

CHARACTERIZATION OF SYSTEMATIC
ERRORS ON SPACE DEBRIS ASTRONOMICAL
COORDINATES OBTAINED FROM THE 1-M
REFLECTOR AT OAN-VENEZUELA.

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Optical systems as well as atmospheric refraction are known to introduce non-negligible random and systematic errors on astronomical coordinates. We aim to characterize such systematic errors or distortions, including the contribution of atmospheric refraction at different zenith distances, using overlapping observations taken along the Celestial Equator and the local meridian. We hope to improve the obtained astronomical coordinates, in particular for space debris objects on which this error reduction translate into a significantly more precise geocentric position, given their proximity to Earth. By correcting for the aforementioned distortions, we also hope to reach the precision limit of the optical system being used, in this case the 1-m Reflector telescope at Llano del Hato Observatory (MPC 303) in Venezuela. We apply this procedure in the observation of space debris located at the Laplace plane.

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