

Asteroid 2010 TU149 in the Taurid complex

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The Taurid shower is a long-lasting meteor shower. It is accepted that the stream is a complex of several small meteoroid streams. It includes parts of night-time and day-time showers, which are divided into two branches (northern and southern). The stream has a perihelion distance of about 0.4 AU and eccentricity about 0.85. Moreover, it is a stream with very low inclination of less than 5°.

There is no simple explanation for the long duration and dispersion of the Taurid complex stream. It was suggested that a giant comet disintegrated into smaller pieces, where one of was comet 2P/Encke, which is already associated with the Taurid stream. But apart from 2P/Encke, a several minor planets have been associated with Taurids ([1], [4], [2]).

Rudawska et al. [3] noticed a possible connection between several meteors from Armagh Observatory meteor database and the asteroid 2010 TU149. 2010 TU149 has not been considered as an object belonging to the Taurid complex yet.

The asteroid was discovered on 13 October 2010 by LINEAR. Its orbital elements are: $q = 0.3783$, $e = 0.8281$, $\omega = 91.6385$, $\Omega = 59.7737$ and $i = 1.9716$, while the Tisserand invariant for the orbit has a value of 3.09 with respect to the Jupiter.

In this talk, we will present a survey of results dealing with investigating the association of asteroid 2010 TU149 with the Taurid meteoroid stream.

References

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