



Rotational properties of transneptunian objects from the K2 mission

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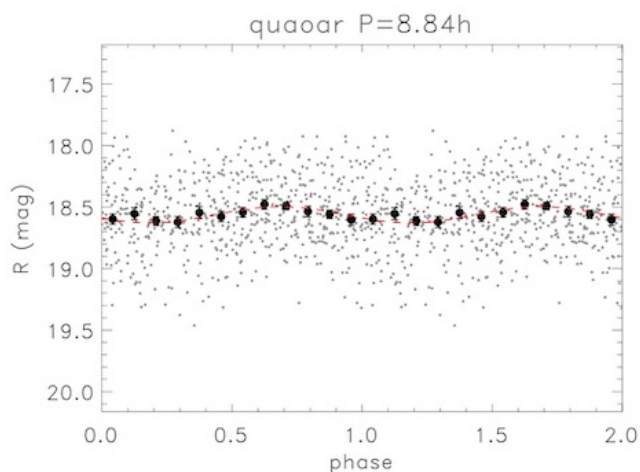
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Due to their faintness light curves of transneptunian objects (TNOs) in most cases are difficult to obtain, and therefore the number of TNOs with known rotational properties (at least rotation period) are rather limited. As it was shown for other small body populations, long-term, 1-3-month monitoring of small bodies revealed many targets with long rotation periods. These measurements significantly increased the number of slow rotators ($P > 24\text{h}$) for Jovian Trojans (Szabó et al., 2017), Hildas (Szabó et al., 2020) and Centaurs (Marton et al., 2020) using Kepler/K2 measurements, and also for main belt asteroids (Pál et al., 2020) using the TESS space telescope. Here we report on Kepler/K2 measurements of 70 TNOs, collected over the whole length of the K2 mission, in Campaigns 3-19. Our data notably increases the number of TNOs with known rotational properties. We compare these characteristics with those of other small body populations in the Solar system.



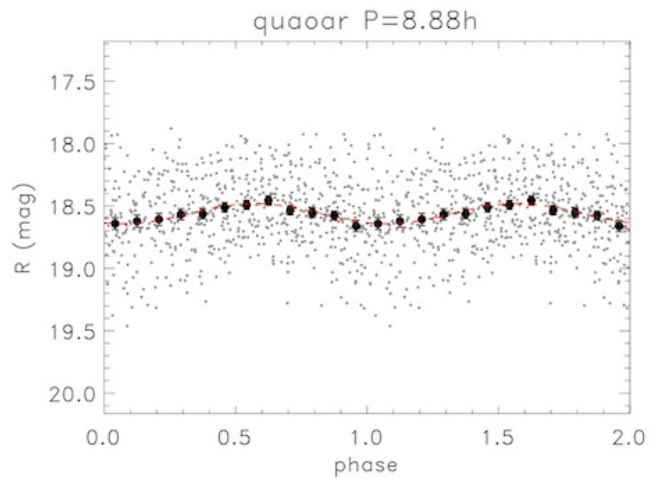


Figure 1: Light curve of (50000) Quaoar obtained from the K2 measurements, folded with the canonical $P = 8.84$ h period (Ortiz et al., 2003, left), and with the newly determined $P = 8.88$ h rotation period (right).

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