



13284 - Unravelling the evolution and accretion morphology of an extraordinary black hole X-ray binary

Cycle: 21, Proposal Category: GO

(UV Initiative)

(Availability Mode: AVAILABLE)

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) SWIFTJ1357.2-0933	COS/FUV COS/NUV	5	07-Jul-2014 21:00:29.0	yes
B1	(2) TARGET01-SAFE-TARGET	COS/FUV COS/NUV	5	07-Jul-2014 21:00:32.0	yes
02	(1) SWIFTJ1357.2-0933	COS/FUV COS/NUV	4	07-Jul-2014 21:00:34.0	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>
B2	(3) SWIFTJ1357.2-0933-SAFE-TARGET	COS/FUV COS/NUV	4	07-Jul-2014 21:00:36.0	yes
A1	(1) SWIFTJ1357.2-0933	S/C	1	07-Jul-2014 21:00:36.0	yes
A2	(1) SWIFTJ1357.2-0933	S/C	1	07-Jul-2014 21:00:37.0	yes

20 Total Orbits Used

ABSTRACT

The process of accretion via an accretion disk is a fundamental aspect of several areas of Astrophysics. Ultraviolet (UV) observations of quiescent X-ray binaries offer the unique opportunity to study cool, gaseous accretion disks around black holes in a very low mass-accretion regime. We propose to study the quiescent accretion disk of the recently discovered Galactic black hole X-ray binary Swift J1357.2-0933, using FUV spectroscopic observations with the HST-COS. This stellar-mass black hole shares a set of properties that make it a unique target that can offer a new, unprecedented view of the quiescent accretion flow: the binary is viewed at high inclination and is located nearby (~ 1.6 kpc) at high Galactic latitude ($b=+50$ deg), which causes an unprecedented low reddening of $E(B-V)=0.02$ mag. Furthermore, Swift J1357.2-0933 has a very short orbital period of only ~ 2.8 hr, which points towards an unusual evolutionary history. The proposed HST-COS FUV spectroscopic observations will be employed to study the accretion morphology using the continuum emission, whereas the line emission patterns and abundances serve as a tracer of emission site of the UV radiation and the evolutionary stage of the binary.

OBSERVING DESCRIPTION

The cold quiescent accretion disk in LMXBs is expected to peak in the UV band, with most ionized emission lines occurring in the FUV between ~ 1200 - 1700 Å. Investigation of the quiescent accretion stream in Swift J1357.2-0933 thus benefits most from spectroscopic observations with the HST/COS.

Given the expected faintness of our target we propose to use the COS with the low-resolution G140L grating to obtain the best possible S/N. The resolving power of the low-resolution grating is sufficient to resolve the expected ionized emission lines (which have typical widths of ~ 10 Å), and to determine whether these lines are single or double peaked. We propose to use the 1105 Å setting that provides continuous coverage between 1118-2251 Å in segment A, while segment B is switched off.

We used the online HST-COS exposure time calculators (v. 21.1). We model our point source with a $F_{\lambda} \propto \lambda^{-1}$ spectral energy

Proposal 13284 (STScI Edit Number: 3, Created: Monday, July 7, 2014 8:00:38 PM EST) - Overview

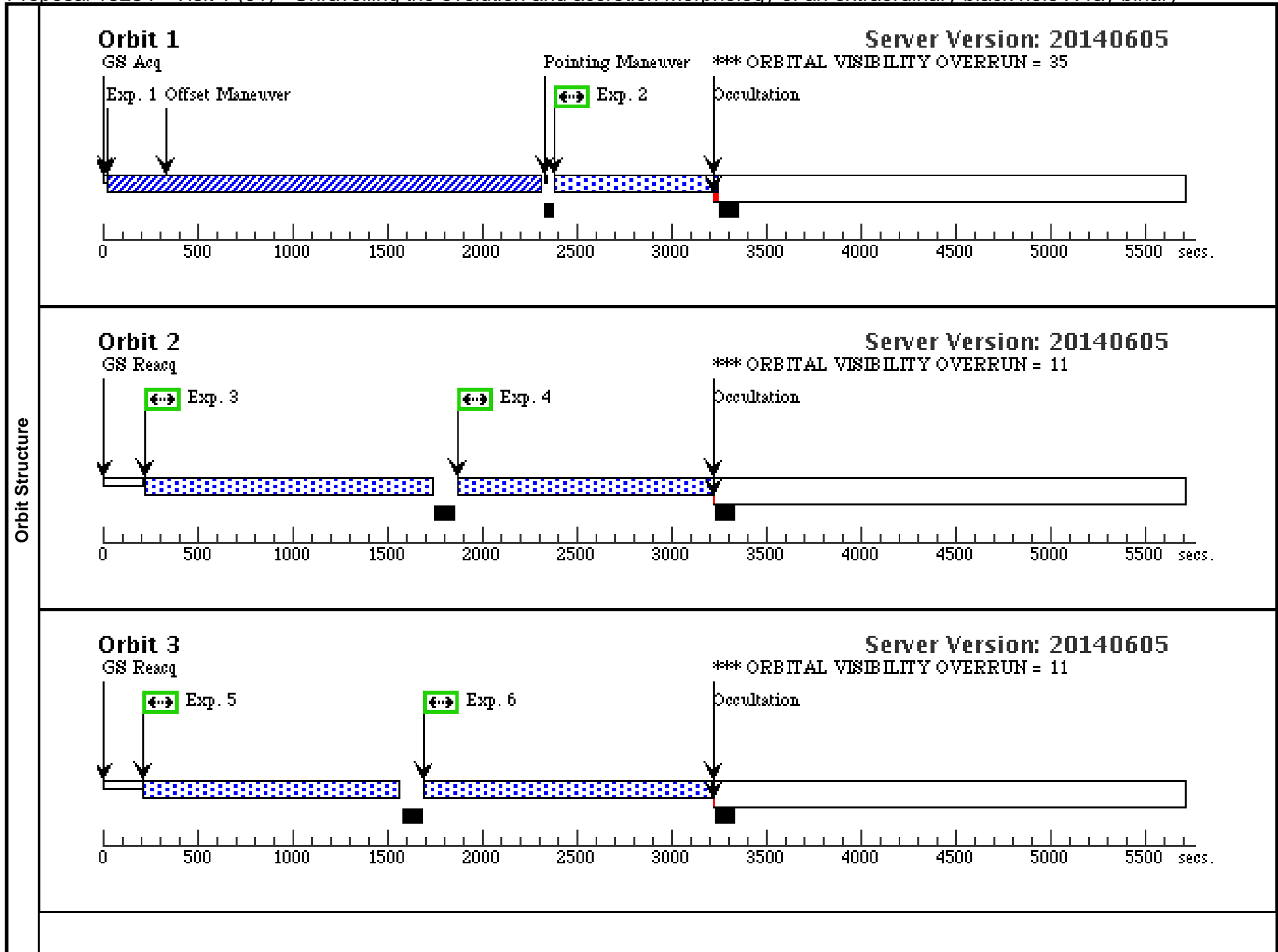
distribution. We normalize the continuum flux to $F_{\lambda} = 6 \times 10^{-18}$ erg/cm²/s/Å at 3560 Å, which is inferred from SDSS observations of the quiescent counterpart of Swift J1357.2-0933 (ATel #3140). The reddening towards our target is $E(B-V) = 0.02$ mag. We require a S/N of 2 for the continuum emission, which is similar to that achieved in HST/COS spectroscopic observations of the quiescent black hole X-ray binary A0620-00 (Froning et al. 2011); the S/N for the emission lines will be higher.

We propose to use different FP-POS positions to reduce fixed-pattern noise and to minimize long-term gain sag. The source position is accurately known (to within 0.3 arcsec; ATel #3147), so target acquisition can be performed using ACQ/IMAGE (a S/N of 40 was assumed for the exposure time calculation). The total observing time of 9 orbits is spread over two visits.

Proposal 13284 - Visit 1 (01) - Unravelling the evolution and accretion morphology of an extraordinary black hole X-ray binary

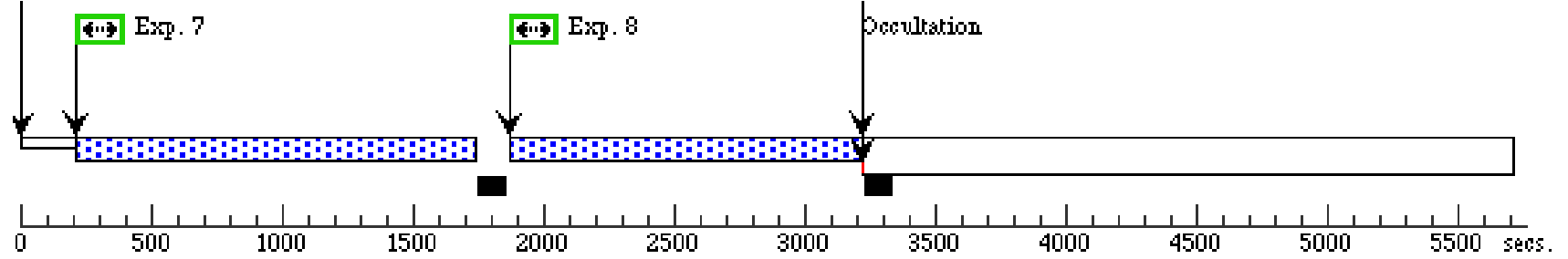
Tue Jul 08 01:00:38 GMT 2014

Visit	Proposal 13284, Visit 1 (01), scheduled Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: ORIENT 25D TO 255 D <i>Comments: This should be scheduled in evening-local time. Flags need to be cleared during the work day.</i>									
	(Visit 1 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit 1 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit 1 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit 1 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit 1 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN									
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes	Miscellaneous		
	(1)	SWIFTJ1357.2-0933	RA: 13 57 16.8180 (209.3200750d) Dec: -09 32 38.55 (-9.54404d) Equinox: J2000				V=22.75+/-0.16	Reference Frame: ICRS		
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	TA1 - image (517768)	(1) SWIFTJ1357.2-0933	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		USE OFFSET V01S AF		946 Secs (946 Secs) [==>]	[1]
	2	Science 1 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=67 5	USE OFFSET V01S AF		675 Secs (675 Secs) [==>]	[1]
	3	Science2 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=14 73	USE OFFSET V01S AF		1473 Secs (1473 Secs) [==>]	[2]
	4	Science3 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=12 96	USE OFFSET V01S AF		1296 Secs (1296 Secs) [==>]	[2]
	5	Science4 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=2; BUFFER-TIME=12 96	USE OFFSET V01S AF		1296 Secs (1296 Secs) [==>]	[3]
	6	Science5 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=2; BUFFER-TIME=14 73	USE OFFSET V01S AF		1473 Secs (1473 Secs) [==>]	[3]
	7	Science6 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=3; BUFFER-TIME=14 73	USE OFFSET V01S AF		1473 Secs (1473 Secs) [==>]	[4]
	8	Science7 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=3; BUFFER-TIME=12 96	USE OFFSET V01S AF		1296 Secs (1296 Secs) [==>]	[4]
	9	Science8 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=4; BUFFER-TIME=14 73	USE OFFSET V01S AF		1473 Secs (1473 Secs) [==>]	[5]
10	Science9 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=4; BUFFER-TIME=12 96	USE OFFSET V01S AF		1296 Secs (1296 Secs) [==>]	[5]	



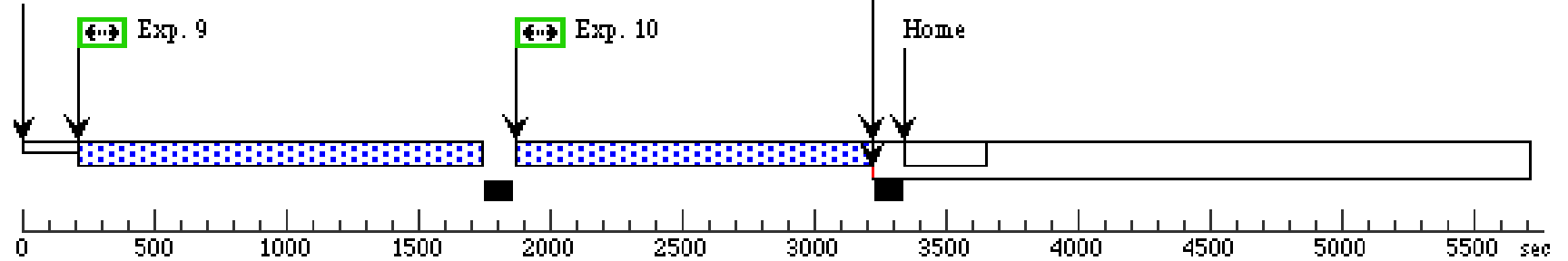
Orbit 4

GS Reacq



Orbit 5

GS Reacq

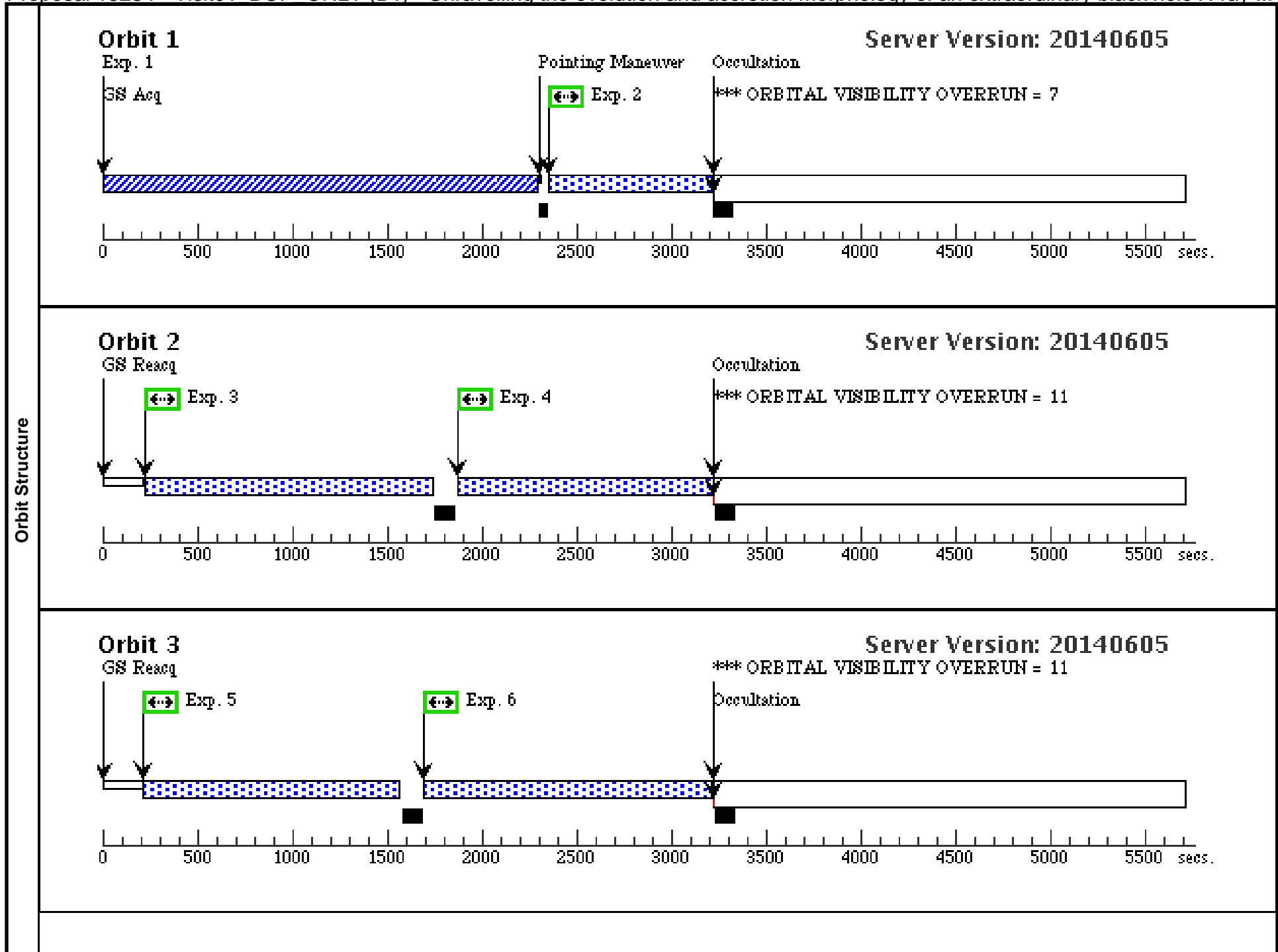


Proposal 13284 - Visit01_BOP_ONLY (B1) - Unravelling the evolution and accretion morphology of an extraordinary black hole X-ray ...

Visit	Proposal 13284, Visit01_BOP_ONLY (B1), withdrawn Tue Jul 08 01:00:38 GMT 2014 Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: ORIENT 25D TO 255 D <i>Comments: This is for BOP checking the safe target only and should not execute onboard HST.</i>																						
	Diagnosics (Visit01_BOP_ONLY (B1)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit01_BOP_ONLY (B1)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit01_BOP_ONLY (B1)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit01_BOP_ONLY (B1)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit01_BOP_ONLY (B1)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN																						
Fixed Targets	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">#</th> <th style="width: 20%;">Name</th> <th style="width: 25%;">Target Coordinates</th> <th style="width: 20%;">Targ. Coord. Corrections</th> <th style="width: 10%;">Fluxes</th> <th style="width: 20%;">Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>SWIFTJ1357.2-0933</td> <td>RA: 13 57 16.8180 (209.3200750d) Dec: -09 32 38.55 (-9.54404d) Equinox: J2000</td> <td></td> <td>V=22.75+/-0.16</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td>(2)</td> <td>TARGET01-SAFE-TARGET</td> <td>Offset from SWIFTJ1357.2-0933 RA Offset: 0.0 Secs Dec Offset: -9.82 Arcsec</td> <td></td> <td>V=22.75+/-0.16</td> <td>Offset Position (TARGET01-SAFE-TARGET)</td> </tr> </tbody> </table>					#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	SWIFTJ1357.2-0933	RA: 13 57 16.8180 (209.3200750d) Dec: -09 32 38.55 (-9.54404d) Equinox: J2000		V=22.75+/-0.16	Reference Frame: ICRS	(2)	TARGET01-SAFE-TARGET	Offset from SWIFTJ1357.2-0933 RA Offset: 0.0 Secs Dec Offset: -9.82 Arcsec		V=22.75+/-0.16	Offset Position (TARGET01-SAFE-TARGET)
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<i>Comments: This target is a blank piece of sky which is the bright object safe pointing and is 9.82 arcseconds away at a PA 179.4 degrees from SWIFTJ1357.2-0933.</i>																							

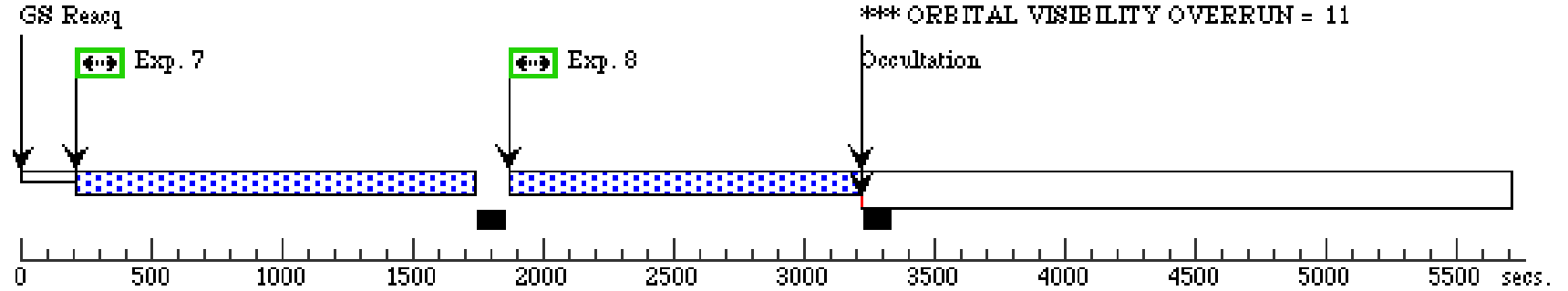
Proposal 13284 - Visit01 BOP ONLY (B1) - Unravelling the evolution and accretion morphology of an extraordinary black hole X-ray ...

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1	TA1 - image (517768)	(2) TARGET01-SAF E-TARGET	COS/NUV, ACQ/IMAGE, PSA	MIRRORA					946 Secs (946 Secs)	
									[==>]	[1]	
	2	Science 1 (517864)	(2) TARGET01-SAF E-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=67 5				675 Secs (675 Secs)	
									[==>]	[1]	
	3	Science2 (517864)	(2) TARGET01-SAF E-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=14 73				1473 Secs (1473 Secs)	
									[==>]	[2]	
	4	Science3 (517864)	(2) TARGET01-SAF E-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=12 96				1296 Secs (1296 Secs)	
									[==>]	[2]	
	5	Science4 (517864)	(2) TARGET01-SAF E-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=2; BUFFER-TIME=12 96				1296 Secs (1296 Secs)	
								[==>]	[3]		
6	Science5 (517864)	(2) TARGET01-SAF E-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=2; BUFFER-TIME=14 73				1473 Secs (1473 Secs)		
								[==>]	[3]		
7	Science6 (517864)	(2) TARGET01-SAF E-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=3; BUFFER-TIME=14 73				1473 Secs (1473 Secs)		
								[==>]	[4]		
8	Science7 (517864)	(2) TARGET01-SAF E-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=3; BUFFER-TIME=12 96				1296 Secs (1296 Secs)		
								[==>]	[4]		
9	Science8 (517864)	(2) TARGET01-SAF E-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=4; BUFFER-TIME=14 73				1473 Secs (1473 Secs)		
								[==>]	[5]		
10	Science9 (517864)	(2) TARGET01-SAF E-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=4; BUFFER-TIME=12 96				1296 Secs (1296 Secs)		
								[==>]	[5]		



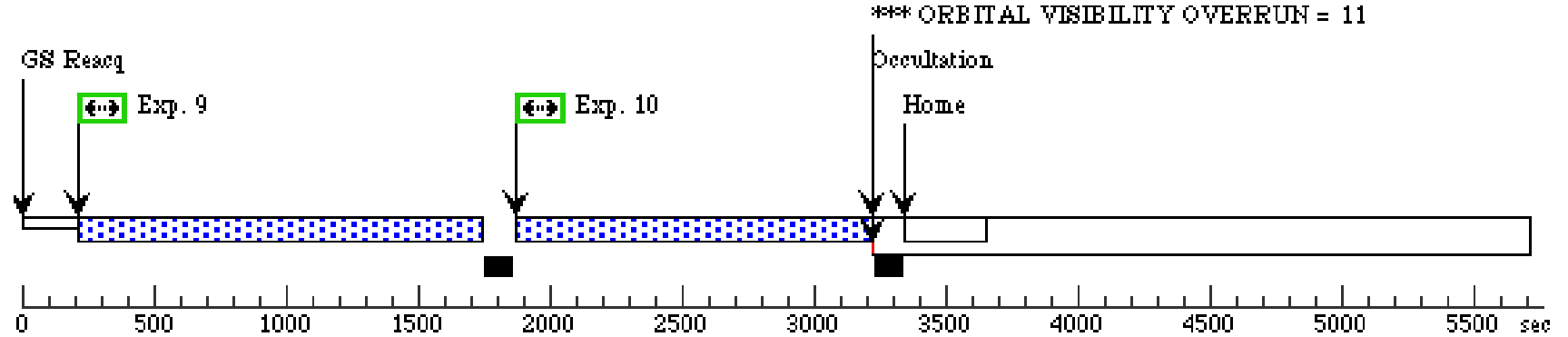
Orbit 4

Server Version: 20140605



Orbit 5

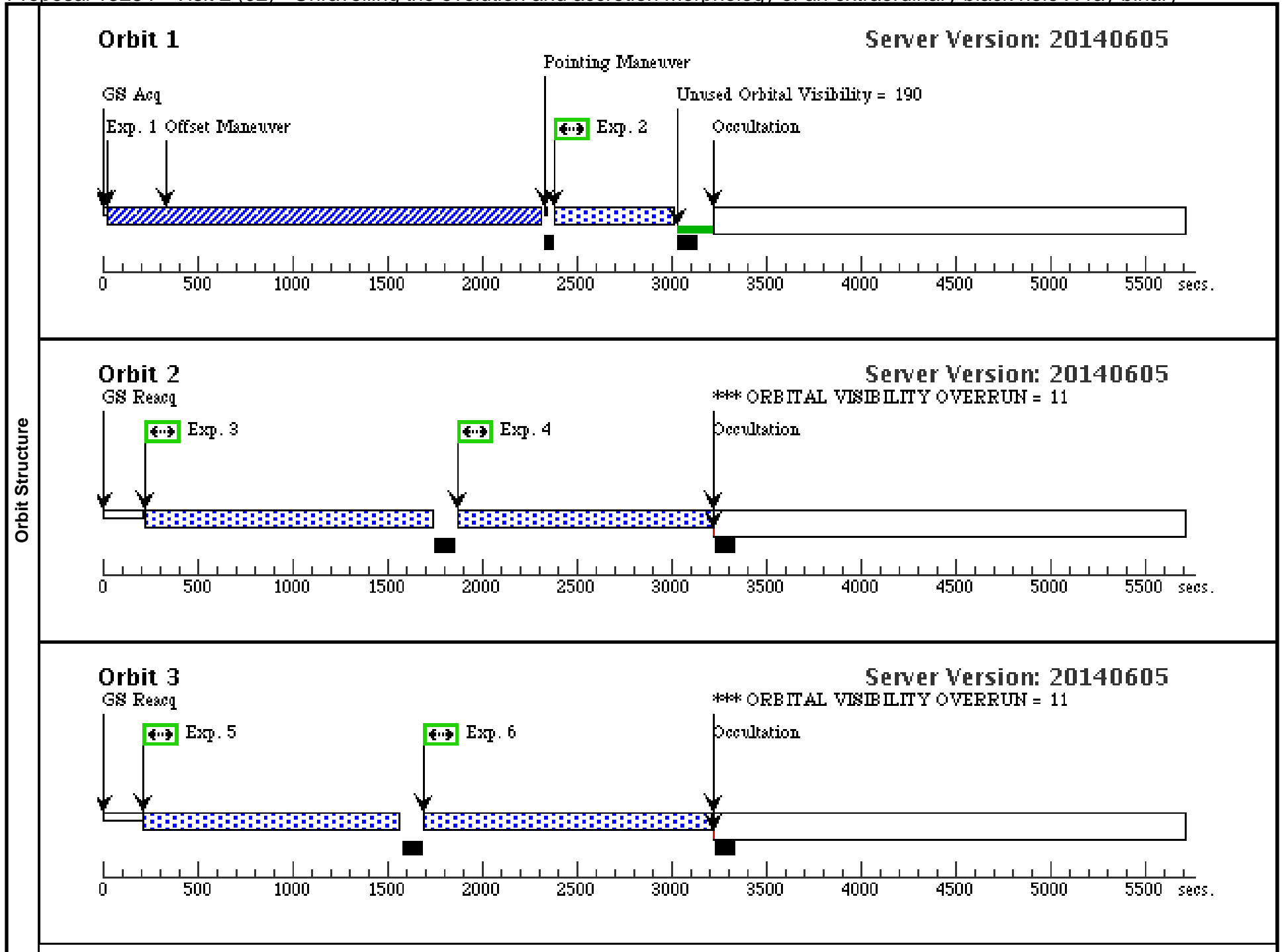
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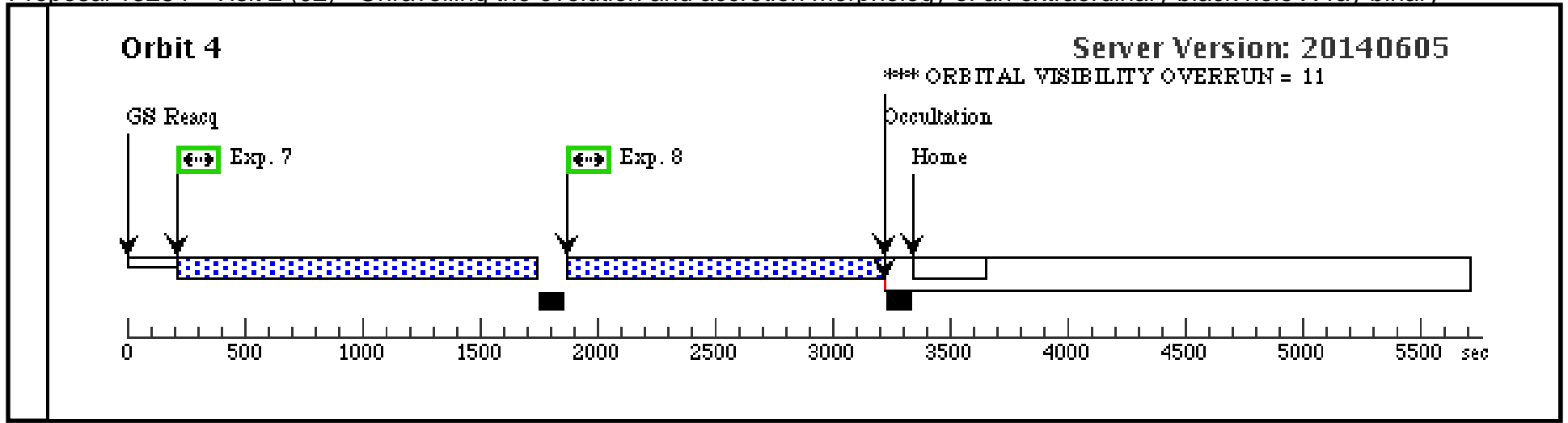


Proposal 13284 - Visit 2 (02) - Unravelling the evolution and accretion morphology of an extraordinary black hole X-ray binary

Tue Jul 08 01:00:39 GMT 2014

Visit	Proposal 13284, Visit 2 (02), implementation Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: ORIENT 300D TO 195 D <i>Comments: This should be scheduled in evening-local time. Flags need to be cleared during the work day.</i>									
	(Visit 2 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit 2 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit 2 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN									
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes	Miscellaneous		
	(1)	SWIFTJ1357.2-0933	RA: 13 57 16.8180 (209.3200750d) Dec: -09 32 38.55 (-9.54404d) Equinox: J2000				V=22.75+/-0.16	Reference Frame: ICRS		
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	TA1 - image (517768)	(1) SWIFTJ1357.2-0933	COS/NUV, ACQ/IMAGE, PSA	MIRRORA		USE OFFSET V02S AF		946 Secs (946 Secs) [==>]	[1]
	2	Science 1 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=45 0	USE OFFSET V02S AF		450 Secs (450 Secs) [==>]	[1]
	3	Science2 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=14 73	USE OFFSET V02S AF		1473 Secs (1473 Secs) [==>]	[2]
	4	Science3 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=12 96	USE OFFSET V02S AF		1296 Secs (1296 Secs) [==>]	[2]
	5	Science4 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=2; BUFFER-TIME=12 96	USE OFFSET V02S AF		1296 Secs (1296 Secs) [==>]	[3]
	6	Science5 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=2; BUFFER-TIME=14 73	USE OFFSET V02S AF		1473 Secs (1473 Secs) [==>]	[3]
	7	Science6 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=3; BUFFER-TIME=14 73	USE OFFSET V02S AF		1473 Secs (1473 Secs) [==>]	[4]
	8	Science7 (517864)	(1) SWIFTJ1357.2-0933	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=4; BUFFER-TIME=12 93	USE OFFSET V02S AF		1293 Secs (1293 Secs) [==>]	[4]

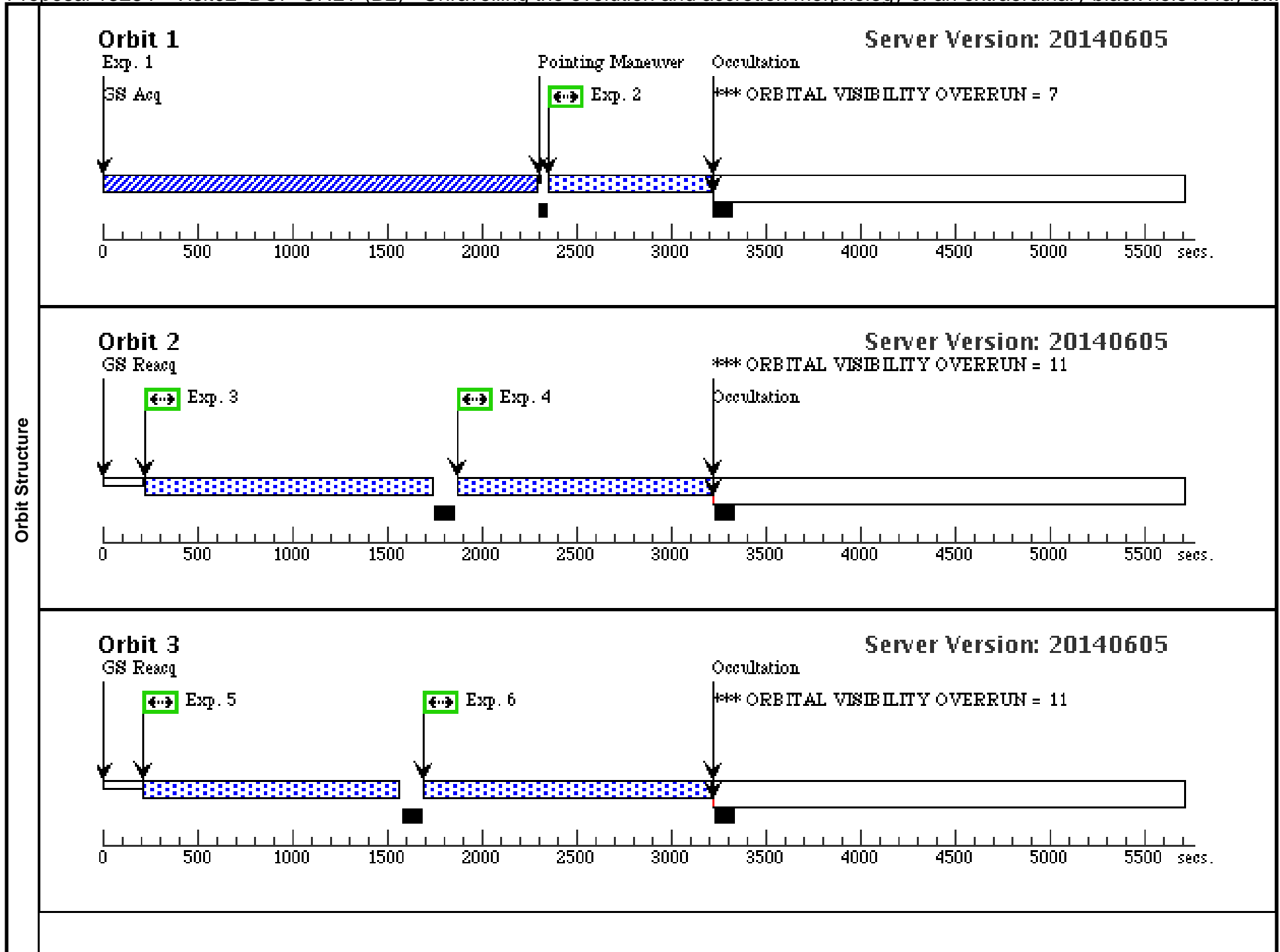


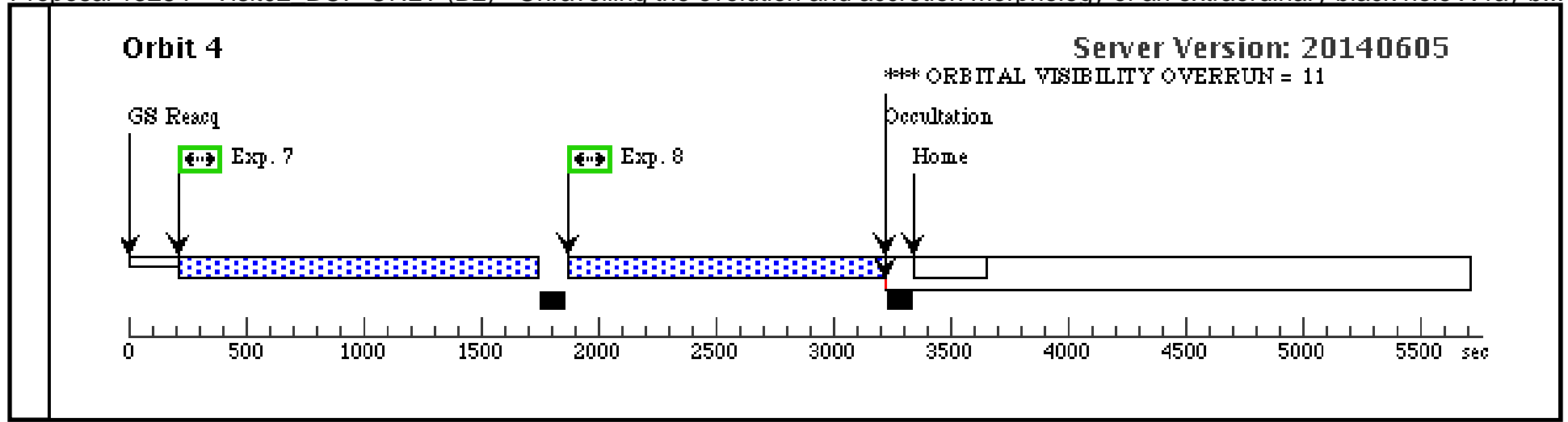


Proposal 13284 - Visit02_BOP-ONLY (B2) - Unravelling the evolution and accretion morphology of an extraordinary black hole X-ray b...

Tue Jul 08 01:00:39 GMT 2014

Visit	Proposal 13284, Visit02_BOP-ONLY (B2), withdrawn Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: ORIENT 300D TO 195 D <i>Comments: This is for BOP checking the safe target only and should not execute onboard HST.</i>																																																																																																			
	Diagnosics (Visit02_BOP-ONLY (B2)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit02_BOP-ONLY (B2)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit02_BOP-ONLY (B2)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit02_BOP-ONLY (B2)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN																																																																																																			
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(3)	SWIFTJ1357.2-0933-SAFE-TARGET	Offset from SWIFTJ1357.2-0933 RA Offset: 0.6 Secs Dec Offset: -4.053 Arcsec		V=22.75+/-0.16	Offset Position (SWIFTJ1357.2-0933-SAFE-TARGET)																																																																																															
Exposures	<table border="1"> <thead> <tr> <th>#</th> <th>Label (ETC Run)</th> <th>Target</th> <th>Config,Mode,Aperture</th> <th>Spectral Els.</th> <th>Opt. Params.</th> <th>Special Reqs.</th> <th>Groups</th> <th>Exp. Time (Total)/[Actual Dur.]</th> <th>Orbit</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>TA1 - image (517768)</td> <td>(3) SWIFTJ1357.2-0933-SAFE-TARGET</td> <td>COS/NUV, ACQ/IMAGE, PSA</td> <td>MIRRORA</td> <td></td> <td></td> <td></td> <td>946 Secs (946 Secs) [==>]</td> <td>[1]</td> </tr> <tr> <td>2</td> <td>Science 1 (517864)</td> <td>(3) SWIFTJ1357.2-0933-SAFE-TARGET</td> <td>COS/FUV, TIME-TAG, PSA</td> <td>G140L 1105 A</td> <td>FP-POS=1; BUFFER-TIME=67 5</td> <td></td> <td></td> <td>675 Secs (675 Secs) [==>]</td> <td>[1]</td> </tr> <tr> <td>3</td> <td>Science2 (517864)</td> <td>(3) SWIFTJ1357.2-0933-SAFE-TARGET</td> <td>COS/FUV, TIME-TAG, PSA</td> <td>G140L 1105 A</td> <td>FP-POS=1; BUFFER-TIME=14 73</td> <td></td> <td></td> <td>1473 Secs (1473 Secs) [==>]</td> <td>[2]</td> </tr> <tr> <td>4</td> <td>Science3 (517864)</td> <td>(3) SWIFTJ1357.2-0933-SAFE-TARGET</td> <td>COS/FUV, TIME-TAG, PSA</td> <td>G140L 1105 A</td> <td>FP-POS=1; BUFFER-TIME=12 96</td> <td></td> <td></td> <td>1296 Secs (1296 Secs) [==>]</td> <td>[2]</td> </tr> <tr> <td>5</td> <td>Science4 (517864)</td> <td>(3) SWIFTJ1357.2-0933-SAFE-TARGET</td> <td>COS/FUV, TIME-TAG, PSA</td> <td>G140L 1105 A</td> <td>FP-POS=2; BUFFER-TIME=12 96</td> <td></td> <td></td> <td>1296 Secs (1296 Secs) [==>]</td> <td>[3]</td> </tr> <tr> <td>6</td> <td>Science5 (517864)</td> <td>(3) SWIFTJ1357.2-0933-SAFE-TARGET</td> <td>COS/FUV, TIME-TAG, PSA</td> <td>G140L 1105 A</td> <td>FP-POS=2; BUFFER-TIME=14 73</td> <td></td> <td></td> <td>1473 Secs (1473 Secs) [==>]</td> <td>[3]</td> </tr> <tr> <td>7</td> <td>Science6 (517864)</td> <td>(3) SWIFTJ1357.2-0933-SAFE-TARGET</td> <td>COS/FUV, TIME-TAG, PSA</td> <td>G140L 1105 A</td> <td>FP-POS=3; BUFFER-TIME=14 73</td> <td></td> <td></td> <td>1473 Secs (1473 Secs) [==>]</td> <td>[4]</td> </tr> <tr> <td>8</td> <td>Science7 (517864)</td> <td>(3) SWIFTJ1357.2-0933-SAFE-TARGET</td> <td>COS/FUV, TIME-TAG, PSA</td> <td>G140L 1105 A</td> <td>FP-POS=4; BUFFER-TIME=12 93</td> <td></td> <td></td> <td>1293 Secs (1293 Secs) [==>]</td> <td>[4]</td> </tr> </tbody> </table>										#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	1	TA1 - image (517768)	(3) SWIFTJ1357.2-0933-SAFE-TARGET	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				946 Secs (946 Secs) [==>]	[1]	2	Science 1 (517864)	(3) SWIFTJ1357.2-0933-SAFE-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=67 5			675 Secs (675 Secs) [==>]	[1]	3	Science2 (517864)	(3) SWIFTJ1357.2-0933-SAFE-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=14 73			1473 Secs (1473 Secs) [==>]	[2]	4	Science3 (517864)	(3) SWIFTJ1357.2-0933-SAFE-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=12 96			1296 Secs (1296 Secs) [==>]	[2]	5	Science4 (517864)	(3) SWIFTJ1357.2-0933-SAFE-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=2; BUFFER-TIME=12 96			1296 Secs (1296 Secs) [==>]	[3]	6	Science5 (517864)	(3) SWIFTJ1357.2-0933-SAFE-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=2; BUFFER-TIME=14 73			1473 Secs (1473 Secs) [==>]	[3]	7	Science6 (517864)	(3) SWIFTJ1357.2-0933-SAFE-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=3; BUFFER-TIME=14 73			1473 Secs (1473 Secs) [==>]	[4]	8	Science7 (517864)	(3) SWIFTJ1357.2-0933-SAFE-TARGET	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=4; BUFFER-TIME=12 93			1293 Secs (1293 Secs) [==>]	[4]
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Proposal 13284 - Visit01 SC Visit (A1) - Unravelling the evolution and accretion morphology of an extraordinary black hole X-ray binary

Tue Jul 08 01:00:39 GMT 2014

Visit	Proposal 13284, Visit01_SC_Visit (A1), scheduled Diagnostic Status: No Diagnostics Scientific Instruments: S/C Special Requirements: ORIENT 25D TO 255 D Comments: This visit allocates and sets up the safe position offset slot for Visit01 which will use that slot. This S/C visit should go earlier in the week while Visit01 will be at least 3 days later. The S/C visit will contain only 1 exposure.									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
(1)		SWIFTJ1357.2-0933	RA: 13 57 16.8180 (209.3200750d) Dec: -09 32 38.55 (-9.54404d) Equinox: J2000		V=22.75+/-0.16	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) SWIFTJ1357.2-0933	(1) SWIFTJ1357.2-0933	S/C, DATA, V1			POS TARG 232.723, -237.515; SAVE OFFSET V01 SAF; SPEC COM INSTR ECSLOTSET; QESIPARM ANGLE 179.4; QESIPARM DIST 9.82		5 Secs (5 Secs) [=>]	[1]
Orbit Structure	Orbit 1 Server Version: 20140605									

Proposal 13284 - Visit02_SC_Visit (A2) - Unravelling the evolution and accretion morphology of an extraordinary black hole X-ray binary

Tue Jul 08 01:00:39 GMT 2014

Visit	Proposal 13284, Visit02_SC_Visit (A2), scheduling Diagnostic Status: No Diagnostics Scientific Instruments: S/C Special Requirements: ORIENT 300D TO 195 D <i>Comments: This visit allocates and sets up the safe position offset slot for Visit02 which will use that slot. This S/C visit should go earlier in the week while Visit02 will be at least 3 days later. The S/C visit will contain only 1 exposure.</i>									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
(1)		SWIFTJ1357.2-0933	RA: 13 57 16.8180 (209.3200750d) Dec: -09 32 38.55 (-9.54404d) Equinox: J2000		V=22.75+/-0.16	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SWIFTJ1357.2-0 933	S/C, DATA, V1			POS TARG 232.723, -237.515; SAVE OFFSET V02 SAF; SPEC COM INSTR ECSLOTSET; QESIPARM ANGL E 114.4; QESIPARM DIST 9. 819		5 Secs (5 Secs) [==>]	[1]
Orbit Structure	<p>Orbit 1 Server Version: 20140605</p> <p>GS Acq Unused Orbital Visibility = 2884</p> <p>Exp. 1</p> <p>Occultation</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>									