

(4342)Freud occults UCAC4 535-040916

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

[Date] 2025.11.20 [Approx hour] 18.1
[Star] UCAC4 535-040916 VMag=13.61 RMag=13.12
[Asteroid] (4342)Freud 17.56 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: 18h07m52.598s +/- 0.015s (UTC) S/N=10.14
R: 18h07m57.217s +/- 0.115s (UTC) S/N=10.61 Ctt=81.7
[Predicted Time error] 0.605 sec [RUWE] 0.85

[Recorded] From 18h7m30s
To 18h8m30s

[Mag. drop] D: Measured: Mag Drop (measured): 3.29 Mag. ; Predicted:
Mag Drop (predicted): 4.0 Mag.
R: Measured: Mag Drop (measured): 3.32 Mag. ; Predicted:
Mag Drop (predicted): 4.0 Mag.

[Telescope] Aperture: 40cm Type: Classical Cassegrain F=2.6 (Reducer
x 0.26)

[Camera] Analog or Digital video , Model= ASI290MM

[Exposure] Set: 112.0msec, Measure: 112msec

[Setting] Area: 1936x600 ; Binning=2
Gain: 410 ; Brightness: 67 ; High Speed Mode: Off

[Time keep] GPS ; Model: GT502MGG(PPSPUcorrection -0.0106045s)

[Evidence] GPS Time Log : Recorded ; Screen shot: Recorded

[Condition] Stability: Strong flickering Transparency: Clear

[Remarks] Multiple intermediate points exist at the reappearance positions
on the light curve. Therefore, using the analysis software "Limovie," we
calculated the contact angle and fitted a diffraction curve. Additionally, a re-
disappearance is observed at the reappearance position, but we believe this is a
temporary reappearance caused by terrain features such as valleys or cracks.

[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 / Aperture photometry

(Sharp4.1 ON,Tracking OFF, Linked Tracking=OFF, Double Star
Analyzing=OFF, Star's Angular Diameter=ON Mag drop considered=OFF)

Data Release Site

https://drive.google.com/drive/folders/1nqJ07SHiX_xr3ry1leygco9UBAgL2eY
B?usp=sharing

<Observations>

<Event>

<Date>2025|11|20|18.1</Date>

<Details>

<Star>UCAC4|535-

040916|0||0.000000000|0.000000000|0.00|0.00|0.00|0|0.00000000|0.00000
00|25.00|25.00|25.00|0</Star>

<Asteroid>4342|Freud|0.00000000|0.00000000|0.00000000|0.00000000|0.0000
000|0.00000000|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>3|1|10.38||Multiple intermediate points exist at the
reappearance positions on the light curve. Therefore, using the analysis software
"Limovie," we calculated the contact angle and fitted a diffraction curve.
Additionally, a re-disappearance is observed at the reappearance position, but we
believe this is a temporary reappearance caused by terrain features such as
valleys.</Conditions>

<D>18 7 52.598|D|0.015||| </D>

<R>18 7 57.217|R|0.115||| </R>

</Observer>

</Observations>

<LastEdited>2023|7|17</LastEdited>

</Event>

</Observations>

Text-based Light curve

(4342)_20251120_180750_Katsuhiko_Kitazaki.dat

Date: 2025-11-20 18:7:50.26: 9.41: 85

Star: 0: 0: 0: 0: 0-0-0: 535-040916

Observer: +139:33:41.2: +35:42:37.0: 66: Katsuhiko Kitazaki

Object: Asteroid: 4342: Freud

Values:885:750:765:603:647:816:575:753:706:640:700:732:678:773:704:596:69

3:789:795:740:816:156:30:40:22:35:10:97:63:31:0:20:83:-32:29:2:65:-

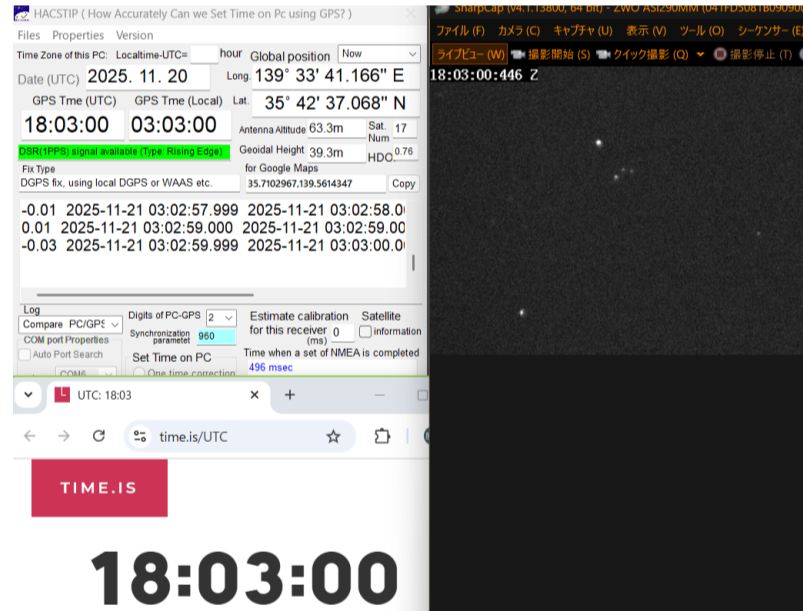
61:34:16:71:46:92:122:43:25:50:90:16:

22:-42:36:39:-9:44:16:50:-

70:72:91:121:127:405:533:272:481:540:795:757:727:755:688:710:693:635:695:

832:721:703:648:685:823:683:732:668

UTC Time Evidence

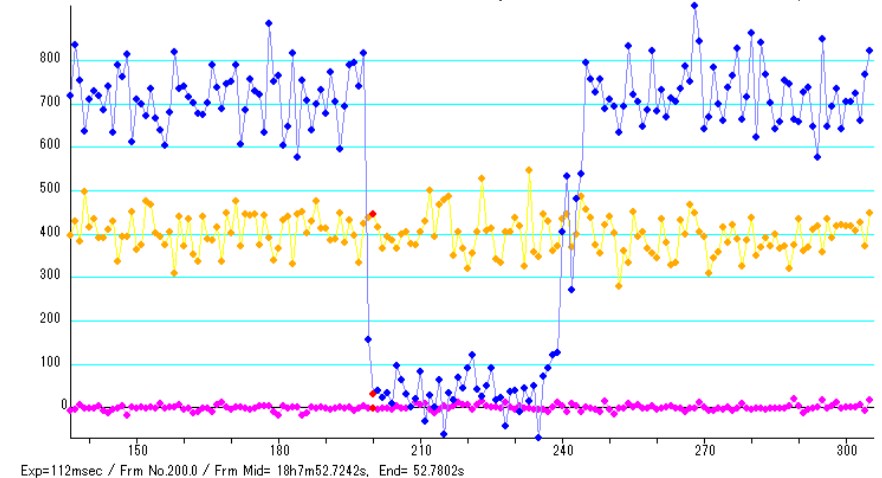


Target Star Position (Target star = Blue, Comparison star = Yellow, Pink =
Background metering)



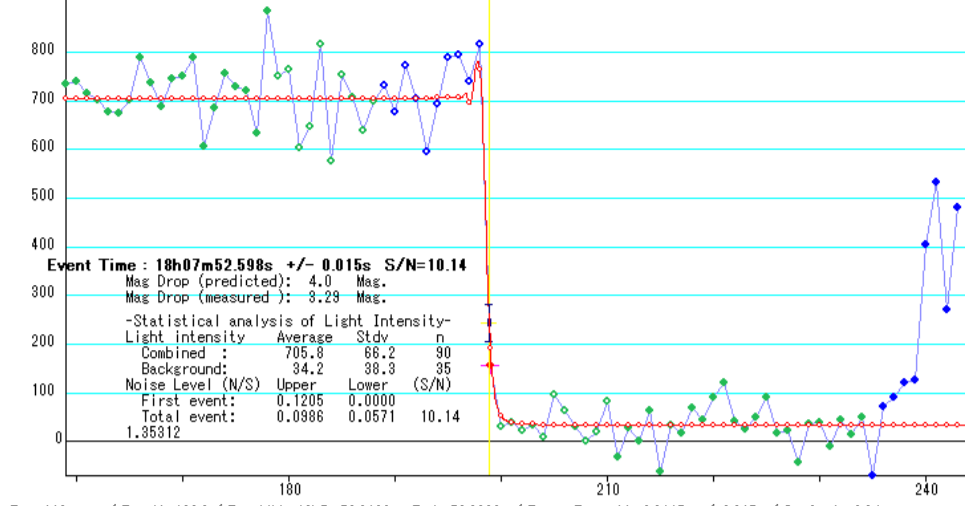
Light curve (Target star = Blue line, Target star = Yellow line)

2025 Nov 20: (4342) Freud occults UCAC4 535-040916 Observed by Katsuhiko Kitazaki / PSF-Frame Photometry /



Time analysis of disappearance

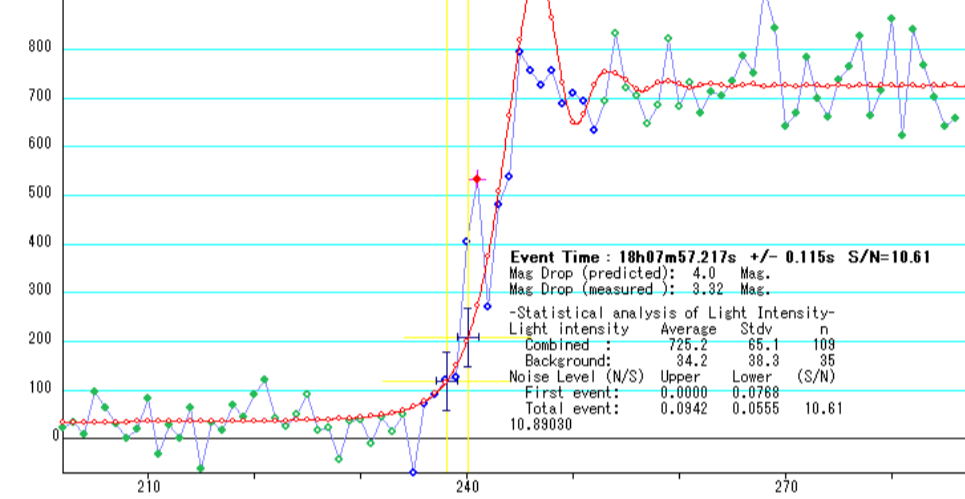
2025 Nov 20: (4342) Freud occults UCAC4 535-040916 Observed by Katsuhiko Kitazaki / PSF-Frame Photometry /
Dist=331942715km Veloc=3459m/sec



Exp=112msec / Frm No.199.0 / Frm Mid= 18h7m52.6122s, End= 52.6682s / Event=Frm mid -0.0145s +/-0.015s / OctAngle=0.0deg

Time analysis of reappearance

2025 Nov 20: (4342) Freud occults UCAC4 535-040916 Observed by Katsuhiko Kitazaki / PSF-Frame Photometry /
Dist=331942715km Veloc=3459m/sec



Exp=112msec / Frm No.241.0 / Frm Mid= 18h7m57.3165s, End= 57.3725s / Event=Frm mid -0.0997s +/-0.115s / OctAngle=81.7deg