15614 - Black Holes in Green Peas?

Cycle: 26, 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) J125305.97-031258.8	COS/FUV COS/NUV	1	07-Dec-2018 15:00:47.0	yes
02	(2) J104645.75+302330.9	COS/FUV COS/NUV	1	07-Dec-2018 15:00:49.0	yes
03	(3) J132916.55+170020.9	COS/FUV COS/NUV	1	07-Dec-2018 15:00:49.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
04	(4) J101526.38+305451.9	COS/FUV COS/NUV	1	07-Dec-2018 15:00:50.0	yes
05	(5) J160627.53+135547.7	COS/FUV COS/NUV	1	07-Dec-2018 15:00:51.0	yes
06	(6) J121932.22+213324.5	COS/FUV COS/NUV	1	07-Dec-2018 15:00:52.0	yes
07	(7) J155027.78+192058.5	COS/FUV COS/NUV	1	07-Dec-2018 15:00:53.0	yes
08	(8) J140018.94+010454.0	COS/FUV COS/NUV	1	07-Dec-2018 15:00:53.0	yes
09	(9) J101629.88+073404.9	COS/FUV COS/NUV	1	07-Dec-2018 15:00:54.0	yes

9 Total Orbits Used

ABSTRACT

Green Peas (GPs) are low-redshift galaxies with extreme lines, high ionization, compact morphology, low metallicities, and large escape fractions of Lyman-alpha line and Lyman continuum. They are good analogs of high-redshift LyA galaxies. This could be due to low metallicity stars, or AGN. At these low metallicities, BPT diagram cannot distinguish between AGN and star-formation. About 25% of GPs have AGN colors. We will observe 10 of them with Chandra, with a detection limit set to 10% AGN contribution. This will help us understand how weak AGN could play a role in escape of Lyman-alpha and Lyman continuum and thus reionization. We also request 9 orbits of HST time to measure the LyA line. The near-UV image can find central point source AGN, and measure their contribution to NUV light.

OBSERVING DESCRIPTION

We wish to observe 9 Green-Peas with COS to measure the LyA line flux and velocity profile to determine the escape fraction and constrain the radiative transfer of the LyA line. This will allow us to apply the same diagnostics of LyA that we have applied to the larger Green Pea population.

Because the green peas that have the mid-IR colors of AGN and the highest expected CXO fluxes have little overlap with the set of green peas previously observed with HST+COS, we request these brief COS observations as part of the present CXO observing time request. Among our 10

CXO targets, one (J1209+15) has already been observed with COS.

Green peas observed in our prior programs have LyA line fluxes about 10e-14 erg/cm2/s (Henry et al 2015; Yang et al 2016, 2017). Lines this bright can be detected at high signal-to-noise with 30-40 minutes of COS FUV spectroscopy with G160M or G130M, leaving enough time for target acquisition and overheads. Therefore we request one orbit per target in the sample.

Visit

Proposal 15614, Visit 01, implementation Fri Dec 07 20:00:55 GMT 2018

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(Exposure 2 (Visit 01)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

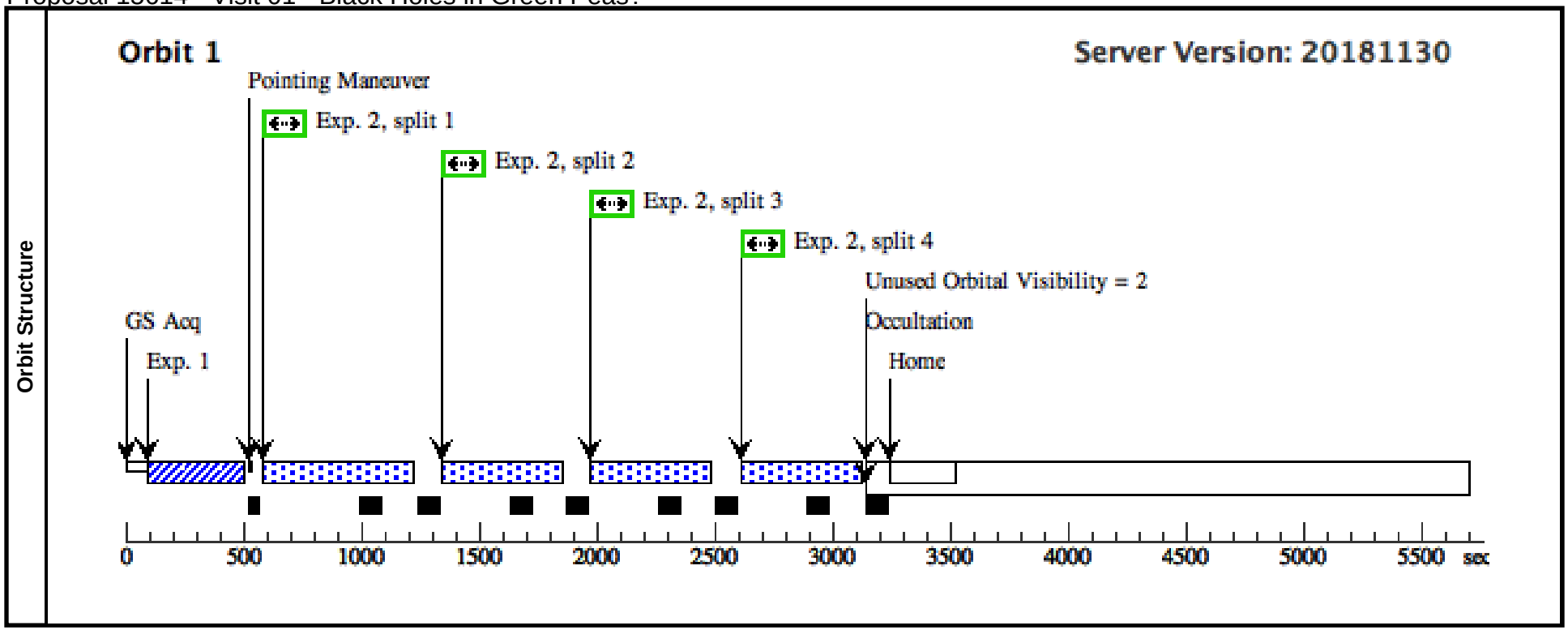
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J125305.97-031258.8	RA: 12 53 5.9700 (193.2748750d) Dec: -03 12 58.84 (-3.21634d) Equinox: J2000	Redshift: 0.023	V=15.75	Reference Frame: ICRS

Comments: Galex NUV = 16.3 mag
Category=GALAXY
Description=[STARBURST]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(1289461)	(1) J125305.97-031258.8	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				60 Secs (60 Secs) *[==>]*	 ***[1]***
2	(1289441)	(1) J125305.97-031258.8	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=2500; FLASH=YES; SEGMENT=BOTH; FP-POS=ALL			450 Secs (1844 Secs) *[==>461.0 Secs (Split 1)]* *[==>461.0 Secs (Split 2)]* *[==>461.0 Secs (Split 3)]* *[==>461.0 Secs (Split 4)]*	 ***[1]***


Orbit Structure
Orbit 1
Server Version: 20181130
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Exp. 2, split 3
Exp. 2, split 4
Unused Orbital Visibility = 2
GS Acq
Exp. 1
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 15614, Visit 02, implementation Fri Dec 07 20:00:55 GMT 2018

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

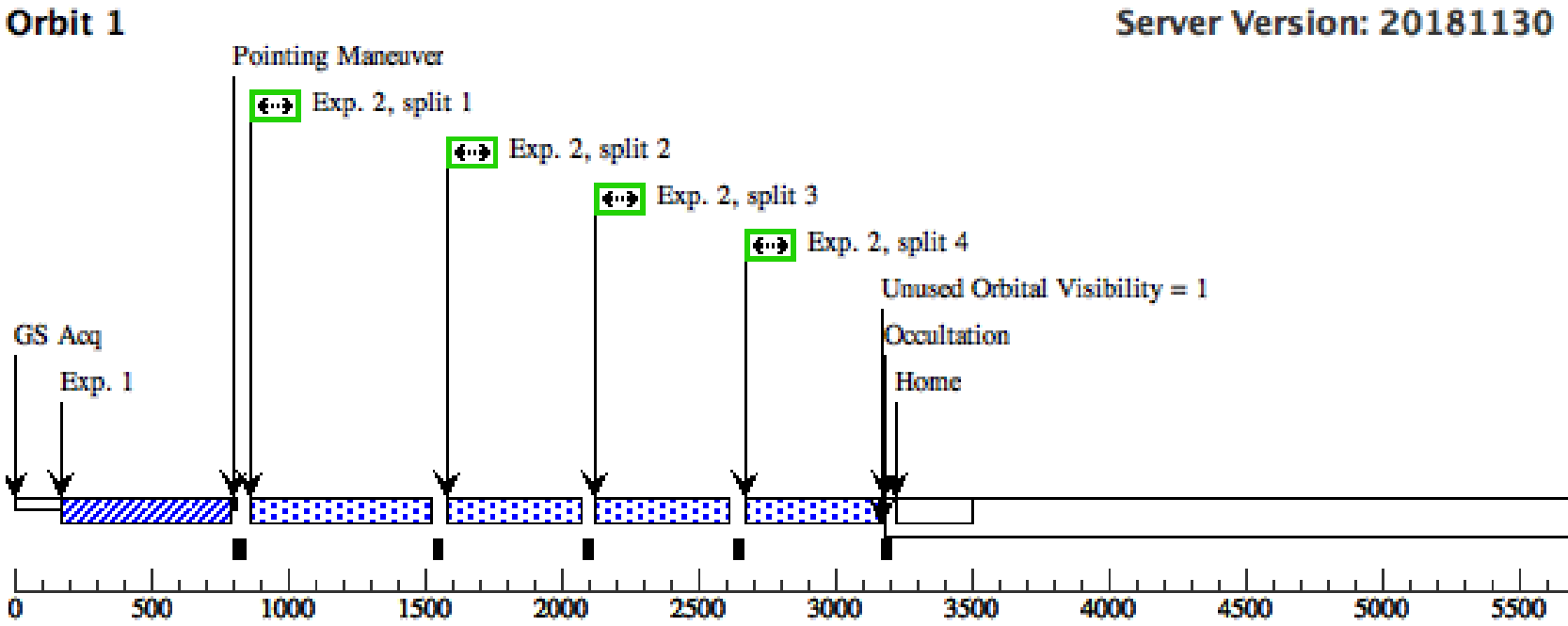
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	J104645.75+302330.9	RA: 10 46 45.7500 (161.6906250d) Dec: +30 23 30.91 (30.39192d) Equinox: J2000	Redshift: 0.127	V=18.87	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[STARBURST]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(1289464)	(2) J104645.75+302330.9	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs (200 Secs) *[==>]*	*[1]*
2	(1289427)	(2) J104645.75+302330.9	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=ALL; BUFFER-TIME=3000; FLASH=YES; SEGMENT=BOTH			420 Secs (1736 Secs) *[==>434.0 Secs (Split 1)]* *[==>434.0 Secs (Split 2)]* *[==>434.0 Secs (Split 3)]* *[==>434.0 Secs (Split 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15614, Visit 03, implementation

Fri Dec 07 20:00:55 GMT 2018

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

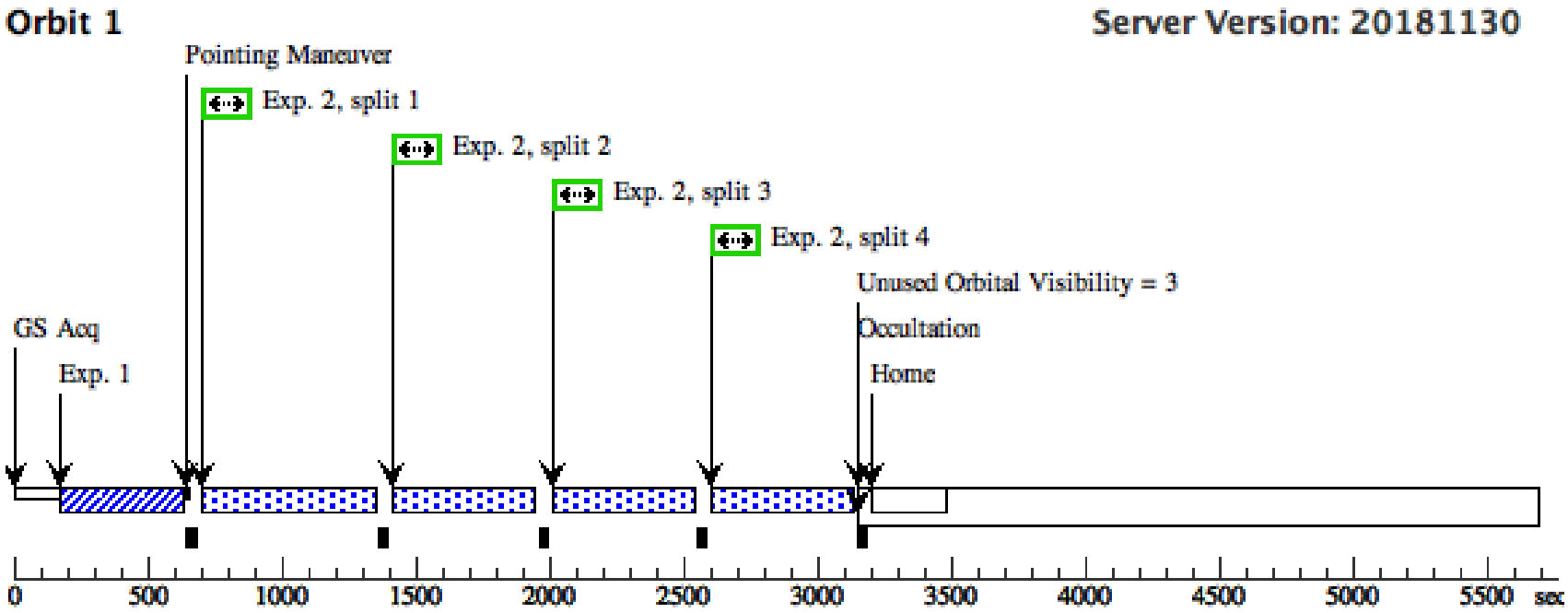
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	J132916.55+170020.9	RA: 13 29 16.5500 (202.3189583d) Dec: +17 00 20.94 (17.00582d) Equinox: J2000	Redshift: 0.094	V=18.41	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[STARBURST]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(1289465)	(3) J132916.55+170 020.9	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				120 Secs (120 Secs) *[==>]*	 *[1]*
2	(1289428)	(3) J132916.55+170 020.9	COS/FUV, TIME-TAG, PSA	G130M 1300 A	FP-POS=ALL; BUFFER-TIME=3000; FLASH=YES; SEGMENT=A			450 Secs (1920 Secs) *[==>480.0 Secs (Split 1)]* *[==>480.0 Secs (Split 2)]* *[==>480.0 Secs (Split 3)]* *[==>480.0 Secs (Split 4)]*	 *[1]*

Orbit Structure



Visit

Proposal 15614, Visit 04, implementation Fri Dec 07 20:00:55 GMT 2018

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

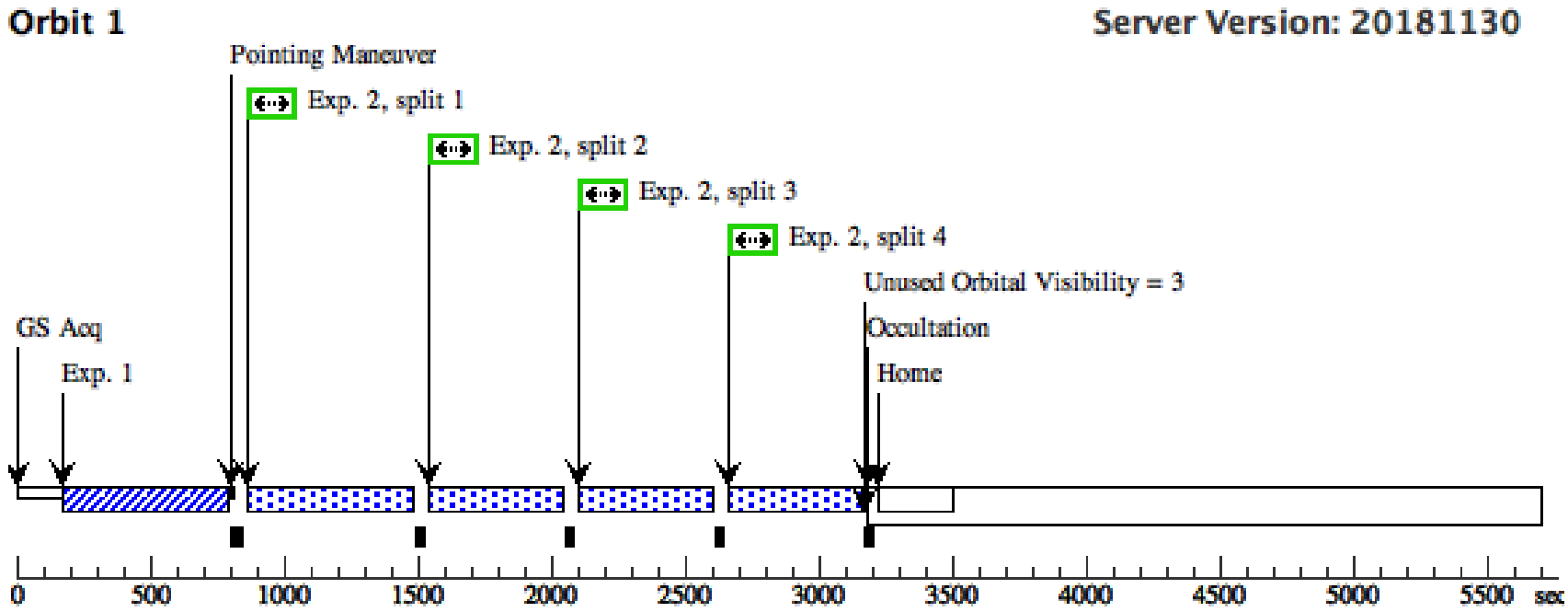
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J101526.38+305451.9	RA: 10 15 26.3900 (153.8599583d) Dec: +30 54 51.83 (30.91440d) Equinox: J2000	Redshift: 0.092	V=18.68	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[STARBURST]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(1289472)	(4) J101526.38+305451.9	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs (200 Secs) *[==>]*	 *[1]*
2	(1289479)	(4) J101526.38+305451.9	COS/FUV, TIME-TAG, PSA	G130M 1300 A	FP-POS=ALL; BUFFER-TIME=3000; FLASH=YES; SEGMENT=A			420 Secs (1784 Secs) *[==>446.0 Secs (Split 1)]* *[==>446.0 Secs (Split 2)]* *[==>446.0 Secs (Split 3)]* *[==>446.0 Secs (Split 4)]*	 *[1]*

Orbit Structure



Visit

Proposal 15614, Visit 05, implementation Fri Dec 07 20:00:55 GMT 2018

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

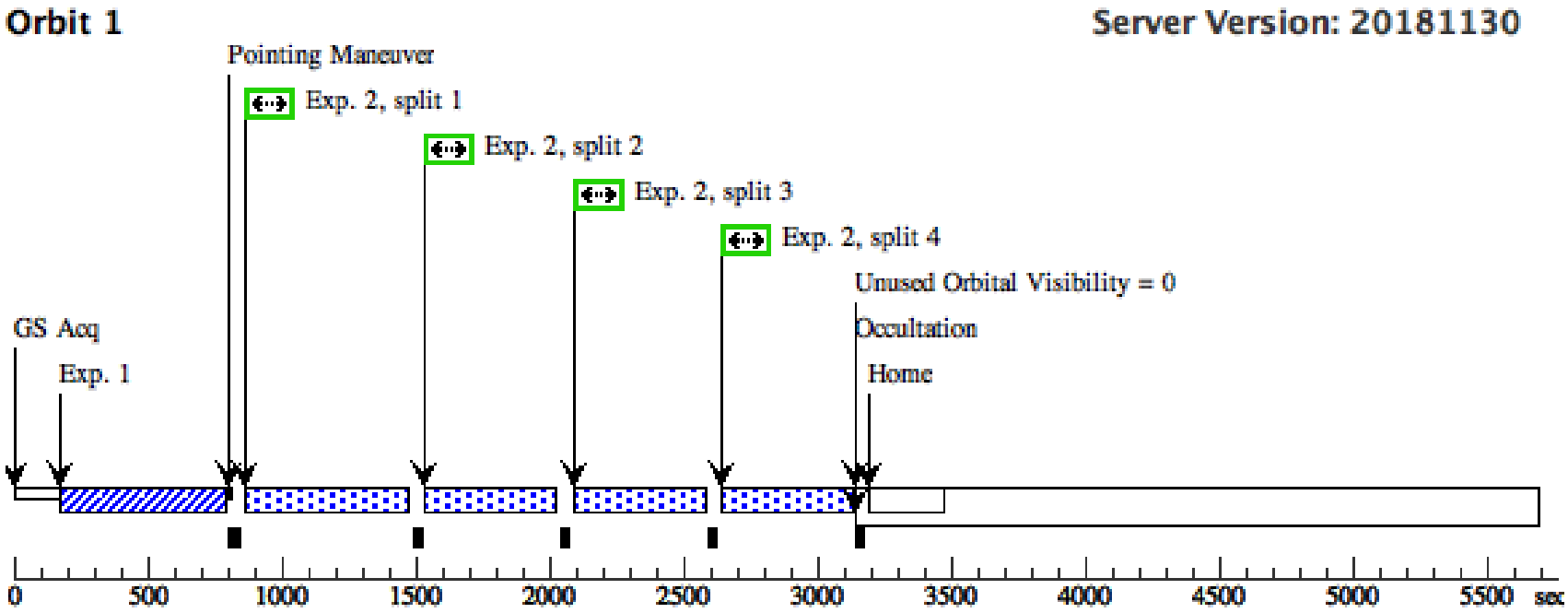
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J160627.53+135547.7	RA: 16 06 27.5300 (241.6147083d) Dec: +13 55 47.86 (13.92996d) Equinox: J2000	Redshift: 0.107	V=18.55	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[STARBURST]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(1289473)	(5) J160627.53+135547.7	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs (200 Secs) *[==>]*	 *[1]*
2	(1289480)	(5) J160627.53+135547.7	COS/FUV, TIME-TAG, PSA	G130M 1309 A	FP-POS=ALL; BUFFER-TIME=3000; FLASH=YES; SEGMENT=A			420 Secs (1752 Secs) *[==>438.0 Secs (Split 1)]* *[==>438.0 Secs (Split 2)]* *[==>438.0 Secs (Split 3)]* *[==>438.0 Secs (Split 4)]*	 *[1]*

Orbit Structure



Visit

Proposal 15614, Visit 06, implementation Fri Dec 07 20:00:55 GMT 2018

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

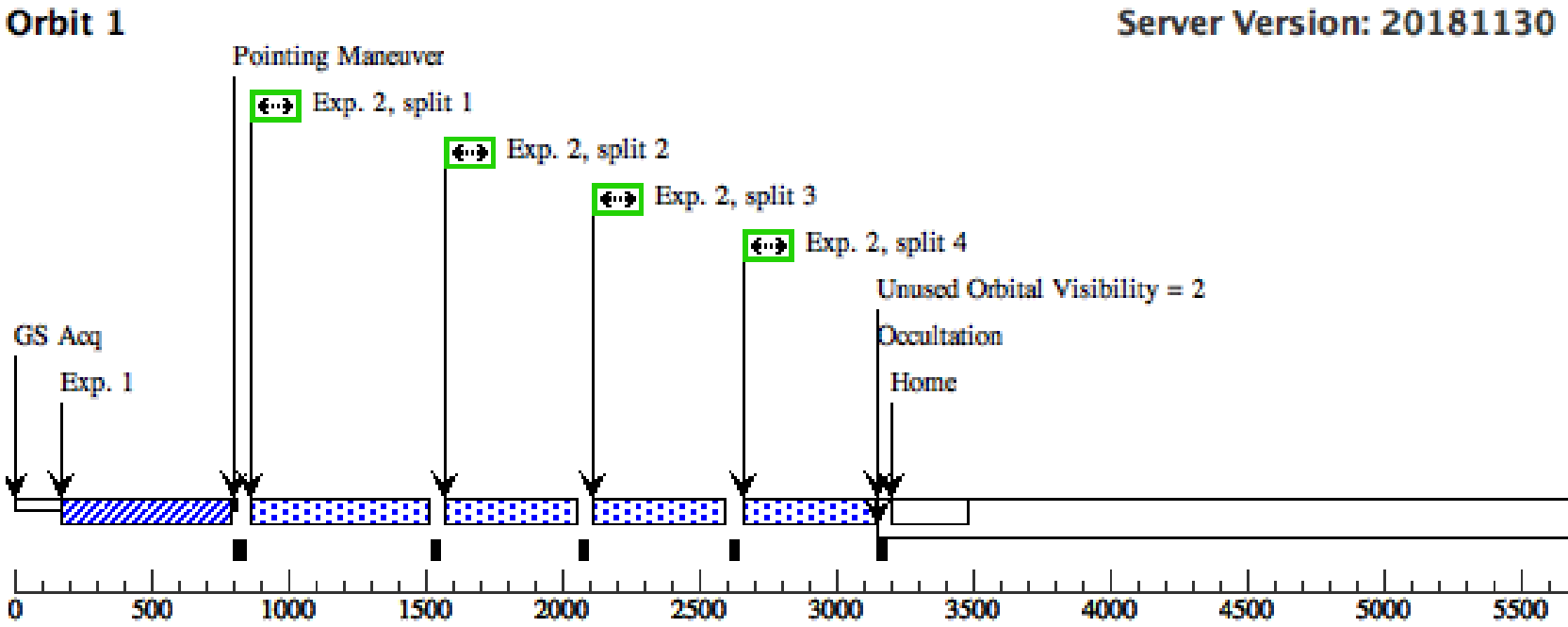
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J121932.22+213324.5	RA: 12 19 32.2100 (184.8842083d) Dec: +21 33 24.94 (21.55693d) Equinox: J2000	Redshift: 0.141	V=18.20	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[STARBURST]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(1289475)	(6) J121932.22+213324.5	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs (200 Secs) *[==>]*	*[1]*
2	(1289481)	(6) J121932.22+213324.5	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=ALL; BUFFER-TIME=3000; FLASH=YES; SEGMENT=BOTH			420 Secs (1712 Secs) *[==>428.0 Secs (Split 1)]* *[==>428.0 Secs (Split 2)]* *[==>428.0 Secs (Split 3)]* *[==>428.0 Secs (Split 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15614, Visit 07, implementation Fri Dec 07 20:00:55 GMT 2018

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

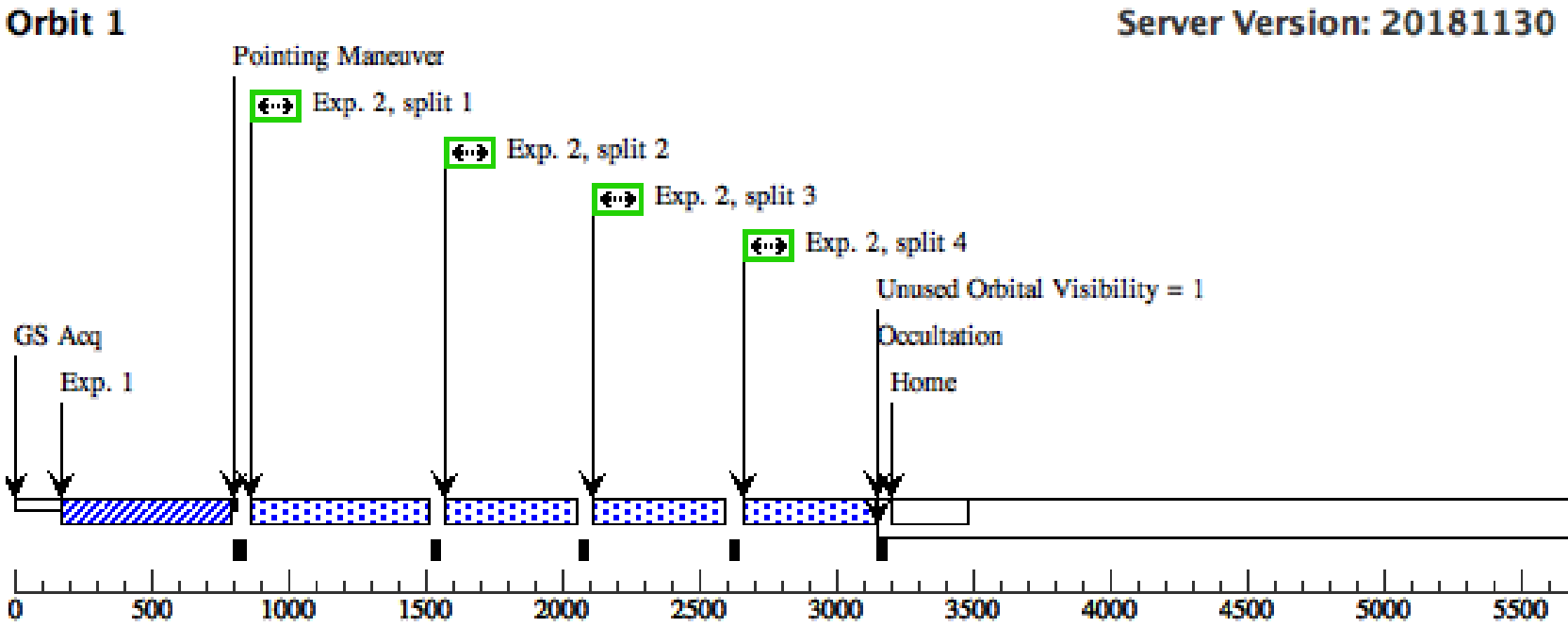
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	J155027.78+192058.5	RA: 15 50 27.7800 (237.6157500d) Dec: +19 20 58.74 (19.34965d) Equinox: J2000	Redshift: 0.212	V=18.81	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[STARBURST]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(1289476)	(7) J155027.78+192058.5	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs (200 Secs) *[==>]*	*[1]*
2	(1289482)	(7) J155027.78+192058.5	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; BUFFER-TIME=3000; FLASH=YES; SEGMENT=BOTH			420 Secs (1712 Secs) *[==>428.0 Secs (Split 1)]* *[==>428.0 Secs (Split 2)]* *[==>428.0 Secs (Split 3)]* *[==>428.0 Secs (Split 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15614, Visit 08, implementation Fri Dec 07 20:00:55 GMT 2018

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

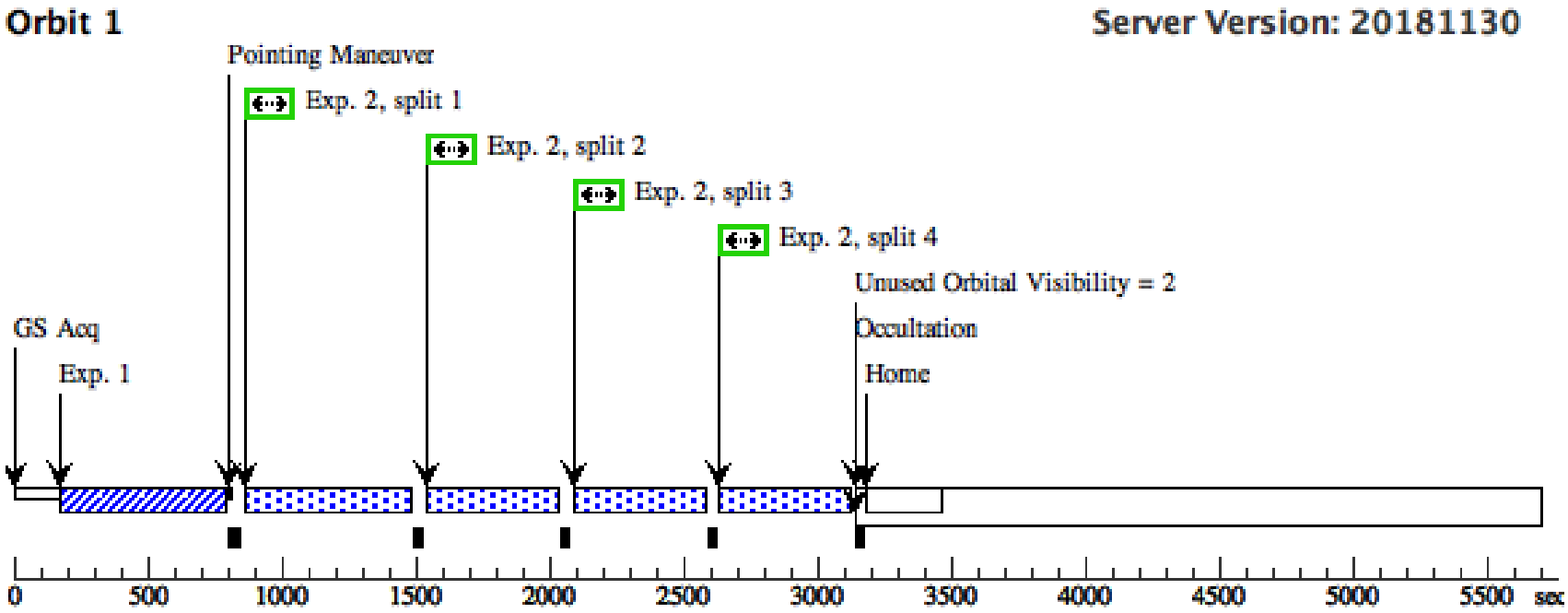
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	J140018.94+010454.0	RA: 14 00 18.9300 (210.0788750d) Dec: +01 04 53.86 (1.08163d) Equinox: J2000	Redshift: 0.121	V=18.93	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[STARBURST]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(1289477)	(8) J140018.94+010454.0	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs (200 Secs) *[==>]*	*[1]*
2	(1289483)	(8) J140018.94+010454.0	COS/FUV, TIME-TAG, PSA	G130M 1327 A	FP-POS=ALL; BUFFER-TIME=3000; FLASH=YES; SEGMENT=A			420 Secs (1736 Secs) *[==>434.0 Secs (Split 1)]* *[==>434.0 Secs (Split 2)]* *[==>434.0 Secs (Split 3)]* *[==>434.0 Secs (Split 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15614, Visit 09, implementation Fri Dec 07 20:00:55 GMT 2018

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	J101629.88+073404.9	RA: 10 16 29.8800 (154.1245000d) Dec: +07 34 4.93 (7.56804d) Equinox: J2000	Redshift: 0.183	V=18.52	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[STARBURST]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(1289478)	(9) J101629.88+073404.9	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs (200 Secs) *[==>]*	*[1]*
2	(1289484)	(9) J101629.88+073404.9	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=ALL; BUFFER-TIME=3000; FLASH=YES; SEGMENT=BOTH			420 Secs (1708 Secs) *[==>427.0 Secs (Split 1)]* *[==>427.0 Secs (Split 2)]* *[==>427.0 Secs (Split 3)]* *[==>427.0 Secs (Split 4)]*	*[1]*

Orbit Structure