



12786 - Searching for the nature of the ultra-long transient GRB 111209A

Cycle: 19, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

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	(1) GRB111209A	WFC3/IR WFC3/UVIS	1	28-Dec-2011 21:04:07.0	yes
02	(1) GRB111209A	WFC3/IR	1	28-Dec-2011 21:04:12.0	yes
03	(1) GRB111209A	WFC3/IR WFC3/UVIS	2	28-Dec-2011 21:04:17.0	yes

4 Total Orbits Used

ABSTRACT

We propose observations of the exceptional long duration transient GRB 111209A. Its long-lived gamma- and X-ray emission mark it apart from other GRBs, and are very similar to those of the Christmas day burst 2010, whose origin remains under debate, culminating in the publication of two

competing scenarios in Nature earlier this month. Unlike the Christmas day burst, our deep VLT and Gemini spectroscopy has unveiled the redshift of GRB 111209A, and allows us to launch a comprehensive campaign to understand its origin. Does it originate from a massive star collapse akin to long GRBs? Is it related to Galactic nuclei, as suggested for some other long lived gamma-ray transients discovered in 2011? By utilizing the exquisite HST PSF we will obtain a precise position of the afterglow with respect to its host galaxy. Coupled with this we will use the unique ability of WFC3 grism's to obtain good S/N across the 1 micron region to search at the expected peak of any supernova, and hence provide spectroscopic evidence for the presence (or absence) of an associated supernova. Ultimately these observations may show conclusively what these long duration transients are, and link them into the diverse populations of high energy transients that are now being uncovered.

OBSERVING DESCRIPTION

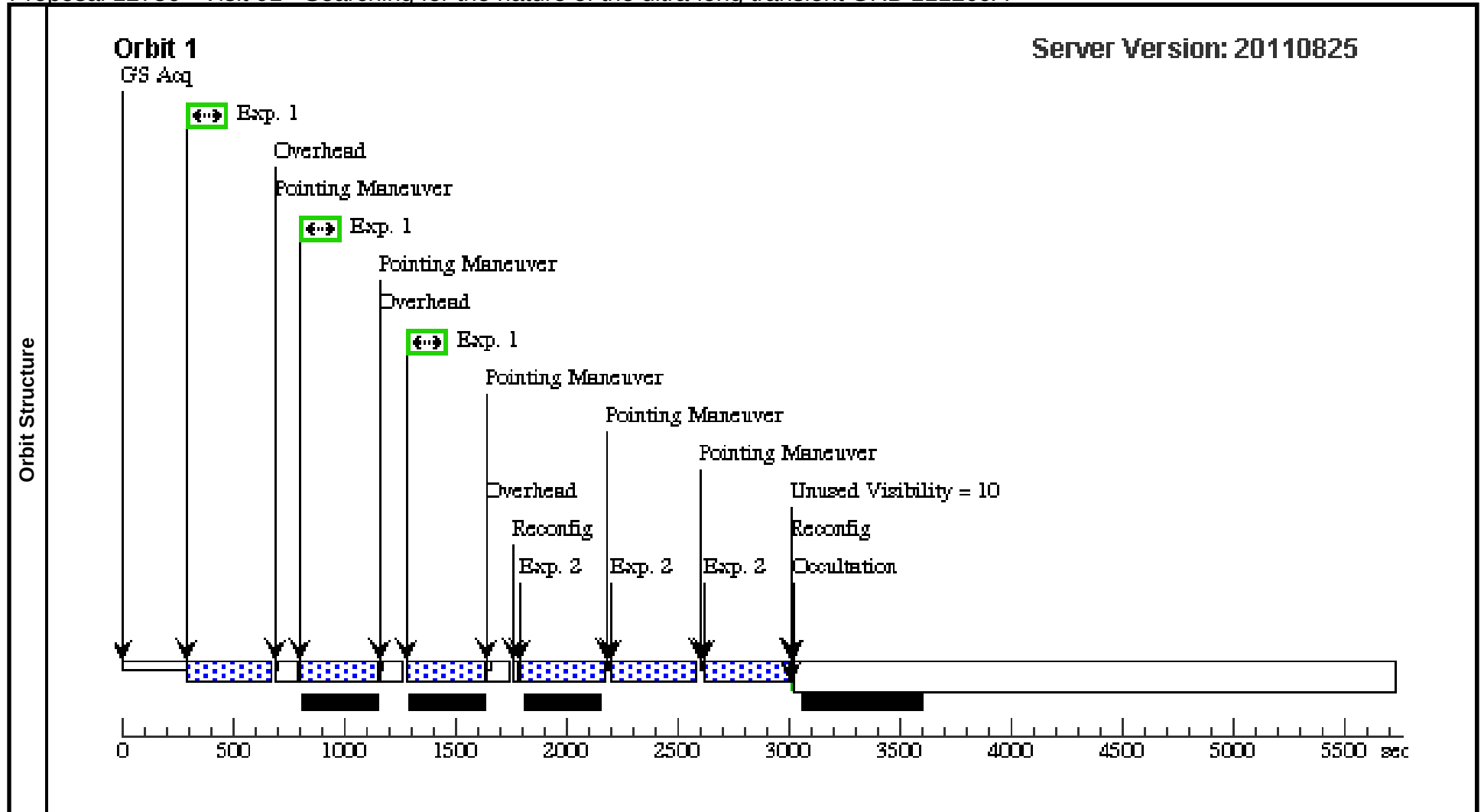
We propose to obtain observations of the exceptional GRB 111209A. Our first epoch of observations will consist of two orbits, one of imaging and a second of grism spectroscopy.

Our imaging will be split between the F336W and F125W filters on WFC3. We will use a 3 point dither for each filter to pack the orbit, with the F336W observations tracking the afterglow, and F125W providing a measure of any associated supernova.

Our grism observations will utilize G102 to map the expected spectral peak of the supernova. We will use a 4-point dither pattern.

Proposal 12786 - Visit 01 - Searching for the nature of the ultra-long transient GRB 111209A

Visit	Proposal 12786, Visit 01, completed										Thu Dec 29 02:04:22 GMT 2011	
	Diagnostic Status: No Diagnostics											
	Scientific Instruments: WFC3/IR, WFC3/UVIS											
	Special Requirements: SCHED 100%											
Patterns	#	Primary Pattern					Secondary Pattern				Exposures	
	(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.145 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false						(1)	
	(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.636 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false						(2)	
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous			
	(1)	GRB111209A	RA: 00 57 22.6100 (14.3442083d) Dec: -46 48 3.60 (-46.80100d) Equinox: J2000				V=21+/-2		Reference Frame: Swift			
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit
	1		(1) GRB111209A	WFC3/UVIS, ACCUM, UVIS		F336W	CR-SPLIT=NO		Pattern 1, Exps 1-1 in Visit 01 (1)	350 Secs		
										[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]		[1]
	2		(1) GRB111209A	WFC3/IR, MULTIACCUM, IR		F125W	NSAMP=8; SAMP-SEQ=SPAR S50		Pattern 2, Exps 2-2 in Visit 01 (2)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]		[1]



Proposal 12786 - Visit 02 - Searching for the nature of the ultra-long transient GRB 111209A

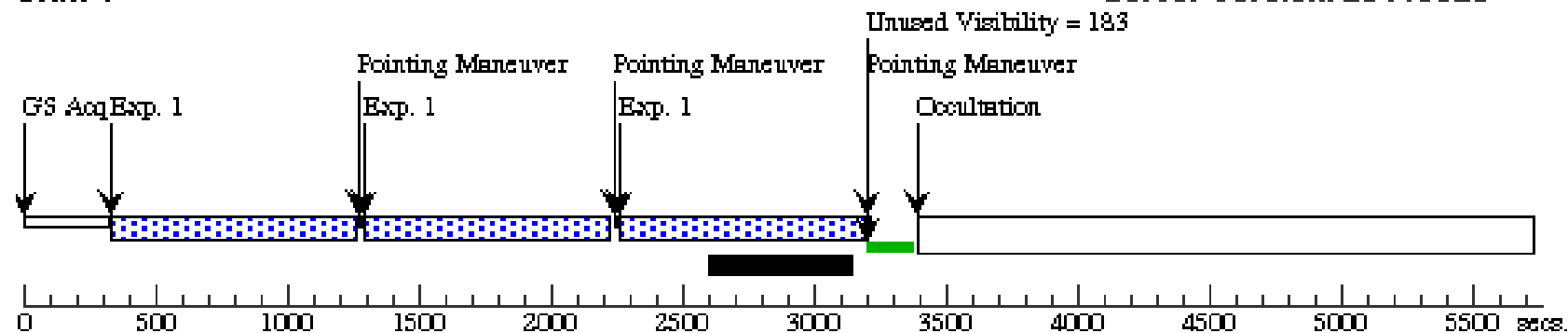
Visit	Proposal 12786, Visit 02, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SCHED 100%					Thu Dec 29 02:04:22 GMT 2011				
Patterns	#	Primary Pattern			Secondary Pattern			Exposures		
	(3)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number 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)		
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous	
	(1)	GRB111209A	RA: 00 57 22.6100 (14.3442083d) Dec: -46 48 3.60 (-46.80100d) Equinox: J2000				V=21+/-2		Reference Frame: Swift	
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) GRB111209A	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=4; SAMP-SEQ=SPAR S50			[==>]	[1]
	2		(1) GRB111209A	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=12; SAMP-SEQ=SPAR S50		Pattern 3, Exps 2-2 in Visit 02 (3)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
Orbit Structure	Orbit 1									
	Server Version: 20110825 									

Proposal 12786 - Visit 03 - Searching for the nature of the ultra-long transient GRB 111209A

Visit	Proposal 12786, Visit 03, implementation Thu Dec 29 02:04:23 GMT 2011									
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: BETWEEN 07-JAN-2012 AND 14-JAN-2012									
Patterns	#	Primary Pattern				Secondary Pattern			Exposures	
	(3)	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)	
	(4)	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			(3)	
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous	
	(1)	GRB111209A	RA: 00 57 22.6100 (14.3442083d) Dec: -46 48 3.60 (-46.80100d) Equinox: J2000				V=21+/-2		Reference Frame: Swift	
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) GRB111209A	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=10; SAMP-SEQ=SPAR S100		Pattern 3, Exps 1-1 i n Visit 03 (3)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2		(1) GRB111209A	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=4; SAMP-SEQ=SPAR S50			[==>]	[2]
	3		(1) GRB111209A	WFC3/UVIS, ACCUM, UVIS	F336W	CR-SPLIT=NO		Pattern 4, Exps 3-3 i n Visit 03 (4)	350 Secs	
									[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]

Orbit 1

Server Version: 20110825



Orbit Structure

Orbit 2

Server Version: 20110825

