



## 14474 - Comet P/2010 V1 fragmentation event

Cycle: 23, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

### INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
<b>Dr. David Jewitt (PI) (Contact)</b>	<b>University of California - Los Angeles</b>	<b>jewitt@ucla.edu</b>
Dr. Harold A. Weaver (CoI) (Contact)	The Johns Hopkins University Applied Physics Laboratory	hal.weaver@jhuapl.edu
Dr. Karen J. Meech (CoI)	University of Hawaii	meech@ifa.hawaii.edu
Dr. Richard Wainscoat (CoI)	University of Hawaii	rjw@ifa.hawaii.edu
Dr. Jan Kleyna (CoI)	University of Hawaii	kleyna@ifa.hawaii.edu
Rob Weryk (CoI)	University of Hawaii	weryk@hawaii.edu
Masateru Ishiguro (CoI)	Seoul National University	ishiguro@astro.snu.ac.kr
Dr. Jessica Agarwal (CoI) (ESA Member)	Max Planck Institute for Solar System Research	je.agarwal@gmail.com
Dr. Jing Li (CoI)	University of California - Los Angeles	jli@igpp.ucla.edu
Man-To Hui (CoI)	University of California - Los Angeles	pachacoti@ucla.edu
Max Mutchler (CoI) (Contact)	Space Telescope Science Institute	mutchler@stsci.edu

### 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) P2010V1-D-OFFSET	WFC3/UVIS	1	23-Feb-2016 21:34:28.0	yes
02	(1) P2010V1-D-OFFSET	WFC3/UVIS	1	23-Feb-2016 21:34:29.0	yes
03	(1) P2010V1-D-OFFSET	WFC3/UVIS	1	23-Feb-2016 21:34:30.0	yes
3A	(1) P2010V1-D-OFFSET	WFC3/UVIS	1	23-Feb-2016 21:34:31.0	yes
04	(1) P2010V1-D-OFFSET	WFC3/UVIS	1	23-Feb-2016 21:34:32.0	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>
05	(1) P2010V1-D-OFFSET	WFC3/UVIS	1	23-Feb-2016 21:34:33.0	yes
06	(1) P2010V1-D-OFFSET	WFC3/UVIS	1	23-Feb-2016 21:34:34.0	yes
07	(2) P2010V1-D	WFC3/UVIS	1	23-Feb-2016 21:34:35.0	yes

8 Total Orbits Used

**ABSTRACT**

We will observe comet P/2010 V1 (Ikeya-Murakami), currently undergoing a spectacular fragmentation event, in order to investigate the process of cometary disintegration. We aim to establish the size distribution of fragments down to the 20m scale, to estimate the ejected mass, to constrain the dynamics of the fragments and dust, and to measure the velocity of ejected material from a unique observing geometry. The split nature of comet P/2010 V1 was announced on 2016 January 03. The short-term photometric and morphological changes indicative of rapid disintegration are evident in ground-based observations taken in the first 5 days of January. Therefore, we need rapid response, high resolution images from HST to be able to follow the break up.

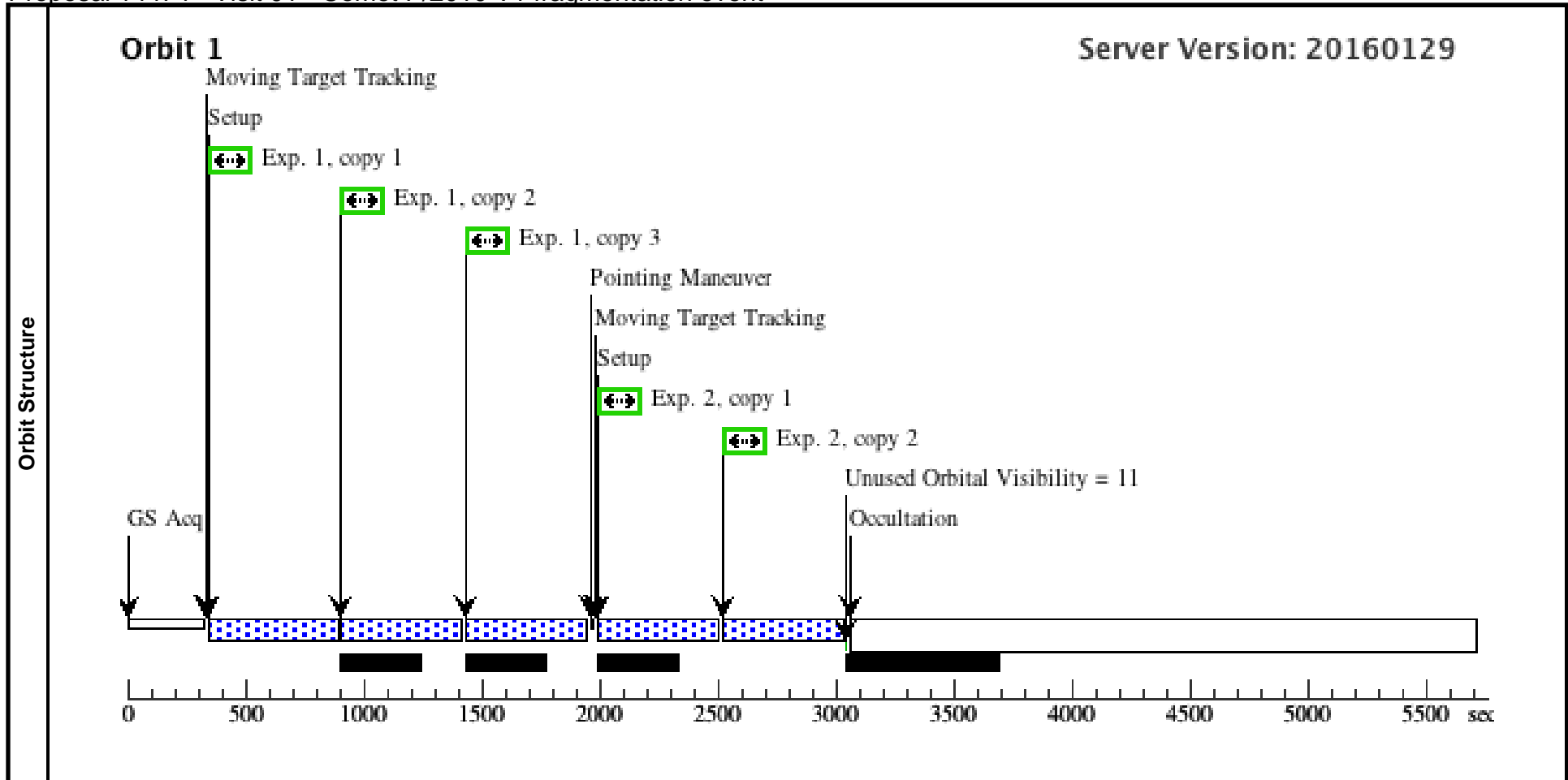
**OBSERVING DESCRIPTION**

TBD

Proposal 14474 - Visit 01 - Comet P/2010 V1 fragmentation event

Wed Feb 24 02:34:36 GMT 2016

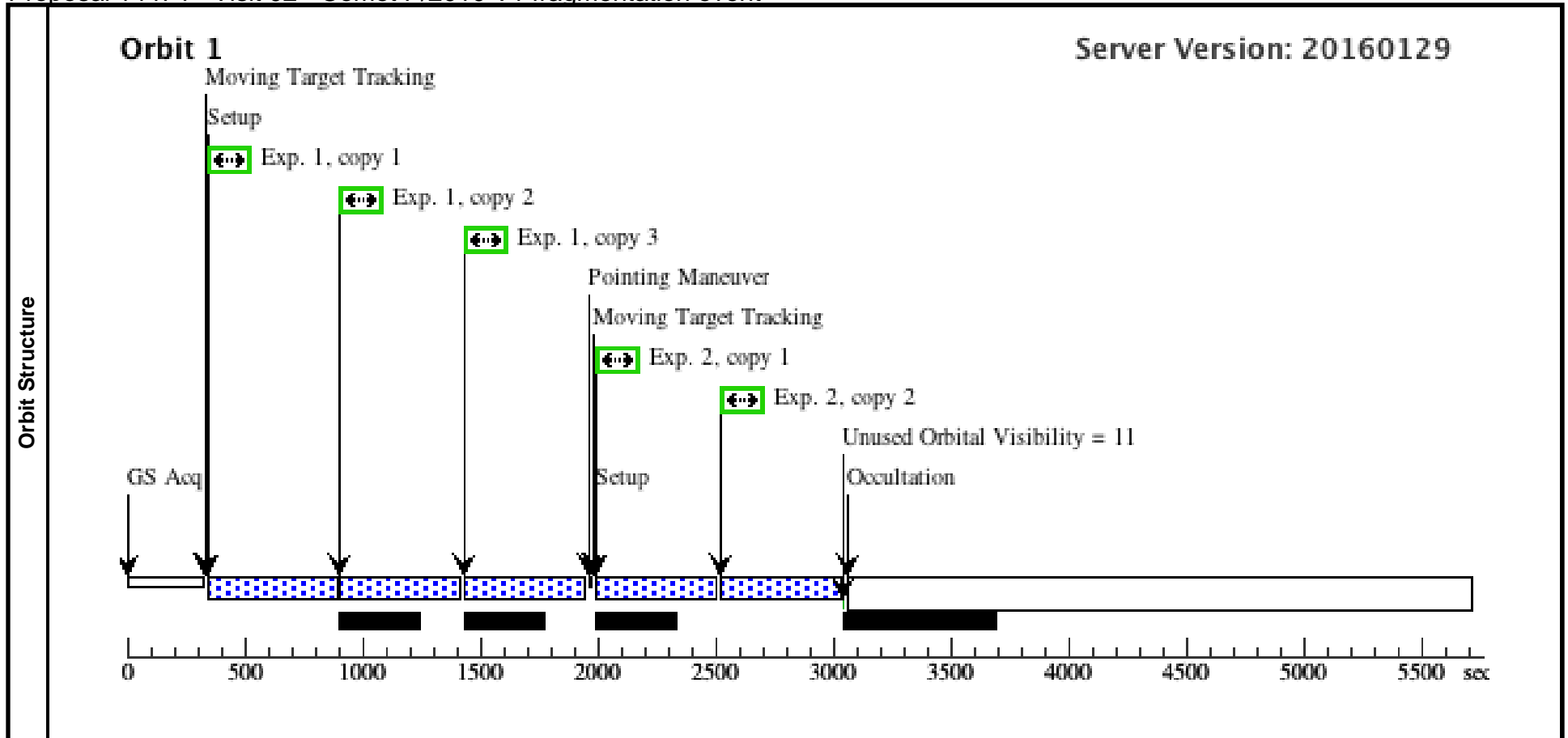
Visit	<b>Proposal 14474, Visit 01, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 195D TO 205 D; VISIBILITY INTERVAL 51 M <i>Comments: Schedule this visit as soon as possible.</i>									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(1)	P2010V1-D-OFFSET	TYPE=COMET,Q=1.57370492,E=0.4 901496,I=9.38631,O=3.78214,W=152. 43725,T=17-MAR-2016:07:17:31,TTimeScale=TDT,EQU INOX=J2000,EPOCH=22-OCT-2014:00:00:00,EpochTimeScale=TDT	TYPE=POS_ANGLE,RAD=62,ANG=292,REF=NORTH			MOSS Planning Start: 01-JAN-2016:00:00:00 MOSS Planning End: 31-OCT-2016:00:00:00 MOSS Show Windows: true	EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Visit 01	400 Secs X 3 (1200 Secs) [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)]	[1]
2		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.0		Sequence 1-2 Non-Int in Visit 01	400 Secs X 2 (800 Secs) [=>(Copy 1)] [=>(Copy 2)]	[1]



Proposal 14474 - Visit 02 - Comet P/2010 V1 fragmentation event

Wed Feb 24 02:34:36 GMT 2016

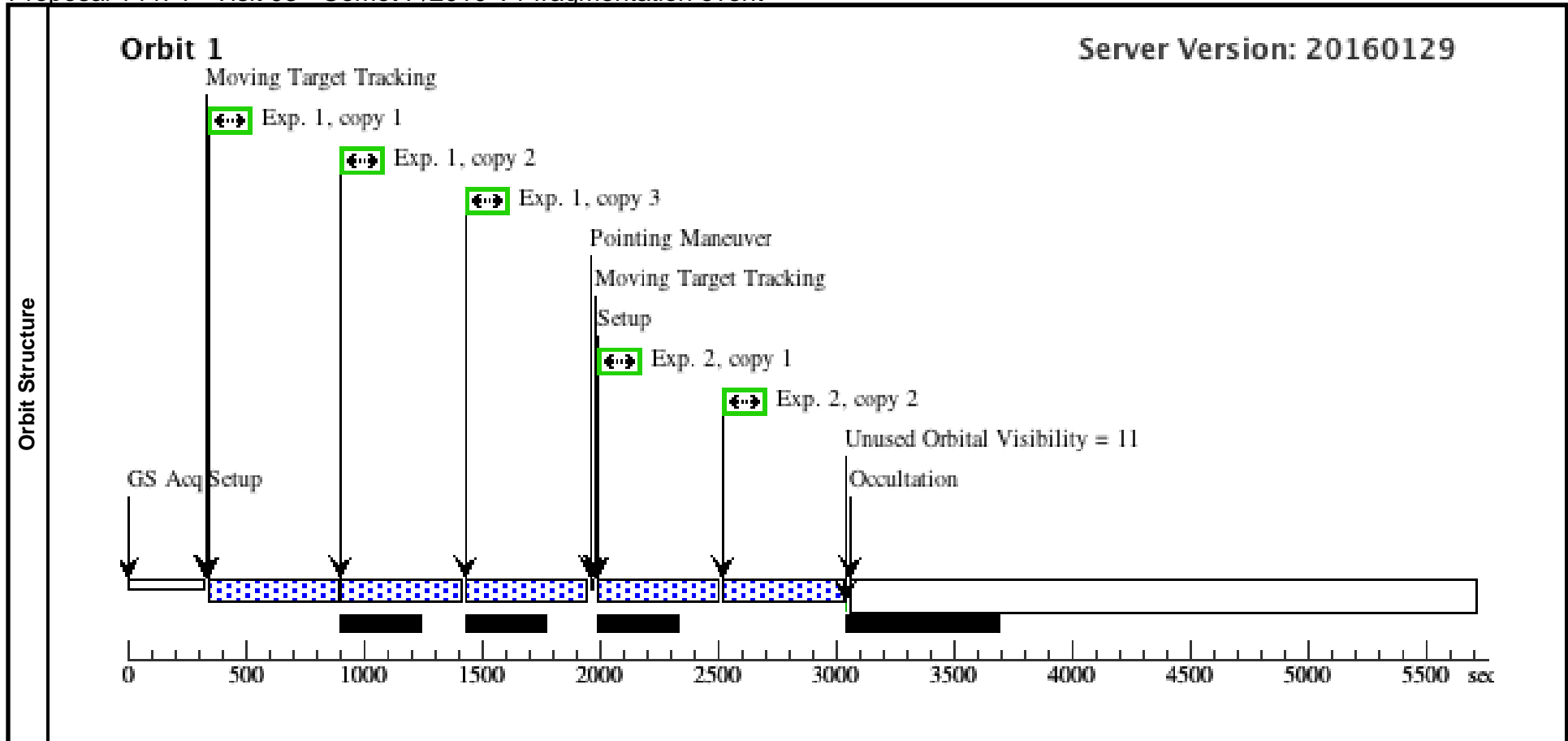
Visit	<b>Proposal 14474, Visit 02, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 195D TO 205 D; AFTER 01 BY 0.8 D TO 1.2 D; VISIBILITY INTERVAL 51 M <i>Comments: Schedule this visit as soon as possible.</i>									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(1)	P2010V1-D-OFFSET	TYPE=COMET,Q=1.57370492,E=0.4 901496,I=9.38631,O=3.78214,W=152. 43725,T=17-MAR-2016:07:17:31,TTimeScale=TDT,EQU INOX=J2000,EPOCH=22-OCT-2014:00:00:00,EpochTimeScale=TDT	TYPE=POS_ANGLE,RAD=62,ANG=292,REF=NORTH			MOSS Planning Start: 01-JAN-2016:00:00:00 MOSS Planning End: 31-OCT-2016:00:00:00 MOSS Show Windows: true	EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Visit 02	400 Secs X 3 (1200 Secs) [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)]	[1]
2		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.0		Sequence 1-2 Non-Int in Visit 02	400 Secs X 2 (800 Secs) [=>(Copy 1)] [=>(Copy 2)]	[1]



Proposal 14474 - Visit 03 - Comet P/2010 V1 fragmentation event

Wed Feb 24 02:34:36 GMT 2016

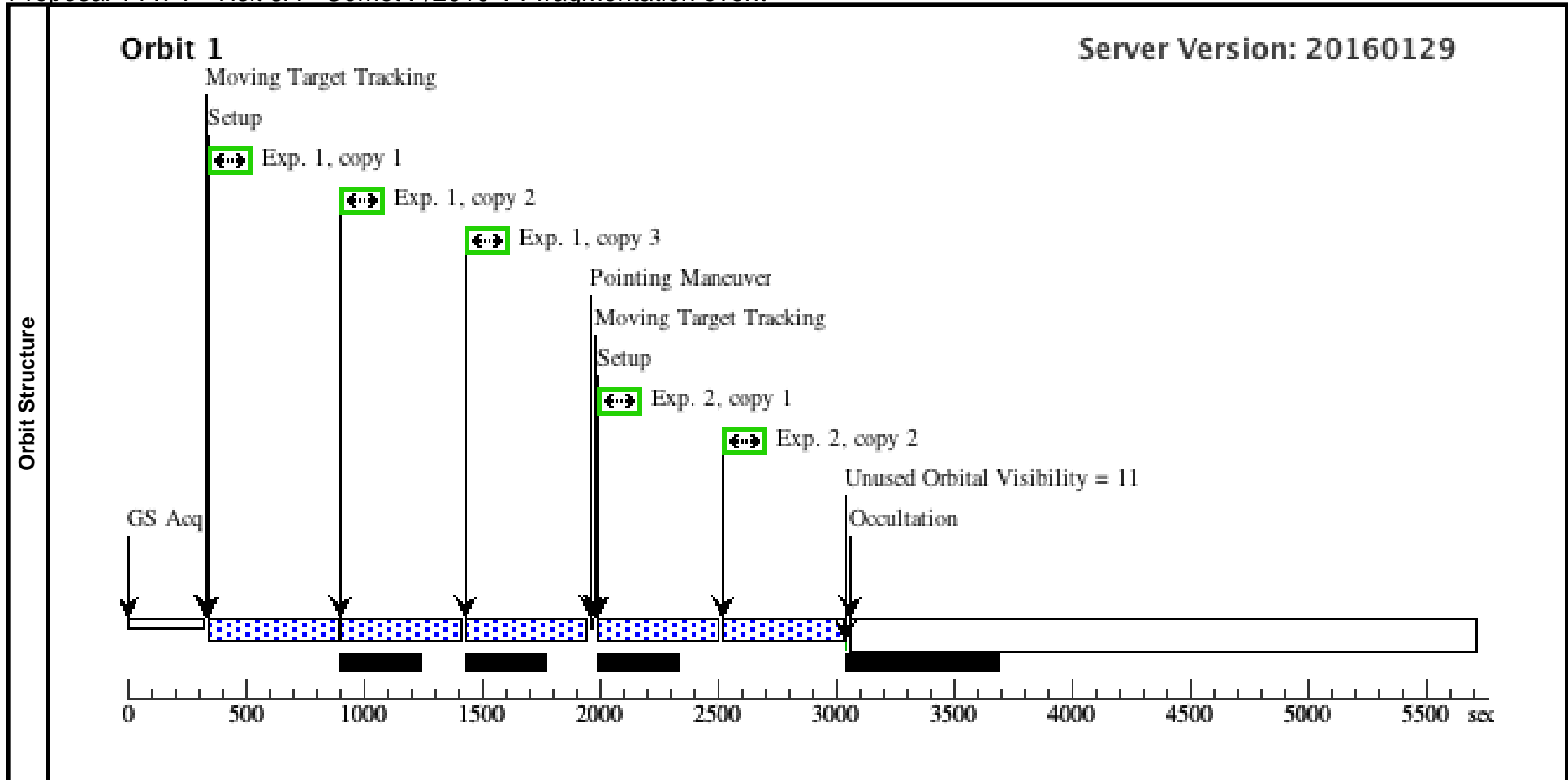
Visit	<b>Proposal 14474, Visit 03, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 195D TO 205 D; AFTER 02 BY 0.8 D TO 1.2 D; VISIBILITY INTERVAL 51 M <i>Comments: Schedule this visit as soon as possible.</i>									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(1)	P2010V1-D-OFFSET	TYPE=COMET,Q=1.57370492,E=0.4 901496,I=9.38631,O=3.78214,W=152. 43725,T=17-MAR-2016:07:17:31,TTimeScale=TDT,EQU INOX=J2000,EPOCH=22-OCT-2014:00:00:00,EpochTimeScale=TDT	TYPE=POS_ANGLE,RAD=62,ANG=292,REF=NORTH			MOSS Planning Start: 01-JAN-2016:00:00:00 MOSS Planning End: 31-OCT-2016:00:00:00 MOSS Show Windows: true	EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Visit 03	400 Secs X 3 (1200 Secs) [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)]	[1]
2		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.0	Sequence 1-2 Non-Int in Visit 03	400 Secs X 2 (800 Secs) [=>(Copy 1)] [=>(Copy 2)]	[1]	



Proposal 14474 - Visit 3A - Comet P/2010 V1 fragmentation event

Wed Feb 24 02:34:36 GMT 2016

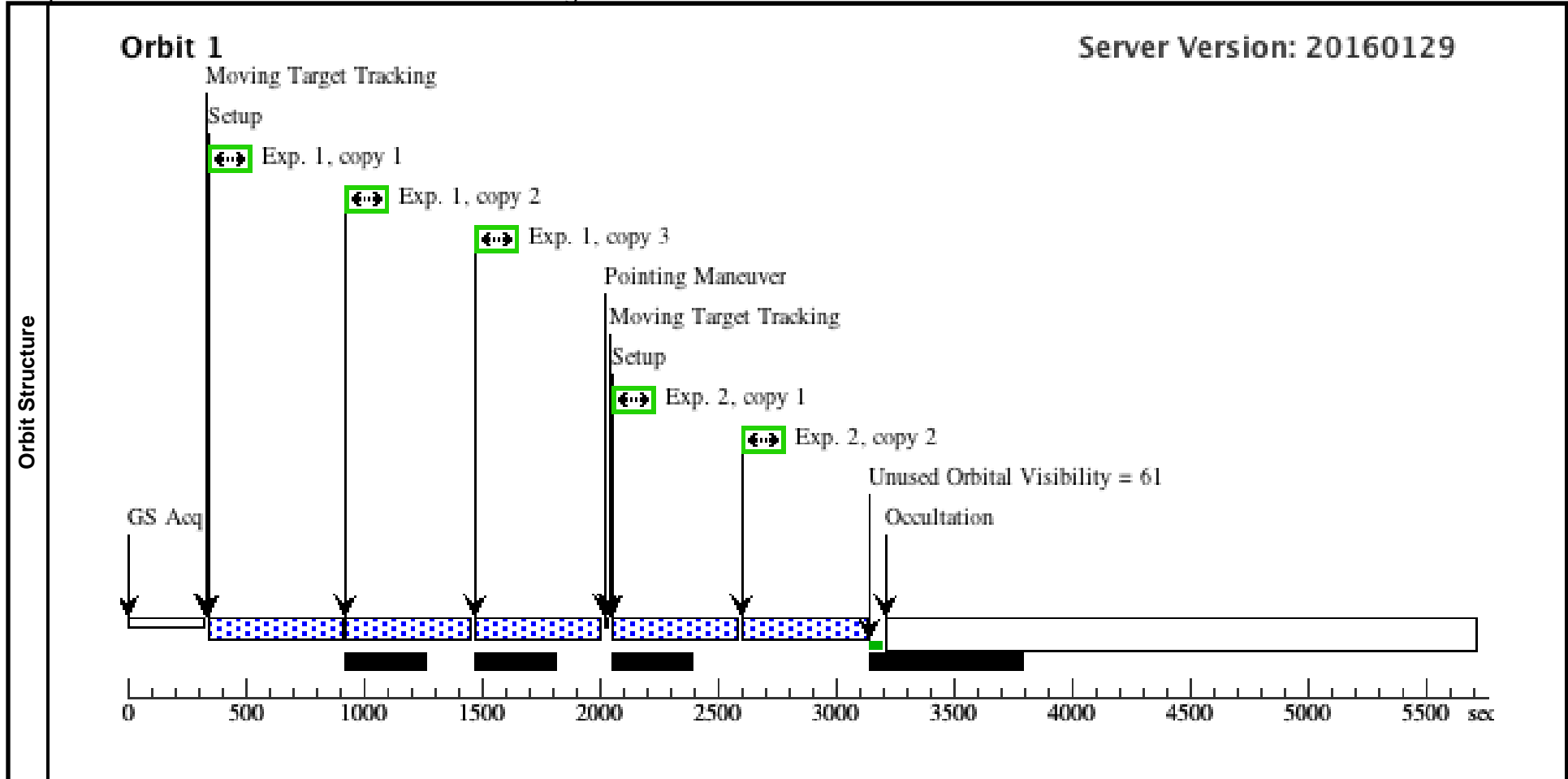
Visit	<b>Proposal 14474, Visit 3A, withdrawn</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 195D TO 205 D; AFTER 02; BETWEEN 30-JAN-2016 AND 30-JAN-2016:19; VISIBILITY INTERVAL 51 M <i>Comments: Schedule this visit as soon as possible. alternate visit to 3.</i>									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(1)	P2010V1-D-OFFSET	TYPE=COMET,Q=1.57370492,E=0.4 901496,I=9.38631,O=3.78214,W=152. 43725,T=17-MAR-2016:07:17:31,TTimeScale=TDT,EQU INOX=J2000,EPOCH=22-OCT-2014:00:00:00,EpochTimeScale=TDT	TYPE=POS_ANGLE,RAD=62,ANG=292,REF=NORTH			MOSS Planning Start: 01-JAN-2016:00:00:00 MOSS Planning End: 31-OCT-2016:00:00:00 MOSS Show Windows: true	EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Visit 3A	400 Secs X 3 (1200 Secs) [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)]	[1]
2		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.0	Sequence 1-2 Non-Int in Visit 3A	400 Secs X 2 (800 Secs) [=>(Copy 1)] [=>(Copy 2)]	[1]	



Proposal 14474 - Visit 04 - Comet P/2010 V1 fragmentation event

Wed Feb 24 02:34:36 GMT 2016

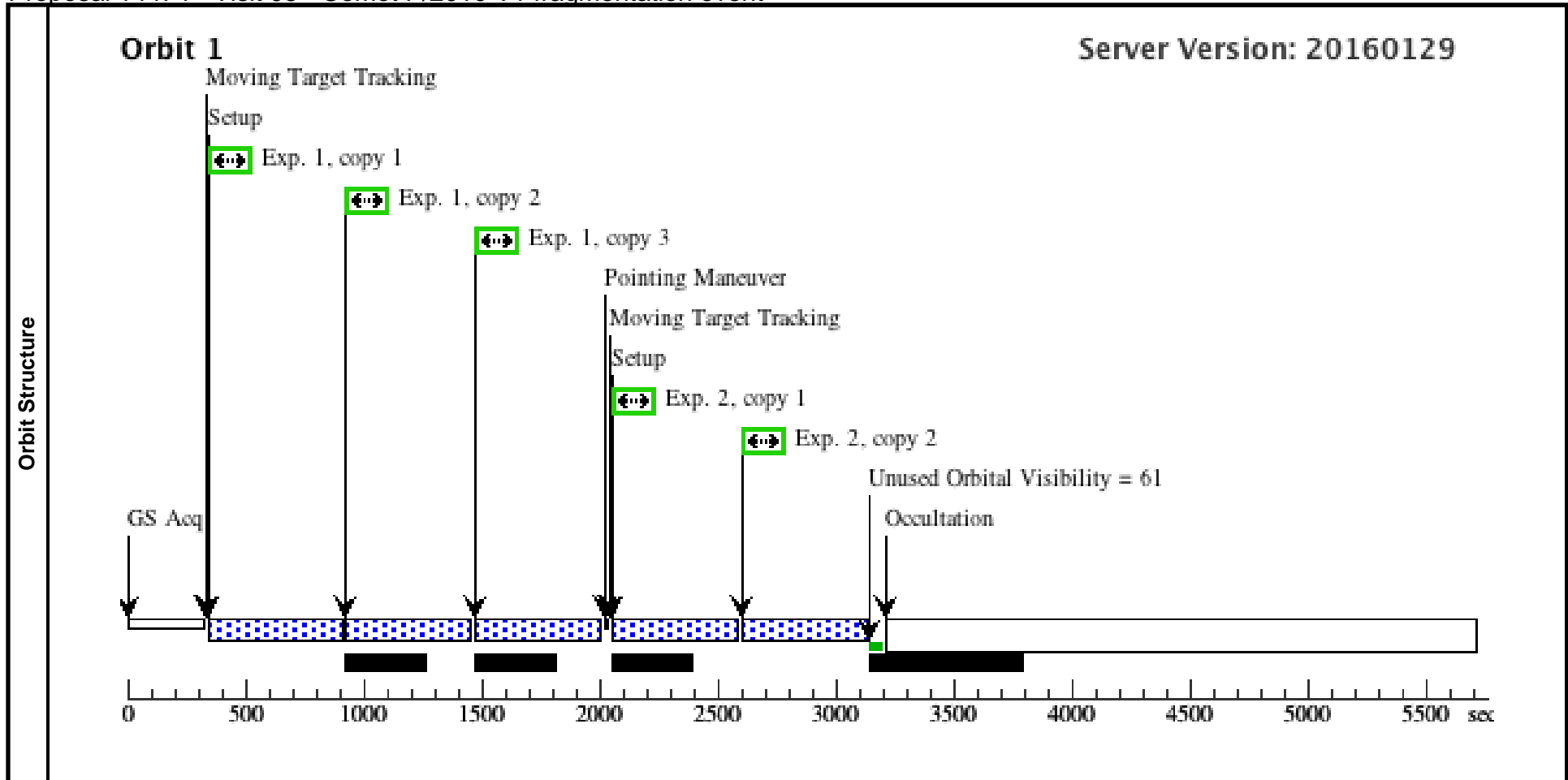
Visit	<b>Proposal 14474, Visit 04, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 09-FEB-2016:00:00:00 AND 19-FEB-2016:00:00:00 Comments: First visit for mid-February observations.									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(1)	P2010V1-D-OFFSET	TYPE=COMET,Q=1.57370492,E=0.4 901496,I=9.38631,O=3.78214,W=152. 43725,T=17-MAR-2016:07:17:31,TTimeScale=TDT,EQU INOX=J2000,EPOCH=22-OCT-2014:00:00:00,EpochTimeScale=TDT	TYPE=POS_ANGLE,RAD=62,ANG=292,REF=NORTH			MOSS Planning Start: 01-JAN-2016:00:00:00 MOSS Planning End: 31-OCT-2016:00:00:00 MOSS Show Windows: true	EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Visit 04	420 Secs X 3 (1260 Secs) [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)]	[1]
2		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.0		Sequence 1-2 Non-Int in Visit 04	420 Secs X 2 (840 Secs) [=>(Copy 1)] [=>(Copy 2)]	[1]



Proposal 14474 - Visit 05 - Comet P/2010 V1 fragmentation event

Wed Feb 24 02:34:36 GMT 2016

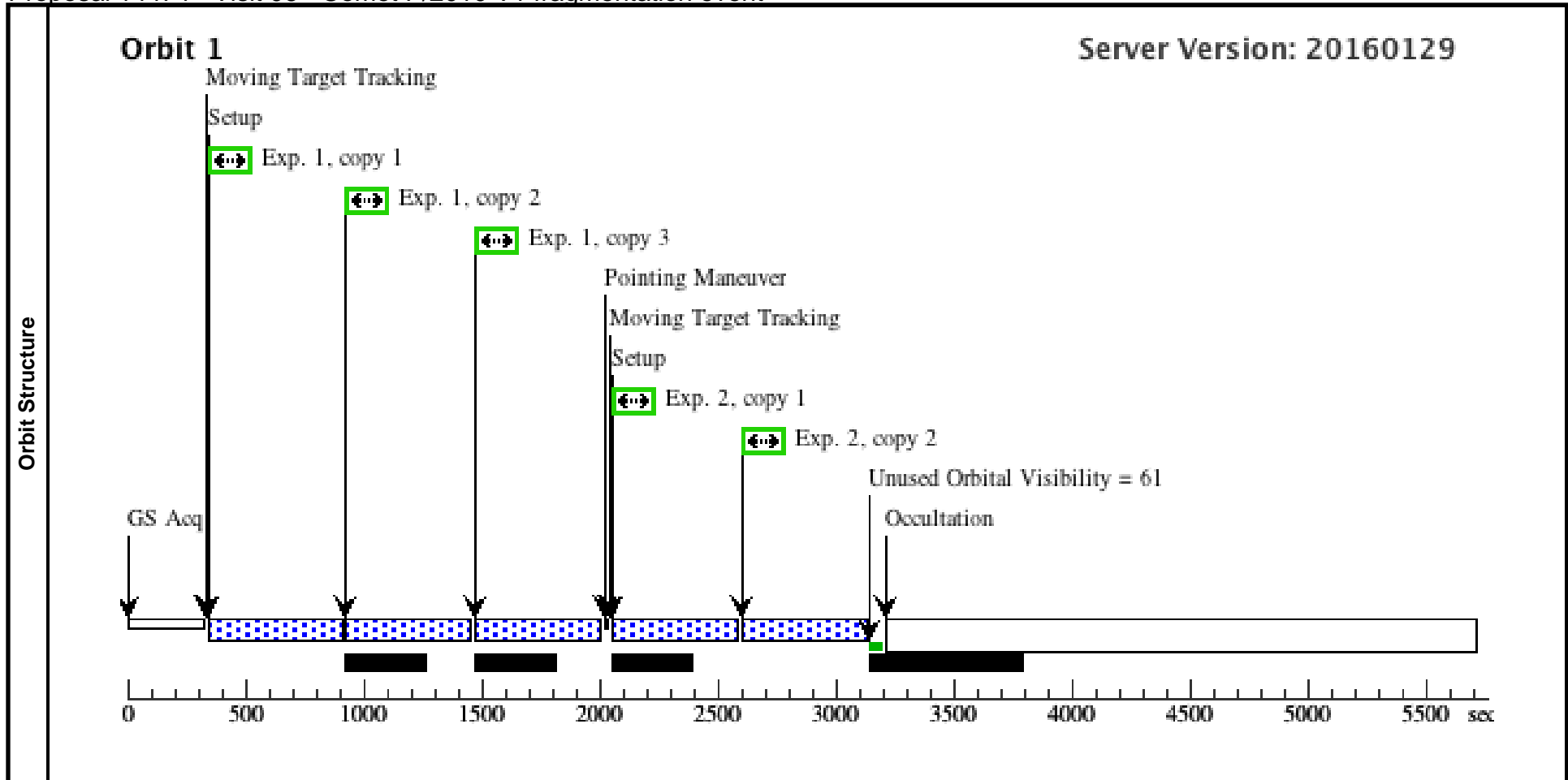
Visit	Proposal 14474, Visit 05, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 04 BY 0.8 D TO 1.2 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(1)	P2010V1-D-OFFSET	TYPE=COMET,Q=1.57370492,E=0.4 901496,I=9.38631,O=3.78214,W=152. 43725,T=17-MAR-2016:07:17:31,TTimeScale=TDT,EQU INOX=J2000,EPOCH=22-OCT-2014:00:00:00,EpochTimeScale=TDT	TYPE=POS_ANGLE,RAD=62,ANG=292,REF=NORTH			MOSS Planning Start: 01-JAN-2016:00:00:00 MOSS Planning End: 31-OCT-2016:00:00:00 MOSS Show Windows: true	EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Visit 05	420 Secs X 3 (1260 Secs) [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)]	[1]
2		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.0		Sequence 1-2 Non-Int in Visit 05	420 Secs X 2 (840 Secs) [=>(Copy 1)] [=>(Copy 2)]	[1]



Proposal 14474 - Visit 06 - Comet P/2010 V1 fragmentation event

Wed Feb 24 02:34:36 GMT 2016

Visit	<b>Proposal 14474, Visit 06, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 05 BY 0.8 D TO 1.2 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(1)	P2010V1-D-OFFSET	TYPE=COMET,Q=1.57370492,E=0.4 901496,I=9.38631,O=3.78214,W=152. 43725,T=17-MAR-2016:07:17:31,TTimeScale=TDT,EQU INOX=J2000,EPOCH=22-OCT-2014:00:00:00,EpochTimeScale=TDT	TYPE=POS_ANGLE,RAD=62,ANG=292,REF=NORTH			MOSS Planning Start: 01-JAN-2016:00:00:00 MOSS Planning End: 31-OCT-2016:00:00:00 MOSS Show Windows: true	EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Visit 06	420 Secs X 3 (1260 Secs) [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)]	[1]
2		(1) P2010V1-D-OFFSET	WFC3/UVIS, ACCUM, UVIS-CENTER	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.0	Sequence 1-2 Non-Int in Visit 06	420 Secs X 2 (840 Secs) [=>(Copy 1)] [=>(Copy 2)]	[1]	



Proposal 14474 - March 2016 visit (07) - Comet P/2010 V1 fragmentation event

Wed Feb 24 02:34:36 GMT 2016

Visit	<b>Proposal 14474, March 2016 visit (07), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 112D TO 112 D; BETWEEN 22-MAR-2016:00:00:00 AND 26-MAR-2016:00:00:00 <i>Comments: Only visit to use pointing at D-fragment with no offset.</i>									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(2)	P2010V1-D	TYPE=COMET,Q=1.5724817364255 39,E=.4905379107240086,I=9.385602 685056183,O=3.763159206157828,W =152.5187190835178,T=17-MAR- 2016:09:09:39,TimeScale=UTC,EQ UINOX=J2000,EPOCH=06-FEB- 2016:00:00:00,EpochTimeScale=TDB					EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(2) P2010V1-D	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in March 2016 visit (07)	420 Secs X 3 (1260 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]	[1]
2		(2) P2010V1-D	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.0	Sequence 1-2 Non-Int in March 2016 visit (07)	420 Secs X 2 (840 Secs) [==>(Copy 1)] [==>(Copy 2)]	[1]	

