

OBSERVATION CAMPAIGN PLANNING FOR THE GEOSTATIONARY RING

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Observation of the objects in the geostationary ring is of vital importance because of the uniqueness of this area in space. Routine observation of this ring is done using ground-based telescopes to identify uncatalogued objects and also to verify the information about catalogued objects.

Detection rates and pass characteristics for ground-based telescopes can be predicted based on the population of ESA's MASTER (Meteoroid and Space Debris Terrestrial Environment Reference) model in the geostationary ring. Based on observation time, observation campaigns for the geostationary ring can be planned and instrument parameters as well as the viewing direction, sensor position, or orbit can be optimized according to the density of the object populations.

This paper is the result of propagation of objects from the MASTER model to calculate objects' density and to identify the densest regions of the geostationary ring. The paper also concludes with some suggestions to use observation results to evaluate and improve the MASTER model.