Motion Disturbances Analysis of the Jupiter's VIth Satellite and their Influence on Astrometrical Observations at National Astronomical Observatory, Rozhen, Bulgaria

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Abstract

The Jupiter's outer satellites could be regarde as poorly studied objects of the Solar system. One of them is Himalia - the VIth satellite. Up to now Himalia was observed about 500 times and most of these observations were at the beginning of the century, after its discovery. Nowadays observers have at their disposal previous ephemeris with 1.8" accuracy due to the contemporary theories of Himalia's motion.

Disturbances due mainly to the Sun, Saturn, Jupiter's excentricity and Galilean satellites. As an interstitial orbit of the VIth satellite is accepted the orbit obtained form the solving of the problem of two fixed centres. Such an interstitial orbit also includes disturbances determined by the IInd, IIIrd and partially by the IVth zonal harmonic from the expanding of the Jupiter's force function of gravitation in series of Legendre polynomialis.

Preprint submitted to Elsevier Science *8 June 1995*