



13692 - Orbits and Physical Properties of Four Binary Transneptunian Objects

Cycle: 22, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Dr. William M. Grundy (PI) (Contact)	Lowell Observatory	w.grundy@lowell.edu
Dr. Keith S. Noll (CoI)	NASA Goddard Space Flight Center	keith.s.noll@nasa.gov
Dr. Susan D. Benecchi (CoI)	Planetary Science Institute	susank@psi.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) 60458-2000-CM114	WFC3/UVIS	1	20-May-2015 21:03:48.0	yes
02	(1) 60458-2000-CM114	WFC3/UVIS	1	20-May-2015 21:03:51.0	yes
03	(2) 1999-RT214	WFC3/UVIS	1	20-May-2015 21:03:53.0	yes
04	(2) 1999-RT214	WFC3/UVIS	1	20-May-2015 21:03:56.0	yes
05	(3) 2000-CQ114	WFC3/UVIS	1	20-May-2015 21:03:58.0	yes
06	(4) 2001-FL185	WFC3/UVIS	1	20-May-2015 21:04:00.0	yes
07	(4) 2001-FL185	WFC3/UVIS	1	20-May-2015 21:04:03.0	yes
08	(4) 2001-FL185	WFC3/UVIS	1	20-May-2015 21:04:05.0	yes

8 Total Orbits Used

ABSTRACT

Intriguing patterns are evident in both the orbits of transneptunian objects and in their observable external characteristics (colors, spectral features, etc.). Bulk physical properties are needed to make sense of the observations and to exploit them to constrain conditions in the protoplanetary disk

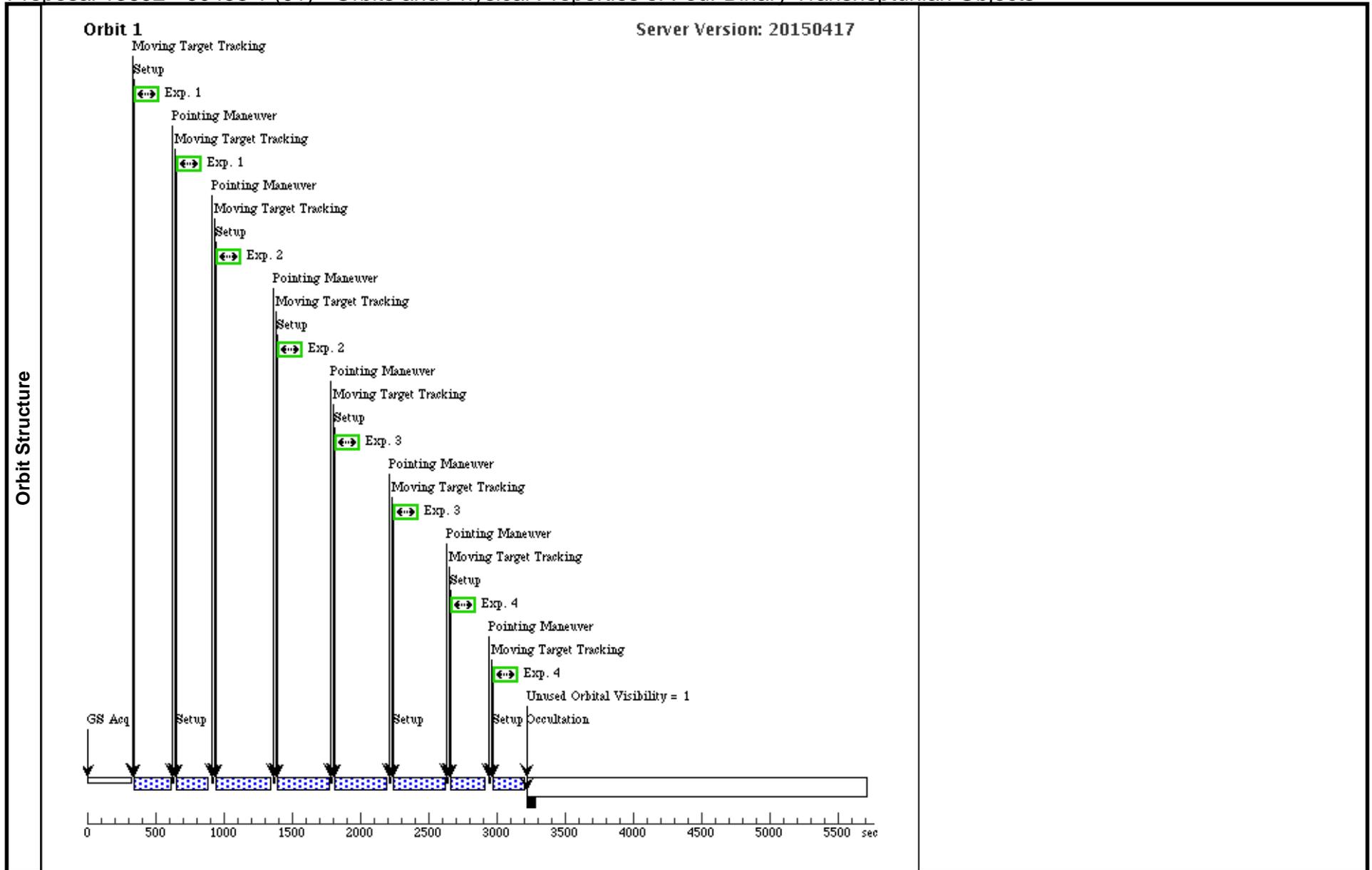
Proposal 13692 (STScI Edit Number: 5, Created: Wednesday, May 20, 2015 8:04:07 PM EST) - Overview

where these objects formed. The key to obtaining bulk properties of transneptunian objects is that a sizeable proportion of them are binaries. Binary mutual orbits provide dynamical masses that can in turn be used to compute bulk densities. A statistical sample of binary orbits offers powerful constraints on formation mechanisms as well as subsequent evolution. This proposal seeks to continue a multi-year campaign to obtain orbits for as large of a sample of binary transneptunian objects as possible. We seek to make efficient use of HST by targeting four systems where we can obtain a dramatic improvement in orbital knowledge from relatively few, strategically timed visits, and where the secondary is too faint for reliable detection with ground-based near-IR adaptive optics techniques.

Proposal 13692 - 60458 1 (01) - Orbits and Physical Properties of Four Binary Transneptunian Objects

Thu May 21 01:04:07 GMT 2015

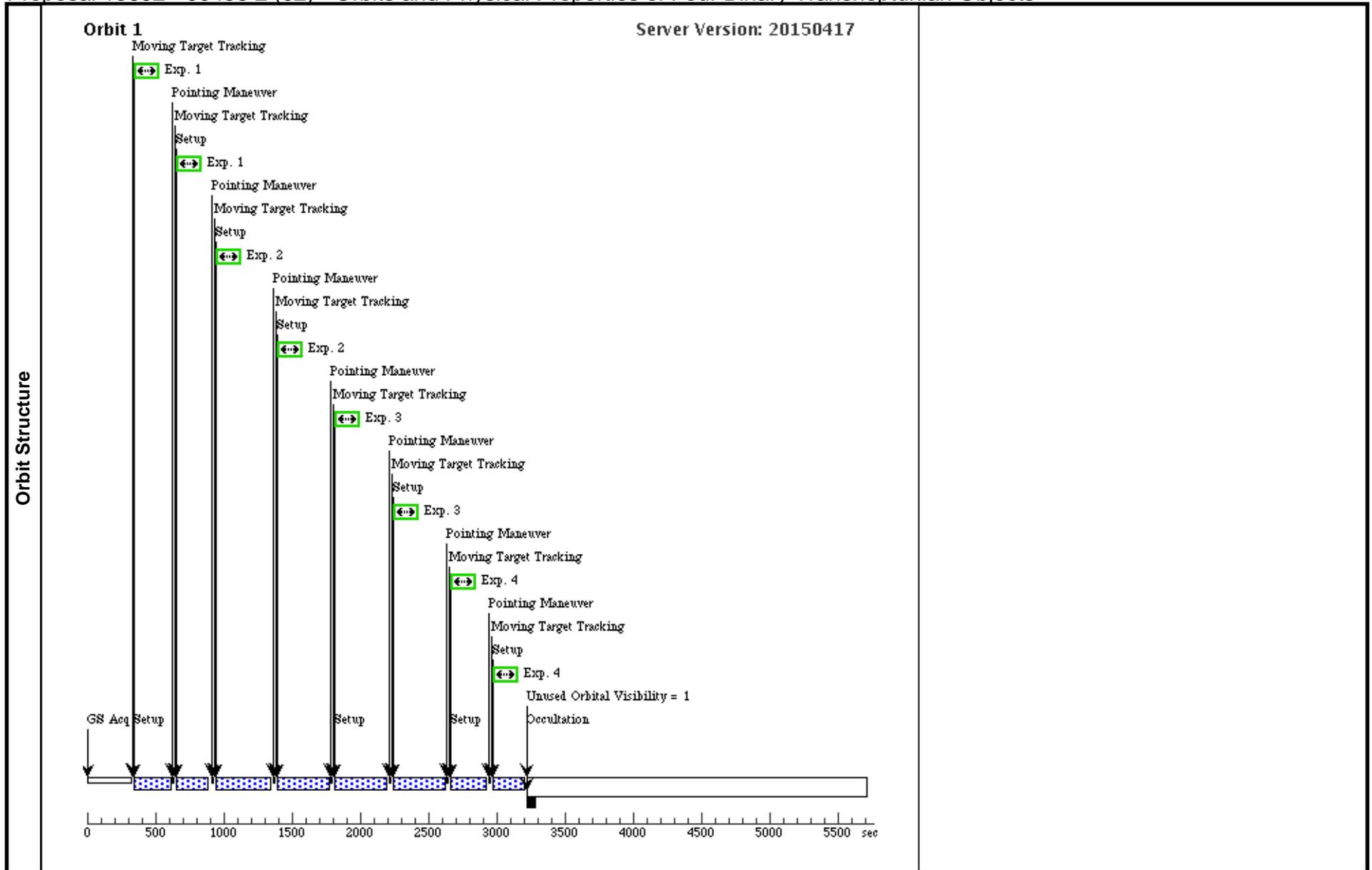
Visit	Proposal 13692, 60458 1 (01), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; BETWEEN 10-MAR-2015:00:00:00 AND 20-MAR-2015:23:59:59									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false					(1), (2), (3), (4)	
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	60458-2000-CM114	TYPE=ASTEROID,A=60.1019557500 00,E=0.409091089330,I=19.66541172 2000,O=312.297120750000,W=250.96 8045070000,M=340.166132620000,E QUINOX=J2000,EPOCH=27-JUN- 2015,EpochTimeScale=UTC <i>Comments: Positional uncertainty as of summer 2015 is 1.9 arcsec.</i>					EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) 60458-2000-CM114	(1) 60458-2000-CM114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG -.1582,0 .0289867; GS ACQ SCENARIO BASE1B3	Pattern 1, Exps 1-1 in 60458 1 (01) (1)	195 Secs (390 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) 60458-2000-CM114	(1) 60458-2000-CM114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F438W	CR-SPLIT=NO; FLASH=7	POS TARG -0.1532 56,-0.144537	Pattern 1, Exps 2-2 in 60458 1 (01) (1)	335 Secs (670 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) 60458-2000-CM114	(1) 60458-2000-CM114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F438W	CR-SPLIT=NO; FLASH=7	POS TARG 0.05418 35,0.0385166	Pattern 1, Exps 3-3 in 60458 1 (01) (1)	335 Secs (670 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) 60458-2000-CM114	(1) 60458-2000-CM114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG 0.04943 75,-0.145331	Pattern 1, Exps 4-4 in 60458 1 (01) (1)	195 Secs (390 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 13692 - 60458 2 (02) - Orbits and Physical Properties of Four Binary Transneptunian Objects

Thu May 21 01:04:07 GMT 2015

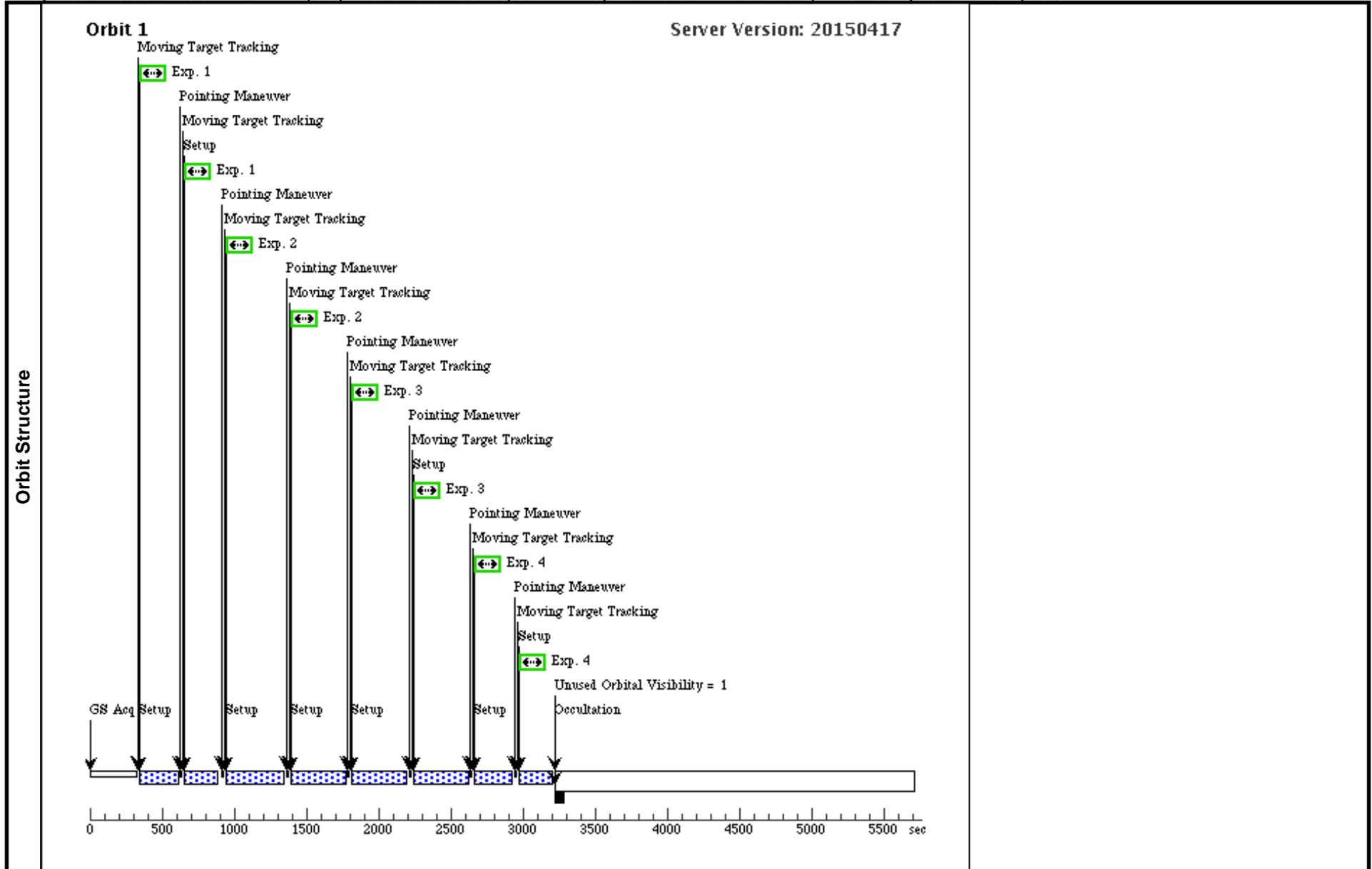
Visit	Proposal 13692, 60458 2 (02), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; BETWEEN 02-APR-2015:00:00:00 AND 04-APR-2015:00:00:00; BETWEEN 20-APR-2015:00:00:00 AND 22-APR-2015:00:00:00; BETWEEN 04-MAY-2015:00:00:00 AND 06-MAY-2015:00:00:00; BETWEEN 23-MAY-2015:00:00:00 AND 25-MAY-2015:00:00:00; BETWEEN 06-JUN-2015:00:00:00 AND 08-JUN-2015:00:00:00									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(1)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2), (3), (4)					
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	60458-2000-CM114	TYPE=ASTEROID,A=60.1019557500 00,E=0.409091089330,I=19.66541172 2000,O=312.297120750000,W=250.96 8045070000,M=340.166132620000,E QUINOX=J2000,EPOCH=27-JUN- 2015,EpochTimeScale=UTC <i>Comments: Positional uncertainty as of summer 2015 is 1.9 arcsec.</i>				EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) 60458-2000-CM 114	(1) 60458-2000-CM 114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG -.1582,0 .0289867	Pattern 1, Exps 1-1 in 60458 2 (02) (1)	195 Secs (390 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2	(1) 60458-2000-CM 114	(1) 60458-2000-CM 114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	CR-SPLIT=NO	POS TARG -0.1532 56,-0.144537	Pattern 1, Exps 2-2 in 60458 2 (02) (1)	340 Secs (680 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3	(1) 60458-2000-CM 114	(1) 60458-2000-CM 114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	CR-SPLIT=NO	POS TARG 0.05418 35,0.0385166	Pattern 1, Exps 3-3 in 60458 2 (02) (1)	340 Secs (680 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4	(1) 60458-2000-CM 114	(1) 60458-2000-CM 114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG 0.04943 75,-0.145331	Pattern 1, Exps 4-4 in 60458 2 (02) (1)	195 Secs (390 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 13692 - 99RT214 1 (03) - Orbits and Physical Properties of Four Binary Transneptunian Objects

Thu May 21 01:04:07 GMT 2015

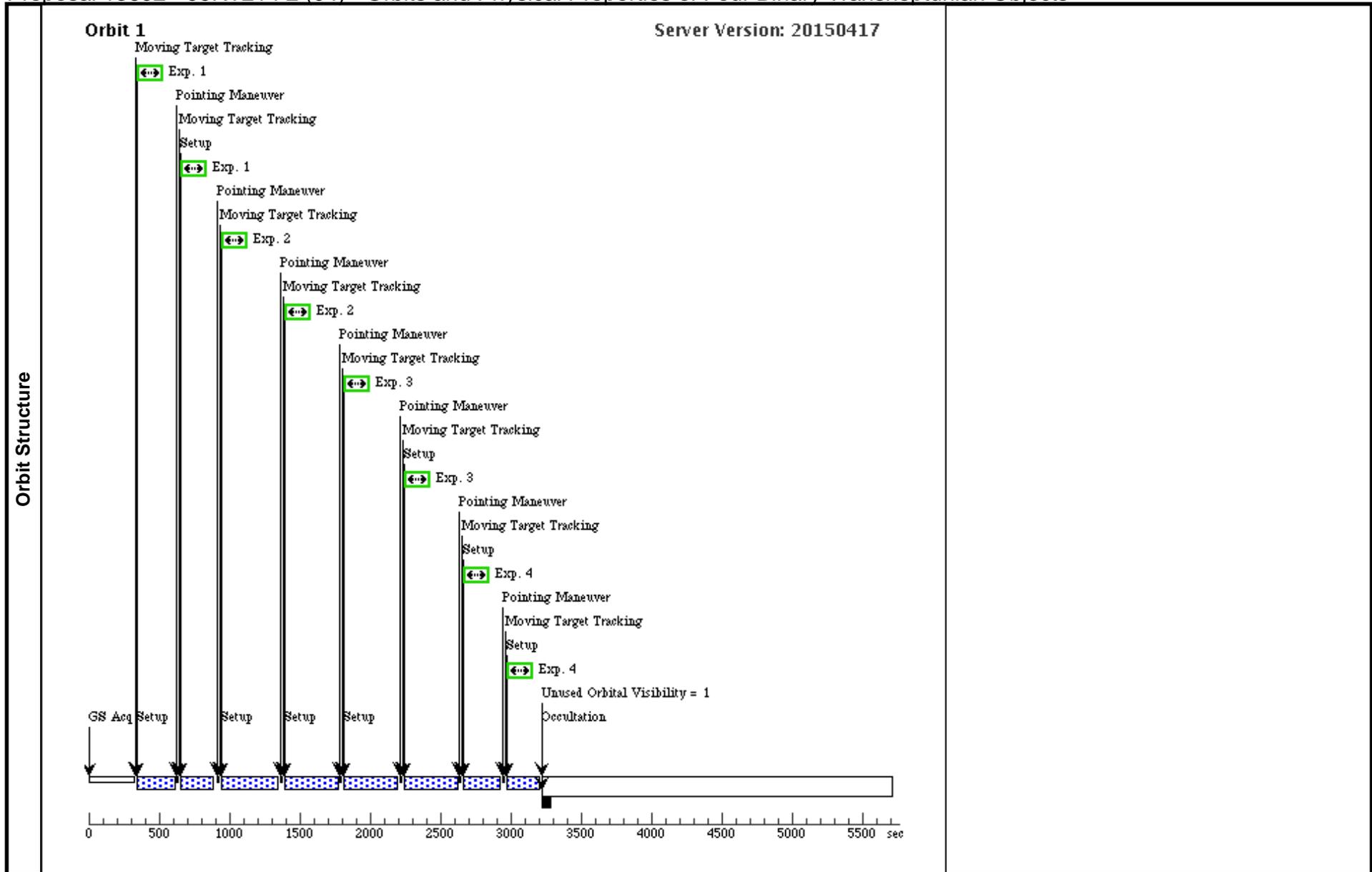
Visit	Proposal 13692, 99RT214 1 (03), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%: BETWEEN 05-OCT-2014:00:00:00 AND 27-OCT-2014:00:00:00										
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures		
		(1)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false					(1), (2), (3), (4)		
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center				
	(2)	1999-RT214	TYPE=ASTEROID,A=42.72616346000,E=0.051460600000,I=2.57204000000,O=138.062800000000,W=209.172970000000,M=333.804120000000,EQUINOX=J2000,EPOCH=30-AUG-1999,EpochTimeScale=UTC					EARTH			
	<i>Comments: Positional uncertainty as of summer 2015 is 0.9 arcsec.</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1		(2) 1999-RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG -.1582,0 .0289867; GS ACQ SCENARIO BASE1B3	Pattern 1, Exps 1-1 in 99RT214 1 (03) (1)	195 Secs (390 Secs)	[=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(2) 1999-RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	CR-SPLIT=NO	POS TARG -0.153256,-0.144537	Pattern 1, Exps 2-2 in 99RT214 1 (03) (1)	340 Secs (680 Secs)	[=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3		(2) 1999-RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	CR-SPLIT=NO	POS TARG 0.0541835,0.0385166	Pattern 1, Exps 3-3 in 99RT214 1 (03) (1)	340 Secs (680 Secs)	[=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4		(2) 1999-RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG 0.0494375,-0.145331	Pattern 1, Exps 4-4 in 99RT214 1 (03) (1)	195 Secs (390 Secs)	[=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 13692 - 99RT214 2 (04) - Orbits and Physical Properties of Four Binary Transneptunian Objects

Thu May 21 01:04:08 GMT 2015

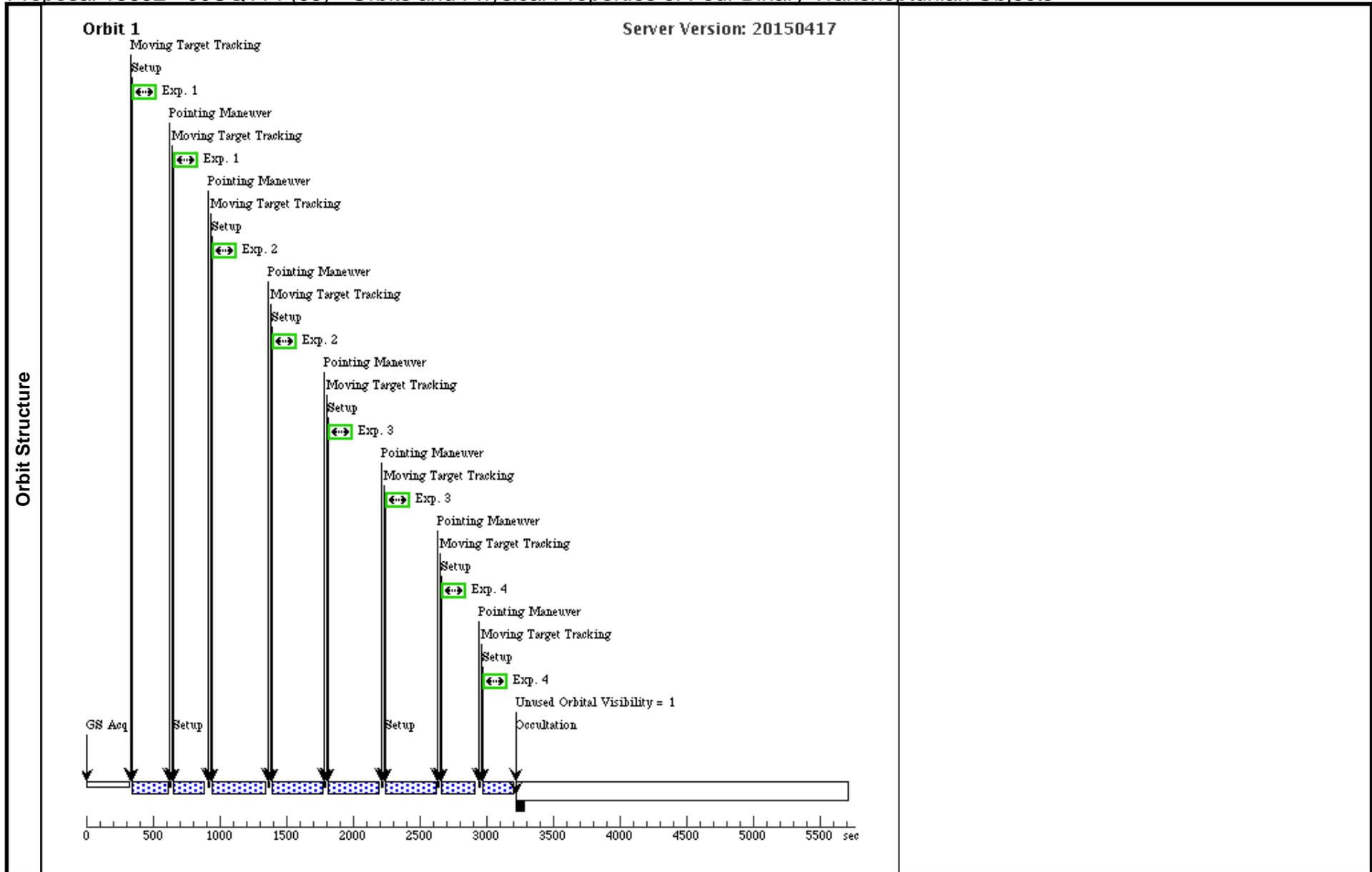
Visit	Proposal 13692, 99RT214 2 (04), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; BETWEEN 04-NOV-2014:00:00:00 AND 10-NOV-2014:00:00:00										
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures		
		(1)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false					(1), (2), (3), (4)		
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center				
	(2)	1999-RT214	TYPE=ASTEROID,A=42.72616346000,E=0.051460600000,I=2.57204000000,O=138.062800000000,W=209.172970000000,M=333.804120000000,EQUINOX=J2000,EPOCH=30-AUG-1999,EpochTimeScale=UTC					EARTH			
	<i>Comments: Positional uncertainty as of summer 2015 is 0.9 arcsec.</i>										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1		(2) 1999-RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG -.1582,0 .0289867	Pattern 1, Exps 1-1 in 99RT214 2 (04) (1)	195 Secs (390 Secs)		[1]
									[==>(Pattern 1)]		
									[==>(Pattern 2)]		
	2		(2) 1999-RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	CR-SPLIT=NO	POS TARG -0.153256,-0.144537	Pattern 1, Exps 2-2 in 99RT214 2 (04) (1)	340 Secs (680 Secs)		[1]
								[==>(Pattern 1)]			
								[==>(Pattern 2)]			
3		(2) 1999-RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	CR-SPLIT=NO	POS TARG 0.0541835,0.0385166	Pattern 1, Exps 3-3 in 99RT214 2 (04) (1)	340 Secs (680 Secs)		[1]	
								[==>(Pattern 1)]			
								[==>(Pattern 2)]			
4		(2) 1999-RT214	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG 0.0494375,-0.145331	Pattern 1, Exps 4-4 in 99RT214 2 (04) (1)	195 Secs (390 Secs)		[1]	
								[==>(Pattern 1)]			
								[==>(Pattern 2)]			



Proposal 13692 - 00CQ114 (05) - Orbits and Physical Properties of Four Binary Transneptunian Objects

Thu May 21 01:04:08 GMT 2015

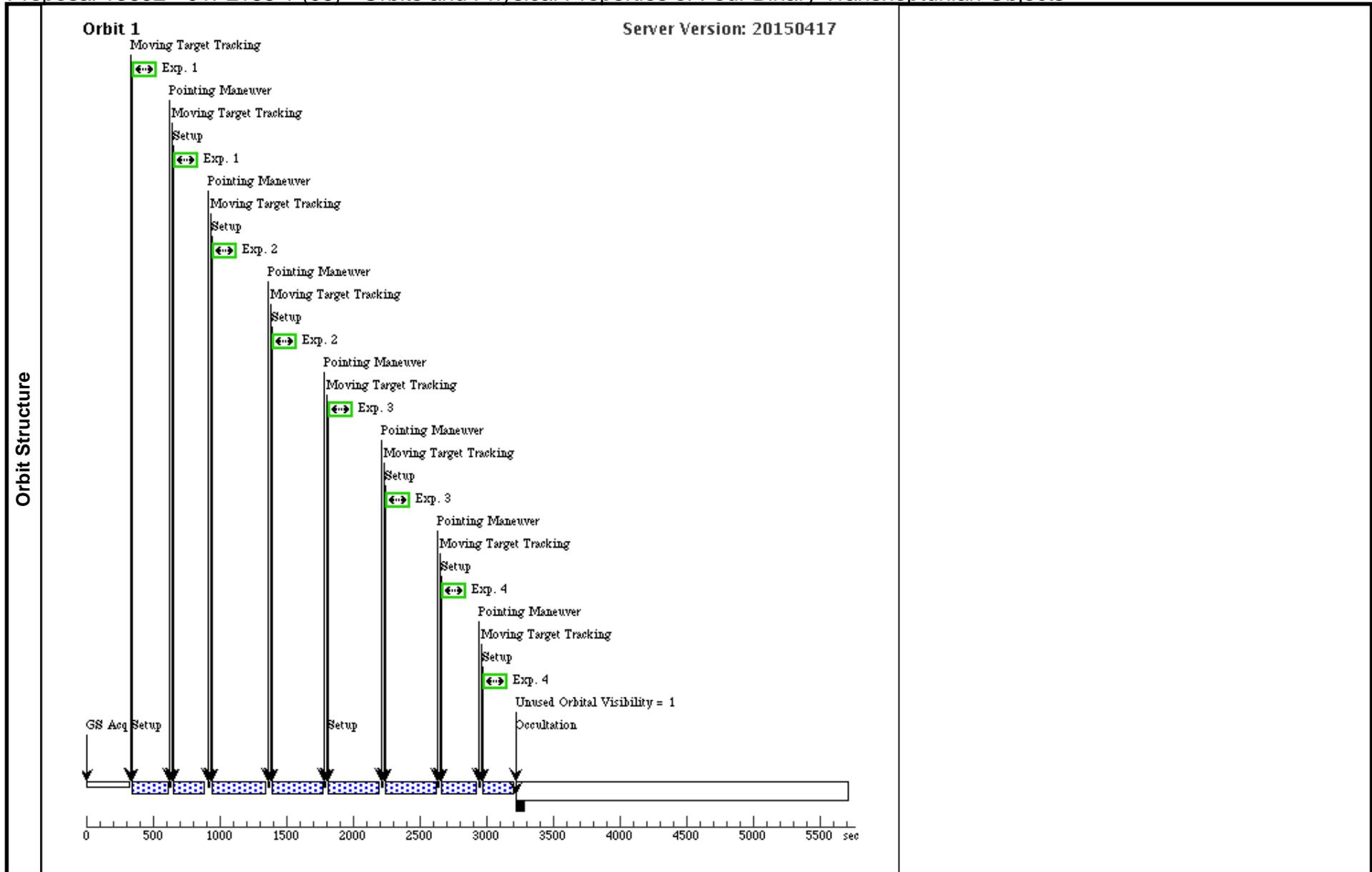
Visit	Proposal 13692, 00CQ114 (05), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; BETWEEN 31-MAR-2015:00:00:00 AND 01-MAY-2015:00:00:00									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=LINE	Coordinate Frame=POS-TARG					(1), (2), (3), (4)	
		Purpose=DITHER	Pattern Orientation=46.84							
		Number Of Points=2	Angle Between Sides=							
		Point Spacing=0.145	Center Pattern=false							
		Line Spacing=								
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(3)	2000-CQ114	TYPE=ASTEROID,A=46.0174257700 00,E=0.116163710000,I=2.694540000 000,O=38.262610000000,W=30.78918 0000000,M=73.275020000000,EQUIN OX=J2000,EPOCH=06-FEB- 2000,EpochTimeScale=UTC					EARTH		
	<i>Comments: Positional uncertainty as of summer 2015 is 0.2 arcsec.</i>									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(3) 2000-CQ114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG -.1582,0 .0289867; GS ACQ SCENARI O BASE1B3	Pattern 1, Exps 1-1 i n 00CQ114 (05) (1)	195 Secs (390 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(3) 2000-CQ114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F438W	CR-SPLIT=NO; FLASH=7	POS TARG -0.1532 56,-0.144537	Pattern 1, Exps 2-2 i n 00CQ114 (05) (1)	335 Secs (670 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3		(3) 2000-CQ114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F438W	CR-SPLIT=NO; FLASH=7	POS TARG 0.05418 35,0.0385166	Pattern 1, Exps 3-3 i n 00CQ114 (05) (1)	335 Secs (670 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4		(3) 2000-CQ114	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG 0.04943 75,-0.145331	Pattern 1, Exps 4-4 i n 00CQ114 (05) (1)	195 Secs (390 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 13692 - 01FL185 1 (06) - Orbits and Physical Properties of Four Binary Transneptunian Objects

Thu May 21 01:04:08 GMT 2015

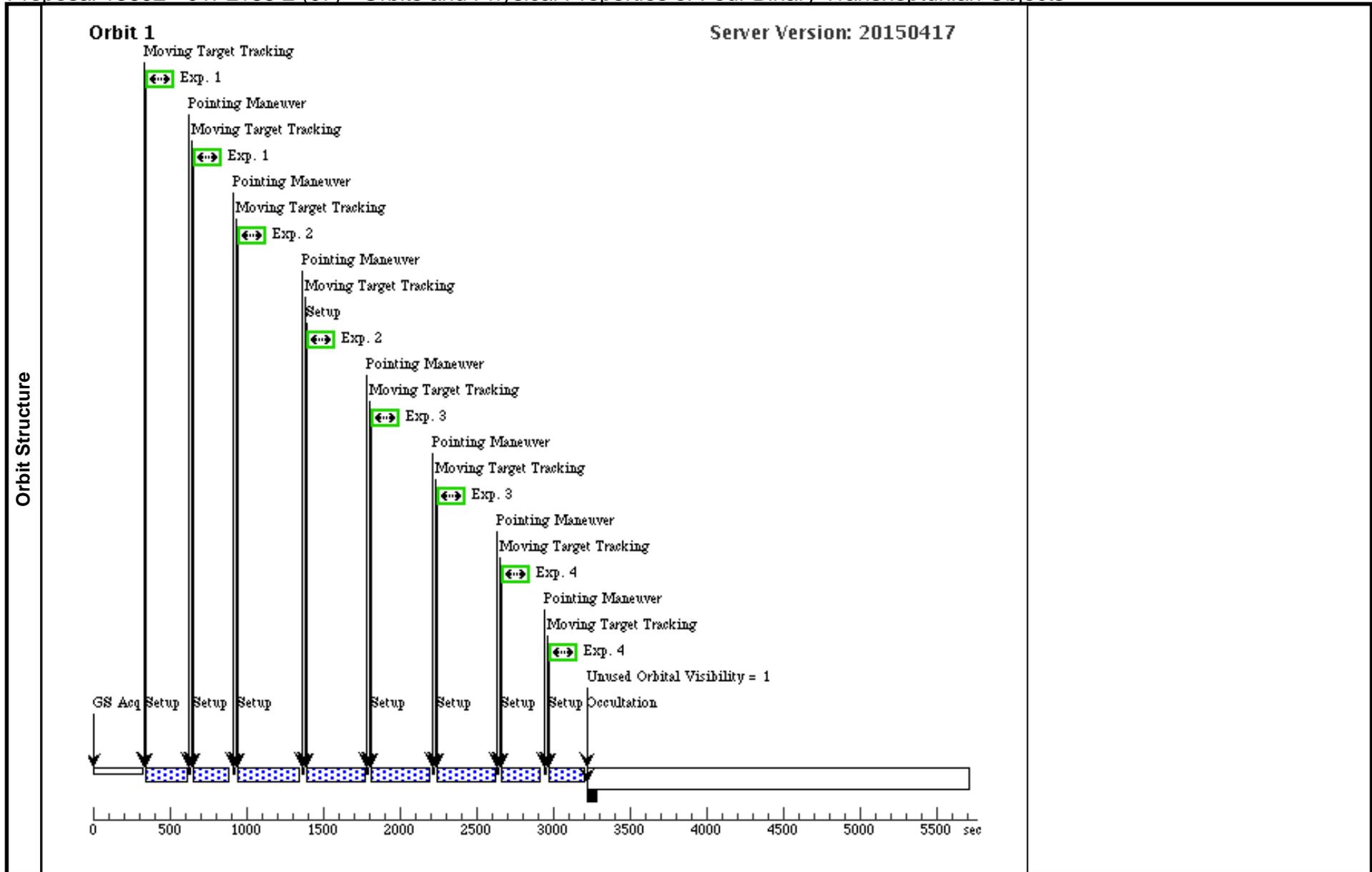
Visit	Proposal 13692, 01FL185 1 (06), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%: BETWEEN 20-APR-2015:00:00:00 AND 05-MAY-2015:00:00:00									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2), (3), (4)				
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(4)	2001-FL185	TYPE=ASTEROID,A=44.1762198800 00,E=0.077025880000,I=3.558740000 000,O=75.419440000000,W=66.66114 0000000,M=15.185210000000,EQUIN OX=J2000,EPOCH=22-MAR- 2001,EpochTimeScale=UTC <i>Comments: Positional uncertainty as of summer 2015 is 1.2 arcsec.</i>				EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG -.1582,0 .0289867; GS ACQ SCENARI O BASE1B3	Pattern 1, Exps 1-1 i n 01FL185 1 (06) (1)	195 Secs (390 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	CR-SPLIT=NO	POS TARG -0.1532 56,-0.144537	Pattern 1, Exps 2-2 i n 01FL185 1 (06) (1)	340 Secs (680 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	CR-SPLIT=NO	POS TARG 0.05418 35,0.0385166	Pattern 1, Exps 3-3 i n 01FL185 1 (06) (1)	340 Secs (680 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG 0.04943 75,-0.145331	Pattern 1, Exps 4-4 i n 01FL185 1 (06) (1)	195 Secs (390 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 13692 - 01FL185 2 (07) - Orbits and Physical Properties of Four Binary Transneptunian Objects

Thu May 21 01:04:08 GMT 2015

Visit	Proposal 13692, 01FL185 2 (07), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%									
	#	Primary Pattern	Secondary Pattern	Exposures						
Patterns	(1)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	(1), (2), (3), (4)						
	Solar System Targets									
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(4)	2001-FL185	TYPE=ASTEROID,A=44.1762198800 00,E=0.077025880000,I=3.558740000 000,O=75.419440000000,W=66.66114 0000000,M=15.185210000000,EQUIN OX=J2000,EPOCH=22-MAR- 2001,EpochTimeScale=UTC <i>Comments: Positional uncertainty as of summer 2015 is 1.2 arcsec.</i>				EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG -.1582,0 .0289867	Pattern 1, Exps 1-1 i n 01FL185 2 (07) (1)	195 Secs (390 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	2		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F438W	CR-SPLIT=NO; FLASH=7	POS TARG -0.1532 56,-0.144537	Pattern 1, Exps 2-2 i n 01FL185 2 (07) (1)	335 Secs (670 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F438W	CR-SPLIT=NO; FLASH=7	POS TARG 0.05418 35,0.0385166	Pattern 1, Exps 3-3 i n 01FL185 2 (07) (1)	335 Secs (670 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG 0.04943 75,-0.145331	Pattern 1, Exps 4-4 i n 01FL185 2 (07) (1)	195 Secs (390 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]



Proposal 13692 - 01FL185 3 (08) - Orbits and Physical Properties of Four Binary Transneptunian Objects

Thu May 21 01:04:09 GMT 2015

Visit	Proposal 13692, 01FL185 3 (08), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false					(1), (2), (3), (4)	
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(4)	2001-FL185	TYPE=ASTEROID,A=44.1762198800 00,E=0.077025880000,I=3.558740000 000,O=75.419440000000,W=66.66114 0000000,M=15.185210000000,EQUIN OX=J2000,EPOCH=22-MAR- 2001,EpochTimeScale=UTC <i>Comments: Positional uncertainty as of summer 2015 is 1.2 arcsec.</i>				EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG -.1582,0 .0289867	Pattern 1, Exps 1-1 i n 01FL185 3 (08) (1)	195 Secs (390 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	CR-SPLIT=NO	POS TARG -0.1532 56,-0.144537	Pattern 1, Exps 2-2 i n 01FL185 3 (08) (1)	340 Secs (680 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W	CR-SPLIT=NO	POS TARG 0.05418 35,0.0385166	Pattern 1, Exps 3-3 i n 01FL185 3 (08) (1)	340 Secs (680 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4		(4) 2001-FL185	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F606W	CR-SPLIT=NO	POS TARG 0.04943 75,-0.145331	Pattern 1, Exps 4-4 i n 01FL185 3 (08) (1)	195 Secs (390 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]

