18216 - A Three-Dimensional Panchromatic View of Active Regions and CMEs on the Young Solar-Type Star AB Dor

Cycle: 33, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*
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Dr. Ian Waite (CoI)	University of Southern Queensland

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) V-AB-DOR	COS/FUV COS/NUV	2	26-Mar-2026 15:01:16.0	yes
H1	(1) V-AB-DOR	COS/FUV COS/NUV	2	26-Mar-2026 15:01:17.0	yes
02	(1) V-AB-DOR	COS/FUV COS/NUV	2	26-Mar-2026 15:01:19.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
H2	(1) V-AB-DOR	COS/FUV COS/NUV	2	26-Mar-2026 15:01:20.0	yes
03	(1) V-AB-DOR	COS/FUV COS/NUV	2	26-Mar-2026 15:01:21.0	yes
H3	(1) V-AB-DOR	COS/FUV COS/NUV	2	26-Mar-2026 15:01:22.0	yes
04	(1) V-AB-DOR	COS/FUV COS/NUV	2	26-Mar-2026 15:01:23.0	yes
H4	(1) V-AB-DOR	COS/FUV COS/NUV	2	26-Mar-2026 15:01:24.0	yes

16 Total Orbits Used

ABSTRACT

The magnetically active regions on young solar-type stars often produce large stellar flares that are likely associated coronal mass ejections (CMEs). These transient phenomena are thought to be key drivers of atmospheric evolution on early Earth-like planets. However, little is known about how stellar active regions are heated, the three-dimensional (3D) struicture, and how CMEs are generated from them. We propose HST/COS observations of a 50 Myr-old solar-type star, AB Dor, to be conducted in coordination with an approved multi-observatory campaign to provide the first multi-wavelength, temporally- and spatially-resolved observations of active regions on a young solar-type star: X-ray spectroscopic observations by XRISM, optical photometry by TESS, and ground-based optical spectroscopic observations. Simultaneous X-ray/UV/optical spectroscopy will allow us to detect Doppler shifts associated with stellar flares, enabling us to capture multi-thermal 3D CME phenomena and assess their true impact on exoplanetary environments for the first time. Furthermore, by performing Doppler imaging across multiple wavelengths capable of resolving the star's rapid rotation, we aim to obtain the first comprehensive 3D view of an active region on a star other than the Sun. In combination with numerical modeling, the proposed program will provide a critical benchmark for understanding stellar active regions and space weather around young solar-type stars, offering high legacy value for studies of planetary habitability in the era of JWST and future UV missions.

OBSERVING DESCRIPTION

FUV Spectra: The HST data will use COS with G130M, CENWAVE=1309
to record the emission lines of C III (117.5 nm), Si III (120.6 nm), N V (123.8nm), Fe XII

(124.2, 134.9nm), C I (132.9nm), C II (133.5 nm), Fe XXI (135.4nm), O V (137.1nm), O IV] (140.1nm), and Si IV (139.4, 140.3 nm). To resolve the physical processes relevant to chromospheric and coronal heating, we require R ~ 15,000. To constrain the stellar wind density of EK Dra, we require signal-to-noise ~ 10 at the peak of the O IV] 140.1 nm line. By comparing to archival HST FUV spectra of EK Dra (Ayres & France 2010; Ayres 2015), we estimate that three orbits per visit will be sufficient for detection of S/N > 10 per resolution element in the peak of the density-sensitive O IV] features (COS.sp.1684389). We calculate S/N between 10 and 20 in the peak of several C I lines and the coronal iron lines, S/N between 20 and 30 in Si IV and N V, and S/N > 30 in Si III and C II. This highfidelity spectrum will allow us to identify temporal variability and will provide robust line-fit measurements of thermal and non-thermal widths and line kinematics.

Given the observed UV flare rate from EK Dra, we expect to observe 2 - 3 multi-wavelength flares in a 12 orbit HST campaign (3 orbits per visits x 4 visits). Each 3-orbit visit is sufficient for a high-S/N stellar spectrum (see next sub-section) that will provide the quiescent stellar baseline and rotational modulation between flare events.

Target Acquisition: We performed a quantitative ETC target acquisition calculation using the STScI online tools, we scaled observed solar-type star to an average magnitude of V = 7.6, and we find that an exposure time of approximately 3.2s are required (COS.ta.1684394), using an imaging target acquisition in BOA+MIRRORA.

Instrument Safety: An ETC calculation using the observed EK Dra Lyman-alpha flux (the brightest stellar line in the FUV spectrum of EK Dra; Ayres et al. 2015), multiplied by 1.5 for conservatism, find no bright object violations using the COS G130M mode (COS.sp.1895208), therefore these observations present no risk to the instrument and are consistent with the COS 2025 observing guidelines.

Coordinated Observations: Simultaneous observations from space- and ground-based

telescopes using X-ray spectroscopy (NICER), optical spectroscopy/photometry (TESS, Seimei telescope), and radio telescope (GMRT) will complement the HST time. TESS will be pivotal for the calculation of global energies. These observatories have a long record of providing flexible scheduling to provide supporting ground-based observations for approved space-based flare campaigns.

Visit

Proposal 18216, Visit 01, failed Thu Mar 26 19:01:24 GMT 2026

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; BETWEEN 20-DEC-2025:00:00:00 AND 10-FEB-2026:00:00:00

Comments: While the observing coordination window for these observations extends through spring 2026, the optimial window is December 29th 2025 to January 4th 2026. If there is anything we can adjust in this program to squeeze into that window, that would be great.

Diagnostics

(Visit 01) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AB-DOR	RA: 05 28 44.8712 (82.1869633d) Dec: -65 26 55.20 (-65.44867d) Equinox: J2000	Proper Motion RA: 37.554 mas/yr Proper Motion Dec: 158.574 mas/yr Parallax: 0.0673331" Epoch of Position: 2000	V=6.999+/-0.05	Reference Frame: ICRS

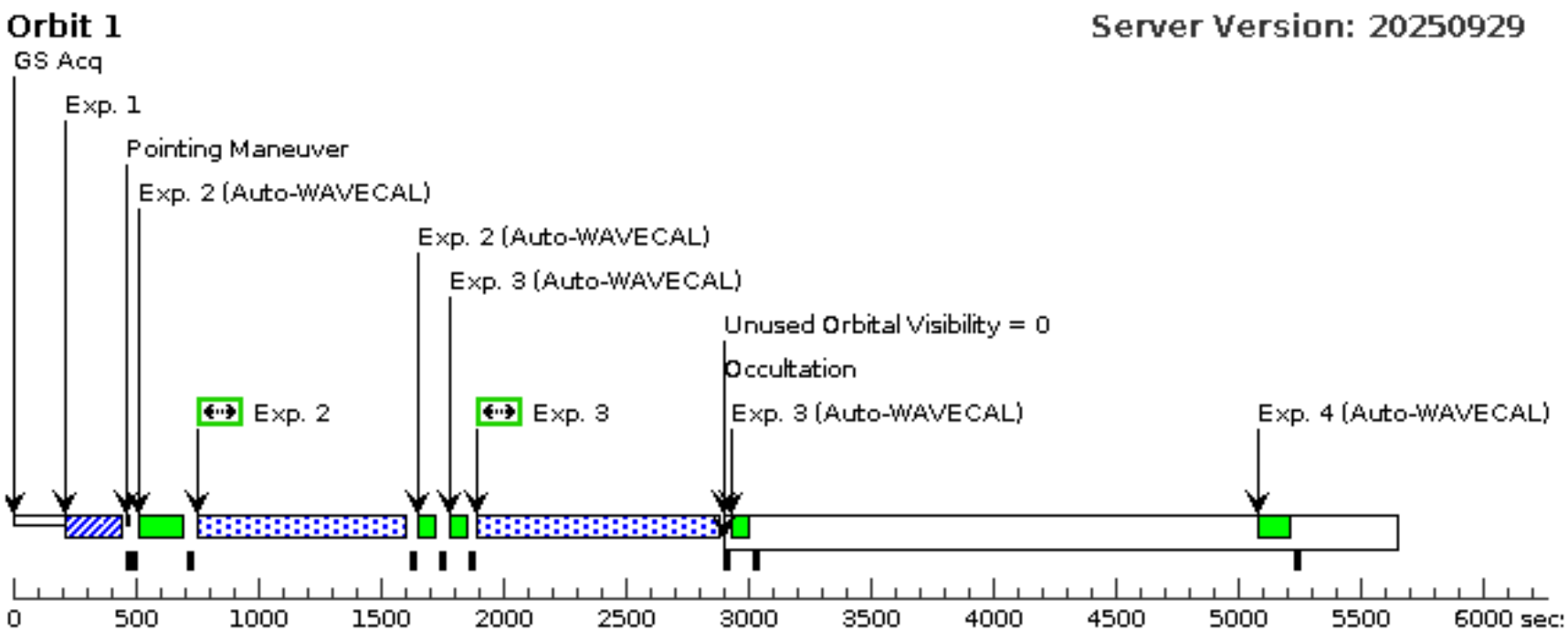
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

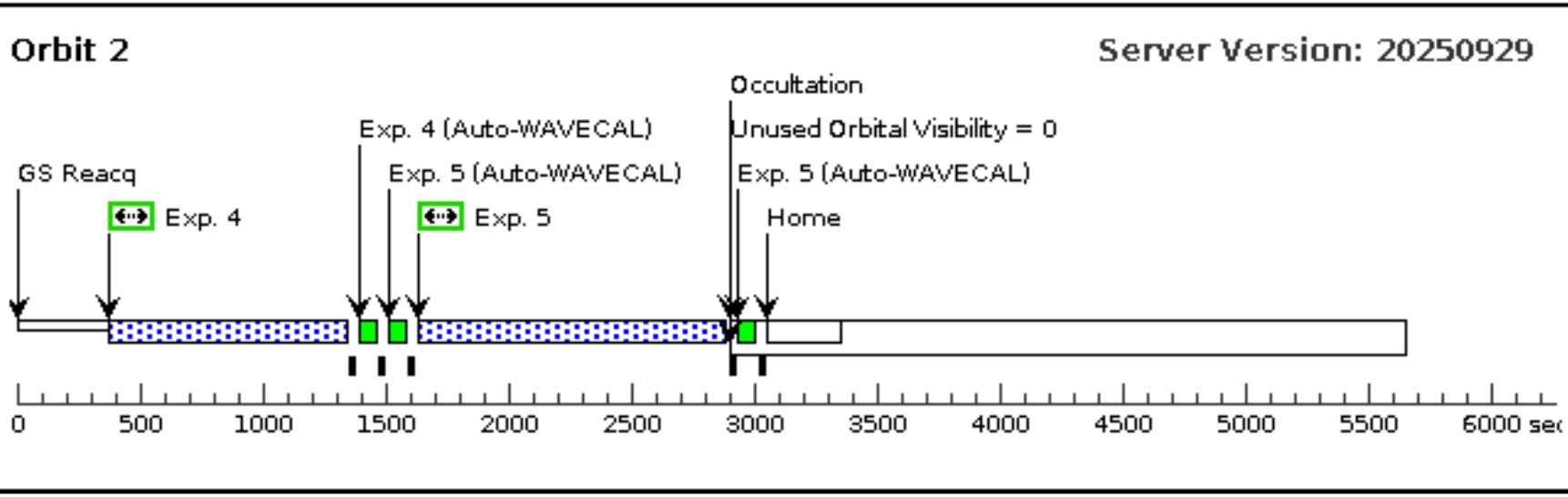
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=EXT-STAR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

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ABDor_ACQIMG1 (COS.ta.2210688)	(1) V-AB-DOR	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				5 Secs (5 Secs) *[==>]*	*[1]*
2	ABDor-G130M_v1_1 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=3; SEGMENT=A			800 Secs (800 Secs) *[==>]*	*[1]*
3	ABDor-G130M_v1_2 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=4; SEGMENT=A			935 Secs (935 Secs) *[==>]*	*[1]*
4	ABDor-G130M_v1_3 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=1; SEGMENT=A			916 Secs (916 Secs) *[==>]*	*[2]*
5	ABDor-G130M_v1_4 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=2; SEGMENT=A			1200 Secs (1200 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 18216, HOPR (H1) Thu Mar 26 19:01:24 GMT 2026

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: While the observing coordination window for these observations extends through spring 2026, the optimial window is December 29th 2025 to January 4th 2026. If there is anything we can adjust in this program to squeeze into that window, that would be great.

Repeat for failed 01

Diagnostics

(HOPR (H1)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AB-DOR	RA: 05 28 44.8712 (82.1869633d) Dec: -65 26 55.20 (-65.44867d) Equinox: J2000	Proper Motion RA: 37.554 mas/yr Proper Motion Dec: 158.574 mas/yr Parallax: 0.0673331" Epoch of Position: 2000	V=6.999+/-0.05	Reference Frame: ICRS

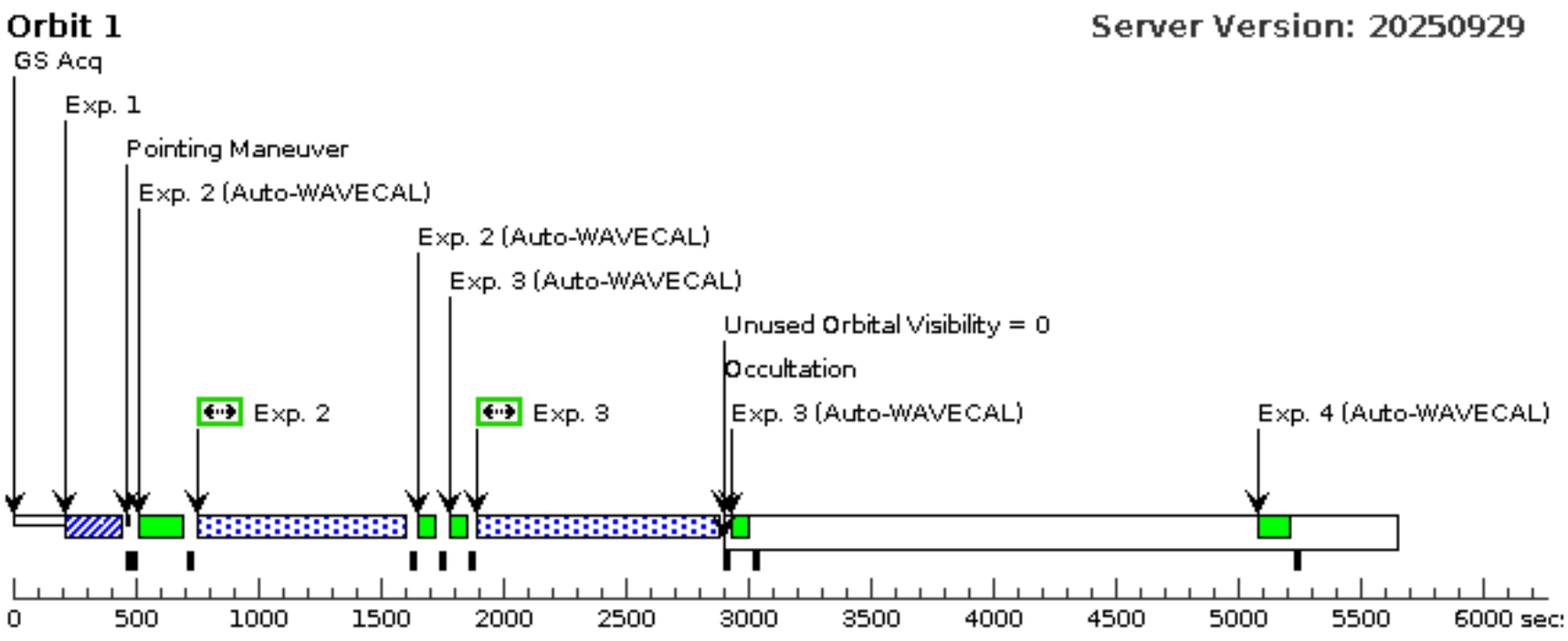
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

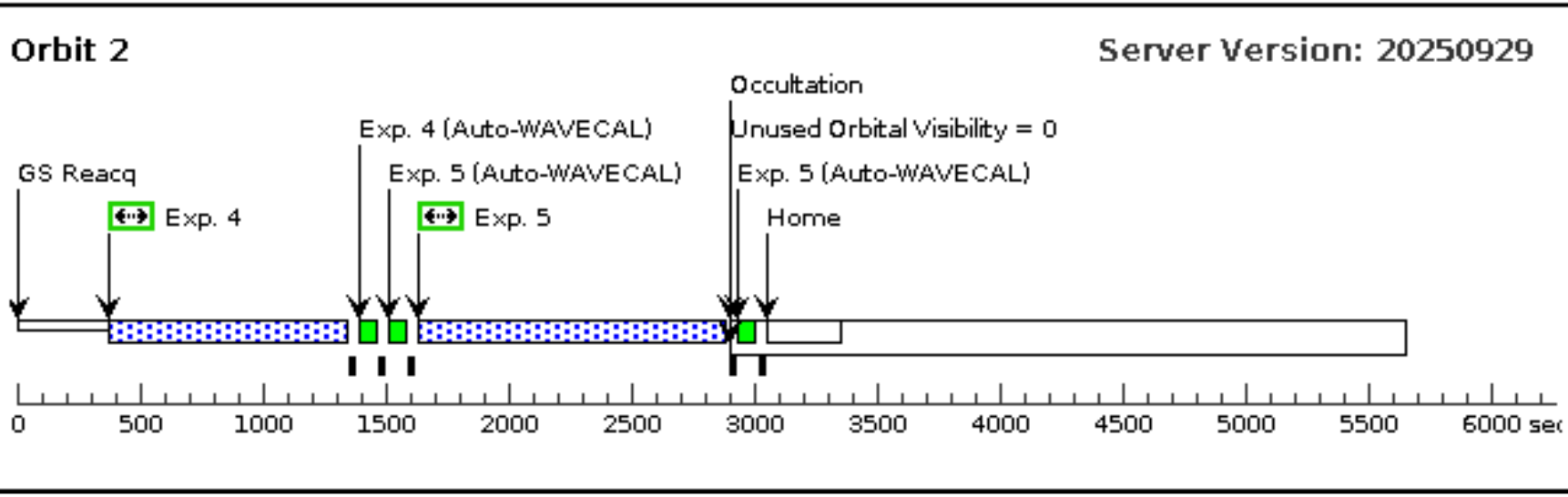
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=EXT-STAR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

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ABDor_ACQIMG1 (COS.ta.2210688)	(1) V-AB-DOR	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				5 Secs (5 Secs) *[==>]*	*[1]*
2	ABDor-G130M_v1_1 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=3; SEGMENT=A			800 Secs (800 Secs) *[==>]*	*[1]*
3	ABDor-G130M_v1_2 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=4; SEGMENT=A			935 Secs (935 Secs) *[==>]*	*[1]*
4	ABDor-G130M_v1_3 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=1; SEGMENT=A			916 Secs (916 Secs) *[==>]*	*[2]*
5	ABDor-G130M_v1_4 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=2; SEGMENT=A			1200 Secs (1200 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 18216, Visit 02, failed Thu Mar 26 19:01:25 GMT 2026

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; AFTER 01 BY 0.5 D TO 2.5 D

Comments: While the observing coordination window for these observations extends through spring 2026, the optimial window is December 29th 2025 to January 4th 2026. If there is anything we can adjust in this program to squeeze into that window, that would be great.

Diagnostics

(Visit 02) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AB-DOR	RA: 05 28 44.8712 (82.1869633d) Dec: -65 26 55.20 (-65.44867d) Equinox: J2000	Proper Motion RA: 37.554 mas/yr Proper Motion Dec: 158.574 mas/yr Parallax: 0.0673331" Epoch of Position: 2000	V=6.999+/-0.05	Reference Frame: ICRS

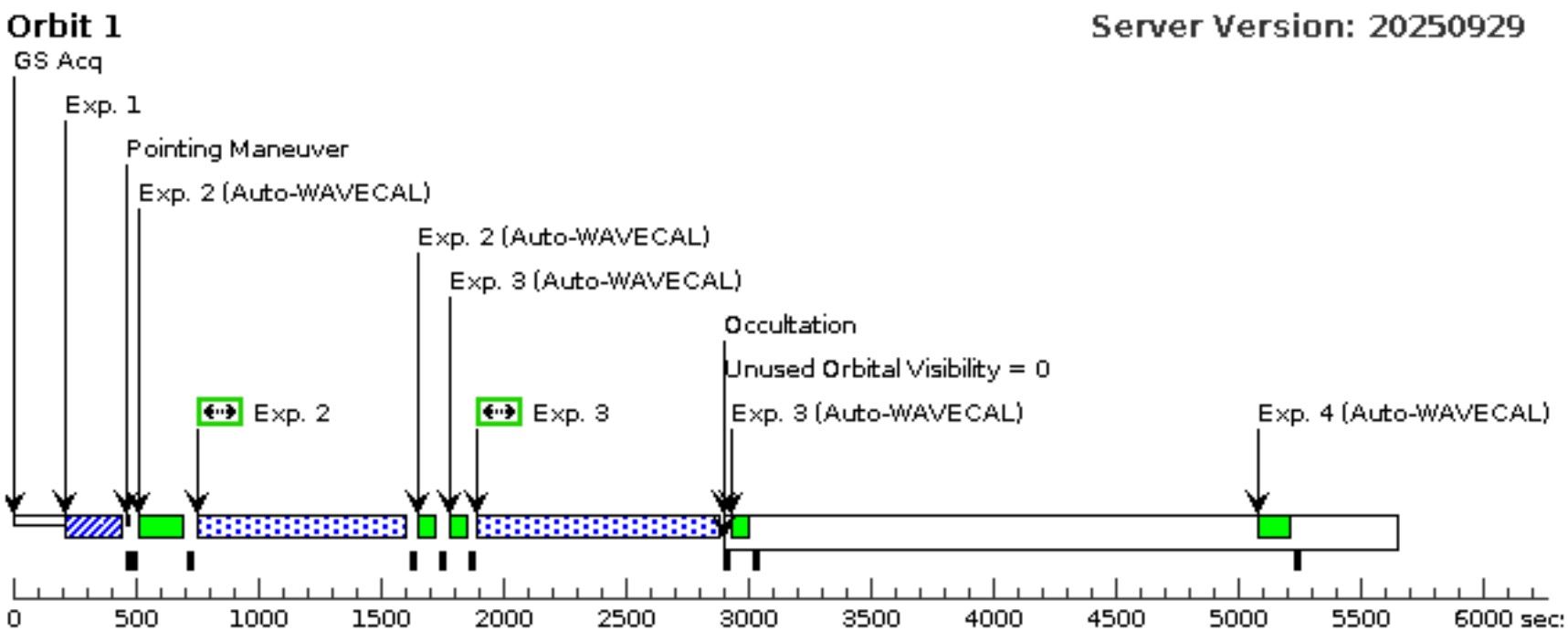
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

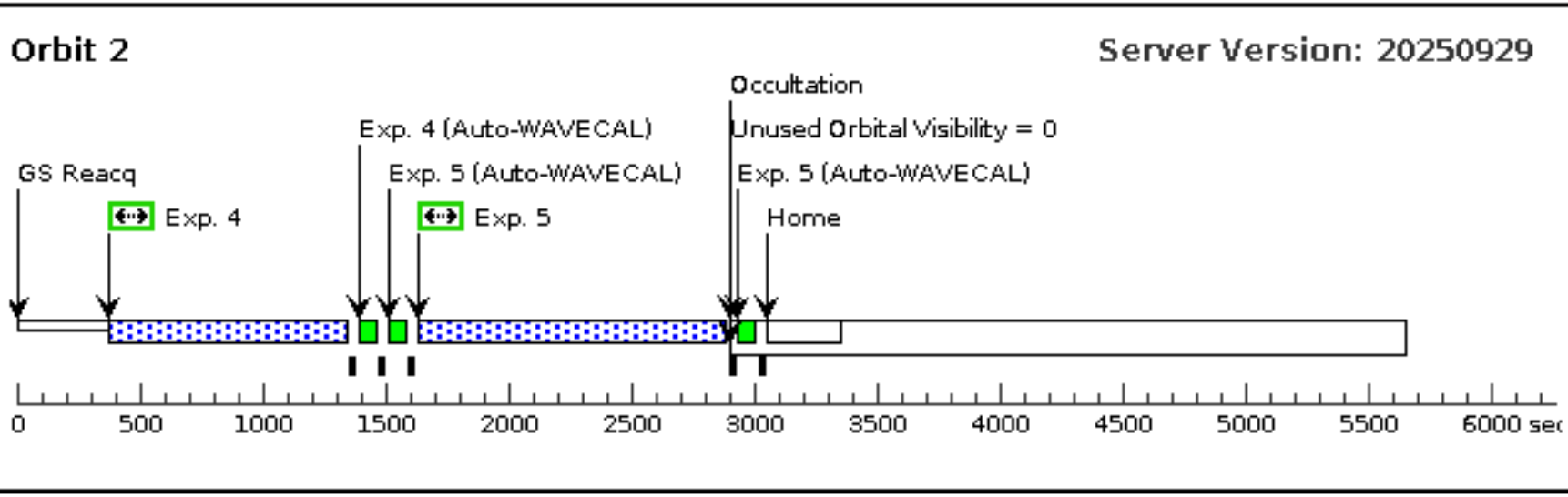
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=EXT-STAR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

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ABDor_ACQIMG2 (COS.ta.2210688)	(1) V-AB-DOR	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				5 Secs (5 Secs) *[==>]*	***[1]***
2	ABDor-G130M_v2_1 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=3; SEGMENT=A			800 Secs (800 Secs) *[==>]*	***[1]***
3	ABDor-G130M_v2_2 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=4; SEGMENT=A			935 Secs (935 Secs) *[==>]*	***[1]***
4	ABDor-G130M_v2_3 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=1; SEGMENT=A			916 Secs (916 Secs) *[==>]*	***[2]***
5	ABDor-G130M_v2_4 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=2; SEGMENT=A			1200 Secs (1200 Secs) *[==>]*	***[2]***

Orbit Structure





Visit

Proposal 18216, HOPR (H2) Thu Mar 26 19:01:25 GMT 2026

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; AFTER H1 BY 0.5 D TO 2.5 D

Comments: While the observing coordination window for these observations extends through spring 2026, the optimial window is December 29th 2025 to January 4th 2026. If there is anything we can adjust in this program to squeeze into that window, that would be great.

Repeat for failed 02

Diagnostics

(HOPR (H2)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AB-DOR	RA: 05 28 44.8712 (82.1869633d) Dec: -65 26 55.20 (-65.44867d) Equinox: J2000	Proper Motion RA: 37.554 mas/yr Proper Motion Dec: 158.574 mas/yr Parallax: 0.0673331" Epoch of Position: 2000	V=6.999+/-0.05	Reference Frame: ICRS

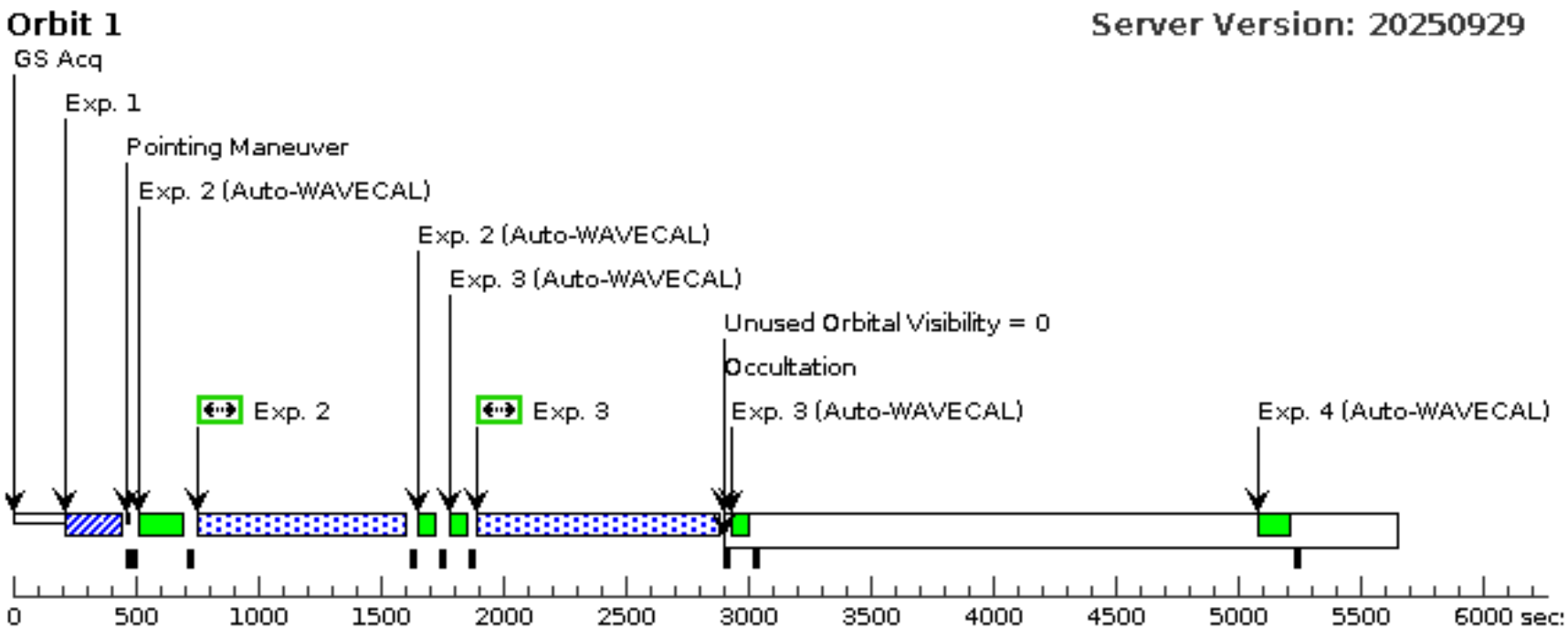
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

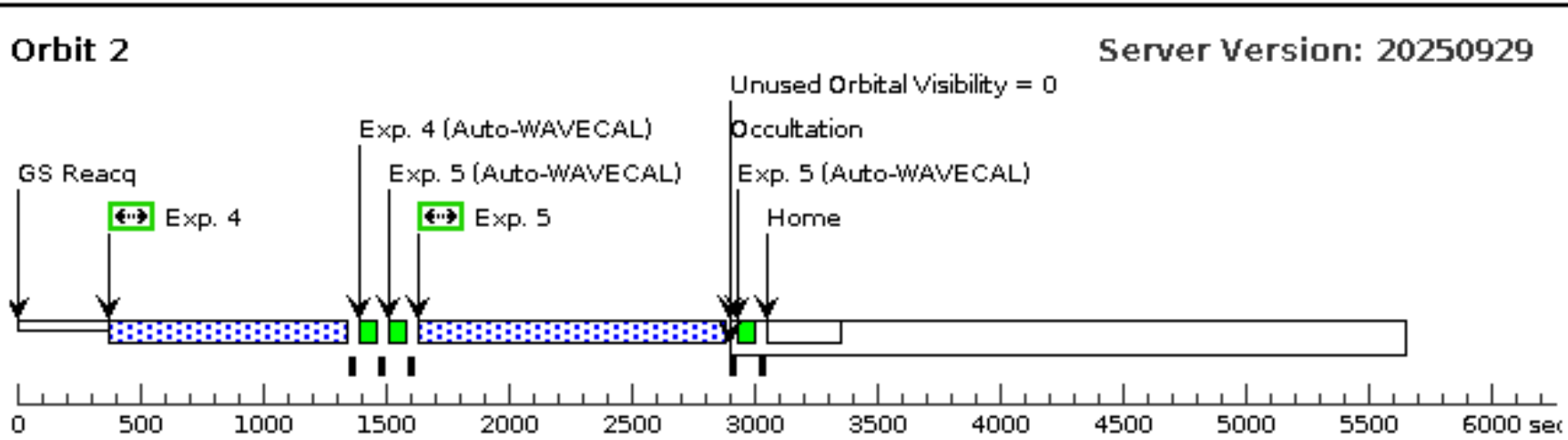
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=EXT-STAR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

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ABDor_ACQIMG2 (COS.ta.2210688)	(1) V-AB-DOR	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				5 Secs (5 Secs) *[==>]*	***[1]***
2	ABDor-G130M_v2_1 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=3; SEGMENT=A			800 Secs (800 Secs) *[==>]*	***[1]***
3	ABDor-G130M_v2_2 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=4; SEGMENT=A			935 Secs (935 Secs) *[==>]*	***[1]***
4	ABDor-G130M_v2_3 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=1; SEGMENT=A			916 Secs (916 Secs) *[==>]*	***[2]***
5	ABDor-G130M_v2_4 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=2; SEGMENT=A			1200 Secs (1200 Secs) *[==>]*	***[2]***

Orbit Structure





Visit

Proposal 18216, Visit 03, failed Thu Mar 26 19:01:25 GMT 2026

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; AFTER 02 BY 0.5 D TO 2.5 D

Comments: While the observing coordination window for these observations extends through spring 2026, the optimial window is December 29th 2025 to January 4th 2026. If there is anything we can adjust in this program to squeeze into that window, that would be great.

Diagnostics

(Visit 03) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AB-DOR	RA: 05 28 44.8712 (82.1869633d) Dec: -65 26 55.20 (-65.44867d) Equinox: J2000	Proper Motion RA: 37.554 mas/yr Proper Motion Dec: 158.574 mas/yr Parallax: 0.0673331" Epoch of Position: 2000	V=6.999+/-0.05	Reference Frame: ICRS

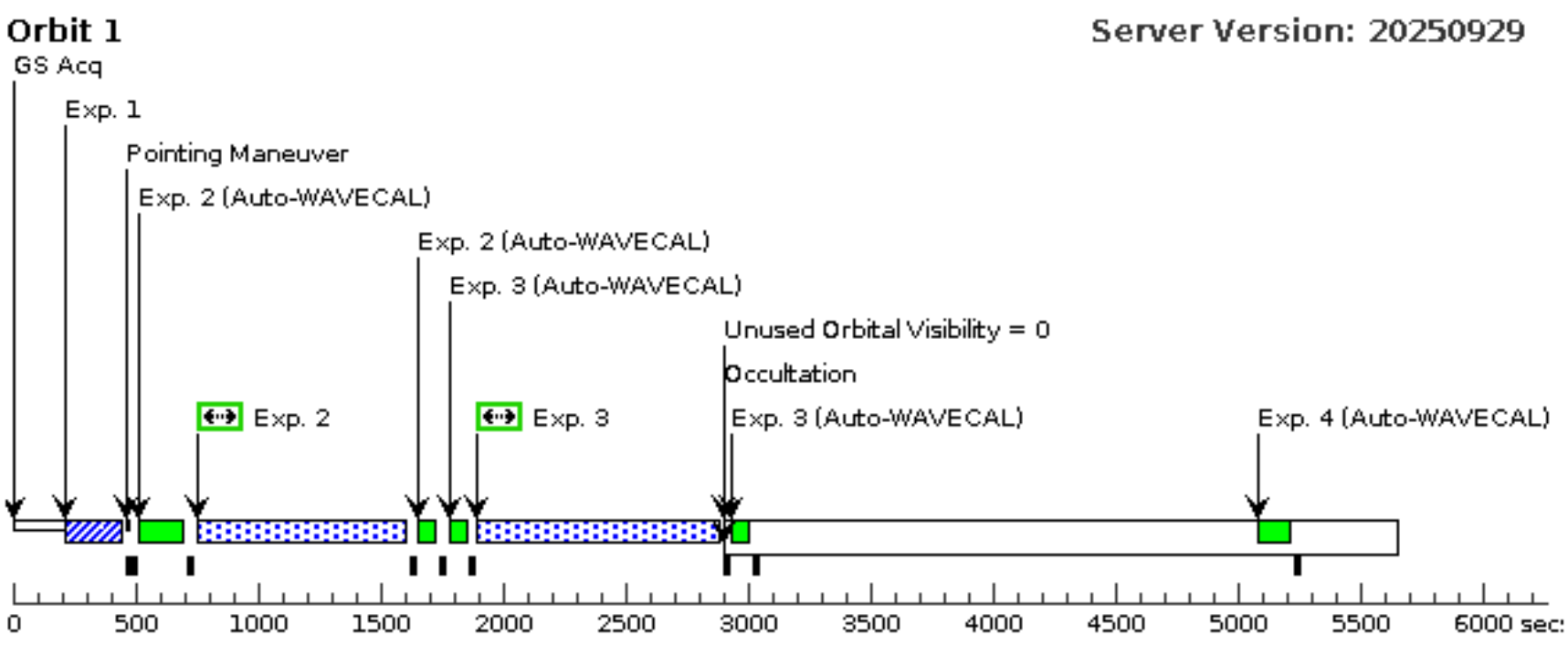
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

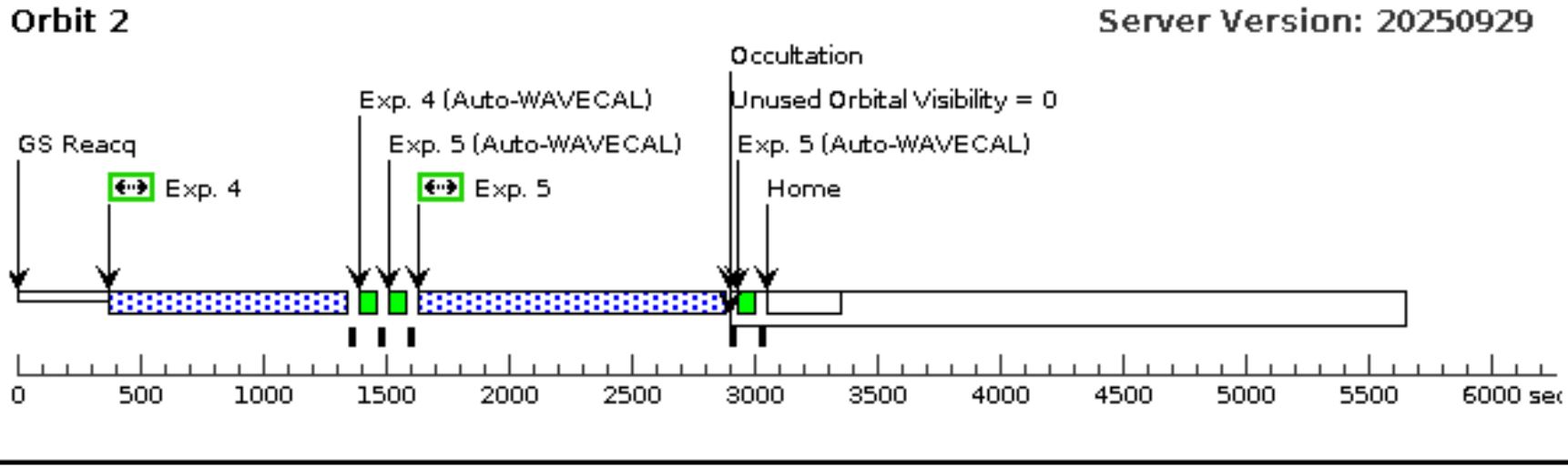
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=EXT-STAR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

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ABDor_ACQIMG3 (COS.ta.2210688)	(1) V-AB-DOR	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				5 Secs (5 Secs) *[==>]*	***[1]***
2	ABDor-G130M_v3_1 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=3; SEGMENT=A			800 Secs (800 Secs) *[==>]*	***[1]***
3	ABDor-G130M_v3_2 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=4; SEGMENT=A			935 Secs (935 Secs) *[==>]*	***[1]***
4	ABDor-G130M_v3_3 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=1; SEGMENT=A			916 Secs (916 Secs) *[==>]*	***[2]***
5	ABDor-G130M_v3_4 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=2; SEGMENT=A			1200 Secs (1200 Secs) *[==>]*	***[2]***

Orbit Structure





Visit

Proposal 18216, HOPR (H3) Thu Mar 26 19:01:25 GMT 2026

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; AFTER H2 BY 0.5 D TO 2.5 D

Comments: While the observing coordination window for these observations extends through spring 2026, the optimial window is December 29th 2025 to January 4th 2026. If there is anything we can adjust in this program to squeeze into that window, that would be great.

Repeat for failed 03

Diagnostics

(HOPR (H3)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AB-DOR	RA: 05 28 44.8712 (82.1869633d) Dec: -65 26 55.20 (-65.44867d) Equinox: J2000	Proper Motion RA: 37.554 mas/yr Proper Motion Dec: 158.574 mas/yr Parallax: 0.0673331" Epoch of Position: 2000	V=6.999+/-0.05	Reference Frame: ICRS

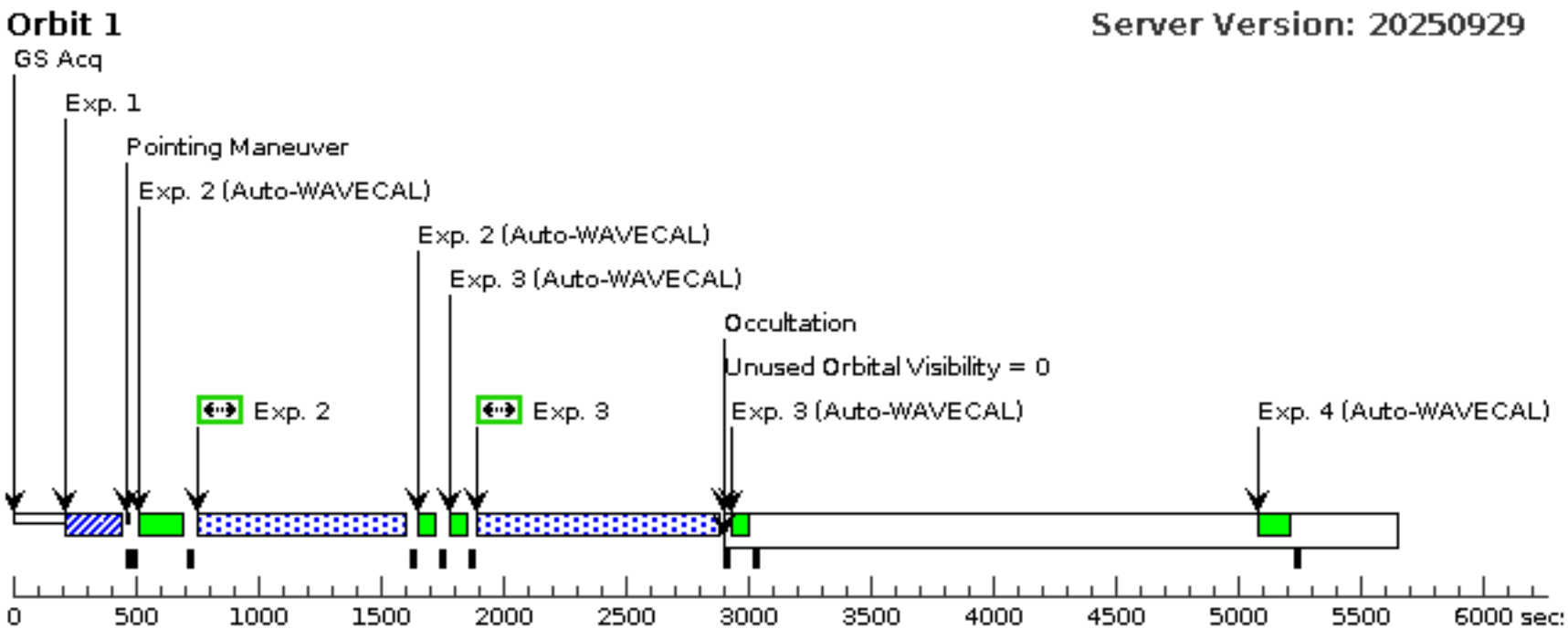
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

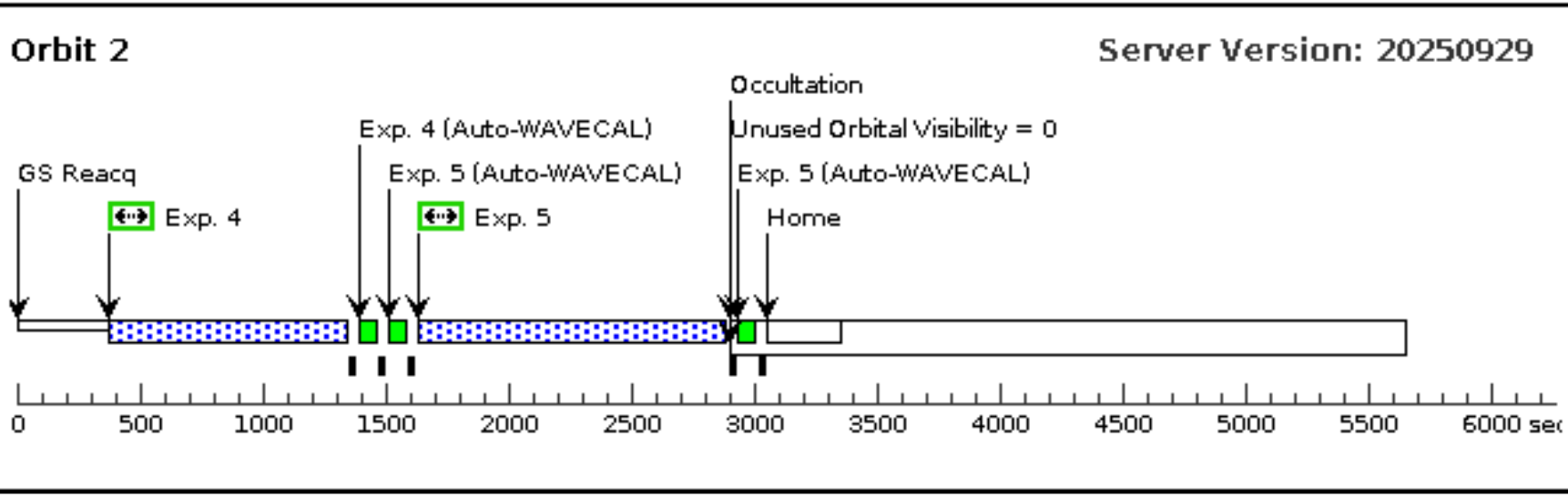
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=EXT-STAR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

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ABDor_ACQIMG3 (COS.ta.2210688)	(1) V-AB-DOR	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				5 Secs (5 Secs) *[==>]*	***[1]***
2	ABDor-G130M_v3_1 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=3; SEGMENT=A			800 Secs (800 Secs) *[==>]*	***[1]***
3	ABDor-G130M_v3_2 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=4; SEGMENT=A			935 Secs (935 Secs) *[==>]*	***[1]***
4	ABDor-G130M_v3_3 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=1; SEGMENT=A			916 Secs (916 Secs) *[==>]*	***[2]***
5	ABDor-G130M_v3_4 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=2; SEGMENT=A			1200 Secs (1200 Secs) *[==>]*	***[2]***

Orbit Structure





Visit

Proposal 18216, Visit 04, failed Thu Mar 26 19:01:25 GMT 2026

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; AFTER 03 BY 0.5 D TO 2.5 D

Comments: While the observing coordination window for these observations extends through spring 2026, the optimial window is December 29th 2025 to January 4th 2026. If there is anything we can adjust in this program to squeeze into that window, that would be great.

Diagnostics

(Visit 04) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AB-DOR	RA: 05 28 44.8712 (82.1869633d) Dec: -65 26 55.20 (-65.44867d) Equinox: J2000	Proper Motion RA: 37.554 mas/yr Proper Motion Dec: 158.574 mas/yr Parallax: 0.0673331" Epoch of Position: 2000	V=6.999+/-0.05	Reference Frame: ICRS

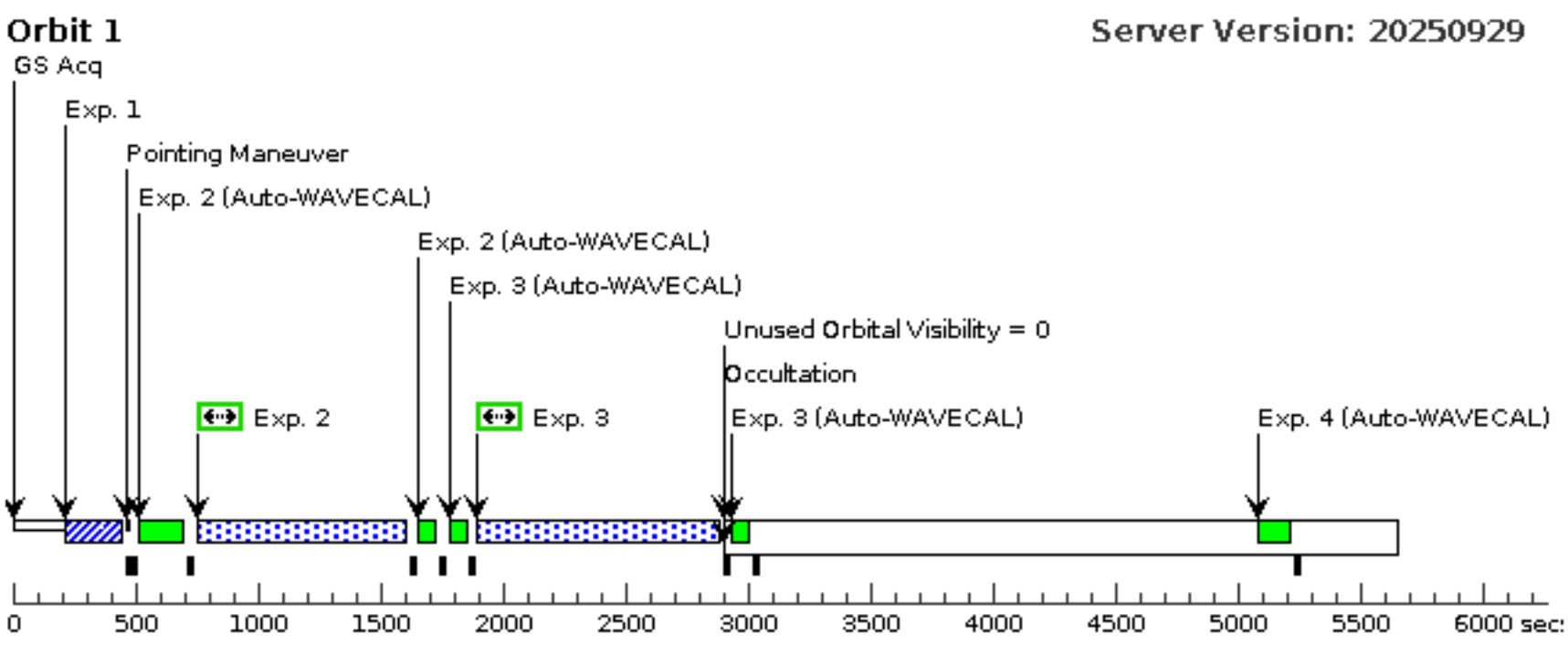
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

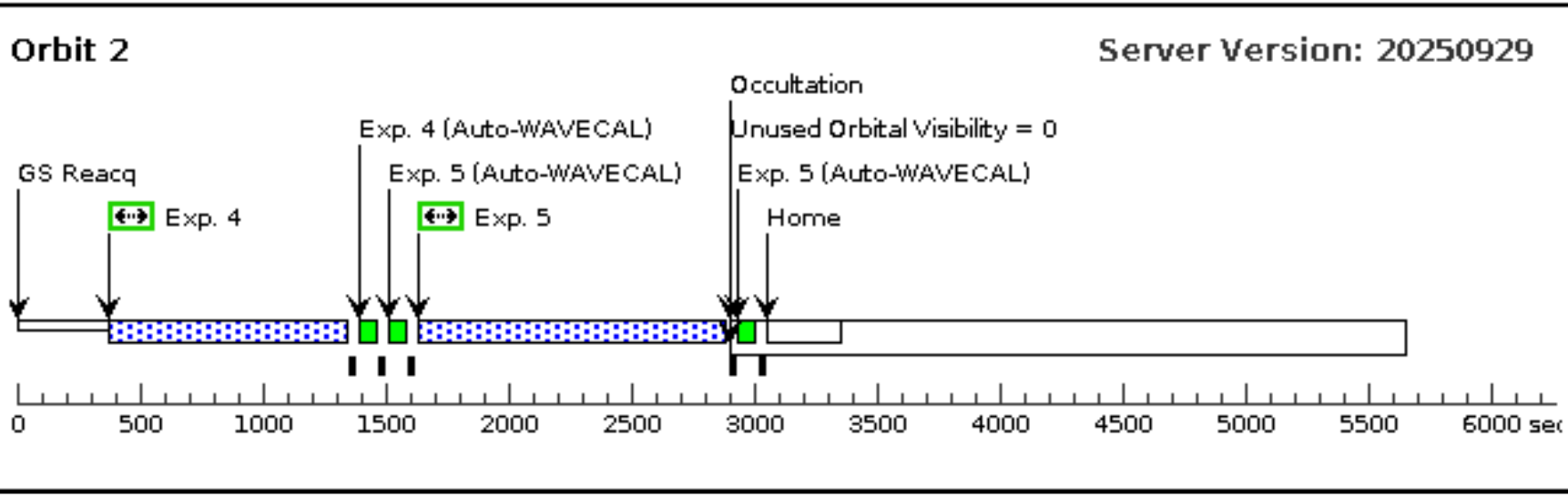
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=EXT-STAR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

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ABDor_ACQIMG4 (COS.ta.2210688)	(1) V-AB-DOR	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				5 Secs (5 Secs) *[==>]*	***[1]***
2	ABDor-G130M_v4_1 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=3; SEGMENT=A			800 Secs (800 Secs) *[==>]*	***[1]***
3	ABDor-G130M_v4_2 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=4; SEGMENT=A			935 Secs (935 Secs) *[==>]*	***[1]***
4	ABDor-G130M_v4_3 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=1; SEGMENT=A			916 Secs (916 Secs) *[==>]*	***[2]***
5	ABDor-G130M_v4_4 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=2; SEGMENT=A			1200 Secs (1200 Secs) *[==>]*	***[2]***

Orbit Structure





Visit

Proposal 18216, HOPR (H4) Thu Mar 26 19:01:25 GMT 2026

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; AFTER H3 BY 0.5 D TO 2.5 D

Comments: While the observing coordination window for these observations extends through spring 2026, the optimial window is December 29th 2025 to January 4th 2026. If there is anything we can adjust in this program to squeeze into that window, that would be great.

Repeat for failed 04

Diagnostics

(HOPR (H4)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AB-DOR	RA: 05 28 44.8712 (82.1869633d) Dec: -65 26 55.20 (-65.44867d) Equinox: J2000	Proper Motion RA: 37.554 mas/yr Proper Motion Dec: 158.574 mas/yr Parallax: 0.0673331" Epoch of Position: 2000	V=6.999+/-0.05	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=EXT-STAR
Description=[K V-IV]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ABDor_ACQIMG4 (COS.ta.2210688)	(1) V-AB-DOR	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				5 Secs (5 Secs) *[==>]*	***[1]***
2	ABDor-G130M_v4_1 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=3; SEGMENT=A			800 Secs (800 Secs) *[==>]*	***[1]***
3	ABDor-G130M_v4_2 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=4; SEGMENT=A			935 Secs (935 Secs) *[==>]*	***[1]***
4	ABDor-G130M_v4_3 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=1; SEGMENT=A			916 Secs (916 Secs) *[==>]*	***[2]***
5	ABDor-G130M_v4_4 (COS.sp.2210687)	(1) V-AB-DOR	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=15000; FP-POS=2; SEGMENT=A			1200 Secs (1200 Secs) *[==>]*	***[2]***

Orbit Structure