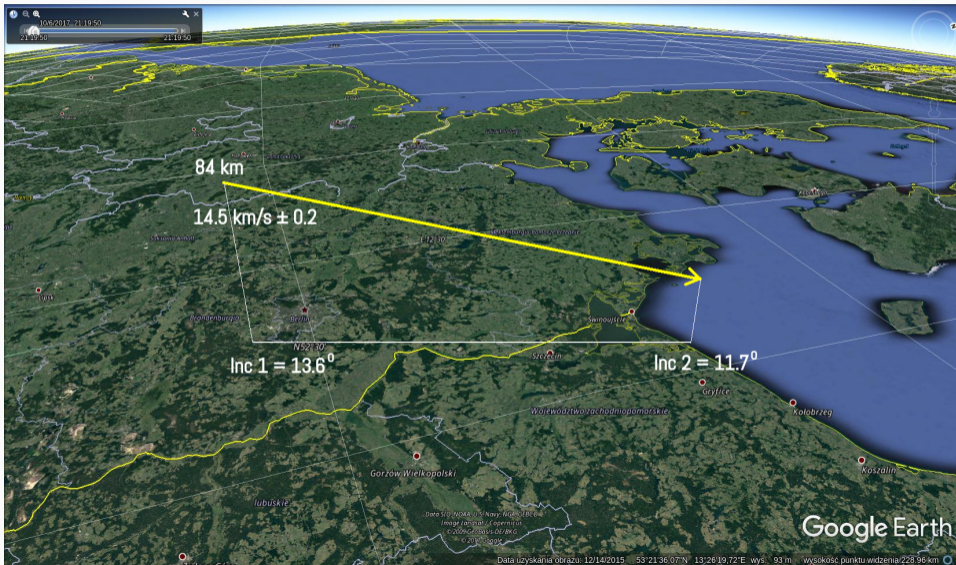
Fireball trajectory



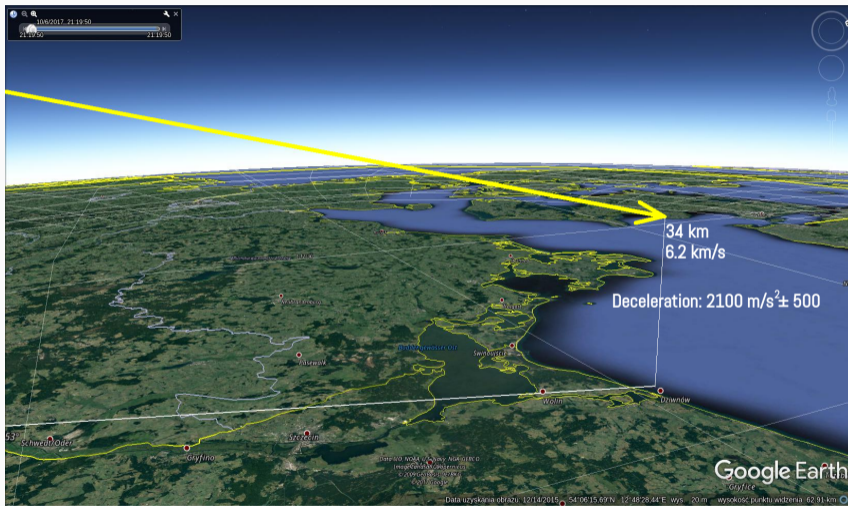
Fireball trajectory



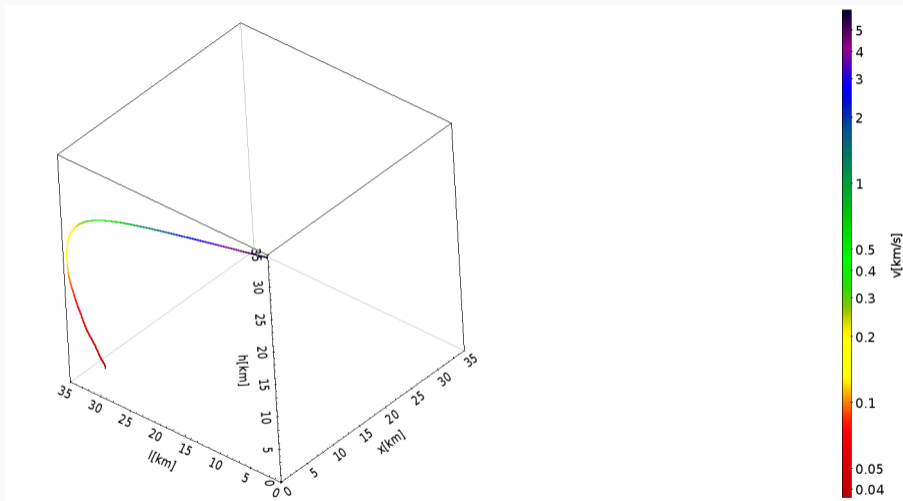
Fireball trajectory



Fireball trajectory - final part



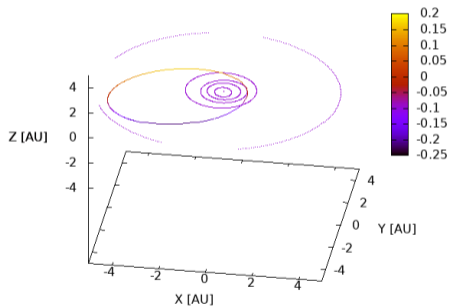
Ablation ceased after 1.5-2s from the last observed point



Possible meteorite fall 30km north of the Baltic coast, estimated mass 0.5kg

Fireball orbit

THE 20171006PFN201950 METEOR ORBIT



- $a : 3.0AU$
- $e : 0.67 \pm 0.02$
- $i : 4.85^\circ \pm 0.05$
- $q : 0.955AU \pm 0.0003$
- $\omega : 8.4^\circ \pm 0.3$
- $\Omega : 13.5282^\circ \pm 0.3$

Summary

- Slow and very long fireball has been recorded by three cameras in Poland and Germany
- Duration 17.5 s, length 217 km
- Shallow trajectory with inclination 11.6 degrees at the end
- Initial velocity 14.5 km/s (beginning point not observed)
- Terminal velocity 6.5 km/s at 34km height (the last visible frame, not real terminal point)
- Meteorite fall possible north of the Baltic coast

MANY THANKS TO: Sirko Molau, Anastasios Margonis, Dieter Heinlein, Jurgen Oberst – for great cooperation and valuable data

Thank you for your attention!



IMC 2018

SLOVAKIA
Pezinok - Modra

International Meteor Conference

August 30 - September 2, Pezinok-Modra, Slovakia