

CONTROL ID: 3049437

TITLE: K2 light curves of eight Centaurs

ABSTRACT BODY:

Abstract (2,250 Maximum Characters): As has been demonstrated by some recent papers, the K2 mission (Howell et al. 2014, *PASP*, 126, 398) provides an excellent opportunity to obtain rotational properties of Centaurs and trans-Neptunian objects (Pál et al. 2015, *ApJL*, 804, 45, Pál et al. 2016 *AJ*, 151, 117, Kiss et al. 2016, *MNRAS*, 457, 2908). Here we report on K2 observations of eight Centaurs: (250112) 2002 KY14, 2010 GX34, 2010 JJ124, (499522) 2010 PL66, (471931) 2013 PH44, (463368) 2012 VU85, 2016 AE193 and 2009 YD7. We obtained light curves and derived rotational periods for 5 targets. We give an assessment on light curve interpretation of contact binary vs. shape effects. The results suggest that at least one of our targets could be a contact binary, the first among Centaurs.

Category: Centaurs and Kuiper Belt Objects: Physical Characterization

Sub-Category: None

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Plain-Language Abstract Synopsis: Centaurs are small solar system bodies moving on unstable orbits between Jupiter and Neptune. Their dynamics and physical characteristics provide information on the history of the Solar System. The K2 mission of the Kepler Space Telescope is able to observe Solar System Objects along the ecliptic, including Centaurs. We collected data on eight bodies and aim to explain their brightness variations. One of them seems to be a contact binary, the first one discovered among Centaurs.

Contributing Teams: (none)