

A New Double Star from Lunar Occultation: XZ 103822

Alex Pratt

International Occultation Timing Association / European Section (IOTA/ES)
British Astronomical Association (BAA)
MPC Z92 - Leeds, England
alex.pratt@bcs.org.uk

Abstract: A lunar occultation observation by the author in April 2019 detected a new double star: XZ 103822.

XZ 103822

On 2019 April 12, a lunar occultation disappearance of XZ 103822 was video-recorded at 50 fields/second using a 28cm telescope and a Watec 910HX camera at amateur observatory MPC Z92. The waxing Moon was 51% illuminated. The star is 10th magnitude so the recording was analysed at 25 frames/second (using Limovie software), giving a better signal to noise ratio and a less noisy light curve than at 50 fields/second (Figure 1).

The intermediate step was measured to have a dura-

tion of 0.423s, with the fainter star being the first to disappear behind the Moon. The position angle of the event at the Moon's limb was 110.9° and the radial velocity of the Moon at the location of the occultation was 0.465"/second (Occult4 software). The consequent separation of the components of this star is at least 0.2". The magnitude of XZ 103822 is Mv 10.29. From the heights of the three portions of the light curve, the V magnitudes of the components are derived as 10.7 and 11.5.

There are no previous observations of this star in

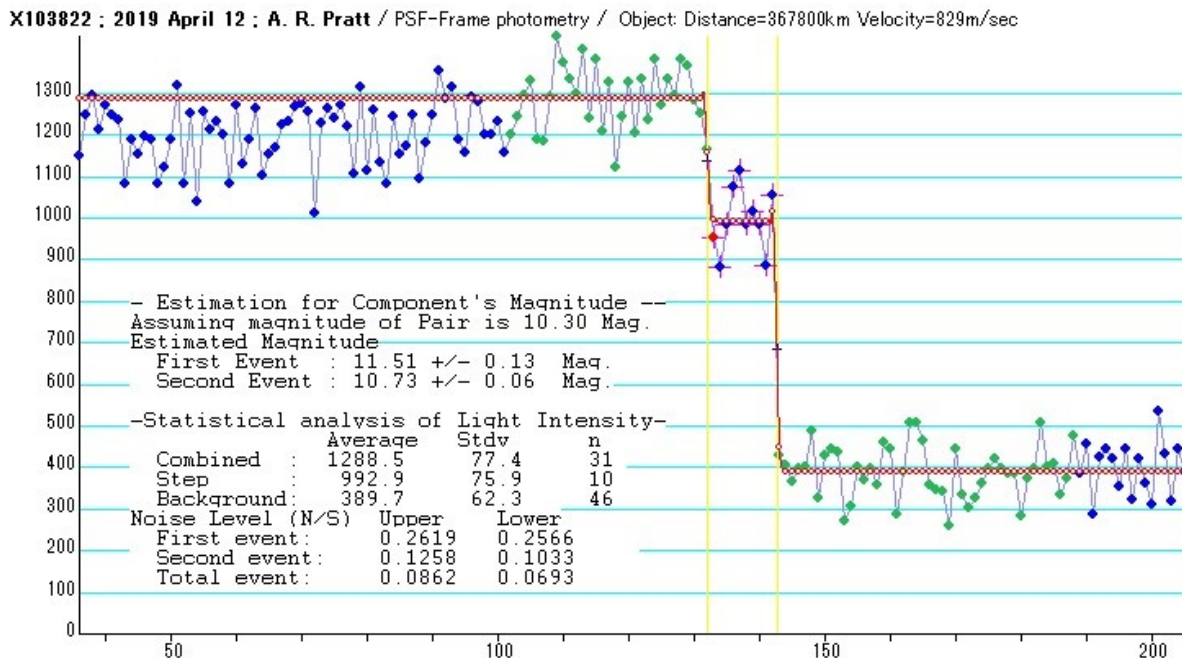


Figure 1.

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the Archive of Lunar Occultation Observations.

Star XZ 103822 = TYC 1373-37-1
 = GSC 01373-00037
 = 2MASS J07403872+2052502
 = Gaia DR2 673152977377071616

Coord. (J2000) 7h 40m 38.72s, 20° 52' 50.11"

Spectral type ?

Derived double data:

Mag A 10.7 ± 0.1 (V)

Mag B 11.5 ± 0.1 (V)

Epoch 2019.28

Separation $> 0.2''$

PA at epoch between 21 and 201 deg

References

Miyashita, K. : Limovie - http://astro-limovie.info/limovie/limovie_en.html

Herald, D. : Occult4 - <http://www.lunar-occultations.com/iota/occult4.htm>

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