



9746 - Binary systems in the Kuiper Belt

Cycle: 12, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets</i>	<i>Configurations</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) K00CA5F	ACS/HRC	1	19-Jun-2006 21:00:48.0	yes
02	(1) K00CA5F	ACS/HRC	1	19-Jun-2006 21:00:52.0	yes
03	(1) K00CA5F	ACS/HRC	1	19-Jun-2006 21:00:54.0	yes
04	(8) J99T36C-COPY	ACS/HRC	1	19-Jun-2006 21:00:56.0	yes
05	(3) J99T36C	ACS/HRC	1	19-Jun-2006 21:00:58.0	yes
06	(3) J99T36C	ACS/HRC	1	19-Jun-2006 21:01:00.0	yes
07	(3) J99T36C	ACS/HRC	1	19-Jun-2006 21:01:02.0	yes
08	(3) J99T36C	ACS/HRC	1	19-Jun-2006 21:01:04.0	yes
09	(3) J99T36C	ACS/HRC	1	19-Jun-2006 21:01:06.0	yes

Proposal 9746 - Overview

<i>Visit</i>	<i>Targets</i>	<i>Configurations</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
10	(7) 1999TC36	ACS/HRC	1	19-Jun-2006 21:01:08.0	yes
11	(4) J98SG5M	ACS/HRC	1	19-Jun-2006 21:01:10.0	yes
12	(4) J98SG5M	ACS/HRC	1	19-Jun-2006 21:01:11.0	yes
13	(4) J98SG5M	ACS/HRC	1	19-Jun-2006 21:01:13.0	yes
14	(4) J98SG5M	ACS/HRC	1	19-Jun-2006 21:01:15.0	yes
15	(4) J98SG5M	ACS/HRC	1	19-Jun-2006 21:01:17.0	yes
16	(9) J98SG5M-COPY	ACS/HRC	1	19-Jun-2006 21:01:19.0	yes
17	(5) K01QT8C	ACS/HRC	1	19-Jun-2006 21:01:20.0	yes
18	(5) K01QT8C	ACS/HRC	1	19-Jun-2006 21:01:22.0	yes
19	(5) K01QT8C	ACS/HRC	1	19-Jun-2006 21:01:24.0	yes
20	(5) K01QT8C	ACS/HRC	1	19-Jun-2006 21:01:26.0	yes
21	(5) K01QT8C	ACS/HRC	1	19-Jun-2006 21:01:27.0	yes
22	(5) K01QT8C	ACS/HRC	1	19-Jun-2006 21:01:29.0	yes
23	(6) J97C29Q	ACS/HRC	1	19-Jun-2006 21:01:31.0	yes
24	(6) J97C29Q	ACS/HRC	1	19-Jun-2006 21:01:33.0	yes
25	(6) J97C29Q	ACS/HRC	1	19-Jun-2006 21:01:35.0	yes

25 Total Orbits Used

ABSTRACT

The properties of the orbits of Kuiper belt object (KBO) satellites hold keys to fundamental insight into masses and densities of KBOs, the interaction history of the early solar system, the internal structure of distant ice-rock bodies, and even the genesis of the Pluto-Charon binary. Within the past 18 months, 9 KBO satellite systems have been discovered, allowing for the first time the possibility of characterizing a sample of KBO satellite orbital

Proposal 9746 - Overview

properties. We propose HRC observations to determine satellite orbits in the 6 best cases. We have carefully devised a strategy for each of these 6 systems to make maximum use of ground-based observations, previous HST observations, and the smallest possible number of new HST observations. Our proposed observations will efficiently provide highly reliable orbital solutions which are critical to achieving the scientific promise available from the study of these systems. Our strategy relies heavily on extensive Monte Carlo simulations to define optimal times of observing such that each new point obtained gives maximum leverage for refining the orbital solution. We find that with this strategy we can provide mass solutions for all 6 systems to an accuracy of better than 10% using only 25 new HST observations. This highly efficient program provides extreme scientific output with optimal use of scarce resources.

OBSERVING DESCRIPTION

We propose to use HRC observations to characterize the orbits of six confirmed binary systems in the Kuiper belt. The targets are faint ($21.0 < V_{\text{mag}} < 24.5$) and move at rates of 1-3"/hour. Optimum scheduling is based on preliminary data and Monte Carlo analysis that identify the epochs of visits that will provide the most leverage on the orbital solution. Each one of the six targets therefore has two visits on hold (visits 1-2, 3-4, 9-10, 15-16, 21-22, 24-25), awaiting either HST or non-HST data. The HST observations required for computing optimum scheduling (visits 5-8, 11-14, 17-20) are requested at the very beginning of Cycle 12 to make sure that we have the opportunity to observe each target's pericenter passage during Cycle 12.

We request four equal-duration iterations during an exposure, and one exposure per visit. All exposures are in F606W, except for the last visit for each target (visits 2, 4, 10, 16, 22, 25) which have two exposures in F606W and two exposures in F814W.

We would like to update orbital elements three weeks prior to observations in order to take advantage of the latest reported astrometry and reduce ephemeris uncertainties.

Proposal 9746 - Visit 01 - Binary systems in the Kuiper Belt

Tue Jun 20 01:01:37 GMT 2006

Visit	Proposal 9746, Visit 01 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: PCS MODE FINE; SCHED 50%; BETWEEN 23-APR-2004:00:00:00 AND 17-MAY-2004:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(1)		K00CA5F	TYPE=ASTEROID,A=44.109508271991,E =0.042362358787,I=0.527082632701,O=5 6.694961162348,W=53.748907227907,M= 10.892407302007,EQUINOX=J2000,EPO CH=13-MAR-2001:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) K00CA5F	(1) K00CA5F	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>Moving Target Tracking</p> <p>GS Acq Setup Exp. 1, copy 1 Exp. 1, copy 2 Exp. 1, copy 3 Exp. 1, copy 4 Occultation</p> <p>Unused Visibility = 100</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>									

Visit	Proposal 9746, Visit 02 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: PCS MODE FINE; SCHED 50%; AFTER 01 BY 25 D TO 26 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(1)		K00CA5F	TYPE=ASTEROID,A=44.109508271991,E =0.042362358787,I=0.527082632701,O=5 6.694961162348,W=53.748907227907,M= 10.892407302007,EQUINOX=J2000,EPO CH=13-MAR-2001:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) K00CA5F	(1) K00CA5F	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 2	
									[==>(Copy 1)]	[1]
									[==>(Copy 2)]	
	2	(1) K00CA5F	(1) K00CA5F	ACS/HRC, ACCUM, HRC	F814W	CR-SPLIT=NO			610.0 Secs X 2	
									[==>(Copy 1)]	[1]
									[==>(Copy 2)]	
Orbit Structure	<p>Orbit 1 Server Version: 20060322</p> <p>Moving Target Tracking</p> <p>The diagram shows a horizontal timeline from 0 to 5500 seconds. Key events are marked with vertical arrows: GS Acq at ~100s, Setup at ~300s, Exp. 1, copy 1 at ~1100s, Exp. 1, copy 2 at ~1300s, Exp. 2, copy 1 at ~1700s, Exp. 2, copy 2 at ~2400s, and Occultation at ~3100s. A blue checkered bar represents the observation period from ~300s to ~3100s. A black bar at the bottom indicates the occultation period starting at ~3100s. The text 'Unused Visibility = 46' is located above the occultation bar.</p>									
	<p>Timeline labels: GS Acq, Setup, Exp. 1, copy 1, Exp. 1, copy 2, Exp. 2, copy 1, Exp. 2, copy 2, Occultation, Unused Visibility = 46</p> <p>X-axis: 0, 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500 sec</p>									

Visit	Proposal 9746, Visit 03 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: PCS MODE FINE; SCHED 50%; AFTER 01 BY 9 D TO 10 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(1)		K00CA5F	TYPE=ASTEROID,A=44.109508271991,E =0.042362358787,I=0.527082632701,O=5 6.694961162348,W=53.748907227907,M= 10.892407302007,EQUINOX=J2000,EPO CH=13-MAR-2001:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) K00CA5F	(1) K00CA5F	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>The diagram shows a timeline for Orbit 1 from 0 to 5500 seconds. Key events are marked with arrows: GS Acq at ~100s, Setup at ~300s, Moving Target Tracking starting at ~300s, and ending at ~3100s. Four copies of 'Exp. 1' are shown as vertical bars within the observation period: copy 1 at ~1100s, copy 2 at ~1700s, copy 3 at ~2300s, and copy 4 at ~2900s. An 'Occultation' event is marked at ~3150s. A green bar indicates the occultation period from ~3150s to ~3200s. A black bar indicates the end of the observation period at ~3100s. A long horizontal bar from ~3100s to ~5500s is labeled 'Unused Visibility = 100'. A blue checkered bar highlights the observation period from ~300s to ~3100s.</p>									

Proposal 9746 - Visit 04 - Binary systems in the Kuiper Belt

Tue Jun 20 01:01:38 GMT 2006

Visit	Proposal 9746, Visit 04 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: PCS MODE FINE; SCHED 50%; BETWEEN 27-JUN-2006:00:00:00 AND 14-JUL-2006:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(8)		J99T36C-COPY	TYPE=ASTEROID,A=39.705653280451,E=0.230307359197,I=8.415256356741,O=97.201218073854,W=294.59101159062,M=-20.717387041833,EQUINOX=J2000,EPOCH=14-OCT-2000:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(8) J99T36C-COPY		ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									

Proposal 9746 - Visit 05 - Binary systems in the Kuiper Belt

Tue Jun 20 01:01:39 GMT 2006

Visit	Proposal 9746, Visit 05 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; BETWEEN 30-JUN-2003:00:00:00 AND 06-JUL-2003:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(3)		J99T36C	TYPE=ASTEROID,A=39.705653280451,E =0.230307359197,I=8.415256356741,O=9 7.201218073854,W=294.59101159062,M= - 20.717387041833,EQUINOX=J2000,EPO CH=14-OCT-2000:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(3) J99T36C		ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>The diagram shows a timeline for Orbit 1 from 0 to 5500 seconds. Key events are marked with arrows: GS Acq at ~100s, Setup at ~300s, Moving Target Tracking starting at ~300s, and ending at ~3100s. Four copies of 'Exp. 1' are shown as vertical bars within the observation period: copy 1 at ~1100s, copy 2 at ~1700s, copy 3 at ~2300s, and copy 4 at ~2900s. An 'Occultation' event is marked at ~3100s. A green bar indicates the observation period from ~300s to ~3100s. A black bar indicates the occultation period from ~3100s to ~3200s. A long white bar represents 'Unused Visibility = 100' from ~3200s to ~5500s. A scale at the bottom is marked in 500-second increments.</p>									

Visit	Proposal 9746, Visit 06 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; AFTER 05 BY 9 D TO 10 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(3)		J99T36C	TYPE=ASTEROID,A=39.705653280451,E =0.230307359197,I=8.415256356741,O=9 7.201218073854,W=294.59101159062,M= - 20.717387041833,EQUINOX=J2000,EPO CH=14-OCT-2000:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(3) J99T36C	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO				610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>Moving Target Tracking</p> <p>GS Acq Setup Exp. 1, copy 1 Exp. 1, copy 2 Exp. 1, copy 3 Exp. 1, copy 4 Occultation</p> <p>Unused Visibility = 100</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>									

Proposal 9746 - Visit 07 - Binary systems in the Kuiper Belt

Tue Jun 20 01:01:39 GMT 2006

Visit	Proposal 9746, Visit 07 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; AFTER 05 BY 25 D TO 26 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(3)		J99T36C	TYPE=ASTEROID,A=39.705653280451,E =0.230307359197,I=8.415256356741,O=9 7.201218073854,W=294.59101159062,M= - 20.717387041833,EQUINOX=J2000,EPO CH=14-OCT-2000:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(3) J99T36C		ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>Moving Target Tracking</p> <p>GS Acq Setup Exp. 1, copy 1 Exp. 1, copy 2 Exp. 1, copy 3 Exp. 1, copy 4 Occultation</p> <p>Unused Visibility = 100</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>									

Proposal 9746 - Visit 08 - Binary systems in the Kuiper Belt

Tue Jun 20 01:01:40 GMT 2006

Visit	Proposal 9746, Visit 08 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; AFTER 05 BY 54 D TO 55 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(3)		J99T36C	TYPE=ASTEROID,A=39.705653280451,E =0.230307359197,I=8.415256356741,O=9 7.201218073854,W=294.59101159062,M= - 20.717387041833,EQUINOX=J2000,EPO CH=14-OCT-2000:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(3) J99T36C		ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>The diagram illustrates the timeline for Orbit 1. It starts at 0 seconds with 'GS Acq' and 'Setup'. A 'Moving Target Tracking' phase begins around 300 seconds. The observation period, indicated by a blue checkered bar, includes four copies of 'Exp. 1' (copy 1, 2, 3, and 4) occurring between approximately 1000 and 3000 seconds. Following the last exposure, there is an 'Occultation' event around 3100 seconds, marked with a black bar. The period from 3100 to 5500 seconds is labeled 'Unused Visibility = 100'. The x-axis is labeled 'sec' and ranges from 0 to 5500 with major ticks every 500 units.</p>									

Visit	Proposal 9746, Visit 09 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; BETWEEN 26-MAY-2004:00:00:00 AND 27-MAY-2004:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(3)		J99T36C	TYPE=ASTEROID,A=39.705653280451,E =0.230307359197,I=8.415256356741,O=9 7.201218073854,W=294.59101159062,M= - 20.717387041833,EQUINOX=J2000,EPO CH=14-OCT-2000:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(3) J99T36C	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO				610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									

Proposal 9746 - Visit 10 - Binary systems in the Kuiper Belt

Tue Jun 20 01:01:40 GMT 2006

Visit	Proposal 9746, Visit 10 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; BETWEEN 30-JUL-2005:00:00:00 AND 25-AUG-2005:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(7)		1999TC36	TYPE=ASTEROID,A=39.705653280451,E =0.230307359197,I=8.415256356741,O=9 7.201218073854,W=294.59101159062,M= - 20.717387041833,EQUINOX=J2000,EPO CH=14-OCT-2000:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(7) 1999TC36	(7) 1999TC36	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 2	
									[==>(Copy 1)]	[1]
									[==>(Copy 2)]	
	2	(7) 1999TC36	(7) 1999TC36	ACS/HRC, ACCUM, HRC	F814W	CR-SPLIT=NO			610.0 Secs X 2	
									[==>(Copy 1)]	[1]
									[==>(Copy 2)]	
Orbit Structure	<p>Orbit 1 Server Version: 20060322</p> <p>Moving Target Tracking</p> <p>GS Acq Setup Exp. 1, copy 1 Exp. 1, copy 2 Exp. 2, copy 1 Exp. 2, copy 2 Occultation</p> <p>Unused Visibility = 46</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>									

Visit	Proposal 9746, Visit 11 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; BETWEEN 30-JUN-2003:00:00:00 AND 06-JUL-2003:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(4)		J98SG5M	TYPE=ASTEROID,A=48.263436586357,E =0.377064712728,I=13.459417517579,O= 183.106839234337,W=131.920756553371, M=25.403092851589,EQUINOX=J2000,E POCH=25-NOV-1998:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) J98SG5M		ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>The diagram illustrates the timing of observations for Orbit 1. The x-axis represents time in seconds, ranging from 0 to 5500. Key events are marked with vertical arrows: 'GS Acq Setup' at approximately 100 seconds, 'Moving Target Tracking' starting at 300 seconds, and four exposure copies ('Exp. 1, copy 1' through 'copy 4') occurring between 1000 and 3000 seconds. An 'Occultation' event is marked at approximately 3100 seconds. A horizontal bar at the bottom of the timeline, from 3100 to 5500 seconds, is labeled 'Unused Visibility = 100', indicating the period when the target is not visible due to the occultation.</p>									

Visit	Proposal 9746, Visit 12 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; AFTER 11 BY 9 D TO 10 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(4)		J98SG5M	TYPE=ASTEROID,A=48.263436586357,E =0.377064712728,I=13.459417517579,O= 183.106839234337,W=131.920756553371, M=25.403092851589,EQUINOX=J2000,E POCH=25-NOV-1998:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) J98SG5M	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO				610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>The diagram illustrates the timeline for Orbit 1. It starts with 'GS Acq Setup' at approximately 200 seconds. 'Moving Target Tracking' begins at 300 seconds. The observation period, indicated by a blue checkered bar, spans from approximately 300 seconds to 3100 seconds. Within this period, four exposure copies are scheduled: 'Exp. 1, copy 1' at ~1000s, 'Exp. 1, copy 2' at ~1500s, 'Exp. 1, copy 3' at ~2000s, and 'Exp. 1, copy 4' at ~2500s. At approximately 3100 seconds, an 'Occultation' occurs, marked by a vertical line and a small black bar. Following the occultation, the system is in a state of 'Unused Visibility = 100' until the end of the orbit at 5500 seconds.</p>									

Visit	Proposal 9746, Visit 13 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; AFTER 11 BY 25 D TO 26 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(4)		J98SG5M	TYPE=ASTEROID,A=48.263436586357,E =0.377064712728,I=13.459417517579,O= 183.106839234337,W=131.920756553371, M=25.403092851589,EQUINOX=J2000,E POCH=25-NOV-1998:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) J98SG5M		ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>Moving Target Tracking</p> <p>GS Acq Setup Exp. 1, copy 1 Exp. 1, copy 2 Exp. 1, copy 3 Exp. 1, copy 4 Occultation</p> <p>Unused Visibility = 100</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>									

Visit	Proposal 9746, Visit 14 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; AFTER 11 BY 54 D TO 55 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(4)		J98SG5M	TYPE=ASTEROID,A=48.263436586357,E =0.377064712728,I=13.459417517579,O= 183.106839234337,W=131.920756553371, M=25.403092851589,EQUINOX=J2000,E POCH=25-NOV-1998:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) J98SG5M		ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>Moving Target Tracking</p> <p>GS Acq Setup Exp. 1, copy 1 Exp. 1, copy 2 Exp. 1, copy 3 Exp. 1, copy 4 Occultation</p> <p>Unused Visibility = 100</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>									

Visit	Proposal 9746, Visit 15 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; BETWEEN 27-JAN-2004:12:00:00 AND 29-JAN-2004:12:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(4)		J98SG5M	TYPE=ASTEROID,A=48.263436586357,E =0.377064712728,I=13.459417517579,O= 183.106839234337,W=131.920756553371, M=25.403092851589,EQUINOX=J2000,E POCH=25-NOV-1998:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(4) J98SG5M		ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>The diagram illustrates the observation timeline for Orbit 1. It features a horizontal axis representing time in seconds, ranging from 0 to 5500 with major ticks every 500 seconds. Key events are marked with vertical arrows: 'GS Acq Setup' at approximately 200 seconds, 'Moving Target Tracking' starting at 300 seconds, and 'Occultation' at approximately 3100 seconds. The observation period is shown as a blue checkered bar from roughly 300 to 3100 seconds, containing four exposure copies labeled 'Exp. 1, copy 1' through 'copy 4'. A green bar at the end of the observation period indicates 'Unused Visibility = 100' from approximately 3100 to 5500 seconds.</p>									

Visit	Proposal 9746, Visit 16 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; BETWEEN 20-JUN-2006:00:00:00 AND 08-JUL-2006:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(9)		J98SG5M-COPY	TYPE=ASTEROID,A=48.263436586357,E =0.377064712728,I=13.459417517579,O= 183.106839234337,W=131.920756553371, M=25.403092851589,EQUINOX=J2000,E POCH=25-NOV-1998:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(9) J98SG5M-COPY	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO				610.0 Secs X 2	
									[==>(Copy 1)]	[1]
									[==>(Copy 2)]	
	2	(9) J98SG5M-COPY	ACS/HRC, ACCUM, HRC	F814W	CR-SPLIT=NO				610.0 Secs X 2	
									[==>(Copy 1)]	[1]
									[==>(Copy 2)]	
Orbit Structure	<p>Orbit 1 Server Version: 20060322</p> <p>Moving Target Tracking</p> <p>Timeline labels: GS Acq Setup, Exp. 1, copy 1, Exp. 1, copy 2, Exp. 2, copy 1, Exp. 2, copy 2, Occultation, Unused Visibility = 46</p> <p>X-axis: 0, 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500 sec</p>									

Proposal 9746 - Visit 17 - Binary systems in the Kuiper Belt

Tue Jun 20 01:01:42 GMT 2006

Visit	Proposal 9746, Visit 17 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; BETWEEN 30-JUN-2003:00:00:00 AND 06-JUL-2003:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(5)		K01QT8C	TYPE=ASTEROID,A=46.293041383077,E=0.12391248184,I=30.599193881655,O=334.758414343377,W=4.984562554415,M=-1.732294357076,EQUINOX=J2000,EPOCH=27-AUG-2001:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(5) K01QT8C	(5) K01QT8C	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	<p>Orbit 1 Server Version: 20060322</p> <p>The diagram shows a timeline for Orbit 1. Key events are marked with arrows: GS Acq at ~100s, Setup at ~200s, Moving Target Tracking starting at ~300s, and ending at ~3100s. Four copies of 'Exp. 1' are shown as vertical bars within the observation period: copy 1 at ~1100s, copy 2 at ~1700s, copy 3 at ~2300s, and copy 4 at ~2900s. An 'Occultation' event is marked at ~3150s. A green bar indicates 'Unused Visibility = 100' from ~3150s to ~5500s. A blue checkered bar represents the observation period from ~300s to ~3100s. The x-axis is labeled 'sec' and ranges from 0 to 5500.</p>									

Visit	Proposal 9746, Visit 18 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; AFTER 17 BY 9 D TO 10 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(5)		K01QT8C	TYPE=ASTEROID,A=46.293041383077,E =0.12391248184,I=30.599193881655,O=3 34.758414343377,W=4.984562554415,M= - 1.732294357076,EQUINOX=J2000,EPOC H=27-AUG-2001:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(5) K01QT8C		ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>The diagram shows a timeline for Orbit 1. Key events are marked with arrows: GS Acq at ~100s, Setup at ~200s, Moving Target Tracking starting at ~200s and ending at ~3100s, four copies of Exp. 1 (copy 1-4) occurring between ~1000s and ~3100s, Occultation at ~3150s, and Unused Visibility = 100 from ~3150s to ~5500s. A blue checkered bar indicates the observation period from ~200s to ~3100s.</p>									

Visit	Proposal 9746, Visit 19 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; AFTER 17 BY 25 D TO 26 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(5)		K01QT8C	TYPE=ASTEROID,A=46.293041383077,E=0.12391248184,I=30.599193881655,O=334.758414343377,W=4.984562554415,M=-1.732294357076,EQUINOX=J2000,EPOCH=27-AUG-2001:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(5) K01QT8C	(5) K01QT8C	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>Moving Target Tracking</p> <p>GS Acq Setup Exp. 1, copy 1 Exp. 1, copy 2 Exp. 1, copy 3 Exp. 1, copy 4 Occultation</p> <p>Unused Visibility = 100</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>									

Proposal 9746 - Visit 20 - Binary systems in the Kuiper Belt

Tue Jun 20 01:01:42 GMT 2006

Visit	Proposal 9746, Visit 20 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; AFTER 17 BY 54 D TO 55 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(5)		K01QT8C	TYPE=ASTEROID,A=46.293041383077,E =0.12391248184,I=30.599193881655,O=3 34.758414343377,W=4.984562554415,M= - 1.732294357076,EQUINOX=J2000,EPOC H=27-AUG-2001:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(5) K01QT8C		ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>Moving Target Tracking</p> <p>GS Acq Setup Exp. 1, copy 1 Exp. 1, copy 2 Exp. 1, copy 3 Exp. 1, copy 4 Occultation</p> <p>Unused Visibility = 100</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>									

Proposal 9746 - Visit 21 - Binary systems in the Kuiper Belt

Tue Jun 20 01:01:43 GMT 2006

Visit	Proposal 9746, Visit 21 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%: BETWEEN 07-MAY-2004:00:00:00 AND 08-MAY-2004:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(5)		K01QT8C	TYPE=ASTEROID,A=46.293041383077,E=0.12391248184,I=30.599193881655,O=334.758414343377,W=4.984562554415,M=-1.732294357076,EQUINOX=J2000,EPOCH=27-AUG-2001:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(5) K01QT8C		ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	<p>Orbit 1 Server Version: 20060322</p> <p>The diagram shows a horizontal timeline from 0 to 5500 seconds. Key events are marked with arrows: GS Acq at ~100s, Setup at ~300s, Moving Target Tracking from ~300s to ~3100s, Exp. 1, copy 1 at ~1100s, Exp. 1, copy 2 at ~1700s, Exp. 1, copy 3 at ~2300s, Exp. 1, copy 4 at ~2900s, Occultation at ~3100s, and Unused Visibility = 100 from ~3100s to ~5500s. A blue checkered bar highlights the observation period from approximately 300 to 3100 seconds.</p>									
	<p>Timeline labels: GS Acq, Setup, Moving Target Tracking, Exp. 1, copy 1, Exp. 1, copy 2, Exp. 1, copy 3, Exp. 1, copy 4, Occultation, Unused Visibility = 100.</p> <p>X-axis: 0, 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500 sec</p>									

Visit	Proposal 9746, Visit 22 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; BETWEEN 19-JUN-2004:06:00:00 AND 20-JUN-2004:06:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(5)		K01QT8C	TYPE=ASTEROID,A=46.293041383077,E =0.12391248184,I=30.599193881655,O=3 34.758414343377,W=4.984562554415,M= - 1.732294357076,EQUINOX=J2000,EPOC H=27-AUG-2001:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(5) K01QT8C	(5) K01QT8C	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 2	
									[==>(Copy 1)]	[1]
									[==>(Copy 2)]	
	2	(5) K01QT8C	(5) K01QT8C	ACS/HRC, ACCUM, HRC	F814W	CR-SPLIT=NO			610.0 Secs X 2	
									[==>(Copy 1)]	[1]
									[==>(Copy 2)]	
Orbit Structure	<p>Orbit 1 Server Version: 20060322</p> <p>The diagram shows a horizontal timeline from 0 to 5500 seconds. Key events are marked with arrows: GS Acq at ~100s, Setup at ~300s, Moving Target Tracking at ~400s, Exp. 1, copy 1 at ~1100s, Exp. 1, copy 2 at ~1300s, Exp. 2, copy 1 at ~1700s, Exp. 2, copy 2 at ~2400s, Occultation at ~3200s, and Unused Visibility = 46 at ~3200s. A blue checkered bar represents the observation period from approximately 400s to 3200s. A black bar at the bottom indicates the occultation period from ~3200s to ~3300s.</p>									
	<p>Timeline labels: 0, 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500 sec</p>									

Visit	Proposal 9746, Visit 23 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; BETWEEN 14-FEB-2004:00:00:00 AND 22-FEB-2004:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(6)		J97C29Q	TYPE=ASTEROID,A=44.879302781706,E =0.115031256954,I=2.904526214231,O=1 32.624414855838,W=334.211238978335, M=40.500756188924,EQUINOX=J2000,E POCH=04-MAY-1998:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(6) J97C29Q	(6) J97C29Q	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>Moving Target Tracking</p> <p>GS Acq Setup Exp. 1, copy 1 Exp. 1, copy 2 Exp. 1, copy 3 Exp. 1, copy 4 Occultation</p> <p>Unused Visibility = 100</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>									

Visit	Proposal 9746, Visit 24 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; BETWEEN 30-APR-2004:00:00:00 AND 04-MAY-2004:00:00:00									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window			
(6)		J97C29Q	TYPE=ASTEROID,A=44.879302781706,E =0.115031256954,I=2.904526214231,O=1 32.624414855838,W=334.211238978335, M=40.500756188924,EQUINOX=J2000,E POCH=04-MAY-1998:00:00:00							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(6) J97C29Q	(6) J97C29Q	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 4 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20060322									
	<p>Moving Target Tracking</p> <p>GS Acq Setup Exp. 1, copy 1 Exp. 1, copy 2 Exp. 1, copy 3 Exp. 1, copy 4 Occultation</p> <p>Unused Visibility = 100</p> <p>0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec</p>									

Visit	Proposal 9746, Visit 25 Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SCHED 50%; BETWEEN 22-JUN-2004:12:00:00 AND 23-JUN-2004:12:00:00										
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window				
(6)		J97C29Q	TYPE=ASTEROID,A=44.879302781706,E =0.115031256954,I=2.904526214231,O=1 32.624414855838,W=334.211238978335, M=40.500756188924,EQUINOX=J2000,E POCH=04-MAY-1998:00:00:00								
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
	1	(6) J97C29Q	(6) J97C29Q	ACS/HRC, ACCUM, HRC	F606W	CR-SPLIT=NO			610.0 Secs X 2		
									[==>(Copy 1)]	[1]	
									[==>(Copy 2)]		
	2	(6) J97C29Q	(6) J97C29Q	ACS/HRC, ACCUM, HRC	F814W	CR-SPLIT=NO			610.0 Secs X 2		
									[==>(Copy 1)]	[1]	
									[==>(Copy 2)]		
Orbit Structure	<p>Orbit 1 Server Version: 20060322</p> <p>The diagram shows a timeline for Orbit 1. Key events are marked with arrows: GS Acq at ~100s, Setup at ~300s, Moving Target Tracking starting at ~400s, Exp. 1, copy 1 at ~1000s, Exp. 1, copy 2 at ~1200s, Exp. 2, copy 1 at ~1700s, Exp. 2, copy 2 at ~2400s, Occultation at ~3100s, and Unused Visibility = 46 starting at ~3100s. A blue checkered bar represents the observation period from approximately 400s to 3100s. The x-axis is labeled in seconds from 0 to 5500.</p>										