

target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-06-02T22:33:46.310
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4069434268322555904
 2Mass ID (if available) : 18005674-2303288

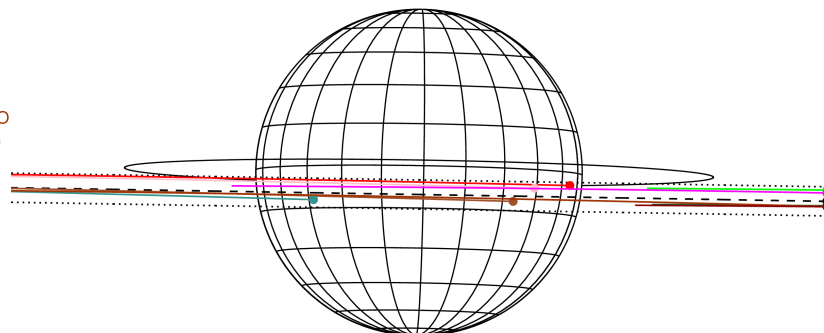
Jupiter 2043-06-02T22:33:46 K9.61 G14.89 Pgt

ICRS Star Coord at Epoch: 18h 00m 56.74018s -23°03'28.87537s
 RUWE (>1.4 is poor) : 0.92
 K magnitude : 9.611
 G magnitude : 14.890
 RP magnitude : 13.607
 BP magnitude : 16.754
 DUPflag : 0
 Distance (au) : 4.301
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -14.88
 Sun-Target sep (deg) : 161.47
 Sun-Moon sep (deg) : 98.84
 B (ring opening deg) : -2.43
 PA of pole (deg) : -0.94
 Pole direction: RA (deg): 268.05668
 Dec (deg): 64.49732
 C/A sky separation (") : 3.092
 C/A sky separation (km) : 9644.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp



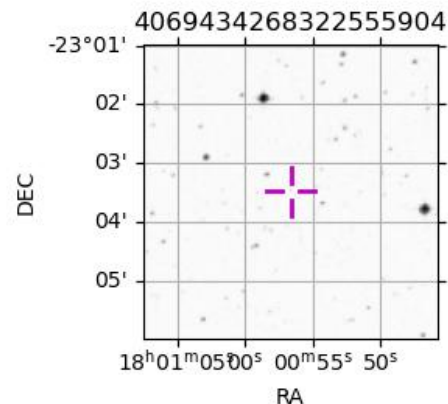
2043-06-02T22:33:46.3100 at: 18 00 56.7402 s: -23 03 28.875 C/A 3.103" PA 359.04 deg v_sky -14.88 km/s D 04.30 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 PMO
 TEN
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



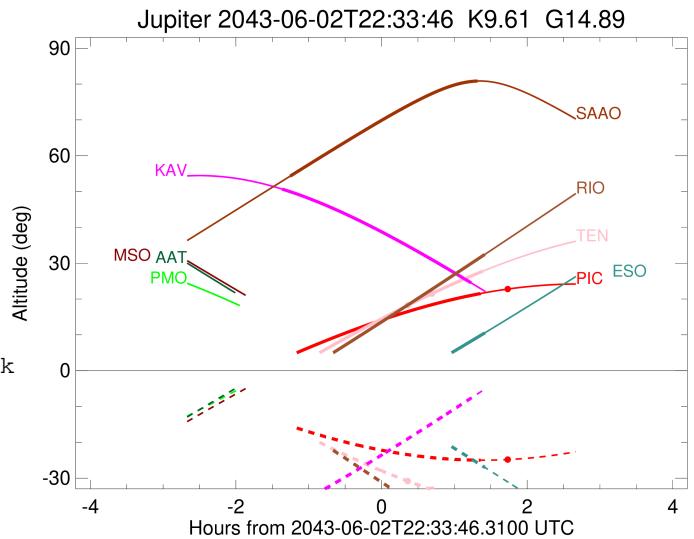
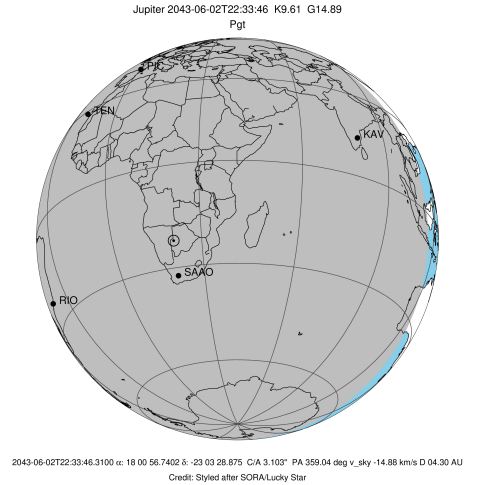
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+	JUN 02 23:55 - JUN 02 23:55	Pne
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 02 23:57 - JUN 02 23:57	Pne
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	JUN 02 21:11 - JUN 02 23:47	Pie
RIO	Rio de Janeiro	-22.9	316.8	+	JUN 02 23:58 - JUN 02 23:58	Pne
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	JUN 02 23:58 - JUN 02 23:58	Pne
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUN 02 21:18 - JUN 02 23:53	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-02T22:37:02.940
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        : 4069434268322555904
2Mass ID (if available) : 18005674-2303288
ICRS Star Coord at Epoch: 18h 00m 56.74018s -23:03:28.87537s
RUWE (>1.4 is poor)  : 0.92
K magnitude           : 9.611
G magnitude           : 14.890
RP magnitude          : 13.607
BP magnitude          : 16.754
DUPflag              : 0
Distance (au)         : 4.301
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -14.88
Sun-Target sep (deg)  : 161.47
Sun-Moon sep (deg)    : 99.00
B (ring opening deg) : -2.43
PA of pole (deg)      : -0.94
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (") : 1.347
C/A sky separation (km) : 4202.0
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
    
```

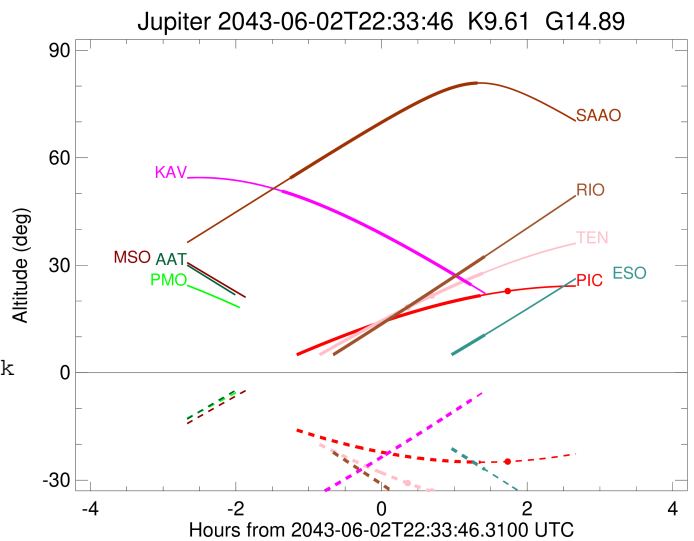
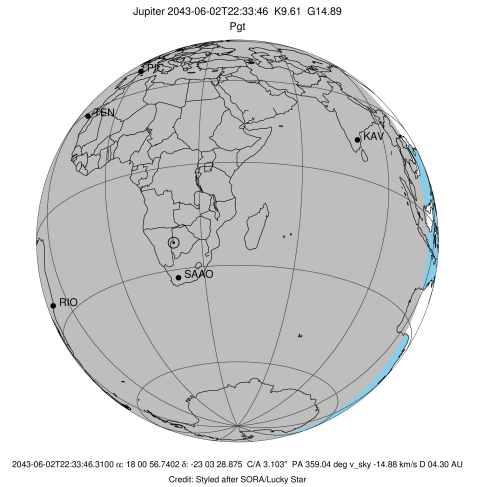


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-02T21:18:15.071	4.17x	-15.37	71492.0	-3.76	-4.29
Jupiter	E	2043-06-02T23:55:25.021	21.53	-24.98	71492.0	-3.12	-3.56

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-02T22:38:58.230
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      : 4069434268322555904
2Mass ID (if available) : 18005674-2303288
ICRS Star Coord at Epoch: 18h 00m 56.74018s -23:03:28.87537s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.611
G magnitude          : 14.890
RP magnitude        : 13.607
BP magnitude        : 16.754
DUPflag            : 0
Distance (au)       : 4.301
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -14.88
Sun-Target sep (deg) : 161.47
Sun-Moon sep (deg)  : 98.97
B (ring opening deg) : -2.43
PA of pole (deg)    : -0.94
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (" ) : 1.782
C/A sky separation (km) : 5558.6
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
    
```

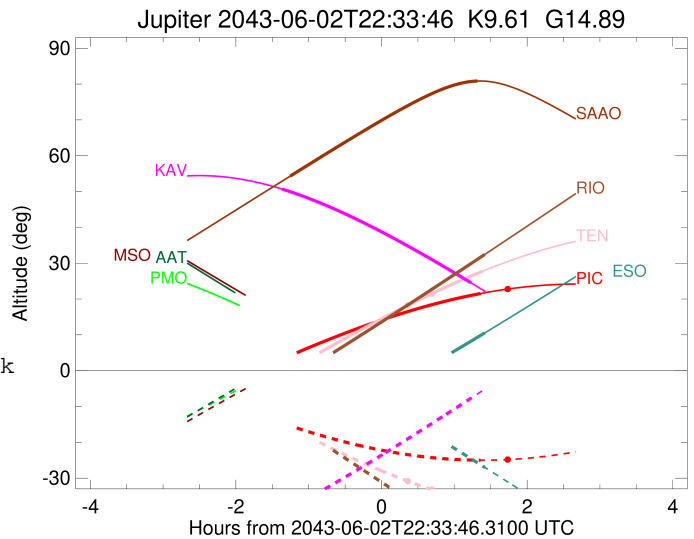
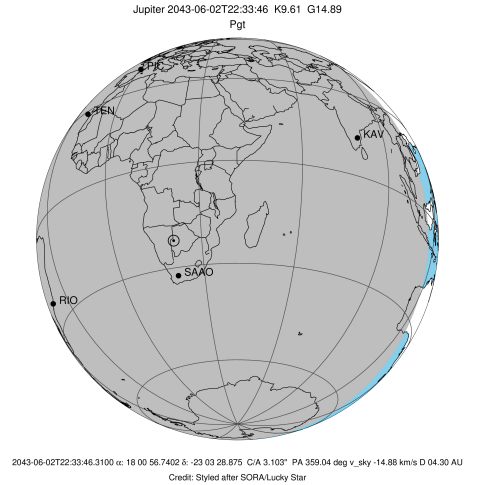


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-02T21:20:00.227	0.56x	-16.13	71491.9	-5.02	-5.74
Jupiter	E	2043-06-02T23:57:17.402	27.77	-37.09	71492.0	-4.02	-4.60

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-02T22:29:28.840
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : KAV
Location             : Kavalur Observatory
Latitude (deg)       : 12.57556
E. Longitude (deg)   : 78.83167
Altitude (km)        : 0.722
Gaia source ID       : 4069434268322555904
2Mass ID (if available) : 18005674-2303288
ICRS Star Coord at Epoch: 18h 00m 56.74018s -23:03:28.87537s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.611
G magnitude           : 14.890
RP magnitude         : 13.607
BP magnitude         : 16.754
DUPflag             : 0
Distance (au)        : 4.301
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.88
Sun-Target sep (deg) : 161.47
Sun-Moon sep (deg)   : 99.55
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.94
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 2.083
C/A sky separation (km): 6497.3
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
    
```

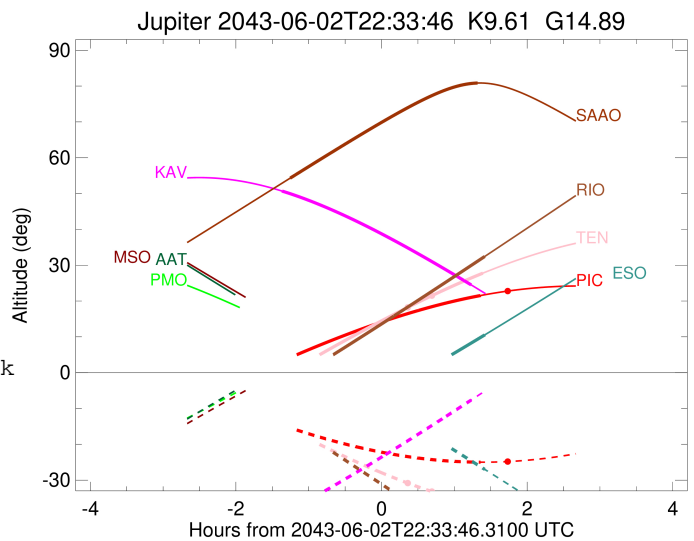
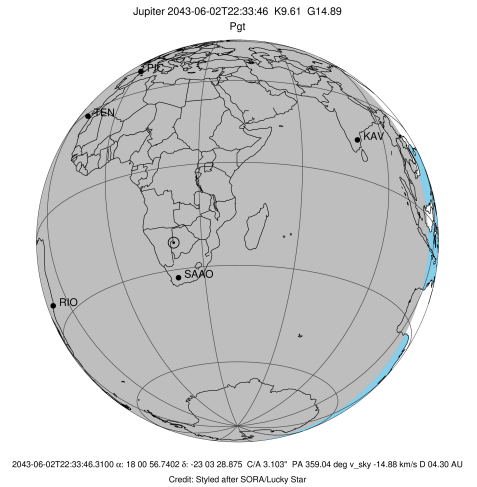


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-02T21:11:48.475	50.69	-39.57	71491.9	-4.90	-5.60
Jupiter	E	2043-06-02T23:47:34.984	24.52	-7.66	71491.9	-5.70	-6.51

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-02T22:40:29.510
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       : 4069434268322555904
2Mass ID (if available) : 18005674-2303288
ICRS Star Coord at Epoch: 18h 00m 56.74018s -23:03:28.87537s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 9.611
G magnitude           : 14.890
RP magnitude         : 13.607
BP magnitude         : 16.754
DUPflag              : 0
Distance (au)        : 4.301
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.88
Sun-Target sep (deg) : 161.47
Sun-Moon sep (deg)   : 98.93
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.94
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 3.685
C/A sky separation (km): 11495.6
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
    
```

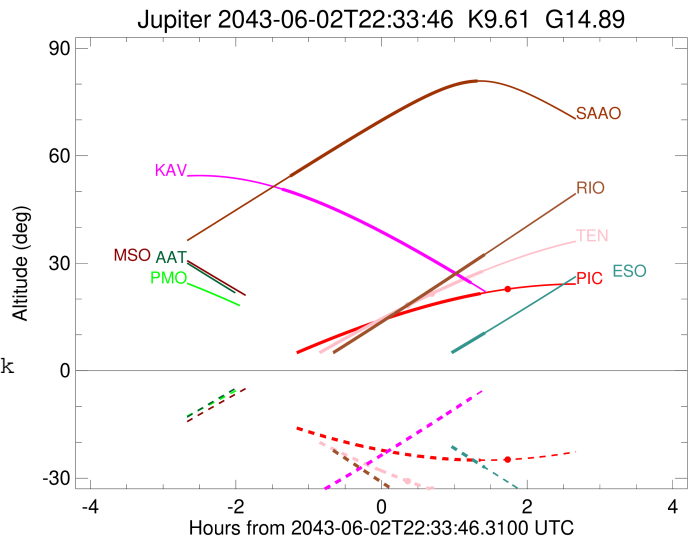
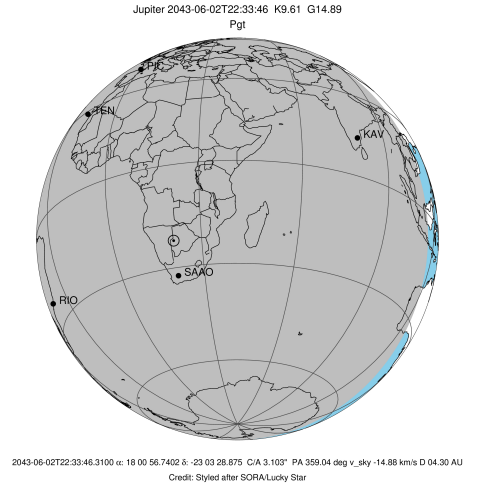


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-02T21:21:21.041	-1.86x	-15.04	71491.8	-9.91	-11.30
Jupiter	E	2043-06-02T23:58:49.157	32.43	-50.39	71491.8	-8.63	-9.84

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-02T22:39:51.600
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      : 4069434268322555904
2Mass ID (if available) : 18005674-2303288
ICRS Star Coord at Epoch: 18h 00m 56.74018s -23:03:28.87537s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 9.611
G magnitude          : 14.890
RP magnitude         : 13.607
BP magnitude         : 16.754
DUPflag             : 0
Distance (au)       : 4.301
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.88
Sun-Target sep (deg) : 161.47
Sun-Moon sep (deg)  : 98.61
B (ring opening deg) : -2.43
PA of pole (deg)    : -0.94
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 4.214
C/A sky separation (km): 13143.8
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
    
```

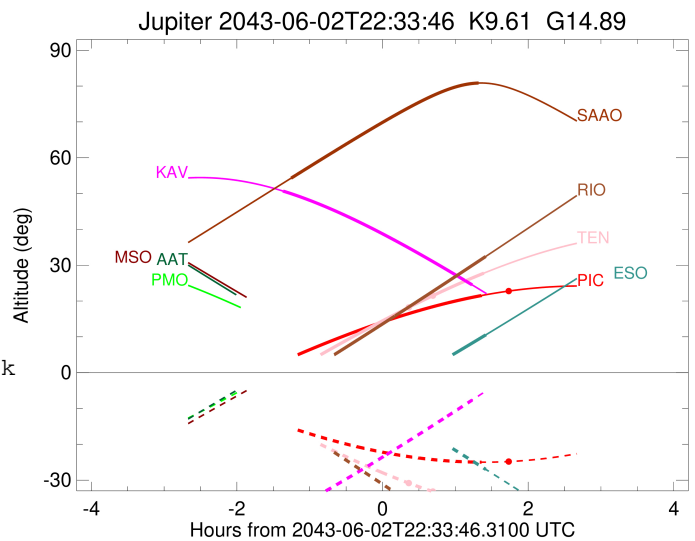
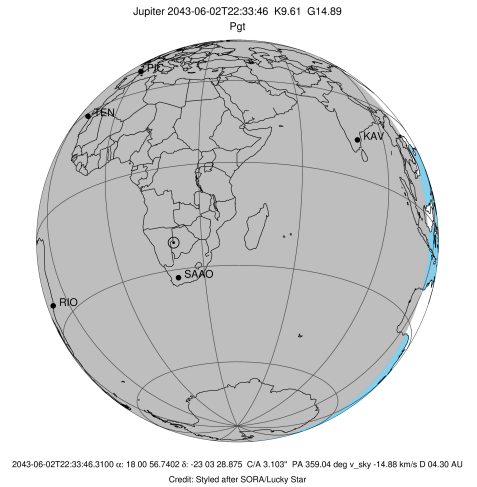


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-02T21:20:01.853	-19.28x	5.47x	71491.7	-11.16	-12.70
Jupiter	E	2043-06-02T23:58:55.639	10.56	-27.01	71491.8	-9.96	-11.35

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-02T22:35:52.810
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       : 4069434268322555904
2Mass ID (if available) : 18005674-2303288
ICRS Star Coord at Epoch: 18h 00m 56.74018s -23:03:28.87537s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 9.611
G magnitude           : 14.890
RP magnitude         : 13.607
BP magnitude         : 16.754
DUPflag              : 0
Distance (au)        : 4.301
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.88
Sun-Target sep (deg) : 161.47
Sun-Moon sep (deg)   : 99.71
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.94
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 3.444
C/A sky separation (km): 10743.1
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	2043-06-02T21:18:28.861	54.29	-70.39	71491.8	-8.91	-10.17
Jupiter	E	2043-06-02T23:53:00.912	80.84	-70.03	71491.8	-8.55	-9.75