

Observations planning service
for the project
“Against the bias in spins and shapes of asteroids”

User manual

1. How to start:

In order to register to the service one needs to use unique registration code obtained from project coordinator dr. Anna Marciniak of Astronomical Observatory Institute of A. Mickiewicz University in Poznań, Poland (ania.astro@gmail.com). Each user defines own username and password.

In the first use of the service an observing site has to be defined, with geographic coordinates, and limiting magnitude and elevation.

Then, each time while using the service only the username and password are required. The observing site is preserved for each user. The service works best with Firefox browser.

2. Suggested targets

Suggested targets option displays a set of selected targets visible tonight (or on any chosen night) for a given observer. They are already selected for sufficient Moon distance, limiting brightness, and visibility time. Begin and end times are for local site and defined altitude above the horizon. Coloured dots denote the list from which target comes from:

- Green - main list of long-period and low-amplitude targets
- Orange - list of possible low-pole targets with shorter periods - good for 1-2 hours of free observing time
- Red - backup targets
- Pink - targets finished, no more data needed.

The user needs to choose which targets to observe from the green and orange marked targets, taking into account the phases already covered.

3. Phases

We aim to cover whole rotation of each long-period target in relatively short time (2-3 weeks). In order to achieve this, long observing runs (at least 3 hours) are needed, and the phase coverage is the key issue. The first Action icon from the last three in the row (“Show coverage graph”) displays phase coverage plot.

In all rows but the last, the star symbols (*****) denote phases of rotation already covered with previous observations. Phases are counted from 0 to 1 (one full revolution) with a given period, and usually one run covers only 0.1 - 0.3 of the full rotation. Remaining phases are marked with ===== signs. The observing dates are given above each row of stars.

The last row of the phase plot shows which parts of the rotation can be covered tonight. A target should be observed only if tonight the missing phases can be covered, at least partially, to gain data from parts of the lightcurve that have not been observed yet.

If no target has the missing phases possible to be covered tonight, one should choose target that has last been observed at least a month ago. This will allow to register phase angle effects and determine the period more precisely.

4. Finder charts and coordinates

The second Action icon (“Event details”) displays a finder chart, J2000 equatorial coordinates, visibility plots, and asteroid parameters.

The system calculates close star passages of an asteroid and warns against them. One should avoid observations when any star passage is predicted. However only catalogue stars are checked. One should also visually inspect finder chart with DSS image (the default view) for any star passages too. The asteroid path length is equal its local visibility time.

If needed, the DSS image in the background can be replace with PPMXL catalogue chart. The finder chart can be exported to *.png format.

5. Reserving targets

For optimal coordination it is possible to reserve targets for a given night, with a short comment - by choosing the last Action icon (“Add target to planification”), however it is not necessary.

Please inform the project coordinator by e-mail, soon as possible after the observing run, of any observations made for targets from this project. Data reduction can be done later.

6. Data publishing policy

Lightcurve data gathered in this project are accumulated over a few apparitions, and are published only with unique spin and shape asteroid model. Sometimes it means 3-5 years before given lightcurve is published. Publications are done in renowned scientific journals (*Astronomy Astrophys.*, *MNRAS*, *Icarus*) and all the observers and data analysts are added as coauthors. Then data are made public via CDS or ALCDEF repositories.

In case of any questions or doubts please write to: ania.astro@gmail.com.