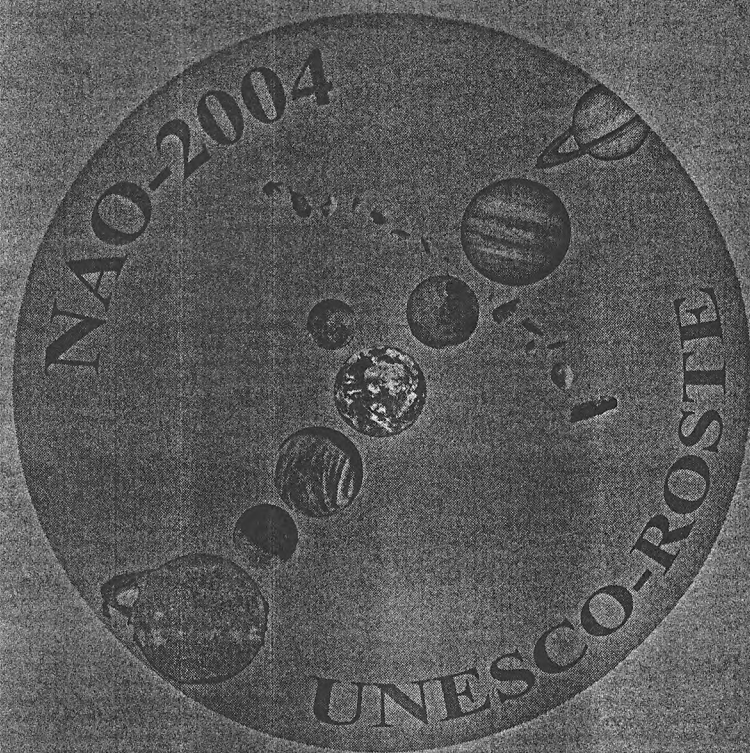


**INTERNATIONAL
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**Research of Artificial and Natural NEOs
and Other Solar System Bodies with
CCD Ground-based Telescopes**
PROCEEDINGS OF THE CONFERENCE

INFLUENCE OF THE ATMOSPHERE ON ASTROGEODETTIC MEASUREMENTS

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During last three decades geodesy, geodynamics, navigation and many other sciences have gone through real revolution due to the application of artificial satellites of the Earth (ASE). The majority of these sciences studies the processes of passing of electromagnetic impulses through the Earth's atmosphere.

Electrically charged area of the atmosphere - ionosphere, as well as neutral area which consist of the troposphere and stratosphere, influence the speed and the direction of propagation of electromagnetic waves. As the ionosphere is the dispersion environment for radio waves we can almost avoid the effect of ionospheres using the technique of two frequencies.

The elimination of the influence of neutral atmosphere, which is non-dispersion space for definite radio frequencies, being the main problem, it is impossible to apply bifrequency methods for it. The neutral atmosphere is the reason of two effects - delay of propagation of a signal and the bending of a ray (refraction).

The development of day-time laser observations ASE, the increase of instrumental accuracy of laser measurements of distances to ASE up to 1-5 mm, the development of radio engineering observations (GPS - observation), and the fulfilment of international state programs and projects have caused the necessity of making the researches on increasing of the accuracy of models of reduction for influence of atmosphere both registration of regional and local features of a field of a refraction. Thus, one of the actual tasks is the estimation and refinement of models of atmospheric reductions at the analysis of interpretation of astronomical - geodesic observations with the purpose to increase the accuracy of registration of influence of the atmosphere on outcomes of ranging observations of ASE.

This paper is devoted to the problem of accuracy increasing in allowing for Earth's atmosphere influences on results of daily ranging observation of the Earth artificial satellites.

For an optical range the correction ΔpL was calculated in two ways: by the method of numerical integration under the data of aerological sounding (probing) of the atmosphere and under the Mariny Murray formulas. For a radio-frequency range the correction ΔpR is obtained also by method of numerical integration, and also under the Saastamoinen and Hopfeld formula.

The divergences between the values of the corrections ΔpR , calculated under the Saastamoinen formula, and the corrections obtained by a method of numerical integration, in a radio-frequency range are much more larger, than in optical range. A reason of such a divergence is that in a radio-frequency range the considerable influence has partial pressure of water vapours. In papers the estimation of the precipitable water vapour for GPS observations in Ukraine.

USAGE OF RESULTS OF A FIVE-COLOR PHOTOMETRY OF SMALL ASTEROIDS OBTAINED BY SDSS FOR REVISION OF MBA-FAMILY MEMBERS

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The numerous discovery of new asteroids have allowed essentially to expand the inventory of the members of families. The statistical techniques, such as a hierarchical clustering method, allow to identify groupings (clusters) in phase space of proper orbital elements designating them as families. However, significant part of the members of these groupings are not the "true" members, as belong to asteroids of a background.

Besides as a result of secondary processes of disruption of the family's members can be formed so-called "clans", that is groups consisting from several subfamilies, which are difficult for separating based only on the orbital data, but which, probably, have various mineralogic structure.