



## 16057 - Dark Vortex Disruption

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) NEPTUNE	WFC3/UVIS	1	18-Dec-2019 23:00:14.0	yes
02	(1) NEPTUNE	WFC3/UVIS	1	18-Dec-2019 23:00:16.0	yes
03	(1) NEPTUNE	WFC3/UVIS	1	18-Dec-2019 23:00:18.0	yes
04	(1) NEPTUNE	WFC3/UVIS	1	18-Dec-2019 23:00:20.0	yes
05	(1) NEPTUNE	WFC3/UVIS	1	18-Dec-2019 23:00:22.0	yes

5 Total Orbits Used

## **ABSTRACT**

Annual HST observations of Neptune, last obtained at the end of September 2019, show that the planet's dark spot is drifting toward the equator. This feature, named "NDS-2018" for its discovery date, is the first dark spot seen to behave like the Great Dark Spot discovered by Voyager 2. Its equatorward migration is similar to numerical simulations, which also find that vortices drifting too close to the equator will become disrupted, creating a planetary-scale disturbance.

The formation of NDS-2018 was witnessed by Hubble, unusual because only one other dark spot had a well-defined formation time. Similarly, only two (different) vortices were seen to dissipate by fading away. Late-time observations of NDS-2018 would thus create the only full record of the origin, evolution, and dissipation of a dark vortex, as well as the only observations of the dissipation pathway involving equatorward drift and disruption (conjectured, but never observed).

New observations are urgently requested before Neptune reaches HST's solar exclusion limit on January 12, 2020. The observations would either (1) measure the morphology, position, and drift of the vortex prior to disruption; (2) witness a never-before seen planetary-scale disturbance long anticipated from model simulations; or (3) give tight constraints on the complete lifetime of a dark vortex for the first time. Rather than fading, the vortex increased in contrast from 2018 to 2019, while also shrinking in overall area. New photometric and morphological measurements will determine whether the vortex evolution continues to resemble a vorticity-preserving column-stretching process.

## **OBSERVING DESCRIPTION**

A set of 4-5 identical orbits, equally spaced in longitude over one Neptune rotation (16 hours). We need to cover all possible longitudes because the longitudinal drift rate of NDS-2018 varied between 2018 and 2019 data, leading to large uncertainties in the longitude at the time of observation. The program must be executed in December or January, prior to conjunction (Neptune is 55 deg from the Sun on 2020-Jan-12). We request observations as soon as feasible (but not disruptive) during the period before conjunction. All timing constraints are described in more detail in the Visit 1 comments.

We mitigate unstable pixels by dithering both spatially and temporally (i.e., using Neptune's changing rotational phase to dither). The F467M filter provides the highest contrast for dark spots, so we acquire the most frames per orbit in this filter. The frames will be spread evenly throughout the orbit, to maximize the range of longitudes covered at low emission angle.

F467M (512K SUB)

F547M (512K SUB)

F763M (512K SUB)

F845M (512K SUB)

FQ619N

Proposal 16057 - Visit 01 - Dark Vortex Disruption

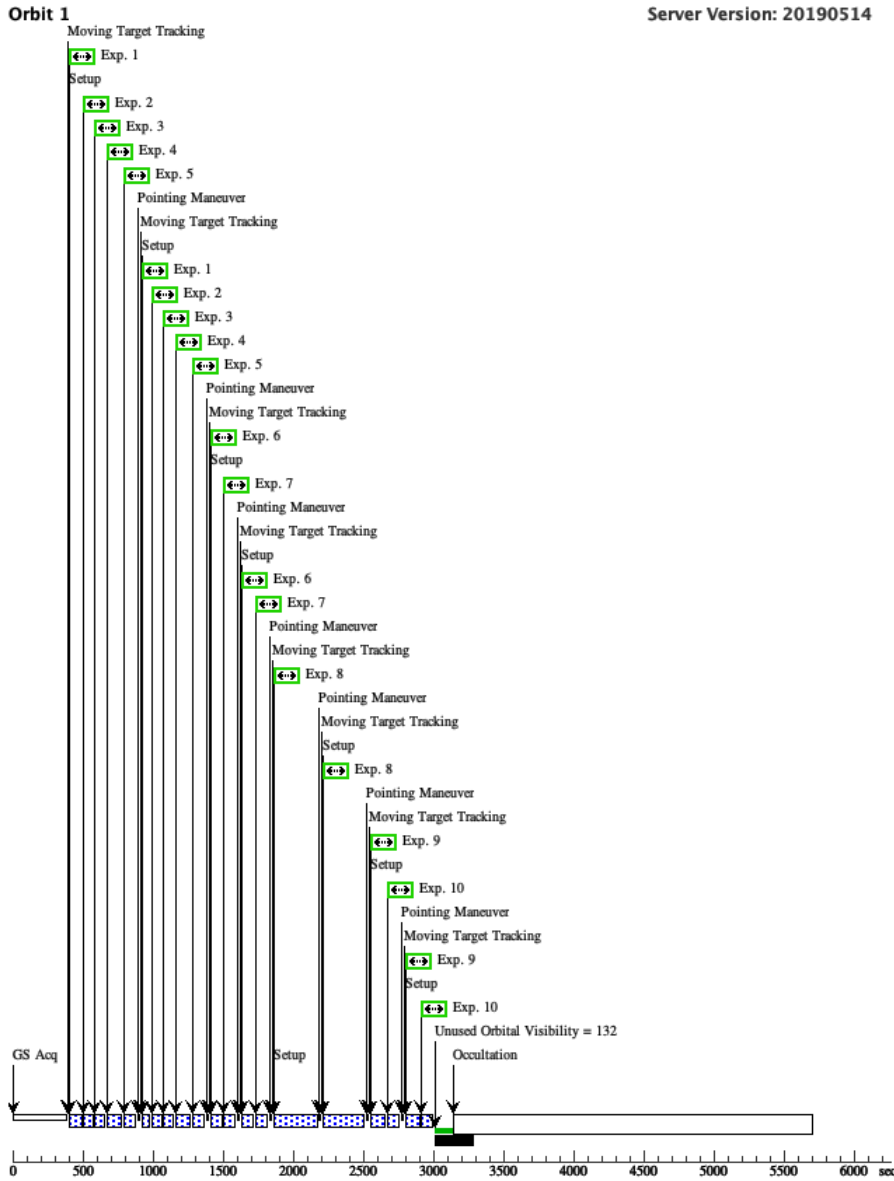
Thu Dec 19 04:00:23 GMT 2019

<b>Visit</b>	<p><b>Proposal 16057, Visit 01, implementation</b></p> <p><b>Diagnostic Status: Warning</b></p> <p>Scientific Instruments: WFC3/UVIS</p> <p>Special Requirements: (none)</p> <p><i>Comments: Desired visit timing is every other HST orbit. If this cannot be scheduled soon, then we can accept a pair of consecutive orbits (and thus a gap of 2 orbits) somewhere in the sequence. To capture this, we set a SEQ ALL VISITS WITHIN 15 HOURS condition.</i></p> <p><i>Visit 5 must start 8 or 9 orbits after visit 1 (12:44 to 14:20 after), to span a full Neptune rotation, so we set a VISIT 5 AFTER VISIT 1 BY 12 TO 15 HOURS condition.</i></p> <p><i>All visits must complete before Neptune reaches 55 deg solar elongation, so we set a BEFORE 13-JAN-2020 condition on all visits (but presumably this constraint is already covered by the HST planning system).</i></p>																	
	<p>(F467M (01.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(F547M (01.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(F763M (01.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(F845M (01.004)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(F467M (01.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(F763M (01.006)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(F467M (01.007)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(FQ619N_quadA (01.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(FQ619N_quadA (01.008)) Warning (Form): POS TARG &amp; PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignetted part of the field of view or moving it to another quadrant.</p> <p>(F845M (01.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(F467M (01.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p>																	
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<b>Patterns</b>	<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-LINE                      Purpose=DITHER                      Number Of Points=2                      Point Spacing=0.145                      Line Spacing=                 </td> <td>                     Coordinate Frame=POS-TARG                      Pattern Orientation=46.84                      Angle Between Sides=                      Center Pattern=false                 </td> <td>(1-5), (6-7), (8), (9-10)</td> </tr> </tbody> </table>	#	Primary Pattern	Secondary Pattern	Exposures	(1)	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	(1-5), (6-7), (8), (9-10)									
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	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center											
(1)	NEPTUNE	STD=NEPTUNE				EARTH												

Proposal 16057 - Visit 01 - Dark Vortex Disruption

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO	GS ACQ SCENARIO BASE1BE	Sequence 1-10 Non-Int in Visit 01 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 01 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	2	F547M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F547M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 01 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 01 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	F763M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 01 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 01 (1)	20 Secs (40 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	F845M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 01 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 01 (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 01 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 01 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F763M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 01 Pattern 1, Exps 6-7 in Sequence 1-10 Non-Int in Visit 01 (1)	20 Secs (40 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 01 Pattern 1, Exps 6-7 in Sequence 1-10 Non-Int in Visit 01 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	FQ619N_quadA	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ619N	CR-SPLIT=NO	POS TARG +20,-24	Sequence 1-10 Non-Int in Visit 01 Pattern 1, Exps 8-8 in Sequence 1-10 Non-Int in Visit 01 (1)	120 Secs (240 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	9	F845M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 01 Pattern 1, Exps 9-10 in Sequence 1-10 Non-Int in Visit 01 (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
10	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 01 Pattern 1, Exps 9-10 in Sequence 1-10 Non-Int in Visit 01 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]	

Orbit Structure



Proposal 16057 - Visit 02 - Dark Vortex Disruption

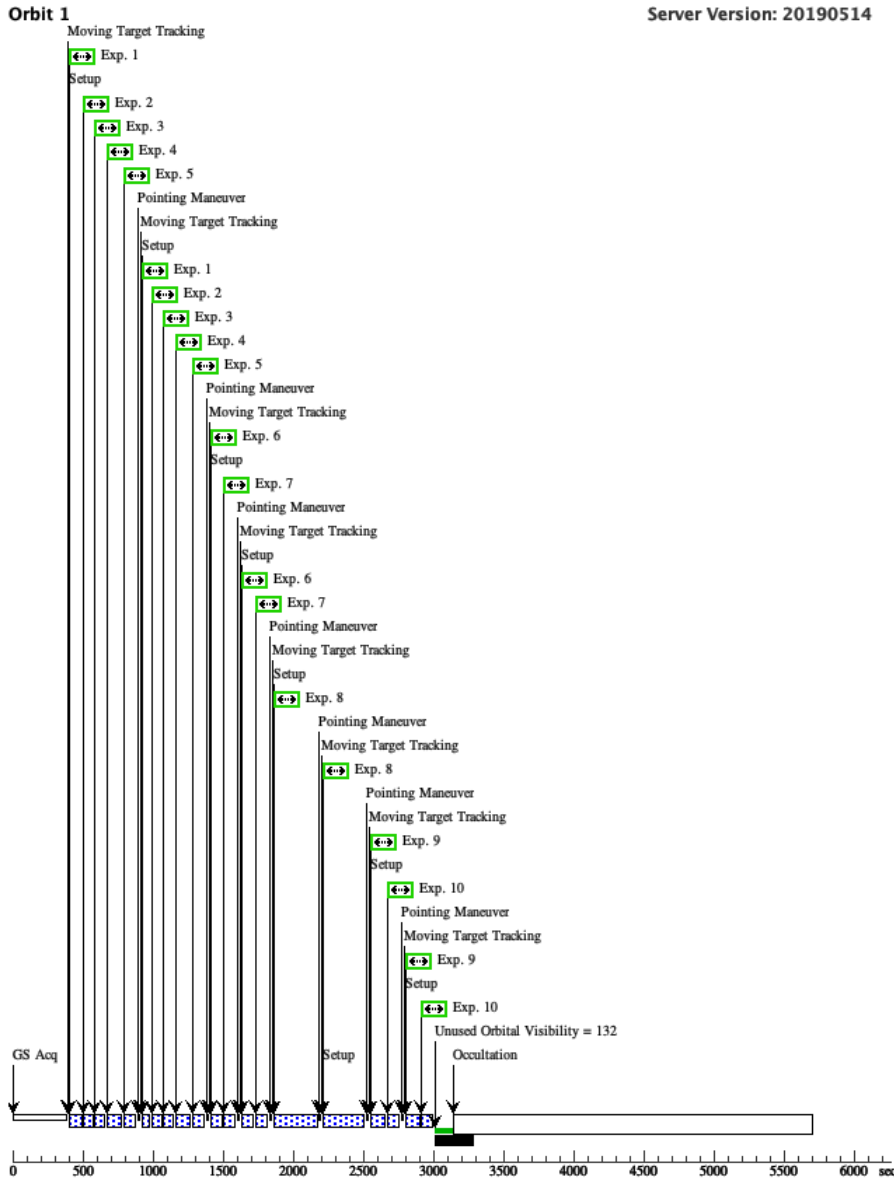
Thu Dec 19 04:00:23 GMT 2019

<b>Visit</b>	<b>Proposal 16057, Visit 02, implementation</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01 BY 1.9 Orbits TO 2.1 Orbits						
<b>Diagnostics</b>	(F467M (02.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (02.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (02.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F845M (02.004)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (02.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (02.006)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (02.007)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ619N_quadA (02.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ619N_quadA (02.008)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignettted part of the field of view or moving it to another quadrant. (F845M (02.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (02.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
<b>Patterns</b>	#	<b>Primary Pattern</b>	<b>Secondary Pattern</b>	<b>Exposures</b>			
	(1)	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		(1-5), (6-7), (8), (9-10)			
<b>Solar System Targets</b>	#	<b>Name</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Window</b>	<b>Ephem Center</b>
	(1)	NEPTUNE	STD=NEPTUNE				EARTH
	Comments: Description=Neptune Extended=YES						

Proposal 16057 - Visit 02 - Dark Vortex Disruption

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO	GS ACQ SCENARIO BASE1BE	Sequence 1-10 Non-Int in Visit 02 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 02 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	2	F547M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F547M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 02 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 02 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	F763M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 02 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 02 (1)	20 Secs (40 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	F845M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 02 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 02 (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 02 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 02 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F763M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 02 Pattern 1, Exps 6-7 in Sequence 1-10 Non-Int in Visit 02 (1)	20 Secs (40 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 02 Pattern 1, Exps 6-7 in Sequence 1-10 Non-Int in Visit 02 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	FQ619N_quadA	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ619N	CR-SPLIT=NO	POS TARG +20,-24	Sequence 1-10 Non-Int in Visit 02 Pattern 1, Exps 8-8 in Sequence 1-10 Non-Int in Visit 02 (1)	120 Secs (240 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	9	F845M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 02 Pattern 1, Exps 9-10 in Sequence 1-10 Non-Int in Visit 02 (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
10	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 02 Pattern 1, Exps 9-10 in Sequence 1-10 Non-Int in Visit 02 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]	

Orbit Structure



Proposal 16057 - Visit 03 - Dark Vortex Disruption

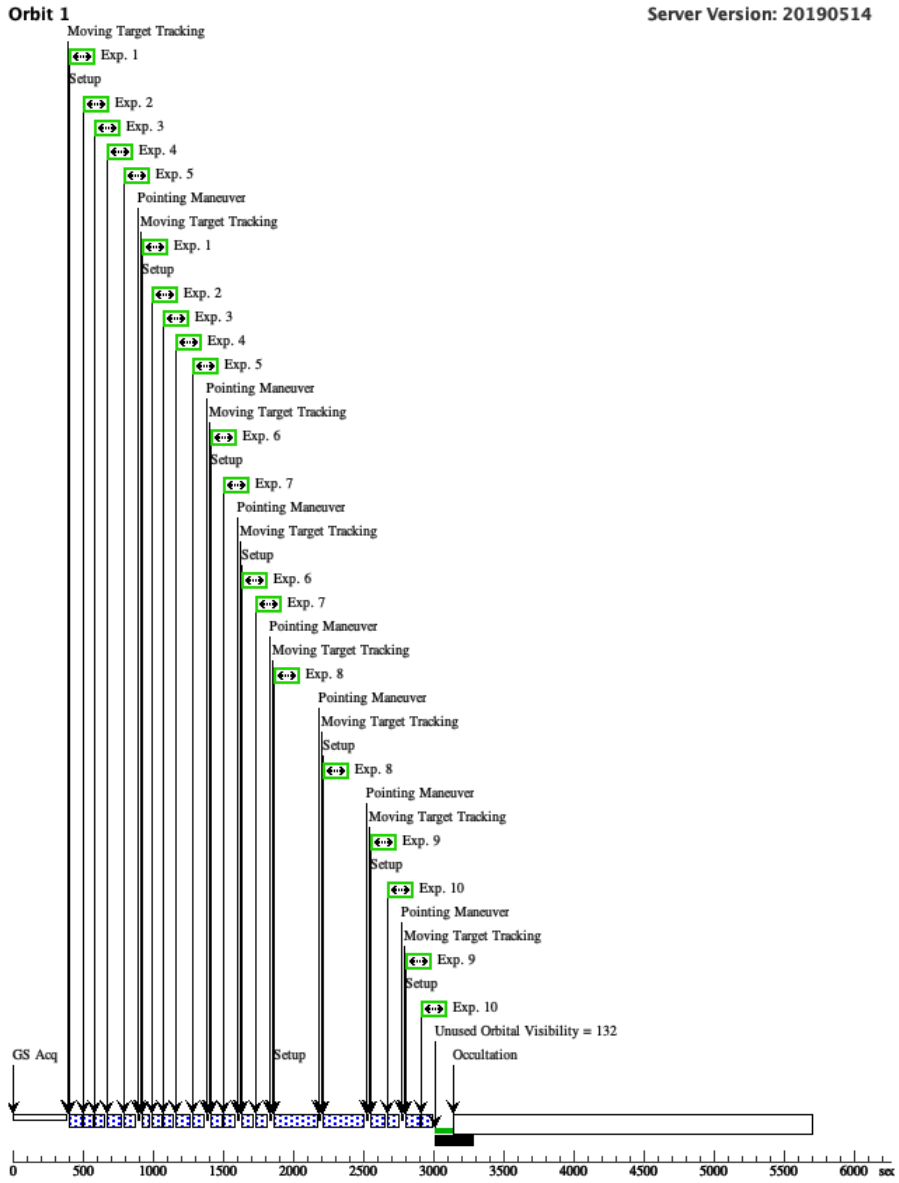
Thu Dec 19 04:00:23 GMT 2019

<b>Visit</b>	<b>Proposal 16057, Visit 03, implementation</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01 BY 3.9 Orbits TO 4.1 Orbits														
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#	Name	Level 1	Level 2	Level 3	Window	Ephem Center									
(1)	NEPTUNE	STD=NEPTUNE				EARTH									

Proposal 16057 - Visit 03 - Dark Vortex Disruption

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO	GS ACQ SCENARIO BASE1BE	Sequence 1-10 Non-Int in Visit 03 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 03 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	2	F547M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F547M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 03 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 03 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	F763M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 03 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 03 (1)	20 Secs (40 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	F845M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 03 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 03 (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 03 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 03 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F763M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 03 Pattern 1, Exps 6-7 in Sequence 1-10 Non-Int in Visit 03 (1)	20 Secs (40 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 03 Pattern 1, Exps 6-7 in Sequence 1-10 Non-Int in Visit 03 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	FQ619N_quadA	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ619N	CR-SPLIT=NO	POS TARG +20,-24	Sequence 1-10 Non-Int in Visit 03 Pattern 1, Exps 8-8 in Sequence 1-10 Non-Int in Visit 03 (1)	120 Secs (240 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	9	F845M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 03 Pattern 1, Exps 9-10 in Sequence 1-10 Non-Int in Visit 03 (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
10	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 03 Pattern 1, Exps 9-10 in Sequence 1-10 Non-Int in Visit 03 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]	

Orbit Structure



Proposal 16057 - Visit 04 - Dark Vortex Disruption

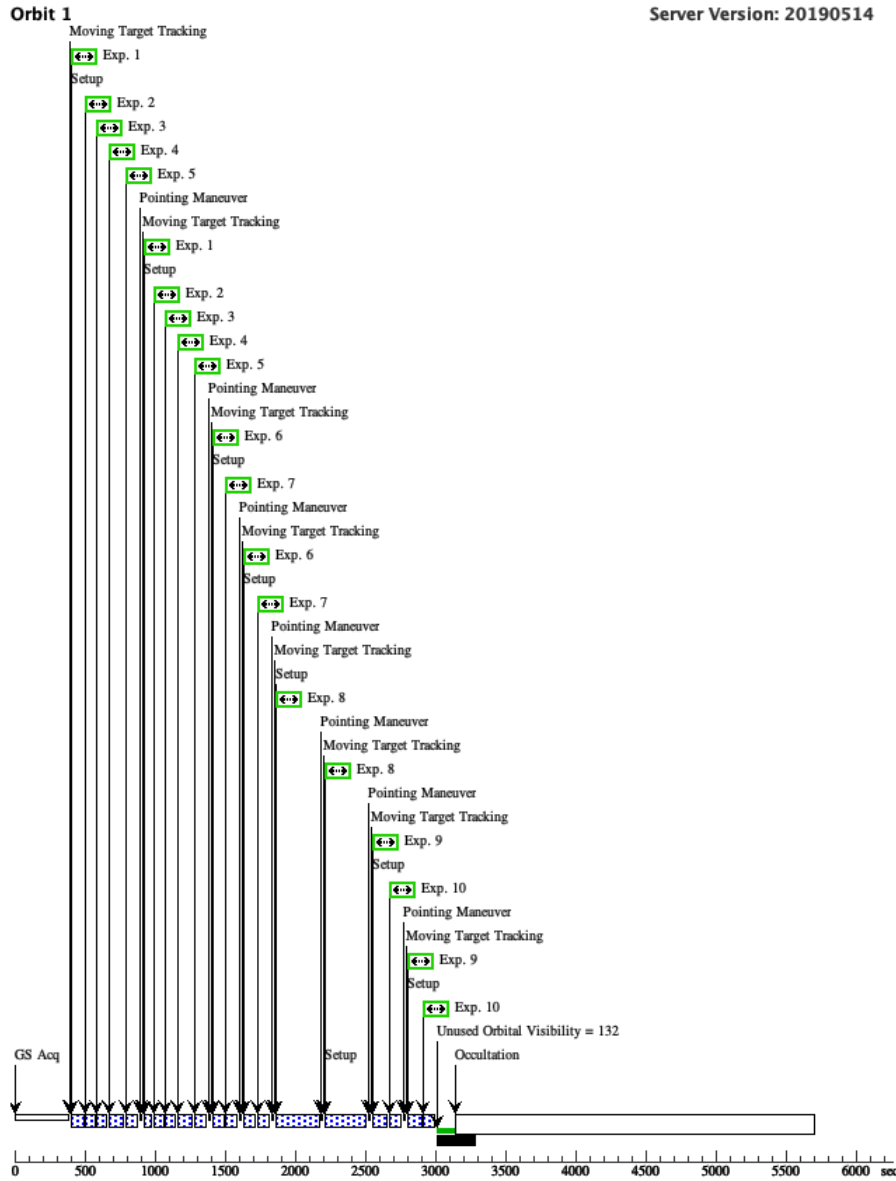
Thu Dec 19 04:00:23 GMT 2019

<b>Visit</b>	<b>Proposal 16057, Visit 04, implementation</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01 BY 5.9 Orbits TO 6.1 Orbits																			
<b>Diagnostics</b>	(F467M (04.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (04.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (04.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F845M (04.004)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (04.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (04.006)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (04.007)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ619N_quadA (04.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ619N_quadA (04.008)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignettted part of the field of view or moving it to another quadrant. (F845M (04.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (04.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser																			
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#	Name	Level 1	Level 2	Level 3	Window	Ephem Center														
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Proposal 16057 - Visit 04 - Dark Vortex Disruption

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO	GS ACQ SCENARIO BASE1BE	Sequence 1-10 Non-Int in Visit 04 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 04 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	2	F547M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F547M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 04 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 04 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	F763M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 04 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 04 (1)	20 Secs (40 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	F845M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 04 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 04 (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 04 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 04 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F763M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 04 Pattern 1, Exps 6-7 in Sequence 1-10 Non-Int in Visit 04 (1)	20 Secs (40 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 04 Pattern 1, Exps 6-7 in Sequence 1-10 Non-Int in Visit 04 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	FQ619N_quadA	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ619N	CR-SPLIT=NO	POS TARG +20,-24	Sequence 1-10 Non-Int in Visit 04 Pattern 1, Exps 8-8 in Sequence 1-10 Non-Int in Visit 04 (1)	120 Secs (240 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	9	F845M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 04 Pattern 1, Exps 9-10 in Sequence 1-10 Non-Int in Visit 04 (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
10	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 04 Pattern 1, Exps 9-10 in Sequence 1-10 Non-Int in Visit 04 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]	

Orbit Structure



# Proposal 16057 - Visit 05 - Dark Vortex Disruption

Thu Dec 19 04:00:23 GMT 2019

<b>Visit</b>	<b>Proposal 16057, Visit 05, implementation</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01 BY 12 H TO 15 H; BEFORE 13-JAN-2020:00:00:00																
	<b>Diagnosics</b> (F467M (05.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (05.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (05.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F845M (05.004)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (05.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (05.006)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (05.007)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ619N_quadA (05.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ619N_quadA (05.008)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignettted part of the field of view or moving it to another quadrant. (F845M (05.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (05.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser																
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#	Name	Level 1	Level 2	Level 3	Window	Ephem Center											
(1)	NEPTUNE	STD=NEPTUNE				EARTH											
<b>Solar System Targets</b>																	

Proposal 16057 - Visit 05 - Dark Vortex Disruption

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO	GS ACQ SCENARIO BASE1BE	Sequence 1-10 Non-Int in Visit 05 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 05 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	2	F547M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F547M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 05 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 05 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	F763M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 05 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 05 (1)	20 Secs (40 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	F845M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 05 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 05 (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 05 Pattern 1, Exps 1-5 in Sequence 1-10 Non-Int in Visit 05 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F763M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 05 Pattern 1, Exps 6-7 in Sequence 1-10 Non-Int in Visit 05 (1)	20 Secs (40 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F467M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 05 Pattern 1, Exps 6-7 in Sequence 1-10 Non-Int in Visit 05 (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	FQ619N_quadA	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ619N	CR-SPLIT=NO	POS TARG +20,-24	Sequence 1-10 Non-Int in Visit 05 Pattern 1, Exps 8-8 in Sequence 1-10 Non-Int in Visit 05 (1)	120 Secs (240 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	9	F845M	(1) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-Int in Visit 05 Pattern 1, Exps 9-10 in Sequence 1-10 Non-Int in Visit 05 (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
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Orbit Structure

