



Aug 30 - Sep 2
Pezinok - Modra
SLOVAKIA

Fireball over Germany and Poland 6-th October 2017

Trajectory and orbit

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

31 August 2018

PFN52 video station, Stary Sielc, Poland 6.10.2017 20:19:53 UT



PFN52 PAV75 Mintron 12V6 + Computar 6mm f/0.8 Operated by: Marcin Stolarz

PFN52 video station, Stary Sielc, Poland 6.10.2017 20:19:53 UT



PFN52 PAV75 Mintron 12V6 + Computar 6mm f/0.8 Operated by: Marcin Stolarz

Video Data Summary - PFN52



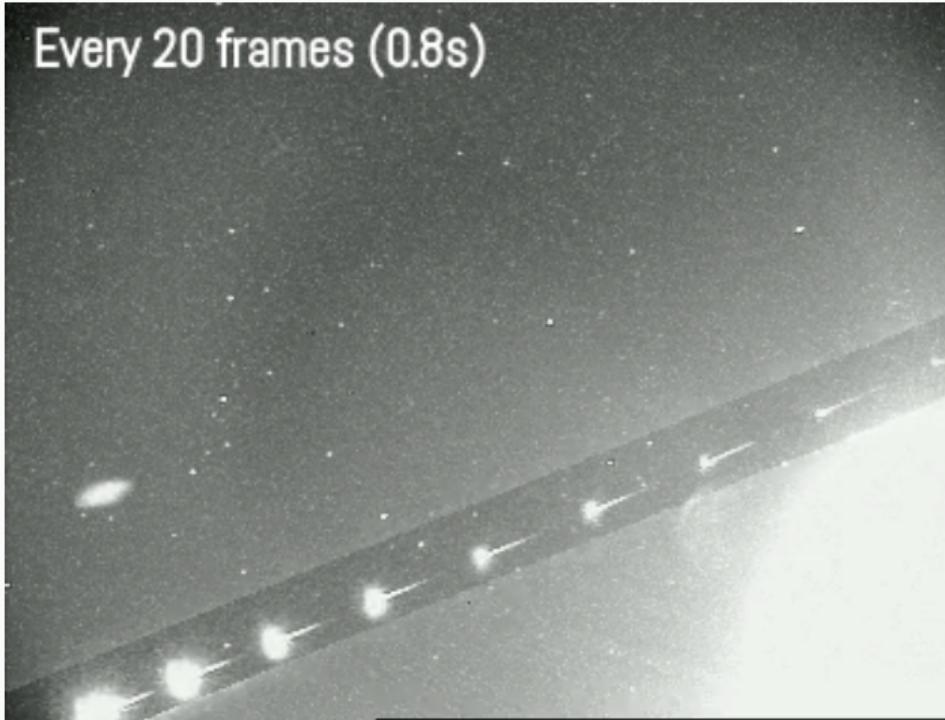
- Frames: 333
- FPS: 25
- Length: 13.32 s
- Detection time: 20:19:53.93 UT
- Beginning point – not observed, late detection
- Terminal point - not observed, obscured by tree
- Manual measurements, frame by frame. Centroid manually determined due to heavy coma

REMO1 video camera, Ketzür, Germany 6.10.2017 20:19:50 UT



Operated by: Sirko Molau

REMO1 video camera, Ketzür, Germany 6.10.2017 20:19:50 UT



Operated by: Sirko Molau

Video Data Summary - REMO1



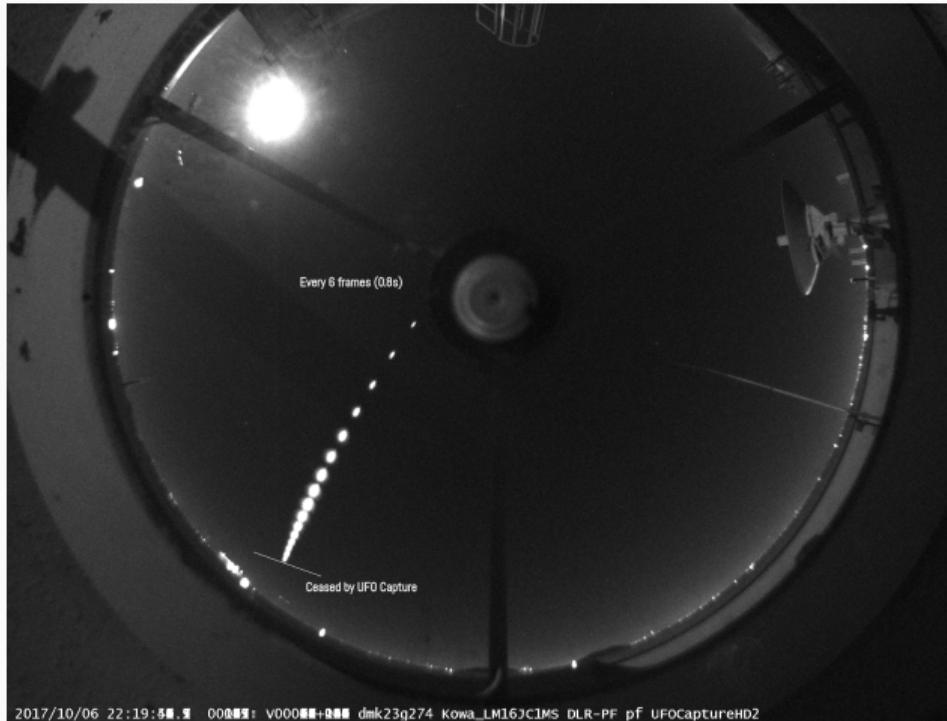
- Frames: 173
- FPS: 25
- Length: 6.92 s
- Detection time: 20:19:50.71 UT
- Beginning point – not observed, out of FOV
- Terminal point - not observed, out of FOV
- Automated astrometry by MetRec

DLR Adlershof video camera, Berlin-Adlershof, Germany 6.10.2017 20:19:47 UT



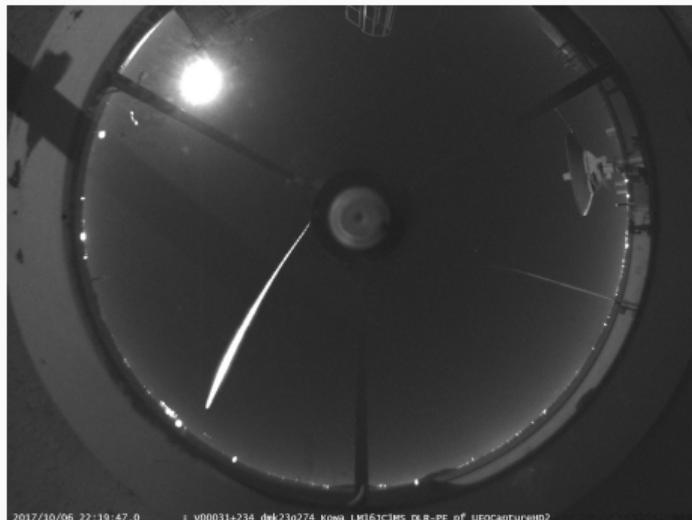
Operated by: Anastasios Margonis

DLR Adlershof video camera, Berlin-Adlershof, Germany 6.10.2017 20:19:47 UT



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

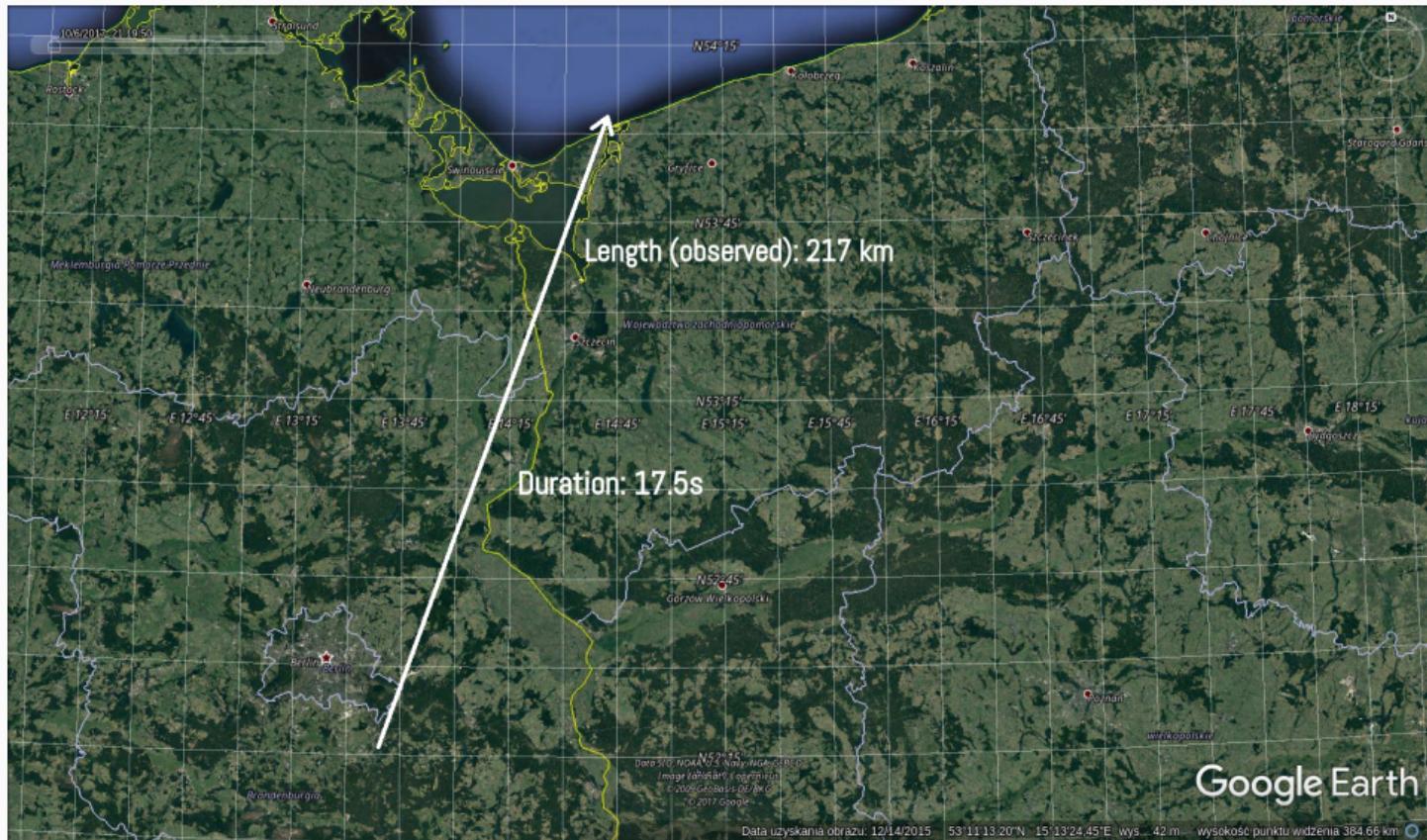
Fireball stations on the map



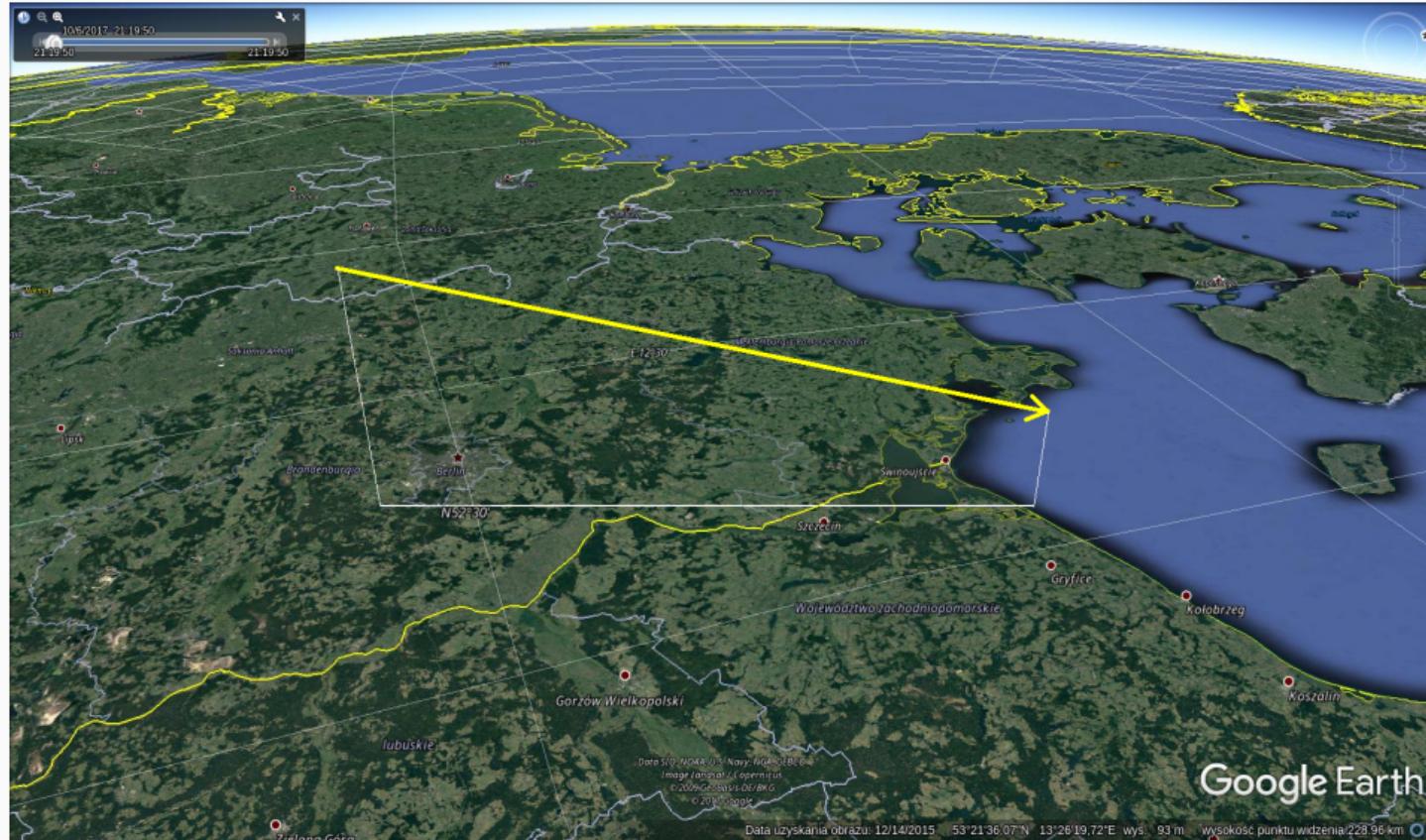
Fireball trajectory



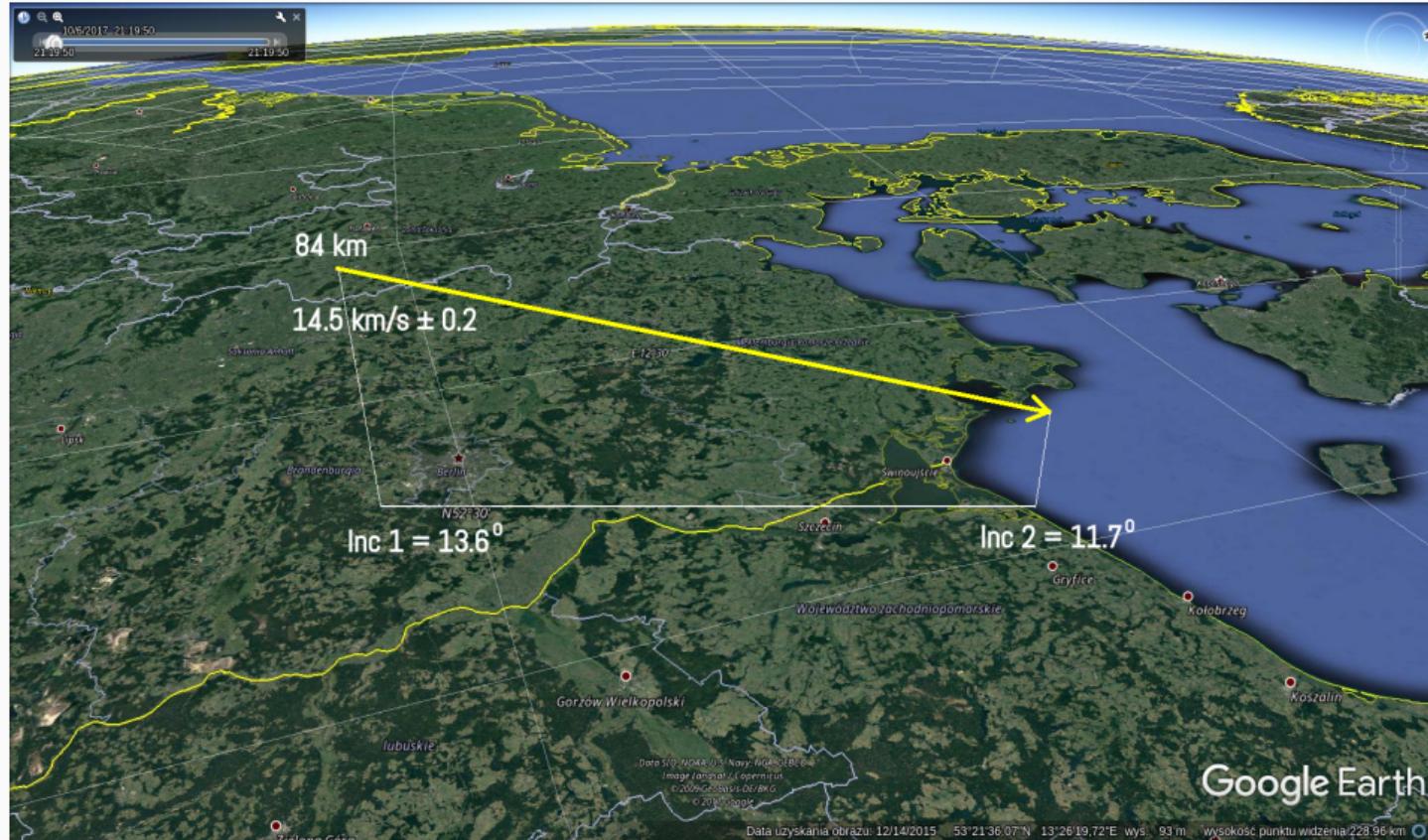
Fireball trajectory



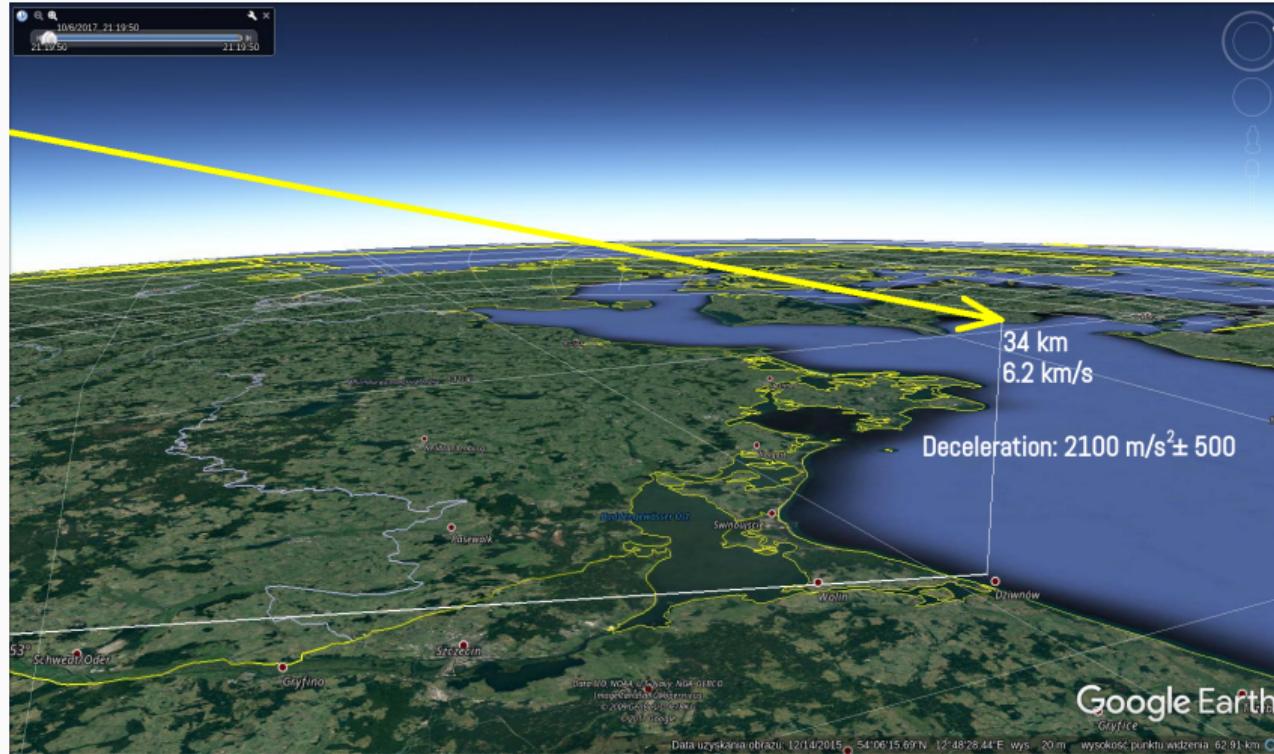
Fireball trajectory



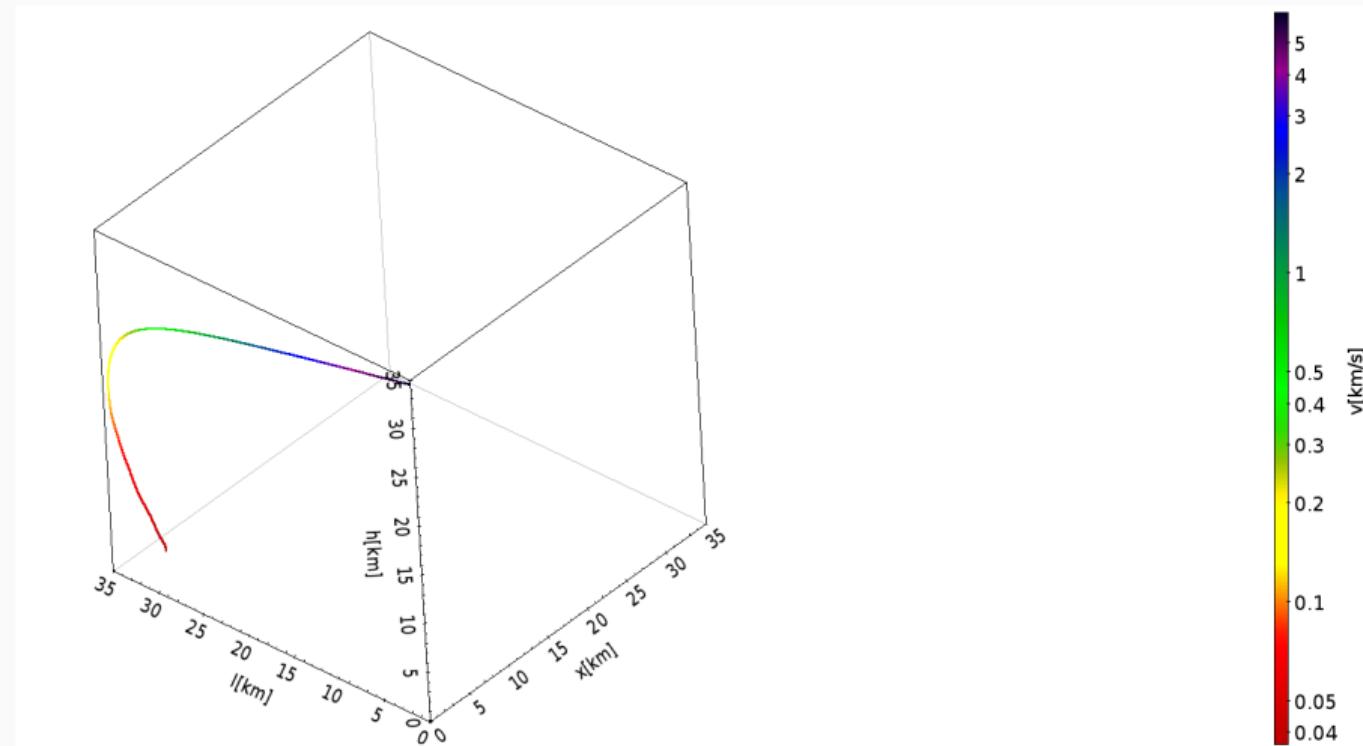
Fireball trajectory



Fireball trajectory - final part

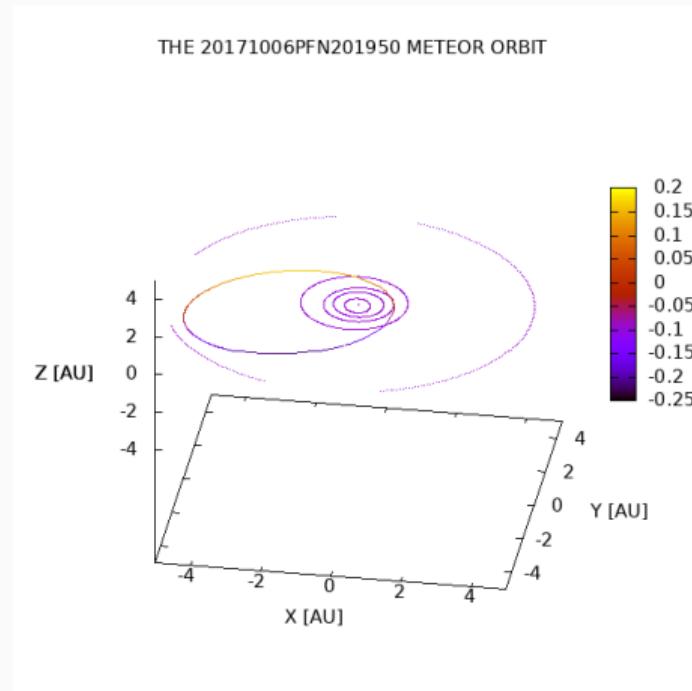


Ablation ceased after 1.5-2s from the last observed point



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

Fireball orbit



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

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!

