



15930 - Cold Dark Matter and the GD-1 Stellar Stream

Cycle: 27, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) SPUR1 ANY	ACS/WFC WFC3/UVIS	4	12-Dec-2019 13:00:19.0	yes
02	(2) SPUR2 ANY	ACS/WFC WFC3/UVIS	4	12-Dec-2019 13:00:24.0	yes
03	(3) SPUR3 ANY	ACS/WFC WFC3/UVIS	4	12-Dec-2019 13:00:28.0	yes
04	(4) SPUR4 ANY	ACS/WFC WFC3/UVIS	4	12-Dec-2019 13:00:32.0	yes
51	(5) STREAME1 ANY	ACS/WFC WFC3/UVIS	2	12-Dec-2019 13:00:35.0	yes

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
52	(5) STREAME1 ANY	ACS/WFC WFC3/UVIS	2	12-Dec-2019 13:00:37.0	yes
06	(6) STREAME2 ANY	ACS/WFC WFC3/UVIS	4	12-Dec-2019 13:00:40.0	yes
07	(7) STREAMW1 ANY	ACS/WFC WFC3/UVIS	4	12-Dec-2019 13:00:44.0	yes
81	(8) STREAMW2 ANY	ACS/WFC WFC3/UVIS	2	12-Dec-2019 13:00:47.0	yes
82	(8) STREAMW2 ANY	ACS/WFC WFC3/UVIS	2	12-Dec-2019 13:00:48.0	yes

32 Total Orbits Used

ABSTRACT

We propose to use HST to characterize a dark-matter subhalo in the Milky Way. Tidally disrupted globular clusters create thin and kinematically cold stellar streams that are extremely sensitive to any gravitational perturbation. Orbiting in the Milky Way halo, these streams provide a unique opportunity to test for the presence of perturbing dark-matter subhalos. Gaps discovered along streams provide tentative evidence for dark matter influence, but their origin remains uncertain as stream gaps alone can be due to baryonic effects as well. Recently, Gaia observations of the GD-1 stellar stream have revealed a spur of stars associated with one of the gaps in the stream. Such features naturally arise when a stream encounters a massive perturber, and have a unique 3D kinematic signature. We propose here to measure precise proper motions in the perturbed region of GD-1. We will target eight fields with ACS/WFC and parallel-observe with WFC3/UVIS in two epochs. Proper motion accuracies near 3 km/s will be achieved by measuring the relative motion between stream stars and background galaxies using established techniques that have already been successfully applied to other objects in the Local Group (e.g., LMC/SMC, Leo I, M31, Sgr and Lethe streams). A passing subhalo is expected to introduce differences in tangential velocity between the stream and the spur, and our data will have the precision to resolve these kinematic offsets. Our results will definitively establish whether GD-1 features are a signature of a dark matter subhalo. If HST confirms the subhalo origin of the gap, it will measure the physical properties of the subhalo and rule out all reasonable alternatives.

OBSERVING DESCRIPTION

The ultimate goal of this multi-cycle program is to obtain sets of images separated by 2~3 years in time for measuring absolute proper motions of individual stars along the GD-1 stellar stream. In the Cycle 27 (this program), we will image 8 primary ACS/WFC + 8 parallel WFC3/UVIS = 16 fields in total. Each primary ACS/WFC field location was carefully chosen to target the densest region of the stream. Accordingly, our parallel WFC3/UVIS field locations were placed along the stream using the Visit Orientation special requirements. Each visit consists of 4 orbits, i.e., 3 orbits of F606W and 1 visit of F814W observations. Each F814W orbit consists of 1 short + 3 long exposures, and each F606W orbit consists of 1 short + 2 long exposures. The multiband data will be used for constructing color-magnitude diagrams (CMDs) that will help identify the GD-1 stream members. To maximize the time baseline of the two cycles, we request all of our visits to be observed in the earlier period of Cycle 27 using the BEFORE Visit Timing Requirements. For all visits, we have also increased the SCHEDULEABILITY to 70 to allow wider observable windows.

Proposal 15930 - SPUR1 (01) - Cold Dark Matter and the GD-1 Stellar Stream

Thu Dec 12 18:00:49 GMT 2019

Visit	<p>Proposal 15930, SPUR1 (01), scheduling</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: WFC3/UVIS, ACS/WFC</p> <p>Special Requirements: SCHED 70%; ORIENT 180D TO 186 D; BEFORE 31-AUG-2020:00:00:00</p> <p><i>Comments: This is the visit for SPUR1 target field. This visit consists of 4 orbits. The first orbit is for obtaining F814W images for both the primary ACS/WFC + parallel WFC3/UVIS fields, while orbits 2-4 are for obtaining F606W images. We request specific orient ranges to position the primary+parallel fields parallel to the GD-1 stream which has a width of 0.5 deg FWHM. This will ensure that our target fields include as many GD-1 member stars as possible. Individual exposures will be dithered using a customized dither pattern designed for optimizing pixel-phase coverage via the POS TARG arguments. To fulfill our scientific goals, it is imperative to maximize the time baseline. We therefore added timing requirements so that the images are obtained as early in the cycle as possible. For this, we have also loosened the schedulability requirement to 70 to allow increased observable windows - the default schedulability would only allow 1~2 days of observable window, while our current schedulability allows about 12 days of windows.</i></p>					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(1)		SPUR1	RA: 10 15 34.7697 (153.8948737d) Dec: +42 24 43.36 (42.41204d) Equinox: J2000		V=20.0	Reference Frame: ICRS
	<p><i>Comments:</i> Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER, TIDAL TAIL] Extended=NO</p>					

Proposal 15930 - SPUR1 (01) - Cold Dark Matter and the GD-1 Stellar Stream

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(1) SPUR1	ACS/WFC, ACCUM, WFC	F814W	FLASH=25	POS TARG 0.0000,0 .0000	Sequence 1-8 Non-Int in SPUR1 (01) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in SPUR1 (01)	50 Secs (50 Secs) [==>]	[1]
	2	ANY	WFC3/UVIS, ACCUM, UVIS	F814W	FLASH=10		Sequence 1-8 Non-Int in SPUR1 (01) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in SPUR1 (01)	60 Secs (60 Secs) [==>]	[1]
	3	(1) SPUR1	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.0000,0 .0000	Sequence 1-8 Non-Int in SPUR1 (01) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in SPUR1 (01)	646 Secs (646 Secs) [==>]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR1 (01) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in SPUR1 (01)	698 Secs (698 Secs) [==>]	[1]
	5	(1) SPUR1	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.1647,0 .0124	Sequence 1-8 Non-Int in SPUR1 (01) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in SPUR1 (01)	646 Secs (646 Secs) [==>]	[1]
	6	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR1 (01) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in SPUR1 (01)	698 Secs (698 Secs) [==>]	[1]
	7	(1) SPUR1	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.3293,0 .0248	Sequence 1-8 Non-Int in SPUR1 (01) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in SPUR1 (01)	615 Secs (615 Secs) [==>]	[1]
	8	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR1 (01) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in SPUR1 (01)	698 Secs (698 Secs) [==>]	[1]
	9	(1) SPUR1	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in SPUR1 (01) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in SPUR1 (01)	50 Secs (50 Secs) [==>]	[2]

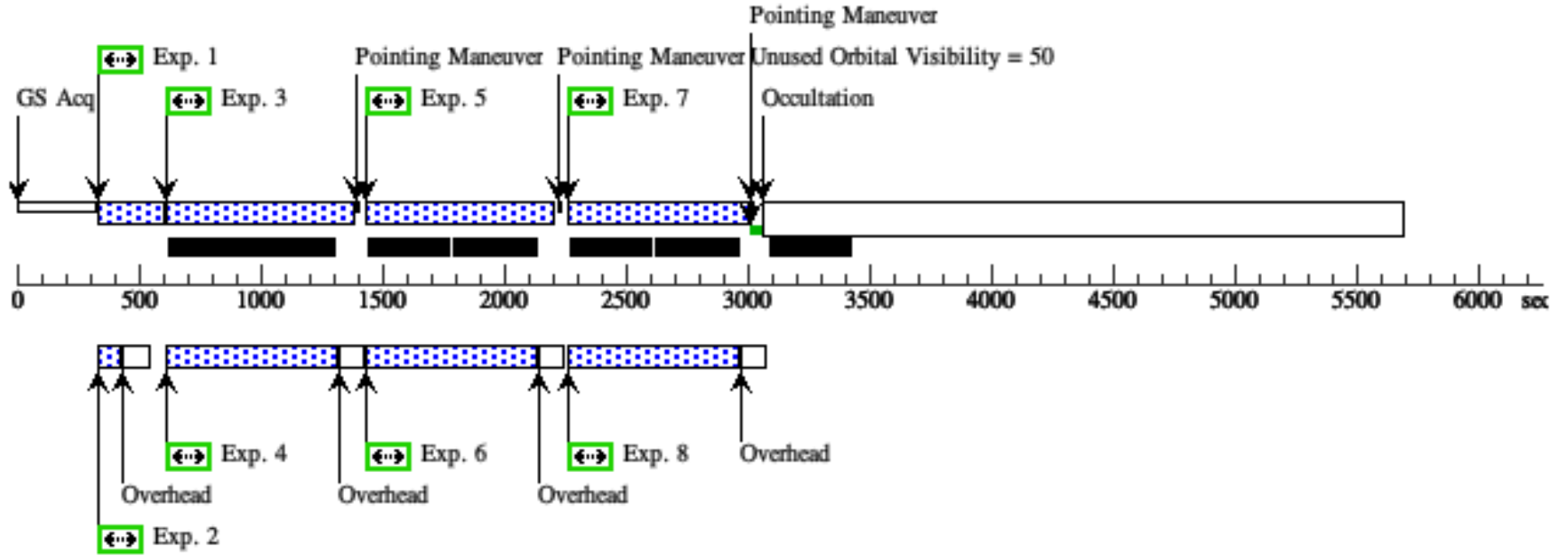
Proposal 15930 - SPUR1 (01) - Cold Dark Matter and the GD-1 Stellar Stream

10	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 9-14 Non-Int in SPUR1 (01) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in SPUR1 (01)	50 Secs (50 Secs) [==>]	[2]
11	(1) SPUR1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0000,0.0000	Sequence 9-14 Non-Int in SPUR1 (01) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in SPUR1 (01)	1064 Secs (1064 Secs) [==>]	[2]
12	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in SPUR1 (01) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in SPUR1 (01)	1050 Secs (1050 Secs) [==>]	[2]
13	(1) SPUR1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.1647,0.0124	Sequence 9-14 Non-Int in SPUR1 (01) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in SPUR1 (01)	1063 Secs (1063 Secs) [==>]	[2]
14	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in SPUR1 (01) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in SPUR1 (01)	1050 Secs (1050 Secs) [==>]	[2]
15	(1) SPUR1	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.3293,0.0248	Sequence 15-20 Non-Int in SPUR1 (01) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in SPUR1 (01)	50 Secs (50 Secs) [==>]	[3]
16	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10		Sequence 15-20 Non-Int in SPUR1 (01) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in SPUR1 (01)	50 Secs (50 Secs) [==>]	[3]
17	(1) SPUR1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.3293,0.0248	Sequence 15-20 Non-Int in SPUR1 (01) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in SPUR1 (01)	1091 Secs (1091 Secs) [==>]	[3]
18	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in SPUR1 (01) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in SPUR1 (01)	1050 Secs (1050 Secs) [==>]	[3]

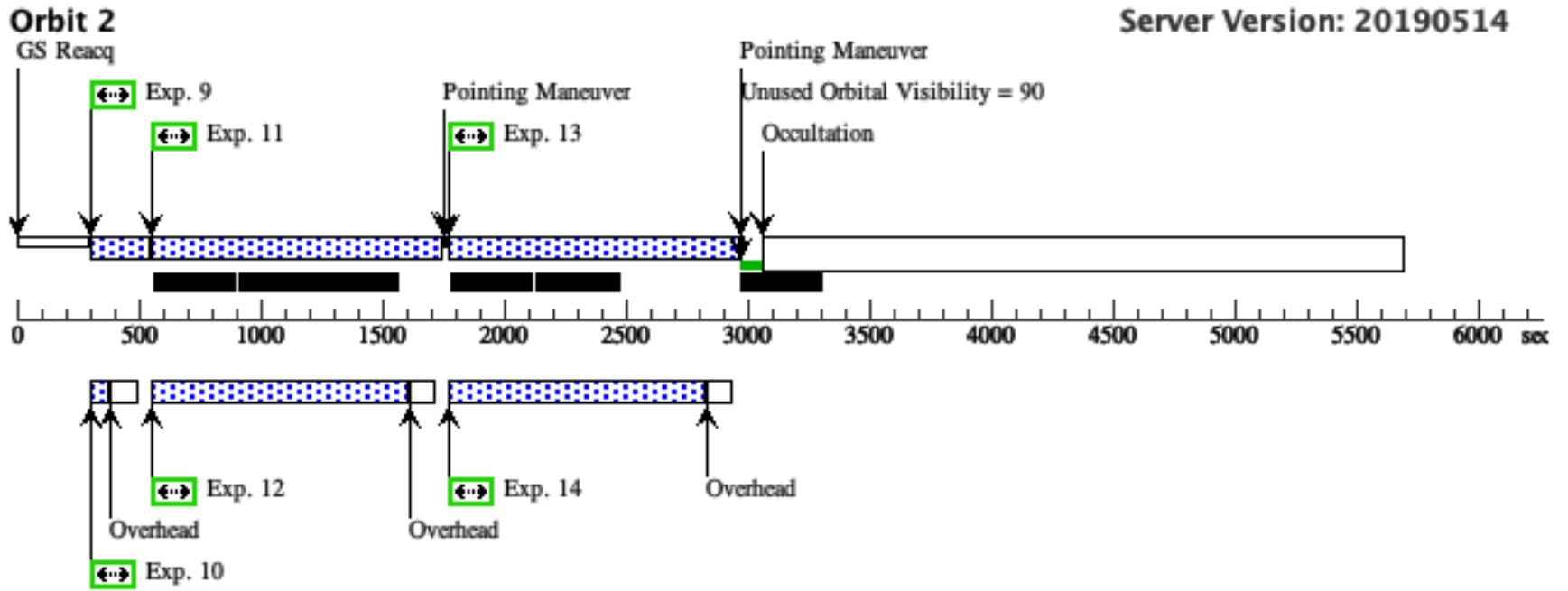
Proposal 15930 - SPUR1 (01) - Cold Dark Matter and the GD-1 Stellar Stream

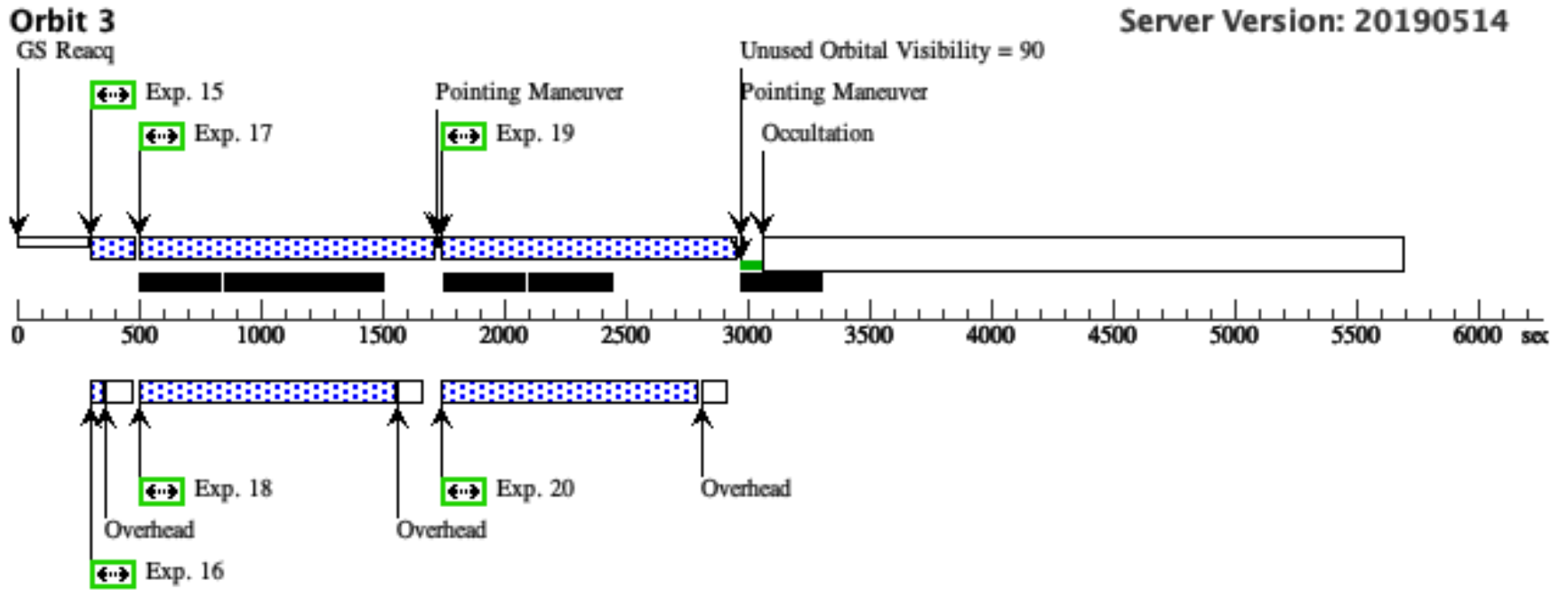
19	(1) SPUR1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0747,0 .1294	Sequence 15-20 Non-Int in SPUR1 (01) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in SPUR1 (01)	1091 Secs (1091 Secs) [==>]	[3]
20	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in SPUR1 (01) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in SPUR1 (01)	1050 Secs (1050 Secs) [==>]	[3]
21	(1) SPUR1	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in SPUR1 (01) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in SPUR1 (01)	50 Secs (50 Secs) [==>]	[4]
22	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 21-26 Non-Int in SPUR1 (01) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in SPUR1 (01)	50 Secs (50 Secs) [==>]	[4]
23	(1) SPUR1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in SPUR1 (01) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in SPUR1 (01)	1091 Secs (1091 Secs) [==>]	[4]
24	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 21-26 Non-Int in SPUR1 (01) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in SPUR1 (01)	1050 Secs (1050 Secs) [==>]	[4]
25	(1) SPUR1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.4039,0 .1541	Sequence 21-26 Non-Int in SPUR1 (01) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in SPUR1 (01)	1091 Secs (1091 Secs) [==>]	[4]
26	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 21-26 Non-Int in SPUR1 (01) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in SPUR1 (01)	1050 Secs (1050 Secs) [==>]	[4]

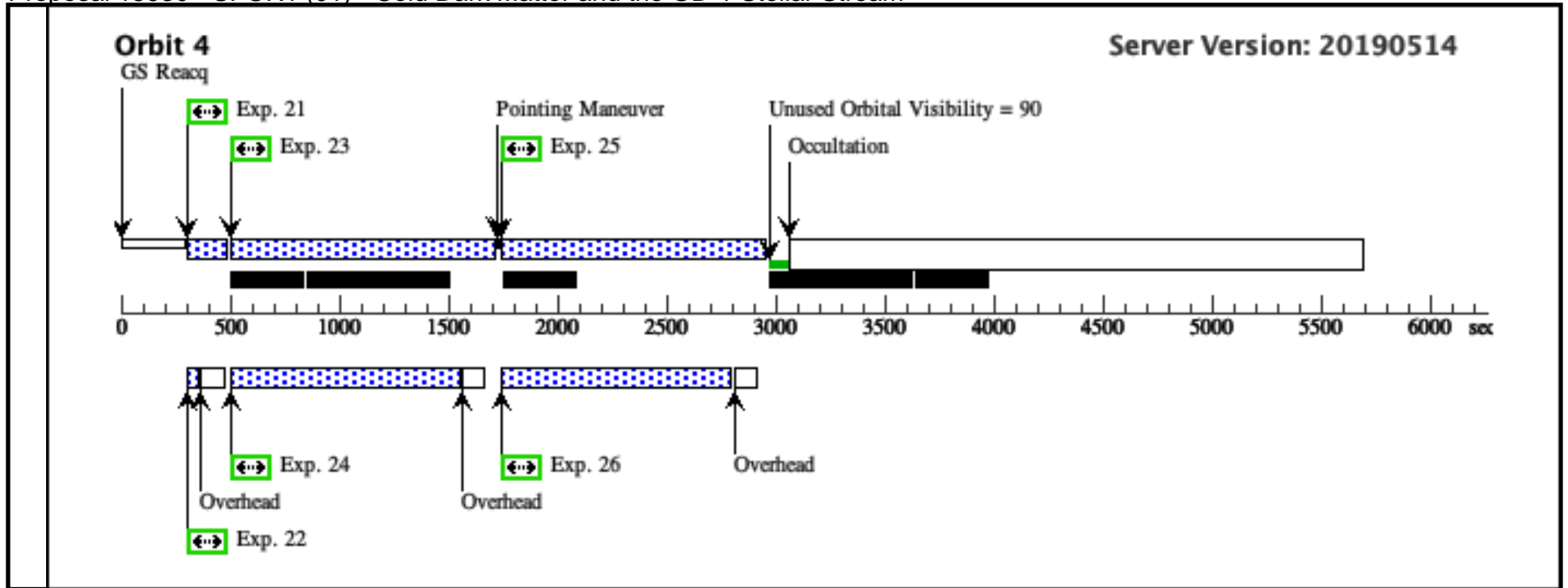
Orbit 1



Orbit Structure







Proposal 15930 - SPUR2 (02) - Cold Dark Matter and the GD-1 Stellar Stream

Thu Dec 12 18:00:50 GMT 2019

Visit	Proposal 15930, SPUR2 (02), scheduling Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SCHED 70%; ORIENT 180D TO 186 D; BEFORE 31-AUG-2020:00:00:00 <i>Comments: This is the visit for SPUR2 target field. This visit consists of 4 orbits. The first orbit is for obtaining F814W images for both the primary ACS/WFC + parallel WFC3/UVIS fields, while orbits 2-4 are for obtaining F606W images. We request specific orient ranges to position the primary+parallel fields parallel to the GD-1 stream which has a width of 0.5 deg FWHM. This will ensure that our target fields include as many GD-1 member stars as possible. Individual exposures will be dithered using a customized dither pattern designed for optimizing pixel-phase coverage via the POS TARG arguments. To fulfill our scientific goals, it is imperative to maximize the time baseline. We therefore added timing requirements so that the images are obtained as early in the cycle as possible. For this, we have also loosened the schedulability requirement to 70 to allow increased observable windows - the default schedulability would only allow 1~2 days of observable window, while our current schedulability allows about 12 days of windows.</i>												
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>SPUR2</td> <td>RA: 10 15 17.9579 (153.8248246d) Dec: +42 26 36.70 (42.44353d) Equinox: J2000</td> <td></td> <td>V=20.0</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments:</i> Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER, TIDAL TAIL] Extended=NO</p>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(2)	SPUR2	RA: 10 15 17.9579 (153.8248246d) Dec: +42 26 36.70 (42.44353d) Equinox: J2000		V=20.0
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous								
(2)	SPUR2	RA: 10 15 17.9579 (153.8248246d) Dec: +42 26 36.70 (42.44353d) Equinox: J2000		V=20.0	Reference Frame: ICRS								

Proposal 15930 - SPUR2 (02) - Cold Dark Matter and the GD-1 Stellar Stream

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(2) SPUR2	ACS/WFC, ACCUM, WFC	F814W	FLASH=25	POS TARG 0.0000,0 .0000	Sequence 1-8 Non-Int in SPUR2 (02) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in SPUR2 (02)	50 Secs (50 Secs) [==>]	[1]
	2	ANY	WFC3/UVIS, ACCUM, UVIS	F814W	FLASH=10		Sequence 1-8 Non-Int in SPUR2 (02) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in SPUR2 (02)	50 Secs (50 Secs) [==>]	[1]
	3	(2) SPUR2	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.0000,0 .0000	Sequence 1-8 Non-Int in SPUR2 (02) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in SPUR2 (02)	646 Secs (646 Secs) [==>]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR2 (02) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in SPUR2 (02)	698 Secs (698 Secs) [==>]	[1]
	5	(2) SPUR2	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.1647,0 .0124	Sequence 1-8 Non-Int in SPUR2 (02) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in SPUR2 (02)	646 Secs (646 Secs) [==>]	[1]
	6	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR2 (02) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in SPUR2 (02)	698 Secs (698 Secs) [==>]	[1]
	7	(2) SPUR2	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.3293,0 .0248	Sequence 1-8 Non-Int in SPUR2 (02) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in SPUR2 (02)	615 Secs (615 Secs) [==>]	[1]
	8	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR2 (02) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in SPUR2 (02)	698 Secs (698 Secs) [==>]	[1]
	9	(2) SPUR2	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in SPUR2 (02) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in SPUR2 (02)	50 Secs (50 Secs) [==>]	[2]

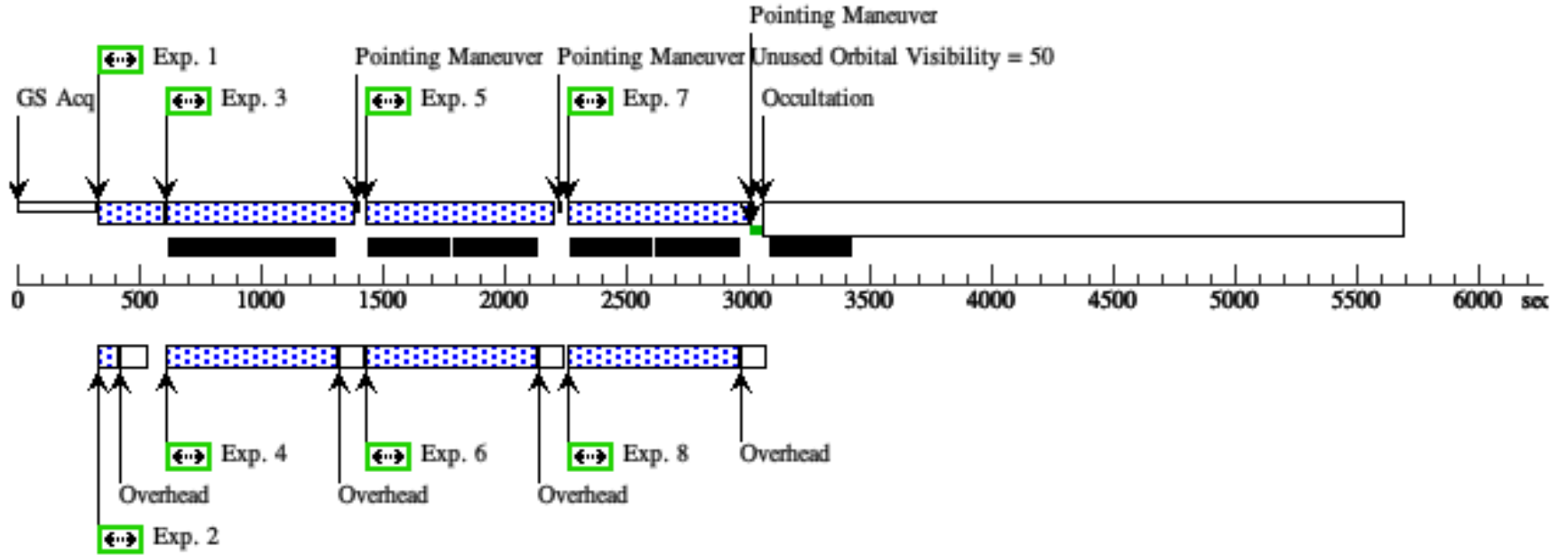
Proposal 15930 - SPUR2 (02) - Cold Dark Matter and the GD-1 Stellar Stream

10	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 9-14 Non-Int in SPUR2 (02) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in SPUR2 (02)	50 Secs (50 Secs) [==>]	[2]
11	(2) SPUR2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0000,0.0000	Sequence 9-14 Non-Int in SPUR2 (02) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in SPUR2 (02)	1064 Secs (1064 Secs) [==>]	[2]
12	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in SPUR2 (02) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in SPUR2 (02)	1050 Secs (1050 Secs) [==>]	[2]
13	(2) SPUR2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.1647,0.0124	Sequence 9-14 Non-Int in SPUR2 (02) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in SPUR2 (02)	1063 Secs (1063 Secs) [==>]	[2]
14	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in SPUR2 (02) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in SPUR2 (02)	1050 Secs (1050 Secs) [==>]	[2]
15	(2) SPUR2	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.3293,0.0248	Sequence 15-20 Non-Int in SPUR2 (02) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in SPUR2 (02)	50 Secs (50 Secs) [==>]	[3]
16	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 15-20 Non-Int in SPUR2 (02) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in SPUR2 (02)	50 Secs (50 Secs) [==>]	[3]
17	(2) SPUR2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.3293,0.0248	Sequence 15-20 Non-Int in SPUR2 (02) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in SPUR2 (02)	1091 Secs (1091 Secs) [==>]	[3]
18	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in SPUR2 (02) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in SPUR2 (02)	1050 Secs (1050 Secs) [==>]	[3]

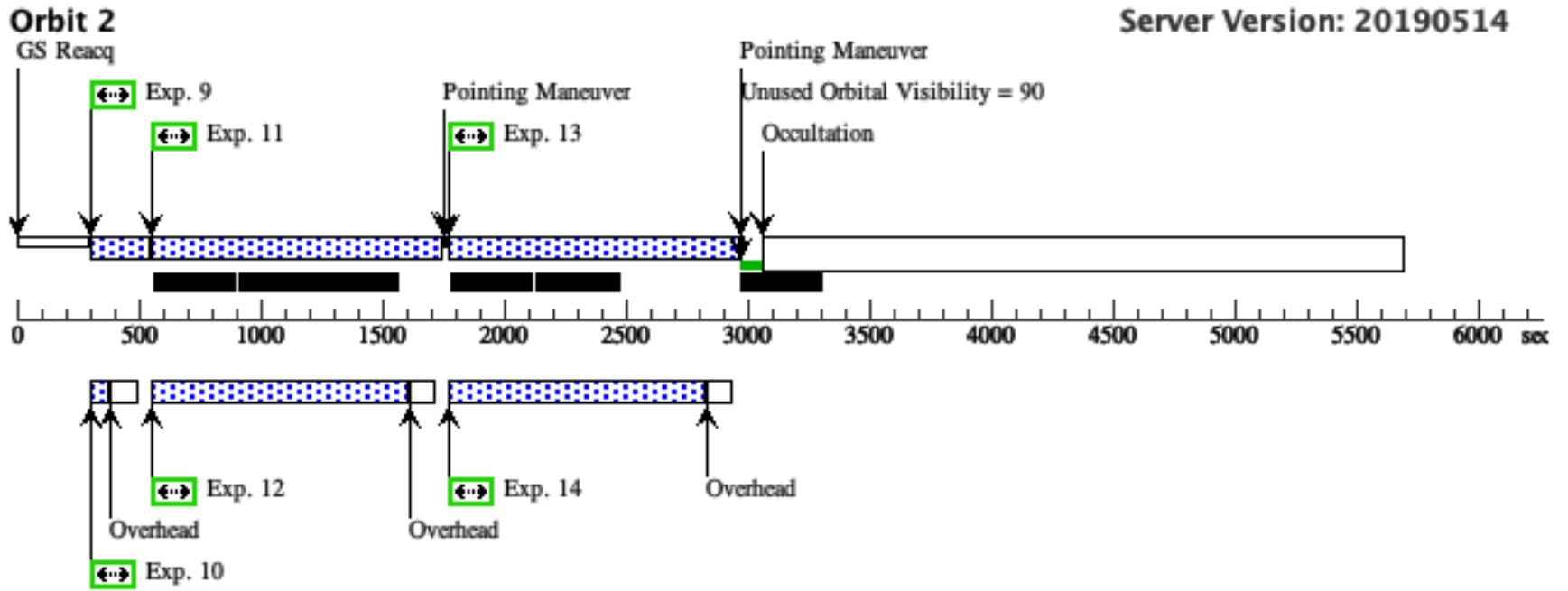
Proposal 15930 - SPUR2 (02) - Cold Dark Matter and the GD-1 Stellar Stream

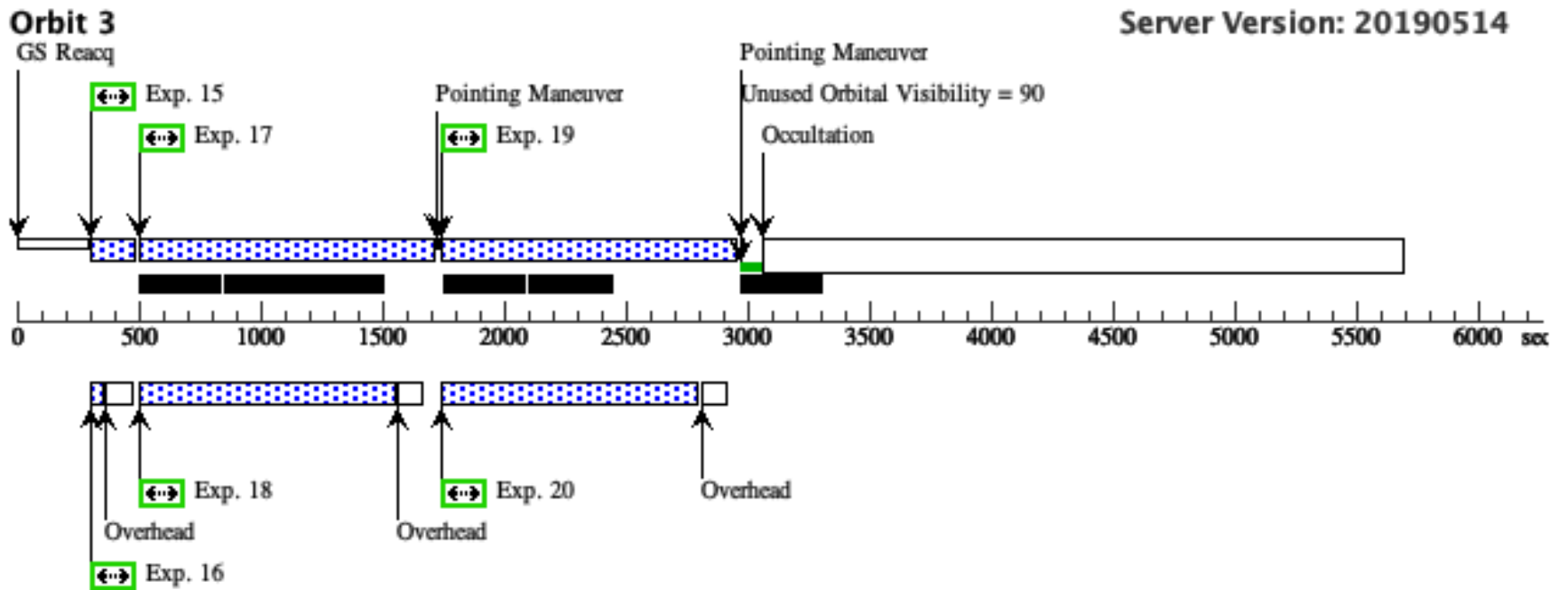
19	(2) SPUR2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0747,0 .1294	Sequence 15-20 Non-Int in SPUR2 (02) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in SPUR2 (02)	1091 Secs (1091 Secs) [==>]	[3]
20	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in SPUR2 (02) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in SPUR2 (02)	1050 Secs (1050 Secs) [==>]	[3]
21	(2) SPUR2	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in SPUR2 (02) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in SPUR2 (02)	50 Secs (50 Secs) [==>]	[4]
22	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 21-26 Non-Int in SPUR2 (02) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in SPUR2 (02)	50 Secs (50 Secs) [==>]	[4]
23	(2) SPUR2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in SPUR2 (02) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in SPUR2 (02)	1091 Secs (1091 Secs) [==>]	[4]
24	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 21-26 Non-Int in SPUR2 (02) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in SPUR2 (02)	1100 Secs (1100 Secs) [==>]	[4]
25	(2) SPUR2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.4039,0 .1541	Sequence 21-26 Non-Int in SPUR2 (02) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in SPUR2 (02)	1091 Secs (1091 Secs) [==>]	[4]
26	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 21-26 Non-Int in SPUR2 (02) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in SPUR2 (02)	1100 Secs (1100 Secs) [==>]	[4]

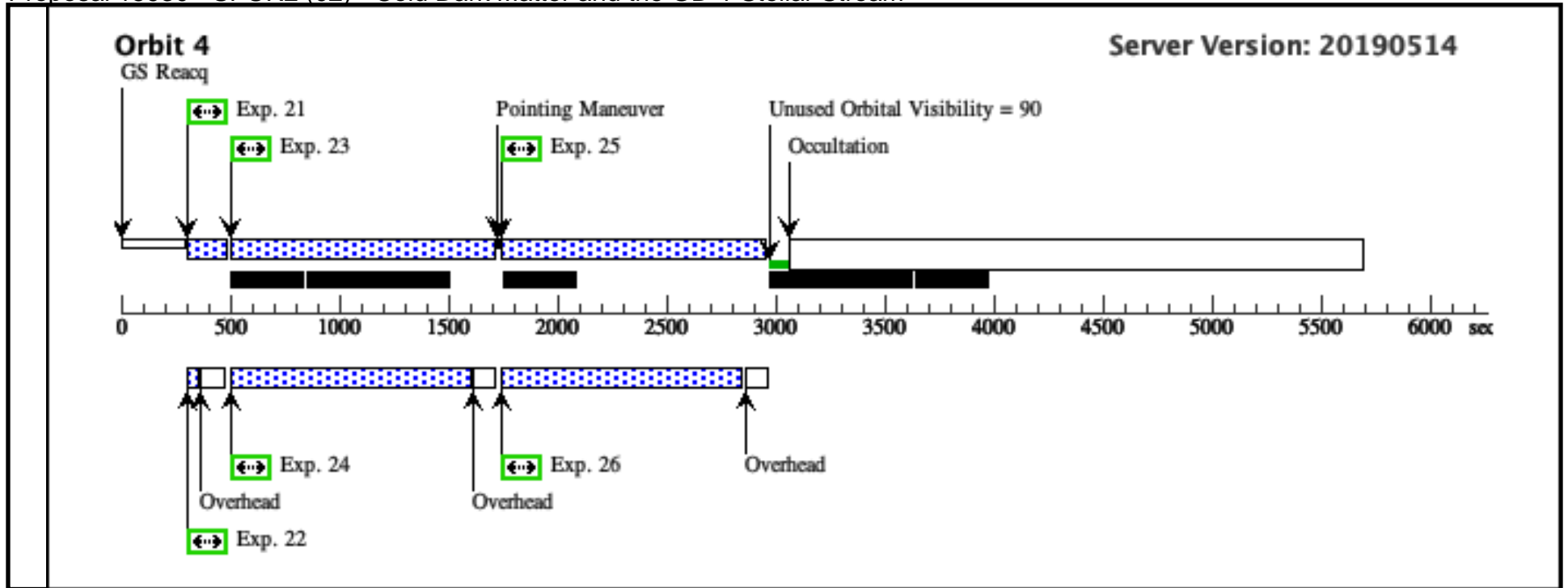
Orbit 1



Orbit Structure







Proposal 15930 - SPUR3 (03) - Cold Dark Matter and the GD-1 Stellar Stream

Thu Dec 12 18:00:50 GMT 2019

Visit	<p>Proposal 15930, SPUR3 (03), scheduling</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: WFC3/UVIS, ACS/WFC</p> <p>Special Requirements: SCHED 70%; ORIENT 180D TO 186 D; BEFORE 31-AUG-2020:00:00:00</p> <p><i>Comments: This is the visit for SPUR3 target field. This visit consists of 4 orbits. The first orbit is for obtaining F814W images for both the primary ACS/WFC + parallel WFC3/UVIS fields, while orbits 2-4 are for obtaining F606W images. We request specific orient ranges to position the primary+parallel fields parallel to the GD-1 stream which has a width of 0.5 deg FWHM. This will ensure that our target fields include as many GD-1 member stars as possible. Individual exposures will be dithered using a customized dither pattern designed for optimizing pixel-phase coverage via the POS TARG arguments. To fulfill our scientific goals, it is imperative to maximize the time baseline. We therefore added timing requirements so that the images are obtained as early in the cycle as possible. For this, we have also loosened the schedulability requirement to 70 to allow increased observable windows - the default schedulability would only allow 1~2 days of observable window, while our current schedulability allows about 12 days of windows.</i></p>					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(3)		SPUR3	RA: 10 15 35.6103 (153.8983762d) Dec: +42 28 1.36 (42.46704d) Equinox: J2000		V=20.0	Reference Frame: ICRS
<p><i>Comments:</i> Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER, TIDAL TAIL] Extended=NO</p>						

Proposal 15930 - SPUR3 (03) - Cold Dark Matter and the GD-1 Stellar Stream

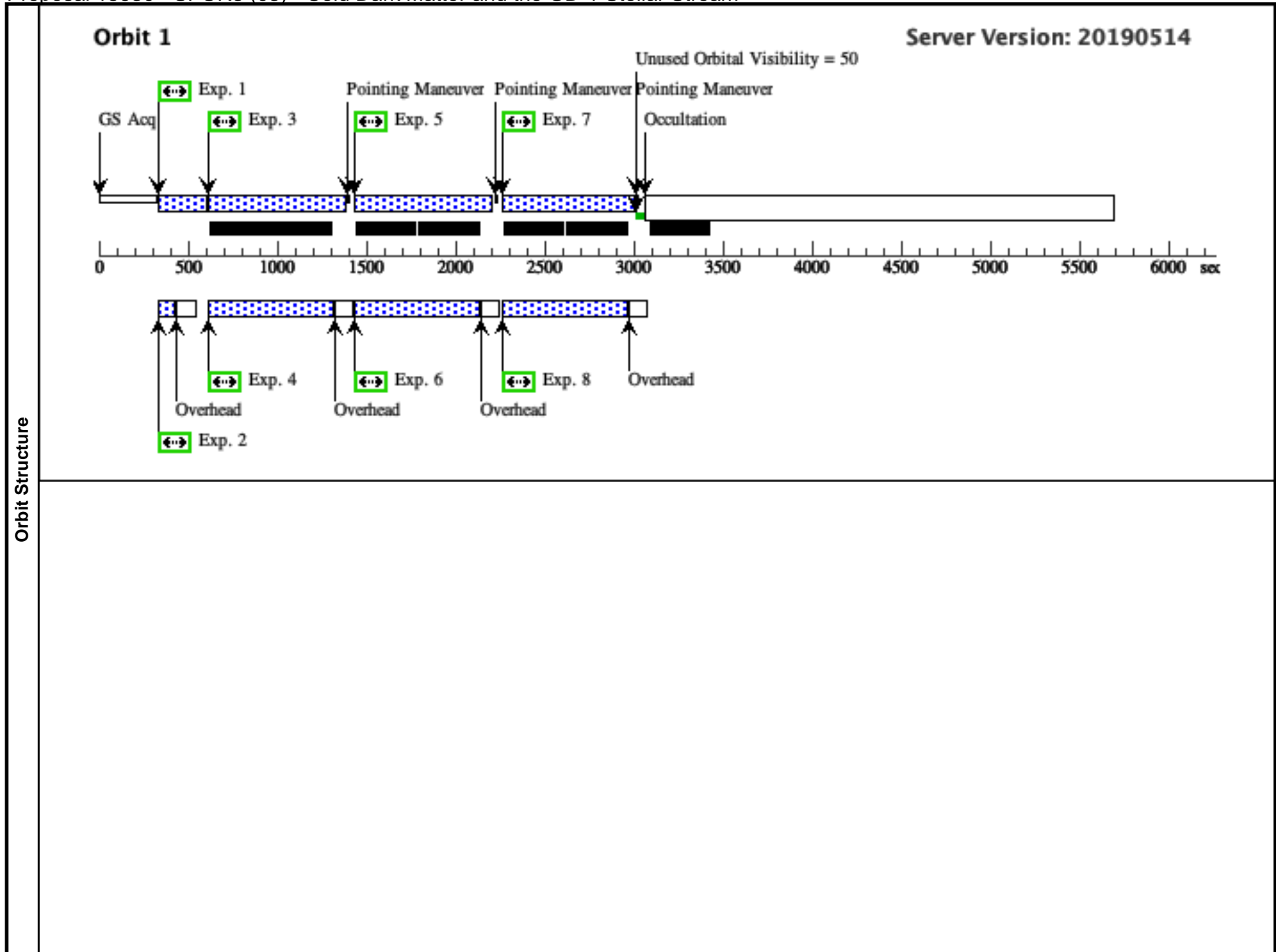
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(3) SPUR3	ACS/WFC, ACCUM, WFC	F814W	FLASH=25	POS TARG 0.0000,0 .0000	Sequence 1-8 Non-Int in SPUR3 (03) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in SPUR3 (03)	50 Secs (50 Secs) [==>]	[1]
	2	ANY	WFC3/UVIS, ACCUM, UVIS	F814W	FLASH=10		Sequence 1-8 Non-Int in SPUR3 (03) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in SPUR3 (03)	60 Secs (60 Secs) [==>]	[1]
	3	(3) SPUR3	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.0000,0 .0000	Sequence 1-8 Non-Int in SPUR3 (03) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in SPUR3 (03)	646 Secs (646 Secs) [==>]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR3 (03) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in SPUR3 (03)	698 Secs (698 Secs) [==>]	[1]
	5	(3) SPUR3	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.1647,0 .0124	Sequence 1-8 Non-Int in SPUR3 (03) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in SPUR3 (03)	646 Secs (646 Secs) [==>]	[1]
	6	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR3 (03) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in SPUR3 (03)	698 Secs (698 Secs) [==>]	[1]
	7	(3) SPUR3	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.3293,0 .0248	Sequence 1-8 Non-Int in SPUR3 (03) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in SPUR3 (03)	615 Secs (615 Secs) [==>]	[1]
	8	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR3 (03) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in SPUR3 (03)	698 Secs (698 Secs) [==>]	[1]
	9	(3) SPUR3	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in SPUR3 (03) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in SPUR3 (03)	50 Secs (50 Secs) [==>]	[2]

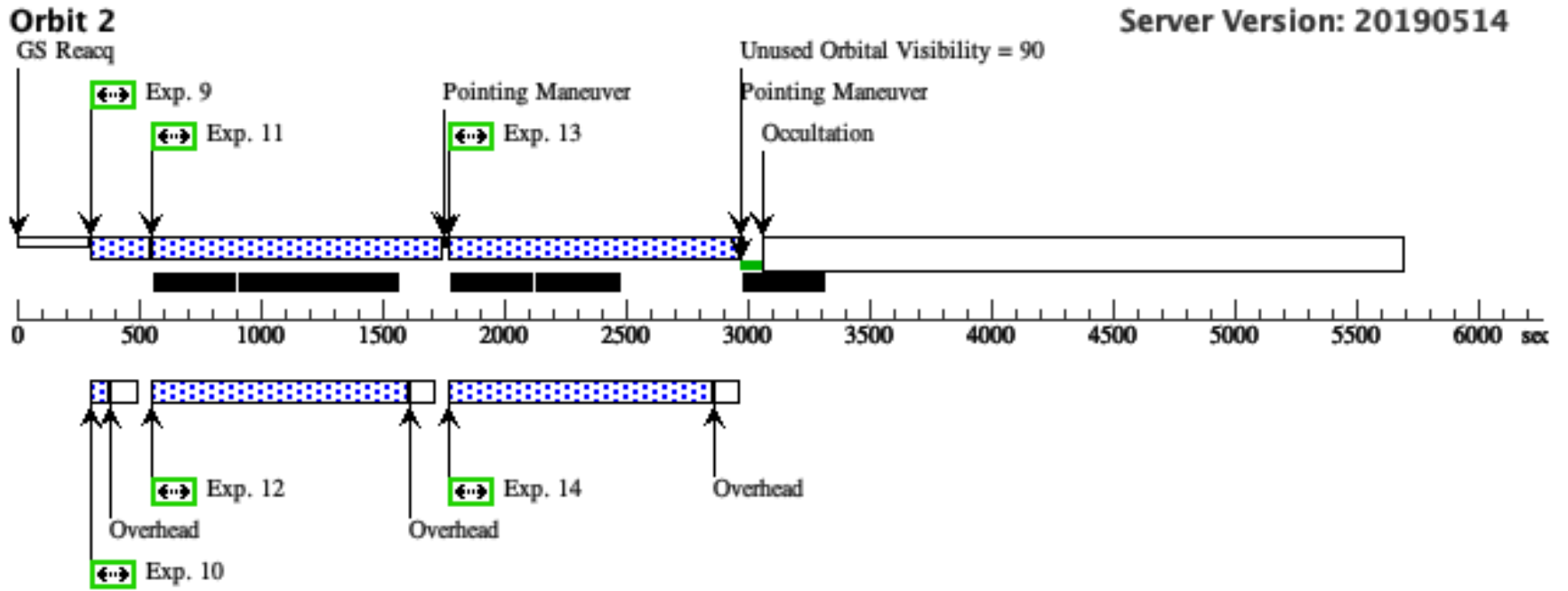
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10	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 9-14 Non-Int in SPUR3 (03) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in SPUR3 (03)	50 Secs (50 Secs) [==>]	[2]
11	(3) SPUR3	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0000,0.0000	Sequence 9-14 Non-Int in SPUR3 (03) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in SPUR3 (03)	1064 Secs (1064 Secs) [==>]	[2]
12	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in SPUR3 (03) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in SPUR3 (03)	1050 Secs (1050 Secs) [==>]	[2]
13	(3) SPUR3	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.1647,0.0124	Sequence 9-14 Non-Int in SPUR3 (03) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in SPUR3 (03)	1063 Secs (1063 Secs) [==>]	[2]
14	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in SPUR3 (03) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in SPUR3 (03)	1080 Secs (1080 Secs) [==>]	[2]
15	(3) SPUR3	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.3293,0.0248	Sequence 15-20 Non-Int in SPUR3 (03) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in SPUR3 (03)	50 Secs (50 Secs) [==>]	[3]
16	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 15-20 Non-Int in SPUR3 (03) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in SPUR3 (03)	50 Secs (50 Secs) [==>]	[3]
17	(3) SPUR3	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.3293,0.0248	Sequence 15-20 Non-Int in SPUR3 (03) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in SPUR3 (03)	1091 Secs (1091 Secs) [==>]	[3]
18	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in SPUR3 (03) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in SPUR3 (03)	1050 Secs (1050 Secs) [==>]	[3]

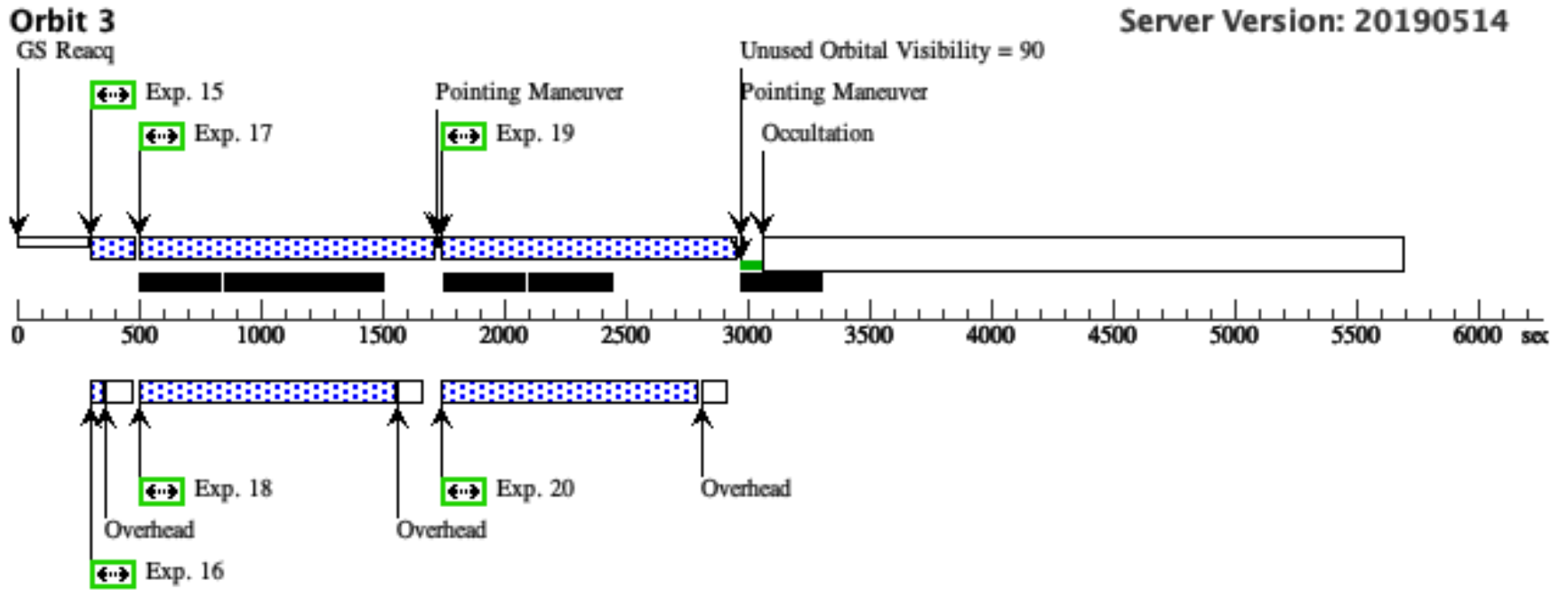
Proposal 15930 - SPUR3 (03) - Cold Dark Matter and the GD-1 Stellar Stream

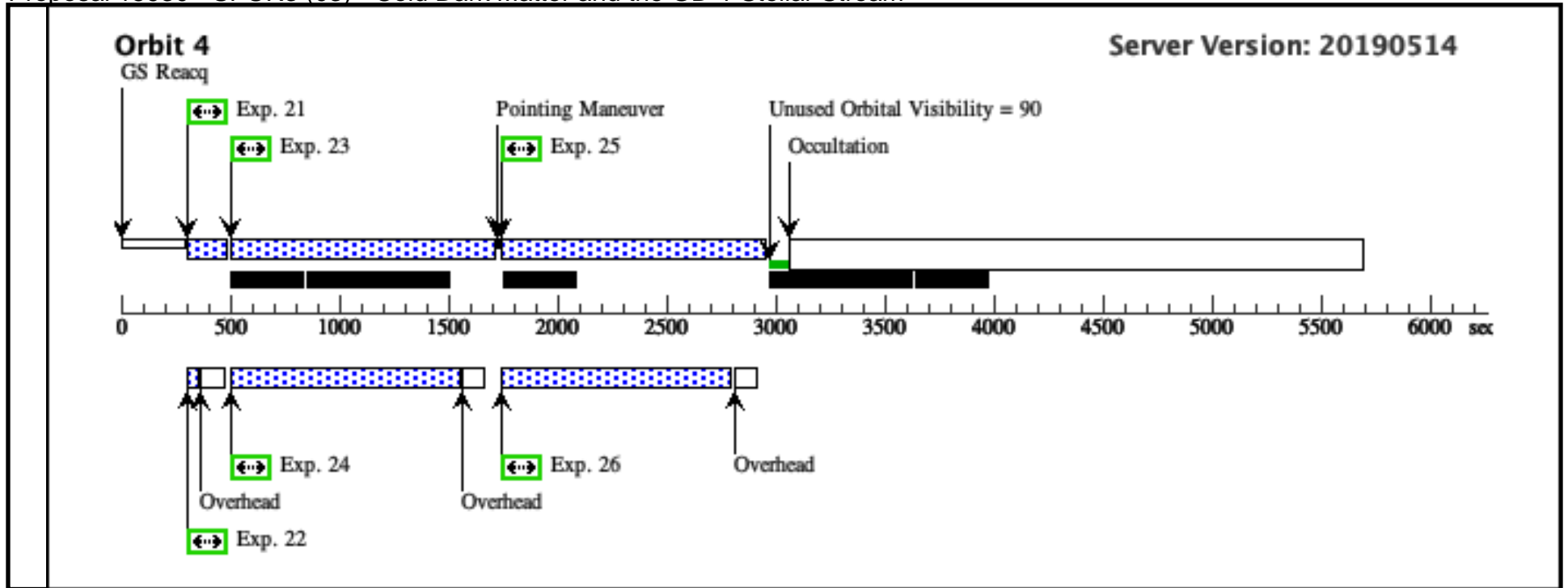
19	(3) SPUR3	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0747,0 .1294	Sequence 15-20 Non-Int in SPUR3 (03) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in SPUR3 (03)	1091 Secs (1091 Secs) [==>]	[3]
20	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in SPUR3 (03) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in SPUR3 (03)	1050 Secs (1050 Secs) [==>]	[3]
21	(3) SPUR3	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in SPUR3 (03) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in SPUR3 (03)	50 Secs (50 Secs) [==>]	[4]
22	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 21-26 Non-Int in SPUR3 (03) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in SPUR3 (03)	50 Secs (50 Secs) [==>]	[4]
23	(3) SPUR3	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in SPUR3 (03) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in SPUR3 (03)	1091 Secs (1091 Secs) [==>]	[4]
24	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 21-26 Non-Int in SPUR3 (03) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in SPUR3 (03)	1050 Secs (1050 Secs) [==>]	[4]
25	(3) SPUR3	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.4039,0 .1541	Sequence 21-26 Non-Int in SPUR3 (03) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in SPUR3 (03)	1091 Secs (1091 Secs) [==>]	[4]
26	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 21-26 Non-Int in SPUR3 (03) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in SPUR3 (03)	1050 Secs (1050 Secs) [==>]	[4]





Server Version: 20190514





Proposal 15930 - SPUR4 (04) - Cold Dark Matter and the GD-1 Stellar Stream

Thu Dec 12 18:00:50 GMT 2019

Visit	<p>Proposal 15930, SPUR4 (04), scheduling</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: WFC3/UVIS, ACS/WFC</p> <p>Special Requirements: SCHED 70%; ORIENT 180D TO 186 D; BEFORE 31-AUG-2020:00:00:00</p> <p><i>Comments: This is the visit for SPUR4 target field. This visit consists of 4 orbits. The first orbit is for obtaining F814W images for both the primary ACS/WFC + parallel WFC3/UVIS fields, while orbits 2-4 are for obtaining F606W images. We request specific orient ranges to position the primary+parallel fields parallel to the GD-1 stream which has a width of 0.5 deg FWHM. This will ensure that our target fields include as many GD-1 member stars as possible. Individual exposures will be dithered using a customized dither pattern designed for optimizing pixel-phase coverage via the POS TARG arguments. To fulfill our scientific goals, it is imperative to maximize the time baseline. We therefore added timing requirements so that the images are obtained as early in the cycle as possible. For this, we have also loosened the schedulability requirement to 70 to allow increased observable windows - the default schedulability would only allow 1~2 days of observable window, while our current schedulability allows about 12 days of windows.</i></p>					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(4)		SPUR4	RA: 10 15 18.4202 (153.8267508d) Dec: +42 29 53.64 (42.49823d) Equinox: J2000		V=20.0	Reference Frame: ICRS
	<p><i>Comments:</i> <i>Category=STELLAR CLUSTER</i> <i>Description=[GLOBULAR CLUSTER, TIDAL TAIL]</i> <i>Extended=NO</i></p>					

Proposal 15930 - SPUR4 (04) - Cold Dark Matter and the GD-1 Stellar Stream

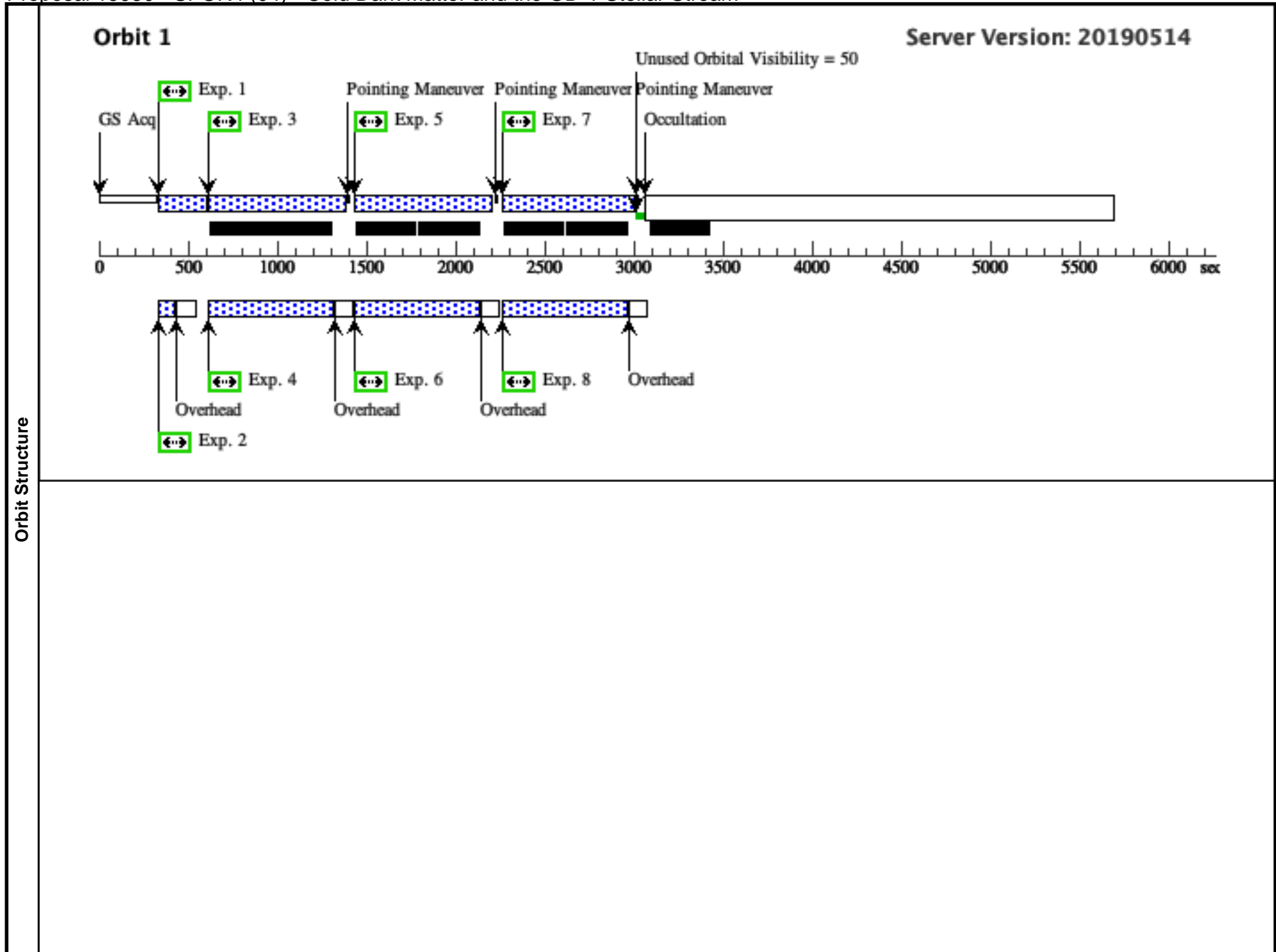
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(4) SPUR4	ACS/WFC, ACCUM, WFC	F814W	FLASH=25	POS TARG 0.0000,0 .0000	Sequence 1-8 Non-Int in SPUR4 (04) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in SPUR4 (04)	50 Secs (50 Secs) [==>]	[1]
	2	ANY	WFC3/UVIS, ACCUM, UVIS	F814W	FLASH=10.0		Sequence 1-8 Non-Int in SPUR4 (04) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in SPUR4 (04)	60 Secs (60 Secs) [==>]	[1]
	3	(4) SPUR4	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.0000,0 .0000	Sequence 1-8 Non-Int in SPUR4 (04) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in SPUR4 (04)	646 Secs (646 Secs) [==>]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR4 (04) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in SPUR4 (04)	698 Secs (698 Secs) [==>]	[1]
	5	(4) SPUR4	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.1647,0 .0124	Sequence 1-8 Non-Int in SPUR4 (04) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in SPUR4 (04)	646 Secs (646 Secs) [==>]	[1]
	6	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR4 (04) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in SPUR4 (04)	698 Secs (698 Secs) [==>]	[1]
	7	(4) SPUR4	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.3293,0 .0248	Sequence 1-8 Non-Int in SPUR4 (04) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in SPUR4 (04)	615 Secs (615 Secs) [==>]	[1]
	8	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in SPUR4 (04) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in SPUR4 (04)	698 Secs (698 Secs) [==>]	[1]
	9	(4) SPUR4	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in SPUR4 (04) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in SPUR4 (04)	50 Secs (50 Secs) [==>]	[2]

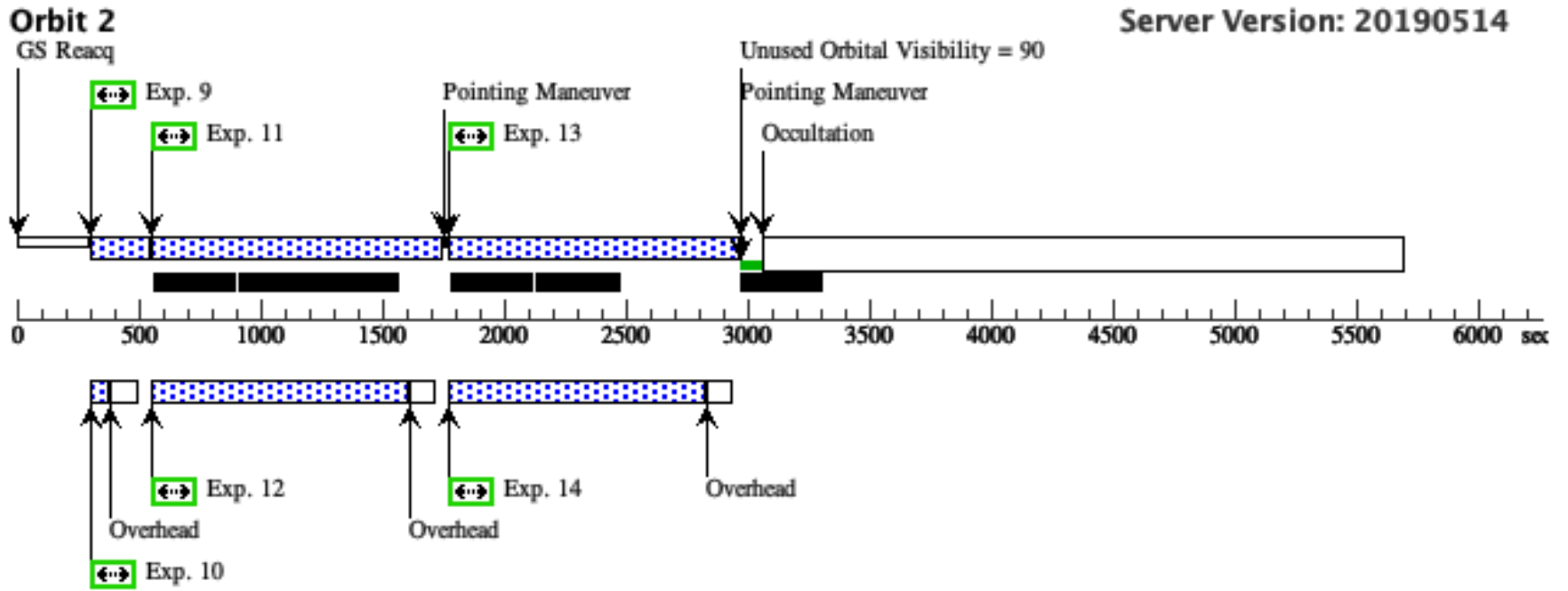
Proposal 15930 - SPUR4 (04) - Cold Dark Matter and the GD-1 Stellar Stream

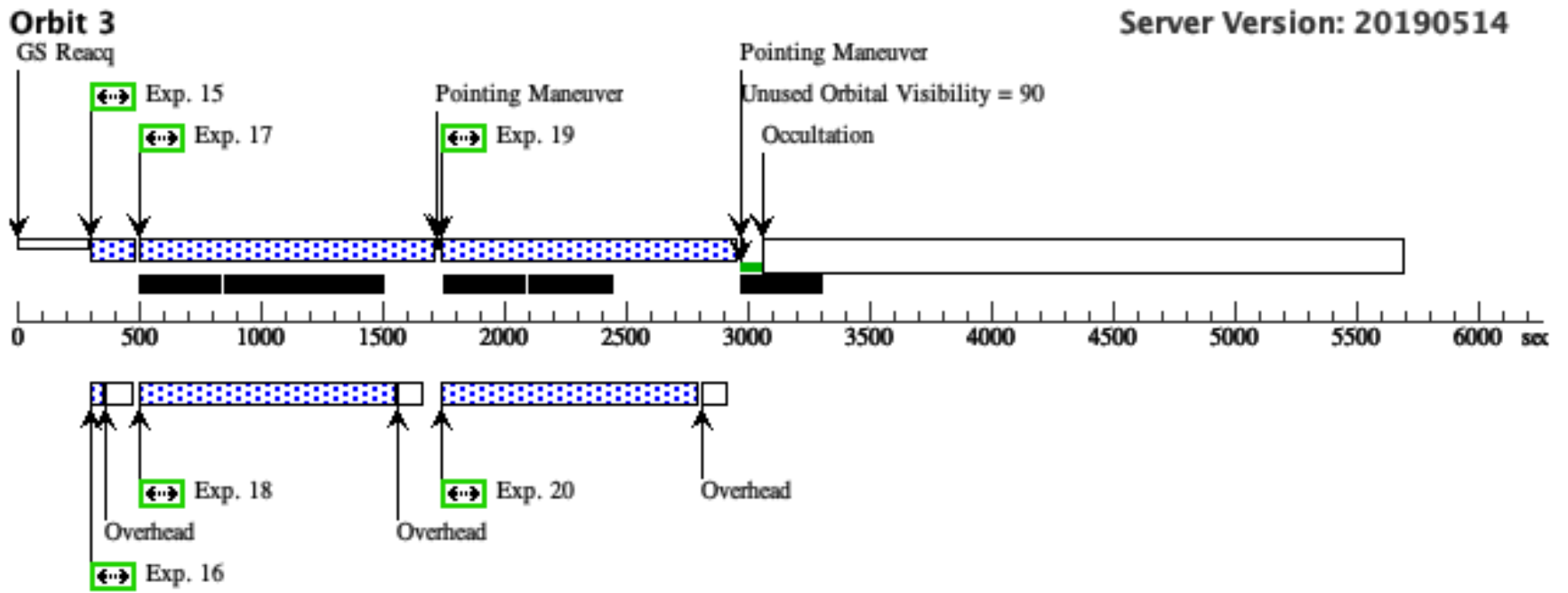
10	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 9-14 Non-Int in SPUR4 (04) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in SPUR4 (04)	50 Secs (50 Secs) [==>]	[2]
11	(4) SPUR4	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0000,0.0000	Sequence 9-14 Non-Int in SPUR4 (04) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in SPUR4 (04)	1064 Secs (1064 Secs) [==>]	[2]
12	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in SPUR4 (04) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in SPUR4 (04)	1050 Secs (1050 Secs) [==>]	[2]
13	(4) SPUR4	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.1647,0.0124	Sequence 9-14 Non-Int in SPUR4 (04) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in SPUR4 (04)	1063 Secs (1063 Secs) [==>]	[2]
14	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in SPUR4 (04) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in SPUR4 (04)	1050 Secs (1050 Secs) [==>]	[2]
15	(4) SPUR4	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.3293,0.0248	Sequence 15-20 Non-Int in SPUR4 (04) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in SPUR4 (04)	50 Secs (50 Secs) [==>]	[3]
16	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 15-20 Non-Int in SPUR4 (04) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in SPUR4 (04)	50 Secs (50 Secs) [==>]	[3]
17	(4) SPUR4	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.3293,0.0248	Sequence 15-20 Non-Int in SPUR4 (04) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in SPUR4 (04)	1091 Secs (1091 Secs) [==>]	[3]
18	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in SPUR4 (04) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in SPUR4 (04)	1050 Secs (1050 Secs) [==>]	[3]

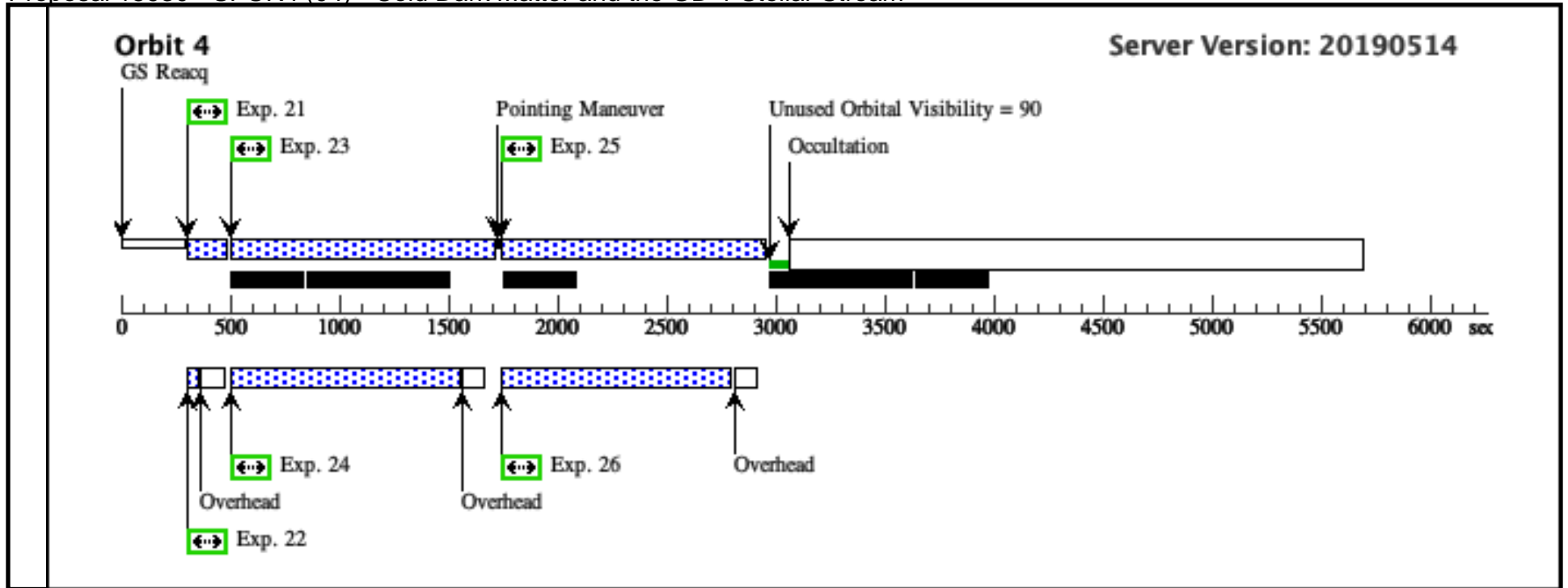
Proposal 15930 - SPUR4 (04) - Cold Dark Matter and the GD-1 Stellar Stream

19	(4) SPUR4	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0747,0 .1294	Sequence 15-20 Non-Int in SPUR4 (04) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in SPUR4 (04)	1091 Secs (1091 Secs) [==>]	[3]
20	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in SPUR4 (04) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in SPUR4 (04)	1050 Secs (1050 Secs) [==>]	[3]
21	(4) SPUR4	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in SPUR4 (04) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in SPUR4 (04)	50 Secs (50 Secs) [==>]	[4]
22	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 21-26 Non-Int in SPUR4 (04) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in SPUR4 (04)	50 Secs (50 Secs) [==>]	[4]
23	(4) SPUR4	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in SPUR4 (04) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in SPUR4 (04)	1091 Secs (1091 Secs) [==>]	[4]
24	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 21-26 Non-Int in SPUR4 (04) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in SPUR4 (04)	1050 Secs (1050 Secs) [==>]	[4]
25	(4) SPUR4	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.4039,0 .1541	Sequence 21-26 Non-Int in SPUR4 (04) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in SPUR4 (04)	1091 Secs (1091 Secs) [==>]	[4]
26	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 21-26 Non-Int in SPUR4 (04) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in SPUR4 (04)	1050 Secs (1050 Secs) [==>]	[4]









Proposal 15930 - STREAME1-1 (51) - Cold Dark Matter and the GD-1 Stellar Stream

Thu Dec 12 18:00:50 GMT 2019

Visit	<p>Proposal 15930, STREAME1-1 (51), scheduling</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: WFC3/UVIS, ACS/WFC</p> <p>Special Requirements: SCHED 70%; ORIENT 180D TO 186 D; BEFORE 31-AUG-2020:00:00:00</p> <p><i>Comments: This is the visit for STREAME1 target field. This visit consists of 2 orbits. The first orbit is for obtaining F814W images for both the primary ACS/WFC + parallel WFC3/UVIS fields, while the second orbit is for obtaining F606W images. We request specific orient ranges to position the primary+parallel fields parallel to the GD-1 stream which has a width of 0.5 deg FWHM. This will ensure that our target fields include as many GD-1 member stars as possible. Individual exposures will be dithered using a customized dither pattern designed for optimizing pixel-phase coverage via the POS TARG arguments. To fulfill our scientific goals, it is imperative to maximize the time baseline. We therefore added timing requirements so that the images are obtained as early in the cycle as possible. For this, we have also loosened the schedulability requirement to 70 to allow increased observable windows - the default schedulability would only allow 1~2 days of observable window, while our current schedulability allows about 12 days of windows.</i></p>					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(5)		STREAME1	RA: 10 23 28.9979 (155.8708246d) Dec: +42 10 53.66 (42.18157d) Equinox: J2000		V=20.0	Reference Frame: ICRS
	<p><i>Comments:</i> <i>Category=STELLAR CLUSTER</i> <i>Description=[GLOBULAR CLUSTER, TIDAL TAIL]</i> <i>Extended=NO</i></p>					

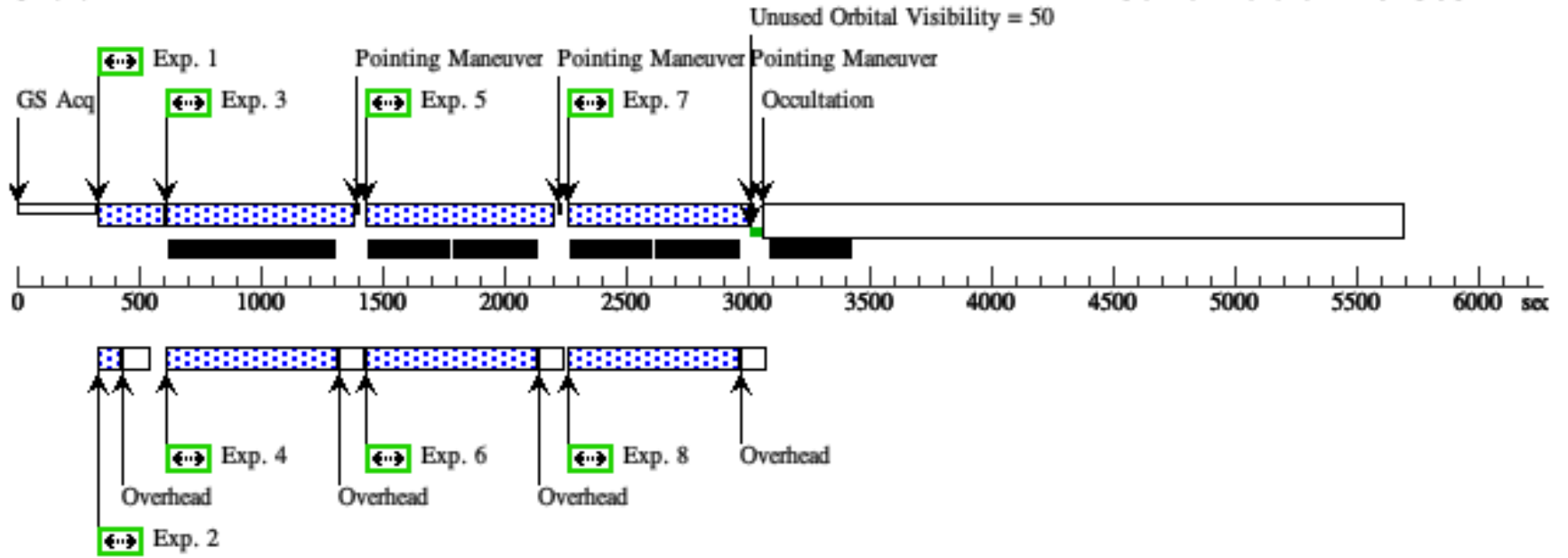
Proposal 15930 - STREAME1-1 (51) - Cold Dark Matter and the GD-1 Stellar Stream

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(5) STREAME1	ACS/WFC, ACCUM, WFC	F814W	FLASH=25	POS TARG 0.0000,0.0000	Sequence 1-8 Non-Int in STREAME1-1 (51) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in STREAME1-1 (51)	50 Secs (50 Secs) [==>]	[1]
	2	ANY	WFC3/UVIS, ACCUM, UVIS	F814W	FLASH=10.0		Sequence 1-8 Non-Int in STREAME1-1 (51) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in STREAME1-1 (51)	60 Secs (60 Secs) [==>]	[1]
	3	(5) STREAME1	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.0000,0.0000	Sequence 1-8 Non-Int in STREAME1-1 (51) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in STREAME1-1 (51)	646 Secs (646 Secs) [==>]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAME1-1 (51) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in STREAME1-1 (51)	698 Secs (698 Secs) [==>]	[1]
	5	(5) STREAME1	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.1647,0.0124	Sequence 1-8 Non-Int in STREAME1-1 (51) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in STREAME1-1 (51)	646 Secs (646 Secs) [==>]	[1]
	6	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAME1-1 (51) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in STREAME1-1 (51)	698 Secs (698 Secs) [==>]	[1]
	7	(5) STREAME1	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.3293,0.0248	Sequence 1-8 Non-Int in STREAME1-1 (51) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in STREAME1-1 (51)	615 Secs (615 Secs) [==>]	[1]
	8	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAME1-1 (51) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in STREAME1-1 (51)	698 Secs (698 Secs) [==>]	[1]

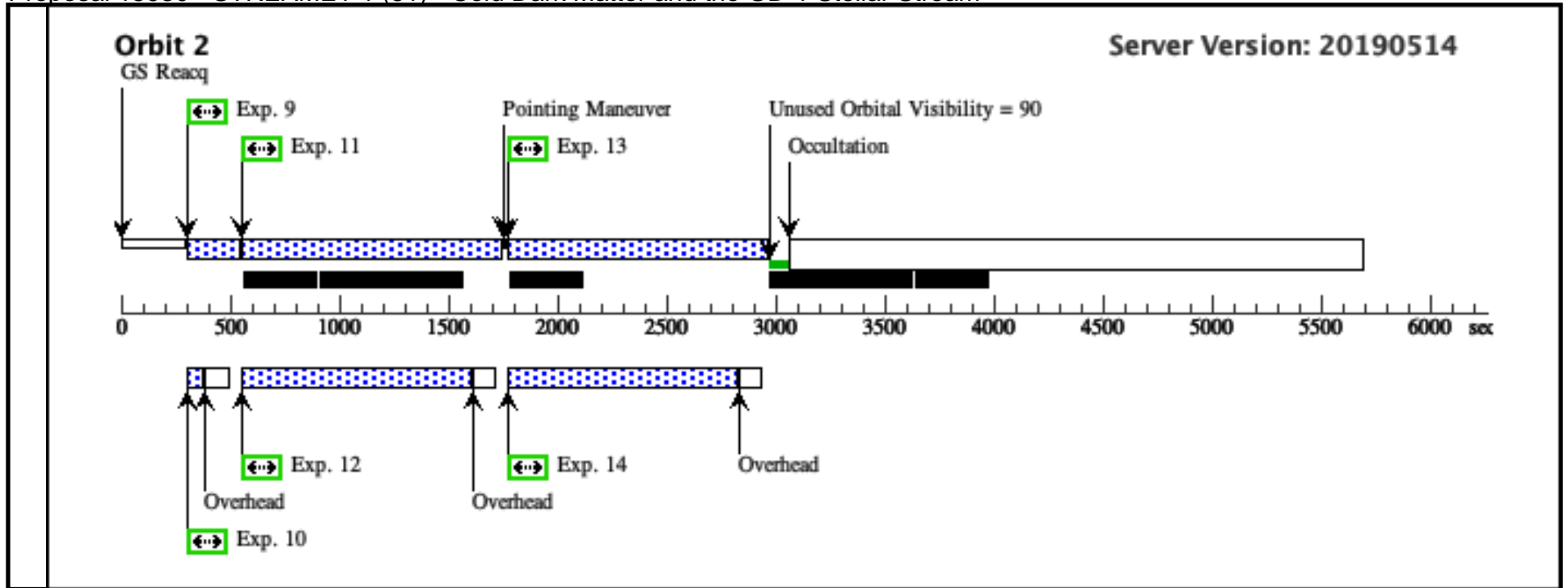
Proposal 15930 - STREAME1-1 (51) - Cold Dark Matter and the GD-1 Stellar Stream

9	(5) STREAME1	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in STREAME1-1 (51) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in STREAME1-1 (51)	50 Secs (50 Secs) [==>]	[2]
10	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 9-14 Non-Int in STREAME1-1 (51) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in STREAME1-1 (51)	50 Secs (50 Secs) [==>]	[2]
11	(5) STREAME1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in STREAME1-1 (51) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in STREAME1-1 (51)	1064 Secs (1064 Secs) [==>]	[2]
12	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in STREAME1-1 (51) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in STREAME1-1 (51)	1050 Secs (1050 Secs) [==>]	[2]
13	(5) STREAME1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.1647,0 .0124	Sequence 9-14 Non-Int in STREAME1-1 (51) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in STREAME1-1 (51)	1063 Secs (1063 Secs) [==>]	[2]
14	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in STREAME1-1 (51) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in STREAME1-1 (51)	1050 Secs (1050 Secs) [==>]	[2]

Orbit 1



Orbit Structure



Proposal 15930 - STREAME1-2 (52) - Cold Dark Matter and the GD-1 Stellar Stream

Thu Dec 12 18:00:50 GMT 2019

Visit	<p>Proposal 15930, STREAME1-2 (52), scheduling</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: WFC3/UVIS, ACS/WFC</p> <p>Special Requirements: SCHED 70%; SAME ORIENT AS 51; BEFORE 31-AUG-2020:00:00:00; GROUP 52,51 WITHIN 30D</p> <p><i>Comments: This is the visit for STREAME1 target field. This visit consists of 2 orbits. Both orbits are for obtaining F606W images. We request specific orient ranges to position the primary+parallel fields parallel to the GD-1 stream which has a width of 0.5 deg FWHM. This will ensure that our target fields include as many GD-1 member stars as possible. Individual exposures will be dithered using a customized dither pattern designed for optimizing pixel-phase coverage via the POS TARG arguments. To fulfill our scientific goals, it is imperative to maximize the time baseline. We therefore added timing requirements so that the images are obtained as early in the cycle as possible. For this, we have also loosened the schedulability requirement to 70 to allow increased observable windows - the default schedulability would only allow 1~2 days of observable window, while our current schedulability allows about 12 days of windows.</i></p>					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(5)		STREAME1	RA: 10 23 28.9979 (155.8708246d) Dec: +42 10 53.66 (42.18157d) Equinox: J2000		V=20.0	Reference Frame: ICRS
	<p><i>Comments:</i> <i>Category=STELLAR CLUSTER</i> <i>Description=[GLOBULAR CLUSTER, TIDAL TAIL]</i> <i>Extended=NO</i></p>					

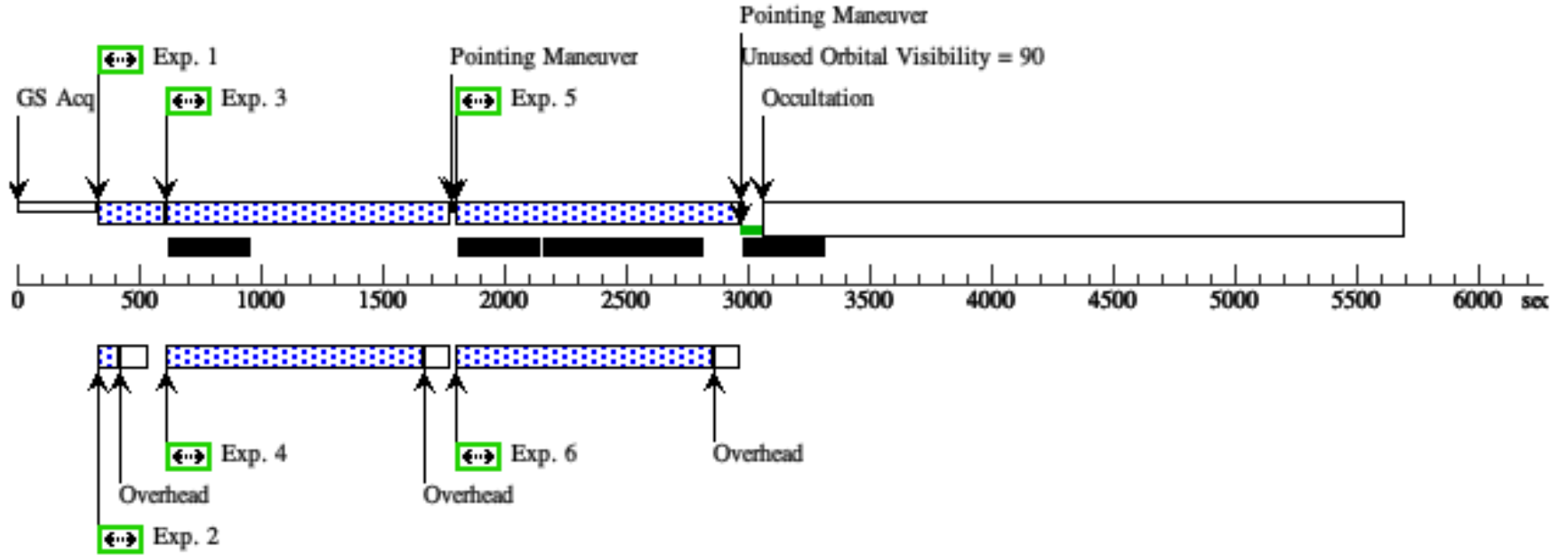
Proposal 15930 - STREAME1-2 (52) - Cold Dark Matter and the GD-1 Stellar Stream

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(5) STREAME1	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.3293,0.0248	Sequence 1-6 Non-Int in STREAME1-2 (52) Prime + Parallel Group 1-2 in Sequence 1-6 Non-Int in STREAME1-2 (52)	50 Secs (50 Secs) [==>]	[1]
	2	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 1-6 Non-Int in STREAME1-2 (52) Prime + Parallel Group 1-2 in Sequence 1-6 Non-Int in STREAME1-2 (52)	50 Secs (50 Secs) [==>]	[1]
	3	(5) STREAME1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.3293,0.0248	Sequence 1-6 Non-Int in STREAME1-2 (52) Prime + Parallel Group 3-4 in Sequence 1-6 Non-Int in STREAME1-2 (52)	1034 Secs (1034 Secs) [==>]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 1-6 Non-Int in STREAME1-2 (52) Prime + Parallel Group 3-4 in Sequence 1-6 Non-Int in STREAME1-2 (52)	1050 Secs (1050 Secs) [==>]	[1]
	5	(5) STREAME1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0747,0.1294	Sequence 1-6 Non-Int in STREAME1-2 (52) Prime + Parallel Group 5-6 in Sequence 1-6 Non-Int in STREAME1-2 (52)	1035 Secs (1035 Secs) [==>]	[1]
	6	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 1-6 Non-Int in STREAME1-2 (52) Prime + Parallel Group 5-6 in Sequence 1-6 Non-Int in STREAME1-2 (52)	1050 Secs (1050 Secs) [==>]	[1]
	7	(5) STREAME1	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.2393,0.1418	Sequence 7-12 Non-Int in STREAME1-2 (52) Prime + Parallel Group 7-8 in Sequence 7-12 Non-Int in STREAME1-2 (52)	50 Secs (50 Secs) [==>]	[2]
	8	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 7-12 Non-Int in STREAME1-2 (52) Prime + Parallel Group 7-8 in Sequence 7-12 Non-Int in STREAME1-2 (52)	50 Secs (50 Secs) [==>]	[2]

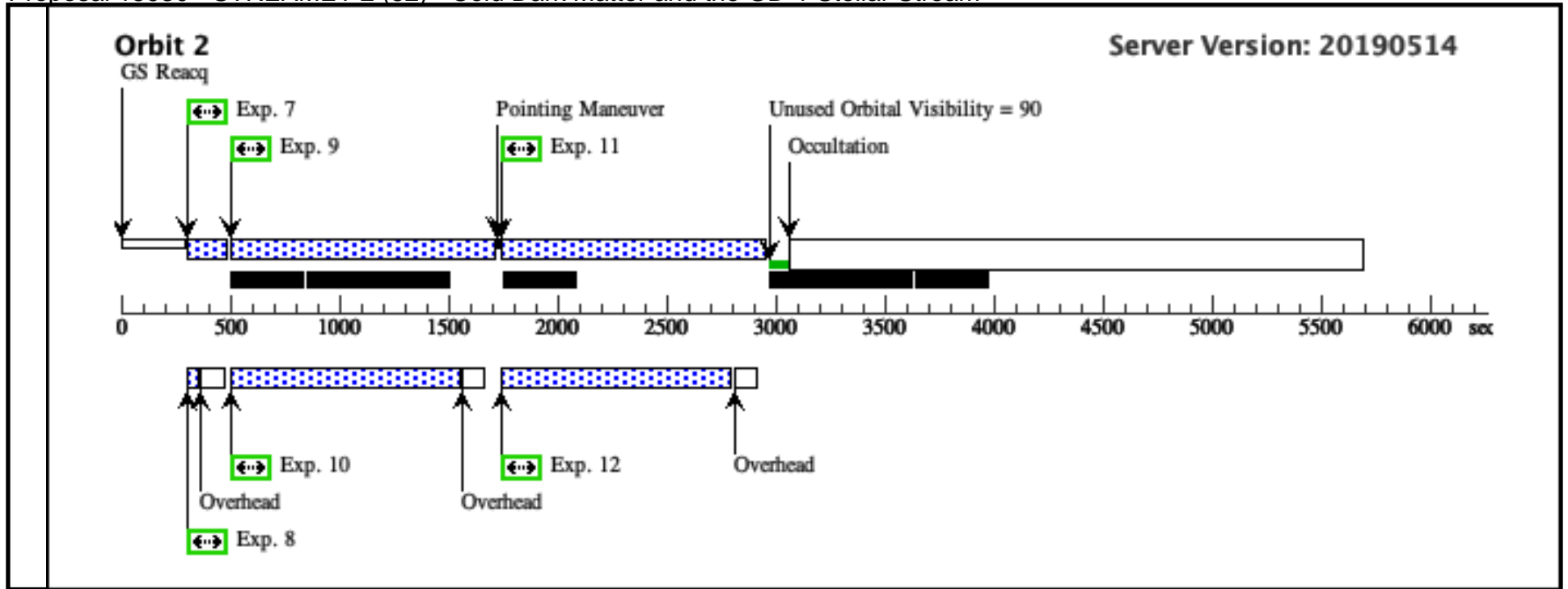
Proposal 15930 - STREAME1-2 (52) - Cold Dark Matter and the GD-1 Stellar Stream

9	(5) STREAME1	ACS/WFC, ACCUM, WFC	F606W	POS TARG 0.2393,0 .1418	Sequence 7-12 Non-Int in STREAME1-2 (52) Prime + Parallel Group 9-10 in Sequence 7-12 Non-Int in STREAME1-2 (52)	1091 Secs (1091 Secs) [==>]	[2]
10	ANY	WFC3/UVIS, ACCUM, UVIS	F606W		Sequence 7-12 Non-Int in STREAME1-2 (52) Prime + Parallel Group 9-10 in Sequence 7-12 Non-Int in STREAME1-2 (52)	1050 Secs (1050 Secs) [==>]	[2]
11	(5) STREAME1	ACS/WFC, ACCUM, WFC	F606W	POS TARG 0.4039,0 .1541	Sequence 7-12 Non-Int in STREAME1-2 (52) Prime + Parallel Group 11-12 in Sequence 7-12 Non-Int in STREAME1-2 (52)	1091 Secs (1091 Secs) [==>]	[2]
12	ANY	WFC3/UVIS, ACCUM, UVIS	F606W		Sequence 7-12 Non-Int in STREAME1-2 (52) Prime + Parallel Group 11-12 in Sequence 7-12 Non-Int in STREAME1-2 (52)	1050 Secs (1050 Secs) [==>]	[2]

Orbit 1



Orbit Structure



Proposal 15930 - STREAME2 (06) - Cold Dark Matter and the GD-1 Stellar Stream

Thu Dec 12 18:00:50 GMT 2019

Visit	<p>Proposal 15930, STREAME2 (06), scheduling</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: WFC3/UVIS, ACS/WFC</p> <p>Special Requirements: SCHED 70%; ORIENT 180D TO 186 D; BEFORE 31-AUG-2020:00:00:00</p> <p><i>Comments: This is the visit for STREAME2 target field. This visit consists of 4 orbits. The first orbit is for obtaining F814W images for both the primary ACS/WFC + parallel WFC3/UVIS fields, while orbits 2-4 are for obtaining F606W images. We request specific orient ranges to position the primary+parallel fields parallel to the GD-1 stream which has a width of 0.5 deg FWHM. This will ensure that our target fields include as many GD-1 member stars as possible. Individual exposures will be dithered using a customized dither pattern designed for optimizing pixel-phase coverage via the POS TARG arguments. To fulfill our scientific goals, it is imperative to maximize the time baseline. We therefore added timing requirements so that the images are obtained as early in the cycle as possible. For this, we have also loosened the schedulability requirement to 70 to allow increased observable windows - the default schedulability would only allow 1~2 days of observable window, while our current schedulability allows about 12 days of windows.</i></p>					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(6)		STREAME2	RA: 10 23 44.6911 (155.9362129d) Dec: +42 09 42.91 (42.16192d) Equinox: J2000		V=20.0	Reference Frame: ICRS
<p><i>Comments:</i> Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER, TIDAL TAIL] Extended=NO</p>						

Proposal 15930 - STREAME2 (06) - Cold Dark Matter and the GD-1 Stellar Stream

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(6) STREAME2	ACS/WFC, ACCUM, WFC	F814W	FLASH=25	POS TARG 0.0000,0.0000	Sequence 1-8 Non-Int in STREAME2 (06) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in STREAME2 (06)	50 Secs (50 Secs) [==>]	[1]
	2	ANY	WFC3/UVIS, ACCUM, UVIS	F814W	FLASH=10.0		Sequence 1-8 Non-Int in STREAME2 (06) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in STREAME2 (06)	60 Secs (60 Secs) [==>]	[1]
	3	(6) STREAME2	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.0000,0.0000	Sequence 1-8 Non-Int in STREAME2 (06) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in STREAME2 (06)	646 Secs (646 Secs) [==>]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAME2 (06) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in STREAME2 (06)	698 Secs (698 Secs) [==>]	[1]
	5	(6) STREAME2	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.1647,0.0124	Sequence 1-8 Non-Int in STREAME2 (06) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in STREAME2 (06)	646 Secs (646 Secs) [==>]	[1]
	6	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAME2 (06) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in STREAME2 (06)	698 Secs (698 Secs) [==>]	[1]
	7	(6) STREAME2	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.3293,0.0248	Sequence 1-8 Non-Int in STREAME2 (06) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in STREAME2 (06)	615 Secs (615 Secs) [==>]	[1]
	8	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAME2 (06) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in STREAME2 (06)	698 Secs (698 Secs) [==>]	[1]

Proposal 15930 - STREAME2 (06) - Cold Dark Matter and the GD-1 Stellar Stream

9	(6) STREAME2	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in STREAME2 (06) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in STREAME2 (06)	50 Secs (50 Secs) [==>]	[2]
10	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 9-14 Non-Int in STREAME2 (06) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in STREAME2 (06)	50 Secs (50 Secs) [==>]	[2]
11	(6) STREAME2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in STREAME2 (06) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in STREAME2 (06)	1064 Secs (1064 Secs) [==>]	[2]
12	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in STREAME2 (06) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in STREAME2 (06)	1050 Secs (1050 Secs) [==>]	[2]
13	(6) STREAME2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.1647,0 .0124	Sequence 9-14 Non-Int in STREAME2 (06) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in STREAME2 (06)	1063 Secs (1063 Secs) [==>]	[2]
14	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in STREAME2 (06) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in STREAME2 (06)	1050 Secs (1050 Secs) [==>]	[2]
15	(6) STREAME2	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.3293,0 .0248	Sequence 15-20 Non-Int in STREAME2 (06) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in STREAME2 (06)	50 Secs (50 Secs) [==>]	[3]
16	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 15-20 Non-Int in STREAME2 (06) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in STREAME2 (06)	50 Secs (50 Secs) [==>]	[3]

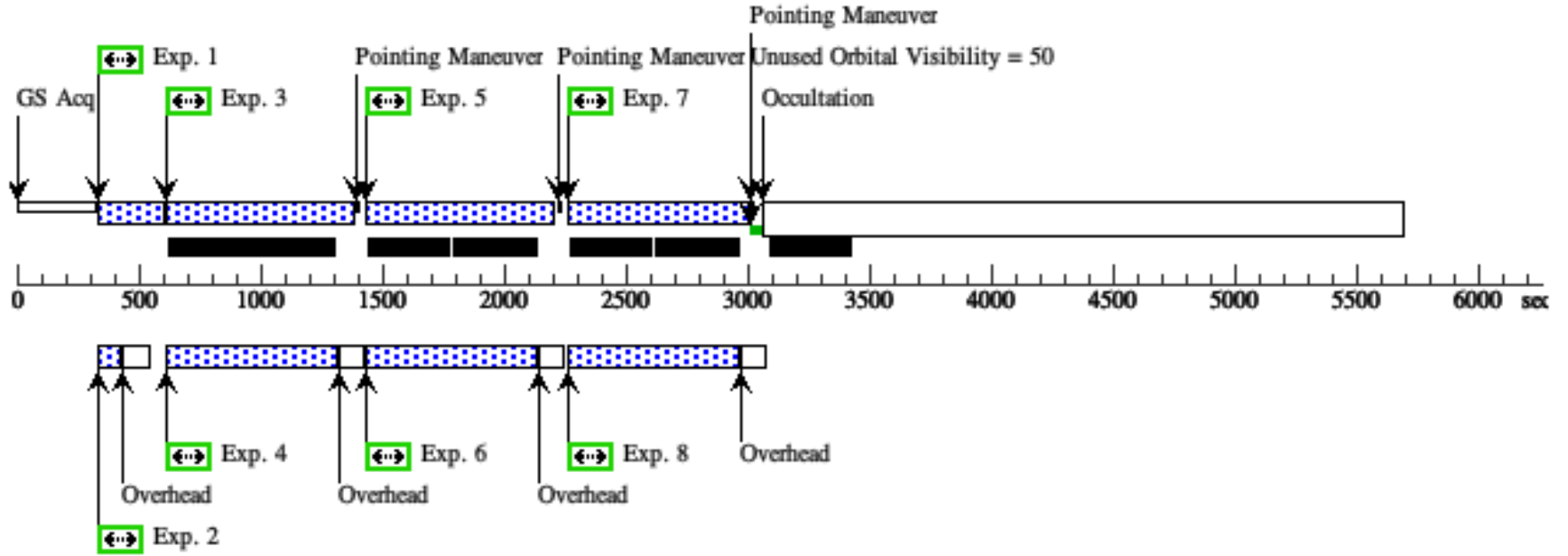
Proposal 15930 - STREAME2 (06) - Cold Dark Matter and the GD-1 Stellar Stream

17	(6) STREAME2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.3293,0 .0248	Sequence 15-20 Non-Int in STREAME2 (06) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in STREAME2 (06)	1091 Secs (1091 Secs) [==>]	[3]
18	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in STREAME2 (06) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in STREAME2 (06)	1050 Secs (1050 Secs) [==>]	[3]
19	(6) STREAME2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0747,0 .1294	Sequence 15-20 Non-Int in STREAME2 (06) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in STREAME2 (06)	1091 Secs (1091 Secs) [==>]	[3]
20	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in STREAME2 (06) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in STREAME2 (06)	1050 Secs (1050 Secs) [==>]	[3]
21	(6) STREAME2	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in STREAME2 (06) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in STREAME2 (06)	50 Secs (50 Secs) [==>]	[4]
22	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 21-26 Non-Int in STREAME2 (06) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in STREAME2 (06)	50 Secs (50 Secs) [==>]	[4]
23	(6) STREAME2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in STREAME2 (06) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in STREAME2 (06)	1091 Secs (1091 Secs) [==>]	[4]
24	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 21-26 Non-Int in STREAME2 (06) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in STREAME2 (06)	1050 Secs (1050 Secs) [==>]	[4]

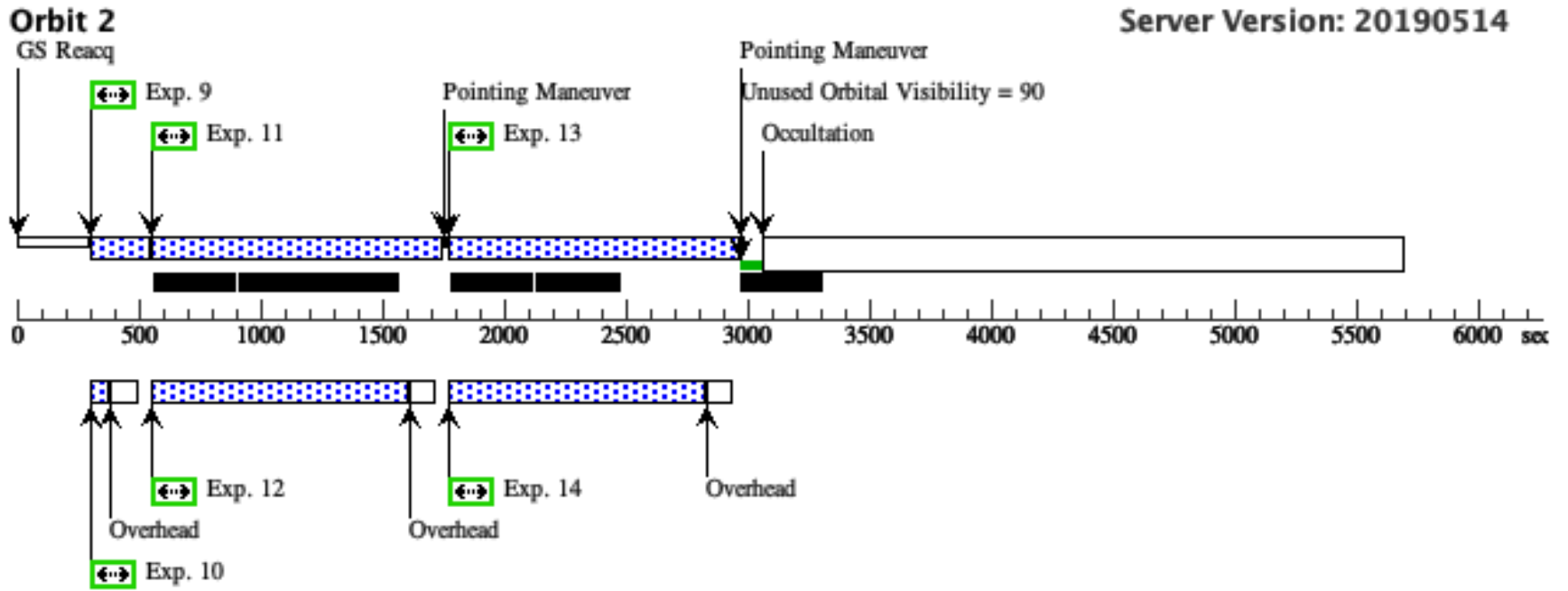
Proposal 15930 - STREAME2 (06) - Cold Dark Matter and the GD-1 Stellar Stream

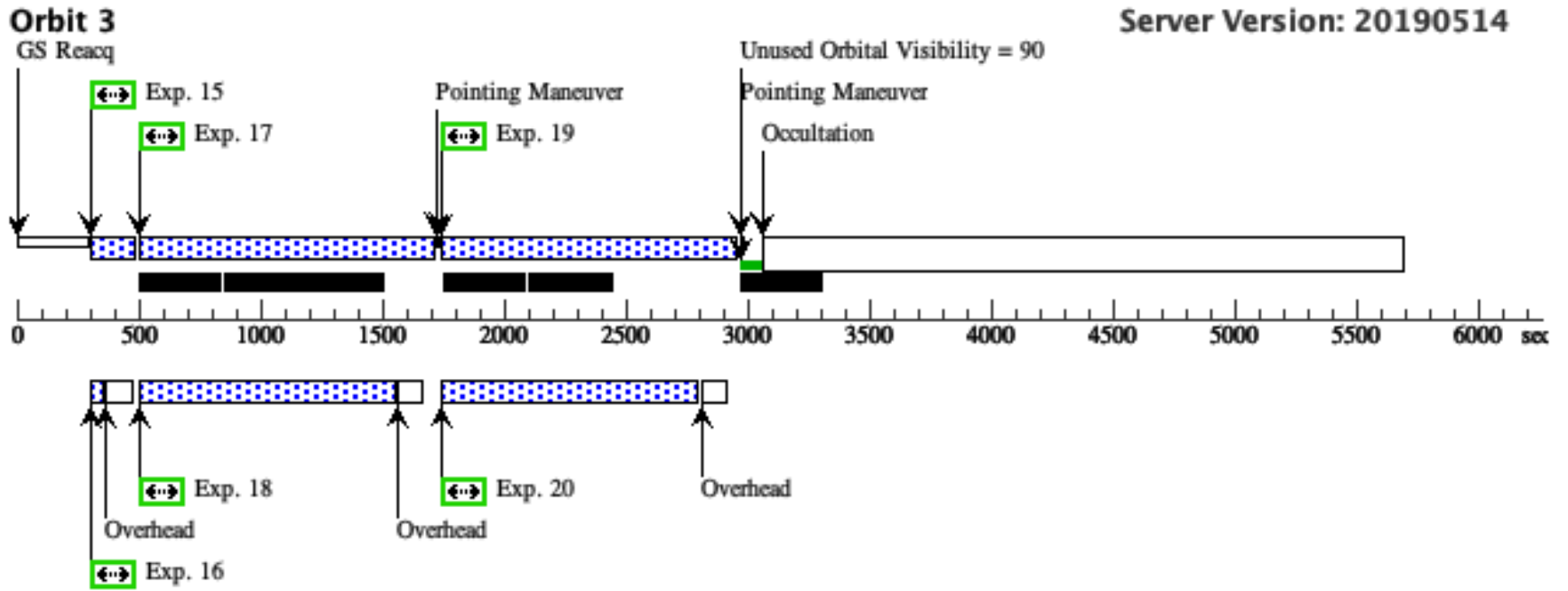
25	(6) STREAME2	ACS/WFC, ACCUM, WFC	F606W	POS TARG 0.4039,0 .1541	Sequence 21-26 Non-Int in STREAME2 (06) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in STREAME2 (06)	1091 Secs (1091 Secs) [==>]	[4]
26	ANY	WFC3/UVIS, ACCUM, UVIS	F606W		Sequence 21-26 Non-Int in STREAME2 (06) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in STREAME2 (06)	1050 Secs (1050 Secs) [==>]	[4]

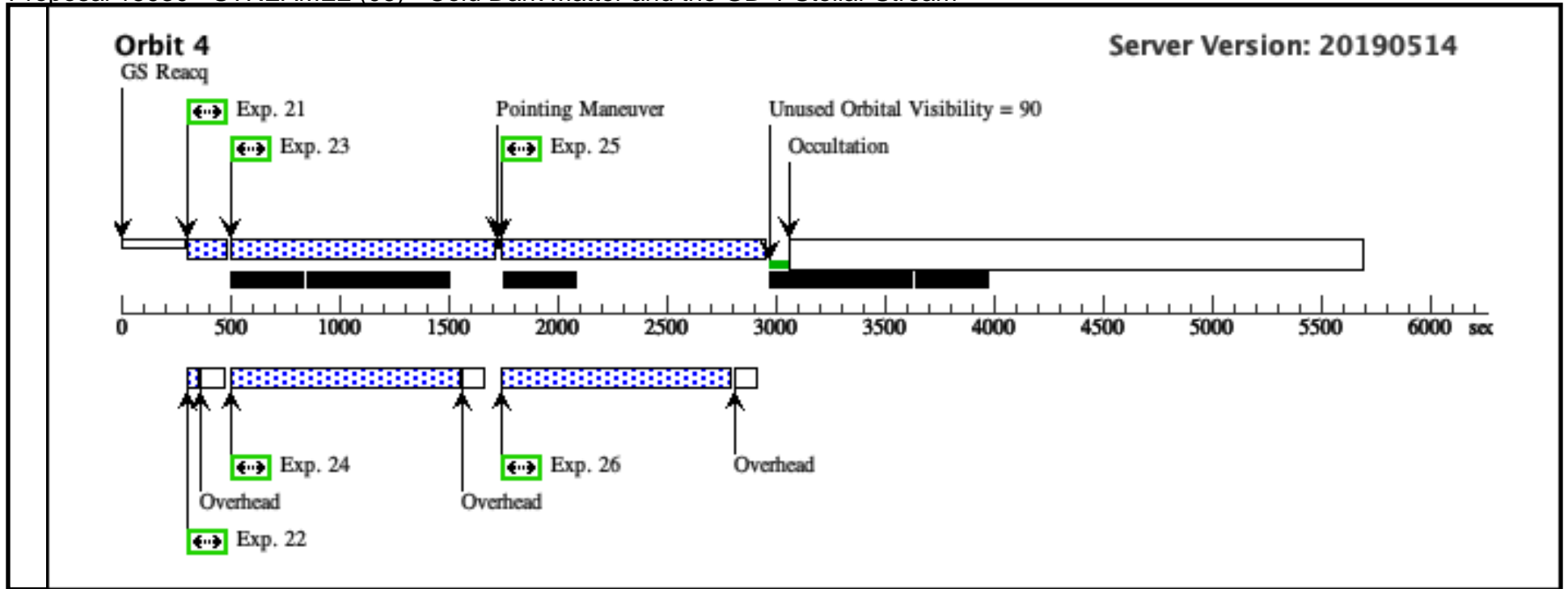
Orbit 1



Orbit Structure







Proposal 15930 - STREAMW1 (07) - Cold Dark Matter and the GD-1 Stellar Stream

Thu Dec 12 18:00:50 GMT 2019

Visit	<p>Proposal 15930, STREAMW1 (07), scheduling</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: WFC3/UVIS, ACS/WFC</p> <p>Special Requirements: SCHED 70%; ORIENT 171D TO 177 D; BEFORE 31-AUG-2020:00:00:00</p> <p><i>Comments: This is the visit for STREAMW1 target field. This visit consists of 4 orbits. The first orbit is for obtaining F814W images for both the primary ACS/WFC + parallel WFC3/UVIS fields, while orbits 2-4 are for obtaining F606W images. We request specific orient ranges to position the primary+parallel fields parallel to the GD-1 stream which has a width of 0.5 deg FWHM. This will ensure that our target fields include as many GD-1 member stars as possible. Individual exposures will be dithered using a customized dither pattern designed for optimizing pixel-phase coverage via the POS TARG arguments. To fulfill our scientific goals, it is imperative to maximize the time baseline. We therefore added timing requirements so that the images are obtained as early in the cycle as possible. For this, we have also loosened the schedulability requirement to 70 to allow increased observable windows - the default schedulability would only allow 1~2 days of observable window, while our current schedulability allows about 12 days of windows.</i></p>					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(7)		STREAMW1	RA: 09 36 59.0668 (144.2461117d) Dec: +30 16 20.36 (30.27232d) Equinox: J2000		V=20.0	Reference Frame: ICRS
	<p><i>Comments:</i> Category=STELLAR CLUSTER Description=[GLOBULAR CLUSTER, TIDAL TAIL] Extended=NO</p>					

Proposal 15930 - STREAMW1 (07) - Cold Dark Matter and the GD-1 Stellar Stream

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F814W	FLASH=25	POS TARG 0.0000,0.0000	Sequence 1-8 Non-Int in STREAMW1 (07) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in STREAMW1 (07)	50 Secs (50 Secs) [==>]	[1]
	2	ANY	WFC3/UVIS, ACCUM, UVIS	F814W	FLASH=10.0		Sequence 1-8 Non-Int in STREAMW1 (07) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in STREAMW1 (07)	60 Secs (60 Secs) [==>]	[1]
	3	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.0000,0.0000	Sequence 1-8 Non-Int in STREAMW1 (07) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in STREAMW1 (07)	635 Secs (635 Secs) [==>]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAMW1 (07) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in STREAMW1 (07)	698 Secs (698 Secs) [==>]	[1]
	5	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.1647,0.0124	Sequence 1-8 Non-Int in STREAMW1 (07) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in STREAMW1 (07)	634 Secs (634 Secs) [==>]	[1]
	6	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAMW1 (07) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in STREAMW1 (07)	697 Secs (697 Secs) [==>]	[1]
	7	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.3293,0.0248	Sequence 1-8 Non-Int in STREAMW1 (07) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in STREAMW1 (07)	600 Secs (600 Secs) [==>]	[1]
	8	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAMW1 (07) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in STREAMW1 (07)	690 Secs (690 Secs) [==>]	[1]

Proposal 15930 - STREAMW1 (07) - Cold Dark Matter and the GD-1 Stellar Stream

9	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in STREAMW1 (07) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in STREAMW1 (07)	50 Secs (50 Secs) [==>]	[2]
10	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 9-14 Non-Int in STREAMW1 (07) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in STREAMW1 (07)	50 Secs (50 Secs) [==>]	[2]
11	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in STREAMW1 (07) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in STREAMW1 (07)	1056 Secs (1056 Secs) [==>]	[2]
12	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in STREAMW1 (07) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in STREAMW1 (07)	1050 Secs (1050 Secs) [==>]	[2]
13	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.1647,0 .0124	Sequence 9-14 Non-Int in STREAMW1 (07) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in STREAMW1 (07)	1055 Secs (1055 Secs) [==>]	[2]
14	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in STREAMW1 (07) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in STREAMW1 (07)	1050 Secs (1050 Secs) [==>]	[2]
15	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.3293,0 .0248	Sequence 15-20 Non-Int in STREAMW1 (07) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in STREAMW1 (07)	50 Secs (50 Secs) [==>]	[3]
16	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 15-20 Non-Int in STREAMW1 (07) Prime + Parallel Group 15-16 in Sequence 15-20 Non-Int in STREAMW1 (07)	50 Secs (50 Secs) [==>]	[3]

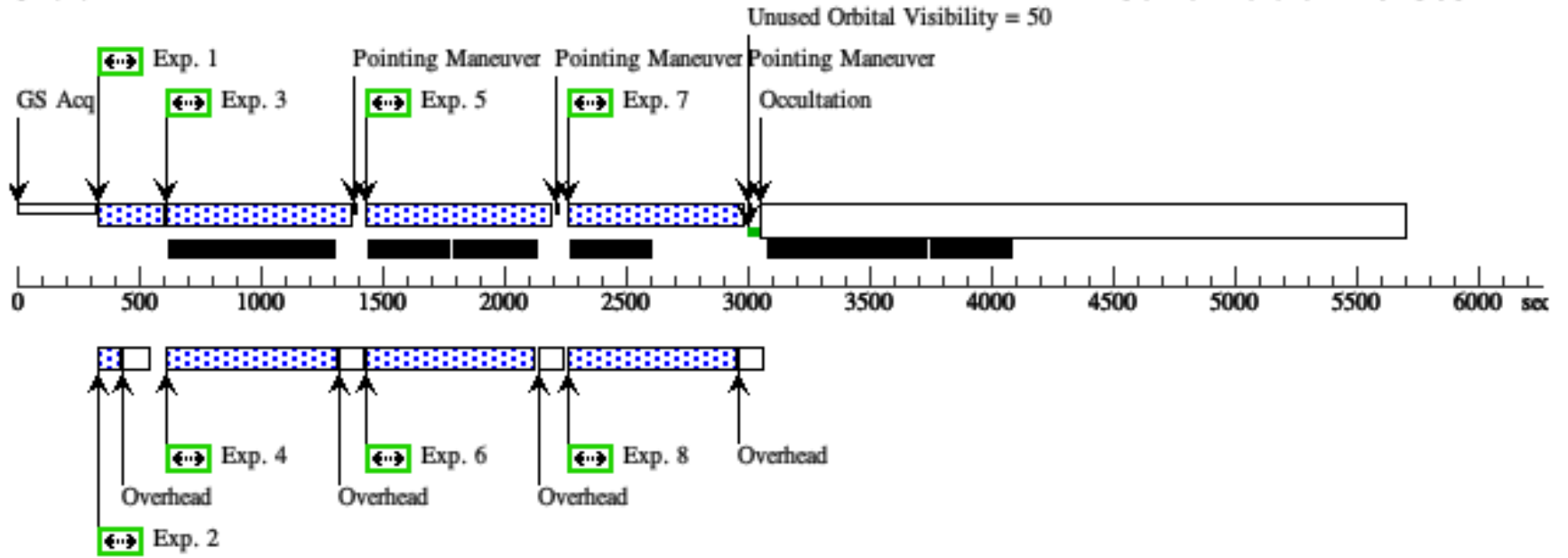
Proposal 15930 - STREAMW1 (07) - Cold Dark Matter and the GD-1 Stellar Stream

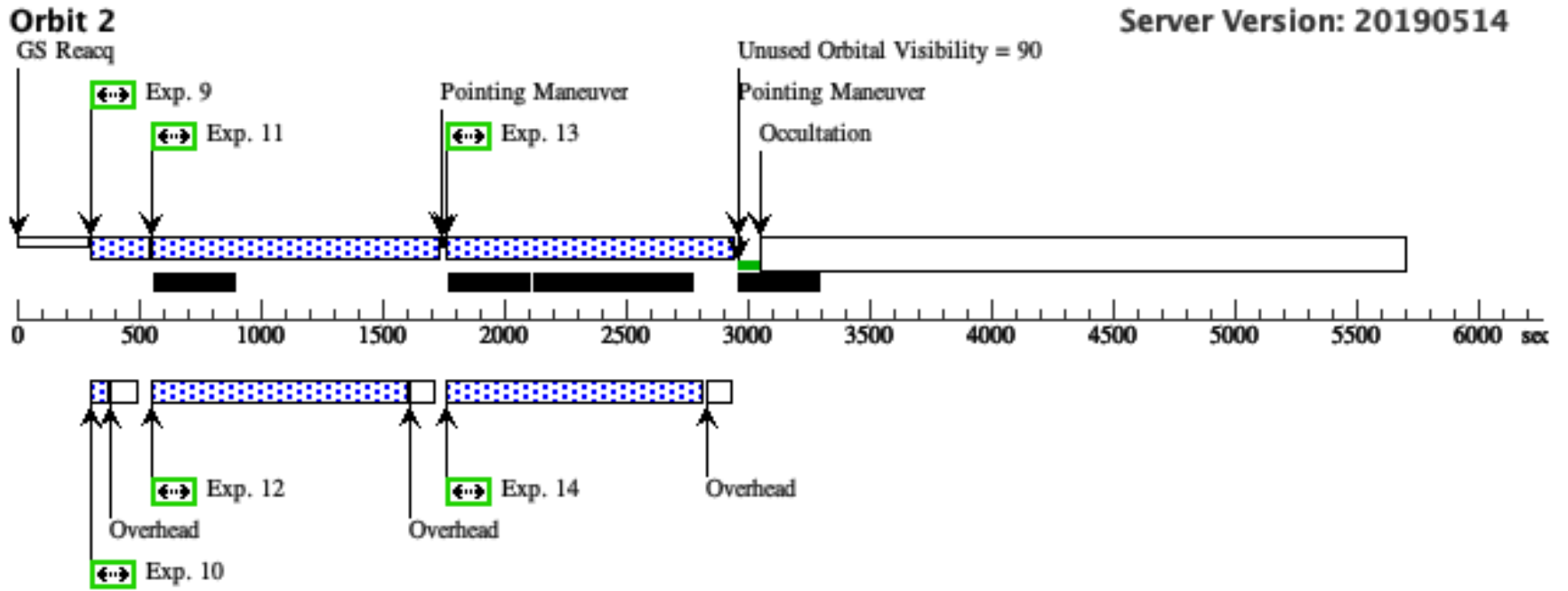
17	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.3293,0 .0248	Sequence 15-20 Non-Int in STREAMW1 (07) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in STREAMW1 (07)	1083 Secs (1083 Secs) [==>]	[3]
18	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in STREAMW1 (07) Prime + Parallel Group 17-18 in Sequence 15-20 Non-Int in STREAMW1 (07)	1050 Secs (1050 Secs) [==>]	[3]
19	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0747,0 .1294	Sequence 15-20 Non-Int in STREAMW1 (07) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in STREAMW1 (07)	1083 Secs (1083 Secs) [==>]	[3]
20	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 15-20 Non-Int in STREAMW1 (07) Prime + Parallel Group 19-20 in Sequence 15-20 Non-Int in STREAMW1 (07)	1050 Secs (1050 Secs) [==>]	[3]
21	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in STREAMW1 (07) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in STREAMW1 (07)	50 Secs (50 Secs) [==>]	[4]
22	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 21-26 Non-Int in STREAMW1 (07) Prime + Parallel Group 21-22 in Sequence 21-26 Non-Int in STREAMW1 (07)	50 Secs (50 Secs) [==>]	[4]
23	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.2393,0 .1418	Sequence 21-26 Non-Int in STREAMW1 (07) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in STREAMW1 (07)	1083 Secs (1083 Secs) [==>]	[4]
24	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 21-26 Non-Int in STREAMW1 (07) Prime + Parallel Group 23-24 in Sequence 21-26 Non-Int in STREAMW1 (07)	1050 Secs (1050 Secs) [==>]	[4]

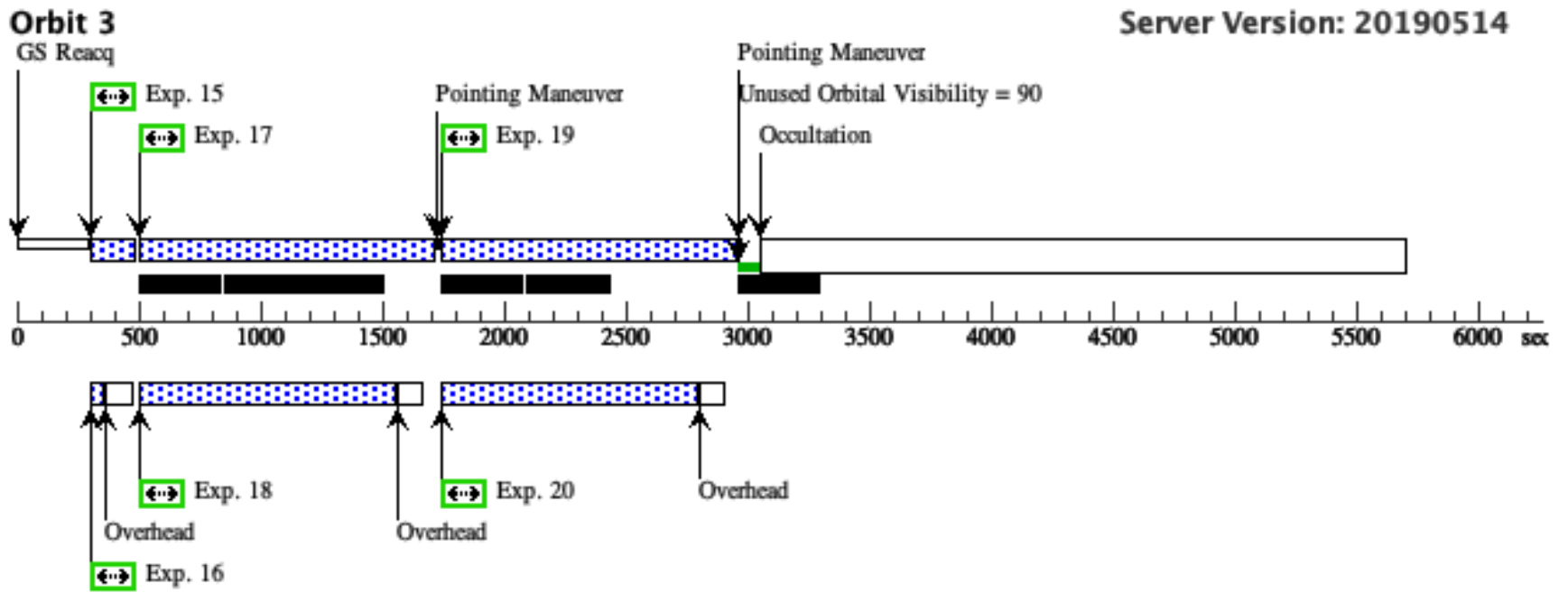
Proposal 15930 - STREAMW1 (07) - Cold Dark Matter and the GD-1 Stellar Stream

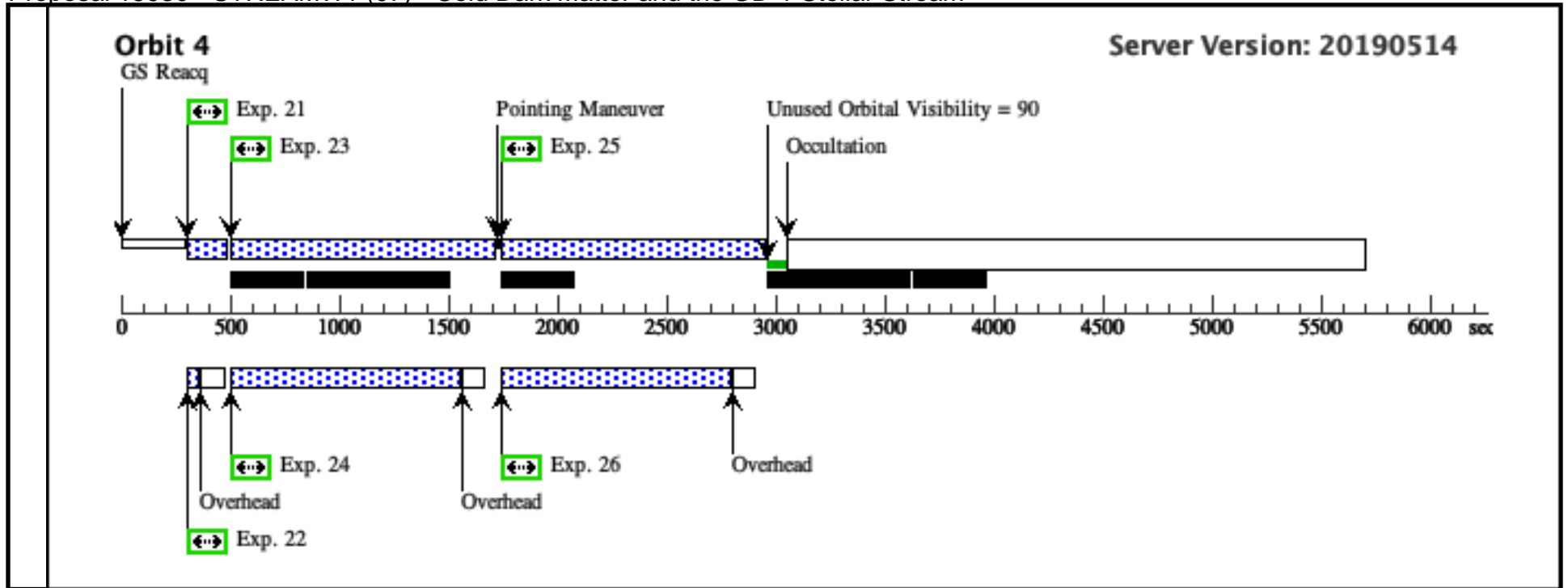
25	(7) STREAMW1	ACS/WFC, ACCUM, WFC	F606W	POS TARG 0.4039,0 .1541	Sequence 21-26 Non-Int in STREAMW1 (07) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in STREAMW1 (07)	1083 Secs (1083 Secs) [==>]	[4]
26	ANY	WFC3/UVIS, ACCUM, UVIS	F606W		Sequence 21-26 Non-Int in STREAMW1 (07) Prime + Parallel Group 25-26 in Sequence 21-26 Non-Int in STREAMW1 (07)	1050 Secs (1050 Secs) [==>]	[4]

Orbit 1









Proposal 15930 - STREAMW2-1 (81) - Cold Dark Matter and the GD-1 Stellar Stream

Thu Dec 12 18:00:51 GMT 2019

Visit	<p>Proposal 15930, STREAMW2-1 (81), scheduling</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: WFC3/UVIS, ACS/WFC</p> <p>Special Requirements: SCHED 70%; ORIENT 171D TO 177 D; BEFORE 31-AUG-2020:00:00:00</p> <p><i>Comments: This is the visit for STREAMW2 target field. This visit consists of 2 orbits. The first orbit is for obtaining F814W images for both the primary ACS/WFC + parallel WFC3/UVIS fields, while the second orbit is for obtaining F606W images. We request specific orient ranges to position the primary+parallel fields parallel to the GD-1 stream which has a width of 0.5 deg FWHM. This will ensure that our target fields include as many GD-1 member stars as possible. Individual exposures will be dithered using a customized dither pattern designed for optimizing pixel-phase coverage via the POS TARG arguments. To fulfill our scientific goals, it is imperative to maximize the time baseline. We therefore added timing requirements so that the images are obtained as early in the cycle as possible. For this, we have also loosened the schedulability requirement to 70 to allow increased observable windows - the default schedulability would only allow 1~2 days of observable window, while our current schedulability allows about 12 days of windows.</i></p>												
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(8)</td> <td>STREAMW2</td> <td>RA: 09 36 43.8271 (144.1826129d) Dec: +30 17 18.11 (30.28836d) Equinox: J2000</td> <td></td> <td>V=20.0</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments:</i> <i>Category=STELLAR CLUSTER</i> <i>Description=[GLOBULAR CLUSTER, TIDAL TAIL]</i> <i>Extended=NO</i></p>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(8)	STREAMW2	RA: 09 36 43.8271 (144.1826129d) Dec: +30 17 18.11 (30.28836d) Equinox: J2000		V=20.0
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous								
(8)	STREAMW2	RA: 09 36 43.8271 (144.1826129d) Dec: +30 17 18.11 (30.28836d) Equinox: J2000		V=20.0	Reference Frame: ICRS								

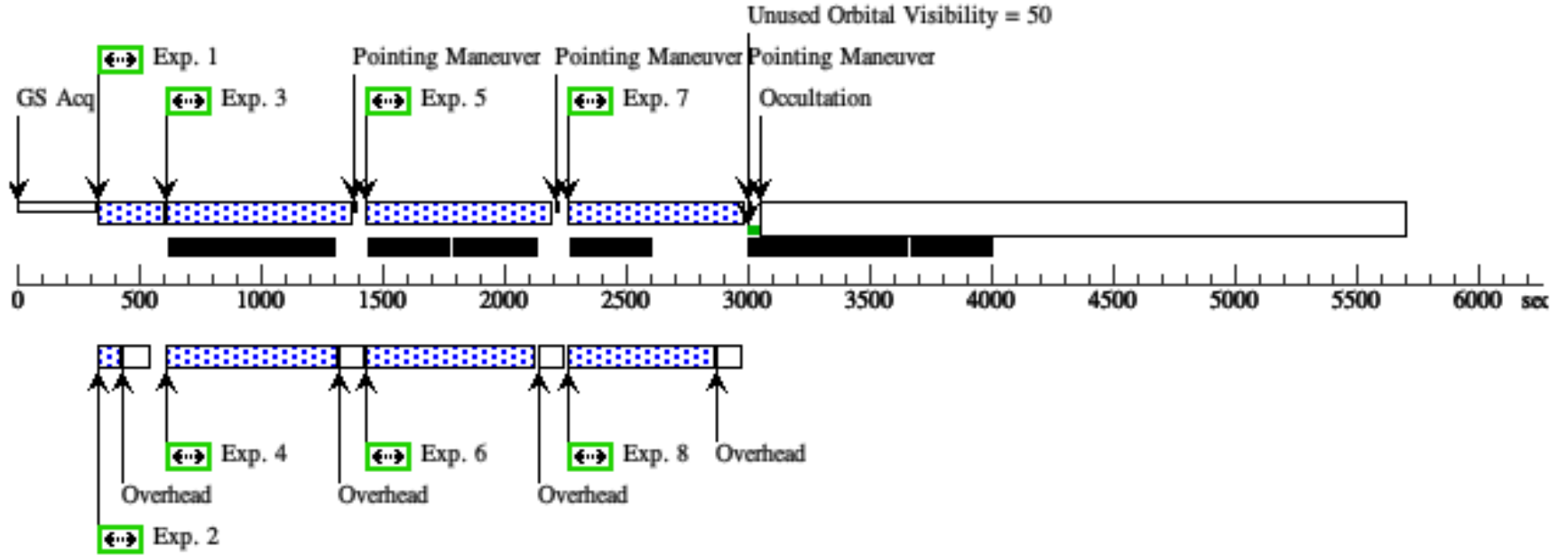
Proposal 15930 - STREAMW2-1 (81) - Cold Dark Matter and the GD-1 Stellar Stream

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F814W	FLASH=25	POS TARG 0.0000,0.0000	Sequence 1-8 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in STREAMW2-1 (81)	50 Secs (50 Secs) [==>]	[1]
	2	ANY	WFC3/UVIS, ACCUM, UVIS	F814W	FLASH=10.0		Sequence 1-8 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in STREAMW2-1 (81)	60 Secs (60 Secs) [==>]	[1]
	3	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.0000,0.0000	Sequence 1-8 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in STREAMW2-1 (81)	635 Secs (635 Secs) [==>]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in STREAMW2-1 (81)	698 Secs (698 Secs) [==>]	[1]
	5	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.1647,0.0124	Sequence 1-8 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in STREAMW2-1 (81)	634 Secs (634 Secs) [==>]	[1]
	6	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in STREAMW2-1 (81)	697 Secs (697 Secs) [==>]	[1]
	7	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.3293,0.0248	Sequence 1-8 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in STREAMW2-1 (81)	600 Secs (600 Secs) [==>]	[1]
	8	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-8 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in STREAMW2-1 (81)	600 Secs (600 Secs) [==>]	[1]

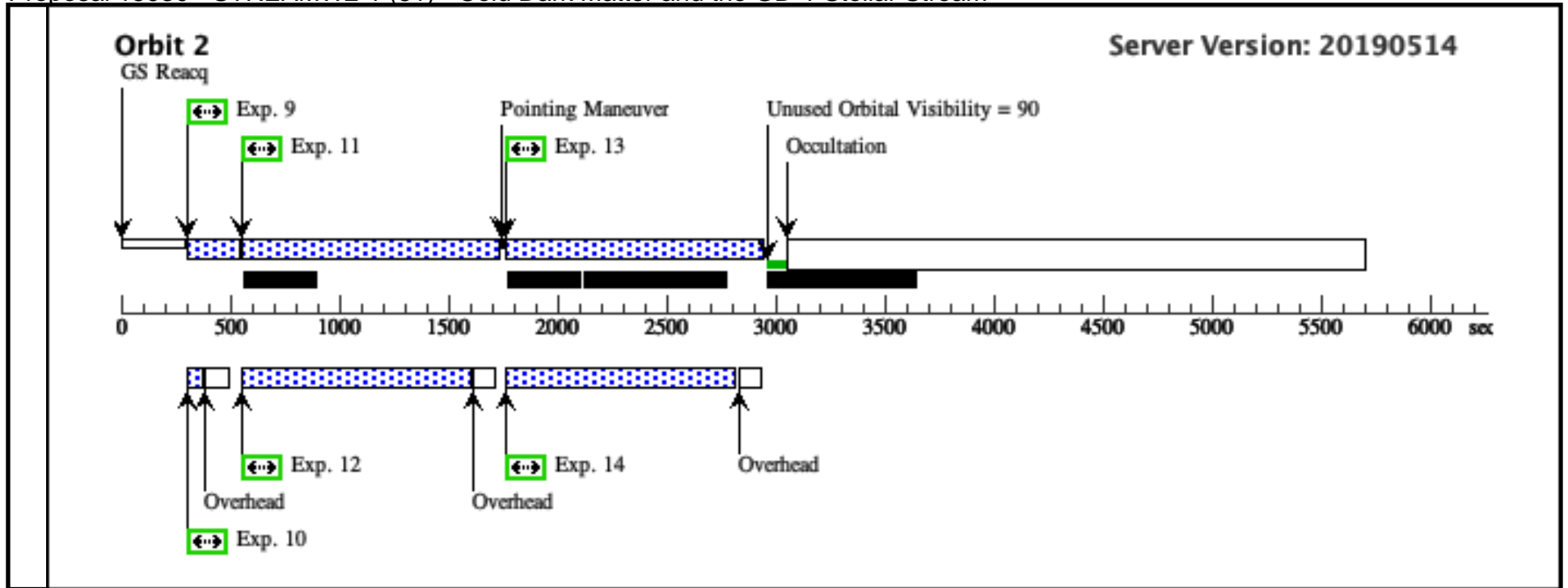
Proposal 15930 - STREAMW2-1 (81) - Cold Dark Matter and the GD-1 Stellar Stream

9	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in STREAMW2-1 (81)	50 Secs (50 Secs) [==>]	[2]
10	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 9-14 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 9-10 in Sequence 9-14 Non-Int in STREAMW2-1 (81)	50 Secs (50 Secs) [==>]	[2]
11	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0000,0 .0000	Sequence 9-14 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in STREAMW2-1 (81)	1056 Secs (1056 Secs) [==>]	[2]
12	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 11-12 in Sequence 9-14 Non-Int in STREAMW2-1 (81)	1050 Secs (1050 Secs) [==>]	[2]
13	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.1647,0 .0124	Sequence 9-14 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in STREAMW2-1 (81)	1055 Secs (1055 Secs) [==>]	[2]
14	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 9-14 Non-Int in STREAMW2-1 (81) Prime + Parallel Group 13-14 in Sequence 9-14 Non-Int in STREAMW2-1 (81)	1050 Secs (1050 Secs) [==>]	[2]

Orbit 1



Orbit Structure



Proposal 15930 - STREAMW2-2 (82) - Cold Dark Matter and the GD-1 Stellar Stream

Thu Dec 12 18:00:51 GMT 2019

Visit	<p>Proposal 15930, STREAMW2-2 (82), scheduling</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: WFC3/UVIS, ACS/WFC</p> <p>Special Requirements: SCHED 70%; SAME ORIENT AS 81; BEFORE 31-AUG-2020:00:00:00; GROUP 82,81 WITHIN 30D</p> <p><i>Comments: This is the visit for STREAMW2 target field. This visit consists of 2 orbits. Both orbits are for obtaining F606W images. We request specific orient ranges to position the primary+parallel fields parallel to the GD-1 stream which has a width of 0.5 deg FWHM. This will ensure that our target fields include as many GD-1 member stars as possible. Individual exposures will be dithered using a customized dither pattern designed for optimizing pixel-phase coverage via the POS TARG arguments. To fulfill our scientific goals, it is imperative to maximize the time baseline. We therefore added timing requirements so that the images are obtained as early in the cycle as possible. For this, we have also loosened the schedulability requirement to 70 to allow increased observable windows - the default schedulability would only allow 1~2 days of observable window, while our current schedulability allows about 12 days of windows.</i></p>					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(8)		STREAMW2	RA: 09 36 43.8271 (144.1826129d) Dec: +30 17 18.11 (30.28836d) Equinox: J2000		V=20.0	Reference Frame: ICRS
<p><i>Comments:</i> <i>Category=STELLAR CLUSTER</i> <i>Description=[GLOBULAR CLUSTER, TIDAL TAIL]</i> <i>Extended=NO</i></p>						

Proposal 15930 - STREAMW2-2 (82) - Cold Dark Matter and the GD-1 Stellar Stream

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.3293,0.0248	Sequence 1-6 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 1-2 in Sequence 1-6 Non-Int in STREAMW2-2 (82)	50 Secs (50 Secs) [==>]	[1]
	2	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 1-6 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 1-2 in Sequence 1-6 Non-Int in STREAMW2-2 (82)	50 Secs (50 Secs) [==>]	[1]
	3	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.3293,0.0248	Sequence 1-6 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 3-4 in Sequence 1-6 Non-Int in STREAMW2-2 (82)	1027 Secs (1027 Secs) [==>]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 1-6 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 3-4 in Sequence 1-6 Non-Int in STREAMW2-2 (82)	1050 Secs (1050 Secs) [==>]	[1]
	5	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0747,0.1294	Sequence 1-6 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 5-6 in Sequence 1-6 Non-Int in STREAMW2-2 (82)	1026 Secs (1026 Secs) [==>]	[1]
	6	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 1-6 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 5-6 in Sequence 1-6 Non-Int in STREAMW2-2 (82)	1050 Secs (1050 Secs) [==>]	[1]
	7	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F606W	FLASH=23	POS TARG 0.2393,0.1418	Sequence 7-12 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 7-8 in Sequence 7-12 Non-Int in STREAMW2-2 (82)	50 Secs (50 Secs) [==>]	[2]
	8	ANY	WFC3/UVIS, ACCUM, UVIS	F606W	FLASH=10.0		Sequence 7-12 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 7-8 in Sequence 7-12 Non-Int in STREAMW2-2 (82)	50 Secs (50 Secs) [==>]	[2]

Proposal 15930 - STREAMW2-2 (82) - Cold Dark Matter and the GD-1 Stellar Stream

9	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F606W	POS TARG 0.2393,0 .1418	Sequence 7-12 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 9-10 in Sequence 7-12 Non-Int in STREAMW2-2 (82)	1083 Secs (1083 Secs) [==>]	[2]
10	ANY	WFC3/UVIS, ACCUM, UVIS	F606W		Sequence 7-12 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 9-10 in Sequence 7-12 Non-Int in STREAMW2-2 (82)	1050 Secs (1050 Secs) [==>]	[2]
11	(8) STREAMW2	ACS/WFC, ACCUM, WFC	F606W	POS TARG 0.4039,0 .1541	Sequence 7-12 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 11-12 in Sequence 7-12 Non-Int in STREAMW2-2 (82)	1083 Secs (1083 Secs) [==>]	[2]
12	ANY	WFC3/UVIS, ACCUM, UVIS	F606W		Sequence 7-12 Non-Int in STREAMW2-2 (82) Prime + Parallel Group 11-12 in Sequence 7-12 Non-Int in STREAMW2-2 (82)	1050 Secs (1050 Secs) [==>]	[2]

