



17707 - Mutual events of Transneptunian Binaries

Cycle: 32, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>
Dr. Benjamin Proudfoot (PI) (Contact)	University of Central Florida Board of Trustees
Prof. Darin Ragozzine (CoI)	Brigham Young University
Dr. Will M. Grundy (CoI)	Lowell Observatory

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) KAGARA	WFC3/UVIS	1	18-Dec-2024 20:01:15.0	yes
02	(1) KAGARA	WFC3/UVIS	1	18-Dec-2024 20:01:17.0	yes
03	(2) TYPHON	WFC3/UVIS	1	18-Dec-2024 20:01:19.0	yes
04	(2) TYPHON	WFC3/UVIS	1	18-Dec-2024 20:01:20.0	yes
05	(3) LOGOS	WFC3/UVIS	1	18-Dec-2024 20:01:20.0	yes
06	(3) LOGOS	WFC3/UVIS	1	18-Dec-2024 20:01:21.0	yes
07	(4) 2001XR254	WFC3/UVIS	1	18-Dec-2024 20:01:22.0	yes
08	(4) 2001XR254	WFC3/UVIS	1	18-Dec-2024 20:01:23.0	yes

8 Total Orbits Used

ABSTRACT

The population of transneptunian objects (TNOs) is a key tracer of the early solar system's formation and evolution. By looking at the binaries within the TNO population, convincing evidence of planetesimal formation by the Streaming Instability has been found. Further study of these bodies is

Proposal 17707 (STScI Edit Number: 0, Created: Wednesday, December 18, 2024, 8:01:24PM Eastern Standard Time) - Overview
sure to reveal more insights into the earliest moments of our solar system. One ideal way to study binaries at unprecedented resolution is to observe mutual events, periodic dimming events where one binary component occults/eclipses another. Currently, four TNO binaries are (or will soon be) undergoing mutual events. In this proposal, we ask for 8 orbits to precisely determine the times of these mutual events. Current event timing uncertainties are >24 hours, and are impossible to use for planning observations. Our proposed observations will reduce uncertainties to <4 hours, allowing for precise observations from ground-based telescopes. We will also use state-of-the-art non-Keplerian orbit fitting techniques which will allow for far better predictions. Capturing mutual events will provide immense opportunity for discovery, and are impossible without our proposed observations.

OBSERVING DESCRIPTION

Our observations are focused on obtaining precise relative astrometric positions of TNO binary components. Our observations of each target consist of two visits, one scheduled at the time of maximum separation (as indicated by our orbit models), and one scheduled at the time of minimum separation (without going below resolution limits). Observations are conducted with the F350LP filter to maximize SNR while maintaining a minimum PSF FWHM. To obtain maximum exposure time (and prevent memory buffer dumps), most observations are taken with the UVIS2-C512C-SUB aperture subarray, although we finish each visit with full frame UVIS images to get an absolute astrometric measurement of the system for use in heliocentric ephemeris updates.

All timing requirements are listed as "betweens" for each visit. These timing requirements allow the highest scientific return from our program. If, however, these requirements are too constraining for telescope scheduling, we can relax them, as needed.

Proposal 17707 - Kagara (1) (01) - Mutual events of Transneptunian Binaries

Thu Dec 19 01:01:24 GMT 2024

Visit	Proposal 17707, Kagara (1) (01), implementation Diagnostic Status: Informational Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 01-OCT-2024:00:00:00 AND 22-OCT-2024:00:00:00; BETWEEN 07-NOV-2024:00:00:00 AND 27-NOV-2024:00:00:00; BETWEEN 25-JAN-2025:00:00:00 AND 06-FEB-2025:14:00:00; BETWEEN 14-MAR-2025:00:00:00 AND 03-APR-2025:00:00:00; BETWEEN 31-MAY-2025:00:00:00 AND 05-JUL-2025:00:00:00; BETWEEN 21-JUL-2025:00:00:00 AND 08-AUG-2025:00:00:00; BETWEEN 07-FEB-2025:06:00:00 AND 27-FEB-2025:00:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET						
	(Kagara (1) (01)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.						
Diagnostics							
Patterns	#	Primary Pattern		Secondary Pattern		Exposures	
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false			(1), (2)	
	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false			(3)	
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
	(1)	KAGARA	TYPE=ASTEROID,A=44.3371713074 7964,E=0.0957619691154921,I=2.864 244613050194 ,O=117.9685872316395,W=74.675614 5599299,M=337.1076959588931,EQU INOX=J2000,EPOCH=25-OCT-2015:00:00:00,EpochTimeScale=TDB				EARTH
Comments: Description=TNO binary with 128 day orbital period							

Proposal 17707 - Kagara (1) (01) - Mutual events of Transneptunian Binaries

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) KAGARA	(1) KAGARA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in Kagara (1) (01)	150 Secs (600 Secs)	
								Pattern 1, Exps 1-1 in Sequence 1-3 Non-Int in Kagara (1) (01)	[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	
2	(1) KAGARA	(1) KAGARA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in Kagara (1) (01)	150 Secs (600 Secs)		
							Pattern 1, Exps 2-2 in Sequence 1-3 Non-Int in Kagara (1) (01)	[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		
								[==>(Pattern 3)]		
								[==>(Pattern 4)]		
3	(1) KAGARA	(1) KAGARA	WFC3/UVIS, ACCUM, UVIS2	F350LP	FLASH=7		Sequence 1-3 Non-Int in Kagara (1) (01)	150 Secs (300 Secs)		
							Pattern 2, Exps 3-3 in Sequence 1-3 Non-Int in Kagara (1) (01)	[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		

Proposal 17707 - Kagara (2) (02) - Mutual events of Transneptunian Binaries

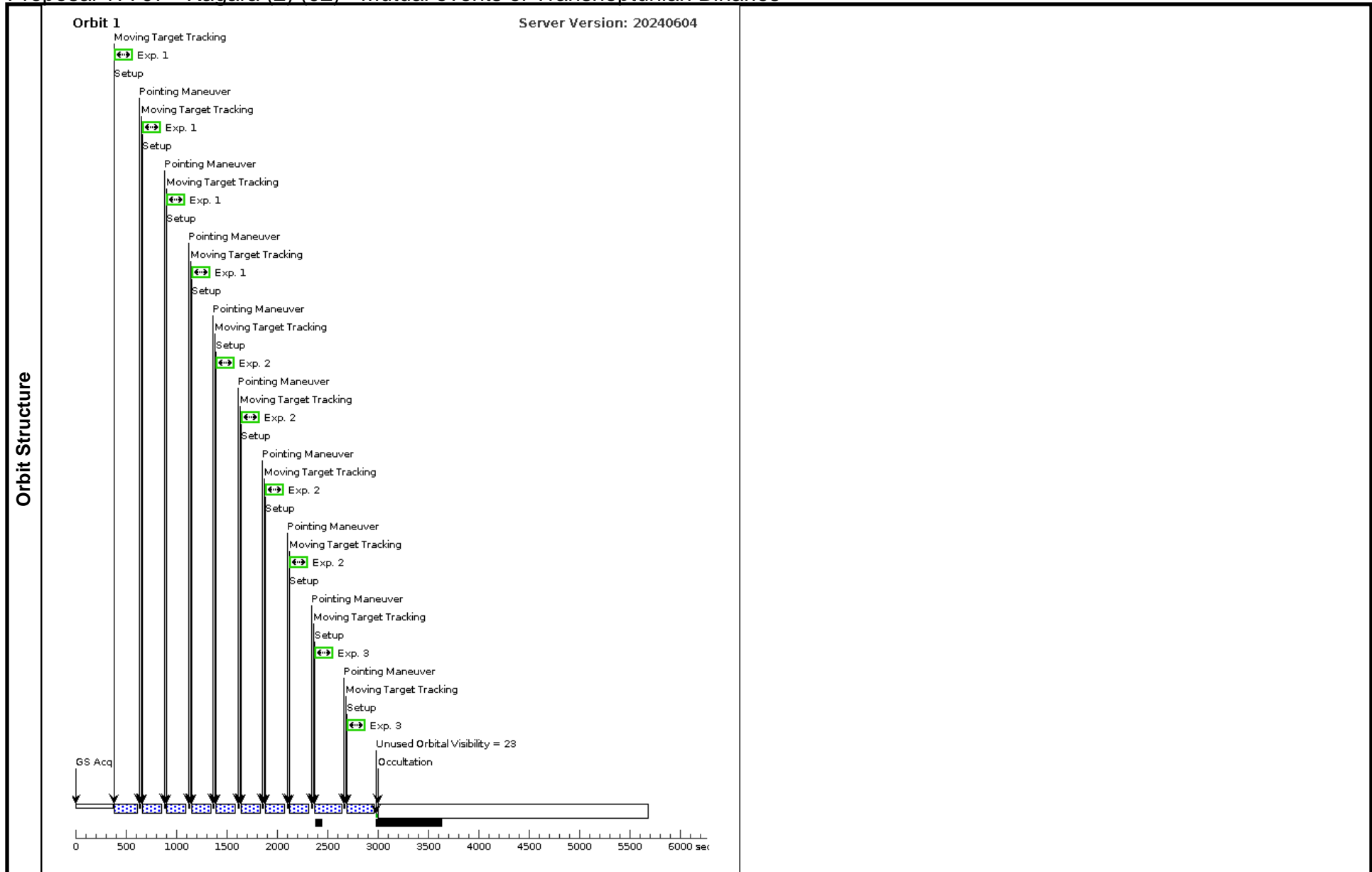
Thu Dec 19 01:01:24 GMT 2024

Visit	Proposal 17707, Kagara (2) (02), implementation Diagnostic Status: Informational Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 22-OCT-2024:00:00:00 AND 26-OCT-2024:00:00:00; BETWEEN 01-NOV-2024:00:00:00 AND 07-NOV-2024:00:00:00; BETWEEN 27-NOV-2024:00:00:00 AND 12-DEC-2024:00:00:00; BETWEEN 11-JAN-2025:00:00:00 AND 25-JAN-2025:00:00:00; BETWEEN 28-FEB-2025:00:00:00 AND 03-MAR-2025:00:00:00; BETWEEN 09-MAR-2025:00:00:00 AND 14-MAR-2025:00:00:00; BETWEEN 04-APR-2025:00:00:00 AND 18-APR-2025:00:00:00; BETWEEN 16-MAY-2025:00:00:00 AND 30-MAY-2025:00:00:00; BETWEEN 05-JUL-2025:00:00:00 AND 09-JUL-2025:00:00:00; BETWEEN 16-JUL-2025:00:00:00 AND 21-JUL-2025:00:00:00; BETWEEN 08-AUG-2025:00:00:00 AND 24-AUG-2025:00:00:00; BETWEEN 25-SEP-2025:00:00:00 AND 01-OCT-2025:00:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET																			
	Diagnosics (Kagara (2) (02)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.																			
Patterns	<table border="1"> <thead> <tr> <th>#</th> <th>Primary Pattern</th> <th>Secondary Pattern</th> <th>Exposures</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td> Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112 Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false </td> <td></td> <td>(1), (2)</td> </tr> <tr> <td>(2)</td> <td> Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false </td> <td></td> <td>(3)</td> </tr> </tbody> </table>	#	Primary Pattern	Secondary Pattern	Exposures	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112 Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1), (2)	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(3)							
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(2)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(3)																	
Solar System Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Level 1</th> <th>Level 2</th> <th>Level 3</th> <th>Window</th> <th>Ephem Center</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>KAGARA</td> <td>TYPE=ASTEROID,A=44.3371713074 7964,E=0.0957619691154921,I=2.864 244613050194 .O=117.9685872316395,W=74.675614 5599299,M=337.1076959588931,EQU INOX=J2000,EPOCH=25-OCT- 2015:00:00:00,EpochTimeScale=TDB</td> <td></td> <td></td> <td></td> <td>EARTH</td> </tr> </tbody> </table> <p><i>Comments: Description=TNO binary with 128 day orbital period</i></p>	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center	(1)	KAGARA	TYPE=ASTEROID,A=44.3371713074 7964,E=0.0957619691154921,I=2.864 244613050194 .O=117.9685872316395,W=74.675614 5599299,M=337.1076959588931,EQU INOX=J2000,EPOCH=25-OCT- 2015:00:00:00,EpochTimeScale=TDB				EARTH					
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center														
(1)	KAGARA	TYPE=ASTEROID,A=44.3371713074 7964,E=0.0957619691154921,I=2.864 244613050194 .O=117.9685872316395,W=74.675614 5599299,M=337.1076959588931,EQU INOX=J2000,EPOCH=25-OCT- 2015:00:00:00,EpochTimeScale=TDB				EARTH														

Proposal 17707 - Kagara (2) (02) - Mutual events of Transneptunian Binaries

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) KAGARA	(1) KAGARA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in Kagara (2) (02)	150 Secs (600 Secs)	
								Pattern 1, Exps 1-1 in Sequence 1-3 Non-Int in Kagara (2) (02) (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2	(1) KAGARA	(1) KAGARA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in Kagara (2) (02)	150 Secs (600 Secs)	
							Pattern 1, Exps 2-2 in Sequence 1-3 Non-Int in Kagara (2) (02) (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]	
3	(1) KAGARA	(1) KAGARA	WFC3/UVIS, ACCUM, UVIS2	F350LP	FLASH=7		Sequence 1-3 Non-Int in Kagara (2) (02)	150 Secs (300 Secs)		
							Pattern 2, Exps 3-3 in Sequence 1-3 Non-Int in Kagara (2) (02) (2)	[==>(Pattern 1)] [==>(Pattern 2)]	[1]	

Proposal 17707 - Kagura (2) (02) - Mutual events of Transneptunian Binaries



Proposal 17707 - Typhon (1) (03) - Mutual events of Transneptunian Binaries

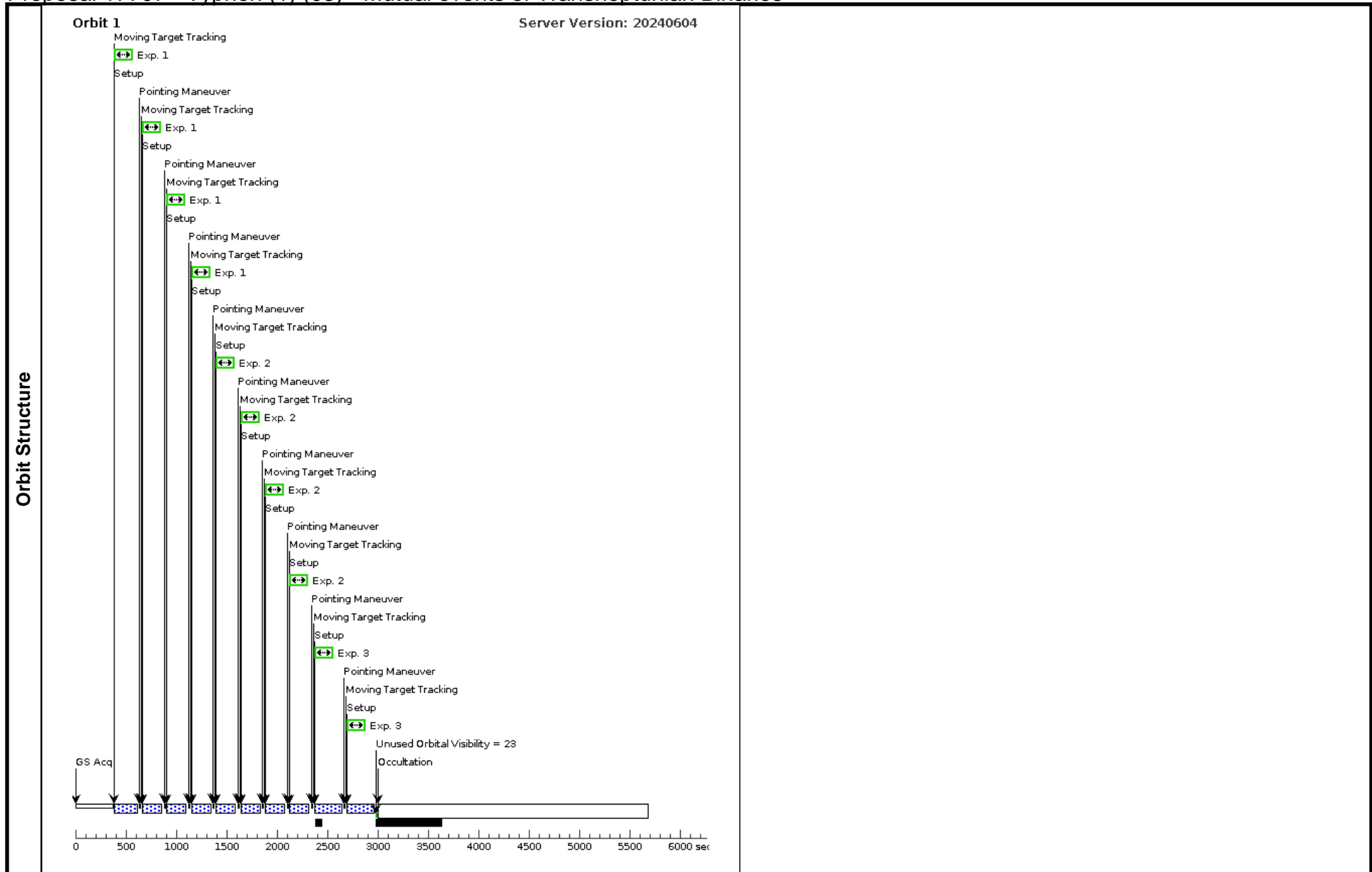
Thu Dec 19 01:01:24 GMT 2024

Visit	Proposal 17707, Typhon (1) (03), implementation Diagnostic Status: Informational Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 02-OCT-2024:06:00:00 AND 09-OCT-2024:00:00:00; BETWEEN 09-NOV-2024:12:00:00 AND 16-NOV-2024:00:00:00; BETWEEN 17-DEC-2024:06:00:00 AND 24-DEC-2024:00:00:00; BETWEEN 24-JAN-2025:06:00:00 AND 31-JAN-2025:06:00:00; BETWEEN 03-MAR-2025:00:00:00 AND 10-MAR-2025:06:00:00; BETWEEN 10-APR-2025:00:00:00 AND 17-APR-2025:06:00:00; BETWEEN 17-MAY-2025:18:00:00 AND 25-MAY-2025:06:00:00; BETWEEN 24-JUN-2025:18:00:00 AND 02-JUL-2025:00:00:00; BETWEEN 01-AUG-2025:18:00:00 AND 08-AUG-2025:18:00:00; BETWEEN 09-SEP-2025:00:00:00 AND 15-SEP-2025:12:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET						
	Diagnosics (Typhon (1) (03)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.						
Patterns	#	Primary Pattern	Secondary Pattern	Exposures			
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1), (2)		
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(3)			
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
	(2)	TYPHON	TYPE=ASTEROID,A=38.2666667496 5798,E=0.5414543038719521,I=2.425 277300882227 ,O=351.9106141660436,W=159.33392 59602325,M=14.7270708887519,EQU INOX=J2000,EPOCH=09-FEB- 2016:00:00:00,EpochTimeScale=TDB				EARTH
Comments: Description=Binary centaur with 19 day orbit							

Proposal 17707 - Typhon (1) (03) - Mutual events of Transneptunian Binaries

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(2) TYPHON	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in Typhon (1) (03)	150 Secs (600 Secs)	
								Pattern 1, Exps 1-1 in Sequence 1-3 Non-Int in Typhon (1) (03) (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2		(2) TYPHON	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in Typhon (1) (03)	150 Secs (600 Secs)	
							Pattern 1, Exps 2-2 in Sequence 1-3 Non-Int in Typhon (1) (03) (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]	
3		(2) TYPHON	WFC3/UVIS, ACCUM, UVIS2	F350LP	FLASH=7		Sequence 1-3 Non-Int in Typhon (1) (03)	150 Secs (300 Secs)		
							Pattern 2, Exps 3-3 in Sequence 1-3 Non-Int in Typhon (1) (03) (2)	[==>(Pattern 1)] [==>(Pattern 2)]	[1]	

Proposal 17707 - Typhon (1) (03) - Mutual events of Transneptunian Binaries



Proposal 17707 - Typhon (2) (04) - Mutual events of Transneptunian Binaries

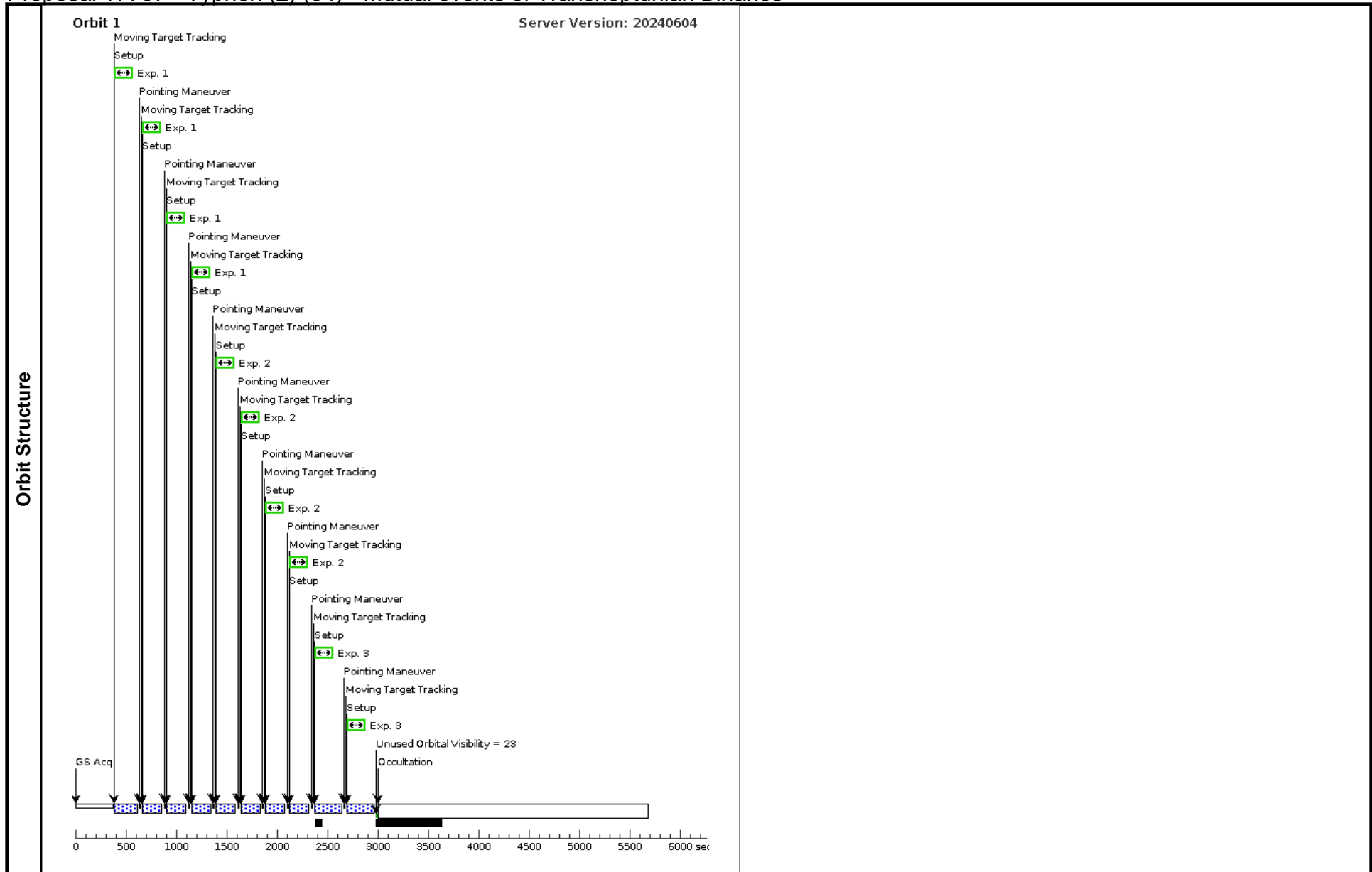
Thu Dec 19 01:01:24 GMT 2024

Visit	Proposal 17707, Typhon (2) (04), implementation Diagnostic Status: Informational Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 21-OCT-2024:12:00:00 AND 28-OCT-2024:00:00:00; BETWEEN 28-NOV-2024:12:00:00 AND 05-DEC-2024:00:00:00; BETWEEN 05-JAN-2025:06:00:00 AND 12-JAN-2025:06:00:00; BETWEEN 12-FEB-2025:06:00:00 AND 19-FEB-2025:06:00:00; BETWEEN 22-MAR-2025:00:00:00 AND 29-MAR-2025:06:00:00; BETWEEN 28-APR-2025:18:00:00 AND 06-MAY-2025:06:00:00; BETWEEN 05-JUN-2025:18:00:00 AND 13-JUN-2025:00:00:00; BETWEEN 13-JUL-2025:18:00:00 AND 20-JUL-2025:18:00:00; BETWEEN 21-AUG-2025:00:00:00 AND 27-AUG-2025:12:00:00; BETWEEN 28-SEP-2025:00:00:00 AND 03-OCT-2025:00:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET					
	(Typhon (2) (04)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.					
Diagnosics						
Patterns	#	Primary Pattern		Secondary Pattern		Exposures
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false			(1), (2)
Solar System Targets	(2)	TYPHON TYPE=ASTEROID,A=38.2666667496 5798,E=0.5414543038719521,I=2.425 277300882227 ,O=351.9106141660436,W=159.33392 59602325,M=14.7270708887519,EQU INOX=J2000,EPOCH=09-FEB-2016:00:00:00,EpochTimeScale=TDB Comments: Description=Binary centaur with 19 day orbit				EARTH

Proposal 17707 - Typhon (2) (04) - Mutual events of Transneptunian Binaries

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(2) TYPHON	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in Typhon (2) (04)	150 Secs (600 Secs)	
								Pattern 1, Exps 1-1 in Sequence 1-3 Non-Int in Typhon (2) (04) (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2		(2) TYPHON	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in Typhon (2) (04)	150 Secs (600 Secs)	
							Pattern 1, Exps 2-2 in Sequence 1-3 Non-Int in Typhon (2) (04) (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]	
3		(2) TYPHON	WFC3/UVIS, ACCUM, UVIS2	F350LP	FLASH=7		Sequence 1-3 Non-Int in Typhon (2) (04)	150 Secs (300 Secs)		
							Pattern 2, Exps 3-3 in Sequence 1-3 Non-Int in Typhon (2) (04) (2)	[==>(Pattern 1)] [==>(Pattern 2)]	[1]	

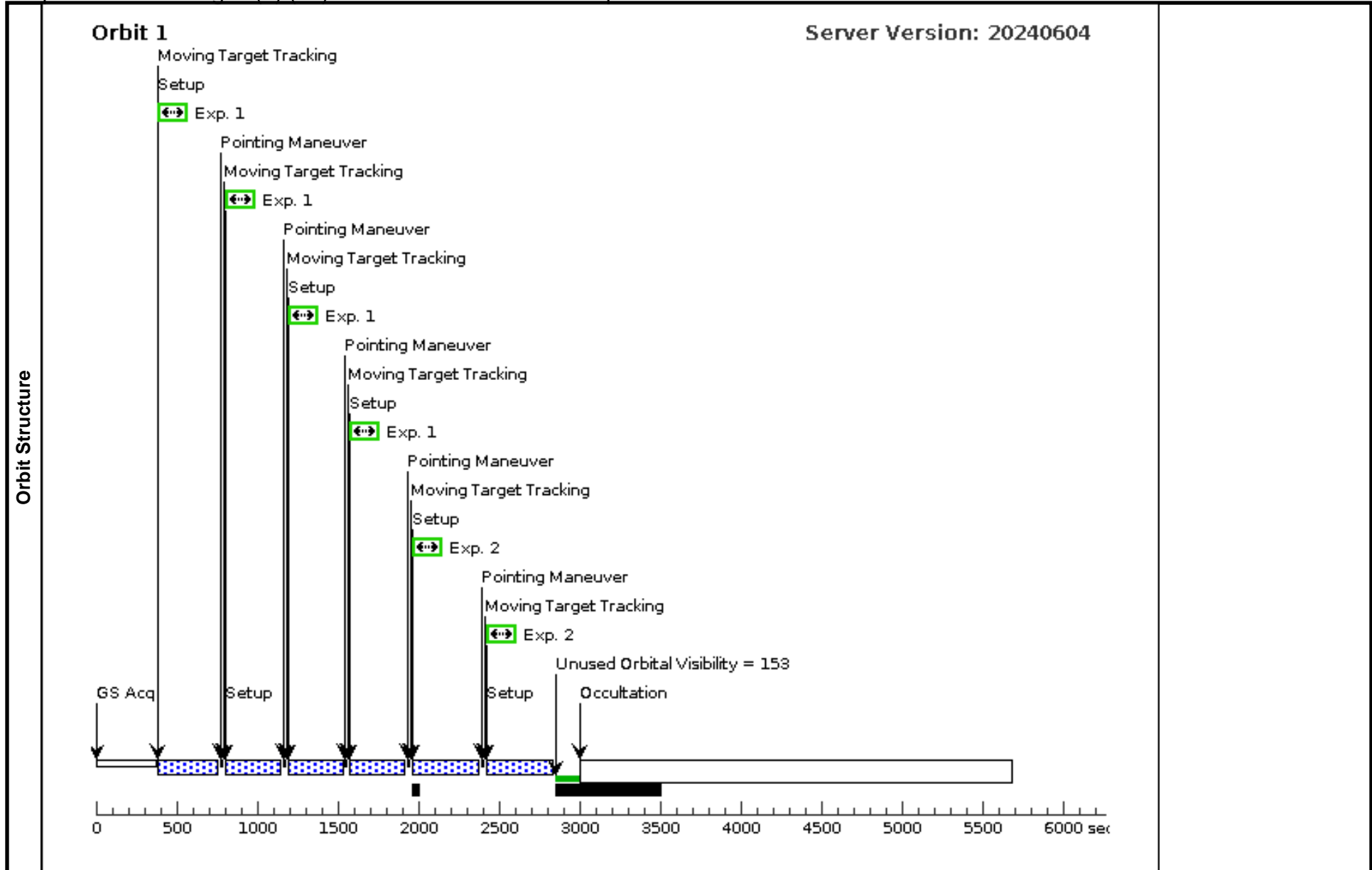
Proposal 17707 - Typhon (2) (04) - Mutual events of Transneptunian Binaries



Proposal 17707 - Logos (1) (05) - Mutual events of Transneptunian Binaries

Thu Dec 19 01:01:24 GMT 2024

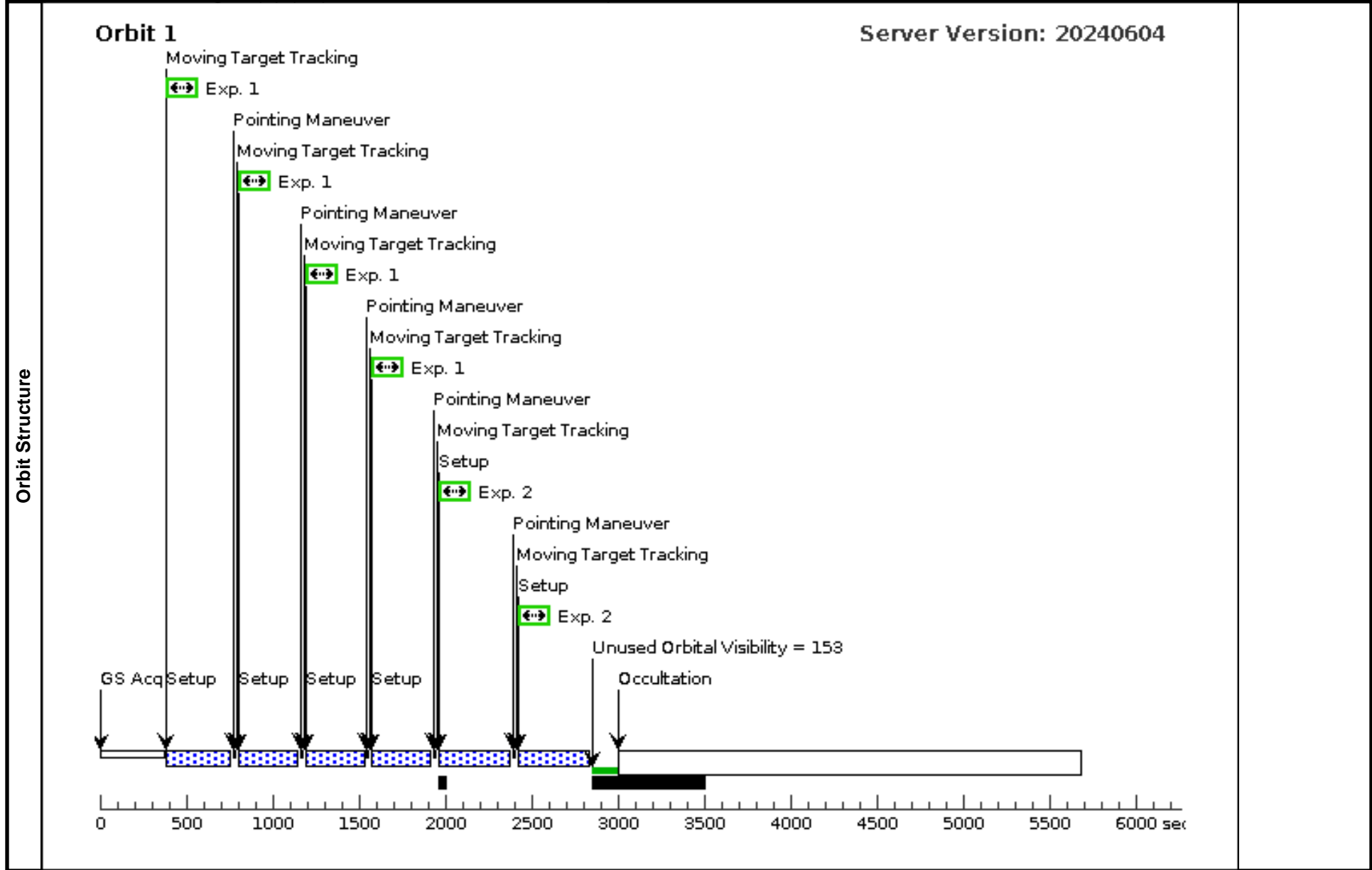
Visit	Proposal 17707, Logos (1) (05), implementation Diagnostic Status: Informational Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 15-OCT-2024:00:00:00 AND 27-OCT-2024:00:00:00; BETWEEN 15-NOV-2024:00:00:00 AND 05-DEC-2024:00:00:00; BETWEEN 17-DEC-2024:00:00:00 AND 05-JAN-2025:04:00:00; BETWEEN 05-JAN-2025:20:00:00 AND 23-JAN-2025:00:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET <i>Comments: Logos' maximum separation window is unschedulable. Instead, this visit will target an alternative window (closer to minimum separation) that will provide similarly strong orbital constraints. If windows are too narrow, we are able to relax constraints with only slight decrease in science value.</i>									
	Diagnosics (Logos (1) (05)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.									
Patterns	#	Primary Pattern			Secondary Pattern		Exposures			
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false			(1)				
Patterns	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false			(2)				
	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
Solar System Targets	(3)	LOGOS	TYPE=ASTEROID,A=45.4221922397 7799,E=0.1237573151409189,I=2.895 362234339929 ,O=132.5091420103192,W=337.50354 20772433,M=55.68419386030521,EQ UINOX=J2000,EPOCH=10-FEB-2014:00:00:00,EpochTimeScale=TDB				EARTH			
	<i>Comments: Description=TNO binary with 310 day orbit period</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(3) LOGOS	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP				Sequence 1-2 Non-Int in Logos (1) (05) Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in Logos (1) (05) (1)	300 Secs (1200 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
2	(3) LOGOS	WFC3/UVIS, ACCUM, UVIS2	F350LP				Sequence 1-2 Non-Int in Logos (1) (05) Pattern 2, Exps 2-2 in Sequence 1-2 Non-Int in Logos (1) (05) (2)	300 Secs (600 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]	



Proposal 17707 - Logos (2) (06) - Mutual events of Transneptunian Binaries

Thu Dec 19 01:01:24 GMT 2024

Visit	Proposal 17707, Logos (2) (06), implementation Diagnostic Status: Informational Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 13-MAR-2025:00:00:00 AND 09-APR-2025:00:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET <i>Comments: If windows are too narrow, we are able to relax constraints with only slight decrease in science value.</i>									
	Diagnosics (Logos (2) (06)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.									
Patterns	#	Primary Pattern	Secondary Pattern			Exposures				
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false				(1)			
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false				(2)				
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(3)	LOGOS	TYPE=ASTEROID,A=45.4221922397 7799,E=0.1237573151409189,I=2.895 362234339929 ,O=132.5091420103192,W=337.50354 20772433,M=55.68419386030521,EQ UINOX=J2000,EPOCH=10-FEB- 2014:00:00:00,EpochTimeScale=TDB				EARTH			
<i>Comments: Description=TNO binary with 310 day orbit period</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(3) LOGOS	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			Sequence 1-2 Non-Int in Logos (2) (06) Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in Logos (2) (06) (1)	300 Secs (1200 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
2		(3) LOGOS	WFC3/UVIS, ACCUM, UVIS2	F350LP			Sequence 1-2 Non-Int in Logos (2) (06) Pattern 2, Exps 2-2 in Sequence 1-2 Non-Int in Logos (2) (06) (2)	300 Secs (600 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]	



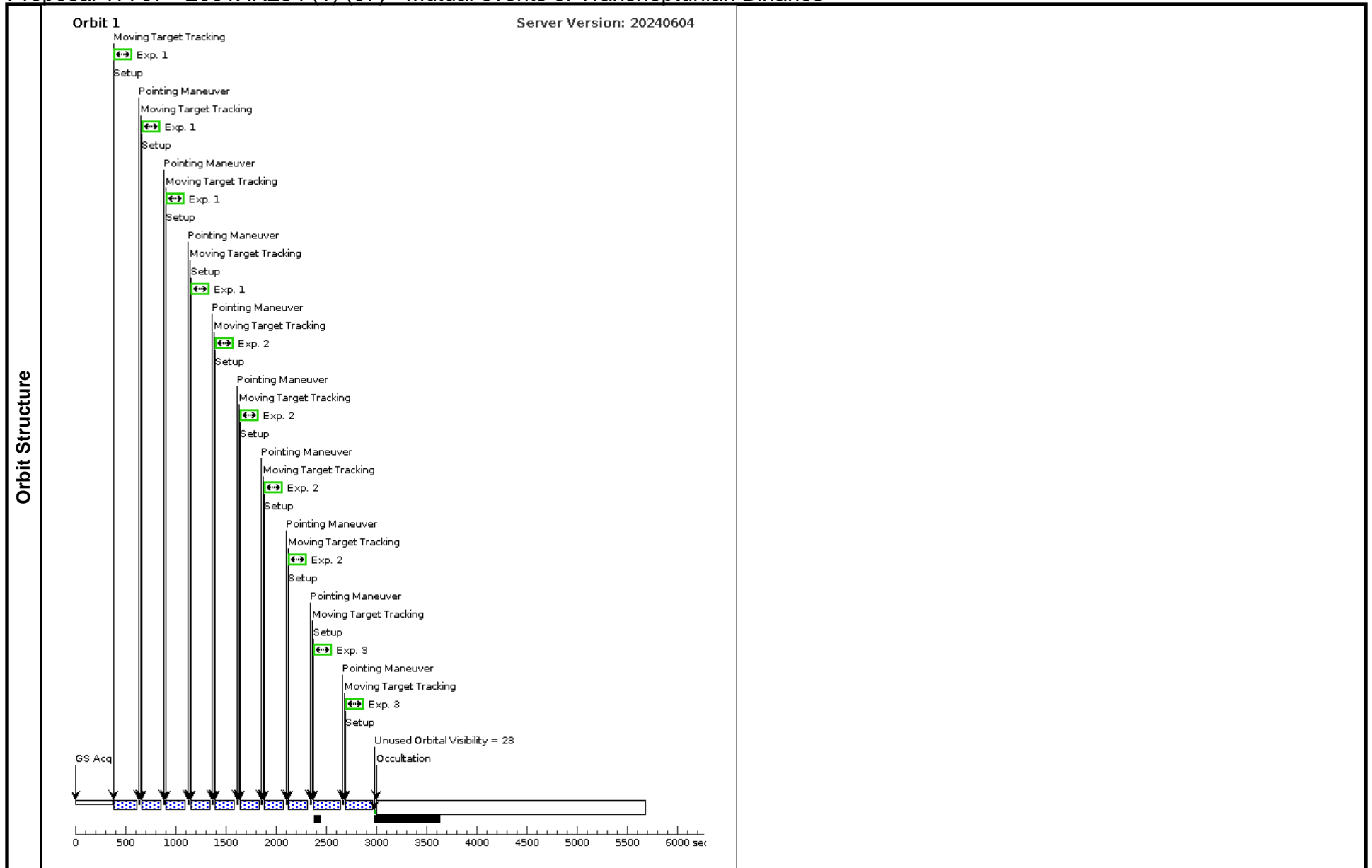
Proposal 17707 - 2001XR254 (1) (07) - Mutual events of Transneptunian Binaries

Thu Dec 19 01:01:24 GMT 2024

Visit	Proposal 17707, 2001XR254 (1) (07), completed Diagnostic Status: Informational Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 21-NOV-2024:00:00:00 AND 17-JAN-2025:00:00:00; BETWEEN 27-MAR-2025:00:00:00 AND 21-MAY-2025:00:00:00; BETWEEN 31-JUL-2025:00:00:00 AND 25-SEP-2025:00:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET						
	(2001XR254 (1) (07)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.						
Diagnosics							
Patterns	#	Primary Pattern	Secondary Pattern	Exposures			
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112 Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1), (2)			
	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(3)			
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
	(4)	2001XR254	TYPE=ASTEROID,A=43.0350323955 3269,E=0.03368308770101577,I=1.23 1087312053428 ,O=180.0171013714119,W=71.011126 4146927,M=231.0792572076766,EQU INOX=J2000,EPOCH=29-JAN- 2017:00:00:00,EpochTimeScale=TDB				EARTH
<i>Comments: Description=TNO binary with 126 days period</i>							

Proposal 17707 - 2001XR254 (1) (07) - Mutual events of Transneptunian Binaries

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(4) 2001XR254	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in 2001XR254 (1) (07)	150 Secs (600 Secs)	
								Pattern 1, Exps 1-1 in Sequence 1-3 Non-Int in 2001XR254 (1) (07) (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2		(4) 2001XR254	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in 2001XR254 (1) (07)	150 Secs (600 Secs)	
							Pattern 1, Exps 2-2 in Sequence 1-3 Non-Int in 2001XR254 (1) (07) (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]	
3		(4) 2001XR254	WFC3/UVIS, ACCUM, UVIS2	F350LP	FLASH=7		Sequence 1-3 Non-Int in 2001XR254 (1) (07)	150 Secs (300 Secs)		
							Pattern 2, Exps 3-3 in Sequence 1-3 Non-Int in 2001XR254 (1) (07) (2)	[==>(Pattern 1)] [==>(Pattern 2)]	[1]	



Proposal 17707 - 2001XR254 (2) (08) - Mutual events of Transneptunian Binaries

Thu Dec 19 01:01:24 GMT 2024

Visit	Proposal 17707, 2001XR254 (2) (08), completed Diagnostic Status: Informational Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 01-OCT-2024:00:00:00 AND 04-OCT-2024:18:00:00; BETWEEN 17-OCT-2024:06:00:00 AND 31-OCT-2024:00:00:00; BETWEEN 07-NOV-2024:18:00:00 AND 11-NOV-2024:12:00:00; BETWEEN 31-JAN-2025:18:00:00 AND 07-FEB-2025:06:00:00; BETWEEN 19-FEB-2025:06:00:00 AND 05-MAR-2025:12:00:00; BETWEEN 13-MAR-2025:00:00:00 AND 16-MAR-2025:18:00:00; BETWEEN 05-JUN-2025:12:00:00 AND 12-JUN-2025:12:00:00; BETWEEN 25-JUN-2025:06:00:00 AND 09-JUL-2025:00:00:00; BETWEEN 16-JUL-2025:18:00:00 AND 21-JUL-2025:00:00:00; BETWEEN 09-OCT-2025:00:00:00 AND 16-OCT-2025:00:00:00; BETWEEN 28-OCT-2025:12:00:00 AND 11-NOV-2025:12:00:00; BETWEEN 19-NOV-2025:06:00:00 AND 23-NOV-2025:12:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET						
	Diagnosics (2001XR254 (2) (08)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.						
Patterns	#	Primary Pattern	Secondary Pattern	Exposures			
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112 Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1), (2)			
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(3)				
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
	(4)	2001XR254	TYPE=ASTEROID,A=43.0350323955 3269,E=0.03368308770101577,I=1.23 1087312053428 ,O=180.0171013714119,W=71.011126 4146927,M=231.0792572076766,EQU INOX=J2000,EPOCH=29-JAN- 2017:00:00:00,EpochTimeScale=TDB				EARTH
<i>Comments: Description=TNO binary with 126 days period</i>							

Proposal 17707 - 2001XR254 (2) (08) - Mutual events of Transneptunian Binaries

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(4) 2001XR254	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in 2001XR254 (2) (08)	150 Secs (600 Secs)	
								Pattern 1, Exps 1-1 in Sequence 1-3 Non-Int in 2001XR254 (2) (08) (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2		(4) 2001XR254	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=7		Sequence 1-3 Non-Int in 2001XR254 (2) (08)	150 Secs (600 Secs)	
							Pattern 1, Exps 2-2 in Sequence 1-3 Non-Int in 2001XR254 (2) (08) (1)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]	
3		(4) 2001XR254	WFC3/UVIS, ACCUM, UVIS2	F350LP	FLASH=7		Sequence 1-3 Non-Int in 2001XR254 (2) (08)	150 Secs (300 Secs)		
							Pattern 2, Exps 3-3 in Sequence 1-3 Non-Int in 2001XR254 (2) (08) (2)	[==>(Pattern 1)] [==>(Pattern 2)]	[1]	

