



11830 - Jets at Intermediate Redshifts: Shedding Light on Emission Mechanisms and Physics

Cycle: 17, 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>
03	(3) 1834+612	WFC3/UVIS	1	13-Mar-2009 21:29:24.0	yes
02	(2) 0805+046	WFC3/UVIS	1	13-Mar-2009 21:29:29.0	yes
01	(1) 0730+257	WFC3/UVIS	1	13-Mar-2009 21:29:32.0	yes

3 Total Orbits Used

ABSTRACT

We propose observations of a small sample of intermediate-redshift radio jets ($2 < z < 3$) matched in radio properties with the one we previously observed at $z \leq 1$. The goal is to investigate the physics of jets in a significantly different cosmological environment. While observations of jets at

high z ($\geq 3-4$) tend to confirm the IC/CMB origin of the X-ray emission, the limited morphological information available due to the faintness of the radio emission prevents more detailed studies. Observations at intermediate z will bridge the gap, allowing us to study the role of both the increase of the CMB energy and intergalactic matter densities on the X-ray emission properties and physics of jets.

OBSERVING DESCRIPTION

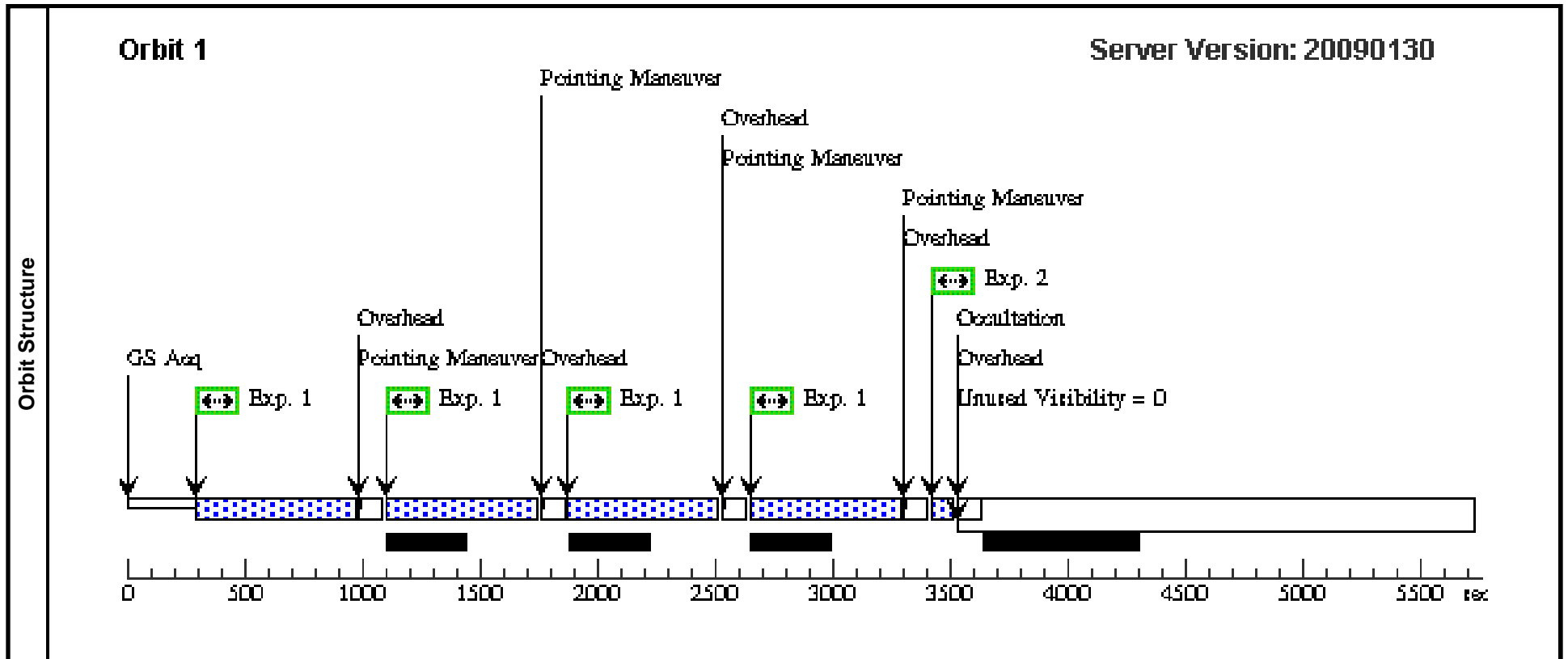
Each of the 3 targets require 1 orbit of F606W imaging. Assuming a radio-to-optical spectral index, $\alpha_{\text{ro}}=0.9$ and normalizing to the radio fluxes, we expect a range of detections of $0.07 \mu\text{Jy}$ (18σ) for the faintest radio knots, to $0.64 \mu\text{Jy}$ (89σ) for the brightest. Conversely, we can probe α_{ro} values down to >0.95 and >1.14 (5σ). Thus, a single filter observation is sufficiently sensitive to determine if the radio and X-ray points are from a single power-law component or if two spectral components are necessary (e.g., Sambruna et al. 2006).

According to the WFC3 ETC, the 2 V~18 targets will take ~200 sec to saturate. We have put in a short (92-93 sec) exposure to obtain an unsaturated image. The third target, the faintest one, is not expected to saturate.

Proposal 11830 - Visit 03 - Jets at Intermediate Redshifts: Shedding Light on Emission Mechanisms and Physics

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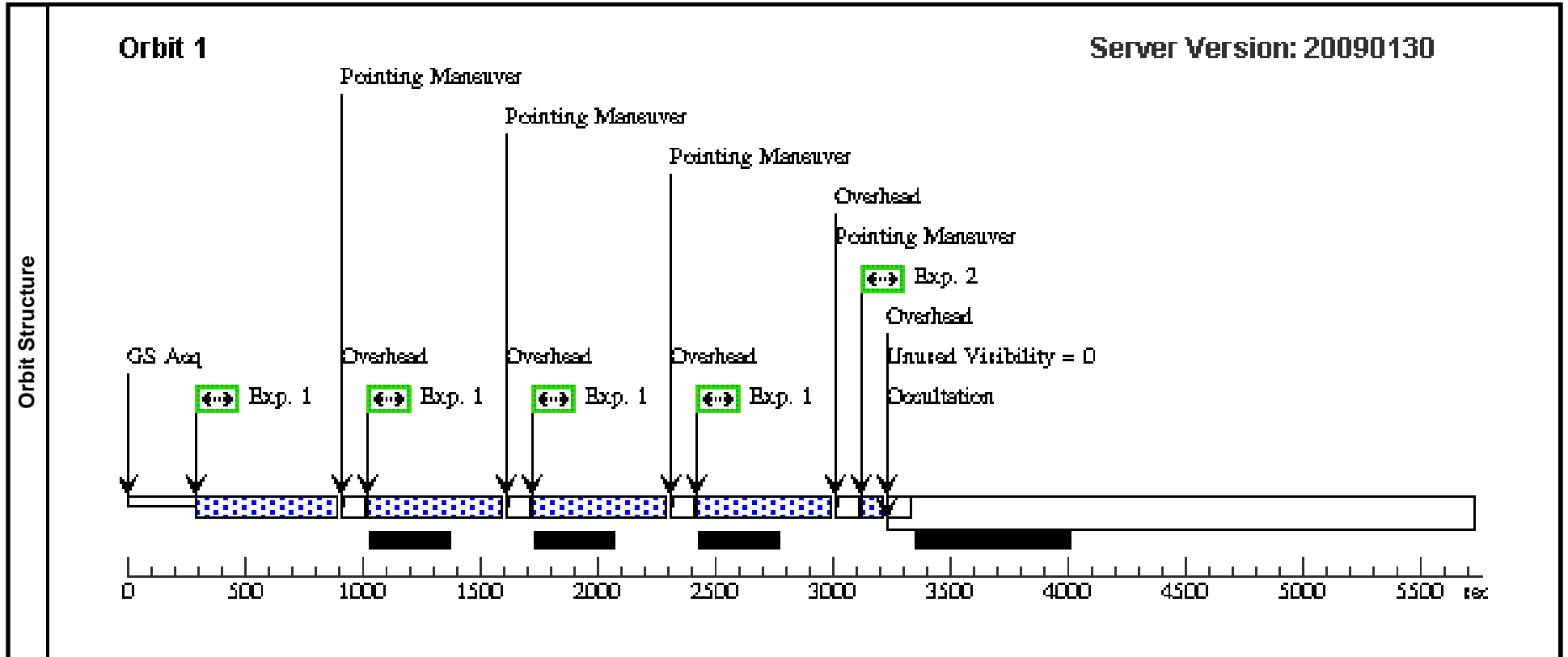
Visit	Proposal 11830, Visit 03, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
(1)		Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false					(1)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	1834+612	RA: 18 35 19.6752 (278.8319800d) Dec: +61 19 40.01 (61.32778d) Equinox: J2000		V=17.6	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(3) 1834+612	WFC3/UVIS, ACCUM, UVIS1	F606W	CR-SPLIT=NO		Pattern 1-1 (1)	646 Secs	
									[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
2		(3) 1834+612	WFC3/UVIS, ACCUM, UVIS1	F606W	CR-SPLIT=NO			92 Secs		
								[==>]		[1]



Proposal 11830 - Visit 02 - Jets at Intermediate Redshifts: Shedding Light on Emission Mechanisms and Physics

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Visit	Proposal 11830, Visit 02, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none)									
	Patterns	#	Primary Pattern				Secondary Pattern			Exposures
		(1)	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				(1)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous			
	(2)	0805+046	RA: 08 07 57.5385 (121.9897438d) Dec: +04 32 34.53 (4.54292d) Equinox: J2000			V=18.2	Reference Frame: ICRS			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) 0805+046	WFC3/UVIS, ACCUM, UVIS1	F606W	CR-SPLIT=NO		Pattern 1-1 (1)	572 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2		(2) 0805+046	WFC3/UVIS, ACCUM, UVIS1	F606W	CR-SPLIT=NO			93 Secs [==>]	[1]



Proposal 11830 - Visit 01 - Jets at Intermediate Redshifts: Shedding Light on Emission Mechanisms and Physics

Sat Mar 14 01:29:36 GMT 2009

Visit	Proposal 11830, Visit 01, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: (none)										
	Patterns	#	Primary Pattern				Secondary Pattern				Exposures
(1)		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				(1)	
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections		Fluxes	Miscellaneous		
	(1)	0730+257	RA: 07 33 8.7900 (113.2866250d) Dec: +25 36 24.80 (25.60689d) Equinox: J2000					V=20	Reference Frame: ICRS		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit
	1		(1) 0730+257	WFC3/UVIS, ACCUM, UVIS1	F606W	CR-SPLIT=NO		Pattern 1-1 (1)	635 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]		[1]

