



16056 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy

Mission Target

Cycle: 27, 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) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:19.0	yes
02	(1) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:20.0	yes
03	(1) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:22.0	yes
04	(1) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:23.0	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) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:24.0	yes
06	(1) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:25.0	yes
07	(1) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:27.0	yes
08	(1) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:28.0	yes
09	(1) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:29.0	yes
10	(1) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:30.0	yes
11	(1) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:32.0	yes
12	(1) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:33.0	yes
59	(1) EURYBATES	WFC3/UVIS	1	19-Jan-2021 07:00:34.0	yes

13 Total Orbits Used

ABSTRACT

A deep search for satellites around Jupiter Trojan asteroids that are targets of NASA's Lucy mission has yielded the detection of a small satellite with $d \sim 1$ km orbiting Eurybates. Observations on 12 and 14 September 2018 show a $V \sim 26.77$ mag object at a projected distance of 1928 km from Eurybates that is moving at a rate consistent with that of a bound satellite. The Lucy spacecraft is planned to fly within this distance to a close approach of 1000 ± 75 km. Thus, it is of critical importance to the mission to recover the satellite and constrain the orbit in order to evaluate the impact on the design of targeting, flyby, and science sequences, data volume, and other potential effects. We are requesting immediate observations prior to 11 January 2020 for recovery and initial orbit characterization with more detailed orbit determination observations during the next very favorable opposition starting in September 2020.

OBSERVING DESCRIPTION

We have three single-orbit visits to observe Eurybates to attempt recovery of a satellite with an unknown orbit. The potential satellite was observed on Sep 12 and 14, 2018 at a projected distance of ~ 1900 km (0.58 arcsec). Because the orbit period is not known and the satellite is ~ 9.5 mags fainter than Eurybates, it will be difficult or impossible to detect when it is closer than ~ 0.4 arcsec from the primary. For this reason we want to spread the three visits out in the interval from the first visit (somewhere between Dec. 9 but before Dec 22, depending on calendars) and the last day of HST visibility on Jan 11. That window is how we arrived at the AFTER BY 10-17 day requirement.

We request the first visit be scheduled as soon as possible to allow the longest window in which to fit the three visits. The very latest scheduling for the first visit is Dec 21, but sooner is better. A longer window increases the chances of timing at least one visit when the satellite is far enough from the much brighter primary to be detectable. Earlier also is better in terms of angular scale because the geocentric distance to the target is increasing by about 2% per week.

Exposure times can be shortened as needed to schedule. A 10 sec decrement in the six long exposures saves 60 sec overall. If more than 20 sec per exposure needs to be cut, please consult with us first.

Proposal 16056 - Visit 01 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

Tue Jan 19 12:00:34 GMT 2021

Visit	Proposal 16056, Visit 01, completed		
	Diagnostic Status: No Diagnostics		
	Scientific Instruments: WFC3/UVIS		
	Special Requirements: BEFORE 22-DEC-2019:00:00:00		

Patterns	#	Primary Pattern	Secondary Pattern	Exposures
	(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.290 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	

Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB				
<i>Comments: Description=Trojan Asteroid Extended=NO</i>							

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=12			Pattern 1, Exps 1-1 in Visit 01 (1)	30 Secs (60 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP				Pattern 1, Exps 2-2 in Visit 01 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) EURYBATES	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			POS TARG 0.092,0.098	Pattern 1, Exps 3-3 in Visit 01 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) EURYBATES	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			POS TARG 0.185,0.197	Pattern 1, Exps 4-4 in Visit 01 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]

Proposal 16056 - Visit 02 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

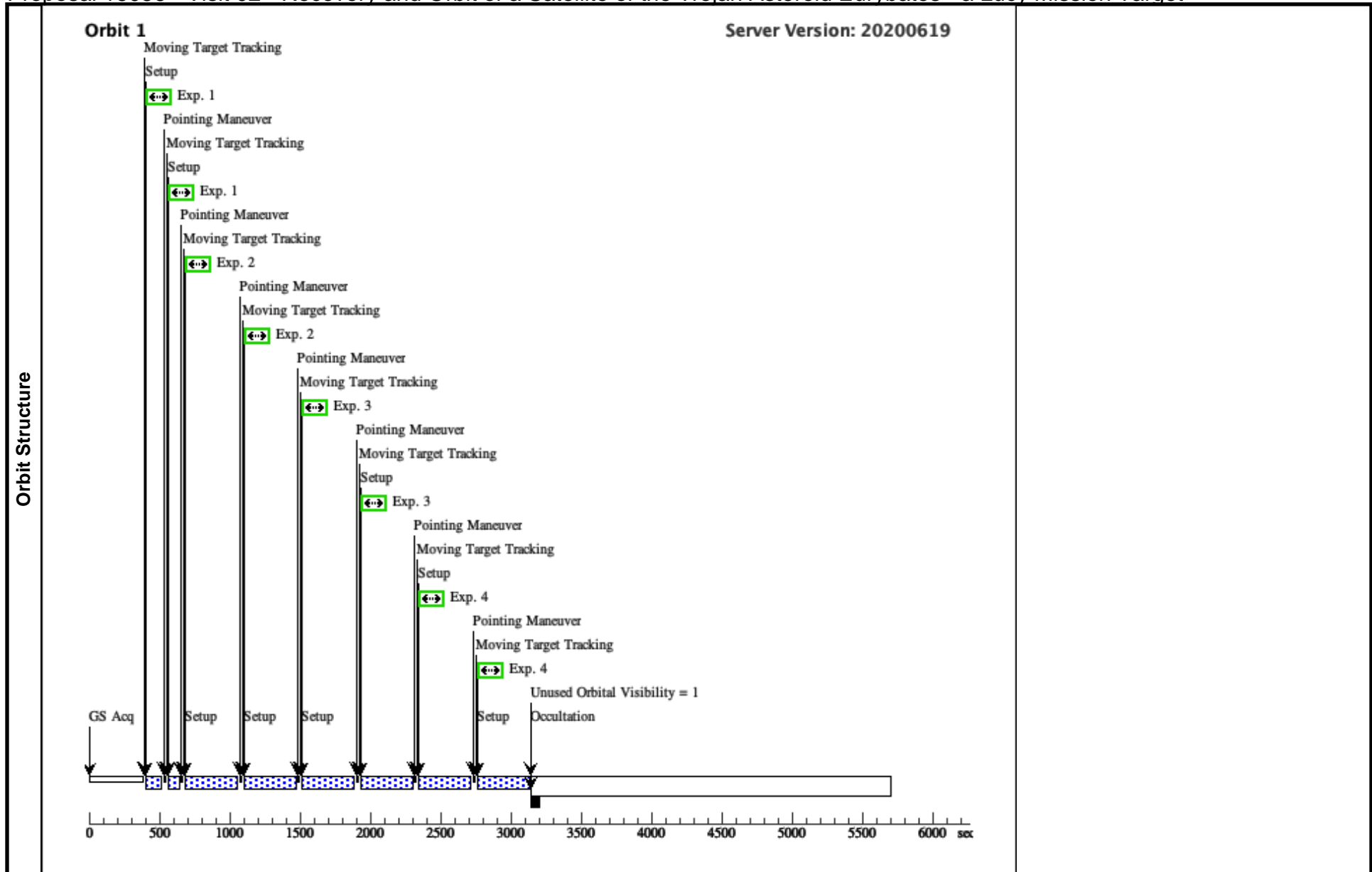
Tue Jan 19 12:00:35 GMT 2021

Visit	Proposal 16056, Visit 02, completed		
	Diagnostic Status: No Diagnostics		
	Scientific Instruments: WFC3/UVIS		
	Special Requirements: AFTER 01 BY 10 D TO 17 D		

Patterns	#	Primary Pattern	Secondary Pattern	Exposures
	(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.290 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	

Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB				
<i>Comments: Description=Trojan Asteroid Extended=NO</i>							

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=12		Pattern 1, Exps 1-1 in Visit 02 (1)	30 Secs (60 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			Pattern 1, Exps 2-2 in Visit 02 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP		POS TARG 0.092,0.098	Pattern 1, Exps 3-3 in Visit 02 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP		POS TARG 0.185,0.197	Pattern 1, Exps 4-4 in Visit 02 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 16056 - Visit 03 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

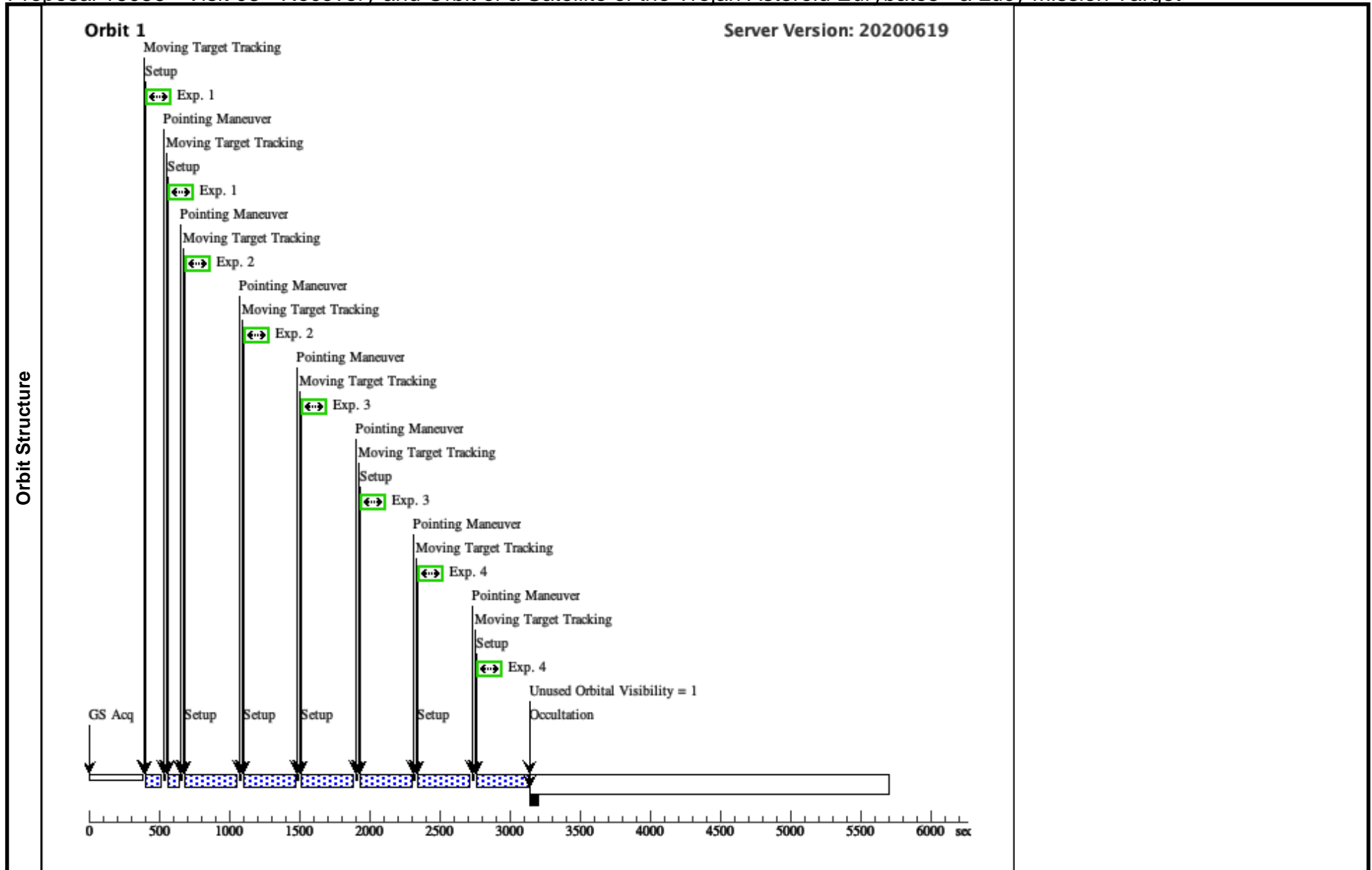
Tue Jan 19 12:00:35 GMT 2021

Visit	Proposal 16056, Visit 03, completed		
	Diagnostic Status: No Diagnostics		
	Scientific Instruments: WFC3/UVIS		
	Special Requirements: AFTER 02 BY 10 D TO 17 D		

Patterns	#	Primary Pattern	Secondary Pattern	Exposures
	(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.290 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	

Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB				
<i>Comments: Description=Trojan Asteroid Extended=NO</i>							

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=12			Pattern 1, Exps 1-1 in Visit 03 (1)	30 Secs (60 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP				Pattern 1, Exps 2-2 in Visit 03 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) EURYBATES	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			POS TARG 0.092,0.098	Pattern 1, Exps 3-3 in Visit 03 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) EURYBATES	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			POS TARG 0.185,0.197	Pattern 1, Exps 4-4 in Visit 03 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]

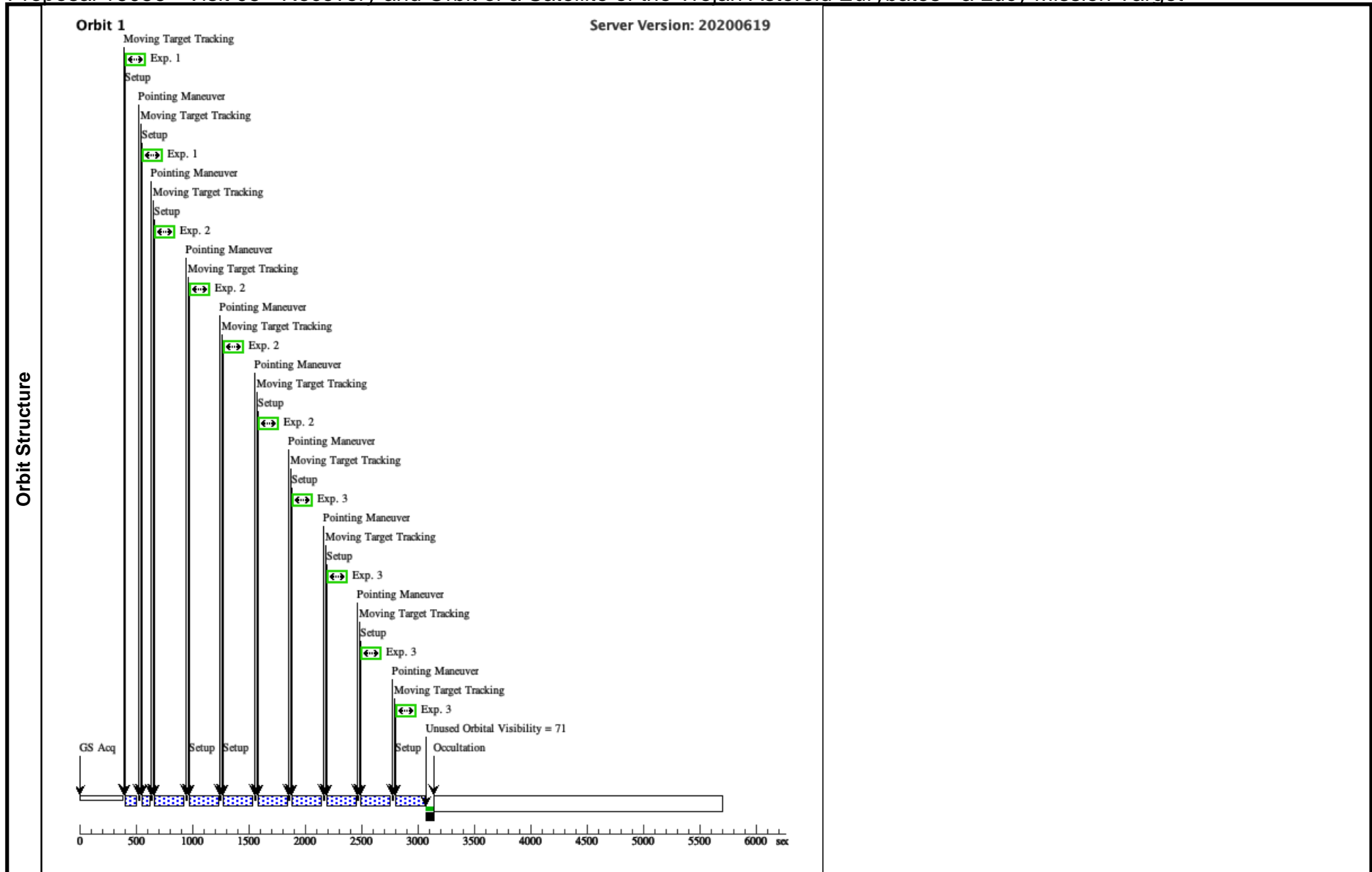


Proposal 16056 - Visit 04 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

Visit		Proposal 16056, Visit 04, completed Tue Jan 19 12:00:35 GMT 2021 Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 11-JUL-2020:00:00:00 AND 31-JUL-2020:00:00:00								
Patterns	#	Primary Pattern		Secondary Pattern		Exposures				
	(3)	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			(2), (3)				
(4)	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			(1)					
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB				EARTH			
<i>Comments: Description=Trojan Asteroid Extended=NO</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=12		Sequence 1-3 Non-Int in Visit 04 Pattern 4, Exps 1-1 in Sequence 1-3 Non-Int in Visit 04 (4)	20 Secs (40 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			Sequence 1-3 Non-Int in Visit 04 Pattern 3, Exps 2-2 in Sequence 1-3 Non-Int in Visit 04 (3)	220 Secs (880 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	3	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP		POS TARG 0.0900,0.0896	Sequence 1-3 Non-Int in Visit 04 Pattern 3, Exps 3-3 in Sequence 1-3 Non-Int in Visit 04 (3)	220 Secs (880 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]

Proposal 16056 - Visit 05 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

Visit		Proposal 16056, Visit 05, completed Tue Jan 19 12:00:35 GMT 2021 Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 04 BY 14.5 D TO 20.5 D								
Patterns	#	Primary Pattern		Secondary Pattern		Exposures				
	(3)	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			(2), (3)				
	(4)	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			(1)				
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB				EARTH			
<i>Comments: Description=Trojan Asteroid Extended=NO</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1)	EURYBATES	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=12		Sequence 1-3 Non-Int in Visit 05 Pattern 4, Exps 1-1 in Sequence 1-3 Non-Int in Visit 05 (4)	20 Secs (40 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1)	EURYBATES	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			Sequence 1-3 Non-Int in Visit 05 Pattern 3, Exps 2-2 in Sequence 1-3 Non-Int in Visit 05 (3)	220 Secs (880 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	3	(1)	EURYBATES	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP		POS TARG 0.0900,0.0896	Sequence 1-3 Non-Int in Visit 05 Pattern 3, Exps 3-3 in Sequence 1-3 Non-Int in Visit 05 (3)	220 Secs (880 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]



Proposal 16056 - Visit 06 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

Visit		Proposal 16056, Visit 06, completed Tue Jan 19 12:00:35 GMT 2021 Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 13-SEP-2020:00:00:00 AND 19-SEP-2020:23:59:59								
Patterns	#	Primary Pattern		Secondary Pattern		Exposures				
	(3)	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			(2), (3)				
(4)	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			(1)					
Solar System Targets		#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
(1)		EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB <i>Comments: Description=Trojan Asteroid Extended=NO</i>					EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=12		Sequence 1-3 Non-Int in Visit 06 Pattern 4, Exps 1-1 in Sequence 1-3 Non-Int in Visit 06 (4)	20 Secs (40 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			Sequence 1-3 Non-Int in Visit 06 Pattern 3, Exps 2-2 in Sequence 1-3 Non-Int in Visit 06 (3)	220 Secs (880 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	3	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP		POS TARG 0.0900,0.0896	Sequence 1-3 Non-Int in Visit 06 Pattern 3, Exps 3-3 in Sequence 1-3 Non-Int in Visit 06 (3)	220 Secs (880 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]

Proposal 16056 - Visit 07 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

Tue Jan 19 12:00:35 GMT 2021

Visit	Proposal 16056, Visit 07, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 11-OCT-2020:00:00:00 AND 13-OCT-2020:23:59:59									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(4)	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		(1), (2), (3), (4)				
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB				EARTH			
	<i>Comments: Description=Trojan Asteroid Extended=NO</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=11		Sequence 1-4 Non-Int in Visit 07 Pattern 4, Exps 1-1 in Sequence 1-4 Non-Int in Visit 07 (4)	20 Secs (40 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	FLASH=11	POS TARG 0.297,0.318	Sequence 1-4 Non-Int in Visit 07 Pattern 4, Exps 2-2 in Sequence 1-4 Non-Int in Visit 07 (4)	40 Secs (80 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W			Sequence 1-4 Non-Int in Visit 07 Pattern 4, Exps 3-3 in Sequence 1-4 Non-Int in Visit 07 (4)	350 Secs (700 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	FLASH=3	POS TARG 0.297,0.318	Sequence 1-4 Non-Int in Visit 07 Pattern 4, Exps 4-4 in Sequence 1-4 Non-Int in Visit 07 (4)	480 Secs (960 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]

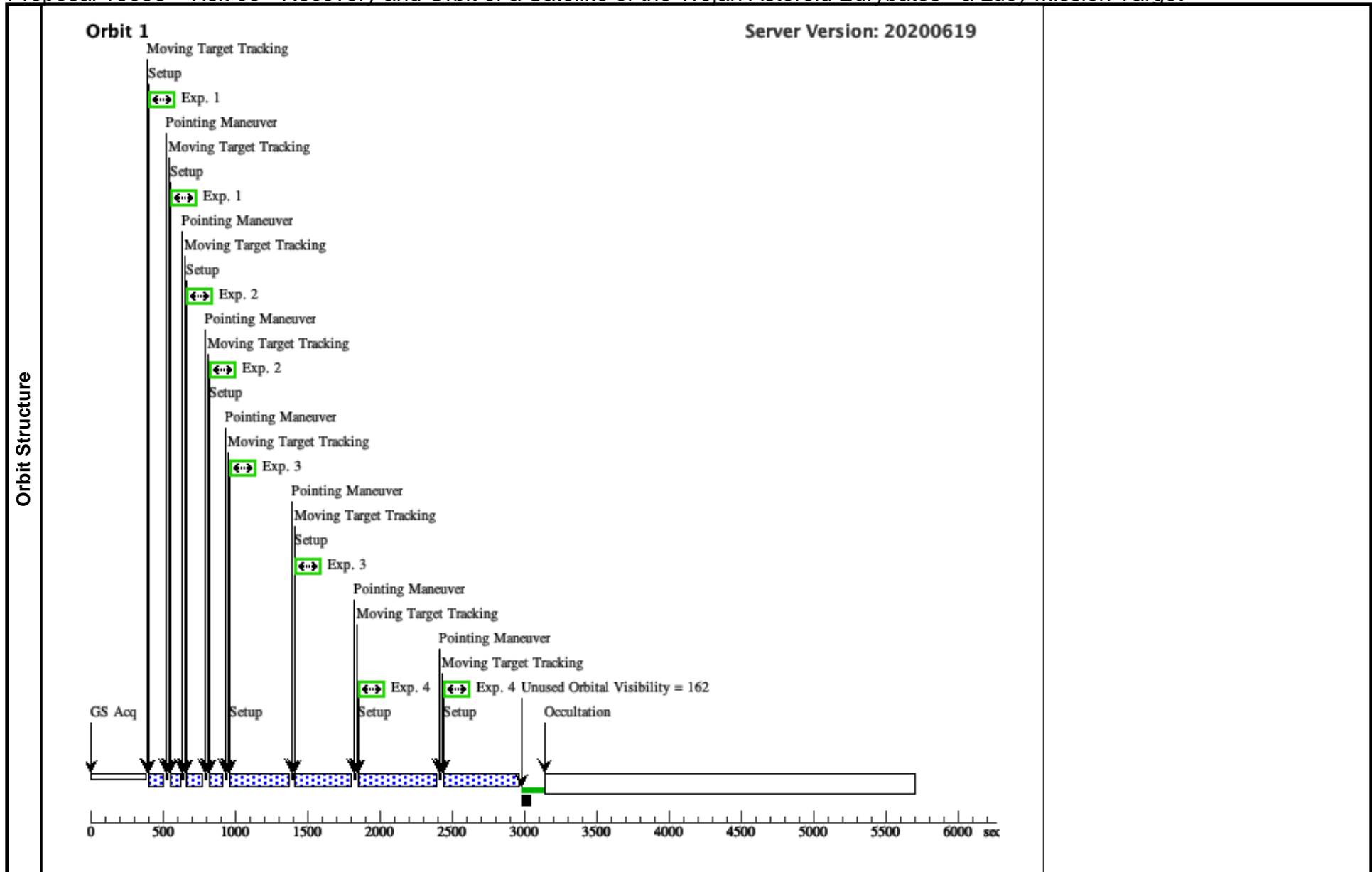
Proposal 16056 - Visit 08 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

Visit	Proposal 16056, Visit 08, completed Tue Jan 19 12:00:35 GMT 2021 Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 07 BY 72 H TO 120 H; BETWEEN 15-OCT-2020:00:00:00 AND 17-OCT-2020:23:59:59									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(4)	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		(1), (2), (3), (4)					
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB <i>Comments: Description=Trojan Asteroid Extended=NO</i>				EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=11		Sequence 1-4 Non-Int in Visit 08 Pattern 4, Exps 1-1 in Sequence 1-4 Non-Int in Visit 08 (4)	20 Secs (40 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	FLASH=11	POS TARG 0.297,0.318	Sequence 1-4 Non-Int in Visit 08 Pattern 4, Exps 2-2 in Sequence 1-4 Non-Int in Visit 08 (4)	40 Secs (80 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W			Sequence 1-4 Non-Int in Visit 08 Pattern 4, Exps 3-3 in Sequence 1-4 Non-Int in Visit 08 (4)	350 Secs (700 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	FLASH=3	POS TARG 0.297,0.318	Sequence 1-4 Non-Int in Visit 08 Pattern 4, Exps 4-4 in Sequence 1-4 Non-Int in Visit 08 (4)	480 Secs (960 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]

Proposal 16056 - Visit 09 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

Tue Jan 19 12:00:35 GMT 2021

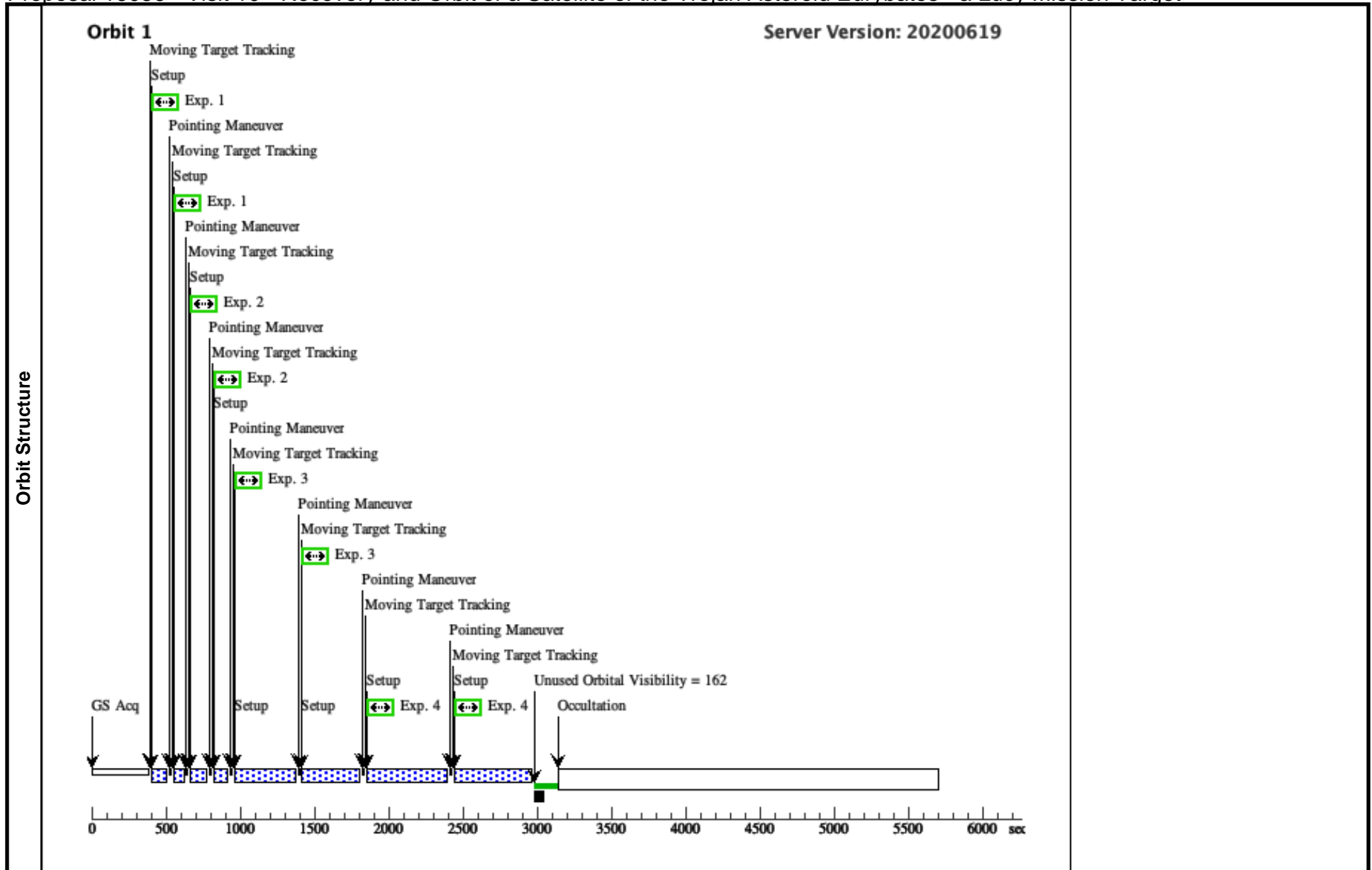
Visit	Proposal 16056, Visit 09, failed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 20-NOV-2020:02:00:00 AND 21-NOV-2020:02:00:00									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(4)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2), (3), (4)					
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB				EARTH			
	<i>Comments: Description=Trojan Asteroid Extended=NO</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=11		Sequence 1-4 Non-Int in Visit 09 Pattern 4, Exps 1-1 in Sequence 1-4 Non-Int in Visit 09 (4)	20 Secs (40 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	FLASH=11	POS TARG 0.297,0.318	Sequence 1-4 Non-Int in Visit 09 Pattern 4, Exps 2-2 in Sequence 1-4 Non-Int in Visit 09 (4)	40 Secs (80 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W			Sequence 1-4 Non-Int in Visit 09 Pattern 4, Exps 3-3 in Sequence 1-4 Non-Int in Visit 09 (4)	350 Secs (700 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	FLASH=3	POS TARG 0.297,0.318	Sequence 1-4 Non-Int in Visit 09 Pattern 4, Exps 4-4 in Sequence 1-4 Non-Int in Visit 09 (4)	480 Secs (960 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 16056 - Visit 10 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

Tue Jan 19 12:00:35 GMT 2021

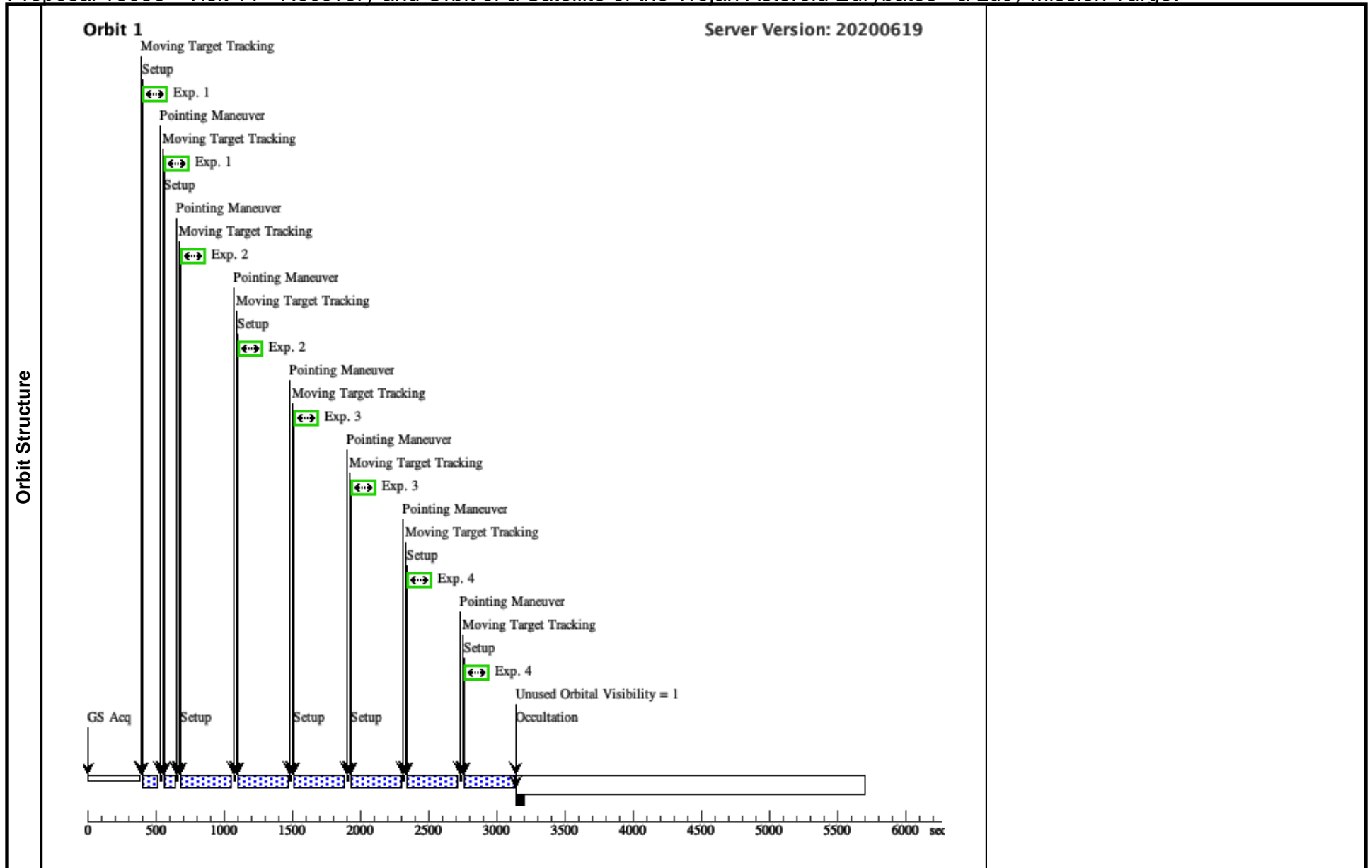
Visit	Proposal 16056, Visit 10, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 24-NOV-2020:02:00:00 AND 25-NOV-2020:02:00:00									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(4)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2), (3), (4)				
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB				EARTH			
	<i>Comments: Description=Trojan Asteroid Extended=NO</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	FLASH=11		Sequence 1-4 Non-Int in Visit 10 Pattern 4, Exps 1-1 in Sequence 1-4 Non-Int in Visit 10 (4)	20 Secs (40 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	FLASH=11	POS TARG 0.297,0.318	Sequence 1-4 Non-Int in Visit 10 Pattern 4, Exps 2-2 in Sequence 1-4 Non-Int in Visit 10 (4)	40 Secs (80 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W			Sequence 1-4 Non-Int in Visit 10 Pattern 4, Exps 3-3 in Sequence 1-4 Non-Int in Visit 10 (4)	350 Secs (700 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	FLASH=3	POS TARG 0.297,0.318	Sequence 1-4 Non-Int in Visit 10 Pattern 4, Exps 4-4 in Sequence 1-4 Non-Int in Visit 10 (4)	480 Secs (960 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 16056 - Visit 11 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

Tue Jan 19 12:00:35 GMT 2021

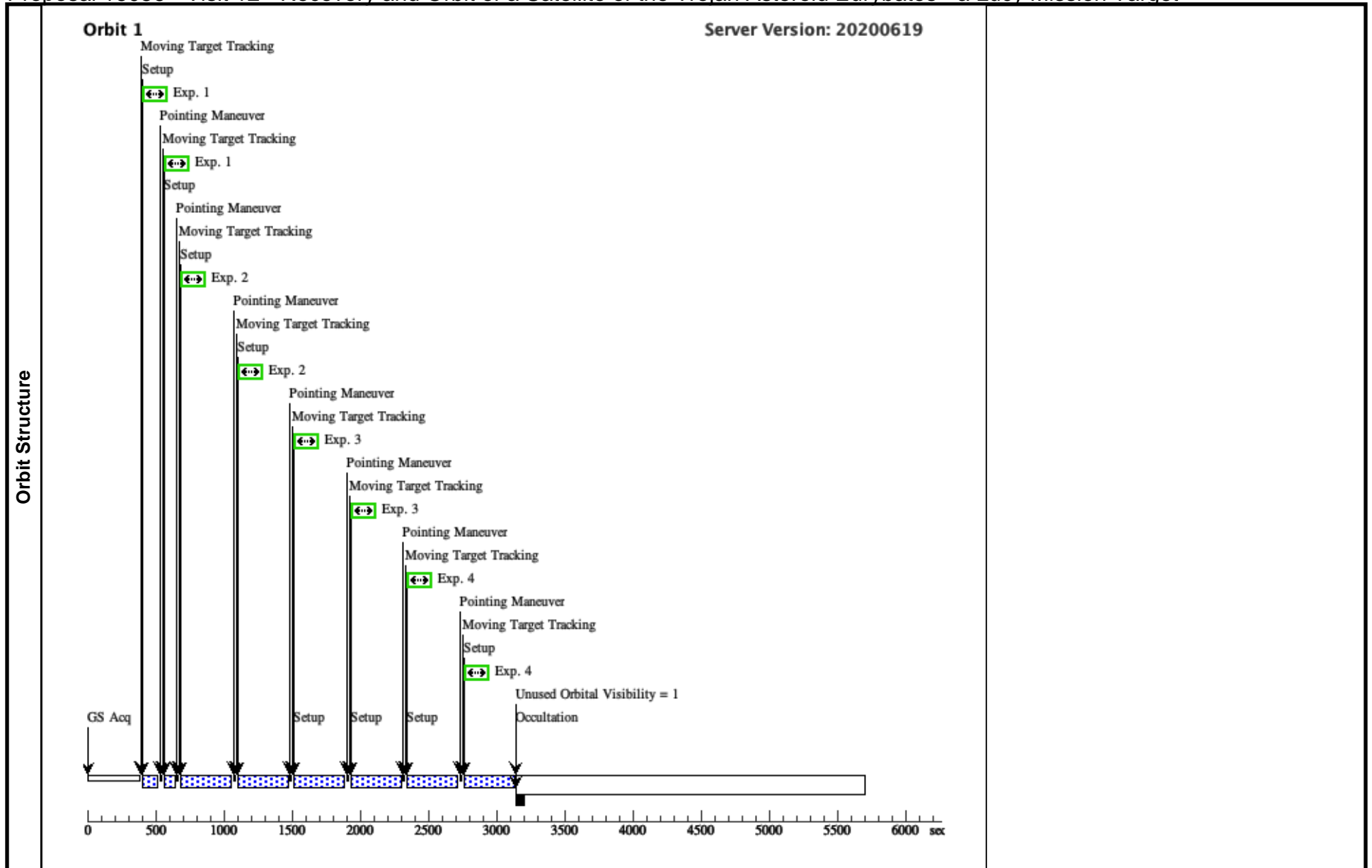
Visit	Proposal 16056, Visit 11, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 10-FEB-2021:00:00:00 AND 11-FEB-2021:00:00:00									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.290 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2), (3), (4)				
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB				EARTH			
	<i>Comments: Description=Trojan Asteroid Extended=NO</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=12		Sequence 1-4 Non-Int in Visit 11 Pattern 1, Exps 1-1 in Sequence 1-4 Non-Int in Visit 11 (1)	30 Secs (60 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			Sequence 1-4 Non-Int in Visit 11 Pattern 1, Exps 2-2 in Sequence 1-4 Non-Int in Visit 11 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP		POS TARG 0.092,0.098	Sequence 1-4 Non-Int in Visit 11 Pattern 1, Exps 3-3 in Sequence 1-4 Non-Int in Visit 11 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP		POS TARG 0.185,0.197	Sequence 1-4 Non-Int in Visit 11 Pattern 1, Exps 4-4 in Sequence 1-4 Non-Int in Visit 11 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 16056 - Visit 12 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

Tue Jan 19 12:00:35 GMT 2021

Visit	Proposal 16056, Visit 12, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 12-FEB-2021:06:00:00 AND 13-FEB-2021:06:00:00									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.290 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2), (3), (4)				
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB				EARTH			
	<i>Comments: Description=Trojan Asteroid Extended=NO</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=12		Sequence 1-4 Non-Int in Visit 12 Pattern 1, Exps 1-1 in Sequence 1-4 Non-Int in Visit 12 (1)	30 Secs (60 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			Sequence 1-4 Non-Int in Visit 12 Pattern 1, Exps 2-2 in Sequence 1-4 Non-Int in Visit 12 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP		POS TARG 0.092,0.098	Sequence 1-4 Non-Int in Visit 12 Pattern 1, Exps 3-3 in Sequence 1-4 Non-Int in Visit 12 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP		POS TARG 0.185,0.197	Sequence 1-4 Non-Int in Visit 12 Pattern 1, Exps 4-4 in Sequence 1-4 Non-Int in Visit 12 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 16056 - Visit 59 - Recovery and Orbit of a Satellite of the Trojan Asteroid Eurybates - a Lucy Mission Target

Tue Jan 19 12:00:35 GMT 2021

Visit	Proposal 16056, Visit 59, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 14-FEB-2021:12:00:00 AND 15-FEB-2021:12:00:00									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.290 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2), (3), (4)				
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	EURYBATES	TYPE=ASTEROID,A=5.19482566090 9952,E=0.08892019463262771,I=8.05 897310596958 ,O=43.53959194136358,W=27.429869 50746389,M=279.393486820639,EQU INOX=J2000,EPOCH=05-AUG- 2019:00:00:00,EpochTimeScale=TDB				EARTH			
	<i>Comments: Description=Trojan Asteroid Extended=NO</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	FLASH=12		Sequence 1-4 Non-Int in Visit 59 Pattern 1, Exps 1-1 in Sequence 1-4 Non-Int in Visit 59 (1)	30 Secs (60 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP			Sequence 1-4 Non-Int in Visit 59 Pattern 1, Exps 2-2 in Sequence 1-4 Non-Int in Visit 59 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP		POS TARG 0.092,0.098	Sequence 1-4 Non-Int in Visit 59 Pattern 1, Exps 3-3 in Sequence 1-4 Non-Int in Visit 59 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) EURYBATES		WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP		POS TARG 0.185,0.197	Sequence 1-4 Non-Int in Visit 59 Pattern 1, Exps 4-4 in Sequence 1-4 Non-Int in Visit 59 (1)	330 Secs (660 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]

