11647 - A Deep Exploration of Classes of Long Period Variable Stars in M31

Cycle: 17, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) M31-IRFIELD1	ACS/WFC WFC3/IR	1	26-Jun-2009 21:07:02.0	yes
02	(2) M31-IRFIELD2	ACS/WFC WFC3/IR	1	26-Jun-2009 21:07:07.0	yes
03	(3) M31-IRFIELD3 (4) M31-IRFIELD4 (20) M31-IRFIELD20	ACS/WFC WFC3/IR	1	26-Jun-2009 21:07:14.0	yes
04	(11) M31-IRFIELD11 (12) M31-IRFIELD12 (21) M31-IRFIELD21	ACS/WFC WFC3/IR	1	26-Jun-2009 21:07:21.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
05	(5) M31-IRFIELD5 (6) M31-IRFIELD6 (22) M31-IRFIELD22	ACS/WFC WFC3/IR	1	26-Jun-2009 21:07:31.0	yes
06	(13) M31-IRFIELD13 (14) M31-IRFIELD14 (23) M31-IRFIELD23	ACS/WFC WFC3/IR	1	26-Jun-2009 21:07:37.0	yes
07	(7) M31-IRFIELD7	ACS/WFC WFC3/IR	1	26-Jun-2009 21:07:41.0	yes
08	(8) M31-IRFIELD8	ACS/WFC WFC3/IR	1	26-Jun-2009 21:07:44.0	yes

8 Total Orbits Used

ABSTRACT

We propose a thrifty but information-packed investigation with WFC3/IR F160W and F110W providing crucial information about Long Period Variables in M31, at a level of detail that has recently allowed the discovery of new variable star classes in the Magellanic Clouds, a very different stellar population. These observations are buttressed by an extensive map of the same fields with ACS and WFPC2 exposures in F555W and F814W, and a massive ground-based imaging patrol producing well-sampled light curves for more than 400,000 variable stars. Our primary goal is to collect sufficient NIR data in order to analyze and classify the huge number of long-period variables in our catalog (see below) through Period-Luminosity (P/L) diagrams. We will produce accurate P/L diagrams for both the bulge and a progression of locations throughout the disk of M31. These diagrams will be similar in quality to those currently in the Magellanic Clouds, with their lower metallicity, radically different star formation history, and larger spread in distance to the variables. M31 offers an excellent chance to study more typical disk populations, in a manner which might be extended to more distant galaxies where such variables are still visible, probing a much more evenly spread progenitor age distribution than cepheids (and perhaps useful as a distance scale alternative or cross-check). Our data will also provide a massive and unique color-magnitude dataset; we expect that this study will produce several important results, among them a better understanding of P/L and P/L-color relations for pulsating variables which are essential to the extragalactic distance ladder. We will view these variables at a common distance over a range of

metallicities (eliminating the distance-error vs. metallicity ambiguity between the LMC and SMC), allow further insight into possible faint-variable mass-loss for higher metallicities, and in general produce a sample more typical of giant disk galaxies predominant in many studies.

OBSERVING DESCRIPTION

There are two variants of the observing strategy depending on the density of stars in the WFC3 IR field. For Visits 1, 2, 7 & 8 of one orbit apiece, there is only one pointing per orbit, and for each field a primary NSAMP=14 or 15, STEP200 IR exposure is made in each of F110W and F160W, respectively. Meanwhile a parallel ACS/WFC CR-SPLIT=2 exposure of 1083s or 1283s is made in each of F555W and F814W, respectively. Each of these four Visits is paired with another visit for which the IR exposure is positioned within the ACS field of the paired visit, and vice versa (with ORIENT angles 180 degrees apart between the two visits). For Visits 3, 4, 5 & 6 of one orbit apiece, there are two fields like the one described above, but with shorter exposures in both WFC3/IR and ACS/WFC . These are taken within the same orbit by first taking a short pair of WFC3/IR exposures half-way in between, and then making small (less than 2 arcmin) Pointing Manuevers from this central pointing, meaning that a second Guide Star Acqusition is not needed. For these Visits 3, 4, 5 & 6, Exposures 1 & 2 are useful for photometrically tying together the fields in the later pointings in these Visits, and for increasing the counts of bright stars. For these Visits 3, 4, 5 & 6, some of the WFC3/IR and ACS/WFC fields overlap in the same manner as with Visits 1, 2, 7 & 8.

JUSTIFICATION FOR VISIT TIMING REQUIREMENTS:

We have selected Visits 1 and 6 as examples of each of the two basic observational strategies for a one-orbit visit, and we are requsting that these be executed in calendar year 2009 to make absolutely sure that the observational strategy produces suitable results. While we are confident that both observational strategies will work, but they are challenging. We feel that the "Before" conditions on Visits 1 and 6 are prudent and justified.

Visit

Proposal 11647, Visit 01, implementation Sat Jun 27 01:07:47 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: ORIENT 217D TO 219 D; BEFORE 22-AUG-2009:11:59:00

Diagnostics

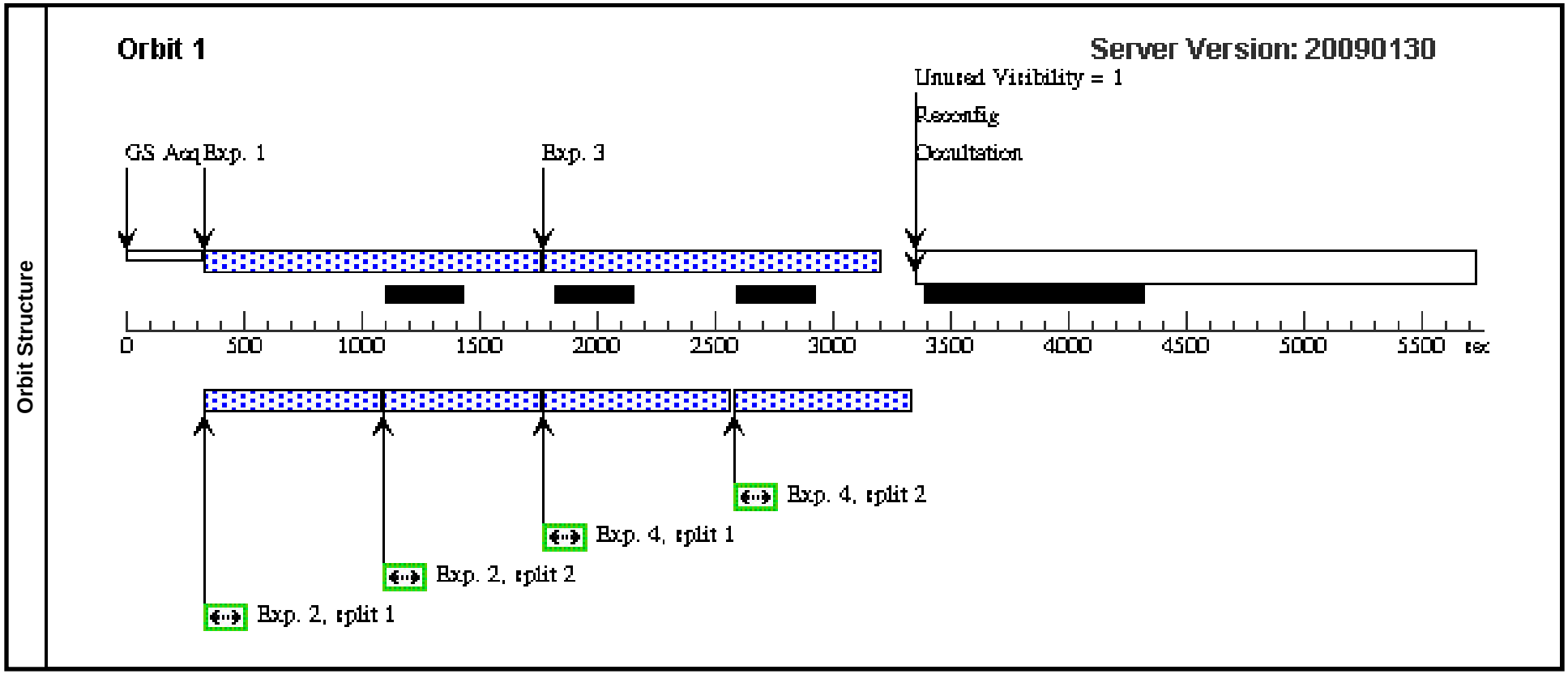
(Visit 01) Warning (Orbit Planner): PARALLELS SIGNIFICANTLY EXTEND ALIGNMENT TIME

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	M31-IRFIELD1	RA: 00 41 57.2400 (10.4885000d) Dec: +41 24 13.40 (41.40372d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	1.0101	(1) M31-IRFIELD1	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=14; SAMP-SEQ=STEP200	GS ACQ SCENARIO BASE1B3	Prime + Parallel Group 1-2	*[==>]*	***[1]***
2	1.0102	(1) M31-IRFIELD1	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=2		Prime + Parallel Group 1-2	1083 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	1.0201	(1) M31-IRFIELD1	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=14; SAMP-SEQ=STEP200		Prime + Parallel Group 3-4	*[==>]*	***[1]***
4	1.0202	(1) M31-IRFIELD1	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2		Prime + Parallel Group 3-4	1260 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20090130
Unused Visibility = 1
Reconfig
Occultation
GS Acq
Exp. 1
Exp. 3
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 4, split 2
Exp. 4, split 1
Exp. 2, split 2
Exp. 2, split 1

Visit

Proposal 11647, Visit 02, implementation Sat Jun 27 01:07:48 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: ORIENT 217D TO 219 D

Diagnostics

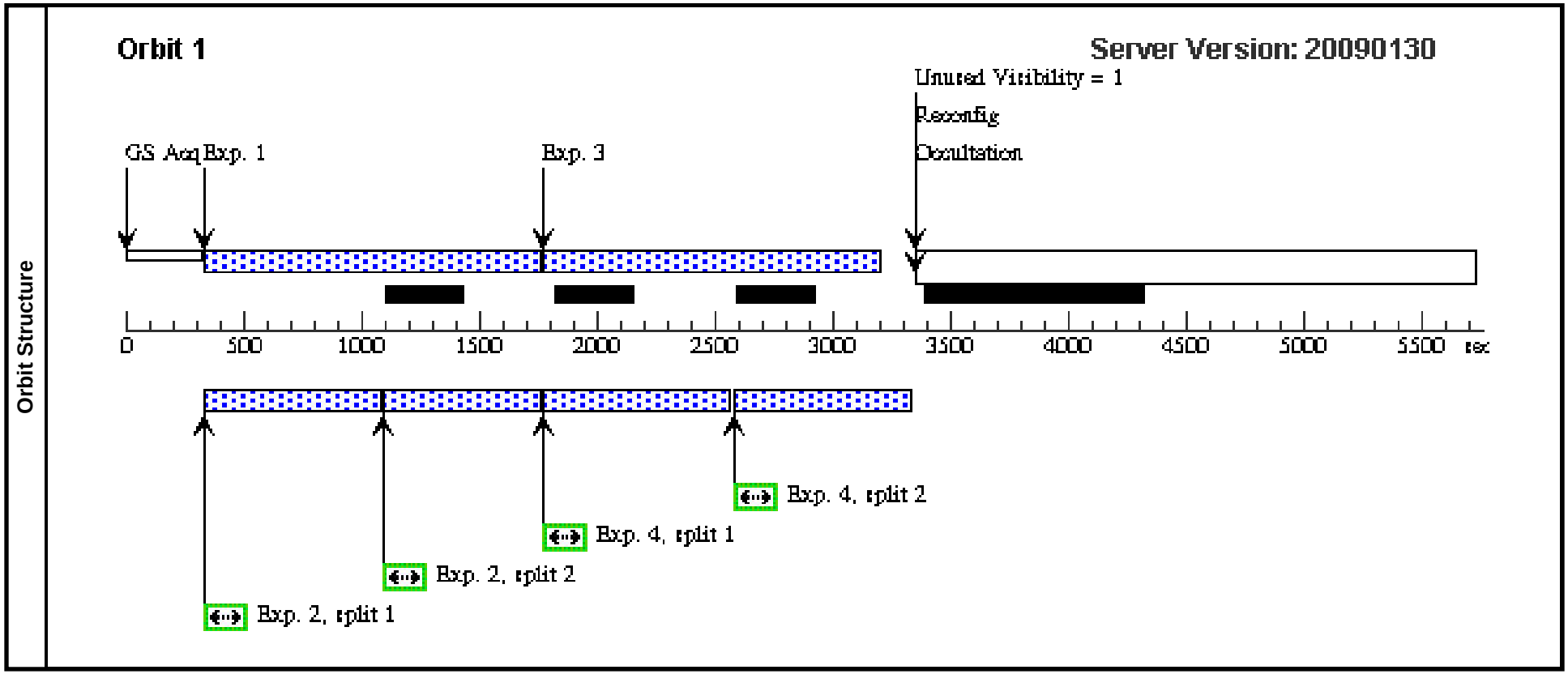
(Visit 02) Warning (Orbit Planner): PARALLELS SIGNIFICANTLY EXTEND ALIGNMENT TIME

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	M31-IRFIELD2	RA: 00 42 4.9500 (10.5206250d) Dec: +41 26 18.00 (41.43833d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	2.0101	(2) M31-IRFIELD2	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=14; SAMP-SEQ=STEP200	GS ACQ SCENARIO BASE1B3	Prime + Parallel Group 1-2	*[==>]*	***[1]***
2	2.0102	(2) M31-IRFIELD2	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=2		Prime + Parallel Group 1-2	1083 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	2.0201	(2) M31-IRFIELD2	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=14; SAMP-SEQ=STEP200		Prime + Parallel Group 3-4	*[==>]*	***[1]***
4	2.0202	(2) M31-IRFIELD2	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2		Prime + Parallel Group 3-4	1260 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20090130
Unused Visibility = 1
Reconfig
Occultation
GS Acq
Exp. 1
Exp. 3
0
500
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2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 4, split 2
Exp. 4, split 1
Exp. 2, split 2
Exp. 2, split 1

Visit

Proposal 11647, Visit 03, implementation Sat Jun 27 01:07:48 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: ORIENT 32D TO 44 D

Diagnostics

(Visit 03) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

(Visit 03) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	M31-IRFIELD3	RA: 00 42 28.6800 (10.6195000d) Dec: +41 25 6.10 (41.41836d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS
(4)	M31-IRFIELD4	RA: 00 42 36.4900 (10.6520417d) Dec: +41 27 10.80 (41.45300d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS
(20)	M31-IRFIELD20	RA: 00 42 32.5800 (10.6357500d) Dec: +41 26 8.50 (41.43569d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS

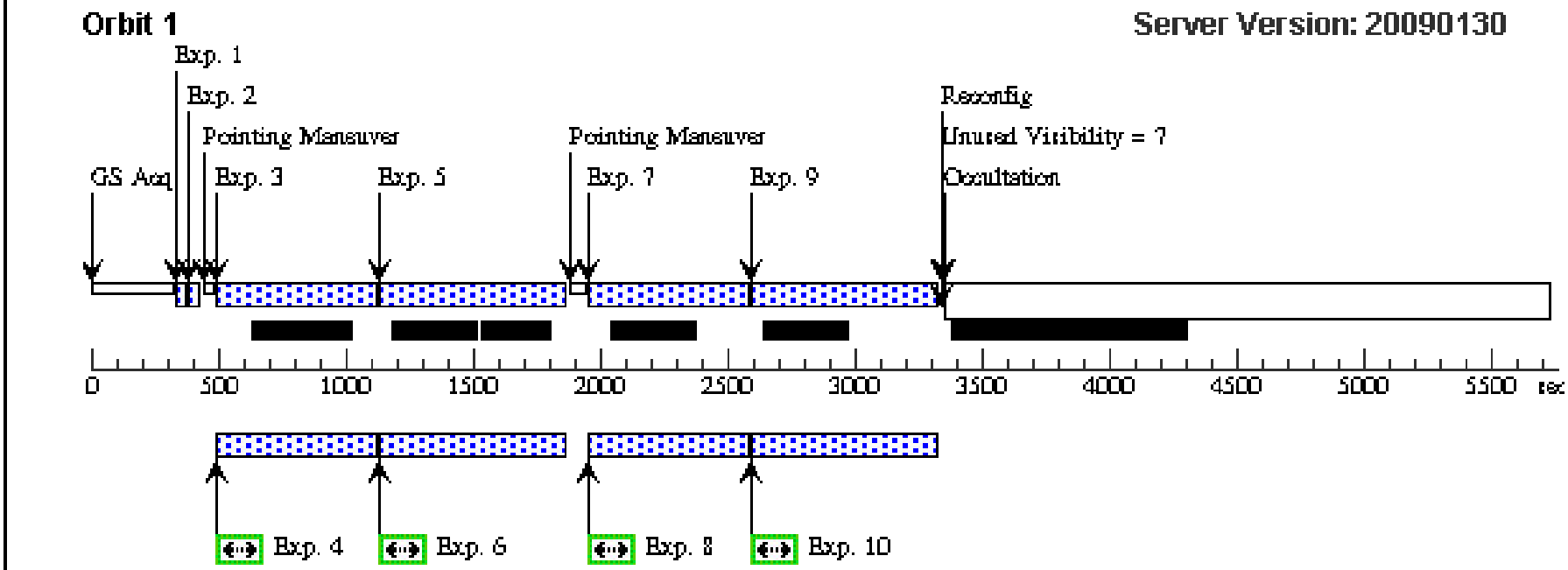
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(20) M31-IRFIELD20	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=4; SAMP-SEQ=STEP200		Same Guide Stars	*[==>]*	***[1]***
2		(20) M31-IRFIELD20	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=5; SAMP-SEQ=STEP200		Same Guide Stars	*[==>]*	***[1]***
3	3.0101	(3) M31-IRFIELD3	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=10; SAMP-SEQ=STEP200		Same Guide Stars Prime + Parallel Group 3-4	*[==>]*	***[1]***
4	3.0102	(3) M31-IRFIELD3	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=NO		Same Guide Stars Prime + Parallel Group 3-4	420 Secs *[==>]*	***[1]***
5	3.0201	(3) M31-IRFIELD3	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=13; SAMP-SEQ=STEP100		Same Guide Stars Prime + Parallel Group 5-6	*[==>]*	***[1]***
6	3.0202	(3) M31-IRFIELD3	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=NO		Same Guide Stars Prime + Parallel Group 5-6	570 Secs *[==>]*	***[1]***
7	3.0301	(4) M31-IRFIELD4	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=10; SAMP-SEQ=STEP200		Same Guide Stars Prime + Parallel Group 7-8	*[==>]*	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
8	3.0302	(4) M31-IRFIELD4	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=NO		Same Guide Stars	420 Secs	
							Prime + Parallel Group 7-8	*[==>]*	***[1]***
9	3.0401	(4) M31-IRFIELD4	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=13; SAMP-SEQ=STEP100		Same Guide Stars	*[==>]*	***[1]***
							Prime + Parallel Group 9-10		
10	3.0402	(4) M31-IRFIELD4	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=NO		Same Guide Stars	570 Secs	
							Prime + Parallel Group 9-10	*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 11647, Visit 04, implementation Sat Jun 27 01:07:49 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: ORIENT 32D TO 44 D

Diagnostics

(Visit 04) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

(Visit 04) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	M31-IRFIELD11	RA: 00 42 20.8700 (10.5869583d) Dec: +41 23 1.40 (41.38372d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS
(12)	M31-IRFIELD12	RA: 00 42 13.0600 (10.5544167d) Dec: +41 20 57.70 (41.34936d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS
(21)	M31-IRFIELD21	RA: 00 42 16.9200 (10.5705000d) Dec: +41 21 59.50 (41.36653d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS

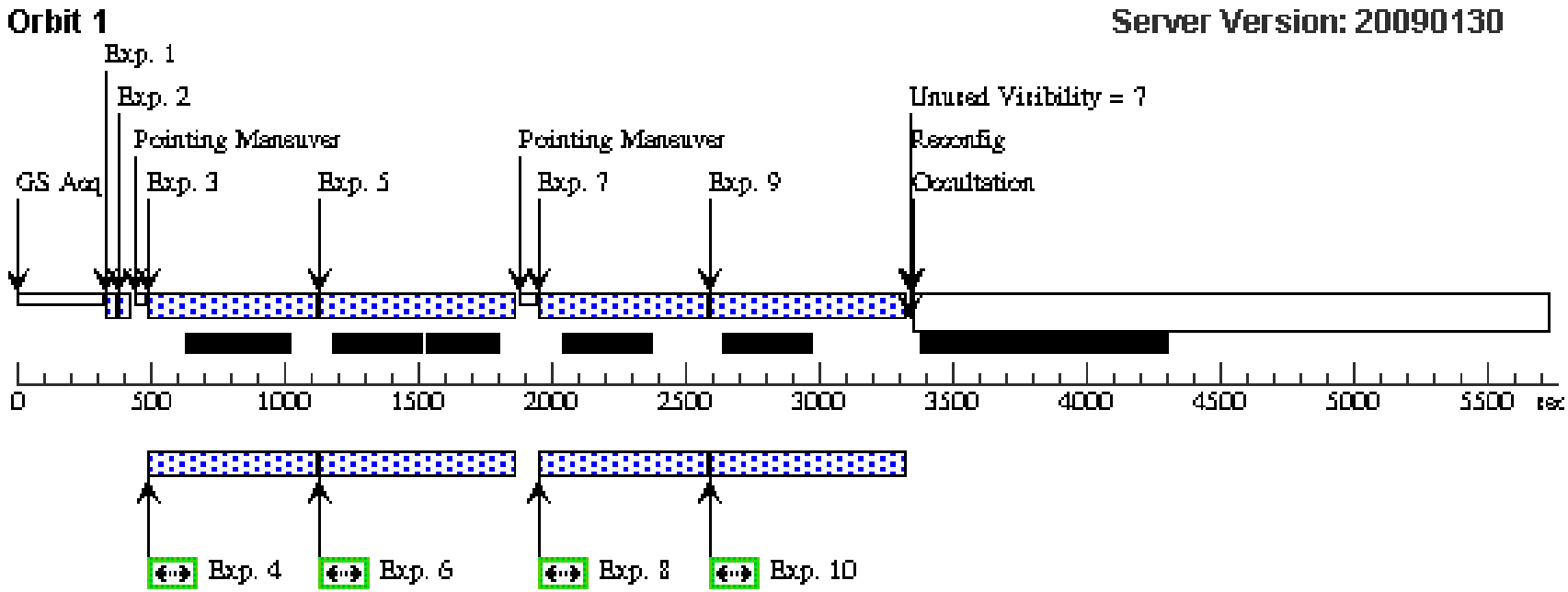
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(21) M31-IRFIELD21	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=4; SAMP-SEQ=STEP200		Same Guide Stars	*[==>]*	***[1]***
2		(21) M31-IRFIELD21	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=5; SAMP-SEQ=STEP200		Same Guide Stars	*[==>]*	***[1]***
3	4.0101	(11) M31-IRFIELD11	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=10; SAMP-SEQ=STEP200		Same Guide Stars Prime + Parallel Group 3-4	*[==>]*	***[1]***
4	4.0102	(11) M31-IRFIELD11	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=NO		Same Guide Stars Prime + Parallel Group 3-4	420 Secs *[==>]*	***[1]***
5	4.0201	(11) M31-IRFIELD11	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=13; SAMP-SEQ=STEP100		Same Guide Stars Prime + Parallel Group 5-6	*[==>]*	***[1]***
6	4.0202	(11) M31-IRFIELD11	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=NO		Same Guide Stars Prime + Parallel Group 5-6	570 Secs *[==>]*	***[1]***
7	4.0301	(12) M31-IRFIELD12	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=10; SAMP-SEQ=STEP200		Same Guide Stars Prime + Parallel Group 7-8	*[==>]*	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
8	4.0302	(12) M31-IRFIELD1 2	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=NO		Same Guide Stars	420 Secs	
							Prime + Parallel Group 7-8	*[==>]*	***[1]***
9	4.0401	(12) M31-IRFIELD1 2	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=13; SAMP-SEQ=STEP100		Same Guide Stars	*[==>]*	***[1]***
							Prime + Parallel Group 9-10		
10	4.0402	(12) M31-IRFIELD1 2	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=NO		Same Guide Stars	570 Secs	
							Prime + Parallel Group 9-10	*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 11647, Visit 05, implementation Sat Jun 27 01:07:50 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: ORIENT 217D TO 219 D

Diagnostics

(Visit 05) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

(Visit 05) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	M31-IRFIELD5	RA: 00 42 57.7300 (10.7405417d) Dec: +41 06 11.50 (41.10319d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS
(6)	M31-IRFIELD6	RA: 00 43 5.5400 (10.7730833d) Dec: +41 08 16.20 (41.13783d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS
(22)	M31-IRFIELD22	RA: 00 43 1.1300 (10.7547083d) Dec: +41 07 13.80 (41.12050d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS

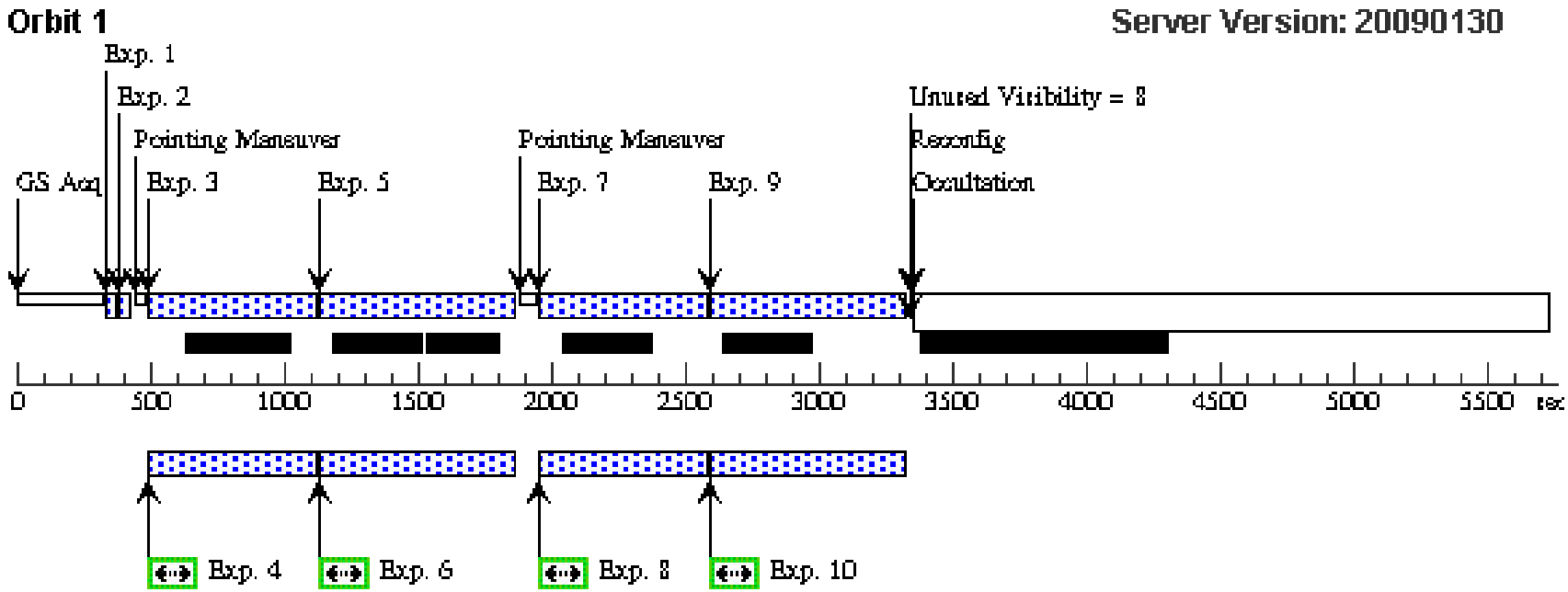
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(22) M31-IRFIELD22	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=4; SAMP-SEQ=STEP200		Same Guide Stars	*[==>]*	***[1]***
2		(22) M31-IRFIELD22	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=5; SAMP-SEQ=STEP200		Same Guide Stars	*[==>]*	***[1]***
3	5.0101	(5) M31-IRFIELD5	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=10; SAMP-SEQ=STEP200		Same Guide Stars Prime + Parallel Group 3-4	*[==>]*	***[1]***
4	5.0102	(5) M31-IRFIELD5	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=NO		Same Guide Stars Prime + Parallel Group 3-4	420 Secs *[==>]*	***[1]***
5	5.0201	(5) M31-IRFIELD5	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=13; SAMP-SEQ=STEP100		Same Guide Stars Prime + Parallel Group 5-6	*[==>]*	***[1]***
6	5.0202	(5) M31-IRFIELD5	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=NO		Same Guide Stars Prime + Parallel Group 5-6	570 Secs *[==>]*	***[1]***
7	5.0301	(6) M31-IRFIELD6	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=10; SAMP-SEQ=STEP200		Same Guide Stars Prime + Parallel Group 7-8	*[==>]*	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
8	5.0302	(6) M31-IRFIELD6	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=NO		Same Guide Stars	420 Secs	
							Prime + Parallel Group 7-8	*[==>]*	***[1]***
9	5.0401	(6) M31-IRFIELD6	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=13; SAMP-SEQ=STEP100		Same Guide Stars	*[==>]*	***[1]***
							Prime + Parallel Group 9-10		
10	5.0402	(6) M31-IRFIELD6	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=NO		Same Guide Stars	570 Secs	
							Prime + Parallel Group 9-10	*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 11647, Visit 06, implementation Sat Jun 27 01:07:51 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: ORIENT 217D TO 219 D; BEFORE 27-AUG-2009:11:59:00

Diagnostics

(Visit 06) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

(Visit 06) Warning (Orbit Planner): MERGING RULE VIOLATED DURING AUTOMATIC MERGING

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	M31-IRFIELD13	RA: 00 43 13.3500 (10.8056250d) Dec: +41 10 20.90 (41.17247d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS
(14)	M31-IRFIELD14	RA: 00 43 21.1600 (10.8381667d) Dec: +41 12 25.60 (41.20711d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS
(23)	M31-IRFIELD23	RA: 00 43 17.2500 (10.8218750d) Dec: +41 11 23.20 (41.18978d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS

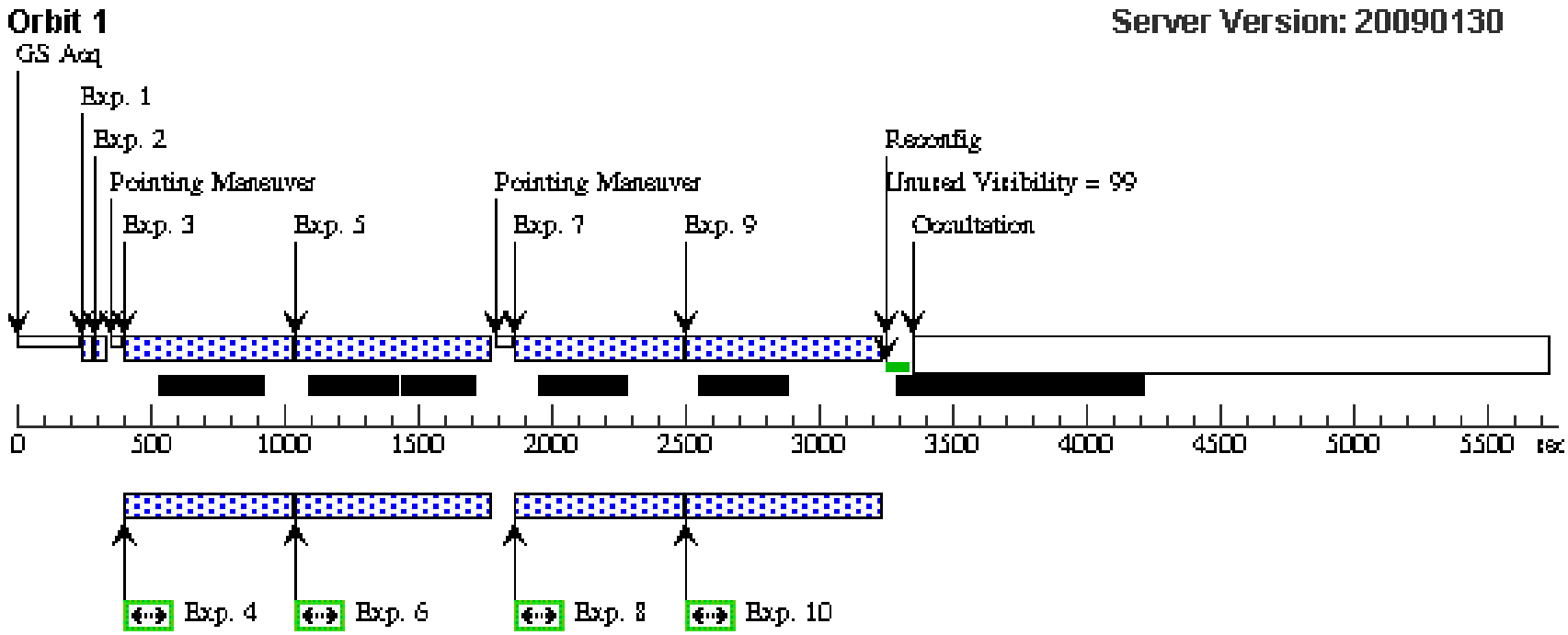
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(23) M31-IRFIELD23	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=4; SAMP-SEQ=STEP200	GS ACQ SCENARIO SINGLE	Same Guide Stars	*[==>]*	***[1]***
2		(23) M31-IRFIELD23	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=5; SAMP-SEQ=STEP200		Same Guide Stars	*[==>]*	***[1]***
3	6.0101	(13) M31-IRFIELD13	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=10; SAMP-SEQ=STEP200		Same Guide Stars Prime + Parallel Group 3-4	*[==>]*	***[1]***
4	6.0102	(13) M31-IRFIELD13	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=NO		Same Guide Stars Prime + Parallel Group 3-4	420 Secs *[==>]*	***[1]***
5	6.0201	(13) M31-IRFIELD13	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=13; SAMP-SEQ=STEP100		Same Guide Stars Prime + Parallel Group 5-6	*[==>]*	***[1]***
6	6.0202	(13) M31-IRFIELD13	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=NO		Same Guide Stars Prime + Parallel Group 5-6	570 Secs *[==>]*	***[1]***
7	6.0101	(14) M31-IRFIELD14	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=10; SAMP-SEQ=STEP200		Same Guide Stars Prime + Parallel Group 7-8	*[==>]*	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
8	6.0102	(14) M31-IRFIELD14	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=NO		Same Guide Stars	420 Secs	
							Prime + Parallel Group 7-8	*[==>]*	***[1]***
9	6.0201	(14) M31-IRFIELD14	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=13; SAMP-SEQ=STEP100		Same Guide Stars	*[==>]*	***[1]***
							Prime + Parallel Group 9-10		
10	6.0202	(14) M31-IRFIELD14	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=NO		Same Guide Stars	570 Secs	
							Prime + Parallel Group 9-10	*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 11647, Visit 07, implementation Sat Jun 27 01:07:51 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: ORIENT 32D TO 44 D

Diagnostics

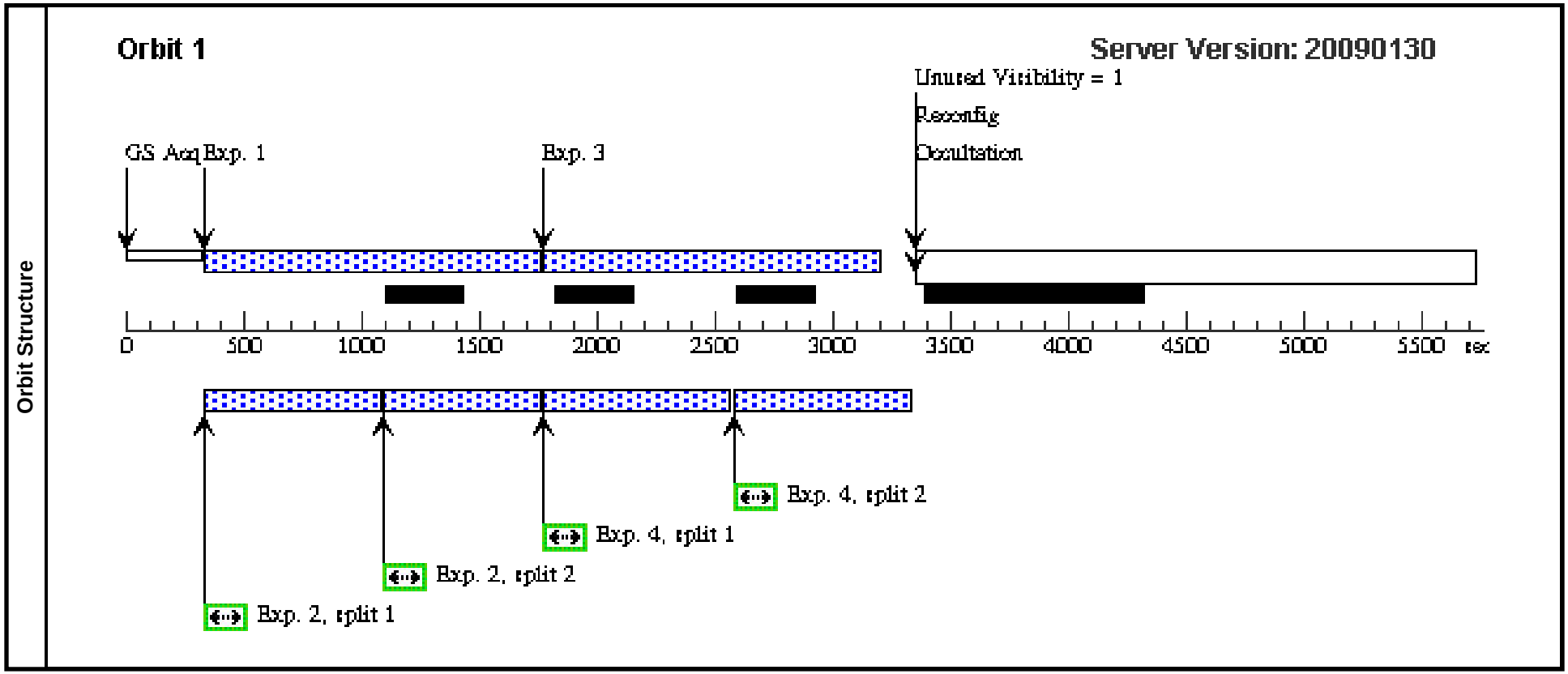
(Visit 07) Warning (Orbit Planner): PARALLELS SIGNIFICANTLY EXTEND ALIGNMENT TIME

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	M31-IRFIELD7	RA: 00 43 28.1600 (10.8673333d) Dec: +41 06 54.50 (41.11514d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	7.0101	(7) M31-IRFIELD7	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=14; SAMP-SEQ=STEP200		Prime + Parallel Group 1-2	*[==>]*	***[1]***
2	7.0102	(7) M31-IRFIELD7	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=2		Prime + Parallel Group 1-2	1083 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	7.0201	(7) M31-IRFIELD7	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=14; SAMP-SEQ=STEP200		Prime + Parallel Group 3-4	*[==>]*	***[1]***
4	7.0202	(7) M31-IRFIELD7	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2		Prime + Parallel Group 3-4	1260 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20090130
Unused Visibility = 1
Reconfig
Occultation
GS Acq
Exp. 1
Exp. 3
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 4, split 2
Exp. 4, split 1
Exp. 2, split 2
Exp. 2, split 1

Visit

Proposal 11647, Visit 08, implementation Sat Jun 27 01:07:52 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: ORIENT 32D TO 44 D

Diagnostics

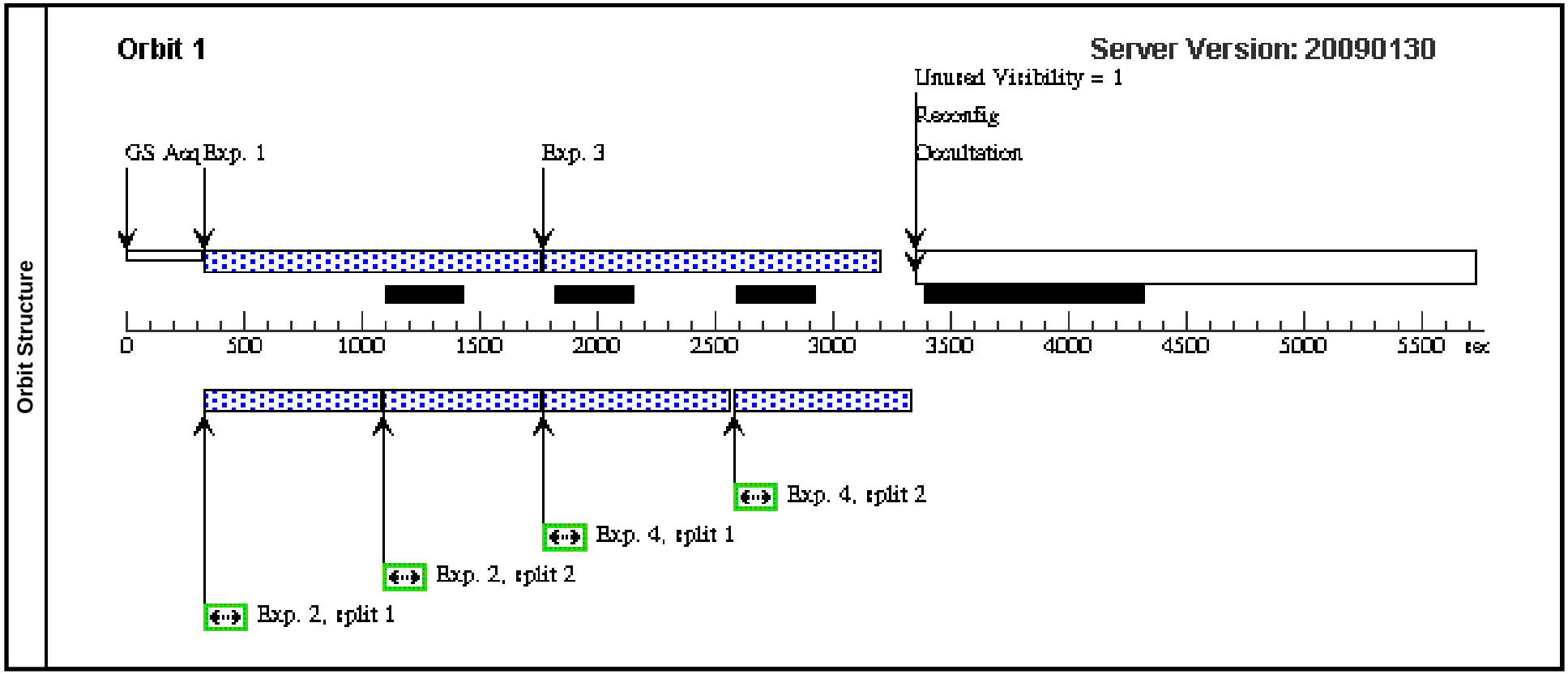
(Visit 08) Warning (Orbit Planner): PARALLELS SIGNIFICANTLY EXTEND ALIGNMENT TIME

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	M31-IRFIELD8	RA: 00 43 36.4700 (10.9019583d) Dec: +41 09 4.20 (41.15117d) Equinox: J2000		V=22+/-3	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	8.0101	(8) M31-IRFIELD8	WFC3/IR, MULTIACCUM, IR-FIX	F110W	NSAMP=14; SAMP-SEQ=STEP200	GS ACQ SCENARIO BASE1B3	Prime + Parallel Group 1-2	*[==>]*	***[1]***
2	8.0102	(8) M31-IRFIELD8	ACS/WFC, ACCUM, WFC-FIX	F555W	CR-SPLIT=2		Prime + Parallel Group 1-2	1083 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3	8.0201	(8) M31-IRFIELD8	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=14; SAMP-SEQ=STEP200		Prime + Parallel Group 3-4	*[==>]*	***[1]***
4	8.0202	(8) M31-IRFIELD8	ACS/WFC, ACCUM, WFC-FIX	F814W	CR-SPLIT=2		Prime + Parallel Group 3-4	1260 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20090130
Unused Visibility = 1
Reconfig
Occultation
GS Acq
Exp. 1
Exp. 3
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 4, split 2
Exp. 4, split 1
Exp. 2, split 2
Exp. 2, split 1