12553 - Detecting the stellar continuum of the galaxy counterparts of three z>2 Damped Lyman-alpha Absorbers

Cycle: 19, Proposal Category: GO

(Availability Mode: SUPPORTED)

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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) QSO-J2222-0946	WFC3/UVIS	1	30-Jun-2011 21:21:49.0	yes
02	(2) QSO-J0918+1636	WFC3/UVIS	1	30-Jun-2011 21:21:53.0	yes
03	(3) QSO-J0338-0005	WFC3/UVIS	1	30-Jun-2011 21:21:56.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
04	(3) QSO-J0338-0005	WFC3/UVIS	1	30-Jun-2011 21:21:59.0	yes
05	(1) QSO-J2222-0946	WFC3/IR	1	30-Jun-2011 21:22:02.0	yes
07	(2) QSO-J0918+1636	WFC3/IR	1	30-Jun-2011 21:22:05.0	yes
08	(2) QSO-J0918+1636	WFC3/IR	1	30-Jun-2011 21:22:08.0	yes
06	(1) QSO-J2222-0946	WFC3/IR	1	30-Jun-2011 21:22:11.0	yes

8 Total Orbits Used

ABSTRACT

Despite more than 20 years of study the Damped Lyman-alpha Absorbers (DLAs) have not yet found their place in the puzzle of galaxy formation and evolution. In particular, the nature of the DLA galaxy counterparts remain very poorly constrained even after substantial amounts of observing time both with HST and 8-m class telescopes. The reason for this is now understood: DLAs are due to their HI cross-section selection drawn from the faint end of the luminosity function. However, we have found evidence that DLAs fullfil luminosity-metallicity and mass-metallicity relations similar to local relations. We have therefore initiated a survey of the galaxy counterparts of metal rich Damped Lyman-alpha Absorbers at redshifts around 2.5 using the newly commissioned X-shooter spectrograph at the ESO Very Large Telescope. For the first 6 targets in the survey we have detected Lyman-alpha, [OIII] and/or H-alpha emission from three of the DLA absorbers. We here proposed to characterize the stellar content of the galaxy counterparts (age, extinction, morphology) and compare these properties with similar properties of emission selected galaxies at similar redshifts. This will be an important step in finding the proper place for DLAs in the puzzle of galaxy formation.

OBSERVING DESCRIPTION

The purpose of the observation is to detect galaxy counterparts of Damped Lyman-alpha Absorbers close to QSO sightlines. The challenge is to design the observation such that the PSF of the background QSO can be optimally subtracted. In order to optimize the PSF subtraction I rotate the field to place the position of the DLA galaxy between the diffraction spikes of the PSF. I follow the calculation in Fig. 7.1 in the Phase II proposal instructions for cycle 19:

Q2222-0946 (visits 1, 5 and 6): PA = 45 degrees EofN (impact parameter 0.8 arcsec). Hence, ORIENT should be 221.38 + 45. = 266.38 degrees. Allow a +/- 5 degree range and also a 180 degree rotation.

261.38 to 271.38 degrees or 81.38 to 91.38 degrees
For IR add 4.8 degrees:
266.18 to 276.18 or 86.18 to 96.18 degrees

Q0918+1636 (visits 2, 7 and 8) : PA = 246 degrees EofN (impact parameter 2.0 arcec). Equivalent to 66 degrees EofN. Hence, ORIENT should be 221.38 + 66. = 287.38 degrees.
Allow a +/- 5 degree range and also a 180 degree rotation.
282.38 to 292.38 or 102.38 to 122.38 degrees.
For IR add 4.8 degrees: 287.18 to 297.18 or 107.18 to 117.18 degrees.

Q0338-0005 (visits 3 and 4): PA = -30.+/-10. degrees EofN (impact parameter 0.5 arcsec). Hence, ORIENT should be 221.38 - 30. = 191.38 degrees.
Allow a +/- 5 degree range and also a 180 degree rotation.
186.38 to 196.38 or 6.38 to 16.38 degrees.
For this target we only do UVIS. I would have preferred if visits 3 and 4 could have orientations rotated by 180 degree relative to eachother, but there seems to be no visibility if I rotate visit 4 by 180 degrees relative to visit 3.

Furthermore, to improve the sampling of the PSF we will use a four-point, half-pixel shift dither pattern for each visit.

REAL TIME JUSTIFICATION
NA

CALIBRATION JUSTIFICATION
NA

Visit

Proposal 12553, Visit 01 Fri Jul 01 01:22:14 GMT 2011

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 261.38D TO 271.38 D; ORIENT 81.38D TO 91.38 D

Comments: I plan to place the target between the diffraction spikes (the two horisontal holes to also avoid troubles with bleeding cf. Fig. 7.1 in the Phase II instructions). The target is at a PA of 45. degrees EofN.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)

Fixed Targets

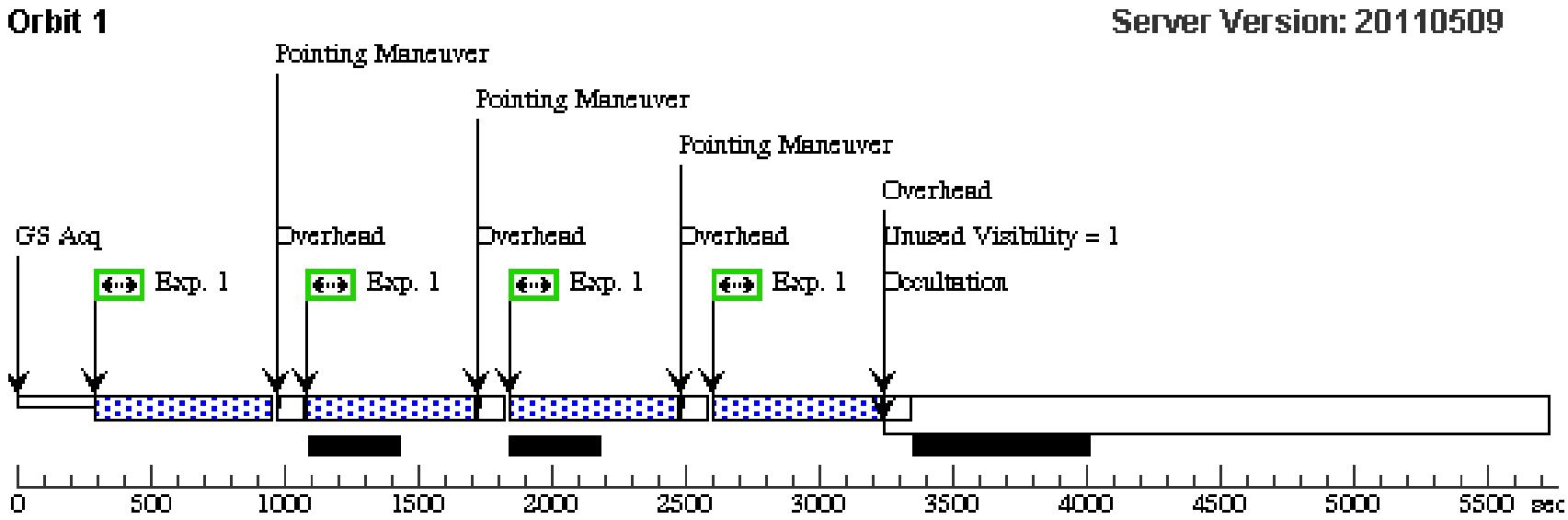
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J2222-0946	RA: 22 22 56.1100 (335.7337917d) Dec: -09 46 36.30 (-9.77675d) Equinox: J2000		V=18.267	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) QSO-J2222-0946	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 1, Exps 1-1 in Visit 01 (1)	810 Secs *[==>629.0 Secs (Pattern 1)]* *[==>629.0 Secs (Pattern 2)]* *[==>629.0 Secs (Pattern 3)]* *[==>629.0 Secs (Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 12553, Visit 02 Fri Jul 01 01:22:15 GMT 2011

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 282.38D TO 292.38 D; ORIENT 102.38D TO 112.38 D

Comments: I plan to place the target between the diffraction spikes (the two horisontal holes to also avoid troubles with bleeding cf. Fig. 7.1 in the Phase II instructions). The target is at a PA of 246. degrees EofN.

Patterns

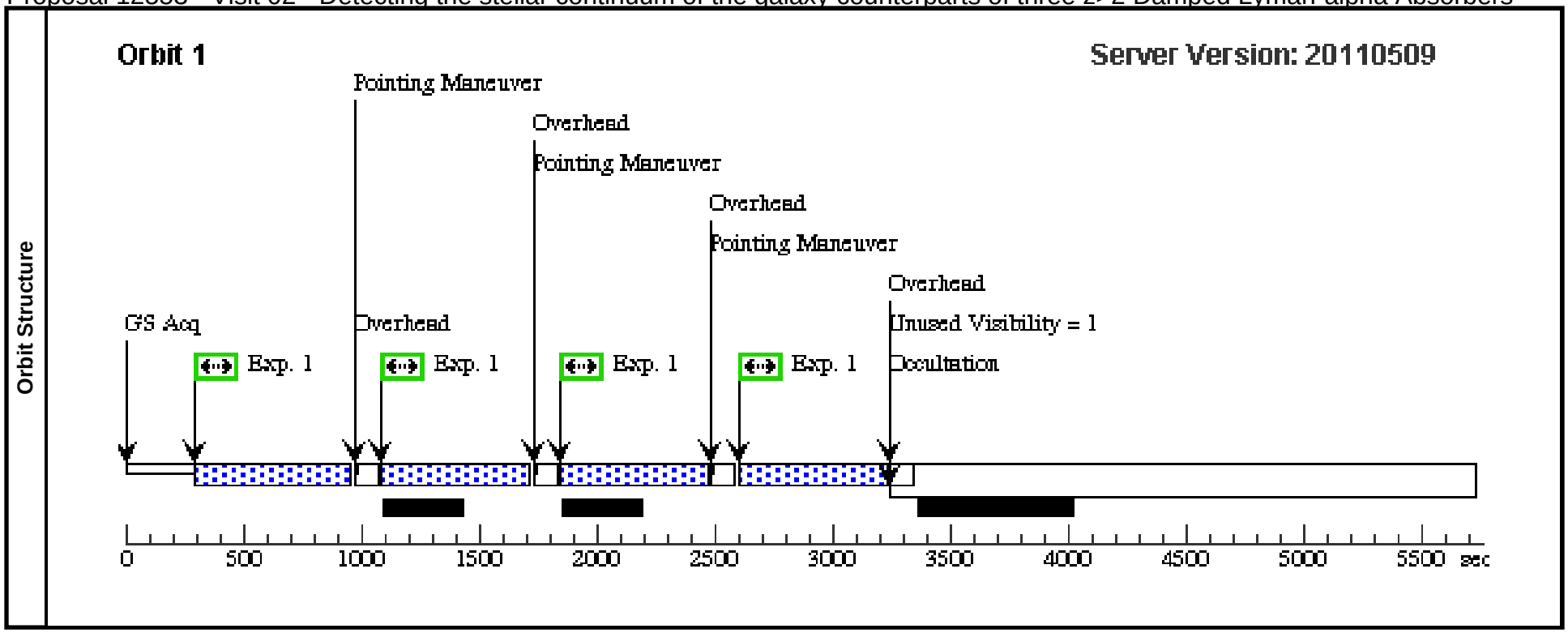
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	QSO-J0918+1636	RA: 09 18 26.1600 (139.6090000d) Dec: +16 36 9.00 (16.60250d) Equinox: J2000		V=20.5+/-0.2	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) QSO-J0918+1636	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 1, Exps 1-1 in Visit 02 (1)	810 Secs *[==>630.0 Secs (Pattern 1)]* *[==>631.0 Secs (Pattern 2)]* *[==>631.0 Secs (Pattern 3)]* *[==>631.0 Secs (Pattern 4)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20110509
Pointing Maneuver
Overhead
Pointing Maneuver
Overhead
Pointing Maneuver
Overhead
GS Acq
Exp. 1
Overhead
Exp. 1
Exp. 1
Exp. 1
Unused Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12553, Visit 03 Fri Jul 01 01:22:16 GMT 2011

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 6.38D TO 16.38 D

Comments: I plan to place the target between the diffraction spikes (the two horisontal holes to also avoid troubles with bleeding cf. Fig. 7.1 in the Phase II instructions). The target is at a PA of -33. degrees EofN.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)

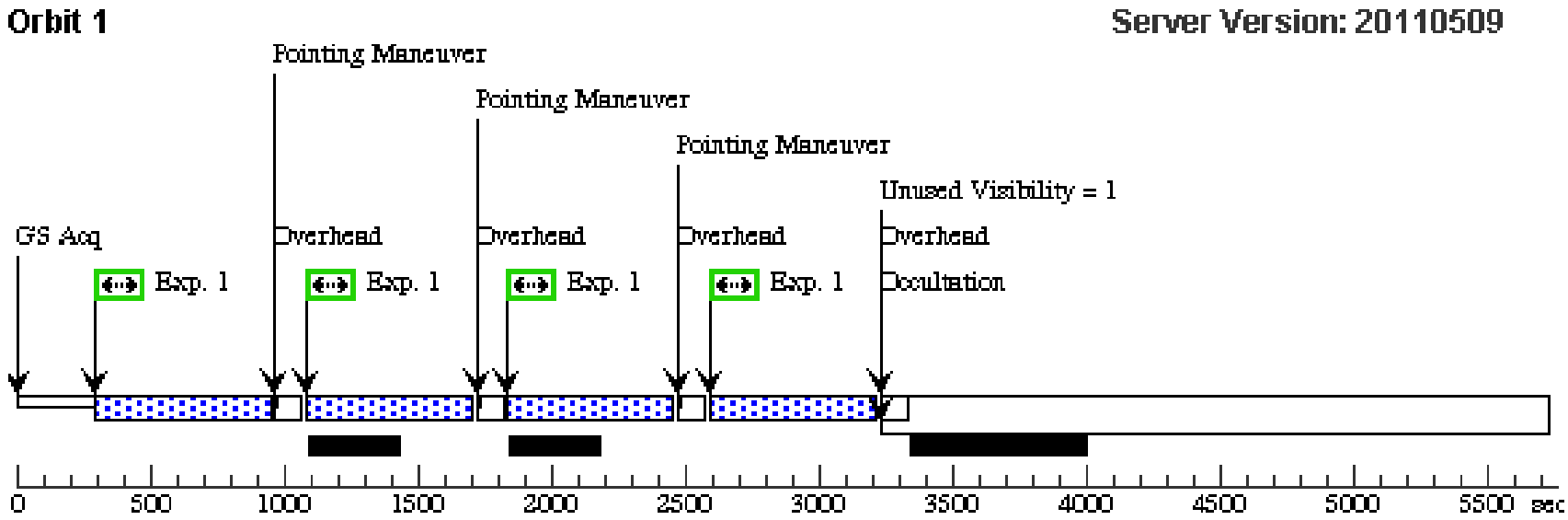
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	QSO-J0338-0005	RA: 03 38 54.7700 (54.7282083d) Dec: -00 05 21.00 (-.08917d) Equinox: J2000		V=18.7+/-0.2	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) QSO-J0338-0005	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 1, Exps 1-1 in Visit 03 (1)	810 Secs *[==>627. Secs (Pattern 1)]* *[==>627. Secs (Pattern 2)]* *[==>627. Secs (Pattern 3)]* *[==>627. Secs (Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 12553, Visit 04 Fri Jul 01 01:22:16 GMT 2011

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 6.38D TO 16.38 D

Comments: I plan to place the target between the diffraction spikes (the two horisontal holes to also avoid troubles with bleeding cf. Fig. 7.1 in the Phase II instructions). The target is at a PA of -33. degrees EofN. Compared to visit 3 I would strongly have preferred if this visit could have been observed with a orientation rotated by 180 degrees, but it seems there is no visibility at that rotation.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)

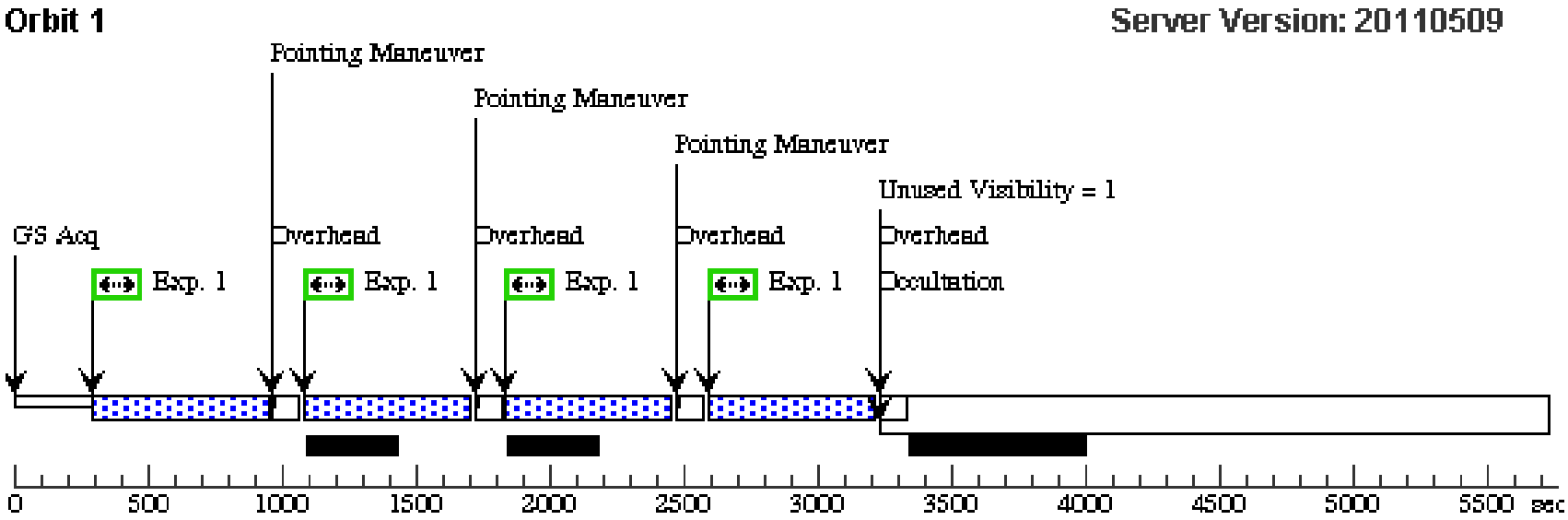
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	QSO-J0338-0005	RA: 03 38 54.7700 (54.7282083d) Dec: -00 05 21.00 (-.08917d) Equinox: J2000		V=18.7+/-0.2	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) QSO-J0338-0005	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 1, Exps 1-1 in Visit 04 (1)	810 Secs *[==>627. Secs (Pattern 1)]* *[==>627. Secs (Pattern 2)]* *[==>627. Secs (Pattern 3)]* *[==>627. Secs (Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 12553, Visit 05 Fri Jul 01 01:22:16 GMT 2011

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 266.18D TO 276.18 D; ORIENT 86.18D TO 96.18 D

Comments: I plan to place the target between the diffraction spikes (the two horisontal holes to also avoid troubles with bleeding cf. Fig. 7.1 in the Phase II instructions). The target is at a PA of 246. degrees EofN.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1)

Fixed Targets

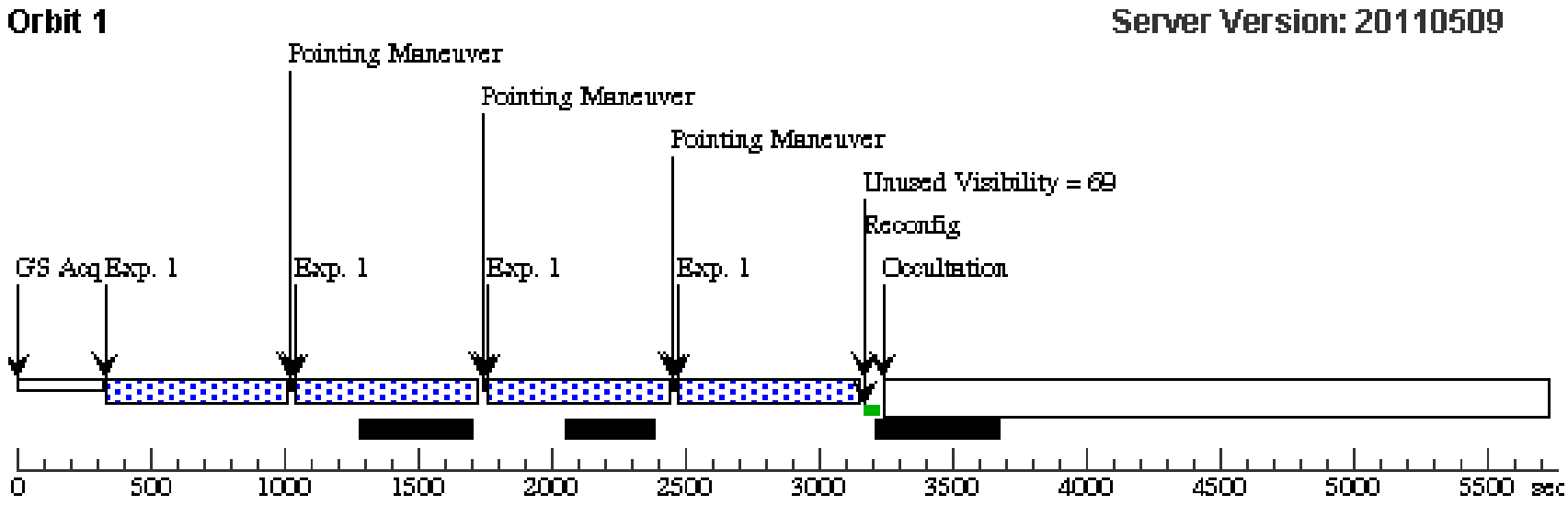
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J2222-0946	RA: 22 22 56.1100 (335.7337917d) Dec: -09 46 36.30 (-9.77675d) Equinox: J2000		V=18.267	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) QSO-J2222-0946	WFC3/IR, MULTIACCUM, IR	F105W	SAMP-SEQ=SPARS 50; NSAMP=14		Pattern 2, Exps 1-1 in Visit 05 (2)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 12553, Visit 07 Fri Jul 01 01:22:17 GMT 2011

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 287.18D TO 297.18 D; ORIENT 107.18D TO 117.18 D

Comments: I plan to place the target between the diffraction spikes (the two horisontal holes to also avoid troubles with bleeding cf. Fig. 7.1 in the Phase II instructions). The target is at a PA of 246. degrees EofN.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1)

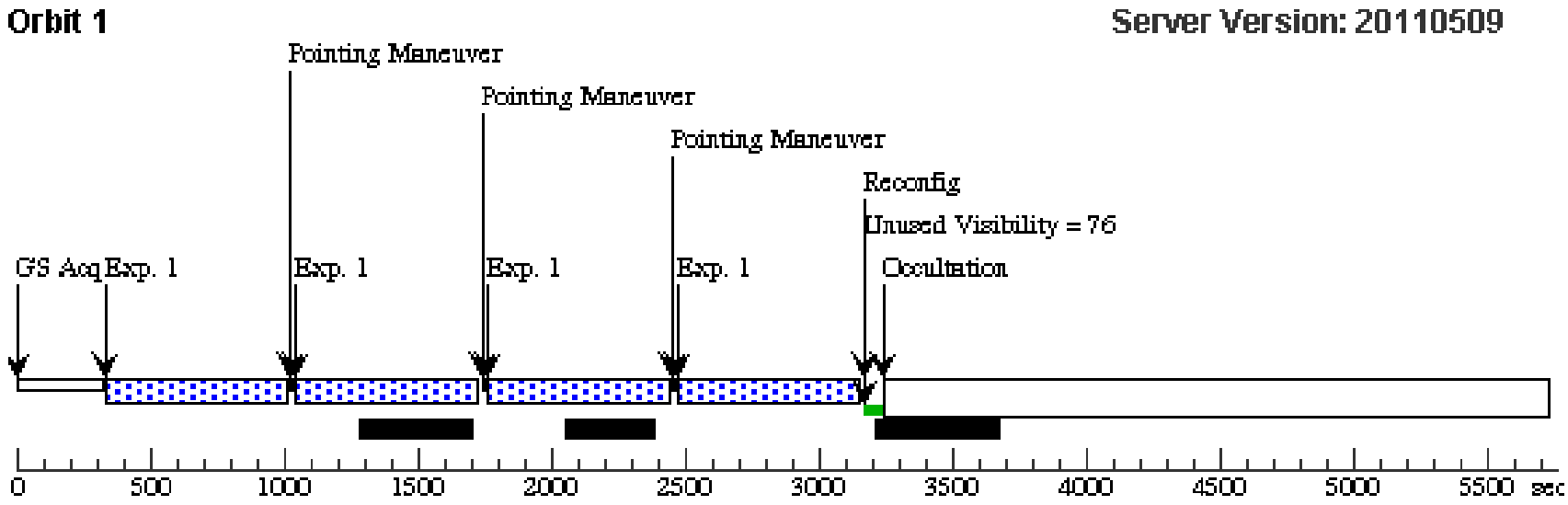
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	QSO-J0918+1636	RA: 09 18 26.1600 (139.6090000d) Dec: +16 36 9.00 (16.60250d) Equinox: J2000		V=20.5+/-0.2	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) QSO-J0918+1636	WFC3/IR, MULTIACCUM, IR	F105W	SAMP-SEQ=SPARS50; NSAMP=14		Pattern 2, Exps 1-1 in Visit 07 (2)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 12553, Visit 08 Fri Jul 01 01:22:17 GMT 2011

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 287.18D TO 297.18 D; ORIENT 107.18D TO 117.18 D

Comments: I plan to place the target between the diffraction spikes (the two horisontal holes to also avoid troubles with bleeding cf. Fig. 7.1 in the Phase II instructions). The target is at a PA of 246. degrees EofN.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1)

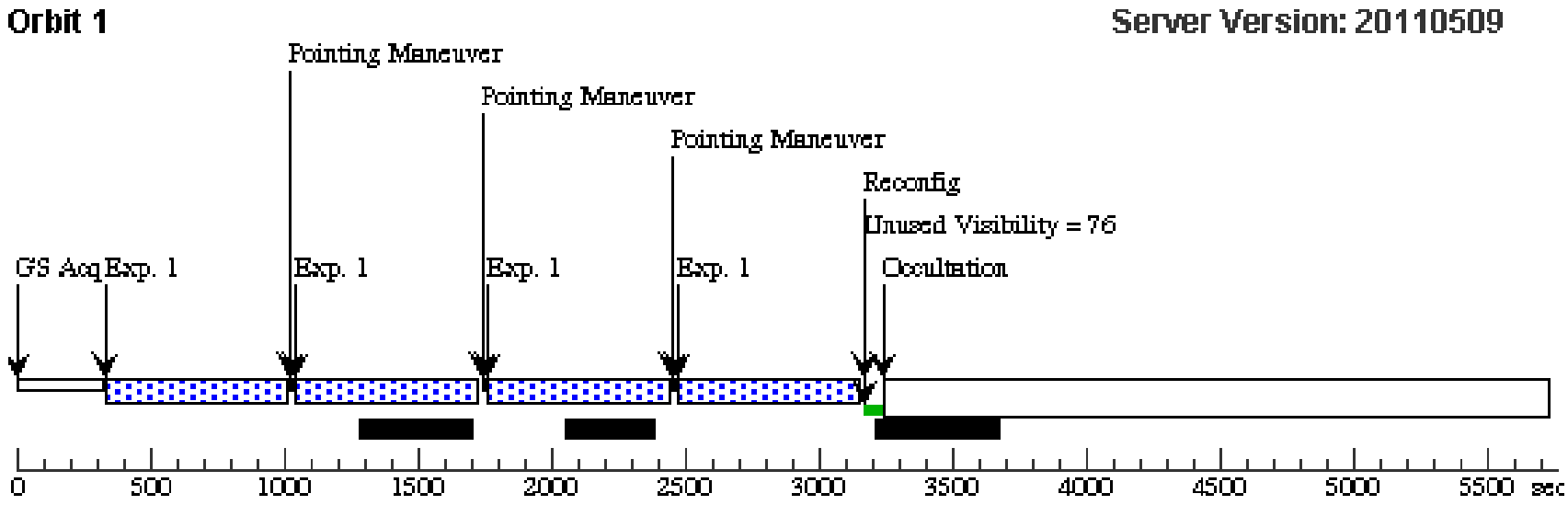
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	QSO-J0918+1636	RA: 09 18 26.1600 (139.6090000d) Dec: +16 36 9.00 (16.60250d) Equinox: J2000		V=20.5+/-0.2	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) QSO-J0918+1636	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=SPARS50; NSAMP=14		Pattern 2, Exps 1-1 in Visit 08 (2)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 12553, Visit 06 Fri Jul 01 01:22:17 GMT 2011

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 266.18D TO 276.18 D; ORIENT 86.18D TO 96.18 D

Comments: I plan to place the target between the diffraction spikes (the two horisontal holes to also avoid troubles with bleeding cf. Fig. 7.1 in the Phase II instructions). The target is at a PA of 246. degrees EofN.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J2222-0946	RA: 22 22 56.1100 (335.7337917d) Dec: -09 46 36.30 (-9.77675d) Equinox: J2000		V=18.267	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) QSO-J2222-0946	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=SPARS50; NSAMP=14		Pattern 2, Exps 1-1 in Visit 06 (2)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure