



14011 - UVIS CTI Monitor (EPER)

Cycle: 22, Proposal Category: CAL/WFC3

(Availability Mode: RESTRICTED)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:20.0	yes
02	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:21.0	yes
03	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:22.0	yes
04	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:23.0	yes
05	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:24.0	yes
06	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:25.0	yes
07	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:26.0	yes
08	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:27.0	yes

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
09	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:27.0	yes
10	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:28.0	yes
11	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:29.0	yes
12	DARK TUNGSTEN	WFC3/UVIS	1	01-Oct-2014 22:03:30.0	yes

12 Total Orbits Used

ABSTRACT

The Extended Pixel Edge Response (EPER) technique is used to measure the Charge Transfer Inefficiency (CTI) of the WFC3/UVIS detector via an assessment of the profiles of excess charge in the extended pixel region. As a result, CTE losses over time are monitored in a continuation of this multi-cycle CTE monitor program (Cycle 17: 11924, Cycle 18: 12347, Cycle 19: 12691, Cycle 20: 13082, Cycle 21: 13565).

OBSERVING DESCRIPTION

This program consists of 12 internal orbits grouped in pairs of visits. Each pair of visits obtains internal lamp flatfields at a variety of illumination levels. Since the Flight Software does not permit bias exposures in the EPER readout format, short 0.5 second dark exposures are taken as a bias measurement. The first visit of each group includes one short dark frame (for bias) followed by two internal tungsten flatfields in the F390M filter. The second visit of the group consists of one dark frame (for bias) followed by three internal tungsten flatfields with the F390W, F438W, and F438W filters, respectively. A group of observations is taken approximately every 8 weeks over the span of a year.

Data analysis will include (1) visually inspecting dark frames in order to check for undesired periodic noise in measurements, (2) identifying trends in Charge Transfer Efficiency (CTE) loss profiles and (3) quantifying the CTE over time (via the procedure described in TIR WFC3 2012-03, Bourque & Kozhurina-Platais).

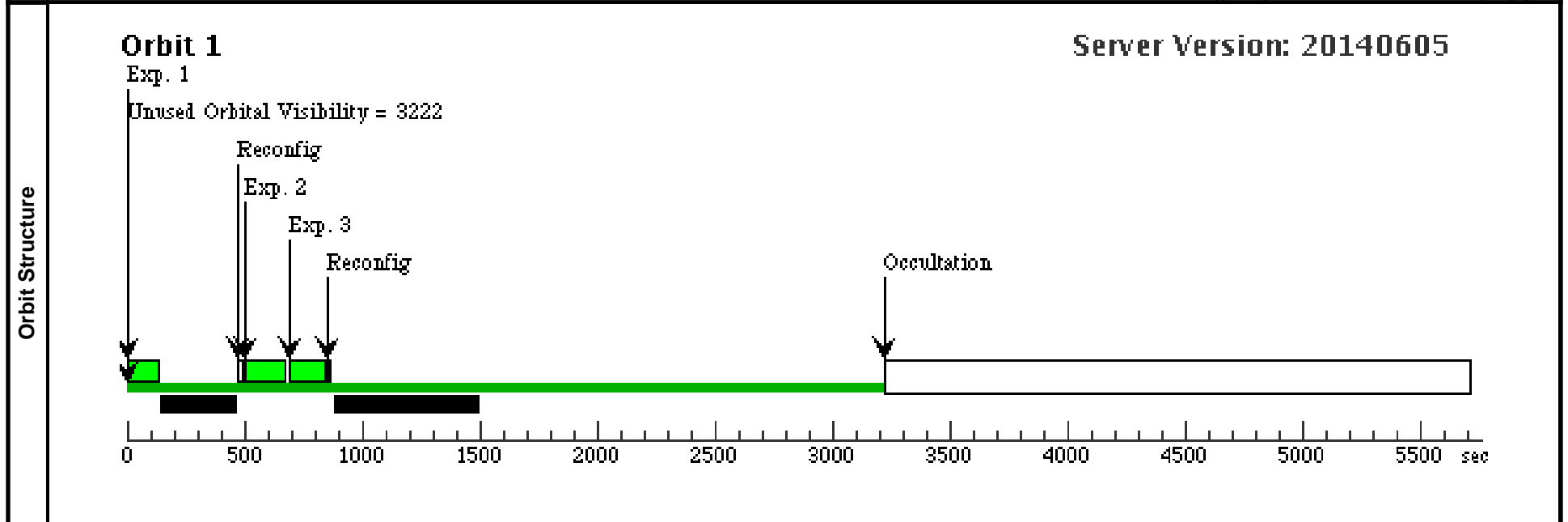
----- Additional Comments -----

The observational frequency of visit-pairs has been reduced in half from the preceding EPER programs.

Proposal 14011 - Visit 01 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:32 GMT 2014

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	0.5	DARK	WFC3/UVIS, ACCUM, UVIS	DEF	CTE=EPER				0.5 Secs (0.5 Secs) [==>]
2	9.2	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER				9.2 Secs (9.2 Secs) [==>]	[1]
3	22.9	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER				22.9 Secs (22.9 Secs) [==>]	[1]



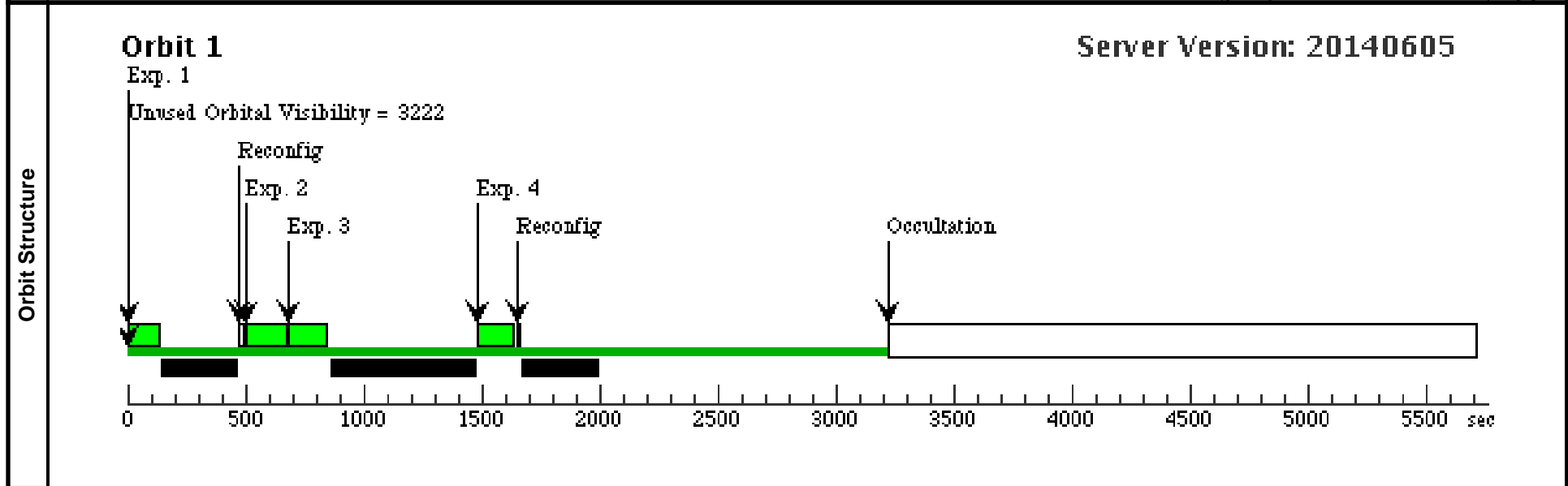
Proposal 14011 - Visit 02 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:32 GMT 2014

Visit	Proposal 14011, Visit 02
	Diagnostic Status: Warning
	Scientific Instruments: WFC3/UVIS
	Special Requirements: (none)

Diagnostics	(Visit 02) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU
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Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	0.5	DARK		WFC3/UVIS, ACCUM, UVIS	DEF	CTE=EPER			0.5 Secs (0.5 Secs)
									[==>]	[1]
2	6.4	TUNGSTEN		WFC3/UVIS, ACCUM, UVIS	F390W	CTE=EPER			6.4 Secs (6.4 Secs)	
									[==>]	[1]
3	7.6	TUNGSTEN		WFC3/UVIS, ACCUM, UVIS	F438W	CTE=EPER			7.6 Secs (7.6 Secs)	
									[==>]	[1]
4	22.7	TUNGSTEN		WFC3/UVIS, ACCUM, UVIS	F438W	CTE=EPER			22.7 Secs (22.7 Secs)	
									[==>]	[1]

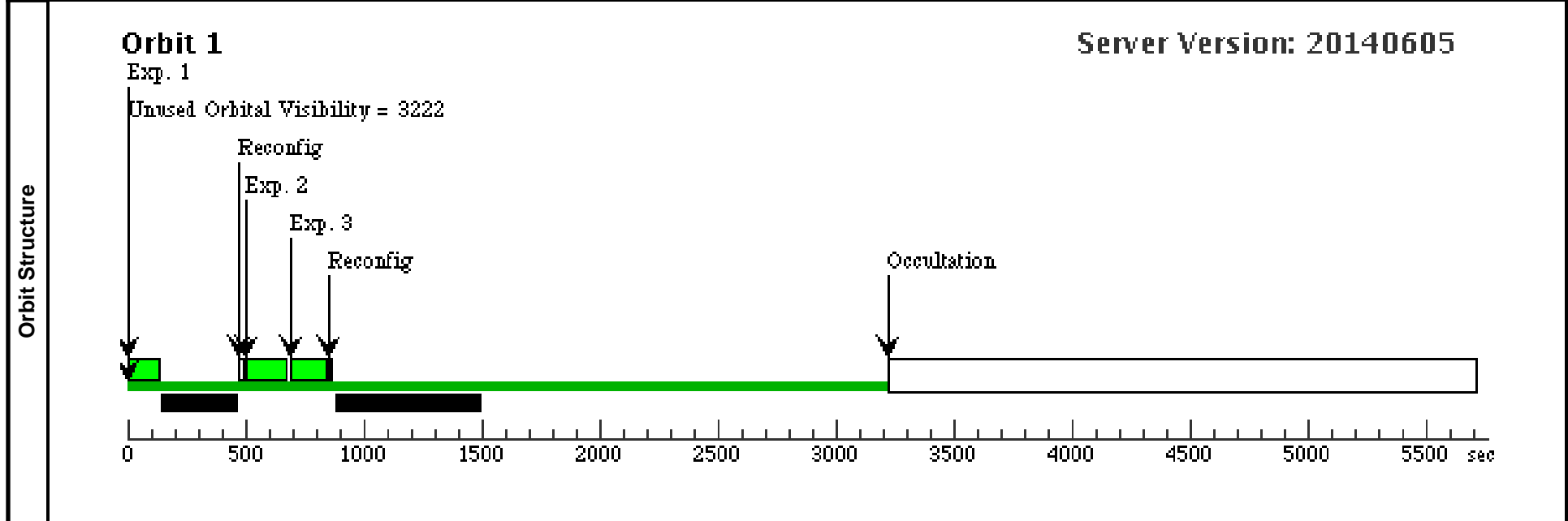


Proposal 14011 - Visit 03 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:32 GMT 2014

Visit	Proposal 14011, Visit 03									
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: WFC3/UVIS									
	Special Requirements: BETWEEN 01-JAN-2015:00:00:00 AND 01-FEB-2015:00:00:00; GROUP 03,04 WITHIN 1D									

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
		1	0.5	DARK	WFC3/UVIS, ACCUM, UVIS	DEF	CTE=EPER			0.5 Secs (0.5 Secs)
									[==>]	[1]
	2	9.2	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER			9.2 Secs (9.2 Secs)	
									[==>]	[1]
	3	22.9	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER			22.9 Secs (22.9 Secs)	
									[==>]	[1]



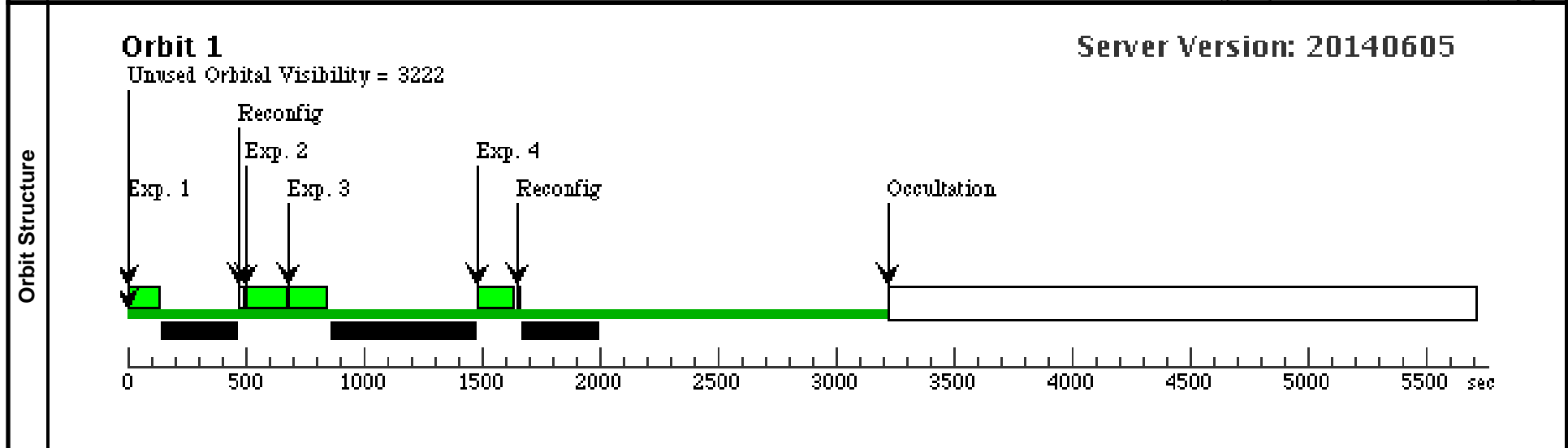
Proposal 14011 - Visit 04 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:32 GMT 2014

Visit	Proposal 14011, Visit 04 Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS Special Requirements: (none)								
	(Visit 04) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU								
	# Label Target Config,Mode,Aperture Spectral Els. Opt. Params. Special Reqs. Groups Exp. Time (Total)/[Actual Dur.] Orbit								
	1	0.5	DARK	WFC3/UVIS, ACCUM, UVIS	DEF	CTE=EPER			0.5 Secs (0.5 Secs)

Diagnosics	(Visit 04) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU									
	# Label Target Config,Mode,Aperture Spectral Els. Opt. Params. Special Reqs. Groups Exp. Time (Total)/[Actual Dur.] Orbit									
	2	6.4	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390W	CTE=EPER			6.4 Secs (6.4 Secs)	[1]
	3	7.6	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F438W	CTE=EPER			7.6 Secs (7.6 Secs)	[1]

Exposures	# Label Target Config,Mode,Aperture Spectral Els. Opt. Params. Special Reqs. Groups Exp. Time (Total)/[Actual Dur.] Orbit									
	4	22.7	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F438W	CTE=EPER			22.7 Secs (22.7 Secs)	[1]
	[==>]									
	[1]									

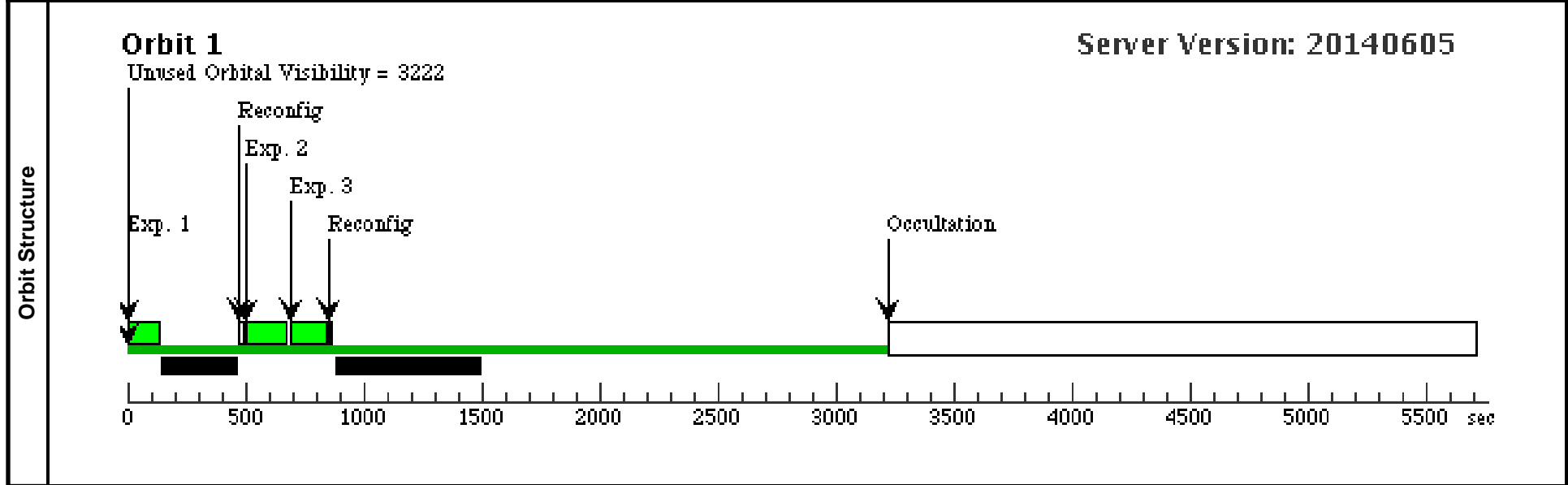


Proposal 14011 - Visit 05 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:32 GMT 2014

Visit	Proposal 14011, Visit 05									
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: WFC3/UVIS									
	Special Requirements: BETWEEN 01-MAR-2015:00:00:00 AND 01-APR-2015:00:00:00; GROUP 05,06 WITHIN 1D									

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	0.5	DARK	WFC3/UVIS, ACCUM, UVIS	DEF	CTE=EPER			0.5 Secs (0.5 Secs)	
									[==>]	[1]
	2	9.2	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER			9.2 Secs (9.2 Secs)	
								[==>]	[1]	
3	22.9	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER			22.9 Secs (22.9 Secs)		
								[==>]	[1]	



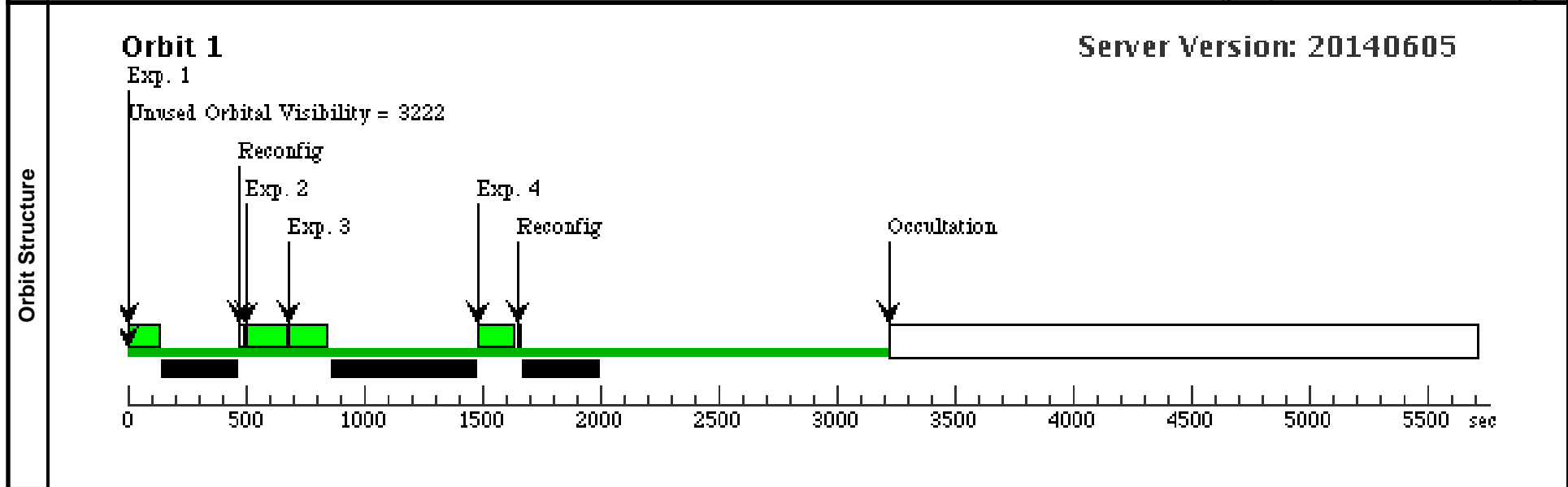
Proposal 14011 - Visit 06 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:32 GMT 2014

Visit	Proposal 14011, Visit 06 Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS Special Requirements: (none)
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Diagnostics	(Visit 06) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU
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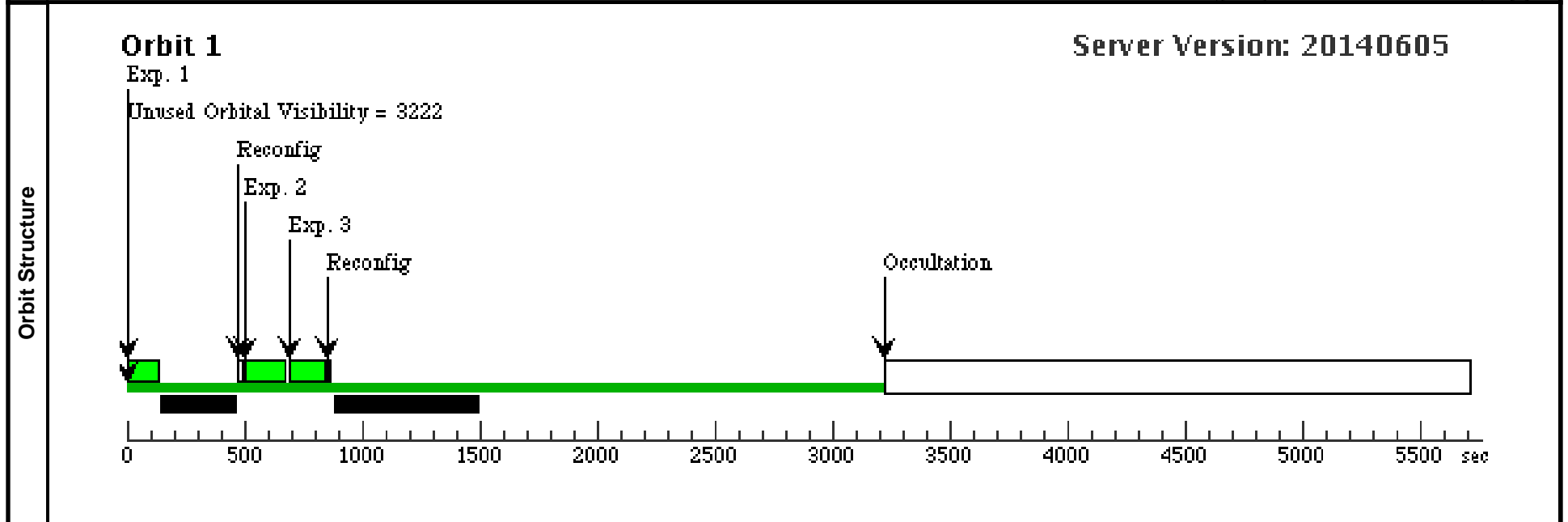
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	0.5	DARK	WFC3/UVIS, ACCUM, UVIS	DEF	CTE=EPER			0.5 Secs (0.5 Secs) [==>]	[1]
2	6.4	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390W	CTE=EPER			6.4 Secs (6.4 Secs) [==>]	[1]
3	7.6	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F438W	CTE=EPER			7.6 Secs (7.6 Secs) [==>]	[1]
4	22.7	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F438W	CTE=EPER			22.7 Secs (22.7 Secs) [==>]	[1]



Proposal 14011 - Visit 07 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:32 GMT 2014

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	0.5	DARK	WFC3/UVIS, ACCUM, UVIS	DEF	CTE=EPER				0.5 Secs (0.5 Secs) [==>]
2	9.2	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER				9.2 Secs (9.2 Secs) [==>]	[1]
3	22.9	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER				22.9 Secs (22.9 Secs) [==>]	[1]



Proposal 14011 - Visit 08 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:32 GMT 2014

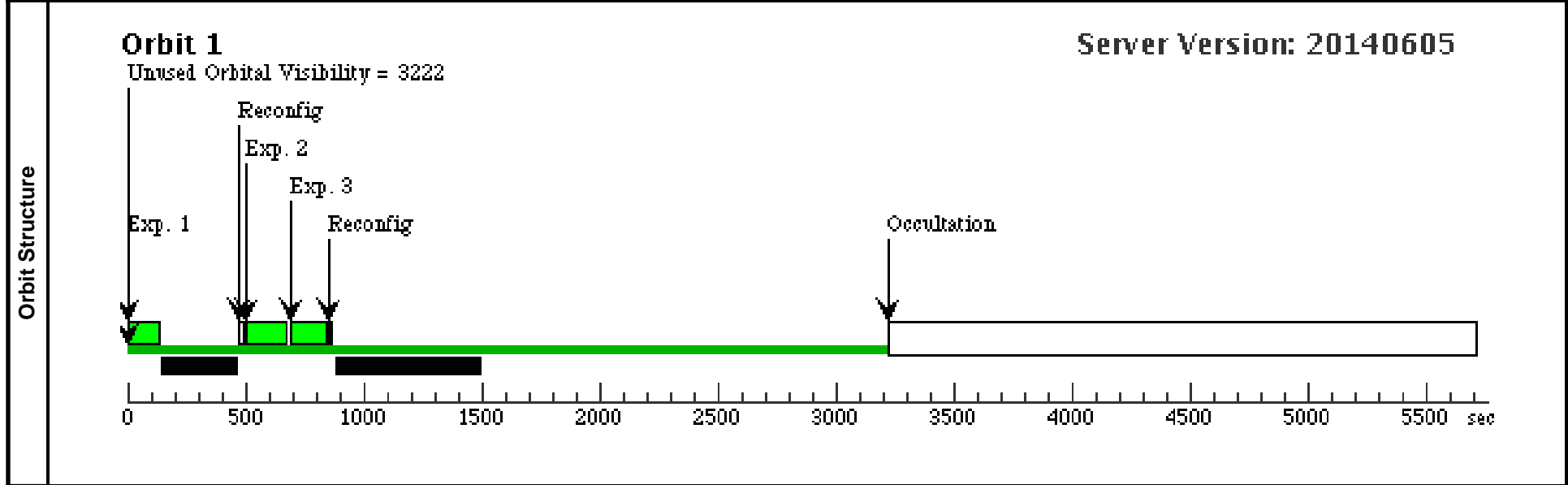
Visit	Proposal 14011, Visit 08 Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
	(Visit 08) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	0.5	DARK	WFC3/UVIS, ACCUM, UVIS	DEF	CTE=EPER			0.5 Secs (0.5 Secs)	
									[==>]	[1]
	2	6.4	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390W	CTE=EPER			6.4 Secs (6.4 Secs)	
									[==>]	[1]
3	7.6	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F438W	CTE=EPER			7.6 Secs (7.6 Secs)		
								[==>]	[1]	
4	22.7	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F438W	CTE=EPER			22.7 Secs (22.7 Secs)		
								[==>]	[1]	
Orbit Structure	<p>Orbit 1 Server Version: 20140605</p> <p>Unused Orbital Visibility = 3222</p> <p>The timeline shows a sequence of events over 5500 seconds. Green bars represent exposure durations: Exp. 1 (0-100s), Exp. 2 (500-510s), Exp. 3 (600-610s), and Exp. 4 (1500-1520s). Black bars represent reconfigurations: one between 100-500s and another between 1700-2000s. An occultation event is marked at approximately 3200s. The x-axis is labeled 'sec' and ranges from 0 to 5500 with major ticks every 500 units.</p>									

Proposal 14011 - Visit 09 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:33 GMT 2014

Visit	Proposal 14011, Visit 09									
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: WFC3/UVIS									
	Special Requirements: BETWEEN 01-JUL-2015:00:00:00 AND 01-AUG-2015:00:00:00; GROUP 09,10 WITHIN 1D									

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	0.5	DARK	WFC3/UVIS, ACCUM, UVIS	DEF	CTE=EPER			0.5 Secs (0.5 Secs)	
									[==>]	[1]
	2	9.2	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER			9.2 Secs (9.2 Secs)	
								[==>]	[1]	
3	22.9	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER			22.9 Secs (22.9 Secs)		
								[==>]	[1]	



Proposal 14011 - Visit 10 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:33 GMT 2014

Visit	Proposal 14011, Visit 10 Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS Special Requirements: (none)	
	(Visit 10) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
	# Label Target Config,Mode,Aperture Spectral Els. Opt. Params. Special Reqs. Groups Exp. Time (Total)/[Actual Dur.] Orbit	
	1	0.5 DARK WFC3/UVIS, ACCUM, UVIS DEF CTE=EPER

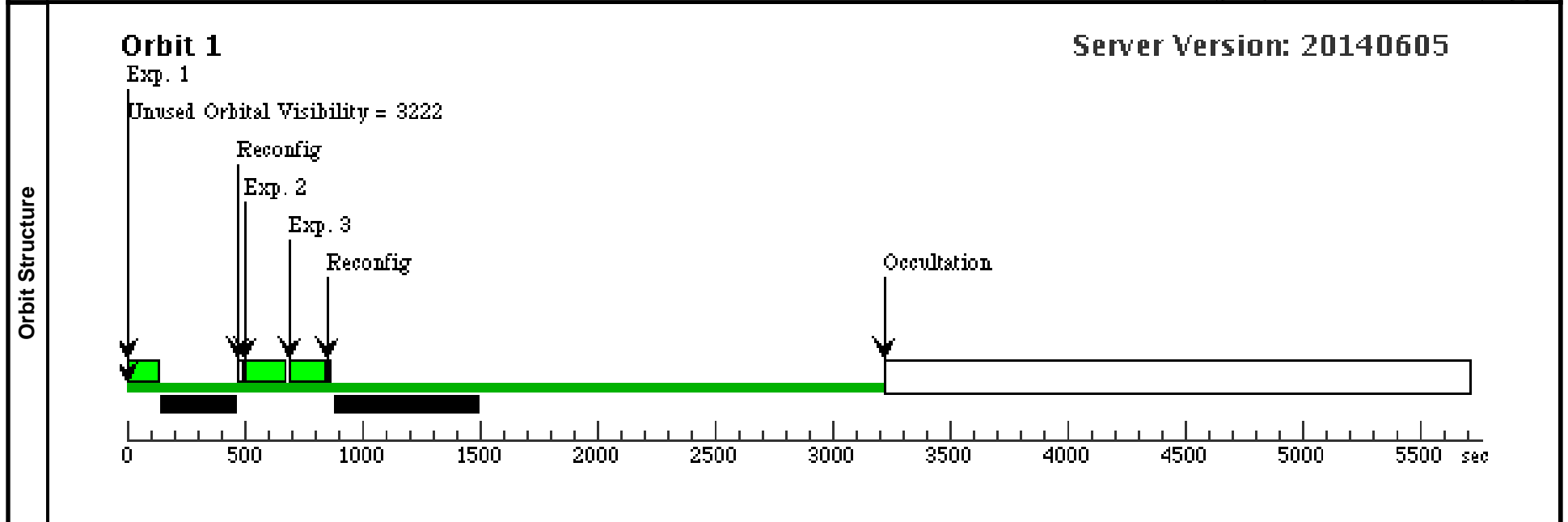
Exposures	2	6.4 TUNGSTEN WFC3/UVIS, ACCUM, UVIS F390W CTE=EPER	0.5 Secs (0.5 Secs)	[1]
	3	7.6 TUNGSTEN WFC3/UVIS, ACCUM, UVIS F438W CTE=EPER	6.4 Secs (6.4 Secs)	[1]
	4	22.7 TUNGSTEN WFC3/UVIS, ACCUM, UVIS F438W CTE=EPER	7.6 Secs (7.6 Secs)	[1]
			22.7 Secs (22.7 Secs)	[1]

Orbit Structure	Orbit 1 Unused Orbital Visibility = 3222		Server Version: 20140605		
	<p>The diagram shows a timeline for Orbit 1. The x-axis represents time in seconds from 0 to 5500. Key events are marked with arrows: Exp. 1 at ~100s, Reconfig at ~450s, Exp. 2 at ~550s, Exp. 3 at ~750s, Reconfig at ~1650s, Exp. 4 at ~1750s, and Occultation at ~3250s. Green bars represent active experiment durations, and black bars represent reconfiguration periods. A long white bar starting at ~3250s indicates the occultation period.</p>				
	0	500	1000	1500	2000
	2500	3000	3500	4000	4500
5000	5500	sec			

Proposal 14011 - Visit 11 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:33 GMT 2014

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	0.5	DARK	WFC3/UVIS, ACCUM, UVIS	DEF	CTE=EPER				0.5 Secs (0.5 Secs) [==>]
2	9.2	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER				9.2 Secs (9.2 Secs) [==>]	[1]
3	22.9	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390M	CTE=EPER				22.9 Secs (22.9 Secs) [==>]	[1]



Proposal 14011 - Visit 12 - UVIS CTI Monitor (EPER)

Thu Oct 02 02:03:33 GMT 2014

Visit	Proposal 14011, Visit 12 Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS Special Requirements: (none)
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Diagnostics	(Visit 12) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU
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#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	0.5	DARK	WFC3/UVIS, ACCUM, UVIS	DEF	CTE=EPER			0.5 Secs (0.5 Secs) [==>]	[1]
2	6.4	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F390W	CTE=EPER			6.4 Secs (6.4 Secs) [==>]	[1]
3	7.6	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F438W	CTE=EPER			7.6 Secs (7.6 Secs) [==>]	[1]
4	22.7	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F438W	CTE=EPER			22.7 Secs (22.7 Secs) [==>]	[1]

