(127587)2003 AQ82 occults Tycho2 0712-00442-1

********** Asteroid occultation Report **********

[Date] 2025.11.11 [Approx hour] 14.1
[Star] Tycho2 0712-00442-1 VMag=11.64 RMag=11.12
[Asteroid] 20.33 mag.

[Observer] 1: Katsuhiko Kitazaki 2:
[Location] Musashino, Tokyo, JP
[Longitude] 139o33'41.2" E
[Latitude] 35o42'37.0" N
[Altitude] 66m
[Datum] WGS84

[Event time] D: 14h12m29.275s +/- 0.006s (UTC) S/N=10.32
R: 14h12m29.477s +/- 0.006s (UTC) S/N=10.66
[Predicted Time error] 0.588 sec [RUWE] 1.30

[Recorded] From 14h12m00s
To 14h13m00s

[Mag. drop] D: Measured: Mag Drop (measured): 2.77 Mag. ; Predicted: Mag Drop (predicted): 8.7 Mag.
R: Measured: Mag Drop (measured): 2.81 Mag. ; Predicted: Mag Drop (predicted): 8.7 Mag.

[Telescope] Aperture: 40cm Type: Other F=2.6（Reducer ×0.26）
[Camera] Analog or Digital video , Model= ASI290MM
[Exposure] Set: 59.1msec, Measure: 59.1msec
[Setting] Area: 1936x800 ; Binning=2
Gain: 380 ; Brightness: 83 ; High Speed Mode: Off
[Time keep] GPS ; Model: GT502MGG
[Evidence] GPS Time Log : Recorded ; Screen shot: Recorded

[Condition] Stability: Slight flickering Transparency: Clear
[Remarks] Due to significant scintillation, the frame exposure time was slightly increased to 59.1 ms. While the predicted magnitude drop was 8.7 mag, the measured magnitude drop was only 0.28 mag. Given the estimated diameter of the asteroid is 2 km, I suspect diffraction is having an effect.

[Additional comment]
Capture ： ZWO ASI290MM imaging data to PC using SharpCap4.1.13800.0
Photometry analysis : Analyzed with software.limovie1.0.1.8 Pneuma
Photometry method：PSF photometry
(Sharp4.1 ON,Tracking OFF, Linked Tracking=OFF, Star's Angular Diameter=ON,Mag drop considered=OFF)
Data Release Site
https://drive.google.com/drive/folders/1-GrwdObZlU356lRrkUAVy_ixcqrz_Vac?usp=sharing

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<Observations>
<Event>
<Date>2025|11|11|14.1</Date>
<Details>
<Star>Tycho2|0712-00442-1|0||0.0000000000|0.000000000|0.00|0.00|0.00|0|0.00000000|0.0000000|25.00|25.00|25.00|0</Star>
<Asteroid>127587|2003 AQ82|0.00000000|0.00000000|0.0000000|0.0000000|0.0000000|0.0000000|1.00000|0.00000|0.0|1.0|20.00</Asteroid>
</Details>
<Observations>
<Observer>
<ID>1|Katsuhiko Kitazaki||0|Musashino, Tokyo|JP|+139 33 41.2|+35 42 37.0|66| |40|6|a|a</ID>
<Conditions>2|1|10.49||Due to significant scintillation, the frame exposure time was slightly increased to 59.1 ms. While the predicted magnitude drop was 8.7 mag, the measured magnitude drop was only 0.28 mag. Given the estimated diameter of the asteroid is 2 km, I suspect diffraction is having an effect.</Conditions>
<D>14 12 29.275|D|0.006||| </D>
<R>14 12 29.477|R|0.006||| </R>
</Observer>
</Observations>
<LastEdited>2023|7|17</LastEdited>
</Event>
</Observations>

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Text-based Light curve
(127587)_20251111_141227_Katsuhiko_Kitazaki.dat

Date: 2025-11-11 14:12:27.09: 4.97: 85
Star: 0: 0: 0: 0: 0712-00442-1: 0-0
Observer: +139:33:41.2: +35:42:37.0: 66: Katsuhiko Kitazaki
Object: Asteroid: 127587: 2003 AQ82
Values:1667:1938:1760:1973:2065:2003:2124:1875:1942:1858:1677:1970:2060:1781:1797:1693:1632:1923:1774:2161:1811:1768:1673:2080:1826:1674:1850:2025:1875:1782:2191:2063:1953:1773:1864:2134:1953:746:207:83:244:1953:2102:1593:2042:1908:1970:1982:1711:2029:1892:1789:2158:2057:1990:1705:1772:2121:1981:1965:1657:2003:2010:2053:1959:1760:1789:2010:2099:2039:2213:1772:2035:1842:2022:1647:1744:1912:2036:1863:1963:1852:1858:2034:1715
UTC Time Evidence

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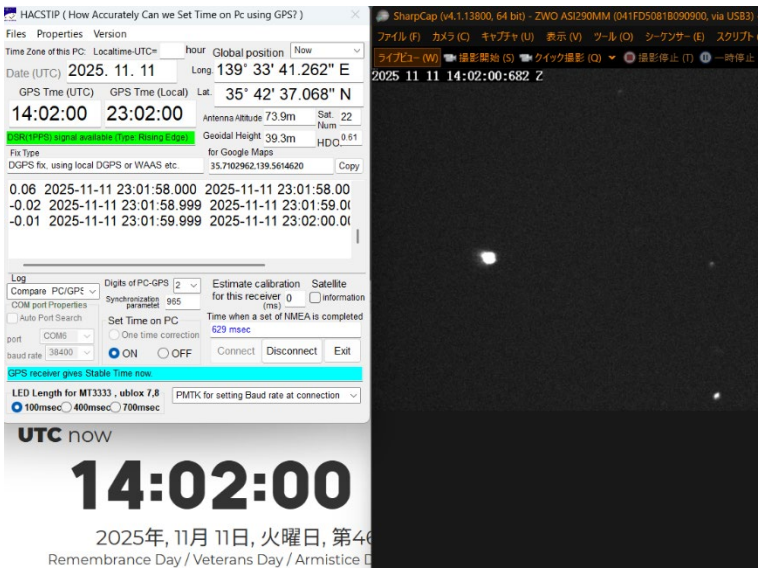
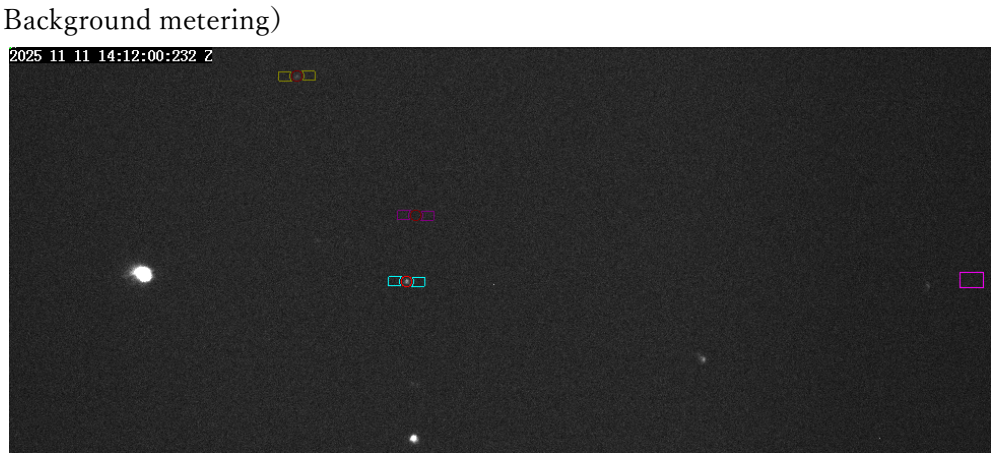
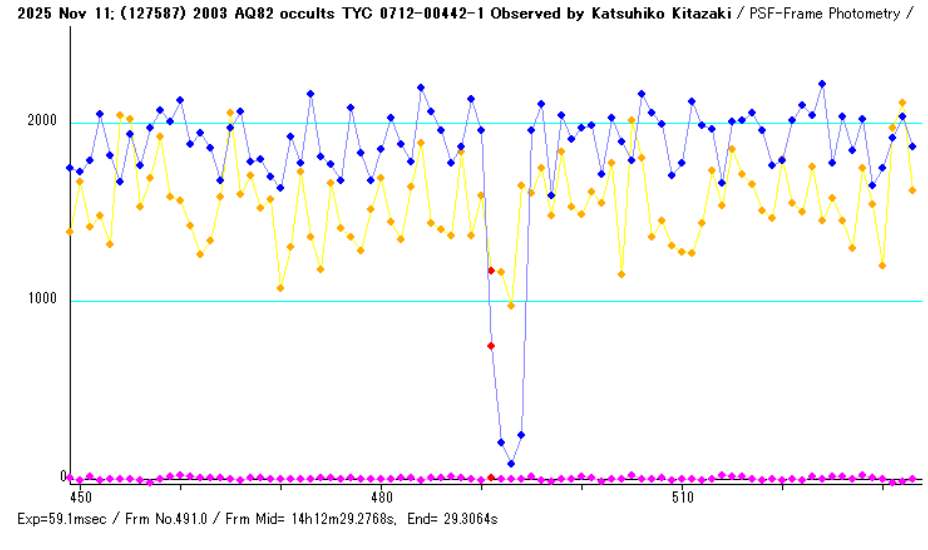
UTC Time Evidence



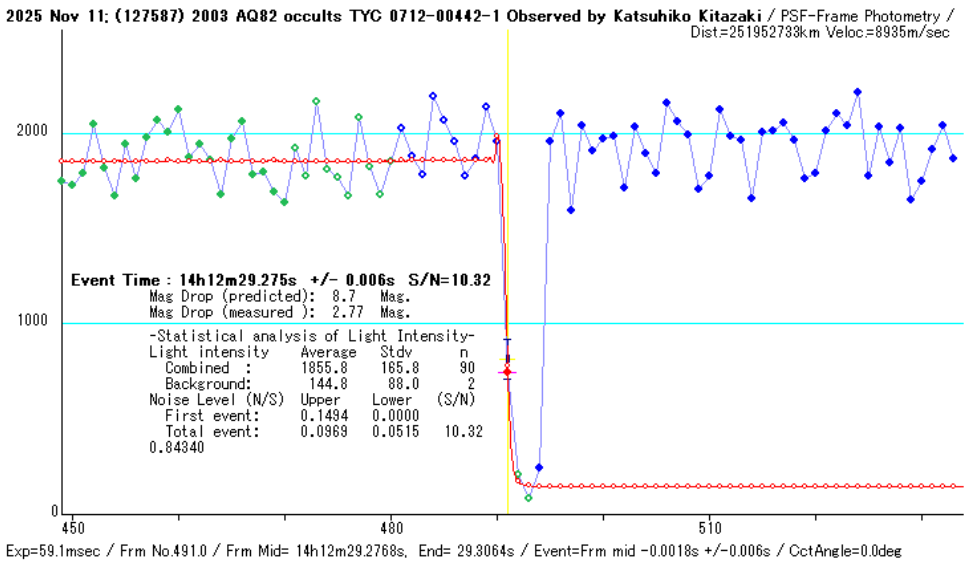
Target Star Position（Target star = Blue, Comparison star = Yellow, Pink = Background metering)



Light curve（Target star = Blue line, Target star = Yellow line)



Time analysis of disappearance



Time analysis of reappearance