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# Northern Taurids in the IAU Meteor Data Center Database

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The method of indices was used to study the northern branch of the autumn (night) part of the Taurid complex. The procedure is based on mathematical statistics only and was applied to select the Northern Taurid meteor records from the IAU Meteor Data Center Database. Because we wanted to study especially the fine structure of the inner part of the Northern Taurids, we were focused on the interval of the higher activity of the stream—from the end of the activity of the Perseids until the beginning of the Geminids activity. The outlying parts of the complex, active until January according to some authors, were not taken into account. In total, 84 Northern Taurid orbits were selected. Of these 84 orbits, 63 (75%) were sorted into 11 associations found in the stream.

One of the associations consisted of three orbits and was identified as a previously unknown northern branch of the  $\tau$ -Arietids. We also found an association with orbital characteristics equal to the characteristics of the  $\delta$ -Piscids North and the  $\chi$ -Orionids North. The meteors in these associations were observed up to three weeks earlier compared to the currently cataloged data of the showers. The orientation of the mean orbit of a 5-member association with the  $\delta$ -Piscids North was different from the general trend, indicating that this stream may not be genetically related to other members of the Taurid complex.

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## References

Kaňuchová Z. and Svoreň J. (2012). “Northern Taurids in the IAU MDC Database”. *Contrib. Astron. Obs. Skalnaté Pleso*, **42**, 115–124.

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