

# Searching for a second occultation in EPIC 204376071.

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## Abstract

EPIC 204376071 is a young ( $\sim 10$  Myr) M star (estimated mass  $0.16 M_{\odot}$ , and radius  $0.63 R_{\odot}$ ), probable member of the Upper Sco association, that exhibited an 80% drop in flux lasting one day, in the course of one campaign of the K2 mission (Rappaport et al. 2019). Different scenarios have been proposed to explain this feature, some of them requiring a periodic behaviour of these events. With only one event observed, it becomes challenging to obtain further observations to investigate further the origin of the abrupt flux drops, and start confirming/rejecting possible scenarios. We have obtained new photometric observations, and analysed archival photometry, with the goal to identify additional flux drops on this star, and get the ephemeris, should these events be periodic. We do not detect any further deep drop in flux, and place stronger constraints on possible periods. With only K2 data,  $\sim 80\%$  of the periods between 70 and 1200 days would have been missed. With the new data, this fraction drops to  $\sim 40\%$ .