



12314 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

Cycle: 18, Proposal Category: GO
(Availability Mode: AVAILABLE)

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	(1) SIMP0136	WFC3/IR	6	28-Sep-2011 21:02:29.0	yes
02	(9) 2M2228	WFC3/IR	6	28-Sep-2011 21:03:13.0	yes
03	(2) 2MASS0915	WFC3/IR	6	28-Sep-2011 21:03:56.0	yes
07	(8) 2MASSJ2139	WFC3/IR	6	28-Sep-2011 21:04:36.0	yes
51	(1) SIMP0136	WFC3/IR	6	28-Sep-2011 21:06:07.0	yes

30 Total Orbits Used

ABSTRACT

Ultracool L and T dwarf bridge the gap between cool stars and giant planets and therefore provide an important laboratory for both probing stellar atmospheres and devising future observations of cool, large-separation giant exoplanets. A key challenge of ultracool atmospheres is the understanding of the transition from dusty L-type atmospheres to clearer T-type

atmospheres, dominated by methane and water absorption bands. It is clear that understanding cloud formation and evolution is crucial to understanding the L/T transition, and hence giant exoplanet atmospheres. Numerous diverse models have been proposed to explain the atmospheric evolution, from multi-condensate clouds to growing holes and sudden collapse of the cloud layers with decreasing temperature. As yet, those models remain weakly constrained by observations.

We propose to use the unparalleled sensitivity and stability of WFC3 on HST to tackle this question. We will obtain time series of G141 grism spectra of six L/T dwarfs, including two resolved binaries and two unresolved L/T dwarfs. We will measure the level of rotational variability as a function of wavelength to derive the one-dimensional spectral maps of their cloud covers. Those maps will address the following questions: How heterogeneous is the cloud cover as a function of spectral type? and, What are the spectral properties and diversity of clouds across the photosphere of the targets? The proposed observations will provide a unique, statistically constraining data set on cloud distribution, properties, and evolution as a function of spectral type. These new constraints will allow direct comparison to the models and will drive the development of new models with realistic treatment of the cloud layers. With typical rotation periods of 3 hours, we can cover two rotation periods within 6 HST orbits. We propose to obtain simultaneous IRAC [4.5] observations of the two unresolved T dwarfs. The Spitzer data will enhance our ability to identify absorbers in individual clouds within their complex atmospheres and will probe non-equilibrium CO chemistry and vertical mixing. Combined, these observations will provide the first spatially and spectrally resolved maps of ultracool dwarf photospheres across the L/T transition.

OBSERVING DESCRIPTION

This proposal will obtain time-resolved WFC3 grism spectra of brown dwarfs.

Two of the targets are well-separated binary sources; we plan to obtain spectra of both components, which places constraints on the orientation.

ADDITIONAL COMMENTS

It is critical that the observations of individual targets are scheduled back-to-back.

In addition, two of the targets will also be observed with Spitzer and attempts should be made to coordinate the observations. The coordinated observations (or observations as close in time as possible) will make the data set much more valuable.

Proposal 12314 - Visit 01 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

Visit	Proposal 12314, Visit 01, scheduled					Thu Sep 29 01:06:20 GMT 2011
	Diagnostic Status: No Diagnostics					
	Scientific Instruments: WFC3/IR					
	Special Requirements: (none)					
	Comments: SIMP0136: Direct FN132 Image + G141 Spectra with Coordinated Spitzer/IRAC Observations					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	SIMP0136	RA: 01 36 57.1150 (24.2379792d)	Proper Motion RA: 1241 mas/yr	V=(?)	Reference Frame: ICRS
			Dec: +09 33 47.32 (9.56314d)	Proper Motion Dec: -4 mas/yr	J=13.45	
			Equinox: J2000	Epoch of Position: 2006.470		

Proposal 12314 - Visit 01 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	Direct Image F132N	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY		[==>]	[1]
	Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.									
	2	SIMP0136 (Long exp - G141)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY		[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)]	[1]
	Comments: Must be coordinated with Spitzer/IRAC observations									
Exposures	3	SIMP0136 (Short filler)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=14; SAMP-SEQ=SPARS10	POS TARG -15.172, +1.158		[==>]	[1]
	Comments: Must be coordinated with Spitzer/IRAC observations									
	4	Direct Image F132N	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY		[==>]	[2]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.										

Proposal 12314 - Visit 01 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

5	SIMP0136 (Long exp - G141)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)] [==>(Copy 17)]	[2]
Comments: Must be coordinated with Spitzer/IRAC observations								
6	SIMP0136 (Short filler)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=5; SAMP-SEQ=SPAR S10	POS TARG -15.172, +1.158	[==>]	[2]
Comments: Must be coordinated with Spitzer/IRAC observations								
7	Direct Image F132N	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[3]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.								
8	SIMP0136 (Long exp - G141)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)] [==>(Copy 17)]	[3]
Comments: Must be coordinated with Spitzer/IRAC observations								

Proposal 12314 - Visit 01 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

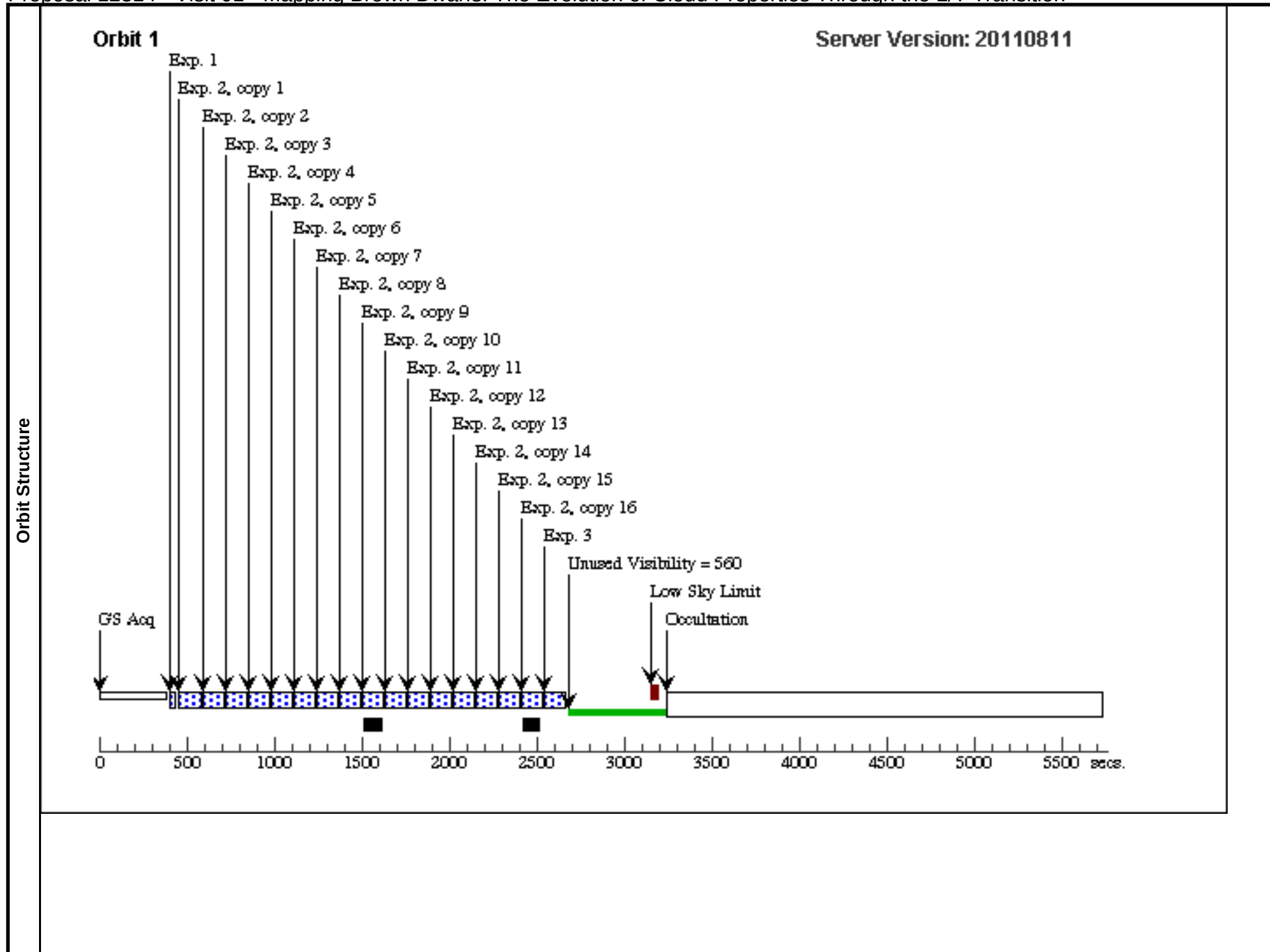
9	SIMP0136 (Short filler)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=5; SAMP-SEQ=SPAR S10	POS TARG -15.172, +1.158	[==>]	[3]
Comments: Must be coordinated with Spitzer/IRAC observations								
10	Direct Image F132N	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[4]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.								
11	SIMP0136 (Long exp - G141)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)] [==>(Copy 17)]	[4]
Comments: Must be coordinated with Spitzer/IRAC observations								
12	SIMP0136 (Short filler)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=5; SAMP-SEQ=SPAR S10	POS TARG -15.172, +1.158	[==>]	[4]
Comments: Must be coordinated with Spitzer/IRAC observations								
13	Direct Image F132N	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[5]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.								

Proposal 12314 - Visit 01 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

14	SIMP0136 (Long exp - G141)	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)]	[5]
Comments: Must be coordinated with Spitzer/IRAC observations							
15	SIMP0136 (Short filler)	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=7; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158	[==>]	[5]
Comments: Must be coordinated with Spitzer/IRAC observations							
16	Direct Image F132N	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[6]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.							
17	SIMP0136 (Long exp - G141)	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)]	[6]
Comments: Must be coordinated with Spitzer/IRAC observations							

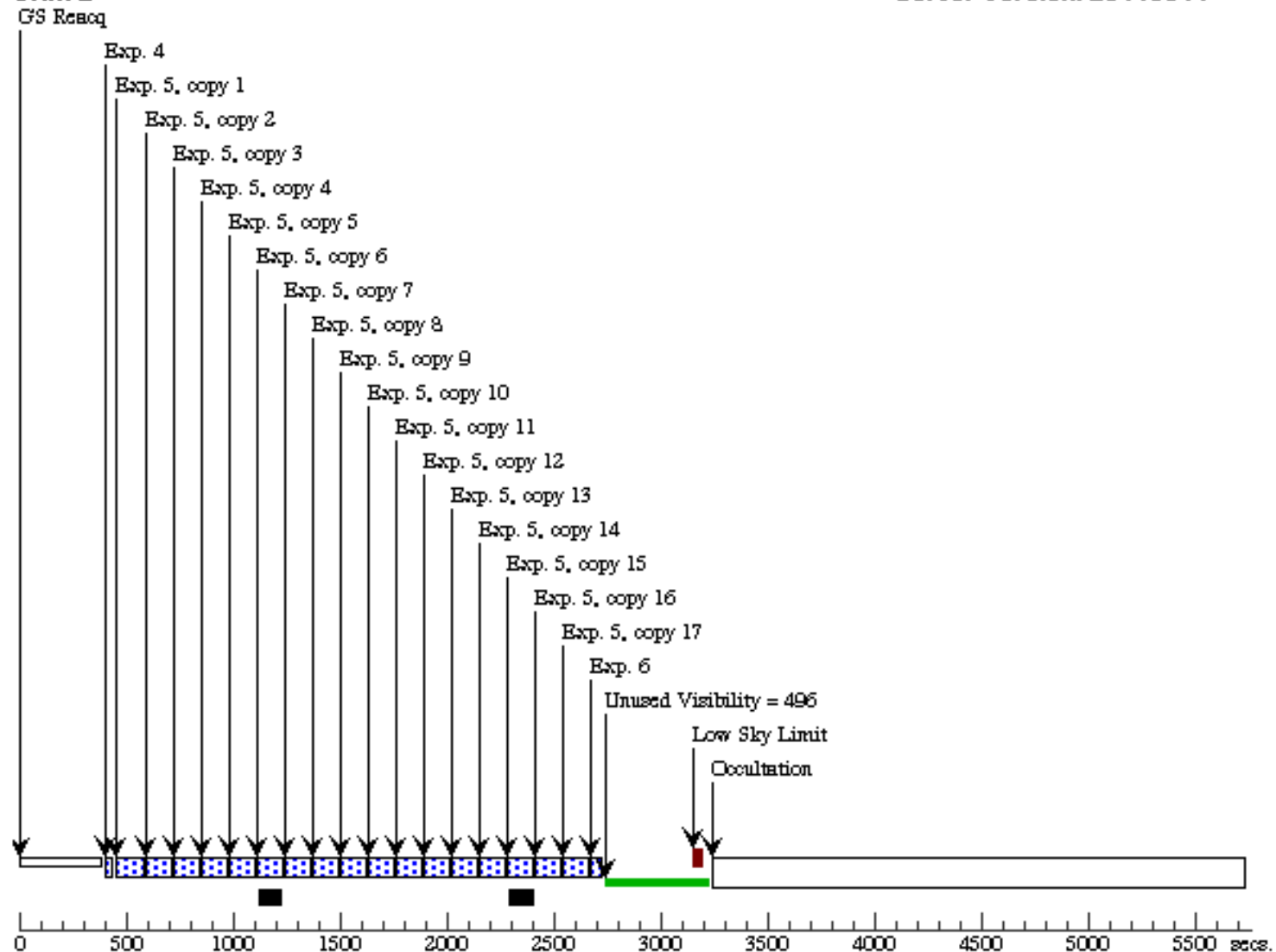
Proposal 12314 - Visit 01 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

18	SIMP0136 ((1) SIMP0136 Short filler)	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=15; SAMP-SEQ=SPAR S10	POS TARG -15.172, +1.158	[==>]	[6]
Comments: Must be coordinated with Spitzer/IRAC observations							



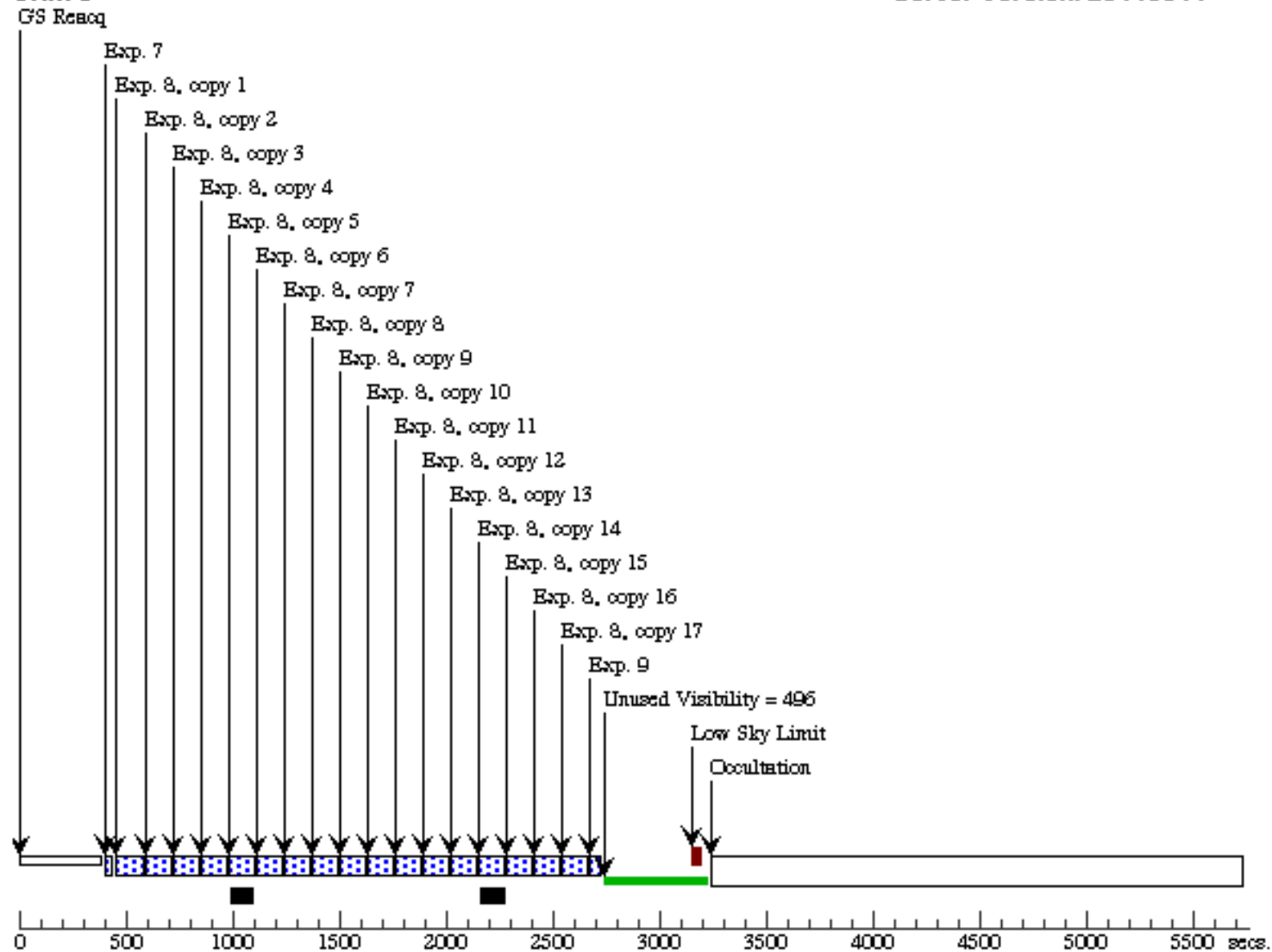
Orbit 2

Server Version: 20110811



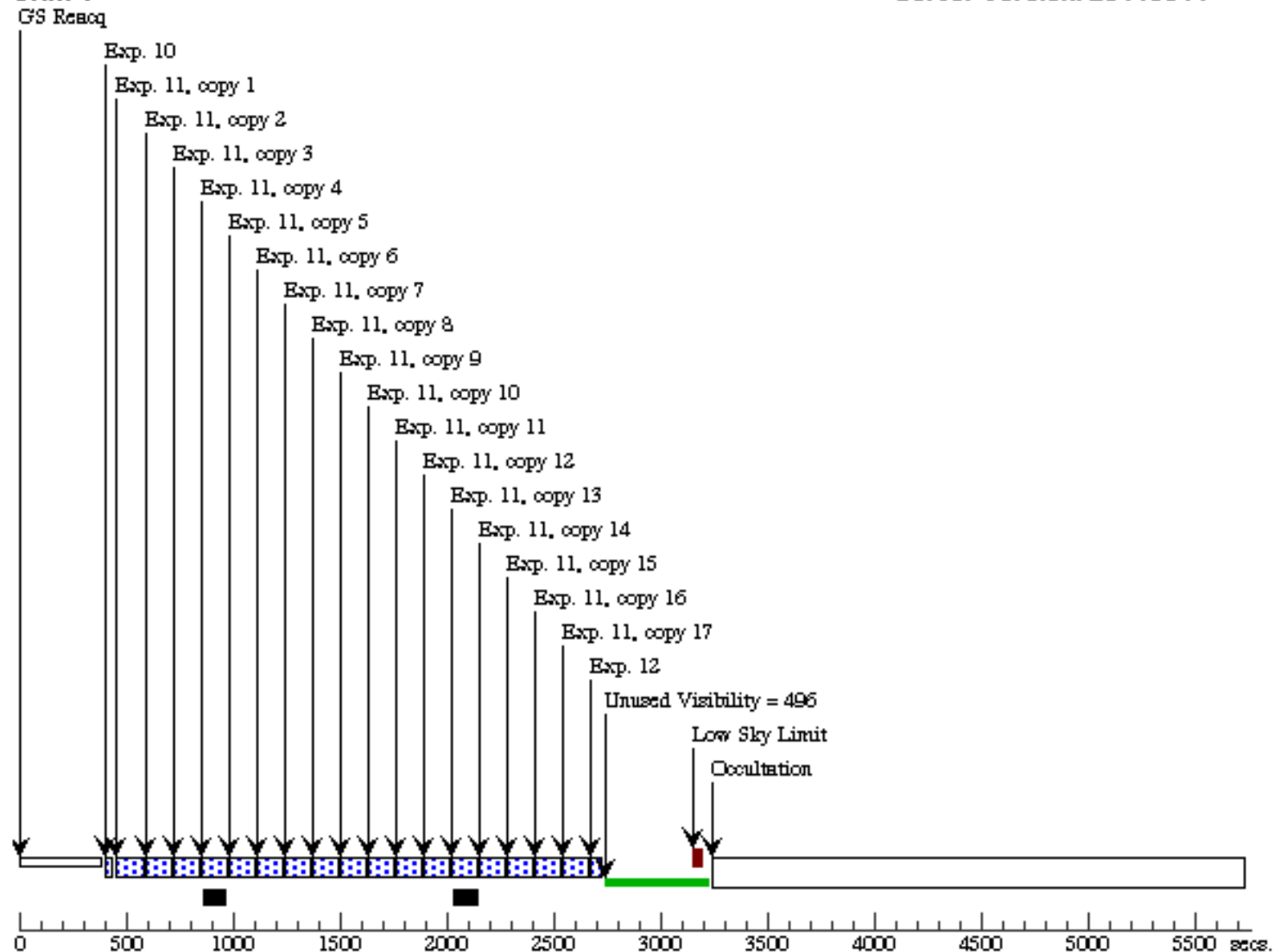
Orbit 3

Server Version: 20110811



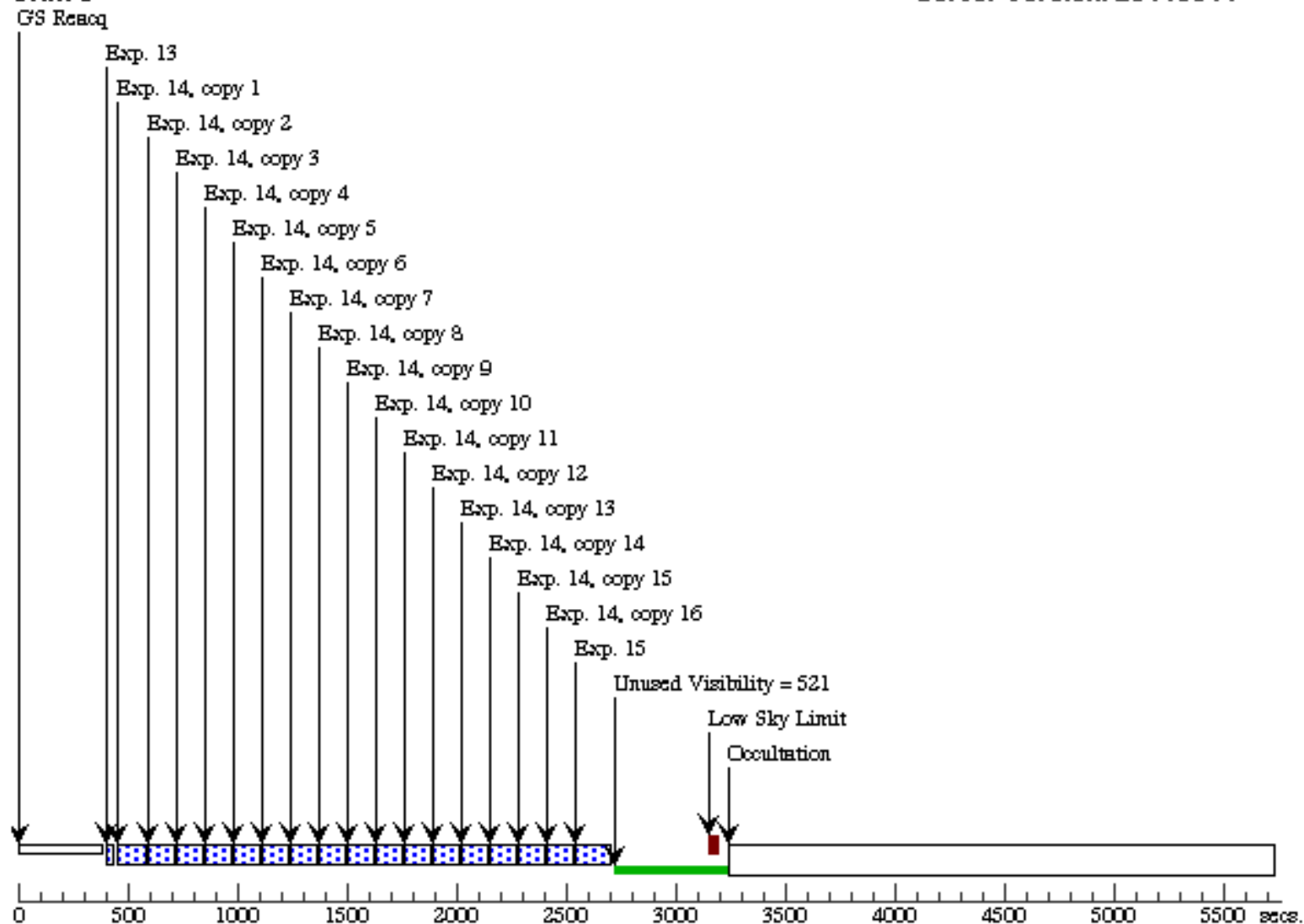
Orbit 4

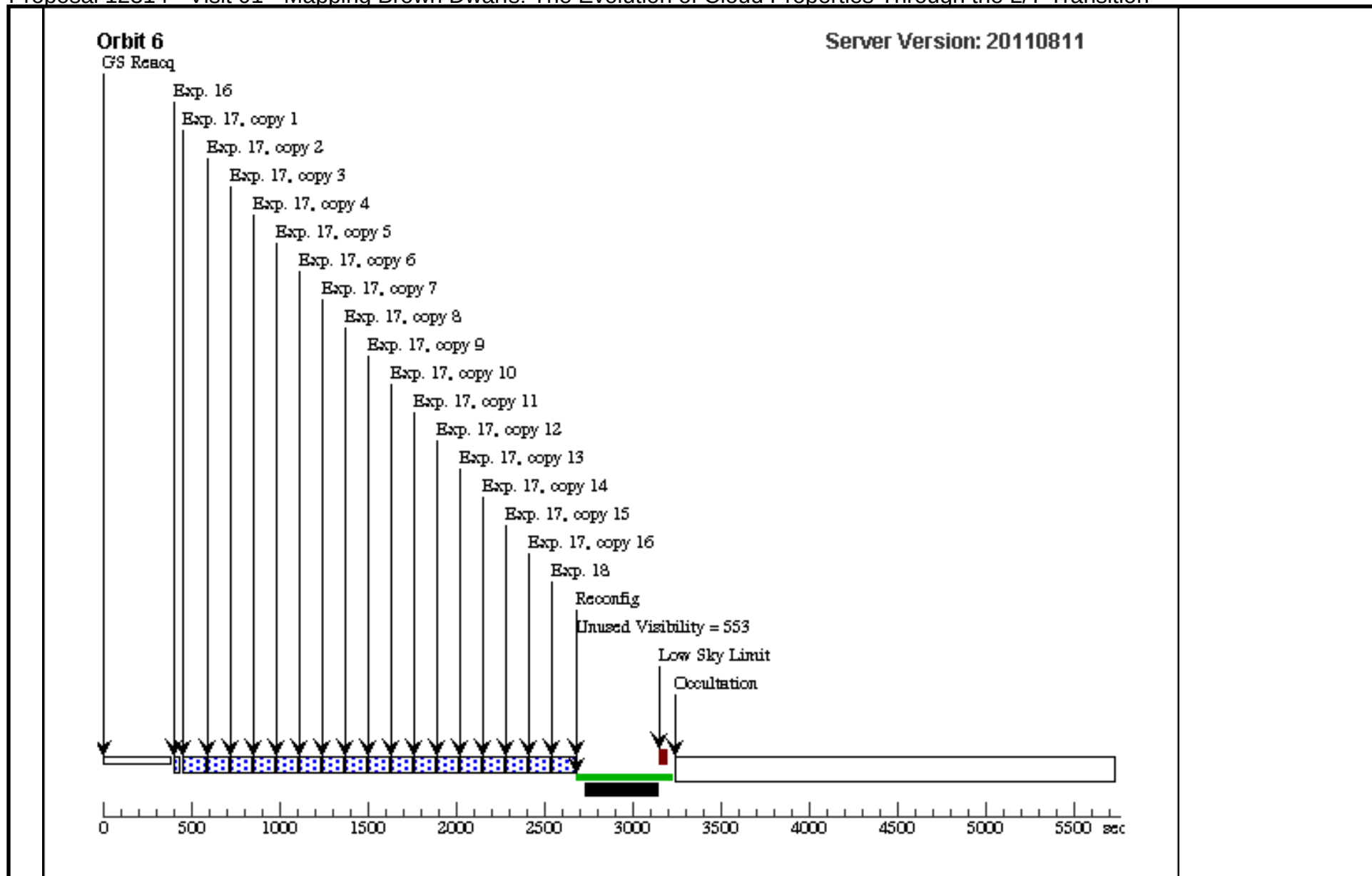
Server Version: 20110811



Orbit 5

Server Version: 20110811





Proposal 12314 - Visit 02 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

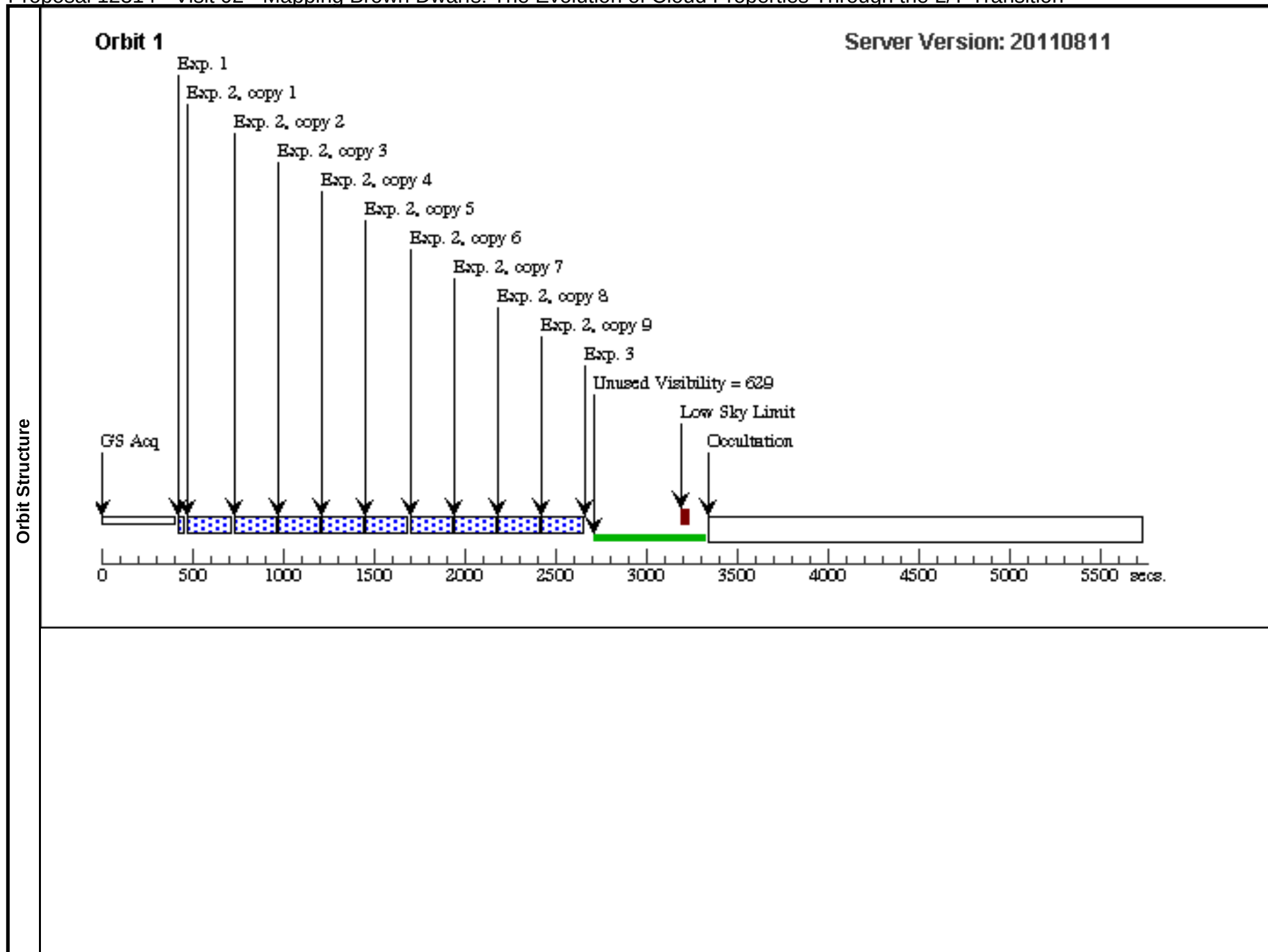
Visit	Proposal 12314, Visit 02, completed					Thu Sep 29 01:06:24 GMT 2011
	Diagnostic Status: No Diagnostics					
	Scientific Instruments: WFC3/IR					
	Special Requirements: PCS MODE FINE; BETWEEN 04-JUL-2011:00:00:00 AND 11-JUL-2011:00:00:00					
	<i>Comments: 2M2228 - Joint Spitzer/HST Observations</i> <i>Joint visibility window: Jun 30-July 29, 2011.</i> <i>Please, make sure that the scheduling is coordinated with the SSC.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(9)	2M2228	RA: 22 28 28.8940 (337.1203917d)	Proper Motion RA: 0.027 arcsec/yr	V=(?)	Reference Frame: ICRS
			Dec: -43 10 26.27 (-43.17396d)	Proper Motion Dec: -0.3088 arcsec/yr	J=15.6	
			Equinox: J2000	Epoch of Position: 1998.981		
	<i>Comments: Selected for Joint Spitzer/HST observations</i>					
<i>Sp Type=T6.5</i> <i>Proper Motion: 0.31"/yr (175degree) Burgasser et al. 2003</i>						

Proposal 12314 - Visit 02 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	Direct Image F132N	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY		[==>]	[1]
	Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.									
	2	2M2228 (Long exp - G141)	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY		[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)]	[1]
	Comments: Must be coordinated with Spitzer/IRAC observations									
	3	Direct Image F132N	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY		[==>]	[1]
	Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.									
	4	2M2228 (Long exp - G141)	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY		[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)]	[2]
	Comments: Must be coordinated with Spitzer/IRAC observations									
	5	Direct Image F132N	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY		[==>]	[2]
	Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.									
	6	2M2228 (Long exp - G141)	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY		[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)]	[3]
	Comments: Must be coordinated with Spitzer/IRAC observations									

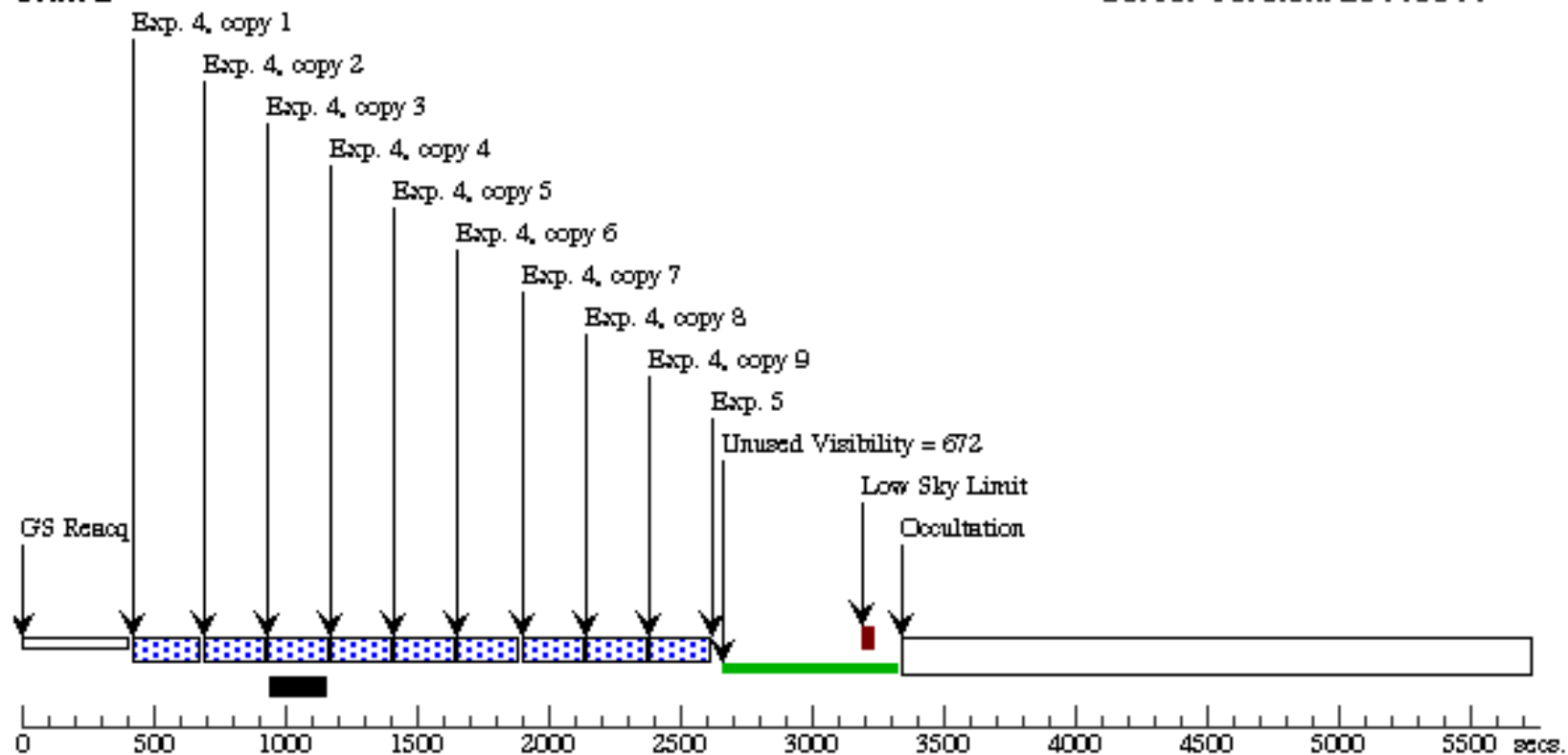
Proposal 12314 - Visit 02 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

7	Direct Image F132N	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[4]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.								
8	2M2228 (Long exp - G141)	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)]	[4]
Comments: Must be coordinated with Spitzer/IRAC observations								
9	Direct Image F132N	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[5]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.								
10	2M2228 (Long exp - G141)	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)]	[5]
Comments: Must be coordinated with Spitzer/IRAC observations								
11	Direct Image F132N	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[6]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.								
12	2M2228 (Long exp - G141)	(9) 2M2228	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)]	[6]
Comments: Must be coordinated with Spitzer/IRAC observations								



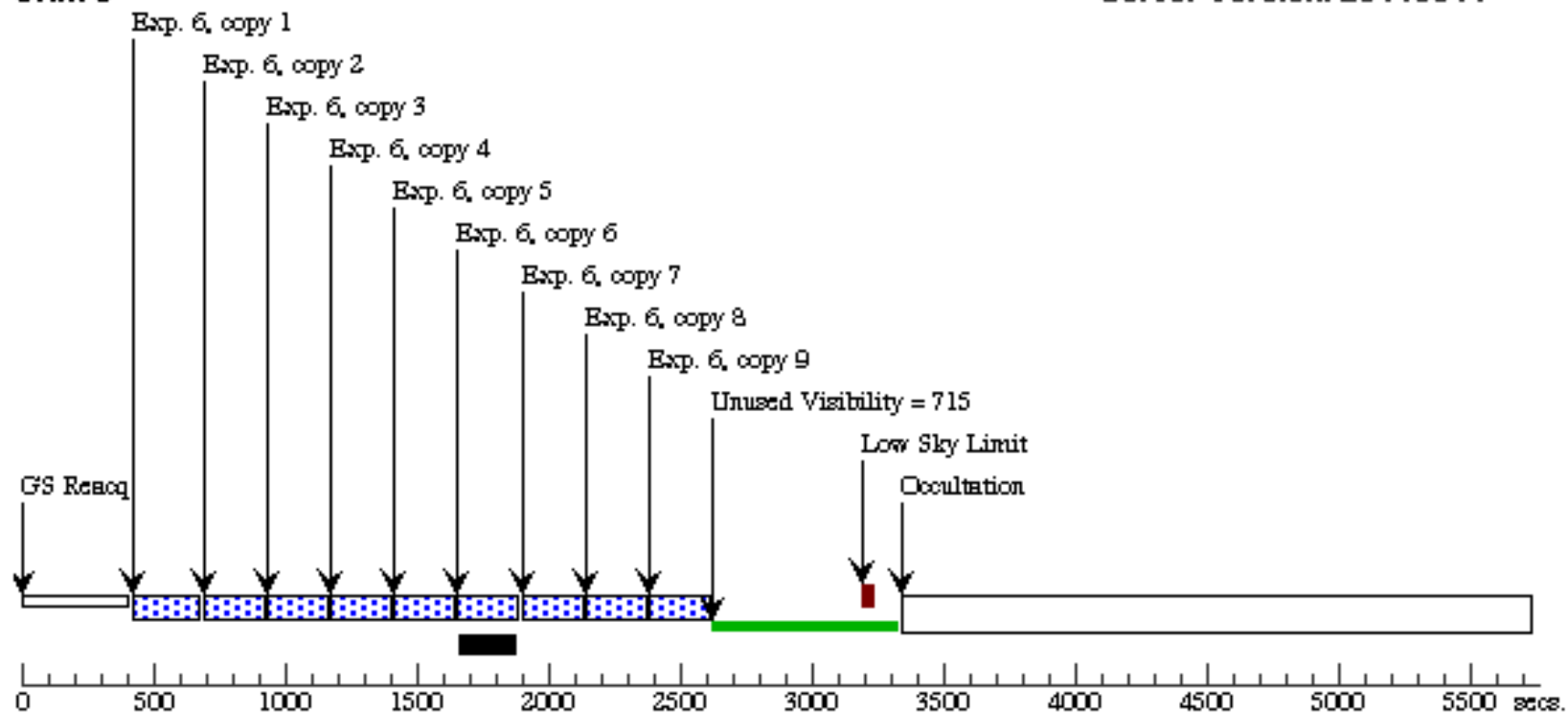
Orbit 2

Server Version: 20110811



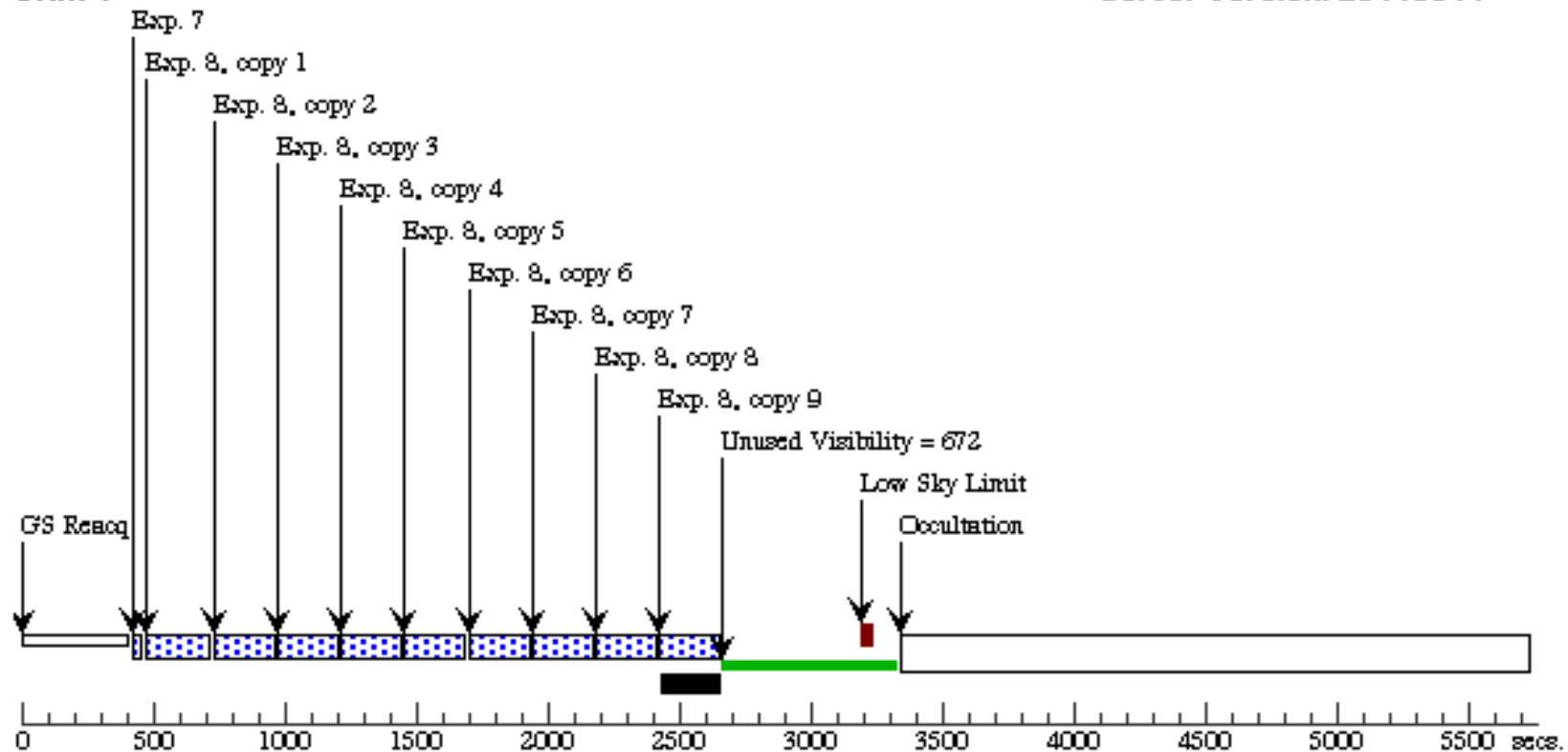
Orbit 3

Server Version: 20110811



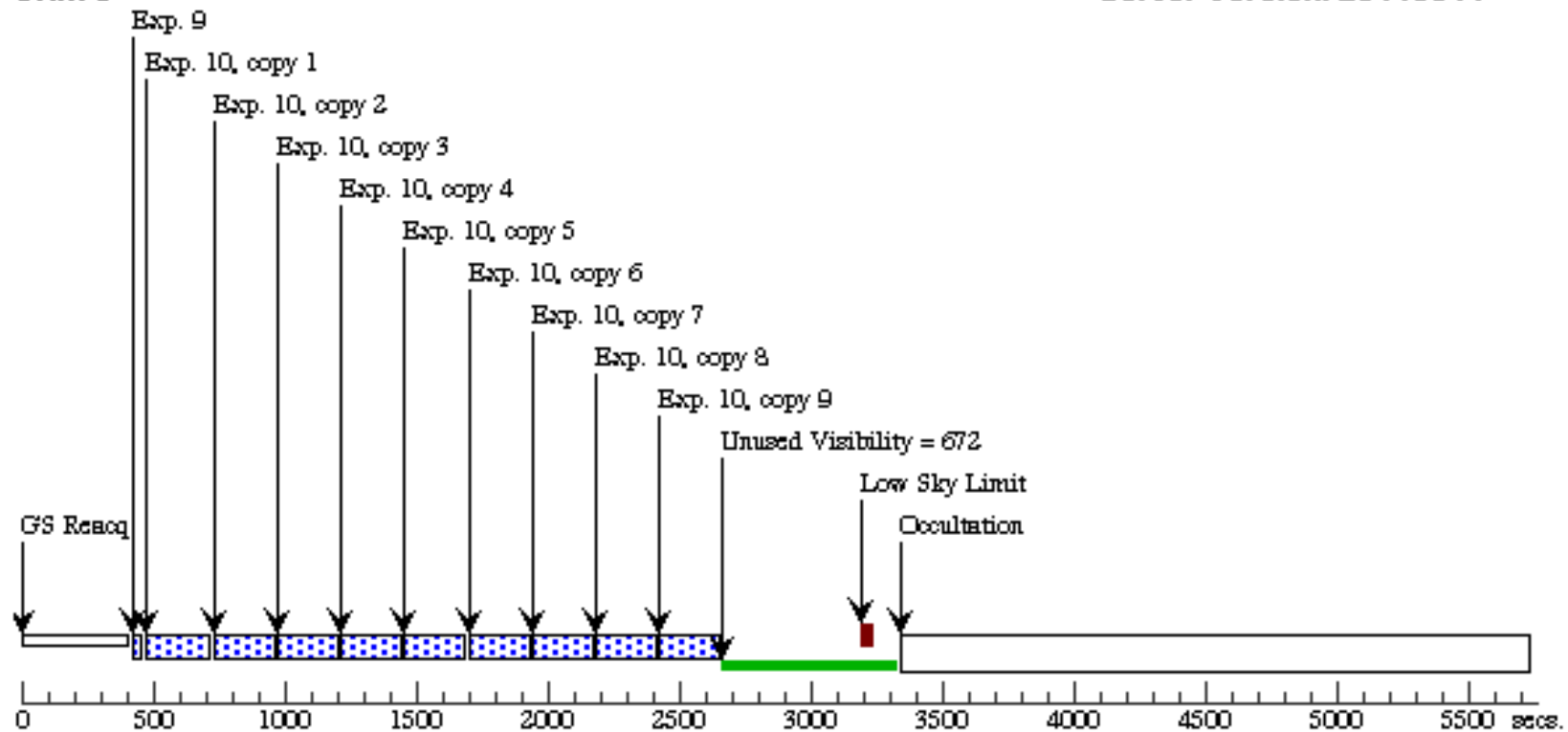
Orbit 4

Server Version: 20110811



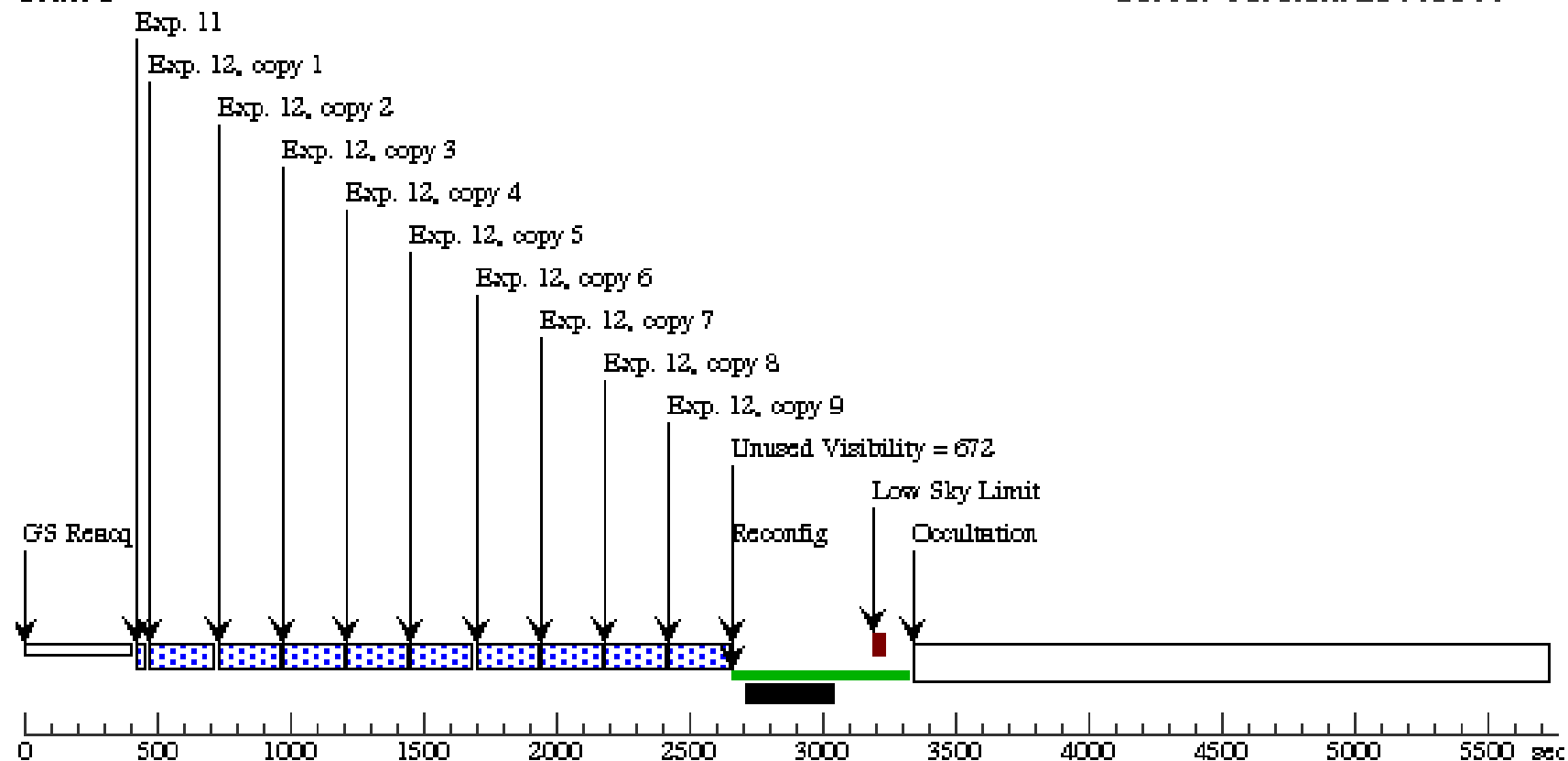
Orbit 5

Server Version: 20110811



Orbit 6

Server Version: 20110811



Proposal 12314 - Visit 03 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

Visit	Proposal 12314, Visit 03, completed Thu Sep 29 01:06:26 GMT 2011				
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: PCS MODE FINE; ORIENT 110D TO 300 D <i>Comments: 2MASS0195 : Binary, orientation constraints (NO coordinated Spitzer observations)</i>				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(2)	2MASS0915	RA: 09 15 34.1370 (138.8922375d) Dec: +04 22 4.59 (4.36794d) Equinox: J2000	Proper Motion RA: -88.46 mas/yr Proper Motion Dec: 40.27 mas/yr Epoch of Position: 2001.21	V=(?) J=15.30
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>					

Proposal 12314 - Visit 03 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

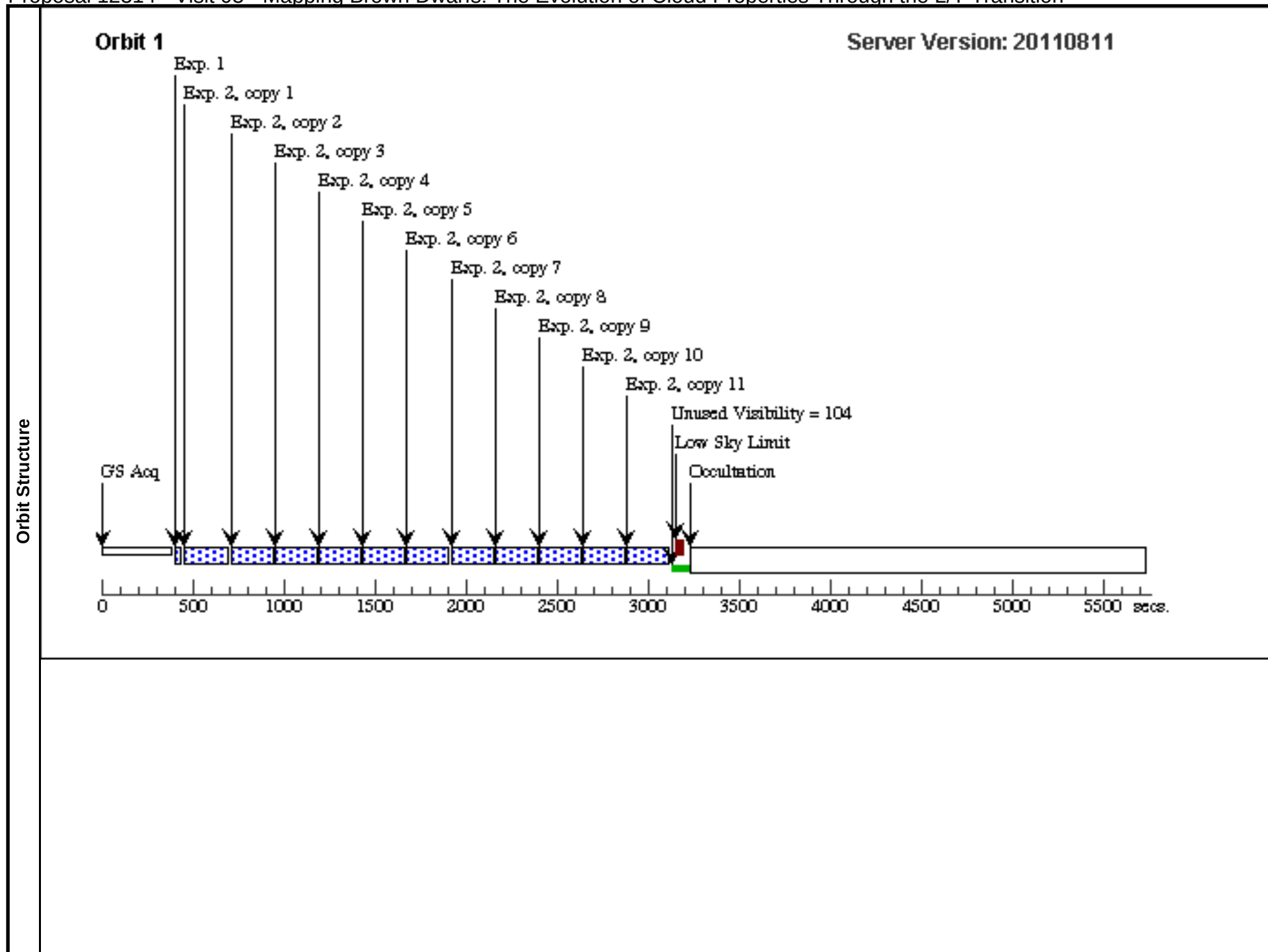
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	Direct Image F132N	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY		[==>]	[1]
	Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.									
	2	2MASS0915 (Long exp - G141)	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY		[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[1]
	Comments: Must be coordinated with Spitzer/IRAC observations									
	3	Direct Image F132N	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY		[==>]	[2]
	Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.									
	4	2MASS0915 (Long exp - G141)	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY		[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[2]
	Comments: Must be coordinated with Spitzer/IRAC observations									
	5	Direct Image F132N	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY		[==>]	[3]
	Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.									

Proposal 12314 - Visit 03 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

6	2MASS0915 (Long exp - G141)	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[3]
Comments: Must be coordinated with Spitzer/IRAC observations								
7	Direct Image F132N	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[4]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.								
8	2MASS0915 (Long exp - G141)	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[4]
Comments: Must be coordinated with Spitzer/IRAC observations								
9	Direct Image F132N	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[5]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.								
10	2MASS0915 (Long exp - G141)	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[5]
Comments: Must be coordinated with Spitzer/IRAC observations								

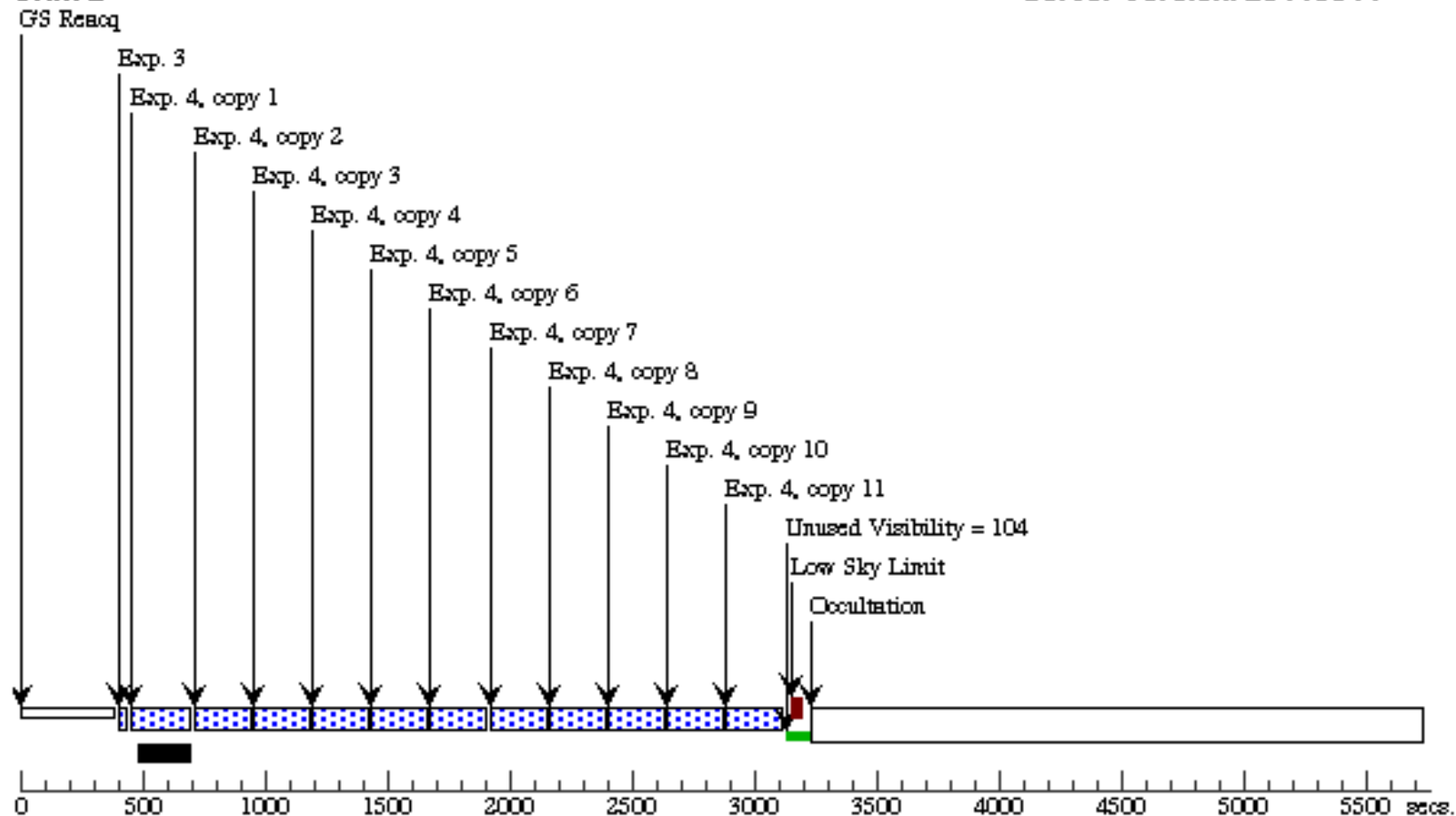
Proposal 12314 - Visit 03 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

11	Direct Image F132N	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[6]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.								
12	2MASS0915 (Long exp - G141)	(2) 2MASS0915	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[6]
Comments: Must be coordinated with Spitzer/IRAC observations								



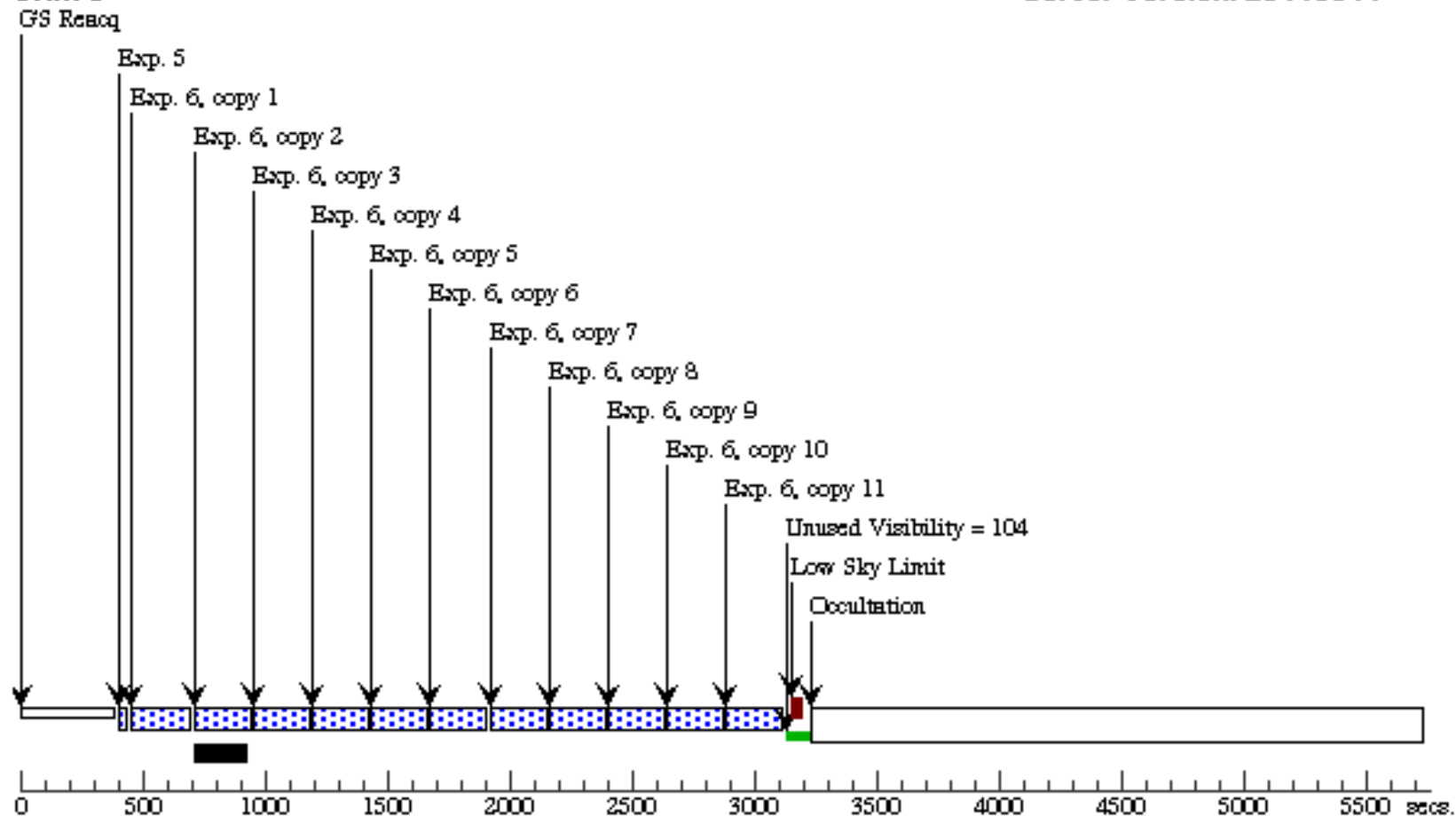
Orbit 2

Server Version: 20110811



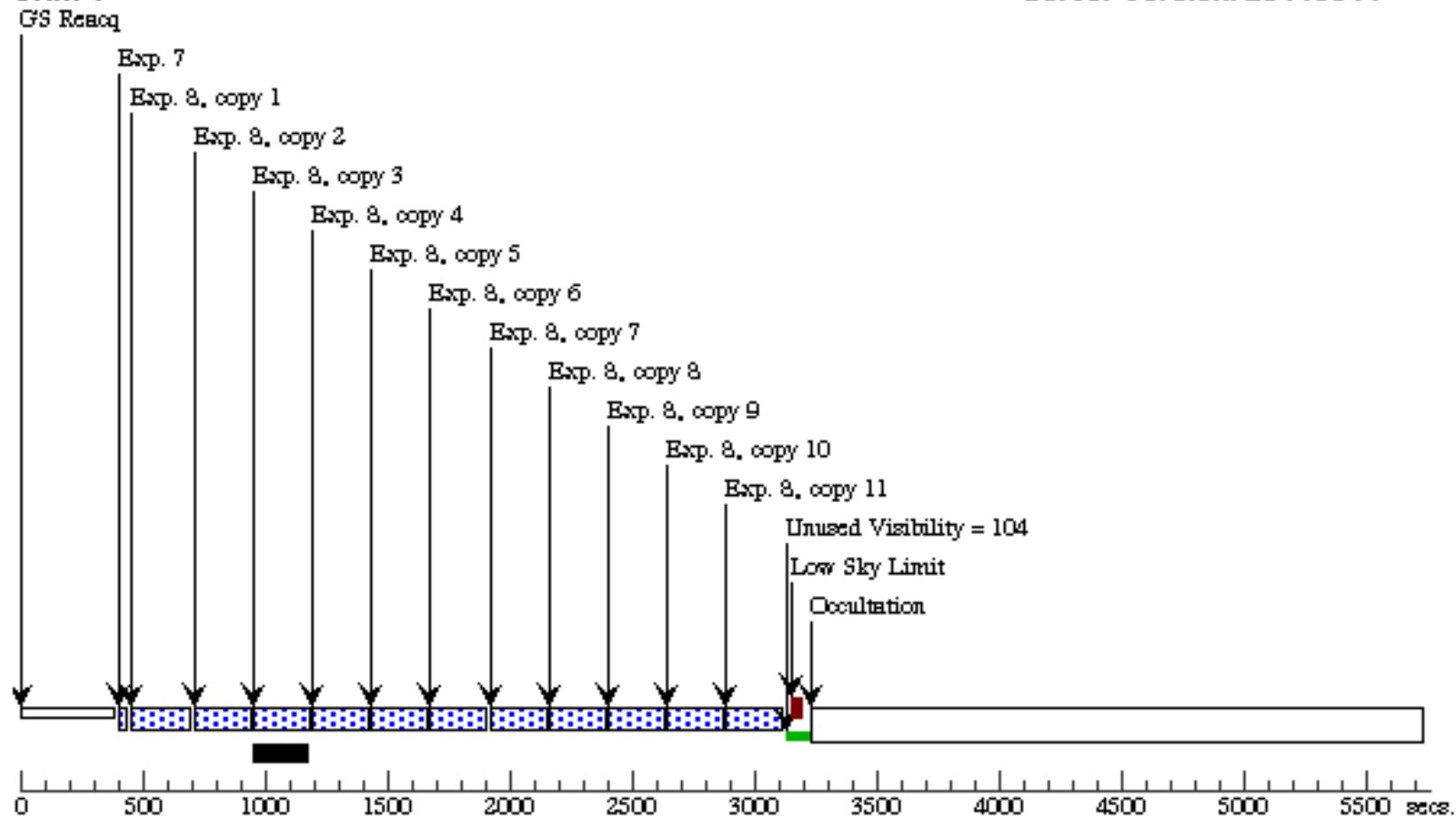
Orbit 3

Server Version: 20110811



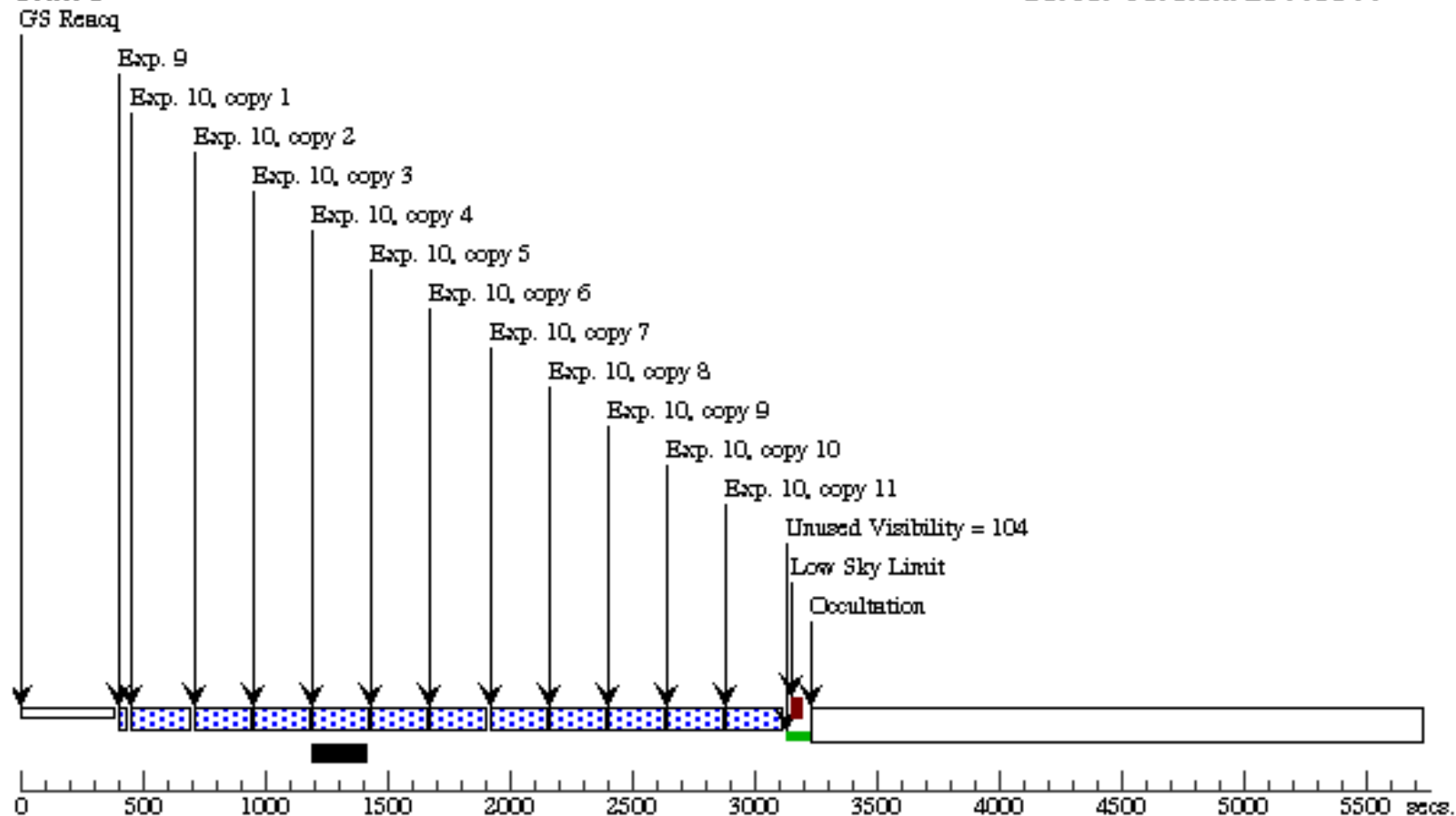
Orbit 4

Server Version: 20110811



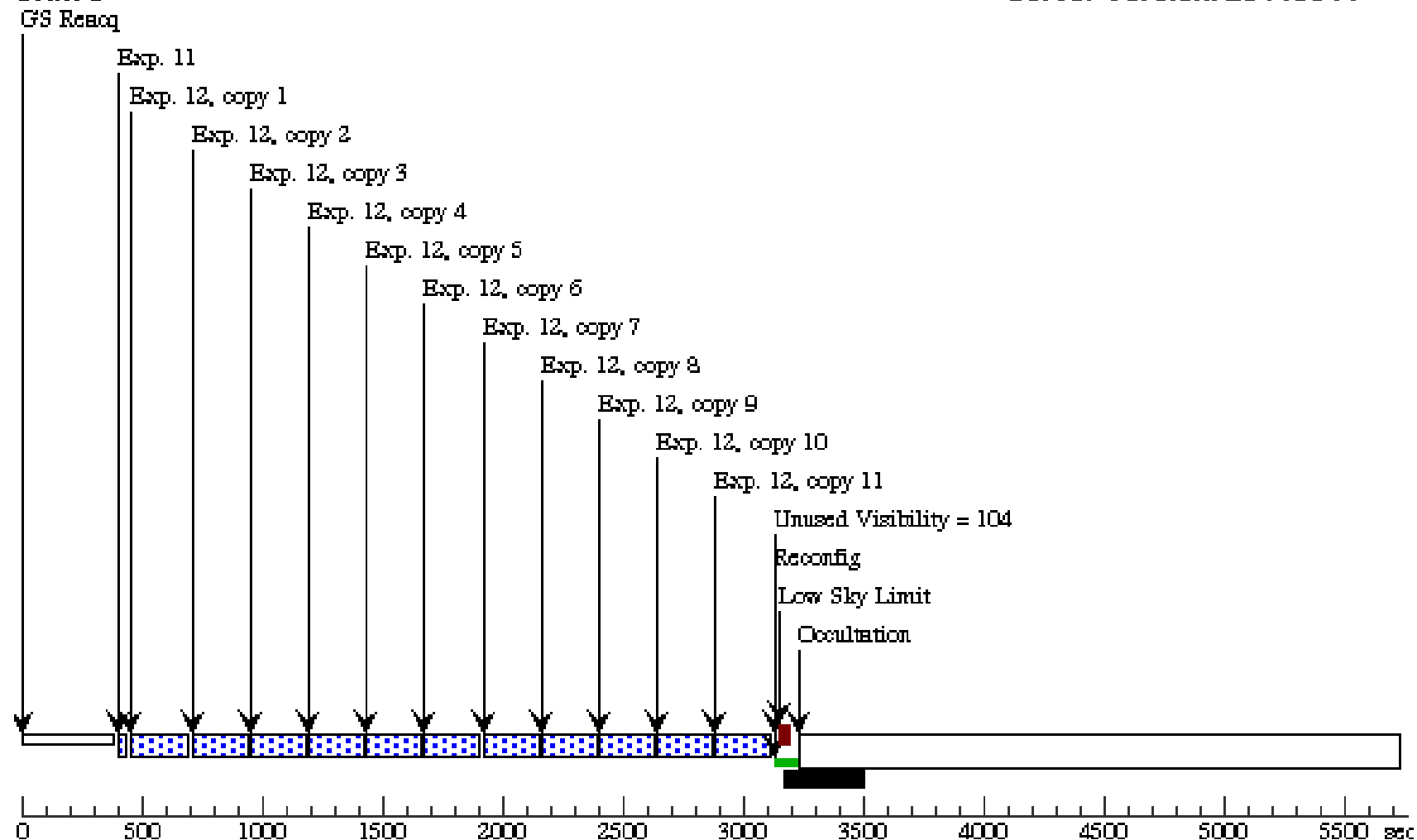
Orbit 5

Server Version: 20110811



Orbit 6

Server Version: 20110811



Proposal 12314 - Visit 07 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

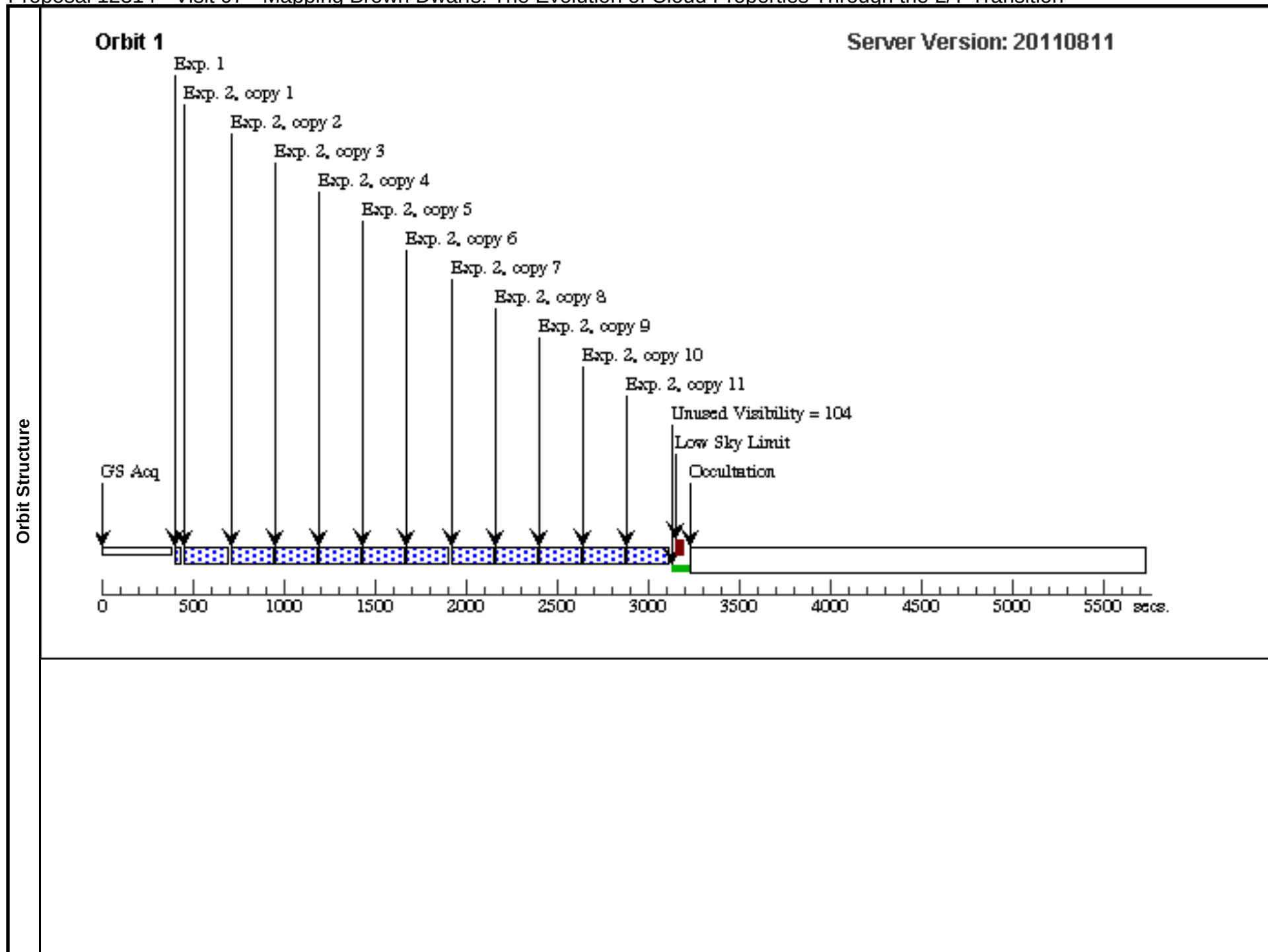
Visit	Proposal 12314, Visit 07, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: PCS MODE FINE Comments: 2MASSJ2139 (NO coordinated Spitzer observations)					Thu Sep 29 01:06:27 GMT 2011
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(8)	2MASSJ2139	RA: 21 39 26.9600 (324.8623333d) Dec: +02 20 23.95 (2.33999d) Equinox: J2000	Proper Motion RA: 0.501 arcsec/yr Proper Motion Dec: 0.23 arcsec/yr Epoch of Position: 2006.56	V=21+/-1 J=15.26 H=14.16 K=13.58	Reference Frame: ICRS

Proposal 12314 - Visit 07 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	Direct Image F132N	(8) 2MASSJ2139	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY		[==>]	[1]
	Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.									
	2	2MASS2139 (Long exp - G141)	(8) 2MASSJ2139	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY		[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[1]
	3	2MASS2139 (Long exp - G141)	(8) 2MASSJ2139	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY		[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[2]
	4	2MASS2139 (Long exp - G141)	(8) 2MASSJ2139	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY		[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[3]

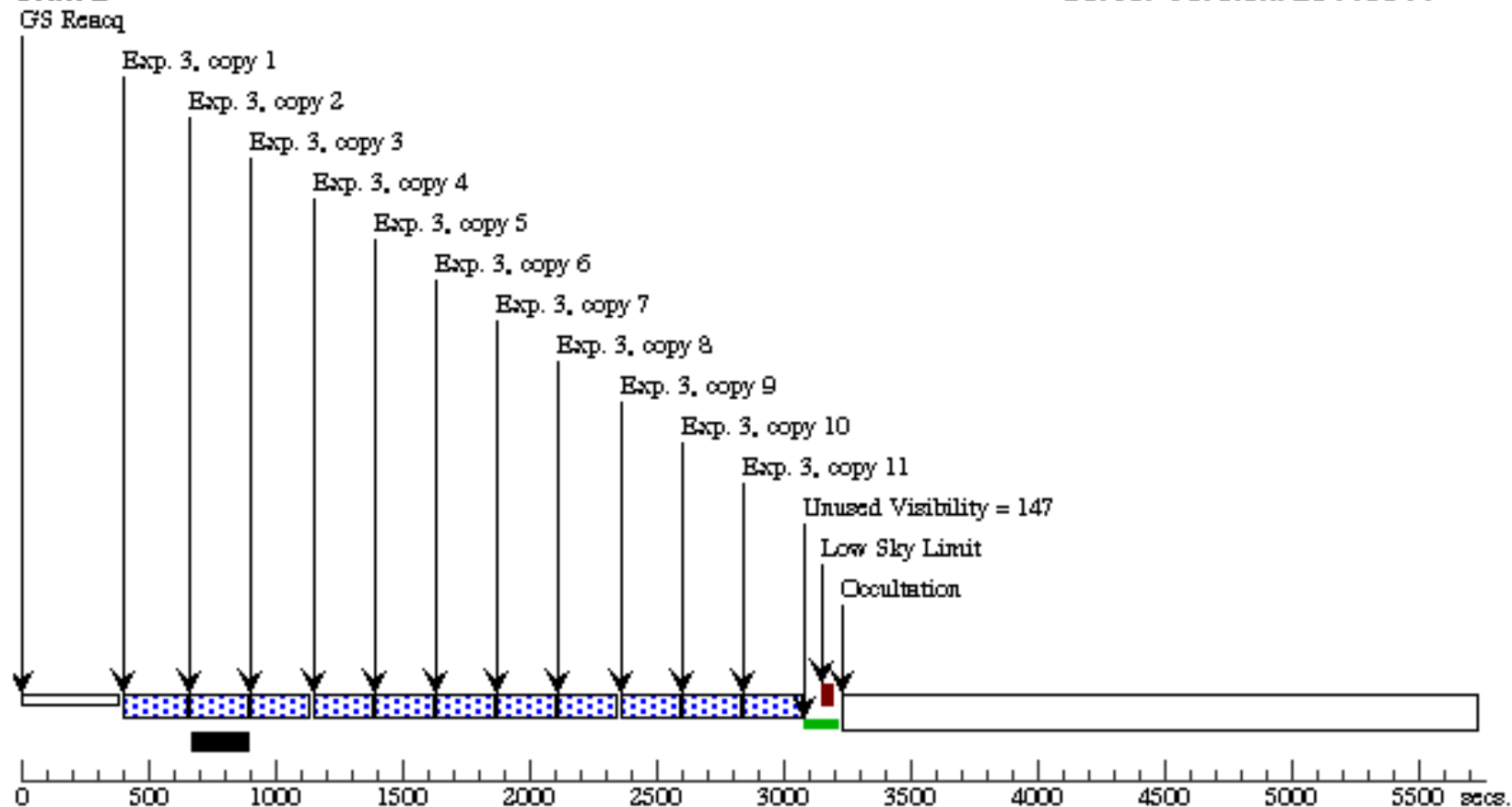
Proposal 12314 - Visit 07 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

5	2MASS213 9 (Long exp - G141)	(8) 2MASSJ2139	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[4]
6	2MASS213 9 (Long exp - G141)	(8) 2MASSJ2139	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[5]
7	2MASS213 9 (Long exp - G141)	(8) 2MASSJ2139	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=11; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)]	[6]



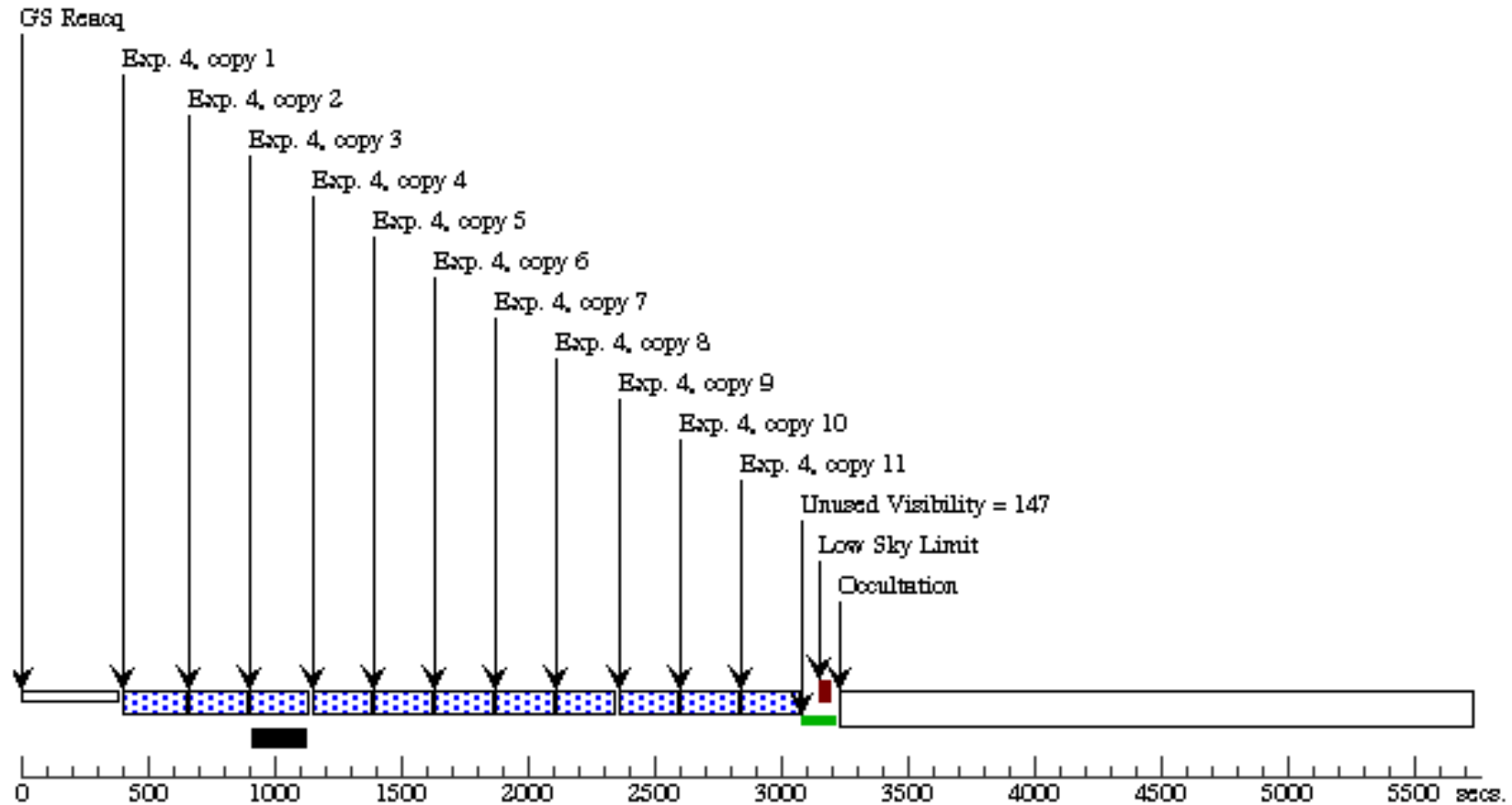
Orbit 2

Server Version: 20110811



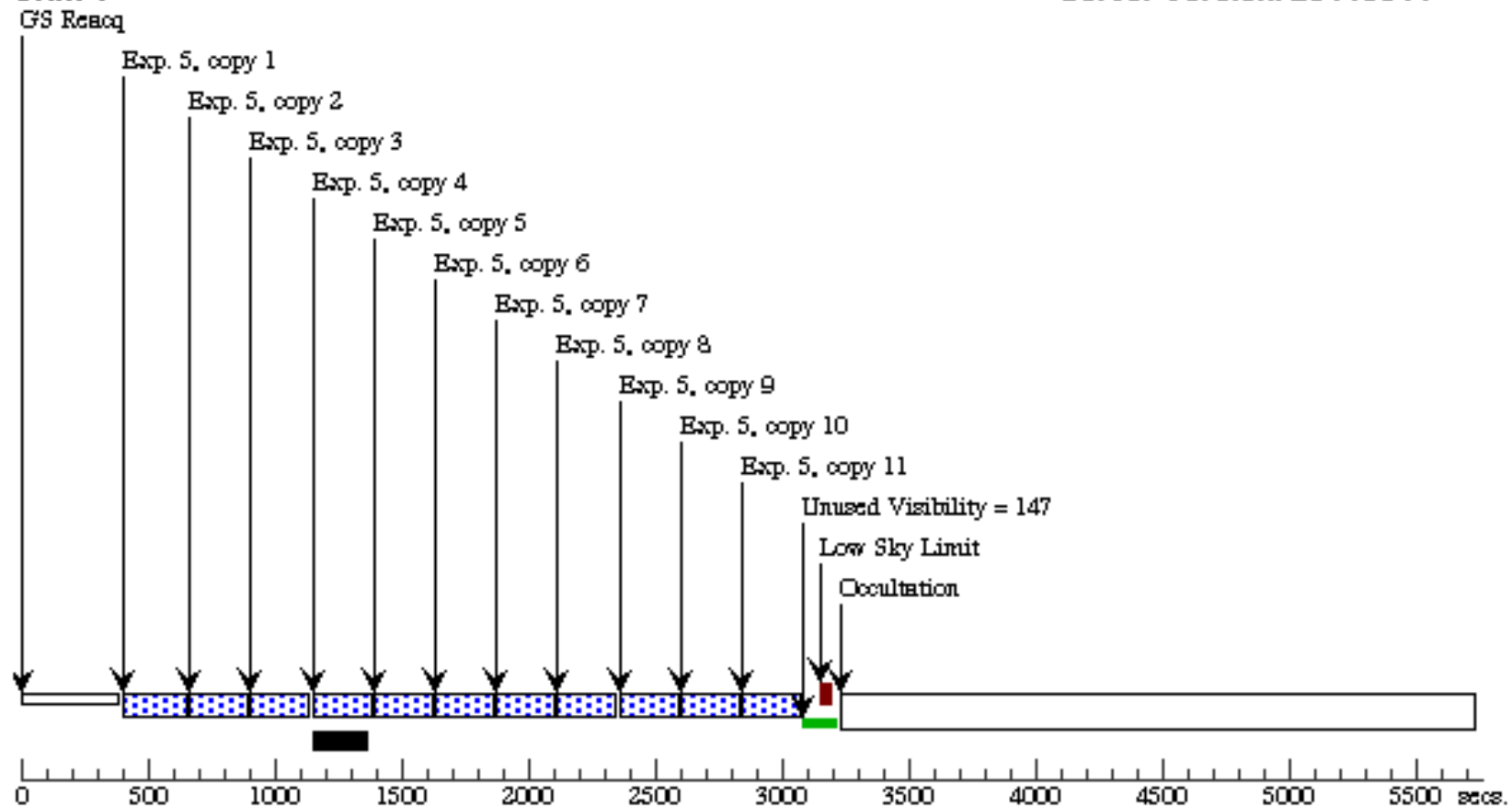
Orbit 3

Server Version: 20110811



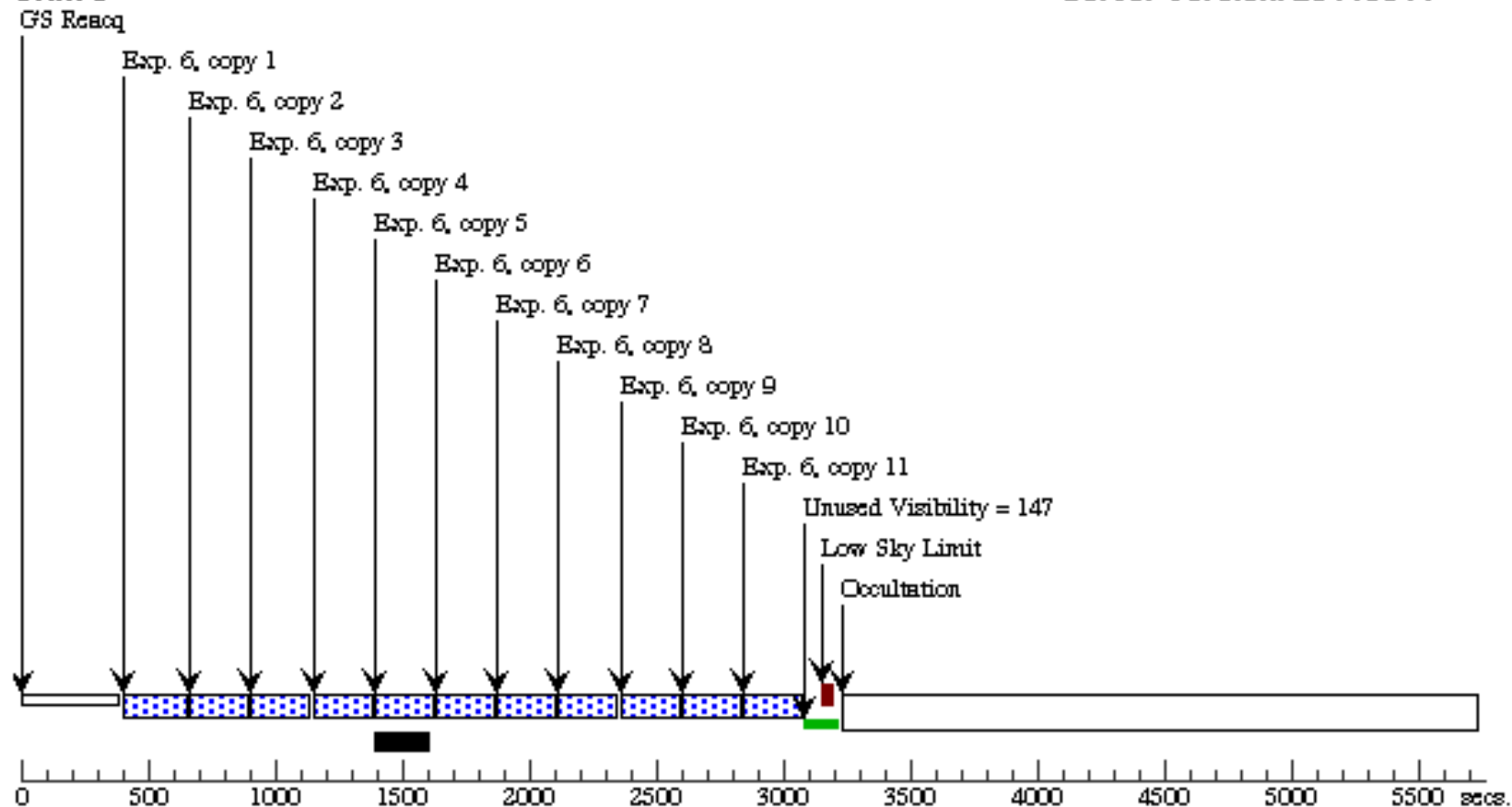
Orbit 4

Server Version: 20110811



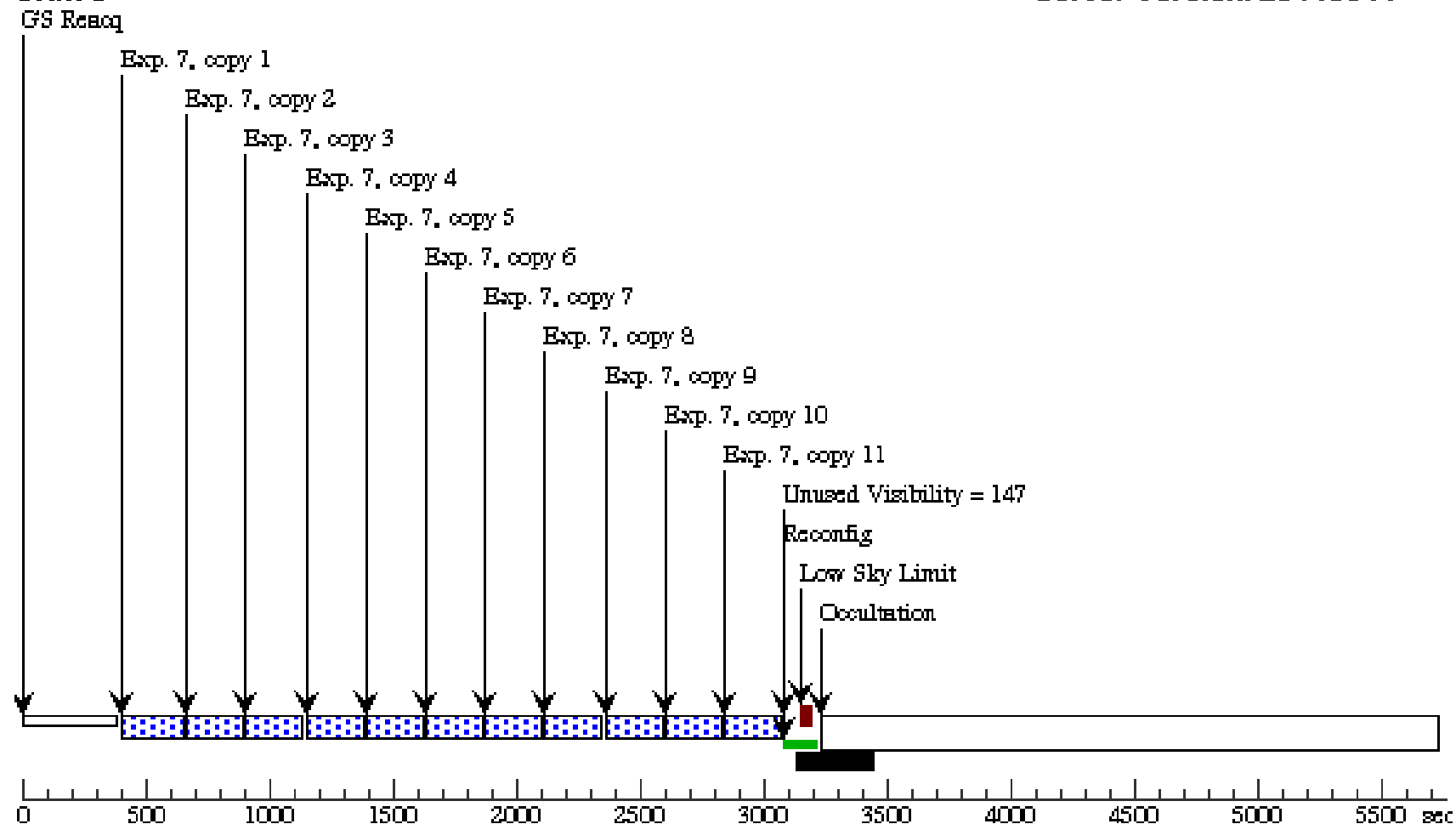
Orbit 5

Server Version: 20110811



Orbit 6

Server Version: 20110811



Proposal 12314 - Visit 51 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

Visit	Proposal 12314, Visit 51 Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: (none) <i>Comments: SIMP0136: Direct FN132 Image + G141 Spectra with Coordinated Spitzer/IRAC Observations</i> <i>Copy of visit 01, which was lost in the SI C&DH hang on day 2011.270.</i>					Thu Sep 29 01:06:29 GMT 2011
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	SIMP0136	RA: 01 36 57.1150 (24.2379792d) Dec: +09 33 47.32 (9.56314d) Equinox: J2000	Proper Motion RA: 1241 mas/yr Proper Motion Dec: -4 mas/yr Epoch of Position: 2006.470	V=(?) J=13.45	Reference Frame: ICRS

Proposal 12314 - Visit 51 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	Direct Image F132N	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY		[==>]	[1]
	Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.									
	2	SIMP0136 (Long exp - G141)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG -15.172, +1.158; LOW-SKY		[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)]	[1]
	Comments: Must be coordinated with Spitzer/IRAC observations									
Exposures	3	SIMP0136 (Short filler)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=14; SAMP-SEQ=SPARS10	POS TARG -15.172, +1.158		[==>]	[1]
	Comments: Must be coordinated with Spitzer/IRAC observations									
	4	Direct Image F132N	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY		[==>]	[2]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.										

Proposal 12314 - Visit 51 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

5	SIMP0136 (Long exp - G141)	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)] [==>(Copy 17)]	[2]
Comments: Must be coordinated with Spitzer/IRAC observations							
6	SIMP0136 (Short filler)	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=5; SAMP-SEQ=SPAR S10	POS TARG -15.172, +1.158	[==>]	[2]
Comments: Must be coordinated with Spitzer/IRAC observations							
7	Direct Image F132N	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[3]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.							
8	SIMP0136 (Long exp - G141)	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)] [==>(Copy 17)]	[3]
Comments: Must be coordinated with Spitzer/IRAC observations							

Proposal 12314 - Visit 51 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

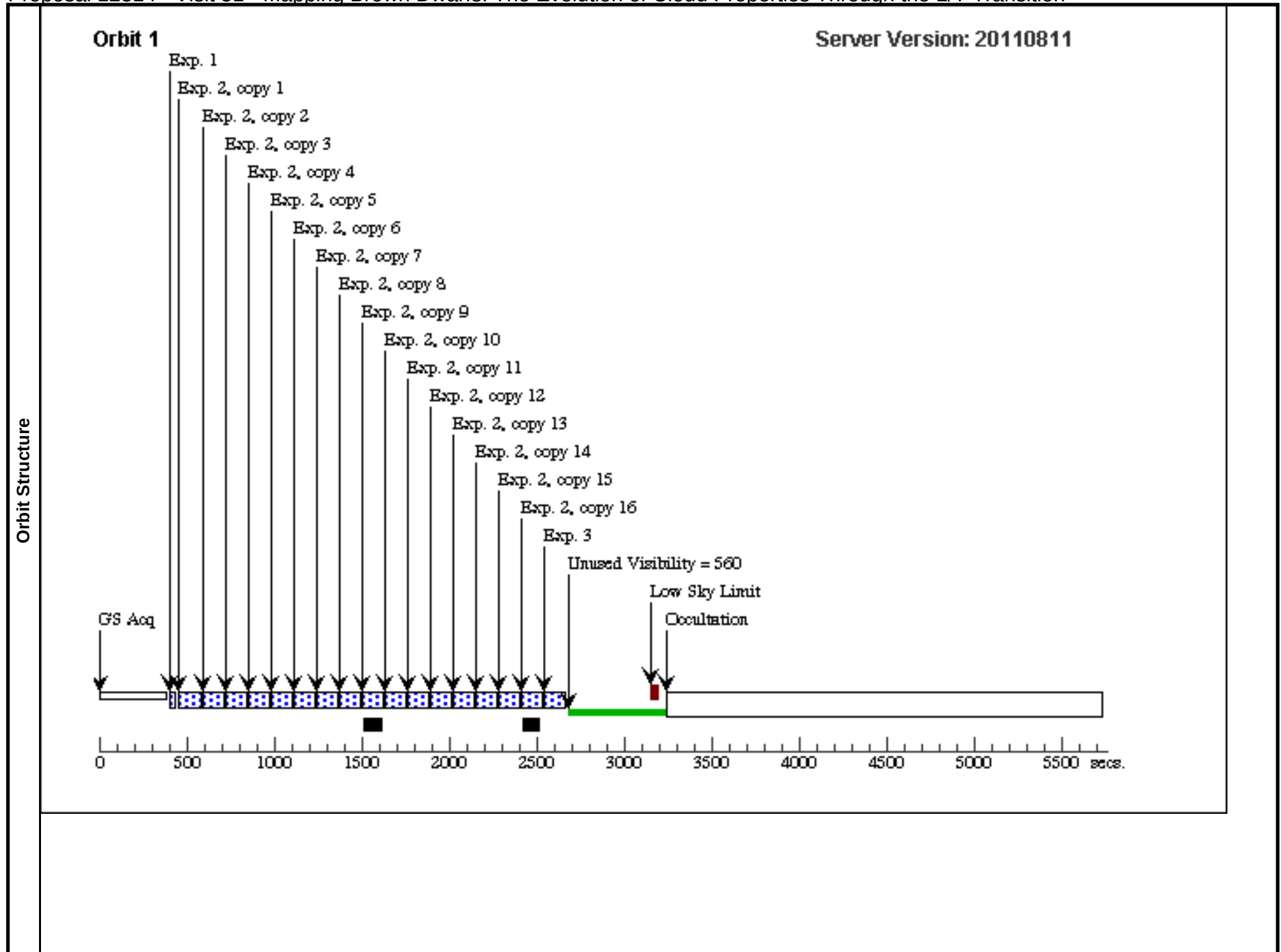
9	SIMP0136 (Short filler)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=5; SAMP-SEQ=SPAR S10	POS TARG -15.172, +1.158	[==>]	[3]
Comments: Must be coordinated with Spitzer/IRAC observations								
10	Direct Image F132N	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[4]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.								
11	SIMP0136 (Long exp - G141)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)] [==>(Copy 17)]	[4]
Comments: Must be coordinated with Spitzer/IRAC observations								
12	SIMP0136 (Short filler)	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=5; SAMP-SEQ=SPAR S10	POS TARG -15.172, +1.158	[==>]	[4]
Comments: Must be coordinated with Spitzer/IRAC observations								
13	Direct Image F132N	(1) SIMP0136	WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[5]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.								

Proposal 12314 - Visit 51 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

14	SIMP0136 (Long exp - G141)	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)]	[5]
Comments: Must be coordinated with Spitzer/IRAC observations							
15	SIMP0136 (Short filler)	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=7; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158	[==>]	[5]
Comments: Must be coordinated with Spitzer/IRAC observations							
16	Direct Image F132N	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	F132N	SAMP-SEQ=SPARS 10; NSAMP=2	POS TARG -15.172, 1.158; LOW-SKY	[==>]	[6]
Comments: Direct image in F132N to help wavelength calibration. Using the same POS TARG as for the G141 exposures.							
17	SIMP0136 (Long exp - G141)	(1) SIMP0136 WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=6; SAMP-SEQ=SPAR S25	POS TARG -15.172, +1.158; LOW-SKY	[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)]	[6]
Comments: Must be coordinated with Spitzer/IRAC observations							

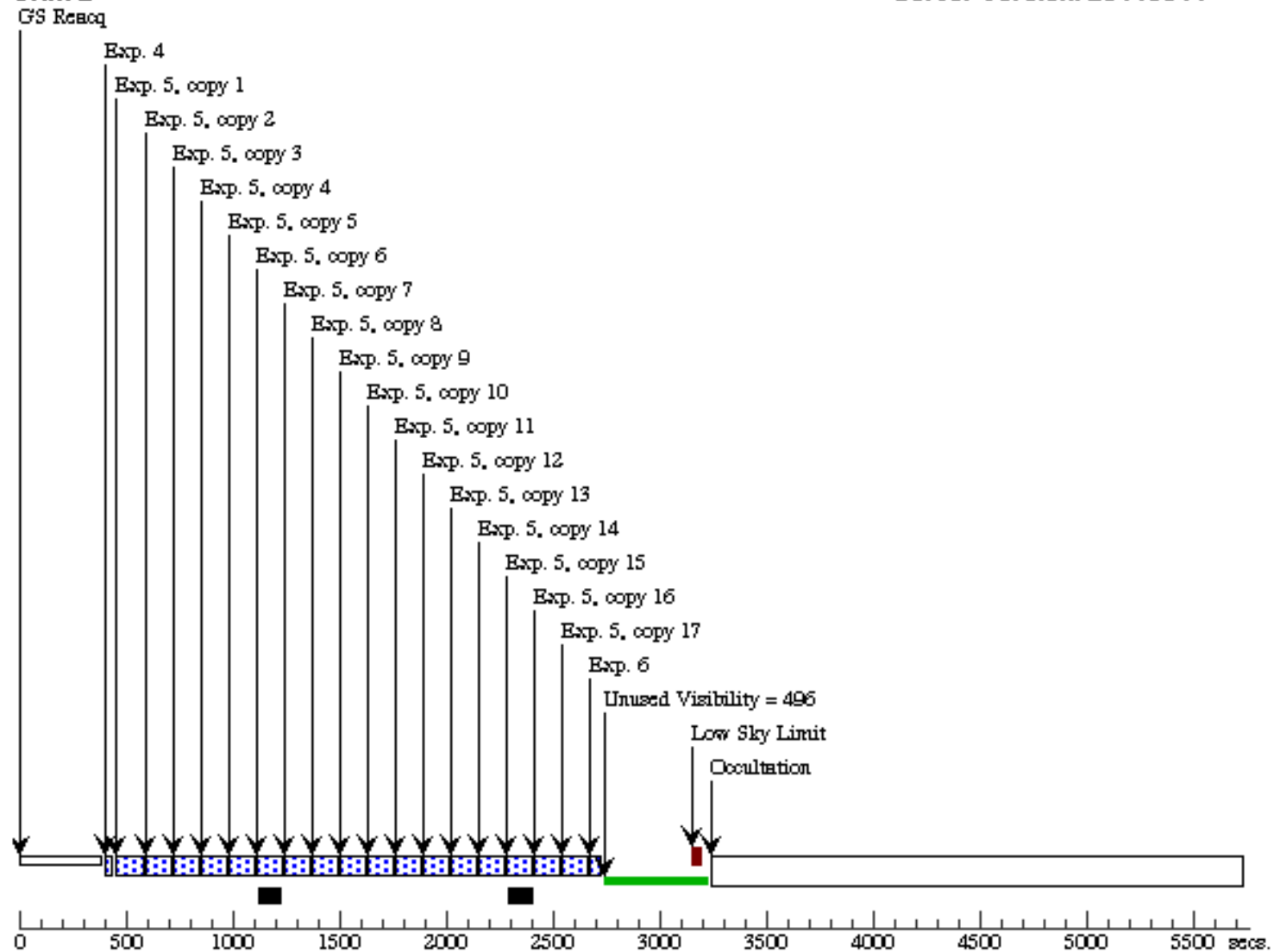
Proposal 12314 - Visit 51 - Mapping Brown Dwarfs: The Evolution of Cloud Properties Through the L/T Transition

18	SIMP0136 ((1) SIMP0136 Short filler)	WFC3/IR, MULTIACCUM, IRSUB256	G141	NSAMP=15; SAMP-SEQ=SPAR S10	POS TARG -15.172, +1.158	[==>]	[6]
Comments: Must be coordinated with Spitzer/IRAC observations							



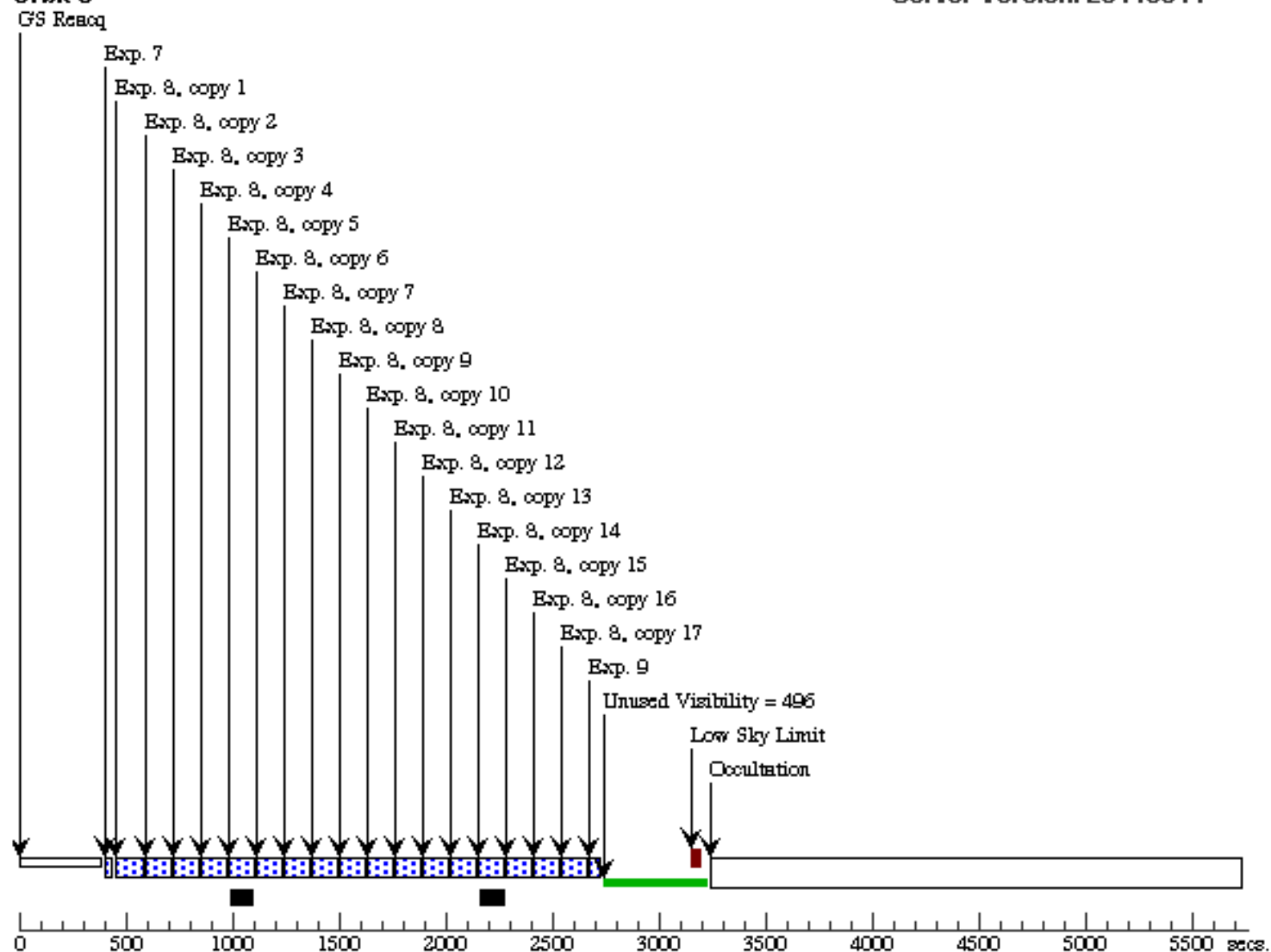
Orbit 2

Server Version: 20110811



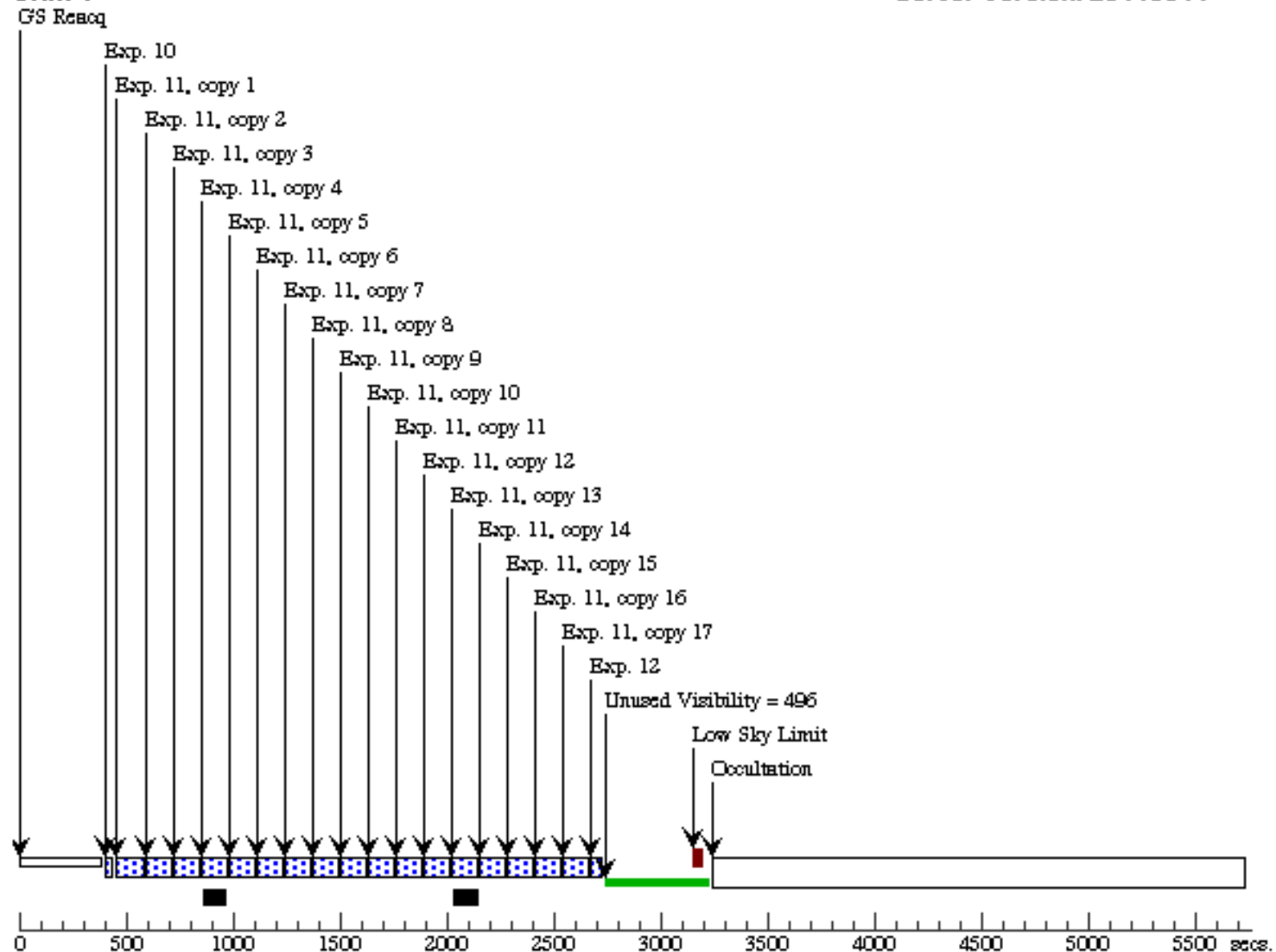
Orbit 3

Server Version: 20110811



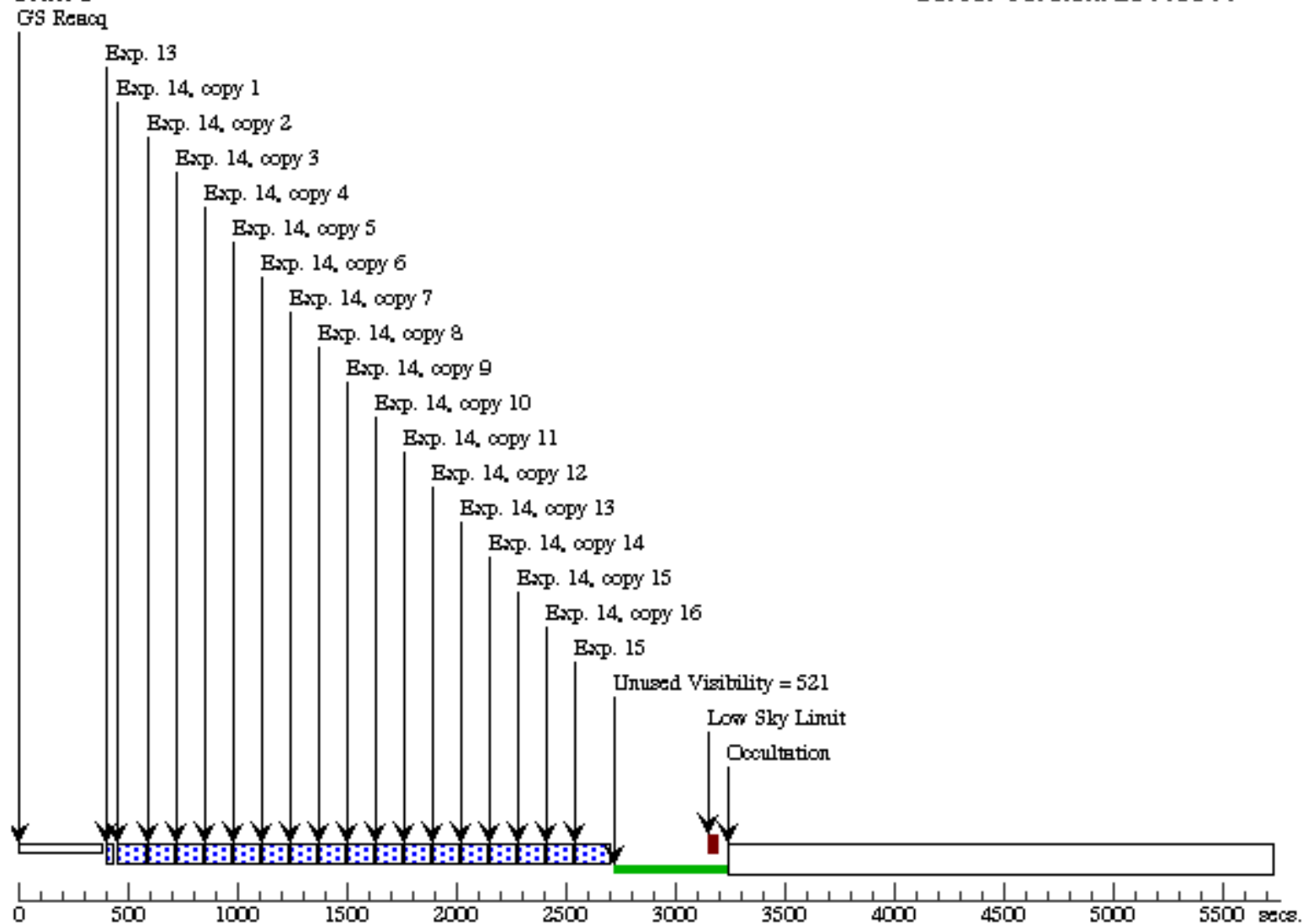
Orbit 4

Server Version: 20110811



Orbit 5

Server Version: 20110811



Orbit 6

Server Version: 20110811

