



# 13940 - X-RAYS FROM GREEN PEA ANALOGS

Cycle: 22, Proposal Category: GO

(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) 6DFGS-GJ144805.3-011058	WFC3/UVIS	1	20-Jan-2015 16:00:26.0	yes
02	(2) SDSSJ084220.94+115000.3	WFC3/UVIS	1	20-Jan-2015 16:00:27.0	yes

2 Total Orbits Used

## ABSTRACT

X-rays may have contributed to the heating and reionization of the IGM in the early universe. High mass X-ray binaries (HMXB) within small, low-metallicity galaxies are expected to be the main source of X-rays at this time. Since studying these high-redshift galaxies is currently impossible, we turn to local analogs that have the same properties the galaxies in the early are expected to have. A number of recent studies have shown an enhanced number of HMXBs in nearby low metallicity galaxies. We propose to observe a sample of metal-deficient luminous compact galaxies (LCG) in order to determine if the X-ray luminosity is enhanced relative to SFR, thereby providing further evidence to the importance of X-rays in the early universe.

## OBSERVING DESCRIPTION

## Proposal 13940 (STScI Edit Number: 0, Created: Tuesday, January 20, 2015 4:00:28 PM EST) - Overview

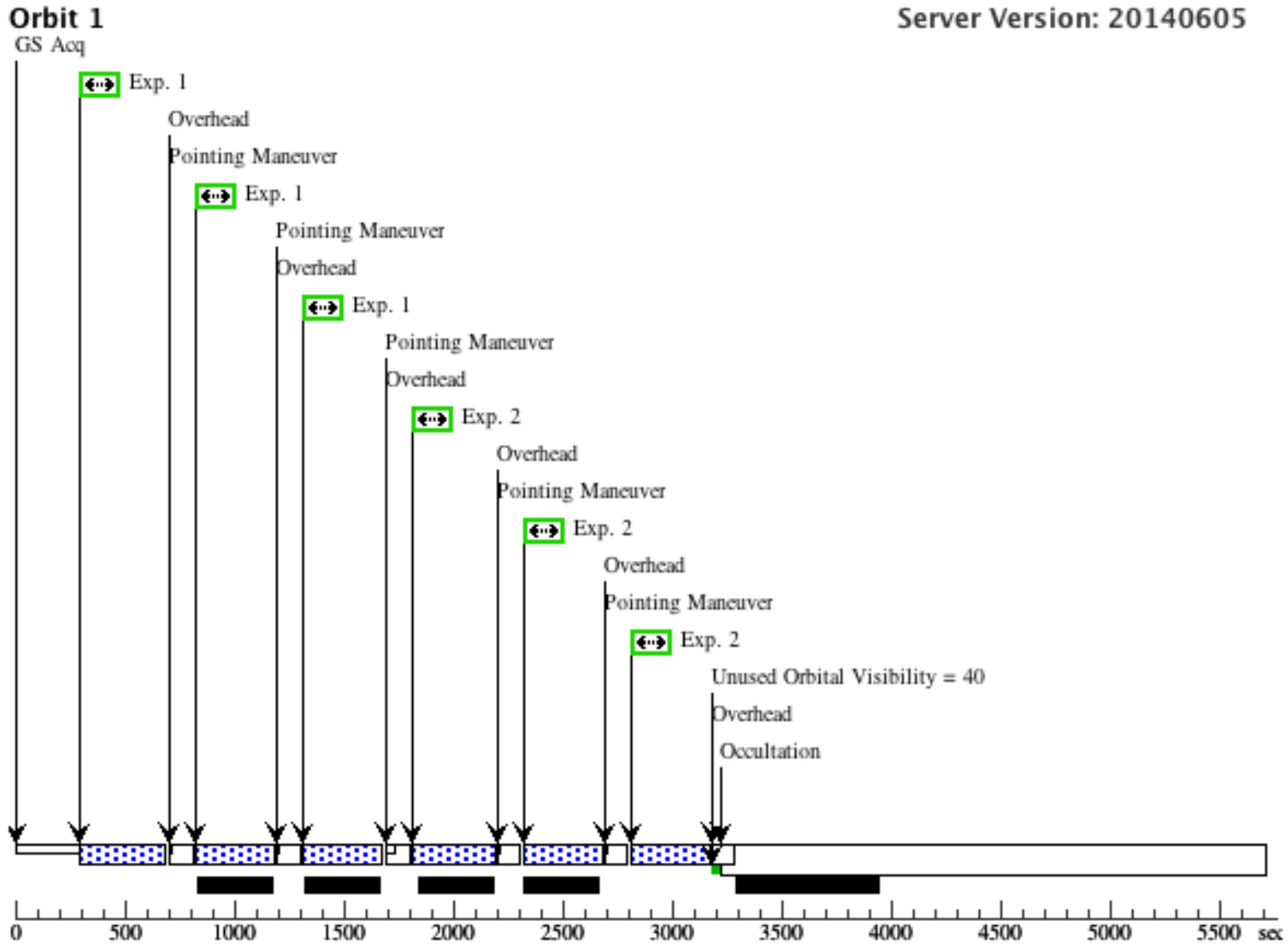
We will obtain images in the F606W and F336W filters with the WFC3/UVIS. We will obtain three observations in each filter for cosmic ray and bad pixel rejection. We will obtain a total integration of 1080s in each filter. The F606W filter image will achieve a limiting V-magnitude of 25.9 at a signal to noise ratio of 5. At the distance to the galaxies of about 120 Mpc, this will permit detection of super star clusters with  $M_V < -9.5$  (allowing for an extinction  $E(B-V) = 0.055$  as measured for target #1,  $E(B-V) = 0.037$  for target #2). The F336W filter image will enable us to construct a U-V color-magnitude diagram and constrain the ages of the star cluster via comparison with stellar synthesis models (e.g. Hunter et al. 2000, AJ, 120, 2383). We select F336W because of the young age expected for the stars in the clusters. The clusters detected in the F606W image with  $S/N = 5$  will be detected in the F336W image at  $S/N = 3.7$ , allowing reasonable constraints on the U-band magnitudes of the dimmer clusters ( $\Delta U = \pm 0.3$ ) and accurate measurements for the brightest clusters.

Proposal 13940 - Visit 01 - X-RAYS FROM GREEN PEA ANALOGS

Tue Jan 20 21:00:29 GMT 2015

Visit	<b>Proposal 13940, Visit 01, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(1)	Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	6DFGS-GJ144805.3-011058 Alt Name1: SHOC486	RA: 14 48 5.3780 (222.0224083d) Dec: -01 10 57.69 (-1.18269d) Equinox: J2000		V=16.5	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) 6DFGS-GJ144805.3-011058	WFC3/UVIS, ACCUM, UVIS2	F336W	FLASH=12		Pattern 1, Exps 1-1 in Visit 01 (1)	360 Secs (1080 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
2		(1) 6DFGS-GJ144805.3-011058	WFC3/UVIS, ACCUM, UVIS1	F606W			Pattern 1, Exps 2-2 in Visit 01 (1)	360 Secs (1080 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]	

Orbit Structure



Proposal 13940 - Visit 02 - X-RAYS FROM GREEN PEA ANALOGS

Tue Jan 20 21:00:29 GMT 2015

Visit	<b>Proposal 13940, Visit 02, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SDSSJ084220.94+11500.3	RA: 08 42 20.9000 (130.5870833d) Dec: +11 50 0.20 (11.83339d) Equinox: J2000		V=16.5	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(2) SDSSJ084220.94+115000.3	WFC3/UVIS, ACCUM, UVIS2	F336W	FLASH=12		Pattern 1, Exps 1-1 in Visit 02 (1)	360 Secs (1080 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]
2		(2) SDSSJ084220.94+115000.3	WFC3/UVIS, ACCUM, UVIS1	F606W			Pattern 1, Exps 2-2 in Visit 02 (1)	360 Secs (1080 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)]	[1]	

