

Solar synchronous orbit. Prediction of local solar time of the ascending node

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The possible causes of deviations of the local solar time of the ascending node (LST AD) from initial value is considered based on orbital data SC METEOR M1. It was established that the main cause of deviation is the change of inclination. This occurs because of the solar gravitational perturbations and leads to change of local time law which close to the parabola. In general, these variations are long periodic one with the period of approximately 28 years.

The simplified system of differential equations that describe the evolution of inclination and LST AD is proposed. The results of the integration of this system are in good agreement with the actual data on the evolution of orbital parameters SC METEOR M1.