



13609 - Investigating the Trigger Mechanism for Newly Discovered Main Belt Comet P/2013 P5

Cycle: 21, 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) MBC-2013P5	WFC3/UVIS	1	27-Nov-2013 21:29:36.0	yes
02	(1) MBC-2013P5	WFC3/UVIS	1	27-Nov-2013 21:29:45.0	yes
03	(1) MBC-2013P5	WFC3/UVIS	1	27-Nov-2013 21:29:53.0	yes
04	(1) MBC-2013P5	WFC3/UVIS	1	27-Nov-2013 21:30:00.0	yes
05	(1) MBC-2013P5	WFC3/UVIS	1	27-Nov-2013 21:30:08.0	yes
06	(2) MBC-2013P5-2014	WFC3/UVIS	1	27-Nov-2013 21:30:16.0	yes
07	(2) MBC-2013P5-2014	WFC3/UVIS	1	27-Nov-2013 21:30:26.0	yes

7 Total Orbits Used

ABSTRACT

Our Target of Opportunity program (GO-13475: Hubble Imaging of a Newly-Discovered Main-Belt Comet) was triggered on 2013 August 29 for the new object P/2013 P5, with the first observations taken on September 10th. The results are spectacular, revealing an asteroid unlike any seen before and with details impossible to detect with any other facility. We request a total of 7 more Hubble orbits to investigate what triggered the activation of this MBC: 5 orbits will be used to monitor the temporal evolution of P5 (1 orbit every month until the object enters Hubble's solar exclusion zone) and two specialized orbits will be used to clarify the nature of this event. These observations will contribute to an exciting new field in planetary astronomy (real-time asteroid disruption science) with important implications for the supply of zodiacal dust, the population of meteor streams, and for dust production in debris disks around other stars.

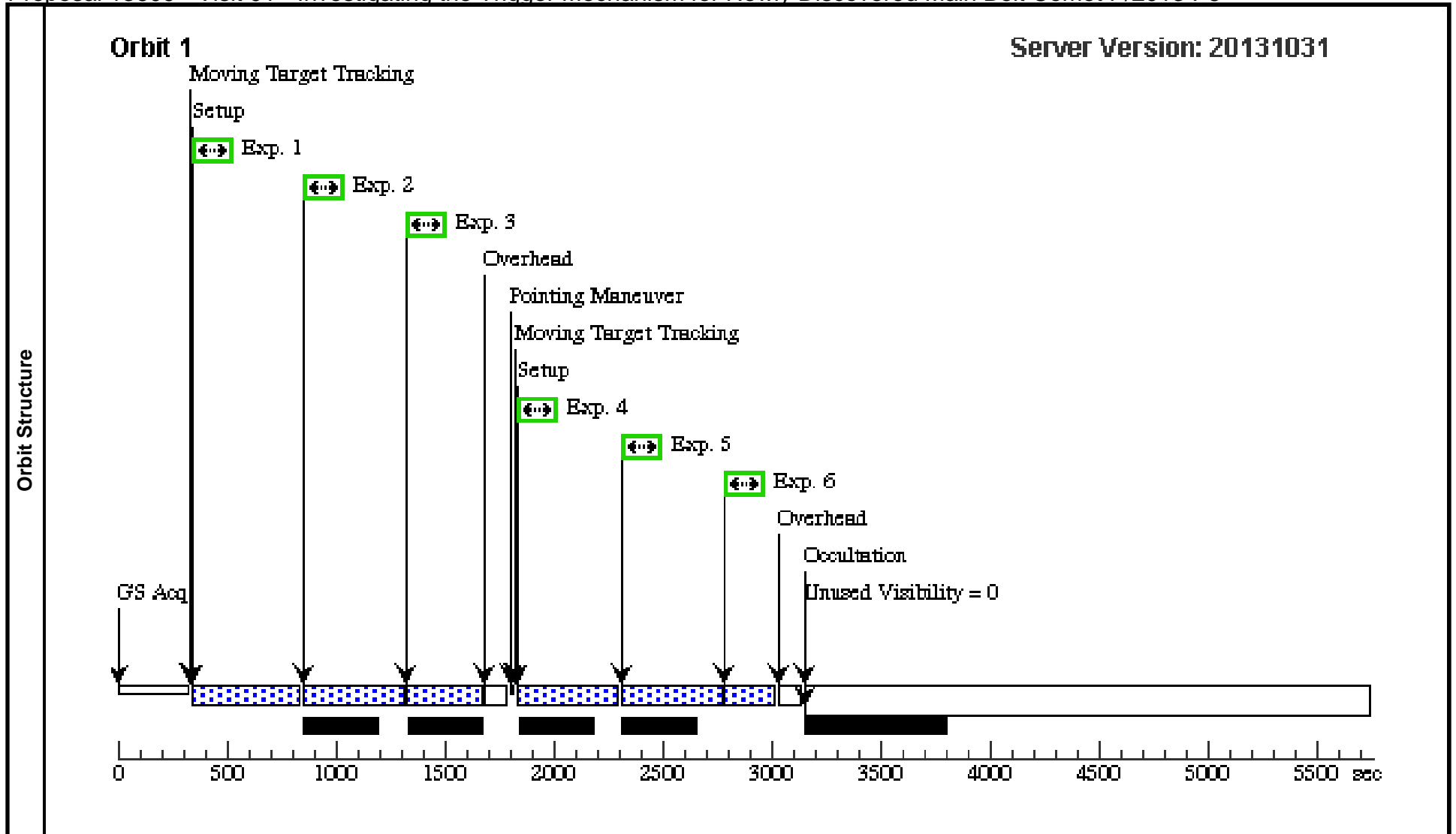
OBSERVING DESCRIPTION

TBD

Proposal 13609 - Visit 01 - Investigating the Trigger Mechanism for Newly Discovered Main Belt Comet P/2013 P5

Thu Nov 28 02:30:34 GMT 2013

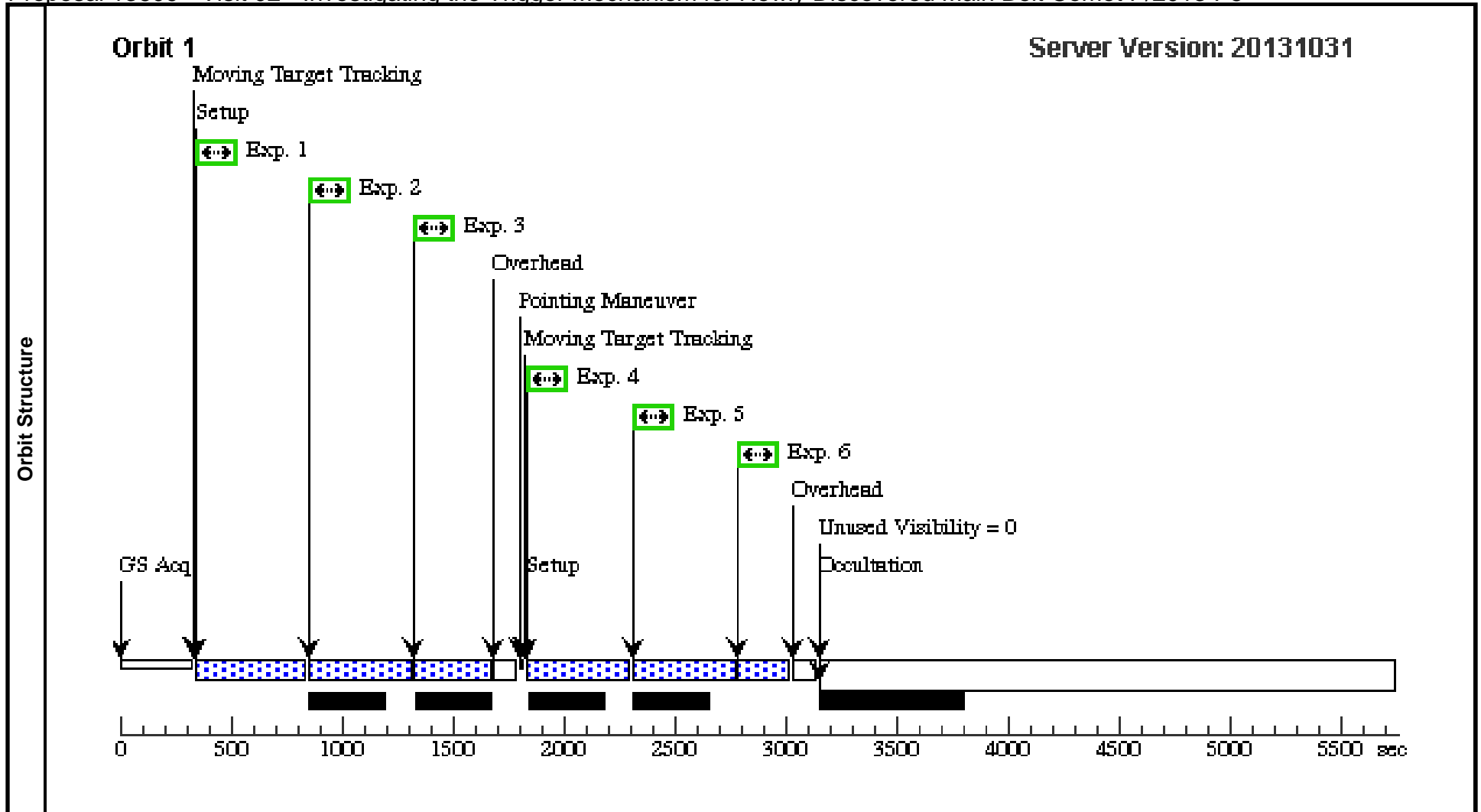
Visit	Proposal 13609, Visit 01, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 94D TO 94 D; BETWEEN 18-OCT-2013:15:00:00 AND 18-OCT-2013:18:30:00; VISIBILITY INTERVAL 52.5 M									
	Solar System Targets									
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center				
(1)	MBC-2013P5	TYPE=COMET,Q=1.9362310649763 65,E=0.1152950202772868,I=4.96802 5082929992,O=279.2838812591228, W=144.2314426709158,T=15-APR- 2014:18:42:42,TimeScale=TDT,EQU INOX=J2000,EPOCH=30-AUG- 2013,EpochTimeScale=TDT					EARTH			
<i>Comments: JPL #04 orbital elements</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -10,null; GS ACQ SCENARI O BASE1B3		348 Secs (348 Secs) [==>]	[1]
	2		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -10,null		348 Secs (348 Secs) [==>]	[1]
	3		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -10,null		348 Secs (348 Secs) [==>]	[1]
	4		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -9.8,2.4 1		348 Secs (348 Secs) [==>]	[1]
	5		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -9.8,2.4 1		348 Secs (348 Secs) [==>]	[1]
	6		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -9.8,2.4 1		233 Secs (233 Secs) [==>]	[1]
<i>Comments: Please adjust to match observability window</i>										



Proposal 13609 - Visit 02 - Investigating the Trigger Mechanism for Newly Discovered Main Belt Comet P/2013 P5

Thu Nov 28 02:30:36 GMT 2013

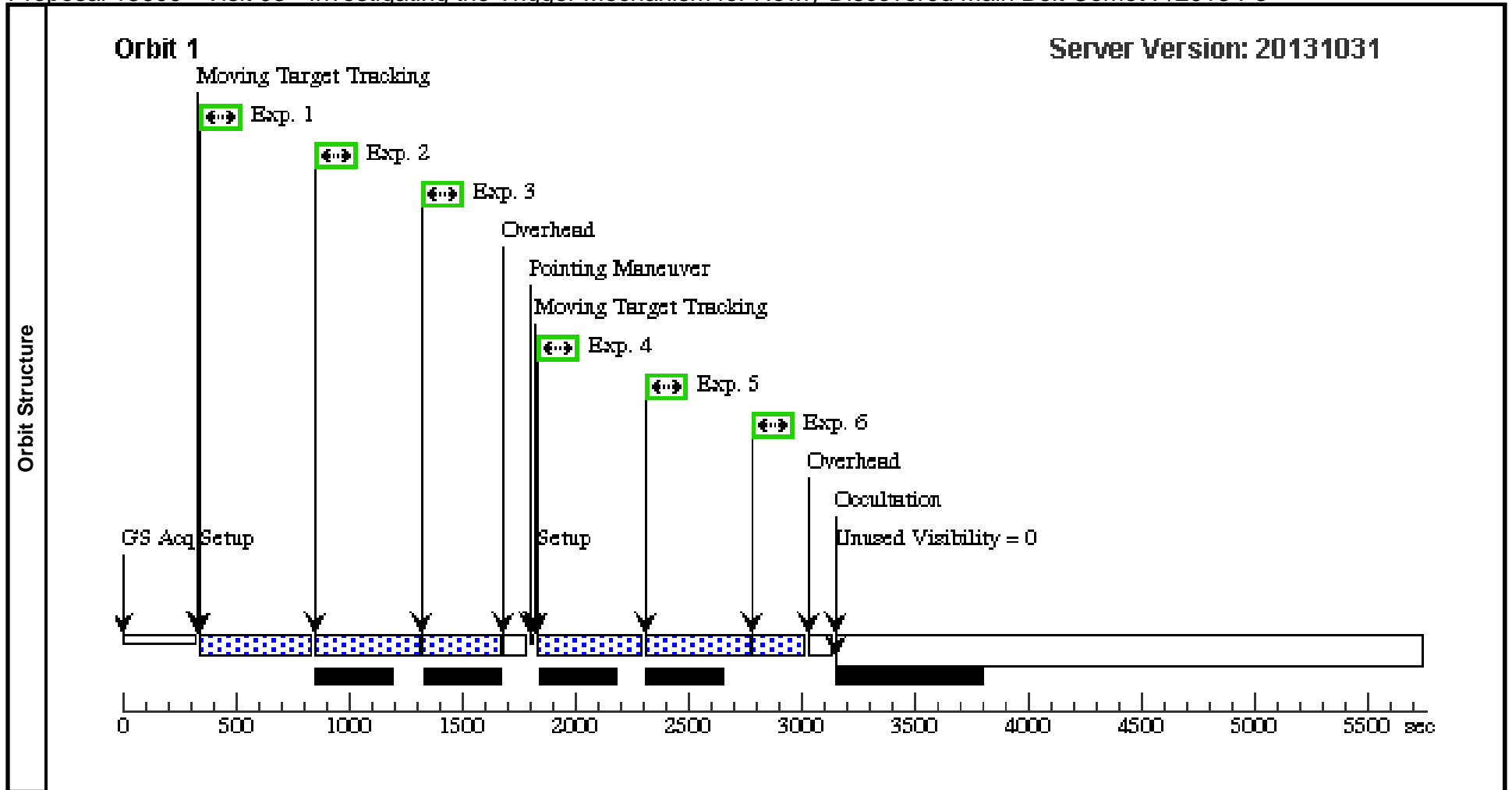
Visit	Proposal 13609, Visit 02, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 94D TO 94 D; AFTER 01 BY 0.5 Orbits TO 1.1 Orbits; VISIBILITY INTERVAL 52.5 M									
	Solar System Targets									
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center				
(1)	MBC-2013P5	TYPE=COMET,Q=1.9362310649763 65,E=0.1152950202772868,I=4.96802 5082929992,O=279.2838812591228, W=144.2314426709158,T=15-APR- 2014:18:42:42,TimeScale=TDT,EQU INOX=J2000,EPOCH=30-AUG- 2013,EpochTimeScale=TDT					EARTH			
<i>Comments: JPL #04 orbital elements</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -10,null; GS ACQ SCENARI O BASE1B3		348 Secs (348 Secs) [==>]	[1]
	2		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -10,null		348 Secs (348 Secs) [==>]	[1]
	3		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -10,null		348 Secs (348 Secs) [==>]	[1]
	4		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -9.8,2.4 1		348 Secs (348 Secs) [==>]	[1]
	5		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -9.8,2.4 1		348 Secs (348 Secs) [==>]	[1]
	6		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG -9.8,2.4 1		233 Secs (233 Secs) [==>]	[1]
<i>Comments: Please adjust to match observability window</i>										



Proposal 13609 - Visit 03 - Investigating the Trigger Mechanism for Newly Discovered Main Belt Comet P/2013 P5

Thu Nov 28 02:30:37 GMT 2013

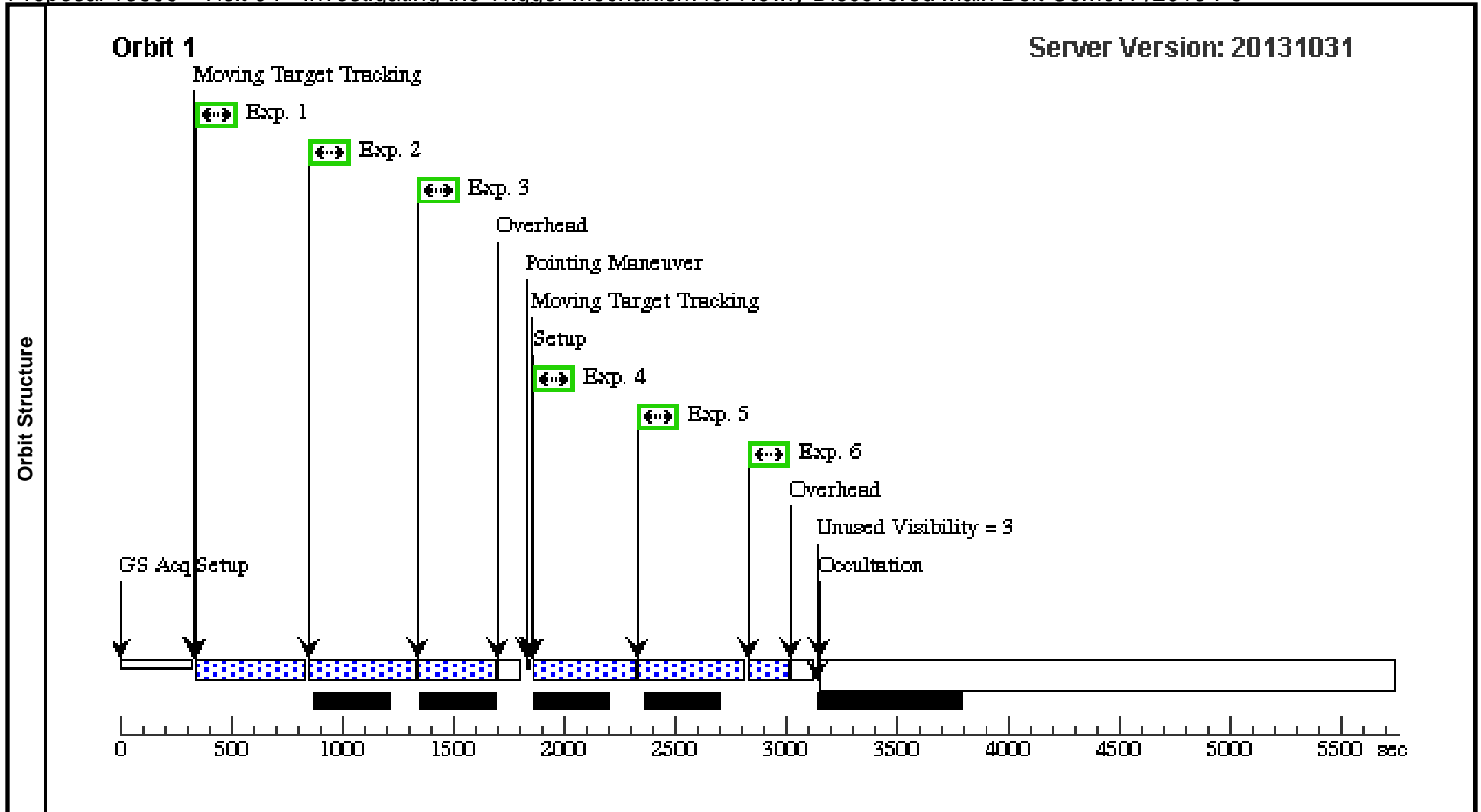
Visit	Proposal 13609, Visit 03, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 11-NOV-2013 AND 15-NOV-2013; VISIBILITY INTERVAL 52.5 M										
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	MBC-2013P5	TYPE=COMET,Q=1.9362310649763 65,E=0.1152950202772868,I=4.96802 5082929992,O=279.2838812591228, W=144.2314426709158,T=15-APR- 2014:18:42:42,TimeScale=TDT,EQU INOX=J2000,EPOCH=30-AUG- 2013,EpochTimeScale=TDT					EARTH			
	<i>Comments: JPL #04 orbital elements</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)		
									[==>]		[1]
	2		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)		
									[==>]		[1]
	3		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)		
									[==>]		[1]
4		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.41		348 Secs (348 Secs)			
								[==>]		[1]	
5		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.41		348 Secs (348 Secs)			
								[==>]		[1]	
6		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.41		233 Secs (233 Secs)			
								[==>]		[1]	
	<i>Comments: Please adjust to match observability window</i>										



Proposal 13609 - Visit 04 - Investigating the Trigger Mechanism for Newly Discovered Main Belt Comet P/2013 P5

Thu Nov 28 02:30:38 GMT 2013

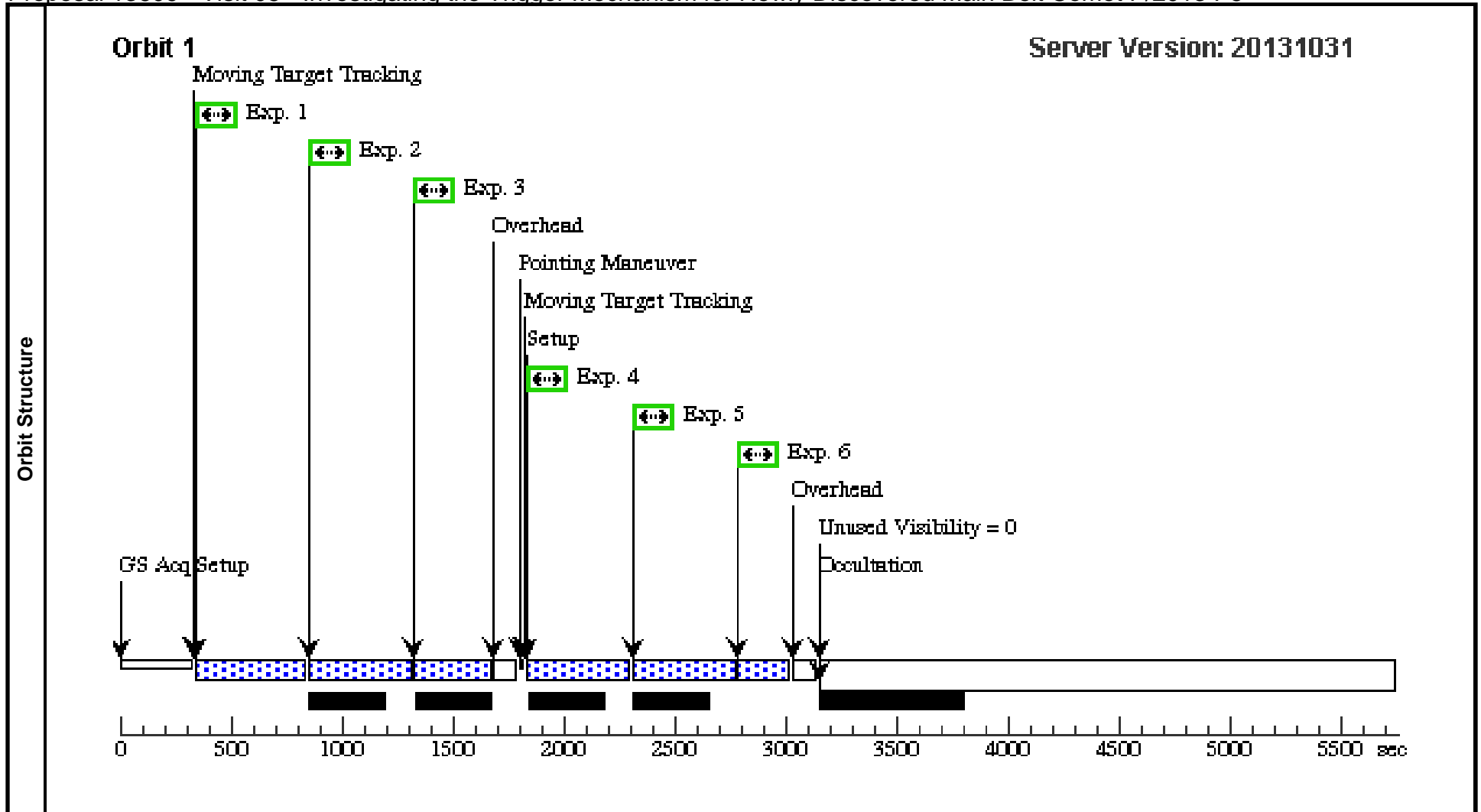
Visit	Proposal 13609, Visit 04, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 03 BY 0.5 Orbits TO 1.1 Orbits; VISIBILITY INTERVAL 52.5 M									
	Solar System Targets									
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center				
(1)	MBC-2013P5	TYPE=COMET,Q=1.9362310649763 65,E=0.1152950202772868,I=4.96802 5082929992,O=279.2838812591228, W=144.2314426709158,T=15-APR- 2014:18:42:42,TimeScale=TDT,EQU INOX=J2000,EPOCH=30-AUG- 2013,EpochTimeScale=TDT					EARTH			
<i>Comments: JPL #04 orbital elements</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F600LP	CR-SPLIT=NO			348 Secs (348 Secs)	
									[==>]	[1]
	2		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F475X	CR-SPLIT=NO			348 Secs (348 Secs)	
									[==>]	[1]
	3		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F475X	CR-SPLIT=NO			348 Secs (348 Secs)	
									[==>]	[1]
4		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F475X	CR-SPLIT=NO	POS TARG 0.2,2,41		348 Secs (348 Secs)		
								[==>]	[1]	
5		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F600LP	CR-SPLIT=NO	POS TARG 0.2,2,41		348 Secs (348 Secs)		
								[==>]	[1]	
6		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F600LP	CR-SPLIT=NO	POS TARG 0.2,2,41		180 Secs (180 Secs)		
								[==>]	[1]	
<i>Comments: Please adjust to match orbit visibility window.</i>										



Proposal 13609 - Visit 05 - Investigating the Trigger Mechanism for Newly Discovered Main Belt Comet P/2013 P5

Thu Nov 28 02:30:39 GMT 2013

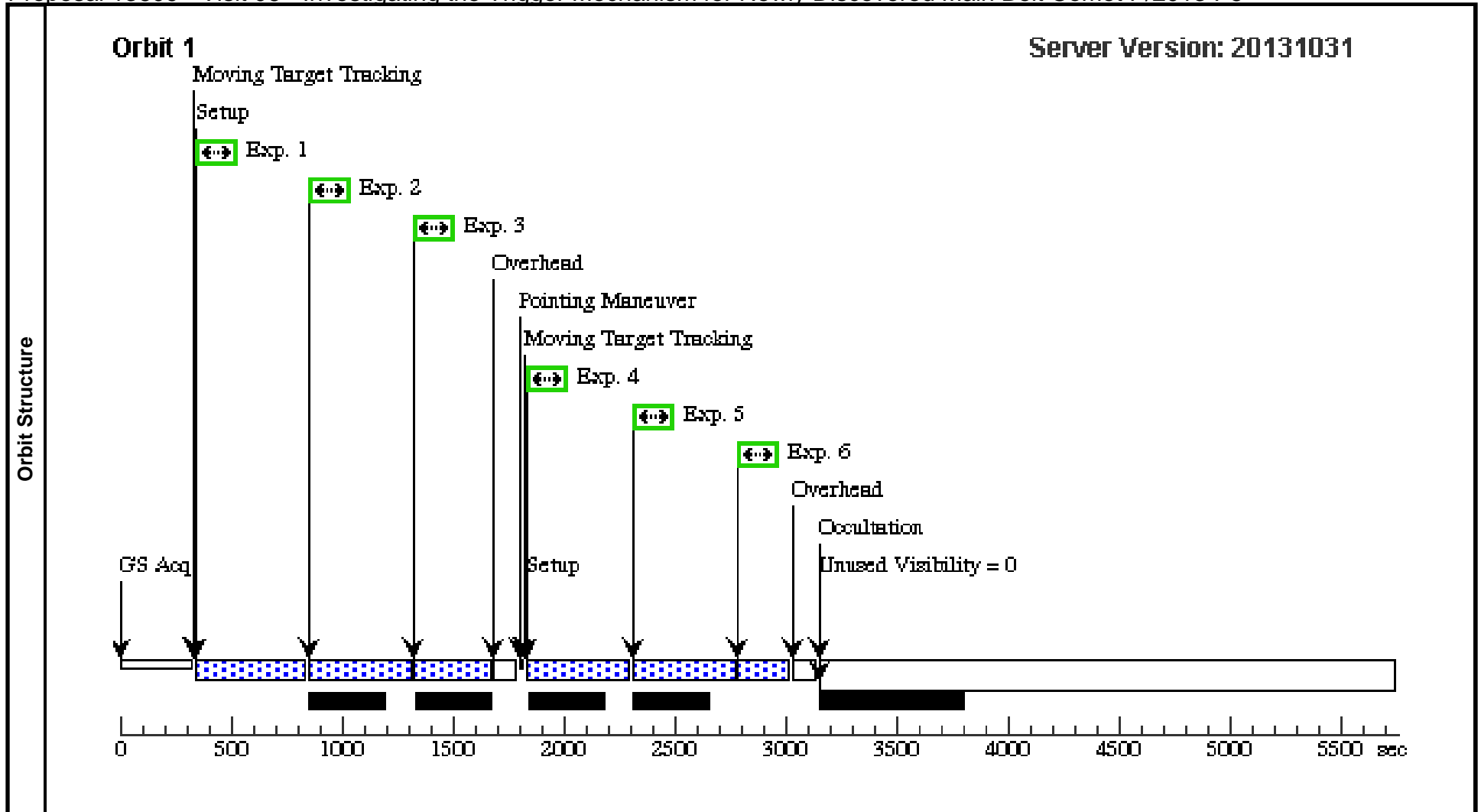
Visit	Proposal 13609, Visit 05, scheduled Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 07-DEC-2013 AND 13-DEC-2013: VISIBILITY INTERVAL 52.5 M									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(1)	MBC-2013P5	TYPE=COMET,Q=1.9362310649763 65,E=0.1152950202772868,I=4.96802 5082929992,O=279.2838812591228, W=144.2314426709158,T=15-APR- 2014:18:42:42,TimeScale=TDT,EQU INOX=J2000,EPOCH=30-AUG- 2013,EpochTimeScale=TDT					EARTH	<i>Comments: JPL #04 orbital elements</i>	
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)	
									[==>]	[1]
	2		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)	
									[==>]	[1]
	3		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)	
									[==>]	[1]
4		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.41		348 Secs (348 Secs)		
								[==>]	[1]	
5		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.41		348 Secs (348 Secs)		
								[==>]	[1]	
6		(1) MBC-2013P5	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.41		233 Secs (233 Secs)		
								[==>]	[1]	
<i>Comments: Please adjust to match observability window</i>										



Proposal 13609 - Visit 06 - Investigating the Trigger Mechanism for Newly Discovered Main Belt Comet P/2013 P5

Thu Nov 28 02:30:40 GMT 2013

Visit	Proposal 13609, Visit 06, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 31-DEC-2013:00:00:00 AND 01-JAN-2014:00:00:00: VISIBILITY INTERVAL 52.5 M									
	Solar System Targets									
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center				
(2)	MBC-2013P5-2014	TYPE=COMET,Q=1.9364360155639 78,E=0.1152223972303745,I=4.96863 4632295663,O=279.2912548101674, W=144.230501667038,T=15-APR- 2014:20:00:08,TimeScale=TDT,EQU INOX=J2000,EPOCH=07-SEP- 2013,EpochTimeScale=TDT					EARTH			
<i>Comments: JPL #09 orbital elements</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)	
			14						[==>]	[1]
	2		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)	
			14						[==>]	[1]
	3		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)	
			14						[==>]	[1]
4		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2,41		348 Secs (348 Secs)		
		14						[==>]	[1]	
5		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2,41		348 Secs (348 Secs)		
		14						[==>]	[1]	
6		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2,41		233 Secs (233 Secs)		
		14						[==>]	[1]	
<i>Comments: Please adjust to match observability window</i>										



Proposal 13609 - Visit 07 - Investigating the Trigger Mechanism for Newly Discovered Main Belt Comet P/2013 P5

Thu Nov 28 02:30:41 GMT 2013

Visit	Proposal 13609, Visit 07, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 10-FEB-2014 AND 14-FEB-2014; VISIBILITY INTERVAL 52.5 M									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(2)	MBC-2013P5-2014	TYPE=COMET,Q=1.9364360155639 78,E=0.1152223972303745,I=4.96863 4632295663,O=279.2912548101674, W=144.230501667038,T=15-APR- 2014:20:00:08,TimeScale=TDT,EQU INOX=J2000,EPOCH=07-SEP- 2013,EpochTimeScale=TDT					EARTH	<i>Comments: JPL #09 orbital elements</i>	
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)	
									[==>]	[1]
	2		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)	
									[==>]	[1]
	3		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO			348 Secs (348 Secs)	
									[==>]	[1]
4		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2,41		348 Secs (348 Secs)		
								[==>]	[1]	
5		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2,41		348 Secs (348 Secs)		
								[==>]	[1]	
6		(2) MBC-2013P5-2014	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2,41		233 Secs (233 Secs)		
								[==>]	[1]	
<i>Comments: Please adjust to match observability window</i>										

