



13347 - The Missing Baryons Around Nearby Dwarf Galaxies

Cycle: 21, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
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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) MRK-1253	COS/FUV COS/NUV	3	19-Nov-2013 21:01:36.0	yes
02	(5) 2XMM-J100420.0+051300	COS/FUV COS/NUV	3	19-Nov-2013 21:01:53.0	yes
03	(1) 2MASX-J10053271-2417161	COS/FUV COS/NUV	5	19-Nov-2013 21:02:12.0	yes
04	(2) ESO-499-G-041	COS/FUV COS/NUV	5	19-Nov-2013 21:02:31.0	yes
05	(3) 2MASS-J10155924-2748289	COS/FUV COS/NUV	5	19-Nov-2013 21:02:53.0	yes

21 Total Orbits Used

ABSTRACT

Dwarf galaxies are missing nearly all of their baryons, which have presumably flowed away as a wind. This mass loss accounts for a significant fraction of all baryons lost from galaxies, so there is great interest in determining the size and scope of the gas lost. This gas is not visible in emission but is detectable through absorption features toward background AGNs. Here we propose to observe the absorbing material around three isolated dwarfs on the periphery of the Local Group: Sextans A, Sextans B, and NGC 3109. Unlike more distant dwarfs, the star formation history and cold gaseous content of these galaxies are well-studied. The isolation of these dwarfs, far from large galaxies, means that they have not yet interacted with other systems so their mass loss history is well-preserved, making them ideal targets for study.

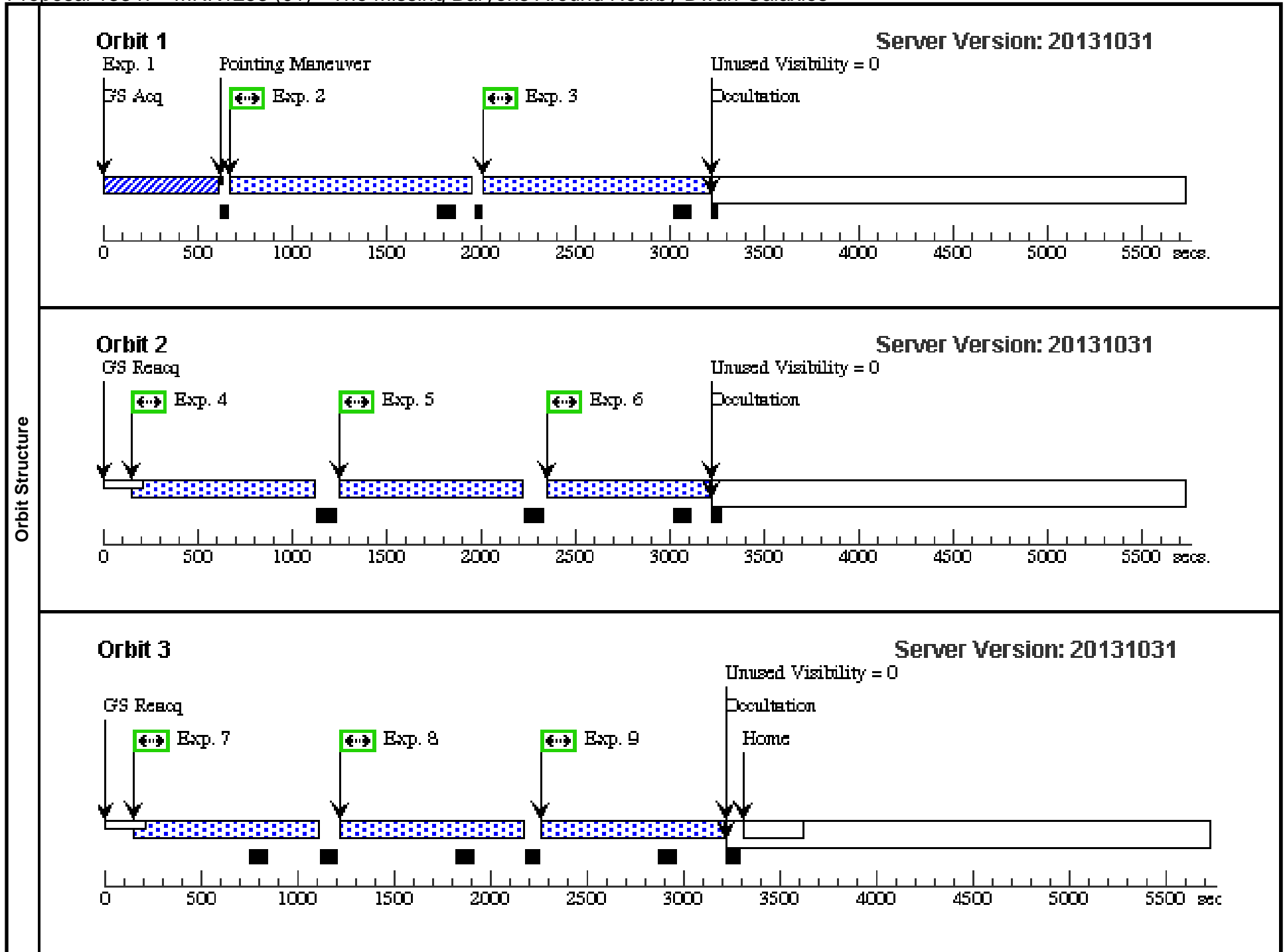
OBSERVING DESCRIPTION

There are FUV magnitudes from GALEX for all targets and we use those, along with the COS spectroscopic ETC, to determine the exposure time to achieve a S/N of about 10 per resolution element for the G130M and G160M settings. We will adopt what has become the standard setting, having multiple spectra with central wavelengths of 1291, 1300, 1309, and 1318 for the G130M and 1589, 1600, 1611, and 1623 for the G160M. The total amount of time for an object is divided between G130M and G160M in the approximate ratio of 1:2. Each object has an acquisition image and then a set of 4 G130M spectra and 4 G160M spectra, each with different wavelength setting, making a total of 8 spectra per object. Two targets, Mrk 1253 and PG 1001+054 (2XMM J100420.0+051300) are observed for 3 orbits each and the other three are each observed for 5 orbits.

Proposal 13347 - MRK1253 (01) - The Missing Baryons Around Nearby Dwarf Galaxies

Wed Nov 20 02:03:03 GMT 2013

Visit	Proposal 13347, MRK1253 (01), implementation Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: (none)									
	(MRK1253 (01)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(4)	MRK-1253	RA: 10 19 32.8600 (154.8869167d) Dec: -03 20 15.00 (-3.33750d) Equinox: J2000	Redshift: 0.049	V=16.0+/-0.3	Reference Frame: ICRS				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Magnitudes in the Galax catalog are: FUV = 17.2, NUV = 17.0; Sy 1</i>										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(517320)	(4) MRK-1253	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				87 Secs (87 Secs) [==>]	[1]
	2	(517330)	(4) MRK-1253	COS/FUV, TIME-TAG, PSA	G160M 1589 A	0; FP-POS=1			1070 Secs (1064 Secs) [==>1064.0 Secs]	[1]
	3	(517330)	(4) MRK-1253	COS/FUV, TIME-TAG, PSA	G160M 1600 A	0; FP-POS=2			1070 Secs (1074 Secs) [==>1074.0 Secs]	[1]
	4	(517330)	(4) MRK-1253	COS/FUV, TIME-TAG, PSA	G160M 1611 A	0; FP-POS=3			900 Secs (850 Secs) [==>850.0 Secs]	[2]
	5	(517330)	(4) MRK-1253	COS/FUV, TIME-TAG, PSA	G160M 1623 A	0; FP-POS=4			900 Secs (850 Secs) [==>850.0 Secs]	[2]
	6	(517321)	(4) MRK-1253	COS/FUV, TIME-TAG, PSA	G130M 1291 A	0; FP-POS=1			700 Secs (675 Secs) [==>675.0 Secs]	[2]
	7	(517321)	(4) MRK-1253	COS/FUV, TIME-TAG, PSA	G130M 1300 A	0; FP-POS=2			850 Secs (840 Secs) [==>840.0 Secs]	[3]
	8	(517321)	(4) MRK-1253	COS/FUV, TIME-TAG, PSA	G130M 1309 A	0; FP-POS=3			850 Secs (825 Secs) [==>825.0 Secs]	[3]
	9	(517321)	(4) MRK-1253	COS/FUV, TIME-TAG, PSA	G130M 1318 A	0; FP-POS=4			850 Secs (825 Secs) [==>825.0 Secs]	[3]

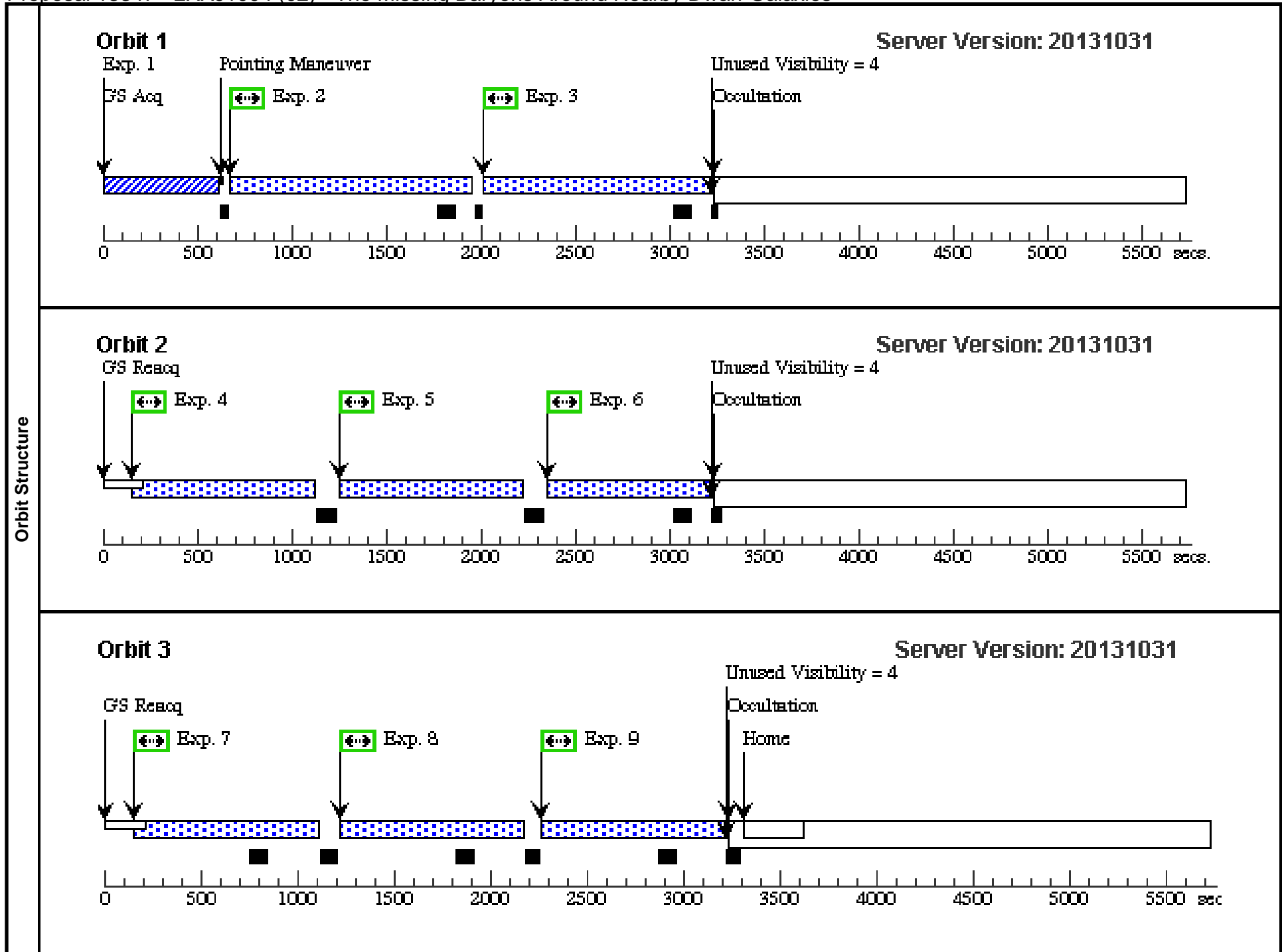


Orbit Structure

Proposal 13347 - 2XXJ1004 (02) - The Missing Baryons Around Nearby Dwarf Galaxies

Wed Nov 20 02:03:06 GMT 2013

Visit	Proposal 13347, 2XXJ1004 (02), implementation Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: (none) <i>Comments: PG1001p54</i>									
	(2XXJ1004 (02)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE. (2XXJ1004 (02)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.									
Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(5)	2XMM-J100420.0+051300	RA: 10 04 20.1414 (151.0839225d) Dec: +05 13 0.49 (5.21680d) Equinox: J2000	Redshift: 0.16	V=16.55	Reference Frame: ICRS				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. The Gaia magnitudes for this Sy 1 are FUV = 17.1, NUV = 16.84.</i>										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(517320)	(5) 2XMM-J100420.0+051300	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				87 Secs (87 Secs) [==>]	[1]
	2	(517330)	(5) 2XMM-J100420.0+051300	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=90 0; FP-POS=1			1070 Secs (1064 Secs) [==>1064.0 Secs]	[1]
	3	(517330)	(5) 2XMM-J100420.0+051300	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=90 0; FP-POS=2			1070 Secs (1074 Secs) [==>1074.0 Secs]	[1]
	4	(517330)	(5) 2XMM-J100420.0+051300	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=90 0; FP-POS=3			900 Secs (850 Secs) [==>850.0 Secs]	[2]
	5	(517330)	(5) 2XMM-J100420.0+051300	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=90 0; FP-POS=4			900 Secs (850 Secs) [==>850.0 Secs]	[2]
	6	(517321)	(5) 2XMM-J100420.0+051300	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=50 0; FP-POS=1			700 Secs (675 Secs) [==>675.0 Secs]	[2]
	7	(517321)	(5) 2XMM-J100420.0+051300	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=50 0; FP-POS=2			850 Secs (840 Secs) [==>840.0 Secs]	[3]
	8	(517321)	(5) 2XMM-J100420.0+051300	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=50 0; FP-POS=3			850 Secs (825 Secs) [==>825.0 Secs]	[3]
	9	(517321)	(5) 2XMM-J100420.0+051300	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=50 0; FP-POS=4			850 Secs (825 Secs) [==>825.0 Secs]	[3]



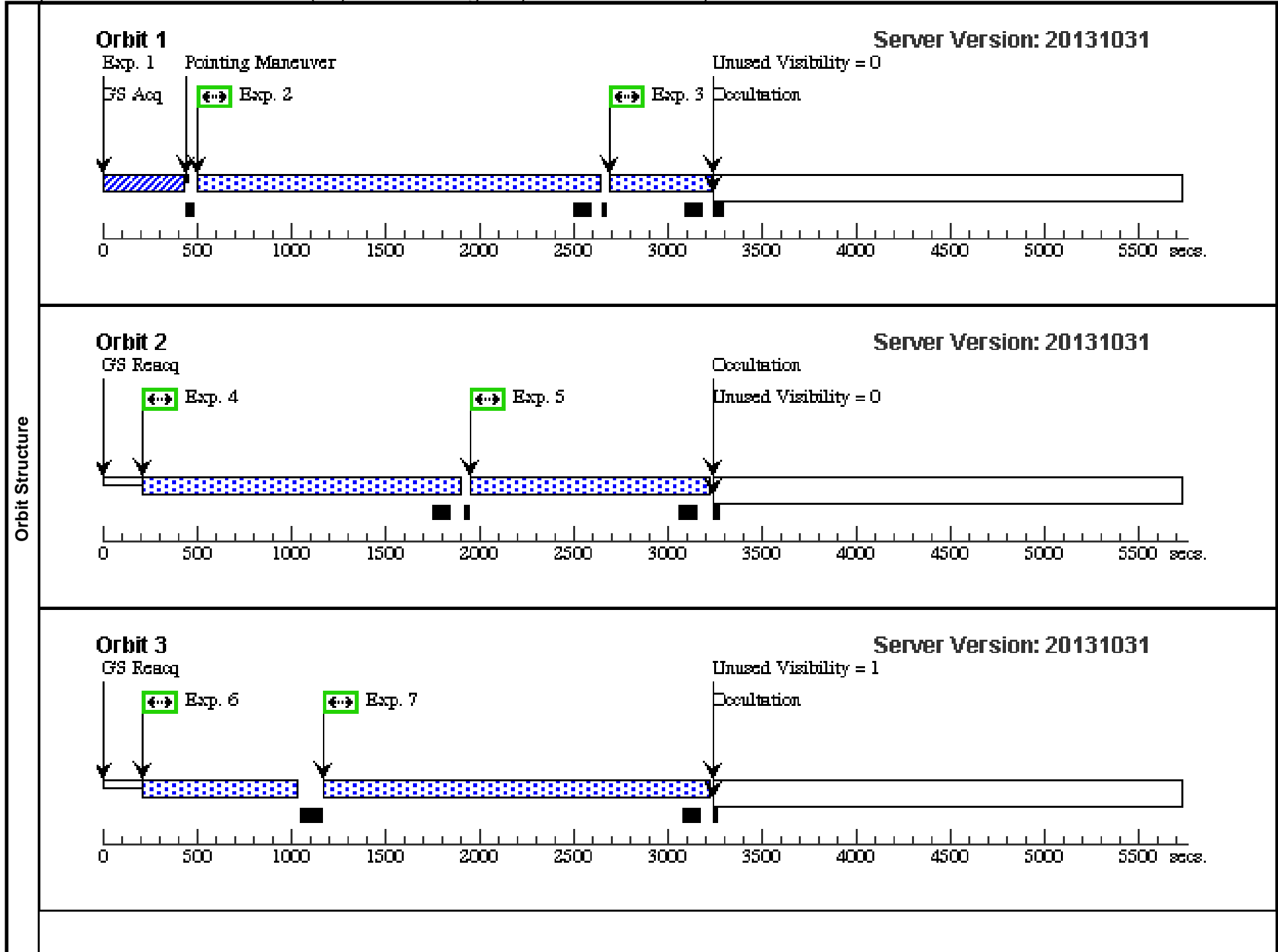
Proposal 13347 - 2MASXJ1005 (03) - The Missing Baryons Around Nearby Dwarf Galaxies

Wed Nov 20 02:03:08 GMT 2013

Visit	Proposal 13347, 2MASXJ1005 (03), implementation Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: (none) <i>Comments: CTS M00.02</i>																
Diagnostics	(2MASXJ1005 (03)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. (2MASXJ1005 (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	<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>2MASX-J10053271-2417161</td> <td> RA: 10 05 32.7170 (151.3863208d) Dec: -24 17 16.15 (-24.28782d) Equinox: J2000 </td> <td>Redshift: 0.153590</td> <td>V=17.5+/-0.3</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	2MASX-J10053271-2417161	RA: 10 05 32.7170 (151.3863208d) Dec: -24 17 16.15 (-24.28782d) Equinox: J2000	Redshift: 0.153590	V=17.5+/-0.3	Reference Frame: ICRS	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. The Galex magnitudes are FUV 18.2, NUV = 17.98, as given in the GALEX source catalog; Sy 1.2.</i>			
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous												
(1)	2MASX-J10053271-2417161	RA: 10 05 32.7170 (151.3863208d) Dec: -24 17 16.15 (-24.28782d) Equinox: J2000	Redshift: 0.153590	V=17.5+/-0.3	Reference Frame: ICRS												

Proposal 13347 - 2MASXJ1005 (03) - The Missing Baryons Around Nearby Dwarf Galaxies

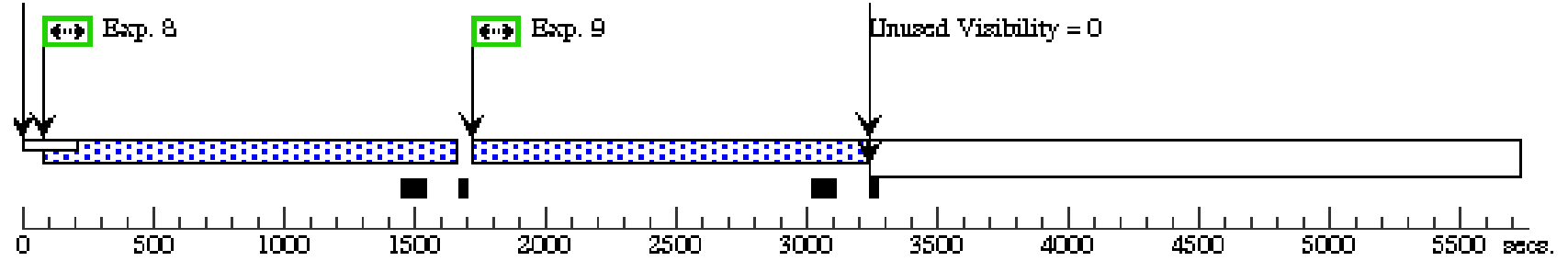
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1	(542446)	(1) 2MASX-J100532 71-2417161	COS/NUV, ACQ/IMAGE, PSA	MIRRORA					14 Secs (14 Secs) [==>]	[1]
	2	(517497)	(1) 2MASX-J100532 71-2417161	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=18 00; FP-POS=1				1070 Secs (1920 Secs) [==>1920.0 Secs]	[1]
	3	(517497)	(1) 2MASX-J100532 71-2417161	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=30 0; FP-POS=1				1070 Secs (418 Secs) [==>418.0 Secs]	[1]
	4	(517497)	(1) 2MASX-J100532 71-2417161	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=15 00; FP-POS=2				1070 Secs (1634 Secs) [==>1634.0 Secs]	[2]
	5	(517497)	(1) 2MASX-J100532 71-2417161	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=10 00; FP-POS=2				900 Secs (1150 Secs) [==>1150.0 Secs]	[2]
	6	(517497)	(1) 2MASX-J100532 71-2417161	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=70 0; FP-POS=3				900 Secs (766 Secs) [==>766.0 Secs]	[3]
	7	(517497)	(1) 2MASX-J100532 71-2417161	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=18 00; FP-POS=4				900 Secs (1931 Secs) [==>1931.0 Secs]	[3]
	8	(517510)	(1) 2MASX-J100532 71-2417161	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=12 00; FP-POS=1				700 Secs (1386 Secs) [==>1386.0 Secs]	[4]
	9	(517510)	(1) 2MASX-J100532 71-2417161	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=12 00; FP-POS=2				850 Secs (1386 Secs) [==>1386.0 Secs]	[4]
	10	(517510)	(1) 2MASX-J100532 71-2417161	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=12 00; FP-POS=3				850 Secs (1387 Secs) [==>1387.0 Secs]	[5]
11	(517510)	(1) 2MASX-J100532 71-2417161	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=12 00; FP-POS=4				850 Secs (1387 Secs) [==>1387.0 Secs]	[5]	



Server Version: 20131031

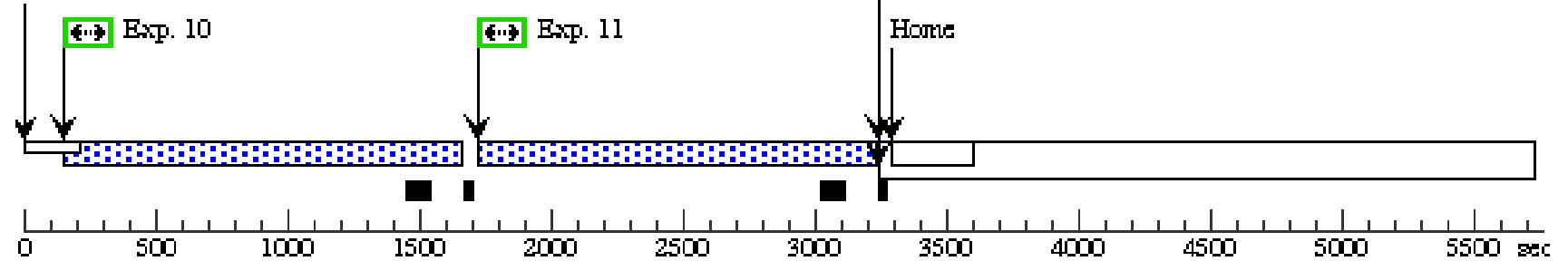
Orbit 4

GS Reacq



Orbit 5

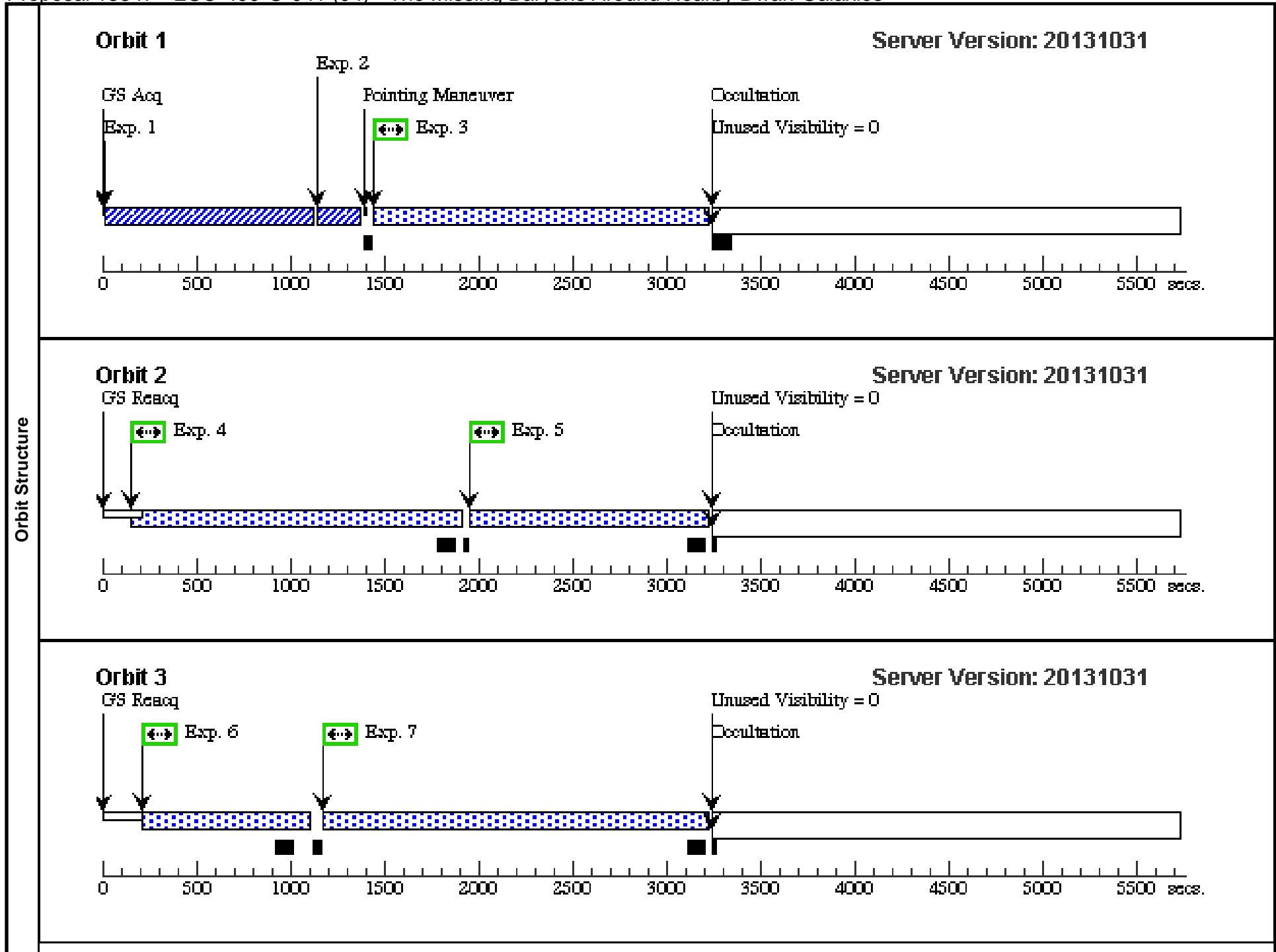
GS Reacq



Proposal 13347 - ESO-499-G-041 (04) - The Missing Baryons Around Nearby Dwarf Galaxies

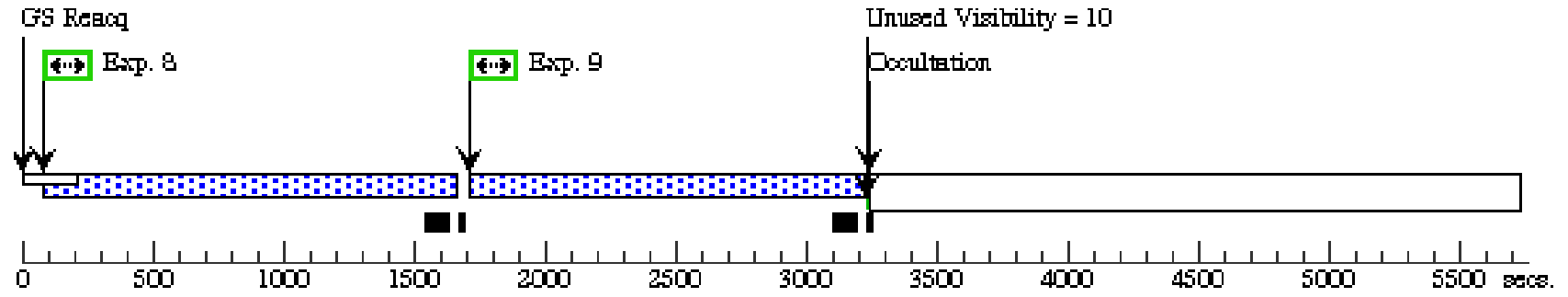
Wed Nov 20 02:03:10 GMT 2013

Visit	Proposal 13347, ESO-499-G-041 (04), implementation Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: (none)									
	(ESO-499-G-041 (04)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	ESO-499-G-041	RA: 10 05 55.3600 (151.4806667d) Dec: -23 03 24.65 (-23.05685d) Equinox: J2000	Redshift: 0.012	V=14.5+/-0.3	Reference Frame: ICRS				
<i>Comments: This object was generated by the targetselector and retrieved from the NED database. GALEX magnitudes are FUV = 18.1, NUV = 17.3, from the Galax catalog; Sy 1</i>										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(541677)	(2) ESO-499-G-041	COS/NUV, ACQ/SEARCH, PSA	MIRRORB	SCAN-SIZE=3; STEP-SIZE=1.767			57 Secs (57 Secs) [==>]	[1]
	2	(541677)	(2) ESO-499-G-041	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				57 Secs (57 Secs) [==>]	[1]
	3	(542450)	(2) ESO-499-G-041	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=16 49; FP-POS=1			1070 Secs (1567 Secs) [==>1567.0 Secs]	[1]
	4	(542450)	(2) ESO-499-G-041	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=15 34; FP-POS=2			1070 Secs (1634 Secs) [==>1634.0 Secs]	[2]
	5	(542450)	(2) ESO-499-G-041	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=10 50; FP-POS=2			900 Secs (1150 Secs) [==>1150.0 Secs]	[2]
	6	(542450)	(2) ESO-499-G-041	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=66 6; FP-POS=3			900 Secs (834 Secs) [==>834.0 Secs]	[3]
	7	(542450)	(2) ESO-499-G-041	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=18 31; FP-POS=4			900 Secs (1931 Secs) [==>1931.0 Secs]	[3]
	8	(542451)	(2) ESO-499-G-041	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=12 86; FP-POS=1			700 Secs (1386 Secs) [==>1386.0 Secs]	[4]
	9	(542451)	(2) ESO-499-G-041	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=12 86; FP-POS=2			850 Secs (1386 Secs) [==>1386.0 Secs]	[4]
	10	(542451)	(2) ESO-499-G-041	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=12 87; FP-POS=3			850 Secs (1387 Secs) [==>1387.0 Secs]	[5]
	11	(542451)	(2) ESO-499-G-041	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=12 87; FP-POS=4			850 Secs (1387 Secs) [==>1387.0 Secs]	[5]



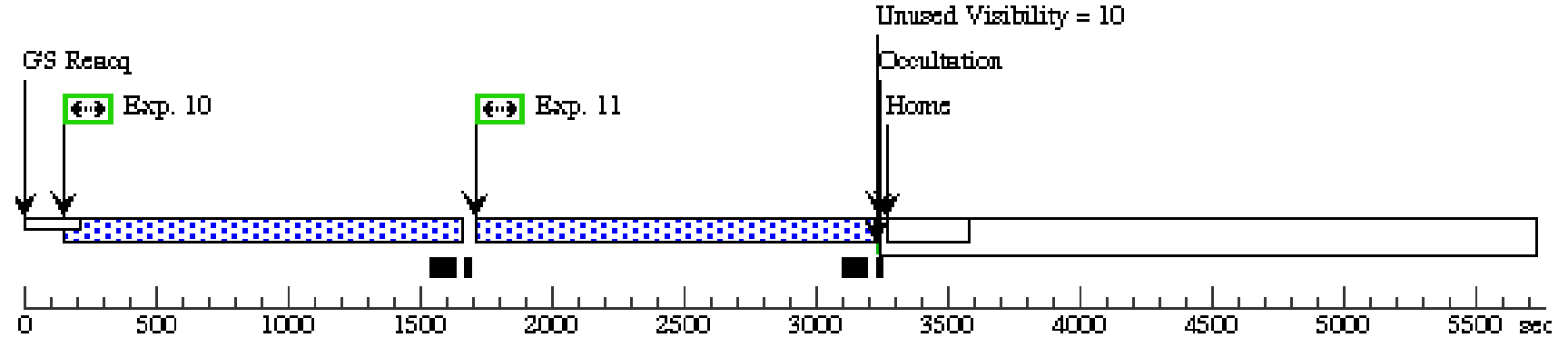
Orbit 4

Server Version: 20131031



Orbit 5

Server Version: 20131031



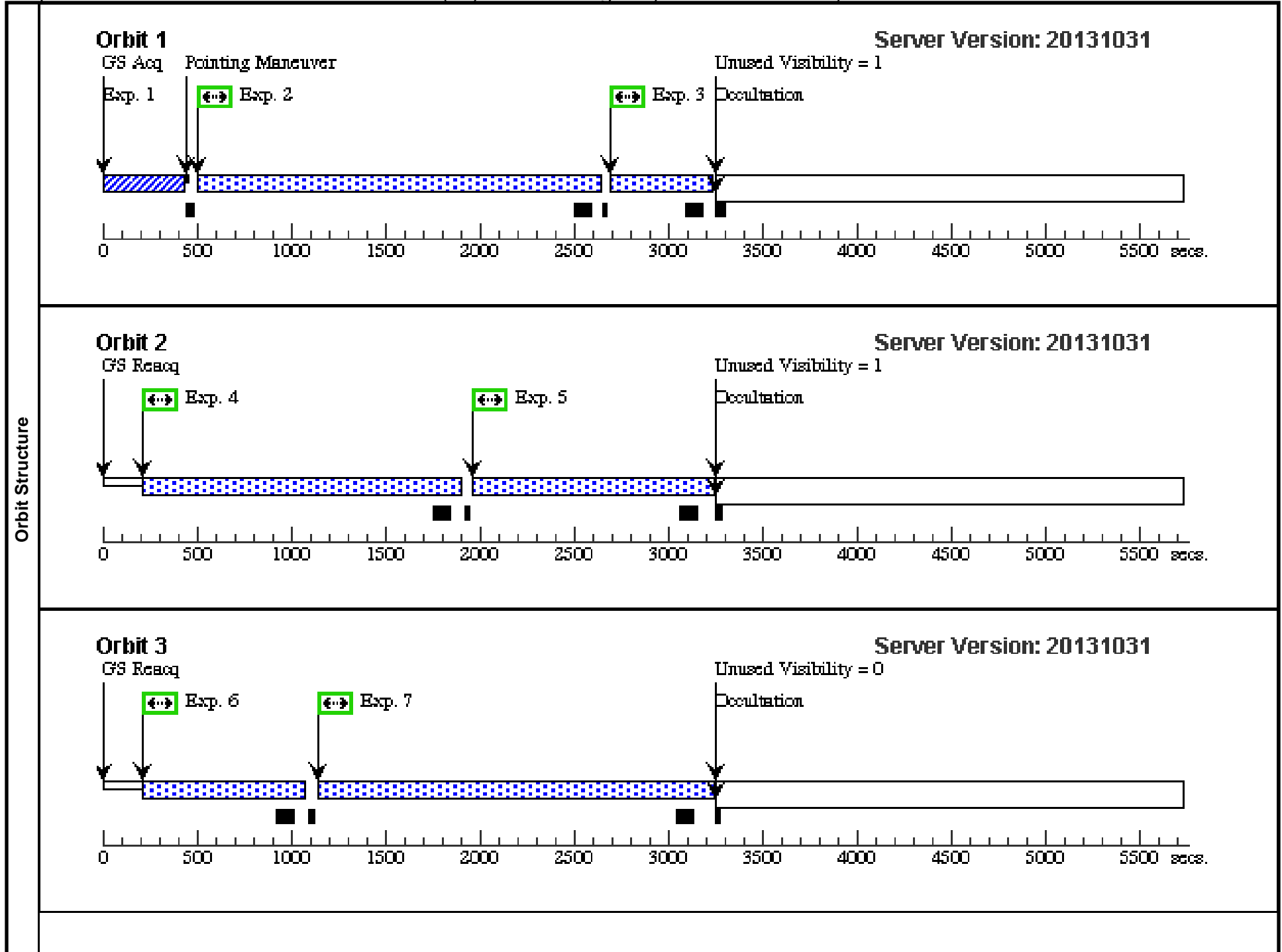
Proposal 13347 - 2MASS-J10155924-274827 (05) - The Missing Baryons Around Nearby Dwarf Galaxies

Wed Nov 20 02:03:12 GMT 2013

Visit	<p>Proposal 13347, 2MASS-J10155924-274827 (05), implementation</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: COS/NUV, COS/FUV</p> <p>Special Requirements: (none)</p> <p><i>Comments: 1RXS J101558.9-274827</i></p>					
	<p>(2MASS-J10155924-274827 (05)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.</p> <p>(2MASS-J10155924-274827 (05)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.</p>					
Diagnosics						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(3)	2MASS-J10155924-2748289	RA: 10 15 59.2400 (153.9968333d) Dec: -27 48 28.80 (-27.80800d) Equinox: J2000	Redshift: 0.1	V=17.3+/-0.3	Reference Frame: ICRS
<p><i>Comments: This object was generated by the targetselector and retrieved from the NED database. The Gaia source catalog gives the following magnitudes: FUV = 18.0, NUV = 17.76</i></p>						

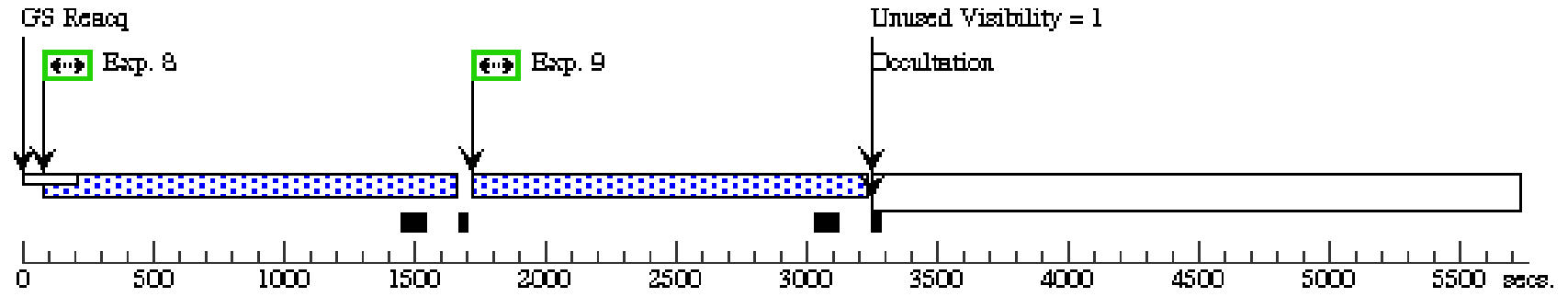
Proposal 13347 - 2MASS-J10155924-274827 (05) - The Missing Baryons Around Nearby Dwarf Galaxies

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(541676)	(3) 2MASS-J101559 24-2748289	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				14 Secs (14 Secs)	
									[==>]	[1]
	2	(542452)	(3) 2MASS-J101559 24-2748289	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=18 00; FP-POS=1			1070 Secs (1924 Secs)	
									[==>1924.0 Secs]	[1]
	3	(542452)	(3) 2MASS-J101559 24-2748289	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=30 0; FP-POS=1			1070 Secs (422 Secs)	
									[==>422.0 Secs]	[1]
	4	(542452)	(3) 2MASS-J101559 24-2748289	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=15 00; FP-POS=2			1070 Secs (1638 Secs)	
									[==>1638.0 Secs]	[2]
	5	(542452)	(3) 2MASS-J101559 24-2748289	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=10 00; FP-POS=2			900 Secs (1154 Secs)	
									[==>1154.0 Secs]	[2]
6	(542452)	(3) 2MASS-J101559 24-2748289	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=67 0; FP-POS=3			900 Secs (809 Secs)		
								[==>809.0 Secs]	[3]	
7	(542452)	(3) 2MASS-J101559 24-2748289	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=18 00; FP-POS=4			900 Secs (1974 Secs)		
								[==>1974.0 Secs]	[3]	
8	(542453)	(3) 2MASS-J101559 24-2748289	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=12 00; FP-POS=1			700 Secs (1390 Secs)		
								[==>1390.0 Secs]	[4]	
9	(542453)	(3) 2MASS-J101559 24-2748289	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=12 00; FP-POS=2			850 Secs (1390 Secs)		
								[==>1390.0 Secs]	[4]	
10	(542453)	(3) 2MASS-J101559 24-2748289	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=12 00; FP-POS=3			850 Secs (1391 Secs)		
								[==>1391.0 Secs]	[5]	
11	(542453)	(3) 2MASS-J101559 24-2748289	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=12 00; FP-POS=4			850 Secs (1391 Secs)		
								[==>1391.0 Secs]	[5]	



Orbit 4

Server Version: 20131031



Orbit 5

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