13033 - COS-Halos: New FUV Measurements of Baryons and Metals in the Inner Circumgalactic Medium

Cycle: 20, 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) SDSSJ091029.75+101413.6	COS/FUV COS/NUV	1	26-Apr-2013 21:01:16.0	yes
03	(3) SDSSJ094331.61+053131.4	COS/FUV COS/NUV	1	26-Apr-2013 21:01:24.0	yes
04	(4) SDSSJ115758.72-002220.8	COS/FUV COS/NUV	1	26-Apr-2013 21:01:30.0	yes
05	(5) SDSSJ141910.20+420746.9	COS/FUV COS/NUV	1	26-Apr-2013 21:01:36.0	yes
06	(6) SDSSJ155504.39+362848.0	COS/FUV COS/NUV	1	26-Apr-2013 21:01:42.0	yes
07	(7) SDSSJ133045.15+281321.4	COS/FUV COS/NUV	1	26-Apr-2013 21:01:47.0	yes
08	(8) SDSSJ124154.02+572107.3	COS/FUV COS/NUV	1	26-Apr-2013 21:01:53.0	yes
09	(9) SDSSJ095000.73+483129.3	COS/FUV COS/NUV	1	26-Apr-2013 21:01:58.0	yes
10	(10) SDSSJ132222.68+464535.2	COS/FUV COS/NUV	1	26-Apr-2013 21:02:03.0	yes
11	(11) SDSSJ123335.07+475800.4	COS/FUV COS/NUV	1	26-Apr-2013 21:02:08.0	yes
12	(12) SDSSJ134251.60-005345.3	COS/FUV COS/NUV	1	26-Apr-2013 21:02:14.0	yes
13	(13) SDSSJ113327.78+032719.1	COS/FUV COS/NUV	1	26-Apr-2013 21:02:19.0	yes
14	(14) SDSSJ101622.60+470643.3	COS/FUV COS/NUV	1	26-Apr-2013 21:02:24.0	yes
15	(15) SDSSJ094331.61+053131.49	COS/FUV COS/NUV	1	26-Apr-2013 21:02:29.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
24	(14) SDSSJ101622.60+470643.3	COS/FUV COS/NUV	1	26-Apr-2013 21:02:34.0	yes

15 Total Orbits Used

ABSTRACT

To understand the origins of galaxies, we must discover how they obtain gas from the IGM and how they return it to their environment. Two key problems face us now. First, how much total mass is in the circumgalactic medium (CGM), and how does this vary with galaxy properties? Second, what is the metallicity distribution of halo gas, and does it reflect the dominance of metal-rich ejection by galaxies, accretion of gas-rich satellites, or low-metallicity accretion from the IGM? We propose to obtain a set of 14 direct measurements of total gas (H+metals) content and metallicity for a well-characterized, unbiased sample of galaxies from the Cycle 17 COS-Halos survey. We will use the G140L or G130M/1222 settings of COS to measure HI column densities, NHI, to ~0.3 dex precision using the proven Lyman limit (LL) technique. COS provides the unique capability to observe at wavelengths near 1000 A, so these are measurements that only HST can do. Our data will measure the baryonic content of these galaxy halos with direct Lyman-limit based measurements of N_HI. Using the newly determined HI column densities and the metal lines detected as part of the original COS-Halos Cycle 17 program, we will measure the metallicities of these systems and with these test models of galaxy accretion and feedback. These COS-Halos galaxies are already well-characterized by ground-based spectroscopy, including precise redshifts, SFRs, and metallicities, making for a uniform and well-defined sample. This proposal maximizes the science return of the large COS-Halos program for a modest additional investment by significantly increasing the number of HI and metallicity measurements in CGM gas.

OBSERVING DESCRIPTION

Introduction: *We emphasize that ALL 14 of these targets were acquired and observed safely during Cycle 17 as part of COS-Halos.* Our goal is to obtain measurements of flux below the Lyman limit in QSO absorbers of known redshift, which requires short wavelength coverage in either G140L/1280 or G130M/1222.

Acquisition: We plan for ACQ/IMAGE for all these targets, as was done for them in Cycle 17. We have planned the exposure times to achieve S/N = 40 using the known target GALEX FUV fluxes. We then apply a 25% increase to account for QSO variability and add a small margin of safety on the S/N. The individual ETC numbers for the TA exposure times are listed along with the TA exposures.

Science Exposures: Following the ACQ/IMAGE, we break each orbit into two exposures of equal length, at FPPOS = 1 and 3 in that order. These exposures are focused on low-S/N observations of flux below the Lyman limit - they will not benefit from all four FP-POS settings, and using all 4 is just a waste of time. We have performed ETC calculations for each exposure / target pairing using the actual grating setups and exposure times. These ETC numbers are provided.

Bright Object Protection (Targets): These are all faint QSOs that were observed safely in Cycle 17. They would need to be about 5 magnitudes brighter than they are to be anywhere near the bright limits for FUV observations. In our experience with these targets in Cycle 17, by far the brightest pixel in the data is the geocoronal (airglow) Lyman alpha.

Bright Object Protection (Fields): These 14 targets all clear BOP checking in the BOT with both GALEX and GSC2. Note that we already cleared and observed these 14 targets in Cycle 17.

Visit

Proposal 13033, J0910+1014 (G140L/1280) (01), completed Sat Apr 27 01:02:41 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(J0910+1014 (G140L/1280) (01)) Warning (Orbit Planner): VISIBILITY OVERRUN

(J0910+1014 (G140L/1280) (01)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

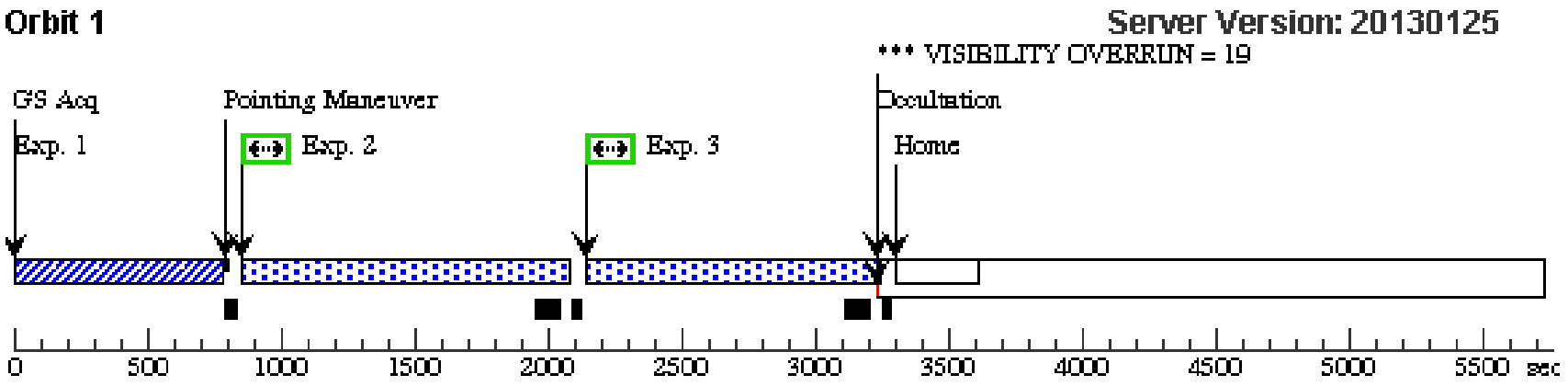
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSJ091029.75+101413.6	RA: 09 10 29.7548 (137.6239783d) Dec: +10 14 13.59 (10.23711d) Equinox: J2000		V=17.7400+/-0.1 FUVMag = 18.69	Reference Frame: ICRS

Comments: z_QSO = 0.46
G140L/1280

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412677)	(1) SDSSJ091029.75+101413.6	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				174 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G140L/1280 FPPOS=1 (sp.415740)	(1) SDSSJ091029.75+101413.6	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=938; FP-POS=1; FLASH=YES			1050 Secs *[==>]*	*[1]*
3	G140L/1280 FPPOS=3 (sp.415740)	(1) SDSSJ091029.75+101413.6	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=938; FP-POS=3; FLASH=YES			1050 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J0943+0531 (G140L/1280) (03), completed Sat Apr 27 01:02:43 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(J0943+0531 (G140L/1280) (03)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

(J0943+0531 (G140L/1280) (03)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

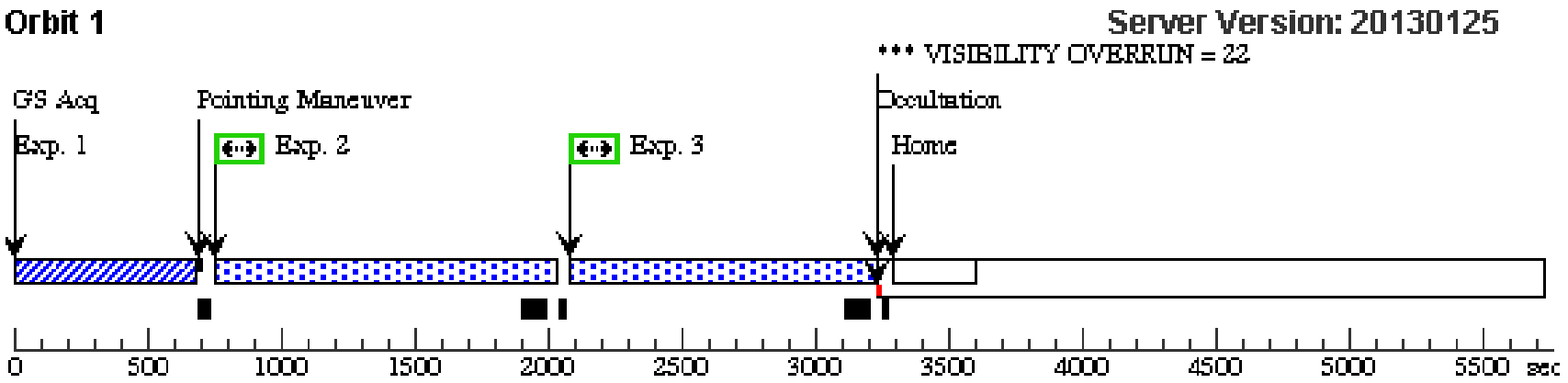
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	SDSSJ094331.61+053131.4	RA: 09 43 33.7869 (145.8907787d) Dec: +05 31 22.27 (5.52285d) Equinox: J2000		V=17.1600+/-0.1 FUVmag = 18.50	Reference Frame: ICRS

Comments: z_QSO = 0.56
G140L/1280

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412678)	(3) SDSSJ094331.61 +053131.4	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				125 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G140L/1280 FPPOS=1 (sp.415766)	(3) SDSSJ094331.61 +053131.4	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=993; FP-POS=1; FLASH=YES			1103 Secs *[==>]*	*[1]*
3	G140L/1280 FPPOS=3 (sp.415766)	(3) SDSSJ094331.61 +053131.4	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=992; FP-POS=3; FLASH=YES			1102 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J1157-0022 (G140L/1280) (04), completed Sat Apr 27 01:02:44 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(J1157-0022 (G140L/1280) (04)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

(J1157-0022 (G140L/1280) (04)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

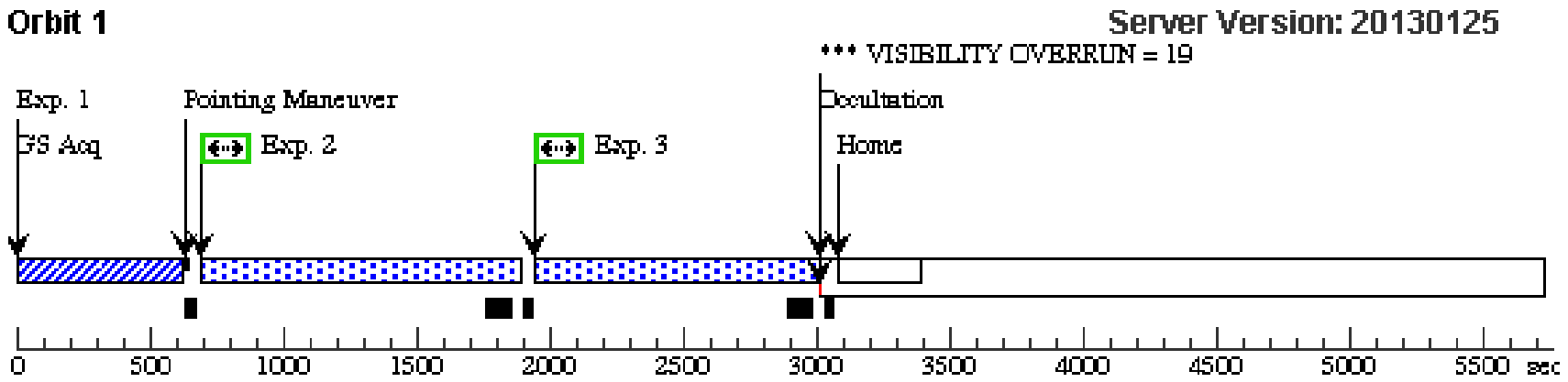
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SDSSJ115758.72-002220.8	RA: 11 57 58.7292 (179.4947050d) Dec: -00 22 20.90 (-.37247d) Equinox: J2000		V=16.8800+/-0.1 FUVmag = 17.74	Reference Frame: ICRS

Comments: z_QSO = 0.26
G140L/1280

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412671)	(4) SDSSJ115758.72-002220.8	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				94 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G140L/1280 FPPOS=1 (sp.416446)	(4) SDSSJ115758.72-002220.8	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=908; FP-POS=1; FLASH=YES			1018 Secs *[==>]*	*[1]*
3	G140L/1280 FPPOS=3 (sp.416446)	(4) SDSSJ115758.72-002220.8	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=908; FP-POS=3; FLASH=YES			1018 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J1419+4207 (G140L/1280) (05), scheduling Sat Apr 27 01:02:45 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(J1419+4207 (G140L/1280) (05)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

(J1419+4207 (G140L/1280) (05)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

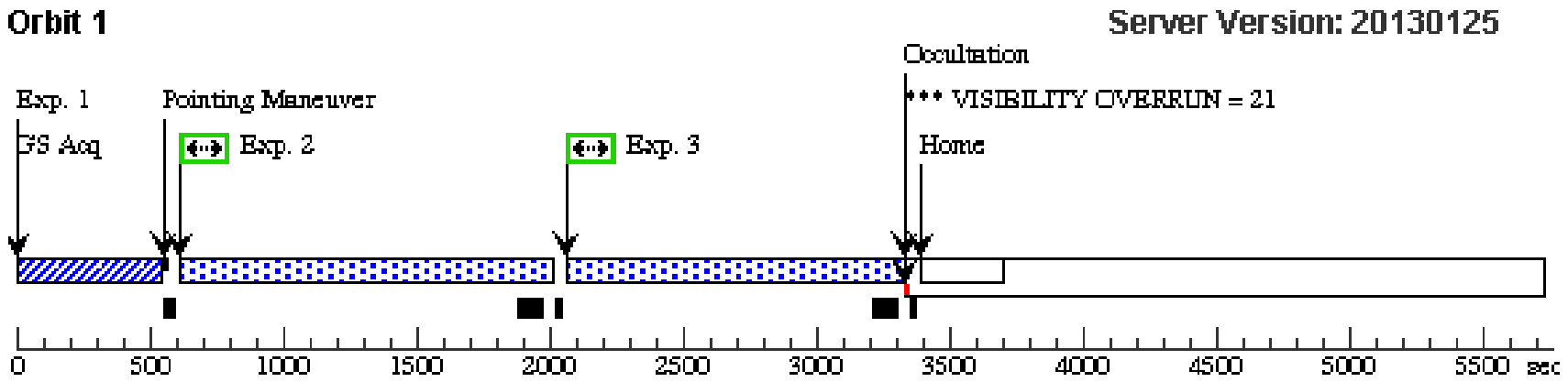
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	SDSSJ141910.20+420746.9	RA: 14 19 10.2033 (214.7925137d) Dec: +42 07 46.93 (42.12970d) Equinox: J2000		V=17.0400+/-0.1 FUVmag = 17.84	Reference Frame: ICRS

Comments: z_QSO = 0.87
G140L/1280

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412668)	(5) SDSSJ141910.20 +420746.9	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				55 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G140L/1280 FPPOS=1 (sp.415770)	(5) SDSSJ141910.20 +420746.9	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=1113; FP-POS=1; FLASH=YES			1223 Secs *[==>]*	*[1]*
3	G140L/1280 FPPOS=3 (sp.415770)	(5) SDSSJ141910.20 +420746.9	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=1113; FP-POS=3; FLASH=YES			1221 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J1555+3628 (G140L/1280) (06), completed Sat Apr 27 01:02:46 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(J1555+3628 (G140L/1280) (06)) Warning (Orbit Planner): VISIBILITY OVERRUN

(J1555+3628 (G140L/1280) (06)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

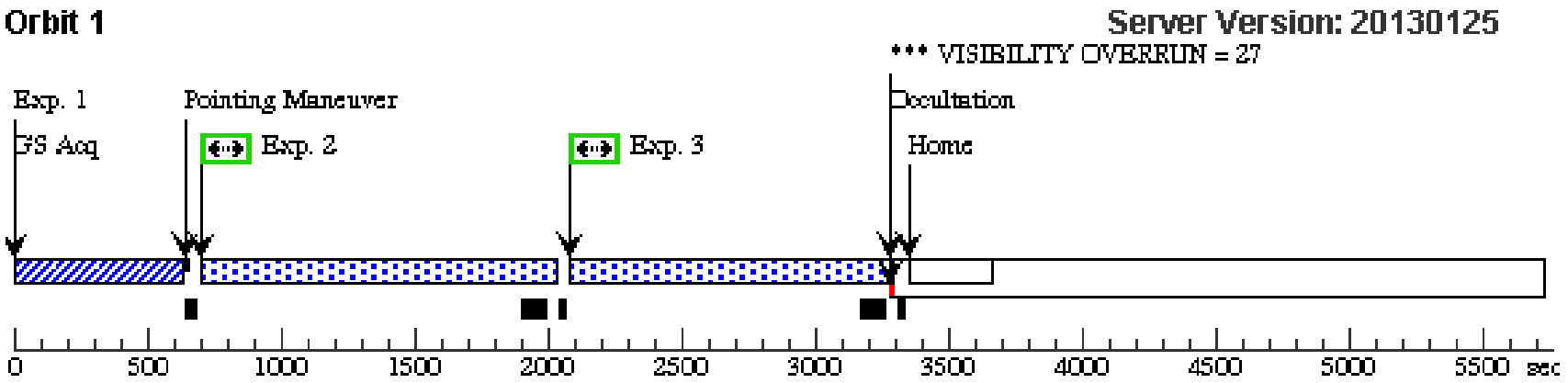
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	SDSSJ155504.39+362848.0	RA: 15 55 4.3971 (238.7683212d) Dec: +36 28 47.96 (36.47999d) Equinox: J2000		V=17.7600+/-0.1 FUVmag = 18.45	Reference Frame: ICRS

Comments: z_QSO = 0.71
G140L/1280

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412679)	(6) SDSSJ155504.39 +362848.0	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				100 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G140L/1280 FPPOS=1 (sp.415772)	(6) SDSSJ155504.39 +362848.0	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=1042; FP-POS=1; FLASH=YES			1152 Secs *[==>]*	*[1]*
3	G140L/1280 FPPOS=3 (sp.415772)	(6) SDSSJ155504.39 +362848.0	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=1052; FP-POS=3; FLASH=YES			1162 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J1330+2813 (G140L/1280) (07), completed Sat Apr 27 01:02:47 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(J1330+2813 (G140L/1280) (07)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

(J1330+2813 (G140L/1280) (07)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

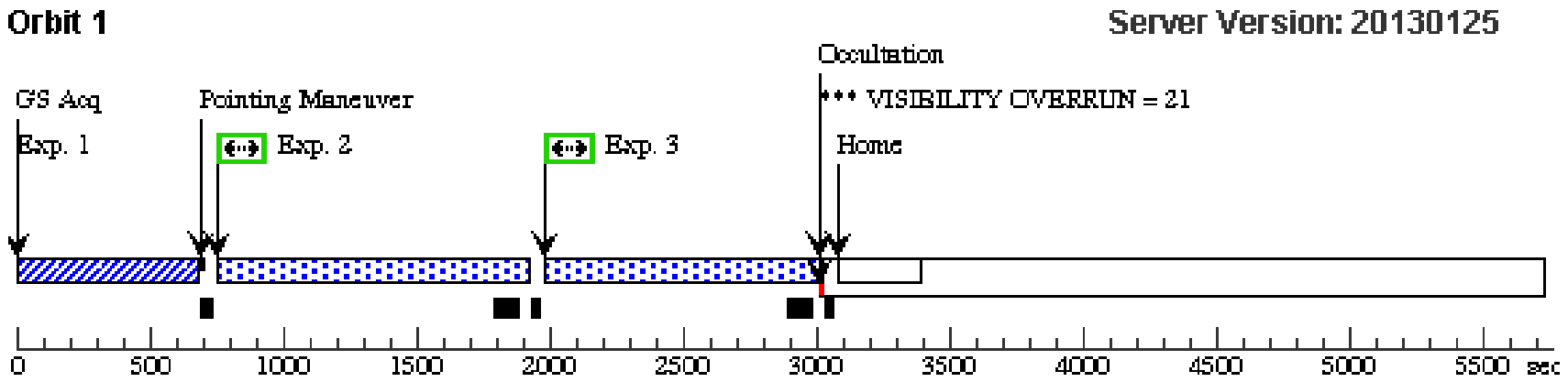
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	SDSSJ133045.15+281321.4	RA: 13 30 45.1506 (202.6881275d) Dec: +28 13 21.51 (28.22264d) Equinox: J2000		V=17.8000+/-0.1 FUVmag = 18.32	Reference Frame: ICRS

Comments: z_QSO = 0.42
G140L/1280

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412676)	(7) SDSSJ133045.15 +281321.4	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				125 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G140L/1280 FPPOS=1 (sp.416451)	(7) SDSSJ133045.15 +281321.4	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=877; FP-POS=1; FLASH=YES			987 Secs *[==>]*	*[1]*
3	G140L/1280 FPPOS=3 (sp.416451)	(7) SDSSJ133045.15 +281321.4	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=877; FP-POS=3; FLASH=YES			987 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J1241+5721 (G130M/1222) (08), completed Sat Apr 27 01:02:48 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(J1241+5721 (G130M/1222) (08)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

(J1241+5721 (G130M/1222) (08)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

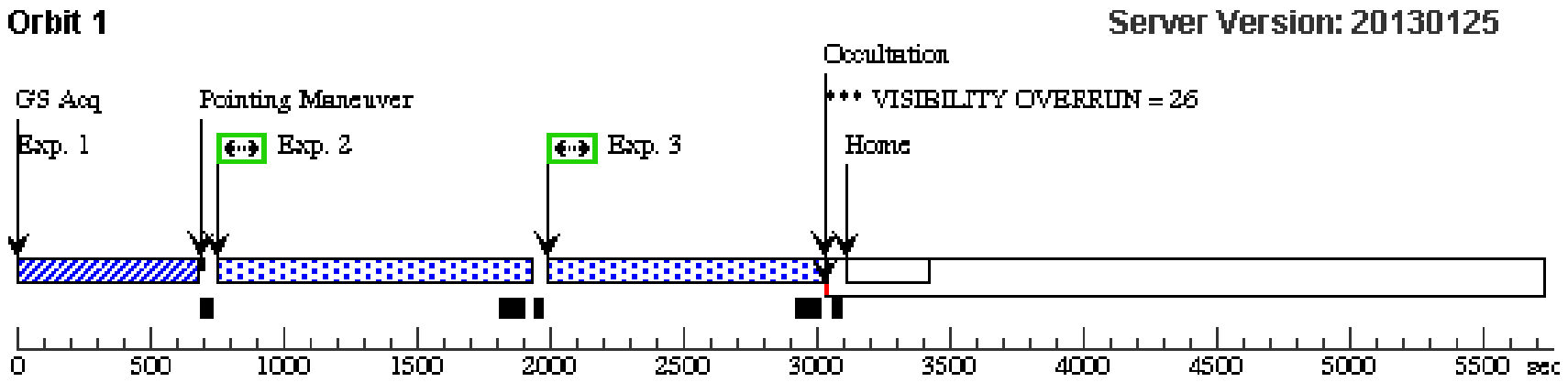
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	SDSSJ124154.02+572107.3	RA: 12 41 54.0252 (190.4751050d) Dec: +57 21 7.36 (57.35204d) Equinox: J2000		V=17.5800+/-0.1 FUVmag = 18.56	Reference Frame: ICRS

Comments: z_QSO = 0.58
G130M/1222

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412678)	(8) SDSSJ124154.02 +572107.3	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				125 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G130M/1222 FPPOS=1 (sp.416455)	(8) SDSSJ124154.02 +572107.3	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=892; FP-POS=1; FLASH=YES			1000 Secs *[==>]*	*[1]*
3	G130M/1222 FPPOS=3 (sp.416455)	(8) SDSSJ124154.02 +572107.3	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=892; FP-POS=3; FLASH=YES			1001 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J0950+4831 (G130M/1222) (09), completed Sat Apr 27 01:02:48 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(J0950+4831 (G130M/1222) (09)) Warning (Orbit Planner): VISIBILITY OVERRUN

(J0950+4831 (G130M/1222) (09)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

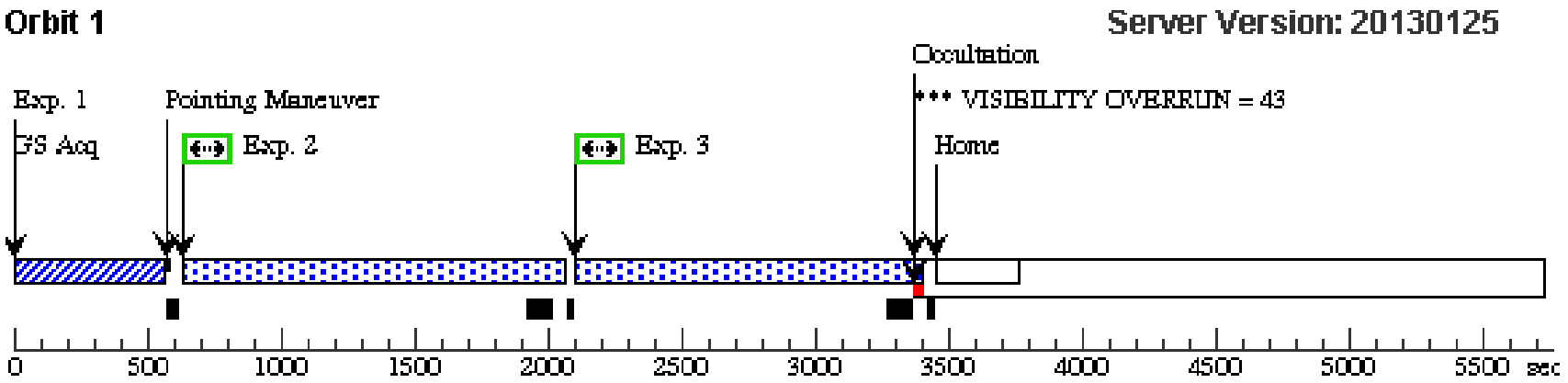
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	SDSSJ095000.73+483129.3	RA: 09 50 0.7414 (147.5030892d) Dec: +48 31 29.34 (48.52482d) Equinox: J2000		V=17.27+/-0.1 FUVmag = 17.86	Reference Frame: ICRS

Comments: z_QSO = 0.59
G130M/1222

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412674)	(9) SDSSJ095000.73 +483129.3	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				64 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G130M/1222 FPPOS=1 (sp.415776)	(9) SDSSJ095000.73 +483129.3	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=1133; FP-POS=1; FLASH=YES			1244 Secs *[==>]*	*[1]*
3	G130M/1222 FPPOS=3 (sp.415776)	(9) SDSSJ095000.73 +483129.3	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=1133; FP-POS=3; FLASH=YES			1244 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J1322+4645 (G130M/1222) (10), completed Sat Apr 27 01:02:49 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(J1322+4645 (G130M/1222) (10)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

(J1322+4645 (G130M/1222) (10)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

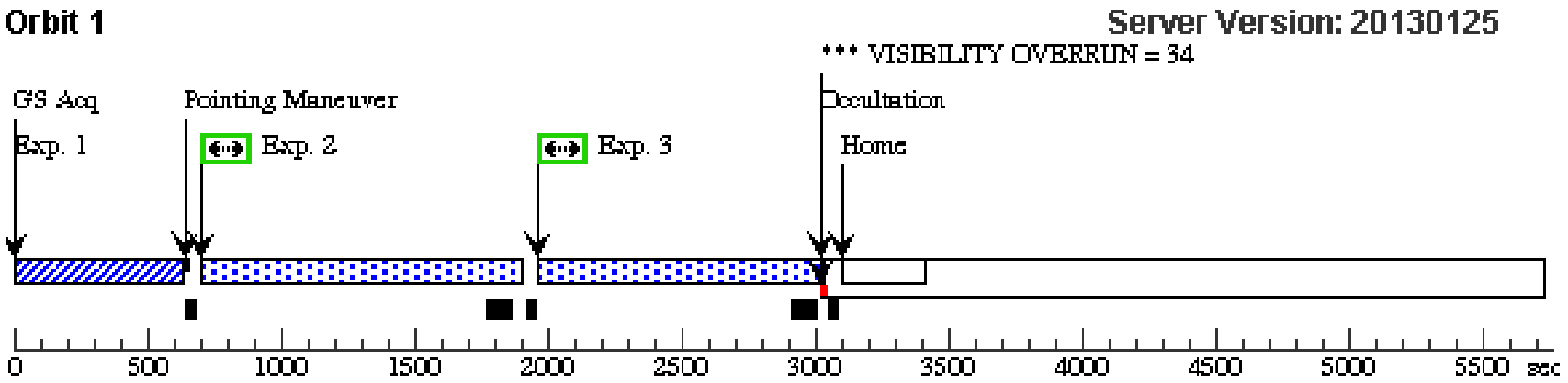
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	SDSSJ132222.68+464535.2	RA: 13 22 22.6801 (200.5945004d) Dec: +46 45 35.26 (46.75979d) Equinox: J2000		V=17.4000+/-0.1 FUVmag = 18.02	Reference Frame: ICRS

Comments: z_QSO = 0.37
G130M/1222

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412675)	(10) SDSSJ132222.68+464535.2	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				100 Secs *[==>]*	***[1]***
Comments: 25% margin applied to ETC-derived exposure time.									
2	G130M/1222 FPPOS=1 (sp.416465)	(10) SDSSJ132222.68+464535.2	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=911; FP-POS=1; FLASH=YES			1022 Secs *[==>]*	***[1]***
3	G130M/1222 FPPOS=3 (sp.416465)	(10) SDSSJ132222.68+464535.2	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=911; FP-POS=3; FLASH=YES			1022 Secs *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 13033, J1233+4758 (G130M/1222) (11), completed Sat Apr 27 01:02:50 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(J1233+4758 (G130M/1222) (11)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

(J1233+4758 (G130M/1222) (11)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

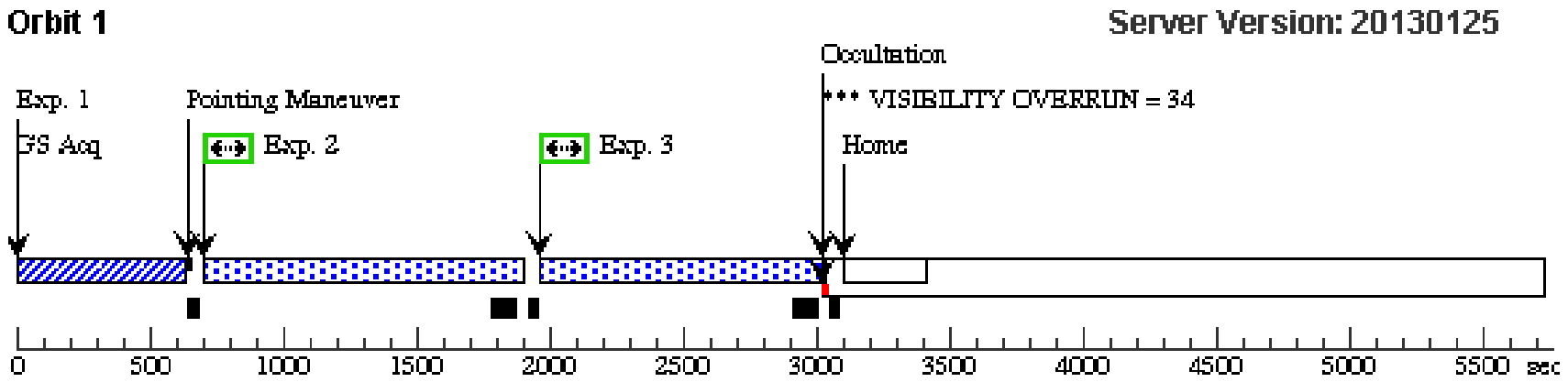
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	SDSSJ123335.07+475800.4	RA: 12 33 35.0732 (188.3961383d) Dec: +47 58 0.49 (47.96680d) Equinox: J2000		V=17.2500+/-0.1 FUVmag = 18.03	Reference Frame: ICRS

Comments: z_QSO = 0.38
G130M/1222

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412675)	(11) SDSSJ123335.07+475800.4	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				100 Secs *[==>]*	***[1]***
Comments: 25% margin applied to ETC-derived exposure time.									
2	G130M/1222 FPPOS=1 (sp.416475)	(11) SDSSJ123335.07+475800.4	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=912; FP-POS=1; FLASH=YES			1022 Secs *[==>]*	***[1]***
3	G130M/1222 FPPOS=3 (sp.416475)	(11) SDSSJ123335.07+475800.4	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=912; FP-POS=3; FLASH=YES			1022 Secs *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 13033, J1342-0053 (G130M/1222) (12), scheduled Sat Apr 27 01:02:51 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(J1342-0053 (G130M/1222) (12)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

(J1342-0053 (G130M/1222) (12)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

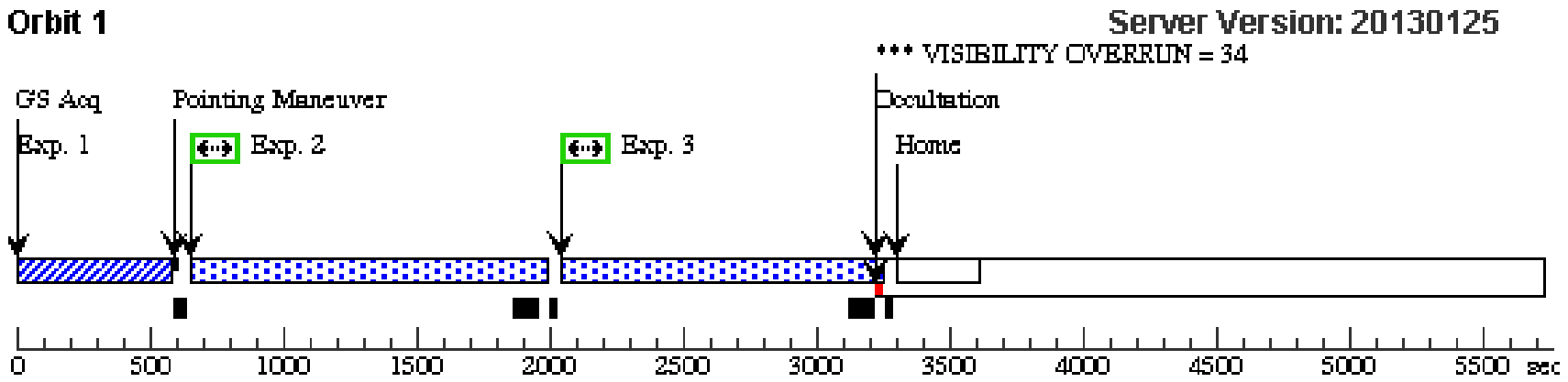
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	SDSSJ134251.60-005345.3	RA: 13 42 51.6076 (205.7150317d) Dec: -00 53 45.30 (-.89592d) Equinox: J2000		V=16.92+/-0.1 FUVmag = 17.58	Reference Frame: ICRS

Comments: z_QSO = 0.33
G130M/1222

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412672)	(12) SDSSJ134251.60-005345.3	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				75 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G130M/1222 FPPOS=1 (sp.415779)	(12) SDSSJ134251.60-005345.3	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=1044; FP-POS=1; FLASH=YES			1154 Secs *[==>]*	*[1]*
3	G130M/1222 FPPOS=3 (sp.415779)	(12) SDSSJ134251.60-005345.3	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=1045; FP-POS=3; FLASH=YES			1155 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J1133+0327 (G130M/1222) (13), completed Sat Apr 27 01:02:51 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(J1133+0327 (G130M/1222) (13)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

(J1133+0327 (G130M/1222) (13)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

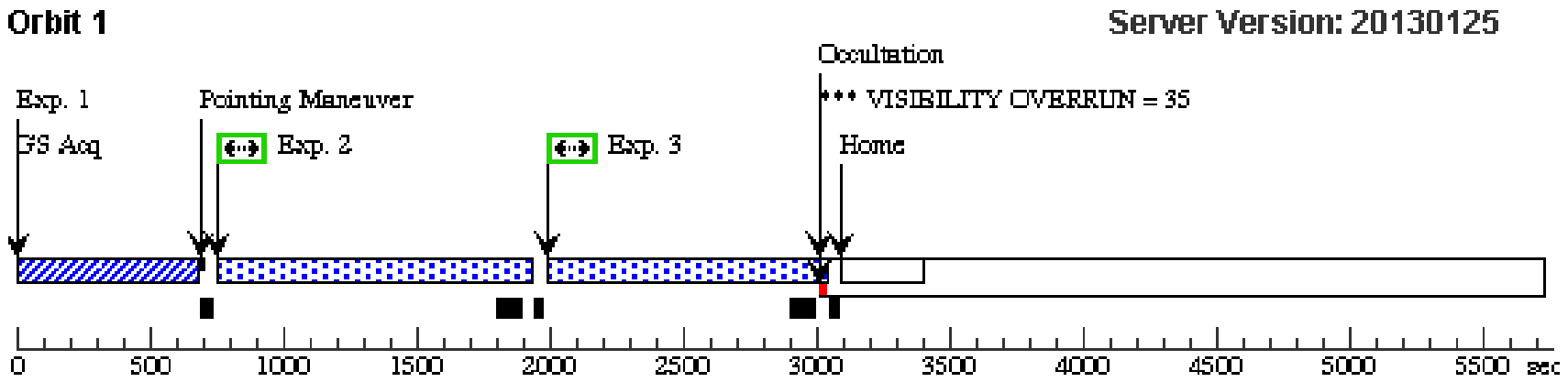
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	SDSSJ113327.78+032719.1	RA: 11 33 27.7878 (173.3657825d) Dec: +03 27 19.18 (3.45533d) Equinox: J2000		V=17.5400+/-0.1 FUVmag = 18.58	Reference Frame: ICRS

Comments: z_QSO = 0.53
G130M/1222

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412678)	(13) SDSSJ113327.78+032719.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				125 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G130M/1222 FPPOS=1 (sp.416479)	(13) SDSSJ113327.78+032719.1	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=883; FP-POS=1; FLASH=YES			993 Secs *[==>]*	*[1]*
3	G130M/1222 FPPOS=3 (sp.416479)	(13) SDSSJ113327.78+032719.1	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=883; FP-POS=3; FLASH=YES			993 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J1016+4706 (G130M/1222) (14), failed Sat Apr 27 01:02:52 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(J1016+4706 (G130M/1222) (14)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

(J1016+4706 (G130M/1222) (14)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

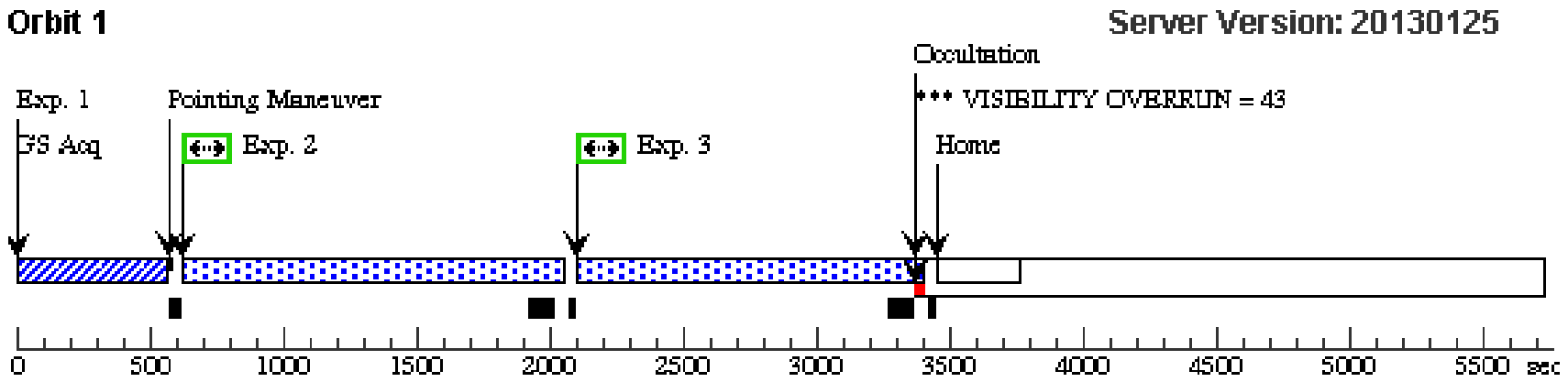
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(14)	SDSSJ101622.60+470643.3	RA: 10 16 22.6231 (154.0942629d) Dec: +47 06 43.39 (47.11205d) Equinox: J2000		V=17.1200+/-0.1 FUVmag = 17.99	Reference Frame: ICRS

Comments: z_QSO = 0.82
G130M/1222

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412673)	(14) SDSSJ101622.60+470643.3	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				63 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G130M/1222 FPPOS=1 (sp.415782)	(14) SDSSJ101622.60+470643.3	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=1133; FP-POS=1; FLASH=YES			1245 Secs *[==>]*	*[1]*
3	G130M/1222 FPPOS=3 (sp.415782)	(14) SDSSJ101622.60+470643.3	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=1133; FP-POS=3; FLASH=YES			1245 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J0943+0531 (G140L/1280) (15), completed Sat Apr 27 01:02:53 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(J0943+0531 (G140L/1280) (15)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

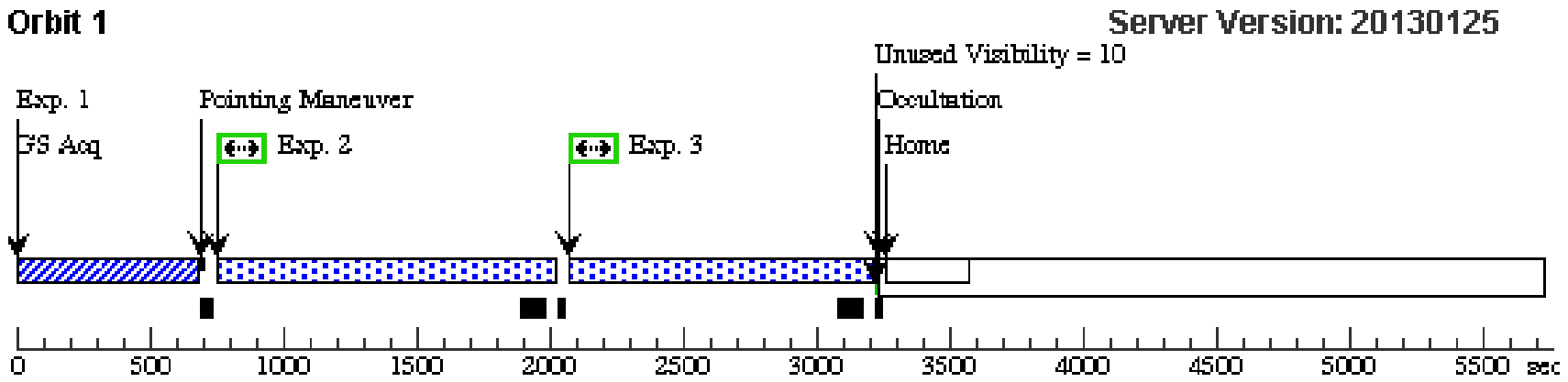
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(15)	SDSSJ094331.61+053131.49	RA: 09 43 31.6150 (145.8817292d) Dec: +05 31 31.49 (5.52541d) Equinox: J2000		V=17.1600+/-0.1 FUVmag = 18.50	Reference Frame: ICRS

Comments: z_QSO = 0.56
G140L/1280

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412678)	(15) SDSSJ094331.61+053131.49	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				125 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G140L/1280 FPPOS=1 (sp.415766)	(15) SDSSJ094331.61+053131.49	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=982; FP-POS=1; FLASH=YES			1087 Secs *[==>]*	*[1]*
3	G140L/1280 FPPOS=3 (sp.415766)	(15) SDSSJ094331.61+053131.49	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=981; FP-POS=3; FLASH=YES			1086 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 13033, J1016+4706 (G130M/1222) (24) Sat Apr 27 01:02:54 GMT 2013

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(J1016+4706 (G130M/1222) (24)) Warning (Orbit Planner): VISIBILITY OVERRUN

(J1016+4706 (G130M/1222) (24)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(14)	SDSSJ101622.60+470643.3	RA: 10 16 22.6231 (154.0942629d) Dec: +47 06 43.39 (47.11205d) Equinox: J2000		V=17.1200+/-0.1 FUVmag = 17.99	Reference Frame: ICRS

Comments: z_QSO = 0.82
G130M/1222

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	ACQ/IMAGE (ta.412673)	(14) SDSSJ101622.60+470643.3	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				63 Secs *[==>]*	*[1]*
Comments: 25% margin applied to ETC-derived exposure time.									
2	G130M/1222 FPPOS=1 (sp.415782)	(14) SDSSJ101622.60+470643.3	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=1133; FP-POS=1; FLASH=YES			1245 Secs *[==>]*	*[1]*
3	G130M/1222 FPPOS=3 (sp.415782)	(14) SDSSJ101622.60+470643.3	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=1133; FP-POS=3; FLASH=YES			1245 Secs *[==>]*	*[1]*

Orbit Structure