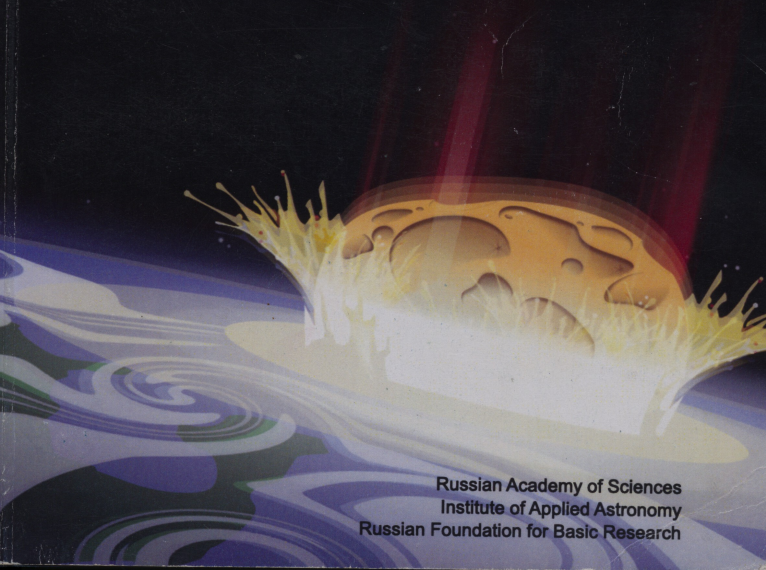


International Conference

Asteroid-Comet Hazard - 2009

ACH - 2009

Russia, St. Petersburg, September 21-25, 2009



Russian Academy of Sciences
Institute of Applied Astronomy
Russian Foundation for Basic Research

Positions of near-Earth asteroids from CCD observations with RTT150

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Near-Earth asteroids (NEAs) have obvious observable motions, and thus, they appear to be difficult objects for observations using telescopes with large focal ratios. Much effort should be made to attain accurate positions of these bodies, especially when they have close approaches with the Earth.

More than 900 observations of more than 20 NEAs were made with the Russian-Turkish telescope (RTT150) from 2004 to 2008 within the framework of international cooperation between our institutions [1]. More extended description of the telescope and some intermediary observational results are presented in [2]. The reduction was made using the UCAC2 and USNO-B1 catalogues. The comparison of the observed and calculated positions with the use of the HORIZONS system gave standard errors of a single position within 0.05"–0.50", the weighted mean error is about 0.2" in each coordinate. The analysis of O–C has revealed the usefulness of asteroid positions for the actual purpose of orbit improving. The principal source of precision degradation of observed positions is low signal-to-noise ratio, caused in some cases by the high observable motions of the asteroids. The ways of possible precision and accuracy improvements, related to the astrometry measurements with the RTT150, are discussed.

List of references

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