

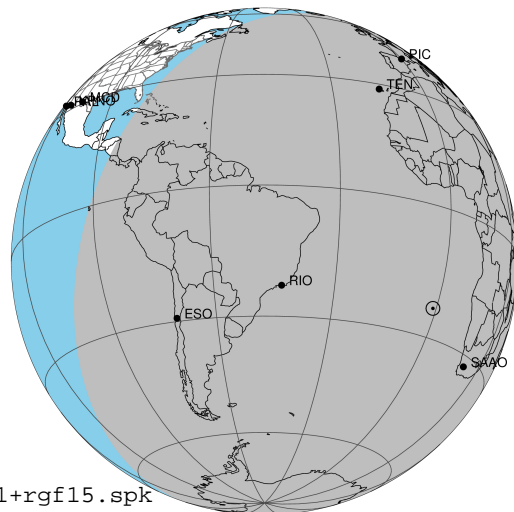
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2042-06-28T00:07:38.410  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 6258277042632220544  
 2Mass ID (if available) : 15203806-1723101

Jupiter 2042-06-28T00:07:38 K9.23 G10.40 Pgt

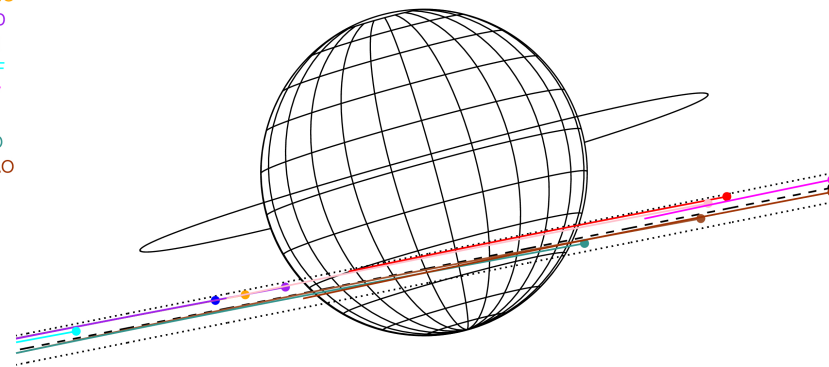
ICRS Star Coord at Epoch: 15h 20m 38.13134s -17:23:10.55352s

RUWE (>1.4 is poor) : 1.07  
 K magnitude : 9.230  
 G magnitude : 10.397  
 RP magnitude : 9.967  
 BP magnitude : 10.664  
 DUPflag : 0  
 Distance (au) : 4.593  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -8.81  
 Sun-Target sep (deg) : 136.41  
 Sun-Moon sep (deg) : 18.98  
 B (ring opening deg) : -3.13  
 PA of pole (deg) : 15.36  
 Pole direction: RA (deg): 268.05648  
 Dec (deg): 64.49730  
 C/A sky separation (") : 12.461  
 C/A sky separation (km) : 41510.8  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2042-06-28T00:07:38 K9.23 G10.40 Pgt



Earth  
 PIC  
 PAL  
 KPNO  
 MCD  
 TEN  
 IRTF  
 KAV  
 RIO  
 ESO  
 SAAO

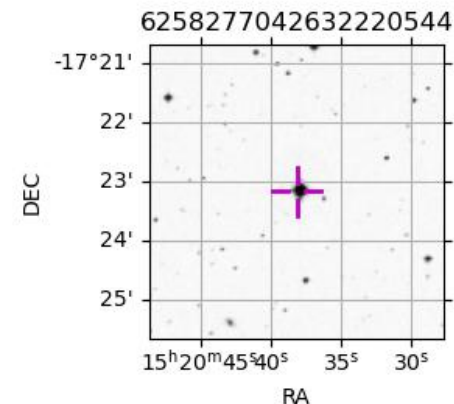


2042-06-28T00:07:38.4100 α: 15 20 38.1313 δ: -17 23 10.554 C/A \*\*\*\*\* PA 11.27 deg v\_sky - 8.81 km/s D 04.59 AU

Credit: Styled after SORA/Lucky Star

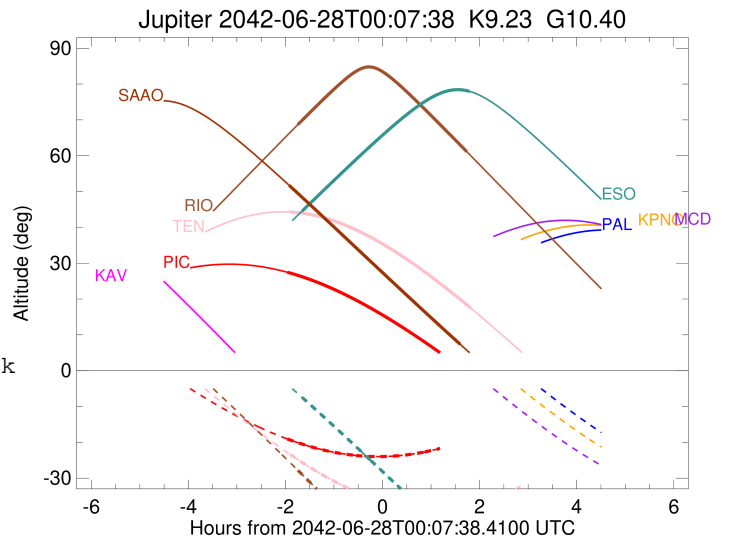
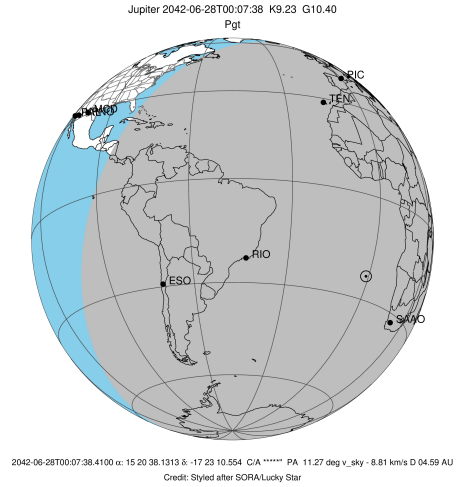
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+	JUN 27 22:10 - JUN 27 22:10	Pin
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5	+ +	JUN 27 22:13 - JUN 28 01:56	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8	+ +	JUN 27 22:23 - JUN 28 01:51	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	JUN 27 22:28 - JUN 28 01:55	Pie
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUN 27 22:12 - JUN 28 01:43	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2042-06-28T00:02:59.570
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : PIC
Location             : Pic du Midi
Latitude (deg)       : 42.93656
E. Longitude (deg)   : 0.14231
Altitude (km)        : 2.890
Gaia source ID       : 6258277042632220544
2Mass ID (if available) : 15203806-1723101
ICRS Star Coord at Epoch: 15h 20m 38.13134s -17:23:10.55352s
RUWE (>1.4 is poor) : 1.07
K magnitude           : 9.230
G magnitude           : 10.397
RP magnitude         : 9.967
BP magnitude         : 10.664
DUPflag              : 0
Distance (au)        : 4.593
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.81
Sun-Target sep (deg) : 136.41
Sun-Moon sep (deg)   : 19.43
B (ring opening deg) : -3.13
PA of pole (deg)     : 15.36
Pole direction: RA (deg): 268.05648
Dec (deg): 64.49730
C/A sky separation (") : 10.764
C/A sky separation (km) : 35859.1
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
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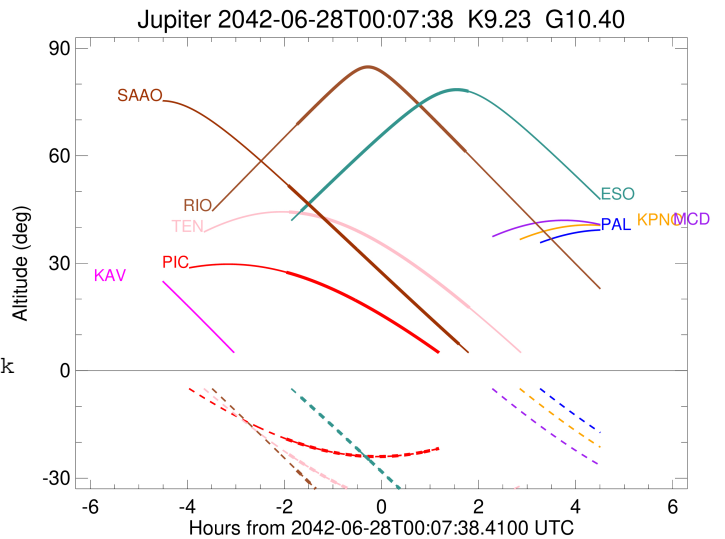
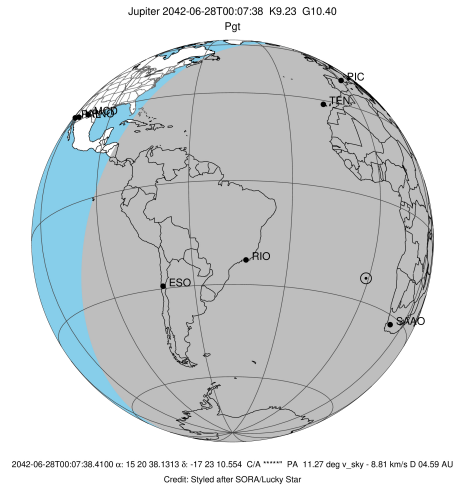


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2042-06-27T22:10:04.280	27.47	-19.06	71487.8	-34.14	-37.71
Jupiter	E	2042-06-28T01:57:40.361	-1.42x	-18.86	71489.4	-26.32	-29.45

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2042-06-28T00:04:03.010
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : TEN
Location              : Teide Obs./Tenerife
Latitude (deg)        : 28.30050
E. Longitude (deg)    : 343.48909
Altitude (km)         : 2.395
Gaia source ID        : 6258277042632220544
2Mass ID (if available) : 15203806-1723101
ICRS Star Coord at Epoch: 15h 20m 38.13134s -17:23:10.55352s
RUWE (>1.4 is poor) : 1.07
K magnitude           : 9.230
G magnitude           : 10.397
RP magnitude          : 9.967
BP magnitude          : 10.664
DUPflag              : 0
Distance (au)         : 4.593
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -8.81
Sun-Target sep (deg)  : 136.41
Sun-Moon sep (deg)   : 19.46
B (ring opening deg) : -3.13
PA of pole (deg)     : 15.36
Pole direction: RA (deg): 268.05648
Dec (deg): 64.49730
C/A sky separation (") : 11.022
C/A sky separation (km) : 36717.6
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
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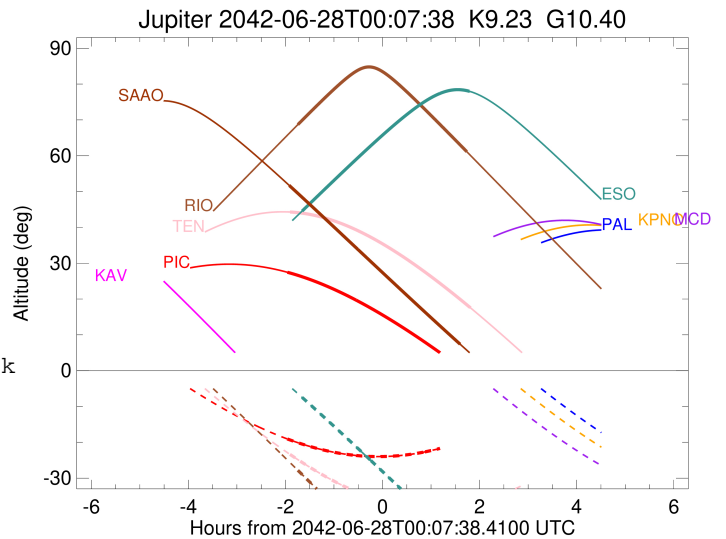
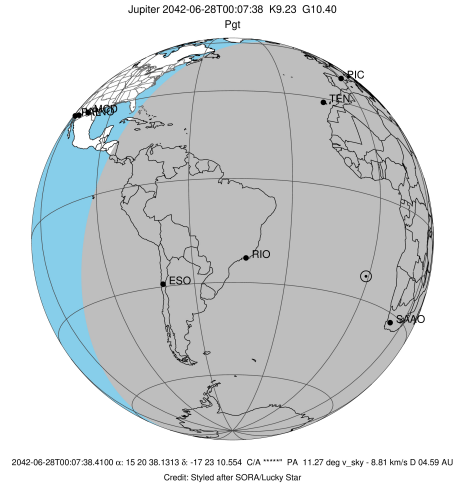


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2042-06-27T22:13:16.888	44.28	-23.37	71487.5	-35.19	-38.79
Jupiter	E	2042-06-28T01:56:11.427	17.58	-37.36	71489.2	-26.94	-30.11

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2042-06-28T00:07:16.710
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : RIO
Location            : Rio de Janeiro
Latitude (deg)      : -22.89506
E. Longitude (deg)  : 316.77708
Altitude (km)       : 0.033
Gaia source ID      : 6258277042632220544
2Mass ID (if available) : 15203806-1723101
ICRS Star Coord at Epoch: 15h 20m 38.13134s -17:23:10.55352s
RUWE (>1.4 is poor) : 1.07
K magnitude          : 9.230
G magnitude          : 10.397
RP magnitude         : 9.967
BP magnitude         : 10.664
DUPflag             : 0
Distance (au)       : 4.593
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.81
Sun-Target sep (deg) : 136.41
Sun-Moon sep (deg)  : 19.35
B (ring opening deg) : -3.13
PA of pole (deg)    : 15.36
Pole direction: RA (deg): 268.05648
Dec (deg): 64.49730
C/A sky separation ("): 12.609
C/A sky separation (km): 42005.0
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
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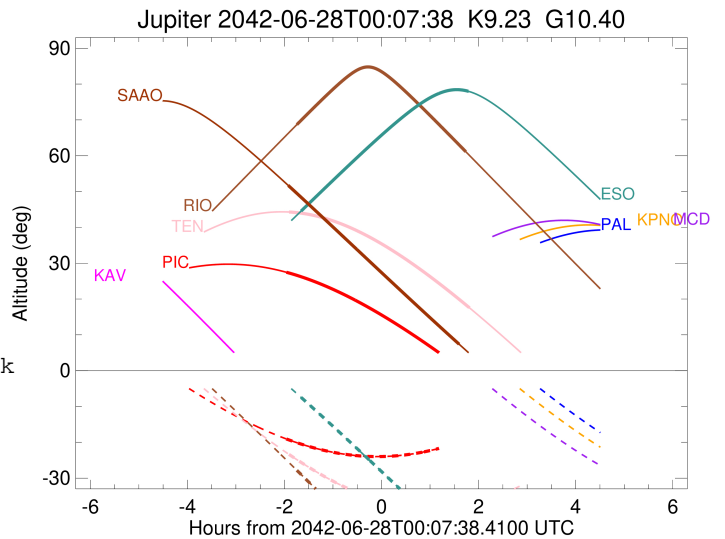
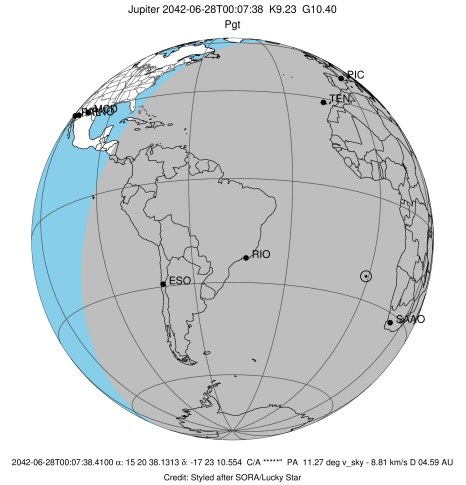


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2042-06-27T22:23:00.713	68.67	-27.81	71486.3	-40.62	-44.33
Jupiter	E	2042-06-28T01:51:49.305	61.13	-75.21	71488.3	-31.58	-35.04

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2042-06-28T00:12:05.690
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : ESO
Location            : European Southern Obs. (3.6m)
Latitude (deg)      : -29.26097
E. Longitude (deg)  : 289.26831
Altitude (km)       : 2.400
Gaia source ID      : 6258277042632220544
2Mass ID (if available) : 15203806-1723101
ICRS Star Coord at Epoch: 15h 20m 38.13134s -17:23:10.55352s
RUWE (>1.4 is poor) : 1.07
K magnitude          : 9.230
G magnitude          : 10.397
RP magnitude         : 9.967
BP magnitude         : 10.664
DUPflag             : 0
Distance (au)       : 4.593
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -8.81
Sun-Target sep (deg) : 136.41
Sun-Moon sep (deg)  : 18.99
B (ring opening deg) : -3.13
PA of pole (deg)    : 15.36
Pole direction: RA (deg): 268.05648
Dec (deg): 64.49730
C/A sky separation (" ) : 12.996
C/A sky separation (km) : 43294.8
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```

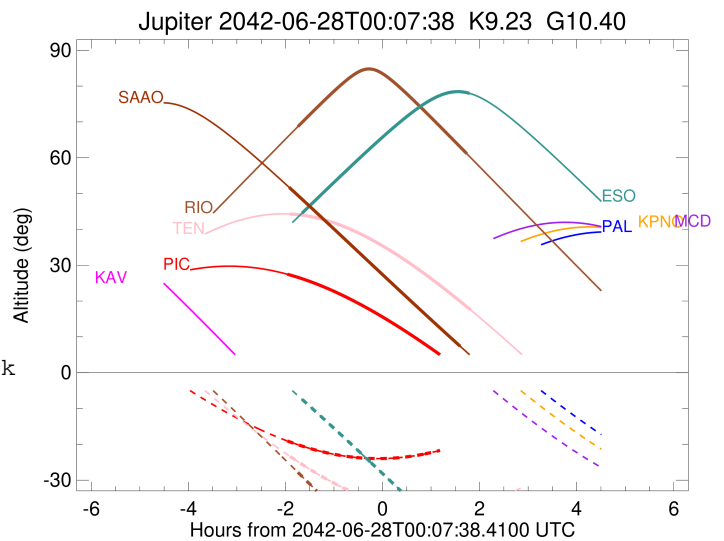
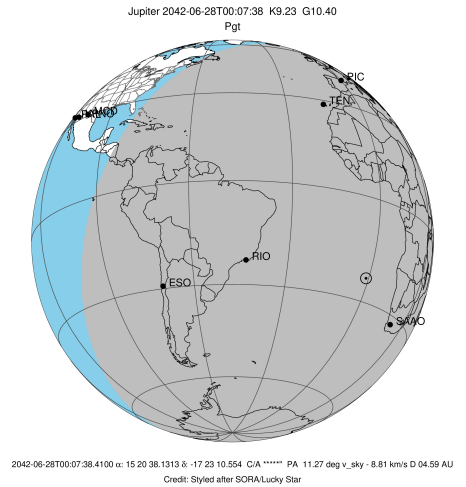


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2042-06-27T22:28:20.748	44.56	-7.47	71486.0	-42.11	-45.83
Jupiter	E	2042-06-28T01:55:11.877	77.97	-51.42	71488.1	-32.52	-36.02

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2042-06-27T23:56:54.810
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : SAAO
Location            : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)      : -32.37953
E. Longitude (deg)  : 20.81070
Altitude (km)       : 1.768
Gaia source ID      : 6258277042632220544
2Mass ID (if available) : 15203806-1723101
ICRS Star Coord at Epoch: 15h 20m 38.13134s -17:23:10.55352s
RUWE (>1.4 is poor) : 1.07
K magnitude          : 9.230
G magnitude          : 10.397
RP magnitude         : 9.967
BP magnitude         : 10.664
DUPflag             : 0
Distance (au)       : 4.593
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -8.81
Sun-Target sep (deg) : 136.41
Sun-Moon sep (deg)  : 19.85
B (ring opening deg) : -3.13
PA of pole (deg)    : 15.36
Pole direction: RA (deg): 268.05648
Dec (deg): 64.49730
C/A sky separation ("): 12.934
C/A sky separation (km): 43087.1
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```



x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2042-06-27T22:12:22.202	51.70	-79.20	71486.3	-40.79	-44.50
Jupiter	E	2042-06-28T01:43:36.841	7.38	-48.72	71487.9	-33.55	-37.09