



11418 - Investigating the Spectacular Outburst of Comet 17P/Holmes

Cycle: 16, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) 17P-HOLMES	WFPC2	1	25-Oct-2007 21:22:33.0	yes
02	(1) 17P-HOLMES	WFPC2	1	25-Oct-2007 21:22:38.0	yes
03	(1) 17P-HOLMES	WFPC2	1	25-Oct-2007 21:22:41.0	yes

3 Total Orbits Used

ABSTRACT

Comet 17P/Holmes is currently undergoing a spectacular eruption in activity, with its brightness increasing by ~14 mag over a 24 hour period. The comet is shedding huge amounts of dust, presumably associated with a major splitting event at the nucleus. The high spatial resolution and high sensitivity of Hubble has proven to be invaluable during previous observations of several fragmenting comets, and the 2007 apparition of 17P/Holmes represents another excellent opportunity to investigate this important cometary phenomenon. We request 3 orbits of WFPC2 observations to measure the size and V-R color of the principal nucleus, perform a deep search for large fragments released during the outburst, monitor the temporal development of the event, and search for a satellite whose collision with the principal nucleus may have triggered the current outburst, as was suggested for the similar outburst observed in 1892.

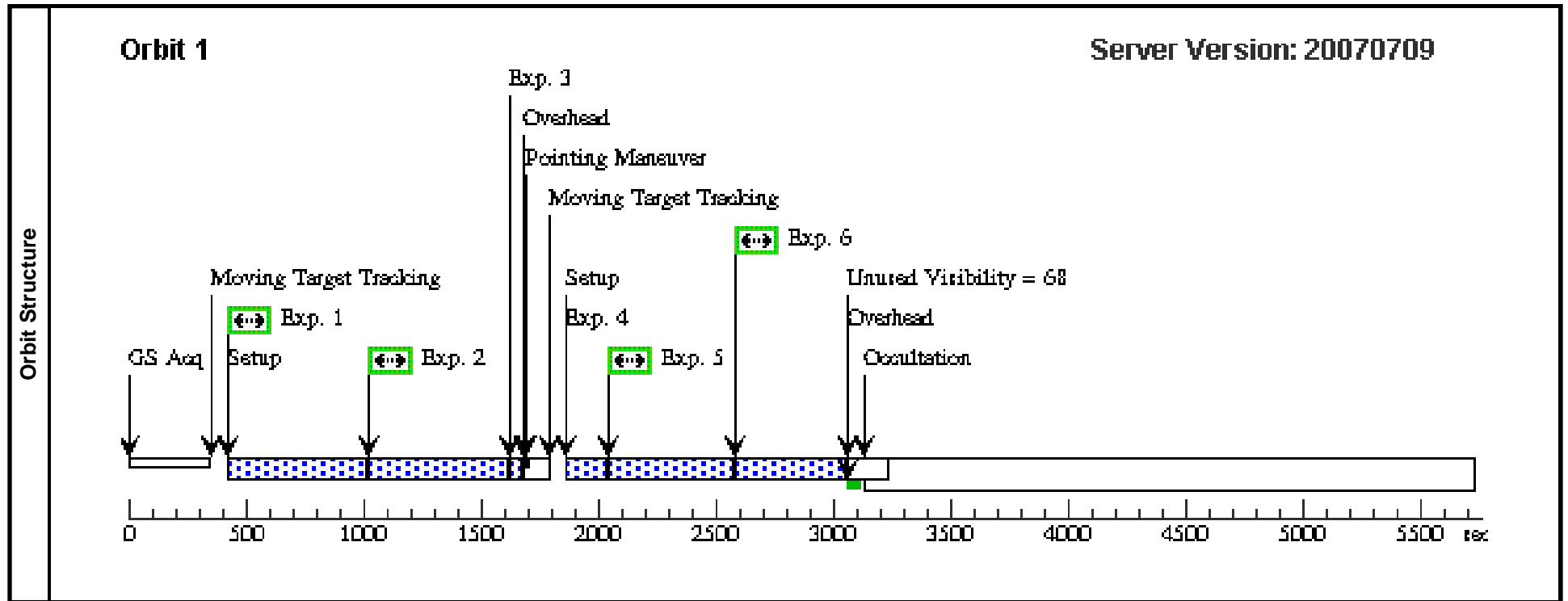
OBSERVING DESCRIPTION

Three identical visits separated by 1-2 days over the next week. Two long exposures in each of two filters, with a small dither shift between them, to mitigate against any bad pixels. One short exposure in each filter, to ensure at least one unsaturated image. The exposures are sequenced to minimize overheads due to filter changes and dither shifts. The long exposures will be combined to make clean images, and they are separated as much as possible to help with the rejection of star trails.

Proposal 11418 - Visit 01 - Investigating the Spectacular Outburst of Comet 17P/Holmes

Fri Oct 26 01:22:44 GMT 2007

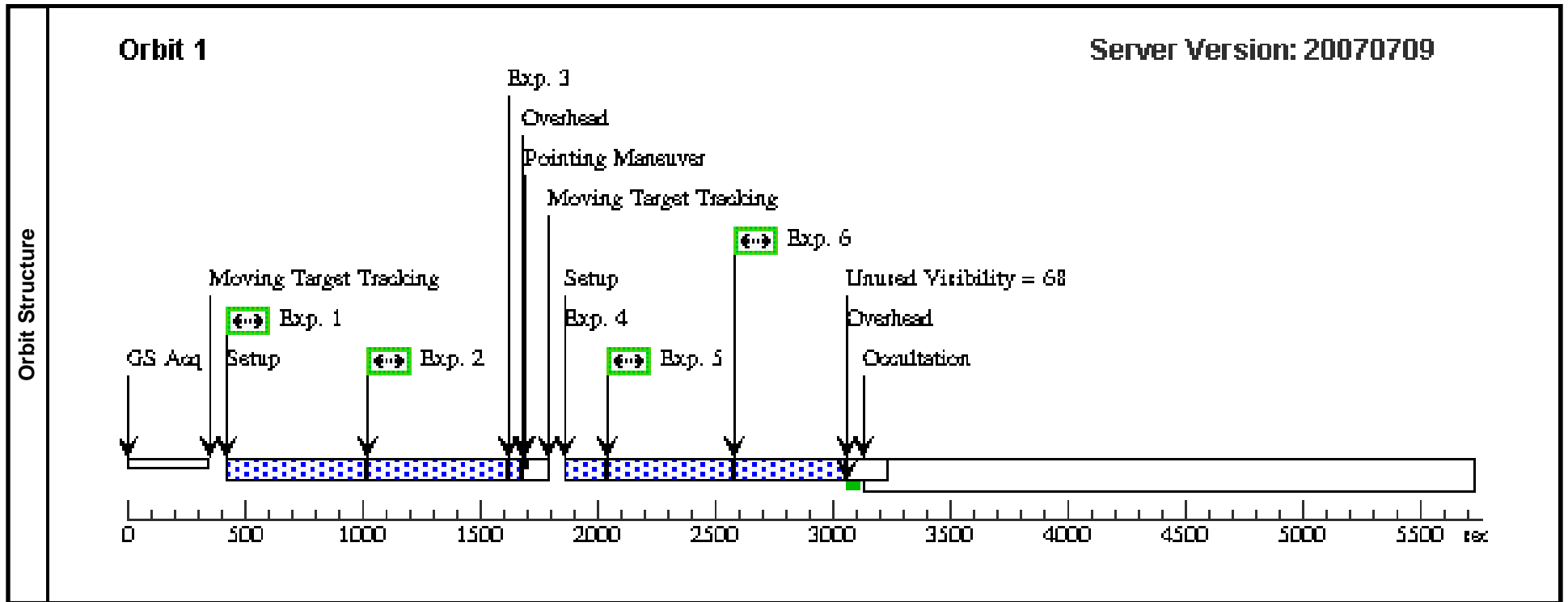
Visit	Proposal 11418, Visit 01										
	Diagnostic Status: No Diagnostics										
Scientific Instruments: WFPC2											
Special Requirements: (none)											
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window					
		(1)	17P-HOLMES	TYPE=COMET,Q=2.0531685968984,E=0.4324195317478,I=19.11330875529636,O=326.8673862726764,W=24.25862184788592,T=04-MAY-2007:11:59:44,EQUINOX=J2000,EPOCH=01-MAY-2007:00:00:00,A1=1.701164E-9,A2=2.844799E-10							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
	1	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F675W	CR-SPLIT=NO				400.0 Secs [==>]	[1]	
	<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>										
	2	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=NO				400.0 Secs [==>]	[1]	
	<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>										
	3	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=NO				40.0 Secs [==>]	[1]	
	<i>Comments: Short exposure ensure at least one unsaturated image</i>										
	4	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F675W	CR-SPLIT=NO	POS TARG 0.249,0.249			40.0 Secs [==>]	[1]	
<i>Comments: Short exposure ensure at least one unsaturated image</i>											
5	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F675W	CR-SPLIT=NO	POS TARG 0.249,0.249			400.0 Secs [==>]	[1]		
<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>											
6	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=NO	POS TARG 0.249,0.249			400.0 Secs [==>]	[1]		
<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>											



Proposal 11418 - Visit 02 - Investigating the Spectacular Outburst of Comet 17P/Holmes

Fri Oct 26 01:22:45 GMT 2007

Visit	Proposal 11418, Visit 02 Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: AFTER 01 BY 2 D TO 3 D										
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window				
	(1)	17P-HOLMES	TYPE=COMET,Q=2.0531685968984,E=0.4324195317478,I=19.11330875529636,O=326.8673862726764,W=24.258621847885 92,T=04-MAY-2007:11:59:44,EQUINOX=J2000,EPOCH=01-MAY-2007:00:00:00,A1=1.701164E-9,A2=2.844799E-10								
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
	1	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F675W	CR-SPLIT=NO				400.0 Secs [==>]	[1]	
	<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>										
	2	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=NO				400.0 Secs [==>]	[1]	
	<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>										
	3	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=NO				40.0 Secs [==>]	[1]	
	<i>Comments: Short exposure ensure at least one unsaturated image</i>										
4	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F675W	CR-SPLIT=NO	POS TARG 0.249,0.249			40.0 Secs [==>]	[1]		
<i>Comments: Short exposure ensure at least one unsaturated image</i>											
5	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F675W	CR-SPLIT=NO	POS TARG 0.249,0.249			400.0 Secs [==>]	[1]		
<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>											
6	(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=NO	POS TARG 0.249,0.249			400.0 Secs [==>]	[1]		
<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>											



Proposal 11418 - Visit 03 - Investigating the Spectacular Outburst of Comet 17P/Holmes

Fri Oct 26 01:22:45 GMT 2007

Visit	Proposal 11418, Visit 03										
	Diagnostic Status: No Diagnostics										
Scientific Instruments: WFPC2											
Special Requirements: AFTER 01 BY 5 D TO 6 D											
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window					
		(1)	17P-HOLMES	TYPE=COMET,Q=2.0531685968984,E=0.4324195317478,I=19.11330875529636,O=326.8673862726764,W=24.25862184788592,T=04-MAY-2007:11:59:44,EQUINOX=J2000,EPOCH=01-MAY-2007:00:00:00,A1=1.701164E-9,A2=2.844799E-10							
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
	1		(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F675W	CR-SPLIT=NO			400.0 Secs [==>]	[1]	
	<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>										
	2		(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=NO			400.0 Secs [==>]	[1]	
	<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>										
	3		(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=NO			40.0 Secs [==>]	[1]	
	<i>Comments: Short exposure ensure at least one unsaturated image</i>										
	4		(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F675W	CR-SPLIT=NO	POS TARG 0.249,0.249		40.0 Secs [==>]	[1]	
<i>Comments: Short exposure ensure at least one unsaturated image</i>											
5		(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F675W	CR-SPLIT=NO	POS TARG 0.249,0.249		400.0 Secs [==>]	[1]		
<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>											
6		(1) 17P-HOLMES	WFPC2, IMAGE, PC1-FIX	F555W	CR-SPLIT=NO	POS TARG 0.249,0.249		400.0 Secs [==>]	[1]		
<i>Comments: Long exposure to detect any trailing debris or orbiting satellites</i>											

