



13389 - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

Cycle: 21, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Prof. Brian Siana (PI) (Contact)	University of California - Riverside	brian.siana@ucr.edu
Dr. Johan Richard (CoI) (ESA Member)	Centre de Recherche Astronomique de Lyon	johan.richard@univ-lyon1.fr
Prof. Claudia Scarlata (CoI)	University of Minnesota - Twin Cities	scarlata@astro.umn.edu
Dr. Harry Teplitz (CoI)	California Institute of Technology	hit@ipac.caltech.edu
Dr. Daniel P. Stark (CoI)	University of Arizona	dpstark@email.arizona.edu
Prof. Brant Robertson (CoI)	University of Arizona	brant@as.arizona.edu
Vandana Desai (CoI)	California Institute of Technology	desai@ipac.caltech.edu
Dr. Marc Rafelski (CoI)	California Institute of Technology	marcar@ipac.caltech.edu
Mrs. Anahita Alavi (CoI)	University of California - Riverside	anahita.alavi@email.ucr.edu
Dr. Alberto Dominguez (CoI)	University of California - Riverside	albertod@ucr.edu
Mr. William R. Freeman (CoI)	University of California - Riverside	billfreeman44@yahoo.com
Dr. Michael James Rutkowski (CoI)	University of Minnesota - Twin Cities	mjrutkow@asu.edu

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	(3) ABELL2744 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:42:46.0	yes

Proposal 13389 (STScI Edit Number: 1, Created: Monday, September 30, 2013 8:45:15 PM EST) - Overview

<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>
02	(3) ABELL2744 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:43:01.0	yes
03	(3) ABELL2744 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:43:14.0	yes
04	(3) ABELL2744 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:43:26.0	yes
05	(1) MACSJ0717 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:43:38.0	yes
06	(1) MACSJ0717 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:43:50.0	yes
07	(1) MACSJ0717 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:44:06.0	yes
08	(1) MACSJ0717 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:44:17.0	yes
09	(2) MACSJ1149 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:44:29.0	yes
10	(2) MACSJ1149 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:44:41.0	yes
11	(2) MACSJ1149 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:44:55.0	yes
12	(2) MACSJ1149 ANY	ACS/WFC WFC3/UVIS	4	30-Sep-2013 21:45:06.0	yes

48 Total Orbits Used

ABSTRACT

We propose deep WFC3/UVIS F275W and F336W (8 orbits per pointing per filter) near-ultraviolet imaging of three of the four "Frontier Field" lensing clusters. These observations will complete the legacy of Hubble imaging in these fields and detect >100 dwarf galaxies ($M_{UV} > -17$) in four redshift bins between $0.5 < z < 3.0$, enabling the following science.

1) Measurement of the luminosity and physical extent of the far-UV emission of lensed dwarf galaxies ($7.5 < \log(M^*) < 9$) at $0.5 < z < 1.5$. With these data we can determine the typical duration and surface density of star formation in galaxies in which supernovae feedback should be particularly important.

2) Enable study of galaxies from $1.5 < z < 3$, the peak epoch of star formation, via identification of their Lyman break. Accurate photometric redshifts via Lyman breaks are critical for identifying young dwarf galaxies which often have flat, featureless spectral energy distributions. The data will also enable measurement of (or significantly constrain) the Lyman continuum emissivity of ~ 20 (~ 12) dwarf galaxies at $z \sim 2.5$ ($z \sim 3.1$) that are analogous to the higher redshift galaxies which reionized the universe.

3) Detect and spatially resolve ongoing star formation in early type galaxies in the foreground clusters. The detection of such star formation (or lack of it) will constrain the mechanisms for quenching star formation and transitioning galaxies to the red sequence.

The parallel fields will be imaged in F435W and F606W to nearly double the exposure time of the Frontier parallel field observations to provide legacy high resolution blue/optical images unique to HST.

OBSERVING DESCRIPTION

We are obtaining 8-orbit images with WFC3/UVIS F275W and F336W of three of the four Frontier Field clusters to be observed in the first two years (Abell 2744, MACS J0717, MACS J1149). In addition, we are obtaining ACS/WFC F435W and F606W imaging in parallel. The orientations are chosen to be the same as the Frontier Field WFC3 observations so that our ACS images lie on the Frontier Field parallel fields.

Post Flash: We are using a post-flash level of 11 e- in F275W (where the background is entirely dark current (~ 3 e-/orbit)). For F336W we expect some background so we are decreasing the post-flash to 6 e- per orbit.

UVIS imaging:

We are taking whole orbit integrations with UVIS. This is to minimize the amount of post-flash we need to add because whole-orbit integrations allow more background and dark current per exposure. We expect to completely eliminate the significant amount of cosmic rays because we will

have 8 exposures in each filter and pointing.

We are using the standard WFC3-UVIS-DITHER-BOX four-point dither pattern for each visit. In separate visits we are using POSTARGS to offset by $\sim 4''$ in x and y to cover the chip gap and to reduce the effect of "blotchiness" in the darks.

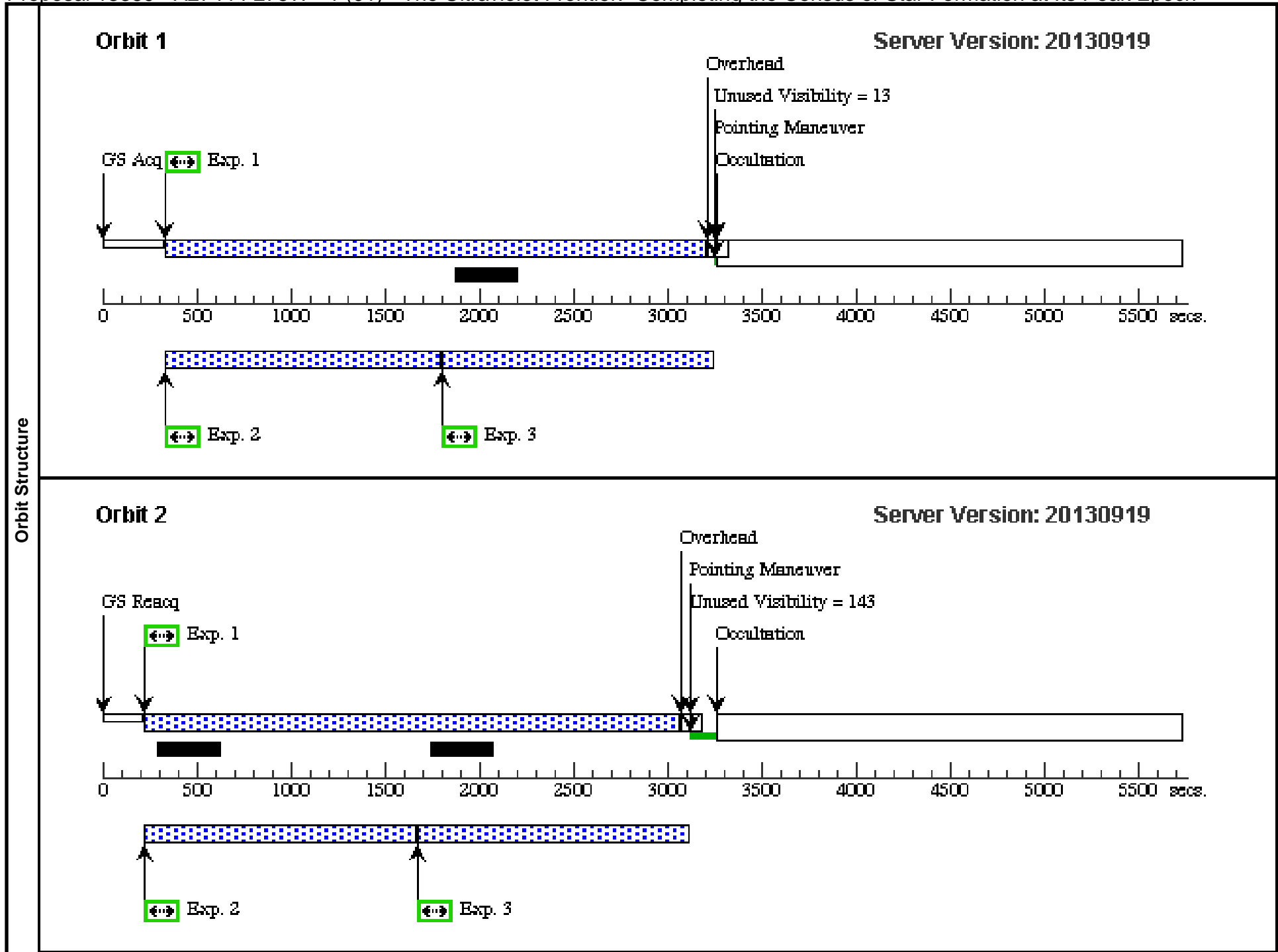
ACS parallel imaging:

In the parallel field, we will be taking a 10-orbit F435W and 6-orbit F606W image. This matches the relative exposure time of the Frontier Field strategy and will result in comparable depth in both filters. Because we are taking whole-orbit integrations with UVIS, the ACS pointing will not move during the entire orbit. We choose to take half-orbit integrations and switch filters to obtain an image in each filter at each position. Of course, because we want more integration in F435W, one of the 4-orbit visits will be completely dedicated to the F435W imaging (while the other 3 4-orbit visits will be split).

Proposal 13389 - A2744 F275W - 1 (01) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

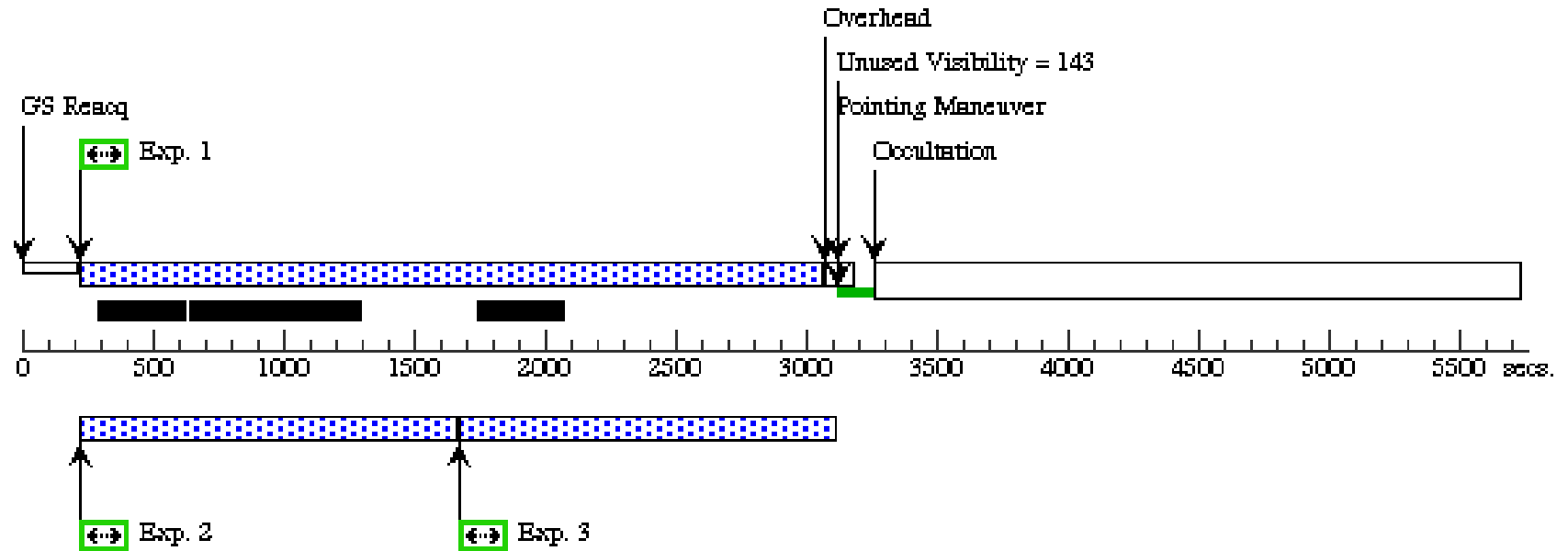
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
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Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(3) ABELL2744	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=11	POS TARG -0.42,-2.02; GS ACQ SCENARIO BASE1B3	Pattern 1, Exps 1-3 in A2744 F275W - 1 (01) (1) Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in A2744 F275W - 1 (01)	2840 Secs (11360 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	[2]
									[==>(Pattern 3)]	[3]
									[==>(Pattern 4)]	[4]
	2		ANY	ACS/WFC, ACCUM, WFC	F435W			Pattern 1, Exps 1-3 in A2744 F275W - 1 (01) (1) Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in A2744 F275W - 1 (01)	1250 Secs (5000 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	[2]
									[==>(Pattern 3)]	[3]
									[==>(Pattern 4)]	[4]
	3		ANY	ACS/WFC, ACCUM, WFC	F606W			Pattern 1, Exps 1-3 in A2744 F275W - 1 (01) (1) Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in A2744 F275W - 1 (01)	1250 Secs (5000 Secs)	
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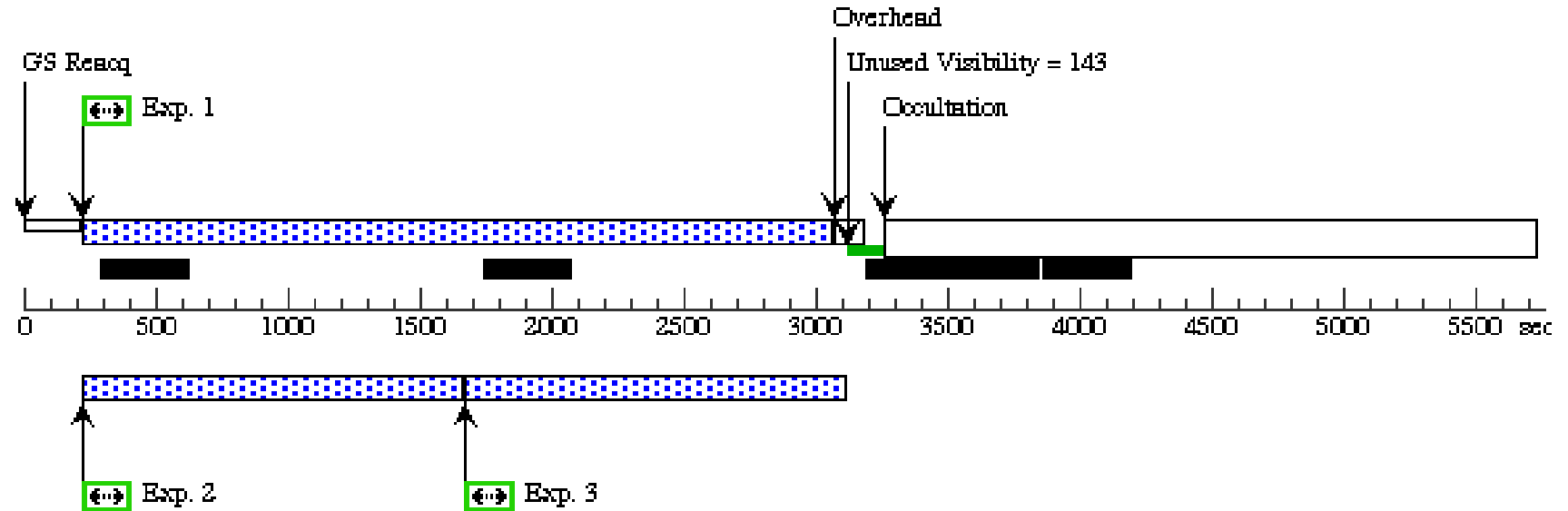
Orbit 3

Server Version: 20130919



Orbit 4

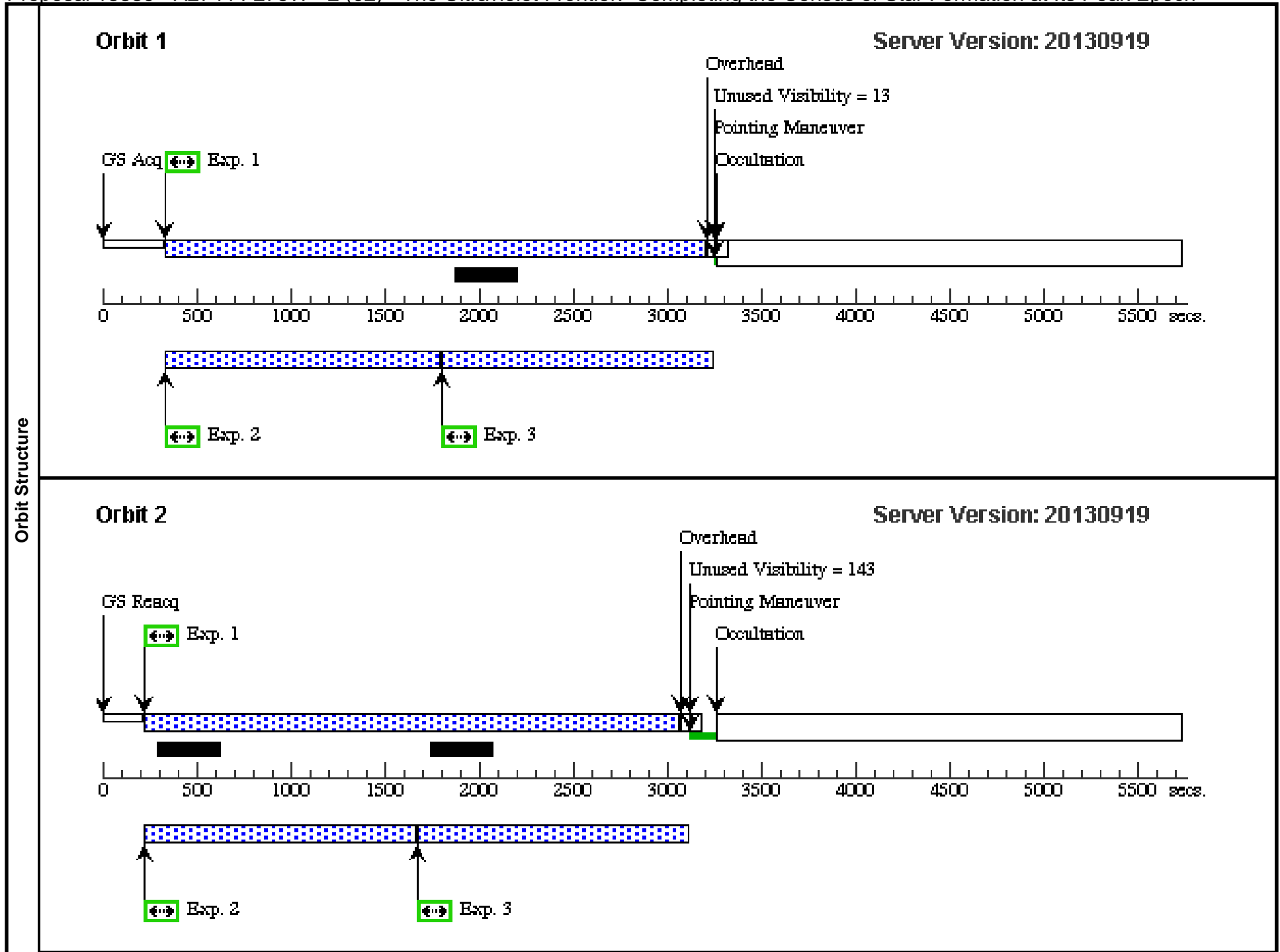
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Proposal 13389 - A2744 F275W - 2 (02) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

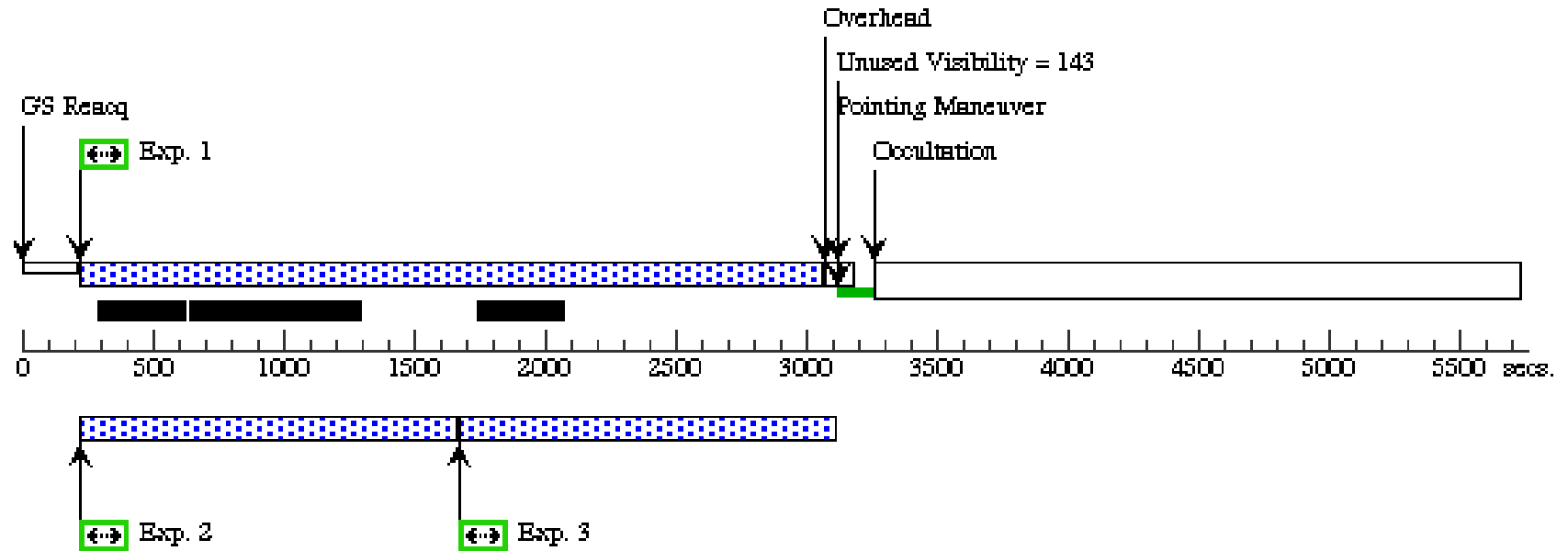
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	ABELL2744	RA: 00 14 21.2000 (3.5883333d) Dec: -30 23 50.10 (-30.39725d) Equinox: J2000		V=26+/-2	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(3) ABELL2744	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=11	POS TARG 0.42,2.0 GS ACQ SCENARI O BASE1B3	Pattern 1, Exps 1-3 in A2744 F275W - 2 (02) (1)	2840 Secs (11360 Secs)	
								Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in A2744 F275W - 2 (02)	[=>(Pattern 1)]	[1]
									[=>(Pattern 2)]	[2]
									[=>(Pattern 3)]	[3]
									[=>(Pattern 4)]	[4]
	2	ANY	ACS/WFC, ACCUM, WFC	F435W				Pattern 1, Exps 1-3 in A2744 F275W - 2 (02) (1)	1250 Secs (5000 Secs)	
								Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in A2744 F275W - 2 (02)	[=>(Pattern 1)]	[1]
									[=>(Pattern 2)]	[2]
									[=>(Pattern 3)]	[3]
									[=>(Pattern 4)]	[4]
	3	ANY	ACS/WFC, ACCUM, WFC	F606W				Pattern 1, Exps 1-3 in A2744 F275W - 2 (02) (1)	1250 Secs (5000 Secs)	
								Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in A2744 F275W - 2 (02)	[=>(Pattern 1)]	[1]
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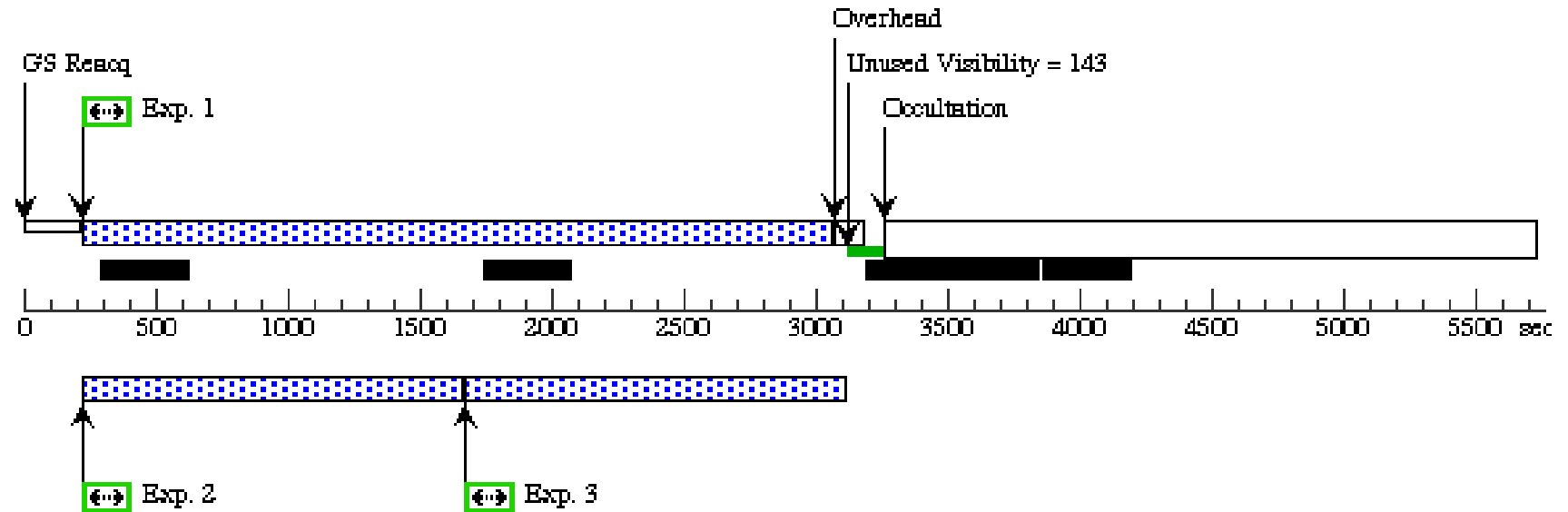
Orbit 3

Server Version: 20130919



Orbit 4

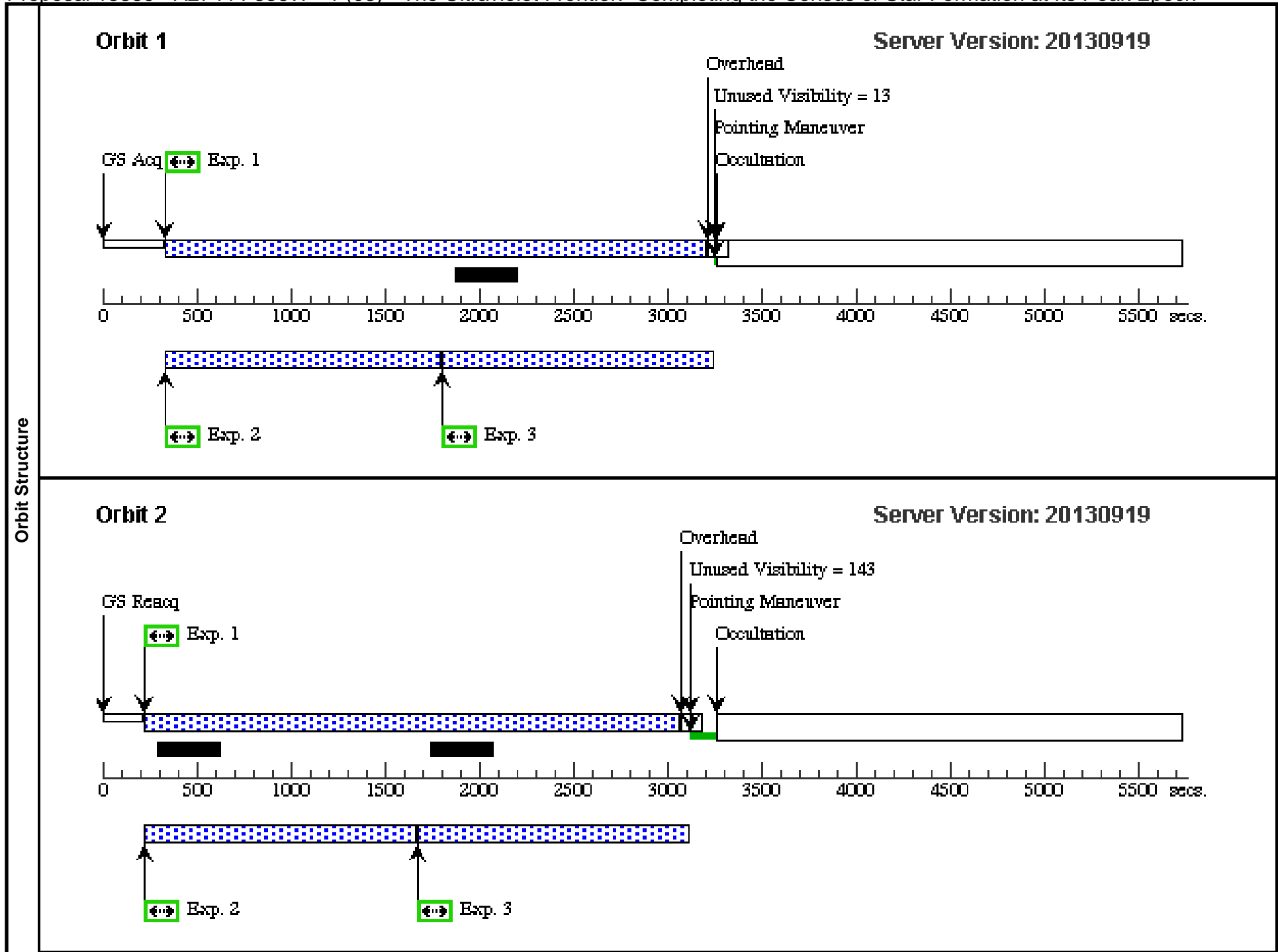
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Proposal 13389 - A2744 F336W - 1 (03) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

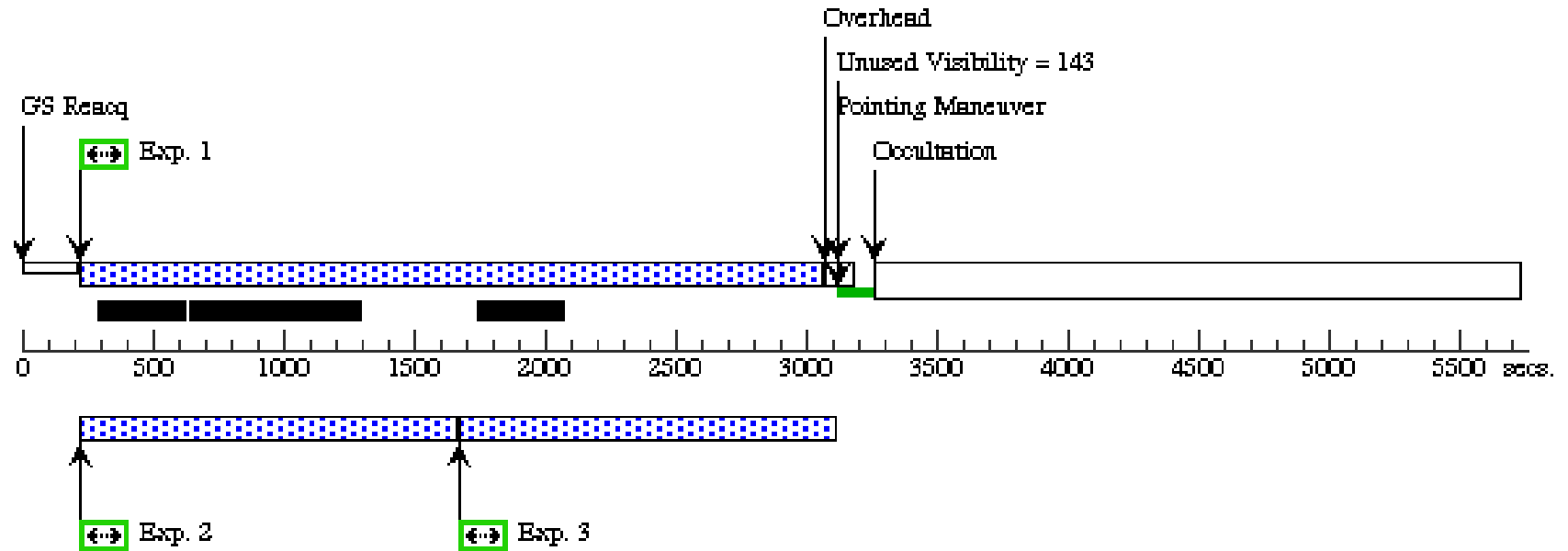
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Visit	Proposal 13389, A2744 F336W - 1 (03), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: ORIENT 053D TO 053 D									
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	ABELL2744	RA: 00 14 21.2000 (3.5883333d) Dec: -30 23 50.10 (-30.39725d) Equinox: J2000		V=26+/-2	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(3) ABELL2744	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=6	POS TARG -0.42,-2.02; GS ACQ SCENARIO BASE1B3	Pattern 1, Exps 1-3 in A2744 F336W - 1 (03) (1) Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in A2744 F336W - 1 (03)	2840 Secs (11360 Secs)	
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									[=>(Pattern 3)]	[3]
								[=>(Pattern 4)]	[4]	
	3		ANY	ACS/WFC, ACCUM, WFC	F606W			Pattern 1, Exps 1-3 in A2744 F336W - 1 (03) (1) Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in A2744 F336W - 1 (03)	1250 Secs (5000 Secs)	
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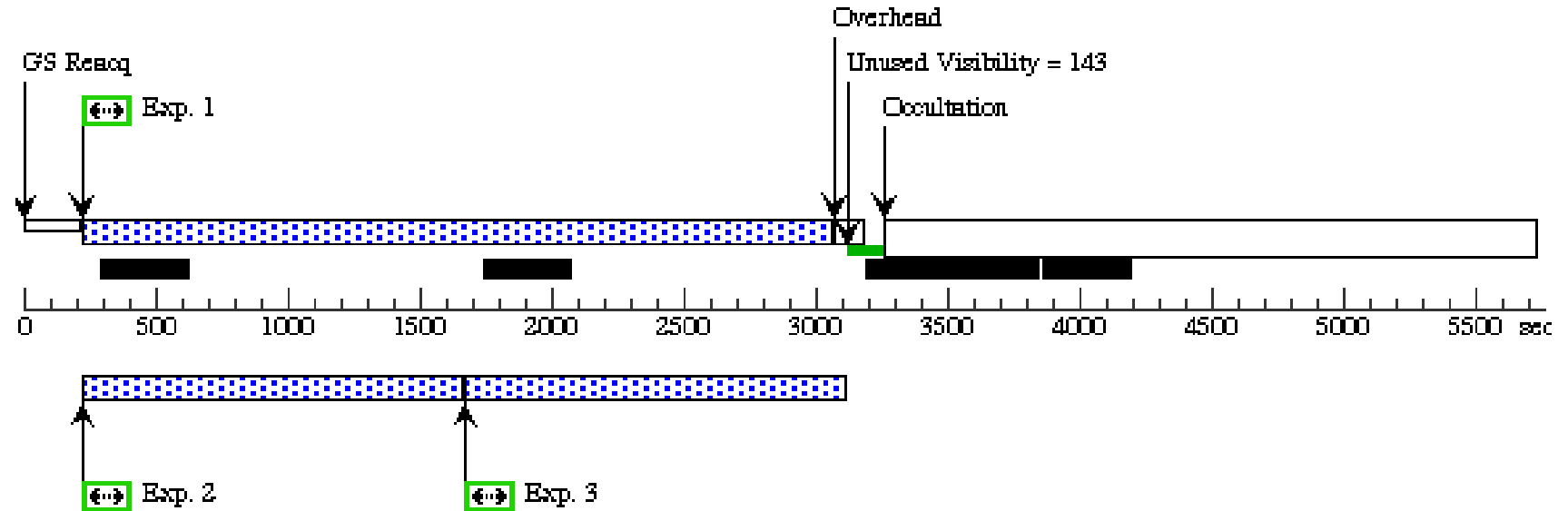
Orbit 3

Server Version: 20130919



Orbit 4

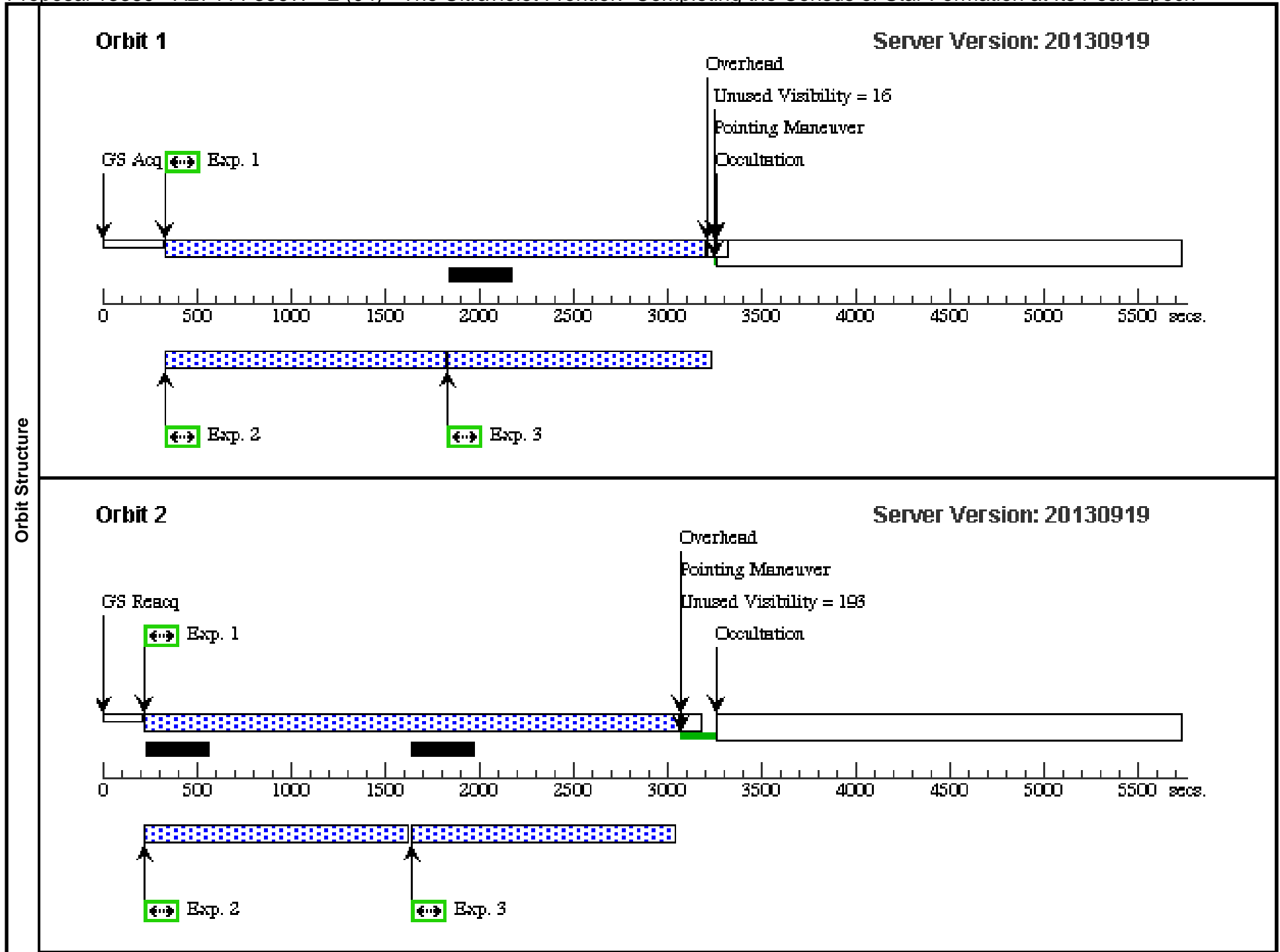
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Proposal 13389 - A2744 F336W - 2 (04) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

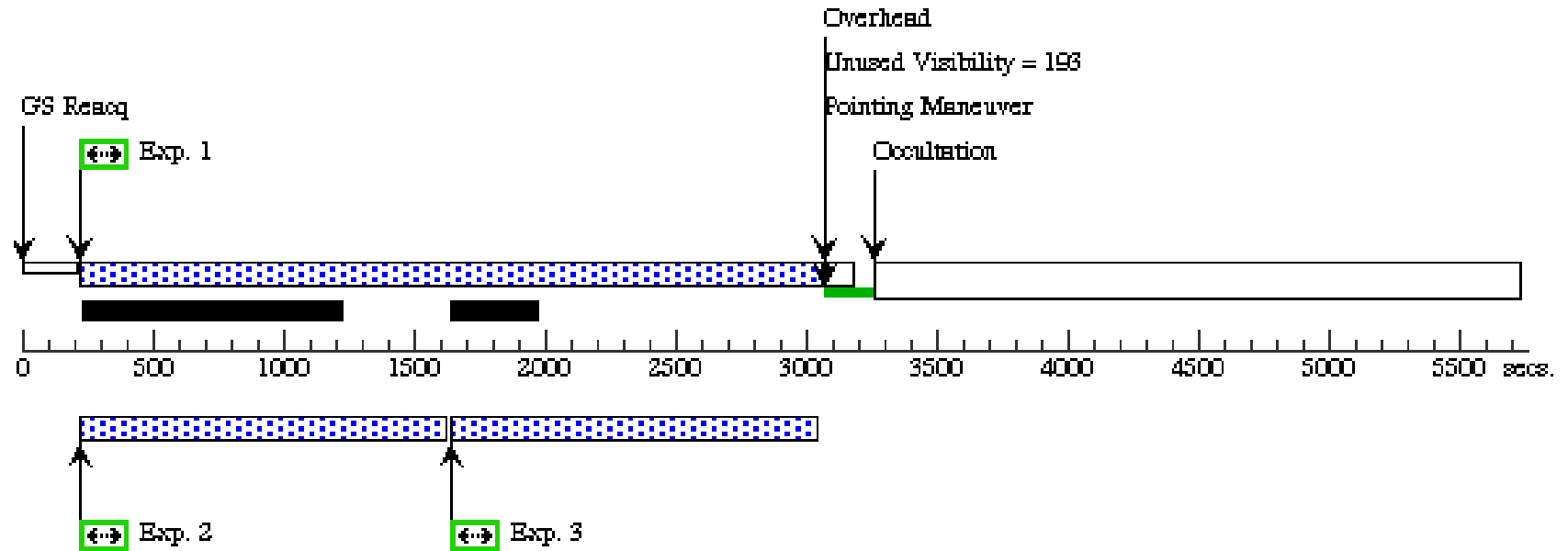
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	ABELL2744	RA: 00 14 21.2000 (3.5883333d) Dec: -30 23 50.10 (-30.39725d) Equinox: J2000		V=26+/-2	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
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								Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in A2744 F336W - 2 (04)	[==>(Pattern 1)]	[1]
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					Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in A2744 F336W - 2 (04)	[==>(Pattern 1)]	[1]			
						[==>(Pattern 2)]	[2]			
						[==>(Pattern 3)]	[3]			
									[==>(Pattern 4)]	[4]
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Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in A2744 F336W - 2 (04)					[==>(Pattern 1)]	[1]				
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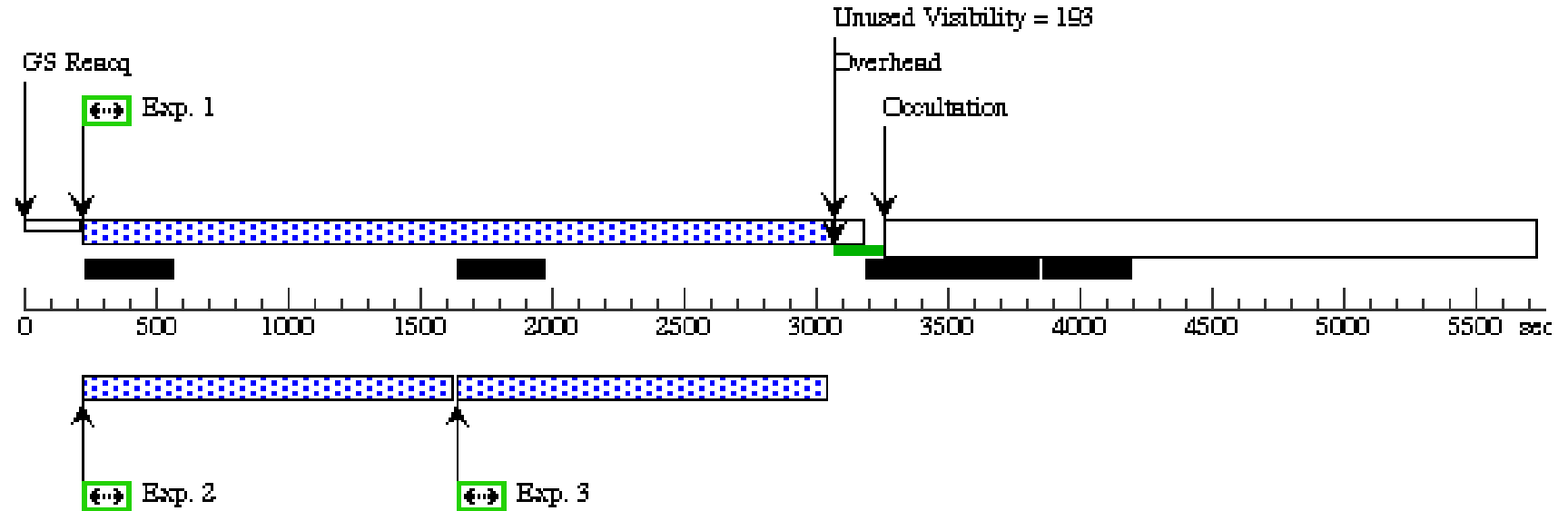
Orbit 3

Server Version: 20130919



Orbit 4

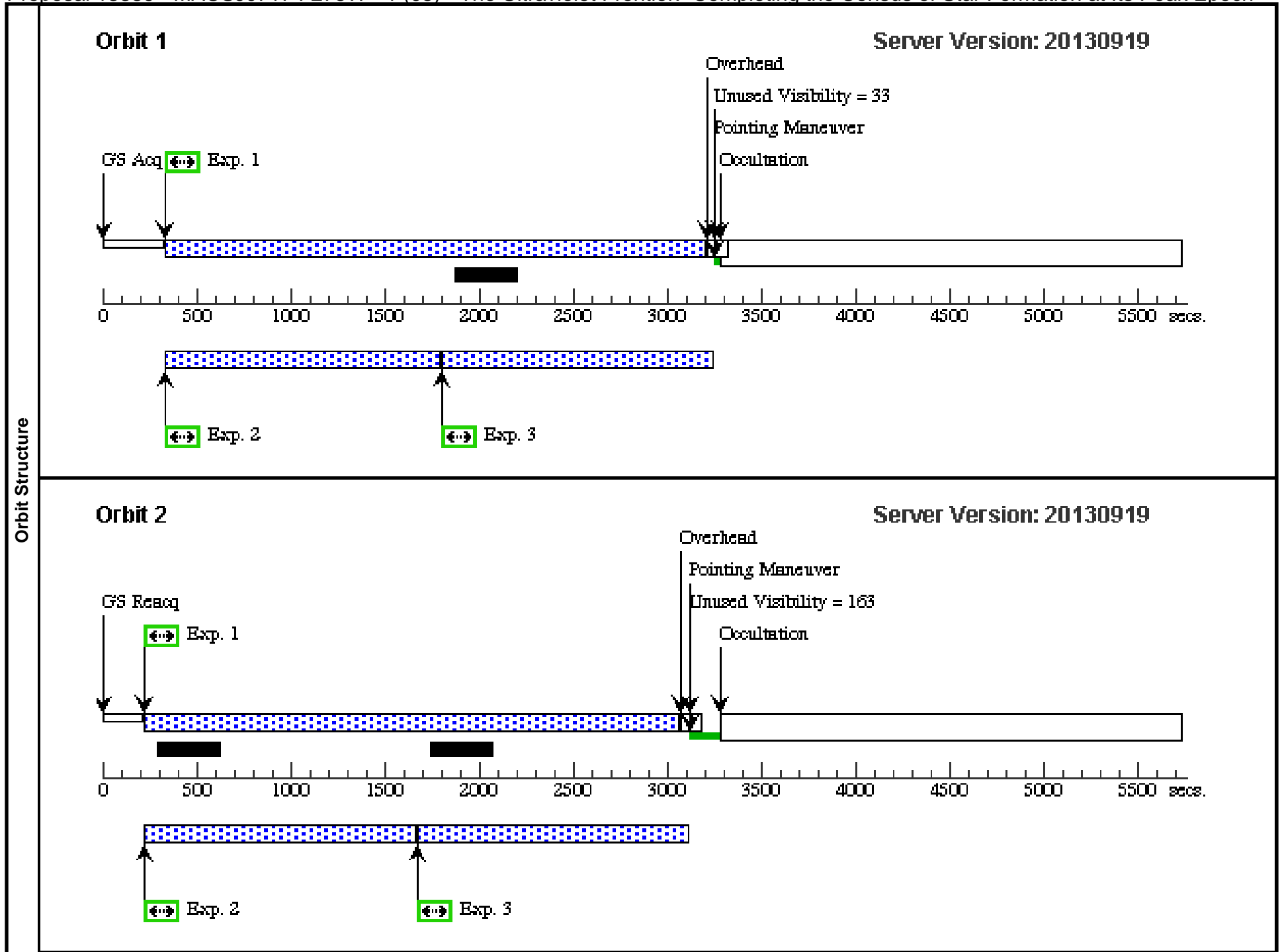
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Proposal 13389 - MACSJ0717 F275W - 1 (05) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

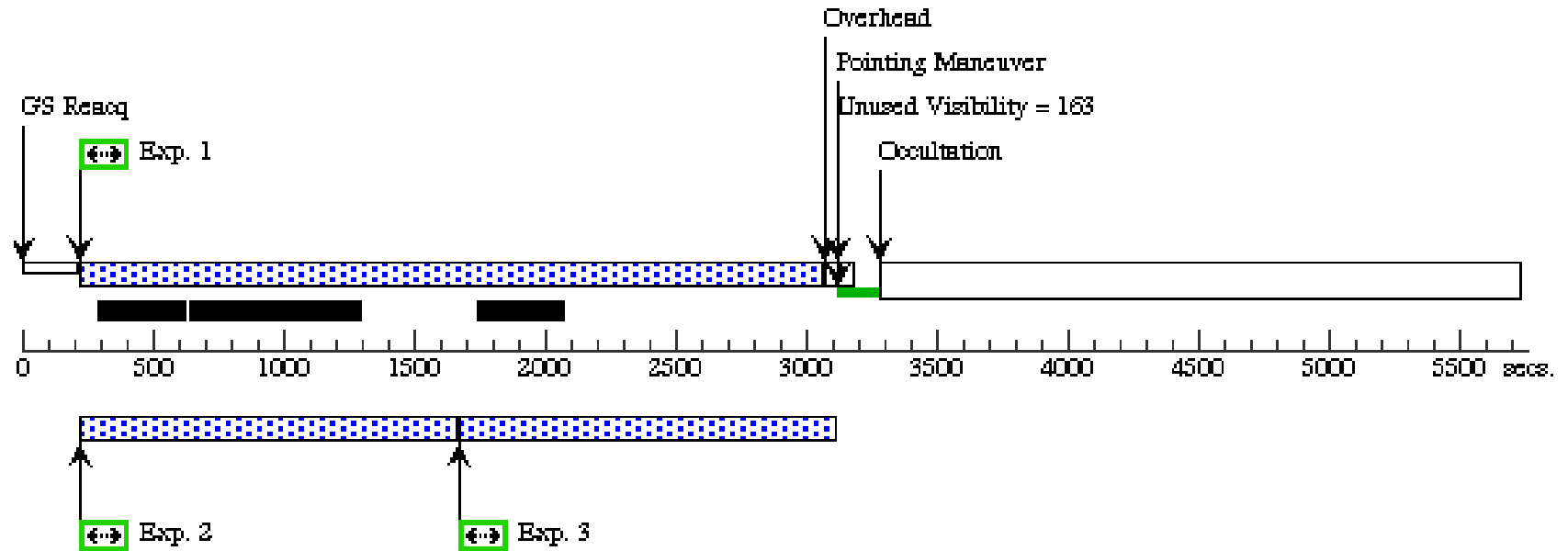
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
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Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
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									[==>(Pattern 1)]	[1]
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									[==>(Pattern 3)]	[3]
	3	ANY	ACS/WFC, ACCUM, WFC	F606W			Pattern 1, Exps 1-3 in MACSJ0717 F275W - 1 (05) (1)	Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ0717 F275W - 1 (05)	1250 Secs (5000 Secs)	
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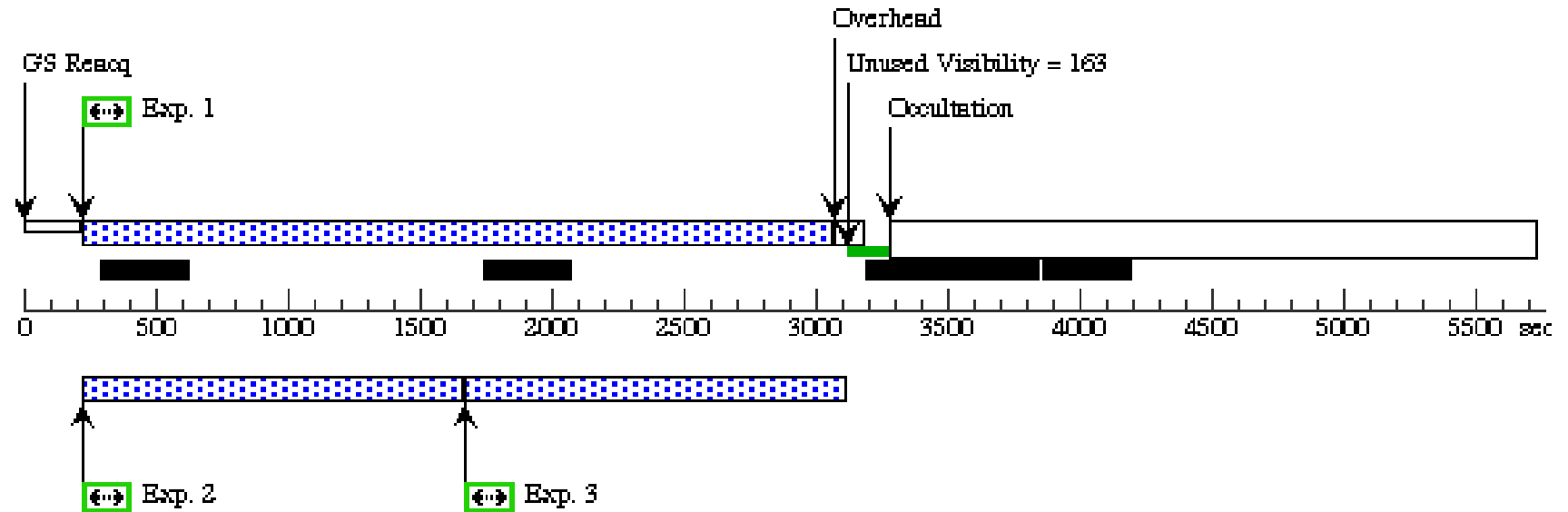
Orbit 3

Server Version: 20130919



Orbit 4

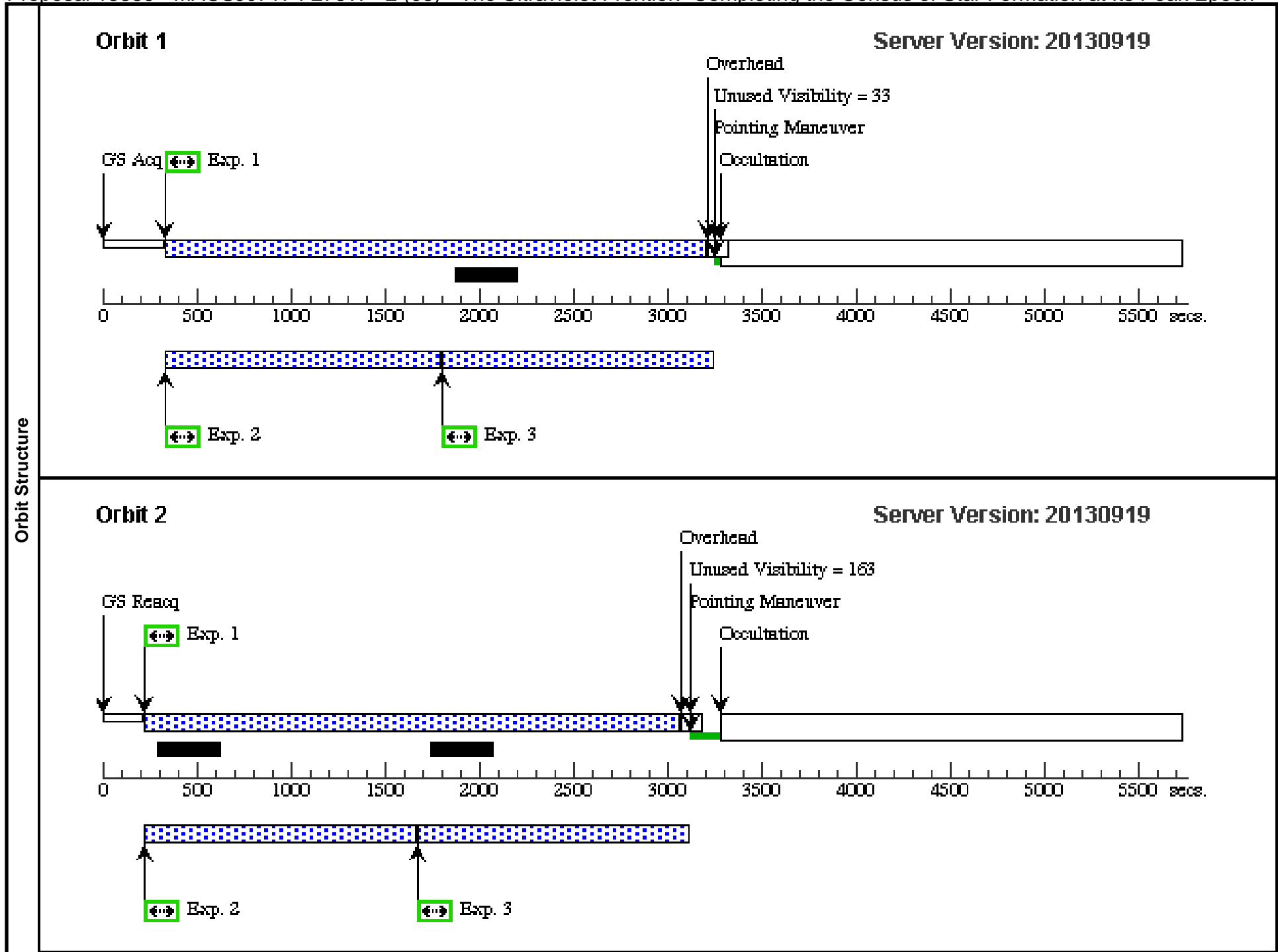
Server Version: 20130919



Proposal 13389 - MACSJ0717 F275W - 2 (06) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

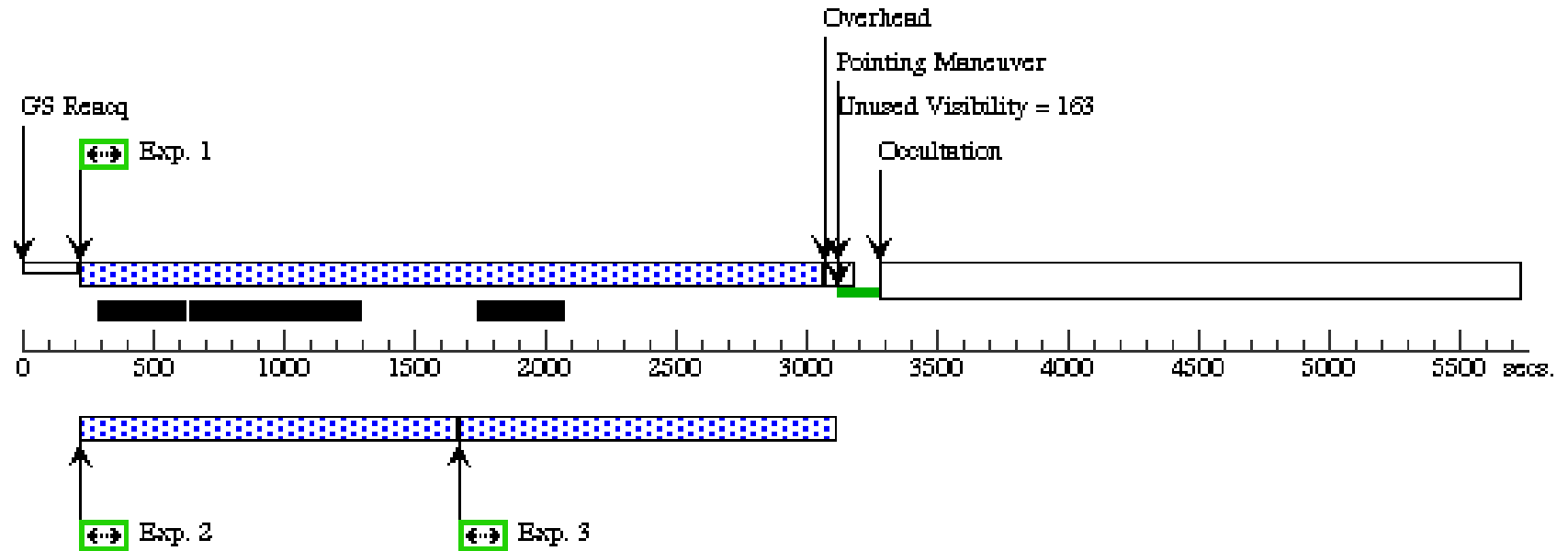
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Visit	Proposal 13389, MACSJ0717 F275W - 2 (06), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: ORIENT 100D TO 100 D									
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	MACSJ0717	RA: 07 17 34.0000 (109.3916667d) Dec: +37 44 49.00 (37.74694d) Equinox: J2000		V=26+/-2	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) MACSJ0717	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=11	POS TARG 0.42,2.0	Pattern 1, Exps 1-3 in MACSJ0717 F275W - 2 (06) (1)	2840 Secs (11360 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	
	2	ANY	ACS/WFC, ACCUM, WFC	F435W			Pattern 1, Exps 1-3 in MACSJ0717 F275W - 2 (06) (1)	1250 Secs (5000 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	
	3	ANY	ACS/WFC, ACCUM, WFC	F606W			Pattern 1, Exps 1-3 in MACSJ0717 F275W - 2 (06) (1)	1250 Secs (5000 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	



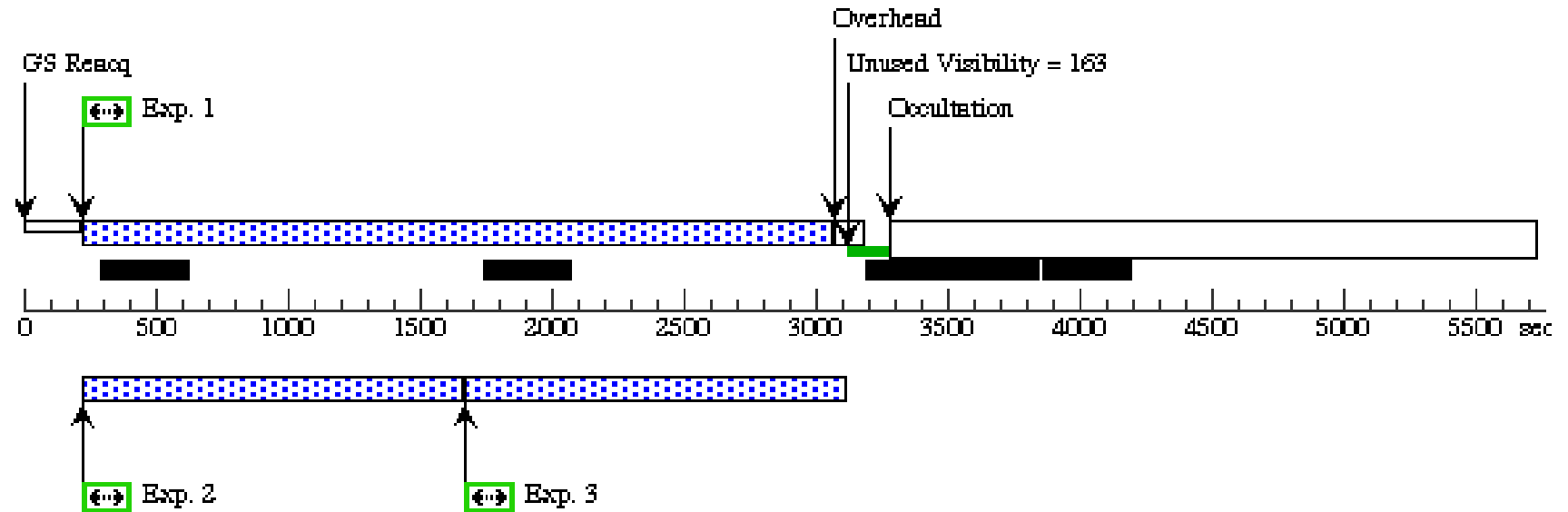
Orbit 3

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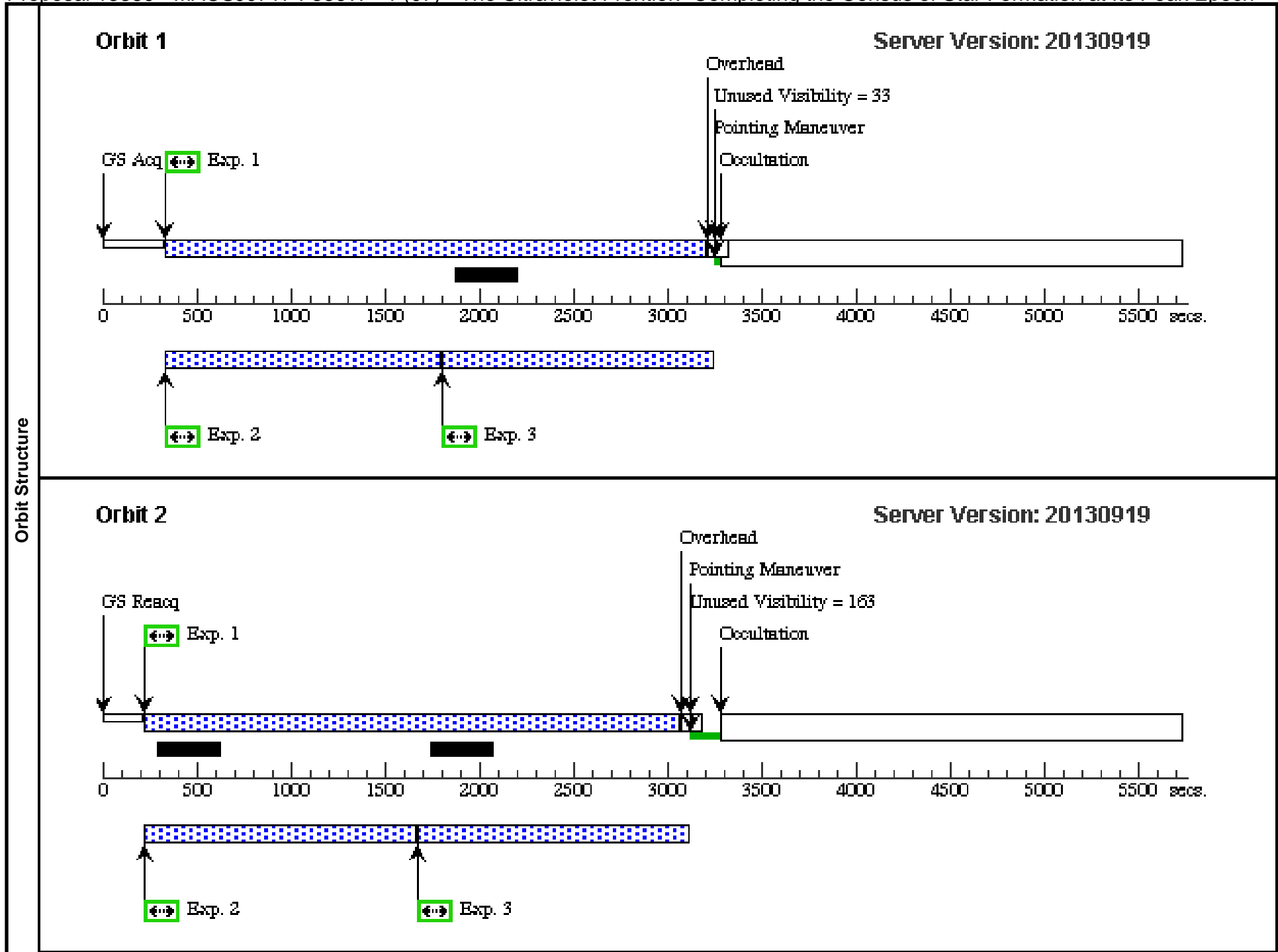
Server Version: 20130919



Proposal 13389 - MACSJ0717 F336W - 1 (07) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

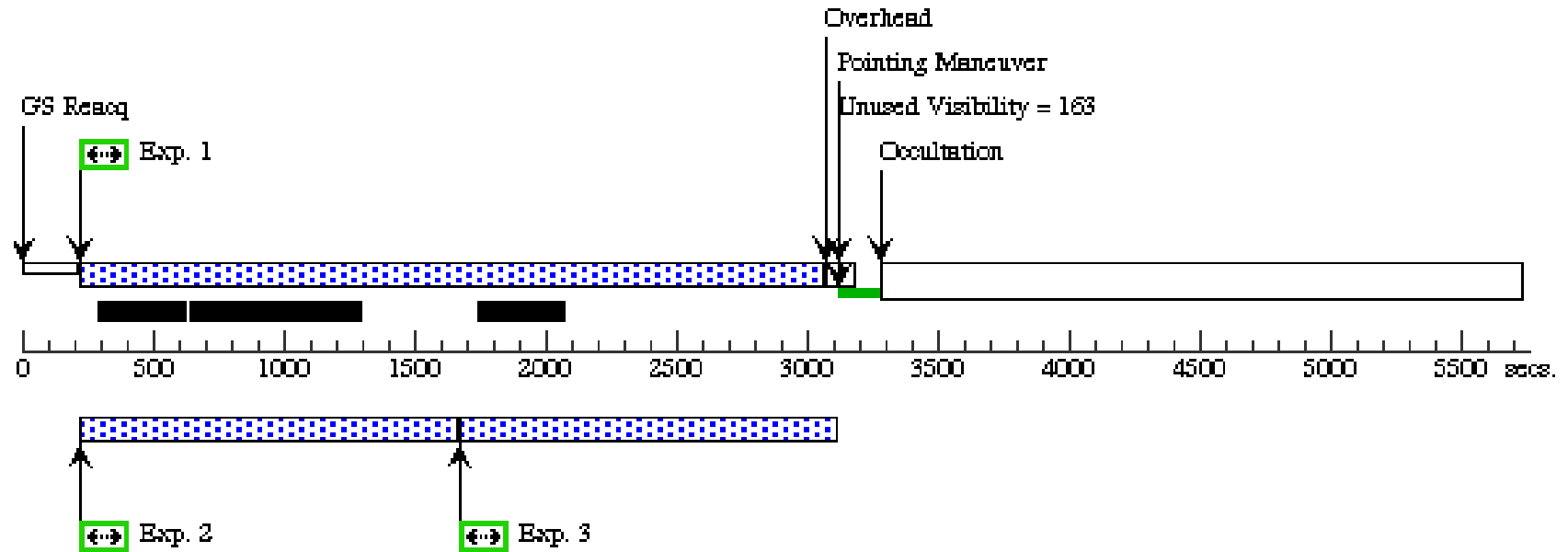
Tue Oct 01 01:45:28 GMT 2013

Visit	Proposal 13389, MACSJ0717 F336W - 1 (07), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: ORIENT 100D TO 100 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1-3)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	MACSJ0717	RA: 07 17 34.0000 (109.3916667d) Dec: +37 44 49.00 (37.74694d) Equinox: J2000		V=26+/-2	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) MACSJ0717	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=6	POS TARG -0.42,-2.02	Pattern 1, Exps 1-3 in MACSJ0717 F336W - 1 (07) (1)	Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ0717 F336W - 1 (07)	2840 Secs (11360 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	[2]
									[==>(Pattern 3)]	[3]
	2	ANY	ACS/WFC, ACCUM, WFC	F435W			Pattern 1, Exps 1-3 in MACSJ0717 F336W - 1 (07) (1)	Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ0717 F336W - 1 (07)	1250 Secs (5000 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	[2]
									[==>(Pattern 3)]	[3]
	3	ANY	ACS/WFC, ACCUM, WFC	F606W			Pattern 1, Exps 1-3 in MACSJ0717 F336W - 1 (07) (1)	Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ0717 F336W - 1 (07)	1250 Secs (5000 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	[2]
									[==>(Pattern 3)]	[3]
								[==>(Pattern 4)]	[4]	



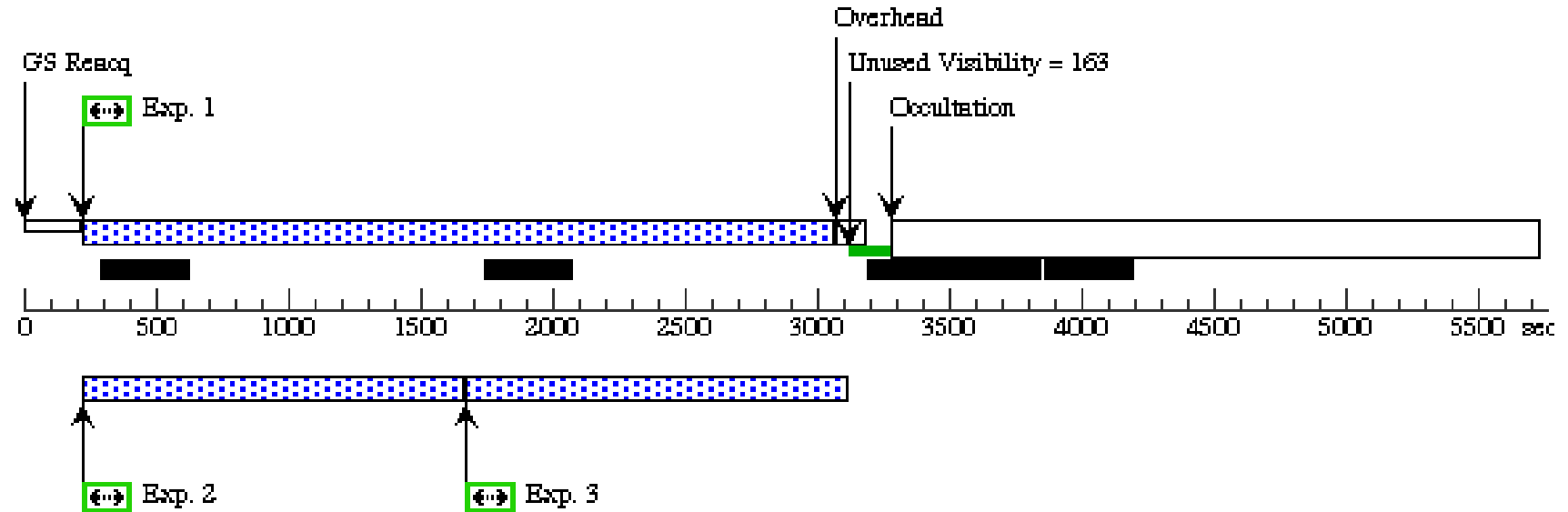
Orbit 3

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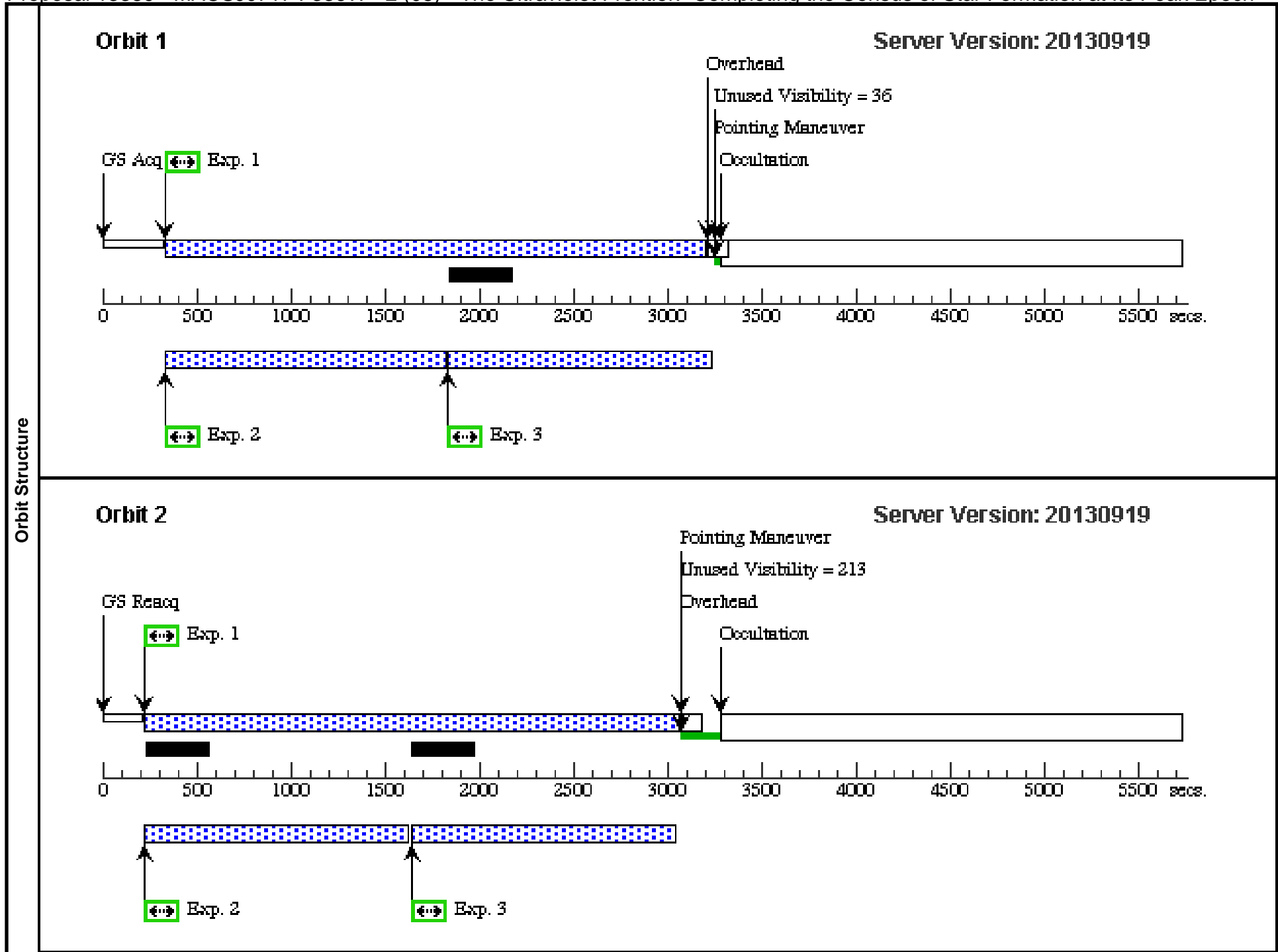
Server Version: 20130919



Proposal 13389 - MACSJ0717 F336W - 2 (08) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

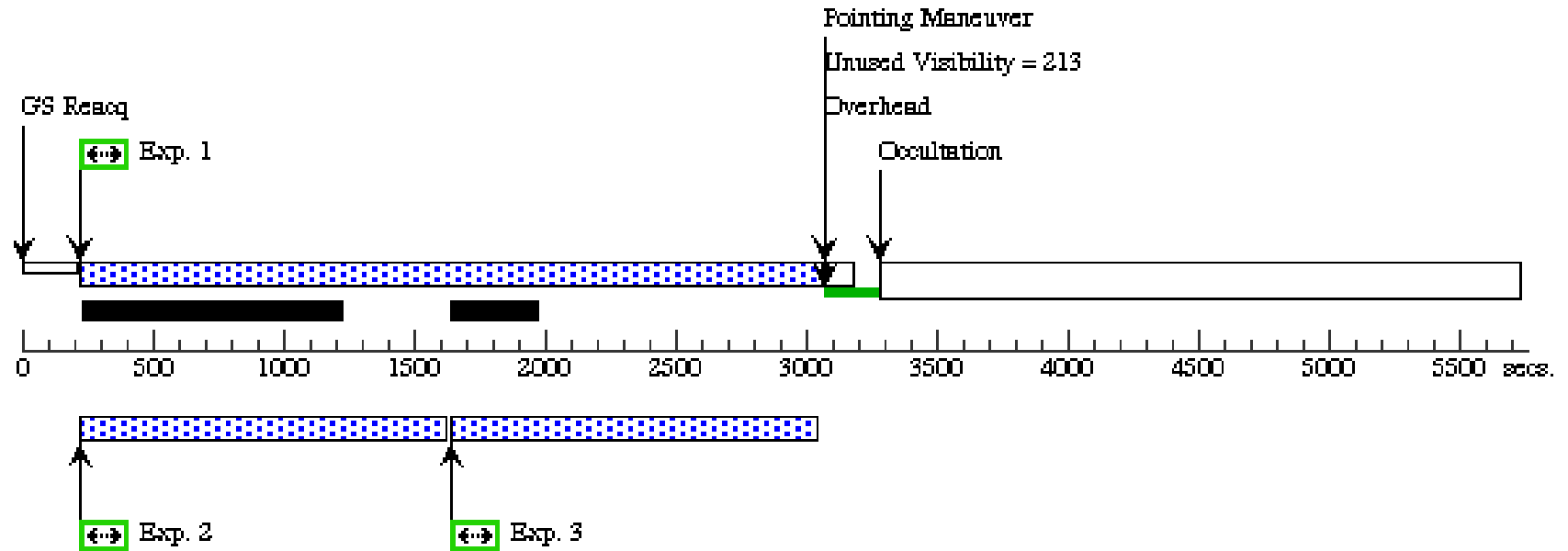
Tue Oct 01 01:45:30 GMT 2013

Visit	Proposal 13389, MACSJ0717 F336W - 2 (08), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: ORIENT 100D TO 100 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1-3)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	MACSJ0717	RA: 07 17 34.0000 (109.3916667d) Dec: +37 44 49.00 (37.74694d) Equinox: J2000		V=26+/-2	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) MACSJ0717	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=6	POS TARG 0.42,2.0	Pattern 1, Exps 1-3 in MACSJ0717 F336W - 2 (08) (1)	2840 Secs (11360 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	
	2	ANY	ACS/WFC, ACCUM, WFC	F435W			Pattern 1, Exps 1-3 in MACSJ0717 F336W - 2 (08) (1)	1280 Secs (5120 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	
	3	ANY	ACS/WFC, ACCUM, WFC	F435W			Pattern 1, Exps 1-3 in MACSJ0717 F336W - 2 (08) (1)	1280 Secs (5120 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	
							Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ0717 F336W - 2 (08)	[==>(Pattern 4)]	[4]	



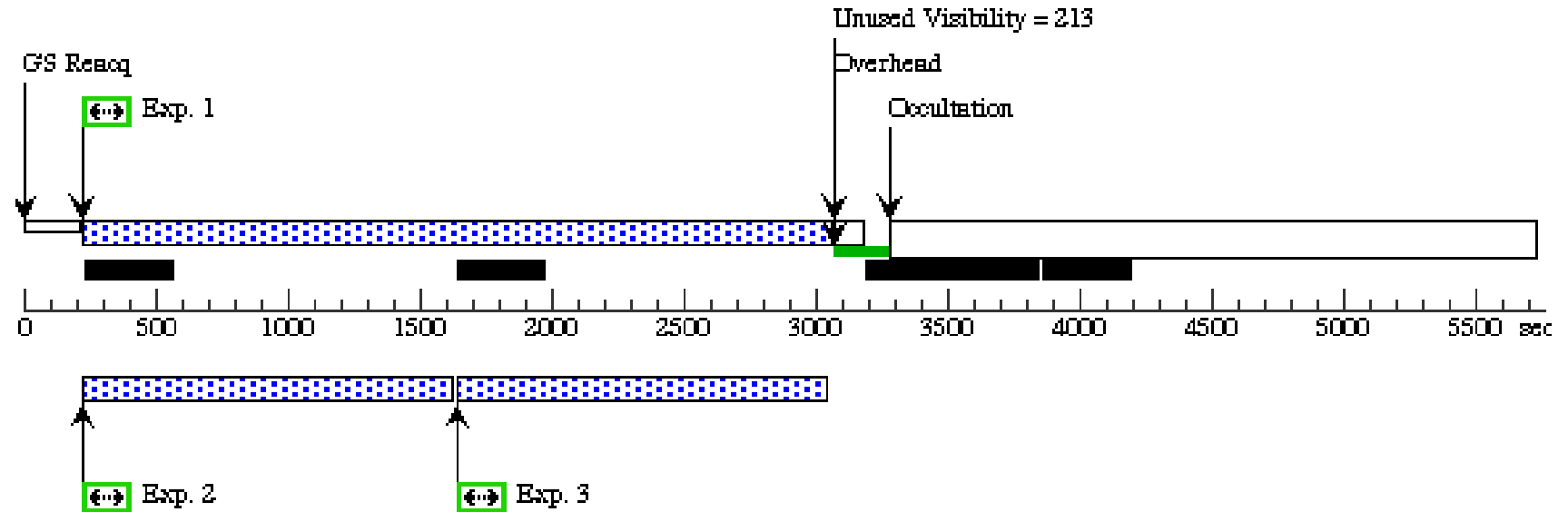
Orbit 3

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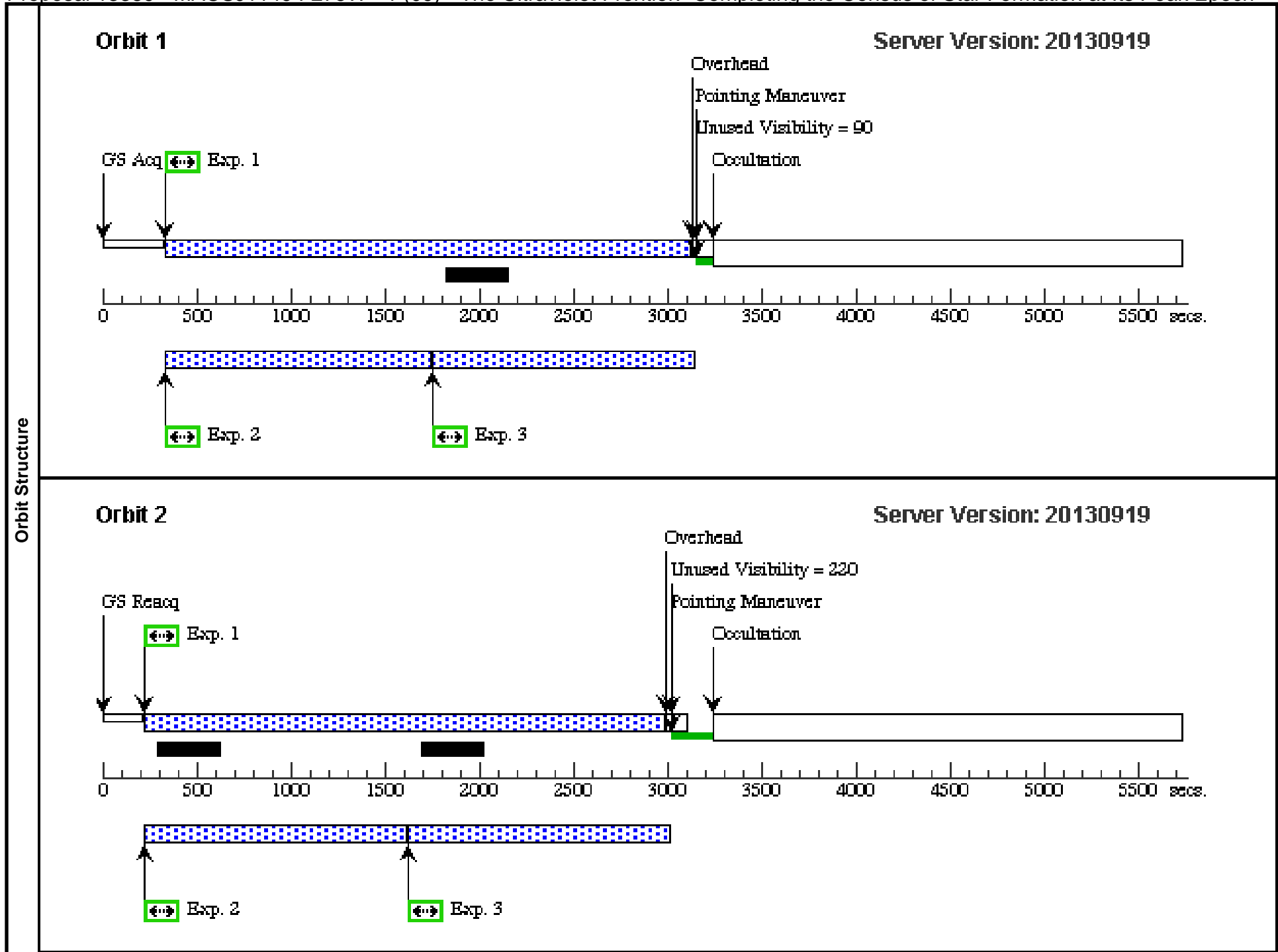
Server Version: 20130919



Proposal 13389 - MACSJ1149 F275W - 1 (09) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

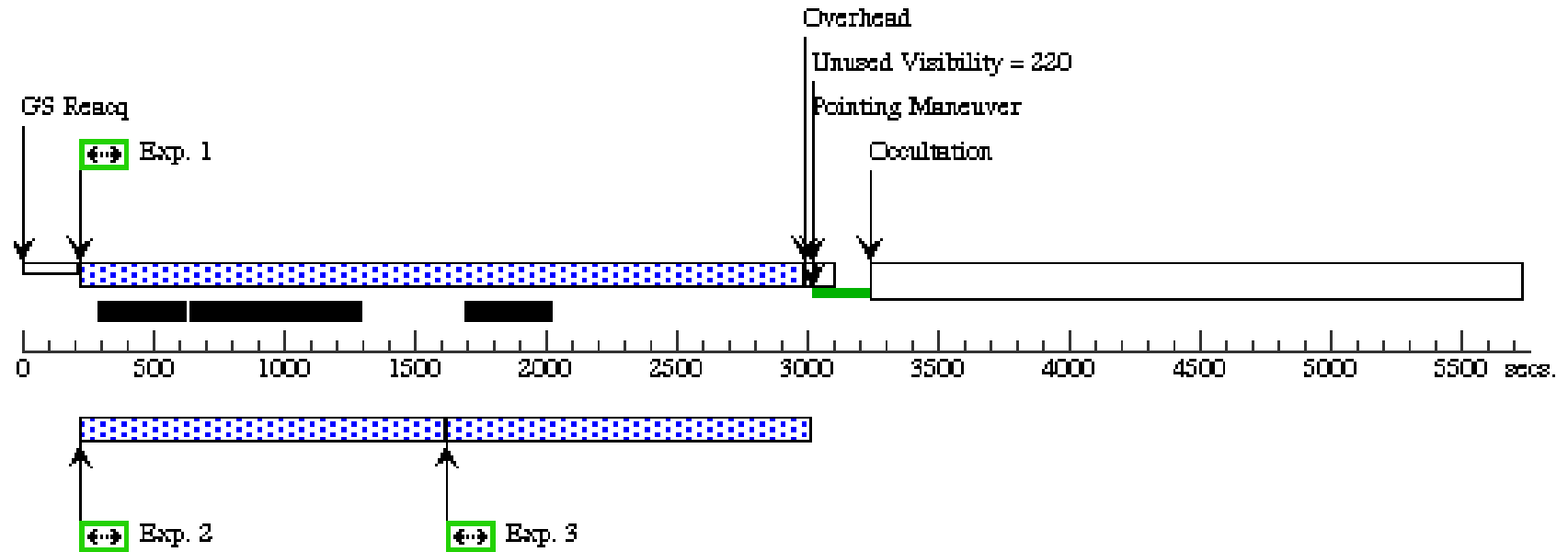
Tue Oct 01 01:45:31 GMT 2013

Visit	Proposal 13389, MACSJ1149 F275W - 1 (09), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: ORIENT 305D TO 305 D										
	Patterns	#	Primary Pattern				Secondary Pattern			Exposures	
		(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false						(1-3)	
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(2)	MACSJ1149	RA: 11 49 36.3000 (177.4012500d) Dec: +22 23 58.10 (22.39947d) Equinox: J2000				V=26+/-2		Reference Frame: ICRS		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1		(2) MACSJ1149	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=11	POS TARG -0.42,-2.02; GS ACQ SCENARIO BASE1B3	Pattern 1, Exps 1-3 in MACSJ1149 F275W - 1 (09) (1) Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F275W - 1 (09)	2760 Secs (11040 Secs)		
									[==>(Pattern 1)]		[1]
									[==>(Pattern 2)]		[2]
									[==>(Pattern 3)]		[3]
								[==>(Pattern 4)]		[4]	
	2	ANY	ACS/WFC, ACCUM, WFC	F435W				Pattern 1, Exps 1-3 in MACSJ1149 F275W - 1 (09) (1) Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F275W - 1 (09)	1200 Secs (4800 Secs)		
									[==>(Pattern 1)]		[1]
									[==>(Pattern 2)]		[2]
									[==>(Pattern 3)]		[3]
								[==>(Pattern 4)]		[4]	
	3	ANY	ACS/WFC, ACCUM, WFC	F606W				Pattern 1, Exps 1-3 in MACSJ1149 F275W - 1 (09) (1) Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F275W - 1 (09)	1200 Secs (4800 Secs)		
									[==>(Pattern 1)]		[1]
[==>(Pattern 2)]										[2]	
[==>(Pattern 3)]										[3]	
							[==>(Pattern 4)]		[4]		



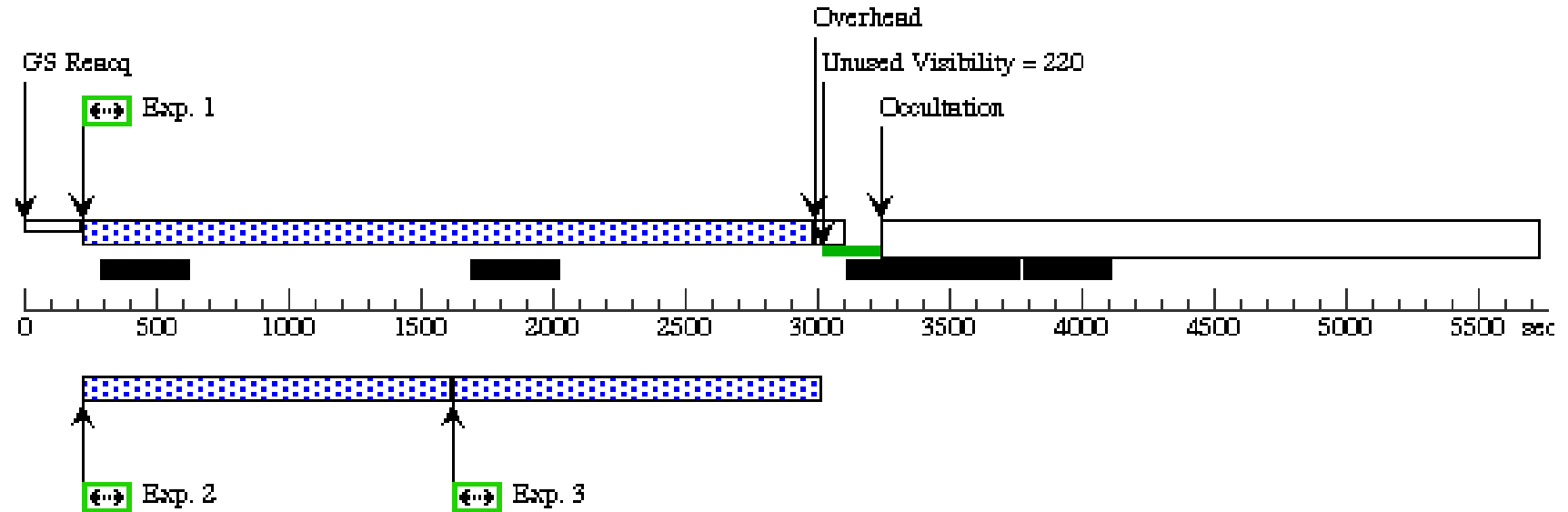
Orbit 3

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Orbit 4

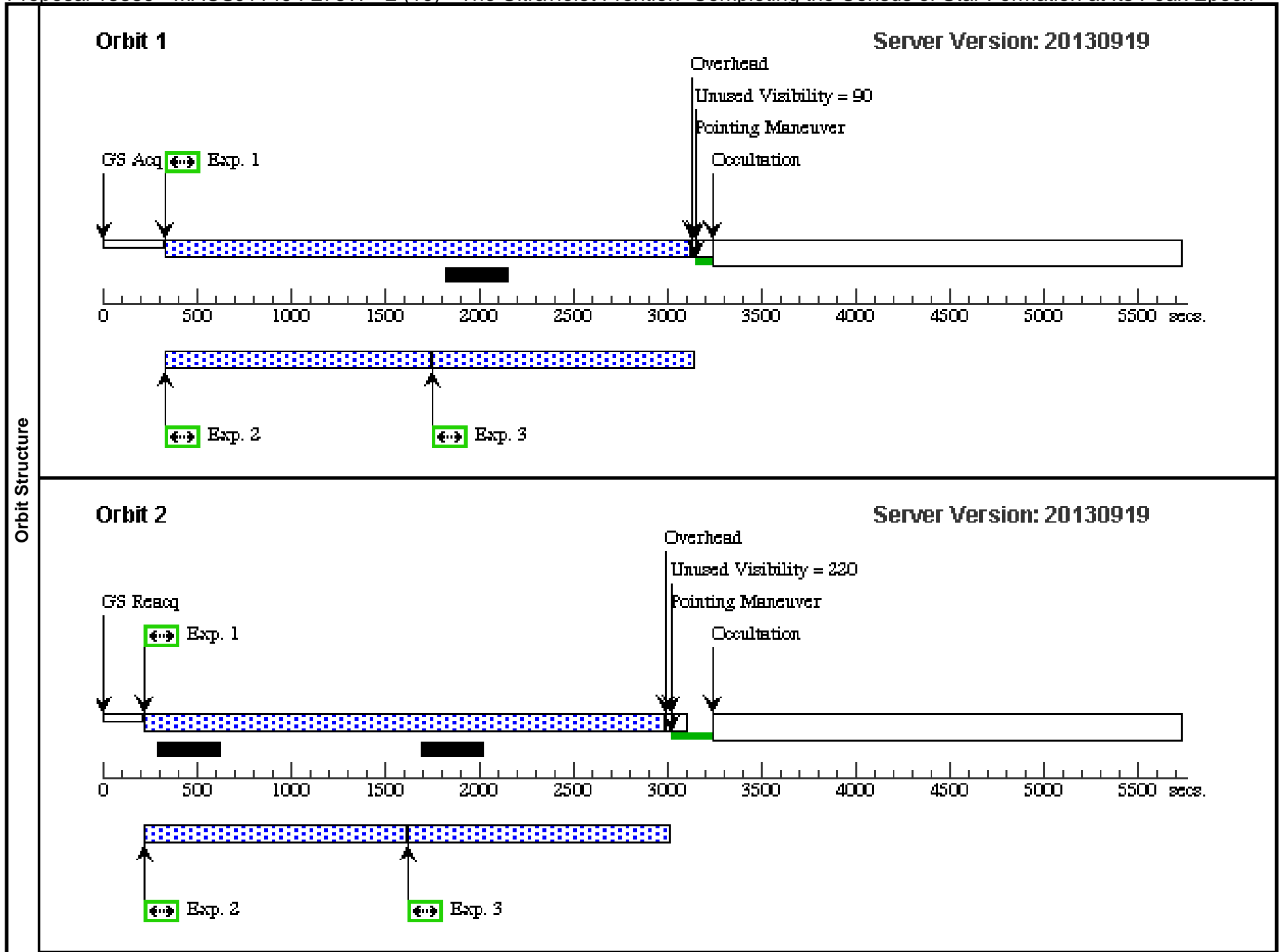
Server Version: 20130919



Proposal 13389 - MACSJ1149 F275W - 2 (10) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

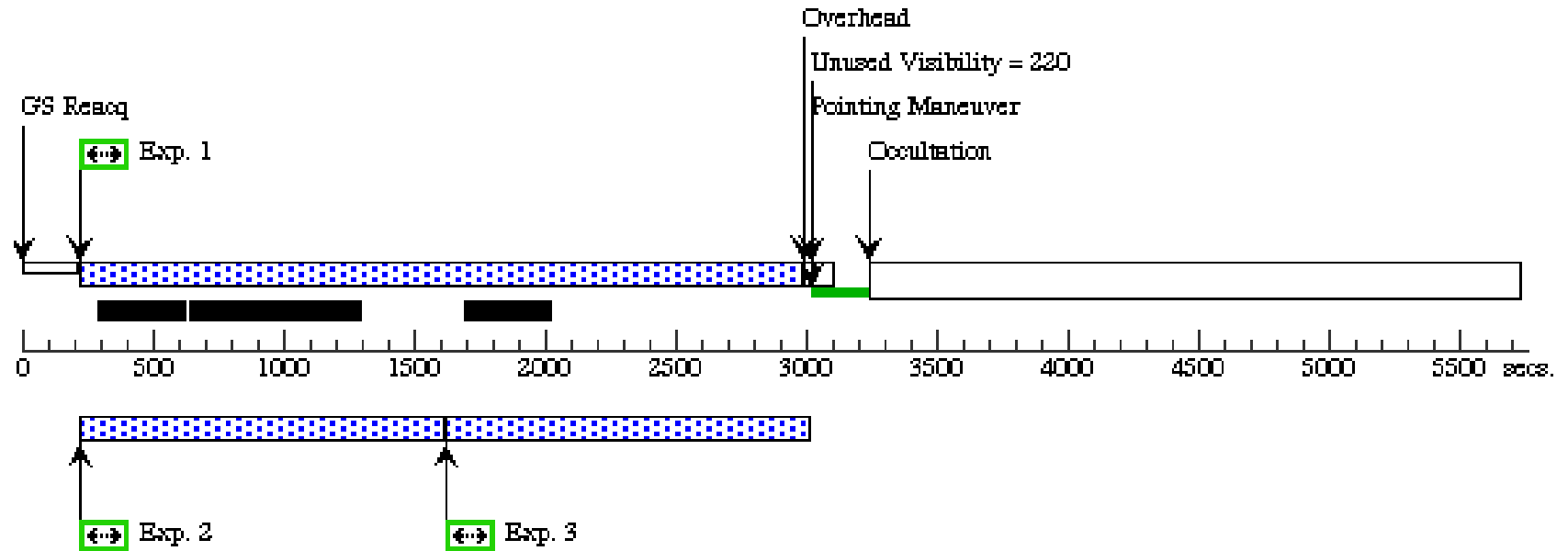
Tue Oct 01 01:45:33 GMT 2013

Visit	Proposal 13389, MACSJ1149 F275W - 2 (10), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: ORIENT 305D TO 305 D										
	Patterns	#	Primary Pattern				Secondary Pattern			Exposures	
		(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112				Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false			(1-3)	
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(2)	MACSJ1149	RA: 11 49 36.3000 (177.4012500d) Dec: +22 23 58.10 (22.39947d) Equinox: J2000				V=26+/-2		Reference Frame: ICRS		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1		(2) MACSJ1149	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	FLASH=11	POS TARG 0.42,2.0 2; GS ACQ SCENARI O BASE1B3	Pattern 1, Exps 1-3 in MACSJ1149 F275W - 2 (10) (1) Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F275W - 2 (10)	2760 Secs (11040 Secs)		
									[=>(Pattern 1)]		[1]
									[=>(Pattern 2)]		[2]
									[=>(Pattern 3)]		[3]
	[=>(Pattern 4)]		[4]								
	2	ANY	ANY	ACS/WFC, ACCUM, WFC	F435W			Pattern 1, Exps 1-3 in MACSJ1149 F275W - 2 (10) (1) Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F275W - 2 (10)	1200 Secs (4800 Secs)		
									[=>(Pattern 1)]		[1]
									[=>(Pattern 2)]		[2]
									[=>(Pattern 3)]		[3]
	[=>(Pattern 4)]		[4]								
	3	ANY	ANY	ACS/WFC, ACCUM, WFC	F606W			Pattern 1, Exps 1-3 in MACSJ1149 F275W - 2 (10) (1) Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F275W - 2 (10)	1200 Secs (4800 Secs)		
									[=>(Pattern 1)]		[1]
[=>(Pattern 2)]									[2]		
[=>(Pattern 3)]									[3]		
[=>(Pattern 4)]		[4]									



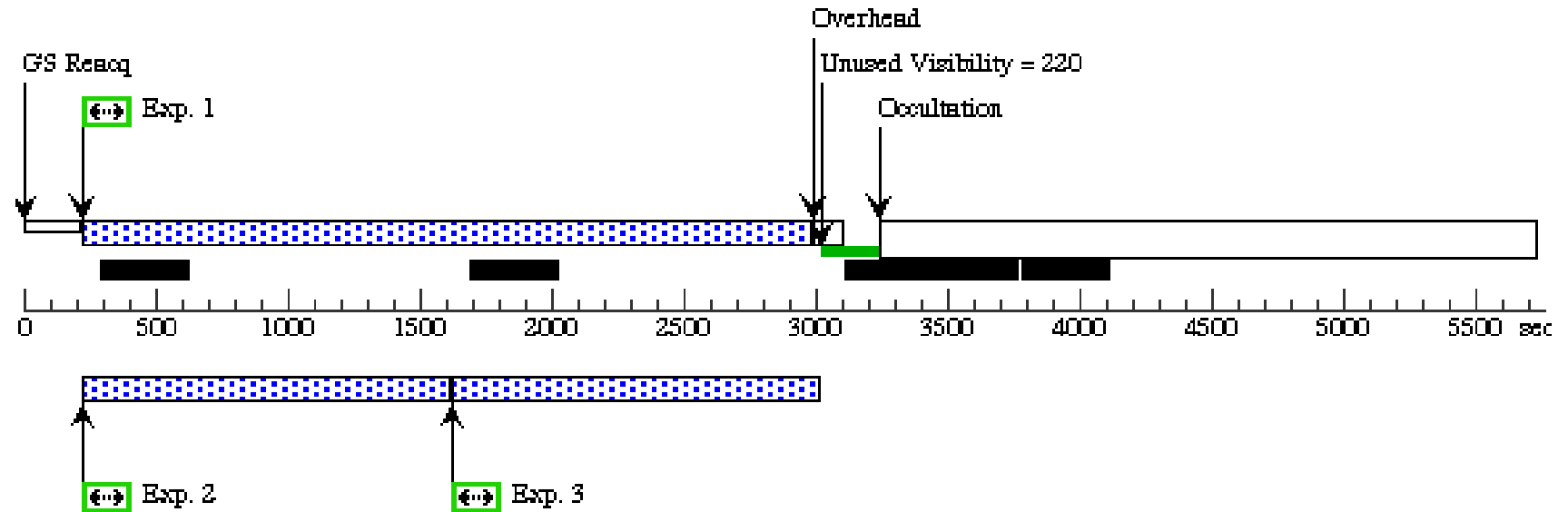
Orbit 3

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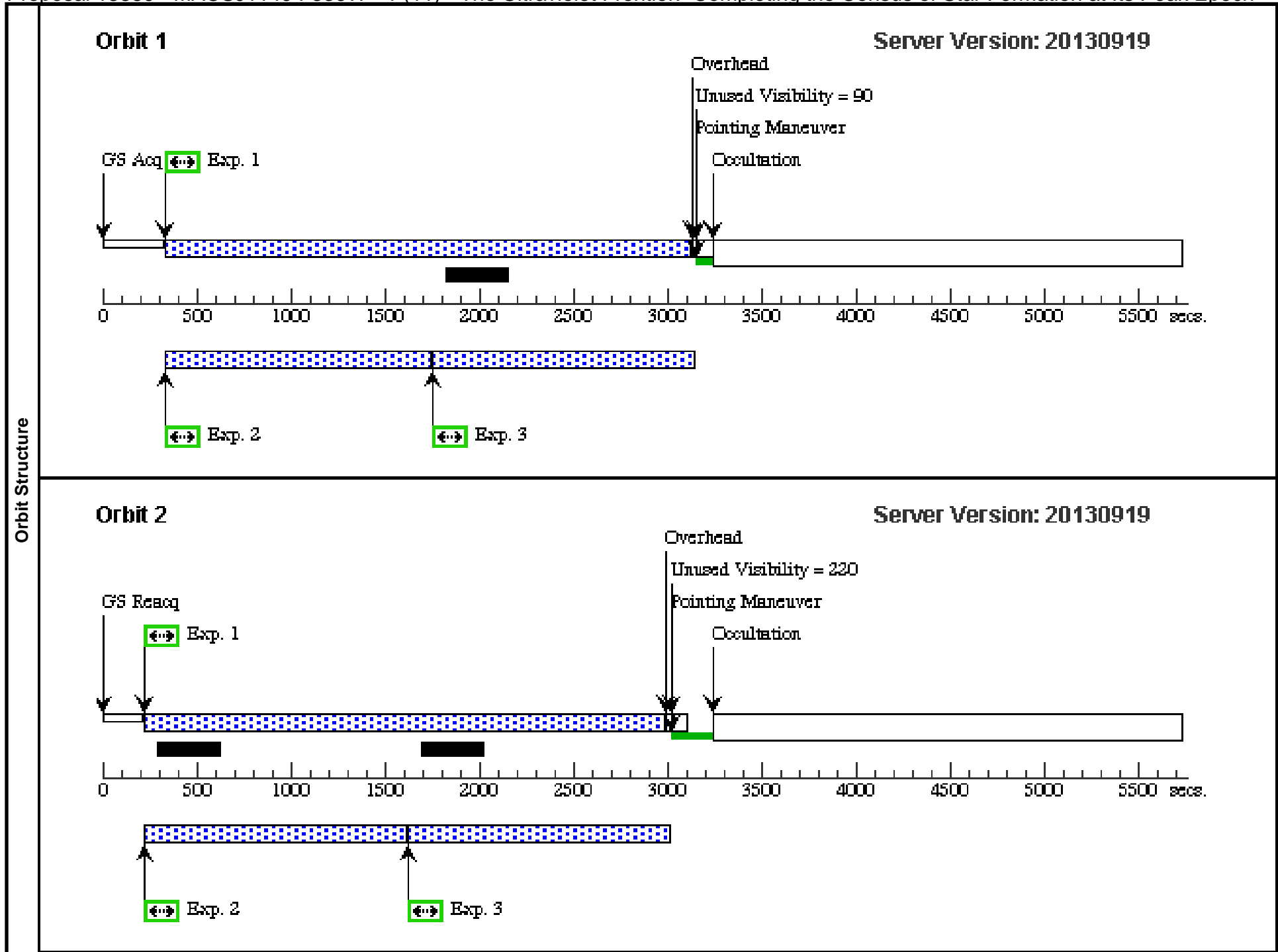
Server Version: 20130919



Proposal 13389 - MACSJ1149 F336W - 1 (11) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

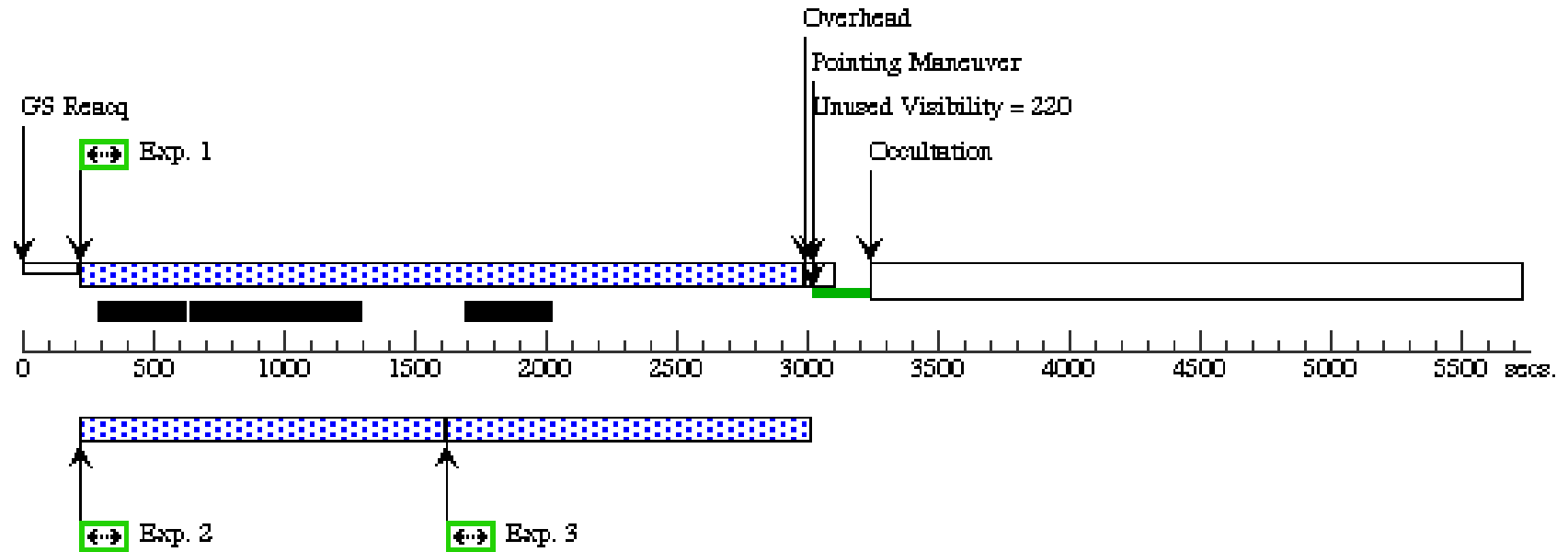
Tue Oct 01 01:45:34 GMT 2013

Visit	Proposal 13389, MACSJ1149 F336W - 1 (11), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: ORIENT 305D TO 305 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1-3)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	MACSJ1149	RA: 11 49 36.3000 (177.4012500d) Dec: +22 23 58.10 (22.39947d) Equinox: J2000		V=26+/-2	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(2) MACSJ1149	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=6	POS TARG -0.42,-2.02; GS ACQ SCENARIO BASE1B3	Pattern 1, Exps 1-3 in MACSJ1149 F336W - 1 (11) (1)	2760 Secs (11040 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	
							Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F336W - 1 (11)	[==>(Pattern 4)]	[4]	
	2	ANY	ACS/WFC, ACCUM, WFC	F435W			Pattern 1, Exps 1-3 in MACSJ1149 F336W - 1 (11) (1)	1200 Secs (4800 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	
							Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F336W - 1 (11)	[==>(Pattern 4)]	[4]	
	3	ANY	ACS/WFC, ACCUM, WFC	F606W			Pattern 1, Exps 1-3 in MACSJ1149 F336W - 1 (11) (1)	1200 Secs (4800 Secs)		
								[==>(Pattern 1)]	[1]	
[==>(Pattern 2)]								[2]		
[==>(Pattern 3)]								[3]		
						Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F336W - 1 (11)	[==>(Pattern 4)]	[4]		



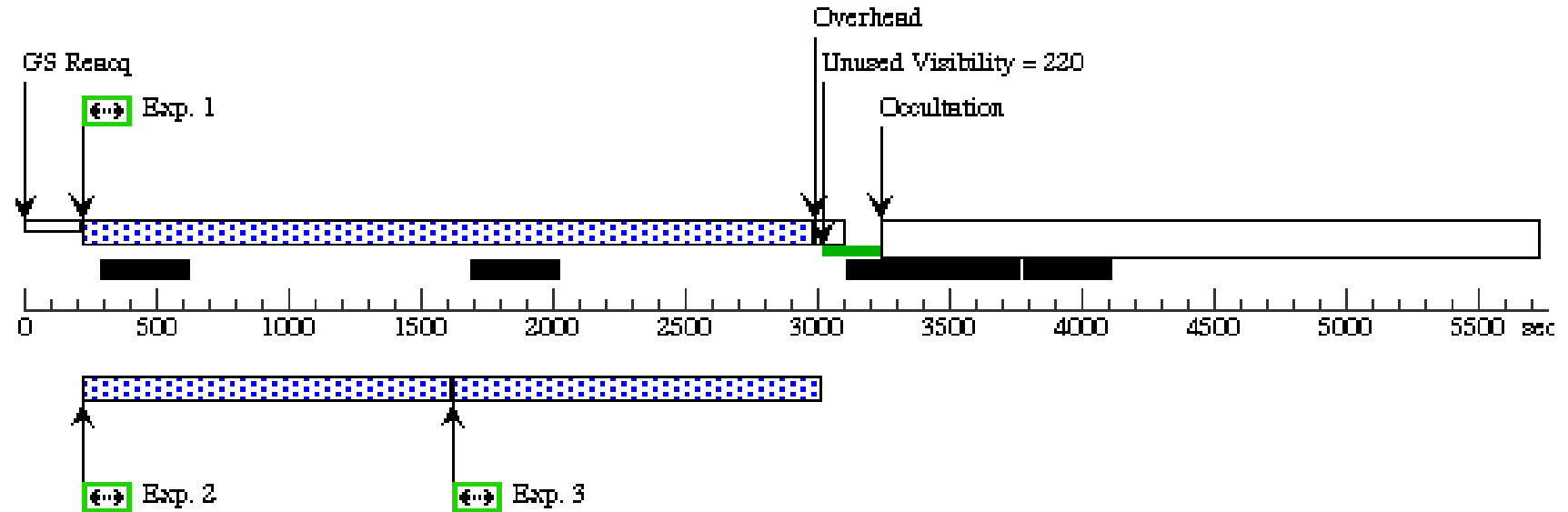
Orbit 3

Server Version: 20130919



Orbit 4

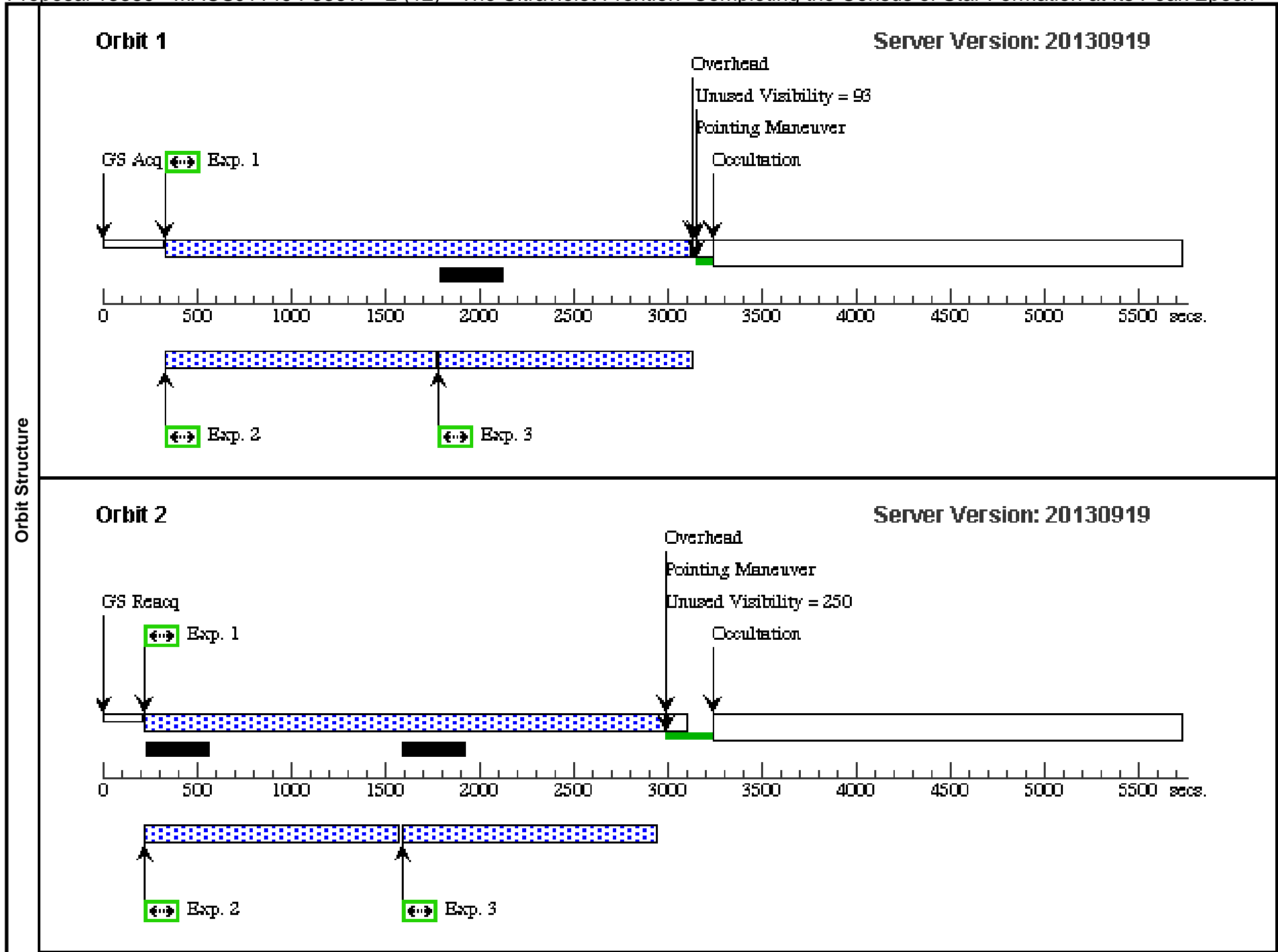
Server Version: 20130919



Proposal 13389 - MACSJ1149 F336W - 2 (12) - The Ultraviolet Frontier: Completing the Census of Star Formation at Its Peak Epoch

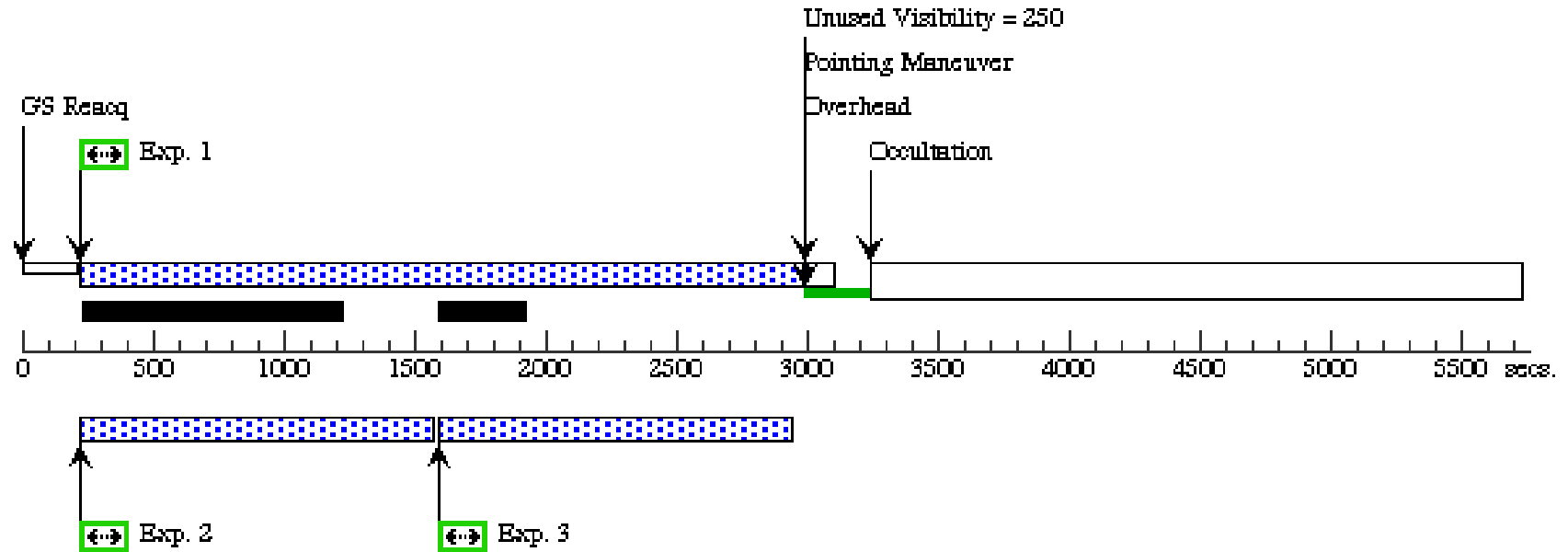
Tue Oct 01 01:45:35 GMT 2013

Visit	Proposal 13389, MACSJ1149 F336W - 2 (12), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: ORIENT 305D TO 305 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1-3)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	MACSJ1149	RA: 11 49 36.3000 (177.4012500d) Dec: +22 23 58.10 (22.39947d) Equinox: J2000		V=26+/-2	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(2) MACSJ1149	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=6	POS TARG 0.42,2.0 2;	GS ACQ SCENARIO BASE1B3	Pattern 1, Exps 1-3 in MACSJ1149 F336W - 2 (12) (1)	2760 Secs (11040 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	[2]
									[==>(Pattern 3)]	[3]
								Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F336W - 2 (12)	[==>(Pattern 4)]	[4]
	2	ANY	ACS/WFC, ACCUM, WFC	F435W				Pattern 1, Exps 1-3 in MACSJ1149 F336W - 2 (12) (1)	1230 Secs (4920 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	[2]
									[==>(Pattern 3)]	[3]
								Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F336W - 2 (12)	[==>(Pattern 4)]	[4]
	3	ANY	ACS/WFC, ACCUM, WFC	F435W				Pattern 1, Exps 1-3 in MACSJ1149 F336W - 2 (12) (1)	1230 Secs (4920 Secs)	
									[==>(Pattern 1)]	[1]
[==>(Pattern 2)]									[2]	
[==>(Pattern 3)]									[3]	
							Prime + Parallel Group 1-3 in Pattern 1, Exps 1-3 in MACSJ1149 F336W - 2 (12)	[==>(Pattern 4)]	[4]	



Orbit 3

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Orbit 4

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