



## 16845 - A BCG in the making from wet major mergers

Cycle: 29, 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) SBS1520+503	ACS/WFC	1	12-Oct-2021 15:00:28.0	yes
02	(1) SBS1520+503	WFC3/UVIS	1	12-Oct-2021 15:00:29.0	yes

2 Total Orbits Used

### ABSTRACT

The brightest central galaxies (BCGs) are the largest and the most massive galaxies in the universe. Their origin is still under debate but major mergers should play a key role. While there have been several dramatic examples of local BCGs forming via dry mergers, BCGs are believed to mainly form with wet major mergers at high  $z$  and there has not been a local analog of such systems. We have searched for BCGs forming via wet major mergers in the local universe and have found a spectacular example of a trio of star forming galaxies with comparable luminosities and within 15 kpc from each other. We propose joint Chandra/HST observations to study AGN, ULXs, diffuse X-ray emission and mergers in this rare system. The results will shed light on the important early stage of BCG formation.

## **OBSERVING DESCRIPTION**

We will observe IRAS 15205+5021 with three filters F275W, F475W and F814W in two orbits to study their central AGN, the merger signature between three central galaxies (like the tidal features) and the young stellar population. F475W and F814W observations will be done in one orbit with ACS/WFC, while the F275W observation will be done in another orbit with WFC3/UVIS. The ACS data in two high-throughput filters allow detections of faint features (e.g., individual star cluster associations, dust) and a detailed color map of the three galaxies. The F275W data will add important information on the SF in the last several  $10^7$  years and the F275W - F475W color is a very good age indicator.

Proposal 16845 - Visit 01 - A BCG in the making from wet major mergers

Tue Oct 12 19:00:29 GMT 2021

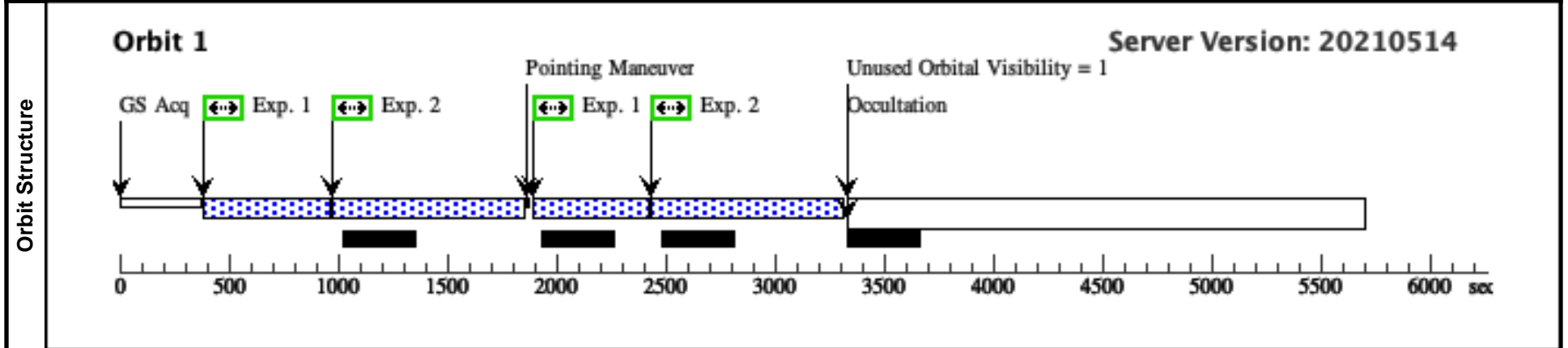
<b>Visit</b>	<b>Proposal 16845, Visit 01</b>		
	<b>Diagnostic Status: No Diagnostics</b>		
	Scientific Instruments: ACS/WFC		
	Special Requirements: (none)		

<b>Patterns</b>	#	Primary Pattern	Secondary Pattern	Exposures
	(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false	

<b>Fixed Targets</b>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	SBS1520+503	RA: 15 22 2.0700 (230.5086250d) Dec: +50 10 23.45 (50.17318d) Equinox: J2000	Epoch of Position: 2000	V=15	Reference Frame: SIMBAD

*Comments:*  
 Category=GALAXY  
 Description=[INTERACTING GALAXY, MULTIPLE NUCLEI, STARBURST]  
 Extended=YES

<b>Exposures</b>	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SBS1520+503	ACS/WFC, ACCUM, WFC1	F814W				Pattern 1, Exps 1-2 in Visit 01 (1)	370 Secs (740 Secs)
									[=>(Pattern 1)] [=>(Pattern 2)]	[1]
2		(1) SBS1520+503	ACS/WFC, ACCUM, WFC1	F475W				Pattern 1, Exps 1-2 in Visit 01 (1)	716 Secs (1432 Secs)	
									[=>(Pattern 1)] [=>(Pattern 2)]	[1]



Proposal 16845 - Visit 02 - A BCG in the making from wet major mergers

Tue Oct 12 19:00:29 GMT 2021

<b>Visit</b>	<b>Proposal 16845, Visit 02</b>		
	<b>Diagnostic Status: No Diagnostics</b>		
	Scientific Instruments: WFC3/UVIS		
	Special Requirements: (none)		

<b>Patterns</b>	#	Primary Pattern	Secondary Pattern	Exposures
	(2)	Pattern Type=WFC3-UVIS-MOS-DITH-LINE Purpose=MOSAIC Number Of Points=3 Point Spacing=2.4 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.754 Angle Between Sides= Center Pattern=true	

<b>Fixed Targets</b>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	SBS1520+503	RA: 15 22 2.0700 (230.5086250d) Dec: +50 10 23.45 (50.17318d) Equinox: J2000	Epoch of Position: 2000	V=15	Reference Frame: SIMBAD

*Comments:*  
 Category=GALAXY  
 Description=[INTERACTING GALAXY, MULTIPLE NUCLEI, STARBURST]  
 Extended=YES

<b>Exposures</b>	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) SBS1520+503	WFC3/UVIS, ACCUM, UVIS1	F275W	FLASH=20			Pattern 2, Exps 1-1 in Visit 02 (2)	888 Secs (2664 Secs)

[=>(Pattern 1)]  
 [=>(Pattern 2)]  
 [=>(Pattern 3)]

[1]

