OBSERVATIONS AND INVESTIGATIONS OF ARTIFICIAL OBJECTS IN LVIV

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Space debris is an increasing threat to space services including satellite communication; allocation of new satellites; navigation and timing applications; even Earth observation itself is affected. As the use of Earth orbit grows more congested, the need to track space objects and provide information about activities in space becomes increasingly critical for a number of reasons, such as helping to prevent collision or debris-caused damage.

Among the methods of tracking the artificial objects are optical ones, which can give information about position of the selected object (positional observations), distance to the object (laser ranging), behavior of the object on the orbit and the shape of the satellite (photometric observations).

The Astronomical observatory (AO) is equipped with special complex of hardware and software for receiving data about: position of LEO object one could get making observations with the "Jupiter-9" on automated mounting of the Meade DS-2130 which was upgraded by AO staff and equipped with modern light-sensitive cameras; position, behavior and the shape of the satellite in GEO region—from observation made with the telescopes AZT-14 or/and GLD-250, which are equipped with modern Starlight Xpress astrocameras and photometric filters Astrodon.

During the time of working the AO has accumulated very many observations of artificial objects which should be collected somewhere. That’s why there arose a need to create some Repository (data warehouse) of satellite observation data. Now it is currently being filled.