



## 13765 - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Cycle: 22, 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) NGC-4151	WFC3/IR WFC3/UVIS	1	16-Jul-2014 21:03:08.0	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>
02	(1) NGC-4151	WFC3/UVIS	1	16-Jul-2014 21:03:09.0	yes
03	(1) NGC-4151	WFC3/UVIS	1	16-Jul-2014 21:03:10.0	yes
04	(1) NGC-4151	WFC3/IR WFC3/UVIS	1	16-Jul-2014 21:03:11.0	yes
05	(1) NGC-4151	WFC3/UVIS	1	16-Jul-2014 21:03:12.0	yes
06	(1) NGC-4151	WFC3/IR WFC3/UVIS	1	16-Jul-2014 21:03:13.0	yes
07	(1) NGC-4151	WFC3/UVIS	1	16-Jul-2014 21:03:14.0	yes
08	(1) NGC-4151	WFC3/IR WFC3/UVIS	1	16-Jul-2014 21:03:15.0	yes
09	(1) NGC-4151	WFC3/UVIS	1	16-Jul-2014 21:03:16.0	yes
10	(1) NGC-4151	WFC3/IR WFC3/UVIS	1	16-Jul-2014 21:03:16.0	yes
11	(1) NGC-4151	WFC3/UVIS	1	16-Jul-2014 21:03:17.0	yes
12	(1) NGC-4151	WFC3/IR WFC3/UVIS	1	16-Jul-2014 21:03:18.0	yes

12 Total Orbits Used

## **ABSTRACT**

We propose to measure an accurate Cepheid-based distance to the archetypical Seyfert 1 galaxy NGC 4151, the brightest and arguably best-studied AGN in the sky. The current uncertainty in its distance is no less than 20% (the irreducible limit of the Tully-Fisher method, which in any case we argue systematically underestimates distances of AGNs), and consequently all luminosity and energetics measures are uncertain by more than 40%. The results of detailed studies of feedback, infall, and outflow and the interaction of gas, radiation, and winds in this galaxy have implications for our understanding of other galaxies because there are so few galaxies that can be observed in such great detail. Importantly, recent developments allow a direct high-precision comparison of black hole masses measured from gas and stellar dynamical modeling (distance dependent) and reverberation mapping (distance independent). With a precise distance measure, it is possible to address lingering doubts about the consistency of black hole mass measurement by these various methods. This program must be done at visible wavelengths and, on account of field crowding, can only be done with

the high angular resolution obtainable with HST.

## **OBSERVING DESCRIPTION**

We will image NGC 4151 on twelve epochs spanning 75 days using WFC3/UVIS and WFC3/IR.

On each epoch, we will obtain 3x350s images with WFC3/UVIS and F350LP; these images will be used to search for Cepheid variables and determine their positions and periods.

On 6 of the epochs we will obtain 2x553s images with WFC3/IR and F160W; these images will be used to establish the mean Cepheid magnitudes in the H band, which will serve as the primary measurement to determine the distance to the galaxy.

On the other 6 epochs, we will obtain 2x550s images with WFC3/UVIS and F555W or F814W; these images will be used to establish the mean V-I color of each variable, required to correct for the effects of interstellar extinction.

All exposure times listed above were entered to ensure schedulability in at least 90% of HST's orbits.

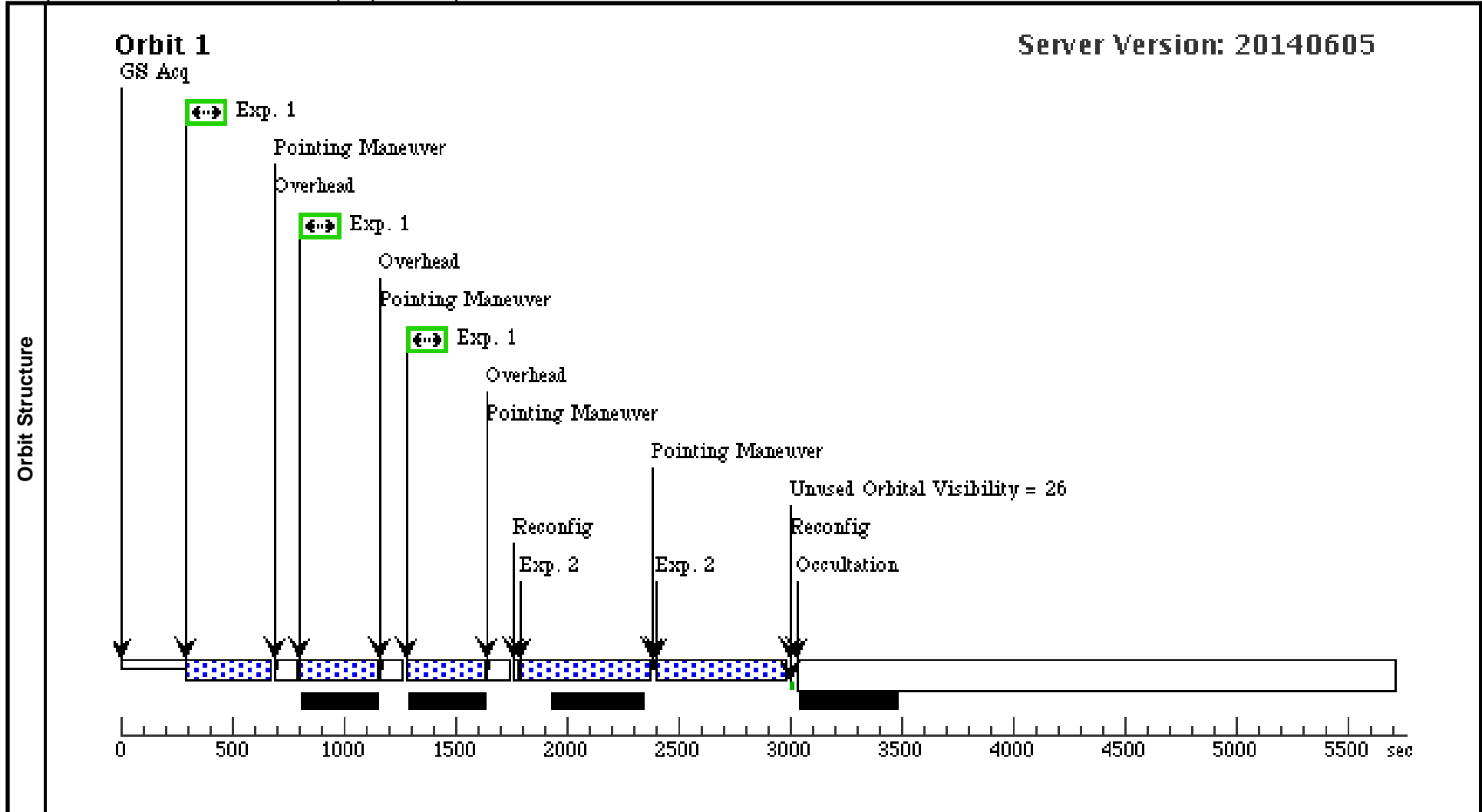
We strongly prefer to obtain all images at two fixed position angles, one for each half of the observations (epochs 1-6 & 7-12, respectively). A single PA would be better, but it's not possible given HST's constraints on roll angle. The actual values of the PAs are left to the discretion of the program coordinator, although we note that a starting PA near 277 will provide optimal coverage of the star-forming regions within the galaxy. Previous observations of this galaxy with WFC3 at PA=282 would seem to suggest that our desired PA can be scheduled. The second PA should be chosen to be as similar as possible to the first one, within GS constraints; we've selected a value of 253 only to test schedulability of the visits.

We strongly prefer to position WFC3/UVIS in such a way that the very bright AGN at the center of this galaxy falls within the chip gap, to avoid saturating as much as possible of the detector.

Proposal 13765 - N4151-H01 (01) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:20 GMT 2014

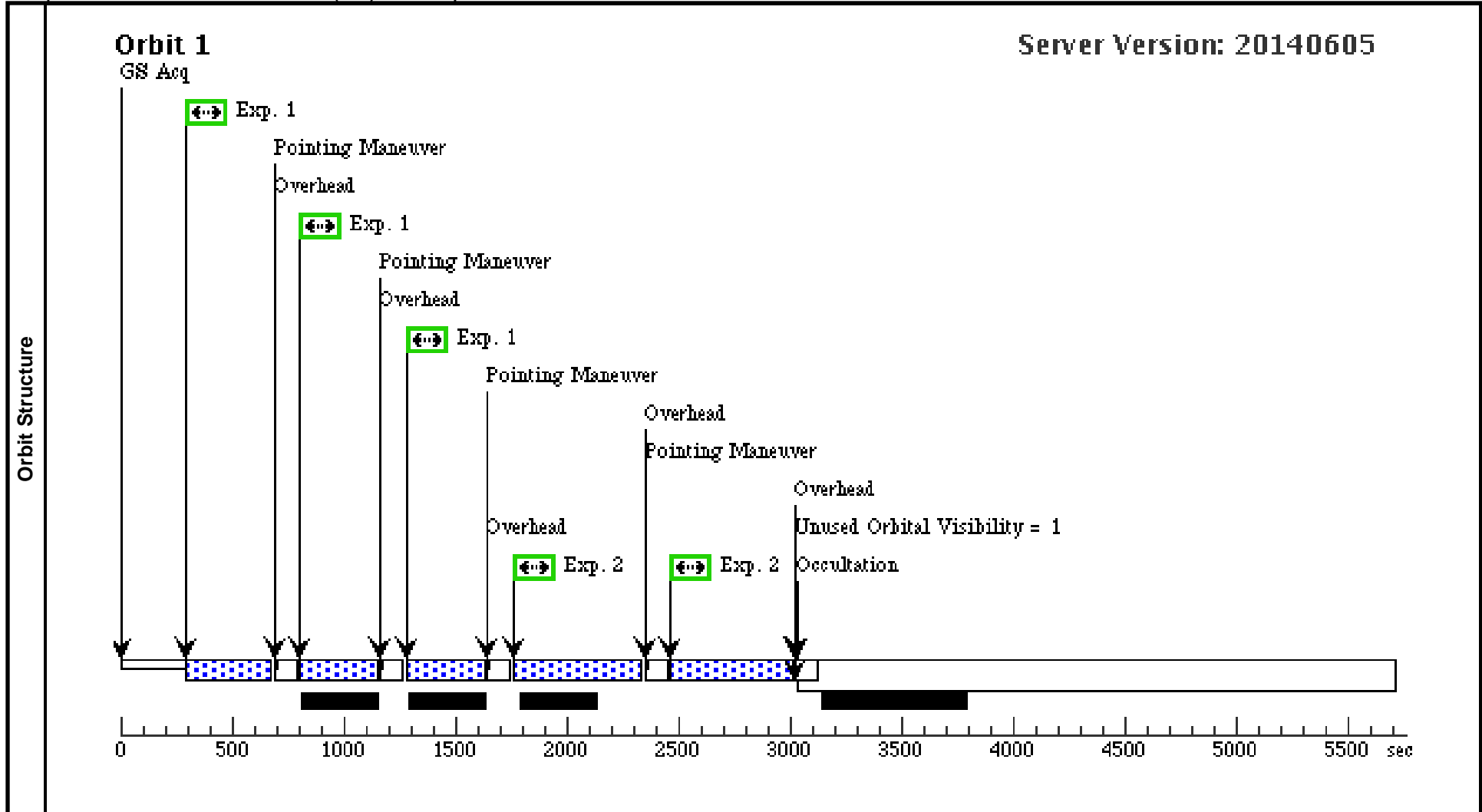
Visit	<b>Proposal 13765, N4151-H01 (01), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: SCHED 90%; ORIENT 285D TO 285 D									
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Patterns	(1)	Pattern Type=WFC3-UVIS-DITHER- 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		(1)						
	(2)	Pattern Type=WFC3-IR-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(2)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP				Pattern 1, Exps 1-1 i n N4151-H01 (01) (1 ) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	350 Secs (1050 Secs)
2		(1) NGC-4151	WFC3/IR, MULTIACCUM, IR-UVIS-CENTER	F160W		NSAMP=12; SAMP-SEQ=SPAR S50		Pattern 2, Exps 2-2 i n N4151-H01 (01) (2 ) [=>(Pattern 1)] [=>(Pattern 2)]	552.937252 Secs (1105.875 Secs)	[1]



Proposal 13765 - N4151-V01 (02) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:20 GMT 2014

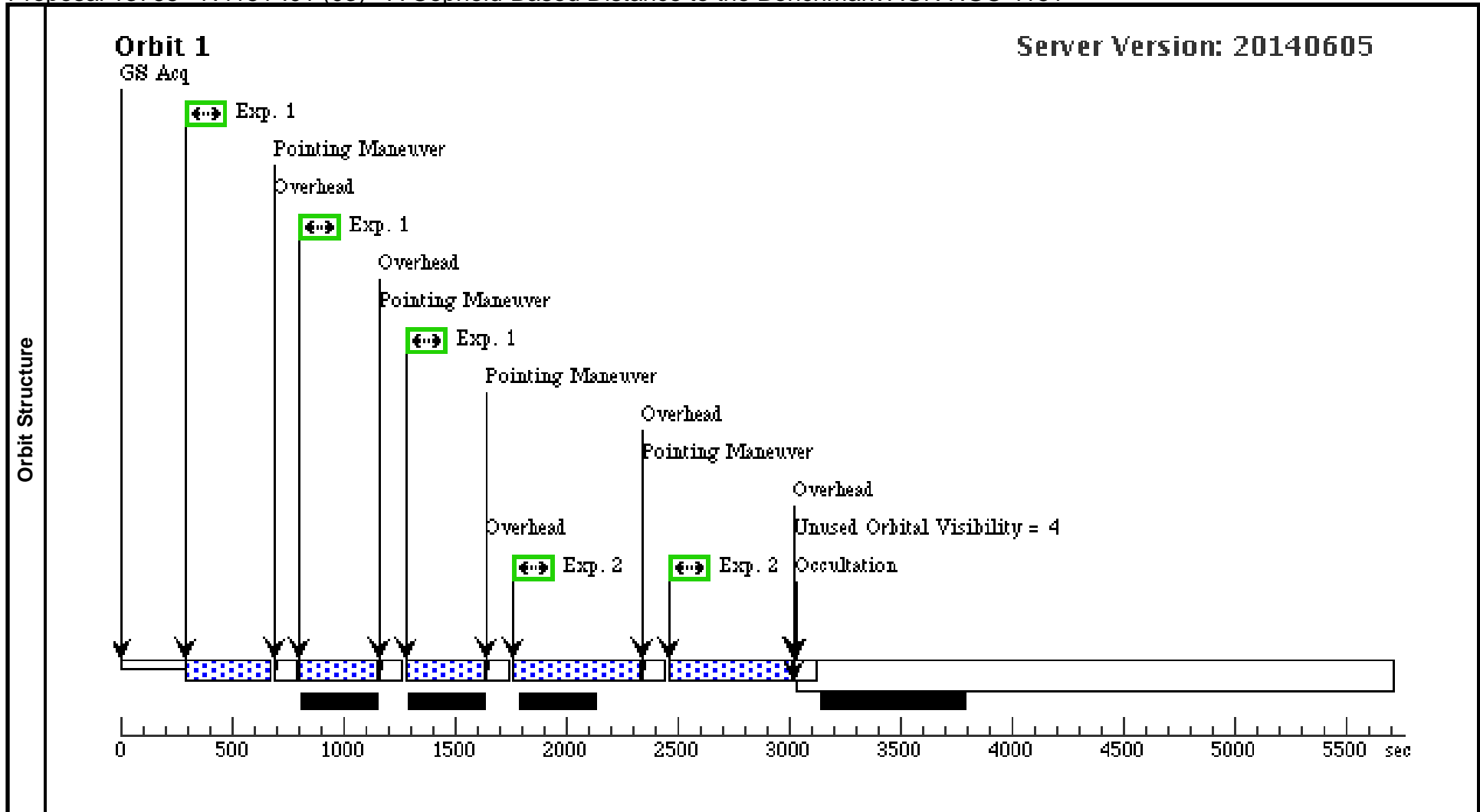
Visit	<b>Proposal 13765, N4151-V01 (02), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 90%; SAME ORIENT AS 01; AFTER 01 BY 7.44 D TO 8.44 D									
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(1)		Pattern Type=WFC3-UVIS-DITHER- 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		(1)					
(3)		Pattern Type=WFC3-UVIS-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 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)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP			Pattern 1, Exps 1-1 i n N4151-V01 (02) (1 )	350 Secs (1050 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
	2		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F555W			Pattern 3, Exps 2-2 i n N4151-V01 (02) (3 )	550 Secs (1100 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 13765 - N4151-I01 (03) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:20 GMT 2014

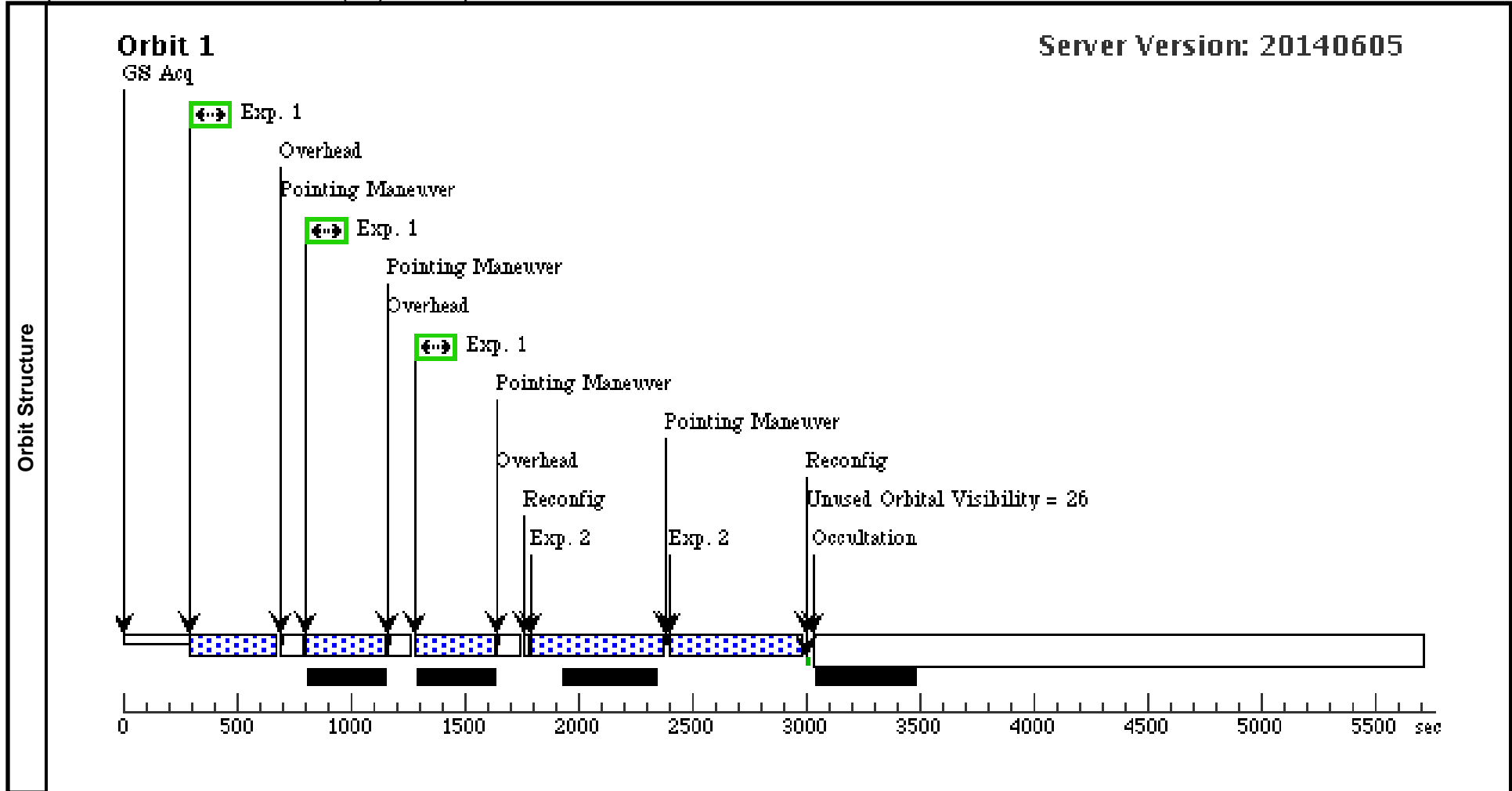
Visit	<b>Proposal 13765, N4151-I01 (03), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 90%; SAME ORIENT AS 01; AFTER 01 BY 14.4 D TO 15.4 D									
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(3)		Pattern Type=WFC3-UVIS-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 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)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP			Pattern 1, Exps 1-1 i n N4151-I01 (03) (1)	350 Secs (1050 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
	2		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Pattern 3, Exps 2-2 i n N4151-I01 (03) (3)	550 Secs (1100 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 13765 - N4151-H02 (04) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:20 GMT 2014

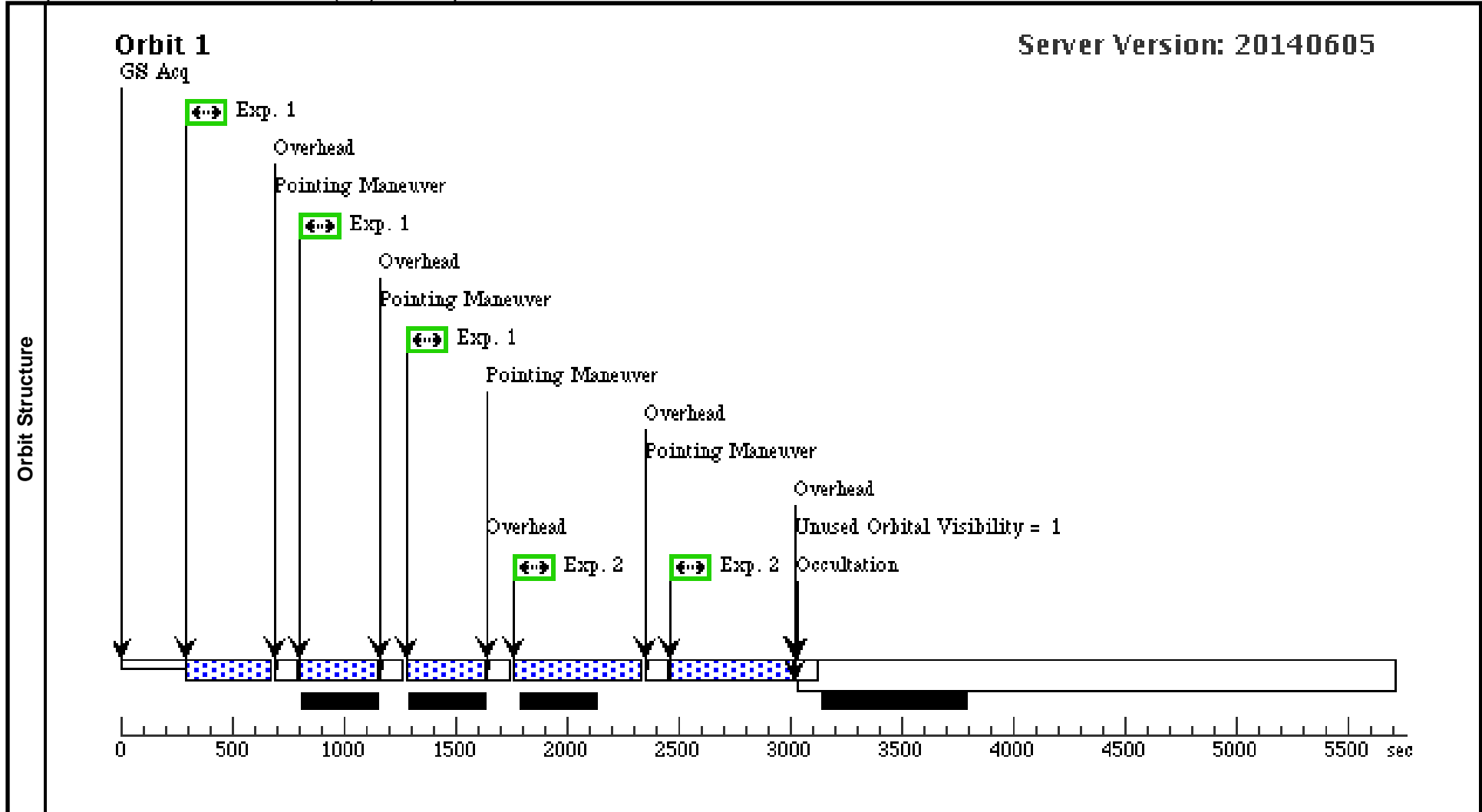
Visit	<b>Proposal 13765, N4151-H02 (04), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: SCHED 90%; SAME ORIENT AS 01; AFTER 01 BY 21.0 D TO 22.0 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	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		(1)				
	(2)	Pattern Type=WFC3-IR-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(2)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP				Pattern 1, Exps 1-1 i n N4151-H02 (04) (1 ) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	350 Secs (1050 Secs)
	2		(1) NGC-4151	WFC3/IR, MULTIACCUM, IR-UVIS-CENTER	F160W	NSAMP=12; SAMP-SEQ=SPAR S50		Pattern 2, Exps 2-2 i n N4151-H02 (04) (2 ) [=>(Pattern 1)] [=>(Pattern 2)]	552.937252 Secs (1105.875 Secs)	[1]



Proposal 13765 - N4151-V02 (05) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:20 GMT 2014

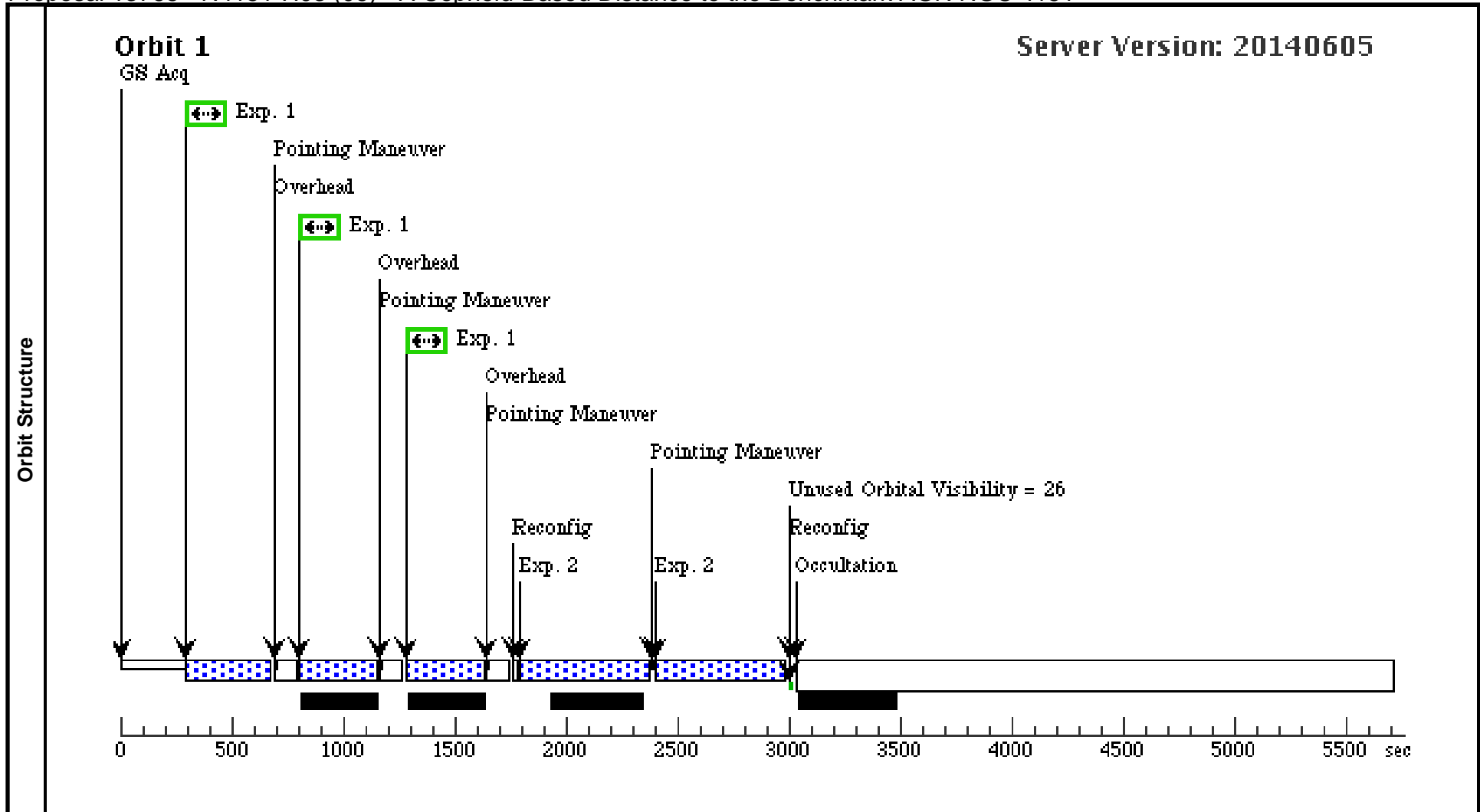
Visit	<b>Proposal 13765, N4151-V02 (05), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 90%; SAME ORIENT AS 01; AFTER 01 BY 26.1 D TO 27.1 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
(1)		Pattern Type=WFC3-UVIS-DITHER- 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	(1)						
(3)		Pattern Type=WFC3-UVIS-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 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)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP			Pattern 1, Exps 1-1 i n N4151-V02 (05) (1 )	350 Secs (1050 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
	2		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F555W			Pattern 3, Exps 2-2 i n N4151-V02 (05) (3 )	550 Secs (1100 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 13765 - N4151-H03 (06) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:20 GMT 2014

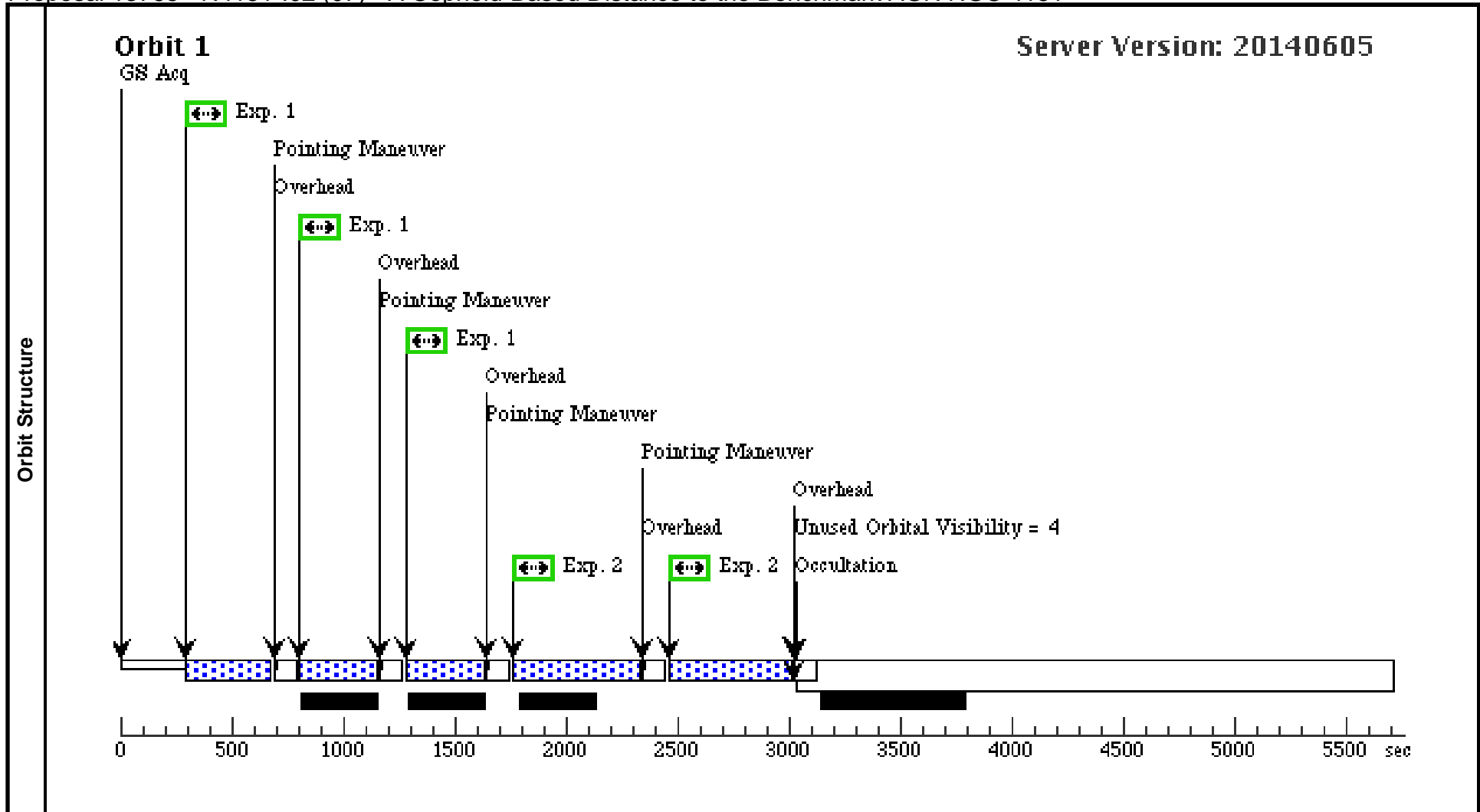
Visit	<b>Proposal 13765, N4151-H03 (06), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: SCHED 90%; SAME ORIENT AS 01; AFTER 01 BY 29.7 D TO 30.7 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	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		(1)				
	(2)	Pattern Type=WFC3-IR-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(2)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP				Pattern 1, Exps 1-1 i n N4151-H03 (06) (1 ) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	350 Secs (1050 Secs)
	2		(1) NGC-4151	WFC3/IR, MULTIACCUM, IR-UVIS-CENTER	F160W	NSAMP=12; SAMP-SEQ=SPAR S50		Pattern 2, Exps 2-2 i n N4151-H03 (06) (2 ) [=>(Pattern 1)] [=>(Pattern 2)]	552.937252 Secs (1105.875 Secs)	[1]



Proposal 13765 - N4151-I02 (07) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:20 GMT 2014

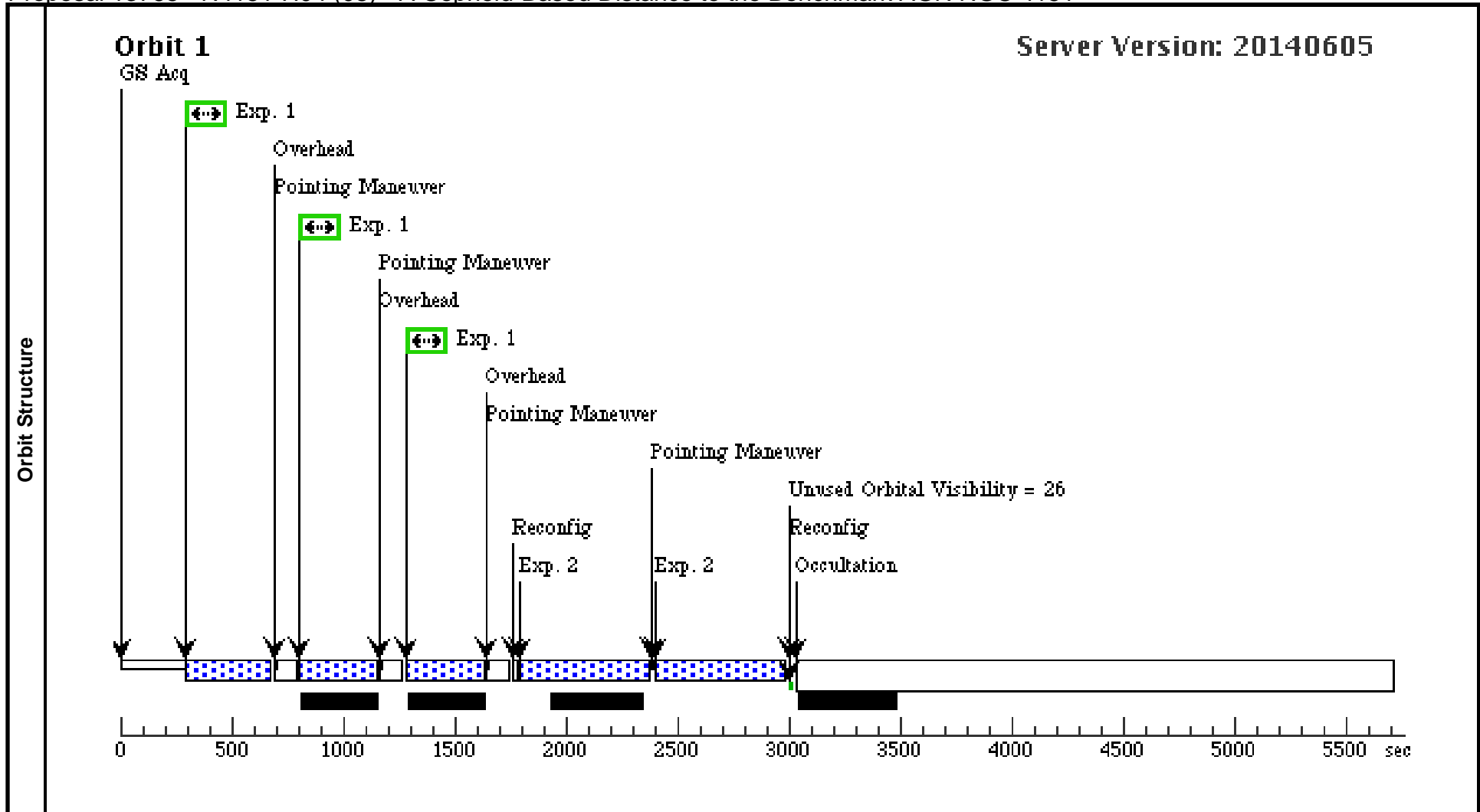
Visit	<b>Proposal 13765, N4151-I02 (07), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 90%: ORIENT 253D TO 253 D; AFTER 01 BY 35.08 D TO 36.08 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
(1)		Pattern 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		(1)					
(3)		Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 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)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP			Pattern 1, Exps 1-1 in N4151-I02 (07) (1)	350 Secs (1050 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
	2		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Pattern 3, Exps 2-2 in N4151-I02 (07) (3)	550 Secs (1100 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 13765 - N4151-H04 (08) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:21 GMT 2014

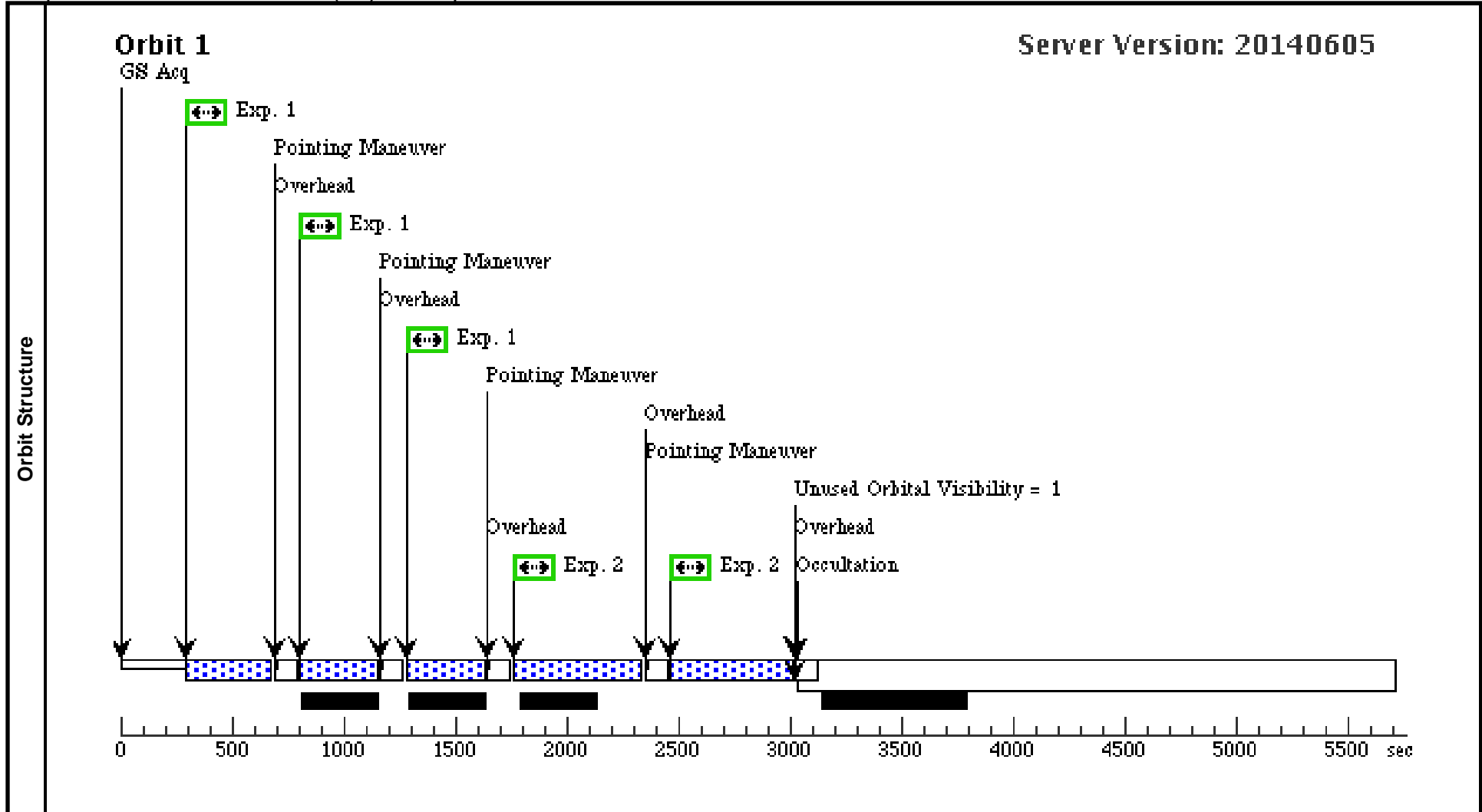
Visit	<b>Proposal 13765, N4151-H04 (08), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: SCHED 90%; SAME ORIENT AS 07; AFTER 01 BY 42.5 D TO 43.5 D									
	#	Primary Pattern	Secondary Pattern	Exposures						
Patterns	(1)	Pattern 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		(1)						
	(2)	Pattern Type=WFC3-IR-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(2)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP				Pattern 1, Exps 1-1 i n N4151-H04 (08) (1 ) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	350 Secs (1050 Secs)
2		(1) NGC-4151	WFC3/IR, MULTIACCUM, IR-UVIS-CENTER	F160W		NSAMP=12; SAMP-SEQ=SPAR S50		Pattern 2, Exps 2-2 i n N4151-H04 (08) (2 ) [==>(Pattern 1)] [==>(Pattern 2)]	552.937252 Secs (1105.875 Secs)	[1]



Proposal 13765 - N4151-V03 (09) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:21 GMT 2014

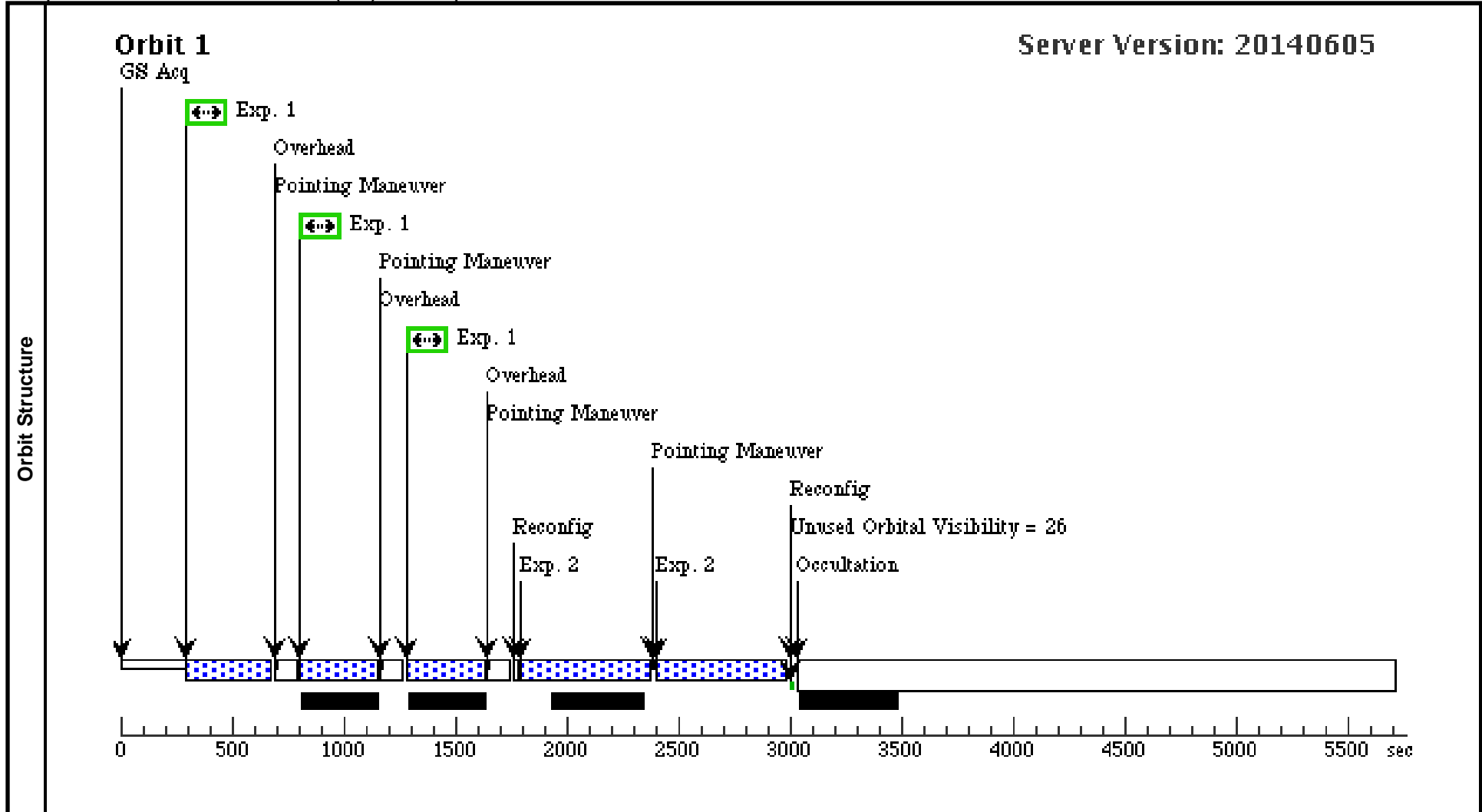
Visit	<b>Proposal 13765, N4151-V03 (09), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 90%; SAME ORIENT AS 07; AFTER 01 BY 51.2 D TO 52.2 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
(1)		Pattern Type=WFC3-UVIS-DITHER-LINE-3PT 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	(1)						
(3)		Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 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)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP			Pattern 1, Exps 1-1 in N4151-V03 (09) (1)	350 Secs (1050 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
	2		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F555W			Pattern 3, Exps 2-2 in N4151-V03 (09) (3)	550 Secs (1100 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 13765 - N4151-H05 (10) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:21 GMT 2014

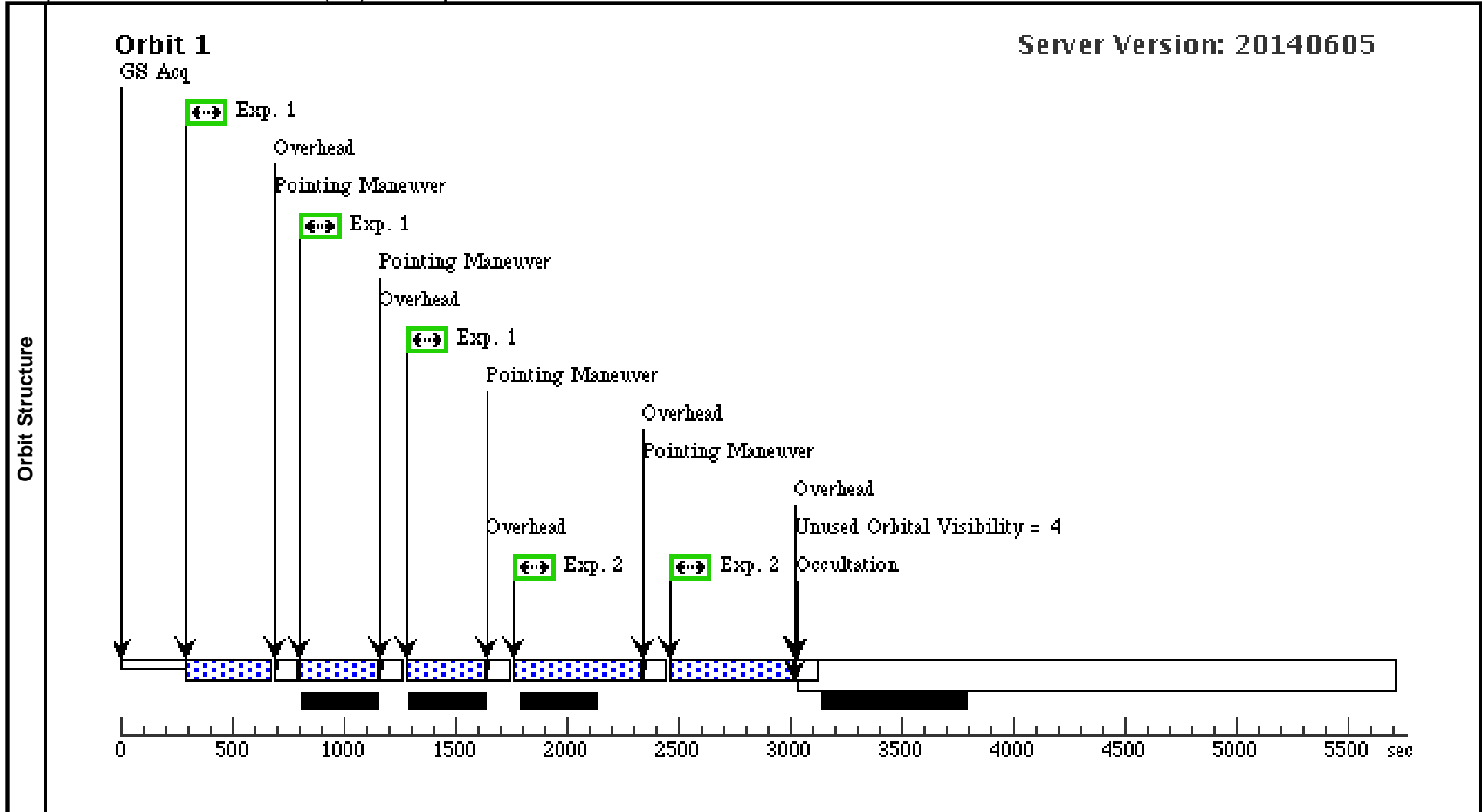
Visit	<b>Proposal 13765, N4151-H05 (10), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: SCHED 90%; SAME ORIENT AS 07; AFTER 01 BY 59.54 D TO 60.54 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	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		(1)				
	(2)	Pattern Type=WFC3-IR-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(2)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP				Pattern 1, Exps 1-1 i n N4151-H05 (10) (1 ) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	350 Secs (1050 Secs)
2		(1) NGC-4151	WFC3/IR, MULTIACCUM, IR-UVIS-CENTER	F160W		NSAMP=12; SAMP-SEQ=SPAR S50		Pattern 2, Exps 2-2 i n N4151-H05 (10) (2 ) [=>(Pattern 1)] [=>(Pattern 2)]	552.937252 Secs (1105.875 Secs)	[1]



Proposal 13765 - N4151-I03 (11) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:21 GMT 2014

Visit	<b>Proposal 13765, N4151-I03 (11), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 90%; SAME ORIENT AS 07; AFTER 01 BY 66.22 D TO 67.22 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
(1)		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	(1)						
(3)		Pattern Type=WFC3-UVIS-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 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)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP			Pattern 1, Exps 1-1 i n N4151-I03 (11) (1)	350 Secs (1050 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
	2		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Pattern 3, Exps 2-2 i n N4151-I03 (11) (3)	550 Secs (1100 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 13765 - N4151-H06 (12) - A Cepheid-Based Distance to the Benchmark AGN NGC 4151

Thu Jul 17 01:03:21 GMT 2014

Visit	<b>Proposal 13765, N4151-H06 (12), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: SCHED 90%; SAME ORIENT AS 07; AFTER 01 BY 73 D TO 75 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	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		(1)				
	(2)	Pattern Type=WFC3-IR-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(2)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	NGC-4151	RA: 12 10 32.6590 (182.6360792d) Dec: +39 24 20.74 (39.40576d) Equinox: J2000		V=10.04+/-0.5	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 (Total)/[Actual Dur.]	Orbit
	1		(1) NGC-4151	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP				Pattern 1, Exps 1-1 i n N4151-H06 (12) (1 ) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	350 Secs (1050 Secs)
2		(1) NGC-4151	WFC3/IR, MULTIACCUM, IR-UVIS-CENTER	F160W		NSAMP=12; SAMP-SEQ=SPAR S50		Pattern 2, Exps 2-2 i n N4151-H06 (12) (2 ) [=>(Pattern 1)] [=>(Pattern 2)]	552.937252 Secs (1105.875 Secs)	[1]

