ON ENERGY-ASTRONOMICAL-LASER SPACE BASE FOR THE ASTEROID-COMET HAZARD MITIGATION

Viacheslav V. Ivashkin

M.V. Keldysh Institute of Applied Mathematics
Miusskaya Sq. 4, Moscow, 125047, Russia
Tel.: 7-095-2507826; Fax: 7-095-9720737; E-mail: ivashkin@spp.Keldysh.ru

A lunar base to mitigate the asteroid-comet hazard for the Earth is investigated. The base is proposed to consist of three stations. First, this is an energy station. This station transforms the solar energy into the electric one, which is used to put into operation an astronomical observatory and a laser station. The observatory telescopes can detect near-Earth objects (NEOs) and discover an object, which impacts the Earth during its motion and can lead to the Earth catastrophe, according to (S. Isobe, 1996). In this case, the laser station is proposed to give a powerful laser effect on that object to deflect or destroy it. There are analyzed the NEO's orbit correction and the NEO destruction via to this laser effect in the Earth-Moon vicinity. The electric power of the energy station required and the area of solar panels at the energy station are evaluated. Possibility to use new Earth-to-Moon trajectories with temporary capture by the Moon is shown for construction of the lunar base. Other space places to organize that space base are also analyzed. Merits and demerits of the laser effect are discussed. Conclusion is made that the international cooperation in designing, creation and operation of this space base is necessary.

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Key words: Space Base; Asteroid-Comet Hazard.