



10766 - A Deep X-ray Survey of the Small Magellanic Cloud

Cycle: 14, 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	(2) SMC-DEEP-FIELD1B	ACS/WFC	1	15-Aug-2007 21:01:03.0	yes
07	(1) SMC-DEEP-FIELD1A	ACS/WFC	1	15-Aug-2007 21:01:08.0	yes
11	(3) SMC-DEEP-FIELD1C-ALT	WFPC2	2	15-Aug-2007 21:01:12.0	yes
12	(9) SMC-DEEP-FIELD1D-ALT	WFPC2	2	15-Aug-2007 21:01:16.0	yes
21	(10) SMC-DEEP-FIELD2A-ALT	WFPC2	2	15-Aug-2007 21:01:19.0	yes
22	(11) SMC-DEEP-FIELD2B-ALT	WFPC2	2	15-Aug-2007 21:01:22.0	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>
23	(12) SMC-DEEP-FIELD2C-ALT	WFPC2	2	15-Aug-2007 21:01:25.0	yes

12 Total Orbits Used

ABSTRACT

We request deep observations of 2 representative fields in the Small Magellanic Cloud with Chandra and HST, with the primary goal of measuring the luminosity function and space density of X-ray binaries and other sources down to an unprecedented faint luminosity limit of 2×10^{-32} erg/s. This will be the faintest XLF ever obtained for any galaxy, including our own. HST photometry to 24th magnitude in V and I filters will identify the sources and provide F_x/F_{opt} , which will be vital in quantifying the LMXB population and in measuring the properties of the first coronally active stars ever detected in an external galaxy.

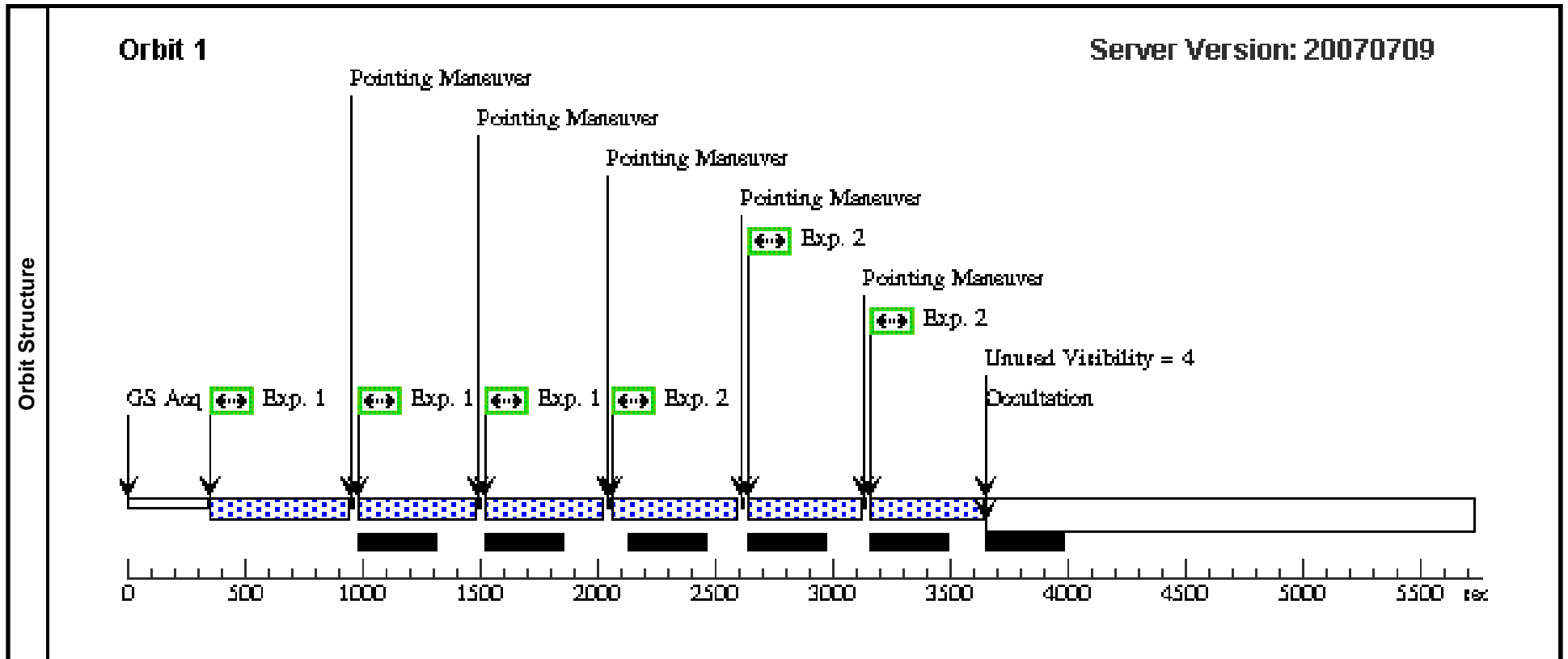
OBSERVING DESCRIPTION

This is a substitute program for the original ACS program. We obtain V (F606W) and I (F814W) WFPC2 exposures in the central part of our Deep Chandra SMC fields. Because of the smaller area coverage of WFPC2 the fields are adjusted to cover regions with high density of X-ray sources. The total integration is 2400s in each band. the observations are obtained with a 3pt dither pattern, in order to reject cosmic rays and obtain some sub-pixel sampling.

Proposal 10766 - Visit 01 - A Deep X-ray Survey of the Small Magellanic Cloud

Thu Aug 16 01:01:29 GMT 2007

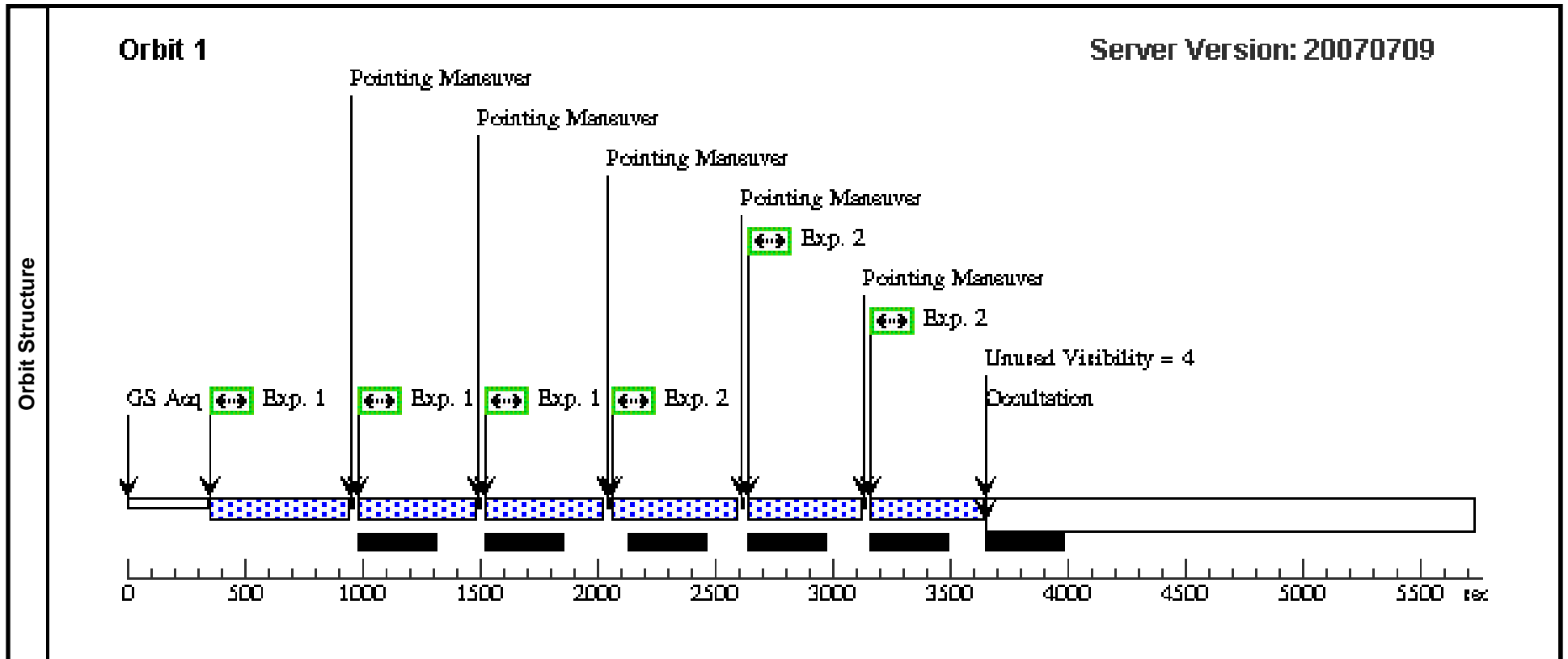
Visit	Proposal 10766, Visit 01, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: ORIENT 355.0D TO 5.0 D; ORIENT 175.0D TO 185.0 D <i>Comments: The orientation constraint is to ensure full coverage of the central part of the HST field. The fields can be observed in any orientation, but if it is different from that indicated here, please contact the observer to adjust the pointing coordinates.</i>									
	Patterns	#	Primary Pattern				Secondary Pattern			Exposures
(1)		Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.011 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.28 Angle Between Sides= Center Pattern=false						(1), (2)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous			
	(2)	SMC-DEEP-FIELD1B	RA: 00 53 14.3032 (13.3095967d) Dec: -72 28 14.25 (-72.47062d) Equinox: J2000 Plate Id: (?)			V=13.0	Coordinate Source: GSC_SURVEY_PLATE			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(2) SMC-DEEP-FIELD1B	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO			Pattern 1-1 (1)	375.0 Secs	
									[=>383.0 Secs (Pattern 1)] [=>383.0 Secs (Pattern 2)] [=>383.0 Secs (Pattern 3)]	[1]
	2	(2) SMC-DEEP-FIELD1B	ACS/WFC, ACCUM, WFCENTER	F814W	CR-SPLIT=NO			Pattern 2-2 (1)	350.0 Secs	
								[=>358.0 Secs (Pattern 1)] [=>358.0 Secs (Pattern 2)] [=>358.0 Secs (Pattern 3)]	[1]	



Proposal 10766 - Visit 07 - A Deep X-ray Survey of the Small Magellanic Cloud

Thu Aug 16 01:01:30 GMT 2007

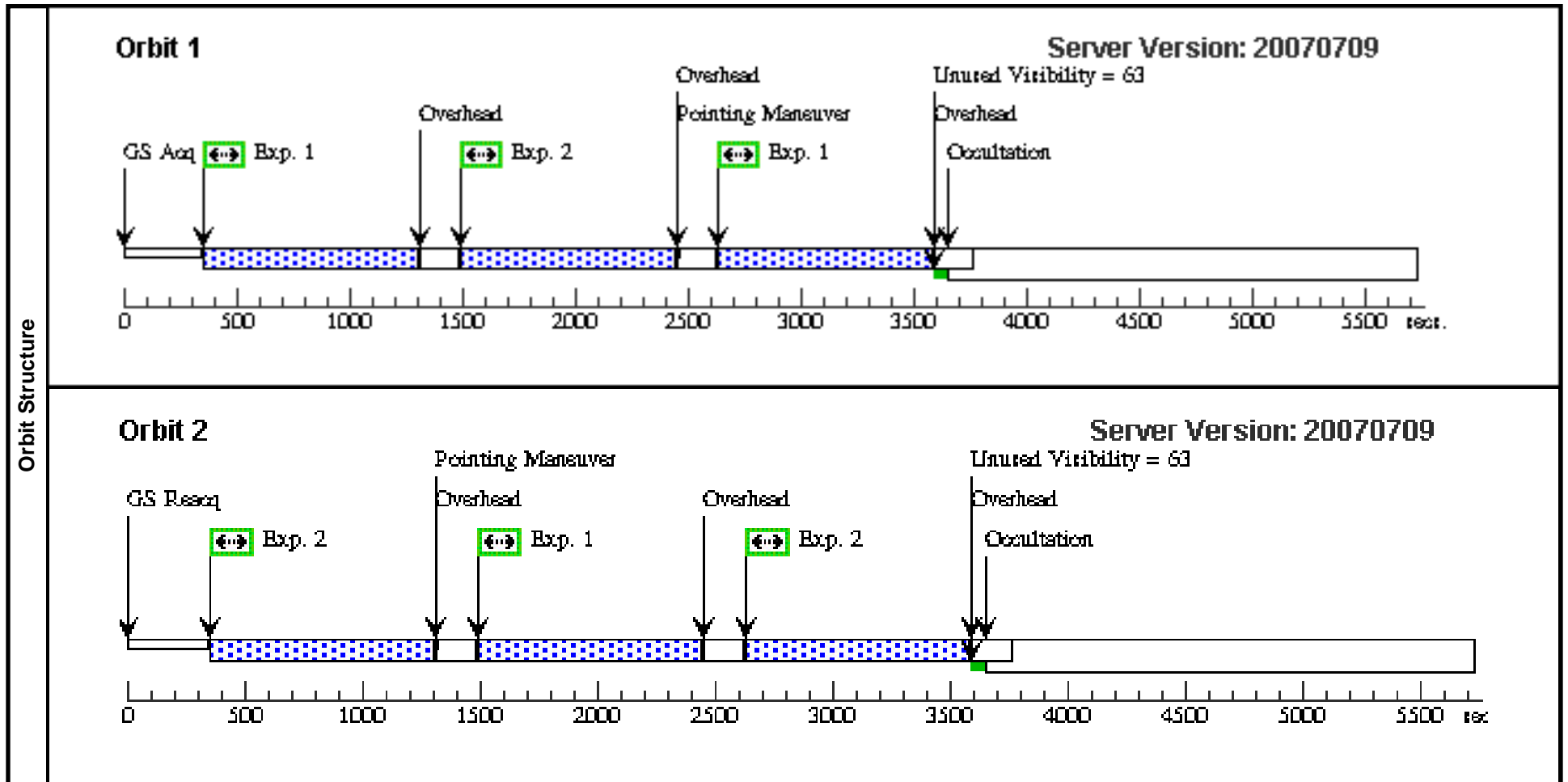
Visit	Proposal 10766, Visit 07, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: ORIENT 355.0D TO 5.0 D; ORIENT 175.0D TO 185.0 D <i>Comments: The orientation constraint is to ensure full coverage of the central part of the HST field. The fields can be observed in any orientation, but if it is different from that indicated here, please contact the observer to adjust the pointing coordinates.</i>									
	Patterns	#	Primary Pattern				Secondary Pattern			Exposures
(1)		Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.011 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.28 Angle Between Sides= Center Pattern=false						(1), (2)	
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes	Miscellaneous		
	(1)	SMC-DEEP-FIELD1A	RA: 00 53 37.1533 (13.4048054d) Dec: -72 24 59.09 (-72.41641d) Equinox: J2000 Plate Id: (?)				V=13.0	Coordinate Source: GSC_SURVEY_PLATE		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) SMC-DEEP-FIELD1A	(1) SMC-DEEP-FIELD1A	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO		Pattern 1-1 (1)	375.0 Secs	
									[=>383.0 Secs (Pattern 1)] [=>383.0 Secs (Pattern 2)] [=>383.0 Secs (Pattern 3)]	[1]
	2	(1) SMC-DEEP-FIELD1A	(1) SMC-DEEP-FIELD1A	ACS/WFC, ACCUM, WFCENTER	F814W	CR-SPLIT=NO		Pattern 2-2 (1)	350.0 Secs	
								[=>358.0 Secs (Pattern 1)] [=>358.0 Secs (Pattern 2)] [=>358.0 Secs (Pattern 3)]	[1]	



Proposal 10766 - Visit 11 - A Deep X-ray Survey of the Small Magellanic Cloud

Thu Aug 16 01:01:30 GMT 2007

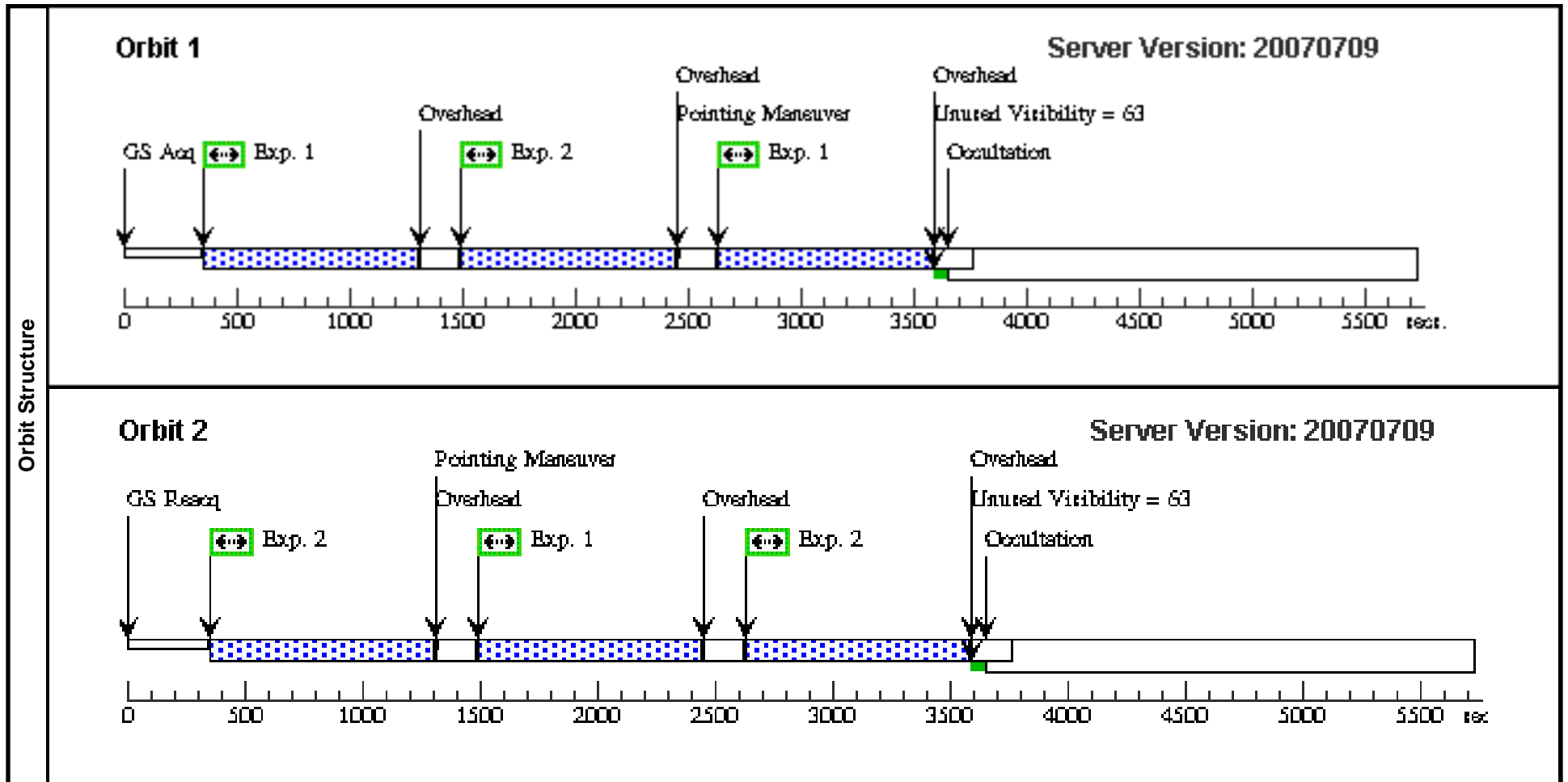
Visit	Proposal 10766, Visit 11, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)										
	Patterns	#	Primary Pattern				Secondary Pattern			Exposures	
		(2)	Pattern Type=WFPC2-LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.354 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=45 Angle Between Sides= Center Pattern=false						(1-2)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous					
	(3)	SMC-DEEP-FIELD1C-ALT	RA: 00 53 54.4000 (13.4766667d) Dec: -72 30 59.20 (-72.51644d) Equinox: J2000 Plate Id: (?)		V=13.0	Coordinate Source: GSC_SURVEY_PLATE					
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit
	1		(3) SMC-DEEP-FIELD1C-ALT	WFPC2, IMAGE, WFALL-FIX	F606W	CR-SPLIT=NO		Pattern 1-2 (2)	800.0 Secs		
									[==>(Pattern 1)]		[1]
									[==>(Pattern 2)]		[2]
									[==>(Pattern 3)]		[2]
	2		(3) SMC-DEEP-FIELD1C-ALT	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=NO		Pattern 1-2 (2)	850.0 Secs		
								[==>800.0 Secs (Pattern 1)]		[1]	
								[==>800.0 Secs (Pattern 2)]		[2]	
								[==>800.0 Secs (Pattern 3)]		[2]	



Proposal 10766 - Visit 12 - A Deep X-ray Survey of the Small Magellanic Cloud

Thu Aug 16 01:01:31 GMT 2007

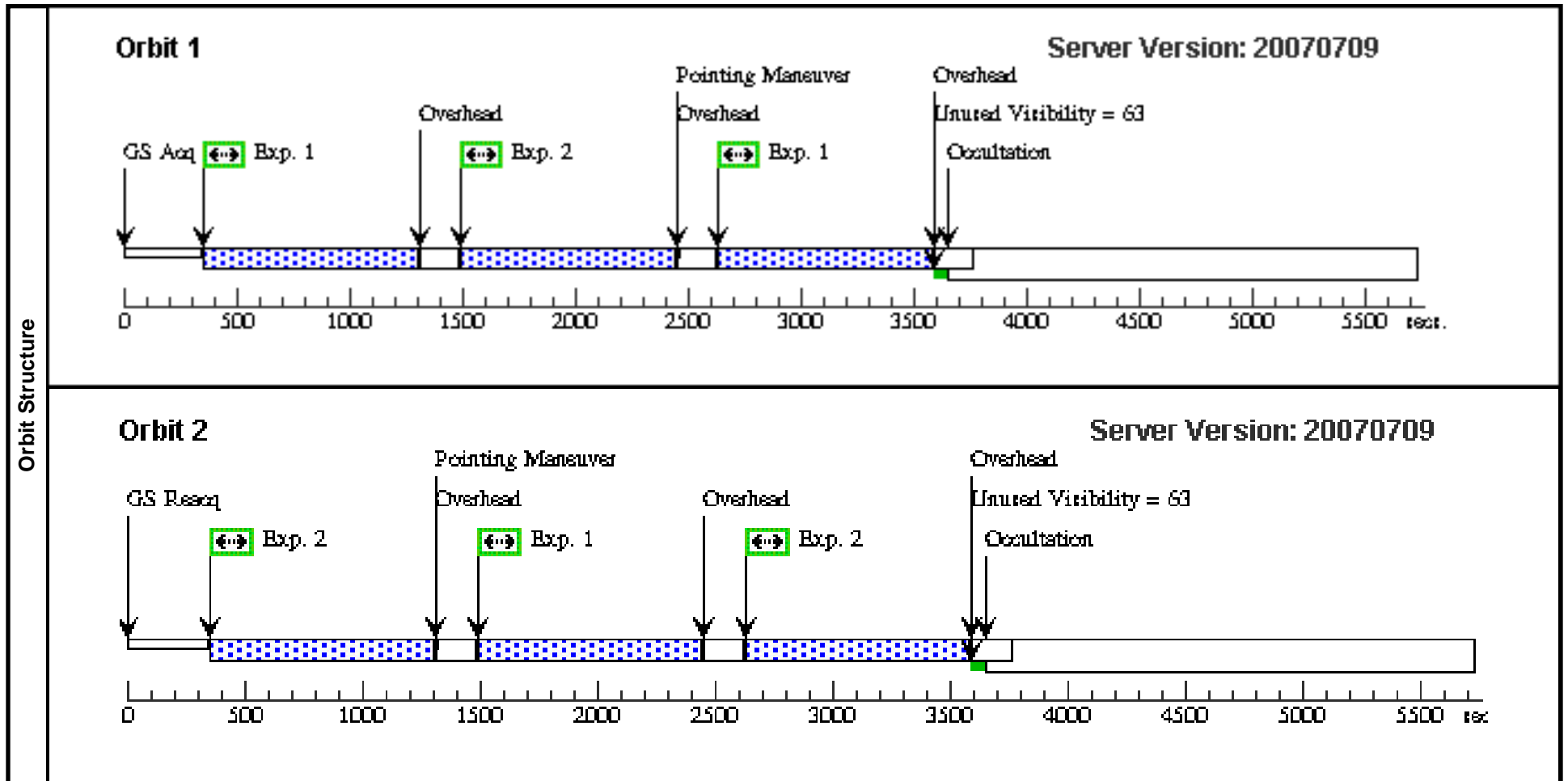
Visit	Proposal 10766, Visit 12, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)									
	Patterns	#	Primary Pattern				Secondary Pattern			Exposures
(2)		Pattern Type=WFPC2-LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.354 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=45 Angle Between Sides= Center Pattern=false						(1-2)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(9)	SMC-DEEP-FIELD1D-ALT	RA: 00 53 22.6000 (13.3441667d) Dec: -72 22 25.00 (-72.37361d) Equinox: J2000 Plate Id: (?)		V=13.0	Coordinate Source: GSC_SURVEY_PLATE				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(9) SMC-DEEP-FIELD1D-ALT	WFPC2, IMAGE, WFALL-FIX	F606W	CR-SPLIT=NO		Pattern 1-2 (2)	800.0 Secs	
									[=>(Pattern 1)]	[1]
									[=>(Pattern 2)]	[2]
									[=>(Pattern 3)]	[2]
	2		(9) SMC-DEEP-FIELD1D-ALT	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=NO		Pattern 1-2 (2)	800.0 Secs	
								[=>(Pattern 1)]	[1]	
								[=>(Pattern 2)]	[2]	
								[=>(Pattern 3)]	[2]	



Proposal 10766 - Visit 21 - A Deep X-ray Survey of the Small Magellanic Cloud

Thu Aug 16 01:01:32 GMT 2007

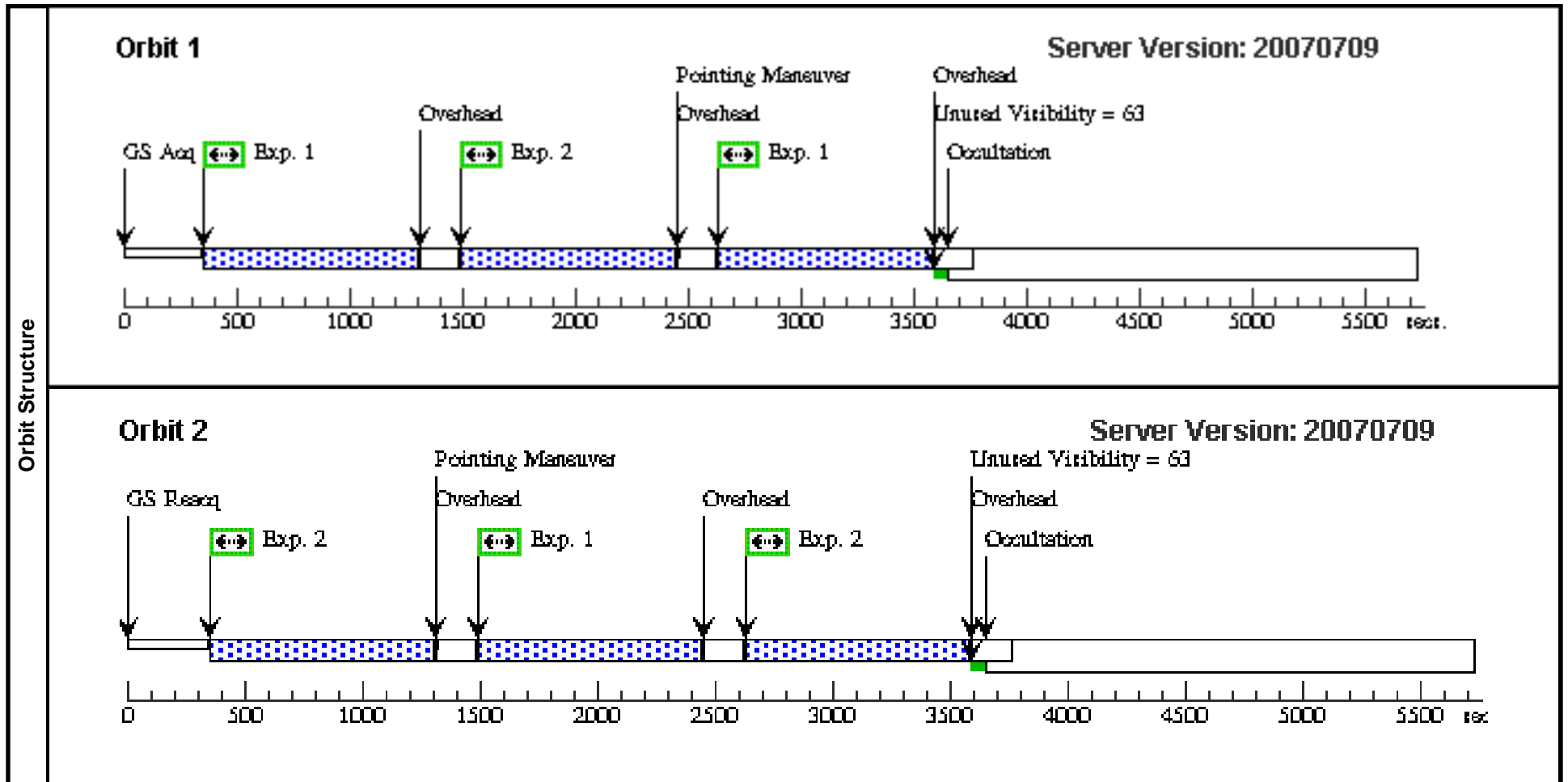
Visit	Proposal 10766, Visit 21, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)									
	Patterns	#	Primary Pattern				Secondary Pattern			
(2)		Pattern Type=WFPC2-LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.354 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=45 Angle Between Sides= Center Pattern=false					(1-2)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous			
	(10)	SMC-DEEP-FIELD2A-ALT	RA: 00 50 7.0000 (12.5291667d) Dec: -73 16 26.30 (-73.27397d) Equinox: J2000 Plate Id: (?)			V=13.0	Coordinate Source: GSC_SURVEY_PLATE			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(10) SMC-DEEP-FIELD2A-ALT	WFPC2, IMAGE, WFALL-FIX	F606W	CR-SPLIT=NO		Pattern 1-2 (2)	800.0 Secs	
									[=>(Pattern 1)]	[1]
									[=>(Pattern 2)]	[2]
									[=>(Pattern 3)]	[2]
	2		(10) SMC-DEEP-FIELD2A-ALT	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=NO		Pattern 1-2 (2)	800.0 Secs	
								[=>(Pattern 1)]	[1]	
								[=>(Pattern 2)]	[2]	
								[=>(Pattern 3)]	[2]	



Proposal 10766 - Visit 22 - A Deep X-ray Survey of the Small Magellanic Cloud

Thu Aug 16 01:01:32 GMT 2007

Visit	Proposal 10766, Visit 22, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)									
	Patterns	#	Primary Pattern				Secondary Pattern			
(2)		Pattern Type=WFPC2-LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.354 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=45 Angle Between Sides= Center Pattern=false					(1-2)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous			
	(11)	SMC-DEEP-FIELD2B-ALT	RA: 00 50 45.3800 (12.6890833d) Dec: -73 15 18.60 (-73.25517d) Equinox: J2000 Plate Id: (?)			V=13.0	Coordinate Source: GSC_SURVEY_PLATE			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(11) SMC-DEEP-FIELD2B-ALT	WFPC2, IMAGE, WFALL-FIX	F606W	CR-SPLIT=NO		Pattern 1-2 (2)	800.0 Secs	
									[=>(Pattern 1)]	[1]
									[=>(Pattern 2)]	[2]
									[=>(Pattern 3)]	[2]
	2		(11) SMC-DEEP-FIELD2B-ALT	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=NO		Pattern 1-2 (2)	800.0 Secs	
								[=>(Pattern 1)]	[1]	
								[=>(Pattern 2)]	[2]	
								[=>(Pattern 3)]	[2]	



Proposal 10766 - Visit 23 - A Deep X-ray Survey of the Small Magellanic Cloud

Thu Aug 16 01:01:33 GMT 2007

Visit	Proposal 10766, Visit 23, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)									
	Patterns	#	Primary Pattern				Secondary Pattern			
(2)		Pattern Type=WFPC2-LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.354 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=45 Angle Between Sides= Center Pattern=false					(1-2)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous			
	(12)	SMC-DEEP-FIELD2C-ALT	RA: 00 50 34.4000 (12.6433333d) Dec: -73 19 51.00 (-73.33083d) Equinox: J2000 Plate Id: (?)			V=13.0	Coordinate Source: GSC_SURVEY_PLATE			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(12) SMC-DEEP-FIELD2C-ALT	WFPC2, IMAGE, WFALL-FIX	F606W	CR-SPLIT=NO		Pattern 1-2 (2)	800.0 Secs		
								[=>(Pattern 1)]	[1]	
								[=>(Pattern 2)]	[2]	
								[=>(Pattern 3)]		
	2	(12) SMC-DEEP-FIELD2C-ALT	WFPC2, IMAGE, WFALL-FIX	F814W	CR-SPLIT=NO		Pattern 1-2 (2)	800.0 Secs		
							[=>(Pattern 1)]	[1]		
							[=>(Pattern 2)]	[2]		
							[=>(Pattern 3)]			

