10419 - An in-depth analysis of a prototypical giant H II region: NGC 604

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	ANY (6) NGC604-BKG (4) NGC604-4 (5) NGC604-5 (1) NGC604-1 (3) NGC604-3 (2) NGC604-2	NIC1 NIC2	2	25-Aug-2005 21:16:07.0	yes

Visit	*Targets*	*Configurations*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
02	ANY (6) NGC604-BKG (4) NGC604-4 (5) NGC604-5 (1) NGC604-1 (3) NGC604-3 (2) NGC604-2	NIC1 NIC2	2	25-Aug-2005 21:16:43.0	yes
03	ANY (6) NGC604-BKG (4) NGC604-4 (5) NGC604-5 (1) NGC604-1 (3) NGC604-3 (2) NGC604-2	NIC1 NIC2	2	25-Aug-2005 21:17:17.0	yes
11	(7) NGC604-CORE	ACS/HRC	5	25-Aug-2005 21:17:37.0	yes
12	(7) NGC604-CORE	ACS/SBC	2	25-Aug-2005 21:17:59.0	yes

13 Total Orbits Used

ABSTRACT

NGC 604 is, together with 30 Doradus, the extragalactic prototype giant H II region. Its stellar content and mass (~200 O+WR stars, ~10**5 M_Sun), age (~3.5 Myr), proximity (840 kpc), and low foreground extinction (E(B-V) <= 0.1) make it an ideal object to study the massive stellar population of a scaled OB association, its interaction with the surrounding medium, and the effects caused by the strong differential extinction. We propose new HST observations which, combined with existent ones, will provide the most thorough multi-wavelength study of NGC 604 from the FUV to the NIR. We will obtain spectral classifications for ~200 stars, measure their spectral energy distributions from 1300 A to 2.2 microns, identify embedded very-young stellar populations hidden inside dust clouds, measure the extinction law and its possible variations as a function of

environmental conditions, and analyze the relationship between the hot stars and the surrounding gas. The new data we are proposing is divided into three parts: (a) slitless objective-prism FUV spectroscopy using ACS/SBC, (b) multi-filter (6 broad-band and 2 narrow-band) NUV-optical imaging using ACS/HRC, and (c) HST/NICMOS broadband imaging. Our final goal is to analyze in detail a well-resolved giant H II region in order to understand the properties of similar but unresolved objects located at cosmological distances.

OBSERVING DESCRIPTION

NICMOS imaging: 3 Visits of 2 orbits each.

We plan to carry out observations of the core of NGC 604 and its surrounding dusty features using NIC2 Camera with three broadband filters: F110W, F160W, and F205W. NIC2 sub-arcsec broadband images will be used to establish the NIR photometric characteristics of the massive star cluster in the core of NGC 604. For such purposes, a 35" area centered on the core of NGC 604 will be obtained in four tiles, using dithering strategies to obtain a better samplimg of the PSF, and to map bad pixels and other artifacts. An adjacent field with IR sources is also planned to be obtained with the same setup. All observations will be in the MULTIACCUM mode. These exposure times will be enough to detect in the F205W band a ZAMS unreddened early-B type star, an O3 star with 20 mag of visual extinction, or all IR sources with brightnesses similar to those of the brightest Class I YSO candidates in 30 Dor. In addition, sky frames will be obtained in a nearby (2' away) field for background subtraction and to take into account the star population of the M33 disk. Parallel broadband images with NIC1 Camera with filters F110W, F160W, F187N and F190N will be specified in order to study stellar population in the periphery of the cluster and to discovery new
embedded emission sources. Paschen Alpha images will be used to study the gas extinction together archived WFPC2 and our ACS/HRC images.

FUV imaging and spectroscopy: 1 Visit of 2 Orbits

We will obtain FUV spectoscopy of the central region of NGC 604 using the objective prism PR130L of ACS/SBC to classify O stars at the distance and extinction of NGC 604. Also, FUV images in filters F122M, F150LP and F165LP, will be obtained with the same detector and their will be used in conjunction with FUV spectroscopy. We have checked that neither with those filters nor with the objective-prism the bright object limits for the SBC are violated. In order to minimize the effect of FUV geocoronal lines, the prism observations will take place under SHADOW conditions. This

eliminates some time in each orbit, but the effect of a lower background more than compensates for fainter sources. Moreover, the time unused for prism observations is utilized for FUV images.

ACS-HRC Imaging: 1 Visit of 5 orbits

We propose to obtain ACS-HRC imaging in six broad-band filters (F220W, F250W, F330W, F435W, F550M, and F850LP). The filters have been chosen in conjunction with the NICMOS ones to provide a complete coverage of the UV-NIR range needed to determine the extinction law. We also provide imaging using filters F658N and F660N to study the interaction of the massive stars with the surrounding gas. There are existing WFPC2 observations in the archive from other programs. We have retrieved and analyzed them extensively, and we concluded that they are not useful for our purposes for a number of reasons (1) With only the F170W data, all broadband images were obtained using WF chips, and the subclustering information is lost, (2) many bright stars are saturated, (3) in those images the border between chips WF2 and WF3 cross the center of the cluster, (4) narrow band images of the cluster also were obtained with WF chips. We plan to increase the resolution from 0.4 pc to 0.1 pc, and thus we will unveil new information, but the analogous case of 30 Dor strongly suggest so.

ADDITIONAL COMMENTS

The Institution of a CoI, Dr. Enrique Perez, is wrong in the STScI database. It should be "Instituto de Astrofisica de Andalucia (IAA), Spain"

Visit

Proposal 10419, Visit 01 Fri Aug 26 01:18:03 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: NIC2, NIC1

Special Requirements: PCS MODE FINE

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(3)	Pattern Type=LINE	Coordinate Frame=POS-TARG		(1-2), (3-4), (5-6), (7-8), (9-10), (11-12), (13-14), (15-16), (17-18), (19-20), (21-22), (23-24)
	Purpose=DITHER	Pattern Orientation=0		
	Number Of Points=2	Angle Between Sides=		
	Point Spacing=1	Center Pattern=false		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC604-1	RA: 01 34 33.2640 (23.6386000d) Dec: +30 46 51.70 (30.78103d) Equinox: J2000 Plate Id: (?)		V=17.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(2)	NGC604-2	RA: 01 34 32.1700 (23.6340417d) Dec: +30 47 0.70 (30.78353d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(3)	NGC604-3	RA: 01 34 32.8370 (23.6368208d) Dec: +30 47 10.30 (30.78619d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(4)	NGC604-4	RA: 01 34 33.9310 (23.6413792d) Dec: +30 47 1.30 (30.78369d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(5)	NGC604-5	RA: 01 34 33.9856 (23.6416067d) Dec: +30 46 39.70 (30.77769d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(6)	NGC604-BKG	RA: 01 34 34.8000 (23.6450000d) Dec: +30 48 10.00 (30.80278d) Equinox: J2000 Plate Id: (?)		V=16.1+/-0.1	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE

Comments: The flux refers to the brightest star in the OB association

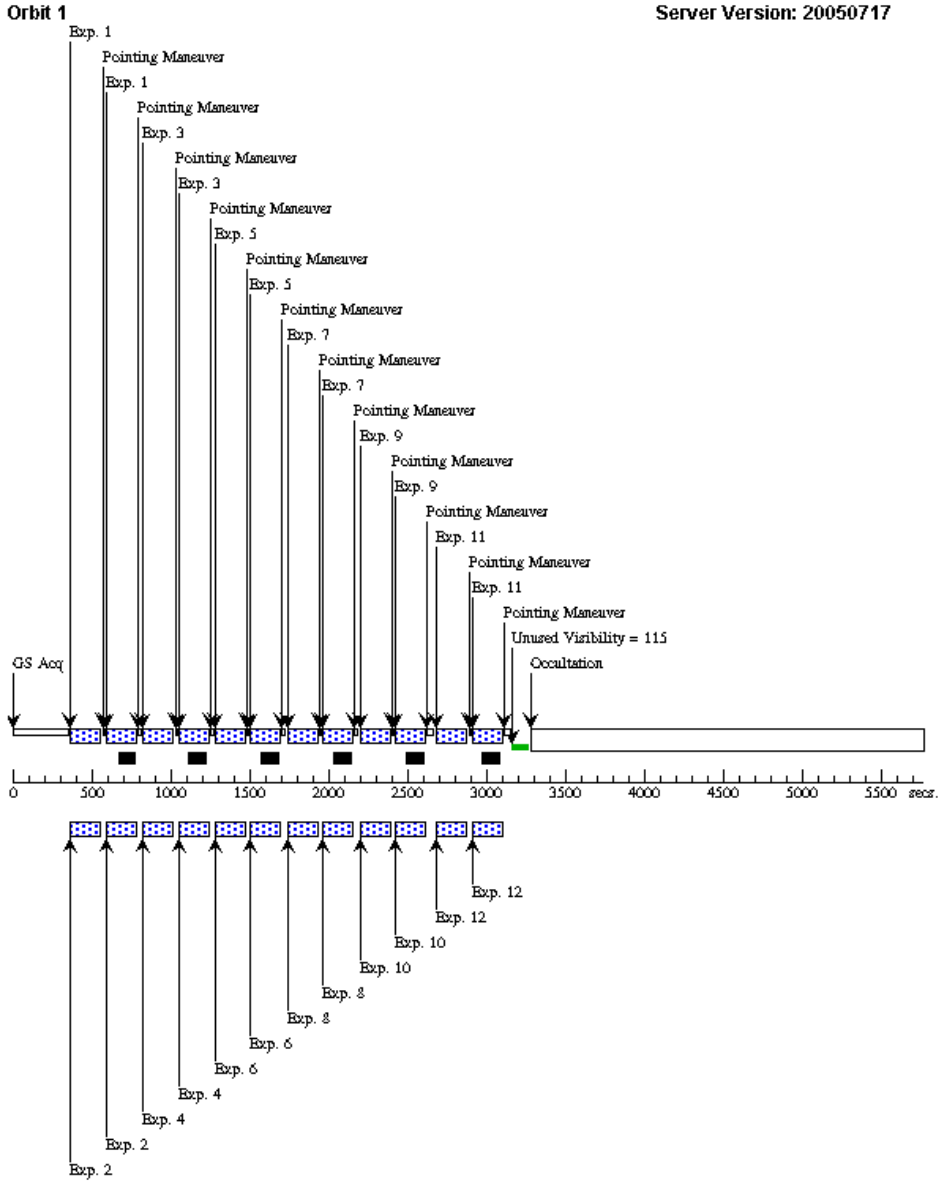
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	NIC2	(1) NGC604-1	NIC2, MULTIACCUM, NIC2-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 1-2 (3) Prime + Parallel Group 1-2	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 1-2 (3) Prime + Parallel Group 1-2	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
3	NIC2	(2) NGC604-2	NIC2, MULTIACCUM, NIC2-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 3-4 (3) Prime + Parallel Group 3-4	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
4	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 3-4 (3) Prime + Parallel Group 3-4	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
5	NIC2	(3) NGC604-3	NIC2, MULTIACCUM, NIC2-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 5-6 (3) Prime + Parallel Group 5-6	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
6	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 5-6 (3) Prime + Parallel Group 5-6	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
7	NIC2	(4) NGC604-4	NIC2, MULTIACCUM, NIC2-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 7-8 (3) Prime + Parallel Group 7-8	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
8	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 7-8 (3) Prime + Parallel Group 7-8	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
9	NIC2	(5) NGC604-5	NIC2, MULTIACCUM, NIC2-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 9-10 (3) Prime + Parallel Group 9-10	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
10	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 9-10 (3) Prime + Parallel Group 9-10	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
11	NIC2	(6) NGC604-BKG	NIC2, MULTIACCUM, NIC2-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 11-12 (3) Prime + Parallel Group 11-12	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
12	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 11-12 (3) Prime + Parallel Group 11-12	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
13	NIC2	(1) NGC604-1	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 13-14 (3) Prime + Parallel Group 13-14	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
14	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 13-14 (3) Prime + Parallel Group 13-14	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***

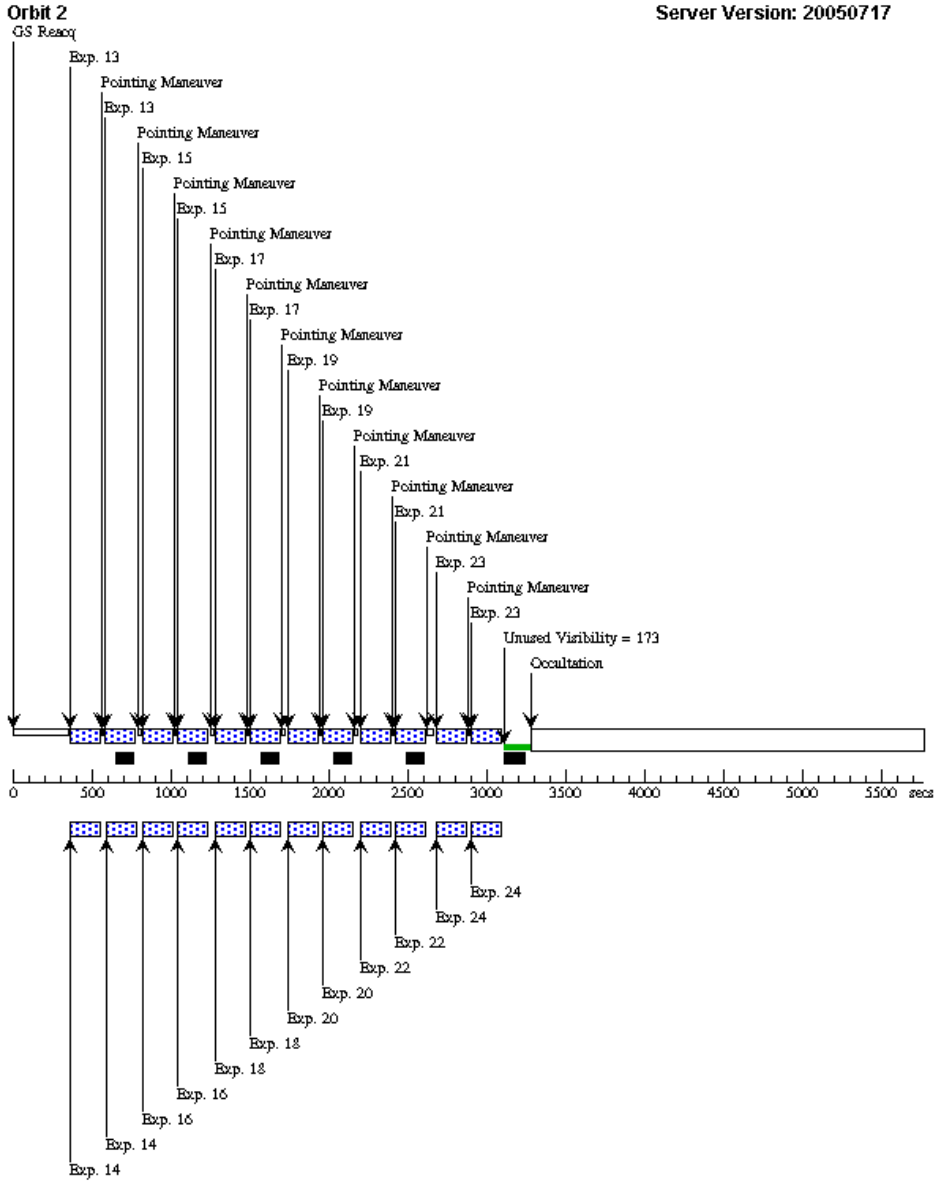
Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
15	NIC2	(2) NGC604-2	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 15-16 (3) Prime + Parallel Group 15-16	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
16	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 15-16 (3) Prime + Parallel Group 15-16	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
17	NIC2	(3) NGC604-3	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 17-18 (3) Prime + Parallel Group 17-18	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
18	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 17-18 (3) Prime + Parallel Group 17-18	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
19	NIC2	(4) NGC604-4	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 19-20 (3) Prime + Parallel Group 19-20	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
20	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 19-20 (3) Prime + Parallel Group 19-20	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
21	NIC2	(5) NGC604-5	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 21-22 (3) Prime + Parallel Group 21-22	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
22	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 21-22 (3) Prime + Parallel Group 21-22	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
23	NIC2	(6) NGC604-BKG	NIC2, MULTIACCUM, NIC2-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 23-24 (3) Prime + Parallel Group 23-24	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
24	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 23-24 (3) Prime + Parallel Group 23-24	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***

Orbit Structure



Orbit Structure (continued)



Visit

Proposal 10419, Visit 02 Fri Aug 26 01:18:07 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: NIC2, NIC1

Special Requirements: PCS MODE FINE; SAME ORIENT AS 01

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(3)	Pattern Type=LINE	Coordinate Frame=POS-TARG		(1-2), (3-4), (5-6), (7-8), (9-10), (11-12), (13-14), (15-16), (17-18), (19-20), (21-22), (23-24)
	Purpose=DITHER	Pattern Orientation=0		
	Number Of Points=2	Angle Between Sides=		
	Point Spacing=1	Center Pattern=false		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC604-1	RA: 01 34 33.2640 (23.6386000d) Dec: +30 46 51.70 (30.78103d) Equinox: J2000 Plate Id: (?)		V=17.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(2)	NGC604-2	RA: 01 34 32.1700 (23.6340417d) Dec: +30 47 0.70 (30.78353d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(3)	NGC604-3	RA: 01 34 32.8370 (23.6368208d) Dec: +30 47 10.30 (30.78619d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(4)	NGC604-4	RA: 01 34 33.9310 (23.6413792d) Dec: +30 47 1.30 (30.78369d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(5)	NGC604-5	RA: 01 34 33.9856 (23.6416067d) Dec: +30 46 39.70 (30.77769d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(6)	NGC604-BKG	RA: 01 34 34.8000 (23.6450000d) Dec: +30 48 10.00 (30.80278d) Equinox: J2000 Plate Id: (?)		V=16.1+/-0.1	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE

Comments: The flux refers to the brightest star in the OB association

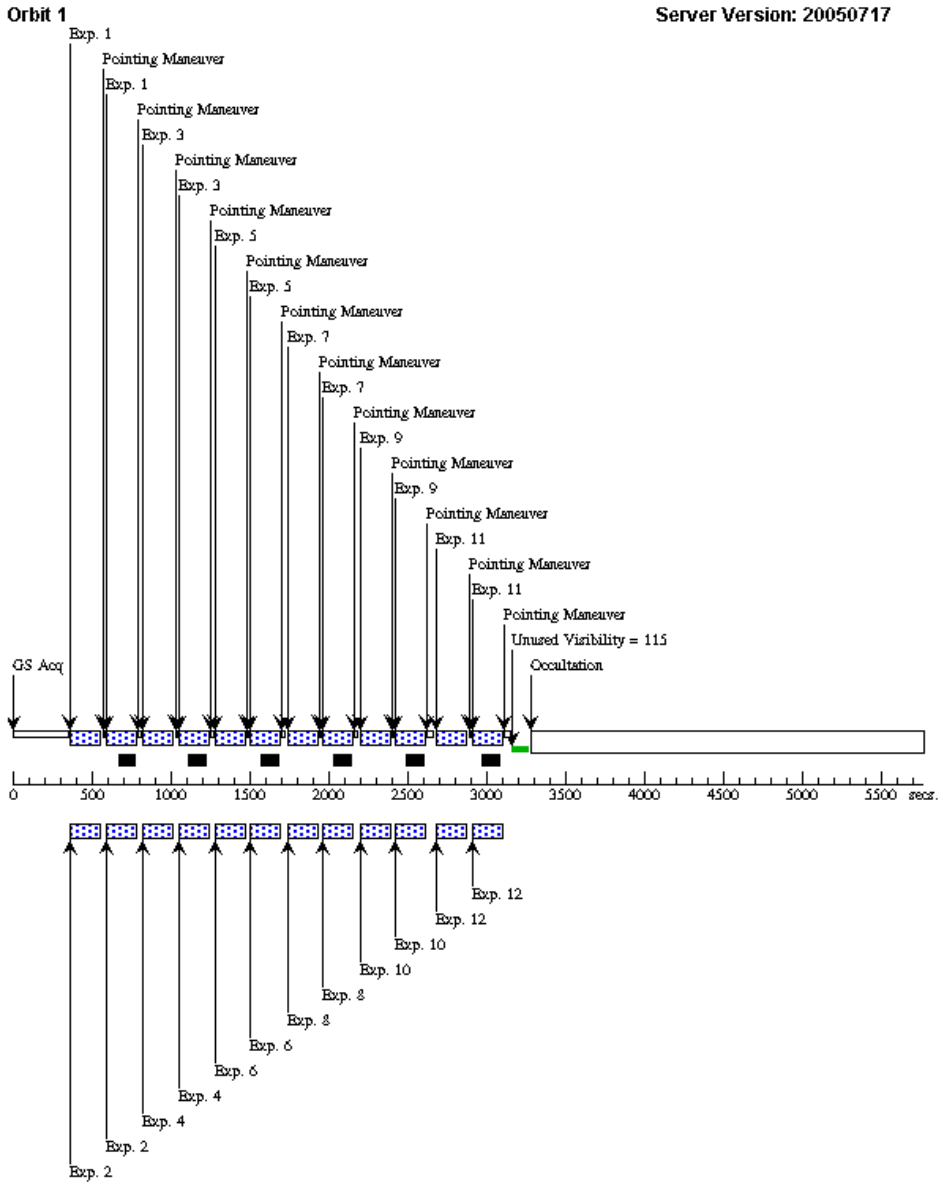
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	NIC2	(1) NGC604-1	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 1-2 (3) Prime + Parallel Group 1-2	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 1-2 (3) Prime + Parallel Group 1-2	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
3	NIC2	(2) NGC604-2	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 3-4 (3) Prime + Parallel Group 3-4	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
4	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 3-4 (3) Prime + Parallel Group 3-4	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
5	NIC2	(3) NGC604-3	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 5-6 (3) Prime + Parallel Group 5-6	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
6	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 5-6 (3) Prime + Parallel Group 5-6	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
7	NIC2	(4) NGC604-4	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 7-8 (3) Prime + Parallel Group 7-8	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
8	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 7-8 (3) Prime + Parallel Group 7-8	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
9	NIC2	(5) NGC604-5	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 9-10 (3) Prime + Parallel Group 9-10	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
10	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 9-10 (3) Prime + Parallel Group 9-10	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
11	NIC2	(6) NGC604-BKG	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 11-12 (3) Prime + Parallel Group 11-12	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
12	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F110W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 11-12 (3) Prime + Parallel Group 11-12	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
13	NIC2	(1) NGC604-1	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 13-14 (3) Prime + Parallel Group 13-14	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
14	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 13-14 (3) Prime + Parallel Group 13-14	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***

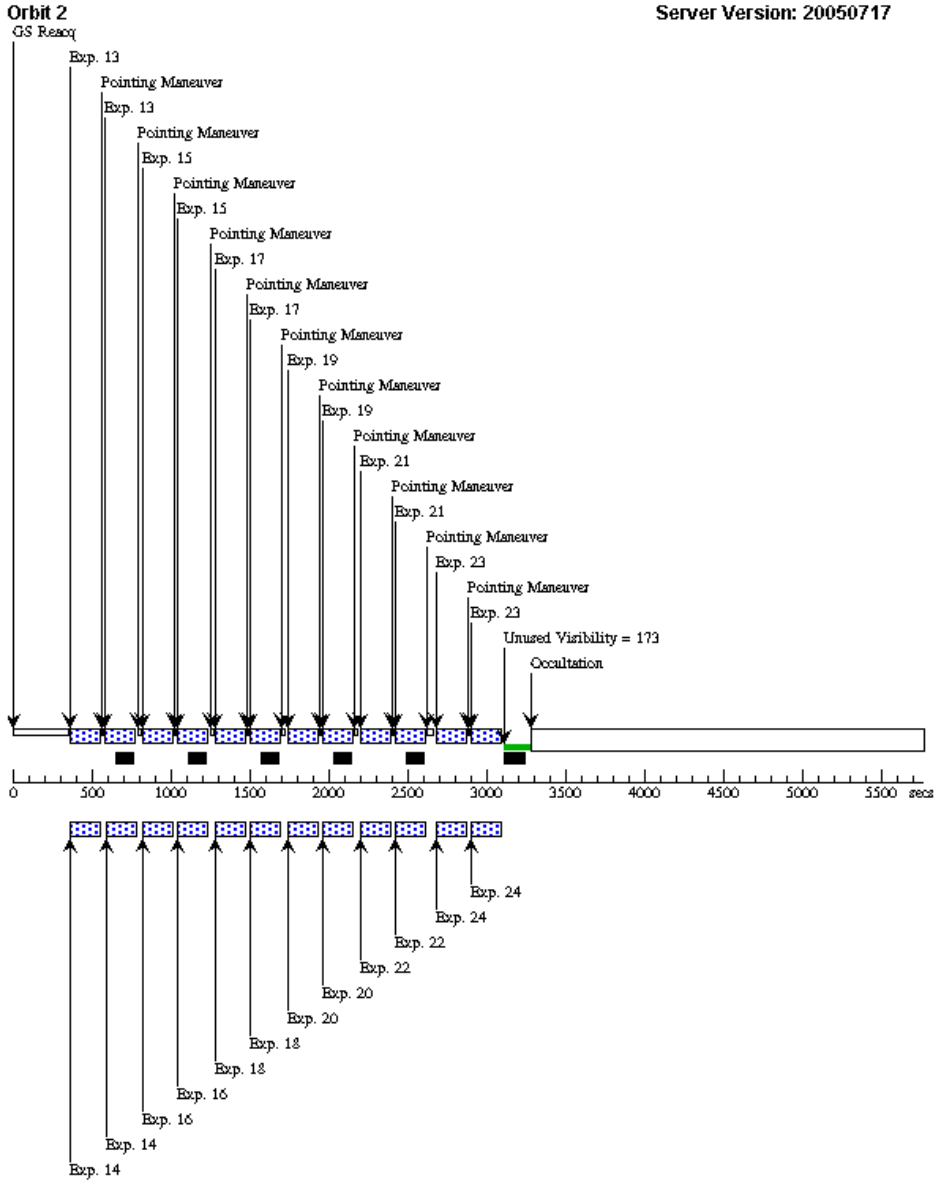
Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
15	NIC2	(2) NGC604-2	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 15-16 (3) Prime + Parallel Group 15-16	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
16	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 15-16 (3) Prime + Parallel Group 15-16	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
17	NIC2	(3) NGC604-3	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 17-18 (3) Prime + Parallel Group 17-18	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
18	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 17-18 (3) Prime + Parallel Group 17-18	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
19	NIC2	(4) NGC604-4	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 19-20 (3) Prime + Parallel Group 19-20	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
20	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 19-20 (3) Prime + Parallel Group 19-20	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
21	NIC2	(5) NGC604-5	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 21-22 (3) Prime + Parallel Group 21-22	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
22	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 21-22 (3) Prime + Parallel Group 21-22	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
23	NIC2	(6) NGC604-BKG	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 23-24 (3) Prime + Parallel Group 23-24	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
24	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F160W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 23-24 (3) Prime + Parallel Group 23-24	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***

Orbit Structure



Orbit Structure (continued)



Visit

Proposal 10419, Visit 03 Fri Aug 26 01:18:09 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: NIC2, NIC1

Special Requirements: PCS MODE FINE; SAME ORIENT AS 01

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(3)	Pattern Type=LINE	Coordinate Frame=POS-TARG		(1-2), (3-4), (5-6), (7-8), (9-10), (11-12), (13-14), (15-16), (17-18), (19-20), (21-22), (23-24)
	Purpose=DITHER	Pattern Orientation=0		
	Number Of Points=2	Angle Between Sides=		
	Point Spacing=1	Center Pattern=false		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC604-1	RA: 01 34 33.2640 (23.6386000d) Dec: +30 46 51.70 (30.78103d) Equinox: J2000 Plate Id: (?)		V=17.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(2)	NGC604-2	RA: 01 34 32.1700 (23.6340417d) Dec: +30 47 0.70 (30.78353d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(3)	NGC604-3	RA: 01 34 32.8370 (23.6368208d) Dec: +30 47 10.30 (30.78619d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(4)	NGC604-4	RA: 01 34 33.9310 (23.6413792d) Dec: +30 47 1.30 (30.78369d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(5)	NGC604-5	RA: 01 34 33.9856 (23.6416067d) Dec: +30 46 39.70 (30.77769d) Equinox: J2000 Plate Id: (?)		V=16.0+/-1.0	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE
(6)	NGC604-BKG	RA: 01 34 34.8000 (23.6450000d) Dec: +30 48 10.00 (30.80278d) Equinox: J2000 Plate Id: (?)		V=16.1+/-0.1	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE

Comments: The flux refers to the brightest star in the OB association

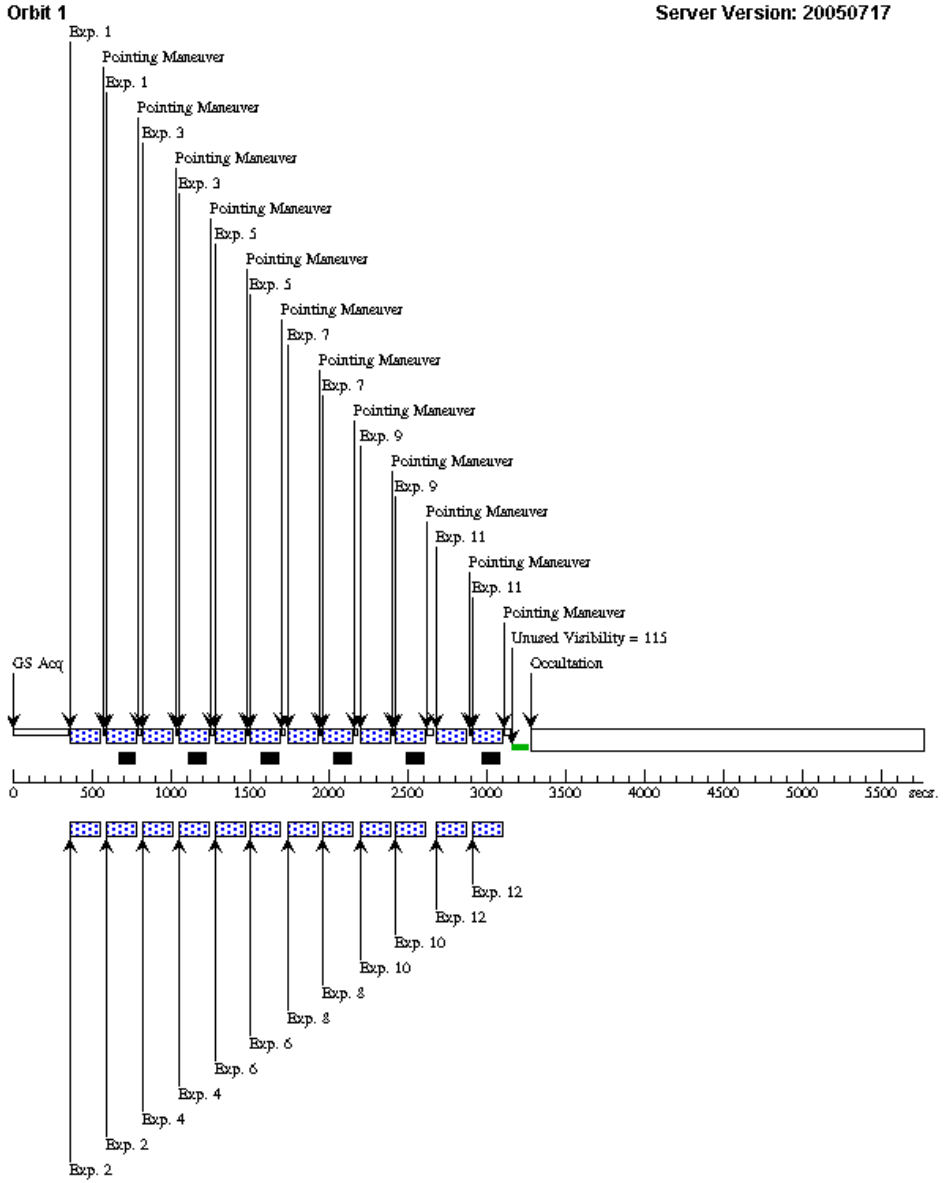
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	NIC2	(1) NGC604-1	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 1-2 (3) Prime + Parallel Group 1-2	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F187N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 1-2 (3) Prime + Parallel Group 1-2	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
3	NIC2	(2) NGC604-2	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 3-4 (3) Prime + Parallel Group 3-4	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
4	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F187N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 3-4 (3) Prime + Parallel Group 3-4	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
5	NIC2	(3) NGC604-3	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 5-6 (3) Prime + Parallel Group 5-6	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
6	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F187N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 5-6 (3) Prime + Parallel Group 5-6	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
7	NIC2	(4) NGC604-4	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 7-8 (3) Prime + Parallel Group 7-8	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
8	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F187N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 7-8 (3) Prime + Parallel Group 7-8	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
9	NIC2	(5) NGC604-5	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 9-10 (3) Prime + Parallel Group 9-10	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
10	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F187N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 9-10 (3) Prime + Parallel Group 9-10	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
11	NIC2	(6) NGC604-BKG	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 11-12 (3) Prime + Parallel Group 11-12	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
12	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F187N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 11-12 (3) Prime + Parallel Group 11-12	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
13	NIC2	(1) NGC604-1	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 13-14 (3) Prime + Parallel Group 13-14	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
14	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F190N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 13-14 (3) Prime + Parallel Group 13-14	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***

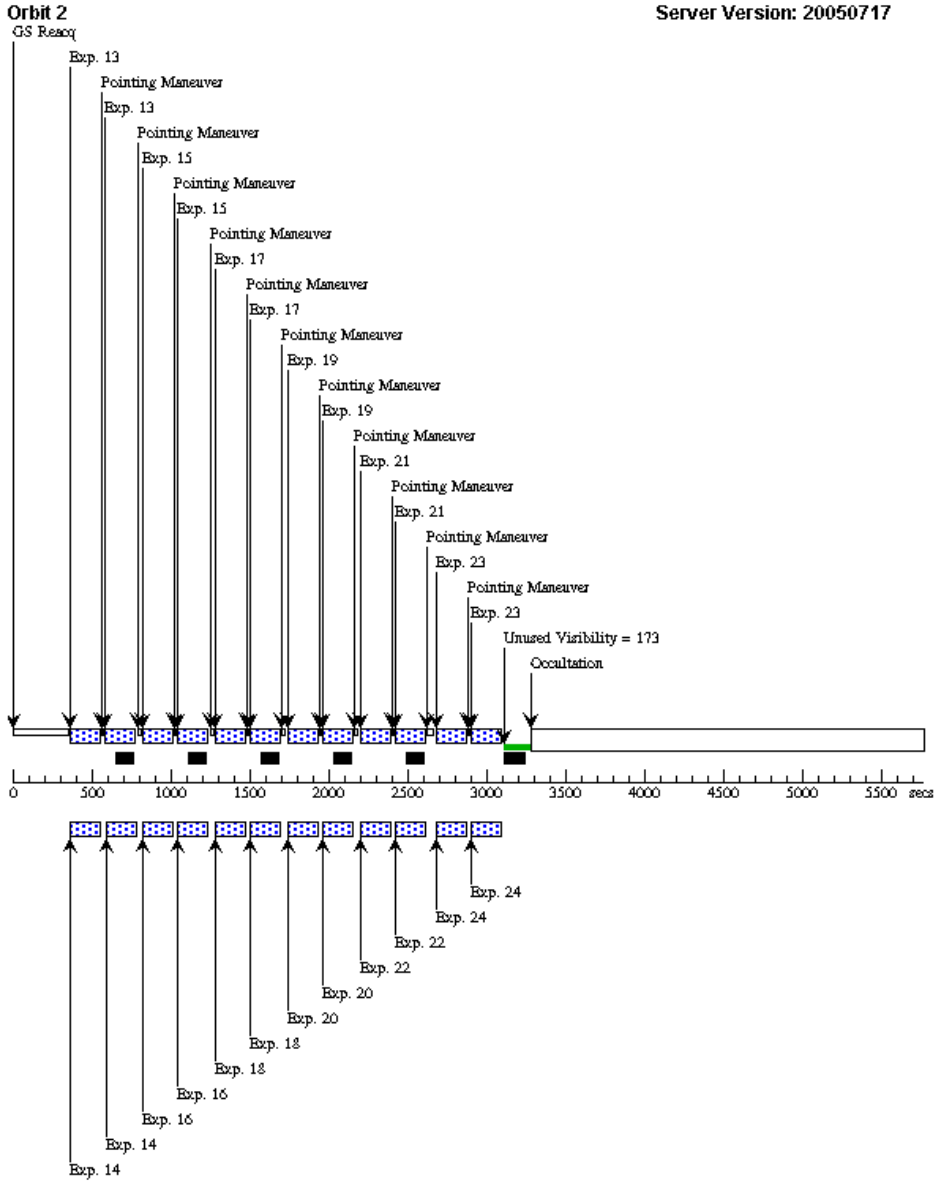
Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
15	NIC2	(2) NGC604-2	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 15-16 (3) Prime + Parallel Group 15-16	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
16	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F190N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 15-16 (3) Prime + Parallel Group 15-16	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
17	NIC2	(3) NGC604-3	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 17-18 (3) Prime + Parallel Group 17-18	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
18	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F190N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 17-18 (3) Prime + Parallel Group 17-18	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
19	NIC2	(4) NGC604-4	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 19-20 (3) Prime + Parallel Group 19-20	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
20	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F190N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 19-20 (3) Prime + Parallel Group 19-20	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
21	NIC2	(5) NGC604-5	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 21-22 (3) Prime + Parallel Group 21-22	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
22	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F190N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 21-22 (3) Prime + Parallel Group 21-22	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
23	NIC2	(6) NGC604-BKG	NIC2, MULTIACCUM, NIC2-FIX	F205W	SAMP-SEQ=STEP16; NSAMP=17		Pattern 23-24 (3) Prime + Parallel Group 23-24	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***
24	NIC1	ANY	NIC1, MULTIACCUM, NIC1-FIX	F190N	SAMP-SEQ=STEP16; NSAMP=17		Pattern 23-24 (3) Prime + Parallel Group 23-24	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[2]***

Orbit Structure



Orbit Structure (continued)



Visit

Proposal 10419, Visit 11 Fri Aug 26 01:18:13 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/HRC

Special Requirements: PCS MODE FINE

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-HRC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=2.7 Line Spacing=0.135	Coordinate Frame=POS-TARG Pattern Orientation=0 Angle Between Sides=90 Center Pattern=true		(1-6), (7-8)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	NGC604-CORE	RA: 01 34 32.9000 (23.6370833d) Dec: +30 47 1.00 (30.78361d) Equinox: J2000 Plate Id: (?)		V=16.1+/-0.1	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE

Comments: The flux refers to the brightest star in the OB association

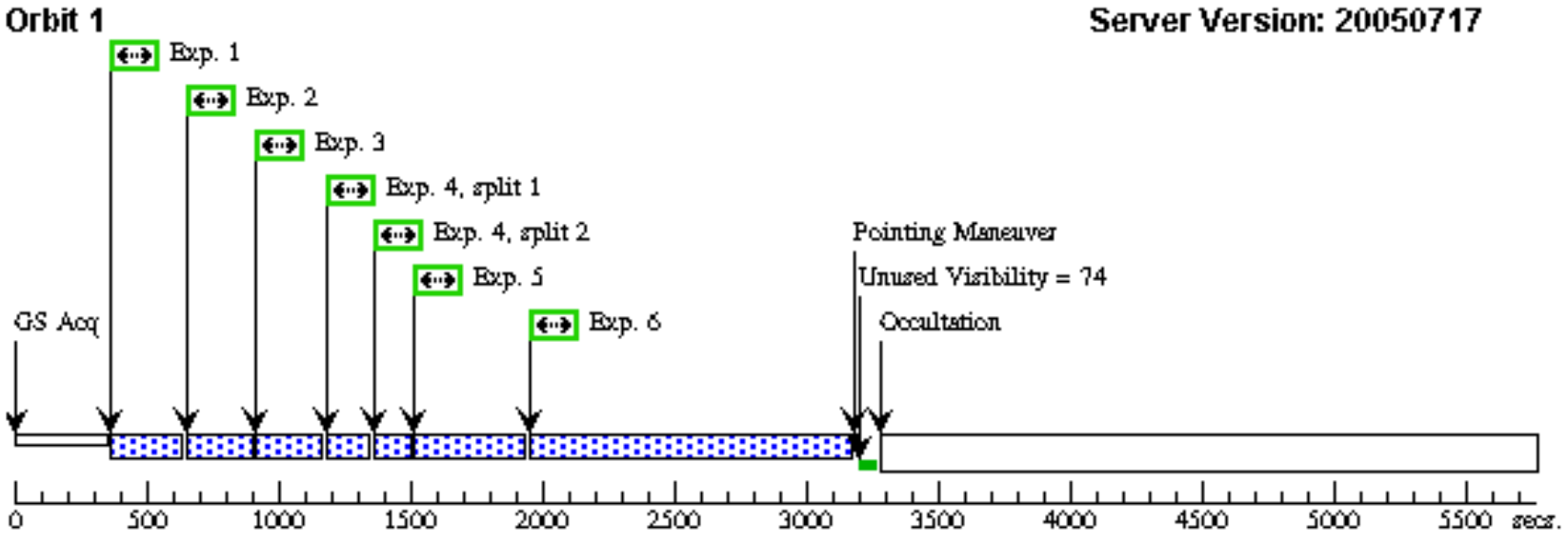
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(7) NGC604-CORE	ACS/HRC, ACCUM, HRC	F220W	CR-SPLIT=NO; GAIN=2; PAREXP=NONE		Pattern 1-6 (1)	150.0 Secs *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]*** ***[2]*** ***[3]*** ***[4]***
2		(7) NGC604-CORE	ACS/HRC, ACCUM, HRC	F250W	CR-SPLIT=NO; GAIN=2; PAREXP=NONE		Pattern 1-6 (1)	200.0 Secs *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]*** ***[2]*** ***[3]*** ***[4]***
3		(7) NGC604-CORE	ACS/HRC, ACCUM, HRC	F330W	CR-SPLIT=NO; GAIN=2; PAREXP=NONE		Pattern 1-6 (1)	200.0 Secs *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]*** ***[2]*** ***[3]*** ***[4]***

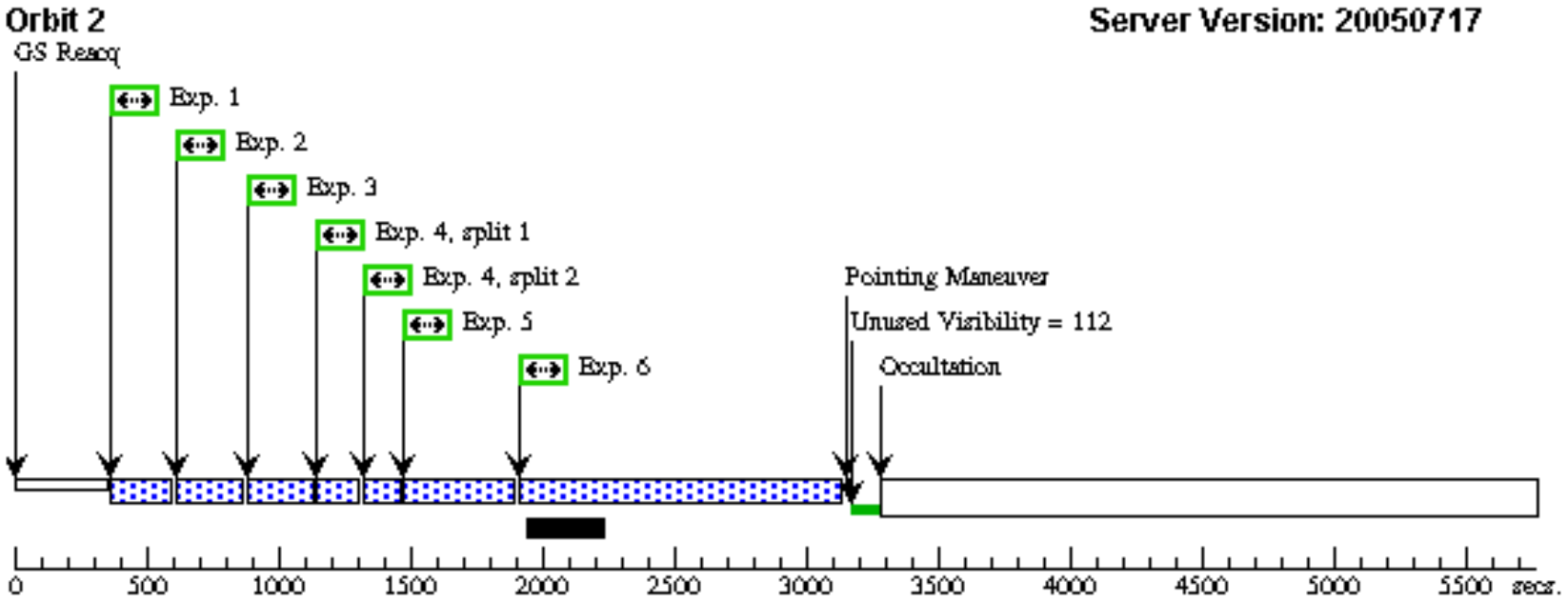
Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
4		(7) NGC604-CORE	ACS/HRC, ACCUM, HRC	F435W	CR-SPLIT=2; GAIN=2; PAREXP=NONE		Pattern 1-6 (1)	200.0 Secs	
								[==>(Pattern 1, Split 1)] *[==>(Pattern 1, Split 2)]*	***[1]***
								[==>(Pattern 2, Split 1)] *[==>(Pattern 2, Split 2)]*	***[2]***
								[==>(Pattern 3, Split 1)] *[==>(Pattern 3, Split 2)]*	***[3]***
								[==>(Pattern 4, Split 1)] *[==>(Pattern 4, Split 2)]*	***[4]***
5		(7) NGC604-CORE	ACS/HRC, ACCUM, HRC	F550M	CR-SPLIT=NO; GAIN=2; PAREXP=NONE		Pattern 1-6 (1)	350.0 Secs	
								[==>(Pattern 1)]	***[1]***
								[==>(Pattern 2)]	***[2]***
								[==>(Pattern 3)]	***[3]***
								[==>(Pattern 4)]	***[4]***
6		(7) NGC604-CORE	ACS/HRC, ACCUM, HRC	F850LP	CR-SPLIT=NO; GAIN=2; PAREXP=NONE		Pattern 1-6 (1)	1170.0 Secs	
								[==>(Pattern 1)]	***[1]***
								[==>(Pattern 2)]	***[2]***
								[==>(Pattern 3)]	***[3]***
								[==>(Pattern 4)]	***[4]***
7		(7) NGC604-CORE	ACS/HRC, ACCUM, HRC	F658N	CR-SPLIT=NO; GAIN=2; PAREXP=NONE		Pattern 7-8 (1)	200.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[5]***
8		(7) NGC604-CORE	ACS/HRC, ACCUM, HRC	F660N	CR-SPLIT=NO; GAIN=2; PAREXP=NONE		Pattern 7-8 (1)	265.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[5]***

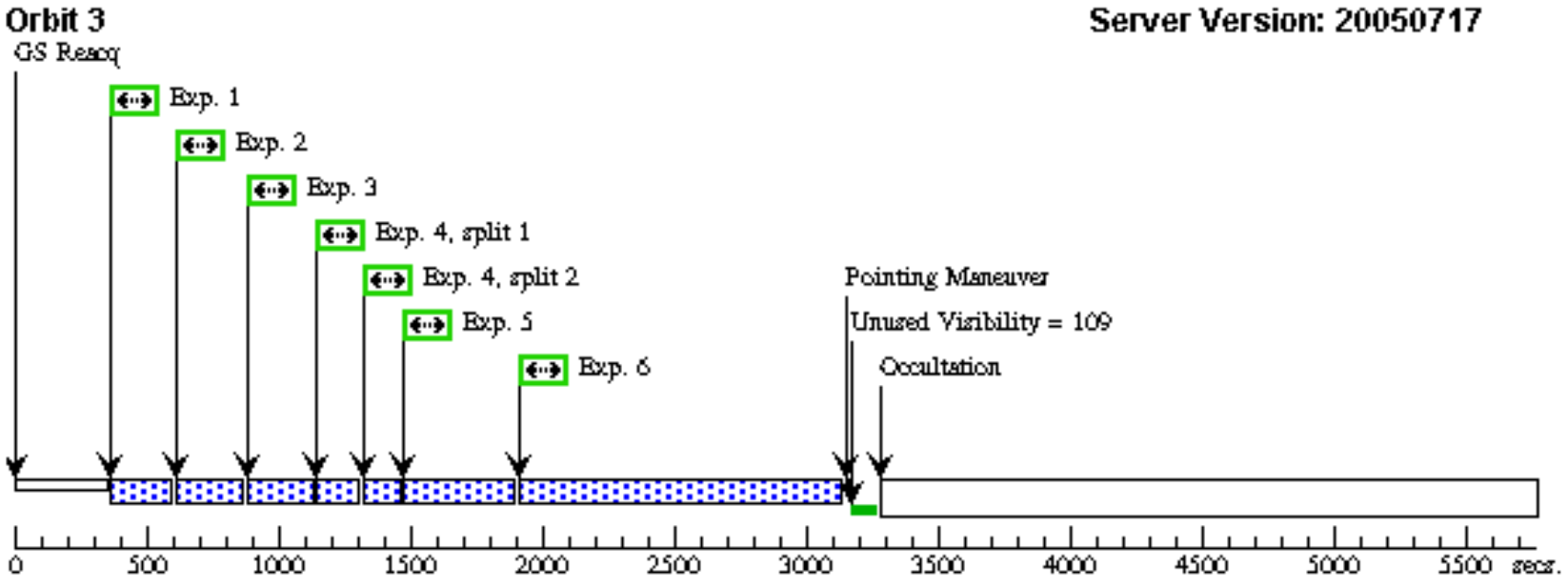
Orbit Structure



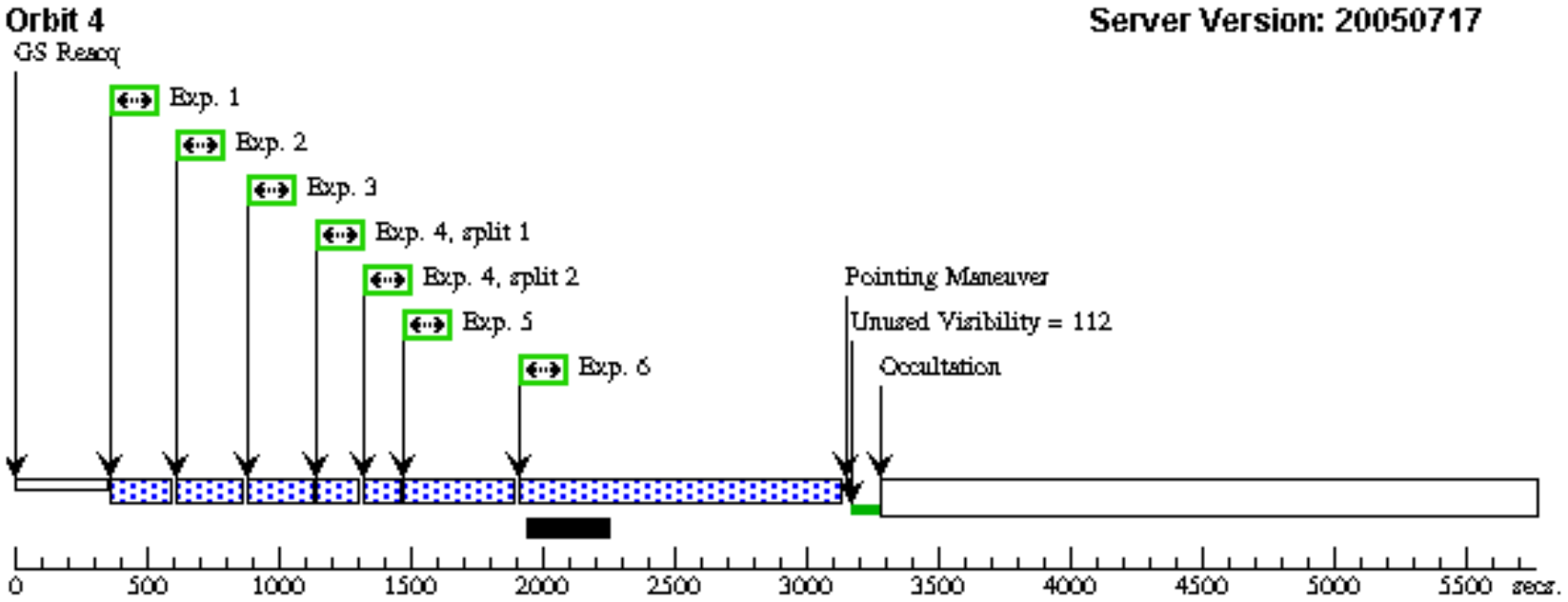
Orbit Structure (continued)

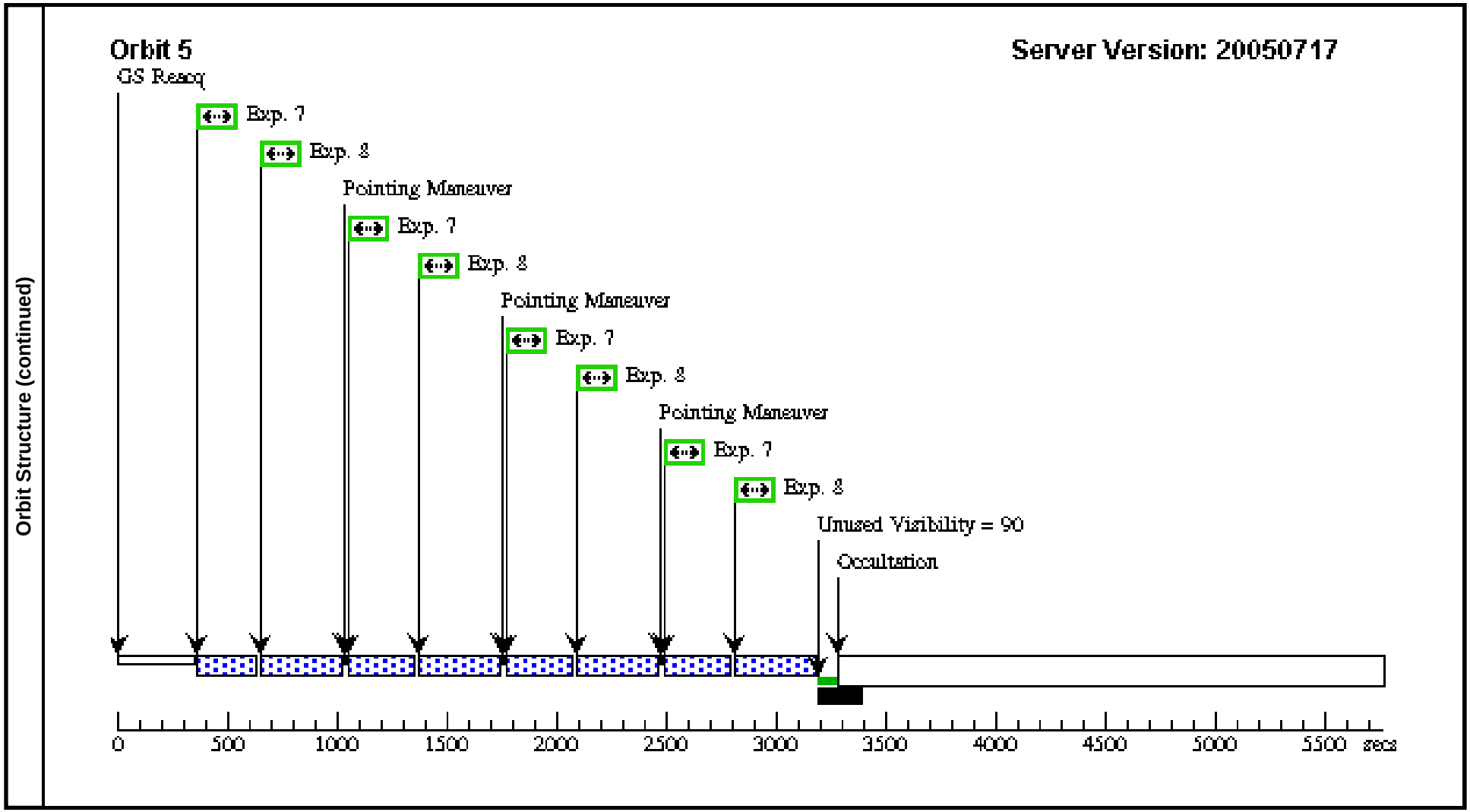


Orbit Structure (continued)



Orbit Structure (continued)




Orbit Structure (continued)
Orbit 5
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GS Reacq
Exp. 7
Exp. 8
Pointing Maneuver
Exp. 7
Exp. 8
Pointing Maneuver
Exp. 7
Exp. 8
Pointing Maneuver
Exp. 7
Exp. 8
Unused Visibility = 90
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs

Visit

Proposal 10419, Visit 12 Fri Aug 26 01:18:14 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: PCS MODE FINE

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=ACS-SBC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.64 Line Spacing=0.64	Coordinate Frame=POS-TARG Pattern Orientation=0 Angle Between Sides=90 Center Pattern=true		(1), (2), (3-4), (5), (6), (7-8)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	NGC604-CORE	RA: 01 34 32.9000 (23.6370833d) Dec: +30 47 1.00 (30.78361d) Equinox: J2000 Plate Id: (?)		V=16.1+/-0.1	Coordinate Source: HIPPARCOS/TYCHO_CATALOGUE

Comments: The flux refers to the brightest star in the OB association

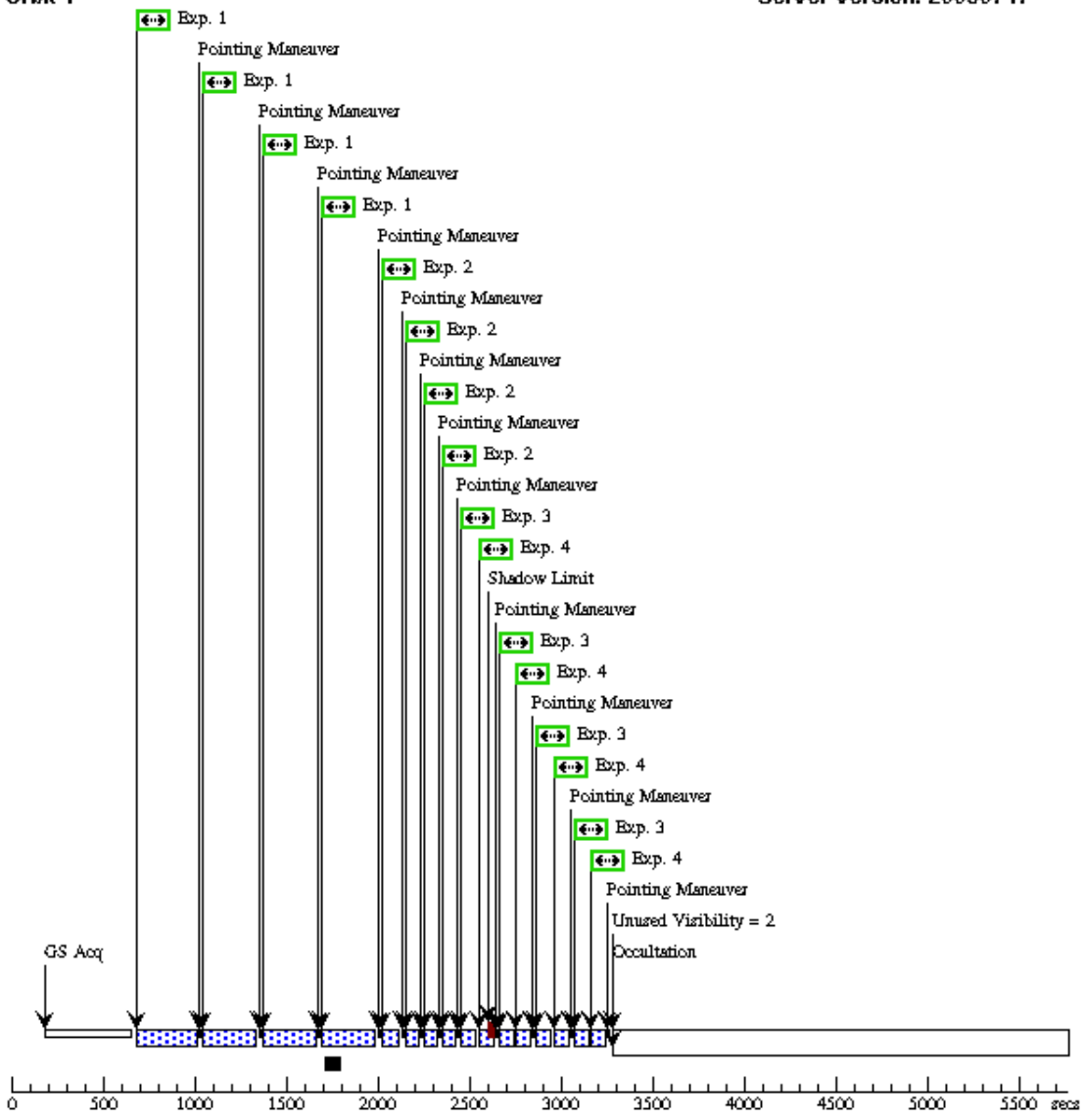
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(7) NGC604-CORE	ACS/SBC, ACCUM, SBC	PR130L		SHADOW	Pattern 1-1 (2)	265.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(7) NGC604-CORE	ACS/SBC, ACCUM, SBC	F122M		SHADOW	Pattern 2-2 (2)	41.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3		(7) NGC604-CORE	ACS/SBC, ACCUM, SBC	F150LP			Pattern 3-4 (2)	30.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
4		(7) NGC604-CORE	ACS/SBC, ACCUM, SBC	F165LP			Pattern 3-4 (2)	30.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
5		(7) NGC604-CORE	ACS/SBC, ACCUM, SBC	PR130L		SHADOW	Pattern 5-5 (2)	270.0 Secs	
								[==>250.0 Secs (Pattern 1)] *[==>250.0 Secs (Pattern 2)]* *[==>349.0 Secs (Pattern 3)]* *[==>250.0 Secs (Pattern 4)]*	***[2]***
6		(7) NGC604-CORE	ACS/SBC, ACCUM, SBC	F122M		SHADOW	Pattern 6-6 (2)	41.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
7		(7) NGC604-CORE	ACS/SBC, ACCUM, SBC	F150LP			Pattern 7-8 (2)	30.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
8		(7) NGC604-CORE	ACS/SBC, ACCUM, SBC	F165LP			Pattern 7-8 (2)	30.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***

Orbit Structure



Orbit Structure (continued)