



13871 - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at $z \sim 10$

Cycle: 22, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Dr. Pascal Oesch (PI) (Contact)	Yale University	pascal.oesch@yale.edu
Prof. Garth D. Illingworth (CoI)	University of California - Santa Cruz	gdi@ucolick.org
Dr. Ivo Labbe (CoI) (ESA Member)	Universiteit Leiden	ivo@strw.leidenuniv.nl
Dr. Gabriel Brammer (CoI) (ESA Member)	Space Telescope Science Institute - ESA	brammer@stsci.edu
Dr. Rychard Bouwens (CoI) (ESA Member)	Universiteit Leiden	bouwens@strw.leidenuniv.nl
Prof. Marijn Franx (CoI) (ESA Member)	Universiteit Leiden	franx@strw.leidenuniv.nl
Prof. Pieter van Dokkum (CoI)	Yale University	pieter.vandokkum@yale.edu
Mr. Daniel K. Magee (CoI)	University of California - Santa Cruz	magee@ucolick.org
Dr. Ivelina G Momcheva (CoI)	Yale University	ivelina.momcheva@yale.edu
Ms. Renske Smit (CoI) (ESA Member)	Universiteit Leiden	rsmit@strw.leidenuniv.nl
Dr. Matthew L. N. Ashby (CoI)	Smithsonian Institution Astrophysical Observatory	mashby@cfa.harvard.edu
Dr. Giovanni G. Fazio (CoI)	Smithsonian Institution Astrophysical Observatory	gfazio@cfa.harvard.edu
Dr. Jiasheng Huang (CoI)	Smithsonian Institution Astrophysical Observatory	jhuang@cfa.harvard.edu
Dr. Steven P. Willner (CoI)	Smithsonian Institution Astrophysical Observatory	swillner@cfa.harvard.edu
Valentino Gonzalez (CoI)	University of California - Riverside	valentino.gonzalez@ucr.edu
Dr. Rosalind Eugenie Skelton (CoI)	South African Astronomical Observatory	ros@sao.ac.za
Dr. Michele Trenti (CoI) (ESA Member)	University of Cambridge	trenti@ast.cam.ac.uk
Dr. Lee Spitler (CoI)	Macquarie University	lee.spitler@mq.edu.au

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) GN-Z10-1 ANY	ACS/WFC WFC3/IR	2	17-Jul-2014 21:10:36.0	yes
02	(1) GN-Z10-1 ANY	ACS/WFC WFC3/IR	2	17-Jul-2014 21:10:38.0	yes
03	(1) GN-Z10-1 ANY	ACS/WFC WFC3/IR	2	17-Jul-2014 21:10:40.0	yes
04	(1) GN-Z10-1 ANY	ACS/WFC WFC3/IR	2	17-Jul-2014 21:10:42.0	yes
05	(1) GN-Z10-1 ANY	ACS/WFC WFC3/IR	2	17-Jul-2014 21:10:44.0	yes
06	(1) GN-Z10-1 ANY	ACS/WFC WFC3/IR	2	17-Jul-2014 21:10:46.0	yes

12 Total Orbits Used

ABSTRACT

We recently discovered an unexpectedly bright and hence very luminous $z \sim 10$ galaxy candidate in the GOODS-North field (GN-z10-1; Oesch et al. 2014). This source is the brightest and highest-redshift $z > 9$ candidate in the complete 900-orbit CANDELS dataset. It is also the only $z > 8$ candidate that is robustly detected in both Spitzer 3.6 and 4.5 micron channels, allowing for an unprecedented sampling of the rest-frame UV to optical spectral energy distribution for such an early galaxy. The existence of such a luminous and massive source at $z \sim 10$, just 500 Myr after the Big Bang, raises significant questions about our understanding of early galaxy formation: it would imply that massive galaxies built up their masses faster than hitherto thought. Our comprehensive photometric tests indicate that this galaxy lies at $z > 9$. However, without a spectroscopic redshift, we can not exclude other possibilities, such as a low redshift galaxy with very unusual continuum and emission line properties. The unusual brightness of this candidate together with the unique continuum sensitivity of the WFC3/IR grism G141 opens up the possibility for spectroscopic confirmation with HST. Because of its high redshift, this source cannot be observed from the ground due to very low atmospheric transparency at the wavelengths of its redshifted Lyman break. Before JWST, HST with the WFC3/IR G141 grism is uniquely capable amongst all existing telescopes of establishing a breakthrough in high-redshift galaxy spectroscopy by enabling a spectroscopic *continuum* detection at $z \sim 10$.

OBSERVING DESCRIPTION

The goal of this program is to obtain a deep WFC3/IR grism spectrum of a bright ($H=26$ mag) candidate $z\sim 10$ galaxy in the GOODS-N field (GN-z10-1 at 12:36:25.46,+62:14:31.4; Oesch et al. 2014). We will observe this source for a total of 12 orbits at different orientations, which were selected to minimize contamination of the resulting grism spectrum from neighboring sources.

The absolute best possible roll angles (ORIENTS=50-53) are unfortunately only schedulable for 1 day in August 2014. We therefore identified a series of other possible angles with acceptably low expected contamination. ORIENTS=(181), (42), (213)

Our observation strategy is to obtain 3 visits of two orbits at two different orientations. Each visit contains four short pre-images of F140W each followed by a long G141 grism exposure. The four sets of exposures are dithered following our successful 4-point dithering strategy used for the 3D-HST survey (e.g., Brammer et al. 2012). I.e. we set POS-TARG: (0,0) (1.355,0.424) (0.881,1.212) (-0.474,0.788).

The structure of each visit is thus four sets of (direct F140W image, G141 grism exposure, dither offset). Due to the possibility of excess Earth-glow by a bright He line at either the beginning or at the end of each orbit, we exchanged the F140W and G141 exposures for the second set of dither offsets within each orbit. This will minimize the impact of background variations on our G141 science exposures.

The aperture is set to GRISM1024, which uses the same reference pixel and definition for both F140W and the G141 grism. In addition to the primary exposures, we also take parallel F435W ACS imaging.

G141 exposures use SPARS100 sampling with NSAMP=14-15, and F140W exposures are taken with SPARS50 with NSAMP=5 and 4 (where NSAMP is optimized to fill the orbits). While NSAMP=4 for the direct images is very low, we only use this setting for the second direct image at the end of each orbit, which is only used to make sure no pointing problems or drifts are present relative to the commanded POS-TARG.

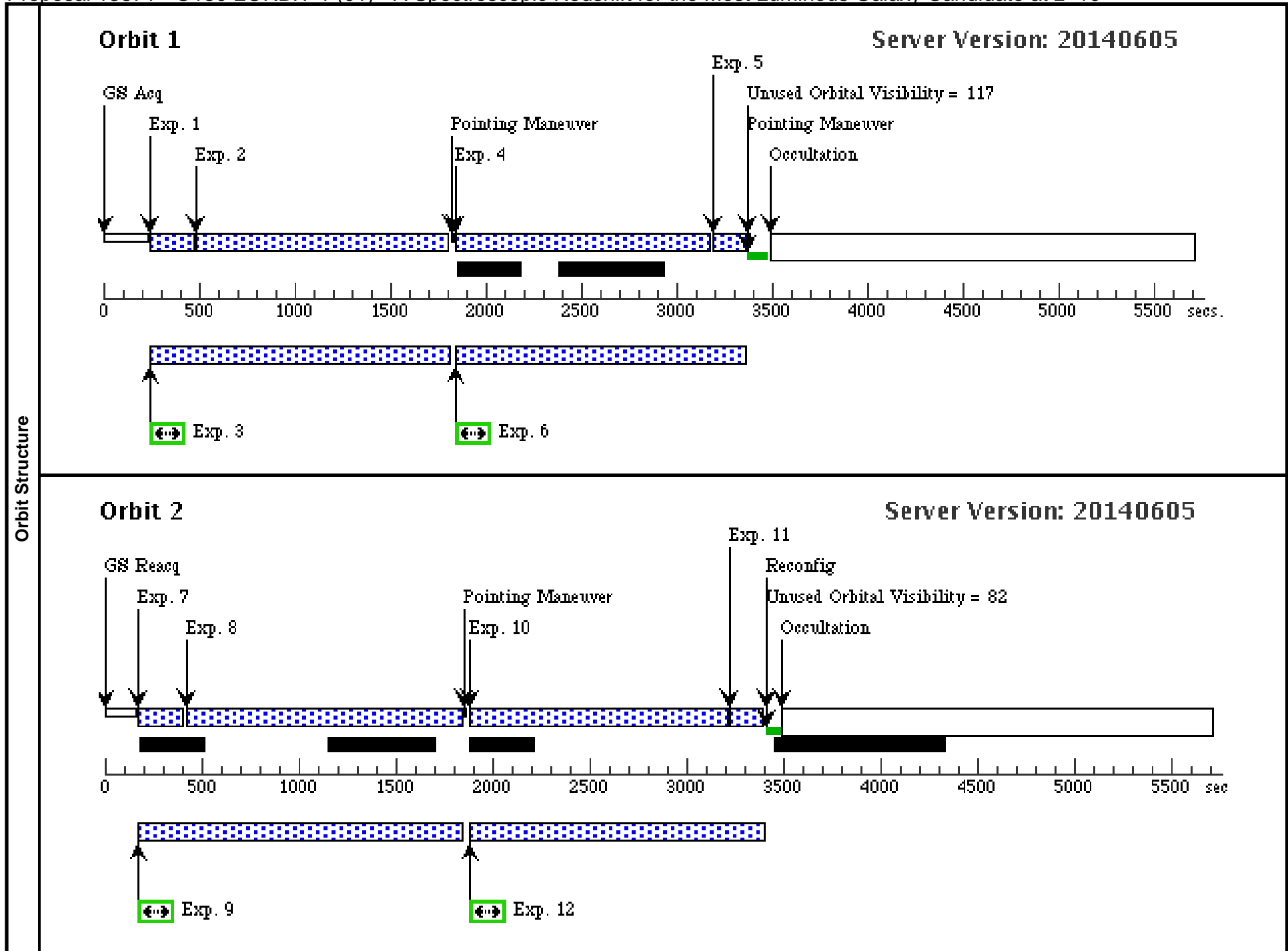
We submit 6 visits of 2 orbit duration. Visits 1-3 have constraints of ORIENT=181. Visits 4-6 have various orient constraints to allow for schedulability ORIENT=(50-53), (42), (213). We request that both sets are taken at the same orient, and we have set the "Same Orient as" special requirement.

Proposal 13871 - O180-2ORBIT-1 (01) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Visit	Proposal 13871, O180-2ORBIT-1 (01), implementation Fri Jul 18 01:10:48 GMT 2014 Diagnostic Status: Warning Scientific Instruments: WFC3/IR, ACS/WFC Special Requirements: ORIENT 181D TO 181 D																
	Diagnosics (O180-2ORBIT-1 (01)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (O180-2ORBIT-1 (01)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (O180-2ORBIT-1 (01)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (O180-2ORBIT-1 (01)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE																
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>GN-Z10-1</td> <td>RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000</td> <td></td> <td>V=30+/-1.0 H=26 mag AB</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table>					#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB	Reference Frame: ICRS
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous											
(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB	Reference Frame: ICRS												
<i>Comments: Target is a J-band dropout, and is not visible in any filter shortward of 1.1um.</i>																	

Proposal 13871 - O180-2ORBIT-1 (01) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.0,0.0; GS ACQ SCENARI O ONEB1B3	Prime + Parallel Gro up 1-3 in O180-2OR BIT-1 (01)	202.934095 Secs (202.934 Secs) [==>]	[1]	
	2	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	SAME POS AS 1	Prime + Parallel Gro up 1-3 in O180-2OR BIT-1 (01)	1302.93649 Secs (1302.936 Secs) [==>]	[1]	
	3	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 1-3 in O180-2OR BIT-1 (01)	1200.0 Secs (1363 Secs) [==>1363.0 Secs]	[1]	
	4	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG 1.355,0. 424	Prime + Parallel Gro up 4-6 in O180-2OR BIT-1 (01)	1302.93649 Secs (1302.936 Secs) [==>]	[1]	
	5	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 4	Prime + Parallel Gro up 4-6 in O180-2OR BIT-1 (01)	152.933644 Secs (152.934 Secs) [==>]	[1]	
	6	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 4-6 in O180-2OR BIT-1 (01)	1200.0 Secs (1394 Secs) [==>1394.0 Secs]	[1]	
	7	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.881,1. 212	Prime + Parallel Gro up 7-9 in O180-2OR BIT-1 (01)	202.934095 Secs (202.934 Secs) [==>]	[2]	
	8	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=15; SAMP-SEQ=SPAR S100	SAME POS AS 7	Prime + Parallel Gro up 7-9 in O180-2OR BIT-1 (01)	1402.936813 Secs (1402.937 Secs) [==>]	[2]	
	9	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 7-9 in O180-2OR BIT-1 (01)	1200.0 Secs (1545 Secs) [==>1545.0 Secs]	[2]	
	10	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG -0.474,0 .788	Prime + Parallel Gro up 10-12 in O180-2 ORBIT-1 (01)	1302.93649 Secs (1302.936 Secs) [==>]	[2]	
	11	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 10	Prime + Parallel Gro up 10-12 in O180-2 ORBIT-1 (01)	152.933644 Secs (152.934 Secs) [==>]	[2]	
12	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 10-12 in O180-2 ORBIT-1 (01)	1200.0 Secs (1394 Secs) [==>1394.0 Secs]	[2]		

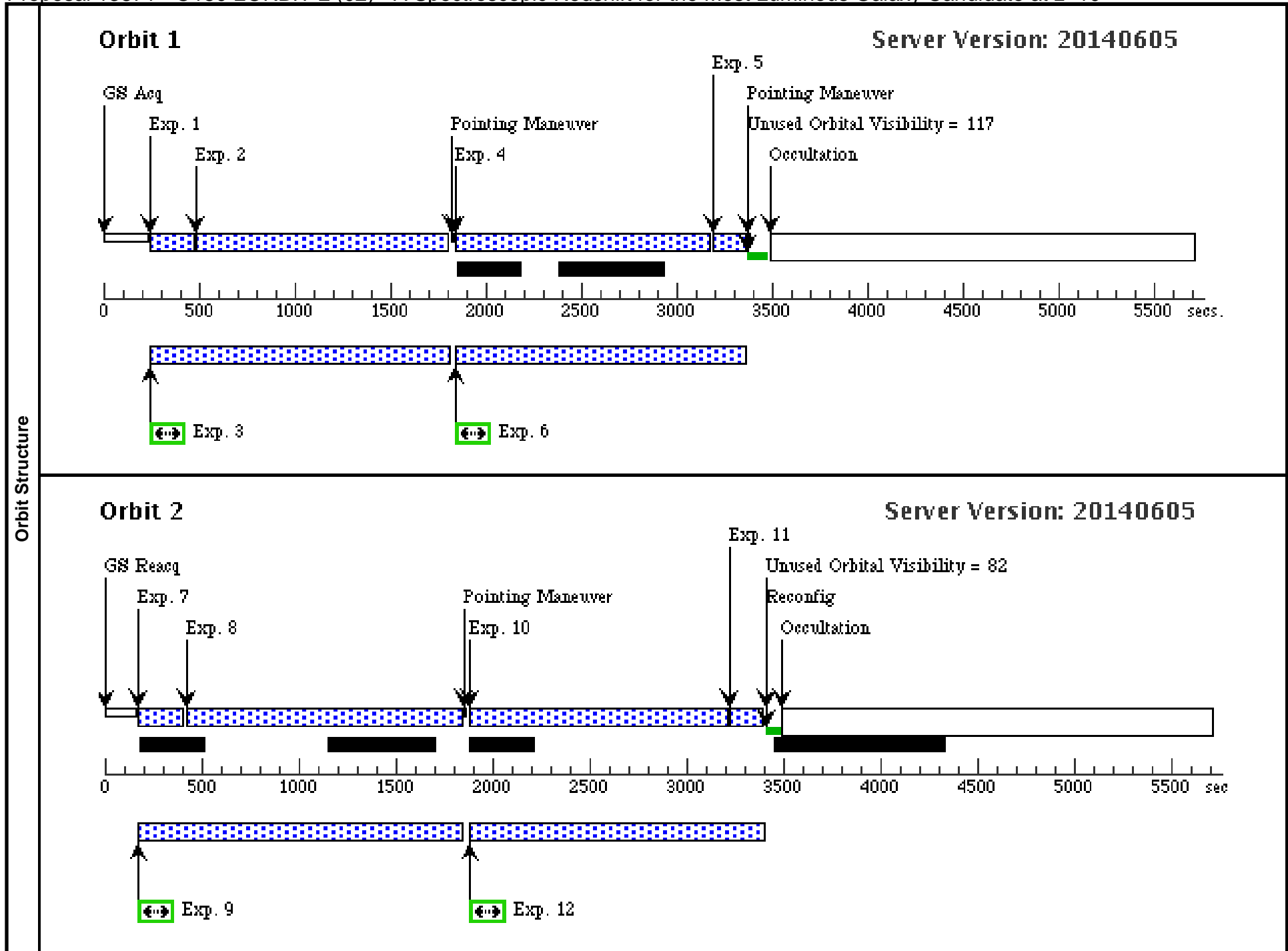


Proposal 13871 - O180-2ORBIT-2 (02) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Visit	Proposal 13871, O180-2ORBIT-2 (02), implementation Fri Jul 18 01:10:48 GMT 2014 Diagnostic Status: Warning Scientific Instruments: WFC3/IR, ACS/WFC Special Requirements: SAME ORIENT AS 01																
	Diagnosics (O180-2ORBIT-2 (02)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (O180-2ORBIT-2 (02)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (O180-2ORBIT-2 (02)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (O180-2ORBIT-2 (02)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE																
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>GN-Z10-1</td> <td>RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000</td> <td></td> <td>V=30+/-1.0 H=26 mag AB</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table>					#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB	Reference Frame: ICRS
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous											
(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB	Reference Frame: ICRS												
Comments: Target is a J-band dropout, and is not visible in any filter shortward of 1.1um.																	

Proposal 13871 - O180-2ORBIT-2 (02) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.0,0.0; GS ACQ SCENARI O ONEB1B3	Prime + Parallel Gro up 1-3 in O180-2OR BIT-2 (02)	202.934095 Secs (202.934 Secs) [==>]	[1]	
	2	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	SAME POS AS 1	Prime + Parallel Gro up 1-3 in O180-2OR BIT-2 (02)	1302.93649 Secs (1302.936 Secs) [==>]	[1]	
	3	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 1-3 in O180-2OR BIT-2 (02)	1200.0 Secs (1363 Secs) [==>1363.0 Secs]	[1]	
	4	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG 1.355,0. 424	Prime + Parallel Gro up 4-6 in O180-2OR BIT-2 (02)	1302.93649 Secs (1302.936 Secs) [==>]	[1]	
	5	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 4	Prime + Parallel Gro up 4-6 in O180-2OR BIT-2 (02)	152.933644 Secs (152.934 Secs) [==>]	[1]	
	6	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 4-6 in O180-2OR BIT-2 (02)	1200.0 Secs (1394 Secs) [==>1394.0 Secs]	[1]	
	7	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.881,1. 212	Prime + Parallel Gro up 7-9 in O180-2OR BIT-2 (02)	202.934095 Secs (202.934 Secs) [==>]	[2]	
	8	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=15; SAMP-SEQ=SPAR S100	SAME POS AS 7	Prime + Parallel Gro up 7-9 in O180-2OR BIT-2 (02)	1402.936813 Secs (1402.937 Secs) [==>]	[2]	
	9	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 7-9 in O180-2OR BIT-2 (02)	1200.0 Secs (1545 Secs) [==>1545.0 Secs]	[2]	
	10	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG -0.474,0 .788	Prime + Parallel Gro up 10-12 in O180-2 ORBIT-2 (02)	1302.93649 Secs (1302.936 Secs) [==>]	[2]	
	11	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 10	Prime + Parallel Gro up 10-12 in O180-2 ORBIT-2 (02)	152.933644 Secs (152.934 Secs) [==>]	[2]	
12	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 10-12 in O180-2 ORBIT-2 (02)	1200.0 Secs (1394 Secs) [==>1394.0 Secs]	[2]		

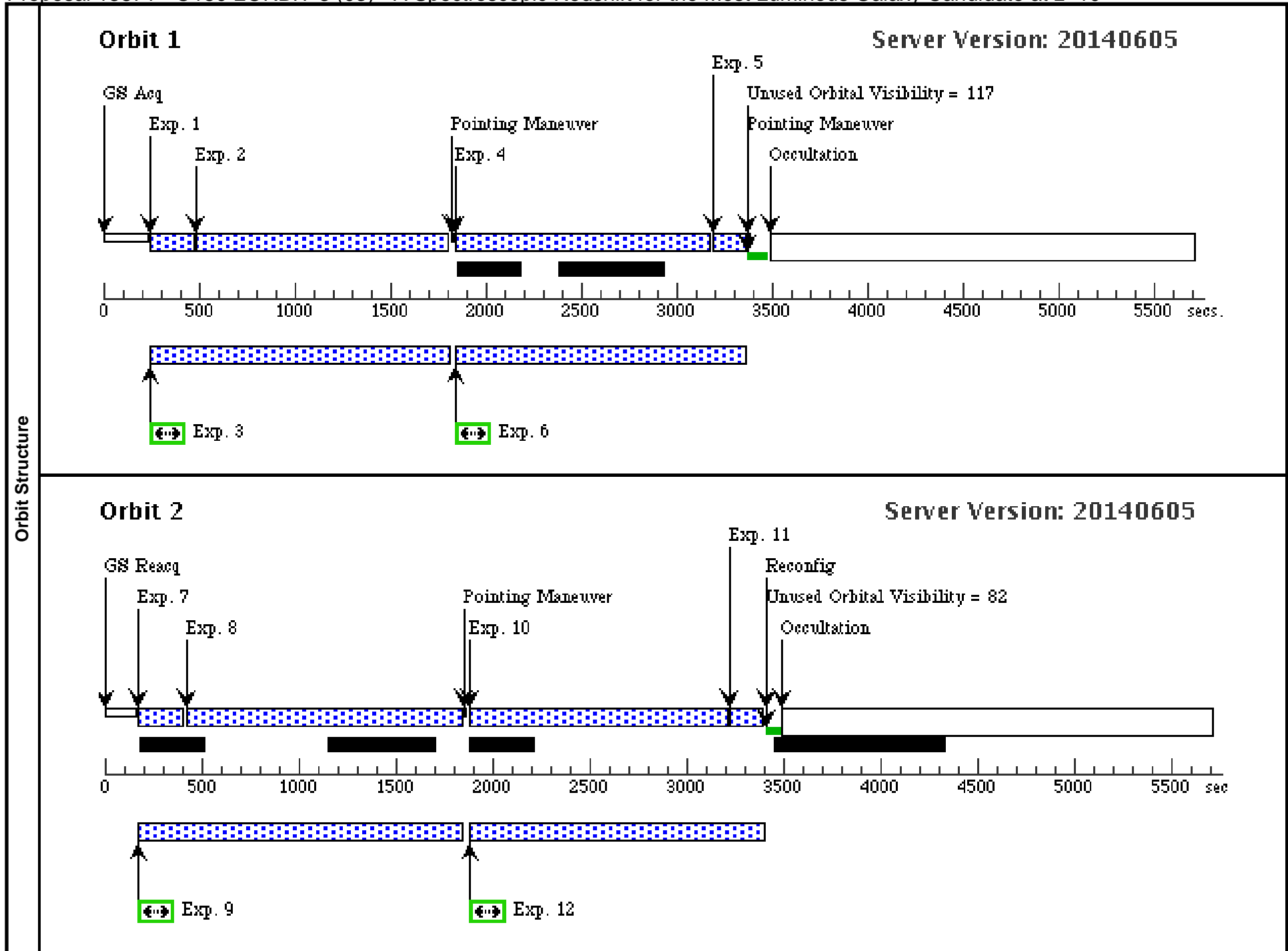


Proposal 13871 - O180-2ORBIT-3 (03) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Visit	Proposal 13871, O180-2ORBIT-3 (03), implementation Fri Jul 18 01:10:49 GMT 2014 Diagnostic Status: Warning Scientific Instruments: WFC3/IR, ACS/WFC Special Requirements: SAME ORIENT AS 01																
	Diagnosics (O180-2ORBIT-3 (03)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (O180-2ORBIT-3 (03)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (O180-2ORBIT-3 (03)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (O180-2ORBIT-3 (03)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE																
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>GN-Z10-1</td> <td>RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000</td> <td></td> <td>V=30+/-1.0 H=26 mag AB</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table>					#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB	Reference Frame: ICRS
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous											
(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB	Reference Frame: ICRS												
Comments: Target is a J-band dropout, and is not visible in any filter shortward of 1.1um.																	

Proposal 13871 - O180-2ORBIT-3 (03) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.0,0.0; GS ACQ SCENARI O ONEB1B3	Prime + Parallel Gro up 1-3 in O180-2OR BIT-3 (03)	202.934095 Secs (202.934 Secs) [==>]	[1]	
	2	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	SAME POS AS 1	Prime + Parallel Gro up 1-3 in O180-2OR BIT-3 (03)	1302.93649 Secs (1302.936 Secs) [==>]	[1]	
	3	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 1-3 in O180-2OR BIT-3 (03)	1200.0 Secs (1363 Secs) [==>1363.0 Secs]	[1]	
	4	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG 1.355,0. 424	Prime + Parallel Gro up 4-6 in O180-2OR BIT-3 (03)	1302.93649 Secs (1302.936 Secs) [==>]	[1]	
	5	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 4	Prime + Parallel Gro up 4-6 in O180-2OR BIT-3 (03)	152.933644 Secs (152.934 Secs) [==>]	[1]	
	6	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 4-6 in O180-2OR BIT-3 (03)	1200.0 Secs (1394 Secs) [==>1394.0 Secs]	[1]	
	7	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.881,1. 212	Prime + Parallel Gro up 7-9 in O180-2OR BIT-3 (03)	202.934095 Secs (202.934 Secs) [==>]	[2]	
	8	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=15; SAMP-SEQ=SPAR S100	SAME POS AS 7	Prime + Parallel Gro up 7-9 in O180-2OR BIT-3 (03)	1402.936813 Secs (1402.937 Secs) [==>]	[2]	
	9	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 7-9 in O180-2OR BIT-3 (03)	1200.0 Secs (1545 Secs) [==>1545.0 Secs]	[2]	
	10	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG -0.474,0 .788	Prime + Parallel Gro up 10-12 in O180-2 ORBIT-3 (03)	1302.93649 Secs (1302.936 Secs) [==>]	[2]	
	11	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 10	Prime + Parallel Gro up 10-12 in O180-2 ORBIT-3 (03)	152.933644 Secs (152.934 Secs) [==>]	[2]	
12	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 10-12 in O180-2 ORBIT-3 (03)	1200.0 Secs (1394 Secs) [==>1394.0 Secs]	[2]		

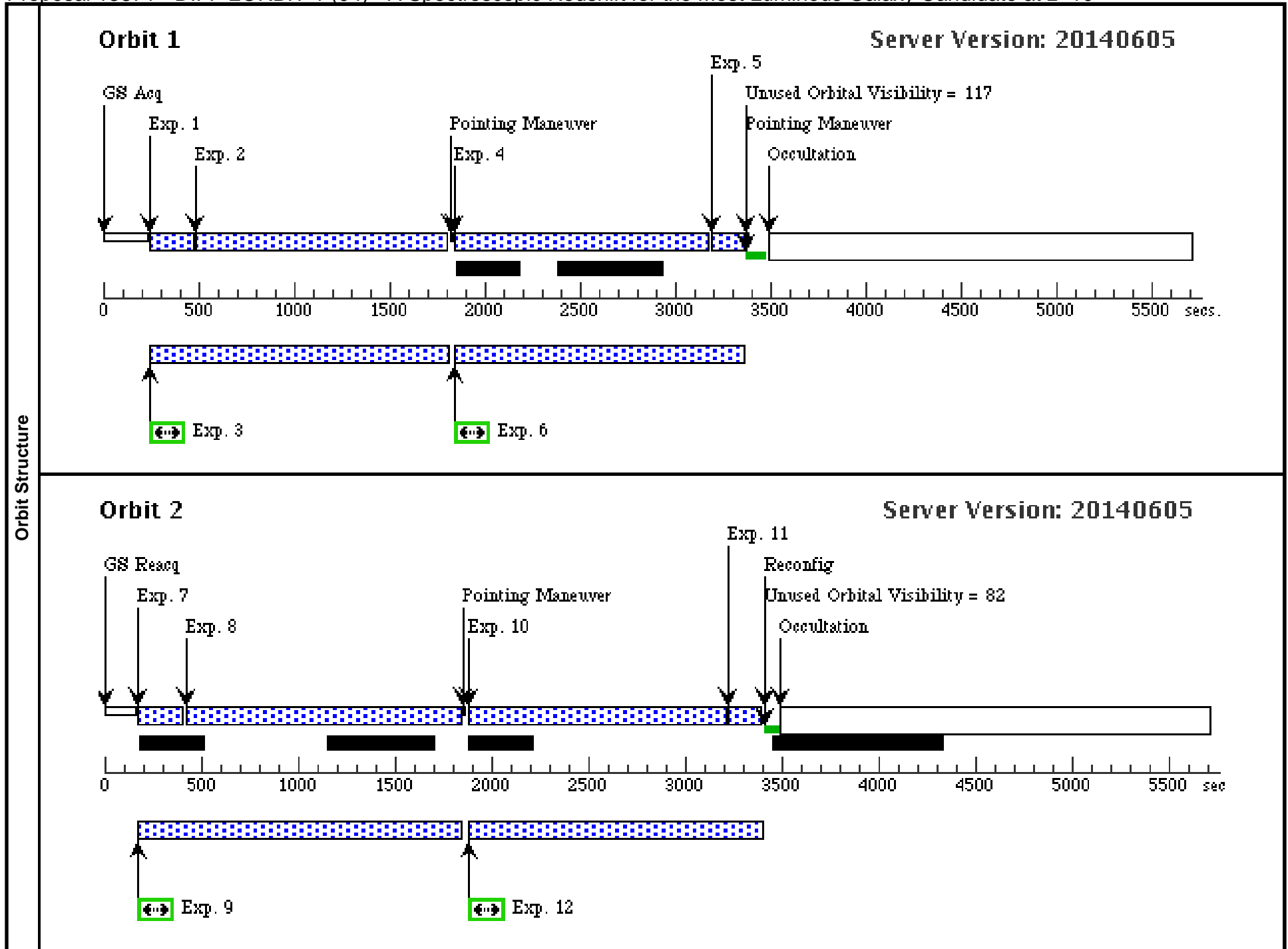


Proposal 13871 - DIFF-2ORBIT-1 (04) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Visit	Proposal 13871, DIFF-2ORBIT-1 (04), implementation Fri Jul 18 01:10:49 GMT 2014 Diagnostic Status: Warning Scientific Instruments: WFC3/IR, ACS/WFC Special Requirements: ORIENT 50D TO 53 D; ORIENT 42D TO 42 D; ORIENT 213D TO 213 D																
	Diagnostics	(DIFF-2ORBIT-1 (04)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (DIFF-2ORBIT-1 (04)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (DIFF-2ORBIT-1 (04)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (DIFF-2ORBIT-1 (04)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE															
Fixed Targets		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">#</th> <th style="width: 20%;">Name</th> <th style="width: 30%;">Target Coordinates</th> <th style="width: 20%;">Targ. Coord. Corrections</th> <th style="width: 10%;">Fluxes</th> <th style="width: 15%;">Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>GN-Z10-1</td> <td>RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000</td> <td></td> <td>V=30+/-1.0 H=26 mag AB</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments: Target is a J-band dropout, and is not visible in any filter shortward of 1.1um.</i></p>					#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous											
(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB	Reference Frame: ICRS												

Proposal 13871 - DIFF-2ORBIT-1 (04) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.0,0.0; GS ACQ SCENARI O ONEB1B3	Prime + Parallel Gro up 1-3 in DIFF-2OR BIT-1 (04)	202.934095 Secs (202.934 Secs) [==>]	[1]	
	2	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	SAME POS AS 1	Prime + Parallel Gro up 1-3 in DIFF-2OR BIT-1 (04)	1302.93649 Secs (1302.936 Secs) [==>]	[1]	
	3	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 1-3 in DIFF-2OR BIT-1 (04)	1200.0 Secs (1363 Secs) [==>1363.0 Secs]	[1]	
	4	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG 1.355,0. 424	Prime + Parallel Gro up 4-6 in DIFF-2OR BIT-1 (04)	1302.93649 Secs (1302.936 Secs) [==>]	[1]	
	5	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 4	Prime + Parallel Gro up 4-6 in DIFF-2OR BIT-1 (04)	152.933644 Secs (152.934 Secs) [==>]	[1]	
	6	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 4-6 in DIFF-2OR BIT-1 (04)	1200.0 Secs (1394 Secs) [==>1394.0 Secs]	[1]	
	7	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.881,1. 212	Prime + Parallel Gro up 7-9 in DIFF-2OR BIT-1 (04)	202.934095 Secs (202.934 Secs) [==>]	[2]	
	8	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=15; SAMP-SEQ=SPAR S100	SAME POS AS 7	Prime + Parallel Gro up 7-9 in DIFF-2OR BIT-1 (04)	1402.936813 Secs (1402.937 Secs) [==>]	[2]	
	9	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 7-9 in DIFF-2OR BIT-1 (04)	1200.0 Secs (1545 Secs) [==>1545.0 Secs]	[2]	
	10	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG -0.474,0 .788	Prime + Parallel Gro up 10-12 in DIFF-2O RBIT-1 (04)	1302.93649 Secs (1302.936 Secs) [==>]	[2]	
	11	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 10	Prime + Parallel Gro up 10-12 in DIFF-2O RBIT-1 (04)	152.933644 Secs (152.934 Secs) [==>]	[2]	
12	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Gro up 10-12 in DIFF-2O RBIT-1 (04)	1200.0 Secs (1394 Secs) [==>1394.0 Secs]	[2]		

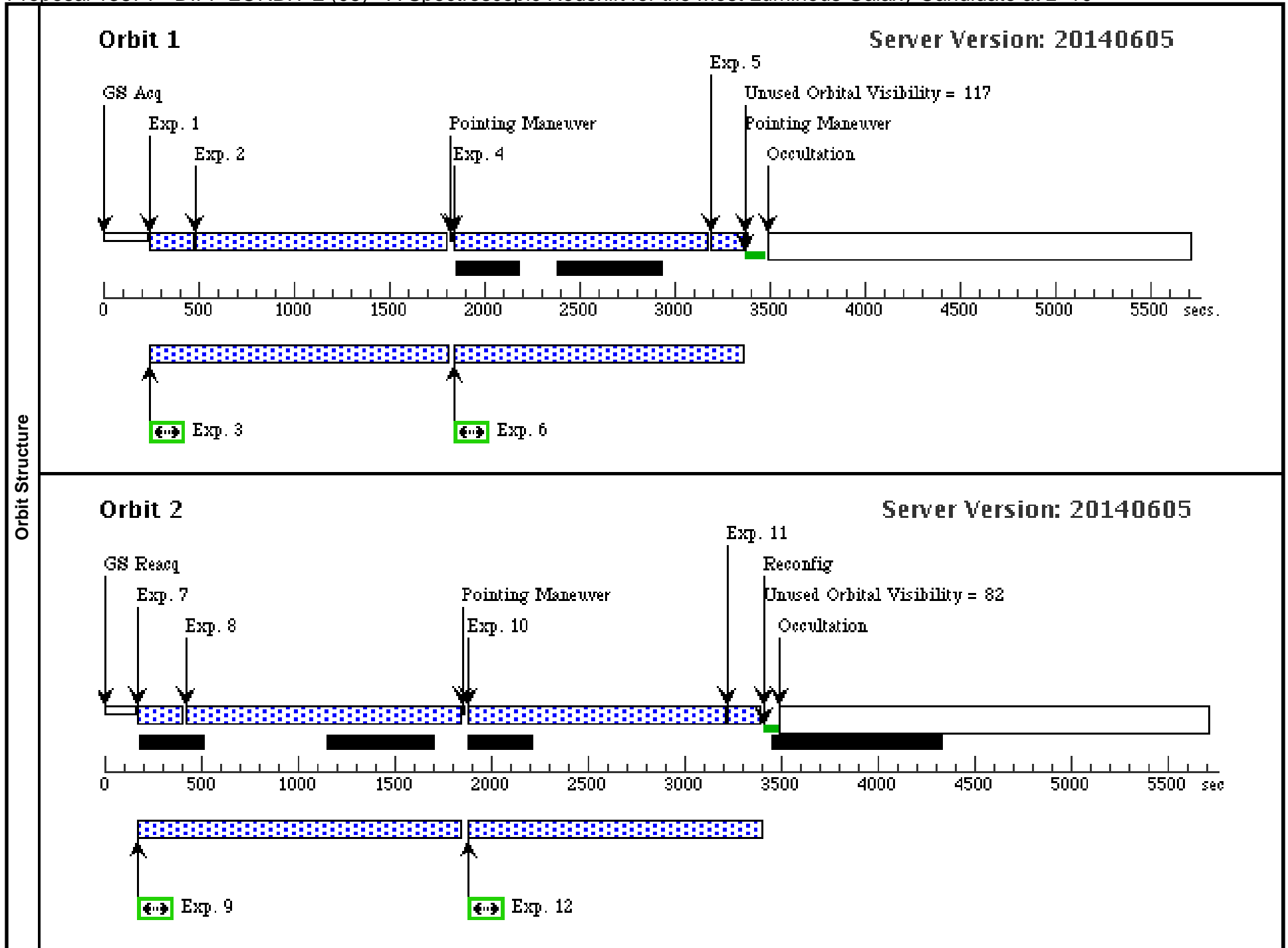


Proposal 13871 - DIFF-2ORBIT-2 (05) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Visit	Proposal 13871, DIFF-2ORBIT-2 (05), implementation Fri Jul 18 01:10:49 GMT 2014 Diagnostic Status: Warning Scientific Instruments: WFC3/IR, ACS/WFC Special Requirements: SAME ORIENT AS 04																
	Diagnosics (DIFF-2ORBIT-2 (05)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (DIFF-2ORBIT-2 (05)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (DIFF-2ORBIT-2 (05)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (DIFF-2ORBIT-2 (05)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE																
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>GN-Z10-1</td> <td>RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000</td> <td></td> <td>V=30+/-1.0 H=26 mag AB</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table>					#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB	Reference Frame: ICRS
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous											
(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB	Reference Frame: ICRS												
<i>Comments: Target is a J-band dropout, and is not visible in any filter shortward of 1.1um.</i>																	

Proposal 13871 - DIFF-2ORBIT-2 (05) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.0,0.0; GS ACQ SCENARI O ONEB1B3	Prime + Parallel Group 1-3 in DIFF-2ORBIT-2 (05)	202.934095 Secs (202.934 Secs) [==>]	[1]	
	2	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	SAME POS AS 1	Prime + Parallel Group 1-3 in DIFF-2ORBIT-2 (05)	1302.93649 Secs (1302.936 Secs) [==>]	[1]	
	3	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Group 1-3 in DIFF-2ORBIT-2 (05)	1200.0 Secs (1363 Secs) [==>1363.0 Secs]	[1]	
	4	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG 1.355,0.424	Prime + Parallel Group 4-6 in DIFF-2ORBIT-2 (05)	1302.93649 Secs (1302.936 Secs) [==>]	[1]	
	5	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 4	Prime + Parallel Group 4-6 in DIFF-2ORBIT-2 (05)	152.933644 Secs (152.934 Secs) [==>]	[1]	
	6	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Group 4-6 in DIFF-2ORBIT-2 (05)	1200.0 Secs (1394 Secs) [==>1394.0 Secs]	[1]	
	7	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.881,1.212	Prime + Parallel Group 7-9 in DIFF-2ORBIT-2 (05)	202.934095 Secs (202.934 Secs) [==>]	[2]	
	8	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=15; SAMP-SEQ=SPAR S100	SAME POS AS 7	Prime + Parallel Group 7-9 in DIFF-2ORBIT-2 (05)	1402.936813 Secs (1402.937 Secs) [==>]	[2]	
	9	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Group 7-9 in DIFF-2ORBIT-2 (05)	1200.0 Secs (1545 Secs) [==>1545.0 Secs]	[2]	
	10	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG -0.474,0.788	Prime + Parallel Group 10-12 in DIFF-2ORBIT-2 (05)	1302.93649 Secs (1302.936 Secs) [==>]	[2]	
	11	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 10	Prime + Parallel Group 10-12 in DIFF-2ORBIT-2 (05)	152.933644 Secs (152.934 Secs) [==>]	[2]	
	12	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Group 10-12 in DIFF-2ORBIT-2 (05)	1200.0 Secs (1394 Secs) [==>1394.0 Secs]	[2]	



Proposal 13871 - DIFF-2ORBIT-3 (06) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Visit	Proposal 13871, DIFF-2ORBIT-3 (06), implementation Fri Jul 18 01:10:49 GMT 2014 Diagnostic Status: Warning Scientific Instruments: WFC3/IR, ACS/WFC Special Requirements: SAME ORIENT AS 04																						
	Diagnosics (DIFF-2ORBIT-3 (06)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (DIFF-2ORBIT-3 (06)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (DIFF-2ORBIT-3 (06)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE (DIFF-2ORBIT-3 (06)) Warning (Orbit Planner): SAME POS MAY NOT BE APPROPRIATE																						
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>GN-Z10-1</td> <td>RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000</td> <td></td> <td>V=30+/-1.0 H=26 mag AB</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td colspan="6"> <i>Comments: Target is a J-band dropout, and is not visible in any filter shortward of 1.1um.</i> </td> </tr> </tbody> </table>					#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB	Reference Frame: ICRS	<i>Comments: Target is a J-band dropout, and is not visible in any filter shortward of 1.1um.</i>					
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																	
(1)	GN-Z10-1	RA: 12 36 25.4600 (189.1060833d) Dec: +62 14 31.40 (62.24206d) Equinox: J2000		V=30+/-1.0 H=26 mag AB	Reference Frame: ICRS																		
<i>Comments: Target is a J-band dropout, and is not visible in any filter shortward of 1.1um.</i>																							

Proposal 13871 - DIFF-2ORBIT-3 (06) - A Spectroscopic Redshift for the Most Luminous Galaxy Candidate at z~10

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.0,0.0; GS ACQ SCENARI O ONEB1B3	Prime + Parallel Group 1-3 in DIFF-2ORBIT-3 (06)	202.934095 Secs (202.934 Secs)	[==>]	[1]
	2	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	SAME POS AS 1	Prime + Parallel Group 1-3 in DIFF-2ORBIT-3 (06)	1302.93649 Secs (1302.936 Secs)	[==>]	[1]
	3	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Group 1-3 in DIFF-2ORBIT-3 (06)	1200.0 Secs (1363 Secs)	[==>1363.0 Secs]	[1]
	4	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG 1.355,0.424	Prime + Parallel Group 4-6 in DIFF-2ORBIT-3 (06)	1302.93649 Secs (1302.936 Secs)	[==>]	[1]
	5	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 4	Prime + Parallel Group 4-6 in DIFF-2ORBIT-3 (06)	152.933644 Secs (152.934 Secs)	[==>]	[1]
	6	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Group 4-6 in DIFF-2ORBIT-3 (06)	1200.0 Secs (1394 Secs)	[==>1394.0 Secs]	[1]
	7	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPAR S50	POS TARG 0.881,1.212	Prime + Parallel Group 7-9 in DIFF-2ORBIT-3 (06)	202.934095 Secs (202.934 Secs)	[==>]	[2]
	8	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=15; SAMP-SEQ=SPAR S100	SAME POS AS 7	Prime + Parallel Group 7-9 in DIFF-2ORBIT-3 (06)	1402.936813 Secs (1402.937 Secs)	[==>]	[2]
	9	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Group 7-9 in DIFF-2ORBIT-3 (06)	1200.0 Secs (1545 Secs)	[==>1545.0 Secs]	[2]
	10	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPAR S100	POS TARG -0.474,0.788	Prime + Parallel Group 10-12 in DIFF-2ORBIT-3 (06)	1302.93649 Secs (1302.936 Secs)	[==>]	[2]
	11	(1) GN-Z10-1	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=4; SAMP-SEQ=SPAR S50	SAME POS AS 10	Prime + Parallel Group 10-12 in DIFF-2ORBIT-3 (06)	152.933644 Secs (152.934 Secs)	[==>]	[2]
12	ANY	ACS/WFC, ACCUM, WFC	F435W			Prime + Parallel Group 10-12 in DIFF-2ORBIT-3 (06)	1200.0 Secs (1394 Secs)	[==>1394.0 Secs]	[2]	

