



15606 - Late-time monitoring of GW170817 across the electromagnetic spectrum

Cycle: 26, Proposal Category: GO

(Availability Mode: SUPPORTED)

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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) GW170817	ACS/WFC	3	18-Feb-2019 17:00:25.0	yes
02	(1) GW170817	ACS/WFC	3	18-Feb-2019 17:00:27.0	yes

6 Total Orbits Used

ABSTRACT

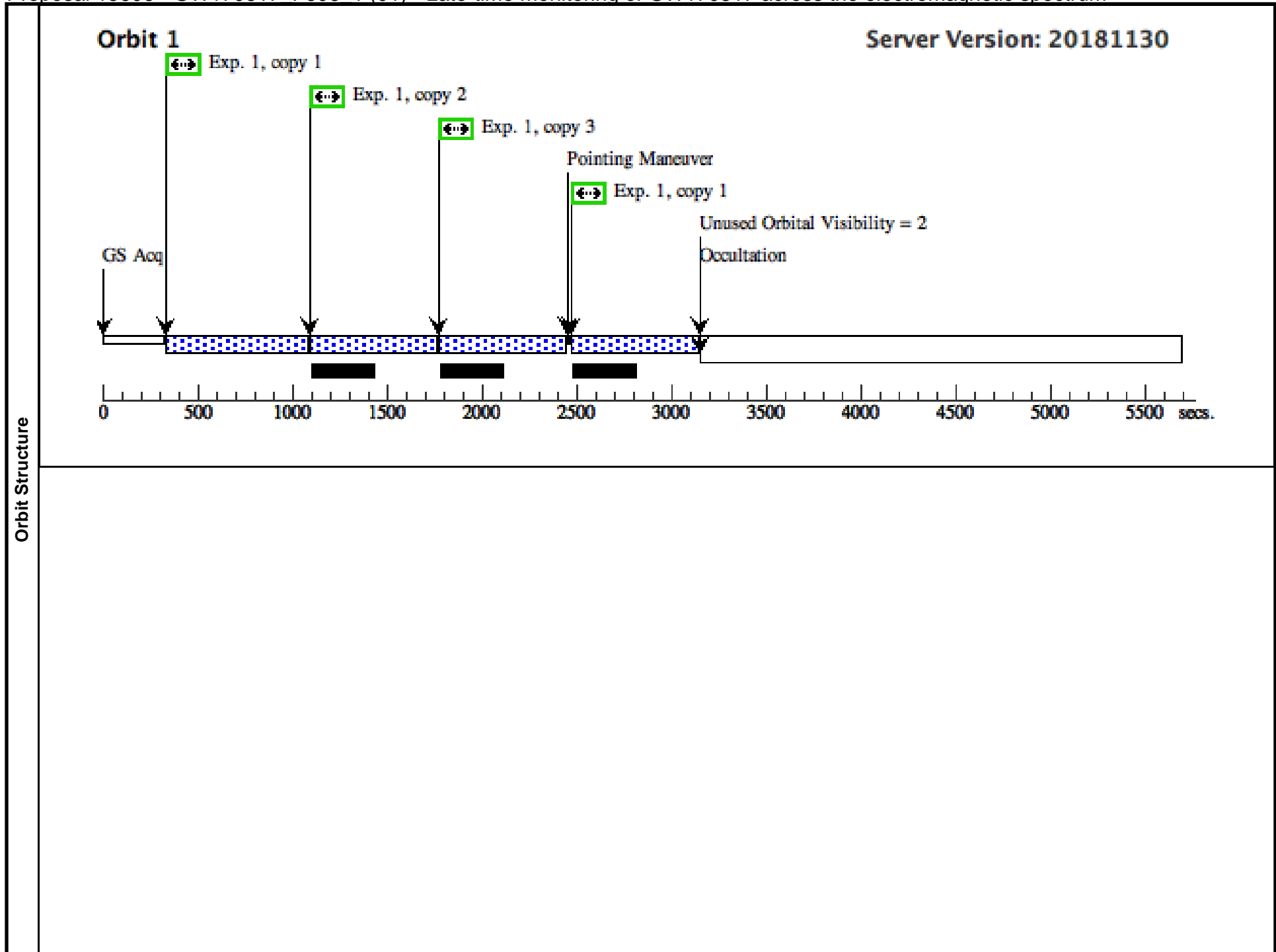
The co-PIs of this proposal are Wen-fai Fong and Raffaella Margutti. We propose joint Chandra-VLA-HST observations to continue our monitoring of the binary neutron star merger GW170817 at $t \sim 500$ -850 days since merger. Our immediate objectives are: (i) to constrain the broad-band spectral evolution of the non-thermal emission from GW170817, and, in particular, the passage of the synchrotron cooling frequency within the Chandra bandpass; (ii) to map the temporal evolution of the emission from GW170817 across the electromagnetic spectrum. These observations are designed to provide new insight into the current debate about the nature of the relativistic ejecta of compact- object mergers and their (now questioned) capability to successfully launch ultra-relativistic jets in their environment.

OBSERVING DESCRIPTION

This proposal is for 2 3-orbit visits of the optical counterpart of GW170817 with HST/ACS F606W. These observations are through our approved Chandra Cycle 20 program.

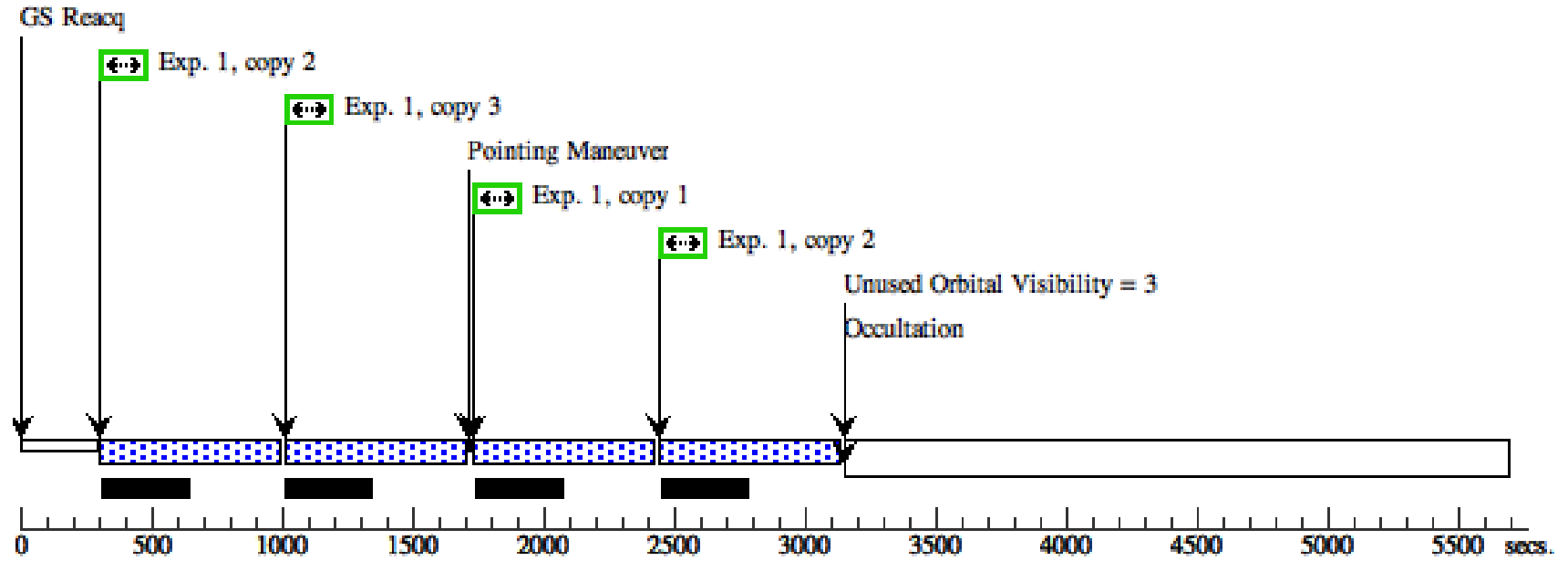
Since the counterpart is expected to be extremely faint (>27 AB mag), we ask that the 2 3-orbit visits occur within a 20 days of each other so in the event of non-detection, we can stack all of the images together and have a deep, unprecedented limit at the position. We also ask that observations commence between Jan 1, 2019-Aug 30, 2019 to roughly coincide with our Chandra observations of the source. Earlier times in this range are strongly preferred.

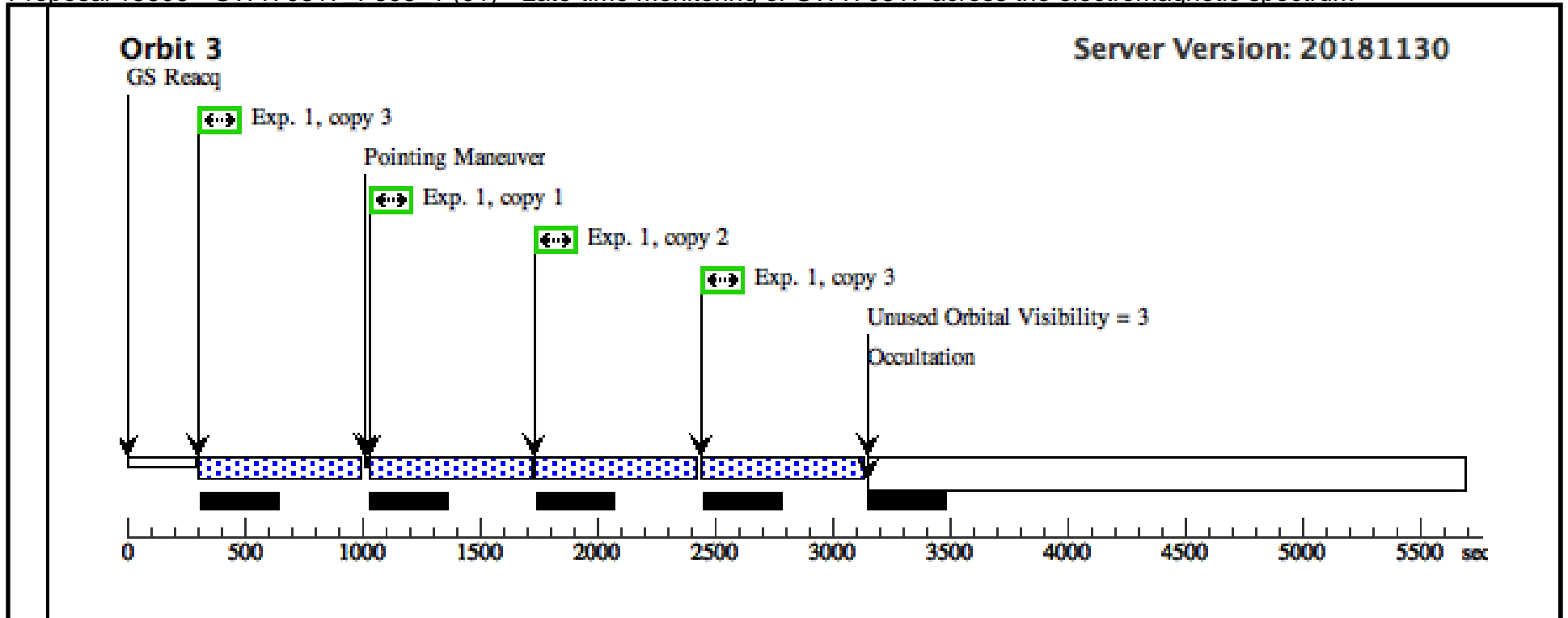
We note that GW170817 is a point source on the outskirts of NGC4993, a bright S0 galaxy.



Orbit 2

Server Version: 20181130

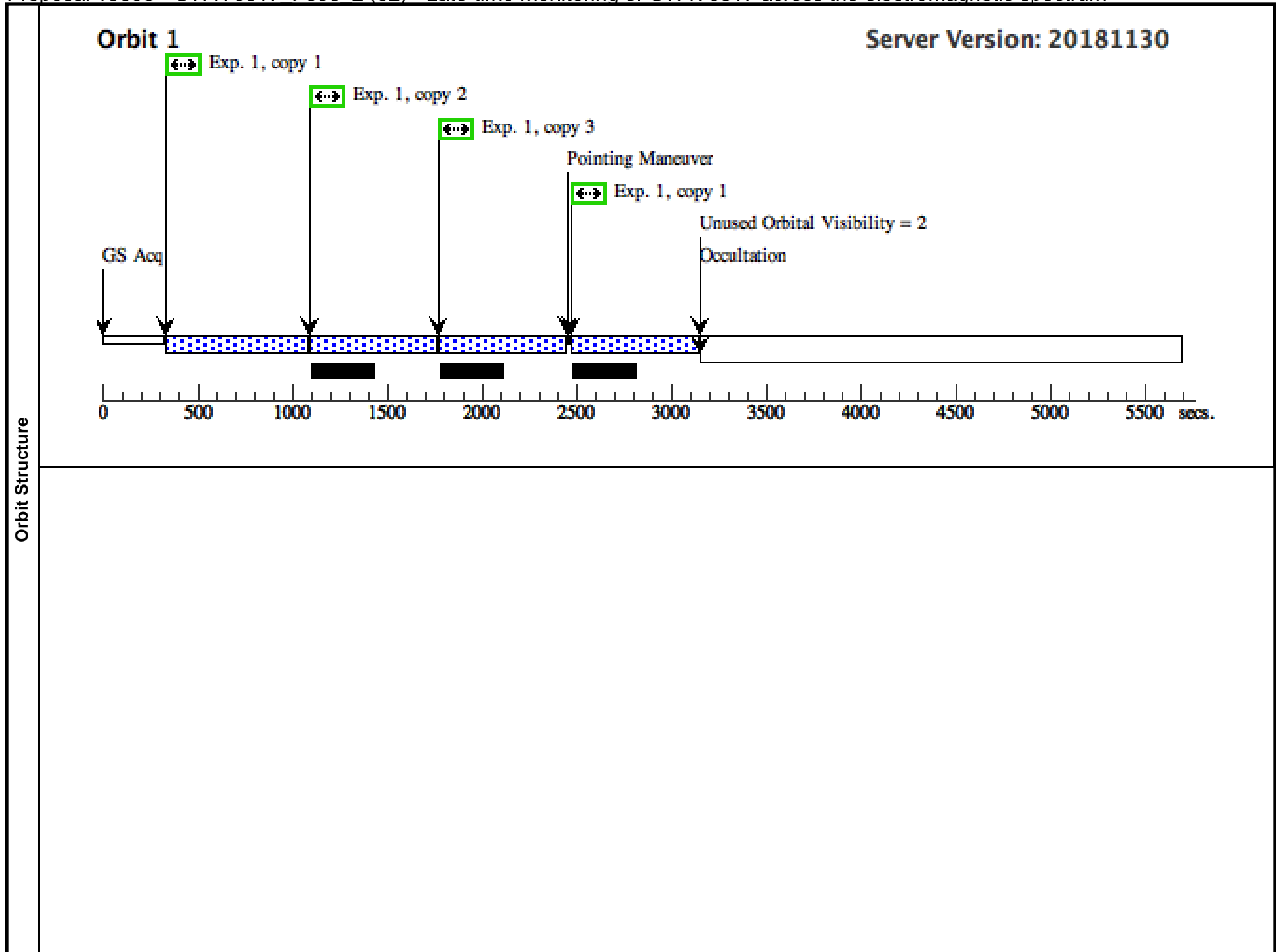




Proposal 15606 - GW170817 F606 2 (02) - Late-time monitoring of GW170817 across the electromagnetic spectrum

Mon Feb 18 22:00:28 GMT 2019

Visit	Proposal 15606, GW170817_F606_2 (02), implementation									
	Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: ORIENT 320D TO 14 D; ORIENT 30D TO 52 D; ORIENT 70D TO 300 D; AFTER 01 BY 0 D TO 20 D; BETWEEN 26-FEB-2019:00:00:00 AND 07-APR-2019:00:00:00 <i>Comments: Second 3-orbit visit of GW170817, to occur within a couple of weeks after the first visit, between Jan 1, 2019 and Aug 30, 2019. ORIENT ranges are set to avoid a bright star falling near the edge of the chip, which can cause artifacts across the image.</i>									
Patterns	#	Primary Pattern	Secondary Pattern	Exposures						
	(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.262 Line Spacing=0.192	Coordinate Frame=POS-TARG Pattern Orientation=18.39 Angle Between Sides=68.14 Center Pattern=false		(1)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	GW170817	RA: 13 09 48.0900 (197.4503750d) Dec: -23 22 53.35 (-23.38149d) Equinox: J2000		V=27	Reference Frame: SIMBAD				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=EXT-STAR Description=[GAMMA RAY BURSTER] Extended=NO										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) GW170817	(1) GW170817	ACS/WFC, ACCUM, WFC1	F606W			Pattern 1, Exps 1-1 in GW170817_F606_2 (02) (1)	500 Secs X 3 (6728 Secs)	
									[==>542.0 Secs (Pattern 1, Copy 1)]	[1]
									[==>542.0 Secs (Pattern 1, Copy 2)]	
									[==>542.0 Secs (Pattern 1, Copy 3)]	
								[==>542.0 Secs (Pattern 2, Copy 1)]		
								[==>570.0 Secs (Pattern 2, Copy 2)]	[2]	
								[==>570.0 Secs (Pattern 2, Copy 3)]		
								[==>570.0 Secs (Pattern 3, Copy 1)]		
								[==>570.0 Secs (Pattern 3, Copy 2)]		
								[==>570.0 Secs (Pattern 3, Copy 3)]	[3]	
								[==>570.0 Secs (Pattern 4, Copy 1)]		
								[==>570.0 Secs (Pattern 4, Copy 2)]		
								[==>570.0 Secs (Pattern 4, Copy 3)]		



Orbit 2

Server Version: 20181130

