



15819 - Determining Benchmark Precision Abundances for Ultracool Companions

Cycle: 27, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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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	(4) NAME-WISE-J1711+3500	WFC3/IR	1	15-Sep-2022 16:00:14.0	yes
02	(4) NAME-WISE-J1711+3500	WFC3/IR	1	15-Sep-2022 16:00:14.0	yes
03	(4) NAME-WISE-J1711+3500	WFC3/IR	1	15-Sep-2022 16:00:15.0	yes
04	(4) NAME-WISE-J1711+3500	WFC3/IR	1	15-Sep-2022 16:00:15.0	yes
05	(5) NAME-WISE-J1217+1626	WFC3/IR	1	15-Sep-2022 16:00:16.0	yes
06	(5) NAME-WISE-J1217+1626	WFC3/IR	1	15-Sep-2022 16:00:16.0	yes
07	(5) NAME-WISE-J1217+1626	WFC3/IR	1	15-Sep-2022 16:00:17.0	yes
08	(5) NAME-WISE-J1217+1626	WFC3/IR	1	15-Sep-2022 16:00:17.0	yes
09	(1) -E-VIR-B	WFC3/IR	1	15-Sep-2022 16:00:20.0	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	(1) -E-VIR-B	WFC3/IR	1	15-Sep-2022 16:00:24.0	yes
11	(1) -E-VIR-B	WFC3/IR	1	15-Sep-2022 16:00:28.0	yes
12	(1) -E-VIR-B	WFC3/IR	1	15-Sep-2022 16:00:31.0	yes
13	(1) -E-VIR-B	WFC3/IR	1	15-Sep-2022 16:00:35.0	yes
14	(1) -E-VIR-B	WFC3/IR	1	15-Sep-2022 16:00:39.0	yes
15	(3) HD-182488B	WFC3/IR	1	15-Sep-2022 16:00:43.0	yes
16	(3) HD-182488B	WFC3/IR	1	15-Sep-2022 16:00:47.0	yes
17	(3) HD-182488B	WFC3/IR	1	15-Sep-2022 16:00:51.0	yes
18	(3) HD-182488B	WFC3/IR	1	15-Sep-2022 16:00:54.0	yes
19	(3) HD-182488B	WFC3/IR	1	15-Sep-2022 16:00:58.0	yes
20	(3) HD-182488B	WFC3/IR	1	15-Sep-2022 16:01:02.0	yes

20 Total Orbits Used

ABSTRACT

With sensitive HST spectroscopy coupled with advanced atmospheric retrieval techniques, we propose to measure the 0.8-1.7 μ m spectra of four planetary temperature T/Y companions and to determine abundances, metallicities, C/O ratios, effective temperatures, surface gravities, and temperature-pressure profiles. Models of star and planet formation suggest that the compositions of the atmospheres of companions relative to their primaries represent an important pathway to understanding the formation mechanism. This program will establish the first high precision atmospheric composition measurements for a set of three benchmark substellar systems with mass ratios comparable to binary systems and test the hypothesis that the C/O ratios are the same for each component, distinct from the prediction for star-planet pairs. The results will provide an important comparison to imaged or transiting exoplanet companions, and we will compare the the benchmark systems to the fourth target, GJ 504 b, the coolest directly imaged companion that may be planetary. The target mass ratios extend from high values comparable to binary stars down to low ratios analogous to exoplanet systems. Covering this broad continuum of mass ratios is essential to test the models in different regimes. Only space-based observations will provide the high sensitivity required to perform the retrieval analysis and robustly determine the atmospheric properties. Another core project goal is developing a comprehensive, high sensitivity spectral library of the coolest companions with legacy value for advancing theoretical atmosphere/evolution models and complementing future JWST observations.

OBSERVING DESCRIPTION

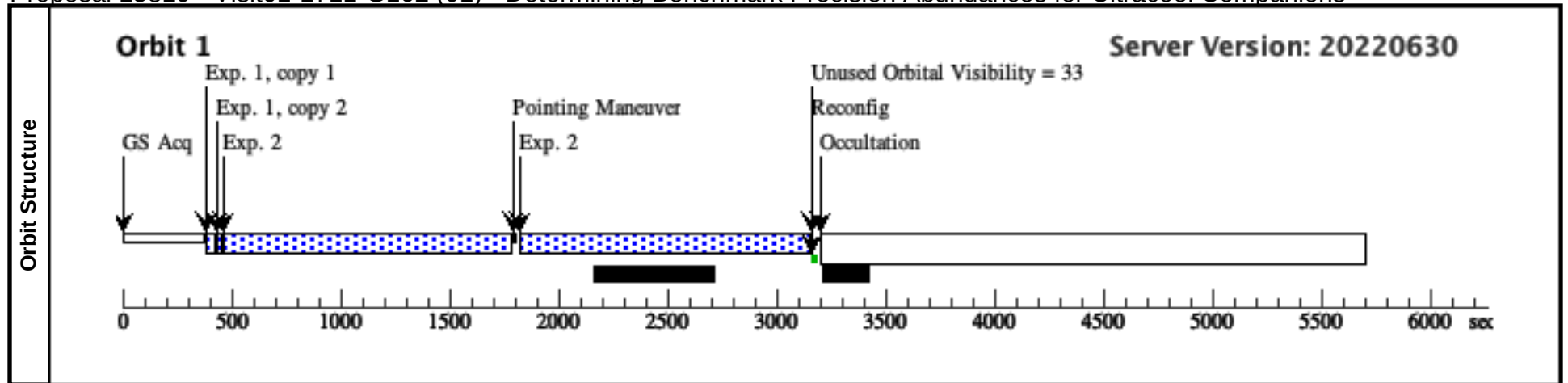
Using the WFC3 G102 and G141grisms, we will obtain $R \sim 100$ -200 spectra over the 0.8-1.7 μ m wavelength range. The combination of projected separation (<1 arcsec vs. >1 arcsec) and delta magnitudes, (<3 vs. >10) determines which of observational approaches is used for each target.

A+B on array: For the two T-T pair targets in the list, the close-in and similar brightness sources WISE1217+16 and WISE1711+3500, we will obtain spectra of both the primary and the secondary on the WFC3 detector, choosing the orientation of the spacecraft in order for the direction of the dispersion to be at an angle near to the orthogonal direction of the binary at the epoch of observation. We will carry out a series of short ~ 500 -1000s exposures such as were utilized in the HST survey of isolated T/Y dwarfs (Schneider+ 2015). The WFC3 ETC confirms that the primaries will not be saturated. We will minimize the flux contamination between the two components by taking advantage of the spatial symmetry of the telescope diffractive response and use the companion-free half of the dispersed image as a reference to minimize blending between the spectra of the two components. This technique is now routine for similar ground based observations (LSS mode of SPHERE, see Hinkley+ 2015, Mesa+ 2016 and reference therein) that are much less stable than with HST (i.e. the technique should be more effective with HST data). These targets will require two orbits per grism setting to build up high quality spectra on the companions to use as input for the atmospheric retrieval code.

Primary off array: For the companions to stars with separations of several arcseconds, a different observational approach is required. Specifically, we will place the primary off the detector and disperse in the direction orthogonal to the line joining primary and secondary. Based on our Exposure Time Calculations, two orbits per grism are necessary to obtain sufficient SNR on GJ504b and GJ 758 B. Because the diffractive halo due to the primary will still be bright at the locations of the companions in this regime, we will carry a series of moderately short (~ 360 s) exposures in order to avoid saturation of any remaining halo at the location of the secondaries. We also request an additional orbit per setting, using the same exposure parameters, to obtain a symmetric image of this halo, this time with both primary and the companion off the detector. For the background subtraction, we will use the same algorithm as for the T+T/Y pairs, but with the background data from a second position.

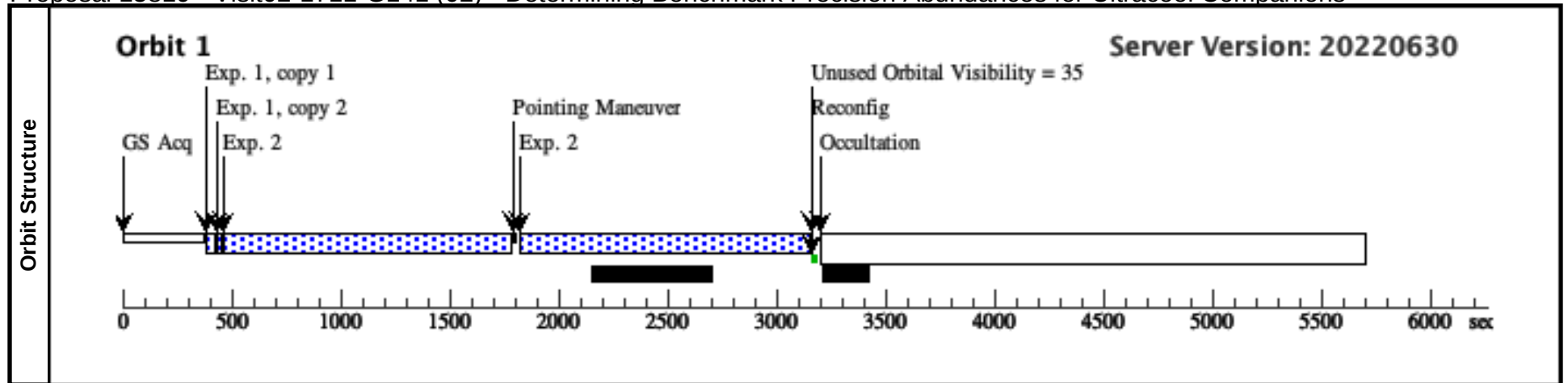
Proposal 15819 - Visit01-1711-G102 (01) - Determining Benchmark Precision Abundances for Ultracool Companions

Visit	Proposal 15819, Visit01-1711-G102 (01), completed				Thu Sep 15 20:01:03 GMT 2022						
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: WFC3/IR										
	Special Requirements: ORIENT 70.4D TO 136.4 D; ORIENT 250.4D TO 316.4 D; AFTER 02 BY 1 D TO 500 D										
	Comments: These comments apply to all observations of this target, and are copied in Visits 1 to 4.										
	This target is a binary pair of brown dwarfs with a separation of ~0".8 or 6 pixels. The position angle of B is -31.6deg E of N (that is, B is at about 1 o'clock relative to A). This was measured in 2012, and I have contacted the authors of the imaging discovery paper, and they are not monitoring the system and do not have a more recent measurement. It would be ideal to make an early observation of this system to make any adjustments for a more optimal ORIENT range, if needed due to orbital motion. Due to this consideration, Visits 1, 3, and 4 are tagged with a timing requirement of -- after Visit 2 -- so that the orientation of Visit 2 can be checked.										
	The aim of the observation is to have the binary pair vertical on the detector so that the spectra are as separate as possible, either with B above A or B below A, so the ORIENT ranges have been set up to be +/- 33degrees of vertical such that the vertical separation is 5-6 pixels.										
	The central value of ORIENT was set to 103.4deg (or 103.4+180deg) based on the manual, from 135deg-31.6deg=103.4deg. The 135deg is used for the Y-axis of WFC3/IR.										
	This target has conflicting values of proper motion in two papers by the same group, and the most recent published value is used.										
Patterns	#	Primary Pattern			Secondary Pattern		Exposures				
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=5 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false		(2)				
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(4)	NAME-WISE-J1711+3500	RA: 17 11 4.5500 (257.7689583d) Dec: +35 00 36.57 (35.01016d) Equinox: J2000		Proper Motion RA: -156.3 mas/yr Proper Motion Dec: -71.2 mas/yr Parallax: 0.0403" Epoch of Position: 2014.0		V=(?) J_A=17.886		Reference Frame: ICRS		
	Comments: The coordinates and proper motion are from the reference Kirkpatrick+ 2019										
	Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	1711+3500-F105Wimage	(4) NAME-WISE-J1711+3500	WFC3/IR, MULTIACCUM, GRISM1024	F105W	SAMP-SEQ=RAPID ; NSAMP=3	POS TARG -50,40		8.796873 Secs X 2 (17.594 Secs)		
									[==>(Copy 1)] [==>(Copy 2)]		[1]
	2	1711ditherTest	(4) NAME-WISE-J1711+3500	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG -50,40	Pattern 1, Exps 2-2 in Visit01-1711-G102 (01) (1)	1302.93649 Secs (2605.873 Secs)		
									[==>(Pattern 1)] [==>(Pattern 2)]		[1]



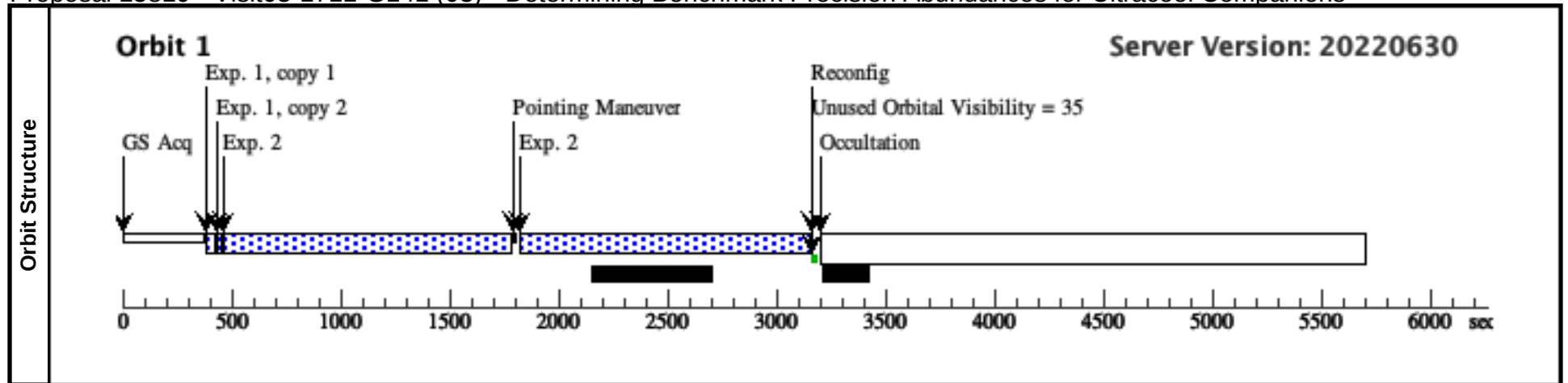
Proposal 15819 - Visit02-1711-G141 (02) - Determining Benchmark Precision Abundances for Ultracool Companions

Visit	Proposal 15819, Visit02-1711-G141 (02), completed					Thu Sep 15 20:01:03 GMT 2022				
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: WFC3/IR									
	Special Requirements: ORIENT 70.4D TO 136.4 D; ORIENT 250.4D TO 316.4 D									
	Comments: These comments apply to all observations of this target, and are copied in Visits 1 to 4.									
	This target is a binary pair of brown dwarfs with a separation of ~0".8 or 6 pixels. The position angle of B is -31.6deg E of N (that it, B is at about 1 o'clock relative to A). This was measured in 2012, and I have contacted the authors of the imaging discovery paper, and they are not monitoring the system and do not have a more recent measurement. It would be ideal to make an early observation of this system to make any adjustments for a more optimal ORIENT range, if needed due to orbital motion. Due to this consideration, Visits 1, 3, and 4 are tagged with a timing requirement of -- after Visit 2 -- so that the orientation of Visit 2 can be checked.									
	The aim of the observation is to have the binary pair vertical on the detector so that the spectra are as separate as possible, either with B above A or B below A, so the ORIENT ranges have been set up to be +/- 33degrees of vertical such that the vertical separation is 5-6 pixels.									
	The central value of ORIENT was set to 103.4deg (or 103.4+180deg) based on the manual, from 135deg-31.6deg=103.4deg. The 135deg is used for the Y-axis of WFC3/IR.									
	This target has conflicting values of proper motion in two papers by the same group, and the most recent published value is used.									
Patterns	#	Primary Pattern			Secondary Pattern		Exposures			
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Coordinate Frame=POS-TARG Pattern Orientation=86.788 Purpose=DITHER Angle Between Sides= Number Of Points=2 Center Pattern=false Point Spacing=5 Line Spacing=					(2)			
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(4)	NAME-WISE-J1711+3500	RA: 17 11 4.5500 (257.7689583d) Dec: +35 00 36.57 (35.01016d) Equinox: J2000	Proper Motion RA: -156.3 mas/yr Proper Motion Dec: -71.2 mas/yr Parallax: 0.0403" Epoch of Position: 2014.0	V=(?) J_A=17.886	Reference Frame: ICRS				
	Comments: The coordinates and proper motion are from the reference Kirkpatrick+ 2019									
	Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	1711+3500-i mageF125W	(4) NAME-WISE-J1 711+3500	WFC3/IR, MULTIACCUM, GRISM1024	F125W	SAMP-SEQ=RAPID ; NSAMP=3	POS TARG -50,40		8.796873 Secs X 2 (17.594 Secs) [==>(Copy 1)] [==>(Copy 2)]	[1]
	2	1711+3500- G141spectru m-1 (1371102)	(4) NAME-WISE-J1 711+3500	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS 100; NSAMP=14	POS TARG -50,40	Pattern 1, Exps 2-2 i n Visit02-1711-G141 (02) (1)	1302.93649 Secs (2605.873 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]



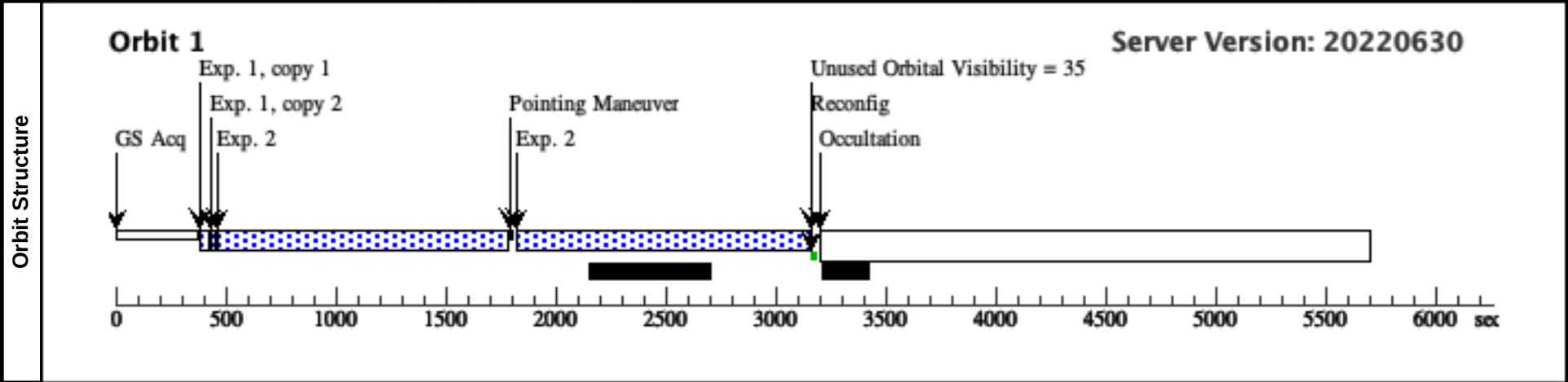
Proposal 15819 - Visit03-1711-G141 (03) - Determining Benchmark Precision Abundances for Ultracool Companions

Visit	Proposal 15819, Visit03-1711-G141 (03), completed					Thu Sep 15 20:01:03 GMT 2022				
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: WFC3/IR									
	Special Requirements: ORIENT 70.4D TO 136.4 D; ORIENT 250.4D TO 316.4 D; AFTER 02 BY 1 D TO 500 D									
	Comments: These comments apply to all observations of this target, and are copied in Visits 1 to 4.									
	This target is a binary pair of brown dwarfs with a separation of ~0".8 or 6 pixels. The position angle of B is -31.6deg E of N (that it, B is at about 1 o'clock relative to A). This was measured in 2012, and I have contacted the authors of the imaging discovery paper, and they are not monitoring the system and do not have a more recent measurement. It would be ideal to make an early observation of this system to make any adjustments for a more optimal ORIENT range, if needed due to orbital motion. Due to this consideration, Visits 1, 3, and 4 are tagged with a timing requirement of -- after Visit 2 -- so that the orientation of Visit 2 can be checked.									
The aim of the observation is to have the binary pair vertical on the detector so that the spectra are as separate as possible, either with B above A or B below A, so the ORIENT ranges have been set up to be +/- 33degrees of vertical such that the vertical separation is 5-6 pixels.										
The central value of ORIENT was set to 103.4deg (or 103.4+180deg) based on the manual, from 135deg-31.6deg=103.4deg. The 135deg is used for the Y-axis of WFC3/IR.										
This target has conflicting values of proper motion in two papers by the same group, and the most recent published value is used.										
Patterns	#	Primary Pattern			Secondary Pattern			Exposures		
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Coordinate Frame=POS-TARG Pattern Orientation=86.788 Purpose=DITHER Angle Between Sides= Number Of Points=2 Center Pattern=false Point Spacing=5 Line Spacing=						(2)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(4)	NAME-WISE-J1711+3500	RA: 17 11 4.5500 (257.7689583d) Dec: +35 00 36.57 (35.01016d) Equinox: J2000	Proper Motion RA: -156.3 mas/yr Proper Motion Dec: -71.2 mas/yr Parallax: 0.0403" Epoch of Position: 2014.0	V=(?) J_A=17.886	Reference Frame: ICRS				
	Comments: The coordinates and proper motion are from the reference Kirkpatrick+ 2019									
	Category=STAR									
	Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	1711+3500-i mageF125W	(4) NAME-WISE-J1 711+3500	WFC3/IR, MULTIACCUM, GRISM1024	F125W	SAMP-SEQ=RAPID ; NSAMP=3	POS TARG -50,40		8.796873 Secs X 2 (17.594 Secs) [==>(Copy 1)] [==>(Copy 2)]	[1]
	2	1711+3500- G141spectru m-1 (1371102)	(4) NAME-WISE-J1 711+3500	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS 100; NSAMP=14	POS TARG -50,40	Pattern 1, Exps 2-2 i n Visit03-1711-G141 (03) (1)	1302.93649 Secs (2605.873 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]



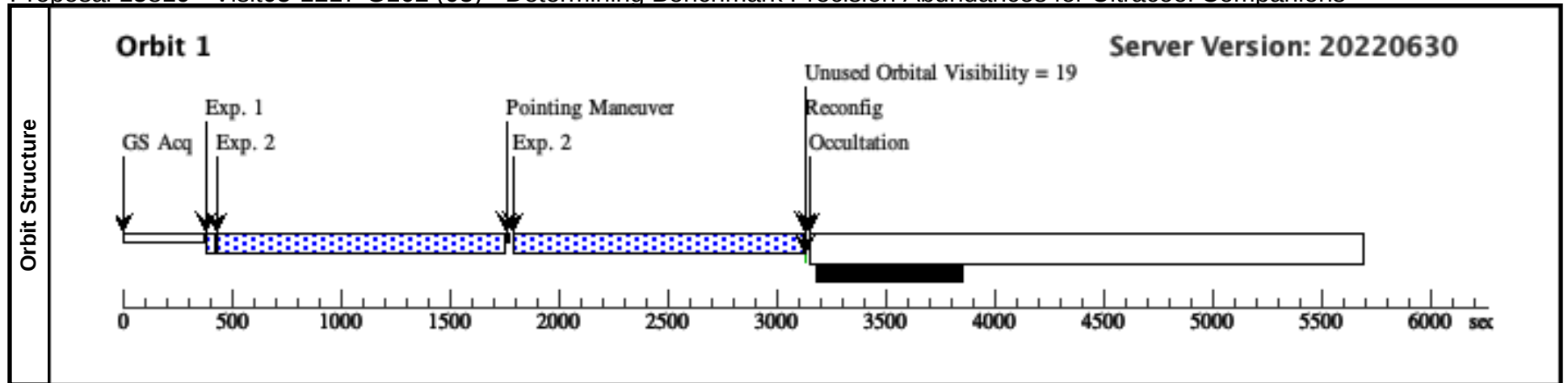
Proposal 15819 - Visit04-1711-G141 (04) - Determining Benchmark Precision Abundances for Ultracool Companions

Visit	Proposal 15819, Visit04-1711-G141 (04), completed					Thu Sep 15 20:01:03 GMT 2022				
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: WFC3/IR									
	Special Requirements: ORIENT 70.4D TO 136.4 D; ORIENT 250.4D TO 316.4 D; AFTER 02 BY 1 D TO 500 D									
	Comments: These comments apply to all observations of this target, and are copied in Visits 1 to 4.									
Visit	This target is a binary pair of brown dwarfs with a separation of ~0".8 or 6 pixels. The position angle of B is -31.6deg E of N (that it, B is at about 1 o'clock relative to A). This was measured in 2012, and I have contacted the authors of the imaging discovery paper, and they are not monitoring the system and do not have a more recent measurement. It would be ideal to make an early observation of this system to make any adjustments for a more optimal ORIENT range, if needed due to orbital motion. Due to this consideration, Visits 1, 3, and 4 are tagged with a timing requirement of -- after Visit 2 -- so that the orientation of Visit 2 can be checked.									
	The aim of the observation is to have the binary pair vertical on the detector so that the spectra are as separate as possible, either with B above A or B below A, so the ORIENT ranges have been set up to be +/- 33degrees of vertical such that the vertical separation is 5-6 pixels.									
	The central value of ORIENT was set to 103.4deg (or 103.4+180deg) based on the manual, from 135deg-31.6deg=103.4deg. The 135deg is used for the Y-axis of WFC3/IR.									
	This target has conflicting values of proper motion in two papers by the same group, and the most recent published value is used.									
Patterns	#	Primary Pattern			Secondary Pattern		Exposures			
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Coordinate Frame=POS-TARG Pattern Orientation=86.788 Purpose=DITHER Angle Between Sides= Number Of Points=2 Center Pattern=false Point Spacing=5 Line Spacing=					(2)			
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(4)	NAME-WISE-J1711+3500	RA: 17 11 4.5500 (257.7689583d) Dec: +35 00 36.57 (35.01016d) Equinox: J2000	Proper Motion RA: -156.3 mas/yr Proper Motion Dec: -71.2 mas/yr Parallax: 0.0403" Epoch of Position: 2014.0	V=(?) J_A=17.886	Reference Frame: ICRS				
	Comments: The coordinates and proper motion are from the reference Kirkpatrick+ 2019									
	Category=STAR									
	Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	1711+3500-i mageF125W	(4) NAME-WISE-J1 711+3500	WFC3/IR, MULTIACCUM, GRISM1024	F125W	SAMP-SEQ=RAPID ; NSAMP=3	POS TARG -50,40		8.796873 Secs X 2 (17.594 Secs) [==>(Copy 1)] [==>(Copy 2)]	[1]
	2	1711+3500- G141spectru m-1 (1371102)	(4) NAME-WISE-J1 711+3500	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS 100; NSAMP=14	POS TARG -50,40	Pattern 1, Exps 2-2 i n Visit04-1711-G141 (04) (1)	1302.93649 Secs (2605.873 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]



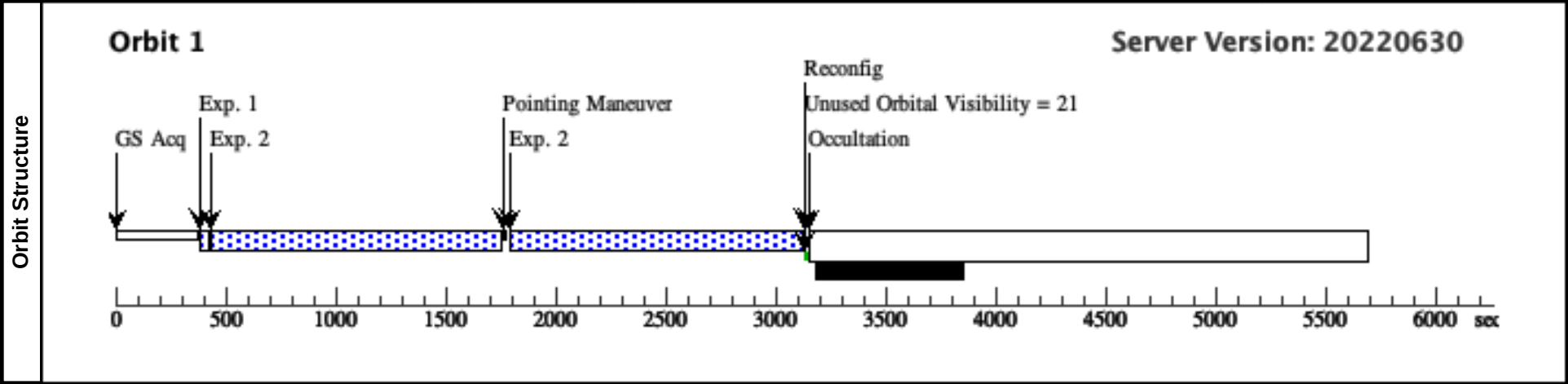
Proposal 15819 - Visit05-1217-G102 (05) - Determining Benchmark Precision Abundances for Ultracool Companions

Visit	Proposal 15819, Visit05-1217-G102 (05), completed										Thu Sep 15 20:01:04 GMT 2022	
	Diagnostic Status: No Diagnostics											
	Scientific Instruments: WFC3/IR											
	Special Requirements: ORIENT 122.5D TO 176.5 D; ORIENT 302.5D TO 356.5 D; AFTER 06 BY 1 D TO 500 D											
	Comments: These comments apply to all observations of this target, and are copied in Visits 5 to 8.											
This target is a binary pair of brown dwarfs with a separation of ~0".78 or 5.6 pixels. The position angle of B is 14.5deg E of N (that it, B is between 11 and 12 o'clock relative to A). This was measured in 2012, and I have contacted the authors of the imaging discovery paper, and they are not monitoring the system and do not have a more recent measurement. It would be ideal to make an early observation of this system to make any adjustments for a more optimal ORIENT range, if needed due to orbital motion. Due to this consideration, Visits 5, 7, and 8 are tagged with a timing requirement of -- after Visit 6 -- so that the orientation of Visit 6 can be checked.												
The aim of the observation is to have the binary pair vertical on the detector so that the spectra are as separate as possible, either with B above A or B below A, so the ORIENT ranges have been set up to be +/- 27degrees of vertical such that the vertical separation is 5-5.6 pixels.												
The central value of ORIENT was set to 149.5deg (or 149.5+180deg) based on the manual, from 135deg+14.5deg=149.5deg. The 135deg is used for the Y-axis of WFC3/IR.												
Patterns	#	Primary Pattern					Secondary Pattern				Exposures	
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=5 Line Spacing=			Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false						(2)	
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous			
	(5)	NAME-WISE-J1217+1626	RA: 12 17 57.0900 (184.4878750d) Dec: +16 26 36.22 (16.44339d) Equinox: J2000		Proper Motion RA: 758.1 mas/yr Proper Motion Dec: -1252.2 mas/yr Parallax: 0.1044" Epoch of Position: 2014.0		V=(?) J_A=17.83, H_A=18.18		Reference Frame: ICRS			
	Comments: The coordinates, proper motion and parallax are from Kirkpatrick+ 2019											
	Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO											
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit	
	1	1217+1626-F105Wimage	(5) NAME-WISE-J1217+1626	WFC3/IR, MULTIACCUM, GRISM1024	F105W	SAMP-SEQ=RAPID ; NSAMP=3	POS TARG -30.0,30.0		8.796873 Secs (8.797 Secs) [==>]		[1]	
	2	1217+1626-G102spectrum-1	(5) NAME-WISE-J1217+1626	WFC3/IR, MULTIACCUM, GRISM1024	G102	SAMP-SEQ=SPARS 100; NSAMP=14	POS TARG -30.0,30.0	Pattern 1, Exps 2-2 in Visit05-1217-G102 (05) (1)	1302.93649 Secs (2605.873 Secs) [==>(Pattern 1)] [==>(Pattern 2)]		[1]	



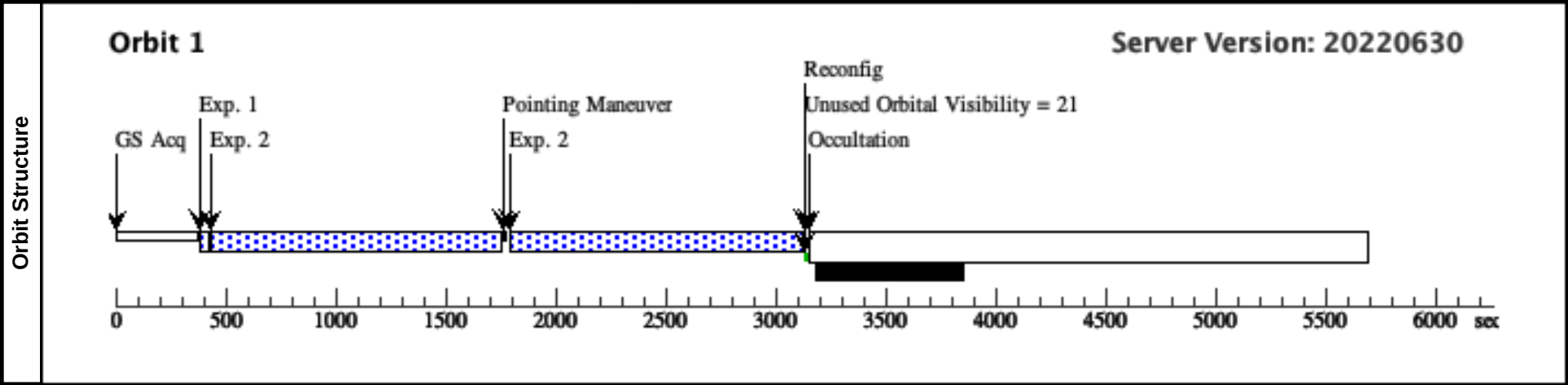
Proposal 15819 - Visit06-1217-G141 (06) - Determining Benchmark Precision Abundances for Ultracool Companions

Visit	Proposal 15819, Visit06-1217-G141 (06), completed					Thu Sep 15 20:01:04 GMT 2022				
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: WFC3/IR									
	Special Requirements: ORIENT 122.5D TO 176.5 D; ORIENT 302.5D TO 356.5 D									
	Comments: These comments apply to all observations of this target, and are copied in Visits 5 to 8.									
This target is a binary pair of brown dwarfs with a separation of ~0".78 or 5.6 pixels. The position angle of B is 14.5deg E of N (that it, B is between 11 and 12 o'clock relative to A). This was measured in 2012, and I have contacted the authors of the imaging discovery paper, and they are not monitoring the system and do not have a more recent measurement. It would be ideal to make an early observation of this system to make any adjustments for a more optimal ORIENT range, if needed due to orbital motion. Due to this consideration, Visits 5, 7, and 8 are tagged with a timing requirement of -- after Visit 6 -- so that the orientation of Visit 6 can be checked.										
The aim of the observation is to have the binary pair vertical on the detector so that the spectra are as separate as possible, either with B above A or B below A, so the ORIENT ranges have been set up to be +/- 27degrees of vertical such that the vertical separation is 5-5.6 pixels.										
The central value of ORIENT was set to 149.5deg (or 149.5+180deg) based on the manual, from 135deg+14.5deg=149.5deg. The 135deg is used for the Y-axis of WFC3/IR.										
Patterns	#	Primary Pattern			Secondary Pattern		Exposures			
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false			(2)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(5)	NAME-WISE-J1217+1626	RA: 12 17 57.0900 (184.4878750d) Dec: +16 26 36.22 (16.44339d) Equinox: J2000	Proper Motion RA: 758.1 mas/yr Proper Motion Dec: -1252.2 mas/yr Parallax: 0.1044" Epoch of Position: 2014.0	V=(?) J_A=17.83, H_A=18.18	Reference Frame: ICRS				
	Comments: The coordinates, proper motion and parallax are from Kirkpatrick+ 2019									
	Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	1217+1626-F125Wimage	(5) NAME-WISE-J1217+1626	WFC3/IR, MULTIACCUM, GRISM1024	F125W	SAMP-SEQ=RAPID ; NSAMP=3	POS TARG -30.0,30.0		8.796873 Secs (8.797 Secs) [==>]	[1]
	2	1217+1626-G141spectrum-1	(5) NAME-WISE-J1217+1626	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS 100; NSAMP=14	POS TARG -30.0,30.0	Pattern 1, Exps 2-2 in Visit06-1217-G141 (06) (1)	1302.93649 Secs (2605.873 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]



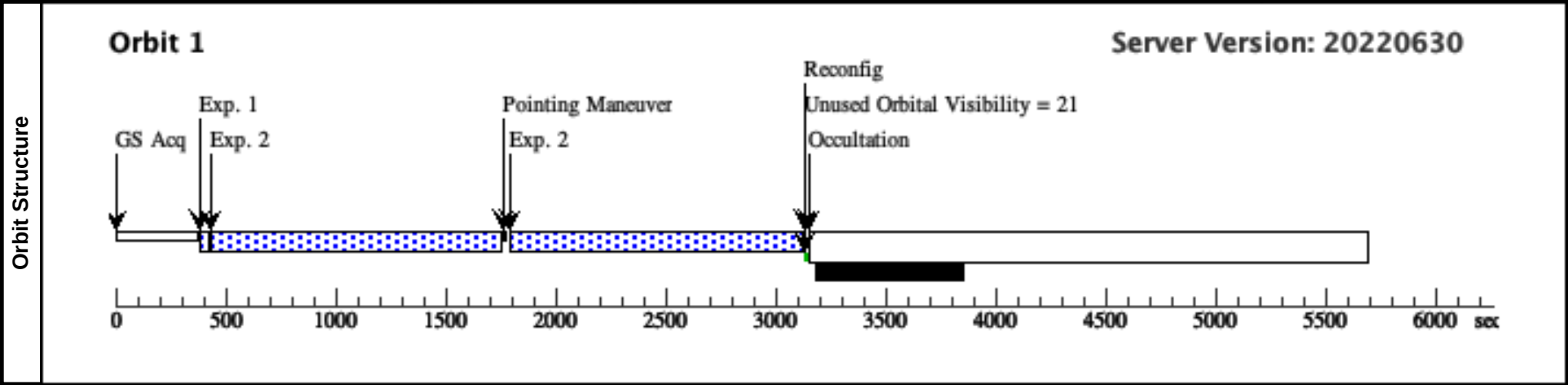
Proposal 15819 - Visit07-1217-G141 (07) - Determining Benchmark Precision Abundances for Ultracool Companions

Visit	Proposal 15819, Visit07-1217-G141 (07), completed						Thu Sep 15 20:01:04 GMT 2022			
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: WFC3/IR									
	Special Requirements: ORIENT 122.5D TO 176.5 D; ORIENT 302.5D TO 356.5 D; AFTER 06 BY 1 D TO 500 D									
	Comments: These comments apply to all observations of this target, and are copied in Visits 5 to 8.									
This target is a binary pair of brown dwarfs with a separation of ~0".78 or 5.6 pixels. The position angle of B is 14.5deg E of N (that it, B is between 11 and 12 o'clock relative to A). This was measured in 2012, and I have contacted the authors of the imaging discovery paper, and they are not monitoring the system and do not have a more recent measurement. It would be ideal to make an early observation of this system to make any adjustments for a more optimal ORIENT range, if needed due to orbital motion. Due to this consideration, Visits 5, 7, and 8 are tagged with a timing requirement of -- after Visit 6 -- so that the orientation of Visit 6 can be checked.										
The aim of the observation is to have the binary pair vertical on the detector so that the spectra are as separate as possible, either with B above A or B below A, so the ORIENT ranges have been set up to be +/- 27degrees of vertical such that the vertical separation is 5-5.6 pixels.										
The central value of ORIENT was set to 149.5deg (or 149.5+180deg) based on the manual, from 135deg+14.5deg=149.5deg. The 135deg is used for the Y-axis of WFC3/IR.										
Patterns	#	Primary Pattern			Secondary Pattern		Exposures			
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false			(2)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(5)	NAME-WISE-J1217+1626	RA: 12 17 57.0900 (184.4878750d) Dec: +16 26 36.22 (16.44339d) Equinox: J2000	Proper Motion RA: 758.1 mas/yr Proper Motion Dec: -1252.2 mas/yr Parallax: 0.1044" Epoch of Position: 2014.0	V=(?) J_A=17.83, H_A=18.18	Reference Frame: ICRS				
	Comments: The coordinates, proper motion and parallax are from Kirkpatrick+ 2019									
	Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	1217+1626-F125Wimage	(5) NAME-WISE-J1217+1626	WFC3/IR, MULTIACCUM, GRISM1024	F125W	SAMP-SEQ=RAPID ; NSAMP=3	POS TARG -30.0,30.0		8.796873 Secs (8.797 Secs) [==>]	[1]
	2	1217+1626-G141spectrum-1	(5) NAME-WISE-J1217+1626	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS 100; NSAMP=14	POS TARG -30.0,30.0	Pattern 1, Exps 2-2 in Visit07-1217-G141 (07) (1)	1302.93649 Secs (2605.873 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]



Proposal 15819 - Visit08-1217-G141 (08) - Determining Benchmark Precision Abundances for Ultracool Companions

Visit	Proposal 15819, Visit08-1217-G141 (08), completed					Thu Sep 15 20:01:04 GMT 2022				
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: WFC3/IR									
	Special Requirements: ORIENT 122.5D TO 176.5 D; ORIENT 302.5D TO 356.5 D; AFTER 06 BY 1 D TO 500 D									
	Comments: These comments apply to all observations of this target, and are copied in Visits 5 to 8.									
This target is a binary pair of brown dwarfs with a separation of ~0".78 or 5.6 pixels. The position angle of B is 14.5deg E of N (that it, B is between 11 and 12 o'clock relative to A). This was measured in 2012, and I have contacted the authors of the imaging discovery paper, and they are not monitoring the system and do not have a more recent measurement. It would be ideal to make an early observation of this system to make any adjustments for a more optimal ORIENT range, if needed due to orbital motion. Due to this consideration, Visits 5, 7, and 8 are tagged with a timing requirement of -- after Visit 6 -- so that the orientation of Visit 6 can be checked.										
The aim of the observation is to have the binary pair vertical on the detector so that the spectra are as separate as possible, either with B above A or B below A, so the ORIENT ranges have been set up to be +/- 27degrees of vertical such that the vertical separation is 5-5.6 pixels.										
The central value of ORIENT was set to 149.5deg (or 149.5+180deg) based on the manual, from 135deg+14.5deg=149.5deg. The 135deg is used for the Y-axis of WFC3/IR.										
Patterns	#	Primary Pattern			Secondary Pattern		Exposures			
	(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false			(2)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(5)	NAME-WISE-J1217+1626	RA: 12 17 57.0900 (184.4878750d) Dec: +16 26 36.22 (16.44339d) Equinox: J2000	Proper Motion RA: 758.1 mas/yr Proper Motion Dec: -1252.2 mas/yr Parallax: 0.1044" Epoch of Position: 2014.0	V=(?) J_A=17.83, H_A=18.18	Reference Frame: ICRS				
	Comments: The coordinates, proper motion and parallax are from Kirkpatrick+ 2019									
	Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	1217+1626-F125Wimage	(5) NAME-WISE-J1217+1626	WFC3/IR, MULTIACCUM, GRISM1024	F125W	SAMP-SEQ=RAPID ; NSAMP=3	POS TARG -30.0,30.0		8.796873 Secs (8.797 Secs) [==>]	[1]
	2	1217+1626-G141spectrum-1	(5) NAME-WISE-J1217+1626	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS 100; NSAMP=14	POS TARG -30.0,30.0	Pattern 1, Exps 2-2 in Visit08-1217-G141 (08) (1)	1302.93649 Secs (2605.873 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]



Proposal 15819 - Visit09-GJ504B-G102 (09) - Determining Benchmark Precision Abundances for Ultracool Companions

Thu Sep 15 20:01:04 GMT 2022

Visit	Proposal 15819, Visit09-GJ504B-G102 (09), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: ORIENT 292D TO 304 D; ORIENT 112D TO 124 D; AFTER 11 BY 1 D TO 500 D Comments: These comments apply to all observations of this target, and are copied in Visits 9-14. This target is a brown dwarf/planet companion to a bright star with a separation of ~2.5arcseconds or 19 pixels. The position angle of B is ~319deg E of N (that it, B is between 10 and 11 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided these relations to estimate the separation and position angle at a given time t expressed in fractional years, such as 2020.5: $Sep\ (mas) = -2894.9367 + 2.6746 \times t$ $P.A.\ (deg) = 2354.0681 - 1.0075 \times t$ For a date of 2020.0, the separation is 2.507arcseconds and the P.A. is 319.9deg E of N. To check the orientation, the Visits are set to occur after Visit 11 which will be used to confirm that the ORIENT is the best possible value. The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI. For the best PSF stability, the ORIENT for Visits 12 and 13 are set to match Visit 11; these are all using the same grism. To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 10 and 14 are the background observations and have an orientation requirement based on Visit 9 or Visit 11.				
Patterns	#	Primary Pattern		Secondary Pattern	
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Line Spacing=	Exposures (2)
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	-E-VIR-B	RA: 13 16 46.1600 (199.1923333d) Dec: +09 25 29.92 (9.42498d) Equinox: J2000	Proper Motion RA: -336.665 mas/yr Proper Motion Dec: 190.579 mas/yr Parallax: 0.0570186" Epoch of Position: 2015.5	V=5.214 J_B=19.8
	Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motion includes the multiplication by cos(Dec) -- is this the HST convention? V-magnitude is for stellar primary. The offset needed is being investigated. Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO				

Proposal 15819 - Visit09-GJ504B-G102 (09) - Determining Benchmark Precision Abundances for Ultracool Companions

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ504B-F10	(1) -E-VIR-B	WFC3/IR, MULTIACCUM,	F105W	SAMP-SEQ=RAPID			1.11126 Secs X 2 (2.223 Secs)	
		5Wimage		GRISM256		;			[==>(Copy 1)]	
						NSAMP=4			[==>(Copy 2)]	
										[1]

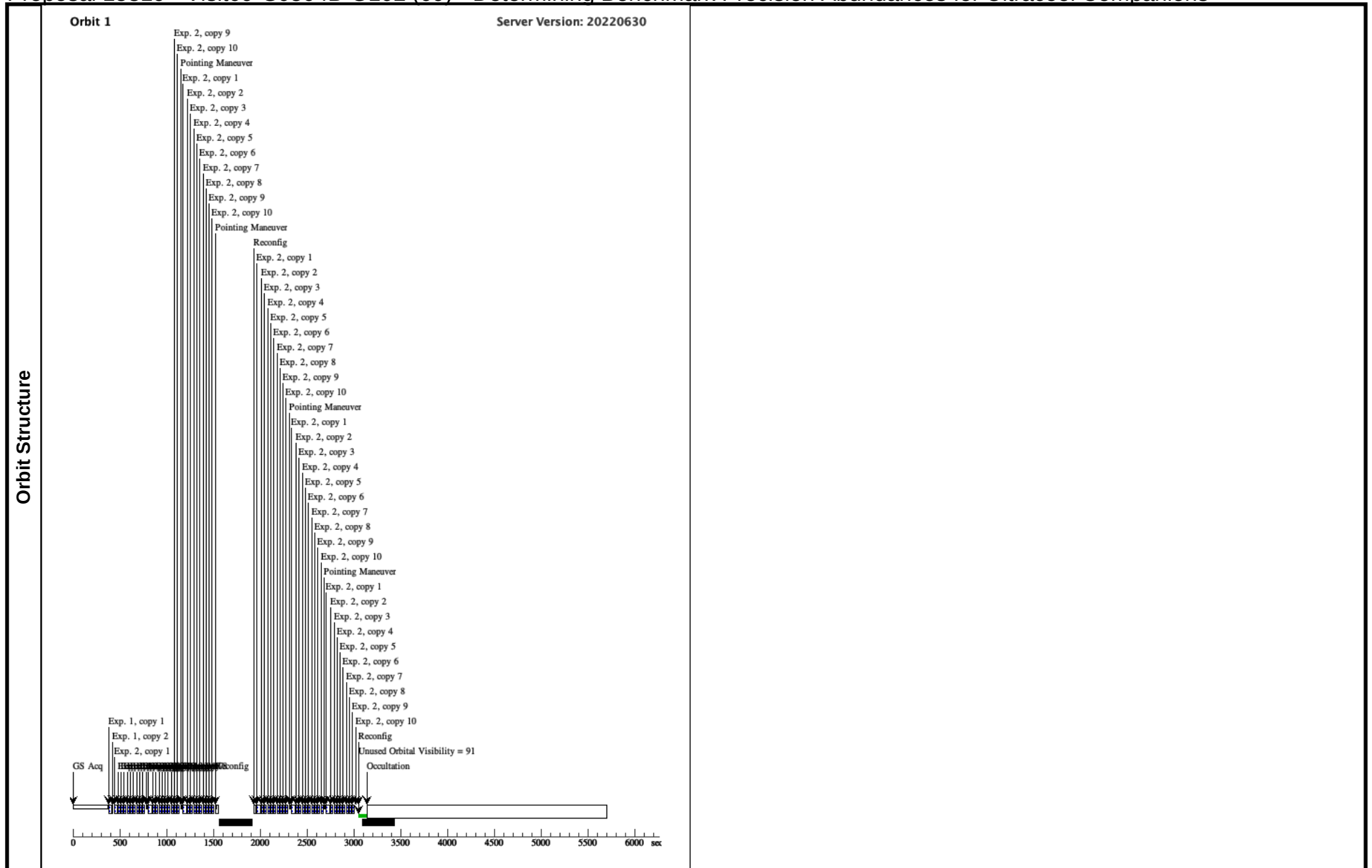
Proposal 15819 - Visit09-GJ504B-G102 (09) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(1) -E-VIR-B	WFC3/IR, MULTIACCUM, GRISM256	G102	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit09-GJ504B-G 102 (09) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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Proposal 15819 - Visit09-GJ504B-G102 (09) - Determining Benchmark Precision Abundances for Ultracool Companions

		[==>(Pattern 2,2, Copy 6)] [==>(Pattern 2,2, Copy 7)] [==>(Pattern 2,2, Copy 8)] [==>(Pattern 2,2, Copy 9)] [==>(Pattern 2,2, Copy 10)] [==>(Pattern 2,3, Copy 1)] [==>(Pattern 2,3, Copy 2)] [==>(Pattern 2,3, Copy 3)] [==>(Pattern 2,3, Copy 4)] [==>(Pattern 2,3, Copy 5)] [==>(Pattern 2,3, Copy 6)] [==>(Pattern 2,3, Copy 7)] [==>(Pattern 2,3, Copy 8)] [==>(Pattern 2,3, Copy 9)] [==>(Pattern 2,3, Copy 10)]	
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Proposal 15819 - Visit10-GJ504B-G102Background (10) - Determining Benchmark Precision Abundances for Ultracool Companions

Thu Sep 15 20:01:04 GMT 2022

Visit	Proposal 15819, Visit10-GJ504B-G102Background (10), implementation				
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: ORIENT 175D TO 180D FROM 09; AFTER 11 BY 1 D TO 500 D Comments: These comments apply to all observations of this target, and are copied in Visits 9-14. This target is a brown dwarf/planet companion to a bright star with a separation of ~2.5arcseconds or 19 pixels. The position angle of B is ~319deg E of N (that it, B is between 10 and 11 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided these relations to estimate the separation and position angle at a given time t expressed in fractional years, such as 2020.5: $Sep\ (mas) = -2894.9367 + 2.6746 \times t$ $P.A.\ (deg) = 2354.0681 - 1.0075 \times t$ For a date of 2020.0, the separation is 2.507arcseconds and the P.A. is 319.9deg E of N. To check the orientation, the Visits are set to occur after Visit 11 which will be used to confirm that the ORIENT is the best possible value. The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI. For the best PSF stability, the ORIENT for Visits 12 and 13 are set to match Visit 11; these are all using the same grism. To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 10 and 14 are the background observations and have an orientation requirement based on Visit 9 or Visit 11.				
Patterns	#	Primary Pattern		Secondary Pattern	
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Line Spacing=	Exposures (2)
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	-E-VIR-B	RA: 13 16 46.1600 (199.1923333d) Dec: +09 25 29.92 (9.42498d) Equinox: J2000	Proper Motion RA: -336.665 mas/yr Proper Motion Dec: 190.579 mas/yr Parallax: 0.0570186" Epoch of Position: 2015.5	V=5.214 J_B=19.8
	Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motion includes the multiplication by cos(Dec) -- is this the HST convention? V-magnitude is for stellar primary. The offset needed is being investigated. Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO				

Proposal 15819 - Visit10-GJ504B-G102Background (10) - Determining Benchmark Precision Abundances for Ultracool Companions

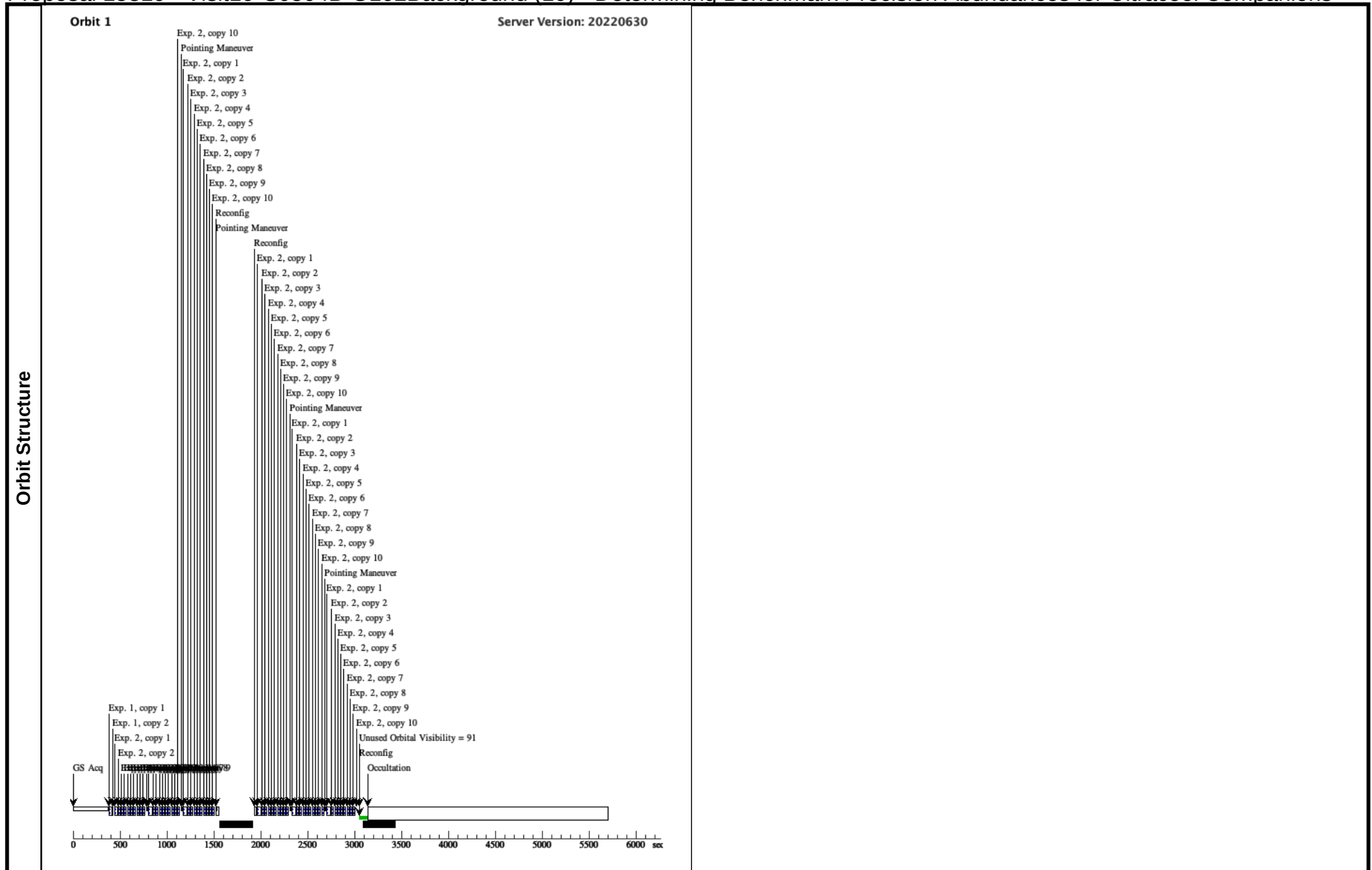
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ504B-F10 5Wimage	(1) -E-VIR-B	WFC3/IR, MULTIACCUM, GRISM256	F105W	SAMP-SEQ=RAPID ; NSAMP=4			1.11126 Secs X 2 (2.223 Secs)	
									[==>(Copy 1)]	
									[==>(Copy 2)]	
										[1]

Proposal 15819 - Visit10-GJ504B-G102Background (10) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(1) -E-VIR-B	WFC3/IR, MULTIACCUM, GRISM256	G102	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit10-GJ504B-G 102Background (10) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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		[==>(Pattern 2,2, Copy 6)] [==>(Pattern 2,2, Copy 7)] [==>(Pattern 2,2, Copy 8)] [==>(Pattern 2,2, Copy 9)] [==>(Pattern 2,2, Copy 10)] [==>(Pattern 2,3, Copy 1)] [==>(Pattern 2,3, Copy 2)] [==>(Pattern 2,3, Copy 3)] [==>(Pattern 2,3, Copy 4)] [==>(Pattern 2,3, Copy 5)] [==>(Pattern 2,3, Copy 6)] [==>(Pattern 2,3, Copy 7)] [==>(Pattern 2,3, Copy 8)] [==>(Pattern 2,3, Copy 9)] [==>(Pattern 2,3, Copy 10)]	
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Proposal 15819 - Visit11-GJ504B-G141 (11) - Determining Benchmark Precision Abundances for Ultracool Companions

Thu Sep 15 20:01:04 GMT 2022

Visit	Proposal 15819, Visit11-GJ504B-G141 (11), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: ORIENT 292D TO 304 D; ORIENT 112D TO 124 D Comments: These comments apply to all observations of this target, and are copied in Visits 9-14. This target is a brown dwarf/planet companion to a bright star with a separation of ~2.5arcseconds or 19 pixels. The position angle of B is ~319deg E of N (that it, B is between 10 and 11 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided these relations to estimate the separation and position angle at a given time t expressed in fractional years, such as 2020.5: $Sep\ (mas) = -2894.9367 + 2.6746 \times t$ $P.A.\ (deg) = 2354.0681 - 1.0075 \times t$ For a date of 2020.0, the separation is 2.507arcseconds and the P.A. is 319.9deg E of N. To check the orientation, the Visits are set to occur after Visit 11 which will be used to confirm that the ORIENT is the best possible value. The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI. For the best PSF stability, the ORIENT for Visits 12 and 13 are set to match Visit 11; these are all using the same grism. To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 10 and 14 are the background observations and have an orientation requirement based on Visit 9 or Visit 11.				
Patterns	#	Primary Pattern		Secondary Pattern	
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Line Spacing=	Exposures (2)
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	-E-VIR-B	RA: 13 16 46.1600 (199.1923333d) Dec: +09 25 29.92 (9.42498d) Equinox: J2000	Proper Motion RA: -336.665 mas/yr Proper Motion Dec: 190.579 mas/yr Parallax: 0.0570186" Epoch of Position: 2015.5	V=5.214 J_B=19.8
	Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motion includes the multiplication by cos(Dec) -- is this the HST convention? V-magnitude is for stellar primary. The offset needed is being investigated. Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO				

Proposal 15819 - Visit11-GJ504B-G141 (11) - Determining Benchmark Precision Abundances for Ultracool Companions

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ504B-F12 5Wimage	(1) -E-VIR-B	WFC3/IR, MULTIACCUM, GRISM256	F125W	SAMP-SEQ=RAPID ; NSAMP=4			1.11126 Secs X 2 (2.223 Secs)	
									[==>(Copy 1)]	
									[==>(Copy 2)]	
										[1]

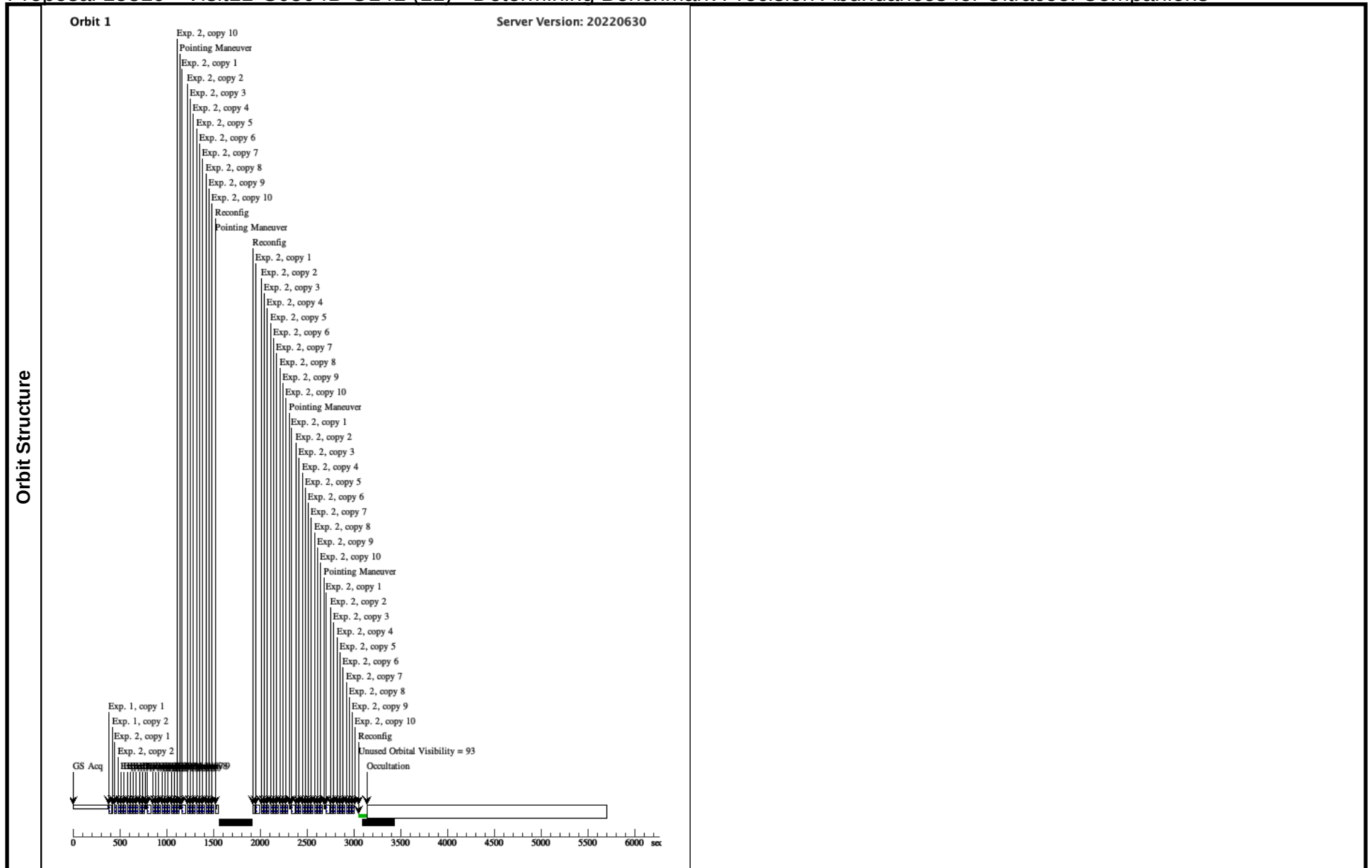
Proposal 15819 - Visit11-GJ504B-G141 (11) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(1) -E-VIR-B	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit11-GJ504B-G 141 (11) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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Proposal 15819 - Visit11-GJ504B-G141 (11) - Determining Benchmark Precision Abundances for Ultracool Companions

		[==>(Pattern 2,2, Copy 6)] [==>(Pattern 2,2, Copy 7)] [==>(Pattern 2,2, Copy 8)] [==>(Pattern 2,2, Copy 9)] [==>(Pattern 2,2, Copy 10)] [==>(Pattern 2,3, Copy 1)] [==>(Pattern 2,3, Copy 2)] [==>(Pattern 2,3, Copy 3)] [==>(Pattern 2,3, Copy 4)] [==>(Pattern 2,3, Copy 5)] [==>(Pattern 2,3, Copy 6)] [==>(Pattern 2,3, Copy 7)] [==>(Pattern 2,3, Copy 8)] [==>(Pattern 2,3, Copy 9)] [==>(Pattern 2,3, Copy 10)]	
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Proposal 15819 - Visit12-GJ504B-G141 (12) - Determining Benchmark Precision Abundances for Ultracool Companions

Thu Sep 15 20:01:04 GMT 2022

Visit	Proposal 15819, Visit12-GJ504B-G141 (12), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 09; AFTER 09 BY 1 D TO 500 D Comments: These comments apply to all observations of this target, and are copied in Visits 9-14. This target is a brown dwarf/planet companion to a bright star with a separation of ~2.5arcseconds or 19 pixels. The position angle of B is ~319deg E of N (that it, B is between 10 and 11 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided these relations to estimate the separation and position angle at a given time t expressed in fractional years, such as 2020.5: $\text{Sep (mas)} = -2894.9367 + 2.6746 \times t$ $\text{P.A. (deg)} = 2354.0681 - 1.0075 \times t$ For a date of 2020.0, the separation is 2.507arcseconds and the P.A. is 319.9deg E of N. To check the orientation, the Visits are set to occur after Visit 11 which will be used to confirm that the ORIENT is the best possible value. The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI. For the best PSF stability, the ORIENT for Visits 12 and 13 are set to match Visit 11; these are all using the same grism. To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 10 and 14 are the background observations and have an orientation requirement based on Visit 9 or Visit 11.				
Patterns	#	Primary Pattern		Secondary Pattern	
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Line Spacing=	Exposures (2)
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	-E-VIR-B	RA: 13 16 46.1600 (199.1923333d) Dec: +09 25 29.92 (9.42498d) Equinox: J2000	Proper Motion RA: -336.665 mas/yr Proper Motion Dec: 190.579 mas/yr Parallax: 0.0570186" Epoch of Position: 2015.5	V=5.214 J_B=19.8
	Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motion includes the multiplication by cos(Dec) -- is this the HST convention? V-magnitude is for stellar primary. The offset needed is being investigated. Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO				

Proposal 15819 - Visit12-GJ504B-G141 (12) - Determining Benchmark Precision Abundances for Ultracool Companions

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ504B-F12	(1) -E-VIR-B	WFC3/IR, MULTIACCUM,	F125W	SAMP-SEQ=RAPID			1.11126 Secs X 2 (2.223 Secs)	
		5Wimage		GRISM256		;			[==>(Copy 1)]	
						NSAMP=4			[==>(Copy 2)]	
										[1]

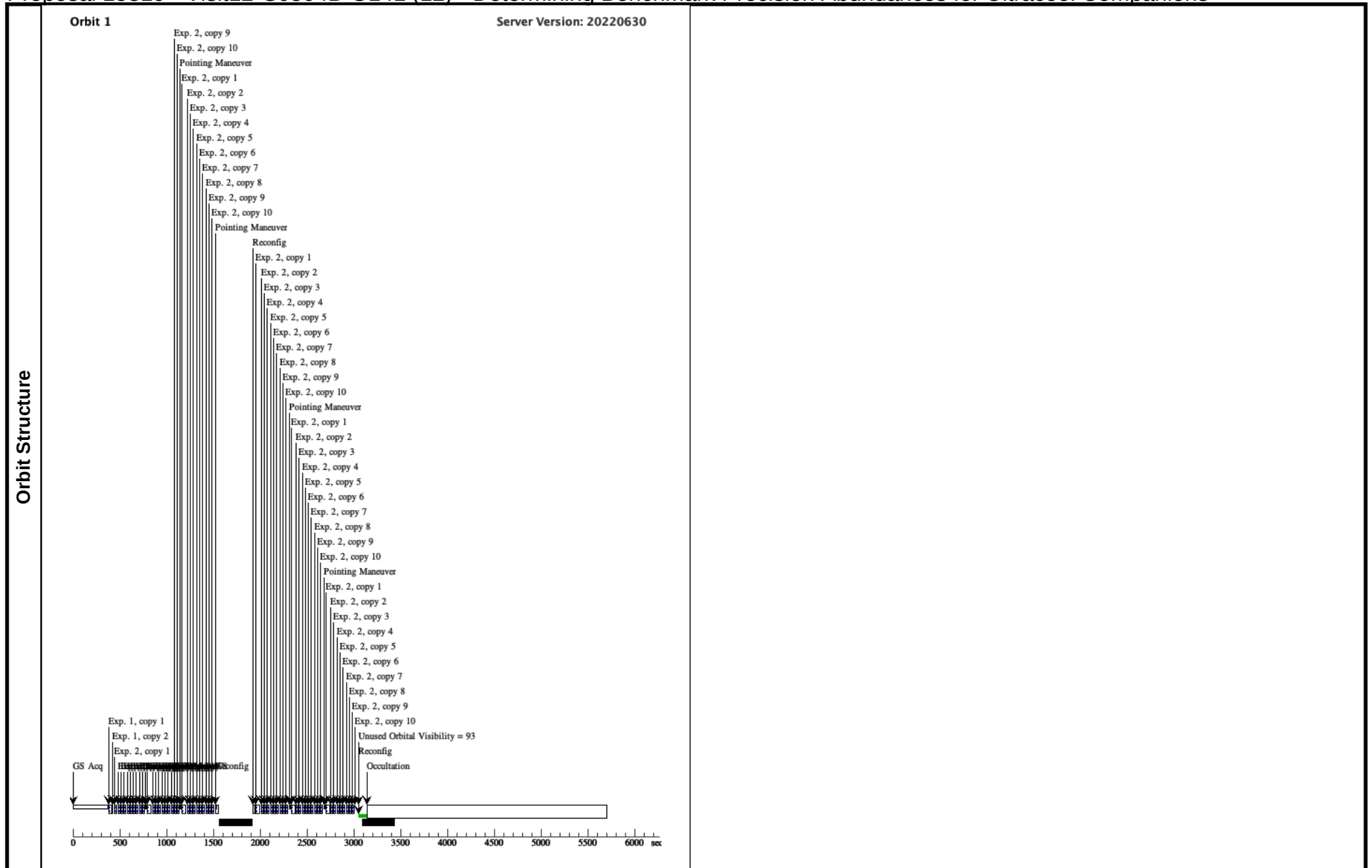
Proposal 15819 - Visit12-GJ504B-G141 (12) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(1) -E-VIR-B	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit12-GJ504B-G 141 (12) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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Proposal 15819 - Visit12-GJ504B-G141 (12) - Determining Benchmark Precision Abundances for Ultracool Companions

		[==>(Pattern 2,2, Copy 6)] [==>(Pattern 2,2, Copy 7)] [==>(Pattern 2,2, Copy 8)] [==>(Pattern 2,2, Copy 9)] [==>(Pattern 2,2, Copy 10)] [==>(Pattern 2,3, Copy 1)] [==>(Pattern 2,3, Copy 2)] [==>(Pattern 2,3, Copy 3)] [==>(Pattern 2,3, Copy 4)] [==>(Pattern 2,3, Copy 5)] [==>(Pattern 2,3, Copy 6)] [==>(Pattern 2,3, Copy 7)] [==>(Pattern 2,3, Copy 8)] [==>(Pattern 2,3, Copy 9)] [==>(Pattern 2,3, Copy 10)]	
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Proposal 15819 - Visit13-GJ504B-G141 (13) - Determining Benchmark Precision Abundances for Ultracool Companions

Thu Sep 15 20:01:04 GMT 2022

Visit	Proposal 15819, Visit13-GJ504B-G141 (13), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 10 Comments: These comments apply to all observations of this target, and are copied in Visits 9-14. This target is a brown dwarf/planet companion to a bright star with a separation of ~2.5arcseconds or 19 pixels. The position angle of B is ~319deg E of N (that it, B is between 10 and 11 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided these relations to estimate the separation and position angle at a given time t expressed in fractional years, such as 2020.5: $\text{Sep (mas)} = -2894.9367 + 2.6746 \times t$ $\text{P.A. (deg)} = 2354.0681 - 1.0075 \times t$ For a date of 2020.0, the separation is 2.507arcseconds and the P.A. is 319.9deg E of N. To check the orientation, the Visits are set to occur after Visit 11 which will be used to confirm that the ORIENT is the best possible value. The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI. For the best PSF stability, the ORIENT for Visits 12 and 13 are set to match Visit 11; these are all using the same grism. To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 10 and 14 are the background observations and have an orientation requirement based on Visit 9 or Visit 11.				
Patterns	#	Primary Pattern		Secondary Pattern	
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Line Spacing=	Exposures (2)
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	-E-VIR-B	RA: 13 16 46.1600 (199.1923333d) Dec: +09 25 29.92 (9.42498d) Equinox: J2000	Proper Motion RA: -336.665 mas/yr Proper Motion Dec: 190.579 mas/yr Parallax: 0.0570186" Epoch of Position: 2015.5	V=5.214 J_B=19.8
	Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motion includes the multiplication by cos(Dec) -- is this the HST convention? V-magnitude is for stellar primary. The offset needed is being investigated. Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO				

Proposal 15819 - Visit13-GJ504B-G141 (13) - Determining Benchmark Precision Abundances for Ultracool Companions

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ504B-F12	(1) -E-VIR-B	WFC3/IR, MULTIACCUM,	F125W	SAMP-SEQ=RAPID			1.11126 Secs X 2 (2.223 Secs)	
		5Wimage		GRISM256		;			[==>(Copy 1)]	
						NSAMP=4			[==>(Copy 2)]	
										[1]

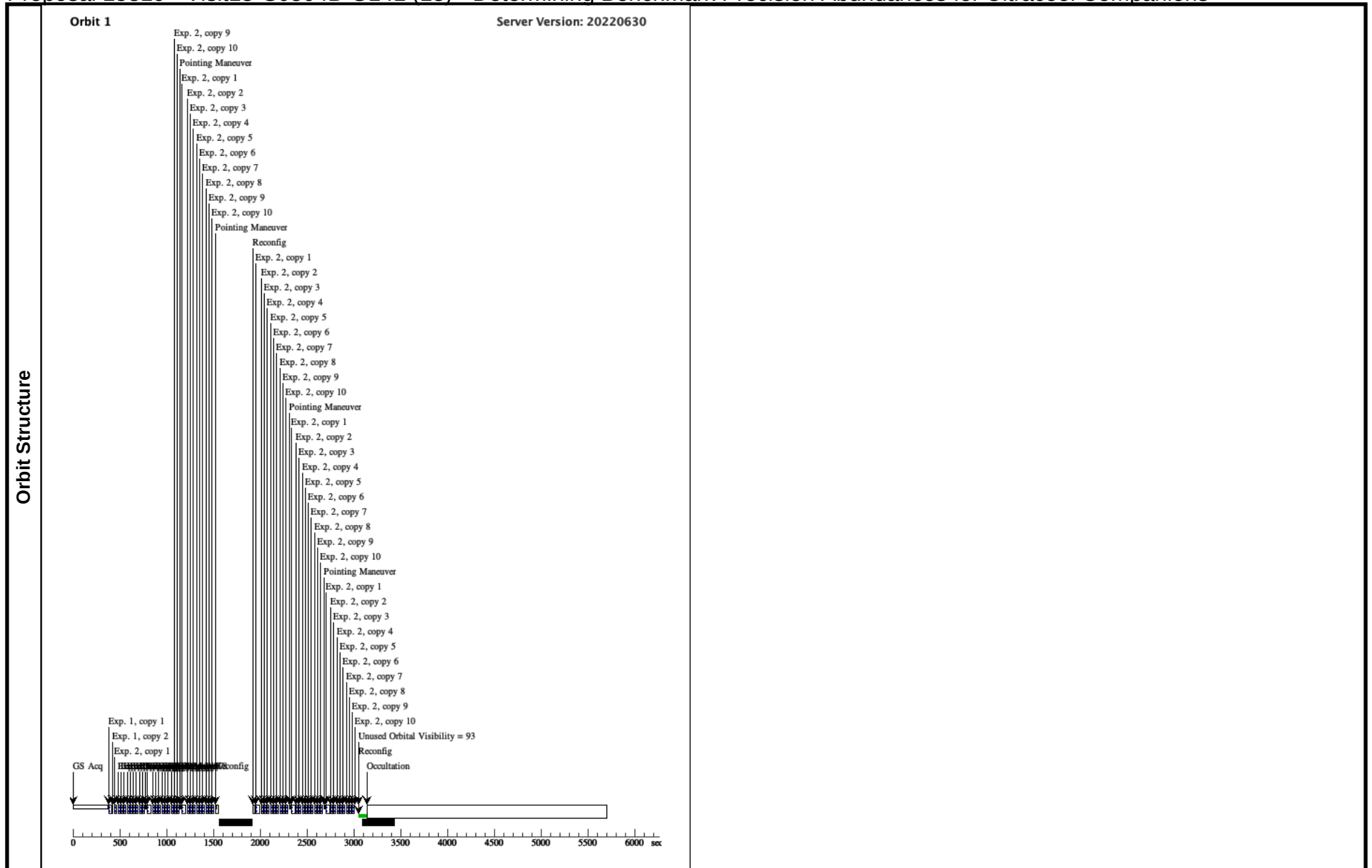
Proposal 15819 - Visit13-GJ504B-G141 (13) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(1) -E-VIR-B	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit13-GJ504B-G 141 (13) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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Proposal 15819 - Visit13-GJ504B-G141 (13) - Determining Benchmark Precision Abundances for Ultracool Companions

		[==>(Pattern 2,2, Copy 6)] [==>(Pattern 2,2, Copy 7)] [==>(Pattern 2,2, Copy 8)] [==>(Pattern 2,2, Copy 9)] [==>(Pattern 2,2, Copy 10)] [==>(Pattern 2,3, Copy 1)] [==>(Pattern 2,3, Copy 2)] [==>(Pattern 2,3, Copy 3)] [==>(Pattern 2,3, Copy 4)] [==>(Pattern 2,3, Copy 5)] [==>(Pattern 2,3, Copy 6)] [==>(Pattern 2,3, Copy 7)] [==>(Pattern 2,3, Copy 8)] [==>(Pattern 2,3, Copy 9)] [==>(Pattern 2,3, Copy 10)]	
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Proposal 15819 - Visit14-GJ504B-G141Background (14) - Determining Benchmark Precision Abundances for Ultracool Companions

Visit	Proposal 15819, Visit14-GJ504B-G141Background (14), implementation				Thu Sep 15 20:01:04 GMT 2022	
	Diagnostic Status: No Diagnostics					
	Scientific Instruments: WFC3/IR					
	Special Requirements: ORIENT 175D TO 180D FROM 09					
	Comments: These comments apply to all observations of this target, and are copied in Visits 9-14.					
	This target is a brown dwarf/planet companion to a bright star with a separation of ~2.5arcseconds or 19 pixels. The position angle of B is ~319deg E of N (that it, B is between 10 and 11 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided these relations to estimate the separation and position angle at a given time t expressed in fractional years, such as 2020.5:					
	Sep (mas) = -2894.9367 + 2.6746 x t P.A. (deg) = 2354.0681 - 1.0075 x t					
For a date of 2020.0, the separation is 2.507arcseconds and the P.A. is 319.9deg E of N.						
To check the orientation, the Visits are set to occur after Visit 11 which will be used to confirm that the ORIENT is the best possible value.						
The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI.						
For the best PSF stability, the ORIENT for Visits 12 and 13 are set to match Visit 11; these are all using the same grism.						
To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 10 and 14 are the background observations and have an orientation requirement based on Visit 9 or Visit 11.						
Patterns	#	Primary Pattern		Secondary Pattern		Exposures
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	(2)
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	-E-VIR-B	RA: 13 16 46.1600 (199.1923333d) Dec: +09 25 29.92 (9.42498d) Equinox: J2000	Proper Motion RA: -336.665 mas/yr Proper Motion Dec: 190.579 mas/yr Parallax: 0.0570186" Epoch of Position: 2015.5	V=5.214 J_B=19.8	Reference Frame: ICRS
	Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motion includes the multiplication by cos(Dec) -- is this the HST convention?					
	V-magnitude is for stellar primary.					
	The offset needed is being investigated. Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO					

Proposal 15819 - Visit14-GJ504B-G141Background (14) - Determining Benchmark Precision Abundances for Ultracool Companions

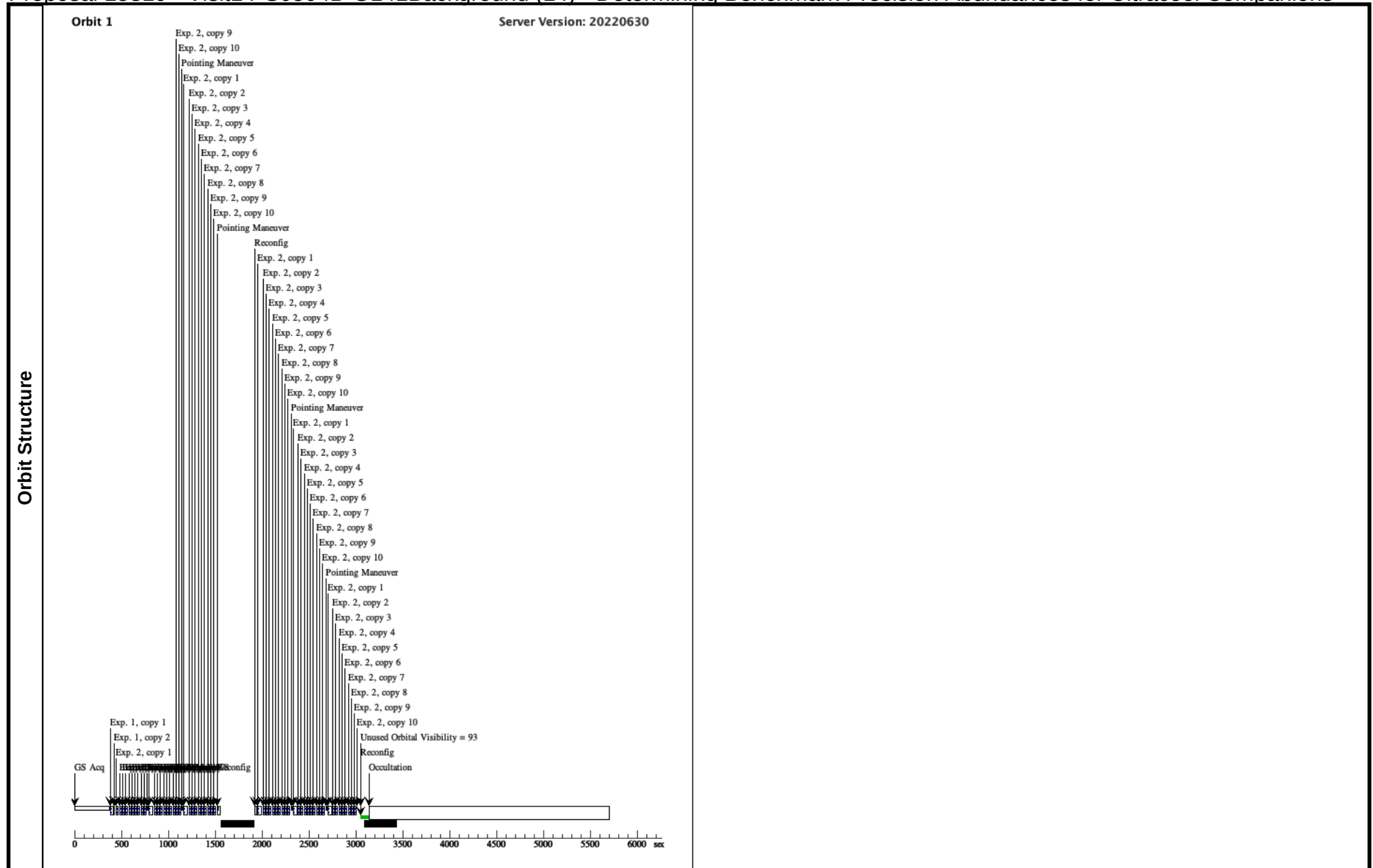
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ504B-F12 5Wimage	(1) -E-VIR-B	WFC3/IR, MULTIACCUM, GRISM256	F125W	SAMP-SEQ=RAPID ; NSAMP=4			1.11126 Secs X 2 (2.223 Secs)	
									[==>(Copy 1)]	
									[==>(Copy 2)]	
										[1]

Proposal 15819 - Visit14-GJ504B-G141Background (14) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(1) -E-VIR-B	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit14-GJ504B-G 141Background (14) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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		[==>(Pattern 2,2, Copy 6)] [==>(Pattern 2,2, Copy 7)] [==>(Pattern 2,2, Copy 8)] [==>(Pattern 2,2, Copy 9)] [==>(Pattern 2,2, Copy 10)] [==>(Pattern 2,3, Copy 1)] [==>(Pattern 2,3, Copy 2)] [==>(Pattern 2,3, Copy 3)] [==>(Pattern 2,3, Copy 4)] [==>(Pattern 2,3, Copy 5)] [==>(Pattern 2,3, Copy 6)] [==>(Pattern 2,3, Copy 7)] [==>(Pattern 2,3, Copy 8)] [==>(Pattern 2,3, Copy 9)] [==>(Pattern 2,3, Copy 10)]	
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Proposal 15819 - Visit15-GJ758-G102 (15) - Determining Benchmark Precision Abundances for Ultracool Companions

Thu Sep 15 20:01:05 GMT 2022

Visit	Proposal 15819, Visit15-GJ758-G102 (15), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: ORIENT 154D TO 194 D; AFTER 17 BY 1 D TO 500 D Comments: These comments apply to all observations of this target, and are copied in each Visit for this target, Visits 15-20. This target is a brown dwarf/planet companion to a bright star with a separation of ~1.5arcseconds or 11.5 pixels. The position angle of B is ~208deg E of N (that it, B is between 4 and 5 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided estimates for changes from a time of 2014.7 into future dates: Change in sep. (mas) = -34mas/yr Change in P.A.(deg) = 1.86deg/yr Sep. in 2014.7: 1697mas P.A. in 2014.7: 207.8deg For a date of 2020.0, the separation is 1.516arcseconds and the P.A. is 217.7deg E of N. To check the orientation, the Visits are set to occur after Visit 17 which will be used to confirm that the ORIENT is the best possible value. The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI. For the best PSF stability, the ORIENT for Visits 18 and 19 are set to match Visit 17; these are all using the same grism. To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 16 and 20 are the background observations and have an orientation requirement linked to Visit 15 or Visit 17.				
Patterns	#	Primary Pattern		Secondary Pattern	
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Line Spacing=	Exposures (2)
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(3)	HD-182488B	RA: 19 23 34.1155 (290.8921479d) Dec: +33 13 21.59 (33.22266d) Equinox: J2000	Proper Motion RA: 81.803 mas/yr Proper Motion Dec: 160.392 mas/yr Parallax: 0.06406" Epoch of Position: 2015.5	V=6.243 J=19.8
	Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motion includes the multiplication by cos(Dec) -- is this the HST convention? V-magnitude is for stellar primary. The offset needed is being investigated. Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO				

Proposal 15819 - Visit15-GJ758-G102 (15) - Determining Benchmark Precision Abundances for Ultracool Companions

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ758B-F10 5Wimage	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	F105W	SAMP-SEQ=RAPID ; NSAMP=4			1.11126 Secs X 2 (2.223 Secs) [==>(Copy 1)] [==>(Copy 2)]	
										[1]

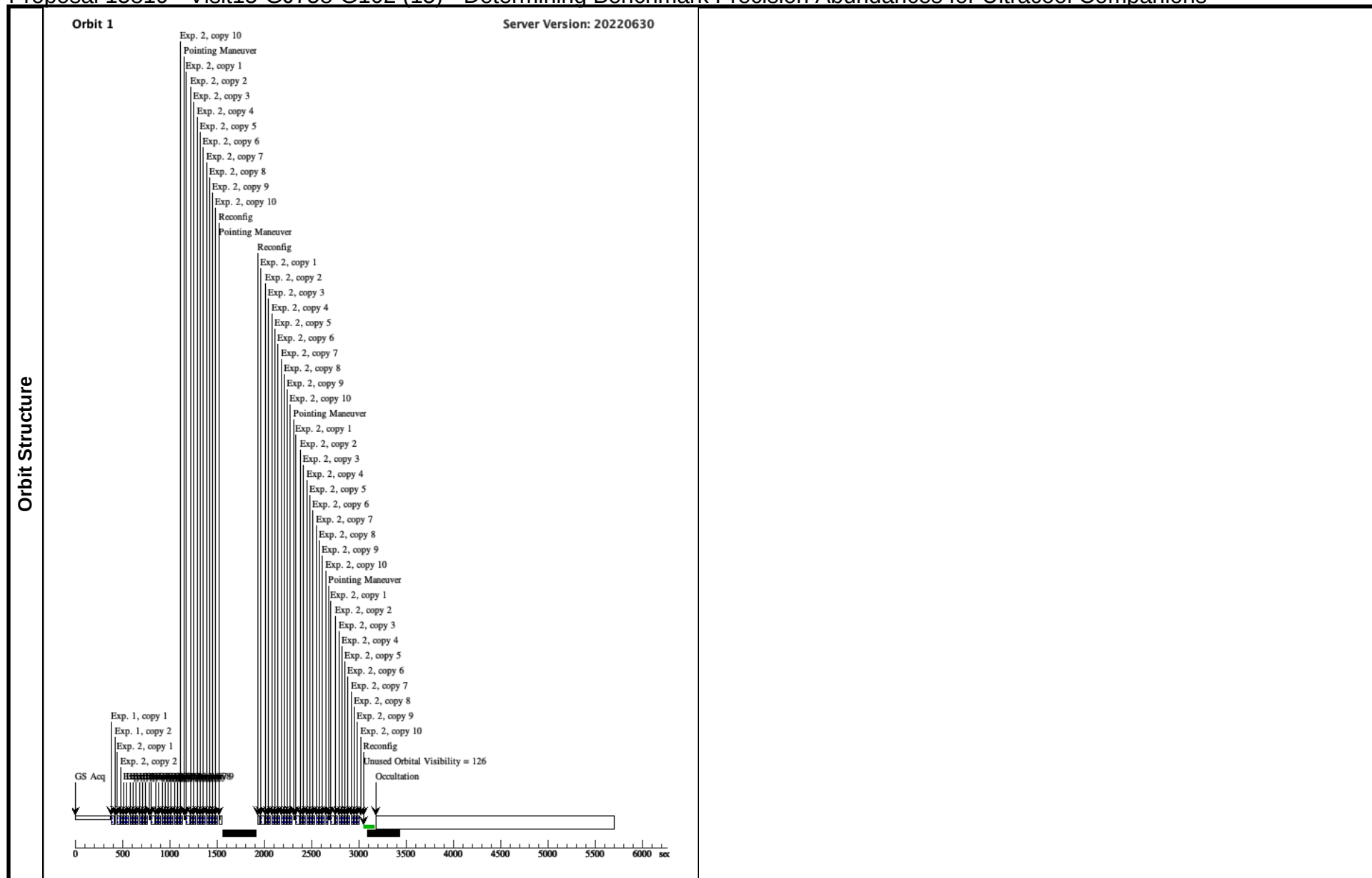
Proposal 15819 - Visit15-GJ758-G102 (15) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	G102	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit15-GJ758-G1 02 (15) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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Proposal 15819 - Visit15-GJ758-G102 (15) - Determining Benchmark Precision Abundances for Ultracool Companions

		[==>(Pattern 2,2, Copy 6)] [==>(Pattern 2,2, Copy 7)] [==>(Pattern 2,2, Copy 8)] [==>(Pattern 2,2, Copy 9)] [==>(Pattern 2,2, Copy 10)] [==>(Pattern 2,3, Copy 1)] [==>(Pattern 2,3, Copy 2)] [==>(Pattern 2,3, Copy 3)] [==>(Pattern 2,3, Copy 4)] [==>(Pattern 2,3, Copy 5)] [==>(Pattern 2,3, Copy 6)] [==>(Pattern 2,3, Copy 7)] [==>(Pattern 2,3, Copy 8)] [==>(Pattern 2,3, Copy 9)] [==>(Pattern 2,3, Copy 10)]	
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Proposal 15819, Visit16-GJ758-G102background (16), completed					Thu Sep 15 20:01:05 GMT 2022
Visit	Diagnostic Status: No Diagnostics				
	Scientific Instruments: WFC3/IR				
	Special Requirements: ORIENT 175D TO 180D FROM 15; AFTER 17 BY 1 D TO 500 D				
	Comments: These comments apply to all observations of this target, and are copied in each Visit for this target, Visits 15-20.				
	This target is a brown dwarf/planet companion to a bright star with a separation of ~1.5arcseconds or 11.5 pixels. The position angle of B is ~208deg E of N (that is, B is between 4 and 5 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided estimates for changes from a time of 2014.7 into future dates:				
	Change in sep. (mas) = -34mas/yr Change in P.A.(deg) = 1.86deg/yr				
	Sep. in 2014.7: 1697mas P.A. in 2014.7: 207.8deg				
Patterns	For a date of 2020.0, the separation is 1.516arcseconds and the P.A. is 217.7deg E of N.				
	To check the orientation, the Visits are set to occur after Visit 17 which will be used to confirm that the ORIENT is the best possible value.				
	The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI.				
	For the best PSF stability, the ORIENT for Visits 18 and 19 are set to match Visit 17; these are all using the same grism.				
	To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 16 and 20 are the background observations and have an orientation requirement linked to Visit 15 or Visit 17.				
Fixed Targets	#	Primary Pattern	Secondary Pattern		Exposures
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Center Pattern=false Line Spacing=	(2)
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(3)	HD-182488B	RA: 19 23 34.1155 (290.8921479d)	Proper Motion RA: 81.803 mas/yr	V=6.243
			Dec: +33 13 21.59 (33.22266d)	Proper Motion Dec: 160.392 mas/yr	J=19.8
			Equinox: J2000	Parallax: 0.06406"	
			Epoch of Position: 2015.5		
Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motion includes the multiplication by cos(Dec) -- is this the HST convention?					
Fixed Targets	V-magnitude is for stellar primary.				
	The offset needed is being investigated.				
	Category=STAR				
	Description=[BROWN DWARF, LOW MASS COMPANION, T]				
Fixed Targets	Extended=NO				

Proposal 15819 - Visit16-GJ758-G102background (16) - Determining Benchmark Precision Abundances for Ultracool Companions

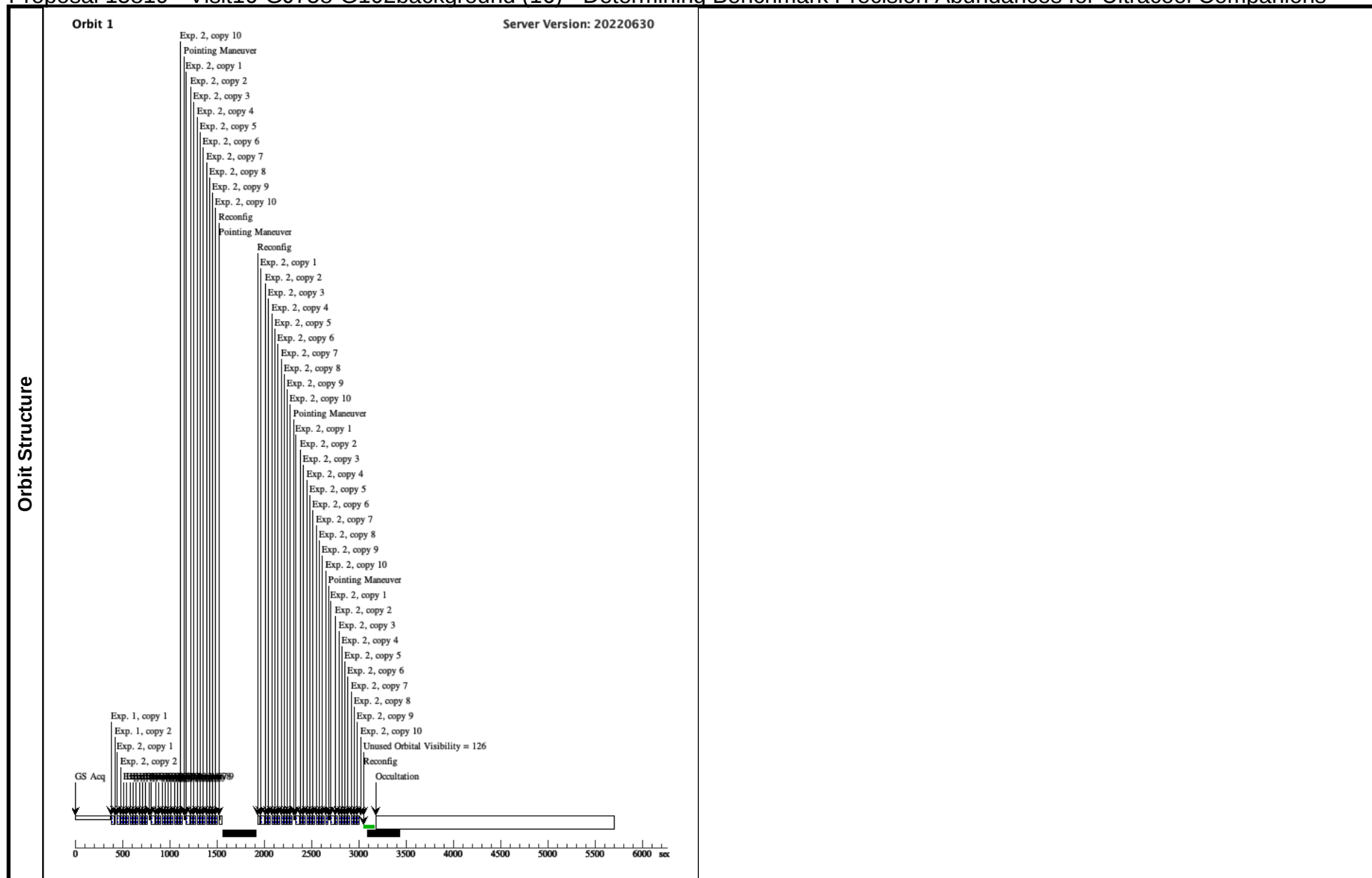
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ758B-F10 5Wimage	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	F105W	SAMP-SEQ=RAPID ; NSAMP=4			1.11126 Secs X 2 (2.223 Secs) [==>(Copy 1)] [==>(Copy 2)]	
										[1]

Proposal 15819 - Visit16-GJ758-G102background (16) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	G102	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit16-GJ758-G1 02background (16) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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		[==>(Pattern 2,2, Copy 6)] [==>(Pattern 2,2, Copy 7)] [==>(Pattern 2,2, Copy 8)] [==>(Pattern 2,2, Copy 9)] [==>(Pattern 2,2, Copy 10)] [==>(Pattern 2,3, Copy 1)] [==>(Pattern 2,3, Copy 2)] [==>(Pattern 2,3, Copy 3)] [==>(Pattern 2,3, Copy 4)] [==>(Pattern 2,3, Copy 5)] [==>(Pattern 2,3, Copy 6)] [==>(Pattern 2,3, Copy 7)] [==>(Pattern 2,3, Copy 8)] [==>(Pattern 2,3, Copy 9)] [==>(Pattern 2,3, Copy 10)]	
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Proposal 15819 - Visit17-GJ758-G141 (17) - Determining Benchmark Precision Abundances for Ultracool Companions

Thu Sep 15 20:01:05 GMT 2022

	Proposal 15819, Visit17-GJ758-G141 (17), completed				Thu Sep 15 20:01:05 GMT 2022
	Diagnostic Status: No Diagnostics				
	Scientific Instruments: WFC3/IR				
	Special Requirements: ORIENT 154D TO 194 D				
	<i>Comments: These comments apply to all observations of this target, and are copied in each Visit for this target, Visits 15-20.</i>				
	<i>This target is a brown dwarf/planet companion to a bright star with a separation of ~1.5arcseconds or 11.5 pixels. The position angle of B is ~208deg E of N (that it, B is between 4 and 5 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided estimates for changes from a time of 2014.7 into future dates:</i>				
Visit	<i>Change in sep. (mas) = -34mas/yr Change in P.A.(deg) = 1.86deg/yr</i>				
	<i>Sep. in 2014.7: 1697mas P.A. in 2014.7: 207.8deg</i>				
	<i>For a date of 2020.0, the separation is 1.516arcseconds and the P.A. is 217.7deg E of N.</i>				
	<i>To check the orientation, the Visits are set to occur after Visit 17 which will be used to confirm that the ORIENT is the best possible value.</i>				
	<i>The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI.</i>				
	<i>For the best PSF stability, the ORIENT for Visits 18 and 19 are set to match Visit 17; these are all using the same grism.</i>				
	<i>To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 16 and 20 are the background observations and have an orientation requirement linked to Visit 15 or Visit 17.</i>				
Patterns	#	Primary Pattern		Secondary Pattern	
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Center Pattern=false	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(3)	HD-182488B	RA: 19 23 34.1155 (290.8921479d) Dec: +33 13 21.59 (33.22266d) Equinox: J2000	Proper Motion RA: 81.803 mas/yr Proper Motion Dec: 160.392 mas/yr Parallax: 0.06406" Epoch of Position: 2015.5	V=6.243 J=19.8
	<i>Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motieon includes the multiplication by cos(Dec) -- is this the HST convention?</i>				
	<i>V-magnitude is for stellar primary.</i>				
	<i>The offset needed is being investigated. Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO</i>				

Proposal 15819 - Visit17-GJ758-G141 (17) - Determining Benchmark Precision Abundances for Ultracool Companions

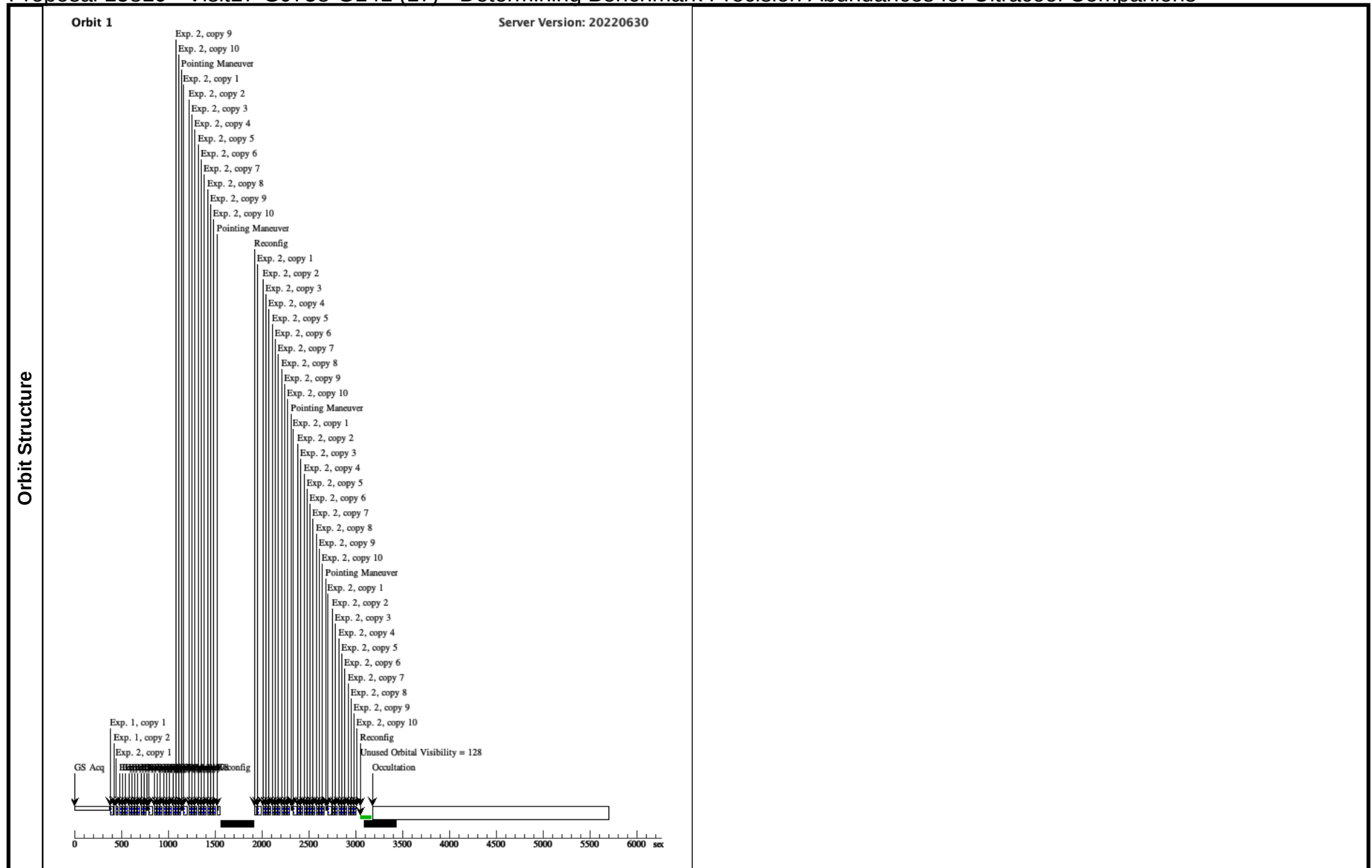
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ758B-F12 5Wimage	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	F125W	SAMP-SEQ=RAPID ; NSAMP=4	POS TARG 0,0		1.11126 Secs X 2 (2.223 Secs) [==>(Copy 1)] [==>(Copy 2)]	
										[1]

Proposal 15819 - Visit17-GJ758-G141 (17) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit17-GJ758-G1 41 (17) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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		[=>(Pattern 2,2, Copy 6)] [=>(Pattern 2,2, Copy 7)] [=>(Pattern 2,2, Copy 8)] [=>(Pattern 2,2, Copy 9)] [=>(Pattern 2,2, Copy 10)] [=>(Pattern 2,3, Copy 1)] [=>(Pattern 2,3, Copy 2)] [=>(Pattern 2,3, Copy 3)] [=>(Pattern 2,3, Copy 4)] [=>(Pattern 2,3, Copy 5)] [=>(Pattern 2,3, Copy 6)] [=>(Pattern 2,3, Copy 7)] [=>(Pattern 2,3, Copy 8)] [=>(Pattern 2,3, Copy 9)] [=>(Pattern 2,3, Copy 10)]	
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Proposal 15819 - Visit18-GJ758-G141 (18) - Determining Benchmark Precision Abundances for Ultracool Companions

Thu Sep 15 20:01:05 GMT 2022

Visit	Proposal 15819, Visit18-GJ758-G141 (18), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 17; AFTER 17 BY 1 D TO 500 D Comments: These comments apply to all observations of this target, and are copied in each Visit for this target, Visits 15-20. This target is a brown dwarf/planet companion to a bright star with a separation of ~1.5arcseconds or 11.5 pixels. The position angle of B is ~208deg E of N (that it, B is between 4 and 5 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided estimates for changes from a time of 2014.7 into future dates: Change in sep. (mas) = -34mas/yr Change in P.A.(deg) = 1.86deg/yr Sep. in 2014.7: 1697mas P.A. in 2014.7: 207.8deg For a date of 2020.0, the separation is 1.516arcseconds and the P.A. is 217.7deg E of N. To check the orientation, the Visits are set to occur after Visit 17 which will be used to confirm that the ORIENT is the best possible value. The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI. For the best PSF stability, the ORIENT for Visits 18 and 19 are set to match Visit 17; these are all using the same grism. To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 16 and 20 are the background observations and have an orientation requirement linked to Visit 15 or Visit 17.				
Patterns	#	Primary Pattern		Secondary Pattern	
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(3)	HD-182488B	RA: 19 23 34.1155 (290.8921479d) Dec: +33 13 21.59 (33.22266d) Equinox: J2000	Proper Motion RA: 81.803 mas/yr Proper Motion Dec: 160.392 mas/yr Parallax: 0.06406" Epoch of Position: 2015.5	V=6.243 J=19.8
	Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motion includes the multiplication by cos(Dec) -- is this the HST convention? V-magnitude is for stellar primary. The offset needed is being investigated. Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO				
Exposures					

Proposal 15819 - Visit18-GJ758-G141 (18) - Determining Benchmark Precision Abundances for Ultracool Companions

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ758B-F12 5Wimage	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	F125W	SAMP-SEQ=RAPID ; NSAMP=4			1.11126 Secs X 2 (2.223 Secs) [==>(Copy 1)] [==>(Copy 2)]	
										[1]

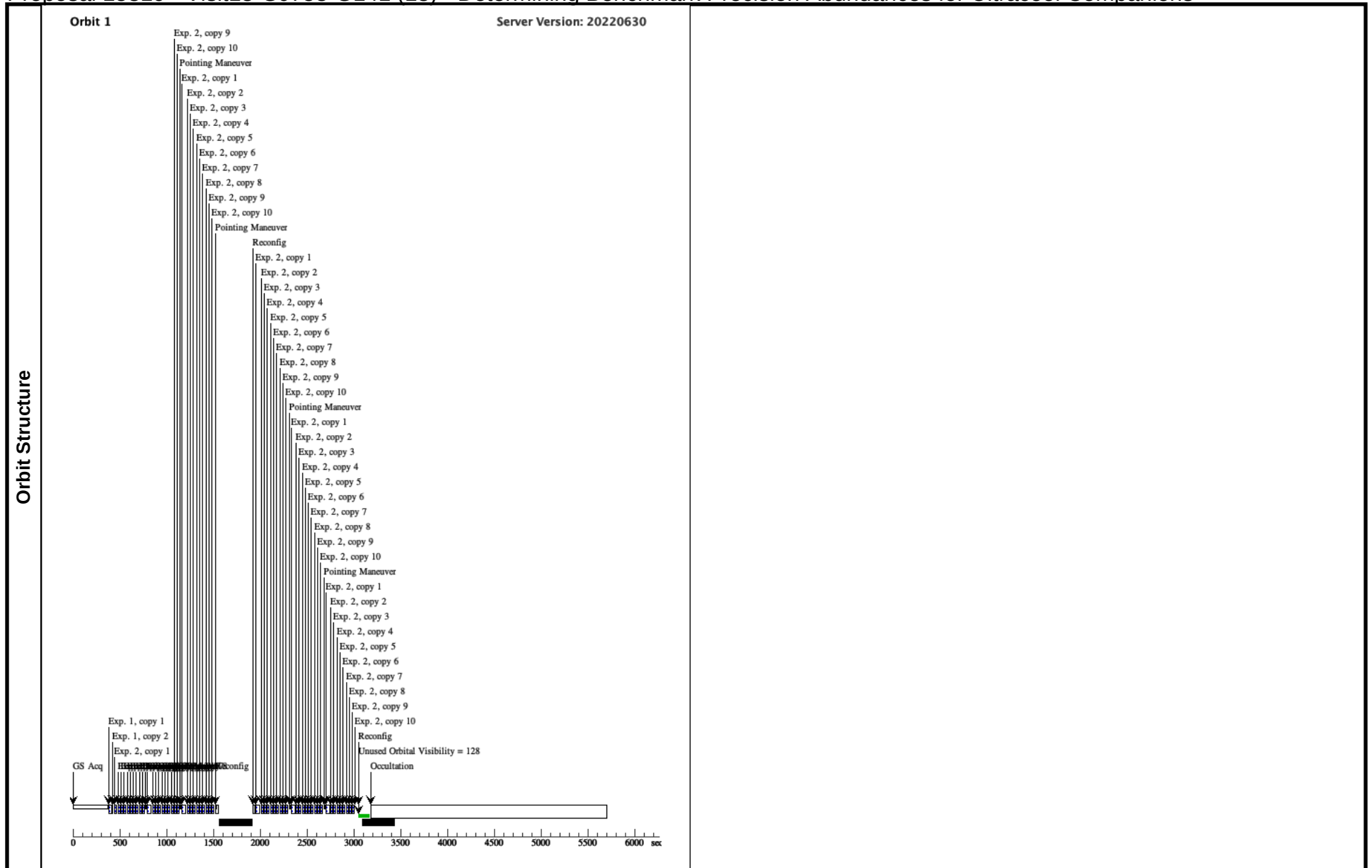
Proposal 15819 - Visit18-GJ758-G141 (18) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit18-GJ758-G1 41 (18) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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Proposal 15819 - Visit18-GJ758-G141 (18) - Determining Benchmark Precision Abundances for Ultracool Companions

		[==>(Pattern 2,2, Copy 6)] [==>(Pattern 2,2, Copy 7)] [==>(Pattern 2,2, Copy 8)] [==>(Pattern 2,2, Copy 9)] [==>(Pattern 2,2, Copy 10)] [==>(Pattern 2,3, Copy 1)] [==>(Pattern 2,3, Copy 2)] [==>(Pattern 2,3, Copy 3)] [==>(Pattern 2,3, Copy 4)] [==>(Pattern 2,3, Copy 5)] [==>(Pattern 2,3, Copy 6)] [==>(Pattern 2,3, Copy 7)] [==>(Pattern 2,3, Copy 8)] [==>(Pattern 2,3, Copy 9)] [==>(Pattern 2,3, Copy 10)]	
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Proposal 15819 - Visit19-GJ758-G141 (19) - Determining Benchmark Precision Abundances for Ultracool Companions

Thu Sep 15 20:01:05 GMT 2022

Visit	Proposal 15819, Visit19-GJ758-G141 (19), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: SAME ORIENT AS 17; AFTER 17 BY 1 D TO 500 D Comments: These comments apply to all observations of this target, and are copied in each Visit for this target, Visits 15-20. This target is a brown dwarf/planet companion to a bright star with a separation of ~1.5arcseconds or 11.5 pixels. The position angle of B is ~208deg E of N (that it, B is between 4 and 5 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided estimates for changes from a time of 2014.7 into future dates: Change in sep. (mas) = -34mas/yr Change in P.A.(deg) = 1.86deg/yr Sep. in 2014.7: 1697mas P.A. in 2014.7: 207.8deg For a date of 2020.0, the separation is 1.516arcseconds and the P.A. is 217.7deg E of N. To check the orientation, the Visits are set to occur after Visit 17 which will be used to confirm that the ORIENT is the best possible value. The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI. For the best PSF stability, the ORIENT for Visits 18 and 19 are set to match Visit 17; these are all using the same grism. To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 16 and 20 are the background observations and have an orientation requirement linked to Visit 15 or Visit 17.				
Patterns	#	Primary Pattern		Secondary Pattern	
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(3)	HD-182488B	RA: 19 23 34.1155 (290.8921479d) Dec: +33 13 21.59 (33.22266d) Equinox: J2000	Proper Motion RA: 81.803 mas/yr Proper Motion Dec: 160.392 mas/yr Parallax: 0.06406" Epoch of Position: 2015.5	V=6.243 J=19.8
	Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motion includes the multiplication by cos(Dec) -- is this the HST convention? V-magnitude is for stellar primary. The offset needed is being investigated. Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO				
Exposures					

Proposal 15819 - Visit19-GJ758-G141 (19) - Determining Benchmark Precision Abundances for Ultracool Companions

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ758B-F12 5Wimage	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	F125W	SAMP-SEQ=RAPID ; NSAMP=4			1.11126 Secs X 2 (2.223 Secs) [==>(Copy 1)] [==>(Copy 2)]	
										[1]

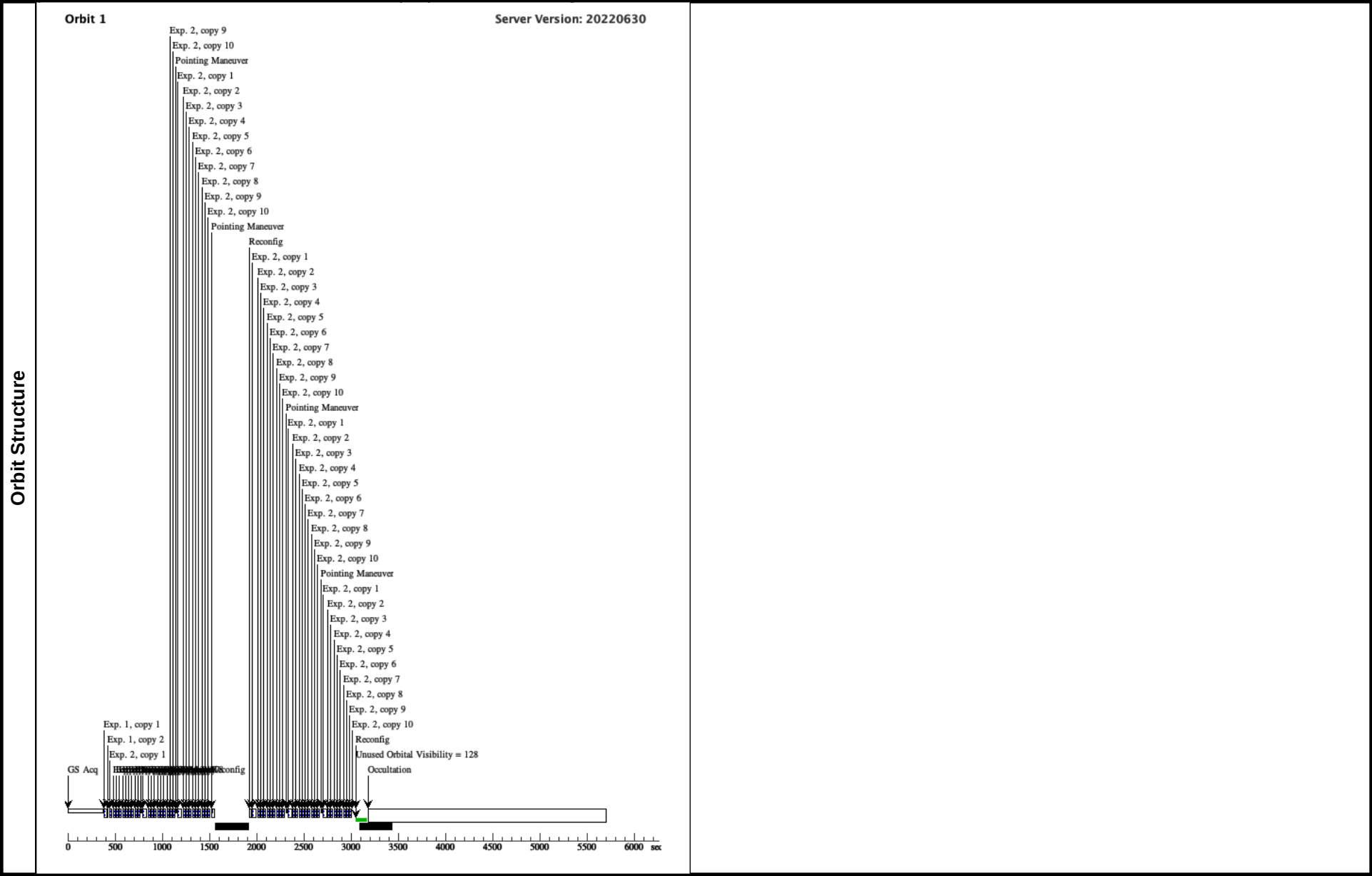
Proposal 15819 - Visit19-GJ758-G141 (19) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit19-GJ758-G1 41 (19) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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Proposal 15819 - Visit19-GJ758-G141 (19) - Determining Benchmark Precision Abundances for Ultracool Companions

		[==>(Pattern 2,2, Copy 6)] [==>(Pattern 2,2, Copy 7)] [==>(Pattern 2,2, Copy 8)] [==>(Pattern 2,2, Copy 9)] [==>(Pattern 2,2, Copy 10)] [==>(Pattern 2,3, Copy 1)] [==>(Pattern 2,3, Copy 2)] [==>(Pattern 2,3, Copy 3)] [==>(Pattern 2,3, Copy 4)] [==>(Pattern 2,3, Copy 5)] [==>(Pattern 2,3, Copy 6)] [==>(Pattern 2,3, Copy 7)] [==>(Pattern 2,3, Copy 8)] [==>(Pattern 2,3, Copy 9)] [==>(Pattern 2,3, Copy 10)]	
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Proposal 15819 - Visit20-GJ758-G141background (20) - Determining Benchmark Precision Abundances for Ultracool Companions

Thu Sep 15 20:01:05 GMT 2022

Visit	Proposal 15819, Visit20-GJ758-G141background (20), completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: ORIENT 175D TO 180D FROM 17; AFTER 17 BY 1 D TO 500 D Comments: These comments apply to all observations of this target, and are copied in each Visit for this target, Visits 15-20. This target is a brown dwarf/planet companion to a bright star with a separation of ~1.5arcseconds or 11.5 pixels. The position angle of B is ~208deg E of N (that it, B is between 4 and 5 o'clock relative to A). This target is being monitored for orbital motion, and the group following the orbit provided estimates for changes from a time of 2014.7 into future dates: Change in sep. (mas) = -34mas/yr Change in P.A.(deg) = 1.86deg/yr Sep. in 2014.7: 1697mas P.A. in 2014.7: 207.8deg For a date of 2020.0, the separation is 1.516arcseconds and the P.A. is 217.7deg E of N. To check the orientation, the Visits are set to occur after Visit 17 which will be used to confirm that the ORIENT is the best possible value. The aim of the observation is to have the binary pair arranged such that they are vertical and their dispersed spectra do not overlap. The smallest subarray is used to enable exposure times that have a series of reads that include unsaturated spectra of the primary and exposures that should saturate out to a radius of 5 pixels based on radial profile information provided by STScI. For the best PSF stability, the ORIENT for Visits 18 and 19 are set to match Visit 17; these are all using the same grism. To subtract the stellar background, an observation at an orientation different by 175-180degrees is taken in each grism. Visits 16 and 20 are the background observations and have an orientation requirement linked to Visit 15 or Visit 17.				
Patterns	#	Primary Pattern		Secondary Pattern	
	(3)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=10.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=86.788 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=OTHER Number Of Points=3 Point Spacing=1.0 Line Spacing=	Exposures (2)
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(3)	HD-182488B	RA: 19 23 34.1155 (290.8921479d) Dec: +33 13 21.59 (33.22266d) Equinox: J2000	Proper Motion RA: 81.803 mas/yr Proper Motion Dec: 160.392 mas/yr Parallax: 0.06406" Epoch of Position: 2015.5	V=6.243 J=19.8
	Comments: This coordinates have been updated to GAIA DR2 measurements and are currently centered on the star. The proper motion includes the multiplication by cos(Dec) -- is this the HST convention? V-magnitude is for stellar primary. The offset needed is being investigated. Category=STAR Description=[BROWN DWARF, LOW MASS COMPANION, T] Extended=NO				

Proposal 15819 - Visit20-GJ758-G141background (20) - Determining Benchmark Precision Abundances for Ultracool Companions

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	GJ758B-F12 5Wimage	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	F125W	SAMP-SEQ=RAPID ; NSAMP=4			1.11126 Secs X 2 (2.223 Secs) [==>(Copy 1)] [==>(Copy 2)]	
										[1]

Proposal 15819 - Visit20-GJ758-G141background (20) - Determining Benchmark Precision Abundances for Ultracool Companions

2	(3) HD-182488B	WFC3/IR, MULTIACCUM, GRISM256	G141	NSAMP=7; SAMP-SEQ=SPAR S5	Pattern 3, Exps 2-2 i n Visit20-GJ758-G1 41background (20) (3)	14.37424 Secs X 10 (862.454 Secs)	
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		[==>(Pattern 1,1, Copy 1)] [==>(Pattern 1,1, Copy 2)] [==>(Pattern 1,1, Copy 3)] [==>(Pattern 1,1, Copy 4)] [==>(Pattern 1,1, Copy 5)] [==>(Pattern 1,1, Copy 6)] [==>(Pattern 1,1, Copy 7)] [==>(Pattern 1,1, Copy 8)] [==>(Pattern 1,1, Copy 9)] [==>(Pattern 1,1, Copy 10)] [==>(Pattern 1,2, Copy 1)] [==>(Pattern 1,2, Copy 2)] [==>(Pattern 1,2, Copy 3)] [==>(Pattern 1,2, Copy 4)] [==>(Pattern 1,2, Copy 5)] [==>(Pattern 1,2, Copy 6)] [==>(Pattern 1,2, Copy 7)] [==>(Pattern 1,2, Copy 8)] [==>(Pattern 1,2, Copy 9)] [==>(Pattern 1,2, Copy 10)] [==>(Pattern 1,3, Copy 1)] [==>(Pattern 1,3, Copy 2)] [==>(Pattern 1,3, Copy 3)] [==>(Pattern 1,3, Copy 4)] [==>(Pattern 1,3, Copy 5)] [==>(Pattern 1,3, Copy 6)] [==>(Pattern 1,3, Copy 7)] [==>(Pattern 1,3, Copy 8)] [==>(Pattern 1,3, Copy 9)] [==>(Pattern 1,3, Copy 10)] [==>(Pattern 2,1, Copy 1)] [==>(Pattern 2,1, Copy 2)] [==>(Pattern 2,1, Copy 3)] [==>(Pattern 2,1, Copy 4)] [==>(Pattern 2,1, Copy 5)] [==>(Pattern 2,1, Copy 6)] [==>(Pattern 2,1, Copy 7)] [==>(Pattern 2,1, Copy 8)] [==>(Pattern 2,1, Copy 9)] [==>(Pattern 2,1, Copy 10)] [==>(Pattern 2,2, Copy 1)] [==>(Pattern 2,2, Copy 2)] [==>(Pattern 2,2, Copy 3)] [==>(Pattern 2,2, Copy 4)] [==>(Pattern 2,2, Copy 5)]	[1]
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		[==>(Pattern 2,2, Copy 6)] [==>(Pattern 2,2, Copy 7)] [==>(Pattern 2,2, Copy 8)] [==>(Pattern 2,2, Copy 9)] [==>(Pattern 2,2, Copy 10)] [==>(Pattern 2,3, Copy 1)] [==>(Pattern 2,3, Copy 2)] [==>(Pattern 2,3, Copy 3)] [==>(Pattern 2,3, Copy 4)] [==>(Pattern 2,3, Copy 5)] [==>(Pattern 2,3, Copy 6)] [==>(Pattern 2,3, Copy 7)] [==>(Pattern 2,3, Copy 8)] [==>(Pattern 2,3, Copy 9)] [==>(Pattern 2,3, Copy 10)]	
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