



11715 - The Luminous Galactic Cepheid RS Puppis: A Geometric Distance from its Nested Light Echoes

Cycle: 17, 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>
01	(4) RS-PUP-NEBULA	ACS/WFC	1	22-Feb-2010 21:10:58.0	yes
02	(4) RS-PUP-NEBULA	ACS/WFC	1	22-Feb-2010 21:11:03.0	yes
03	(4) RS-PUP-NEBULA	ACS/WFC	1	22-Feb-2010 21:11:07.0	yes
04	(4) RS-PUP-NEBULA	ACS/WFC	1	22-Feb-2010 21:11:10.0	yes
05	(4) RS-PUP-NEBULA	ACS/WFC	1	22-Feb-2010 21:11:14.0	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>
06	(4) RS-PUP-NEBULA	ACS/WFC	1	22-Feb-2010 21:11:17.0	yes
07	(4) RS-PUP-NEBULA	ACS/WFC	1	22-Feb-2010 21:11:20.0	yes
08	(2) PSF-BLUE	ACS/WFC	1	22-Feb-2010 21:11:24.0	yes
09	(3) PSF-RED	ACS/WFC	1	22-Feb-2010 21:11:27.0	yes
10	(1) RS-PUP	ACS/WFC	1	22-Feb-2010 21:11:30.0	yes

10 Total Orbits Used

ABSTRACT

RS Puppis is one of the most luminous Cepheids in the Milky Way ($P = 41.4$ days) and an analog of the bright Cepheids used to measure extragalactic distances. An accurate distance would help anchor the zero-point of the bright end of the period-luminosity relation, but at a distance of about 2 kpc it is too far away for a trigonometric parallax with existing instrumentation.

RS Pup is unique in being surrounded by a reflection nebula, whose brightness varies as pulses of light from the Cepheid propagate outwards. Members of our team have used ground-based imaging of the nebula to derive phase lags in the light variations of individual features in the nebula, and have inferred a seemingly very precise geometric distance to the star. However, there is an unavoidable ambiguity involving the cycle counts, which was resolved by assuming that the features lie in the plane of the sky. If this assumption is incorrect, a large systematic error would be introduced into the distance measurement.

We show that polarimetric imaging using the high spatial resolution of ACS/WFC and its ability to image close to the star can resolve this ambiguity and yield a reliable geometric distance to RS Pup. We will also obtain a wide-field multicolor image of the nebula, in order to study its morphology and the mass-loss history of the Cepheid.

OBSERVING DESCRIPTION

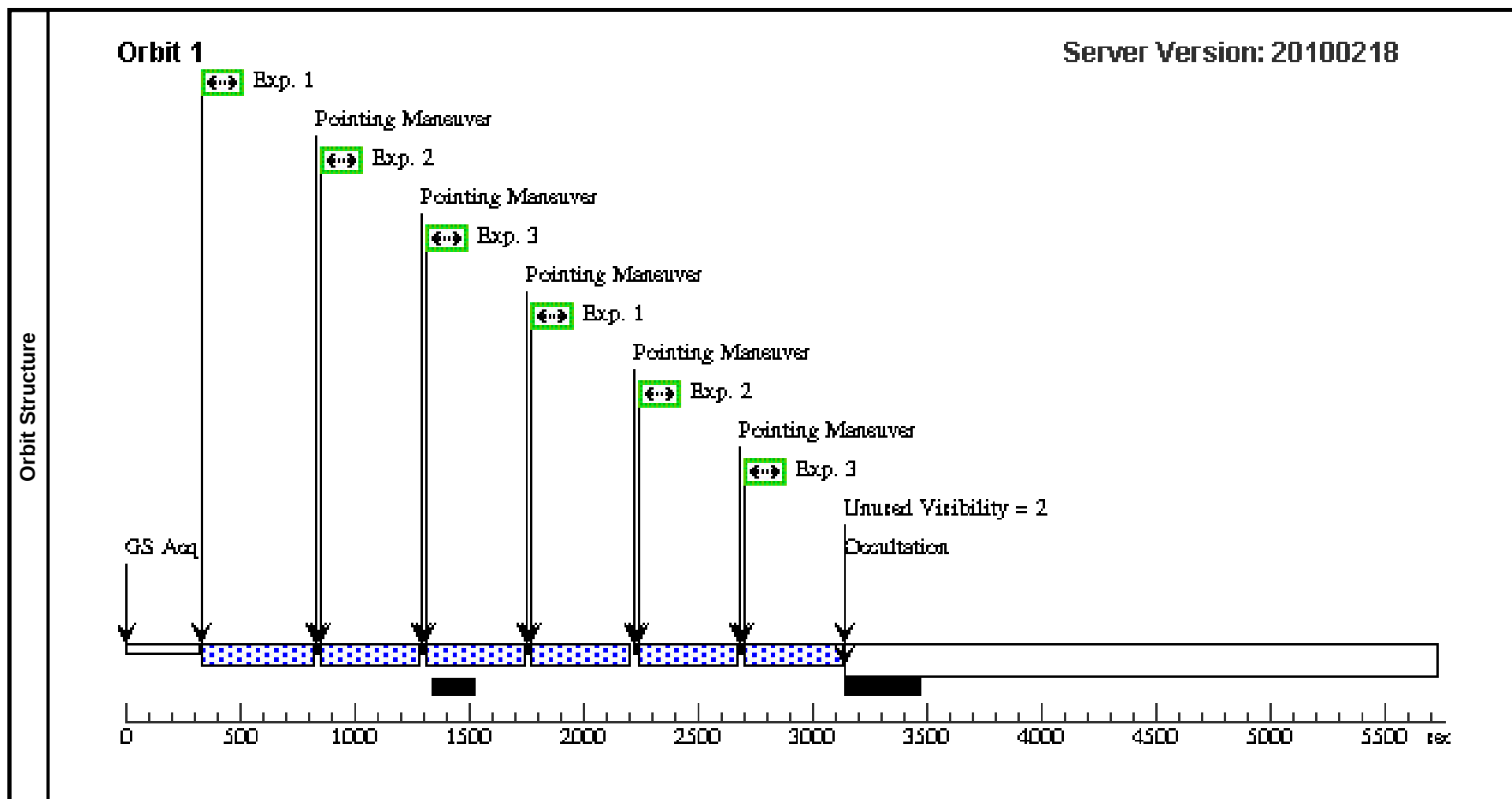
We will obtain polarimetric images of the reflection nebulosity around the Cepheid RS Puppis, using ACS/WFC with F606W and the three polarizers. We use a simple 2-point dither pattern. The 7 polarimetry visits will be spaced at $1/7$ of the Cepheid pulsation period of 41.4 days, in order to have an equally spaced sampling of the reflected light curve.

We will also obtain similar images of two nearby PSF stars, in order to be able to subtract the wings of the bright Cepheid image from the frames. These 2 stars have been chosen to sample the color range covered by the Cepheid during its pulsation period, and the observations of the blue and red PSF stars will be made close to the times at which the Cepheid is bluest and reddest, respectively.

We will devote one orbit to obtaining direct (unpolarized) images in B and V, in order to study the morphology of the nebula. We will place the nebula in the center of the ACS/WFC field of view, and use a 2-point dither to cover the inter-chip gap.

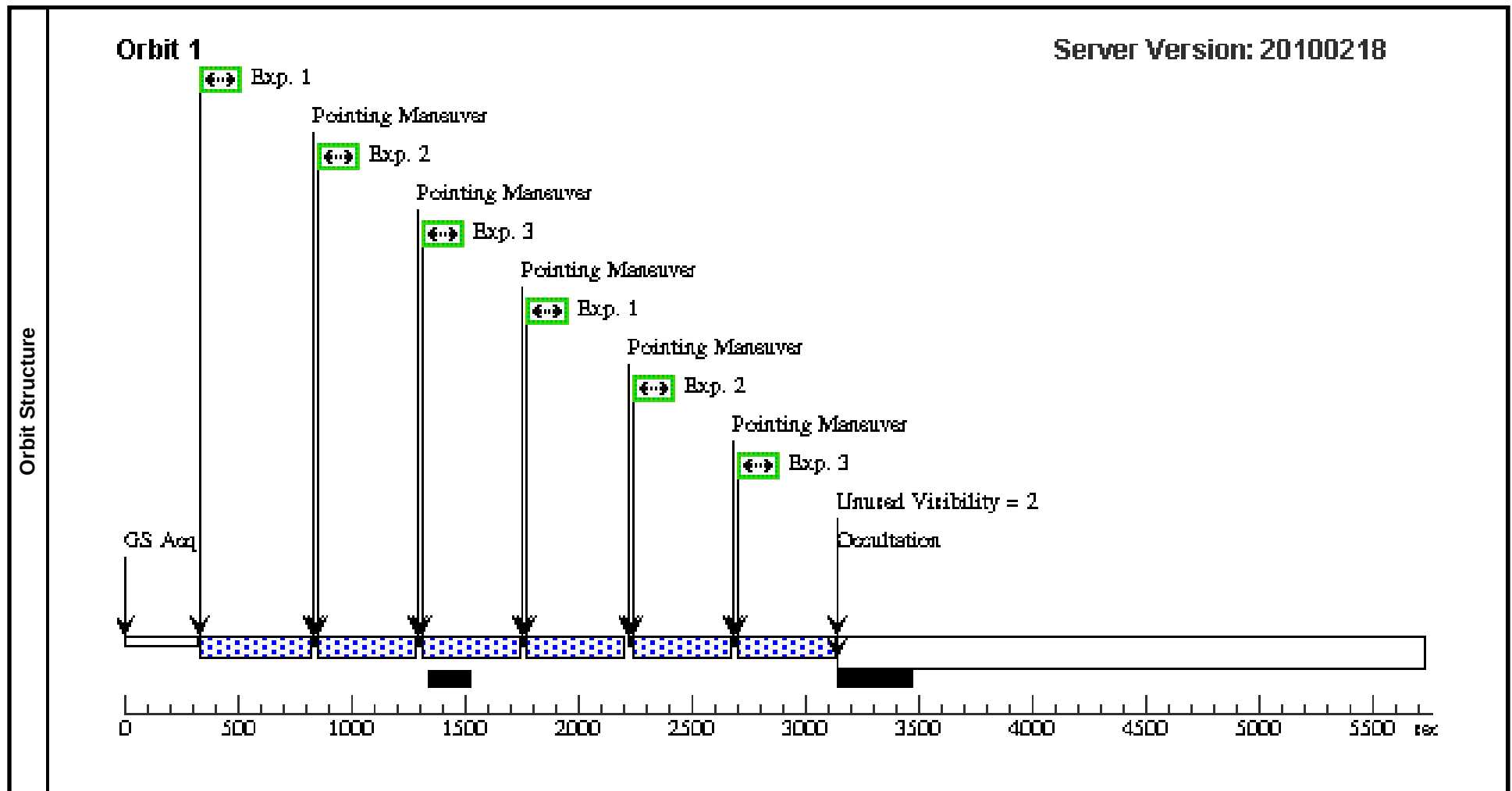
Proposal 11715 - Visit 01 - The Luminous Galactic Cepheid RS Puppis: A Geometric Distance from its Nested Light Echoes

Visit	Proposal 11715, Visit 01, implementation										Tue Feb 23 02:11:33 GMT 2010		
	Diagnostic Status: No Diagnostics												
	Scientific Instruments: ACS/WFC												
	Special Requirements: SCHED 70%; BETWEEN 15-NOV-2009:00:00:00 AND 05-MAY-2010:00:00:00												
	Comments: The BETWEEN requirement is added to ensure that the observations are done in spring 2009 and not at the next opportunity in 2010.												
Patterns	#	Primary Pattern					Secondary Pattern					Exposures	
	(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.364 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=true								(1-3)
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections			Fluxes		Miscellaneous		
	(4)	RS-PUP-NEBULA		RA: 08 13 3.9000 (123.2662500d)		Proper Motion RA: -0.000261s/yr			V=7		Reference Frame: ICRS		
		Alt Name1: HD68860		Dec: -34 35 8.00 (-34.58556d)		Proper Motion Dec: 0.00281"/yr							
				Equinox: J2000		Epoch of Position: 2000							
	Comments: These coordinates are for a location slightly SW of RS Pup itself, where ground-based observations have indicated that the linear polarization is high.												
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit	
	1		(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL0V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs [=>234.0 Secs (Pattern 1)] [=>234.0 Secs (Pattern 2)]		[1]	
	2		(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL60V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs [=>234.0 Secs (Pattern 1)] [=>234.0 Secs (Pattern 2)]		[1]	
	3		(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL120V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs [=>234.0 Secs (Pattern 1)] [=>234.0 Secs (Pattern 2)]		[1]	



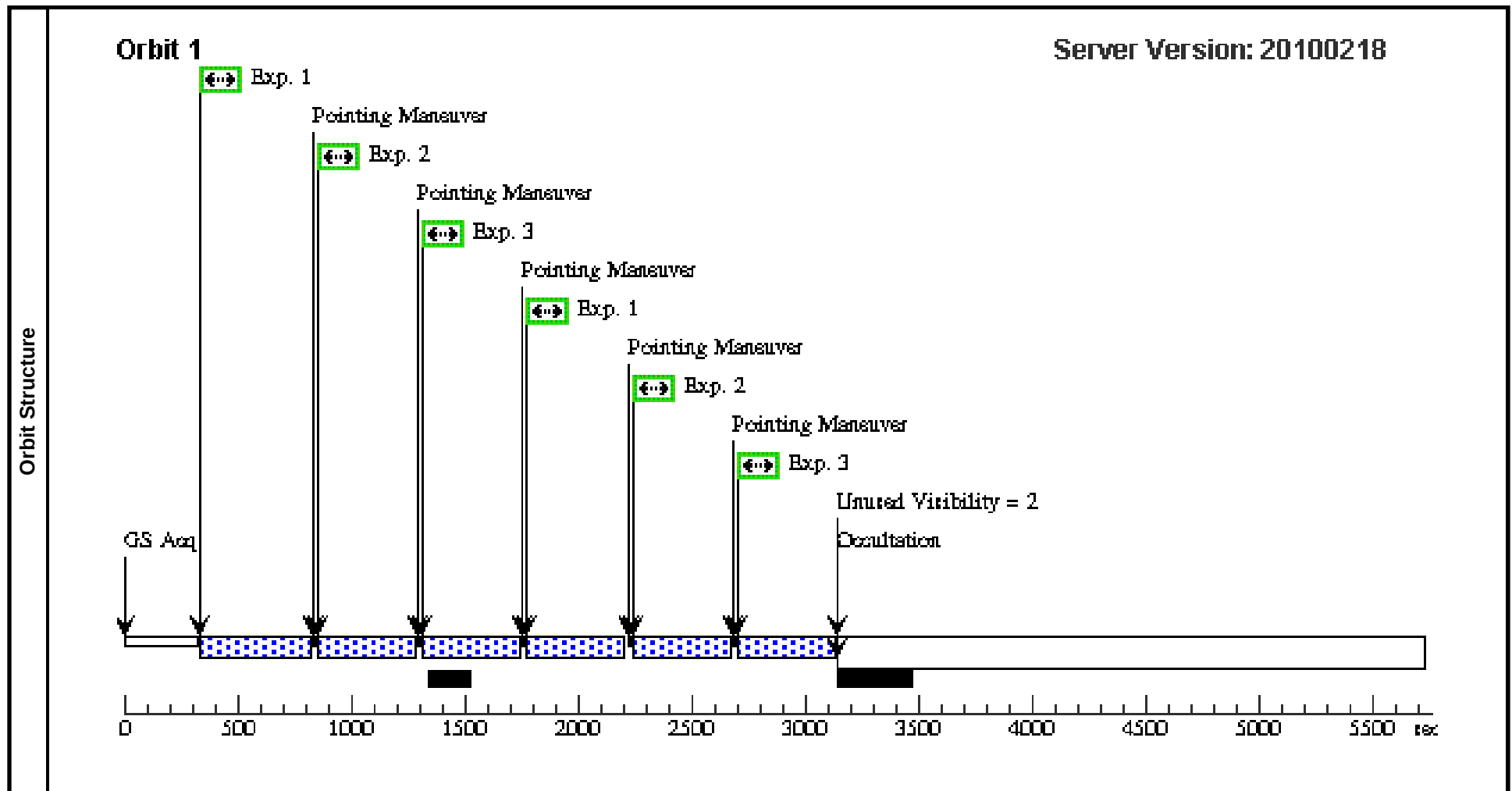
Proposal 11715 - Visit 02 - The Luminous Galactic Cepheid RS Puppis: A Geometric Distance from its Nested Light Echoes

Visit	Proposal 11715, Visit 02, implementation										Tue Feb 23 02:11:34 GMT 2010		
	Diagnostic Status: No Diagnostics												
	Scientific Instruments: ACS/WFC												
	Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 01 BY 5.76 D TO 6.08 D												
	Comments: The seven visits are spaced at 1/7 of the 41.44-day Cepheid period, or 5.92 days, with a window 0.33 day wide.												
Patterns	#	Primary Pattern					Secondary Pattern					Exposures	
	(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.364 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=true								(1-3)
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections			Fluxes		Miscellaneous		
	(4)	RS-PUP-NEBULA		RA: 08 13 3.9000 (123.2662500d)		Proper Motion RA: -0.000261s/yr			V=7		Reference Frame: ICRS		
		Alt Name1: HD68860		Dec: -34 35 8.00 (-34.58556d)		Proper Motion Dec: 0.00281"/yr							
		Equinox: J2000		Epoch of Position: 2000									
Comments: These coordinates are for a location slightly SW of RS Pup itself, where ground-based observations have indicated that the linear polarization is high.													
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit	
	1	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL0V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs		[1]		
									[==>234.0 Secs (Pattern 1)]				
									[==>234.0 Secs (Pattern 2)]				
	2	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL60V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs		[1]		
									[==>234.0 Secs (Pattern 1)]				
									[==>234.0 Secs (Pattern 2)]				
3	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL120V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs		[1]			
								[==>234.0 Secs (Pattern 1)]					
								[==>234.0 Secs (Pattern 2)]					



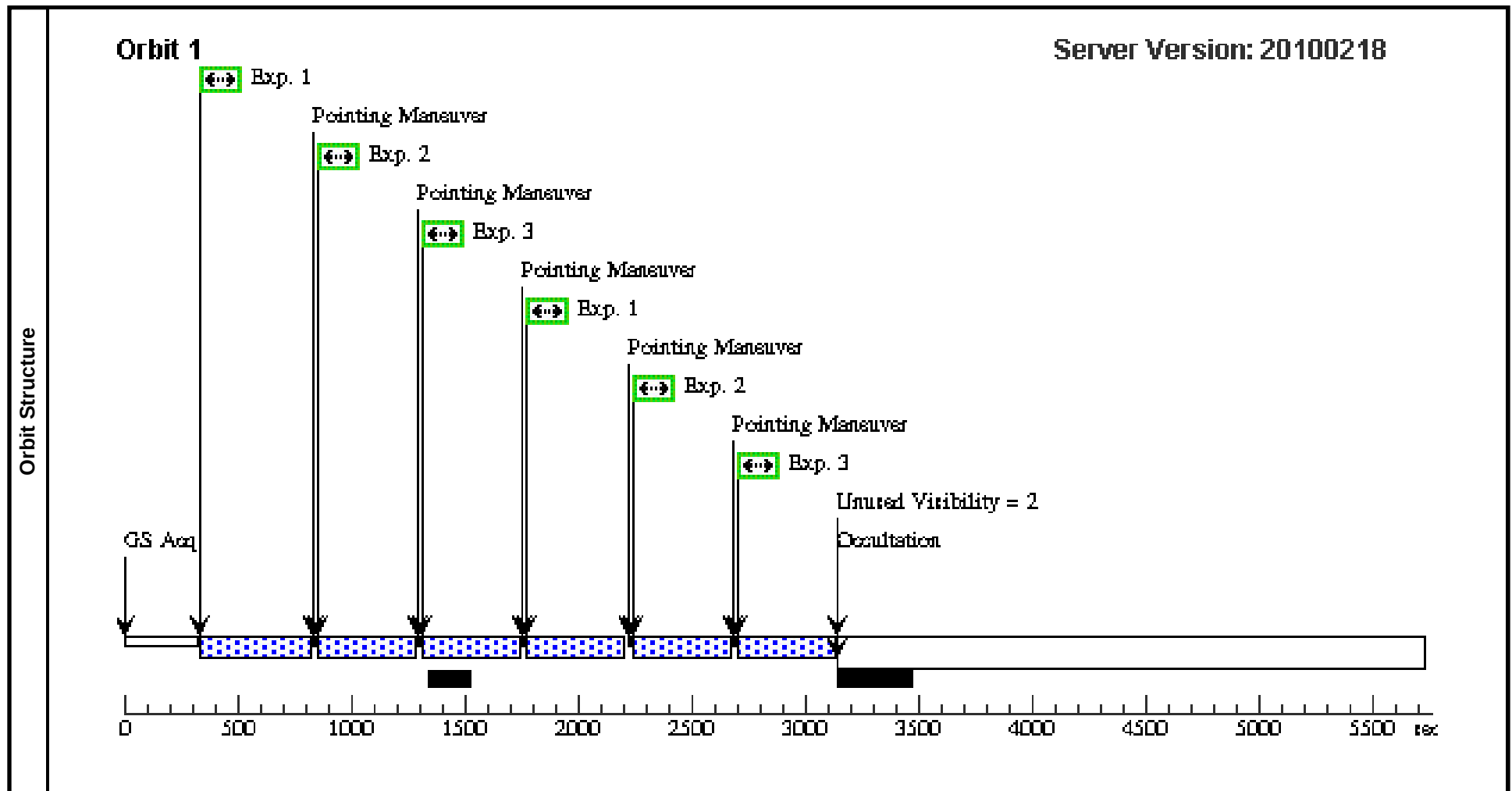
Proposal 11715 - Visit 03 - The Luminous Galactic Cepheid RS Puppis: A Geometric Distance from its Nested Light Echoes

Visit	Proposal 11715, Visit 03, implementation										Tue Feb 23 02:11:34 GMT 2010		
	Diagnostic Status: No Diagnostics												
	Scientific Instruments: ACS/WFC												
	Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 01 BY 11.67 D TO 12.00 D												
	Comments: The seven visits are spaced at 1/7 of the 41.44-day Cepheid period, or 5.92 days, with a window 0.33 day wide.												
Patterns	#	Primary Pattern					Secondary Pattern					Exposures	
	(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.364 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=true							(1-3)	
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous			
	(4)	RS-PUP-NEBULA		RA: 08 13 3.9000 (123.2662500d)		Proper Motion RA: -0.000261s/yr		V=7		Reference Frame: ICRS			
		Alt Name1: HD68860		Dec: -34 35 8.00 (-34.58556d)		Proper Motion Dec: 0.00281"/yr							
				Equinox: J2000		Epoch of Position: 2000							
Comments: These coordinates are for a location slightly SW of RS Pup itself, where ground-based observations have indicated that the linear polarization is high.													
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit	
	1		(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL0V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs			
										[==>234.0 Secs (Pattern 1)]		[1]	
										[==>234.0 Secs (Pattern 2)]			
	2		(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL60V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs			
										[==>234.0 Secs (Pattern 1)]		[1]	
										[==>234.0 Secs (Pattern 2)]			
3		(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL120V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs				
									[==>234.0 Secs (Pattern 1)]		[1]		
									[==>234.0 Secs (Pattern 2)]				



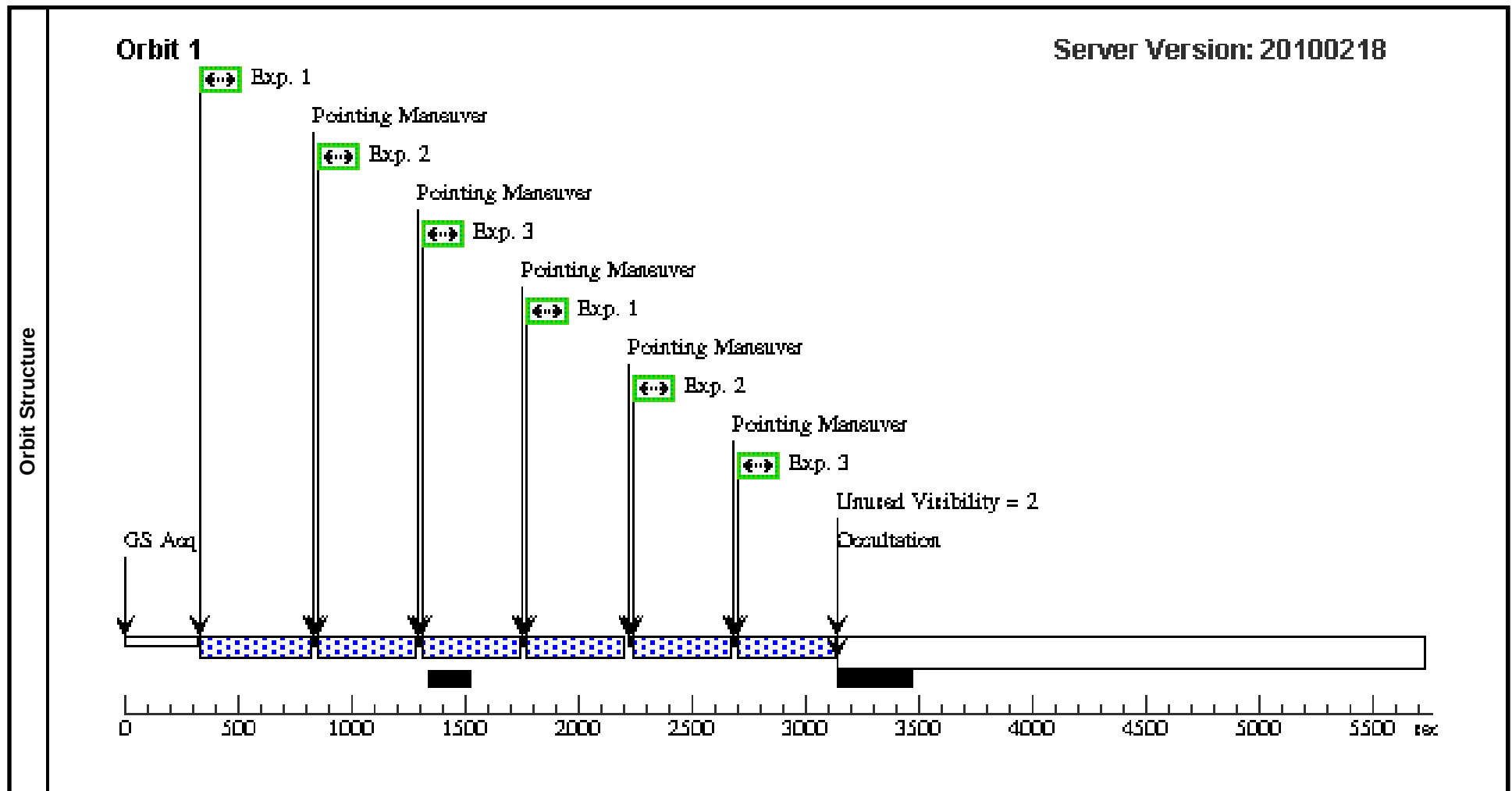
Proposal 11715 - Visit 04 - The Luminous Galactic Cepheid RS Puppis: A Geometric Distance from its Nested Light Echoes

Visit	Proposal 11715, Visit 04, implementation										Tue Feb 23 02:11:35 GMT 2010		
	Diagnostic Status: No Diagnostics												
	Scientific Instruments: ACS/WFC												
	Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 01 BY 16.59 D TO 17.92 D												
	Comments: The seven visits are spaced at 1/7 of the 41.44-day Cepheid period, or 5.92 days, with a window 0.33 day wide.												
Patterns	#	Primary Pattern					Secondary Pattern					Exposures	
	(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.364 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=true								(1-3)
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections			Fluxes		Miscellaneous		
	(4)	RS-PUP-NEBULA		RA: 08 13 3.9000 (123.2662500d)		Proper Motion RA: -0.000261s/yr			V=7		Reference Frame: ICRS		
		Alt Name1: HD68860		Dec: -34 35 8.00 (-34.58556d)		Proper Motion Dec: 0.00281"/yr							
		Equinox: J2000		Epoch of Position: 2000									
Comments: These coordinates are for a location slightly SW of RS Pup itself, where ground-based observations have indicated that the linear polarization is high.													
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit	
	1	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL0V	CR-SPLIT=NO			Pattern 1, Exps 1-3 (1)	300 Secs			
										[==>234.0 Secs (Pattern 1)]			
										[==>234.0 Secs (Pattern 2)]		[1]	
	2	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL60V	CR-SPLIT=NO			Pattern 1, Exps 1-3 (1)	300 Secs			
										[==>234.0 Secs (Pattern 1)]			
[==>234.0 Secs (Pattern 2)]										[1]			
3	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL120V	CR-SPLIT=NO			Pattern 1, Exps 1-3 (1)	300 Secs				
									[==>234.0 Secs (Pattern 1)]				
									[==>234.0 Secs (Pattern 2)]		[1]		



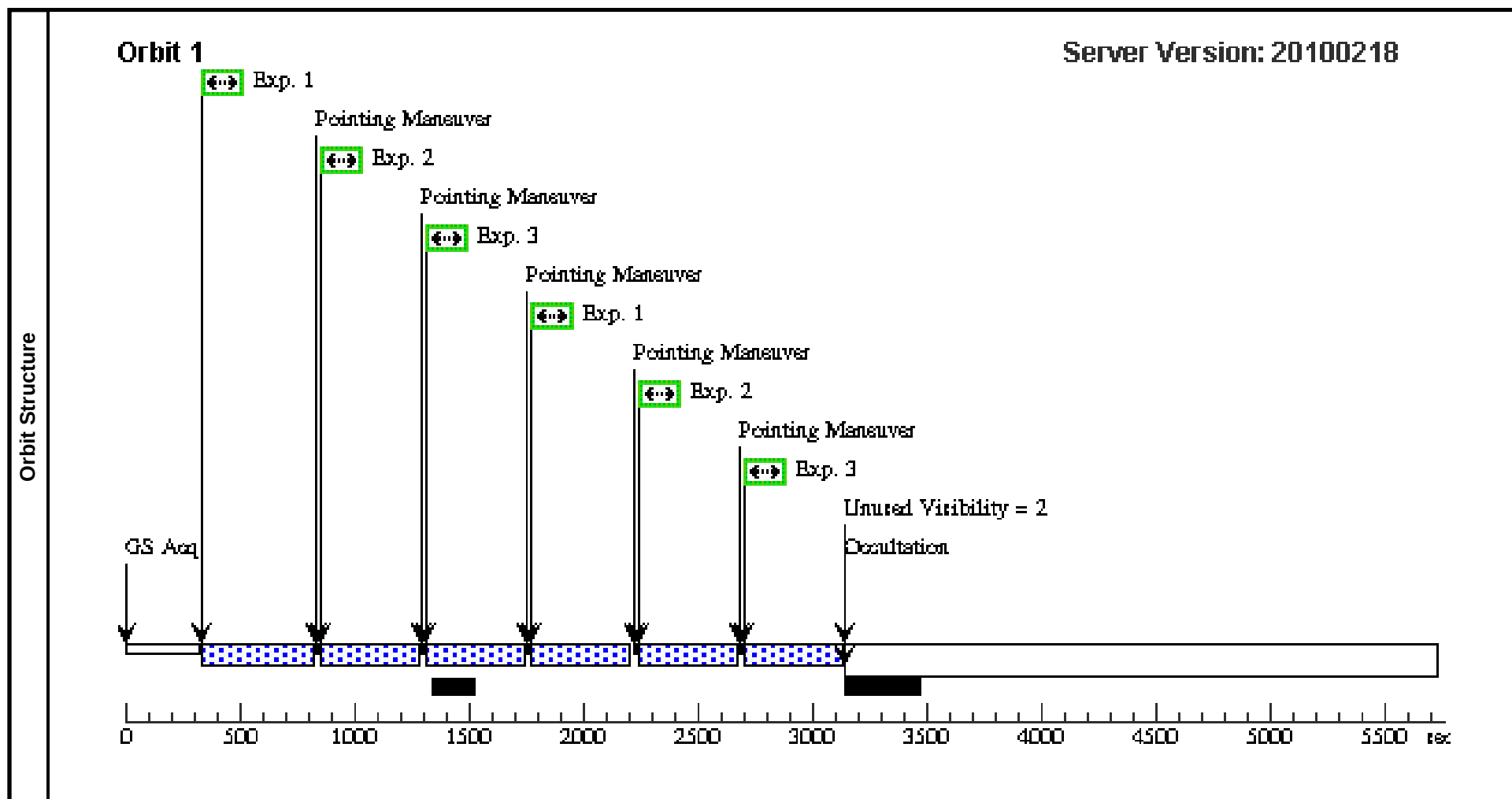
Proposal 11715 - Visit 05 - The Luminous Galactic Cepheid RS Puppis: A Geometric Distance from its Nested Light Echoes

Visit	Proposal 11715, Visit 05, implementation										Tue Feb 23 02:11:36 GMT 2010		
	Diagnostic Status: No Diagnostics												
	Scientific Instruments: ACS/WFC												
	Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 01 BY 23.51 D TO 23.84 D												
Comments: The seven visits are spaced at 1/7 of the 41.44-day Cepheid period, or 5.92 days, with a window 0.33 day wide.													
Patterns	#	Primary Pattern					Secondary Pattern					Exposures	
	(1)	Pattern Type=ACS-WFC-DITHER-LINE Coordinate Frame=POS-TARG Pattern Orientation=47.23 Purpose=DITHER Angle Between Sides= Number Of Points=2 Center Pattern=true Point Spacing=0.364 Line Spacing=										(1-3)	
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous			
	(4)	RS-PUP-NEBULA		RA: 08 13 3.9000 (123.2662500d)		Proper Motion RA: -0.000261s/yr		V=7		Reference Frame: ICRS			
		Alt Name1: HD68860		Dec: -34 35 8.00 (-34.58556d)		Proper Motion Dec: 0.00281"/yr							
		Equinox: J2000		Epoch of Position: 2000									
Comments: These coordinates are for a location slightly SW of RS Pup itself, where ground-based observations have indicated that the linear polarization is high.													
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit		
	1	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC	F606W POL0V	CR-SPLIT=NO			Pattern 1, Exps 1-3 (1)	300 Secs				
									[==>234.0 Secs (Pattern 1)]		[1]		
									[==>234.0 Secs (Pattern 2)]				
	2	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC	F606W POL60V	CR-SPLIT=NO			Pattern 1, Exps 1-3 (1)	300 Secs				
									[==>234.0 Secs (Pattern 1)]		[1]		
									[==>234.0 Secs (Pattern 2)]				
3	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC	F606W POL120V	CR-SPLIT=NO			Pattern 1, Exps 1-3 (1)	300 Secs					
								[==>234.0 Secs (Pattern 1)]		[1]			
								[==>234.0 Secs (Pattern 2)]					



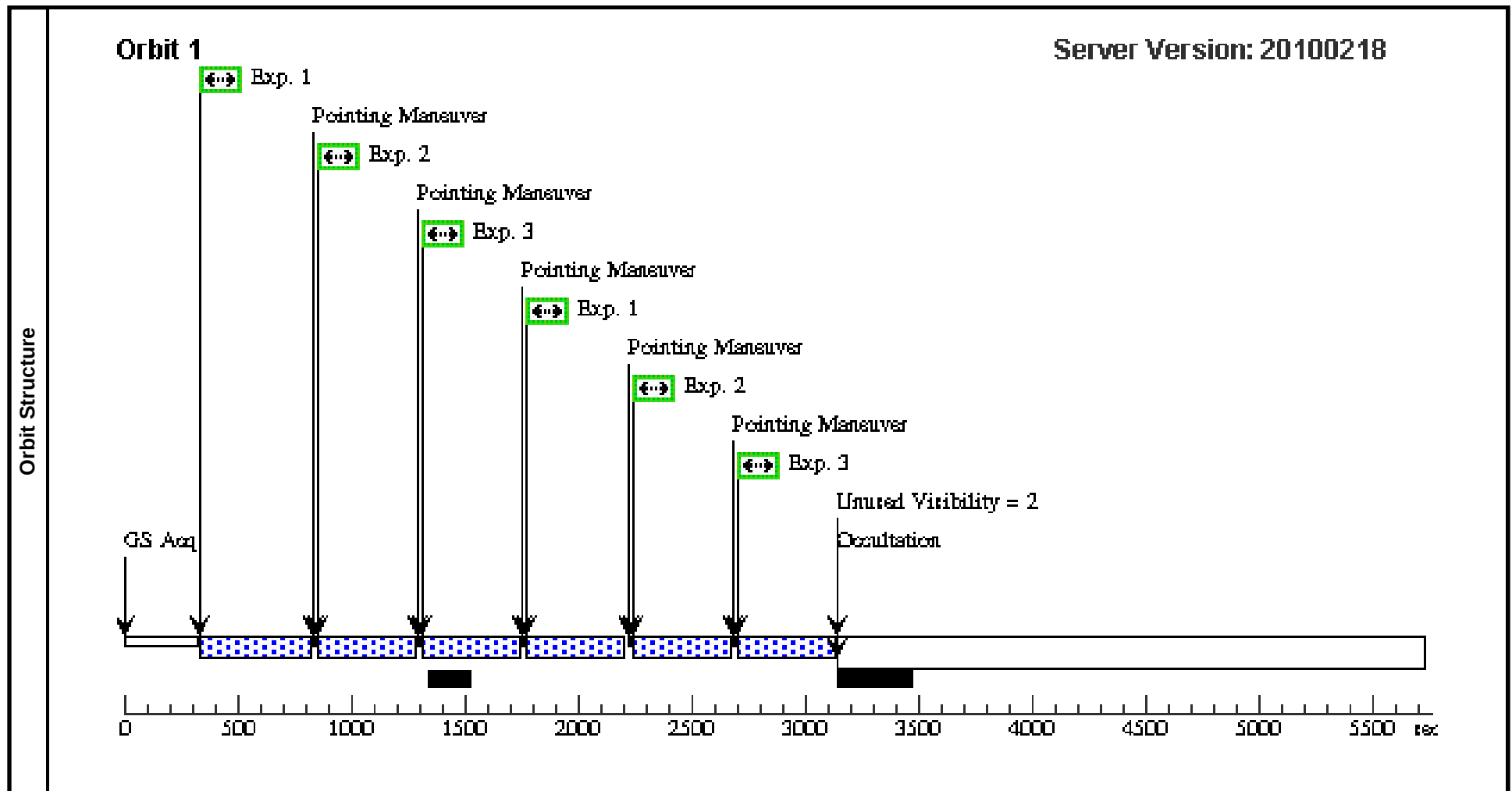
Proposal 11715 - Visit 06 - The Luminous Galactic Cepheid RS Puppis: A Geometric Distance from its Nested Light Echoes

Visit	Proposal 11715, Visit 06, implementation										Tue Feb 23 02:11:37 GMT 2010		
	Diagnostic Status: No Diagnostics												
	Scientific Instruments: ACS/WFC												
	Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 01 BY 29.43 D TO 29.76 D												
	Comments: The seven visits are spaced at 1/7 of the 41.44-day Cepheid period, or 5.92 days, with a window 0.33 day wide.												
Patterns	#	Primary Pattern					Secondary Pattern					Exposures	
	(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.364 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=true								(1-3)
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections			Fluxes		Miscellaneous		
	(4)	RS-PUP-NEBULA		RA: 08 13 3.9000 (123.2662500d)		Proper Motion RA: -0.000261s/yr			V=7		Reference Frame: ICRS		
		Alt Name1: HD68860		Dec: -34 35 8.00 (-34.58556d)		Proper Motion Dec: 0.00281"/yr							
		Equinox: J2000		Epoch of Position: 2000									
Comments: These coordinates are for a location slightly SW of RS Pup itself, where ground-based observations have indicated that the linear polarization is high.													
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit	
	1	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC			F606W POL0V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs			
										[==>234.0 Secs (Pattern 1)]		[1]	
										[==>234.0 Secs (Pattern 2)]			
	2	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC			F606W POL60V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs			
										[==>234.0 Secs (Pattern 1)]		[1]	
										[==>234.0 Secs (Pattern 2)]			
3	(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC			F606W POL120V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs				
									[==>234.0 Secs (Pattern 1)]		[1]		
									[==>234.0 Secs (Pattern 2)]				



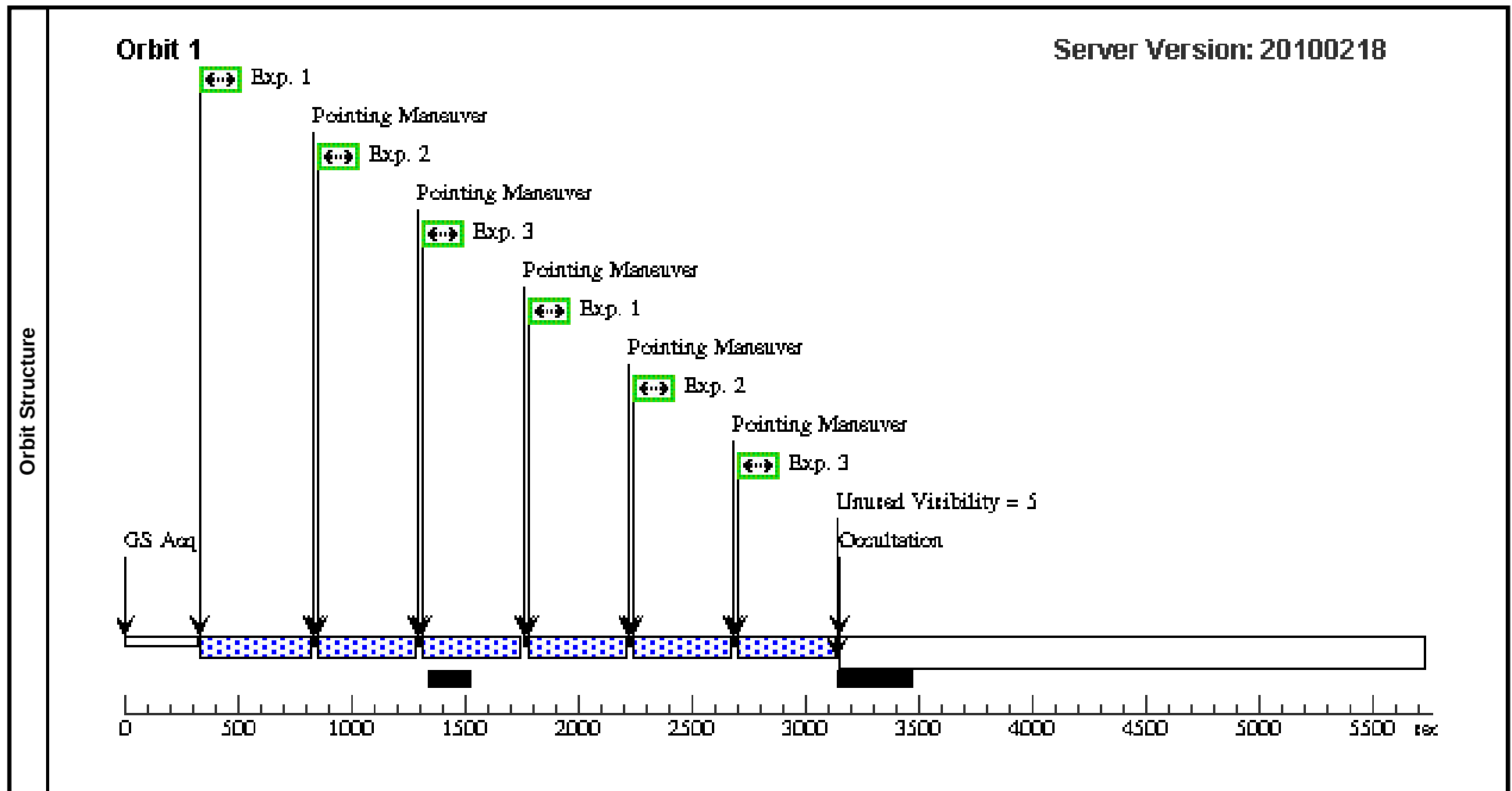
Proposal 11715 - Visit 07 - The Luminous Galactic Cepheid RS Puppis: A Geometric Distance from its Nested Light Echoes

Visit	Proposal 11715, Visit 07, implementation										Tue Feb 23 02:11:37 GMT 2010		
	Diagnostic Status: No Diagnostics												
	Scientific Instruments: ACS/WFC												
	Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 01 BY 35.35 D TO 35.68 D												
	Comments: The seven visits are spaced at 1/7 of the 41.44-day Cepheid period, or 5.92 days, with a window 0.33 day wide.												
Patterns	#	Primary Pattern					Secondary Pattern					Exposures	
	(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.364 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=true							(1-3)	
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous			
	(4)	RS-PUP-NEBULA		RA: 08 13 3.9000 (123.2662500d)		Proper Motion RA: -0.000261s/yr		V=7		Reference Frame: ICRS			
		Alt Name1: HD68860		Dec: -34 35 8.00 (-34.58556d)		Proper Motion Dec: 0.00281"/yr							
				Equinox: J2000		Epoch of Position: 2000							
Comments: These coordinates are for a location slightly SW of RS Pup itself, where ground-based observations have indicated that the linear polarization is high.													
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit	
	1		(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL0V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs			
										[=>234.0 Secs (Pattern 1)]		[1]	
										[=>234.0 Secs (Pattern 2)]			
	2		(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL60V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs			
										[=>234.0 Secs (Pattern 1)]		[1]	
[=>234.0 Secs (Pattern 2)]													
3		(4) RS-PUP-NEBUL A	ACS/WFC, ACCUM, WFC		F606W POL120V	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs				
									[=>234.0 Secs (Pattern 1)]		[1]		
									[=>234.0 Secs (Pattern 2)]				



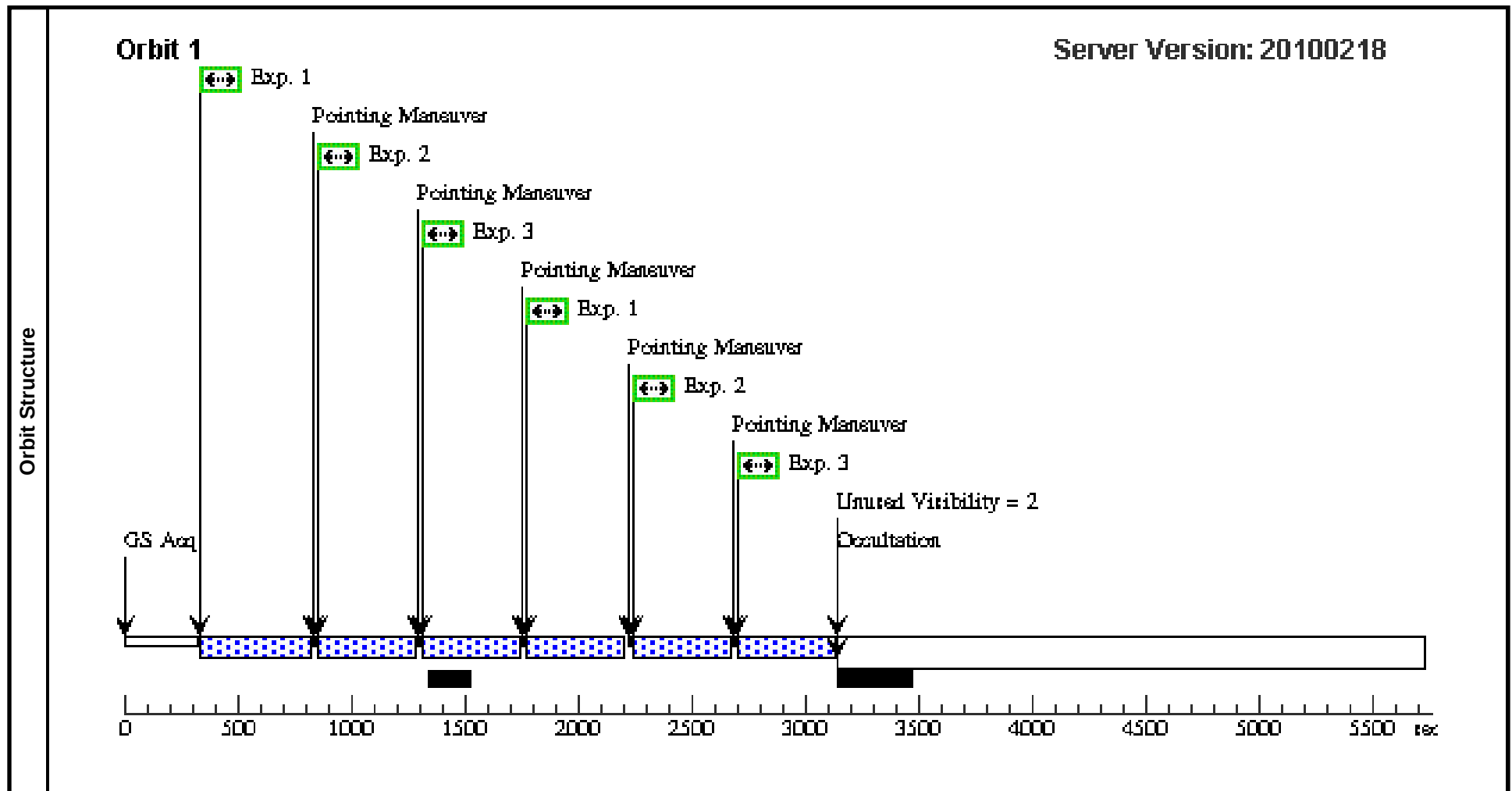
Proposal 11715 - Visit 08 - The Luminous Galactic Cepheid RS Puppis: A Geometric Distance from its Nested Light Echoes

Visit	Proposal 11715, Visit 08, implementation										Tue Feb 23 02:11:38 GMT 2010		
	Diagnostic Status: No Diagnostics												
	Scientific Instruments: ACS/WFC												
	Special Requirements: SCHED 70%; AFTER 03 BY 0 D TO 4 D												
	Comments: The AFTER requirement is added to ensure this PSF observation is done in the same timeframe as the Cepheid observations.												
Patterns	#	Primary Pattern					Secondary Pattern					Exposures	
	(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.364 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=true							(1-3)	
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections			Fluxes		Miscellaneous		
	(2)	PSF-BLUE		RA: 08 09 36.9913 (122.4041304d)		Proper Motion RA: -0.000362s/yr			V=8.2		Reference Frame: ICRS		
		Alt Name1: HD68111		Dec: -36 50 18.90 (-36.83858d)		Proper Motion Dec: 0.00329"/yr							
				Equinox: J2000		Epoch of Position: 2000							
Comments: Coordinates are offset from the star in order to place it at the same field location that will be used for RS Puppis.													
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit	
	1		(2) PSF-BLUE	ACS/WFC, ACCUM, WFC		F606W	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs			
						POL0V				[==>235.0 Secs (Pattern 1)]			
										[==>235.0 Secs (Pattern 2)]		[1]	
	2		(2) PSF-BLUE	ACS/WFC, ACCUM, WFC		F606W	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs			
						POL60V				[==>235.0 Secs (Pattern 1)]			
										[==>235.0 Secs (Pattern 2)]		[1]	
3		(2) PSF-BLUE	ACS/WFC, ACCUM, WFC		F606W	CR-SPLIT=NO		Pattern 1, Exps 1-3 (1)	300 Secs				
					POL120V				[==>235.0 Secs (Pattern 1)]				
									[==>235.0 Secs (Pattern 2)]		[1]		



Proposal 11715 - Visit 09 - The Luminous Galactic Cepheid RS Puppis: A Geometric Distance from its Nested Light Echoes

Visit	Proposal 11715, Visit 09, implementation										Tue Feb 23 02:11:38 GMT 2010		
	Diagnostic Status: No Diagnostics												
	Scientific Instruments: ACS/WFC												
	Special Requirements: SCHED 70%; AFTER 01 BY 0 D TO 4 D												
	Comments: The AFTER requirement is added to ensure this PSF observation is done in the same timeframe as the Cepheid observations.												
Patterns	#	Primary Pattern					Secondary Pattern					Exposures	
	(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.364 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=true								(1-3)
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections			Fluxes		Miscellaneous		
	(3)	PSF-RED		RA: 08 27 20.4591 (126.8352462d)		Proper Motion RA: 0.000892s/yr			V=7.6		Reference Frame: ICRS		
		Alt Name1: HD71670		Dec: -34 42 17.28 (-34.70480d)		Proper Motion Dec: -0.01090"/yr							
				Equinox: J2000		Epoch of Position: 2000							
Comments: Coordinates are offset from the star in order to place it at the same field location that will be used for RS Puppis.													
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit	
	1	(3) PSF-RED	ACS/WFC, ACCUM, WFC	F606W POL0V	CR-SPLIT=NO			Pattern 1, Exps 1-3 (1)	300 Secs				
									[==>234.0 Secs (Pattern 1)]		[1]		
									[==>234.0 Secs (Pattern 2)]				
	2	(3) PSF-RED	ACS/WFC, ACCUM, WFC	F606W POL60V	CR-SPLIT=NO			Pattern 1, Exps 1-3 (1)	300 Secs				
									[==>234.0 Secs (Pattern 1)]		[1]		
									[==>234.0 Secs (Pattern 2)]				
3	(3) PSF-RED	ACS/WFC, ACCUM, WFC	F606W POL120V	CR-SPLIT=NO			Pattern 1, Exps 1-3 (1)	300 Secs					
								[==>234.0 Secs (Pattern 1)]		[1]			
								[==>234.0 Secs (Pattern 2)]					



Proposal 11715 - Visit 10 - The Luminous Galactic Cepheid RS Puppis: A Geometric Distance from its Nested Light Echoes

Visit	Proposal 11715, Visit 10, implementation										Tue Feb 23 02:11:39 GMT 2010		
	Diagnostic Status: Warning												
	Scientific Instruments: ACS/WFC												
	Special Requirements: SAME ORIENT AS 01; BEFORE 01-JUN-2010:00:00:00												
Comments: This is the unpolarized BV image of the RS Pup nebula.													
Diagnostics	(Exposure 1 (Pattern 2, Exps 1-2) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes												
	(Exposure 2 (Pattern 2, Exps 1-2) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes												
Patterns	#	Primary Pattern					Secondary Pattern					Exposures	
	(2)	Pattern Type=ACS-WFC-DITHER-LINE		Coordinate Frame=POS-TARG							(1-2)		
		Purpose=DITHER		Pattern Orientation=85.27									
		Number Of Points=2		Angle Between Sides=									
		Point Spacing=3.011		Center Pattern=true									
		Line Spacing=											
Fixed Targets	#	Name		Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous			
	(1)	RS-PUP		RA: 08 13 4.2160 (123.2675667d)		Proper Motion RA: -0.000261s/yr		V=7		Reference Frame: ICRS			
		Alt Name1: HD68860		Dec: -34 34 42.70 (-34.57853d)		Proper Motion Dec: 0.00281"/yr							
				Equinox: J2000		Epoch of Position: 2000							
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit	
	1		(1) RS-PUP	ACS/WFC, ACCUM, WFCENTER		F435W	CR-SPLIT=NO	POS TARG 0,1.5	Pattern 2, Exps 1-2 (2)	340 Secs			
										[==>647.0 Secs (Pattern 1)]		[1]	
										[==>647.0 Secs (Pattern 2)]			
	2		(1) RS-PUP	ACS/WFC, ACCUM, WFCENTER		F606W	CR-SPLIT=NO	POS TARG 0,1.5	Pattern 2, Exps 1-2 (2)	400 Secs			
									[==>(Pattern 1)]		[1]		
									[==>(Pattern 2)]				

