



# 14766 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Cycle: 24, Proposal Category: GO

(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>
05	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:21.0	yes
08	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:23.0	yes
09	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:24.0	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>
10	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:25.0	yes
11	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:26.0	yes
12	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:27.0	yes
13	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:28.0	yes
14	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:29.0	yes
15	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:30.0	yes
16	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:31.0	yes
17	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:32.0	yes
18	(1) RETICULUM-II ANY	ACS/WFC WFC3/UVIS	1	29-Jul-2016 15:20:33.0	yes

12 Total Orbits Used

## **ABSTRACT**

Recent chemical abundance measurements show that ~80% of the stars in the ultra-faint Milky Way satellite Reticulum II contain >100 times more r-process elements than stars in any other ultra-faint dwarf. These heavy elements must have been synthesized early in the formation history of Ret II in a single event that produced ~0.003 solar masses of r-process nuclei. The best explanation for these results is that a rare neutron star merger occurred in Ret II 12-13 Gyr ago. We propose HST/ACS imaging of Ret II to derive its star formation history, which will place new constraints on the origin of r-process elements in the galaxy. These measurements will be on the same photometric system as previous studies, enabling a careful comparison of the mean age and duration of star formation of Ret II and other ultra-faint dwarfs. We will determine whether the timing of the r-process enrichment is consistent with a neutron star merger, model the chemical evolution of Ret II, and set the stage for a comparison of the star

formation and radioactive decay timescales of the system.

### **OBSERVING DESCRIPTION**

This program will obtain a 12 tile ACS/WFC mosaic of a nearby dwarf galaxy. Each tile will receive a single 1-orbit visit with imaging in the F606W and F814W filters. Each visit will consist of four exposures, two in each filter, in the sequence F606W, F814W, F606W, F814W, with a dither separating the first two exposures from the last two to fill in the chip gap and reject hot pixels.

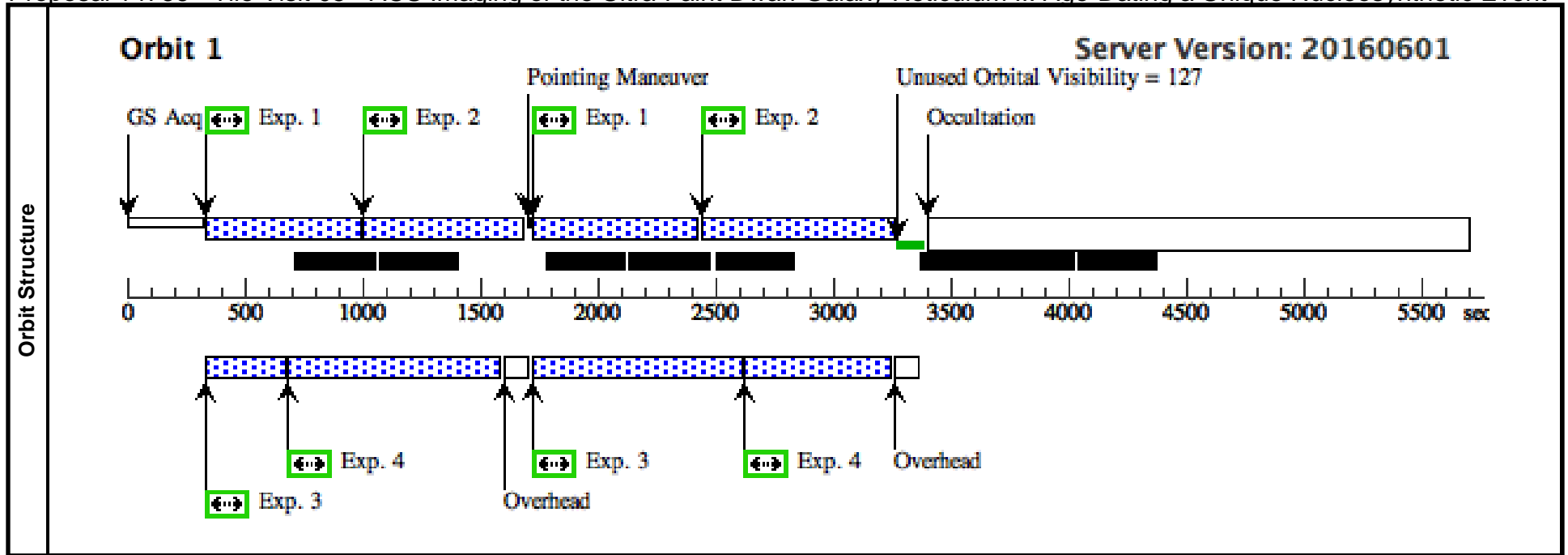
For the mosaic, we want to maximize the total area covered, so we would like minimal overlap between tiles. The arrangement of the tiles will be on a rectangular grid, but given the elongated shape of the galaxy and the limited amount of observing time the full grid will not be populated with observations.

We are also obtaining WFC3/UVIS parallel imaging, again with two F606W and two F814W exposures per orbit.

Proposal 14766 - Tile Visit 05 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

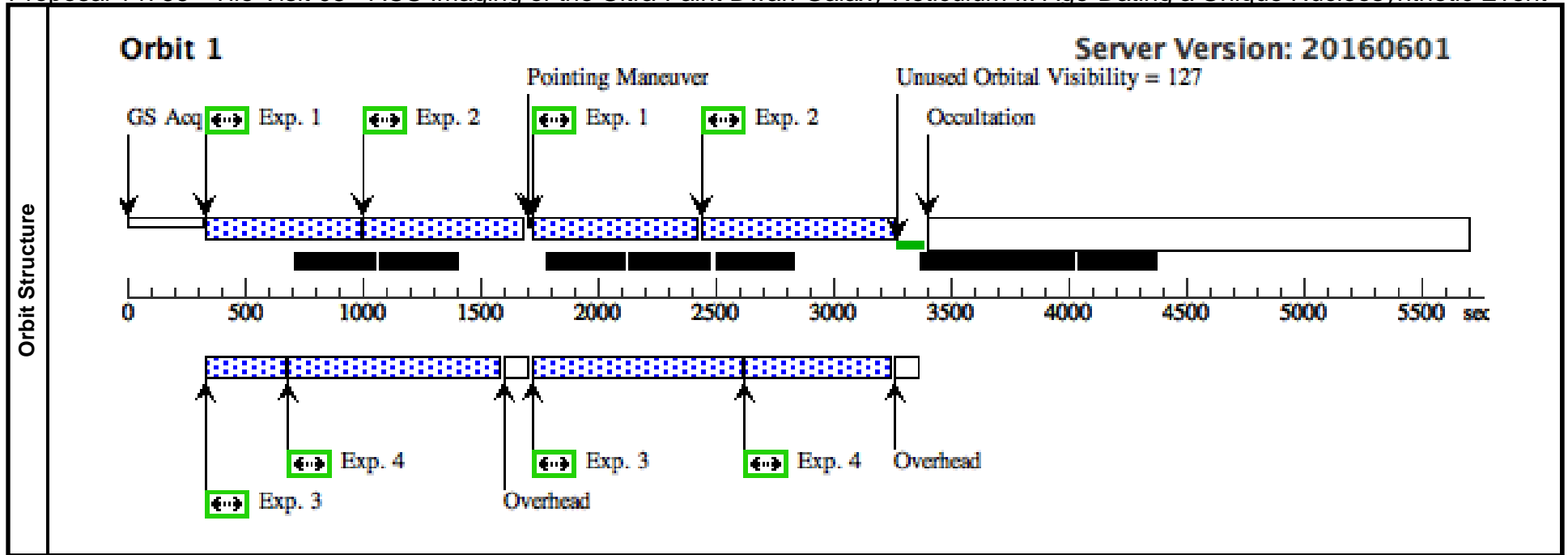
<b>Visit</b>	<b>Proposal 14766, Tile Visit 05</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: ORIENT 0.0D TO 0.0 D										
	<b>Diagnosics</b> (Tile Visit 05) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 05)) 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>	
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=		Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false						(1-4)	
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>		<b>Targ. Coord. Corrections</b>		<b>Fluxes</b>		<b>Miscellaneous</b>		
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000				V=13.9		Reference Frame: ICRS		
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>		<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W			POS TARG 401.828 08360507516,-382.3 1947407455175	Pattern 2, Exps 1-4 in Tile Visit 05 (2)  Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 05	450 Secs (980 Secs) [==>455.0 Secs (Pattern 1)] [==>525.0 Secs (Pattern 2)]		[1]
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W			POS TARG 401.828 08360507516,-382.3 1947407455175	Pattern 2, Exps 1-4 in Tile Visit 05 (2)  Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 05	570 Secs (1140 Secs) [==>500.0 Secs (Pattern 1)] [==>640.0 Secs (Pattern 2)]		[1]
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W				Pattern 2, Exps 1-4 in Tile Visit 05 (2)  Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 05	620 Secs (941 Secs) [==>191.0 Secs (Pattern 1)] [==>750.0 Secs (Pattern 2)]		[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W				Pattern 2, Exps 1-4 in Tile Visit 05 (2)  Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 05	900 Secs (1480 Secs) [==>880.0 Secs (Pattern 1)] [==>600.0 Secs (Pattern 2)]		[1]



Proposal 14766 - Tile Visit 08 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

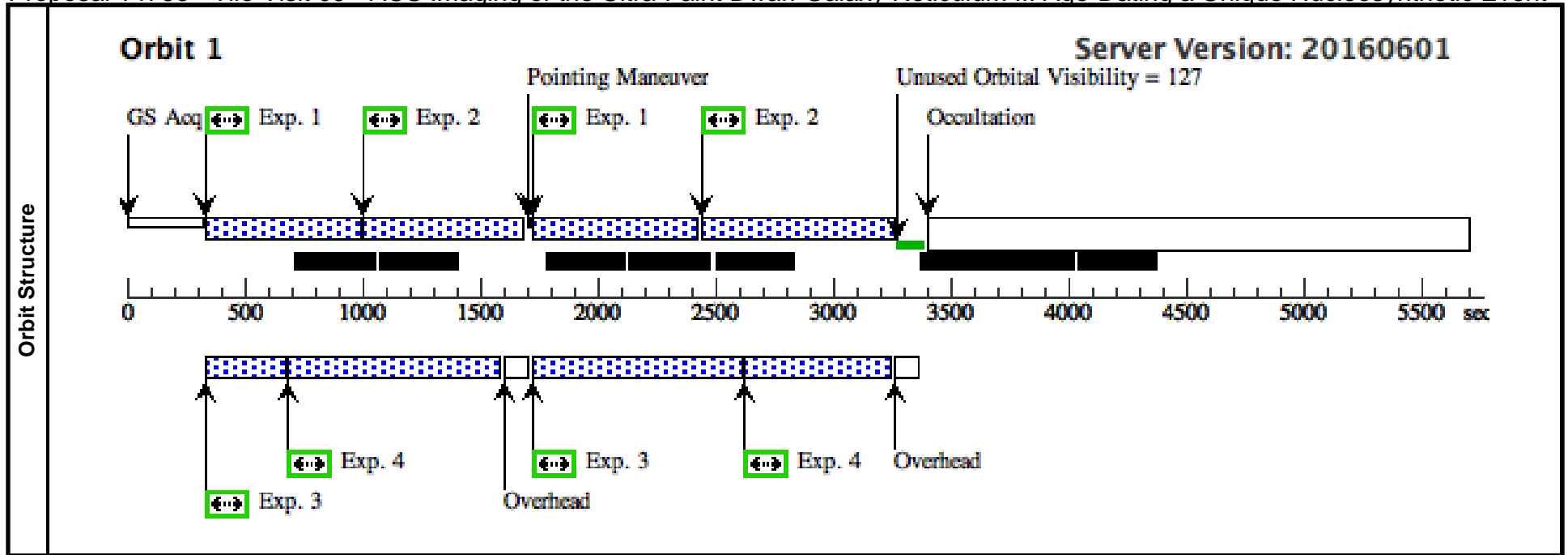
<b>Visit</b>	<b>Proposal 14766, Tile Visit 08</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SAME ORIENT AS 05									
	<b>Diagnosics</b> (Tile Visit 08) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 08)) 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>	
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false				(1-4)			
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>		<b>Targ. Coord. Corrections</b>		<b>Fluxes</b>	<b>Miscellaneous</b>		
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000				V=13.9	Reference Frame: ICRS		
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W			POS TARG 1.78973 97728942224,-205.0 8386465868554	Pattern 2, Exps 1-4 in Tile Visit 08 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 08	450 Secs (980 Secs) [==>455.0 Secs (Pattern 1)] [==>525.0 Secs (Pattern 2)]	[1]
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W			POS TARG 1.78973 97728942224,-205.0 8386465868554	Pattern 2, Exps 1-4 in Tile Visit 08 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 08	570 Secs (1140 Secs) [==>500.0 Secs (Pattern 1)] [==>640.0 Secs (Pattern 2)]	[1]
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W				Pattern 2, Exps 1-4 in Tile Visit 08 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 08	620 Secs (941 Secs) [==>191.0 Secs (Pattern 1)] [==>750.0 Secs (Pattern 2)]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W				Pattern 2, Exps 1-4 in Tile Visit 08 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 08	900 Secs (1480 Secs) [==>880.0 Secs (Pattern 1)] [==>600.0 Secs (Pattern 2)]	[1]



Proposal 14766 - Tile Visit 09 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

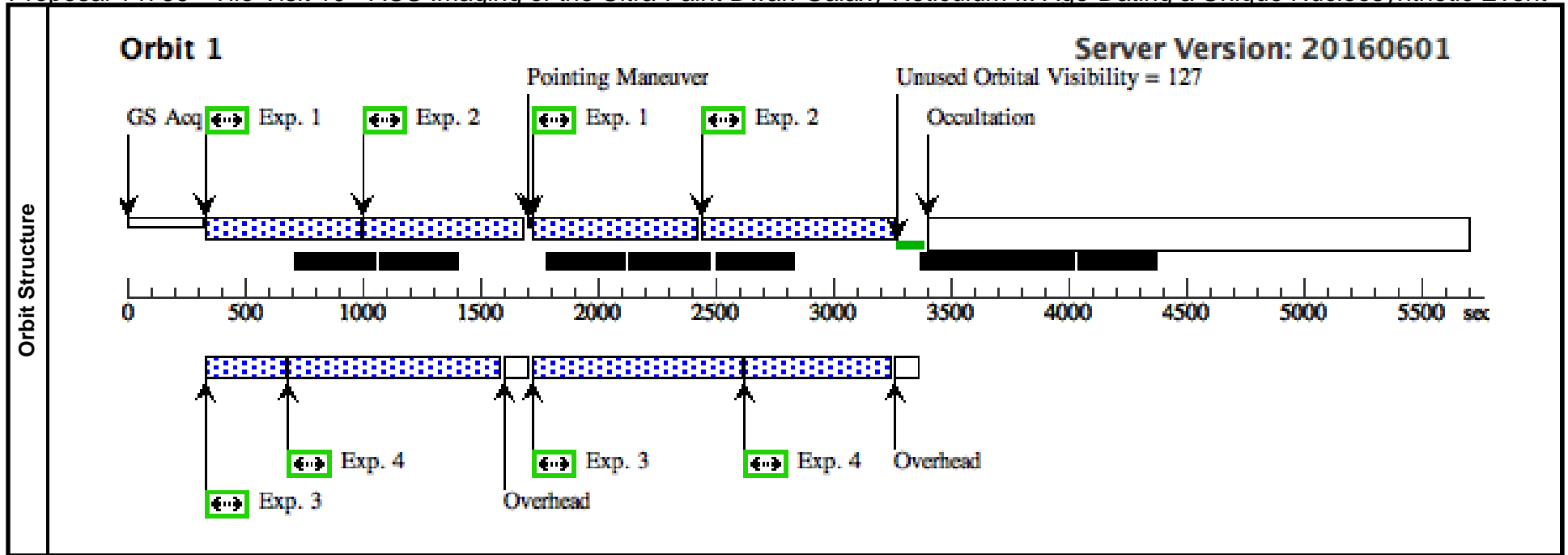
<b>Visit</b>	<b>Proposal 14766, Tile Visit 09</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SAME ORIENT AS 05										
	<b>Diagnosics</b> (Tile Visit 09) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 09)) 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>		
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false						(1-4)		
<b>Fixed Targets</b>	#	<b>Name</b>	<b>Target Coordinates</b>		<b>Targ. Coord. Corrections</b>		<b>Fluxes</b>	<b>Miscellaneous</b>			
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000					V=13.9	Reference Frame: ICRS		
<b>Exposures</b>	#	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>		<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W		POS TARG 200.914 04180253758,-191.1 597370372759	Pattern 2, Exps 1-4 in Tile Visit 09 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 09	450 Secs (980 Secs) [=>455.0 Secs (Pattern 1)] [=>525.0 Secs (Pattern 2)]	[1]		
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W		POS TARG 200.914 04180253758,-191.1 597370372759	Pattern 2, Exps 1-4 in Tile Visit 09 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 09	570 Secs (1140 Secs) [=>500.0 Secs (Pattern 1)] [=>640.0 Secs (Pattern 2)]	[1]		
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 2, Exps 1-4 in Tile Visit 09 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 09	620 Secs (941 Secs) [=>191.0 Secs (Pattern 1)] [=>750.0 Secs (Pattern 2)]	[1]		
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Pattern 2, Exps 1-4 in Tile Visit 09 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 09	900 Secs (1480 Secs) [=>880.0 Secs (Pattern 1)] [=>600.0 Secs (Pattern 2)]	[1]		



Proposal 14766 - Tile Visit 10 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

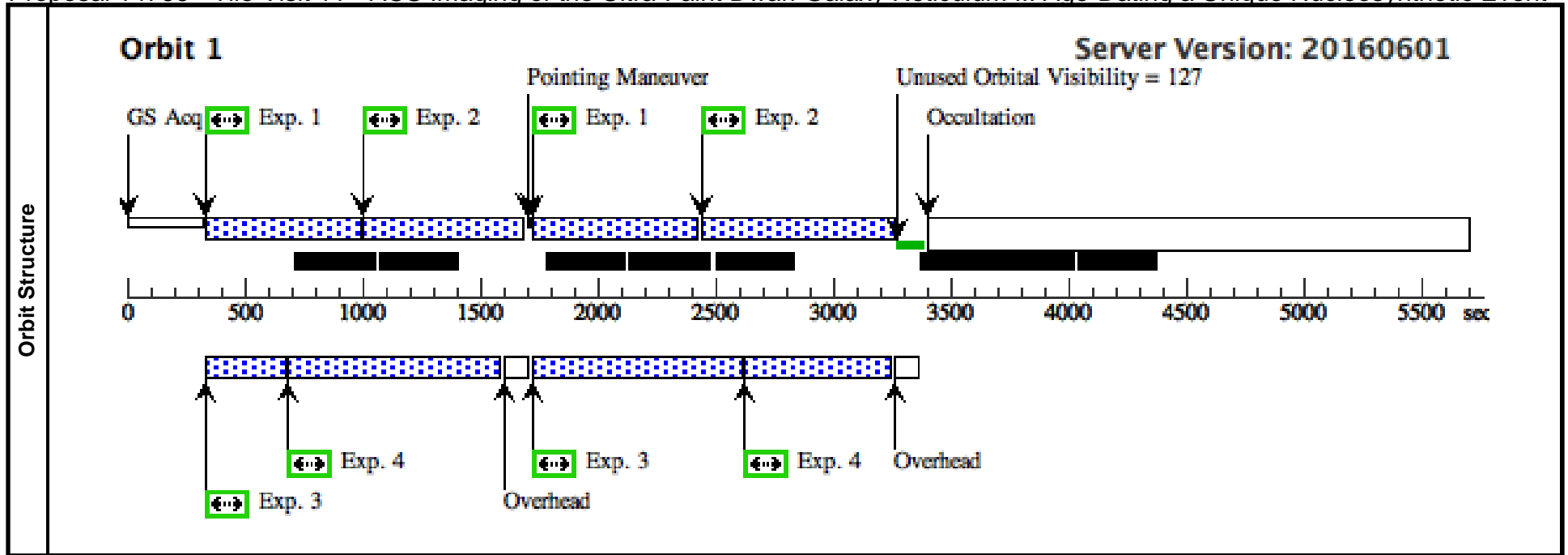
<b>Visit</b>	<b>Proposal 14766, Tile Visit 10</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SAME ORIENT AS 05									
	<b>Diagnosics</b> (Tile Visit 10) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 10)) 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>
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false					(1-4)		
<b>Fixed Targets</b>	#	<b>Name</b>	<b>Target Coordinates</b>		<b>Targ. Coord. Corrections</b>		<b>Fluxes</b>	<b>Miscellaneous</b>		
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000				V=13.9	Reference Frame: ICRS		
<b>Exposures</b>	#	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W		POS TARG 400.038 34383218094,-177.2 3560941586626	Pattern 2, Exps 1-4 in Tile Visit 10 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 10	450 Secs (980 Secs) [==>455.0 Secs (Pattern 1)] [==>525.0 Secs (Pattern 2)]	[1]	
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W		POS TARG 400.038 34383218094,-177.2 3560941586626	Pattern 2, Exps 1-4 in Tile Visit 10 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 10	570 Secs (1140 Secs) [==>500.0 Secs (Pattern 1)] [==>640.0 Secs (Pattern 2)]	[1]	
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 2, Exps 1-4 in Tile Visit 10 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 10	620 Secs (941 Secs) [==>191.0 Secs (Pattern 1)] [==>750.0 Secs (Pattern 2)]	[1]	
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Pattern 2, Exps 1-4 in Tile Visit 10 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 10	900 Secs (1480 Secs) [==>880.0 Secs (Pattern 1)] [==>600.0 Secs (Pattern 2)]	[1]	



Proposal 14766 - Tile Visit 11 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

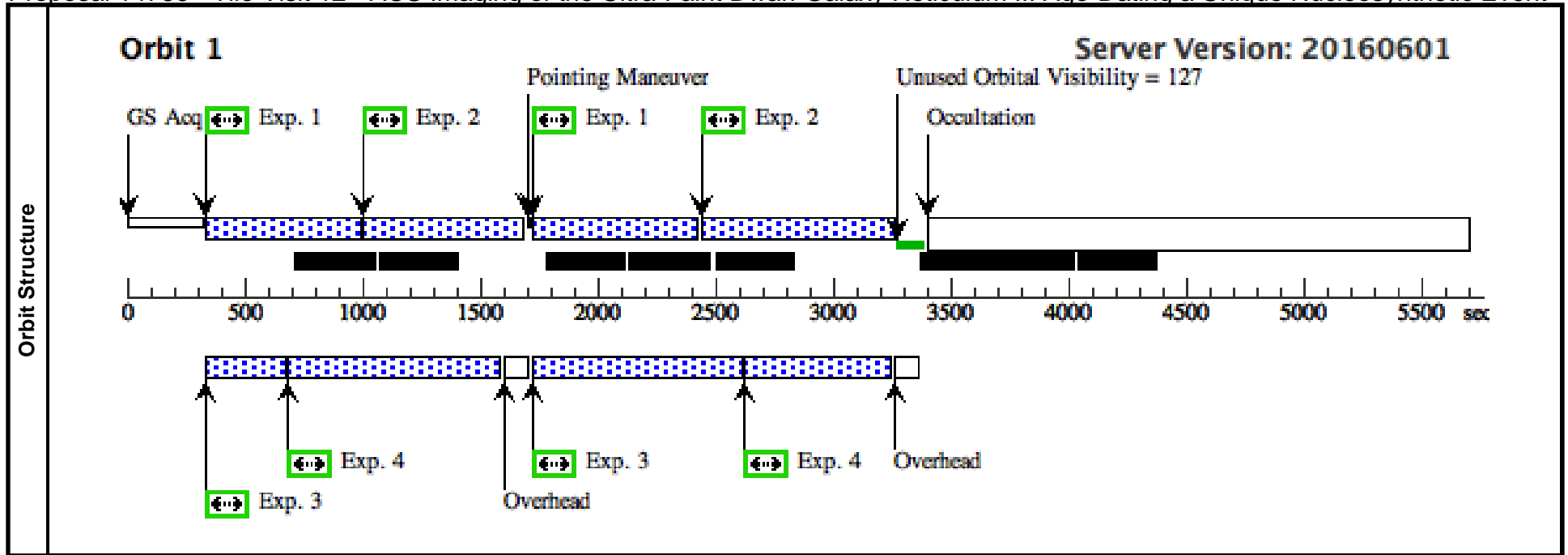
<b>Visit</b>	<b>Proposal 14766, Tile Visit 11</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SAME ORIENT AS 05									
	<b>Diagnosics</b> (Tile Visit 11) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 11)) 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>
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false					(1-4)		
<b>Fixed Targets</b>	#	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>		<b>Fluxes</b>	<b>Miscellaneous</b>			
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000			V=13.9	Reference Frame: ICRS			
<b>Exposures</b>	#	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W		POS TARG -398.24 86040592867,-27.84 8255242819334	Pattern 2, Exps 1-4 in Tile Visit 11 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 11	450 Secs (980 Secs) [==>455.0 Secs (Pattern 1)] [==>525.0 Secs (Pattern 2)]	[1]	
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W		POS TARG -398.24 86040592867,-27.84 8255242819334	Pattern 2, Exps 1-4 in Tile Visit 11 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 11	570 Secs (1140 Secs) [==>500.0 Secs (Pattern 1)] [==>640.0 Secs (Pattern 2)]	[1]	
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 2, Exps 1-4 in Tile Visit 11 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 11	620 Secs (941 Secs) [==>191.0 Secs (Pattern 1)] [==>750.0 Secs (Pattern 2)]	[1]	
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Pattern 2, Exps 1-4 in Tile Visit 11 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 11	900 Secs (1480 Secs) [==>880.0 Secs (Pattern 1)] [==>600.0 Secs (Pattern 2)]	[1]	



Proposal 14766 - Tile Visit 12 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

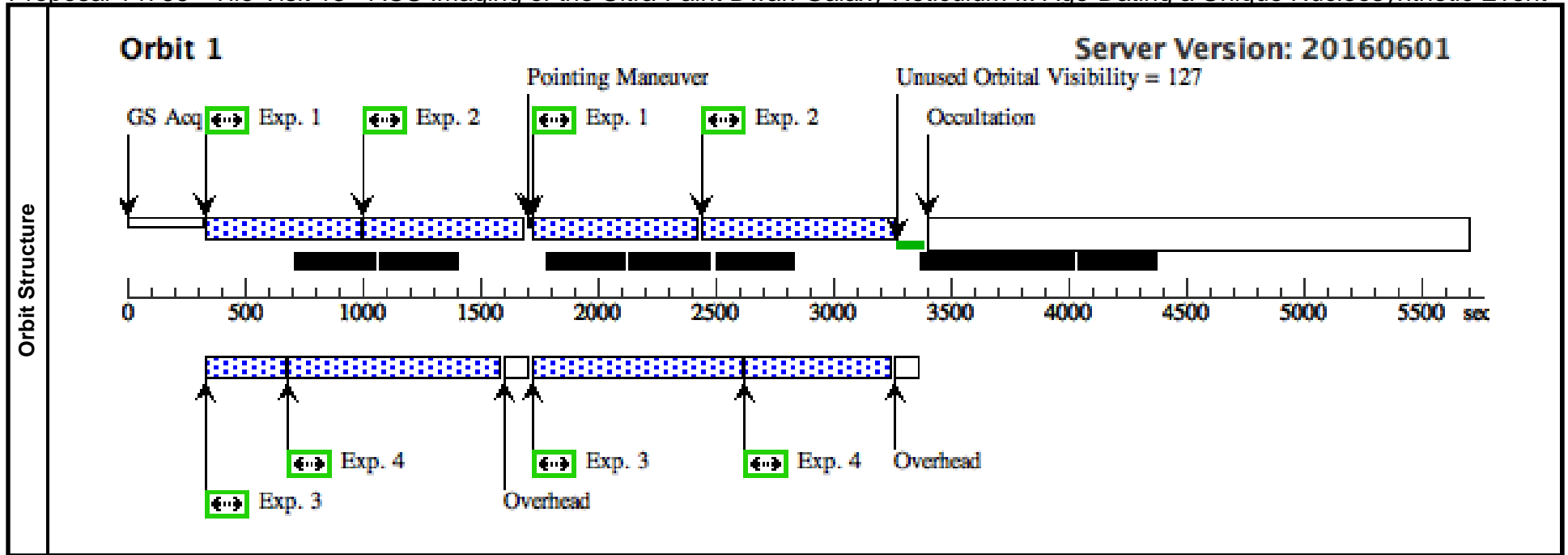
<b>Visit</b>	<b>Proposal 14766, Tile Visit 12</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SAME ORIENT AS 05										
	<b>Diagnosics</b> (Tile Visit 12) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 12)) 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>	
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=		Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false						(1-4)	
<b>Fixed Targets</b>	#	<b>Name</b>	<b>Target Coordinates</b>		<b>Targ. Coord. Corrections</b>		<b>Fluxes</b>		<b>Miscellaneous</b>		
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000				V=13.9		Reference Frame: ICRS		
<b>Exposures</b>	#	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>		<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W		POS TARG -199.12 430202964336,-13.9 24127621409694	Pattern 2, Exps 1-4 in Tile Visit 12 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 12	450 Secs (980 Secs) [=>455.0 Secs (Pattern 1)] [=>525.0 Secs (Pattern 2)]	[1]		
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W		POS TARG -199.12 430202964336,-13.9 24127621409694	Pattern 2, Exps 1-4 in Tile Visit 12 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 12	570 Secs (1140 Secs) [=>500.0 Secs (Pattern 1)] [=>640.0 Secs (Pattern 2)]	[1]		
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 2, Exps 1-4 in Tile Visit 12 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 12	620 Secs (941 Secs) [=>191.0 Secs (Pattern 1)] [=>750.0 Secs (Pattern 2)]	[1]		
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Pattern 2, Exps 1-4 in Tile Visit 12 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 12	900 Secs (1480 Secs) [=>880.0 Secs (Pattern 1)] [=>600.0 Secs (Pattern 2)]	[1]		



Proposal 14766 - Tile Visit 13 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

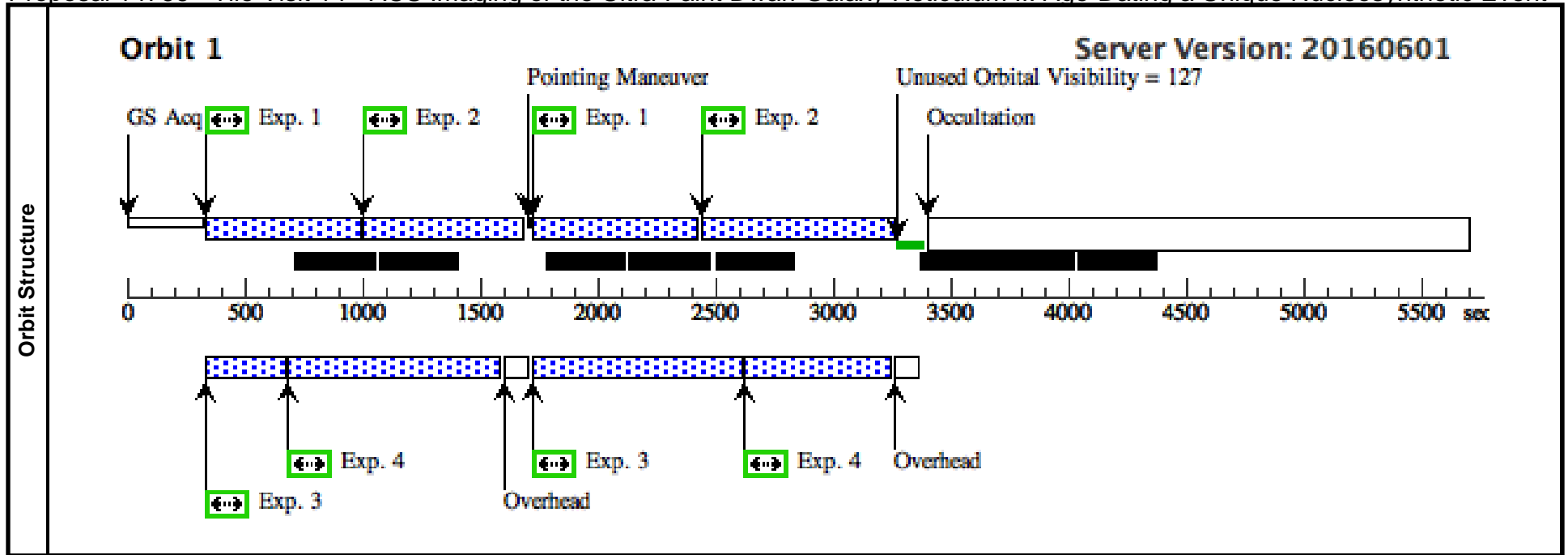
<b>Visit</b>	<b>Proposal 14766, Tile Visit 13</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SAME ORIENT AS 05										
	(Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 13)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser										
<b>Diagnos</b>											
<b>Patterns</b>	#	<b>Primary Pattern</b>				<b>Secondary Pattern</b>				<b>Exposures</b>	
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=		Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false						(1-4)	
<b>Fixed Targets</b>	#	<b>Name</b>	<b>Target Coordinates</b>		<b>Targ. Coord. Corrections</b>		<b>Fluxes</b>		<b>Miscellaneous</b>		
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000				V=13.9		Reference Frame: ICRS		
<b>Exposures</b>	#	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>		<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0,-5.3 290705182007514E-14	Pattern 2, Exps 1-4 in Tile Visit 13 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 13	450 Secs (980 Secs) [==>455.0 Secs (Pattern 1)] [==>525.0 Secs (Pattern 2)]	[1]		
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.0,-5.3 290705182007514E-14	Pattern 2, Exps 1-4 in Tile Visit 13 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 13	570 Secs (1140 Secs) [==>500.0 Secs (Pattern 1)] [==>640.0 Secs (Pattern 2)]	[1]		
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 2, Exps 1-4 in Tile Visit 13 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 13	620 Secs (941 Secs) [==>191.0 Secs (Pattern 1)] [==>750.0 Secs (Pattern 2)]	[1]		
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Pattern 2, Exps 1-4 in Tile Visit 13 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 13	900 Secs (1480 Secs) [==>880.0 Secs (Pattern 1)] [==>600.0 Secs (Pattern 2)]	[1]		



Proposal 14766 - Tile Visit 14 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

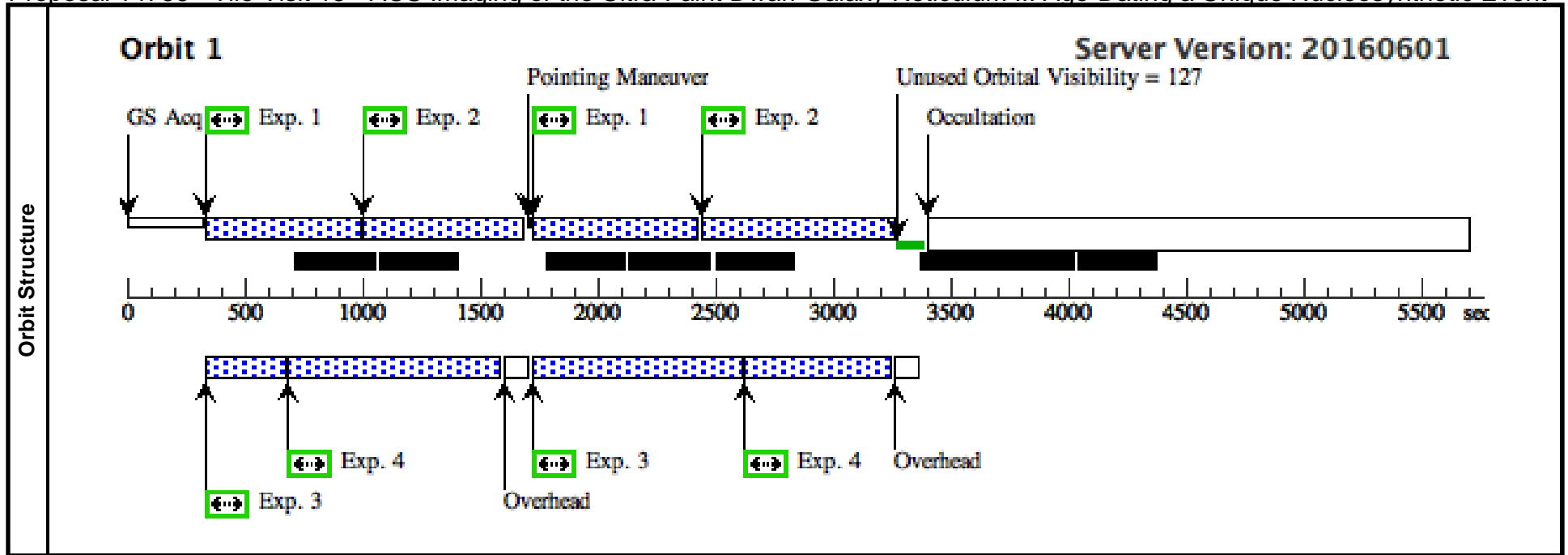
<b>Visit</b>	<b>Proposal 14766, Tile Visit 14</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SAME ORIENT AS 05									
	<b>Diagnosics</b> (Tile Visit 14) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 14)) 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>
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false					(1-4)		
<b>Fixed Targets</b>	#	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>		<b>Fluxes</b>	<b>Miscellaneous</b>			
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000			V=13.9	Reference Frame: ICRS			
<b>Exposures</b>	#	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W		POS TARG 199.124 30202964336,13.924 127621409587	Pattern 2, Exps 1-4 in Tile Visit 14 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 14	450 Secs (980 Secs) [==>455.0 Secs (Pattern 1)] [==>525.0 Secs (Pattern 2)]	[1]	
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W		POS TARG 199.124 30202964336,13.924 127621409587	Pattern 2, Exps 1-4 in Tile Visit 14 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 14	570 Secs (1140 Secs) [==>500.0 Secs (Pattern 1)] [==>640.0 Secs (Pattern 2)]	[1]	
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 2, Exps 1-4 in Tile Visit 14 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 14	620 Secs (941 Secs) [==>191.0 Secs (Pattern 1)] [==>750.0 Secs (Pattern 2)]	[1]	
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Pattern 2, Exps 1-4 in Tile Visit 14 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 14	900 Secs (1480 Secs) [==>880.0 Secs (Pattern 1)] [==>600.0 Secs (Pattern 2)]	[1]	



Proposal 14766 - Tile Visit 15 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

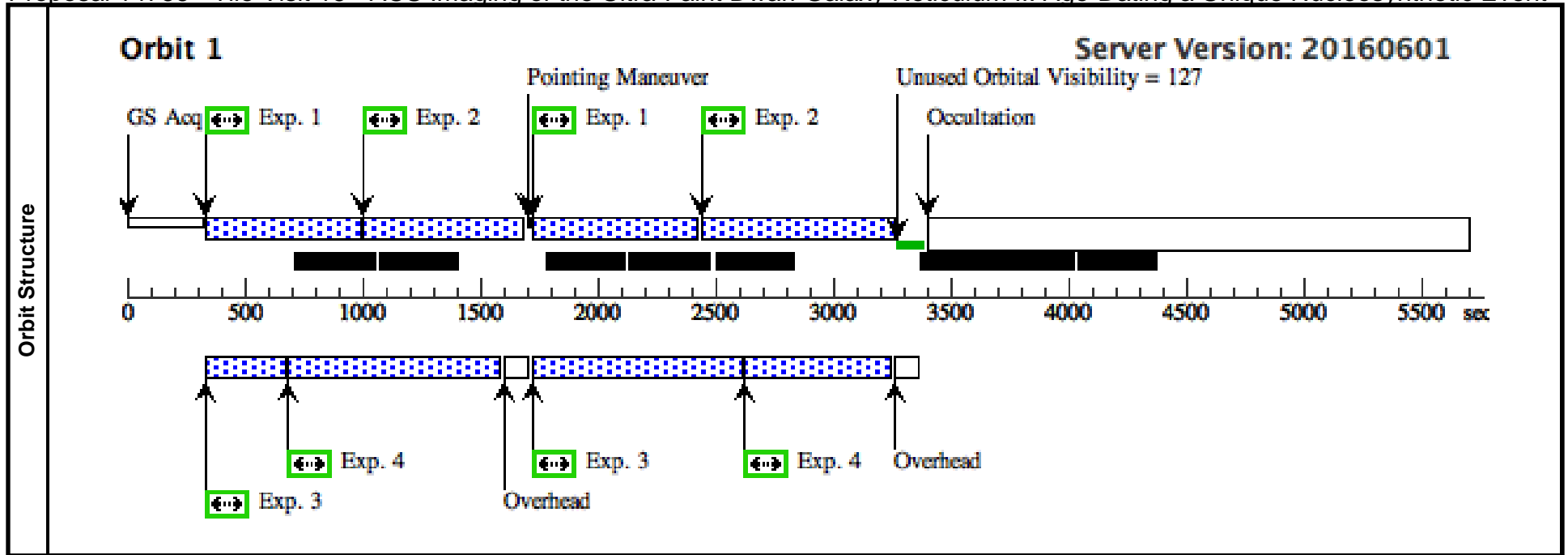
<b>Visit</b>	<b>Proposal 14766, Tile Visit 15</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SAME ORIENT AS 05									
	<b>Diagnosics</b> (Tile Visit 15) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 15)) 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>
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false					(1-4)		
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>		<b>Targ. Coord. Corrections</b>		<b>Fluxes</b>	<b>Miscellaneous</b>		
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000				V=13.9	Reference Frame: ICRS		
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W			POS TARG 398.248 6040592867,27.8482 55242819228	Pattern 2, Exps 1-4 in Tile Visit 15 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 15	450 Secs (980 Secs) [==>455.0 Secs (Pattern 1)] [==>525.0 Secs (Pattern 2)]	[1]
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W			POS TARG 398.248 6040592867,27.8482 55242819228	Pattern 2, Exps 1-4 in Tile Visit 15 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 15	570 Secs (1140 Secs) [==>500.0 Secs (Pattern 1)] [==>640.0 Secs (Pattern 2)]	[1]
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W				Pattern 2, Exps 1-4 in Tile Visit 15 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 15	620 Secs (941 Secs) [==>191.0 Secs (Pattern 1)] [==>750.0 Secs (Pattern 2)]	[1]
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W				Pattern 2, Exps 1-4 in Tile Visit 15 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 15	900 Secs (1480 Secs) [==>880.0 Secs (Pattern 1)] [==>600.0 Secs (Pattern 2)]	[1]



Proposal 14766 - Tile Visit 16 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

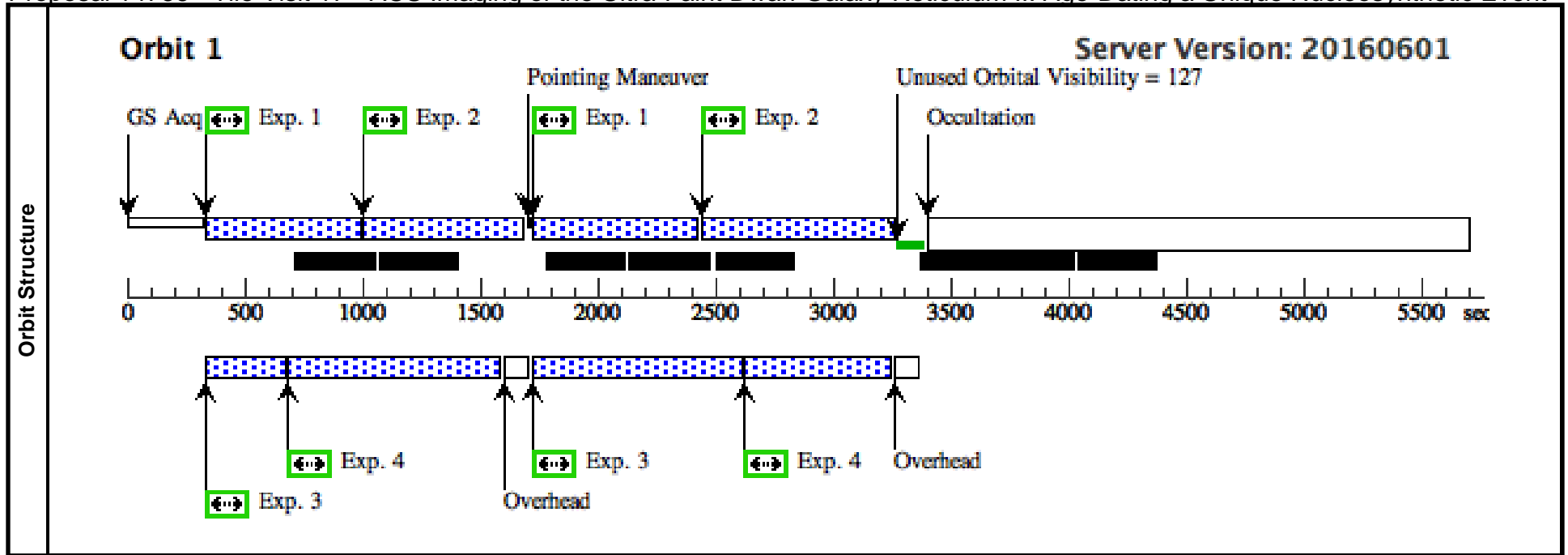
<b>Visit</b>	<b>Proposal 14766, Tile Visit 16</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SAME ORIENT AS 05									
	<b>Diagnosics</b> (Tile Visit 16) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 16)) 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>
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false					(1-4)		
<b>Fixed Targets</b>	#	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>		<b>Fluxes</b>	<b>Miscellaneous</b>			
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000			V=13.9	Reference Frame: ICRS			
<b>Exposures</b>	#	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W		POS TARG -400.03 834383218094,177.2 3560941586618	Pattern 2, Exps 1-4 in Tile Visit 16 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 16	450 Secs (980 Secs) [==>455.0 Secs (Pattern 1)] [==>525.0 Secs (Pattern 2)]	[1]	
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W		POS TARG -400.03 834383218094,177.2 3560941586618	Pattern 2, Exps 1-4 in Tile Visit 16 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 16	570 Secs (1140 Secs) [==>500.0 Secs (Pattern 1)] [==>640.0 Secs (Pattern 2)]	[1]	
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 2, Exps 1-4 in Tile Visit 16 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 16	620 Secs (941 Secs) [==>191.0 Secs (Pattern 1)] [==>750.0 Secs (Pattern 2)]	[1]	
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Pattern 2, Exps 1-4 in Tile Visit 16 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 16	900 Secs (1480 Secs) [==>880.0 Secs (Pattern 1)] [==>600.0 Secs (Pattern 2)]	[1]	



Proposal 14766 - Tile Visit 17 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

<b>Visit</b>	<b>Proposal 14766, Tile Visit 17</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SAME ORIENT AS 05										
	<b>Diagnosics</b> (Tile Visit 17) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 17)) 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>	
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false					(1-4)			
<b>Fixed Targets</b>	#	<b>Name</b>	<b>Target Coordinates</b>		<b>Targ. Coord. Corrections</b>		<b>Fluxes</b>		<b>Miscellaneous</b>		
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000					V=13.9		Reference Frame: ICRS	
<b>Exposures</b>	#	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>		<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W		POS TARG -200.91 404180253758,191.1 5973703727582	Pattern 2, Exps 1-4 in Tile Visit 17 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 17	450 Secs (980 Secs) [=>455.0 Secs (Pattern 1)] [=>525.0 Secs (Pattern 2)]	[1]		
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W		POS TARG -200.91 404180253758,191.1 5973703727582	Pattern 2, Exps 1-4 in Tile Visit 17 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 17	570 Secs (1140 Secs) [=>500.0 Secs (Pattern 1)] [=>640.0 Secs (Pattern 2)]	[1]		
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 2, Exps 1-4 in Tile Visit 17 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 17	620 Secs (941 Secs) [=>191.0 Secs (Pattern 1)] [=>750.0 Secs (Pattern 2)]	[1]		
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Pattern 2, Exps 1-4 in Tile Visit 17 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 17	900 Secs (1480 Secs) [=>880.0 Secs (Pattern 1)] [=>600.0 Secs (Pattern 2)]	[1]		



Proposal 14766 - Tile Visit 18 - ACS Imaging of the Ultra-Faint Dwarf Galaxy Reticulum II: Age-Dating a Unique Nucleosynthetic Event

Fri Jul 29 19:20:35 GMT 2016

<b>Visit</b>	<b>Proposal 14766, Tile Visit 18</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: SAME ORIENT AS 05									
	<b>Diagnosics</b> (Tile Visit 18) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Parallel Exposure 3 (Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 18)) 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>	
	(2)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false				(1-4)			
<b>Fixed Targets</b>	#	<b>Name</b>	<b>Target Coordinates</b>		<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>			
	(1)	RETICULUM-II	RA: 03 35 40.8000 (53.9200000d) Dec: -54 02 55.00 (-54.04861d) Equinox: J2000			V=13.9	Reference Frame: ICRS			
<b>Exposures</b>	#	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time (Total)/[Actual Dur.]</b>	<b>Orbit</b>
	1	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F606W	POS TARG -1.7897 397728942224,205.0 8386465868546	Pattern 2, Exps 1-4 in Tile Visit 18 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 18	450 Secs (980 Secs) [==>455.0 Secs (Pattern 1)] [==>525.0 Secs (Pattern 2)]	[1]		
	2	(1) RETICULUM-II	ACS/WFC, ACCUM, WFC	F814W	POS TARG -1.7897 397728942224,205.0 8386465868546	Pattern 2, Exps 1-4 in Tile Visit 18 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 18	570 Secs (1140 Secs) [==>500.0 Secs (Pattern 1)] [==>640.0 Secs (Pattern 2)]	[1]		
	3	ANY	WFC3/UVIS, ACCUM, UVIS	F606W		Pattern 2, Exps 1-4 in Tile Visit 18 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 18	620 Secs (941 Secs) [==>191.0 Secs (Pattern 1)] [==>750.0 Secs (Pattern 2)]	[1]		
	4	ANY	WFC3/UVIS, ACCUM, UVIS	F814W		Pattern 2, Exps 1-4 in Tile Visit 18 (2) Prime + Parallel Group 1-4 in Pattern 2, Exps 1-4 in Tile Visit 18	900 Secs (1480 Secs) [==>880.0 Secs (Pattern 1)] [==>600.0 Secs (Pattern 2)]	[1]		

