



## 16991 - A Multi-Cycle Monitoring Program of the Hydra's Shadow

Cycle: 30, 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	(1) V-TW-HYA	STIS/CCD	1	01-Feb-2023 15:00:18.0	yes
02	(1) V-TW-HYA	STIS/CCD	1	01-Feb-2023 15:00:19.0	yes
03	(2) PSF-REF-HD85512	STIS/CCD	1	01-Feb-2023 15:00:22.0	yes
04	(1) V-TW-HYA	STIS/CCD	1	01-Feb-2023 15:00:23.0	yes

4 Total Orbits Used

## **ABSTRACT**

In the era of HST, JWST, and ALMA, the initial conditions of planet formation will be laid bare through the direct imaging of planet forming regions around nearby young stars. As more and more disks are observed over multiple epochs, their dynamic and variable natures are revealed, opening new avenues of study. Archival HST images of TW Hya's outer disk show that it has a shadow that orbits with a period of  $\sim 16$  yr, but the full orbit of the shadow has not been observed, leaving ambiguity about its origin. We propose to observe TW Hya over the next three Cycles with HST/STIS coronagraphy to fill in badly needed orbital phase coverage of the shadow's motion and create a homogenous, high quality dataset with archival STIS observations. Our program will elucidate the physical origin of the shadow and constrain the structure of TW Hya's inner cavity independently from sub-mm imaging. Disk shadow imaging is a new tool for understanding the initial conditions of planet formation at radii inaccessible by other observations.

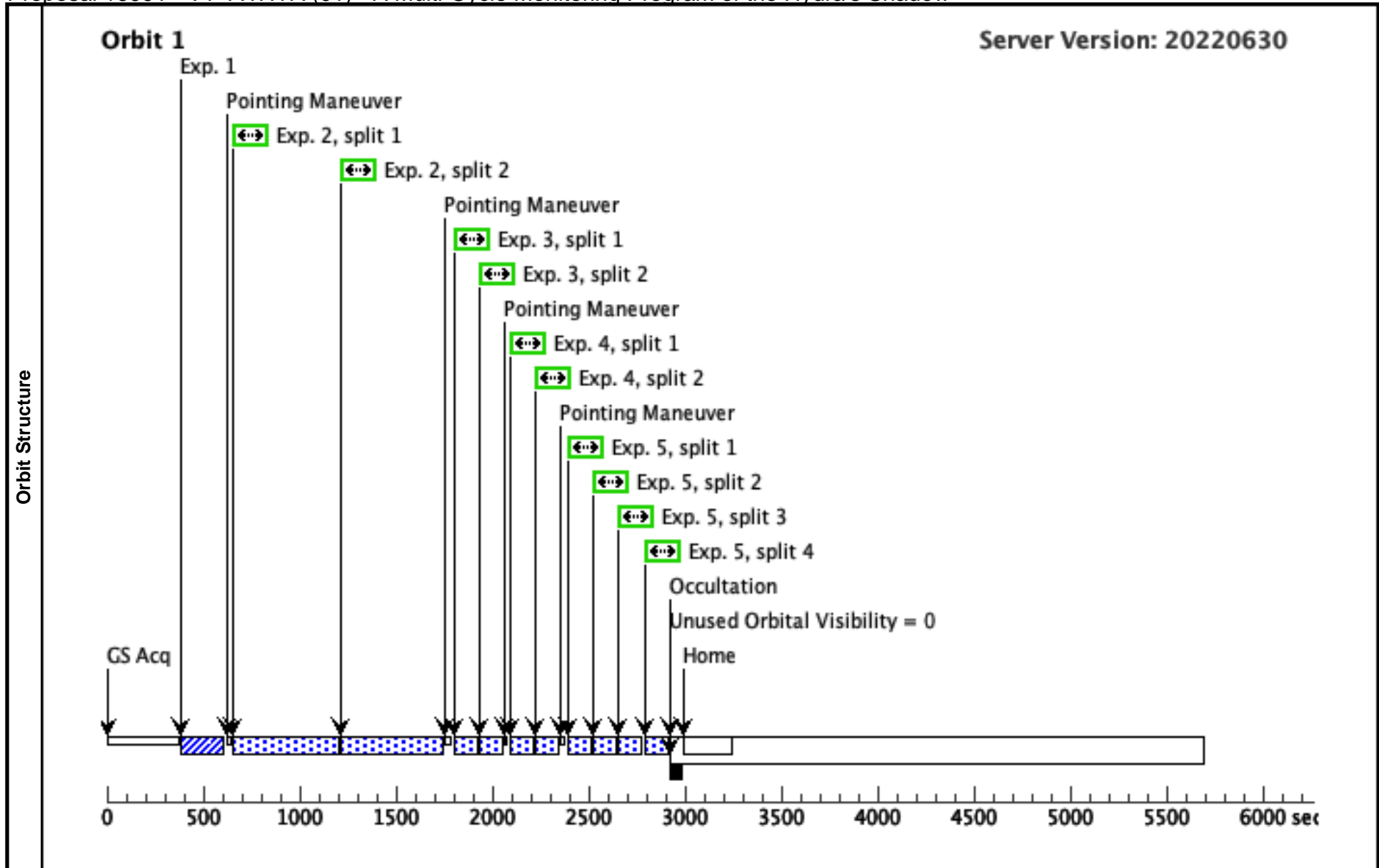
## **OBSERVING DESCRIPTION**

This proposal patterned after 16785 with a combination of BAR10 Lower Left, BAR10 Lower Right, and BAR5 and WEDGEA1.0 50CORON aperture positions. In this program we observe TW HYA in 3 visits interleaved with one visit of the PSF star. The first and last visit of TW Hya is oriented off nominal of between  $\pm 15$  to  $\pm 30$  degrees to enhance angular coverage of the protoplanetary disk.

Proposal 16991 - V1-TWHYA (01) - A Multi-Cycle Monitoring Program of the Hydra's Shadow

Wed Feb 01 20:00:24 GMT 2023

<b>Visit</b>	<p><b>Proposal 16991, V1-TWHYA (01), implementation</b></p> <p><b>Diagnostic Status: No Diagnostics</b></p> <p>Scientific Instruments: STIS/CCD</p> <p>Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 100%; ORIENT -30D TO -15D FROM 02</p> <p><i>Comments: TW Hya</i>  <i>First sets of visits, containing three visits of TW Hya at different relative orientations with one PSF calibration observation interleaved.</i>  <i>This is the first TW Hya visit in the first set.</i>  <i>The four visits within each set must be executed sequentially in contiguous orbits interrupted only for Earth occultation.</i></p> <p><i>Orientation: We wish to schedule this visit (1) at -30 deg from Visit 2, with the absolute orientation of Visit 2 unconstrained.</i>  <i>We allow a relative orientation tolerance from -15 deg to -30 deg to assist in guide star selection and scheduling.</i>  <i>NOTE to PC: Schedule as close to -30 deg from Visit 2 as possible.</i></p> <p><i>Relative Timing: This visit (1) should immediately precede visit (2). I.e., They should be executed sequentially in "back-to-back" orbits.</i></p> <p><i>BAR5 exposure times are selected to maximize SNR close to the star (~10-15/pixel up to inner working angle) and WEDGEA1.0 are selected to be as long as possible to ensure depth exterior to 1".</i></p>																																																																					
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<b>Fixed Targets</b>	<table border="1"> <thead> <tr> <th>#</th> <th>Label (ETC Run)</th> <th>Target</th> <th>Config,Mode,Aperture</th> <th>Spectral Els.</th> <th>Opt. Params.</th> <th>Special Reqs.</th> <th>Groups</th> <th>Exp. Time (Total)/[Actual Dur.]</th> <th>Orbit</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>TWHYA_A CQ (STIS.ta.144 7817)</td> <td>(1) V-TW-HYA</td> <td>STIS/CCD, ACQ, F28X50LP</td> <td>MIRROR</td> <td></td> <td>GS ACQ SCENARI O BASE1B3</td> <td>Sequence 1-5 Non-Int in V1-TWHYA (01 )</td> <td>0.2 Secs (0.2 Secs) [==&gt;]</td> <td>[1]</td> </tr> <tr> <td>2</td> <td>TWHYA_L ONG_1</td> <td>(1) V-TW-HYA</td> <td>STIS/CCD, ACCUM, WEDGEA1.0</td> <td>MIRROR</td> <td>SIZEAXIS2=427; CR-SPLIT=2; GAIN=4</td> <td></td> <td>Sequence 1-5 Non-Int in V1-TWHYA (01 )</td> <td>1016 Secs (1016 Secs) [==&gt;(Split 1)] [==&gt;(Split 2)]</td> <td>[1]</td> </tr> <tr> <td>3</td> <td>TWHYA_B AR10_LL</td> <td>(1) V-TW-HYA</td> <td>STIS/CCD, ACCUM, BAR10</td> <td>MIRROR</td> <td>SIZEAXIS2=100; CR-SPLIT=2; GAIN=4</td> <td>POS TARG -1.2327 0,-1.30535</td> <td>Sequence 1-5 Non-Int in V1-TWHYA (01 )</td> <td>220 Secs (220 Secs) [==&gt;(Split 1)] [==&gt;(Split 2)]</td> <td>[1]</td> </tr> <tr> <td>4</td> <td>TWHYA_B AR10_LR</td> <td>(1) V-TW-HYA</td> <td>STIS/CCD, ACCUM, BAR10</td> <td>MIRROR</td> <td>SIZEAXIS2=100; CR-SPLIT=2; GAIN=4</td> <td>POS TARG 1.33805, -1.30016</td> <td>Sequence 1-5 Non-Int in V1-TWHYA (01 )</td> <td>220 Secs (220 Secs) [==&gt;(Split 1)] [==&gt;(Split 2)]</td> <td>[1]</td> </tr> <tr> <td>5</td> <td>TWHYA_B AR5_CENT ER</td> <td>(1) V-TW-HYA</td> <td>STIS/CCD, ACCUM, BAR5</td> <td>MIRROR</td> <td>SIZEAXIS2=100; CR-SPLIT=4; GAIN=4</td> <td></td> <td>Sequence 1-5 Non-Int in V1-TWHYA (01 )</td> <td>440 Secs (440 Secs) [==&gt;(Split 1)] [==&gt;(Split 2)] [==&gt;(Split 3)] [==&gt;(Split 4)]</td> <td>[1]</td> </tr> </tbody> </table>										#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	1	TWHYA_A CQ (STIS.ta.144 7817)	(1) V-TW-HYA	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARI O BASE1B3	Sequence 1-5 Non-Int in V1-TWHYA (01 )	0.2 Secs (0.2 Secs) [==>]	[1]	2	TWHYA_L ONG_1	(1) V-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=2; GAIN=4		Sequence 1-5 Non-Int in V1-TWHYA (01 )	1016 Secs (1016 Secs) [==>(Split 1)] [==>(Split 2)]	[1]	3	TWHYA_B AR10_LL	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4	POS TARG -1.2327 0,-1.30535	Sequence 1-5 Non-Int in V1-TWHYA (01 )	220 Secs (220 Secs) [==>(Split 1)] [==>(Split 2)]	[1]	4	TWHYA_B AR10_LR	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4	POS TARG 1.33805, -1.30016	Sequence 1-5 Non-Int in V1-TWHYA (01 )	220 Secs (220 Secs) [==>(Split 1)] [==>(Split 2)]	[1]	5	TWHYA_B AR5_CENT ER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR5	MIRROR	SIZEAXIS2=100; CR-SPLIT=4; GAIN=4		Sequence 1-5 Non-Int in V1-TWHYA (01 )	440 Secs (440 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)]	[1]
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	2	TWHYA_L ONG_1	(1) V-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=2; GAIN=4		Sequence 1-5 Non-Int in V1-TWHYA (01 )	1016 Secs (1016 Secs) [==>(Split 1)] [==>(Split 2)]	[1]																																																												
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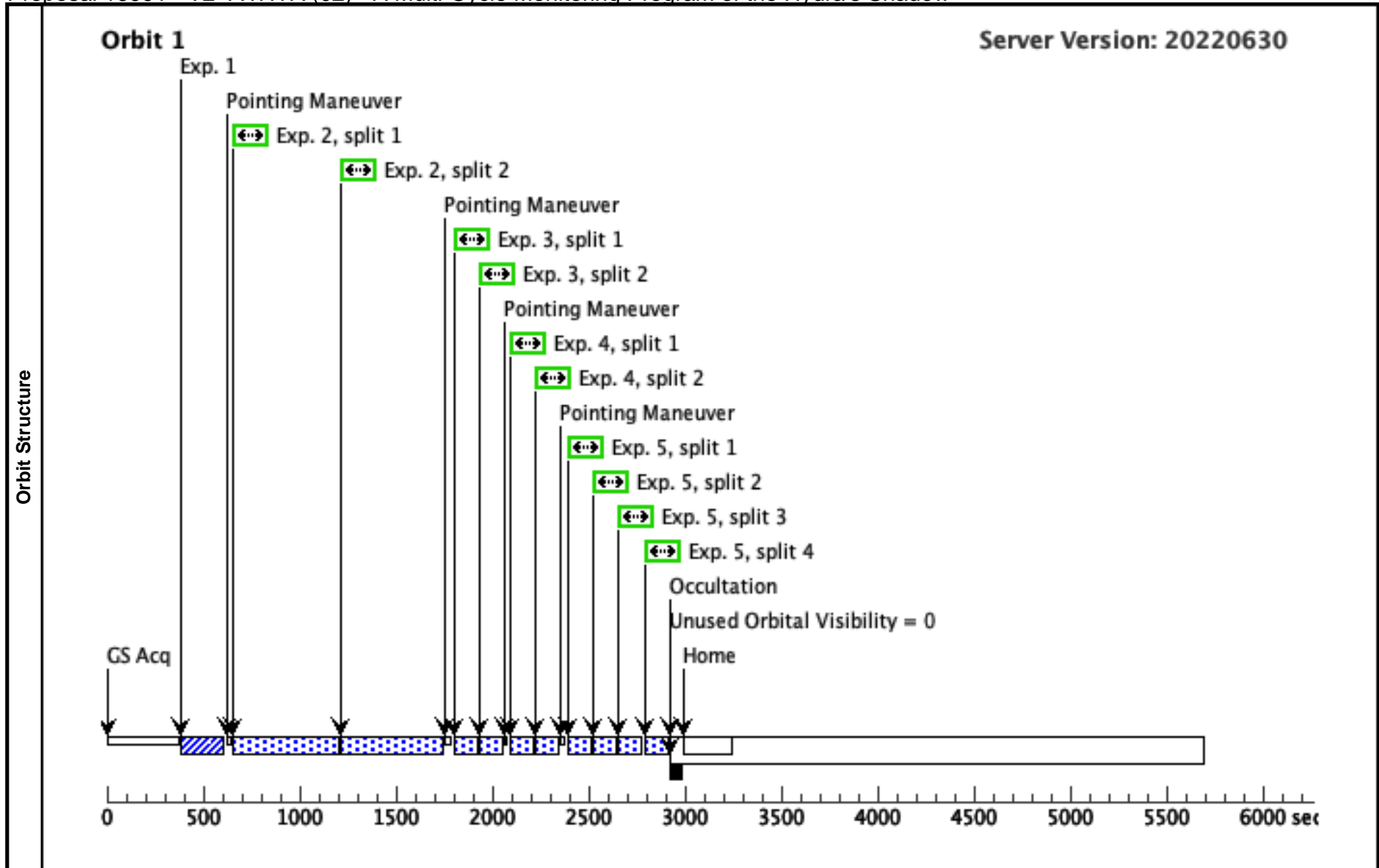
Proposal 16991 - V2-TWHYA (02) - A Multi-Cycle Monitoring Program of the Hydra's Shadow

Wed Feb 01 20:00:24 GMT 2023

<b>Visit</b>	<b>Proposal 16991, V2-TWHYA (02), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 100%; AFTER 01 BY .5 Orbits TO 1.5 Orbits <i>Comments: TW Hya</i> <i>three visits of TW HYA at different relative orientations with one PSF calibration observation interleaved.</i> <i>This is the second TW Hya visit in the first set.</i> <i>The four visits within the set must be executed sequentially in contiguous orbits interrupted only for Earth occultation.</i>  <i>Orientation: There are no orientation constraints on this visit (2).</i> <i>This visit at nominal roll as scheduled by STScI.</i> <i>Visits 1, 3, 4 carry relative orientation constraints w.r.t. this visit.</i>  <i>Relative Timing: This visit (2) should immediately follow Visit 1 and immediately precede Visit 3 in back-to-back orbits.</i>				

<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>
	(1)	V-TW-HYA	RA: 11 01 51.9129 (165.4663038d) Dec: -34 42 17.00 (-34.70472d) Equinox: J2000	Proper Motion RA: -68.4 mas/yr Proper Motion Dec: -14.02 mas/yr Epoch of Position: 1999.32	V=10.5	Reference Frame: ICRS
<i>Comments:</i> Category=STAR Description=[T TAURI STAR] Extended=NO						

<b>Exposures</b>	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1	TWHYA_A CQ (STIS.ta.144 7817)	(1) V-TW-HYA	STIS/CCD, ACQ, F28X50LP	MIRROR			GS ACQ SCENARIO BASE1B3	Sequence 1-5 Non-Int in V2-TWHYA (02)	.2 Secs (0.2 Secs) [==>]	[1]
	2	TWHYA_L ONG_1	(1) V-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=2; GAIN=4			Sequence 1-5 Non-Int in V2-TWHYA (02)	1016 Secs (1016 Secs) [==>(Split 1)] [==>(Split 2)]	[1]
	3	TWHYA_B AR10_LL	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4	POS TARG -1.2327 0,-1.30535		Sequence 1-5 Non-Int in V2-TWHYA (02)	220 Secs (220 Secs) [==>(Split 1)] [==>(Split 2)]	[1]
	4	TWHYA_B AR10_LR	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4	POS TARG 1.33805, -1.30016		Sequence 1-5 Non-Int in V2-TWHYA (02)	220 Secs (220 Secs) [==>(Split 1)] [==>(Split 2)]	[1]
	5	TWHYA_B AR5_CENT ER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR5	MIRROR	SIZEAXIS2=100; CR-SPLIT=4; GAIN=4			Sequence 1-5 Non-Int in V2-TWHYA (02)	440 Secs (440 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)]	[1]



Proposal 16991 - V3-PSF-TWHYA (03) - A Multi-Cycle Monitoring Program of the Hydra's Shadow

Wed Feb 01 20:00:24 GMT 2023

<b>Visit</b>	<p><b>Proposal 16991, V3-PSF-TWHYA (03), implementation</b></p> <p><b>Diagnostic Status: No Diagnostics</b></p> <p>Scientific Instruments: STIS/CCD</p> <p>Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 100%; AFTER 02 BY .5 Orbits TO 1.5 Orbits</p> <p>Comments: PSF (HD 85512). PSF calibration target for TW Hya. <math>V = 7.636</math>. <math>B - V = +1.15</math>. Spex. K6Vk</p> <p><i>This is the PSF star calibrator for the flanking visits (1-4). We levy no orientation constraints on this visit (3). However, we choose this target since it has been used in the past for TW Hya. So as Visits 2 and 3 must be scheduled in sequential contiguous orbits, if scheduled at nominal roll (as we expect also Visit 2 will be) then we expect absolute orientations of Visits 2 and 3 to be very similar (within a few degrees). This is important so we maintain similar Sun and Beta angles for the science target and its PSF calibrator,</i></p> <p><i>Relative Timing: This visit (3) should immediately follow visit 2 and immediately precede visit 4. I.e., they should be executed sequentially in "back-to-back" orbits.</i></p>												
	<b>Fixed Targets</b>	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>PSF-REF-HD85512</td> <td>RA: 09 51 7.7094 (147.7821225d) Dec: -43 30 17.34 (-43.50482d) Equinox: J2000</td> <td>Proper Motion RA: 461 mas/yr Proper Motion Dec: -472.0 mas/yr Parallax: 0.08867" Epoch of Position: 2015.5</td> <td>V=7.651</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p>Comments: possible spoiler star from original 2000 program is now at ~5.73" in 2021. Category=STAR Description=[M V-IV] Extended=NO</p>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(2)	PSF-REF-HD85512	RA: 09 51 7.7094 (147.7821225d) Dec: -43 30 17.34 (-43.50482d) Equinox: J2000	Proper Motion RA: 461 mas/yr Proper Motion Dec: -472.0 mas/yr Parallax: 0.08867" Epoch of Position: 2015.5	V=7.651
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Proposal 16991 - V3-PSF-TWHYA (03) - A Multi-Cycle Monitoring Program of the Hydra's Shadow

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	PSF-TWHY A_ACQ (STIS.ta.144 7816)	(2) PSF-REF-HD855 12	STIS/CCD, ACQ, F25ND3	MIRROR		GS ACQ SCENARI O BASE1B3	Sequence 1-8 Non-In t in V3-PSF-TWHY A (03)	.7 Secs (0.7 Secs) [==>]	[1]
<i>Comments: K6V nearby star V=7.65 Exptime rounded to nearest 0.1 second, assumed to get SNR=100.</i>									
2	PSF_TWHY A_LONG_1	(2) PSF-REF-HD855 12	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=8; GAIN=4		Sequence 1-8 Non-In t in V3-PSF-TWHY A (03)	256 Secs (256 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)] [==>(Split 5)] [==>(Split 6)] [==>(Split 7)] [==>(Split 8)]	[1]
3	PSF_TWHY A_LONG_2	(2) PSF-REF-HD855 12	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; GAIN=4; CR-SPLIT=8		Sequence 1-8 Non-In t in V3-PSF-TWHY A (03)	256 Secs (256 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)] [==>(Split 5)] [==>(Split 6)] [==>(Split 7)] [==>(Split 8)]	[1]
4	PSF_TWHY A_BAR10_ LR	(2) PSF-REF-HD855 12	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=5; GAIN=4	POS TARG 1.33805, -1.30016	Sequence 1-8 Non-In t in V3-PSF-TWHY A (03)	56 Secs (56 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)] [==>(Split 5)]	[1]
5	PSF_TWHY A_BAR10_ LL	(2) PSF-REF-HD855 12	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=5; GAIN=4	POS TARG -1.2327 0,-1.30535	Sequence 1-8 Non-In t in V3-PSF-TWHY A (03)	56 Secs (56 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)] [==>(Split 5)]	[1]
6	PSF-TWHY A_BAR5_C ENTER	(2) PSF-REF-HD855 12	STIS/CCD, ACCUM, BAR5	MIRROR	SIZEAXIS2=100; CR-SPLIT=5; GAIN=4		Sequence 1-8 Non-In t in V3-PSF-TWHY A (03)	56 Secs (56 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)] [==>(Split 5)]	[1]

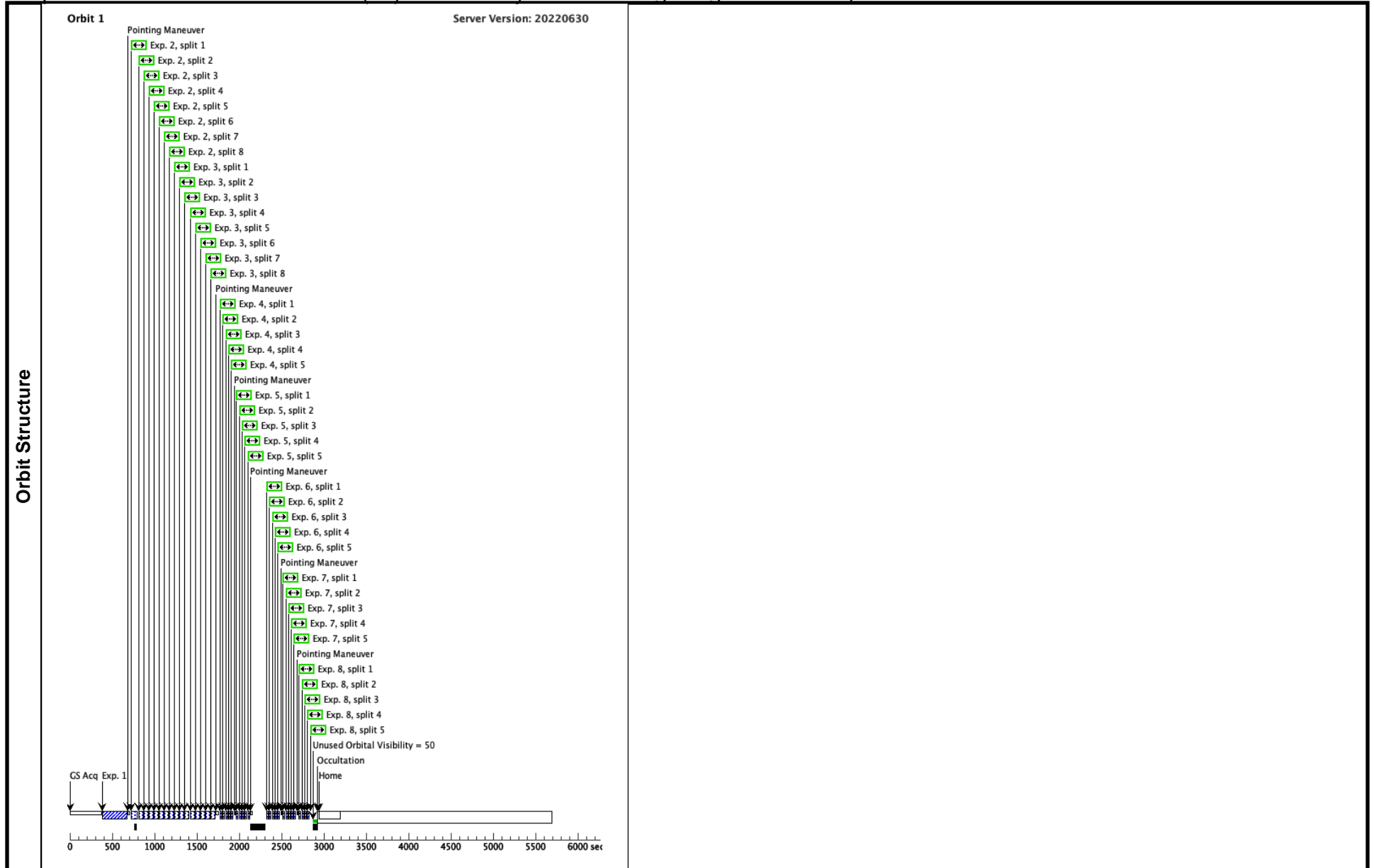
Exposures



Proposal 16991 - V3-PSF-TWHYA (03) - A Multi-Cycle Monitoring Program of the Hydra's Shadow

7	PSF-TWHY A_BAR5_P LUSDITHE R	(2) PSF-REF-HD855 12	STIS/CCD, ACCUM, BAR5	MIRROR	SIZEAXIS2=100; CR-SPLIT=5; GAIN=4	POS TARG 0.00247 95,0.0124497	Sequence 1-8 Non-Int in V3-PSF-TWHYA (03)	56 Secs (56 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)] [==>(Split 5)]	[1]
8	PSF-TWHY A_BAR5_M INUSDITH ER	(2) PSF-REF-HD855 12	STIS/CCD, ACCUM, BAR5	MIRROR	SIZEAXIS2=100; CR-SPLIT=5; GAIN=4	POS TARG -0.0024 7955,-0.0124497	Sequence 1-8 Non-Int in V3-PSF-TWHYA (03)	56 Secs (56 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)] [==>(Split 5)]	[1]

Proposal 16991 - V3-PSF-TWHYA (03) - A Multi-Cycle Monitoring Program of the Hydra's Shadow



Proposal 16991 - V4-TWHYA (04) - A Multi-Cycle Monitoring Program of the Hydra's Shadow

Wed Feb 01 20:00:24 GMT 2023

Visit	<b>Proposal 16991, V4-TWHYA (04), implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 100%; ORIENT 15D TO 30D FROM 02; AFTER 03 BY 0.5 Orbits TO 1.5 Orbits Comments: Orientation: We wish to schedule this visit (4) at +30 deg from Visit 2, with the absolute orientation of Visit 2 unconstrained. We allow a relative orientation tolerance from +15 deg to +30 deg to assist in guide star selection and scheduling. NOTE to PC: Schedule as close to +30 deg from Visit 2 as possible. Relative Timing: This visit (4) should immediately follow Visit 3. I.e., They should be executed sequentially in "back-to-back" orbits.												
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>V-TW-HYA</td> <td>RA: 11 01 51.9129 (165.4663038d) Dec: -34 42 17.00 (-34.70472d) Equinox: J2000</td> <td>Proper Motion RA: -68.4 mas/yr Proper Motion Dec: -14.02 mas/yr Epoch of Position: 1999.32</td> <td>V=10.5</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> Comments: Category=STAR Description=[T TAURI STAR] Extended=NO	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	V-TW-HYA	RA: 11 01 51.9129 (165.4663038d) Dec: -34 42 17.00 (-34.70472d) Equinox: J2000	Proper Motion RA: -68.4 mas/yr Proper Motion Dec: -14.02 mas/yr Epoch of Position: 1999.32	V=10.5
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Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit			
	1	TWHYA_A CQ (STIS.ta.144 7817)	(1) V-TW-HYA	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARI O BASE1B3	Sequence 1-5 Non-Int in V4-TWHYA (04)	.2 Secs (0.2 Secs) [==>]	[1]			
	2	TWHYA_L ONG_1	(1) V-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=2; GAIN=4		Sequence 1-5 Non-Int in V4-TWHYA (04)	1016 Secs (1016 Secs) [==>(Split 1)] [==>(Split 2)]	[1]			
	3	TWHYA_B AR10_LL	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4	POS TARG -1.2327 0,-1.30535	Sequence 1-5 Non-Int in V4-TWHYA (04)	220 Secs (220 Secs) [==>(Split 1)] [==>(Split 2)]	[1]			
	4	TWHYA_B AR10_LR	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4	POS TARG 1.33805, -1.30016	Sequence 1-5 Non-Int in V4-TWHYA (04)	220 Secs (220 Secs) [==>(Split 1)] [==>(Split 2)]	[1]			
	5	TWHYA_B AR5_CENT ER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR5	MIRROR	SIZEAXIS2=100; CR-SPLIT=4; GAIN=4		Sequence 1-5 Non-Int in V4-TWHYA (04)	440 Secs (440 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)]	[1]			

