



## Rotation properties in the Hilda and Main-Belt asteroid families observed by K2 and TESS

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We identified 125 individual light curves of Hilda asteroids observed by the K2 mission. We found that despite of the mixed taxonomies, the Hilda group highly resembles the Trojans in the distribution of rotation periods and amplitudes, and even the LR group (mostly C- and X-type) Hildas follow this rule. Contrary to the Main Belt, the Hilda group lacks the very fast rotators. The ratio of extremely slow rotators ( $P > 100$  hr) is a surprising 18%, which is unique in the solar system. The occurrence rate of asteroids with multiple periods (4%) and asteroids with three maxima in the light curves (5%) can be signs of a high rate of binarity, which we can estimate as 25% within the Hilda group.

Based on our extraction of 10 thousand full asteroid light curves from the first year observations by TESS (Pál et al. 2020) we can compare the distribution of rotation period and shape asphericity in the most populated asteroid families overall in the Main Belt. We reveal internal structure of some asteroid families in respect to rotation statistics and signs of rotation properties evolving with age.