The SBG Telescope of the Astronomical Observatory of the Ural Federal University: Opportunities for Gaia-FUN-SSO

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Gaia-FUN-SSO-3

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Outline

Astronomical Observatory of the Ural Federal University

Kourovskaya Astronomical Observatory

- The observatory has participated in the GAIA-FUN-SSO network since September 2013.
- Three campaigns of observation were as tests of observational opportunities
  - 2013 TV135 campaign (October 2013 — January 2014)
  - 2007 HB15 campaign (April 2014)
  - 2014 HQ124 short campaign (8–11 June 2014)

Astronomical Observatory of the Ural Federal University

Localization

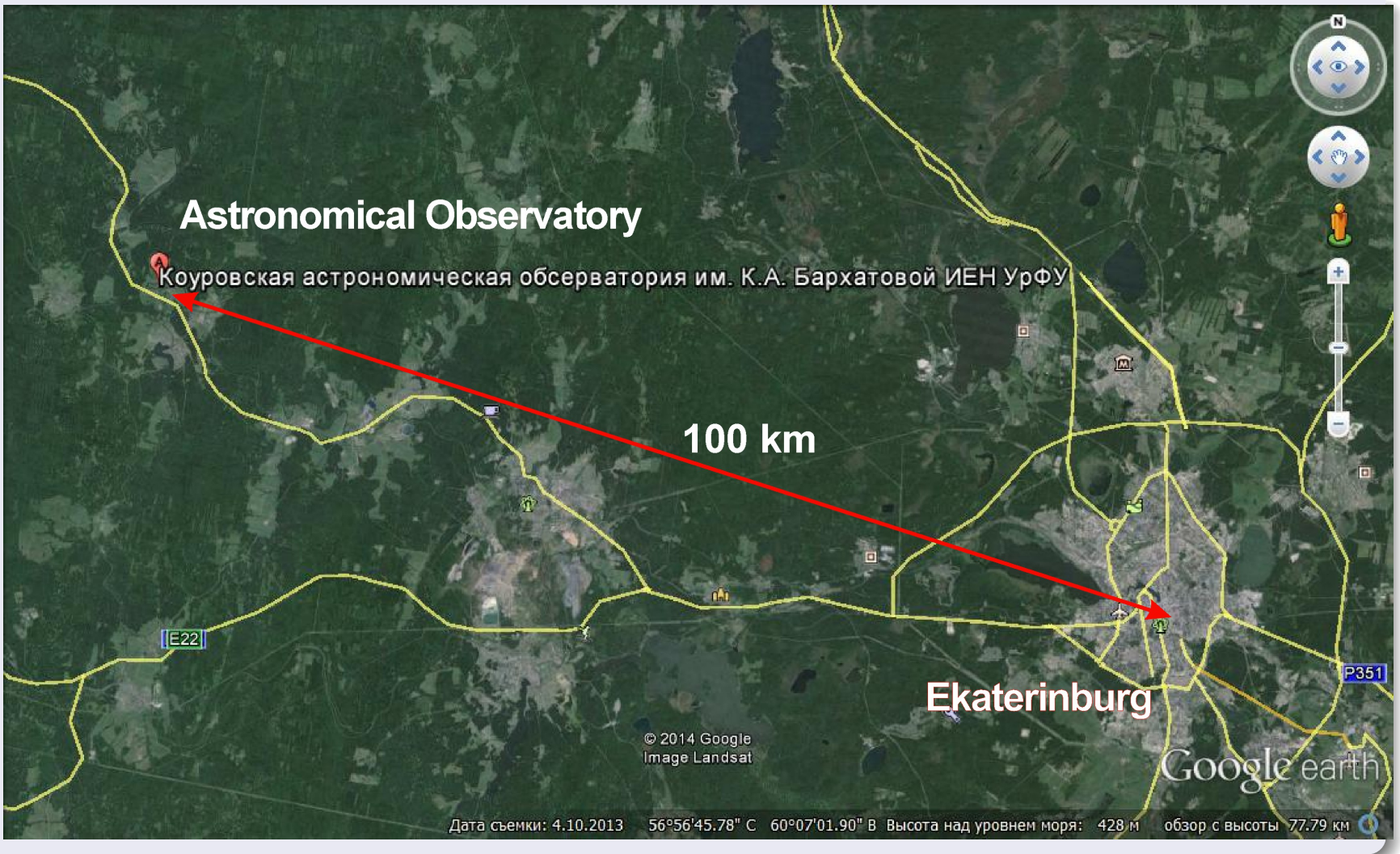
Name	Kourovskaya
IAU Code	168
Longitude	59.5472 deg
Latitude	56.9473 deg
Elevation	290 m

Dates

- The observatory was found on 12 January 1965.
- The SBG telescope has been used since 1974.
- The CCD observations has carried out since 2005.

In the GAIA-FUN-SSO Network

In the Middle Ural Range



In the observatory

The SBG telescope

The SBG telescope

Instrument specifications

Type	Reflector, Schmidt telescope
Mount	Four-axis alt-azimuth mounting
Focal length	0.788 m
Diameter	0.5 m

Receptor specifications

CCD Camera	Alta U32 (Apogee)
CCD Array	KAF-3200ME-1 (CODAC)
Elements	2184×1472 elements, 6.8×6.8 μm
Pixel size	1.803 arcsec/pixel
Field of view	65×44 arcmin
Limiting magnitude	19 mag

The SBG telescope

The precision timing system

- 12-channel GPS receiver Acutime 2000 GPS Smart Antenna

Controlling software

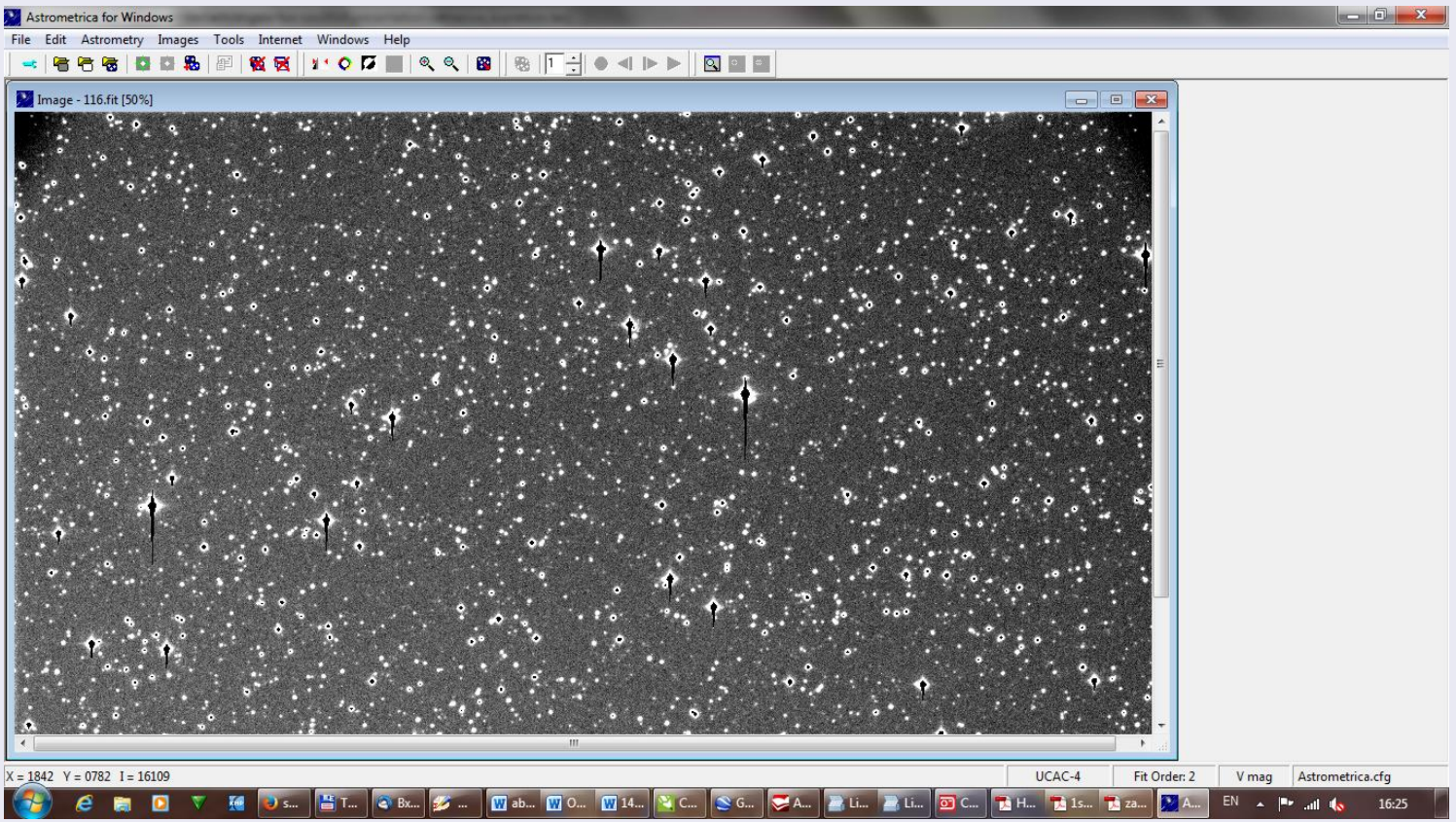
- SBGControl

Main targets

- Small Solar System bodies
- Artificial satellites of the Earth

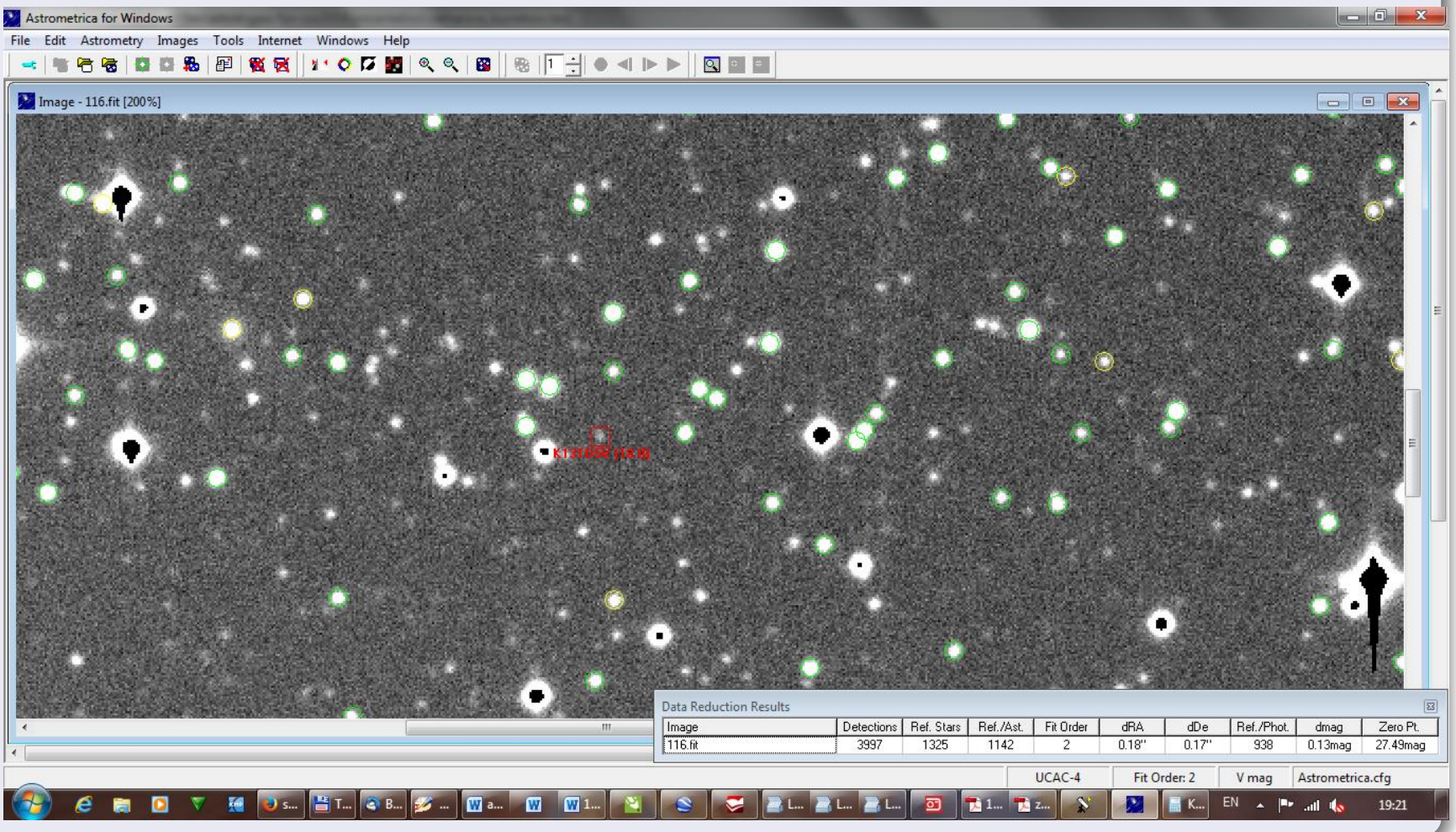
Astrometrical software

Astrometrica



Campaigns of observation

2013 TV135 campaign (October 2013 — January 2014)



Campaigns of observation

2007 HB15 campaign (April 2014)

- The asteroid was not detected.
- It was very faint object for the SBG telescope.

2014 HQ124 short campaign (8–11 June 2014)

- The asteroid was not observed.
- The sky was very light in nautical twilight near a day of summer solstice.

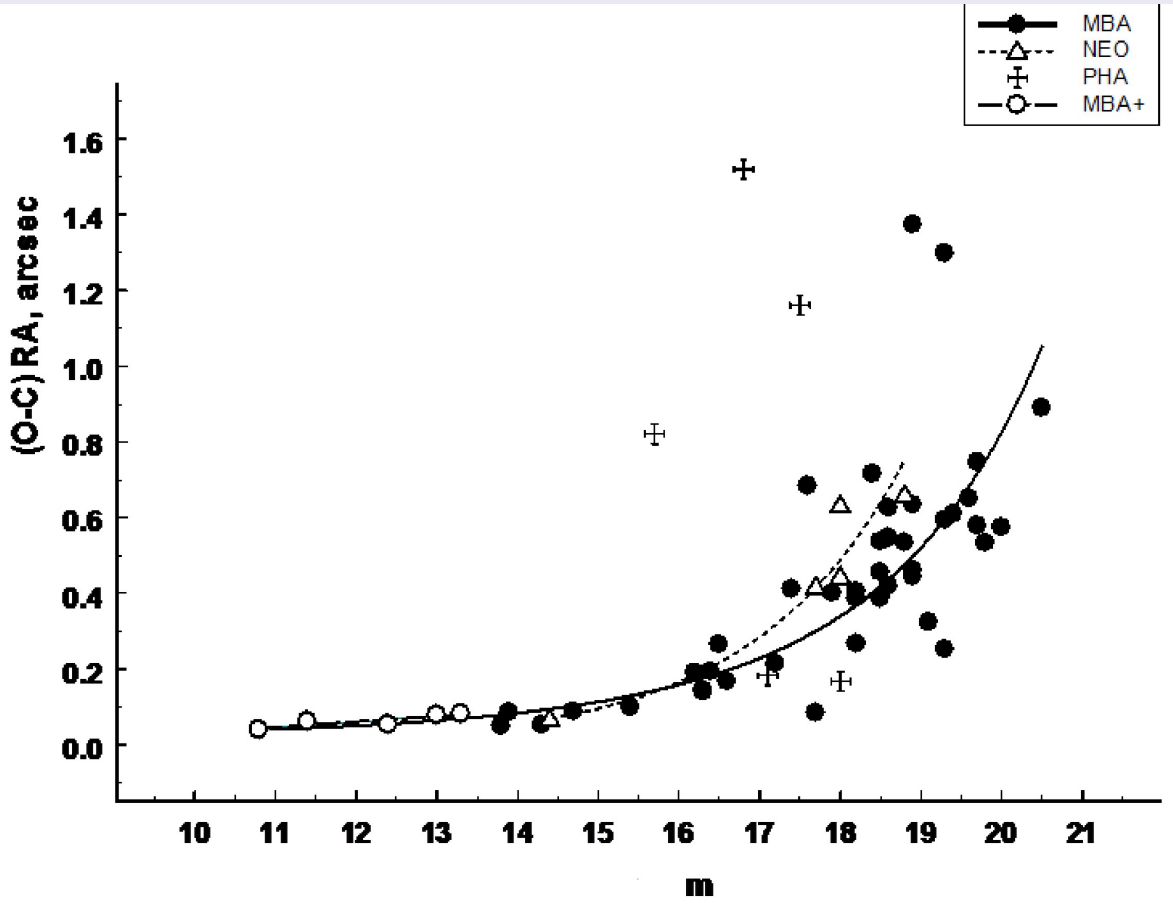
Observations of small Solar System bodies in 2014

Small bodies

- 54 asteroids (MBA, NEO, PHA).
- 12 comets.

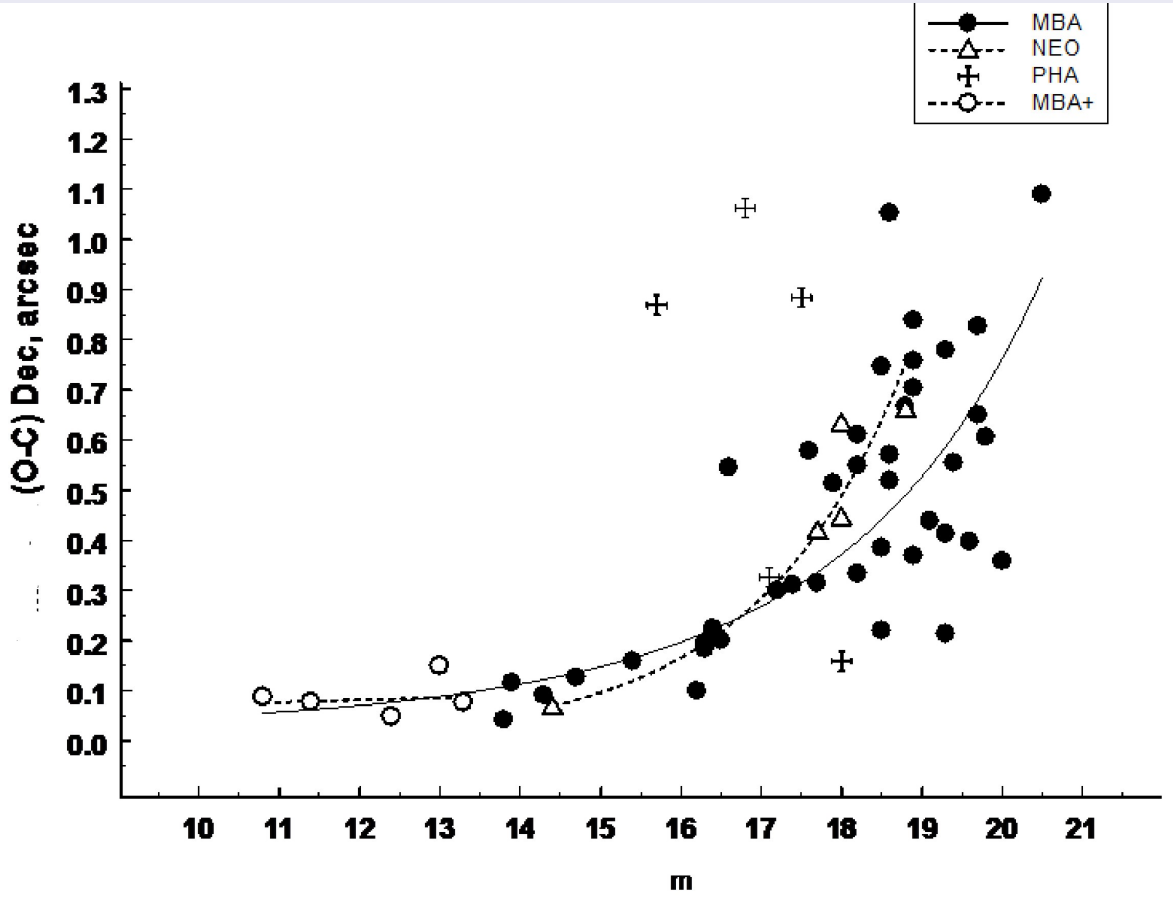
O–C in right ascension

Rms (O–C) in right ascension (G.Kaiser, private communication)



O–C in declination

Rms (O–C) in declination (G.Kaiser, private communication)



Future

1.2 m telescope

Type	Reflector, Cassegrain system
Mount	Alt-azimuth mounting
Focal length	3.5 m
Diameter	1.2 m
Field of view	1.15 deg
Limiting magnitude	20 mag

Conclusion

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- The Astronomical Observatory of the Ural Federal University can efficiently participate in the Gaia-FUN-SSO Network.

Thank you
for your attention!