



## 17232 - Identifying the fingerprints of r-process heavy metals in a short GRB

Cycle: 30, Proposal Category: GO

(Availability Mode: SUPPORTED)

### INVESTIGATORS

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Dr. Gabriele Bruni (CoI) (ESA Member)	Istit. di Astro. Spaziale e Fisica Cosmica-Roma, INAF
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Simone Dichiara (CoI)	The Pennsylvania State University
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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>
18	(1) GRB	WFC3/UVIS	1	21-Nov-2023 11:01:03.0	yes
19	(1) GRB	WFC3/IR	1	21-Nov-2023 11:01:04.0	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>
20	(1) GRB	WFC3/IR	1	21-Nov-2023 11:01:04.0	yes
01	(2) GRB23111A-POS1	WFC3/IR	1	21-Nov-2023 11:01:05.0	yes
02	(3) GRB23111A-POS2	WFC3/IR	1	21-Nov-2023 11:01:06.0	yes
03	(4) GRB23111A-POS3	WFC3/IR	1	21-Nov-2023 11:01:07.0	yes
04	(2) GRB23111A-POS1	WFC3/IR	1	21-Nov-2023 11:01:08.0	yes
05	(3) GRB23111A-POS2	WFC3/IR	1	21-Nov-2023 11:01:08.0	yes
06	(4) GRB23111A-POS3	WFC3/IR	1	21-Nov-2023 11:01:09.0	yes
21	(1) GRB	WFC3/UVIS	1	21-Nov-2023 11:01:10.0	yes
22	(1) GRB	WFC3/IR	1	21-Nov-2023 11:01:10.0	yes
23	(1) GRB	WFC3/IR	2	21-Nov-2023 11:01:11.0	yes
07	(1) GRB	WFC3/IR WFC3/UVIS	1	21-Nov-2023 11:01:12.0	yes
08	(1) GRB	WFC3/IR WFC3/UVIS	1	21-Nov-2023 11:01:13.0	yes
09	(1) GRB	WFC3/IR	1	21-Nov-2023 11:01:14.0	yes
10	(1) GRB	WFC3/UVIS	1	21-Nov-2023 11:01:14.0	yes
11	(1) GRB	WFC3/IR	1	21-Nov-2023 11:01:15.0	yes

18 Total Orbits Used

## ABSTRACT

The afterglow of some short GRBs displays a late-time rebrightening, visible in the near-infrared a few days after the burst. This late-time bump could be explained as kilonova emission, providing a direct link to neutron star mergers, and a compelling proof for the synthesis of heavy nuclei through the rapid neutron capture process (r-process). We propose a multi-wavelength follow-up campaign of a nearby ( $z < 0.4$ ) short GRB in order to detect the expected kilonova bump and constrain its properties. Multi-band observations, and in particular X-rays, are critical to pin down the nature of the observed rebrightening, and to distinguish it from the standard afterglow emission.

## **OBSERVING DESCRIPTION**

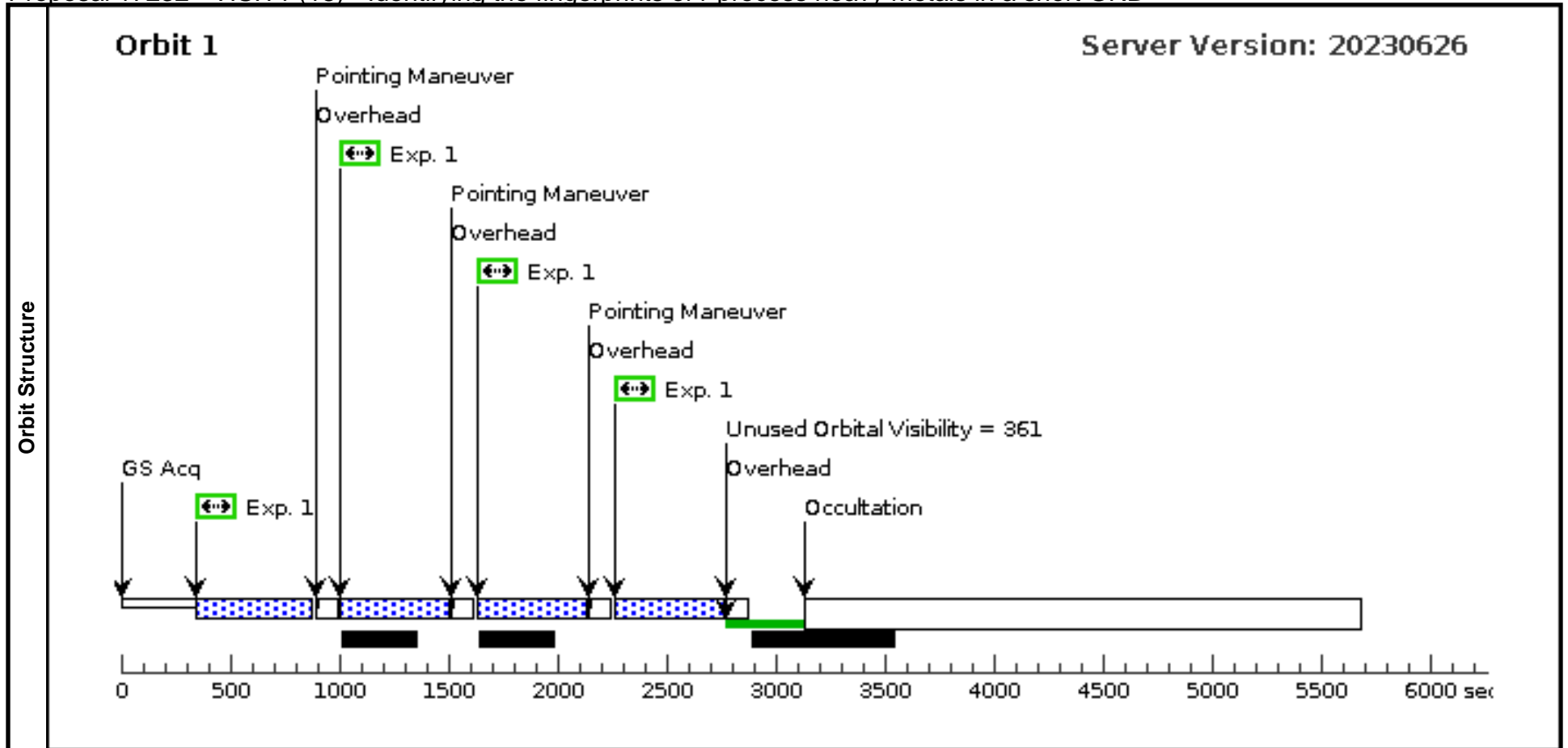
We will trigger on a GRB at  $z < 0.4$  and observable by Chandra. For most cases, observations will start within a week from the GRB and will involve deep imaging of the field. However, nearby events differ from the general population and a later start of the observations could be possible. In these cases, imaging might be replaced with grism spectroscopy if the source is sufficiently bright.

Based on past experience, filters F606W (UVIS) and F110W/F160W (IR) are the most likely to be used. However, given the unknown distance of the source, some flexibility in the filter choice should be warranted. For example, F814W/F850LP in the optical, and F105W/F125W/F140W in the IR are also plausible choices that could optimize the science for a given redshift and source brightness.

Proposal 17232 - VISIT1 (18) - Identifying the fingerprints of r-process heavy metals in a short GRB

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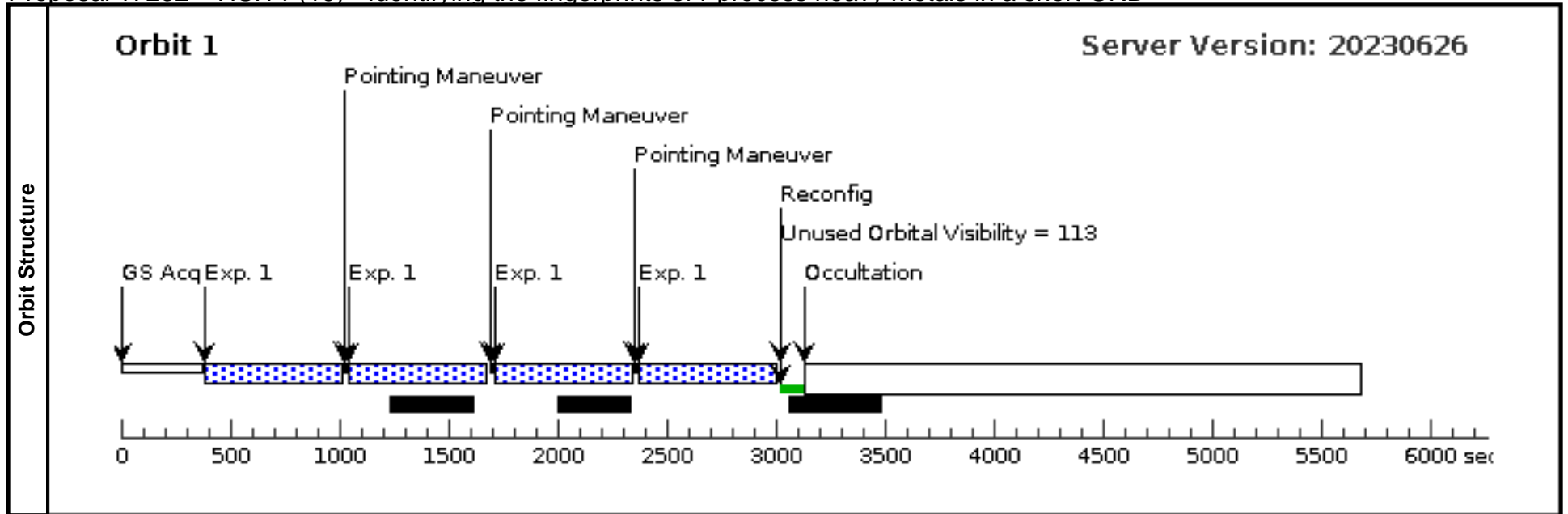
<b>Visit</b>	<b>Proposal 17232, VISIT1 (18), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: ON HOLD ; TOO RESPONSE TIME 3.0D Comments: We will likely select the filters from the following list: F606W, F814W, F850LP. On Hold Comments: GRB trigger										
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>				<b>Secondary Pattern</b>			<b>Exposures</b>	
(1)		Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112		Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false					(1)		
<b>Generic Targets</b>	<b>#</b>	<b>Name</b>	<b>Criteria</b>		<b>Description</b>						
	(1)	GRB	GRB at z<0.4								
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>		<b>Orbit</b>
	1	UVIS	(1) GRB	WFC3/UVIS, ACCUM, UVIS2	F606W	CR-SPLIT=NO		Pattern 1, Exps 1-1 in VISIT1 (18) (1)	500 Secs (2000 Secs) [=>500.0 Secs (Pattern 1)] [=>500.0 Secs (Pattern 2)] [=>500.0 Secs (Pattern 3)] [=>500 Secs (Pattern 4)]		[1]



Proposal 17232 - VISIT1 (19) - Identifying the fingerprints of r-process heavy metals in a short GRB

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<b>Visit</b>	<b>Proposal 17232, VISIT1 (19), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR Special Requirements: ON HOLD ; TOO RESPONSE TIME 3.0D <i>Comments: We will likely select the filters from the following list: F105W, F110W, F125W, F140W, F160W. In case of a nearby (<math>z &lt; \sim 0.2</math>) event we may add an exposure of IR spectroscopy.</i> <i>On Hold Comments: GRB trigger</i>										
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>				<b>Secondary Pattern</b>			<b>Exposures</b>	
(2)		Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false						(1)		
<b>Generic Targets</b>	<b>#</b>	<b>Name</b>	<b>Criteria</b>		<b>Description</b>						
	(1)	GRB	GRB at $z < 0.4$								
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>		<b>Orbit</b>
	1	IR1	(1) GRB	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=13; SAMP-SEQ=SPAR S50		Pattern 2, Exps 1-1 in VISIT1 (19) (2)	602.937703 Secs (2411.751 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]		[1]

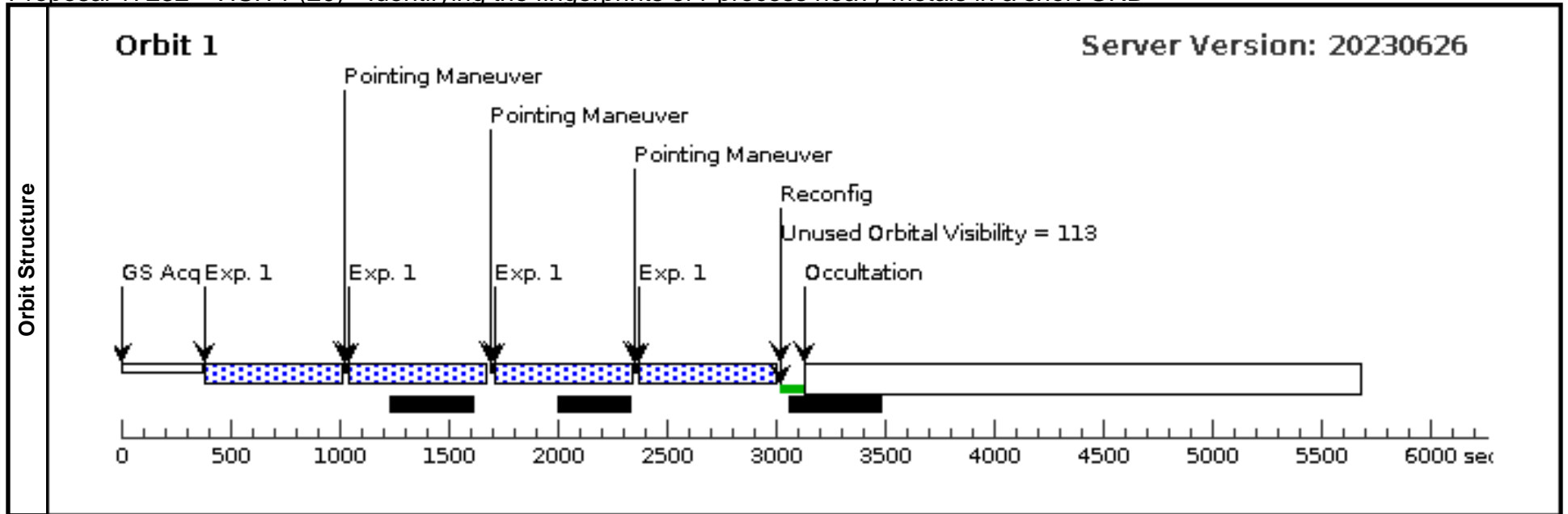


Proposal 17232 - VISIT1 (20) - Identifying the fingerprints of r-process heavy metals in a short GRB

Tue Nov 21 16:01:15 GMT 2023

<b>Visit</b>	<b>Proposal 17232, VISIT1 (20), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR Special Requirements: ON HOLD ; TOO RESPONSE TIME 3.0D Comments: We will likely select the filters from the following list: F105W, F110W, F125W, F140W, F160W. In case of a rare (~0.1 yr) nearby ( $z < -0.2$ ) event we may add an exposure of IR spectroscopy. On Hold Comments: GRB trigger									
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>				<b>Secondary Pattern</b>			<b>Exposures</b>
(2)		Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false						(1)	
<b>Generic Targets</b>	<b>#</b>	<b>Name</b>	<b>Criteria</b>	<b>Description</b>						
	(1)	GRB	GRB at $z < 0.4$							
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	IR1	(1) GRB	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=13; SAMP-SEQ=SPAR S50		Pattern 2, Exps 1-1 in VISIT1 (20) (2)	602.937703 Secs (2411.751 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]

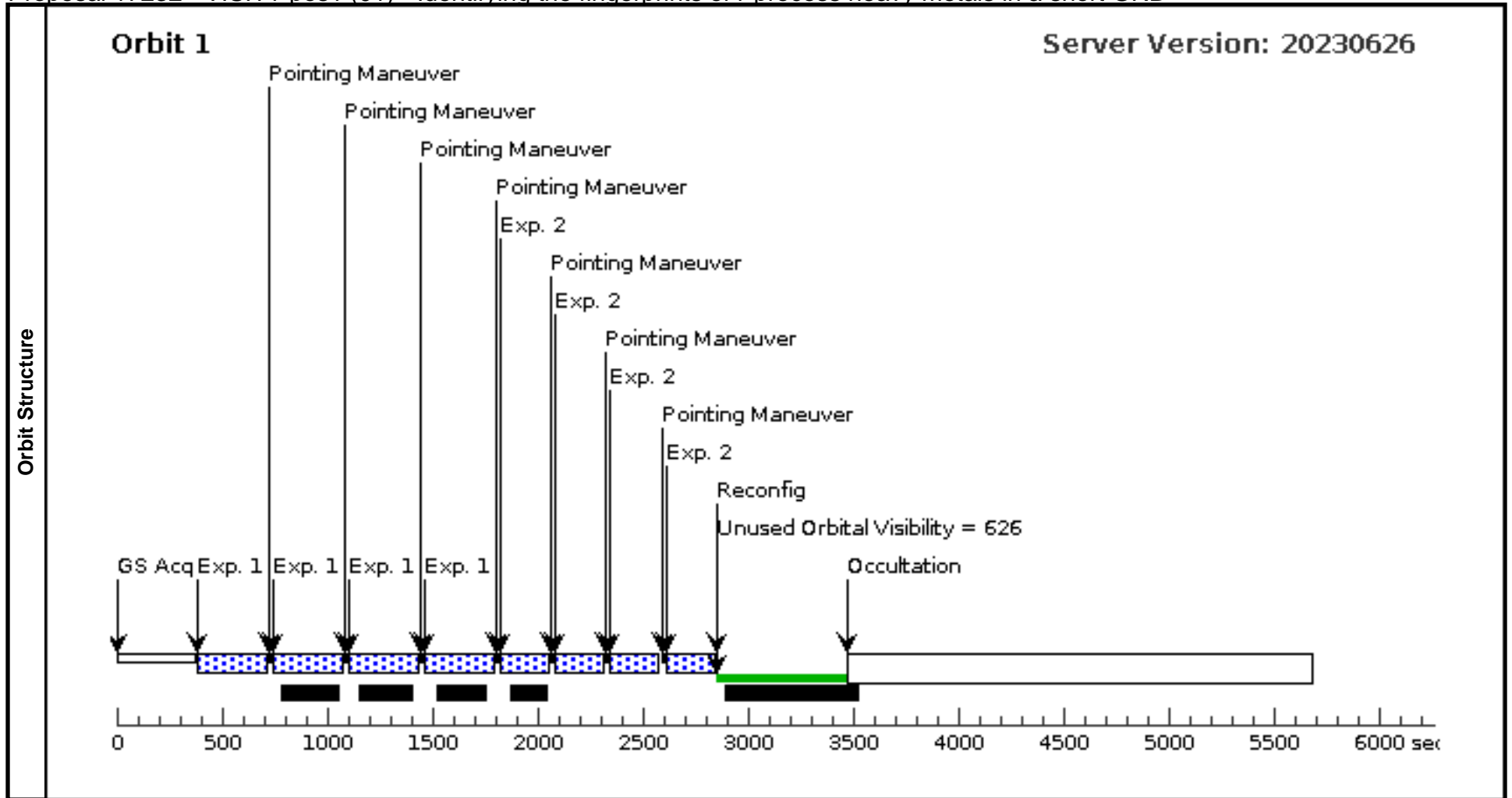




Proposal 17232 - VISIT1-pos1 (01) - Identifying the fingerprints of r-process heavy metals in a short GRB

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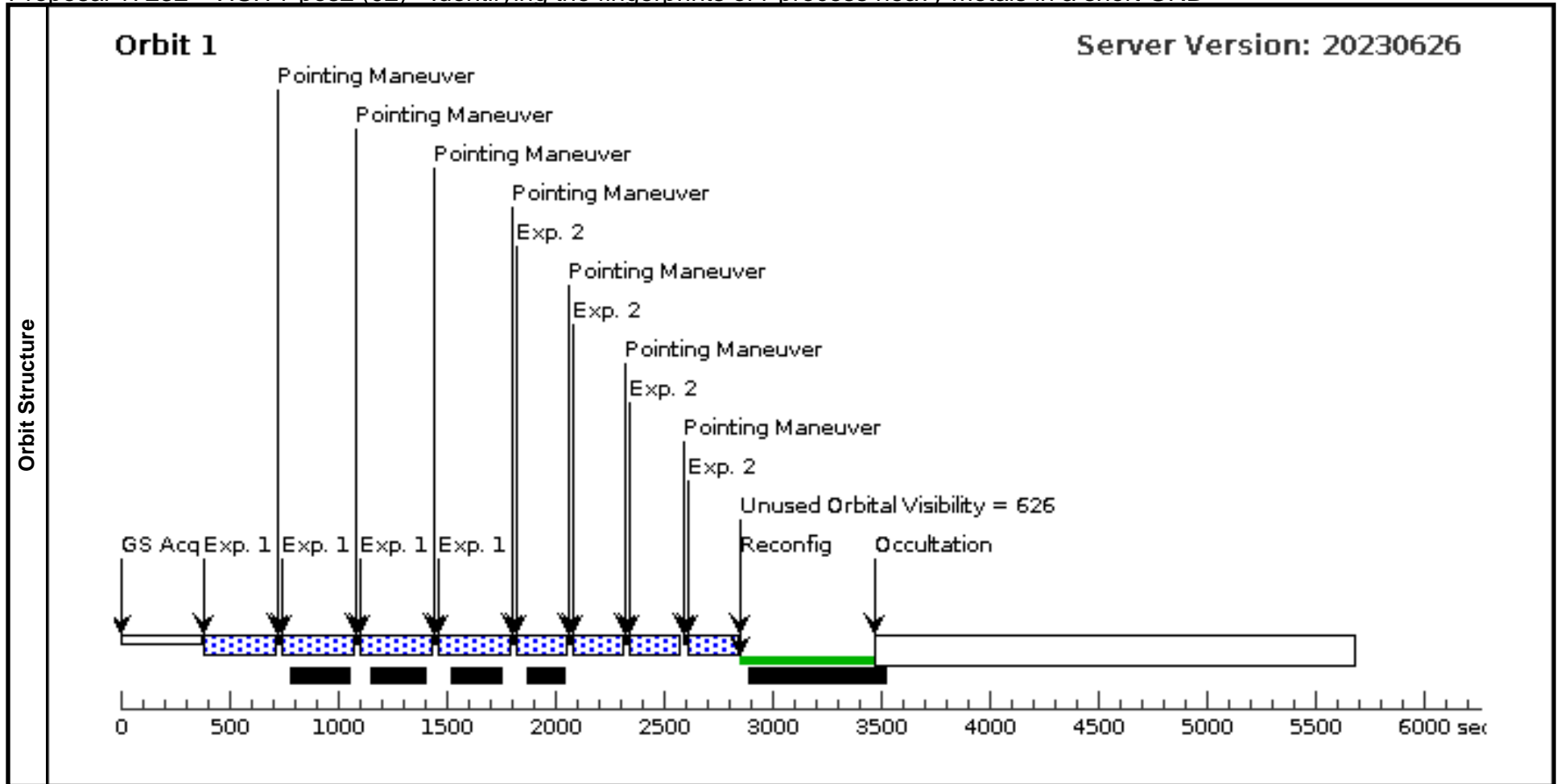
Visit	<b>Proposal 17232, VISIT1-pos1 (01), scheduled</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR Special Requirements: TOO RESPONSE TIME 3.0D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(2)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	GRB23111A-POS1	RA: 09 56 12.4000 (149.0516667d) Dec: +69 41 30.00 (69.69167d) Equinox: J2000		V=10	Reference Frame: NED				
	<i>Comments:</i> Category=STAR Description=[GAMMA RAY BURSTER, X-RAY TRANSIENT]									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	IR1	(2) GRB23111A-POS1	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=9; SAMP-SEQ=STEP100		Pattern 2, Exps 1-1 in VISIT1-pos1 (01) (2)	299.231323 Secs (1196.925 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2	IR1	(2) GRB23111A-POS1	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=8; SAMP-SEQ=STEP100		Pattern 2, Exps 2-2 in VISIT1-pos1 (01) (2)	199.231 Secs (796.924 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]



Proposal 17232 - VISIT1-pos2 (02) - Identifying the fingerprints of r-process heavy metals in a short GRB

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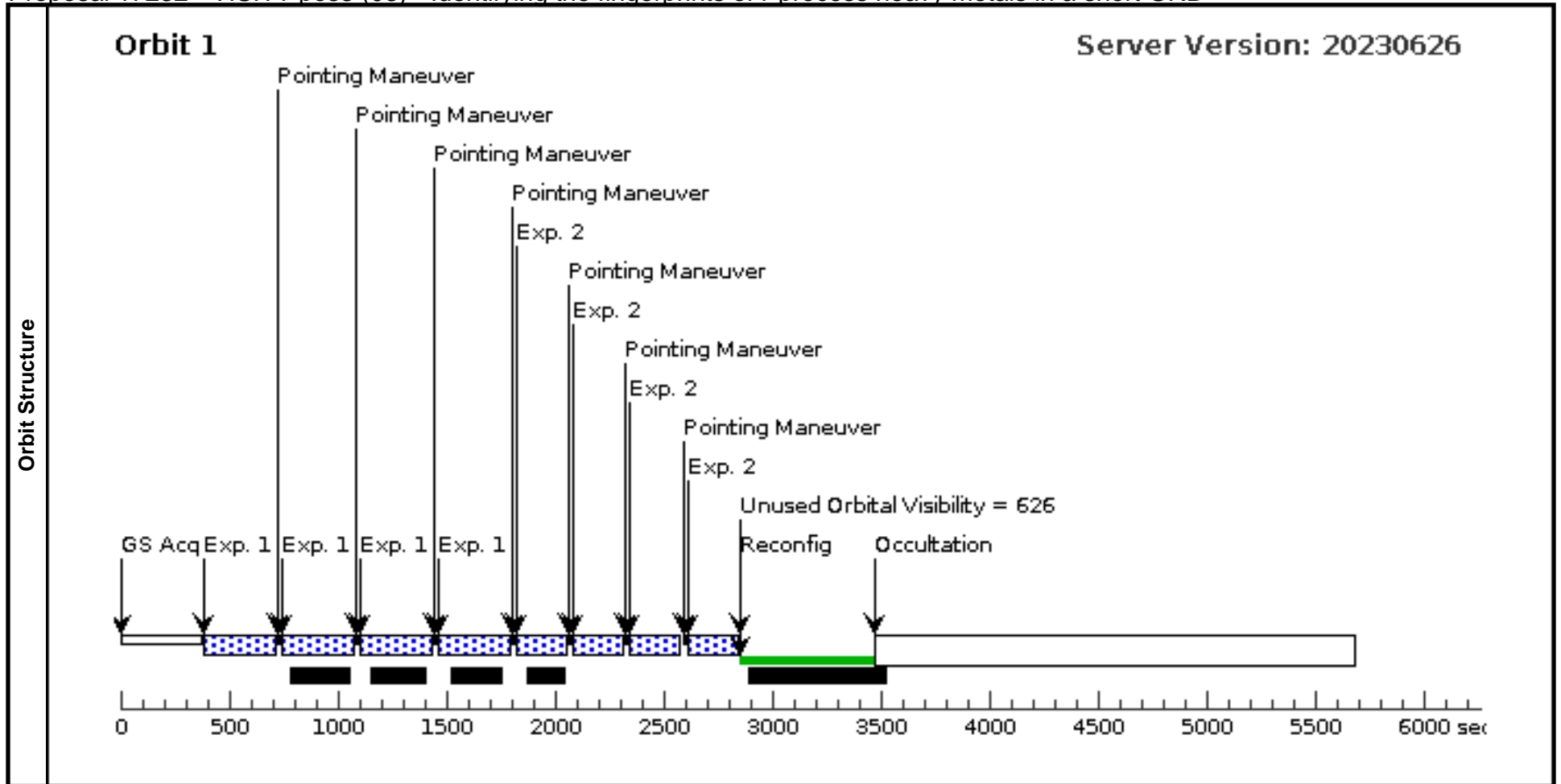
Visit	<b>Proposal 17232, VISIT1-pos2 (02), scheduled</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR Special Requirements: TOO RESPONSE TIME 3.0D										
	Patterns	#	Primary Pattern				Secondary Pattern			Exposures	
		(2)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false				(1), (2)			
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(3)	GRB23111A-POS2	RA: 09 55 48.9200 (148.9538333d) Dec: +69 41 21.66 (69.68935d) Equinox: J2000				V=10		Reference Frame: NED		
	<i>Comments:</i> Category=STAR Description=[GAMMA RAY BURSTER, X-RAY TRANSIENT]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	IR1	(3) GRB23111A-POS2	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=9; SAMP-SEQ=STEP100	GS ACQ SCENARIO BASE1B3	Pattern 2, Exps 1-1 in VISIT1-pos2 (02) (2)	299.231323 Secs (1196.925 Secs)		
									[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]		[1]
2	IR1	(3) GRB23111A-POS2	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=8; SAMP-SEQ=STEP100		Pattern 2, Exps 2-2 in VISIT1-pos2 (02) (2)	199.231 Secs (796.924 Secs)			
									[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]		[1]



Proposal 17232 - VISIT1-pos3 (03) - Identifying the fingerprints of r-process heavy metals in a short GRB

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Visit	<b>Proposal 17232, VISIT1-pos3 (03), scheduled</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR Special Requirements: TOO RESPONSE TIME 3.0D									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(2)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false					(1), (2)	
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes	Miscellaneous		
	(4)	GRB23111A-POS3	RA: 09 55 58.0600 (148.9919167d) Dec: +69 39 58.28 (69.66619d) Equinox: J2000				V=10	Reference Frame: NED		
	<i>Comments:</i> Category=STAR Description=[GAMMA RAY BURSTER, X-RAY TRANSIENT]									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	IR1	(4) GRB23111A-POS3	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=9; SAMP-SEQ=STEP100		Pattern 2, Exps 1-1 in VISIT1-pos3 (03) (2)	299.231323 Secs (1196.925 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
2	IR1	(4) GRB23111A-POS3	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=8; SAMP-SEQ=STEP100		Pattern 2, Exps 2-2 in VISIT1-pos3 (03) (2)	199.231 Secs (796.924 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]	

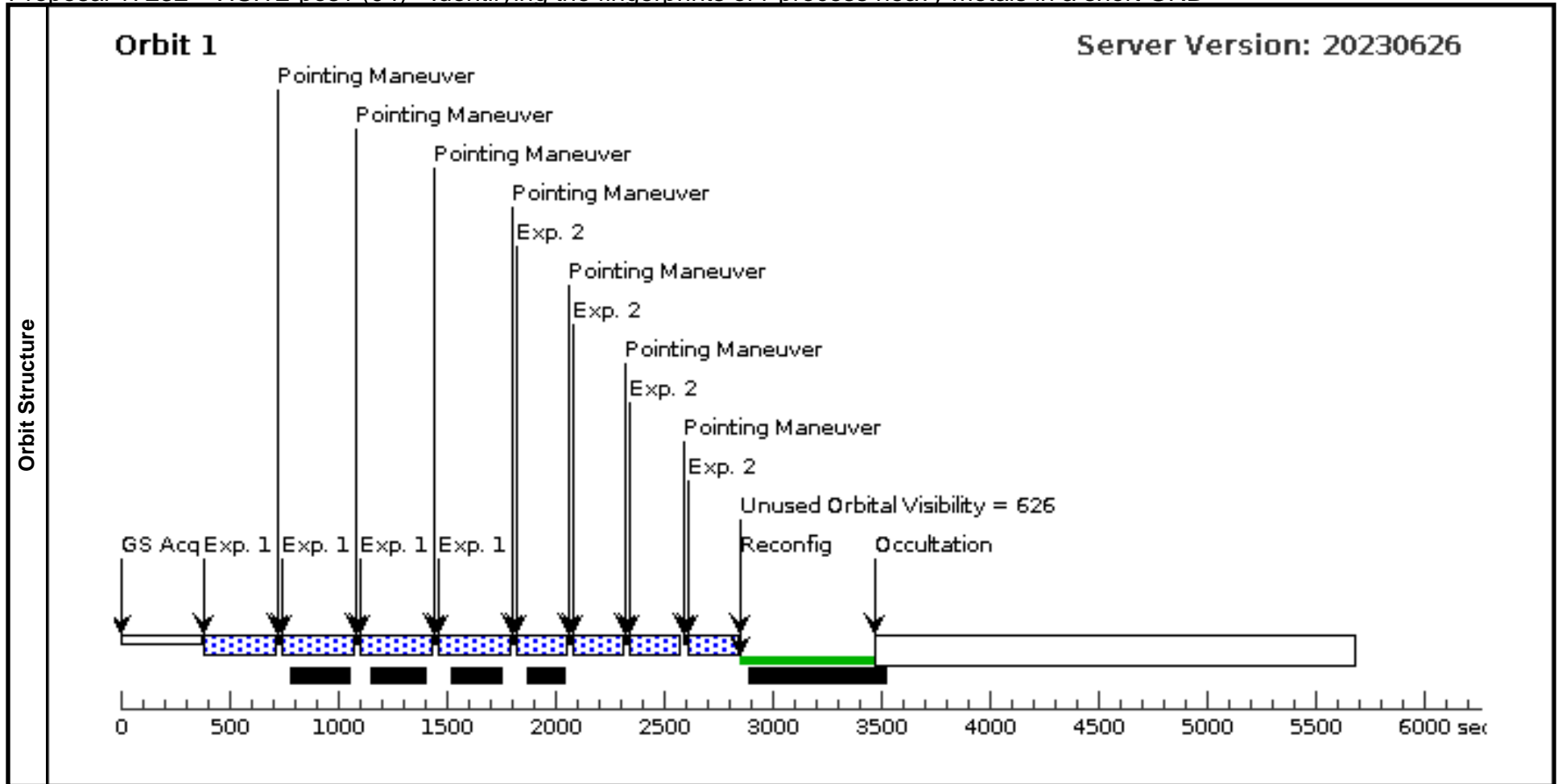


Proposal 17232 - VISIT2-pos1 (04) - Identifying the fingerprints of r-process heavy metals in a short GRB

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<b>Visit</b>	<b>Proposal 17232, VISIT2-pos1 (04), scheduling</b> <b>Diagnostic Status: Informational</b> Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 01; AFTER 01 BY 4 D TO 10 D; TOO RESPONSE TIME 3.0D									
	(VISIT2-pos1 (04)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.									
<b>Diagnosics</b>										
<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>	<b>Secondary Pattern</b>	<b>Exposures</b>						
	(2)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)					
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>				
	(2)	GRB231111A-POS1	RA: 09 56 12.4000 (149.0516667d) Dec: +69 41 30.00 (69.69167d) Equinox: J2000		V=10	Reference Frame: NED				
<i>Comments: Category=STAR Description=[GAMMA RAY BURSTER, X-RAY TRANSIENT]</i>										
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	IR1	(2) GRB231111A-POS1	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=9; SAMP-SEQ=STEP1 00		Pattern 2, Exps 1-1 in VISIT2-pos1 (04) (2)	299.231323 Secs (1196.925 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
2	IR1	(2) GRB231111A-POS1	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=8; SAMP-SEQ=STEP1 00		Pattern 2, Exps 2-2 in VISIT2-pos1 (04) (2)	199.231 Secs (796.924 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]	

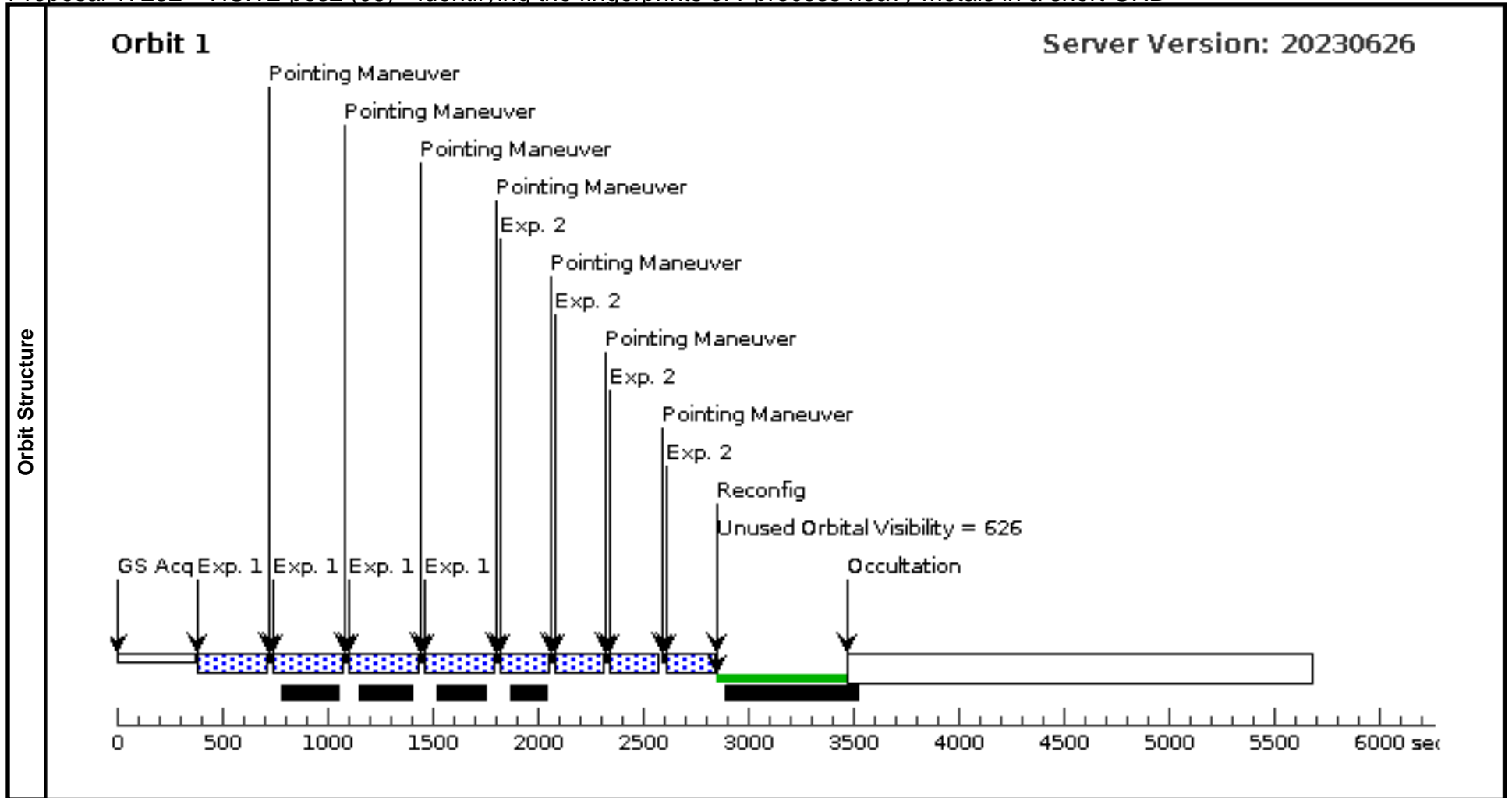




Proposal 17232 - VISIT2-pos2 (05) - Identifying the fingerprints of r-process heavy metals in a short GRB

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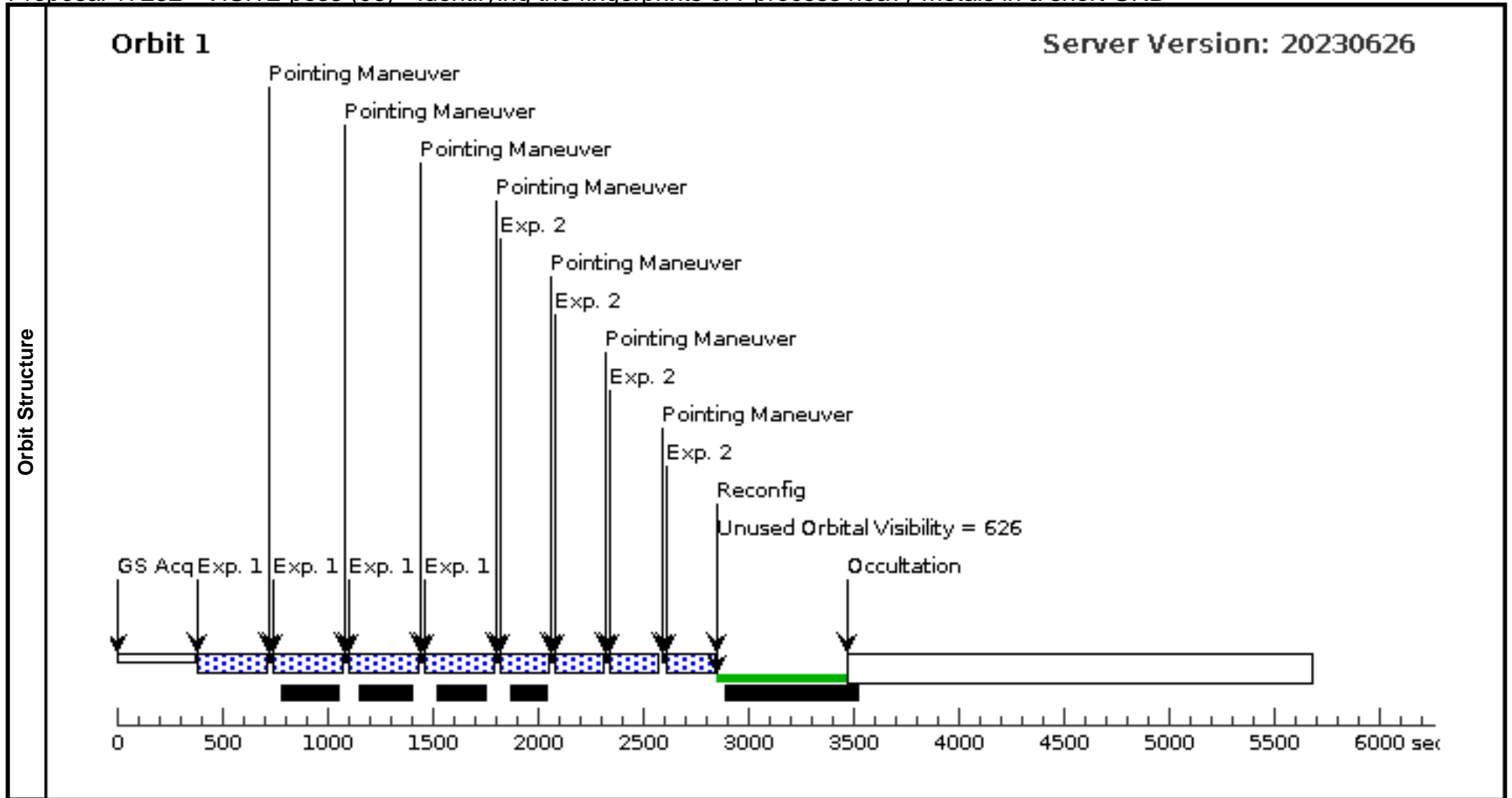
<b>Visit</b>	Proposal 17232, VISIT2-pos2 (05), scheduling <b>Diagnostic Status: Informational</b> Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 02; AFTER 02 BY 4 D TO 10 D; TOO RESPONSE TIME 3.0D									
	(VISIT2-pos2 (05)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.									
<b>Diagnosics</b>										
<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>	<b>Secondary Pattern</b>	<b>Exposures</b>						
	(2)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)					
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>				
	(3)	GRB23111A-POS2	RA: 09 55 48.9200 (148.9538333d) Dec: +69 41 21.66 (69.68935d) Equinox: J2000		V=10	Reference Frame: NED				
Comments: Category=STAR Description=[GAMMA RAY BURSTER, X-RAY TRANSIENT]										
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	IR1	(3) GRB23111A-POS2	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=9; SAMP-SEQ=STEP100	GS ACQ SCENARIO BASE1B3	Pattern 2, Exps 1-1 in VISIT2-pos2 (05) (2)	299.231323 Secs (1196.925 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
2	IR1	(3) GRB23111A-POS2	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=8; SAMP-SEQ=STEP100		Pattern 2, Exps 2-2 in VISIT2-pos2 (05) (2)	199.231 Secs (796.924 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]	



Proposal 17232 - VISIT2-pos3 (06) - Identifying the fingerprints of r-process heavy metals in a short GRB

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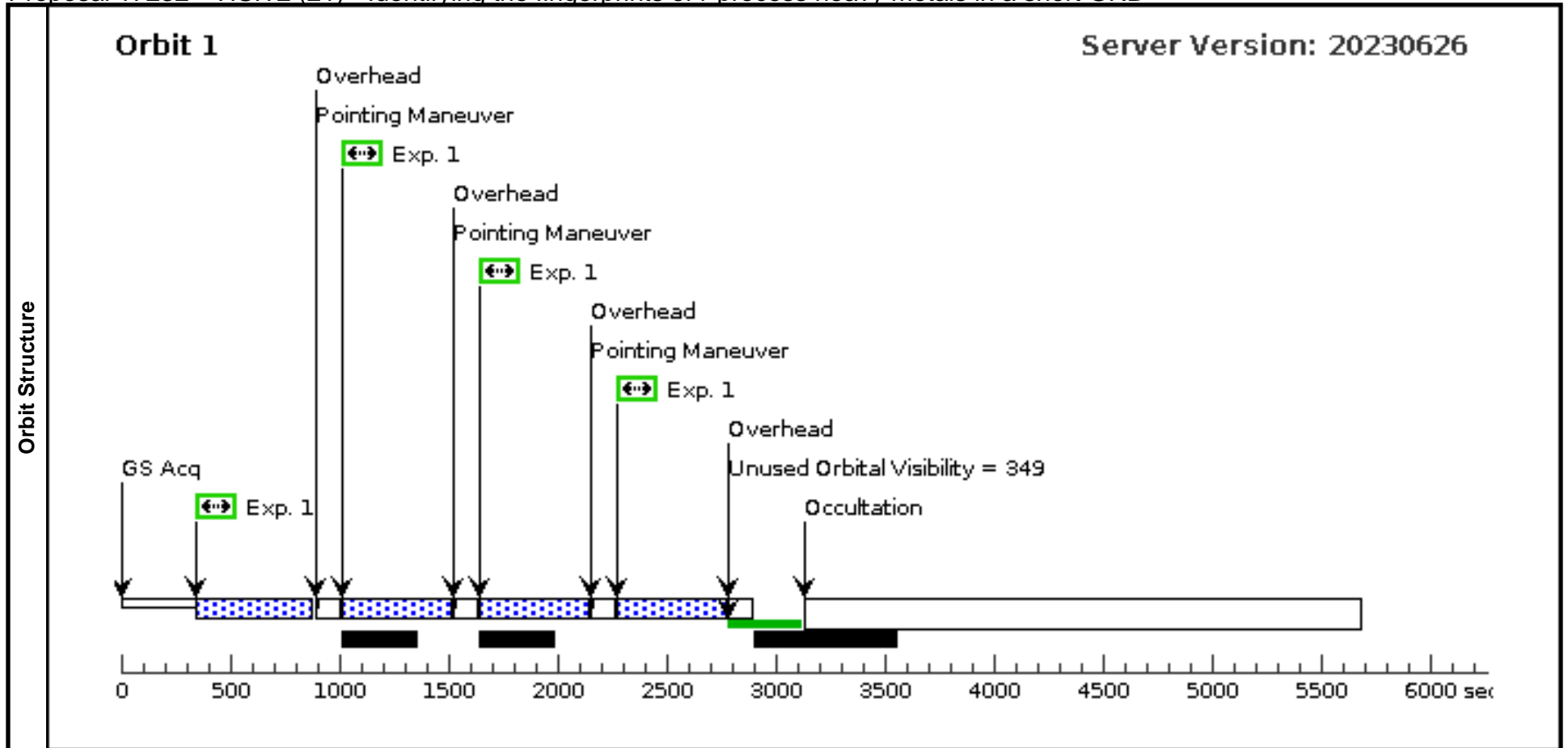
Visit	<b>Proposal 17232, VISIT2-pos3 (06), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR Special Requirements: AFTER 03 BY 4 D TO 10 D; TOO RESPONSE TIME 3.0D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(2)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(4)	GRB23111A-POS3	RA: 09 55 58.0600 (148.9919167d) Dec: +69 39 58.28 (69.66619d) Equinox: J2000		V=10	Reference Frame: NED				
	<i>Comments:</i> Category=STAR Description=[GAMMA RAY BURSTER, X-RAY TRANSIENT]									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	IR1	(4) GRB23111A-POS3	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=9; SAMP-SEQ=STEP100		Pattern 2, Exps 1-1 in VISIT2-pos3 (06) (2)	299.231323 Secs (1196.925 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2	IR1	(4) GRB23111A-POS3	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=8; SAMP-SEQ=STEP100		Pattern 2, Exps 2-2 in VISIT2-pos3 (06) (2)	199.231 Secs (796.924 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]



Proposal 17232 - VISIT2 (21) - Identifying the fingerprints of r-process heavy metals in a short GRB

Tue Nov 21 16:01:16 GMT 2023

<b>Visit</b>	<b>Proposal 17232, VISIT2 (21), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 18 BY 4 D TO 6 D; ON HOLD ; TOO RESPONSE TIME 3.0D Comments: We will likely select the filters from the following list: F606W, F814W, F850LP. On Hold Comments: GRB trigger									
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>				<b>Secondary Pattern</b>			<b>Exposures</b>
(1)		Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112		Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false					(1)	
<b>Generic Targets</b>	<b>#</b>	<b>Name</b>	<b>Criteria</b>		<b>Description</b>					
	(1)	GRB	GRB at z<0.4							
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	UVIS	(1) GRB	WFC3/UVIS, ACCUM, UVIS2	F606W	CR-SPLIT=NO; FLASH=4		Pattern 1, Exps 1-1 in VISIT2 (21) (1)	500 Secs (2000 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]

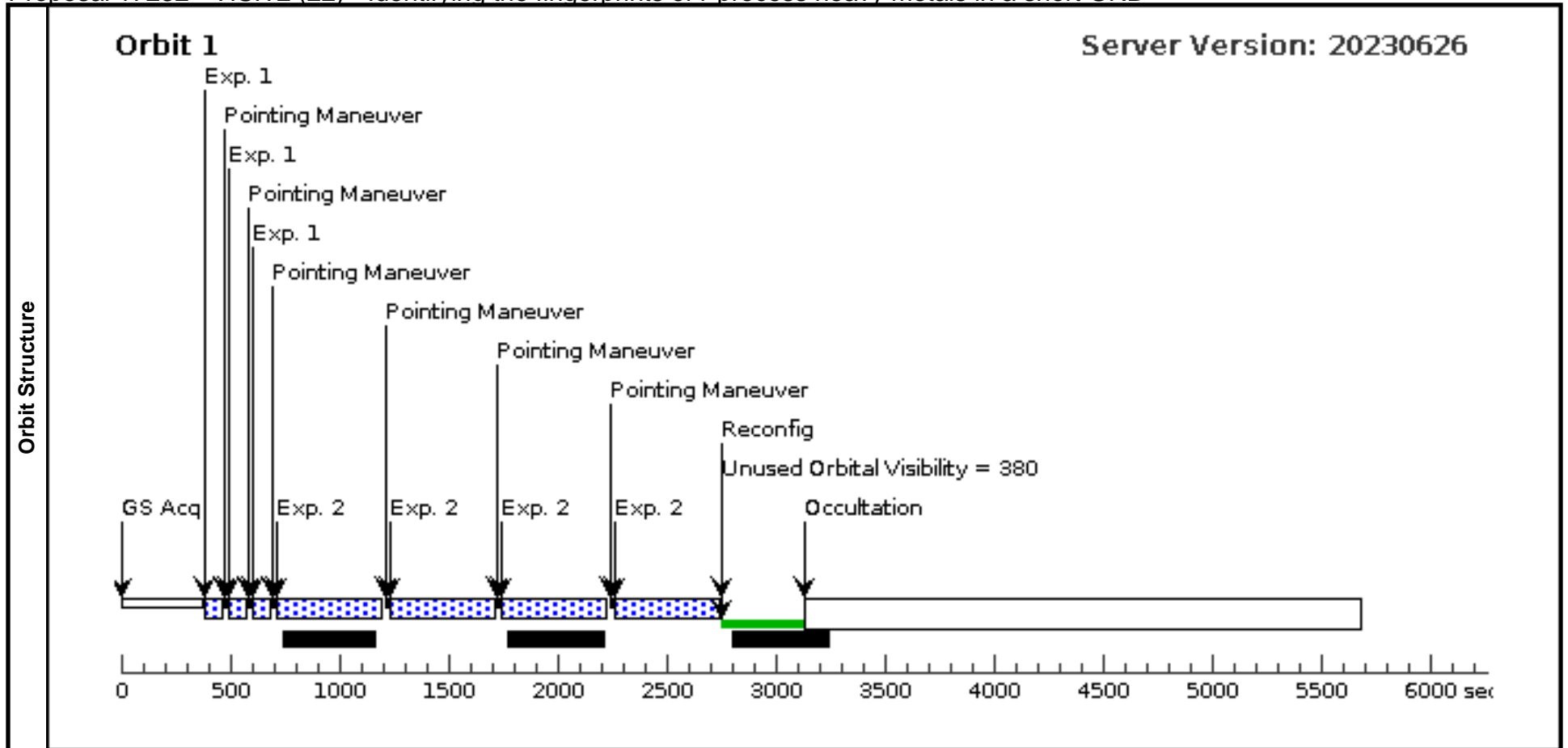


Proposal 17232 - VISIT2 (22) - Identifying the fingerprints of r-process heavy metals in a short GRB

Tue Nov 21 16:01:16 GMT 2023

<b>Visit</b>	<b>Proposal 17232, VISIT2 (22), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR Special Requirements: AFTER 19 BY 4 D TO 6 D; ON HOLD ; TOO RESPONSE TIME 3.0D Comments: We will likely select the filters from the following list: F105W, F110W, F125W, F140W, F160W. On Hold Comments: GRB trigger									
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>			<b>Secondary Pattern</b>			<b>Exposures</b>	
(2)		Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false					(2)		
(4)	Pattern Type=WFC3-IR-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.605 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false					(1)			
<b>Generic Targets</b>	<b>#</b>	<b>Name</b>	<b>Criteria</b>	<b>Description</b>						
	(1)	GRB	GRB at z<0.4							
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	IR1	(1) GRB	WFC3/IR, MULTIACCUM, GRISM1024	F110W	NSAMP=6; SAMP-SEQ=STEP5 0		Pattern 4, Exps 1-1 in VISIT2 (22) (4)	49.230226 Secs (147.691 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
2	IR2	(1) GRB	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=10; SAMP-SEQ=SPAR S50		Pattern 2, Exps 2-2 in VISIT2 (22) (2)	452.93635 Secs (1811.745 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]	



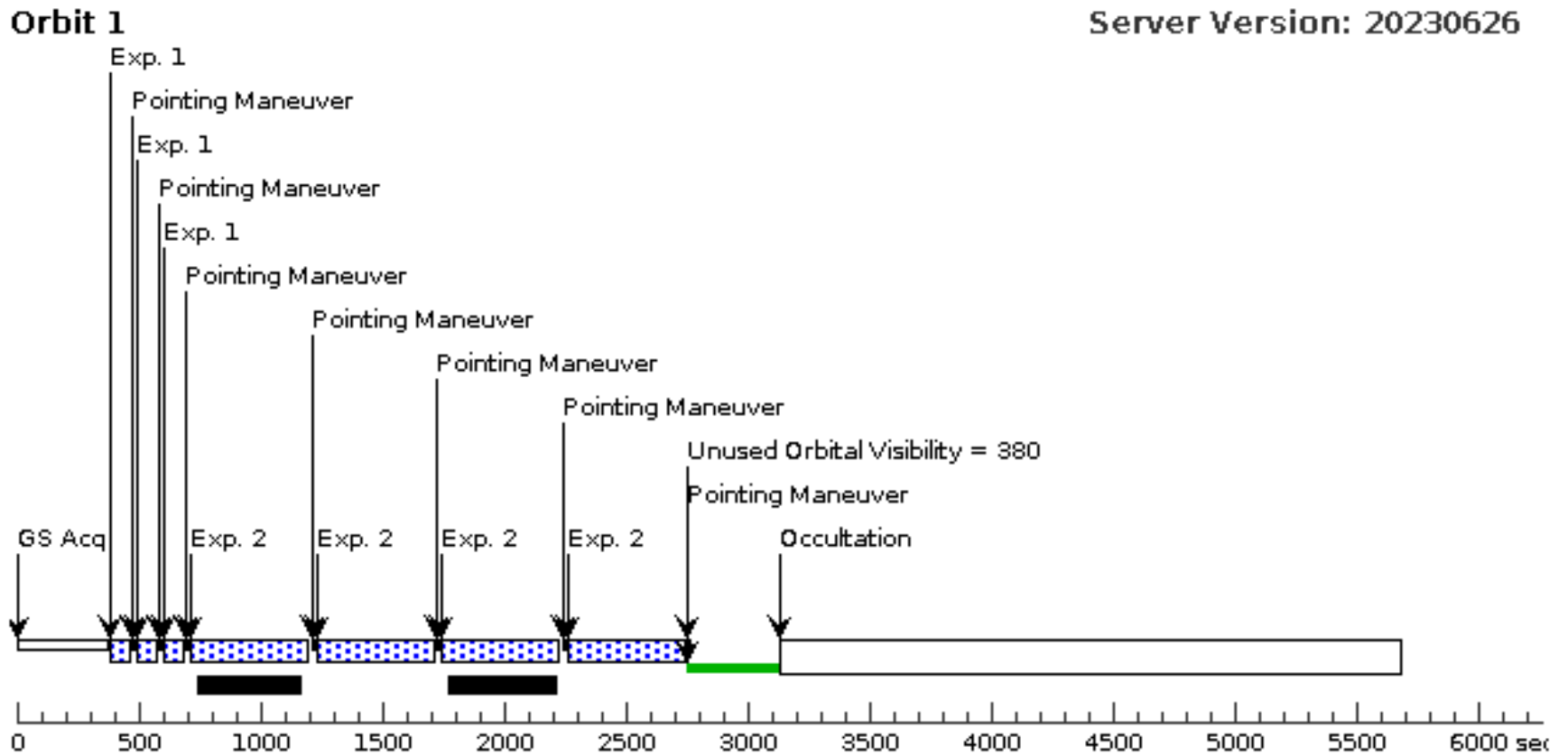


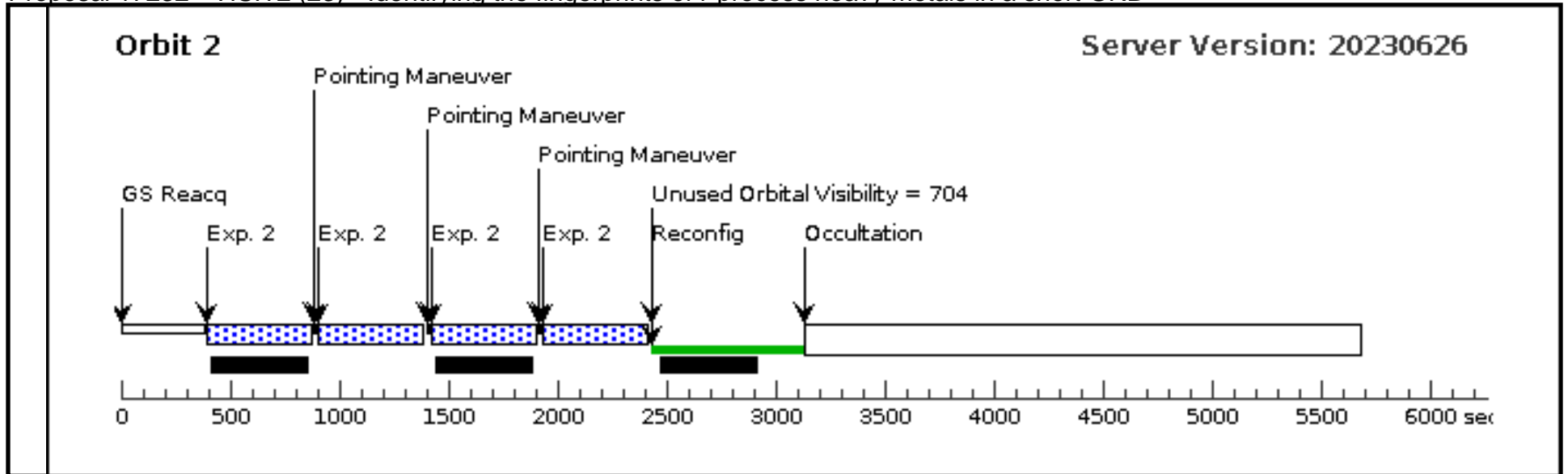
Proposal 17232 - VISIT2 (23) - Identifying the fingerprints of r-process heavy metals in a short GRB

Tue Nov 21 16:01:16 GMT 2023

<b>Visit</b>	<b>Proposal 17232, VISIT2 (23), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR Special Requirements: AFTER 20 BY 4 D TO 6 D; ON HOLD ; TOO RESPONSE TIME 3.0D Comments: We will likely select the filters from the following list: F105W, F110W, F125W, F140W, F160W. On Hold Comments: GRB trigger									
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>			<b>Secondary Pattern</b>			<b>Exposures</b>	
(3)		Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.65 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=0 Angle Between Sides= Center Pattern=false	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false	(2)				
(4)	Pattern Type=WFC3-IR-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.605 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false				(1)				
<b>Generic Targets</b>	<b>#</b>	<b>Name</b>	<b>Criteria</b>	<b>Description</b>						
	(1)	GRB	GRB at z<0.4							
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	IR1	(1) GRB	WFC3/IR, MULTIACCUM, GRISM1024	F160W	NSAMP=6; SAMP-SEQ=STEP5 0		Pattern 4, Exps 1-1 in VISIT2 (23) (4)	49.230226 Secs (147.691 Secs)	
									[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[1]
	2	IR2	(1) GRB	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=10; SAMP-SEQ=SPAR S50		Pattern 3, Exps 2-2 in VISIT2 (23) (3)	452.93635 Secs (3623.491 Secs)	
								[==>(Pattern 1,1)] [==>(Pattern 1,2)] [==>(Pattern 1,3)] [==>(Pattern 1,4)]	[1]	
								[==>(Pattern 2,1)] [==>(Pattern 2,2)] [==>(Pattern 2,3)] [==>(Pattern 2,4)]	[2]	

Orbit Structure

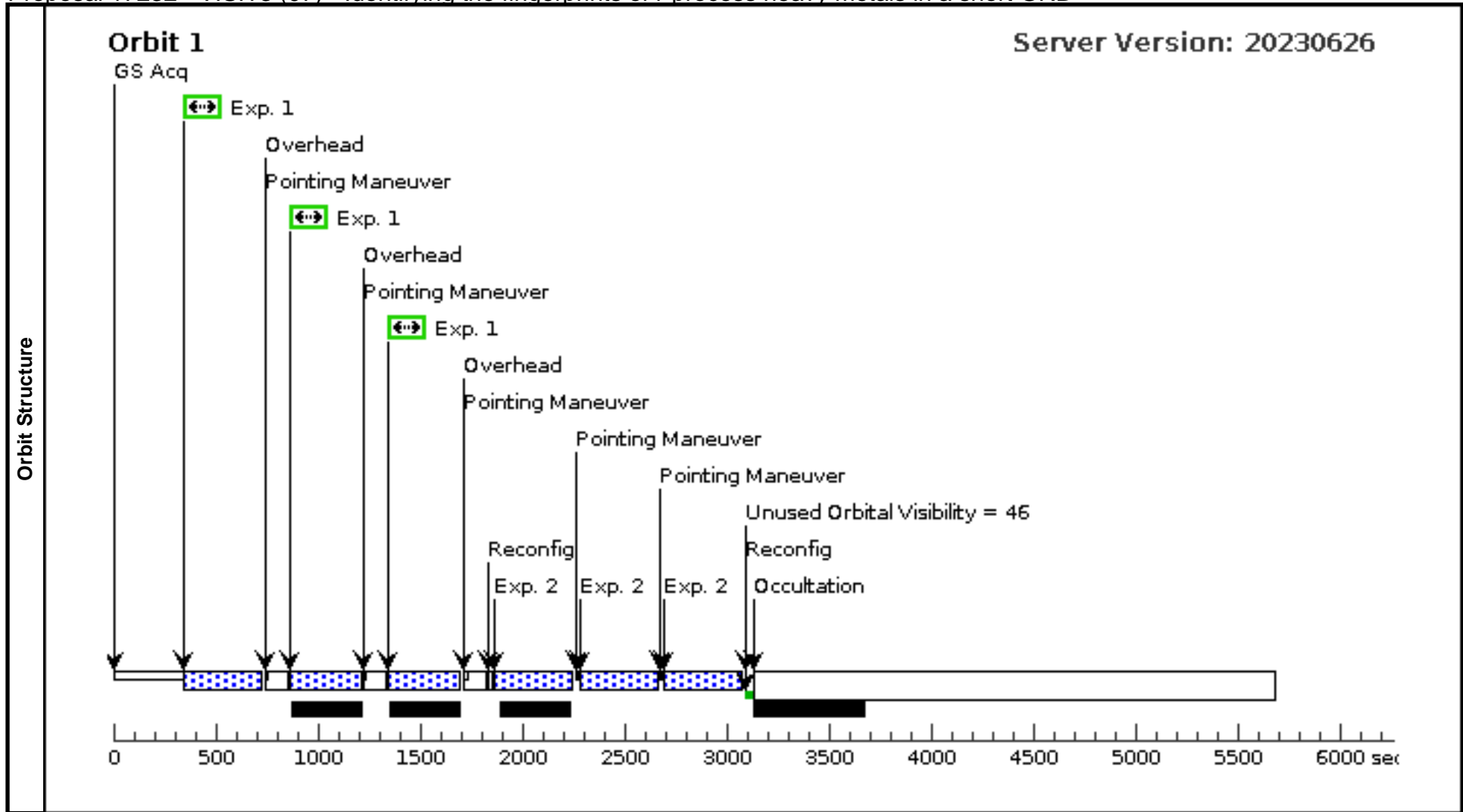




Proposal 17232 - VISIT3 (07) - Identifying the fingerprints of r-process heavy metals in a short GRB

Tue Nov 21 16:01:16 GMT 2023

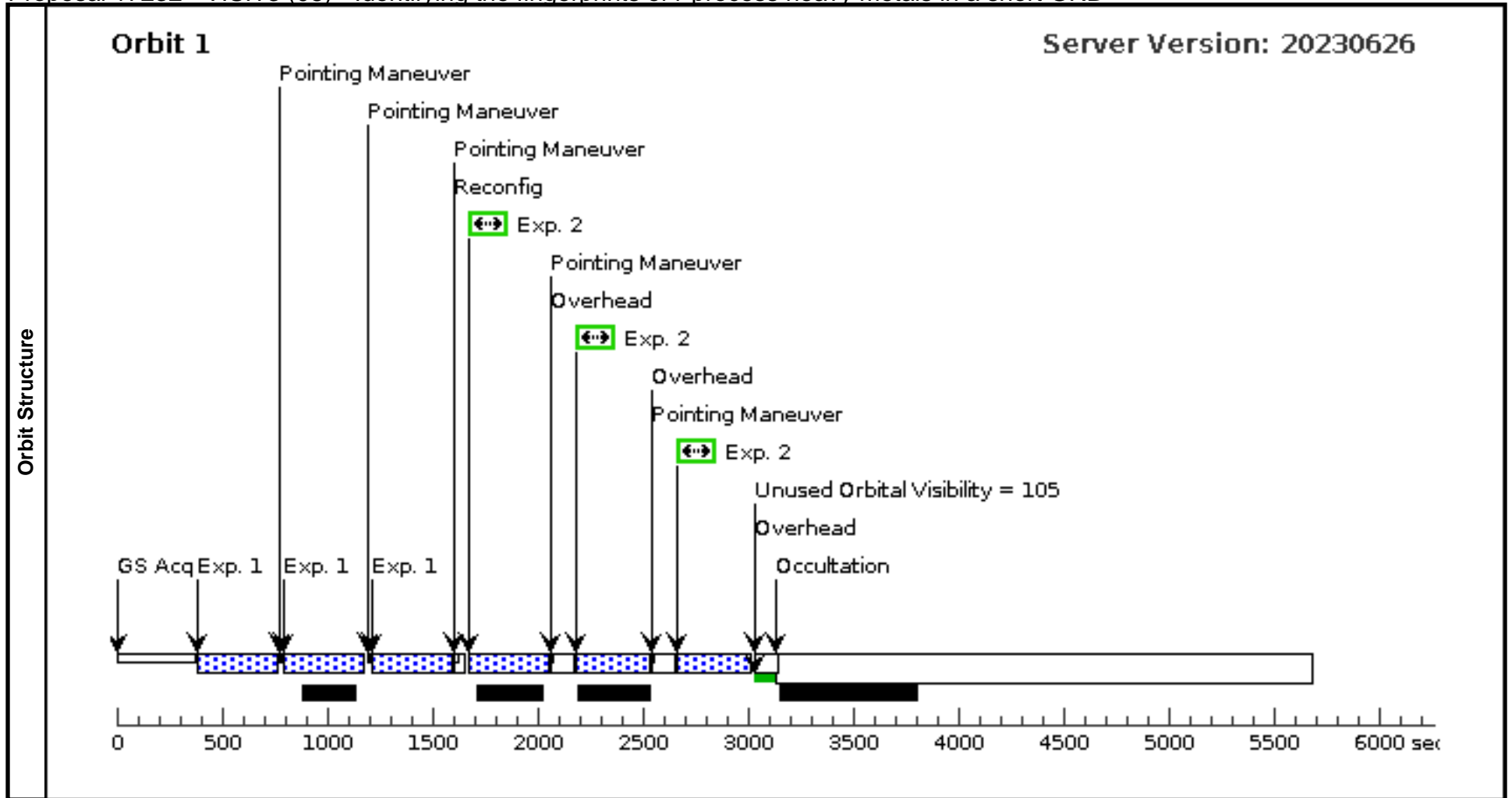
<b>Visit</b>	<b>Proposal 17232, VISIT3 (07), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: AFTER 21 BY 10 D TO 15 D; ON HOLD ; TOO RESPONSE TIME 3.0D Comments: We will likely select the filters from the following list:F606W, F814W, F850LP. On Hold Comments: GRB trigger									
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>			<b>Secondary Pattern</b>			<b>Exposures</b>	
(4)		Pattern Type=WFC3-IR-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.605 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false					(2)		
(5)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false					(1)			
<b>Generic Targets</b>	<b>#</b>	<b>Name</b>	<b>Criteria</b>	<b>Description</b>						
	(1)	GRB	GRB at z<0.4							
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	UVIS	(1) GRB	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W	CR-SPLIT=NO; FLASH=10		Pattern 5, Exps 1-1 in VISIT3 (07) (5)	350 Secs (1050 Secs) [==>350 Secs (Pattern 1)] [==>350 Secs (Pattern 2)] [==>350 Secs (Pattern 3)]	[1]
2	IR1	(1) GRB	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=8; SAMP-SEQ=SPAR S50		Pattern 4, Exps 2-2 in VISIT3 (07) (4)	352.935448 Secs (1058.806 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[1]	



Proposal 17232 - VISIT3 (08) - Identifying the fingerprints of r-process heavy metals in a short GRB

Tue Nov 21 16:01:16 GMT 2023

<b>Visit</b>	<b>Proposal 17232, VISIT3 (08), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: AFTER 22 BY 10 D TO 15 D; ON HOLD ; TOO RESPONSE TIME 3.0D Comments: We will likely select the filters from the following list: F105W, F110W, F125W, F140W, F160W. On Hold Comments: GRB trigger									
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>			<b>Secondary Pattern</b>			<b>Exposures</b>	
(4)		Pattern Type=WFC3-IR-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.605 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false					(1)		
(5)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false					(2)			
<b>Generic Targets</b>	<b>#</b>	<b>Name</b>	<b>Criteria</b>	<b>Description</b>						
	(1)	GRB	GRB at z<0.4							
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	IR1	(1) GRB	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=8; SAMP-SEQ=SPAR S50		Pattern 4, Exps 1-1 in VISIT3 (08) (4)	352.935448 Secs (1058.806 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
2	UVIS	(1) GRB	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W	CR-SPLIT=NO; FLASH=4		Pattern 5, Exps 2-2 in VISIT3 (08) (5)	350 Secs (1050 Secs) [=>350 Secs (Pattern 1)] [=>350 Secs (Pattern 2)] [=>350 Secs (Pattern 3)]	[1]	

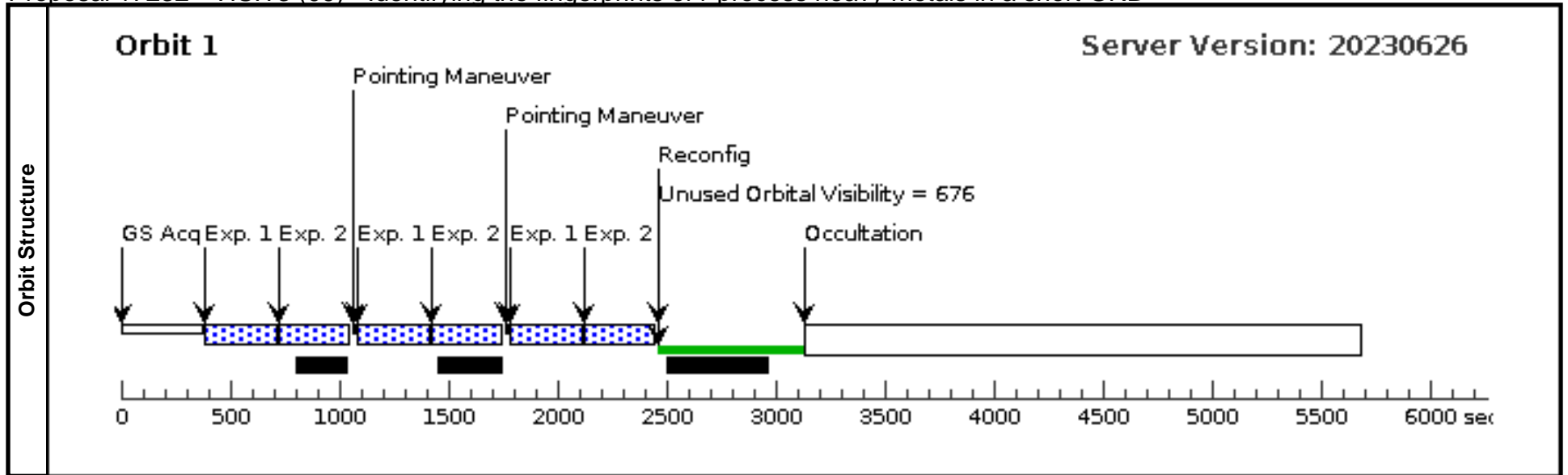




Proposal 17232 - VISIT3 (09) - Identifying the fingerprints of r-process heavy metals in a short GRB

Tue Nov 21 16:01:16 GMT 2023

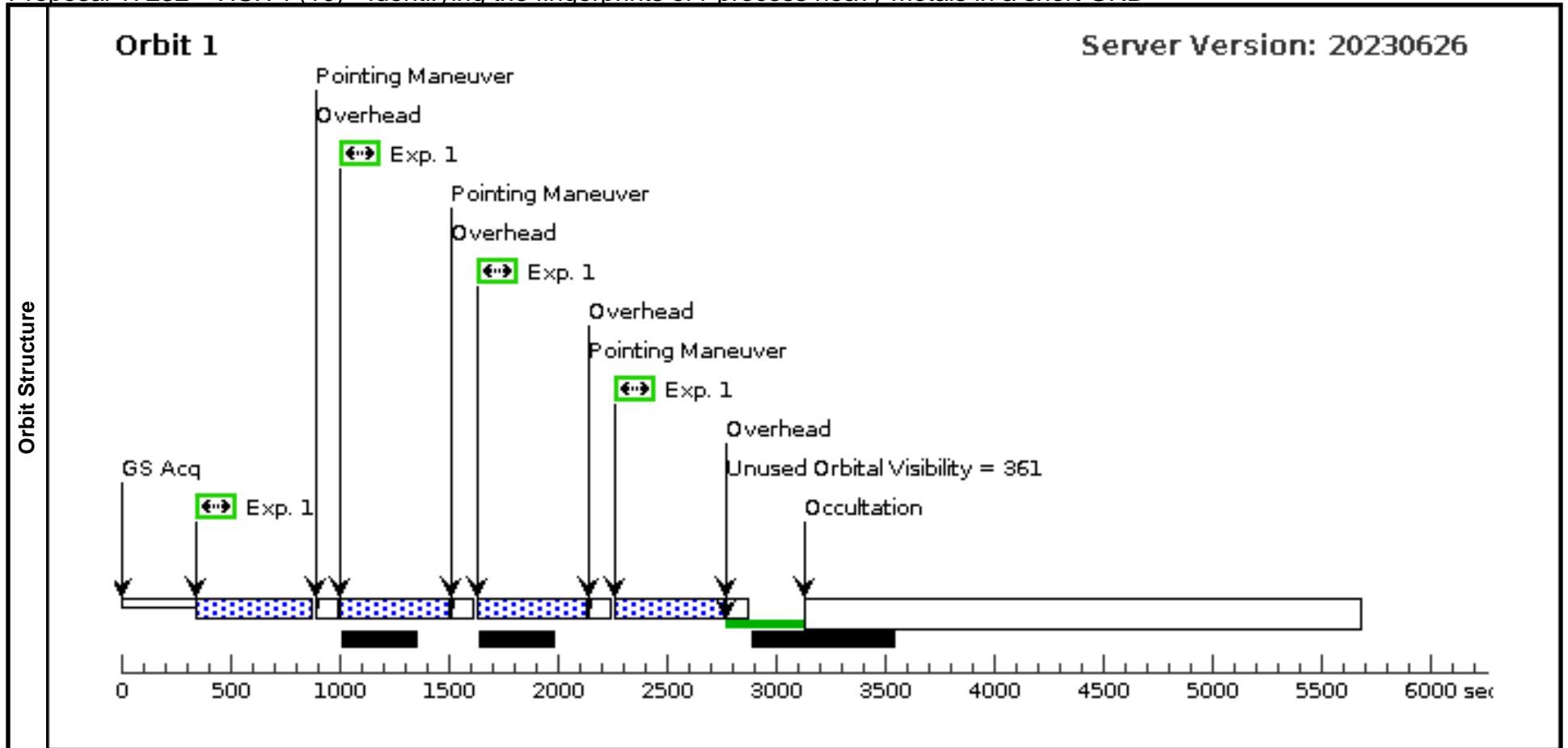
<b>Visit</b>	<b>Proposal 17232, VISIT3 (09), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR Special Requirements: AFTER 23 BY 10 D TO 15 D; ON HOLD ; TOO RESPONSE TIME 3.0D Comments: We will likely select the filters from the following list: F105W, F110W, F125W, F140W, F160W. On Hold Comments: GRB trigger									
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>			<b>Secondary Pattern</b>			<b>Exposures</b>	
(4)		Pattern Type=WFC3-IR-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.605 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false					(1-2)		
<b>Generic Targets</b>	<b>#</b>	<b>Name</b>	<b>Criteria</b>	<b>Description</b>						
	(1)	GRB	GRB at z<0.4							
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	IR1	(1) GRB	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=7; SAMP-SEQ=SPAR S50		Pattern 4, Exps 1-2 in VISIT3 (09) (4)	302.934997 Secs (908.805 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
	2	IR2	(1) GRB	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=7; SAMP-SEQ=SPAR S50		Pattern 4, Exps 1-2 in VISIT3 (09) (4)	302.934997 Secs (908.805 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]



Proposal 17232 - VISIT4 (10) - Identifying the fingerprints of r-process heavy metals in a short GRB

Tue Nov 21 16:01:16 GMT 2023

<b>Visit</b>	<b>Proposal 17232, VISIT4 (10), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: ON HOLD ; TOO RESPONSE TIME 3.0D Comments: We will likely select the filters from the following list: F606W, F814W, F850LP. On Hold Comments: GRB trigger									
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>				<b>Secondary Pattern</b>			<b>Exposures</b>
(1)		Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112		Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false					(1)	
<b>Generic Targets</b>	<b>#</b>	<b>Name</b>	<b>Criteria</b>		<b>Description</b>					
	(1)	GRB	GRB at z<0.4							
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	UVIS	(1) GRB	WFC3/UVIS, ACCUM, UVIS2	F606W	CR-SPLIT=NO		Pattern 1, Exps 1-1 in VISIT4 (10) (1)	500 Secs (2000 Secs) [=>500.0 Secs (Pattern 1)] [=>500.0 Secs (Pattern 2)] [=>500.0 Secs (Pattern 3)] [=>500 Secs (Pattern 4)]	[1]



Proposal 17232 - VISIT4 (11) - Identifying the fingerprints of r-process heavy metals in a short GRB

Tue Nov 21 16:01:16 GMT 2023

<b>Visit</b>	<b>Proposal 17232, VISIT4 (11), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/IR Special Requirements: ON HOLD ; TOO RESPONSE TIME 3.0D Comments: We will likely select the filters from the following list: F105W, F110W, F125W, F140W, F160W. On Hold Comments: GRB trigger										
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>				<b>Secondary Pattern</b>			<b>Exposures</b>	
(2)		Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false						(1)		
<b>Generic Targets</b>	<b>#</b>	<b>Name</b>	<b>Criteria</b>		<b>Description</b>						
	(1)	GRB	GRB at z<0.4								
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>		<b>Orbit</b>
	1	IR1	(1) GRB	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=13; SAMP-SEQ=SPAR S50		Pattern 2, Exps 1-1 in VISIT4 (11) (2)	602.937703 Secs (2411.751 Secs)	[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]

