

Baltic Adventure :
Hyperborea, Aug 23, 2022

Robert Purvinskis

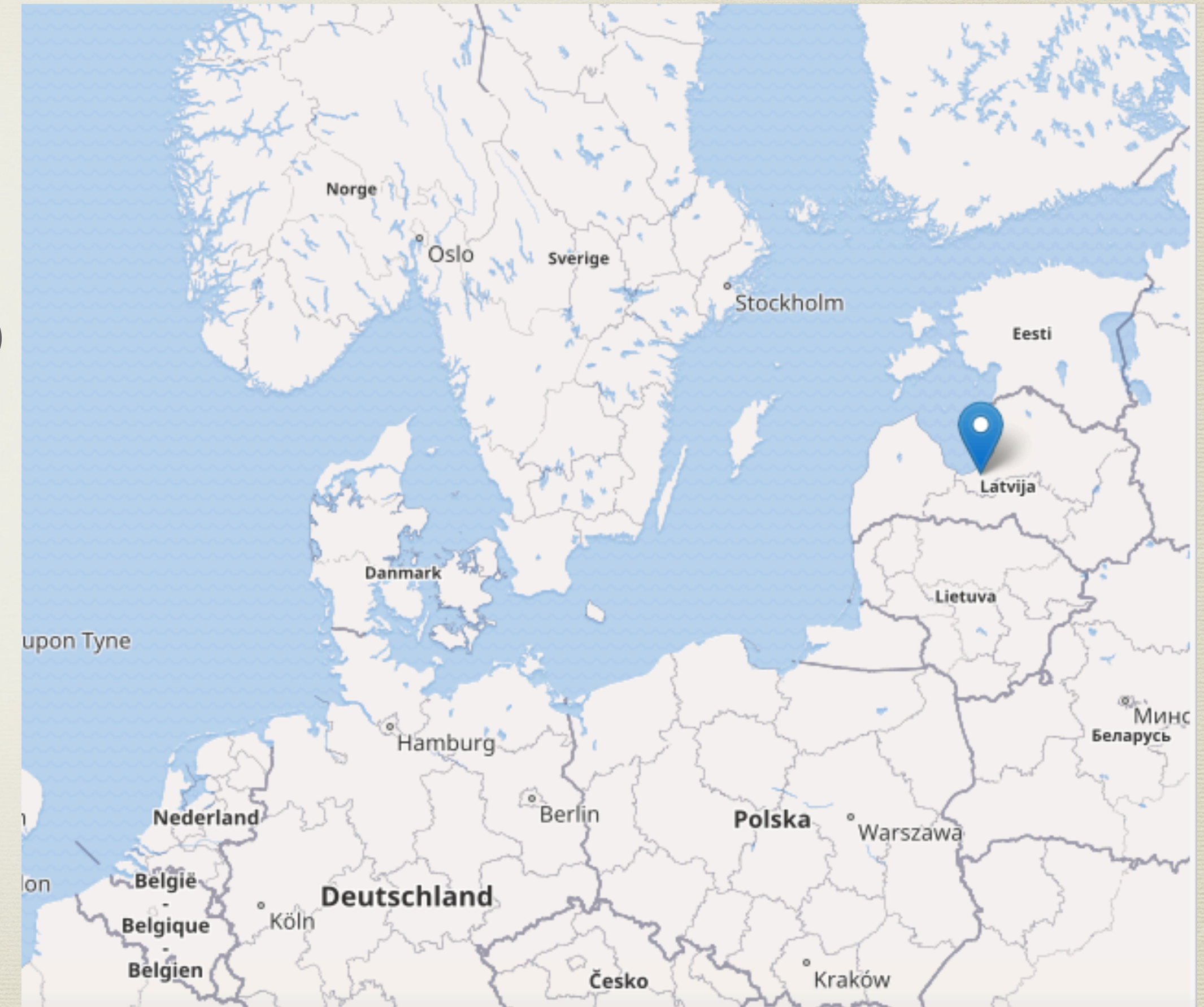
Introduction

- * Result was negative at all sites
- * Planning and preparing the team
- * Equipment used
- * Results
- * Lithuanian postscript



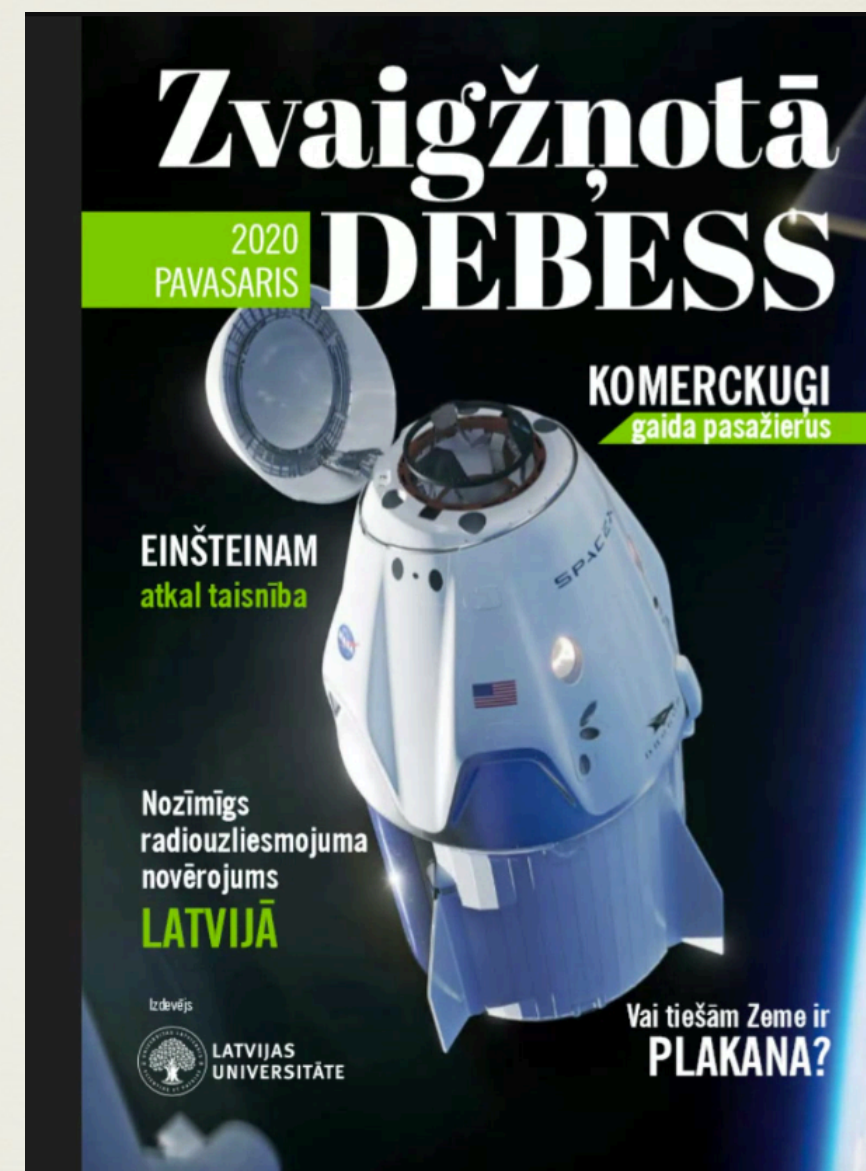
Occultations in the Baltic States

- * No recent positive observations in Latvia(?)
- * A couple of active observers in Lithuania
- * Contact sought with Estonian groups



Preparation

- * Online Talk at LAB, 2020
- * Event identified Oct - Nov 2021
- * Planning and online discussions
- * WhatsApp group
- * Article in local magazine
- * Support from experienced observer in region
- * Talk at seminar a week before event



Noteiksim asteroīda Hyperborea formu!

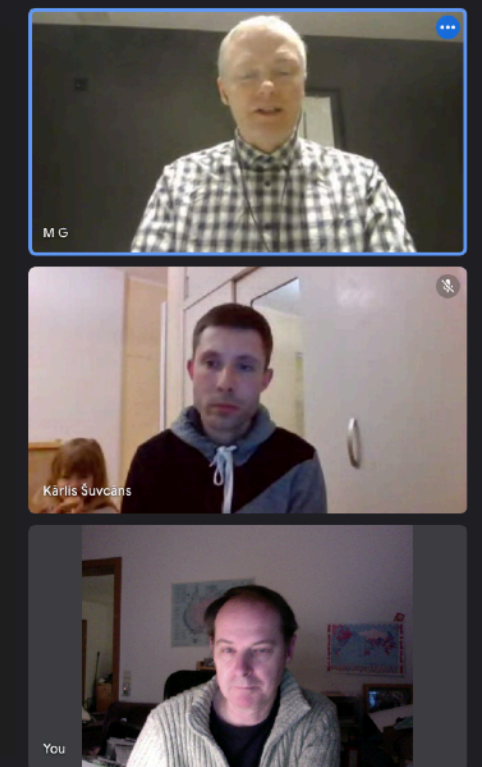
2022.08.23.

23.augustā Latvijas dienvidaustrumos būs iespējams novērot, kā asteroīds 1309 Hyperborea uz dažām sekundēm aizsedz 9.zvaigžņlieluma zvaigzni. Vairākos novērojumu punktos veikti laika mērījumi ļaus aprēķināt šī asteroīda formu.



Noskaidrojamās lietas

- Kāds ir pats vienkāršākais novērošanas veids?
- Kā un ar kādu teleskopu vērot?
- Kā reģistrēt laiku?
- Vai var filmēt?
- Novērojumiem piemērotu vietu izvēle
- Kā atrast īsto zvaigzni?



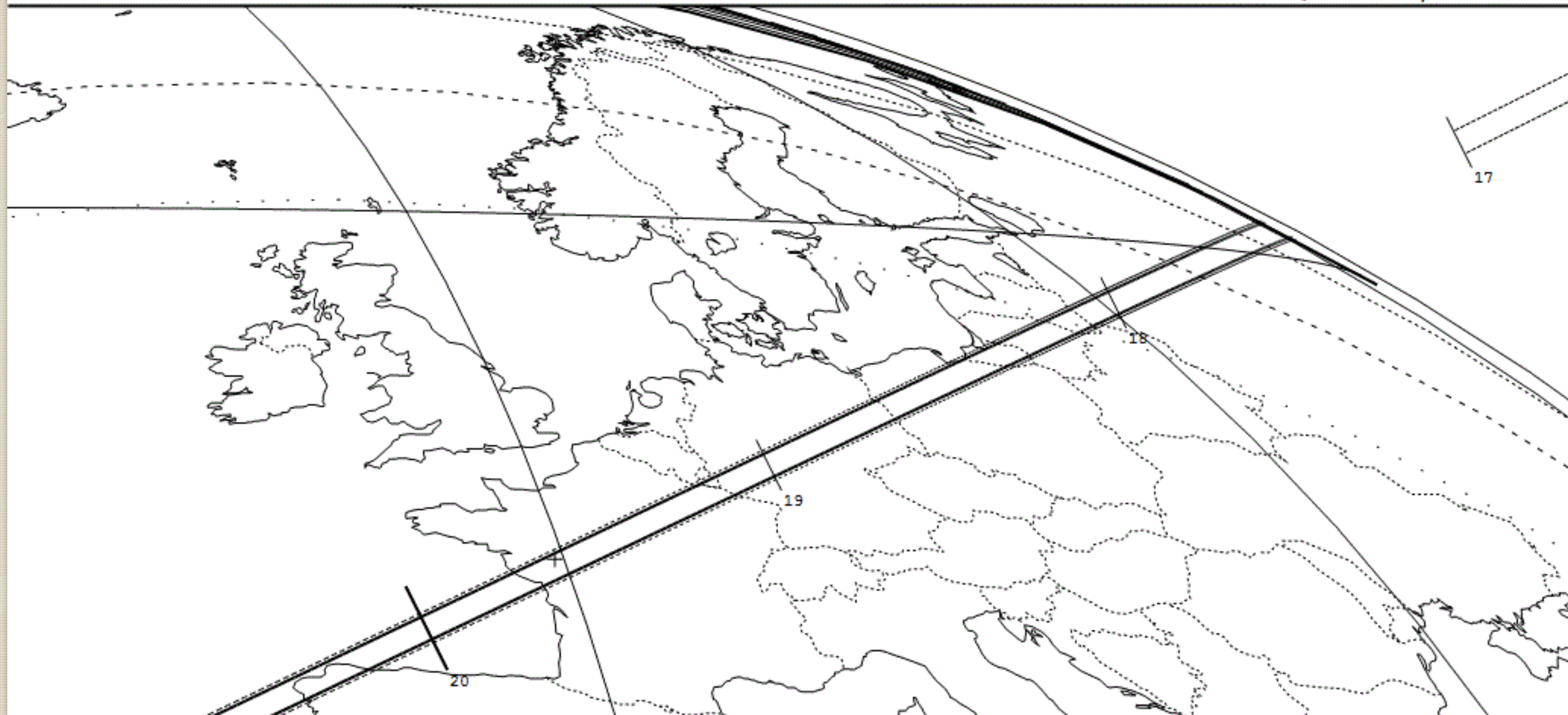
ROBERTS PURVINSKIS
AIZKLĀŠANĀS
NOVĒROJUMI

1309 Hyperborea occults TYC 5196-01212-1 on 2022 Aug 23 from 0h 17m to 0h 30m UT

Star: (Dia < 0.1 mas)
Mv 9.6
RA = 21 4 34.9938 (astrometric)
Dec = - 3 5 31.182
[of Date: 21 5 46, - 3 0 4]
Prediction of 2022 Jun 29.2
Reliable not available

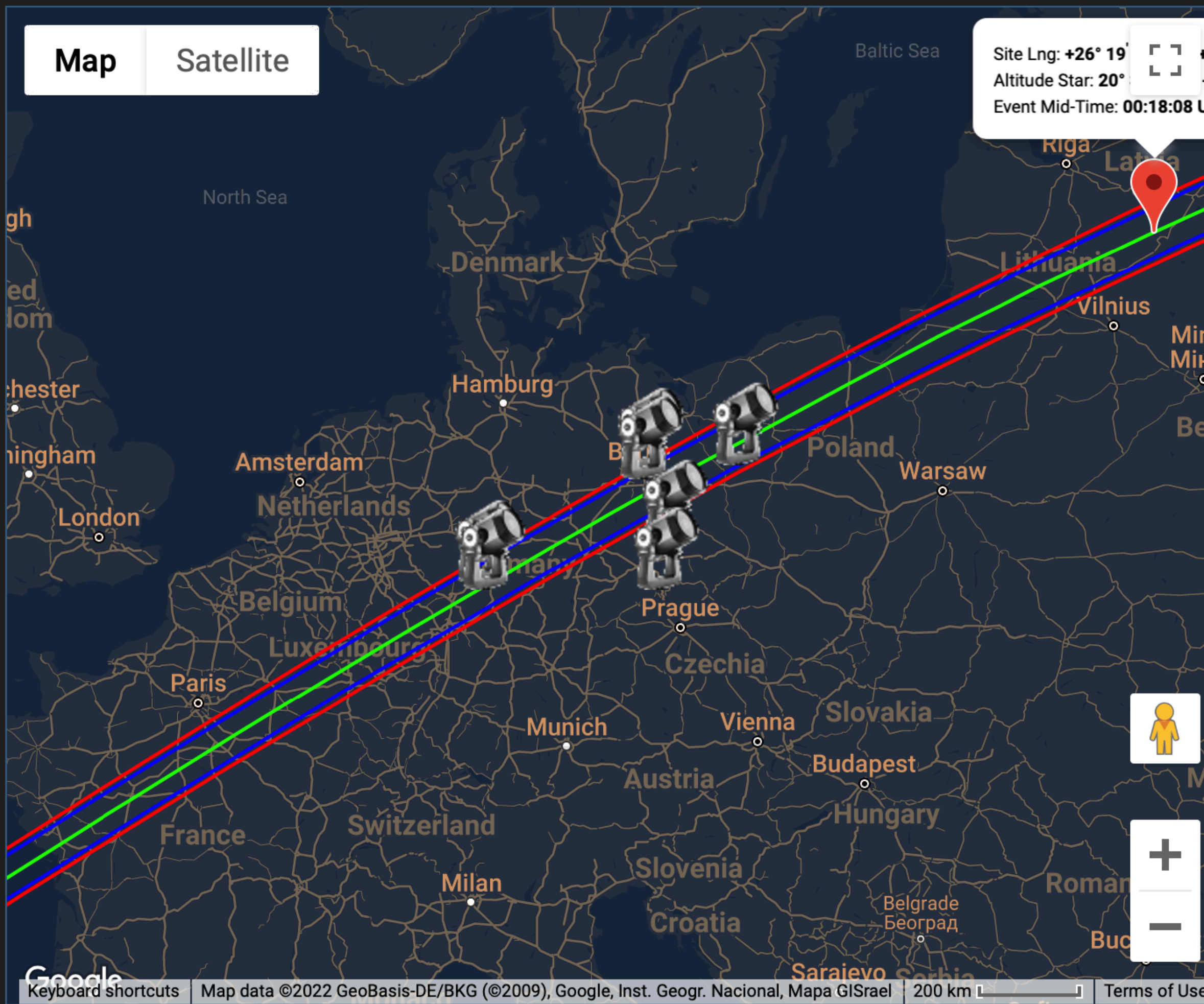
Durations: Max = 4.2 secs
1km = 0.072 secs, 1mas = 0.13 secs
Mag Drop = 6.0 [100%]v
Sun : Dist = 162°
Moon: Dist = 140°, illum = 17%
Error 13.3 x 3.3 mas in PA 77°

Asteroid: (in DAMIT)
Mag = 15.5
Dia = 58 ±3km, 32 mas
Parallax = 3.536"
Hourly dRA = -1.653s
dDec = -12.41"
JPL#682022Jun06, Known errors



Login to submit a station

Change prediction: Horizons/GaiaEDR3, last upd: 03 Aug, 09:02 by OWC, orbit date: 01 Aug 2022 (JPL#69)



Prediction

Last Updated: 03/Aug/22, 09:02 UT
 Prediction By: OWC
 Orbit Date: 01 Aug 2022 (JPL#69)
 Data Sources: Horizons/GaiaEDR3
 Error in time: 1.7 sec
 Error (path widths): 0.137
 Err. Ellipse PA: 77°
 Err. Ellipse: 0.013" x 0.0033"
 OWC Id: 505142
 Err. Basis: Known errors

Event

From: 00:17:28 UT To: 00:30:04 UT
 Combined Mag: 9.56 Max Duration: 4.2 sec
 Mag Drop (V): 5.96 Mag Drop (R): 5.99
 Shadow Width: 70.6 km Moon Phase: 17% sunlit
 Solar Elong.: 162° Moon Elong.: 140°

Target Star

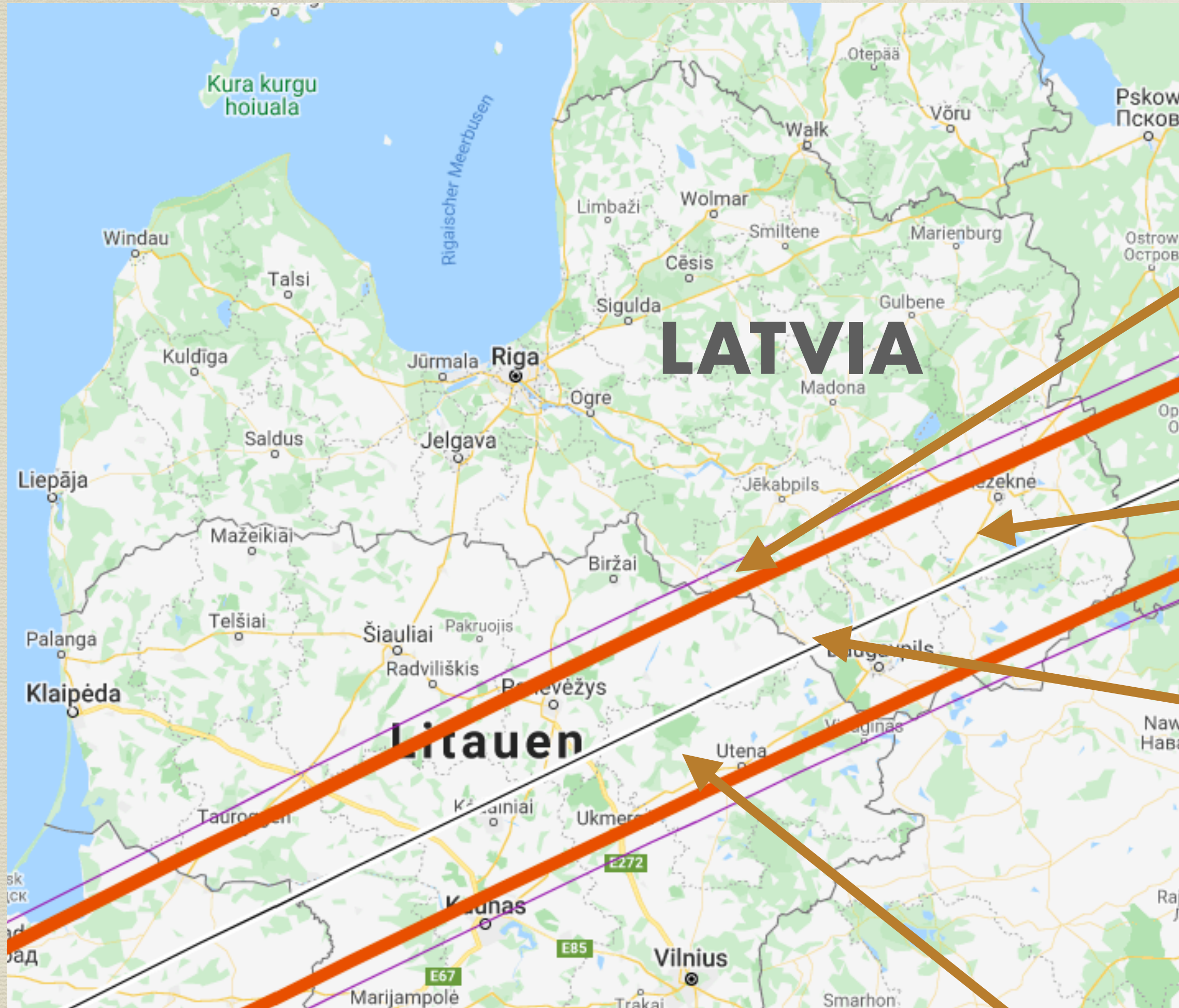
Name: TYC 5196-01212-1 V mag: 9.56
 R mag: 9.09
 Constellation: Aquarius B mag: 9.87
 Diameter: 0.10 mas Flags:
 RUWE: 0.85 Gaia Flags:
 Gaia Sourceld: 6915914811429005568 RA [aprnt]: 21^h 05^m 46^s.2813
 RA [ICRS]: 21^h 04^m 34^s.9938 Dec [aprnt]: -03° 00' 04".078
 Dec [ICRS]: -03° 05' 31".182

Object

Name: (1309) Hyperborea Class: Outer Main-belt

Tagged as: Baltics (Tagged by Robert Purvinskis) CentralEurope Rousselot

Our Team - Latvia



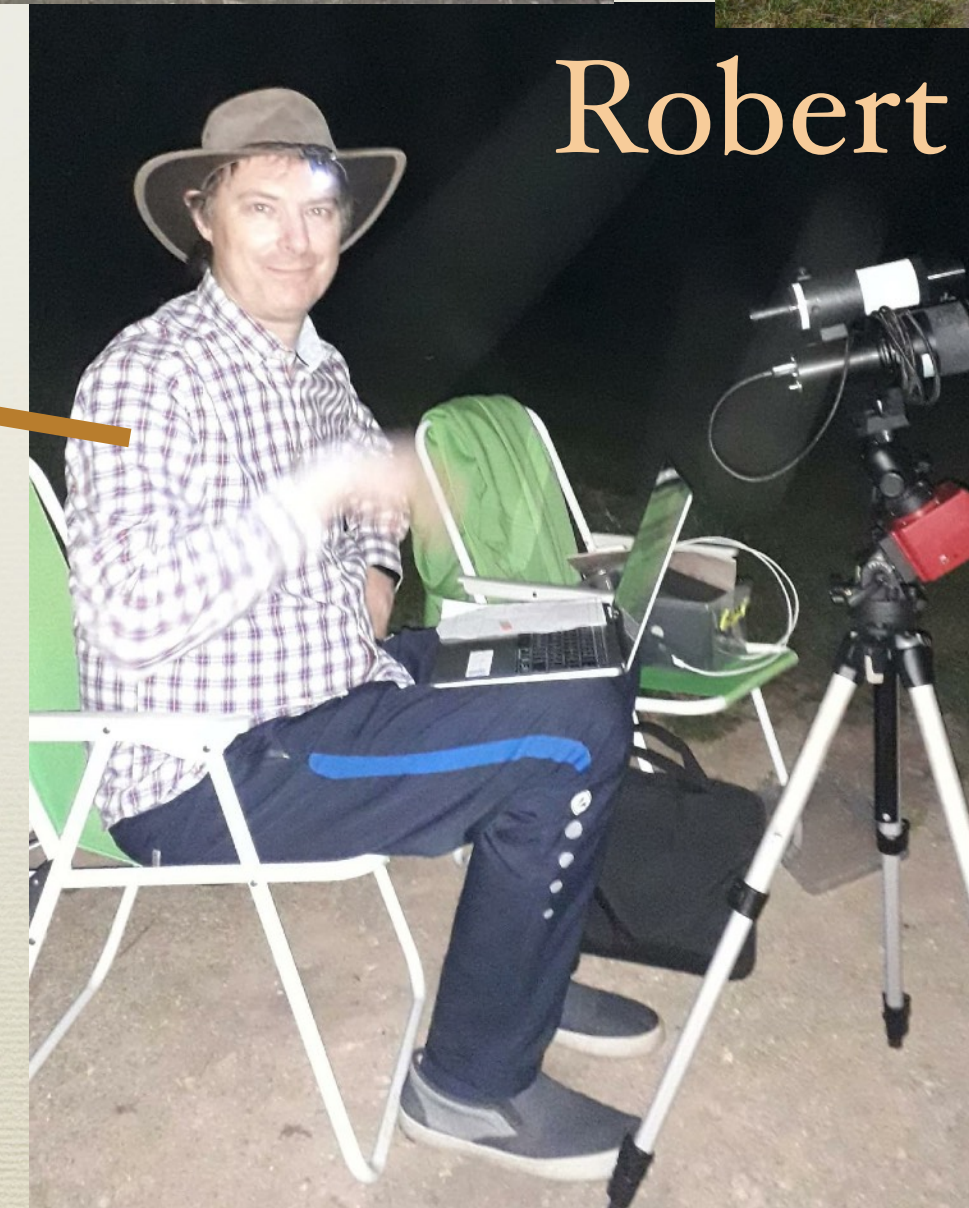
Karlis



Juris

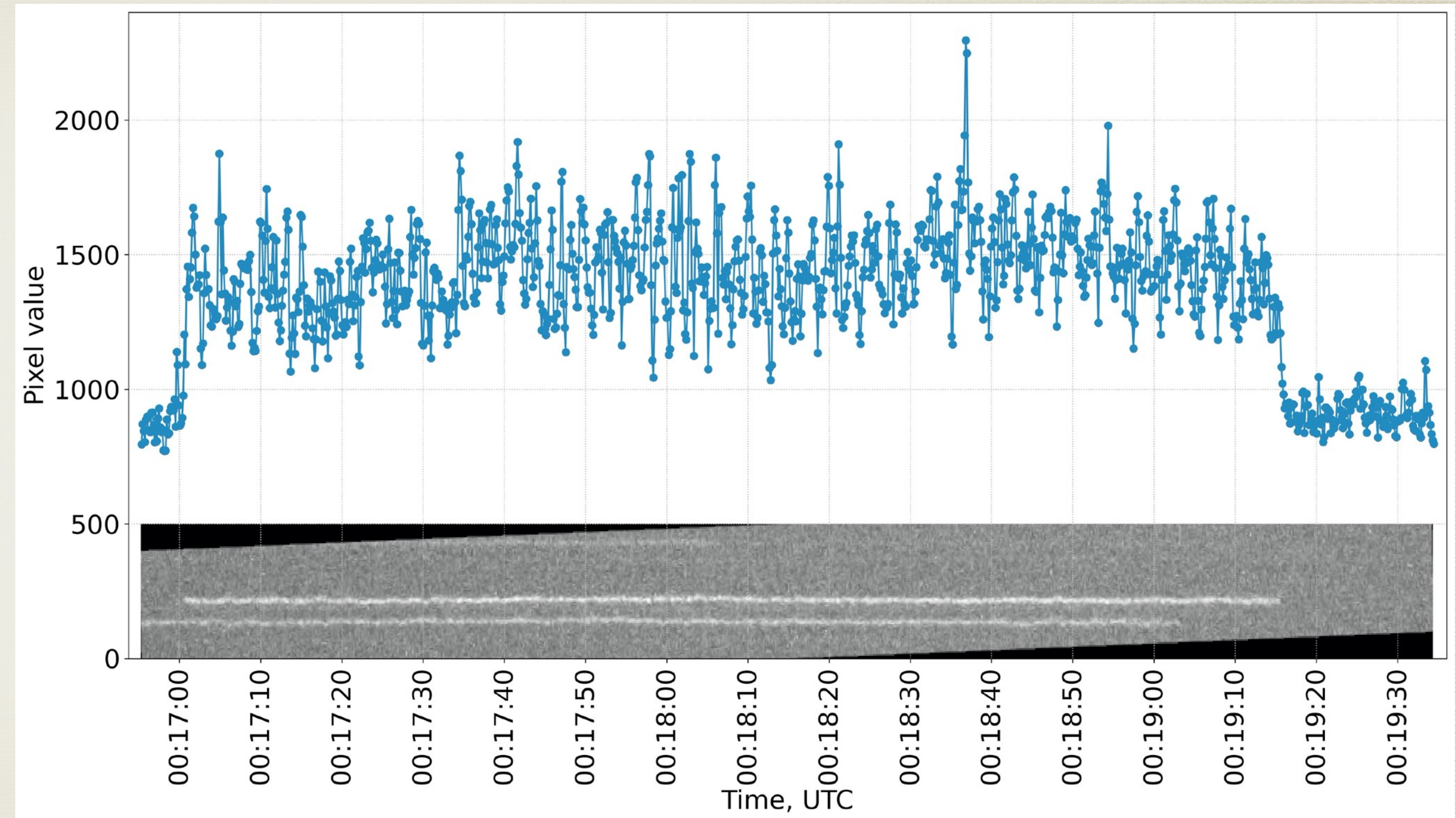
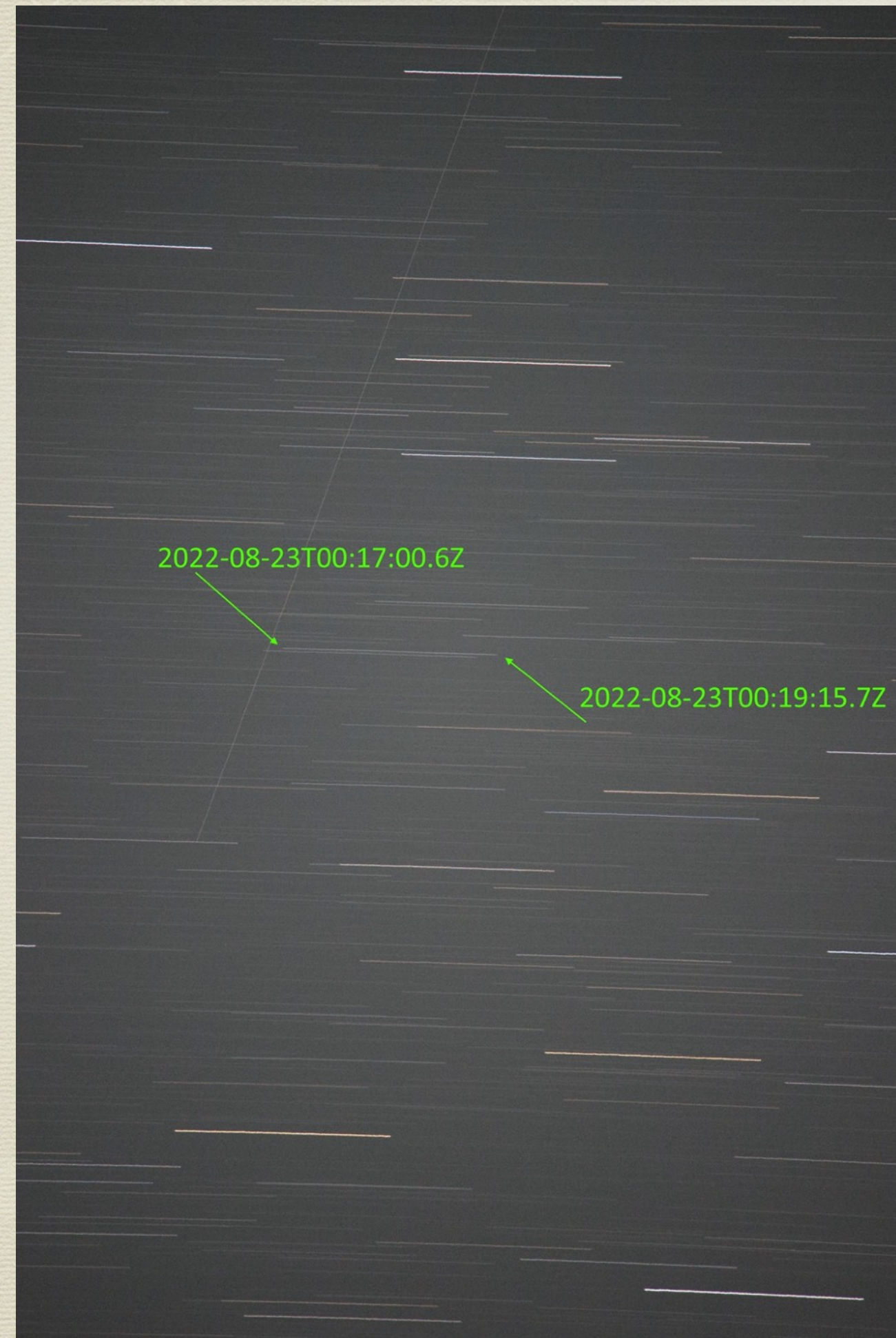


Robert



Donatas Tamonis (LT)

Juris' Drift Scan exposure

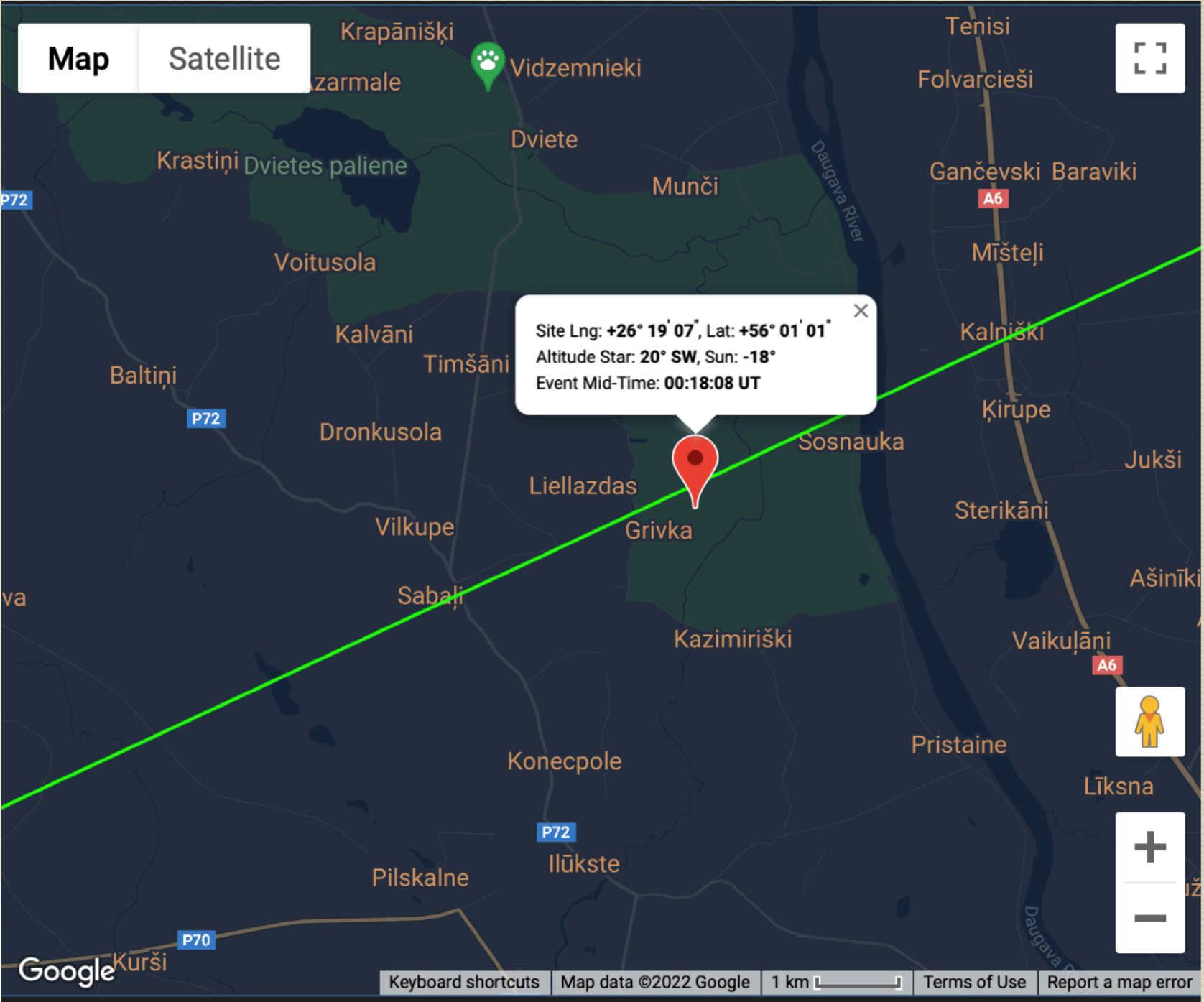


My setup

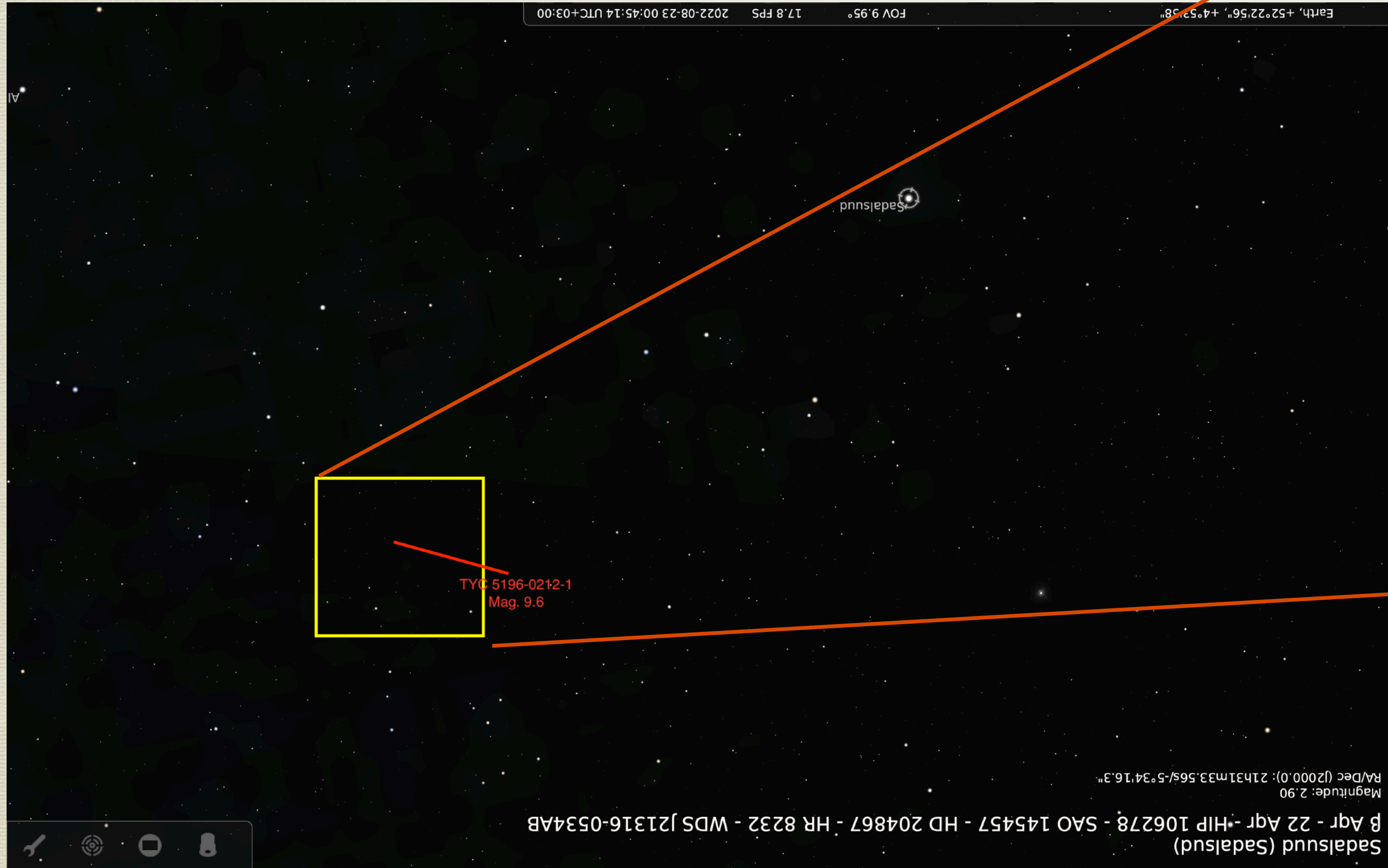
- Swiss DVTI with 300 mm f/4 Canon telephoto lens
- 8x50 finder scope
- iOptron tracker on photo tripod
- MacBook Air laptop (OS-X)
- Image capture : AstroDMx
- Processing: PyMovie



My Site



Finding the star



My results

AstroDMx Capture (1.5.0.0) for macOS

Connect Camera Capture Snapshot Snapshot Config ▶ Scale Display: 215 % H-Flip V-Flip

Controls: Capture Profiles
Profile: RP-200
New Load Save Manage

Controls: Camera
Pixel Format: YUY2
Resolution: 960 x 600
 Greyscale Transform
Dropped Frames: 0 Reset

Controls: Thermal

Controls: Exposure
Gain: Exposure: 60 Exposure Scale: Range: Frame Integration: NONE

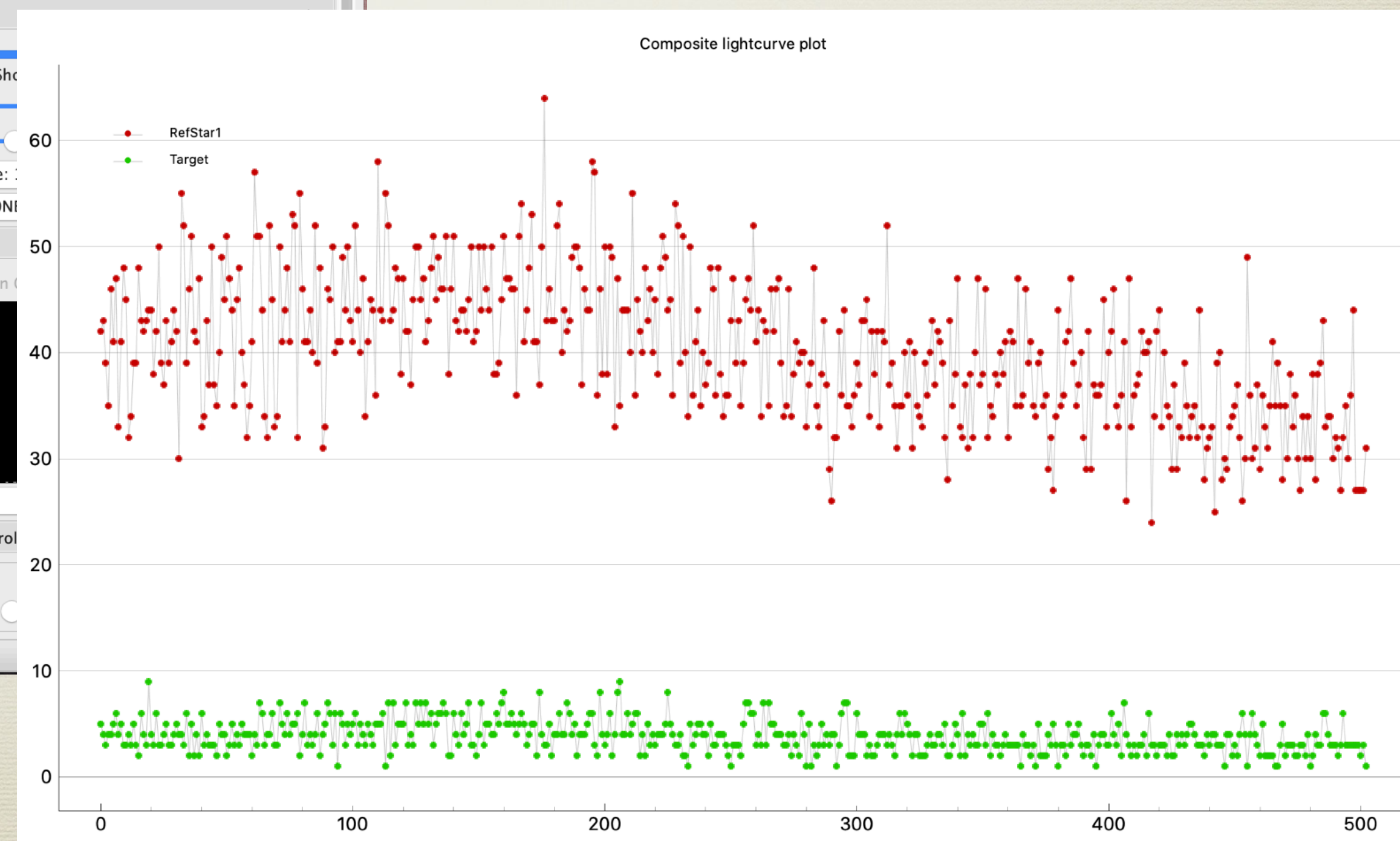
Controls: Histogram
 Active Calibration

Channel: RGB

Controls: Preview Control
 Active
Display Performance:

20220822+23:45:22.728-23.042 02116+0000 960x600 2x2 316ms 22dB 0000 +2

CAMERA: DVTI-CAM CORES: 4 FPS: 3.2 DEPTH: 8-Bit CALIBRATION: NONE STATUS: Streaming

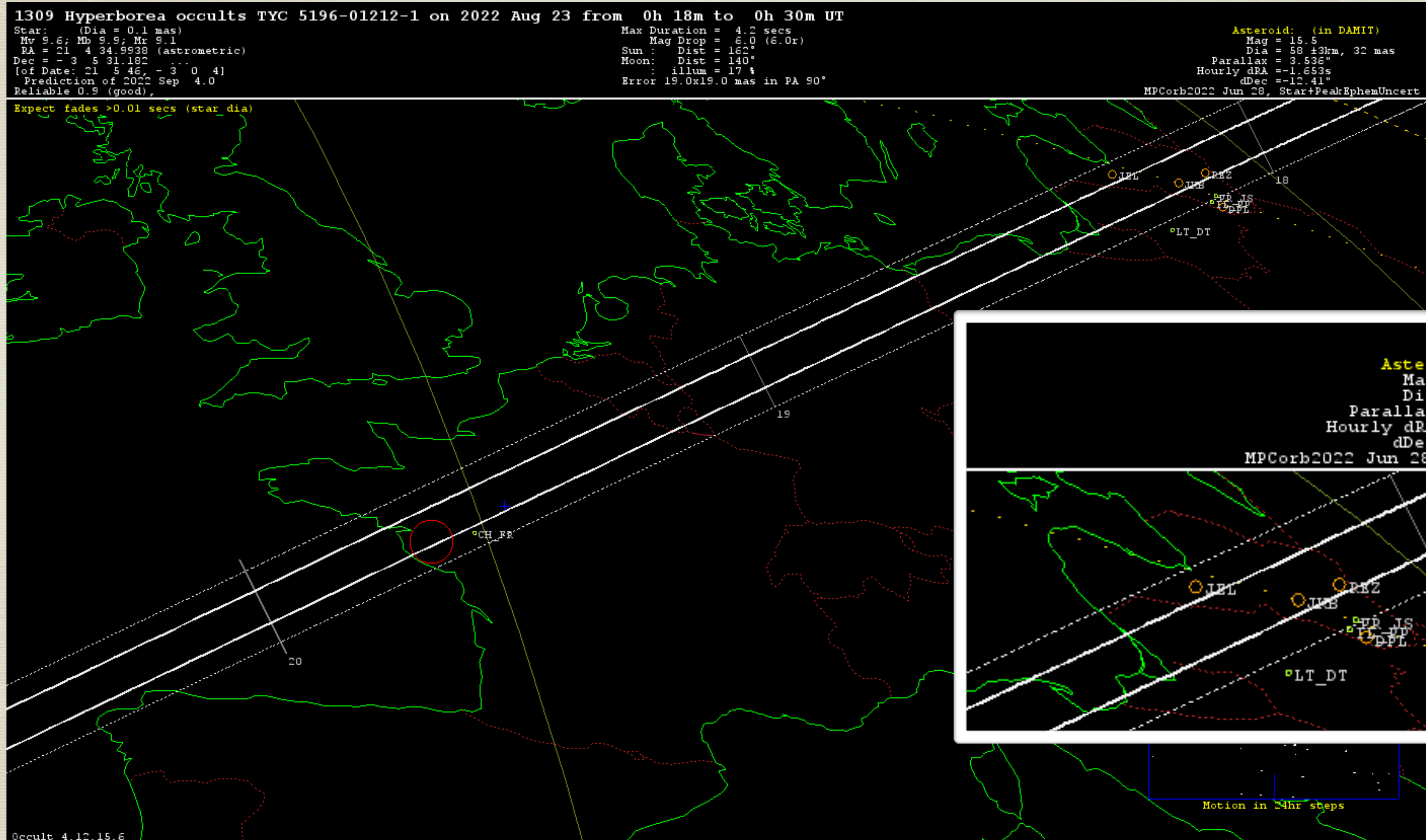


So what happened?

“That’s the way the cookie crumbles..”


–Bob Anderson

Prediction with MPEC June 2022 (made after event)



Visit to Lithuania after event





Thank you!
Paldies!
Ačiū!

Especially to Kārlis, Juris, Mārtiņš, Elvīra and Donatas