



13824 - SN 2011fe - tackling the Type Ia progenitor puzzle through extremely late time photometry

Cycle: 22, Proposal Category: GO

(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) SN-2011FE	ACS/WFC WFC3/IR WFC3/UVIS	3	17-Jun-2015 21:20:58.0	yes
02	(1) SN-2011FE	ACS/WFC WFC3/IR	4	17-Jun-2015 21:21:05.0	yes
A1	BIAS	ACS/WFC	1	17-Jun-2015 21:21:08.0	yes
A2	BIAS	ACS/WFC	1	17-Jun-2015 21:21:10.0	yes
B1	BIAS	ACS/WFC	1	17-Jun-2015 21:21:11.0	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>
B2	BIAS	ACS/WFC	1	17-Jun-2015 21:21:13.0	yes

11 Total Orbits Used

ABSTRACT

We propose to obtain extremely late-time photometry for the nearby SN Ia 2011fe. Located nearby in M101 and along a line of sight with negligible extinction, SN 2011fe provides us with the once-in-a-lifetime chance to probe SN Ia physics by measuring the very late time luminosity decline. Such extremely late photometric measurements are only accessible to HST. Despite the importance of SNe Ia in astrophysics and cosmology, and a large concerted effort to understand these objects, it is still unclear whether SNe Ia result from the explosion of an accreting white dwarf (single-degenerate scenario) or from the merger-explosion of two white dwarfs (double-degenerate scenario). However, theoretical models predict clear differences in the very late time light-curves of the two scenarios. The UBVRI photometry which we propose to obtain will extend a current Gemini imaging campaign enabling us to test whether SN 2011fe originated from a single-degenerate or from a double-degenerate progenitor. As SN 2011fe is a typical SN Ia, the result - together with the results from complementary tests - will have a significant impact on the interpretation of SNe Ia and on future developments in SN Ia theory.

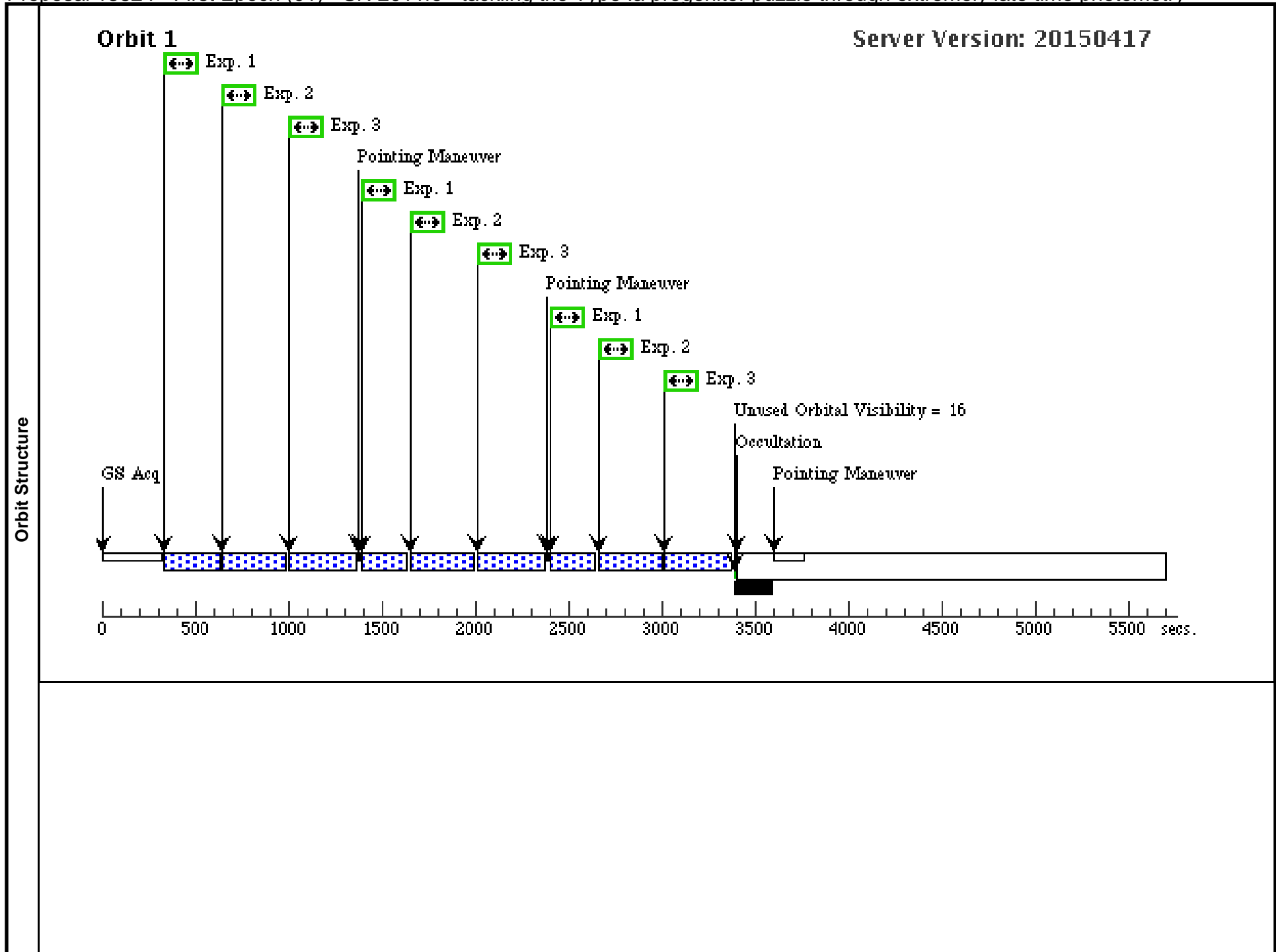
Proposal 13824 - First Epoch (01) - SN 2011fe - tackling the Type Ia progenitor puzzle through extremely late time photometry

Thu Jun 18 01:21:15 GMT 2015

Visit	Proposal 13824, First Epoch (01), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS, ACS/WFC Special Requirements: BETWEEN 01-JAN-2015:00:00:00 AND 31-JAN-2015:00:00:00; GROUP 01,A1,A2 WITHIN 14D					
	#	Primary Pattern	Secondary Pattern	Exposures		
Patterns	(1)	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	(5), (6), (7)		
	(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.011 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.28 Angle Between Sides= Center Pattern=false	(1-3)		
	(3)	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	(4)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	SN-2011FE	RA: 14 03 5.7330 (210.7738875d) Dec: +54 16 25.18 (54.27366d) Equinox: J2000		V=25	Reference Frame: SIMBAD
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>						

Proposal 13824 - First Epoch (01) - SN 2011fe - tackling the Type Ia progenitor puzzle through extremely late time photometry

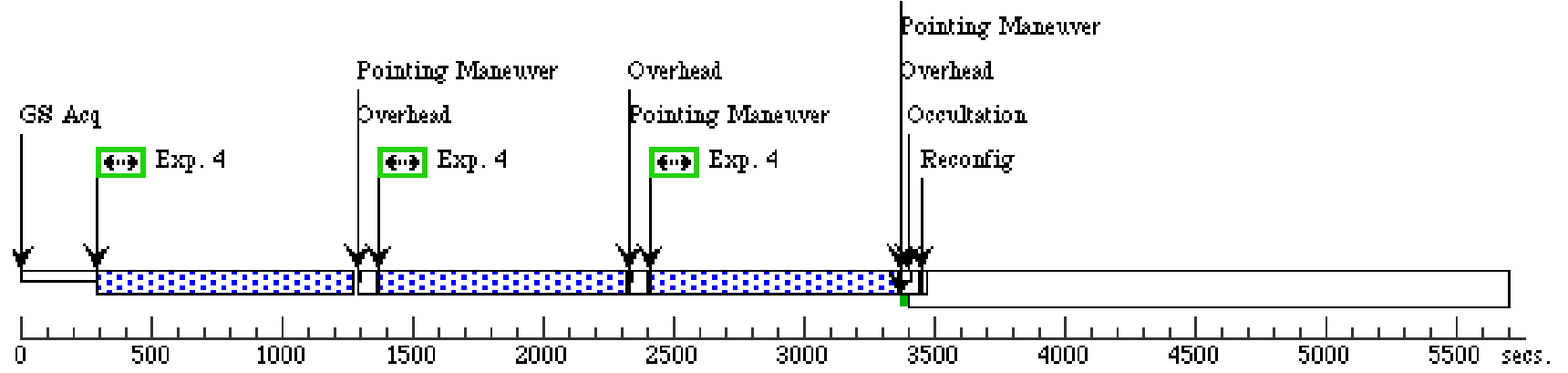
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1	ACS sdss g (622462)	(1) SN-2011FE	ACS/WFC, ACCUM, WFC1-1K	F475W				Pattern 2, Exps 1-3 in First Epoch (01) (2)	120 Secs (360 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[1]
	2	ACS sdss r (622474)	(1) SN-2011FE	ACS/WFC, ACCUM, WFC1-1K	F625W				Pattern 2, Exps 1-3 in First Epoch (01) (2)	220 Secs (660 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[1]
	3	ACS sdss i (622475)	(1) SN-2011FE	ACS/WFC, ACCUM, WFC1-1K	F775W				Pattern 2, Exps 1-3 in First Epoch (01) (2)	250 Secs (750 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[1]
	4	WFC3-UVI S U-band (622668)	(1) SN-2011FE	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F336W	FLASH=9			Pattern 3, Exps 4-4 in First Epoch (01) (3)	950 Secs (2850 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[2]
	5	WFC3 J-ban d (622669)	(1) SN-2011FE	WFC3/IR, MULTIACCUM, IRSUB512	F125W	NSAMP=13; SAMP-SEQ=SPAR S25	POS TARG 0.0,0.0		Sequence 5-7 Non-Int in First Epoch (01) Pattern 1, Exps 5-5 in Sequence 5-7 Non-Int in First Epoch (01) (1)	275.908039 Secs (827.724 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[3]
	6	WFC3 sdss f at-z (622670)	(1) SN-2011FE	WFC3/IR, MULTIACCUM, IRSUB512	F105W	NSAMP=15; SAMP-SEQ=SPAR S25	POS TARG 0.0,0.0		Sequence 5-7 Non-Int in First Epoch (01) Pattern 1, Exps 6-6 in Sequence 5-7 Non-Int in First Epoch (01) (1)	321.750541 Secs (965.252 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[3]
	7	WFC3 h-ban d (622671)	(1) SN-2011FE	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=13; SAMP-SEQ=SPAR S25	POS TARG 0.0,0.0		Sequence 5-7 Non-Int in First Epoch (01) Pattern 1, Exps 7-7 in Sequence 5-7 Non-Int in First Epoch (01) (1)	275.908039 Secs (827.724 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[3]



Orbit 2

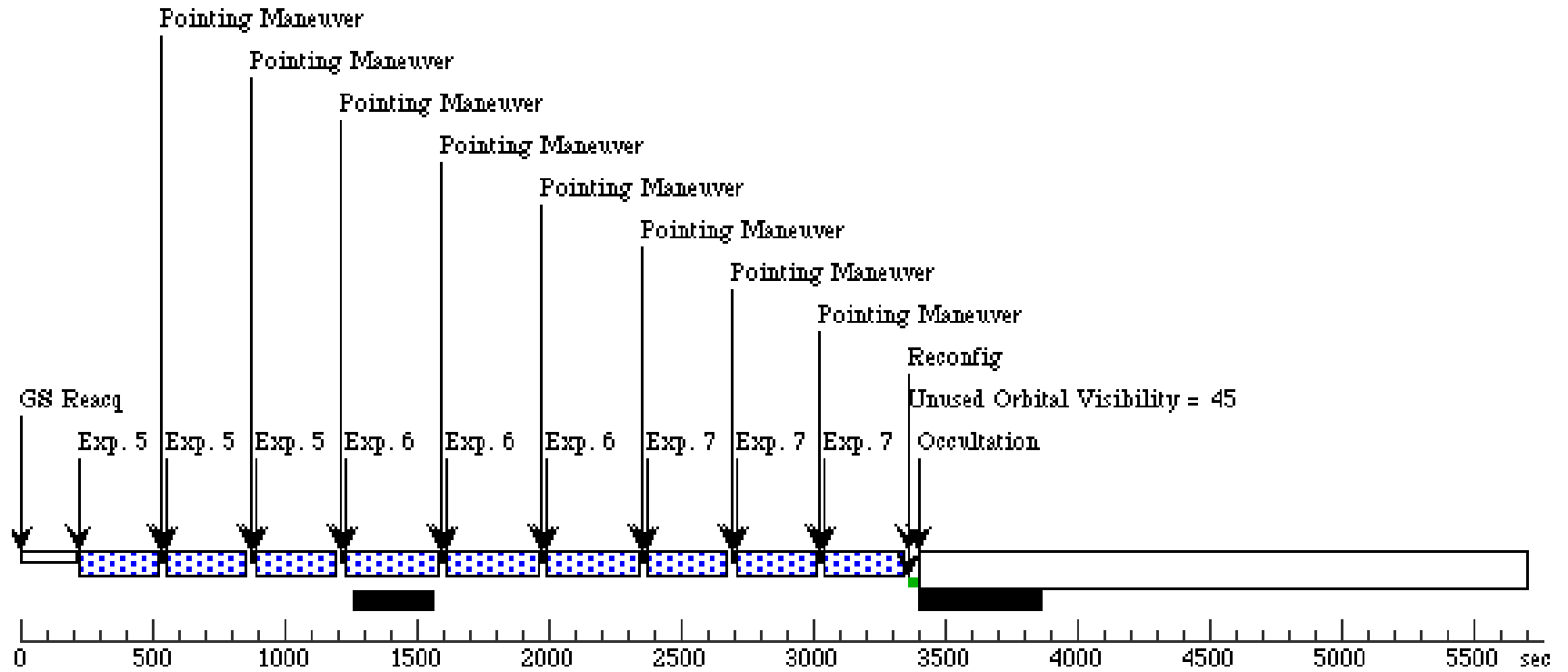
Server Version: 20150417

Unused Orbital Visibility = 34



Orbit 3

Server Version: 20150417



Proposal 13824 - Second Epoch (02) - SN 2011fe - tackling the Type Ia progenitor puzzle through extremely late time photometry

Thu Jun 18 01:21:15 GMT 2015

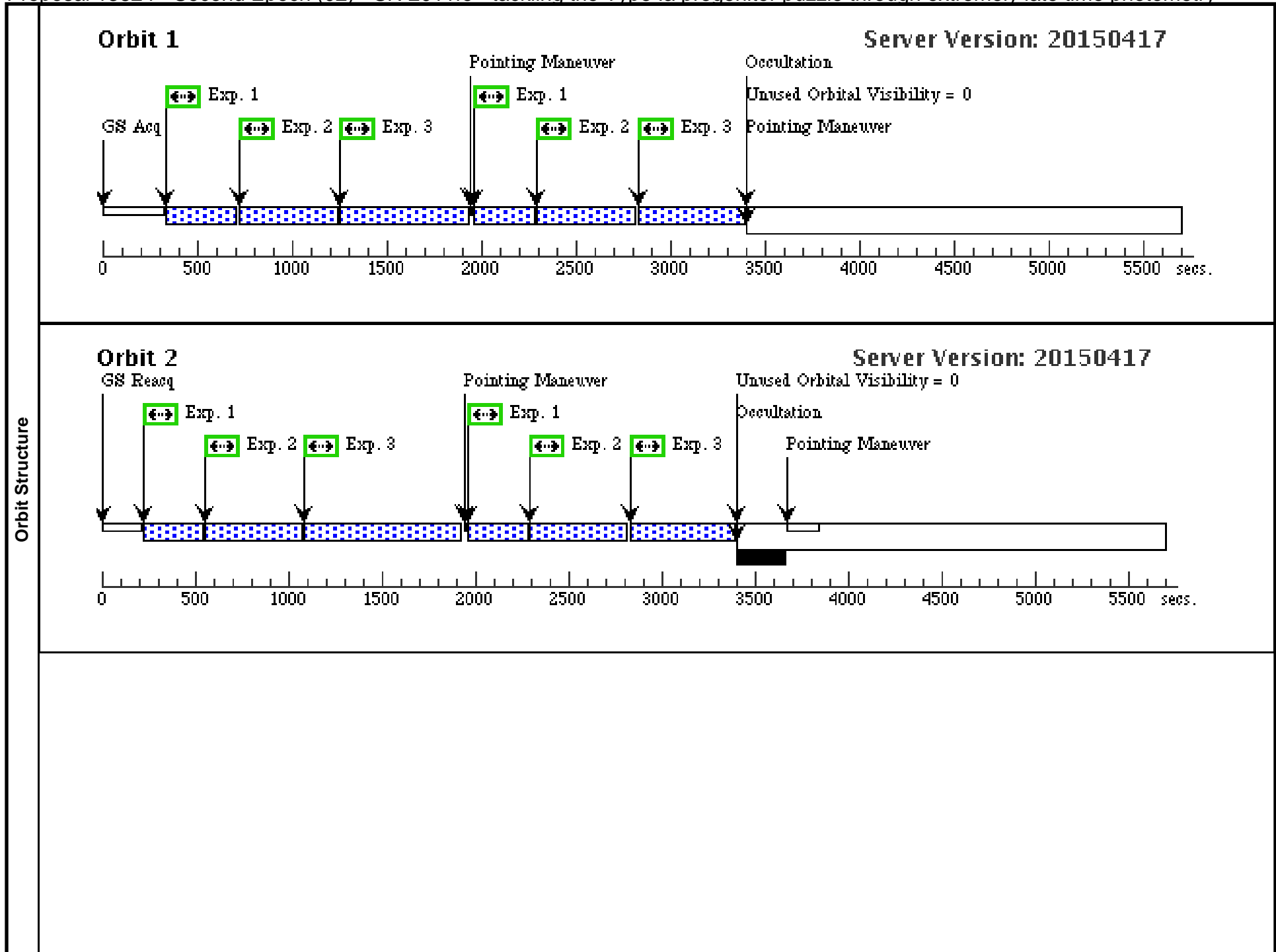
Visit	Proposal 13824, Second Epoch (02), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, ACS/WFC Special Requirements: BETWEEN 24-JUN-2015:00:00:00 AND 28-SEP-2015:00:00:00: GROUP 02,B1,B2 WITHIN 14D					
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures	
(1)		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		(4), (5), (6), (7), (8), (9)	
(5)		Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false		(1-3)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	SN-2011FE	RA: 14 03 5.7330 (210.7738875d) Dec: +54 16 25.18 (54.27366d) Equinox: J2000		V=25	Reference Frame: SIMBAD
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>						

Proposal 13824 - Second Epoch (02) - SN 2011fe - tackling the Type Ia progenitor puzzle through extremely late time photometry

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	ACS sdss g (622535)	(1) SN-2011FE	ACS/WFC, ACCUM, WFC1-1K	F475W		Pattern 5, Exps 1-3 in Second Epoch (02) (5)	200 Secs (800 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1] [2]	
	2	ACS sdss r (622536)	(1) SN-2011FE	ACS/WFC, ACCUM, WFC1-1K	F625W		Pattern 5, Exps 1-3 in Second Epoch (02) (5)	400 Secs (1600 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1] [2]	
	3	ACS sdss i (622538)	(1) SN-2011FE	ACS/WFC, ACCUM, WFC1-1K	F775W		Pattern 5, Exps 1-3 in Second Epoch (02) (5)	450 Secs (2202 Secs) [==>567.0 Secs (Pattern 1)] [==>(Pattern 2)] [==>735.0 Secs (Pattern 3)] [==>(Pattern 4)]	[1] [2]	
	4	WFC3-IR J (622672)	(1) SN-2011FE	WFC3/IR, MULTIACCUM, IRSUB512	F125W	NSAMP=12; SAMP-SEQ=SPAR S25		Sequence 4-6 Non-Int in Second Epoch (02) Pattern 1, Exps 4-4 in Sequence 4-6 Non-Int in Second Epoch (02) (1)	252.986788 Secs (758.96 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[3]
	5	WFC3-IR sdss fat-z (622673)	(1) SN-2011FE	WFC3/IR, MULTIACCUM, IRSUB512	F105W	NSAMP=15; SAMP-SEQ=SPAR S25		Sequence 4-6 Non-Int in Second Epoch (02) Pattern 1, Exps 5-5 in Sequence 4-6 Non-Int in Second Epoch (02) (1)	321.750541 Secs (965.252 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[3]
	6	WFC3-IR H (622891)	(1) SN-2011FE	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=13; SAMP-SEQ=SPAR S25		Sequence 4-6 Non-Int in Second Epoch (02) Pattern 1, Exps 6-6 in Sequence 4-6 Non-Int in Second Epoch (02) (1)	275.908039 Secs (827.724 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[3]
	7	WFC3-IR J (622891)	(1) SN-2011FE	WFC3/IR, MULTIACCUM, IRSUB512	F125W	NSAMP=13; SAMP-SEQ=SPAR S25		Sequence 7-9 Non-Int in Second Epoch (02) Pattern 1, Exps 7-7 in Sequence 7-9 Non-Int in Second Epoch (02) (1)	275.908039 Secs (827.724 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[4]
	8	WFC3-IR sdss fat-z (622891)	(1) SN-2011FE	WFC3/IR, MULTIACCUM, IRSUB512	F105W	NSAMP=15; SAMP-SEQ=SPAR S25		Sequence 7-9 Non-Int in Second Epoch (02) Pattern 1, Exps 8-8 in Sequence 7-9 Non-Int in Second Epoch (02) (1)	321.750541 Secs (965.252 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[4]

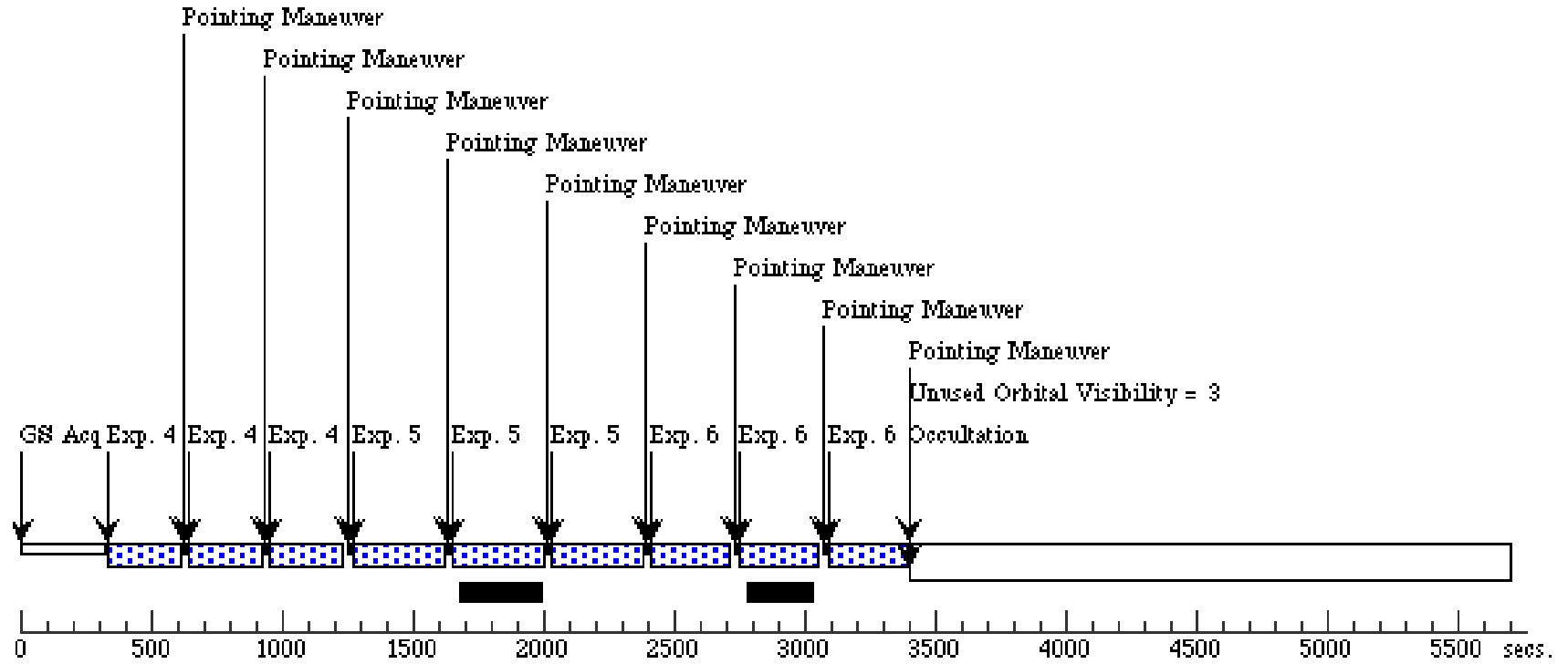
Proposal 13824 - Second Epoch (02) - SN 2011fe - tackling the Type Ia progenitor puzzle through extremely late time photometry

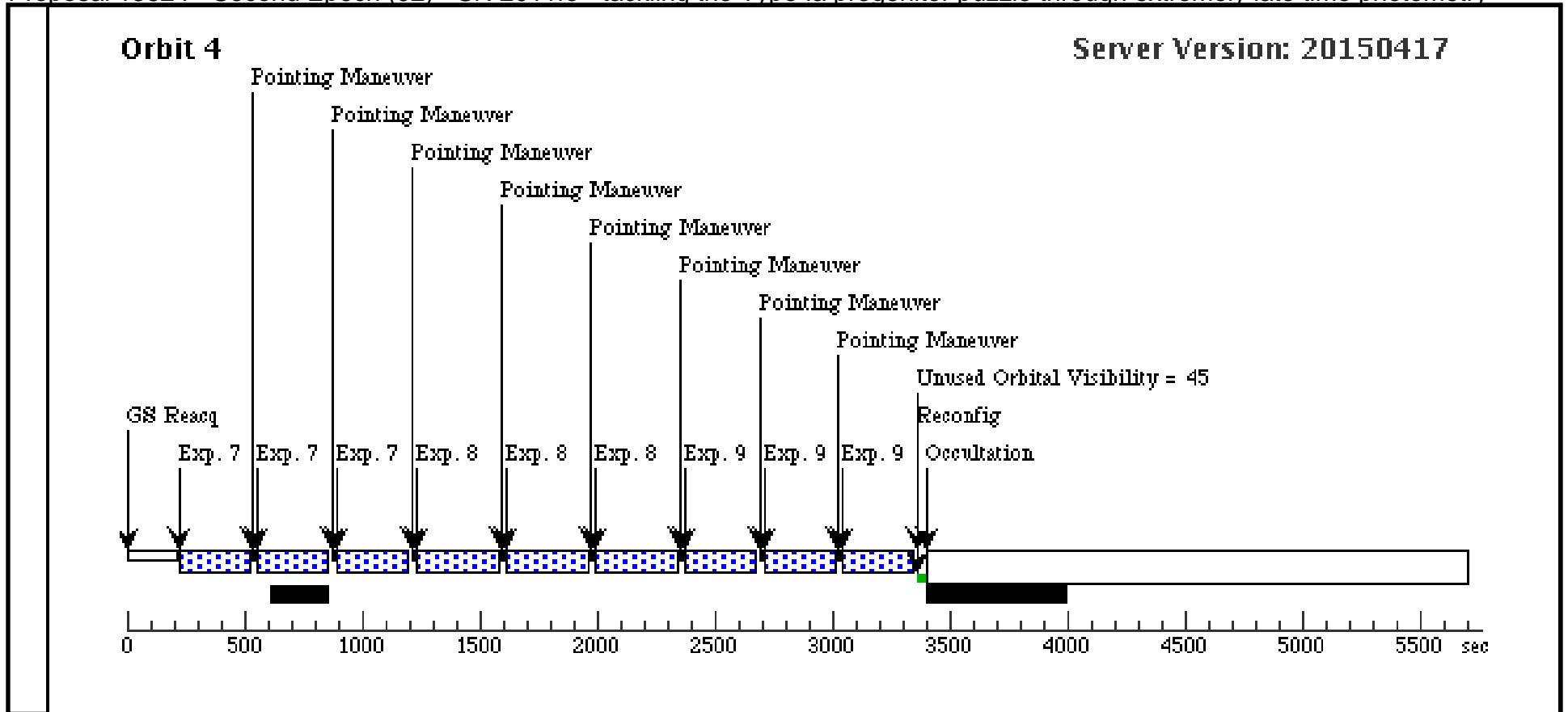
9	WFC3-IR H (1) SN-2011FE	WFC3/IR, MULTIACCUM, IRSUB512	F160W	NSAMP=13; SAMP-SEQ=SPAR S25	Sequence 7-9 Non-Int in Second Epoch (02) Pattern 1, Exps 9-9 i n Sequence 7-9 Non- Int in Second Epoch (02) (1)	275.908039 Secs (827.724 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[4]
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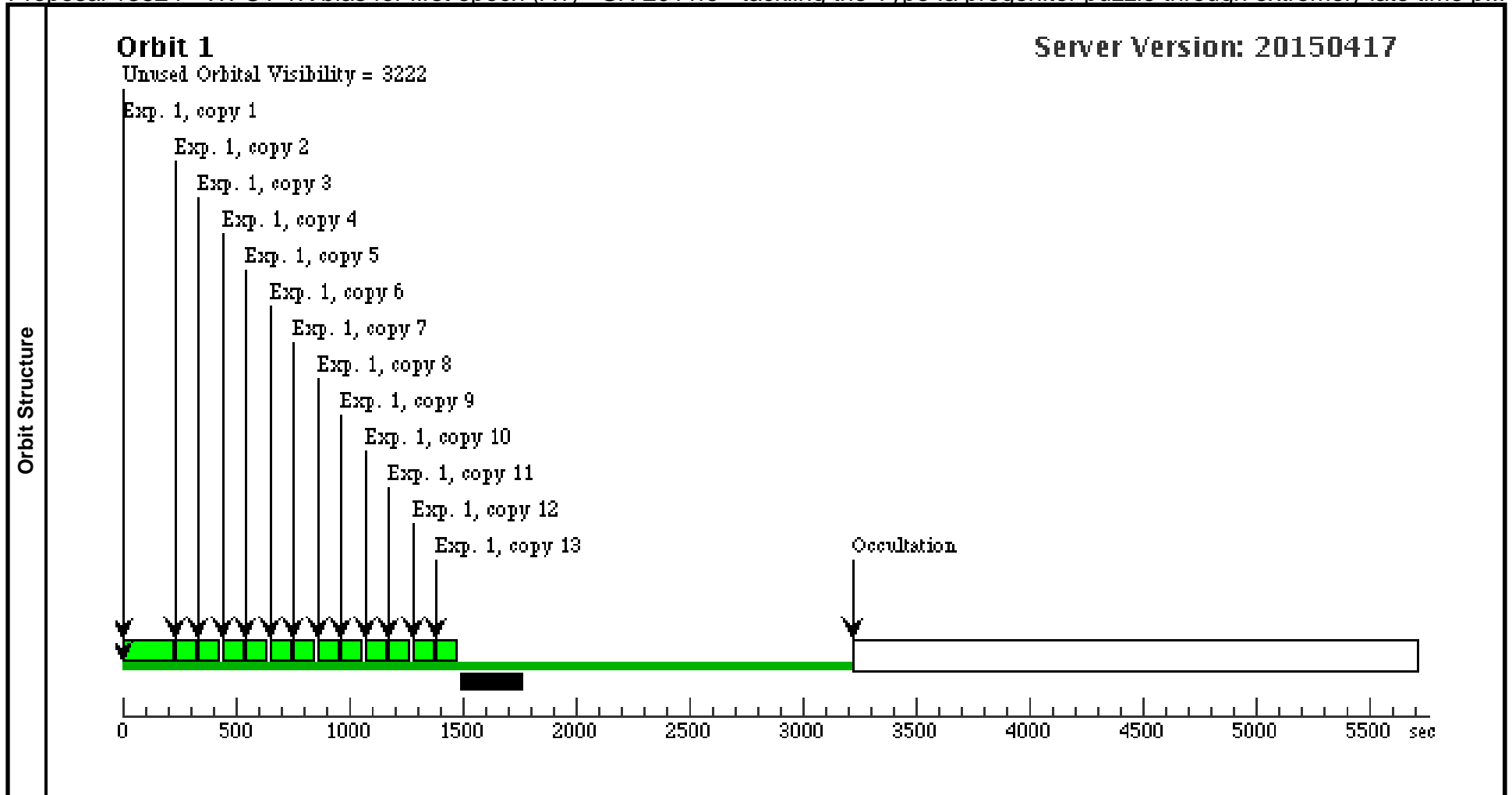
Orbit 3

Server Version: 20150417

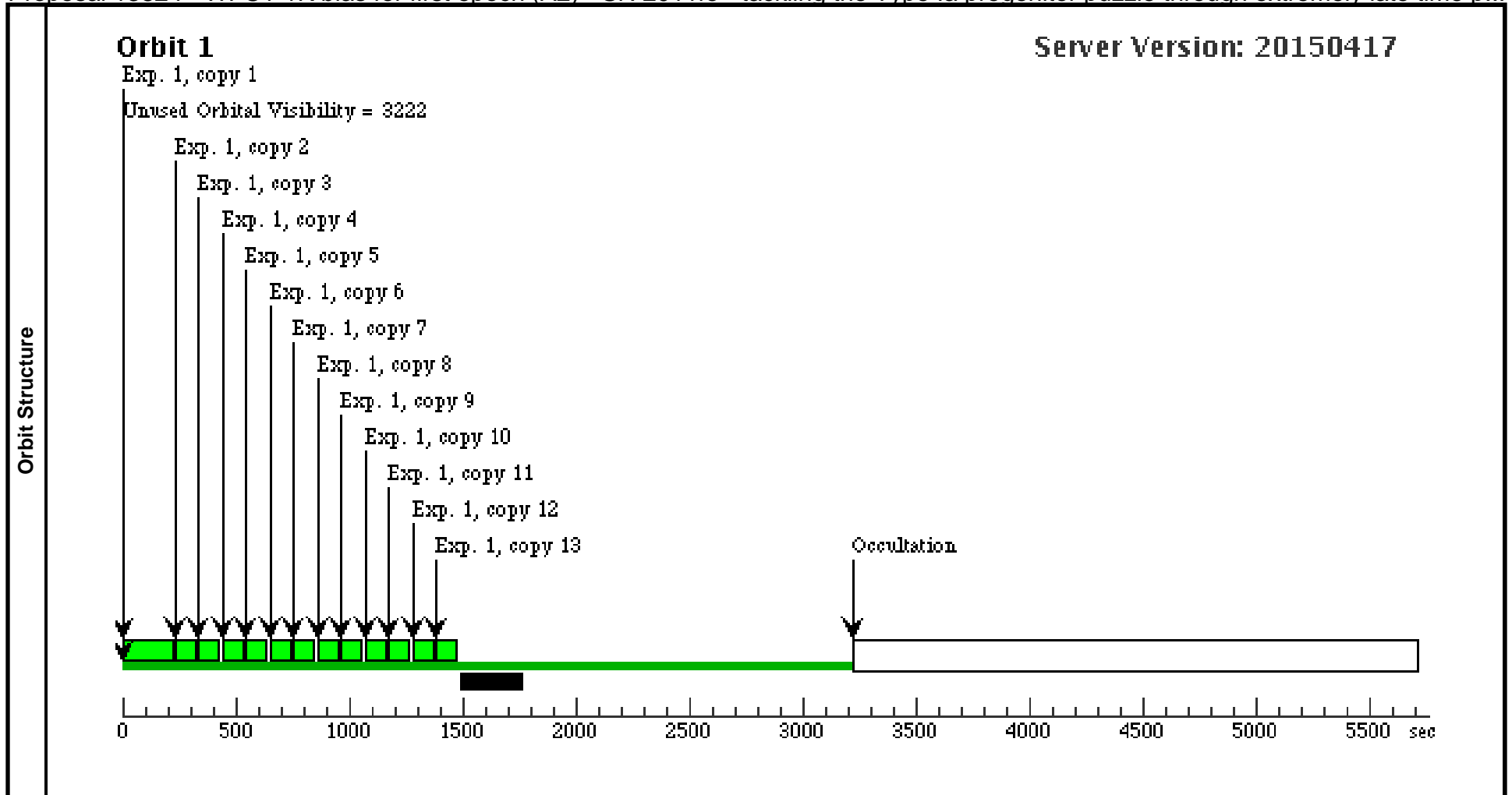




Visit	Proposal 13824, WFC1-1K bias for first epoch (A1), completed Diagnostic Status: Error Scientific Instruments: ACS/WFC Special Requirements: SEQ A1,A2 WITHIN 1 D <i>Comments: This orbit is charged to the Cycle 22 ACS Subarray Bias Calibration Program. Avoid SAA passages; SAA-impacted orbits are usable.</i>											
	Diagnostics	(Exposure 1 (WFC1-1K bias for first epoch (A1))) Error (Form): Target BIAS is no longer a valid selection (Exposure 1 (WFC1-1K bias for first epoch (A1))) Error (Form): This attribute cannot have this value due to other choices: Spectral_Element=DEF This value is by default illegal. (Exposure 1 (WFC1-1K bias for first epoch (A1))) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=COMPRESSION=NONE The combination of attributes chosen is illegal. (Exposure 1 (WFC1-1K bias for first epoch (A1))) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=COMPRESSION The combination of attributes chosen is illegal. (Exposure 1 (WFC1-1K bias for first epoch (A1))) Error (Form): This attribute is not allowed to have this value: Calibration_Target = BIAS It is an Available option and cannot normally be used in a GO proposal. (Exposure 1 (WFC1-1K bias for first epoch (A1))) Error (Form): COMPRESSION is not a valid selection (Exposure 1 (WFC1-1K bias for first epoch (A1))) Error (Form): Illegal selection: DEF.										
Exposures		#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
		1		BIAS	ACS/WFC, ACCUM, WFC1-1K	DEF	GAIN=2.0; COMPRESSION=N ONE			0 Secs X 13 (0 Secs)		
											[==>(Copy 1)]	
											[==>(Copy 2)]	
											[==>(Copy 3)]	
											[==>(Copy 4)]	
										[==>(Copy 5)]		
										[==>(Copy 6)]		
										[==>(Copy 7)]	[1]	
										[==>(Copy 8)]		
										[==>(Copy 9)]		
										[==>(Copy 10)]		
										[==>(Copy 11)]		
									[==>(Copy 12)]			
									[==>(Copy 13)]			

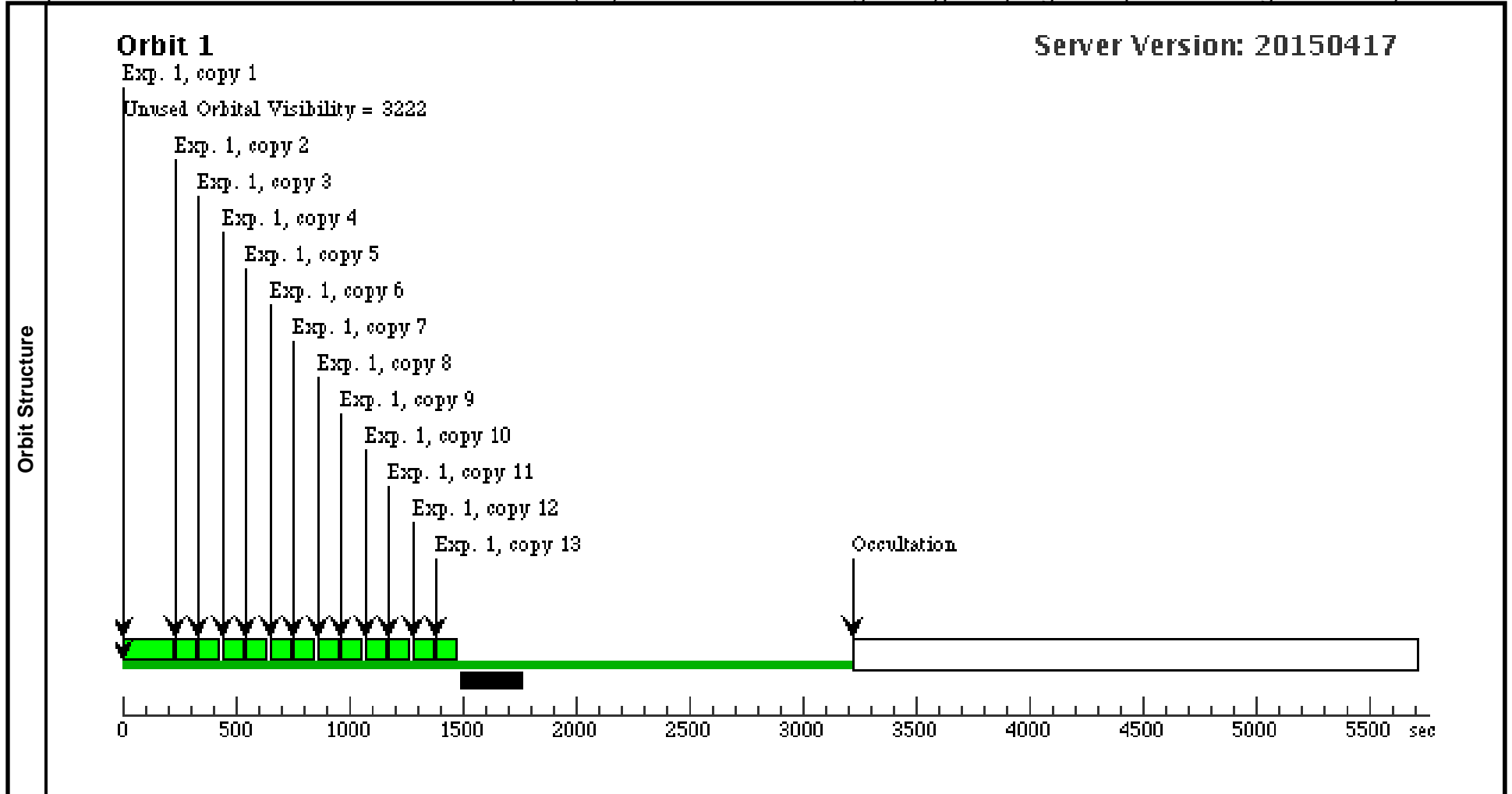


Visit	<p>Proposal 13824, WFC1-1K bias for first epoch (A2), completed</p> <p>Diagnostic Status: Error</p> <p>Scientific Instruments: ACS/WFC</p> <p>Special Requirements: (none)</p> <p><i>Comments: This orbit is charged to the Cycle 22 ACS Subarray Bias Calibration Program. Avoid SAA passages; SAA-impacted orbits are usable.</i></p>										
	Diagnostics	<p>(Exposure 1 (WFC1-1K bias for first epoch (A2))) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=COMPRESSION=NONE The combination of attributes chosen is illegal.</p> <p>(Exposure 1 (WFC1-1K bias for first epoch (A2))) Error (Form): Illegal selection: DEF.</p> <p>(Exposure 1 (WFC1-1K bias for first epoch (A2))) Error (Form): Target BIAS is no longer a valid selection</p> <p>(Exposure 1 (WFC1-1K bias for first epoch (A2))) Error (Form): This attribute cannot have this value due to other choices: Spectral_Element=DEF This value is by default illegal.</p> <p>(Exposure 1 (WFC1-1K bias for first epoch (A2))) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=COMPRESSION The combination of attributes chosen is illegal.</p> <p>(Exposure 1 (WFC1-1K bias for first epoch (A2))) Error (Form): This attribute is not allowed to have this value: Calibration_Target = BIAS It is an Available option and cannot normally be used in a GO proposal.</p> <p>(Exposure 1 (WFC1-1K bias for first epoch (A2))) Error (Form): COMPRESSION is not a valid selection</p>									
Exposures		#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
		1		BIAS	ACS/WFC, ACCUM, WFC1-1K	DEF	GAIN=2.0; COMPRESSION=N ONE			0 Secs X 13 (0 Secs)	
										[==>(Copy 1)]	
										[==>(Copy 2)]	
										[==>(Copy 3)]	
									[==>(Copy 4)]		
									[==>(Copy 5)]		
									[==>(Copy 6)]		
									[==>(Copy 7)]	[1]	
									[==>(Copy 8)]		
									[==>(Copy 9)]		
									[==>(Copy 10)]		
									[==>(Copy 11)]		
								[==>(Copy 12)]			
								[==>(Copy 13)]			



Proposal 13824 - WFC1-1K bias for second epoch (B1) - SN 2011fe - tackling the Type Ia progenitor puzzle through extremely late tim...

Visit	Proposal 13824, WFC1-1K bias for second epoch (B1), implementation Thu Jun 18 01:21:16 GMT 2015 Diagnostic Status: Error Scientific Instruments: ACS/WFC Special Requirements: SEQ B1,B2 WITHIN 1 D <i>Comments: This orbit is charged to the Cycle 22 ACS Subarray Bias Calibration Program. Avoid SAA passages; SAA-impacted orbits are usable.</i>									
	Diagnostics	(Exposure 1 (WFC1-1K bias for second epoch (B1))) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=COMPRESSION=NONE The combination of attributes chosen is illegal.								
(Exposure 1 (WFC1-1K bias for second epoch (B1))) Error (Form): Illegal selection: DEF.										
(Exposure 1 (WFC1-1K bias for second epoch (B1))) Error (Form): COMPRESSION is not a valid selection										
(Exposure 1 (WFC1-1K bias for second epoch (B1))) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=COMPRESSION The combination of attributes chosen is illegal.										
(Exposure 1 (WFC1-1K bias for second epoch (B1))) Error (Form): This attribute cannot have this value due to other choices: Spectral_Element=DEF This value is by default illegal.										
(Exposure 1 (WFC1-1K bias for second epoch (B1))) Error (Form): Target BIAS is no longer a valid selection										
(Exposure 1 (WFC1-1K bias for second epoch (B1))) Error (Form): This attribute is not allowed to have this value: Calibration_Target = BIAS It is an Available option and cannot normally be used in a GO proposal.										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		BIAS	ACS/WFC, ACCUM, WFC1-1K	DEF	GAIN=2.0; COMPRESSION=N ONE			0 Secs X 13 (0 Secs)	
									[==>(Copy 1)]	
									[==>(Copy 2)]	
									[==>(Copy 3)]	
									[==>(Copy 4)]	
									[==>(Copy 5)]	
									[==>(Copy 6)]	
									[==>(Copy 7)]	[1]
									[==>(Copy 8)]	
									[==>(Copy 9)]	
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									[==>(Copy 11)]	
								[==>(Copy 12)]		
								[==>(Copy 13)]		



Proposal 13824 - WFC1-1K bias for second epoch (B2) - SN 2011fe - tackling the Type Ia progenitor puzzle through extremely late tim...

Thu Jun 18 01:21:16 GMT 2015

Visit	<p>Proposal 13824, WFC1-1K bias for second epoch (B2), implementation</p> <p>Diagnostic Status: Error</p> <p>Scientific Instruments: ACS/WFC</p> <p>Special Requirements: (none)</p> <p><i>Comments: This orbit is charged to the Cycle 22 ACS Subarray Bias Calibration Program. Avoid SAA passages; SAA-impacted orbits are usable.</i></p>										
	Diagnostics	<p>(Exposure 1 (WFC1-1K bias for second epoch (B2))) Error (Form): This attribute cannot have this value due to other choices: Spectral_Element=DEF This value is by default illegal.</p> <p>(Exposure 1 (WFC1-1K bias for second epoch (B2))) Error (Form): Illegal selection: DEF.</p> <p>(Exposure 1 (WFC1-1K bias for second epoch (B2))) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=COMPRESSION=NONE The combination of attributes chosen is illegal.</p> <p>(Exposure 1 (WFC1-1K bias for second epoch (B2))) Error (Form): COMPRESSION is not a valid selection</p> <p>(Exposure 1 (WFC1-1K bias for second epoch (B2))) Error (Form): This attribute is not allowed to have this value: Calibration_Target = BIAS It is an Available option and cannot normally be used in a GO proposal.</p> <p>(Exposure 1 (WFC1-1K bias for second epoch (B2))) Error (Form): Target BIAS is no longer a valid selection</p> <p>(Exposure 1 (WFC1-1K bias for second epoch (B2))) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=COMPRESSION The combination of attributes chosen is illegal.</p>									
Exposures		#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
		1		BIAS	ACS/WFC, ACCUM, WFC1-1K	DEF	GAIN=2.0; COMPRESSION=N ONE			0 Secs X 13 (0 Secs)	
										[==>(Copy 1)]	
										[==>(Copy 2)]	
										[==>(Copy 3)]	
										[==>(Copy 4)]	
									[==>(Copy 5)]		
									[==>(Copy 6)]		
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								[==>(Copy 13)]			

