



12008 - Primordial formation of close binaries in globular clusters with low density

cores

Cycle: 17, Proposal Category: GO
(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Prof. Albert Kong (PI)	National Tsing Hua University	akong@phys.nthu.edu.tw
Prof. Walter H. G. Lewin (CoI) (AdminUSPI)	Massachusetts Institute of Technology	lewin@mit.edu
Prof. Scott F. Anderson (CoI)	University of Washington	anderson@astro.washington.edu
Dr. Cees G. Bassa (CoI) (ESA Member)	Space Research Organization Netherlands	bassa@physics.mcgill.ca
Prof. Frank Verbunt (CoI) (ESA Member)	Universiteit Utrecht, Sterrekundig Instituut	f.w.m.verbunt@astro.uu.nl
Dr. David E. Pooley (CoI)	University of Wisconsin - Madison	dave@astro.wisc.edu
Mr. Shi-Hao Lan (CoI)	National Tsing Hau University	aganippelux@gmail.com
Ms. Ting-Ni Lu (CoI)	National Tsing Hau University	wohemos@gmail.com

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) NGC-6362	WFC3/UVIS	1	27-Jan-2010 21:17:40.0	yes
02	(1) NGC-6362	ACS/WFC	1	27-Jan-2010 21:17:45.0	yes
03	(2) NGC-6535	WFC3/UVIS	1	27-Jan-2010 21:17:49.0	yes
04	(2) NGC-6535	ACS/WFC	1	27-Jan-2010 21:17:52.0	yes
05	(3) ESO-390-6	WFC3/UVIS	1	27-Jan-2010 21:17:55.0	yes
06	(3) ESO-390-6	ACS/WFC	1	27-Jan-2010 21:17:58.0	yes

6 Total Orbits Used

ABSTRACT

The primordial binary population is a key input parameter for any realistic model of dense star cluster dynamics. However, the number of primordial binaries and its direct implications for the formation rate of close binaries remain poorly understood. Theoretical calculations show that cataclysmic variables can be formed directly from primordial binaries in or near the core of low core density globular clusters. We propose to use Chandra/HST to study low density core globular clusters systematically and to test the prediction that low-luminosity X-ray sources can be formed from primordial binaries in the cluster core. This project will complement our successful Chandra/HST program to study the dynamical formation of X-ray sources in high core density globular clusters.

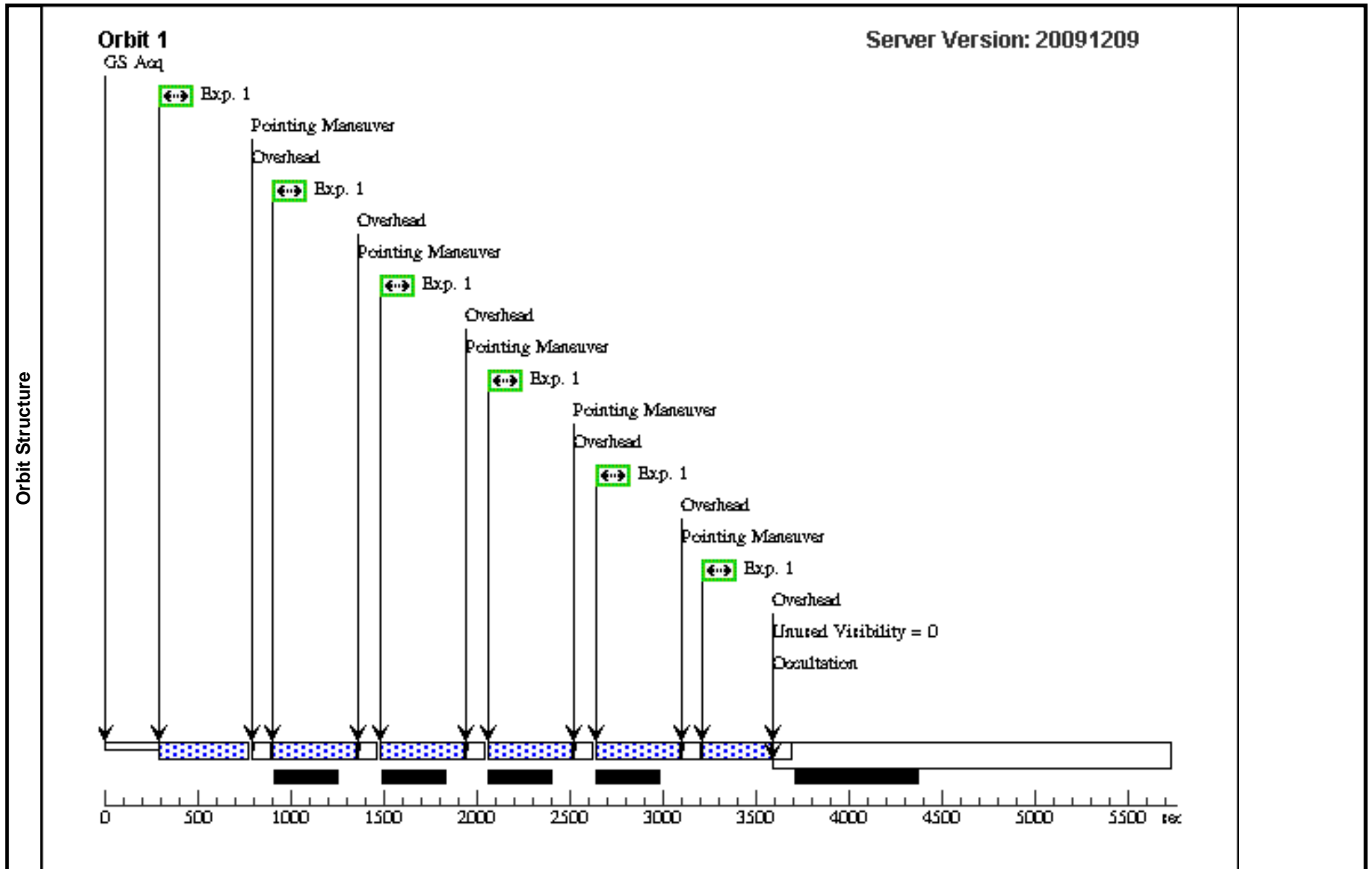
OBSERVING DESCRIPTION

The objective of these observations is to search for optical counterparts of globular cluster X-ray sources discovered with Chandra.

Proposal 12008 - Visit 01 - Primordial formation of close binaries in globular clusters with low density cores

Thu Jan 28 02:18:01 GMT 2010

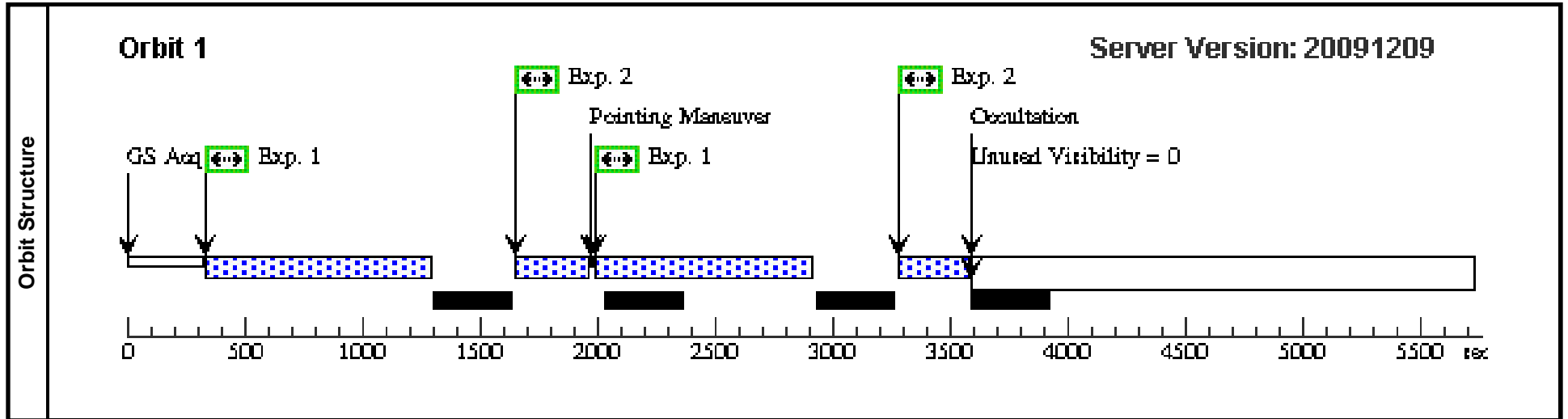
Visit	Proposal 12008, Visit 01, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=WFC3-UVIS-MOS-DITH-LINE Purpose=MOSAIC Number Of Points=3 Point Spacing=2.4 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.754 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-UVIS-MOS-DITH-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.119 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=33.606 Angle Between Sides= Center Pattern=false	(1)			
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	NGC-6362	RA: 17 31 54.8700 (262.9786250d) Dec: -67 02 52.30 (-67.04786d) Equinox: J2000 Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.		V=8.86	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) NGC-6362	WFC3/UVIS, ACCUM, UVIS	F336W	CR-SPLIT=NO		Pattern 1, Exps 1-1 (1)	3145 Secs [==>450.0 Secs (Pattern 1,1)] [==>450.0 Secs (Pattern 1,2)] [==>450.0 Secs (Pattern 2,1)] [==>450.0 Secs (Pattern 2,2)] [==>450.0 Secs (Pattern 3,1)] [==>368.0 Secs (Pattern 3,2)]	[1]



Proposal 12008 - Visit 01 - Primordial formation of close binaries in globular clusters with low density cores

Thu Jan 28 02:18:02 GMT 2010

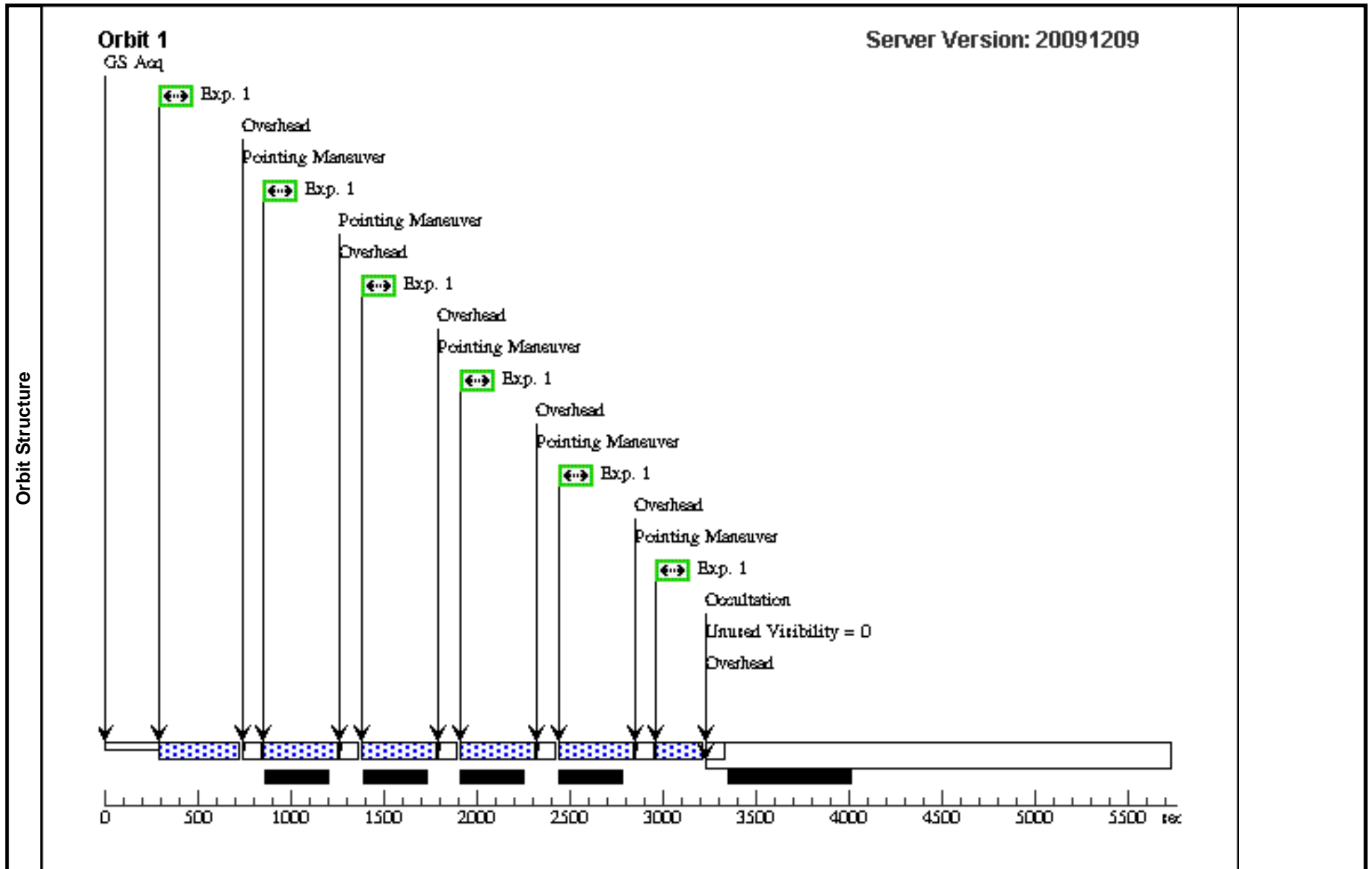
Visit	Proposal 12008, Visit 02, implementation Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: (none)									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.011 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)	NGC-6362	RA: 17 31 54.8700 (262.9786250d) Dec: -67 02 52.30 (-67.04786d) Equinox: J2000 <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>			V=8.86	Reference Frame: ICRS			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) NGC-6362	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO		Pattern 2, Exps 1-2 (2)	1516 Secs [==>750.0 Secs (Pattern 1)] [==>766.0 Secs (Pattern 2)]	[1]
	2		(1) NGC-6362	ACS/WFC, ACCUM, WFC	F625W	CR-SPLIT=NO		Pattern 2, Exps 1-2 (2)	300 Secs [==>145.0 Secs (Pattern 1)] [==>140.0 Secs (Pattern 2)]	[1]



Proposal 12008 - Visit 03 - Primordial formation of close binaries in globular clusters with low density cores

Thu Jan 28 02:18:03 GMT 2010

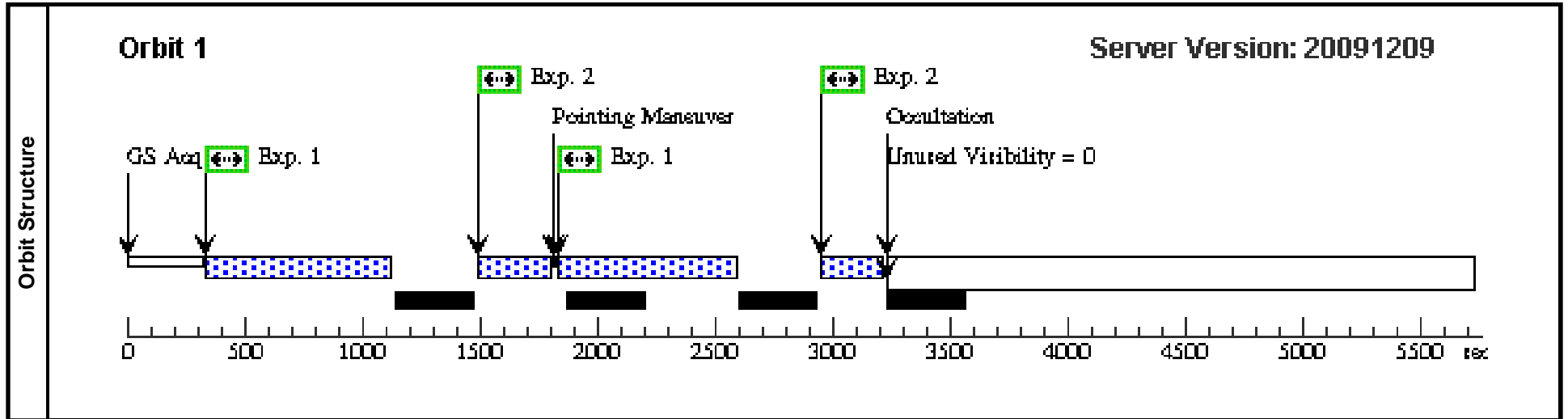
Visit	Proposal 12008, Visit 03, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=WFC3-UVIS-MOS-DITH-LINE Purpose=MOSAIC Number Of Points=3 Point Spacing=2.4 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.754 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-UVIS-MOS-DITH-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.119 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=33.606 Angle Between Sides= Center Pattern=false	(1)			
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	NGC-6535	RA: 18 03 50.6900 (270.9612083d) Dec: -00 17 48.90 (-.29692d) Equinox: J2000		V=11.35	Reference Frame: ICRS				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) NGC-6535	WFC3/UVIS, ACCUM, UVIS	F336W	CR-SPLIT=NO		Pattern 1, Exps 1-1 (1)	2769 Secs [==>400.0 Secs (Pattern 1,1)] [==>400.0 Secs (Pattern 1,2)] [==>400.0 Secs (Pattern 2,1)] [==>400.0 Secs (Pattern 2,2)] [==>400.0 Secs (Pattern 3,1)] [==>253.0 Secs (Pattern 3,2)]	[1]



Proposal 12008 - Visit 03 - Primordial formation of close binaries in globular clusters with low density cores

Thu Jan 28 02:18:03 GMT 2010

Visit	Proposal 12008, Visit 04, implementation Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: (none)										
	Patterns	#	Primary Pattern				Secondary Pattern				Exposures
(2)		Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 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)	NGC-6535	RA: 18 03 50.6900 (270.9612083d) Dec: -00 17 48.90 (-.29692d) Equinox: J2000				V=11.35		Reference Frame: ICRS		
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>											
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit
	1	(2) NGC-6535	(2) NGC-6535	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO		Pattern 2, Exps 1-2 (2)	1188 Secs		
									[==>588.0 Secs (Pattern 1)]	[==>600.0 Secs (Pattern 2)]	[1]
2	(2) NGC-6535	(2) NGC-6535	ACS/WFC, ACCUM, WFC	F625W	CR-SPLIT=NO		Pattern 2, Exps 1-2 (2)	250 Secs			
								[==>148.0 Secs (Pattern 1)]	[==>100.0 Secs (Pattern 2)]	[1]	



Proposal 12008 - Visit 05 - Primordial formation of close binaries in globular clusters with low density cores

Thu Jan 28 02:18:03 GMT 2010

Visit	Proposal 12008, Visit 05, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
(1)		Pattern Type=WFC3-UVIS-MOS-DITH-LINE Purpose=MOSAIC Number Of Points=3 Point Spacing=2.4 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.754 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-UVIS-MOS-DITH-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.119 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=33.606 Angle Between Sides= Center Pattern=false	(1)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	ESO-390-6	RA: 16 28 40.1000 (247.1670833d) Dec: -35 21 13.00 (-35.35361d) Equinox: J2000		V=12.0	Reference Frame: ICRS				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(3) ESO-390-6	WFC3/UVIS, ACCUM, UVIS	F336W	CR-SPLIT=NO		Pattern 1, Exps 1-1 (1)	2841 Secs [==>200.0 Secs (Pattern 1,1)] [==>200.0 Secs (Pattern 1,2)] [==>200.0 Secs (Pattern 2,1)] [==>150.0 Secs (Pattern 2,2)] [==>120.0 Secs (Pattern 3,1)] [==>100.0 Secs (Pattern 3,2)]	[1]

Proposal 12008 - Visit 06 - Primordial formation of close binaries in globular clusters with low density cores

Thu Jan 28 02:18:04 GMT 2010

Visit	Proposal 12008, Visit 06, implementation Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: (none)									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 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				
	(3)	ESO-390-6	RA: 16 28 40.1000 (247.1670833d) Dec: -35 21 13.00 (-35.35361d) Equinox: J2000 Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.		V=12.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(3) ESO-390-6	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO		Pattern 2, Exps 1-2 (2)	1212 Secs [==>600.0 Secs (Pattern 1)] [==>612.0 Secs (Pattern 2)]	[1]
2		(3) ESO-390-6	ACS/WFC, ACCUM, WFC	F625W	CR-SPLIT=NO		Pattern 2, Exps 1-2 (2)	300 Secs [==>150.0 Secs (Pattern 1)] [==>141.0 Secs (Pattern 2)]	[1]	

