

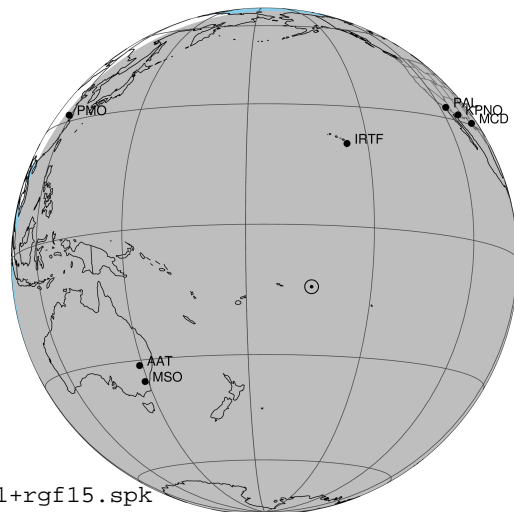
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2041-04-27T10:56:12.590
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3630106702176637952
 2Mass ID (if available) : 13343562-0813599

Jupiter 2041-04-27T10:56:12 K9.47 G12.01 Pgt

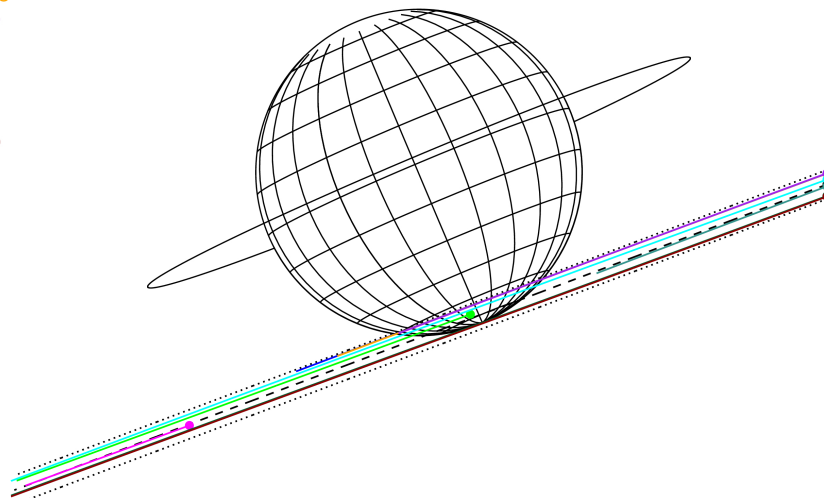
ICRS Star Coord at Epoch: 13h 34m 35.63738s -08:14:00.00010s

RUWE (>1.4 is poor) : 1.56
 K magnitude : 9.469
 G magnitude : 12.007
 RP magnitude : 11.246
 BP magnitude : 12.639
 DUPflag : 0
 Distance (au) : 4.459
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.59
 Sun-Target sep (deg) : 167.84
 Sun-Moon sep (deg) : 151.90
 B (ring opening deg) : -3.14
 PA of pole (deg) : 22.89
 Pole direction: RA (deg): 268.05627
 Dec (deg): 64.49721
 C/A sky separation (") : 20.971
 C/A sky separation (km) : 67816.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2041-04-27T10:56:12 K9.47 G12.01
 Pgt



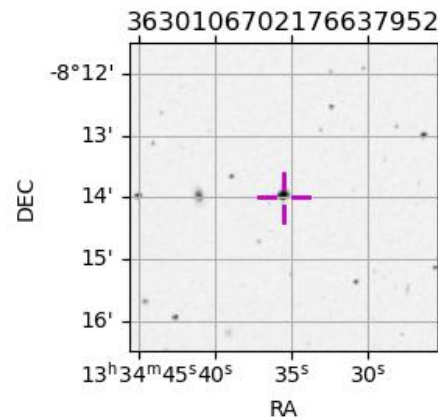
Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 ESO
 AAT
 MSO



2041-04-27T10:56:12.5900 α: 13 34 35.6374 δ: -08 14 00.0000 C/A ***** PA 20.61 deg v_sky -16.59 km/s D 04.46 AU
 Credit: Styled after SORA/Lucky Star

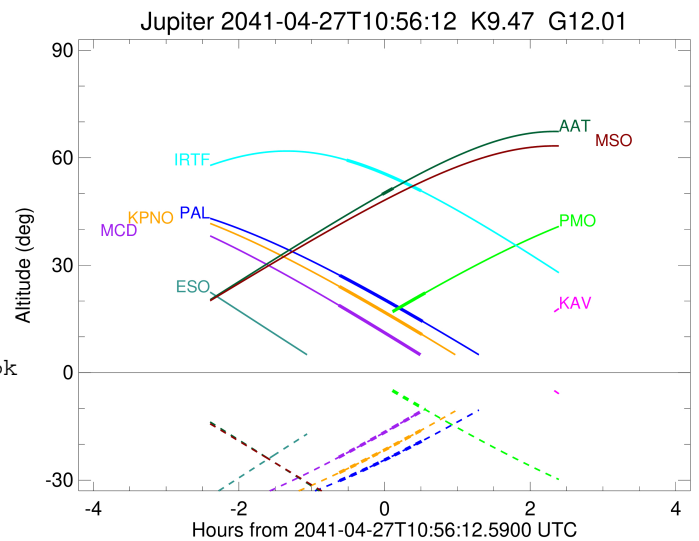
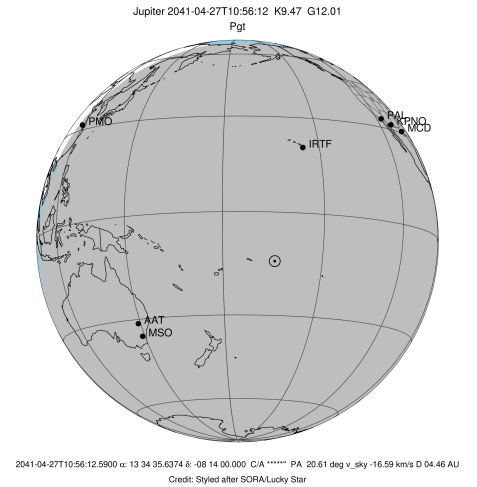
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events	Interval	OEcode
PIC	Pic du Midi	42.9	0.1				Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	APR 27 10:19 - APR 27 11:27		Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	APR 27 11:29 - APR 27 11:29		Pne
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	APR 27 10:18 - APR 27 11:27		Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	APR 27 10:18 - APR 27 10:18		Pin
TEN	Teide Obs./Tenerife	28.3	343.5				Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+ +	APR 27 10:25 - APR 27 11:26		Pie
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	+ +	APR 27 10:54 - APR 27 11:03		Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8				Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0				Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2041-04-27T10:53:24.490
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)       : 1.706
Gaia source ID      : 3630106702176637952
2Mass ID (if available) : 13343562-0813599
ICRS Star Coord at Epoch: 13h 34m 35.63738s -08:14:00.00010s
RUWE (>1.4 is poor) : 1.56
K magnitude          : 9.469
G magnitude          : 12.007
RP magnitude         : 11.246
BP magnitude         : 12.639
DUPflag             : 0
Distance (au)       : 4.459
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.59
Sun-Target sep (deg) : 167.84
Sun-Moon sep (deg)  : 152.38
B (ring opening deg) : -3.14
PA of pole (deg)    : 22.89
Pole direction: RA (deg): 268.05627
Dec (deg): 64.49721
C/A sky separation (") : 19.361
C/A sky separation (km) : 62609.8
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
    
```

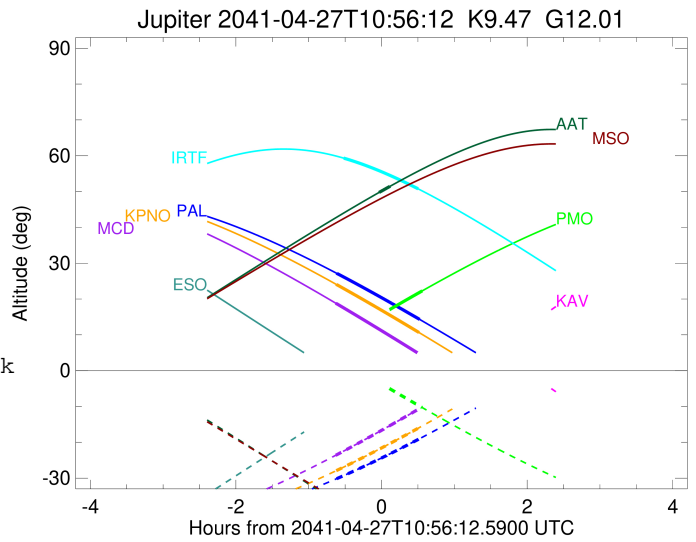
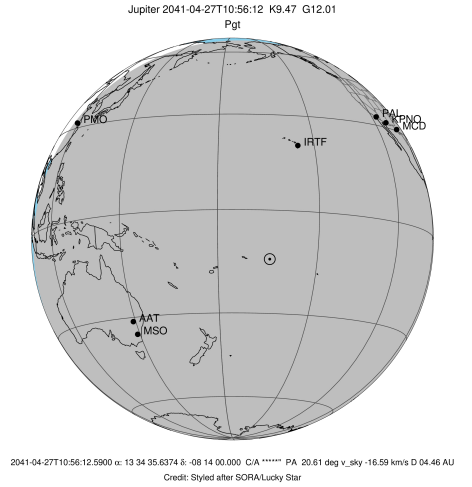


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2041-04-27T10:19:16.447	27.17	-30.15	71481.2	-63.38	-66.19
Jupiter	E	2041-04-27T11:27:38.337	14.31	-18.98	71482.1	-58.68	-61.83

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2041-04-27T11:02:30.780
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PMO
Location            : Purple Mtn Obs. Nanking
Latitude (deg)      : 32.06667
E. Longitude (deg)  : 118.82089
Altitude (km)       : 0.364
Gaia source ID      : 3630106702176637952
2Mass ID (if available) : 13343562-0813599
ICRS Star Coord at Epoch: 13h 34m 35.63738s -08:14:00.00010s
RUWE (>1.4 is poor) : 1.56
K magnitude          : 9.469
G magnitude          : 12.007
RP magnitude         : 11.246
BP magnitude         : 12.639
DUPflag             : 0
Distance (au)       : 4.459
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -16.59
Sun-Target sep (deg) : 167.84
Sun-Moon sep (deg)  : 151.21
B (ring opening deg) : -3.14
PA of pole (deg)    : 22.89
Pole direction: RA (deg): 268.05627
Dec (deg): 64.49721
C/A sky separation ("): 20.432
C/A sky separation (km): 66074.9
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
    
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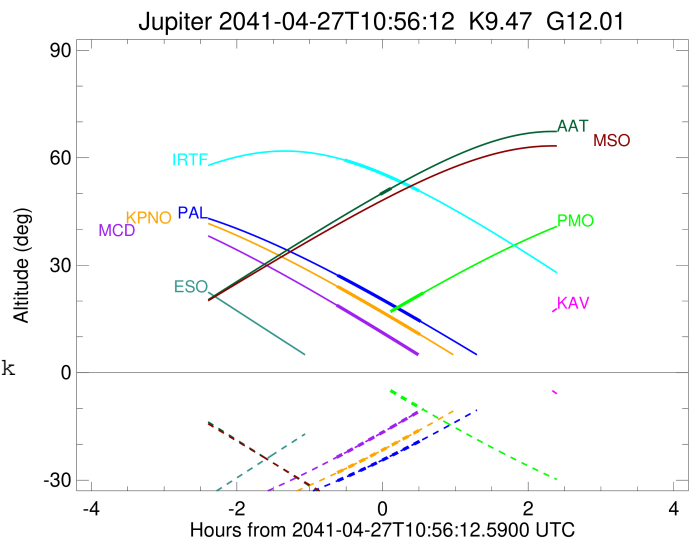
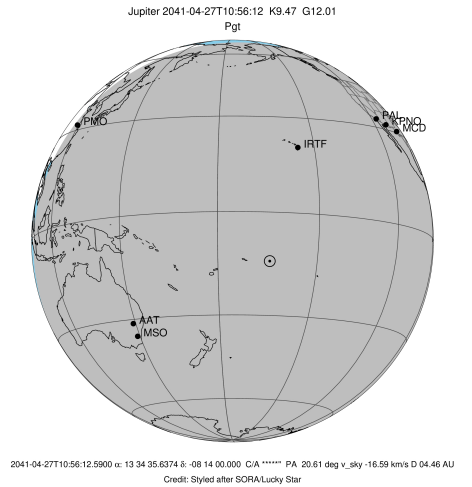


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2041-04-27T10:35:17.871	11.51	0.55x	71480.0	-69.96	-72.19
Jupiter	E	2041-04-27T11:29:39.926	22.25	-10.28	71480.9	-64.72	-67.42

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2041-04-27T10:53:00.210
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : KPNO
Location              : Kitt Peak Natl Obs
Latitude (deg)        : 31.96333
E. Longitude (deg)    : 248.40000
Altitude (km)         : 2.120
Gaia source ID        : 3630106702176637952
2Mass ID (if available) : 13343562-0813599
ICRS Star Coord at Epoch: 13h 34m 35.63738s -08:14:00.00010s
RUWE (>1.4 is poor) : 1.56
K magnitude           : 9.469
G magnitude           : 12.007
RP magnitude          : 11.246
BP magnitude          : 12.639
DUPflag              : 0
Distance (au)         : 4.459
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.59
Sun-Target sep (deg)  : 167.84
Sun-Moon sep (deg)   : 152.40
B (ring opening deg) : -3.14
PA of pole (deg)     : 22.89
Pole direction: RA (deg): 268.05627
Dec (deg): 64.49721
C/A sky separation (") : 19.381
C/A sky separation (km) : 62673.8
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
    
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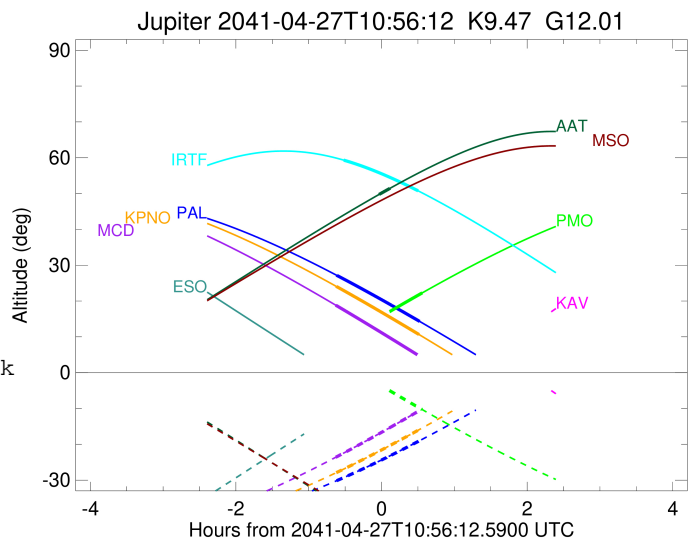
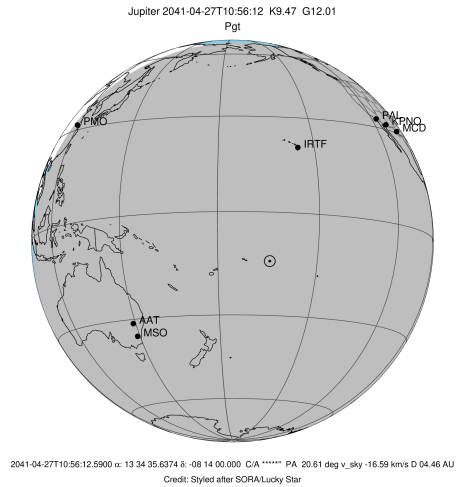


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2041-04-27T10:18:56.369	24.08	-27.91	71481.1	-63.44	-66.24
Jupiter	E	2041-04-27T11:27:10.276	10.64	-15.93	71482.1	-58.83	-61.97

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2041-04-27T10:52:31.830
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : MCD
Location              : McDonald Obs. 2.7m
Latitude (deg)        : 30.67158
E. Longitude (deg)    : 255.97844
Altitude (km)         : 2.075
Gaia source ID        : 3630106702176637952
2Mass ID (if available) : 13343562-0813599
ICRS Star Coord at Epoch: 13h 34m 35.63738s -08:14:00.00010s
RUWE (>1.4 is poor) : 1.56
K magnitude           : 9.469
G magnitude           : 12.007
RP magnitude          : 11.246
BP magnitude          : 12.639
DUPflag              : 0
Distance (au)         : 4.459
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.59
Sun-Target sep (deg) : 167.84
Sun-Moon sep (deg)   : 152.41
B (ring opening deg) : -3.14
PA of pole (deg)     : 22.89
Pole direction: RA (deg): 268.05627
Dec (deg): 64.49721
C/A sky separation (") : 19.405
C/A sky separation (km) : 62751.9
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
    
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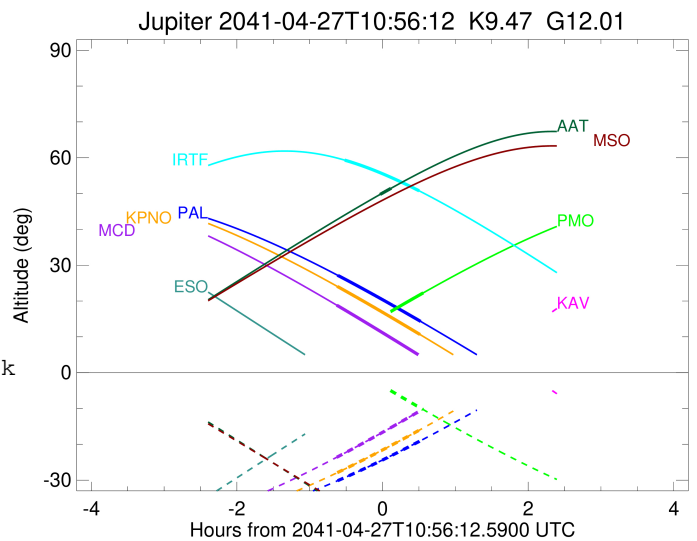
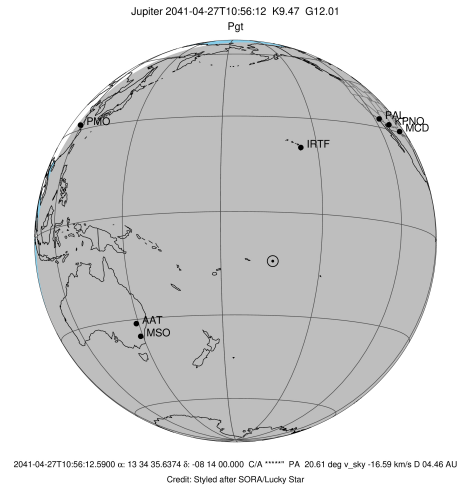


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2041-04-27T10:18:31.785	18.83	-23.61	71481.1	-63.50	-66.30
Jupiter	E	2041-04-27T11:26:38.579	4.81x	-10.75	71482.0	-59.03	-62.16

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2041-04-27T10:55:46.680
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)        : 19.82622
E. Longitude (deg)    : 204.52800
Altitude (km)         : 4.168
Gaia source ID        : 3630106702176637952
2Mass ID (if available) : 13343562-0813599
ICRS Star Coord at Epoch: 13h 34m 35.63738s -08:14:00.00010s
RUWE (>1.4 is poor) : 1.56
K magnitude           : 9.469
G magnitude           : 12.007
RP magnitude          : 11.246
BP magnitude          : 12.639
DUPflag              : 0
Distance (au)         : 4.459
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.59
Sun-Target sep (deg) : 167.84
Sun-Moon sep (deg)   : 152.35
B (ring opening deg) : -3.14
PA of pole (deg)     : 22.89
Pole direction: RA (deg): 268.05627
Dec (deg): 64.49721
C/A sky separation ("): 19.891
C/A sky separation (km): 64325.8
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
    
```

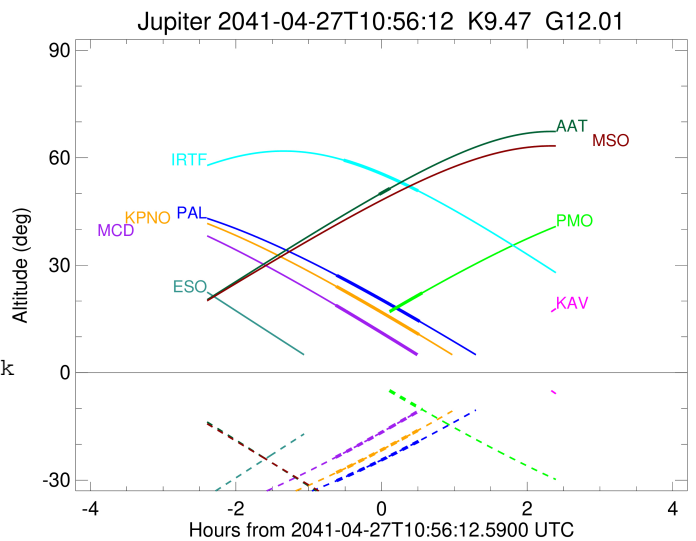
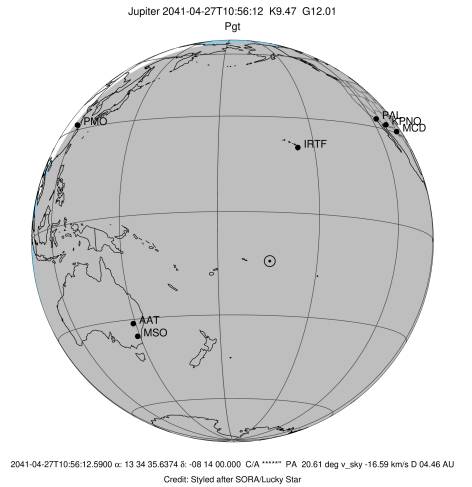


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2041-04-27T10:25:13.554	59.30	-56.24	71480.6	-66.66	-69.19
Jupiter	E	2041-04-27T11:26:21.757	50.76	-52.46	71481.6	-61.32	-64.29

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2041-04-27T10:58:49.770
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : AAT
Location              : Siding Spring (AAT)
Latitude (deg)        : -31.27703
E. Longitude (deg)    : 149.06608
Altitude (km)         : 1.164
Gaia source ID        : 3630106702176637952
2Mass ID (if available) : 13343562-0813599
ICRS Star Coord at Epoch: 13h 34m 35.63738s -08:14:00.00010s
RUWE (>1.4 is poor) : 1.56
K magnitude           : 9.469
G magnitude           : 12.007
RP magnitude          : 11.246
BP magnitude          : 12.639
DUPflag               : 0
Distance (au)         : 4.459
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.59
Sun-Target sep (deg)  : 167.84
Sun-Moon sep (deg)    : 152.03
B (ring opening deg) : -3.14
PA of pole (deg)      : 22.89
Pole direction: RA (deg): 268.05627
Dec (deg): 64.49721
C/A sky separation ("): 22.060
C/A sky separation (km): 71337.6
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	2041-04-27T10:54:24.007	49.78	-44.01	71478.5	-86.74	-87.13
Jupiter	E	2041-04-27T11:03:15.630	51.46	-45.87	71478.6	-82.90	-83.73