17733 - When Clouds Collide: Observing Gas Accretion onto the Milky Way's Disk

Cycle: 32, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*
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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) 2MASS-J07380702+2127295	COS/FUV COS/NUV	3	10-Dec-2025 07:00:15.0	yes
02	(1) 2MASS-J07380702+2127295	COS/FUV COS/NUV	2	10-Dec-2025 07:00:16.0	yes
03	(1) 2MASS-J07380702+2127295	COS/FUV COS/NUV	2	10-Dec-2025 07:00:17.0	yes
04	(2) UVQS-J070919.25+254923.4	COS/FUV COS/NUV	3	10-Dec-2025 07:00:17.0	yes
05	(2) UVQS-J070919.25+254923.4	COS/FUV COS/NUV	2	10-Dec-2025 07:00:18.0	yes
06	(2) UVQS-J070919.25+254923.4	COS/FUV COS/NUV	2	10-Dec-2025 07:00:19.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
07	(3) 2MASS-J06413937+4510020	COS/FUV COS/NUV	2	10-Dec-2025 07:00:19.0	yes
10	(3) 2MASS-J06413937+4510020	COS/FUV COS/NUV	2	10-Dec-2025 07:00:19.0	yes
08	(3) 2MASS-J06413937+4510020	COS/FUV COS/NUV	3	10-Dec-2025 07:00:20.0	yes
11	(4) VV2000-J042630.1+070530	COS/FUV COS/NUV	2	10-Dec-2025 07:00:21.0	yes
12	(4) VV2000-J042630.1+070530	COS/FUV COS/NUV	2	10-Dec-2025 07:00:21.0	yes
15	(4) VV2000-J042630.1+070530	COS/FUV COS/NUV	2	10-Dec-2025 07:00:22.0	yes
13	(4) VV2000-J042630.1+070530	COS/FUV COS/NUV	3	10-Dec-2025 07:00:23.0	yes
14	(4) VV2000-J042630.1+070530	COS/FUV COS/NUV	2	10-Dec-2025 07:00:24.0	yes
16	(4) VV2000-J042630.1+070530	COS/FUV COS/NUV	2	10-Dec-2025 07:00:24.0	yes

34 Total Orbits Used

ABSTRACT

Despite it being the reference L* galaxy for extragalactic studies, our Milky Way (MW) seems to host a circumgalactic medium (CGM) with far less ionized gas content than their low-redshift counterparts. This program is designed to investigate the MW's CGM anomaly by examining whether there are large streams of ionized gas being accreted onto the MW's disk in a co-planner manner at low Galactic latitudes, which may elude previous studies that were limited to QSOs at high-latitude regions. We will observe 4 new QSO sightlines toward the anti-Galactic center direction, where a large population of infalling HI clouds are present. We will quantify the physical properties of the ionized gas associated with the infalling HI clouds, including ionization states, ion ratios, metallicity, neutral and ionized masses, and infalling time scales and mass rates. Detections of high ion column densities in our proposed observations will confirm that there are indeed large streams of ionized gas flowing from the MW's CGM to the disk,

resolving the debate surrounding the MW's CGM anomaly. Null detection of ionized gas would also be extremely informative: it would indicate that the MW's CGM is truly different from those of other L* galaxies, with insufficient amounts of ionized gas in all directions.

OBSERVING DESCRIPTION

We will observe the QSOs using both G130M and G160M gratings to cover a wide range of UV ions, such as SiII, SII, AlII, CII, and CIV. The observations are split into 2-3 orbits per visit.

Observation setup strategy:

- Gratings and CENWAVE: we will use both G130M and G160M gratings for our observations. For G130M, we will use CENWAVE=1291 (SEGMENT=BOTH, FP-POS=3,4) to cover our targeted ion lines. For G160M, we will use CENWAVE=1589 and FP-POS=1,2,3,4.

- Target acquisition: our targets have coordiante uncertainties within 0.03-0.05 arcsec based on SIMBAD (except QSO 2: UVQS-J070919.25+254923.4 which has no reported uncertainties and we assume an uncertainty of 0.05 arcsec). All targets are at z>0.1 and appear to be point sources in 2MASS images, so we conduct target acquisition using ACQ/IMAGE in NUV, with sufficient exposure times to reach S/N=20 using an FOS-based template spectrum.

- Science exposure: for exposure time, we modeled the QSOs with COS-based QSO input spectra, adding in the appropriate extinction, and normalizing the spectra to each QSO's GALEX FUV AB magnitude. We aim to achieve a signal-to-noise ratio S/N=12 at 1300 A for G130M and 1550 A for G160M. The observations will be conducted in TIME-TAG mode. The Buffer Fill Time from COS ETC is generally long (a few thousands seccond), and we set the Buffer Time to equal to the exposure time following the flow chart in Figure 5.12 in COS instrument handbook.

Visit

Proposal 17733, Q1-G130M-a3 (01), completed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for 2MASS-J07380702+2127295

Diagnostics

(Q1-G130M-a3 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q1-G130M-a3 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q1-G130M-a3 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	2MASS-J07380702+2127295	RA: 07 38 7.0324 (114.5293017d) Dec: +21 27 29.54 (21.45821d) Equinox: J2000	Proper Motion RA: 0.085 mas/yr Proper Motion Dec: 0.011 mas/yr Parallax: 4.07E-5" Epoch of Position: 2000 Redshift: 0.75	V=16.4 FUV=17.38	Reference Frame: ICRS

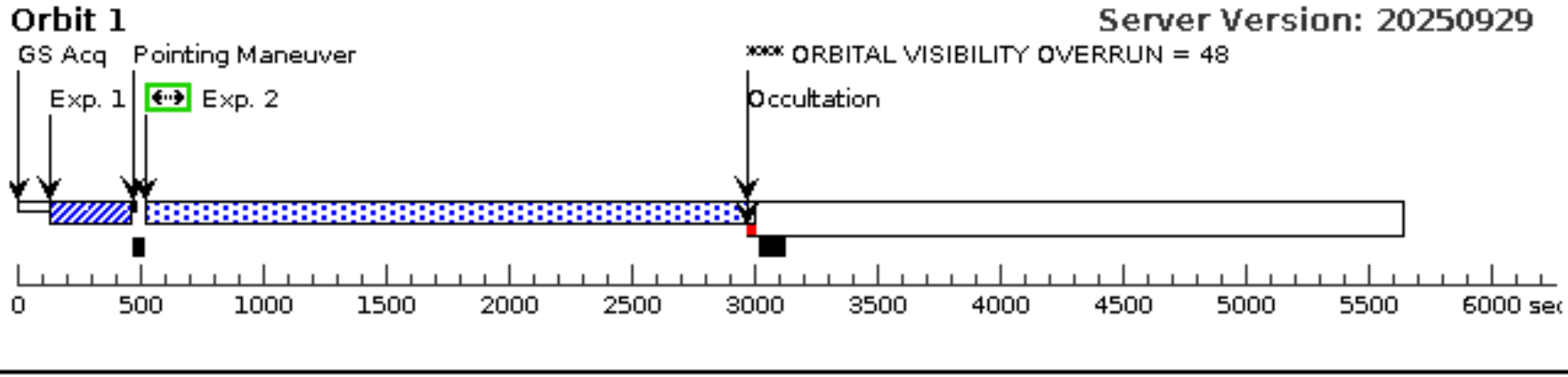
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

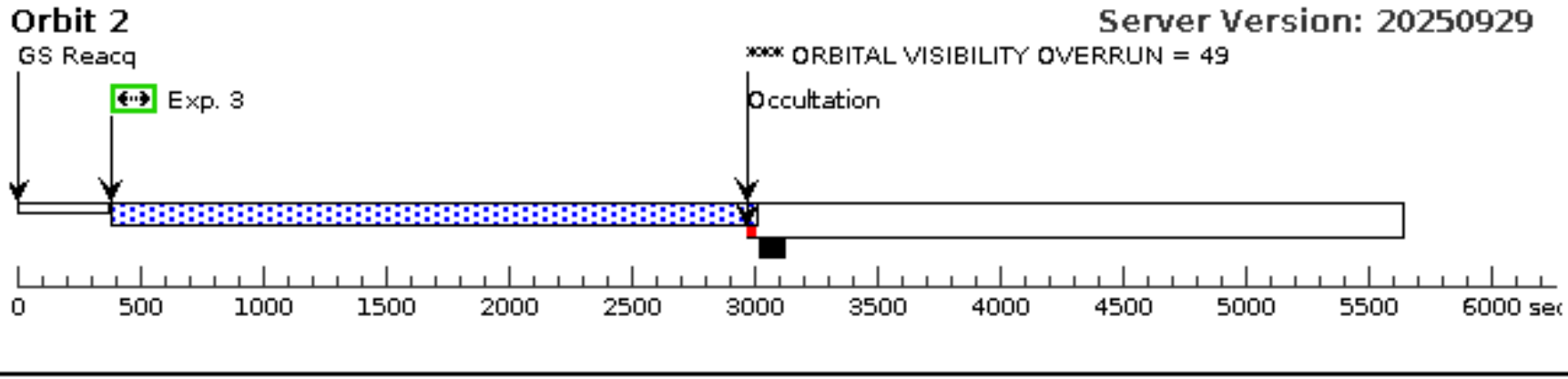
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

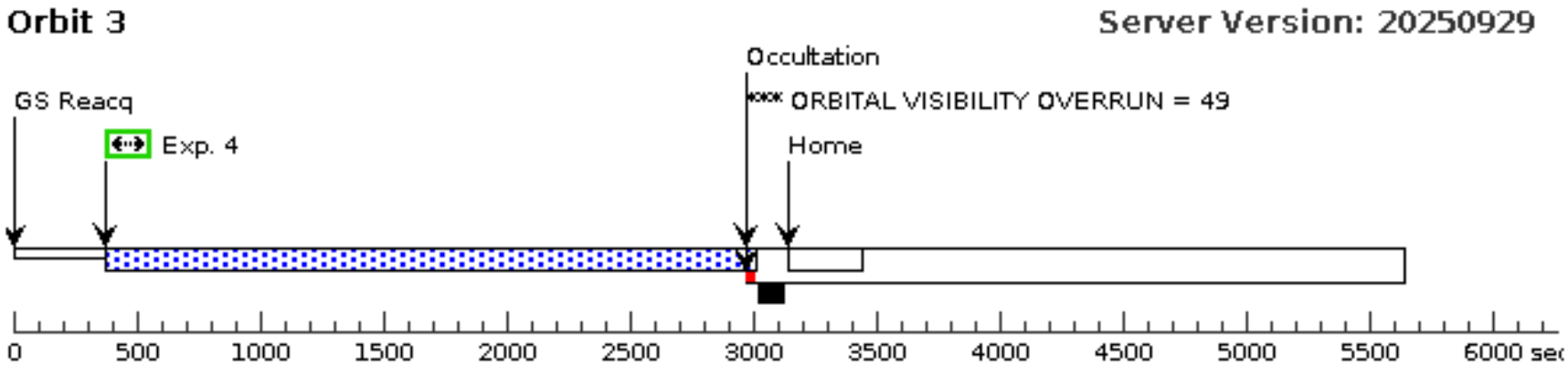
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929409)	(1) 2MASS-J07380702+2127295	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				10 Secs (10 Secs) *[==>]*	***[1]***
2	(COS.sp.1927563)	(1) 2MASS-J07380702+2127295	COS/FUV, TIME-TAG, PSA	G130M 1291 A	SEGMENT=BOTH; FP-POS=3; BUFFER-TIME=2315			2315 Secs (2315 Secs) *[==>]*	***[1]***
3	(COS.sp.1927564)	(1) 2MASS-J07380702+2127295	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=2584; SEGMENT=BOTH; FP-POS=3			2584 Secs (2584 Secs) *[==>]*	***[2]***
4	(COS.sp.1927564)	(1) 2MASS-J07380702+2127295	COS/FUV, TIME-TAG, PSA	G130M 1291 A	SEGMENT=BOTH; FP-POS=4; BUFFER-TIME=2584			2584 Secs (2584 Secs) *[==>]*	***[3]***

Orbit Structure







Visit

Proposal 17733, Q1-G160M-a2 (02), completed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for 2MASS-J07380702+2127295

Diagnostics

(Q1-G160M-a2 (02)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q1-G160M-a2 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q1-G160M-a2 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	2MASS-J07380702+2127295	RA: 07 38 7.0324 (114.5293017d) Dec: +21 27 29.54 (21.45821d) Equinox: J2000	Proper Motion RA: 0.085 mas/yr Proper Motion Dec: 0.011 mas/yr Parallax: 4.07E-5" Epoch of Position: 2000 Redshift: 0.75	V=16.4 FUV=17.38	Reference Frame: ICRS

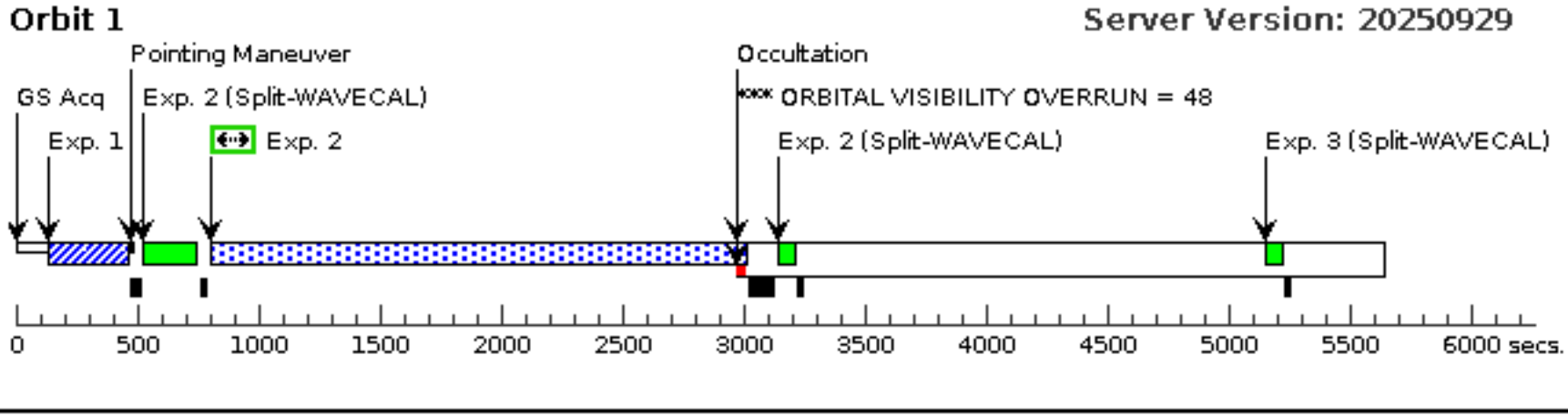
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

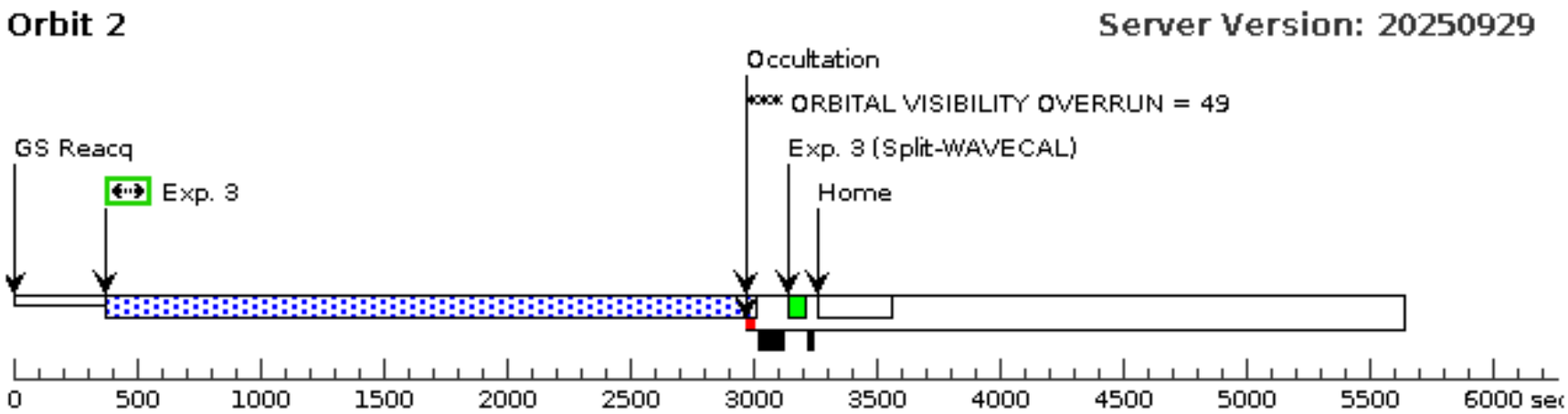
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929409)	(1) 2MASS-J07380702+2127295	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				10 Secs (10 Secs) *[==>]*	*[1]*
2	(COS.sp.1927631)	(1) 2MASS-J07380702+2127295	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=1; BUFFER-TIME=2157			2157 Secs (2157 Secs) *[==>]*	*[1]*
3	(COS.sp.1927631)	(1) 2MASS-J07380702+2127295	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=2; BUFFER-TIME=2588			2588 Secs (2588 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 17733, Q1-G160M-b2 (03), completed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for 2MASS-J07380702+2127295

Diagnostics

(Q1-G160M-b2 (03)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q1-G160M-b2 (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q1-G160M-b2 (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	2MASS-J07380702+2127295	RA: 07 38 7.0324 (114.5293017d) Dec: +21 27 29.54 (21.45821d) Equinox: J2000	Proper Motion RA: 0.085 mas/yr Proper Motion Dec: 0.011 mas/yr Parallax: 4.07E-5" Epoch of Position: 2000 Redshift: 0.75	V=16.4 FUV=17.38	Reference Frame: ICRS

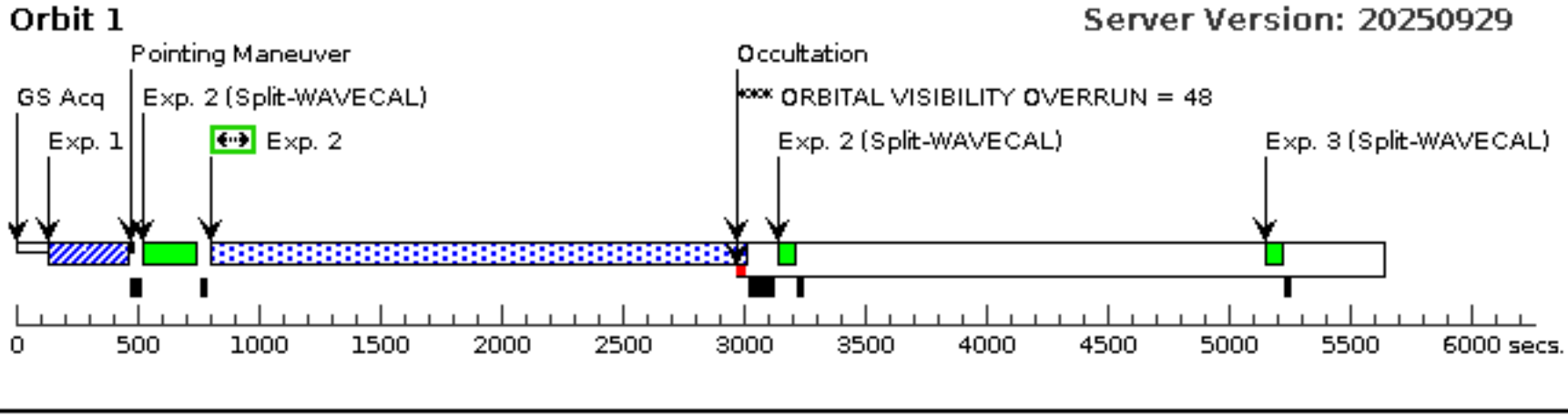
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

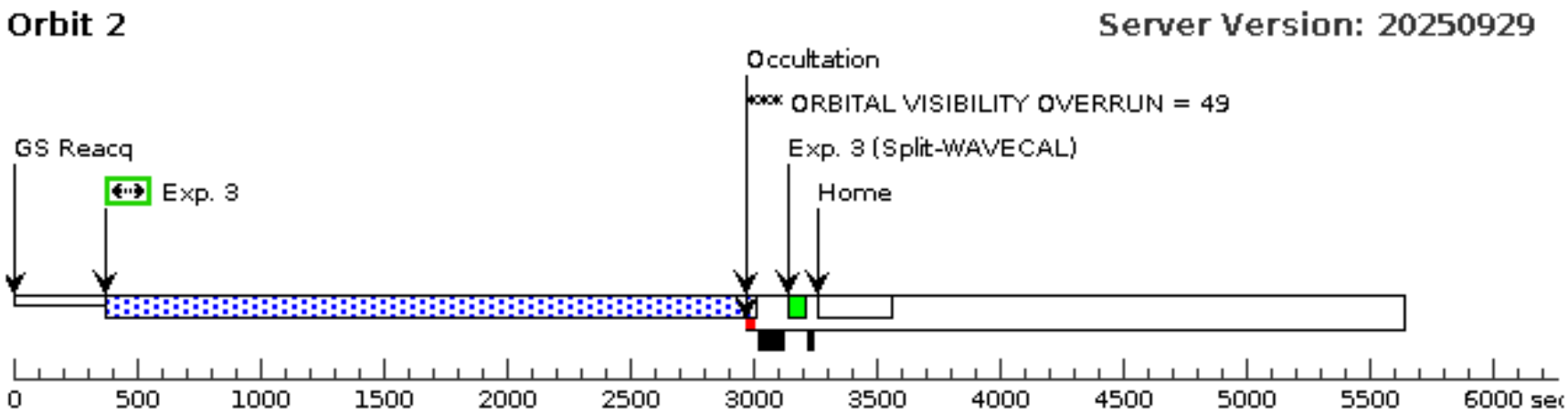
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929409)	(1) 2MASS-J07380702+2127295	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				10 Secs (10 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1927631)	(1) 2MASS-J07380702+2127295	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=3; BUFFER-TIME=2157			2157 Secs (2157 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1927631)	(1) 2MASS-J07380702+2127295	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=4; BUFFER-TIME=2588			2588 Secs (2588 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 17733, Q2-G130M-a3 (04), completed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q2: UVQS-J070919.25+254923.4

Diagnostics

(Q2-G130M-a3 (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q2-G130M-a3 (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q2-G130M-a3 (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	UVQS-J070919.25+254923.4	RA: 07 09 19.2500 (107.3302083d) Dec: +25 49 23.40 (25.82317d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.136	V=16.4 FUV=17.30	Reference Frame: ICRS

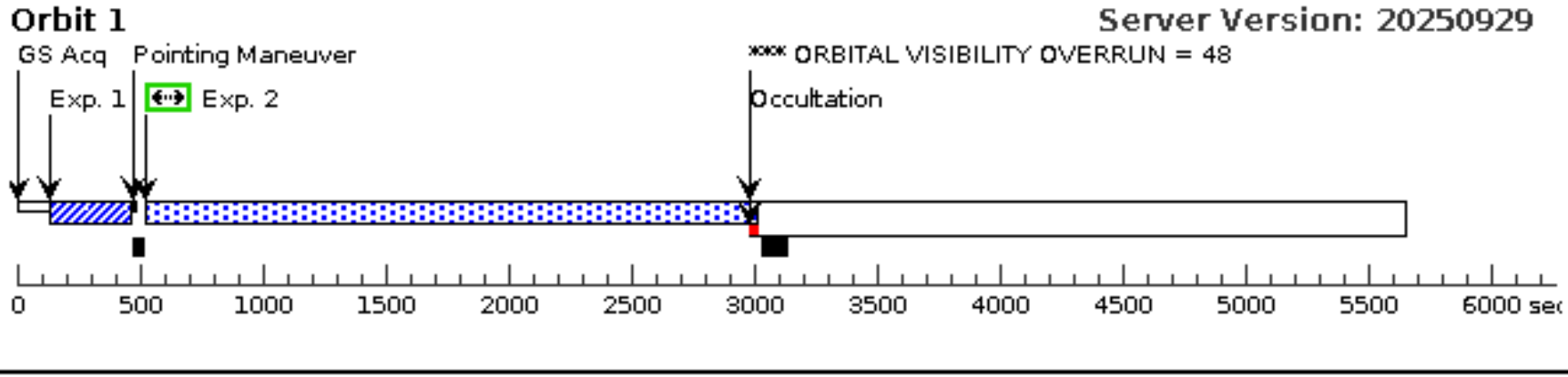
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

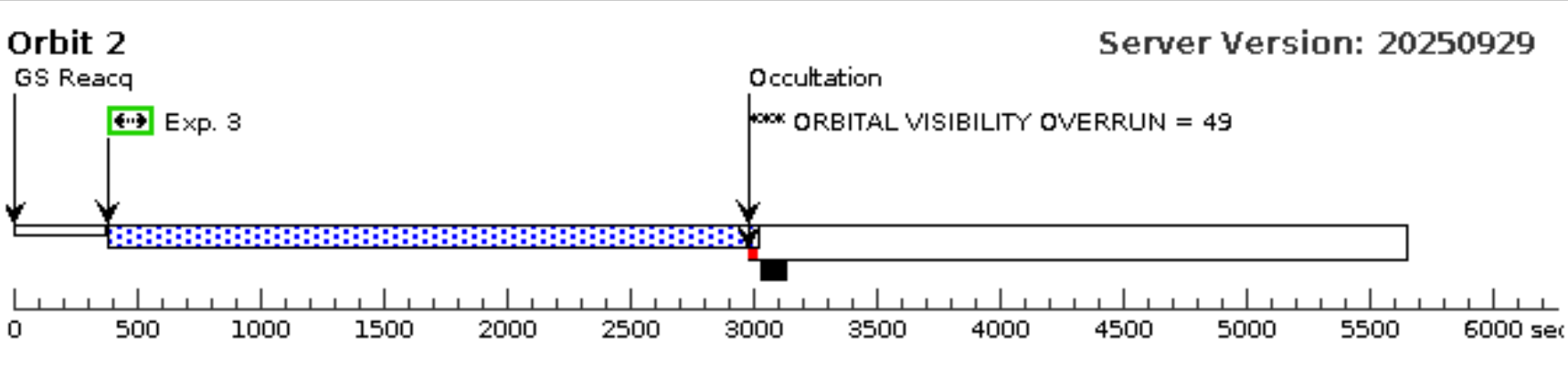
No coordinate uncertainties in RA or DEC from SIMBAD. So we assumed an uncertaity of 0.05 arcsec in both RA and DEC, which is based on the coordinate uncertainties of other targets on our list.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

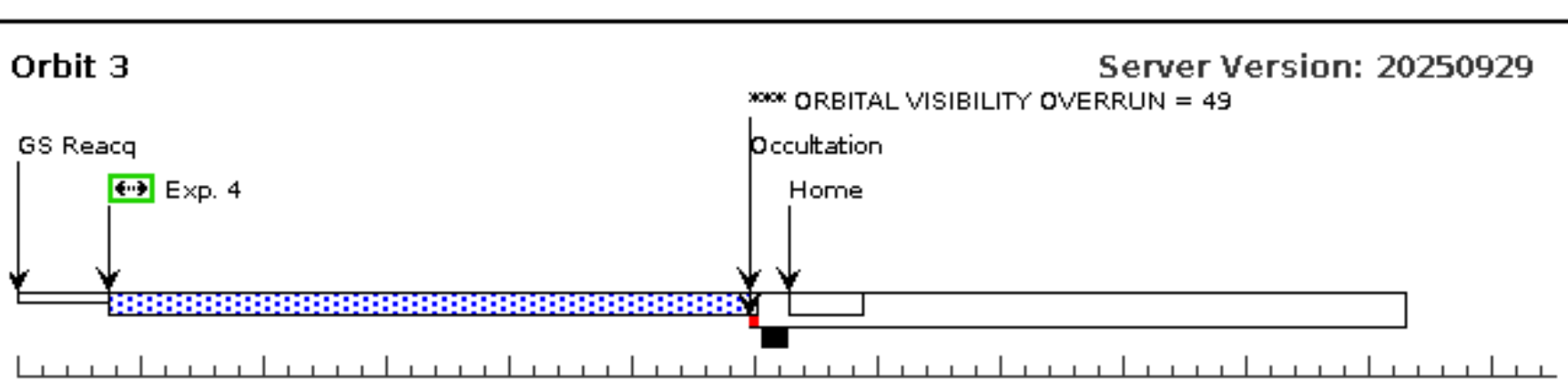
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929421)	(2) UVQS-J070919.25+254923.4	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				10 Secs (10 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1927632)	(2) UVQS-J070919.25+254923.4	COS/FUV, TIME-TAG, PSA	G130M 1291 A	SEGMENT=BOTH; FP-POS=3; BUFFER-TIME=2319			2319 Secs (2319 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1927632)	(2) UVQS-J070919.25+254923.4	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=2588; SEGMENT=BOTH; FP-POS=3			2588 Secs (2588 Secs) *[==>]*	 ***[2]***
4	(COS.sp.1927632)	(2) UVQS-J070919.25+254923.4	COS/FUV, TIME-TAG, PSA	G130M 1291 A	SEGMENT=BOTH; FP-POS=4; BUFFER-TIME=2588			2588 Secs (2588 Secs) *[==>]*	 ***[3]***

Orbit Structure







Visit

Proposal 17733, Q2-G160M-a2 (05), completed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q2: UVQS-J070919.25+254923.4

Diagnostics

(Q2-G160M-a2 (05)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q2-G160M-a2 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q2-G160M-a2 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	UVQS-J070919.25+254923.4	RA: 07 09 19.2500 (107.3302083d) Dec: +25 49 23.40 (25.82317d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.136	V=16.4 FUV=17.30	Reference Frame: ICRS

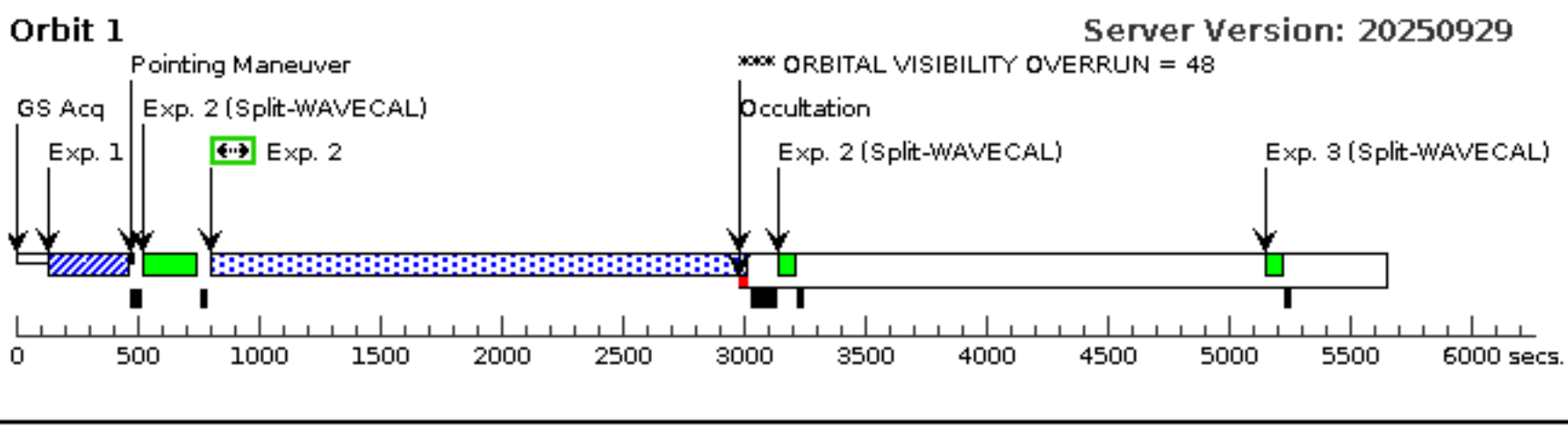
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

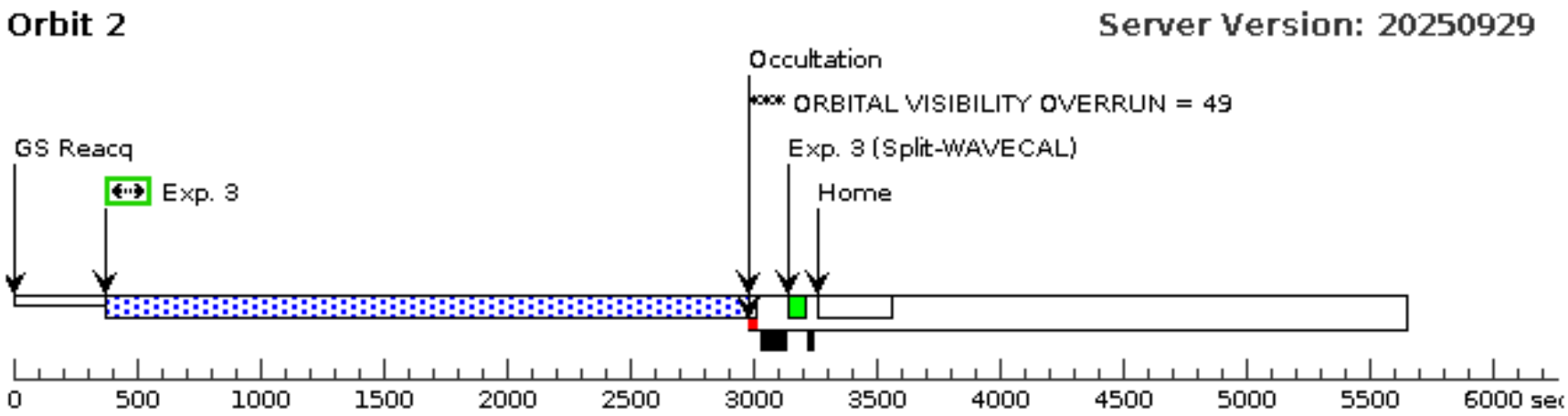
No coordinate uncertainties in RA or DEC from SIMBAD. So we assumed an uncertaity of 0.05 arcsec in both RA and DEC, which is based on the coordinate uncertainties of other targets on our list.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929421)	(2) UVQS-J070919.25+254923.4	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				10 Secs (10 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1927633)	(2) UVQS-J070919.25+254923.4	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=1; BUFFER-TIME=2161			2161 Secs (2161 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1927633)	(2) UVQS-J070919.25+254923.4	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=2; BUFFER-TIME=2592			2592 Secs (2592 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 17733, Q2-G160M-a2 (06), completed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q2: UVQS-J070919.25+254923.4

Diagnostics

(Q2-G160M-a2 (06)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q2-G160M-a2 (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q2-G160M-a2 (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	UVQS-J070919.25+254923.4	RA: 07 09 19.2500 (107.3302083d) Dec: +25 49 23.40 (25.82317d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.136	V=16.4 FUV=17.30	Reference Frame: ICRS

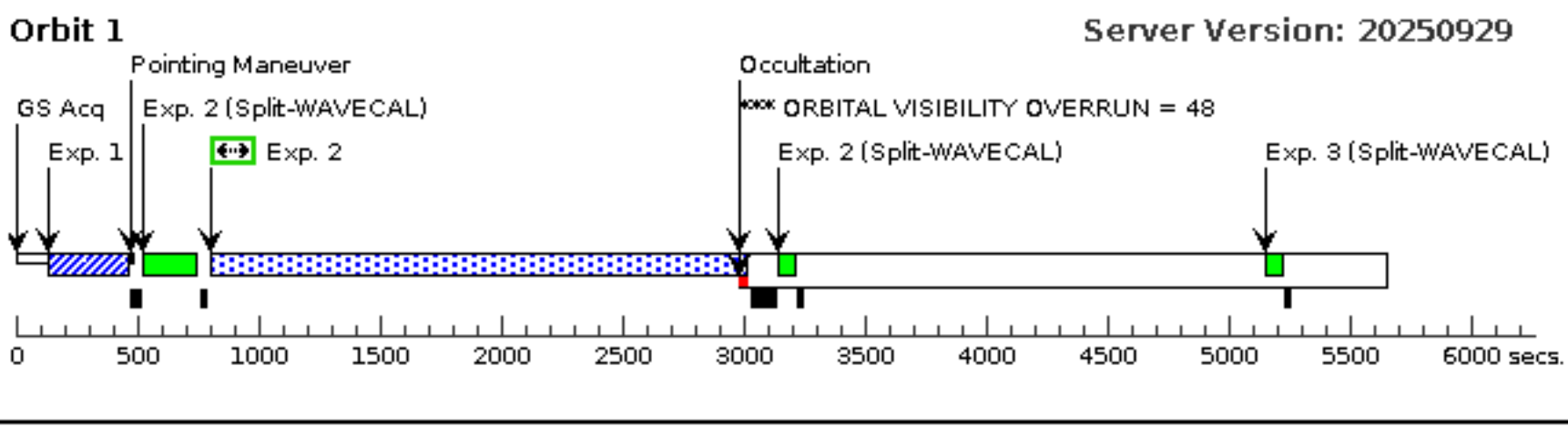
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

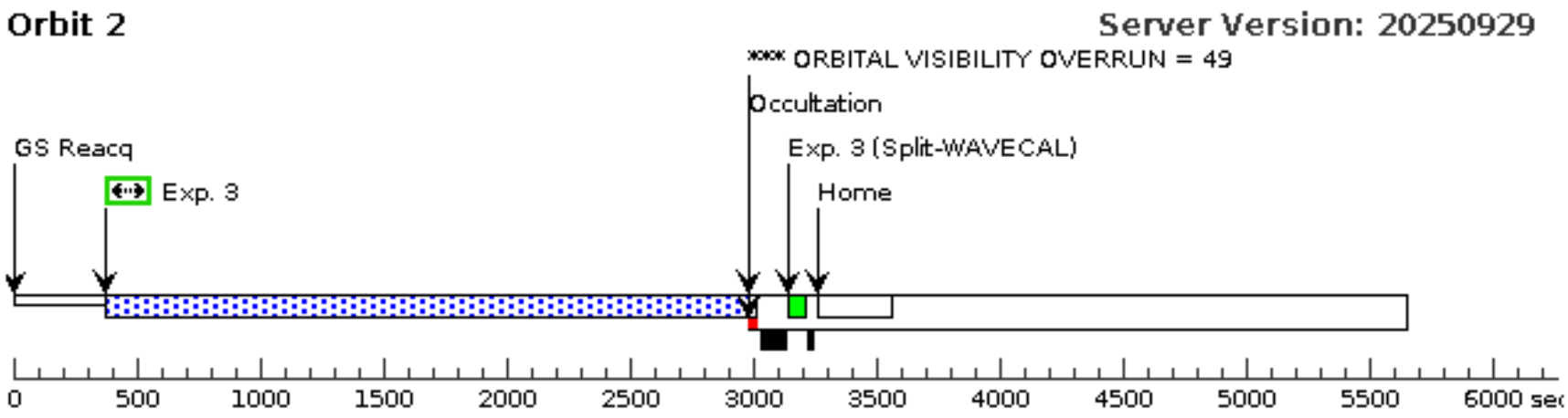
No coordinate uncertainties in RA or DEC from SIMBAD. So we assumed an uncertaity of 0.05 arcsec in both RA and DEC, which is based on the coordinate uncertainties of other targets on our list.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929421)	(2) UVQS-J070919.25+254923.4	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				10 Secs (10 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1927633)	(2) UVQS-J070919.25+254923.4	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=3; BUFFER-TIME=2161			2161 Secs (2161 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1927633)	(2) UVQS-J070919.25+254923.4	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=4; BUFFER-TIME=2592			2592 Secs (2592 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 17733, Q3-G130M-a2 (07), completed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q3: 2MASS-J06413937+4510020

Diagnostics

(Q3-G130M-a2 (07)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q3-G130M-a2 (07)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q3-G130M-a2 (07)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	2MASS-J06413937+4510020	RA: 06 41 39.3727 (100.4140529d) Dec: +45 10 2.03 (45.16723d) Equinox: J2000	Proper Motion RA: 0.05 mas/yr Proper Motion Dec: -0.025000008463393897 mas/yr Parallax: 1.96E-5" Epoch of Position: 2000 Redshift: 0.297	V=16.4 FUV=17.56	Reference Frame: ICRS

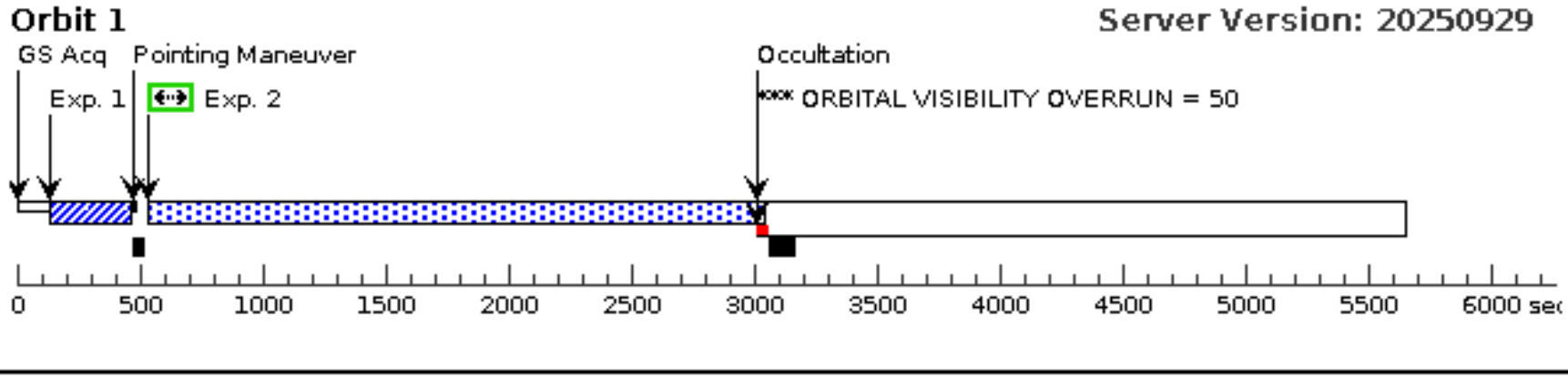
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

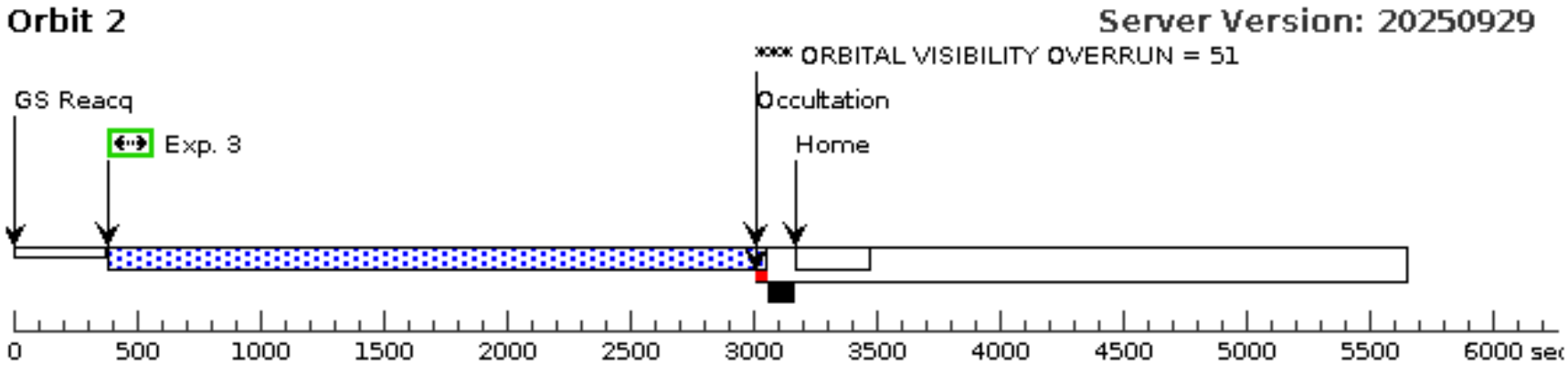
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929423)	(3) 2MASS-J06413937+4510020	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				13 Secs (13 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1927634)	(3) 2MASS-J06413937+4510020	COS/FUV, TIME-TAG, PSA	G130M 1291 A	SEGMENT=BOTH; FP-POS=3; BUFFER-TIME=2343			2343 Secs (2343 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1927634)	(3) 2MASS-J06413937+4510020	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=2618; SEGMENT=BOTH; FP-POS=3			2618 Secs (2618 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 17733, Q3-G130M-b2 (10), completed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q3: 2MASS-J06413937+4510020

Diagnostics

(Q3-G130M-b2 (10)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q3-G130M-b2 (10)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q3-G130M-b2 (10)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	2MASS-J06413937+4510020	RA: 06 41 39.3727 (100.4140529d) Dec: +45 10 2.03 (45.16723d) Equinox: J2000	Proper Motion RA: 0.05 mas/yr Proper Motion Dec: -0.025000008463393897 mas/yr Parallax: 1.96E-5" Epoch of Position: 2000 Redshift: 0.297	V=16.4 FUV=17.56	Reference Frame: ICRS

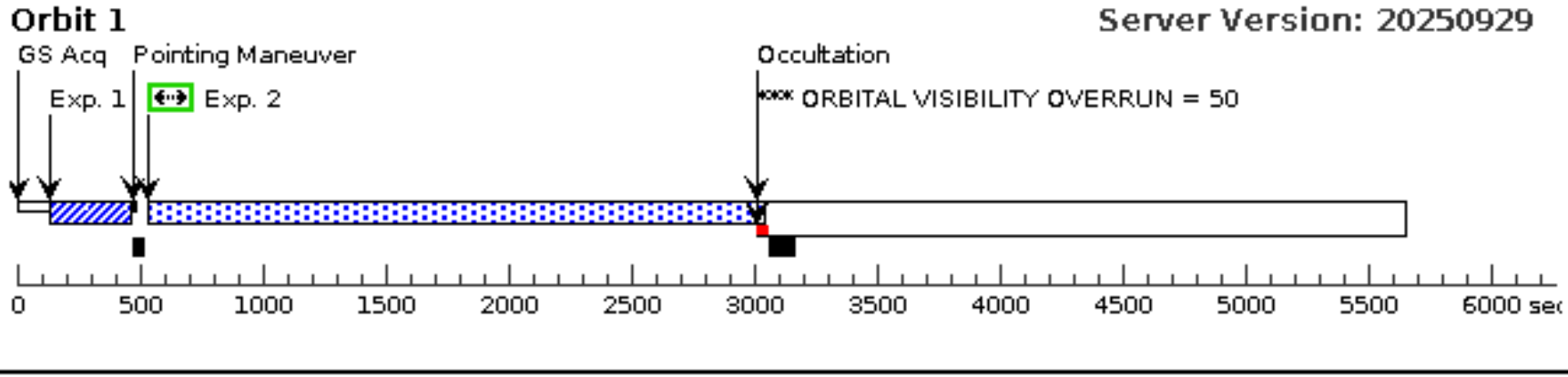
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

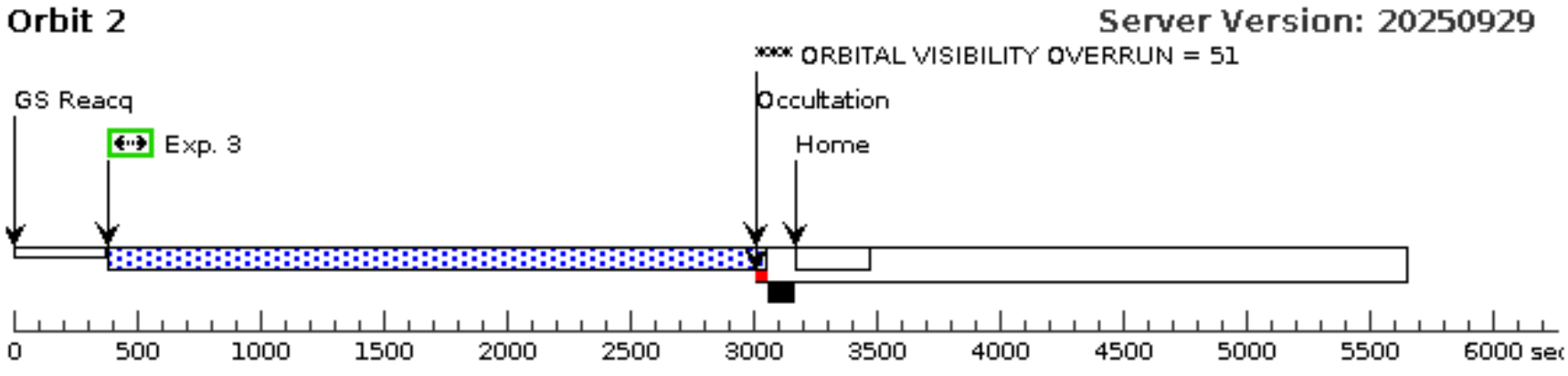
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929423)	(3) 2MASS-J06413937+4510020	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				13 Secs (13 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1927634)	(3) 2MASS-J06413937+4510020	COS/FUV, TIME-TAG, PSA	G130M 1291 A	SEGMENT=BOTH; FP-POS=4; BUFFER-TIME=2343			2343 Secs (2343 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1927634)	(3) 2MASS-J06413937+4510020	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=2618; SEGMENT=BOTH; FP-POS=4			2618 Secs (2618 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 17733, Q3-G160M-a3 (08), completed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q3: 2MASS-J06413937+4510020

Diagnostics

(Q3-G160M-a3 (08)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q3-G160M-a3 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q3-G160M-a3 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q3-G160M-a3 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	2MASS-J06413937+4510020	RA: 06 41 39.3727 (100.4140529d) Dec: +45 10 2.03 (45.16723d) Equinox: J2000	Proper Motion RA: 0.05 mas/yr Proper Motion Dec: -0.025000008463393897 mas/yr Parallax: 1.96E-5" Epoch of Position: 2000 Redshift: 0.297	V=16.4 FUV=17.56	Reference Frame: ICRS

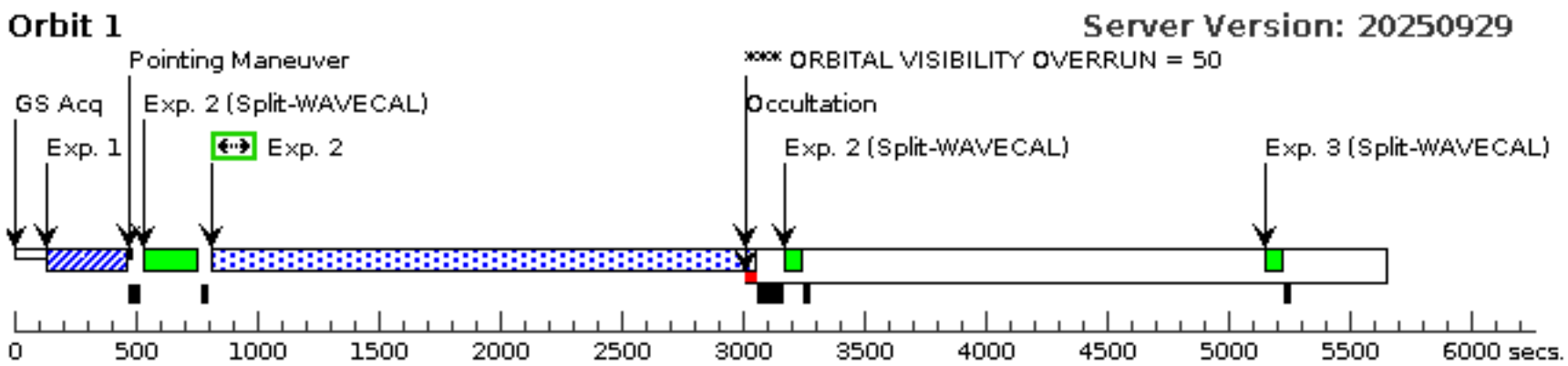
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

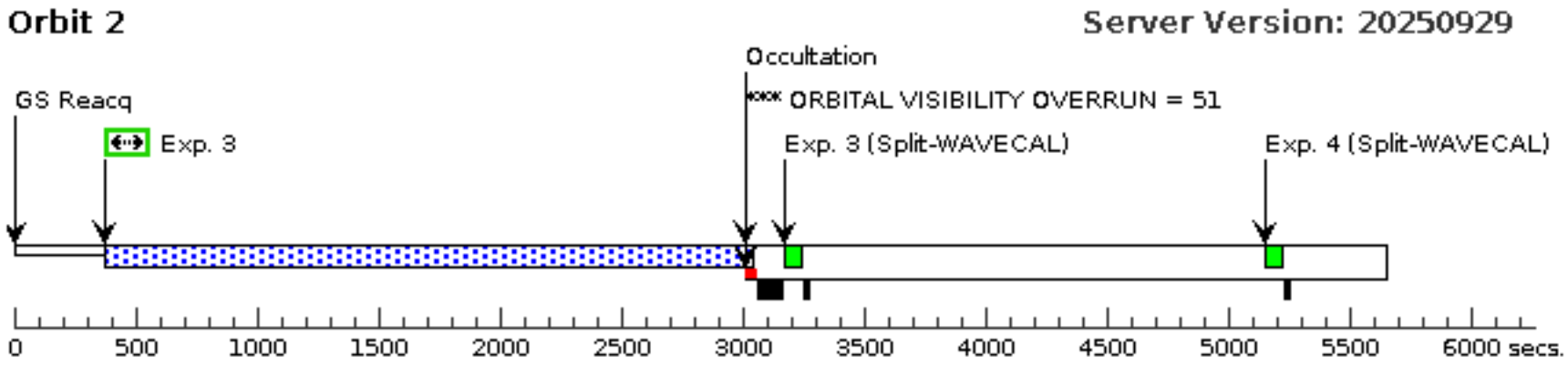
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

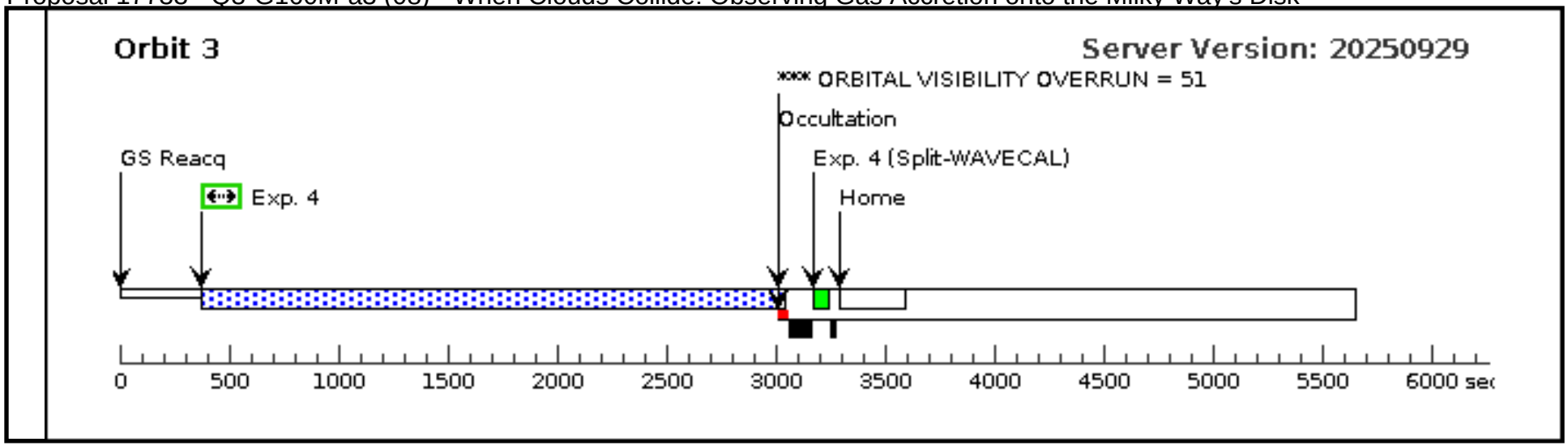
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929423)	(3) 2MASS-J06413937+4510020	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				13 Secs (13 Secs) *[==>]*	***[1]***
2	(COS.sp.1927635)	(3) 2MASS-J06413937+4510020	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=1; BUFFER-TIME=2185			2185 Secs (2185 Secs) *[==>]*	***[1]***
3	(COS.sp.1927635)	(3) 2MASS-J06413937+4510020	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=2; BUFFER-TIME=2622			2622 Secs (2622 Secs) *[==>]*	***[2]***
4	(COS.sp.1927635)	(3) 2MASS-J06413937+4510020	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=3; BUFFER-TIME=2622			2622 Secs (2622 Secs) *[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20250929
**** ORBITAL VISIBILITY OVERRUN = 51
Occultation
GS Reacq
Exp. 4
Exp. 4 (Split-WAVECAL)
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17733, Q4-G130M-a2 (11), completed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q4: VV2000-J042630.1+070530

Diagnostics

(Q4-G130M-a2 (11)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q4-G130M-a2 (11)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q4-G130M-a2 (11)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

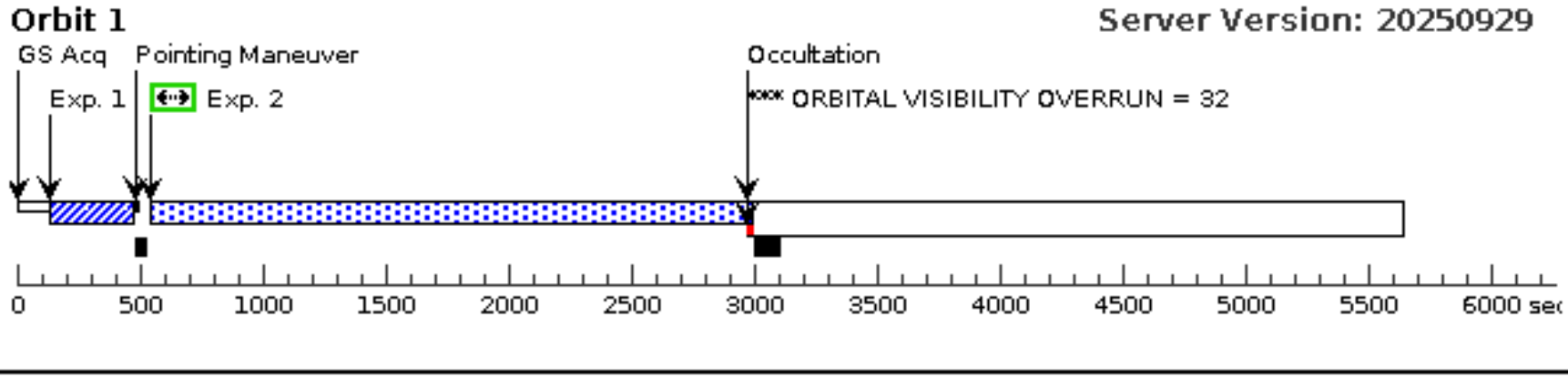
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	VV2000-J042630.1+070530	RA: 04 26 30.0943 (66.6253929d) Dec: +07 05 30.06 (7.09168d) Equinox: J2000	Proper Motion RA: 0.023 mas/yr Proper Motion Dec: 0.030 mas/yr Epoch of Position: 2000 Redshift: 0.17	V=16.4 FUV=17.42	Reference Frame: ICRS

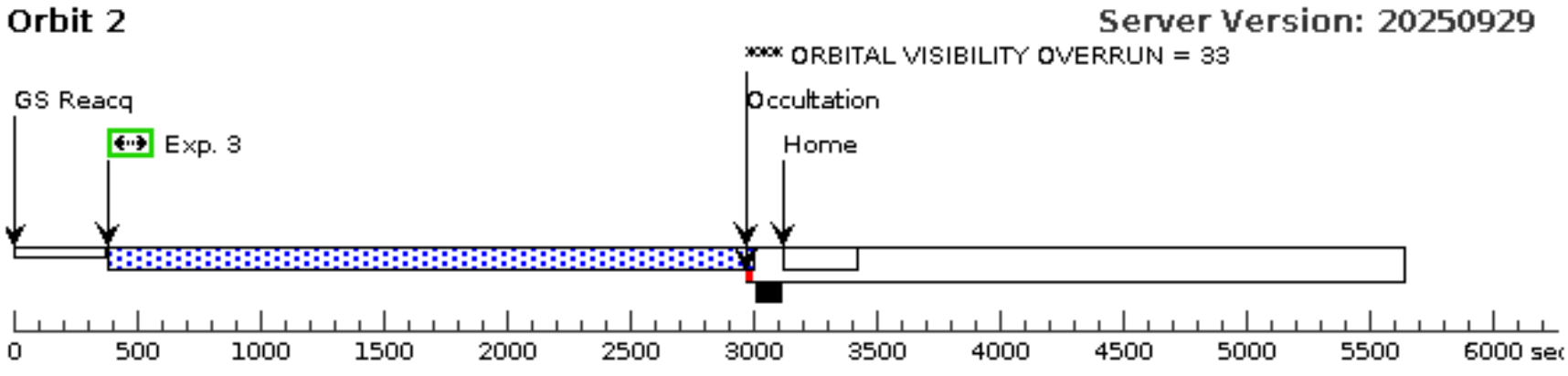
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929424)	(4) VV2000-J042630.1+070530	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				16 Secs (16 Secs) *[==>]*	*[1]*
2	(COS.sp.1927638)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G130M 1291 A	SEGMENT=BOTH; FP-POS=3; BUFFER-TIME=2285			2285 Secs (2285 Secs) *[==>]*	*[1]*
3	(COS.sp.1927638)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=2566; SEGMENT=BOTH; FP-POS=3			2566 Secs (2566 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 17733, Q4-G130M-b2 (12), failed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q4: VV2000-J042630.1+070530

Diagnostics

(Q4-G130M-b2 (12)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q4-G130M-b2 (12)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q4-G130M-b2 (12)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

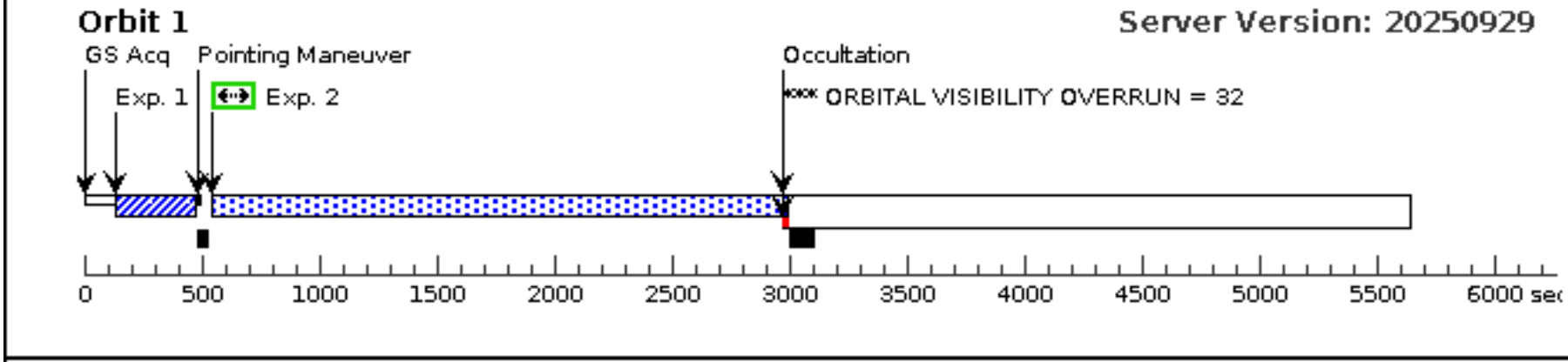
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	VV2000-J042630.1+070530	RA: 04 26 30.0943 (66.6253929d) Dec: +07 05 30.06 (7.09168d) Equinox: J2000	Proper Motion RA: 0.023 mas/yr Proper Motion Dec: 0.030 mas/yr Epoch of Position: 2000 Redshift: 0.17	V=16.4 FUV=17.42	Reference Frame: ICRS

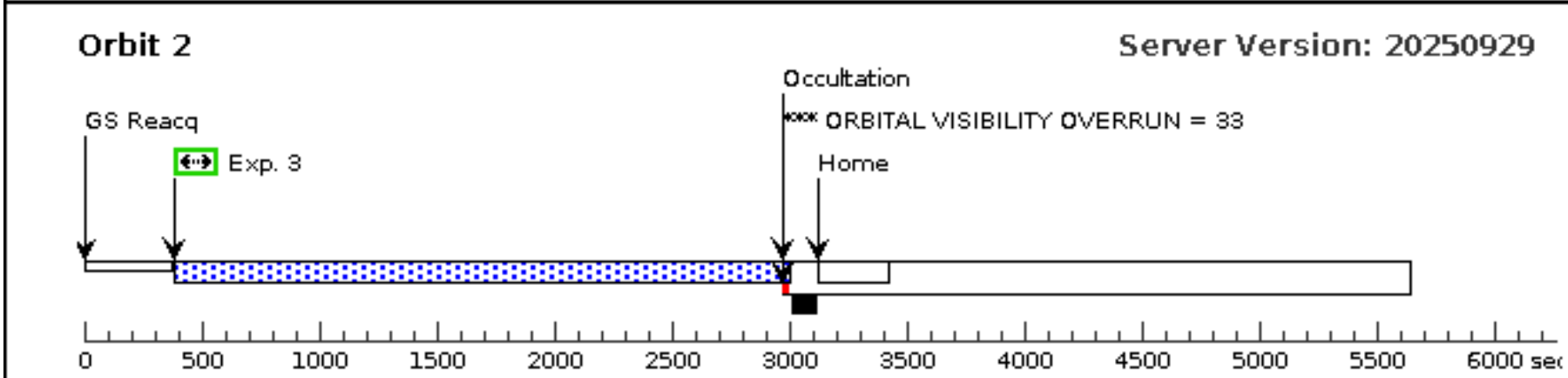
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929424)	(4) VV2000-J042630.1+070530	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				16 Secs (16 Secs) *[==>]*	*[1]*
2	(COS.sp.1927638)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G130M 1291 A	SEGMENT=BOTH; FP-POS=4; BUFFER-TIME=2285			2285 Secs (2285 Secs) *[==>]*	*[1]*
3	(COS.sp.1927638)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=2566; SEGMENT=BOTH; FP-POS=4			2566 Secs (2566 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 17733, Q4-G130M-b2 (15) Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q4: VV2000-J042630.1+070530

HOPR repeat of visit 12.

Diagnostics

(Q4-G130M-b2 (15)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q4-G130M-b2 (15)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q4-G130M-b2 (15)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

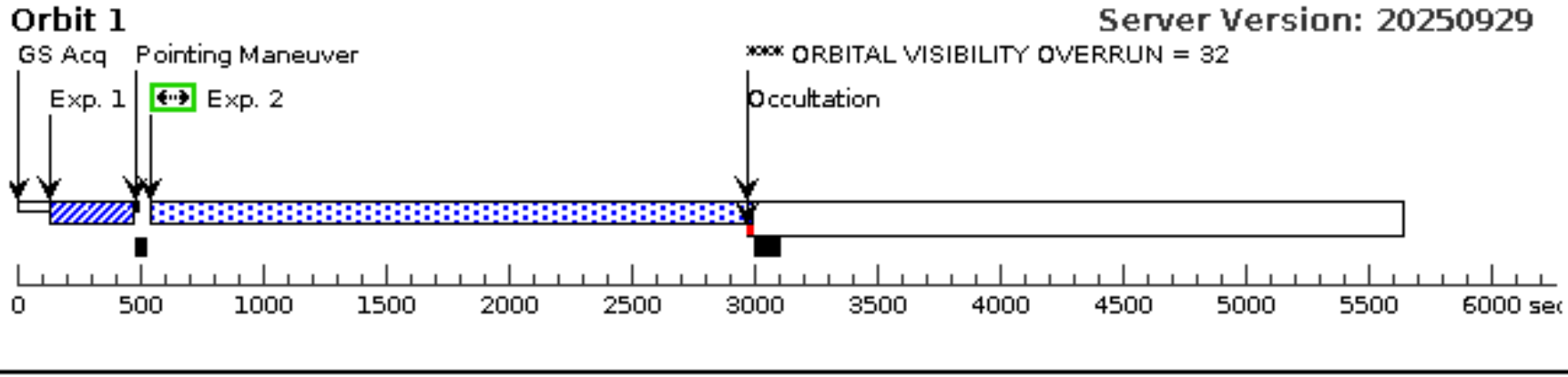
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	VV2000-J042630.1+070530	RA: 04 26 30.0943 (66.6253929d) Dec: +07 05 30.06 (7.09168d) Equinox: J2000	Proper Motion RA: 0.023 mas/yr Proper Motion Dec: 0.030 mas/yr Epoch of Position: 2000 Redshift: 0.17	V=16.4 FUV=17.42	Reference Frame: ICRS

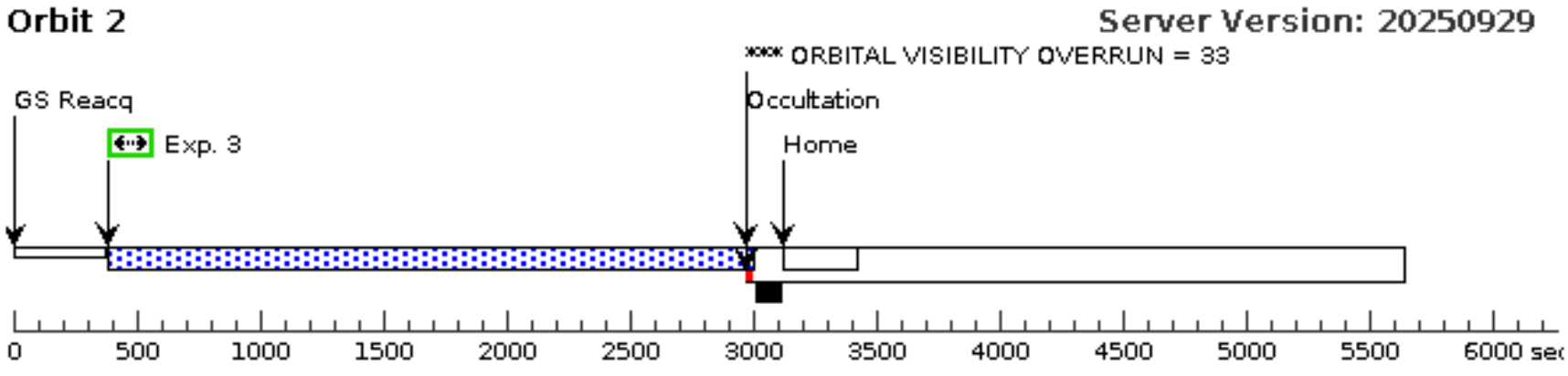
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929424)	(4) VV2000-J042630.1+070530	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				16 Secs (16 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1927638)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G130M 1291 A	SEGMENT=BOTH; FP-POS=4; BUFFER-TIME=2285			2285 Secs (2285 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1927638)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=2566; SEGMENT=BOTH; FP-POS=4			2566 Secs (2566 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 17733, Q4-G160M-a3 (13), completed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q4: VV2000-J042630.1+070530

Diagnostics

(Q4-G160M-a3 (13)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q4-G160M-a3 (13)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q4-G160M-a3 (13)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q4-G160M-a3 (13)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

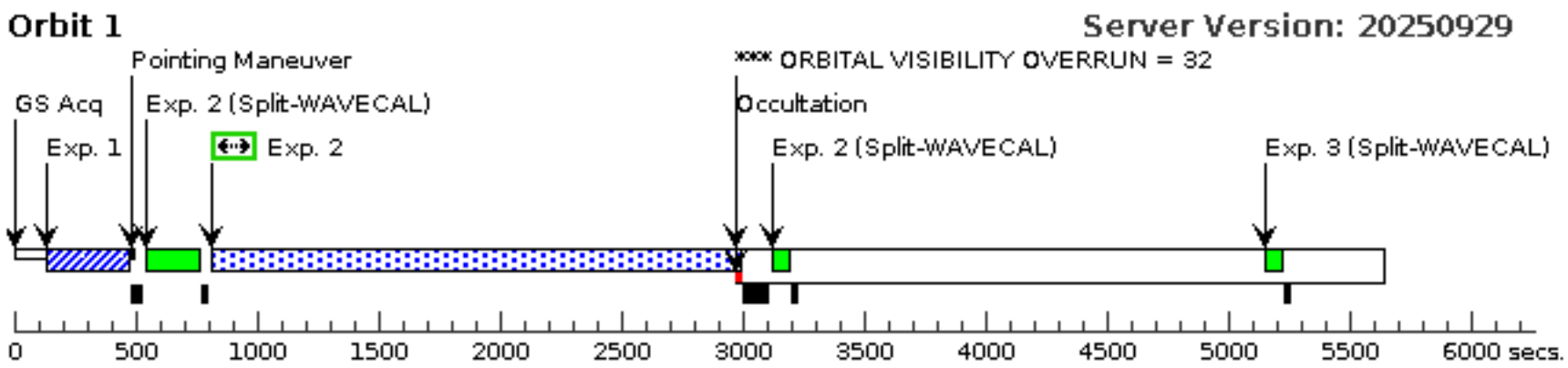
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	VV2000-J042630.1+070530	RA: 04 26 30.0943 (66.6253929d) Dec: +07 05 30.06 (7.09168d) Equinox: J2000	Proper Motion RA: 0.023 mas/yr Proper Motion Dec: 0.030 mas/yr Epoch of Position: 2000 Redshift: 0.17	V=16.4 FUV=17.42	Reference Frame: ICRS

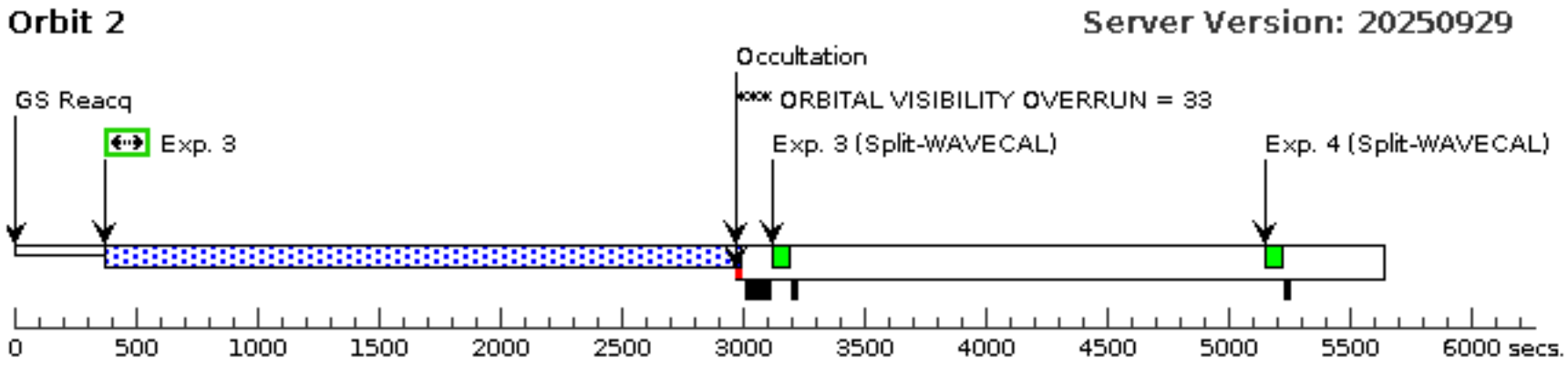
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

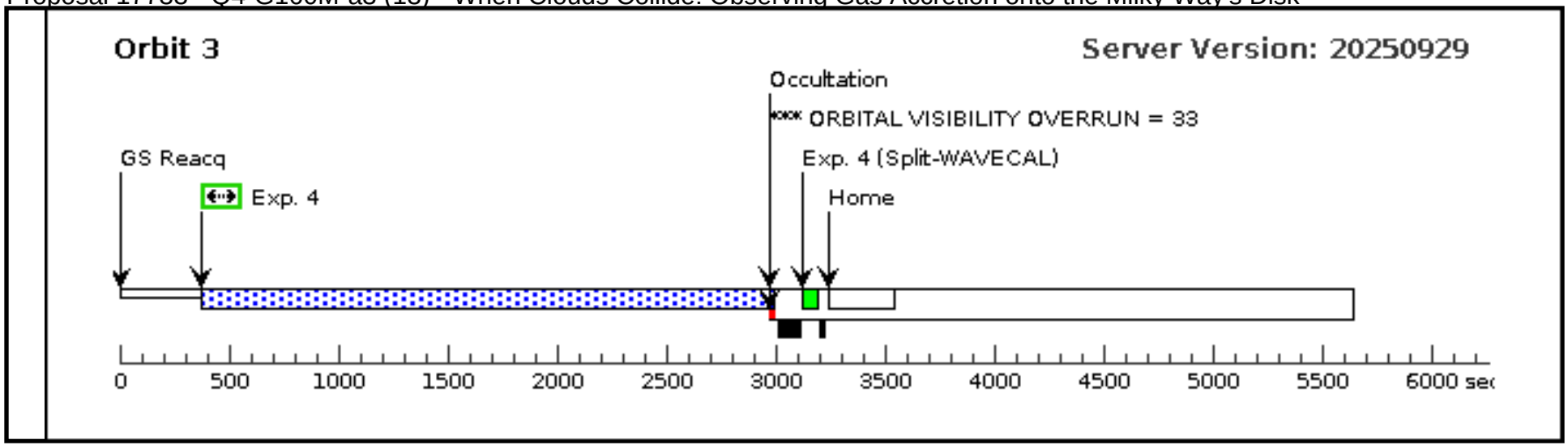
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929424)	(4) VV2000-J042630.1+070530	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				16 Secs (16 Secs) *[==>]*	*[1]*
2	(COS.sp.1927641)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=1; BUFFER-TIME=2127			2127 Secs (2127 Secs) *[==>]*	*[1]*
3	(COS.sp.1927641)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=2; BUFFER-TIME=2570			2570 Secs (2570 Secs) *[==>]*	*[2]*
4	(COS.sp.1927641)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=3; BUFFER-TIME=2570			2570 Secs (2570 Secs) *[==>]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20250929
Occultation
*** ORBITAL VISIBILITY OVERRUN = 33
GS Reacq
Exp. 4
Exp. 4 (Split-WAVECAL)
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17733, Q4-G160M-b2 (14), failed Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q4: VV2000-J042630.1+070530

Diagnostics

(Q4-G160M-b2 (14)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q4-G160M-b2 (14)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q4-G160M-b2 (14)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

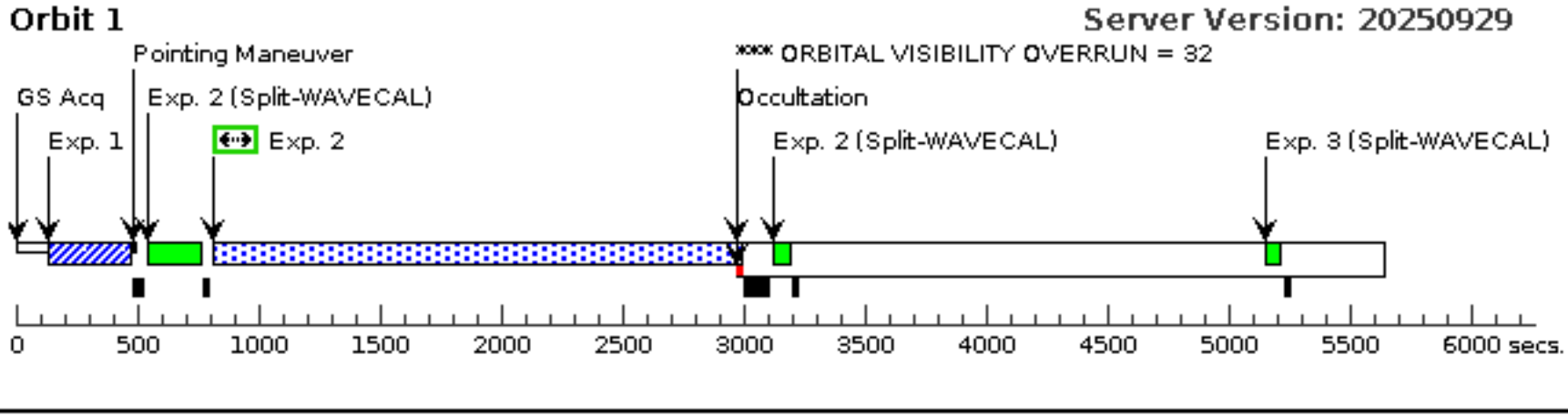
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	VV2000-J042630.1+070530	RA: 04 26 30.0943 (66.6253929d) Dec: +07 05 30.06 (7.09168d) Equinox: J2000	Proper Motion RA: 0.023 mas/yr Proper Motion Dec: 0.030 mas/yr Epoch of Position: 2000 Redshift: 0.17	V=16.4 FUV=17.42	Reference Frame: ICRS

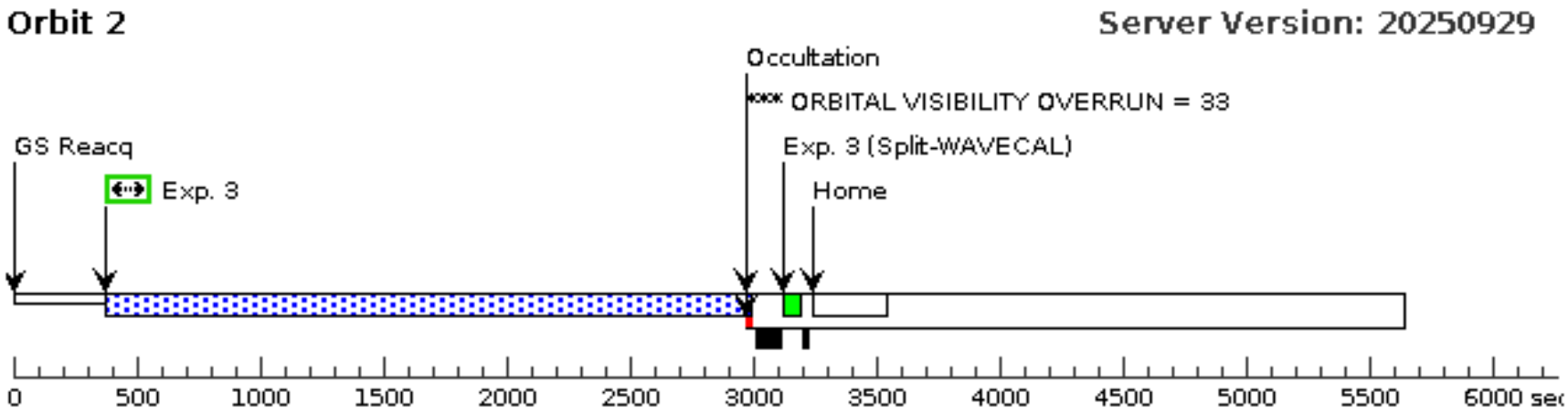
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929424)	(4) VV2000-J042630.1+070530	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				16 Secs (16 Secs) *[==>]*	***[1]***
2	(COS.sp.1927641)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=4; BUFFER-TIME=2127			2127 Secs (2127 Secs) *[==>]*	***[1]***
3	(COS.sp.1927641)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=4; BUFFER-TIME=2570			2570 Secs (2570 Secs) *[==>]*	***[2]***

Orbit Structure





Visit

Proposal 17733, Q4-G160M-b2 (16) Wed Dec 10 12:00:25 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Observation for Q4: VV2000-J042630.1+070530

HOPR repeat of visit 14.

Diagnostics

(Q4-G160M-b2 (16)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(Q4-G160M-b2 (16)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Q4-G160M-b2 (16)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	VV2000-J042630.1+070530	RA: 04 26 30.0943 (66.6253929d) Dec: +07 05 30.06 (7.09168d) Equinox: J2000	Proper Motion RA: 0.023 mas/yr Proper Motion Dec: 0.030 mas/yr Epoch of Position: 2000 Redshift: 0.17	V=16.4 FUV=17.42	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1929424)	(4) VV2000-J042630.1+070530	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				16 Secs (16 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1927641)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=4; BUFFER-TIME=2127			2127 Secs (2127 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1927641)	(4) VV2000-J042630.1+070530	COS/FUV, TIME-TAG, PSA	G160M 1589 A	SEGMENT=BOTH; FP-POS=4; BUFFER-TIME=2570			2570 Secs (2570 Secs) *[==>]*	 ***[2]***

Orbit Structure