



15523 - ACS Internal CTE Monitor

Cycle: 26, Proposal Category: CAL/ACS

(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>
A1	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:12.0	yes
A2	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:13.0	yes
A3	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:14.0	yes
A4	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:14.0	yes
A5	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:14.0	yes
A6	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:15.0	yes
B0	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:15.0	yes
B1	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:16.0	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	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:16.0	yes
B3	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:17.0	yes
B4	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:17.0	yes
B5	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:17.0	yes
B6	DARK TUNGSTEN	ACS/WFC	1	22-Apr-2019 12:00:18.0	yes

13 Total Orbits Used

ABSTRACT

This is a continuation of Program 14950 and is to be executed twice a cycle for internal CTE.

The charge transfer efficiency (CTE) of the ACS CCD detectors will decline as damage due to on-orbit radiation exposure accumulates. This degradation will be monitored twice a cycle to determine the useful lifetime of the CCDs (previous cycles were only monitored once a year). All the data for this program is acquired using internal targets (lamps) only, so all of the exposures should be taken during Earth occultation time (but not during SAA passages). This program emulates the ACS pre-flight ground calibration and post-launch SMOV testing (program 8948), so that results from each epoch can be directly compared. Extended Pixel Edge Response (EPER) data will be obtained over a range of signal levels for the Wide Field Channel (WFC). The signal levels are 125, 500, 1620, 5000, 10000, and 60000 electrons at gain 2.

OBSERVING DESCRIPTION

This program obtains a set of CTE data twice per cycle. All CTE data are acquired using the internal tungsten calibration lamp(s). A short dark (pseudo-bias) using the same timing pattern is obtained during each visit for calibration purposes. Pointed observatory time is not required for internal CTE measurements. All the exposures will be taken during Earth occultation time, but not during South Atlantic Anomaly (SAA) passages. Extended Pixel Edge Response (EPER) data will be collected over a range of signal levels for WFC. Crossed filter elements are used for some WFC observations in order to produce the lower signal levels.

Proposal 15523 (STScI Edit Number: 0, Created: Monday, April 22, 2019 at 11:00:18 AM Eastern Standard Time) - Overview

Extra-large overscans are read out for EPER exposures: 75 trailing serial overscan pixels and 75 virtual overscan rows (the leading overscans are unchanged). This facilitates the measurement of both parallel and serial CTE from a single image, and will accommodate the growing deferred charge tail over the lifetime of ACS. The timing pattern for the parallel/serial EPER test is selected by setting the optional parameter CTE=JCTWE (for WFC).

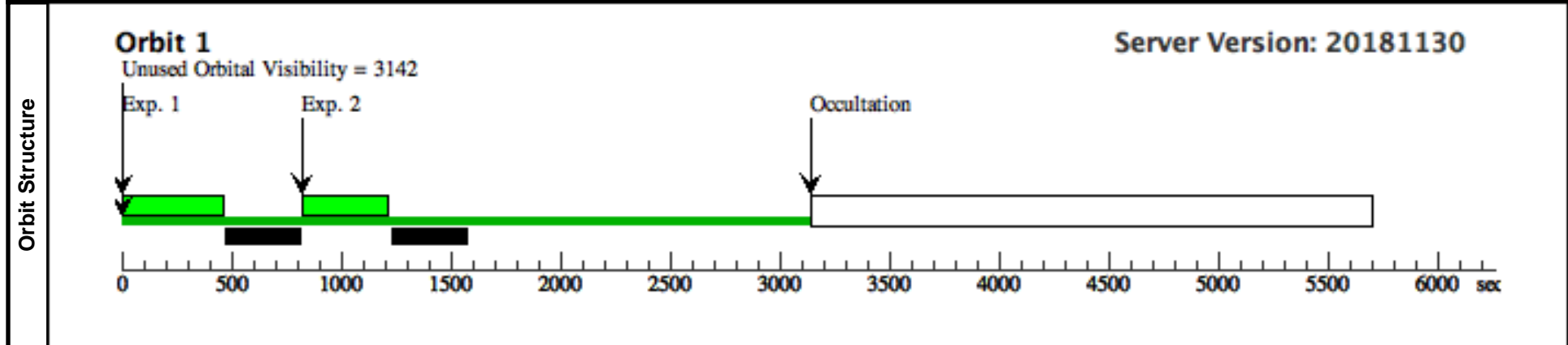
Key signal level is 1620 electrons, which is the signal level produced by the Fe55 ground-test source, and will allow for a better correlation of pre-launch and on-orbit CTE measurements. The last set of exposures were taken in May 2018 (Program 14950).

Proposal 15523 - Visit A1 - ACS Internal CTE Monitor

Mon Apr 22 16:00:18 GMT 2019

Visit	Proposal 15523, Visit A1, completed									
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: ACS/WFC									
	Special Requirements: BETWEEN 10-NOV-2018:00:00:00 AND 08-DEC-2018:00:00:00; SEQ A1,A2,A3,A4,A5,A6 WITHIN 7 D									

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	WFC-AD-E PER short dark	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE				0.5 Secs (0.5 Secs) [==>]
<i>Comments: Short dark with EPER timing pattern (pseudo-bias).</i>										
2	WFC-AD-E PER-125e	TUNGSTEN	ACS/WFC, ACCUM, WFC	F555W F435W	AMP=AD; CTE=JCTWE				0.5 Secs (0.5 Secs) [==>]	[1]
<i>Comments: Signal level 125 electrons.</i>										



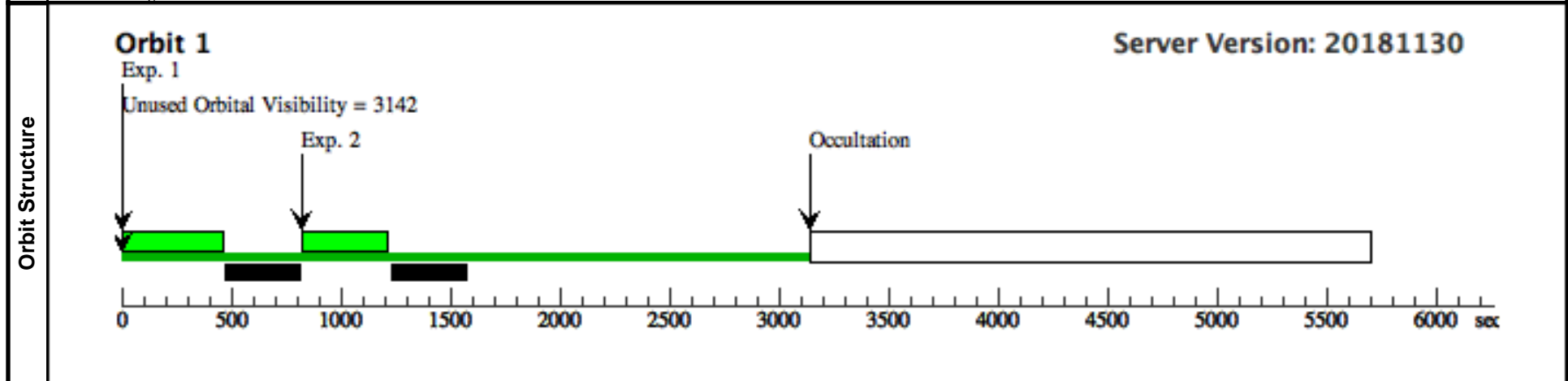
Proposal 15523 - Visit A2 - ACS Internal CTE Monitor

Mon Apr 22 16:00:18 GMT 2019

Visit	Proposal 15523, Visit A2, completed									
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: ACS/WFC									
	Special Requirements: (none)									

Comments: WFC EPER for amps AD

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	WFC-AD-E PER short dark	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE				0.5 Secs (0.5 Secs) [==>]
<i>Comments: Short dark with EPER timing pattern (pseudo-bias).</i>										
2	WFC-AD-E PER-500e	TUNGSTEN	ACS/WFC, ACCUM, WFC	F555W F435W	AMP=AD; CTE=JCTWE				1.2 Secs (1.2 Secs) [==>]	[1]
<i>Comments: Signal level 500 electrons.</i>										

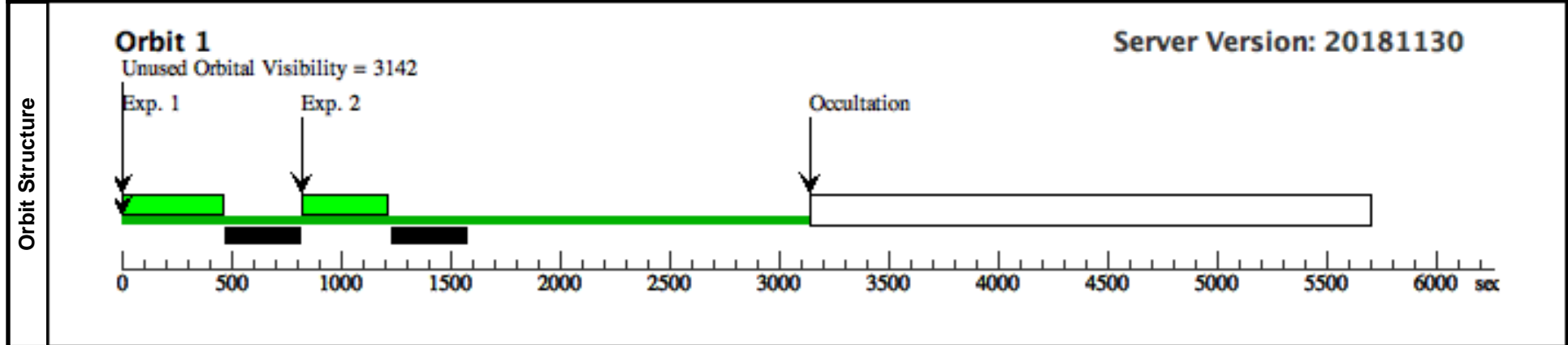


Proposal 15523 - Visit A3 - ACS Internal CTE Monitor

Mon Apr 22 16:00:18 GMT 2019

Visit	Proposal 15523, Visit A3, completed									
	Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: (none) <i>Comments: WFC EPER for amps AD</i>									

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
		1	WFC-AD-E PER short dark	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE			0.5 Secs (0.5 Secs)
<i>Comments: Short dark with EPER timing pattern (pseudo-bias).</i>									[==>]	[1]
	2	WFC-AD-E PER-1620e	TUNGSTEN	ACS/WFC, ACCUM, WFC	F555W F435W	AMP=AD; CTE=JCTWE			4.5 Secs (4.5 Secs)	
	<i>Comments: Signal level 1620 electrons.</i>									[==>]

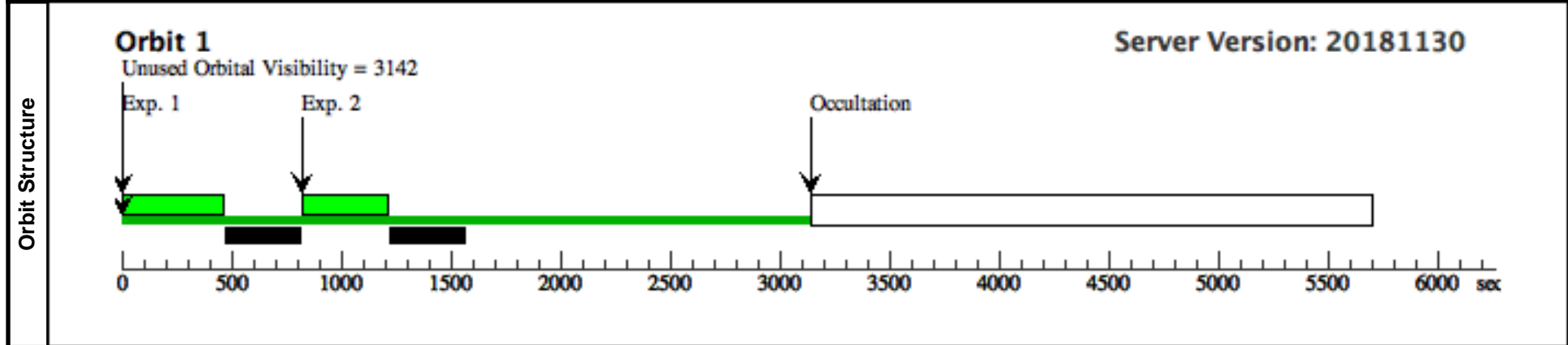


Proposal 15523 - Visit A4 - ACS Internal CTE Monitor

Mon Apr 22 16:00:18 GMT 2019

Visit	Proposal 15523, Visit A4, completed									
	Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: (none) <i>Comments: WFC EPER for amps AD</i>									

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
		1	WFC-AD-E PER short dark	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE			0.5 Secs (0.5 Secs)
<i>Comments: Short dark with EPER timing pattern (pseudo-bias).</i>									[==>]	[1]
	2	WFC-AD-E PER-5000e	TUNGSTEN	ACS/WFC, ACCUM, WFC	F435W	AMP=AD; CTE=JCTWE			1.0 Secs (1 Secs)	
	<i>Comments: Signal level 5000 electrons.</i>									[==>]



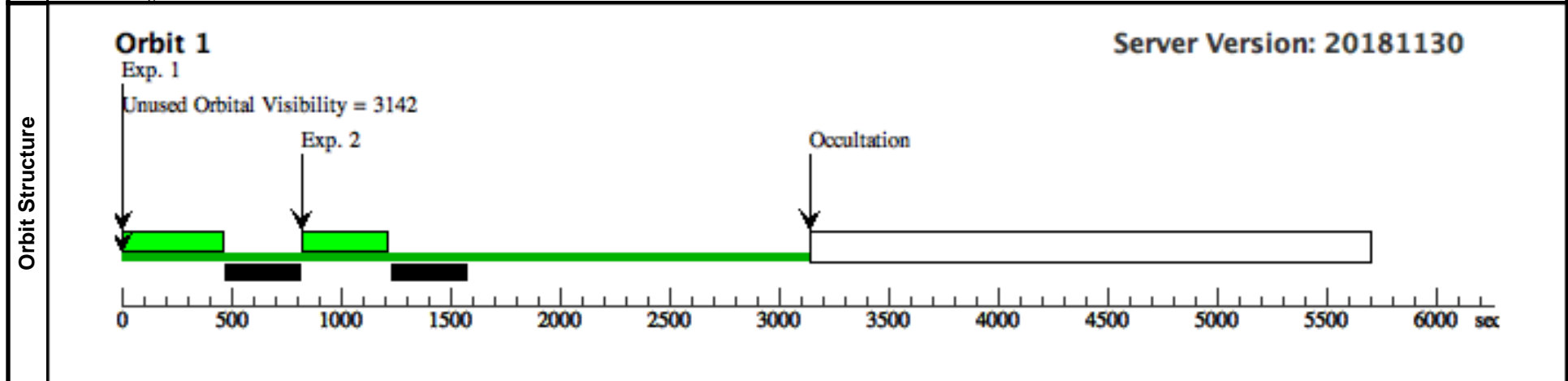
Proposal 15523 - Visit A5 - ACS Internal CTE Monitor

Mon Apr 22 16:00:18 GMT 2019

Visit	Proposal 15523, Visit A5, completed									
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: ACS/WFC									
	Special Requirements: (none)									

Comments: WFC EPER for amps AD

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	WFC-AD-E PER short dark	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE			0.5 Secs (0.5 Secs) [==>]	[1]
<i>Comments: Short dark with EPER timing pattern (pseudo-bias).</i>									
2	WFC-AD-E PER-10000e	TUNGSTEN	ACS/WFC, ACCUM, WFC	F435W	AMP=AD; CTE=JCTWE			2.1 Secs (2.1 Secs) [==>]	[1]
<i>Comments: Signal level 10000 electrons.</i>									



Proposal 15523 - Visit A6 - ACS Internal CTE Monitor

Mon Apr 22 16:00:18 GMT 2019

Visit	Proposal 15523, Visit A6, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: (none) <i>Comments: WFC EPER for amps AD</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	WFC-AD-E PER short dark	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE			0.5 Secs (0.5 Secs)	
									[==>]	[1]
	<i>Comments: Short dark with EPER timing pattern (pseudo-bias).</i>									
2	WFC-AD-E PER-60000e	TUNGSTEN	ACS/WFC, ACCUM, WFC	F435W	AMP=AD; CTE=JCTWE				12.5 Secs (12.5 Secs)	
									[==>]	[1]
<i>Comments: Signal level 60000 electrons.</i>										
Orbit Structure	<p>Orbit 1 Server Version: 20181130</p> <p>Exp. 1 Unused Orbital Visibility = 3142</p> <p>Exp. 2</p> <p>Occultation</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec</p>									

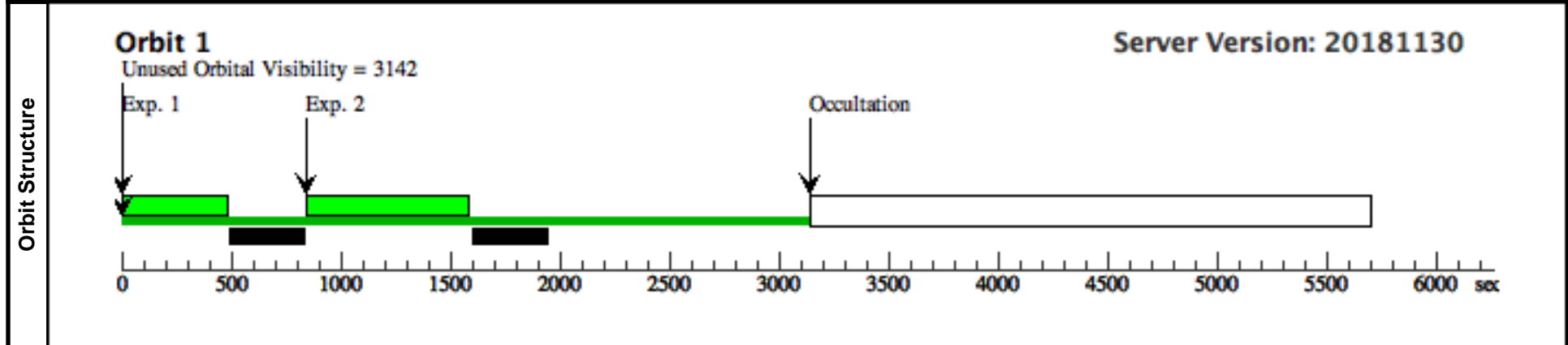
Proposal 15523 - Visit B0 - ACS Internal CTE Monitor

Mon Apr 22 16:00:18 GMT 2019

Visit	<p>Proposal 15523, Visit B0</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: ACS/WFC</p> <p>Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 21-MAY-2019:00:00:00</p> <p><i>Comments: WFC EPER for amps AD</i></p>
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Diagnostics	(Visit B0) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU
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#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	WFC-AD-E PER-LED-1 80e	DARK	ACS/WFC, ACCUM, WFC	DEF	FLASH=180; CTE=JCTWE; AMP=AD			0.5 Secs (0.5 Secs) [==>]	[1]
<i>Comments: Short dark flashed to 180e, read out with EPER timing pattern.</i>									
2	WFC-AD-E PER-LED-7 100e	TUNGSTEN	ACS/WFC, ACCUM, WFC	F435W F555W	FLASH=4830; AMP=AD; CTE=JCTWE			6.2 Secs (6.2 Secs) [==>]	[1]
<i>Comments: Flat field flashed to 7100e, read out with EPER timing pattern.</i>									



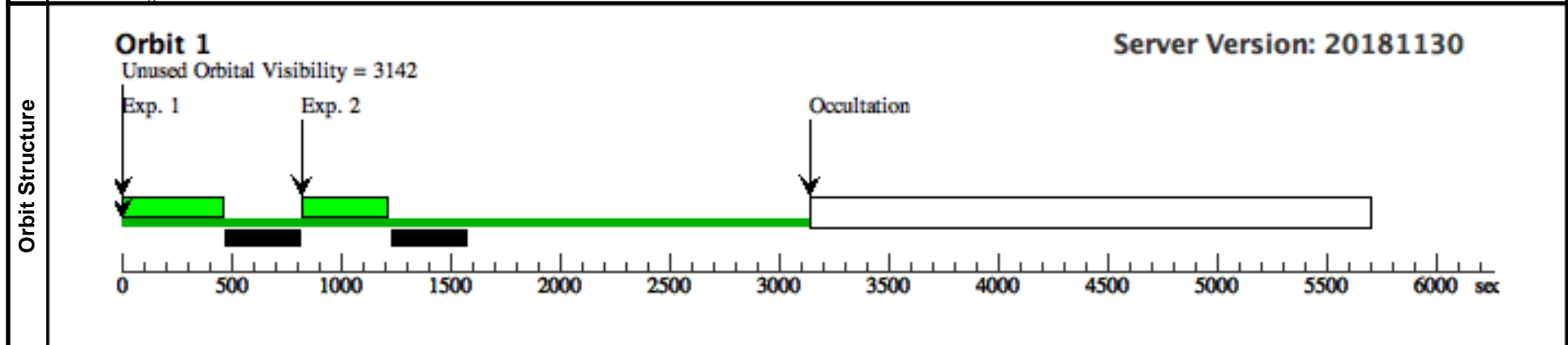
Proposal 15523 - Visit B1 - ACS Internal CTE Monitor

Mon Apr 22 16:00:19 GMT 2019

Visit	Proposal 15523, Visit B1, scheduling									
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: ACS/WFC									
	Special Requirements: BETWEEN 10-MAY-2019:00:00:00 AND 08-JUN-2019:00:00:00; SEQ B1,B2,B3,B4,B5,B6 WITHIN 7 D									

Comments: WFC EPER for amps AD

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	WFC-AD-E PER-set2 sh ort dark	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE				0.5 Secs (0.5 Secs) [==>]
<i>Comments: Short dark with EPER timing pattern (pseudo-bias).</i>										
2	WFC-AD-E PER-125e-s et2	TUNGSTEN	ACS/WFC, ACCUM, WFC	F555W F435W	AMP=AD; CTE=JCTWE				0.5 Secs (0.5 Secs) [==>]	[1]
<i>Comments: Signal level 125 electrons.</i>										



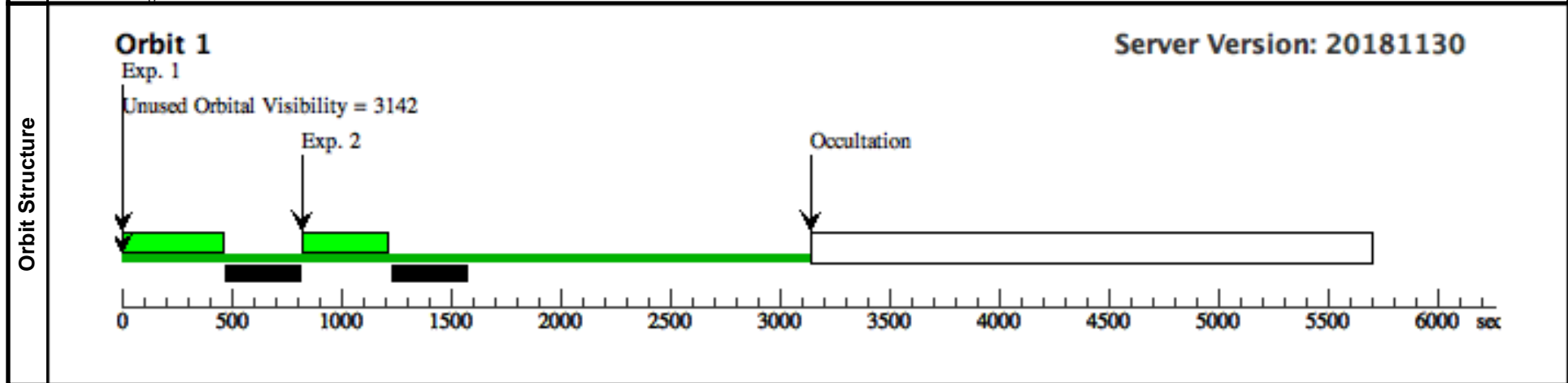
Proposal 15523 - Visit B2 - ACS Internal CTE Monitor

Mon Apr 22 16:00:19 GMT 2019

Visit	Proposal 15523, Visit B2, scheduling									
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: ACS/WFC									
	Special Requirements: (none)									

Comments: WFC EPER for amps AD

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	WFC-AD-E	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE				0.5 Secs (0.5 Secs)
		PER-set2 short dark							[==>]	[1]
Comments: Short dark with EPER timing pattern (pseudo-bias).										
2	WFC-AD-E	TUNGSTEN	ACS/WFC, ACCUM, WFC	F555W F435W	AMP=AD; CTE=JCTWE				1.2 Secs (1.2 Secs)	
		PER-500e-s et2							[==>]	[1]
Comments: Signal level 500 electrons.										



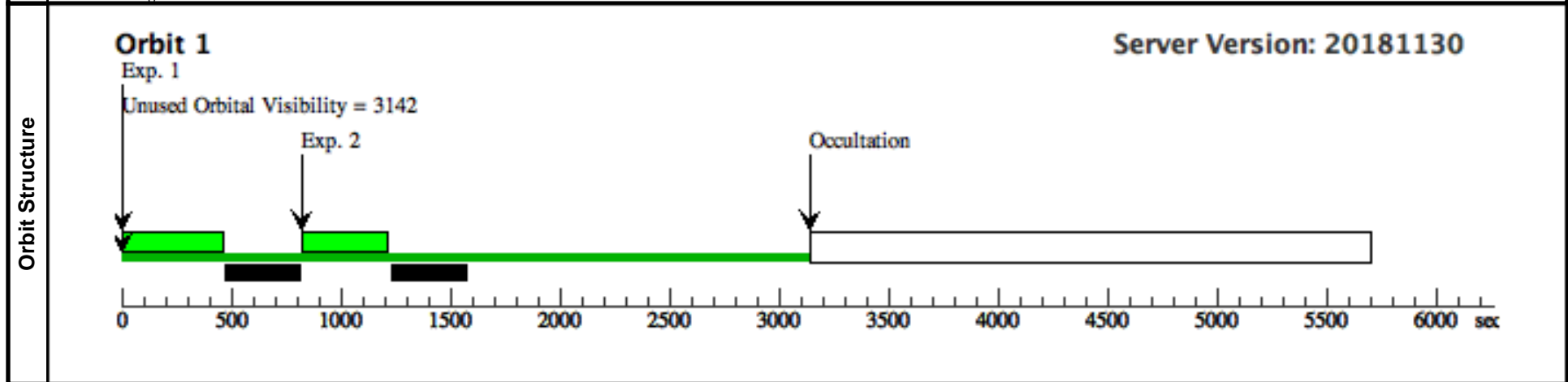
Proposal 15523 - Visit B3 - ACS Internal CTE Monitor

Mon Apr 22 16:00:19 GMT 2019

Visit	Proposal 15523, Visit B3, scheduling									
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: ACS/WFC									
	Special Requirements: (none)									

Comments: WFC EPER for amps AD

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	WFC-AD-E	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE				0.5 Secs (0.5 Secs)
		PER-set2 short dark							[==>]	[1]
Comments: Short dark with EPER timing pattern (pseudo-bias).										
2	WFC-AD-E	TUNGSTEN	ACS/WFC, ACCUM, WFC	F555W	AMP=AD; CTE=JCTWE				4.5 Secs (4.5 Secs)	
		PER-1620e-set2		F435W					[==>]	[1]
Comments: Signal level 1620 electrons.										

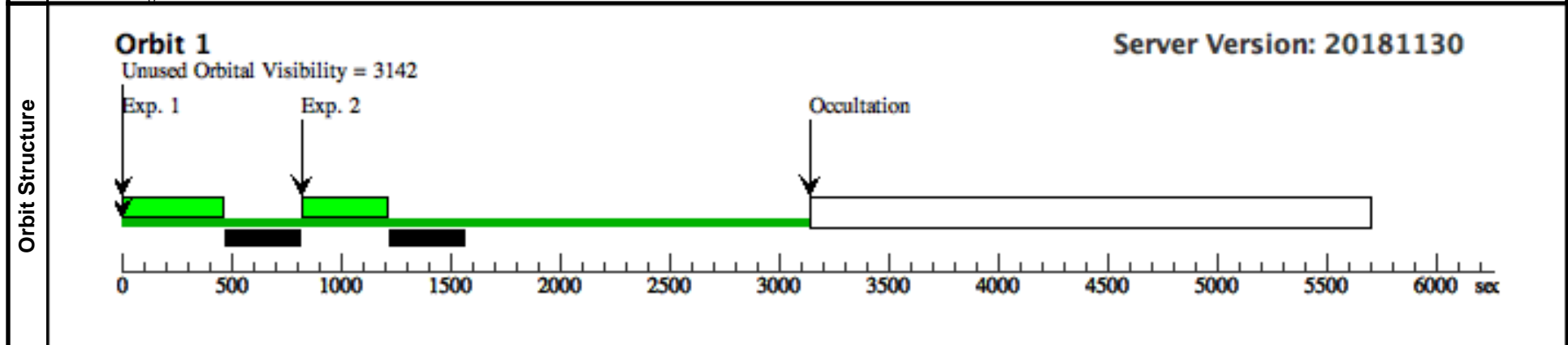


Proposal 15523 - Visit B4 - ACS Internal CTE Monitor

Mon Apr 22 16:00:19 GMT 2019

Visit	Proposal 15523, Visit B4, scheduling									
	Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: (none) <i>Comments: WFC EPER for amps AD</i>									

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
		1	WFC-AD-E PER-set2 sh ort dark	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE			0.5 Secs (0.5 Secs) [==>]
	<i>Comments: Short dark with EPER timing pattern (pseudo-bias).</i>									
	2	WFC-AD-E PER-5000e- set2	TUNGSTEN	ACS/WFC, ACCUM, WFC	F435W	AMP=AD; CTE=JCTWE			1.0 Secs (1 Secs) [==>]	[1]
	<i>Comments: Signal level 5000 electrons.</i>									

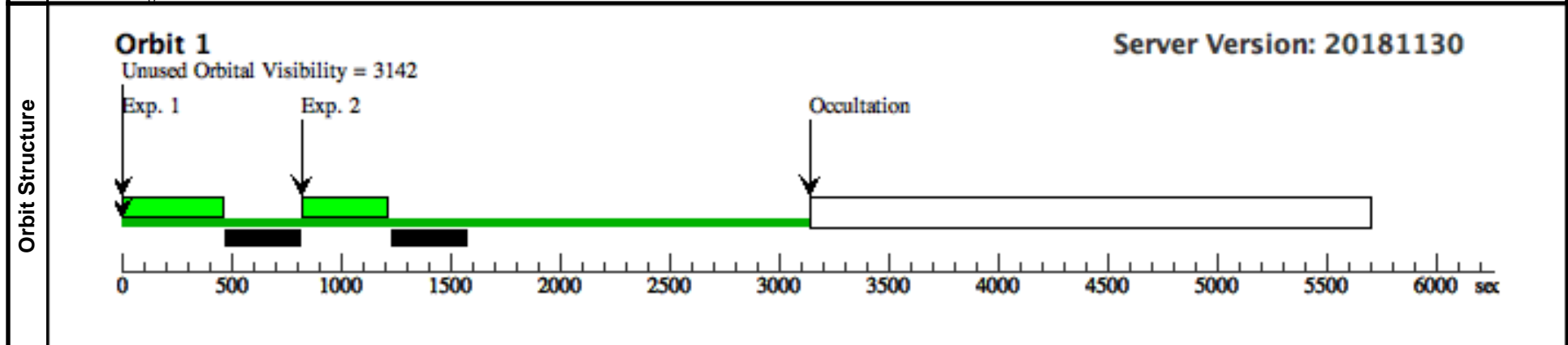


Proposal 15523 - Visit B5 - ACS Internal CTE Monitor

Mon Apr 22 16:00:19 GMT 2019

Visit	Proposal 15523, Visit B5, scheduling									
	Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: (none) <i>Comments: WFC EPER for amps AD</i>									

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
		1	WFC-AD-E PER-set2 sh ort dark	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE			0.5 Secs (0.5 Secs) [==>]
	<i>Comments: Short dark with EPER timing pattern (pseudo-bias).</i>									
	2	WFC-AD-E PER-10000e -set2	TUNGSTEN	ACS/WFC, ACCUM, WFC	F435W	AMP=AD; CTE=JCTWE			2.1 Secs (2.1 Secs) [==>]	[1]
	<i>Comments: Signal level 10000 electrons.</i>									



Proposal 15523 - Visit B6 - ACS Internal CTE Monitor

Mon Apr 22 16:00:19 GMT 2019

Visit	Proposal 15523, Visit B6, scheduling									
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: ACS/WFC									
	Special Requirements: (none)									

Comments: WFC EPER for amps AD

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	WFC-AD-E	DARK	ACS/WFC, ACCUM, WFC	DEF	AMP=AD; CTE=JCTWE				0.5 Secs (0.5 Secs)
		PER-set2 sh ort dark							[==>]	[1]
Comments: Short dark with EPER timing pattern (pseudo-bias).										
2	WFC-AD-E	TUNGSTEN	ACS/WFC, ACCUM, WFC	F435W	AMP=AD; CTE=JCTWE				12.5 Secs (12.5 Secs)	
		PER-60000e -set2							[==>]	[1]
Comments: Signal level 60000 electrons.										

