10799 - Photometric Mapping of Vesta's Southern Hemisphere

Cycle: 15, 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) VESTA	WFPC2	1	21-May-2007 18:07:17.0	yes
02	(1) VESTA	WFPC2	1	21-May-2007 18:07:25.0	yes
03	(1) VESTA	WFPC2	1	21-May-2007 18:07:32.0	yes
04	(1) VESTA	WFPC2	1	21-May-2007 18:07:39.0	yes
05	(1) VESTA	WFPC2	1	21-May-2007 18:07:50.0	yes
06	(1) VESTA	WFPC2	1	21-May-2007 18:07:56.0	yes
07	(1) VESTA	WFPC2	1	21-May-2007 18:08:02.0	yes

7 Total Orbits Used

ABSTRACT

We propose to image asteroid 4 Vesta throughout one complete rotation during its opposition and close approach to Earth in May of 2007 in four filters for the purposes of improving knowledge of its spin pole, size, shape, albedo and composition across its surface. We will conduct a satellite search. Multi-filter imaging will extend the range of photometric mapping into the southern hemisphere where a large basin exists, and will extend compositional mapping further into the southern hemisphere than previous observations. The results will improve our understanding of protoplanetary processes and support scientific planning for NASA's Dawn mission to orbit Vesta 2011.

OBSERVING DESCRIPTION

We plan to image asteroid 4 Vesta through one complete rotation during its opposition and close approach to Earth in May of 2007 in four broad band filters for the purposes of improving knowledge of its spin pole, size, shape, albedo and composition across its surface. We will conduct a search for satellites. Multi-filter imaging at this opposition will extend the range of photometric mapping into the southern hemisphere of Vesta where a large basin exists, and will extend compositional mapping further into the southern hemisphere than previous observations. The results will improve our understanding of protoplanetary processes and support scientific planning for NASA's Dawn mission to orbit Vesta in 2011.

REAL TIME JUSTIFICATION

none

CALIBRATION JUSTIFICATION

none

ADDITIONAL COMMENTS

Time critical observing:

Our primary objective of dense longitudinal mapping of Vesta is achieved with seven visits to Vesta. The first four visits are sequential and occur within 4 orbits. There is a gap of 31 orbits from the start of the first visit, then the last three visits are sequential. This spacing gives complete and

fairly uniformly spaced longitudinal coverage and is controlled by the rotation period of Vesta (5.342 hrs) relative to the orbital period of HST.

Observations can begin on May 14th. Obsrving earlier, we lose spatial resolution. We want to complete our observations before May 20th, 2:00 hr, as the phase function begins its opposition surge at 6 degrees. We want to observe at phase angle values larger than 6 degrees. We will be able to constrain a roughness parameter with photometric modeling when we observe at phase angle between 7-9 degrees.

We can meet the objective of aquiring albedo maps if the observations are scheduled between May 17 and June 4, 2007, but we lose the information on surface roughness. So we prefer to complete observations by May 20th.

Visit

Proposal 10799, Visit 01, scheduling Mon May 21 17:08:05 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: PCS MODE FINE; BETWEEN 14-MAY-2007:05:00:00 AND 20-MAY-2007:02:00:00; SEQ 01,02,03,04 WITHIN 4 Orbits

Comments: The most important factor is to achieve complete and uniform rotational coverage. This can be done by separating the start of visit 4 from the start of visit 5 by 31 orbits. If these two visits are more than 31 orbits apart, the range in phase angle and spatial resolution become problematic to the mapping. Note that this value has been revised from the old value in the original Phase II proposal, which has been updated here accordingly.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(1)	VESTA	TYPE=ASTEROID,A=2.36195625573717, E=0.08936578245846,I=7.1337975921628 2,O=103.9183796862978,W=150.1801484 597885,M=341.5920160475586,EQUINO X=J2000,EPOCH=10-APR-2007:00:00:00			PHASE OF VESTA FROM EARTH BETWEEN 7.0 10.0, RANGE VESTA EARTH LT 1.1814, RANGE VESTA EARTH GT 1.159

Comments: We are targeting the southern hemisphere of Vesta (maximum southern sub-Earth latitude).
First priority: Albedo maps
Acquire complete rotational coverage in as few orbits as possible.
Observe at large enough phase angle to constrain the roughness and avoid opposition surge, between 7-9 degrees.
Achieve high spatial resolution which changes by less than 2/3 pixel in this observing window.
Second priority: Satellite search
The uncertainty in the V magnitude is theoretically 0.01 magnitudes.
source of these data is JPL Small-Body Database.
http://ssd.jpl.nasa.gov/sbdb.cgi
The acquisition uncertainty is most likely driven by uncertainty in the position of the guide stars.

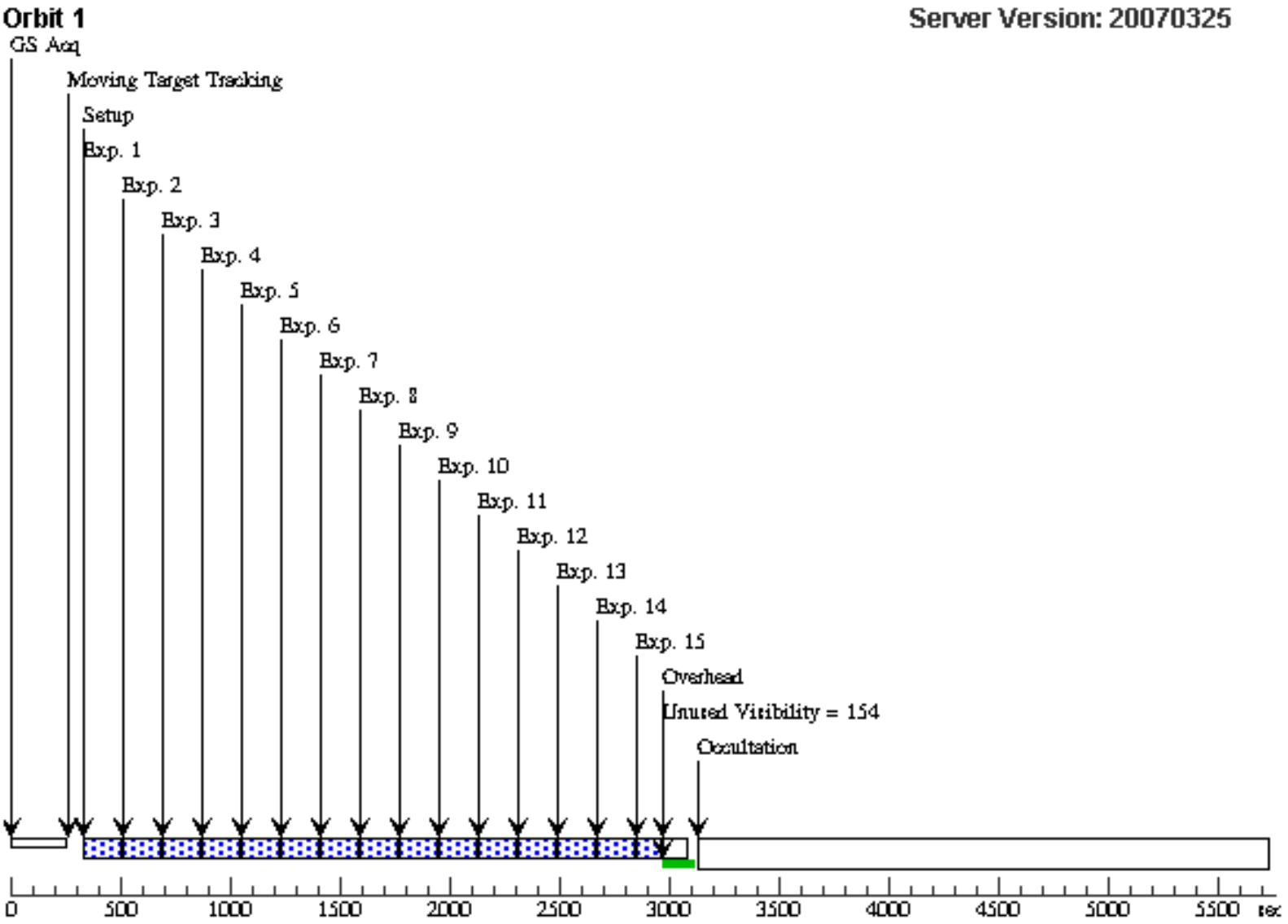
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N		GS ACQ SCENARIO SINGLE		1.2 Secs	
								[==>]	***[1]***
2	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
3	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
4	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
5	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***
6	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
7	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
8	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
9	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
10	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
11	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
12	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
13	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***
14	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
15	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 10799, Visit 02, scheduling Mon May 21 17:08:06 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: PCS MODE FINE; BETWEEN 14-MAY-2007:05:00:00 AND 20-MAY-2007:02:00:00

Comments: The most important factor is to achieve complete and uniform rotational coverage. This can be done by separating the start of visit 4 from the start of visit 5 by 31 orbits. If the visits are more than 31 orbits apart, the range in phase angle and spatial resolution become problematic to the mapping. Note that this value has been revised from the old value in the original Phase II proposal, which has been updated here accordingly.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(1)	VESTA	TYPE=ASTEROID,A=2.36195625573717, E=0.08936578245846,I=7.1337975921628 2,O=103.9183796862978,W=150.1801484 597885,M=341.5920160475586,EQUINO X=J2000,EPOCH=10-APR-2007:00:00:00			PHASE OF VESTA FROM EARTH BETWEEN 7.0 10.0, RANGE VESTA EARTH LT 1.1814, RANGE VESTA EARTH GT 1.159

Comments: We are targeting the southern hemisphere of Vesta (maximum southern sub-Earth latitude).
First priority: Albedo maps
Acquire complete rotational coverage in as few orbits as possible.
Observe at large enough phase angle to constrain the roughness and avoid opposition surge, between 7-9 degrees.
Achieve high spatial resolution which changes by less than 2/3 pixel in this observing window.
Second priority: Satellite search
The uncertainty in the V magnitude is theoretically 0.01 magnitudes.
source of these data is JPL Small-Body Database.
http://ssd.jpl.nasa.gov/sbdb.cgi
The acquisition uncertainty is most likely driven by uncertainty in the position of the guide stars.

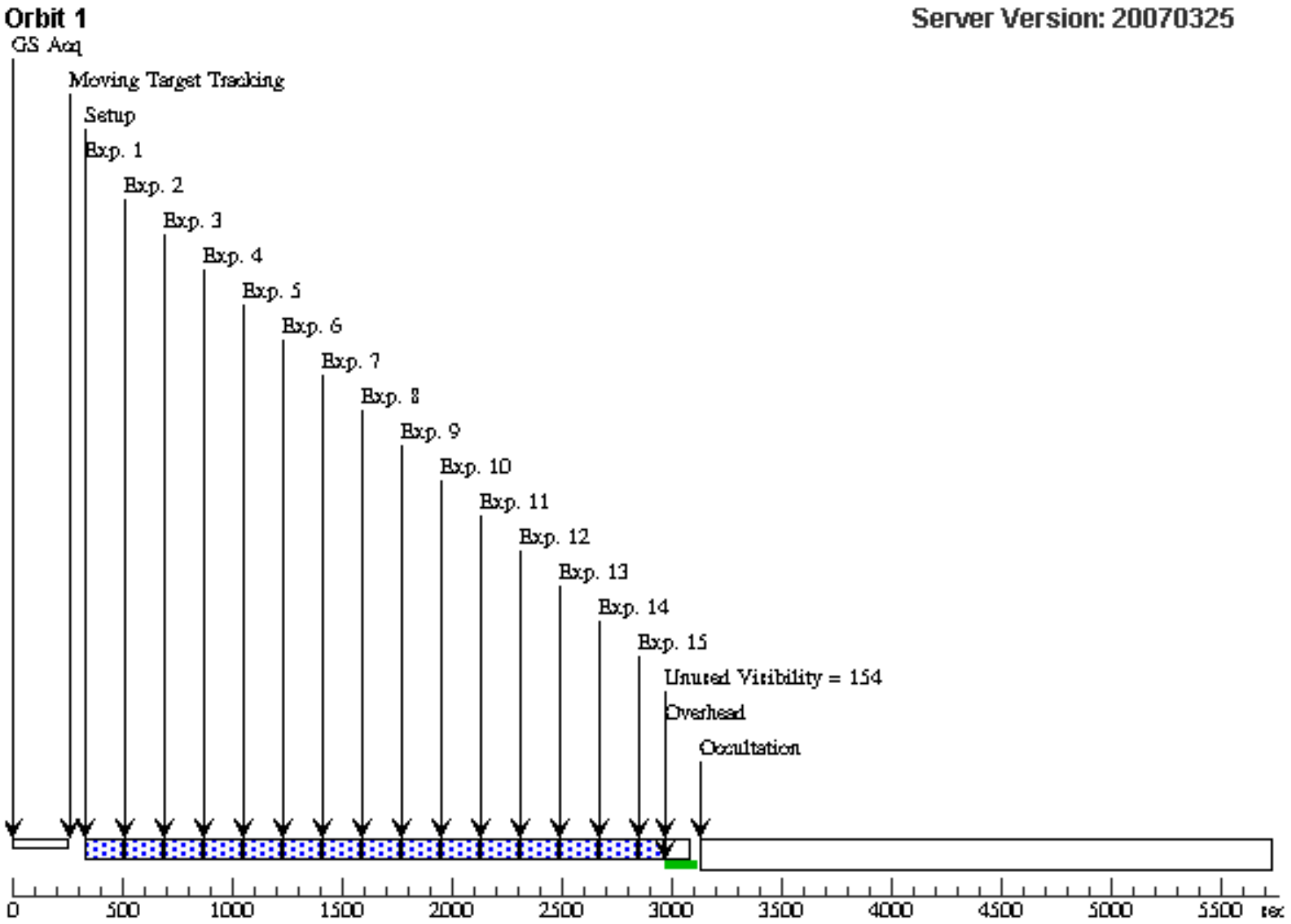
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N		GS ACQ SCENARIO SINGLE		1.2 Secs	
								[==>]	***[1]***
2	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
3	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
4	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
5	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***
6	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
7	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
8	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
9	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
10	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
11	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
12	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
13	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***
14	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
15	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 10799, Visit 03, scheduling Mon May 21 17:08:07 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: PCS MODE FINE; BETWEEN 14-MAY-2007:05:00:00 AND 20-MAY-2007:02:00:00

Comments: The most important factor is to achieve complete and uniform rotational coverage. This can be done by separating the start of visit 4 from the start of visit 5 by 31 orbits. If the visits are more than 31 orbits apart, the range in phase angle and spatial resolution become problematic to the mapping. Note that this value has been revised from the old value in the original Phase II proposal, which has been updated here accordingly.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(1)	VESTA	TYPE=ASTEROID,A=2.36195625573717, E=0.08936578245846,I=7.1337975921628 2,O=103.9183796862978,W=150.1801484 597885,M=341.5920160475586,EQUINO X=J2000,EPOCH=10-APR-2007:00:00:00			PHASE OF VESTA FROM EARTH BETWEEN 7.0 10.0, RANGE VESTA EARTH LT 1.1814, RANGE VESTA EARTH GT 1.159

Comments: We are targeting the southern hemisphere of Vesta (maximum southern sub-Earth latitude).
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Achieve high spatial resolution which changes by less than 2/3 pixel in this observing window.
Second priority: Satellite search
The uncertainty in the V magnitude is theoretically 0.01 magnitudes.
source of these data is JPL Small-Body Database.
http://ssd.jpl.nasa.gov/sbdb.cgi
The acquisition uncertainty is most likely driven by uncertainty in the position of the guide stars.

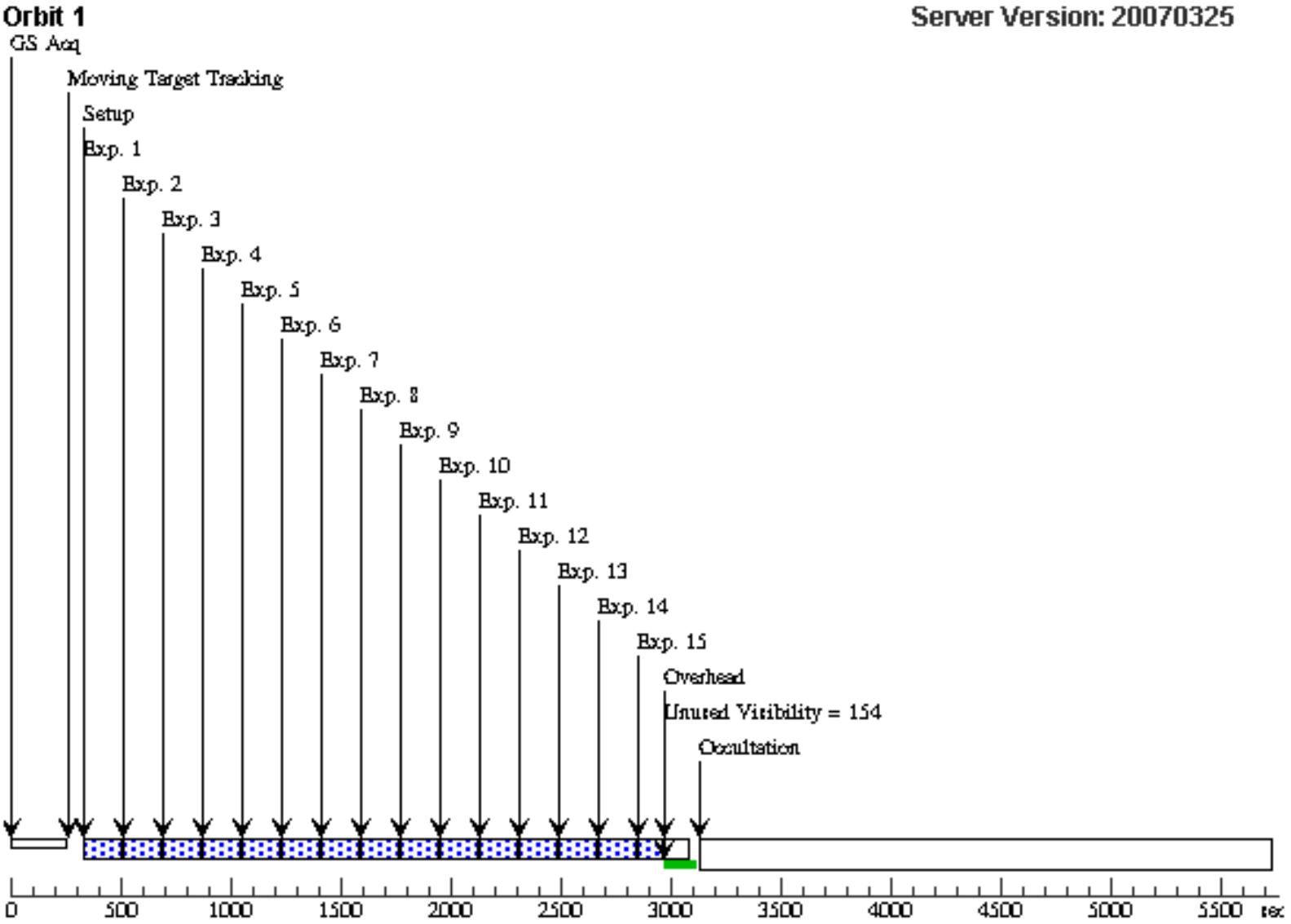
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N		GS ACQ SCENARIO SINGLE		1.2 Secs	
								[==>]	***[1]***
2	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
3	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
4	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
5	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***
6	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
7	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
8	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
9	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
10	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
11	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
12	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
13	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***
14	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
15	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 10799, Visit 04, scheduling Mon May 21 17:08:08 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: PCS MODE FINE; BETWEEN 14-MAY-2007:05:00:00 AND 20-MAY-2007:02:00:00

Comments: The most important factor is to achieve complete and uniform rotational coverage. This can be done by separating the start of visit 4 from the start of visit 5 by (exactly) 31 orbits. If the visits are more than 31 orbits apart, the range in phase angle and spatial resolution become problematic to the mapping. Note that this value has been revised from the old value in the original Phase II proposal, which has been updated here accordingly.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(1)	VESTA	TYPE=ASTEROID,A=2.36195625573717, E=0.08936578245846,I=7.1337975921628 2,O=103.9183796862978,W=150.1801484 597885,M=341.5920160475586,EQUINO X=J2000,EPOCH=10-APR-2007:00:00:00			PHASE OF VESTA FROM EARTH BETWEEN 7.0 10.0, RANGE VESTA EARTH LT 1.1814, RANGE VESTA EARTH GT 1.159

Comments: We are targeting the southern hemisphere of Vesta (maximum southern sub-Earth latitude).
First priority: Albedo maps
Acquire complete rotational coverage in as few orbits as possible.
Observe at large enough phase angle to constrain the roughness and avoid opposition surge, between 7-9 degrees.
Achieve high spatial resolution which changes by less than 2/3 pixel in this observing window.
Second priority: Satellite search
The uncertainty in the V magnitude is theoretically 0.01 magnitudes.
source of these data is JPL Small-Body Database.
http://ssd.jpl.nasa.gov/sbdb.cgi
The acquisition uncertainty is most likely driven by uncertainty in the position of the guide stars.

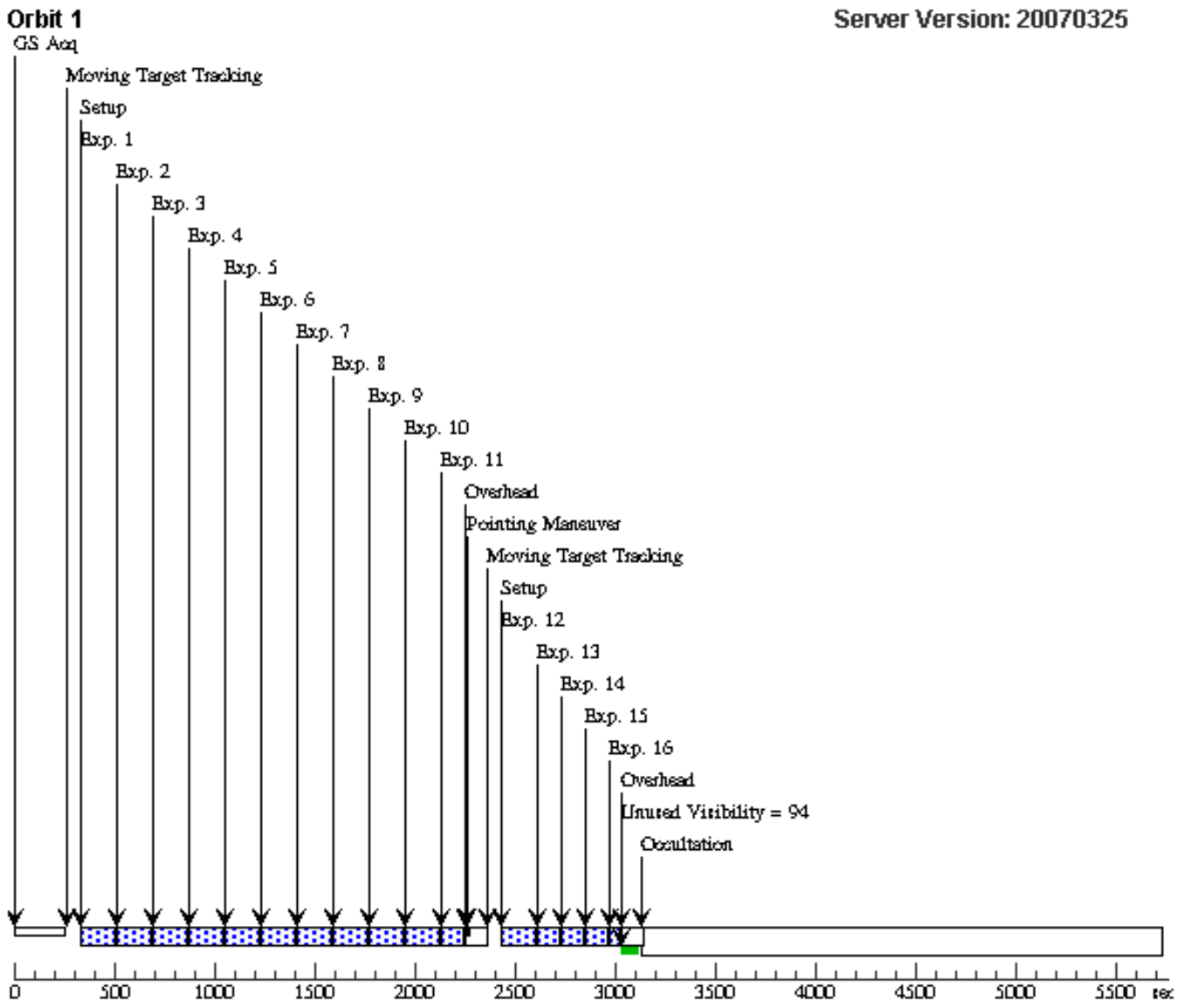
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N		GS ACQ SCENARIO SINGLE	Same Guide Stars	1.2 Secs	
								[==>]	***[1]***
2	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W			Same Guide Stars	0.5 Secs	
								[==>]	***[1]***
3	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
4	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
5	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N			Same Guide Stars	1.2 Secs	
								[==>]	***[1]***
6	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
7	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W			Same Guide Stars	0.5 Secs	
								[==>]	***[1]***
8	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
9	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N			Same Guide Stars	1.2 Secs	
								[==>]	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
10	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
11	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
12	Vesta 702W satellite search	(1) VESTA	WFPC2, IMAGE, WFALL	F702W	CLOCKS=YES		Same Guide Stars	40.0 Secs	
								[==>]	***[1]***
13	Vesta 702W satellite search	(1) VESTA	WFPC2, IMAGE, WFALL	F702W	CLOCKS=YES		Same Guide Stars	40.0 Secs	
								[==>]	***[1]***
14	Vesta 702W satellite search	(1) VESTA	WFPC2, IMAGE, WFALL	F702W	CLOCKS=YES		Same Guide Stars	40.0 Secs	
								[==>]	***[1]***
15	Vesta 702W satellite search	(1) VESTA	WFPC2, IMAGE, WFALL	F702W	CLOCKS=YES		Same Guide Stars	40.0 Secs	
								[==>]	***[1]***
16	Vesta 702W satellite search	(1) VESTA	WFPC2, IMAGE, WFALL	F702W	CLOCKS=YES		Same Guide Stars	40.0 Secs	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 10799, Visit 05, scheduling Mon May 21 17:08:09 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: PCS MODE FINE; AFTER 04 BY 30.9 Orbits TO 31.1 Orbits; SEQ 05,06,07 WITHIN 3 Orbits

Comments: In order to get complete longitudinal coverage of Vesta, which rotates in 5.342 hrs, it is necessary to begin the start of visit 5, 31 orbits after the start of visit 4.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(1)	VESTA	TYPE=ASTEROID,A=2.36195625573717, E=0.08936578245846,I=7.1337975921628 2,O=103.9183796862978,W=150.1801484 597885,M=341.5920160475586,EQUINO X=J2000,EPOCH=10-APR-2007:00:00:00			PHASE OF VESTA FROM EARTH BETWEEN 7.0 10.0, RANGE VESTA EARTH LT 1.1814, RANGE VESTA EARTH GT 1.159

Comments: We are targeting the southern hemisphere of Vesta (maximum southern sub-Earth latitude).
First priority: Albedo maps
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Observe at large enough phase angle to constrain the roughness and avoid opposition surge, between 7-9 degrees.
Achieve high spatial resolution which changes by less than 2/3 pixel in this observing window.
Second priority: Satellite search
The uncertainty in the V magnitude is theoretically 0.01 magnitudes.
source of these data is JPL Small-Body Database.
http://ssd.jpl.nasa.gov/sbdb.cgi
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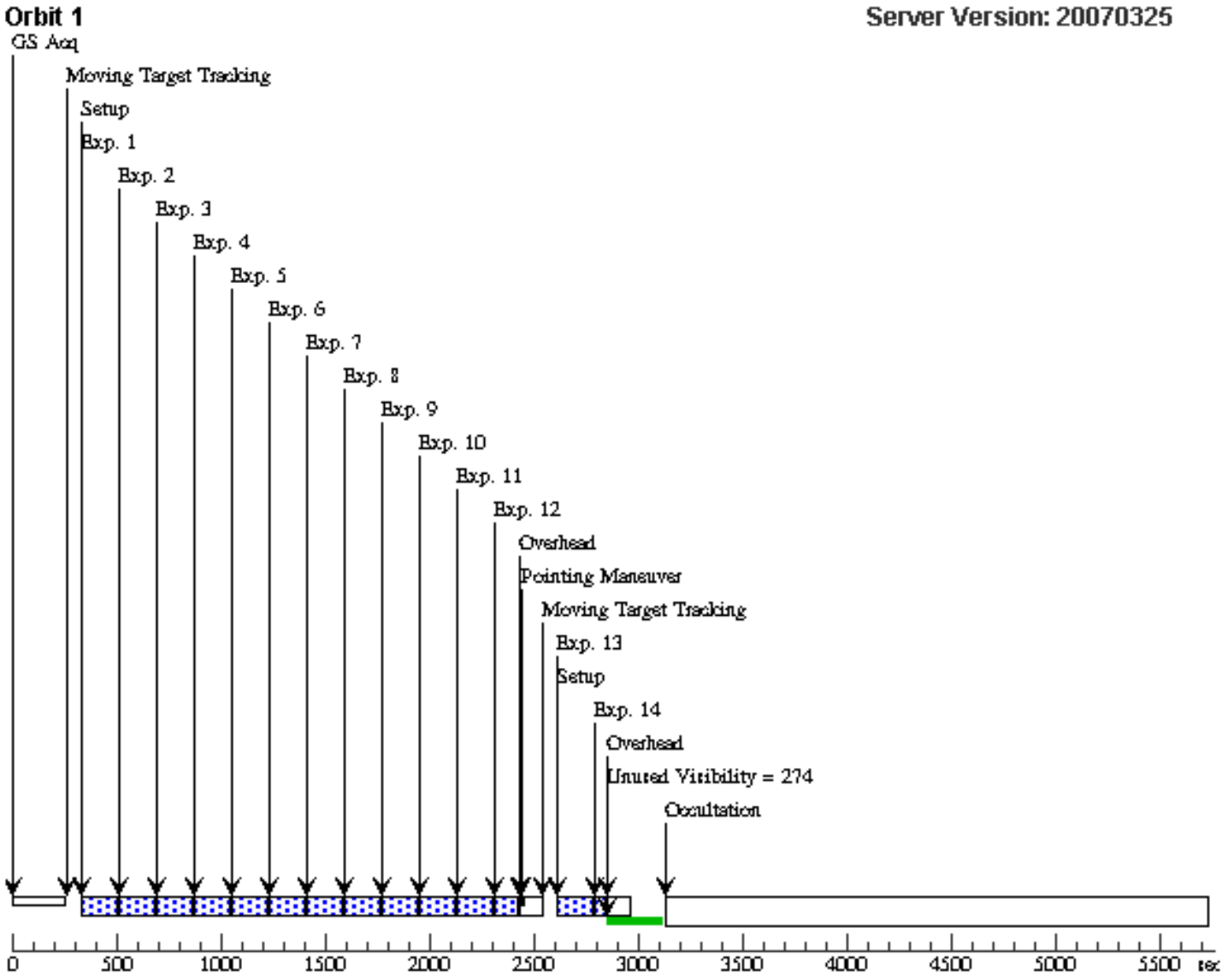
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N		GS ACQ SCENARIO SINGLE	Same Guide Stars	1.2 Secs	
								[==>]	***[1]***
2	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W			Same Guide Stars	0.5 Secs	
								[==>]	***[1]***
3	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
4	Vesta 1042M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
5	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N			Same Guide Stars	1.2 Secs	
								[==>]	***[1]***
6	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W			Same Guide Stars	0.5 Secs	
								[==>]	***[1]***
7	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
8	Vesta 1042M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
9	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N			Same Guide Stars	1.2 Secs	
								[==>]	***[1]***
10	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W			Same Guide Stars	0.5 Secs	
								[==>]	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
11	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
12	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
13	Vesta 702W satellite search	(1) VESTA	WFPC2, IMAGE, WFALL	F702W	CLOCKS=YES		Same Guide Stars	40.0 Secs	
								[==>]	***[1]***
14	Vesta 702W satellite search	(1) VESTA	WFPC2, IMAGE, WFALL	F702W	CLOCKS=YES		Same Guide Stars	40.0 Secs	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 10799, Visit 06, scheduling Mon May 21 17:08:10 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: PCS MODE FINE

Comments: This visit should follow after visit 5

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(1)	VESTA	TYPE=ASTEROID,A=2.36195625573717, E=0.08936578245846,I=7.1337975921628 2,O=103.9183796862978,W=150.1801484 597885,M=341.5920160475586,EQUINO X=J2000,EPOCH=10-APR-2007:00:00:00			PHASE OF VESTA FROM EARTH BETWEEN 7.0 10.0, RANGE VESTA EARTH LT 1.1814, RANGE VESTA EARTH GT 1.159

Comments: We are targeting the southern hemisphere of Vesta (maximum southern sub-Earth latitude).
First priority: Albedo maps
Acquire complete rotational coverage in as few orbits as possible.
Observe at large enough phase angle to constrain the roughness and avoid opposition surge, between 7-9 degrees.
Achieve high spatial resolution which changes by less than 2/3 pixel in this observing window.
Second priority: Satellite search
The uncertainty in the V magnitude is theoretically 0.01 magnitudes.
source of these data is JPL Small-Body Database.
http://ssd.jpl.nasa.gov/sbdb.cgi
The acquisition uncertainty is most likely driven by uncertainty in the position of the guide stars.

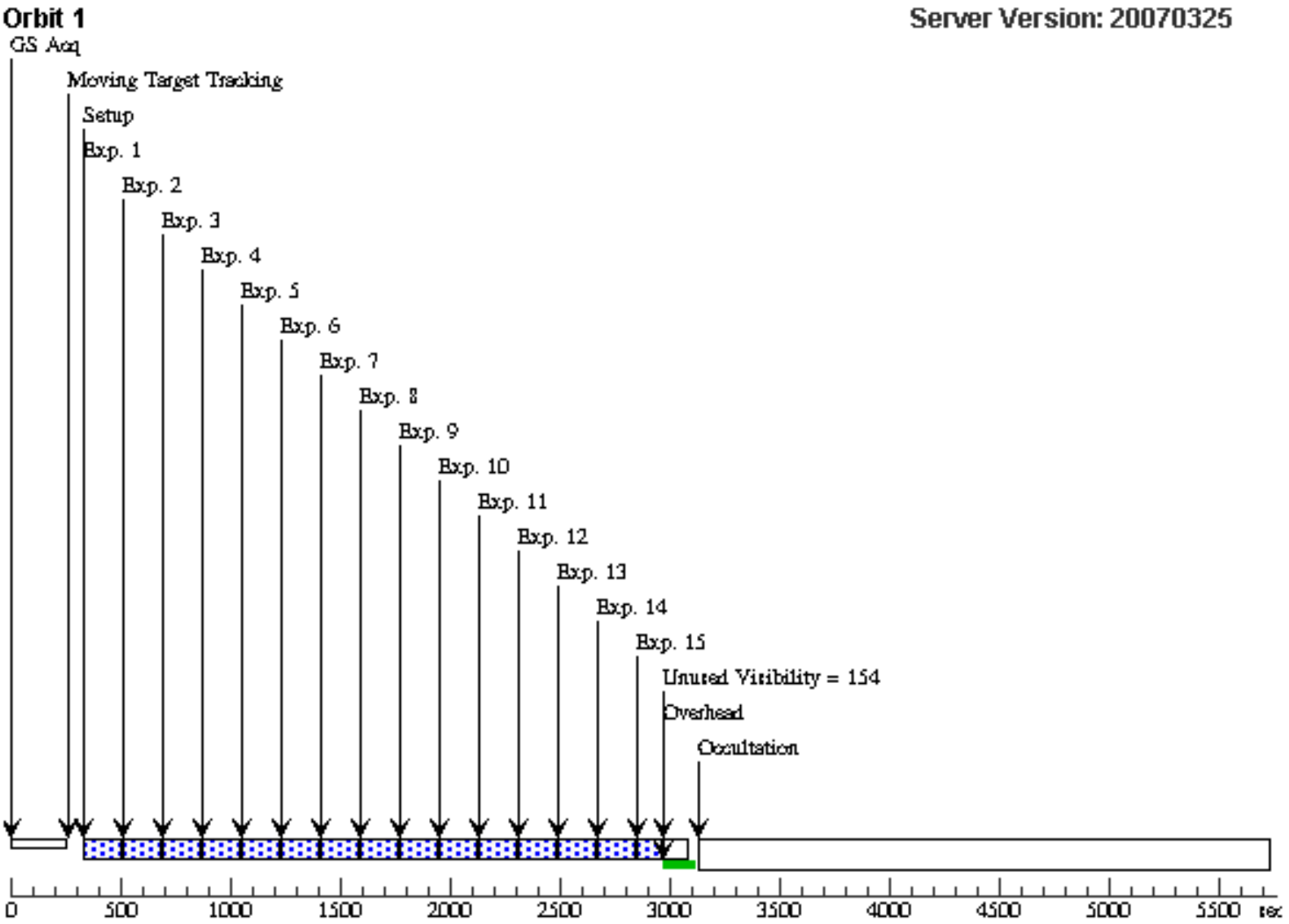
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N		GS ACQ SCENARIO SINGLE		1.2 Secs	
								[==>]	***[1]***
2	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
3	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
4	Vesta 1042M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
5	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***
6	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
7	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
8	Vesta 1042M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
9	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***
10	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
11	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W				0.5 Secs	
								[==>]	***[1]***
12	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N				1.2 Secs	
								[==>]	***[1]***
13	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***
14	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N				10.0 Secs	
								[==>]	***[1]***
15	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M				10.0 Secs	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 10799, Visit 07, scheduling Mon May 21 17:08:11 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: PCS MODE FINE

Comments: This visit should follow after visit 6.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(1)	VESTA	TYPE=ASTEROID,A=2.36195625573717, E=0.08936578245846,I=7.1337975921628 2,O=103.9183796862978,W=150.1801484 597885,M=341.5920160475586,EQUINO X=J2000,EPOCH=10-APR-2007:00:00:00			PHASE OF VESTA FROM EARTH BETWEEN 7.0 10.0, RANGE VESTA EARTH LT 1.1814, RANGE VESTA EARTH GT 1.159

Comments: We are targeting the southern hemisphere of Vesta (maximum southern sub-Earth latitude).
First priority: Albedo maps
Acquire complete rotational coverage in as few orbits as possible.
Observe at large enough phase angle to constrain the roughness and avoid opposition surge, between 7-9 degrees.
Achieve high spatial resolution which changes by less than 2/3 pixel in this observing window.
Second priority: Satellite search
The uncertainty in the V magnitude is theoretically 0.01 magnitudes.
source of these data is JPL Small-Body Database.
http://ssd.jpl.nasa.gov/sbdb.cgi
The acquisition uncertainty is most likely driven by uncertainty in the position of the guide stars.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N		GS ACQ SCENARIO SINGLE	Same Guide Stars	1.2 Secs	
								[==>]	***[1]***
2	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W			Same Guide Stars	0.5 Secs	
								[==>]	***[1]***
3	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
4	Vesta 1042M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
5	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N			Same Guide Stars	1.2 Secs	
								[==>]	***[1]***
6	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
7	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W			Same Guide Stars	0.5 Secs	
								[==>]	***[1]***
8	Vesta 1042M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
9	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N			Same Guide Stars	1.2 Secs	
								[==>]	***[1]***
10	Vesta 439W	(1) VESTA	WFPC2, IMAGE, PC1	F439W			Same Guide Stars	0.5 Secs	
								[==>]	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
11	Vesta 953N	(1) VESTA	WFPC2, IMAGE, PC1	F953N			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
12	Vesta 673N	(1) VESTA	WFPC2, IMAGE, PC1	F673N			Same Guide Stars	1.2 Secs	
								[==>]	***[1]***
13	Vesta 1042 M	(1) VESTA	WFPC2, IMAGE, PC1	F1042M			Same Guide Stars	10.0 Secs	
								[==>]	***[1]***
14	Vesta 702W satellite search	(1) VESTA	WFPC2, IMAGE, WFALL	F702W	CLOCKS=YES		Same Guide Stars	40.0 Secs	
								[==>]	***[1]***
15	Vesta 702W satellite search	(1) VESTA	WFPC2, IMAGE, WFALL	F702W	CLOCKS=YES		Same Guide Stars	40.0 Secs	
								[==>]	***[1]***

Orbit Structure