10831 - A new wide-separation Einstein Cross at z=2.7

Cycle: 15, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) SDSSJ1011+0143	ACS/WFC	1	28-Nov-2006 21:37:32.0	yes
51	(1) SDSSJ1011+0143	ACS/WFC	1	28-Nov-2006 21:37:37.0	yes
02	(1) SDSSJ1011+0143	ACS/WFC	1	28-Nov-2006 21:37:41.0	yes

3 Total Orbits Used

ABSTRACT

We propose ACS F555W and F814W imaging observations of a new wide-separation Einstein Cross selected from SDSS spectroscopy through a bright anomalous emission line and confirmed recently with Keck imaging and spectroscopy. The source galaxy is a moderately luminous (L~0.2L*)

Lyman-alpha emitter at z=2.699, which is magnified and extended by more than a factor of twenty, making it one of the most accessible high-redshift bright Ly-a emitters on the sky. Its apparent flux is only 1.2 magnitudes fainter than MS1612-cB58, making this an ideal system for detailed study of the metallicity and initial mass function of a high-redshift star forming galaxy. The Einstein Radius is ~1.8arcsec, one of the widest known, making future spectroscopic ground-based followup optimal. This angle subtends ~5 kpc at the lens galaxy at z=0.331. The high resolution, high signal to noise imaging we propose to obtain will allow us to build accurate lensing models, including source reconstructions; combined with existing and planned Keck spectroscopy, will make possible a map of the host dark matter halo density profile to greater than one effective light radius; and will reveal lower surface brightness features associated with the bright star-forming knot lensed into the Cross. Finally, it will be an exquisite Hubble Heritage galaxy, which will be indispensable for many other applications. We are requesting a very modest proprietary period, in order to provide high-level reductions and ancillary data publically available simultaneously.

OBSERVING DESCRIPTION

We are obtaining deep images of the target Einstein Cross with one orbit each in F555W and F814W with ACS-WFC, with aperture set to WFC1. In each orbit we use ACS-WFC-DITHER-BOX with 4 points and the default spacings and no CR-SPLIT. Each band is observed for 4x522s = 2088s.

Visit

Proposal 10831, Visit 01, completed Wed Nov 29 02:37:44 GMT 2006

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 285.0D TO 340.0 D

Patterns

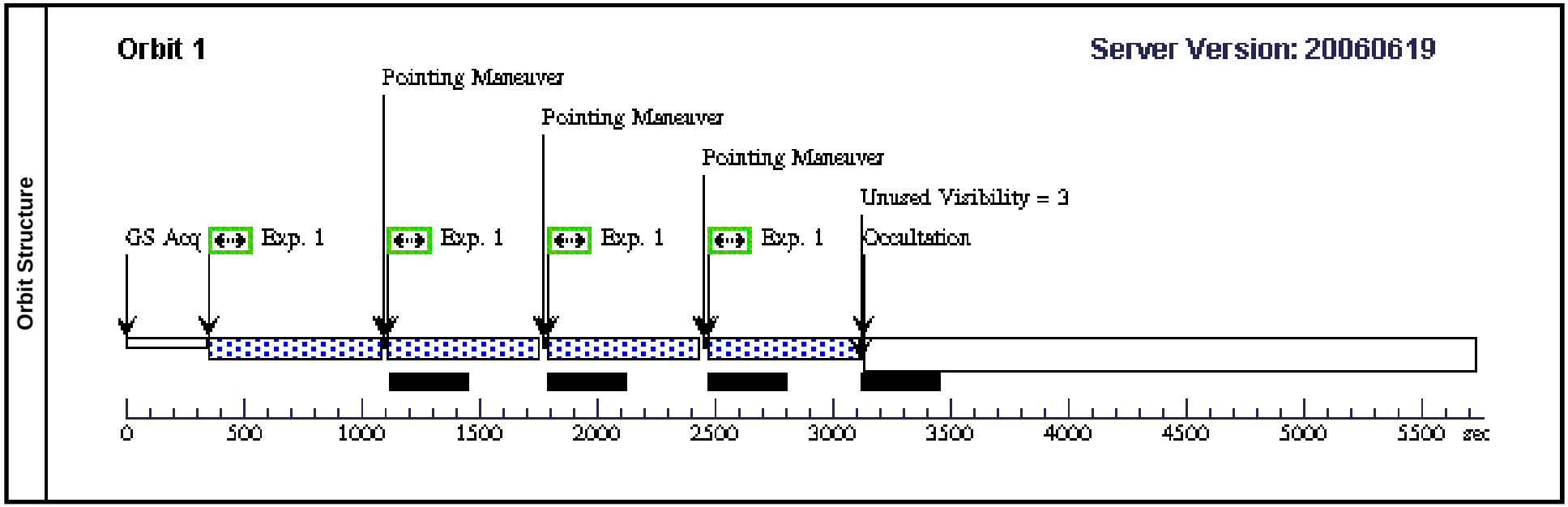
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.1 Center Pattern=true		(1)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSJ1011+0143	RA: 10 11 29.4900 (152.8728750d) Dec: +01 43 23.30 (1.72314d) Equinox: J2000	Redshift: 0.331	V=22.0 I=21.2	Reference Frame: SDSS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) SDSSJ1011+0143	ACS/WFC, ACCUM, WFC2	F555W	CR-SPLIT=NO		Pattern 1-1 (1)	522.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20060619
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Visibility = 3
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10831, Visit 51 Wed Nov 29 02:37:45 GMT 2006

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 285.0D TO 340.0 D

Patterns

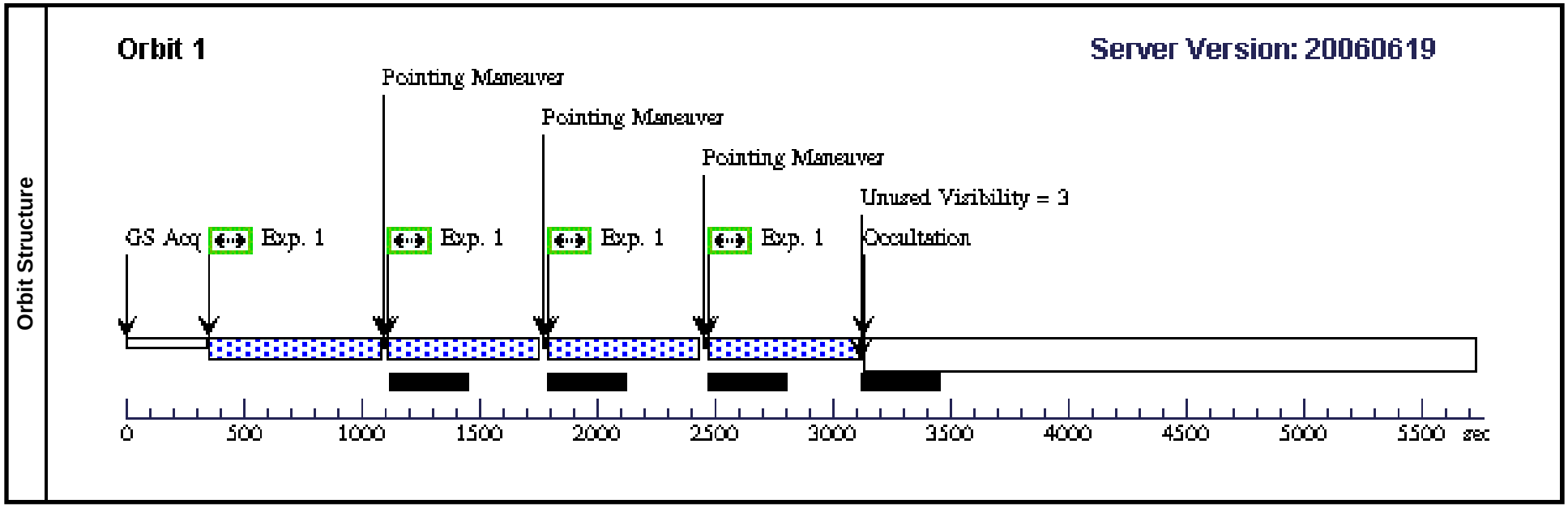
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.1 Center Pattern=true		(1)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSJ1011+0143	RA: 10 11 29.4900 (152.8728750d) Dec: +01 43 23.30 (1.72314d) Equinox: J2000	Redshift: 0.331	V=22.0 I=21.2	Reference Frame: SDSS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) SDSSJ1011+0143	ACS/WFC, ACCUM, WFC2	F555W	CR-SPLIT=NO		Pattern 1-1 (1)	522.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***


Orbit Structure
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Server Version: 20060619
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Visibility = 3
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10831, Visit 02, completed Wed Nov 29 02:37:45 GMT 2006

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 01

Patterns

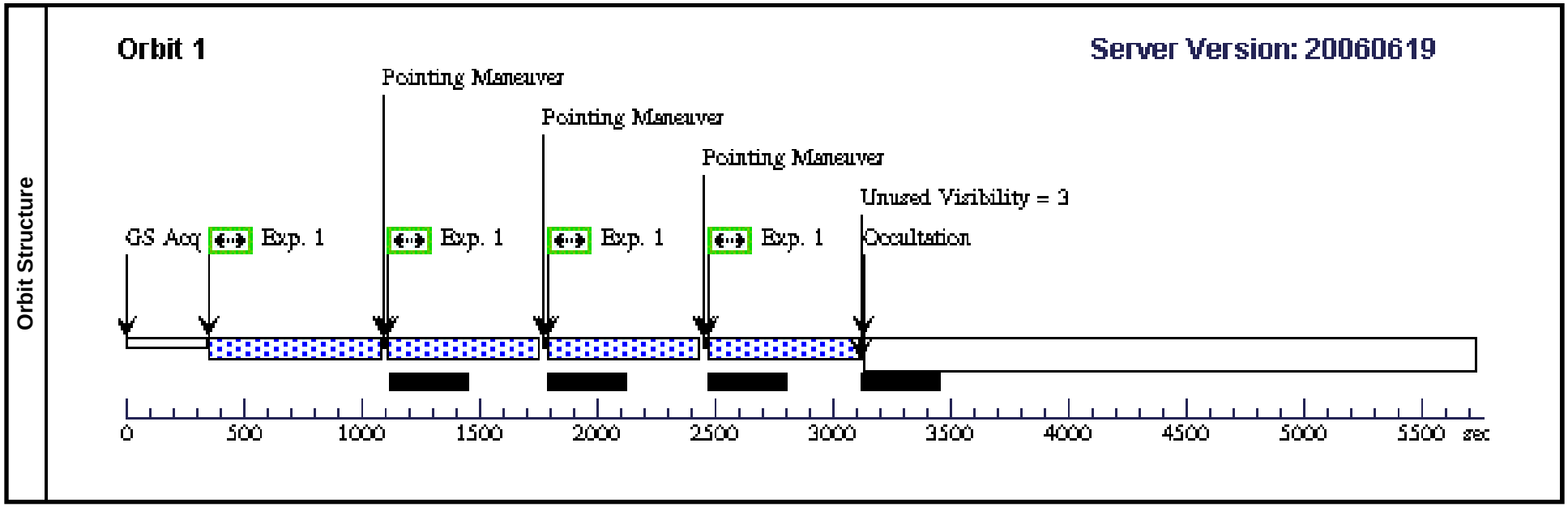
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.7 Angle Between Sides=69.1 Center Pattern=true		(1)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSJ1011+0143	RA: 10 11 29.4900 (152.8728750d) Dec: +01 43 23.30 (1.72314d) Equinox: J2000	Redshift: 0.331	V=22.0 I=21.2	Reference Frame: SDSS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) SDSSJ1011+0143	ACS/WFC, ACCUM, WFC2	F814W	CR-SPLIT=NO		Pattern 1-1 (1)	522.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20060619
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Visibility = 3
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Occultation
0
500
1000
1500
2000
2500
3000
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4000
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sec