



17206 - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

Cycle: 30, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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

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) BORASISI	WFC3/UVIS	1	26-Jul-2024 16:00:40.0	yes
10	(1) BORASISI	WFC3/UVIS	1	26-Jul-2024 16:00:41.0	yes
02	(1) BORASISI	WFC3/UVIS	1	26-Jul-2024 16:00:41.0	yes
03	(4) RT214	WFC3/UVIS	1	26-Jul-2024 16:00:42.0	yes
09	(4) RT214	WFC3/UVIS	1	26-Jul-2024 16:00:43.0	yes
04	(4) RT214	WFC3/UVIS	1	26-Jul-2024 16:00:43.0	yes
11	(4) RT214	WFC3/UVIS	1	26-Jul-2024 16:00:44.0	yes
05	(2) SILA	WFC3/UVIS	1	26-Jul-2024 16:00:44.0	yes
06	(2) SILA	WFC3/UVIS	1	26-Jul-2024 16:00:45.0	yes
07	(3) ALTJIRA	WFC3/UVIS	1	26-Jul-2024 16:00:46.0	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>
08	(3) ALTJIRA	WFC3/UVIS	1	26-Jul-2024 16:00:47.0	yes

11 Total Orbits Used

ABSTRACT

The Cold Classical Transneptunian objects (TNOs) are one of the least processed solar system subpopulations, making them a perfect place to test planet formation hypotheses. One of the most favored planetary formation models is the streaming instability, which predicts that binaries should be extremely common, especially among the Cold Classical. It also predicts that the spins of individual binary components will be well aligned with the binary orbit. Unfortunately, to date, this prediction has been difficult to test, but with increasingly long observational baselines, non-Keplerian orbital analysis is able to precisely measure both the shapes and spin poles of individual binary components. With these measurements, a quantitative test of the streaming instability model of planetesimal formation can be completed. In this program, we request 8 orbits to precisely measure the spin poles and shapes of Cold Classical TNOs, which will enable a detailed test of planet formation models.

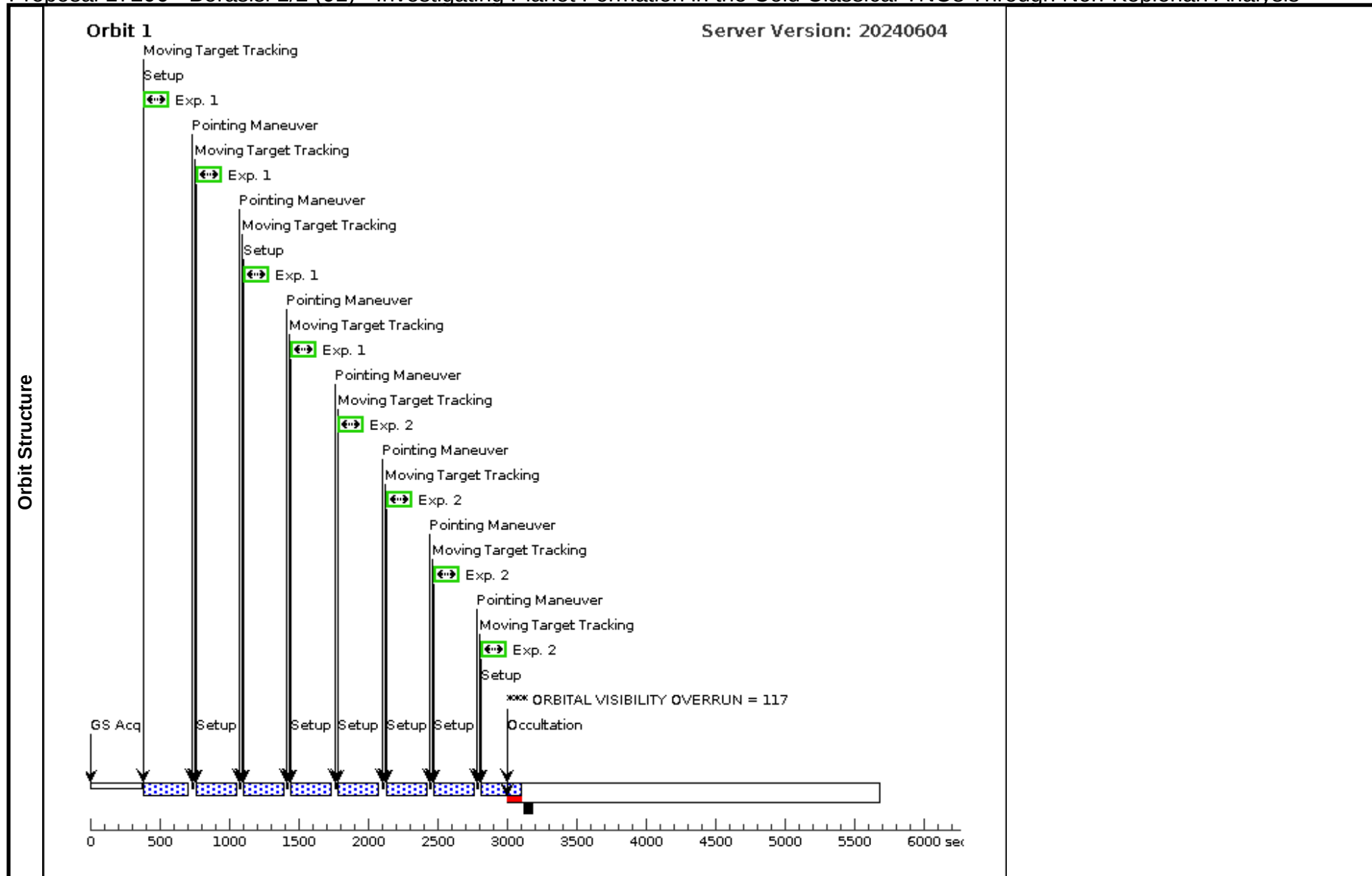
OBSERVING DESCRIPTION

Observations of transneptunian binaries to provide precise constraints on non-Keplerian motion in the binary mutual orbit, allowing for precise determination of shape and spin properties. Using preliminary models with the already existing orbital data, we are able to predict optimal times for observing, optimizing both the "information gained" by each observation and the binary separation.

We propose a total of 8 single-orbit visits using WFC3/UVIS in standard imaging mode, using a 512x512 subarray to optimize exposure times, and a dither pattern to optimally sample the PSF, as is common for imaging TNO binaries. We choose the F350LP filter to maximize the signal from our target with at least 4 exposures per visit, allowing us to achieve the best data quality possible. This maximizes astrometric precision, the goal of these observations.

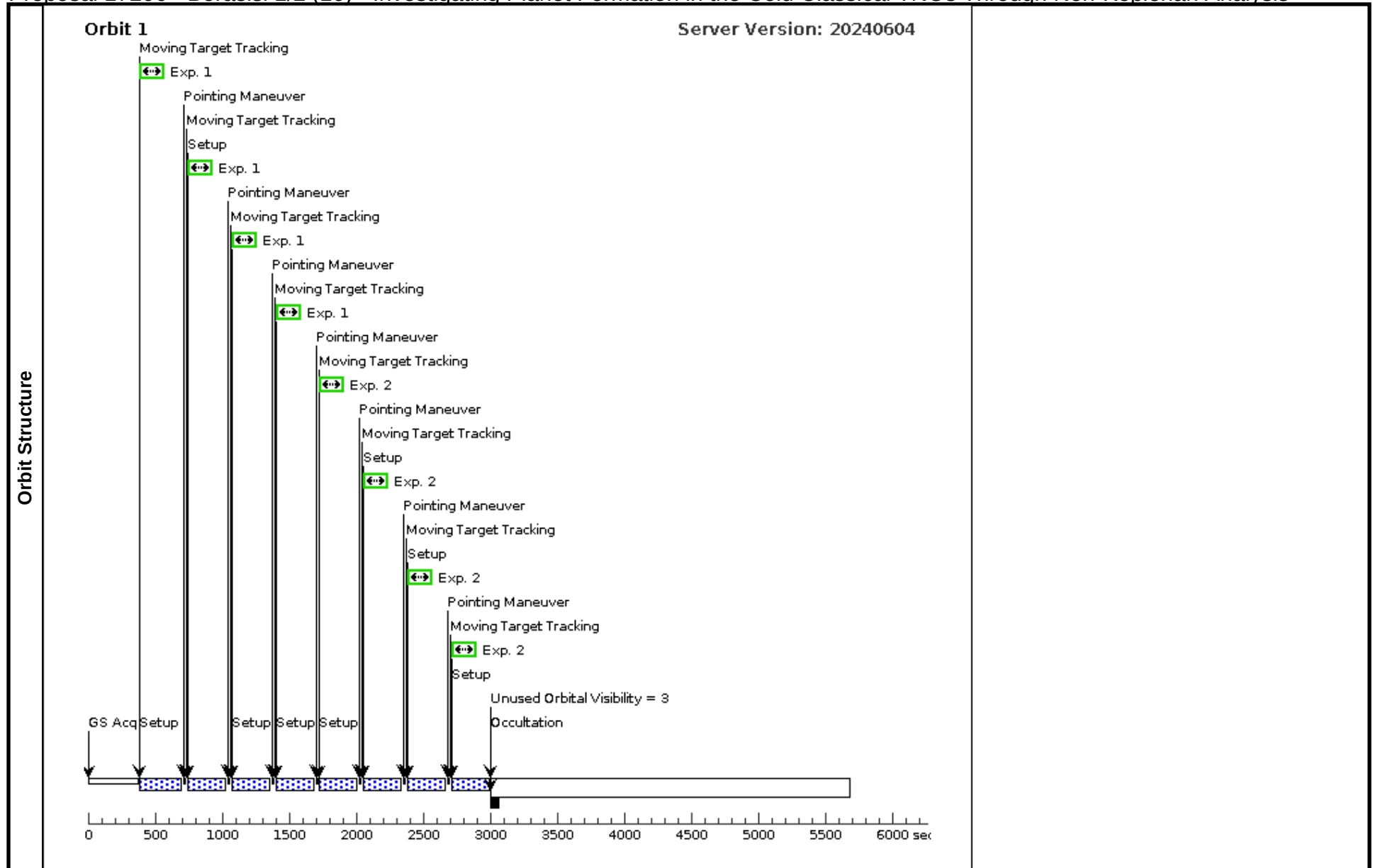
Proposal 17206 - Borasisi 1/2 (01) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

Visit	Proposal 17206, Borasisi 1/2 (01), failed										Fri Jul 26 20:00:47 GMT 2024	
	Diagnostic Status: Warning											
	Scientific Instruments: WFC3/UVIS											
	Special Requirements: BETWEEN 15-OCT-2022:00:00:00 AND 01-NOV-2022:23:59:59; BETWEEN 01-DEC-2022:00:00:00 AND 15-DEC-2022:23:59:59; BETWEEN 15-JAN-2023:00:00:00 AND 01-FEB-2023:23:59:59; BETWEEN 03-MAR-2023:00:00:00 AND 20-MAR-2023:23:59:59; BETWEEN 18-APR-2023:00:00:00 AND 04-MAY-2023:23:59:59; BETWEEN 04-JUN-2023:00:00:00 AND 20-JUN-2023:23:59:59; BETWEEN 20-JUL-2023:00:00:00 AND 04-AUG-2023:23:59:59; BETWEEN 05-SEP-2023:00:00:00 AND 21-SEP-2023:23:59:59; BETWEEN 22-OCT-2023:00:00:00 AND 06-NOV-2023:23:59:59; BETWEEN 06-DEC-2023:00:00:00 AND 22-DEC-2023:23:59:59; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET											
Comments: First visit of (66652) Borasisi-Pabu. To do at any of the listed times.												
Diagnostics	(Borasisi 1/2 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN											
	(Borasisi 1/2 (01)) 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 Coordinate Frame=POS-TARG Pattern Orientation=23.884 Purpose=DITHER Angle Between Sides=81.785 Number Of Points=4 Center Pattern=false Point Spacing=0.173 Line Spacing=0.112									(1), (2)	
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center					
	(1)	BORASISI	TYPE=ASTEROID,A=43.5537571826 8945,E=0.08532384207025838,I=0.56 31681679109887 ,O=84.69133745706878,W=195.20826 1819899,M=59.42549750805467,EQU INOX=J2000,EPOCH=31-AUG-2015:00:00:00,EpochTimeScale=TDB				EARTH					
Comments: Description=Asteroid (66652) Borasisi Extended=NO												
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit	
	1		(1) BORASISI	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Borasisi 1/2 (01)	250 Secs (1028 Secs)			
								Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in Borasisi 1/2 (01) (1)	[==>257.0 Secs (Pattern 1)] [==>257.0 Secs (Pattern 2)] [==>257.0 Secs (Pattern 3)] [==>257.0 Secs (Pattern 4)]		[1]	
	2		(1) BORASISI	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Borasisi 1/2 (01)	250 Secs (1028 Secs)			
								Pattern 1, Exps 2-2 in Sequence 1-2 Non-Int in Borasisi 1/2 (01) (1)	[==>257.0 Secs (Pattern 1)] [==>257.0 Secs (Pattern 2)] [==>257.0 Secs (Pattern 3)] [==>257.0 Secs (Pattern 4)]		[1]	



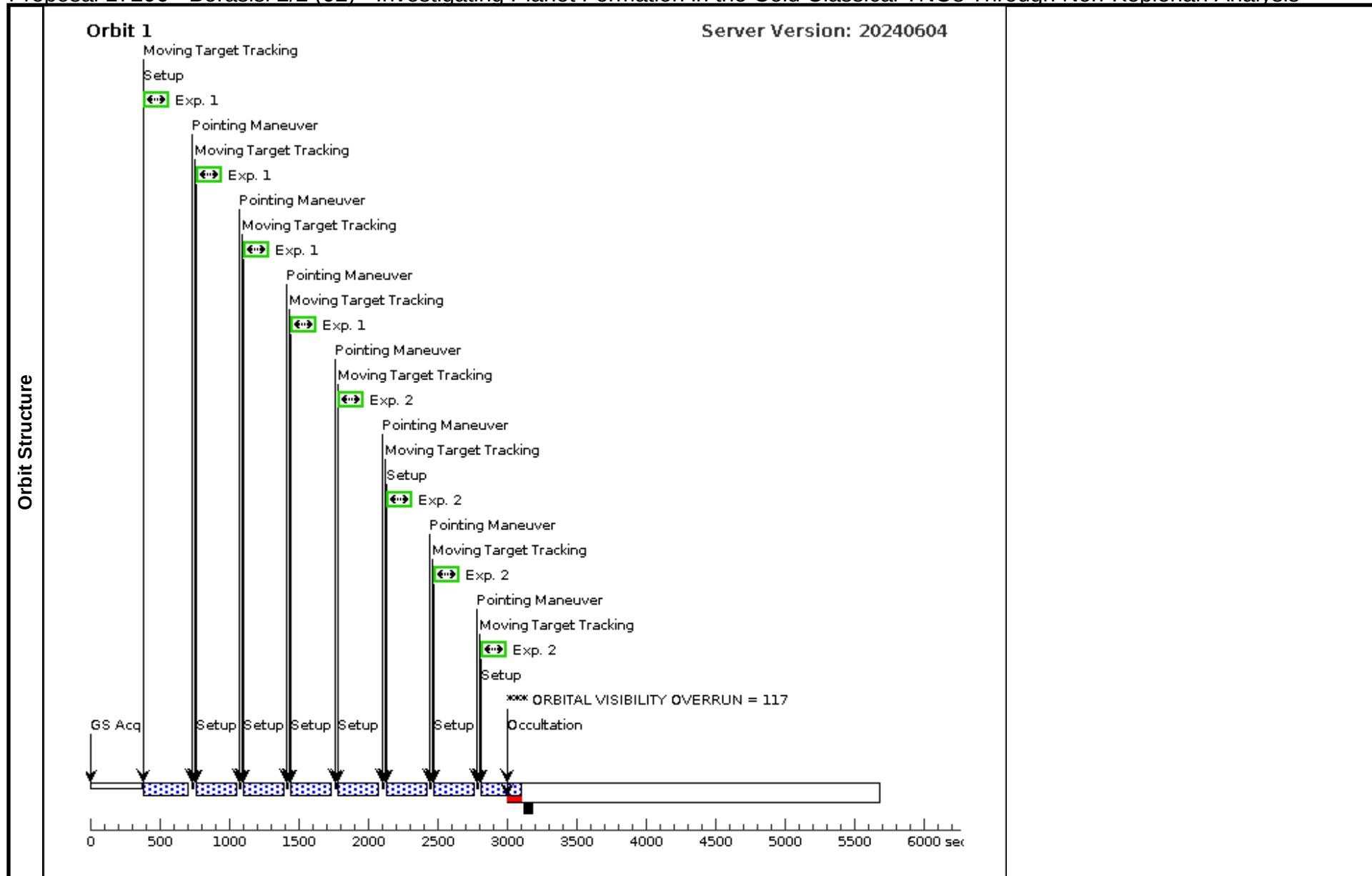
Proposal 17206 - Borasisi 1/2 (10) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

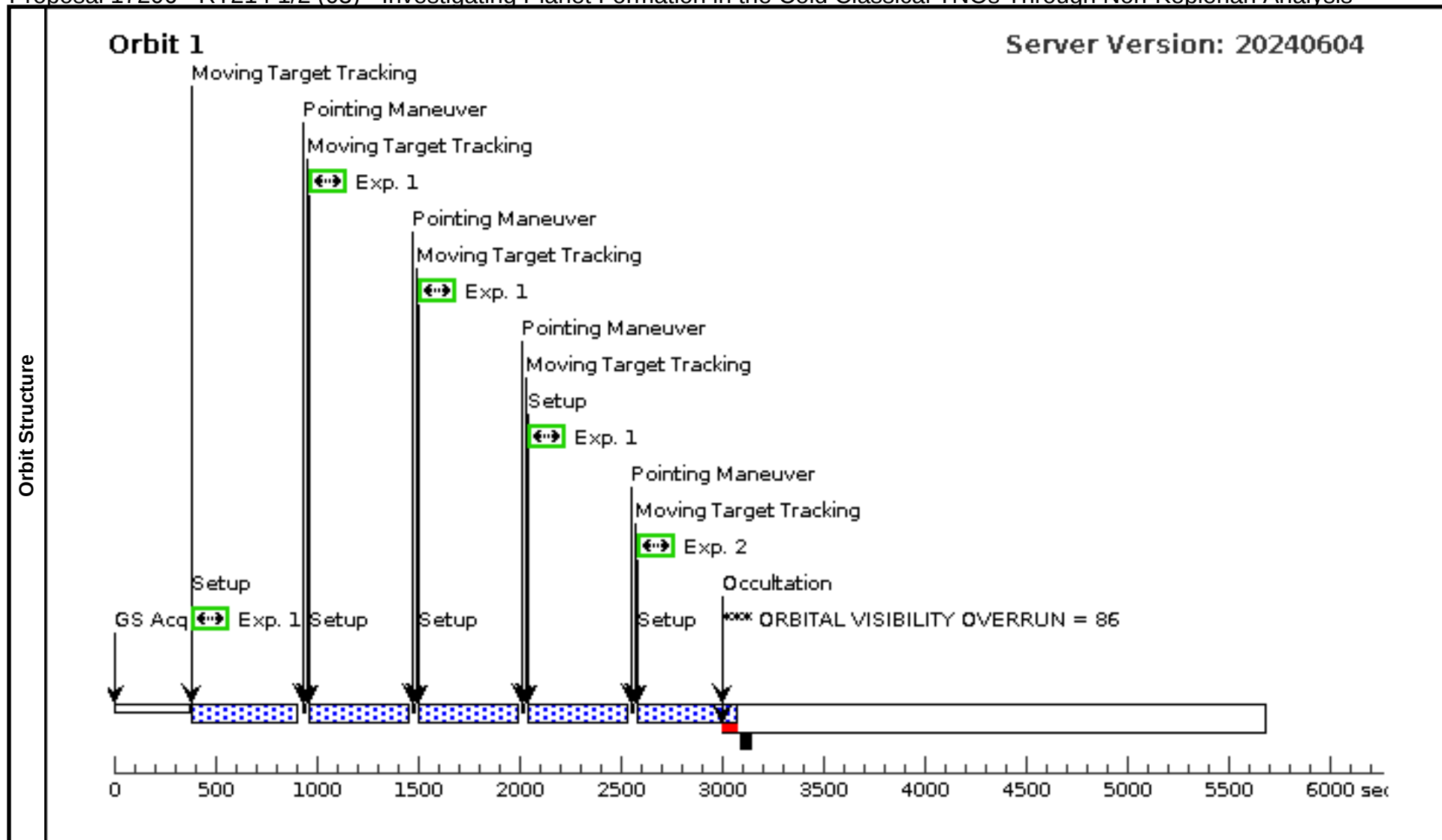
Visit	Proposal 17206, Borasisi 1/2 (10), implementation										Fri Jul 26 20:00:47 GMT 2024	
	Diagnostic Status: Informational											
	Scientific Instruments: WFC3/UVIS											
	Special Requirements: BETWEEN 20-AUG-2024:20:30:00 AND 22-AUG-2024:16:30:00; BETWEEN 23-AUG-2024:04:30:00 AND 24-AUG-2024:03:30:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET											
Comments: First visit of (66652) Borasisi-Pabu. To do at any time.												
Diagnostics	(Borasisi 1/2 (10)) 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 Coordinate Frame=POS-TARG Pattern Orientation=23.884 Purpose=DITHER Angle Between Sides=81.785 Number Of Points=4 Center Pattern=false Point Spacing=0.173 Line Spacing=0.112								(1), (2)		
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center					
	(1)	BORASISI	TYPE=ASTEROID,A=43.55375718268945,E=0.08532384207025838,I=0.5631681679109887,O=84.69133745706878,W=195.208261819899,M=59.42549750805467,EQUINOX=J2000,EPOCH=31-AUG-2015:00:00:00,EpochTimeScale=TDB									EARTH
Comments: Description=Asteroid (66652) Borasisi Extended=NO												
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit	
	1		(1) BORASISI	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Borasisi 1/2 (10)	250 Secs (968 Secs)			
								Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in Borasisi 1/2 (10) (1)	[==>242.0 Secs (Pattern 1)] [==>242.0 Secs (Pattern 2)] [==>242.0 Secs (Pattern 3)] [==>242.0 Secs (Pattern 4)]		[1]	
	2		(1) BORASISI	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Borasisi 1/2 (10)	250 Secs (968 Secs)			
								Pattern 1, Exps 2-2 in Sequence 1-2 Non-Int in Borasisi 1/2 (10) (1)	[==>242.0 Secs (Pattern 1)] [==>242.0 Secs (Pattern 2)] [==>242.0 Secs (Pattern 3)] [==>242.0 Secs (Pattern 4)]		[1]	



Proposal 17206 - Borasisi 2/2 (02) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

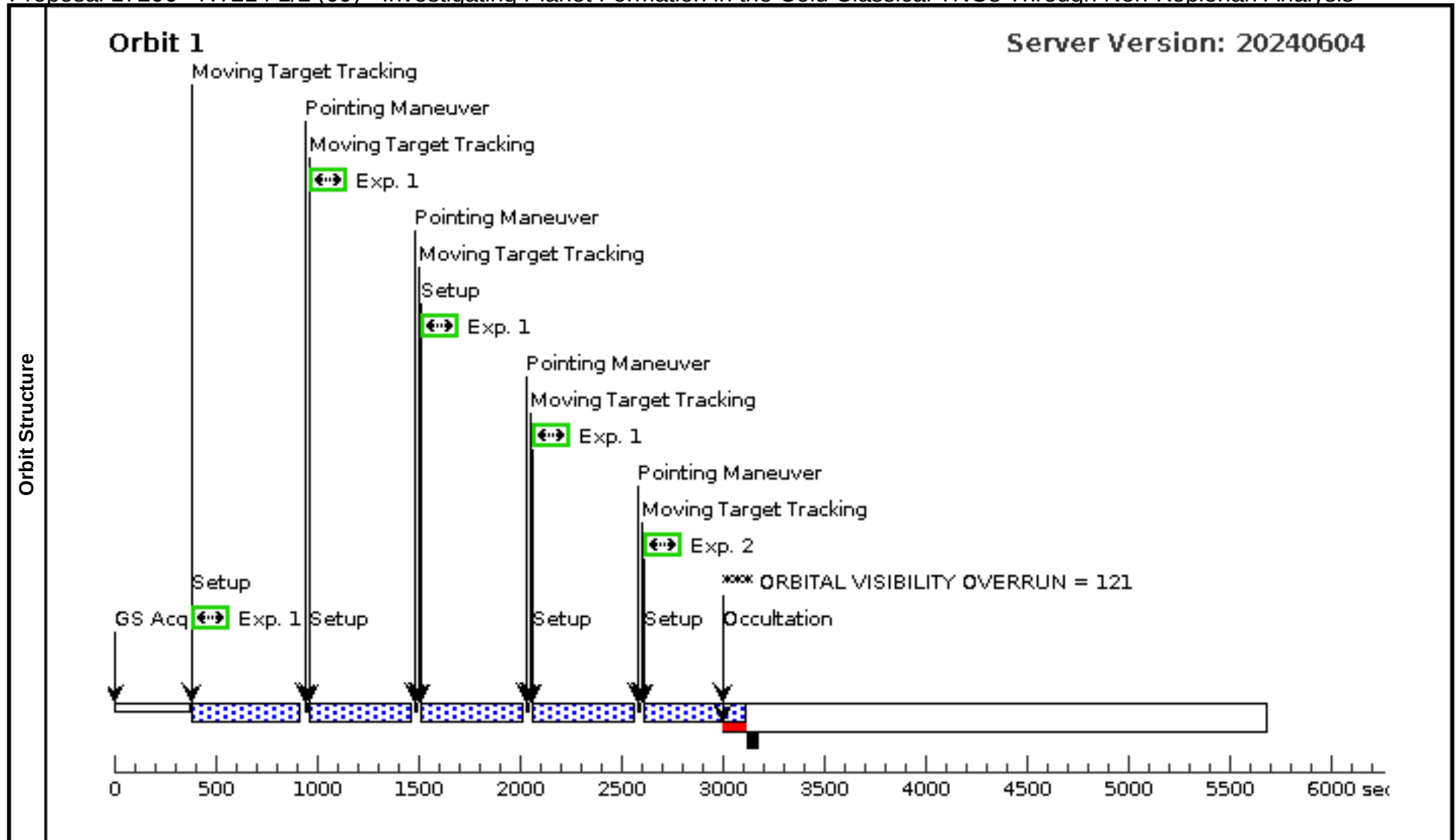
Visit	Proposal 17206, Borasisi 2/2 (02), completed										Fri Jul 26 20:00:47 GMT 2024				
	Diagnostic Status: Warning														
	Scientific Instruments: WFC3/UVIS														
	Special Requirements: AFTER 01 BY 6 D TO 180 D; BETWEEN 06-DEC-2023:00:00:00 AND 22-DEC-2023:23:59:59; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET														
Comments: Second visit of (66652) Borasisi-Pabu. To do at any of the listed times.															
Diagnostics	(Borasisi 2/2 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN														
	(Borasisi 2/2 (02)) 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)			
Solar System Targets	#	Name	Level 1		Level 2		Level 3		Window		Ephem Center				
	(1)	BORASISI	TYPE=ASTEROID,A=43.55375718268945,E=0.08532384207025838,I=0.5631681679109887,O=84.69133745706878,W=195.208261819899,M=59.42549750805467,EQUINOX=J2000,EPOCH=31-AUG-2015:00:00:00,EpochTimeScale=TDB								EARTH				
Comments: Description=Asteroid (66652) Borasisi Extended=NO															
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit			
	1		(1) BORASISI	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB		F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Borasisi 2/2 (02)	250 Secs (1028 Secs)					
									Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in Borasisi 2/2 (02) (1)	[==>257.0 Secs (Pattern 1)] [==>257.0 Secs (Pattern 2)] [==>257.0 Secs (Pattern 3)] [==>257.0 Secs (Pattern 4)]		[1]			
	2		(1) BORASISI	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB		F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Borasisi 2/2 (02)	250 Secs (1028 Secs)					
									Pattern 1, Exps 2-2 in Sequence 1-2 Non-Int in Borasisi 2/2 (02) (1)	[==>257.0 Secs (Pattern 1)] [==>257.0 Secs (Pattern 2)] [==>257.0 Secs (Pattern 3)] [==>257.0 Secs (Pattern 4)]		[1]			





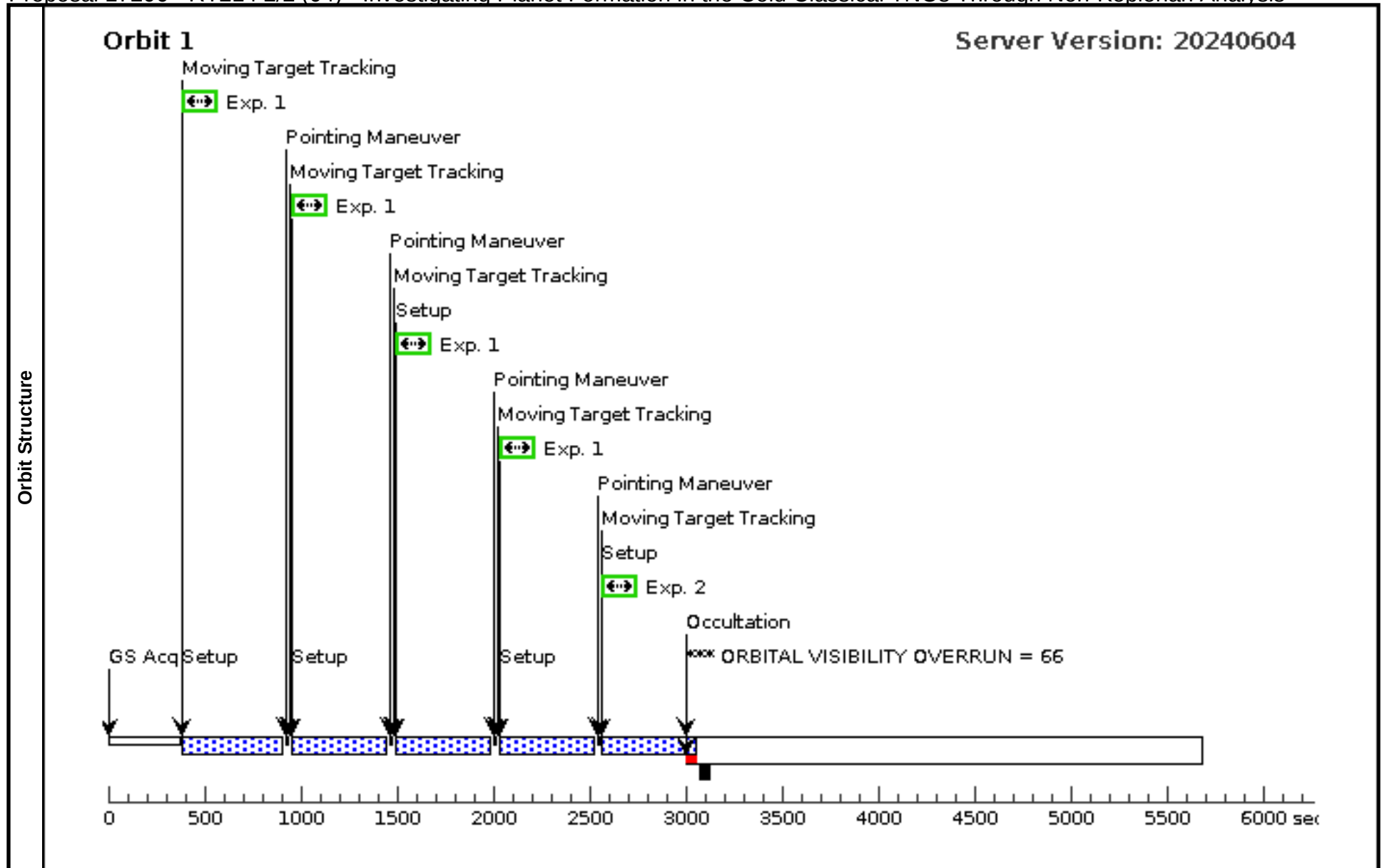
Proposal 17206 - RT214 1/2 (09) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

Visit	Proposal 17206, RT214 1/2 (09), completed										Fri Jul 26 20:00:47 GMT 2024		
	Diagnostic Status: Warning												
	Scientific Instruments: WFC3/UVIS												
	Special Requirements: BETWEEN 21-NOV-2022:00:00:00 AND 23-NOV-2022:00:00:00; BETWEEN 28-DEC-2022:00:00:00 AND 03-FEB-2023:23:59:59; BETWEEN 31-MAR-2023:00:00:00 AND 08-APR-2023:23:59:59; BETWEEN 04-MAY-2023:00:00:00 AND 10-MAY-2023:23:59:59; BETWEEN 07-AUG-2023:12:30:00 AND 13-AUG-2023:23:59:59; BETWEEN 08-SEP-2023:00:00:00 AND 15-OCT-2023:23:59:59; BETWEEN 15-NOV-2023:00:00:00 AND 15-DEC-2023:00:00:00; BETWEEN 26-NOV-2022:00:00:00 AND 28-NOV-2022:00:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET												
Comments: First visit for 1999 RT214. To be completed as soon as possible.													
Diagnostics	(RT214 1/2 (09)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN												
	(RT214 1/2 (09)) 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)	
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center						
	(4)	RT214	TYPE=ASTEROID,A=42.44010614572944,E=0.04390676646713668,I=2.580129693680121,O=138.0677964843207,W=206.8380098831675,M=343.5661790361984,EQUINOX=J2000,EPOCH=23-OCT-2005:00:00:00,EpochTimeScale=TDB					EARTH					
Comments: Description=Asteroid 1999 RT214 Extended=NO													
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit		
	1		(4) RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in RT214 1/2 (09)	350 Secs (1852 Secs)		[1]		
								Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in RT214 1/2 (09)	[==>463.0 Secs (Pattern 1)] [==>463.0 Secs (Pattern 2)] [==>463.0 Secs (Pattern 3)] [==>463.0 Secs (Pattern 4)]				
2		(4) RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in RT214 1/2 (09)	350 Secs (463 Secs)					
								[==>463.0 Secs]		[1]			



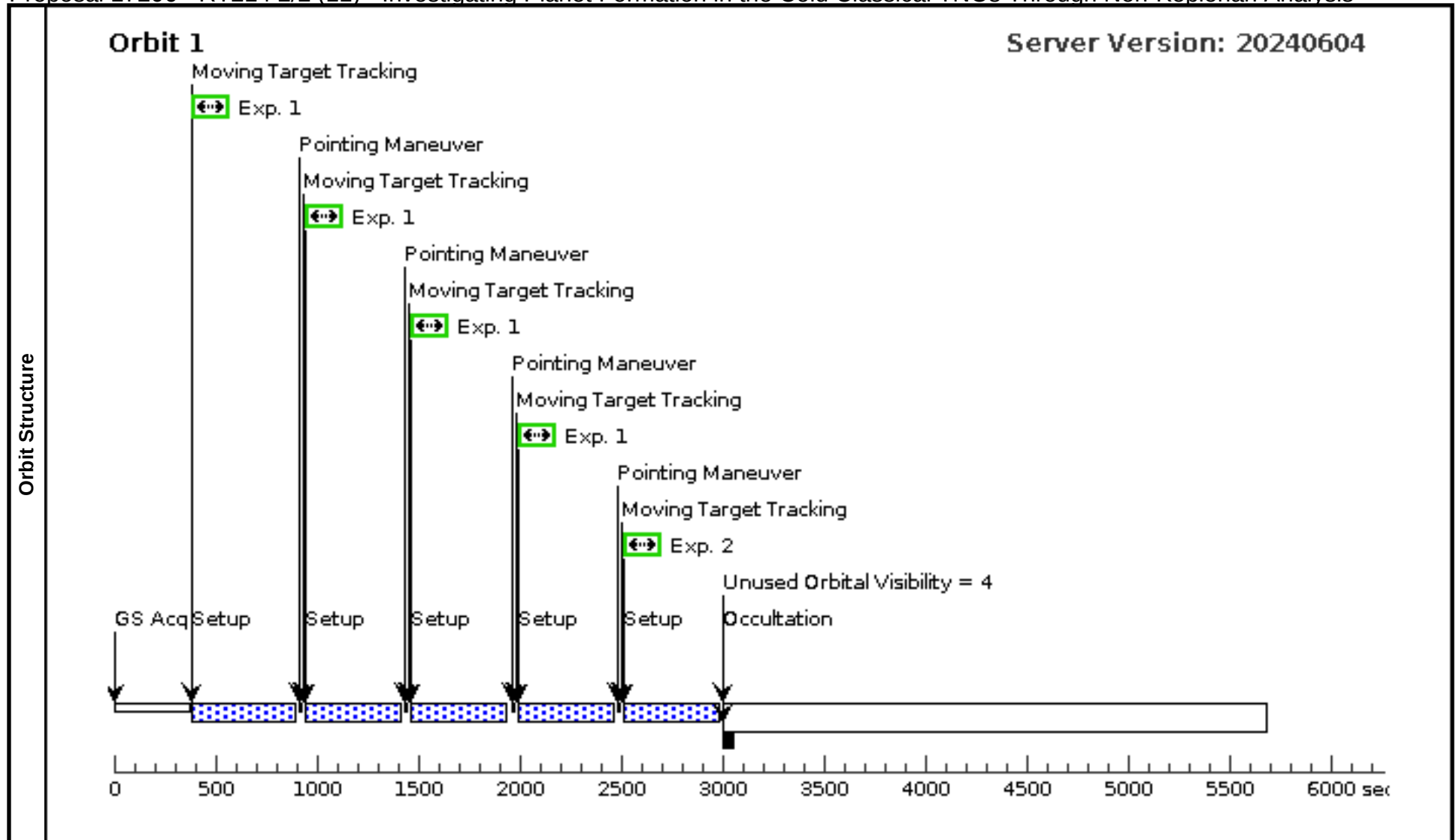
Proposal 17206 - RT214 2/2 (04) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

Visit	Proposal 17206, RT214 2/2 (04), failed										Fri Jul 26 20:00:48 GMT 2024		
	Diagnostic Status: Warning												
	Scientific Instruments: WFC3/UVIS												
	Special Requirements: AFTER 09 BY 90 D TO 456 D; BETWEEN 05-DEC-2023:00:00:00 AND 09-DEC-2023:12:00:00; BETWEEN 12-DEC-2023:04:00:00 AND 13-DEC-2023:16:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET												
	Comments: Second visit for 1999 RT214. To be completed at least 90 days after first visit.												
Diagnostics	(RT214 2/2 (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN												
	(RT214 2/2 (04)) 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)		
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center						
	(4)	RT214	TYPE=ASTEROID,A=42.44010614572944,E=0.04390676646713668,I=2.580129693680121,O=138.0677964843207,W=206.8380098831675,M=343.5661790361984,EQUINOX=J2000,EPOCH=23-OCT-2005:00:00:00,EpochTimeScale=TDB									EARTH	
	Comments: Description=Asteroid 1999 RT214 Extended=NO												
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit		
	1		(4) RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in RT214 2/2 (04)	350 Secs (1808 Secs)		[1]		
								Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in RT214 2/2 (04)	[==>452.0 Secs (Pattern 1)] [==>452.0 Secs (Pattern 2)] [==>452.0 Secs (Pattern 3)] [==>452.0 Secs (Pattern 4)]				
								(1)					
2		(4) RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in RT214 2/2 (04)	350 Secs (452 Secs)					
									[==>452.0 Secs]		[1]		



Proposal 17206 - RT214 2/2 (11) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

Visit	Proposal 17206, RT214 2/2 (11), implementation										Fri Jul 26 20:00:48 GMT 2024			
	Diagnostic Status: Informational													
	Scientific Instruments: WFC3/UVIS													
	Special Requirements: BETWEEN 22-AUG-2024:07:30:00 AND 22-AUG-2024:23:00:00; BETWEEN 20-SEP-2024:00:00:00 AND 27-OCT-2024:00:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET													
	Comments: Second visit for 1999 RT214. To at any time.													
Diagnostics	(RT214 2/2 (11)) 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)		
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center							
	(4)	RT214	TYPE=ASTEROID,A=42.44010614572944,E=0.04390676646713668,I=2.580129693680121,O=138.0677964843207,W=206.8380098831675,M=343.5661790361984,EQUINOX=J2000,EPOCH=23-OCT-2005:00:00:00,EpochTimeScale=TDB											
Comments: Description=Asteroid 1999 RT214 Extended=NO														
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit			
	1		(4) RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in RT214 2/2 (11)	350 Secs (1752 Secs)					
								Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in RT214 2/2 (11) (1)	[==>438.0 Secs (Pattern 1)] [==>438.0 Secs (Pattern 2)] [==>438.0 Secs (Pattern 3)] [==>438.0 Secs (Pattern 4)]		[1]			
	2		(4) RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in RT214 2/2 (11)	350 Secs (438 Secs)					
									[==>438.0 Secs]		[1]			



Proposal 17206 - Sila 1/2 (05) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

Visit	Proposal 17206, Sila 1/2 (05), completed Fri Jul 26 20:00:48 GMT 2024					
	Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 21-NOV-2022:12:00:00 AND 23-NOV-2022:12:00:00; BETWEEN 27-NOV-2022:12:00:00 AND 29-NOV-2022:12:00:00; BETWEEN 04-DEC-2022:12:00:00 AND 06-DEC-2022:12:00:00; BETWEEN 10-DEC-2022:12:00:00 AND 12-DEC-2022:12:00:00; BETWEEN 16-DEC-2022:12:00:00 AND 18-DEC-2022:12:00:00; BETWEEN 22-DEC-2022:12:00:00 AND 24-DEC-2022:12:00:00; BETWEEN 28-DEC-2022:12:00:00 AND 30-DEC-2022:12:00:00; BETWEEN 04-JAN-2023:12:00:00 AND 06-JAN-2023:12:00:00; BETWEEN 10-JAN-2023:12:00:00 AND 12-JAN-2023:12:00:00; BETWEEN 17-JAN-2023:12:00:00 AND 19-JAN-2023:12:00:00; BETWEEN 23-JAN-2023:12:00:00 AND 25-JAN-2023:12:00:00; BETWEEN 29-JAN-2023:12:00:00 AND 31-JAN-2023:12:00:00; BETWEEN 04-FEB-2023:12:00:00 AND 06-FEB-2023:12:00:00; BETWEEN 10-FEB-2023:12:00:00 AND 12-FEB-2023:12:00:00; BETWEEN 16-FEB-2023:12:00:00 AND 18-FEB-2023:12:00:00; BETWEEN 23-FEB-2023:12:00:00 AND 25-FEB-2023:12:00:00; BETWEEN 01-MAR-2023:12:00:00 AND 03-MAR-2023:12:00:00; BETWEEN 07-MAR-2023:12:00:00 AND 09-MAR-2023:12:00:00; BETWEEN 14-MAR-2023:12:00:00 AND 16-MAR-2023:12:00:00; BETWEEN 20-MAR-2023:12:00:00 AND 22-MAR-2023:12:00:00; BETWEEN 26-MAR-2023:12:00:00 AND 28-MAR-2023:12:00:00; BETWEEN 02-APR-2023:12:00:00 AND 04-APR-2023:12:00:00; BETWEEN 08-APR-2023:12:00:00 AND 10-APR-2023:12:00:00; BETWEEN 14-APR-2023:12:00:00 AND 16-APR-2023:12:00:00; BETWEEN 21-APR-2023:12:00:00 AND 23-APR-2023:12:00:00; BETWEEN 27-APR-2023:12:00:00 AND 29-APR-2023:12:00:00; BETWEEN 03-MAY-2023:12:00:00 AND 05-MAY-2023:12:00:00; BETWEEN 10-MAY-2023:12:00:00 AND 12-MAY-2023:12:00:00; BETWEEN 16-MAY-2023:12:00:00 AND 18-MAY-2023:12:00:00; BETWEEN 22-MAY-2023:12:00:00 AND 24-MAY-2023:12:00:00; BETWEEN 28-MAY-2023:12:00:00 AND 30-MAY-2023:12:00:00; BETWEEN 03-JUN-2023:12:00:00 AND 05-JUN-2023:12:00:00; BETWEEN 09-JUN-2023:12:00:00 AND 11-JUN-2023:12:00:00; BETWEEN 15-JUN-2023:12:00:00 AND 17-JUN-2023:12:00:00; BETWEEN 21-JUN-2023:12:00:00 AND 23-JUN-2023:12:00:00; BETWEEN 28-JUN-2023:12:00:00 AND 30-JUN-2023:12:00:00; BETWEEN 04-JUL-2023:12:00:00 AND 06-JUL-2023:12:00:00; BETWEEN 10-JUL-2023:12:00:00 AND 12-JUL-2023:12:00:00; BETWEEN 17-JUL-2023:12:00:00 AND 19-JUL-2023:12:00:00; BETWEEN 23-JUL-2023:12:00:00 AND 25-JUL-2023:12:00:00; BETWEEN 29-JUL-2023:12:00:00 AND 31-JUL-2023:12:00:00; BETWEEN 04-AUG-2023:12:00:00 AND 06-AUG-2023:12:00:00; BETWEEN 11-AUG-2023:12:00:00 AND 13-AUG-2023:12:00:00; BETWEEN 17-AUG-2023:12:00:00 AND 19-AUG-2023:12:00:00; BETWEEN 24-AUG-2023:12:00:00 AND 26-AUG-2023:12:00:00; BETWEEN 30-AUG-2023:12:00:00 AND 01-SEP-2023:12:00:00; BETWEEN 05-SEP-2023:12:00:00 AND 07-SEP-2023:12:00:00; BETWEEN 12-SEP-2023:12:00:00 AND 14-SEP-2023:12:00:00; BETWEEN 18-SEP-2023:12:00:00 AND 20-SEP-2023:12:00:00; BETWEEN 24-SEP-2023:12:00:00 AND 26-SEP-2023:12:00:00; BETWEEN 30-SEP-2023:12:00:00 AND 02-OCT-2023:12:00:00; BETWEEN 06-OCT-2023:12:00:00 AND 08-OCT-2023:12:00:00; BETWEEN 13-OCT-2023:12:00:00 AND 15-OCT-2023:12:00:00; BETWEEN 19-OCT-2023:12:00:00 AND 21-OCT-2023:12:00:00; BETWEEN 25-OCT-2023:12:00:00 AND 27-OCT-2023:12:00:00; BETWEEN 31-OCT-2023:12:00:00 AND 02-NOV-2023:12:00:00; BETWEEN 06-NOV-2023:12:00:00 AND 08-NOV-2023:12:00:00; BETWEEN 13-NOV-2023:12:00:00 AND 15-NOV-2023:12:00:00; BETWEEN 19-NOV-2023:12:00:00 AND 21-NOV-2023:12:00:00; BETWEEN 25-NOV-2023:12:00:00 AND 27-NOV-2023:12:00:00; BETWEEN 02-DEC-2023:12:00:00 AND 04-DEC-2023:12:00:00; BETWEEN 08-DEC-2023:12:00:00 AND 10-DEC-2023:12:00:00; BETWEEN 14-DEC-2023:12:00:00 AND 16-DEC-2023:12:00:00; BETWEEN 21-DEC-2023:12:00:00 AND 23-DEC-2023:12:00:00; BETWEEN 27-DEC-2023:12:00:00 AND 29-DEC-2023:12:00:00 <i>Comments: First visit for (79360) Sila. To be completed as soon as possible.</i>					
Diagnostics	(Sila 1/2 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Sila 1/2 (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), (2)
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window
	(2)	SILA	TYPE=ASTEROID,A=44.1214659761 4639,E=0.01660872618560968,I=2.24 076055136504 ,O=304.3404045501882,W=222.21187 83244919,M=332.2025185712392,EQ UINOX=J2000,EPOCH=26-DEC-2015:00:00:00,EpochTimeScale=TDB			
<i>Comments: Description=Asteroid (79360) Sila Extended=NO</i>						

Proposal 17206 - Sila 1/2 (05) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

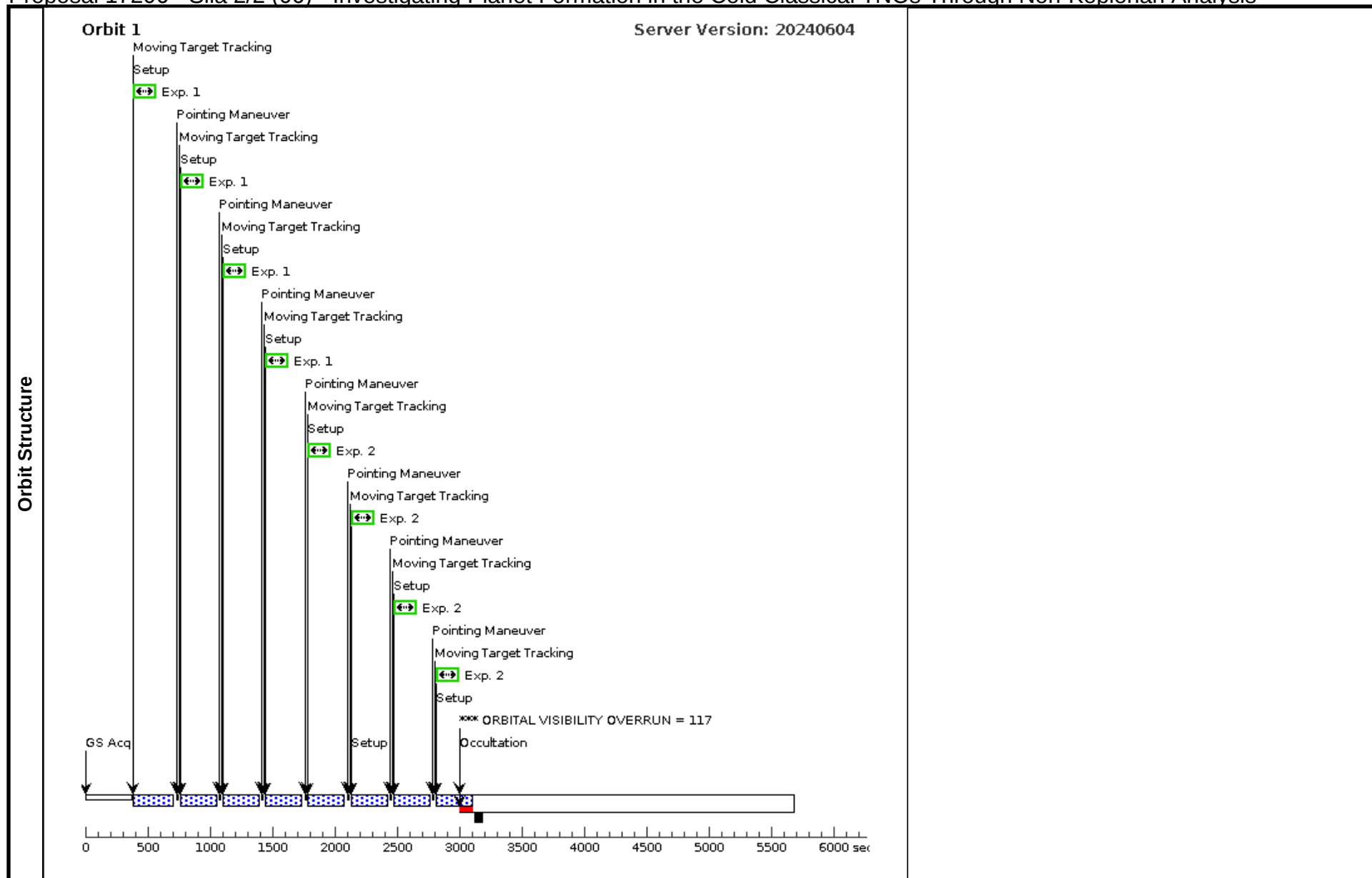
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(2) SILA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO; FLASH=5		Sequence 1-2 Non-Int in Sila 1/2 (05)	220 Secs (828 Secs)	
								Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in Sila 1/2 (05) (1)	[==>207.0 Secs (Pattern 1)] [==>207.0 Secs (Pattern 2)] [==>207.0 Secs (Pattern 3)] [==>207.0 Secs (Pattern 4)]	[1]
	2		(2) SILA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO; FLASH=5		Sequence 1-2 Non-Int in Sila 1/2 (05)	220 Secs (828 Secs)	
								Pattern 1, Exps 2-2 in Sequence 1-2 Non-Int in Sila 1/2 (05) (1)	[==>207.0 Secs (Pattern 1)] [==>207.0 Secs (Pattern 2)] [==>207.0 Secs (Pattern 3)] [==>207.0 Secs (Pattern 4)]	[1]

Proposal 17206 - Sila 2/2 (06) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

Visit	Proposal 17206, Sila 2/2 (06), completed			Fri Jul 26 20:00:48 GMT 2024	
	Diagnostic Status: Warning				
	Scientific Instruments: WFC3/UVIS				
Visit	Special Requirements: AFTER 05 BY 180 D TO 456 D; BETWEEN 03-OCT-2022:12:00:00 AND 05-OCT-2022:12:00:00; BETWEEN 09-OCT-2022:12:00:00 AND 11-OCT-2022:12:00:00; BETWEEN 15-OCT-2022:12:00:00 AND 17-OCT-2022:12:00:00; BETWEEN 21-OCT-2022:12:00:00 AND 23-OCT-2022:12:00:00; BETWEEN 27-OCT-2022:12:00:00 AND 29-OCT-2022:12:00:00; BETWEEN 03-NOV-2022:12:00:00 AND 05-NOV-2022:12:00:00; BETWEEN 09-NOV-2022:12:00:00 AND 11-NOV-2022:12:00:00; BETWEEN 15-NOV-2022:12:00:00 AND 17-NOV-2022:12:00:00; BETWEEN 21-NOV-2022:12:00:00 AND 23-NOV-2022:12:00:00; BETWEEN 27-NOV-2022:12:00:00 AND 29-NOV-2022:12:00:00; BETWEEN 04-DEC-2022:12:00:00 AND 06-DEC-2022:12:00:00; BETWEEN 10-DEC-2022:12:00:00 AND 12-DEC-2022:12:00:00; BETWEEN 16-DEC-2022:12:00:00 AND 18-DEC-2022:12:00:00; BETWEEN 22-DEC-2022:12:00:00 AND 24-DEC-2022:12:00:00; BETWEEN 28-DEC-2022:12:00:00 AND 30-DEC-2022:12:00:00; BETWEEN 04-JAN-2023:12:00:00 AND 06-JAN-2023:12:00:00; BETWEEN 10-JAN-2023:12:00:00 AND 12-JAN-2023:12:00:00; BETWEEN 17-JAN-2023:12:00:00 AND 19-JAN-2023:12:00:00; BETWEEN 23-JAN-2023:12:00:00 AND 25-JAN-2023:12:00:00; BETWEEN 29-JAN-2023:12:00:00 AND 31-JAN-2023:12:00:00; BETWEEN 04-FEB-2023:12:00:00 AND 06-FEB-2023:12:00:00; BETWEEN 10-FEB-2023:12:00:00 AND 12-FEB-2023:12:00:00; BETWEEN 16-FEB-2023:12:00:00 AND 18-FEB-2023:12:00:00; BETWEEN 23-FEB-2023:12:00:00 AND 25-FEB-2023:12:00:00; BETWEEN 01-MAR-2023:12:00:00 AND 03-MAR-2023:12:00:00; BETWEEN 07-MAR-2023:12:00:00 AND 09-MAR-2023:12:00:00; BETWEEN 14-MAR-2023:12:00:00 AND 16-MAR-2023:12:00:00; BETWEEN 20-MAR-2023:12:00:00 AND 22-MAR-2023:12:00:00; BETWEEN 26-MAR-2023:12:00:00 AND 28-MAR-2023:12:00:00; BETWEEN 02-APR-2023:12:00:00 AND 04-APR-2023:12:00:00; BETWEEN 08-APR-2023:12:00:00 AND 10-APR-2023:12:00:00; BETWEEN 14-APR-2023:12:00:00 AND 16-APR-2023:12:00:00; BETWEEN 21-APR-2023:12:00:00 AND 23-APR-2023:12:00:00; BETWEEN 27-APR-2023:12:00:00 AND 29-APR-2023:12:00:00; BETWEEN 03-MAY-2023:12:00:00 AND 05-MAY-2023:12:00:00; BETWEEN 10-MAY-2023:12:00:00 AND 12-MAY-2023:12:00:00; BETWEEN 16-MAY-2023:12:00:00 AND 18-MAY-2023:12:00:00; BETWEEN 22-MAY-2023:12:00:00 AND 24-MAY-2023:12:00:00; BETWEEN 28-MAY-2023:12:00:00 AND 30-MAY-2023:12:00:00; BETWEEN 03-JUN-2023:12:00:00 AND 05-JUN-2023:12:00:00; BETWEEN 09-JUN-2023:12:00:00 AND 11-JUN-2023:12:00:00; BETWEEN 15-JUN-2023:12:00:00 AND 17-JUN-2023:12:00:00; BETWEEN 21-JUN-2023:12:00:00 AND 23-JUN-2023:12:00:00; BETWEEN 28-JUN-2023:12:00:00 AND 30-JUN-2023:12:00:00; BETWEEN 04-JUL-2023:12:00:00 AND 06-JUL-2023:12:00:00; BETWEEN 10-JUL-2023:12:00:00 AND 12-JUL-2023:12:00:00; BETWEEN 17-JUL-2023:12:00:00 AND 19-JUL-2023:12:00:00; BETWEEN 23-JUL-2023:12:00:00 AND 25-JUL-2023:12:00:00; BETWEEN 29-JUL-2023:12:00:00 AND 31-JUL-2023:12:00:00; BETWEEN 04-AUG-2023:12:00:00 AND 06-AUG-2023:12:00:00; BETWEEN 11-AUG-2023:12:00:00 AND 13-AUG-2023:12:00:00; BETWEEN 17-AUG-2023:12:00:00 AND 19-AUG-2023:12:00:00; BETWEEN 24-AUG-2023:12:00:00 AND 26-AUG-2023:12:00:00; BETWEEN 30-AUG-2023:12:00:00 AND 01-SEP-2023:12:00:00; BETWEEN 05-SEP-2023:12:00:00 AND 07-SEP-2023:12:00:00; BETWEEN 12-SEP-2023:12:00:00 AND 14-SEP-2023:12:00:00; BETWEEN 18-SEP-2023:12:00:00 AND 20-SEP-2023:12:00:00; BETWEEN 24-SEP-2023:12:00:00 AND 26-SEP-2023:12:00:00; BETWEEN 30-SEP-2023:12:00:00 AND 02-OCT-2023:12:00:00; BETWEEN 06-OCT-2023:12:00:00 AND 08-OCT-2023:12:00:00; BETWEEN 13-OCT-2023:12:00:00 AND 15-OCT-2023:12:00:00; BETWEEN 19-OCT-2023:12:00:00 AND 21-OCT-2023:12:00:00; BETWEEN 25-OCT-2023:12:00:00 AND 27-OCT-2023:12:00:00; BETWEEN 31-OCT-2023:12:00:00 AND 02-NOV-2023:12:00:00; BETWEEN 06-NOV-2023:12:00:00 AND 08-NOV-2023:12:00:00; BETWEEN 13-NOV-2023:12:00:00 AND 15-NOV-2023:12:00:00; BETWEEN 19-NOV-2023:12:00:00 AND 21-NOV-2023:12:00:00; BETWEEN 25-NOV-2023:12:00:00 AND 27-NOV-2023:12:00:00; BETWEEN 02-DEC-2023:12:00:00 AND 04-DEC-2023:12:00:00; BETWEEN 08-DEC-2023:12:00:00 AND 10-DEC-2023:12:00:00; BETWEEN 14-DEC-2023:12:00:00 AND 16-DEC-2023:12:00:00; BETWEEN 21-DEC-2023:12:00:00 AND 23-DEC-2023:12:00:00; BETWEEN 27-DEC-2023:12:00:00 AND 29-DEC-2023:12:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET				
	Comments: Second visit for (79360) Sila. To be completed at least 180 days after first visit.				
	Diagnostics	(Sila 2/2 (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN			
(Sila 2/2 (06)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.					
Patterns	#	Primary Pattern		Secondary Pattern	
	(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	#	Name	Level 1	Level 2	Level 3
	(2)	SILA	TYPE=ASTEROID,A=44.12146597614639,E=0.01660872618560968,I=2.24076055136504,O=304.3404045501882,W=222.2118783244919,M=332.2025185712392,EQUINOX=J2000,EPOCH=26-DEC-2015:00:00:00,EpochTimeScale=TDB		
Solar System Targets	Comments: Description=Asteroid (79360) Sila Extended=NO				
	EARTH				

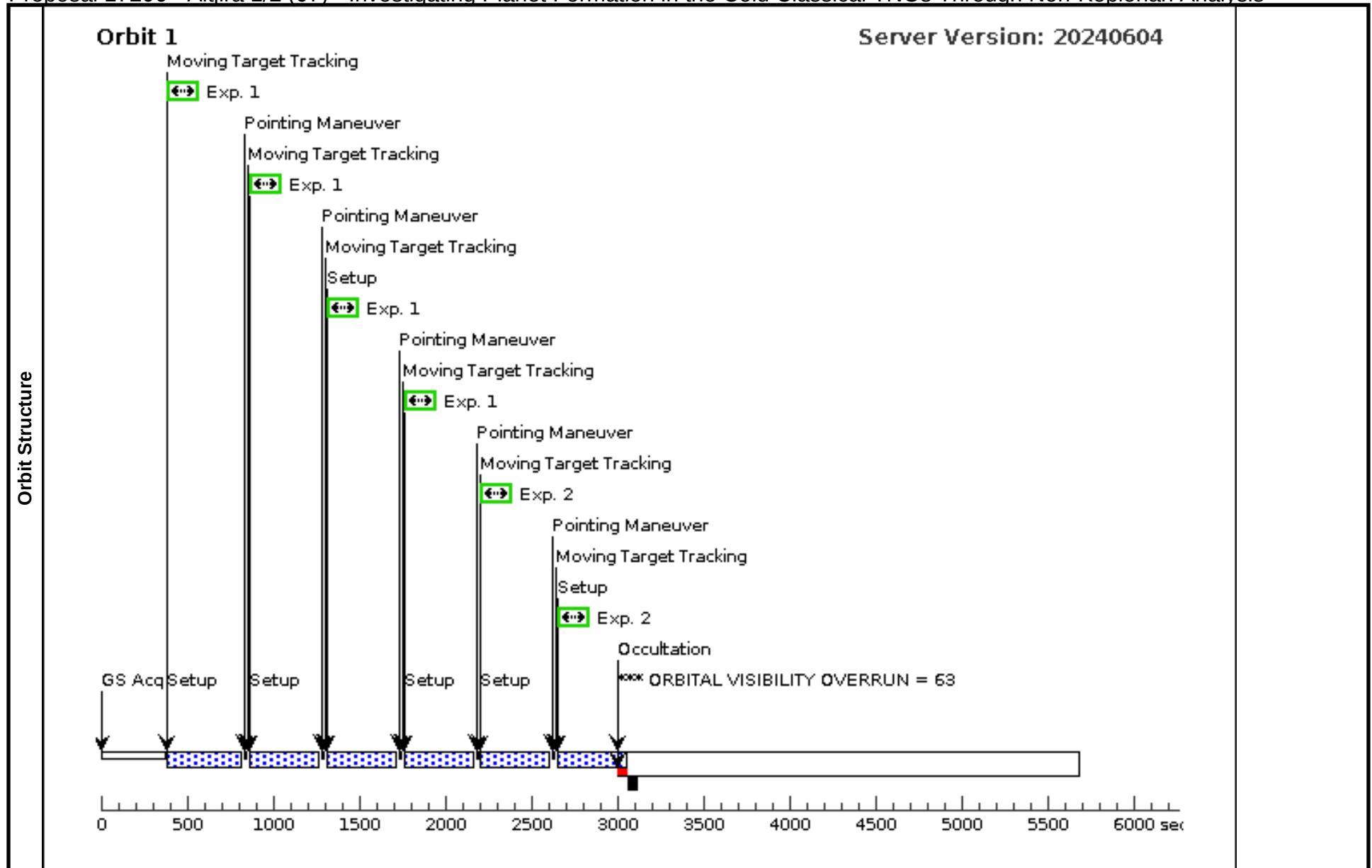
Proposal 17206 - Sila 2/2 (06) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(2) SILA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Sila 2/2 (06)	220 Secs (1028 Secs)	
								Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in Sila 2/2 (06) (1)	[==>257.0 Secs (Pattern 1)] [==>257.0 Secs (Pattern 2)] [==>257.0 Secs (Pattern 3)] [==>257.0 Secs (Pattern 4)]	[1]
	2		(2) SILA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Sila 2/2 (06)	220 Secs (1028 Secs)	
								Pattern 1, Exps 2-2 in Sequence 1-2 Non-Int in Sila 2/2 (06) (1)	[==>257.0 Secs (Pattern 1)] [==>257.0 Secs (Pattern 2)] [==>257.0 Secs (Pattern 3)] [==>257.0 Secs (Pattern 4)]	[1]



Proposal 17206 - Altjira 1/2 (07) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

Visit	Proposal 17206, Altjira 1/2 (07), completed										Fri Jul 26 20:00:48 GMT 2024	
	Diagnostic Status: Warning											
	Scientific Instruments: WFC3/UVIS											
	Special Requirements: BETWEEN 23-OCT-2023:02:00:00 AND 25-OCT-2023:12:00:00; BETWEEN 26-OCT-2023:04:00:00 AND 27-OCT-2023:20:00:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET											
	Comments: First visit of (148780) Altjira. To do at any of the listed times.											
Diagnostics	(Altjira 1/2 (07)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN											
	(Altjira 1/2 (07)) 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)	ALTJIRA	TYPE=ASTEROID,A=44.0721827072 1229,E=0.06312621864487571,I=5.20 5413770482293 ,O=1.951982829381656,W=296.01994 89983244,M=114.1297622184921,EQ UINOX=J2000,EPOCH=02-JUL- 2006:00:00:00,EpochTimeScale=TDB								EARTH	
Comments: Description=Asteroid (148780) Altjira Extended=NO												
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1		(3) ALTJIRA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB		F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Altjira 1/2 (07)	300 Secs (1448 Secs)		
									Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in Altjira 1/2 (07)	[==>362.0 Secs (Pattern 1)] [==>362.0 Secs (Pattern 2)] [==>362.0 Secs (Pattern 3)] [==>362.0 Secs (Pattern 4)]		[1]
	2		(3) ALTJIRA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB		F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Altjira 1/2 (07)	300 Secs (724 Secs)		
									Pattern 2, Exps 2-2 in Sequence 1-2 Non-Int in Altjira 1/2 (07)	[==>362.0 Secs (Pattern 1)] [==>362.0 Secs (Pattern 2)]		[1]



Proposal 17206 - Altjira 2/2 (08) - Investigating Planet Formation in the Cold Classical TNOs Through Non-Keplerian Analysis

Visit	Proposal 17206, Altjira 2/2 (08), completed										Fri Jul 26 20:00:48 GMT 2024	
	Diagnostic Status: Warning											
	Scientific Instruments: WFC3/UVIS											
	Special Requirements: BETWEEN 22-JUN-2023:00:00:00 AND 01-JUL-2023:23:59:59; BETWEEN 07-NOV-2023:00:00:00 AND 17-NOV-2023:23:59:59; BETWEEN 06-FEB-2023:00:00:00 AND 08-FEB-2023:10:00:00; BETWEEN 10-FEB-2023:18:00:00 AND 12-FEB-2023:23:59:00; VISIBILITY INTERVAL NO GYRO BIAS UPDATE ON MOVING TARGET											
Comments: Second visit of (148780) Altjira. To do at any of the listed times.												
Diagnostics	(Altjira 2/2 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN											
	(Altjira 2/2 (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 Coordinate Frame=POS-TARG Pattern Orientation=23.884 Purpose=DITHER Angle Between Sides=81.785 Number Of Points=4 Center Pattern=false Point Spacing=0.173 Line Spacing=0.112									(1)	
	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE Coordinate Frame=POS-TARG Pattern Orientation=46.84 Purpose=DITHER Angle Between Sides= Number Of Points=2 Center Pattern=false Point Spacing=0.145 Line Spacing=									(2)	
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center					
	(3)	ALTJIRA	TYPE=ASTEROID,A=44.0721827072 1229,E=0.06312621864487571,I=5.20 5413770482293 ,O=1.951982829381656,W=296.01994 89983244,M=114.1297622184921,EQ UINOX=J2000,EPOCH=02-JUL- 2006:00:00:00,EpochTimeScale=TDB					EARTH				
Comments: Description=Asteroid (148780) Altjira Extended=NO												
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit	
	1		(3) ALTJIRA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Altjira 2/2 (08) Pattern 1, Exps 1-1 in Sequence 1-2 Non-Int in Altjira 2/2 (08) (1)	300 Secs (1488 Secs) [==>372.0 Secs (Pattern 1)] [==>372.0 Secs (Pattern 2)] [==>372.0 Secs (Pattern 3)] [==>372.0 Secs (Pattern 4)]		[1]	
	2		(3) ALTJIRA	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Altjira 2/2 (08) Pattern 2, Exps 2-2 in Sequence 1-2 Non-Int in Altjira 2/2 (08) (2)	300 Secs (744 Secs) [==>372.0 Secs (Pattern 1)] [==>372.0 Secs (Pattern 2)]		[1]	

