17140 - Toward an observational test of the Lambda CDM hierarchical paradigm at the smallest galaxy scales

Cycle: 30, 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	(3) MRK-178	ACS/WFC	3	18-Oct-2022 10:02:43.0	yes
02	(3) MRK-178	ACS/WFC	3	18-Oct-2022 10:02:44.0	yes
03	(3) MRK-178	ACS/WFC	3	18-Oct-2022 10:02:46.0	yes
04	(1) UGC-8760-POINT1	ACS/WFC	1	18-Oct-2022 10:02:47.0	yes
05	(1) UGC-8760-POINT1	ACS/WFC	2	18-Oct-2022 10:02:48.0	yes
06	(2) UGC-8760-POINT2	ACS/WFC	1	18-Oct-2022 10:02:48.0	yes
07	(2) UGC-8760-POINT2	ACS/WFC	2	18-Oct-2022 10:02:49.0	yes
08	(2) UGC-8760-POINT2	ACS/WFC	1	18-Oct-2022 10:02:50.0	yes
09	(4) NGC-5238-P1	ACS/WFC	3	18-Oct-2022 10:02:51.0	yes
10	(4) NGC-5238-P1	ACS/WFC	3	18-Oct-2022 10:02:53.0	yes
11	(4) NGC-5238-P1	ACS/WFC	2	18-Oct-2022 10:02:54.0	yes
12	(5) NGC-5238-P2	ACS/WFC	3	18-Oct-2022 10:02:56.0	yes
13	(5) NGC-5238-P2	ACS/WFC	3	18-Oct-2022 10:02:57.0	yes
14	(5) NGC-5238-P2	ACS/WFC	2	18-Oct-2022 10:02:58.0	yes

32 Total Orbits Used

ABSTRACT

Deep, wide-field ground-based imaging has led to the discovery of low-surface brightness tidal features around three small dwarf galaxies (with stellar masses between 10^7 and 10^8 Msun) at distances between 3 and 4 Mpc: UGC 8760, UGC 6541, and NGC 5238. The three galaxies are isolated, without any identifiable companion that could cause the observed tidal disturbances. Of 45 dwarf galaxies imaged to comparable depth, they are the only strong candidates of dwarfs in the process of accreting smaller satellites, thus a signature of hierarchical structure assembly on the smallest scales. Remarkably, direct evidence of satellite accretion has so far been observed in dwarfs typically more massive than these. Preliminary N-body hydrodynamical simulations suggest that the merger events occurred no longer than ~1 Gyr ago.

To confirm this hypothesis, we propose new deep ACS imaging in V and I that will enable the characterization of the stellar populations of the host dwarfs and of their satellites' remnants, and to infer their detailed star formation history (SFH) over the last ~1 Gyr. Analysis of these new data will

potentially reveal the presence of starbursts triggered by pericenter passages during the interaction. Together with the galaxy kinematical properties, the SFHs will provide a crucial ingredient for N-body hydrodynamical simulations aimed at reconstructing the properties of the dwarf progenitors and their merging history. Ultimately, these results will be compared with cosmological simulations that predict the satellite population around dwarf galaxies of different masses, providing a first test of the Lambda CDM hierarchical paradigm at the smallest galaxy scales.

OBSERVING DESCRIPTION

We will observe three dwarf irregular galaxies: Mrk 178, UGC-8760, and NGC-5238. For Mrk 178, one ACS pointing is sufficient to cover the whole galaxy. For UGC-8760, and NGC-5238, two pointings are needed for each galaxy.

Mrk178: Three visits, Mrk178_vis01_V, Mrk178_vis02_I and Mrk178_vis03_I are planned for this galaxy.

Mrk178_vis01_V extends for 3 orbits. We will perform exposures in F606W with ACS/WFC. Sub-exposures of ~550 s each will be performed according to a primary 3-point dither-line pattern (to fill the gap between the ACS detectors) coupled with a 4 point-box sub-dither (to improve PSF sampling), for a total of 12 sub-exposures. All chosen dither types are the defauld "convenience" patterns for ACS/WFC.
We constrain the orientation angle to be in the range 260-280 degrees. This choice allows for an optimal coverage of both the galaxy and the extended low surface brightness regions, while maximizing schedulability.

Mrk178_vis02_I and Mrk178_vis03_I adopt the same strategy as Mrk178_vis01_V, except for the F814W filter.
We need twice as long exposure time in I than in V to reach the required depth. This implies 6 orbits in total in I, which are splitted into 2 separate visits (vis02 and vis03). We require the same orient as for visit 01, in order to have coverage of the observed sources in both V and I.

UGC8760_P1 s observed in two separate visits: UGC8760_P1_vis04_V and UGC8760_P1_vis05_I.
Vis04 lasts for 1 orbit and vis05 for 2 orbits. We use the F606W filter in vis04 and F814W in vis05.
We adopt a dither-line pattern with 5 points spaced by 0.7585 arcsec. The total offest from point 1 to point 5 equals the offset of 3.034 of the convenience ACS/WFC dither line pattern typically used to fill the gap between the detectors. We selected 2 ranges of orients that avoid the gap to fall on the low surface brightness features.

UGC8760_P2 is observed in 3 visits. UGC8760_P2_vis06_V is the same as vis04 except for a pointing shift.
UGC8760_P2_vis07_I is the same as vis05 except for a pointing shift. UGC8760_P2_VIS08_VI lasts for 1 orbit and we perform both F606W and F814W observations, each with a half orbit duration. We choose a convenience 2 point dither-line pattern optimized for ACS/WFC. Thus we have 2 sub-exposures in V and 2 in I. we request the same orient of visit 07 qnd 08.

NGC5238-P1 is observed in 3 visits. NGC5238-P1_vis09_V performs observations in F606W and lasts for 3 orbits. We adopt a 3 point - line primary dither pattern coupled with a 4 point box dither, for a total of 12 sub-exposures. The adopted dither patterns are the convenience ones for ACS/WFC.
Orient ranges are chosen to avoid the gap to fall on the low surface brightness structure to the south.
NGC5238-P1_vis10_I is the same as visti 09 except that observations are done in F814W.
We request the same orient as visit 09.
NGC5238-P1_vis11_I is the as same as visit 10, except that we adopt a 2 point line primary dither coupled with a 4 point box secondary dither, for a total of 8 exposures in 2 orbits.

For NGC5238-P2, the observation strategy is the same as for NGC5238-P1.

For all three targets, but particularly for Mrk178, the orient constraints translate into limited visibility.
Therefore any reduction of the visibility windows from a reduced gyro operations could highly affect the possibility of completing this project.

Visit

Proposal 17140, Mrk178_vis01_V (01), implementation Tue Oct 18 14:02:59 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 260D TO 280 D

Comments: This visit extends for 3 orbits. We will perform exposures in F606W with ACS/WFC. The individual sub-exposures of ~550 s each will be performed according to a primary 3-point dither-line pattern (to fill the gap between the ACS detectors) coupled with a 4 point-box sub-dither (to improve PSF sampling), for a total of 12 sub-exposures. All chosen dither types are the defauld "convenience" patterns for ACS/WFC. We constrain the orientation angle to be in the range 260-280 degrees. This choice allows for an optimal coverage of both the galaxy and the extended low surface brightness regions, while maximizing schedulability.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=true	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.2637 Line Spacing=0.1856	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.02 Center Pattern=false	(1)

Fixed Targets

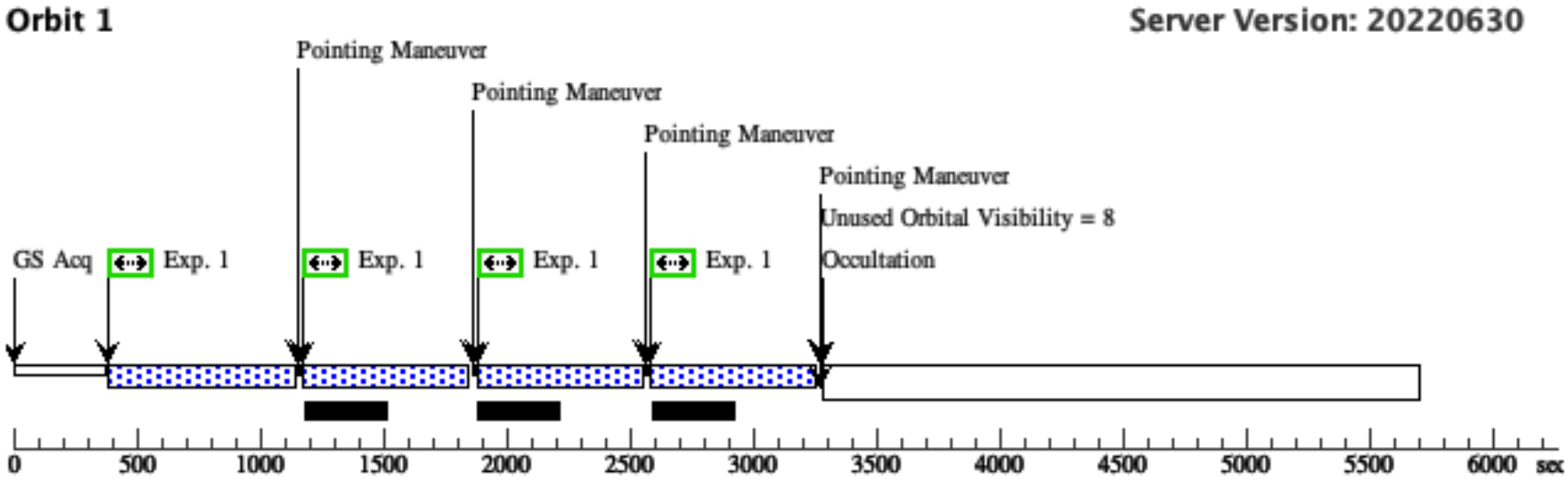
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	MRK-178 Alt Name1: UGC6541	RA: 11 33 28.7981 (173.3699921d) Dec: +49 14 12.01 (49.23667d) Equinox: J2000	Epoch of Position: 2015.5	V=14.3	Reference Frame: SIMBAD

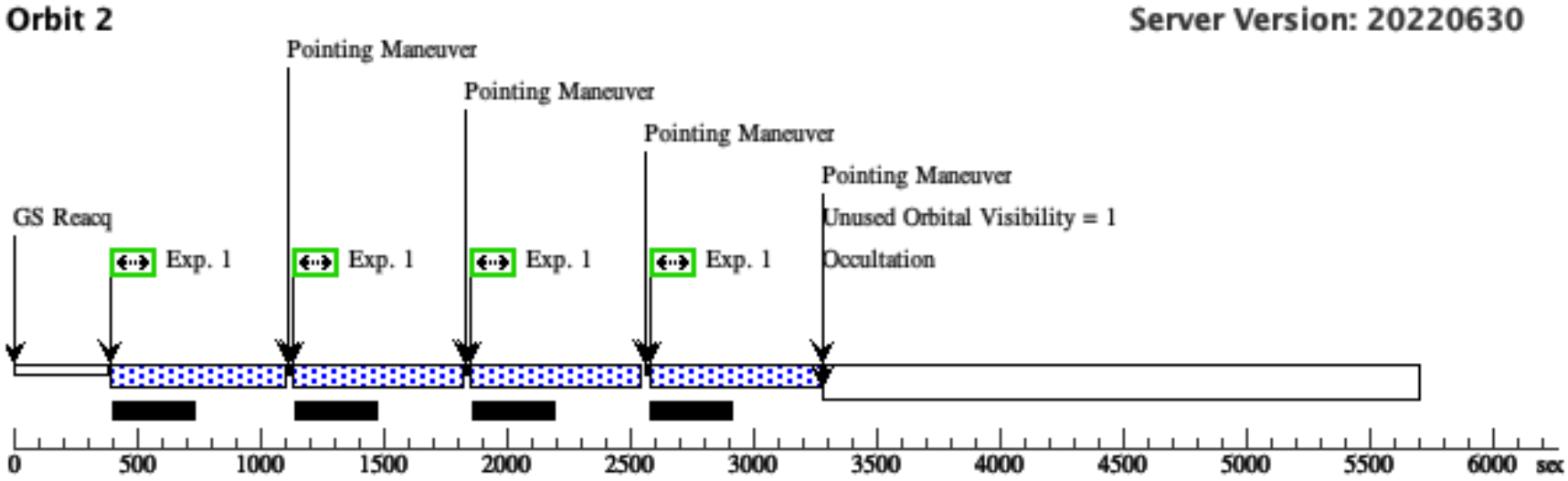
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]

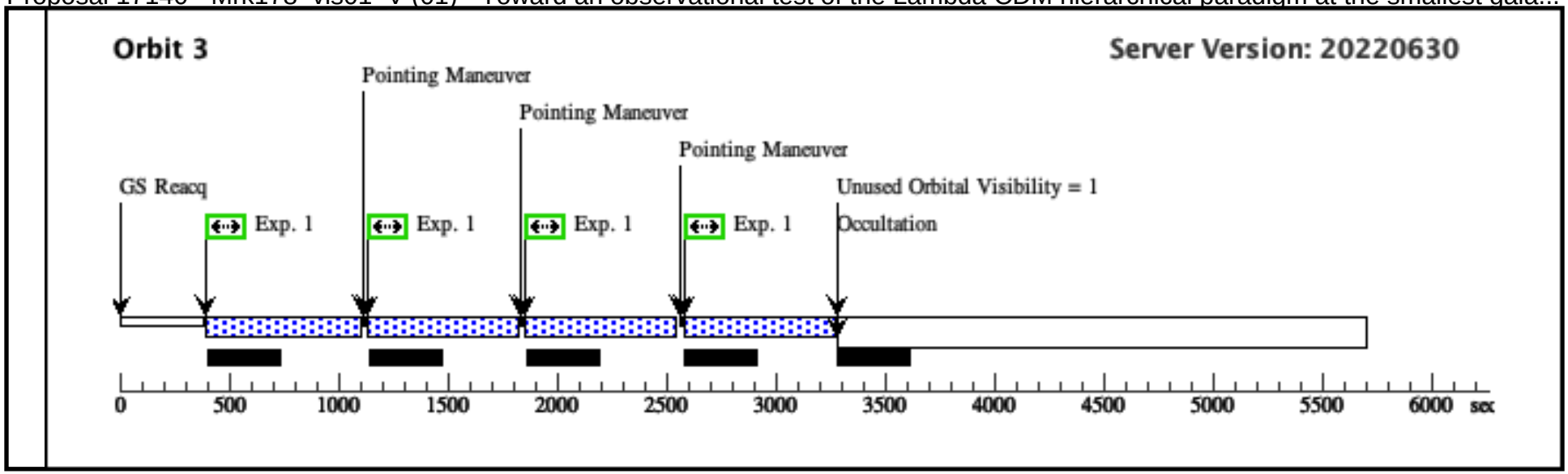
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) MRK-178	ACS/WFC, ACCUM, WFC	F606W			Pattern 1, Exps 1-1 in Mrk178_vis01_V (01) (1)	550 Secs (6760 Secs)	
								[==>(Pattern 1,1)] *[==>(Pattern 1,2)]* *[==>(Pattern 1,3)]* *[==>(Pattern 1,4)]*	***[1]***
								[==>585.0 Secs (Pattern 2,1)] *[==>565.0 Secs (Pattern 2,2)]* *[==>565.0 Secs (Pattern 2,3)]* *[==>565.0 Secs (Pattern 2,4)]*	***[2]***
								[==>585.0 Secs (Pattern 3,1)] *[==>565.0 Secs (Pattern 3,2)]* *[==>565.0 Secs (Pattern 3,3)]* *[==>565.0 Secs (Pattern 3,4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20220630
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Unused Orbital Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 17140, Mrk178_vis02_I (02), implementation Tue Oct 18 14:02:59 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 01

Comments: The observation strategy is the same as for visit 01, excpet for the choice of the F814W filter.
We need twice as long exposure time in I than in V to reach the required depth. This implies 6 orbits in total in I, which are splitted into 2 separate visits (vis02 and vis03).
We require the same orient as for visit 01, in order to have coverage of the observed sources in both V and I.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=true	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.2637 Line Spacing=0.1856	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.02 Center Pattern=false	(1)

Fixed Targets

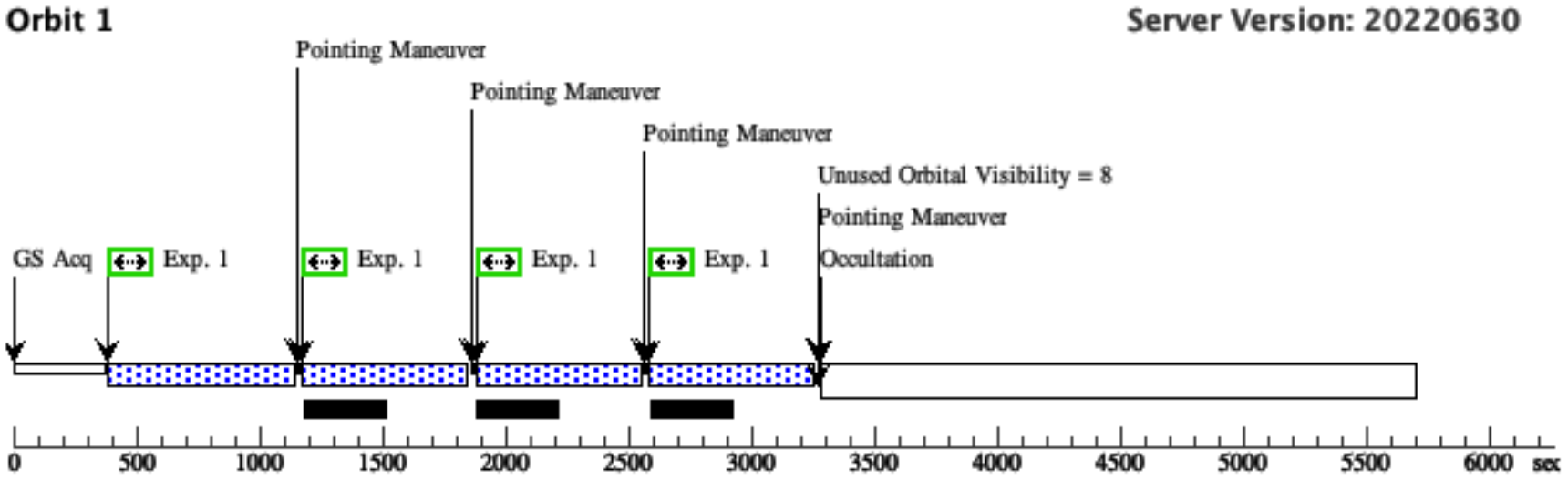
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	MRK-178 Alt Name1: UGC6541	RA: 11 33 28.7981 (173.3699921d) Dec: +49 14 12.01 (49.23667d) Equinox: J2000	Epoch of Position: 2015.5	V=14.3	Reference Frame: SIMBAD

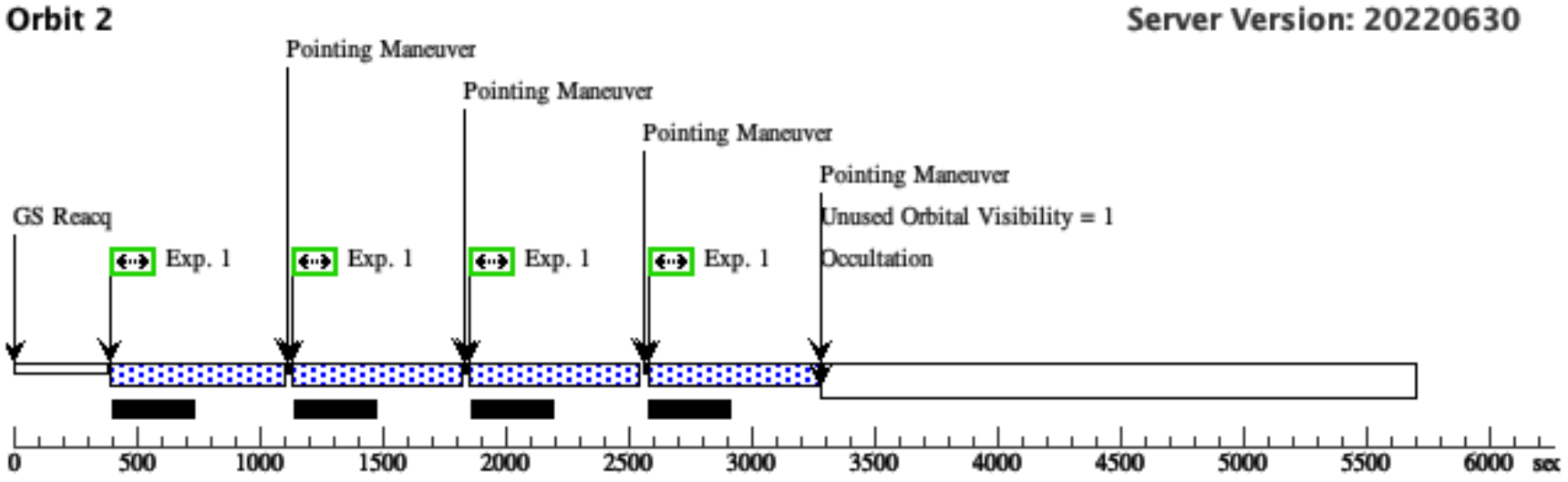
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]

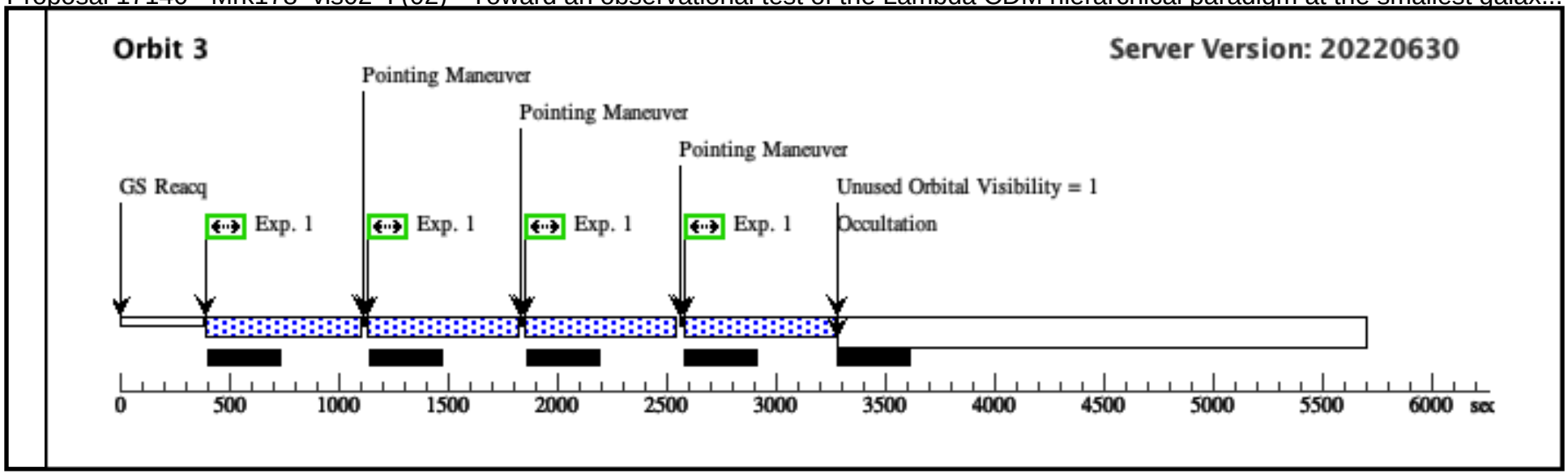
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) MRK-178	ACS/WFC, ACCUM, WFC	F814W			Pattern 1, Exps 1-1 in Mrk178_vis02_I (02) (1)	550 Secs (6760 Secs)	
								[==>(Pattern 1,1)] *[==>(Pattern 1,2)]* *[==>(Pattern 1,3)]* *[==>(Pattern 1,4)]*	***[1]***
								[==>585.0 Secs (Pattern 2,1)] *[==>565.0 Secs (Pattern 2,2)]* *[==>565.0 Secs (Pattern 2,3)]* *[==>565.0 Secs (Pattern 2,4)]*	***[2]***
								[==>585.0 Secs (Pattern 3,1)] *[==>565.0 Secs (Pattern 3,2)]* *[==>565.0 Secs (Pattern 3,3)]* *[==>565.0 Secs (Pattern 3,4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20220630
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Unused Orbital Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 17140, Mrk178_vis03_I (03), implementation Tue Oct 18 14:02:59 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 02

Comments: See comments for Mrk178_vis02_I.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=true	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.2637 Line Spacing=0.1856	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.02 Center Pattern=false	(1)

Fixed Targets

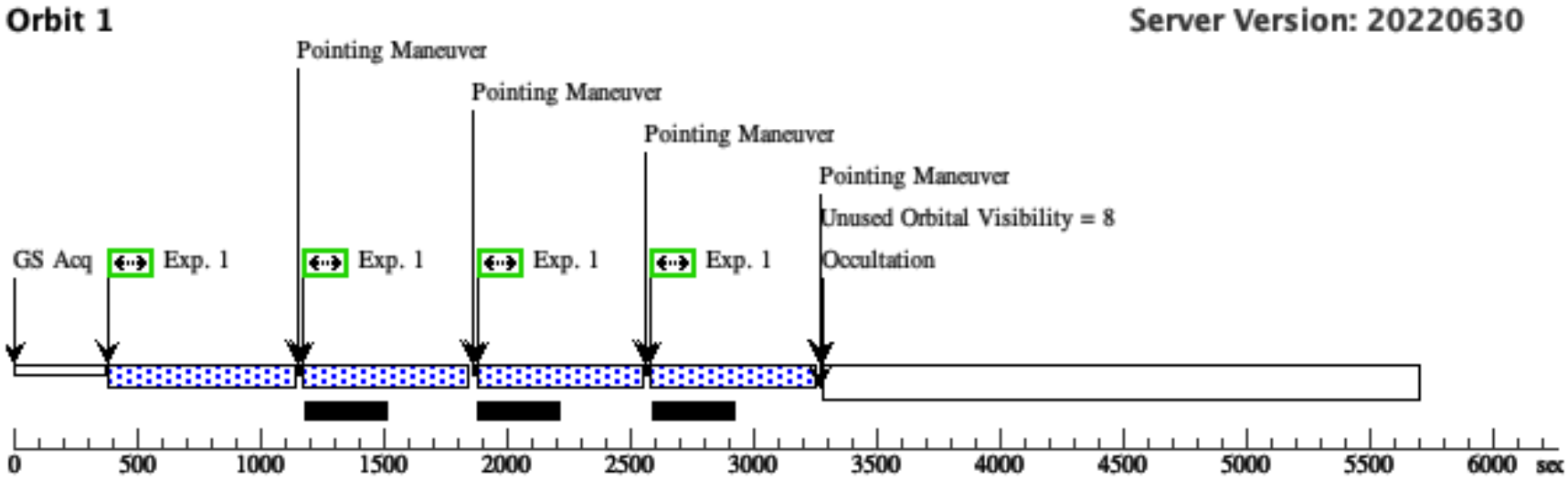
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	MRK-178 Alt Name1: UGC6541	RA: 11 33 28.7981 (173.3699921d) Dec: +49 14 12.01 (49.23667d) Equinox: J2000	Epoch of Position: 2015.5	V=14.3	Reference Frame: SIMBAD

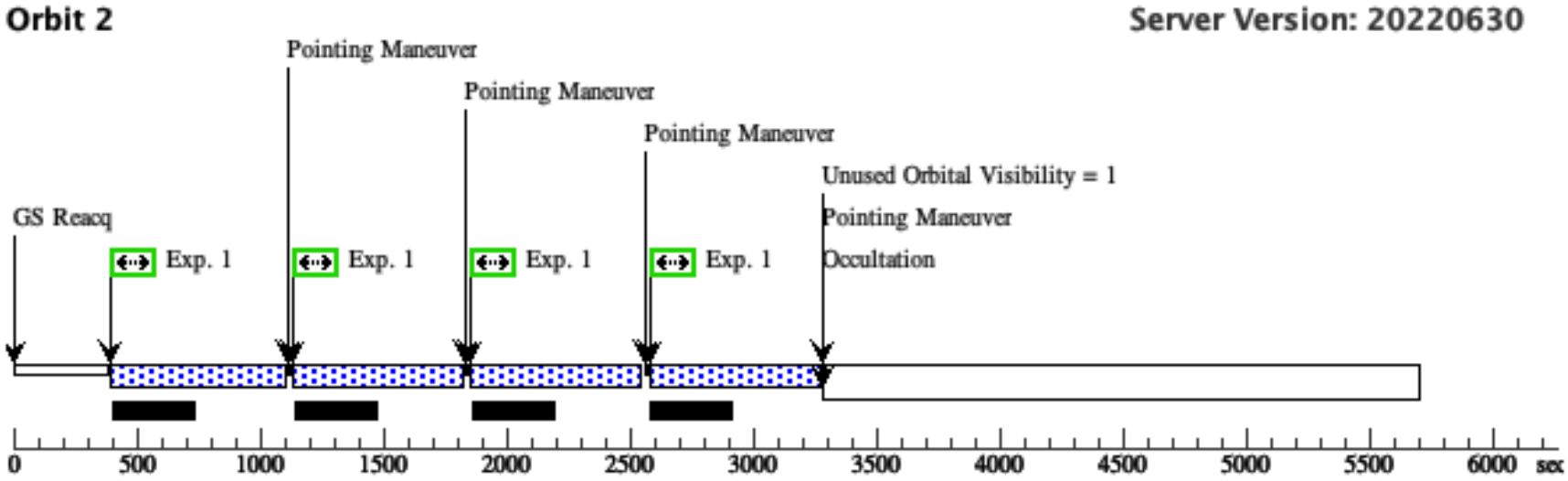
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]

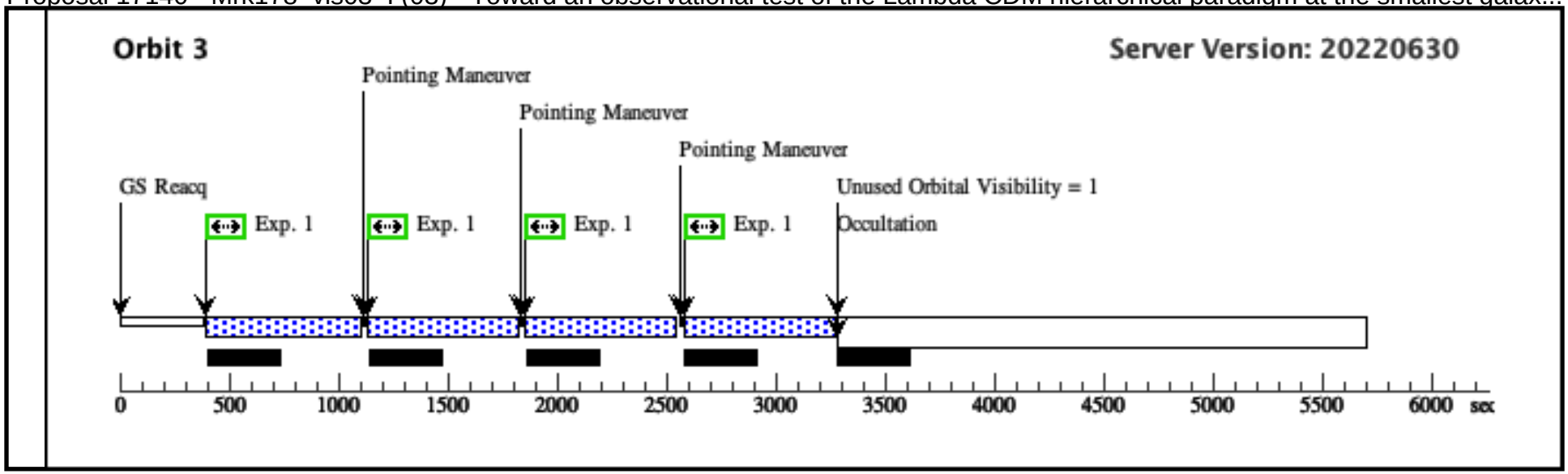
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) MRK-178	ACS/WFC, ACCUM, WFC	F814W			Pattern 1, Exps 1-1 in Mrk178_vis03_I (03) (1)	550 Secs (6760 Secs)	
								[==>(Pattern 1,1)] *[==>(Pattern 1,2)]* *[==>(Pattern 1,3)]* *[==>(Pattern 1,4)]*	***[1]***
								[==>585.0 Secs (Pattern 2,1)] *[==>565.0 Secs (Pattern 2,2)]* *[==>565.0 Secs (Pattern 2,3)]* *[==>565.0 Secs (Pattern 2,4)]*	***[2]***
								[==>585.0 Secs (Pattern 3,1)] *[==>565.0 Secs (Pattern 3,2)]* *[==>565.0 Secs (Pattern 3,3)]* *[==>565.0 Secs (Pattern 3,4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20220630
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Unused Orbital Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 17140, UGC8760_P1_vis04_V (04), implementation Tue Oct 18 14:02:59 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 171D TO 285 D; ORIENT 327D TO 100 D

Comments: This visit lasts for 1 orbit and performs observations of UGC8760 with ACS/WFC in F606W.
We have adopted a dither-line pattern with 5 points spaced by 0.7585 arcsec. The total offest from point 1 to point 5 equals the offset of 3.034 of the convenience ACS/WFC dither line pattern typically used to fill the gap between the detectors.
We have 5 exposures of ~390 sec each, for a total exposure time of ~1960 sec in F606W.
We selected 2 ranges of orients that optimize galaxy coverage.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=5 Point Spacing=0.7585 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

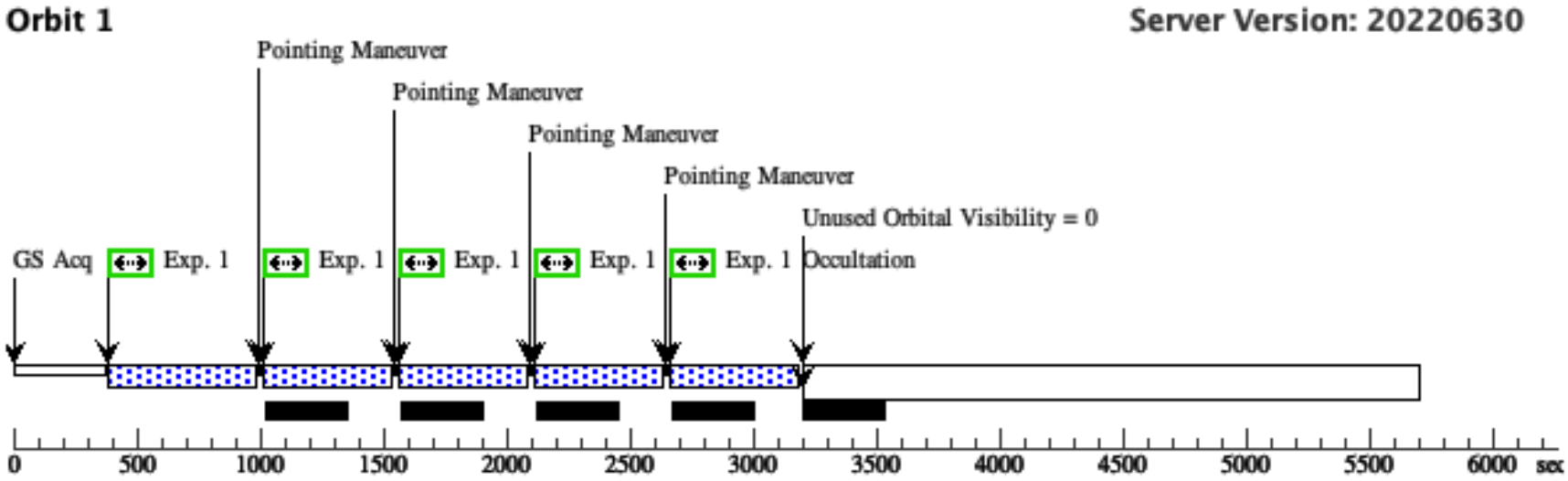
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	UGC-8760-POINT1	RA: 13 50 48.4174 (207.7017392d) Dec: +38 00 51.54 (38.01432d) Equinox: J2000	Proper Motion RA: 1.0011166375183201E-4 sec of time/yr Proper Motion Dec: -4.859999762629741E-4 arcsec/yr Epoch of Position: 2015.5	V=13.77	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]
Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) UGC-8760-POINT1	ACS/WFC, ACCUM, WFC	F606W			Pattern 2, Exps 1-1 in UGC8760_P1_vis04_V (04) (2)	340 Secs (1965 Secs) *[==>393.0 Secs (Pattern 1)]* *[==>393.0 Secs (Pattern 2)]* *[==>393.0 Secs (Pattern 3)]* *[==>393.0 Secs (Pattern 4)]* *[==>393.0 Secs (Pattern 5)]*	***[1]***

Orbit Structure



Visit

Proposal 17140, UGC8760_P1_vis05_I (05), implementation Tue Oct 18 14:02:59 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 04

Comments: This visit lasts for 2 orbits and performs observations of UGC8760 with ACS/WFC in F814W.
Same as for visit 4, we have adopted a dither-line pattern with 5 points spaced by 0.7585 arcsec. The total offest from point 1 to point 5 equals the offset of 3.034 of the convenience ACS/WFC dither line pattern typically used to fill the gap between the detectors.
We have in total 10 exposures of ~390 sec each, for a total exposure time of ~4000 sec in F814W.
We request the orient to be the same as for visit 04

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=5 Point Spacing=0.7585 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false		(1-2)

Fixed Targets

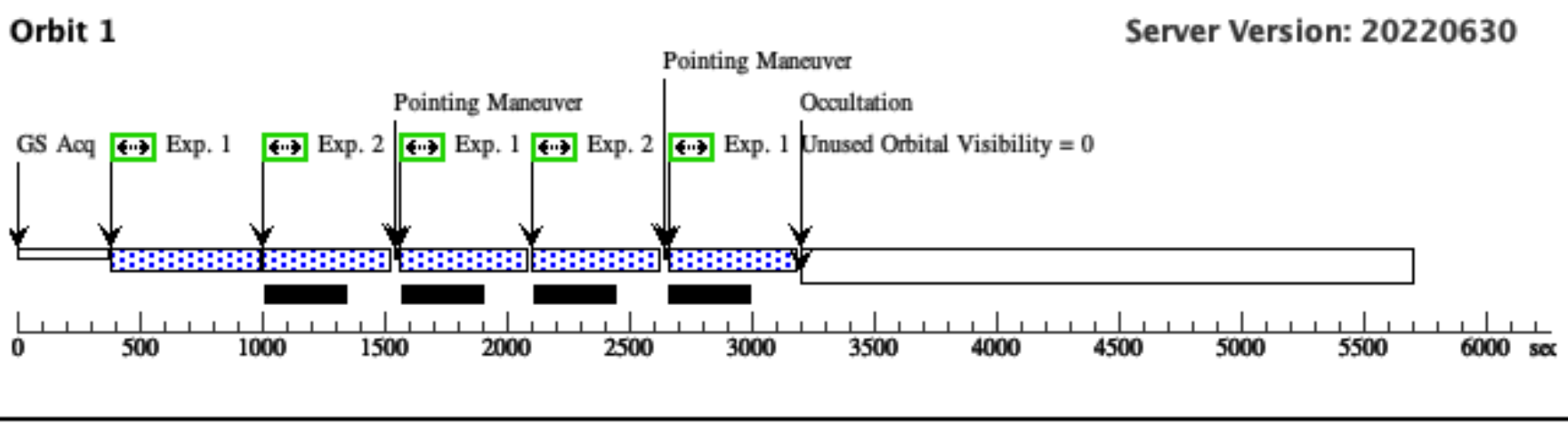
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	UGC-8760-POINT1	RA: 13 50 48.4174 (207.7017392d) Dec: +38 00 51.54 (38.01432d) Equinox: J2000	Proper Motion RA: 1.0011166375183201E-4 sec of time/yr Proper Motion Dec: -4.859999762629741E-4 arcsec/yr Epoch of Position: 2015.5	V=13.77	Reference Frame: SIMBAD

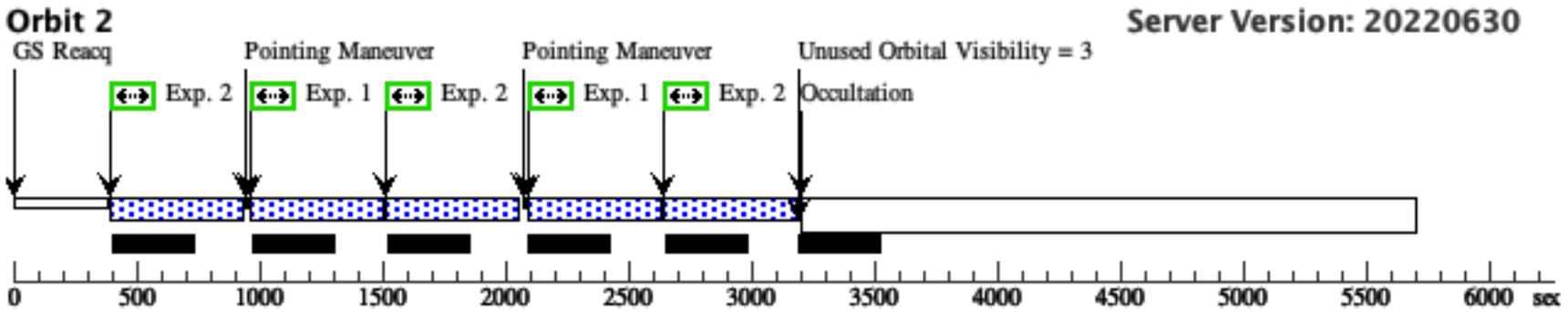
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]
Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) UGC-8760-POINT1	ACS/WFC, ACCUM, WFC	F814W			Pattern 2, Exps 1-2 in UGC8760_P1_vis05_I (05) (2)	340 Secs (2033 Secs)	
								[==>401.0 Secs (Pattern 1)]	***[1]***
								[==>401.0 Secs (Pattern 2)]	
								[==>401.0 Secs (Pattern 3)]	
								[==>415.0 Secs (Pattern 4)]	***[2]***
								[==>415.0 Secs (Pattern 5)]	
2		(1) UGC-8760-POINT1	ACS/WFC, ACCUM, WFC	F814W			Pattern 2, Exps 1-2 in UGC8760_P1_vis05_I (05) (2)	340 Secs (2047 Secs)	
								[==>401.0 Secs (Pattern 1)]	***[1]***
								[==>401.0 Secs (Pattern 2)]	
								[==>415.0 Secs (Pattern 3)]	
								[==>415.0 Secs (Pattern 4)]	***[2]***
								[==>415.0 Secs (Pattern 5)]	

Orbit Structure





Visit

Proposal 17140, UGC8760_P2_vis06_V (06), implementation Tue Oct 18 14:02:59 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 04

Comments: This visit is the same as vis04 except for a pointing shift aimed at observing the low surface brightness tail to the north of UGC 8760.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=5 Point Spacing=0.7585 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

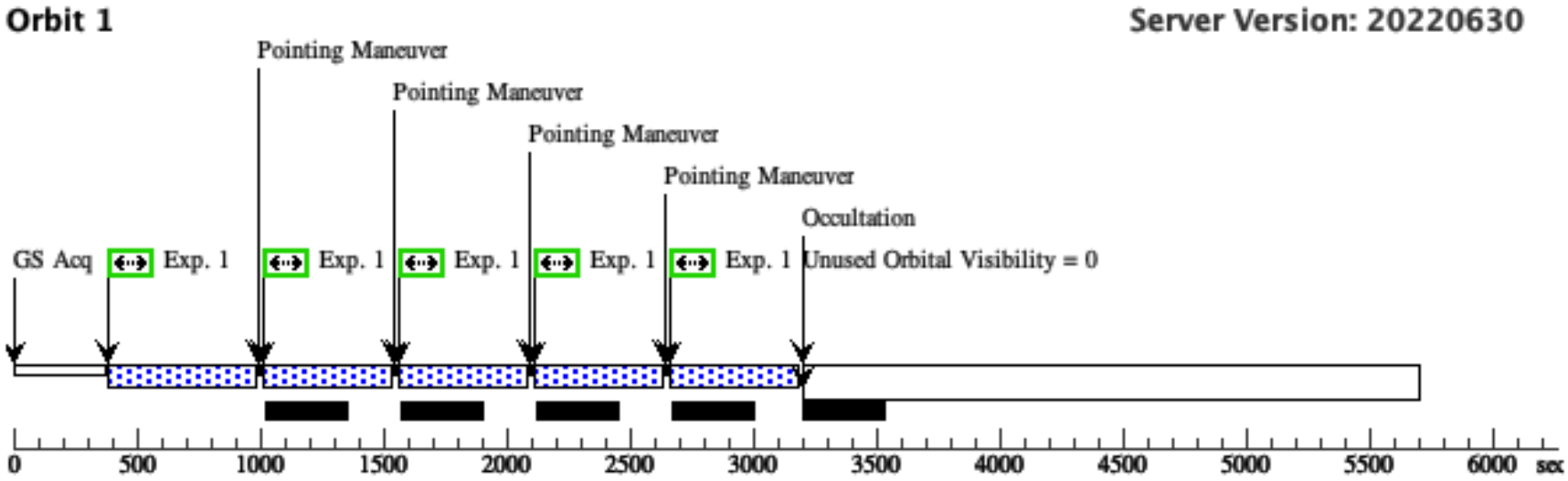
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	UGC-8760-POINT2	RA: 13 50 56.7279 (207.7363663d) Dec: +38 02 50.41 (38.04734d) Equinox: J2000	Proper Motion RA: 1.0011166375183201E-4 sec of time/yr Proper Motion Dec: -4.859999762629741E-4 arcsec/yr Epoch of Position: 2015.5	V=13.77	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]
Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) UGC-8760-POINT2	ACS/WFC, ACCUM, WFC	F606W			Pattern 2, Exps 1-1 in UGC8760_P2_vis06_V (06) (2)	350 Secs (1965 Secs) *[==>393.0 Secs (Pattern 1)]* *[==>393.0 Secs (Pattern 2)]* *[==>393.0 Secs (Pattern 3)]* *[==>393.0 Secs (Pattern 4)]* *[==>393.0 Secs (Pattern 5)]*	***[1]***

Orbit Structure



Visit

Proposal 17140, UGC8760_P2_vis07_I (07), implementation Tue Oct 18 14:02:59 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 04

Comments: This visit is the same as vis05 except for a pointing shift aimed at observing the low surface brightness tail to the north of UGC 8760. It covers 2 orbits and performs observations in F814W.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=5 Point Spacing=0.7585 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false		(1-2)

Fixed Targets

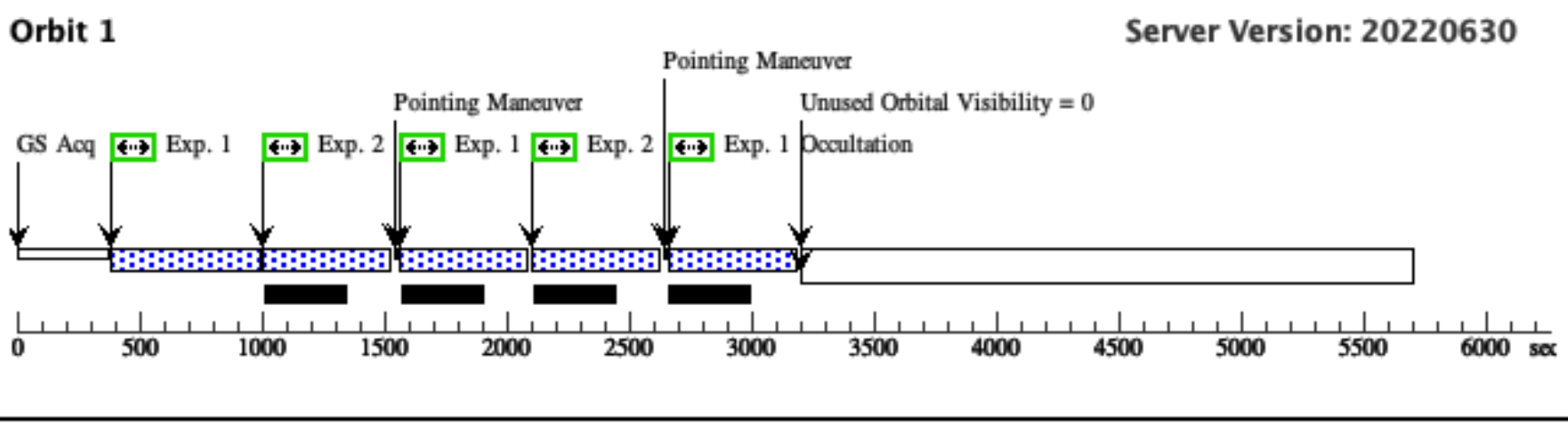
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	UGC-8760-POINT2	RA: 13 50 56.7279 (207.7363663d) Dec: +38 02 50.41 (38.04734d) Equinox: J2000	Proper Motion RA: 1.0011166375183201E-4 sec of time/yr Proper Motion Dec: -4.859999762629741E-4 arcsec/yr Epoch of Position: 2015.5	V=13.77	Reference Frame: SIMBAD

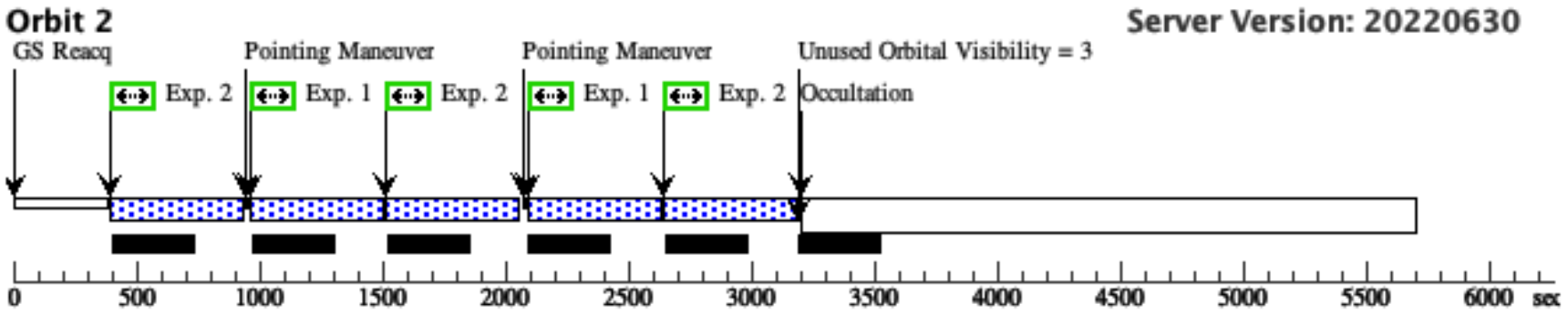
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]
Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) UGC-8760-POINT2	ACS/WFC, ACCUM, WFC	F814W			Pattern 2, Exps 1-2 in UGC8760_P2_vis07_I (07) (2)	350 Secs (2033 Secs)	
								[==>401.0 Secs (Pattern 1)]	***[1]***
								[==>401.0 Secs (Pattern 2)]	
								[==>401.0 Secs (Pattern 3)]	
								[==>415.0 Secs (Pattern 4)]	***[2]***
								[==>415.0 Secs (Pattern 5)]	
2		(2) UGC-8760-POINT2	ACS/WFC, ACCUM, WFC	F814W			Pattern 2, Exps 1-2 in UGC8760_P2_vis07_I (07) (2)	350 Secs (2047 Secs)	
								[==>401.0 Secs (Pattern 1)]	***[1]***
								[==>401.0 Secs (Pattern 2)]	
								[==>415.0 Secs (Pattern 3)]	
								[==>415.0 Secs (Pattern 4)]	***[2]***
								[==>415.0 Secs (Pattern 5)]	

Orbit Structure





Visit

Proposal 17140, UGC8760_P2_VIS08_VI (08), implementation Tue Oct 18 14:02:59 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 07

Comments: This visit lasts 1 orbit and we perform both F606W and F814W observations, each with a half orbit duration. We choose a convenience 2 point dither-line pattern optimized for ACS/WFC. Thus we have 2 sub-exposures in V and 2 in I. we request the same orient of visit 07 qnd 08.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(3)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

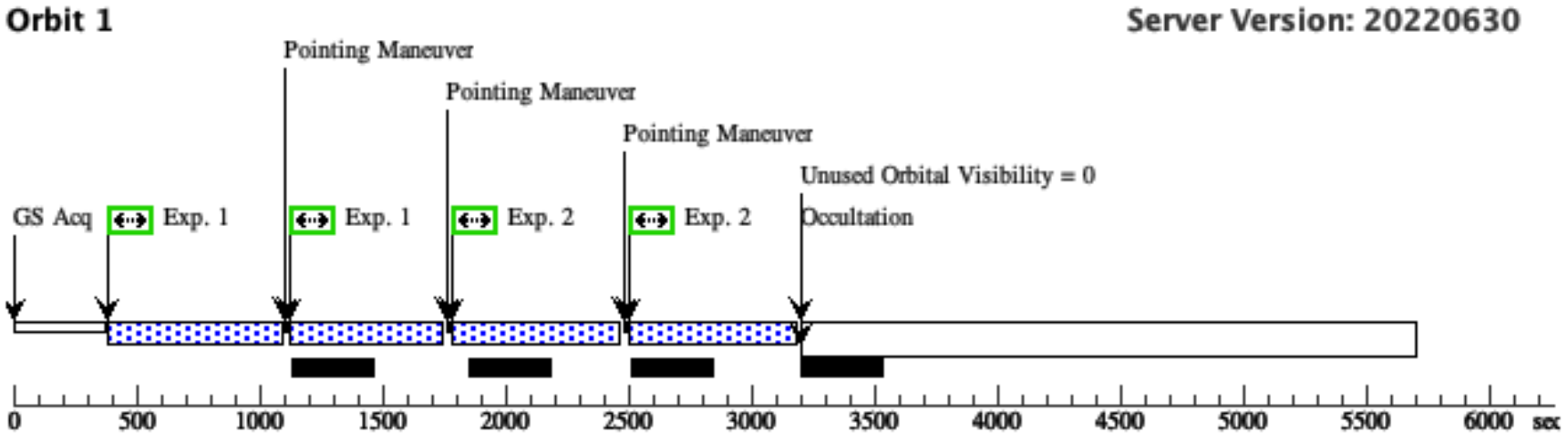
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	UGC-8760-POINT2	RA: 13 50 56.7279 (207.7363663d) Dec: +38 02 50.41 (38.04734d) Equinox: J2000	Proper Motion RA: 1.0011166375183201E-4 sec of time/yr Proper Motion Dec: -4.859999762629741E-4 arcsec/yr Epoch of Position: 2015.5	V=13.77	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]
Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) UGC-8760-POINT2	ACS/WFC, ACCUM, WFC	F606W			Pattern 3, Exps 1-1 in UGC8760_P2_VIS08_VI (08) (3)	500 Secs (1000 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	*[1]*
2		(2) UGC-8760-POINT2	ACS/WFC, ACCUM, WFC	F814W			Pattern 3, Exps 2-2 in UGC8760_P2_VIS08_VI (08) (3)	500 Secs (1056 Secs) *[==>(Pattern 1)]* *[==>556.0 Secs (Pattern 2)]*	*[1]*

Orbit Structure



Visit

Proposal 17140, NGC5238-P1_vis09_V (09), implementation Tue Oct 18 14:03:00 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 350D TO 30 D; ORIENT 145D TO 215 D

Comments: This visit lasts for 3 orbits and performs observations of the central region of NGC5238 in V.
We adopt a 3 point - line primary dither pattern coupled to a 4 point box dither, for a total of 8 sub-exposures. The adopted dither patterns are the convenience ones for ACS/WFC.
Within 3 orbits, we perform a total of 12 exposures in V.
Orient ranges are chosen to avoid the gap to fall on the low surface brightness structure to the south.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=true	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.2637 Line Spacing=0.1856	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.02 Center Pattern=false	(1)

Fixed Targets

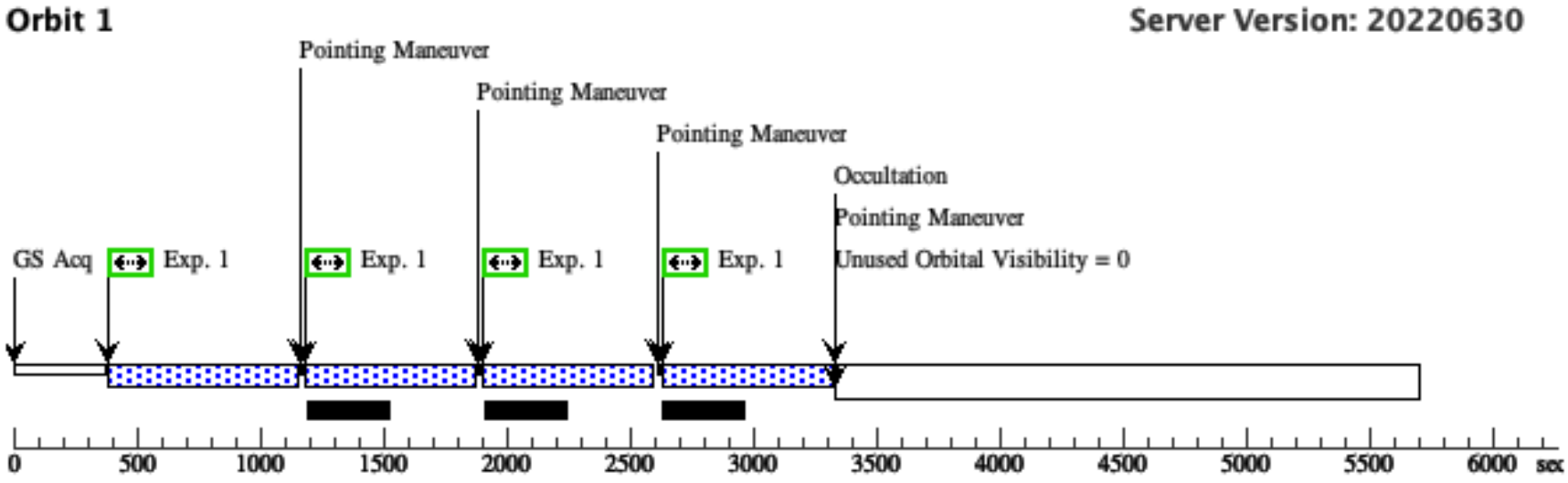
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	NGC-5238-P1	RA: 13 34 43.0965 (203.6795687d) Dec: +51 35 57.82 (51.59939d) Equinox: J2000	Proper Motion RA: -7.085791625616834E-6 sec of time/yr Proper Motion Dec: -1.2500004231696948E-4 arcsec/yr Epoch of Position: 2015.5	V=13.2	Reference Frame: SIMBAD

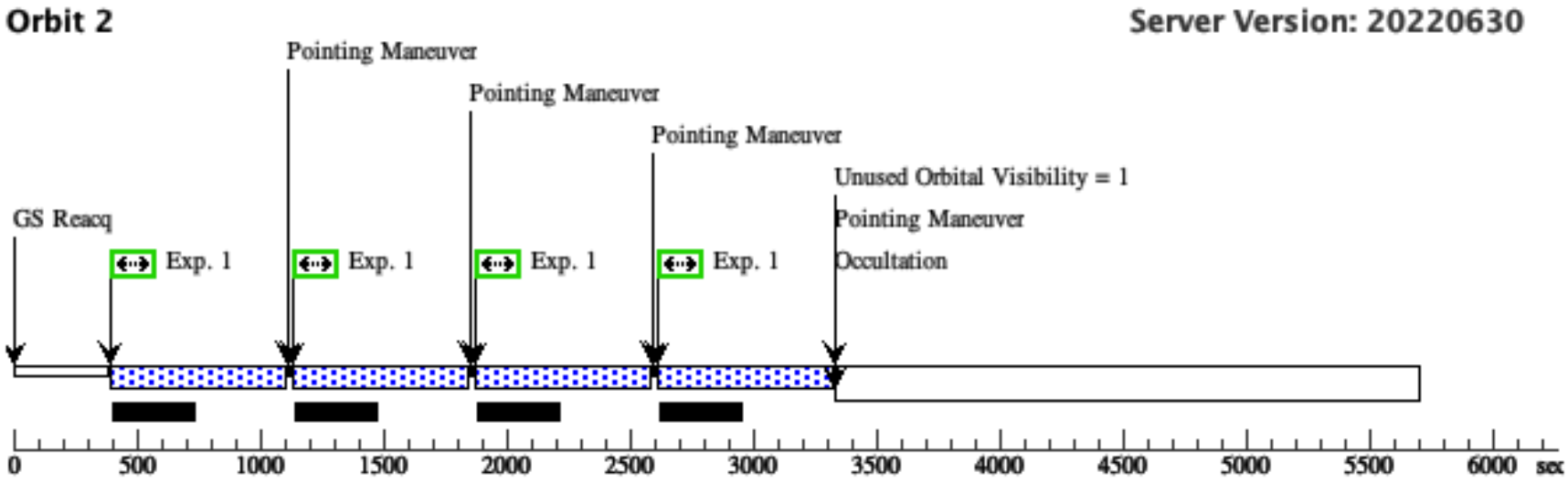
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]

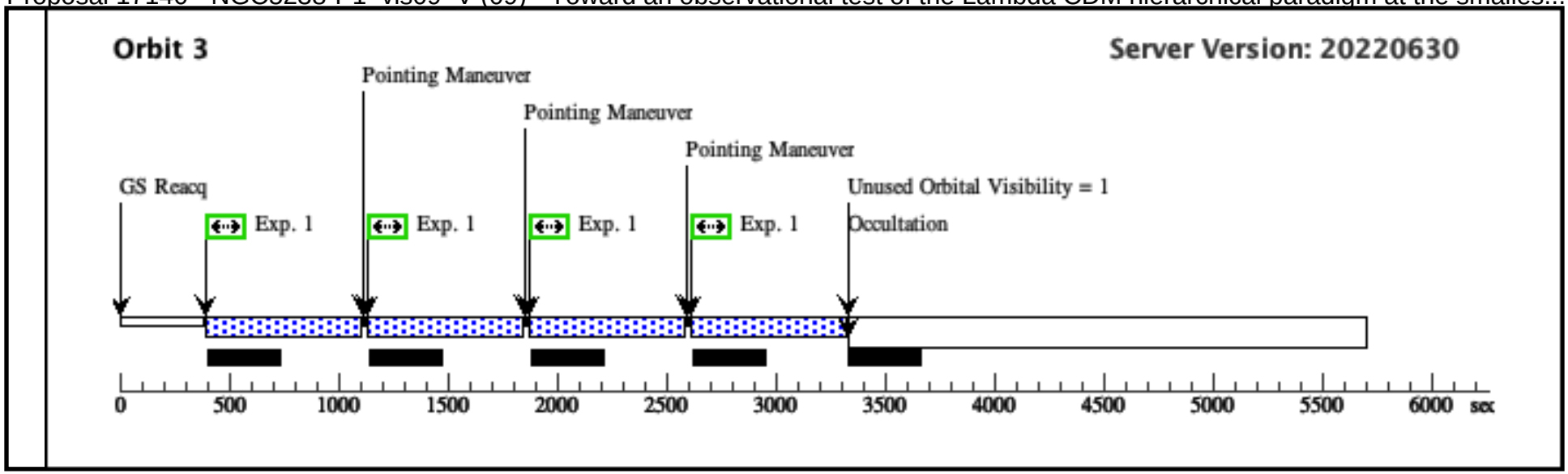
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) NGC-5238-P1	ACS/WFC, ACCUM, WFC	F606W			Pattern 1, Exps 1-1 in NGC5238-P1_vis09_V (09) (1)	550 Secs (6912 Secs)	
								[==>564.0 Secs (Pattern 1,1)]	***[1]***
								[==>564.0 Secs (Pattern 1,2)]	
								[==>564.0 Secs (Pattern 1,3)]	
								[==>564.0 Secs (Pattern 1,4)]	
								[==>582.0 Secs (Pattern 2,1)]	***[2]***
								[==>582.0 Secs (Pattern 2,2)]	
								[==>582.0 Secs (Pattern 2,3)]	
								[==>582.0 Secs (Pattern 2,4)]	
								[==>582.0 Secs (Pattern 3,1)]	***[3]***
								[==>582.0 Secs (Pattern 3,2)]	
								[==>582.0 Secs (Pattern 3,3)]	
								[==>582.0 Secs (Pattern 3,4)]	

Orbit Structure






Orbit 3
Server Version: 20220630
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Unused Orbital Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 17140, NGC5238-P1_vis10_I (10), implementation Tue Oct 18 14:03:00 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 09

Comments: Same as visti 09 except that observations are done in F814W.
We request the same orient as visit 09.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=true	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.2637 Line Spacing=0.1856	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.02 Center Pattern=false	(1)

Fixed Targets

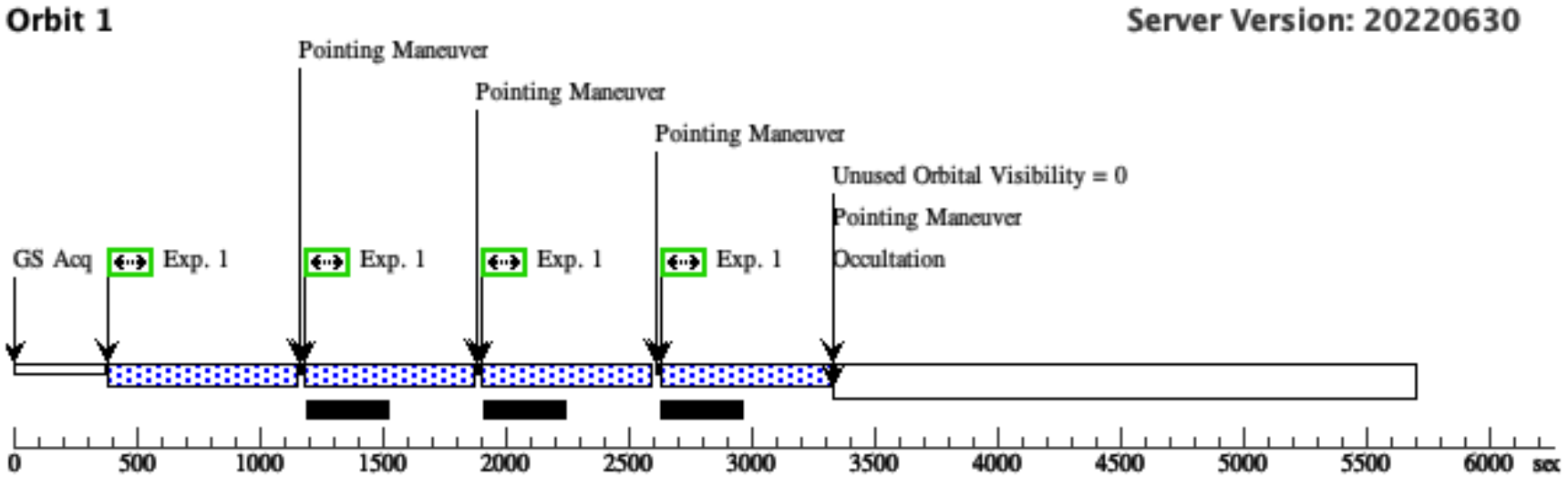
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	NGC-5238-P1	RA: 13 34 43.0965 (203.6795687d) Dec: +51 35 57.82 (51.59939d) Equinox: J2000	Proper Motion RA: -7.085791625616834E-6 sec of time/yr Proper Motion Dec: -1.2500004231696948E-4 arcsec/yr Epoch of Position: 2015.5	V=13.2	Reference Frame: SIMBAD

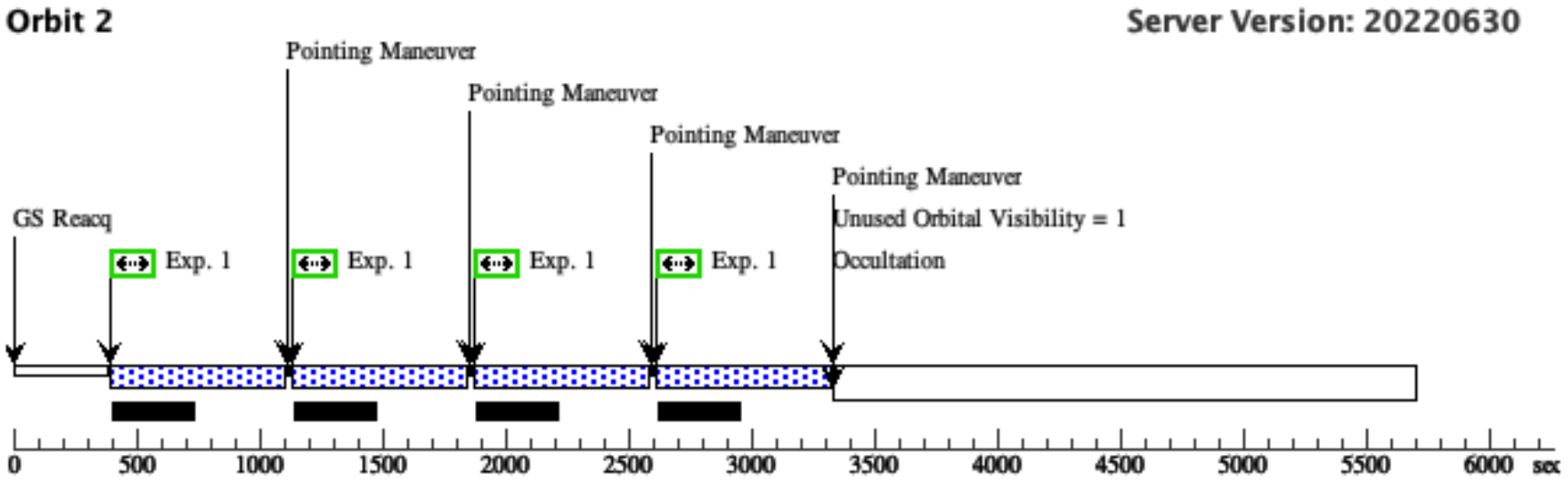
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]

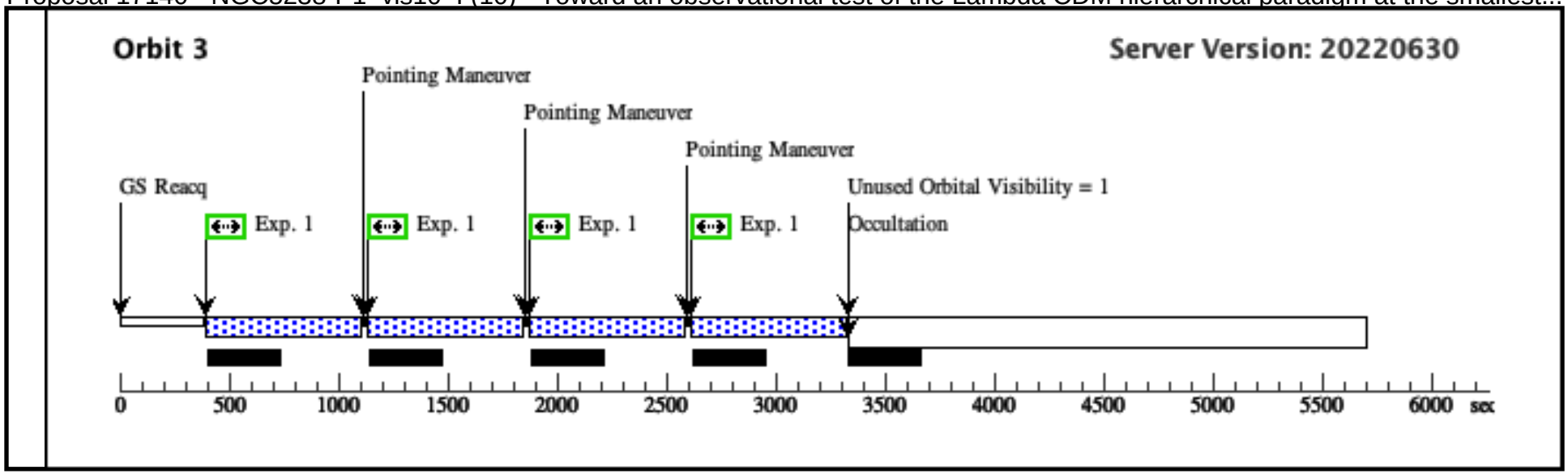
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) NGC-5238-P1	ACS/WFC, ACCUM, WFC	F814W			Pattern 1, Exps 1-1 in NGC5238-P1_vis10_I (10) (1)	550 Secs (6912 Secs)	
								[==>564.0 Secs (Pattern 1,1)]	***[1]***
								[==>564.0 Secs (Pattern 1,2)]	
								[==>564.0 Secs (Pattern 1,3)]	
								[==>564.0 Secs (Pattern 1,4)]	
								[==>582.0 Secs (Pattern 2,1)]	***[2]***
								[==>582.0 Secs (Pattern 2,2)]	
								[==>582.0 Secs (Pattern 2,3)]	
								[==>582.0 Secs (Pattern 2,4)]	
								[==>582.0 Secs (Pattern 3,1)]	***[3]***
								[==>582.0 Secs (Pattern 3,2)]	
								[==>582.0 Secs (Pattern 3,3)]	
								[==>582.0 Secs (Pattern 3,4)]	

Orbit Structure






Orbit 3
Server Version: 20220630
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Unused Orbital Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 17140, NGC5238-P1_vis11_I (11), implementation Tue Oct 18 14:03:00 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 10

Comments: Same as visti 10, except that we adopt a 2 point line primary dither coupled with a 4 point box secondary dither, for a total of 8 exposures in 2 orbirs.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(4)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.2637 Line Spacing=0.1856	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.02 Center Pattern=false	(1)

Fixed Targets

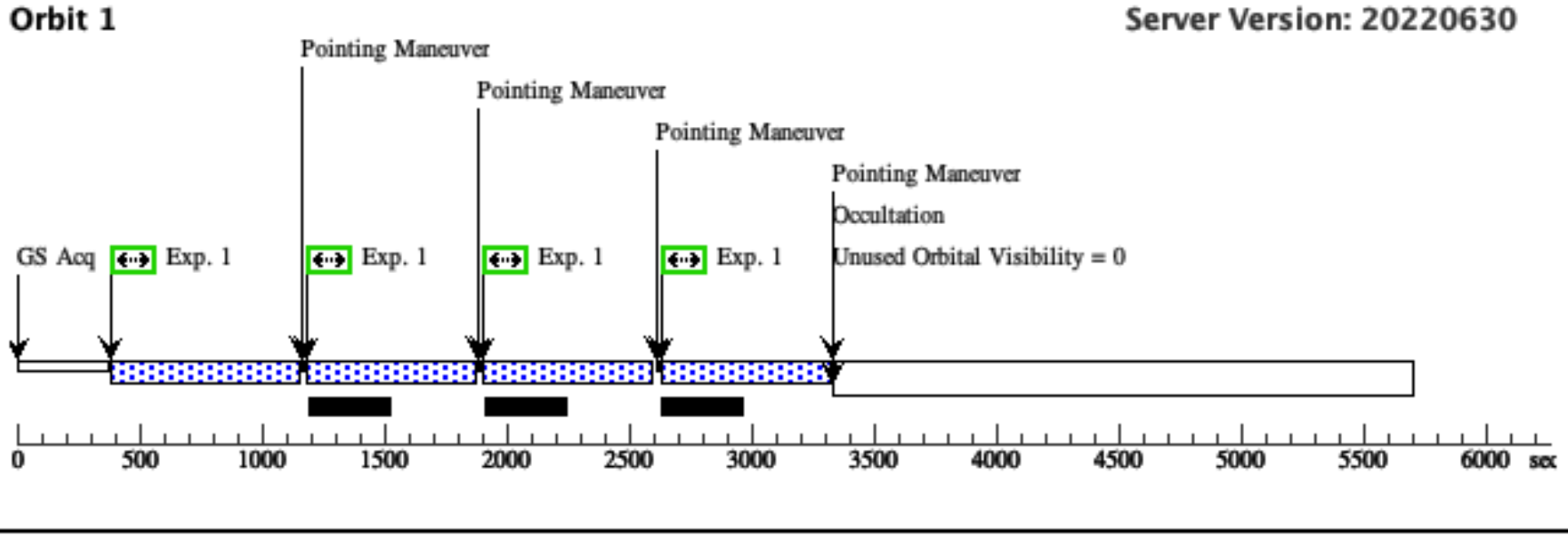
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	NGC-5238-P1	RA: 13 34 43.0965 (203.6795687d) Dec: +51 35 57.82 (51.59939d) Equinox: J2000	Proper Motion RA: -7.085791625616834E-6 sec of time/yr Proper Motion Dec: -1.2500004231696948E-4 arcsec/yr Epoch of Position: 2015.5	V=13.2	Reference Frame: SIMBAD

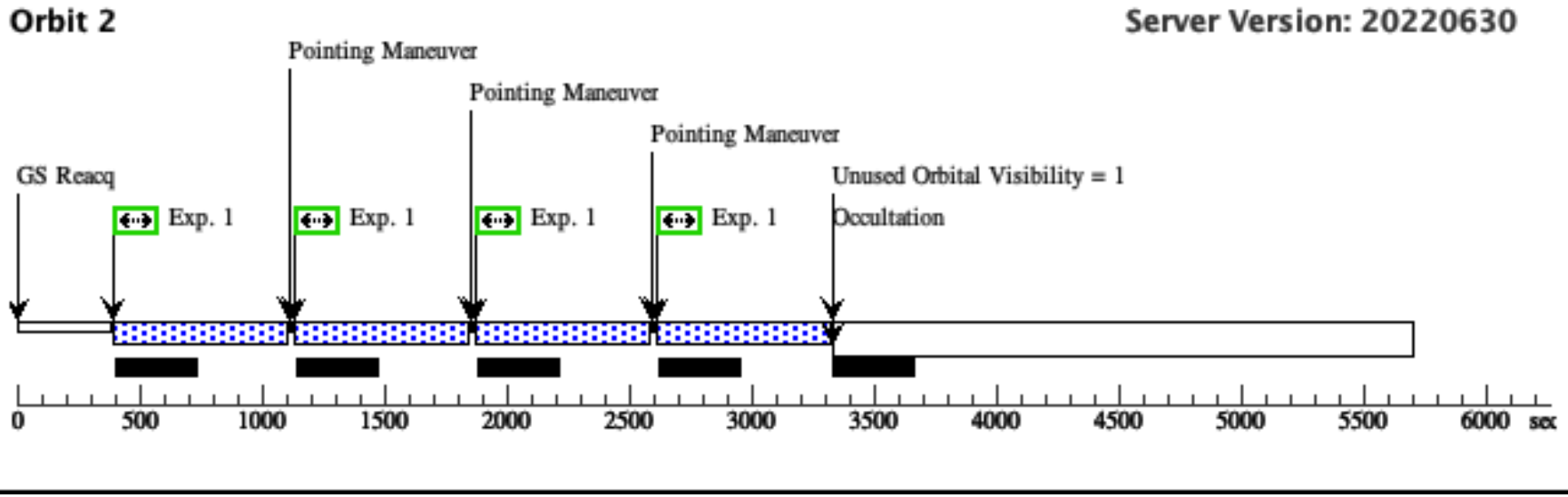
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) NGC-5238-P1	ACS/WFC, ACCUM, WFC	F814W			Pattern 4, Exps 1-1 in NGC5238-P1_vis11_I (11) (4)	550 Secs (4584 Secs)	
								[==>564.0 Secs (Pattern 1,1)] *[==>564.0 Secs (Pattern 1,2)]* *[==>564.0 Secs (Pattern 1,3)]* *[==>564.0 Secs (Pattern 1,4)]*	***[1]***
								[==>582.0 Secs (Pattern 2,1)] *[==>582.0 Secs (Pattern 2,2)]* *[==>582.0 Secs (Pattern 2,3)]* *[==>582.0 Secs (Pattern 2,4)]*	***[2]***

Orbit Structure





Visit

Proposal 17140, NGC5238-P2_vis12_V (12), implementation Tue Oct 18 14:03:00 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 09

Comments: Strategy for NGC5238-P1 is repeated for P2. the purpose is to cover the low surface brightness feature to the north. This visit lasts for 3 orbits and performs observations of the central region of NGC5238 in V.
We adopt a 3 point - line primary dither pattern coupled to a 4 point box dither, for a total of 8 sub-exposures. The adopted dither patterns are the convenience ones for ACS/WFC.
Within 3 orbits, we perform a total of 12 exposures in V.
Orient ranges are chosen to avoid the gap to fall on the low surface brightness structure to the south.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=true	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.2637 Line Spacing=0.1856	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.02 Center Pattern=false	(1)

Fixed Targets

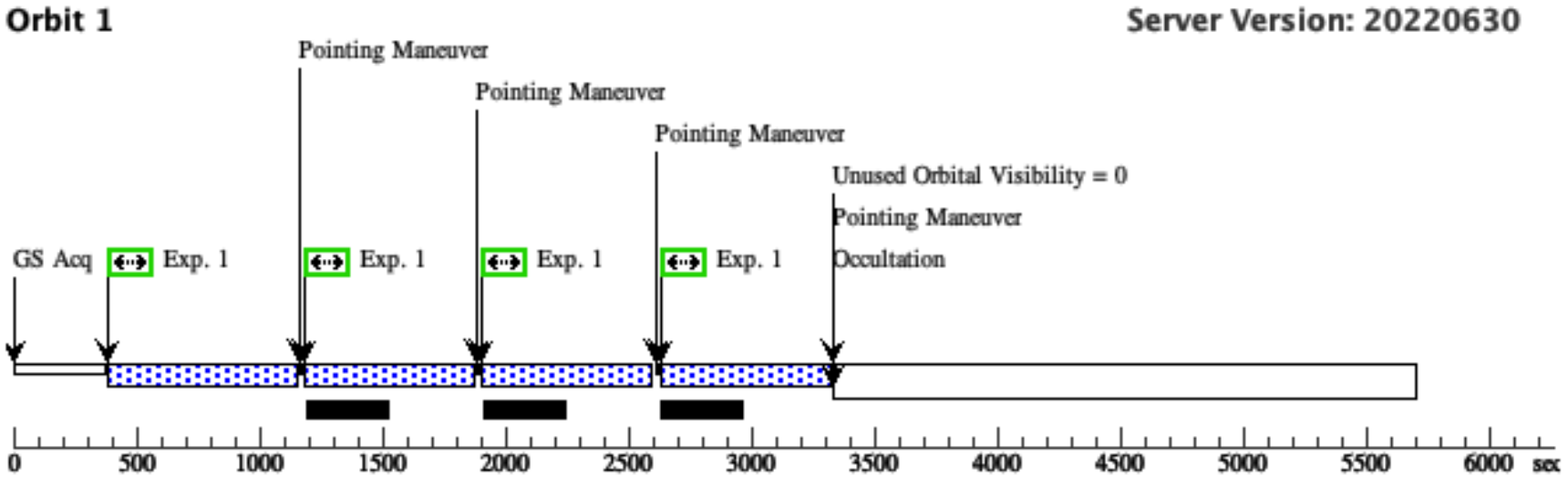
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	NGC-5238-P2	RA: 13 34 41.9313 (203.6747137d) Dec: +51 38 22.84 (51.63968d) Equinox: J2000	Proper Motion RA: -7.085791625616834E-6 sec of time/yr Proper Motion Dec: -1.2500004231696948E-4 arcsec/yr Epoch of Position: 2015.5	V=13.2	Reference Frame: SIMBAD

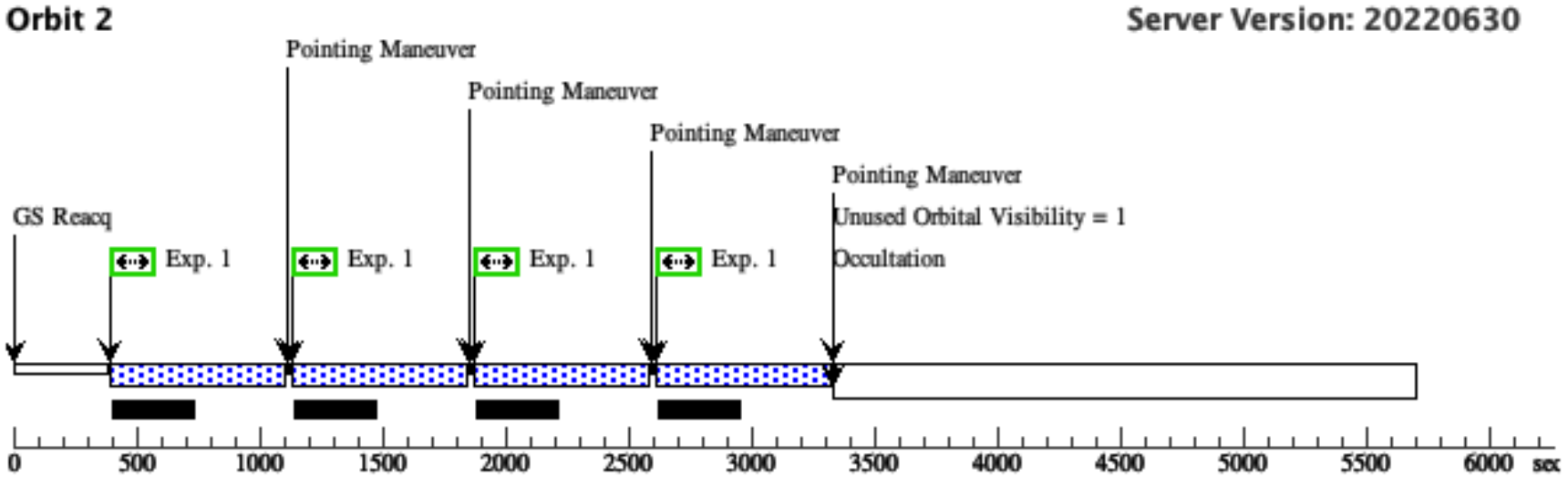
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]

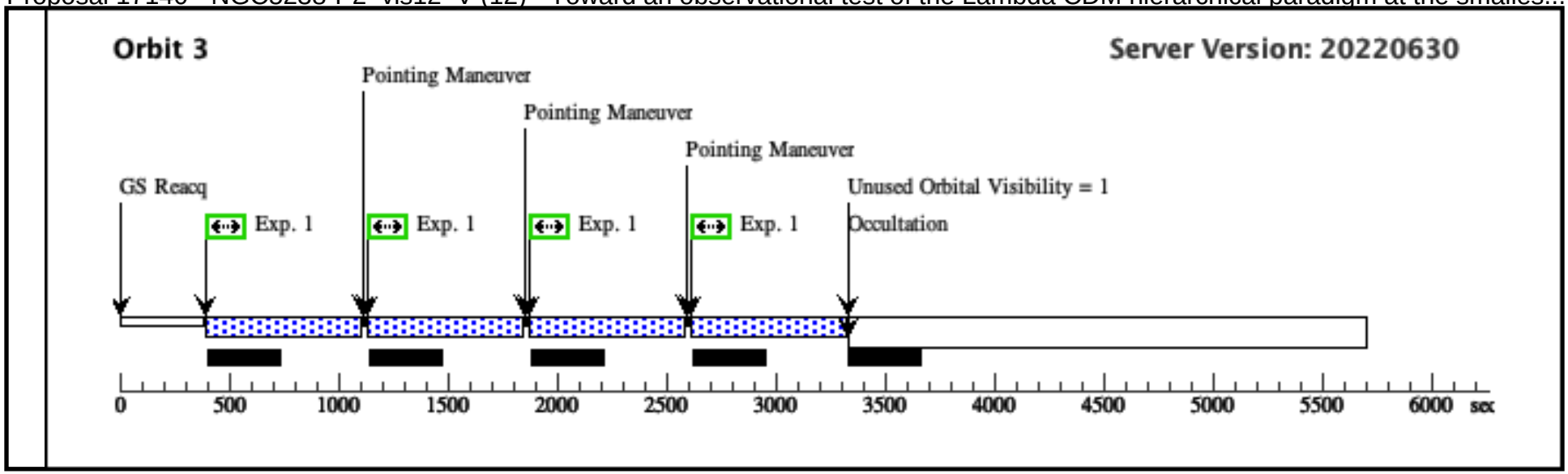
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) NGC-5238-P2	ACS/WFC, ACCUM, WFC	F606W			Pattern 1, Exps 1-1 in NGC5238-P2_vis12_V (12) (1)	550 Secs (6912 Secs)	
								[==>564.0 Secs (Pattern 1,1)]	***[1]***
								[==>564.0 Secs (Pattern 1,2)]	
								[==>564.0 Secs (Pattern 1,3)]	
								[==>564.0 Secs (Pattern 1,4)]	
								[==>582.0 Secs (Pattern 2,1)]	***[2]***
								[==>582.0 Secs (Pattern 2,2)]	
								[==>582.0 Secs (Pattern 2,3)]	
								[==>582.0 Secs (Pattern 2,4)]	
								[==>582.0 Secs (Pattern 3,1)]	***[3]***
								[==>582.0 Secs (Pattern 3,2)]	
								[==>582.0 Secs (Pattern 3,3)]	
								[==>582.0 Secs (Pattern 3,4)]	

Orbit Structure






Orbit 3
Server Version: 20220630
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Unused Orbital Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 17140, NGC5238-P2_vis13_I (13), implementation Tue Oct 18 14:03:00 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 10

Comments: Same as visit 10, but done at the position of NGC5238-P2.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=true	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.2637 Line Spacing=0.1856	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.02 Center Pattern=false	(1)

Fixed Targets

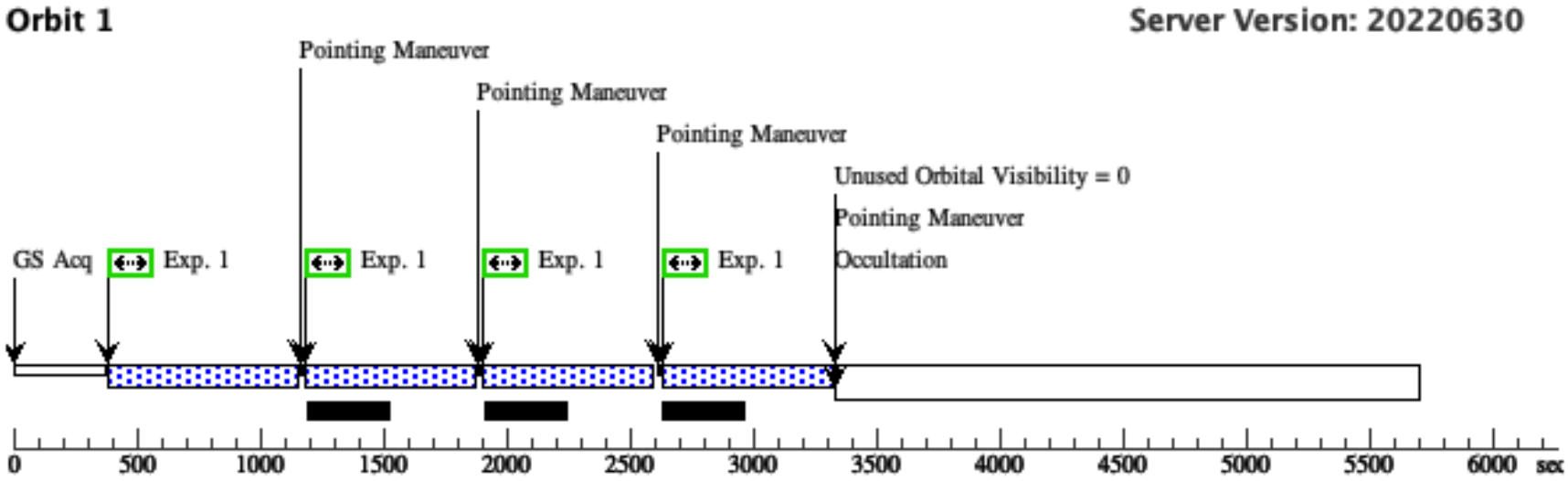
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	NGC-5238-P2	RA: 13 34 41.9313 (203.6747137d) Dec: +51 38 22.84 (51.63968d) Equinox: J2000	Proper Motion RA: -7.085791625616834E-6 sec of time/yr Proper Motion Dec: -1.2500004231696948E-4 arcsec/yr Epoch of Position: 2015.5	V=13.2	Reference Frame: SIMBAD

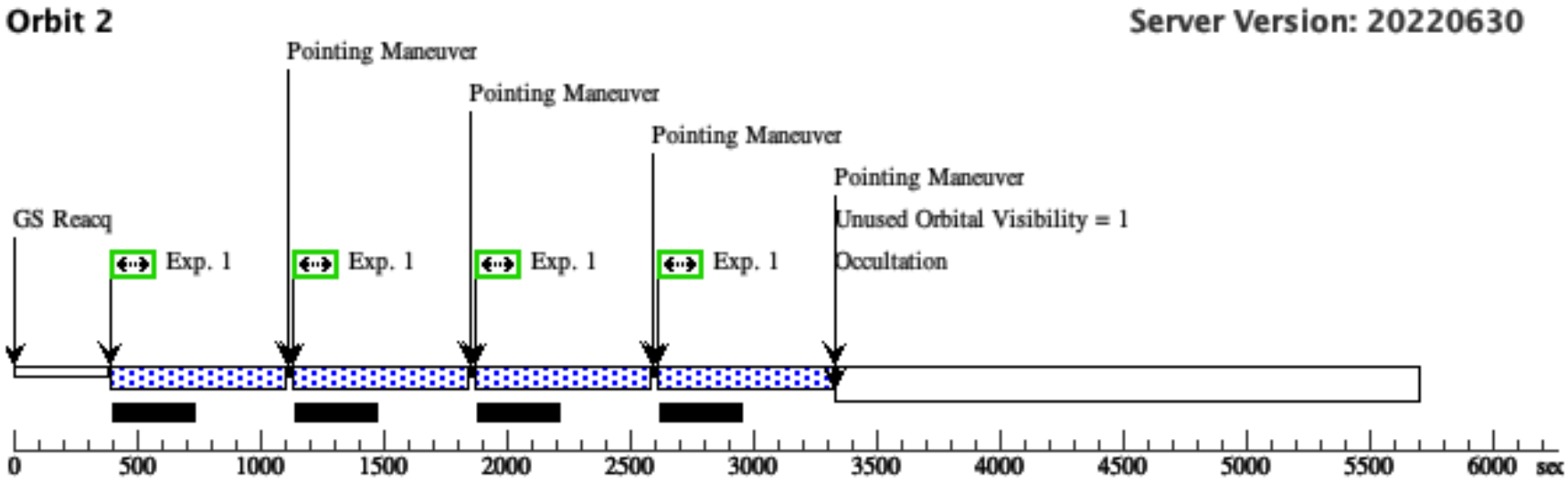
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]

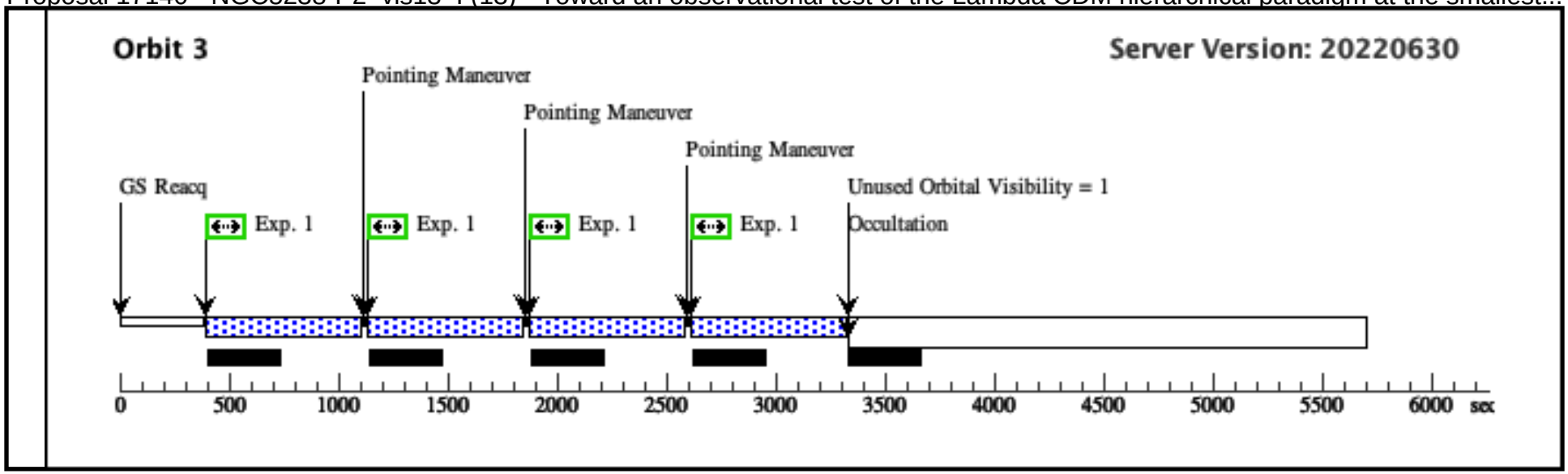
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) NGC-5238-P2	ACS/WFC, ACCUM, WFC	F814W			Pattern 1, Exps 1-1 in NGC5238-P2_vis13_I (13) (1)	550 Secs (6912 Secs)	
								[==>564.0 Secs (Pattern 1,1)]	***[1]***
								[==>564.0 Secs (Pattern 1,2)]	
								[==>564.0 Secs (Pattern 1,3)]	
								[==>564.0 Secs (Pattern 1,4)]	
								[==>582.0 Secs (Pattern 2,1)]	***[2]***
								[==>582.0 Secs (Pattern 2,2)]	
								[==>582.0 Secs (Pattern 2,3)]	
								[==>582.0 Secs (Pattern 2,4)]	
								[==>582.0 Secs (Pattern 3,1)]	***[3]***
								[==>582.0 Secs (Pattern 3,2)]	
								[==>582.0 Secs (Pattern 3,3)]	
								[==>582.0 Secs (Pattern 3,4)]	

Orbit Structure






Orbit 3
Server Version: 20220630
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Unused Orbital Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 17140, NGC5238-P2_vis14_I (14), implementation Tue Oct 18 14:03:00 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 10

Comments: Same as visti 11, except that we adopt a 2 point line primary dither coupled with a 4 point box secondary dither, for a total of 8 exposures in 2 orbirs.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(4)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.2637 Line Spacing=0.1856	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.02 Center Pattern=false	(1)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	NGC-5238-P2	RA: 13 34 41.9313 (203.6747137d) Dec: +51 38 22.84 (51.63968d) Equinox: J2000	Proper Motion RA: -7.085791625616834E-6 sec of time/yr Proper Motion Dec: -1.2500004231696948E-4 arcsec/yr Epoch of Position: 2015.5	V=13.2	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[AMORPHOUS IRREGULAR]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) NGC-5238-P2	ACS/WFC, ACCUM, WFC	F814W			Pattern 4, Exps 1-1 in NGC5238-P2_vis14_I (14) (4)	550 Secs (4584 Secs)	
								[==>564.0 Secs (Pattern 1,1)] *[==>564.0 Secs (Pattern 1,2)]* *[==>564.0 Secs (Pattern 1,3)]* *[==>564.0 Secs (Pattern 1,4)]*	***[1]***
								[==>582.0 Secs (Pattern 2,1)] *[==>582.0 Secs (Pattern 2,2)]* *[==>582.0 Secs (Pattern 2,3)]* *[==>582.0 Secs (Pattern 2,4)]*	***[2]***

Orbit Structure