



Tracking on non-active collaborative objects from San Fernando Laser station

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The Royal Observatory of the Spanish Navy (ROA) works on satellite geodesy from the early days of the space age, when the first artificial satellite tracking telescope was installed in 1958: the Baker-Nunn camera. In 1975 a French satellite Laser ranging (SLR) station was installed and operated at ROA . Since 1980, ROA has been operating this instrument which was upgraded to a third generation and it is still keep into a continuous update to reach the highest level of operability.

Since then ROA has participated in different space geodesy campaigns through the International Laser Service Stations (ILRS) or its European regional organization (EUROLAS), tracking a number of artificial satellites types : ERS, ENVISAT, LAGEOS, TOPEX- POSEIDON to name but a few.

Recently we opened a new field of research: space debris tracking, which is receiving increasing importance and attention from international space agencies. The main problem is the relatively low accuracy of common used methods. It is clear that improving the predicted orbit accuracy is necessary to fulfill our aims (avoiding unnecessary anti-collision maneuvers,...). Following results obtained by other colleagues (Austria, China, USA,...) we proposed to share our time-schedule using our satellite ranging station to obtain data which will make orbital elements predictions far more accurate (sub-meter accuracy), while we still keep our tracking routines over active satellites. In this communication we report the actions fulfill until nowadays.