10600 - Studying the spectum of PSR B0656+14

Cycle: 14, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
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VISITS

Visit	*Targets*	*Configurations*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) PSRB0656+14	ACS/WFC	3	18-Nov-2005 22:39:28.0	yes
02	(1) PSRB0656+14	ACS/WFC	3	18-Nov-2005 22:39:43.0	yes

6 Total Orbits Used

ABSTRACT

PSR B0656+14 is the brightest intermediate-age pulsar which has been extensively studied in X-rays and optical with different instruments. The wide-band photometry of PSR B0656+14 strongly suggests the presence of spectral features between 4000 and 11,000 A. The sensitivity and resolution of ACS/WFC opens an opportunity to study the pulsar spectrum with a higher resolution and a better S/N than it was previously possible. This will allow us to accurately measure the pulsar spectrum, confirm the spectral features and investigate their shape and strength.

OBSERVING DESCRIPTION

To obtain the low-resolution spectrum of PSR 0656+14, we observe it with three medium width (9% of the central wavelength) RAMP filters (FR459M, FR647M and FR914M). Using different central wavelength settings for the RAMP filters, we obtain continuous spectral coverage from 4000 to 10,000 A. The chosen exposure times should provide S/N about 10 for each filter and each wavelength setting. The total scientific exposure time amounts to 13 ks. The observation is divided into 2 three-orbit visits. Because this is essentially imaging observation of a point source, on-board acquisition is not required.

Visit

Proposal 10600, Visit 01 Sat Nov 19 03:39:47 GMT 2005

Diagnostic Status: Warning

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Diagnostics

(Visit 01) Warning: ACS EXPOSURE TIME ADJUSTED

(Visit 01) Warning: ACS EXPOSURE TIME ADJUSTED

(Visit 01) Warning: ACS EXPOSURE TIME ADJUSTED

Fixed Targets

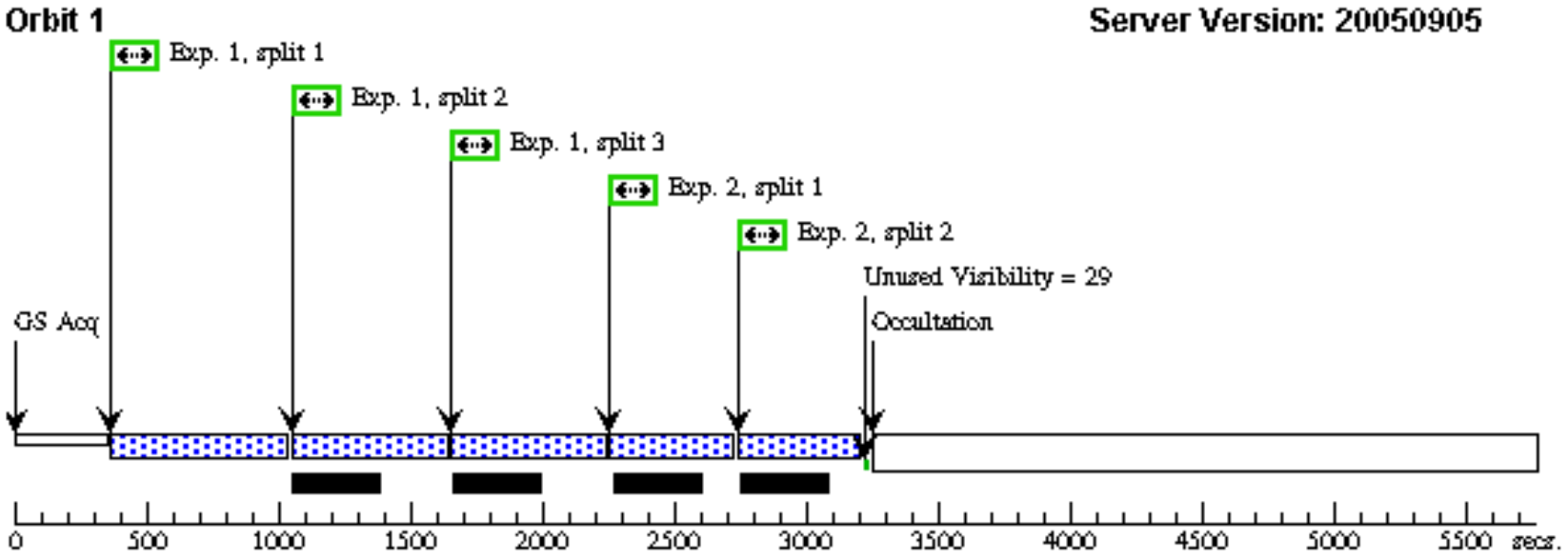
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	PSRB0656+14	RA: 06 59 48.1500 (104.9506250d) Dec: +14 14 21.55 (14.23932d) Equinox: J2000 Plate Id: 02UU		V=25.0+/-0.1 B=25, R=24.6, I=24	Coordinate Source: HST_IMAGE

Comments: This pulsar has a proper motion of (44, -2.4) mas/yr. A pointing accuracy of 5" is sufficient for our purposes.

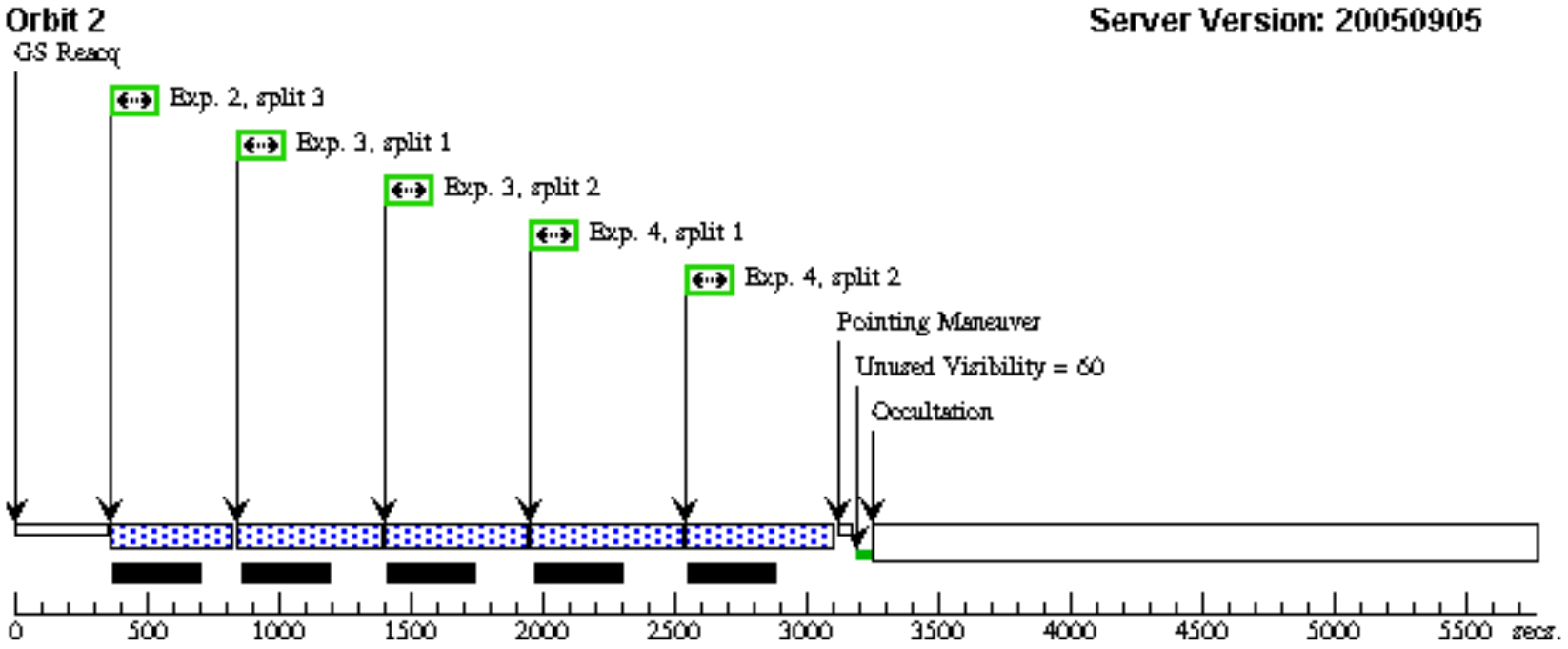
Exposures

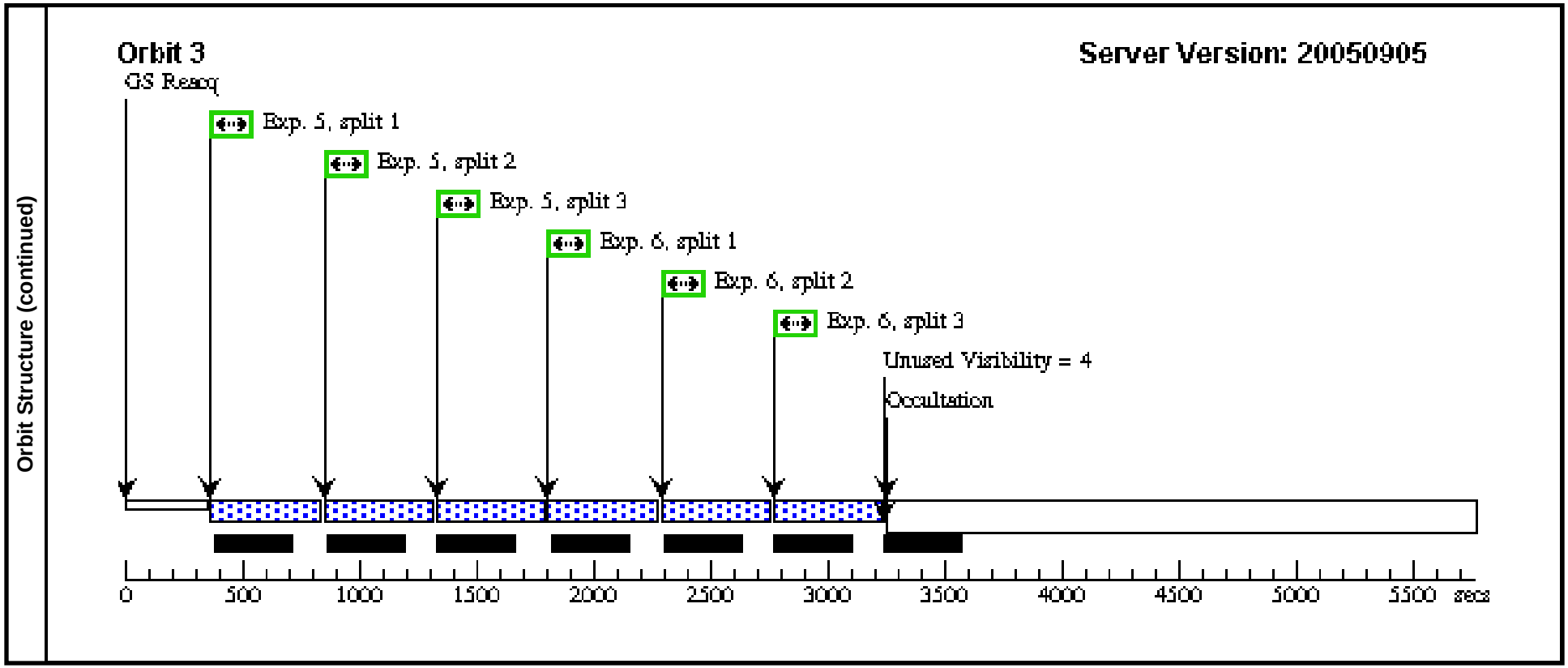
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) PSRB0656+14	ACS/WFC, ACCUM, WFC	FR459M 4016.0 A	CR-SPLIT=3			1400.0 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]*	***[1]***
2		(1) PSRB0656+14	ACS/WFC, ACCUM, WFC	FR459M 4400.0 A	CR-SPLIT=3			1020.0 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]*	 ***[1]*** ***[2]***
3		(1) PSRB0656+14	ACS/WFC, ACCUM, WFC	FR459M 4782.0 A	CR-SPLIT=2			830.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	 ***[2]***
4		(1) PSRB0656+14	ACS/WFC, ACCUM, WFC	FR459M 5165.0 A	CR-SPLIT=2			885.0 Secs *[==>(Split 1)]* *[==>(Split 2)]*	 ***[2]***
5		(1) PSRB0656+14	ACS/WFC, ACCUM, WFC	FR647M 5561.0 A	CR-SPLIT=3			1020.0 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]*	 ***[3]***
6		(1) PSRB0656+14	ACS/WFC, ACCUM, WFC	FR647M 6243.0 A	CR-SPLIT=3			1020.0 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]*	 ***[3]***

Orbit Structure



Orbit Structure (continued)




Orbit Structure (continued)
Orbit 3
Server Version: 20050905
GS Reacq
Exp. 5, split 1
Exp. 5, split 2
Exp. 5, split 3
Exp. 6, split 1
Exp. 6, split 2
Exp. 6, split 3
Unused Visibility = 4
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs

Visit

Proposal 10600, Visit 02 Sat Nov 19 03:39:49 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Fixed Targets

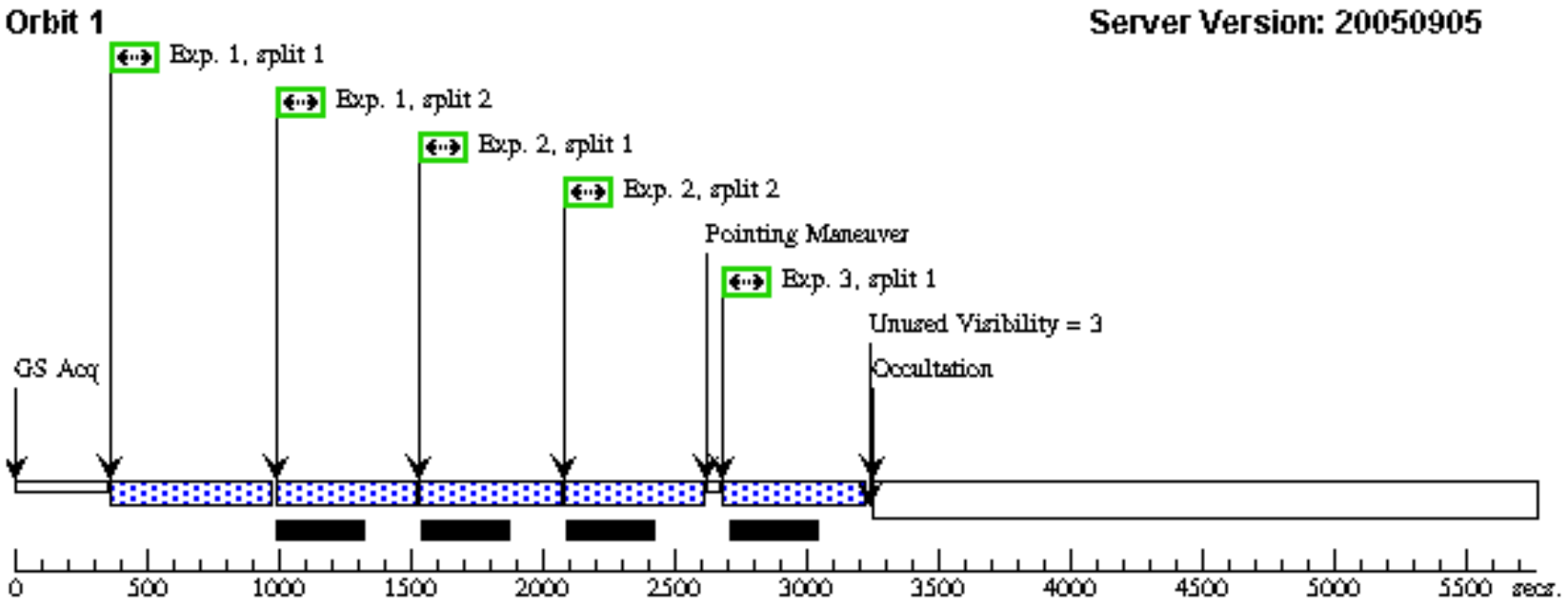
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	PSRB0656+14	RA: 06 59 48.1500 (104.9506250d) Dec: +14 14 21.55 (14.23932d) Equinox: J2000 Plate Id: 02UU		V=25.0+/-0.1 B=25, R=24.6, I=24	Coordinate Source: HST_IMAGE

Comments: This pulsar has a proper motion of (44, -2.4) mas/yr. A pointing accuracy of 5" is sufficient for our purposes.

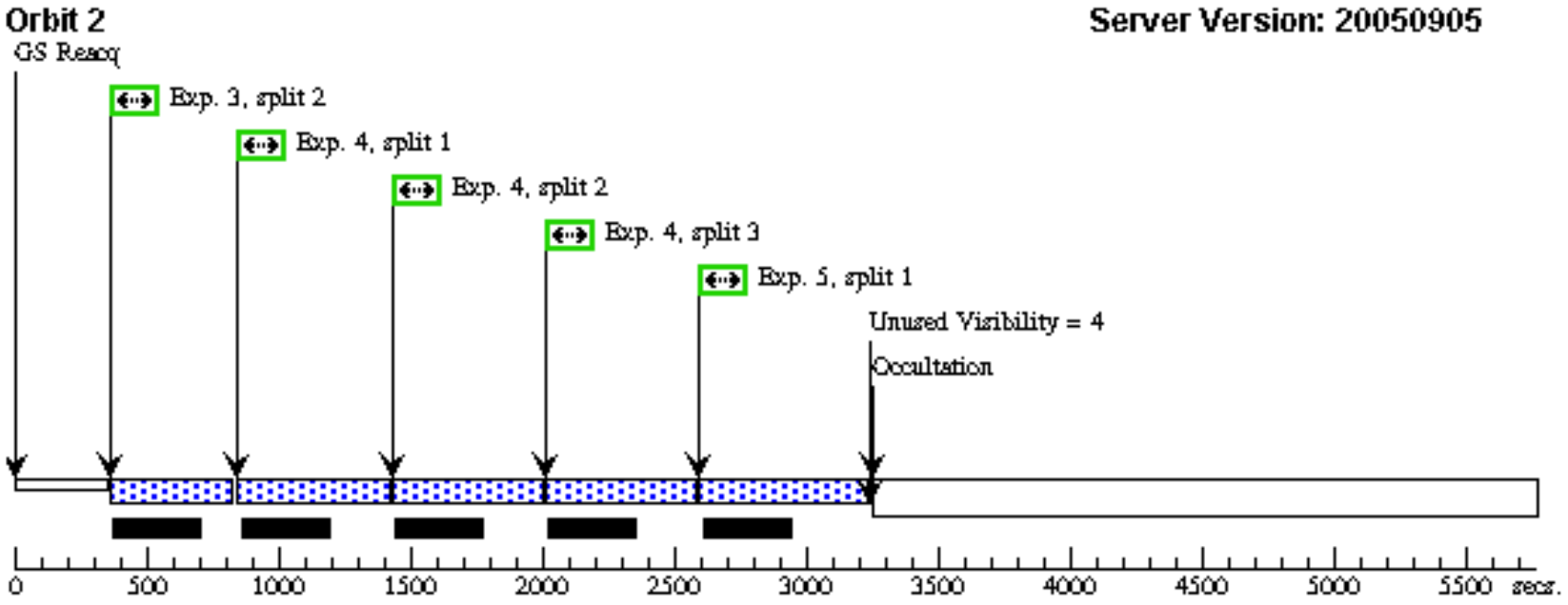
Exposures

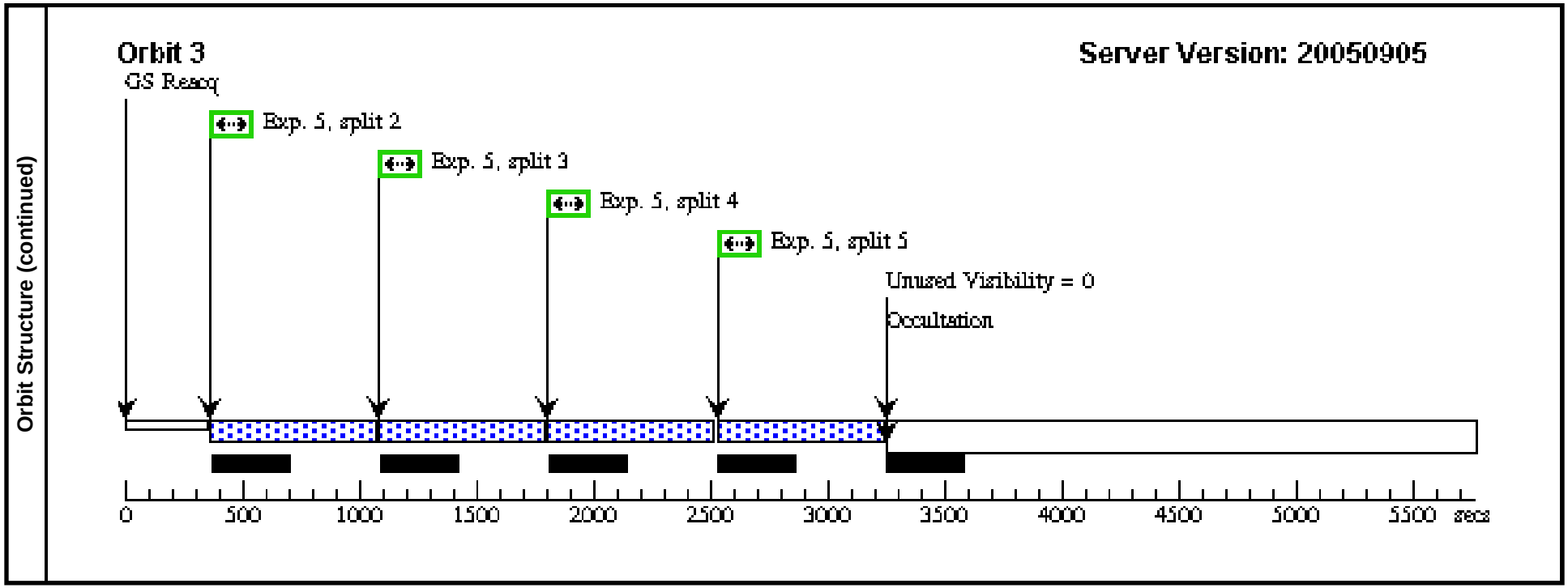
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) PSRB0656+14	ACS/WFC, ACCUM, WFC	FR647M 6825.0 A	CR-SPLIT=2			680.0 Secs *[==>405.0 Secs (Split 1)]* *[==>405.0 Secs (Split 2)]*	***[1]***
2		(1) PSRB0656+14	ACS/WFC, ACCUM, WFC	FR647M 7407.0 A	CR-SPLIT=2			680.0 Secs *[==>405.0 Secs (Split 1)]* *[==>405.0 Secs (Split 2)]*	***[1]***
3		(1) PSRB0656+14	ACS/WFC, ACCUM, WFC	FR914M 7981.0 A	CR-SPLIT=2			680.0 Secs *[==>405.0 Secs (Split 1)]* *[==>342.0 Secs (Split 2)]*	 ***[1]*** ***[2]***
4		(1) PSRB0656+14	ACS/WFC, ACCUM, WFC	FR914M 8805.0 A	CR-SPLIT=3			1325.0 Secs *[==>443.6 Secs (Split 1)]* *[==>443.6 Secs (Split 2)]* *[==>443.6 Secs (Split 3)]*	 ***[2]***
5		(1) PSRB0656+14	ACS/WFC, ACCUM, WFC	FR914M 9627.0 A	CR-SPLIT=5			2500.0 Secs *[==>502.0 Secs (Split 1)]* *[==>585.0 Secs (Split 2)]* *[==>585.0 Secs (Split 3)]* *[==>585.0 Secs (Split 4)]* *[==>585.0 Secs (Split 5)]*	 ***[2]*** ***[3]***

Orbit Structure



Orbit Structure (continued)




Orbit Structure (continued)
Orbit 3
Server Version: 20050905
GS Reacq
Exp. 5, split 2
Exp. 5, split 3
Exp. 5, split 4
Exp. 5, split 5
Unused Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs