



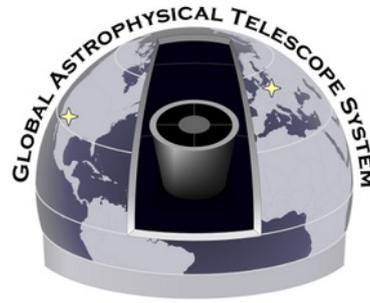
Astronomical Observatory
Adam Mickiewicz University



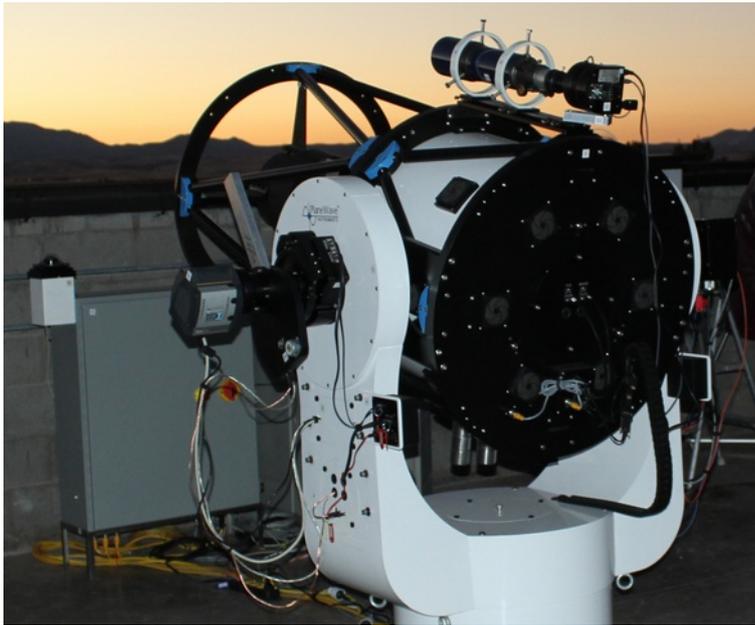
Science with RBT/PST2 and PST3 telescopes

Krzysztof Kamiński,
Anna Marciniak, Monika K. Kamińska

11th OPTICON Gaia Science Alerts Workshop
2021



RBT/PST2



Roman Baranowski Telescope /
Poznań Spectroscopic Telescope 2
0.7m f/6
R=40000
operational since 2013

Winer Observatory - Arizona

PST3



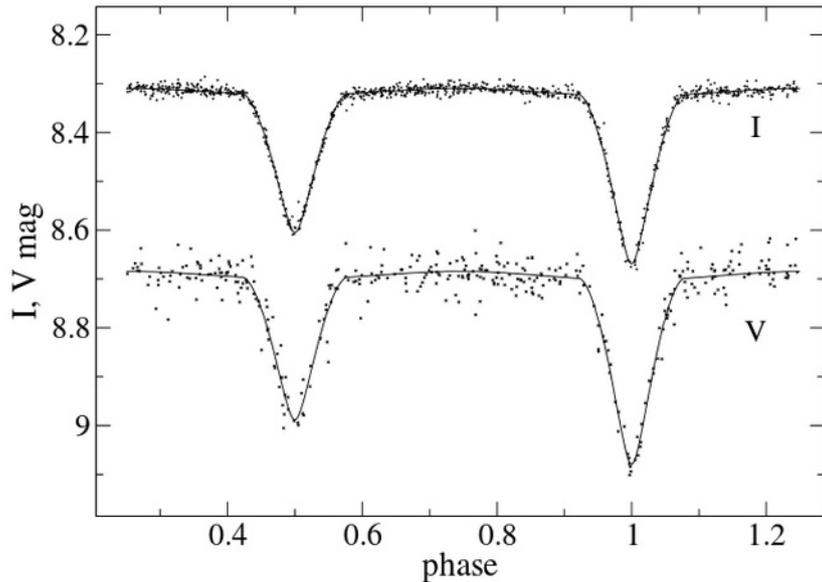
Poznań SST Telescope 3
0.7m f/4.5
2x 0.3m f/5
2x 0.3m f/1
in comissioning

Chalin - Poland

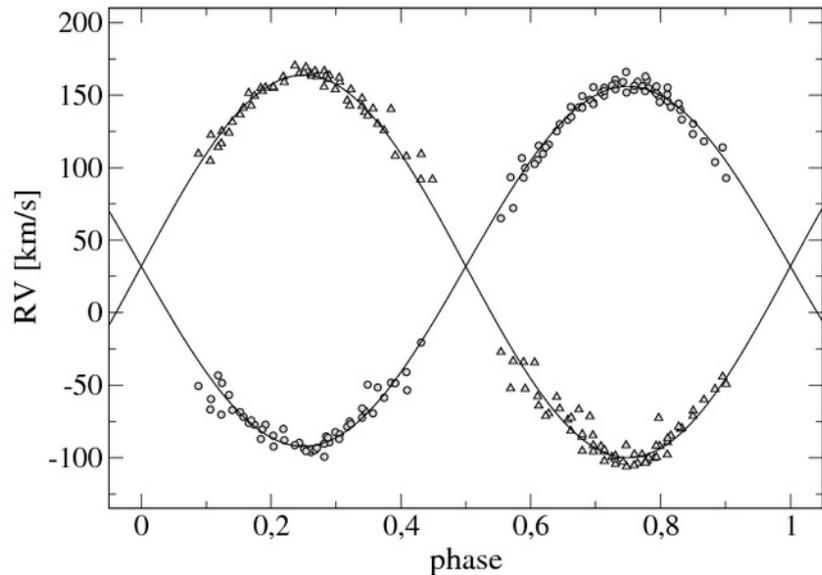
Modeling of eclipsing stars

Determination of astrophysical parameters of eclipsing stars

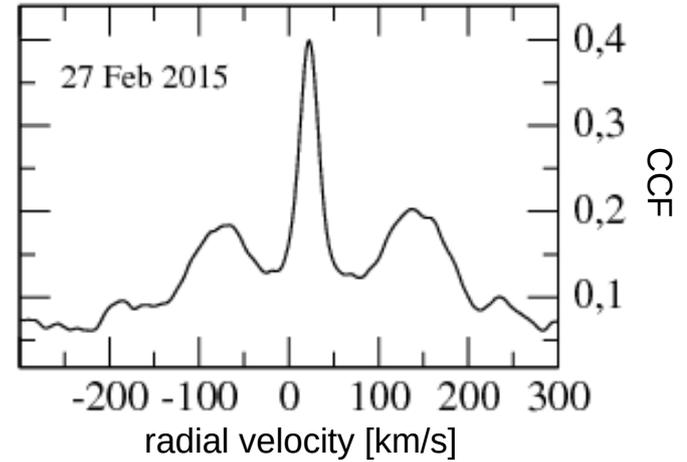
PI: Wojciech Dimitrov



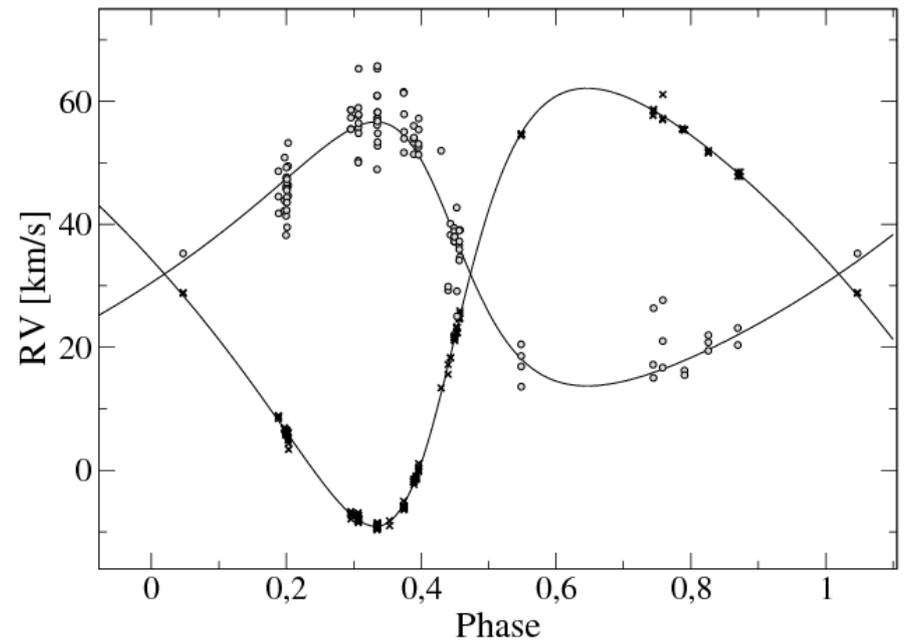
DY Lyn lightcurves from ASAS.



Radial velocities of eclipsing components (P=1.3d).



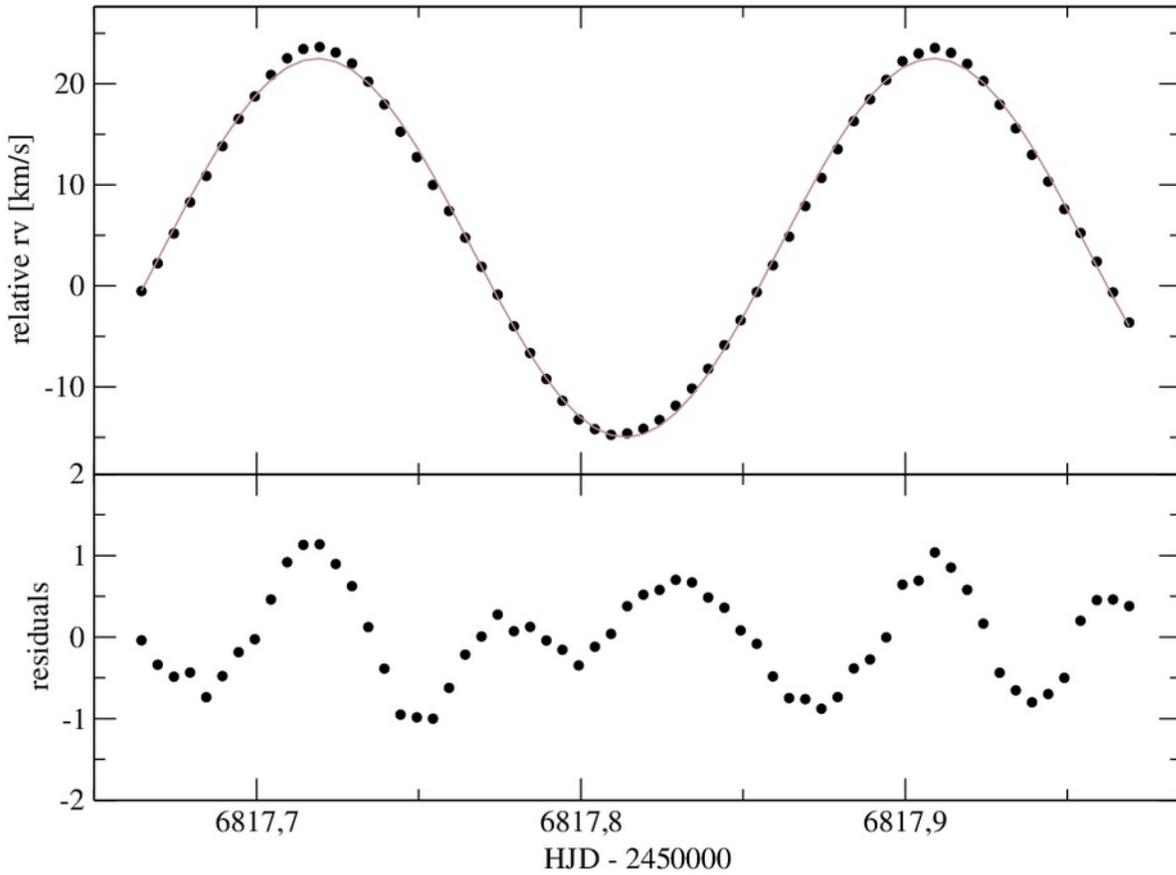
Cross-correlation function.



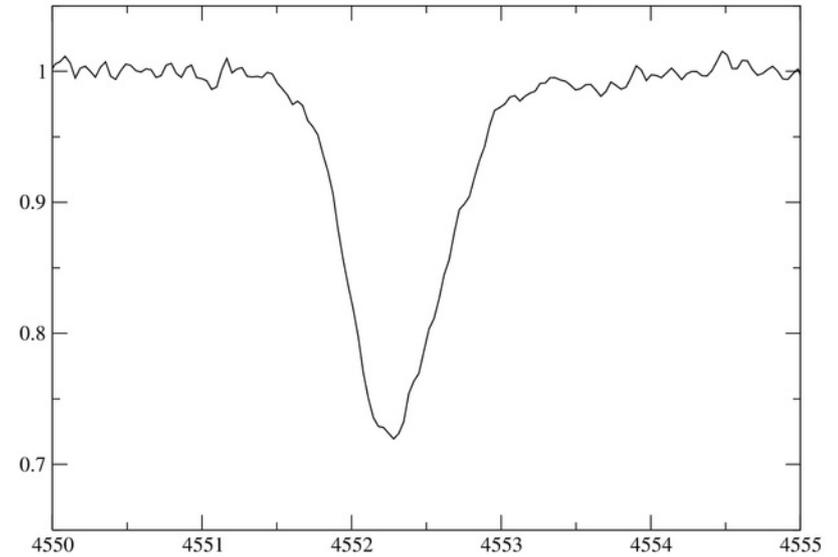
Radial velocities of the third component and eclipsing barycenter (P=281d).

Pulsating stars

High mass pulsating stars
PI: Krzysztof Kamiński

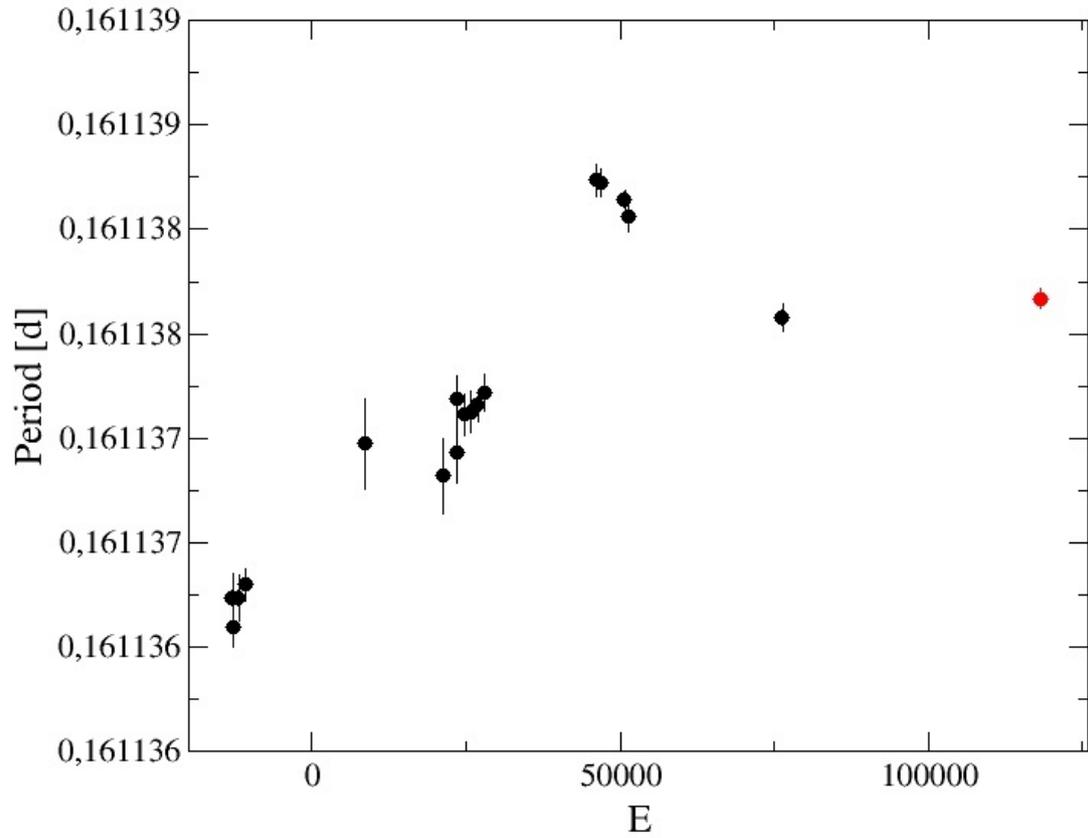


Beta Cep single night radial velocity curve.

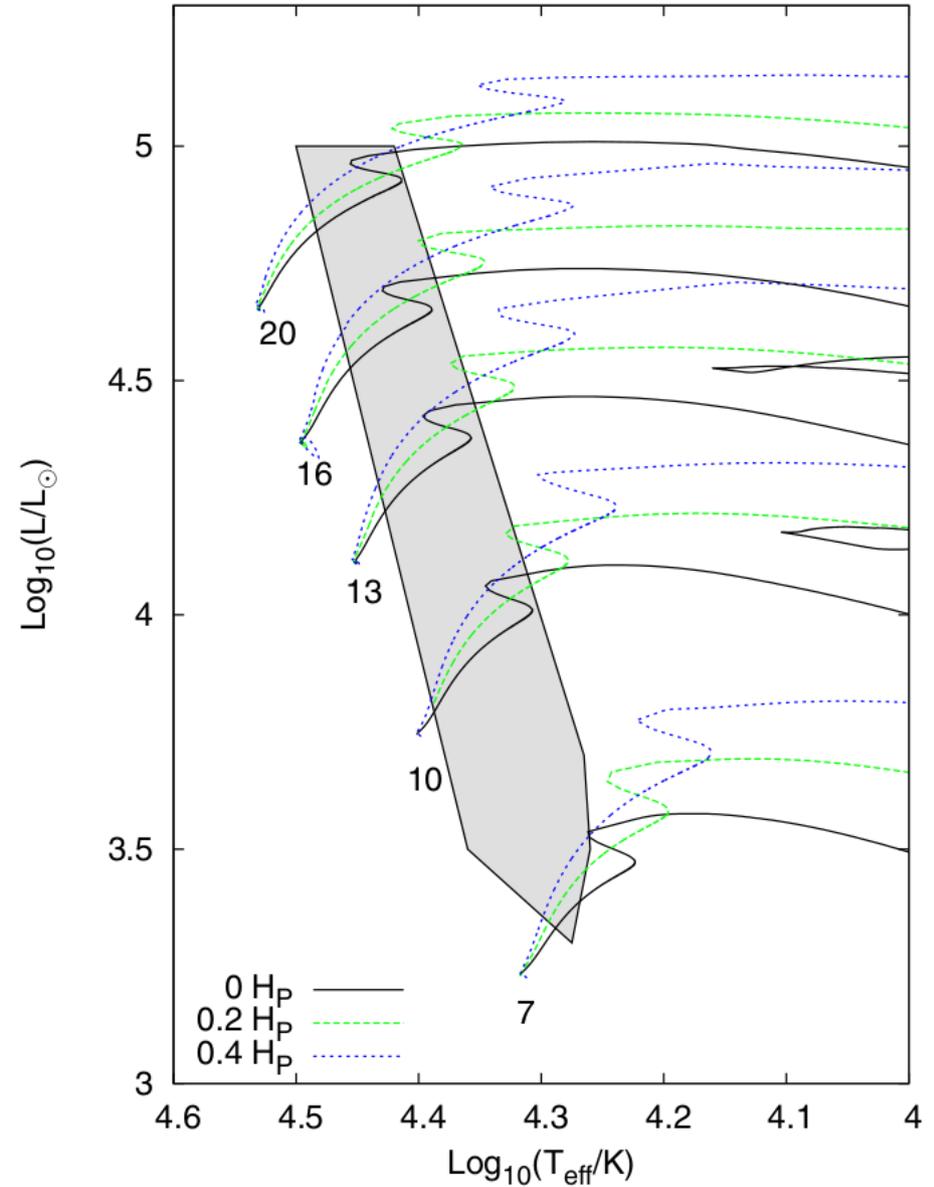


Beta Cep single metal line profile variations.

Pulsating stars



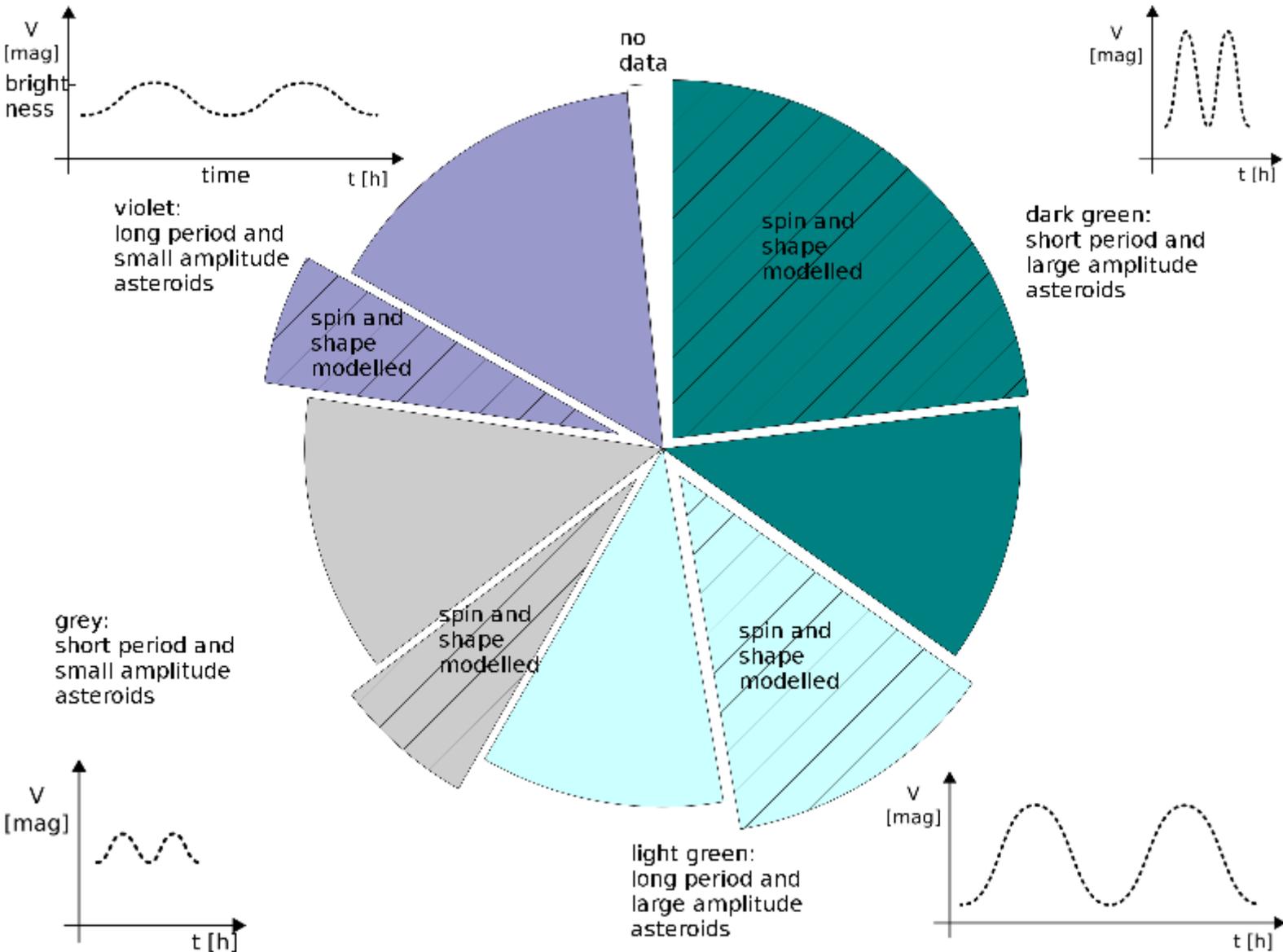
Observed pulsation period changes of delta Ceti.



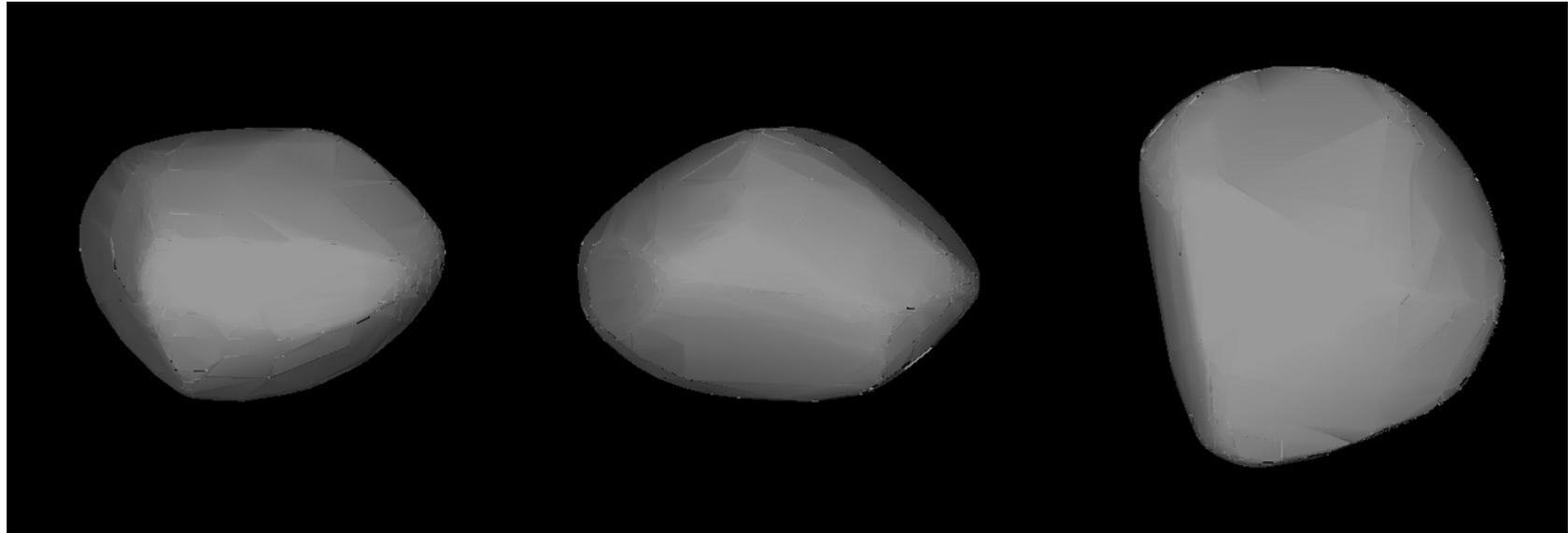
Evolution tracks of high mass stars (Neilson & Ignace, 2015).

Main belt asteroids

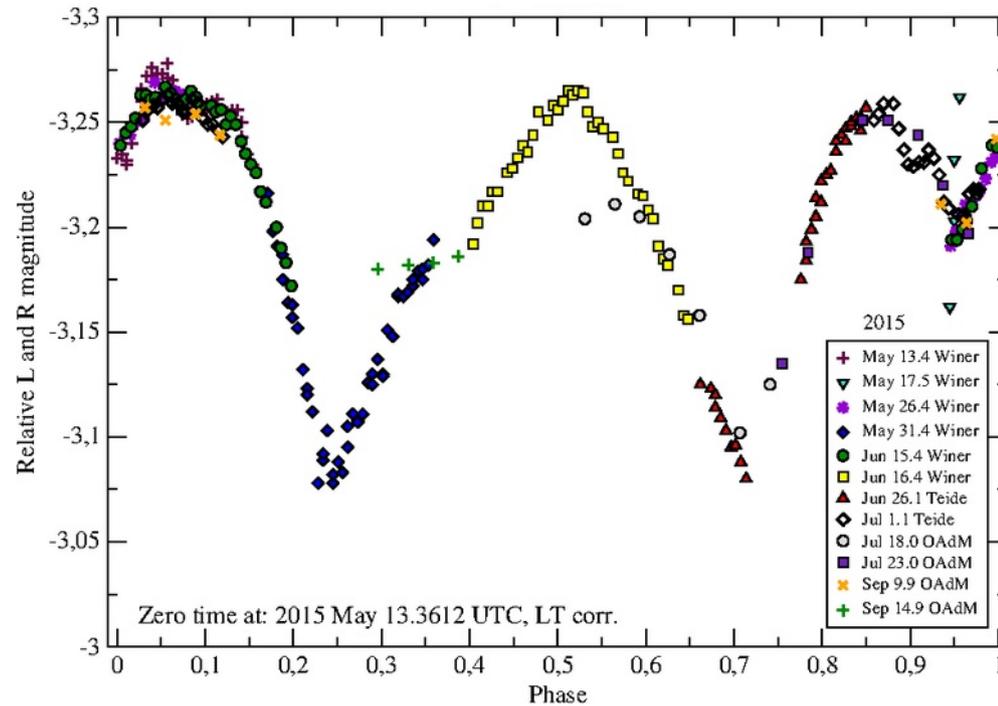
Survey of low amplitude and long period main belt asteroids
PI: Anna Marciniak



Main belt asteroids



3D model for 468 Lina asteroid.



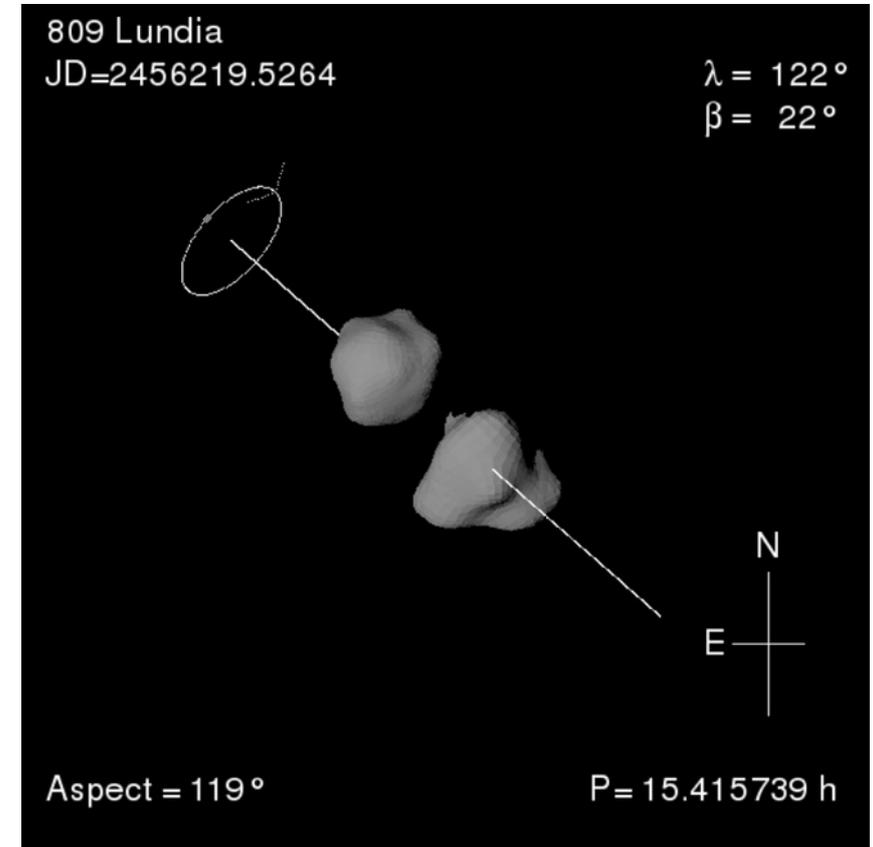
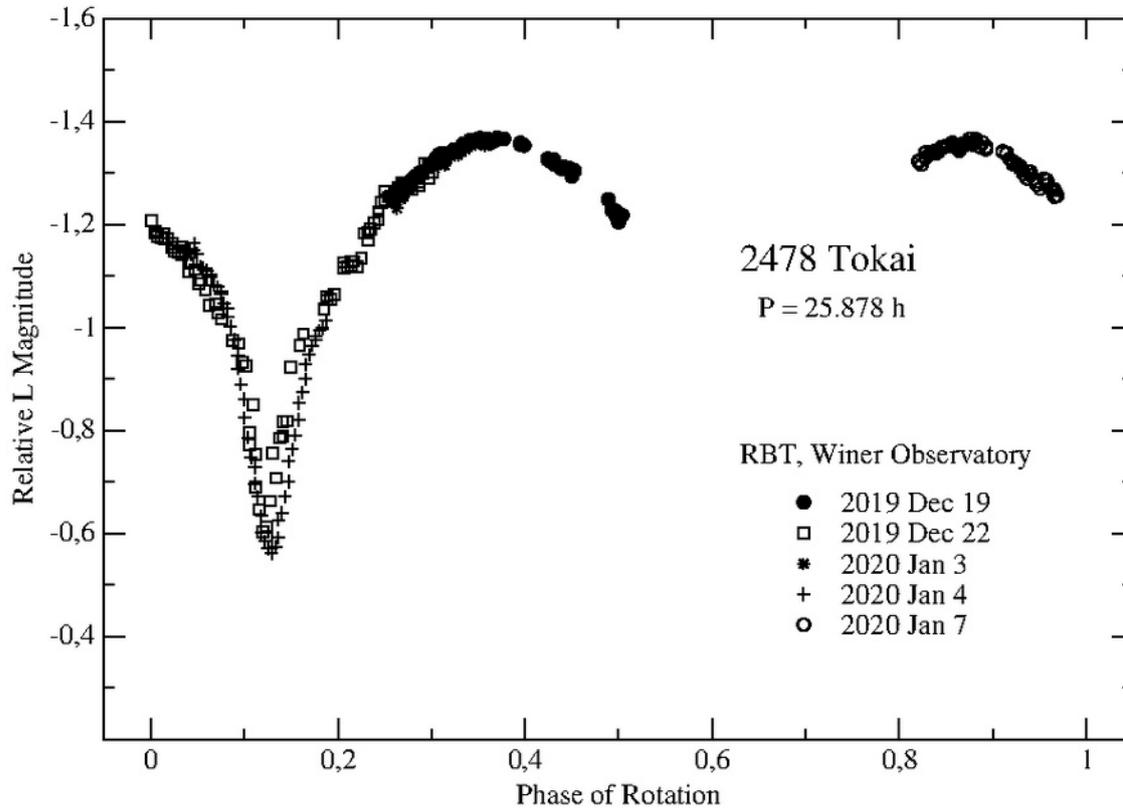
Phased lightcurve for 468 Lina with $P=16.5h$.

Binary asteroids

Survey of the synchronous binary asteroids in the Solar System

PI: Magdalena Polińska

Co-I: Przemysław Bartczak, Grzegorz Dudziński, Edyta Podlewska-Gaca



Example of a phased light curve of binary asteroid from RBT/PST2 telescope.

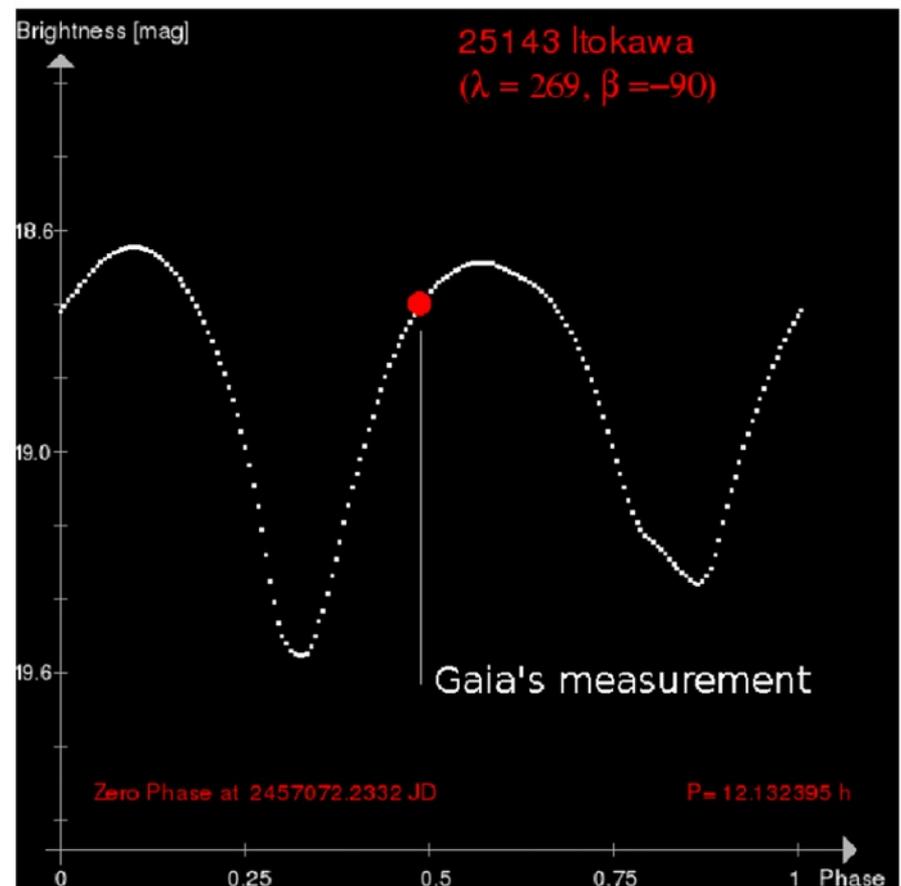
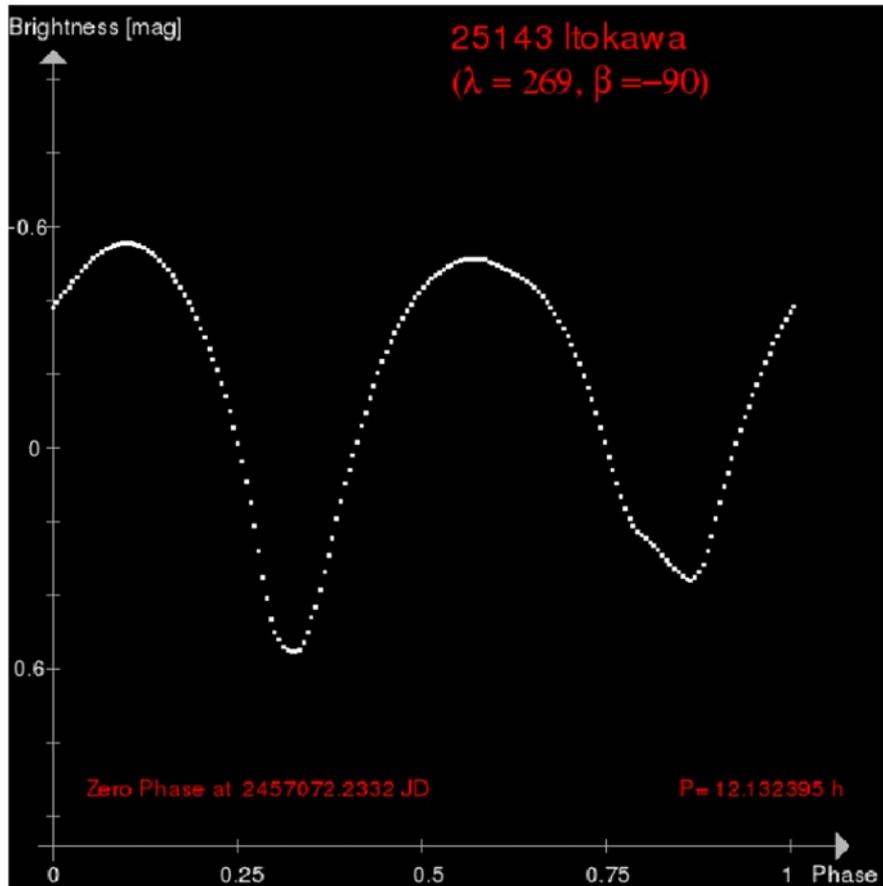
3D model of binary asteroid 809 Lundia based on photometric observations.

Asteroid volumes

Precise asteroid volumes from Gaia mission and ground-based observations

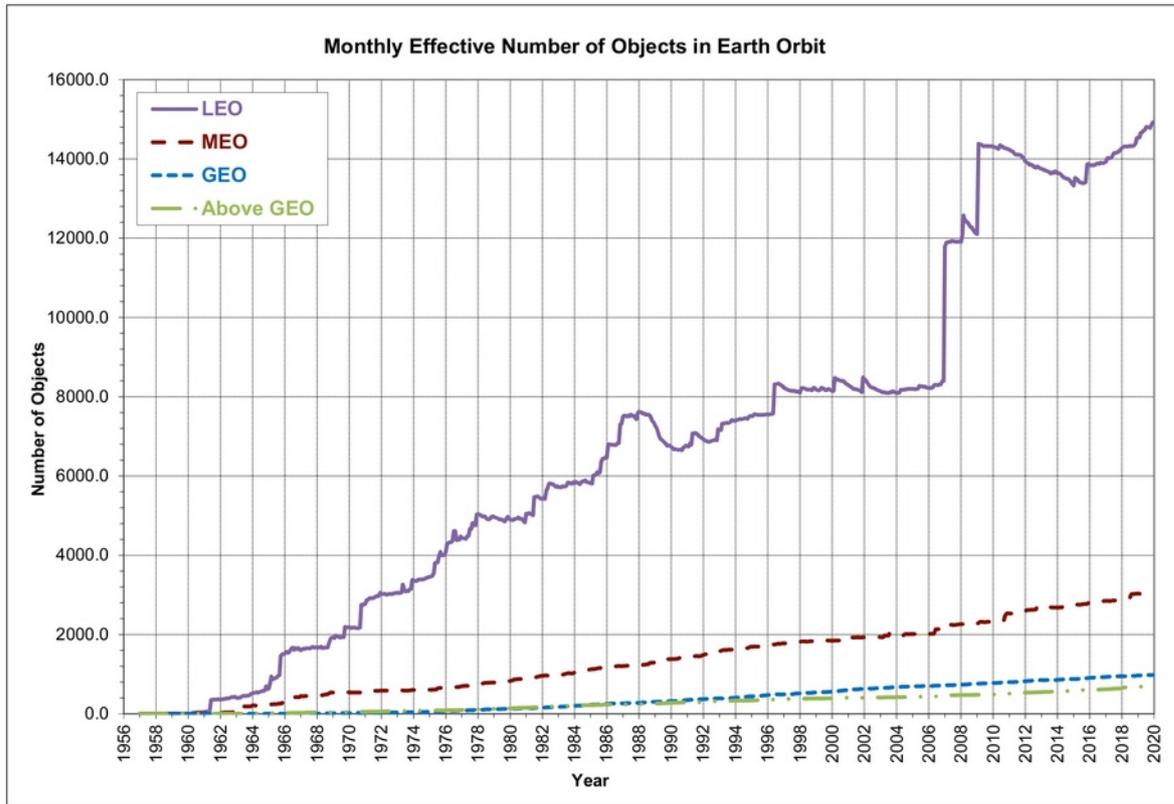
PI: Edyta Podlewska-Gaca

Co-I: Magdalena Polińska, Przemysław Bartczak, Grzegorz Dudziński



Combining ground-based high density light curves
with sparse absolute photometry from Gaia.

Space safety



Number of Earth orbiting objects in US satellite catalog.

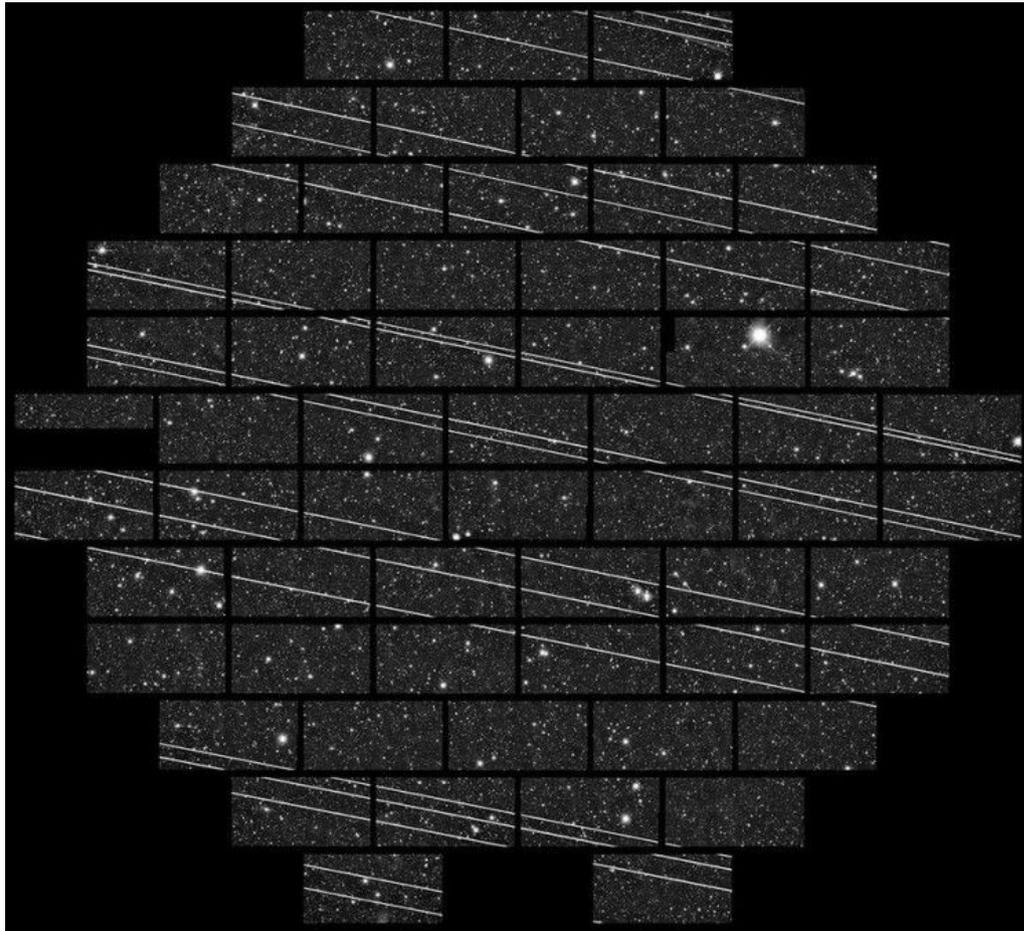


On-orbit rocket upper stage fragmentation.

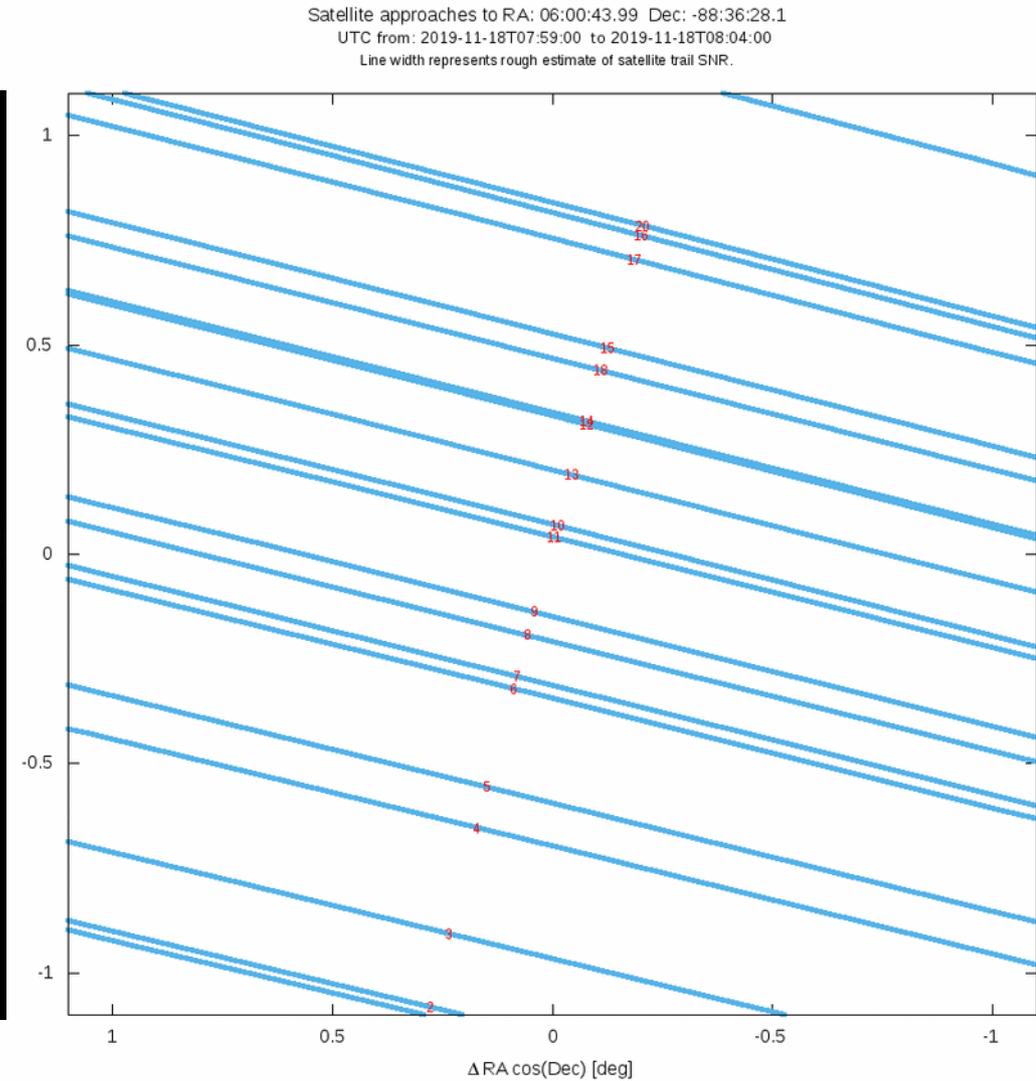


EU Space Surveillance and Tracking Consortium

Satellites and astronomical imaging



DECam on 4m telescope Blanco
CTIO (2019-11-20)



Predicted satellite trails

Satellite Trail Predictor - coming soon
A web service for predicting satellite trails in astronomical images.

Thank you for your attention



(The domes of PST3 telescopes)