16236 - The Life and Death of Ultra-Hot Jupiter WASP-12b

Cycle: 28, Proposal Category: GO

(Availability Mode: SUPPORTED)

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) WASP-12	WFC3/IR	3	06-Oct-2022 17:00:28.0	yes
02	(1) WASP-12	WFC3/IR	4	06-Oct-2022 17:00:44.0	yes
03	(1) WASP-12	WFC3/IR	2	06-Oct-2022 17:00:51.0	yes
04	(1) WASP-12	WFC3/IR	3	06-Oct-2022 17:01:02.0	yes
05	(1) WASP-12	WFC3/IR	3	06-Oct-2022 17:01:12.0	yes
06	(1) WASP-12	WFC3/IR	3	06-Oct-2022 17:01:23.0	yes
07	(1) WASP-12	WFC3/IR	4	06-Oct-2022 17:01:38.0	yes

22 Total Orbits Used

ABSTRACT

A new class of exoplanets called ultra-hot Jupiters has recently been recognized; these gas-giant exoplanets are on extremely close orbits around their host stars and have dayside atmospheres which reach >2500 K. Ultra-hot Jupiters are so strongly irradiated that many of the molecules, including the dominant constituent hydrogen, will thermally dissociate on their daysides and may recombine on their cooler nightsides. Significant mass loss and tidal distortion have also been predicted for some ultra-hot Jupiters. However, there are currently few ultra-hot Jupiters whose entire atmospheres are well characterized, and additional high precision observations are required to test recent model predictions. We therefore propose to collect one HST/WFC3 G141 spectroscopic full-orbit phasecurve of WASP-12b - the prototypical ultra-hot Jupiter - in order to create longitudinally resolved temperature and chemical maps, to understand the enormous ellipsoidal variations seen at 4.5 microns, and to better constrain the planet's orbital decay rate and the stellar tidal quality factor.

OBSERVING DESCRIPTION

Full-orbit phasecurve observation of the exoplanet WASP-12b using WFC3 G141, containing two secondary eclipses and one transit.

We have placed stringent orientation constraints which are necessary to avoid overlapping spectra from nearby stellar objects 1 and 10 arcsec away at PA=250 and 238, respectively. We intend to use the differences between individual non-destructive reads to remove the contamination from the nearby M-dwarfs, using the technique as was tested for HAT-P-32Ab using data from GO 14767 (Nikolov et al., 2018). To guarantee that we are able

to subtract the companion spectra, we will also collect 10 staring mode observations during the first, stabilizing orbit (as was done by Kreidberg et al., 2015).

We enforce a phase constraint on the first exposure of the first orbit to ensure that we acquire our two baseline orbits before the first secondary eclipse and two baseline orbits after the final secondary eclipse.

We have placed our 22 orbits into 3 "visits" with timing constraints on the second and third visits to ensure they follow immediately after each other. We have had to use 3 visits instead of one to solve two error messages from the APT software: (PHASE CRITICAL VISIT HAS PHASE WINDOW LARGER THAN PERIOD; and TOO MANY SUBEXPOSURES IN ONE GROUP (REQUEST HELP FROM YOUR PC)). We have also placed a constraint on the second and third "visits" to ensure that all 22 orbits be collected at the same orientation angle as the first orbit to increase our ability to decorrelate detector systematics and to allow for subtraction of the nearby companion stars. We anticipate there being a need for gyro bias updates and SAA crossing(s), but have not entered any parameters related to this into the APT software. However, two good opportunities for brief interruptions in the observations are at the breaks between visits which are at times not expected to impact the transit, eclipse, or maximum/minimum points of the phasecurve.

Visit

Proposal 16236, Companion Spec + Science (01), implementation Thu Oct 06 21:01:40 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 70%; ORIENT 162.5D TO 247.5 D; ORIENT 342.7D TO 82.3 D; Period 1.09142030 D AND ZERO-PHASE HJD2456176.668258; SEQ 01,02,03,04,05,06,07 WITHIN 18 Orbits

Comments: The stringent orientation constraints are necessary to avoid overlapping spectra from nearby stellar objects 1 and 10 arcsec away at PA=250 and 238. We calculate the central values for our orient ranges using Detector Offset+PA=135+250=25 or 205. We calculate the width of our orient range to ensure that after each non-destructive read the two stars' spectra are still separated by >4 FWHM to try to allow for our mildly experimental technique to subtract the comanion flux using the differences between non-destructive reads (tested for HAT-P-32Ab using data from GO 14767; Nikolov et al., 2018). To guarantee that we are able to subtract the companion spectra, we will also collect 10 staring mode observations during the first, stabilizing orbit (as was done by Kreidberg et al., 2015); our orient ranges ensure that the spectra will be separated by >5.6 FWHM for these staring-mode spectra.

We enforce a phase constraint on the first exposure to ensure that we acquire our two baseline orbits before the first secondary eclipse and two baseline orbits after the final secondary eclipse.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WASP-12	RA: 06 30 32.7967 (97.6366529d)	Proper Motion RA: -1.580 mas/yr	V=11.57+/-0.16	Reference Frame: ICRS
		Dec: +29 40 20.27 (29.67230d)	Proper Motion Dec: -6.958 mas/yr		
		Equinox: J2000	Parallax: 0.0023122"		
			Epoch of Position: 2000		
			Radial Velocity: 19.034 km/sec		

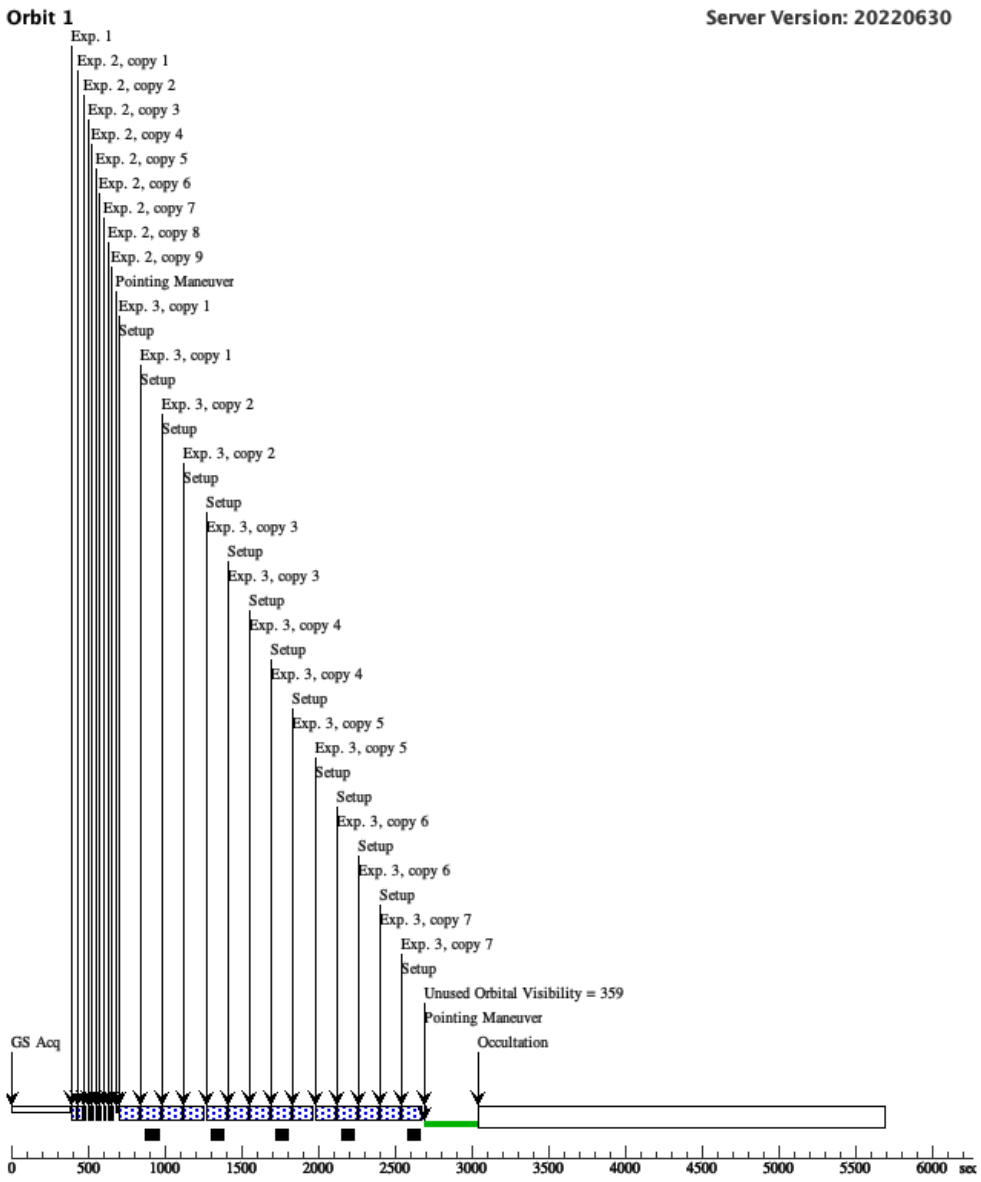
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. Edited to include Proper Motion, RV, and Parallax
Category=EXT-STAR
Description=[EXTRA-SOLAR PLANET, G V-IV]

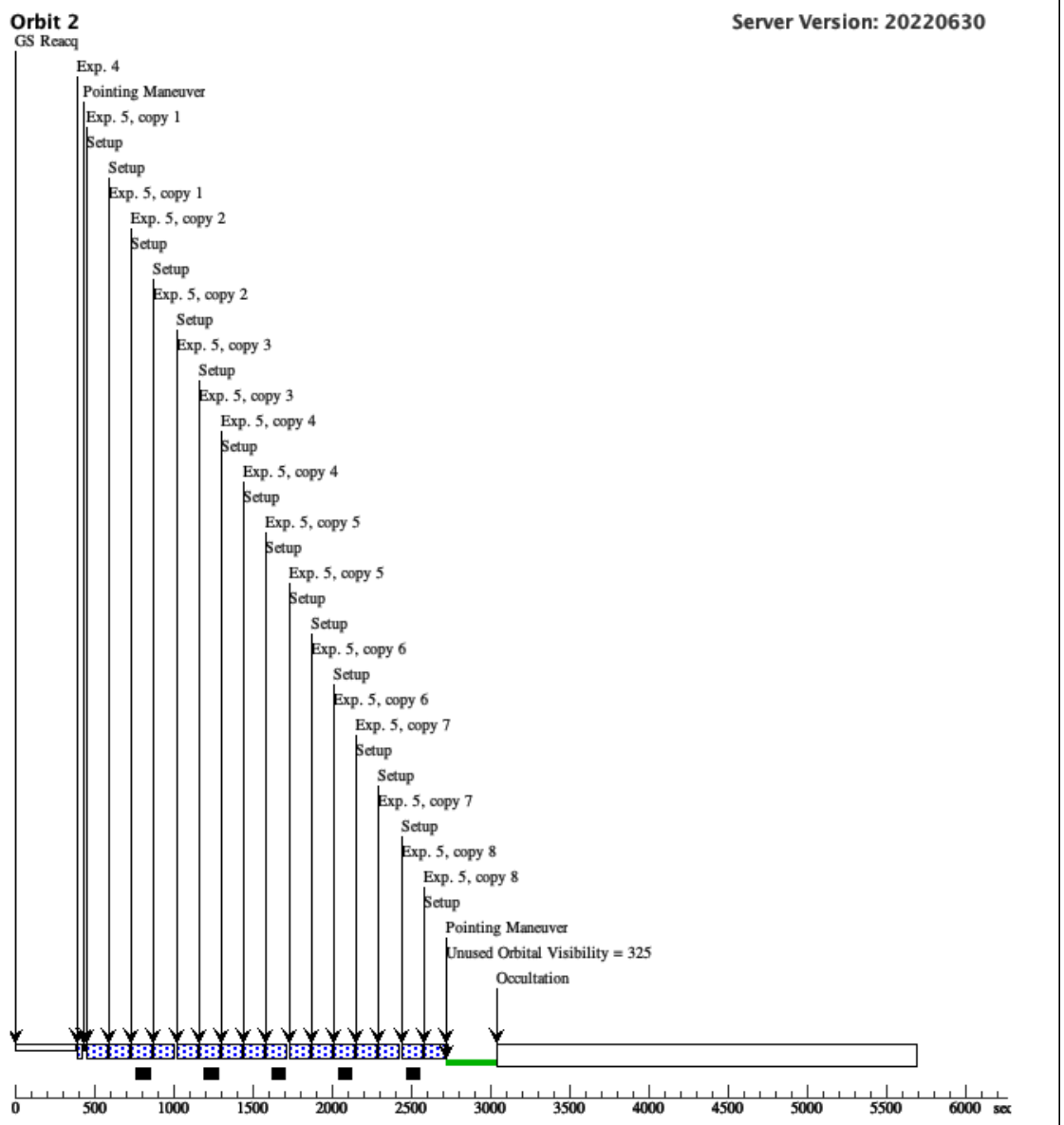
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0; PHASE 0.31625 TO 0.35475; GS ACQ SCENARIO BASE1BE	Sequence 1-3 Non-Int in Companion Spec + Science (01)	0.833445 Secs (0.833 Secs) *[==>]*	***[1]***
	Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).								
2	Companion Spec (WFC3IR.sp.1449965)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=2	POS TARG 0,0	Sequence 1-3 Non-Int in Companion Spec + Science (01)	7.624302 Secs X 9 (68.619 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]* *[==>(Copy 3)]* *[==>(Copy 4)]* *[==>(Copy 5)]* *[==>(Copy 6)]* *[==>(Copy 7)]* *[==>(Copy 8)]* *[==>(Copy 9)]*	***[1]***
	Comments: No spatial scan desired here to ensure the separation between WASP-12A and the nearby M-dwarf companions WASP-12B,C.								
3	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 1-3 Non-Int in Companion Spec + Science (01)	103.128633 Secs X 7 (1443.801 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)]*	***[1]***
	Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.								
4	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 4-5 Non-Int in Companion Spec + Science (01)	0.833445 Secs (0.833 Secs) *[==>]*	***[2]***
	Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).								

5	Science Observations (WFC3IR.ssb.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 4-5 Non-Int in Companion Spec + Science (01)	103.128633 Secs X 8 (1650.058 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)]*	***[2]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
6	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 6-7 Non-Int in Companion Spec + Science (01)	0.833445 Secs (0.833 Secs) *[==>]*	***[3]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
7	Science Observations (WFC3IR.ssb.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 6-7 Non-Int in Companion Spec + Science (01)	103.128633 Secs X 8 (1650.058 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)]*	***[3]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									

Orbit Structure




Orbit 2
Server Version: 20220630
GS Reacq
Exp. 4
Pointing Maneuver
Exp. 5, copy 1
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Exp. 5, copy 1
Exp. 5, copy 2
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Exp. 5, copy 2
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Exp. 5, copy 3
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Exp. 5, copy 3
Exp. 5, copy 4
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Exp. 5, copy 4
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Exp. 5, copy 8
Exp. 5, copy 8
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Pointing Maneuver
Unused Orbital Visibility = 325
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1500
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2500
3000
3500
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4500
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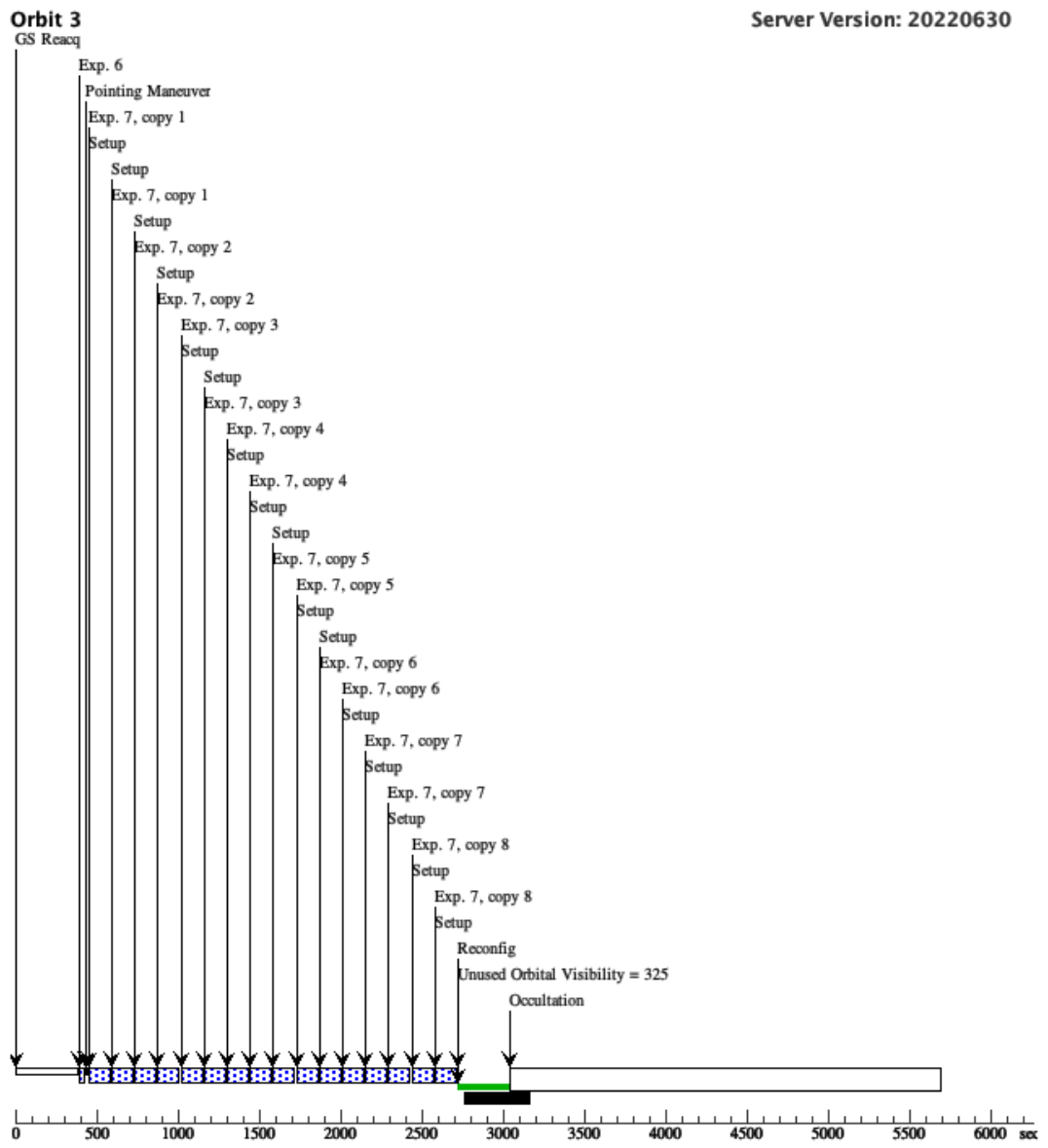
5500
6000
sec


Orbit 3
Server Version: 20220630
GS Reacq
Exp. 6
Pointing Maneuver
Exp. 7, copy 1
Setup
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Exp. 7, copy 1
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Exp. 7, copy 2
Setup
Exp. 7, copy 2
Exp. 7, copy 3
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Exp. 7, copy 3
Exp. 7, copy 4
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Exp. 7, copy 6
Exp. 7, copy 6
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Exp. 7, copy 7
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Exp. 7, copy 7
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Exp. 7, copy 8
Setup
Exp. 7, copy 8
Setup
Reconfig
Unused Orbital Visibility = 325
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16236, Companion Spec + Science (01) (02), implementation Thu Oct 06 21:01:40 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 01

Comments: The stringent orientation constraints are necessary to avoid overlapping spectra from nearby stellar objects 1 and 10 arcsec away at PA=250 and 238. We calculate the central values for our orient ranges using Detector Offset+PA=135+250=25 or 205. We calculate the width of our orient range to ensure that after each non-destructive read the two stars' spectra are still separated by >4 FWHM to try to allow for our mildly experimental technique to subtract the comanion flux using the differences between non-destructive reads (tested for HAT-P-32Ab using data from GO 14767; Nikolov et al., 2018). To guarantee that we are able to subtract the companion spectra, we will also collect 10 staring mode observations during the first, stabilizing orbit (as was done by Kreidberg et al., 2015); our orient ranges ensure that the spectra will be separated by >5.6 FWHM for these staring-mode spectra.

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		Dec: +29 40 20.27 (29.67230d)	Proper Motion Dec: -6.958 mas/yr		
		Equinox: J2000	Parallax: 0.0023122"		
			Epoch of Position: 2000		
			Radial Velocity: 19.034 km/sec		

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. Edited to include Proper Motion, RV, and Parallax
Category=EXT-STAR
Description=[EXTRA-SOLAR PLANET, G V-IV]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
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Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
2	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 1-2 Non-Int in Companion Spec + Science (01) (02)	103.128633 Secs X 8 (1650.058 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)]*	 ***[1]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
3	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 3-4 Non-Int in Companion Spec + Science (01) (02)	0.833445 Secs (0.833 Secs) *[==>]*	 ***[2]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									

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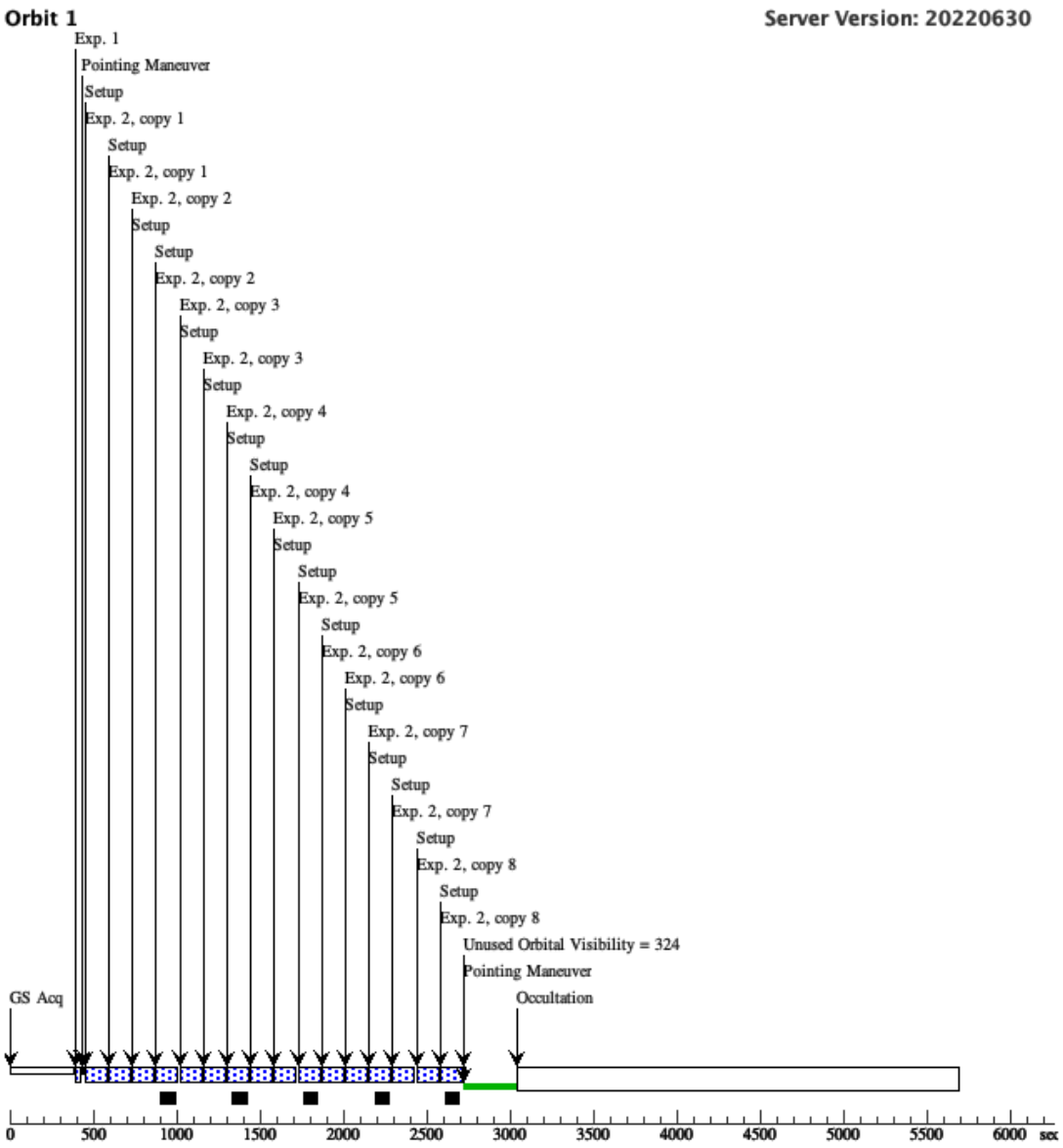
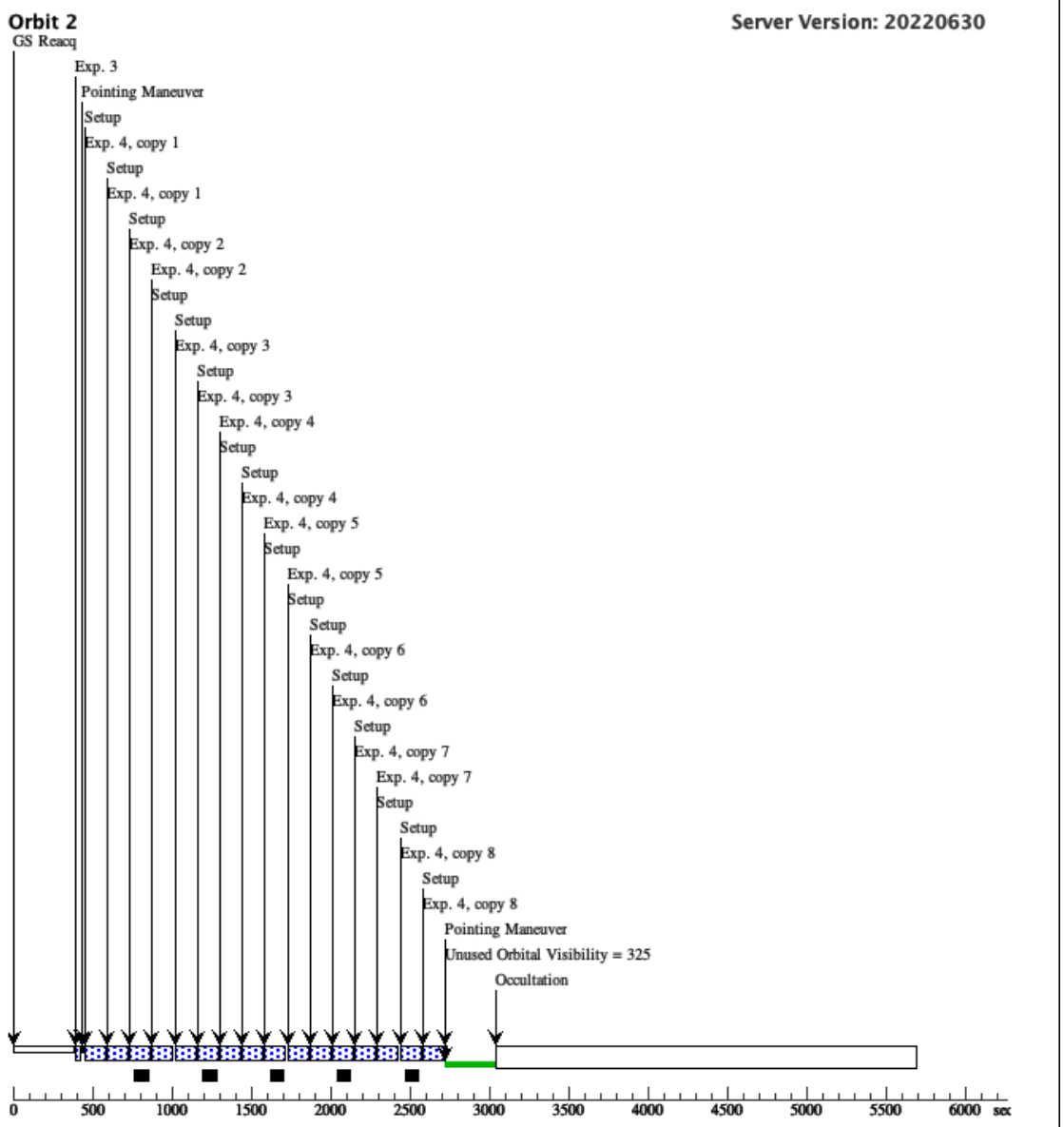
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
5	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 5-6 Non-Int in Companion Spec + Science (01) (02)	0.833445 Secs (0.833 Secs) *[==>]*	***[3]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
6	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 5-6 Non-Int in Companion Spec + Science (01) (02)	103.128633 Secs X 8 (1650.058 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)]*	***[3]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									

	7	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 7-8 Non-Int in Companion Spec + Science (01) (02)	0.833445 Secs (0.833 Secs) *[==>]*	***[4]***
	Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
	8	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 7-8 Non-Int in Companion Spec + Science (01) (02)	103.128633 Secs X 8 (1650.058 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)]*	***[4]***
	Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									

Orbit Structure




Orbit 2
Server Version: 20220630
GS Reacq
Exp. 3
Pointing Maneuver
Setup
Exp. 4, copy 1
Setup
Exp. 4, copy 1
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Exp. 4, copy 2
Exp. 4, copy 2
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Exp. 4, copy 7
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Exp. 4, copy 8
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Exp. 4, copy 8
Pointing Maneuver
Unused Orbital Visibility = 325
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
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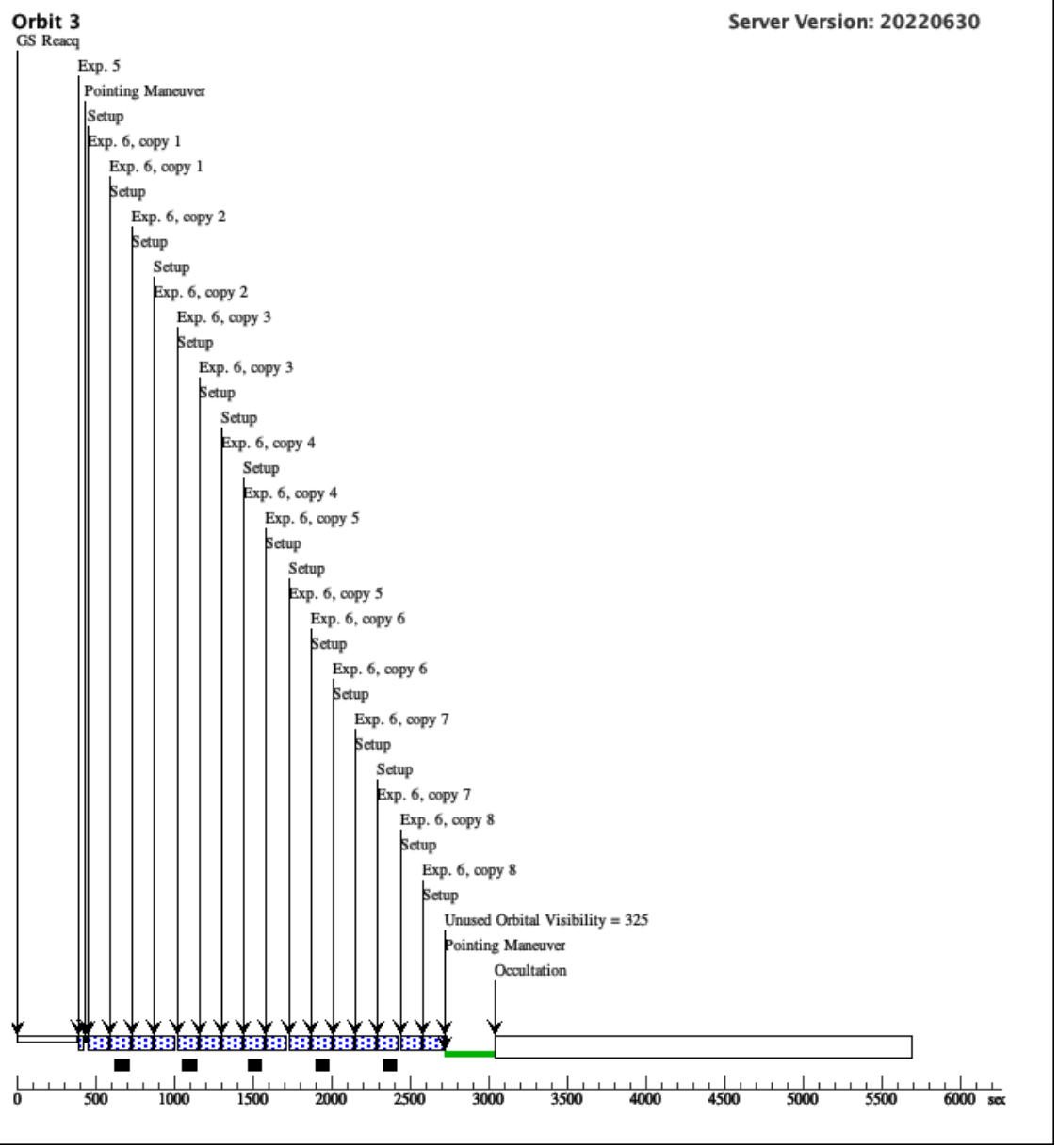
5500
6000
sec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Exp. 6, copy 6
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Exp. 6, copy 7
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Exp. 6, copy 7
Exp. 6, copy 8
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Exp. 6, copy 8
Setup
Unused Orbital Visibility = 325
Pointing Maneuver
Occultation
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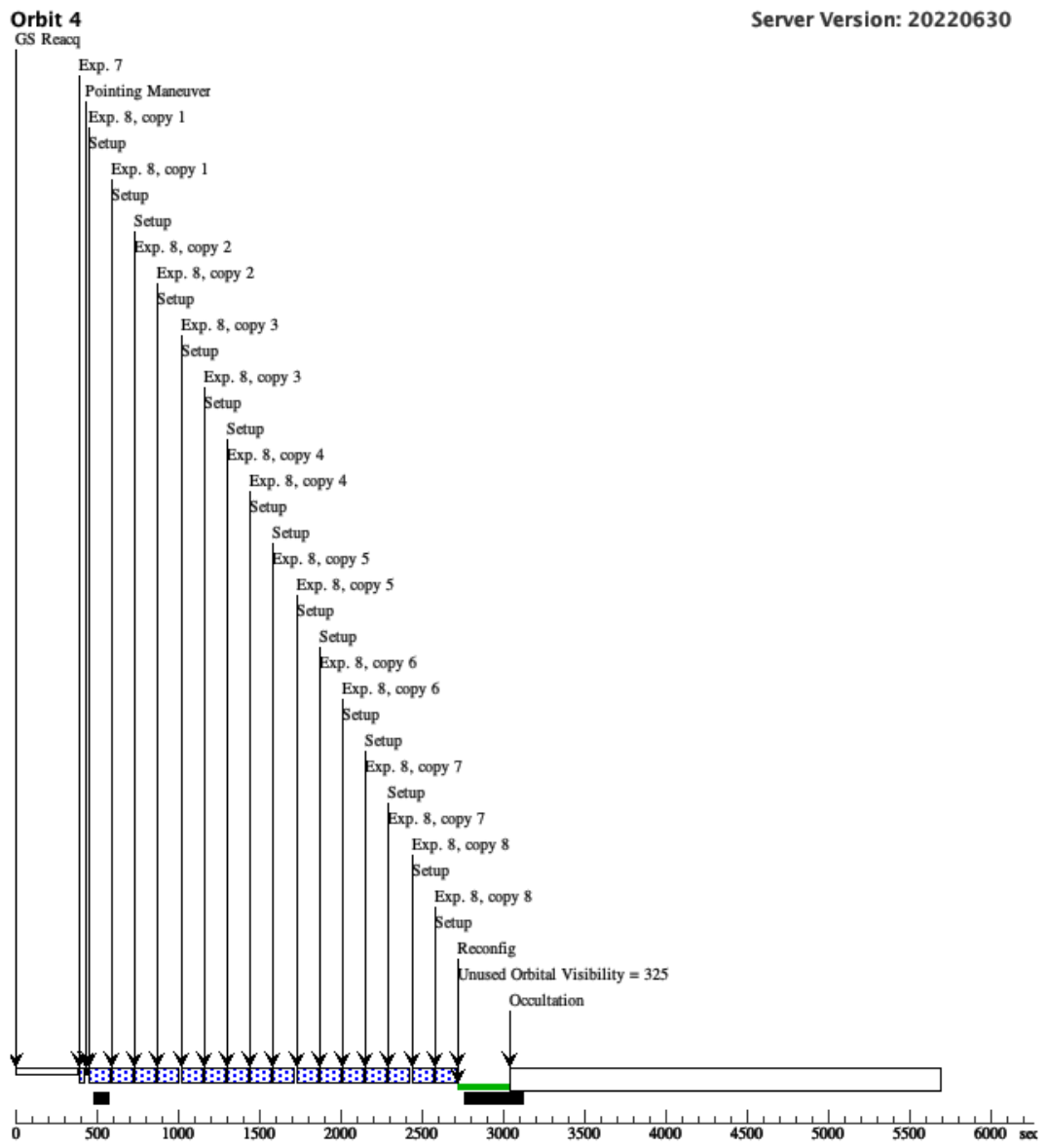
4500
5000
5500
6000
sec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Exp. 8, copy 5
Exp. 8, copy 5
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Exp. 8, copy 6
Exp. 8, copy 6
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Exp. 8, copy 7
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Exp. 8, copy 7
Exp. 8, copy 8
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Exp. 8, copy 8
Setup
Reconfig
Unused Orbital Visibility = 325
Occultation
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1000
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2000
2500
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3500
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sec

Visit

Proposal 16236, Science (02) (03), implementation Thu Oct 06 21:01:41 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 02

Comments: We must maintain the same orientation as in "visit" 1 to increase our ability to decorrelate the detector systematics and to allow us to subtract the companion star's spectrum.

We also have placed an After Visit requirement to try to ensure that Visit 2 will follow immediately after Visit 1. See the Proposal Description for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WASP-12	RA: 06 30 32.7967 (97.6366529d)	Proper Motion RA: -1.580 mas/yr	V=11.57+/-0.16	Reference Frame: ICRS
		Dec: +29 40 20.27 (29.67230d)	Proper Motion Dec: -6.958 mas/yr		
		Equinox: J2000	Parallax: 0.0023122"		
			Epoch of Position: 2000		
			Radial Velocity: 19.034 km/sec		

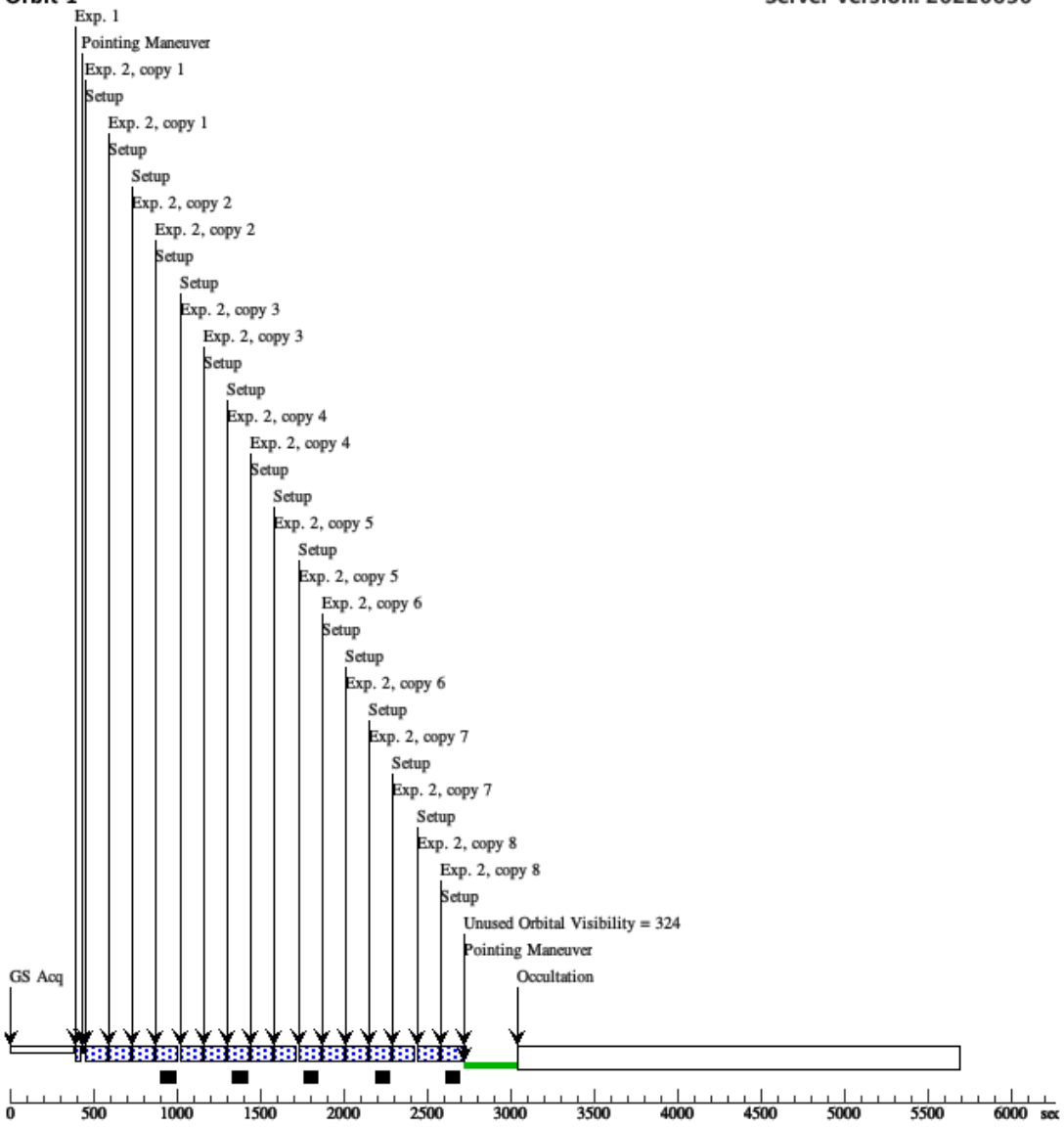
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. Edited to include Proper Motion, RV, and Parallax
Category=EXT-STAR
Description=[EXTRA-SOLAR PLANET, G V-IV]

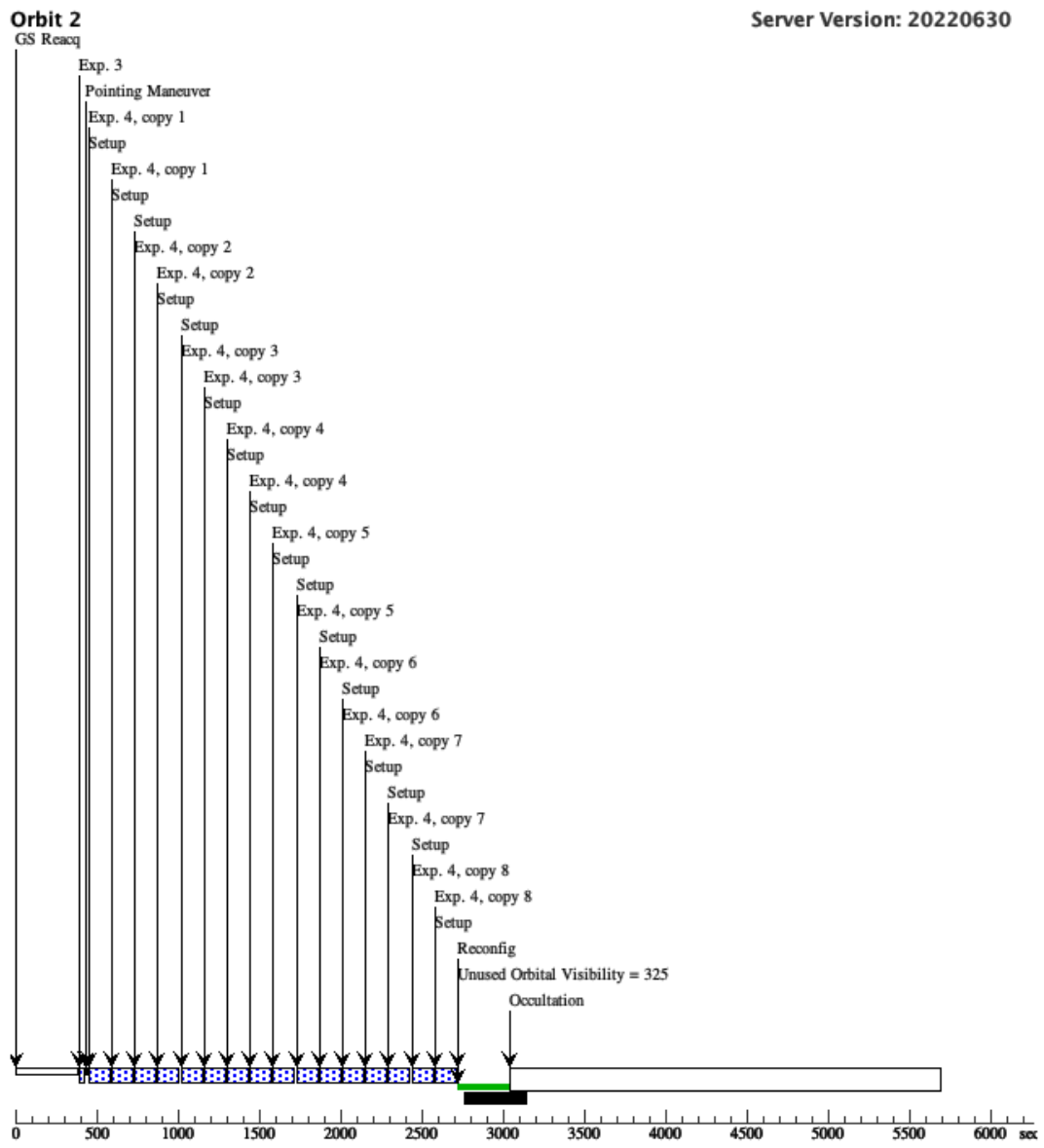
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 1-2 Non-Int in Science (02) (03)	0.833445 Secs (0.833 Secs) *[==>]*	*[1]*
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
2	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 1-2 Non-Int in Science (02) (03)	103.128633 Secs X 8 (1650.058 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)]*	*[1]*
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
3	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 3-4 Non-Int in Science (02) (03)	0.833445 Secs (0.833 Secs) *[==>]*	*[2]*
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									

	4	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 3-4 Non-Int in Science (02) (03)	103.128633 Secs X 8 (1650.058 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)]*	***[2]***
	Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									

Orbit Structure

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GS Reacq
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Exp. 4, copy 7
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Exp. 4, copy 8
Exp. 4, copy 8
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Reconfig
Unused Orbital Visibility = 325
Occultation
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Visit

Proposal 16236, Science (02) (04) Thu Oct 06 21:01:41 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 03

Comments: We must maintain the same orientation as in "visit" 1 to increase our ability to decorrelate the detector systematics and to allow us to subtract the companion star's spectrum.

We also have placed an After Visit requirement to try to ensure that Visit 2 will follow immediately after Visit 1. See the Proposal Description for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WASP-12	RA: 06 30 32.7967 (97.6366529d)	Proper Motion RA: -1.580 mas/yr	V=11.57+/-0.16	Reference Frame: ICRS
		Dec: +29 40 20.27 (29.67230d)	Proper Motion Dec: -6.958 mas/yr		
		Equinox: J2000	Parallax: 0.0023122"		
			Epoch of Position: 2000		
			Radial Velocity: 19.034 km/sec		

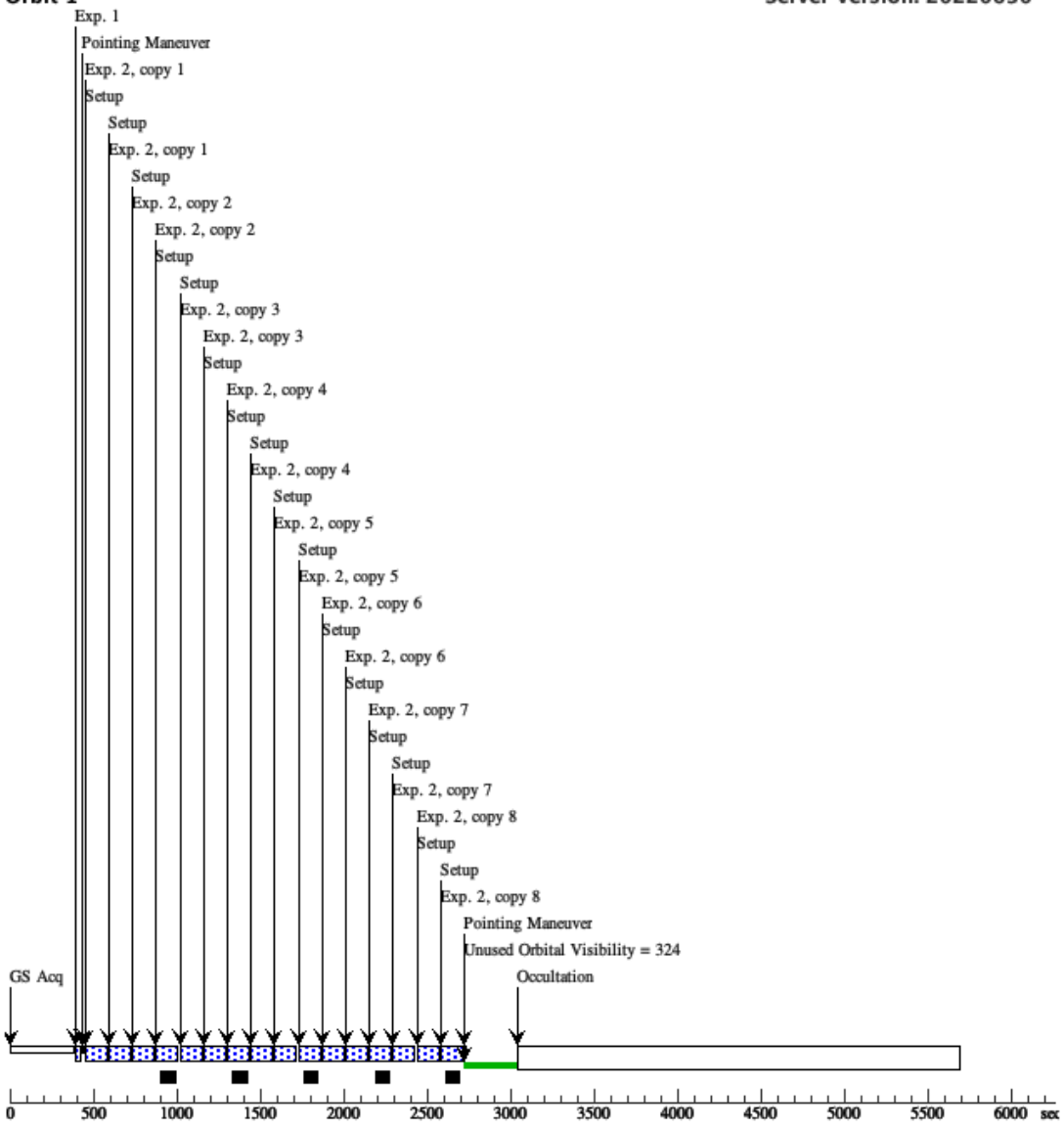
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. Edited to include Proper Motion, RV, and Parallax
Category=EXT-STAR
Description=[EXTRA-SOLAR PLANET, G V-IV]

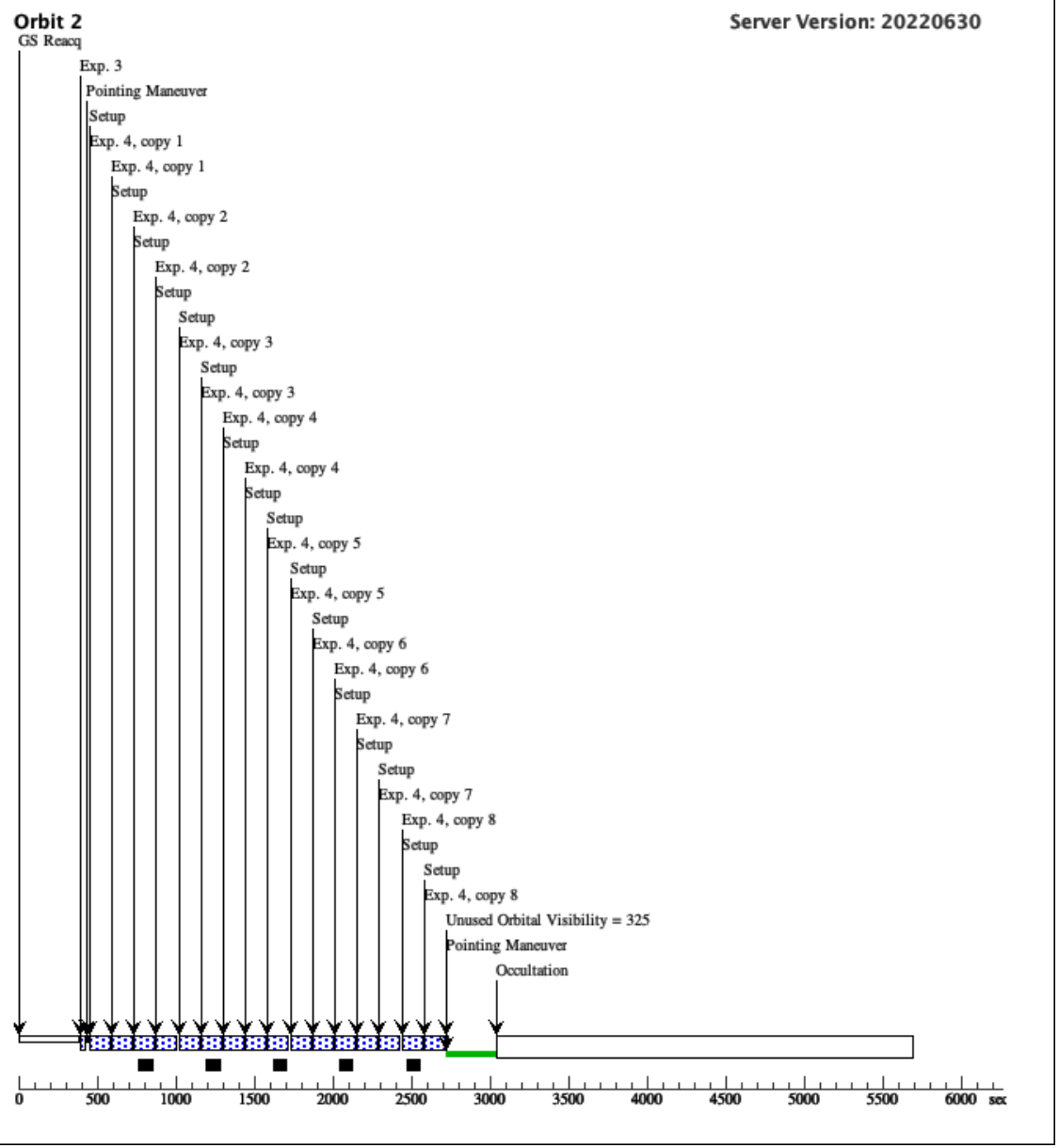
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 1-2 Non-Int in Science (02) (04)	0.833445 Secs (0.833 Secs) *[==>]*	***[1]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
2	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 1-2 Non-Int in Science (02) (04)	103.128633 Secs X 8 (1650.058 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)]*	***[1]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
3	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 3-4 Non-Int in Science (02) (04)	0.833445 Secs (0.833 Secs) *[==>]*	***[2]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									

4	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 3-4 Non-Int in Science (02) (04)	103.128633 Secs X 8 (1650.058 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)]*	***[2]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
5	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 5-6 Non-Int in Science (02) (04)	0.833445 Secs (0.833 Secs) *[==>]*	***[3]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
6	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 5-6 Non-Int in Science (02) (04)	103.128633 Secs X 8 (1650.058 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)]*	***[3]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									

Orbit Structure

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Exp. 4, copy 7
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Exp. 4, copy 7
Exp. 4, copy 8
Setup
Setup
Exp. 4, copy 8
Unused Orbital Visibility = 325
Pointing Maneuver
Occultation
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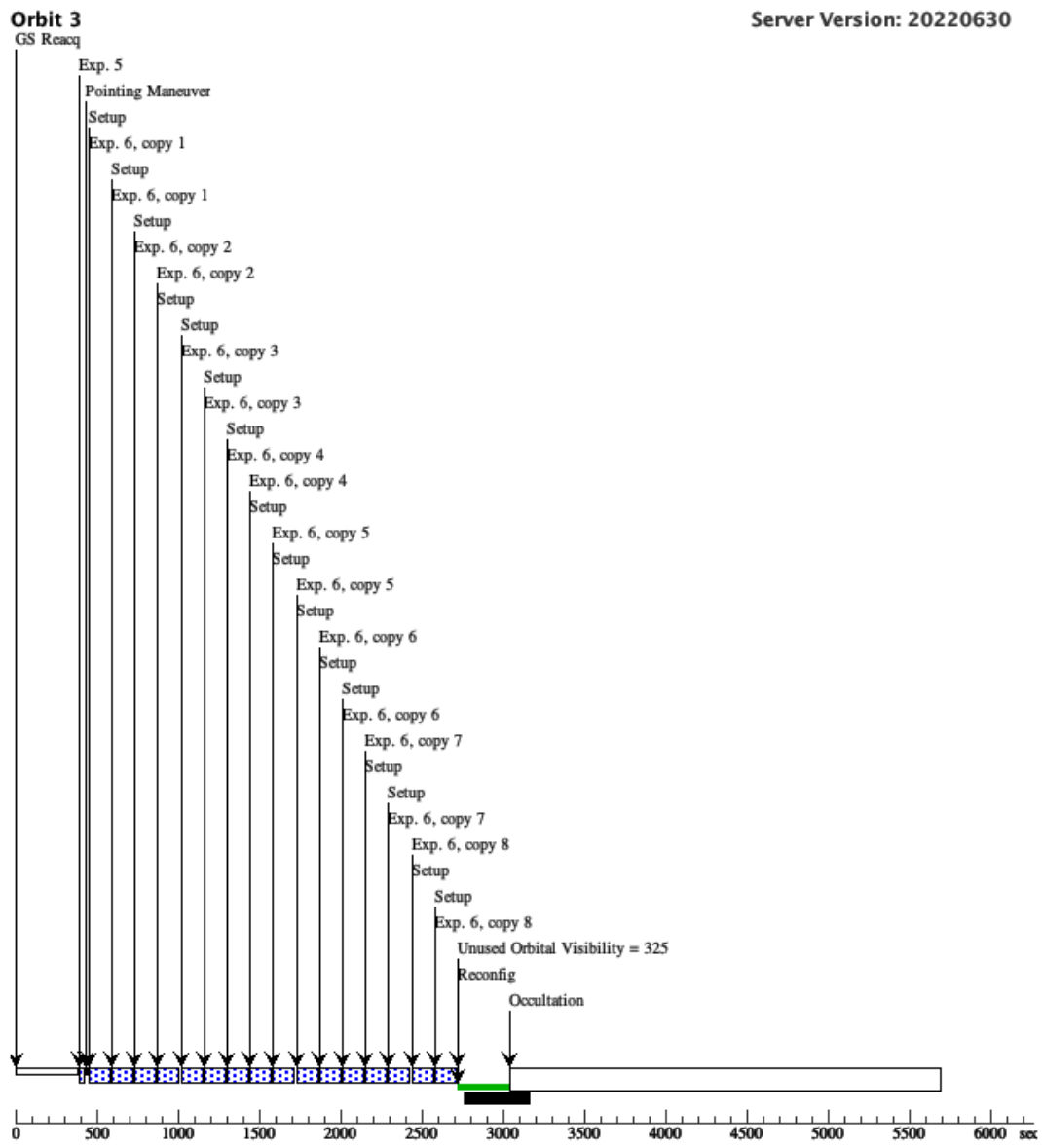
Orbit 3
Server Version: 20220630
GS Reacq
Exp. 5
Pointing Maneuver
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Exp. 6, copy 1
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Exp. 6, copy 6
Exp. 6, copy 7
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Exp. 6, copy 7
Exp. 6, copy 8
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Exp. 6, copy 8
Unused Orbital Visibility = 325
Reconfig
Occultation
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Visit

Proposal 16236, Science (03) (05) Thu Oct 06 21:01:41 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 04

Comments: We must maintain the same orientation as in "visit" 1 to increase our ability to decorrelate the detector systematics and to allow us to subtract the companion star's spectrum.

We also have placed an After Visit requirement to try to ensure that Visit 2 will follow immediately after Visit 1. See the Proposal Description for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WASP-12	RA: 06 30 32.7967 (97.6366529d)	Proper Motion RA: -1.580 mas/yr	V=11.57+/-0.16	Reference Frame: ICRS
		Dec: +29 40 20.27 (29.67230d)	Proper Motion Dec: -6.958 mas/yr		
		Equinox: J2000	Parallax: 0.0023122"		
			Epoch of Position: 2000		
			Radial Velocity: 19.034 km/sec		

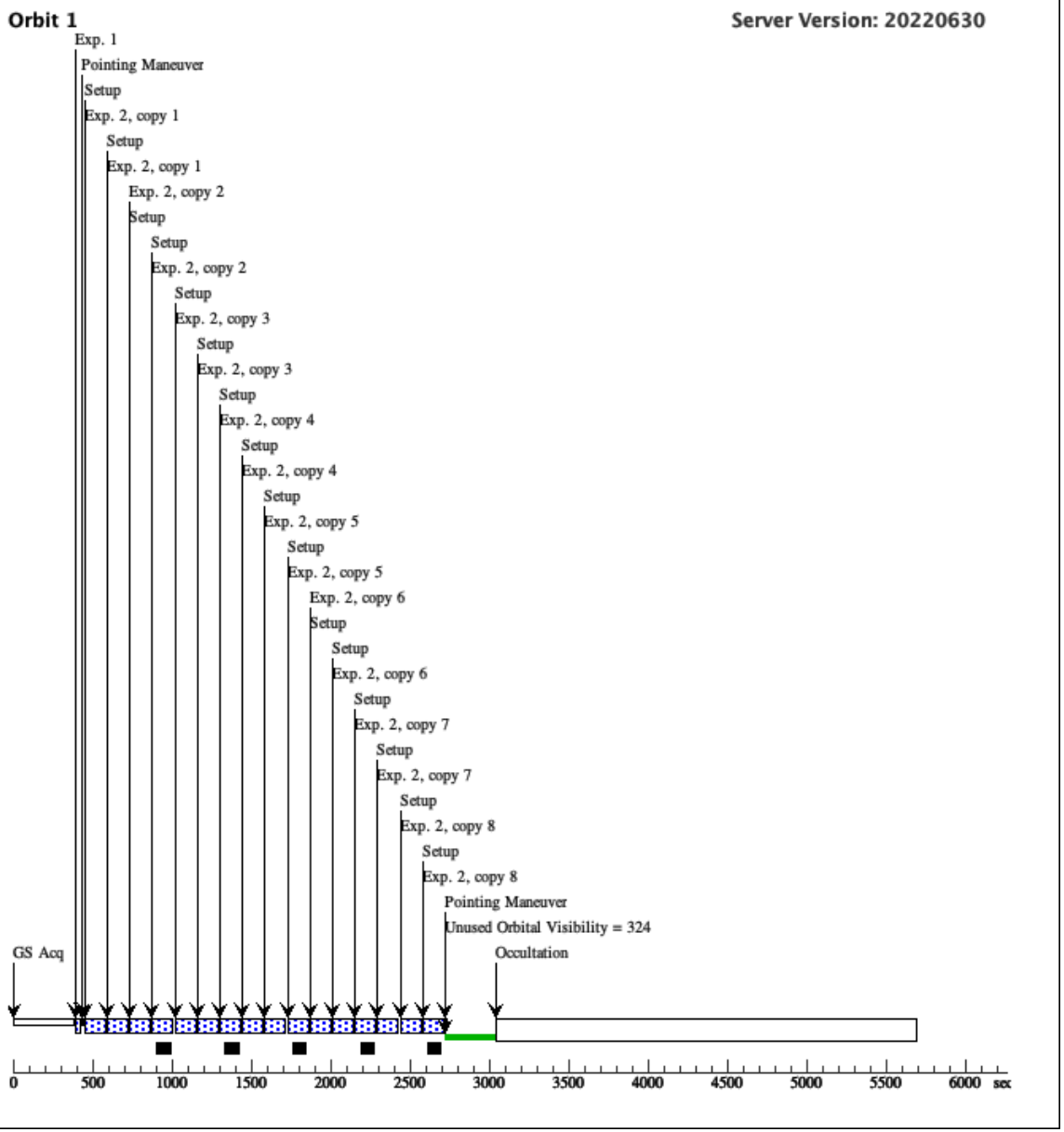
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. Edited to include Proper Motion, RV, and Parallax
Category=EXT-STAR
Description=[EXTRA-SOLAR PLANET, G V-IV]

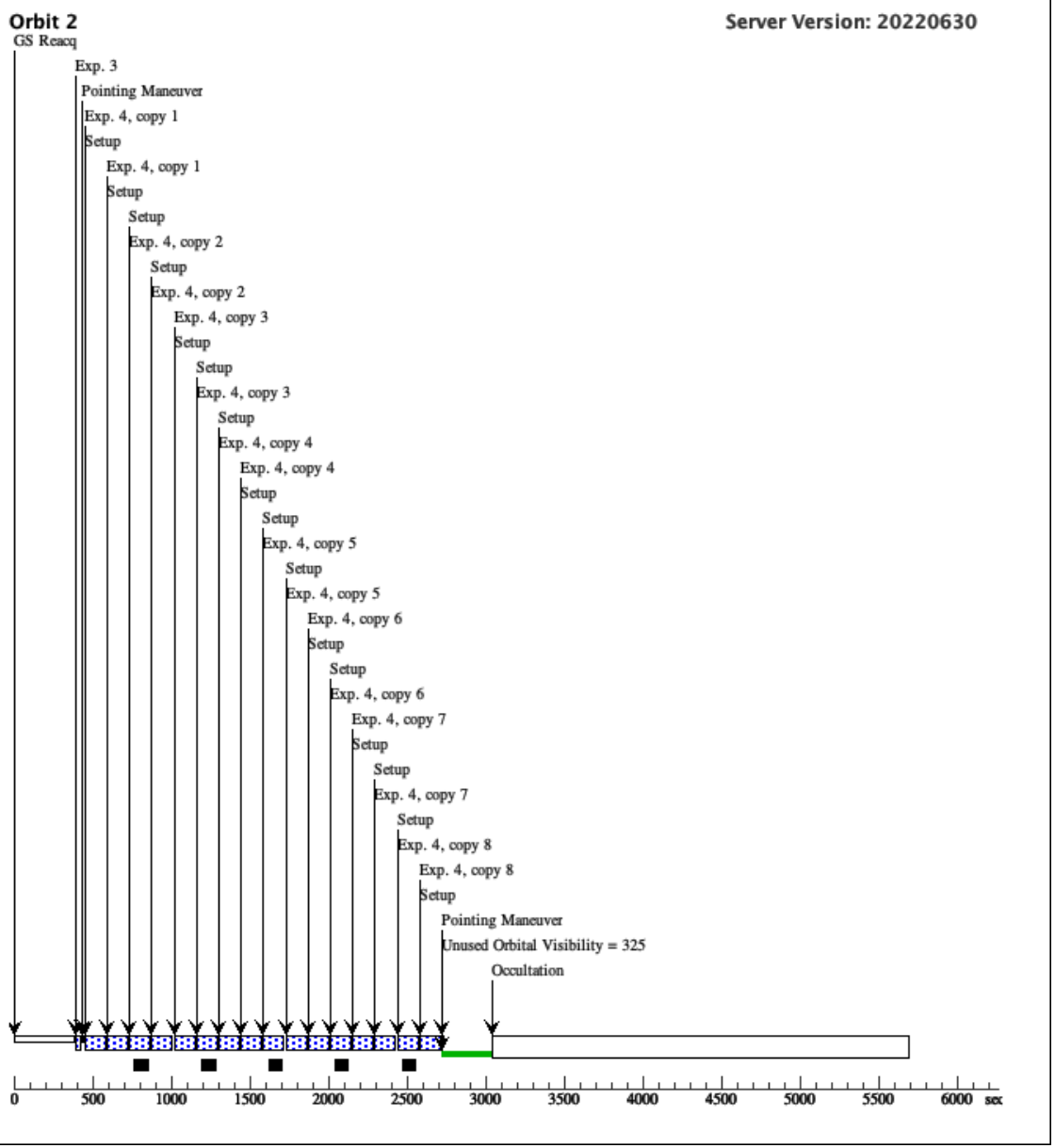
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0; GS ACQ SCENARIO BASE1BE	Sequence 1-2 Non-Int in Science (03) (05)	0.833445 Secs (0.833 Secs) *[==>]*	***[1]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
2	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0325,90.0 Degrees,Round trip	Sequence 1-2 Non-Int in Science (03) (05)	103.128633 Secs X 8 (1650.058 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)]*	***[1]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
3	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 3-4 Non-Int in Science (03) (05)	0.833445 Secs (0.833 Secs) *[==>]*	***[2]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									

4	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 3-4 Non-Int in Science (03) (05)	103.128633 Secs X 8 (1650.058 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)]*	***[2]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
5	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 5-6 Non-Int in Science (03) (05)	0.833445 Secs (0.833 Secs) *[==>]*	***[3]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
6	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 5-6 Non-Int in Science (03) (05)	103.128633 Secs X 8 (1650.058 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)]*	***[3]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									

Orbit Structure




Orbit 2
Server Version: 20220630
GS Reacq
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Pointing Maneuver
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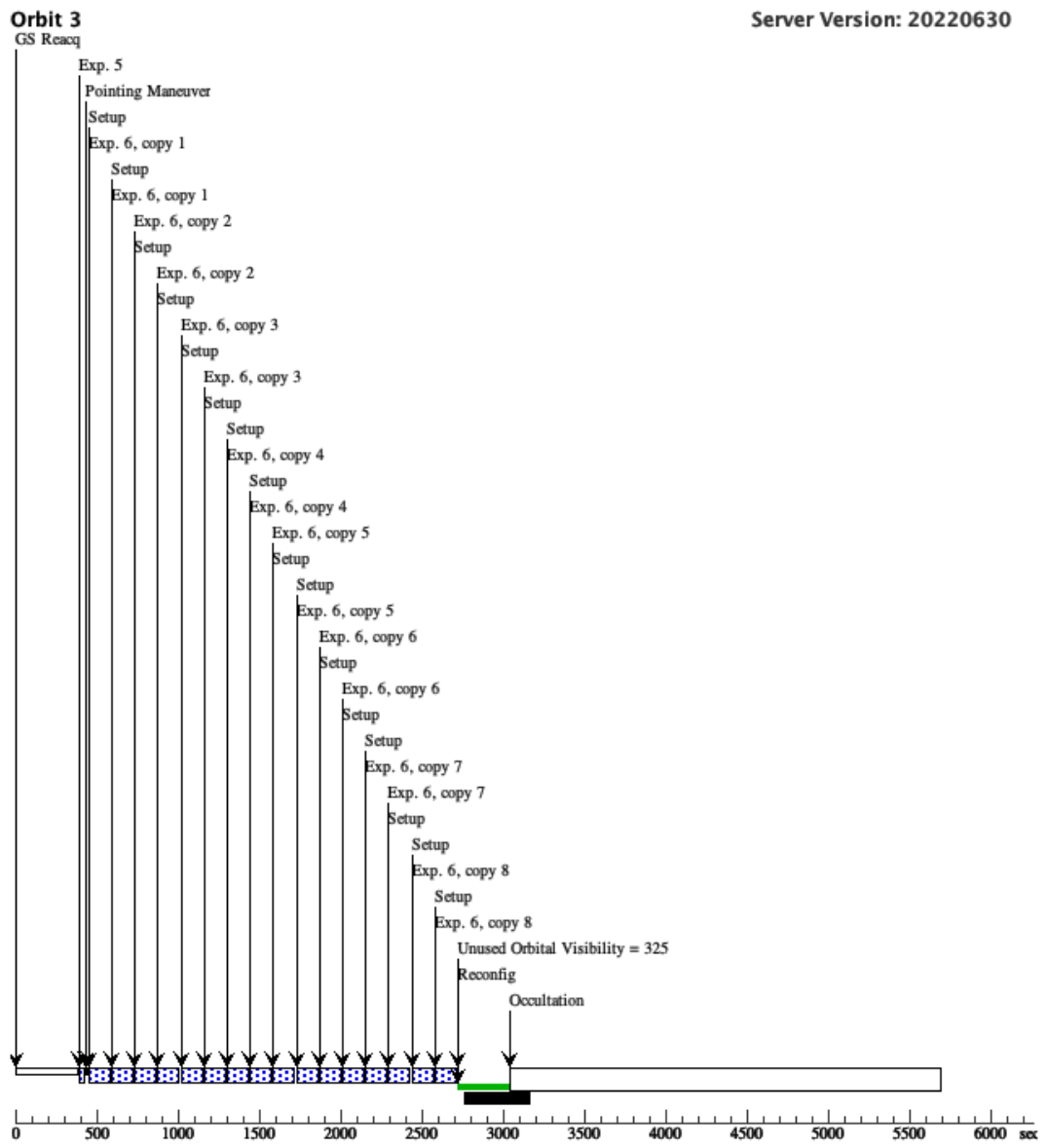
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Unused Orbital Visibility = 325
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Visit

Proposal 16236, Science (03) (06) Thu Oct 06 21:01:41 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 05

Comments: We must maintain the same orientation as in "visit" 1 to increase our ability to decorrelate the detector systematics and to allow us to subtract the companion star's spectrum.

We also have placed an After Visit requirement to try to ensure that Visit 3 will follow immediately after Visit 2. See the Proposal Description for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WASP-12	RA: 06 30 32.7967 (97.6366529d)	Proper Motion RA: -1.580 mas/yr	V=11.57+/-0.16	Reference Frame: ICRS
		Dec: +29 40 20.27 (29.67230d)	Proper Motion Dec: -6.958 mas/yr		
		Equinox: J2000	Parallax: 0.0023122"		
			Epoch of Position: 2000		
			Radial Velocity: 19.034 km/sec		

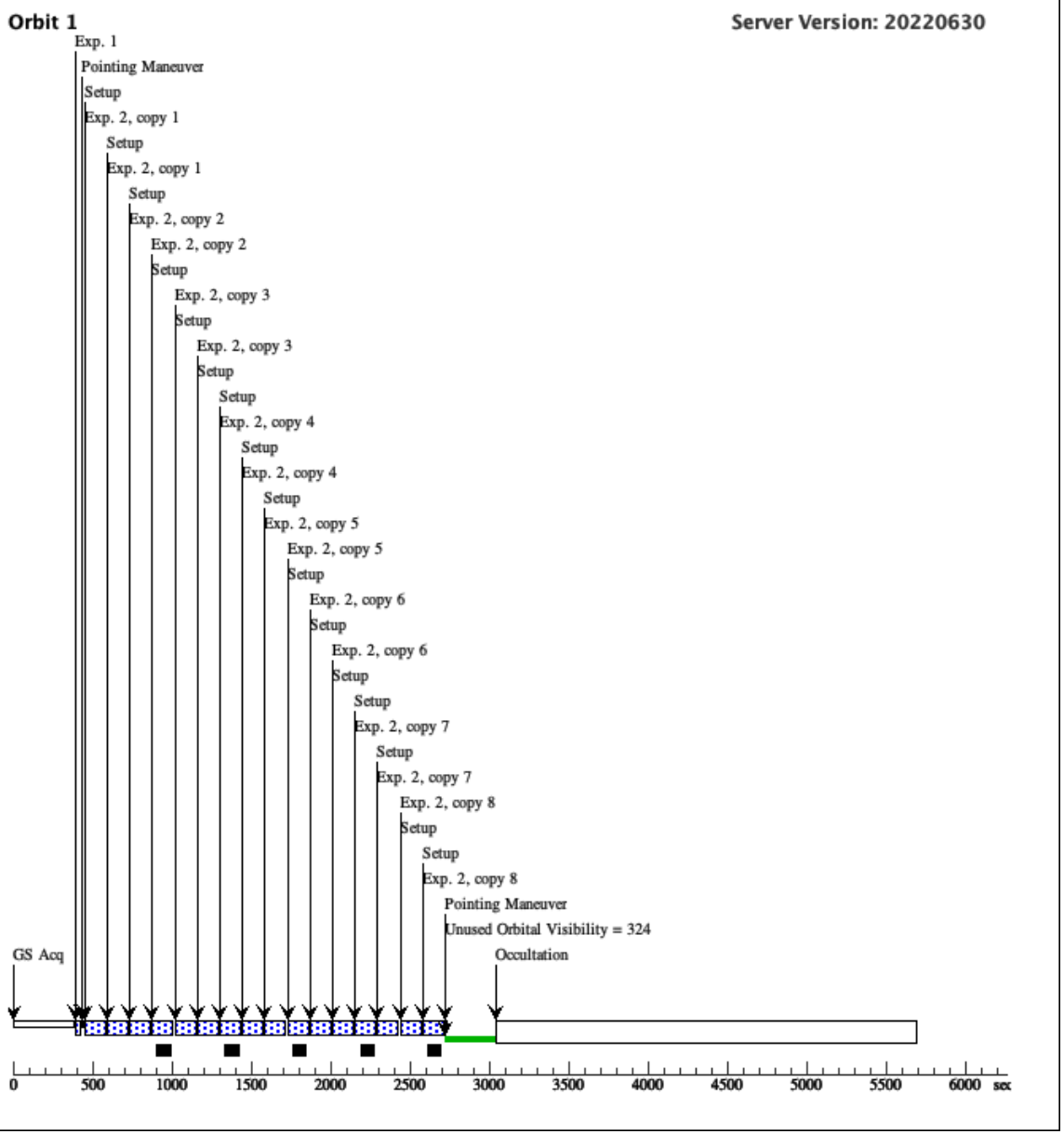
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. Edited to include Proper Motion, RV, and Parallax
Category=EXT-STAR
Description=[EXTRA-SOLAR PLANET, G V-IV]

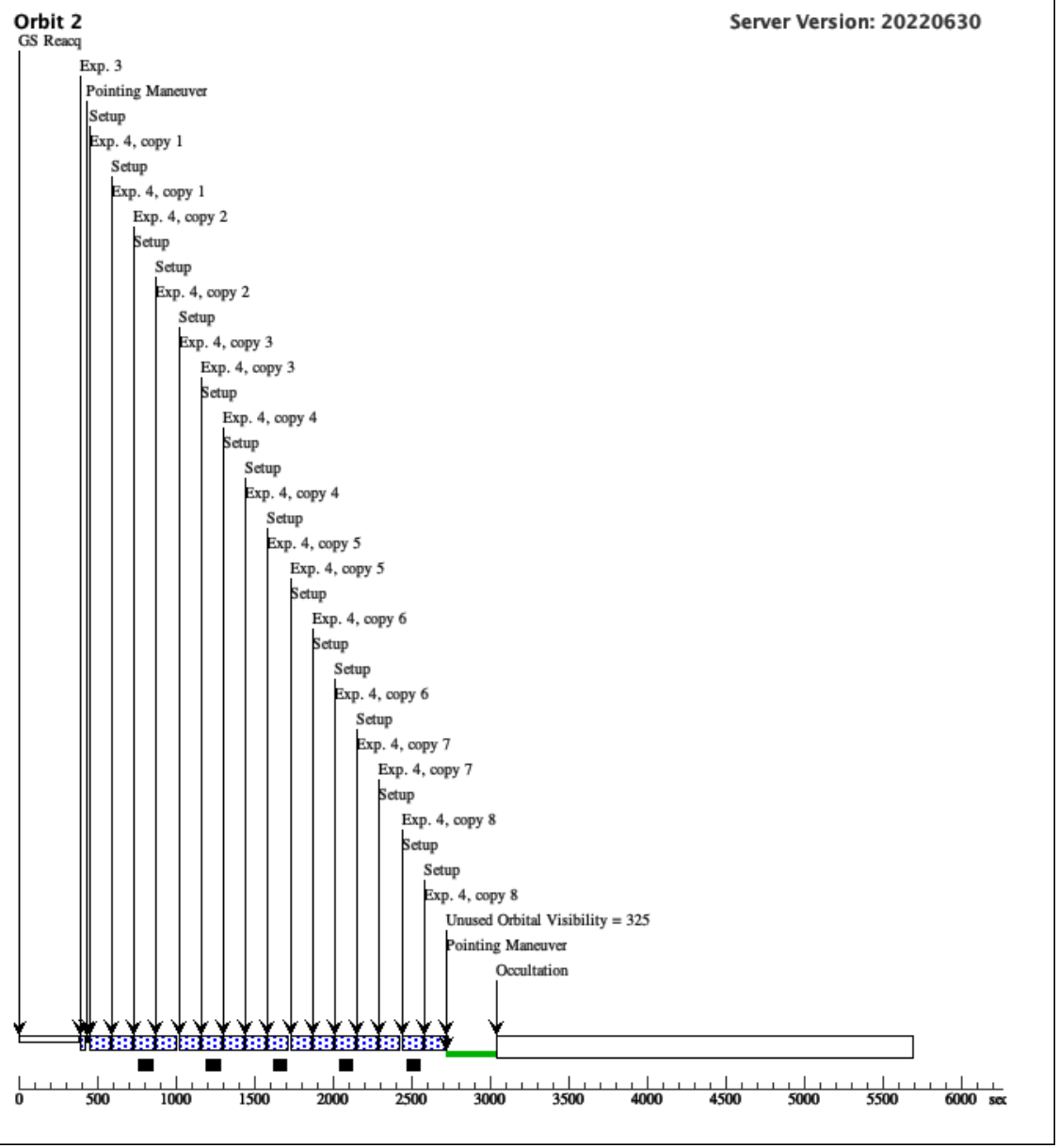
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0; GS ACQ SCENARIO BASE1BE	Sequence 1-2 Non-Int in Science (03) (06)	0.833445 Secs (0.833 Secs) *[==>]*	***[1]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
2	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 1-2 Non-Int in Science (03) (06)	103.128633 Secs X 8 (1650.058 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)]*	***[1]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
3	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 3-4 Non-Int in Science (03) (06)	0.833445 Secs (0.833 Secs) *[==>]*	***[2]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									

4	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 3-4 Non-Int in Science (03) (06)	103.128633 Secs X 8 (1650.058 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)]*	***[2]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
5	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 5-6 Non-Int in Science (03) (06)	0.833445 Secs (0.833 Secs) *[==>]*	***[3]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
6	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 5-6 Non-Int in Science (03) (06)	103.128633 Secs X 8 (1650.058 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)]*	***[3]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									

Orbit Structure

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Unused Orbital Visibility = 325
Pointing Maneuver
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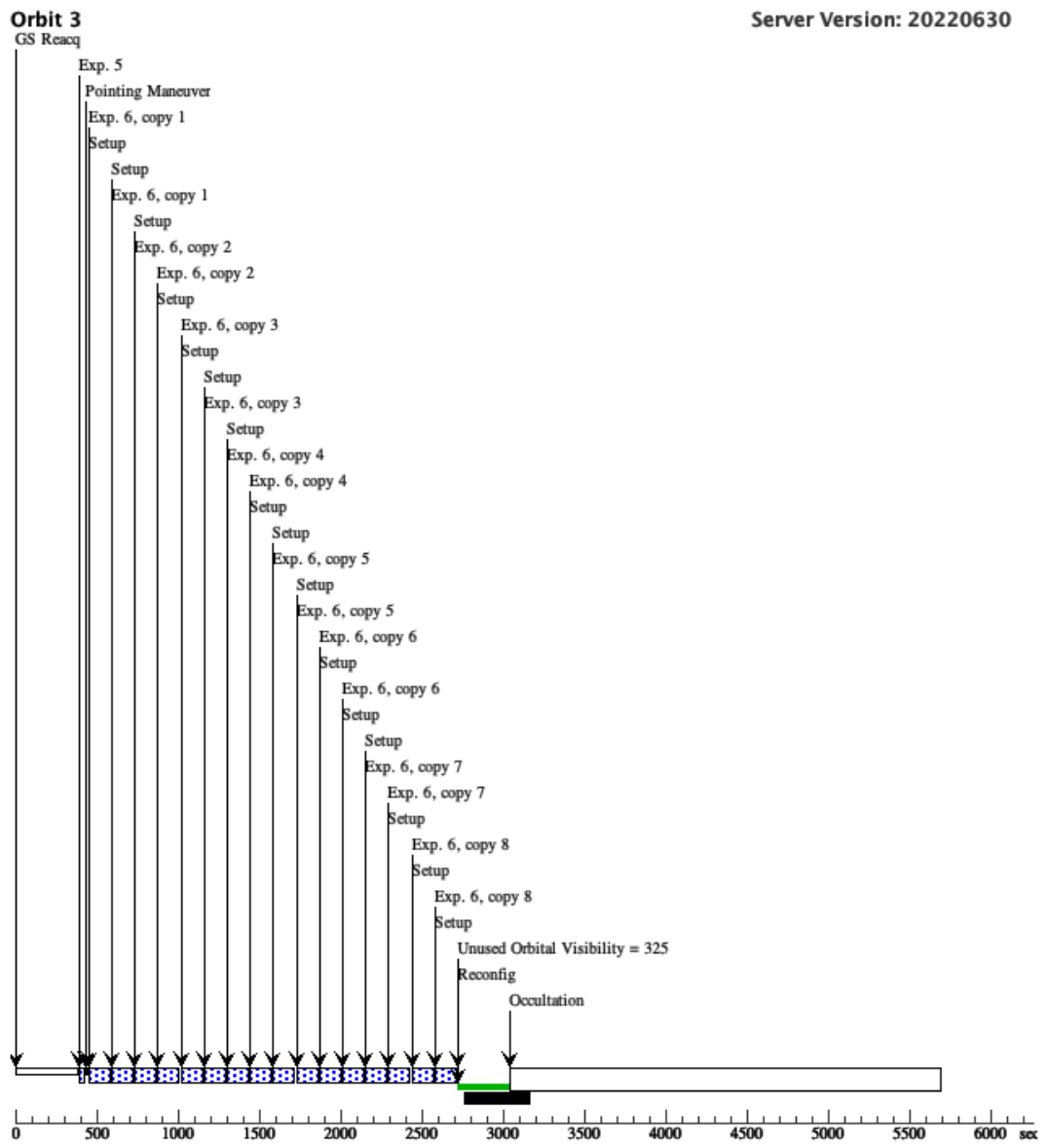
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Setup
Unused Orbital Visibility = 325
Reconfig
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Visit

Proposal 16236, Science (03) (07) Thu Oct 06 21:01:41 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 70%; SAME ORIENT AS 01; AFTER 06

Comments: We must maintain the same orientation as in "visit" 1 to increase our ability to decorrelate the detector systematics and to allow us to subtract the companion star's spectrum.

We also have placed an After Visit requirement to try to ensure that Visit 3 will follow immediately after Visit 2. See the Proposal Description for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WASP-12	RA: 06 30 32.7967 (97.6366529d)	Proper Motion RA: -1.580 mas/yr	V=11.57+/-0.16	Reference Frame: ICRS
		Dec: +29 40 20.27 (29.67230d)	Proper Motion Dec: -6.958 mas/yr		
		Equinox: J2000	Parallax: 0.0023122"		
			Epoch of Position: 2000		
			Radial Velocity: 19.034 km/sec		

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. Edited to include Proper Motion, RV, and Parallax
Category=EXT-STAR
Description=[EXTRA-SOLAR PLANET, G V-IV]

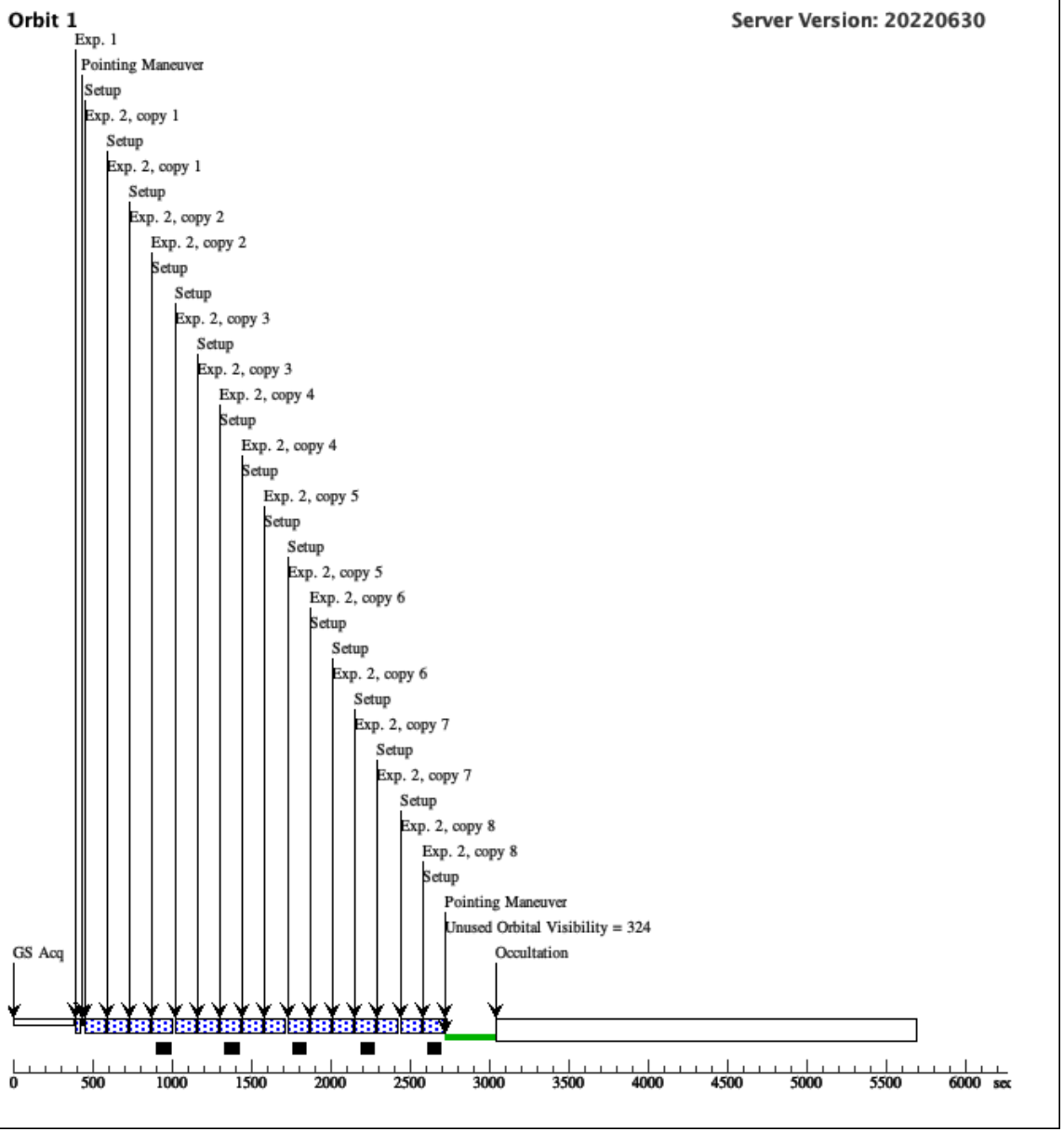
Exposures

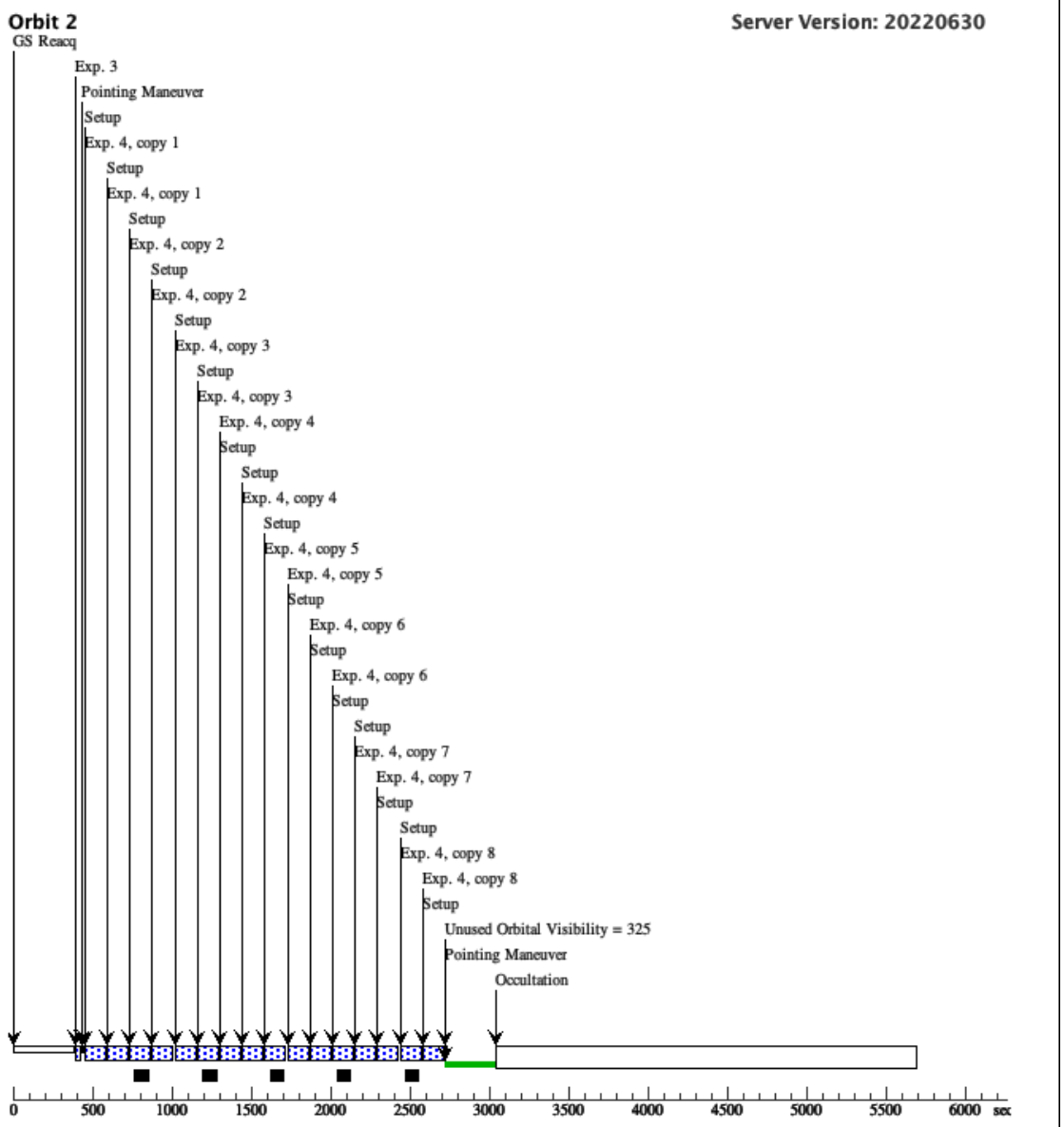
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 1-2 Non-Int in Science (03) (07)	0.833445 Secs (0.833 Secs) *[==>]*	*[1]*
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
2	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 1-2 Non-Int in Science (03) (07)	103.128633 Secs X 8 (1650.058 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)]*	*[1]*
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
3	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 3-4 Non-Int in Science (03) (07)	0.833445 Secs (0.833 Secs) *[==>]*	*[2]*
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									

4	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 3-4 Non-Int in Science (03) (07)	103.128633 Secs X 8 (1650.058 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)]*	***[2]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									
5	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 5-6 Non-Int in Science (03) (07)	0.833445 Secs (0.833 Secs) *[==>]*	***[3]***
Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
6	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 5-6 Non-Int in Science (03) (07)	103.128633 Secs X 8 (1650.058 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)]*	***[3]***
Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									

	7	Wavelength Solution (WFC3IR.im.1449967)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	F126N	SAMP-SEQ=RAPID; NSAMP=3	POS TARG 0,0	Sequence 7-8 Non-Int in Science (03) (07)	0.833445 Secs (0.833 Secs) *[==>]*	 ***[4]***
	Comments: F126N was selected as a narrow band filter to avoid saturation while determining the wavelength solution. This filter was also previously successfully used in GO program 13467 (Kreidberg et al., 2015).									
	8	Science Observations (WFC3IR.ss.1450520)	(1) WASP-12	WFC3/IR, MULTIACCUM, GRISM256	G141	SAMP-SEQ=SPARS10; NSAMP=15	POS TARG 0,0; SPATIAL SCAN 0.0 325,90.0 Degrees,Round trip	Sequence 7-8 Non-Int in Science (03) (07)	103.128633 Secs X 8 (1650.058 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)]*	 ***[4]***
	Comments: Our scan rate, SAMP-SEQ, and NSAMP ere jointly optimized to provide high observing efficiency, a peak per-pixel count of ~35,000 to ensure rapid charge-trapping equilibriation within the first orbit, and the ability to separate the contaminating flux from the nearby M-dwarf companions at PA=250 while also not excessively limiting the ORIENT range of the observations.									

Orbit Structure

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Unused Orbital Visibility = 325
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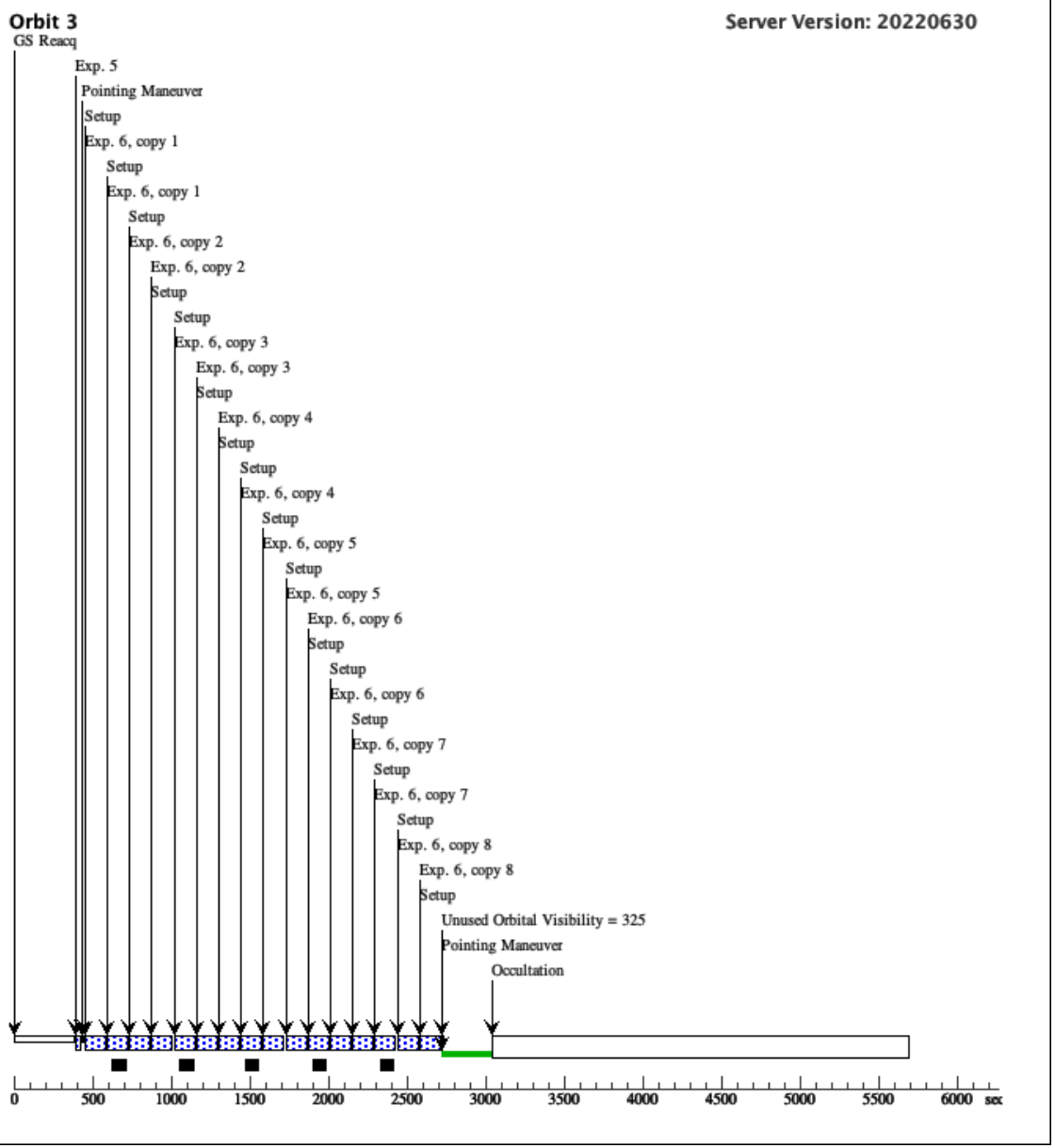
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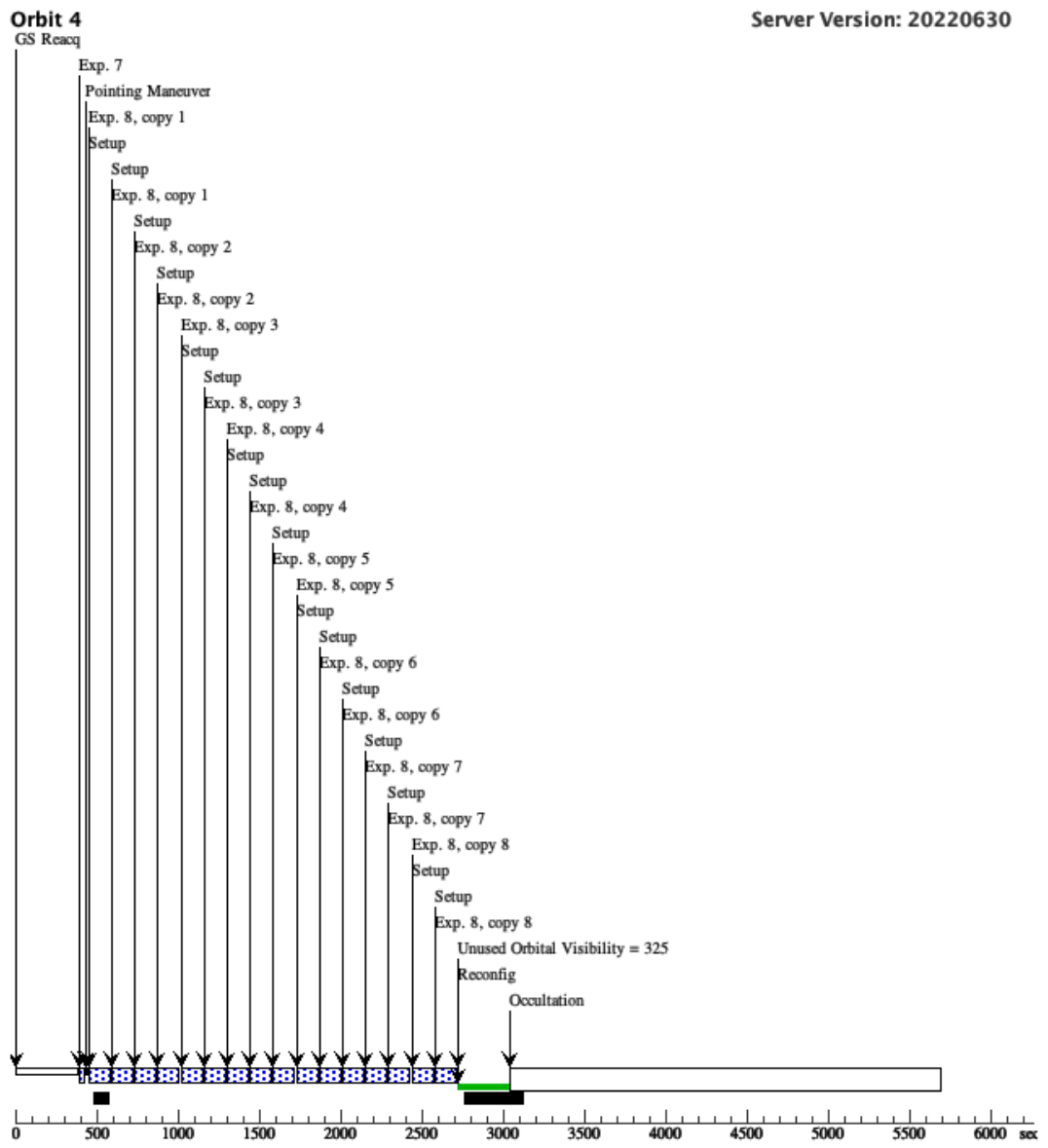
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Unused Orbital Visibility = 325
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