



16493 - Investigating the Outflows and Shocks of HOPS 361

Cycle: 28, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Nicole Karnath (PI) (Contact)	Universities Space Research Association	nkarnath@usra.edu
Dr. Tom Megeath (CoI) (Contact)	University of Toledo	tommegeath@gmail.com
Dr. Dan Watson (CoI)	University of Rochester	dmw@pas.rochester.edu
Dr. Joel David Green (CoI) (Contact)	Space Telescope Science Institute	jgreen@stsci.edu
Dr. William J. Fischer (CoI)	Space Telescope Science Institute	wfischer@stsci.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) HOPS361-CENTER	WFC3/IR	1	24-Feb-2021 14:00:12.0	yes
02	(1) HOPS361-CENTER	WFC3/IR	1	24-Feb-2021 14:00:13.0	yes
03	(2) HOPS361-NE	WFC3/IR	1	24-Feb-2021 14:00:13.0	yes
04	(2) HOPS361-NE	WFC3/IR	1	24-Feb-2021 14:00:14.0	yes
05	(3) HOPS361-SW	WFC3/IR	1	24-Feb-2021 14:00:14.0	yes
06	(3) HOPS361-SW	WFC3/IR	1	24-Feb-2021 14:00:15.0	yes
07	(1) HOPS361-CENTER	WFC3/IR	1	24-Feb-2021 14:00:15.0	yes
08	(1) HOPS361-CENTER	WFC3/IR	1	24-Feb-2021 14:00:16.0	yes
09	(2) HOPS361-NE	WFC3/IR	1	24-Feb-2021 14:00:17.0	yes
10	(2) HOPS361-NE	WFC3/IR	1	24-Feb-2021 14:00:18.0	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	(3) HOPS361-SW	WFC3/IR	1	24-Feb-2021 14:00:18.0	yes
12	(3) HOPS361-SW	WFC3/IR	1	24-Feb-2021 14:00:19.0	yes

12 Total Orbits Used

ABSTRACT

Abstract: We propose a HST near-IR + SOFIA far-IR study of NGC 2071, a system of at least two outflows from a small group of intermediate to low luminosity stars. Protostellar outflows are ubiquitous part of the star formation process. They provide a record of variable accretion onto stars, have significant impact on the surrounding molecular cloud, and may disrupt or trigger star formation in molecular clouds. Intermediate-luminosity ($30 < L_{\text{bol}} < 1000$ solar luminosities) protostars bridge the gap between low- and high-mass star formation, forming stars with masses between 2 and 10 solar masses (Di Francesco et al. 1997; Mannings & Sargent 2000). Outflows from these systems of protostars have a significant impact on the surrounding ISM, may play an important role in cloud evolution, and are an important laboratory for understanding the origin of far-IR line emission from outflows. In this study, WFC3/IR images of [FeII] and Paschen Beta lines will trace J-type shocks in the near-IR. Proper motions of knots will be derived from a 2009 WFC3/IR image. SOFIA 4GREAT will trace emission from far-IR transitions of [OI] and four additional CO transitions tracing shock heated gas. These lines will provide both radial velocities of the shocked emission as well as measurements of the mass flow and heating by shocks and UV radiation. The combined data will provide 3D space motions of the knots of shock accelerated gas where the outflow is interacting with the surrounding molecular cloud. Additionally, shock velocities and mass and energy momentum flows through the shocks will provide one of the most detailed measurements of the feedback from a system of protostars to date.

OBSERVING DESCRIPTION

We will observe three positions extended along the axis of the HOPS 361/NGC 2071-IR outflow. Each position will be observed in the F164N, F167N, F126N, F128N and F130N filters to obtain images in the FeII 1.257 μm and 1.644 μm lines and the Paschen Beta line at 1.282 μm . This will be executed in twelve orbits. Six of the visits will be for the F164N and F167N filters, with four 10 minute exposures along a diagonal dither line pattern. The pattern is aligned at an angle of 41.788 degree with the diagonal of each rectangular pixel, and the adopted offsets of 10.25 pixels will improve the spatial sampling of the data. These data will be used to map the FeII 1.644 line and, comparing to a previous F160W image of the outflow, measure the proper motions of the outflow knots. The F167N filter will be used for the continuum subtraction. For the remaining six visits, we will obtain two visits at each of the positions: the F126N & F130N filters in one visit - each with three 10 and 3.33 minute integrations per orbit - and then the F128N & F130N filters in the next visit - again with three 10 and 3.33 minute integrations per orbit. The F130N filter observations from both visits at a given position will be combined to provide a sensitive measurement of the continuum. Again, the three exposures will be observed

Proposal 16493 (STScI Edit Number: 1, Created: Wednesday, February 24, 2021 at 2:00:19 PM Eastern Standard Time) - Overview

along a diagonal dither line with an offset of 10.33 pixels after each integration. To ensure that the three fields cover the outflow, the orient angle is constrained between 90 and 102 degrees. This range is optimized for observations in the spring of 2021. These should all be taken with the same orientation to ensure proper relative orientation of each of the three fields. Orientations closer to 90 degrees are better, but any angle in this range will be acceptable.

Proposal 16493 - Visit 01 - Investigating the Outflows and Shocks of HOPS 361

Wed Feb 24 19:00:19 GMT 2021

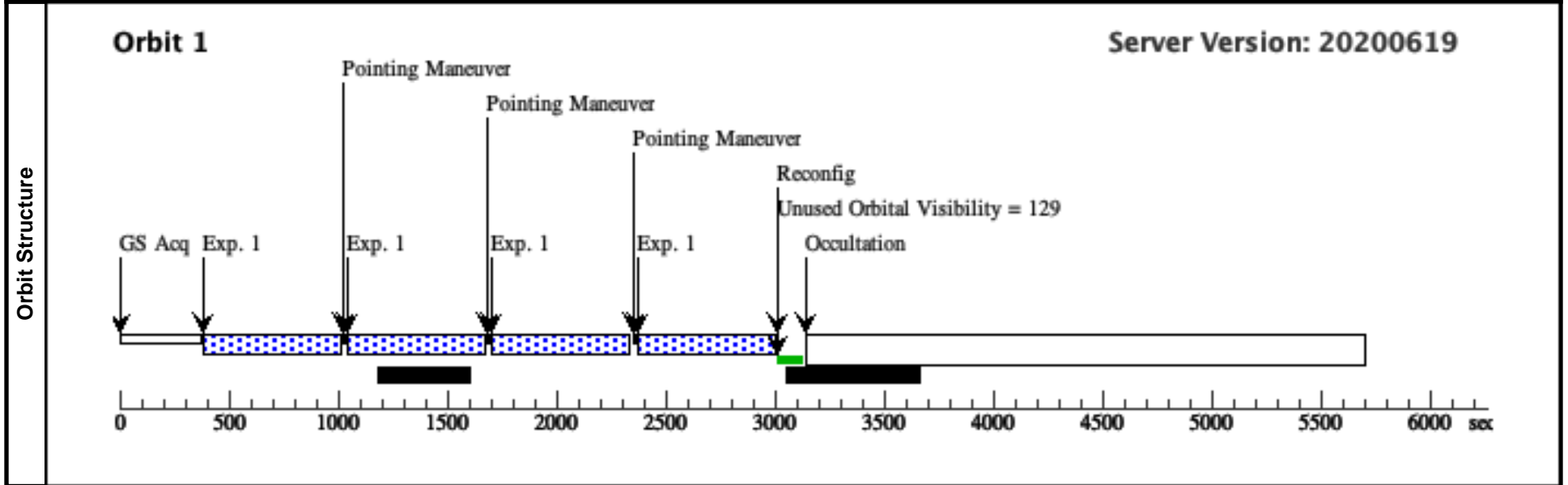
Visit	Proposal 16493, Visit 01, implementation		
	Diagnostic Status: No Diagnostics		
	Scientific Instruments: WFC3/IR		
	Special Requirements: ORIENT 90D TO 102 D		

Patterns	#	Primary Pattern	Secondary Pattern	Exposures
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=1.858 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	HOPS361-CENTER	RA: 05 47 5.0412 (86.7710050d) Dec: +00 22 14.75 (.37076d) Equinox: J2000	Epoch of Position: 2015.5	V=28	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
 Category=STAR
 Description=[YSO]

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) HOPS361-CENTER	WFC3/IR, MULTIACCUM, IR	F164N	NSAMP=12; SAMP-SEQ=STEP100	GS ACQ SCENARIO BASE1B3	Pattern 1, Exps 1-1 in Visit 01 (1)	599.232292 Secs (2396.929 Secs)	[1]



Proposal 16493 - Visit 02 - Investigating the Outflows and Shocks of HOPS 361

Wed Feb 24 19:00:20 GMT 2021

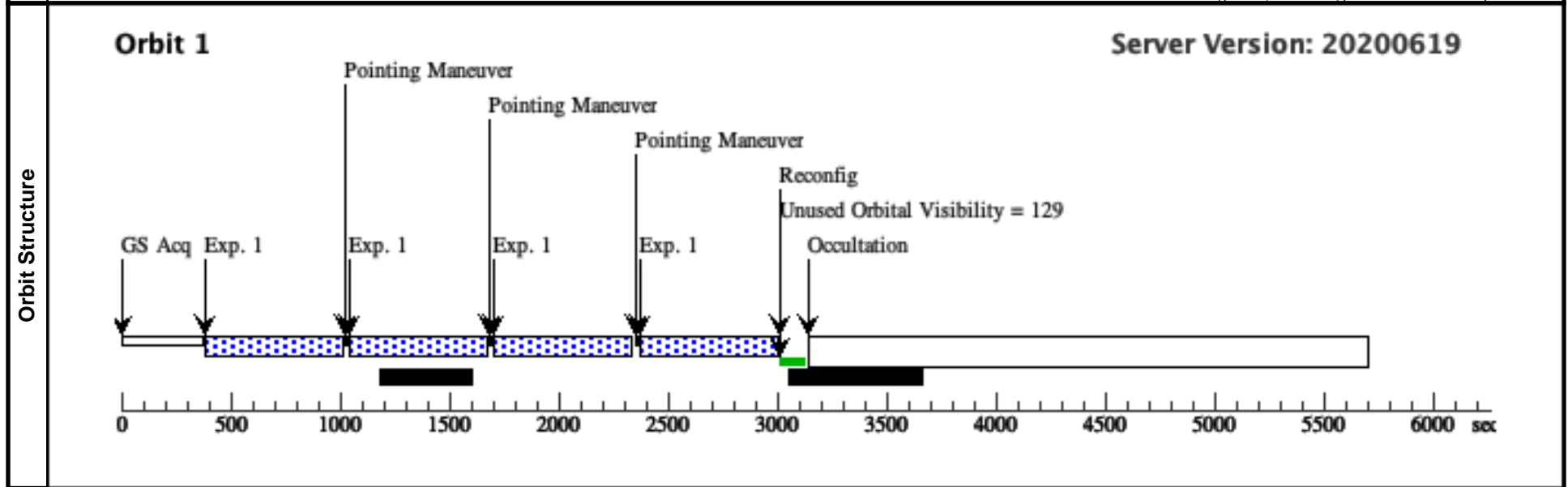
Visit	Proposal 16493, Visit 02, implementation		
	Diagnostic Status: No Diagnostics		
	Scientific Instruments: WFC3/IR		
	Special Requirements: SAME ORIENT AS 01		

Patterns	#	Primary Pattern	Secondary Pattern	Exposures
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	HOPS361-CENTER	RA: 05 47 5.0412 (86.7710050d) Dec: +00 22 14.75 (.37076d) Equinox: J2000	Epoch of Position: 2015.5	V=28	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
 Category=STAR
 Description=[YSO]

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) HOPS361-CENTER	WFC3/IR, MULTIACCUM, IR	F167N	NSAMP=12; SAMP-SEQ=STEP100		Pattern 1, Exps 1-1 in Visit 02 (1)	599.232292 Secs (2396.929 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]



Proposal 16493 - Visit 03 - Investigating the Outflows and Shocks of HOPS 361

Wed Feb 24 19:00:20 GMT 2021

Visit	Proposal 16493, Visit 03, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 01		
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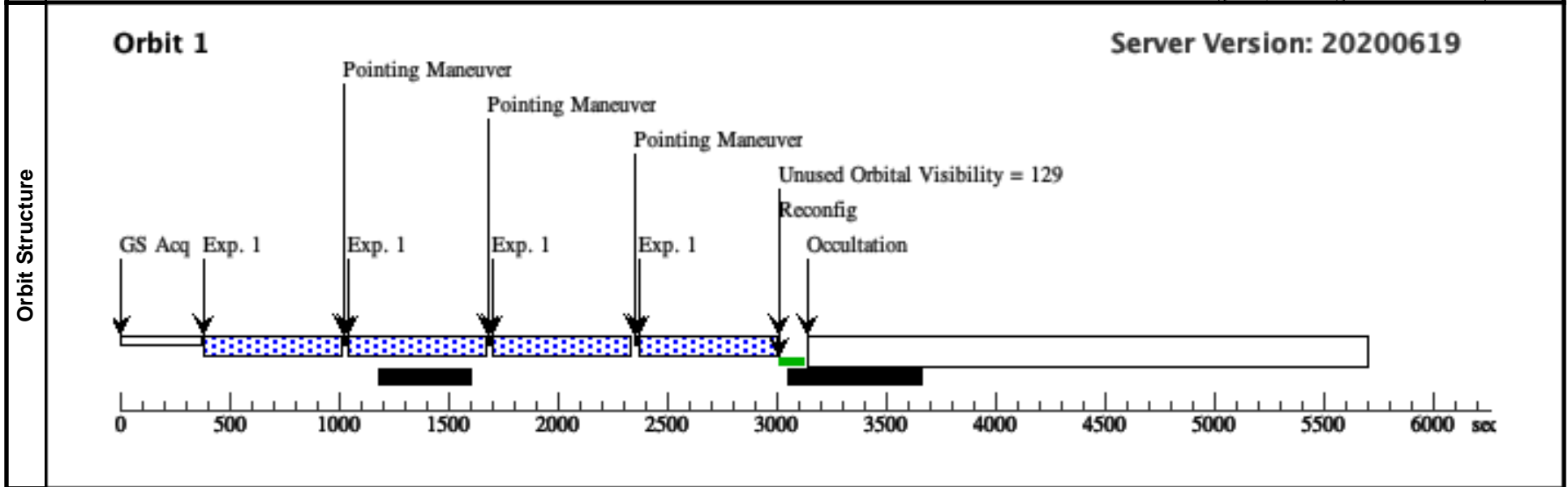
Patterns	#	Primary Pattern	Secondary Pattern	Exposures
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=1.858 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(2)	HOPS361-NE	RA: 05 47 10.5000 (86.7937500d) Dec: +00 23 36.72 (.39353d) Equinox: J2000		V=35	Reference Frame: ICRS

Comments:
 Category=ISM
 Description=[KNOT]
 Extended=YES

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(2)	HOPS361-NE	WFC3/IR, MULTIACCUM, IR	F164N	NSAMP=12; SAMP-SEQ=STEP100			Pattern 1, Exps 1-1 in Visit 03 (1)	599.232292 Secs (2396.929 Secs)

[=>(Pattern 1)]
 [=>(Pattern 2)]
 [=>(Pattern 3)]
 [=>(Pattern 4)]



Proposal 16493 - Visit 04 - Investigating the Outflows and Shocks of HOPS 361

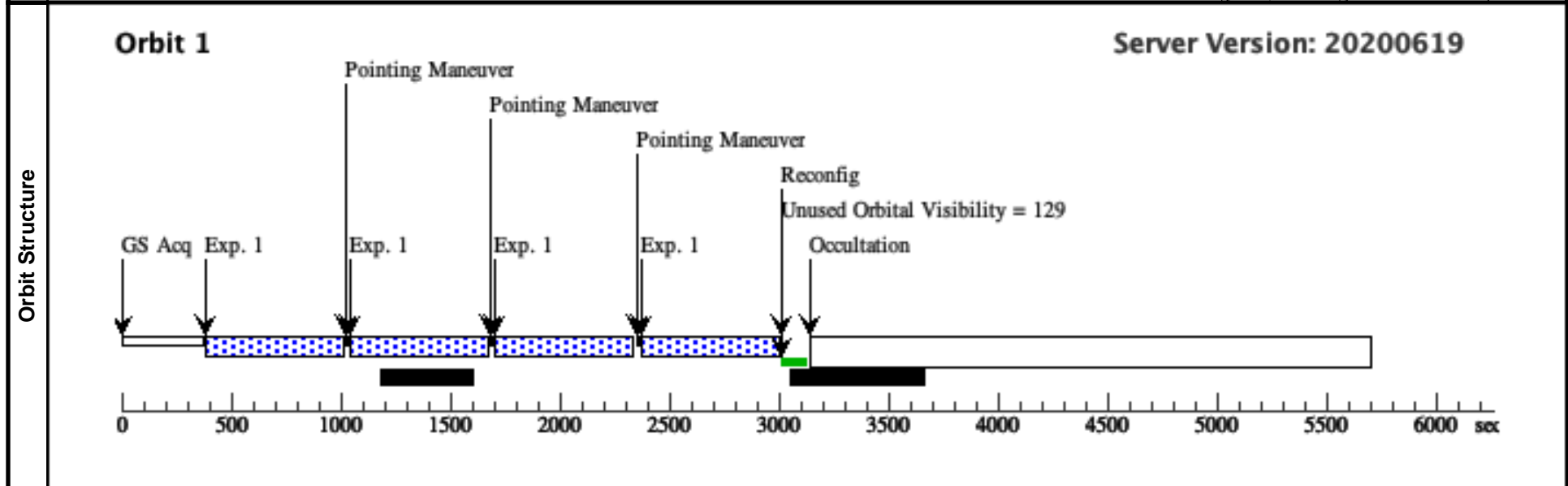
Wed Feb 24 19:00:20 GMT 2021

Visit	Proposal 16493, Visit 04, implementation		
	Diagnostic Status: No Diagnostics		
	Scientific Instruments: WFC3/IR		
	Special Requirements: SAME ORIENT AS 01		

Patterns	#	Primary Pattern	Secondary Pattern	Exposures
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=1.858 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(2)	HOPS361-NE	RA: 05 47 10.5000 (86.7937500d) Dec: +00 23 36.72 (.39353d) Equinox: J2000		V=35	Reference Frame: ICRS
<i>Comments:</i> Category=ISM Description=[KNOT] Extended=YES						

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(2)	HOPS361-NE	WFC3/IR, MULTIACCUM, IR	F167N	NSAMP=12; SAMP-SEQ=STEP100			Pattern 1, Exps 1-1 in Visit 04 (1)	599.232292 Secs (2396.929 Secs)
									[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	



Proposal 16493 - Visit 05 - Investigating the Outflows and Shocks of HOPS 361

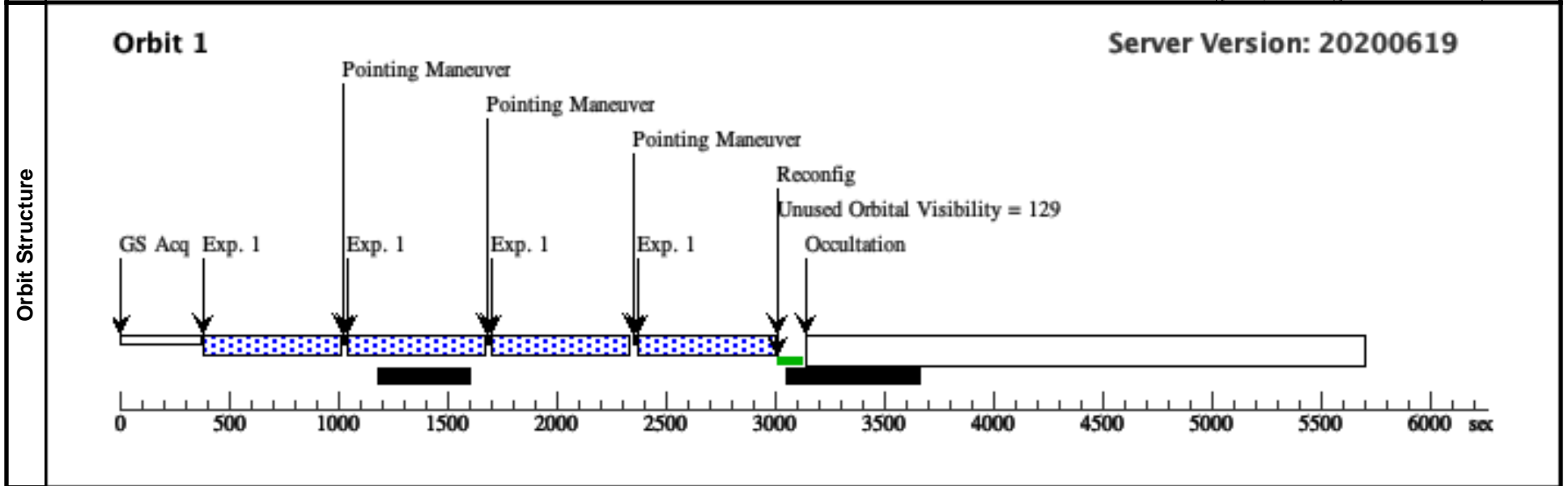
Wed Feb 24 19:00:20 GMT 2021

Visit	Proposal 16493, Visit 05, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 01		

Patterns	#	Primary Pattern	Secondary Pattern	Exposures
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=1.858 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(3)	HOPS361-SW	RA: 05 46 58.9431 (86.7455963d) Dec: +00 20 41.12 (.34476d) Equinox: J2000		V=35	Reference Frame: ICRS
<i>Comments:</i> Category=ISM Description=[KNOT] Extended=YES						

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(3) HOPS361-SW	WFC3/IR, MULTIACCUM, IR	F164N	NSAMP=12; SAMP-SEQ=STEP100				Pattern 1, Exps 1-1 in Visit 05 (1)	599.232292 Secs (2396.929 Secs)
									[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]



Proposal 16493 - Visit 06 - Investigating the Outflows and Shocks of HOPS 361

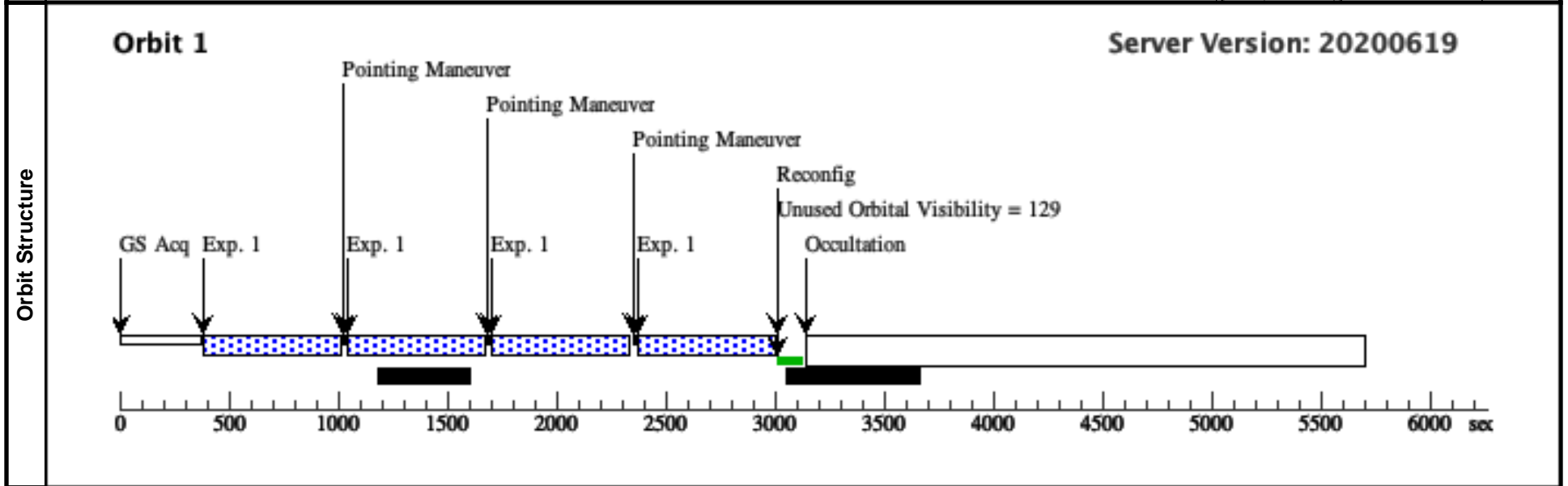
Wed Feb 24 19:00:20 GMT 2021

Visit	Proposal 16493, Visit 06, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 01		

Patterns	#	Primary Pattern	Secondary Pattern	Exposures
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=1.858 Line Spacing= Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(3)	HOPS361-SW	RA: 05 46 58.9431 (86.7455963d) Dec: +00 20 41.12 (.34476d) Equinox: J2000		V=35	Reference Frame: ICRS
	<i>Comments:</i> Category=ISM Description=[KNOT] Extended=YES					

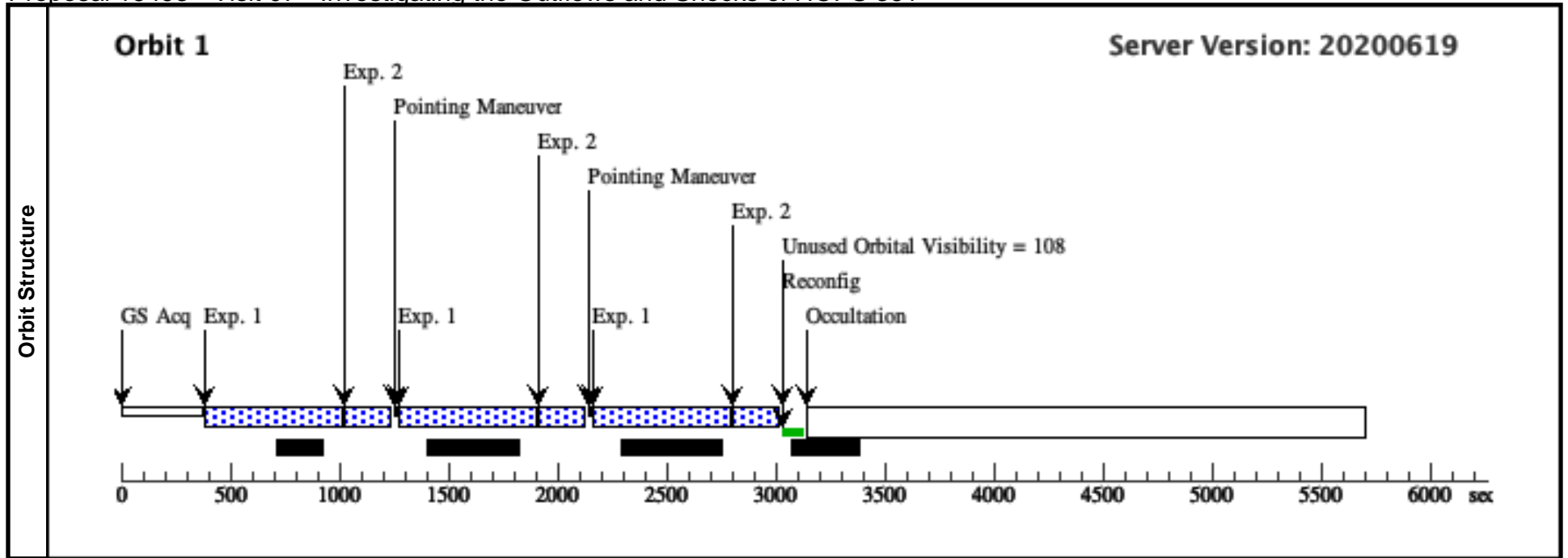
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(3) HOPS361-SW	WFC3/IR, MULTIACCUM, IR	F167N	NSAMP=12; SAMP-SEQ=STEP1 00		Pattern 1, Exps 1-1 i n Visit 06 (1)	599.232292 Secs (2396.929 Secs)	
									[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]



Proposal 16493 - Visit 07 - Investigating the Outflows and Shocks of HOPS 361

Wed Feb 24 19:00:20 GMT 2021

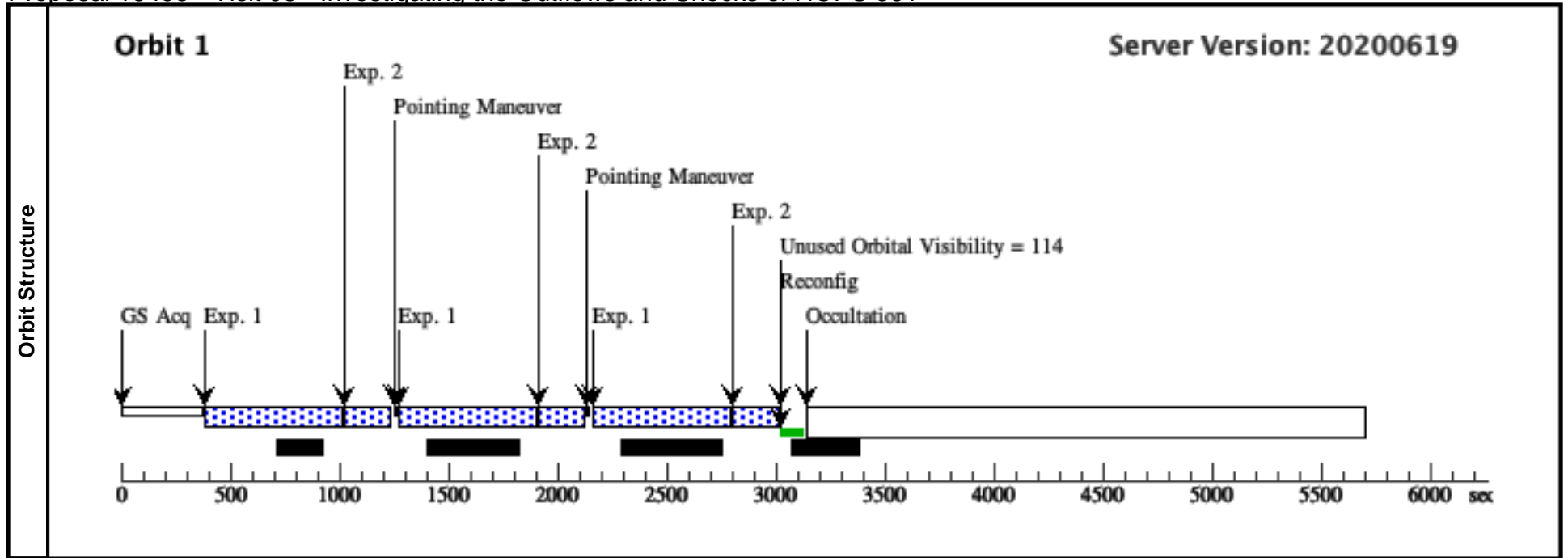
Visit	Proposal 16493, Visit 07, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 01									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=1.873 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-2)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	HOPS361-CENTER	RA: 05 47 5.0412 (86.7710050d) Dec: +00 22 14.75 (.37076d) Equinox: J2000	Epoch of Position: 2015.5	V=28	Reference Frame: SIMBAD				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=STAR Description=[YSO]										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) HOPS361-CENTER	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=12; SAMP-SEQ=STEP100		Pattern 2, Exps 1-2 in Visit 07 (2)	599.232292 Secs (1797.697 Secs)	
									[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
2		(1) HOPS361-CENTER	WFC3/IR, MULTIACCUM, IR	F130N	NSAMP=9; SAMP-SEQ=STEP50		Pattern 2, Exps 1-2 in Visit 07 (2)	199.231579 Secs (597.695 Secs)		
									[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]



Proposal 16493 - Visit 08 - Investigating the Outflows and Shocks of HOPS 361

Wed Feb 24 19:00:20 GMT 2021

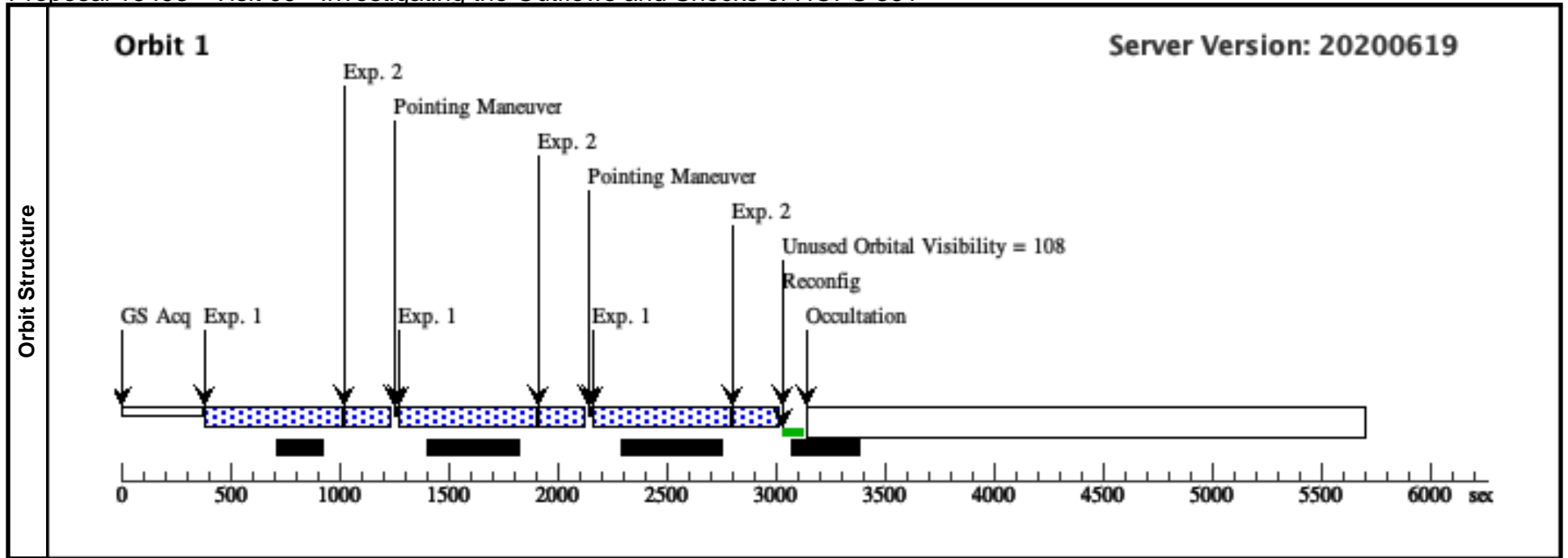
Visit	Proposal 16493, Visit 08, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 01									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=1.873 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-2)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	HOPS361-CENTER	RA: 05 47 5.0412 (86.7710050d) Dec: +00 22 14.75 (.37076d) Equinox: J2000	Epoch of Position: 2015.5	V=28	Reference Frame: SIMBAD				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=STAR Description=[YSO]									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) HOPS361-CENTER	WFC3/IR, MULTIACCUM, IR	F128N	NSAMP=12; SAMP-SEQ=STEP100		Pattern 2, Exps 1-2 in Visit 08 (2)	599.232292 Secs (1797.697 Secs)	
									[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
	2		(1) HOPS361-CENTER	WFC3/IR, MULTIACCUM, IR	F130N	NSAMP=9; SAMP-SEQ=STEP50		Pattern 2, Exps 1-2 in Visit 08 (2)	199.231579 Secs (597.695 Secs)	
									[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]



Proposal 16493 - Visit 09 - Investigating the Outflows and Shocks of HOPS 361

Wed Feb 24 19:00:20 GMT 2021

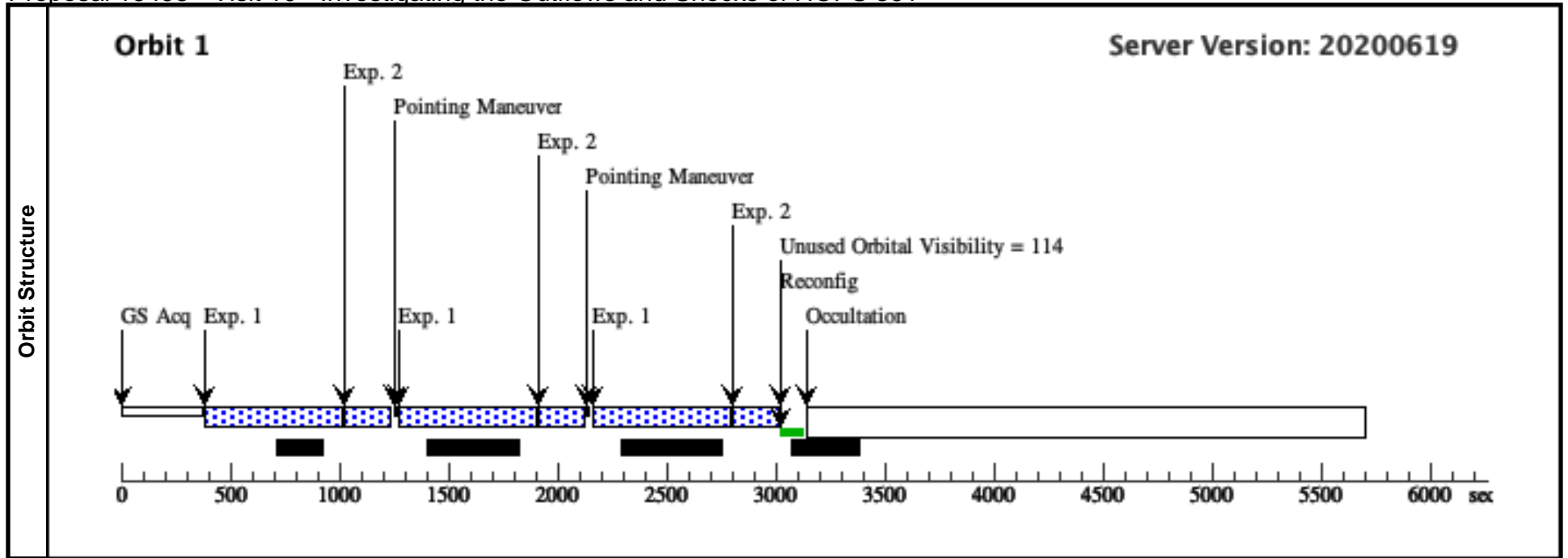
Visit	Proposal 16493, Visit 09, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 01									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=1.873 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-2)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	HOPS361-NE	RA: 05 47 10.5000 (86.7937500d) Dec: +00 23 36.72 (.39353d) Equinox: J2000		V=35	Reference Frame: ICRS				
	<i>Comments:</i> Category=ISM Description=[KNOT] Extended=YES									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(2) HOPS361-NE	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=12; SAMP-SEQ=STEP100			Pattern 2, Exps 1-2 in Visit 09 (2)	599.232292 Secs (1797.697 Secs)	
								[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]	
2	(2) HOPS361-NE	WFC3/IR, MULTIACCUM, IR	F130N	NSAMP=9; SAMP-SEQ=STEP50			Pattern 2, Exps 1-2 in Visit 09 (2)	199.231579 Secs (597.695 Secs)		
								[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]	



Proposal 16493 - Visit 10 - Investigating the Outflows and Shocks of HOPS 361

Wed Feb 24 19:00:20 GMT 2021

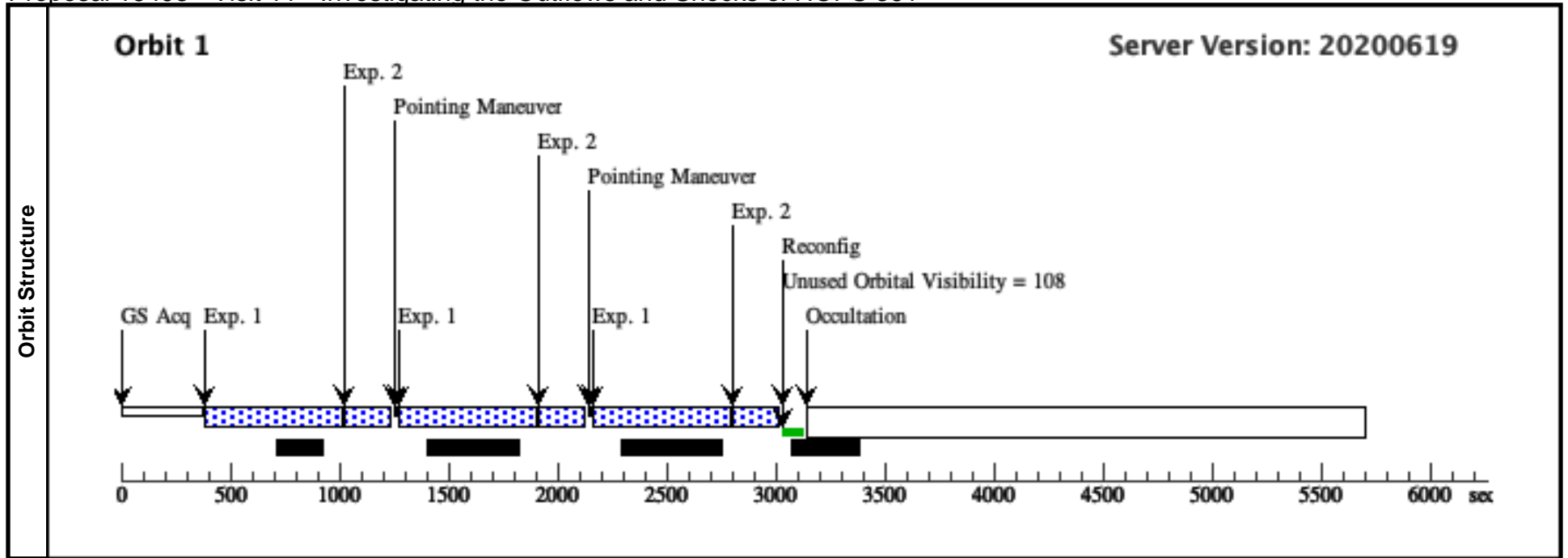
Visit	Proposal 16493, Visit 10, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 01									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=1.873 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-2)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	HOPS361-NE	RA: 05 47 10.5000 (86.7937500d) Dec: +00 23 36.72 (.39353d) Equinox: J2000		V=35	Reference Frame: ICRS				
	<i>Comments:</i> Category=ISM Description=[KNOT] Extended=YES									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(2) HOPS361-NE	WFC3/IR, MULTIACCUM, IR	F128N	NSAMP=12; SAMP-SEQ=STEP100			Pattern 2, Exps 1-2 in Visit 10 (2)	599.232292 Secs (1797.697 Secs)	
									[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
	2	(2) HOPS361-NE	WFC3/IR, MULTIACCUM, IR	F130N	NSAMP=9; SAMP-SEQ=STEP50			Pattern 2, Exps 1-2 in Visit 10 (2)	199.231579 Secs (597.695 Secs)	
									[=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]



Proposal 16493 - Visit 11 - Investigating the Outflows and Shocks of HOPS 361

Wed Feb 24 19:00:20 GMT 2021

Visit	Proposal 16493, Visit 11, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 01									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=1.873 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-2)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	HOPS361-SW	RA: 05 46 58.9431 (86.7455963d) Dec: +00 20 41.12 (.34476d) Equinox: J2000		V=35	Reference Frame: ICRS				
	<i>Comments:</i> Category=ISM Description=[KNOT] Extended=YES									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(3) HOPS361-SW	WFC3/IR, MULTIACCUM, IR	F126N	NSAMP=12; SAMP-SEQ=STEP100			Pattern 2, Exps 1-2 in Visit 11 (2)	599.232292 Secs (1797.697 Secs)	
									[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[1]
2	(3) HOPS361-SW	WFC3/IR, MULTIACCUM, IR	F130N	NSAMP=9; SAMP-SEQ=STEP50			Pattern 2, Exps 1-2 in Visit 11 (2)	199.231579 Secs (597.695 Secs)		
									[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[1]



Proposal 16493 - Visit 12 - Investigating the Outflows and Shocks of HOPS 361

Wed Feb 24 19:00:20 GMT 2021

Visit	Proposal 16493, Visit 12, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 01									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=1.873 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-2)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	HOPS361-SW	RA: 05 46 58.9431 (86.7455963d) Dec: +00 20 41.12 (.34476d) Equinox: J2000		V=35	Reference Frame: ICRS				
	<i>Comments:</i> Category=ISM Description=[KNOT] Extended=YES									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(3) HOPS361-SW	WFC3/IR, MULTIACCUM, IR	F128N	NSAMP=12; SAMP-SEQ=STEP100			Pattern 2, Exps 1-2 in Visit 12 (2)	599.232292 Secs (1797.697 Secs)	
								[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[1]	
2	(3) HOPS361-SW	WFC3/IR, MULTIACCUM, IR	F130N	NSAMP=9; SAMP-SEQ=STEP50			Pattern 2, Exps 1-2 in Visit 12 (2)	199.231579 Secs (597.695 Secs)		
								[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)]	[1]	

