



13825 - Stellar Forensics VI: A post-explosion view of the progenitor of SN 2012aw

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-2012AW	ACS/WFC	2	06-Oct-2014 21:49:24.0	yes
A1	BIAS	ACS/WFC	1	06-Oct-2014 21:49:25.0	yes
A2	BIAS	ACS/WFC	1	06-Oct-2014 21:49:27.0	yes

4 Total Orbits Used

ABSTRACT

Recent studies have used high spatial resolution HST observations of supernova (SN) sites to directly identify the progenitors of core-collapse SNe in pre-explosion images. These studies have set constraints about the nature of massive stars and their evolution just prior to explosion. Now, at late-times when the SNe have faded sufficiently, it is possible to return to the sites of these core-collapse SNe to search for clues about the nature of their progenitors.

Proposal 13825 (STScI Edit Number: 0, Created: Monday, October 6, 2014 8:49:28 PM EST) - Overview

We request time to conduct deep, late-time, high-resolution imaging with ACS/WFC of the site of the core-collapse SN 2012aw. We aim to: 1) Confirm our original identification, made in pre-explosion images, by confirming that the progenitor is now missing; 2) Apply image subtraction techniques for this late-time imaging with our pre-explosion images to determine accurate photometry of the progenitor to constrain the temperature and luminosity. HST provides the unique combination of high-resolution optical imaging at very faint magnitudes that will facilitate this study.

OBSERVING DESCRIPTION

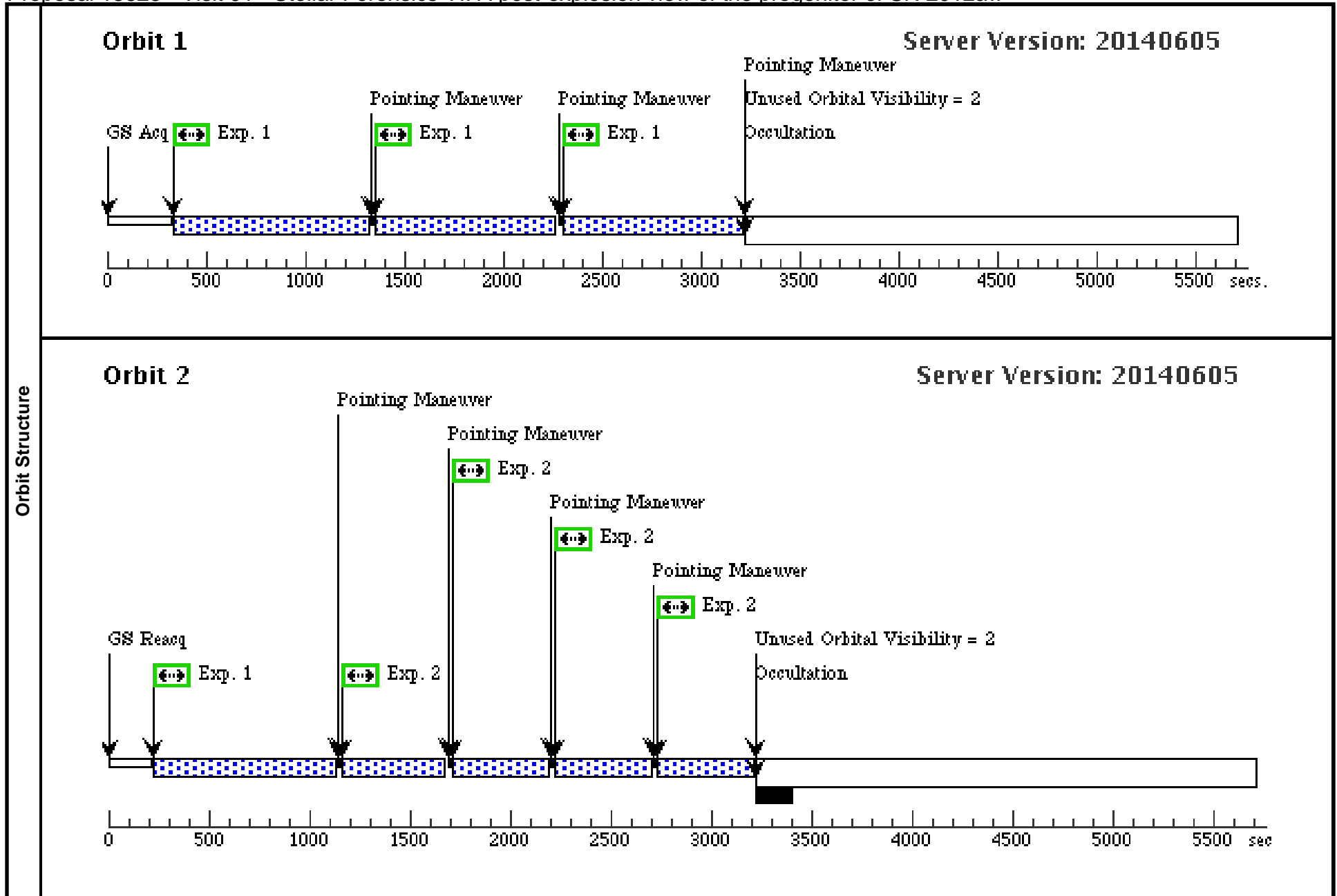
We aim to acquire deep ACS/WFC F555W and F814W imaging observations of the site of SN 2012aw. The observations adopt a box dither pattern to improve PSF sampling, as well as enable the rejection of CRs and hot pixels. We place a loose constraint that the observations be acquired after March 2015 - to ensure that the SN has faded sufficiently for our science goals.

CALIBRATION ORBITS: As per STScI policy, 2 internal orbits have been added to this proposal for the purpose of obtaining subarray bias frames that are contemporaneous with the science observations. These internal orbits will be charged to STScI's Cycle 22 ACS Calibration Program. The ACS Instrument Team at STScI is responsible for producing superbias reference files from the bias frames obtained in this GO proposal.

Proposal 13825 - Visit 01 - Stellar Forensics VI: A post-explosion view of the progenitor of SN 2012aw

Tue Oct 07 01:49:28 GMT 2014

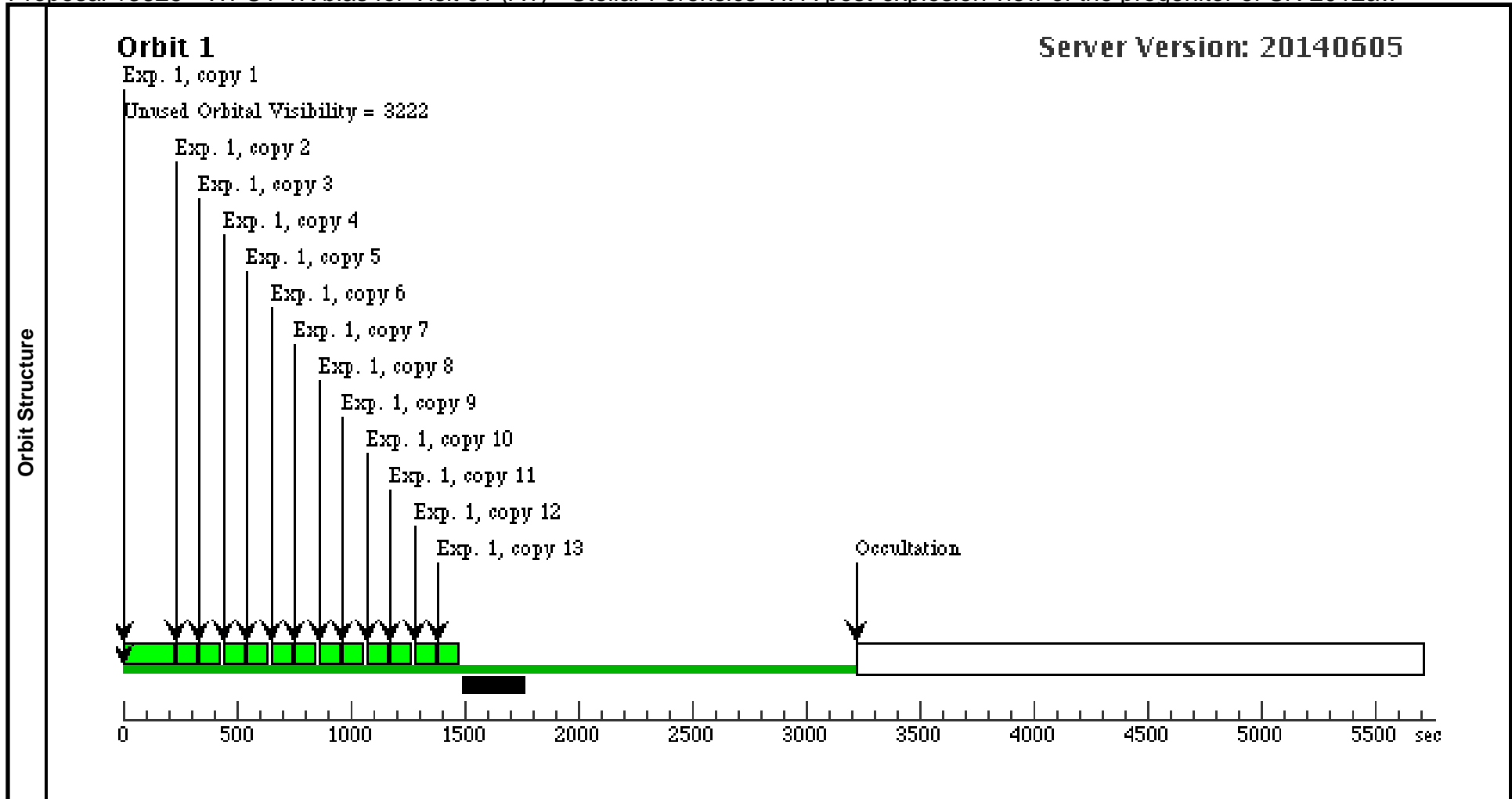
Visit	Proposal 13825, Visit 01, implementation Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: AFTER 16-MAR-2015:00:00:00; GROUP 01,A1,A2 WITHIN 14D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER 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), (2)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN-2012AW	RA: 10 43 53.7600 (160.9740000d) Dec: +11 40 17.90 (11.67164d) Equinox: J2000		V=25	Reference Frame: SIMBAD				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SN-2012AW	ACS/WFC, ACCUM, WFC1-1K	F555W				Pattern 1, Exps 1-1 in Visit 01 (1)	817 Secs (3268 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]
2		(1) SN-2012AW	ACS/WFC, ACCUM, WFC1-1K	F814W				Pattern 1, Exps 2-2 in Visit 01 (1)	384 Secs (1536 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[2]



Proposal 13825 - WFC1-1K bias for Visit 01 (A1) - Stellar Forensics VI: A post-explosion view of the progenitor of SN 2012aw

Tue Oct 07 01:49:28 GMT 2014

Visit	<p>Proposal 13825, WFC1-1K bias for Visit 01 (A1)</p> <p>Diagnostic Status: Error</p> <p>Scientific Instruments: ACS/WFC</p> <p>Special Requirements: SEQ A1,A2 WITHIN 1 D</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 Visit 01 (A1))) 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 Visit 01 (A1))) Error (Form): COMPRESSION is not a valid selection</p> <p>(Exposure 1 (WFC1-1K bias for Visit 01 (A1))) 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 Visit 01 (A1))) Error (Form): Target BIAS is no longer a valid selection</p> <p>(Exposure 1 (WFC1-1K bias for Visit 01 (A1))) 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 Visit 01 (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.</p> <p>(Exposure 1 (WFC1-1K bias for Visit 01 (A1))) Error (Form): Illegal selection: DEF.</p>																																																																																																																																																		
Exposures		<table border="1"> <thead> <tr> <th>#</th> <th>Label</th> <th>Target</th> <th>Config,Mode,Aperture</th> <th>Spectral Els.</th> <th>Opt. Params.</th> <th>Special Reqs.</th> <th>Groups</th> <th>Exp. Time (Total)/[Actual Dur.]</th> <th>Orbit</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td>BIAS</td> <td>ACS/WFC, ACCUM, WFC1-1K</td> <td>DEF</td> <td>GAIN=2.0; COMPRESSION=N ONE</td> <td></td> <td></td> <td>0 Secs X 13 (0 Secs)</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 1)]</td> <td rowspan="13" style="text-align: center; vertical-align: middle;">[1]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 2)]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 3)]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 4)]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 5)]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 6)]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 7)]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 8)]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 9)]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 10)]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 11)]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 12)]</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>[==>(Copy 13)]</td> </tr> </tbody> </table>										#	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)]	[1]									[==>(Copy 2)]									[==>(Copy 3)]									[==>(Copy 4)]									[==>(Copy 5)]									[==>(Copy 6)]									[==>(Copy 7)]									[==>(Copy 8)]									[==>(Copy 9)]									[==>(Copy 10)]									[==>(Copy 11)]									[==>(Copy 12)]								
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Proposal 13825 - WFC1-1K bias for Visit 01 (A2) - Stellar Forensics VI: A post-explosion view of the progenitor of SN 2012aw

Tue Oct 07 01:49:29 GMT 2014

Visit	<p>Proposal 13825, WFC1-1K bias for Visit 01 (A2)</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 Visit 01 (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 Visit 01 (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 Visit 01 (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 Visit 01 (A2))) Error (Form): Target BIAS is no longer a valid selection</p> <p>(Exposure 1 (WFC1-1K bias for Visit 01 (A2))) Error (Form): COMPRESSION is not a valid selection</p> <p>(Exposure 1 (WFC1-1K bias for Visit 01 (A2))) Error (Form): Illegal selection: DEF.</p> <p>(Exposure 1 (WFC1-1K bias for Visit 01 (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>									
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)]	
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									[==>(Copy 7)]	[1]	
									[==>(Copy 8)]		
									[==>(Copy 9)]		
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									[==>(Copy 11)]		
								[==>(Copy 12)]			
								[==>(Copy 13)]			

