13491 - Directly Probing >10^6 K Gas in Lyman Limit Absorbers at z > 2

Cycle: 21, Proposal Category: GO

(UV Initiative)

(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) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:36:52.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
02	(1) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:37:04.0	yes
03	(1) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:37:16.0	yes
04	(1) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:37:26.0	yes
05	(1) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:37:36.0	yes
06	(1) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:37:46.0	yes
07	(1) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:37:56.0	yes
08	(1) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:38:05.0	yes
09	(1) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:38:15.0	yes
10	(1) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:38:25.0	yes
11	(1) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:38:38.0	yes
12	(1) QSO-J1701+6412	COS/FUV COS/NUV	5	14-Mar-2014 21:38:47.0	yes

60 Total Orbits Used

ABSTRACT

The ultraviolet spectrum of the QSO HS1700+6416 (z_qso = 2.736) is remarkable - this spectrum reveals "partial" Lyman limit absorption at six different redshifts ranging from z = 1.1573 to 2.4331. Despite these absorption systems, the QSO is relatively bright in the HST band and provides a unique opportunity to study extreme ultraviolet absorption lines at rest wavelengths < 500 A. We propose to obtain high S/N, high-resolution COS

spectroscopy of this QSO to characterize the hot gas in the circumgalactic media traced by the six Lyman limit absorbers as well as other systems along the line of sight. We will search for 15 ions that trace gas at log T > 6 (e.g., MgIX, SiXII, SXIV, FeXVI, and others) to gain insight on the missing baryons, the "hidden" mass of hot gas in galactic outflows and halos, and the relationships between the hot and cool gas phases in circumgalactic gaseous media. In addition to the Lyman limit systems, the sight line also pierces the intracluster media of two lower redshift X-ray bright clusters at an impact parameter near the cluster virial radii, as well as a high-redshift protocluster at z = 2.3. ACS and WFC3 imaging and IR grism spectroscopy of galaxies near the sight line have already been obtained, and a large sample of galaxy redshifts have been measured for objects at z > 2. Consequently, the proposed COS spectrum will have many archival uses beyond our primary science goals.

OBSERVING DESCRIPTION

We will obtain high S/N, high-resolution COS spectroscopy of the QSO HS1700+6416 with the G130M grating. This target has been observed successfully many times with HST, although some care must be exercised in the selection of the guide stars (see comments under the target section of the Phase II proposal). The coordinates of this point source are accurately known, so we will acquire the target with the COS-NUV channel using ACQ/IMAGE. To choose the acquistion setup and calculate exposure times for the ACQ/IMAGE sequence, we have uploaded a previous STIS NUV spectrum of HS1700+6416 into the COS ETC. Previous observations indicate that the QSO flux can vary by ~20%, so the acquisition exposure time was selected to provide S/N = 40 even if the QSO exhibits its faintest known flux at the time of the observations, but we have checked to ensure that the observation is safe for the COS detector even if it is in its brightest known state. For this program, attaining the highest possible signal-to-noise is of paramount importance, so to provide the best ability to sense and correct for fixed-pattern noise, we will observe the QSO at three different central wavelengths (1309, 1318, and 1327 A) of the G130M grating, and we will record exposures with all four FP-SPLIT positions at each central wavelength. This strategy has the additional advantage that it fills in the G130M detector gap. The bright-object protection check in the APT flags the HS1700+6416 target acquisition with MIRRORA as a bright-object concern, but the UV flux is low enough so that the target is well below the local count-rate limit for the COS detectors. To establish this (and to check the science exposures as well), we have used the ETC to check global and local count rates using previous FUV and NUV spectra obtained with HST as well as the GALEX FUV and NUV magnitudes, and we have allowed for 20% variability; we also note that HS1700+6416 has been successfully observed with COS in program 11528 with the same target acquisition set up (including MIRRORA).

Visit

Proposal 13491, Visit 01, implementation Sat Mar 15 01:38:59 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 01) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

Comments: This target has often been observed successfully with HST, but there have also been multiple failed observations (see, e.g., program 11528). The following communication from Amber Armstrong to David Syphers summarizes findings following failed acquisitions for prog.11528:

Hello David,

It is my professional opinion that this field will pose problems anytime specific guide stars are not chosen. I have read that magnitudes of GSC2 stars are anywhere from 0.5-0.8 fainter than expected in this field and that will cause the FGS sensors to fail to lock on to a majority of the guide stars available. Therefore, we have determined (as a result of 11528) that we will change the faint limit of all 3 FGSs to 12.2 (for this target only) which will assure that only the Hipparchos observed stars are used. I would definitely recommend anyone observing this target inform their PC or equivalent right away of past failures and request that only guide stars that have been successful in the past be used during this exposure. For your information, I will list the guide stars and the FGS sensor used to successfully lock on to this target in the past (11528 visit 23)

N4EY000036 on FGS2
N4EY000102 on FGS3

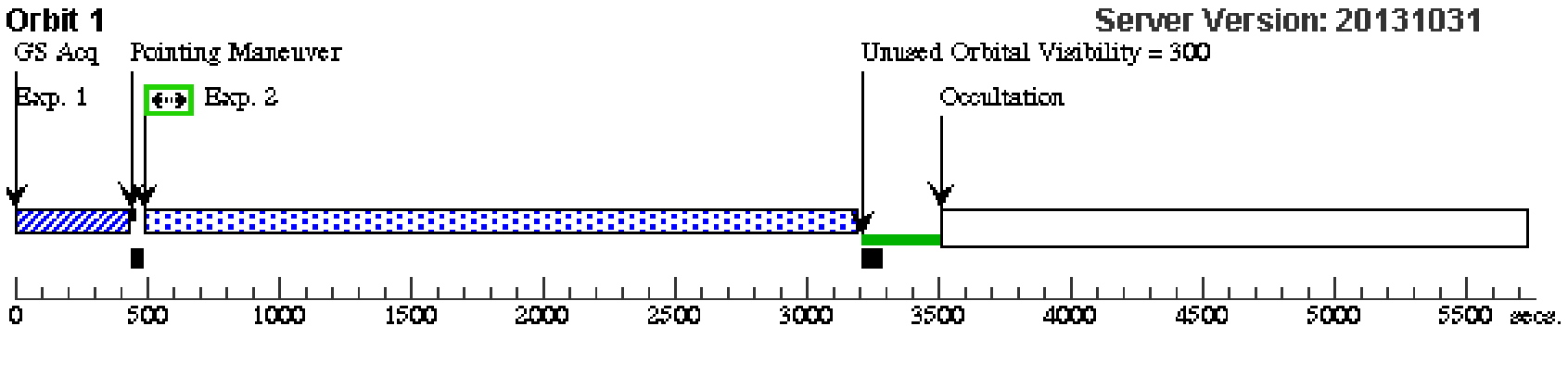
These were successful at a U3 nominal roll at 62.7 degrees. Any PC should be able to find this information in our archives and HOPR reports, but I had to dig to find it so I'll make it available here. At this point, I intend to use these guide stars for your observation.

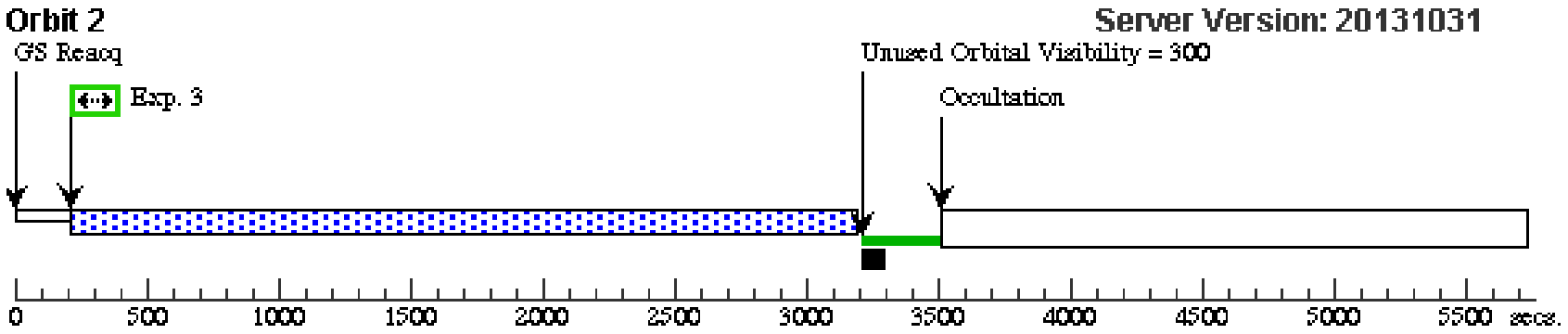
Cheers,
Amber Armstrong

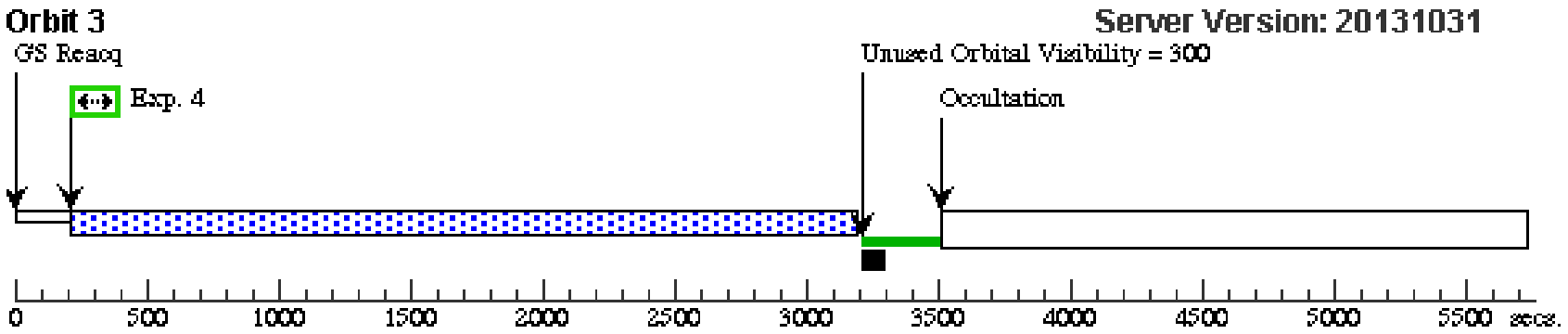
Exposures

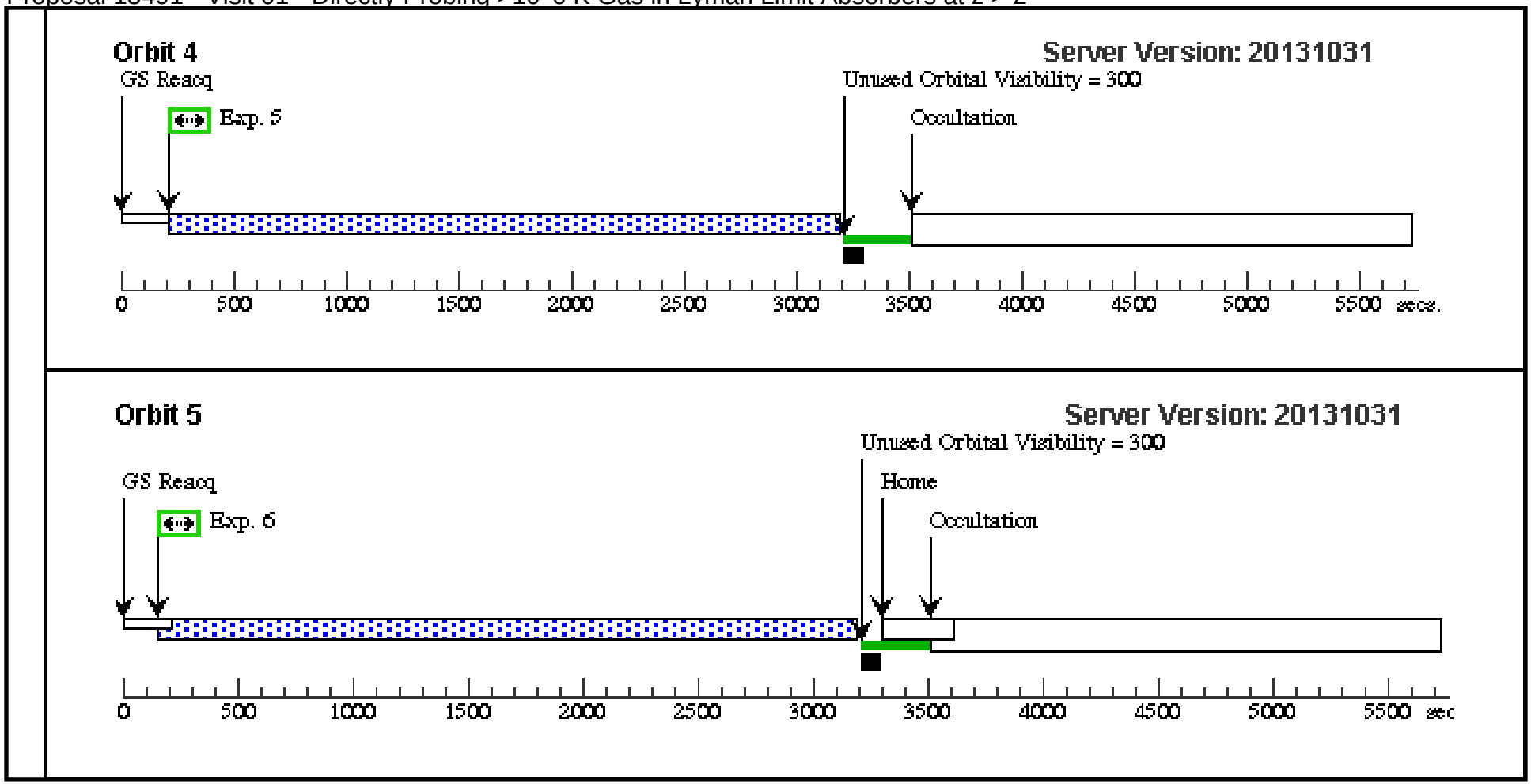
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.509793)	(1) QSO-J1701+6412	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				12.8 Secs (12.8 Secs) *[==>]*	***[1]***
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=1			2515 Secs (2515 Secs) *[==>]*	***[1]***
3	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=2			2925 Secs (2925 Secs) *[==>]*	***[2]***
4	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=3			2925 Secs (2925 Secs) *[==>]*	***[3]***
5	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=4			2925 Secs (2925 Secs) *[==>]*	***[4]***
6	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=1			2925 Secs (2925 Secs) *[==>]*	***[5]***

Orbit Structure





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secs.
Orbit 5
Server Version: 20131031
Unused Orbital Visibility = 300
GS Reacq
Exp. 6
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Occultation
0
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1500
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5500
sec

Visit

Proposal 13491, Visit 02, implementation Sat Mar 15 01:39:02 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 02) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

Comments: This target has often been observed successfully with HST, but there have also been multiple failed observations (see, e.g., program 11528). The following communication from Amber Armstrong to David Syphers summarizes findings following failed acquisitions for prog.11528:

Hello David,

It is my professional opinion that this field will pose problems anytime specific guide stars are not chosen. I have read that magnitudes of GSC2 stars are anywhere from 0.5-0.8 fainter than expected in this field and that will cause the FGS sensors to fail to lock on to a majority of the guide stars available. Therefore, we have determined (as a result of 11528) that we will change the faint limit of all 3 FGSs to 12.2 (for this target only) which will assure that only the Hipparchos observed stars are used. I would definitely recommend anyone observing this target inform their PC or equivalent right away of past failures and request that only guide stars that have been successful in the past be used during this exposure. For your information, I will list the guide stars and the FGS sensor used to successfully lock on to this target in the past (11528 visit 23)

N4EY000036 on FGS2
N4EY000102 on FGS3

These were successful at a U3 nominal roll at 62.7 degrees. Any PC should be able to find this information in our archives and HOPR reports, but I had to dig to find it so I'll make it available here. At this point, I intend to use these guide stars for your observation.

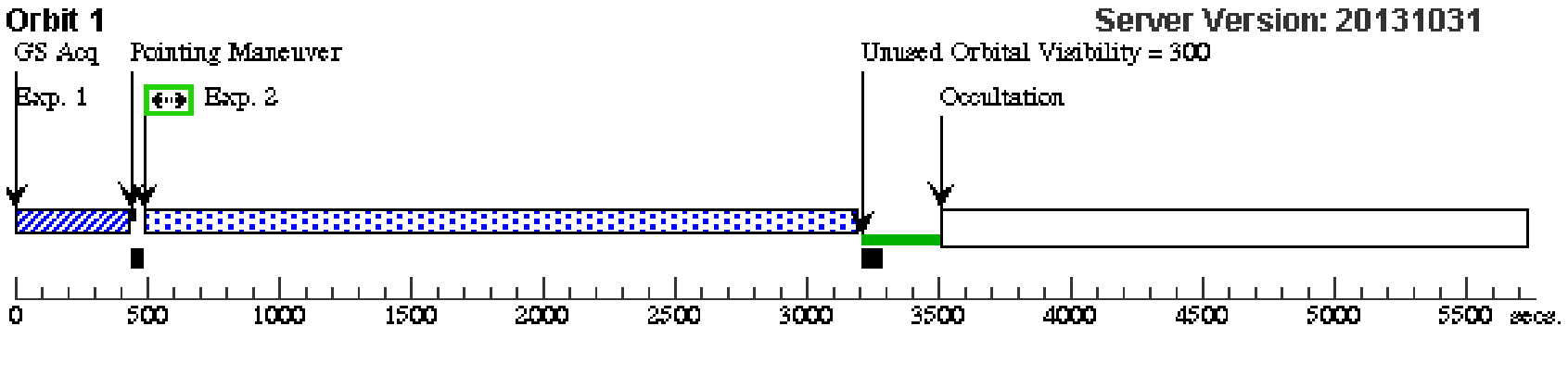
Cheers,
Amber Armstrong

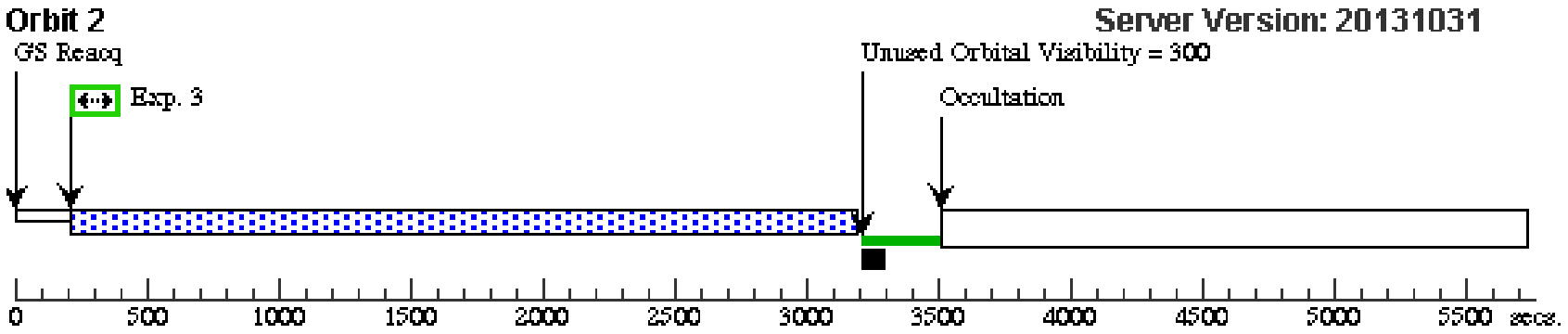
Proposal 13491 - Visit 02 - Directly Probing >10^6 K Gas in Lyman Limit Absorbers at z > 2

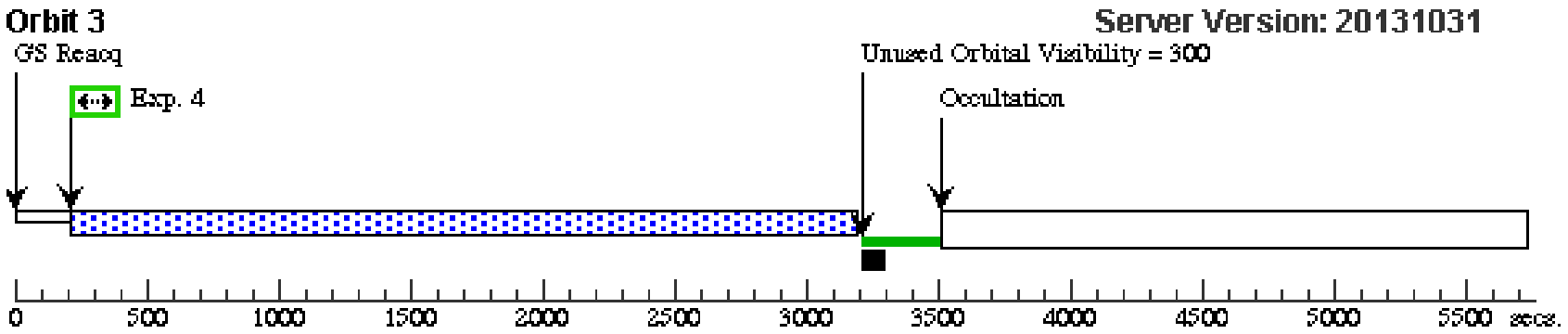
Exposures

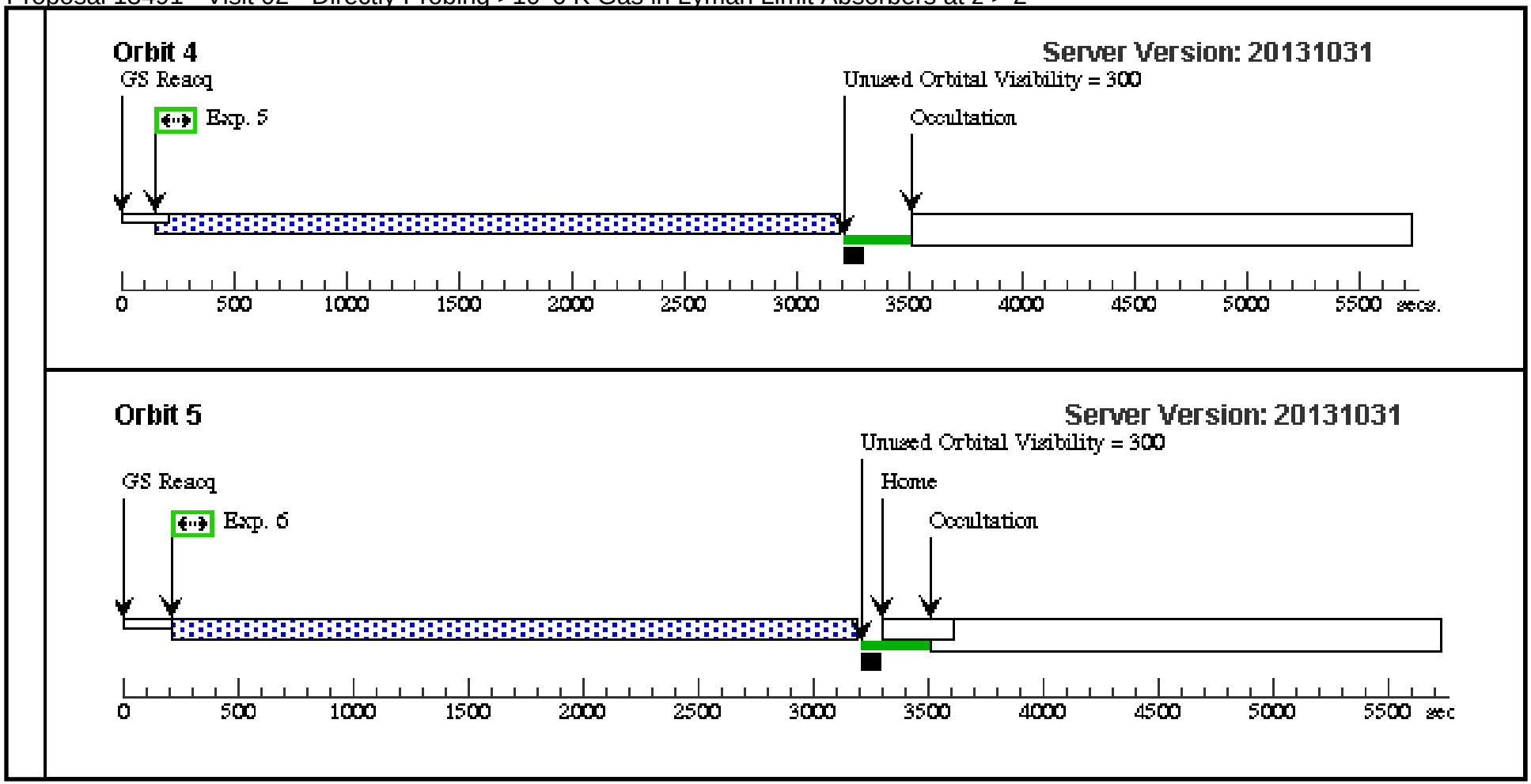
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.509793)	(1) QSO-J1701+6412	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				12.8 Secs (12.8 Secs) *[==>]*	***[1]***
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=2			2515 Secs (2515 Secs) *[==>]*	***[1]***
3	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=3			2925 Secs (2925 Secs) *[==>]*	***[2]***
4	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=4			2925 Secs (2925 Secs) *[==>]*	***[3]***
5	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=1			2925 Secs (2925 Secs) *[==>]*	***[4]***
6	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=2			2925 Secs (2925 Secs) *[==>]*	***[5]***

Orbit Structure





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GS Reacq
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secs.
Orbit 5
Server Version: 20131031
Unused Orbital Visibility = 300
GS Reacq
Exp. 6
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13491, Visit 03, implementation Sat Mar 15 01:39:04 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 03) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

Comments: This target has often been observed successfully with HST, but there have also been multiple failed observations (see, e.g., program 11528). The following communication from Amber Armstrong to David Syphers summarizes findings following failed acquisitions for prog.11528:

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N4EY000036 on FGS2
N4EY000102 on FGS3

These were successful at a U3 nominal roll at 62.7 degrees. Any PC should be able to find this information in our archives and HOPR reports, but I had to dig to find it so I'll make it available here. At this point, I intend to use these guide stars for your observation.

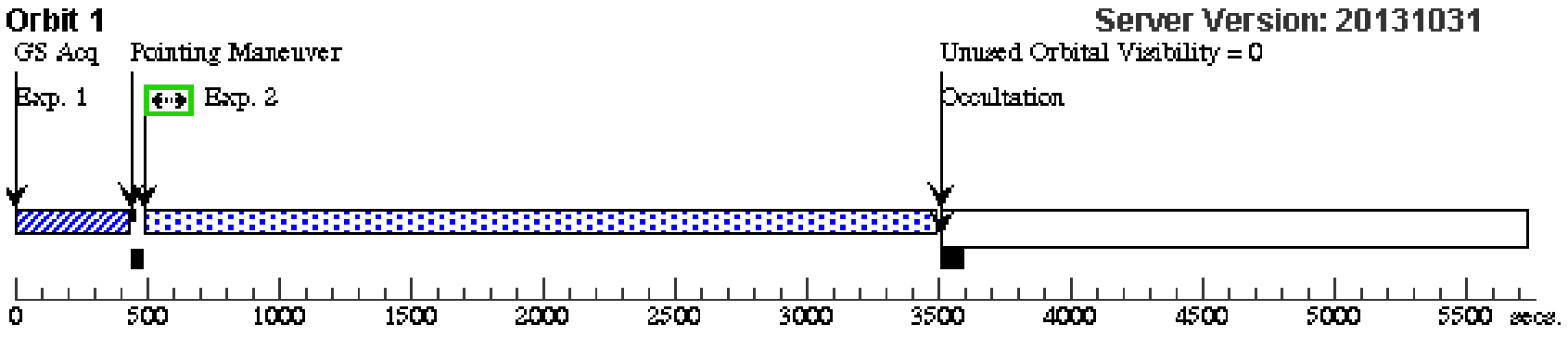
Cheers,
Amber Armstrong

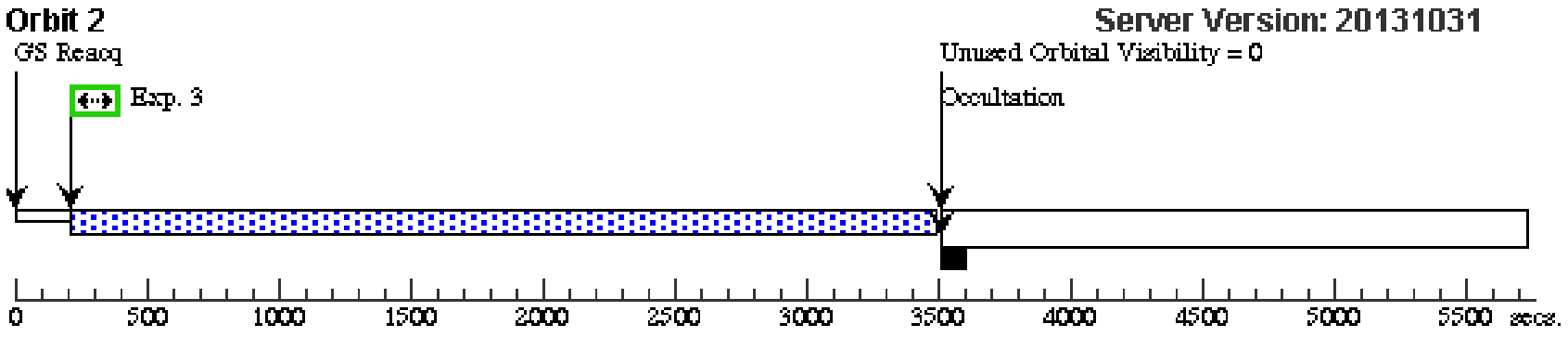
Proposal 13491 - Visit 03 - Directly Probing >10^6 K Gas in Lyman Limit Absorbers at z > 2

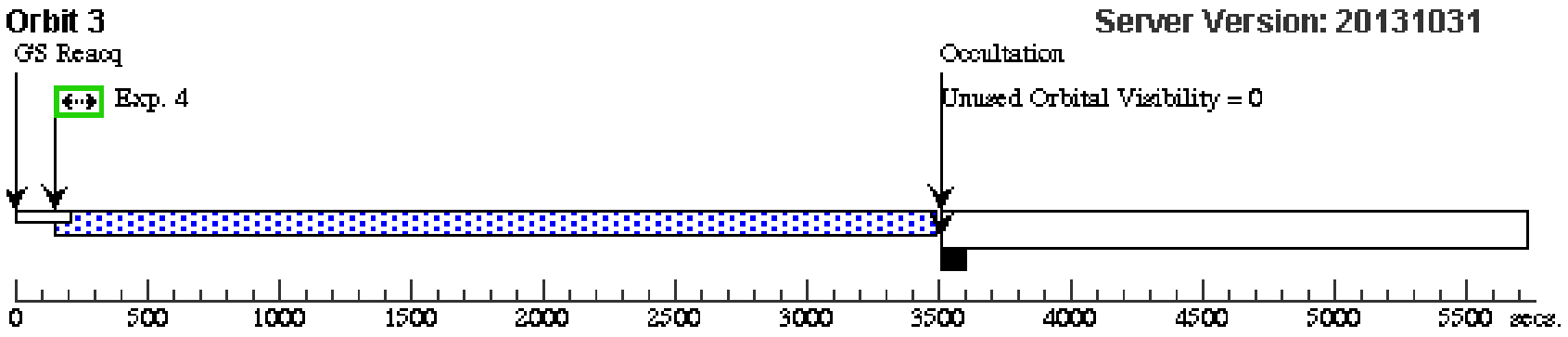
Exposures

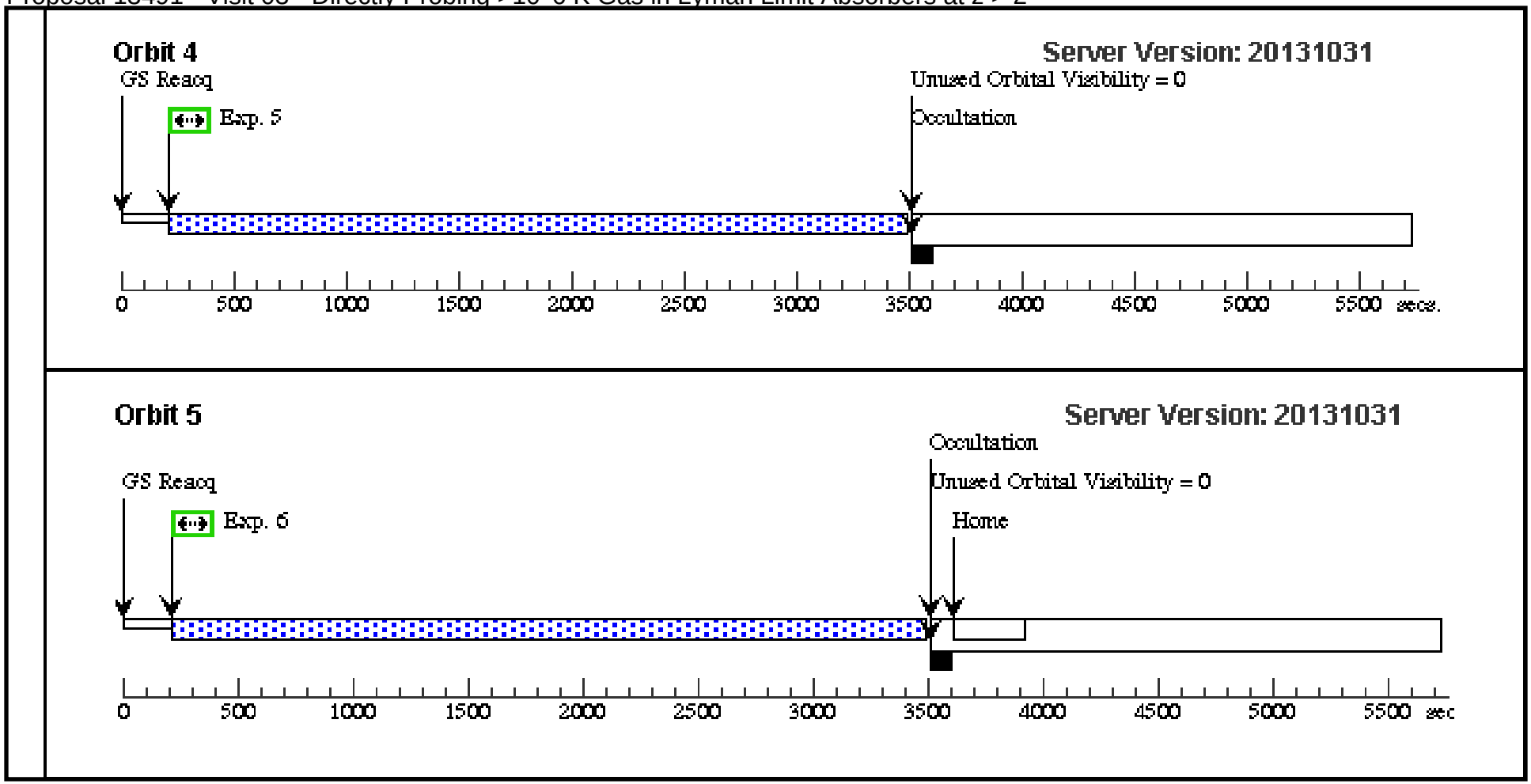
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.509793)	(1) QSO-J1701+6412	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				12.8 Secs (12.8 Secs) *[==>]*	***[1]***
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=3			2815 Secs (2815 Secs) *[==>]*	***[1]***
3	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=4			3225 Secs (3225 Secs) *[==>]*	***[2]***
4	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=1			3225 Secs (3225 Secs) *[==>]*	***[3]***
5	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=2			3225 Secs (3225 Secs) *[==>]*	***[4]***
6	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=3			3225 Secs (3225 Secs) *[==>]*	***[5]***

Orbit Structure





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GS Reacq
Exp. 5
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Occultation
0
500
1000
1500
2000
2500
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3500
4000
4500
5000
5500
secs.
Orbit 5
Server Version: 20131031
Occultation
GS Reacq
Unused Orbital Visibility = 0
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13491, Visit 04, implementation Sat Mar 15 01:39:06 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 04) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

Comments: This target has often been observed successfully with HST, but there have also been multiple failed observations (see, e.g., program 11528). The following communication from Amber Armstrong to David Syphers summarizes findings following failed acquisitions for prog.11528:

Hello David,

It is my professional opinion that this field will pose problems anytime specific guide stars are not chosen. I have read that magnitudes of GSC2 stars are anywhere from 0.5-0.8 fainter than expected in this field and that will cause the FGS sensors to fail to lock on to a majority of the guide stars available. Therefore, we have determined (as a result of 11528) that we will change the faint limit of all 3 FGSs to 12.2 (for this target only) which will assure that only the Hipparchos observed stars are used. I would definitely recommend anyone observing this target inform their PC or equivalent right away of past failures and request that only guide stars that have been successful in the past be used during this exposure. For your information, I will list the guide stars and the FGS sensor used to successfully lock on to this target in the past (11528 visit 23)

N4EY000036 on FGS2
N4EY000102 on FGS3

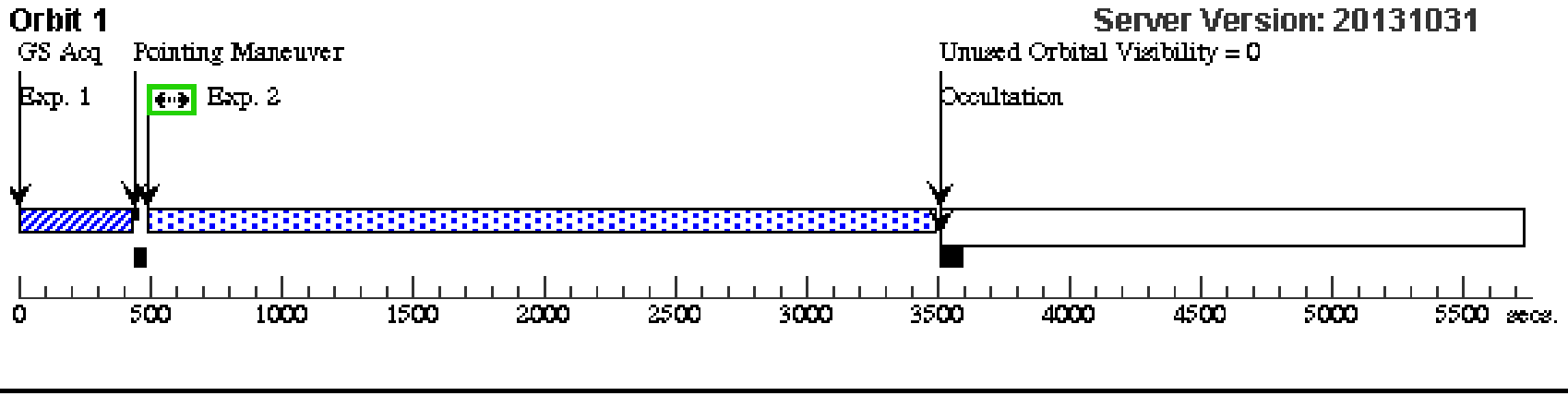
These were successful at a U3 nominal roll at 62.7 degrees. Any PC should be able to find this information in our archives and HOPR reports, but I had to dig to find it so I'll make it available here. At this point, I intend to use these guide stars for your observation.

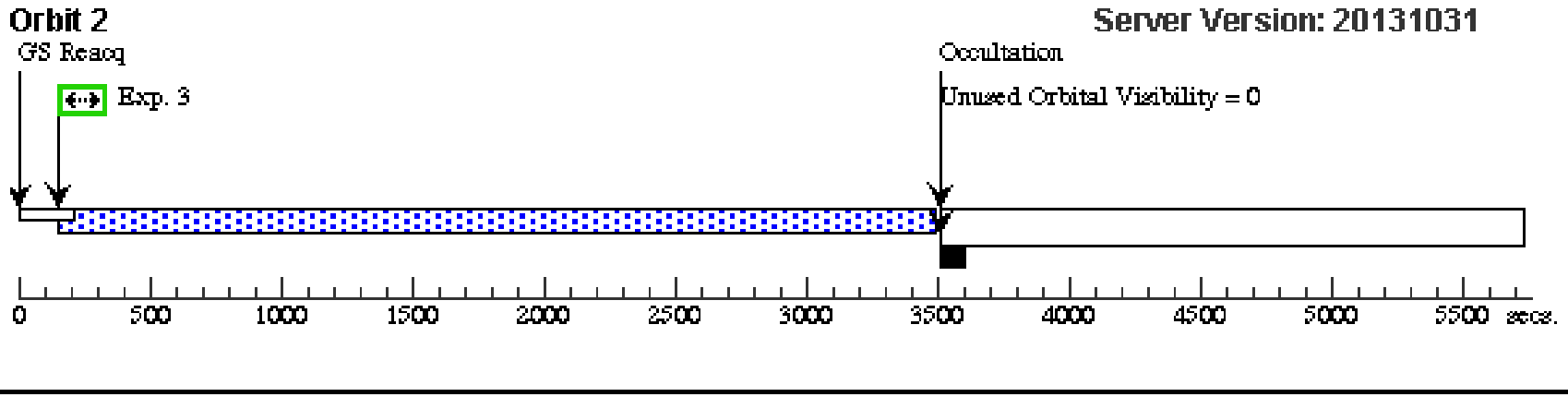
Cheers,
Amber Armstrong

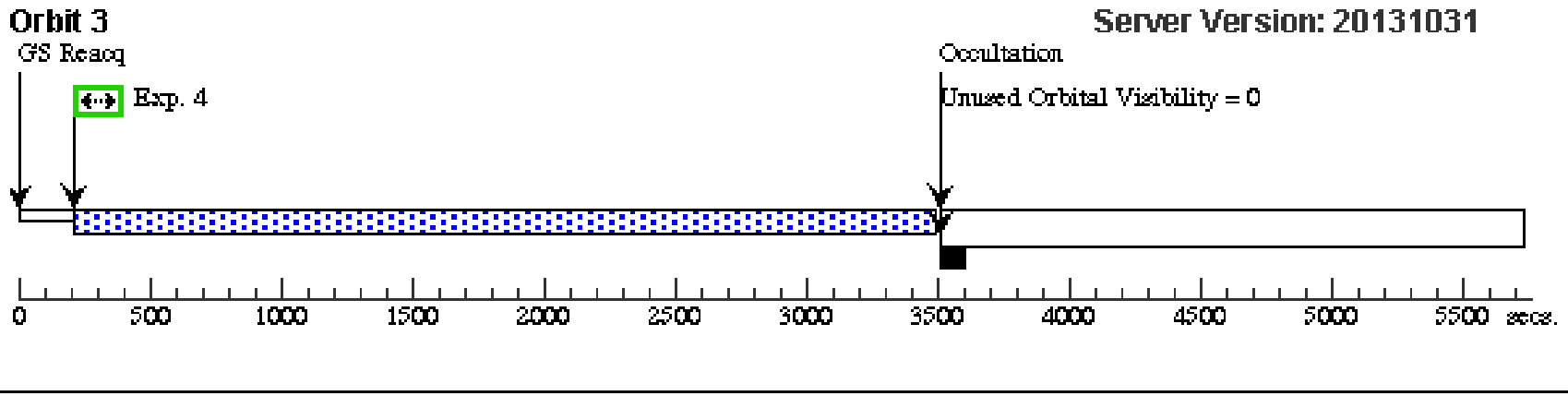
Exposures

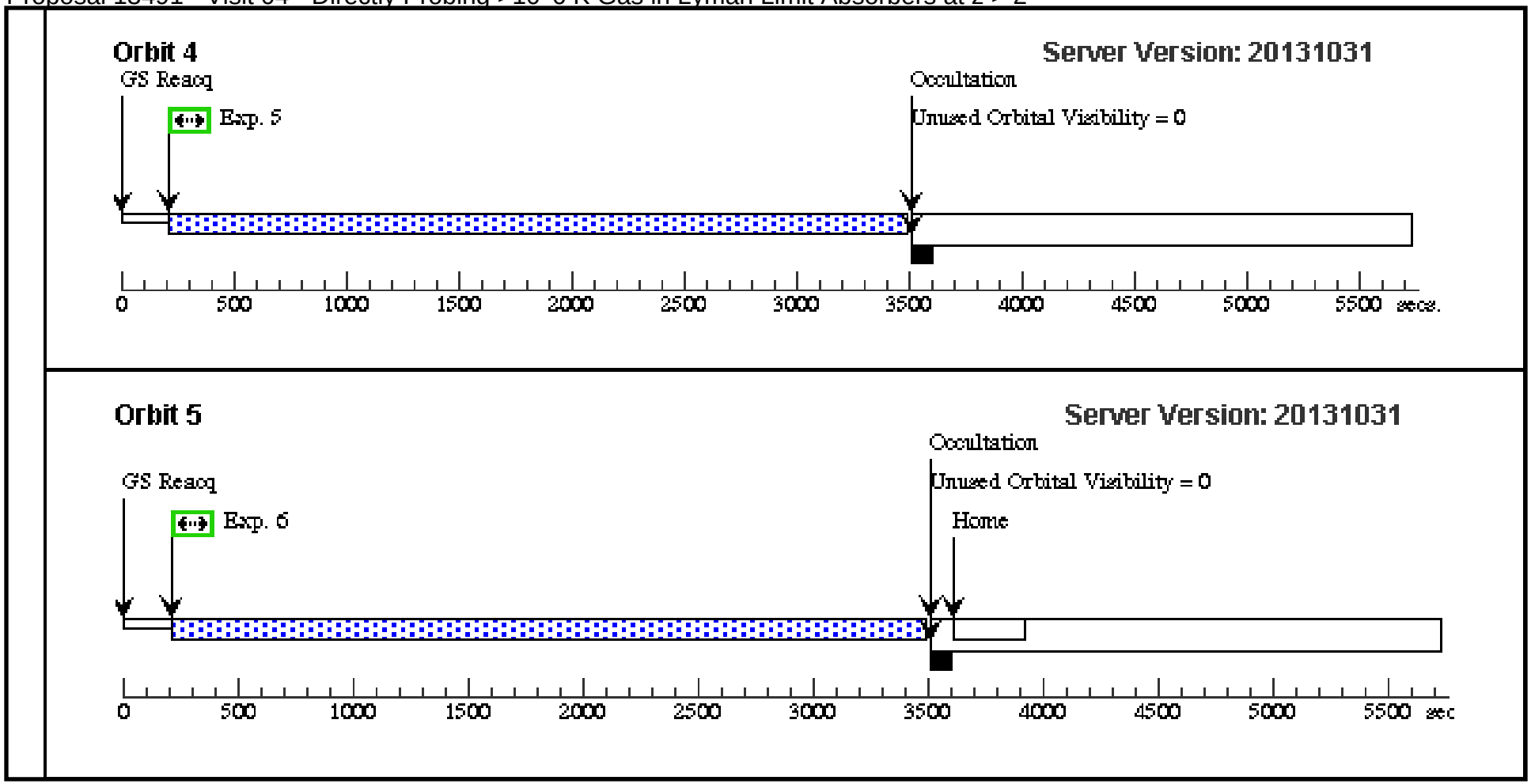
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.509793)	(1) QSO-J1701+6412	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				12.8 Secs (12.8 Secs) *[==>]*	***[1]***
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=4			2815 Secs (2815 Secs) *[==>]*	***[1]***
3	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=1			3225 Secs (3225 Secs) *[==>]*	***[2]***
4	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=2			3225 Secs (3225 Secs) *[==>]*	***[3]***
5	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=3			3225 Secs (3225 Secs) *[==>]*	***[4]***
6	(COS.sp.509796)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=4126; FP-POS=4			3225 Secs (3225 Secs) *[==>]*	***[5]***

Orbit Structure








Orbit 4
Server Version: 20131031
GS Reacq
Exp. 5
Occultation
Unused Orbital Visibility = 0
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4500
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5500
secs.
Orbit 5
Server Version: 20131031
Occultation
GS Reacq
Unused Orbital Visibility = 0
Exp. 6
Home
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5500
sec

Visit

Proposal 13491, Visit 05, implementation Sat Mar 15 01:39:08 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 05) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

Comments: This target has often been observed successfully with HST, but there have also been multiple failed observations (see, e.g., program 11528). The following communication from Amber Armstrong to David Syphers summarizes findings following failed acquisitions for prog.11528:

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It is my professional opinion that this field will pose problems anytime specific guide stars are not chosen. I have read that magnitudes of GSC2 stars are anywhere from 0.5-0.8 fainter than expected in this field and that will cause the FGS sensors to fail to lock on to a majority of the guide stars available. Therefore, we have determined (as a result of 11528) that we will change the faint limit of all 3 FGSs to 12.2 (for this target only) which will assure that only the Hipparchos observed stars are used. I would definitely recommend anyone observing this target inform their PC or equivalent right away of past failures and request that only guide stars that have been successful in the past be used during this exposure. For your information, I will list the guide stars and the FGS sensor used to successfully lock on to this target in the past (11528 visit 23)

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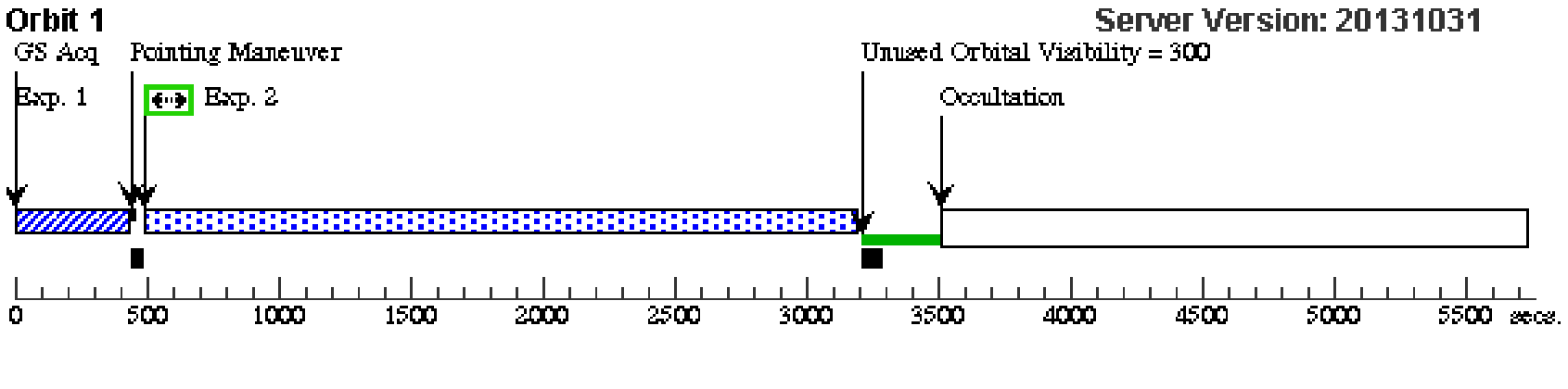
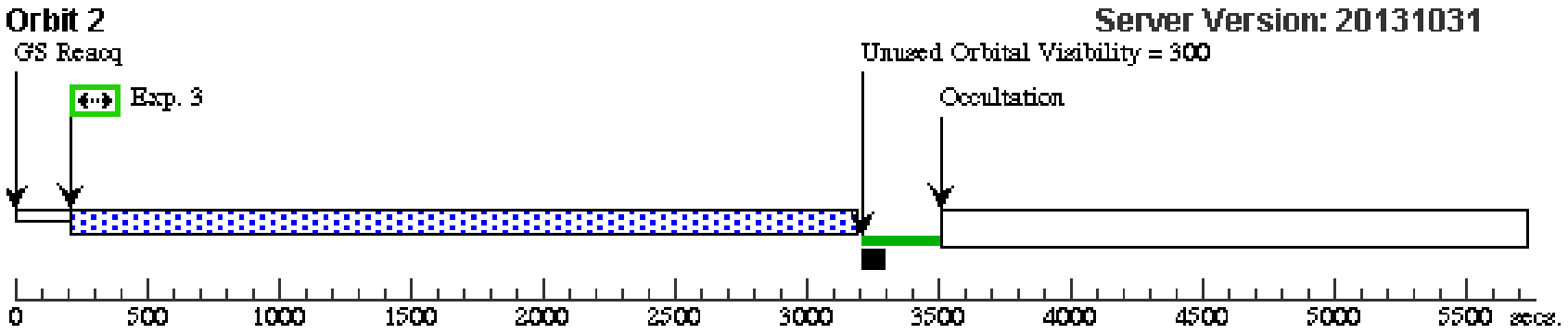
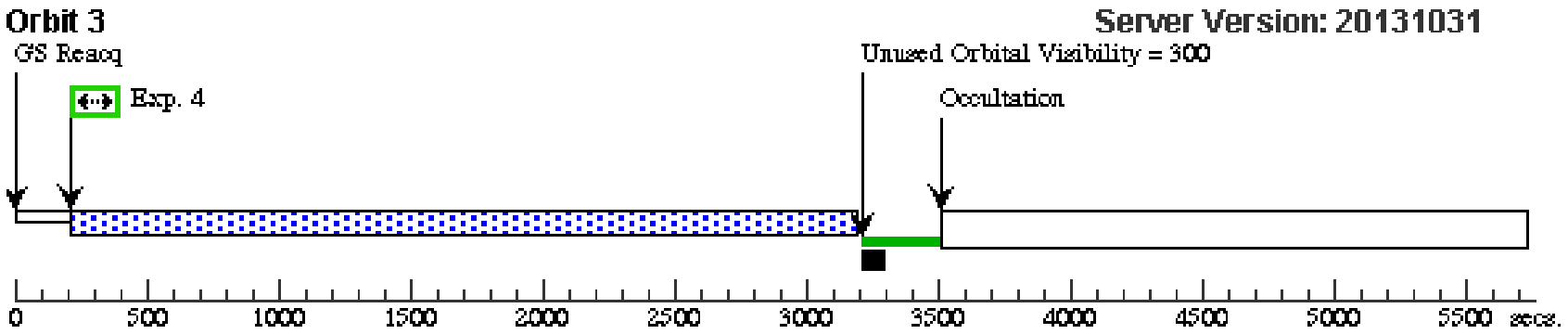
Exposures

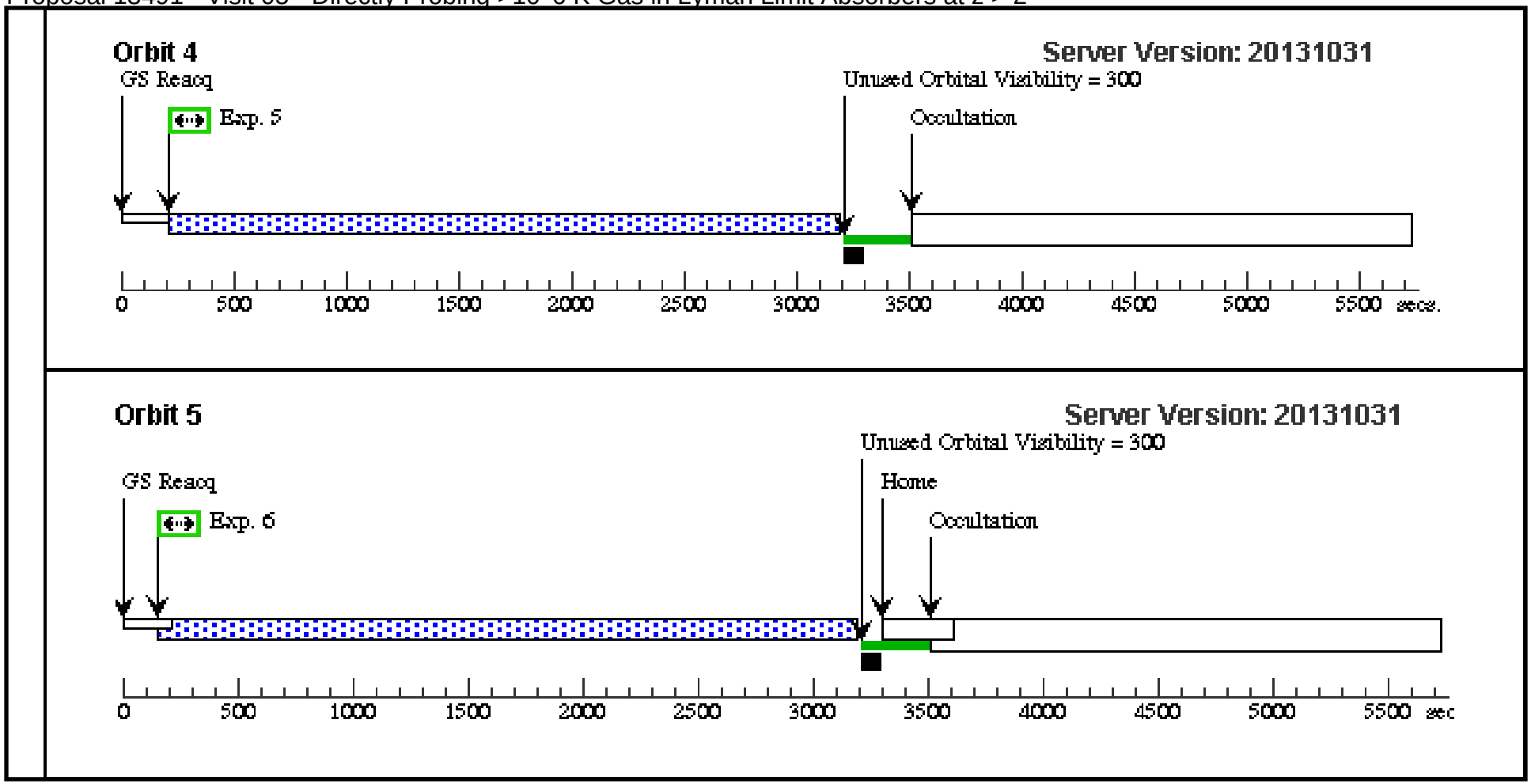
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.509793)	(1) QSO-J1701+6412	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				12.8 Secs (12.8 Secs) *[==>]*	***[1]***
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=1			2515 Secs (2515 Secs) *[==>]*	***[1]***
3	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=2			2925 Secs (2925 Secs) *[==>]*	***[2]***
4	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=3			2925 Secs (2925 Secs) *[==>]*	***[3]***
5	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=4			2925 Secs (2925 Secs) *[==>]*	***[4]***
6	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=1			2925 Secs (2925 Secs) *[==>]*	***[5]***

Orbit Structure








Orbit 4
Server Version: 20131031
GS Reacq
Exp. 5
Unused Orbital Visibility = 300
Occultation
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3000
3500
4000
4500
5000
5500
secs.
Orbit 5
Server Version: 20131031
Unused Orbital Visibility = 300
GS Reacq
Exp. 6
Home
Occultation
0
500
1000
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4500
5000
5500
sec

Visit

Proposal 13491, Visit 06, implementation Sat Mar 15 01:39:09 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 06) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

Comments: This target has often been observed successfully with HST, but there have also been multiple failed observations (see, e.g., program 11528). The following communication from Amber Armstrong to David Syphers summarizes findings following failed acquisitions for prog.11528:

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These were successful at a U3 nominal roll at 62.7 degrees. Any PC should be able to find this information in our archives and HOPR reports, but I had to dig to find it so I'll make it available here. At this point, I intend to use these guide stars for your observation.

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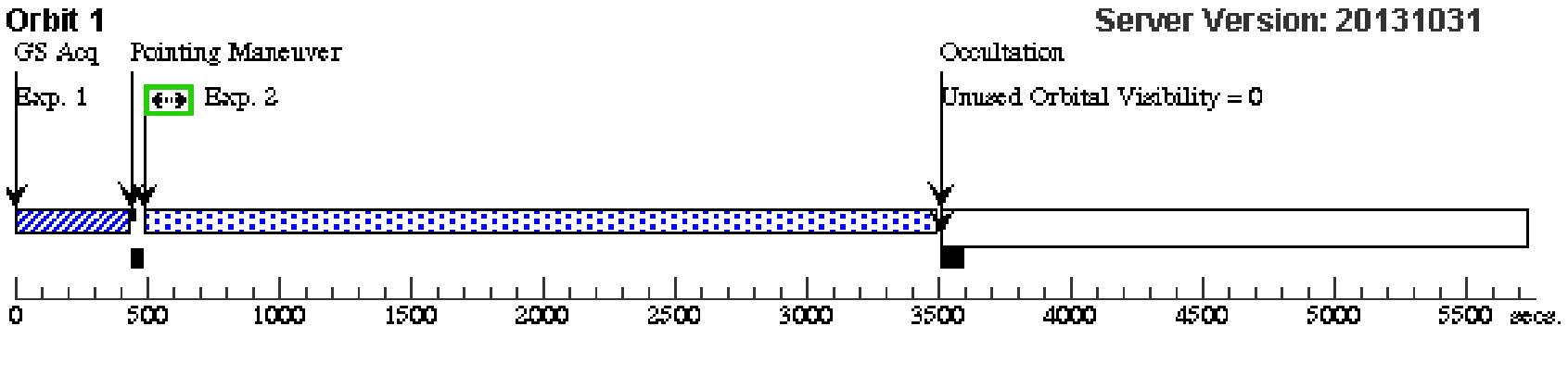
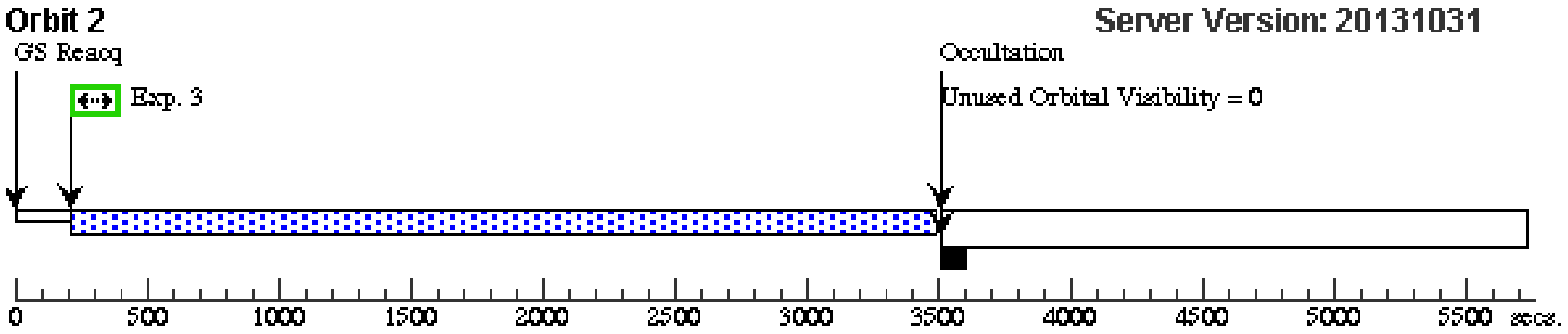
Proposal 13491 - Visit 06 - Directly Probing >10^6 K Gas in Lyman Limit Absorbers at z > 2

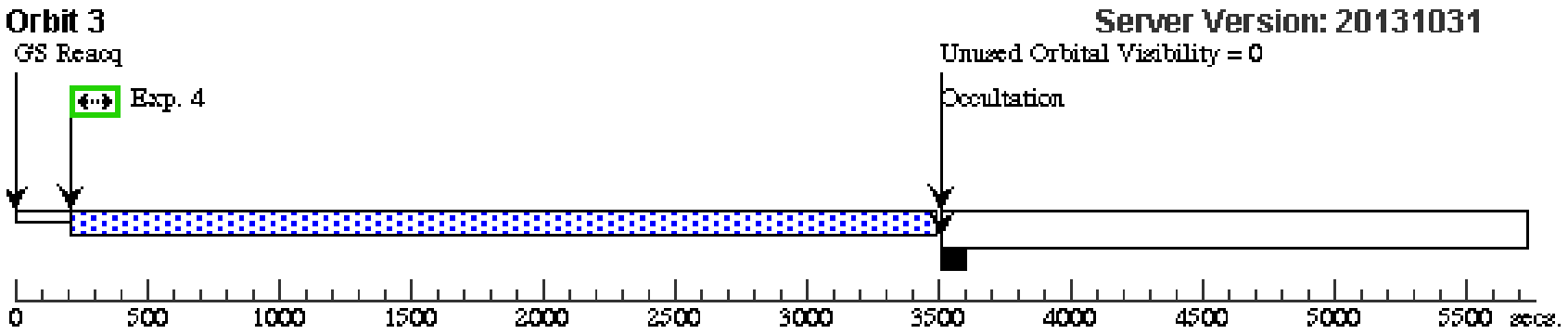
Exposures

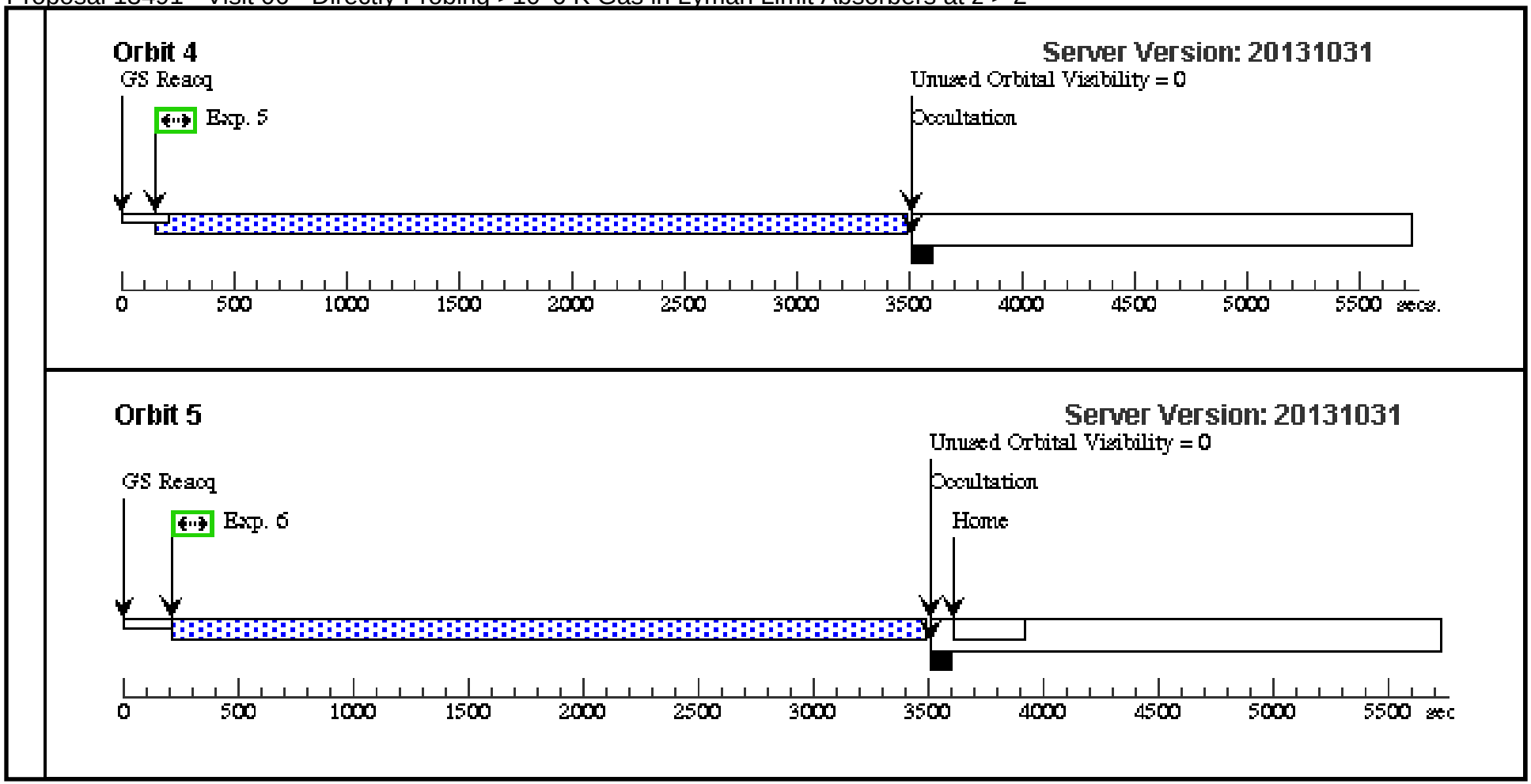
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.509793)	(1) QSO-J1701+6412	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				12.8 Secs (12.8 Secs) *[==>]*	***[1]***
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=2			2815 Secs (2815 Secs) *[==>]*	***[1]***
3	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=3			3225 Secs (3225 Secs) *[==>]*	***[2]***
4	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=4			3225 Secs (3225 Secs) *[==>]*	***[3]***
5	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=1			3225 Secs (3225 Secs) *[==>]*	***[4]***
6	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=2			3225 Secs (3225 Secs) *[==>]*	***[5]***

Orbit Structure








Orbit 4
Server Version: 20131031
GS Reacq
Exp. 5
Unused Orbital Visibility = 0
Occultation
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secs.
Orbit 5
Server Version: 20131031
Unused Orbital Visibility = 0
GS Reacq
Occultation
Exp. 6
Home
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500
1000
1500
2000
2500
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3500
4000
4500
5000
5500
sec

Visit

Proposal 13491, Visit 07, implementation Sat Mar 15 01:39:11 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 07) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

Comments: This target has often been observed successfully with HST, but there have also been multiple failed observations (see, e.g., program 11528). The following communication from Amber Armstrong to David Syphers summarizes findings following failed acquisitions for prog.11528:

Hello David,

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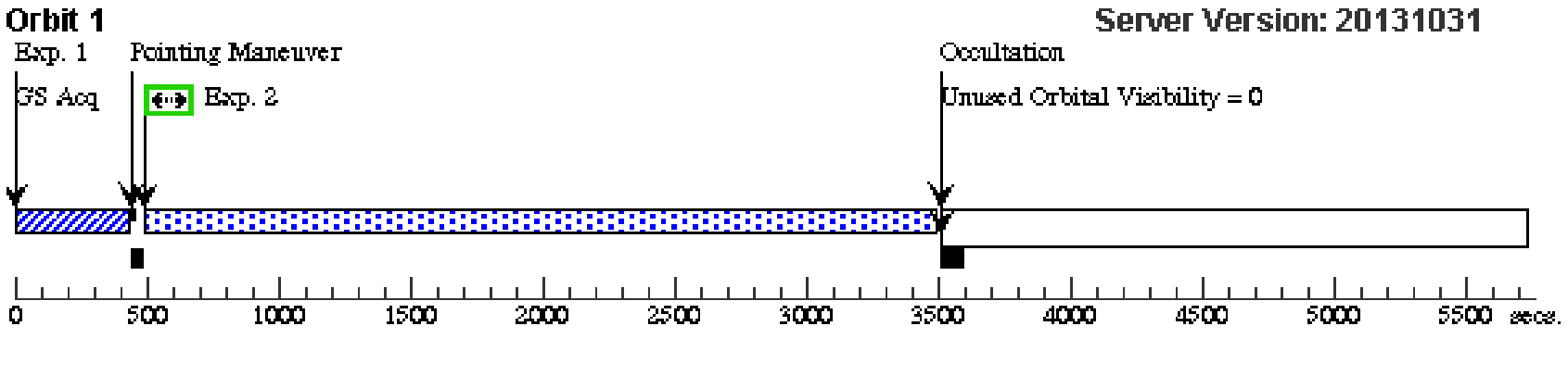
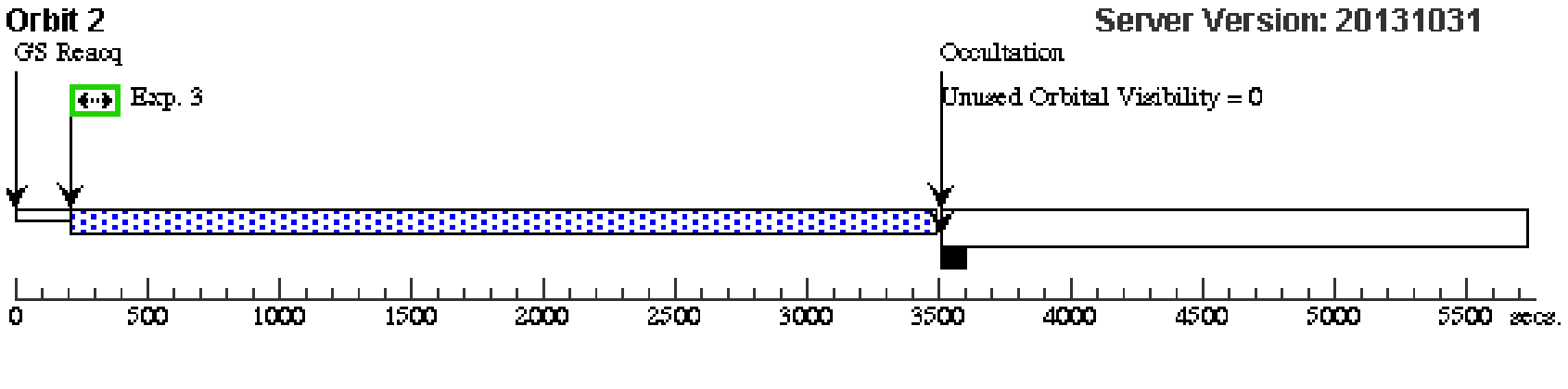
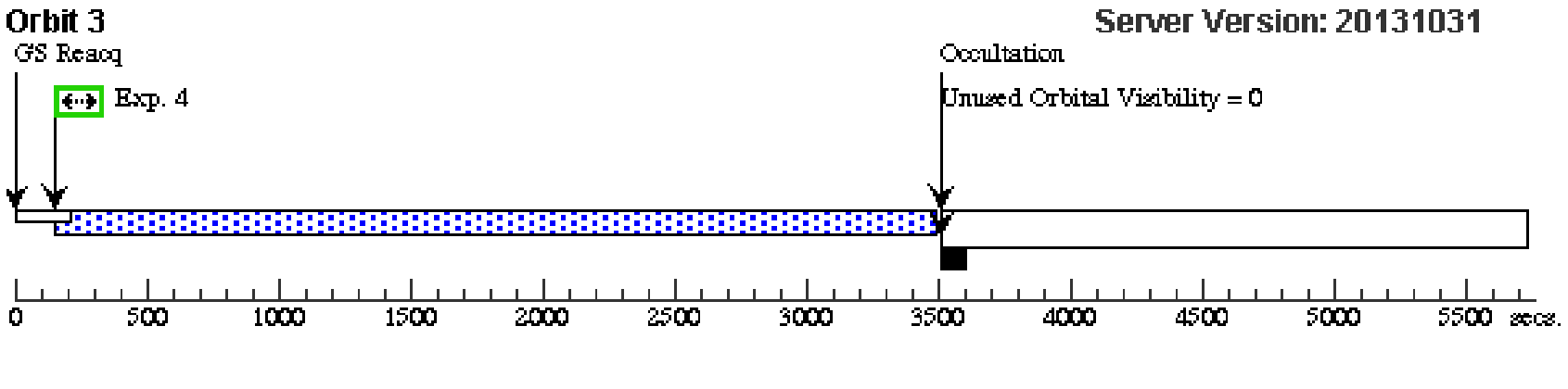
Exposures

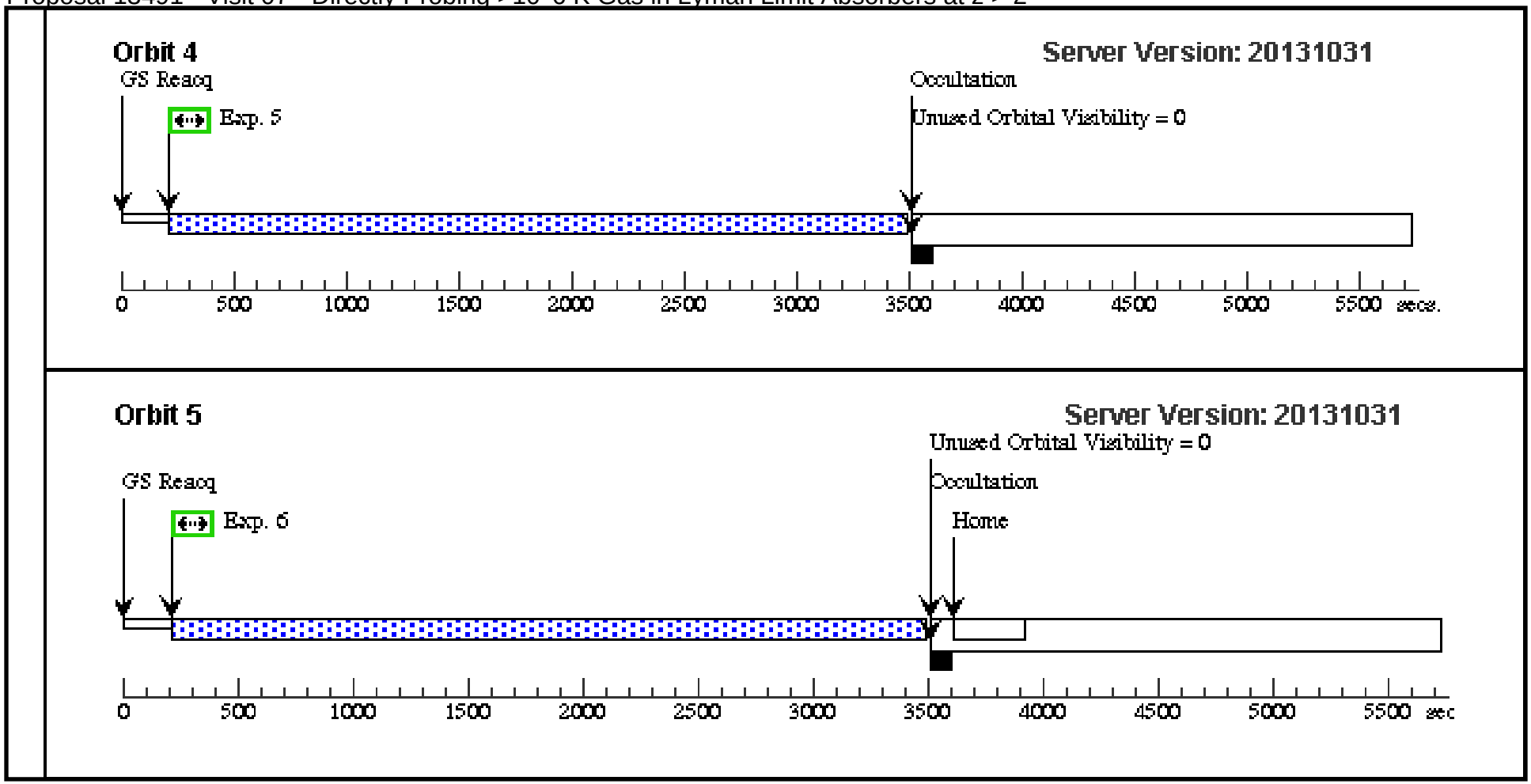
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.509793)	(1) QSO-J1701+6412	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				12.8 Secs (12.8 Secs) *[==>]*	***[1]***
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=3			2815 Secs (2815 Secs) *[==>]*	***[1]***
3	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=4			3225 Secs (3225 Secs) *[==>]*	***[2]***
4	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=1			3225 Secs (3225 Secs) *[==>]*	***[3]***
5	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=2			3225 Secs (3225 Secs) *[==>]*	***[4]***
6	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=3			3225 Secs (3225 Secs) *[==>]*	***[5]***

Orbit Structure








Orbit 4
Server Version: 20131031
GS Reacq
Exp. 5
Occultation
Unused Orbital Visibility = 0
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secs.
Orbit 5
Server Version: 20131031
Unused Orbital Visibility = 0
GS Reacq
Exp. 6
Occultation
Home
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4000
4500
5000
5500
sec

Visit

Proposal 13491, Visit 08, implementation Sat Mar 15 01:39:12 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 08) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

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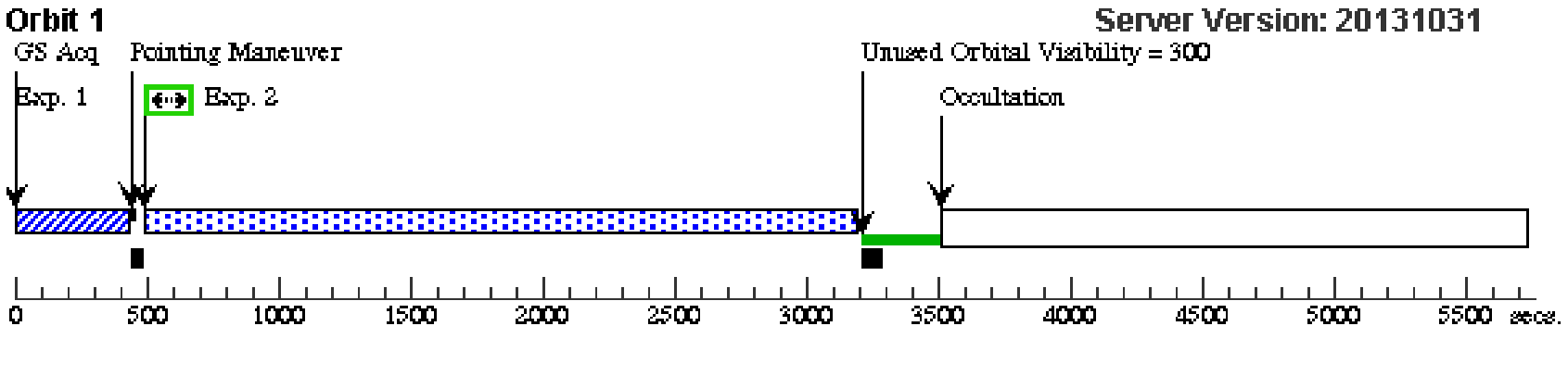
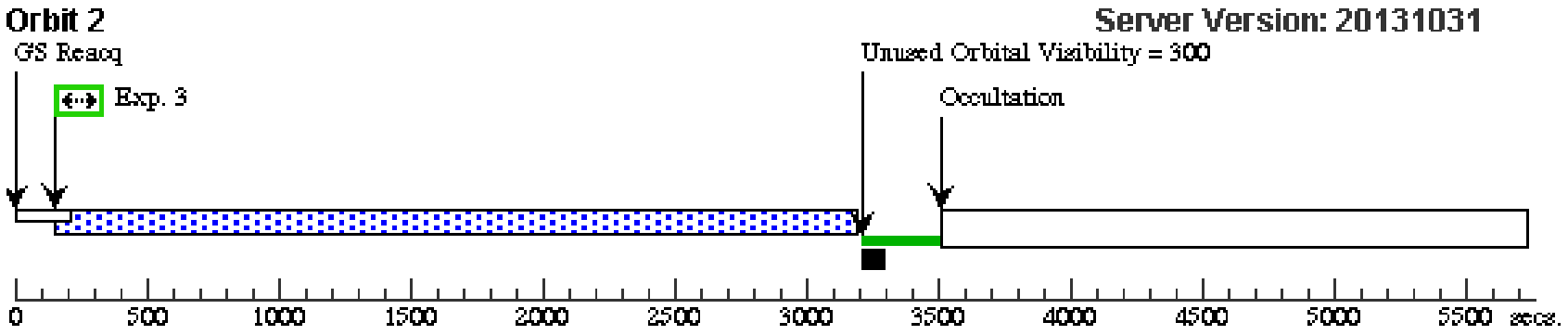
Amber Armstrong

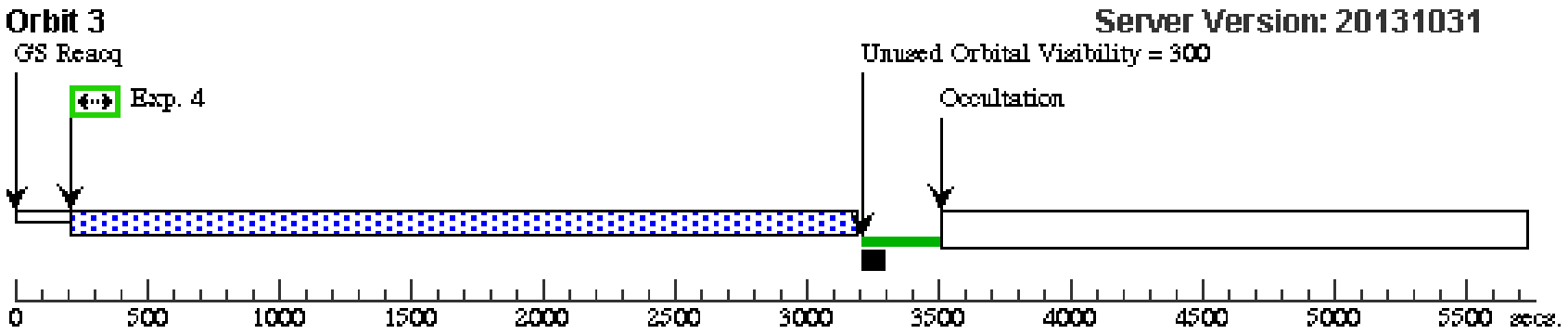
Exposures

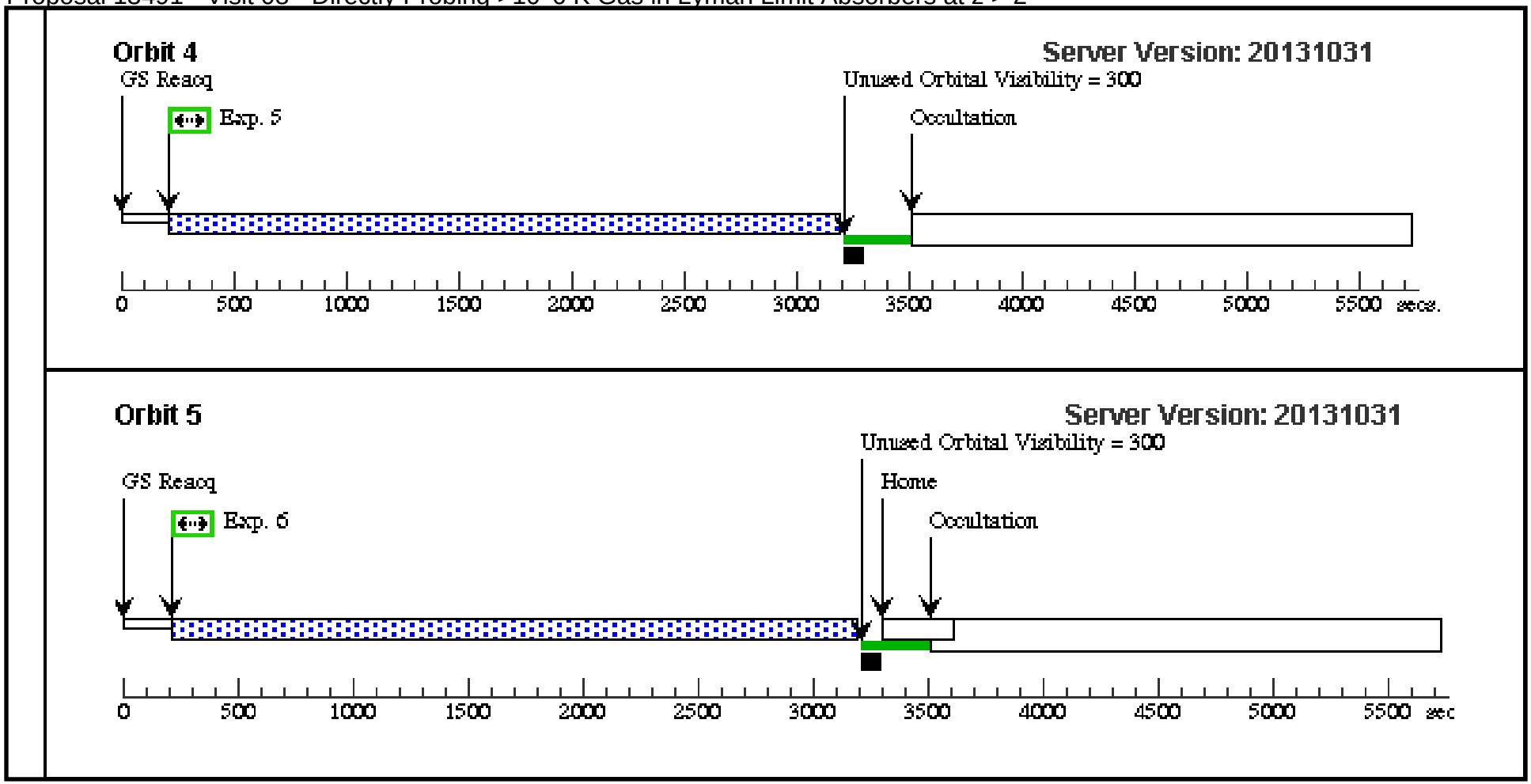
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.509793)	(1) QSO-J1701+6412	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				12.8 Secs (12.8 Secs) *[==>]*	***[1]***
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=4			2515 Secs (2515 Secs) *[==>]*	***[1]***
3	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=1			2925 Secs (2925 Secs) *[==>]*	***[2]***
4	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=2			2925 Secs (2925 Secs) *[==>]*	***[3]***
5	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=3			2925 Secs (2925 Secs) *[==>]*	***[4]***
6	(COS.sp.509802)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=3921; FP-POS=4			2925 Secs (2925 Secs) *[==>]*	***[5]***

Orbit Structure








Orbit 4
Server Version: 20131031
GS Reacq
Exp. 5
Unused Orbital Visibility = 300
Occultation
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1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 5
Server Version: 20131031
Unused Orbital Visibility = 300
GS Reacq
Exp. 6
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13491, Visit 09, implementation Sat Mar 15 01:39:14 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 09) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

Comments: This target has often been observed successfully with HST, but there have also been multiple failed observations (see, e.g., program 11528). The following communication from Amber Armstrong to David Syphers summarizes findings following failed acquisitions for prog.11528:

Hello David,

It is my professional opinion that this field will pose problems anytime specific guide stars are not chosen. I have read that magnitudes of GSC2 stars are anywhere from 0.5-0.8 fainter than expected in this field and that will cause the FGS sensors to fail to lock on to a majority of the guide stars available. Therefore, we have determined (as a result of 11528) that we will change the faint limit of all 3 FGSs to 12.2 (for this target only) which will assure that only the Hipparchos observed stars are used. I would definitely recommend anyone observing this target inform their PC or equivalent right away of past failures and request that only guide stars that have been successful in the past be used during this exposure. For your information, I will list the guide stars and the FGS sensor used to successfully lock on to this target in the past (11528 visit 23)

N4EY000036 on FGS2
N4EY000102 on FGS3

These were successful at a U3 nominal roll at 62.7 degrees. Any PC should be able to find this information in our archives and HOPR reports, but I had to dig to find it so I'll make it available here. At this point, I intend to use these guide stars for your observation.

Cheers,
Amber Armstrong

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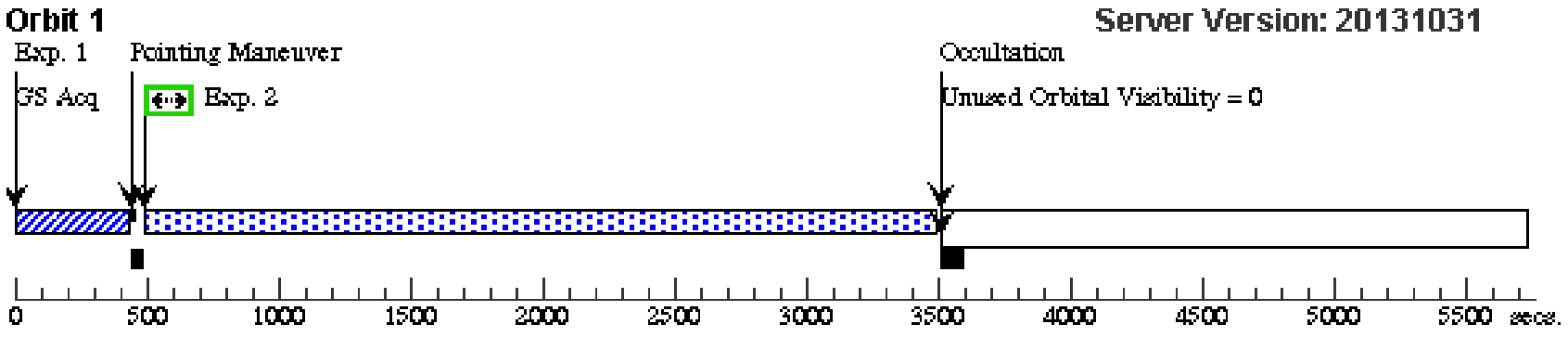
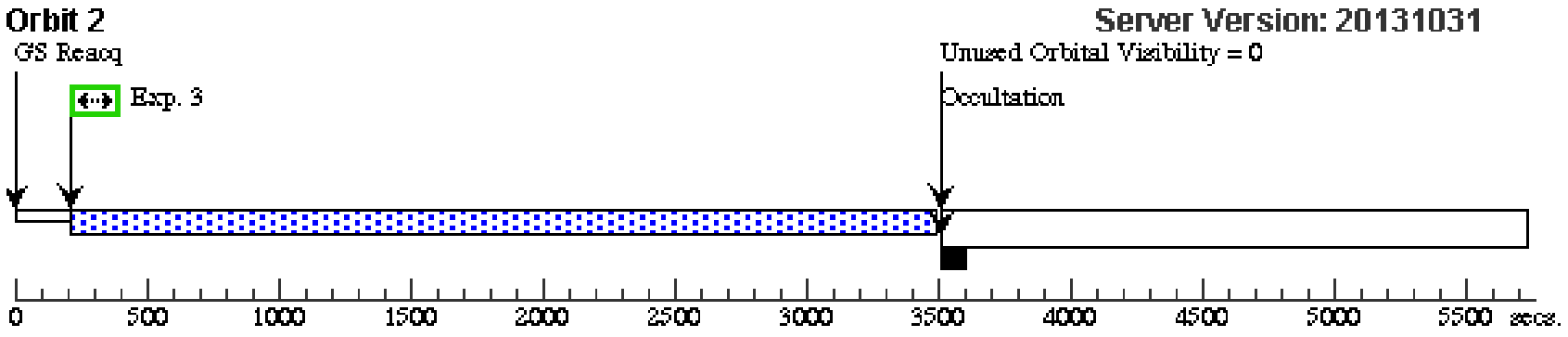
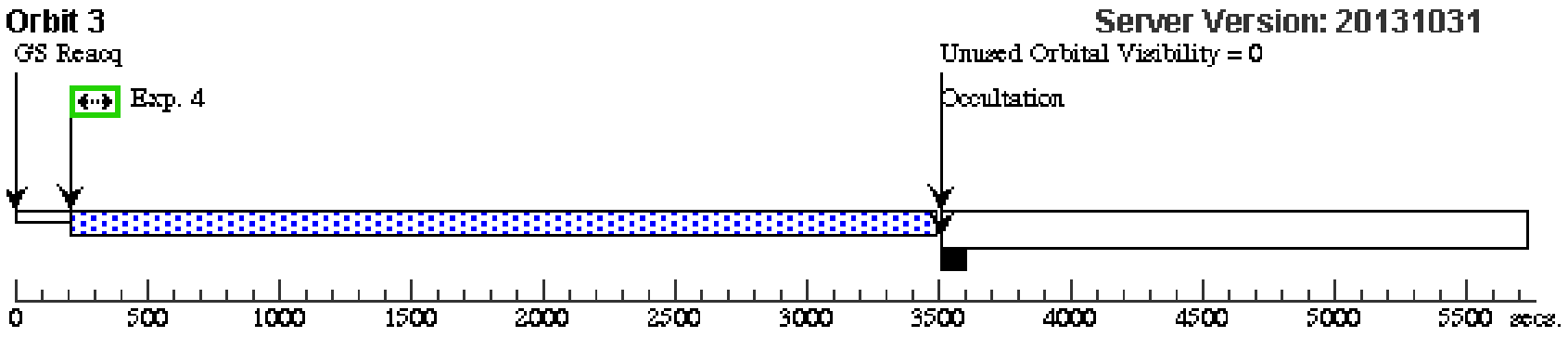
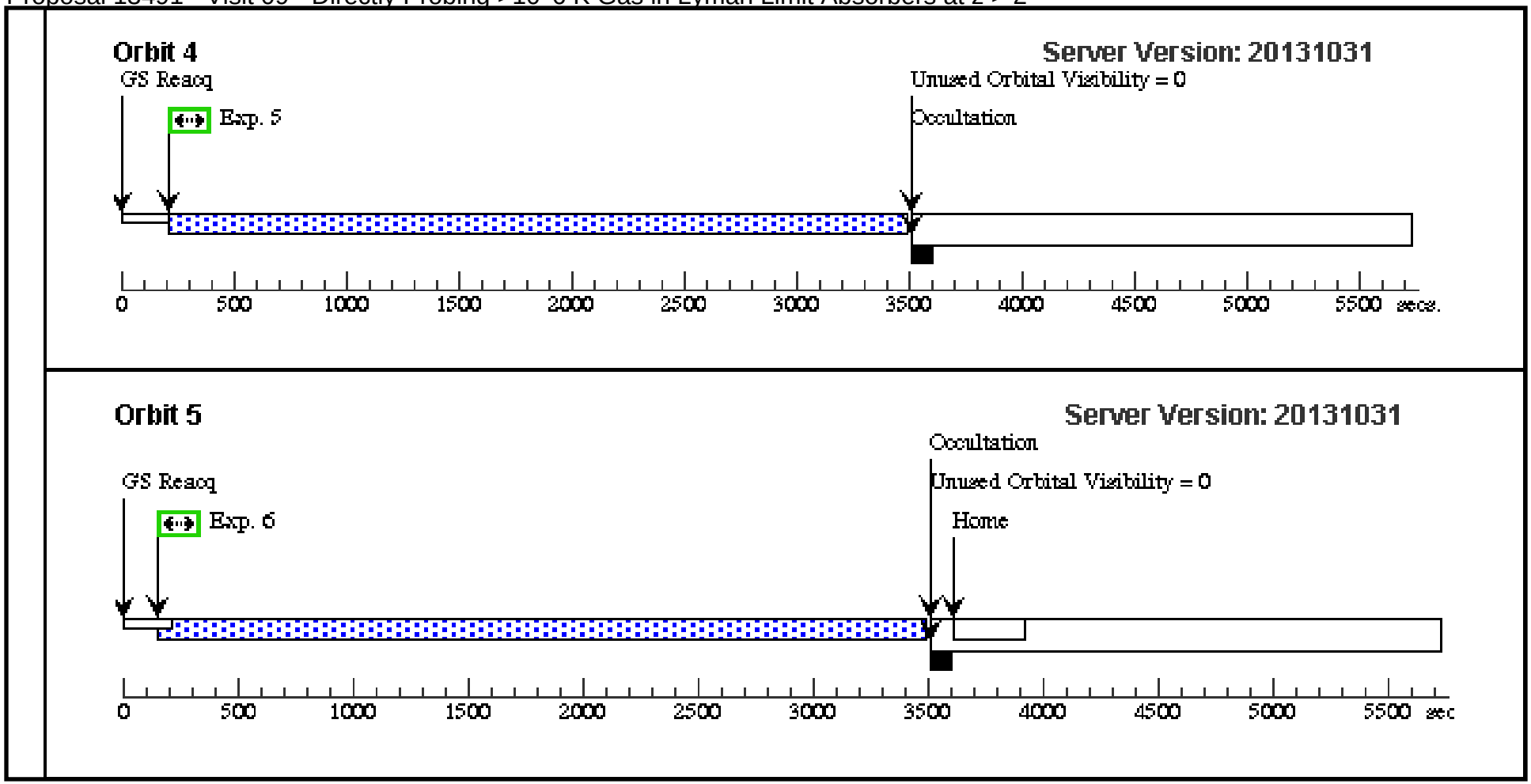
1	(COS.ta.509793)	(1) QSO-J1701+6412	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				12.8 Secs (12.8 Secs) *[==>]*	***[1]***
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=1			2815 Secs (2815 Secs) *[==>]*	***[1]***
3	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=2			3225 Secs (3225 Secs) *[==>]*	***[2]***
4	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=3			3225 Secs (3225 Secs) *[==>]*	***[3]***
5	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=4			3225 Secs (3225 Secs) *[==>]*	***[4]***
6	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=1			3225 Secs (3225 Secs) *[==>]*	***[5]***

Orbit Structure








Orbit 4
Server Version: 20131031
GS Reacq
Exp. 5
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 5
Server Version: 20131031
Occultation
GS Reacq
Unused Orbital Visibility = 0
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13491, Visit 10, implementation Sat Mar 15 01:39:15 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 10) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

Comments: This target has often been observed successfully with HST, but there have also been multiple failed observations (see, e.g., program 11528). The following communication from Amber Armstrong to David Syphers summarizes findings following failed acquisitions for prog.11528:

Hello David,

It is my professional opinion that this field will pose problems anytime specific guide stars are not chosen. I have read that magnitudes of GSC2 stars are anywhere from 0.5-0.8 fainter than expected in this field and that will cause the FGS sensors to fail to lock on to a majority of the guide stars available. Therefore, we have determined (as a result of 11528) that we will change the faint limit of all 3 FGSs to 12.2 (for this target only) which will assure that only the Hipparchos observed stars are used. I would definitely recommend anyone observing this target inform their PC or equivalent right away of past failures and request that only guide stars that have been successful in the past be used during this exposure. For your information, I will list the guide stars and the FGS sensor used to successfully lock on to this target in the past (11528 visit 23)

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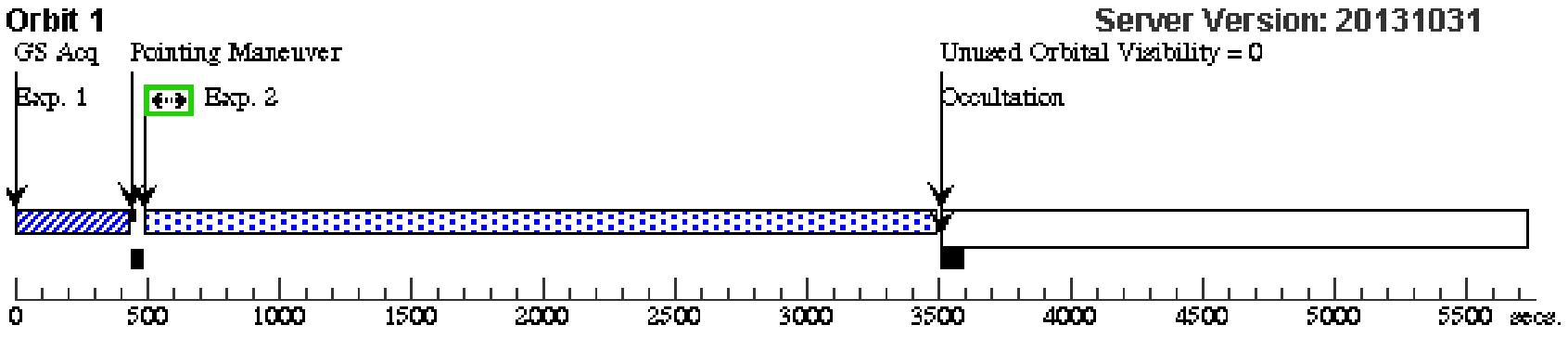
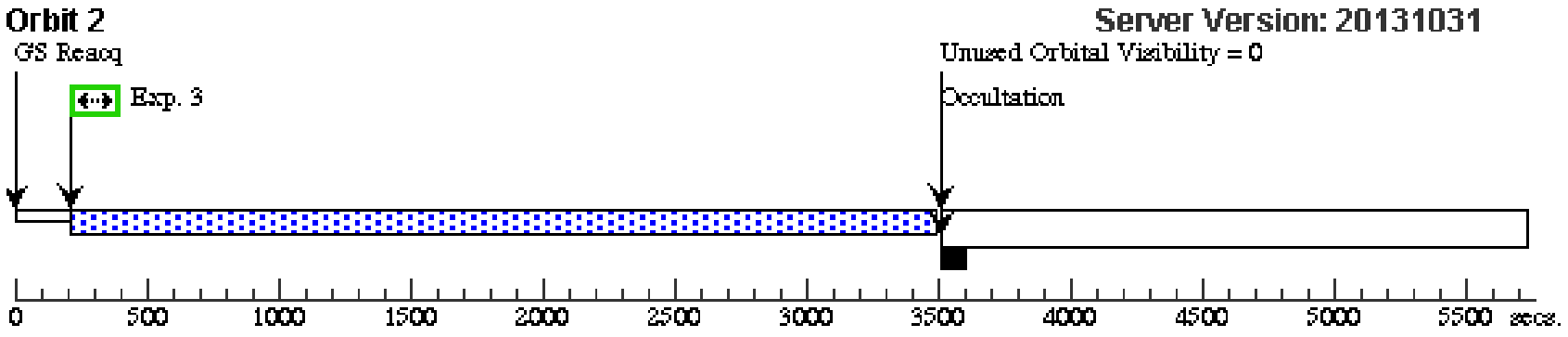
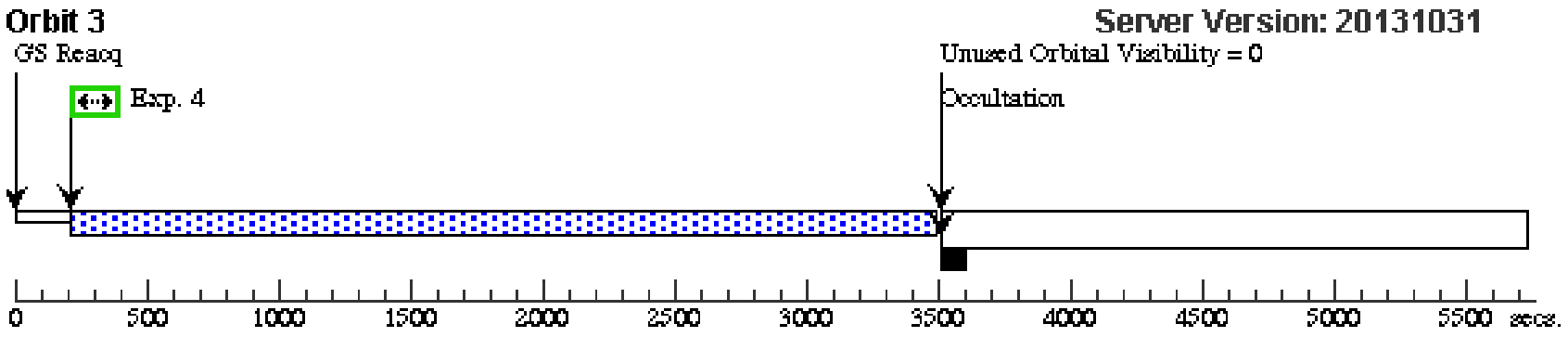
Exposures

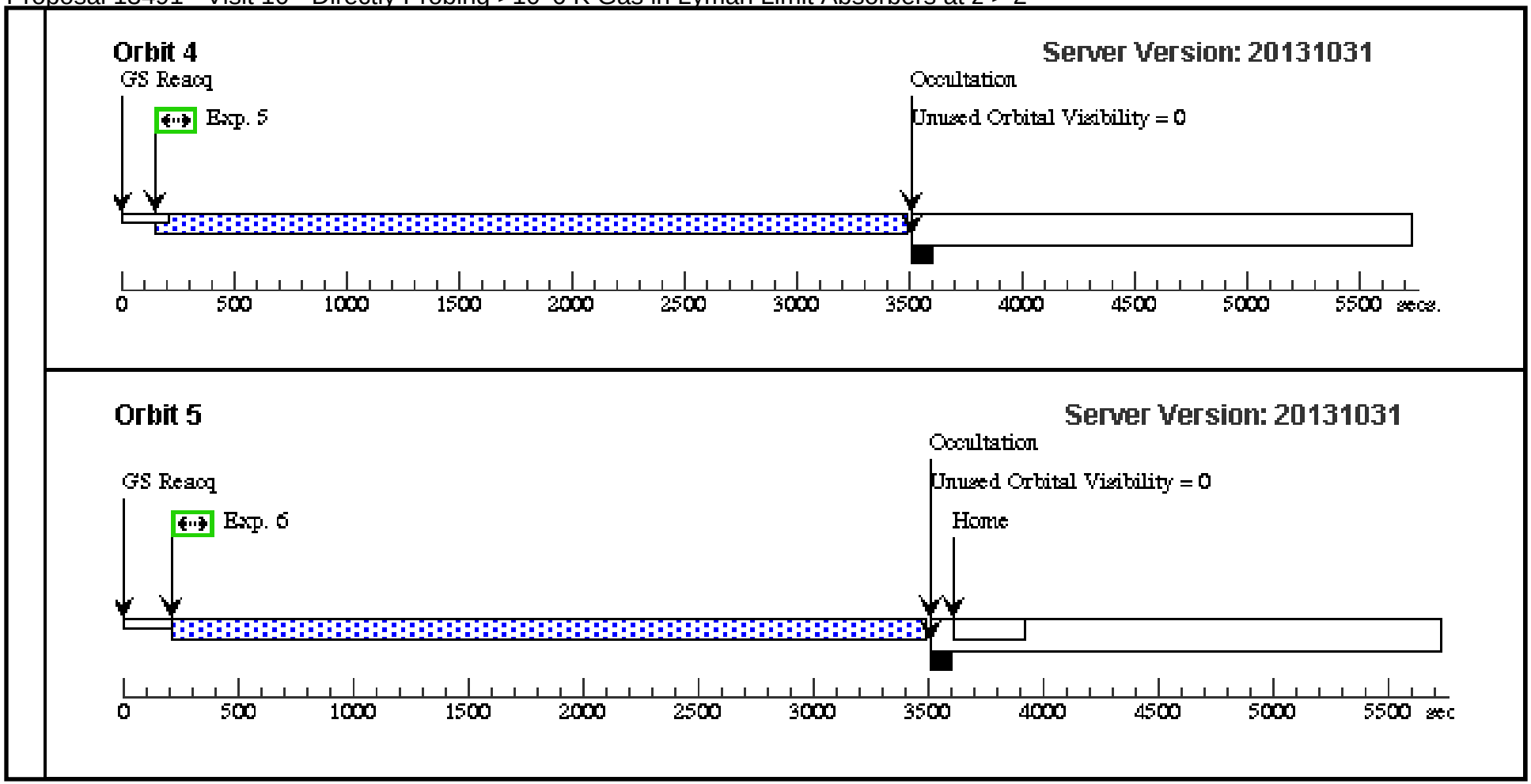
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.509793)	(1) QSO-J1701+6412	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				12.8 Secs (12.8 Secs) *[==>]*	***[1]***
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=2			2815 Secs (2815 Secs) *[==>]*	***[1]***
3	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=3			3225 Secs (3225 Secs) *[==>]*	***[2]***
4	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=4			3225 Secs (3225 Secs) *[==>]*	***[3]***
5	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=1			3225 Secs (3225 Secs) *[==>]*	***[4]***
6	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=2			3225 Secs (3225 Secs) *[==>]*	***[5]***

Orbit Structure








Orbit 4
Server Version: 20131031
GS Reacq
Exp. 5
Occultation
Unused Orbital Visibility = 0
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1500
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2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 5
Server Version: 20131031
Occultation
GS Reacq
Unused Orbital Visibility = 0
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13491, Visit 11, implementation Sat Mar 15 01:39:16 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 11) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

Comments: This target has often been observed successfully with HST, but there have also been multiple failed observations (see, e.g., program 11528). The following communication from Amber Armstrong to David Syphers summarizes findings following failed acquisitions for prog.11528:

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N4EY000102 on FGS3

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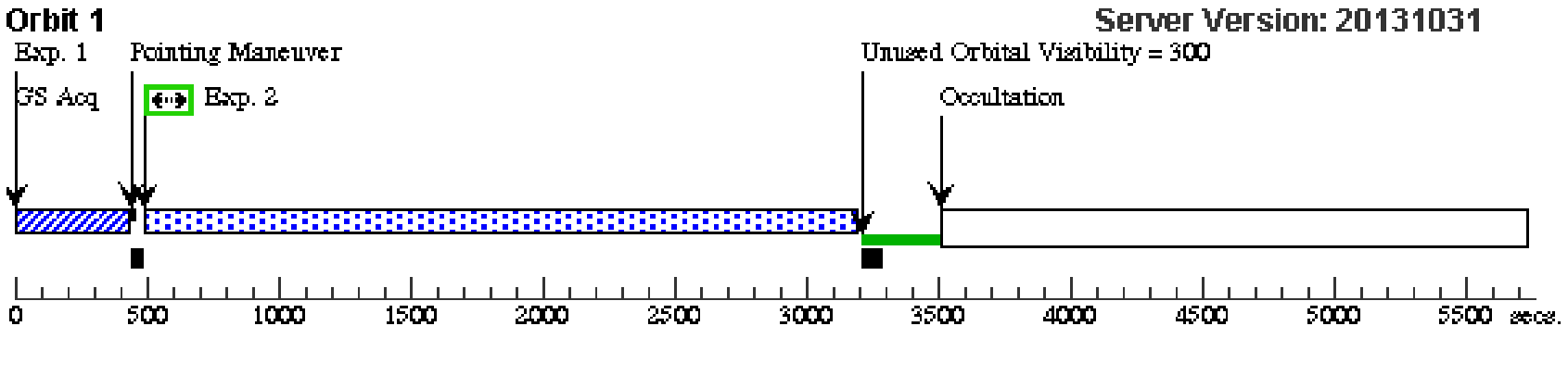
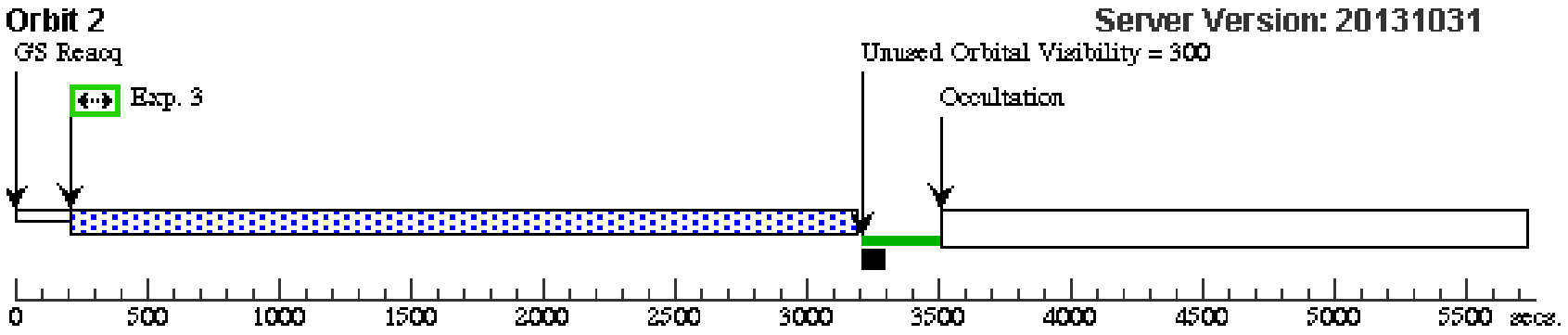
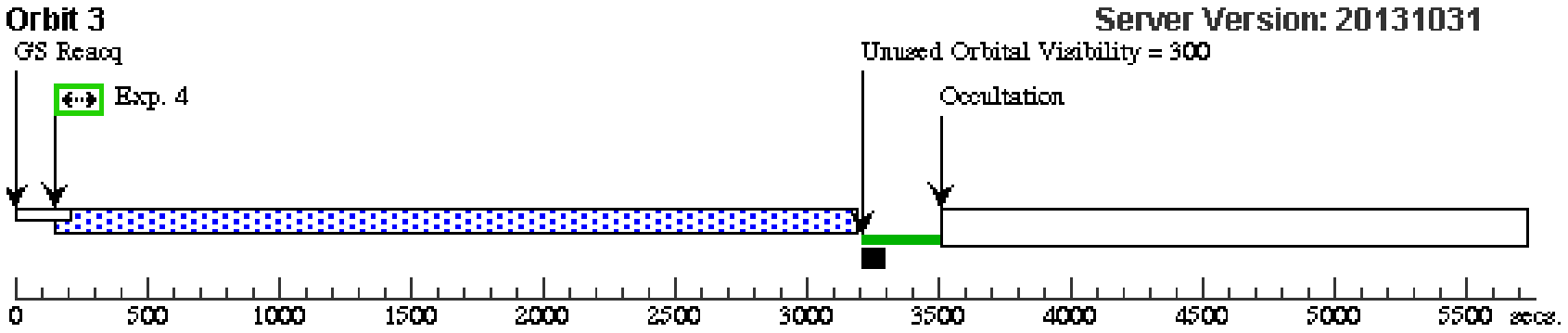
Exposures

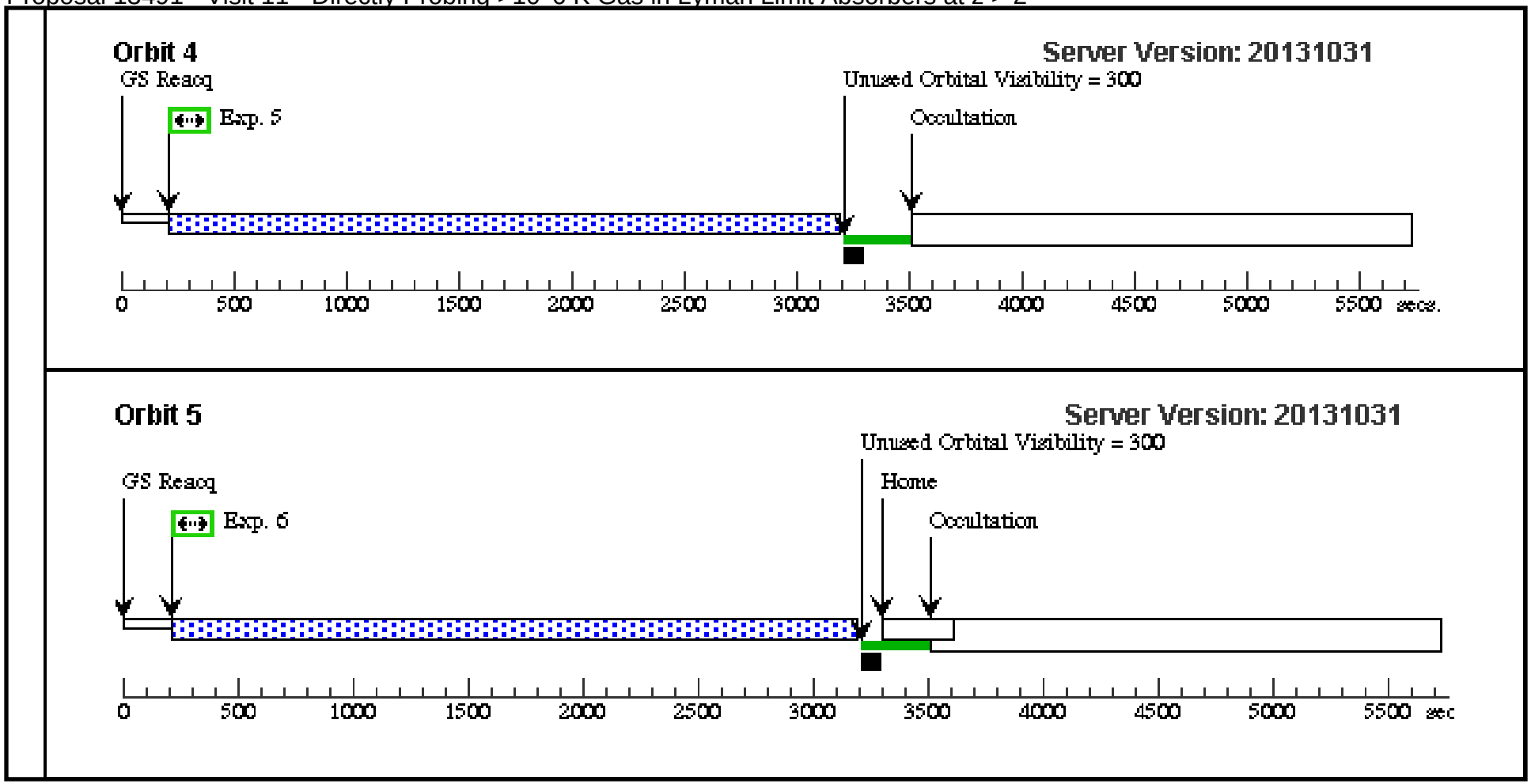
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.509793)	(1) QSO-J1701+6412	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				12.8 Secs (12.8 Secs) *[==>]*	***[1]***
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=3			2515 Secs (2515 Secs) *[==>]*	***[1]***
3	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=4			2925 Secs (2925 Secs) *[==>]*	***[2]***
4	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=1			2925 Secs (2925 Secs) *[==>]*	***[3]***
5	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=2			2925 Secs (2925 Secs) *[==>]*	***[4]***
6	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=3			2925 Secs (2925 Secs) *[==>]*	***[5]***

Orbit Structure








Orbit 4
Server Version: 20131031
GS Reacq
Exp. 5
Unused Orbital Visibility = 300
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
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5500
secs.
Orbit 5
Server Version: 20131031
Unused Orbital Visibility = 300
GS Reacq
Exp. 6
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13491, Visit 12, implementation Sat Mar 15 01:39:17 GMT 2014

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Diagnostics

(Visit 12) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	QSO-J1701+6412 Alt Name1: HS1700+6416	RA: 17 01 0.6200 (255.2525833d) Dec: +64 12 9.04 (64.20251d) Equinox: J2000	Redshift: 2.735	V=16.1+/-0.2 F(1300) = 2.5e-15, F(2000) = 1.0e-15, GALEX FUV = 18.2, GALEX NUV = 18.1	Reference Frame: ICRS

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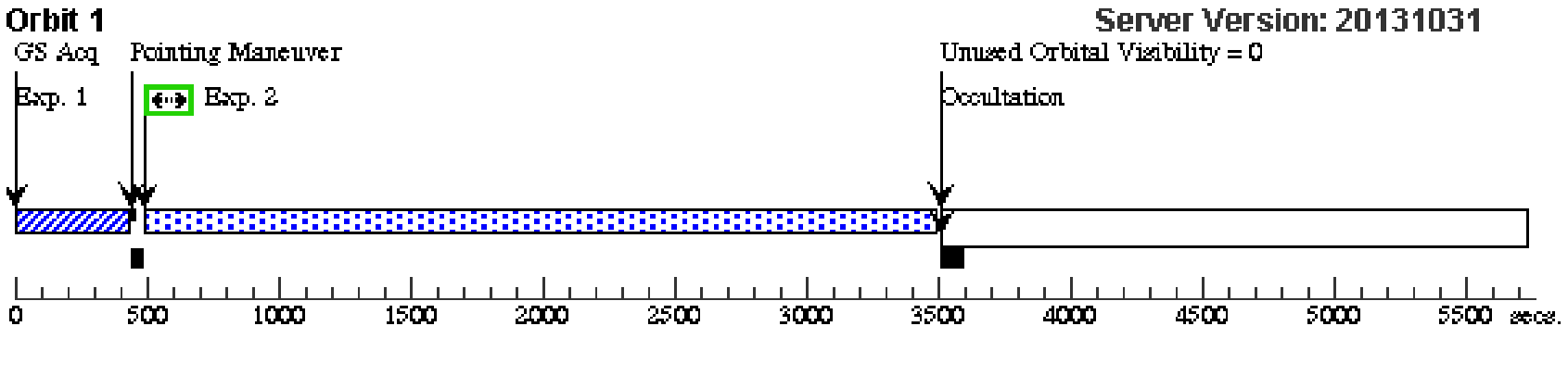
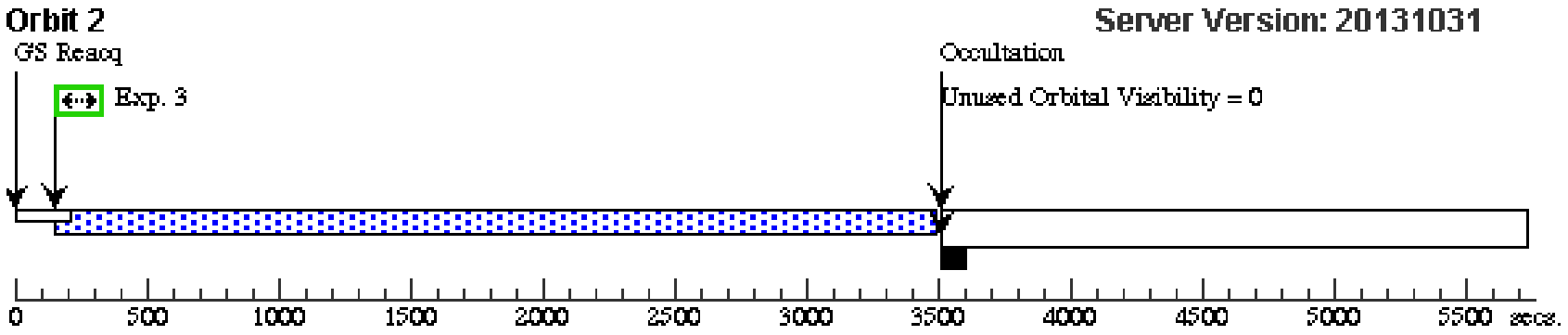
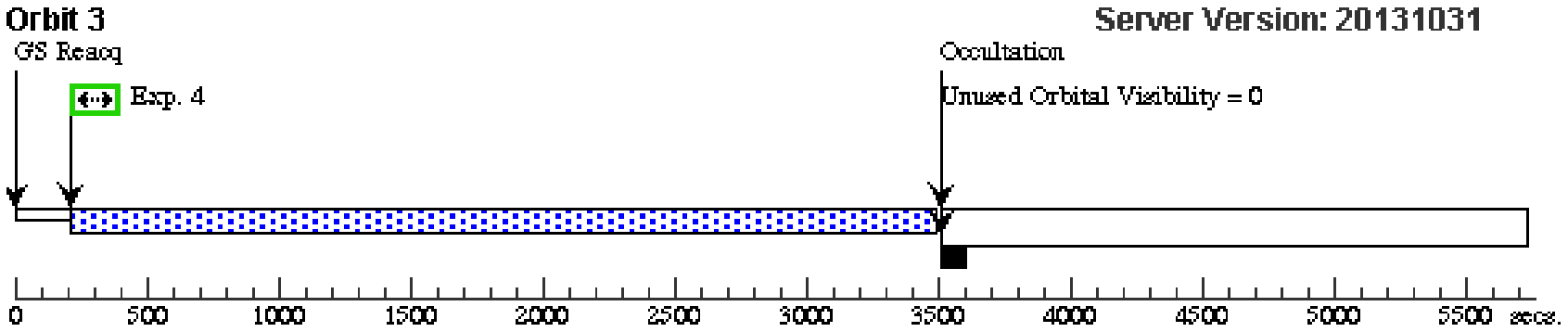
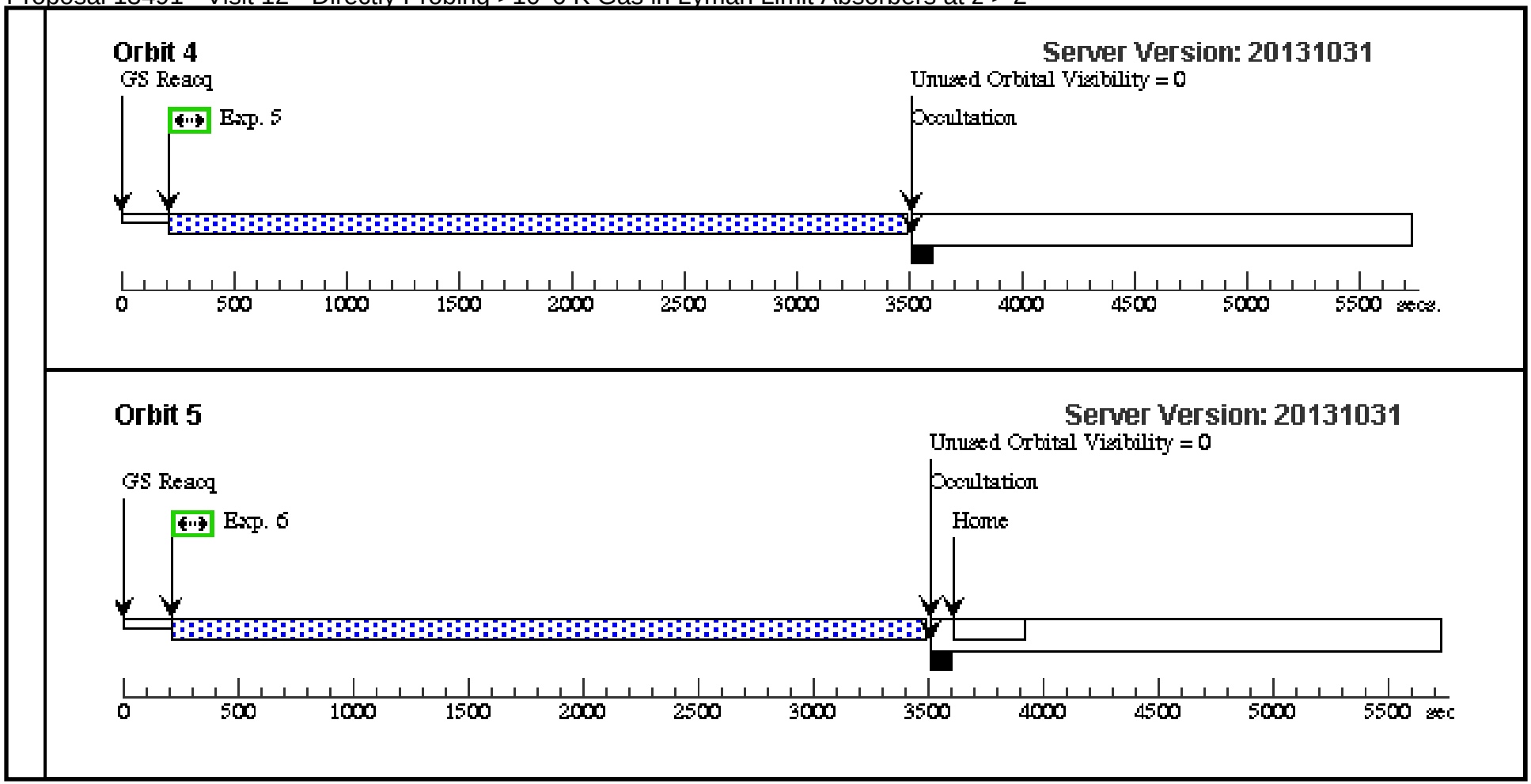
Comments: ACQ/IMAGE exposure time calculated by uploading a previous STIS G230L spectrum into the COS target acquisition exposure time calculator. The target has been observed many times with HST, and the UV flux appears to vary by ~20%. The requested acquistion time will provide S/N = 40 (see ETC COS.ta.509793) if it is at its faintest known level. If it is at its brightest known level, it is still safe for COS (brightest pixel = 25.1 counts/sec).									
2	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=4			2815 Secs (2815 Secs) *[==>]*	***[1]***
3	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=1			3225 Secs (3225 Secs) *[==>]*	***[2]***
4	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=2			3225 Secs (3225 Secs) *[==>]*	***[3]***
5	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=3			3225 Secs (3225 Secs) *[==>]*	***[4]***
6	(COS.sp.509803)	(1) QSO-J1701+6412	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3933; FP-POS=4			3225 Secs (3225 Secs) *[==>]*	***[5]***

Orbit Structure








Orbit 4
Server Version: 20131031
GS Reacq
Exp. 5
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 5
Server Version: 20131031
Unused Orbital Visibility = 0
GS Reacq
Occultation
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec