



11340 - X-ray Observations of 11 Millisecond Pulsars in M28

Cycle: 16, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Prof. Jonathan E. Grindlay (PI)	Harvard University	josh@cfa.harvard.edu
Dr. Slavko Bogdanov (CoI)	McGill University	sbogdano@cfa.harvard.edu
Dr. Maureen van den Berg (CoI)	Harvard University	mvandenberg@cfa.harvard.edu
Dr. Peter D. Edmonds (CoI)	Eureka Scientific Inc.	peter-edmonds@hotmail.com
Dr. Haldan N. Cohn (CoI)	Indiana University System	cohn@astro.indiana.edu
Dr. Phyllis M. Lugger (CoI)	Indiana University System	lugger@indiana.edu
Dr. Ingrid Stairs (CoI)	University of British Columbia	istairs@astro.ubc.ca
Dr. Scott M. Ransom (CoI)	Associated Universities, Inc.	sransom@nrao.edu
Dr. Craig Heinke (CoI)	University of Alberta, Canada	cheinke@northwestern.edu

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) MESSIER-028	WFPC2	4	05-Mar-2010 21:01:04.0	yes
02	(1) MESSIER-028	WFPC2	4	05-Mar-2010 21:01:23.0	yes
11	(2) MESSIER-028-COPY	ACS/WFC	4	05-Mar-2010 21:01:38.0	yes

12 Total Orbits Used

ABSTRACT

Note - This phase-2 proposal describes a revised HST program to repeat two failed cycle-16 visits of 8 orbits in total with the WFPC2 to the globular cluster M28. The revised program consists of 4 orbits with the ACS/WFC. The original abstract is included below.

We propose a deep X-ray survey of the globular cluster M28 which will yield a wealth of important and unique science, ranging from the first direct measurement of the magnetic field of a millisecond pulsar and constraints on the neutron star equation of state to likely X-ray/optical (HST) detection of a re-exchanged binary MSP. The proposed joint HST WFPC2 observation will tie the X-ray, optical, and radio data to a common astrometric frame allowing an unambiguous identification of numerous cataclysmic variables and active binaries in M28 as well as making possible the first direct optical detection of a millisecond pulsar.

OBSERVING DESCRIPTION

The goal of this program is to image the core of the globular cluster M28 with the ACS/WFC in order to look for optical counterparts of the millisecond pulsars (MSPs) and other sources that were detected in our joint Chandra cycle-9 observation. In particular, our aim is to identify the optical counterparts to MSP-H and MSP-A; our observational setup is thus optimized to get good photometry in the region around these objects. From archival HST observations and the WFPC2 images obtained during the first attempt at executing this program, we identified faint candidate counterparts to MSP-H. To avoid that the diffraction spikes and saturation columns of a nearby bright star contaminate the photometry of these faint stars we impose constraints on the ORIENT angle. These constraints also leave the region around another high-priority object, MSP-A, free of diffraction/saturation spikes.

The current pointing of the ACS/WFC is preliminary and will be refined once we know the approximate date when our observations will be scheduled. The reason is that for a given ORIENT angle, some Chandra sources will fall inside the chip gap. By refining the coordinates of the pointing we can avoid that high-priority objects fall outside the field of view.

This program comprises 1 visit of 4 orbits that contains exposures in the F435W, F625W and F658N filters. All exposures are part of dither patterns that make use of integer and sub-pixel offsets to improve the intrinsic spatial resolution of the ACS/WFC and mitigate the effect of bad pixels. The exposures in F435W (4x464s) and F625W (4x60s) are made in the standard 2x2 ACS-WFC-DITHER-BOX pattern. The exposures through the

F658N filter (3x717s+6x724s) are made in a 3x3 dither pattern that uses 5-pixel integer offsets combined with 1/3 sub-pixel offsets.

Proposal 11340 - Visit 01 - X-ray Observations of 11 Millisecond Pulsars in M28

Visit	Proposal 11340, Visit 01, failed Diagnostic Status: Error Scientific Instruments: WFPC2 Special Requirements: ORIENT 300.0D TO 300.0 D	Sat Mar 06 02:01:43 GMT 2010
--------------	---	------------------------------

Proposal 11340 - Visit 01 - X-ray Observations of 11 Millisecond Pulsars in M28

Diagnosics

(B-1 (01.001)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(B-1 (01.001)) Error (Form): IMAGE is not a valid selection

(B-1 (01.001)) Error (Form): Illegal selection: WFPC2.

(B-1 (01.001)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-2 (01.002)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(B-2 (01.002)) Error (Form): Illegal selection: WFPC2.

(B-2 (01.002)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-2 (01.002)) Error (Form): IMAGE is not a valid selection

(B-3 (01.003)) Error (Form): Illegal selection: WFPC2.

(B-3 (01.003)) Error (Form): IMAGE is not a valid selection

(B-3 (01.003)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-3 (01.003)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-1 (01.004)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(R-1 (01.004)) Error (Form): IMAGE is not a valid selection

(R-1 (01.004)) Error (Form): Illegal selection: WFPC2.

(R-1 (01.004)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-2 (01.005)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(R-2 (01.005)) Error (Form): Illegal selection: WFPC2.

(R-2 (01.005)) Error (Form): IMAGE is not a valid selection

(R-2 (01.005)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-3 (01.006)) Error (Form): Illegal selection: WFPC2.

(R-3 (01.006)) Error (Form): IMAGE is not a valid selection

(R-3 (01.006)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-3 (01.006)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-4 (01.007)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-4 (01.007)) Error (Form): IMAGE is not a valid selection

(B-4 (01.007)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(B-4 (01.007)) Error (Form): Illegal selection: WFPC2.

(B-5 (01.008)) Error (Form): IMAGE is not a valid selection

Proposal 11340 - Visit 01 - X-ray Observations of 11 Millisecond Pulsars in M28

(B-5 (01.008)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-5 (01.008)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(B-5 (01.008)) Error (Form): Illegal selection: WFPC2.

(B-6 (01.009)) Error (Form): IMAGE is not a valid selection

(B-6 (01.009)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(B-6 (01.009)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-6 (01.009)) Error (Form): Illegal selection: WFPC2.

(R-4 (01.010)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(R-4 (01.010)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-4 (01.010)) Error (Form): IMAGE is not a valid selection

(R-4 (01.010)) Error (Form): Illegal selection: WFPC2.

(R-5 (01.011)) Error (Form): IMAGE is not a valid selection

(R-5 (01.011)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(R-5 (01.011)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-5 (01.011)) Error (Form): Illegal selection: WFPC2.

(R-6 (01.012)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-6 (01.012)) Error (Form): Illegal selection: WFPC2.

(R-6 (01.012)) Error (Form): IMAGE is not a valid selection

(R-6 (01.012)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-7 (01.013)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(B-7 (01.013)) Error (Form): Illegal selection: WFPC2.

(B-7 (01.013)) Error (Form): IMAGE is not a valid selection

(B-7 (01.013)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-8 (01.014)) Error (Form): IMAGE is not a valid selection

(B-8 (01.014)) Error (Form): Illegal selection: WFPC2.

(B-8 (01.014)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-8 (01.014)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(B-9 (01.015)) Error (Form): IMAGE is not a valid selection

(B-9 (01.015)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

Proposal 11340 - Visit 01 - X-ray Observations of 11 Millisecond Pulsars in M28

(B-9 (01.015)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-9 (01.015)) Error (Form): Illegal selection: WFPC2.

(R-7 (01.016)) Error (Form): IMAGE is not a valid selection

(R-7 (01.016)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(R-7 (01.016)) Error (Form): Illegal selection: WFPC2.

(R-7 (01.016)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-8 (01.017)) Error (Form): IMAGE is not a valid selection

(R-8 (01.017)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(R-8 (01.017)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-8 (01.017)) Error (Form): Illegal selection: WFPC2.

(R-9 (01.018)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-9 (01.018)) Error (Form): IMAGE is not a valid selection

(R-9 (01.018)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(R-9 (01.018)) Error (Form): Illegal selection: WFPC2.

(Bshort (01.019)) Error (Form): IMAGE is not a valid selection

(Bshort (01.019)) Error (Form): Illegal selection: WFPC2.

(Bshort (01.019)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(Bshort (01.019)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(Rshort (01.020)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(Rshort (01.020)) Error (Form): Illegal selection: WFPC2.

(Rshort (01.020)) Error (Form): IMAGE is not a valid selection

(Rshort (01.020)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(Exposure 21 (Visit 01)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(Exposure 21 (Visit 01)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(Exposure 21 (Visit 01)) Error (Form): IMAGE is not a valid selection

(Exposure 21 (Visit 01)) Error (Form): Illegal selection: WFPC2.

Proposal 11340 - Visit 01 - X-ray Observations of 11 Millisecond Pulsars in M28

Patterns	#	Primary Pattern	Secondary Pattern	Exposures
	(1)	Pattern Type=WFPC2-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.3535 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=45.0 Angle Between Sides= Center Pattern=false	

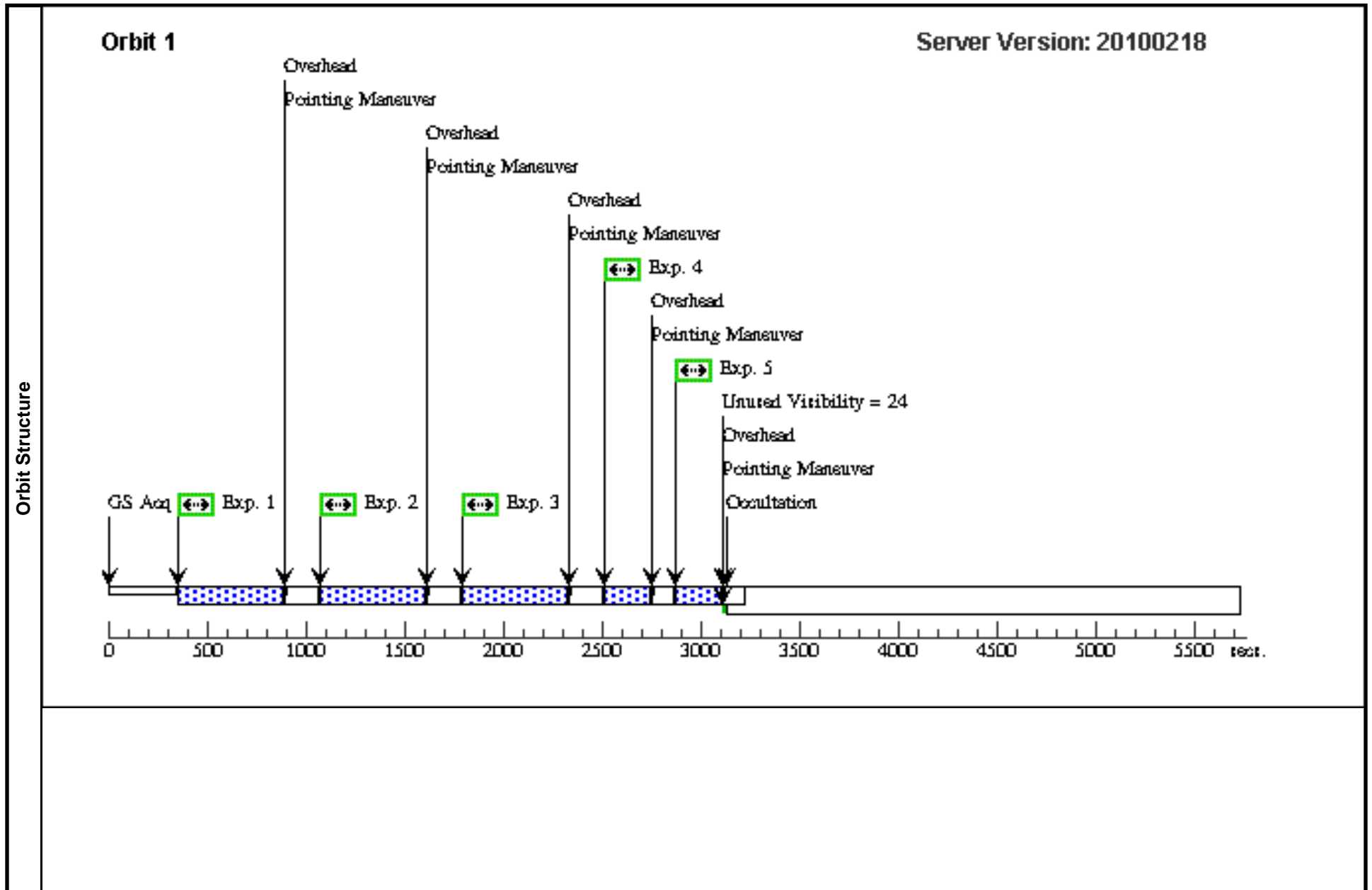
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	MESSIER-028	RA: 18 24 32.4337 (276.1351404d) Dec: -24 52 17.00 (-24.87139d) Equinox: J2000		V=14+/-0.1	Reference Frame: NED

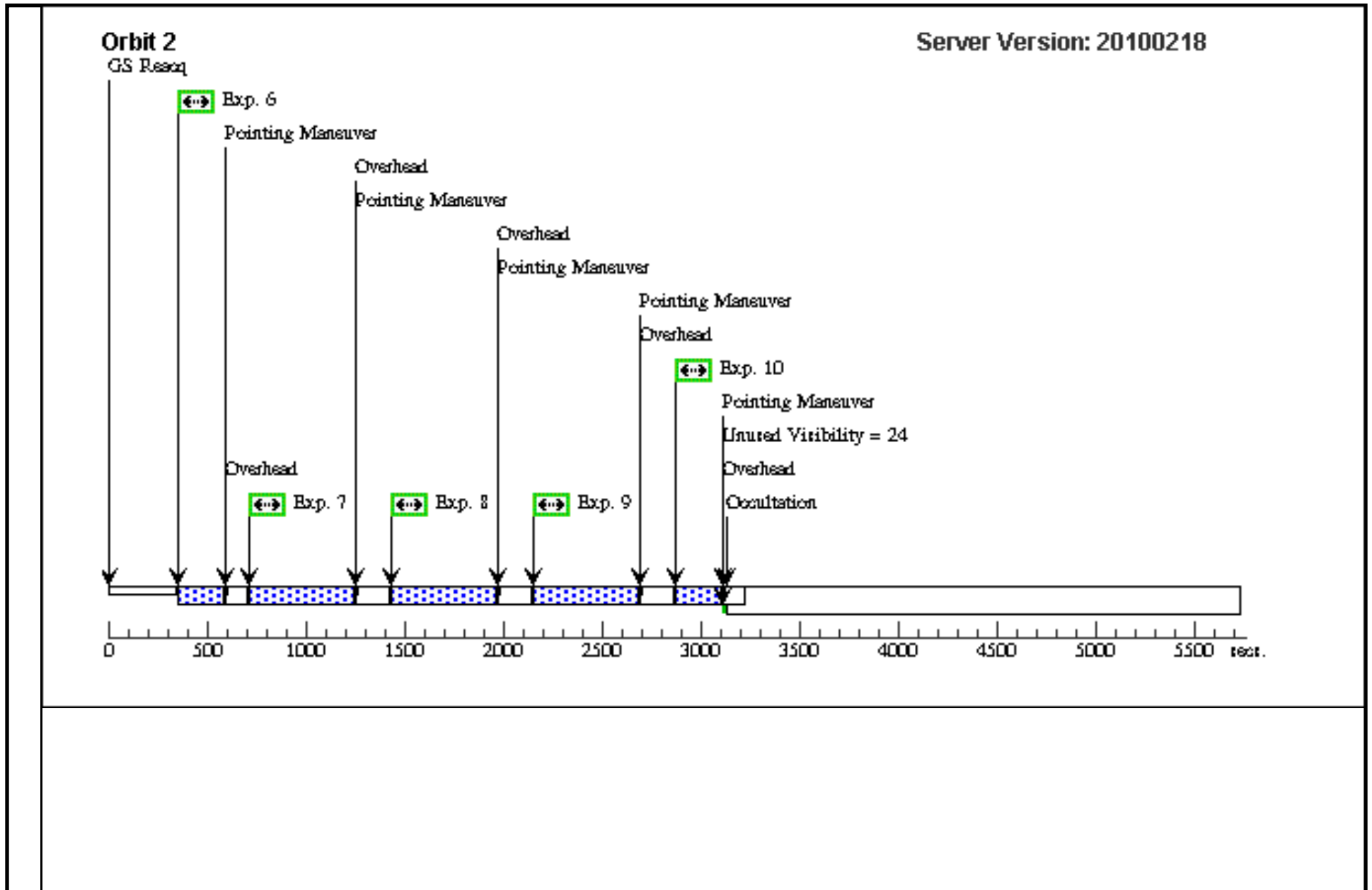
Proposal 11340 - Visit 01 - X-ray Observations of 11 Millisecond Pulsars in M28

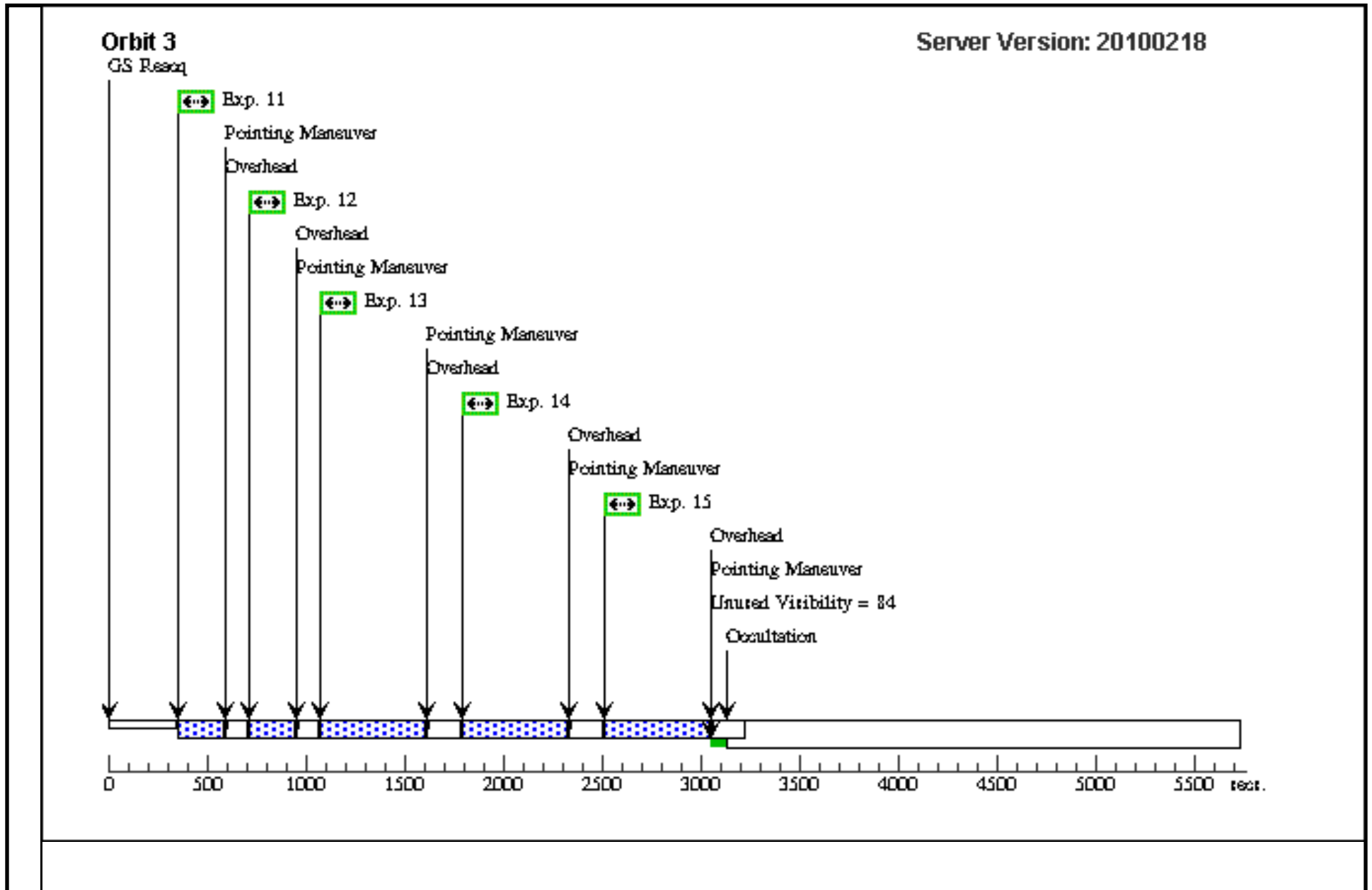
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit
Exposures	1	B-1	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W				400.0 Secs	[==>]	[1]
	2	B-2	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 0.1827,0 .5632		400.0 Secs	[==>]	[1]
	3	B-3	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 0.3653,1 .1264		400.0 Secs	[==>]	[1]
	4	R-1	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W				100.0 Secs	[==>]	[1]
	5	R-2	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 0.1827,0 .5632		100.0 Secs	[==>]	[1]
	6	R-3	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 0.3653,1 .1264		100.0 Secs	[==>]	[2]
	7	B-4	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 0.5632,0 .1827		400.0 Secs	[==>]	[2]
	8	B-5	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 0.7459,0 .7459		400.0 Secs	[==>]	[2]
	9	B-6	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 0.9285,1 .3091		400.0 Secs	[==>]	[2]
	10	R-4	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 0.5632,0 .1827		100.0 Secs	[==>]	[2]
	11	R-5	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 0.7459,0 .7459		100.0 Secs	[==>]	[3]
	12	R-6	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 0.9285,1 .3091		100.0 Secs	[==>]	[3]
	13	B-7	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 1.1264,0 .3653		400.0 Secs	[==>]	[3]
	14	B-8	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 1.3091,0 .9285		400.0 Secs	[==>]	[3]
	15	B-9	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 1.4918,1 .4918		400.0 Secs	[==>]	[3]
	16	R-7	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 1.1264,0 .3653		100.0 Secs	[==>]	[4]
	17	R-8	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 1.3091,0 .9285		100.0 Secs	[==>]	[4]
	18	R-9	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 1.4918,1 .4918		100.0 Secs	[==>]	[4]

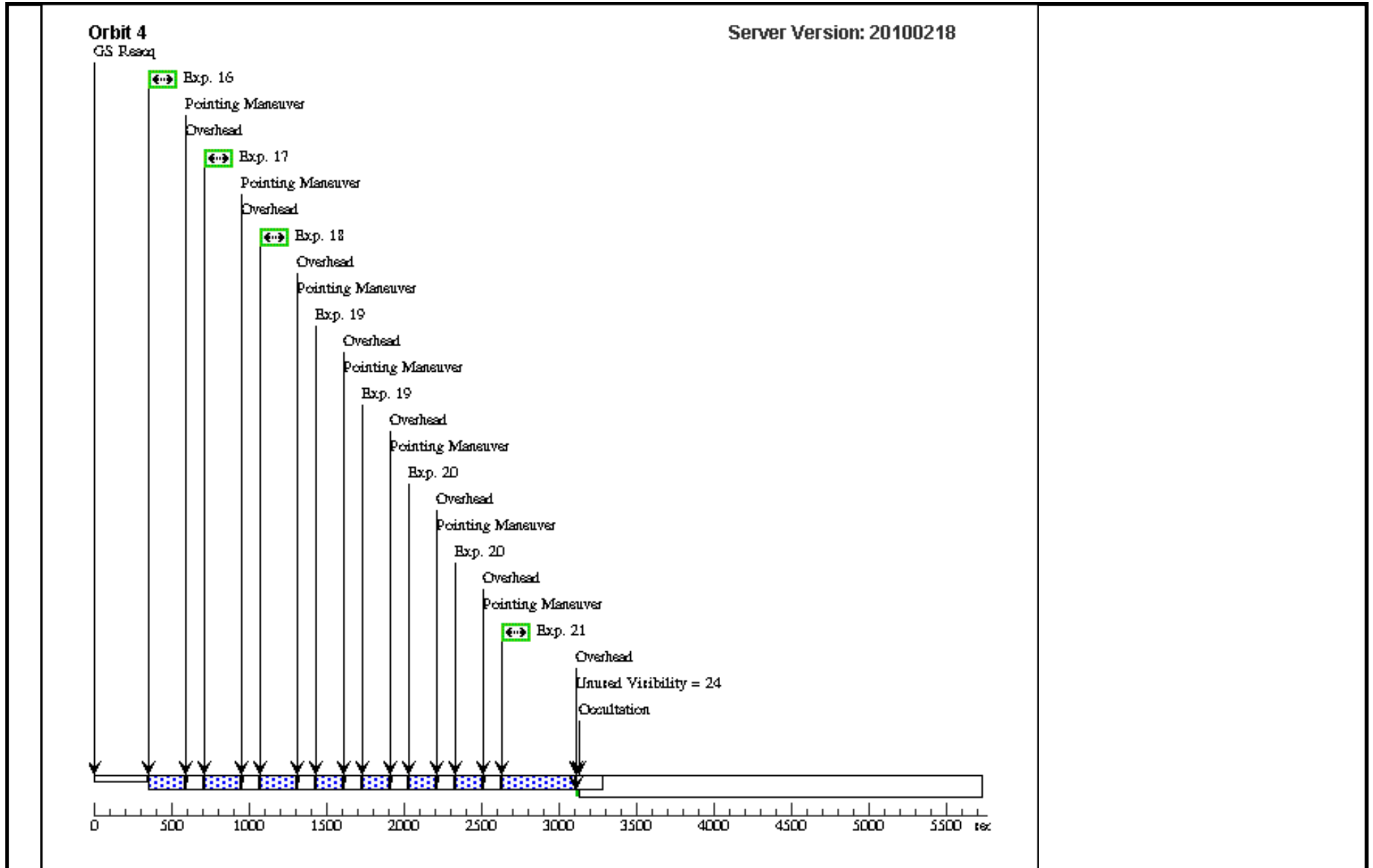
Proposal 11340 - Visit 01 - X-ray Observations of 11 Millisecond Pulsars in M28

19	Bshort	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W	Pattern 1, Exps 19-19 (1)	30.0 Secs	
						[==>(Pattern 1)]	[4]
20	Rshort	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W	Pattern 1, Exps 20-20 (1)	10.0 Secs	
						[==>(Pattern 1)]	[4]
21		(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		300.0 Secs	
						[==>]	[4]









Proposal 11340 - Visit 01 - X-ray Observations of 11 Millisecond Pulsars in M28

Visit	<p>Proposal 11340, Visit 02, failed Diagnostic Status: Error Scientific Instruments: WFPC2 Special Requirements: ORIENT 300.0D TO 300.0 D; AFTER 01 BY 0.0 D TO 7.0 D</p>
--------------	---

Sat Mar 06 02:01:46 GMT 2010

Diagnostics	(B-1 (02.001)) Error (Form): IMAGE is not a valid selection
	(B-1 (02.001)) Error (Form): Illegal selection: WFPC2.
	(B-1 (02.001)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal.
	(B-1 (02.001)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal.
	(B-2 (02.002)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal.
	(B-2 (02.002)) Error (Form): Illegal selection: WFPC2.
	(B-2 (02.002)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal.
	(B-2 (02.002)) Error (Form): IMAGE is not a valid selection
	(B-3 (02.003)) Error (Form): Illegal selection: WFPC2.
	(B-3 (02.003)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal.
	(B-3 (02.003)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal.
	(B-3 (02.003)) Error (Form): IMAGE is not a valid selection
	(R-1 (02.004)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal.
	(R-1 (02.004)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal.
	(R-1 (02.004)) Error (Form): Illegal selection: WFPC2.
	(R-1 (02.004)) Error (Form): IMAGE is not a valid selection
	(R-2 (02.005)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal.
	(R-2 (02.005)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal.
	(R-2 (02.005)) Error (Form): IMAGE is not a valid selection
	(R-2 (02.005)) Error (Form): Illegal selection: WFPC2.
	(R-3 (02.006)) Error (Form): IMAGE is not a valid selection
	(R-3 (02.006)) Error (Form): Illegal selection: WFPC2.
	(R-3 (02.006)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal.
	(R-3 (02.006)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal.
	(B-4 (02.007)) Error (Form): IMAGE is not a valid selection
(B-4 (02.007)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal.	
(B-4 (02.007)) Error (Form): Illegal selection: WFPC2.	
(B-4 (02.007)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal.	
(B-5 (02.008)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal.	

Proposal 11340 - Visit 02 - X-ray Observations of 11 Millisecond Pulsars in M28

(B-5 (02.008)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-5 (02.008)) Error (Form): IMAGE is not a valid selection

(B-5 (02.008)) Error (Form): Illegal selection: WFPC2.

(B-6 (02.009)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-6 (02.009)) Error (Form): Illegal selection: WFPC2.

(B-6 (02.009)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(B-6 (02.009)) Error (Form): IMAGE is not a valid selection

(R-4 (02.010)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-4 (02.010)) Error (Form): Illegal selection: WFPC2.

(R-4 (02.010)) Error (Form): IMAGE is not a valid selection

(R-4 (02.010)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(R-5 (02.011)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-5 (02.011)) Error (Form): Illegal selection: WFPC2.

(R-5 (02.011)) Error (Form): IMAGE is not a valid selection

(R-5 (02.011)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(R-6 (02.012)) Error (Form): IMAGE is not a valid selection

(R-6 (02.012)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(R-6 (02.012)) Error (Form): Illegal selection: WFPC2.

(R-6 (02.012)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-7 (02.013)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(B-7 (02.013)) Error (Form): Illegal selection: WFPC2.

(B-7 (02.013)) Error (Form): IMAGE is not a valid selection

(B-7 (02.013)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-8 (02.014)) Error (Form): Illegal selection: WFPC2.

(B-8 (02.014)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2
It is a Restricted option and can only be used in an engineering proposal.

(B-8 (02.014)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

(B-8 (02.014)) Error (Form): IMAGE is not a valid selection

(B-9 (02.015)) Error (Form): Illegal selection: WFPC2.

(B-9 (02.015)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE
This value is by default illegal.

Proposal 11340 - Visit 02 - X-ray Observations of 11 Millisecond Pulsars in M28

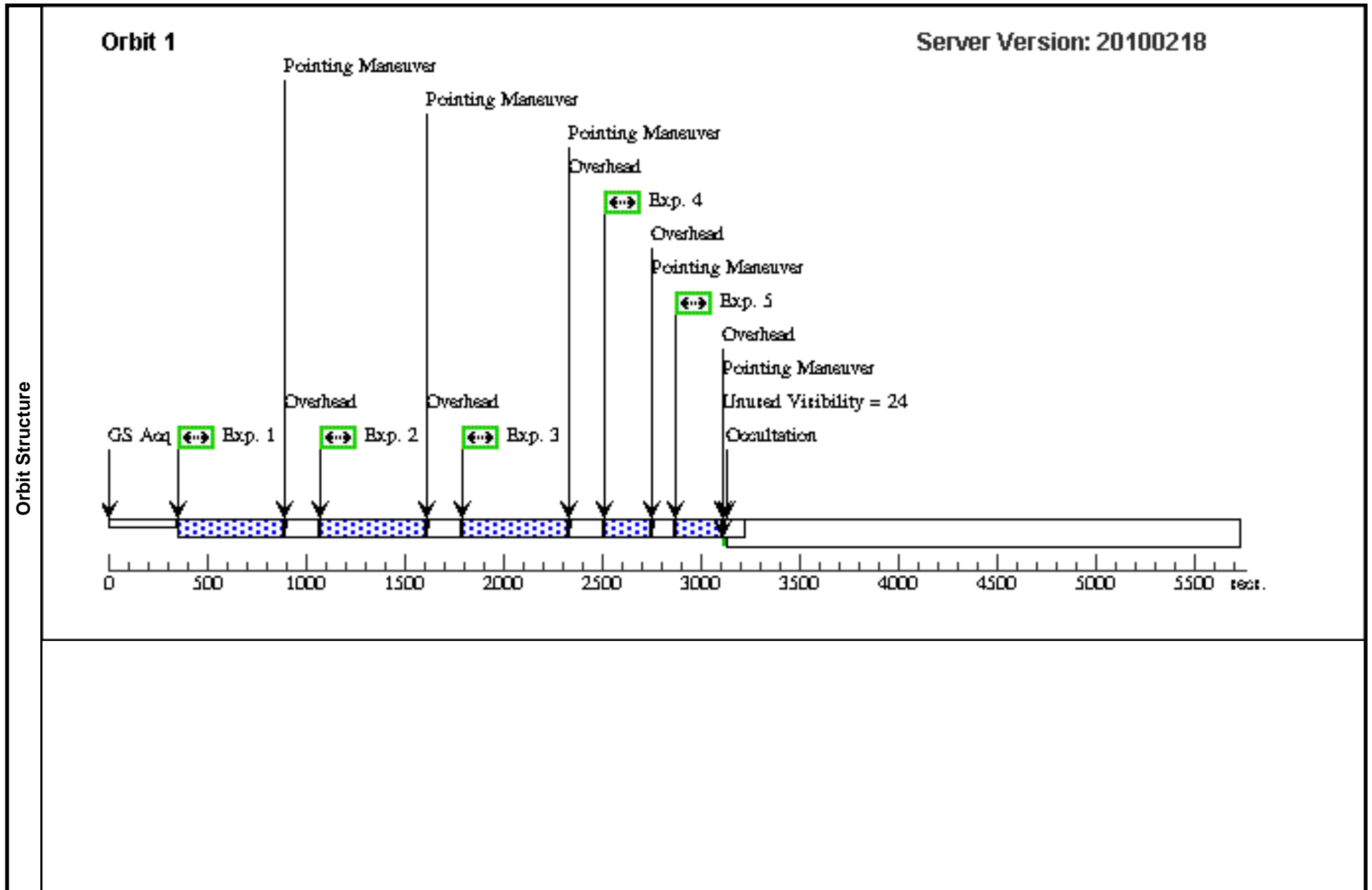
<p>(B-9 (02.015)) Error (Form): IMAGE is not a valid selection (B-9 (02.015)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal. (R-7 (02.016)) Error (Form): IMAGE is not a valid selection (R-7 (02.016)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal. (R-7 (02.016)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal. (R-7 (02.016)) Error (Form): Illegal selection: WFPC2. (R-8 (02.017)) Error (Form): Illegal selection: WFPC2. (R-8 (02.017)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal. (R-8 (02.017)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal. (R-8 (02.017)) Error (Form): IMAGE is not a valid selection (R-9 (02.018)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal. (R-9 (02.018)) Error (Form): Illegal selection: WFPC2. (R-9 (02.018)) Error (Form): IMAGE is not a valid selection (R-9 (02.018)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal. (Ha (02.019)) Error (Form): Illegal selection: WFPC2. (Ha (02.019)) Error (Form): This attribute is not allowed to have this value: Config = WFPC2 It is a Restricted option and can only be used in an engineering proposal. (Ha (02.019)) Error (Form): This attribute cannot have this value due to other choices: Mode=IMAGE This value is by default illegal. (Ha (02.019)) Error (Form): IMAGE is not a valid selection</p>						
Patterns	#	Primary Pattern		Secondary Pattern	Exposures	
	(2)	Pattern Type=WFPC2-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.559017 Line Spacing=0.559017	Coordinate Frame=POS-TARG Pattern Orientation=26.56505 Angle Between Sides=143.1301 Center Pattern=false		(19)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	MESSIER-028	RA: 18 24 32.4337 (276.1351404d) Dec: -24 52 17.00 (-24.87139d) Equinox: J2000		V=14+/-0.1	Reference Frame: NED

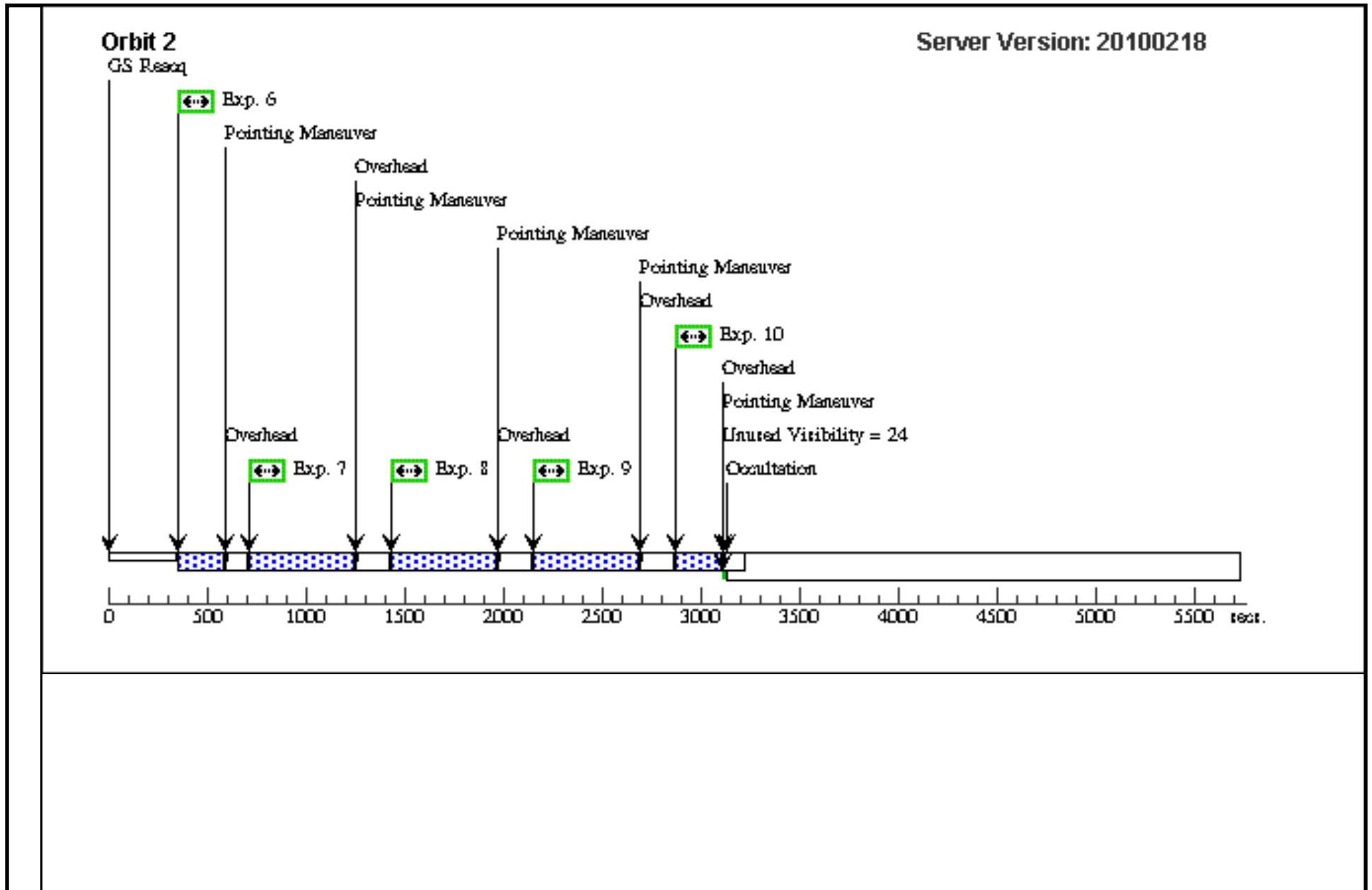
Proposal 11340 - Visit 02 - X-ray Observations of 11 Millisecond Pulsars in M28

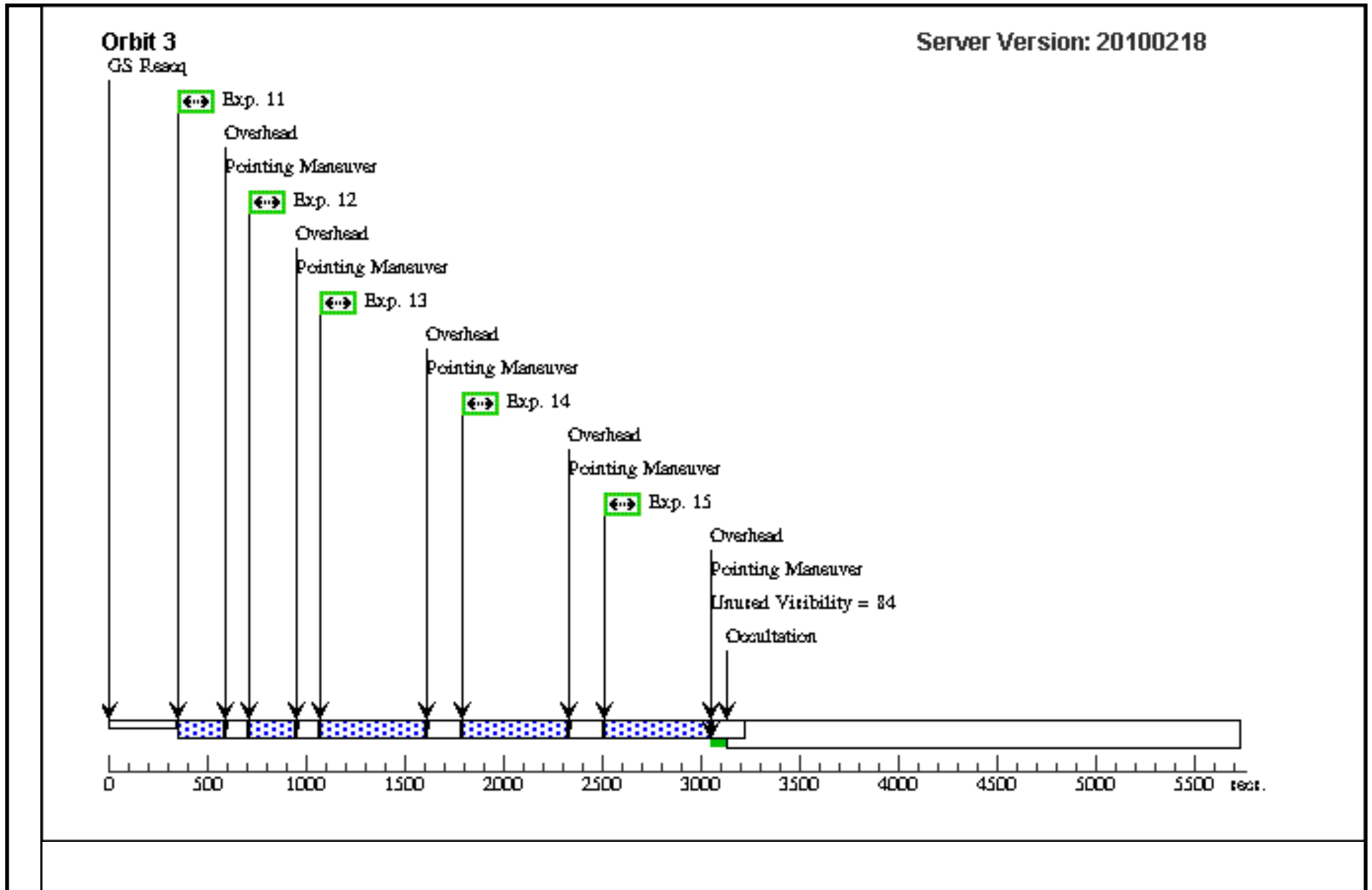
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	B-1	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W				400.0 Secs	
									[==>]	[1]
	2	B-2	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 0.1827,0.5632		400.0 Secs	
									[==>]	[1]
	3	B-3	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 0.3653,1.1264		400.0 Secs	
									[==>]	[1]
	4	R-1	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W				100.0 Secs	
									[==>]	[1]
	5	R-2	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 0.1827,0.5632		100.0 Secs	
									[==>]	[1]
	6	R-3	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 0.3653,1.1264		100.0 Secs	
									[==>]	[2]
	7	B-4	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 0.5632,0.1827		400.0 Secs	
									[==>]	[2]
	8	B-5	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 0.7459,0.7459		400.0 Secs	
									[==>]	[2]
	9	B-6	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 0.9285,1.3091		400.0 Secs	
								[==>]	[2]	
10	R-4	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 0.5632,0.1827		100.0 Secs		
								[==>]	[2]	
11	R-5	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 0.7459,0.7459		100.0 Secs		
								[==>]	[3]	
12	R-6	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 0.9285,1.3091		100.0 Secs		
								[==>]	[3]	
13	B-7	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 1.1264,0.3653		400.0 Secs		
								[==>]	[3]	
14	B-8	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 1.3091,0.9285		400.0 Secs		
								[==>]	[3]	
15	B-9	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F439W		POS TARG 1.4918,1.4918		400.0 Secs		
								[==>]	[3]	
16	R-7	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 1.1264,0.3653		100.0 Secs		
								[==>]	[4]	
17	R-8	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 1.3091,0.9285		100.0 Secs		
								[==>]	[4]	
18	R-9	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F675W		POS TARG 1.4918,1.4918		100.0 Secs		
								[==>]	[4]	

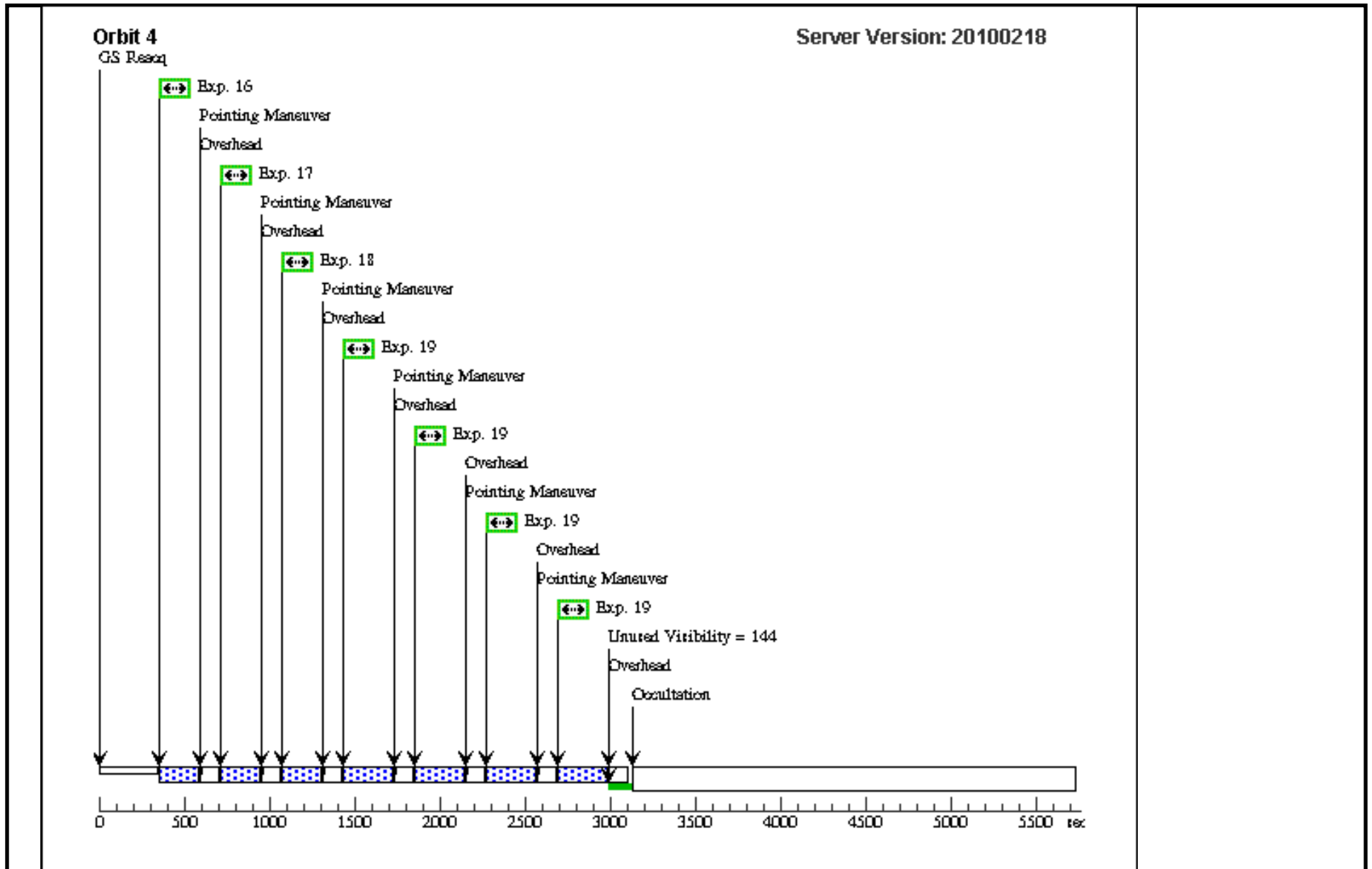
Proposal 11340 - Visit 02 - X-ray Observations of 11 Millisecond Pulsars in M28

19	Ha	(1) MESSIER-028	WFPC2, IMAGE, PC1-FIX	F656N	Pattern 2, Exps 19-19 (2)	160.0 Secs [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[4]
----	----	-----------------	-----------------------	-------	---------------------------	--	-----









Proposal 11340 - Visit 02 - X-ray Observations of 11 Millisecond Pulsars in M28

Sat Mar 06 02:01:48 GMT 2010

Visit	<p>Proposal 11340, Visit 11, implementation</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: ACS/WFC</p> <p>Special Requirements: GYRO MODE 3GOBAD; ORIENT 283D TO 283 D</p> <p><i>Comments: The ORIENT constraint is set by the requirement that the saturation and diffraction spikes of two bright stars should avoid the locations of candidate counterparts near Chandra sources. To compute the allowed ranges, we calculated the position angles of the lines connecting the bright stars and their nearby candidate counterparts (261.8deg and 265.6 deg, measured North to East). Then we looked up the angle between the U3-axis and the ACS/WFC detector y-axis (2 deg) to compute the ORIENT angles that should be avoided: 261.8+2deg=263.8deg and 265.6+2deg=267.6deg. We adopt a margin of +/-15deg around these angles, which results in a range that should be avoided of 248.8-282.6deg. Since saturation and diffraction occur at 90deg-intervals, the final range that should be avoided is: 68.8-102.6deg, 158.8-192.6deg, 248.8-282.6deg and 338.8-12.6deg. Therefore, the allowed ORIENTangles are in the range: 12.6-68.8deg, 102.6-158.8deg, 192.6-248.8deg, 282.6-338.8deg.</i></p> <p><i>Note added on March 5, 2010: Given the plan windows for this visit (April 19 - May 24, 2010), we have selected an ORIENT angle of 283 deg, which will optimize the schedulability of the visit, and put all our prime targets in the ACS/WFC field of view.</i></p>					
	<p>(Visit 11) Warning (Form): Gyro Mode overrides default value of 2G.</p>					
Diagnosics						
Patterns	#	Primary Pattern	Secondary Pattern	Exposures		
	(3)	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	(2)		
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(2)	MESSIER-028-COPY Alt Name1: NGC6626	RA: 18 24 29.7400 (276.1239167d) Dec: -24 52 11.70 (-24.86992d) Equinox: J2000		V=11.2+/-0.2 The V-mag refers to the brightest UCAC2 star projected within 2 arcmin from the cluster center. The reddening towards the cluster is E(B-V)=0.42.	Reference Frame: ICRS

Proposal 11340 - Visit 11 - X-ray Observations of 11 Millisecond Pulsars in M28

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
Exposures	1	R-1	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F625W	CR-SPLIT=NO; GAIN=2.0	POS TARG 0.000,0. 000; GS ACQ SCENARI O BASE1B3	60 Secs [==>]	[1]
	2	B	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F435W	GAIN=2.0; CR-SPLIT=NO	Pattern 3, Exps 2-2 (3)	464 Secs [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	3	R-2	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F625W	CR-SPLIT=NO; GAIN=2.0	POS TARG 0.247,0. 094	60 Secs [==>]	[2]
	4	Ha-1	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F658N	CR-SPLIT=NO; GAIN=2.0	POS TARG -0.329,- 0.356	717 Secs [==>]	[2]
	5	Ha-2	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F658N	CR-SPLIT=NO; GAIN=2.0	POS TARG -0.247,- 0.102	717 Secs [==>]	[2]
	6	Ha-3	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F658N	CR-SPLIT=NO; GAIN=2.0	POS TARG -0.165,0 .151	717 Secs [==>]	[2]
	7	R-3	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F625W	CR-SPLIT=NO; GAIN=2.0	POS TARG 0.124,0. 232	60 Secs [==>]	[3]
	8	Ha-4	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F658N	CR-SPLIT=NO; GAIN=2.0	POS TARG -0.082,- 0.254	724 Secs [==>]	[3]
	9	Ha-5	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F658N	CR-SPLIT=NO; GAIN=2.0	POS TARG 0.000,0. 000	724 Secs [==>]	[3]
	10	Ha-6	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F658N	CR-SPLIT=NO; GAIN=2.0	POS TARG 0.082,0. 254	724 Secs [==>]	[3]
	11	R-4	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F625W	CR-SPLIT=NO; GAIN=2.0	POS TARG -0.124,0 .138	60 Secs [==>]	[4]
	12	Ha-7	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F658N	CR-SPLIT=NO; GAIN=2.0	POS TARG 0.165,- .151	724 Secs [==>]	[4]
	13	Ha-8	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F658N	CR-SPLIT=NO; GAIN=2.0	POS TARG 0.247,0. 102	724 Secs [==>]	[4]
	14	Ha-9	(2) MESSIER-028-C OPY	ACS/WFC, ACCUM, WFC-FIX	F658N	CR-SPLIT=NO; GAIN=2.0	POS TARG 0.329,0. 356	724 Secs [==>]	[4]

