



13065 - Imaging the Host Galaxy and Cluster of Hercules A

Cycle: 19, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Dr. Stefi A. Baum (PI) (Contact)	Rochester Institute of Technology	baum@cis.rit.edu
John M Stoke (CoI)	Associated Universities, Inc.	jstoke@nrao.edu
Dr. Christopher P. O'Dea (CoI)	Rochester Institute of Technology	cposps@cis.rit.edu
Dr. Fred K. Y. Lo (CoI)	Associated Universities, Inc.	flo@nrao.edu

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) HER-A	WFC3/UVIS	3	02-Aug-2012 21:18:28.0	yes

3 Total Orbits Used

ABSTRACT

We propose to image the host galaxy and surrounding cluster of the powerful radio galaxy Hercules A. The observations will be used to (1) study the colors and morphologies of the cluster members and to look for interactions with the extended radio lobes, (2) investigate the nature of the obscuring rings in the host galaxy, and (3) create a visually appealing color image to be used in a press release with new very deep EVLA observations.

OBSERVING DESCRIPTION

We want wide filters (for S/N) which avoid bright emission lines (so as to give stellar continuum only to allow interpretation of the colors). The optical spectrum by Buttiglioni et al 2009 shows the [OII] 3727 and H-alpha+[NII] lines are bright, the [OI] 6300 line is moderate, and the [OIII]

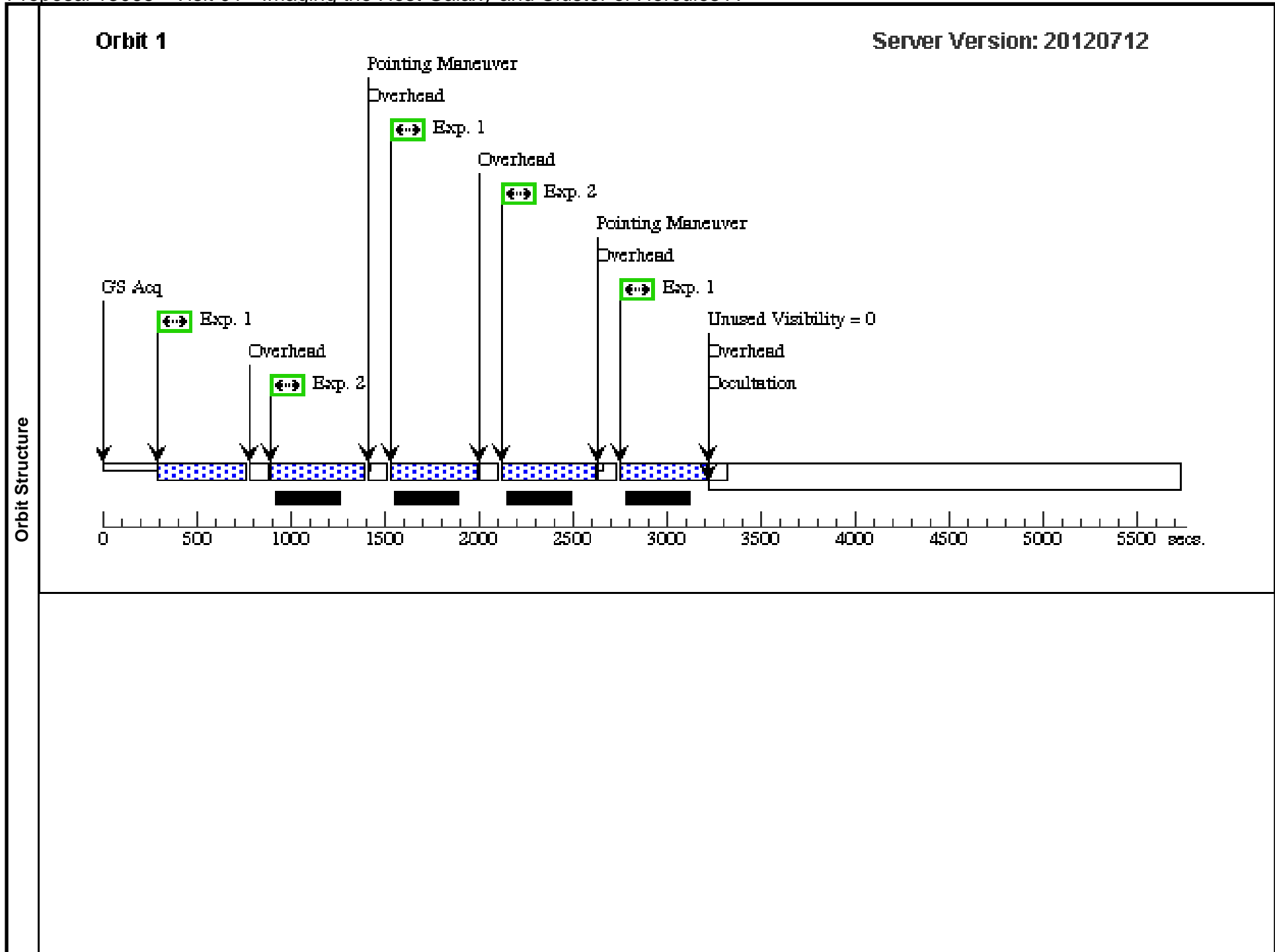
Proposal 13065 (STScI Edit Number: 3, Created: Thursday, August 2, 2012 8:18:38 PM EST) - Overview

5007 line is faint (and likely to be confined to the nucleus). So the wavelength range between [OII] and [OI] in the observers frame 4300-7270 is available. The F606W filter fits in this range and has a high throughput. F625W also fits but has smaller bandwidth so will be somewhat less sensitive. The F336W filter fits blue-ward of [OII] and gives a long baseline in wavelength for measuring galaxy colors and obscuration in the rings. The broad red filter F814W will allow the spectral energy distribution (SED) of the stellar populations to be determined. To calculate exposure times we consider A1689, a well studied Abell cluster at similar redshift ($z=0.183$). The faint end of the galaxy luminosity function is at $V=24$ (Wilson et al. 1997). This can be reached in one orbit each with the F606W and F814W filters. In one orbit the F336W (U) filter will provide good detections of cluster ellipticals down to $V=21$, and deeper for any galaxies which are star forming, and will allow a measure of the optical depth of the obscuring rings. The observations in each filter should be dithered to allow removal of hot pixels, cosmic rays, and the chip gap.

Proposal 13065 - Visit 01 - Imaging the Host Galaxy and Cluster of Hercules A

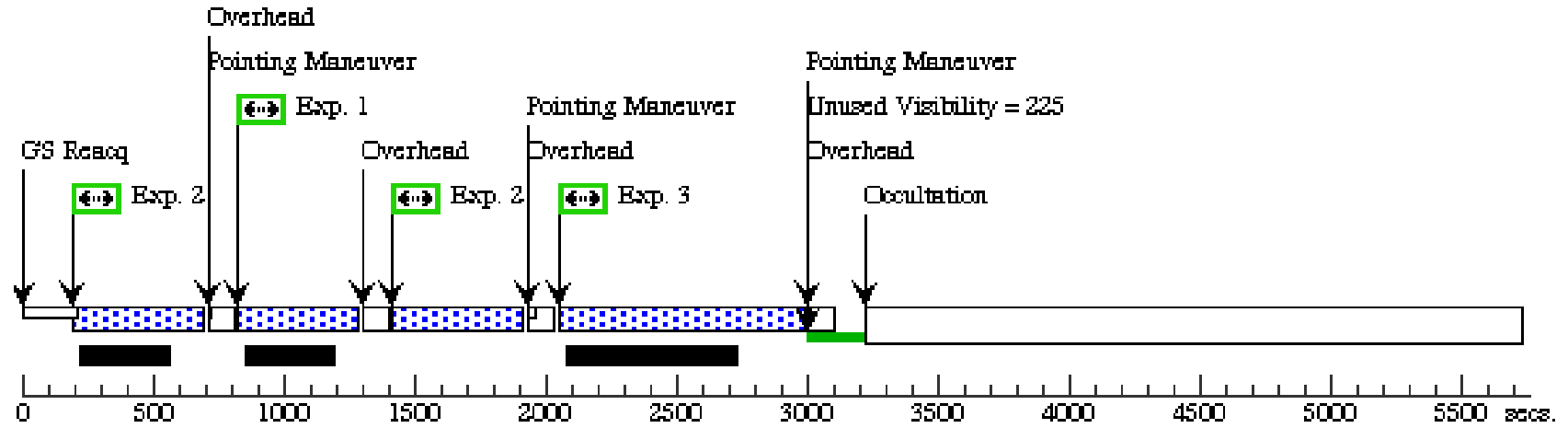
Fri Aug 03 01:18:38 GMT 2012

Visit	Proposal 13065, Visit 01, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 70D TO 80 D									
	Patterns	Primary Pattern	Secondary Pattern	Exposures						
	(1)	Pattern Type=LINE Purpose=MOSAIC Number Of Points=2 Point Spacing=40 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90 Angle Between Sides= Center Pattern=true	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=1.0 Line Spacing=	(1-2), (3)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	HER-A	RA: 16 51 8.1470 (252.7839458d) Dec: +04 59 33.32 (4.99259d) Equinox: J2000 <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>		V=18.25	Reference Frame: SIMBAD				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) HER-A	(1) HER-A	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W	CR-SPLIT=NO		Pattern 1, Exps 1-2 in Visit 01 (1)	440 Secs	
									[=>(Pattern 1,1)]	[1]
									[=>(Pattern 1,2)]	[1]
									[=>(Pattern 2,1)]	[2]
									[=>(Pattern 2,2)]	[2]
	2	(1) HER-A	(1) HER-A	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	CR-SPLIT=NO	GS ACQ SCENARIO BASE1B3	Pattern 1, Exps 1-2 in Visit 01 (1)	482 Secs	
									[=>(Pattern 1,1)]	[1]
									[=>(Pattern 1,2)]	[1]
									[=>(Pattern 2,1)]	[2]
								[=>(Pattern 2,2)]	[2]	
3	(1) HER-A	(1) HER-A	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	CR-SPLIT=NO			Pattern 1, Exps 3-3 in Visit 01 (1)	914 Secs	
								[=>(Pattern 1,1)]	[2]	
								[=>(Pattern 1,2)]	[3]	
								[=>(Pattern 2,1)]	[3]	
								[=>(Pattern 2,2)]	[3]	



Orbit 2

Server Version: 20120712



Orbit 3

Server Version: 20120712

