



## 12077 - Monitoring the Aftermath of an Asteroid Impact Event

Cycle: 17, 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) P2010-A2	WFC3/UVIS	1	25-Mar-2010 21:03:53.0	yes
02	(1) P2010-A2	WFC3/UVIS	1	25-Mar-2010 21:03:58.0	yes
03	(2) P2010-A2-2	WFC3/UVIS	1	25-Mar-2010 21:04:02.0	yes
04	(3) P2010-A2-3	WFC3/UVIS	1	25-Mar-2010 21:04:05.0	yes
05	(3) P2010-A2-3	WFC3/UVIS	1	25-Mar-2010 21:04:08.0	yes
06	(3) P2010-A2-3	WFC3/UVIS	1	25-Mar-2010 21:04:11.0	yes

6 Total Orbits Used

### ABSTRACT

Our Director's Discretionary program (GO-12053) to image the newly discovered object P/2010 A2 executed successfully on 2010 Jan 25 and 29 with spectacular results. Hubble has apparently borne witness to the first detection of a collision in the asteroid belt. Hubble imaging with the WFC3 has revealed an object unlike anything ever seen before and with details impossible to detect with any other facility. We request 6 more orbits of Hubble time (1 orbit every 20 days over the next few months, until the object enters Hubble's solar exclusion zone in late-June 2010) to monitor the evolution of this remarkable object and further clarify the nature of this event. These observations may usher in a new era of searching for and characterizing collisional events within the asteroid belt.

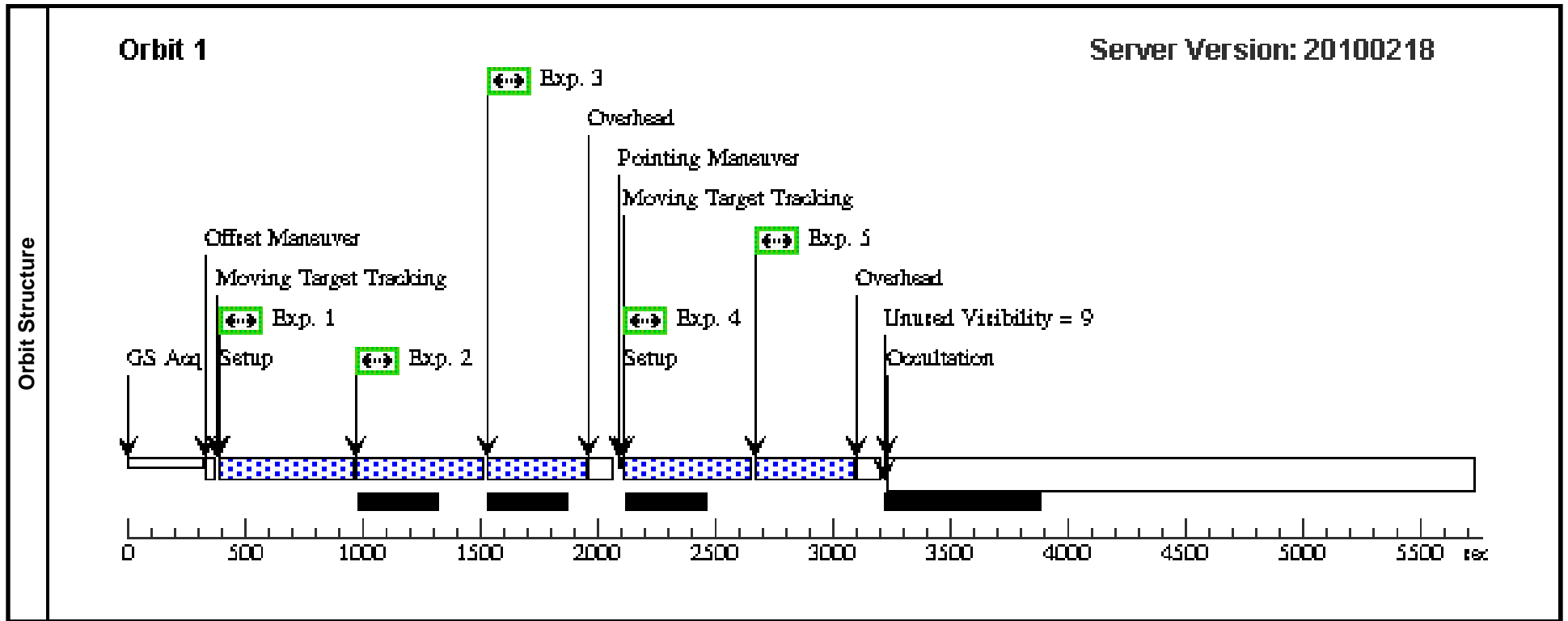
#### **OBSERVING DESCRIPTION**

TBD

Proposal 12077 - Visit 01 - Monitoring the Aftermath of an Asteroid Impact Event

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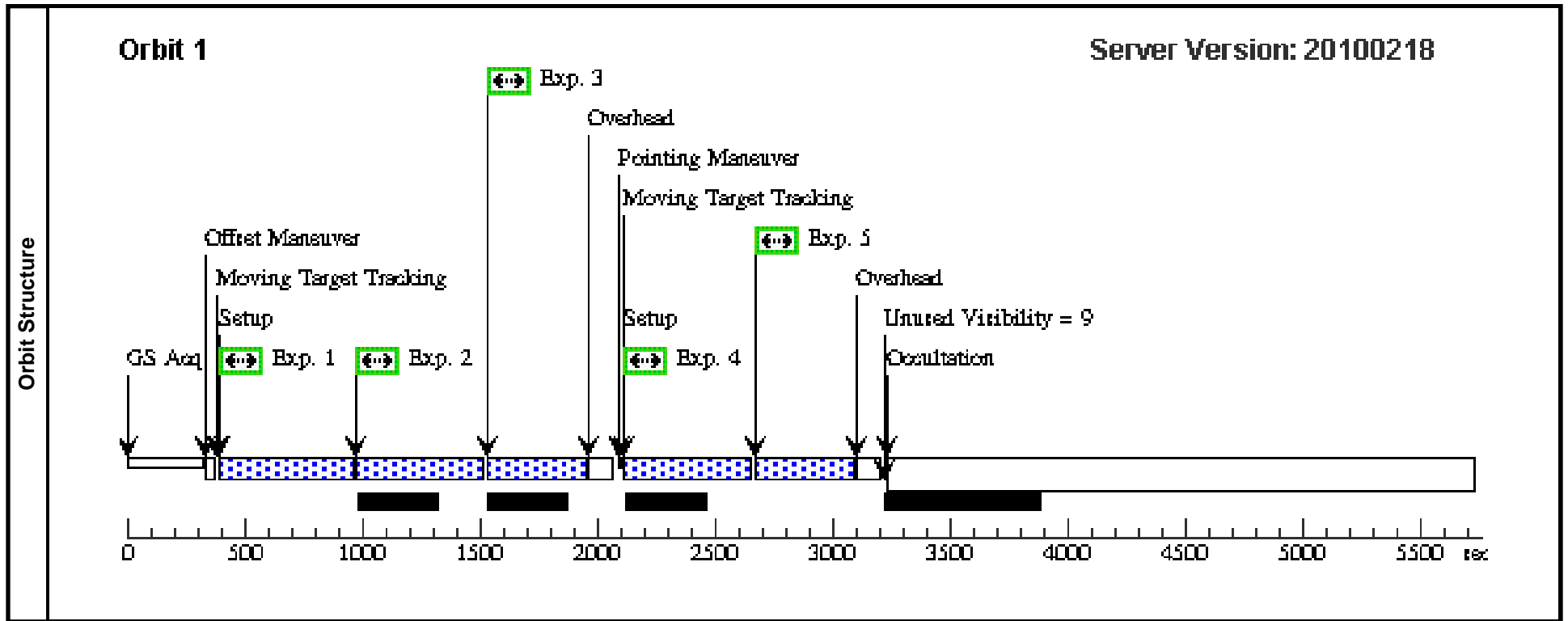
Visit	<b>Proposal 12077, Visit 01, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 15-FEB-2010:00:00:00 AND 01-MAR-2010:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(1)	P2010-A2	TYPE=COMET,Q=2.0079460,E=0.12 38959,I=5.27048,O=320.21852,W=13 3.01076,T=03-DEC- 2009:21:02:17,EQUINOX=J2000,EPO CH=25-NOV-2009:00:00:00					EARTH		
	<i>Comments:</i> Acquisition Uncertainty: 10 Arcsec Ephemeris Uncertainty: 1000 Kilometers									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) P2010-A2	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V01	425 Secs		[1]	
	2	(1) P2010-A2	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V01	425 Secs		[1]	
	3	(1) P2010-A2	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V01	425 Secs		[1]	
	4	(1) P2010-A2	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V01	425 Secs		[1]	
	5	(1) P2010-A2	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V01	425 Secs		[1]	



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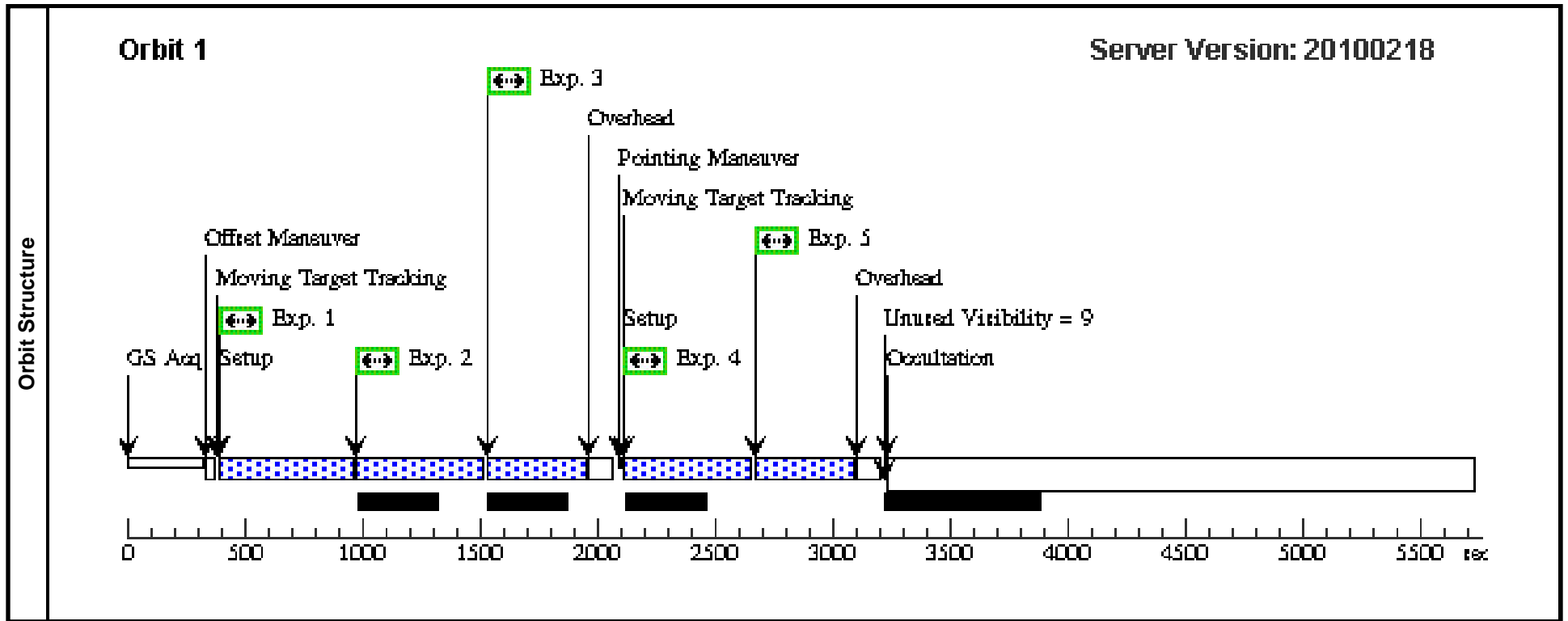
Visit	<b>Proposal 12077, Visit 02, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01 BY 17 D TO 23 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(1)	P2010-A2	TYPE=COMET,Q=2.0079460,E=0.12 38959,I=5.27048,O=320.21852,W=13 3.01076,T=03-DEC- 2009:21:02:17,EQUINOX=J2000,EPO CH=25-NOV-2009:00:00:00					EARTH		
	<i>Comments:</i> Acquisition Uncertainty: 10 Arcsec Ephemeris Uncertainty: 1000 Kilometers									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) P2010-A2		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V02		425 Secs [==>]	[1]
	2	(1) P2010-A2		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V02		425 Secs [==>]	[1]
	3	(1) P2010-A2		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V02		425 Secs [==>]	[1]
	4	(1) P2010-A2		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V02		425 Secs [==>]	[1]
	5	(1) P2010-A2		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V02		425 Secs [==>]	[1]



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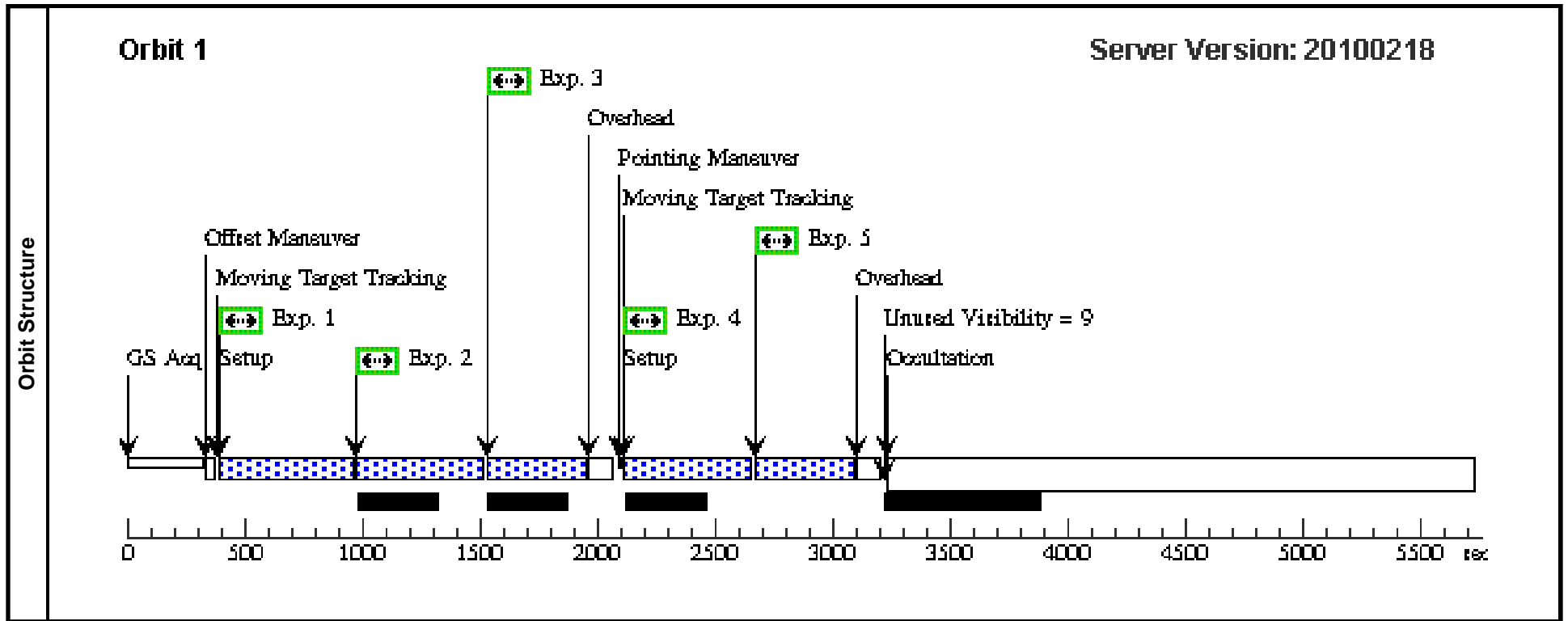
Visit	<b>Proposal 12077, Visit 03, scheduling</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 02 BY 17 D TO 23 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(2)	P2010-A2-2	TYPE=COMET,Q=2.0057959,E=0.12 43017,I=5.25692,O=320.27799,W=13 3.12101,T=04-DEC- 2009:09:33:07,EQUINOX=J2000,EPO CH=25-NOV-2009:00:00:00					EARTH		
	<i>Comments: This is for Visits 3, 4, 5, and 6.</i> <i>Orbital elements are from MPEC-E80.</i>  <i>Acquisition Uncertainty: 10 Arcsec</i> <i>Ephemeris Uncertainty: 10000 Kilometers</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(2) P2010-A2-2		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V03		425 Secs [==>]	[1]
	2	(2) P2010-A2-2		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V03		425 Secs [==>]	[1]
	3	(2) P2010-A2-2		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V03		425 Secs [==>]	[1]
	4	(2) P2010-A2-2		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V03		425 Secs [==>]	[1]
	5	(2) P2010-A2-2		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V03		425 Secs [==>]	[1]



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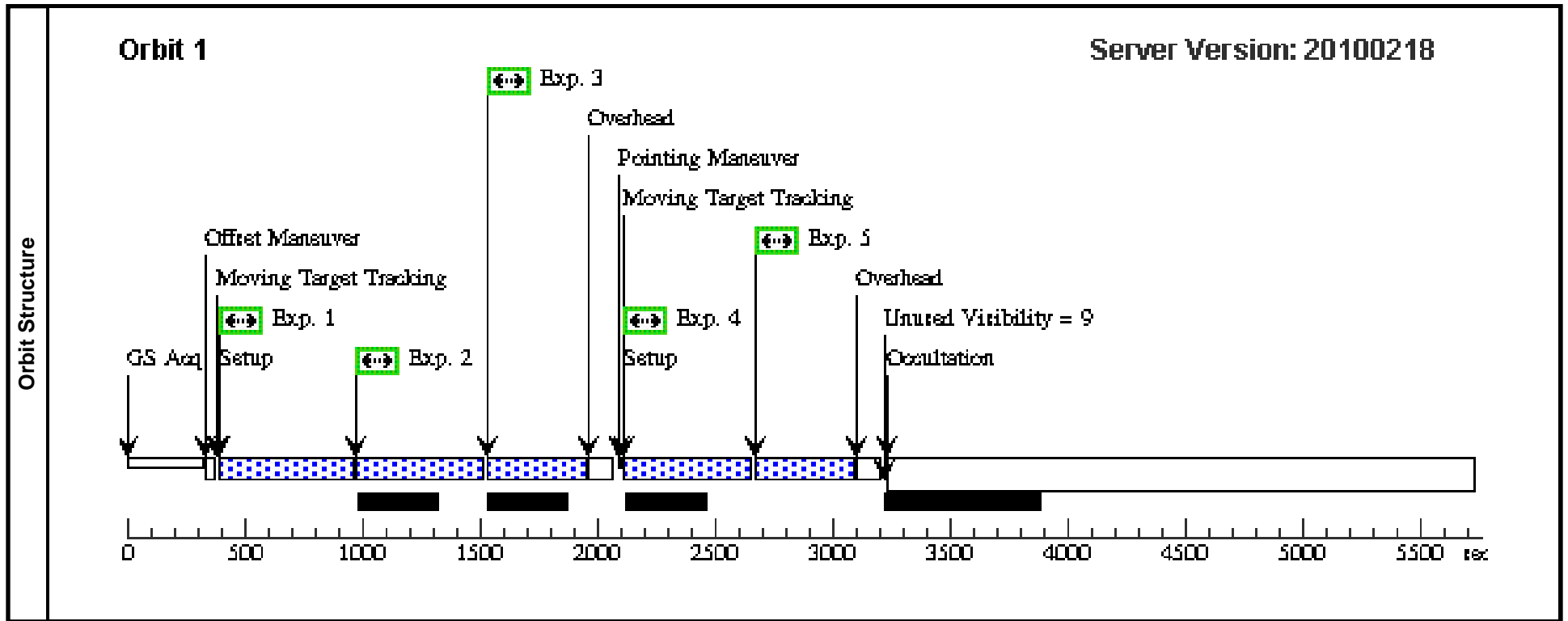
Visit	<b>Proposal 12077, Visit 04, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 03 BY 17 D TO 23 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(3)	P2010-A2-3	TYPE=COMET,Q=2.0058793,E=0.12 43023,I=5.25682,O=320.27856,W=13 3.22104,T=04-DEC- 2009:16:06:01,EQUINOX=J2000,EPO CH=25-NOV-2009:00:00:00					EARTH		
	<i>Comments: This is for Visits 4, 5, and 6.</i> <i>Orbital elements are from MPEC-F15.</i>  <i>Acquisition Uncertainty: 10 Arcsec</i> <i>Ephemeris Uncertainty: 10000 Kilometers</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(3) P2010-A2-3		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V04		425 Secs [==>]	[1]
	2	(3) P2010-A2-3		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V04		425 Secs [==>]	[1]
	3	(3) P2010-A2-3		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V04		425 Secs [==>]	[1]
	4	(3) P2010-A2-3		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V04		425 Secs [==>]	[1]
	5	(3) P2010-A2-3		WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V04		425 Secs [==>]	[1]



Proposal 12077 - Visit 05 - Monitoring the Aftermath of an Asteroid Impact Event

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Visit	<b>Proposal 12077, Visit 05, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 04 BY 17 D TO 23 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(3)	P2010-A2-3	TYPE=COMET,Q=2.0058793,E=0.12 43023,I=5.25682,O=320.27856,W=13 3.22104,T=04-DEC- 2009:16:06:01,EQUINOX=J2000,EPO CH=25-NOV-2009:00:00:00					EARTH		
	<i>Comments: This is for Visits 4, 5, and 6.</i> <i>Orbital elements are from MPEC-F15.</i>  <i>Acquisition Uncertainty: 10 Arcsec</i> <i>Ephemeris Uncertainty: 10000 Kilometers</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(3) P2010-A2-3	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V05		425 Secs [==>]	[1]	
	2	(3) P2010-A2-3	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V05		425 Secs [==>]	[1]	
	3	(3) P2010-A2-3	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V05		425 Secs [==>]	[1]	
	4	(3) P2010-A2-3	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V05		425 Secs [==>]	[1]	
	5	(3) P2010-A2-3	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V05		425 Secs [==>]	[1]	



Proposal 12077 - Visit 06 - Monitoring the Aftermath of an Asteroid Impact Event

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Visit	<b>Proposal 12077, Visit 06, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 05 BY 17 D TO 23 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(3)	P2010-A2-3	TYPE=COMET,Q=2.0058793,E=0.12 43023,I=5.25682,O=320.27856,W=13 3.22104,T=04-DEC- 2009:16:06:01,EQUINOX=J2000,EPO CH=25-NOV-2009:00:00:00					EARTH		
	<i>Comments: This is for Visits 4, 5, and 6.</i> <i>Orbital elements are from MPEC-F15.</i>  <i>Acquisition Uncertainty: 10 Arcsec</i> <i>Ephemeris Uncertainty: 10000 Kilometers</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(3) P2010-A2-3	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V06		425 Secs [==>]	[1]	
	2	(3) P2010-A2-3	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V06		425 Secs [==>]	[1]	
	3	(3) P2010-A2-3	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	REQ EPHEM CORR PA2V06		425 Secs [==>]	[1]	
	4	(3) P2010-A2-3	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V06		425 Secs [==>]	[1]	
	5	(3) P2010-A2-3	WFC3/UVIS, ACCUM, UVIS1-FIX	F606W	CR-SPLIT=NO	POS TARG 0.2,0.2; REQ EPHEM CORR PA2V06		425 Secs [==>]	[1]	

