11705 - Physical Properties of Quasar Outflows: From BALs to mini-BALs

Cycle: 17, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) J130136.13+000157.86	COS/NUV	3	14-Sep-2010 21:04:45.0	yes
03	(7) J103112.24+380717.23	COS/NUV	3	14-Sep-2010 21:04:50.0	yes
05	(2) J090924.01+000211.04	COS/NUV	4	14-Sep-2010 21:04:56.0	yes
07	(3) J090552.41+025931.46	COS/NUV	5	14-Sep-2010 21:05:04.0	yes
09	(4) J020845.54+002236.07	COS/NUV	2	14-Sep-2010 21:05:11.0	yes
11	(5) J100023.49+124705.43	COS/NUV	4	14-Sep-2010 21:05:16.0	yes
13	(6) J100128.61+502756.90	COS/NUV	2	14-Sep-2010 21:05:19.0	yes
02	(1) J130136.13+000157.86	COS/NUV	4	14-Sep-2010 21:05:23.0	yes
04	(7) J103112.24+380717.23	COS/NUV	4	14-Sep-2010 21:05:28.0	yes
10	(4) J020845.54+002236.07	COS/NUV	4	14-Sep-2010 21:05:33.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
14	(6) J100128.61+502756.90	COS/NUV	4	14-Sep-2010 21:05:37.0	yes
54	(7) J103112.24+380717.23	COS/NUV	4	14-Sep-2010 21:05:42.0	yes

43 Total Orbits Used

ABSTRACT

Accretion disk outflows are important components of quasar environments. They might play a major role in facilitating accretion, regulating star formation in the host galaxies and distributing metals to the surrounding gas. They reveal themselves most conspicuously via broad absorption lines (BALs), but they appear even more frequently in other guises such as the weaker and narrower ``mini-BALs.'' How are these diverse outflow features related? Are mini-BALs really just ``mini'' versions of the BALs, or do they represent a fundamentally different type of outflow, with different degrees of ionization, column densities, mass loss rates, physical origins, etc.?

We propose HST-COS spectroscopy to make the first quantitative assessment of the outflow physical conditions across the full range of weak/narrow mini-BALs to strong/broad BALs. Our strategy is to measure key diagnostic lines (SVI, OVI, CIII, SIV, PV, etc.) at 930A - 1130A (rest-frame) in a sample of 7 outflow quasars with known mini-BALs through weak BALs. We will then 1) combine the COS data with ground-based spectra of the same quasars to include more lines (CIV, SiIV) at longer wavelengths, and 2) include in our analysis a nearly identical UV/optical dataset obtained previously for a sample of quasars with strong BALs. Our study of this combined dataset will be an essential next step toward a more global understanding of quasar outflows.

OBSERVING DESCRIPTION

We will use COS in the spectroscopic mode with NUV-G230L at two central wavelengths per quasar, 2636 \AA\ and 2950 \AA , to cover the nominal range from $\sim$930 \AA\ to $\sim$1130 \AA\ in the rest frame. Two settings are essential to cover all of the important lines mentioned in the Science Justification. (In one target, we will not reach the SVI 933,944 lines, and in another we will not get the 1128 component of the PV doublet. But for all others our wavelength coverage is complete.) We performed specific exposure time calculations on every quasar in our sample to make sure that the critical wavelengths will be measured with adequate signal-to-noise ratios. We estimated UV fluxes based on the SDSS g magnitudes (Table 1) extrapolated using an $F_{\lambda}\propto\lambda^{-1}$ powerlaw spectrum. We then used to online ETC to determine the exposure times needed to achieve S/N $\ga$ 15 per resolution element in the continuum for the stronger BAL-like systems, and S/N $\ga$ 20 for the weaker mini-BALs. The typical exposure times are $\sim$60 minutes in the 2635 setting and $\sim$90--120 minutes in 2950. These values of the

S/N and the resolution provided by NUV-G230L, $R\sim 2000$, are a good match to the existing and available ground-based spectra that we will use to supplement the proposed observations (see Science Justification). Finally, we combined our exposure time estimates with standard overheads for guide star acquisition, target acquistion and COS instrument exposures (as described in the Cycle 17 Call for Proposals) to determine the number of orbits needed per grating setting per quasar. In all cases, we rounded up to next full orbit (rather than trim our desired exposure times to fit into a smaller number of orbits) to be certain that our observations reach the desired S/N thresholds.

Visit

Proposal 11705, Visit 01, completed Wed Sep 15 01:05:46 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Diagnostics

(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN

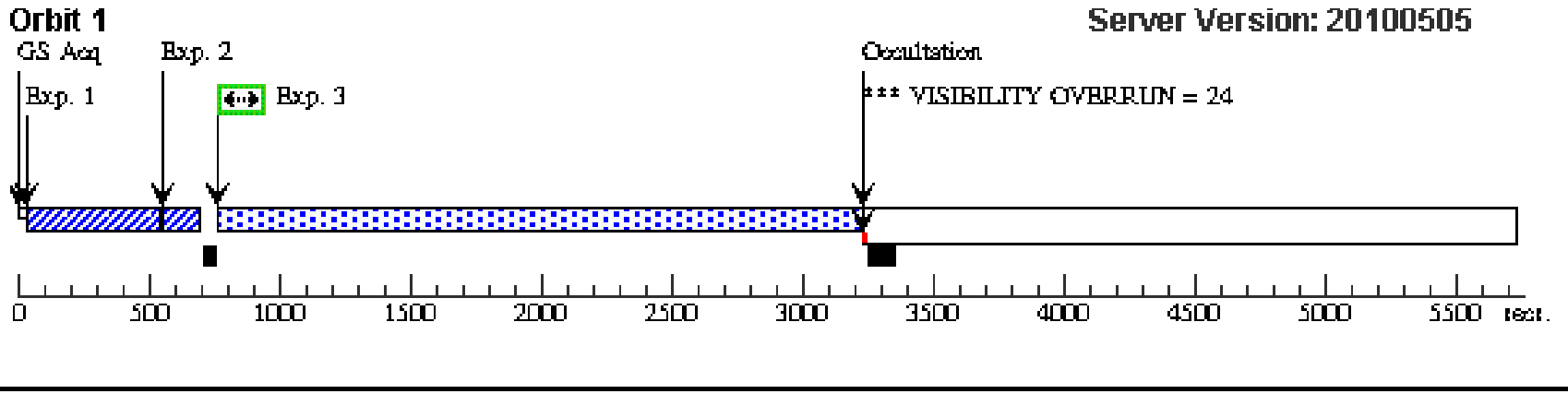
Fixed Targets

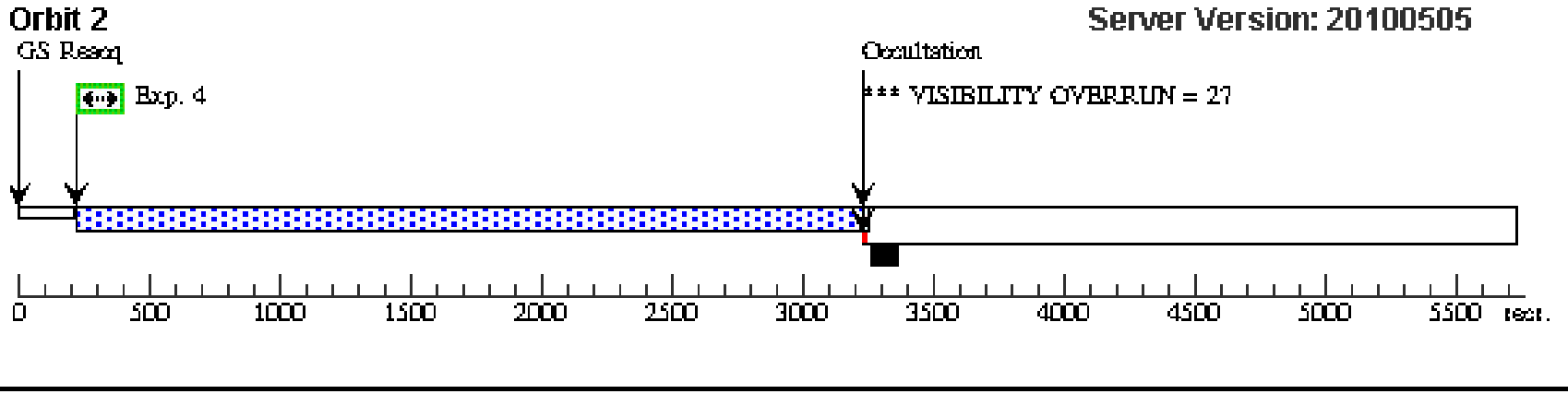
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J130136.13+000157.86	RA: 13 01 36.1300 (195.4005417d) Dec: +00 01 57.86 (.03274d) Equinox: J2000		V=17.6	Reference Frame: ICRS

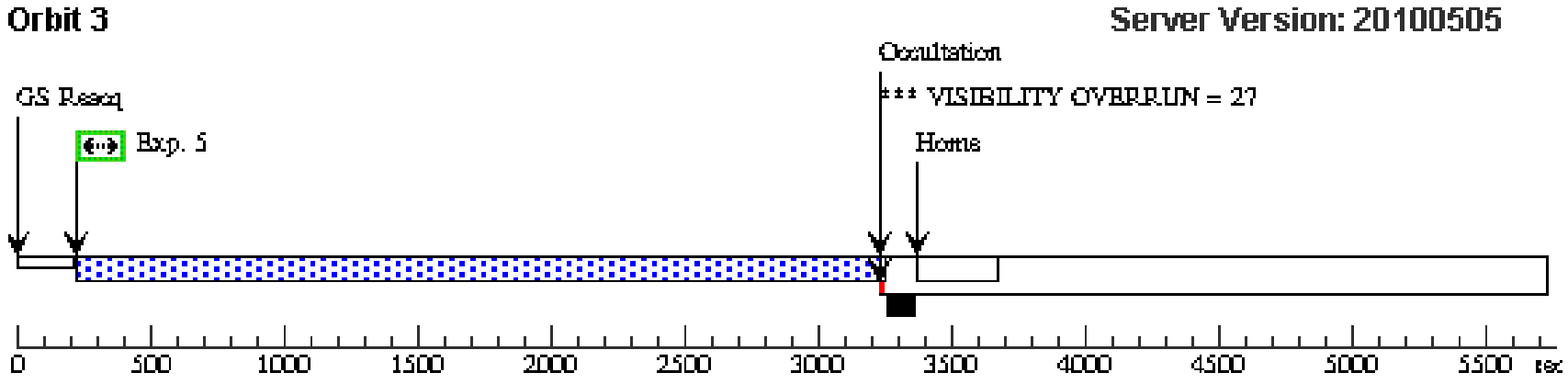
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) J130136.13+000157.86	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=2			15 Secs *[==>]*	 ***[1]***
2		(1) J130136.13+000157.86	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				15 Secs *[==>]*	 ***[1]***
3		(1) J130136.13+000157.86	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=2360			2360 Secs *[==>]*	 ***[1]***
4		(1) J130136.13+000157.86	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=3012			3012 Secs *[==>]*	 ***[2]***
5		(1) J130136.13+000157.86	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=3012			3012 Secs *[==>]*	 ***[3]***

Orbit Structure







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Proposal 11705, Visit 03, completed Wed Sep 15 01:05:47 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Diagnostics

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Fixed Targets

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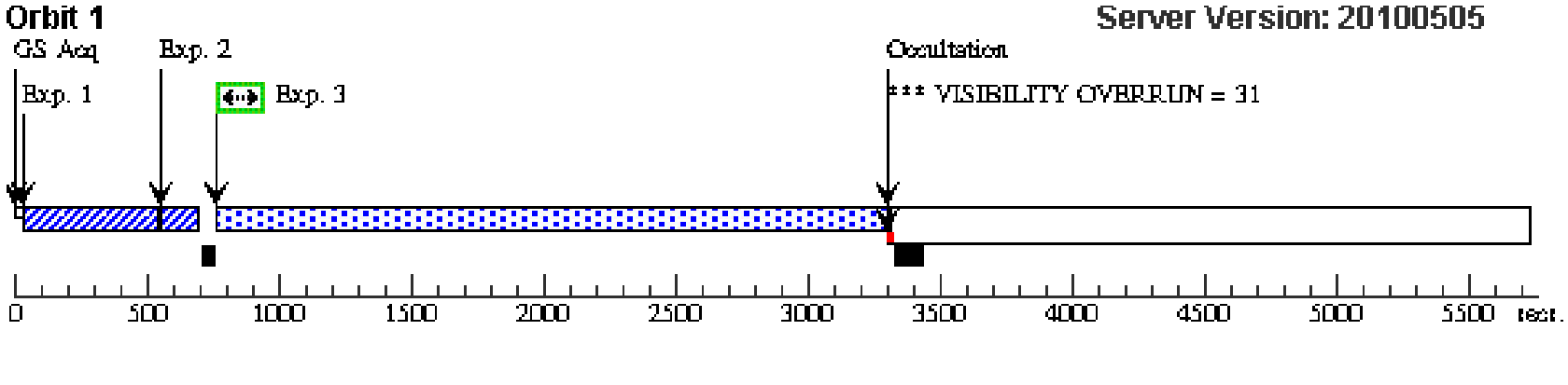
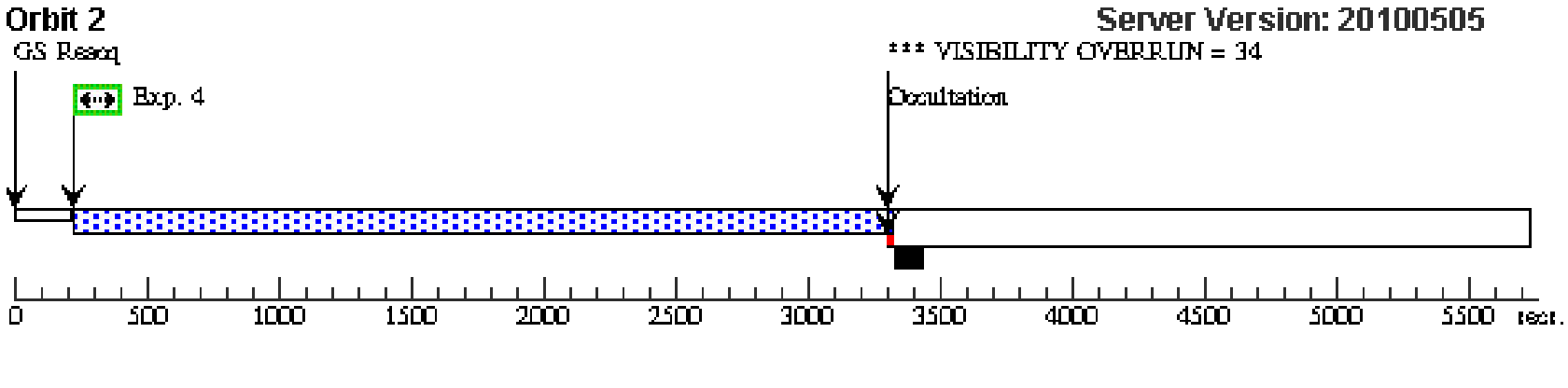
(7)	J103112.24+380717.23	RA: 10 31 12.2400 (157.8010000d) Dec: +38 07 17.23 (38.12145d) Equinox: J2000		V=17.3	Reference Frame: ICRS

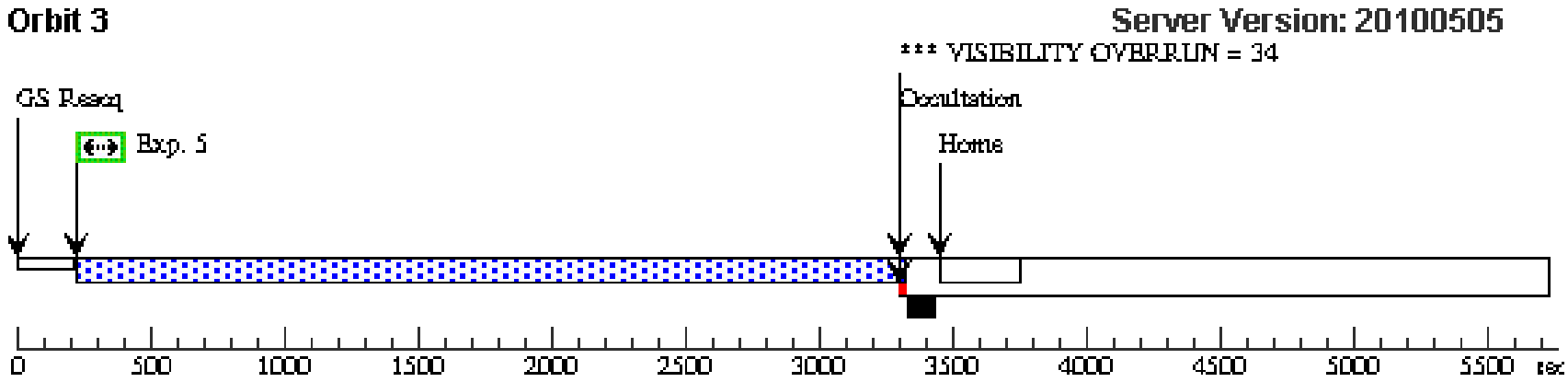
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(7) J103112.24+380717.23	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=2			15 Secs *[==>]*	 ***[1]***
2		(7) J103112.24+380717.23	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				15 Secs *[==>]*	 ***[1]***
3		(7) J103112.24+380717.23	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=2434			2434 Secs *[==>]*	 ***[1]***
4		(7) J103112.24+380717.23	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=3086			3086 Secs *[==>]*	 ***[2]***
5		(7) J103112.24+380717.23	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=3086			3086 Secs *[==>]*	 ***[3]***

Orbit Structure







Visit

Proposal 11705, Visit 05, completed Wed Sep 15 01:05:48 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Diagnostics

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(Visit 05) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

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(2)	J090924.01+000211.04	RA: 09 09 24.0100 (137.3500417d) Dec: +00 02 11.04 (.03640d) Equinox: J2000		V=16.7	Reference Frame: ICRS

Exposures

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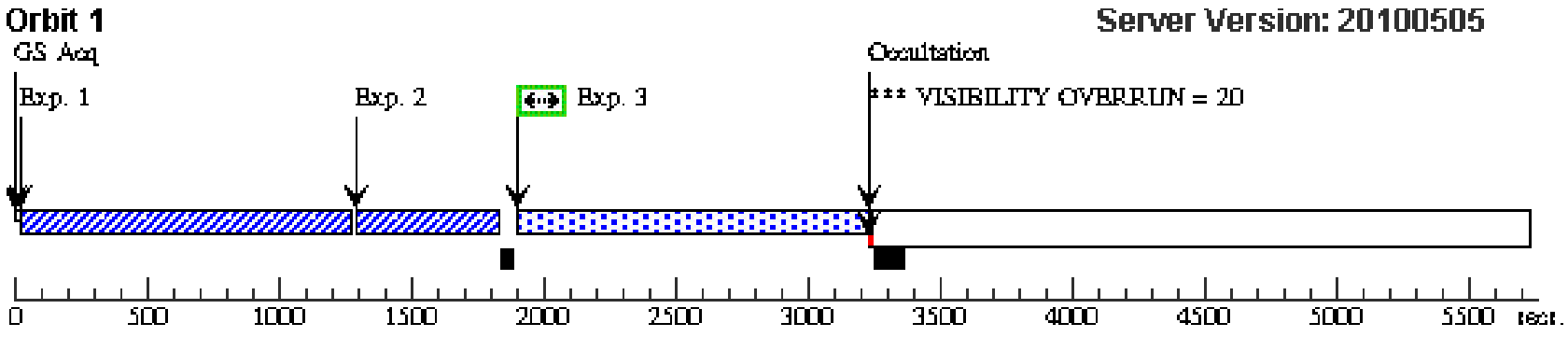
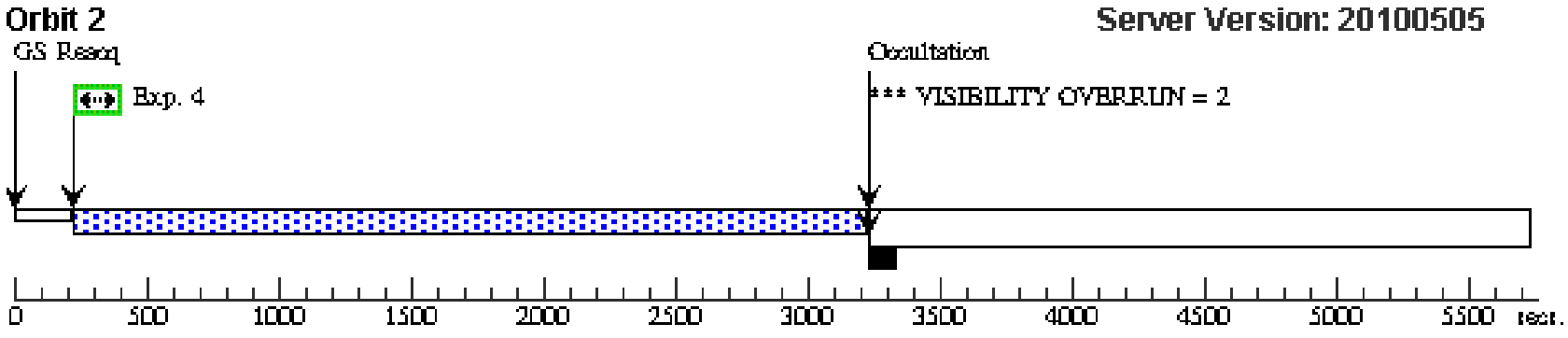
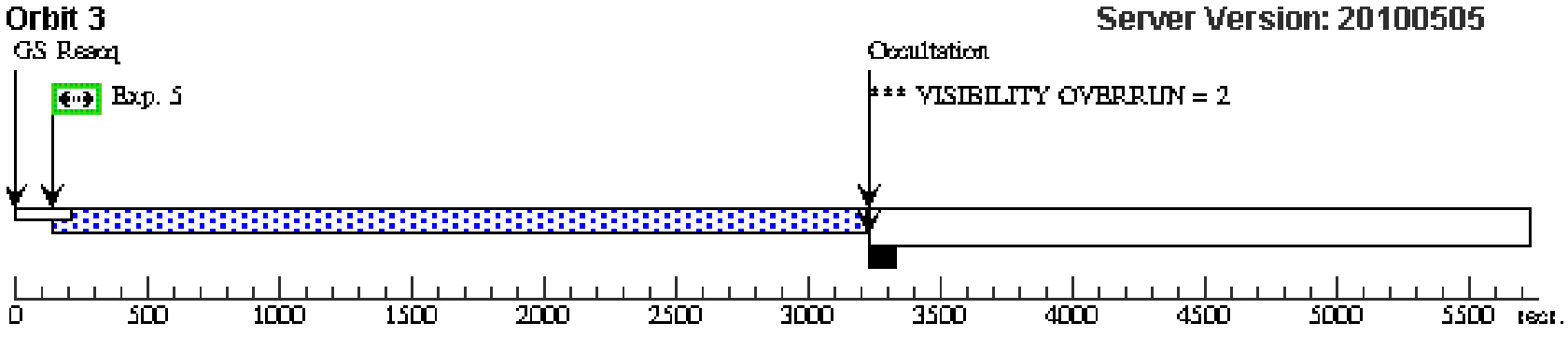
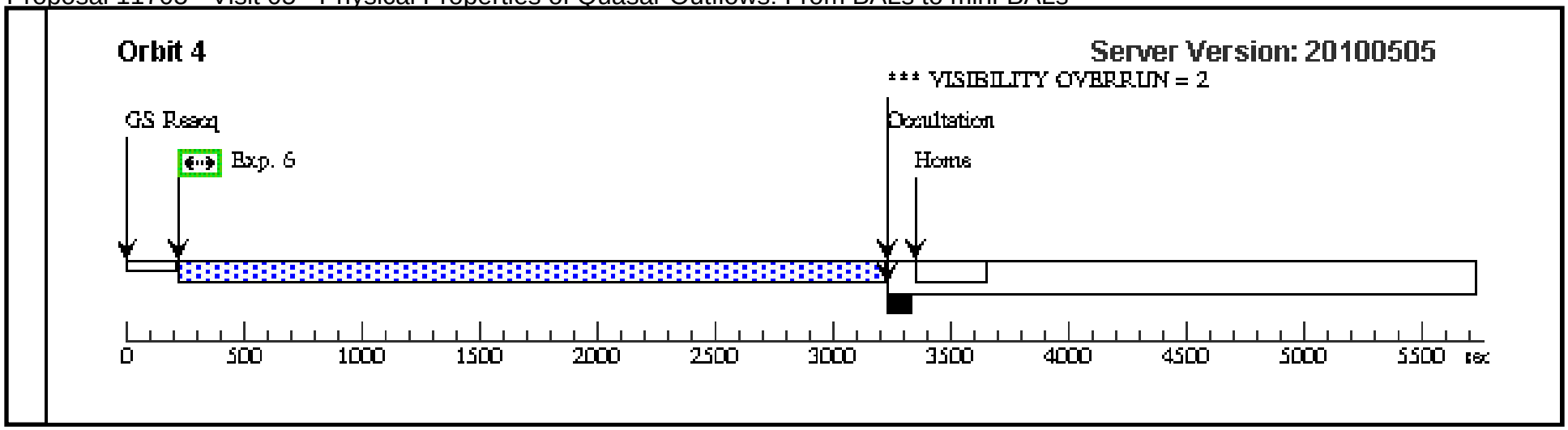
1		(2) J090924.01+000211.04	COS/NUV, ACQ/SEARCH, PSA	MIRRORB	SCAN-SIZE=2			200 Secs *[==>]*	 ***[1]***
2		(2) J090924.01+000211.04	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				200 Secs *[==>]*	 ***[1]***
3		(2) J090924.01+000211.04	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=1173			1173 Secs *[==>1229.0 Secs]*	 ***[1]***
4		(2) J090924.01+000211.04	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=3012			3012 Secs *[==>2987.0 Secs]*	 ***[2]***
5		(2) J090924.01+000211.04	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3012			3012 Secs *[==>2987.0 Secs]*	 ***[3]***
6		(2) J090924.01+000211.04	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3012			3012 Secs *[==>2987.0 Secs]*	 ***[4]***

Orbit Structure





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Visit

Proposal 11705, Visit 07, completed Wed Sep 15 01:05:48 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Diagnostics

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Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	J090552.41+025931.46	RA: 09 05 52.4100 (136.4683750d) Dec: +02 59 31.46 (2.99207d) Equinox: J2000		V=17.3	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) J090552.41+025931.46	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=2			15 Secs	
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2		(3) J090552.41+025931.46	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				15 Secs	
								[==>]	***[1]***
3		(3) J090552.41+025931.46	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=2360			2360 Secs	
								[==>]	***[1]***
4		(3) J090552.41+025931.46	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=3012			3012 Secs	
								[==>]	***[2]***
5		(3) J090552.41+025931.46	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3012			3012 Secs	
								[==>]	***[3]***
6		(3) J090552.41+025931.46	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3012			3012 Secs	
								[==>]	***[4]***
7		(3) J090552.41+025931.46	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3012			3012 Secs	
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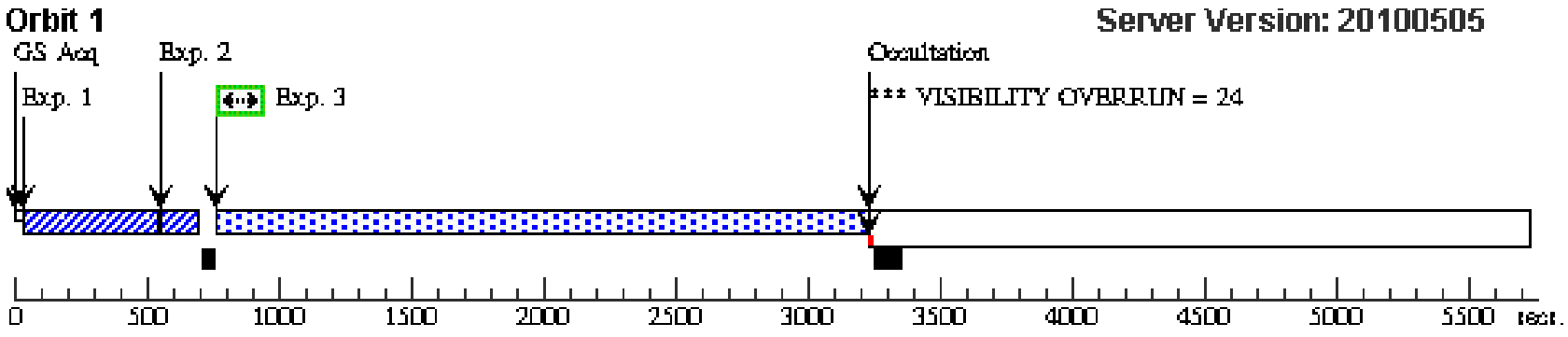
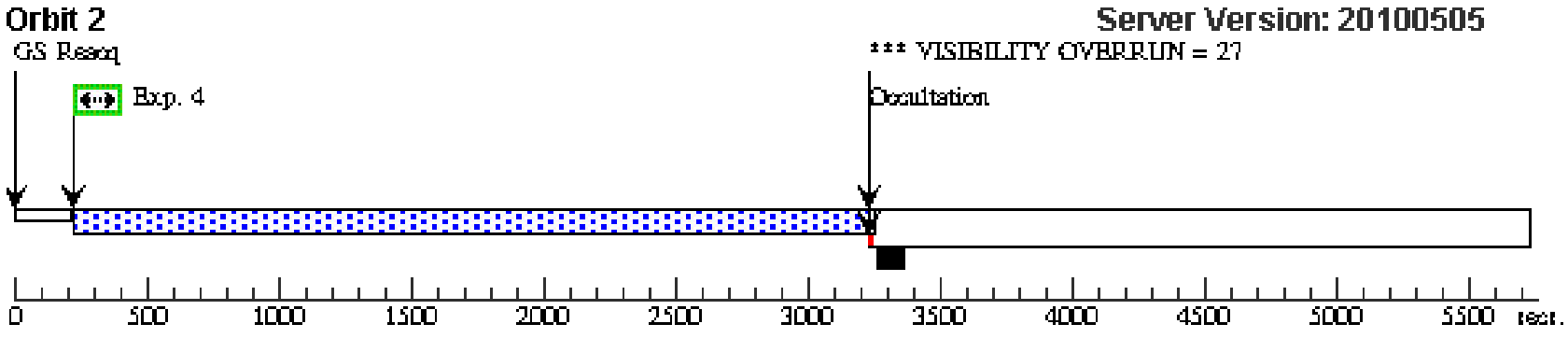
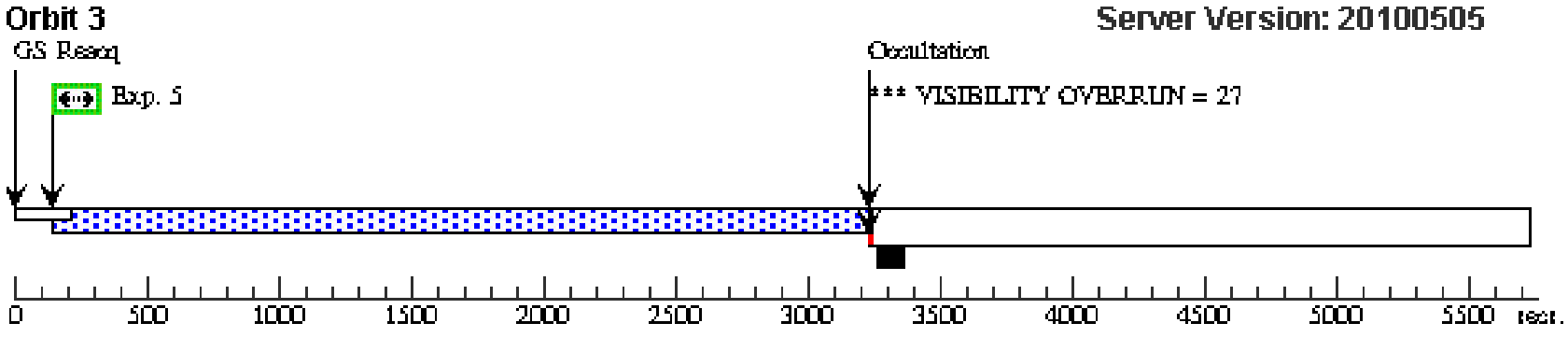
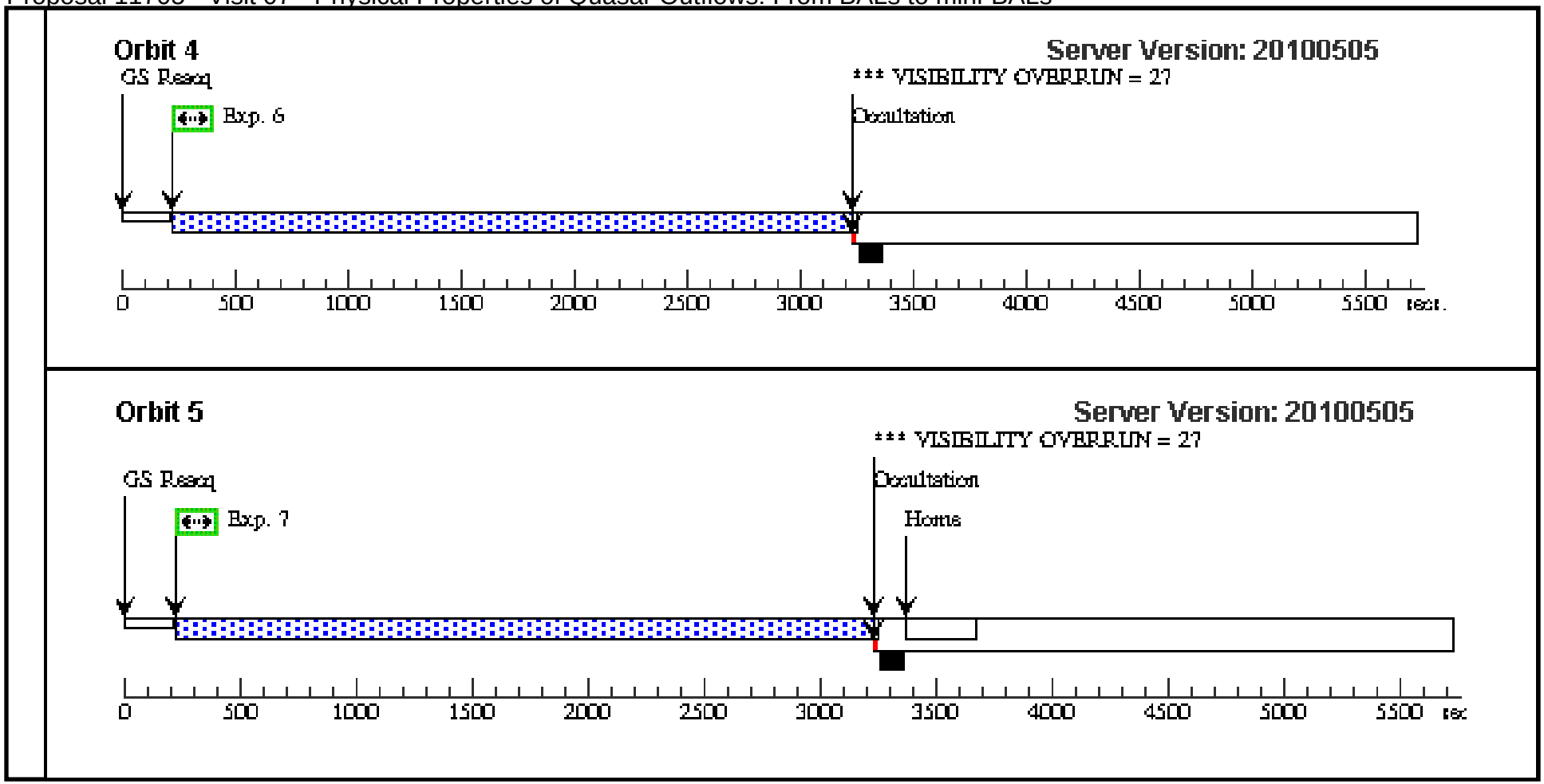
Orbit Structure





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Visit

Proposal 11705, Visit 09, completed Wed Sep 15 01:05:50 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Diagnostics

(Visit 09) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 09) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J020845.54+002236.07	RA: 02 08 45.5400 (32.1897500d) Dec: +00 22 36.07 (.37669d) Equinox: J2000		V=17.1	Reference Frame: ICRS

Exposures

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1		(4) J020845.54+002236.07	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=2			12 Secs	
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2		(4) J020845.54+002236.07	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				15 Secs	
								[==>]	***[1]***
3		(4) J020845.54+002236.07	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=2372			2372 Secs	
								[==>]	***[1]***
4		(4) J020845.54+002236.07	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=3012			3012 Secs	
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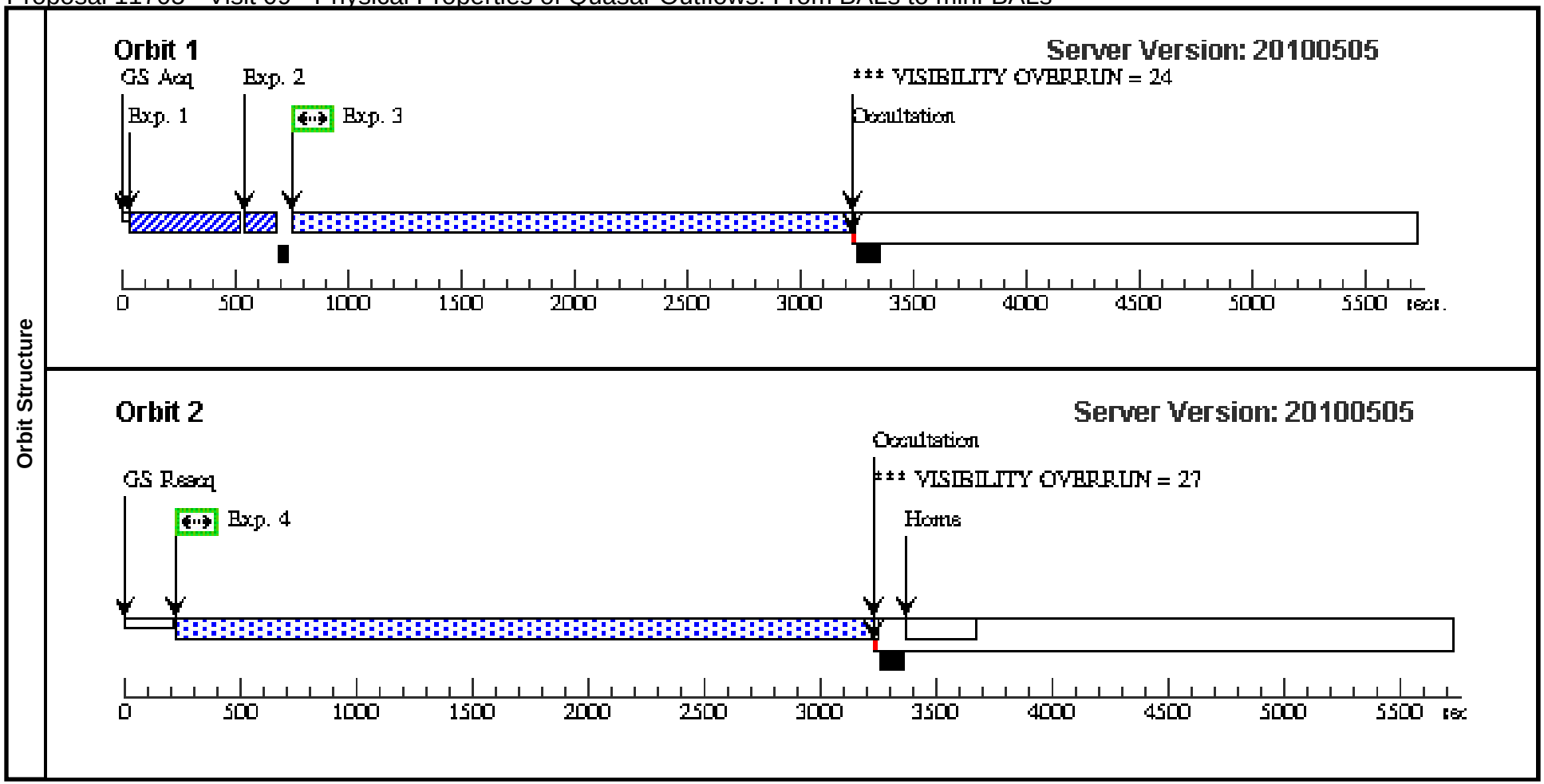
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Exp. 2
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Exp. 3
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sec.
Orbit 2
Server Version: 20100505
Occultation
GS Reacq
*** VISIBILITY OVERRUN = 27
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Visit

Proposal 11705, Visit 11, completed Wed Sep 15 01:05:50 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Diagnostics

(Visit 11) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 11) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 11) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 11) Warning (Orbit Planner): VISIBILITY OVERRUN

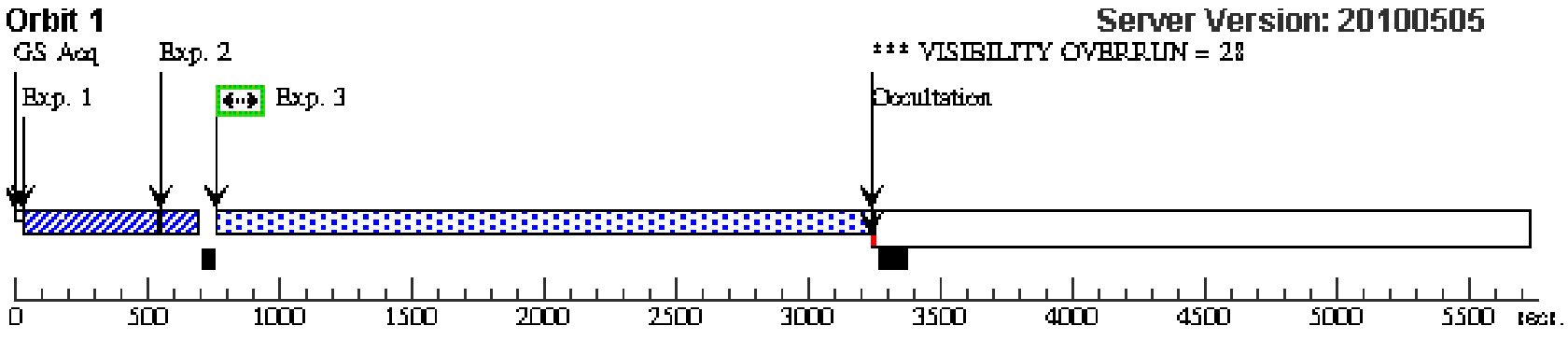
Fixed Targets

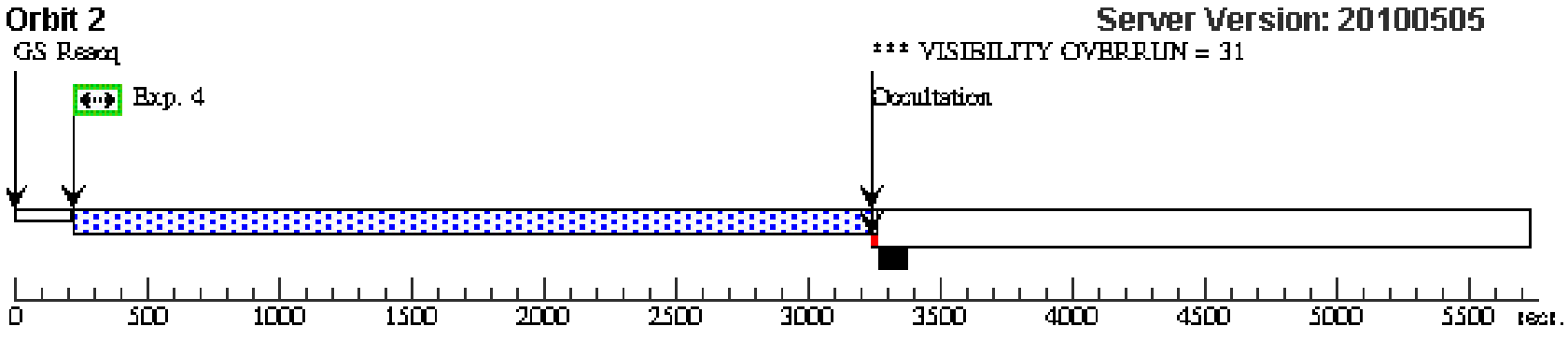
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J100023.49+124705.43	RA: 10 00 23.4900 (150.0978750d) Dec: +12 47 5.43 (12.78484d) Equinox: J2000		V=17.6	Reference Frame: ICRS

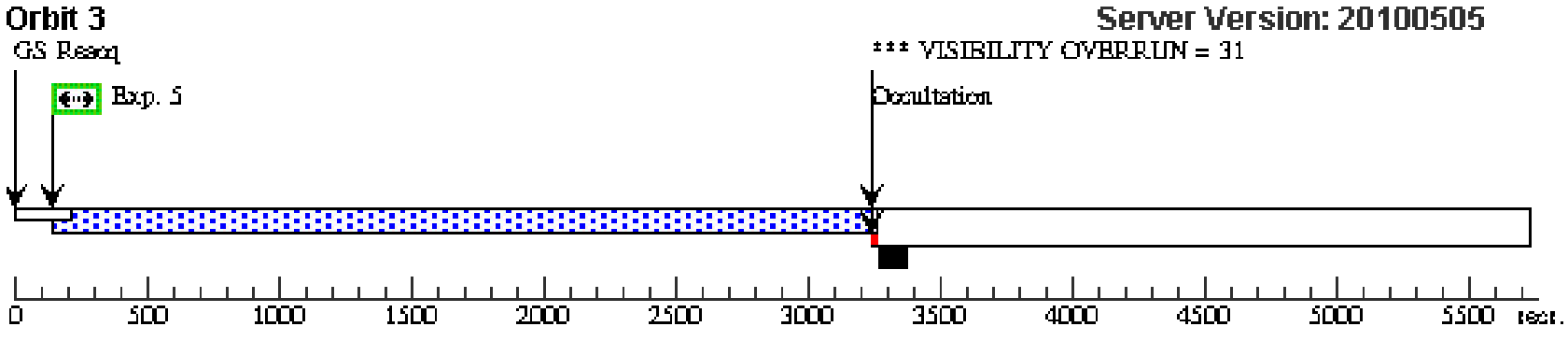
Exposures

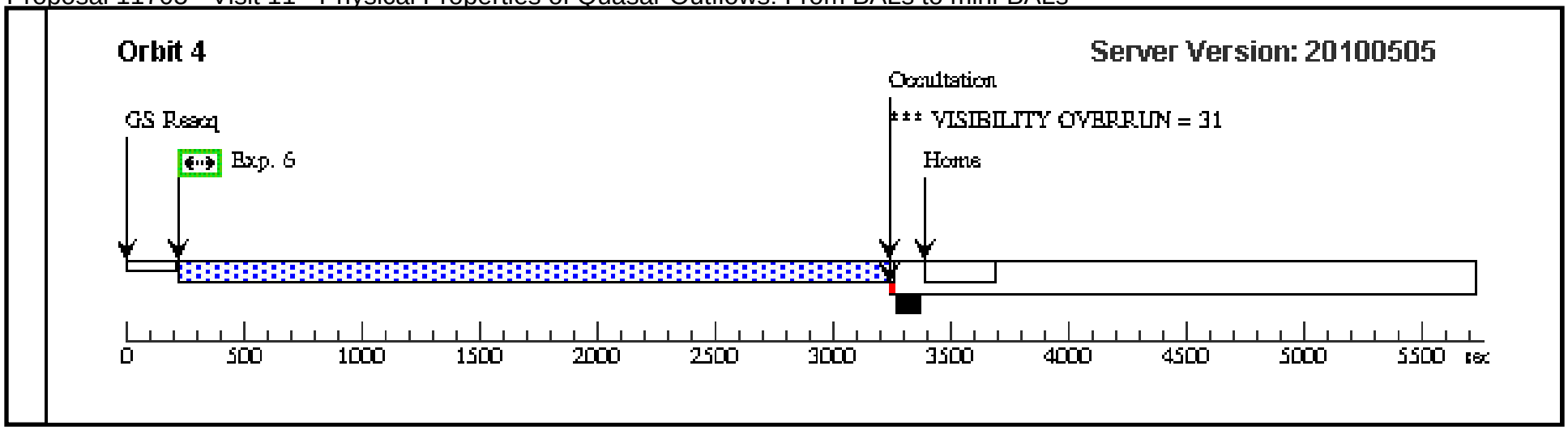
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(5) J100023.49+124705.43	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=2			15 Secs *[==>]*	***[1]***
2		(5) J100023.49+124705.43	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				15 Secs *[==>]*	***[1]***
3		(5) J100023.49+124705.43	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=2375			2375 Secs *[==>]*	***[1]***
4		(5) J100023.49+124705.43	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=3027			3027 Secs *[==>]*	***[2]***
5		(5) J100023.49+124705.43	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3027			3027 Secs *[==>]*	***[3]***
6		(5) J100023.49+124705.43	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3027			3027 Secs *[==>]*	***[4]***

Orbit Structure








Orbit 4
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sec

Visit

Proposal 11705, Visit 13, completed Wed Sep 15 01:05:51 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Diagnostics

(Visit 13) Warning (Orbit Planner): VISIBILITY OVERRUN

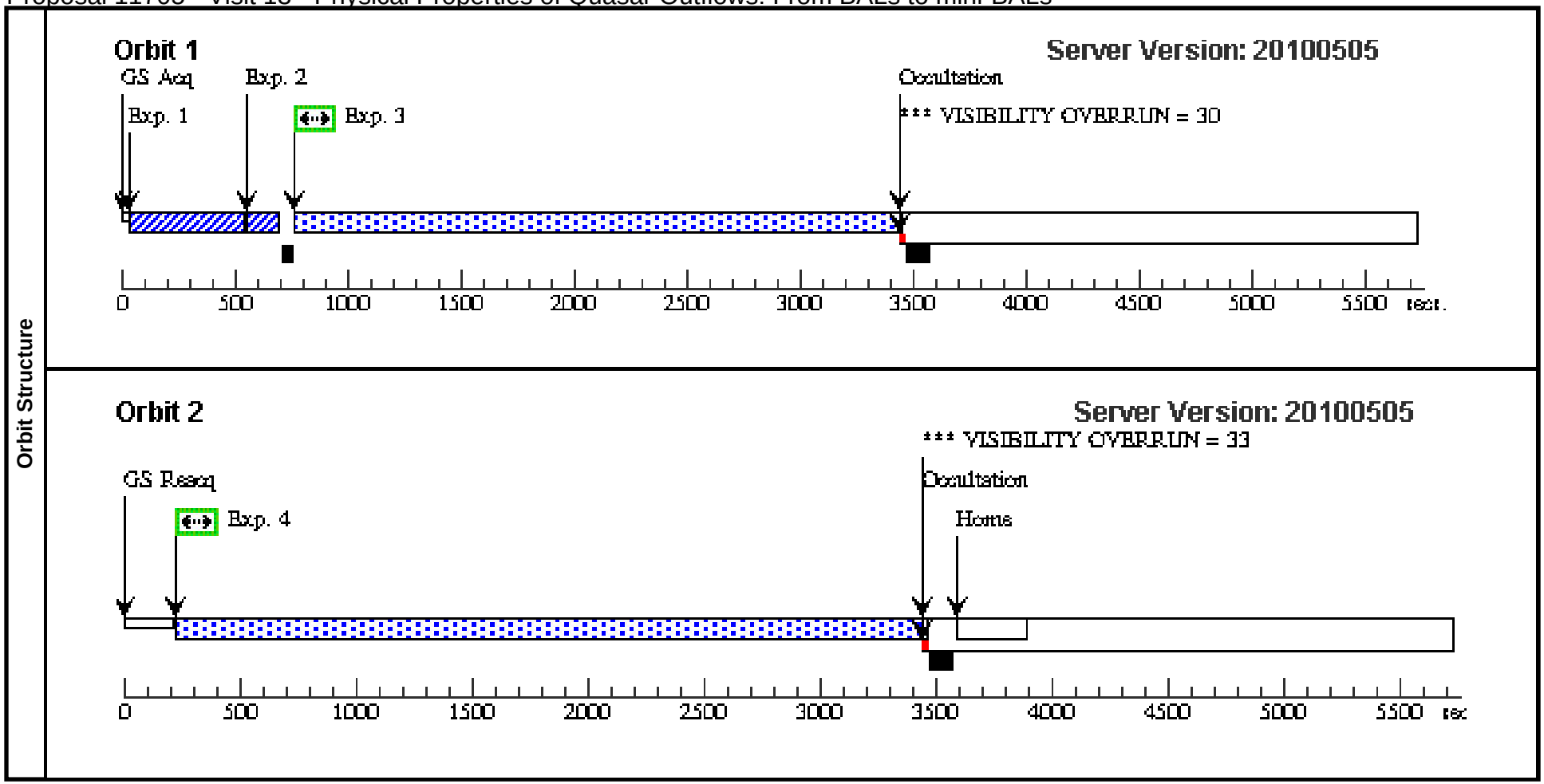
(Visit 13) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J100128.61+502756.90	RA: 10 01 28.6100 (150.3692083d) Dec: +50 27 56.90 (50.46581d) Equinox: J2000		V=17.6	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(6) J100128.61+502756.90	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=2			15 Secs *[==>]*	 ***[1]***
2		(6) J100128.61+502756.90	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				15 Secs *[==>]*	 ***[1]***
3		(6) J100128.61+502756.90	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=2577			2577 Secs *[==>]*	 ***[1]***
4		(6) J100128.61+502756.90	COS/NUV, TIME-TAG, PSA	G230L 2635 A	BUFFER-TIME=3229			3229 Secs *[==>]*	 ***[2]***


Orbit Structure
Orbit 1
Server Version: 20100505
GS Acq
Exp. 1
Exp. 2
Exp. 3
Occultation
*** VISIBILITY OVERRUN = 30
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec.
Orbit 2
Server Version: 20100505
*** VISIBILITY OVERRUN = 33
GS Reacq
Exp. 4
Occultation
Horns
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11705, Visit 02, completed Wed Sep 15 01:05:51 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Diagnostics

(Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN

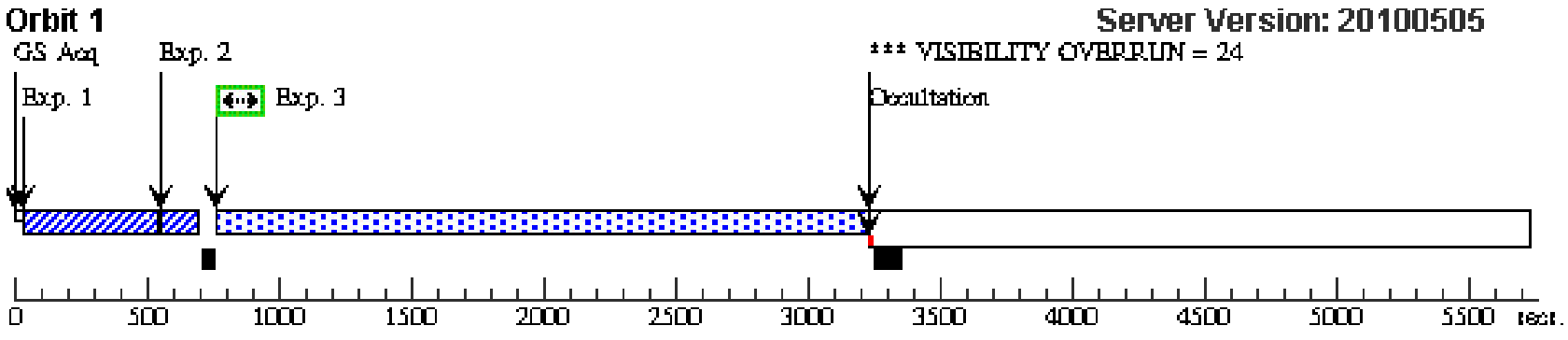
Fixed Targets

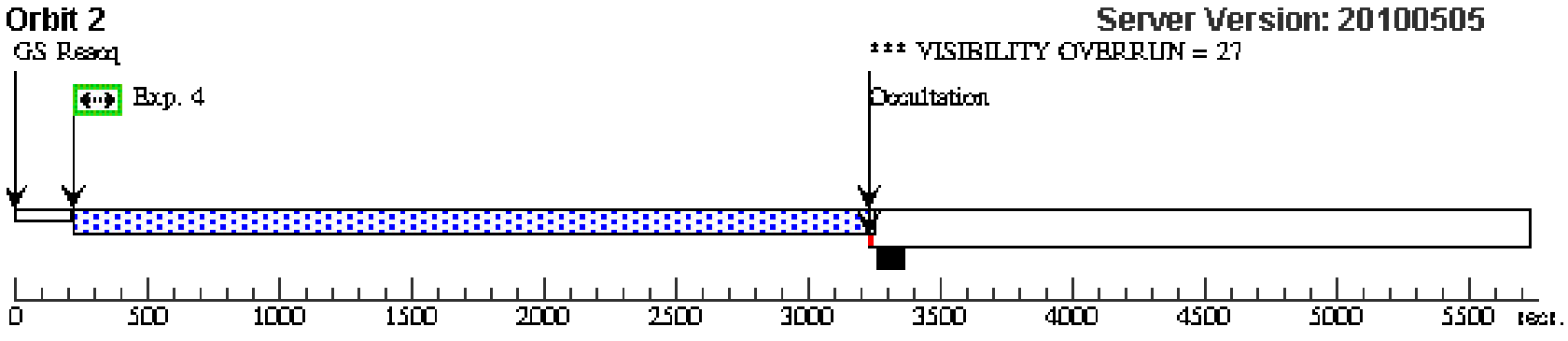
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J130136.13+000157.86	RA: 13 01 36.1300 (195.4005417d) Dec: +00 01 57.86 (.03274d) Equinox: J2000		V=17.6	Reference Frame: ICRS

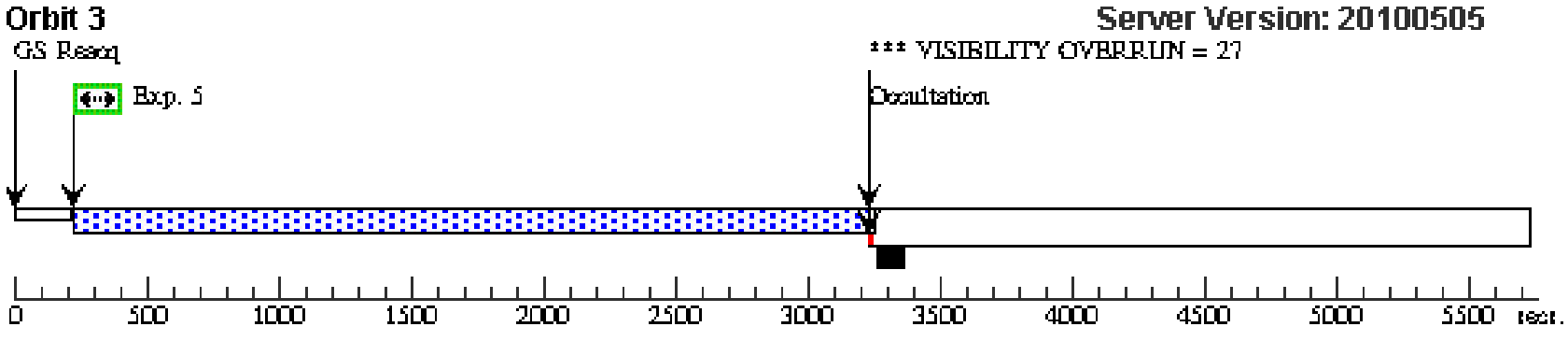
Exposures

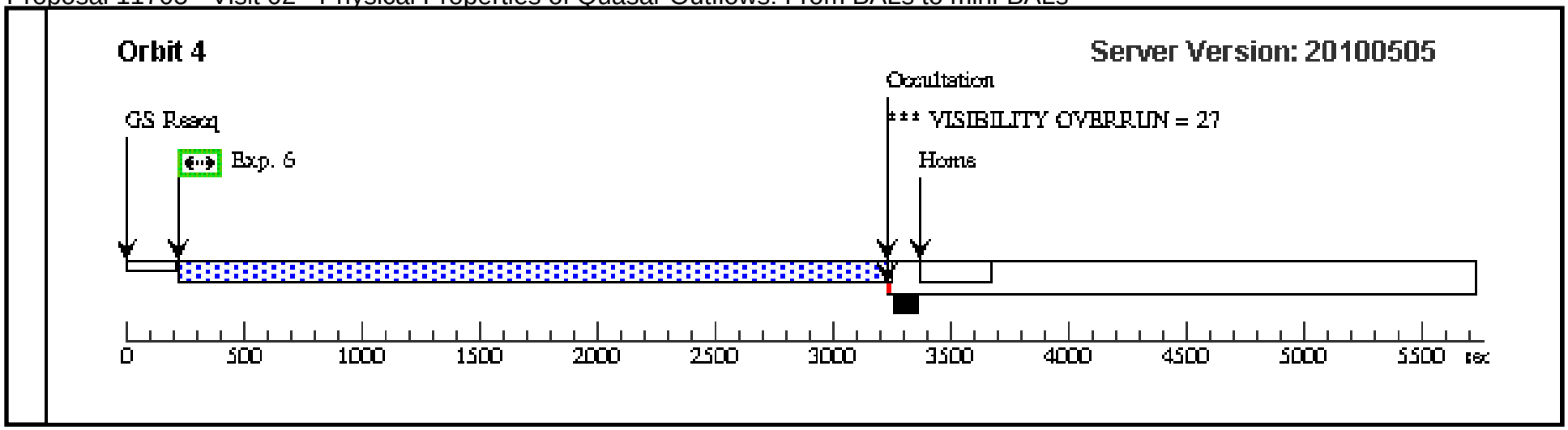
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) J130136.13+000157.86	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=2			15 Secs *[==>]*	***[1]***
2		(1) J130136.13+000157.86	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				15 Secs *[==>]*	***[1]***
3		(1) J130136.13+000157.86	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=2360			2360 Secs *[==>]*	***[1]***
4		(1) J130136.13+000157.86	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3012			3012 Secs *[==>]*	***[2]***
5		(1) J130136.13+000157.86	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3012			3012 Secs *[==>]*	***[3]***
6		(1) J130136.13+000157.86	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3012			3012 Secs *[==>]*	***[4]***

Orbit Structure








Orbit 4
Server Version: 20100505
Occultation
*** VISIBILITY OVERRUN = 27
GS Reacq
Exp. 6
Homs
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11705, Visit 04, failed Wed Sep 15 01:05:51 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Diagnostics

(Visit 04) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 04) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 04) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 04) Warning (Orbit Planner): VISIBILITY OVERRUN

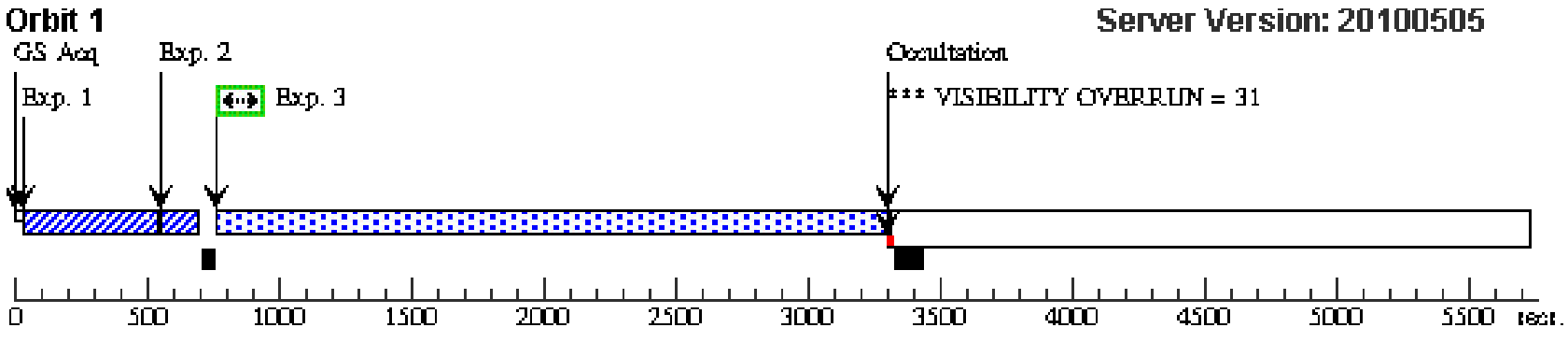
Fixed Targets

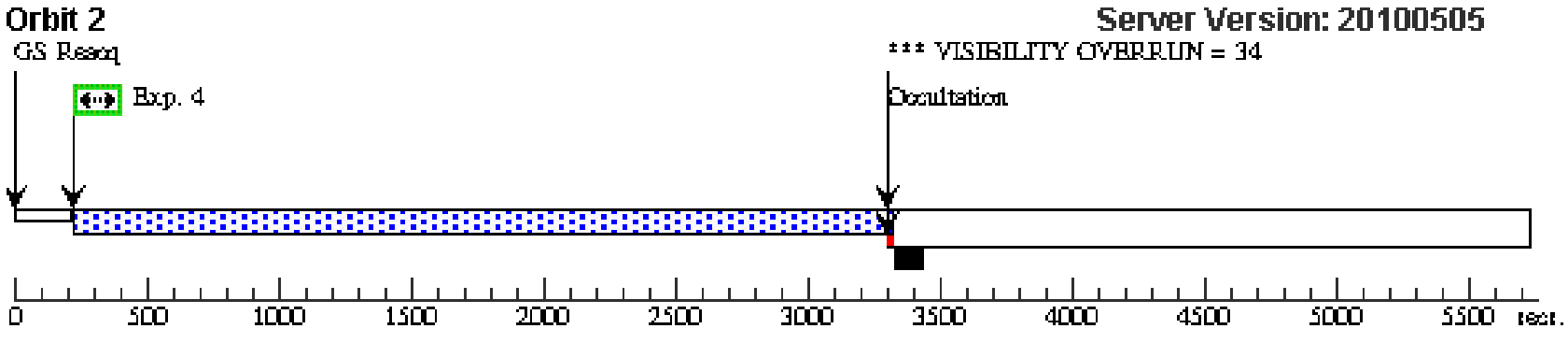
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	J103112.24+380717.23	RA: 10 31 12.2400 (157.8010000d) Dec: +38 07 17.23 (38.12145d) Equinox: J2000		V=17.3	Reference Frame: ICRS

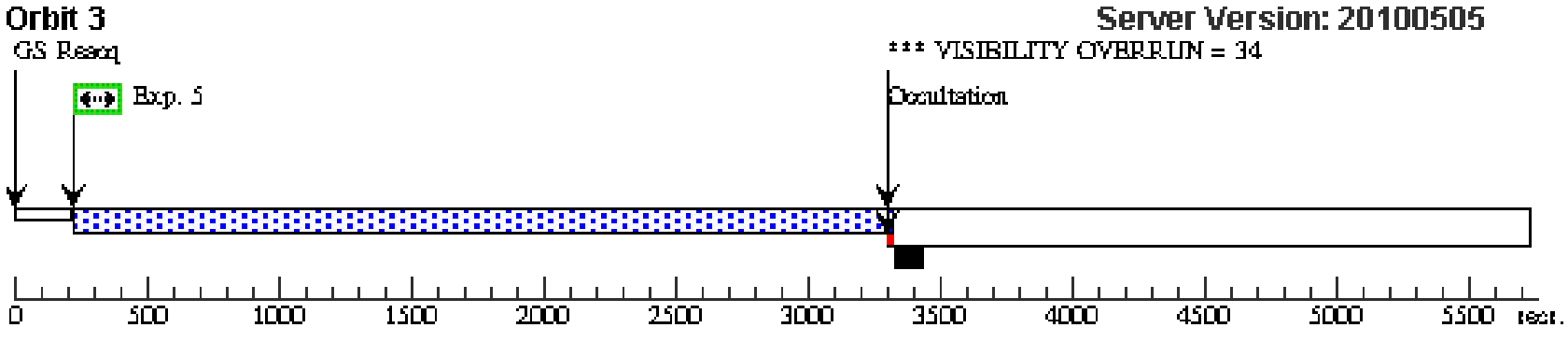
Exposures

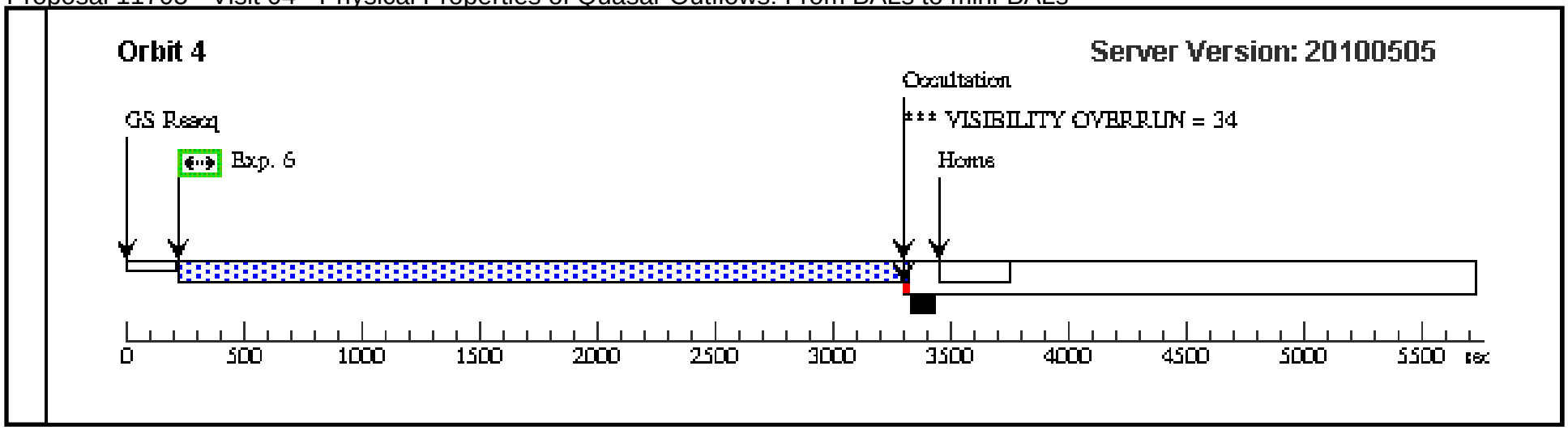
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(7) J103112.24+380717.23	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=2			15 Secs	
								[==>]	***[1]***
2		(7) J103112.24+380717.23	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				15 Secs	
								[==>]	***[1]***
3		(7) J103112.24+380717.23	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=2434			2434 Secs	
								[==>]	***[1]***
4		(7) J103112.24+380717.23	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3086			3086 Secs	
								[==>]	***[2]***
5		(7) J103112.24+380717.23	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3086			3086 Secs	
								[==>]	***[3]***
6		(7) J103112.24+380717.23	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3086			3086 Secs	
								[==>]	***[4]***

Orbit Structure








Orbit 4
Server Version: 20100505
Occultation
*** VISIBILITY OVERRUN = 34
GS Reacq
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11705, Visit 10, completed Wed Sep 15 01:05:52 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Diagnostics

(Visit 10) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 10) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 10) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 10) Warning (Orbit Planner): VISIBILITY OVERRUN

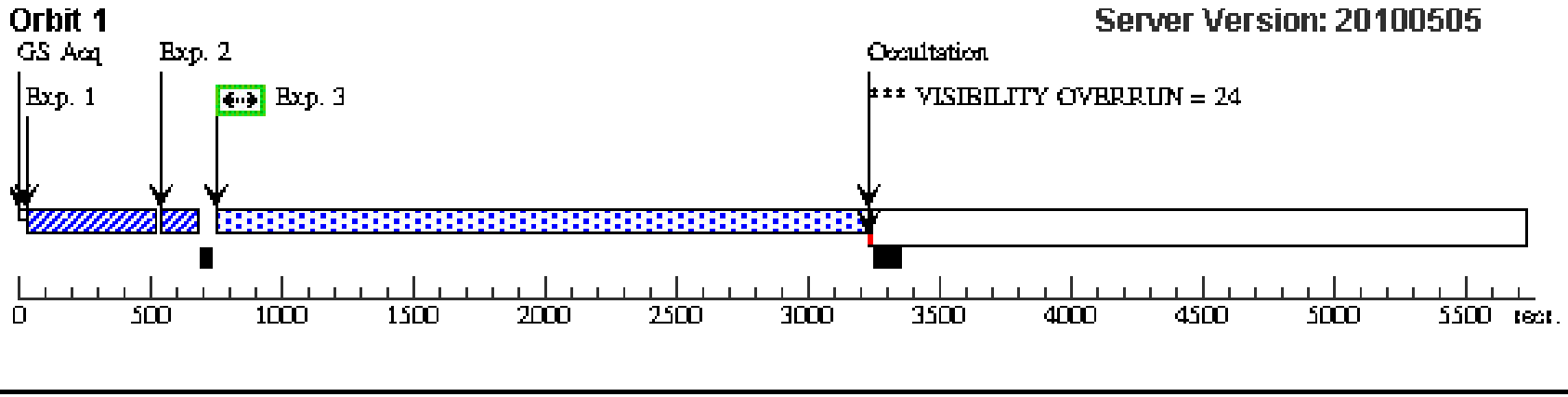
Fixed Targets

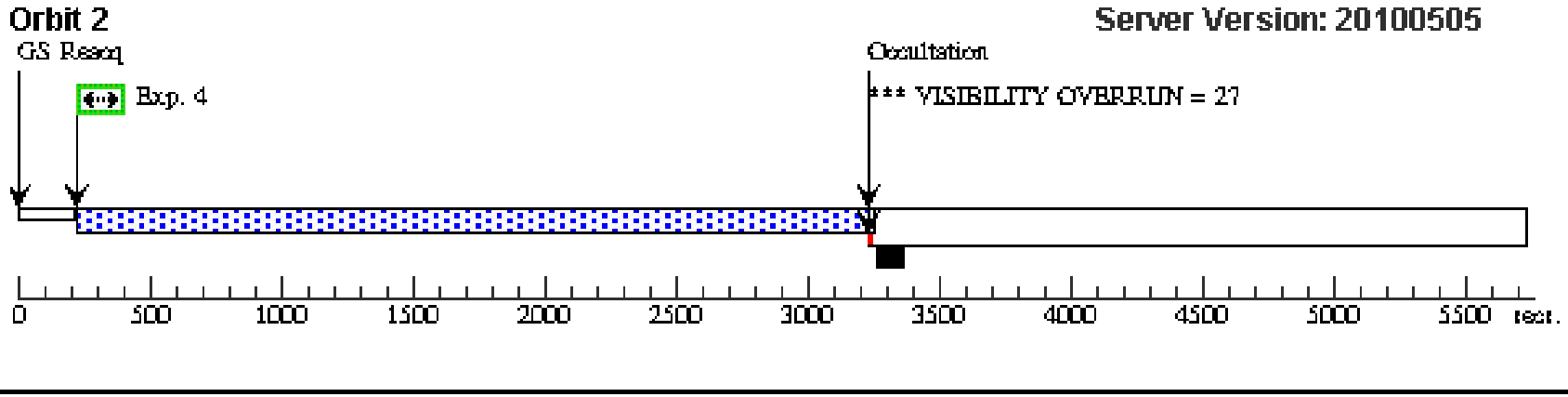
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J020845.54+002236.07	RA: 02 08 45.5400 (32.1897500d) Dec: +00 22 36.07 (.37669d) Equinox: J2000		V=17.1	Reference Frame: ICRS

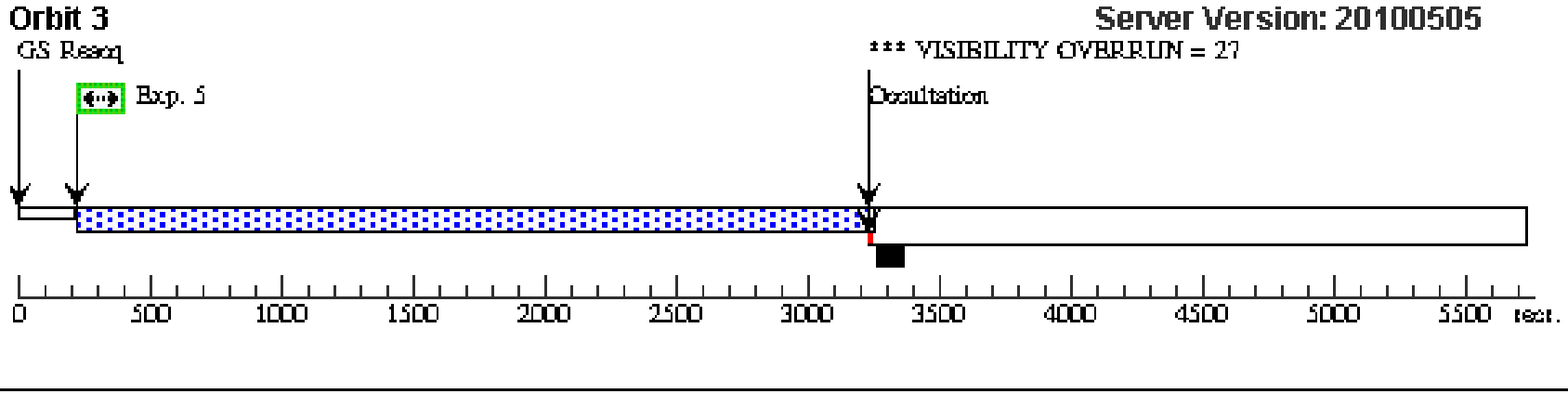
Exposures

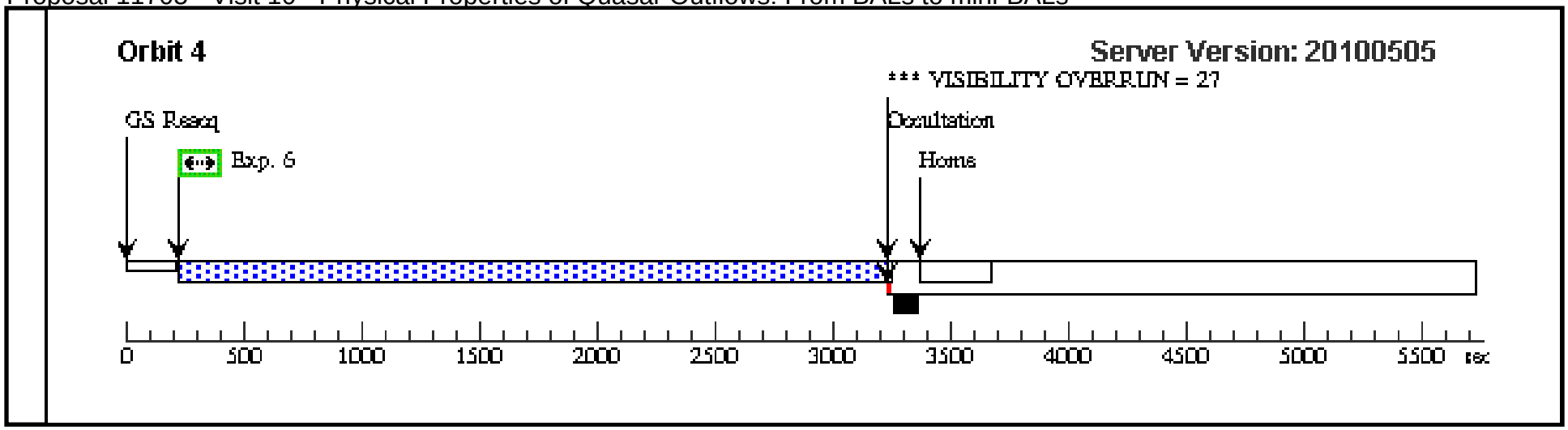
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) J020845.54+002236.07	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=2			12 Secs	
								[==>]	***[1]***
2		(4) J020845.54+002236.07	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				15 Secs	
								[==>]	***[1]***
3		(4) J020845.54+002236.07	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=2372			2372 Secs	
								[==>]	***[1]***
4		(4) J020845.54+002236.07	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3012			3012 Secs	
								[==>]	***[2]***
5		(4) J020845.54+002236.07	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3012			3012 Secs	
								[==>]	***[3]***
6		(4) J020845.54+002236.07	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3012			3012 Secs	
								[==>]	***[4]***

Orbit Structure








Orbit 4
Server Version: 20100505
*** VISIBILITY OVERRUN = 27
GS Reacq
Exp. 6
Occultation
Horns
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11705, Visit 14, completed Wed Sep 15 01:05:53 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Diagnostics

(Visit 14) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 14) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 14) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 14) Warning (Orbit Planner): VISIBILITY OVERRUN

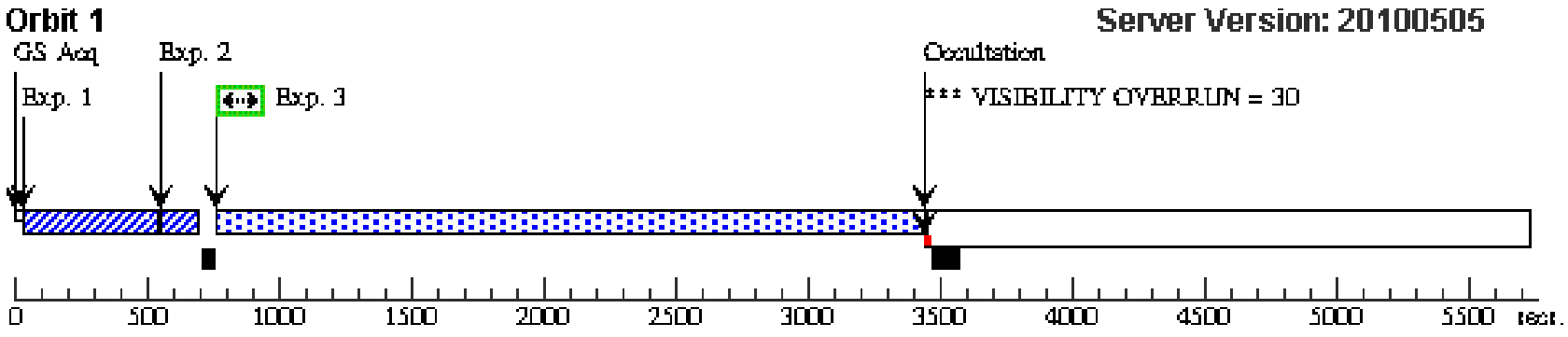
Fixed Targets

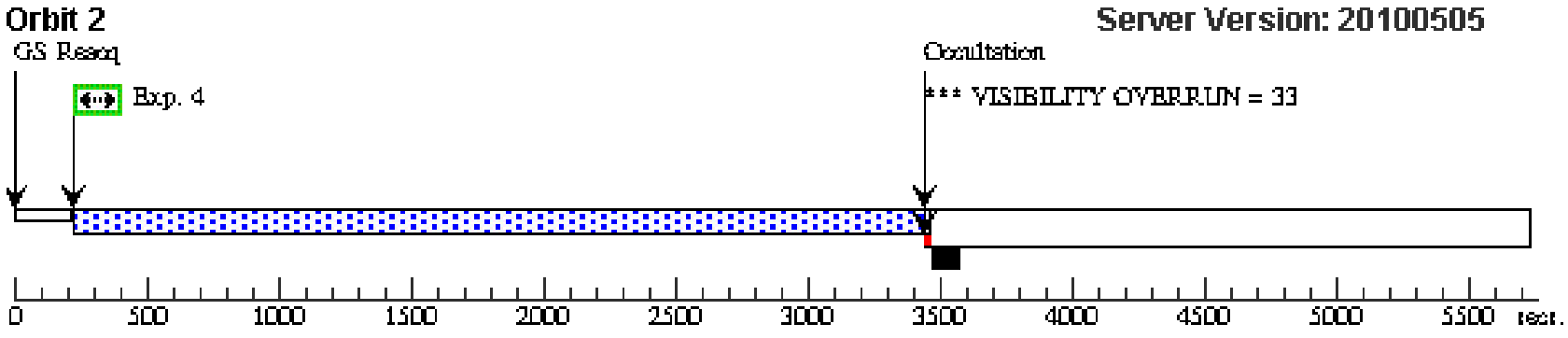
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J100128.61+502756.90	RA: 10 01 28.6100 (150.3692083d) Dec: +50 27 56.90 (50.46581d) Equinox: J2000		V=17.6	Reference Frame: ICRS

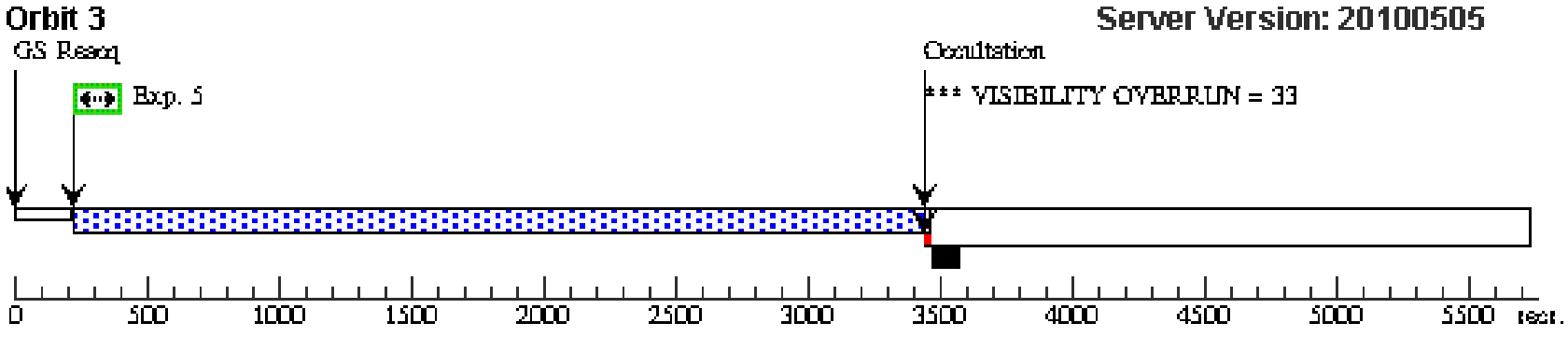
Exposures

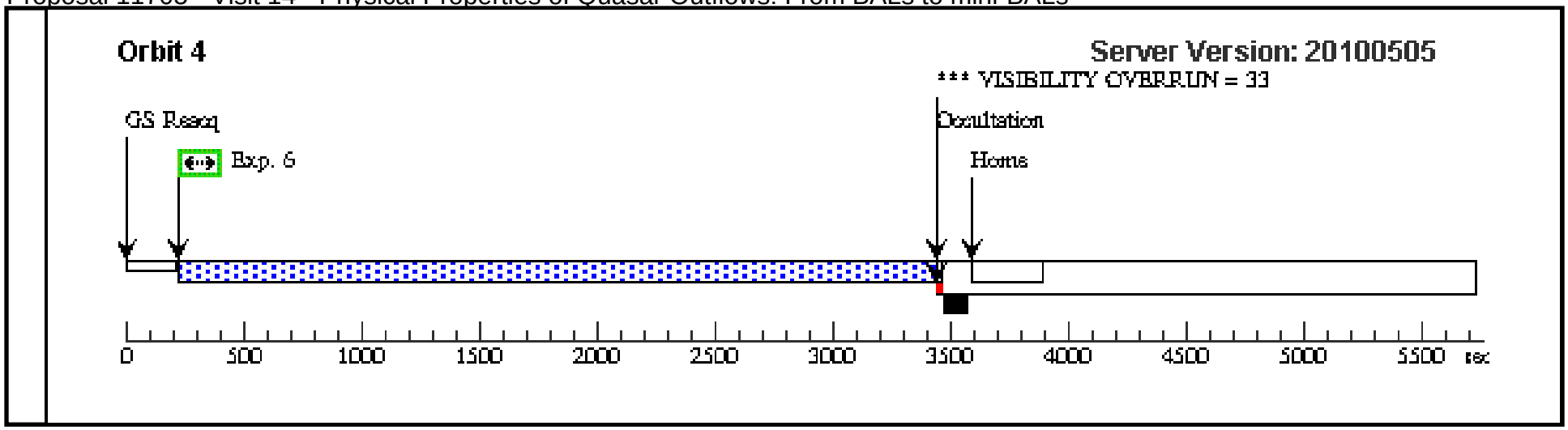
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(6) J100128.61+502756.90	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=2			15 Secs *[==>]*	 ***[1]***
2		(6) J100128.61+502756.90	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				15 Secs *[==>]*	 ***[1]***
3		(6) J100128.61+502756.90	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=2577			2577 Secs *[==>]*	 ***[1]***
4		(6) J100128.61+502756.90	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3229			3229 Secs *[==>]*	 ***[2]***
5		(6) J100128.61+502756.90	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3229			3229 Secs *[==>]*	 ***[3]***
6		(6) J100128.61+502756.90	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3229			3229 Secs *[==>]*	 ***[4]***

Orbit Structure








Orbit 4
Server Version: 20100505
*** VISIBILITY OVERRUN = 33
GS Reacq
Exp. 6
Occultation
Horns
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11705, Visit 54 Wed Sep 15 01:05:54 GMT 2010

Diagnostic Status: Warning

Scientific Instruments: COS/NUV

Special Requirements: (none)

Comments: Repeat of failed visit 04.

Diagnostics

(Visit 54) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 54) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 54) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 54) Warning (Orbit Planner): VISIBILITY OVERRUN

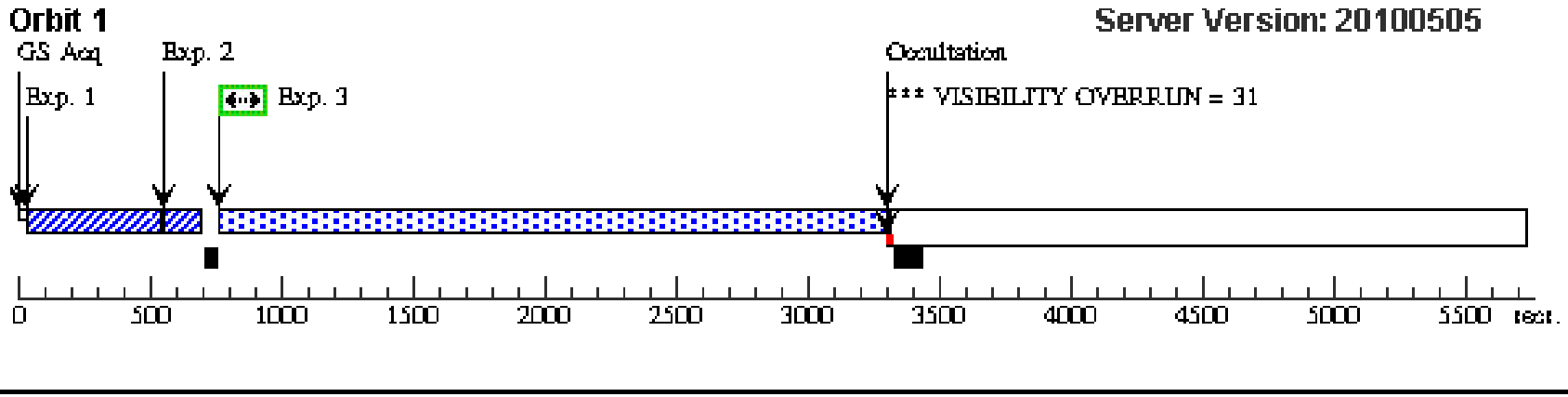
Fixed Targets

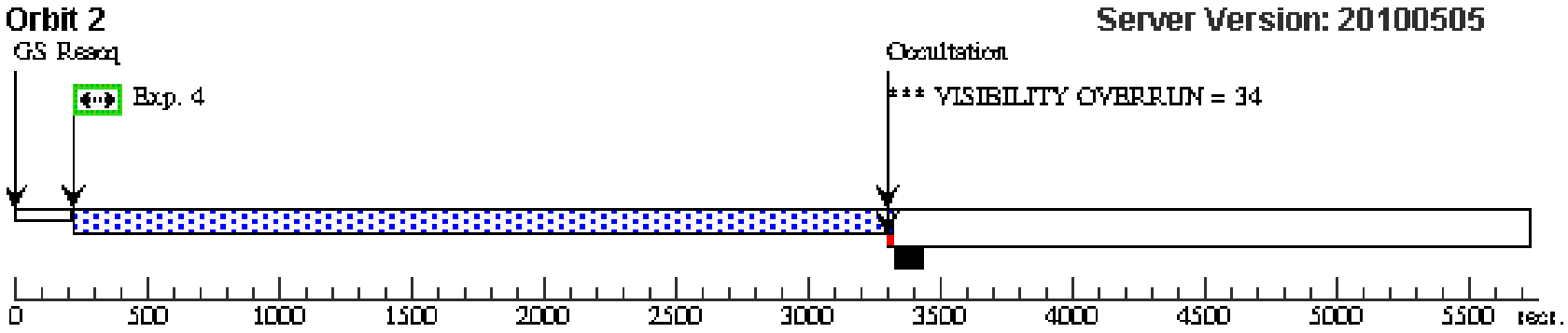
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	J103112.24+380717.23	RA: 10 31 12.2400 (157.8010000d) Dec: +38 07 17.23 (38.12145d) Equinox: J2000		V=17.3	Reference Frame: ICRS

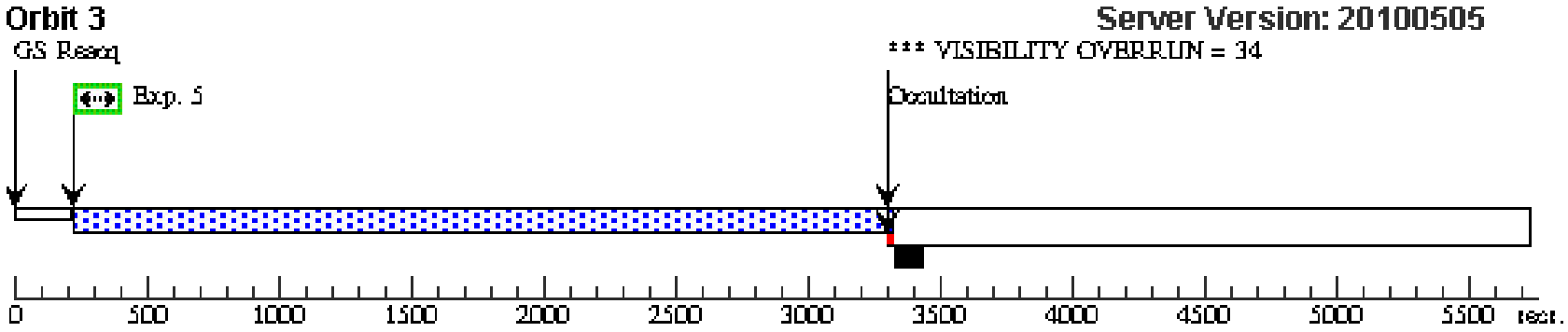
Exposures

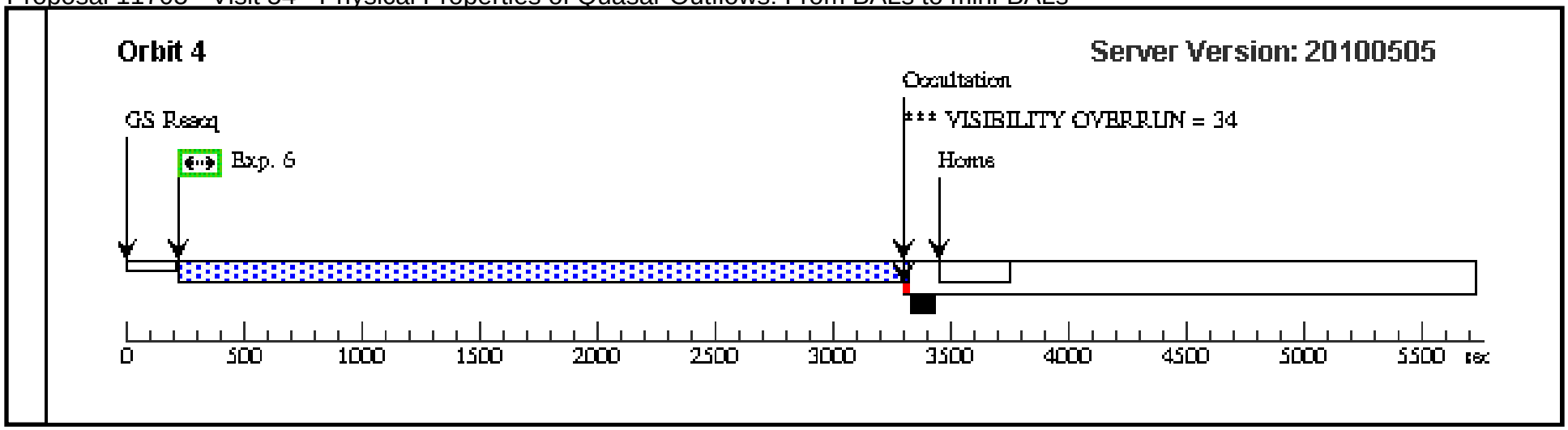
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(7) J103112.24+380717.23	COS/NUV, ACQ/SEARCH, PSA	MIRRORA	SCAN-SIZE=2			15 Secs *[==>]*	 ***[1]***
2		(7) J103112.24+380717.23	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				15 Secs *[==>]*	 ***[1]***
3		(7) J103112.24+380717.23	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=2434			2434 Secs *[==>]*	 ***[1]***
4		(7) J103112.24+380717.23	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3086			3086 Secs *[==>]*	 ***[2]***
5		(7) J103112.24+380717.23	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3086			3086 Secs *[==>]*	 ***[3]***
6		(7) J103112.24+380717.23	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=3086			3086 Secs *[==>]*	 ***[4]***

Orbit Structure








Orbit 4
Server Version: 20100505
Occultation
*** VISIBILITY OVERRUN = 34
GS Reacq
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec