13001 - SDSS 0921+28: A unique lensed quasar system

Cycle: 20, 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) SDSS092115.47+285444.3	ACS/WFC WFC3/IR WFC3/UVIS	2	05-Oct-2012 21:07:33.0	yes
02	BIAS	ACS/WFC	1	05-Oct-2012 21:07:47.0	yes

3 Total Orbits Used

ABSTRACT

SDSS 0921+28 is a unique small-separation (1.9") lensed quasar system we found recently. Adaptive optics imaging shows several images of at least two lensed objects: A doubly lensed quasar; An inclined quad image of a lensed galaxy; and possibly an image of the lensed quasar host galaxy. As far as we know this is the first example (in visible light) of a galaxy-mass lens which is lensing multiple sources. We estimate that roughly 1\% of the quasar lensed by galaxy mass objects have images of additional lensed sources. The existence of a lensed quasar that allows to measure the time delay along with many constraints (maybe of sources at different redshifts) will be a powerful tool for cosmological study as well as to probe the quasar host galaxy in great details. Here we propose to obtain 4 band imaging of the system using 2 HST orbits. Combined with the AO K-band

observations this will allow to obtain accurate photometric redshift of the different sources; study their morphology and accurately modeling of the lensing potential. Specifically, the accurate modeling of the lensing potential will have important implications for measurements of cosmological parameters.

OBSERVING DESCRIPTION

We request to observe the lensed quasar SDSS0921+28 using the F475W-band (ACS/WFC);
F625W (ACS/WFC); F814W (WFC3/UVIS) and F110W (WFC3/IR) filters.

Visit

Proposal 13001, SDSS0921_visit1 (01), scheduling Sat Oct 06 01:07:56 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR, WFC3/UVIS, ACS/WFC

Special Requirements: GROUP 01,02 WITHIN 14D

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=20.67 Angle Between Sides=69.05 Center Pattern=false		(1), (2)
(2)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(3)
(3)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(4)

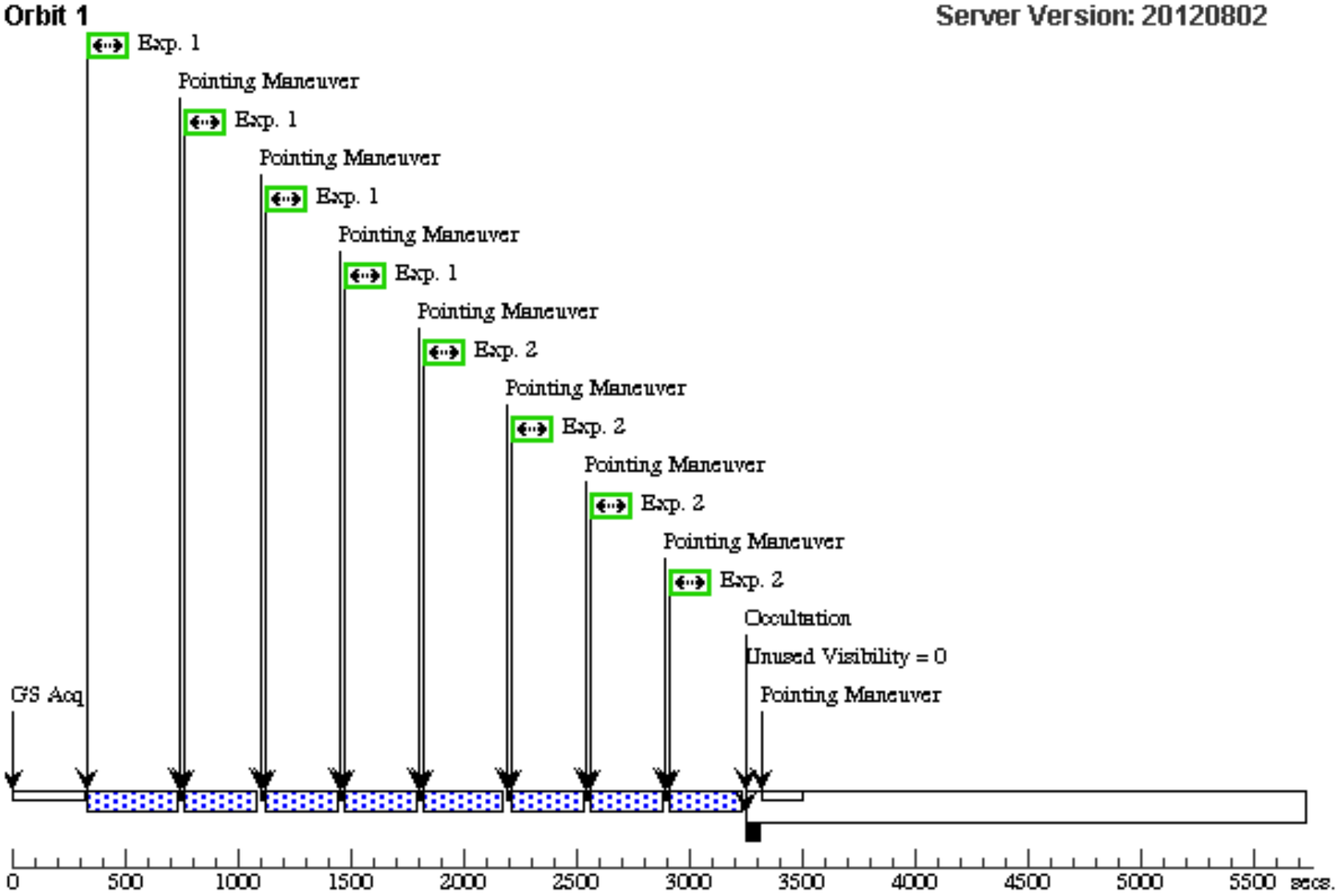
Fixed Targets

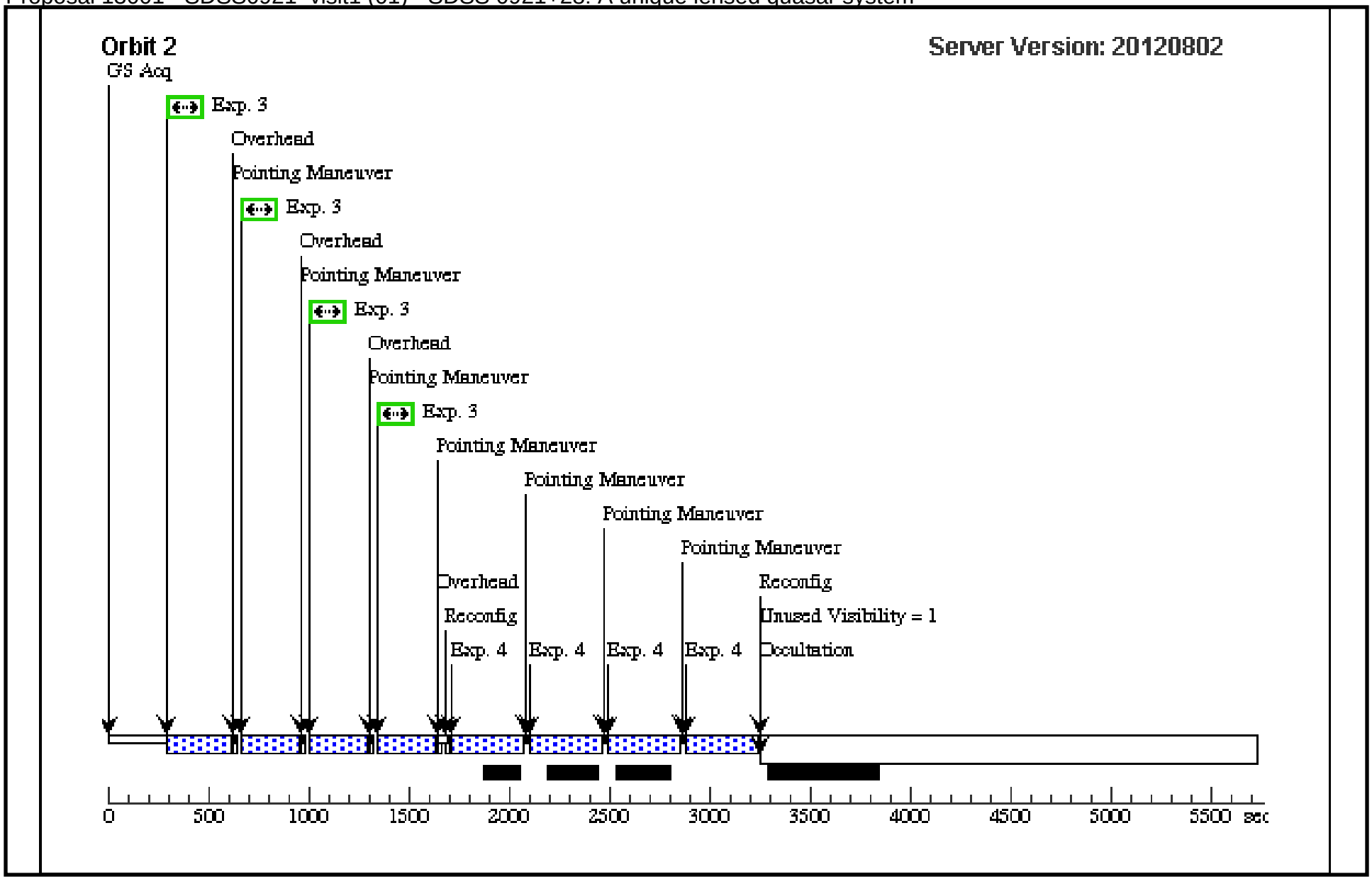
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSS092115.47+285444.3	RA: 09 21 15.4700 (140.3144583d) Dec: +28 54 44.30 (28.91231d) Equinox: J2000		V=20.0+/-0.2	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	sdss0921_F475W	(1) SDSS092115.47+285444.3	ACS/WFC, ACCUM, WFC1-512	F475W			Pattern 1, Exps 1-1 in SDSS0921_visit1 (01) (1)	260 Secs *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2	sdss0921_F625W	(1) SDSS092115.47+285444.3	ACS/WFC, ACCUM, WFC1-512	F625W			Pattern 1, Exps 2-2 in SDSS0921_visit1 (01) (1)	261 Secs *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3	sdss0921_F814W	(1) SDSS092115.47+285444.3	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F814W			Pattern 2, Exps 3-3 in SDSS0921_visit1 (01) (2)	288 Secs *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
4	sdss0921_F110W	(1) SDSS092115.47+285444.3	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=14; SAMP-SEQ=SPARS25		Pattern 3, Exps 4-4 in SDSS0921_visit1 (01) (3)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20120802
GS Acq
Exp. 3
Overhead
Pointing Maneuver
Exp. 3
Overhead
Pointing Maneuver
Exp. 3
Overhead
Pointing Maneuver
Exp. 3
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Overhead
Reconfig
Exp. 4
Exp. 4
Exp. 4
Exp. 4
Reconfig
Unused Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13001, Visit 02 Sat Oct 06 01:08:00 GMT 2012

Diagnostic Status: Error

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Diagnostics

(Exposure 1 (Visit 02)) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=COMPRESSION=NONE
The combination of attributes chosen is illegal.

(Exposure 1 (Visit 02)) Error (Form): This attribute cannot have this value due to other choices: Spectral_Element=DEF
This value is by default illegal.

(Exposure 1 (Visit 02)) Error (Form): COMPRESSION is not a valid selection

(Exposure 1 (Visit 02)) Error (Form): This attribute is not allowed to have this value: Calibration_Target = BIAS
It is an Available option and cannot normally be used in a GO proposal.

(Exposure 1 (Visit 02)) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=COMPRESSION
The combination of attributes chosen is illegal.

(Exposure 1 (Visit 02)) Error (Form): Illegal selection: DEF.

(Exposure 1 (Visit 02)) Error (Form): Target BIAS is no longer a valid selection

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		BIAS	ACS/WFC, ACCUM, WFC1-512	DEF	GAIN=2.0; COMPRESSION=NONE			0 Secs X 21 *[==>(Copy 1)]* *[==>(Copy 2)]* *[==>(Copy 3)]* *[==>(Copy 4)]* *[==>(Copy 5)]* *[==>(Copy 6)]* *[==>(Copy 7)]* *[==>(Copy 8)]* *[==>(Copy 9)]* *[==>(Copy 10)]* *[==>(Copy 11)]* *[==>(Copy 12)]* *[==>(Copy 13)]* *[==>(Copy 14)]* *[==>(Copy 15)]* *[==>(Copy 16)]* *[==>(Copy 17)]* *[==>(Copy 18)]* *[==>(Copy 19)]* *[==>(Copy 20)]* *[==>(Copy 21)]*	***[1]***

Comments: This orbit is charged to ACS/CAL program 13164.

Orbit Structure