



## 12363 - X-ray and HST Imaging of Kpc-Scale Binary AGNs

Cycle: 18, 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) SDSSJ1108+0659	WFC3/IR WFC3/UVIS	1	16-Sep-2010 21:36:40.0	yes
02	(2) SDSSJ1131-0204	WFC3/IR WFC3/UVIS	1	16-Sep-2010 21:36:45.0	yes
03	(3) SDSSJ1146+5110	WFC3/IR WFC3/UVIS	1	16-Sep-2010 21:36:50.0	yes
04	(4) SDSSJ1332+0606	WFC3/IR WFC3/UVIS	1	16-Sep-2010 21:36:54.0	yes

4 Total Orbits Used

### ABSTRACT

Binary active galactic nuclei (AGN) with kiloparsec separations are of great value in understanding the role of galaxy mergers in AGN fueling and the interplay between supermassive black holes and their hosts. While pervasive in theoretical models, despite decades of searching, merging kpc-scale binary AGNs remain extremely difficult to find. Here we propose to observe four newly discovered, optically-selected kpc-scale binary Type 2 AGNs with Chandra and HST. The detection of two X-ray nuclei in each galaxy will confirm their binary AGN nature unambiguously, and triple the number of kpc-scale binary X-ray AGN known. The joint HST observations will explore host morphologies and small-scale star formation activity in these merging systems.

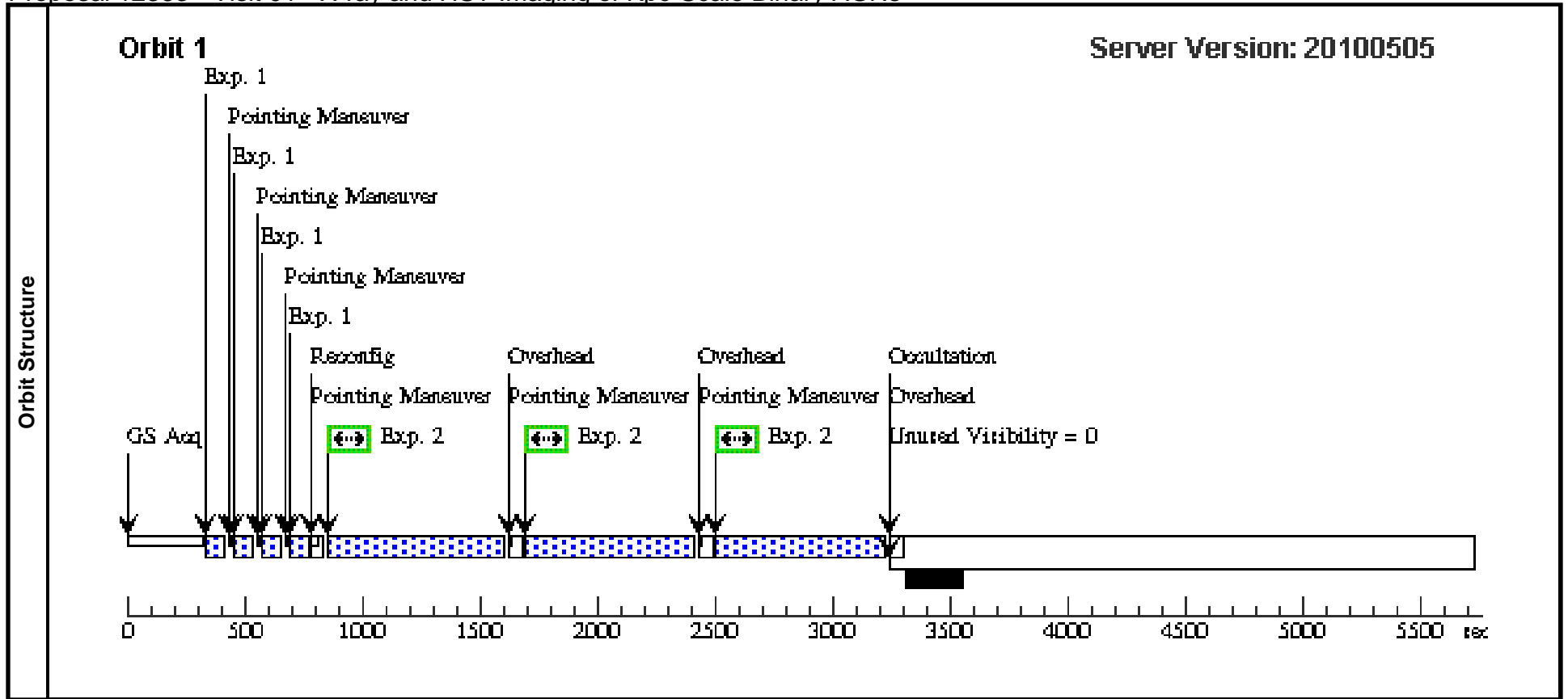
### **OBSERVING DESCRIPTION**

WFC3 (F336W and F105W) observations of kpc binary AGNs.

Proposal 12363 (STScI Edit Number: 0, Created: Thursday, September 16, 2010 8:36:57 PM EST) - Overview

Fri Sep 17 01:36:57 GMT 2010

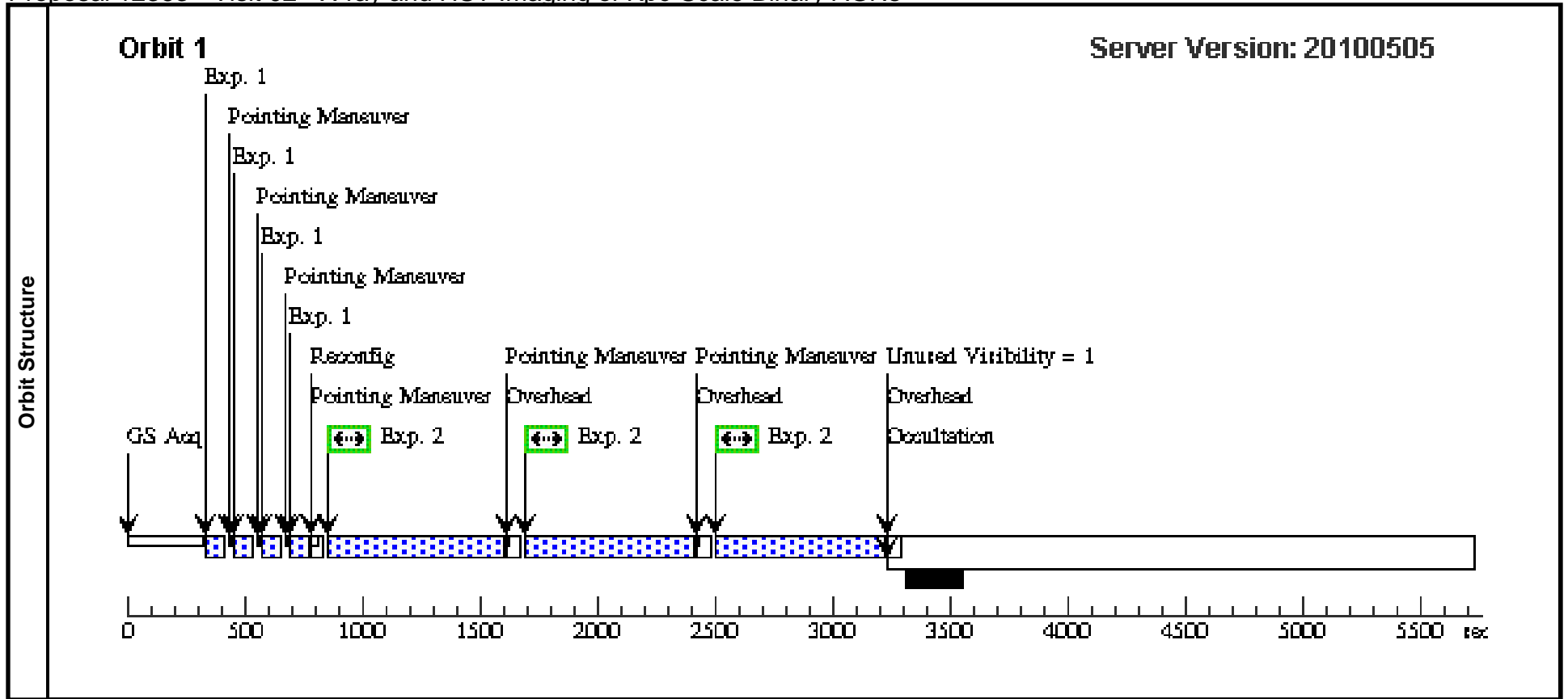
Visit	<b>Proposal 12363, Visit 01</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: (none) <i>Comments: J1108+0659</i>									
	#	Primary Pattern	Secondary Pattern	Exposures						
Patterns	(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365 Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1)						
	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(2)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SDSSJ1108+0659	RA: 11 08 51.0300 (167.2126250d) Dec: +06 59 1.40 (6.98372d) Equinox: J2000		V=(?) sdss r 17.04	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	IR	(1) SDSSJ1108+0659 9	WFC3/IR, MULTIACCUM, IRSUB512	F105W	NSAMP=7; SAMP-SEQ=STEP2 5		Pattern 1, Exps 1-1 (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
2	UVIS	(1) SDSSJ1108+0659 9	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F336W			Pattern 2, Exps 2-2 (2)	722 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[1]	



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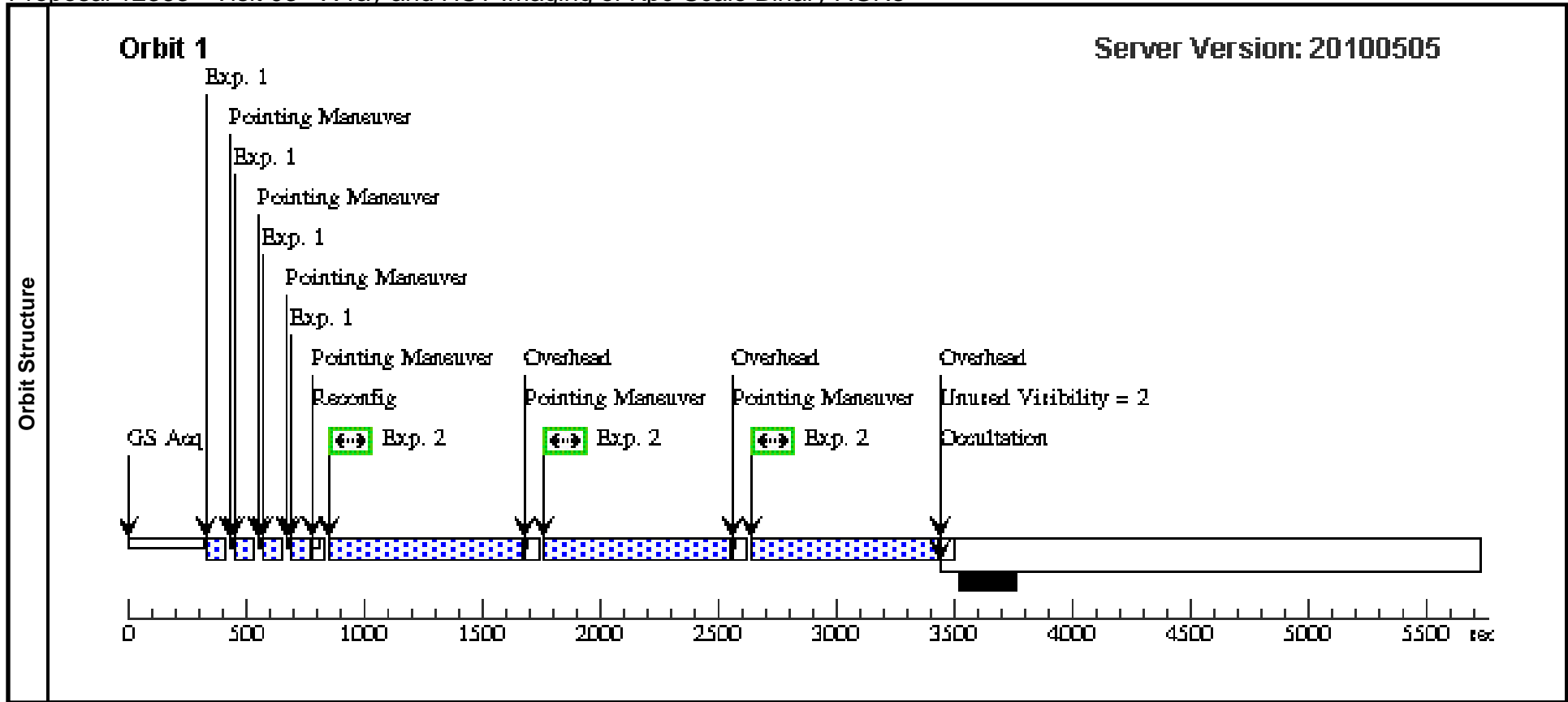
Visit	<b>Proposal 12363, Visit 02</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: (none) Comments: J1131-0204									
	Patterns	#	Primary Pattern				Secondary Pattern			Exposures
		(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false						(1)
	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false						(2)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SDSSJ1131-0204	RA: 11 31 26.0800 (172.8586667d) Dec: -02 04 59.30 (-2.08314d) Equinox: J2000		V=(?) sdss r 16.39	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	IR	(2) SDSSJ1131-0204	WFC3/IR, MULTIACCUM, IRSUB512	F105W	NSAMP=7; SAMP-SEQ=STEP2 5		Pattern 1, Exps 1-1 (1)	[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	2	UVIS	(2) SDSSJ1131-0204	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F336W			Pattern 2, Exps 2-2 (2)	719 Secs [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]



Proposal 12363 - Visit 02 - X-ray and HST Imaging of Kpc-Scale Binary AGNs

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Visit	<b>Proposal 12363, Visit 03</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: (none) Comments: J1146+5110									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false					(1)	
	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false					(2)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	SDSSJ1146+5110	RA: 11 46 42.4700 (176.6769583d) Dec: +51 10 29.60 (51.17489d) Equinox: J2000		V=(?) sdss r 16.90	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	IR	(3) SDSSJ1146+5110 0	WFC3/IR, MULTIACCUM, IRSUB512	F105W	NSAMP=7; SAMP-SEQ=STEP2 5		Pattern 1, Exps 1-1 (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2	UVIS	(3) SDSSJ1146+5110 0	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F336W			Pattern 2, Exps 2-2 (2)	789 Secs [==>789.0 Secs (Pattern 1)] [==>789.0 Secs (Pattern 2)] [==>789.0 Secs (Pattern 3)]	[1]



Proposal 12363 - Visit 03 - X-ray and HST Imaging of Kpc-Scale Binary AGNs

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Visit	<b>Proposal 12363, Visit 04</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: (none) <i>Comments: J1332+0606</i>										
	Patterns	#	Primary Pattern				Secondary Pattern			Exposures	
		(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false						(1)	
	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false						(2)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes		Miscellaneous			
	(4)	SDSSJ1332+0606	RA: 13 32 26.3400 (203.1097500d) Dec: +06 06 27.30 (6.10758d) Equinox: J2000			V=(?) sdss r 17.62			Reference Frame: ICRS		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit
	1	IR	(4) SDSSJ1332+0606 6	WFC3/IR, MULTIACCUM, IRSUB512	F105W	NSAMP=7; SAMP-SEQ=STEP2 5		Pattern 1, Exps 1-1 (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]	
	2	UVIS	(4) SDSSJ1332+0606 6	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F336W			Pattern 2, Exps 2-2 (2)	722 Secs [==>722.0 Secs (Pattern 1)] [==>722.0 Secs (Pattern 2)] [==>722.0 Secs (Pattern 3)]	[1]	

