



## 14492 - A New Dark Vortex

Cycle: 23, Proposal Category: GO

(Availability Mode: AVAILABLE)

### INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
<b>Michael H. Wong (PI) (Contact)</b>	<b>University of California - Berkeley</b>	<b>mikewong@astro.berkeley.edu</b>
Prof. Imke de Pater (CoI)	University of California - Berkeley	imke@berkeley.edu
Mr. Joshua W Tollefson (CoI)	University of California - Berkeley	jtollefs@berkeley.edu
Ms. Katherine de Kleer (CoI)	University of California - Berkeley	kdeklee@berkeley.edu
Dr. Heidi B. Hammel (CoI)	Space Science Institute	hbh@alum.mit.edu
Dr. Statia Cook (CoI)	American Museum of Natural History	shcook@amnh.org
Dr. Ricardo Hueso (CoI) (ESA Member)	Universidad del Pais Vasco	ricardo.hueso@ehu.es
Dr. Agustin Sanchez-Lavega (CoI) (ESA Member)	Universidad del Pais Vasco	wupsalaa@bi.ehu.es
Dr. Amy Simon (CoI)	NASA Goddard Space Flight Center	amy.simon@nasa.gov
Mr. Marc Delcroix (CoI) (ESA Member)	Societe Astronomique de France	delcroix.marc@free.fr
Dr. Lawrence Sromovsky (CoI)	University of Wisconsin - Madison	larry.sromovsky@ssec.wisc.edu
Mr. Patrick M. Fry (CoI) (Contact)	University of Wisconsin - Madison	pat.fry@ssec.wisc.edu
Dr. Glenn S. Orton (CoI)	Jet Propulsion Laboratory	glenn.s.orton@jpl.nasa.gov
Prof. Christoph Baranec (CoI)	University of Hawaii at Manoa	baranec@hawaii.edu

### 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-SDS-2015	WFC3/UVIS	1	27-Apr-2016 21:11:02.0	yes
02	(1) NEPTUNE-SDS-2015	WFC3/UVIS	1	27-Apr-2016 21:11:06.0	yes
03	(1) NEPTUNE-SDS-2015	WFC3/UVIS	1	27-Apr-2016 21:11:09.0	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>
04	(1) NEPTUNE-SDS-2015	WFC3/UVIS	1	27-Apr-2016 21:11:12.0	yes

4 Total Orbits Used

### **ABSTRACT**

A bright, unusually long-lived outburst of cloud activity on Neptune was observed in 2015. This led to speculation about whether the clouds were convective in nature, or bright companions to an unseen dark vortex (similar to the Great Dark Spot studied in detail by Voyager 2). HST OPAL images at blue wavelengths finally answered this question by discovering a new dark vortex at 45 deg S. We call this feature SDS-2015, for "southern dark spot discovered in 2015."

Dark vortices on Neptune are rare; SDS-2015 is only the fifth ever seen. All five were diverse in terms of size and shape, the distribution of bright companion clouds, and horizontal motions (oscillations and drifts). The drift of these vortices is highly sensitive to horizontal and vertical wind shear, making them valuable probes into the structure of Neptune's atmospheric jets. We have traced oscillations in the longitudinal positions of bright companion clouds of SDS-2015, but a second epoch of HST imaging is needed to measure latitudinal motion of the dark vortex itself.

Only HST can image dark vortices on Neptune. Ground-based facilities lack the resolution to detect these low-contrast features at blue optical wavelengths, while infrared observations don't detect the dark spots themselves, only their bright companion features. We propose observations of SDS-2015, in order to measure its size, drift rate, and aerosol structure, and to trace its temporal evolution. The observations will improve our understanding of the life cycle of neptunian vortices, of their influence on the surrounding atmosphere, and of the structure of planetary jets.

### **OBSERVING DESCRIPTION**

Four identical visits (1 orbit each) to achieve global coverage of Neptune. Visits should be separated by one quarter Neptune day (4.25 hours between visits). Ideally this means orbits 0, 2, 5, and 7.

FQ727N - Split into 2 frames, one each at beginning and end of orbit, to get better SNR and to dither using the planet's rotation. Use POS-TARG (same values as for GO-14044) to shift target closer to UVIS center. This minimizes slews in case guide stars are hard to find.

F467M, F547M - Take 6 frames spaced throughout the orbit. These will be combined in post-processing to remove cosmic rays, oversample the PSF,

Proposal 14492 (STScI Edit Number: 1, Created: Wednesday, April 27, 2016 8:11:14 PM EST) - Overview  
and improve SNR on the low-contrast dark spot.

Line pattern spacing changed from 0.145 arcsec to 0.270, see pattern comments.

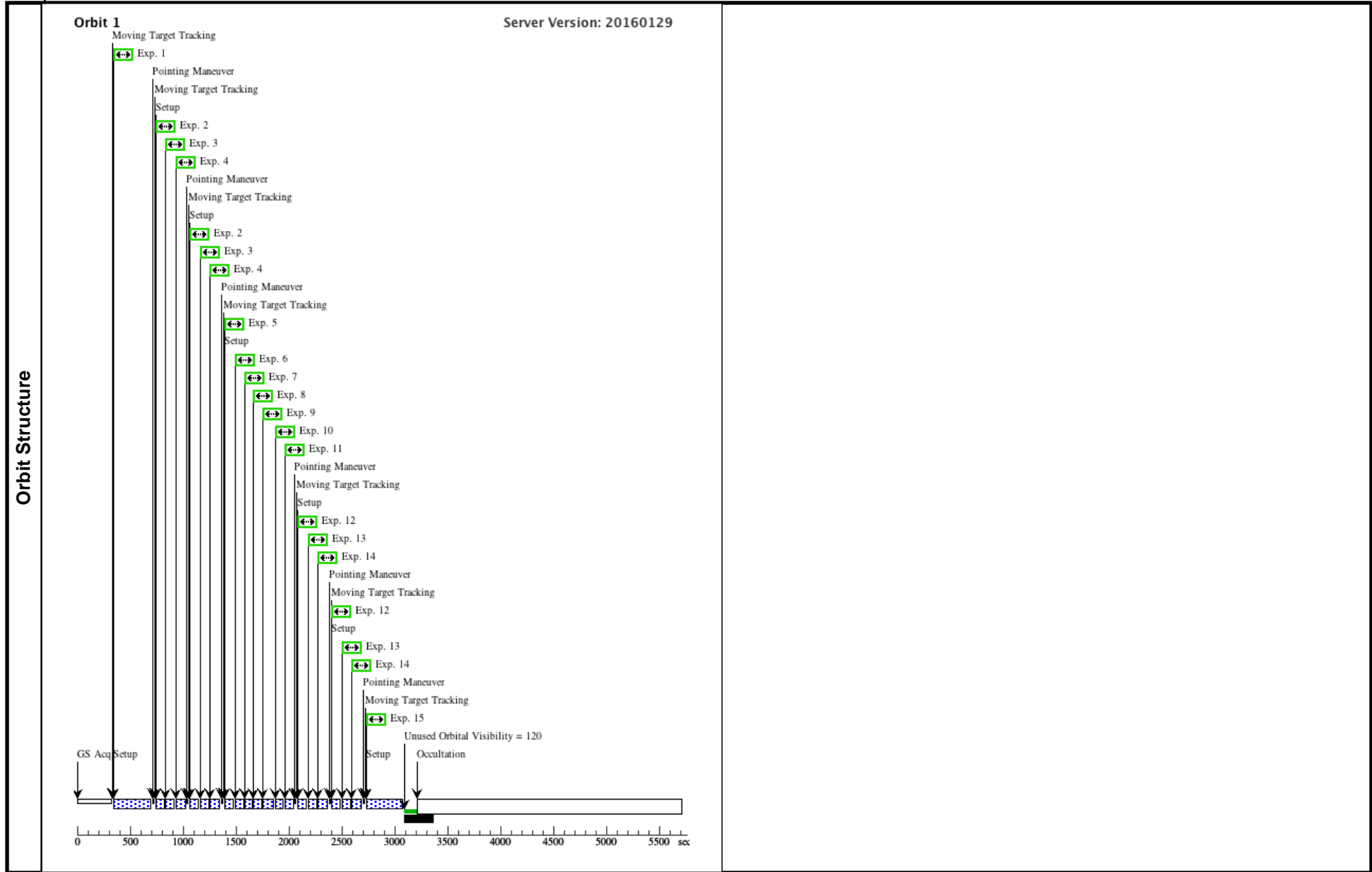
Proposal 14492 - Visit 01 - A New Dark Vortex

Thu Apr 28 01:11:14 GMT 2016

<b>Visit</b>	<b>Proposal 14492, Visit 01, implementation</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 01-MAY-2016:00:00:00 AND 09-JUN-2016:00:00:00 <i>Comments: Call this orbit 0.</i>																			
	<b>Diagnosics</b> (FQ727N (01.001)) Warning (Form): POS TARG & 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. (FQ727N (01.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (01.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (01.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (01.004)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (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 (F547M (01.006)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F390M (01.007)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F410M (01.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F336W (01.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (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 (F547M (01.011)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (01.012)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (01.013)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (01.014)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ727N (01.015)) Warning (Form): POS TARG & 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. (FQ727N (01.015)) 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>	<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=0.270                      Line Spacing=                 </td> <td>                     Coordinate Frame=POS-TARG                      Pattern Orientation=46.84                      Angle Between Sides=                      Center Pattern=true                 </td> <td>(2-4), (12-14)</td> </tr> </tbody> </table>	#	Primary Pattern	Secondary Pattern	Exposures	(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.270 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=true	(2-4), (12-14)											
	#	Primary Pattern	Secondary Pattern	Exposures																
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.270 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=true	(2-4), (12-14)																	
<b>Solar System Targets</b>	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Level 1</th> <th>Level 2</th> <th>Level 3</th> <th>Window</th> <th>Ephem Center</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>NEPTUNE-SDS-2015</td> <td>STD=NEPTUNE</td> <td></td> <td></td> <td>NOT ECL P PARTIAL OF NEPTUNE-SDS-2015 BY TRITON FROM EARTH</td> <td>EARTH</td> </tr> </tbody> </table>	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center	(1)	NEPTUNE-SDS-2015	STD=NEPTUNE			NOT ECL P PARTIAL OF NEPTUNE-SDS-2015 BY TRITON FROM EARTH	EARTH	<i>Comments: Extended=YES</i>				
	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center													
(1)	NEPTUNE-SDS-2015	STD=NEPTUNE			NOT ECL P PARTIAL OF NEPTUNE-SDS-2015 BY TRITON FROM EARTH	EARTH														

Proposal 14492 - Visit 01 - A New Dark Vortex

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	FQ727N	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -15,+15	Sequence 1-15 Non-Int in Visit 01	150 Secs (150 Secs) [==>]	[1]
	2	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 01 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 01 (1)	14 Secs (28 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 01 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 01 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	F763M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 01 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 01 (1)	30 Secs (60 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 01	14 Secs (14 Secs) [==>]	[1]
	6	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 01	6 Secs (6 Secs) [==>]	[1]
	7	F390M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F390M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 01	15 Secs (15 Secs) [==>]	[1]
	8	F410M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F410M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 01	15 Secs (15 Secs) [==>]	[1]
	9	F336W	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F336W	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 01	30 Secs (30 Secs) [==>]	[1]
	10	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 01	14 Secs (14 Secs) [==>]	[1]
	11	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 01	6 Secs (6 Secs) [==>]	[1]
	12	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 01 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 01 (1)	14 Secs (28 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	13	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 01 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 01 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	14	F763M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 01 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 01 (1)	30 Secs (60 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
15	FQ727N	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -15,+15	Sequence 1-15 Non-Int in Visit 01	150 Secs (150 Secs) [==>]	[1]	



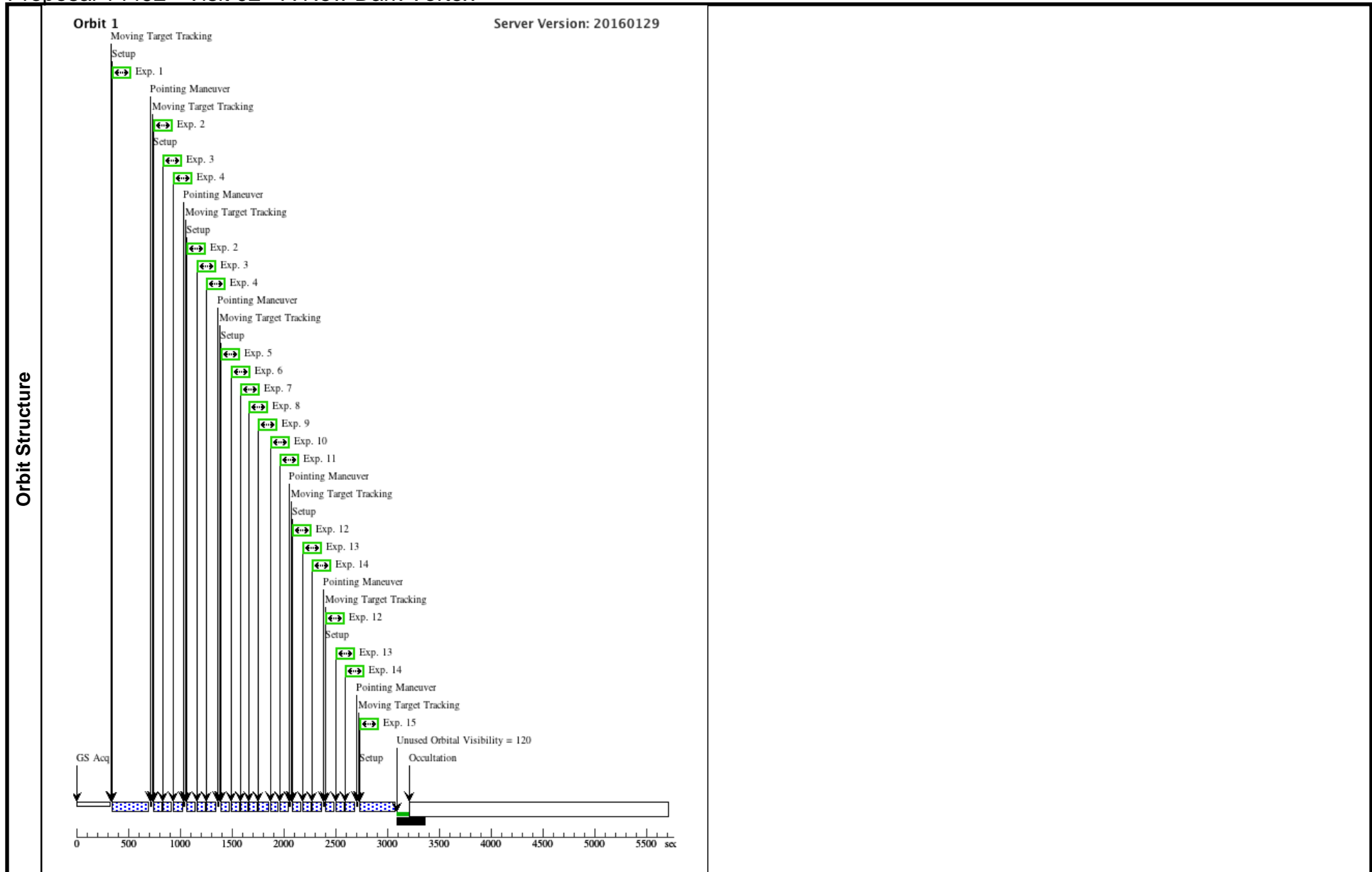
Proposal 14492 - Visit 02 - A New Dark Vortex

Thu Apr 28 01:11:14 GMT 2016

<b>Visit</b>	<b>Proposal 14492, Visit 02, implementation</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01 BY 3 H TO 4 H <i>Comments: Visit 2 should be orbit 2 or 3 (orbit 2 preferred).</i>																			
	<b>Diagnosics</b> (FQ727N (02.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ727N (02.001)) Warning (Form): POS TARG & 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. (F467M (02.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (02.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (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 (F547M (02.006)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F390M (02.007)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F410M (02.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F336W (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 (F547M (02.011)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (02.012)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (02.013)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (02.014)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ727N (02.015)) Warning (Form): POS TARG & 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. (FQ727N (02.015)) 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>	<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=0.270                      Line Spacing=                 </td> <td>                     Coordinate Frame=POS-TARG                      Pattern Orientation=46.84                      Angle Between Sides=                      Center Pattern=true                 </td> <td>(2-4), (12-14)</td> </tr> </tbody> </table>	#	Primary Pattern	Secondary Pattern	Exposures	(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.270 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=true	(2-4), (12-14)											
	#	Primary Pattern	Secondary Pattern	Exposures																
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.270 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=true	(2-4), (12-14)																	
<b>Solar System Targets</b>	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Level 1</th> <th>Level 2</th> <th>Level 3</th> <th>Window</th> <th>Ephem Center</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>NEPTUNE-SDS-2015</td> <td>STD=NEPTUNE</td> <td></td> <td></td> <td>NOT ECL P PARTIAL OF NEPTUNE-SDS-2015 BY TRITON FROM EARTH</td> <td>EARTH</td> </tr> </tbody> </table>	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center	(1)	NEPTUNE-SDS-2015	STD=NEPTUNE			NOT ECL P PARTIAL OF NEPTUNE-SDS-2015 BY TRITON FROM EARTH	EARTH	<i>Comments: Extended=YES</i>				
	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center													
(1)	NEPTUNE-SDS-2015	STD=NEPTUNE			NOT ECL P PARTIAL OF NEPTUNE-SDS-2015 BY TRITON FROM EARTH	EARTH														

Proposal 14492 - Visit 02 - A New Dark Vortex

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	FQ727N	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -15,+15	Sequence 1-15 Non-Int in Visit 02	150 Secs (150 Secs) [==>]	[1]
	2	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 02 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 02 (1)	14 Secs (28 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 02 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 02 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	F763M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 02 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 02 (1)	30 Secs (60 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 02	14 Secs (14 Secs) [==>]	[1]
	6	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 02	6 Secs (6 Secs) [==>]	[1]
	7	F390M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F390M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 02	15 Secs (15 Secs) [==>]	[1]
	8	F410M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F410M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 02	15 Secs (15 Secs) [==>]	[1]
	9	F336W	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F336W	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 02	30 Secs (30 Secs) [==>]	[1]
	10	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 02	14 Secs (14 Secs) [==>]	[1]
	11	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 02	6 Secs (6 Secs) [==>]	[1]
	12	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 02 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 02 (1)	14 Secs (28 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	13	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 02 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 02 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	14	F763M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 02 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 02 (1)	30 Secs (60 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
15	FQ727N	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -15,+15	Sequence 1-15 Non-Int in Visit 02	150 Secs (150 Secs) [==>]	[1]	



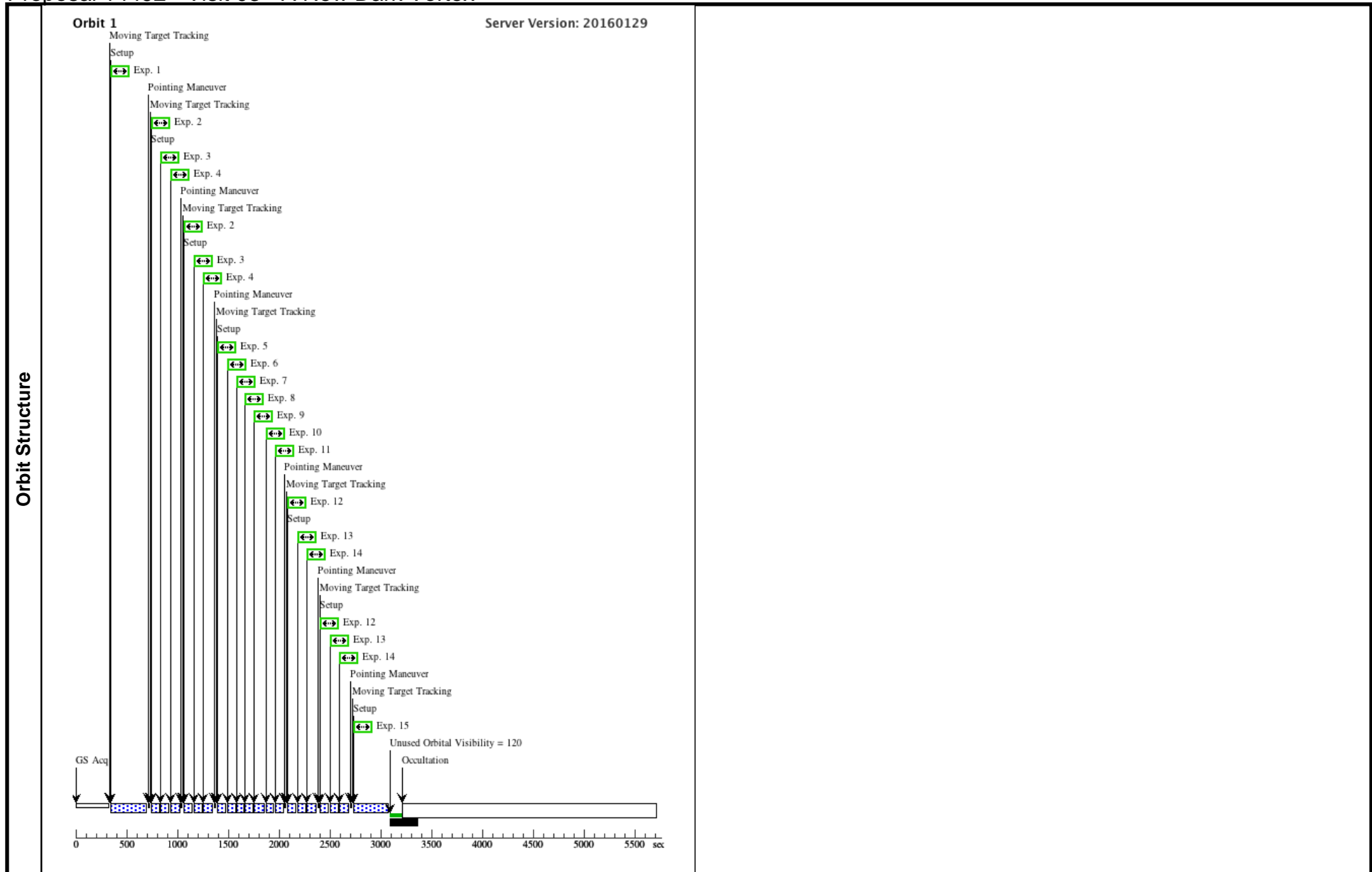
Proposal 14492 - Visit 03 - A New Dark Vortex

Thu Apr 28 01:11:15 GMT 2016

<b>Visit</b>	<b>Proposal 14492, Visit 03, implementation</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01 BY 23 H TO 25 H <i>Comments: Orbit 15</i>						
	<b>Diagnosics</b> (FQ727N (03.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ727N (03.001)) Warning (Form): POS TARG & 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. (F467M (03.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (03.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (03.004)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (03.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (03.006)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F390M (03.007)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F410M (03.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F336W (03.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (03.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (03.011)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (03.012)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (03.013)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (03.014)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ727N (03.015)) Warning (Form): POS TARG & 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. (FQ727N (03.015)) 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>#</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=0.270 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=true	(2-4), (12-14)			
<b>Solar System Targets</b>	<b>#</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-SDS-2015	STD=NEPTUNE			NOT ECL P PARTIAL OF NEPTUNE-SDS-2015 BY TRITON FROM EARTH	EARTH
<i>Comments: Extended=YES</i>							

Proposal 14492 - Visit 03 - A New Dark Vortex

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	FQ727N	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -15,+15	Sequence 1-15 Non-Int in Visit 03	150 Secs (150 Secs) [==>]	[1]
	2	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 03 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 03 (1)	14 Secs (28 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 03 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 03 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	F763M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 03 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 03 (1)	30 Secs (60 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 03	14 Secs (14 Secs) [==>]	[1]
	6	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 03	6 Secs (6 Secs) [==>]	[1]
	7	F390M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F390M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 03	15 Secs (15 Secs) [==>]	[1]
	8	F410M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F410M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 03	15 Secs (15 Secs) [==>]	[1]
	9	F336W	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F336W	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 03	30 Secs (30 Secs) [==>]	[1]
	10	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 03	14 Secs (14 Secs) [==>]	[1]
	11	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 03	6 Secs (6 Secs) [==>]	[1]
	12	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 03 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 03 (1)	14 Secs (28 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	13	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 03 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 03 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	14	F763M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 03 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 03 (1)	30 Secs (60 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
15	FQ727N	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -15,+15	Sequence 1-15 Non-Int in Visit 03	150 Secs (150 Secs) [==>]	[1]	



Proposal 14492 - Visit 04 - A New Dark Vortex

Thu Apr 28 01:11:15 GMT 2016

<b>Visit</b>	<b>Proposal 14492, Visit 04, implementation</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01 BY 27 H TO 29 H <i>Comments: Orbit 17 (preferred) or 18</i>						
	<b>Diagnosics</b> (FQ727N (04.001)) Warning (Form): POS TARG & 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. (FQ727N (04.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (04.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (04.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (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 (F547M (04.006)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F390M (04.007)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F410M (04.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F336W (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 (F547M (04.011)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (04.012)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F547M (04.013)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (04.014)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ727N (04.015)) Warning (Form): POS TARG & 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. (FQ727N (04.015)) 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>#</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=0.270 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=true	(2-4), (12-14)			
<b>Solar System Targets</b>	<b>#</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-SDS-2015	STD=NEPTUNE			NOT ECL P PARTIAL OF NEPTUNE-SDS-2015 BY TRITON FROM EARTH	EARTH
<i>Comments: Extended=YES</i>							

Proposal 14492 - Visit 04 - A New Dark Vortex

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	FQ727N	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -15,+15	Sequence 1-15 Non-Int in Visit 04	150 Secs (150 Secs) [==>]	[1]
	2	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 04 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 04 (1)	14 Secs (28 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 04 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 04 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	F763M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 04 Pattern 1, Exps 2-4 in Sequence 1-15 Non-Int in Visit 04 (1)	30 Secs (60 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 04	14 Secs (14 Secs) [==>]	[1]
	6	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 04	6 Secs (6 Secs) [==>]	[1]
	7	F390M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F390M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 04	15 Secs (15 Secs) [==>]	[1]
	8	F410M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F410M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 04	15 Secs (15 Secs) [==>]	[1]
	9	F336W	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F336W	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 04	30 Secs (30 Secs) [==>]	[1]
	10	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 04	14 Secs (14 Secs) [==>]	[1]
	11	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 04	6 Secs (6 Secs) [==>]	[1]
	12	F467M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 04 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 04 (1)	14 Secs (28 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	13	F547M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO; BLADE=A		Sequence 1-15 Non-Int in Visit 04 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 04 (1)	6 Secs (12 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	14	F763M	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-15 Non-Int in Visit 04 Pattern 1, Exps 12-14 in Sequence 1-15 Non-Int in Visit 04 (1)	30 Secs (60 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
15	FQ727N	(1) NEPTUNE-SDS-2015	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -15,+15	Sequence 1-15 Non-Int in Visit 04	150 Secs (150 Secs) [==>]	[1]	

