17790 - The C/Fe and dust-to-ice ratios in Beta Pictoris exocomets

Cycle: 32, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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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) BETA-PIC WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	3	21-Jan-2025 13:00:27.0	yes
02	(1) BETA-PIC	COS/FUV	1	21-Jan-2025 13:00:28.0	yes
03	(1) BETA-PIC WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	3	21-Jan-2025 13:00:30.0	yes
04	(1) BETA-PIC	COS/FUV	1	21-Jan-2025 13:00:31.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
05	(1) BETA-PIC WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	3	21-Jan-2025 13:00:32.0	yes
06	(1) BETA-PIC	COS/FUV	1	21-Jan-2025 13:00:34.0	yes
07	(1) BETA-PIC WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	3	21-Jan-2025 13:00:35.0	yes
08	(1) BETA-PIC	COS/FUV	1	21-Jan-2025 13:00:36.0	yes

16 Total Orbits Used

ABSTRACT

Exocomets are small icy bodies analogues to comets in our solar system, placed on eccentric orbits and producing extended tails of dust and gas near their periastra. When transiting in front of their host star, the exocometary tails can be detected using photometry and absorption spectroscopy, as already done in several systems. The most iconic case is undoubtedly Beta Pic, which continuously displays variable absorption in many spectral lines (e.g. Fe, Ca, C, O) due to the high rate of exocometary transits in this system.

Despite decades of observations, we still have very few information on the composition of these objects, depriving us of valuable knowledge for understanding their formation processes and history. However, significant progress was recently made with the development of the "exocomet curve of growth" technique, which allows realiable measurements of exocometary column densities using absorption spectroscopy.

Here we propose to take advantage of this new tool to estimate, for the first time, 1) the ionisation state in several Beta Pic comets and 2) their C/Fe ratios, by targeting very specific UV lines with STIS and COS. The ionisation state will be characterized by measuring the column densities of many refractory species (Fe, Ni, Mn...) with different ionisation energies. The C/Fe ratio will be measured through the study of the C I and Fe II lines accessible with STIS. This ratio will directly lead to the estimate of the dust-to-ice ratio in several Beta Pic comets, yielding valuable insight on the role played by exocomets in the evolution of planetary system and allowing for comparison between solar and extrasolar comets.

OBSERVING DESCRIPTION

The goal of HST program 17790 is to determine the ionisation state and C/Fe ratio of Beta Pic exocomets, by studying their absorption signatures in various UV lines of their host star spectrum.

Our program will be divided into four visits, each visit targetting the same spectral range (1150 - 2900 A). To ensure that a fresh set of exocomets is detected at each visit, we request that two consecutive visits be separated by at least 5 days.
Each visit will consist of four consecutive orbits (3 with STIS, 1 with COS), with the following settings:

- 1 STIS orbit in the NUV/MAMA / E230H configuration, splitted into two exposures:
  - 1 exposure targetting the 2013 A cenwave (1874 - 2151 A, including Zn II and Cr II lines), with the 0.1x0.03 aperture;
  - 1 exposure targetting the 2762 A cenwave (2623 - 2900 A, including Fe II, Cr II and Mg II II lines), with the 31x0.05NDA aperture;

- 1 STIS orbit in the FUV/MAMA / E140H configuration, with the following exposure:
  - 1 exposure targetting the 1598 A cenwave (1497 - 1699 A, including C I, Fe II lines from), with the 0.2x0.2 aperture;

- 1 STIS orbit in the NUV/MAMA / E230H configuration, splitted into three exposures:
  - 1 exposure targetting the 1763 A cenwave (1624 - 1901 A, including lines from S I, Fe II, Ni II, Si II, Al III), with the 0.2x0.2 aperture;
  - 1 exposure targetting the 2263 A cenwave (2124 - 2401 A, including Fe II, Ni and Co II lines), with the 0.1x0.03 aperture;
  - 1 exposure targetting the 2513 A cenwave (2374 - 2651 A, including Fe II and Mn II lines), with the 0.1x0.03 aperture;

- 1 COS orbit in the FUV / G130 M configuration, targetting the 1291 A cenwave. Both segments will be used (B[1137-1274], A[1292-1432]), allowing the observation of S II, C I, C II, O I and N I lines. In order to use both FP-POS=3 and FP-POS=4, we split this orbit into two separate exposures targetting the same wavelength range.

To avoid blending between separate cometary features, we always use the gratting with the highest spectral resolution (E230H, 140H, G130M). The apertures have been chosen so that the brightness limit of 200,000 count/s is respected for all A5V stellar models provided by the ETC and all wavelength settings. We organised the different STIS exposures so as to observe all Cr II lines during orbit #1, and all Ni II lines during orbit #3. To compensate for the low flux of Beta Pic in the far-UV, we dedicate a full orbit (#2) to the observation of the C I bands at 1560 and 1660 A.

For each visit, we expect to detect between 1 and 3 individual exocomets. The ionisation state in each of these object will be recovered through the comparison between the observed composition in refractory ions (S I, Fe II, Ni II, Mn II, Al III...) and photospheric abundances. Then, the C/Fe ratio of each exocomet will then be estimated through the analysis of C I and Fe II lines. Over the four visits, we expect to be able to measure this ratio in 8 +- 3 exocomets, opening the way for comparison between Beta Pic exocomet families.

Visit

Proposal 17790, Visit 01, implementation Tue Jan 21 18:00:36 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA

Special Requirements: SEQ 01,02 WITHIN 3.5 Orbits

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	BETA-PIC	RA: 05 47 17.0877 (86.8211988d)	Proper Motion RA: 5.16 mas/yr	V=3.86	Reference Frame: ICRS
		Dec: -51 03 59.44 (-51.06651d)	Proper Motion Dec: 84.041 mas/yr		
		Equinox: J2000	Parallax: 0.0509307"		
			Epoch of Position: 2000		

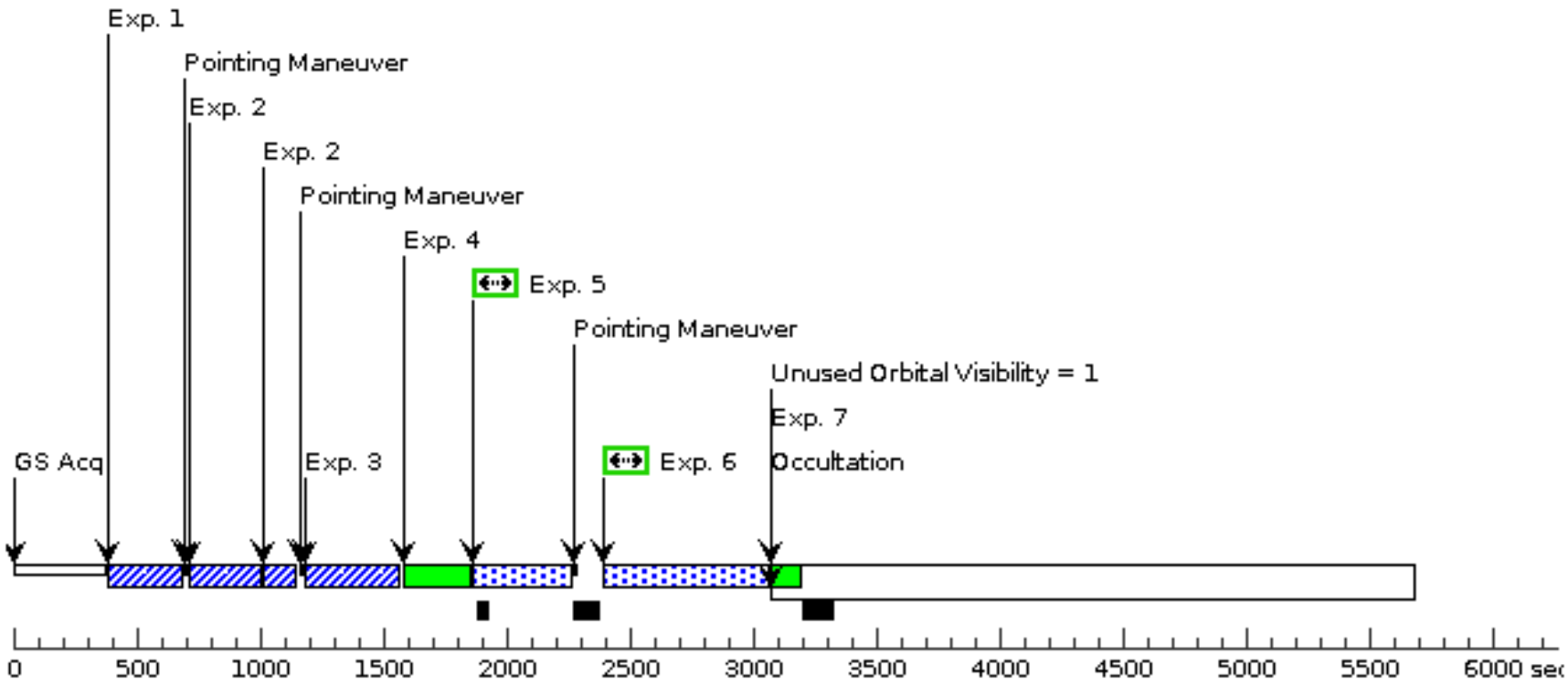
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

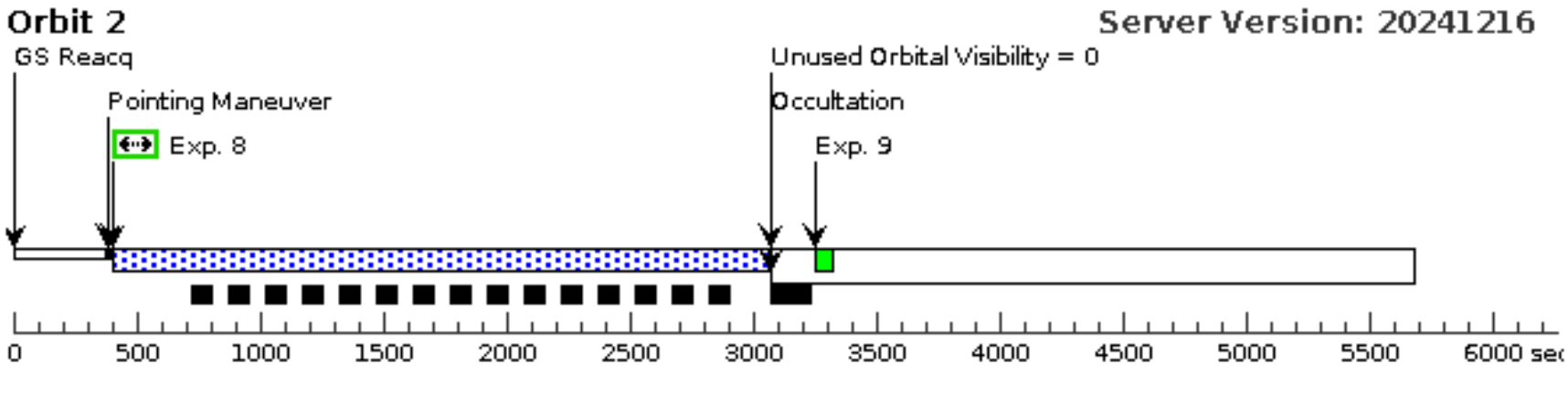
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=STAR
Description=[A4-A9 V-IV]
Extended=NO

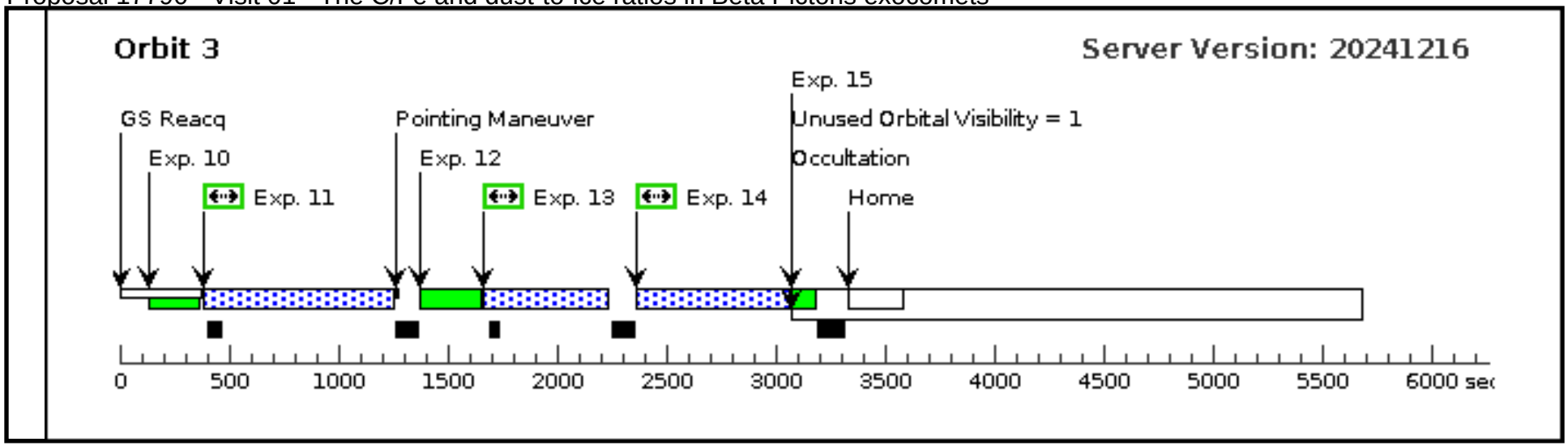
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	STIS - ACQ (STIS.ta.1932502)	(1) BETA-PIC	STIS/CCD, ACQ, F25ND5	MIRROR			Sequence 1-7 Non-Int in Visit 01	1 Secs (1 Secs) *[==>]*	*[1]*
2	STIS - ACQ/PEAK (STIS.sp.1947279)	(1) BETA-PIC	STIS/CCD, ACQ/PEAK, 0.2X0.09	G430M 4451 A			Sequence 1-7 Non-Int in Visit 01	1 Secs (1 Secs) *[==>]*	*[1]*
3	STIS - ACQ/PEAK (STIS.sp.1932510)	(1) BETA-PIC	STIS/CCD, ACQ/PEAK, 0.1X0.03	G430M 4451 A			Sequence 1-7 Non-Int in Visit 01	1 Secs (1 Secs) *[==>]*	*[1]*
4	STIS - Zn II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2013 A			Sequence 1-7 Non-Int in Visit 01	*[==>]*	*[1]*
5	STIS - Zn II - ACCUM (STIS.sp.1932511)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2013 A	WAVECAL=NO		Sequence 1-7 Non-Int in Visit 01	482 Secs (382 Secs) *[==>382.0 Secs]*	*[1]*
6	STIS - Mg II - ACCUM (STIS.sp.1932513)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 31X0.05NDA	E230H 2812 A	WAVECAL=NO		Sequence 1-7 Non-Int in Visit 01	600 Secs (500 Secs) *[==>500.0 Secs]*	*[1]*
7	STIS - Mg II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2812 A			Sequence 1-7 Non-Int in Visit 01	*[==>]*	*[1]*
8	STIS - C I - ACCUM (STIS.sp.1932514)	(1) BETA-PIC	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140H 1598 A	BUFFER-TIME=150; WAVECAL=NO		Sequence 8-9 Non-Int in Visit 01	2000 Secs (2474 Secs) *[==>2474.0 Secs]*	*[2]*
9	STIS - C I - WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140H 1598 A			Sequence 8-9 Non-Int in Visit 01	*[==>]*	*[2]*
10	STIS - Al III - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 1763 A			Sequence 10-15 Non-Int in Visit 01	*[==>]*	*[3]*
11	STIS - Al III - ACCUM (STIS.sp.1932515)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 1763 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 01	900 Secs (855 Secs) *[==>855.0 Secs]*	*[3]*
12	STIS - Ni II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2263 A			Sequence 10-15 Non-Int in Visit 01	*[==>]*	*[3]*
13	STIS - Ni II - ACCUM (STIS.sp.1932517)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2263 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 01	600 Secs (555 Secs) *[==>555.0 Secs]*	*[3]*
14	STIS - Mn II - ACCUM (STIS.sp.1932518)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2513 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 01	600 Secs (555 Secs) *[==>555.0 Secs]*	*[3]*
15	STIS - Mn II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2513 A			Sequence 10-15 Non-Int in Visit 01	*[==>]*	*[3]*

Orbit Structure



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Server Version: 20241216
GS Reacq
Exp. 10
Exp. 11
Pointing Maneuver
Exp. 12
Exp. 13
Exp. 14
Exp. 15
Unused Orbital Visibility = 1
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17790, Visit 02, implementation Tue Jan 21 18:00:37 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV

Special Requirements: SEQ 01,02 WITHIN 3.5 Orbits

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	BETA-PIC	RA: 05 47 17.0877 (86.8211988d) Dec: -51 03 59.44 (-51.06651d) Equinox: J2000	Proper Motion RA: 5.16 mas/yr Proper Motion Dec: 84.041 mas/yr Parallax: 0.0509307" Epoch of Position: 2000	V=3.86	Reference Frame: ICRS

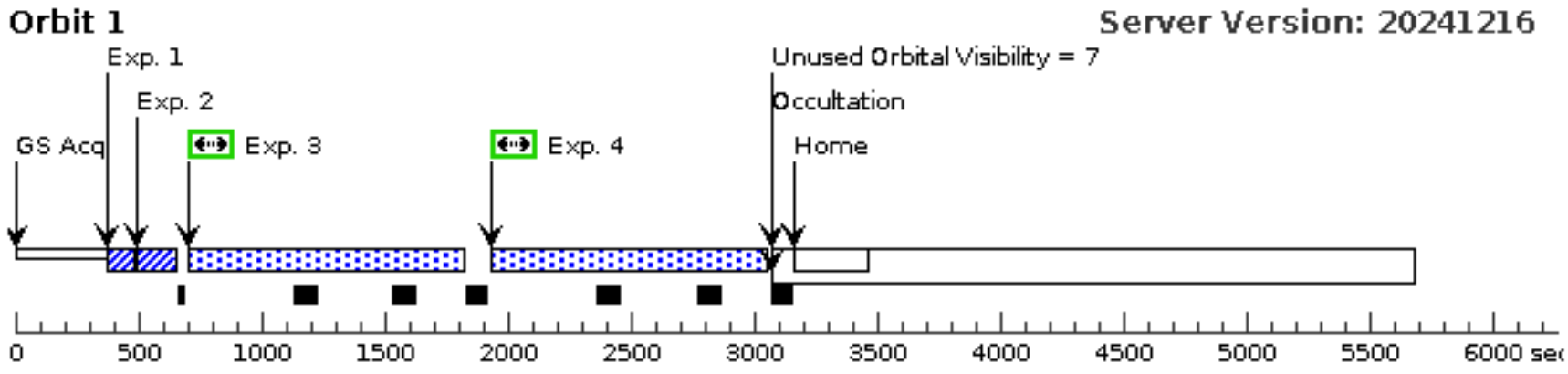
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

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=STAR
Description=[A4-A9 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	COS - PEAKXD (COS.sa.1937085)	(1) BETA-PIC	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A			Sequence 1-4 Non-Int in Visit 02	1.5 Secs (1.5 Secs) *[==>]*	*[1]*
2	COS - PEAKD (COS.sa.1937085)	(1) BETA-PIC	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.9		Sequence 1-4 Non-Int in Visit 02	1.5 Secs (1.5 Secs) *[==>]*	*[1]*
3	COS - TIMETAG (COS.sp.1928434)	(1) BETA-PIC	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=400; FP-POS=3; SEGMENT=BOTH		Sequence 1-4 Non-Int in Visit 02	1200 Secs (1072 Secs) *[==>1072.0 Secs]*	*[1]*
4	COS - TIMETAG (COS.sp.1928434)	(1) BETA-PIC	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=400; FP-POS=4; SEGMENT=BOTH		Sequence 1-4 Non-Int in Visit 02	1200 Secs (1072 Secs) *[==>1072.0 Secs]*	*[1]*

Orbit Structure



Visit

Proposal 17790, Visit 03, implementation Tue Jan 21 18:00:37 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA

Special Requirements: AFTER 02 BY 5 D TO 300 D; SEQ 03,04 WITHIN 3.5 Orbits

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	BETA-PIC	RA: 05 47 17.0877 (86.8211988d)	Proper Motion RA: 5.16 mas/yr	V=3.86	Reference Frame: ICRS
		Dec: -51 03 59.44 (-51.06651d)	Proper Motion Dec: 84.041 mas/yr		
		Equinox: J2000	Parallax: 0.0509307"		
			Epoch of Position: 2000		

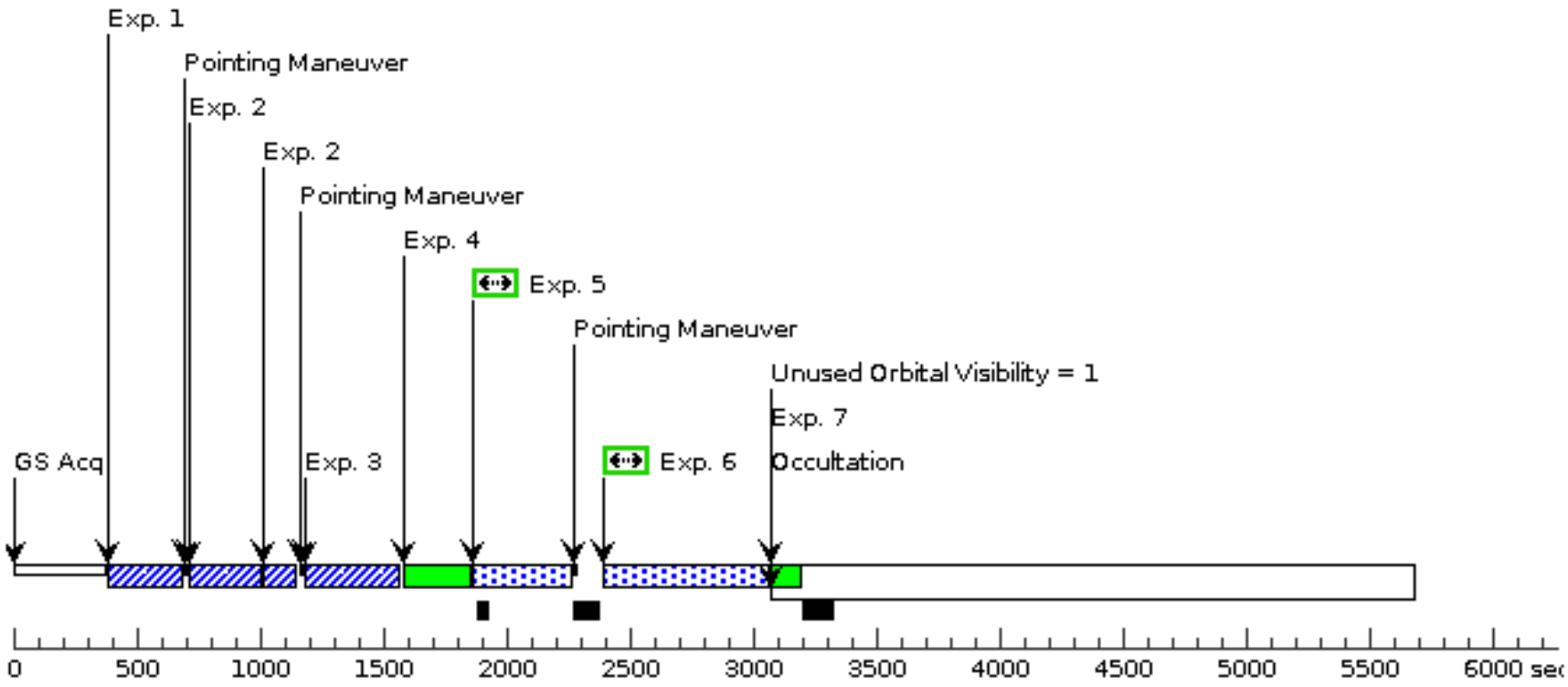
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

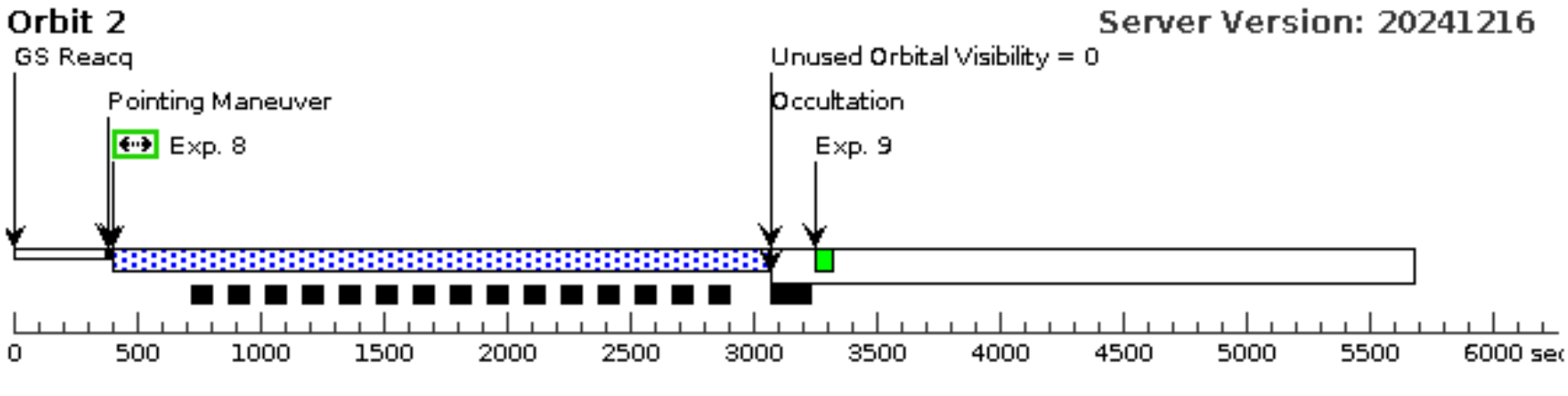
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=STAR
Description=[A4-A9 V-IV]
Extended=NO

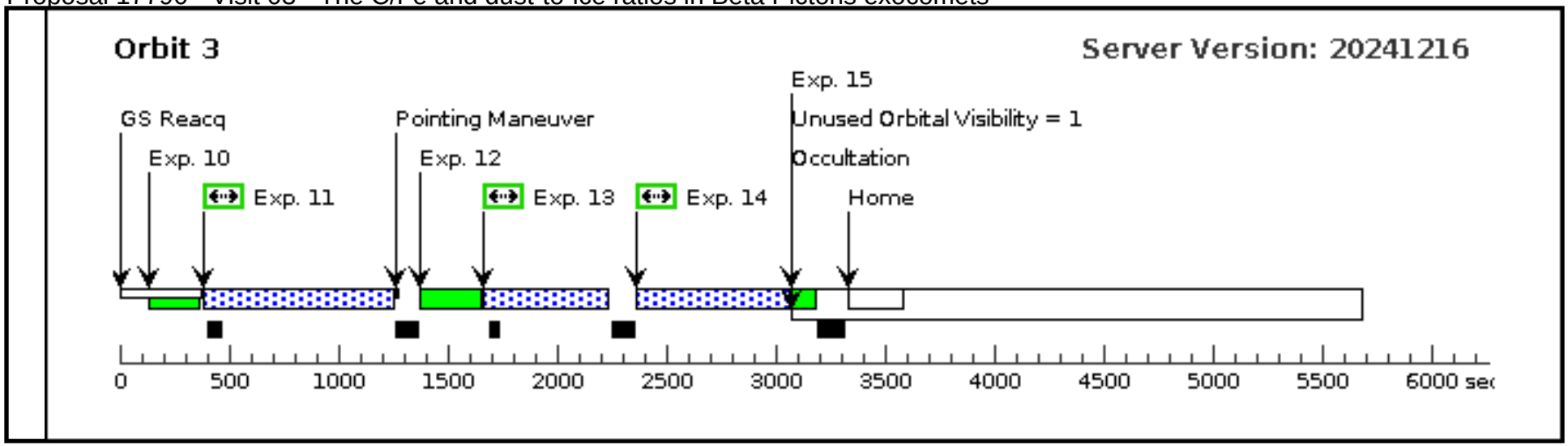
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	STIS - ACQ (STIS.ta.1932502)	(1) BETA-PIC	STIS/CCD, ACQ, F25ND5	MIRROR			Sequence 1-7 Non-Int in Visit 03	1 Secs (1 Secs) *[==>]*	 ***[1]***
2	STIS - ACQ/PEAK (STIS.sp.1947279)	(1) BETA-PIC	STIS/CCD, ACQ/PEAK, 0.2X0.09	G430M 4451 A			Sequence 1-7 Non-Int in Visit 03	1 Secs (1 Secs) *[==>]*	 ***[1]***
3	STIS - ACQ/PEAK (STIS.sp.1932510)	(1) BETA-PIC	STIS/CCD, ACQ/PEAK, 0.1X0.03	G430M 4451 A			Sequence 1-7 Non-Int in Visit 03	1 Secs (1 Secs) *[==>]*	 ***[1]***
4	STIS - Zn II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2013 A			Sequence 1-7 Non-Int in Visit 03	*[==>]*	***[1]***
5	STIS - Zn II - ACCUM (STIS.sp.1932511)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2013 A	WAVECAL=NO		Sequence 1-7 Non-Int in Visit 03	482 Secs (382 Secs) *[==>382.0 Secs]*	 ***[1]***
6	STIS - Mg II - ACCUM (STIS.sp.1932513)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 31X0.05NDA	E230H 2812 A	WAVECAL=NO		Sequence 1-7 Non-Int in Visit 03	600 Secs (500 Secs) *[==>500.0 Secs]*	 ***[1]***
7	STIS - Mg II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2812 A			Sequence 1-7 Non-Int in Visit 03	*[==>]*	***[1]***
8	STIS - C I - ACCUM (STIS.sp.1932514)	(1) BETA-PIC	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140H 1598 A	BUFFER-TIME=150; WAVECAL=NO		Sequence 8-9 Non-Int in Visit 03	2000 Secs (2474 Secs) *[==>2474.0 Secs]*	 ***[2]***
9	STIS - C I - WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140H 1598 A			Sequence 8-9 Non-Int in Visit 03	*[==>]*	***[2]***
10	STIS - Al III - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 1763 A			Sequence 10-15 Non-Int in Visit 03	*[==>]*	***[3]***
11	STIS - Al III - ACCUM (STIS.sp.1932515)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 1763 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 03	900 Secs (855 Secs) *[==>855.0 Secs]*	 ***[3]***
12	STIS - Ni II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2263 A			Sequence 10-15 Non-Int in Visit 03	*[==>]*	***[3]***
13	STIS - Ni II - ACCUM (STIS.sp.1932517)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2263 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 03	600 Secs (555 Secs) *[==>555.0 Secs]*	 ***[3]***
14	STIS - Mn II - ACCUM (STIS.sp.1932518)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2513 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 03	600 Secs (555 Secs) *[==>555.0 Secs]*	 ***[3]***
15	STIS - Mn II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2513 A			Sequence 10-15 Non-Int in Visit 03	*[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20241216
GS Reacq
Exp. 10
Exp. 11
Pointing Maneuver
Exp. 12
Exp. 13
Exp. 14
Exp. 15
Unused Orbital Visibility = 1
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17790, Visit 04, implementation Tue Jan 21 18:00:37 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV

Special Requirements: SEQ 03,04 WITHIN 3.5 Orbits

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	BETA-PIC	RA: 05 47 17.0877 (86.8211988d) Dec: -51 03 59.44 (-51.06651d) Equinox: J2000	Proper Motion RA: 5.16 mas/yr Proper Motion Dec: 84.041 mas/yr Parallax: 0.0509307" Epoch of Position: 2000	V=3.86	Reference Frame: ICRS

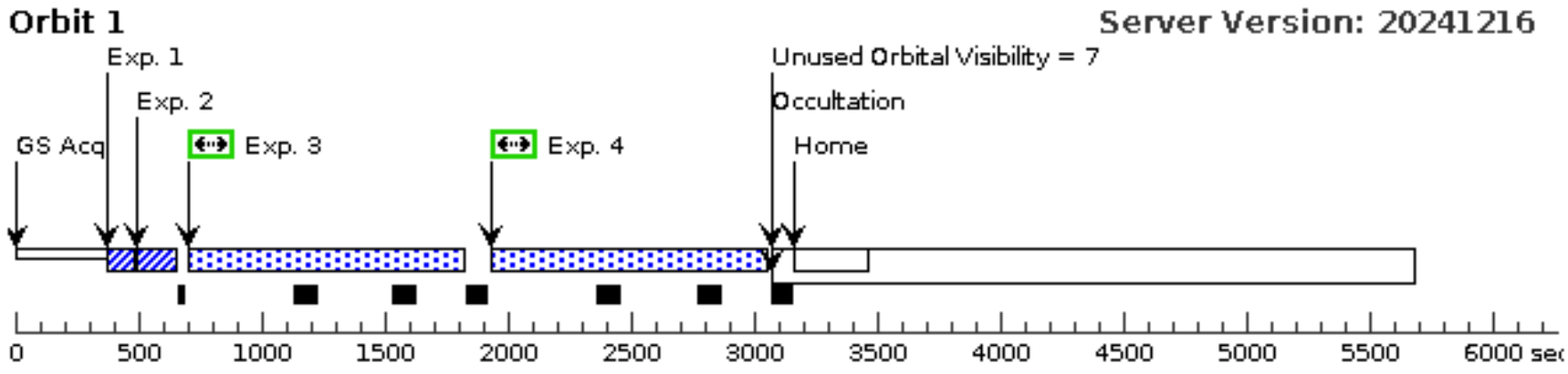
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

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=STAR
Description=[A4-A9 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	COS - PEAKXD (COS.sa.1937085)	(1) BETA-PIC	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A			Sequence 1-4 Non-Int in Visit 04	1.5 Secs (1.5 Secs) *[==>]*	*[1]*
2	COS - PEAKD (COS.sa.1937085)	(1) BETA-PIC	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.9		Sequence 1-4 Non-Int in Visit 04	1.5 Secs (1.5 Secs) *[==>]*	*[1]*
3	COS - TIMETAG (COS.sp.1928434)	(1) BETA-PIC	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=400; FP-POS=3; SEGMENT=BOTH		Sequence 1-4 Non-Int in Visit 04	1200 Secs (1072 Secs) *[==>1072.0 Secs]*	*[1]*
4	COS - TIMETAG (COS.sp.1928434)	(1) BETA-PIC	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=400; FP-POS=4; SEGMENT=BOTH		Sequence 1-4 Non-Int in Visit 04	1200 Secs (1072 Secs) *[==>1072.0 Secs]*	*[1]*

Orbit Structure



Visit

Proposal 17790, Visit 05, implementation Tue Jan 21 18:00:37 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA

Special Requirements: AFTER 04 BY 5 D TO 300 D; SEQ 05,06 WITHIN 3.5 Orbits

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	BETA-PIC	RA: 05 47 17.0877 (86.8211988d)	Proper Motion RA: 5.16 mas/yr	V=3.86	Reference Frame: ICRS
		Dec: -51 03 59.44 (-51.06651d)	Proper Motion Dec: 84.041 mas/yr		
		Equinox: J2000	Parallax: 0.0509307"		
			Epoch of Position: 2000		

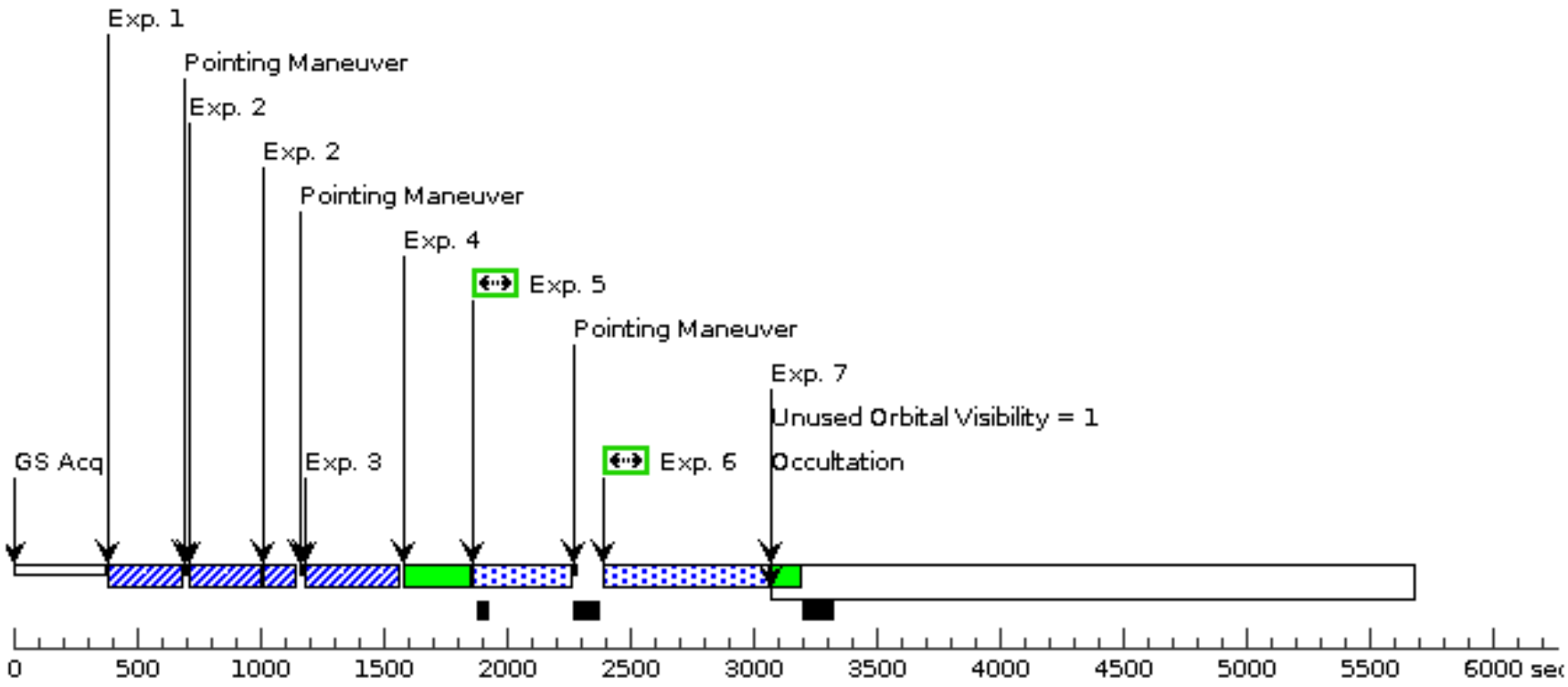
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

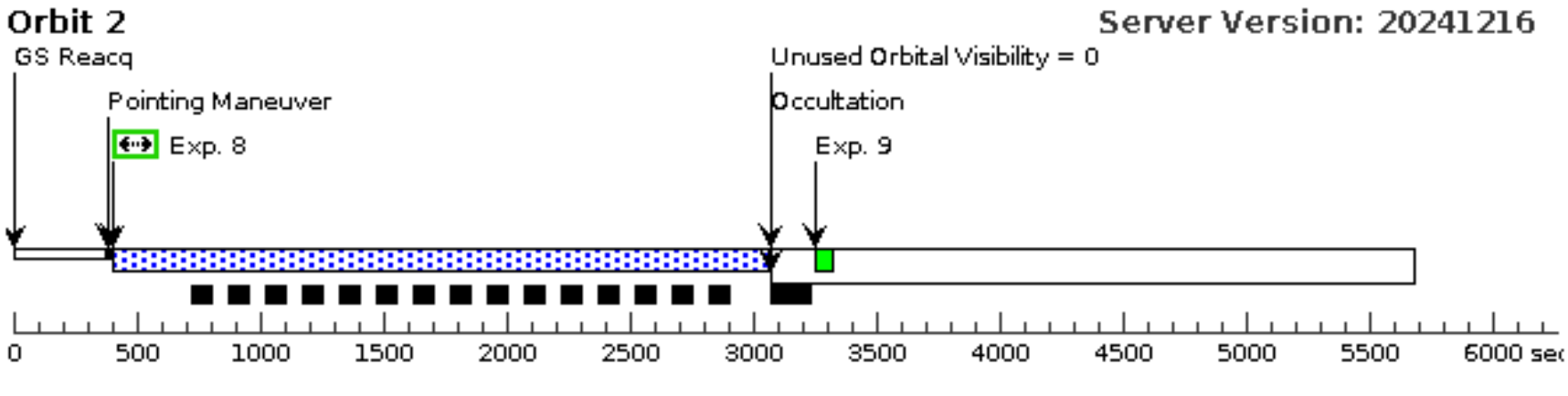
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=STAR
Description=[A4-A9 V-IV]
Extended=NO

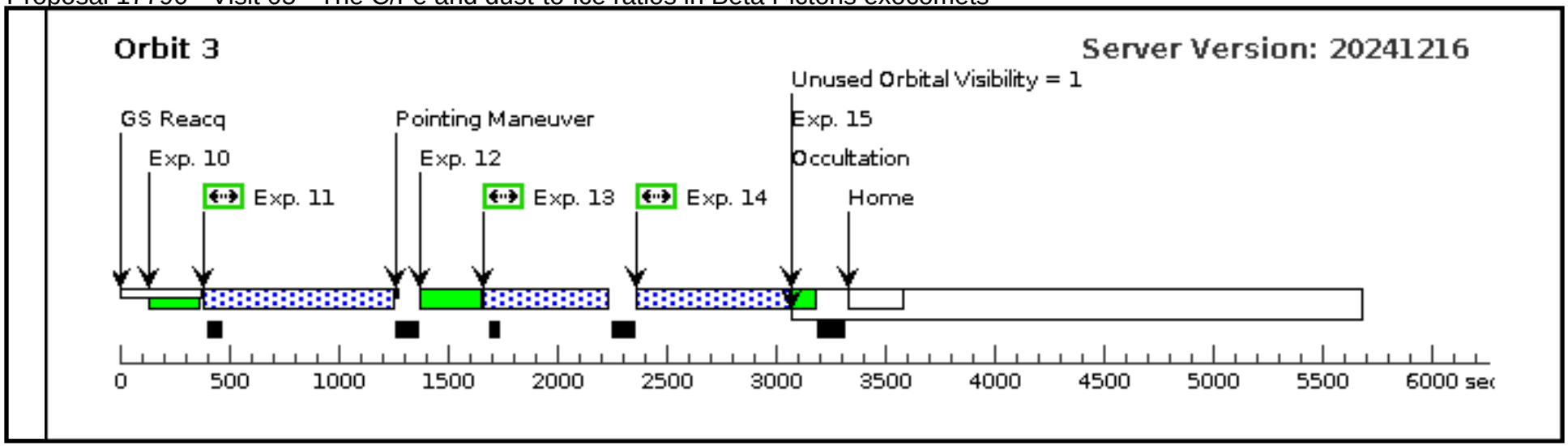
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	STIS - ACQ (STIS.ta.1932502)	(1) BETA-PIC	STIS/CCD, ACQ, F25ND5	MIRROR			Sequence 1-7 Non-Int in Visit 05	1 Secs (1 Secs) *[==>]*	***[1]***
2	STIS - ACQ/PEAK (STIS.sp.1947279)	(1) BETA-PIC	STIS/CCD, ACQ/PEAK, 0.2X0.09	G430M 4451 A			Sequence 1-7 Non-Int in Visit 05	1 Secs (1 Secs) *[==>]*	***[1]***
3	STIS - ACQ/PEAK (STIS.sp.1932510)	(1) BETA-PIC	STIS/CCD, ACQ/PEAK, 0.1X0.03	G430M 4451 A			Sequence 1-7 Non-Int in Visit 05	1 Secs (1 Secs) *[==>]*	***[1]***
4	STIS - Zn II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2013 A			Sequence 1-7 Non-Int in Visit 05	*[==>]*	***[1]***
5	STIS - Zn II - ACCUM (STIS.sp.1932511)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2013 A	WAVECAL=NO		Sequence 1-7 Non-Int in Visit 05	482 Secs (382 Secs) *[==>382.0 Secs]*	***[1]***
6	STIS - Mg II - ACCUM (STIS.sp.1932513)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 31X0.05NDA	E230H 2812 A	WAVECAL=NO		Sequence 1-7 Non-Int in Visit 05	600 Secs (500 Secs) *[==>500.0 Secs]*	***[1]***
7	STIS - Mg II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2812 A			Sequence 1-7 Non-Int in Visit 05	*[==>]*	***[1]***
8	STIS - C I - ACCUM (STIS.sp.1932514)	(1) BETA-PIC	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140H 1598 A	BUFFER-TIME=1500; WAVECAL=NO		Sequence 8-9 Non-Int in Visit 05	2000 Secs (2474 Secs) *[==>2474.0 Secs]*	***[2]***
9	STIS - C I - WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140H 1598 A			Sequence 8-9 Non-Int in Visit 05	*[==>]*	***[2]***
10	STIS - Al III - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 1763 A			Sequence 10-15 Non-Int in Visit 05	*[==>]*	***[3]***
11	STIS - Al III - ACCUM (STIS.sp.1932515)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 1763 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 05	900 Secs (855 Secs) *[==>855.0 Secs]*	***[3]***
12	STIS - Ni II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2263 A			Sequence 10-15 Non-Int in Visit 05	*[==>]*	***[3]***
13	STIS - Ni II - ACCUM (STIS.sp.1932517)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2263 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 05	600 Secs (555 Secs) *[==>555.0 Secs]*	***[3]***
14	STIS - Mn II - ACCUM (STIS.sp.1932518)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2513 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 05	600 Secs (555 Secs) *[==>555.0 Secs]*	***[3]***
15	STIS - Mn II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2513 A			Sequence 10-15 Non-Int in Visit 05	*[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20241216
Unused Orbital Visibility = 1
GS Reacq
Exp. 10
Exp. 11
Pointing Maneuver
Exp. 12
Exp. 13
Exp. 14
Exp. 15
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17790, Visit 06, implementation Tue Jan 21 18:00:37 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV

Special Requirements: SEQ 05,06 WITHIN 3.5 Orbits

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	BETA-PIC	RA: 05 47 17.0877 (86.8211988d) Dec: -51 03 59.44 (-51.06651d) Equinox: J2000	Proper Motion RA: 5.16 mas/yr Proper Motion Dec: 84.041 mas/yr Parallax: 0.0509307" Epoch of Position: 2000	V=3.86	Reference Frame: ICRS

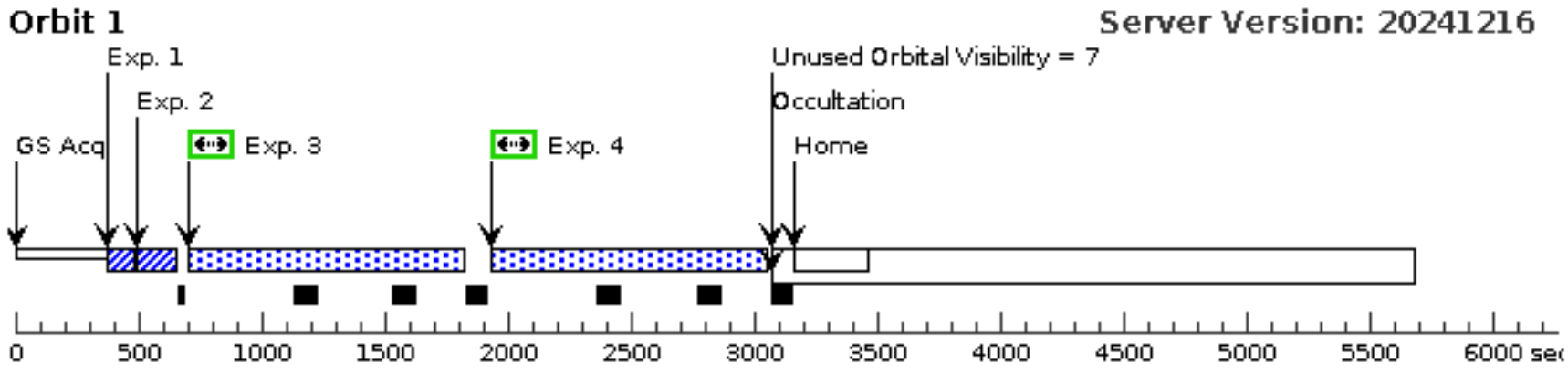
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

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=STAR
Description=[A4-A9 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	COS - PEAKXD (COS.sa.1937085)	(1) BETA-PIC	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A			Sequence 1-4 Non-Int in Visit 06	1.5 Secs (1.5 Secs) *[==>]*	*[1]*
2	COS - PEAKD (COS.sa.1937085)	(1) BETA-PIC	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.9		Sequence 1-4 Non-Int in Visit 06	1.5 Secs (1.5 Secs) *[==>]*	*[1]*
3	COS - TIMETAG (COS.sp.1928434)	(1) BETA-PIC	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=400; FP-POS=3; SEGMENT=BOTH		Sequence 1-4 Non-Int in Visit 06	1200 Secs (1072 Secs) *[==>1072.0 Secs]*	*[1]*
4	COS - TIMETAG (COS.sp.1928434)	(1) BETA-PIC	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=400; FP-POS=4; SEGMENT=BOTH		Sequence 1-4 Non-Int in Visit 06	1200 Secs (1072 Secs) *[==>1072.0 Secs]*	*[1]*

Orbit Structure



Visit

Proposal 17790, Visit 07, implementation Tue Jan 21 18:00:37 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA

Special Requirements: AFTER 06 BY 5 D TO 300 D; SEQ 07,08 WITHIN 3.5 Orbits

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	BETA-PIC	RA: 05 47 17.0877 (86.8211988d)	Proper Motion RA: 5.16 mas/yr	V=3.86	Reference Frame: ICRS
		Dec: -51 03 59.44 (-51.06651d)	Proper Motion Dec: 84.041 mas/yr		
		Equinox: J2000	Parallax: 0.0509307"		
			Epoch of Position: 2000		

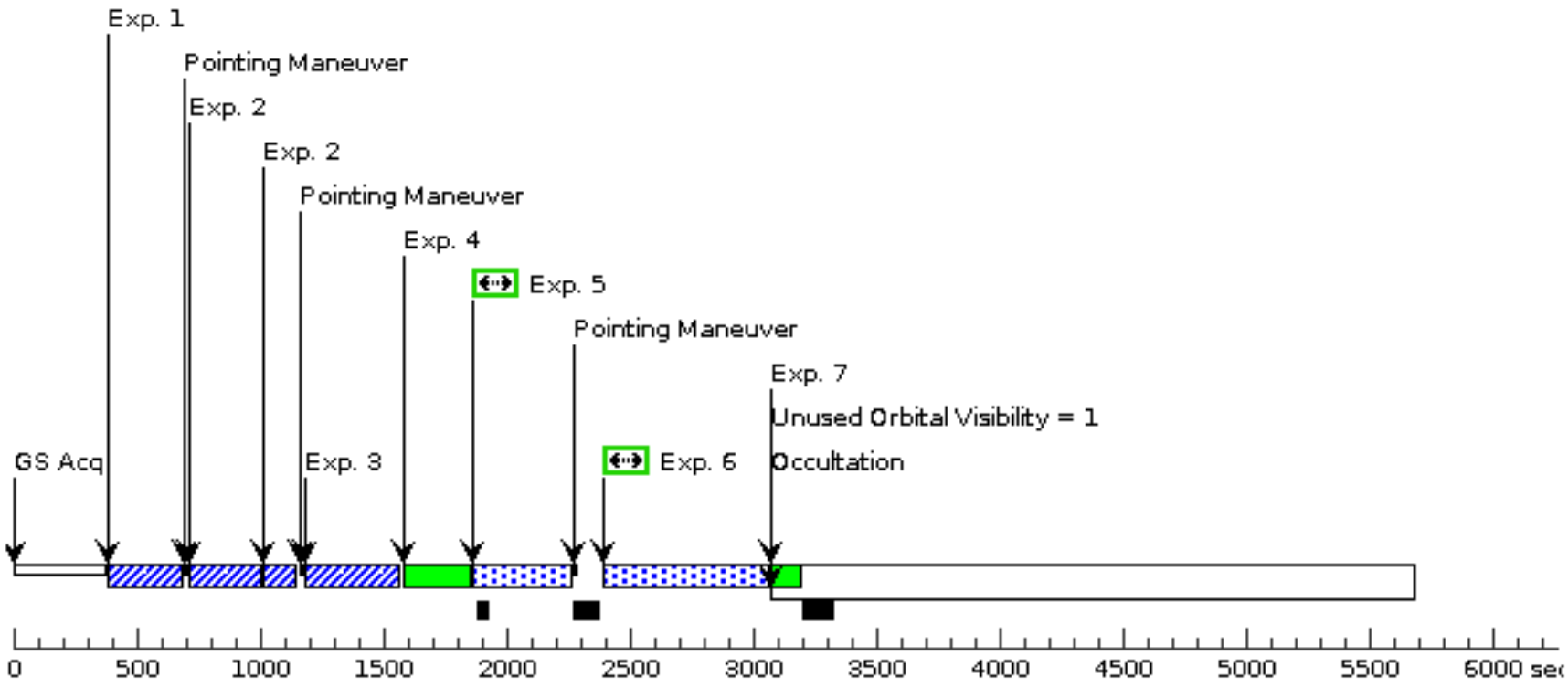
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

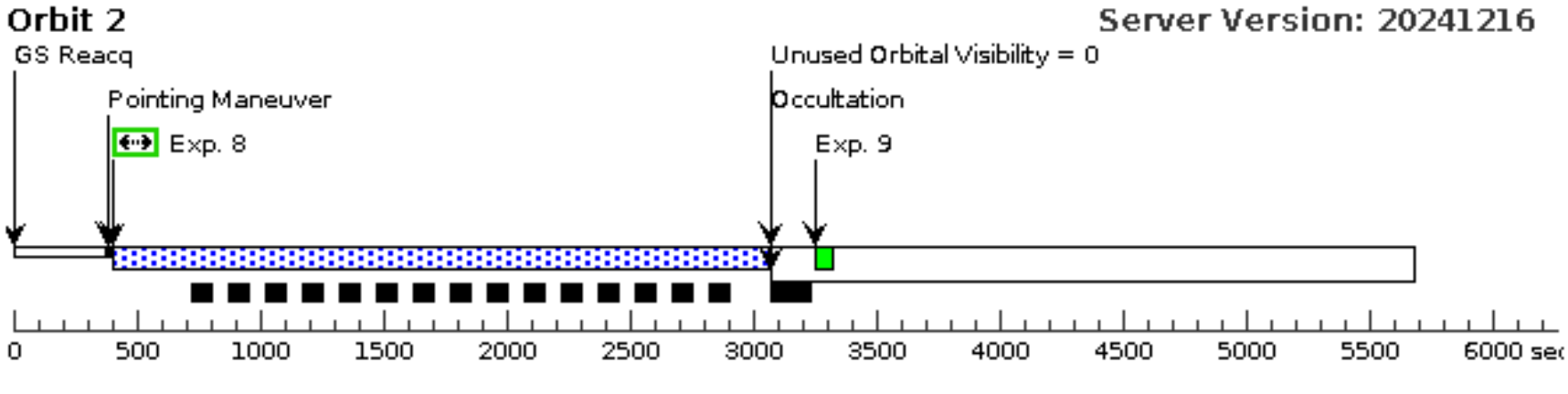
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=STAR
Description=[A4-A9 V-IV]
Extended=NO

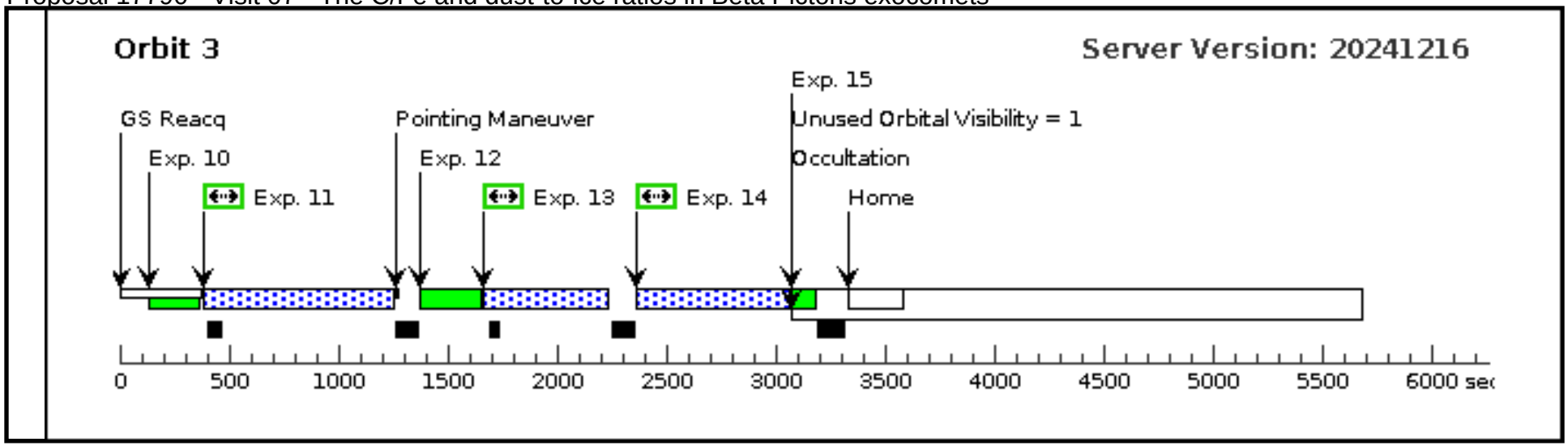
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	STIS - ACQ (STIS.ta.1932502)	(1) BETA-PIC	STIS/CCD, ACQ, F25ND5	MIRROR			Sequence 1-7 Non-Int in Visit 07	1 Secs (1 Secs) *[==>]*	***[1]***
2	STIS - ACQ/PEAK (STIS.sp.1947279)	(1) BETA-PIC	STIS/CCD, ACQ/PEAK, 0.2X0.09	G430M 4451 A			Sequence 1-7 Non-Int in Visit 07	1 Secs (1 Secs) *[==>]*	***[1]***
3	STIS - ACQ/PEAK (STIS.sp.1932510)	(1) BETA-PIC	STIS/CCD, ACQ/PEAK, 0.1X0.03	G430M 4451 A			Sequence 1-7 Non-Int in Visit 07	1 Secs (1 Secs) *[==>]*	***[1]***
4	STIS - Zn II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2013 A			Sequence 1-7 Non-Int in Visit 07	*[==>]*	***[1]***
5	STIS - Zn II - ACCUM (STIS.sp.1932511)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2013 A	WAVECAL=NO		Sequence 1-7 Non-Int in Visit 07	482 Secs (382 Secs) *[==>382.0 Secs]*	***[1]***
6	STIS - Mg II - ACCUM (STIS.sp.1932513)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 31X0.05NDA	E230H 2812 A	WAVECAL=NO		Sequence 1-7 Non-Int in Visit 07	600 Secs (500 Secs) *[==>500.0 Secs]*	***[1]***
7	STIS - Mg II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2812 A			Sequence 1-7 Non-Int in Visit 07	*[==>]*	***[1]***
8	STIS - C I - ACCUM (STIS.sp.1932514)	(1) BETA-PIC	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140H 1598 A	BUFFER-TIME=1500; WAVECAL=NO		Sequence 8-9 Non-Int in Visit 07	2000 Secs (2474 Secs) *[==>2474.0 Secs]*	***[2]***
9	STIS - C I - WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140H 1598 A			Sequence 8-9 Non-Int in Visit 07	*[==>]*	***[2]***
10	STIS - Al III - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 1763 A			Sequence 10-15 Non-Int in Visit 07	*[==>]*	***[3]***
11	STIS - Al III - ACCUM (STIS.sp.1932515)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 1763 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 07	900 Secs (855 Secs) *[==>855.0 Secs]*	***[3]***
12	STIS - Ni II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2263 A			Sequence 10-15 Non-Int in Visit 07	*[==>]*	***[3]***
13	STIS - Ni II - ACCUM (STIS.sp.1932517)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2263 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 07	600 Secs (555 Secs) *[==>555.0 Secs]*	***[3]***
14	STIS - Mn II - ACCUM (STIS.sp.1932518)	(1) BETA-PIC	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2513 A	WAVECAL=NO		Sequence 10-15 Non-Int in Visit 07	600 Secs (555 Secs) *[==>555.0 Secs]*	***[3]***
15	STIS - Mn II - WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 0.1X0.03	E230H 2513 A			Sequence 10-15 Non-Int in Visit 07	*[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20241216
GS Reacq
Exp. 10
Exp. 11
Pointing Maneuver
Exp. 12
Exp. 13
Exp. 14
Exp. 15
Unused Orbital Visibility = 1
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17790, Visit 08, implementation Tue Jan 21 18:00:37 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV

Special Requirements: SEQ 07,08 WITHIN 3.5 Orbits

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	BETA-PIC	RA: 05 47 17.0877 (86.8211988d) Dec: -51 03 59.44 (-51.06651d) Equinox: J2000	Proper Motion RA: 5.16 mas/yr Proper Motion Dec: 84.041 mas/yr Parallax: 0.0509307" Epoch of Position: 2000	V=3.86	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=STAR
Description=[A4-A9 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	COS - PEAKXD (COS.sa.1937085)	(1) BETA-PIC	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A			Sequence 1-4 Non-Int in Visit 08	1.5 Secs (1.5 Secs) *[==>]*	*[1]*
2	COS - PEAKD (COS.sa.1937085)	(1) BETA-PIC	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	STEP-SIZE=0.9		Sequence 1-4 Non-Int in Visit 08	1.5 Secs (1.5 Secs) *[==>]*	*[1]*
3	COS - TIMETAG (COS.sp.1928434)	(1) BETA-PIC	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=400; FP-POS=3; SEGMENT=BOTH		Sequence 1-4 Non-Int in Visit 08	1200 Secs (1072 Secs) *[==>1072.0 Secs]*	*[1]*
4	COS - TIMETAG (COS.sp.1928434)	(1) BETA-PIC	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=400; FP-POS=4; SEGMENT=BOTH		Sequence 1-4 Non-Int in Visit 08	1200 Secs (1072 Secs) *[==>1072.0 Secs]*	*[1]*

Orbit Structure