11145 - Probing the Planet Forming Region of T Tauri Stars in Chamaeleon

Cycle: 16, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Nuria Calvet (PI)	**University of Michigan**	**ncalvet@umich.edu**
Ms. Catherine Espaillat (CoI)	University of Michigan	ccespa@umich.edu
Dr. Edwin Anthony Bergin (CoI)	University of Michigan	ebergin@umich.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) T-25	ACS/SBC	1	17-Jan-2008 22:21:11.0	yes
02	(2) T-54	ACS/SBC	1	17-Jan-2008 22:21:14.0	yes
03	(3) T-8	ACS/SBC	1	17-Jan-2008 22:21:17.0	yes
04	(4) T-26	ACS/SBC	1	17-Jan-2008 22:21:19.0	yes
05	(5) V-BM-CHA	ACS/SBC	1	17-Jan-2008 22:21:21.0	yes
06	(6) V-BF-CHA	ACS/SBC	1	17-Jan-2008 22:21:23.0	yes
07	(7) V-CS-CHA	ACS/SBC	1	17-Jan-2008 22:21:25.0	yes
08	(8) T-6	ACS/SBC	1	17-Jan-2008 22:21:28.0	yes
09	(9) T-31	ACS/SBC	1	17-Jan-2008 22:21:30.0	yes
10	(10) T-29	ACS/SBC	1	17-Jan-2008 22:21:32.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
11	(11) T-35	ACS/SBC	1	17-Jan-2008 22:21:33.0	yes
12	(12) T-56	ACS/SBC	1	17-Jan-2008 22:21:35.0	yes

12 Total Orbits Used

ABSTRACT

By studying the inner, planet-forming regions of circumstellar disks around low-mass pre-main sequence stars we can refine theories of giant planet formation and develop timescales for the evolution of disks and their planets. Spitzer infrared observations of T Tauri stars in the Chamaeleon star-forming region have given us an unprecedented look at dust evolution in young objects. However, despite this ground breaking progress in studying the dust in young disks, the gas properties of the inner disk remain essentially unknown. Using ACS on HST, we propose to measure the H_2 emission originating in the innermost disk regions of classical T Tauri stars in different stages of evolution with the objective of revealing the timescales of gas dissipation and its relationship to dust evolution. This proposal is part of a comprehensive effort with approved programs on Spitzer, Gemini, and Magellan that aim to characterize the state of gas and dust in disks where planets may already have formed.

OBSERVING DESCRIPTION

ACS prism observations are being made of 12 young stellar objects in the Chamaeleon cloud to search for an emission feature at 1600 angstrom. The spectral element is the PR130L being used with the ACS/SBC. A single observation of an orbit in length is scheduled for each target. A pair of short observations is also scheduled, as these are needed for wavelength calibration. The pair of short images is being taken with the F140LP filter on the SBC/ACS.

ADDITIONAL COMMENTS

Revision: CS Cha filter changed from F140 to F165.

Many of our targets were identified by the BOT tool as posing a hazard to the ACS/SBC based on assuming an incorrect spectral type of 05. We

note the correct spectral types for these targets below:

1) T-25 M2.5

3) T-8 K2

4) T-26 G2

5) V-BM-CHA K4

6) V-BF-CHA K7

7) V-CS-CHA K6

8) T-6 K0

12) T-56 M0

In Visit 12 there is an additional object flagged by BOT (at 11 17 45.6, -77 04 23.78). However, plotting this object on a 2MASS color-color diagram shows that it cannot be higher than an F0 star and it therefore falls within the limits of Table 7.4 in the ACS handbook.

Visit

Proposal 11145, Visit 01, implementation Fri Jan 18 03:21:38 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

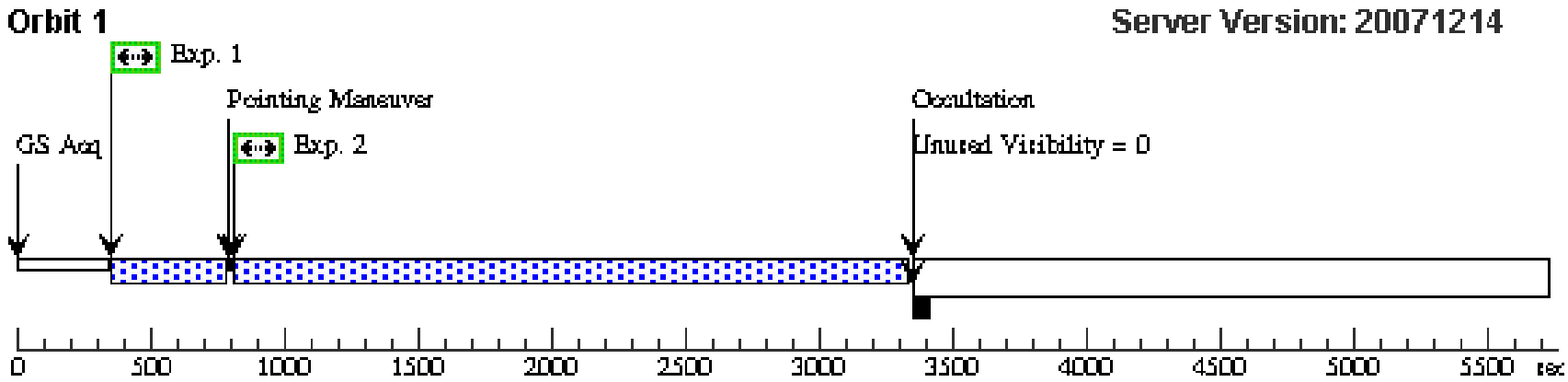
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	T-25	RA: 11 07 19.1500 (166.8297917d) Dec: -76 03 4.85 (-76.05135d) Equinox: J2000		V=15.35	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	T-25	(1) T-25	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs	
								[==>360.0 Secs]	***[1]***
2	T-25	(1) T-25	ACS/SBC, ACCUM, SBC	PR130L				2500.0 Secs	
								[==>2455.0 Secs]	***[1]***

Orbit Structure



Visit

Proposal 11145, Visit 02, implementation Fri Jan 18 03:21:39 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

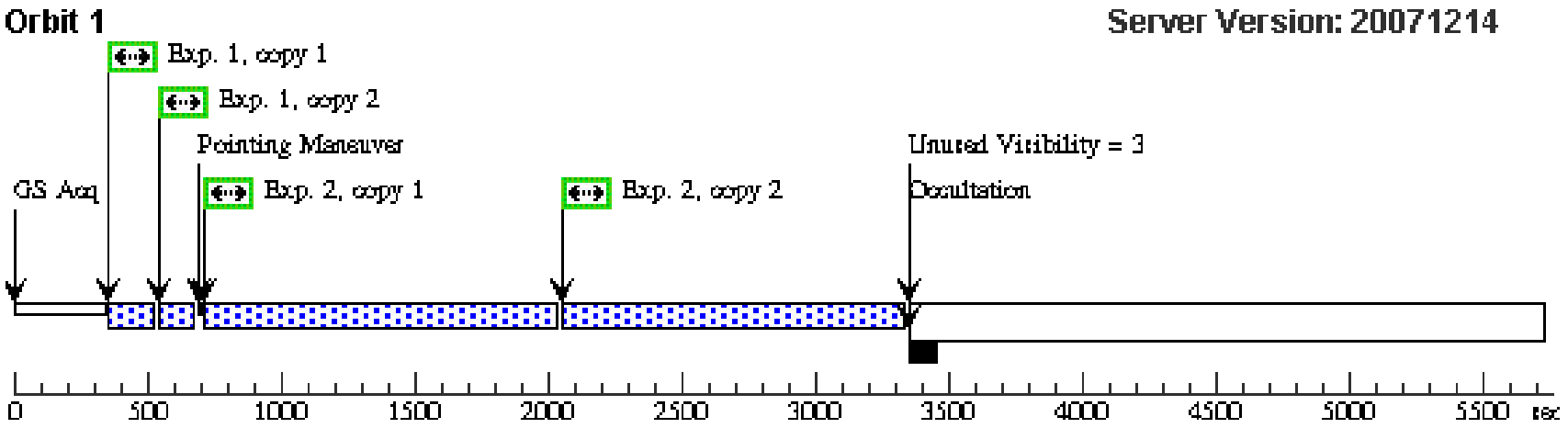
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	T-54	RA: 11 12 42.6900 (168.1778750d) Dec: -77 22 23.05 (-77.37307d) Equinox: J2000		V=11.16	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	T-54	(2) T-54	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs X 2 *[==>108.0 Secs (Copy 1)]* *[==>108.0 Secs (Copy 2)]*	*[1]*
2	T-54	(2) T-54	ACS/SBC, ACCUM, SBC	PR130L				1800.0 Secs X 2 *[==>1258.0 Secs (Copy 1)]* *[==>1258.0 Secs (Copy 2)]*	*[1]*

Orbit Structure



Visit

Proposal 11145, Visit 03, implementation Fri Jan 18 03:21:40 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

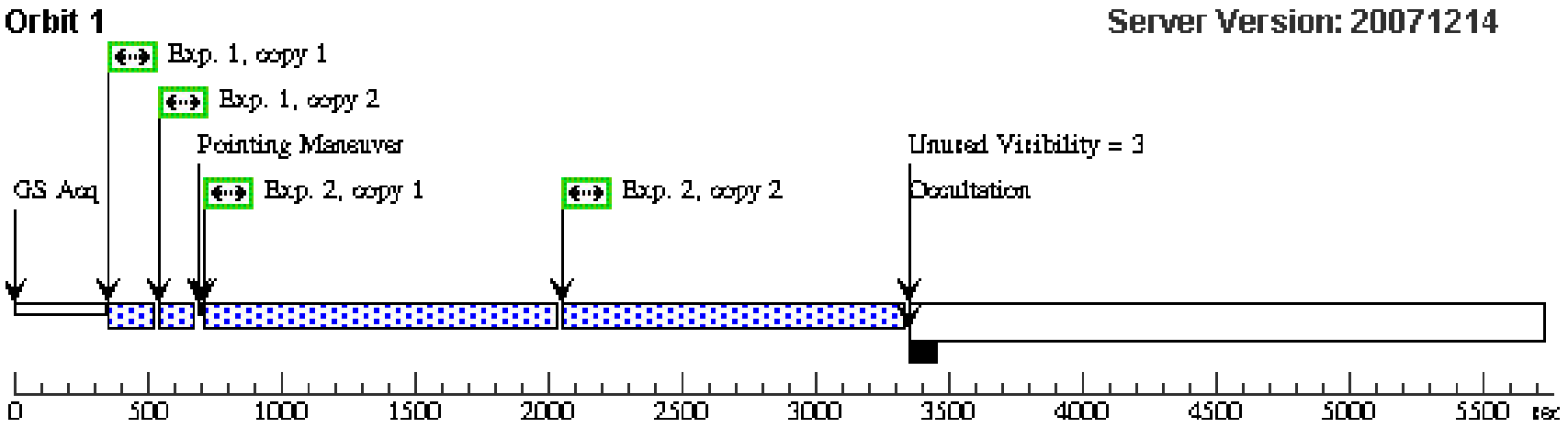
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	T-8	RA: 10 59 6.9900 (164.7791250d) Dec: -77 01 40.44 (-77.02790d) Equinox: J2000		V=11.37	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	T-8	(3) T-8	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs X 2 *[==>108.0 Secs (Copy 1)]* *[==>108.0 Secs (Copy 2)]*	*[1]*
2	T-8	(3) T-8	ACS/SBC, ACCUM, SBC	PR130L				1800.0 Secs X 2 *[==>1258.0 Secs (Copy 1)]* *[==>1258.0 Secs (Copy 2)]*	*[1]*

Orbit Structure



Visit

Proposal 11145, Visit 04, implementation Fri Jan 18 03:21:40 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

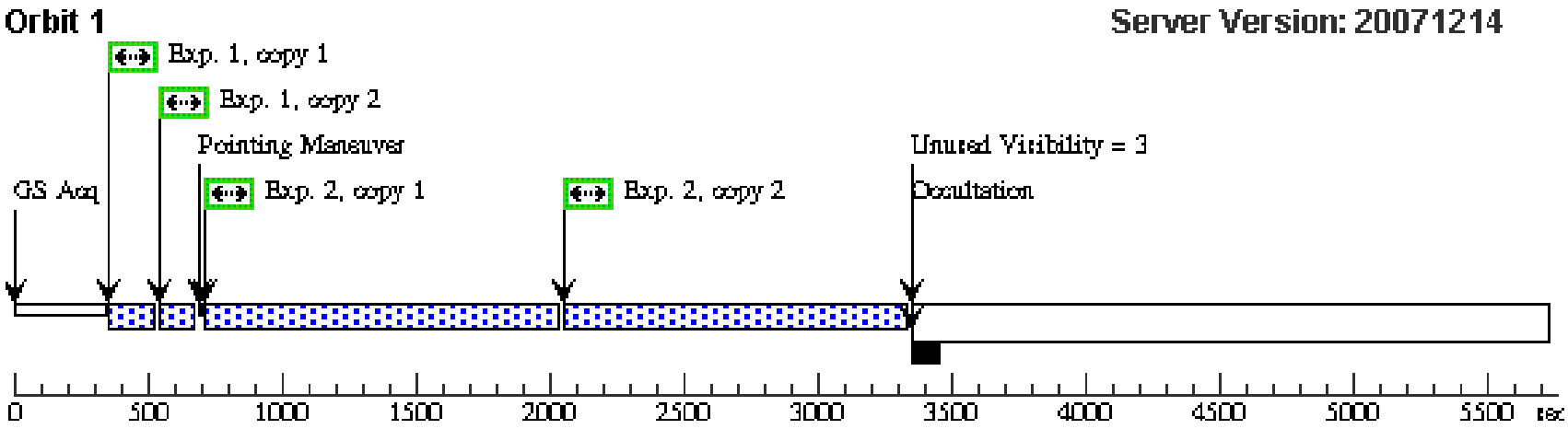
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	T-26	RA: 11 07 20.7400 (166.8364167d) Dec: -77 38 7.35 (-77.63538d) Equinox: J2000		V=10.9	Reference Frame: SIMBAD

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	T-26	(4) T-26	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs X 2 *[==>108.0 Secs (Copy 1)]* *[==>108.0 Secs (Copy 2)]*	*[1]*
2	T-26	(4) T-26	ACS/SBC, ACCUM, SBC	PR130L				1800.0 Secs X 2 *[==>1258.0 Secs (Copy 1)]* *[==>1258.0 Secs (Copy 2)]*	*[1]*

Orbit Structure



Visit

Proposal 11145, Visit 05, implementation Fri Jan 18 03:21:40 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

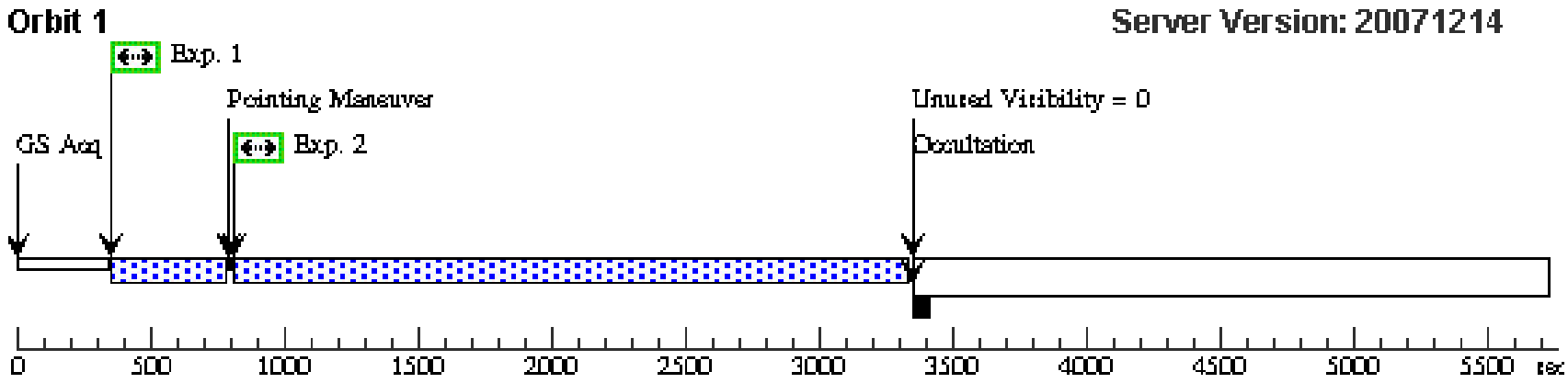
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	V-BM-CHA	RA: 13 08 6.2800 (197.0261667d) Dec: -77 55 5.18 (-77.91811d) Equinox: J2000		V=15.13	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	BM-CHA	(5) V-BM-CHA	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs	
								[==>360.0 Secs]	***[1]***
2	BM-CHA	(5) V-BM-CHA	ACS/SBC, ACCUM, SBC	PR130L				2500.0 Secs	
								[==>2455.0 Secs]	***[1]***

Orbit Structure



Visit

Proposal 11145, Visit 06, implementation Fri Jan 18 03:21:41 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

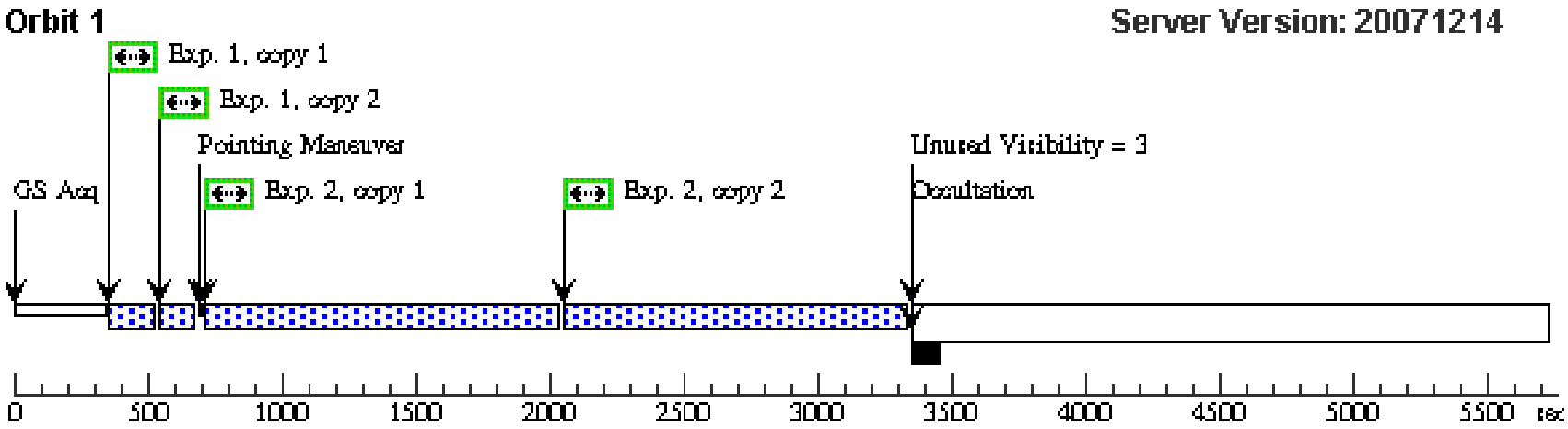
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	V-BF-CHA	RA: 13 05 20.7200 (196.3363333d) Dec: -77 39 1.60 (-77.65044d) Equinox: J2000		V=12.53	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	V-BF-CHA	(6) V-BF-CHA	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs X 2 *[==>108.0 Secs (Copy 1)]* *[==>108.0 Secs (Copy 2)]*	*[1]*
2	V-BF-CHA	(6) V-BF-CHA	ACS/SBC, ACCUM, SBC	PR130L				1800.0 Secs X 2 *[==>1258.0 Secs (Copy 1)]* *[==>1258.0 Secs (Copy 2)]*	*[1]*

Orbit Structure



Visit

Proposal 11145, Visit 07, implementation Fri Jan 18 03:21:41 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

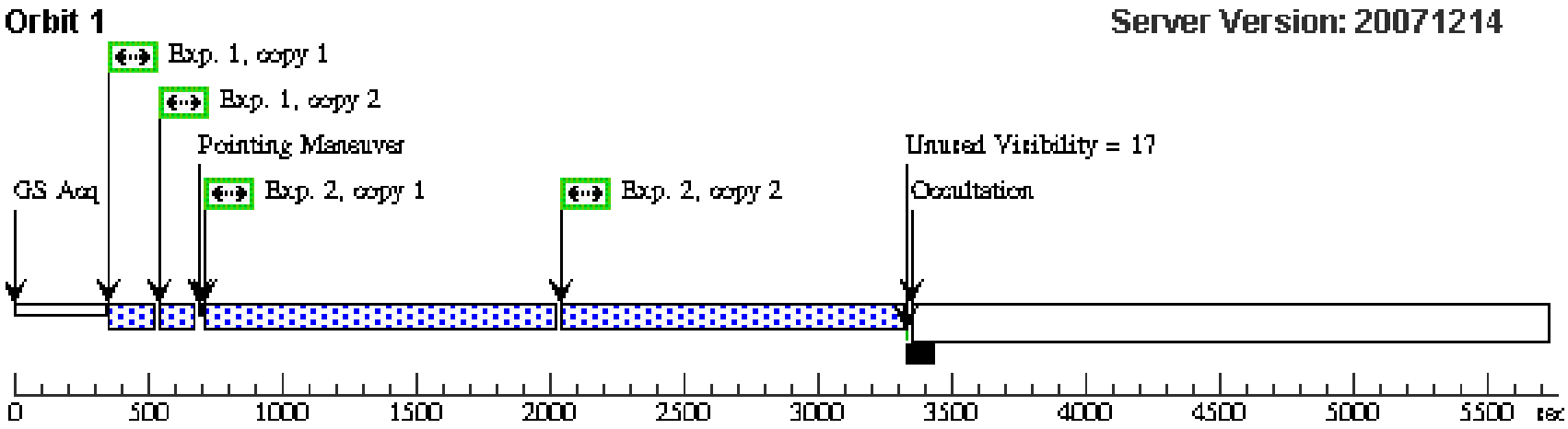
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	V-CS-CHA	RA: 11 02 24.9100 (165.6037917d) Dec: -77 33 35.72 (-77.55992d) Equinox: J2000		V=11.69	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	V-CS-CHA	(7) V-CS-CHA	ACS/SBC, ACCUM, SBC	F165LP				360.0 Secs X 2 *[==>108.0 Secs (Copy 1)]* *[==>108.0 Secs (Copy 2)]*	*[1]*
2	V-CS-CHA	(7) V-CS-CHA	ACS/SBC, ACCUM, SBC	PR130L				1800.0 Secs X 2 *[==>1258.0 Secs (Copy 1)]* *[==>1258.0 Secs (Copy 2)]*	*[1]*

Orbit Structure



Visit

Proposal 11145, Visit 08, implementation Fri Jan 18 03:21:42 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

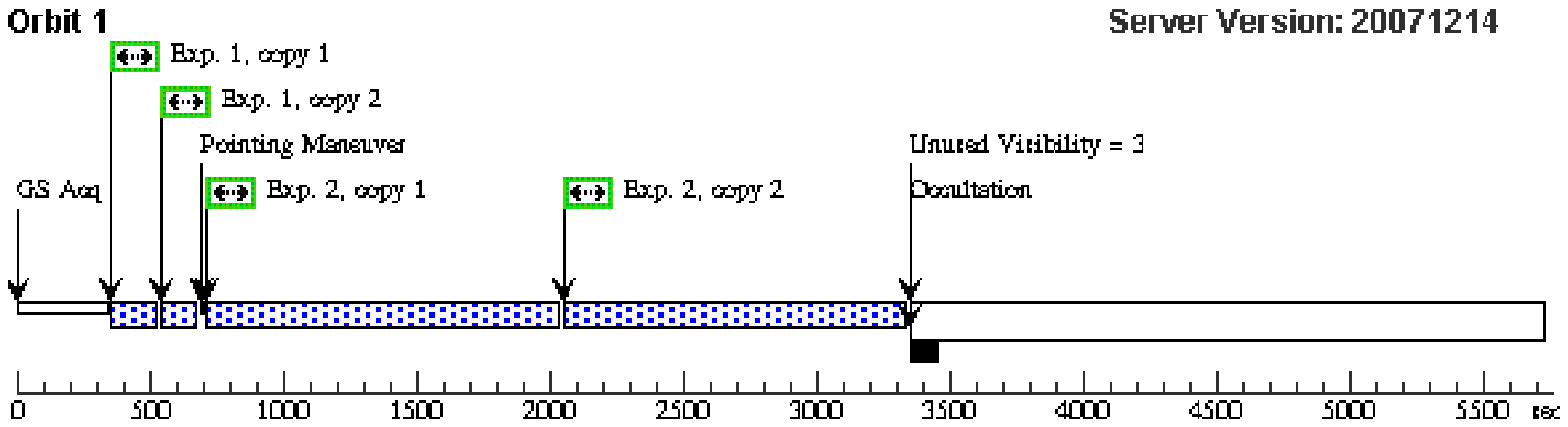
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	T-6	RA: 10 58 16.7700 (164.5698750d) Dec: -77 17 17.06 (-77.28807d) Equinox: J2000		V=11.99	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	T-6	(8) T-6	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs X 2 *[==>108.0 Secs (Copy 1)]* *[==>108.0 Secs (Copy 2)]*	*[1]*
2	T-6	(8) T-6	ACS/SBC, ACCUM, SBC	PR130L				1800.0 Secs X 2 *[==>1258.0 Secs (Copy 1)]* *[==>1258.0 Secs (Copy 2)]*	*[1]*

Orbit Structure



Visit

Proposal 11145, Visit 09, implementation Fri Jan 18 03:21:42 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

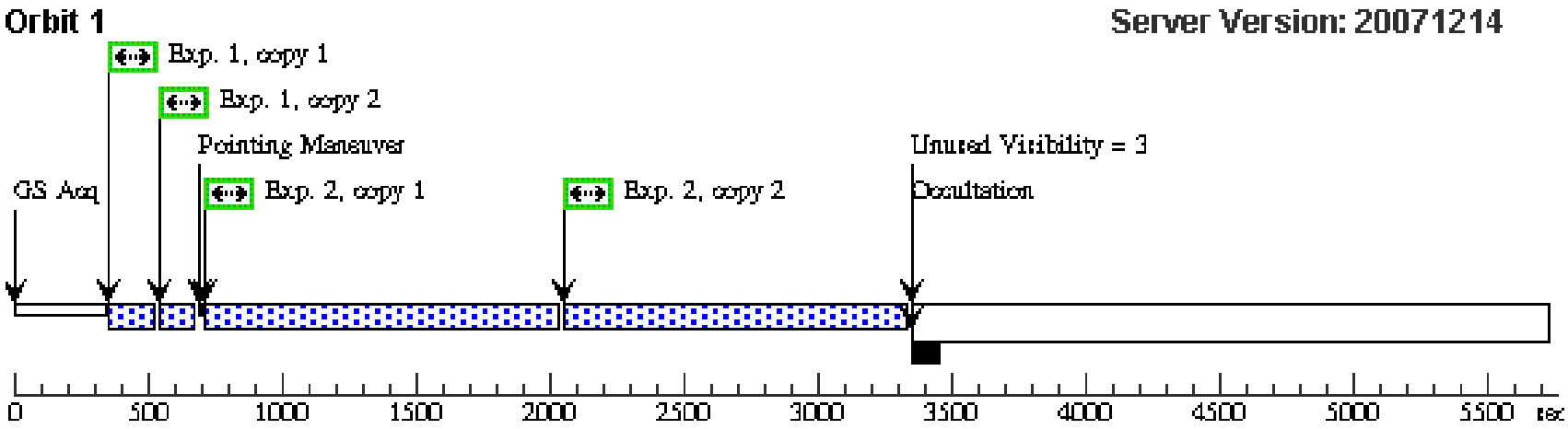
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	T-31	RA: 11 08 1.4900 (167.0062083d) Dec: -77 42 28.85 (-77.70801d) Equinox: J2000		V=12.64	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	T-31	(9) T-31	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs X 2 *[==>108.0 Secs (Copy 1)]* *[==>108.0 Secs (Copy 2)]*	*[1]*
2	T-31	(9) T-31	ACS/SBC, ACCUM, SBC	PR130L				1800.0 Secs X 2 *[==>1258.0 Secs (Copy 1)]* *[==>1258.0 Secs (Copy 2)]*	*[1]*

Orbit Structure



Visit

Proposal 11145, Visit 10, implementation Fri Jan 18 03:21:42 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

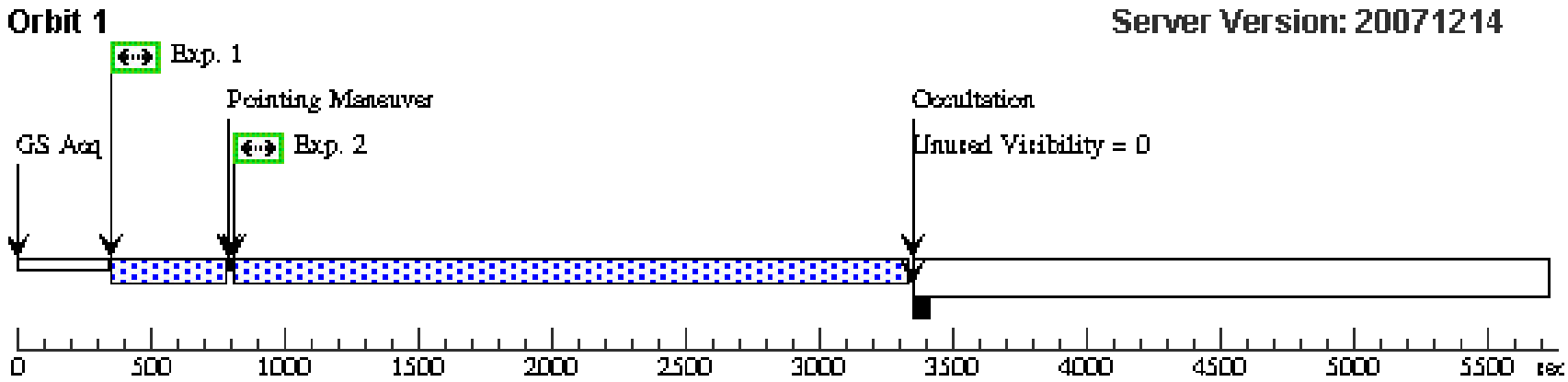
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	T-29	RA: 11 07 57.9300 (166.9913750d) Dec: -77 38 44.93 (-77.64581d) Equinox: J2000		V=14.2	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	T-29	(10) T-29	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs	
								[==>360.0 Secs]	***[1]***
2	T-29	(10) T-29	ACS/SBC, ACCUM, SBC	PR130L				2500.0 Secs	
								[==>2455.0 Secs]	***[1]***

Orbit Structure



Visit

Proposal 11145, Visit 11, implementation Fri Jan 18 03:21:42 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

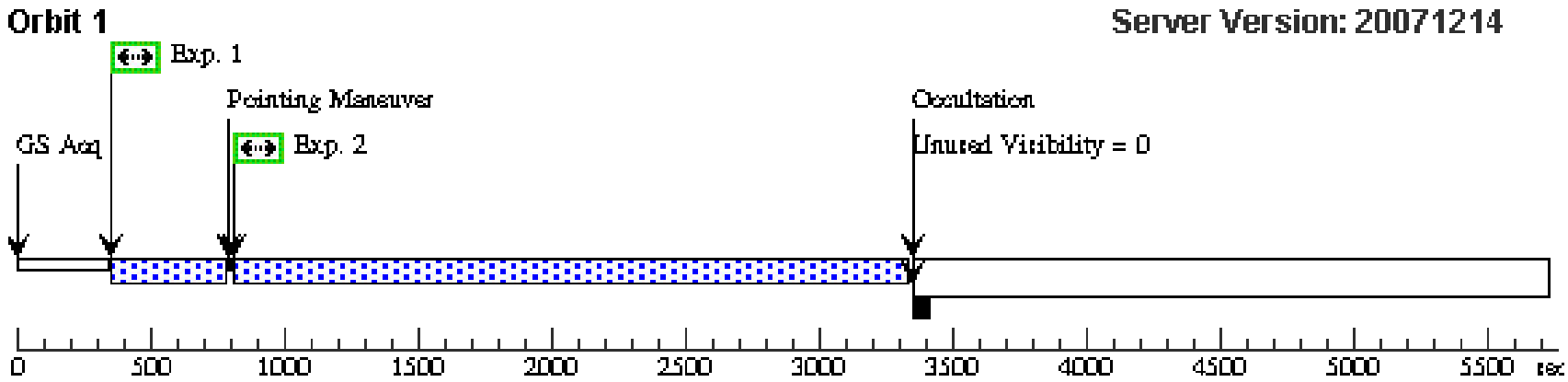
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	T-35	RA: 11 08 39.0500 (167.1627083d) Dec: -77 16 4.24 (-77.26784d) Equinox: J2000		V=16.28	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	T-35	(11) T-35	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs	
								[==>360.0 Secs]	***[1]***
2	T-35	(11) T-35	ACS/SBC, ACCUM, SBC	PR130L				2500.0 Secs	
								[==>2455.0 Secs]	***[1]***

Orbit Structure



Visit

Proposal 11145, Visit 12, implementation Fri Jan 18 03:21:43 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: (none)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	T-56	RA: 11 17 37.0100 (169.4042083d) Dec: -77 04 38.12 (-77.07726d) Equinox: J2000		V=13.5	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	T-56	(12) T-56	ACS/SBC, ACCUM, SBC	F140LP				360.0 Secs X 2 *[==>108.0 Secs (Copy 1)]* *[==>108.0 Secs (Copy 2)]*	*[1]*
2	T-56	(12) T-56	ACS/SBC, ACCUM, SBC	PR130L				1800.0 Secs X 2 *[==>1258.0 Secs (Copy 1)]* *[==>1258.0 Secs (Copy 2)]*	*[1]*

Orbit Structure