



17836 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Cycle: 32, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>
Dr. Nathan Smith (PI) (Contact)	University of Arizona
Dr. Megan Reiter (CoI)	Rice University
Dr. Jon A. Morse (CoI)	California Institute of Technology

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) N3372-TR15	ACS/WFC WFC3/UVIS	2	19-Aug-2025 11:00:17.0	yes
02	(3) N3372-POS20	ACS/WFC WFC3/UVIS	1	19-Aug-2025 11:00:18.0	yes
03	(4) N3372-POS21	ACS/WFC WFC3/UVIS	2	19-Aug-2025 11:00:19.0	yes
04	(5) N3372-POS22	ACS/WFC	1	19-Aug-2025 11:00:19.0	yes
05	(6) N3372-POS24	ACS/WFC	1	19-Aug-2025 11:00:20.0	yes
06	(7) N3372-POS25	ACS/WFC	1	19-Aug-2025 11:00:21.0	yes
07	(8) N3372-POS26	ACS/WFC	1	19-Aug-2025 11:00:22.0	yes
08	(9) N3372-POS27	ACS/WFC	1	19-Aug-2025 11:00:22.0	yes
09	(11) N3372-POS30	ACS/WFC	1	19-Aug-2025 11:00:23.0	yes
10	(2) N3372-POS19	ACS/WFC	2	19-Aug-2025 11:00:24.0	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>
11	(12) N3372-POS29	ACS/WFC WFC3/UVIS	1	19-Aug-2025 11:00:25.0	yes
12	(10) N3372-POS28	ACS/WFC	1	19-Aug-2025 11:00:26.0	yes

15 Total Orbits Used

ABSTRACT

A cycle 13 ACS H-alpha imaging survey of the Carina Nebula covered 540 square arcminutes, concentrating on the two 2-3 Myr old central massive star clusters and several surrounding regions. This revealed dozens of protostellar outflows in a region thought to be devoid of active star formation. A 2nd epoch in cycle 21 allowed for the first proper motion (PM) estimates of such a large sample of irradiated jets, and roughly doubled the number of known jets identified via PM. Now we aim to add a 3rd epoch that will double the time baseline for PMs. In addition to improving the precision of PMs (1-2 km/s for point sources; 3 km/s for nebular features), these observations will achieve new goals not possible before: (1) For the first time, we will measure PM of edge-on ionization fronts at the cloud interface, including dust pillars, globules, and filaments. This will directly measure the impact of massive star feedback and will test otherwise ambiguous scenarios of triggered star formation. (2) We will measure PMs of previously discovered jets, but will push this to lower velocities or higher precision, will improve dynamical ages, and will identify many more outflows, thus completing the census of their mass-loss histories. (3) For faster jets, 3 epochs will reveal hydrodynamic evolution and deceleration of the shock fronts, critical for quantifying the mass-loss history. (4) While Gaia provides PMs for brighter stars, this H-alpha survey will measure PMs and H-alpha flux variability for low-mass pre-main-sequence stars (i.e. T Tauri stars) that are too faint for Gaia. This will yield the most complete census of stellar and gas dynamics in a massive OB association.

OBSERVING DESCRIPTION

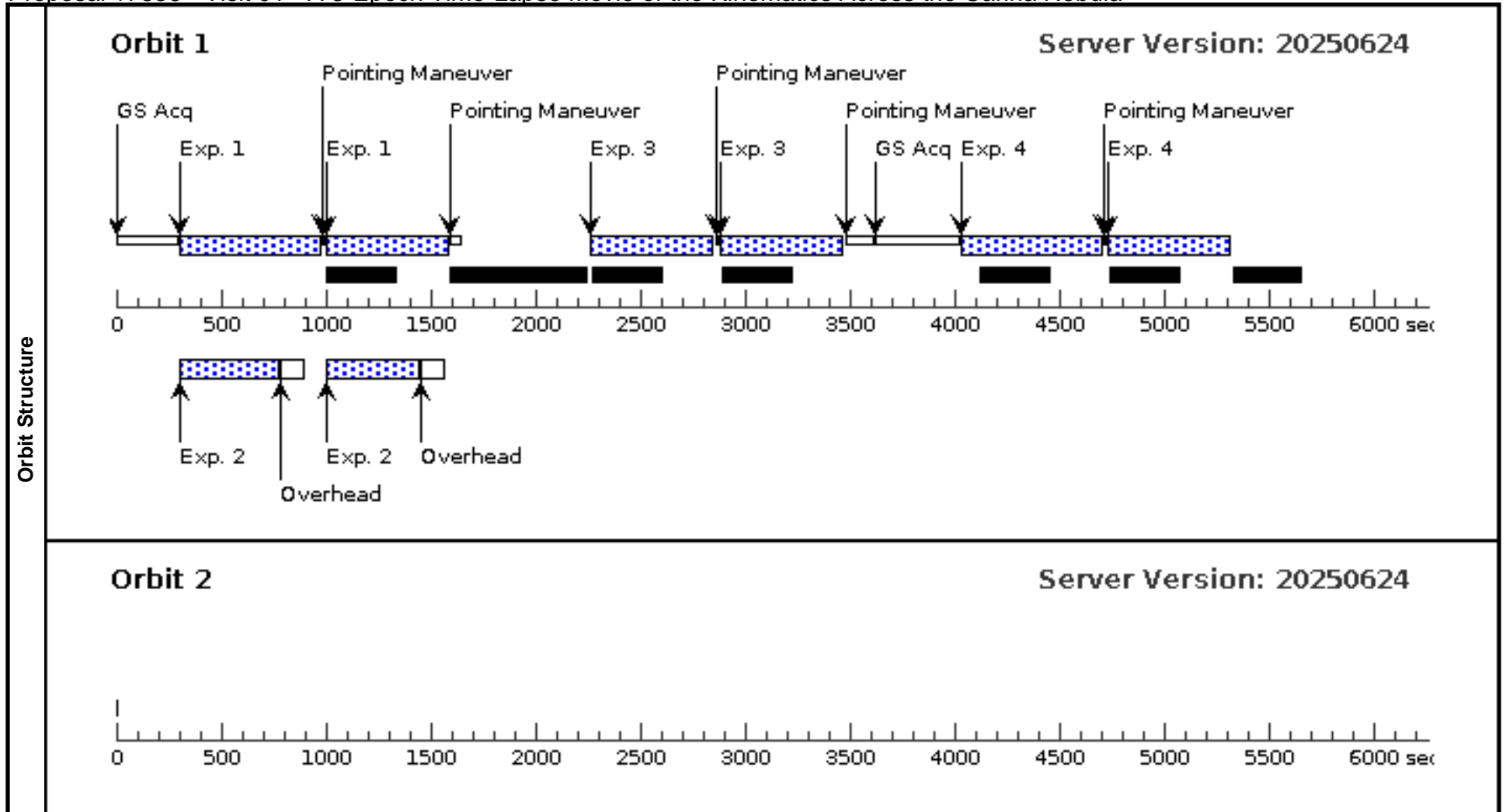
These ACS/WFC primary exposures in the F658N filter are meant to duplicate, as closely as possible, previous observations made in Cycles 13/14 and 21/22 for the goal of measuring proper motions of both stars and nebular features. Each position is an individual visit using 1 CVZ orbit, and approximately the same dither pattern to cover the ACS chip gap and extend spatial coverage.

WFC3 parallel exposures (very limited because of buffer dumps) aim to extend the coverage in the F656N filter, or to use WFC3-IR where it overlaps with an ACS/WFC primary pointing. The roll angles are very tightly constrained in order to match as closely as possible the previous observations.

Proposal 17836 - Visit 01 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:26 GMT 2025

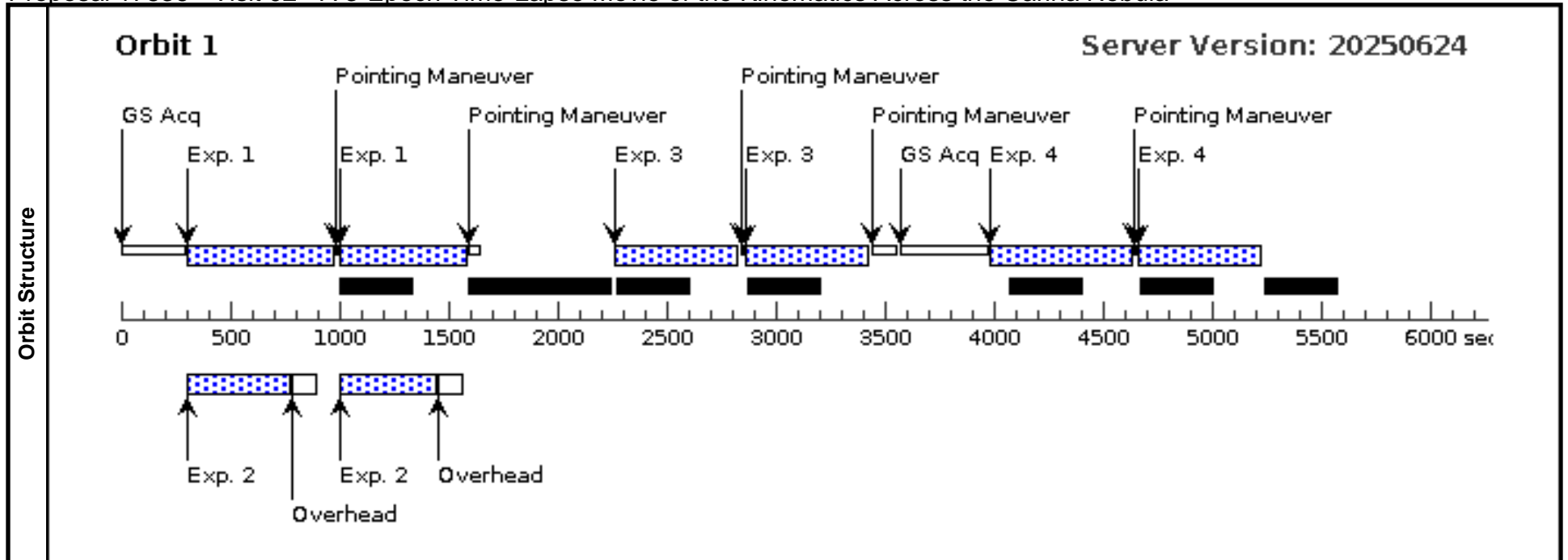
Visit	Proposal 17836, Visit 01, scheduling Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: CVZ; ORIENT 94D TO 96 D									
	(Visit 01) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE									
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
		(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.146 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false		(1-2), (3), (4)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	N3372-TR15	RA: 10 44 57.0000 (161.2375000d) Dec: -59 27 4.00 (-59.45111d) Equinox: J2000 <i>Comments:</i> Category=ISM Description=[HII REGION]		V=10.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) N3372-TR15	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,96.816; GS ACQ SCENARIO ONEB103	Pattern 2, Exps 1-2 in Visit 01 (2) Prime + Parallel Group 1-2 in Pattern 2, Exps 1-2 in Visit 01	460.0 Secs (920 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	2		(1) N3372-TR15	WFC3/UVIS, ACCUM, UVIS	F656N	FLASH=16		Pattern 2, Exps 1-2 in Visit 01 (2) Prime + Parallel Group 1-2 in Pattern 2, Exps 1-2 in Visit 01	440.0 Secs (880 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3		(1) N3372-TR15	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,0.0	Pattern 2, Exps 3-3 in Visit 01 (2)	460.0 Secs (920 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4		(1) N3372-TR15	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,193.63; GS ACQ SCENARIO ONEB103	Pattern 2, Exps 4-4 in Visit 01 (2)	460.0 Secs (920 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]



Proposal 17836 - Visit 02 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:26 GMT 2025

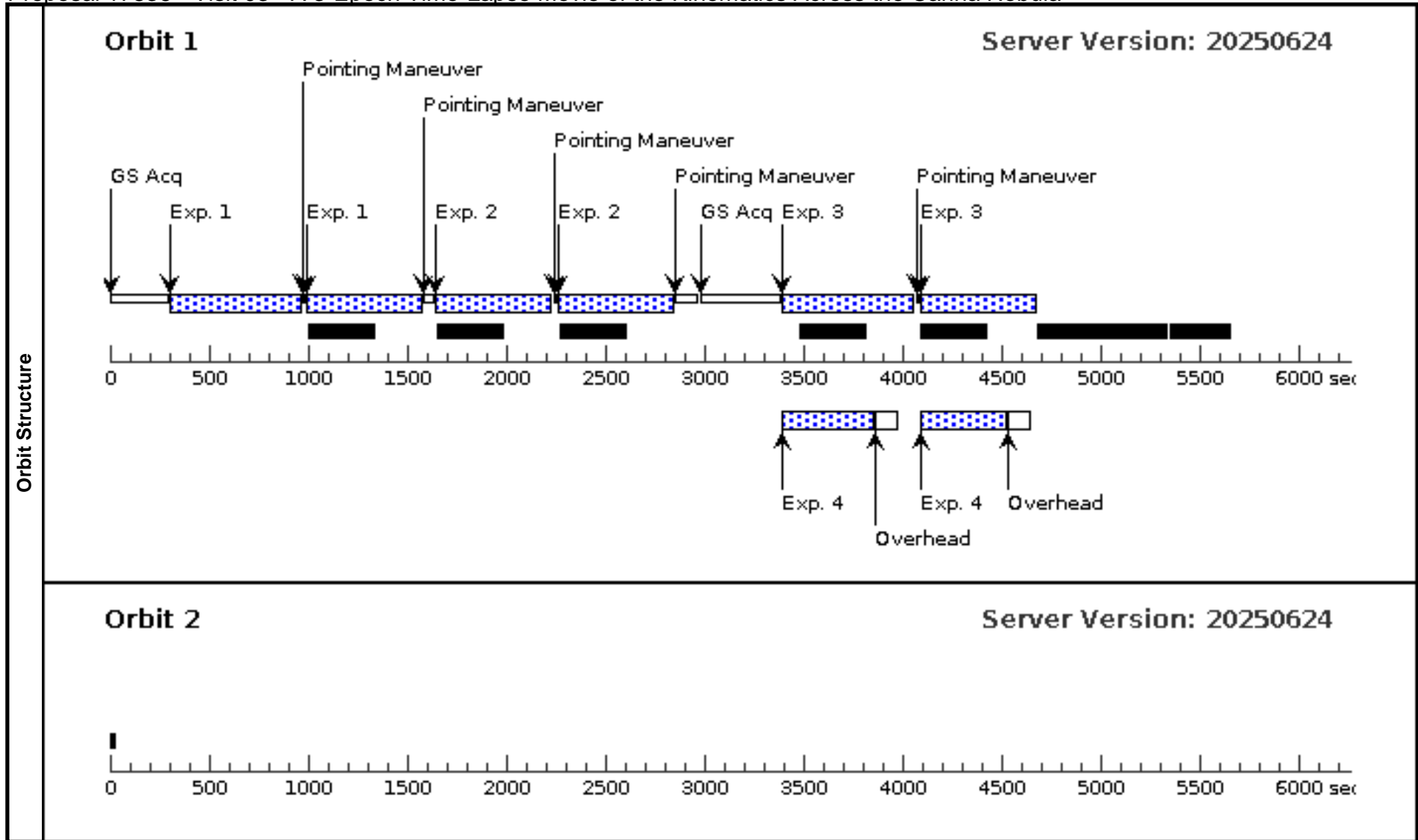
Visit	Proposal 17836, Visit 02, implementation Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: CVZ; ORIENT 97D TO 99 D									
	(Visit 02) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE									
Diagnosics										
Patterns	#	Primary Pattern	Secondary Pattern			Exposures				
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	N3372-POS20	RA: 10 47 1.0000 (161.7541667d) Dec: -60 03 0.00 (-60.05000d) Equinox: J2000 <i>Comments:</i> Category=ISM Description=[HII REGION]		V=10.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(3) N3372-POS20	(3) N3372-POS20	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 193.63,-9.0; GS ACQ SCENARIO ONEB103	Pattern 2, Exps 1-2 in Visit 02 (2) Prime + Parallel Group 1-2 in Pattern 2, Exps 1-2 in Visit 02	460.0 Secs (920 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	2	(3) N3372-POS20	(3) N3372-POS20	WFC3/UVIS, ACCUM, UVIS	F656N	FLASH=16		Pattern 2, Exps 1-2 in Visit 02 (2) Prime + Parallel Group 1-2 in Pattern 2, Exps 1-2 in Visit 02	440.0 Secs (880 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	(3) N3372-POS20	(3) N3372-POS20	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 96.8,-10.0	Pattern 2, Exps 3-3 in Visit 02 (2)	440.0 Secs (880 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	(3) N3372-POS20	(3) N3372-POS20	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,-11.0; GS ACQ SCENARIO ONEB103	Pattern 2, Exps 4-4 in Visit 02 (2)	440.0 Secs (880 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]



Proposal 17836 - Visit 03 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:26 GMT 2025

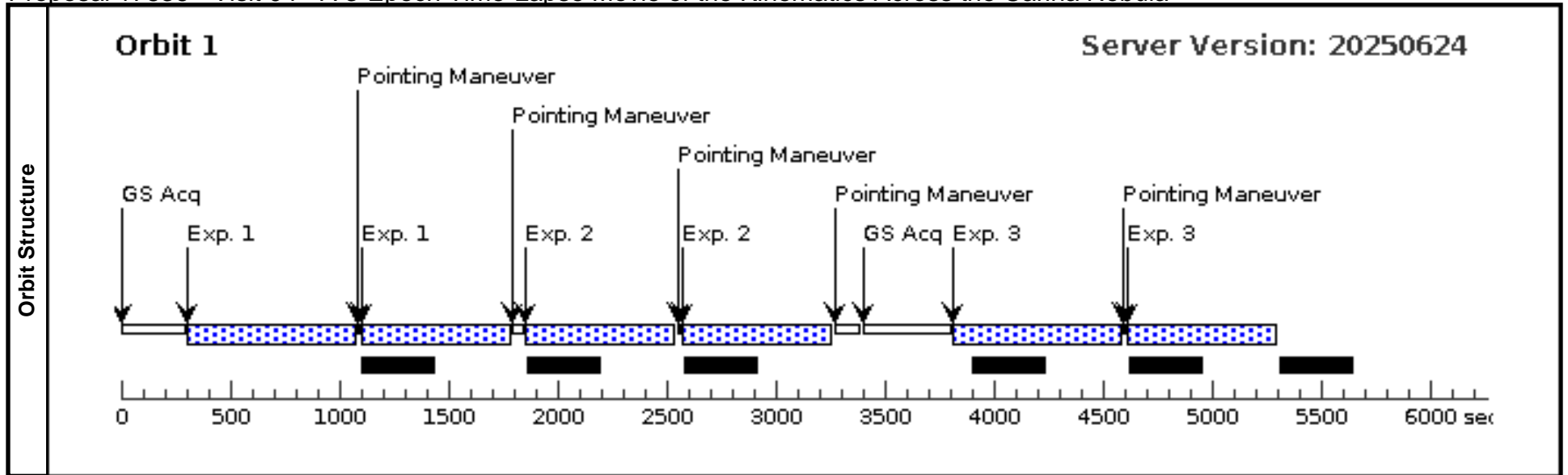
Visit	Proposal 17836, Visit 03, scheduling Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: CVZ; ORIENT 7D TO 9 D									
	(Visit 03) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE									
Diagnosics										
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(4)	N3372-POS21	RA: 10 46 47.0000 (161.6958333d) Dec: -60 09 15.00 (-60.15417d) Equinox: J2000 <i>Comments:</i> Category=ISM Description=[HII REGION]		V=10.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(4) N3372-POS21	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,193.63; GS ACQ SCENARIO ONEB1O3	Pattern 2, Exps 1-1 in Visit 03 (2)	455.0 Secs (910 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(4) N3372-POS21	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,96.816	Pattern 2, Exps 2-2 in Visit 03 (2)	455.0 Secs (910 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3		(4) N3372-POS21	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,0.0; GS ACQ SCENARIO ONEB1O3	Pattern 2, Exps 3-4 in Visit 03 (2) Prime + Parallel Group 3-4 in Pattern 2, Exps 3-4 in Visit 03	455.0 Secs (910 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4		(4) N3372-POS21	WFC3/UVIS, ACCUM, UVIS	F656N	FLASH=16		Pattern 2, Exps 3-4 in Visit 03 (2) Prime + Parallel Group 3-4 in Pattern 2, Exps 3-4 in Visit 03	428.0 Secs (856 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 17836 - Visit 04 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:26 GMT 2025

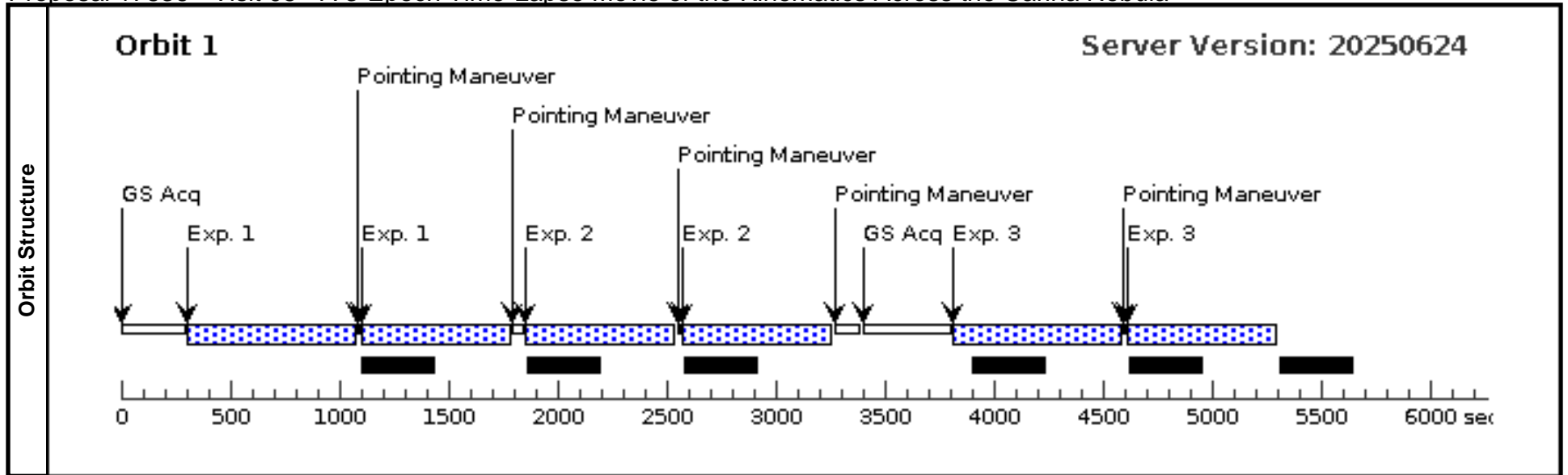
Visit	Proposal 17836, Visit 04, implementation Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: CVZ; ORIENT 97D TO 99 D									
	(Visit 04) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE									
Diagnosics										
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(5)	N3372-POS22	RA: 10 46 32.0000 (161.6333333d) Dec: -60 05 0.00 (-60.08333d) Equinox: J2000		V=10.0	Reference Frame: ICRS				
<i>Comments:</i> Category=ISM Description=[HII REGION]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(5) N3372-POS22	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 193.63,-9.0;	Pattern 2, Exps 1-1 in Visit 04 (2)	560.0 Secs (1120 Secs)	
							GS ACQ SCENARIO ONEB1O3		[=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(5) N3372-POS22	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 96.8,-10	Pattern 2, Exps 2-2 in Visit 04 (2)	560.0 Secs (1120 Secs)	
								[=>(Pattern 1)] [=>(Pattern 2)]	[1]	
3		(5) N3372-POS22	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,-11.0;	Pattern 2, Exps 3-3 in Visit 04 (2)	560.0 Secs (1120 Secs)		
								[=>(Pattern 1)] [=>(Pattern 2)]	[1]	



Proposal 17836 - Visit 05 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:26 GMT 2025

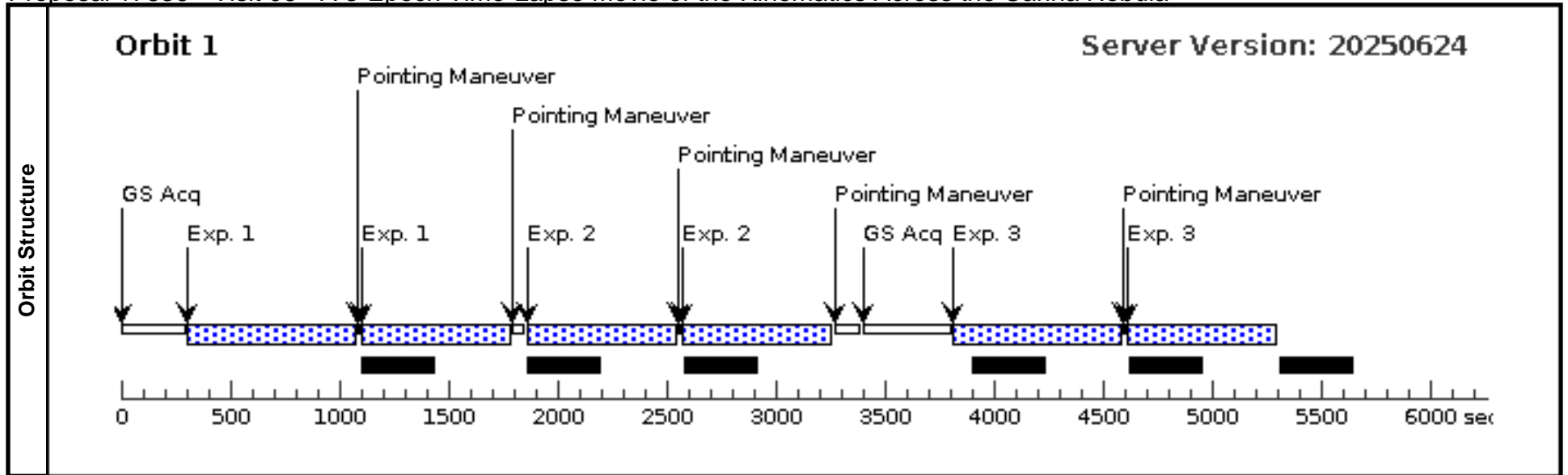
Visit	Proposal 17836, Visit 05, implementation Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: CVZ; ORIENT 97D TO 99 D									
	(Visit 05) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE									
Diagnosics										
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(6)	N3372-POS24	RA: 10 45 53.0000 (161.4708333d)		V=10.0	Reference Frame: ICRS				
		Alt Name1: TREASURE-CHEST	Dec: -59 57 4.00 (-59.95111d)							
		Alt Name2: CPD-592661	Equinox: J2000							
		Comments: Category=ISM Description=[HII REGION]								
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(6) N3372-POS24	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 193.63,-9.0;	Pattern 2, Exps 1-1 in Visit 05 (2)	560.0 Secs (1120 Secs)	
							GS ACQ SCENARIO ONEBIO3		[=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(6) N3372-POS24	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 96.816,-10.0	Pattern 2, Exps 2-2 in Visit 05 (2)	560.0 Secs (1120 Secs)	
								[=>(Pattern 1)] [=>(Pattern 2)]	[1]	
3		(6) N3372-POS24	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,-11.0;	Pattern 2, Exps 3-3 in Visit 05 (2)	560.0 Secs (1120 Secs)		
							GS ACQ SCENARIO ONEBIO3	[=>(Pattern 1)] [=>(Pattern 2)]	[1]	



Proposal 17836 - Visit 06 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:26 GMT 2025

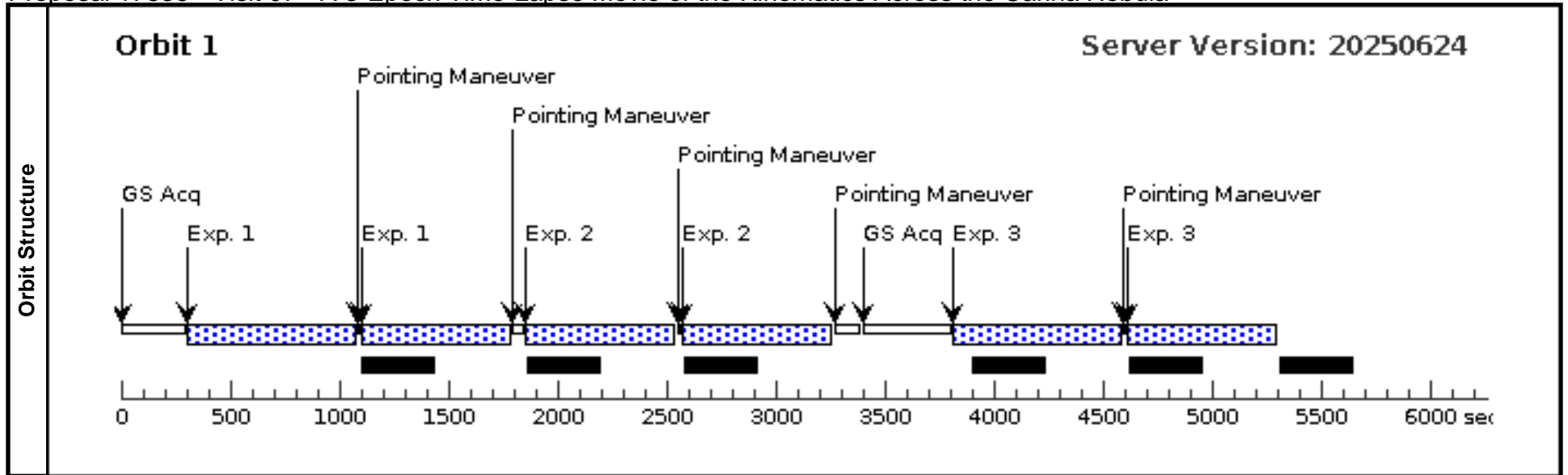
Visit	Proposal 17836, Visit 06, implementation Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: CVZ; ORIENT 90D TO 100.5 D									
	(Visit 06) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE									
Diagnosics										
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(7)	N3372-POS25	RA: 10 44 36.0000 (161.1500000d) Dec: -60 25 10.00 (-60.41944d) Equinox: J2000		V=10.0	Reference Frame: ICRS				
	<i>Comments:</i> Category=ISM Description=[HII REGION]									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(7) N3372-POS25	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG -203.63, -28.0;	Pattern 2, Exps 1-1 in Visit 06 (2)	560.0 Secs (1120 Secs)	
							GS ACQ SCENARIO ONEB103		[=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(7) N3372-POS25	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG -101.816, -19	Pattern 2, Exps 2-2 in Visit 06 (2)	560.0 Secs (1120 Secs)	
								[=>(Pattern 1)] [=>(Pattern 2)]	[1]	
3		(7) N3372-POS25	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG -5.0, -11;	Pattern 2, Exps 3-3 in Visit 06 (2)	560.0 Secs (1120 Secs)		
						GS ACQ SCENARIO ONEB103		[=>(Pattern 1)] [=>(Pattern 2)]	[1]	



Proposal 17836 - Visit 07 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:27 GMT 2025

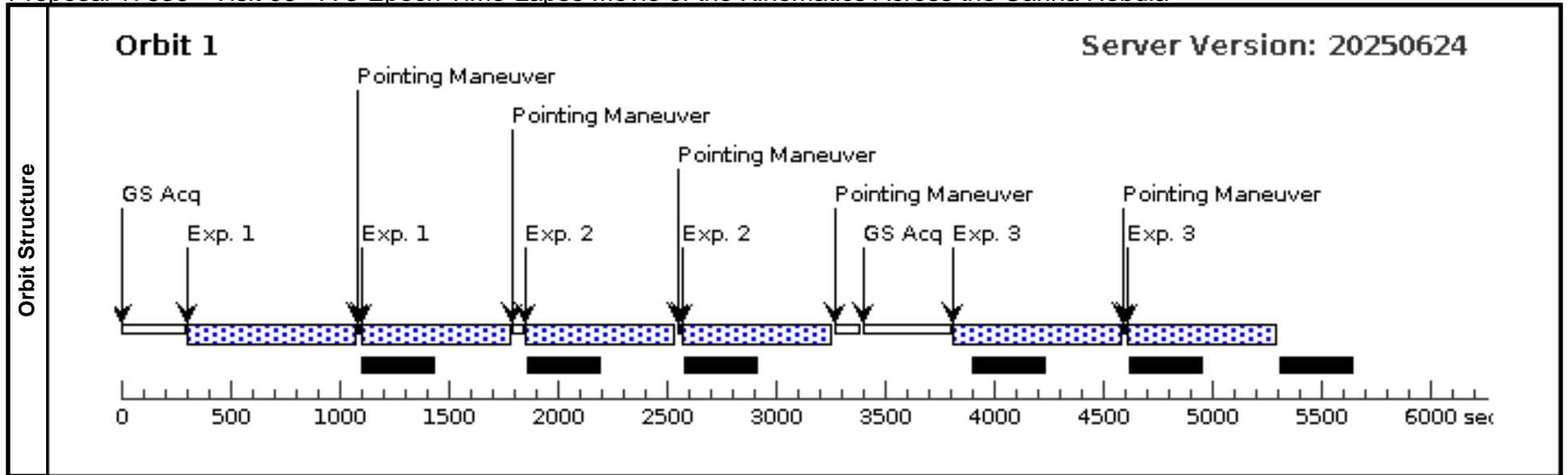
Visit	Proposal 17836, Visit 07, implementation Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: CVZ; ORIENT 95D TO 97 D									
	(Visit 07) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE									
Diagnosics										
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(8)	N3372-POS26	RA: 10 45 15.5000 (161.3145833d) Dec: -59 58 25.00 (-59.97361d) Equinox: J2000		V=10.0	Reference Frame: ICRS				
<i>Comments:</i> Category=ISM Description=[HII REGION]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(8) N3372-POS26	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 193.63,- 9; GS ACQ SCENARI O ONEB1O3	Pattern 2, Exps 1-1 i n Visit 07 (2)	560.0 Secs (1120 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	2		(8) N3372-POS26	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 96.816,- 10	Pattern 2, Exps 2-2 i n Visit 07 (2)	560.0 Secs (1120 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3		(8) N3372-POS26	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,-11. 0; GS ACQ SCENARI O ONEB1O3	Pattern 2, Exps 3-3 i n Visit 07 (2)	560.0 Secs (1120 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]



Proposal 17836 - Visit 08 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:27 GMT 2025

Visit	Proposal 17836, Visit 08, implementation Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: CVZ; ORIENT 98D TO 99 D									
	(Visit 08) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE									
Diagnosics										
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(9)	N3372-POS27 Alt Name1: TEARDROP	RA: 10 44 43.0000 (161.1791667d) Dec: -59 56 20.00 (-59.93889d) Equinox: J2000		V=10.0	Reference Frame: ICRS				
Comments: Category=ISM Description=[HII REGION]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(9) N3372-POS27	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 193.63,-9; GS ACQ SCENARIO ONEB103	Pattern 2, Exps 1-1 in Visit 08 (2)	560.0 Secs (1120 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(9) N3372-POS27	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 96.816,-10	Pattern 2, Exps 2-2 in Visit 08 (2)	560.0 Secs (1120 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3		(9) N3372-POS27	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,-11; GS ACQ SCENARIO ONEB103	Pattern 2, Exps 3-3 in Visit 08 (2)	560.0 Secs (1120 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 17836 - Visit 09 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:27 GMT 2025

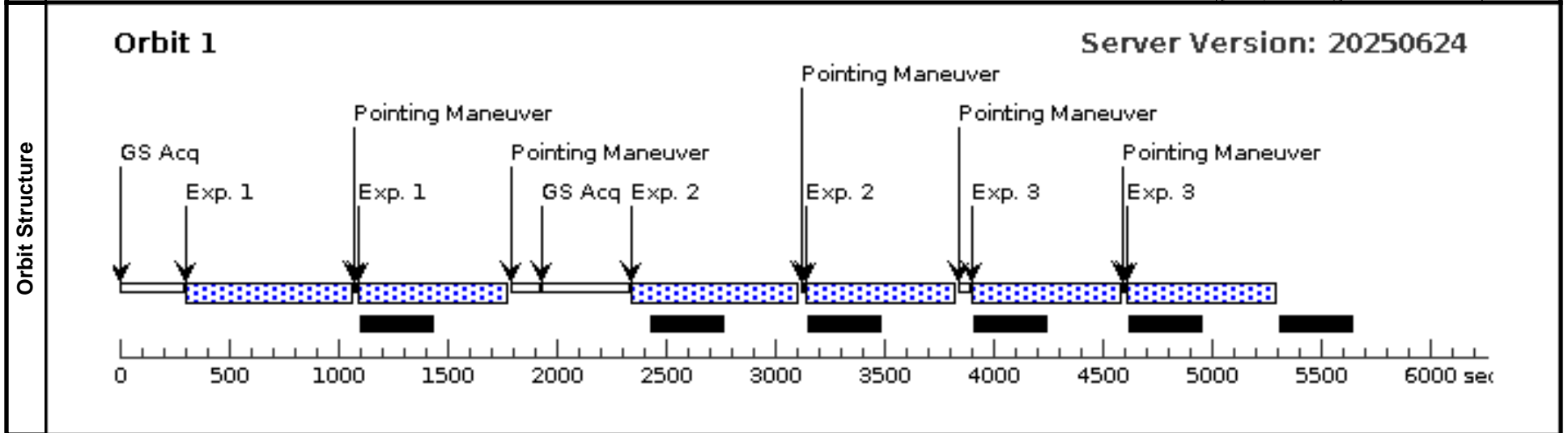
Visit	Proposal 17836, Visit 09, implementation		
	Diagnostic Status: No Diagnostics		
	Scientific Instruments: ACS/WFC		
	Special Requirements: CVZ; ORIENT 100D TO 101 D		

Patterns	#	Primary Pattern	Secondary Pattern	Exposures
	(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.146 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false	

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(11)	N3372-POS30	RA: 10 41 38.0000 (160.4083333d) Dec: -59 46 30.00 (-59.77500d) Equinox: J2000		V=10.0	Reference Frame: ICRS

Comments:
Category=ISM
Description=[HII REGION]

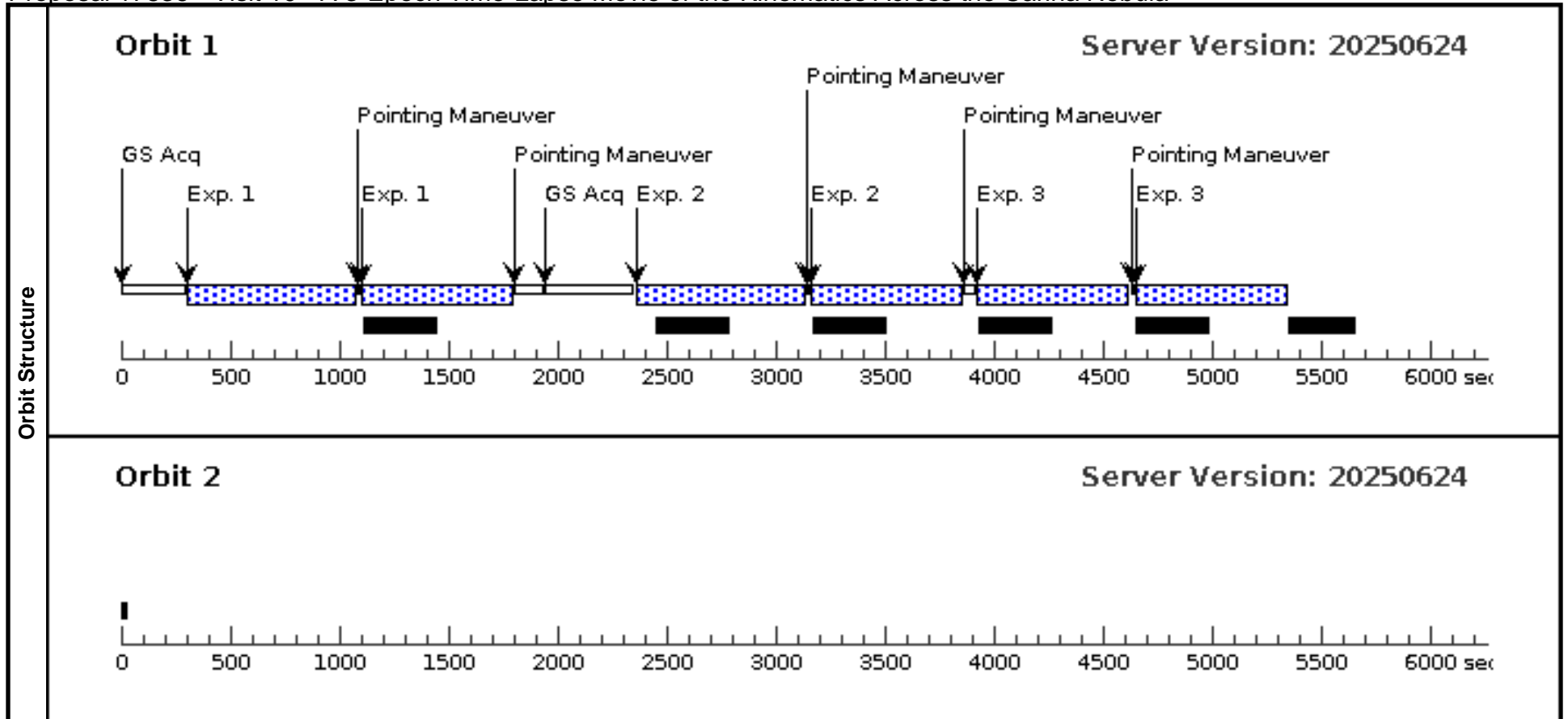
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(11) N3372-POS30	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 83.816,56;	Pattern 2, Exps 1-1 in Visit 09 (2)	558.0 Secs (1116 Secs)	
							GS ACQ SCENARIO ONEB103		[=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(11) N3372-POS30	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG -96.816,-10;	Pattern 2, Exps 2-2 in Visit 09 (2)	558.0 Secs (1116 Secs)	
						GS ACQ SCENARIO ONEB103		[=>(Pattern 1)] [=>(Pattern 2)]	[1]	
3		(11) N3372-POS30	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,-11.0	Pattern 2, Exps 3-3 in Visit 09 (2)	558.0 Secs (1116 Secs)		
								[=>(Pattern 1)] [=>(Pattern 2)]	[1]	



Proposal 17836 - Visit 10 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:27 GMT 2025

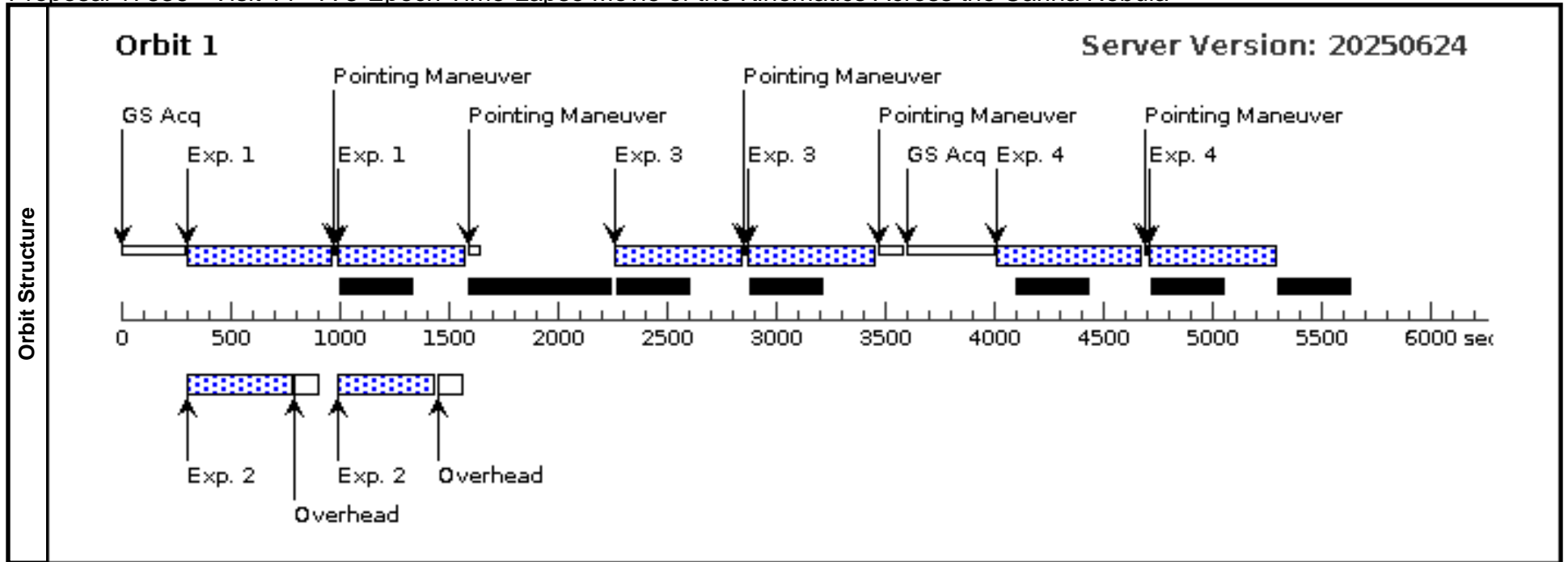
Visit	Proposal 17836, Visit 10, scheduling Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: CVZ; ORIENT 90D TO 96 D									
	(Visit 10) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE									
Diagnosics										
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
	(2)	Pattern Type=ACS-WFC-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.146 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false		(1), (2), (3)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	N3372-POS19	RA: 10 42 25.0000 (160.6041667d) Dec: -59 19 10.00 (-59.31944d) Equinox: J2000		V=10.0	Reference Frame: ICRS				
	<i>Comments:</i> Category=ISM Description=[HII REGION]									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(2) N3372-POS19	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 180.0,0.0;	Pattern 2, Exps 1-1 in Visit 10 (2)	564.0 Secs (1128 Secs)	
							GS ACQ SCENARIO ONEB1O3		[==>(Pattern 1)] [==>(Pattern 2)]	[1]
	2		(2) N3372-POS19	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,96.8	Pattern 2, Exps 2-2 in Visit 10 (2)	564.0 Secs (1128 Secs)	
						GS ACQ SCENARIO ONEB1O3		[==>(Pattern 1)] [==>(Pattern 2)]	[1]	
3		(2) N3372-POS19	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,0.0	Pattern 2, Exps 3-3 in Visit 10 (2)	564.0 Secs (1128 Secs)		
								[==>(Pattern 1)] [==>(Pattern 2)]	[1]	



Proposal 17836 - Visit 11 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:27 GMT 2025

Visit	Proposal 17836, Visit 11, implementation Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, ACS/WFC Special Requirements: CVZ; ORIENT 106D TO 109 D									
	(Visit 11) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE (Visit 11) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE									
Diagnosics										
Patterns	#	Primary Pattern	Secondary Pattern		Exposures					
	(2)	Pattern Type=ACS-WFC-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.146 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false		(1-2), (3), (4)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(12)	N3372-POS29 Alt Name1: CR228	RA: 10 44 1.0000 (161.0041667d) Dec: -60 03 55.00 (-60.06528d) Equinox: J2000		V=12	Reference Frame: ICRS				
<i>Comments:</i> Category=ISM Description=[HII REGION]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(12) N3372-POS29	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 203.63,-9; GS ACQ SCENARIO ONEB103	Pattern 2, Exps 1-2 in Visit 11 (2) Prime + Parallel Group 1-2 in Pattern 2, Exps 1-2 in Visit 11	458.0 Secs (916 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(12) N3372-POS29	WFC3/UVIS, ACCUM, UVIS	F656N	FLASH=16		Pattern 2, Exps 1-2 in Visit 11 (2) Prime + Parallel Group 1-2 in Pattern 2, Exps 1-2 in Visit 11	446.0 Secs (892 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3		(12) N3372-POS29	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 106.816,-10	Pattern 2, Exps 3-3 in Visit 11 (2)	458.0 Secs (916 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	4		(12) N3372-POS29	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 10.0,-11.0; GS ACQ SCENARIO ONEB103	Pattern 2, Exps 4-4 in Visit 11 (2)	458.0 Secs (916 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 17836 - Visit 12 - A 3-Epoch Time-Lapse Movie of the Kinematics Across the Carina Nebula

Tue Aug 19 15:00:27 GMT 2025

Visit	Proposal 17836, Visit 12, implementation Diagnostic Status: Warning Scientific Instruments: ACS/WFC Special Requirements: CVZ; ORIENT 93D TO 95 D									
	(Visit 12) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE									
Diagnosics										
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
	(2)	Pattern Type=ACS-WFC-DITHER- LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.146 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false		(1), (2), (3)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(10)	N3372-POS28	RA: 10 39 5.0000 (159.7708333d) Dec: -59 36 0.00 (-59.60000d) Equinox: J2000		V=10.0	Reference Frame: ICRS				
<i>Comments:</i> Category=ISM Description=[HII REGION]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(10) N3372-POS28	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 74.0,193 .63; GS ACQ SCENARI O ONEB1O3	Pattern 2, Exps 1-1 i n Visit 12 (2)	560.0 Secs (1120 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	2		(10) N3372-POS28	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 37.0,96. 816	Pattern 2, Exps 2-2 i n Visit 12 (2)	560.0 Secs (1120 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	3		(10) N3372-POS28	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO	POS TARG 0.0,0.0; GS ACQ SCENARI O ONEB1O3	Pattern 2, Exps 3-3 i n Visit 12 (2)	560.0 Secs (1120 Secs) [=>(Pattern 1)] [=>(Pattern 2)]	[1]

