



10569 - A Last Look at the First Gravitational Lens

Cycle: 14, Proposal Category: GO

(Availability Mode: AVAILABLE)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Dr. Charles R. Keeton (PI)	Rutgers the State University of New Jersey	keeton@physics.rutgers.edu
Dr. Gary Bernstein (CoI)	University of Pennsylvania	garyb@physics.upenn.edu

VISITS

<i>Visit</i>	<i>Targets</i>	<i>Configurations</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) Q0957+561	ACS/WFC	3	26-Jul-2005 21:16:54.0	yes
02	(1) Q0957+561	ACS/WFC	3	26-Jul-2005 21:17:27.0	yes
03	(1) Q0957+561	ACS/WFC	3	26-Jul-2005 21:17:53.0	yes
04	(1) Q0957+561	ACS/WFC	3	26-Jul-2005 21:18:20.0	yes
05	(3) HD237859 (4) HD237859-OFFSET	ACS/WFC	3	26-Jul-2005 21:19:52.0	yes
06	(2) NGC104	ACS/WFC	1	26-Jul-2005 21:20:34.0	yes

16 Total Orbits Used

ABSTRACT

Strong gravitational lensing provides our best probe of the behavior of dark matter in galaxy halos and their substructure. We undertake ACS imaging to gain new strong and weak lensing data for the first-discovered lens system Q0957+561. We will make a weak lensing image spanning 6'

to map the potential of the cluster around the lens galaxy, and simultaneously obtain a deep image of more than 10 multiply-imaged features in the strong lensing region. This will complete HST's legacy dataset for Q0957+561: a deep multicolor image of a rich multiple-image system, an extremely high-quality weak lensing map, and an existing deep NICMOS image of the Einstein ring. We will combine these three kinds of data into a single lens model--a first--to produce a sophisticated dark matter map that will provide a uniquely detailed view of the relation between visible and dark matter on galaxy scales, and the best available constraints on dark substructure. In addition, the best available H_0 measurement from lensing will potentially allow us to leverage the WMAP data into a more precise measurement of dark energy properties as well. Astrophysics with strong lensing depends crucially on HST's unique capability for precise, well-resolved observations of low-surface-brightness structures next to bright objects, so it is a high priority to address outstanding questions before the demise of HST.

OBSERVING DESCRIPTION

The observations must produce two different images: (1) a "strong lensing" (SL) image, spanning the central 10 arcsec region where all multiply-imaged sources appear; and (2) a "weak lensing" (WL) image spanning the ~ 6 arcmin diameter over which the cluster convergence κ is $> \sim 2\%$ (to keep the uncertainty in H_0 from the cluster mass sheet degeneracy below $\sim 2\%$). Both programs require highest S/N in a primary filter, which we choose to be F606W because its broad bandwidth and high efficiency yield the lowest noise. Both programs also require basic color information, so we choose F814W for its high efficiency and a significant wavelength baseline from F606W. Our general scheme is to obtain the SL and WL data simultaneously by constructing a 2x2 mosaic of ACS pointings that overlap by ~ 30 arcsec. Each of the four pointings is allocated 2 CVZ orbits in F606W and one CVZ orbit in F814W, with subpixel dithering at each pointing. Hence the WL image will span 6 arcmin with 7.7 ksec exposure in F606W plus 3.8 ksec in F814W. The central region will have 31 ksec in F606W plus 15 ksec in F814W, with extensive dithering allowing us to resolve aliasing without the need to use the HRC. Additional PSF-mapping exposures add 4 more orbits to the program, yielding a total of 16 orbits. We now describe the quantitative requirements imposed on the WL and SL imaging by the science, and how our program meets them.

The richness and complexity of the strong lensing in the system make it impossible for us to predict quantitatively the accuracy in H_0 or substructure constraints that will result from any particular set of ACS observations. There is also an element of surprise in what will appear in better images. Thus, we cannot set precise specifications for the SL imaging, but we can make some educated guesses. (1) We must significantly reduce the surface brightness noise levels compared the previous STIS 50CCD image of the system (GO-7332, PI Bernstein), in order to confidently detect

Proposal 10569 - Overview

and measure the lensed structures that are marginally visible in the STIS image. (2) We must execute Poisson-limited subtraction of the two quasar images over the maximum possible fraction of the image. (3) We must obtain color information on the lensed features in order to distinguish substructure anomalies from differential extinction. The noise requirement (1) can be evaluated by ETC estimations, or by measuring the STIS image itself and comparing to ACS F606W from a separate program (GO-9433, PI Bernstein). In either case we find that ~30 ksec of F606W time will meet that stated goal. Note that the surface brightness at the locations of the arcs has contributions from G1 and from scattered quasar light that are as bright as the zodiacal background; also, we do not know the color of the arcs, and we are hoping to discover new features about which we presently know nothing. So it is not possible to provide a more exact S/N calculation than this rough goal of lowering the noise by 0.5 AB mag. The 15 ksec of F814W exposure in the central region will give us good colors for all but the faintest objects detected in F606W, meeting requirement (2).

Our experience with STIS indicates that proper PSF subtraction requires contemporaneous, dithered exposures of a bright template star at each CCD location of a quasar. We use a star of g-i color similar to the quasars', and schedule a series of short dithered exposures at each of the eight CCD locations where quasars will be imaged, plus additional exposures in F814W and of varying exposure lengths to improve the dynamic range. That requires 128 short exposures. While the exposure time can be made short by selecting a sufficiently bright star, we will accumulate a lot of overhead. By choosing a star accessible in the CVZ, and by using WFC subarrays to avoid crushing serial-dump overheads, we can acquire the PSF stars in 3 orbits. (Note that our mosaic naturally places the quasars near an output amplifier of the WFC in each exposure.)

The figure of merit for a WL image is the density of measured background galaxy shapes. The existing ground-based image has 30 galaxies per square arcmin, and yielded the mean surface density $\kappa_{\{30\}}$ in the central 30 arcsec region to be 0.26 ± 0.08 . Since $H_0 \propto (1 - \kappa_{\{30\}})$, we can reduce the H_0 uncertainty due to the mass-sheet degeneracy to <5% if we can increase the lensing S/N ratio by at least a factor two, which requires quadrupling the background galaxy density. Our latest WL techniques, when applied to the GOODS 5.2 ksec F606W images, yield 140 galaxies per square arcmin, meeting our criterion. The 7.7 ksec F606W images we seek will allow for some periods of high earthshine background in the CVZ and some safety factor in the galaxy counts. The F814W time allocated should suffice for identifying "red-sequence" galaxies at low redshift, which can then be eliminated from the lensing analysis. We note that in the central 30 arcsec we should find ~300 galaxies per square arcmin, which will allow a higher-resolution WL map in this critical central area.

We allocate one additional orbit to exposures of a field peripheral to 47 Tuc in order to generate a PSF map contemporaneous to the Q0957+561

Proposal 10569 - Overview

exposures. This is necessary for an accurate WL analysis.

CVZ orbits tend to have higher earthshine levels than regular orbits. For the SL image, this does not matter because the background near the arcs is dominated by scattered quasar light rather than zodiacal light anyway. The CVZ is efficient for the WL image, too: we divide the orbit into many exposures, and we can discard or downweight those few taken in the brightest portions of the orbit. We still end up well ahead of a regular orbit.

ADDITIONAL COMMENTS

Our program was approved for CVZ orbits in Phase I. Unfortunately, APT now says that orbits with truly continuous visibility are not available. There is at least one observing window in Cycle 14 with nearly continuous visibility (science time as high as 88.9 minutes per orbit), and we have successfully constructed our program using these near-CVZ orbits. We emphasize that near-CVZ orbits are crucial for meeting our science goals.

(Note that Orbit Planner gives warnings about visibility overruns because our orbits exceed the nominal 48 minute standard orbit, but Visit Planner processes the program without error.)

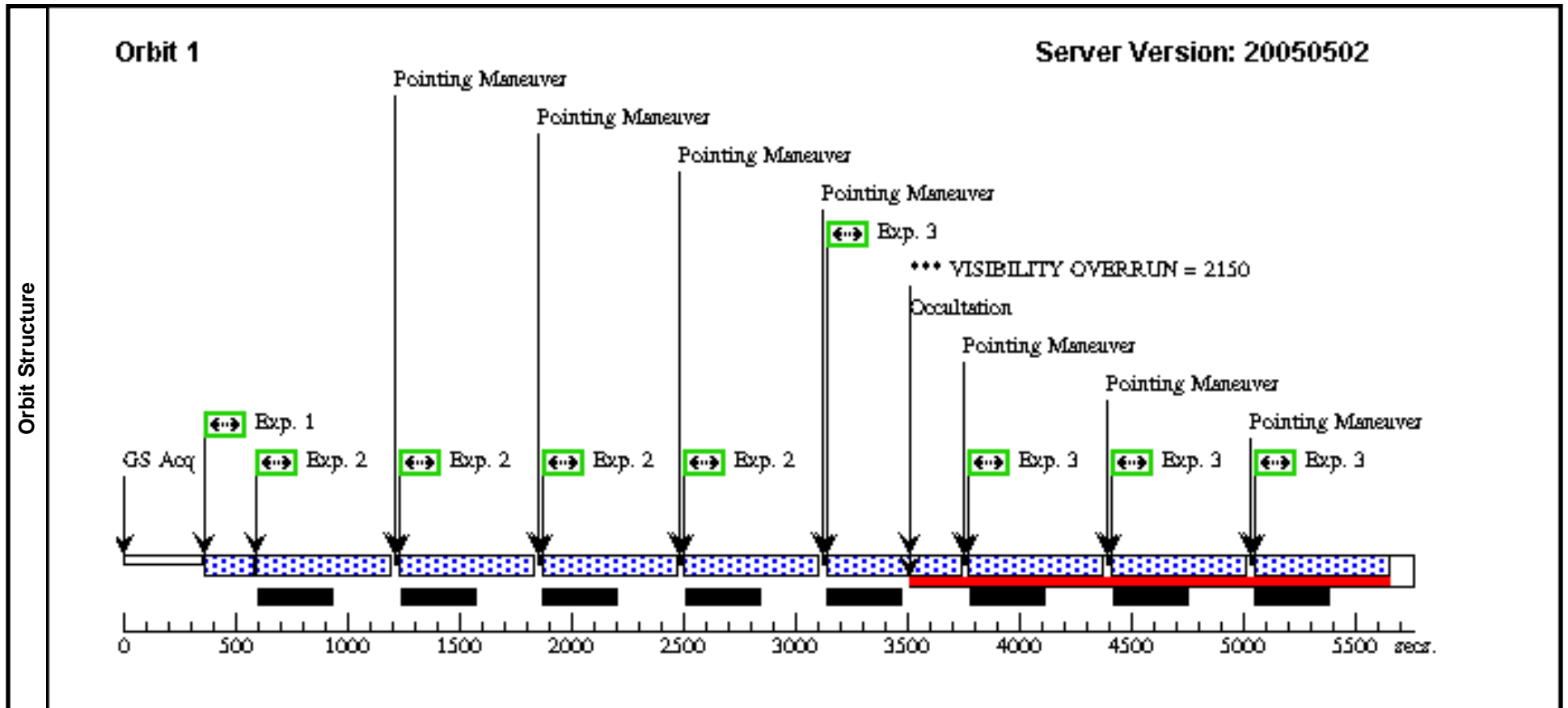
Proposal 10569 - Visit 01 - A Last Look at the First Gravitational Lens

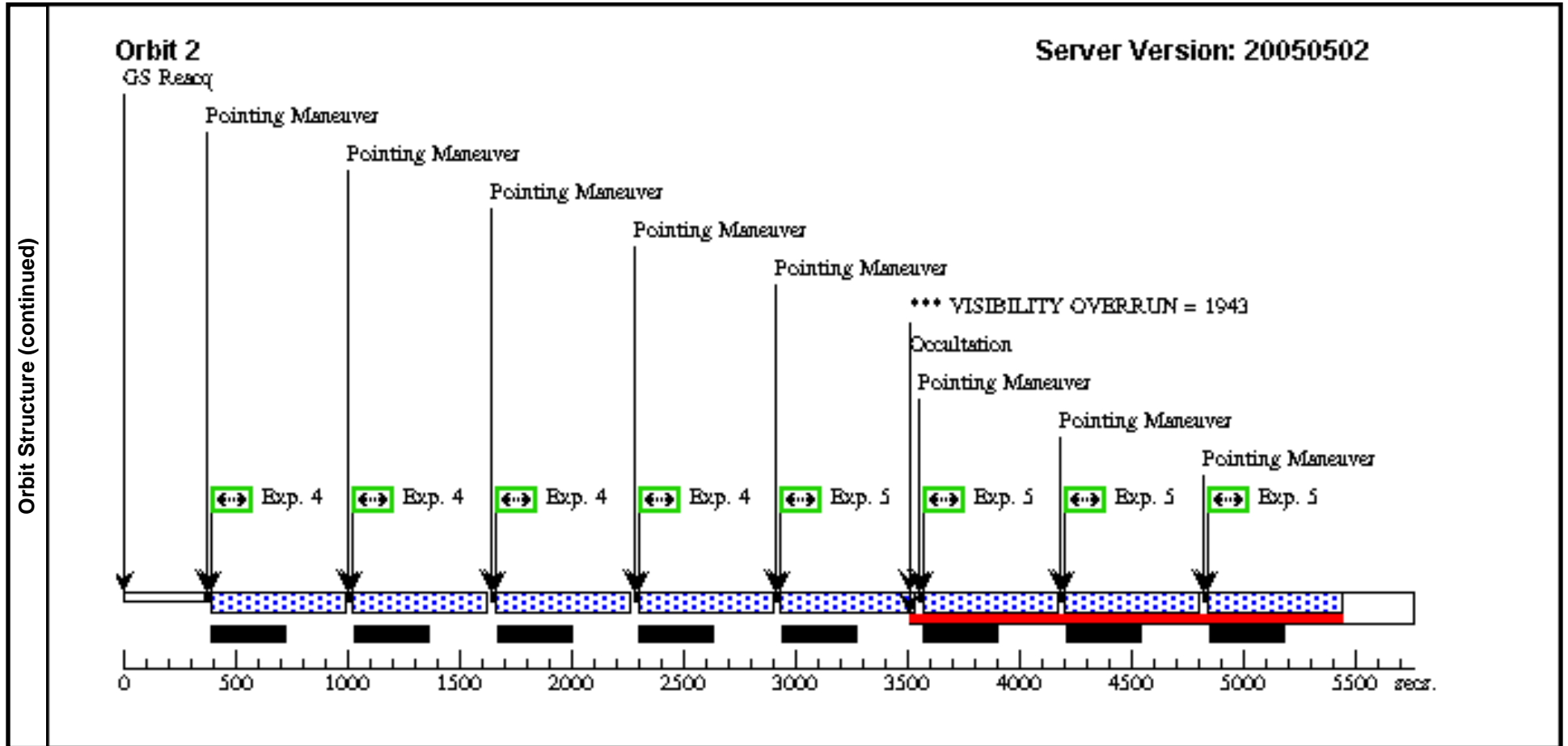
Wed Jul 27 01:20:36 GMT 2005

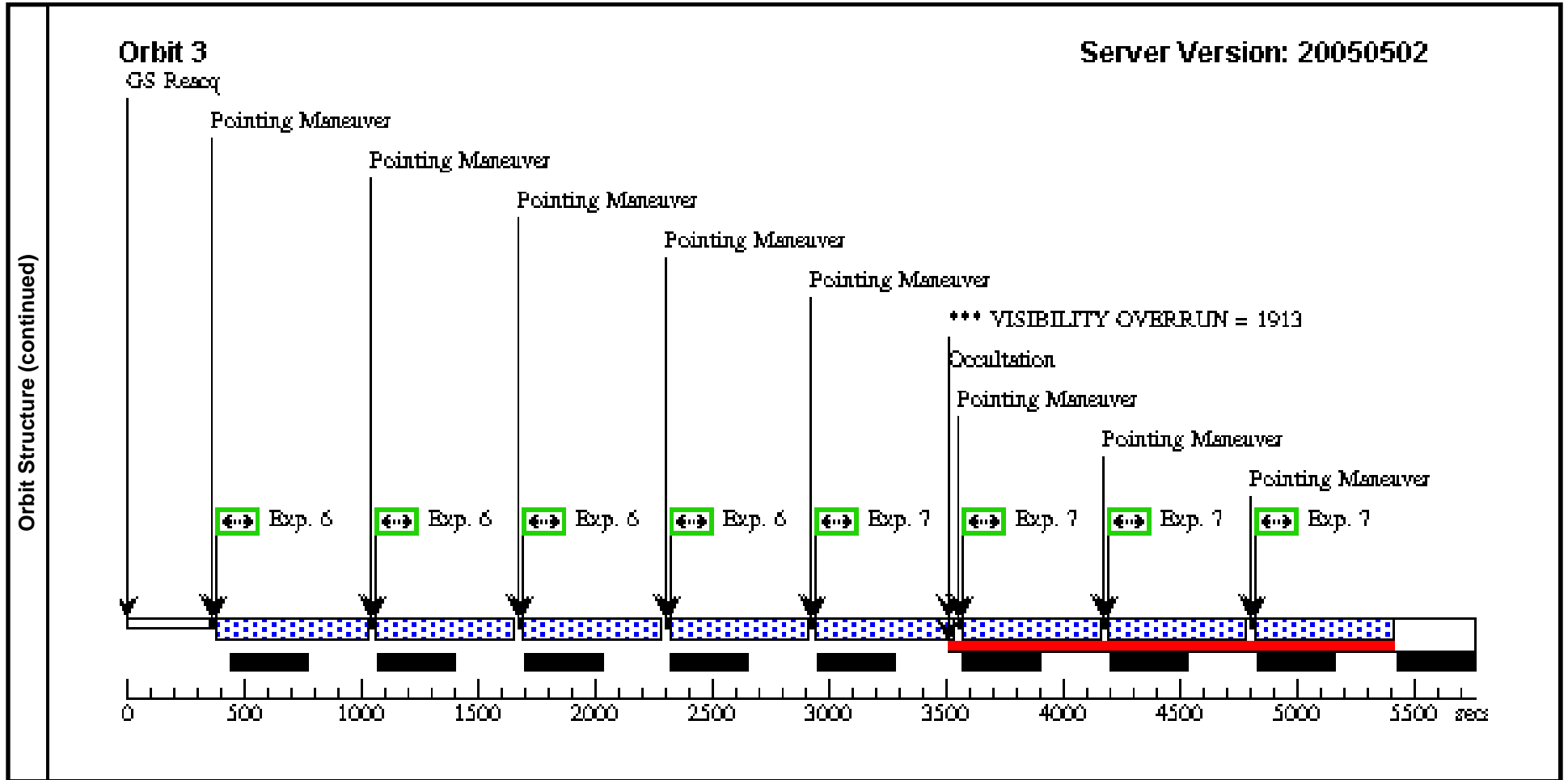
Visit	Proposal 10569, Visit 01 Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: GROUP 01,02,03,04,05,06 WITHIN 18.0D									
	Diagnostics	(Visit 01) Warning: VISIBILITY OVERRUN								
(Visit 01) Warning: VISIBILITY OVERRUN										
(Visit 01) Warning: VISIBILITY OVERRUN										
(Visit 01) Warning: VISIBILITY OVERRUN										
(Visit 01) Warning: VISIBILITY OVERRUN										
(Visit 01) Warning: VISIBILITY OVERRUN										
(Visit 01) Warning: VISIBILITY OVERRUN										
(Visit 01) Warning: VISIBILITY OVERRUN										
(Visit 01) Warning: VISIBILITY OVERRUN										
(Visit 01) Warning: VISIBILITY OVERRUN										
Patterns	#	Primary Pattern				Secondary Pattern			Exposures	
	(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false				(2), (3), (4), (5), (6), (7)			
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous			
	(1)	Q0957+561	RA: 10 01 20.7800 (150.3365833d) Dec: +55 53 55.35 (55.89871d) Equinox: J2000 Plate Id: (?)			V=17.1	Coordinate Source: NED			
<i>Comments: This object was generated by the targetselector and retrieved from the NED database. We then adjusted the coordinates by hand to match the position of quasar A.</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) Q0957+561		ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG -80.22,2 4.44		10.0 Secs	
									[==>]	[1]
	2	(1) Q0957+561		ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG -80.22,2 4.44	Pattern 2-2 (1)	480.0 Secs	
								[==>(Pattern 1)]		
								[==>(Pattern 2)]		
								[==>(Pattern 3)]		
								[==>(Pattern 4)]	[1]	

Proposal 10569 - Visit 01 - A Last Look at the First Gravitational Lens

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
Exposures (continued)	3	(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG -80.22,2 4.44	Pattern 3-3 (1)	480.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	4	(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG -80.22,2 4.44	Pattern 4-4 (1)	480.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	5	(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG -80.22,2 4.44	Pattern 5-5 (1)	480.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	6	(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG -80.22,2 4.44	Pattern 6-6 (1)	470.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]
	7	(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG -80.22,2 4.44	Pattern 7-7 (1)	470.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]







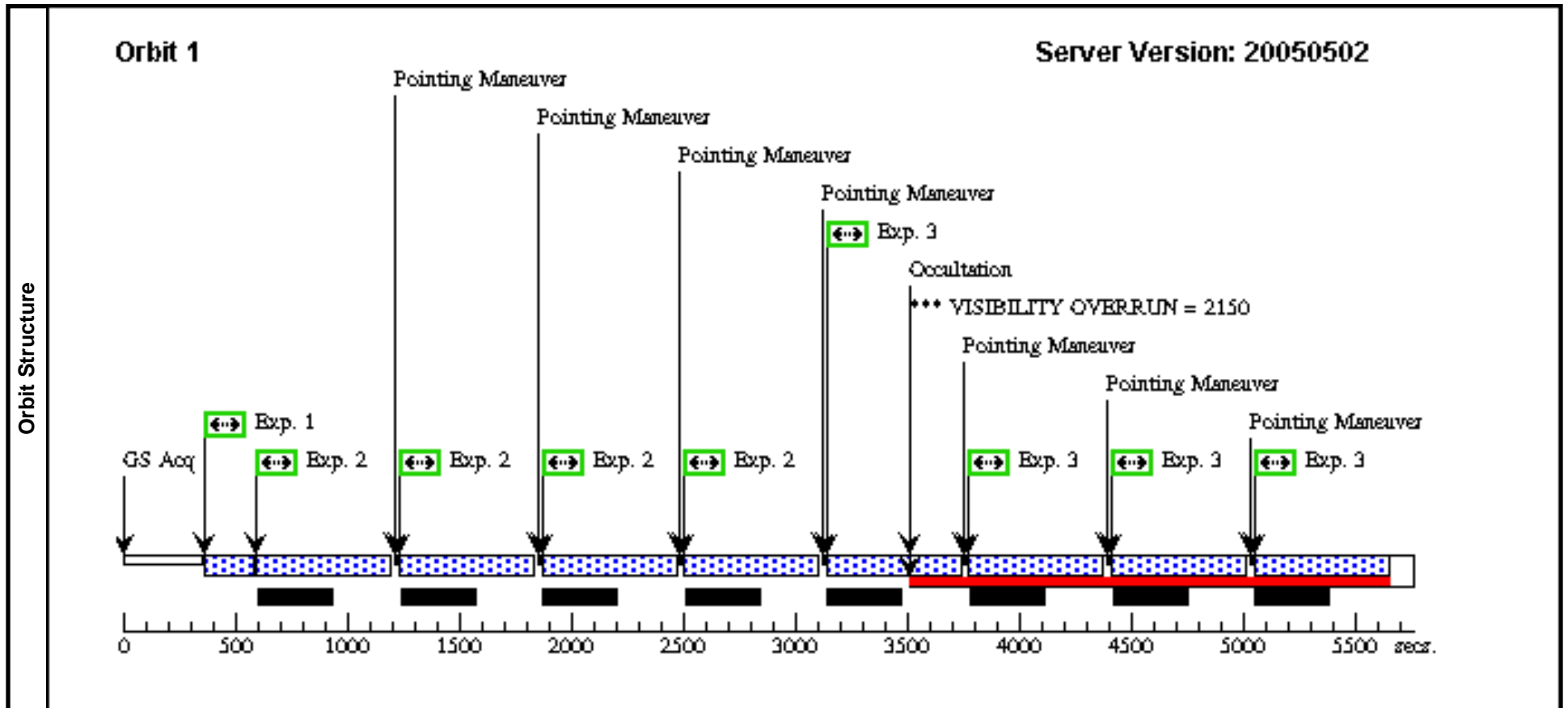
Proposal 10569 - Visit 02 - A Last Look at the First Gravitational Lens

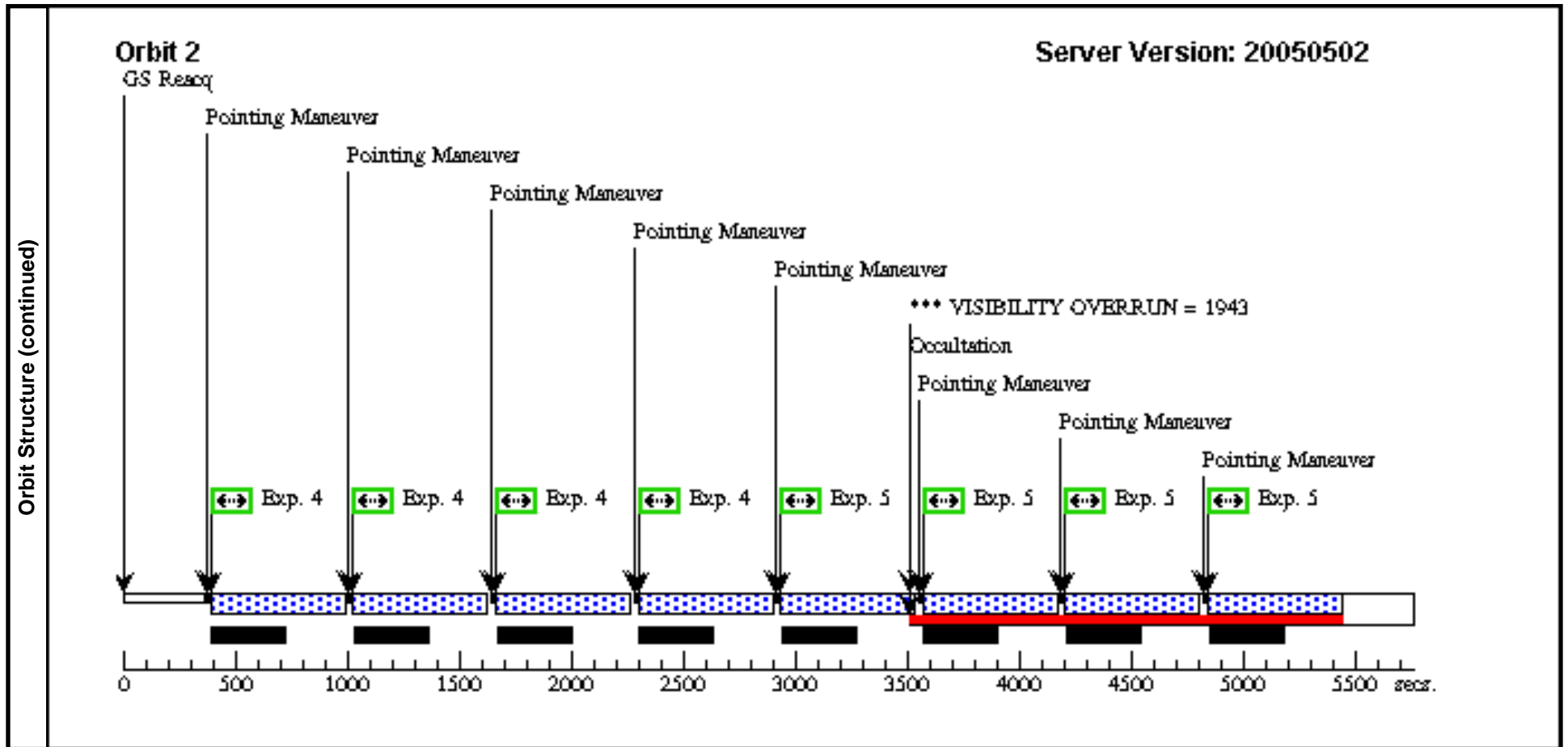
Wed Jul 27 01:20:39 GMT 2005

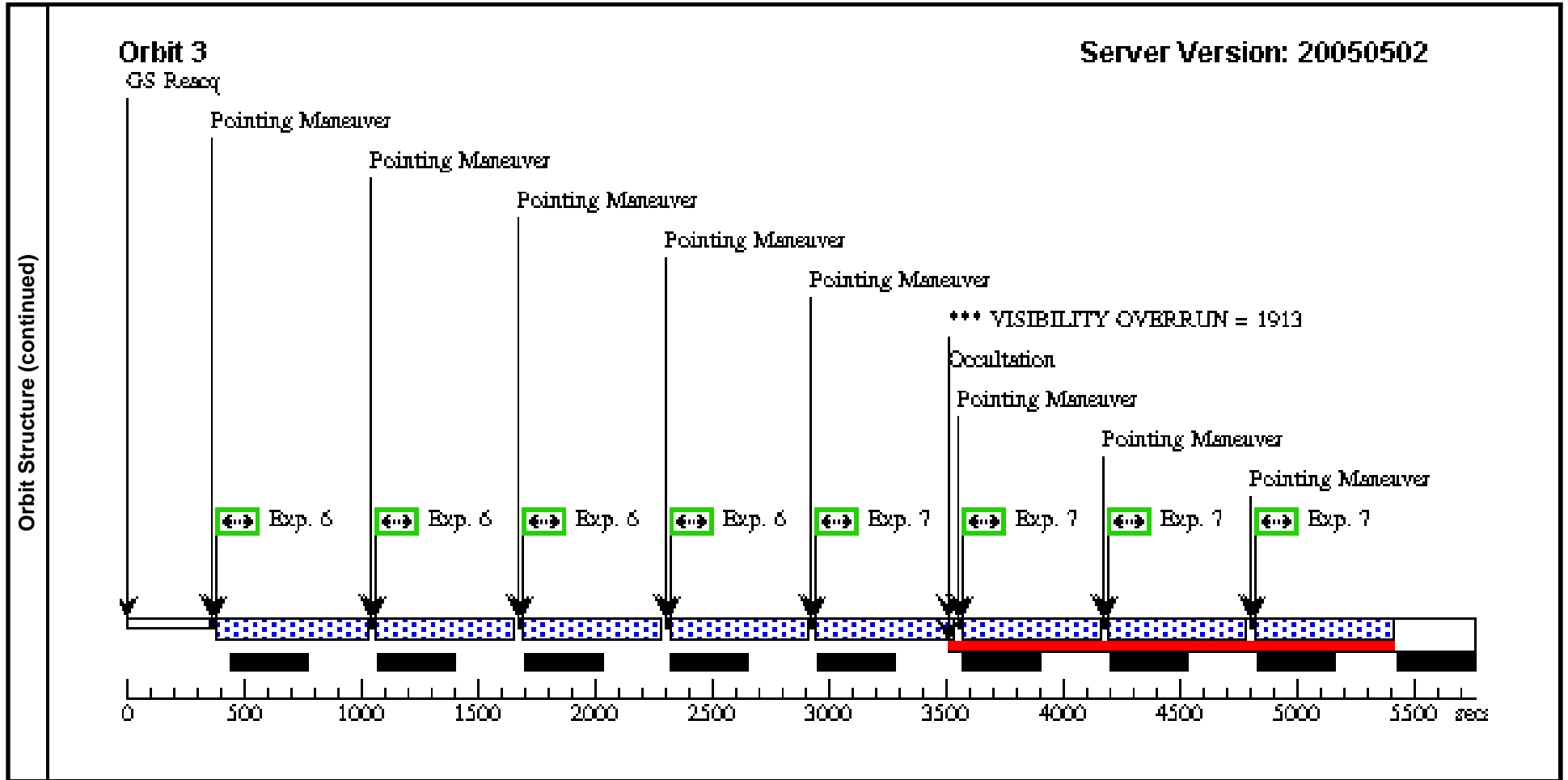
Visit	Proposal 10569, Visit 02 Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: SAME ORIENT AS 01									
	Diagnostics	(Visit 02) Warning: VISIBILITY OVERRUN								
(Visit 02) Warning: VISIBILITY OVERRUN										
(Visit 02) Warning: VISIBILITY OVERRUN										
(Visit 02) Warning: VISIBILITY OVERRUN										
(Visit 02) Warning: VISIBILITY OVERRUN										
(Visit 02) Warning: VISIBILITY OVERRUN										
(Visit 02) Warning: VISIBILITY OVERRUN										
(Visit 02) Warning: VISIBILITY OVERRUN										
(Visit 02) Warning: VISIBILITY OVERRUN										
(Visit 02) Warning: VISIBILITY OVERRUN										
Patterns	#	Primary Pattern				Secondary Pattern			Exposures	
	(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false				(2), (3), (4), (5), (6), (7)			
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous			
	(1)	Q0957+561	RA: 10 01 20.7800 (150.3365833d) Dec: +55 53 55.35 (55.89871d) Equinox: J2000 Plate Id: (?)			V=17.1	Coordinate Source: NED			
<i>Comments: This object was generated by the targetselector and retrieved from the NED database. We then adjusted the coordinates by hand to match the position of quasar A.</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) Q0957+561		ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG 84.42,40 .77		10.0 Secs	
									[==>]	[1]
	2	(1) Q0957+561		ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG 84.42,40 .77	Pattern 2-2 (1)	480.0 Secs	
								[==>(Pattern 1)]		
								[==>(Pattern 2)]		
								[==>(Pattern 3)]		
								[==>(Pattern 4)]	[1]	

Proposal 10569 - Visit 02 - A Last Look at the First Gravitational Lens

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
Exposures (continued)	3	(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG 84.42,40 .77	Pattern 3-3 (1)	480.0 Secs [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	4	(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG 84.42,40 .77	Pattern 4-4 (1)	480.0 Secs [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[2]
	5	(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG 84.42,40 .77	Pattern 5-5 (1)	480.0 Secs [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[2]
	6	(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG 84.42,40 .77	Pattern 6-6 (1)	470.0 Secs [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[3]
	7	(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG 84.42,40 .77	Pattern 7-7 (1)	470.0 Secs [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[3]







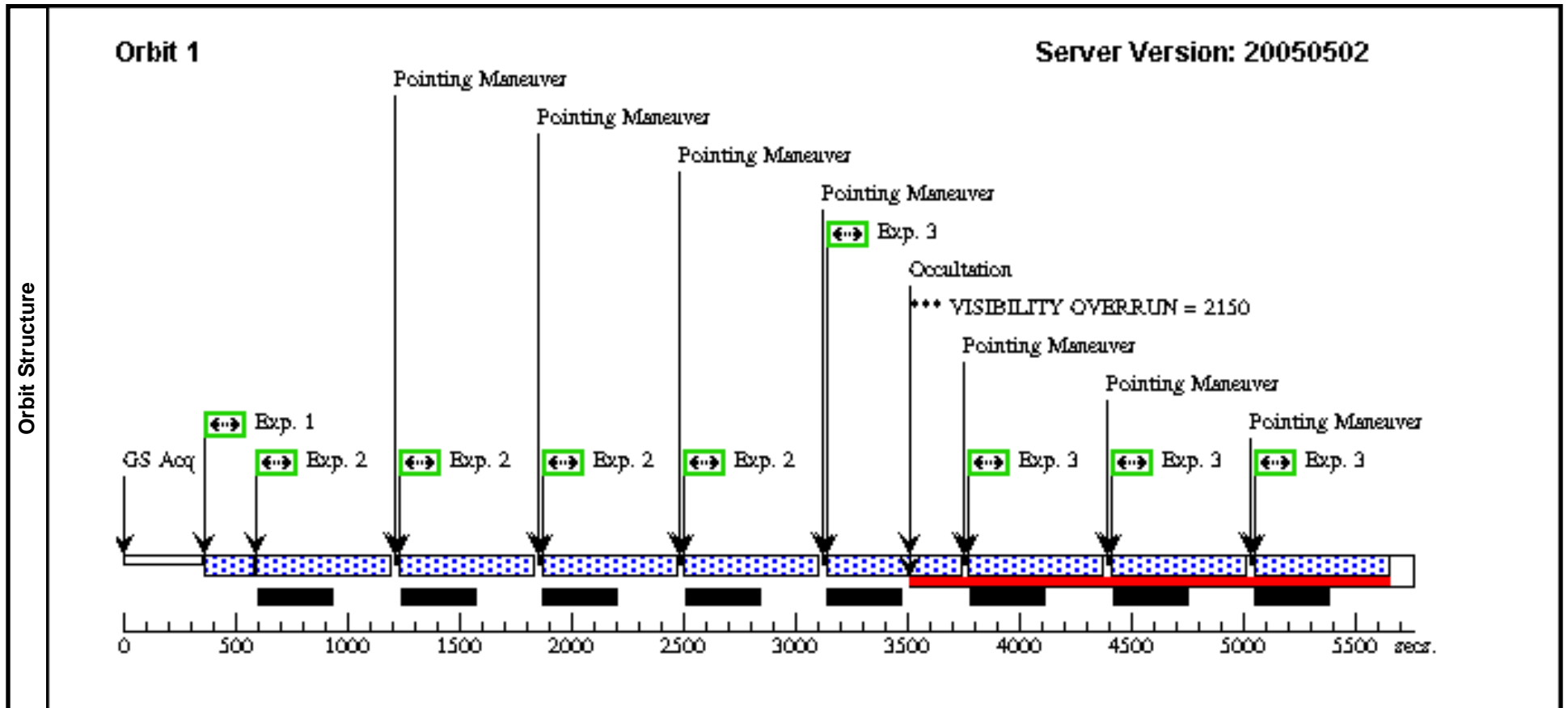
Proposal 10569 - Visit 03 - A Last Look at the First Gravitational Lens

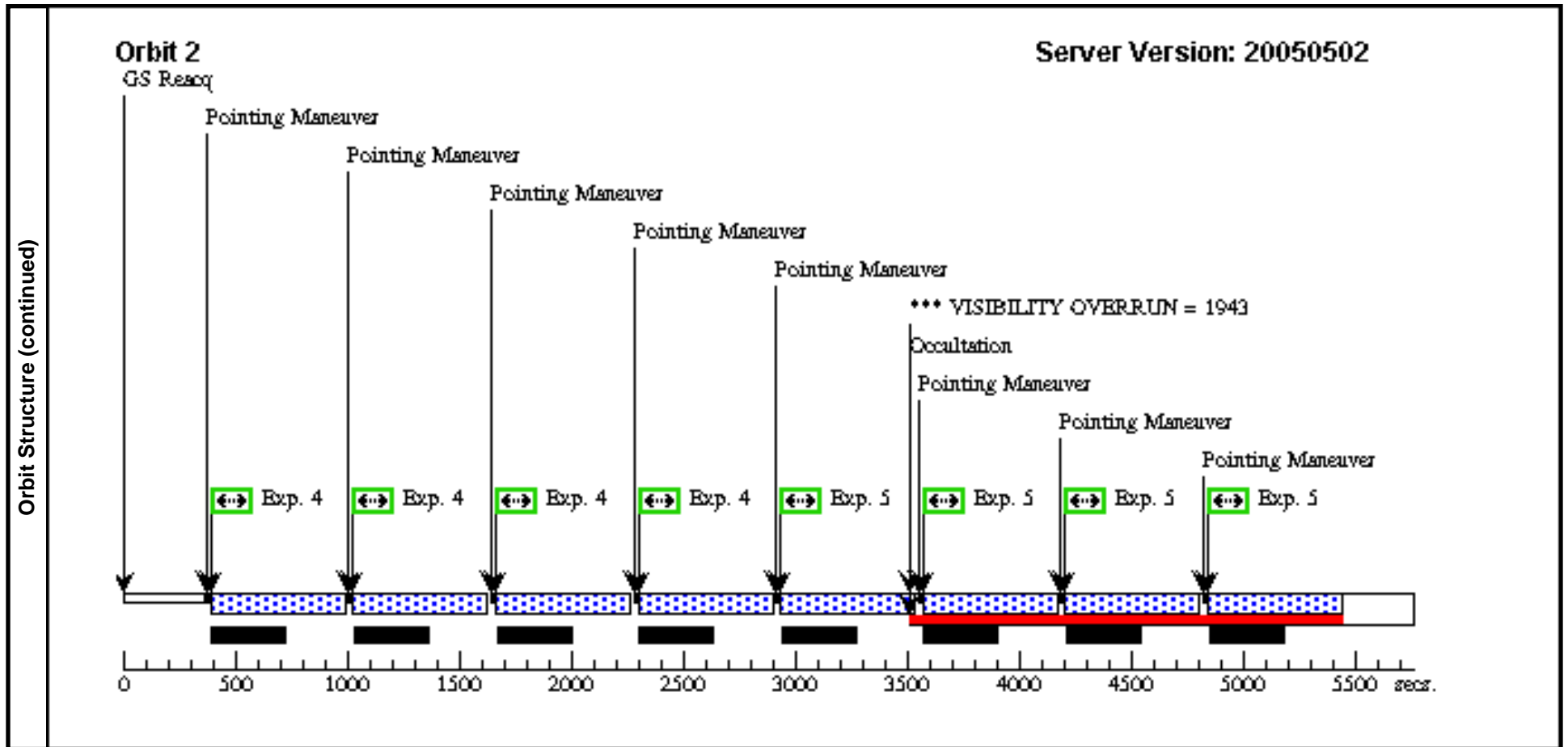
Wed Jul 27 01:20:41 GMT 2005

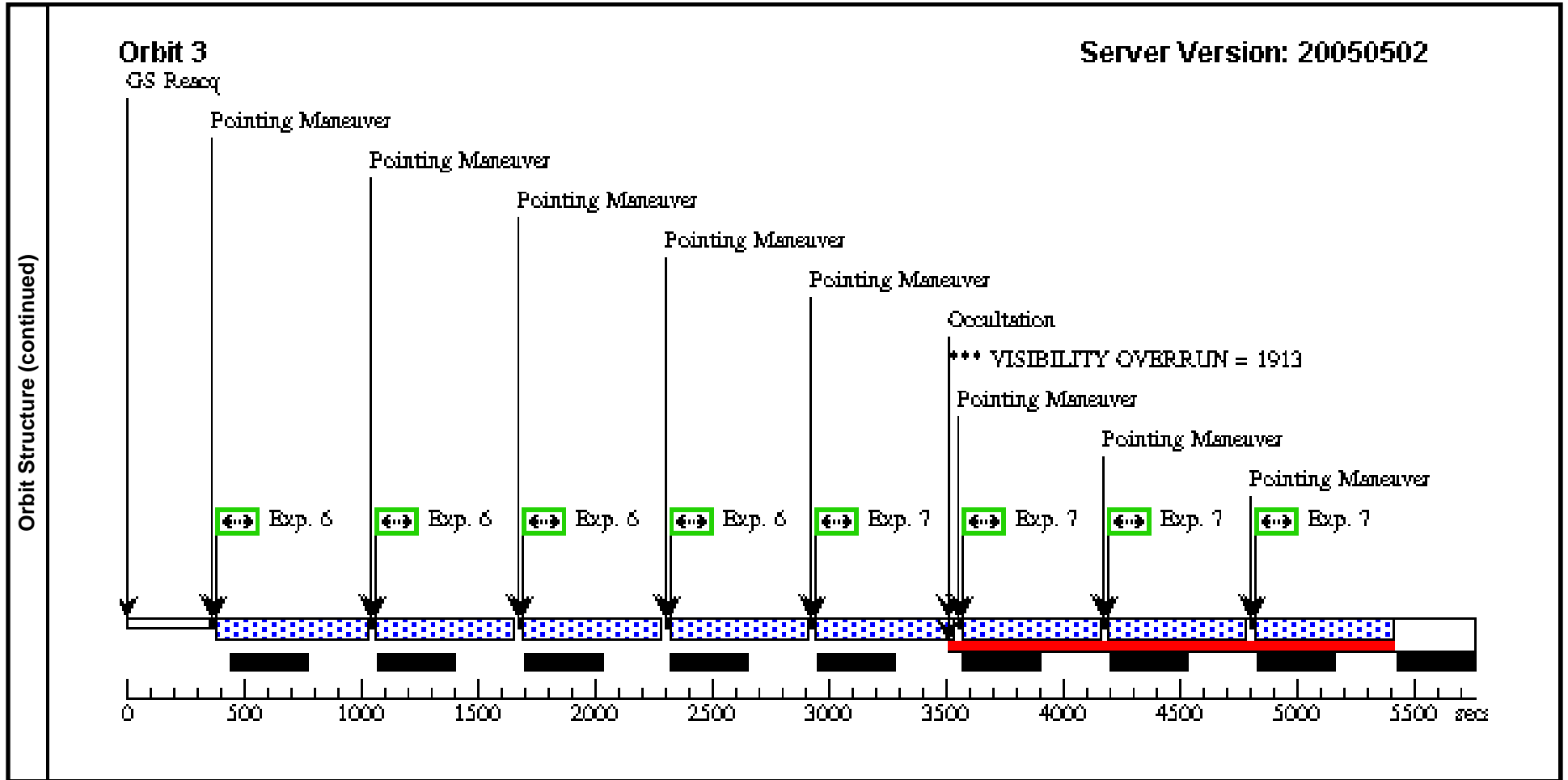
Visit	Proposal 10569, Visit 03 Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: SAME ORIENT AS 01					
	Diagnostics	(Visit 03) Warning: VISIBILITY OVERRUN				
(Visit 03) Warning: VISIBILITY OVERRUN						
(Visit 03) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 03) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 03) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 03) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 03) Warning: VISIBILITY OVERRUN						
(Visit 03) Warning: VISIBILITY OVERRUN						
(Visit 03) Warning: VISIBILITY OVERRUN						
(Visit 03) Warning: VISIBILITY OVERRUN						
(Visit 03) Warning: VISIBILITY OVERRUN						
(Visit 03) Warning: VISIBILITY OVERRUN						
(Visit 03) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 03) Warning: VISIBILITY OVERRUN						
(Visit 03) Warning: VISIBILITY OVERRUN						
(Visit 03) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 03) Warning: VISIBILITY OVERRUN						
(Visit 03) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 03) Warning: VISIBILITY OVERRUN						
(Visit 03) Warning: POS TARG OUTSIDE OF APERTURE						
Patterns	#	Primary Pattern	Secondary Pattern	Exposures		
	(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false	(2), (3), (4), (5), (6), (7)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	Q0957+561	RA: 10 01 20.7800 (150.3365833d) Dec: +55 53 55.35 (55.89871d) Equinox: J2000 Plate Id: (?)		V=17.1	Coordinate Source: NED
<i>Comments: This object was generated by the targetselector and retrieved from the NED database. We then adjusted the coordinates by hand to match the position of quasar A.</i>						

Proposal 10569 - Visit 03 - A Last Look at the First Gravitational Lens

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG 86.62,-1 33.38		10.0 Secs [==>]	[1]
	2		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG 86.62,-1 33.38	Pattern 2-2 (1)	480.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	3		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG 86.62,-1 33.38	Pattern 3-3 (1)	480.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	4		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG 86.62,-1 33.38	Pattern 4-4 (1)	480.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	5		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG 86.62,-1 33.38	Pattern 5-5 (1)	480.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	6		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG 86.62,-1 33.38	Pattern 6-6 (1)	470.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]
	7		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG 86.62,-1 33.38	Pattern 7-7 (1)	470.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]







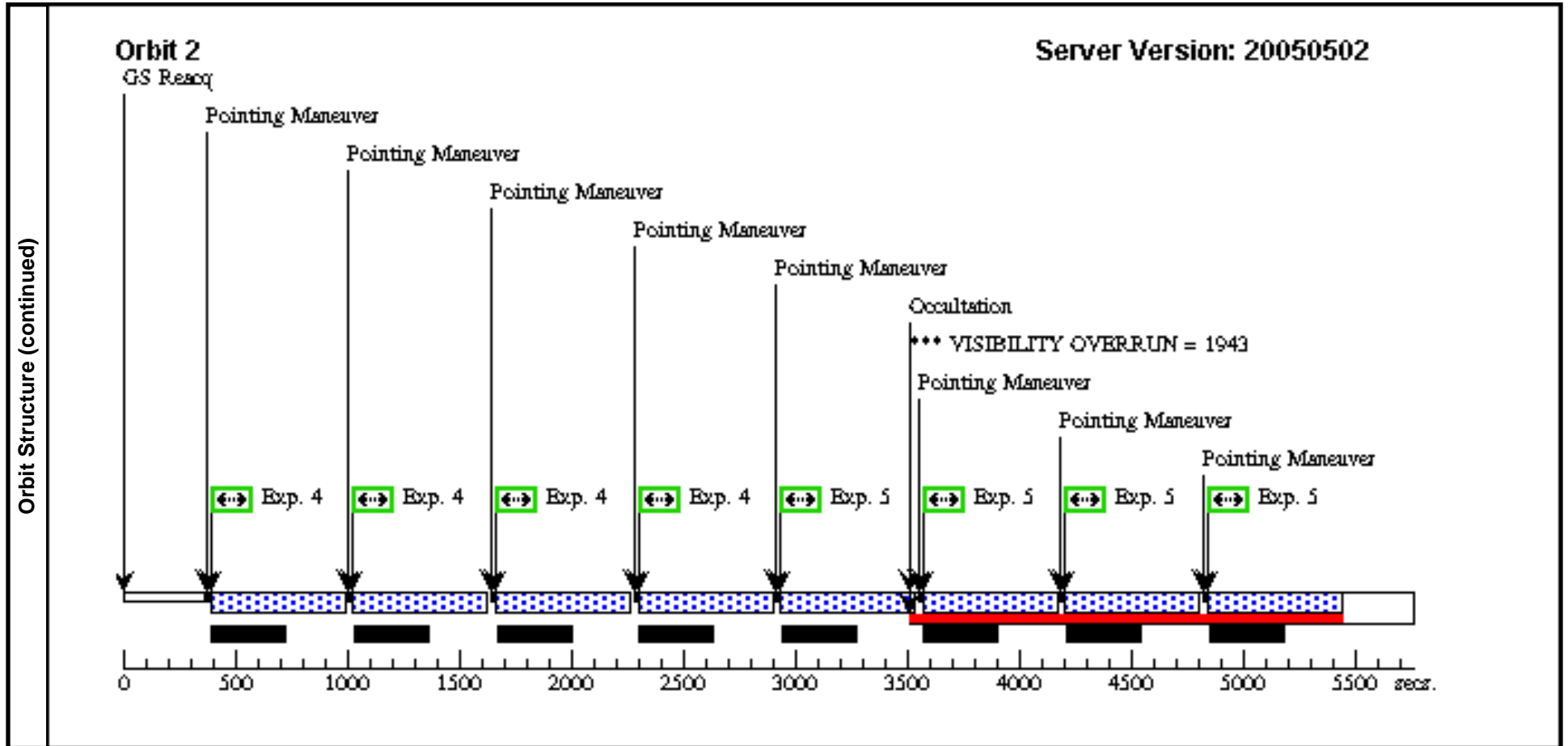
Proposal 10569 - Visit 04 - A Last Look at the First Gravitational Lens

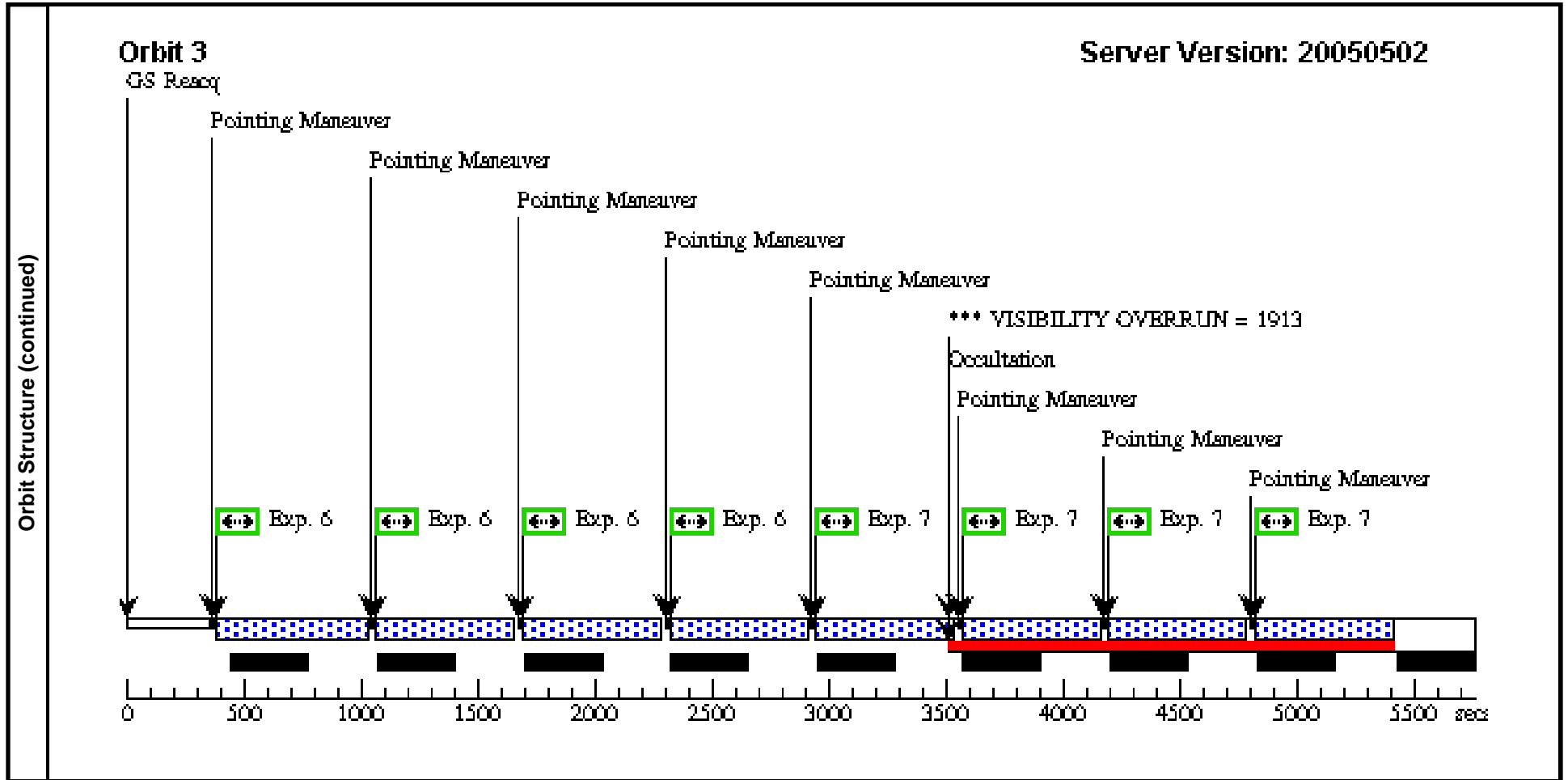
Wed Jul 27 01:20:42 GMT 2005

Visit	Proposal 10569, Visit 04 Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: SAME ORIENT AS 01					
	Diagnostics	(Visit 04) Warning: VISIBILITY OVERRUN				
(Visit 04) Warning: VISIBILITY OVERRUN						
(Visit 04) Warning: VISIBILITY OVERRUN						
(Visit 04) Warning: VISIBILITY OVERRUN						
(Visit 04) Warning: VISIBILITY OVERRUN						
(Visit 04) Warning: POS TARG OUTSIDE OF APERTURE						
(Visit 04) Warning: VISIBILITY OVERRUN						
(Visit 04) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 04) Warning: VISIBILITY OVERRUN						
(Visit 04) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 04) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 04) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 04) Warning: PATTERN POSITION OUTSIDE APERTURE						
(Visit 04) Warning: PATTERN POSITION OUTSIDE APERTURE						
Patterns	#	Primary Pattern	Secondary Pattern	Exposures		
	(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false	(2), (3), (4), (5), (6), (7)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	Q0957+561	RA: 10 01 20.7800 (150.3365833d) Dec: +55 53 55.35 (55.89871d) Equinox: J2000 Plate Id: (?)		V=17.1	Coordinate Source: NED
<i>Comments: This object was generated by the targetselector and retrieved from the NED database. We then adjusted the coordinates by hand to match the position of quasar A.</i>						

Proposal 10569 - Visit 04 - A Last Look at the First Gravitational Lens

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG -82.91,- 144.74		10.0 Secs [==>]	[1]
	2		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG -82.91,- 144.74	Pattern 2-2 (1)	480.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	3		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG -82.91,- 144.74	Pattern 3-3 (1)	480.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	4		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG -82.91,- 144.74	Pattern 4-4 (1)	480.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	5		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO	POS TARG -82.91,- 144.74	Pattern 5-5 (1)	480.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	6		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG -82.91,- 144.74	Pattern 6-6 (1)	470.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]
	7		(1) Q0957+561	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG -82.91,- 144.74	Pattern 7-7 (1)	470.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]





Visit	<p>Proposal 10569, Visit 05 Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: SAME ORIENT AS 01</p>
	<p>Diagnosics</p> <p>(Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: VISIBILITY OVERRUN (Visit 05) Warning: VISIBILITY OVERRUN (Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED (Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: PATTERN POSITION OUTSIDE APERTURE (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED (Visit 05) Warning: VISIBILITY OVERRUN (Visit 05) Warning: VISIBILITY OVERRUN (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: PATTERN POSITION OUTSIDE APERTURE (Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED (Visit 05) Warning: VISIBILITY OVERRUN (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: PATTERN POSITION OUTSIDE APERTURE (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED (Visit 05) Warning: SUBARRAY OFF OF DETECTOR (Visit 05) Warning: VISIBILITY OVERRUN (Visit 05) Warning: SUBARRAY OFF OF DETECTOR</p>

Proposal 10569 - Visit 05 - A Last Look at the First Gravitational Lens

Diagnostics (continued)	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: PATTERN POSITION OUTSIDE APERTURE
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: PATTERN POSITION OUTSIDE APERTURE
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: PATTERN POSITION OUTSIDE APERTURE
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: VISIBILITY OVERRUN	
(Visit 05) Warning: VISIBILITY OVERRUN	
(Visit 05) Warning: VISIBILITY OVERRUN	
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR	
(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED	
(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED	
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR	

Proposal 10569 - Visit 05 - A Last Look at the First Gravitational Lens

Diagnostics (continued)	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: PATTERN POSITION OUTSIDE APERTURE
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
	(Visit 05) Warning: VISIBILITY OVERRUN
	(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
	(Visit 05) Warning: VISIBILITY OVERRUN
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR	
(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED	
(Visit 05) Warning: VISIBILITY OVERRUN	
(Visit 05) Warning: VISIBILITY OVERRUN	
(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED	

Proposal 10569 - Visit 05 - A Last Look at the First Gravitational Lens

Diagnosics (continued)

(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: PATTERN POSITION OUTSIDE APERTURE
(Visit 05) Warning: ACS EXPOSURE TIME ADJUSTED
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: VISIBILITY OVERRUN
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: VISIBILITY OVERRUN
(Visit 05) Warning: SUBARRAY OFF OF DETECTOR
(Visit 05) Warning: VISIBILITY OVERRUN
(AmpC/606/10s/No offset (05.017)) Warning: Target and subarray on different WFC chip.
(AmpC/606/0.3s/No offset (05.018)) Warning: Target and subarray on different WFC chip.
(AmpC/606/10s/Offset (05.019)) Warning: Target and subarray on different WFC chip.
(AmpC/606/0.3s/Offset (05.020)) Warning: Target and subarray on different WFC chip.
(AmpC/814/10s/Offset (05.021)) Warning: Target and subarray on different WFC chip.
(AmpC/814/0.5s/Offset (05.022)) Warning: Target and subarray on different WFC chip.
(AmpC/814/10s/no offset (05.023)) Warning: Target and subarray on different WFC chip.
(AmpC/814/0.5s/no offset (05.024)) Warning: Target and subarray on different WFC chip.
(AmpD/814/10s/No offset (05.025)) Warning: Target and subarray on different WFC chip.
(AmpD/814/0.5s/No offset (05.026)) Warning: Target and subarray on different WFC chip.
(AmpD/814/10s/Offset (05.027)) Warning: Target and subarray on different WFC chip.
(AmpD/814/0.5s/Offset (05.028)) Warning: Target and subarray on different WFC chip.
(AmpD/606/10s/Offset (05.029)) Warning: Target and subarray on different WFC chip.
(AmpD/606/0.3s/Offset (05.030)) Warning: Target and subarray on different WFC chip.
(AmpD/606/10s/No offset (05.031)) Warning: Target and subarray on different WFC chip.
(AmpD/606/0.3s/No offset (05.032)) Warning: Target and subarray on different WFC chip.

Proposal 10569 - Visit 05 - A Last Look at the First Gravitational Lens

	Primary Pattern		Secondary Pattern				Exposures			
	Patterns	(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false					(1-2), (3-4), (5-6), (7-8), (9-10), (11-12), (13-14), (15-16), (17-18), (19-20), (21-22), (23-24), (25-26), (27-28), (29-30), (31-32)	
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	HD237859	RA: 10 02 23.0780 (150.5961583d) Dec: +55 34 30.87 (55.57524d) Equinox: J2000 Plate Id: (?)		V=9.46+/-0.02	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE				
	(4)	HD237859-OFFSET	Offset from HD237859 by RA Offset: -0.14507 Dec Offset: 6.048		V=9.46+/-0.02	Offset Position (HD237859-OFFSET) Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE				
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	AmpA/606/10s/No offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=314; CENTERAXIS2=3796	POS TARG -80.22,2 4.44	Pattern 1-2 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2	AmpA/606/0.3s/No offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=314; CENTERAXIS2=3796	POS TARG -80.22,2 4.44	Pattern 1-2 (1)	0.3 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	3	AmpA/606/10s/Offset	(4) HD237859-OFFSET	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=314; CENTERAXIS2=3796	POS TARG -80.22,2 4.44	Pattern 3-4 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]

Proposal 10569 - Visit 05 - A Last Look at the First Gravitational Lens

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures (continued)	4	AmpA/606/ 0.3s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=31 4; CENTERAXIS2=37 96	POS TARG -80.22,2 4.44	Pattern 3-4 (1)	0.3 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	5	AmpA/814/ 10s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=31 4; CENTERAXIS2=37 96	POS TARG -80.22,2 4.44	Pattern 5-6 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	6	AmpA/814/ 0.5s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=31 4; CENTERAXIS2=37 96	POS TARG -80.22,2 4.44	Pattern 5-6 (1)	0.5 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	7	AmpA/814/ 10s/no offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=31 4; CENTERAXIS2=37 96	POS TARG -80.22,2 4.44	Pattern 7-8 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	8	AmpA/814/ 0.5s/No offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=31 4; CENTERAXIS2=37 96	POS TARG -80.22,2 4.44	Pattern 7-8 (1)	0.5 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	9	AmpB/814/ 10s/No offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=37 96	POS TARG 84.42,40 .77	Pattern 9-10 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]

Proposal 10569 - Visit 05 - A Last Look at the First Gravitational Lens

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures (continued)	10	AmpB/814/ 0.5s/No offs et	(3) HD237859	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=37 96	POS TARG 84.42,40 .77	Pattern 9-10 (1)	0.5 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	11	AmpB/814/ 10s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=37 96	POS TARG 84.42,40 .77	Pattern 11-12 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1] [2]
	12	AmpB/814/ 0.5s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=37 96	POS TARG 84.42,40 .77	Pattern 11-12 (1)	0.5 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1] [2]
	13	AmpB/606/ 10s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=37 96	POS TARG 84.42,40 .77	Pattern 13-14 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	14	AmpB/606/ 0.3s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=37 96	POS TARG 84.42,40 .77	Pattern 13-14 (1)	0.3 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
15	AmpB/606/ 10s/No Offs et	(3) HD237859	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=37 96	POS TARG 84.42,40 .77	Pattern 15-16 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]	

Proposal 10569 - Visit 05 - A Last Look at the First Gravitational Lens

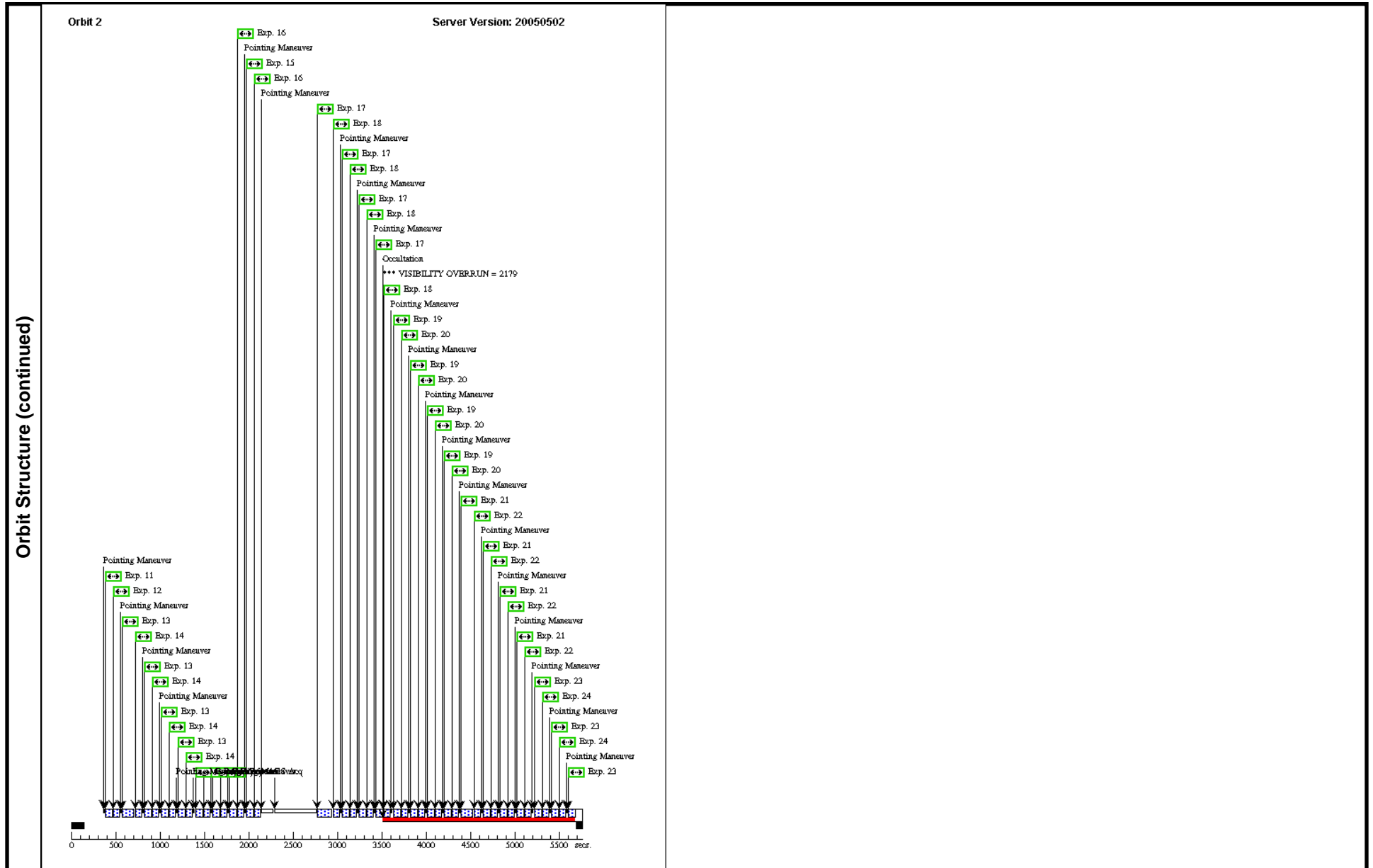
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures (continued)	16	AmpB/606/ 0.3s/No Offsets	(3) HD237859	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=3832; CENTERAXIS2=3796	POS TARG 84.42,40 .77	Pattern 15-16 (1)	0.3 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	17	AmpC/606/ 10s/No offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=314; CENTERAXIS2=302	POS TARG -82.91,- 144.74	Pattern 17-18 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	18	AmpC/606/ 0.3s/No offsets	(3) HD237859	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=314; CENTERAXIS2=302	POS TARG -82.91,- 144.74	Pattern 17-18 (1)	0.3 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	19	AmpC/606/ 10s/Offset	(4) HD237859-OFFSET	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=314; CENTERAXIS2=302	POS TARG -82.91,- 144.74	Pattern 19-20 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	20	AmpC/606/ 0.3s/Offset	(4) HD237859-OFFSET	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=314; CENTERAXIS2=302	POS TARG -82.91,- 144.74	Pattern 19-20 (1)	0.3 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	21	AmpC/814/ 10s/Offset	(4) HD237859-OFFSET	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=314; CENTERAXIS2=302	POS TARG -82.91,- 144.74	Pattern 21-22 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]

Proposal 10569 - Visit 05 - A Last Look at the First Gravitational Lens

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures (continued)	22	AmpC/814/ 0.5s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=31 4; CENTERAXIS2=30 2	POS TARG -82.91,- 144.74	Pattern 21-22 (1)	0.5 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]
	23	AmpC/814/ 10s/no offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=31 4; CENTERAXIS2=30 2	POS TARG -82.91,- 144.74	Pattern 23-24 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2] [3]
	24	AmpC/814/ 0.5s/no offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=31 4; CENTERAXIS2=30 2	POS TARG -82.91,- 144.74	Pattern 23-24 (1)	0.5 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2] [3]
	25	AmpD/814/ 10s/No offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=30 2	POS TARG 86.62,-1 33.38	Pattern 25-26 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]
	26	AmpD/814/ 0.5s/No offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=30 2	POS TARG 86.62,-1 33.38	Pattern 25-26 (1)	0.5 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]
	27	AmpD/814/ 10s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=30 2	POS TARG 86.62,-1 33.38	Pattern 27-28 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]

Proposal 10569 - Visit 05 - A Last Look at the First Gravitational Lens

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures (continued)	28	AmpD/814/ 0.5s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=30 2	POS TARG 86.62,-1 33.38	Pattern 27-28 (1)	0.5 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]
	29	AmpD/606/ 10s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=30 2	POS TARG 86.62,-1 33.38	Pattern 29-30 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]
	30	AmpD/606/ 0.3s/Offset	(4) HD237859-OFFS ET	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=30 2	POS TARG 86.62,-1 33.38	Pattern 29-30 (1)	0.3 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]
	31	AmpD/606/ 10s/No offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=30 2	POS TARG 86.62,-1 33.38	Pattern 31-32 (1)	10.0 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]
	32	AmpD/606/ 0.3s/No offset	(3) HD237859	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO; SIZEAXIS1=622; SIZEAXIS2=600; CENTERAXIS1=38 32; CENTERAXIS2=30 2	POS TARG 86.62,-1 33.38	Pattern 31-32 (1)	0.3 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]



Proposal 10569 - Visit 06 - A Last Look at the First Gravitational Lens

Wed Jul 27 01:20:55 GMT 2005

Visit	Proposal 10569, Visit 06 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: (none)									
	Patterns	#	Primary Pattern				Secondary Pattern			Exposures
(1)		Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171				Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false			(2)	
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous	
	(2)	NGC104	RA: 00 22 38.4900 (5.6603750d) Dec: -72 04 4.00 (-72.06778d) Equinox: J2000 Plate Id: (?)				V=17.5+/-0.1		Coordinate Source: GUIDE_STAR_CATALOG	
<i>Comments: Magnitude of main sequence turn-off stars. Field 6' W of cluster center.</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) NGC104	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO			10.0 Secs	
									[==>]	[1]
	2		(2) NGC104	ACS/WFC, ACCUM, WFC1	F606W	CR-SPLIT=NO		Pattern 2-2 (1)	340.0 Secs	
									[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
3		(2) NGC104	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO			340.0 Secs		
								[==>]	[1]	
4		(2) NGC104	ACS/WFC, ACCUM, WFC1	F814W	CR-SPLIT=NO	POS TARG 0.625,-0.475		340.0 Secs		
								[==>]	[1]	

