



13095 - UVIS L-Flat Via Spatial Scans

Cycle: 20, Proposal Category: CAL/WFC3

(Availability Mode: RESTRICTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Dr. Peter McCullough (PI) (Contact)	Space Telescope Science Institute	pmcc@stsci.edu

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>
1A	(1) -GAM-ARI-MIDPOINT	WFC3/UVIS	2	05-Nov-2012 21:05:16.0	yes
2A	(1) -GAM-ARI-MIDPOINT	S/C WFC3/UVIS	2	05-Nov-2012 21:05:36.0	yes
9A	(1) -GAM-ARI-MIDPOINT	S/C WFC3/UVIS	2	05-Nov-2012 21:05:49.0	yes

6 Total Orbits Used

ABSTRACT

Goals: Obtain a low-frequency flat field in each of two UV filters, F225W and F275W.

OBSERVING DESCRIPTION

We will observe a UV bright double star with boustrophedonic spatial scans. This program is an extension of program 12713, because we learned in that program that the scans require two orbits instead of the one that we had initially estimated, due to overheads of scanning. Because UV-bright stars are few and far between, even in clusters, the traditional method of obtaining an L-flat, namely taking many large-dithered staring-mode exposures is ineffective in the UV. Using the scanning technique and one double star, we should be able to determine the L-flat in the UV filters

Proposal 13095 (STScI Edit Number: 3, Created: Monday, November 5, 2012 9:05:56 PM EST) - Overview

F225W and F275W. For each filter, we require two HST orbits for each visit that scans multiple times in X and in Y, and we originally we required two visits with a relative orient difference of 90 degrees. Hence 8 orbits total. However, it may be that the second requirement for the relative orient of 90 degrees is overkill, and it certainly is hard to schedule for this UV-bright double star (the next best A-star pair that we found is ~3 mag fainter). So initially we are submitting a 4-orbit program; depending on results, we will assess how best to use the remaining 4 orbits or not.

Notes: F218W has not been used in the past two cycles, so we will not include it in this program.

Proposal 13095 - F225W (1A) - UVIS L-Flat Via Spatial Scans

Tue Nov 06 02:05:57 GMT 2012

Proposal 13095, F225W (1A), scheduling
Diagnostic Status: No Diagnostics
 Scientific Instruments: WFC3/UVIS
 Special Requirements: ORIENT 86D TO 86.1 D

Comments: This visit 1A is paired with 1B. They are perturbations on visits 1A and 1B from program 12713. The differences are 1) 12713 used a different double star, HD 80606/7, with a separation of 21", whereas this visit described here uses the UV-bright double star GAM-ARI, with a separation of 10", 2) the filter, and 3) we no longer require the second linked visit with orient 90 degrees from the first visit (to support the shearing interferometer idea). The latter has not been demonstrated to be necessary and for GAM-ORI the schedulability is not favorable at all for visits 90 degrees from this visit orient. Projected at a 45-deg angle, the 10" becomes 7", so this visit will produce 5 pairs of lines separated by 7". The number of pairs (5) is set by the "scan-number-lines" APT parameter. Also, whereas in 12713 the scan width was specified as 120", now in APT we specify the line spacing. Here we choose 33", so that 4 times that is 132" - this helps the 5 pairs cover the width of the UVIS detector (in 12713 we didn't quite cover the entire detector).

In program 12713, each visit required 2 HST orbits. APT exaggerates the time required. To permit experimentation, I copied this visit to 9A, truncated it severely by deleting exposures, only so I could test schedulability in APT.

Alerts to experts (Merle perhaps). The PI is open to suggestions!

*1) I hope the change from 120" to 4*33" doesn't ruin the timing - we don't want to close the shutter prematurely before the scan is finished. Because we'll be scanning a little longer, that could happen, so this program may need some tweaking by an expert.*
2) The orient that I chose gives ~2.5 months of schedulability for the visit: Nov, Dec and 1st half of January. Other options are much less favorable. I have not verified if this orient puts the scans on the detector or if we will miss. Some expert needs to check (with trans tools).

F225W

*Visit orient = position angle of double star + i*90 degrees, with i=any integer (-3,...,0, ... +3), which will place the double star axis at ~45 degrees to the X-Y coordinates of the WFC3 detectors. The 45 degrees is advantageous because then we can scan in X or Y and have the same separation of the two stars' trails on the detector. For each double star, one of the four possibilities for i is much more schedulable (from the roll angle reports). We select only the most schedulable possibility in our orient requirements, in order to keep the definition of the scan directions consistent and correct, i.e. so we don't miss the detector!*

The idea is that all the scans in this Visit when combined will form an XY grid on the detector with each cell of the grid being 7"x7" in size.

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	-GAM-ARI-MIDPOINT	RA: 01 53 31.7300 (28.3822083d) Dec: +19 17 43.70 (19.29547d) Equinox: J2000		V=3.88	Reference Frame: ICRS
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>					
<i>F225W target</i>					
RA	DEC	WDS	YEAR PA SEP m1 m2 sptype dm GL GB		
28.38233	19.29406	01535+1918	2010 356 10.2 4.52 4.58 A1pSi B9V -0.06 142.54770 -41.20061		

Proposal 13095 - F225W (1A) - UVIS L-Flat Via Spatial Scans

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W		POS TARG 0,-47; SPATIAL SCAN 4.0 .90.0 Degrees,Forward; EXP PCS MODE FINE; GS ACQ SCENARIO SINGLE	Sequence 1-5 Non-Int in F225W (1A)	1 Secs [==>]	[1]
<p><i>Comments: The purpose of this exposure is an engineering test of the fast-scanning under FGS control, requested by Merle Reinhart. The desire is to execute this ASAP, hopefully in late October or early November 2012, to keep the development of this capability on schedule, which slipped a month due to additional ground simulations. The POS TARG should put the double star on one of the CCDs, away from the gap.</i></p> <p><i>If required, give this exposure priority and delete the previous exposure (the last of the Y scan, X step exposures) in order to make this sequence fit into one orbit.</i></p>									
2	Y scan, X step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W		POS TARG -69,-115; SPATIAL SCAN 7.5 .90.0 Degrees,Forward,33.0 Arcsec,5; EXP PCS MODE GYRO	Sequence 1-5 Non-Int in F225W (1A)	370 Secs [==>]	[1]
<p><i>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</i></p>									
3	Y scan, X step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W		POS TARG -62,-115; SPATIAL SCAN 7.5 .90.0 Degrees,Forward,33.0 Arcsec,5; EXP PCS MODE GYRO	Sequence 1-5 Non-Int in F225W (1A)	370 Secs [==>]	[1]
<p><i>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</i></p> <p><i>The POS TARG for this exposure is shifted in X by +7" from the previous exposure. This is estimated as follows: the two stars are separated by 10.2", and at 45 deg, the projected separation will be 7", so to have one star's scan line up with the other star's from an adjacent exposure, we space the scans 7" apart. This is redundant as a check of the method, e.g. against color differences of the stars, or HST breathing, etc.</i></p>									
4	Y scan, X step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W		POS TARG -55,-115; SPATIAL SCAN 7.5 .90.0 Degrees,Forward,33.0 Arcsec,5; EXP PCS MODE GYRO	Sequence 1-5 Non-Int in F225W (1A)	370 Secs [==>]	[1]
<p><i>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</i></p> <p><i>The POS TARG for this exposure is shifted in X by +7" from the previous exposure.</i></p>									

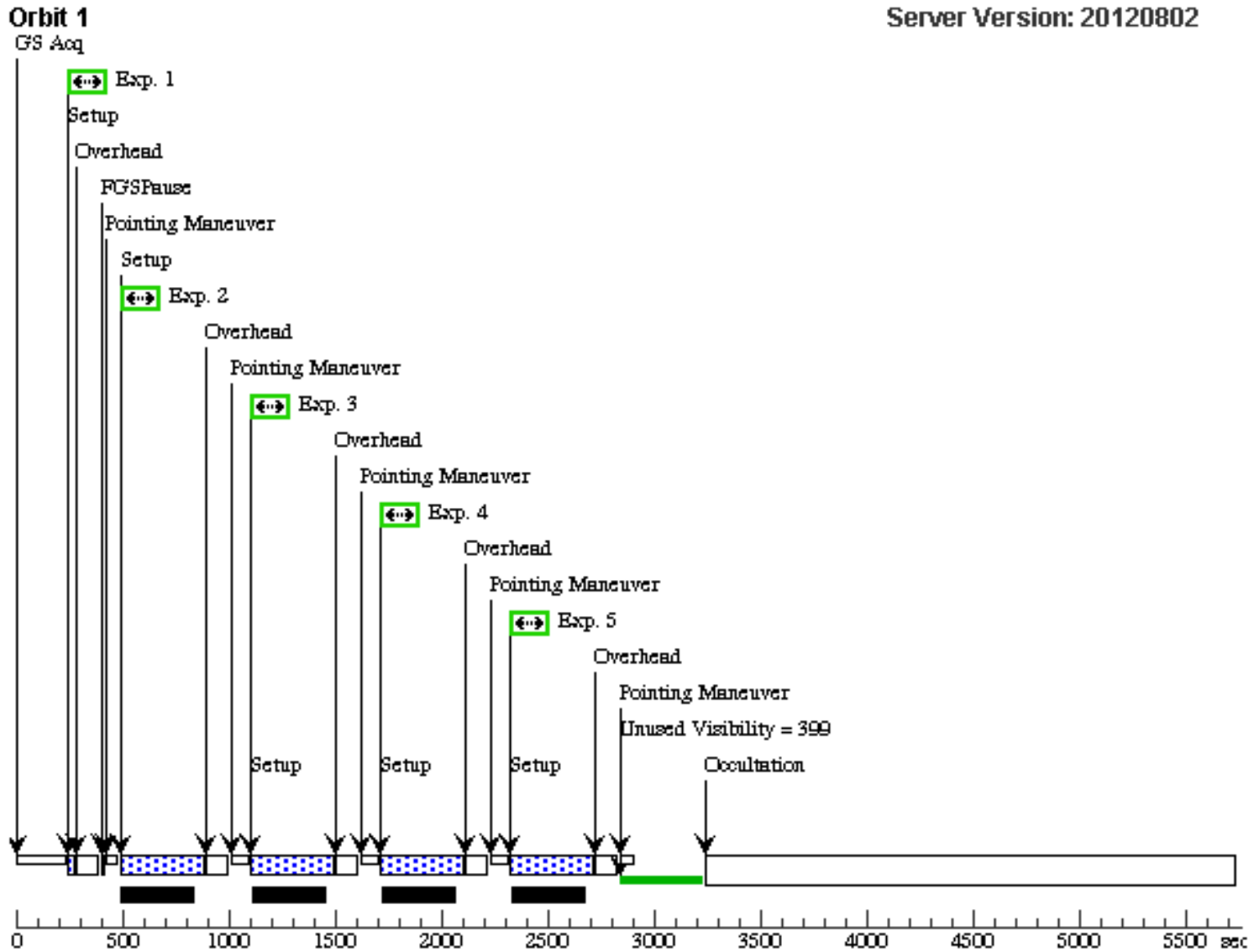
Proposal 13095 - F225W (1A) - UVIS L-Flat Via Spatial Scans

5	Y scan, X st ep	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W	POS TARG -48,-115 ; SPATIAL SCAN 7.5 ,90.0 Degrees,Forwa rd,33.0 Arcsec,5; EXP PCS MODE G YRO	Sequence 1-5 Non-In t in F225W (1A)	370 Secs [==>]	[1]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in X by +7" from the previous exposure.</p>								
6	X scan, Y st ep	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W	POS TARG -115,69; SPATIAL SCAN 7.5 ,3.7702 Degrees,For ward,33.0 Arcsec,5; EXP PCS MODE G YRO	Sequence 6-10 Non-I nt in F225W (1A)	370 Secs [==>]	[2]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p>								
7	X scan, Y st ep	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W	POS TARG -115,62; SPATIAL SCAN 7.5 ,3.7702 Degrees,For ward,33.0 Arcsec,5; EXP PCS MODE G YRO	Sequence 6-10 Non-I nt in F225W (1A)	370 Secs [==>]	[2]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in Y by -7" from the previous exposure.</p>								
8	X scan, Y st ep	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W	POS TARG -115,55; SPATIAL SCAN 7.5 ,3.7702 Degrees,For ward,33.0 Arcsec,5; EXP PCS MODE G YRO	Sequence 6-10 Non-I nt in F225W (1A)	370 Secs [==>]	[2]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in Y by -7" from the previous exposure.</p>								
9	X scan, Y st ep	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W	POS TARG -115,48; SPATIAL SCAN 7.5 ,3.7702 Degrees,For ward,33.0 Arcsec,5; EXP PCS MODE G YRO	Sequence 6-10 Non-I nt in F225W (1A)	370 Secs [==>]	[2]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in Y by -7" from the previous exposure.</p>								

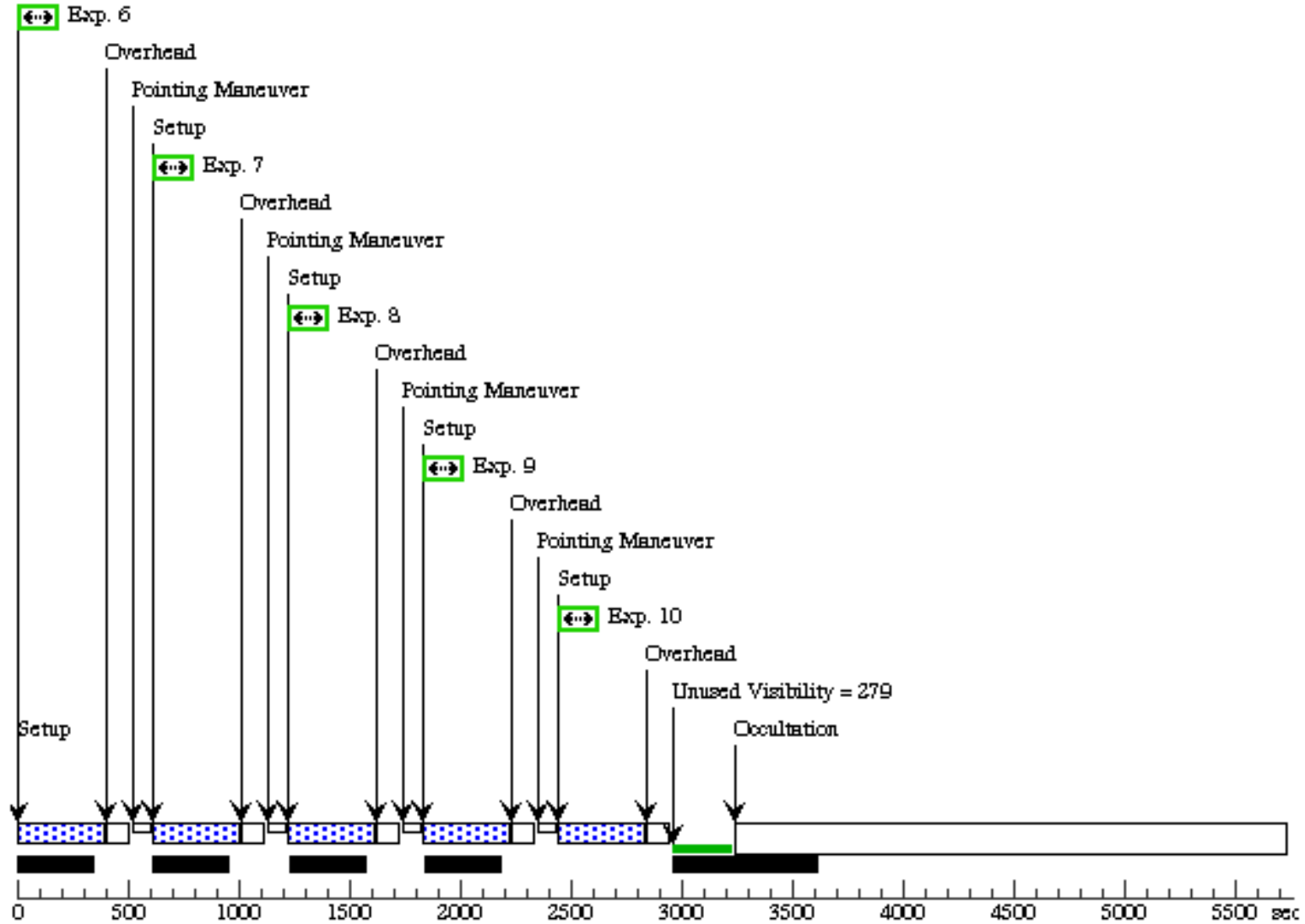
Proposal 13095 - F225W (1A) - UVIS L-Flat Via Spatial Scans

10	X scan, Y step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W	POS TARG -115,41; Sequence 6-10 Non-Int in F225W (1A) SPATIAL SCAN 7.5,3.7702 Degrees,Forward,33.0 Arcsec,5; EXP PCS MODE G YRO	370 Secs [==>]	[2]
<p><i>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans:</i> :Scan-Width 128 :Scan-Number-Lines 5</p> <p><i>The POS TARG for this exposure is shifted in Y by -7" from the previous exposure.</i></p>							

Orbit Structure



Orbit 2



Proposal 13095 - F275W (2A) - UVIS L-Flat Via Spatial Scans

Tue Nov 06 02:06:01 GMT 2012

Visit	Proposal 13095, F275W (2A), implementation Diagnostic Status: No Diagnostics Scientific Instruments: S/C, WFC3/UVIS Special Requirements: ORIENT 86D TO 86.1 D Comments: Same as 1A but different filter. F275W					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(1)		-GAM-ARI-MIDPOINT	RA: 01 53 31.7300 (28.3822083d) Dec: +19 17 43.70 (19.29547d) Equinox: J2000		V=3.88	Reference Frame: ICRS
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. F225W target RA DEC WDS YEAR PA SEP m1 m2 sptype dm GL GB 28.38233 19.29406 01535+1918 2010 356 10.2 4.52 4.58 A1pSi B9V -0.06 142.54770 -41.20061					

Proposal 13095 - F275W (2A) - UVIS L-Flat Via Spatial Scans

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures	1	(1) -GAM-ARI-MID POINT	S/C, POINTING, V1			POS TARG -103.86 27892,-206.9492839; GS ACQ SCENARI ONEB1B3	Sequence 1-6 Non-Int in F275W (2A)	1 Secs [==>]	[1]	
	<p>Comments: The purpose of this exposure is to establish the pointing under FGS-control prior to executing the rest of the visit under GYRO-control. This effectively zeros out the 14-22" blind-pointing error of a GYRO-only visit. The POS TARG on this exposure puts the spacecraft pointing at the starting scan ramp-up position of the following exposure.</p>									
	2	Y scan, X step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W		POS TARG -69,-115 ; SPATIAL SCAN 7.5 ,90.0 Degrees,Forward,33.0 Arcsec,5; EXP PCS MODE GYRO	Sequence 1-6 Non-Int in F275W (2A)	370 Secs [==>]	[1]
	<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p>									
	3	Y scan, X step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W		POS TARG -62,-115 ; SPATIAL SCAN 7.5 ,90.0 Degrees,Forward,33.0 Arcsec,5; EXP PCS MODE GYRO	Sequence 1-6 Non-Int in F275W (2A)	370 Secs [==>]	[1]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in X by +7" from the previous exposure. This is estimated as follows: the two stars are separated by 10.2", and at 45 deg, the projected separation will be 7", so to have one star's scan line up with the other star's from an adjacent exposure, we space the scans 7" apart. This is redundant as a check of the method, e.g. against color differences of the stars, or HST breathing, etc.</p>										
4	Y scan, X step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W		POS TARG -55,-115 ; SPATIAL SCAN 7.5 ,90.0 Degrees,Forward,33.0 Arcsec,5; EXP PCS MODE GYRO	Sequence 1-6 Non-Int in F275W (2A)	370 Secs [==>]	[1]	
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in X by +7" from the previous exposure.</p>										
5	Y scan, X step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W		POS TARG -48,-115 ; SPATIAL SCAN 7.5 ,90.0 Degrees,Forward,33.0 Arcsec,5; EXP PCS MODE GYRO	Sequence 1-6 Non-Int in F275W (2A)	370 Secs [==>]	[1]	
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in X by +7" from the previous exposure.</p>										

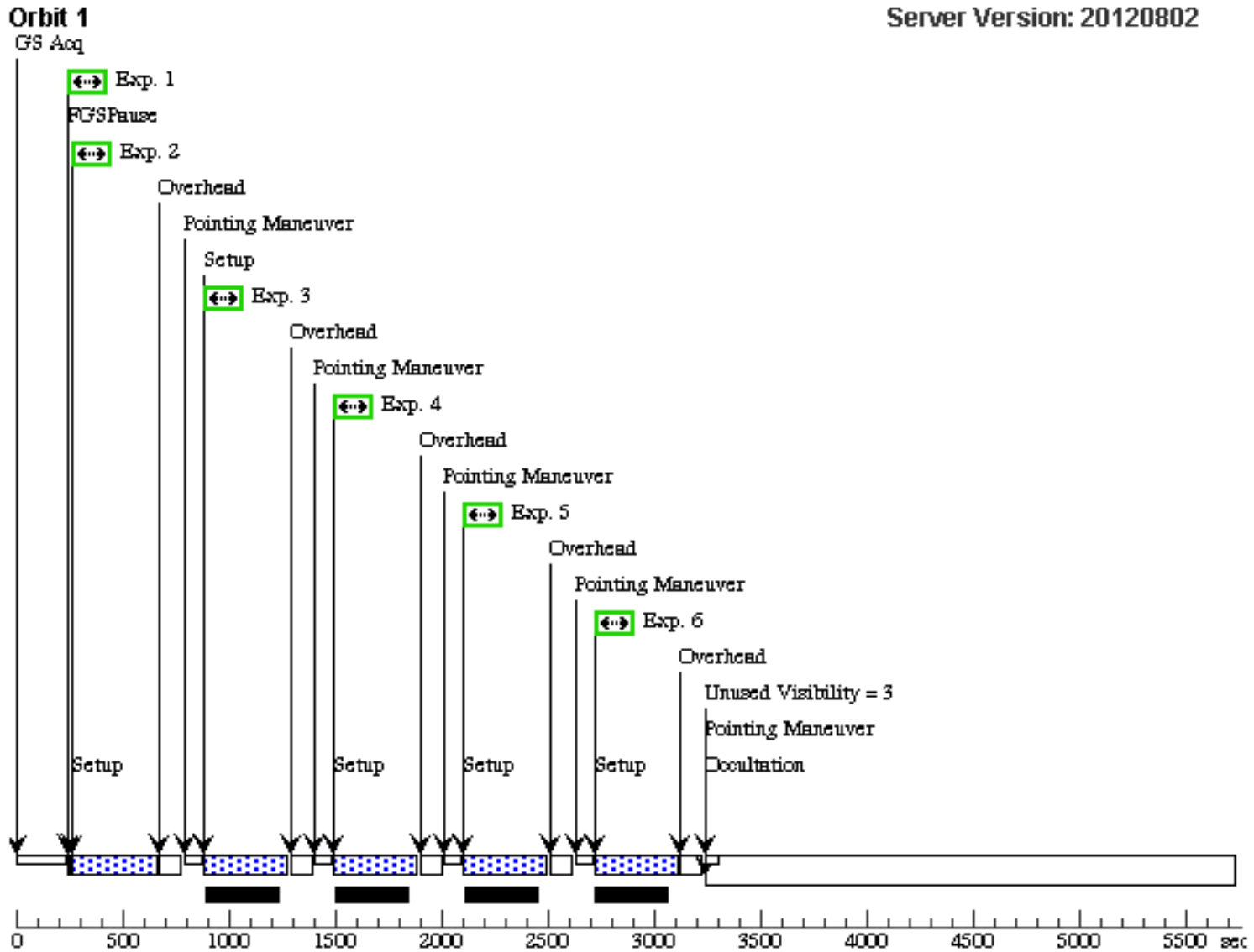
Proposal 13095 - F275W (2A) - UVIS L-Flat Via Spatial Scans

6	Y scan, X st ep	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	POS TARG -41,-115 ; SPATIAL SCAN 7.5 ,90.0 Degrees,Forwa rd,33.0 Arcsec,5; EXP PCS MODE G YRO	Sequence 1-6 Non-In t in F275W (2A)	370 Secs [==>]	[1]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in X by +7" from the previous exposure.</p>								
7	X scan, Y st ep	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	POS TARG -115,69; SPATIAL SCAN 7.5 ,3.7702 Degrees,For ward,33.0 Arcsec,5; EXP PCS MODE G YRO	Sequence 7-11 Non-I nt in F275W (2A)	370 Secs [==>]	[2]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p>								
8	X scan, Y st ep	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	POS TARG -115,62; SPATIAL SCAN 7.5 ,3.7702 Degrees,For ward,33.0 Arcsec,5; EXP PCS MODE G YRO	Sequence 7-11 Non-I nt in F275W (2A)	370 Secs [==>]	[2]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in Y by -7" from the previous exposure.</p>								
9	X scan, Y st ep	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	POS TARG -115,55; SPATIAL SCAN 7.5 ,3.7702 Degrees,For ward,33.0 Arcsec,5; EXP PCS MODE G YRO	Sequence 7-11 Non-I nt in F275W (2A)	370 Secs [==>]	[2]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in Y by -7" from the previous exposure.</p>								
10	X scan, Y st ep	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	POS TARG -115,48; SPATIAL SCAN 7.5 ,3.7702 Degrees,For ward,33.0 Arcsec,5; EXP PCS MODE G YRO	Sequence 7-11 Non-I nt in F275W (2A)	370 Secs [==>]	[2]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in Y by -7" from the previous exposure.</p>								

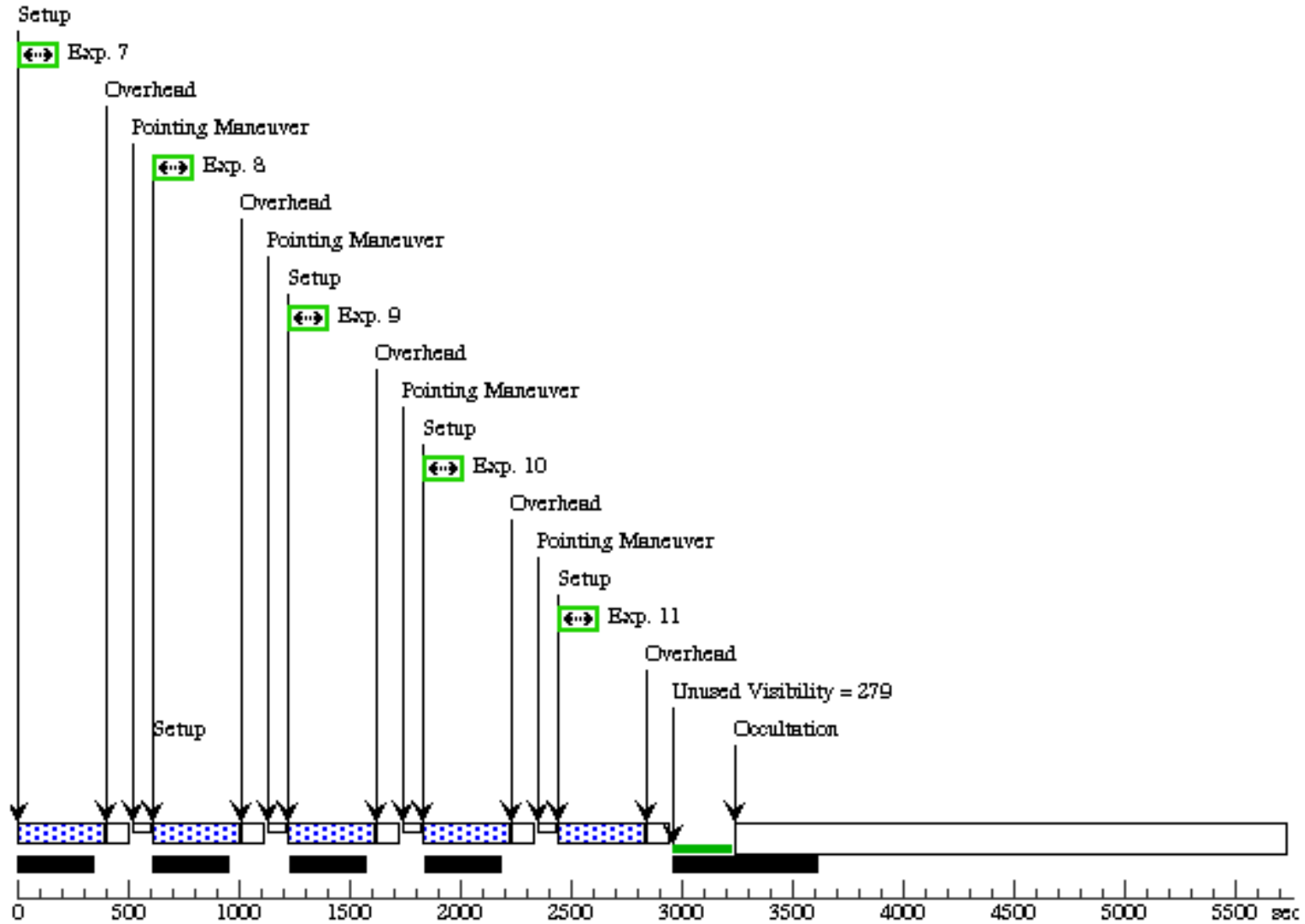
Proposal 13095 - F275W (2A) - UVIS L-Flat Via Spatial Scans

11	X scan, Y step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F275W	POS TARG -115,41; SPATIAL SCAN 7.5 ,3.7702 Degrees,Forward,33.0 Arcsec.5; EXP PCS MODE G YRO	Sequence 7-11 Non-Int in F275W (2A) 370 Secs [==>]	[2]
<p><i>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans:</i> :Scan-Width 128 :Scan-Number-Lines 5</p> <p><i>The POS TARG for this exposure is shifted in Y by -7" from the previous exposure.</i></p>							

Orbit Structure



Orbit 2



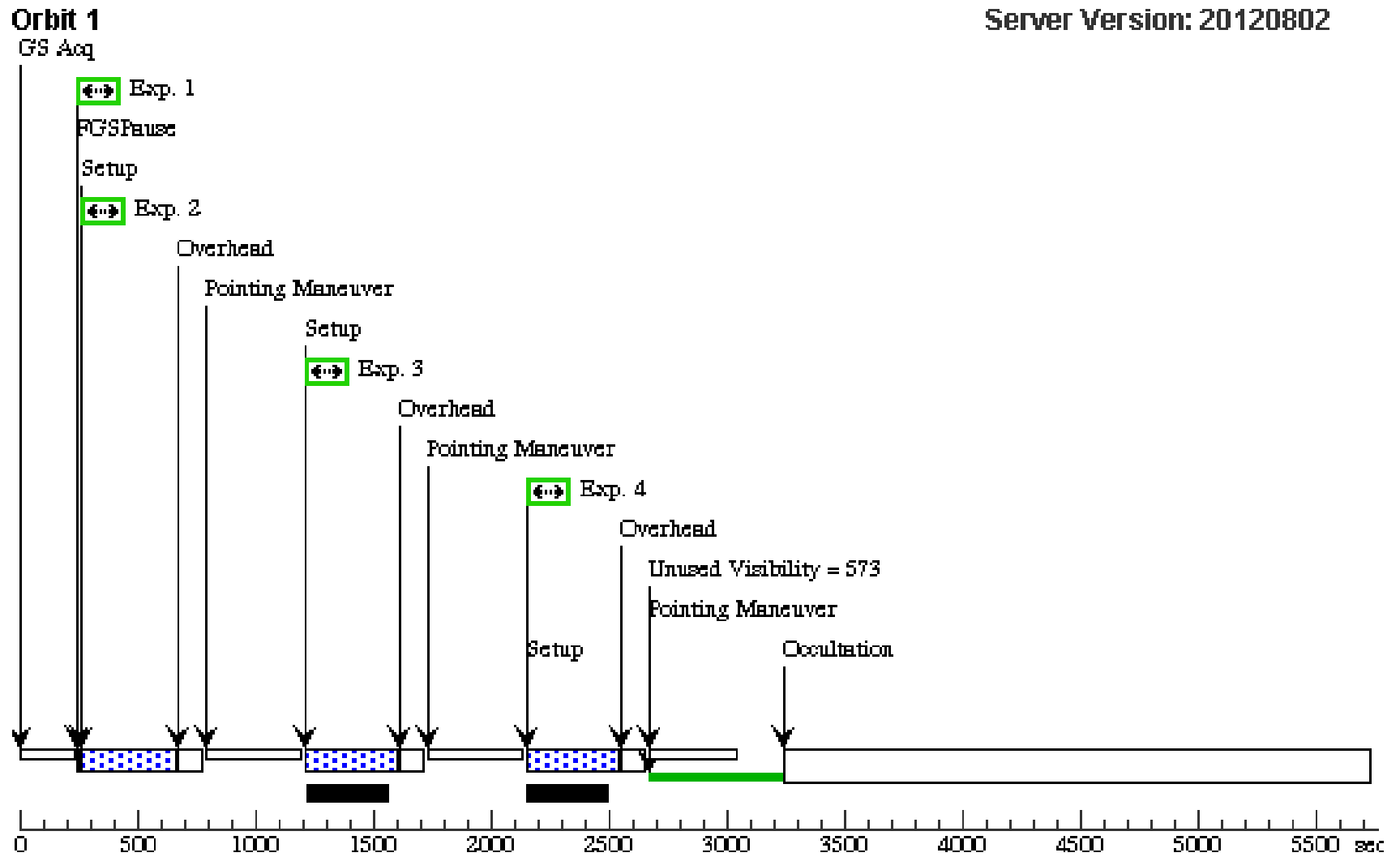
Proposal 13095 - DO NOT USE (9A) - UVIS L-Flat Via Spatial Scans

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) -GAM-ARI-MID POINT	S/C, POINTING, V1			POS TARG -103.86 27892,-206.9492839; GS ACQ SCENARI O ONEB1B3	Sequence 1-4 Non-Int in DO NOT USE (9A)	1 Secs [==>]	[1]
<p>Comments: The purpose of this exposure is to establish the pointing under FGS-control prior to executing the rest of the visit under GYRO-control. This effectively zeros out the 14-22" blind-pointing error of a GYRO-only visit. The POS TARG on this exposure puts the spacecraft pointing at the starting scan ramp-up position of the following exposure.</p>									
2	Y scan, X step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W		POS TARG -69,-115 ; SPATIAL SCAN 7.5 ,90.0 Degrees,Forward; EXP PCS MODE G YRO	Sequence 1-4 Non-Int in DO NOT USE (9A)	370 Secs [==>]	[1]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p>									
3	Y scan, X step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W		POS TARG -62,-115 ; SPATIAL SCAN 7.5 ,90.0 Degrees,Forward; EXP PCS MODE G YRO	Sequence 1-4 Non-Int in DO NOT USE (9A)	370 Secs [==>]	[1]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in X by +7" from the previous exposure. This is estimated as follows: the two stars are separated by 10.2", and at 45 deg, the projected separation will be 7", so to have one star's scan line up with the other star's from an adjacent exposure, we space the scans 7" apart. This is redundant as a check of the method, e.g. against color differences of the stars, or HST breathing, etc.</p>									
4	Y scan, X step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W		POS TARG -55,-115 ; SPATIAL SCAN 7.5 ,90.0 Degrees,Forward; EXP PCS MODE G YRO	Sequence 1-4 Non-Int in DO NOT USE (9A)	370 Secs [==>]	[1]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p> <p>The POS TARG for this exposure is shifted in X by +7" from the previous exposure.</p>									
5	X scan, Y step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W		POS TARG -115,69; SPATIAL SCAN 7.5 ,3.7702 Degrees,Forward; EXP PCS MODE G YRO	Sequence 5-7 Non-Int in DO NOT USE (9A)	370 Secs [==>]	[2]
<p>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans: :Scan-Width 128 :Scan-Number-Lines 5</p>									

Proposal 13095 - DO NOT USE (9A) - UVIS L-Flat Via Spatial Scans

6	X scan, Y step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W	POS TARG -115,62; SPATIAL SCAN 7.5 ,3.7702 Degrees,Forward; EXP PCS MODE G YRO	Sequence 5-7 Non-Int in DO NOT USE (9A) 370 Secs [==>]	[2]
<i>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans:</i>							
:Scan-Width 128							
:Scan-Number-Lines 5							
<i>The POS TARG for this exposure is shifted in Y by -7" from the previous exposure.</i>							
7	X scan, Y step	(1) -GAM-ARI-MID POINT	WFC3/UVIS, ACCUM, UVIS-CENTER	F225W	POS TARG -115,55; SPATIAL SCAN 7.5 ,3.7702 Degrees,Forward; EXP PCS MODE G YRO	Sequence 5-7 Non-Int in DO NOT USE (9A) 370 Secs [==>]	[2]
<i>Comments: Add the following to the tdf define-exposure (immediately after the other scan parameters) to enable the boustrophedonic (serpentine) scan prior to running Trans:</i>							
:Scan-Width 128							
:Scan-Number-Lines 5							
<i>The POS TARG for this exposure is shifted in Y by -7" from the previous exposure.</i>							

Orbit Structure



Orbit 2

