



15269 - Boron in Hyades F Dwarfs - Tracing Deep Into the Li-Be Gap

Cycle: 25, Proposal Category: GO

(UV Initiative)

(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	(3) HD-27848	COS/NUV	4	11-Dec-2018 10:00:47.0	yes
02	(8) HR-1436	COS/NUV	4	11-Dec-2018 10:00:49.0	yes
03	(6) HD-26784	COS/NUV	4	11-Dec-2018 10:00:51.0	yes
04	(7) HD-27808	COS/NUV	4	11-Dec-2018 10:00:53.0	yes
05	(1) HD-28406	COS/NUV	3	11-Dec-2018 10:00:55.0	yes
06	(2) HD-28608	COS/NUV	3	11-Dec-2018 10:00:57.0	yes
07	(4) HR-1201	STIS/CCD STIS/NUV-MAMA	2	11-Dec-2018 10:00:59.0	yes
08	(5) -48-TAU	COS/NUV	2	11-Dec-2018 10:01:00.0	yes

26 Total Orbits Used

ABSTRACT

Dramatic deficiencies of Li in the mid-F stars of the Hyades cluster were discovered by Boesgaard and Tripicco in 1986. Using high-resolution, high signal-to-noise spectra from the Keck 10-m telescope, Boesgaard and King discovered the corresponding deficiencies in Be in the same narrow temperature region in the Hyades. We propose an investigation into the B abundance in the Hyades F stars to ascertain if there is also a B gap. Boron can only be observed with HST; we plan to use the resonance line of B I at 2497 Angstroms. Each of these three elements is destroyed inside stars, but at different depths. Li, Be, and B survive to progressively greater depths, and their surface abundances act as a report on the depth and thoroughness of physical processes occurring in the star. The Li-Be gaps strongly contradict standard theory. Previous work favors rotational mixing that results from angular momentum loss as the dominant mechanism over diffusion, mass loss, and other types of rotational mixing. However, combinations of these mechanisms or other possibilities could still be at work. These observations will help determine the nature of the mixing mechanism(s) and the connection to stellar rotation. The abundance of *all three* light elements in a cluster of known age and metallicity can provide the information needed to discern internal stellar processes. The Li and Be deficiencies occur in field and cluster stars in this mass range (1.1 - 1.25 solar masses), but the mechanisms can best be studied in a cluster of stars of common origin and known characteristics. The Hyades cluster at 650 Myr is close enough to contain stars bright enough for this investigation.

OBSERVING DESCRIPTION

We propose to observe eight judiciously selected Hyades dwarfs to search, primarily, for evidence of a B gap like the previously discovered Li gap and the more recently discovered Be gap. All of our stars have met the stringent selection criteria of having small T_{eff} (<75 K) as determined from all ten colors constructed from UBVRI photometry (Johnson et al. 1962 and Mendoza 1967) and no evidence for binarity listed in Perryman et al. (1998). Stars are selected on the basis of their $A(\text{Li})$ (from C17) and presented in Table 1.

These data will be combined with the B data of the two severely Li- and Be- depleted stars in the Li-Be gap (vB 13 and vB 37), whose $A(\text{B})$ were argued to be robust (Scientific Justification). Conversely, the $A(\text{B})$ of vB 14, 62, and 65 were argued to be suspect. The Hyades archive also contains B data for vB 121, vB 77, and for a few giants that are irrelevant.

Figure 4 shows syntheses of the B I resonance line (2497 A at $R \sim 20,000$) for each star type we propose to observe. These syntheses explicitly contain noise at the levels discussed below, which helps to explicitly illustrate the need for the requested SNR. The $A(\text{B})$ shown vary by a factor of

Proposal 15269 (STScI Edit Number: 0, Created: Tuesday, December 11, 2018 at 10:01:01 AM Eastern Standard Time) - Overview

two from curve to curve. The A(B) are 1.98 (green), 2.28 (red), 2.58 (black) and 2.88 (blue) dex. The dispersion is ~ 0.033 A per pixel; we have binned all panel b) by three and all others by two. The rotation in these syntheses correspond to the stars we propose to observe. The SNR indicated below take into account that for the first orbit, approximately 16.5 minutes are taken by overhead for guide star acquisition, target acquisition, peak-up, and other overheads. We also plan to follow recommended procedures (e.g. multiple exposures and multiple center wavelengths) to help achieve the highest SNR values.

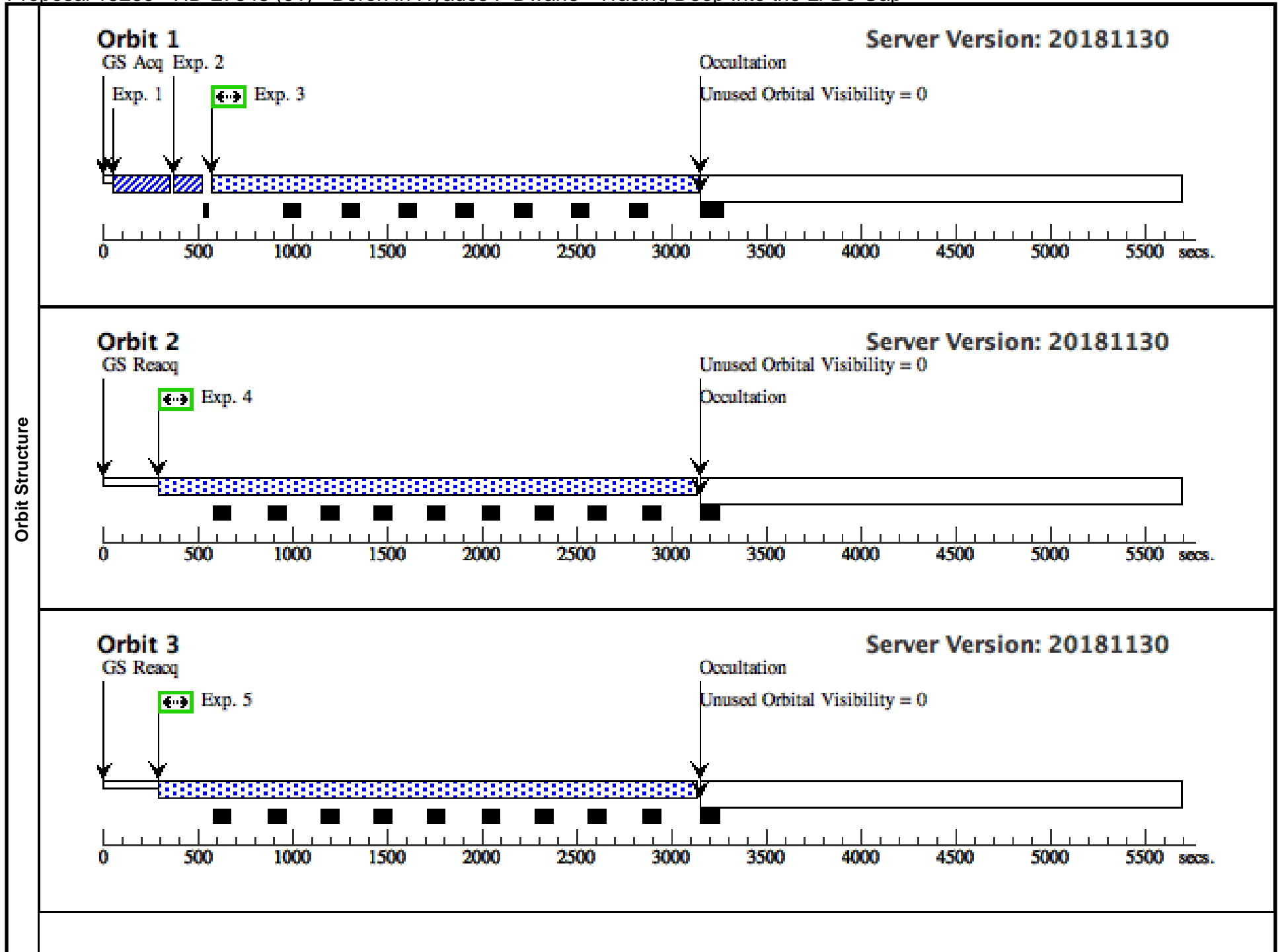
Four stars with high A(Li) will be used to determine the critically important undepleted A(B). Two stars (vB 6 and vB 20) are hotter than the Li gap and two stars (vB 19 and vB 48) are cooler than the Li gap and are on the Li plateau. All stars have $A(\text{Li}) > 2.96$. The two hotter stars are the most likely to be undepleted in Li or nearly so, with $A(\text{Li}) \sim 3.3-3.4$. Although these stars are rotating fairly rapidly, their A(B) can be determined reliably with just 2 orbits, each (panel a; $\text{SNR} \sim 160$ per pixel). No better stars are available hotter than the Li gap, as other stars rotate even more rapidly. The two cooler stars are fainter, and thus require 4 orbits each (panel e, $\text{SNR} \sim 97$ per pixel) in spite of their lower $v \sin i$, which helps deblend the B lines. These two stars have the highest A(Li) on the Li plateau (of the stars with low T_{eff}) and no evidence for binarity), but even so, their $A(\text{Li}) \sim 3.0$ seems slightly depleted relative to the two hot stars. It is also a possibility that we might detect a very slight difference in B (of order 0.1 dex) in the average of these two stars compared to the two hotter stars, which would provide invaluable constraints on rotational mixing.

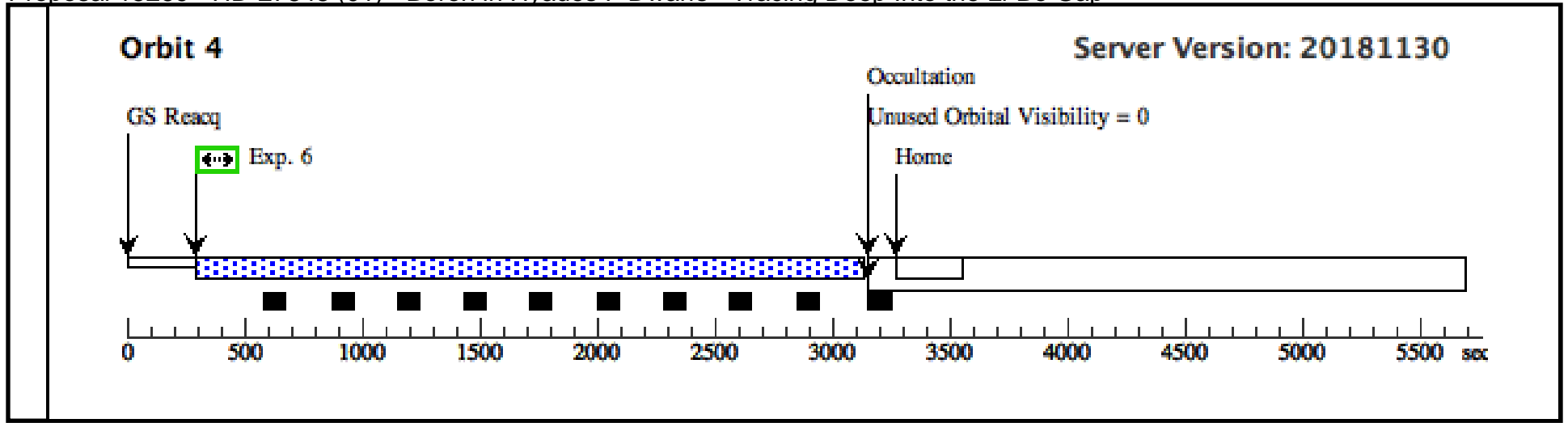
Just two stars do not, alone, provide a robust detection of a B gap. Thus, A(B) in more Li-Be gap stars (besides vB 13 and vB 37) are needed. We propose to observe vB 51 and vB 90, which have an upper limit and detection in A(Li), respectively. 4 orbits for each star will yield $\text{SNR} \sim 85$ per pixel, which will reasonably detect depleted A(B) (panels b, d). Robust detection of a B gap and its magnitude can help differentiate the relative contributions of diffusion, mass loss, and different types of rotational mixing. Finally, we propose to observe two stars, vB 78 and vB 86, with intermediate $A(\text{Li}) \sim 2.3$. These are important for delineating the B-Li correlation, if any. Such a correlation offers even more robust constraints for stellar models. 3 orbits for each star will yield $\text{SNR} \sim 70$ per pixel, which is sufficient for an accurate abundance (panel c).

Proposal 15269 - HD-27848 (01) - Boron in Hyades F Dwarfs - Tracing Deep Into the Li-Be Gap

Tue Dec 11 15:01:01 GMT 2018

Visit	Proposal 15269, HD-27848 (01), implementation Diagnostic Status: No Diagnostics Scientific Instruments: COS/NUV Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(3)	HD-27848 Alt Name1: VB51	RA: 04 24 22.2714 (66.0927975d) Dec: +17 04 44.23 (17.07895d) Equinox: J2000	Proper Motion RA: +97.01 mas/yr Proper Motion Dec: -27.54 mas/yr Parallax: 0.01988" Epoch of Position: 2000	V=6.947	Reference Frame: ICRS			
	<i>Comments:</i> Category=STAR Description=[F3-F9] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	HD-27848 P EAKXD (COS.sa.101 2561)	(3) HD-27848	COS/NUV, ACQ/PEAKXD, PSA	G225M 2306 A				2 Secs (2 Secs) [==>]	[1]
	2	HD-27848 P EAKD (COS.sa.101 2562)	(3) HD-27848	COS/NUV, ACQ/PEAKD, PSA	G225M 2306 A	NUM-POS=5; CENTER=FLUX-W T-FLR; STEP-SIZE=0.9			1.5 Secs (1.5 Secs) [==>]	[1]
	3	HD-27848 Orbit 1 (COS.sp.101 2845)	(3) HD-27848	COS/NUV, TIME-TAG, PSA	G225M 2390 A	4; FP-POS=1; FLASH=YES			2538 Secs (2478 Secs) [==>2478.0 Secs]	[1]
	4	HD-27848 Orbit 2 (COS.sp.101 2848)	(3) HD-27848	COS/NUV, TIME-TAG, PSA	G225M 2390 A	3; FP-POS=2; FLASH=YES			2649 Secs (2827 Secs) [==>2827.0 Secs]	[2]
	5	HD-27848 Orbit 3 (COS.sp.101 2848)	(3) HD-27848	COS/NUV, TIME-TAG, PSA	G225M 2390 A	3; FP-POS=3; FLASH=YES			2649 Secs (2827 Secs) [==>2827.0 Secs]	[3]
	6	HD-27848 Orbit 4 (COS.sp.101 2848)	(3) HD-27848	COS/NUV, TIME-TAG, PSA	G225M 2390 A	3; FP-POS=4; FLASH=YES			2649 Secs (2827 Secs) [==>2827.0 Secs]	[4]

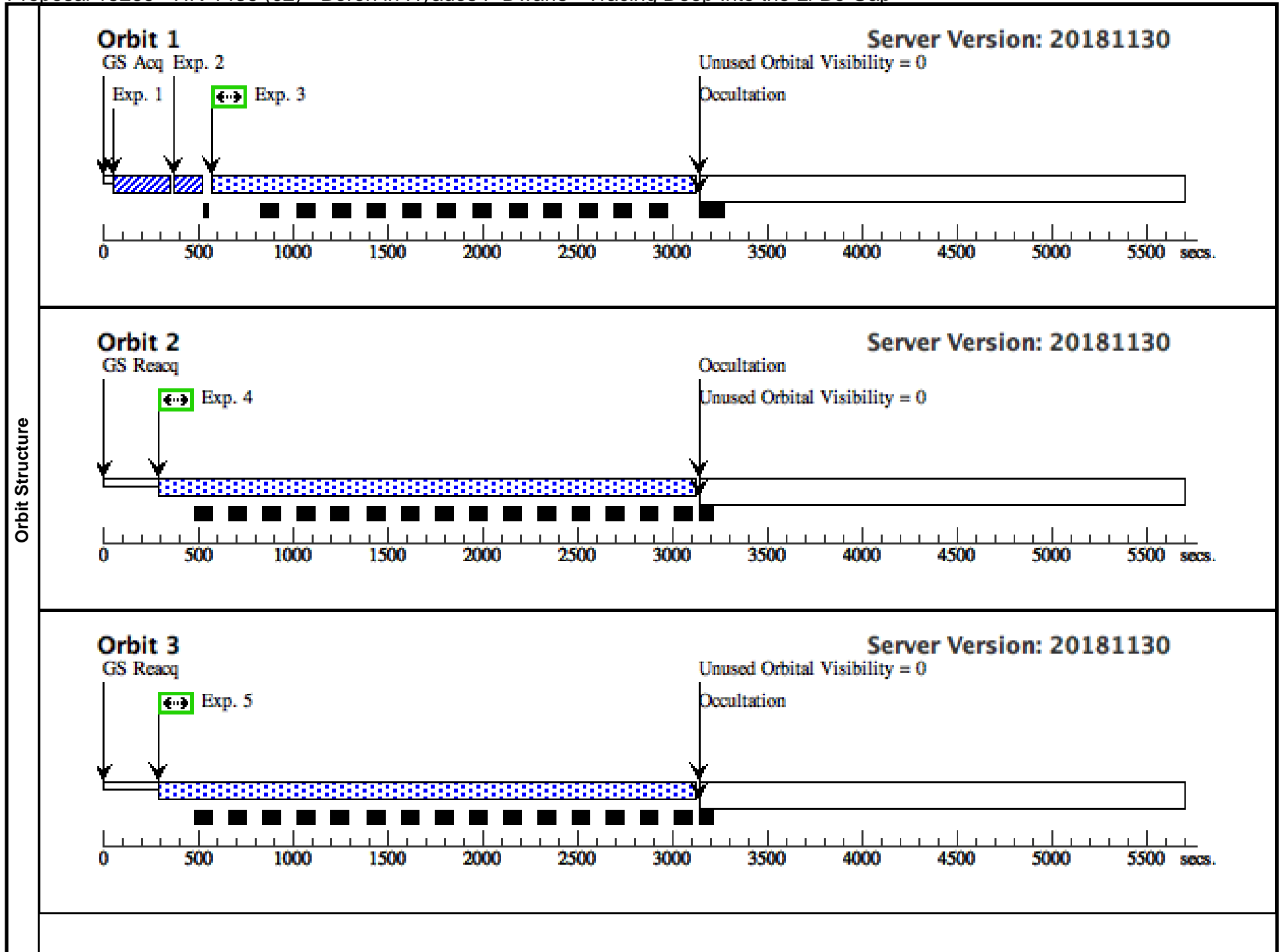


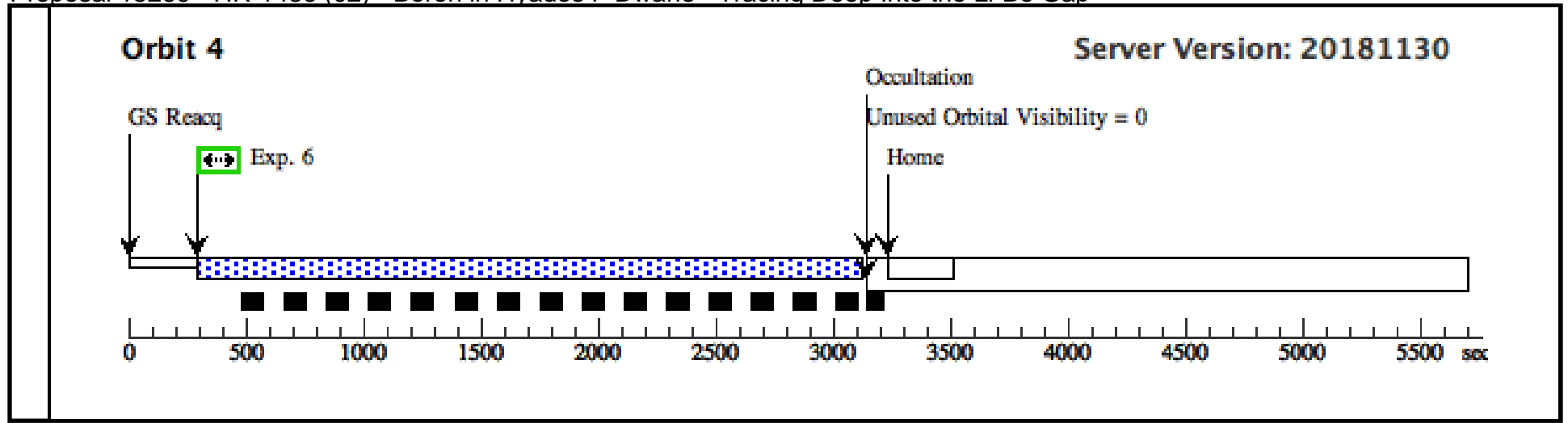


Proposal 15269 - HR-1436 (02) - Boron in Hyades F Dwarfs - Tracing Deep Into the Li-Be Gap

Tue Dec 11 15:01:01 GMT 2018

Visit	Proposal 15269, HR-1436 (02), implementation Diagnostic Status: No Diagnostics Scientific Instruments: COS/NUV Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(8)	HR-1436 Alt Name1: VB90	RA: 04 32 4.8086 (68.0200358d) Dec: +05 24 36.15 (5.41004d) Equinox: J2000	Proper Motion RA: +113.41 mas/yr Proper Motion Dec: +8.54 mas/yr Parallax: 0.02298" Epoch of Position: 2000	V=6.352	Reference Frame: ICRS				
	<i>Comments:</i> Category=STAR Description=[F3-F9] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	HR-1436 PE AKXD (COS.sa.101 2616)	(8) HR-1436	COS/NUV, ACQ/PEAKXD, PSA	G225M 2306 A				2 Secs (2 Secs) [==>]	[1]
	2	HR-1436 PE AKD (COS.sa.101 2615)	(8) HR-1436	COS/NUV, ACQ/PEAKD, PSA	G225M 2306 A	NUM-POS=5; CENTER=FLUX-W T-FLR; STEP-SIZE=0.9			1.5 Secs (1.5 Secs) [==>]	[1]
	3	HR-1436 Or bit 1 (COS.sp.101 2564)	(8) HR-1436	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=18 6; FP-POS=1; FLASH=YES			2527 Secs (2467 Secs) [==>2467.0 Secs]	[1]
	4	HR-1436 Or bit 2 (COS.sp.101 2839)	(8) HR-1436	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=18 1; FP-POS=2; FLASH=YES			2638 Secs (2816 Secs) [==>2816.0 Secs]	[2]
	5	HR-1436 Or bit 3 (COS.sp.101 2839)	(8) HR-1436	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=18 1; FP-POS=3; FLASH=YES			2638 Secs (2816 Secs) [==>2816.0 Secs]	[3]
	6	HR-1436 Or bit 4 (COS.sp.101 2839)	(8) HR-1436	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=18 1; FP-POS=4; FLASH=YES			2638 Secs (2816 Secs) [==>2816.0 Secs]	[4]

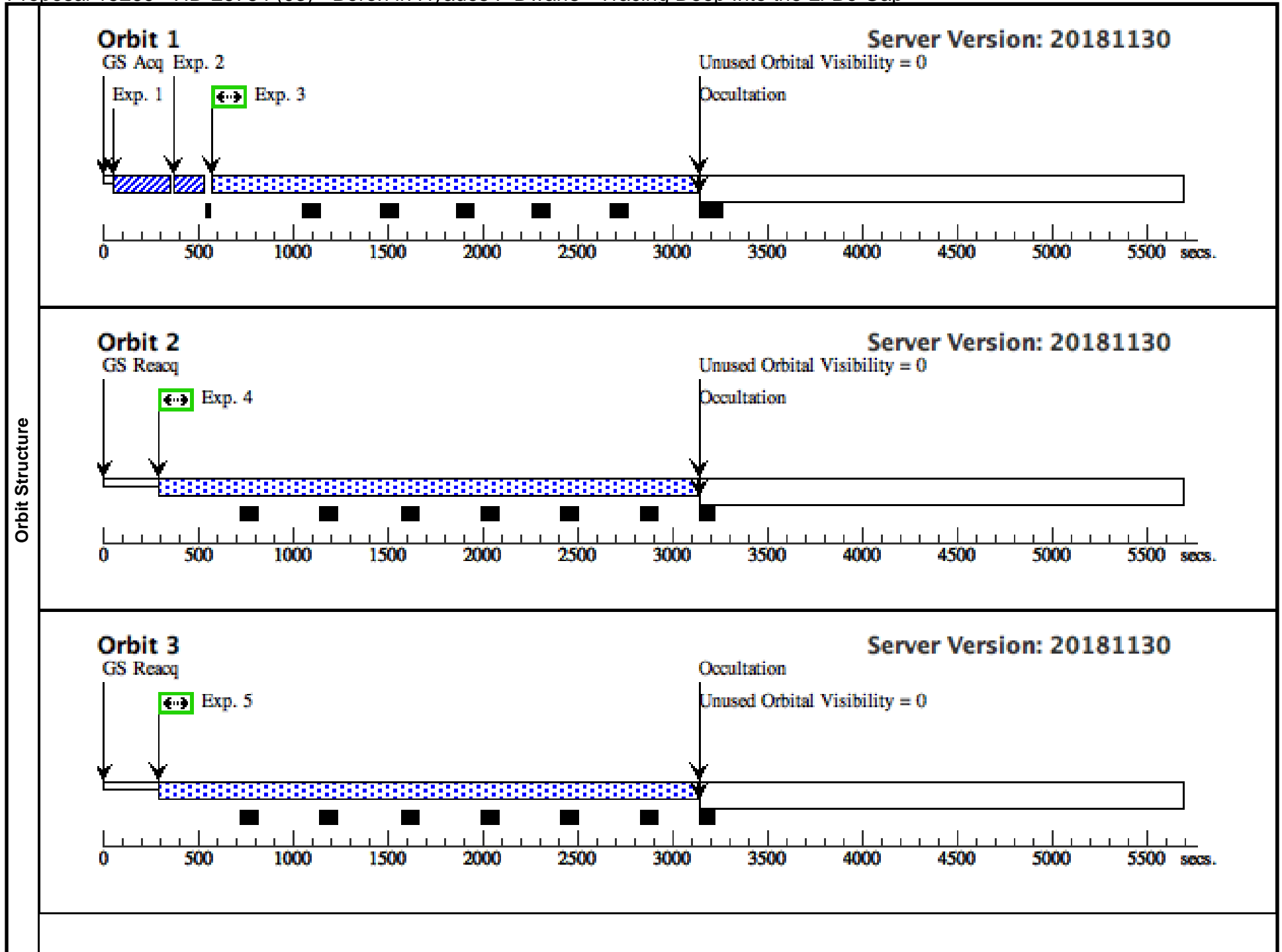


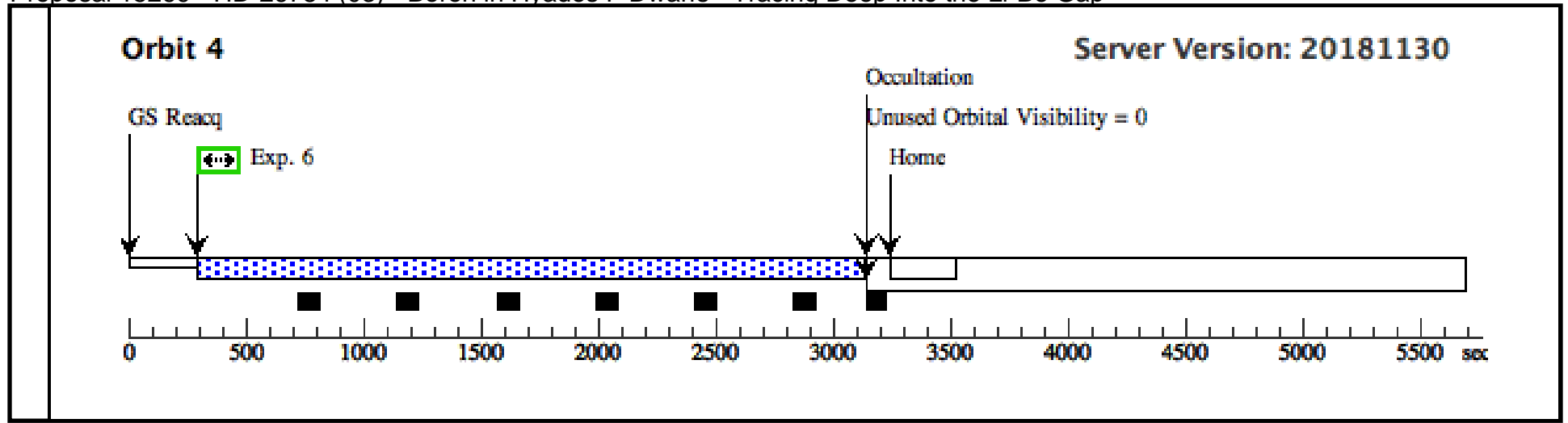


Proposal 15269 - HD-26784 (03) - Boron in Hyades F Dwarfs - Tracing Deep Into the Li-Be Gap

Tue Dec 11 15:01:01 GMT 2018

Visit	Proposal 15269, HD-26784 (03), implementation Diagnostic Status: No Diagnostics Scientific Instruments: COS/NUV Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(6)	HD-26784 Alt Name1: VB19	RA: 04 14 34.3409 (63.6430871d) Dec: +10 42 4.99 (10.70139d) Equinox: J2000	Proper Motion RA: +118.64 mas/yr Proper Motion Dec: -7.88 mas/yr Parallax: 0.0222" Epoch of Position: 2000	V=7.08	Reference Frame: ICRS			
	<i>Comments:</i> Category=STAR Description=[F3-F9] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	HD-26784 P EAKXD (COS.sa.101 2861)	(6) HD-26784	COS/NUV, ACQ/PEAKXD, PSA	G225M 2306 A				3 Secs (3 Secs) [==>]	[1]
	2	HD-26784 P EAKD (COS.sa.101 2857)	(6) HD-26784	COS/NUV, ACQ/PEAKD, PSA	G225M 2306 A	NUM-POS=5; CENTER=FLUX-W T-FLR; STEP-SIZE=0.9			2 Secs (2 Secs) [==>]	[1]
	3	HD-26784 Orbit 1 (COS.sp.101 2867)	(6) HD-26784	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=40 3; FP-POS=1; FLASH=YES			2528 Secs (2468 Secs) [==>2468.0 Secs]	[1]
	4	HD-26784 Orbit 2 (COS.sp.101 2864)	(6) HD-26784	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=42 2; FP-POS=2; FLASH=YES			2639 Secs (2820 Secs) [==>2820.0 Secs]	[2]
	5	HD-26784 Orbit 3 (COS.sp.101 2864)	(6) HD-26784	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=42 2; FP-POS=3; FLASH=YES			2639 Secs (2820 Secs) [==>2820.0 Secs]	[3]
	6	HD-26784 Orbit 4 (COS.sp.101 2864)	(6) HD-26784	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=42 2; FP-POS=4; FLASH=YES			2639 Secs (2820 Secs) [==>2820.0 Secs]	[4]

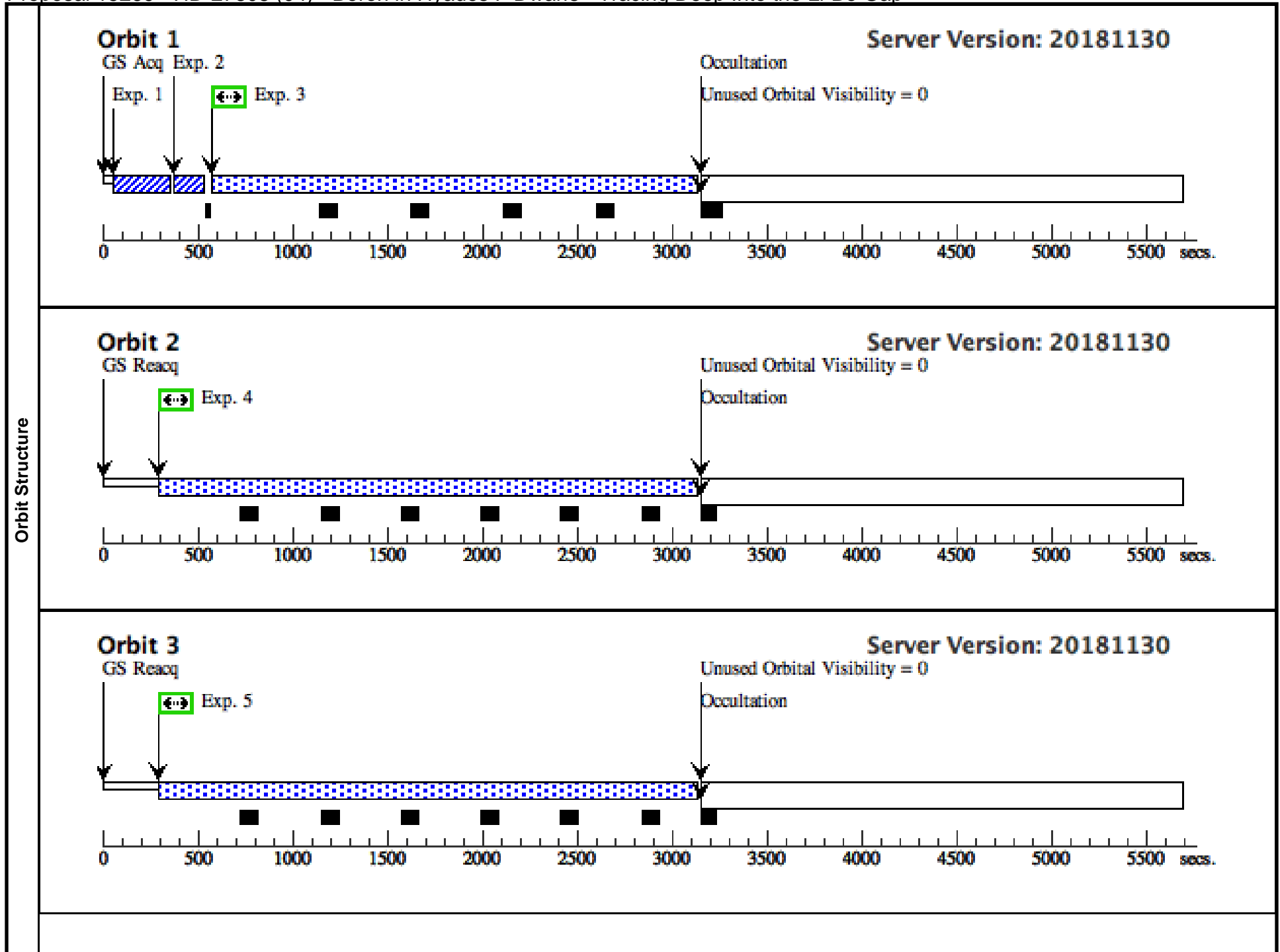


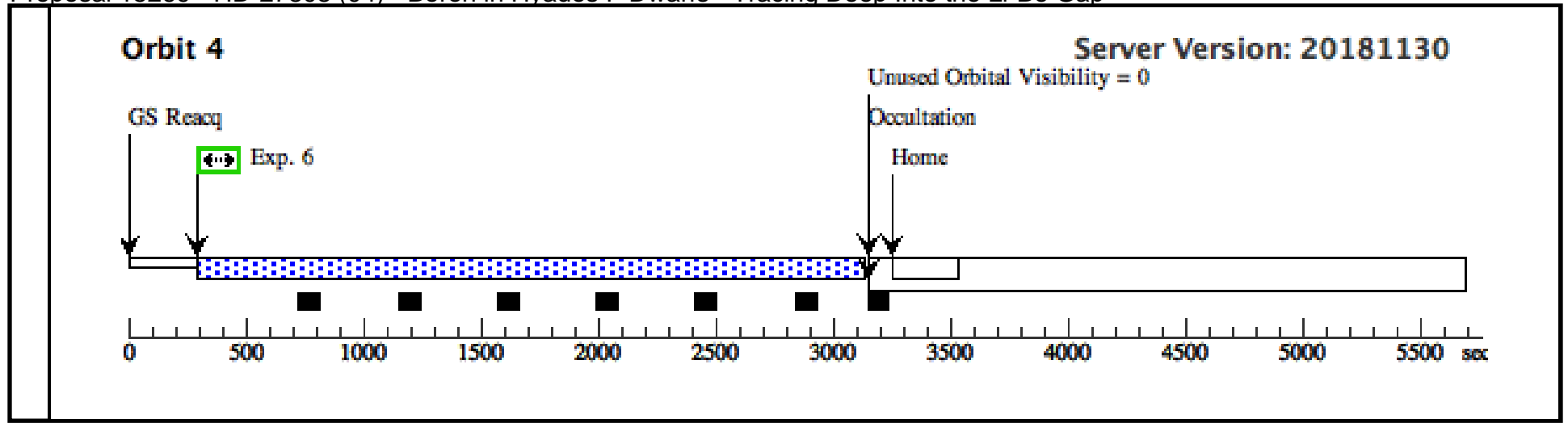


Proposal 15269 - HD-27808 (04) - Boron in Hyades F Dwarfs - Tracing Deep Into the Li-Be Gap

Tue Dec 11 15:01:01 GMT 2018

Visit	Proposal 15269, HD-27808 (04), implementation Diagnostic Status: No Diagnostics Scientific Instruments: COS/NUV Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(7)	HD-27808 Alt Name1: VB48	RA: 04 24 14.5743 (66.0607263d) Dec: +21 44 10.48 (21.73624d) Equinox: J2000	Proper Motion RA: +118.22 mas/yr Proper Motion Dec: -46.27 mas/yr Parallax: 0.02336" Epoch of Position: 2000	V=7.125	Reference Frame: ICRS				
	<i>Comments:</i> Category=STAR Description=[F3-F9] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	HD-27808 P EAKXD (COS.sa.101 2872)	(7) HD-27808	COS/NUV, ACQ/PEAKXD, PSA	G225M 2306 A				3 Secs (3 Secs) [==>]	[1]
	2	HD-27808 P EAKD (COS.sa.101 2873)	(7) HD-27808	COS/NUV, ACQ/PEAKD, PSA	G225M 2306 A	NUM-POS=5; CENTER=FLUX-W T-FLR; STEP-SIZE=0.9			2 Secs (2 Secs) [==>]	[1]
	3	HD-27808 Orbit 1 (COS.sp.101 2875)	(7) HD-27808	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=48 6; FP-POS=1; FLASH=YES			2536 Secs (2476 Secs) [==>2476.0 Secs]	[1]
	4	HD-27808 Orbit 2 (COS.sp.101 2878)	(7) HD-27808	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=42 3; FP-POS=2; FLASH=YES			2647 Secs (2828 Secs) [==>2828.0 Secs]	[2]
	5	HD-27808 Orbit 3 (COS.sp.101 2878)	(7) HD-27808	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=42 3; FP-POS=3; FLASH=YES			2647 Secs (2828 Secs) [==>2828.0 Secs]	[3]
	6	HD-27808 Orbit 4 (COS.sp.101 2878)	(7) HD-27808	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=42 3; FP-POS=4; FLASH=YES			2647 Secs (2828 Secs) [==>2828.0 Secs]	[4]

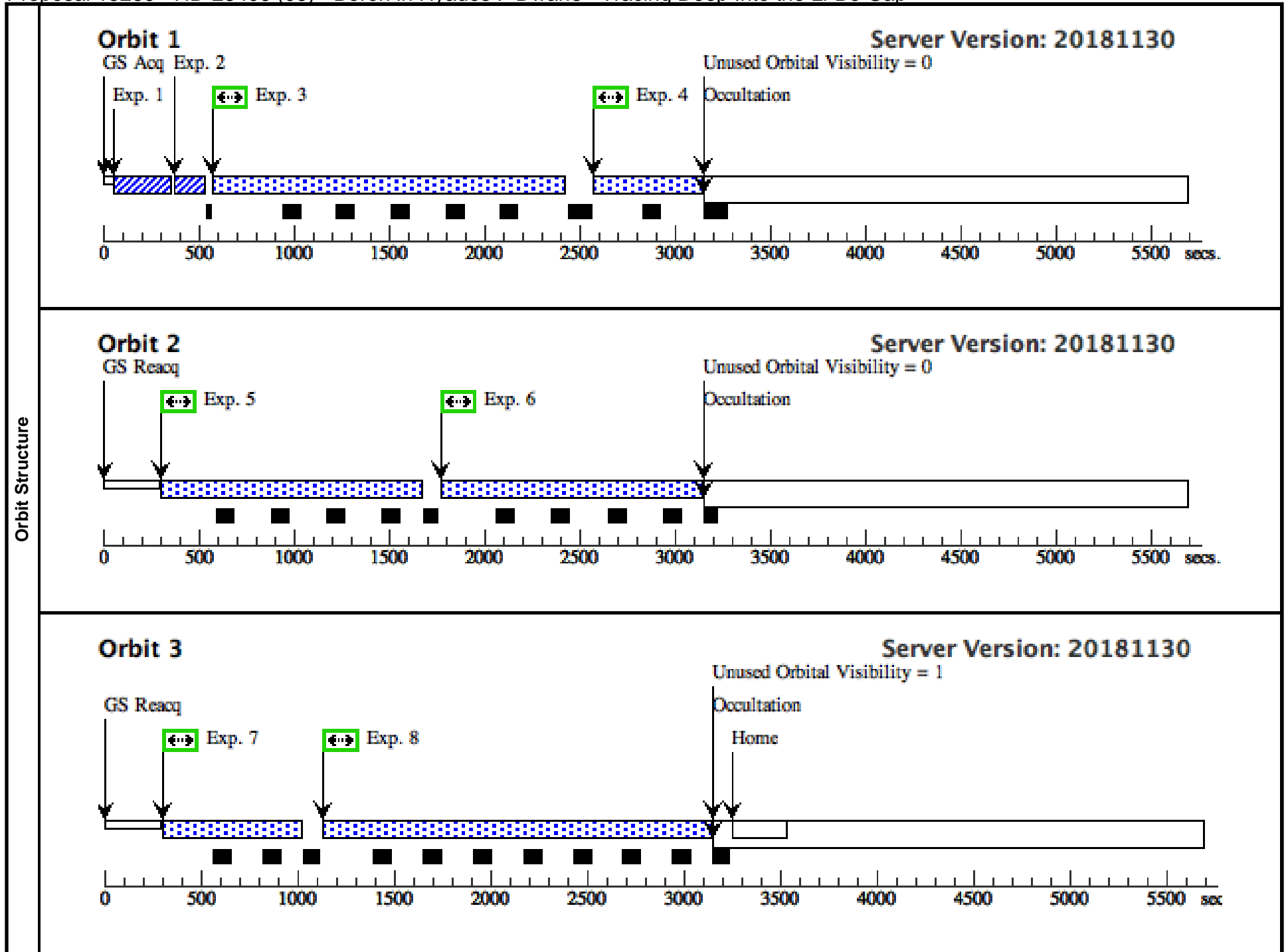




Proposal 15269 - HD-28406 (05) - Boron in Hyades F Dwarfs - Tracing Deep Into the Li-Be Gap

Tue Dec 11 15:01:02 GMT 2018

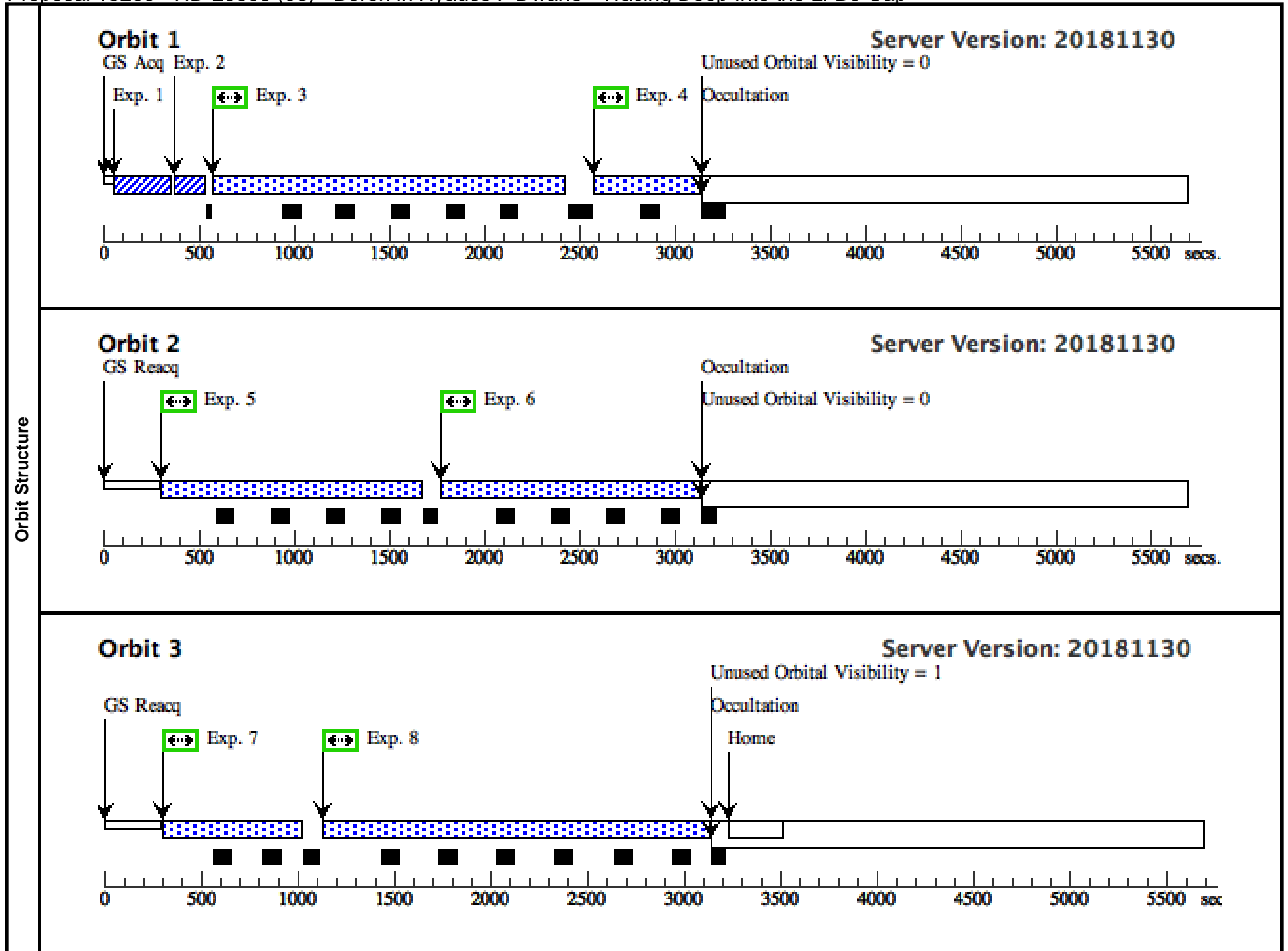
Visit	Proposal 15269, HD-28406 (05), implementation Diagnostic Status: No Diagnostics Scientific Instruments: COS/NUV Special Requirements: (none) <i>Comments: Based on adjustments in our ETC calculations, we have changed the requested orbits for this target from 4 to 3. Total orbit request has not changed.</i>																					
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>HD-28406 Alt Name1: VB78</td> <td>RA: 04 29 30.3507 (67.3764612d) Dec: +17 51 47.39 (17.86316d) Equinox: J2000</td> <td>Proper Motion RA: +106.06 mas/yr Proper Motion Dec: -32.83 mas/yr Parallax: 0.02149" Epoch of Position: 2000</td> <td>V=6.89</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments:</i> Category=STAR Description=[F3-F9] Extended=NO</p>										#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	HD-28406 Alt Name1: VB78	RA: 04 29 30.3507 (67.3764612d) Dec: +17 51 47.39 (17.86316d) Equinox: J2000	Proper Motion RA: +106.06 mas/yr Proper Motion Dec: -32.83 mas/yr Parallax: 0.02149" Epoch of Position: 2000	V=6.89
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																	
(1)	HD-28406 Alt Name1: VB78	RA: 04 29 30.3507 (67.3764612d) Dec: +17 51 47.39 (17.86316d) Equinox: J2000	Proper Motion RA: +106.06 mas/yr Proper Motion Dec: -32.83 mas/yr Parallax: 0.02149" Epoch of Position: 2000	V=6.89	Reference Frame: ICRS																	
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit												
	1	HD-28406 P EAKXD (COS.sa.101 3183)	(1) HD-28406	COS/NUV, ACQ/PEAKXD, PSA	G225M 2306 A				3 Secs (3 Secs) [==>]	[1]												
	2	HD-28406 P EAKD (COS.sa.101 3177)	(1) HD-28406	COS/NUV, ACQ/PEAKD, PSA	G225M 2306 A	NUM-POS=5; CENTER=FLUX-W T-FLR; STEP-SIZE=0.9			2 Secs (2 Secs) [==>]	[1]												
	3	HD-28406 Orbit 1 (COS.sp.101 3475)	(1) HD-28406	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=28 6; FP-POS=1; FLASH=YES		1823 Secs (1760 Secs) [==>1760.0 Secs]	[1]												
	4	HD-28406 Orbit 1 (COS.sp.101 3474)	(1) HD-28406	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=25 3; FP-POS=2; FLASH=YES		615 Secs (552 Secs) [==>552.0 Secs]	[1]												
	5	HD-28406 Orbit 2 (COS.sp.101 3495)	(1) HD-28406	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=29 1; FP-POS=2; FLASH=YES		1274 Secs (1355 Secs) [==>1355.0 Secs]	[2]												
	6	HD-28406 Orbit 2 (COS.sp.101 3496)	(1) HD-28406	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=29 2; FP-POS=3; FLASH=YES		1275 Secs (1356 Secs) [==>1356.0 Secs]	[2]												
	7	HD-28406 Orbit 3 (COS.sp.101 3521)	(1) HD-28406	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=26 0; FP-POS=3; FLASH=YES		630 Secs (706 Secs) [==>706.0 Secs]	[3]												
	8	HD-28406 Orbit 3 (COS.sp.101 3520)	(1) HD-28406	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=25 9; FP-POS=4; FLASH=YES		1919 Secs (1995 Secs) [==>1995.0 Secs]	[3]												



Proposal 15269 - HD-28608 (06) - Boron in Hyades F Dwarfs - Tracing Deep Into the Li-Be Gap

Tue Dec 11 15:01:02 GMT 2018

Visit	Proposal 15269, HD-28608 (06), implementation Diagnostic Status: No Diagnostics Scientific Instruments: COS/NUV Special Requirements: (none) <i>Comments: Based on adjustments in our ETC calculations, we have changed the requested orbits for this target from 4 to 3. Total orbit request has not changed.</i>																					
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>HD-28608 Alt Name1: VB86</td> <td>RA: 04 30 57.1716 (67.7382150d) Dec: +10 45 6.37 (10.75177d) Equinox: J2000</td> <td>Proper Motion RA: +103.13 mas/yr Proper Motion Dec: -9.57 mas/yr Parallax: 0.0212" Epoch of Position: 2000</td> <td>V=7.015</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments:</i> Category=STAR Description=[F3-F9] Extended=NO</p>										#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(2)	HD-28608 Alt Name1: VB86	RA: 04 30 57.1716 (67.7382150d) Dec: +10 45 6.37 (10.75177d) Equinox: J2000	Proper Motion RA: +103.13 mas/yr Proper Motion Dec: -9.57 mas/yr Parallax: 0.0212" Epoch of Position: 2000	V=7.015
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(2)	HD-28608 Alt Name1: VB86	RA: 04 30 57.1716 (67.7382150d) Dec: +10 45 6.37 (10.75177d) Equinox: J2000	Proper Motion RA: +103.13 mas/yr Proper Motion Dec: -9.57 mas/yr Parallax: 0.0212" Epoch of Position: 2000	V=7.015	Reference Frame: ICRS																	
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit												
	1	HD-28608 P EAKXD (COS.sa.101 3558)	(2) HD-28608	COS/NUV, ACQ/PEAKXD, PSA	G225M 2306 A				3 Secs (3 Secs) [==>]	[1]												
	2	HD-28608 P EAKD (COS.sa.101 3555)	(2) HD-28608	COS/NUV, ACQ/PEAKD, PSA	G225M 2306 A	NUM-POS=5; CENTER=FLUX-W T-FLR; STEP-SIZE=0.9			2 Secs (2 Secs) [==>]	[1]												
	3	HD-28608 Orbit 1 (COS.sp.101 3560)	(2) HD-28608	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=28 6; FP-POS=1; FLASH=YES		1823 Secs (1760 Secs) [==>1760.0 Secs]	[1]												
	4	HD-28608 Orbit 1 (COS.sp.101 3646)	(2) HD-28608	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=24 9; FP-POS=2; FLASH=YES		608 Secs (545 Secs) [==>545.0 Secs]	[1]												
	5	HD-28608 Orbit 2 (COS.sp.101 3654)	(2) HD-28608	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=29 1; FP-POS=2; FLASH=YES		1274 Secs (1355 Secs) [==>1355.0 Secs]	[2]												
	6	HD-28608 Orbit 2 (COS.sp.101 3662)	(2) HD-28608	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=29 0; FP-POS=3; FLASH=YES		1268 Secs (1349 Secs) [==>1349.0 Secs]	[2]												
	7	HD-28608 Orbit 3 (COS.sp.101 3666)	(2) HD-28608	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=26 0; FP-POS=3; FLASH=YES		630 Secs (706 Secs) [==>706.0 Secs]	[3]												
	8	HD-28608 Orbit 3 (COS.sp.101 3669)	(2) HD-28608	COS/NUV, TIME-TAG, PSA	G225M 2390 A		BUFFER-TIME=30 1; FP-POS=4; FLASH=YES		1912 Secs (1988 Secs) [==>1988.0 Secs]	[3]												



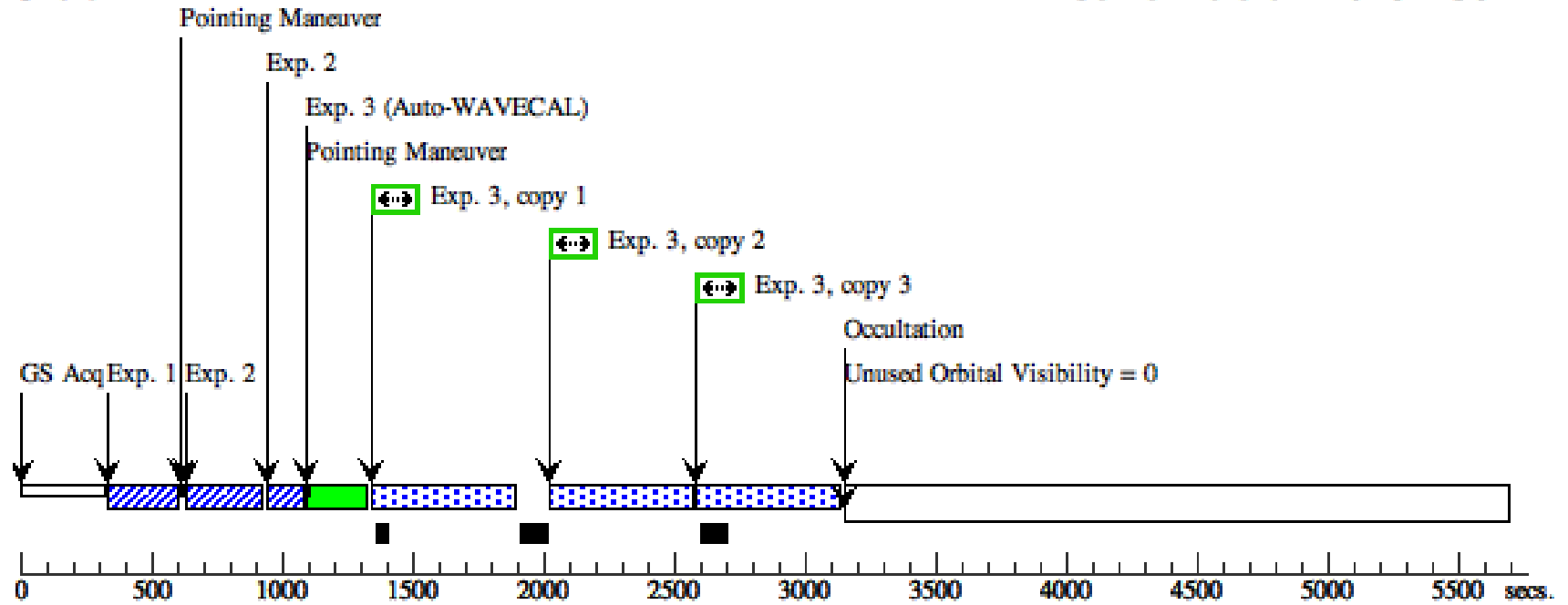
Proposal 15269 - HR-1201 (07) - Boron in Hyades F Dwarfs - Tracing Deep Into the Li-Be Gap

Tue Dec 11 15:01:02 GMT 2018

Visit	Proposal 15269, HR-1201 (07), implementation Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: (none) <i>Comments: Very bright, so we have set it to ACCUM mode. Additionally, as granted, we have adjusted the requested exposure time on this target from 1 orbit to 2 orbits. Based on coordinated adjustments in other targets, the total orbit request is unchanged.</i>									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous		
(4)		HR-1201 Alt Name1: VB6	RA: 03 53 10.0462 (58.2918592d) Dec: +17 19 37.50 (17.32708d) Equinox: J2000	Proper Motion RA: +143.76 mas/yr Proper Motion Dec: -29.75 mas/yr Parallax: 0.0242" Epoch of Position: 2000	V=5.946	Reference Frame: ICRS				
	<i>Comments: Category=STAR Description=[F0-F2] Extended=NO</i>									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	HR-1201 A CQ (STIS.ta.1303619)	(4) HR-1201	STIS/CCD, ACQ, F28X500III	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]
	2	HR-1201 A CQ/PEAK (STIS.sp.1303625)	(4) HR-1201	STIS/CCD, ACQ/PEAK, 0.2X0.09	G430M 4451 A				1 Secs (1 Secs) [==>]	[1]
	3	HR-1201 Or bit 1 (STIS.sp.1303649)	(4) HR-1201	STIS/NUV-MAMA, ACCUM, 52X0.1	G230M 2499 A				541 Secs X 3 (1623 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]	[1]
	<i>Comments: This star is our brightest target.</i>									
	4	HR-1201 Or bit 2 (STIS.sp.1298760)	(4) HR-1201	STIS/NUV-MAMA, ACCUM, 52X0.1	G230M 2499 A				502 Secs X 5 (2510 Secs) [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[2]
<i>Comments: This star is our brightest target.</i>										

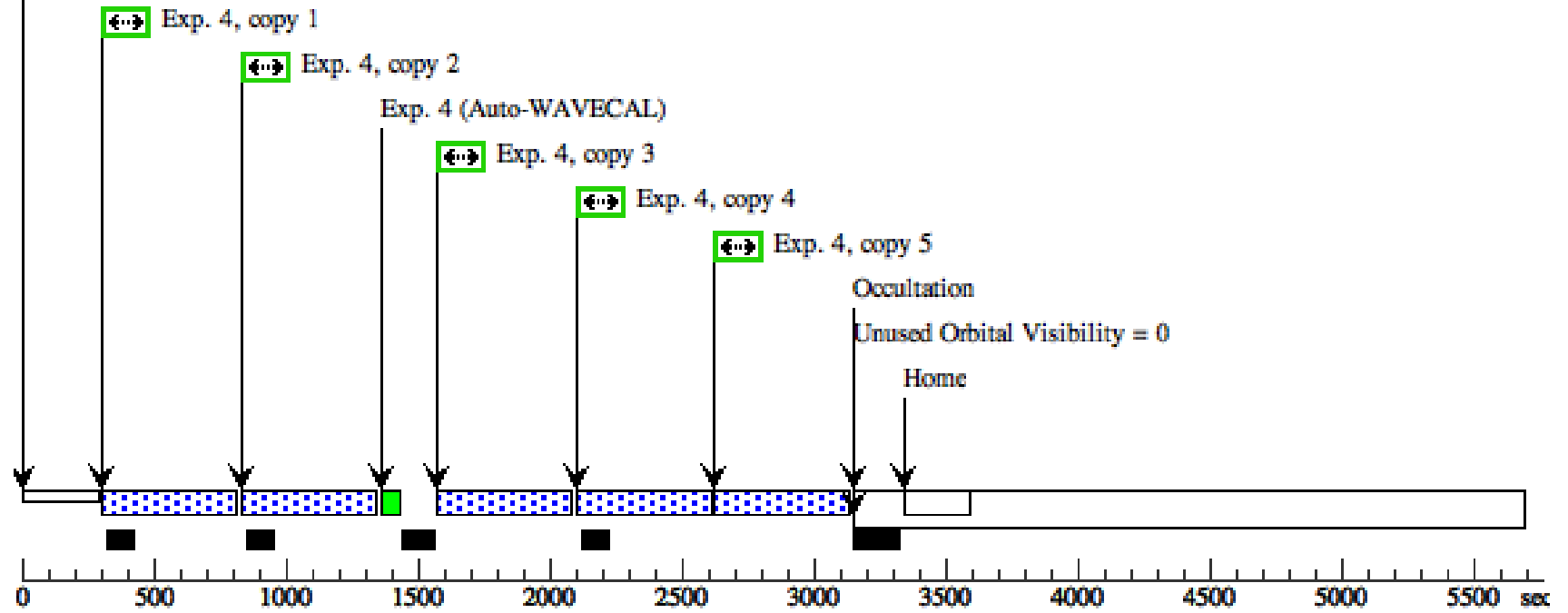
Orbit 1

Orbit Structure



Orbit 2

GS Reacq



Proposal 15269 - -48-TAU (08) - Boron in Hyades F Dwarfs - Tracing Deep Into the Li-Be Gap

Tue Dec 11 15:01:02 GMT 2018

Visit	Proposal 15269, -48-TAU (08), implementation Diagnostic Status: No Diagnostics Scientific Instruments: COS/NUV Special Requirements: (none) <i>Comments: As granted, we have adjusted the requested exposure time on this target from 1 orbit to 2 orbits. Based on coordinated adjustments in other targets, the total orbit request is unchanged.</i>																					
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(5)</td> <td>-48-TAU Alt Name1: VB20</td> <td>RA: 04 15 46.2845 (63.9428521d) Dec: +15 24 2.50 (15.40069d) Equinox: J2000</td> <td>Proper Motion RA: +115.76 mas/yr Proper Motion Dec: -21.72 mas/yr Parallax: 0.02202" Epoch of Position: 2000</td> <td>V=6.3</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments:</i> Category=STAR Description=[F3-F9] Extended=NO</p>										#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(5)	-48-TAU Alt Name1: VB20	RA: 04 15 46.2845 (63.9428521d) Dec: +15 24 2.50 (15.40069d) Equinox: J2000	Proper Motion RA: +115.76 mas/yr Proper Motion Dec: -21.72 mas/yr Parallax: 0.02202" Epoch of Position: 2000	V=6.3
#		Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																
(5)	-48-TAU Alt Name1: VB20	RA: 04 15 46.2845 (63.9428521d) Dec: +15 24 2.50 (15.40069d) Equinox: J2000	Proper Motion RA: +115.76 mas/yr Proper Motion Dec: -21.72 mas/yr Parallax: 0.02202" Epoch of Position: 2000	V=6.3	Reference Frame: ICRS																	
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit												
	1	-48-TAU PE AKXD (COS.sa.101 3341)	(5) -48-TAU	COS/NUV, ACQ/PEAKXD, PSA	G225M 2306 A				1 Secs (1 Secs) [==>]	[1]												
	2	-48-TAU PE AKD (COS.sa.101 3342)	(5) -48-TAU	COS/NUV, ACQ/PEAKD, PSA	G225M 2306 A	NUM-POS=5; CENTER=FLUX-W T-FLR; STEP-SIZE=0.9			1 Secs (1 Secs) [==>]	[1]												
	3	-48-TAU Or bit 1 (COS.sp.129 9564)	(5) -48-TAU	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=19 5; FP-POS=1; FLASH=YES			1191 Secs (1164 Secs) [==>1164.0 Secs]	[1]												
	4	-48-TAU Or bit 1 (COS.sp.129 9564)	(5) -48-TAU	COS/NUV, TIME-TAG, PSA	G225M 2390 A	BUFFER-TIME=19 5; FP-POS=2; FLASH=YES			1191 Secs (1164 Secs) [==>1164.0 Secs]	[1]												
	5	-48-TAU Or bit 2 (COS.sp.129 9568)	(5) -48-TAU	COS/NUV, TIME-TAG, PSA	G225M 2390 A	FLASH=YES; BUFFER-TIME=19 5; FP-POS=3			1392 Secs (1342 Secs) [==>1342.0 Secs]	[2]												
	6	-48-TAU Or bit 2 (COS.sp.129 9568)	(5) -48-TAU	COS/NUV, TIME-TAG, PSA	G225M 2390 A	FLASH=YES; BUFFER-TIME=19 5; FP-POS=4			1392 Secs (1342 Secs) [==>1342.0 Secs]	[2]												

