



11428 - D2 Calibration lamp test

Cycle: 17, Proposal Category: SM4/WFC3

(Availability Mode: RESTRICTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
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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	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:18.0	yes
02	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:23.0	yes
03	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:26.0	yes
04	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:30.0	yes
05	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:32.0	yes
06	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:35.0	yes
10	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:38.0	yes
11	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:40.0	yes
12	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:43.0	yes
07	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:45.0	yes
08	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:48.0	yes
09	DEUTERIUM	WFC3/UVIS	1	01-Jul-2008 21:06:50.0	yes

12 Total Orbits Used

ABSTRACT

This proposal verifies the health and performance of the calsystem deuterium lamp and assesses the status of the major UV filters by taking a full set of internal flatfields. A total of three nominal and one short exposure are obtained for each filter in order to establish an initial baseline of flatfield data as well as to confirm lamp repeatability and provide a contamination check. Additional iterations of D2 internal flatfields will be taken as part of WFC-19, UVIS Internal Flats (proposal 11432).

This proposal corresponds to SMOV ID WFC3-15. It should not be run until after the successful completion of WFC-06, the UVIS detector functional test (proposal 11419) and WFC-11, the initial UVIS alignment (proposal 11424).

OBSERVING DESCRIPTION

Calsystem deuterium flatfields are taken in all WFC3 UV filters. A set of one flat per UV filter has been split into three visits to facilitate scheduling. Multiple iterations of these visit triplets are done to acquire several flats per filter: three iterations at nominal exposure times and one iteration at half the exposure time.

CALIBRATION JUSTIFICATION

Flux levels within the flatfields will be compared to those from ground data to evaluate the D2 lamp performance. Flatfield illumination patterns will be analyzed for any changes compared to previous ground test images. The four runs of the proposal will provide a preliminary check of the lamp's firing behavior on-orbit (occasional delays in the lamp turn-on have been experienced in recent ground tests) while the repeated flatfields will provide a check of the lamp output stability as well as a monitor for possible time-dependent changes due to e.g., contamination. The data will be combined with that from WFC3-19, the UVIS internal flatfields (proposal 11432) to generate on-orbit updates for the WFC3 calibration pipeline flatfield reference files.

ADDITIONAL COMMENTS

Proposal 11428 (STScI Edit Number: 2, Created: Tuesday, July 1, 2008 8:06:53 PM EST) - Overview

Proposal can not be started until approval to use the D2 lamp is obtained from Randy Kimble and/or John MacKenty.

Proposal 11428 - Visit 01 - D2 Calibration lamp test

Wed Jul 02 01:06:53 GMT 2008

Visit	Proposal 11428, Visit 01, implementation										
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: GROUP 01,02,03,04,05,06 WITHIN 2D Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
	1	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F390W	CURRENT=MEDIU M				28. Secs [==>]	[1]
	2	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS-QUAD	FQ387N	CURRENT=MEDIU M				430. Secs [==>]	[1]
	3	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F373N	CURRENT=MEDIU M				635. Secs [==>]	[1]
	4	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F336W	CURRENT=MEDIU M				29.4 Secs [==>]	[1]

Orbit 1

Exp. 1

Unused Visibility = 3028

The timeline shows a green bar representing visibility. Exposure 1 (28s) starts at 0s. Exposure 2 (430s) starts at ~20s. Exposure 3 (635s) starts at ~220s. Exposure 4 (29.4s) starts at ~850s. Reconfigurations (black bars) occur between exposures. An occultation (white bar) begins at 3000s. The x-axis is labeled 'sec' and ranges from 0 to 5500.

Server Version: 20080624

Proposal 11428 - Visit 02 - D2 Calibration lamp test

Wed Jul 02 01:06:54 GMT 2008

Visit	Proposal 11428, Visit 02, implementation									
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none) <i>Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F200LP	CURRENT=MEDIU M			1.7 Secs [==>]	[1]
	2	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F280N	CURRENT=MEDIU M			422. Secs [==>]	[1]
	3	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F218W	CURRENT=MEDIU M			17.5 Secs [==>]	[1]
	4	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F225W	CURRENT=MEDIU M			8.3 Secs [==>]	[1]
	5	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F275W	CURRENT=MEDIU M			17.4 Secs [==>]	[1]
	6	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F300X	CURRENT=MEDIU M			8.4 Secs [==>]	[1]

Orbit 1
Unused Visibility = 3028

Timeline labels: Exp. 1, Exp. 2, Exp. 3, Exp. 4, Exp. 5, Exp. 6, Reconfig, Occultation

Server Version: 20080624

Visit	Proposal 11428, Visit 03, implementation									
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none) Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F343N	CURRENT=MEDIUM			69.5 Secs	[1]
	2	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F395N	CURRENT=MEDIUM			323. Secs	[1]
	3	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F390M	CURRENT=MEDIUM			135. Secs	[1]
	4	D2 - short	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS-QUAD	FQ232N	CURRENT=MEDIUM			237. Secs	[1]

Orbit Structure

Orbit 1 Server Version: 20080624

Exp. 1
Unused Visibility = 3028

The timeline shows a sequence of events over 5500 seconds. Exposure 1 (green bar) starts at 0s and ends at approximately 70s. Exposure 2 (green bar) starts at approximately 200s and ends at approximately 700s. Exposure 3 (green bar) starts at approximately 1400s and ends at approximately 2050s. Exposure 4 (green bar) starts at approximately 1600s and ends at approximately 2050s. A Reconfig event (black bar) occurs between 2050s and 2750s. An Occultation event (black bar) occurs from 3000s to 5500s. The x-axis is labeled 'sec' and ranges from 0 to 5500 with major ticks every 500 units.

Proposal 11428 - Visit 04 - D2 Calibration lamp test

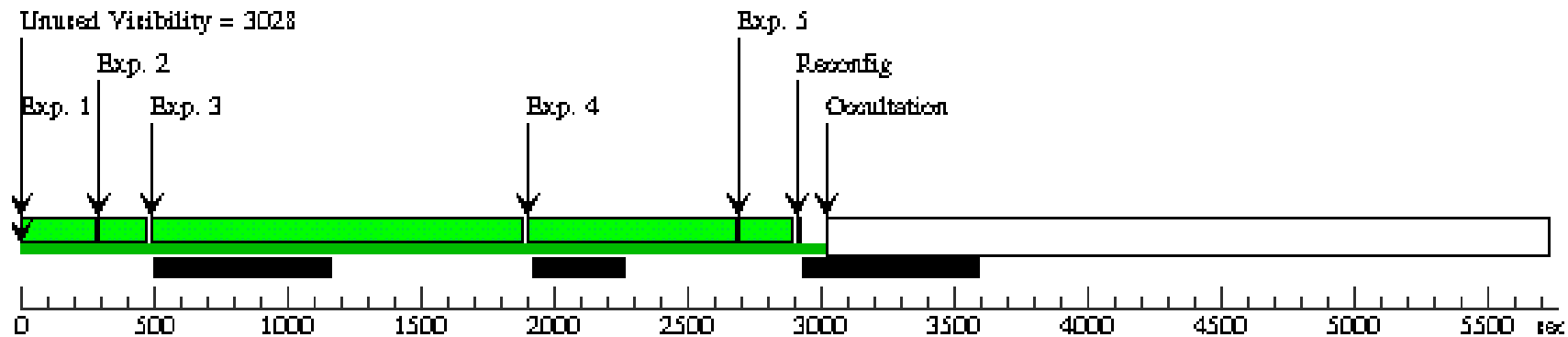
Wed Jul 02 01:06:55 GMT 2008

Visit	Proposal 11428, Visit 04, implementation									
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none) Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F343N	CURRENT=MEDIU M			139. Secs [==>]	[1]
	2	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F275W	CURRENT=MEDIU M			34.7 Secs [==>]	[1]
	3	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F373N	CURRENT=MEDIU M			1270. Secs [==>]	[1]
	4	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F395N	CURRENT=MEDIU M			647. Secs [==>]	[1]
	5	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F390W	CURRENT=MEDIU M			56. Secs [==>]	[1]

Orbit 1

Unused Visibility = 3028

Server Version: 20080624



Visit	Proposal 11428, Visit 05, implementation										
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none) Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
	1	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F200LP	CURRENT=MEDIU M				3.4 Secs [==>]	[1]
	2	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F218W	CURRENT=MEDIU M				35. Secs [==>]	[1]
	3	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F280N	CURRENT=MEDIU M				845. Secs [==>]	[1]
	4	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS-QUAD	FQ232N	CURRENT=MEDIU M				475. Secs [==>]	[1]

Orbit 1

Exp. 1

Unused Visibility = 3028

Server Version: 20080624

Visit		Proposal 11428, Visit 06, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none) <i>Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.</i>									
Exposures		#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
		1	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F225W	CURRENT=MEDIU M			16.6 Secs [==>]	[1]
		2	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F336W	CURRENT=MEDIU M			58.8 Secs [==>]	[1]
		3	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS-QUAD	FQ387N	CURRENT=MEDIU M			860. Secs [==>]	[1]
		4	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F300X	CURRENT=MEDIU M			16.8 Secs [==>]	[1]
		5	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F390M	CURRENT=MEDIU M			271. Secs [==>]	[1]
Orbit Structure		<p>Orbit 1 Unused Visibility = 3028</p> <p>Server Version: 20080624</p>									

Proposal 11428 - Visit 10 - D2 Calibration lamp test

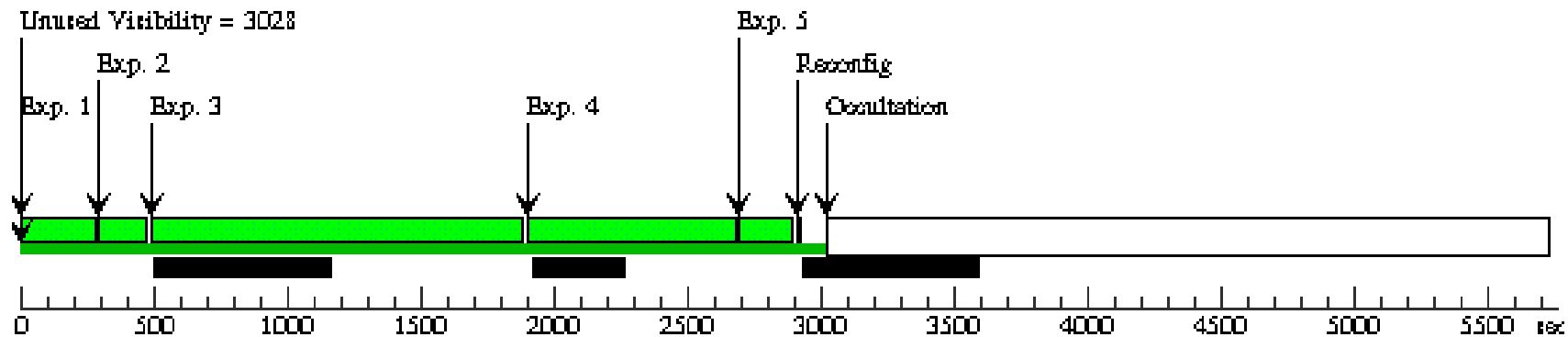
Wed Jul 02 01:06:56 GMT 2008

Visit	Proposal 11428, Visit 10, implementation										
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: GROUP 10,11,12 WITHIN 1D Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
	1	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F343N	CURRENT=MEDIU M				139. Secs [==>]	[1]
	2	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F275W	CURRENT=MEDIU M				34.7 Secs [==>]	[1]
	3	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F373N	CURRENT=MEDIU M				1270. Secs [==>]	[1]
	4	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F395N	CURRENT=MEDIU M				647. Secs [==>]	[1]
	5	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F390W	CURRENT=MEDIU M				56. Secs [==>]	[1]

Orbit 1

Unused Visibility = 3028

Server Version: 20080624



Visit	Proposal 11428, Visit 11, implementation									
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none) Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F200LP	CURRENT=MEDIU M			3.4 Secs [==>]	[1]
	2	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F218W	CURRENT=MEDIU M			35. Secs [==>]	[1]
	3	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F280N	CURRENT=MEDIU M			845. Secs [==>]	[1]
	4	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS-QUAD	FQ232N	CURRENT=MEDIU M			475. Secs [==>]	[1]

Orbit 1
Unused Visibility = 3028

The diagram shows a timeline for Orbit 1. The x-axis represents time in seconds from 0 to 5500. A green bar indicates the total observation time, which ends at approximately 3000 seconds. Key events are marked with arrows: Exp. 1 at 0s, Exp. 2 at ~100s, Exp. 3 at ~300s, Exp. 4 at ~1400s, Reconfig at ~2000s, and Occultation at ~3000s. Black bars below the green bar indicate periods of occultation or unavailability.

Server Version: 20080624

Visit	Proposal 11428, Visit 12, implementation									
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none) Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F225W	CURRENT=MEDIU M			16.6 Secs [==>]	[1]
	2	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F336W	CURRENT=MEDIU M			58.8 Secs [==>]	[1]
	3	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS-QUAD	FQ387N	CURRENT=MEDIU M			860. Secs [==>]	[1]
	4	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F300X	CURRENT=MEDIU M			16.8 Secs [==>]	[1]
	5	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F390M	CURRENT=MEDIU M			271. Secs [==>]	[1]

Orbit Structure	Orbit 1									
	Unused Visibility = 3028 Server Version: 20080624									
<p>The diagram shows a timeline for Orbit 1 with a total duration of 5500 seconds. The x-axis is labeled 'sec' and ranges from 0 to 5500. The timeline includes five exposure periods (Exp. 1 to Exp. 5) shown as green bars, a 'Reconfig' period shown as a black bar, and an 'Occultation' period shown as a white bar. The exposure durations are approximately: Exp. 1 (0-16.6s), Exp. 2 (16.6-75.4s), Exp. 3 (75.4-836s), Exp. 4 (836-852.8s), and Exp. 5 (852.8-1123.8s). The Reconfig period is from 1123.8s to 1140.4s. The Occultation period starts at 1140.4s and ends at 5500s.</p>										

Visit		Proposal 11428, Visit 07, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: GROUP 07,08,09 WITHIN 1D Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.								
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F343N	CURRENT=MEDIU M			139. Secs [==>]	[1]
	2	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F275W	CURRENT=MEDIU M			34.7 Secs [==>]	[1]
	3	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F373N	CURRENT=MEDIU M			1270. Secs [==>]	[1]
	4	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F395N	CURRENT=MEDIU M			647. Secs [==>]	[1]
	5	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F390W	CURRENT=MEDIU M			56. Secs [==>]	[1]
Orbit Structure	<p>Orbit 1 Server Version: 20080624</p> <p>Exp. 1 Unused Visibility = 3028</p>									

Visit	Proposal 11428, Visit 08, implementation									
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none) Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F200LP	CURRENT=MEDIU M			3.4 Secs [==>]	[1]
	2	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F218W	CURRENT=MEDIU M			35. Secs [==>]	[1]
	3	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F280N	CURRENT=MEDIU M			845. Secs [==>]	[1]
	4	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS-QUAD	FQ232N	CURRENT=MEDIU M			475. Secs [==>]	[1]

Orbit 1 **Server Version: 20080624**

Exp. 1
Unused Visibility = 3028

The diagram shows a horizontal timeline from 0 to 5500 seconds. A green bar represents the total exposure time, starting at 0 and ending at approximately 3000 seconds. Within this green bar, four shorter bars represent individual exposures: Exp. 1 (very short), Exp. 2 (short), Exp. 3 (medium), and Exp. 4 (long). A 'Reconfig' event is marked at approximately 2000 seconds. An 'Occultation' event is marked at approximately 3000 seconds, where the green bar ends. Below the green bar, there are two black bars representing periods of no data or occultation: one from approximately 400 to 1000 seconds, and another from approximately 2000 to 2700 seconds. The x-axis is labeled 'sec' and has major ticks every 500 units.

Visit		Proposal 11428, Visit 09, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none) Comments: Exposure times assume medium current. D2 lamp cycles should be minimized to prolong lifetime.								
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F225W	CURRENT=MEDIU M			16.6 Secs [==>]	[1]
	2	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F336W	CURRENT=MEDIU M			58.8 Secs [==>]	[1]
	3	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS-QUAD	FQ387N	CURRENT=MEDIU M			860. Secs [==>]	[1]
	4	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F300X	CURRENT=MEDIU M			16.8 Secs [==>]	[1]
	5	D2 - nomina 1	DEUTERIUM	WFC3/UVIS, ACCUM, UVIS	F390M	CURRENT=MEDIU M			271. Secs [==>]	[1]
Orbit Structure	Orbit 1 Unused Visibility = 3028									
	<p>The diagram shows a timeline for Orbit 1 with a total duration of 5500 seconds. The x-axis is labeled 'sec' and ranges from 0 to 5500 in increments of 500. A green bar represents the total exposure time, which is divided into five segments labeled Exp. 1 through Exp. 5. Exp. 1 is from 0 to ~16.6s, Exp. 2 from ~16.6s to ~75.4s, Exp. 3 from ~75.4s to ~261.4s, Exp. 4 from ~261.4s to ~278.2s, and Exp. 5 from ~278.2s to ~549.2s. Black bars below the green bar indicate periods of occultation. A 'Reconfig' event is marked at approximately 2650 seconds. The text 'Orbit Structure' is written vertically on the left side of the diagram area.</p>									
Server Version: 20080624										