



16020 - WFC3 Tungsten Lamp Warmup

Cycle: 27, Proposal Category: CAL/WFC3

(Availability Mode: RESTRICTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Heather Kurtz (PI) (Contact)	Space Telescope Science Institute	hkurtz@stsci.edu
Mr. Harish Khandrika (CoI) (Contact)	Space Telescope Science Institute	hkhandrika@stsci.edu
Dr. Sylvia M. Baggett (CoI)	Space Telescope Science Institute	sbaggett@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	DARK TUNGSTEN	S/C WFC3/UVIS	1	21-Feb-2020 11:00:12.0	yes
02	DARK TUNGSTEN	S/C WFC3/UVIS	1	21-Feb-2020 11:00:13.0	yes
03	DARK TUNGSTEN	S/C WFC3/UVIS	1	21-Feb-2020 11:00:15.0	yes
04	DARK TUNGSTEN	S/C WFC3/UVIS	1	21-Feb-2020 11:00:16.0	yes

4 Total Orbits Used

ABSTRACT

This proposal will help provide a measure of the stability of the tungsten lamp output immediately after turn-on. The lamp will be examined in the filters F475X, F606W, and F763M. All four bulbs (primaries and backups) will be checked using a short sequence of 0.5 second 3X3 binned full

Proposal 16020 (STScI Edit Number: 2, Created: Friday, February 21, 2020 at 11:00:16 AM Eastern Standard Time) - Overview
frame UVIS flats. Prior observations of the lamp output taken during ground-testing were 11422, 11529, and 11543.

OBSERVING DESCRIPTION

Four internal orbits are required, i.e., four lamp activations of less than 20 minutes each. Each visit uses one of the four tungsten bulbs for a series of 12 0.5 second flats in the F475X filter, 3 0.5 second flats in the F606W filter and 3 0.5 second flats in the F763M filter. All exposures are kept as short as possible in order to achieve continuous fine time-sampling of the lamp outputs. The UVIS images are full-frame binned 3x3, yielding exposure durations a few seconds faster than taking unbinned 512x512 subarrays

----- Calibration Justification -----

The current instrument commanding provides 75 sec for lamp warm-up before a tungsten flatfield exposure begins. Specifically, 30 sec are allocated for the bulb warm-up, followed by 40 sec to transition WFC3 to the tungsten flatfield state, plus an additional few sec during which various image setup commands occur, such as filter selection and setting of the gain. However, analysis of the Bowtie Monitor data taken during SMOV (proposal 11808; ISR 2009-24) showed that the flux output of the lamp was ~3% low in the first flatfield compared to the second unsaturated flatfield, taken 200 sec after the first; the current warmup time allotted for the UVIS default lamp is too short. While not an issue for the Bowtie Monitor, other proposals employing intflats can be adversely affected as both the total lamp output and the spectral characteristics of the lamp are changing during the warm-up period. The data from this proposal will be used to measure the additional time required to reach and maintain stability in the lamp output and may be used to update the operation of the lamps.

----- Additional Comments -----

The start of each of these visits should be separated from any other preceding intflat visit by 3-6 hours - from this proposal or the other Cycle 27 proposals which use the intflat lamps such as 15713 (bowtie monitor) and 15712 (anneal), as well as 15730 and 15731. This will ensure the lamp starts out as cool as possible.

Proposal 16020 - lamp 1 (UV01) (01) - WFC3 Tungsten Lamp Warmup

Visit	<p>Proposal 16020, lamp 1 (UV01) (01), implementation</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: WFC3/UVIS, S/C</p> <p>Special Requirements: GROUP 01,02,03,04 WITHIN 30D; PARALLEL</p>	Fri Feb 21 16:00:17 GMT 2020
Diagnostics	<p>(Exposure 1 (01.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(Exposure 3 (Same Alignment in Sequence 1-5 Non-Int in lamp 1 (UV01) (01))) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(Exposure 4 (Same Alignment in Sequence 1-5 Non-Int in lamp 1 (UV01) (01))) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p>	

Proposal 16020 - lamp 1 (UV01) (01) - WFC3 Tungsten Lamp Warmup

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	sclampon	DARK	S/C, DATA, NONE			SPEC COM INSTR EITLAMP; QASISTATES WFC 3 DET HOLD UVFL AT; QASISTATES WFC 3 SI UVOBS UVOB S; QASISTATES WFC 3 COR HOLD HOL D; QESIPARM LAMP UV01; QESIPARM LAMP WR ON	Sequence 1-5 Non-Int in lamp 1 (UV01) (01)	55 Secs (55 Secs) [==>]	[1]
2	Exposure 1	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F475X	BIN=3	NEW ALIGNMENT	Sequence 1-5 Non-Int in lamp 1 (UV01) (01) Same Alignment in Sequence 1-5 Non-Int in lamp 1 (UV01) (01)	0.5 Secs X 12 (6 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)]	[1]
3		TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F763M	BIN=3		Sequence 1-5 Non-Int in lamp 1 (UV01) (01) Same Alignment in Sequence 1-5 Non-Int in lamp 1 (UV01) (01)	0.5 Secs X 3 (1.5 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]	[1]
4		TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F606W	BIN=3		Sequence 1-5 Non-Int in lamp 1 (UV01) (01) Same Alignment in Sequence 1-5 Non-Int in lamp 1 (UV01) (01)	0.5 Secs X 3 (1.5 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]	[1]

Exposures

Proposal 16020 - lamp 1 (UV01) (01) - WFC3 Tungsten Lamp Warmup

5	sclampoff	DARK	S/C, DATA, NONE	SPEC COM INSTR EITLAMP; QASISTATES WFC 3 DET UVFLAT HO LD; QASISTATES WFC 3 COR HOLD HOL D; QESIPARM LAMP UV01; QESIPARM LAMP WR OFF	Sequence 1-5 Non-Int in lamp 1 (UV01) (01) Same Alignment in S equence 1-5 Non-Int in lamp 1 (UV01) (01)	25 Secs (25 Secs) [==>]	[1]
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Orbit Structure

Orbit 1

Unused Orbital Visibility = 3142

Exp. 1

Exp. 2, copy 1

Exp. 2, copy 2

Exp. 2, copy 3

Exp. 2, copy 4

Exp. 2, copy 5

Exp. 2, copy 6

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Exp. 2, copy 9

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Exp. 2, copy 11

Exp. 2, copy 12

Exp. 3, copy 1

Exp. 3, copy 2

Exp. 3, copy 3

Exp. 4, copy 1

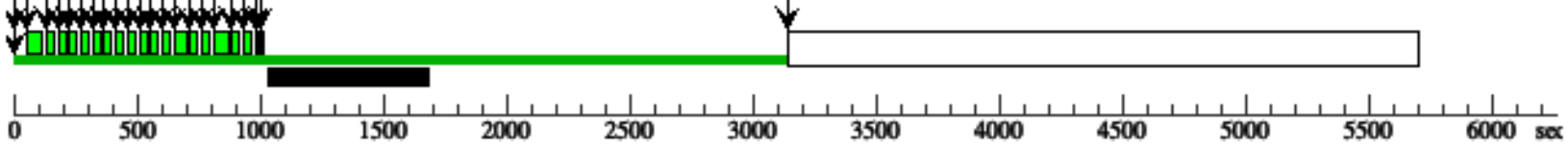
Exp. 4, copy 2

Exp. 4, copy 3

Exp. 5

Reconfig

Occultation



Proposal 16020 - lamp 2 (UV02) (02) - WFC3 Tungsten Lamp Warmup

Visit	<p>Proposal 16020, lamp 2 (UV02) (02), implementation</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: WFC3/UVIS, S/C</p> <p>Special Requirements: PARALLEL</p>	Fri Feb 21 16:00:17 GMT 2020
Diagnostics	<p>(Exposure 1 (02.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(Exposure 3 (Same Alignment in Sequence 1-5 Non-Int in lamp 2 (UV02) (02))) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(Exposure 4 (Same Alignment in Sequence 1-5 Non-Int in lamp 2 (UV02) (02))) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p>	

Proposal 16020 - lamp 2 (UV02) (02) - WFC3 Tungsten Lamp Warmup

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	sclampon	DARK	S/C, DATA, NONE			SPEC COM INSTR EITLAMP; QASISTATES WFC 3 DET HOLD UVFL AT; QASISTATES WFC 3 SI UVOBS UVOB S; QASISTATES WFC 3 COR HOLD HOL D; QESIPARM LAMP UV02; QESIPARM LAMP WR ON	Sequence 1-5 Non-Int in lamp 2 (UV02) (02)	55 Secs (55 Secs) [==>]	[1]
2	Exposure 1	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F475X	BIN=3	NEW ALIGNMENT	Sequence 1-5 Non-Int in lamp 2 (UV02) (02) Same Alignment in S equence 1-5 Non-Int in lamp 2 (UV02) (0 2)	0.5 Secs X 12 (6 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)]	[1]
3		TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F763M	BIN=3		Sequence 1-5 Non-Int in lamp 2 (UV02) (02) Same Alignment in S equence 1-5 Non-Int in lamp 2 (UV02) (0 2)	0.5 Secs X 3 (1.5 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]	[1]
4		TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F606W	BIN=3		Sequence 1-5 Non-Int in lamp 2 (UV02) (02) Same Alignment in S equence 1-5 Non-Int in lamp 2 (UV02) (0 2)	0.5 Secs X 3 (1.5 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]	[1]

Exposures

Proposal 16020 - lamp 2 (UV02) (02) - WFC3 Tungsten Lamp Warmup

5	sclampoff	DARK	S/C, DATA, NONE	SPEC COM INSTR EITLAMP; QASISTATES WFC 3 DET UVFLAT HO LD; QASISTATES WFC 3 COR HOLD HOL D; QESIPARM LAMP UV02; QESIPARM LAMP WR OFF	Sequence 1-5 Non-Int in lamp 2 (UV02) (02) Same Alignment in S equence 1-5 Non-Int in lamp 2 (UV02) (02)	25 Secs (25 Secs) [==>]	[1]
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Orbit Structure

Orbit 1

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Exp. 2, copy 3

Exp. 2, copy 4

Exp. 2, copy 5

Exp. 2, copy 6

Exp. 2, copy 7

Exp. 2, copy 8

Exp. 2, copy 9

Exp. 2, copy 10

Exp. 2, copy 11

Exp. 2, copy 12

Exp. 3, copy 1

Exp. 3, copy 2

Exp. 3, copy 3

Exp. 4, copy 1

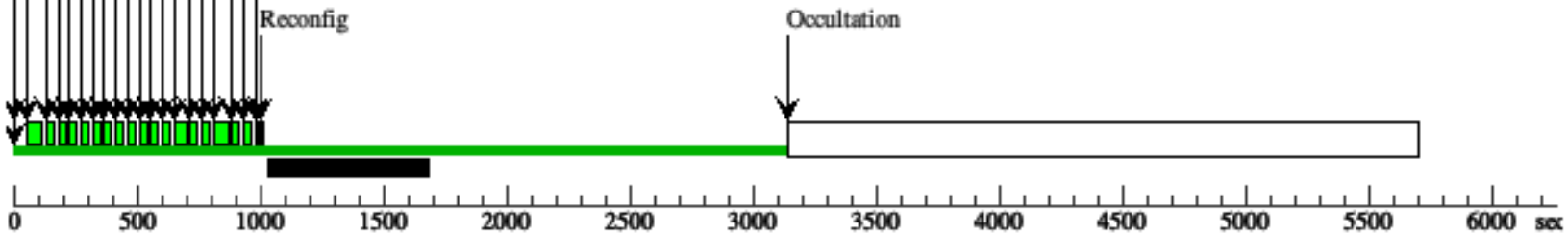
Exp. 4, copy 2

Exp. 4, copy 3

Exp. 5

Reconfig

Occultation



Proposal 16020 - lamp 3 (UV03) (03) - WFC3 Tungsten Lamp Warmup

Visit	Proposal 16020, lamp 3 (UV03) (03), implementation Diagnostic Status: Warning Scientific Instruments: WFC3/UVIS, S/C Special Requirements: PARALLEL	Fri Feb 21 16:00:17 GMT 2020
Diagnostics	(Exposure 1 (03.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (Exposure 3 (Same Alignment in Sequence 1-5 Non-Int in lamp 3 (UV03) (03))) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (Exposure 4 (Same Alignment in Sequence 1-5 Non-Int in lamp 3 (UV03) (03))) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser	

Proposal 16020 - lamp 3 (UV03) (03) - WFC3 Tungsten Lamp Warmup

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	sclampon	DARK	S/C, DATA, NONE			SPEC COM INSTR EITLAMP; QASISTATES WFC 3 DET HOLD UVFL AT; QASISTATES WFC 3 SI UVOBS UVOB S; QASISTATES WFC 3 COR HOLD HOL D; QESIPARM LAMP UV03; QESIPARM LAMP WR ON	Sequence 1-5 Non-Int in lamp 3 (UV03) (03)	55 Secs (55 Secs) [==>]	[1]
2	Exposure 1	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F475X	BIN=3	NEW ALIGNMENT	Sequence 1-5 Non-Int in lamp 3 (UV03) (03) Same Alignment in Sequence 1-5 Non-Int in lamp 3 (UV03) (03)	0.5 Secs X 12 (6 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)]	[1]
3		TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F763M	BIN=3		Sequence 1-5 Non-Int in lamp 3 (UV03) (03) Same Alignment in Sequence 1-5 Non-Int in lamp 3 (UV03) (03)	0.5 Secs X 3 (1.5 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]	[1]
4		TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F606W	BIN=3		Sequence 1-5 Non-Int in lamp 3 (UV03) (03) Same Alignment in Sequence 1-5 Non-Int in lamp 3 (UV03) (03)	0.5 Secs X 3 (1.5 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]	[1]

Exposures

Proposal 16020 - lamp 3 (UV03) (03) - WFC3 Tungsten Lamp Warmup

5	sclampoff	DARK	S/C, DATA, NONE	SPEC COM INSTR EITLAMP; QASISTATES WFC 3 DET UVFLAT HO LD; QASISTATES WFC 3 COR HOLD HOL D; QESIPARM LAMP UV03; QESIPARM LAMP WR OFF	Sequence 1-5 Non-Int in lamp 3 (UV03) (03) Same Alignment in S equence 1-5 Non-Int in lamp 3 (UV03) (03)	25 Secs (25 Secs) [==>] [1]
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Orbit Structure

Orbit 1

Exp. 1

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Exp. 2, copy 6

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Exp. 2, copy 9

Exp. 2, copy 10

Exp. 2, copy 11

Exp. 2, copy 12

Exp. 3, copy 1

Exp. 3, copy 2

Exp. 3, copy 3

Exp. 4, copy 1

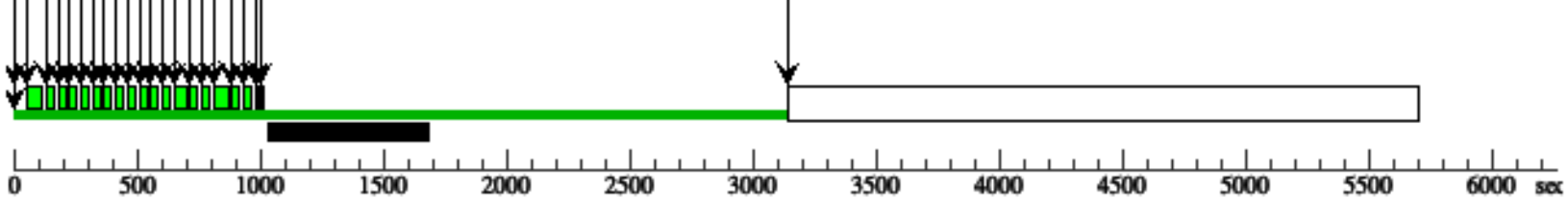
Exp. 4, copy 2

Exp. 4, copy 3

Exp. 5

Reconfig

Occultation



Proposal 16020 - lamp 4 (UV04) (04) - WFC3 Tungsten Lamp Warmup

Visit	<p>Proposal 16020, lamp 4 (UV04) (04), implementation</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: WFC3/UVIS, S/C</p> <p>Special Requirements: PARALLEL</p>	Fri Feb 21 16:00:17 GMT 2020
Diagnostics	<p>(Exposure 1 (04.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(Exposure 3 (Same Alignment in Sequence 1-5 Non-Int in lamp 4 (UV04) (04))) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p> <p>(Exposure 4 (Same Alignment in Sequence 1-5 Non-Int in lamp 4 (UV04) (04))) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser</p>	

Proposal 16020 - lamp 4 (UV04) (04) - WFC3 Tungsten Lamp Warmup

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	sclampon	DARK	S/C, DATA, NONE			SPEC COM INSTR EITLAMP; QASISTATES WFC 3 DET HOLD UVFL AT; QASISTATES WFC 3 SI UVOBS UVOB S; QASISTATES WFC 3 COR HOLD HOL D; QESIPARM LAMP UV04; QESIPARM LAMP WR ON	Sequence 1-5 Non-Int in lamp 4 (UV04) (04)	55 Secs (55 Secs) [==>]	[1]
2	Exposure 1	TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F475X	BIN=3	NEW ALIGNMENT	Sequence 1-5 Non-Int in lamp 4 (UV04) (04) Same Alignment in S equence 1-5 Non-Int in lamp 4 (UV04) (04)	0.5 Secs X 12 (6 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)]	[1]
3		TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F763M	BIN=3		Sequence 1-5 Non-Int in lamp 4 (UV04) (04) Same Alignment in S equence 1-5 Non-Int in lamp 4 (UV04) (04)	0.5 Secs X 3 (1.5 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]	[1]
4		TUNGSTEN	WFC3/UVIS, ACCUM, UVIS	F606W	BIN=3		Sequence 1-5 Non-Int in lamp 4 (UV04) (04) Same Alignment in S equence 1-5 Non-Int in lamp 4 (UV04) (04)	0.5 Secs X 3 (1.5 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]	[1]

Exposures

Proposal 16020 - lamp 4 (UV04) (04) - WFC3 Tungsten Lamp Warmup

5	sclampoff	DARK	S/C, DATA, NONE	SPEC COM INSTR EITLAMP; QASISTATES WFC 3 DET UVFLAT HO LD; QASISTATES WFC 3 COR HOLD HOL D; QESIPARM LAMP UV04; QESIPARM LAMP WR OFF	Sequence 1-5 Non-Int in lamp 4 (UV04) (04) Same Alignment in S equence 1-5 Non-Int in lamp 4 (UV04) (04)	25 Secs (25 Secs) [==>] [1]
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Orbit Structure

Orbit 1

Exp. 1

Unused Orbital Visibility = 3142

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Exp. 2, copy 2

Exp. 2, copy 3

Exp. 2, copy 4

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Exp. 2, copy 6

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Exp. 2, copy 9

Exp. 2, copy 10

Exp. 2, copy 11

Exp. 2, copy 12

Exp. 3, copy 1

Exp. 3, copy 2

Exp. 3, copy 3

Exp. 4, copy 1

Exp. 4, copy 2

Exp. 4, copy 3

Exp. 5

Reconfig

Occultation

