Geophysical Research Abstracts,
Vol. 11, EGU2009-11491, 2009
EGU General Assembly 2009

The construction method of united celenocentric coordinates system for visible and reverse lunar sides, brought to the lunar center masses and main axis of its inertia

Y. Nefedjev, S. Valeev, I. Sharafutdinov , M. Kutlenkov, and N. Varaksina
(star1955@mail.ru)

Construction of a global basic network on the Moon surface is one of the modern celenodesy significant task. In this work the basic creation approaches of united celenocentric coordinates systems in masses center system and the main Moon axis inertia are described on the basis of space and above-ground supervisions association.
At presence base celenocentric the catalogue of coordinates of basic objects on the seen sides of Moon KCK-1162 and of some catalogues of objects in librational to a zone and on the return sides of the Moon in diverse systems construction of uniform system of coordinates with the center and the axes conterminous to the center of weights of the Moon and the main axes of its inertia, includes the following stages:
-Research regular and random errors of catalogue KCK-1162;
-Condensation and expansion of system of catalogue KCK-1162 on the seen, return sides of the Moon and librational a zone.
The choice of a method of transformation of coordinates should be carried out as a result of careful researches of comparative efficiency of the following approaches:
- Affine transformation,
- Optimum polynomial approximations,
- Orthogonal transformation without and in view of regular mistakes,
- Decisions of system of the simultaneous equations.