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Asteroid 2010 TU\textsubscript{149} in the Taurid Complex
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In this talk, we presented a survey of results dealing with investigating the association of asteroid 2010 TU\textsubscript{149} with the Taurid meteoroid stream.

Summary

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 an eccentricity of about 0.85. Moreover, it is a stream with a 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, one of which was Comet 2P/Encke, which is already associated with the Taurid stream. But apart from 2P/Encke, several minor planets have been associated with the Taurids as well (Asher and Steel, 1995; Steel and Asher, 1996; Babadzhanov et al., 2008).

Rudawska et al. (2012) noticed a possible connection between several meteors from the Armagh Observatory meteor database and the asteroid 2010 TU\textsubscript{149}. This asteroid 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 \( q = 0.3783 \), \( e = 0.8281 \), \( \omega = 91°\text{6385} \), \( \Omega = 59°\text{7737} \), and \( i = 1°\text{9716} \). The Tisserand invariant for its orbit has a value of 3.09 with respect to the planet Jupiter.

References


