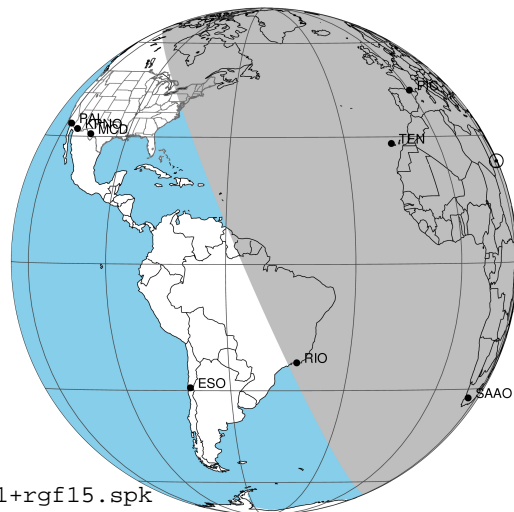


target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2034-12-21T21:42:27.720  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 2545561630974700416  
 2Mass ID (if available) : 00182108+0031276

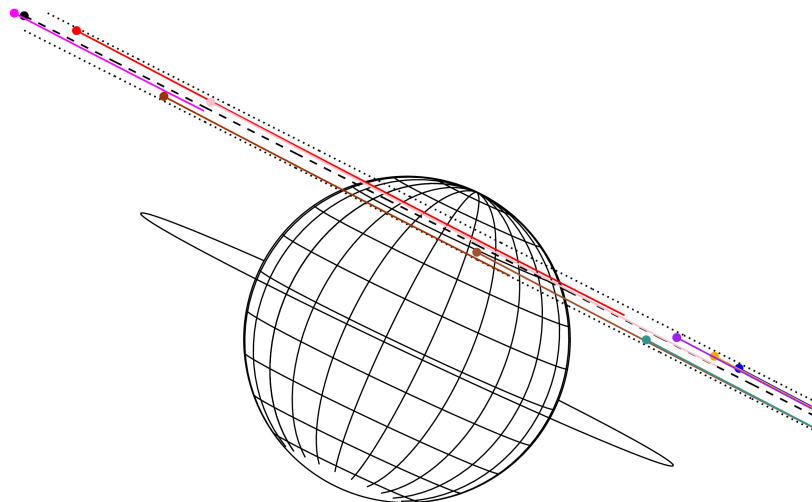
ICRS Star Coord at Epoch: 00h 18m 21.05924s +00:31:27.32455s  
 RUWE (>1.4 is poor) : 1.01  
 K magnitude : 6.641  
 G magnitude : 9.644  
 RP magnitude : 8.775  
 BP magnitude : 10.443  
 DUPflag : 0  
 Distance (au) : 4.772  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 11.05  
 Sun-Target sep (deg) : 94.81  
 Sun-Moon sep (deg) : 36.41  
 B (ring opening deg) : 2.33  
 PA of pole (deg) : -25.35  
 Pole direction: RA (deg): 268.05640  
 Dec (deg): 64.49676  
 C/A sky separation (") : 14.653  
 C/A sky separation (km) : 50717.4  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



2034-12-21T21:42:27.7200 α: 00 18 21.05924 δ: +00 31 27.325 C/A \*\*\*\*\* PA 153.15 deg v\_sky +11.05 km/s D 04.77 AU  
 Credit: Styled after SORA/Lucky Star

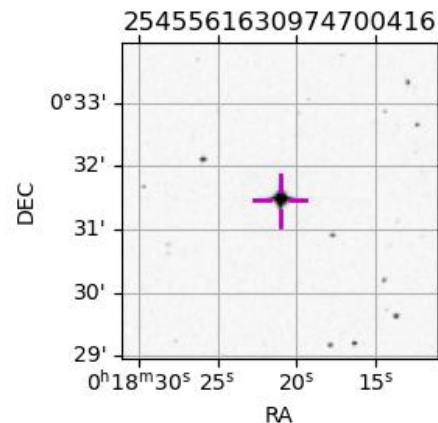
Jupiter 2034-12-21T21:42:27 K6.64 G9.64 Pgt

Earth  
 PIC  
 PAL  
 KPNO  
 MCD  
 TEN  
 KAV  
 RIO  
 ESO  
 SAAO



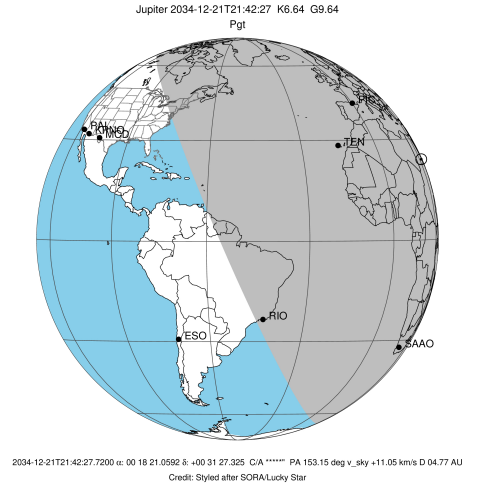
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+ +	DEC 21 20:37 - DEC 21 23:04	Pie
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	+ +	DEC 21 20:33 - DEC 21 23:05	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	+	DEC 21 23:05 - DEC 21 23:05	Pne
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	+	DEC 21 20:22 - DEC 21 20:22	Pin
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

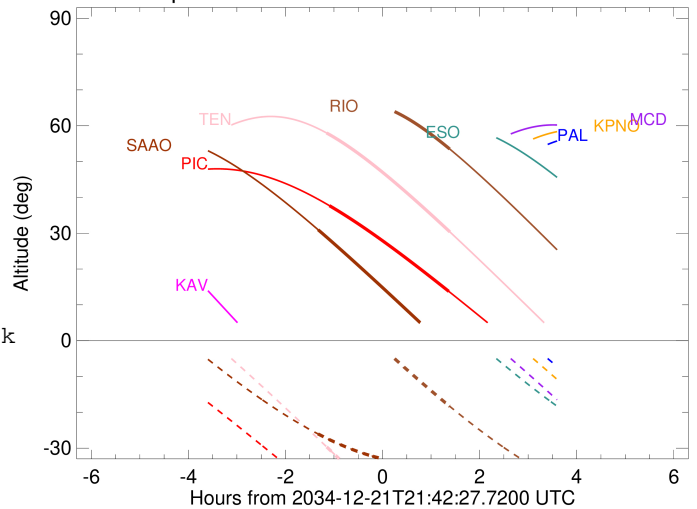


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2034-12-21T21:51:05.460
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        : 2545561630974700416
2Mass ID (if available) : 00182108+0031276
ICRS Star Coord at Epoch: 00h 18m 21.05924s +00:31:27.32455s
RUWE (>1.4 is poor)  : 1.01
K magnitude           : 6.641
G magnitude           : 9.644
RP magnitude          : 8.775
BP magnitude          : 10.443
DUPflag              : 0
Distance (au)         : 4.772
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 11.05
Sun-Target sep (deg)  : 94.81
Sun-Moon sep (deg)    : 36.08
B (ring opening deg)  : 2.33
PA of pole (deg)      : -25.35
Pole direction: RA (deg): 268.05640
Dec (deg): 64.49676
C/A sky separation (") : 15.269
C/A sky separation (km) : 52850.6
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
    
```



Jupiter 2034-12-21T21:42:27 K6.64 G9.64

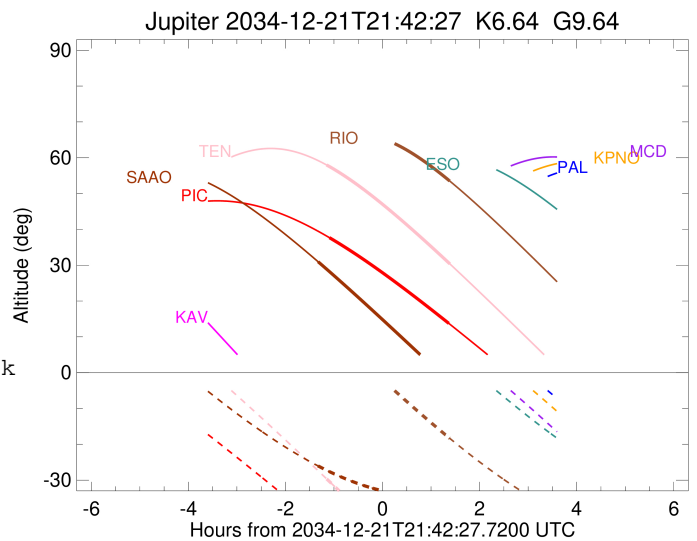
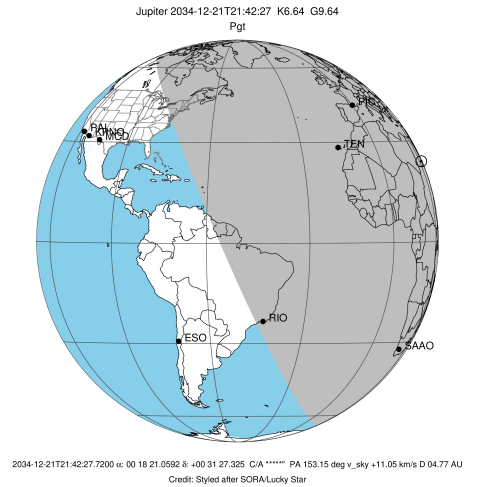


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2034-12-21T20:37:04.082	37.65	-44.57	71487.7	49.69	53.28
Jupiter	E	2034-12-21T23:04:23.370	13.76	-67.76	71488.2	45.77	49.46

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2034-12-21T21:50:02.170
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        : 2545561630974700416
2Mass ID (if available) : 00182108+0031276
ICRS Star Coord at Epoch: 00h 18m 21.05924s +00:31:27.32455s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 6.641
G magnitude           : 9.644
RP magnitude          : 8.775
BP magnitude          : 10.443
DUPflag              : 0
Distance (au)         : 4.772
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 11.05
Sun-Target sep (deg)  : 94.81
Sun-Moon sep (deg)    : 36.35
B (ring opening deg) : 2.33
PA of pole (deg)      : -25.35
Pole direction: RA (deg): 268.05640
Dec (deg): 64.49676
C/A sky separation (" ) : 14.978
C/A sky separation (km) : 51843.7
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
    
```

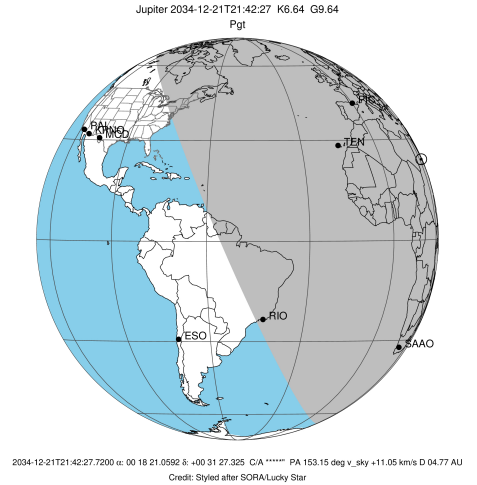


x: target alt < 5.0 deg or sun > -5.0 deg

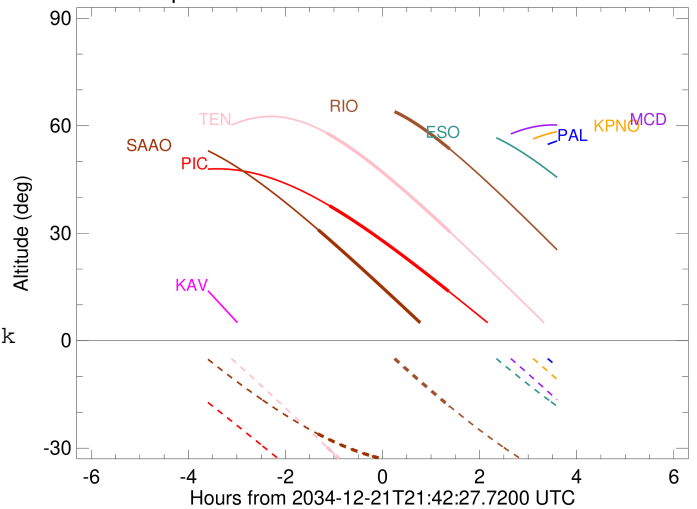
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2034-12-21T20:33:34.196	57.94	-29.67	71487.8	48.80	52.43
Jupiter	E	2034-12-21T23:05:46.244	30.35	-62.98	71488.4	44.28	47.99

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2034-12-21T21:43:08.530
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       : 2545561630974700416
2Mass ID (if available) : 00182108+0031276
ICRS Star Coord at Epoch: 00h 18m 21.05924s +00:31:27.32455s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 6.641
G magnitude           : 9.644
RP magnitude          : 8.775
BP magnitude          : 10.443
DUPflag              : 0
Distance (au)         : 4.772
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 11.05
Sun-Target sep (deg) : 94.81
Sun-Moon sep (deg)   : 36.97
B (ring opening deg) : 2.33
PA of pole (deg)     : -25.35
Pole direction: RA (deg): 268.05640
Dec (deg): 64.49676
C/A sky separation (") : 13.893
C/A sky separation (km) : 48087.2
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
    
```



Jupiter 2034-12-21T21:42:27 K6.64 G9.64

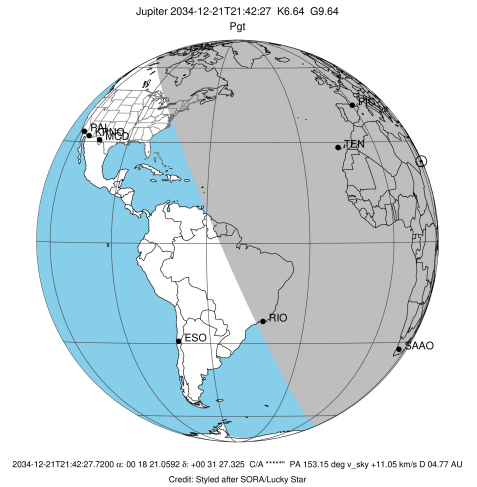


x: target alt < 5.0 deg or sun > -5.0 deg

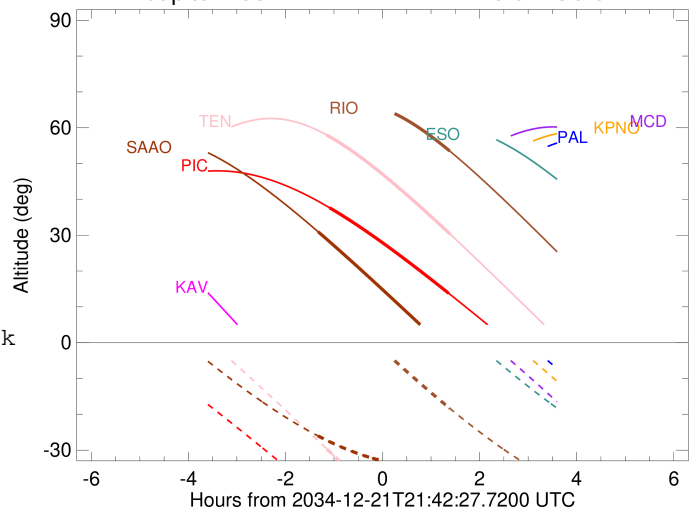
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2034-12-21T20:20:23.839	63.48	15.48x	71488.3	44.77	48.47
Jupiter	E	2034-12-21T23:05:27.497	53.51	-18.31	71488.9	39.77	43.47

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2034-12-21T21:47:22.800
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        : 2545561630974700416
2Mass ID (if available) : 00182108+0031276
ICRS Star Coord at Epoch: 00h 18m 21.05924s +00:31:27.32455s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 6.641
G magnitude           : 9.644
RP magnitude          : 8.775
BP magnitude          : 10.443
DUPflag              : 0
Distance (au)         : 4.772
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 11.05
Sun-Target sep (deg)  : 94.81
Sun-Moon sep (deg)    : 36.09
B (ring opening deg) : 2.33
PA of pole (deg)      : -25.35
Pole direction: RA (deg): 268.05640
Dec (deg): 64.49676
C/A sky separation (") : 13.099
C/A sky separation (km) : 45339.5
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
    
```



Jupiter 2034-12-21T21:42:27 K6.64 G9.64



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	2034-12-21T20:22:49.764	30.97	-26.04	71488.8	41.23	44.95
Jupiter	E	2034-12-21T23:10:45.486	-3.82x	-33.71	71489.2	37.75	41.42