

Observations of variable stars from Holomon Astronomical Station

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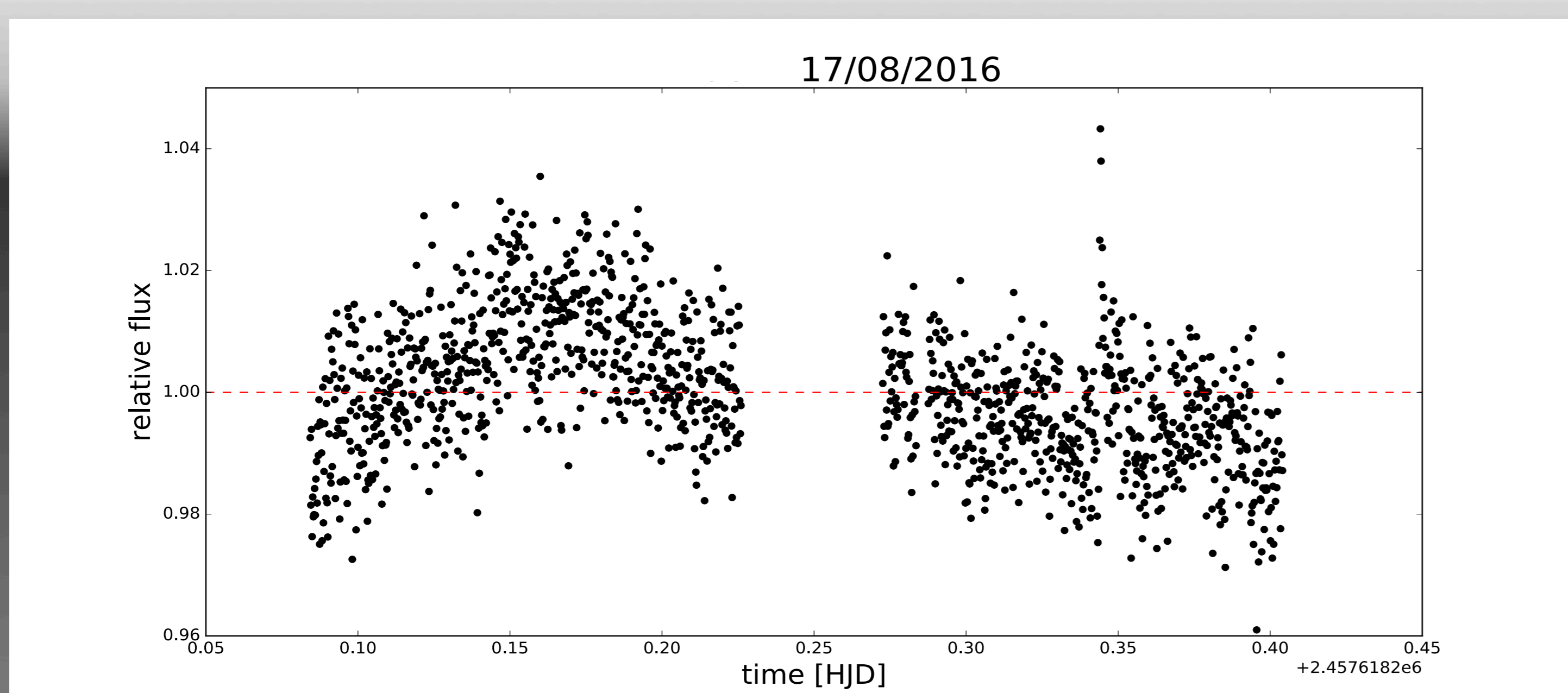
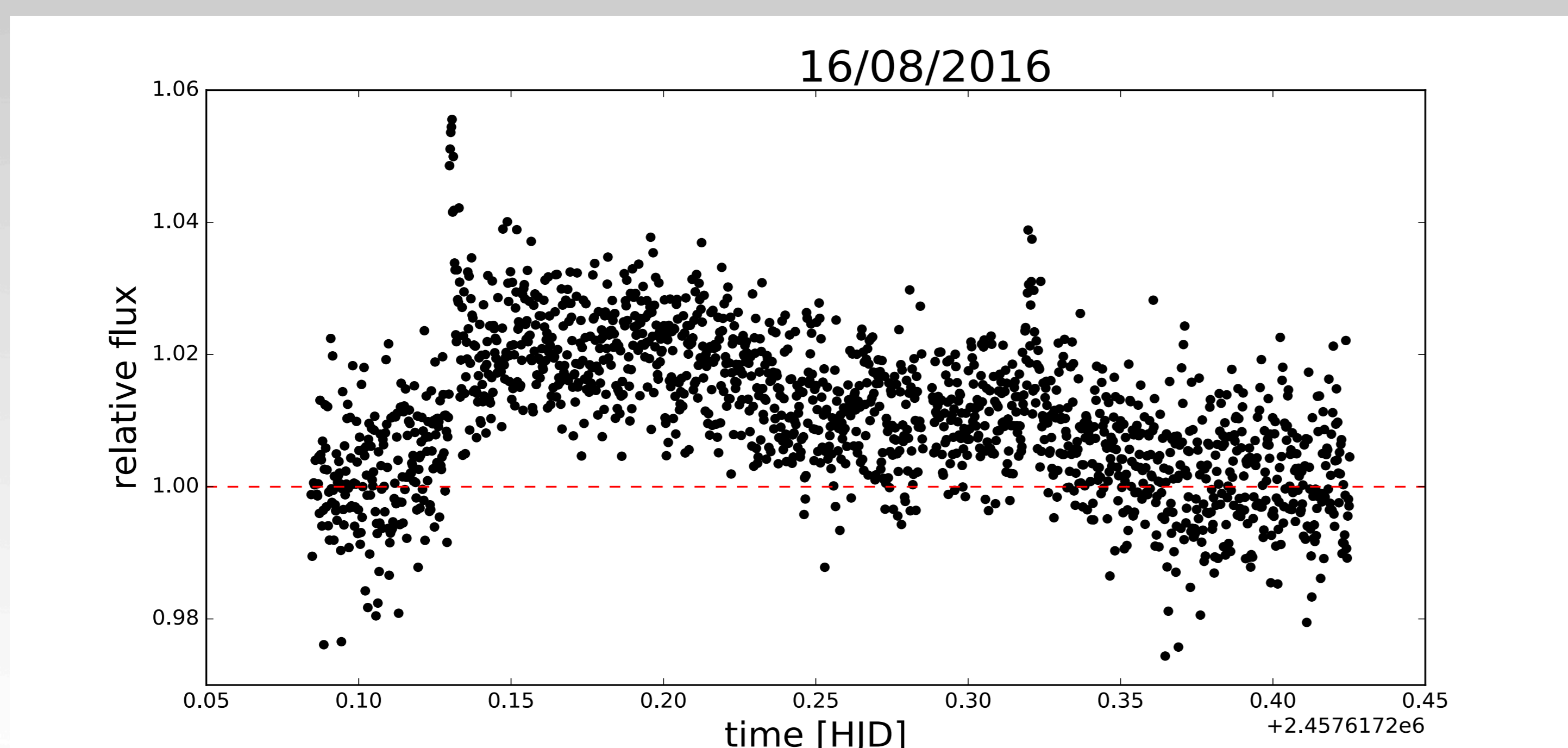
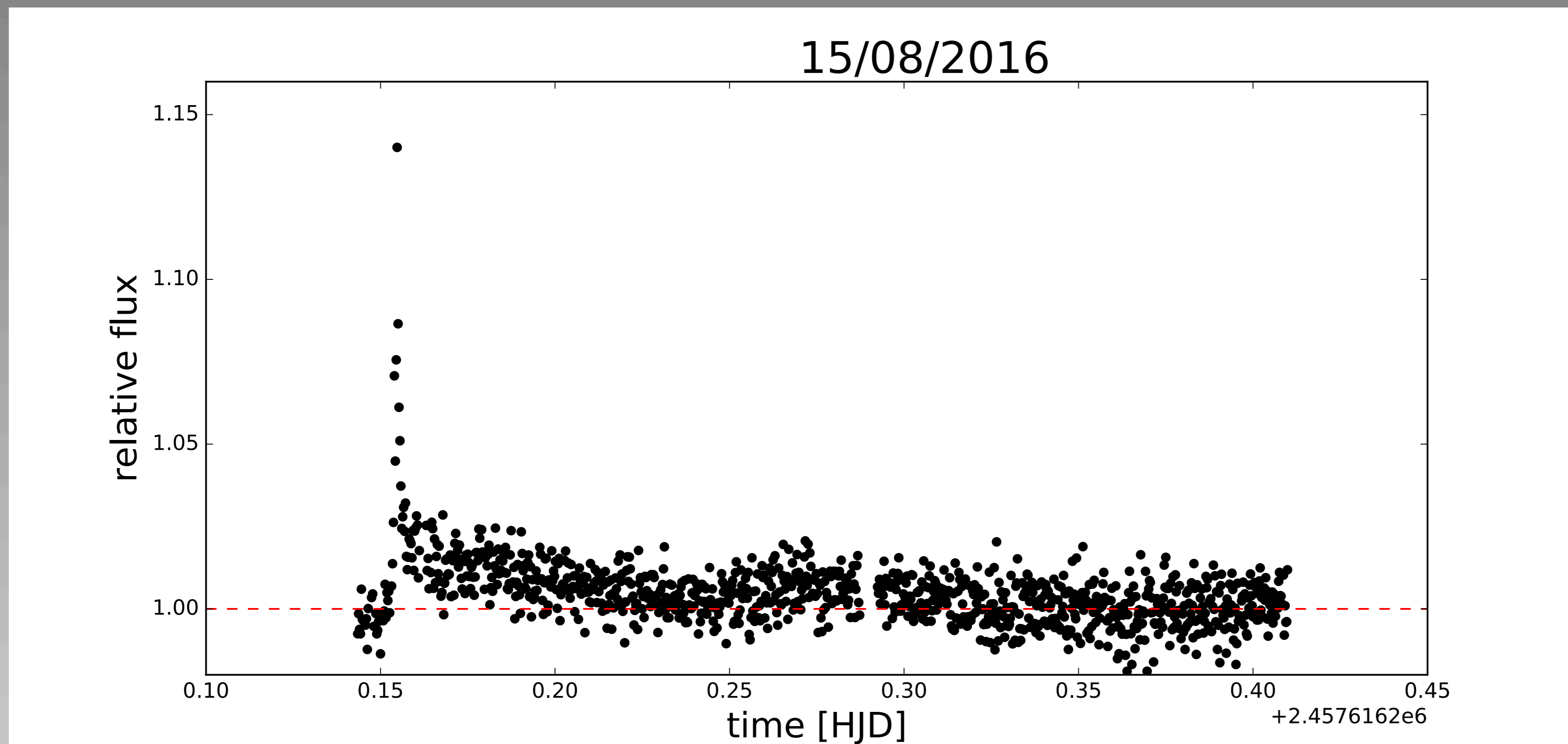
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ABSTRACT

EV Lacertae is a young (300 million years), M3.5 red dwarf star with strong flare activity. We observed EV Lac in the optical, for three consecutive nights in August 2016. The data obtained were analysed using the Holomon Photometric software and revealed three flares, one for each night. The first, increased the stellar flux by approximately 15% while the following two by approximately 5%.

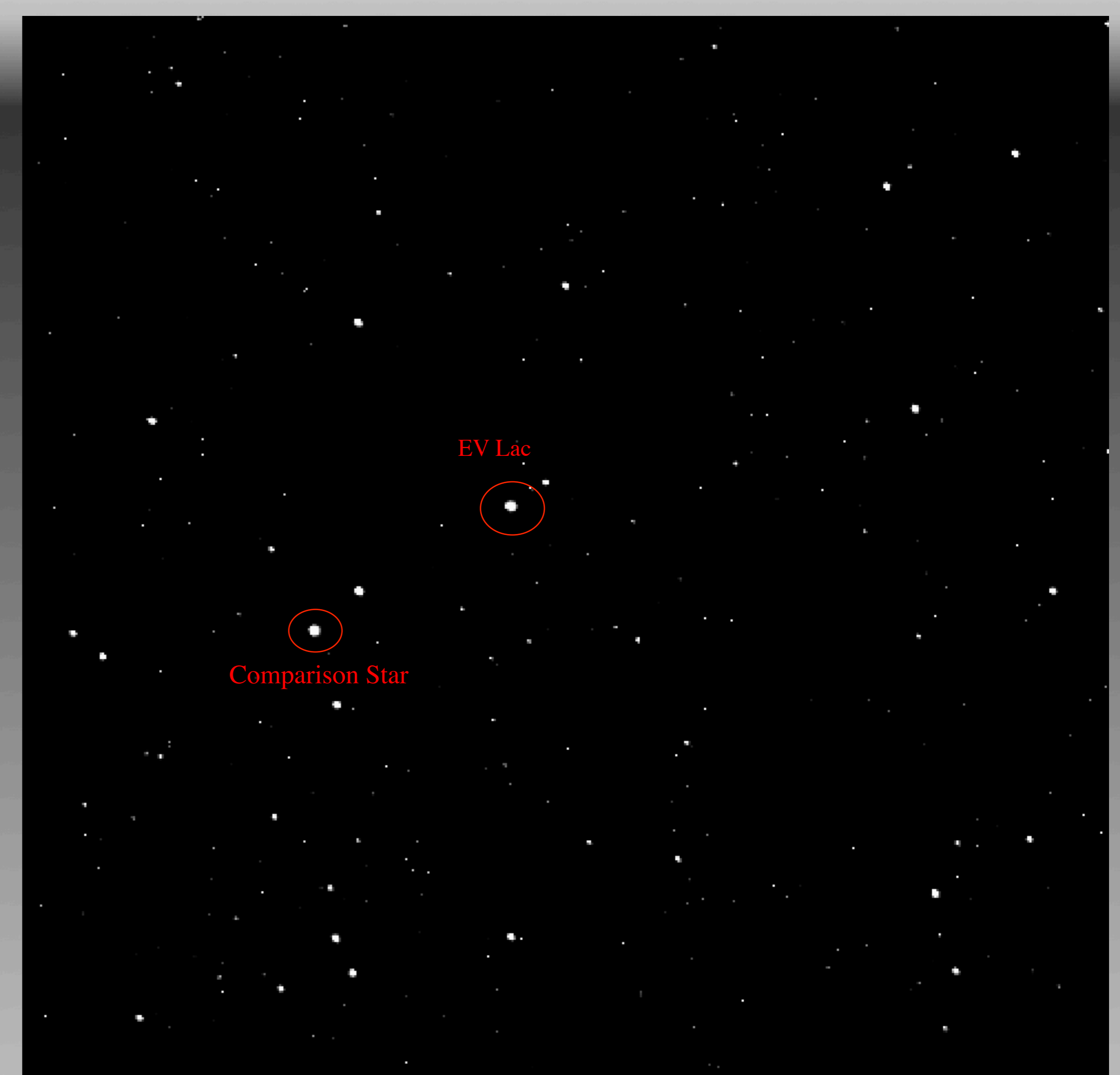


Light-curves extracted for the variable star EV Lac from three consecutive observations from the Holomon Astronomical Station.

EV Lacertae (EV Lac, Gliese 873, HIP 112460) is a spectral type M3.5 red dwarf star, 16.5 light years away and lies in the constellation Lacerta. It is the nearest star to the Sun in that region of the sky. It is a flare star that emits X-rays and on 25 April 2008, NASA'S Swift satellite recorded a flare which was thousands of times more powerful than the largest observed solar flare. Mavridis and Avgoloupis (1986) were the first who suggested the existence of an activity cycle of 5 years.

Osten et al. (2005) carried out detailed multiwavelength observations and demonstrated both frequent and extreme levels of variability. In the same study they highlighted the importance of conducting observations of the star's variability in different wavelengths with the aim of better defining the heat process that cause the flares.

We observed EV Lac for three consecutive nights in August 2016 using the astronomical equipment at the Holomon Astronomical Station. The data were analysed using HOPS, the Holomon Photometric Software. Flares were detected in all three observing attempts with the highest one recorded on the 15th of August (~15%).



Field of view (RA: 24^h 46^m 49^s.73, DEC: +44° 20' 02".37) of the observations, using the C11 telescope and the Atik 4000 camera of the Holomon Astronomical Station.

References

- Mavridis, L. N. and Avgoloupis, S. 1986. The flare star EV Lac. I - The activity cycle, *Astronomy and Astrophysics* (ISSN 0004-6361), vol. 154,(1-2), p. 171-175.

- Osten et. al. 2005. From radio to X-rays: Flares on the dMe flare star EV Lacertae, *The Astrophysical Journal*, vol. 621, p. 389-416.