



12414 - MAMA Spectroscopic Sensitivity and Focus Monitor Cycle 18

Cycle: 18, Proposal Category: CAL/STIS

(Availability Mode: RESTRICTED)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
L1	(1) GRW+70D5824 NONE	STIS STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	25-Jul-2011 21:13:44.0	yes
L2	(1) GRW+70D5824 NONE	STIS STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	25-Jul-2011 21:13:51.0	yes
L3	(1) GRW+70D5824 NONE	STIS STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	25-Jul-2011 21:13:56.0	yes

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
M1	(2) AGK+81D266 NONE	STIS STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	25-Jul-2011 21:14:04.0	yes
E1	(3) BD+28D4211 ANY	COS/FUV STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	2	25-Jul-2011 21:14:11.0	yes
E2	(3) BD+28D4211 ANY	COS/FUV STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	2	25-Jul-2011 21:14:18.0	yes
E3	(3) BD+28D4211 ANY	COS/FUV STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	2	25-Jul-2011 21:14:25.0	yes
E4	(3) BD+28D4211 ANY	COS/FUV STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	2	25-Jul-2011 21:14:32.0	yes

12 Total Orbits Used

ABSTRACT

Monitor sensitivity of each MAMA grating mode to detect any change due to contamination or other causes. Also monitor the STIS focus in a spectroscopic and an imaging mode.

Obtain exposures in each of the 2 low-resolution MAMA spectroscopic modes every 4 months, in each of the 2 medium-resolution modes once a year, and in each of the 4 echelle modes every 3 months, using unique calibration standards for each mode, and ratio the results to the first

Proposal 12414 (STScI Edit Number: 3, Created: Monday, July 25, 2011 8:14:38 PM EST) - Overview

observations to detect any trends. In addition, each L-mode sequence will be preceded by two spectroscopic ACQ/PEAKs with the CCD/G230LB and crossed linear patterns, with the purpose of measuring the focus (PSF across the dispersion as a function of UV wavelength); and each M-mode sequence will be preceded by a CCD/F28X500II direct image also to monitor the focus.

Whenever possible, obtain parallel airglow spectra with COS.

OBSERVING DESCRIPTION

Obtain exposures in each of the 2 low-resolution MAMA spectroscopic modes every 4 months, in each of the 2 medium-resolution modes once a year, and in each of the 4 echelle modes every 3 months, using unique calibration standards for each mode, and ratio the results to the first observations to detect any trends. In addition, each L-mode sequence will be preceded by two spectroscopic ACQ/PEAKs with the CCD/G230LB and crossed linear patterns, with the purpose of measuring the focus (PSF across the dispersion as a function of UV wavelength); and each M-mode sequence will be preceded by a CCD/F28X500II direct image also to monitor the focus.

Whenever possible, obtain parallel airglow spectra with COS.

ADDITIONAL COMMENTS

Interim reports and ISR on sensitivity monitor. Wavelength-dependent trends for implementation as pipeline corrections. ISR on focus monitors. If the focus quality is found to degrade significantly, a separate program to take corrective action (such as an adjustment of the STIS tip/tilt mirror) may be implemented.

COS Observations of Geocoronal Lyman-alpha Emission

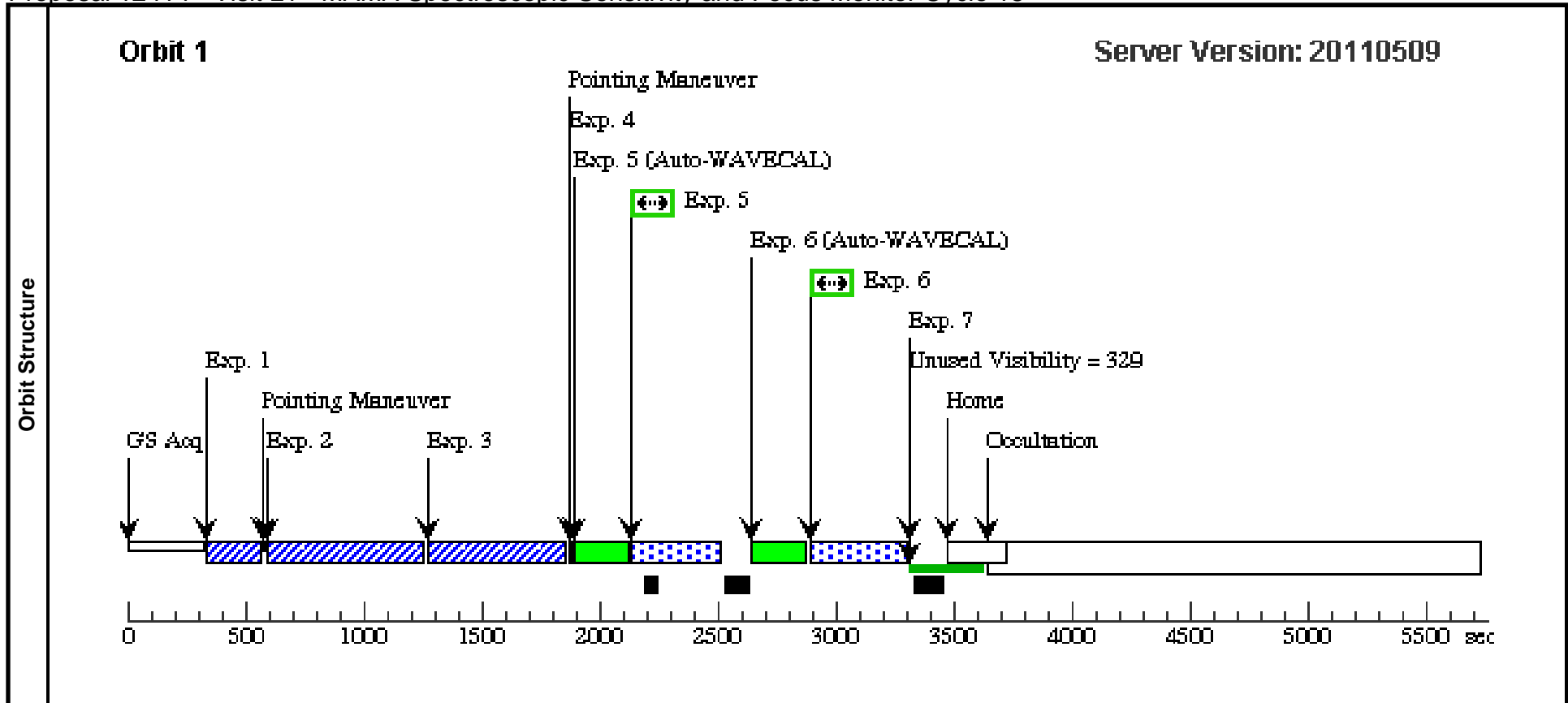
In parallel with STIS observations of BD+28D4211, perform coordinated parallel observations of the background sky with COS. Use G140L/1105 to obtain an airglow spectrum during visits 10 and X2.

Use only one of the two orbits in each visit to avoid alignment problems.

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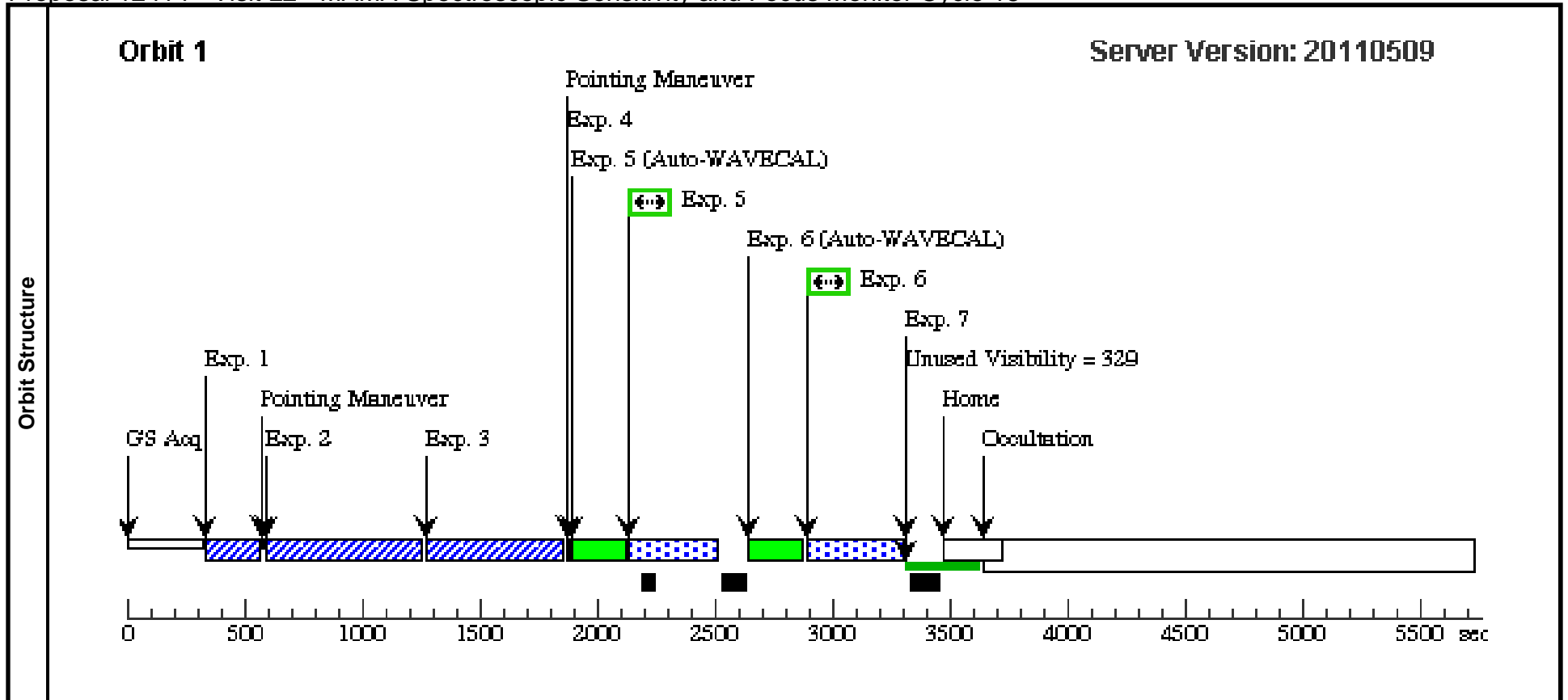
Visit	Proposal 12414, Visit L1, completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD, STIS/FUV-MAMA, STIS/NUV-MAMA, STIS Special Requirements: BETWEEN 15-NOV-2010:00:00:00 AND 29-NOV-2010:00:00:00 Comments: L-modes + Focus									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(1)	GRW+70D5824	RA: 13 38 51.1700 (204.7132083d) Dec: +70 17 7.85 (70.28551d) Equinox: J2000	Proper Motion RA: -0.0798 sec of time/yr Proper Motion Dec: -0.0262 arcsec/yr Epoch of Position: 1991.25	V=12.77+/-0.0 B-V =-0.09 F(1280.8) = 1.38 +/- 0.1 E-12	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	ACQ	(1) GRW+70D5824	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARI O BASE1B3		1.0 Secs [==>]	[1]
	2	Peak	(1) GRW+70D5824	STIS/CCD, ACQ/PEAK, 0.1X0.09	G230LB 2375 A	STEP-SIZE=20; NUM-POS=7; SEARCH=LINEAR AXIS2			20.0 Secs [==>]	[1]
	3	Peak	(1) GRW+70D5824	STIS/CCD, ACQ/PEAK, 0.1X0.09	G230LB 2375 A	STEP-SIZE=20; NUM-POS=7; SEARCH=LINEAR AXIS1			20.0 Secs [==>]	[1]
	4		NONE	STIS, MSMOFF		SETOFFSET=ZERO ; GRATING1=ALL			[==>]	[1]
	5	G140L	(1) GRW+70D5824	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A				331.0 Secs [==>]	[1]
	<i>Comments: exposure time increased to maintain SNR=50 at wavelength of least sensitivity.</i>									
	6	G230L	(1) GRW+70D5824	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A				368.0 Secs [==>]	[1]
<i>Comments: Exposure time increased to maintain SNR=50 at wavelength of least sensitivity</i>										
7		NONE	STIS, MSMOFF		SETOFFSET=REST ORE; GRATING1=ALL			[==>]	[1]	



Proposal 12414 - Visit L2 - MAMA Spectroscopic Sensitivity and Focus Monitor Cycle 18

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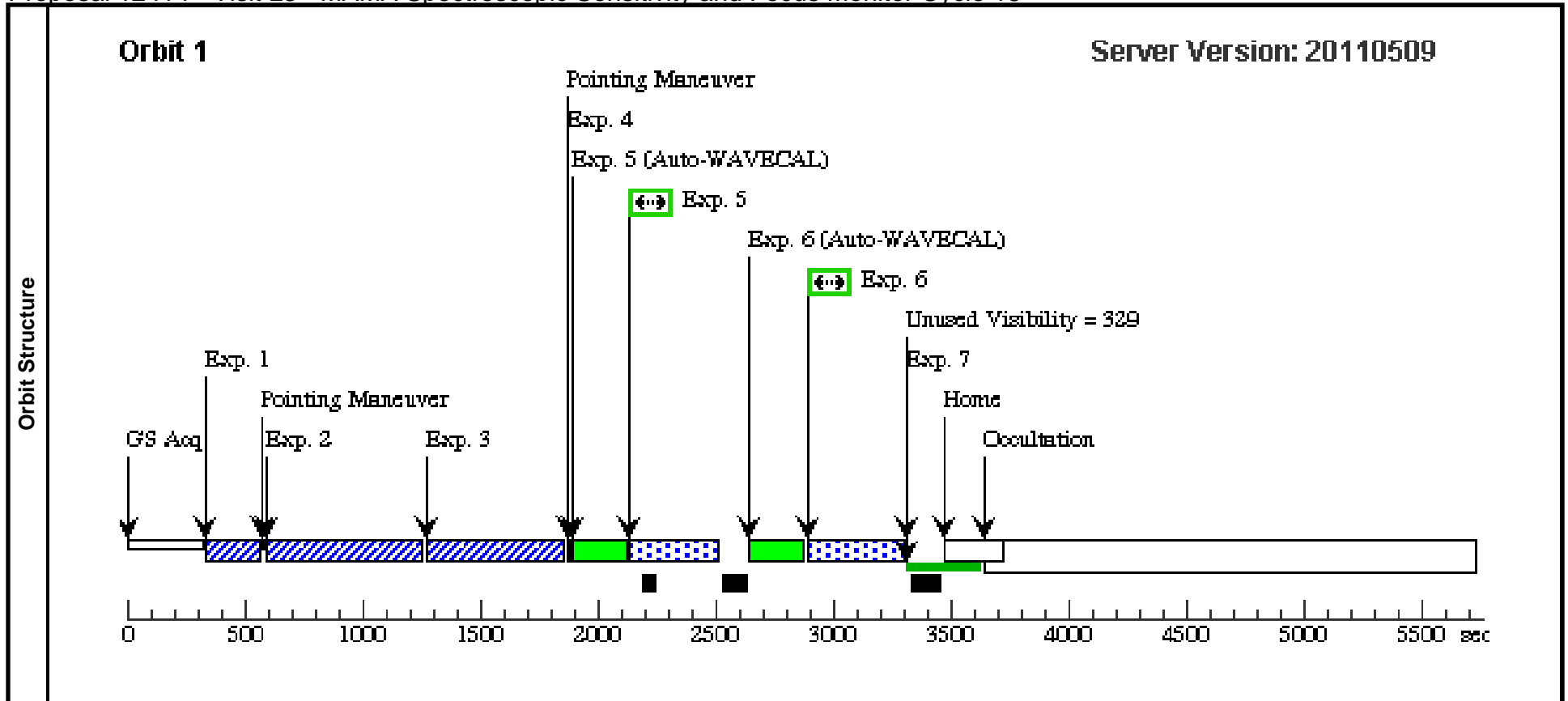
Visit	Proposal 12414, Visit L2, completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD, STIS/FUV-MAMA, STIS/NUV-MAMA, STIS Special Requirements: BETWEEN 14-MAR-2011:00:00:00 AND 20-MAR-2011:00:00:00 Comments: L-modes + Focus									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(1)	GRW+70D5824	RA: 13 38 51.1700 (204.7132083d) Dec: +70 17 7.85 (70.28551d) Equinox: J2000	Proper Motion RA: -0.0798 sec of time/yr Proper Motion Dec: -0.0262 arcsec/yr Epoch of Position: 1991.25	V=12.77+/-0.0 B-V =-0.09 F(1280.8) = 1.38 +/- 0.1 E-12	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	ACQ	(1) GRW+70D5824	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARI O BASE1B3		1.0 Secs [==>]	[1]
	2	Peak	(1) GRW+70D5824	STIS/CCD, ACQ/PEAK, 0.1X0.09	G230LB 2375 A	STEP-SIZE=20; NUM-POS=7; SEARCH=LINEAR AXIS2			20.0 Secs [==>]	[1]
	3	Peak	(1) GRW+70D5824	STIS/CCD, ACQ/PEAK, 0.1X0.09	G230LB 2375 A	STEP-SIZE=20; NUM-POS=7; SEARCH=LINEAR AXIS1			20.0 Secs [==>]	[1]
	4		NONE	STIS, MSMOFF		SETOFFSET=ZERO ; GRATING1=ALL			[==>]	[1]
	5	G140L	(1) GRW+70D5824	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A				331.0 Secs [==>]	[1]
	6	G230L	(1) GRW+70D5824	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A				368.0 Secs [==>]	[1]
	7		NONE	STIS, MSMOFF		SETOFFSET=REST ORE; GRATING1=ALL			[==>]	[1]



Proposal 12414 - Visit L3 - MAMA Spectroscopic Sensitivity and Focus Monitor Cycle 18

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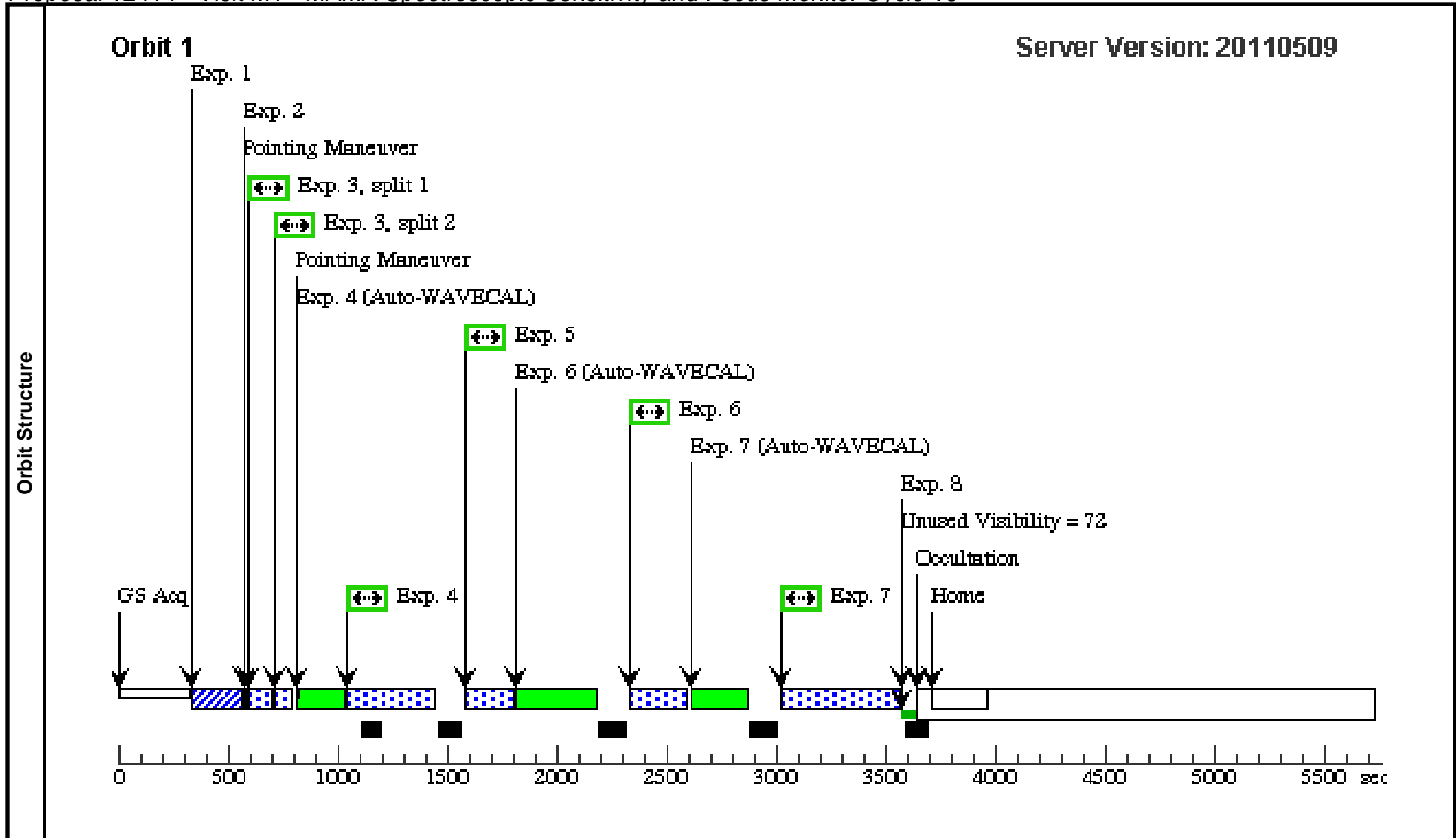
Visit	Proposal 12414, Visit L3, completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD, STIS/FUV-MAMA, STIS/NUV-MAMA, STIS Special Requirements: BETWEEN 04-JUL-2011:00:00:00 AND 11-JUL-2011:00:00:00 Comments: L-modes + Focus									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(1)	GRW+70D5824	RA: 13 38 51.1700 (204.7132083d) Dec: +70 17 7.85 (70.28551d) Equinox: J2000	Proper Motion RA: -0.0798 sec of time/yr Proper Motion Dec: -0.0262 arcsec/yr Epoch of Position: 1991.25	V=12.77+/-0.0 B-V =-0.09 F(1280.8) = 1.38 +/- 0.1 E-12	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	ACQ	(1) GRW+70D5824	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARI O BASE1B3		1.0 Secs [==>]	[1]
	2	Peak	(1) GRW+70D5824	STIS/CCD, ACQ/PEAK, 0.1X0.09	G230LB 2375 A	STEP-SIZE=20; NUM-POS=7; SEARCH=LINEAR AXIS2			20.0 Secs [==>]	[1]
	3	Peak	(1) GRW+70D5824	STIS/CCD, ACQ/PEAK, 0.1X0.09	G230LB 2375 A	STEP-SIZE=20; NUM-POS=7; SEARCH=LINEAR AXIS1			20.0 Secs [==>]	[1]
	4	NONE		STIS, MSMOFF		SETOFFSET=ZERO ; GRATING1=ALL			[==>]	[1]
	5	G140L	(1) GRW+70D5824	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A				331.0 Secs [==>]	[1]
	6	G230L	(1) GRW+70D5824	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A				368.0 Secs [==>]	[1]
	Comments: Expand									
7	NONE		STIS, MSMOFF		SETOFFSET=REST ORE; GRATING1=ALL			[==>]	[1]	



Proposal 12414 - Visit M1 - MAMA Spectroscopic Sensitivity and Focus Monitor Cycle 18

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Visit	Proposal 12414, Visit M1, completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD, STIS/FUV-MAMA, STIS/NUV-MAMA, STIS Special Requirements: BEFORE 01-OCT-2011:00:00:00 Comments: <i>M-modes + Focus</i>									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(2)	AGK+81D266	RA: 09 21 19.2000 (140.3300000d) Dec: +81 43 28.08 (81.72447d) Equinox: J2000	Proper Motion RA: -0.0047 sec of time/yr Proper Motion Dec: -0.0501 arcsec/yr Epoch of Position: 1991.25	V=11.92+/-0.5 B-V = -0.33	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	ACQ	(2) AGK+81D266	STIS/CCD, ACQ, F28X50LP	MIRROR				1.0 Secs [==>]	[1]
	2	MSOFF zero	NONE	STIS, MSMOFF		SETOFFSET=ZERO ; GRATING1=ALL			[==>]	[1]
	3	OII image	(2) AGK+81D266	STIS/CCD, ACCUM, F28X50OII	MIRROR	GAIN=4; CR-SPLIT=2; CENTERAXIS2=256			90.0 Secs [==>(Split 1)] [==>(Split 2)]	[1]
	4	G140M	(2) AGK+81D266	STIS/FUV-MAMA, ACCUM, 52X2	G140M 1567 A				348.0 Secs [==>]	[1]
	5	G140M	(2) AGK+81D266	STIS/FUV-MAMA, ACCUM, 52X2	G140M 1567 A				204.0 Secs [==>]	[1]
	6	G140M	(2) AGK+81D266	STIS/FUV-MAMA, ACCUM, 52X2	G140M 1173 A				204.0 Secs [==>]	[1]
	<i>Comments: Expand</i>									
	7	G230M	(2) AGK+81D266	STIS/NUV-MAMA, ACCUM, 52X2	G230M 2818 A				480.0 Secs [==>]	[1]
	<i>Comments: Expand</i>									
8	MSOFF RE STORE	NONE	STIS, MSMOFF		SETOFFSET=RESTORE; GRATING1=ALL			[==>]	[1]	



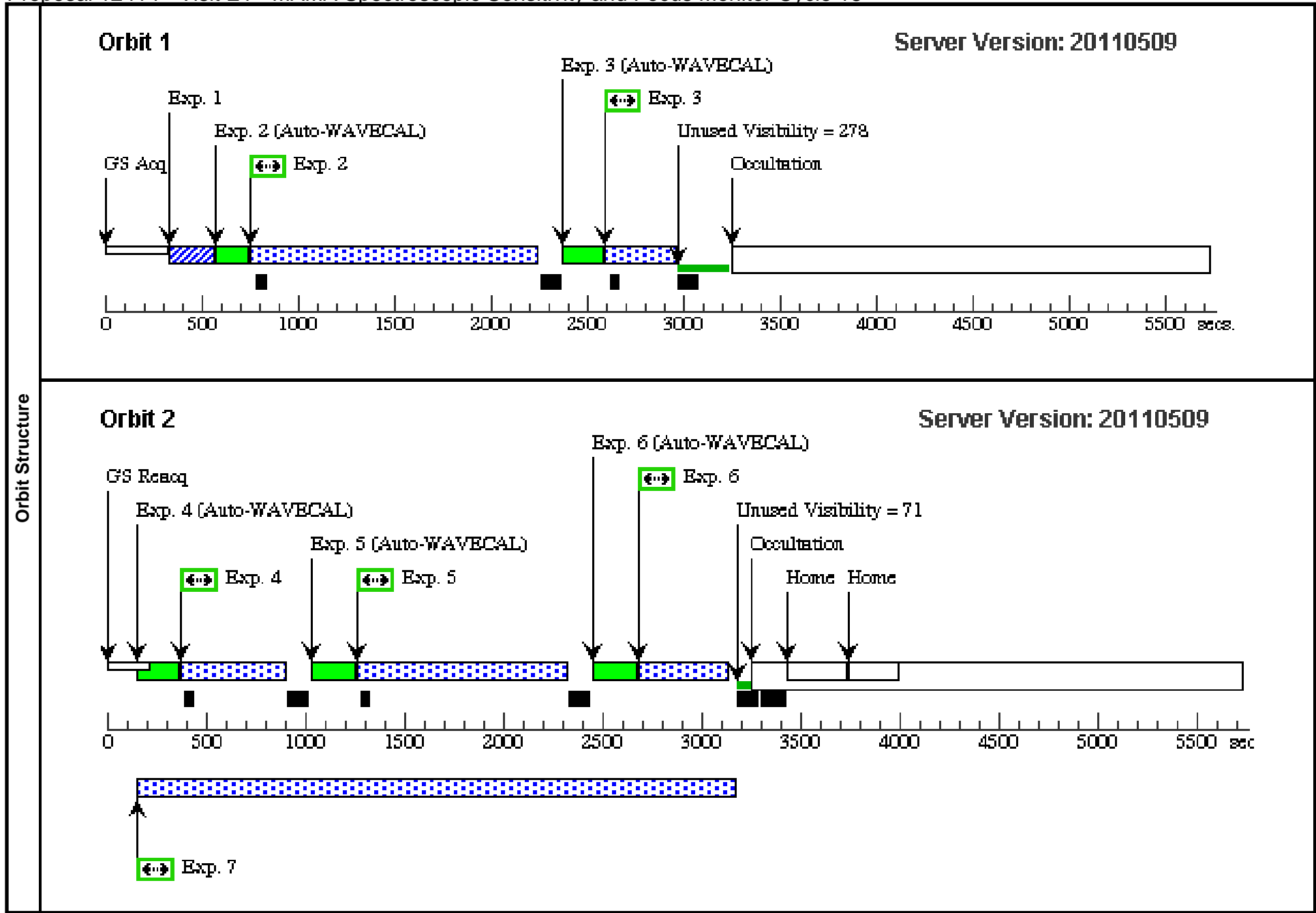
Proposal 12414 - Visit E1 - MAMA Spectroscopic Sensitivity and Focus Monitor Cycle 18

Tue Jul 26 01:14:41 GMT 2011

Visit	Proposal 12414, Visit E1, completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD, COS/FUV, STIS/FUV-MAMA, STIS/NUV-MAMA Special Requirements: ORIENT 62D TO 62 D; BETWEEN 15-NOV-2010:00:00:00 AND 29-NOV-2010:00:00:00 Comments: E-modes + Focus				

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(3)	BD+28D4211	RA: 21 51 11.0200 (327.7959167d) Dec: +28 51 50.40 (28.86400d) Equinox: J2000	Proper Motion RA: -0.0026 sec of time/yr Proper Motion Dec: -0.056 arcsec/yr Epoch of Position: 2000.0	V=10.51+/-0.04 B-V = -0.34 F(2000)=9.42 +/- 0.001 e-12	Reference Frame: ICRS

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	ACQ	(3) BD+28D4211	STIS/CCD, ACQ, F28X50LP	MIRROR				0.1 Secs [==>]	[1]
	2	E230H	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 2263 A				1476.0 Secs [==>]	[1]
	3	E140M	(3) BD+28D4211	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				350.0 Secs [==>]	[1]
	4	E230M	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230M 1978 A			Prime + Parallel Group 4-7 in Visit E1	516.0 Secs [==>]	[2]
	5	E140H	(3) BD+28D4211	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140H 1416 A			Prime + Parallel Group 4-7 in Visit E1	1040.0 Secs [==>]	[2]
	6	E230M	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230M 2707 A			Prime + Parallel Group 4-7 in Visit E1	438.0 Secs [==>]	[2]
	<i>Comments: Expand</i>									
7	ANY		COS/FUV, TIME-TAG, PSA	G130M 1309 A		BUFFER-TIME=2900; FP-POS=1		Prime + Parallel Group 4-7 in Visit E1	2900.0 Secs [==>]	[2]



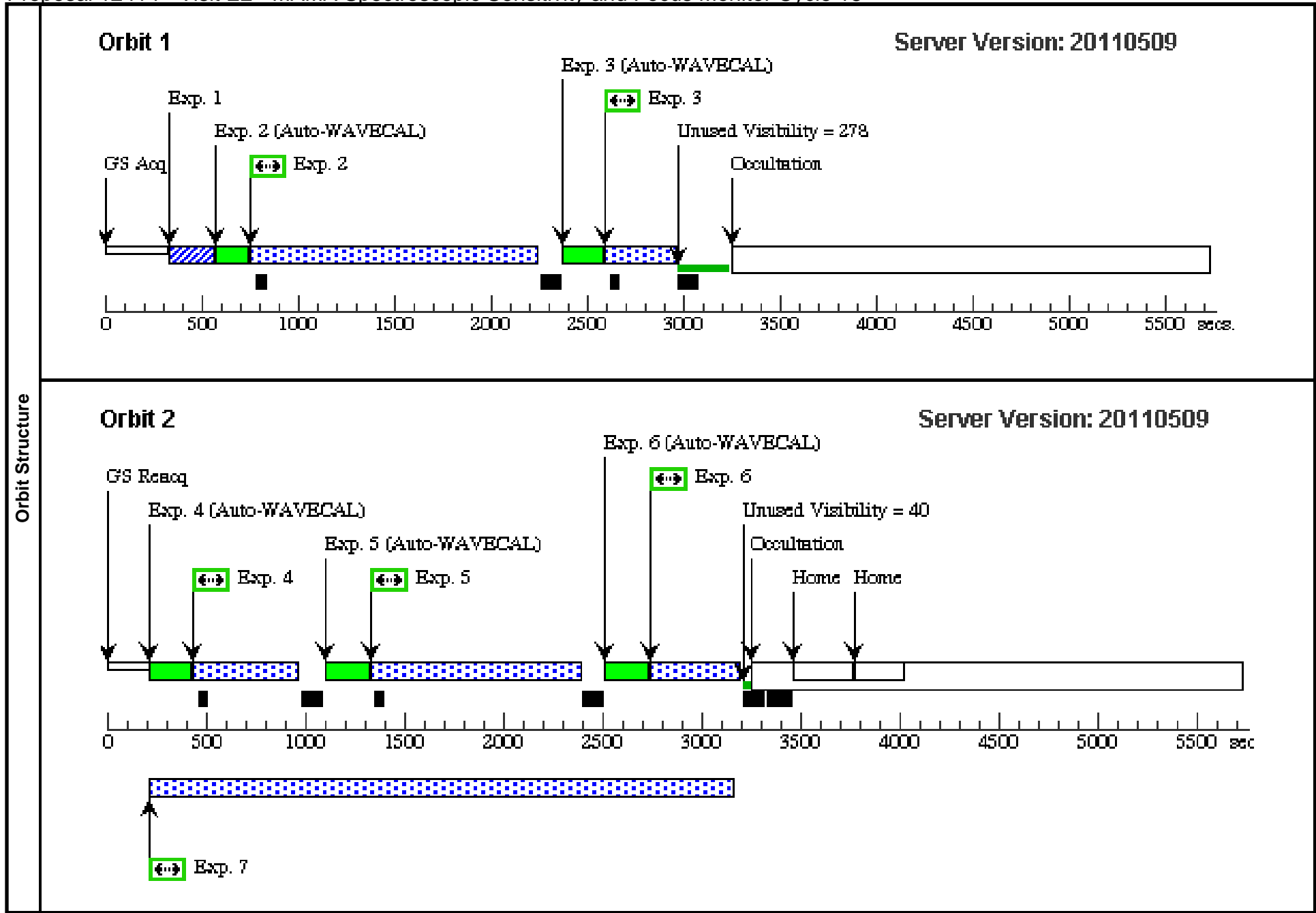
Proposal 12414 - Visit E2 - MAMA Spectroscopic Sensitivity and Focus Monitor Cycle 18

Tue Jul 26 01:14:42 GMT 2011

Visit	Proposal 12414, Visit E2, completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD, COS/FUV, STIS/FUV-MAMA, STIS/NUV-MAMA Special Requirements: ORIENT 30D TO 30 D; BETWEEN 17-JAN-2011:00:00:00 AND 24-JAN-2011:00:00:00 Comments: E-modes				

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(3)	BD+28D4211	RA: 21 51 11.0200 (327.7959167d) Dec: +28 51 50.40 (28.86400d) Equinox: J2000	Proper Motion RA: -0.0026 sec of time/yr Proper Motion Dec: -0.056 arcsec/yr Epoch of Position: 2000.0	V=10.51+/-0.04 B-V = -0.34 F(2000)=9.42 +/- 0.001 e-12	Reference Frame: ICRS

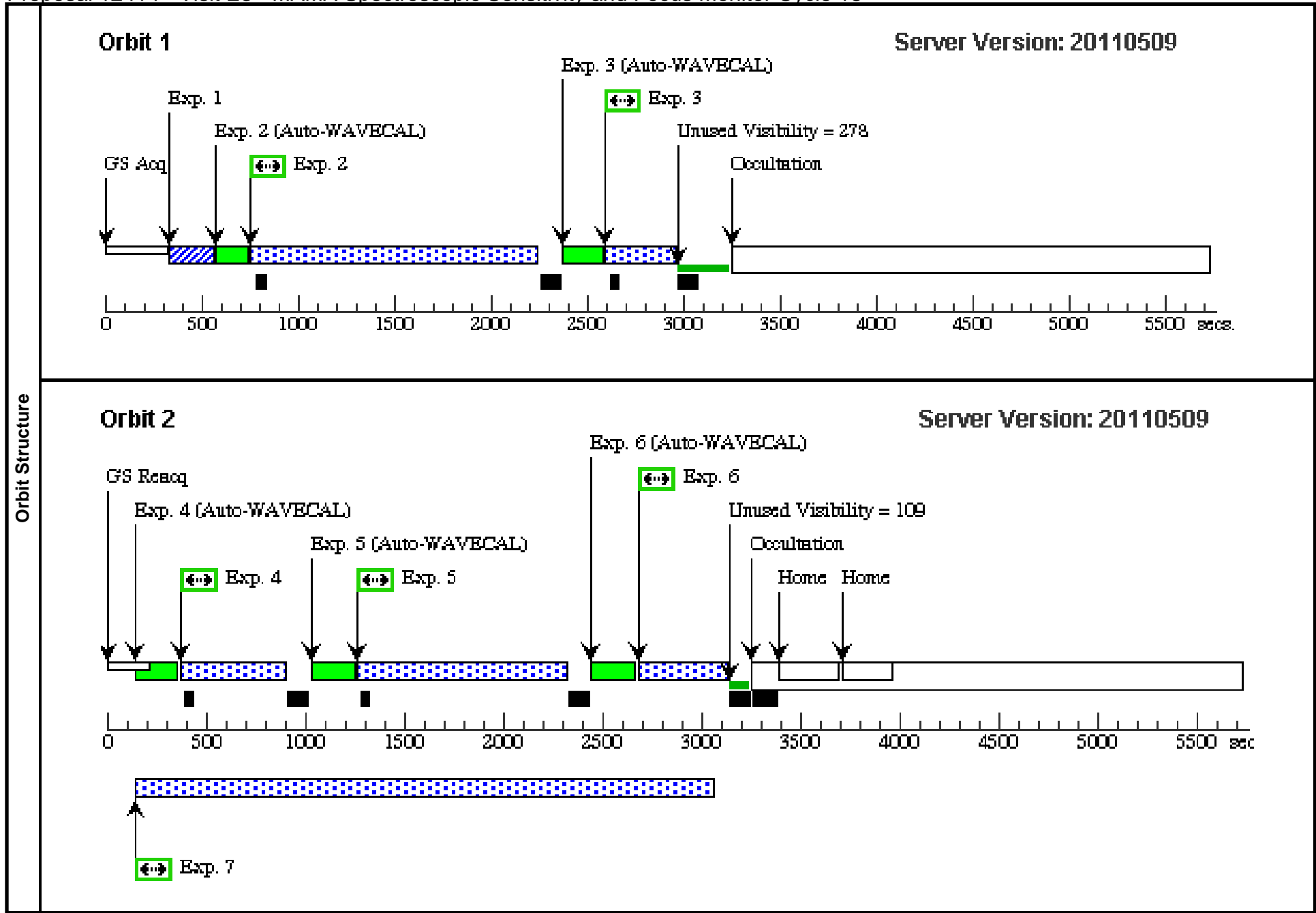
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	ACQ	(3) BD+28D4211	STIS/CCD, ACQ, F28X50LP	MIRROR				0.1 Secs [==>]	[1]
	2	E230H	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 2263 A				1476.0 Secs [==>]	[1]
	3	E140M	(3) BD+28D4211	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				350.0 Secs [==>]	[1]
	4	E230M	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230M 1978 A			Prime + Parallel Group 4-7 in Visit E2	516.0 Secs [==>]	[2]
	5	E140H	(3) BD+28D4211	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140H 1416 A			Prime + Parallel Group 4-7 in Visit E2	1040.0 Secs [==>]	[2]
	6	E230M	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230M 2707 A			Prime + Parallel Group 4-7 in Visit E2	438.0 Secs [==>]	[2]
	<i>Comments: Expand</i>									
7	ANY		COS/FUV, TIME-TAG, PSA	G130M 1309 A		BUFFER-TIME=2900; FP-POS=4		Prime + Parallel Group 4-7 in Visit E2	2900.0 Secs [==>]	[2]



Proposal 12414 - Visit E3 - MAMA Spectroscopic Sensitivity and Focus Monitor Cycle 18

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Visit	Proposal 12414, Visit E3, completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD, COS/FUV, STIS/FUV-MAMA, STIS/NUV-MAMA Special Requirements: ORIENT 255D TO 255 D; BETWEEN 09-MAY-2010:00:00:00 AND 16-MAY-2011:00:00:00 Comments: E-modes									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(3)	BD+28D4211	RA: 21 51 11.0200 (327.7959167d) Dec: +28 51 50.40 (28.86400d) Equinox: J2000	Proper Motion RA: -0.0026 sec of time/yr Proper Motion Dec: -0.056 arcsec/yr Epoch of Position: 2000.0	V=10.51+/-0.04 B-V = -0.34 F(2000)=9.42 +/- 0.001 e-12	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	ACQ	(3) BD+28D4211	STIS/CCD, ACQ, F28X50LP	MIRROR				0.1 Secs [==>]	[1]
	2	E230H	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 2263 A				1476.0 Secs [==>]	[1]
	3	E140M	(3) BD+28D4211	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				350.0 Secs [==>]	[1]
	4	E230M	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230M 1978 A			Prime + Parallel Group 4-7 in Visit E3	516.0 Secs [==>]	[2]
	5	E140H	(3) BD+28D4211	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140H 1416 A			Prime + Parallel Group 4-7 in Visit E3	1040.0 Secs [==>]	[2]
	6	E230M	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230M 2707 A			Prime + Parallel Group 4-7 in Visit E3	438.0 Secs [==>]	[2]
	Comments: Expand									
7		ANY		COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=2800; FP-POS=2		Prime + Parallel Group 4-7 in Visit E3	2800.0 Secs [==>]	[2]



Proposal 12414 - Visit E4 - MAMA Spectroscopic Sensitivity and Focus Monitor Cycle 18

Tue Jul 26 01:14:43 GMT 2011

Visit	Proposal 12414, Visit E4, implementation Diagnostic Status: No Diagnostics Scientific Instruments: STIS/CCD, COS/FUV, STIS/FUV-MAMA, STIS/NUV-MAMA Special Requirements: ORIENT 196.5D TO 196.5 D; BETWEEN 01-AUG-2011:00:00:00 AND 15-AUG-2011:23:59:00 Comments: E-modes									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(3)	BD+28D4211	RA: 21 51 11.0200 (327.7959167d) Dec: +28 51 50.40 (28.86400d) Equinox: J2000	Proper Motion RA: -0.0026 sec of time/yr Proper Motion Dec: -0.056 arcsec/yr Epoch of Position: 2000.0	V=10.51+/-0.04 B-V = -0.34 F(2000)=9.42 +/- 0.001 e-12	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	ACQ	(3) BD+28D4211	STIS/CCD, ACQ, F28X50LP	MIRROR				0.1 Secs [==>]	[1]
	2	E230H	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230H 2263 A				1476.0 Secs [==>]	[1]
	3	E140M	(3) BD+28D4211	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				350.0 Secs [==>]	[1]
	4	E230M	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230M 1978 A			Prime + Parallel Group 4-7 in Visit E4	516.0 Secs [==>]	[2]
	5	E140H	(3) BD+28D4211	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140H 1416 A			Prime + Parallel Group 4-7 in Visit E4	1040.0 Secs [==>]	[2]
	6	E230M	(3) BD+28D4211	STIS/NUV-MAMA, ACCUM, 0.2X0.2	E230M 2707 A			Prime + Parallel Group 4-7 in Visit E4	438.0 Secs [==>]	[2]
	Comments: Expand									
7		ANY		COS/FUV, TIME-TAG, PSA	G140L 1105 A			Prime + Parallel Group 4-7 in Visit E4	2800 Secs [==>]	[2]
										FP-POS=4

