BOKZ Star Instrument Family

In-orbit processing results

The operating star trackers – BOKZ and BOKZ-M – can be considered prototypes for the instruments should which provide for controlling s/c angular motion parameters in nominal operation conditions without any support by other systems of the s/c housekeeping system.
This operation mode was proved on the Yamal-200, Cosmos-2410, Cosmos-2420 and Resurs-DK spacecraft.

Non-nominal operation conditions are as follows:

- S/c angular velocity exceeds the value admissible for certain star instrument modification.
- There are bright natural objects (the Sun, the Earth and the Moon) within the instrument's field of view.
- There are artificial objects (space debris) within the instrument's field of view.

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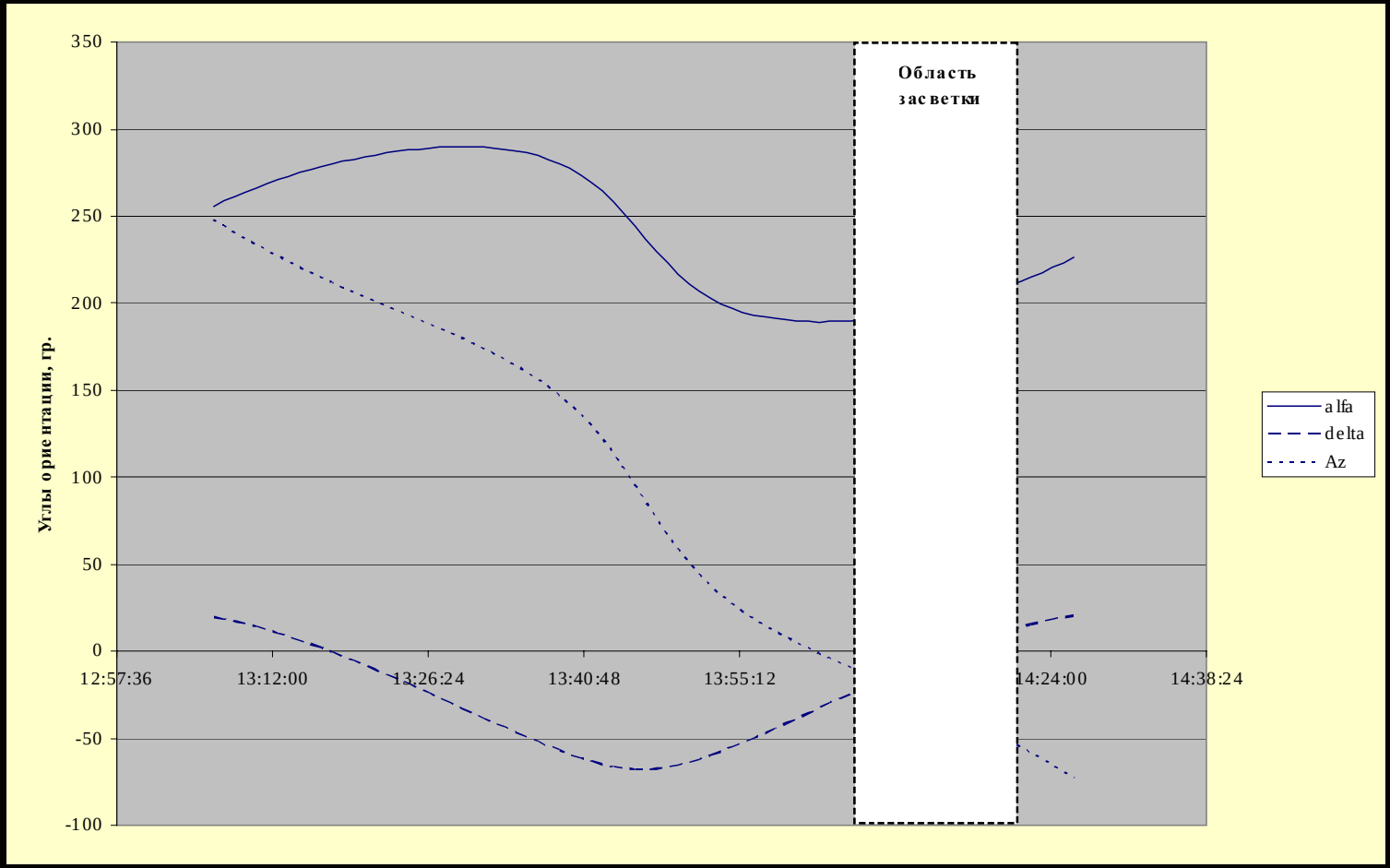
SC trajectory with the attitude control break due to the Sun illumination



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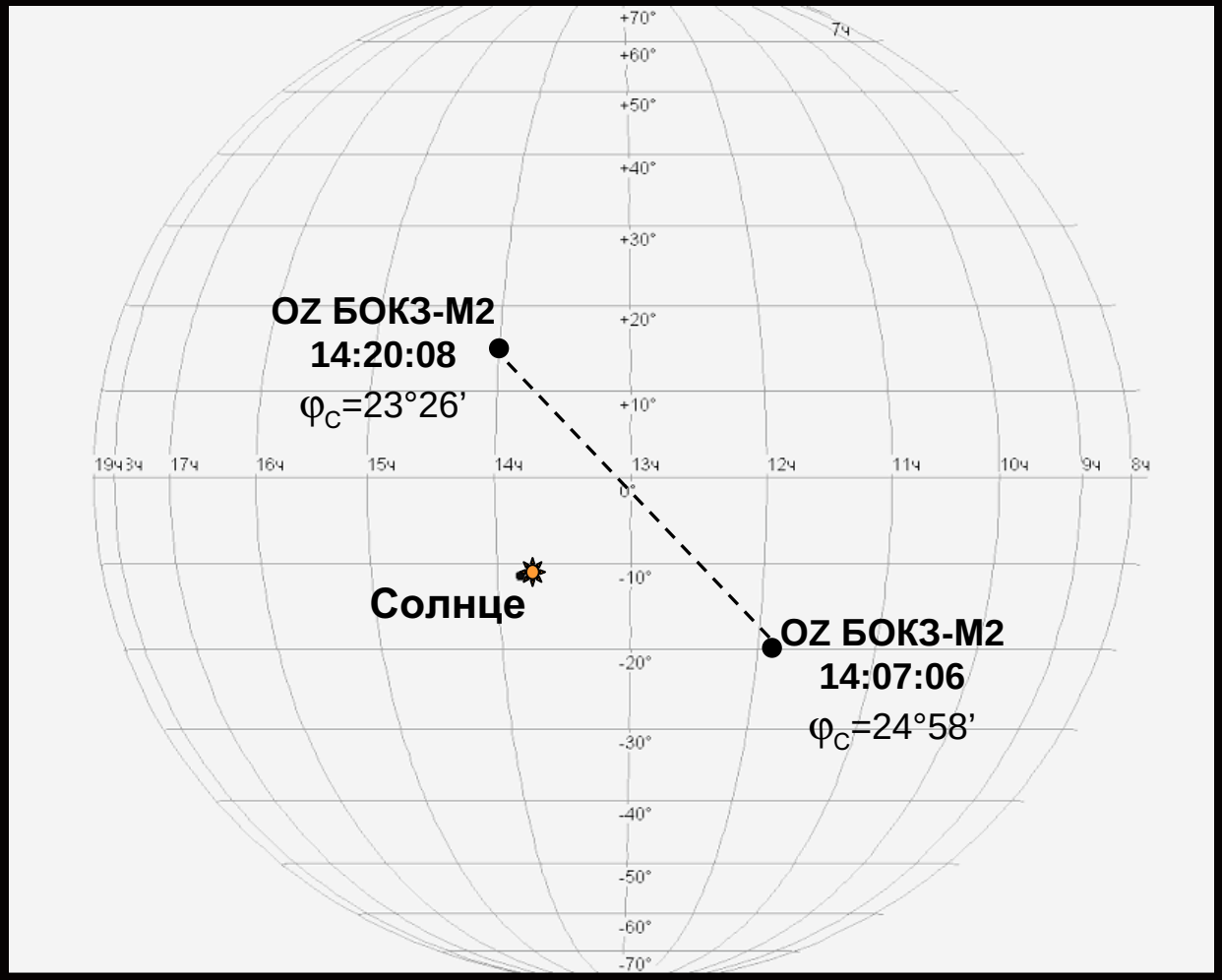
Period of Star tracker non-operation due to the Sun illumination



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Artificial objects

An image of a particle with a size of 150 μm at a distance of 2.8 m from the BOKZ instrument onboard the Yamal-200 spacecraft