



## 13062 - HST Observations of Astrophysically Important Visual Binaries

Cycle: 20, 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) PROCYON	WFC3/UVIS	1	30-Jul-2012 22:04:24.0	yes
02	(2) MU-CAS	WFC3/UVIS	1	30-Jul-2012 22:04:44.0	yes
03	(3) SIRIUS	WFC3/UVIS	1	30-Jul-2012 22:05:05.0	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>
04	(4) G107-70 (5) G107-69 (6) G107-70-REF2 (7) G107-70-REF3 (8) G107-70-REF4 (9) G107-70-REF6 (10) G107-70-REF7 (11) G107-70-REF9	FGS	1	30-Jul-2012 22:05:23.0	yes
05	(12) WD1818+126 (13) WD1818-REF1 (14) WD1818-REF2 (15) WD1818-REF3 (16) WD1818-REF4 (18) WD1818-REF6	FGS	1	30-Jul-2012 22:05:31.0	yes

5 Total Orbits Used

## **ABSTRACT**

We propose to continue three long-term programs. All three consist of astrometry of close visual binaries, with the primary goal of determining dynamical masses for 3 important main-sequence stars and 6 white dwarfs (WDs). A secondary aim is to set limits on third bodies in the systems down to planetary mass. Since all 3 programs needed to be proposed for Cycle 18 continuation, we are simplifying the review process by combining them into a single proposal. Three of our 5 targets are naked-eye stars with much fainter companions that are very difficult to image from the ground. Our other 2 targets are double WDs, whose small separations and faintness likewise make them difficult to measure using ground-based techniques.

The bright stars, to be imaged with WFC3, are: (1) Procyon ( $P = 40.9$  yr), for which our first HST images yielded an accurate angular separation of the bright F star and its much fainter WD companion. Combined with ground-based astrometry of the bright star, our observation significantly revised downward the derived masses, and brought Procyon A into much better agreement with theoretical evolutionary masses. With the continued monitoring proposed here, we will obtain masses to an accuracy of better than 1%, providing a testbed for theories of both Sun-like stars and WDs. (2) Sirius ( $P = 50.1$  yr), an A-type star also having a faint WD companion, Sirius B, the nearest and brightest of all WDs. (3) Mu Cas ( $P = 21.0$  yr), a nearby metal-deficient G dwarf for which accurate masses will lead to the stars' helium contents, with cosmological implications.

The faint double WDs, to be observed with FGS, are: (1) G 107-70 ( $P = 18.8$  yr), and (2) WD 1818+126 ( $P = 12.7$  yr). Our astrometry of these systems will add 4 accurate masses to the handful of WD masses that are directly known from dynamical measurements. The FGS measurements will also provide precise parallaxes for the systems, a necessary ingredient in the mass determinations.

### **OBSERVING DESCRIPTION**

This is the Cycle 19 continuation of several programs in which we are determining the orbits of visual binaries. The targets for Cycle 19 are Procyon,  $\mu$  Cas, Sirius, WD 1818+126, and G 107-70.

We have been observing WD 1818+126 and G 107-70 with FGS, and this part of the program will continue as before, with 1 orbit of POS mode observations of the target and reference stars made for each of these target fields.

Procyon,  $\mu$  Cas, and Sirius will be observed with WFC3/UVIS. For the two very bright stars, Procyon and Sirius, we will use the long-wavelength F953N filter to reduce the signal. Since even with this filter Procyon A and Sirius A would saturate in the minimum WFC3 exposure, we will let them saturate and use the diffraction spikes to centroid the bright components. For Procyon there will be a series of dithered 38-sec exposures, which will provide good unsaturated exposures for Procyon B at the same telescope pointing. For Sirius there will be a series of 6- and 12-sec dithered exposures.

For  $\mu$  Cas, we will use 1.5-sec exposures in F225W, which will not be saturated. These will be followed at each dither position with a 265-sec exposure, which will be well exposed for the cool dM companion.

Proposal 13062 - Procyon (01) - HST Observations of Astrophysically Important Visual Binaries

Tue Jul 31 02:05:39 GMT 2012

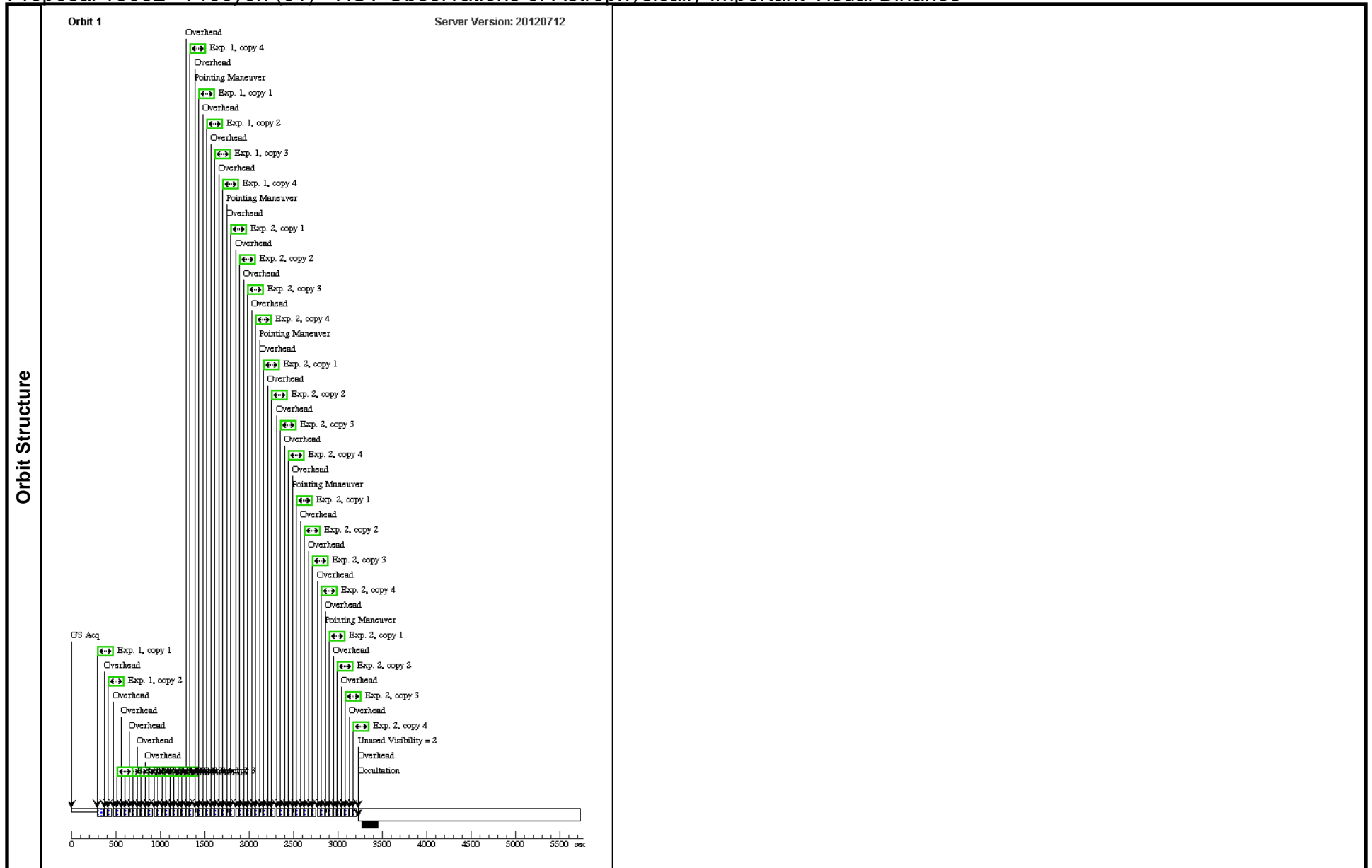
<b>Visit</b>	<b>Proposal 13062, Procyon (01), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: GYRO MODE 3GOBAD; ORIENT 275.8D TO 352.8 D; ORIENT 5.8D TO 33 D; ORIENT 55D TO 82.2 D; ORIENT 95.8D TO 172.2 D; BETWEEN 15-JAN-2013:00:00:00 AND 30-MAR-2013:00:00:00 Comments: <i>ORIENT requirement is done so that companion star will not lie near diffraction spikes or charge bleeding from the very bright primary star.</i>					
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>	<b>Secondary Pattern</b>	<b>Exposures</b>	
	(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=true		(1), (2)	
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>
	(1)	PROCYON	RA: 07 39 18.3700 (114.8265417d)	Proper Motion RA: -0.04755 sec of time/yr	V=0.36+/-0.0	Reference Frame: ICRS
		Alt Name1: ALPHA-CMI	Dec: +05 13 35.50 (5.22653d)	Proper Motion Dec: -1.0229 arcsec/yr	B-V = 0.42	
		Alt Name2: HR2943	Equinox: J2000	Parallax: 0.283"		
				Epoch of Position: 1995.18		
	Comments: <i>Coords are for center of gravity of binary. Accuracy confirmed by 2000 Nov 28 WFPC2 observations. 6/14/06: updated to ICRS system using galex website.</i>					

Proposal 13062 - Procyon (01) - HST Observations of Astrophysically Important Visual Binaries

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	(1) PROCYON	(1) PROCYON	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F953N	CR-SPLIT=NO		Pattern 1, Exps 1-1 i n Procyon (01) (1)	38 Secs X 4	
								[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 1, Copy 3)] [==>(Pattern 1, Copy 4)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 2, Copy 3)] [==>(Pattern 2, Copy 4)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 3, Copy 3)] [==>(Pattern 3, Copy 4)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)] [==>(Pattern 4, Copy 3)] [==>(Pattern 4, Copy 4)]	[1]
2	(1) PROCYON	(1) PROCYON	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F953N	CR-SPLIT=NO		Pattern 1, Exps 2-2 i n Procyon (01) (1)	38 Secs X 4	
								[==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 1, Copy 3)] [==>(Pattern 1, Copy 4)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 2, Copy 3)] [==>(Pattern 2, Copy 4)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 3, Copy 3)] [==>(Pattern 3, Copy 4)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)] [==>(Pattern 4, Copy 3)] [==>(Pattern 4, Copy 4)]	[1]

Exposures

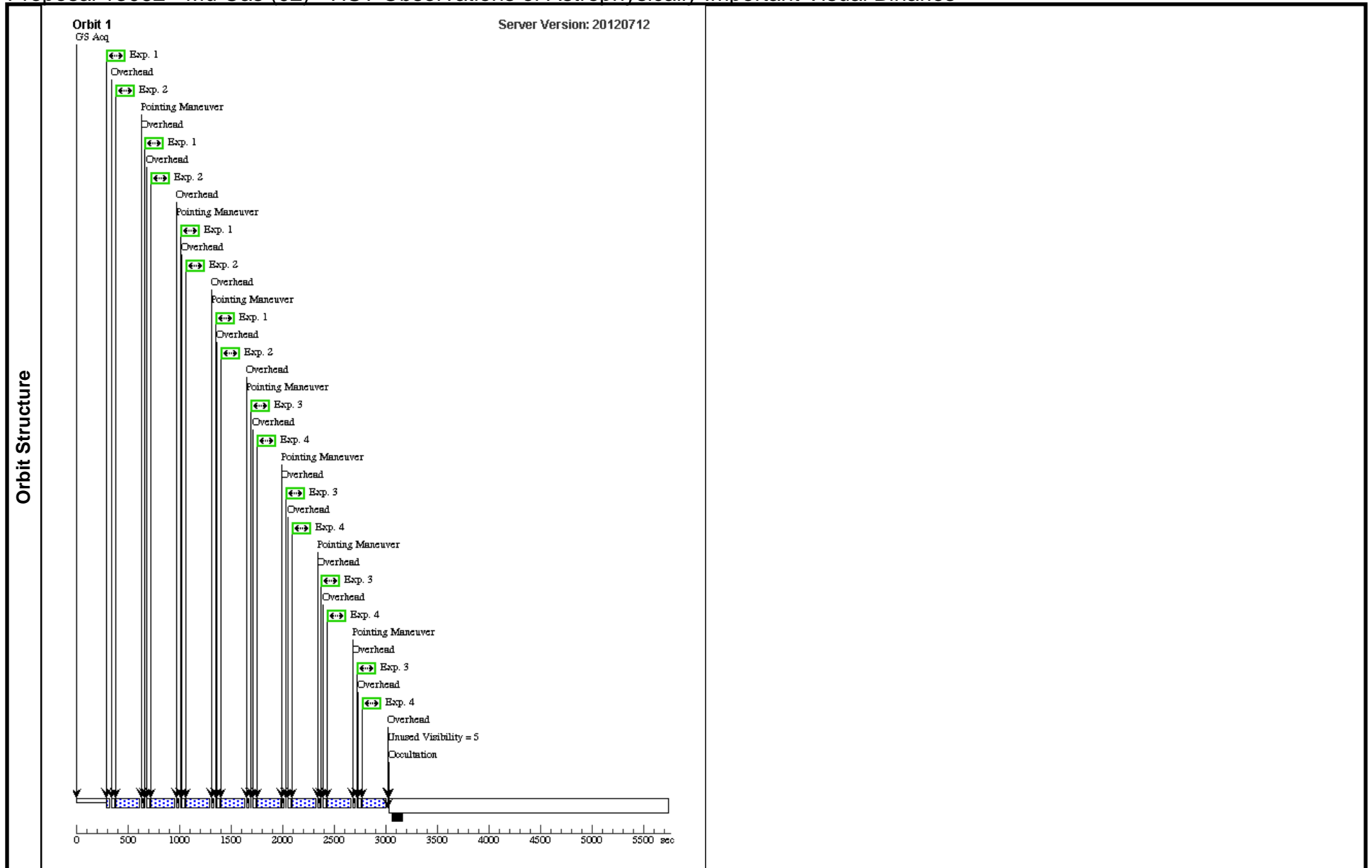
# Proposal 13062 - Procyon (01) - HST Observations of Astrophysically Important Visual Binaries



Proposal 13062 - Mu Cas (02) - HST Observations of Astrophysically Important Visual Binaries

Tue Jul 31 02:05:42 GMT 2012

<b>Visit</b>	<b>Proposal 13062, Mu Cas (02), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: GYRO MODE 3GOBAD; SCHED 100%; ORIENT 61.3D TO 115.7 D; BETWEEN 01-DEC-2012:00:00:00 AND 15-FEB-2013:00:00:00 Comments: <i>ORIENT requirement is done so that companion star will not lie near diffraction spikes or charge bleeding of primary star.</i>									
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>	<b>Secondary Pattern</b>	<b>Exposures</b>					
	(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=true		(1-2), (3-4)					
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>				
	(2)	MU-CAS	RA: 01 08 16.3700 (17.0682083d)	Proper Motion RA: 0.3972 sec of time/yr	V=5.15+/-0.0	Reference Frame: ICRS				
		Alt Name1: HR321	Dec: +54 55 13.20 (54.92033d)	Proper Motion Dec: -1.596 arcsec/yr	B-V = 0.70					
		Alt Name2: HD6582	Equinox: J2000	Parallax: 0.134"						
				Epoch of Position: 2000.0						
	Comments: <i>Coordinate accuracy confirmed by 2000-01 WFPC2 observations. 6/14/06: updated to ICRS system using galax website.</i>									
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time/[Actual Dur.]</b>	<b>Orbit</b>
	1	(2) MU-CAS	(2) MU-CAS	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F225W	CR-SPLIT=NO		Pattern 1, Exps 1-2 in Mu Cas (02) (1)	1.5 Secs	
									[==>(Pattern 1)]	
									[==>(Pattern 2)]	[1]
									[==>(Pattern 3)]	
								[==>(Pattern 4)]		
2	(2) MU-CAS	(2) MU-CAS	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F225W	CR-SPLIT=NO		Pattern 1, Exps 1-2 in Mu Cas (02) (1)	265 Secs		
								[==>236.0 Secs (Pattern 1)]		
								[==>236.0 Secs (Pattern 2)]		[1]
								[==>236.0 Secs (Pattern 3)]		
								[==>236.0 Secs (Pattern 4)]		
3	(2) MU-CAS	(2) MU-CAS	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F225W	CR-SPLIT=NO		Pattern 1, Exps 3-4 in Mu Cas (02) (1)	1.5 Secs		
								[==>(Pattern 1)]		
								[==>(Pattern 2)]		[1]
								[==>(Pattern 3)]		
								[==>(Pattern 4)]		
4	(2) MU-CAS	(2) MU-CAS	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F225W	CR-SPLIT=NO		Pattern 1, Exps 3-4 in Mu Cas (02) (1)	265 Secs		
								[==>236.0 Secs (Pattern 1)]		
								[==>236.0 Secs (Pattern 2)]		[1]
								[==>236.0 Secs (Pattern 3)]		
								[==>236.0 Secs (Pattern 4)]		



# Proposal 13062 - Sirius (03) - HST Observations of Astrophysically Important Visual Binaries

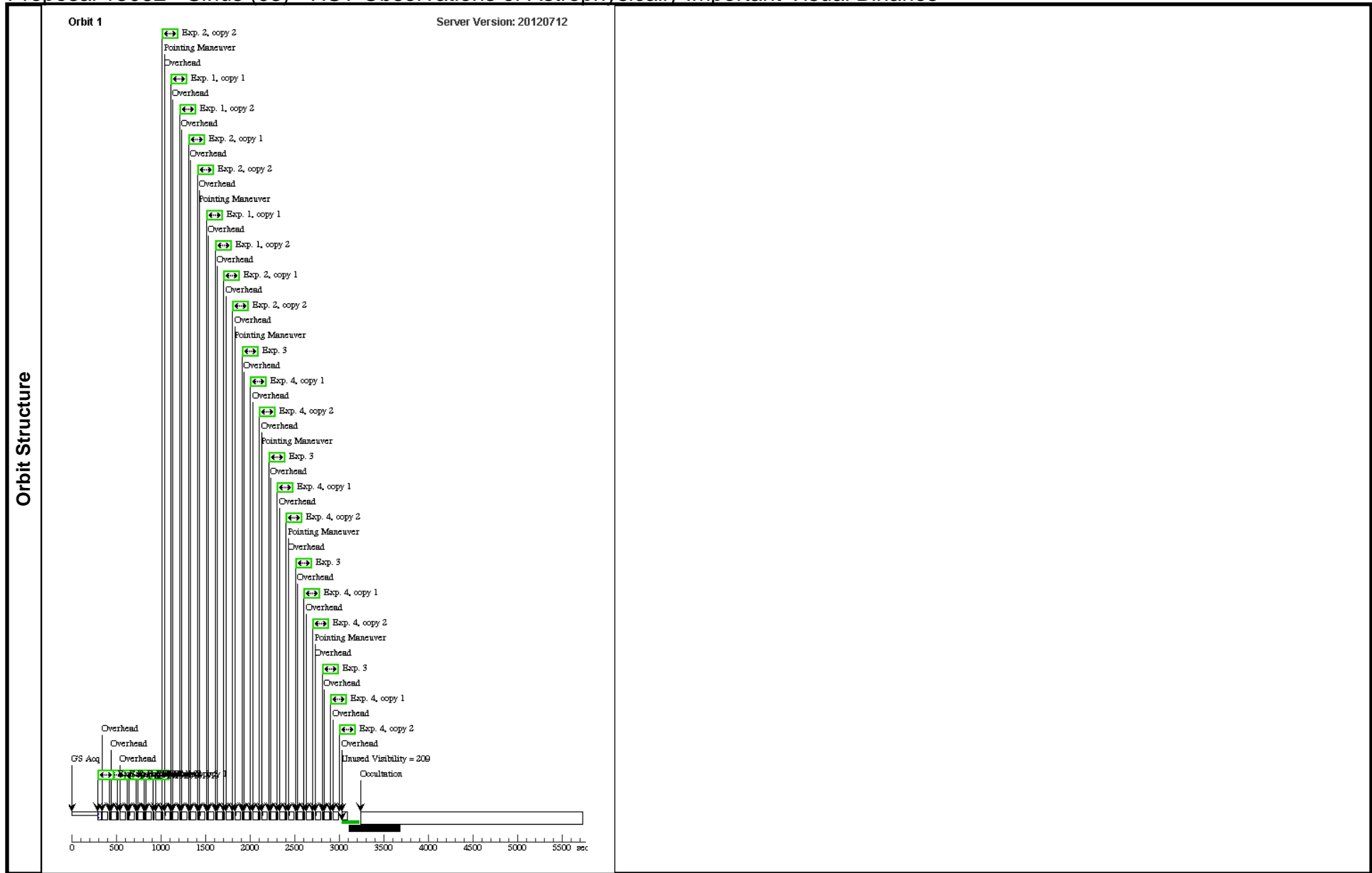
Tue Jul 31 02:05:43 GMT 2012

<b>Visit</b>	<b>Proposal 13062, Sirius (03), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: GYRO MODE 3GOBAD; ORIENT 176.8D TO 210 D; ORIENT 226D TO 259.2 D; ORIENT 266.8D TO 349.2 D; ORIENT 356.8D TO 30 D; BEFORE 15-OCT-2012:00:00:00 Comments: <i>ORIENT requirement is done so that companion star will not lie near diffraction spikes or charge bleeding from the very bright primary star.</i>					
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>	<b>Secondary Pattern</b>	<b>Exposures</b>	
	(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=true		(1-2), (3-4)	
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>
	(3)	SIRIUS	RA: 06 45 8.6600 (101.2860833d) Dec: -16 43 8.20 (-16.71894d) Equinox: J2000	Proper Motion RA: -0.038011 sec of time/yr Proper Motion Dec: -1.22308 arcsec/yr Parallax: 0.379" Epoch of Position: 2008.007	V=-1.47	Reference Frame: ICRS
	Comments: <i>Coordinates are for center of mass of the Sirius A-B binary, determined from a WFPC2 observation in January 2008.</i>					

Proposal 13062 - Sirius (03) - HST Observations of Astrophysically Important Visual Binaries

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
Exposures	1	(3) SIRIUS	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F953N	CR-SPLIT=NO		Pattern 1, Exps 1-2 in Sirius (03) (1)	6 Secs X 2 [=>(Pattern 1, Copy 1)] [=>(Pattern 1, Copy 2)] [=>(Pattern 2, Copy 1)] [=>(Pattern 2, Copy 2)] [=>(Pattern 3, Copy 1)] [=>(Pattern 3, Copy 2)] [=>(Pattern 4, Copy 1)] [=>(Pattern 4, Copy 2)]	[1]
	2	(3) SIRIUS	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F953N	CR-SPLIT=NO		Pattern 1, Exps 1-2 in Sirius (03) (1)	12 Secs X 2 [=>(Pattern 1, Copy 1)] [=>(Pattern 1, Copy 2)] [=>(Pattern 2, Copy 1)] [=>(Pattern 2, Copy 2)] [=>(Pattern 3, Copy 1)] [=>(Pattern 3, Copy 2)] [=>(Pattern 4, Copy 1)] [=>(Pattern 4, Copy 2)]	[1]
	3	(3) SIRIUS	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F953N	CR-SPLIT=NO		Pattern 1, Exps 3-4 in Sirius (03) (1)	6 Secs [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	4	(3) SIRIUS	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F953N	CR-SPLIT=NO		Pattern 1, Exps 3-4 in Sirius (03) (1)	12 Secs X 2 [=>(Pattern 1, Copy 1)] [=>(Pattern 1, Copy 2)] [=>(Pattern 2, Copy 1)] [=>(Pattern 2, Copy 2)] [=>(Pattern 3, Copy 1)] [=>(Pattern 3, Copy 2)] [=>(Pattern 4, Copy 1)] [=>(Pattern 4, Copy 2)]	[1]

Proposal 13062 - Sirius (03) - HST Observations of Astrophysically Important Visual Binaries



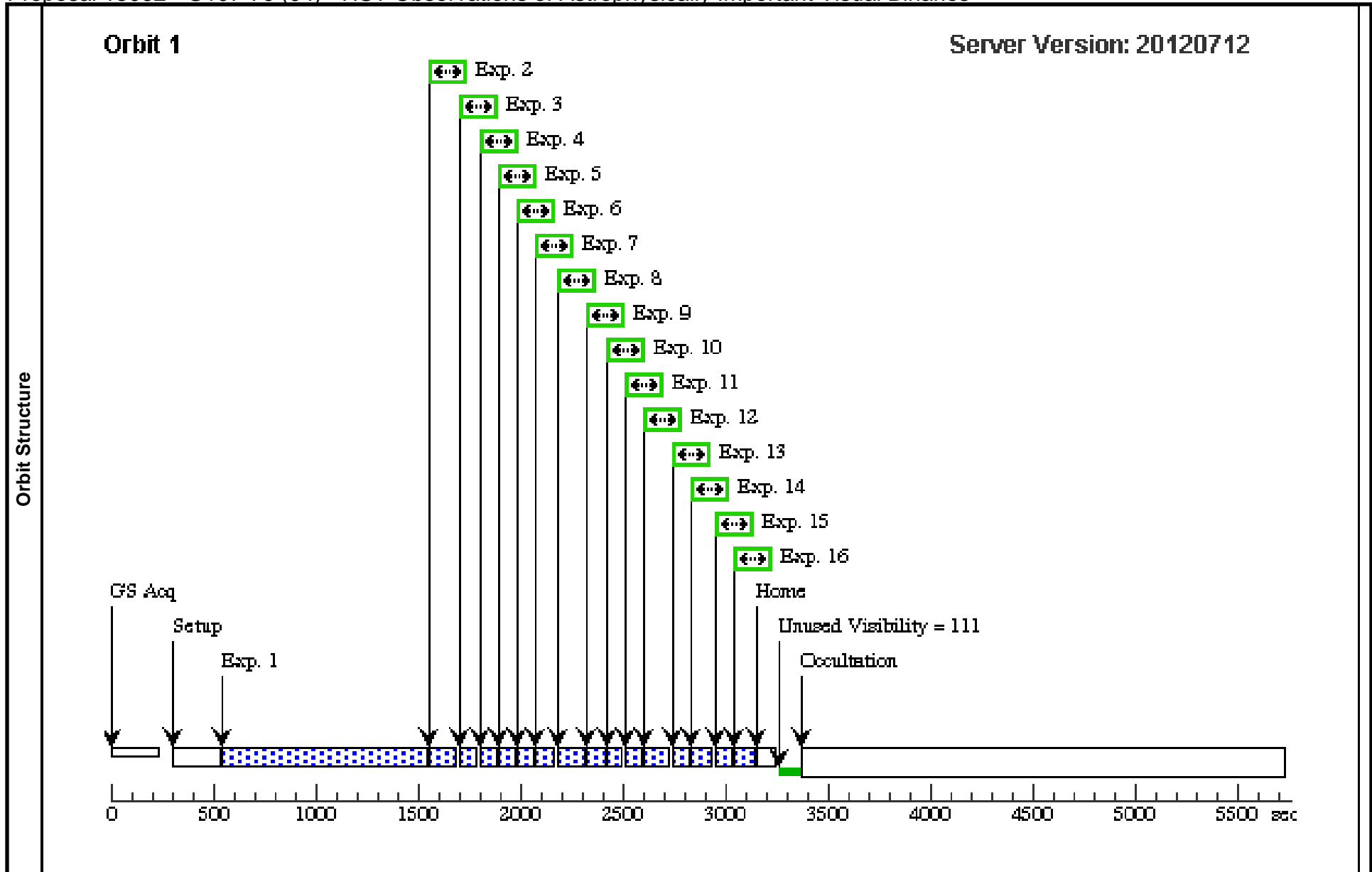
# Proposal 13062 - G107-70 (04) - HST Observations of Astrophysically Important Visual Binaries

Tue Jul 31 02:05:45 GMT 2012

Visit	Proposal 13062, G107-70 (04), implementation						
	Diagnostic Status: No Diagnostics Scientific Instruments: FGS Special Requirements: GYRO MODE 3GOBAD; ORIENT 274D TO 274 D; BETWEEN 01-OCT-2013:00:00:00 AND 30-OCT-2013:00:00:00 Comments: Maximum parallax factors April 10, October 11. This ORIENT can schedule up to April 6, and results in a favorable projection of the G107-70 components (PA ~ 272 degrees) in the FGS frame.						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	
	(4)	G107-70	RA: 07 30 47.2300 (112.6967917d) Dec: +48 10 26.60 (48.17406d) Equinox: J2000	Proper Motion RA: -0.022 sec of time/yr Proper Motion Dec: -1.271 arcsec/yr Parallax: 0.09" Epoch of Position: 2000.0	V=15.5+/-0.1	Reference Frame: ICRS	
	<i>Comments: double degenerate binary system, separation ~0.6"</i>						
	(5)	G107-69	RA: 07 30 42.5700 (112.6773750d) Dec: +48 11 58.80 (48.19967d) Equinox: J2000	Proper Motion RA: -0.022 sec of time/yr Proper Motion Dec: -1.272 arcsec/yr Parallax: 0.09" Epoch of Position: 2000	V=13.6+/-0.1	Reference Frame: ICRS	
	<i>Comments: CPM companion to G107-70, ~1 arcmin distant</i>						
	(6)	G107-70-REF2	RA: 07 30 26.6900 (112.6112083d) Dec: +48 11 1.64 (48.18379d) Equinox: J2000		V=13.3+/-0.1	Reference Frame: ICRS	
	(7)	G107-70-REF3	RA: 07 31 9.7700 (112.7907083d) Dec: +48 10 27.41 (48.17428d) Equinox: J2000		V=14.3+/-0.1	Reference Frame: ICRS	
	(8)	G107-70-REF4	RA: 07 30 57.1700 (112.7382083d) Dec: +48 08 36.71 (48.14353d) Equinox: J2000		V=12.2+/-0.1	Reference Frame: ICRS	
	(9)	G107-70-REF6	RA: 07 30 34.9200 (112.6455000d) Dec: +48 10 31.22 (48.17534d) Equinox: J2000		V=14.3+/-0.1	Reference Frame: ICRS	
	(10)	G107-70-REF7	RA: 07 31 0.3100 (112.7512917d) Dec: +48 10 16.07 (48.17113d) Equinox: J2000		V=14.9	Reference Frame: ICRS	
	(11)	G107-70-REF9	RA: 07 30 15.0300 (112.5626250d) Dec: +48 10 19.67 (48.17213d) Equinox: J2000		V=12.9	Reference Frame: ICRS	

Proposal 13062 - G107-70 (04) - HST Observations of Astrophysically Important Visual Binaries

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) G107-70	FGS, TRANS, 1	FGS, TRANS, 1	F583W	SCANS=15; STEP-SIZE=0.8	POS TARG 0.0,10.0; GS ACQ SCENARI O SINGLE	Sequence 1-16 Non-I nt in G107-70 (04)	715.0 Secs [==>]	[1]
	2	(4) G107-70	FGS, POS, 1	FGS, POS, 1	F583W	FES-TIME=0.4	SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	3	(5) G107-69	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	4	(11) G107-70-REF9	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	5	(8) G107-70-REF4	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	6	(7) G107-70-REF3	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	7	(5) G107-69	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	8	(4) G107-70	FGS, POS, 1	FGS, POS, 1	F583W	FES-TIME=0.4	SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	9	(9) G107-70-REF6	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	10	(6) G107-70-REF2	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	11	(8) G107-70-REF4	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	12	(4) G107-70	FGS, POS, 1	FGS, POS, 1	F583W	FES-TIME=0.4	SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	13	(5) G107-69	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	14	(10) G107-70-REF7	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
	15	(7) G107-70-REF3	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]
16	(11) G107-70-REF9	FGS, POS, 1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-16 Non-I nt in G107-70 (04)	7 Secs [==>]	[1]	



Proposal 13062 - WD1818+126 (05) - HST Observations of Astrophysically Important Visual Binaries

Tue Jul 31 02:05:47 GMT 2012

Visit	Proposal 13062, WD1818+126 (05), implementation						
	Diagnostic Status: No Diagnostics						
	Scientific Instruments: FGS						
	Special Requirements: ORIENT 275.0D TO 283.0 D; BETWEEN 18-MAR-2013:00:00:00 AND 08-APR-2013:00:00:00						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	
	(12)	WD1818+126	RA: 18 20 30.8800 (275.1286667d) Dec: +12 39 17.70 (12.65492d) Equinox: J2000	Proper Motion RA: 0.007 sec of time/yr Proper Motion Dec: 0.271 arcsec/yr Parallax: 0" Epoch of Position: 2000.0	V=16.06+/-0.1	Reference Frame: HST CYCLE 10 PROPOSAL	
	<i>Comments: maximum parallax factor occurs Sep 29 and March 29</i>						
	(13)	WD1818-REF1 Alt Name1: GSC1018.02189	RA: 18 20 23.6700 (275.0986250d) Dec: +12 39 43.80 (12.66217d) Equinox: J2000	Parallax: 0"	V=10.92+/-0.2	Reference Frame: ICRS	
	(14)	WD1818-REF2 Alt Name1: GSC1018.02278	RA: 18 20 26.3600 (275.1098333d) Dec: +12 39 25.20 (12.65700d) Equinox: J2000	Parallax: 0"	V=12.7+/-0.2	Reference Frame: ICRS	
	(15)	WD1818-REF3 Alt Name1: GSC1018.01251	RA: 18 20 31.9700 (275.1332083d) Dec: +12 38 48.12 (12.64670d) Equinox: J2000	Parallax: 0"	V=12.97+/-0.2	Reference Frame: ICRS	
	(16)	WD1818-REF4 Alt Name1: N020230030828	RA: 18 20 33.8600 (275.1410833d) Dec: +12 39 5.56 (12.65154d) Equinox: J2000	Parallax: 0"	V=14.23+/-0.2	Reference Frame: ICRS	
	<i>Comments: position and magnitude from GSC2, using Kriss &amp; Stys color transformations.</i>						
(18)	WD1818-REF6 Alt Name1: N020230031910	RA: 18 20 33.6100 (275.1400417d) Dec: +12 40 16.29 (12.67119d) Equinox: J2000	Parallax: 0"	V=14.43+/-0.3	Reference Frame: ICRS		
<i>Comments: position and magnitude from GSC2, using Kriss &amp; Stys color transformation</i>							

Proposal 13062 - WD1818+126 (05) - HST Observations of Astrophysically Important Visual Binaries

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	1	(12) WD1818+126	FGS, TRANS, 1	F583W	STEP-SIZE=0.6; SCANS=20	POS TARG 0.0,0.0; GS ACQ SCENARI O BASE1B3	Sequence 1-11 Non-Int in WD1818+126 (05)	830.0 Secs [==>]	[1]
	2	2	(12) WD1818+126	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-11 Non-Int in WD1818+126 (05)	30.0 Secs [==>]	[1]
	3	3	(13) WD1818-REF1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-11 Non-Int in WD1818+126 (05)	20.0 Secs [==>]	[1]
	4	4	(16) WD1818-REF4	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-11 Non-Int in WD1818+126 (05)	20.0 Secs [==>]	[1]
	5	5	(15) WD1818-REF3	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-11 Non-Int in WD1818+126 (05)	20.0 Secs [==>]	[1]
	6	6	(14) WD1818-REF2	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-11 Non-Int in WD1818+126 (05)	20.0 Secs [==>]	[1]
	7	7	(12) WD1818+126	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-11 Non-Int in WD1818+126 (05)	30.0 Secs [==>]	[1]
	8	8	(18) WD1818-REF6	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-11 Non-Int in WD1818+126 (05)	20.0 Secs [==>]	[1]
	9	10	(16) WD1818-REF4	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-11 Non-Int in WD1818+126 (05)	20.0 Secs [==>]	[1]
	10	11	(12) WD1818+126	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-11 Non-Int in WD1818+126 (05)	30.0 Secs [==>]	[1]
	11	12	(13) WD1818-REF1	FGS, POS, 1	F583W		SAME POS AS 1	Sequence 1-11 Non-Int in WD1818+126 (05)	20.0 Secs [==>]	[1]

