14642 - A Preparatory Program to Identify the Single Best Transiting Exoplanet for JWST Early Release Science

Cycle: 24, Proposal Category: GO

(JWST Initative)

(Availability Mode: SUPPORTED)

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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	(2) WASP-63	WFC3/IR	8	07-Sep-2016 17:49:25.0	yes

8 Total Orbits Used

ABSTRACT

JWST will revolutionize transiting exoplanet atmospheric science due to its capability for continuous, long-duration observations and, compared to existing space-based facilities, its larger collecting area, spectral coverage, and resolution. However, it is unclear precisely how well JWST will perform and which of its myriad instruments and observing modes will be best suited for transiting exoplanet studies. The Early Release Science (ERS) program was devised to provide early and open access to a broad suite of JWST science observations subject to key data analysis challenges so that the community can quickly build experience and develop a list of best observing practices prior to the Cycle 2 proposal deadline. In a recent paper, we identified 12 transiting exoplanets (dubbed "community targets") that may be suitable for time-series observations within the ERS program; however, a critical unknown for the most favorable targets is the presence of obscuring clouds. To properly assess each observing mode, it is vital that the selected community target has measurable and identifiable spectroscopic features.

We propose HST/WFC3 observations of four exoplanets to identify the single best target by first measuring the size of their 1.4-micron water vapor features. Next, we will perform follow-up Spitzer observations of the top two targets to determine the slopes in their infrared transmission spectra. Together, these measurements will provide the most robust determination of clouds/hazes with the minimum amount of telescope time. Cycle 24 is our final opportunity to identify suitable community targets with cloud-free atmospheres prior to the ERS proposal deadline in mid-2017.

OBSERVING DESCRIPTION

We will observe the transit of WASP-63b using WFC3 and the G141 grism.

Visit

Proposal 14642, WASP-63b (01), implementation Wed Sep 07 21:49:31 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 30%; BEFORE 31-JAN-2017:00:00:00; Period 4.378090 D AND ZERO-PHASE HJD 2455921.6527

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	WASP-63	RA: 06 17 20.7464 (94.3364433d) Dec: -38 19 23.80 (-38.32328d) Equinox: J2000		V=11.15	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Stare-Orbit1	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	F126N	NSAMP=2; SAMP-SEQ=RAPID	PHASE 0.9281 TO 0.9424	Sequence 1-2 Non-Int in WASP-63b (01)	0.55563 Secs (0.556 Secs)	
								[==>]	***[1]***
2	Scan-Round Trip	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Round trip	Sequence 1-2 Non-Int in WASP-63b (01)	103.128633 Secs X 10 (2062.573 Secs)	
								[==>(Copy 1, Forward)] *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]*	***[1]***
3	Stare-Orbit2	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	F126N	NSAMP=2; SAMP-SEQ=RAPID		Sequence 3-5 Non-Int in WASP-63b (01)	0.55563 Secs (0.556 Secs)	
								[==>]	***[2]***

	4	Scan-Rount Trip	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Round trip	Sequence 3-5 Non-Int in WASP-63b (01)	103.128633 Secs X 10 (2062.573 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]*	***[2]***
	5	Scan-Forward	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Forward	Sequence 3-5 Non-Int in WASP-63b (01)	103.128633 Secs (103.129 Secs) *[==>]*	***[2]***
	6	Stare-Orbit3	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	F126N	NSAMP=2; SAMP-SEQ=RAPID		Sequence 6-8 Non-Int in WASP-63b (01)	0.55563 Secs (0.556 Secs) *[==>]*	***[3]***

	7	Scan-Rount Trip	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Round trip	Sequence 6-8 Non-Int in WASP-63b (01)	103.128633 Secs X 10 (2062.573 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]*	***[3]***
	8	Scan-Forward	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Forward	Sequence 6-8 Non-Int in WASP-63b (01)	103.128633 Secs (103.129 Secs) *[==>]*	***[3]***
	9	Stare-Orbit4	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	F126N	NSAMP=2; SAMP-SEQ=RAPID		Sequence 9-11 Non-Int in WASP-63b (01)	0.55563 Secs (0.556 Secs) *[==>]*	***[4]***

	10	Scan-Rount Trip	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Round trip	Sequence 9-11 Non-Int in WASP-63b (01)	103.128633 Secs X 10 (2062.573 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]*	***[4]***
	11	Scan-Forward	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Forward	Sequence 9-11 Non-Int in WASP-63b (01)	103.128633 Secs (103.129 Secs) *[==>]*	***[4]***
	12	Stare-Orbit5	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	F126N	NSAMP=2; SAMP-SEQ=RAPID		Sequence 12-14 Non-Int in WASP-63b (01)	0.55563 Secs (0.556 Secs) *[==>]*	***[5]***

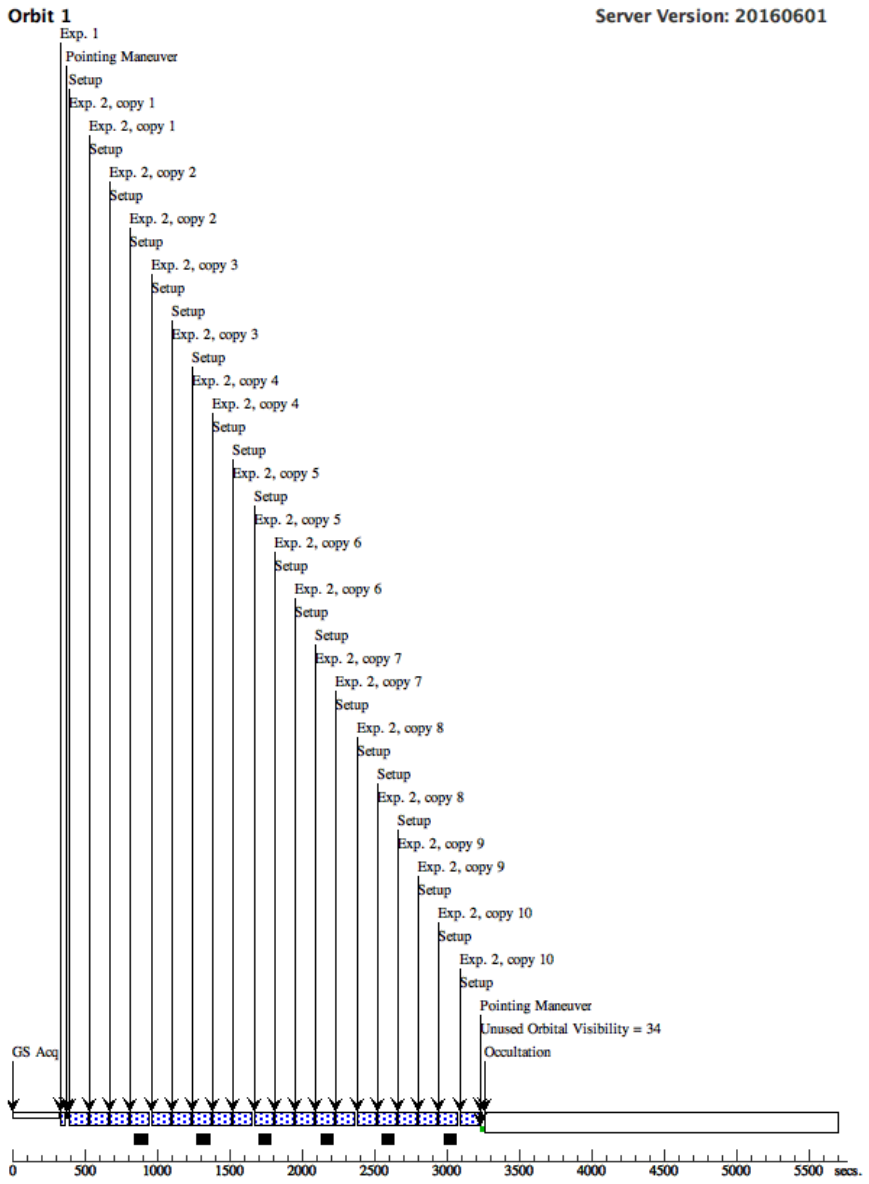
	13	Scan-Rount Trip	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Round trip	Sequence 12-14 Non-Int in WASP-63b (01)	103.128633 Secs X 10 (2062.573 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]*	***[5]***
	14	Scan-Forward	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Forward	Sequence 12-14 Non-Int in WASP-63b (01)	103.128633 Secs (103.129 Secs) *[==>]*	***[5]***
	15	Stare-Orbit6	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	F126N	NSAMP=2; SAMP-SEQ=RAPID		Sequence 15-17 Non-Int in WASP-63b (01)	0.55563 Secs (0.556 Secs) *[==>]*	***[6]***

	16	Scan-Rount Trip	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Round trip	Sequence 15-17 Non-Int in WASP-63b (01)	103.128633 Secs X 10 (2062.573 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]*	***[6]***
	17	Scan-Forward	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Forward	Sequence 15-17 Non-Int in WASP-63b (01)	103.128633 Secs (103.129 Secs) *[==>]*	***[6]***
	18	Stare-Orbit7	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	F126N	NSAMP=2; SAMP-SEQ=RAPID		Sequence 18-20 Non-Int in WASP-63b (01)	0.55563 Secs (0.556 Secs) *[==>]*	***[7]***

	19	Scan-Rount Trip	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Round trip	Sequence 18-20 Non-Int in WASP-63b (01)	103.128633 Secs X 10 (2062.573 Secs) *[==>(Copy 1, Forward)]* *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]*	***[7]***
	20	Scan-Forward	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Forward	Sequence 18-20 Non-Int in WASP-63b (01)	103.128633 Secs (103.129 Secs) *[==>]*	***[7]***
	21	Stare-Orbit8	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	F126N	NSAMP=2; SAMP-SEQ=RAPID		Sequence 21-23 Non-Int in WASP-63b (01)	0.55563 Secs (0.556 Secs) *[==>]*	***[8]***

	22	Scan-Rount Trip	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Round trip	Sequence 21-23 Non-Int in WASP-63b (01)	103.128633 Secs X 10 (2062.573 Secs)	
									[==>(Copy 1, Forward)] *[==>(Copy 1, Reverse)]* *[==>(Copy 2, Forward)]* *[==>(Copy 2, Reverse)]* *[==>(Copy 3, Forward)]* *[==>(Copy 3, Reverse)]* *[==>(Copy 4, Forward)]* *[==>(Copy 4, Reverse)]* *[==>(Copy 5, Forward)]* *[==>(Copy 5, Reverse)]* *[==>(Copy 6, Forward)]* *[==>(Copy 6, Reverse)]* *[==>(Copy 7, Forward)]* *[==>(Copy 7, Reverse)]* *[==>(Copy 8, Forward)]* *[==>(Copy 8, Reverse)]* *[==>(Copy 9, Forward)]* *[==>(Copy 9, Reverse)]* *[==>(Copy 10, Forward)]* *[==>(Copy 10, Reverse)]*	***[8]***
	23	Scan-Forward	(2) WASP-63	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=15; SAMP-SEQ=SPARS10	SPATIAL SCAN 0.08,90.0 Degrees,Forward	Sequence 21-23 Non-Int in WASP-63b (01)	103.128633 Secs (103.129 Secs)	
									[==>]	***[8]***

Orbit Structure

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Exp. 4, copy 9
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Exp. 4, copy 10
Setup
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Occultation
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secs.


Orbit 3
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Exp. 7, copy 9
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Exp. 7, copy 10
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Exp. 8
Unused Orbital Visibility = 3
Pointing Maneuver
Occultation
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secs.


Orbit 4
Server Version: 20160601
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Exp. 10, copy 10
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Exp. 11
Unused Orbital Visibility = 3
Pointing Maneuver
Occultation
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secs.


Orbit 5
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GS Reacq
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Exp. 13, copy 1
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Exp. 13, copy 10
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Exp. 14
Unused Orbital Visibility = 3
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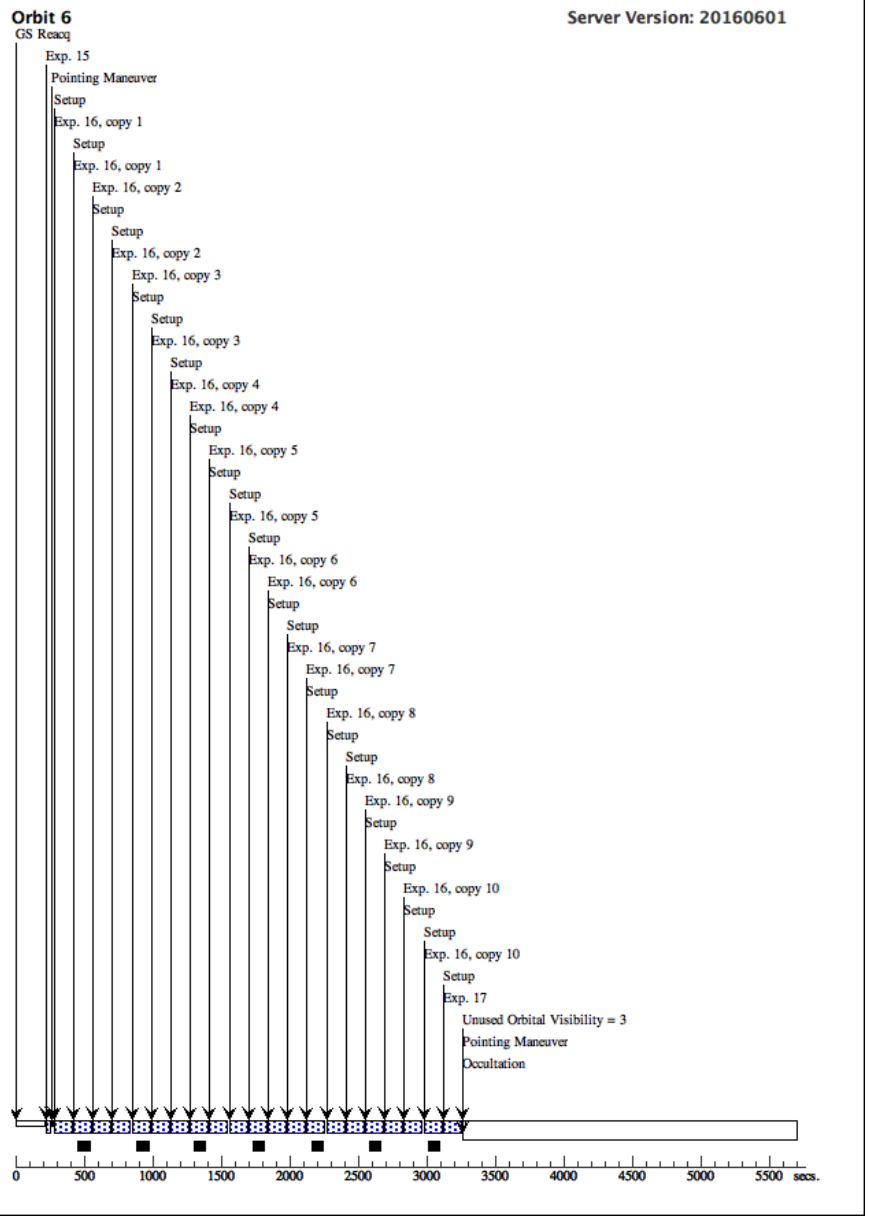
Orbit 6
Server Version: 20160601
GS Reacq
Exp. 15
Pointing Maneuver
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Exp. 16, copy 1
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Exp. 16, copy 1
Exp. 16, copy 2
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Exp. 16, copy 2
Exp. 16, copy 3
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Exp. 16, copy 3
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Exp. 16, copy 4
Exp. 16, copy 4
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Exp. 16, copy 5
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Exp. 16, copy 6
Exp. 16, copy 6
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Exp. 16, copy 7
Exp. 16, copy 7
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Exp. 16, copy 9
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Exp. 16, copy 9
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Exp. 16, copy 10
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Exp. 16, copy 10
Setup
Exp. 17
Unused Orbital Visibility = 3
Pointing Maneuver
Occultation
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secs.


Orbit 7
Server Version: 20160601
GS Reacq
Exp. 18
Pointing Maneuver
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Exp. 19, copy 1
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Exp. 19, copy 2
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Exp. 19, copy 3
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Exp. 19, copy 3
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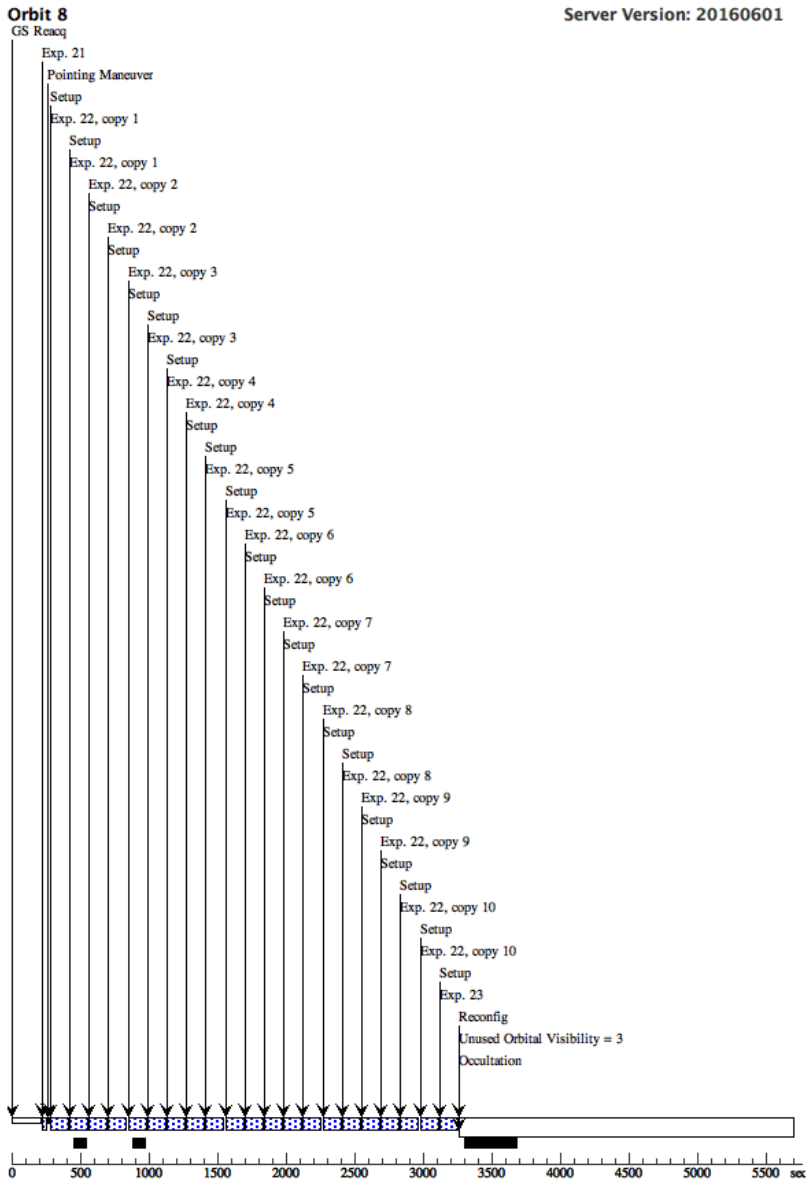
Exp. 19, copy 4
Exp. 19, copy 4
Setup
Exp. 19, copy 5
Setup
Exp. 19, copy 5
Setup
Exp. 19, copy 6
Setup
Exp. 19, copy 6
Setup
Setup
Exp. 19, copy 7
Exp. 19, copy 7
Setup
Setup
Exp. 19, copy 8
Setup
Exp. 19, copy 8
Exp. 19, copy 9
Setup
Setup
Exp. 19, copy 9
Setup
Exp. 19, copy 10
Exp. 19, copy 10
Setup
Setup
Exp. 20
Pointing Maneuver
Unused Orbital Visibility = 3
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 8
Server Version: 20160601
GS Reacq
Exp. 21
Pointing Maneuver
Setup
Exp. 22, copy 1
Setup
Exp. 22, copy 1
Exp. 22, copy 2
Setup
Exp. 22, copy 2
Setup
Exp. 22, copy 3
Setup
Setup
Exp. 22, copy 3
Setup
Exp. 22, copy 4
Exp. 22, copy 4
Setup
Setup
Exp. 22, copy 5
Setup
Exp. 22, copy 5
Exp. 22, copy 6
Setup
Exp. 22, copy 6
Setup
Exp. 22, copy 7
Setup
Exp. 22, copy 7
Setup
Exp. 22, copy 8
Setup
Setup
Exp. 22, copy 8
Exp. 22, copy 9
Setup
Exp. 22, copy 9
Setup
Setup
Exp. 22, copy 10
Setup
Exp. 22, copy 10
Setup
Exp. 23
Reconfig
Unused Orbital Visibility = 3
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec