



13744 - Green Peas and diagnostics for Lyman continuum leaking in star-forming dwarf galaxies

Cycle: 22, 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	(1) J0925+1403	COS/FUV COS/NUV	4	27-May-2015 21:32:25.0	yes
02	(2) J1152+3400	COS/FUV COS/NUV	3	27-May-2015 21:32:28.0	yes
03	(3) J1333+6246	COS/FUV COS/NUV	3	27-May-2015 21:32:31.0	yes
04	(4) J1442-0209	COS/FUV COS/NUV	3	27-May-2015 21:32:34.0	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>
05	(5) J1503+3644	COS/FUV COS/NUV	4	27-May-2015 21:32:37.0	yes

17 Total Orbits Used

ABSTRACT

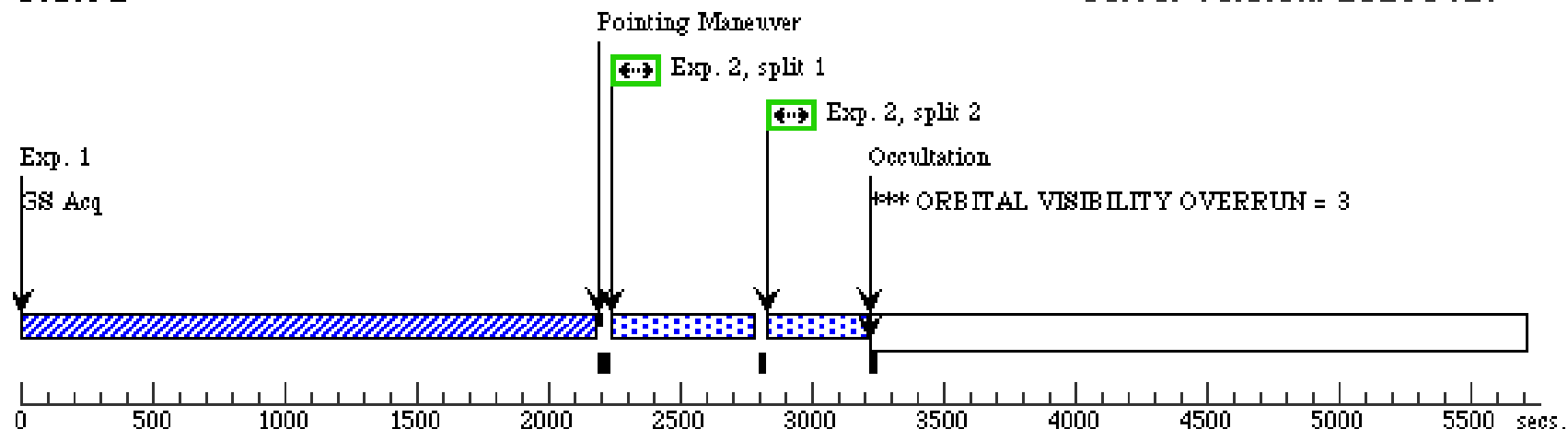
One of the key questions in observational cosmology is the identification of the sources responsible for cosmic reionization. The general consensus is that a population of faint low-mass galaxies must be responsible for the bulk of the ionizing photons. However, attempts at identifying individual galaxies showing Lyman continuum (LyC) leakage have so far not been successful, both at high and low redshifts. We propose here to observe directly the LyC of five so-called "Green Pea" (GP) galaxies. GPs share many of the properties of the Lyman Break galaxies at high z (compactness, low mass, low metallicity, high specific star formation rate, gas-rich and clumpy morphology) and may constitute local examples of the long sought-after LyC leaking galaxies. The five GPs have been identified by searching the Sloan Data Release 10 spectral data base of 2 million spectra for non-AGN emission-line objects that meet the following criteria: high [OIII]5007/[OII]3727 ratios, large GALEX FUV fluxes, and redshifted enough ($z \sim 0.3$) so that the LyC is shifted into the sensitive spectral range of COS. Our unique GP sample will allow us to combine for the first time four fundamental tests for LyC leaking in galaxies and validate their usefulness as LyC leaking indicators : 1) direct measurements of the LyC; 2) high [OIII]/[OII] ratios; 3) characteristics of the Lyman alpha line profile; and 4) residual intensities in the low-ionization ISM absorption UV lines.

Proposal 13744 - visit1 (01) - Green Peas and diagnostics for Lyman continuum leaking in star-forming dwarf galaxies

Visit	Proposal 13744, visit1 (01), completed										Thu May 28 01:32:39 GMT 2015	
	Diagnostic Status: Warning											
	Scientific Instruments: COS/NUV, COS/FUV											
	Special Requirements: (none)											
Comments: none												
Diagnostics	(visit1 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN											
	(visit1 (01)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous			
	(1)	J0925+1403	RA: 09 25 32.3700 (141.3848750d) Dec: +14 03 13.06 (14.05363d) Equinox: J2000				V=20.71+/-0.05 FUV=20.71+/-0.05, NUV=20.75+/-0.04		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	J0925+1403 _ACQ (COS.ta.621 280)	(1) J0925+1403	COS/NUV, ACQ/IMAGE, PSA		MIRRORA				891 Secs (891 Secs)		
										[==>]		[1]
	2	J0925+1403 _G160M (COS.sp.624 708)	(1) J0925+1403	COS/FUV, TIME-TAG, PSA		G160M 1577 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; BUFFER-TIME=11 300.0			600 Secs (1492 Secs)		
										[==>323.0 Secs (Split 1)]		[1]
										[==>323.0 Secs (Split 2)]		
										[==>420.0 Secs (Split 3)]		
										[==>426.0 Secs (Split 4)]		[2]
	3	J0925+1403 _G160M (COS.sp.624 708)	(1) J0925+1403	COS/FUV, TIME-TAG, PSA		G160M 1623 A	EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; BUFFER-TIME=11 300.0; FP-POS=ALL			600 Secs (1486 Secs)		
										[==>323.0 Secs (Split 1)]		
										[==>323.0 Secs (Split 2)]		
										[==>420.0 Secs (Split 3)]		[2]
										[==>420.0 Secs (Split 4)]		
	4	J0925+1403 _G140L (COS.sp.624 747)	(1) J0925+1403	COS/FUV, TIME-TAG, PSA		G140L 1280 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; BUFFER-TIME=11 700.0			500 Secs (5648 Secs)		
										[==>1400.0 Secs (Split 1)]		
										[==>1423.0 Secs (Split 2)]		[3]
									[==>1400.0 Secs (Split 3)]			
									[==>1425.0 Secs (Split 4)]		[4]	

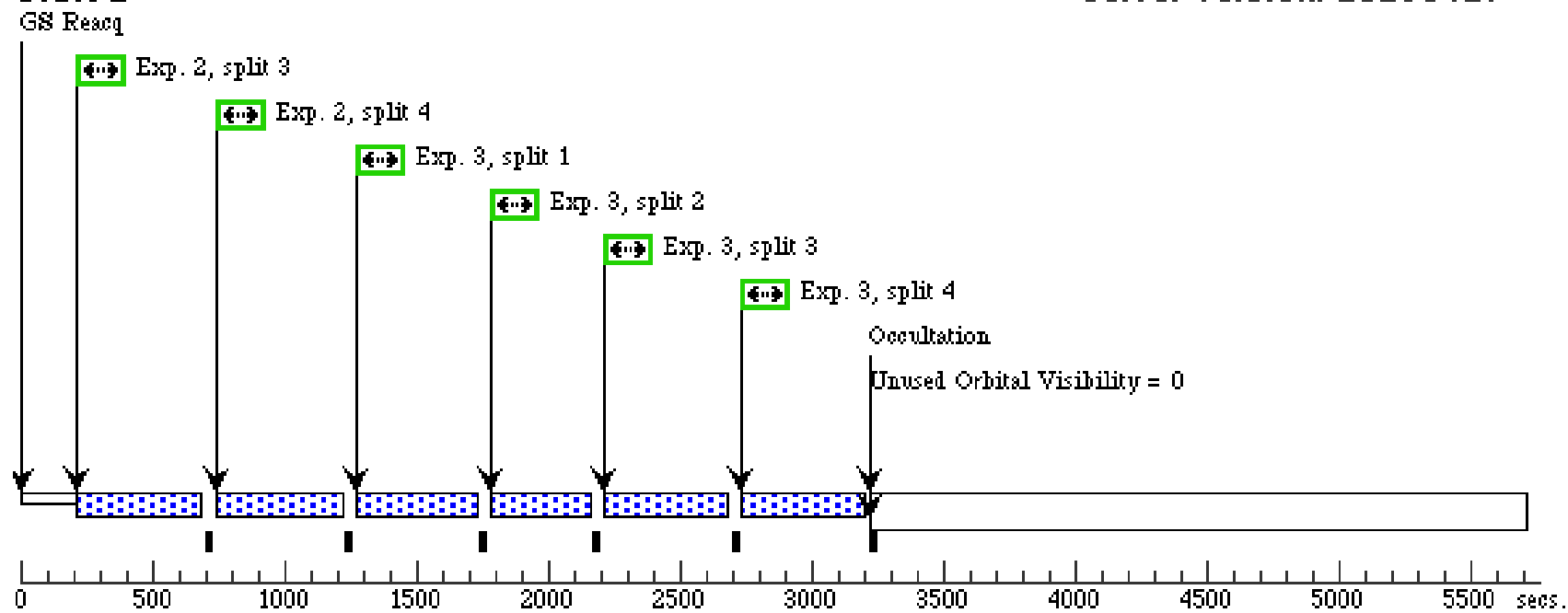
Orbit 1

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Orbit 2

Server Version: 20150417



Orbit 3

Server Version: 20150417

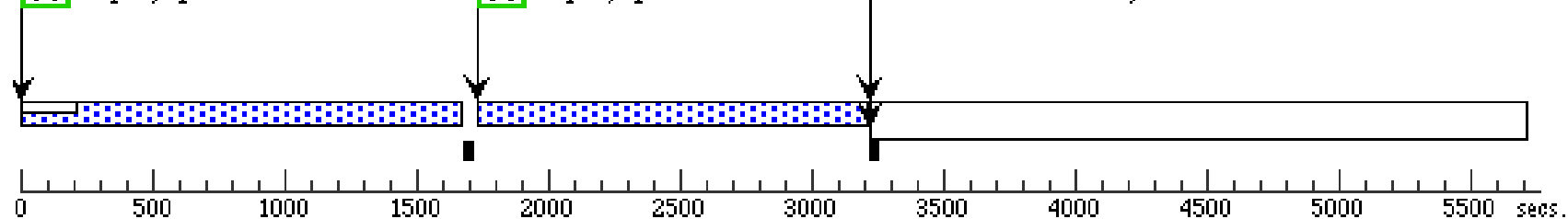
GS Reacq

Exp. 4, split 1

Exp. 4, split 2

Occultation

Unused Orbital Visibility = 0



Orbit 4

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GS Reacq

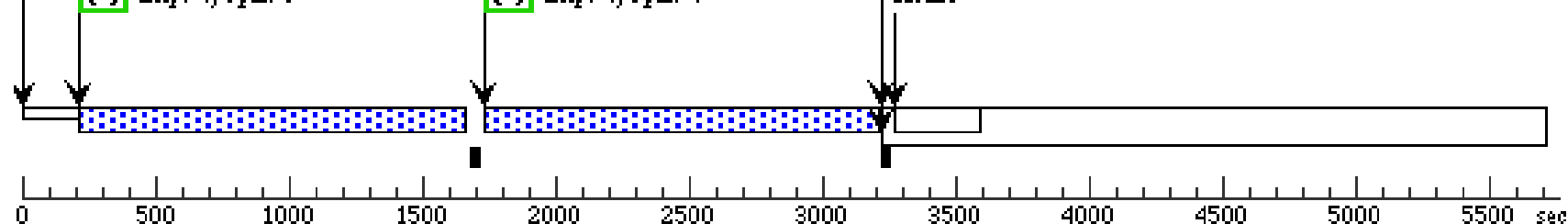
Exp. 4, split 3

Exp. 4, split 4

Unused Orbital Visibility = 0

Occultation

Home

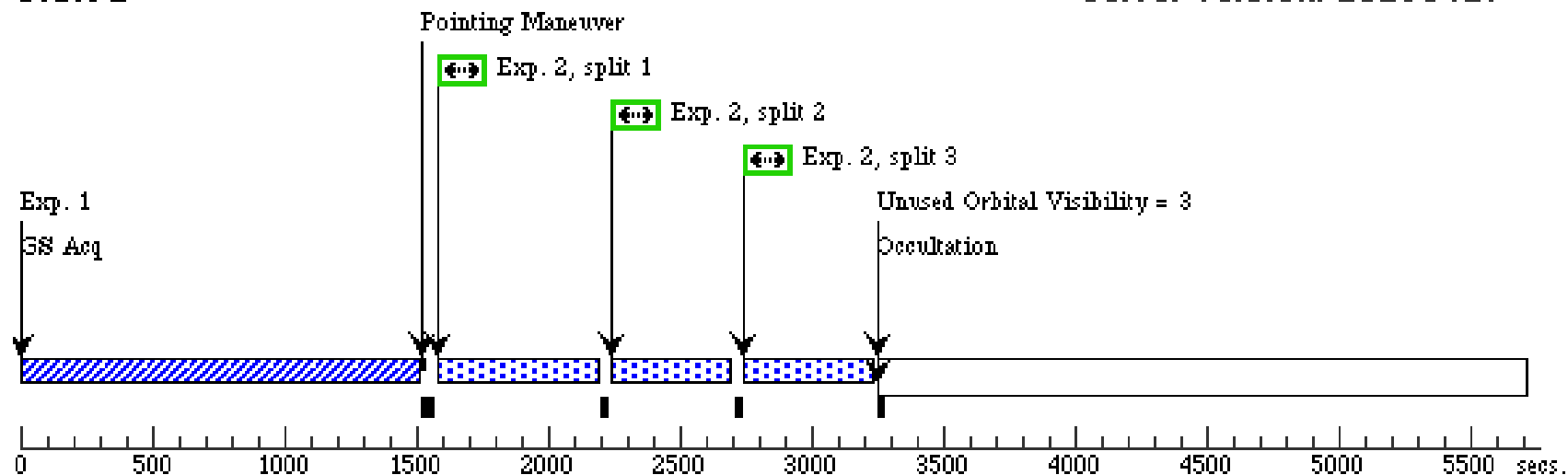


Proposal 13744 - visit2 (02) - Green Peas and diagnostics for Lyman continuum leaking in star-forming dwarf galaxies

Visit	Proposal 13744, visit2 (02), completed										Thu May 28 01:32:39 GMT 2015
	Diagnostic Status: Warning										
	Scientific Instruments: COS/NUV, COS/FUV										
	Special Requirements: (none)										
Diagnos	(visit2 (02)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.										
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(2)	J1152+3400	RA: 11 52 4.8800 (178.0203333d) Dec: +34 00 49.88 (34.01386d) Equinox: J2000				V=20.28+/-0.05 FUV=20.66+/-0.30, NUV=20.38+/-0.17		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	J1152+3400 _ACQ (COS.ta.621 286)	(2) J1152+3400	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				558 Secs (558 Secs)		
									[==>]		[1]
	2	J1152+3400 _G160M (COS.sp.624 716)	(2) J1152+3400	COS/FUV, TIME-TAG, PSA	G160M 1600 A	EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; FP-POS=ALL; BUFFER-TIME=11 240.0			600 Secs (1838 Secs)		
									[==>400.0 Secs (Split 1)]		
									[==>400.0 Secs (Split 2)]		[1]
									[==>438.0 Secs (Split 3)]		
									[==>600.0 Secs (Split 4)]		[2]
	3	J1152+3400 _G160M (COS.sp.624 716)	(2) J1152+3400	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; BUFFER-TIME=11 240.0			500 Secs (1875 Secs)		
									[==>400.0 Secs (Split 1)]		
									[==>400.0 Secs (Split 2)]		
									[==>600.0 Secs (Split 3)]		[2]
								[==>475.0 Secs (Split 4)]			
4	J1152+3400 _G140L (COS.sp.624 749)	(2) J1152+3400	COS/FUV, TIME-TAG, PSA	G140L 1280 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; BUFFER-TIME=11 700.0			500 Secs (2654 Secs)			
								[==>664.0 Secs (Split 1)]			
								[==>664.0 Secs (Split 2)]			
								[==>664.0 Secs (Split 3)]			
								[==>662.0 Secs (Split 4)]		[3]	

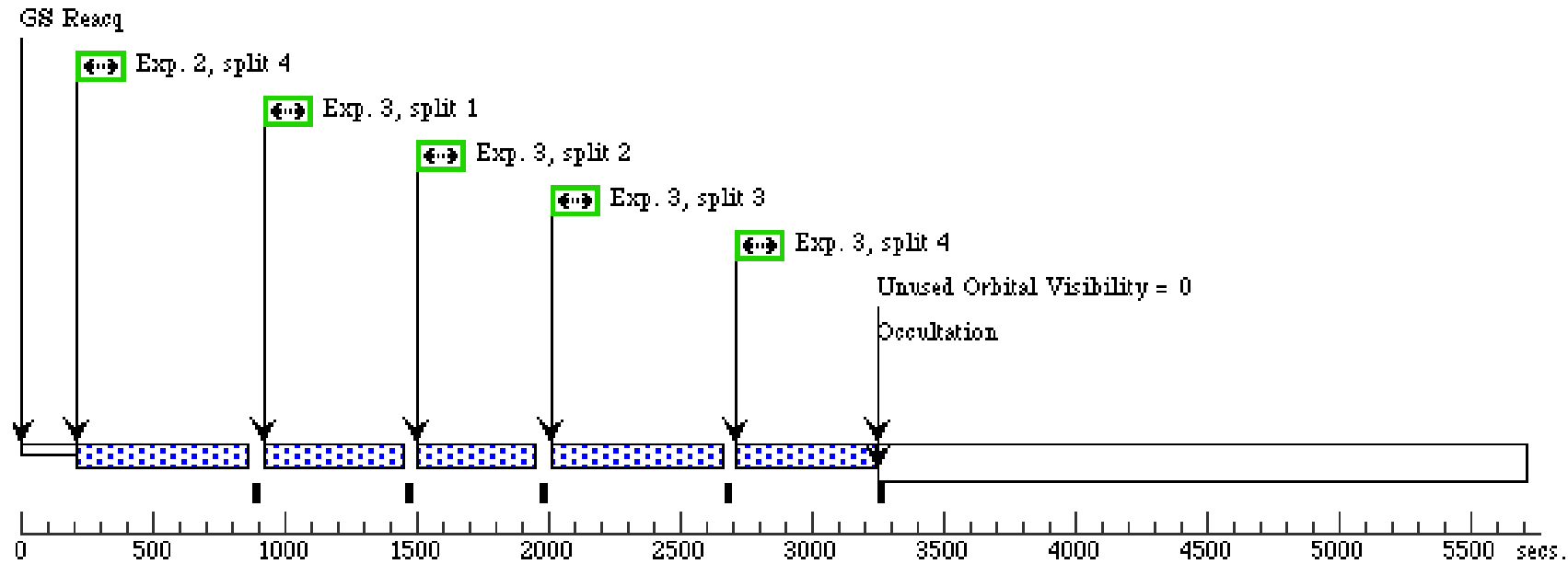
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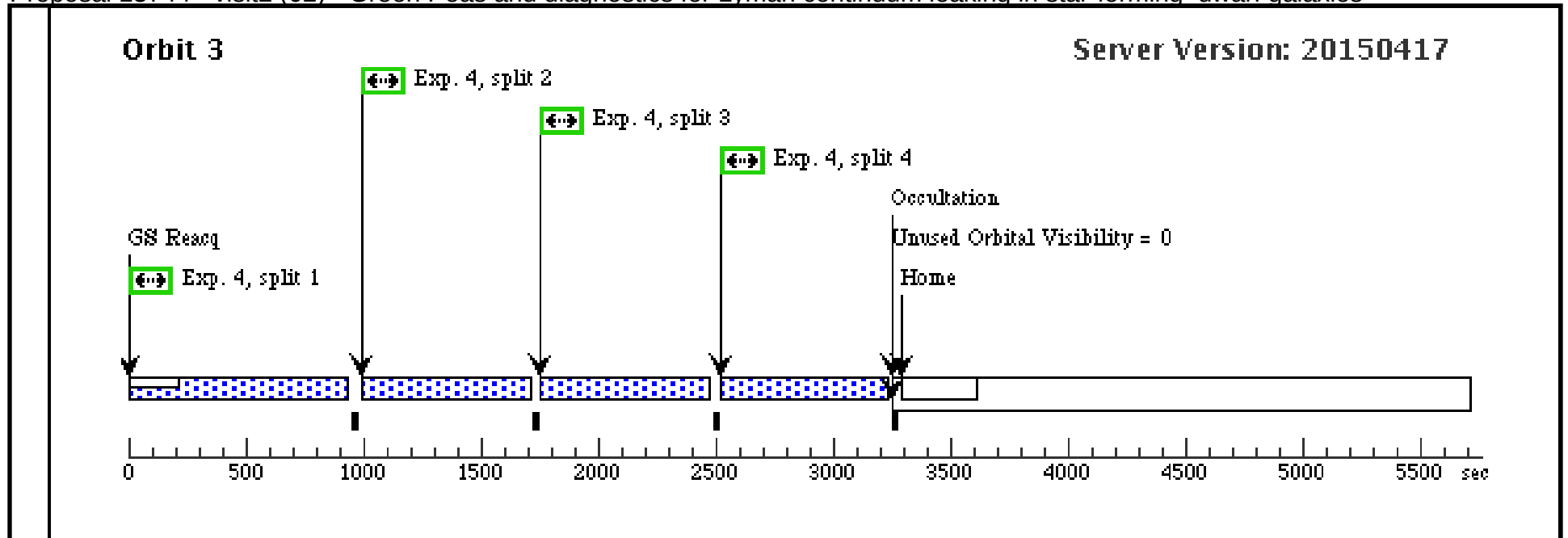
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Orbit 2

Server Version: 20150417





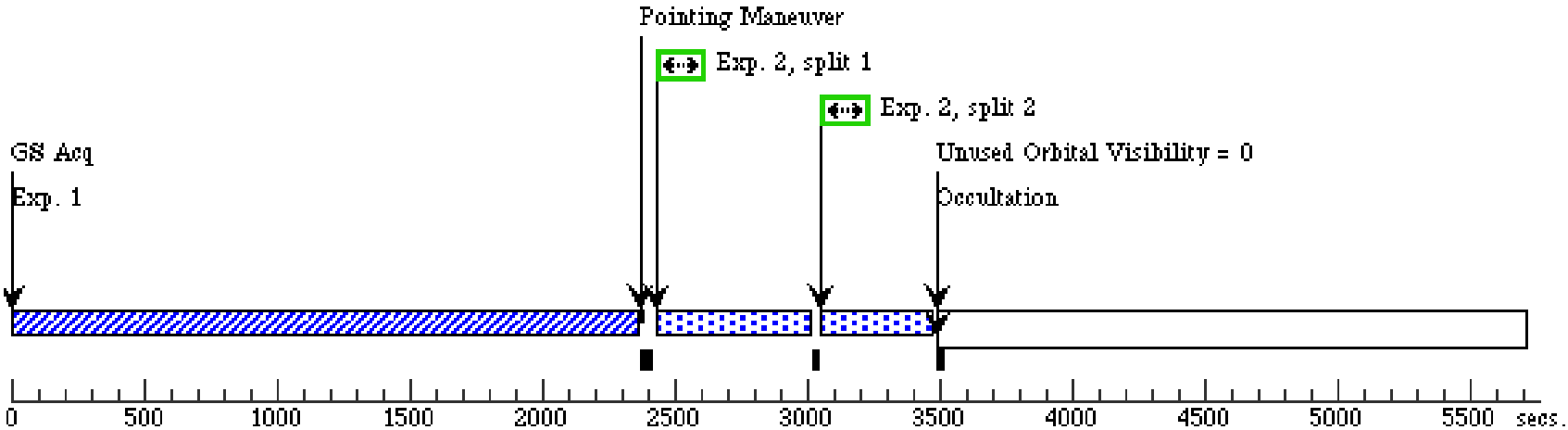
Proposal 13744 - visit3 (03) - Green Peas and diagnostics for Lyman continuum leaking in star-forming dwarf galaxies

Visit	Proposal 13744, visit3 (03), implementation										Thu May 28 01:32:40 GMT 2015	
	Diagnostic Status: Warning											
	Scientific Instruments: COS/NUV, COS/FUV											
	Special Requirements: (none)											
Diagnostics	(visit3 (03)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous			
	(3)	J1333+6246	RA: 13 33 3.9600 (203.2665000d) Dec: +62 46 3.78 (62.76772d) Equinox: J2000				V=20.62+/-0.05 FUV=20.72+/-0.17, NUV=20.97+/-0.15		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	J1333+6246 _ACQ (COS.ta.621 287)	(3) J1333+6246	COS/NUV, ACQ/IMAGE, PSA		MIRRORA				982 Secs (982 Secs) [==>]		[1]
	2	J1333+6246 _G160M (COS.sp.624 719)	(3) J1333+6246	COS/FUV, TIME-TAG, PSA		G160M 1589 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; BUFFER-TIME=11 250.0			375 Secs (1670 Secs) [==>365.0 Secs (Split 1)] [==>368.0 Secs (Split 2)] [==>467.0 Secs (Split 3)] [==>470.0 Secs (Split 4)]		[1] [2]
	3	J1333+6245 _G160M (COS.sp.624 719)	(3) J1333+6246	COS/FUV, TIME-TAG, PSA		G160M 1623 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; BUFFER-TIME=11 250.0			510 Secs (1667 Secs) [==>366.0 Secs (Split 1)] [==>366.0 Secs (Split 2)] [==>470.0 Secs (Split 3)] [==>465.0 Secs (Split 4)]		[2]
	4	J1333+6246 _G140L (COS.sp.708 849)	(3) J1333+6246	COS/FUV, TIME-TAG, PSA		G140L 1105 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=A; BUFFER-TIME=11 700.0			515 Secs (2891 Secs) [==>722.0 Secs (Split 1)] [==>722.0 Secs (Split 2)] [==>722.0 Secs (Split 3)] [==>725.0 Secs (Split 4)]		[3]

Orbit Structure

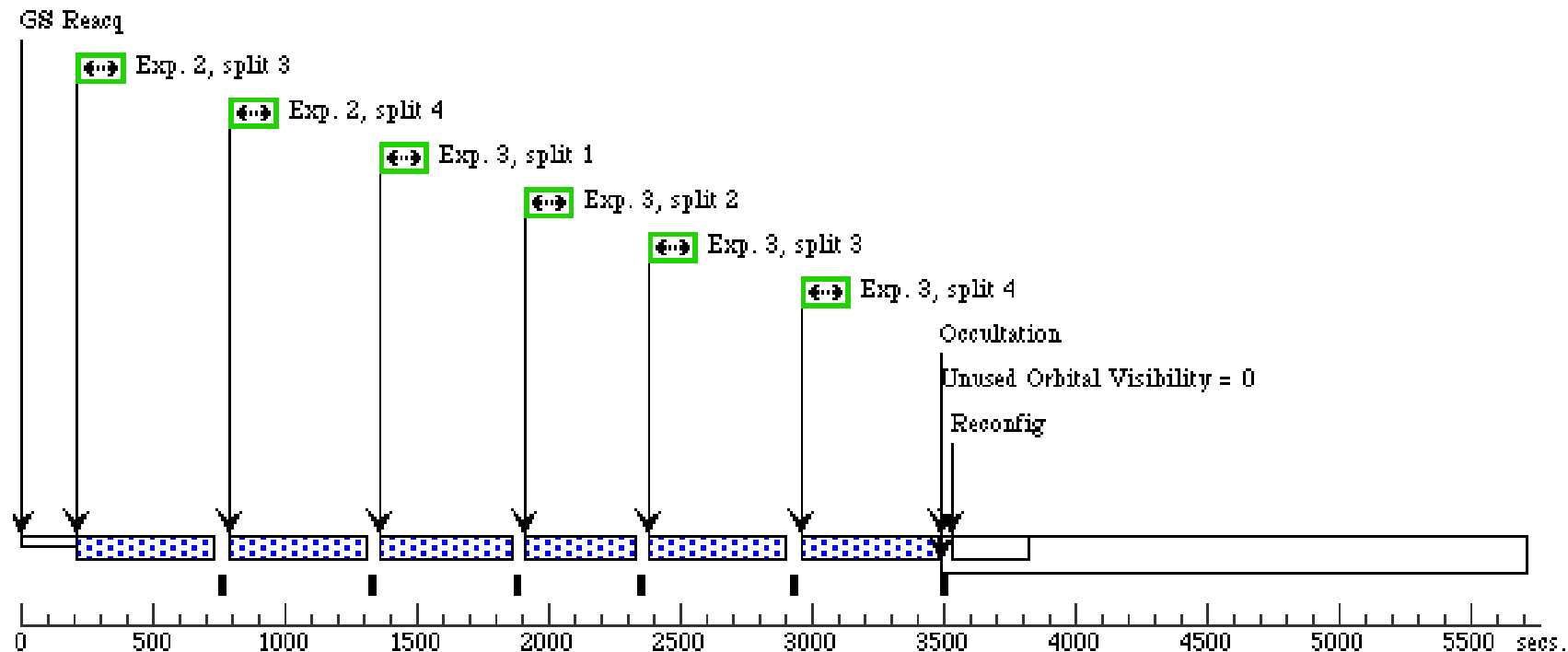
Orbit 1

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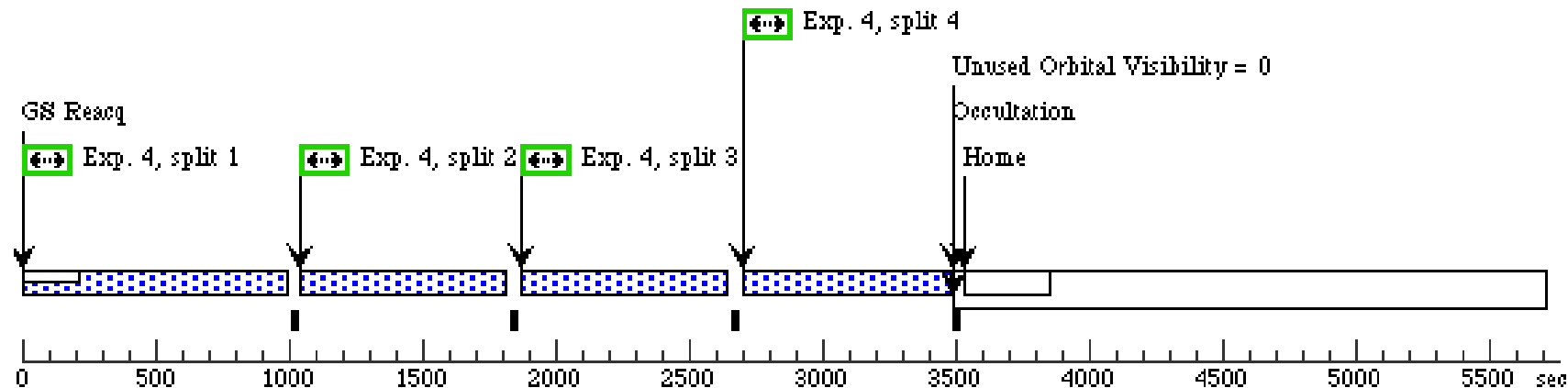
Orbit 2

Server Version: 20150417



Orbit 3

Server Version: 20150417



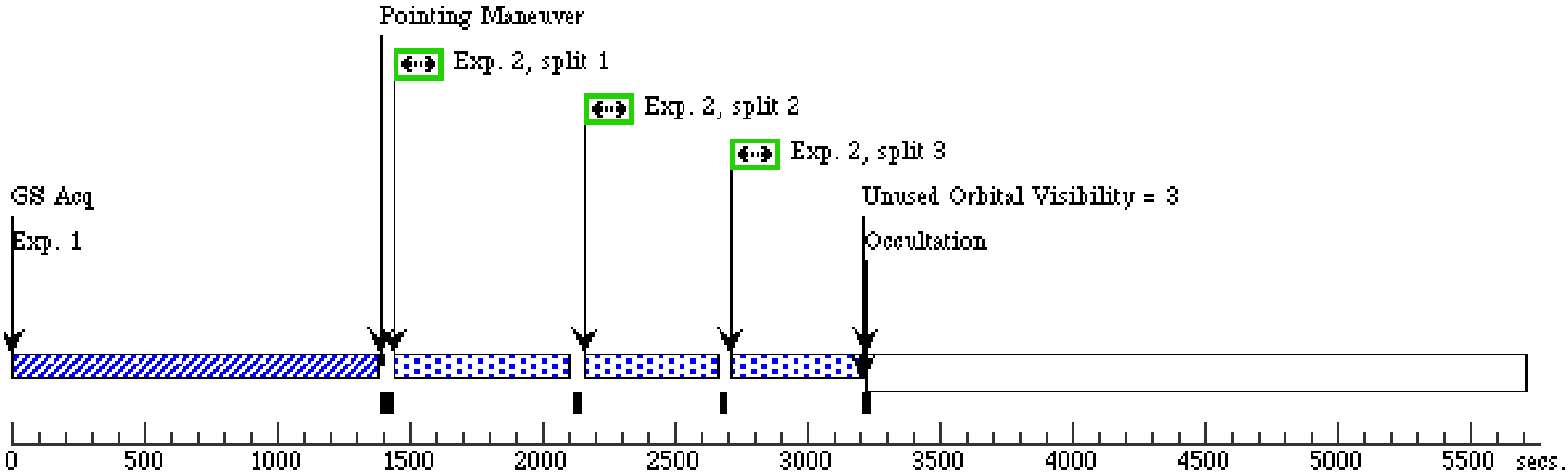
Proposal 13744 - visit4 (04) - Green Peas and diagnostics for Lyman continuum leaking in star-forming dwarf galaxies

Visit	Proposal 13744, visit4 (04), implementation										Thu May 28 01:32:40 GMT 2015
	Diagnostic Status: Warning										
	Scientific Instruments: COS/NUV, COS/FUV										
	Special Requirements: (none)										
Diagnostics	(visit4 (04)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.										
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(4)	J1442-0209	RA: 14 42 31.3900 (220.6307917d) Dec: -02 09 52.03 (-2.16445d) Equinox: J2000				V=20.30+/-0.05 FUV=20.16+/-0.17, NUV=20.31+/-0.05		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	J1442-0209 _ACQ (COS.ta.621 288)	(4) J1442-0209	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				491 Secs (491 Secs) [==>]		[1]
	2	J1442-0209 _G160M (COS.sp.624 722)	(4) J1442-0209	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; BUFFER-TIME=11 170.0			250 Secs (1887 Secs) [==>450.0 Secs (Split 1)] [==>450.0 Secs (Split 2)] [==>437.0 Secs (Split 3)] [==>550.0 Secs (Split 4)]		[1] [2]
	3	J1442-0209 _G160M (COS.sp.624 722)	(4) J1442-0209	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; BUFFER-TIME=11 170.0			250 Secs (1890 Secs) [==>450.0 Secs (Split 1)] [==>450.0 Secs (Split 2)] [==>437.0 Secs (Split 3)] [==>553.0 Secs (Split 4)]		[2]
	4	J1442-0209 _G140L (COS.sp.708 850)	(4) J1442-0209	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=A; BUFFER-TIME=11 700.0			515 Secs (2619 Secs) [==>655.0 Secs (Split 1)] [==>655.0 Secs (Split 2)] [==>655.0 Secs (Split 3)] [==>654.0 Secs (Split 4)]		[3]

Orbit Structure

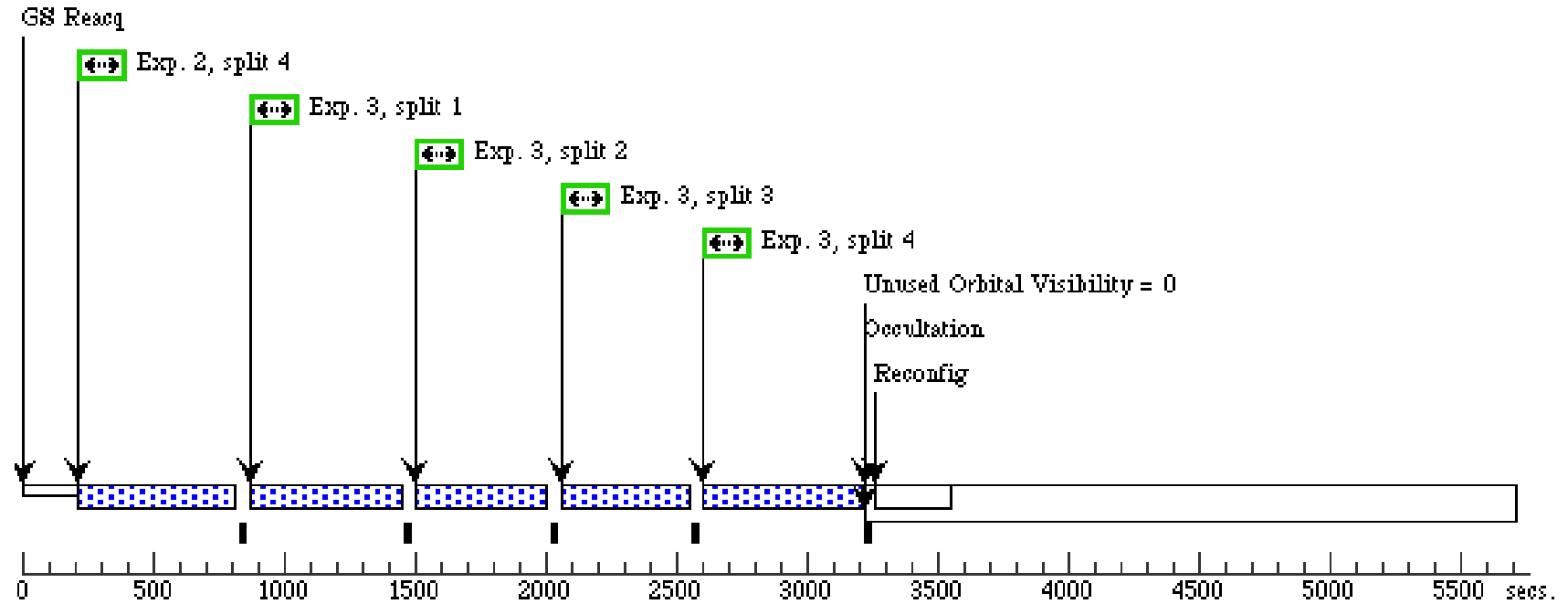
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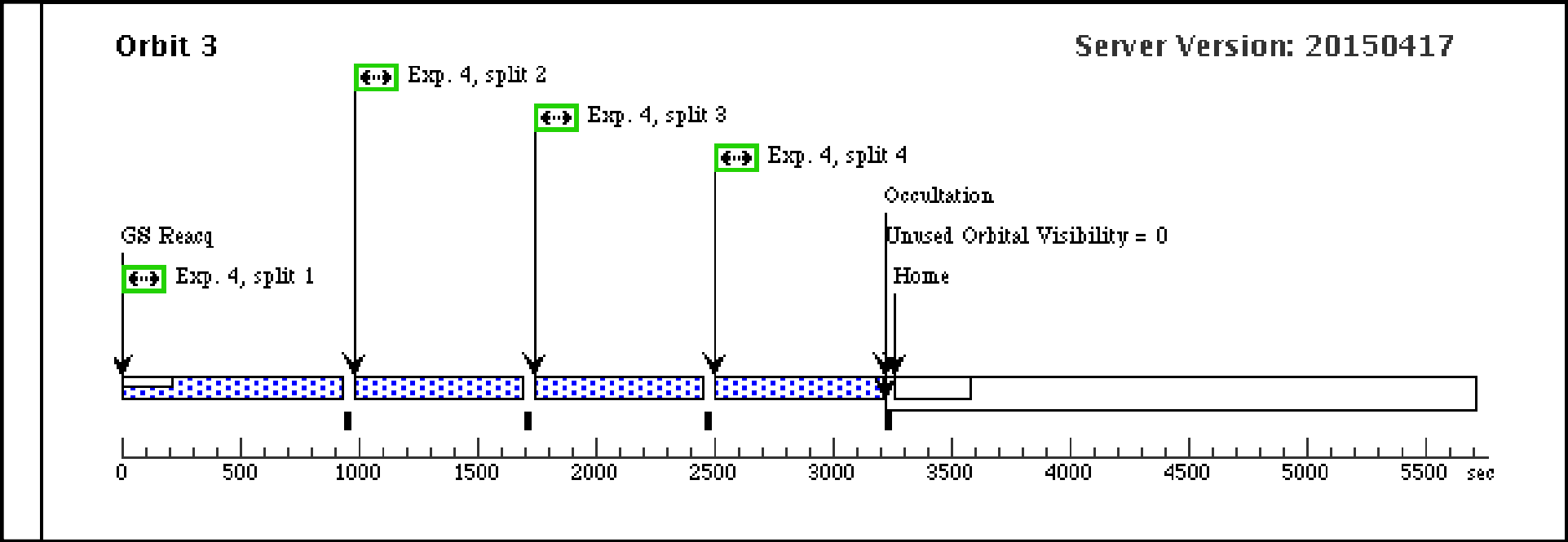
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Orbit 2

Server Version: 20150417



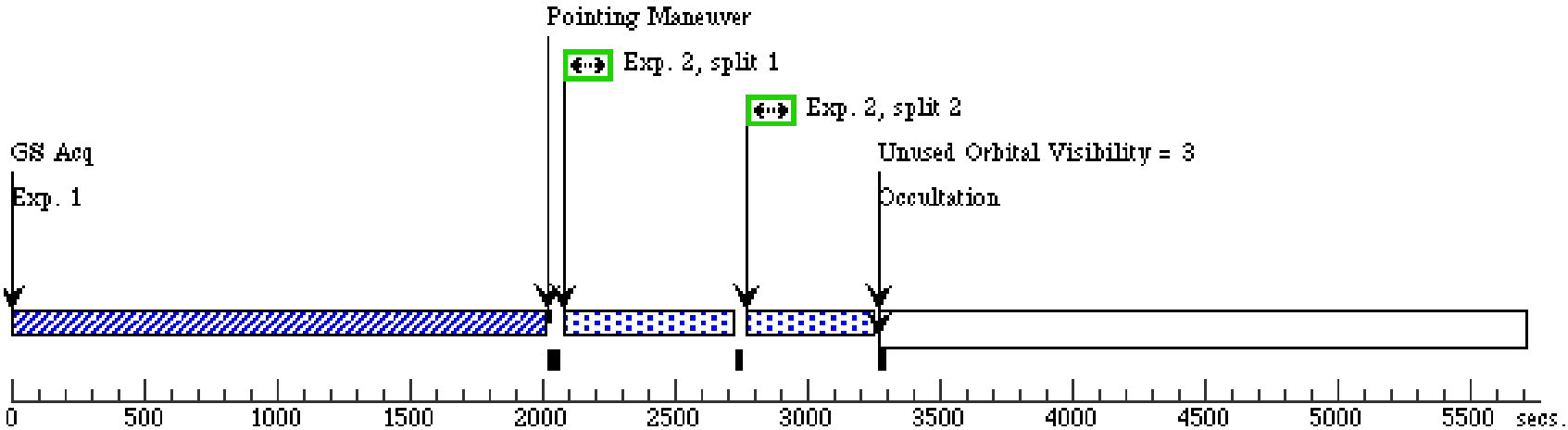


Proposal 13744 - visit5 (05) - Green Peas and diagnostics for Lyman continuum leaking in star-forming dwarf galaxies

Visit	Proposal 13744, visit5 (05), implementation										Thu May 28 01:32:40 GMT 2015	
	Diagnostic Status: Warning											
	Scientific Instruments: COS/NUV, COS/FUV											
	Special Requirements: (none)											
Diagnos	(visit5 (05)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous			
	(5)	J1503+3644	RA: 15 03 42.8300 (225.9284583d) Dec: +36 44 50.75 (36.74743d) Equinox: J2000				V=20.79+/-0.05 FUV=21.02+/-0.31, NUV=20.76+/-0.18		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	J1503+3644 _ACQ (COS.ta.621 289)	(5) J1503+3644	COS/NUV, ACQ/IMAGE, PSA		MIRRORA				808 Secs (808 Secs) [==>]		[1]
	2	J1503+3644 _G160M (COS.sp.624 738)	(5) J1503+3644	COS/FUV, TIME-TAG, PSA		G160M 1600 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; BUFFER-TIME=11 300.0			1000 Secs (1638 Secs) [==>432.0 Secs (Split 1)] [==>432.0 Secs (Split 2)] [==>387.0 Secs (Split 3)] [==>387.0 Secs (Split 4)]		[1] [2]
	3	J1503+3644 _G160M (COS.sp.624 738)	(5) J1503+3644	COS/FUV, TIME-TAG, PSA		G160M 1623 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=BOTH; BUFFER-TIME=11 300.0			500 Secs (1617 Secs) [==>432.0 Secs (Split 1)] [==>432.0 Secs (Split 2)] [==>377.0 Secs (Split 3)] [==>376.0 Secs (Split 4)]		[2]
	4	J1503+3644 _G140L (COS.sp.708 851)	(5) J1503+3644	COS/FUV, TIME-TAG, PSA		G140L 1105 A	FP-POS=ALL; EXTENDED=YES; FLASH=YES; SEGMENT=A; BUFFER-TIME=11 700.0			1300 Secs (5752 Secs) [==>1442.0 Secs (Split 1)] [==>1433.0 Secs (Split 2)] [==>1433.0 Secs (Split 3)] [==>1444.0 Secs (Split 4)]		[3] [4]

Orbit 1

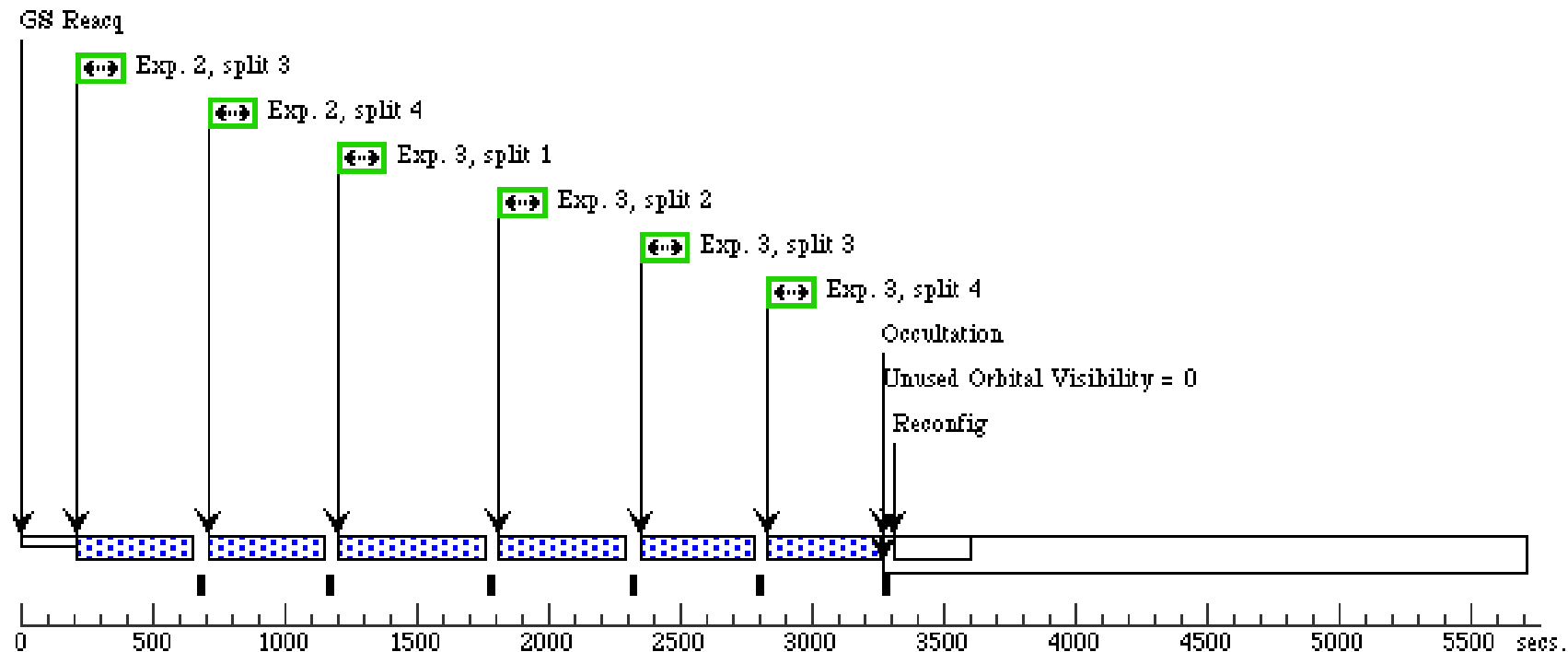
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Orbit Structure

Orbit 2

Server Version: 20150417



Orbit 3

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