10101 - The Region of the Hydrogen-Burning Limit in Omega Centauri and 47 Tucanae

Cycle: 13, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets*	*Configurations*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) NGC104	ACS/WFC	2	16-Aug-2005 21:00:46.0	yes
02	(2) NGC5139	ACS/WFC	4	16-Aug-2005 21:00:54.0	yes
12	(2) NGC5139	ACS/WFC	4	16-Aug-2005 21:01:01.0	yes

10 Total Orbits Used

ABSTRACT

We propose a photometric study of the lower main sequences of
Omega Cen and 47 Tuc, down to the region of the H-burning

limit, which the deeper faintness limit of ACS will allow us to reach. For the faintest stars, proper-motion separation of cluster from field is essential; hence we include Cycle 13 observations. The resulting color--magnitude diagrams (CMDs) and luminosity functions (LFs) will allow study of stars in a mass regime and metallicity that have never been accessible before, and will serve as an important check on theories of the structure of low-mass stars.

These are the 2nd-epoch observations.

OBSERVING DESCRIPTION

For maximum throughput and a good color baseline, we will use F606W and F814W. As discussed in the preceding section, at the second epoch F814W is sufficient.

REAL TIME JUSTIFICATION

The Cycle 13 observations will have to be placed identically with those of Cycle 11. Same orientation will restrict the scheduling windows in Cycle 13, but not severely.

Visit

Proposal 10101, Visit 01 Wed Aug 17 01:01:07 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 19.34D TO 19.34 D; BETWEEN 01-OCT-2004:00:00:00 AND 01-DEC-2004:00:00:00

Comments: Position and orientation chosen to coincide with first epoch.

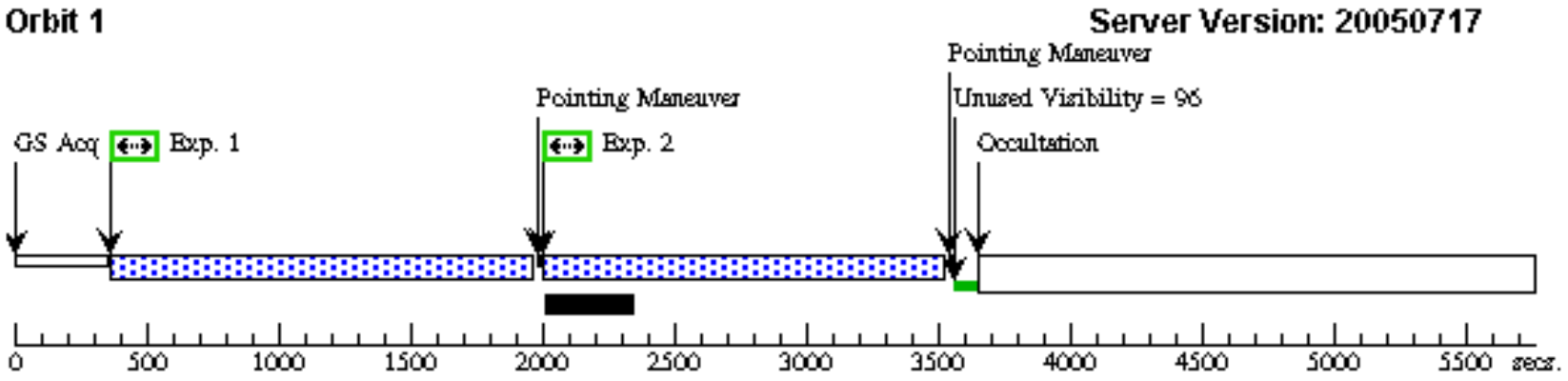
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC104 Alt Name1: 47 Alt Name2: TUC	RA: 00 22 40.1000 (5.6670833d) Dec: -72 03 51.80 (-72.06439d) Equinox: J2000 Plate Id: 01X5	Parallax: 0.0" Epoch of Position:	V=19.5+/-0.5	Coordinate Source: GSC_SURVEY_PLATE

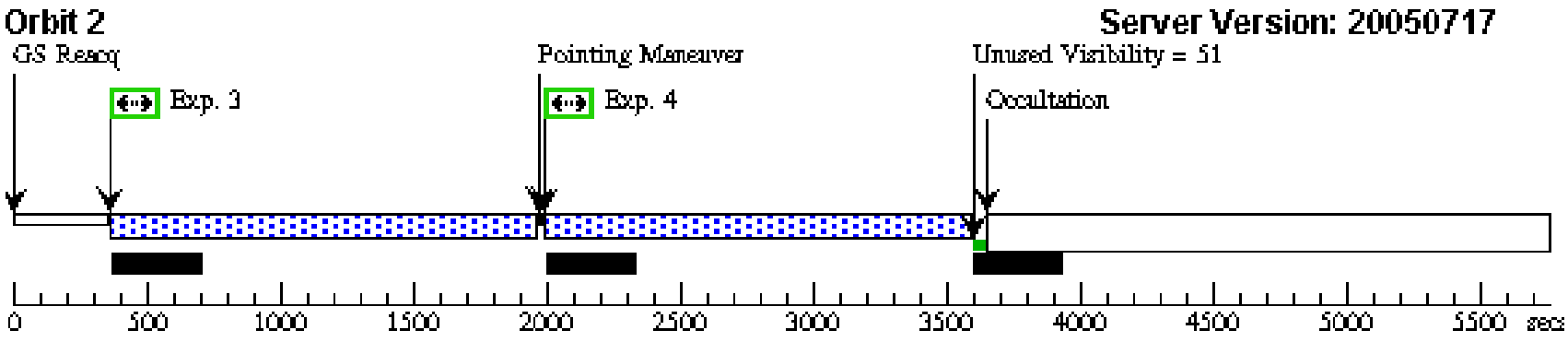
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	47T1	(1) NGC104	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2			1401.0 Secs *[==>]*	*[1]*
2	47T2	(1) NGC104	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2	POS TARG 0.0012,0 .2738		1400.0 Secs *[==>]*	*[1]*
3	47T3	(1) NGC104	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2	POS TARG 0.2733,0 .0205		1474.0 Secs *[==>]*	*[2]*
4	47T4	(1) NGC104	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2	POS TARG 0.2745,0 .2943		1474.0 Secs *[==>]*	*[2]*

Orbit Structure



Orbit Structure (continued)



Visit

Proposal 10101, Visit 02 Wed Aug 17 01:01:08 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 90.0D TO 90.0 D; AFTER 01-JUN-2005:00:00:00

Comments: Pointing and orientation put diffraction spike of a bright star in the ACS gap. They are identical with those of first epoch.

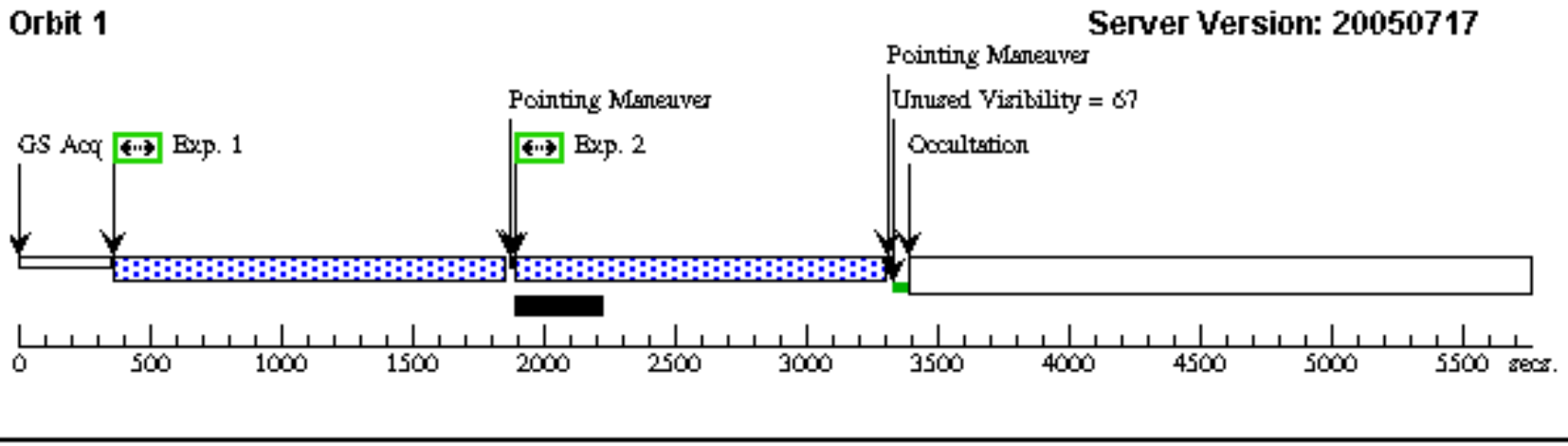
Fixed Targets

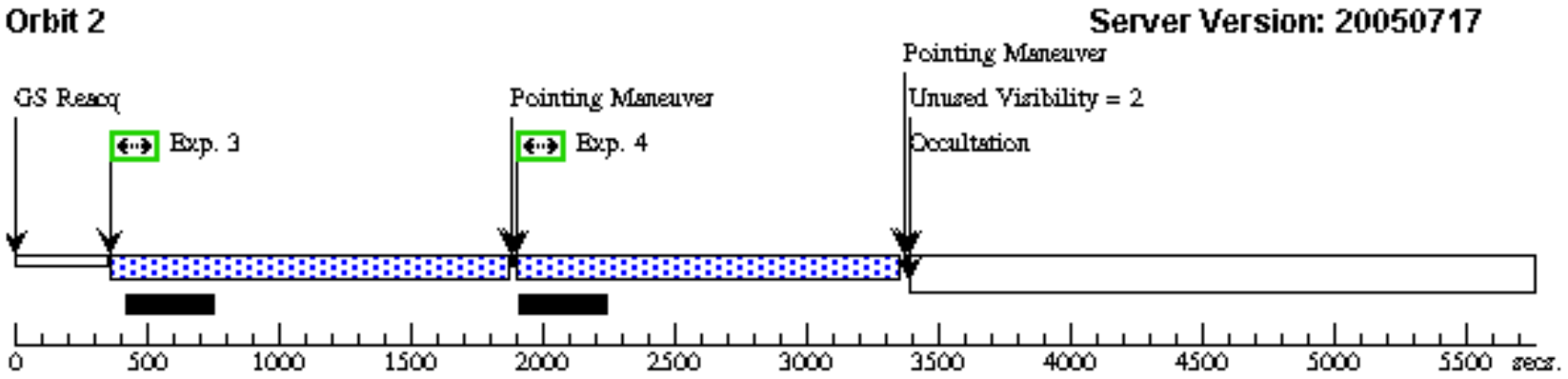
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	NGC5139 Alt Name1: OMEGA CEN	RA: 13 25 35.5000 (201.3979167d) Dec: -47 40 6.70 (-47.66853d) Equinox: J2000 Plate Id: 00AK	Parallax: 0.0" Epoch of Position:	V=19.5+/-0.5	Coordinate Source: GSC_SURVEY_PLATE

Exposures

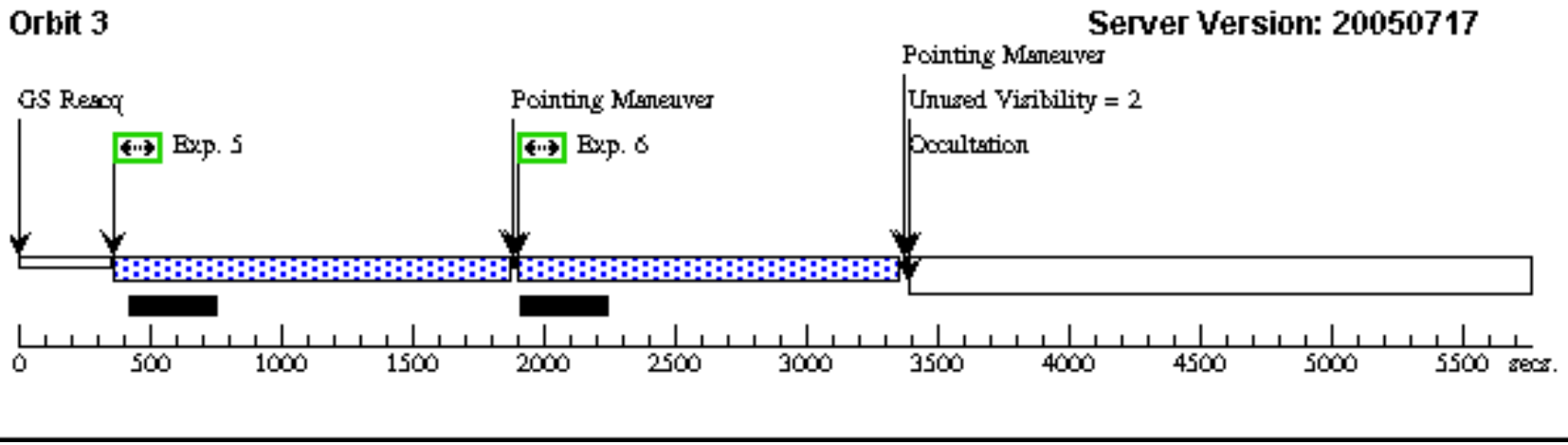
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Om1	(2) NGC5139	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO; GAIN=2			1285.0 Secs *[==>]*	***[1]***
2	Om2	(2) NGC5139	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO; GAIN=2	POS TARG 0.0012,0.2738		1285.0 Secs *[==>]*	***[1]***
3	Om3	(2) NGC5139	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2			1331.0 Secs *[==>]*	***[2]***
4	Om4	(2) NGC5139	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2	POS TARG 0.0012,0.2738		1331.0 Secs *[==>]*	***[2]***
5	Om5	(2) NGC5139	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO; GAIN=2	POS TARG 0.2733,0.0205		1331.0 Secs *[==>]*	***[3]***
6	Om6	(2) NGC5139	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO; GAIN=2	POS TARG 0.2745,0.2943		1331.0 Secs *[==>]*	***[3]***
7	Om7	(2) NGC5139	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2	POS TARG 0.2733,0.0205		1331.0 Secs *[==>]*	***[4]***
8	Om8	(2) NGC5139	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2	POS TARG 0.2745,0.2943		1331.0 Secs *[==>]*	***[4]***

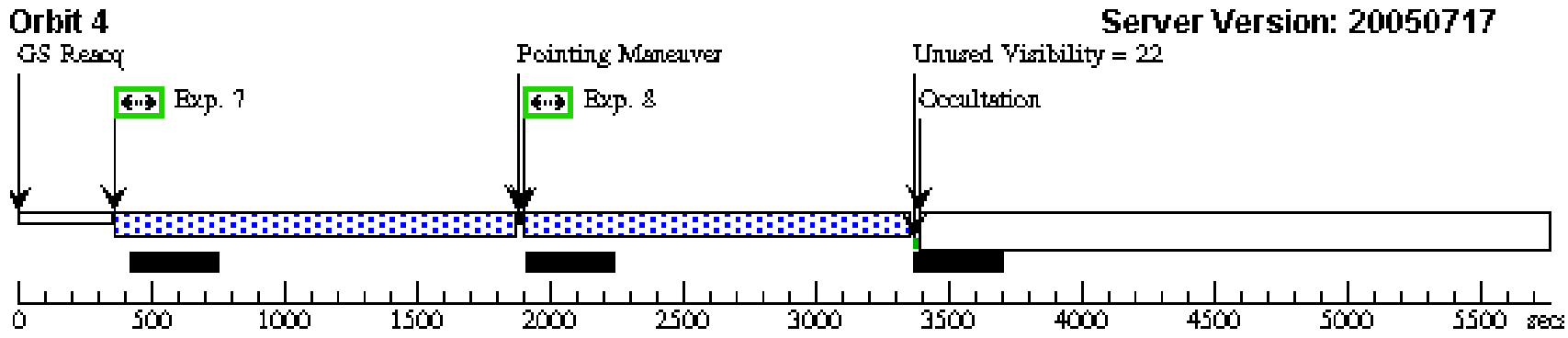
Orbit Structure





Orbit Structure (continued)





Visit

Proposal 10101, Visit 12 Wed Aug 17 01:01:09 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 90.0D TO 90.0 D; ORIENT 270.0D TO 270.0 D; AFTER 01-JUN-2005:00:00:00

Comments: Pointing and orientation put diffraction spike of a bright star in the ACS gap. They are identical with those of first epoch.

Repeat failed visit 02.

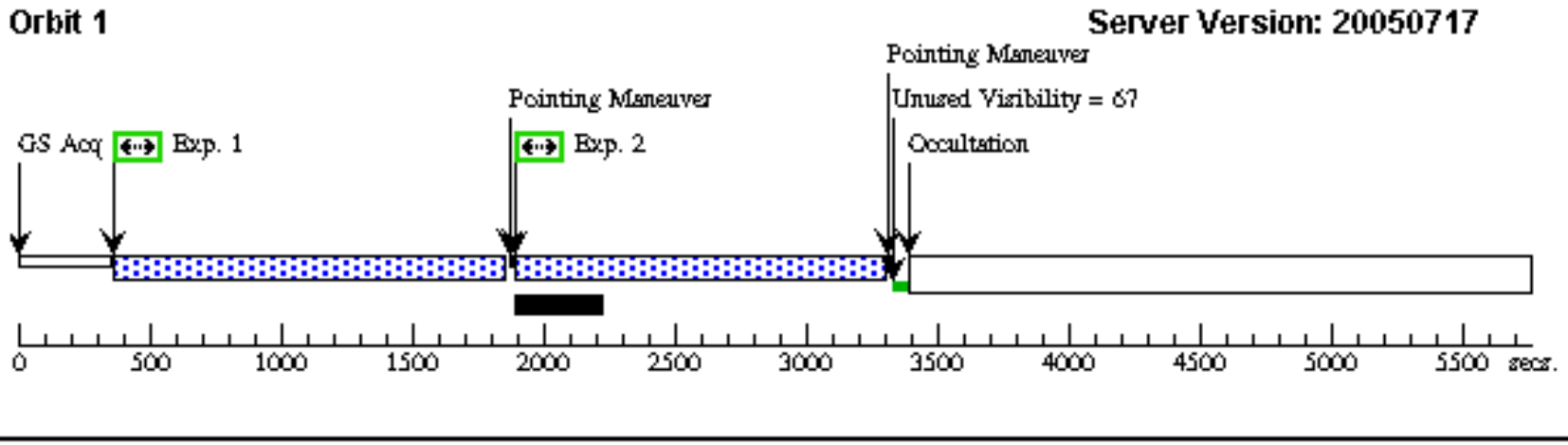
Fixed Targets

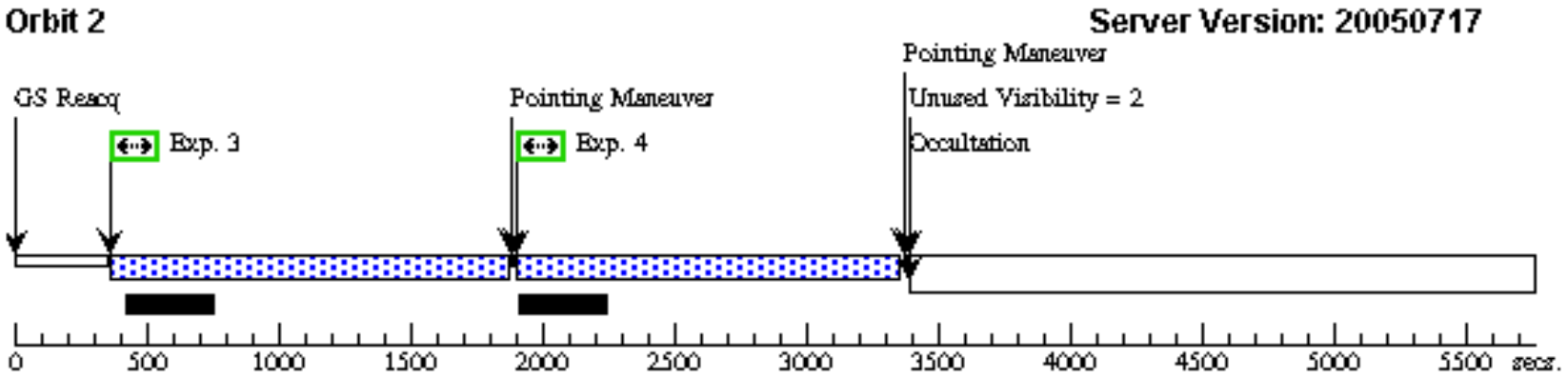
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	NGC5139 Alt Name1: OMEGA CEN	RA: 13 25 35.5000 (201.3979167d) Dec: -47 40 6.70 (-47.66853d) Equinox: J2000 Plate Id: 00AK	Parallax: 0.0" Epoch of Position:	V=19.5+/-0.5	Coordinate Source: GSC_SURVEY_PLATE

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Om1	(2) NGC5139	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO; GAIN=2			1285.0 Secs *[==>]*	 ***[1]***
2	Om2	(2) NGC5139	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO; GAIN=2	POS TARG 0.0012,0.2738		1285.0 Secs *[==>]*	 ***[1]***
3	Om3	(2) NGC5139	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2			1331.0 Secs *[==>]*	 ***[2]***
4	Om4	(2) NGC5139	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2	POS TARG 0.0012,0.2738		1331.0 Secs *[==>]*	 ***[2]***
5	Om5	(2) NGC5139	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO; GAIN=2	POS TARG 0.2733,0.0205		1331.0 Secs *[==>]*	 ***[3]***
6	Om6	(2) NGC5139	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO; GAIN=2	POS TARG 0.2745,0.2943		1331.0 Secs *[==>]*	 ***[3]***
7	Om7	(2) NGC5139	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2	POS TARG 0.2733,0.0205		1331.0 Secs *[==>]*	 ***[4]***
8	Om8	(2) NGC5139	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO; GAIN=2	POS TARG 0.2745,0.2943		1331.0 Secs *[==>]*	 ***[4]***

Orbit Structure





Orbit Structure (continued)