13753 - Pushing to 8 AU in the archetypal protoplanetary disk of TW Hya

Cycle: 22, Proposal Category: GO

(Availability Mode: AVAILABLE)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) V-TW-HYA	STIS/CCD	1	08-Jan-2016 21:01:03.0	yes
02	(1) V-TW-HYA	STIS/CCD	1	08-Jan-2016 21:01:05.0	yes
03	(2) PSF-TW-HYA	STIS/CCD	1	08-Jan-2016 21:01:09.0	yes
04	(1) V-TW-HYA	STIS/CCD	1	08-Jan-2016 21:01:11.0	yes
05	(1) V-TW-HYA	STIS/CCD	1	08-Jan-2016 21:01:13.0	yes
06	(1) V-TW-HYA	STIS/CCD	1	08-Jan-2016 21:01:16.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
07	(2) PSF-TW-HYA	STIS/CCD	1	08-Jan-2016 21:01:19.0	yes
08	(1) V-TW-HYA	STIS/CCD	1	08-Jan-2016 21:01:23.0	yes

8 Total Orbits Used

ABSTRACT

We propose to use eight orbits of HST/STIS coronagraphy with the new bent finger occulter (BAR5) to probe, for the first time in visible scattered light, the protoplanetary disk of TW Hya down to as close as 8-13 AU (0.15-0.24"; roughly Saturn's orbit). That distance is a factor of three improvement compared to previous STIS images of this disk taken in 2000. HST/STIS provides a unique window through visible wavelengths at inner working angles on Solar System scales and at a spatial resolution comparable to the highest resolution modes of ALMA in Cycle 2. Previous scattered light observations show that the surface brightness of the disk abruptly changes its character interior to 50 AU, which could be indicative of a gap opened by a forming planet, a large opacity change, or shadowing from the inner disk. We will probe the inner disk at high fidelity, with the goal of discriminating between these three possibilities. A secondary goal will be to look for brightness variations and Keplerian motion of structures in the outer disk during the 15 year baseline between images. These legacy observations of TW Hya's small dust grain population will provide an anchor for future JWST, ALMA, Gemini Planet Imager (GPI), SPHERE, and polarimetric observations of this disk.

OBSERVING DESCRIPTION

This proposal is designed to blend the techniques of GO 12228 (a sub-array coroangraphic wedge observation of the target at two wedge positions at multiple orientations) using the newly available but unsupported BAR5 postion on the 50CORON aperture. We will execute a total of 8 visits of one orbit each grouped into two sets of four linked visits. The strategy will be to perform 3 visits of TW Hya interspersed with a single PSF reference observation at each wedge position. For each 4 visit block, we will first perform a target acquisition at the BAR10 position, then POS-TARG to the BAR5 position via parameters determined by the calibration program 12923. We will dither at that position to guard against the slit non-repeatability of the STIS slit mechanism, then switch to the WEDGEA1.0 position to take deeper observations of the outer region of the disk.

We attempt to keep the count levels of both TW Hya and its PSF reference as close as possible to avoid CTE effects between the PSF and target. We set exposure times such that 50% of full well is reached at the wedge/bar edges. Since TW Hya is variable we wish to guard against unintended saturation at our innermost working angles. This may also avoid saturation of the PSF in our BAR5 dither positions.

Visit

Proposal 13753, V1-TWHYA (01), scheduling Sat Jan 09 02:01:25 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 80%; ORIENT -30D TO -15D FROM 02

Comments: TW Hya
First of two sets of visits, each containing three visits of TW Hya at different relative orientations with one PSF calibration observation interleaved.
This is the first TW Hya visit in the first set.
The four visits within each set must be executed sequentially in contiguous orbits interrupted only for Earth occultation.

Orientation: We wish to schedule this visit (1) at -30 deg from Visit 2, with the absolute orientation of Visit 2 unconstrained.
We allow a relative orientation tolerence 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 (1) should immediately preceed visit (2). I.e., They should be executed sequentially in "back-to-back" orbits.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9129 (165.4663038d)	Proper Motion RA: -68.7 mas/yr	V=10.79+/-0.2	Reference Frame: ICRS
		Dec: -34 42 17.00 (-34.70472d)	Proper Motion Dec: -13.1 mas/yr		
		Equinox: J2000	Parallax: 0.0186"		
			Epoch of Position: 1999.32		

Comments: position from 2MASS, proper motion from UCAC4

Exposures

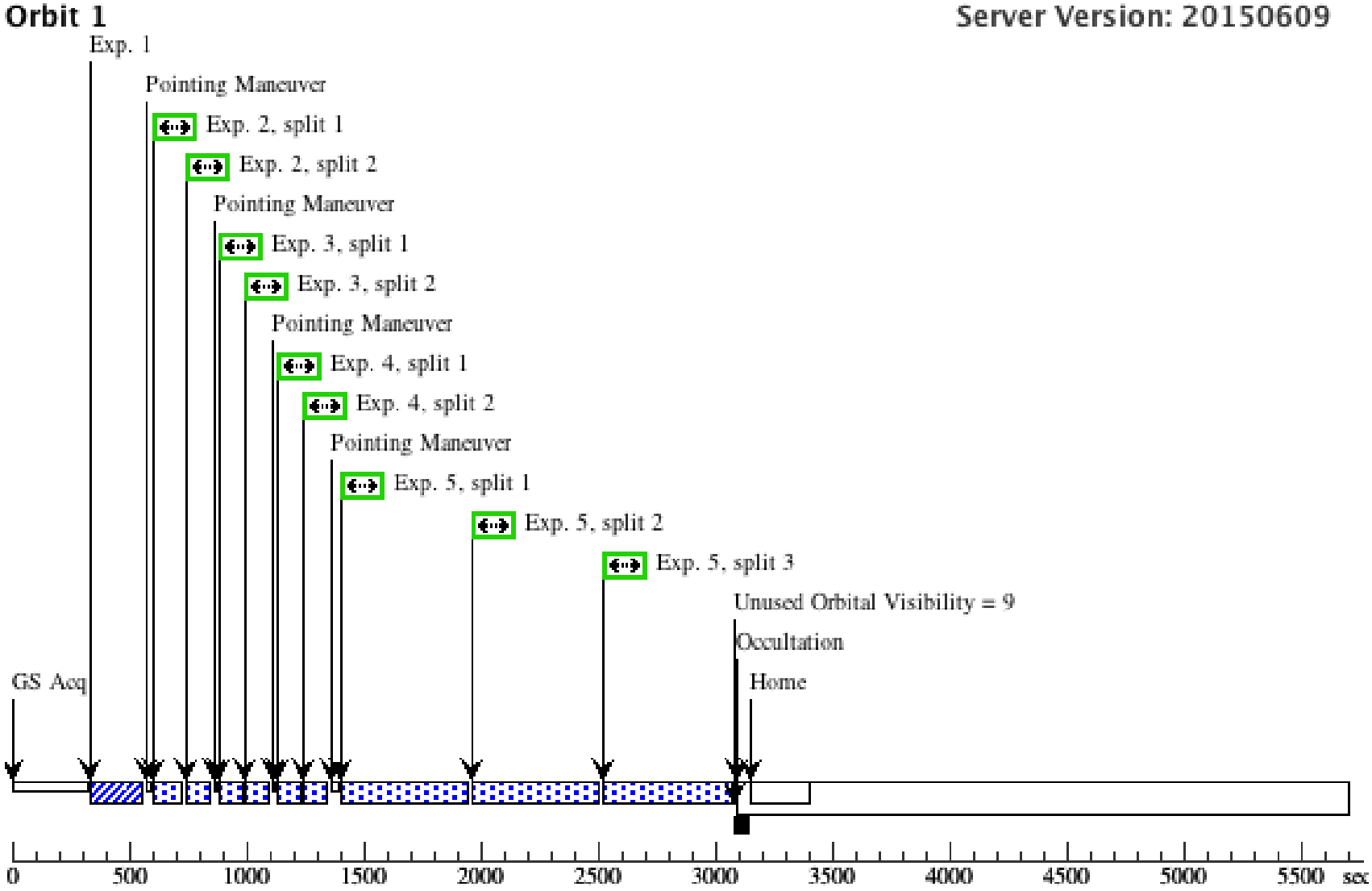
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TWHYA_ACQ (STIS.ta.618243)	(1) V-TW-HYA	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3	Sequence 1-5 Non-Int in V1-TWHYA (01)	0.3 Secs (0.3 Secs) *[==>]*	***[1]***
	Comments: V = 5.78, sp = A0V, Exptime rounded to nearest 0.1 second *ETC Request ID: STIS.ta.625567*								
2	TWHYA_BAR5_CENTER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4; CENTERAXIS2=700	POS TARG 17.48579,-7.42153	Sequence 1-5 Non-Int in V1-TWHYA (01)	182 Secs (182 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
3	TWHYA_BAR5_PLUSDITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4; CENTERAXIS2=700	POS TARG 17.48827,-7.40908	Sequence 1-5 Non-Int in V1-TWHYA (01)	182 Secs (182 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel above the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
4	TWHYA_BAR5_MINUSDITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4; CENTERAXIS2=700	POS TARG 17.48331,-7.43398	Sequence 1-5 Non-Int in V1-TWHYA (01)	182 Secs (182 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel below the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same as we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								

	5	TWHYA_LONG_1	(1) V-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=3; GAIN=4	Sequence 1-5 Non-Int in V1-TWHYA (01)	1581 Secs (1581 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]*	***[1]***

Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V).
HR 4796 is V =5.78 so saturation in 7.80s.
So 90% full well in appx 7.02s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.
For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of
visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.

SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")
For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target
to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the
Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.

Orbit Structure



Visit

Proposal 13753, V2-TWHYA (02), scheduling Sat Jan 09 02:01:25 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 80%; AFTER 01 BY .5 Orbits TO 1.5 Orbits

Comments: TW Hya
First of two sets of visits, each containing three visits of TW HYA at different relative orientations with one PSF calibration observation interleaved.
This is the second TW Hya visit in the first set.
The four visits within each set must be executed sequentially in contiguous orbits interrupted only for Earth occultation.

Orientation: There are no orientation constraints on this visit (2).
This visit at nominal roll as scheduled by STScI.
Visits 1, 4, 5, 6 and 8 carry relative orientation constraints w.r.t. this visit.

Relative Timing: This visit (2) should immediately follow Visit 1 and immediately preceed Visit 3 in back-to-back orbits.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9129 (165.4663038d)	Proper Motion RA: -68.7 mas/yr	V=10.79+/-0.2	Reference Frame: ICRS
		Dec: -34 42 17.00 (-34.70472d)	Proper Motion Dec: -13.1 mas/yr		
		Equinox: J2000	Parallax: 0.0186"		
			Epoch of Position: 1999.32		

Comments: position from 2MASS, proper motion from UCAC4

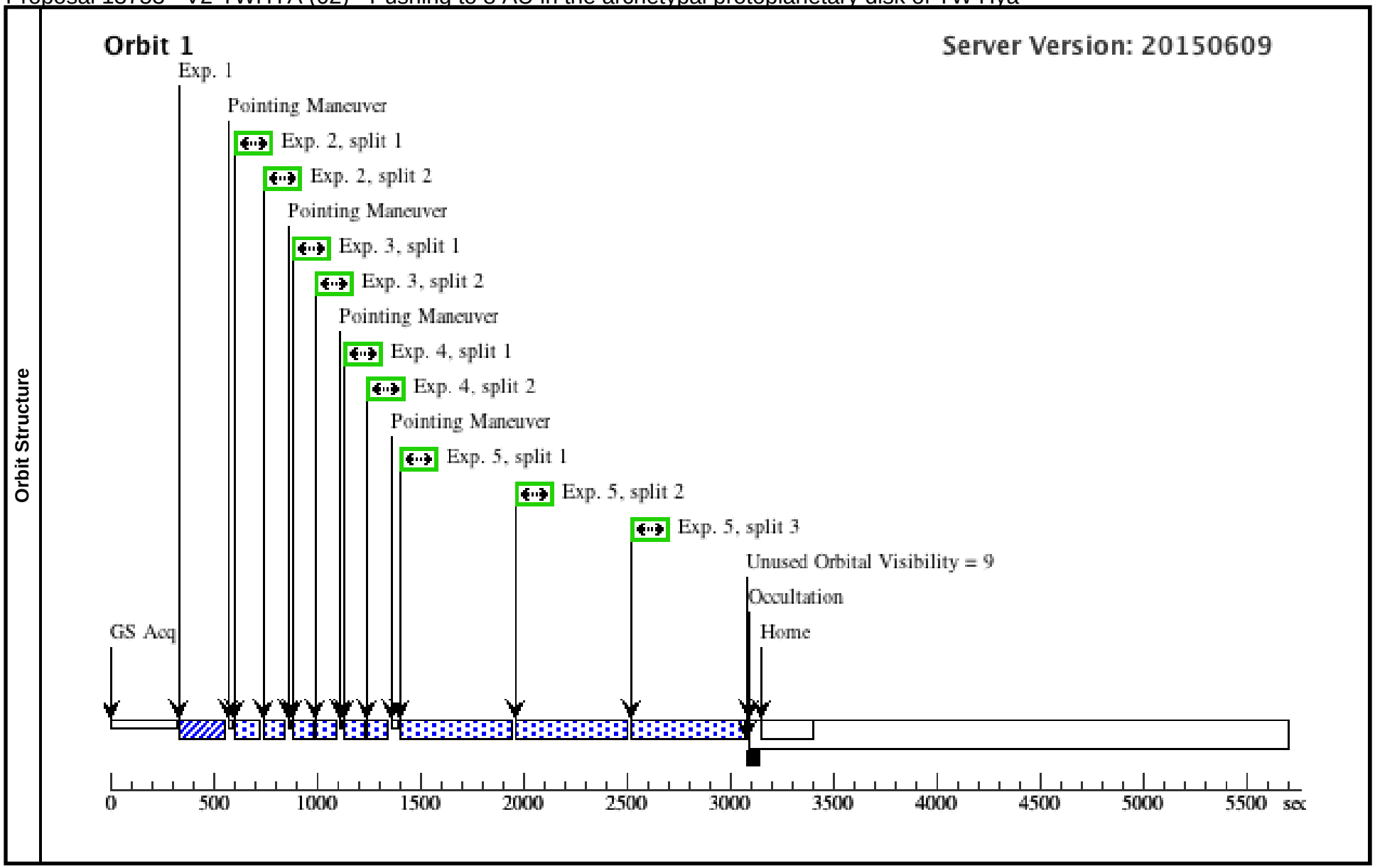
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TWHYA_ACQ (STIS.ta.618243)	(1) V-TW-HYA	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3	Sequence 1-5 Non-Int in V2-TWHYA (02)	.3 Secs (0.3 Secs) *[==>]*	***[1]***
	Comments: V = 5.78, sp = A0V, Exptime rounded to nearest 0.1 second *ETC Request ID: STIS.ta.618243*								
2	TWHYA_BAR5_CENTER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4; CENTERAXIS2=700	POS TARG 17.48579,-7.42153	Sequence 1-5 Non-Int in V2-TWHYA (02)	182 Secs (182 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
3	TWHYA_BAR5_PLUSDITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4; CENTERAXIS2=700	POS TARG 17.48827,-7.40908	Sequence 1-5 Non-Int in V2-TWHYA (02)	182 Secs (182 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel above the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
4	TWHYA_BAR5_MINUSDITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4; CENTERAXIS2=700	POS TARG 17.48331,-7.43398	Sequence 1-5 Non-Int in V2-TWHYA (02)	182 Secs (182 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel below the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								

	5	TWHYA_LONG_1	(1) V-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=3; GAIN=4	Sequence 1-5 Non-Int in V2-TWHYA (02)	1581 Secs (1581 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]*	***[1]***

Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V).
HR 4796 is V =5.78 so saturation in 7.80s.
So 90% full well in appx 7.02s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.
For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of
visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.

SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")
For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target
to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the
Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.


Orbit Structure
Orbit 1
Server Version: 20150609
Exp. 1
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Pointing Maneuver
Exp. 3, split 1
Exp. 3, split 2
Pointing Maneuver
Exp. 4, split 1
Exp. 4, split 2
Pointing Maneuver
Exp. 5, split 1
Exp. 5, split 2
Exp. 5, split 3
Unused Orbital Visibility = 9
Occultation
Home
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13753, V3-PSF-TWHYA (03), scheduling Sat Jan 09 02:01:26 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 80%; AFTER 02 BY .5 Orbits TO 1.5 Orbits

Comments: PSF (HD 85512). PSF calibration target for TW Hya. V = 7.636. B - V = +1.15. Spex. K6Vk

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,

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.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	PSF-TW-HYA	RA: 09 51 7.0052 (147.7791883d)	Proper Motion RA: 461.9 mas/yr	V=7.636+/-0.1	Reference Frame: ICRS
	Alt Name1: HD-85512	Dec: -43 30 9.74 (-43.50271d)	Proper Motion Dec: -471.9 mas/yr		
		Equinox: J2000	Parallax: 0.089"		
			Epoch of Position: 1999.30		

Comments: Coordinates taken from 2MASS, proper motion taken from UCAC4

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	PSF-TWHYA_ACQ (STIS.ta.618247)	(2) PSF-TW-HYA	STIS/CCD, ACQ, F25ND3	MIRROR		GS ACQ SCENARIO BASE1B3	Sequence 1-7 Non-Int in V3-PSF-TWHYA (03)	.7 Secs (0.7 Secs) *[==>]*	***[1]***
	Comments: V = 5.57, sp = B9V, Exptime rounded to nearest 0.1 second *ETC Request ID: STIS.ta.618247*								
2	PSF-TWHYA_BAR5_CENTER	(2) PSF-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=7; GAIN=4; CENTERAXIS2=700	POS TARG 17.48579,-7.42153	Sequence 1-7 Non-Int in V3-PSF-TWHYA (03)	35 Secs (35 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4735 is V = 5.57 so saturation in 1.69Ss.* *So 90% full well in appx 1.52s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
3	PSF-TWHYA_BAR5_PLUSDITHER	(2) PSF-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=7; GAIN=4; CENTERAXIS2=700	POS TARG 17.48827,-7.40908	Sequence 1-7 Non-Int in V3-PSF-TWHYA (03)	35 Secs (35 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on 1/4 PIXEL ABOVE the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4735 is V = 5.57 so saturation in 1.69Ss.* *So 90% full well in appx 1.52s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								

4	PSF-TWHYA_BAR5_MINUSDITHER	(2) PSF-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=7; GAIN=4; CENTERAXIS2=700	POS TARG 17.48331,-7.43398	Sequence 1-7 Non-Int in V3-PSF-TWHYA (03)	35 Secs (35 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]*	***[1]***

Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923.
*This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on 1/4 pixel below the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appropriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).*

*SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.*
HR 4735 is V = 5.57 so saturation in 1.69Ss.
So 90% full well in appx 1.52s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.

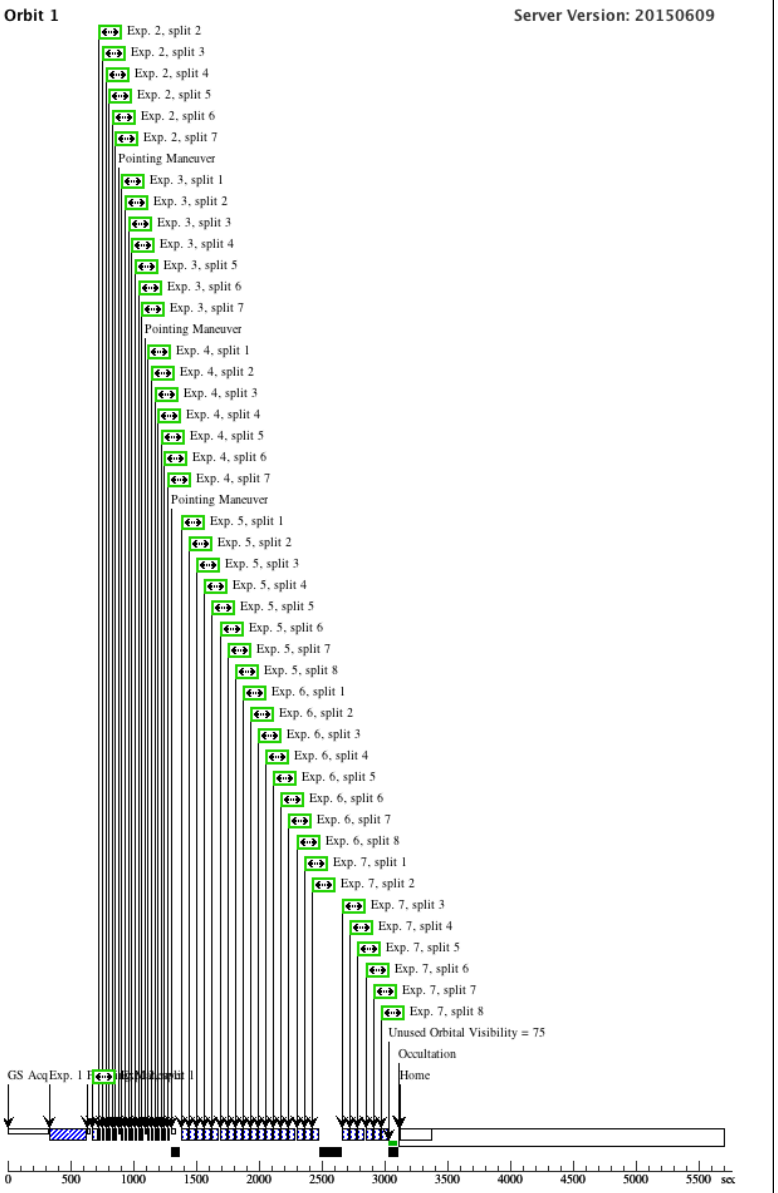
5	PSF_TWHYA_LONG_1	(2) PSF-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=8; GAIN=4		Sequence 1-7 Non-Int in V3-PSF-TWHYA (03)	256 Secs (256 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]* *[==>(Split 8)]*	***[1]***

Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V).
HR 4725 is V =5.57 so saturation in 6.43s.
So 90% full well in appx 5.78s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.
For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.

SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")
For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.

	6	PSF_TWHY A_LONG_2	(2) PSF-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; GAIN=4; CR-SPLIT=8	Sequence 1-7 Non-Int in V3-PSF-TWHYA (03)	256 Secs (256 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]* *[==>(Split 8)]*	***[1]***
		Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V). *HR 4725 is V =5.57 so saturation in 6.43s.* *So 90% full well in appx 5.78s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.* *For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of* *visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.* *SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")* *For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target* *to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the* *Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.*							
	7	PSF_TWHY A_LONG_3	(2) PSF-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; GAIN=4; CR-SPLIT=8	Sequence 1-7 Non-Int in V3-PSF-TWHYA (03)	256 Secs (256 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]* *[==>(Split 8)]*	***[1]***
		Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V). *HR 4725 is V =5.57 so saturation in 6.43s.* *So 90% full well in appx 5.78s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.* *For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of* *visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.* *SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")* *For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target* *to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the* *Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.*							

Orbit Structure



Visit

Proposal 13753, V4-TWHYA (04), scheduling Sat Jan 09 02:01:26 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 80%; ORIENT 15D TO 30D FROM 02; AFTER 03 BY 0.5 Orbits TO 1.5 Orbits

Comments: TW Hya (V=10.8, B-V=1.15)
First of two sets of visits, each containing three visits of HR 4796 at different relative orientations with one PSF calibration observation interleaved.
This is the third HD 4796 visit in the first set.
The four visits within each set must be executed sequentially in contiguous orbits interrupted only for Earth occultation.

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 tolerence 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

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9129 (165.4663038d)	Proper Motion RA: -68.7 mas/yr	V=10.79+/-0.2	Reference Frame: ICRS
		Dec: -34 42 17.00 (-34.70472d)	Proper Motion Dec: -13.1 mas/yr		
		Equinox: J2000	Parallax: 0.0186"		
			Epoch of Position: 1999.32		

Comments: position from 2MASS, proper motion from UCAC4

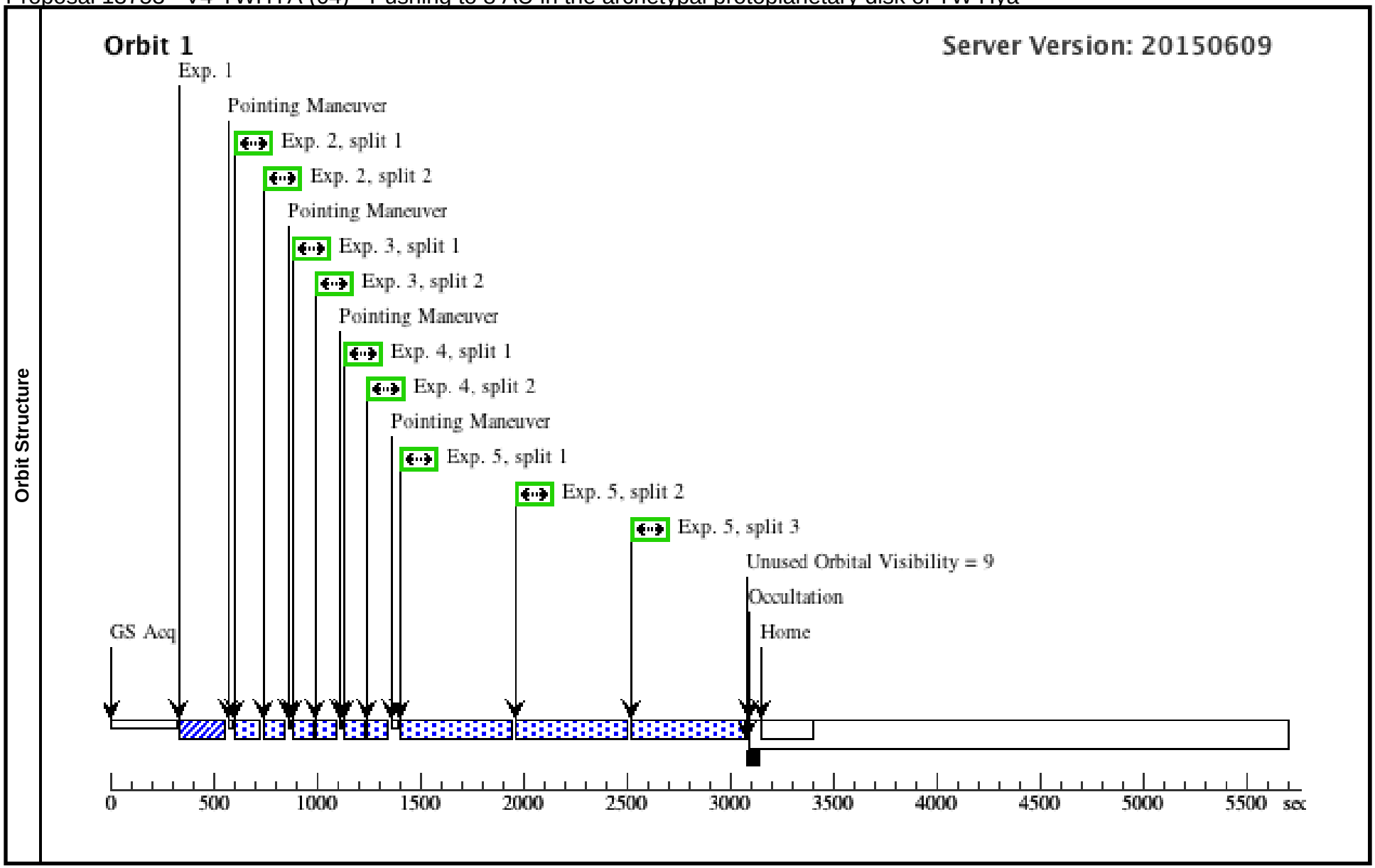
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TWHYA_ACQ (STIS.ta.618243)	(1) V-TW-HYA	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3	Sequence 1-5 Non-Int in V4-TWHYA (04)	.3 Secs (0.3 Secs) *[==>]*	***[1]***
	Comments: V = 5.78, sp = A0V, Exptime rounded to nearest 0.1 second *Taken from Program 8624, where TWHYa had*								
2	TWHYA_BAR5_CENTER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4; CENTERAXIS2=700	POS TARG 17.48579,-7.42153	Sequence 1-5 Non-Int in V4-TWHYA (04)	182 Secs (182 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
3	TWHYA_BAR5_PLUSDITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4; CENTERAXIS2=700	POS TARG 17.48827,-7.40908	Sequence 1-5 Non-Int in V4-TWHYA (04)	182 Secs (182 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel above the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
4	TWHYA_BAR5_MINUSDITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=2; GAIN=4; CENTERAXIS2=700	POS TARG 17.48331,-7.43398	Sequence 1-5 Non-Int in V4-TWHYA (04)	182 Secs (182 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel below the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								

	5	TWHYA_LONG_1	(1) V-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=3; GAIN=4	Sequence 1-5 Non-Int in V4-TWHYA (04)	1581 Secs (1581 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]*	***[1]***

Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V).
HR 4796 is V =5.78 so saturation in 7.80s.
So 90% full well in appx 7.02s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.
For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of
visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.

SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")
For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target
to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the
Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.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Server Version: 20150609
Orbit Structure
Exp. 1
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Pointing Maneuver
Exp. 3, split 1
Exp. 3, split 2
Pointing Maneuver
Exp. 4, split 1
Exp. 4, split 2
Pointing Maneuver
Exp. 5, split 1
Exp. 5, split 2
Exp. 5, split 3
Unused Orbital Visibility = 9
Occultation
GS Acq
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13753, V5-TWHYA (05), completed Sat Jan 09 02:01:26 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 80%; ORIENT -30D TO -15D FROM 06

Comments: TW Hya (V=10.8, B-V=1.15)
Second of two sets of visits, each containing three visits of TW Hya at different relative orientations with one PSF calibration observation interleaved.
This is the first TW Hya visit in the first set.
The four visits within each set must be executed sequentially in contiguous orbits interrupted only for Earth occultation.

Orientation: We wish to schedule this visit (5) at -30 deg from Visit 6.
We allow a relative orientation tolerence 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 6 as possible.

Relative Timing: This visit (5) should immediately precede visit 6.

Diagnostics

(V5-TWHYA (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9129 (165.4663038d)	Proper Motion RA: -68.7 mas/yr	V=10.79+/-0.2	Reference Frame: ICRS
		Dec: -34 42 17.00 (-34.70472d)	Proper Motion Dec: -13.1 mas/yr		
		Equinox: J2000	Parallax: 0.0186"		
			Epoch of Position: 1999.32		

Comments: position from 2MASS, proper motion from UCAC4

Exposures

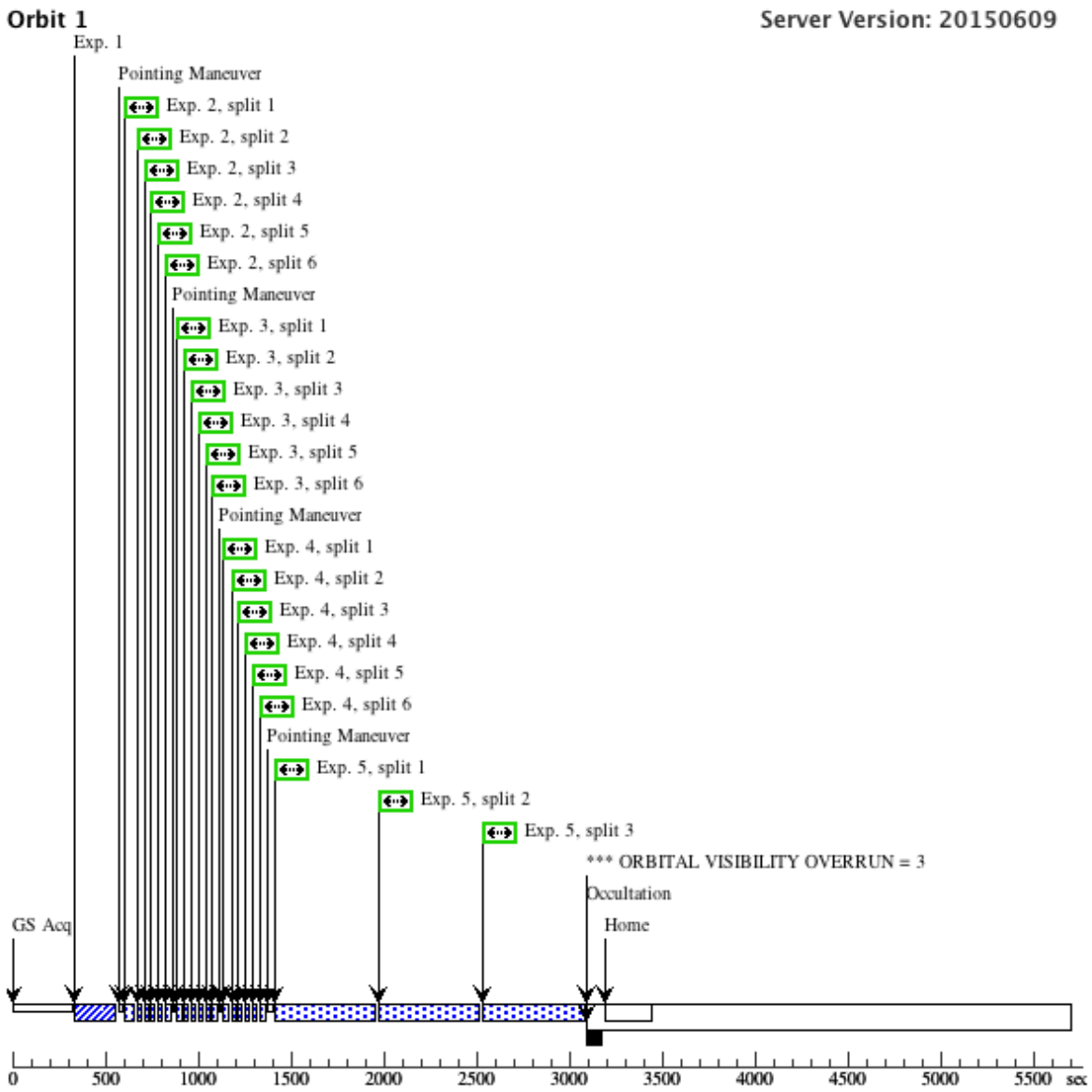
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TWHYA_ACQ (STIS.ta.618243)	(1) V-TW-HYA	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3	Sequence 1-5 Non-Int in V5-TWHYA (05)	.3 Secs (0.3 Secs) *[==>]*	***[1]***
	Comments: V = 5.78, sp = A0V, Exptime rounded to nearest 0.1 second *ETC Request ID: STIS.ta.618243*								
2	TWHYA_BAR5_CENTER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=6; GAIN=4; CENTERAXIS2=700	POS TARG 17.48579,-7.42153	Sequence 1-5 Non-Int in V5-TWHYA (05)	102 Secs (102 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
3	TWHYA_BAR5_PLUS DITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=6; GAIN=4; CENTERAXIS2=700	POS TARG 17.48827,-7.40908	Sequence 1-5 Non-Int in V5-TWHYA (05)	102 Secs (102 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel above the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
4	TWHYA_BAR5_PLUS DITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=6; GAIN=4; CENTERAXIS2=700	POS TARG 17.48331,-7.43398	Sequence 1-5 Non-Int in V5-TWHYA (05)	102 Secs (102 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel below the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								

	5	TWHYA_LONG_1	(1) V-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=3; GAIN=4	Sequence 1-5 Non-Int in V5-TWHYA (05)	1581 Secs (1581 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]*	***[1]***

Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V).
HR 4796 is V =5.78 so saturation in 7.80s.
So 90% full well in appx 7.02s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.
For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of
visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.

SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")
For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target
to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the
Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.

Orbit Structure



Visit

Proposal 13753, V6-TWHYA (06), completed Sat Jan 09 02:01:26 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 80%; ORIENT 75D TO 105D FROM 02; AFTER 05 BY .5 Orbits TO 1.5 Orbits

Comments: TW Hya (V=10.8, B-V=1.15)
Second of two sets of visits, each containing three visits of TW Hya at different relative orientations with one PSF calibration observation interleaved.
This is the second TW Hya visit in the second set.
The four visits within each set must be executed sequentially in contiguous orbits interrupted only for Earth occultation.

Relative Orientation: We wish to schedule this visit (6) at EITHER -90 deg OR +90 deg from Visit 2.
Either (+ or -) is equally acceptable, but there is no way to specificy this via APT 22.2.
Here we specify a range of positive relative orientations of +75 deg to +105 deg to assist in guide star selection and scheduling.
NOTE to PC: Schedule as close to +90 deg from Visit 2 as possible.
Note to PC: You may freely change the parity of the relative orientation to negative if needed for guide star selection and scheduling.

Relative Timing: Schedule in orbit immediately after visit 5 and before visit 7, i.e. they should be back-to-back.

Diagnostics

(V6-TWHYA (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9129 (165.4663038d)	Proper Motion RA: -68.7 mas/yr	V=10.79+/-0.2	Reference Frame: ICRS
		Dec: -34 42 17.00 (-34.70472d)	Proper Motion Dec: -13.1 mas/yr		
		Equinox: J2000	Parallax: 0.0186"		
			Epoch of Position: 1999.32		

Comments: position from 2MASS, proper motion from UCAC4

Exposures

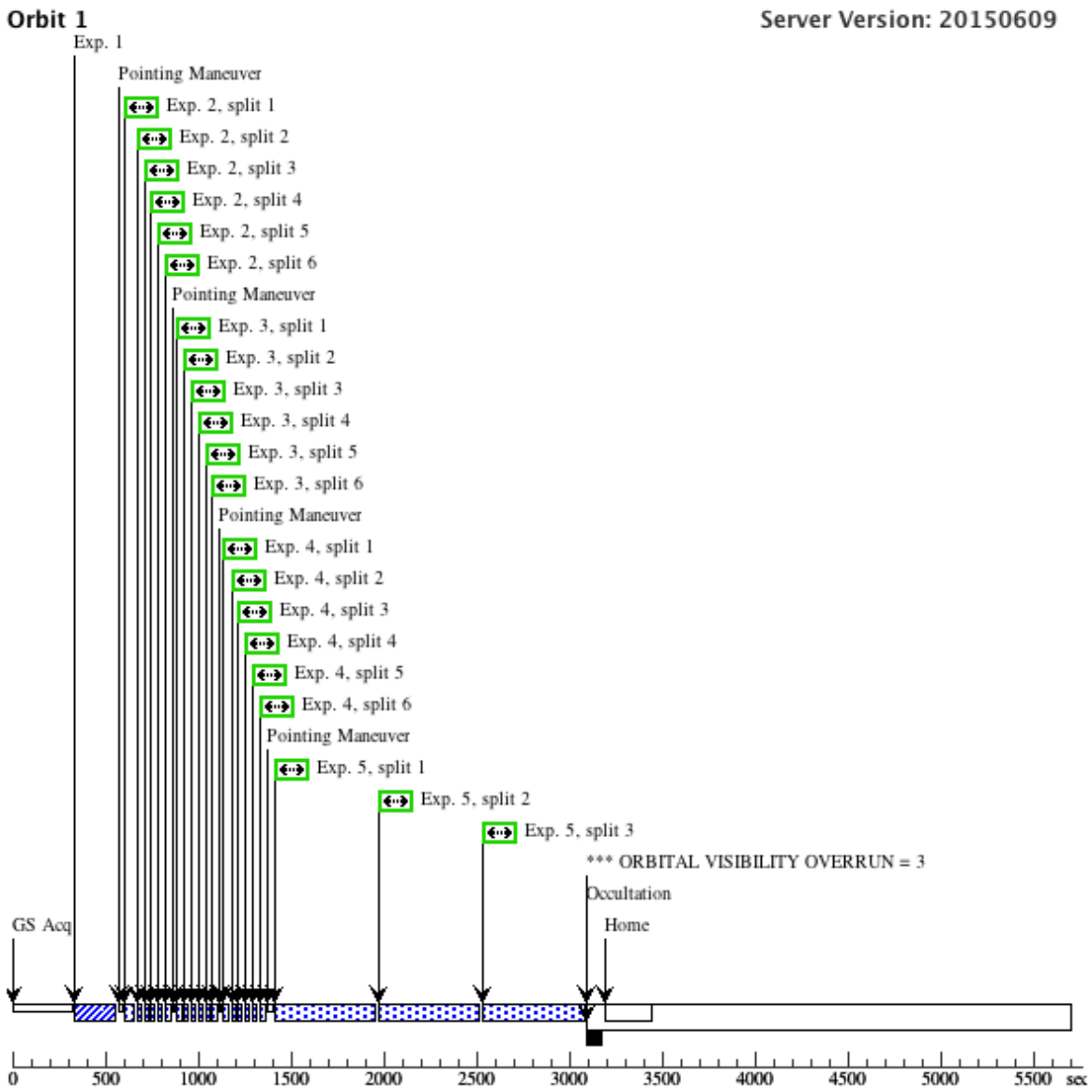
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TWHYA_ACQ (STIS.ta.618243)	(1) V-TW-HYA	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3	Sequence 1-5 Non-Int in V6-TWHYA (06)	.3 Secs (0.3 Secs) *[==>]*	***[1]***
	Comments: V = 5.78, sp = A0V, Exptime rounded to nearest 0.1 second *ETC Request ID: STIS.ta.618243*								
2	TWHYA_BAR5_CENTER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=6; GAIN=4; CENTERAXIS2=700	POS TARG 17.48579,-7.42153	Sequence 1-5 Non-Int in V6-TWHYA (06)	102 Secs (102 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
3	TWHYA_BAR5_PLUSDITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=6; GAIN=4; CENTERAXIS2=700	POS TARG 17.48827,-7.40908	Sequence 1-5 Non-Int in V6-TWHYA (06)	102 Secs (102 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel above the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
4	TWHYA_BAR5_MINUSDITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=6; GAIN=4; CENTERAXIS2=700	POS TARG 17.48331,-7.43398	Sequence 1-5 Non-Int in V6-TWHYA (06)	102 Secs (102 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel below the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								

	5	HR4796_LONG_1	(1) V-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=3; GAIN=4	Sequence 1-5 Non-Int in V6-TWHYA (06)	1581 Secs (1581 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]*	***[1]***

Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V).
HR 4796 is V =5.78 so saturation in 7.80s.
So 90% full well in appx 7.02s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.
For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of
visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.

SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")
For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target
to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the
Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.

Orbit Structure



Visit

Proposal 13753, V7-PSF-TWHYA (07), completed Sat Jan 09 02:01:26 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 80%; AFTER 06 BY .5 Orbits TO 1.5 Orbits

Comments: PSF (HD 85512). PSF calibration target for TW Hya. V=7.636 B-V=1.15, Spex K6Vk.

This is the PSF star calibrator for the flanking visits (5-8). We levy no orientation constraints on this visit (7). However, we choose this target close in the sky to its paired science target. So as Visits 6 and 7 must be scheduled in sequential contiguous orbits, if scheduled at nominal roll (as we expect also Visit 06 will be) then we expect absolute orientations of Visits 6 and 7 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,

Relative Timing: This visit (7) should immediately follow visit 6 and immediately precede visit 8. I.e., they should be executed sequentially in "back-to-back" orbits.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	PSF-TW-HYA	RA: 09 51 7.0052 (147.7791883d)	Proper Motion RA: 461.9 mas/yr	V=7.636+/-0.1	Reference Frame: ICRS
	Alt Name1: HD-85512	Dec: -43 30 9.74 (-43.50271d)	Proper Motion Dec: -471.9 mas/yr		
		Equinox: J2000	Parallax: 0.089"		
			Epoch of Position: 1999.30		

Comments: Coordinates taken from 2MASS, proper motion taken from UCAC4

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	PSF_TWHYA_ACQ (STIS.ta.618247)	(2) PSF-TW-HYA	STIS/CCD, ACQ, F25ND3	MIRROR		GS ACQ SCENARIO BASE1B3	Sequence 1-7 Non-Int in V7-PSF-TWHYA (07)	0.7 Secs (0.7 Secs) *[==>]*	***[1]***
	Comments: V = 5.57, sp = B9V, Exptime rounded to nearest 0.1 second *ETC Request ID: STIS.ta.618247*								
2	PSF_TWHYA_BAR5_CENTER	(2) PSF-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=8; GAIN=4; CENTERAXIS2=700	POS TARG 17.48579,-7.42153	Sequence 1-7 Non-Int in V7-PSF-TWHYA (07)	8 Secs (8 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]* *[==>(Split 8)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4735 is V = 5.57 so saturation in 1.69Ss.* *So 90% full well in appx 1.52s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
3	PSF_TWHYA_BAR5_PLUSDITHER	(2) PSF-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=8; GAIN=4; CENTERAXIS2=700	POS TARG 17.48827,-7.40908	Sequence 1-7 Non-Int in V7-PSF-TWHYA (07)	8 Secs (8 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]* *[==>(Split 8)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on 1/4 PIXEL ABOVE the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4735 is V = 5.57 so saturation in 1.69Ss.* *So 90% full well in appx 1.52s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								

4	PSF_TWHY A_BAR5_M INUSDITH ER	(2) PSF-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=8; GAIN=4; CENTERAXIS2=700	POS TARG 17.48331,-7.43398	Sequence 1-7 Non-Int in V7-PSF-TWHYA (07)	8 Secs (8 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]* *[==>(Split 8)]*	***[1]***

Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923.
*This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on 1/4 pixel below the mid-line of BAR5. We then use a subarray readout of CENTERAXIS2 = 700 appropriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).*

*SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.*
HR 4735 is V = 5.57 so saturation in 1.69Ss.
So 90% full well in appx 1.52s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.

5	PSF_TWHY A_LONG_1	(2) PSF-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=8; GAIN=4		Sequence 1-7 Non-Int in V7-PSF-TWHYA (07)	256 Secs (256 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]* *[==>(Split 8)]*	***[1]***

Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V).
HR 4725 is V =5.57 so saturation in 6.43s.
So 90% full well in appx 5.78s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.
For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.

SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")
For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.

	6	PSF_TWHY A_LONG_2	(2) PSF-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=8; GAIN=4	Sequence 1-7 Non-Int in V7-PSF-TWHYA (07)	256 Secs (256 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]* *[==>(Split 8)]*	***[1]***

Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V).
HR 4725 is V =5.57 so saturation in 6.43s.
So 90% full well in appx 5.78s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.
For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of
visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.

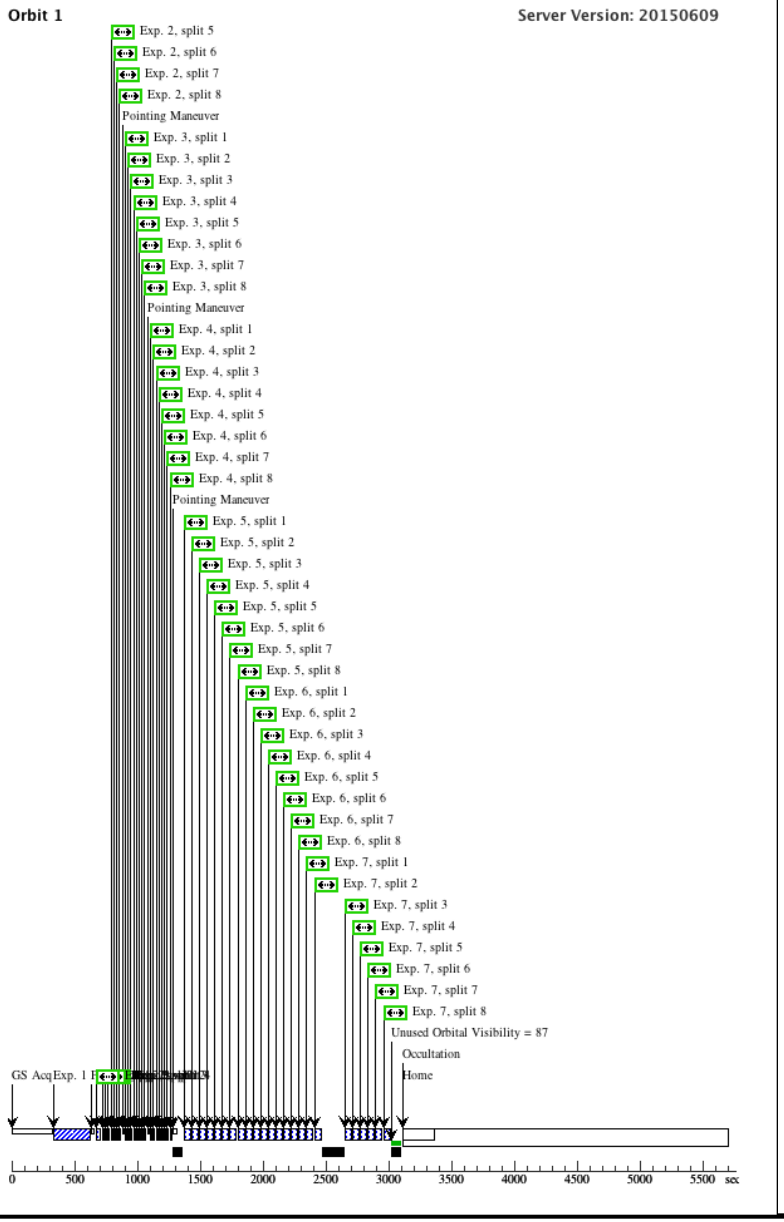
SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")
For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target
to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the
Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.

	7	PSF_TWHY A_LONG_3	(2) PSF-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=8; GAIN=4	Sequence 1-7 Non-Int in V7-PSF-TWHYA (07)	256 Secs (256 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]* *[==>(Split 7)]* *[==>(Split 8)]*	***[1]***

Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V).
HR 4725 is V =5.57 so saturation in 6.43s.
So 90% full well in appx 5.78s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.
For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of
visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.

SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")
For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target
to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the
Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.

Orbit Structure



Visit

Proposal 13753, V8-TWHYA (08), completed Sat Jan 09 02:01:26 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD

Special Requirements: PCS MODE FINE; GUID TOL 0.005"; GYRO MODE 3GOBAD; SCHED 80%; ORIENT 15D TO 30D FROM 06; AFTER 07 BY 0.5 Orbits TO 1.5 Orbits

Comments: TW Hya (V=10.8, B-v=1.15)
FSecond of two sets of visits, each containing three visits of TW Hya at different relative orientations with one PSF calibration observation interleaved.
This is the third TW Hya visit in the first set.
The four visits within each set must be executed sequentially in contiguous orbits interrupted only for Earth occultation.

Orientation: We wish to schedule this visit (8) at +30 deg from Visit 06.
We allow a relative orientation tolerence 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 6 as possible.

Relative Timing: This visit (8) should immediately follow Visit 7. I.e., They should be executed sequentially in "back-to-back" orbits.

Diagnostics

(V8-TWHYA (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-TW-HYA	RA: 11 01 51.9129 (165.4663038d)	Proper Motion RA: -68.7 mas/yr	V=10.79+/-0.2	Reference Frame: ICRS
		Dec: -34 42 17.00 (-34.70472d)	Proper Motion Dec: -13.1 mas/yr		
		Equinox: J2000	Parallax: 0.0186"		
			Epoch of Position: 1999.32		

Comments: position from 2MASS, proper motion from UCAC4

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TWHYA_ACQ (STIS.ta.618243)	(1) V-TW-HYA	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3	Sequence 1-5 Non-Int in V8-TWHYA (08)	.3 Secs (0.3 Secs) *[==>]*	***[1]***
	Comments: V = 5.78, sp = A0V, Exptime rounded to nearest 0.1 second *ETC Request ID: STIS.ta.618243*								
2	TWHYA_BAR5_CENTER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=6; GAIN=4; CENTERAXIS2=700	POS TARG 17.48579,-7.42153	Sequence 1-5 Non-Int in V8-TWHYA (08)	102 Secs (102 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target on the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
3	TWHYA_BAR5_PLUSDITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=6; GAIN=4; CENTERAXIS2=700	POS TARG 17.48827,-7.40908	Sequence 1-5 Non-Int in V8-TWHYA (08)	102 Secs (102 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel above the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								
4	TWHYA_BAR5_MINUSDITHER	(1) V-TW-HYA	STIS/CCD, ACCUM, BAR10	MIRROR	SIZEAXIS2=100; CR-SPLIT=6; GAIN=4; CENTERAXIS2=700	POS TARG 17.48331,-7.43398	Sequence 1-5 Non-Int in V8-TWHYA (08)	102 Secs (102 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]* *[==>(Split 5)]* *[==>(Split 6)]*	***[1]***
	Comments: NOTE TO PC/CS: Here we use the BAR5 occulter (Aperture) that we comissioned in GO program 12923. *This aperture is not available in APT Phase 2, *AND* the SIAF locations of the aperture fiducial we determined in GO 12923 is yet to be populated in SIAF.dat and flowed down to the ground system. We therefore call out BAR10 and use POS TARGs to move the target to the desired positions behind the BAR5 occulter. He we attempt to place the target 1/4 pixel below the mid-line of BAR5. We then use a subarray readout of CENTYERAXIS2 = 700 appopriate for BAR5 with a SIZEAXIS2 = 137 (the same ass we use elsewhere for Wedge0.6A).* *SCALABLE BENCHMARK: We expect full-well at r=0.15" with BAR10 from wings of stellar PSF in 1 second for V=5.0 (A0V) {**to be re-verified**}.* *HR 4796 is V = 5.78 so saturation in 2.09s.* *So 90% full well in appx 1.85s. Use this for the BAR5 exposures, repeated (8x) with multiple CR Splits.*								

	5	TWHYA_LONG_1 (1) V-TW-HYA	STIS/CCD, ACCUM, WEDGEA1.0	MIRROR	SIZEAXIS2=427; CR-SPLIT=3; GAIN=4	Sequence 1-5 Non-Int in V8-TWHYA (08)	1581 Secs (1581 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]*	***[1]***

Comments: SCALABLE BENCHMARK: We expect full-well at r=0.3" from wings of stellar PSF in 1 second for V=3.55 (A0V).
HR 4796 is V =5.78 so saturation in 7.80s.
So 90% full well in appx 7.02s. Use this for the "short" exposures, repeated (8x) with multiple CR Splits.
For long exposures at WedgeA1.0 go (up to) 20x deeper in each that will fit into remainer of
visibility period CR-SPLIT at least 3 times - and trim exposure time to fit in visibility window.

SCALABLE PARAMETER FOR SUB-ARRAY Readout: SIZEAXIS2 = 20 is 1" in full extent (r = 0.5")
For these "long" exposures we will image perpendicular to the wedge (symmetrically) centered on the target
to the maximum extent permitted by the limits of the FOV (edge of the detector) on the "small" side of the
Wedge A taper. Thus, for these short exposures we use SIZEAXIS12 = 427, appropriate for the WedgeA1.0 position.

Orbit Structure