



11128 - Time Scales Of Bulge Formation In Nearby Galaxies

Cycle: 16, 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>
03	(3) NGC4826	WFPC2	1	17-Jan-2008 21:37:21.0	yes
04	(6) NGC3593	WFPC2	1	17-Jan-2008 21:37:24.0	yes
05	(6) NGC3593	WFPC2	1	17-Jan-2008 21:37:26.0	yes
07	(7) NGC4448	NIC2 WFPC2	1	17-Jan-2008 21:37:29.0	yes
09	(8) NGC3675	WFPC2	2	17-Jan-2008 21:37:32.0	yes
11	(9) NGC2681	WFPC2	1	17-Jan-2008 21:37:35.0	yes
15	(11) NGC5879	WFPC2	1	17-Jan-2008 21:37:36.0	yes
16	(12) NGC3351	WFPC2	2	17-Jan-2008 21:37:40.0	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>
18	(13) NGC3521	NIC2 WFPC2	1	17-Jan-2008 21:37:42.0	yes
20	(14) NGC7331	WFPC2	2	17-Jan-2008 21:37:46.0	yes
22	(15) NGC4151	WFPC2	1	17-Jan-2008 21:37:48.0	yes
23	(16) NGC4380	WFPC2	2	17-Jan-2008 21:37:50.0	yes
24	(17) NGC7217	WFPC2	2	17-Jan-2008 21:37:53.0	yes
28	(19) NGC4698	NIC2 WFPC2	2	17-Jan-2008 21:37:56.0	yes
30	(20) NGC1068	WFPC2	1	17-Jan-2008 21:37:58.0	yes
31	(21) NGC7177	WFPC2	1	17-Jan-2008 21:37:59.0	yes
32	(22) NGC5248	WFPC2	1	17-Jan-2008 21:38:00.0	yes
33	(23) NGC4569	WFPC2	2	17-Jan-2008 21:38:02.0	yes

25 Total Orbits Used

ABSTRACT

Traditionally, bulges are thought to fit well into galaxy formation models of hierarchical merging. However, it is now becoming well established that many bulges formed through internal, secular evolution of the disk rather than through mergers. We call these objects pseudobulges. Much is still unknown about pseudobulges, the most pressing questions being: How, exactly, do they build up their mass? How long does it take? And, how many exist? We are after an answer to these questions. If pseudobulges form and evolve over longer periods than the time between mergers, then a significant population of pseudobulges is hard to explain within current galaxy formation theories. A pseudobulge indicates that a galaxy has most likely not undergone a major merger since the formation of the disk. The ages of pseudobulges give us an estimate for the time scale of this quiescent evolution. We propose to use 24 orbits of HST time to complete UBV_IH imaging on a sample of 33 nearby galaxies that we have observed with Spitzer in the mid-IR. These data will be used to measure spatially resolved stellar population parameters (mean stellar age, metallicity, and star

formation history); comparing ages to star formation rates allows us to accurately constrain the time scale of pseudobulge formation. Our sample of bulges includes both pseudo- and classical bulges, and evenly samples barred and unbarred galaxies. Most of our sample is imaged, 13 have complete UBVIH coverage; we merely ask to complete missing observations so that we may construct a uniform sample for studying bulge formation. We also wish to compare the stellar population parameters to a variety of bulge and global galaxy properties including star formation rates, dynamics, internal bulge morphology, structure from bulge-disk decompositions, and gas content. Much of this data set is already or is being assembled. This will allow us to derive methods of pseudobulge identification that can be used to accurately count pseudobulges in large surveys. Aside from our own science goals, we will present this broad set of data to the community. Thus, we waive proprietary periods for all observations.

OBSERVING DESCRIPTION

We wish to obtain surface photometry in each band. We originally wanted ACS/WFC for B,V,I and ACS/HRC for U. However, we are lucky that all of our science objectives can be achieved with WFPC2, centering galaxies on the PC chip. We are primarily interested in the PC chip, thus the WF4 anomaly will not affect us. In 2-gyro mode WFPC2 can obtain signal-to-noise per pixel of $S/N \sim 15-20$ for an 18th V magnitude extended source with exposure times of $t_{\text{exp}}=800\text{s}$ for F450W, $t_{\text{exp}}=400\text{s}$ for F555W and $t_{\text{exp}}=250\text{s}$ for F814W. We will CR-SPLIT each image to reduce the effect of cosmic rays. And we can reach $S/N \sim 20$ for all our galaxies with a 250 second exposure, CR-SPLIT with NICMOS 2 F160W is adequate to reach deep magnitudes. Each galaxy will be centered in the frame.

The proposed observations are heavily weighted toward F336W observations. F336W is the least observed filter in the archive for our sample, and requires, by far, the longest integration times. However, F336W is necessary to determine stellar population quantities with accuracy. Previous groups have had mixed results with HST U band data. To insure a successful program we only target nearby galaxies, and expose longer. Using ACS/HRC with F336W we set exposure times based on the surface brightness profiles, increasing exposure times for fainter galaxies. We require a minimum of $S/N \sim 3$ at ~ 9 arcsec, this allows us to overlap a few resolution elements in a ground based U band image, for constructing a composite space plus ground profile. To correct for possible saturation we plan to add a 60s exposure in F814W at the beginning of the observation sequence. In the event of unpacked orbits, we use the automatic orbit packing option to increase exposure times.

Calculation of the surface photometry will be done with software from Bender & Moellenhoff (1987). The required software is well developed, and

the PI (Fisher) is experienced at using this software. We will obtain wide-field ground-based data for each galaxy giving a greater dynamic range to color and structural profiles. Most of these observations have already been made at the McDonald 0.8-m. The overlap between ACS/WFC and ground-based telescopes provides confirmation for derived quantities. We are confident that the program will be completed and submitted for publication within one year after the completion of HST observations.

Proposal 11128 - Visit 03 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:06 GMT 2008

Visit	Proposal 11128, Visit 03, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)										
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
(3)		NGC4826	RA: 12 56 43.8000 (194.1825000d) Dec: +21 41 0.00 (21.68333d) Equinox: J2000		V=8.47	Reference Frame: ICRS					
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
	1	NGC4826 U (3)	NGC4826	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			1500.0 Secs [==>1200.0 Secs (Split 1)] [==>1200.0 Secs (Split 2)]	[1]	
Orbit Structure	<p>Orbit 1 Server Version: 20071214</p> <p>Unused Visibility = 32</p> <p>Overhead</p> <p>Occultation</p> <p>GS Acq</p> <p>Exp. 1, split 1</p> <p>Exp. 1, split 2</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>										
	<p style="text-align: center;">5</p>										

Proposal 11128 - Visit 04 - Time Scales Of Bulge Formation In Nearby Galaxies

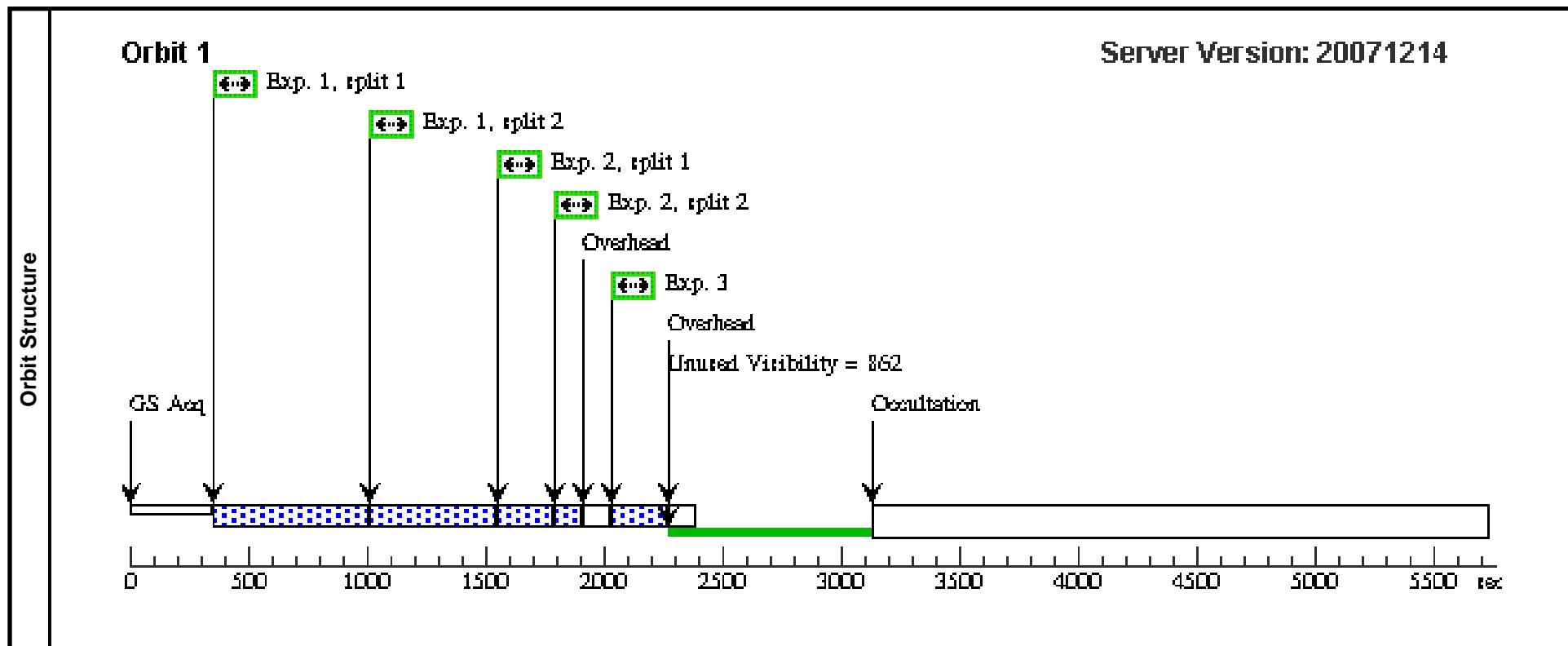
Fri Jan 18 02:38:07 GMT 2008

Visit	Proposal 11128, Visit 04, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)										
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
(6)		NGC3593	RA: 11 14 37.0000 (168.6541667d) Dec: +12 49 4.00 (12.81778d) Equinox: J2000		V=10.9	Reference Frame: ICRS					
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
	1	NGC3593 U (6) NGC3593	(6) NGC3593	WFPC2, IMAGE, PC1-FIX	F336W				2500.0 Secs [=>1200.0 Secs (Split 1)] [=>1200.0 Secs (Split 2)]	[1]	
Orbit Structure	<p>Orbit 1 Server Version: 20071214</p> <p>GS Acq Exp. 1, split 1 Exp. 1, split 2 Occultation Overhead</p> <p>Unused Visibility = 22</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>										
	<p style="text-align: center;">6</p>										

Proposal 11128 - Visit 05 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:07 GMT 2008

Visit	Proposal 11128, Visit 05, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(6)	NGC3593	RA: 11 14 37.0000 (168.6541667d) Dec: +12 49 4.00 (12.81778d) Equinox: J2000		V=10.9	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC3593 B	(6) NGC3593	WFPC2, IMAGE, PC1-FIX	F450W	CR-SPLIT=0.5			800.0 Secs [=>(Split 1)] [=>(Split 2)]	[1]
	2	NGC3593 I	(6) NGC3593	WFPC2, IMAGE, PC1-FIX	F814W	CR-SPLIT=0.5			200.0 Secs [=>(Split 1)] [=>(Split 2)]	[1]
	3	NGC3593 I Short	(6) NGC3593	WFPC2, IMAGE, PC1	F814W				60.0 Secs [=>]	[1]



Proposal 11128 - Visit 07 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:07 GMT 2008

Visit	Proposal 11128, Visit 07, implementation Diagnostic Status: No Diagnostics Scientific Instruments: NIC2, WFPC2 Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(7)	NGC4448	RA: 12 28 15.4000 (187.0641667d) Dec: +28 37 14.40 (28.62067d) Equinox: J2000		V=11.1	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC4448 B	(7) NGC4448	WFPC2, IMAGE, PC1-FIX	F450W	CR-SPLIT=0.5			800.0 Secs [==>(Split 1)] [==>(Split 2)]	[1]
2	NGC4448 H	(7) NGC4448	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP2 56; NSAMP=10			[==>(Copy 1)] [==>(Copy 2)]	[1]	

Orbit Structure

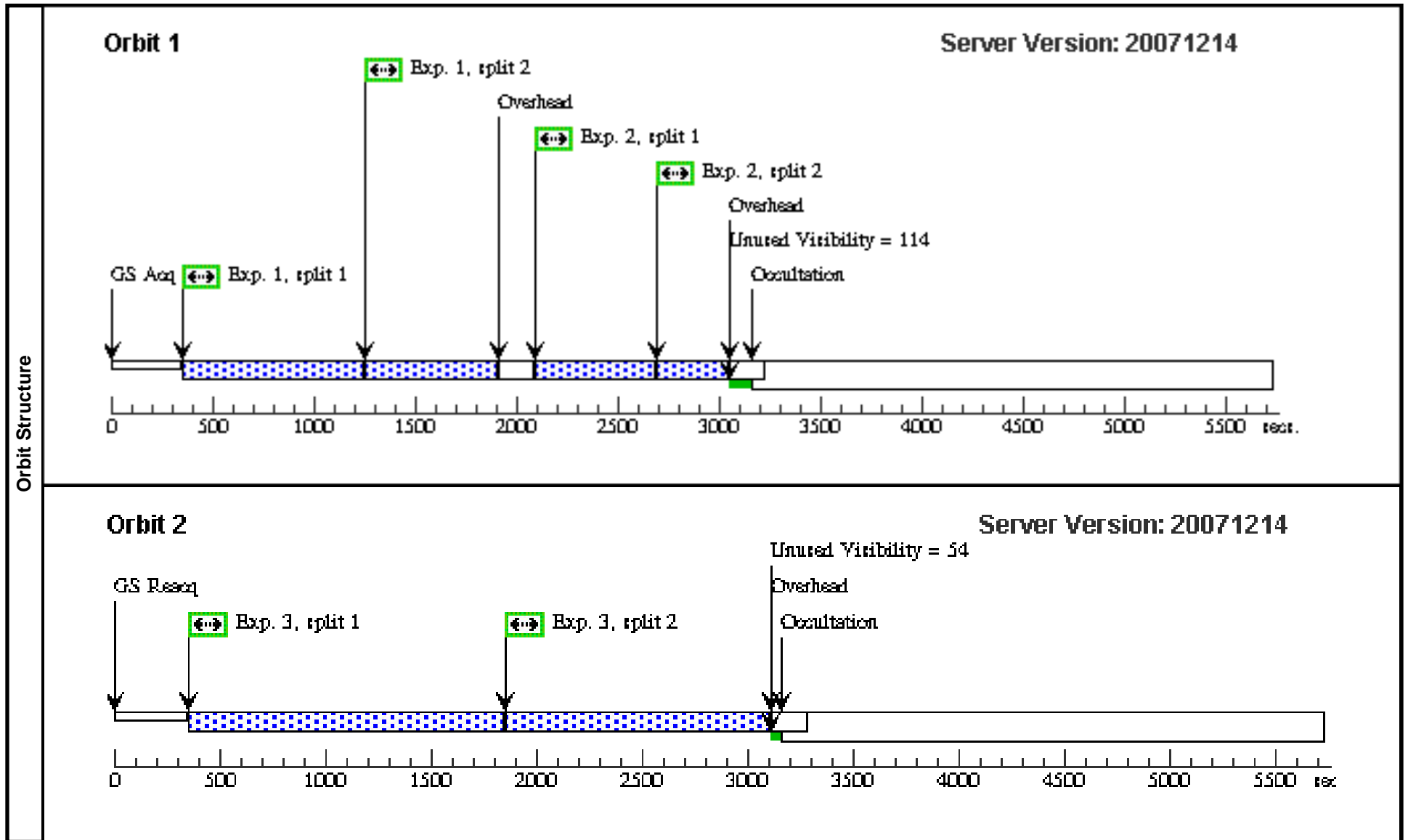
Orbit 1

Server Version: 20071214

Proposal 11128 - Visit 09 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:08 GMT 2008

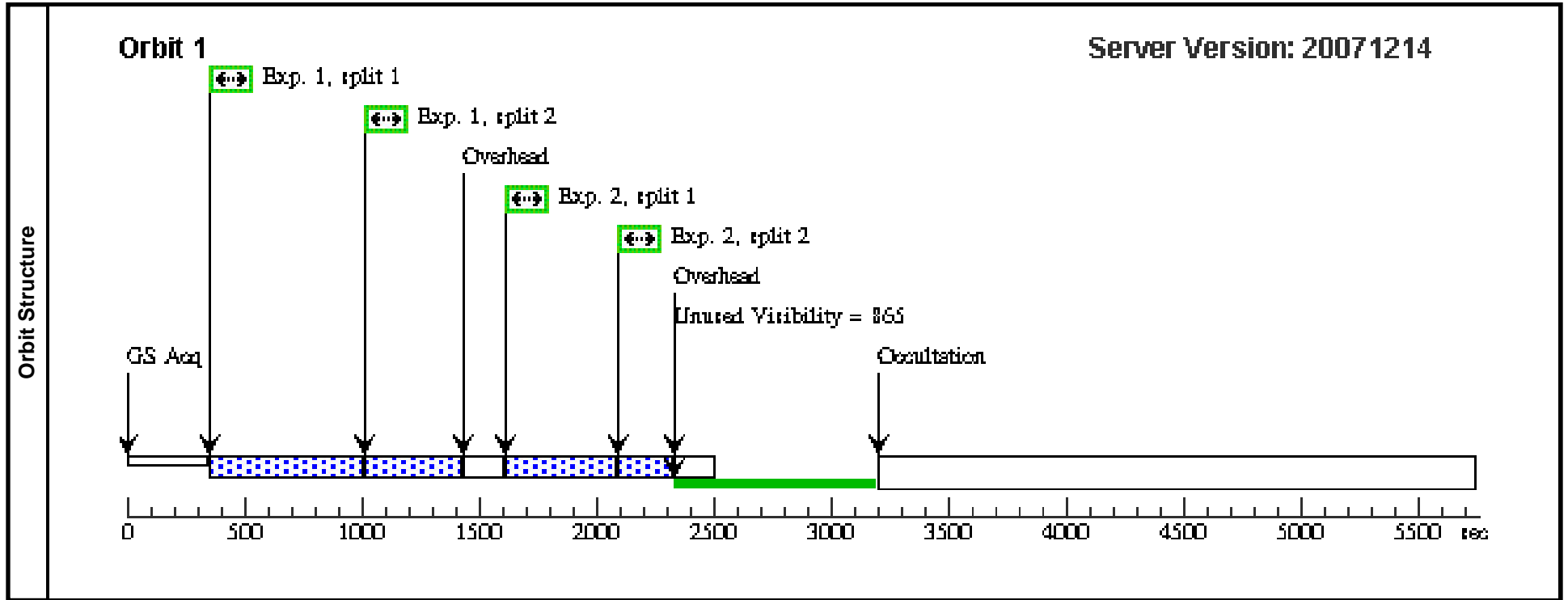
Visit	Proposal 11128, Visit 09, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(8)	NGC3675	RA: 11 26 8.6000 (171.5358333d) Dec: +43 35 7.00 (43.58528d) Equinox: J2000		V=10.14	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC3675 U	(8) NGC3675	WFPC2, IMAGE, PC1-FIX	F336W				1400.0 Secs [=>600.0 Secs (Split 1)] [=>600.0 Secs (Split 2)]	[1]
2	NGC3675 B	(8) NGC3675	WFPC2, IMAGE, PC1-FIX	F450W				700.0 Secs [=>300.0 Secs (Split 1)] [=>300.0 Secs (Split 2)]	[1]	
3	NGC 3675 U	(8) NGC3675	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			2400.0 Secs [=>(Split 1)] [=>(Split 2)]	[2]	



Proposal 11128 - Visit 11 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:08 GMT 2008

Visit	Proposal 11128, Visit 11, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(9)	NGC2681	RA: 08 53 32.6000 (133.3858333d) Dec: +51 18 47.00 (51.31306d) Equinox: J2000		V=10.36	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC2681 B	(9) NGC2681	WFPC2, IMAGE, PC1-FIX	F450W	CR-SPLIT=0.5			800.0 Secs [=>(Split 1)] [=>(Split 2)]	[1]
2	NGC2681 V	(9) NGC2681	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=0.5			400.0 Secs [=>(Split 1)] [=>(Split 2)]	[1]	



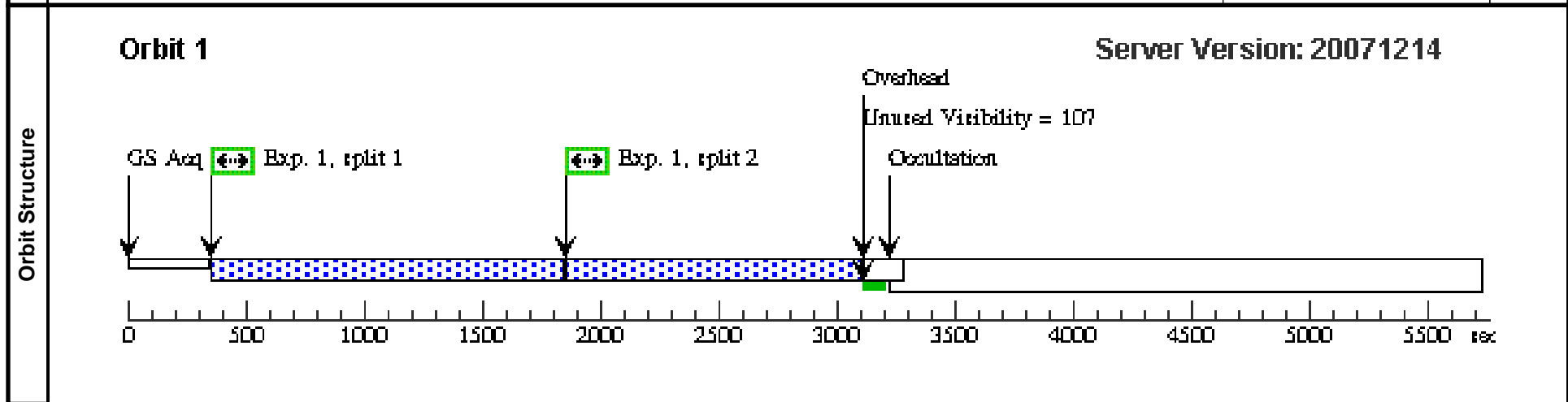
Proposal 11128 - Visit 15 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:09 GMT 2008

Visit	Proposal 11128, Visit 15, implementation				
	Diagnostic Status: No Diagnostics				
	Scientific Instruments: WFPC2				
	Special Requirements: ORIENT 358.0D TO 18.0 D				

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(11)	NGC5879	RA: 15 09 46.7000 (227.4445833d) Dec: +57 00 1.00 (57.00028d) Equinox: J2000		V=11.48	Reference Frame: ICRS

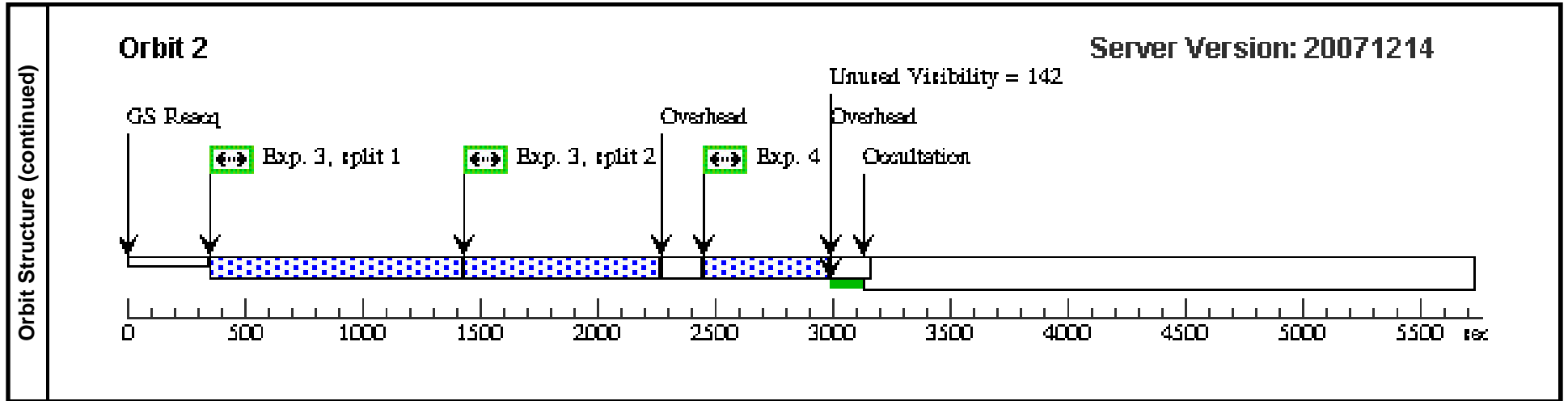
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC5879 U	(11) NGC5879	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			1070.0 Secs	
									[==>1200.0 Secs (Split 1)] [==>1200.0 Secs (Split 2)]	[1]



Proposal 11128 - Visit 16 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:09 GMT 2008

Visit	Proposal 11128, Visit 16, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: ORIENT 143.0D TO 223.0 D									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(12)	NGC3351	RA: 10 43 57.7000 (160.9904167d) Dec: +11 42 13.00 (11.70361d) Equinox: J2000		V=9.79	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC3351 U	(12) NGC3351	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			1850.0 Secs [=>800.0 Secs (Split 1)] [=>800.0 Secs (Split 2)]	[1]
	2	NGC3351 B	(12) NGC3351	WFPC2, IMAGE, PC1-FIX	F450W				400.0 Secs [=>350.0 Secs]	[1]
	3	NGC3351 U	(12) NGC3351	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			1850.0 Secs [=>800.0 Secs (Split 1)] [=>800.0 Secs (Split 2)]	[2]
	4	NGC3351 B	(12) NGC3351	WFPC2, IMAGE, PC1-FIX	F450W				400.0 Secs [=>350.0 Secs]	[2]
Orbit Structure	<p>Orbit 1 Server Version: 20071214</p> <p>Unused Visibility = 142</p> <p>GS Acq, Exp. 1, split 1, Exp. 1, split 2, Exp. 2, Occultation, Overhead</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec.</p>									



Proposal 11128 - Visit 18 - Time Scales Of Bulge Formation In Nearby Galaxies

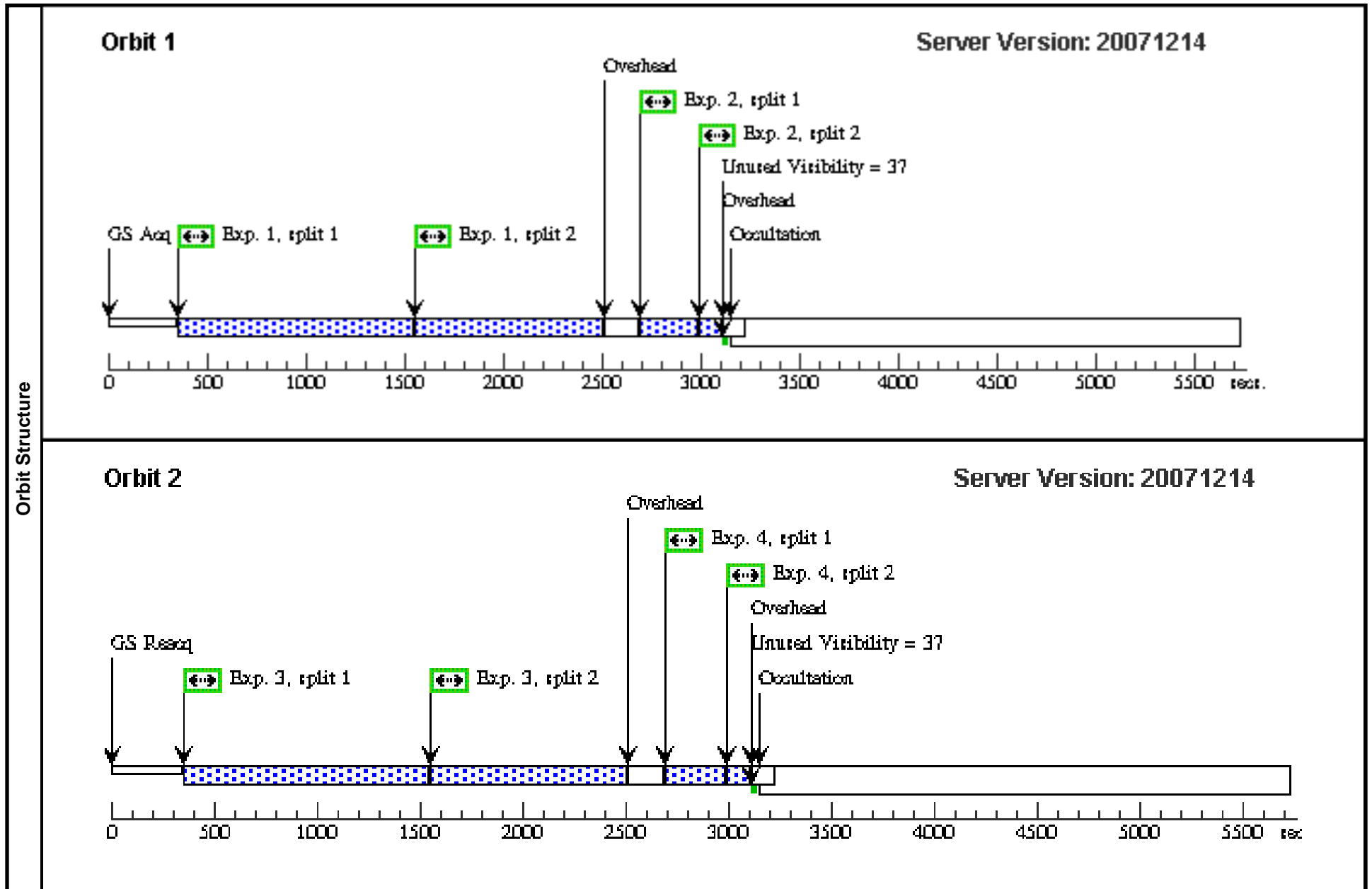
Fri Jan 18 02:38:09 GMT 2008

Visit	Proposal 11128, Visit 18, implementation Diagnostic Status: No Diagnostics Scientific Instruments: NIC2, WFPC2 Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
(13)		NGC3521	RA: 11 05 48.8000 (166.4533333d) Dec: -00 02 8.00 (-.03556d) Equinox: J2000		V=9.06	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC3521 U (13) NGC3521	(13) NGC3521	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			1500.0 Secs [==>700.0 Secs (Split 1)] [==>700.0 Secs (Split 2)]	[1]
2	NGC3521 H (13) NGC3521	(13) NGC3521	NIC2, MULTIACCUM, NIC2	F160W	SAMP-SEQ=STEP2 56; NSAMP=10			[==>(Copy 1)] [==>(Copy 2)]	[1]	
Orbit Structure	<p>Orbit 1 Server Version: 20071214</p> <p>The diagram illustrates the timing of observations within Orbit 1. The x-axis represents time in seconds, ranging from 0 to 5500. Key events are marked with arrows: GS Acq at ~100s, Exp. 1, split 1 (green box) at ~400s, Exp. 1, split 2 (green box) at ~1400s, Pointing Maneuver at ~2000s, Overhead at ~2100s, GS Acq at ~2200s, Exp. 2, copy 1 at ~2700s, Exp. 2, copy 2 at ~2800s, Unused Visibility = 138 at ~3000s, and Occultation at ~3100s. A blue checkered bar highlights the observation period from approximately 400s to 3000s. A small green bar is visible at the end of the observation period around 3000s.</p>									

Proposal 11128 - Visit 20 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:10 GMT 2008

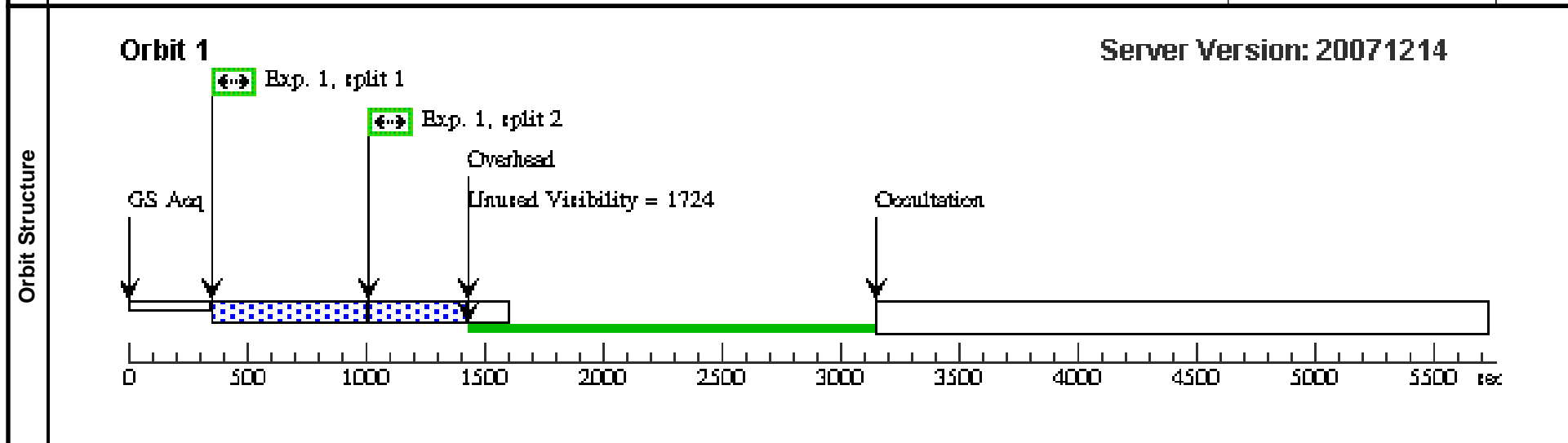
Visit	Proposal 11128, Visit 20, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: ORIENT 158.0D TO 178.0 D									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(14)	NGC7331	RA: 22 37 4.4000 (339.2683333d) Dec: +34 24 59.00 (34.41639d) Equinox: J2000		V=9.33	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC7331 U	(14) NGC7331	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			1800.0 Secs [=>(Split 1)] [=>(Split 2)]	[1]
	2	NGC7331 V	(14) NGC7331	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=0.5			200.0 Secs [=>(Split 1)] [=>(Split 2)]	[1]
	3	NGC7331 U	(14) NGC7331	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=.5			1800.0 Secs [=>(Split 1)] [=>(Split 2)]	[2]
	4	NGC7331 V	(14) NGC7331	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=0.5			200.0 Secs [=>(Split 1)] [=>(Split 2)]	[2]



Proposal 11128 - Visit 22 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:10 GMT 2008

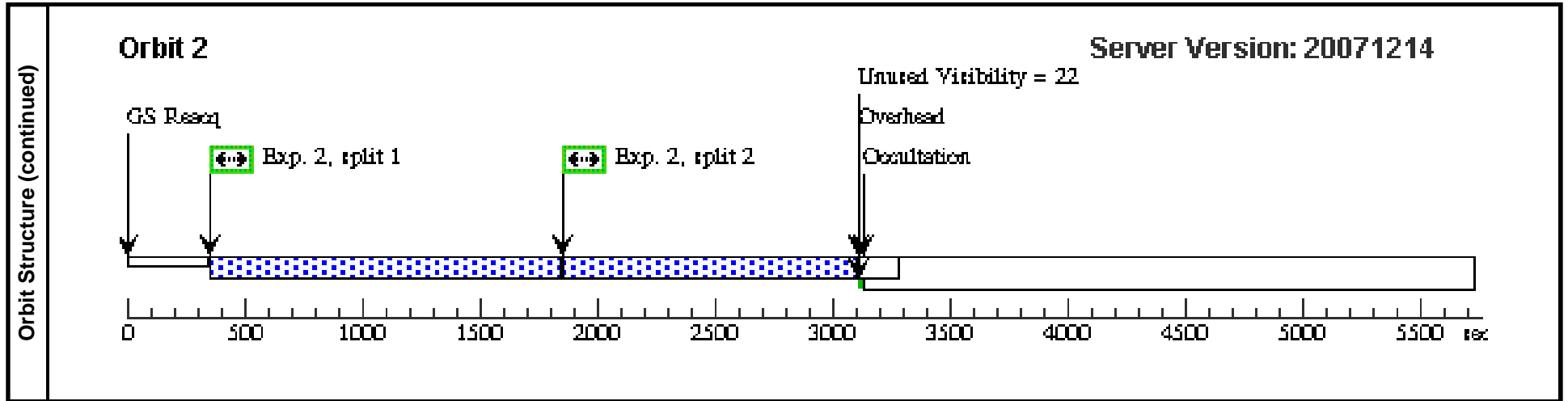
Visit	Proposal 11128, Visit 22, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: ORIENT 308.8D TO 328.0 D									
	Fixed Targets	# Name (15) NGC4151	Target Coordinates RA: 12 10 32.6000 (182.6358333d) Dec: +39 24 21.00 (39.40583d) Equinox: J2000	Targ. Coord. Corrections	Fluxes V=10.53	Miscellaneous Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC4151 B	(15) NGC4151	WFPC2, IMAGE, PC1-FIX	F450W	CR-SPLIT=0.5			800.0 Secs [=>(Split 1)] [=>(Split 2)]	[1]



Proposal 11128 - Visit 23 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:10 GMT 2008

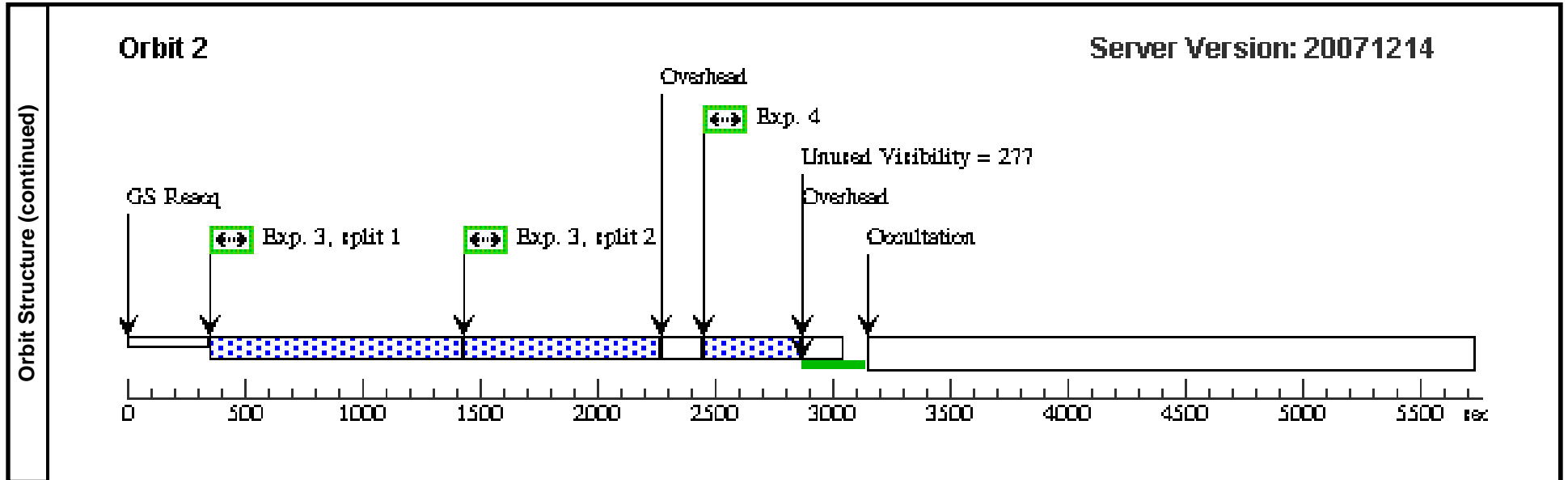
Visit	Proposal 11128, Visit 23, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: ORIENT 123.0D TO 183.0 D										
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
(16)		NGC4380	RA: 12 25 22.2000 (186.3425000d) Dec: +10 01 1.00 (10.01694d) Equinox: J2000		V=11.64	Reference Frame: ICRS					
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
	1	NGC4380 U (16) NGC4380	(16) NGC4380	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			2630.0 Secs		
									[==>1200.0 Secs (Split 1)]	[1]	
									[==>1200.0 Secs (Split 2)]		
	2	NGC4380 U (16) NGC4380	(16) NGC4380	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			2630.0 Secs		
									[==>1200.0 Secs (Split 1)]	[2]	
									[==>1200.0 Secs (Split 2)]		
Orbit Structure	<p>Orbit 1 Server Version: 20071214</p> <p>Timeline labels: GS Acq, Expt. 1, split 1, Expt. 1, split 2, Occultation, Overhead, Unused Visibility = 22</p> <p>X-axis: 0, 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500 sec.</p>										
	<p>Diagram description: The diagram shows a horizontal timeline from 0 to 5500 seconds. A blue hatched bar represents the observation period, starting at approximately 400 seconds and ending at 3100 seconds. Two green boxes with double-headed arrows indicate the split exposures: 'Expt. 1, split 1' from 400s to 1200s, and 'Expt. 1, split 2' from 1200s to 1800s. A vertical arrow at 3100s marks the start of 'Occultation', and another at 3200s marks 'Overhead'. A small gap at the end of the observation period is labeled 'Unused Visibility = 22'.</p>										



Proposal 11128 - Visit 24 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:11 GMT 2008

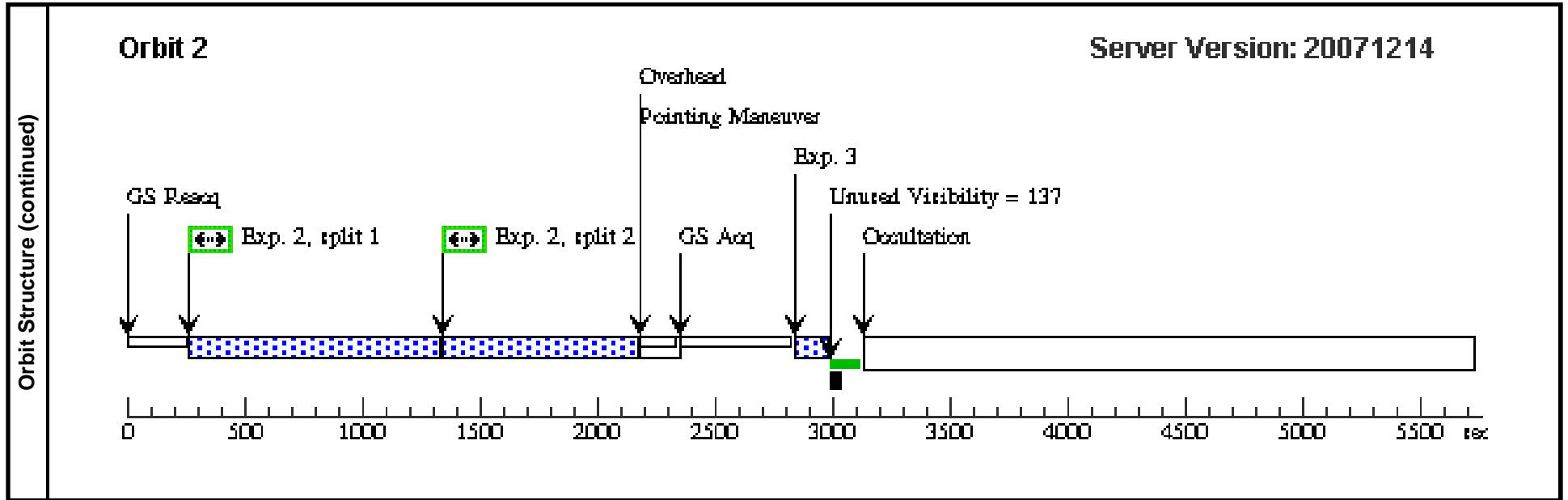
Visit	Proposal 11128, Visit 24, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
(17)		NGC7217	RA: 22 07 52.4000 (331.9683333d) Dec: +31 21 33.00 (31.35917d) Equinox: J2000		V=10.15	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC7217 U	(17) NGC7217	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=.5			1750.0 Secs [=>800.0 Secs (Split 1)] [=>800.0 Secs (Split 2)]	[1]
	2	NGC7217 B	(17) NGC7217	WFPC2, IMAGE, PC1-FIX	F450W				400.0 Secs [=>400.0 Secs]	[1]
	3	NGC7217 U	(17) NGC7217	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			1750.0 Secs [=>800.0 Secs (Split 1)] [=>800.0 Secs (Split 2)]	[2]
	4	NGC7217 B	(17) NGC7217	WFPC2, IMAGE, PC1-FIX	F450W				200.0 Secs [=>260.0 Secs]	[2]
Orbit Structure	<p>Orbit 1 Server Version: 20071214</p> <p>The diagram shows a horizontal timeline from 0 to 5500 seconds. Key events are marked with arrows: GS Acq at 0s, Expt. 1 split 1 (400s), Expt. 1 split 2 (1400s), Expt. 2 (2400s), and Occultation (3000s). Overhead periods are shown between exposures. A green bar at the end indicates 'Unused Visibility = 157'.</p>									



Proposal 11128 - Visit 28 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:11 GMT 2008

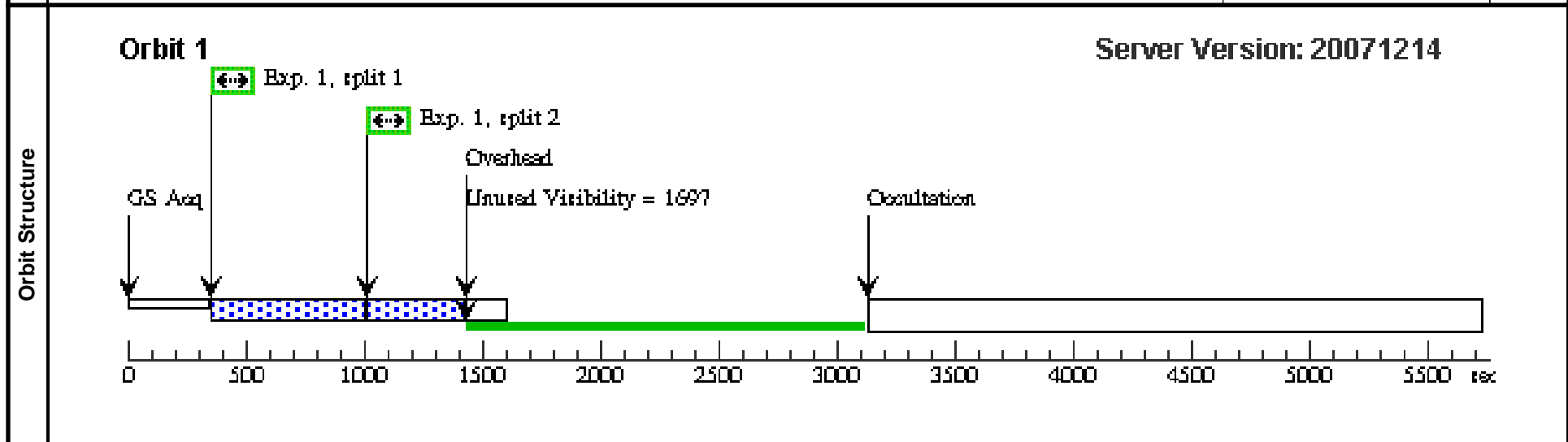
Visit	Proposal 11128, Visit 28, implementation Diagnostic Status: No Diagnostics Scientific Instruments: NIC2, WFPC2 Special Requirements: ORIENT 140.0D TO 200.0 D									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(19)	NGC4698	RA: 12 48 23.0000 (192.0958333d) Dec: +08 29 16.00 (8.48778d) Equinox: J2000		V=10.63	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC4698 U	(19) NGC4698	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5	GS ACQ SCENARI O ONEBITNS		1750.0 Secs [==>1200.0 Secs (Split 1)] [==>1200.0 Secs (Split 2)]	[1]
	2	NGC4698 U	(19) NGC4698	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			1750.0 Secs [==>800.0 Secs (Split 1)] [==>800.0 Secs (Split 2)]	[2]
	3	NGC4698 H	(19) NGC4698	NIC2, MULTIACCUM, NIC2	F160W	SAMP-SEQ=STEP2 56; NSAMP=10			[==>]	[2]
Orbit Structure	<p>Orbit 1 Server Version: 20071214</p> <p>The diagram illustrates the timing of observations within Orbit 1. The x-axis represents time in seconds, ranging from 0 to 5500. Key events are marked: 'GS Acq' at the start, 'Exp. 1, split 1' (green box) at approximately 300s, 'Exp. 1, split 2' (green box) at approximately 1800s, 'Unused Visibility = 100' at 3000s, 'Overhead' at approximately 3100s, and 'Occultation' at approximately 3200s. A blue checkered bar indicates the active observation period from roughly 300s to 5500s.</p>									



Proposal 11128 - Visit 30 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:11 GMT 2008

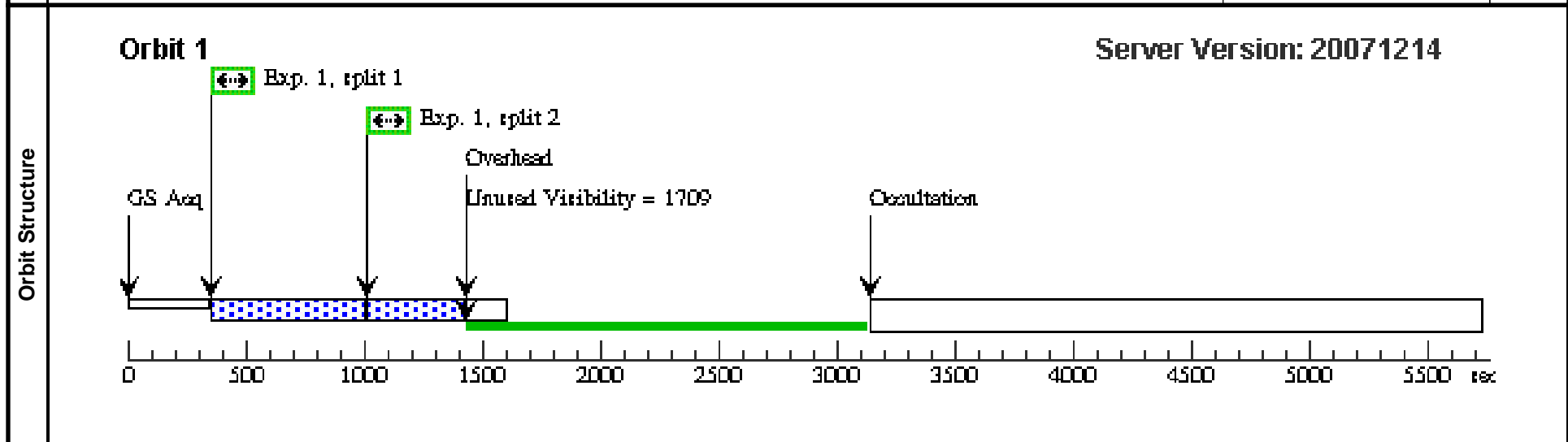
Visit	Proposal 11128, Visit 30, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)						
	Fixed Targets	# Name (20) NGC1068	Target Coordinates RA: 02 42 40.7000 (40.6695833d) Dec: -00 00 48.00 (-.01333d) Equinox: J2000	Targ. Coord. Corrections	Fluxes V=8.96	Miscellaneous Reference Frame: ICRS	
Exposures	# Label Target 1 NGC1068 B (20) NGC1068	Config,Mode,Aperture WFPC2, IMAGE, PC1-FIX	Spectral Els. F450W	Opt. Params. CR-SPLIT=0.5	Special Reqs. Groups	Exp. Time/[Actual Dur.] 800.0 Secs [==>(Split 1)] [==>(Split 2)]	Orbit [1]



Proposal 11128 - Visit 31 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:12 GMT 2008

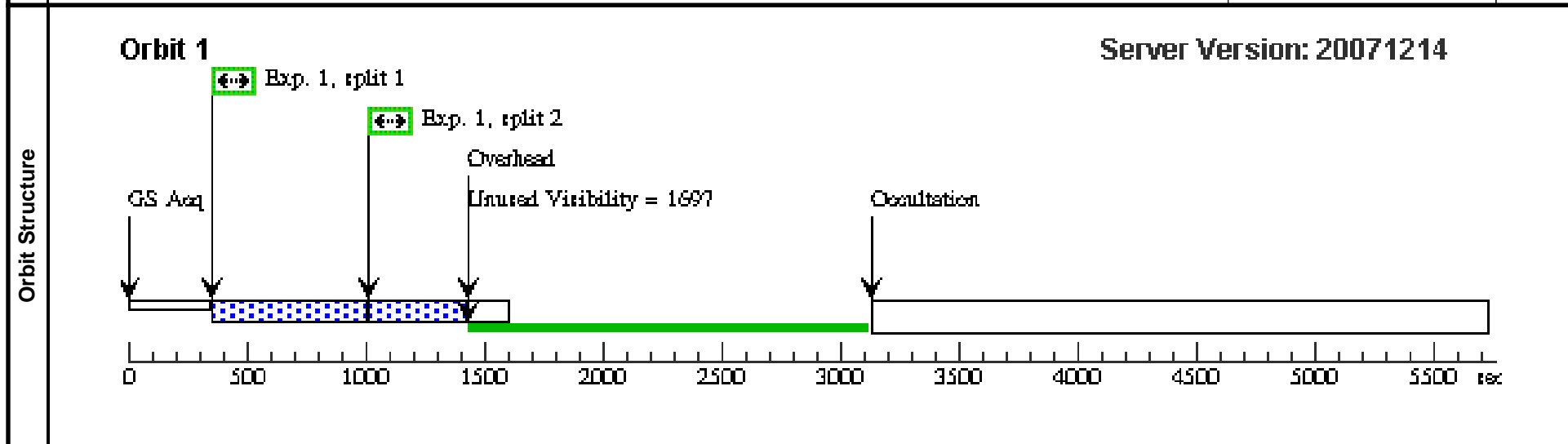
Visit	Proposal 11128, Visit 31, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: ORIENT 256.0D TO 276.0 D									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(21)	NGC7177	RA: 22 00 41.2000 (330.1716667d) Dec: +17 44 17.00 (17.73806d) Equinox: J2000		V=11.05	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	NGC7177 B (21) NGC7177		WFPC2, IMAGE, PC1-FIX	F450W	CR-SPLIT=.5			800.0 Secs [==>(Split 1)] [==>(Split 2)]	[1]



Proposal 11128 - Visit 32 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:12 GMT 2008

Visit	Proposal 11128, Visit 32, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: (none)						
	Fixed Targets	# Name (22) NGC5248	Target Coordinates RA: 13 37 31.9400 (204.3830833d) Dec: +08 53 11.30 (8.88647d) Equinox: J2000	Targ. Coord. Corrections	Fluxes V=10.2	Miscellaneous Reference Frame: ICRS	
Exposures	# Label Target 1 NGC5248 B (22) NGC5248	Config,Mode,Aperture WFPC2, IMAGE, PC1-FIX	Spectral Els. F450W	Opt. Params. CR-SPLIT=0.5	Special Reqs. Groups	Exp. Time/[Actual Dur.] 800.0 Secs [==>(Split 1)] [==>(Split 2)]	Orbit [1]



Proposal 11128 - Visit 33 - Time Scales Of Bulge Formation In Nearby Galaxies

Fri Jan 18 02:38:12 GMT 2008

Visit	Proposal 11128, Visit 33, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: ORIENT 182.0D TO 202.0 D										
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
(23)		NGC4569	RA: 12 36 50.0000 (189.2083333d) Dec: +13 09 45.00 (13.16250d) Equinox: J2000		V=9.38	Reference Frame: ICRS					
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
	1	NGC4569 U (23) NGC4569	(23) NGC4569	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			1750.0 Secs		
									[==>1200.0 Secs (Split 1)]	[1]	
									[==>1200.0 Secs (Split 2)]		
	2	NGC4569 U (23) NGC4569	(23) NGC4569	WFPC2, IMAGE, PC1-FIX	F336W	CR-SPLIT=0.5			1750.0 Secs		
									[==>1200.0 Secs (Split 1)]	[2]	
									[==>1200.0 Secs (Split 2)]		
Orbit Structure	<p>Orbit 1 Server Version: 20071214</p> <p>The diagram shows a horizontal timeline from 0 to 5500 seconds. Key events are marked with arrows: GS Acq at 0s, Expt. 1 split 1 (1200-1800s), Expt. 1 split 2 (1800-3100s), Occultation at 3100s, and Overhead at 3100s. A blue dotted bar indicates the active observation period. A vertical line at 3100s marks the end of the observation period, with 'Unused Visibility = 22' indicated for the remainder of the orbit up to 5500s.</p>										
	<p>Timeline labels: GS Acq, Expt. 1, split 1, Expt. 1, split 2, Occultation, Overhead, Unused Visibility = 22.</p> <p>X-axis: 0, 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500 sec.</p>										

