



16181 - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub-Neptune from TESS

Cycle: 28, Proposal Category: GO
(Availability Mode: SUPPORTED)

INVESTIGATORS

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Dr. Thomas Evans-Soma (CoI)	University of Newcastle
Prof. Jason A. Dittmann (CoI)	University of Florida

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	(3) TYC-8196-1874-1 (4) L-248-27-COS-OFFSET-VERSION	COS/NUV	1	16-Aug-2024 15:00:16.0	yes
03	(1) L-248-27	WFC3/IR	4	16-Aug-2024 15:00:22.0	yes

<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>
10	(5) TOI-700	WFC3/IR	4	16-Aug-2024 15:00:31.0	yes
11	(5) TOI-700	WFC3/IR	4	16-Aug-2024 15:00:40.0	yes
12	(5) TOI-700	WFC3/IR	4	16-Aug-2024 15:00:48.0	yes

17 Total Orbits Used

ABSTRACT

NASA's Transiting Exoplanet Survey Satellite (TESS) is rapidly discovering small transiting planets around the nearest and brightest stars that are most amenable to detailed follow-up characterization. One of the most exciting recent TESS discoveries is TOI 1231b, a 3.6 Earth radius planet orbiting an M- dwarf 27 parsecs away. This planet stands out thanks to its low equilibrium temperature - just 330 Kelvin. As the second temperate sub-Neptune accessible for atmosphere studies, TOI 1231b occupies a poorly explored region of parameter space and can help break the degeneracy in demographic trends in the exo-Neptune population. We propose to observe (1) the transmission spectrum of TOI 1231b in the near-infrared and (2) the Mg II emission from the host star in the UV. With these data, we will be able to detect spectral features at high confidence for a realistic, 100x solar metallicity atmosphere, even if high altitude clouds are present. In addition, our UV observations will provide a critical missing piece in the modeling of atmospheric photochemistry and interpretation of the planet's transmission spectrum. Taken together, these data will provide one of the first glimpses into atmospheric chemistry near the habitable zone, building an essential foundation for interpreting the spectra of potentially habitable planets when they are measured with future facilities.

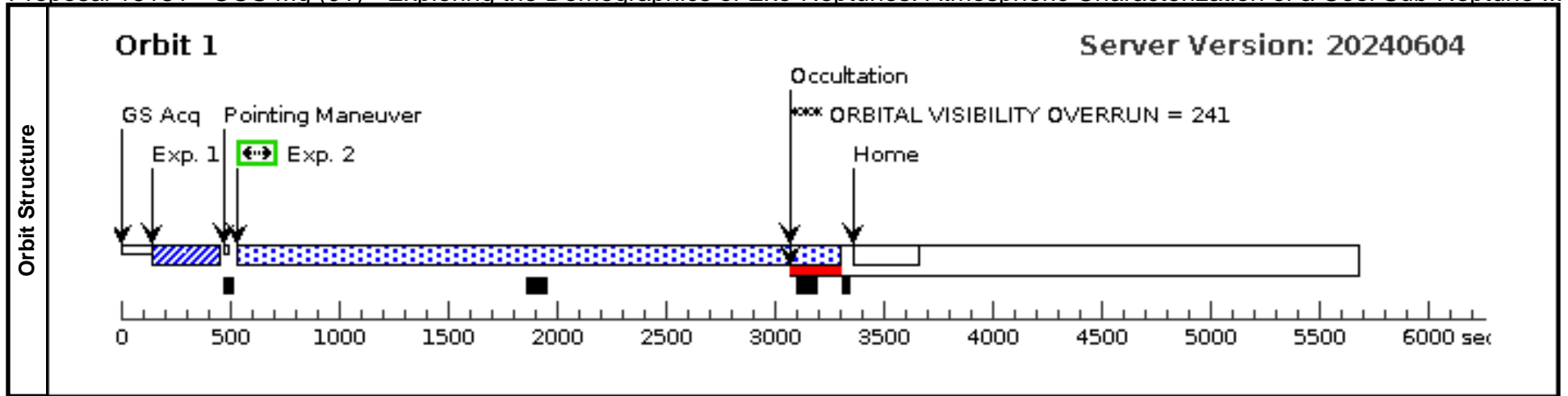
OBSERVING DESCRIPTION

TOI 1231b transits + COS observations of Mg lines

Proposal 16181 - COS Mg (01) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub-Neptune ...

Fri Aug 16 19:00:50 GMT 2024

Visit	Proposal 16181, COS Mg (01), completed Diagnostic Status: Warning Scientific Instruments: COS/NUV Special Requirements: Period 24.245621 D AND ZERO-PHASE HJD2458563.88694									
	(COS Mg (01)) Warning (Orbit Planner): COORDINATES SHOULD BE IN THE ICRS REFERENCE SYSTEM FOR A SMALL APERTURE (COS Mg (01)) Warning (Orbit Planner): COORDINATES SHOULD BE IN THE ICRS REFERENCE SYSTEM FOR A SMALL APERTURE (COS Mg (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN									
Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous			
	(3)	TYC-8196-1874-1	RA: 10 26 46.9474 (156.6956142d) Dec: -52 27 16.14 (-52.45448d) Equinox: J2000	Proper Motion RA: -9.34265332362904E-4 sec of time/yr Proper Motion Dec: 0.036342 arcsec/yr Epoch of Position: 2015.5		V=11.89	Reference Frame: SIMBAD			
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=CALIBRATION Description=[ASTROMETRIC, TARGET ACQUISITION TEST] Extended=NO										
(4)	L-248-27-COS-OFFSET-VERSION	Offset from TYC-8196-1874-1 RA Offset: -0.009217657679215563 Degrees Dec Offset: -0.002087328748 Degrees			V=12.302	Offset Position (L-248-27-COS-OFFSET-VERSION)				
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Offset is the coordinates of the Tycho star - coordinates of the target star Offset is set to epoch 2021.0, accounting for the proper motions of both stars. Category=STAR Description=[M V-IV] Extended=NO										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Acquisition-Offset-Star 1 (COS.ta.145 9606)	(3) TYC-8196-1874-1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB		PHASE 0.00284585 TO 0.99715415	Same Guide Stars in COS Mg (01)	11 Secs (11 Secs) [==>]	[1]
	2	Spectrum (COS.sp.145 2504)	(4) L-248-27-COS-OFFSET-VERSION	COS/NUV, TIME-TAG, PSA	G230L 2950 A	FLASH=YES; BUFFER-TIME=12 40; FP-POS=3		Same Guide Stars in COS Mg (01)	2665 Secs (2665 Secs) [==>]	[1]



Proposal 16181 - Transit 1 (03) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub-Neptune ...

Visit	Proposal 16181, Transit 1 (03), completed Fri Aug 16 19:00:50 GMT 2024 Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: Period 24.245621 D AND ZERO-PHASE HJD2458563.88694												
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>L-248-27</td> <td> RA: 10 26 59.3424 (156.7472600d) Dec: -52 28 4.34 (-52.46787d) Equinox: J2000 </td> <td> Proper Motion RA: -0.009744484003494874 sec of time/yr Proper Motion Dec: 0.361603 arcsec/yr Epoch of Position: 2015.5 </td> <td>V=12.302</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=STAR Description=[M V-IV] Extended=NO</p>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	L-248-27	RA: 10 26 59.3424 (156.7472600d) Dec: -52 28 4.34 (-52.46787d) Equinox: J2000	Proper Motion RA: -0.009744484003494874 sec of time/yr Proper Motion Dec: 0.361603 arcsec/yr Epoch of Position: 2015.5	V=12.302
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous								
(1)	L-248-27	RA: 10 26 59.3424 (156.7472600d) Dec: -52 28 4.34 (-52.46787d) Equinox: J2000	Proper Motion RA: -0.009744484003494874 sec of time/yr Proper Motion Dec: 0.361603 arcsec/yr Epoch of Position: 2015.5	V=12.302	Reference Frame: ICRS								

Proposal 16181 - Transit 1 (03) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub-Neptune ...

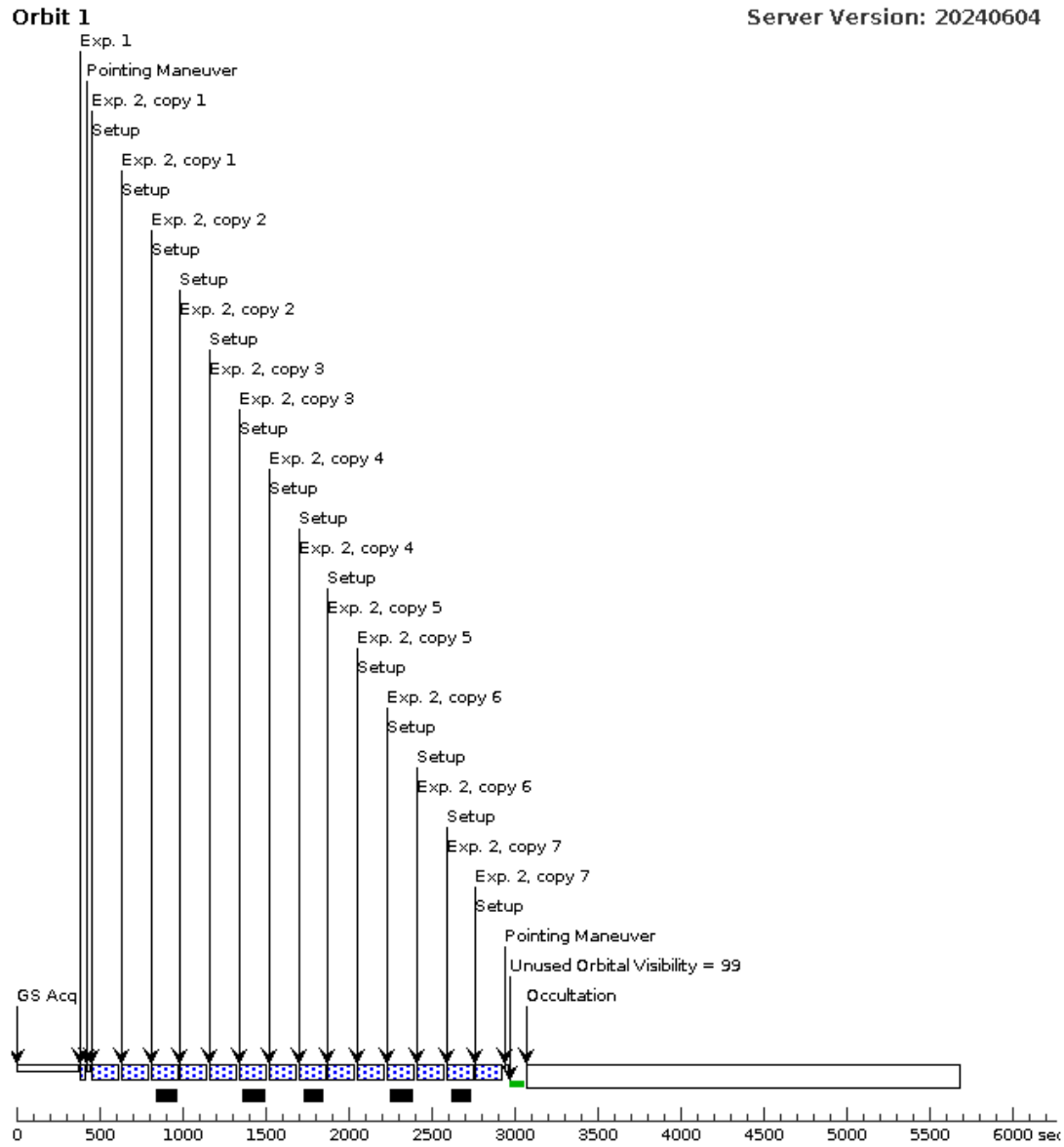
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	(WFC3IR.im.1459610)	(1) L-248-27	WFC3/IR, MULTIACCUM, GRISM512	F126N	NSAMP=1; SAMP-SEQ=RAPID	PHASE 0.99484601 269 TO 0.995483363 37	Sequence 1-2 Non-Int in Transit 1 (03)	0.853027 Secs (0.853 Secs) [==>]	[1]
	2		(1) L-248-27	WFC3/IR, MULTIACCUM, GRISM512	G141	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG null,-14; SPATIAL SCAN 0.1 8,90.0 Degrees,Round trip	Sequence 1-2 Non-Int in Transit 1 (03)	138.380533 Secs X 7 (1937.327 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]
	3	(WFC3IR.im.1459610)	(1) L-248-27	WFC3/IR, MULTIACCUM, GRISM512	F126N	NSAMP=1; SAMP-SEQ=RAPID		Sequence 3-4 Non-Int in Transit 1 (03)	0.853027 Secs (0.853 Secs) [==>]	[2]
	4		(1) L-248-27	WFC3/IR, MULTIACCUM, GRISM512	G141	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG null,-14; SPATIAL SCAN 0.1 8,90.0 Degrees,Round trip	Sequence 3-4 Non-Int in Transit 1 (03)	138.380533 Secs X 7 (1937.327 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)]	[2]
	5	(WFC3IR.im.1459610)	(1) L-248-27	WFC3/IR, MULTIACCUM, GRISM512	F126N	NSAMP=1; SAMP-SEQ=RAPID		Sequence 5-6 Non-Int in Transit 1 (03)	0.853027 Secs (0.853 Secs) [==>]	[3]

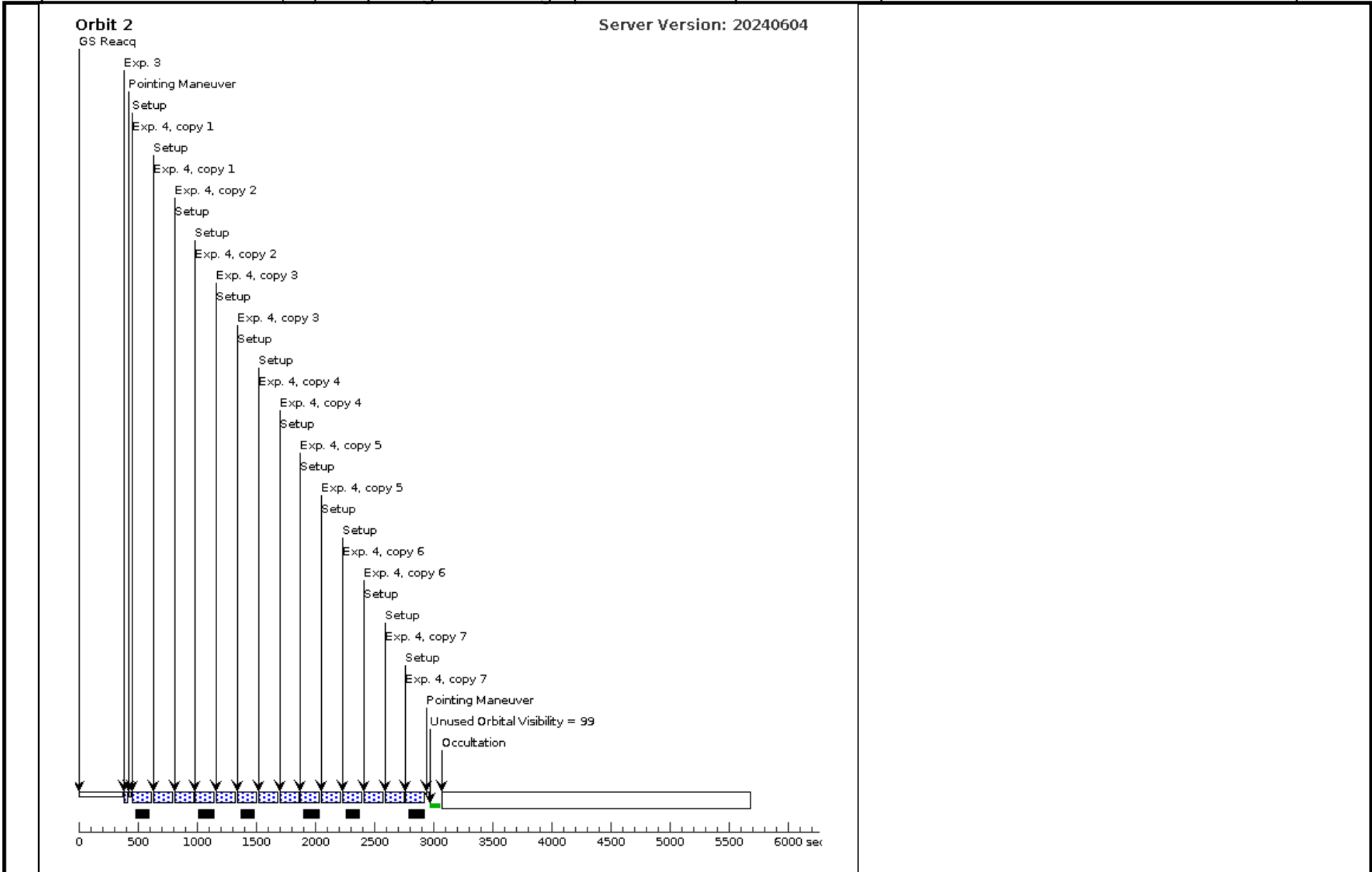
Proposal 16181 - Transit 1 (03) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub-Neptune ...

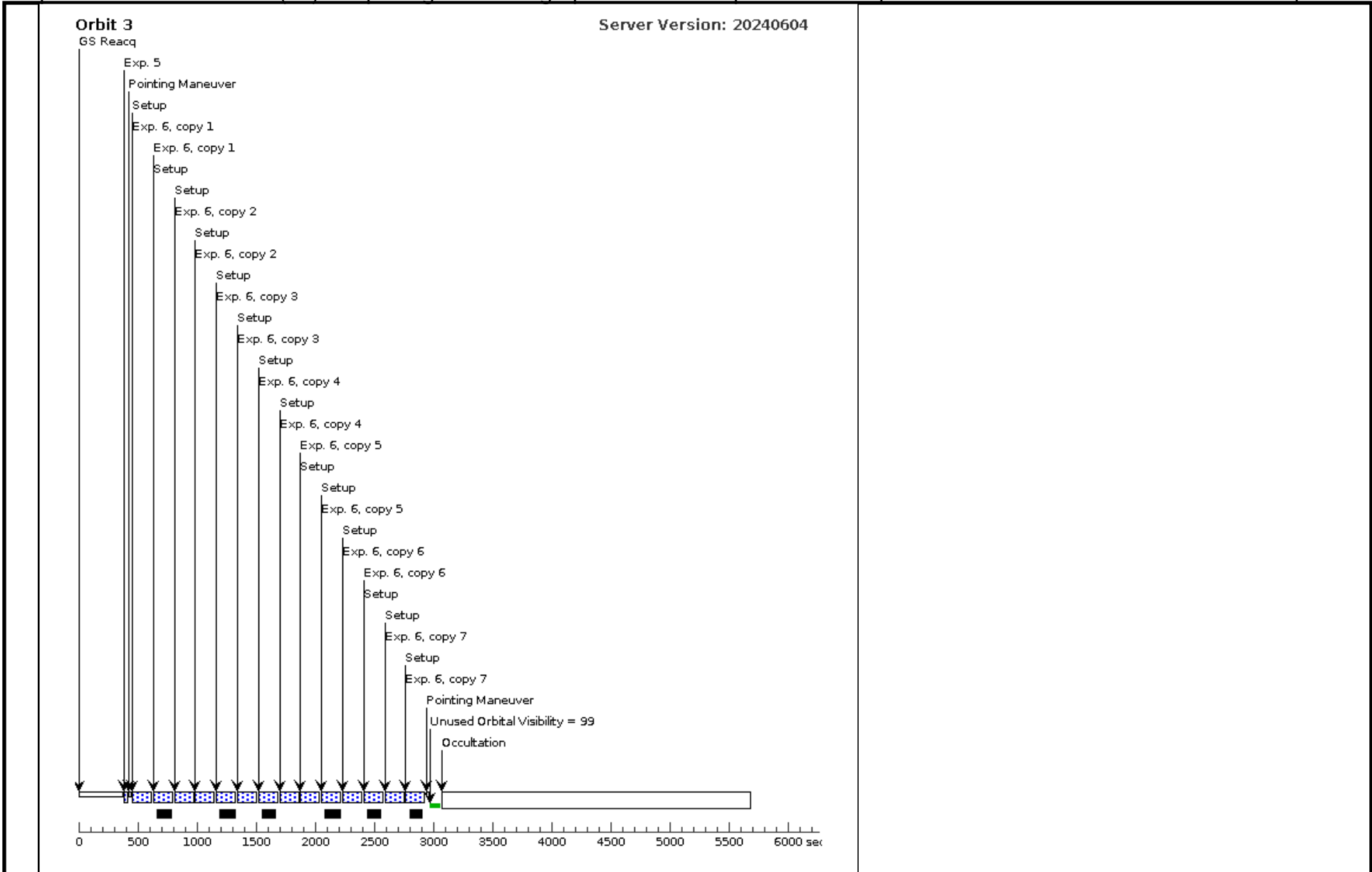
6	(1) L-248-27	WFC3/IR, MULTIACCUM, GRISM512	G141	NSAMP=7; SAMP-SEQ=SPAR S25	POS TARG null,-14; SPATIAL SCAN 0.1 8,90.0 Degrees,Roun d trip	Sequence 5-6 Non-Int in Transit 1 (03)	138.380533 Secs X 7 (1937.327 Secs)	
							[==>(Copy 1, Forward)] [==>(Copy 1, Reverse)] [==>(Copy 2, Forward)] [==>(Copy 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)]	[3]
7	(WFC3IR.im.1459610)	(1) L-248-27	WFC3/IR, MULTIACCUM, GRISM512	F126N	NSAMP=1; SAMP-SEQ=RAPID	Sequence 7-8 Non-Int in Transit 1 (03)	0.853027 Secs (0.853 Secs)	
							[==>]	[4]
8	(1) L-248-27	WFC3/IR, MULTIACCUM, GRISM512	G141	NSAMP=7; SAMP-SEQ=SPAR S25	POS TARG null,-14; SPATIAL SCAN 0.1 8,90.0 Degrees,Roun d trip	Sequence 7-8 Non-Int in Transit 1 (03)	138.380533 Secs X 7 (1937.327 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)]	[4]

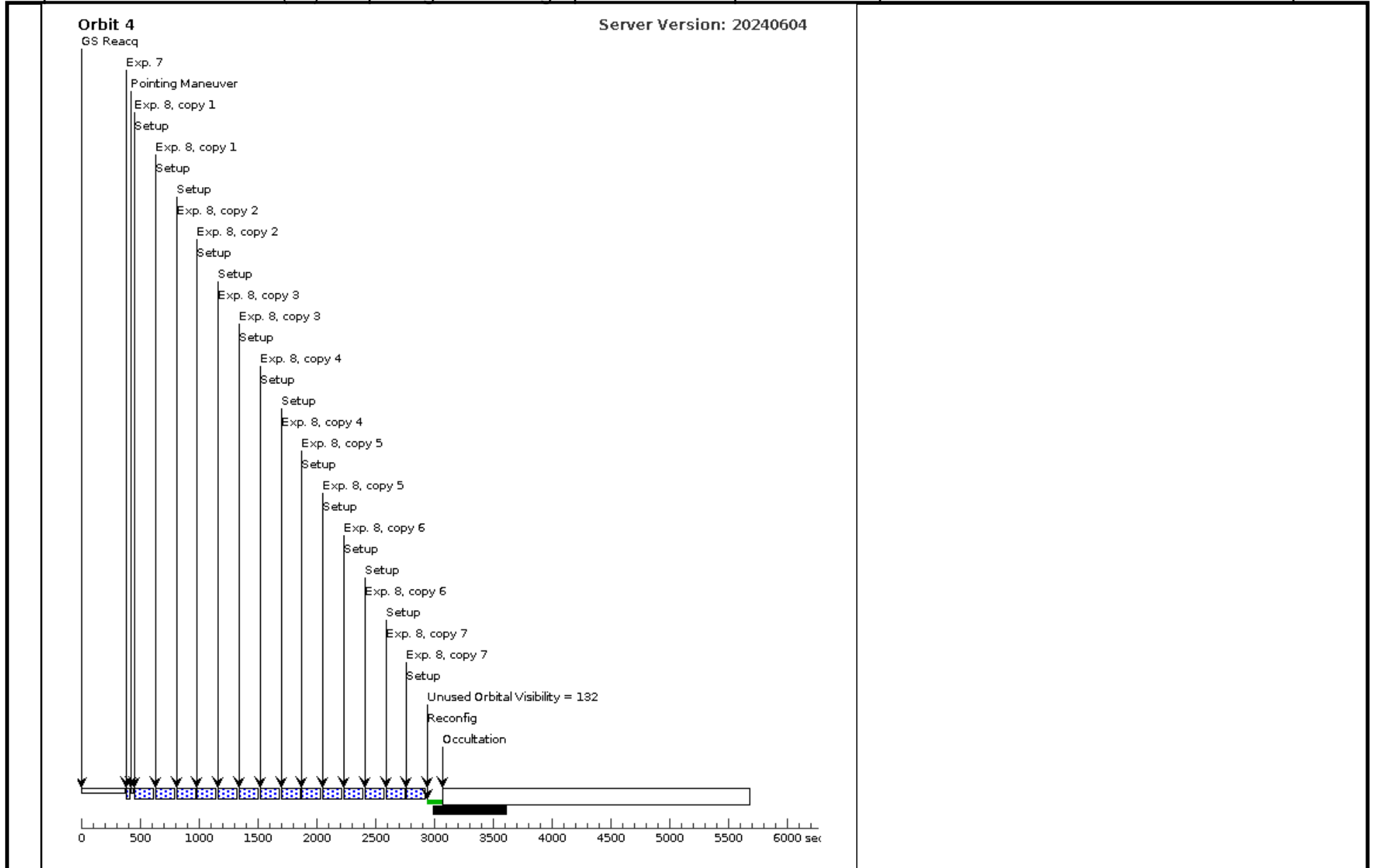
Orbit Structure

Server Version: 20240604









Proposal 16181 - TOI-700c transit 1 (10) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub...

Visit	Proposal 16181, TOI-700c transit 1 (10), implementation Fri Aug 16 19:00:50 GMT 2024					
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SCHED 100%; Period 16.051137 D AND ZERO-PHASE HJD2458821.62181					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(5)	TOI-700	RA: 06 28 23.2285 (97.0967854d) Dec: -65 34 45.52 (-65.57931d) Equinox: J2000	Proper Motion RA: -102.641 mas/yr Proper Motion Dec: 161.748 mas/yr Epoch of Position: 2000	V=13.076	Reference Frame: SIMBAD
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=EXT-STAR Description=[M III-I] Extended=NO						

Proposal 16181 - TOI-700c transit 1 (10) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub...

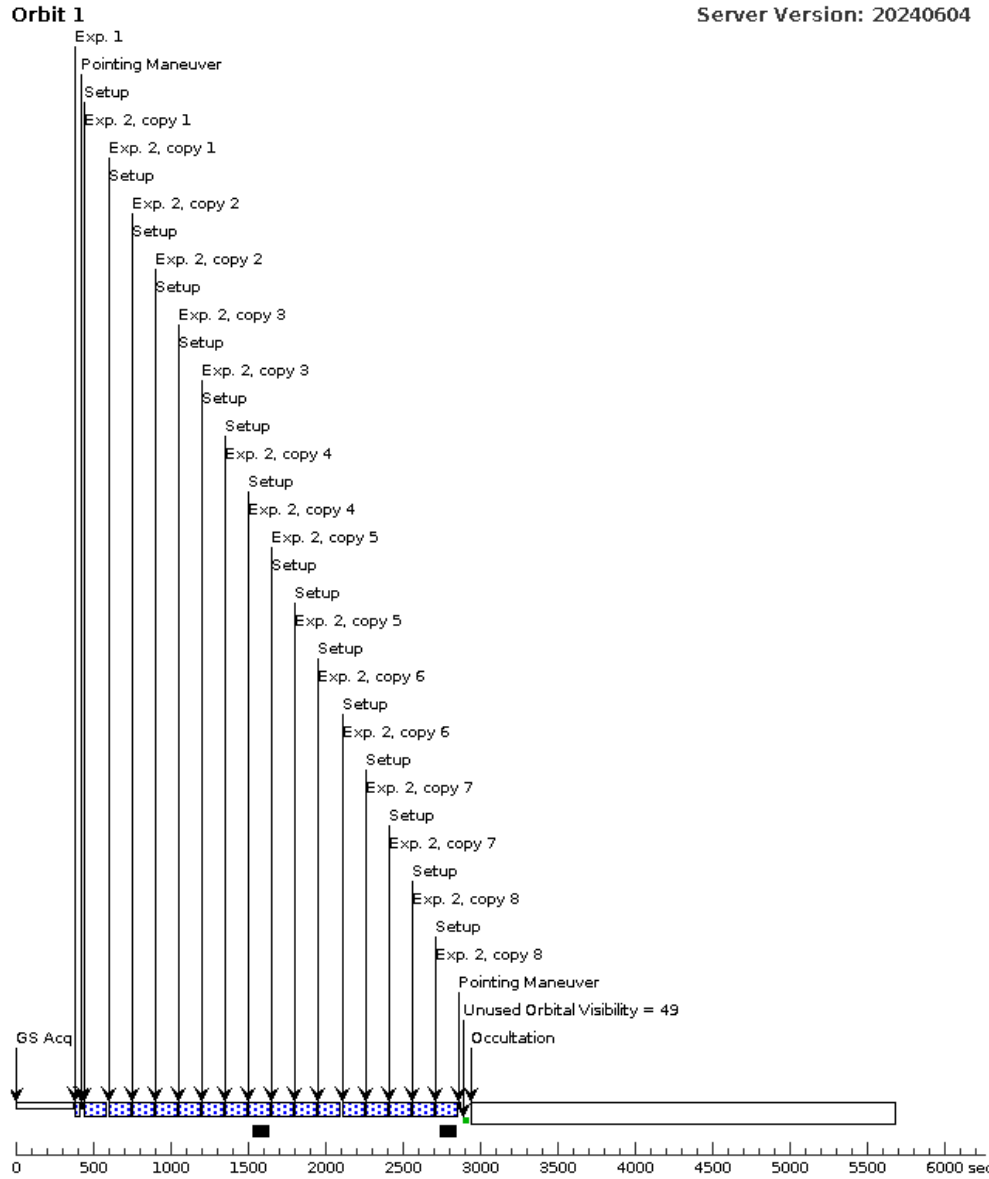
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0; PHASE 0.988396476 TO 0.996028304	Sequence 1-2 Non-Int in TOI-700c transit 1 (10)	3.055965 Secs (3.056 Secs) [==>]	[1]
	2	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG 0,-5; SPATIAL SCAN 0.1,90.0 Degrees,Round trip	Sequence 1-2 Non-Int in TOI-700c transit 1 (10)	112.00801 Secs X 8 (1792.128 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]
	3	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0	Sequence 3-4 Non-Int in TOI-700c transit 1 (10)	3.055965 Secs (3.056 Secs) [==>]	[2]
	4	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG 0,-5; SPATIAL SCAN 0.1,90.0 Degrees,Round trip	Sequence 3-4 Non-Int in TOI-700c transit 1 (10)	112.00801 Secs X 8 (1792.128 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]
	5	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0	Sequence 5-6 Non-Int in TOI-700c transit 1 (10)	3.055965 Secs (3.056 Secs) [==>]	[3]

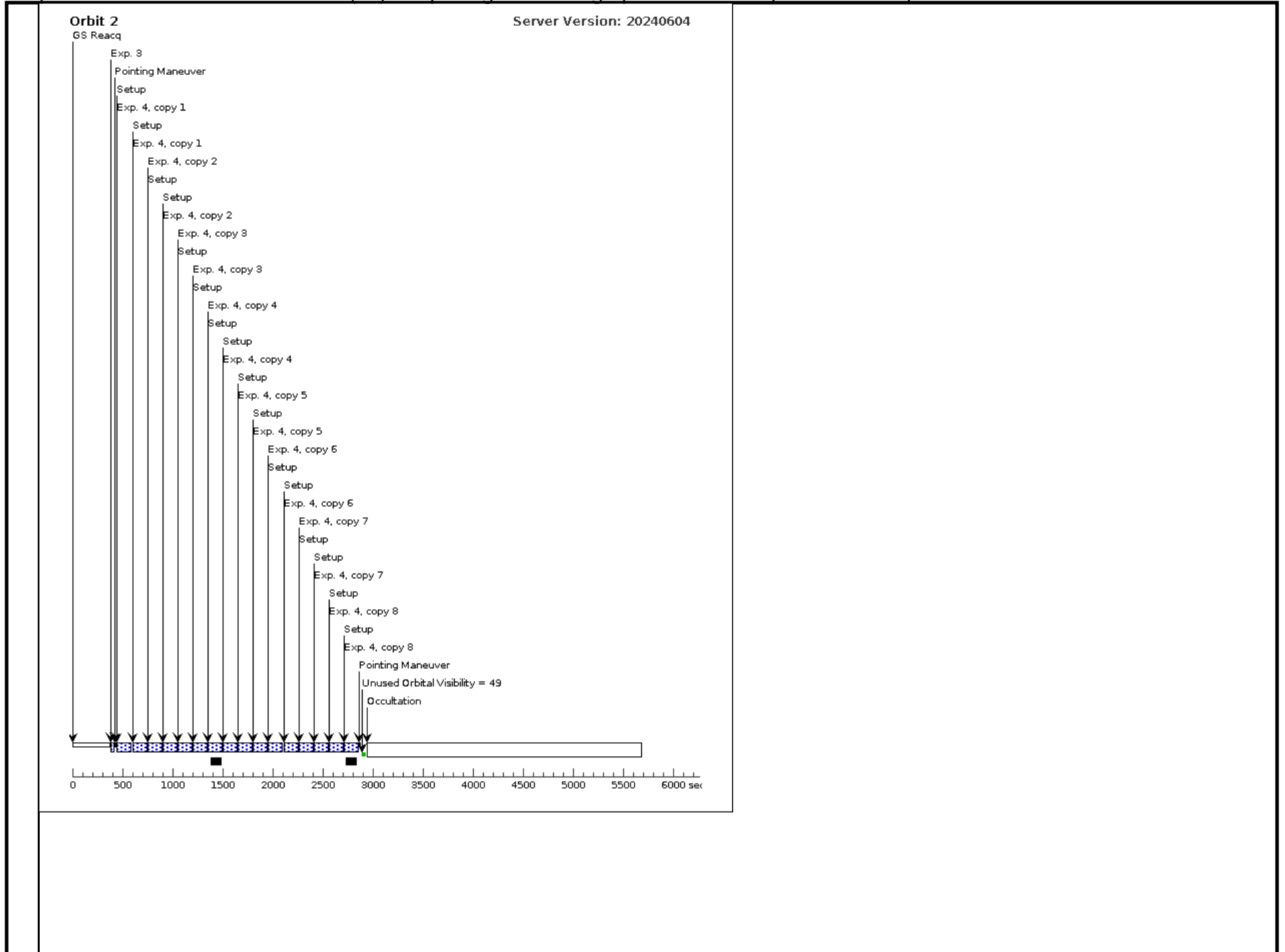
Proposal 16181 - TOI-700c transit 1 (10) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub...

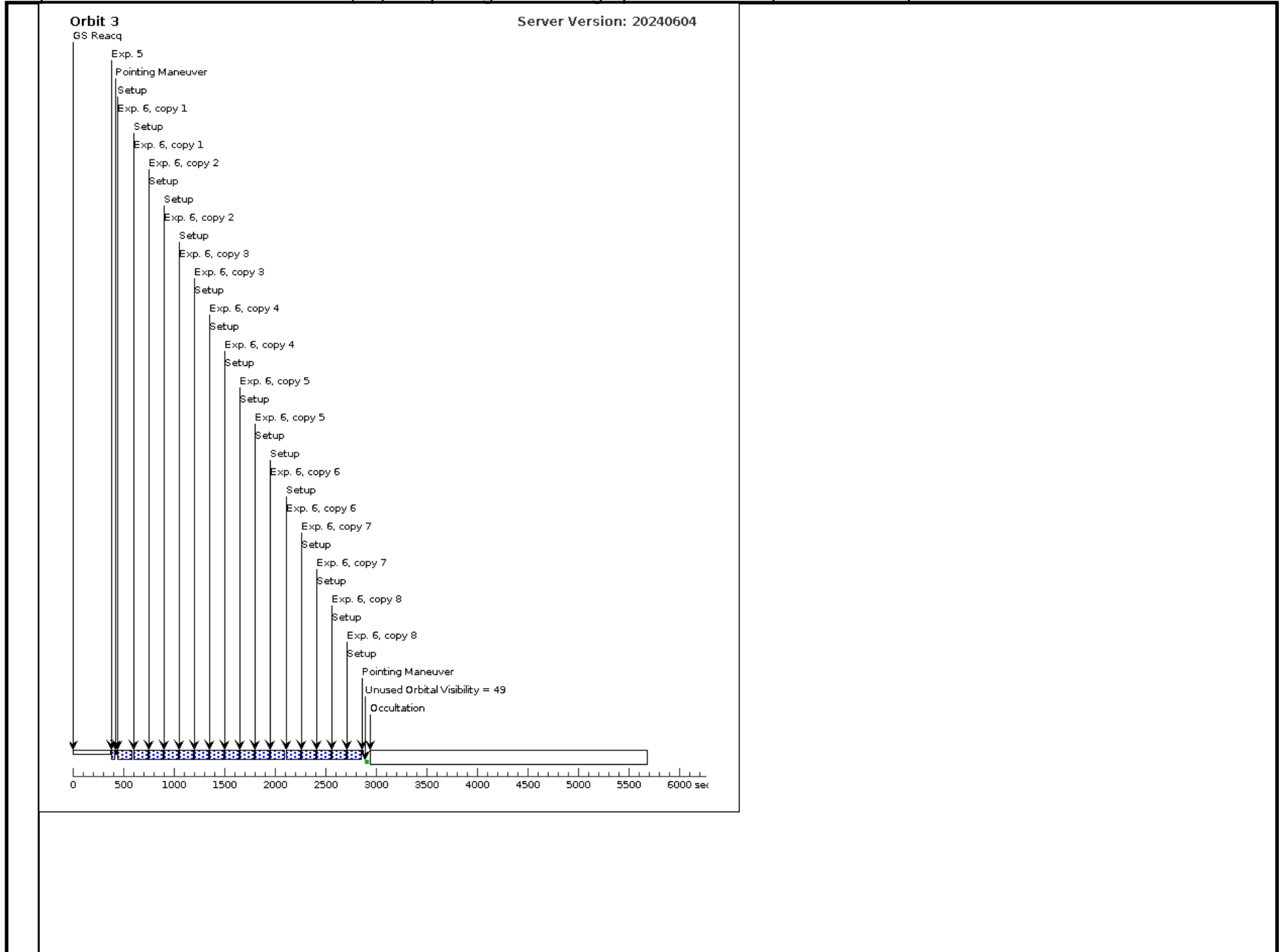
6	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG 0,-5; SPATIAL SCAN 0.1 ,90.0 Degrees,Round trip	Sequence 5-6 Non-Int in TOI-700c transit 1 (10)	112.00801 Secs X 8 (1792.128 Secs)	[3]
							[==>(Copy 1, Forward)] [==>(Copy 1, Reverse)] [==>(Copy 2, Forward)] [==>(Copy 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)]	
7	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0	Sequence 7-8 Non-Int in TOI-700c transit 1 (10)	3.055965 Secs (3.056 Secs)	[4]
							[==>]	
8	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG 0,-5; SPATIAL SCAN 0.1 ,90.0 Degrees,Round trip	Sequence 7-8 Non-Int in TOI-700c transit 1 (10)	112.00801 Secs X 8 (1792.128 Secs)	[4]
							[==>(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)]	

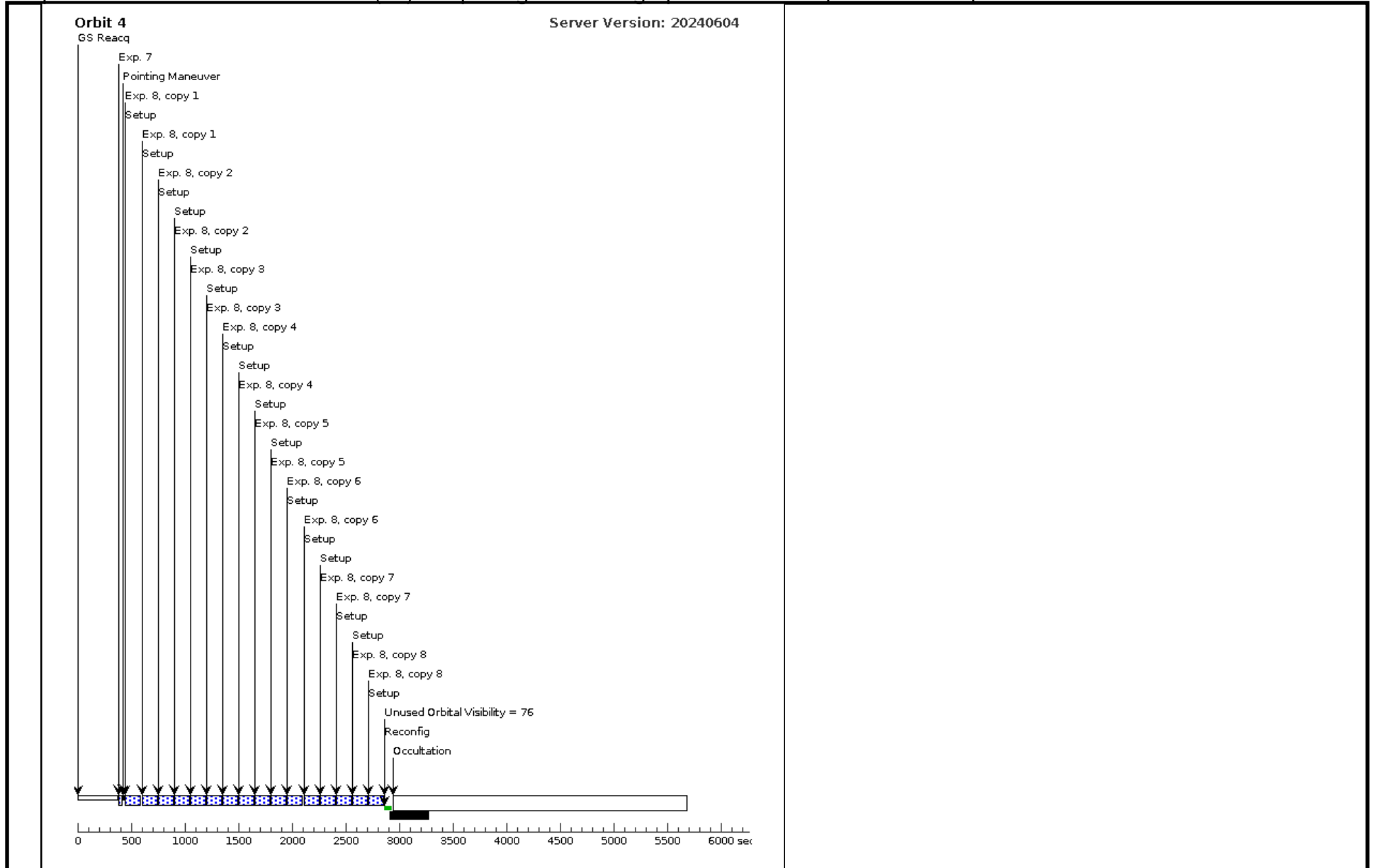
Server Version: 20240604

Orbit Structure









Proposal 16181 - TOI-700c transit 2 (11) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub...

Visit	Proposal 16181, TOI-700c transit 2 (11), completed Fri Aug 16 19:00:51 GMT 2024 Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SCHED 100%; Period 16.051137 D AND ZERO-PHASE HJD2458821.62181					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(5)		TOI-700	RA: 06 28 23.2285 (97.0967854d) Dec: -65 34 45.52 (-65.57931d) Equinox: J2000	Proper Motion RA: -102.641 mas/yr Proper Motion Dec: 161.748 mas/yr Epoch of Position: 2000	V=13.076	Reference Frame: SIMBAD
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=EXT-STAR Description=[M III-I] Extended=NO						

Proposal 16181 - TOI-700c transit 2 (11) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub...

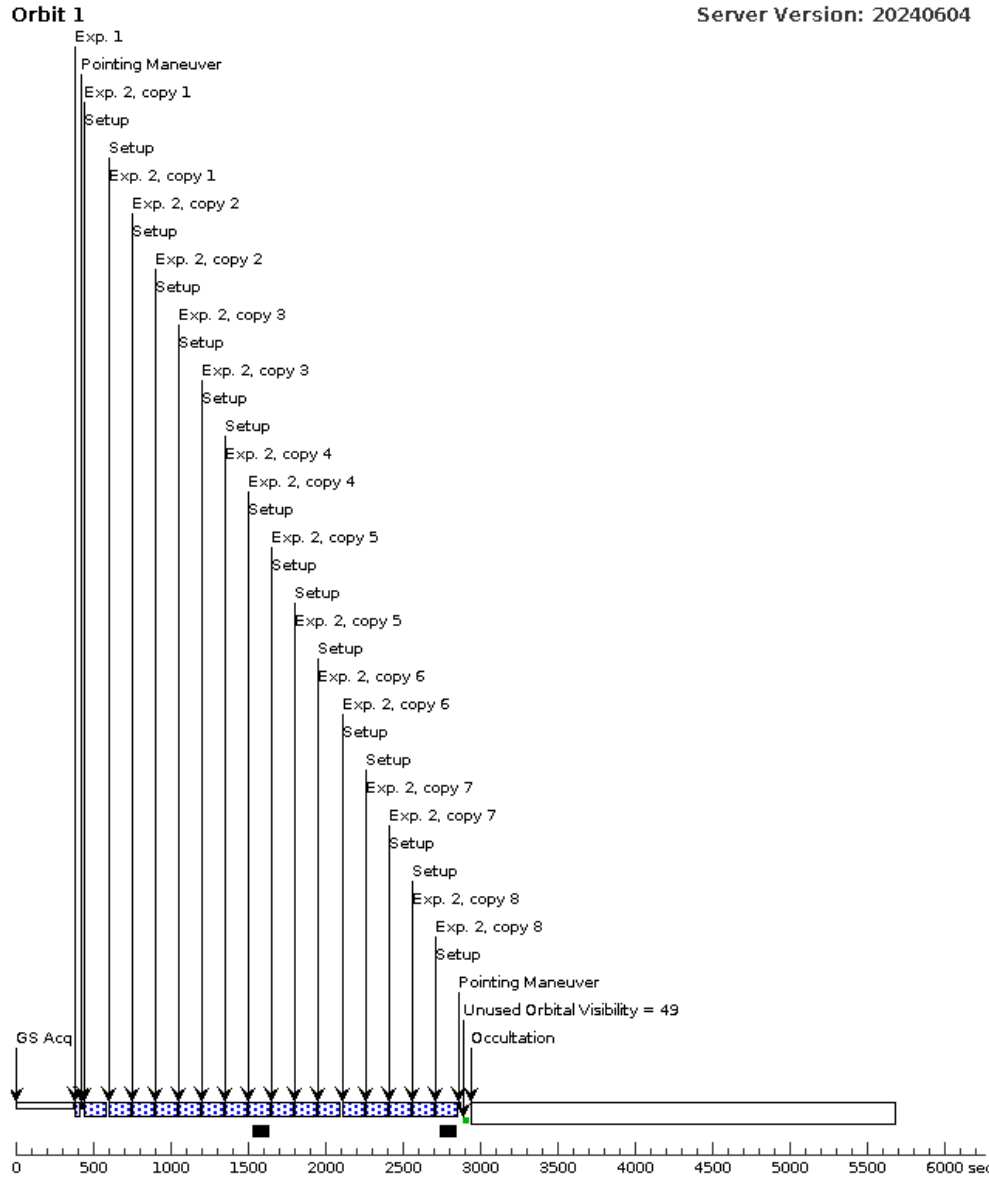
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0; PHASE 0.99000590 0101241 TO 0.99130 3835153028	Sequence 1-2 Non-Int in TOI-700c transit 2 (11)	3.055965 Secs (3.056 Secs) [==>]	[1]
	2	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG 0,-5; SPATIAL SCAN 0.1 ,90.0 Degrees,Round trip	Sequence 1-2 Non-Int in TOI-700c transit 2 (11)	112.00801 Secs X 8 (1792.128 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]
	3	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0	Sequence 3-4 Non-Int in TOI-700c transit 2 (11)	3.055965 Secs (3.056 Secs) [==>]	[2]
	4	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG 0,-5; SPATIAL SCAN 0.1 ,90.0 Degrees,Round trip	Sequence 3-4 Non-Int in TOI-700c transit 2 (11)	112.00801 Secs X 8 (1792.128 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]
	5	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0	Sequence 5-6 Non-Int in TOI-700c transit 2 (11)	3.055965 Secs (3.056 Secs) [==>]	[3]

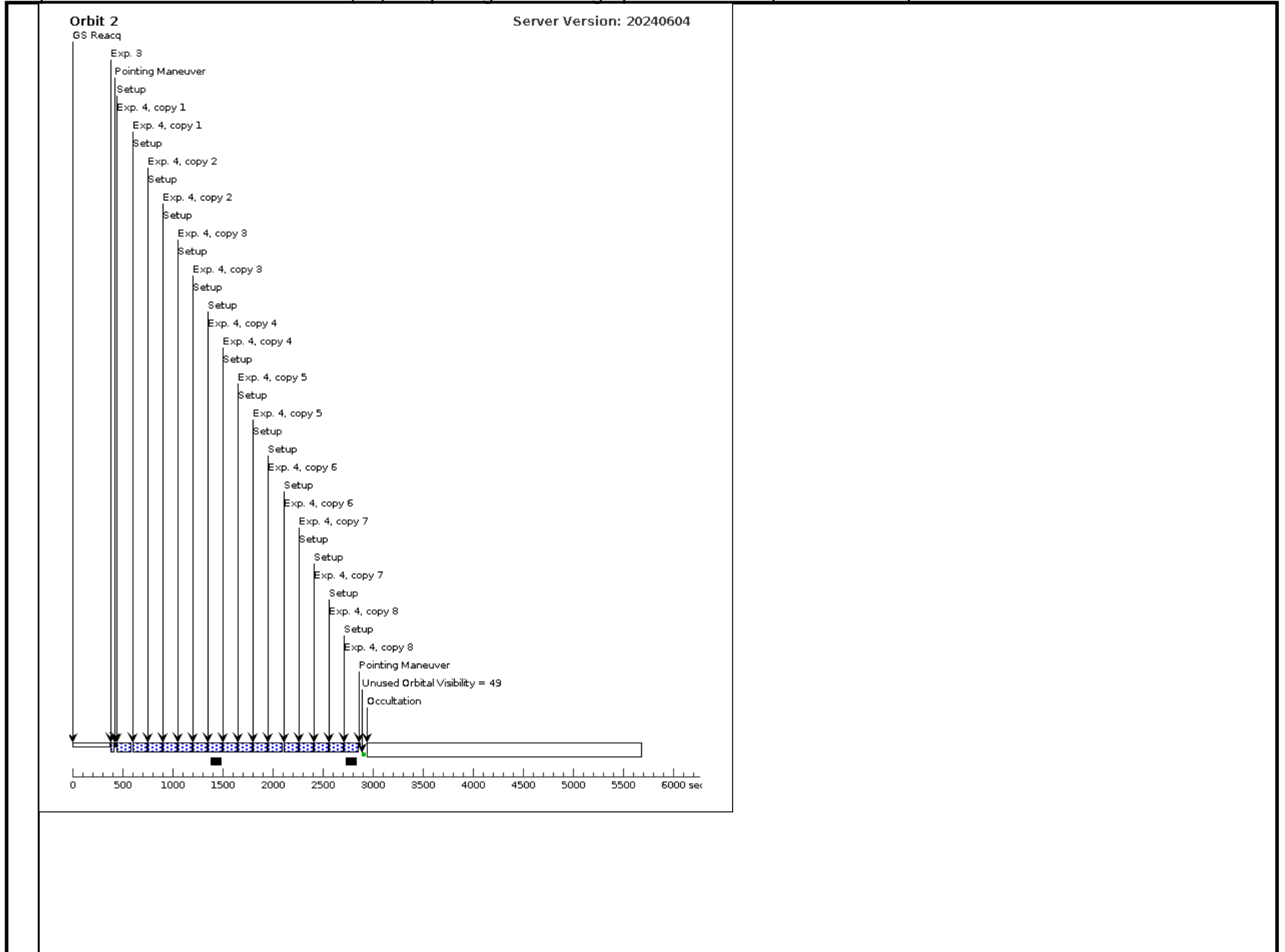
Proposal 16181 - TOI-700c transit 2 (11) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub...

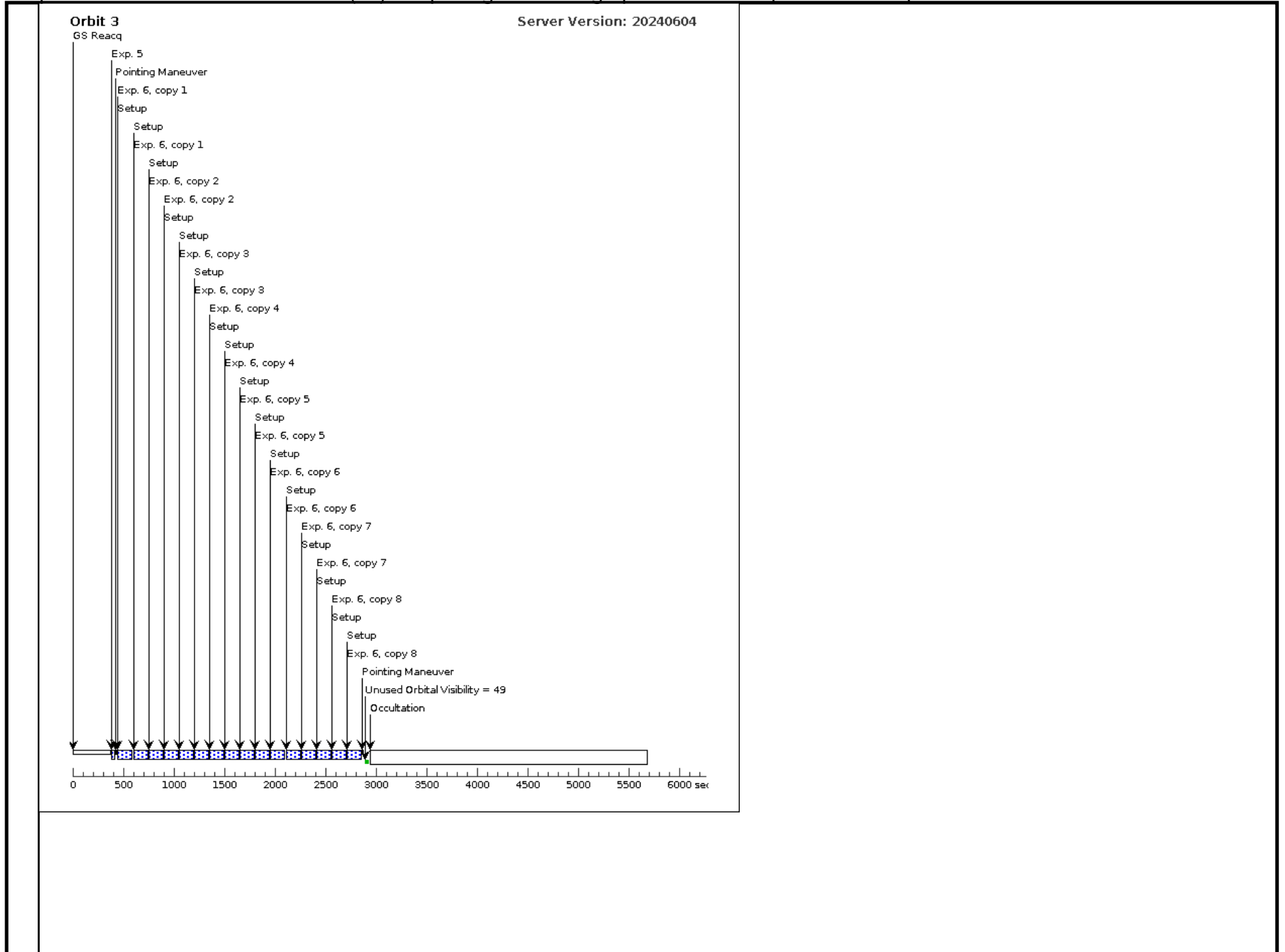
6	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG 0,-5; SPATIAL SCAN 0.1 ,90.0 Degrees,Round trip	Sequence 5-6 Non-Int in TOI-700c transit 2 (11)	112.00801 Secs X 8 (1792.128 Secs) [==>(Copy 1, Forward)] [==>(Copy 1, Reverse)] [==>(Copy 2, Forward)] [==>(Copy 2, Reverse)] [==>(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]
7	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0	Sequence 7-8 Non-Int in TOI-700c transit 2 (11)	3.055965 Secs (3.056 Secs) [==>]	[4]
8	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG 0,-5; SPATIAL SCAN 0.1 ,90.0 Degrees,Round trip	Sequence 7-8 Non-Int in TOI-700c transit 2 (11)	112.00801 Secs X 8 (1792.128 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]

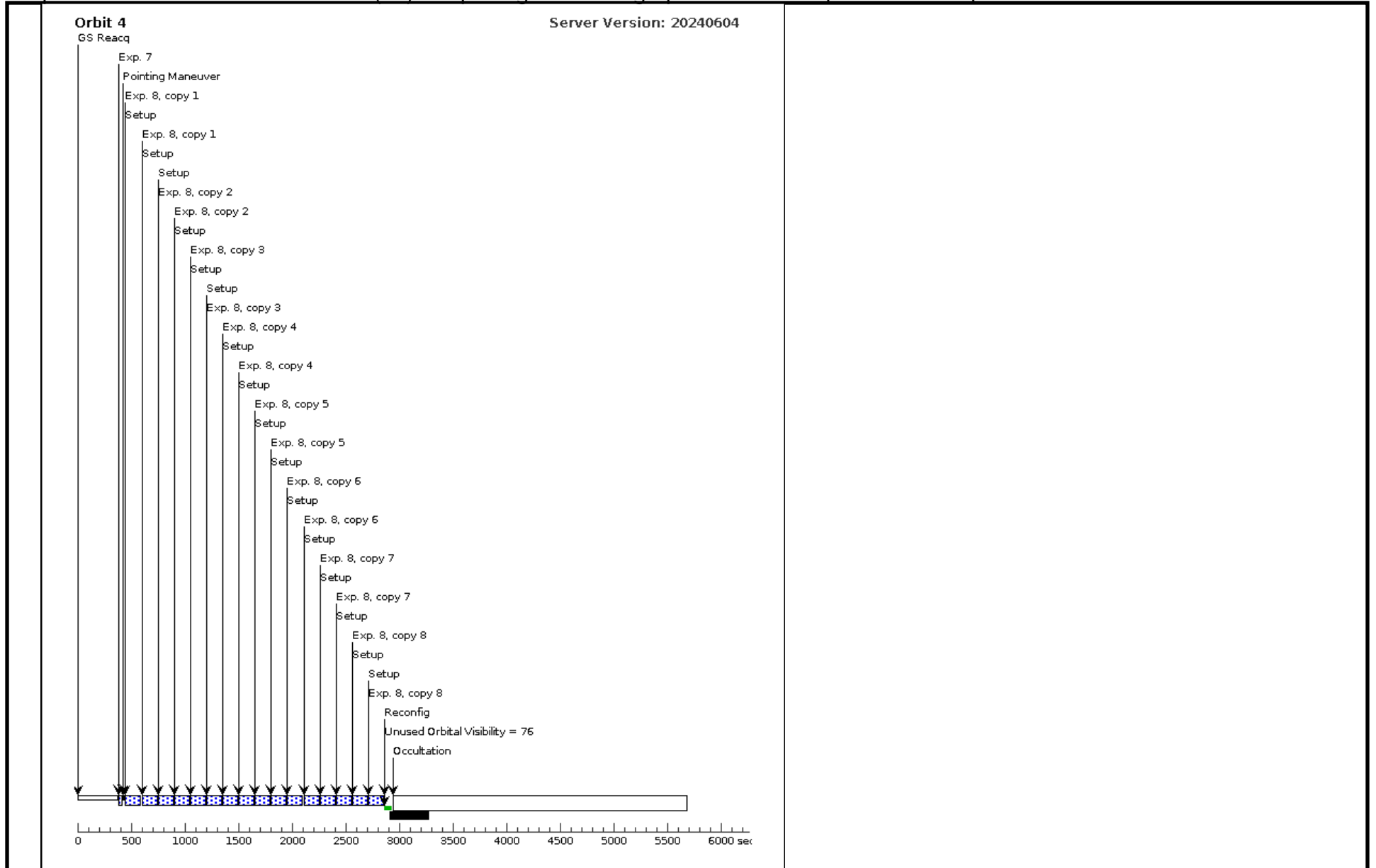
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Orbit Structure









Proposal 16181 - TOI-700c transit 3 (12) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub...

Visit	Proposal 16181, TOI-700c transit 3 (12), implementation Fri Aug 16 19:00:51 GMT 2024 Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SCHED 100%; Period 16.051137 D AND ZERO-PHASE HJD2458821.62181					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(5)		TOI-700	RA: 06 28 23.2285 (97.0967854d) Dec: -65 34 45.52 (-65.57931d) Equinox: J2000	Proper Motion RA: -102.641 mas/yr Proper Motion Dec: 161.748 mas/yr Epoch of Position: 2000	V=13.076	Reference Frame: SIMBAD
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=EXT-STAR Description=[M III-I] Extended=NO						

Proposal 16181 - TOI-700c transit 3 (12) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub...

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0; PHASE 0.988396476 TO 0.996028304	Sequence 1-2 Non-Int in TOI-700c transit 3 (12)	3.055965 Secs (3.056 Secs) [==>]	[1]
	2	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG 0,-5; SPATIAL SCAN 0.1,90.0 Degrees,Round trip	Sequence 1-2 Non-Int in TOI-700c transit 3 (12)	112.00801 Secs X 8 (1792.128 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]
	3	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0	Sequence 3-4 Non-Int in TOI-700c transit 3 (12)	3.055965 Secs (3.056 Secs) [==>]	[2]
	4	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG 0,-5; SPATIAL SCAN 0.1,90.0 Degrees,Round trip	Sequence 3-4 Non-Int in TOI-700c transit 3 (12)	112.00801 Secs X 8 (1792.128 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]
	5	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0	Sequence 5-6 Non-Int in TOI-700c transit 3 (12)	3.055965 Secs (3.056 Secs) [==>]	[3]

Proposal 16181 - TOI-700c transit 3 (12) - Exploring the Demographics of Exo-Neptunes: Atmospheric Characterization of a Cool Sub...

6	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG 0,-5; SPATIAL SCAN 0.1 ,90.0 Degrees,Round trip	Sequence 5-6 Non-In t in TOI-700c transit 3 (12)	112.00801 Secs X 8 (1792.128 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]
7	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	F130N	NSAMP=11; SAMP-SEQ=RAPID	POS TARG 0,0	Sequence 7-8 Non-In t in TOI-700c transit 3 (12)	3.055965 Secs (3.056 Secs) [==>]	[4]
8	(5) TOI-700	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG 0,-5; SPATIAL SCAN 0.1 ,90.0 Degrees,Round trip	Sequence 7-8 Non-In t in TOI-700c transit 3 (12)	112.00801 Secs X 8 (1792.128 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]

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Orbit Structure

