

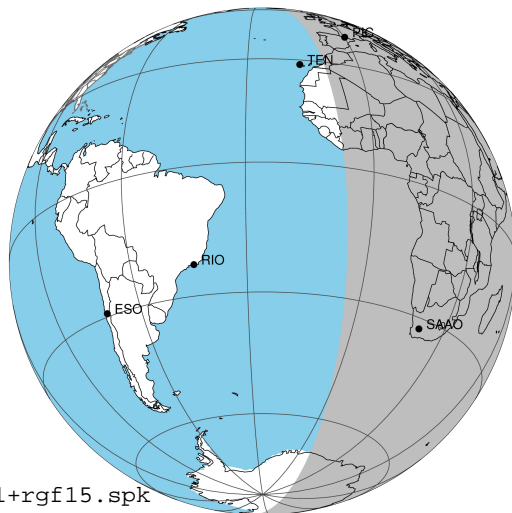
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-10-05T18:16:22.320  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4111656206357980672  
 2Mass ID (if available) : 17270172-2303068

Jupiter 2031-10-05T18:16:22 K9.74 G12.84 Pgt

ICRS Star Coord at Epoch: 17h 27m 01.74243s -23:03:06.88622s

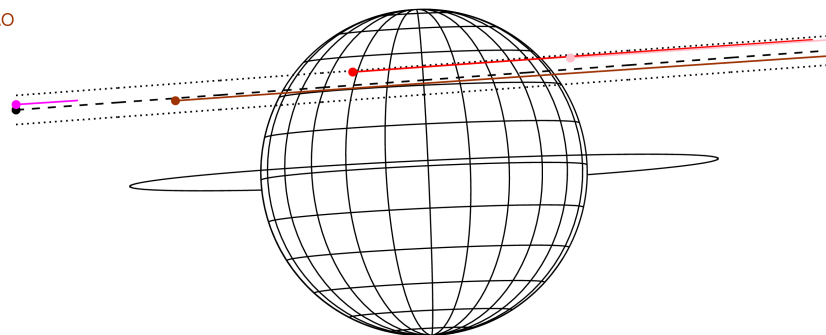
RUWE (>1.4 is poor) : 0.80  
 K magnitude : 9.742  
 G magnitude : 12.837  
 RP magnitude : 11.922  
 BP magnitude : 13.694  
 DUPflag : 0  
 Distance (au) : 5.489  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 23.01  
 Sun-Target sep (deg) : 70.55  
 Sun-Moon sep (deg) : 169.57  
 B (ring opening deg) : -2.31  
 PA of pole (deg) : 2.71  
 Pole direction: RA (deg): 268.05683  
 Dec (deg): 64.49652  
 C/A sky separation (") : 10.142  
 C/A sky separation (km) : 40374.6  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2031-10-05T18:16:22 K9.74 G12.84  
 Pgt



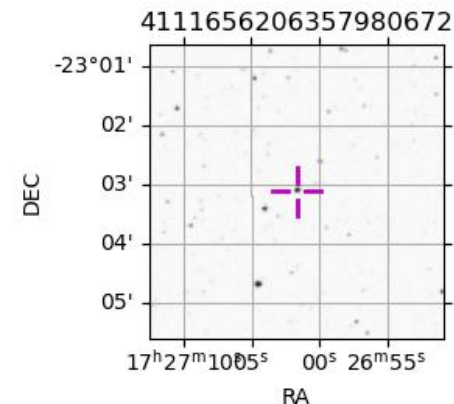
2031-10-05T18:16:22.3200 a: 17 27 01.7424 s: -23 03 06.886 C/A \*\*\*\*\* PA 184.18 deg v\_sky +23.01 km/s D 05.49 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PIC  
 TEN  
 KAV  
 SAAO



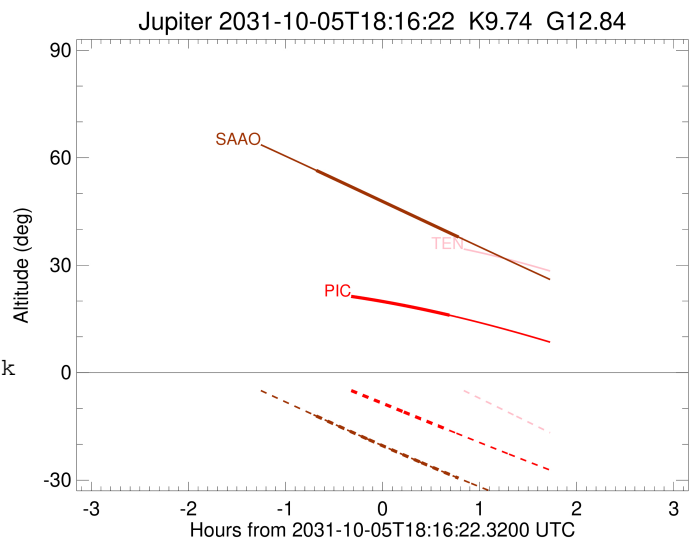
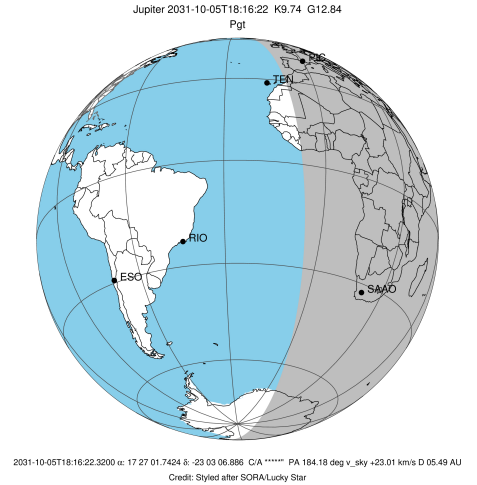
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1	+	OCT 05 18:57 - OCT 05 18:57	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			Pnn
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			Pnn
ESO	European Southern Obs. (3.6m)	-29.3	289.3			Pnn
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	OCT 05 17:35 - OCT 05 19:03	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-10-05T18:17:39.390
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        : 4111656206357980672
2Mass ID (if available) : 17270172-2303068
ICRS Star Coord at Epoch: 17h 27m 01.74243s -23:03:06.88622s
RUWE (>1.4 is poor)  : 0.80
K magnitude           : 9.742
G magnitude           : 12.837
RP magnitude          : 11.922
BP magnitude          : 13.694
DUPflag              : 0
Distance (au)         : 5.489
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 23.01
Sun-Target sep (deg)  : 70.55
Sun-Moon sep (deg)    : 169.69
B (ring opening deg) : -2.31
PA of pole (deg)      : 2.71
Pole direction: RA (deg): 268.05683
Dec (deg): 64.49652
C/A sky separation (") : 11.587
C/A sky separation (km) : 46125.4
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
    
```

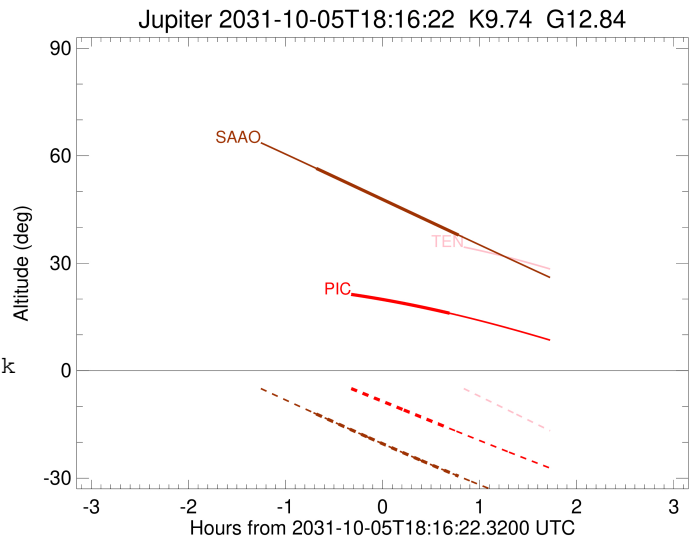
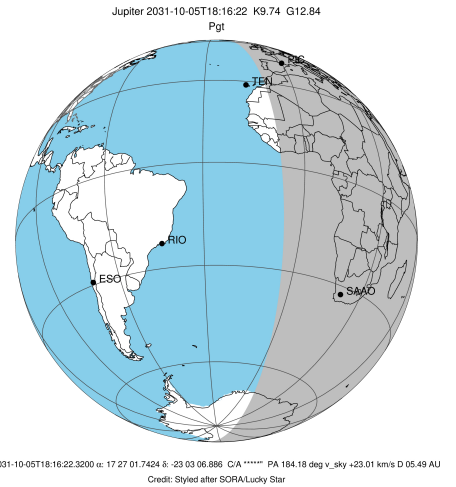


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-05T17:37:30.164	22.44	-1.41x	71489.1	38.74	42.43
Jupiter	E	2031-10-05T18:57:44.456	16.04	-16.12	71488.8	41.49	45.21

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-10-05T18:19:27.430
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        : 4111656206357980672
2Mass ID (if available) : 17270172-2303068
ICRS Star Coord at Epoch: 17h 27m 01.74243s -23:03:06.88622s
RUWE (>1.4 is poor) : 0.80
K magnitude           : 9.742
G magnitude           : 12.837
RP magnitude          : 11.922
BP magnitude          : 13.694
DUPflag              : 0
Distance (au)         : 5.489
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 23.01
Sun-Target sep (deg)  : 70.55
Sun-Moon sep (deg)   : 170.29
B (ring opening deg) : -2.31
PA of pole (deg)     : 2.71
Pole direction: RA (deg): 268.05683
Dec (deg): 64.49652
C/A sky separation (") : 9.786
C/A sky separation (km) : 38954.9
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	2031-10-05T17:35:26.053	56.46	-12.09	71490.0	31.72	35.18
Jupiter	E	2031-10-05T19:03:20.697	37.86	-29.45	71489.7	34.19	37.76