10927 - The Weight-Watcher Program for Subdwarfs

Cycle: 15, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Wei-Chun Jao (PI)	**Georgia State University Research Foundation**	**jao@chara.gsu.edu**
Dr. Todd J. Henry (CoI)	Georgia State University Research Foundation	thenry@chara.gsu.edu
Dr. Otto G. Franz (CoI)	Lowell Observatory	Otto.Franz@lowell.edu
Dr. Lawrence H. Wasserman (CoI)	Lowell Observatory	l.h.wasserman@lowell.edu
Dr. Edmund Nelan (CoI)	Space Telescope Science Institute	nelan@stsci.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(2) G006-026B	FGS	1	11-Jun-2007 21:28:29.0	yes
02	(4) G061-024	FGS	1	11-Jun-2007 21:28:32.0	yes
03	(5) G166-045	FGS	1	11-Jun-2007 21:28:34.0	yes
41	(6) G182-041	FGS	1	11-Jun-2007 21:28:35.0	yes
42	(6) G182-041	FGS	1	11-Jun-2007 21:28:37.0	yes
51	(3) G099-048	FGS	1	11-Jun-2007 21:28:38.0	yes
52	(3) G099-048	FGS	1	11-Jun-2007 21:28:40.0	yes
53	(5) G166-045	FGS	1	11-Jun-2007 21:28:42.0	yes

8 Total Orbits Used

ABSTRACT

We propose to use HST/FGS1r to measure five subdwarf spectroscopic binaries to determine masses for the components. Their metallicities, [Fe/H], range from -0.5 to -2.5, and their projected minimum separations range from 9 to 24 mas. These binaries are resolvable with HST/FGS1r but not any ground-based technique.

Currently, there are only two subdwarf systems having any mass measurements. The proposed work will boost the total number of subdwarf systems with masses from two to seven, and allow us to construct the first mass-luminosity relation for low-metallicity stars.

OBSERVING DESCRIPTION

We will use FGS1r to observe the targets in TRANSFER mode in an attempt to resolve the spectroscopic binaries. The observations will be made at a time that corresponds to maxium elongation (or projected separation). This measurement will be used to establish the angular extent of each binary's semi-major axis. which will yield the orbital inclination, and when combined with the spectroscopic data, the mass of each star.

Visit

Proposal 10927, Visit 01, completed Tue Jun 12 01:28:43 GMT 2007

Diagnostic Status: Warning

Scientific Instruments: FGS

Special Requirements: BETWEEN 20-JUL-2006:00:00:00 AND 15-AUG-2006:00:00:00

Diagnostics

(Visit 01) Warning: SHORT FGS SCAN LENGTH MAY SIGNAL PROBLEMS

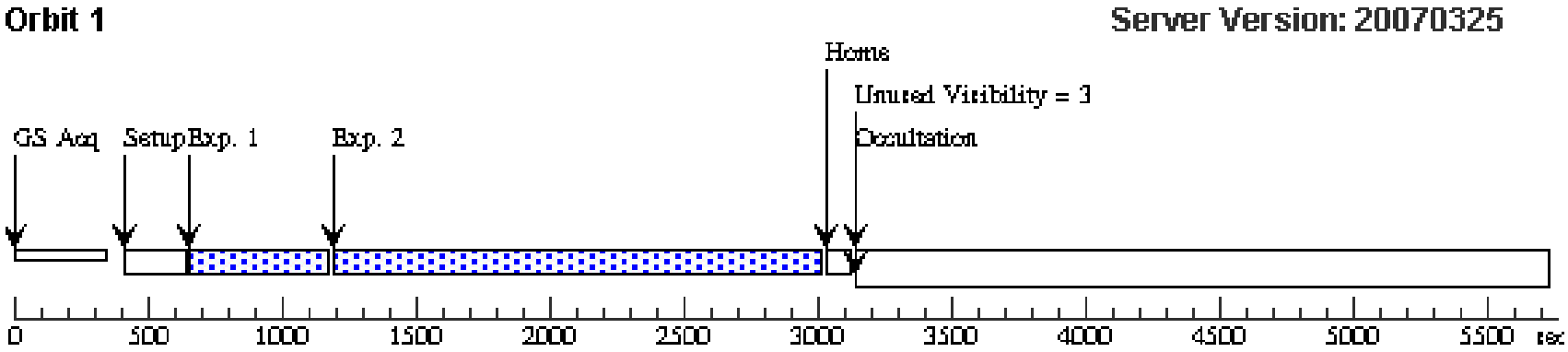
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	G006-026B	RA: 03 39 34.9300 (54.8955417d) Dec: +18 18 51.60 (18.31433d) Equinox: J2000	Proper Motion RA: 0.0137s/yr Proper Motion Dec: -0.193"/yr Epoch of Position: 2000.0	V=12.71+/-0.2 B-V=1.56	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) G006-026B	FGS, TRANS, 1	F583W	SCANS=5; STEP-SIZE=1		Sequence 1-2 Non-Int	375.0 Secs *[==>]*	*[1]*
2		(2) G006-026B	FGS, TRANS, 1	F583W	SCANS=32; STEP-SIZE=0.3	SAME POS AS 1	Sequence 1-2 Non-Int	1370.0 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 10927, Visit 02, scheduling Tue Jun 12 01:28:44 GMT 2007

Diagnostic Status: Warning

Scientific Instruments: FGS

Special Requirements: BETWEEN 11-JUN-2007:00:00:00 AND 30-JUN-2007:00:00:00

Diagnostics

(Visit 02) Warning: SHORT FGS SCAN LENGTH MAY SIGNAL PROBLEMS

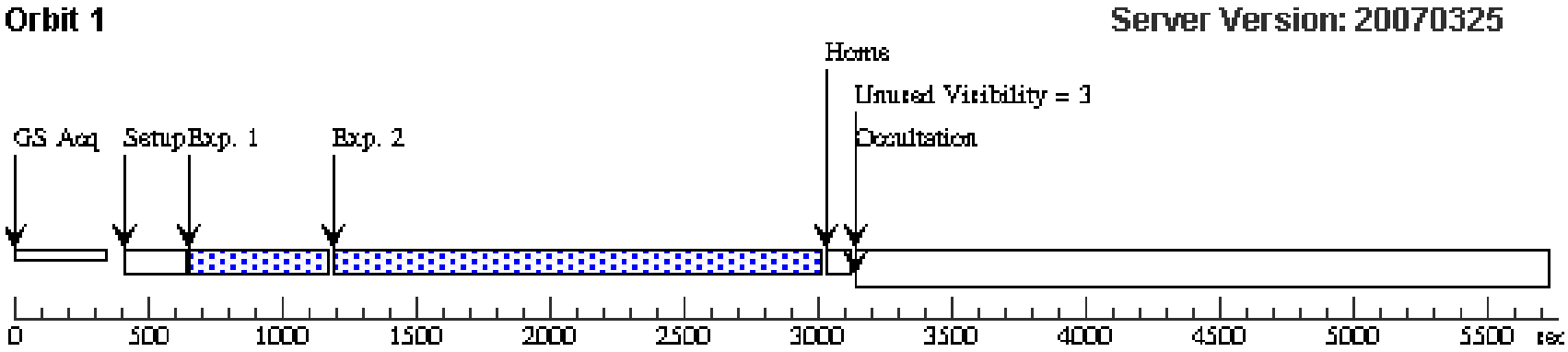
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	G061-024	RA: 12 57 31.9600 (194.3831667d) Dec: +18 41 36.40 (18.69344d) Equinox: J2000	Proper Motion RA: -0.0156s/yr Proper Motion Dec: 0.111"/yr Epoch of Position: 2000.0	V=8.97+/-0.1 B-V=0.67	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) G061-024	FGS, TRANS, 1	F583W	SCANS=5; STEP-SIZE=1		Sequence 1-2 Non-Int	375.0 Secs *[==>]*	*[1]*
2		(4) G061-024	FGS, TRANS, 1	F583W	SCANS=32; STEP-SIZE=0.3	SAME POS AS 1	Sequence 1-2 Non-Int	1370.0 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 10927, Visit 03, scheduling Tue Jun 12 01:28:45 GMT 2007

Diagnostic Status: Warning

Scientific Instruments: FGS

Special Requirements: BETWEEN 09-JUN-2007:00:00:00 AND 22-JUN-2007:00:00:00

Diagnostics

(Visit 03) Warning: SHORT FGS SCAN LENGTH MAY SIGNAL PROBLEMS

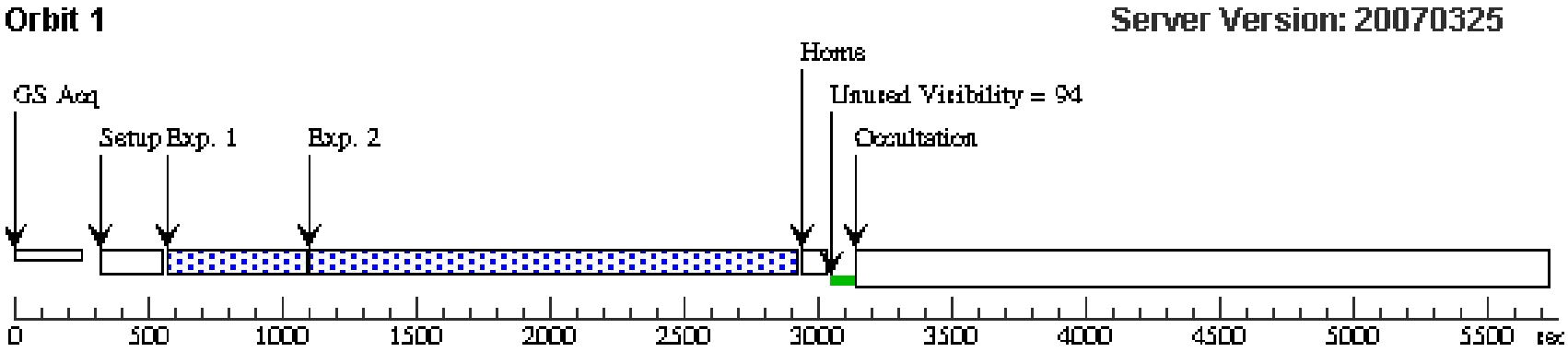
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	G166-045	RA: 14 49 2.3600 (222.2598333d) Dec: +25 42 9.20 (25.70256d) Equinox: J2000	Proper Motion RA: -0.0006s/yr Proper Motion Dec: -0.345"/yr Epoch of Position: 2000.0	V=9.73+/-0.2 B-V=0.44	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(5) G166-045	FGS, TRANS, 1	F583W	SCANS=5; STEP-SIZE=1	GS ACQ SCENARIO ONEB1T	Sequence 1-2 Non-Int	375.0 Secs *[==>]*	*[1]*
2		(5) G166-045	FGS, TRANS, 1	F583W	SCANS=32; STEP-SIZE=0.3	SAME POS AS 1	Sequence 1-2 Non-Int	1370.0 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 10927, Visit 41, completed Tue Jun 12 01:28:45 GMT 2007

Diagnostic Status: Warning

Scientific Instruments: FGS

Special Requirements: BETWEEN 01-FEB-2007:00:00:00 AND 15-FEB-2007:00:00:00

Diagnostics

(Visit 41) Warning: SHORT FGS SCAN LENGTH MAY SIGNAL PROBLEMS

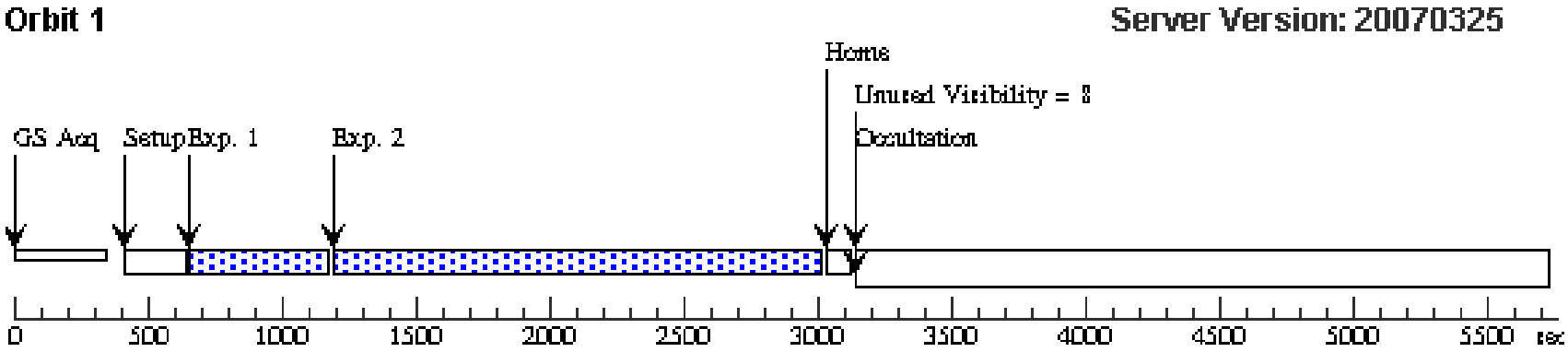
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	G182-041	RA: 18 09 26.5500 (272.3606250d) Dec: +27 55 23.30 (27.92314d) Equinox: J2000	Proper Motion RA: -0.0162s/yr Proper Motion Dec: -0.148"/yr Epoch of Position: 2000.0	V=12.65+/-0.2 B-V=0.93	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(6) G182-041	FGS, TRANS, 1	F583W	SCANS=5; STEP-SIZE=1		Sequence 1-2 Non-Int	375.0 Secs *[==>]*	*[1]*
2		(6) G182-041	FGS, TRANS, 1	F583W	SCANS=32; STEP-SIZE=0.3	SAME POS AS 1	Sequence 1-2 Non-Int	1370.0 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 10927, Visit 42, completed Tue Jun 12 01:28:45 GMT 2007

Diagnostic Status: Warning

Scientific Instruments: FGS

Special Requirements: BETWEEN 15-MAR-2007:00:00:00 AND 30-MAR-2007:00:00:00

Diagnostics

(Visit 42) Warning: SHORT FGS SCAN LENGTH MAY SIGNAL PROBLEMS

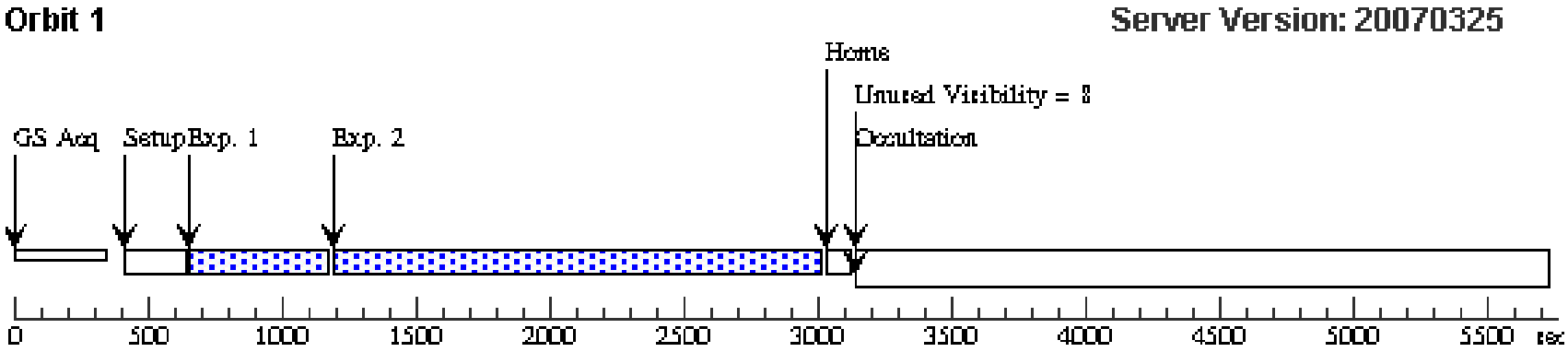
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	G182-041	RA: 18 09 26.5500 (272.3606250d) Dec: +27 55 23.30 (27.92314d) Equinox: J2000	Proper Motion RA: -0.0162s/yr Proper Motion Dec: -0.148"/yr Epoch of Position: 2000.0	V=12.65+/-0.2 B-V=0.93	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(6) G182-041	FGS, TRANS, 1	F583W	SCANS=5; STEP-SIZE=1		Sequence 1-2 Non-Int	375.0 Secs *[==>]*	*[1]*
2		(6) G182-041	FGS, TRANS, 1	F583W	SCANS=32; STEP-SIZE=0.3	SAME POS AS 1	Sequence 1-2 Non-Int	1370.0 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 10927, Visit 51, completed Tue Jun 12 01:28:46 GMT 2007

Diagnostic Status: Warning

Scientific Instruments: FGS

Special Requirements: BETWEEN 07-NOV-2006:00:00:00 AND 21-NOV-2006:00:00:00

Diagnostics

(Visit 51) Warning: SHORT FGS SCAN LENGTH MAY SIGNAL PROBLEMS

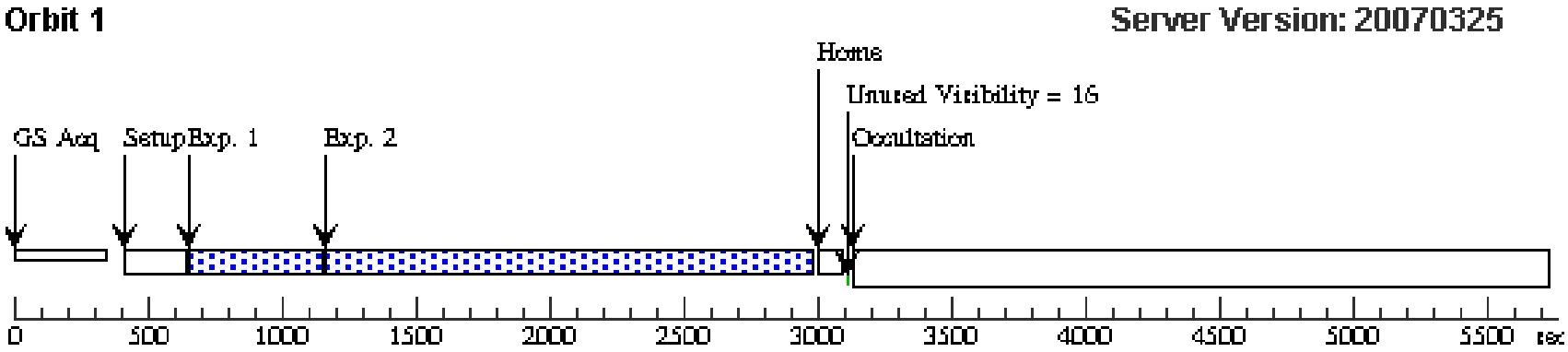
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	G099-048	RA: 05 59 5.9900 (89.7749583d) Dec: +04 10 38.70 (4.17742d) Equinox: J2000	Proper Motion RA: 0.0179s/yr Proper Motion Dec: -0.232"/yr Epoch of Position: 2000.0	V=11.89+/-0.2 B-V=0.70	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) G099-048	FGS, TRANS, 1	F583W	SCANS=5; STEP-SIZE=1		Sequence 1-2 Non-Int	350.0 Secs *[==>]*	*[1]*
2		(3) G099-048	FGS, TRANS, 1	F583W	SCANS=32; STEP-SIZE=0.3	SAME POS AS 1	Sequence 1-2 Non-Int	1370.0 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 10927, Visit 52, completed Tue Jun 12 01:28:46 GMT 2007

Diagnostic Status: Warning

Scientific Instruments: FGS

Special Requirements: ORIENT 28.0D TO 32.0D FROM 51; BETWEEN 07-NOV-2006:00:00:00 AND 21-NOV-2006:00:00:00

Diagnostics

(Visit 52) Warning: SHORT FGS SCAN LENGTH MAY SIGNAL PROBLEMS

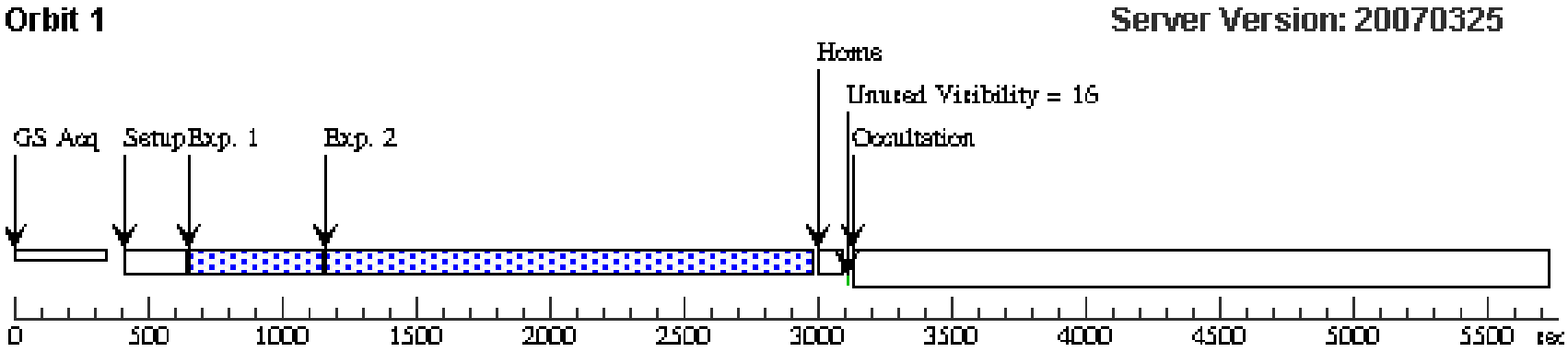
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	G099-048	RA: 05 59 5.9900 (89.7749583d) Dec: +04 10 38.70 (4.17742d) Equinox: J2000	Proper Motion RA: 0.0179s/yr Proper Motion Dec: -0.232"/yr Epoch of Position: 2000.0	V=11.89+/-0.2 B-V=0.70	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) G099-048	FGS, TRANS, 1	F583W	SCANS=5; STEP-SIZE=1		Sequence 1-2 Non-Int	350.0 Secs *[==>]*	*[1]*
2		(3) G099-048	FGS, TRANS, 1	F583W	SCANS=32; STEP-SIZE=0.3	SAME POS AS 1	Sequence 1-2 Non-Int	1370.0 Secs *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 10927, Visit 53 Tue Jun 12 01:28:46 GMT 2007

Diagnostic Status: Warning

Scientific Instruments: FGS

Special Requirements: BETWEEN 09-JUN-2007:00:00:00 AND 29-JUN-2007:00:00:00

Diagnostics

(Visit 53) Warning: SHORT FGS SCAN LENGTH MAY SIGNAL PROBLEMS

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	G166-045	RA: 14 49 2.3600 (222.2598333d) Dec: +25 42 9.20 (25.70256d) Equinox: J2000	Proper Motion RA: -0.0006s/yr Proper Motion Dec: -0.345"/yr Epoch of Position: 2000.0	V=9.73+/-0.2 B-V=0.44	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(5) G166-045	FGS, TRANS, 1	F583W	SCANS=5; STEP-SIZE=1	GSPAIR N68I00026 9F20000000000F0; GS ACQ SCENARI O ONEB1T	Sequence 1-2 Non-In t	375.0 Secs *[==>]*	*[1]*
2		(5) G166-045	FGS, TRANS, 1	F583W	SCANS=32; STEP-SIZE=0.3	SAME POS AS 1	Sequence 1-2 Non-In t	1370.0 Secs *[==>]*	*[1]*

Orbit Structure