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Paper Title: **Analysis of ILRS data from STPSat-2 Retro-reflector**

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Abstract:

Ranging experiments were successfully carried out with the ½ inch hollow retro-reflector on STPSAT2. The purpose of the experiments was to evaluate the utility of such a small device for satellite tracking with the goal of eventually deploying similar retro-reflectors on small inexpensive cubesats to proliferate a larger number of targets for satellite tracking studies. Four of the ILRS participants reported returns in their posted data so these data could be used to evaluate the retro-reflector utility. For all of the experiments, the satellite was in a NADIR pointing orientation and the angular fall-off of the retro-reflector response limited the distance at which the satellite could be detected. The results indicate that if the retro-reflector could be pointed towards the illumination site, the range at which the satellite would provide useful data would be extended considerably.