



14524 - WFC3 imaging of active asteroid P/2016 G1

Cycle: 23, 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) P2016-G1	WFC3/UVIS	1	29-Jul-2016 13:44:06.0	yes
02	(1) P2016-G1	WFC3/UVIS	1	29-Jul-2016 13:44:07.0	yes

2 Total Orbits Used

ABSTRACT

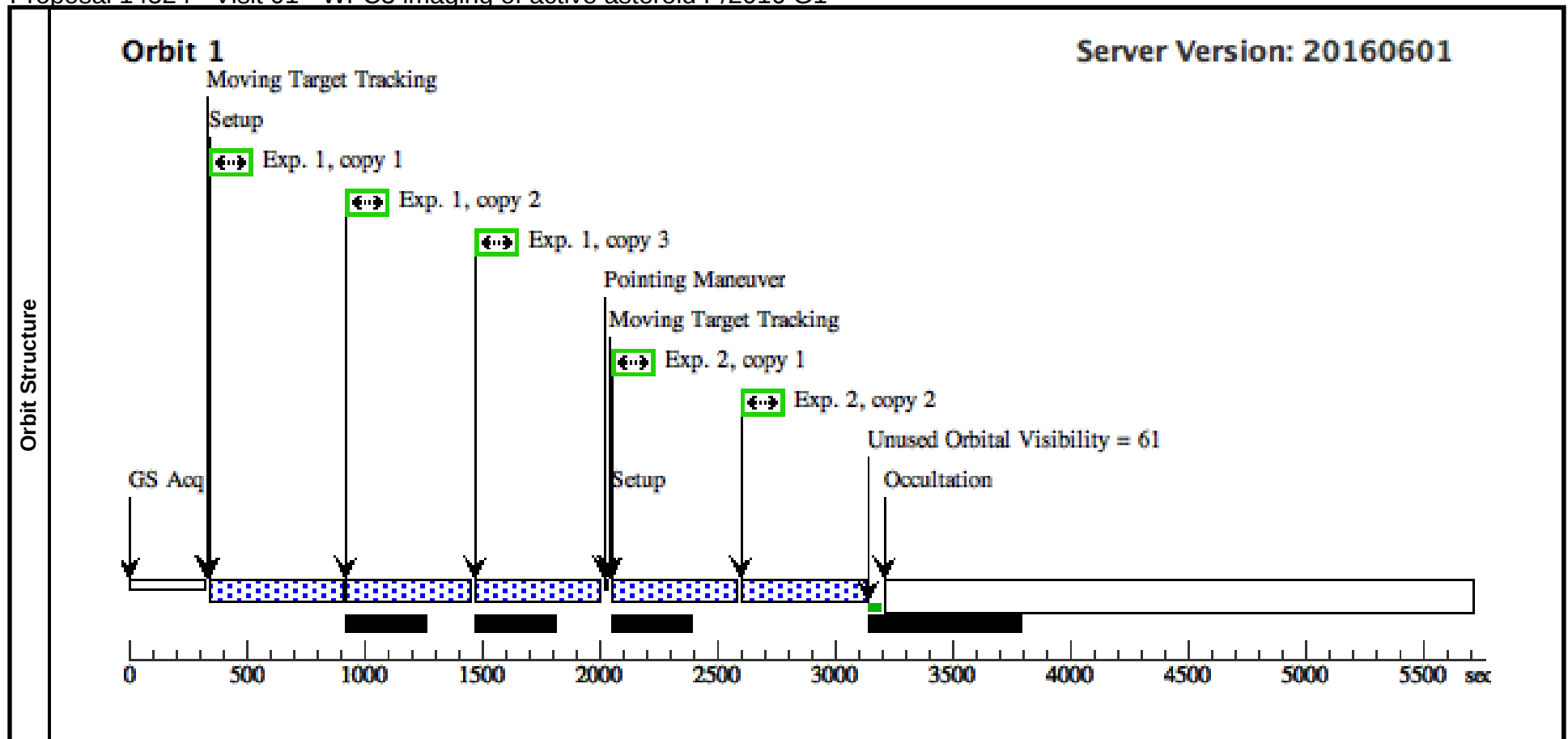
We propose to observe an active main belt asteroid, P/2016 G1 (PANSTARRS), which has been observed a few days ago with the 10m Gran Telescopio CANARIAS (GTC) telescope. GTC images show that the central condensation presents a structure similar to the X-shaped one observed in P/2010 A1, which suggest that the object is breaking apart due to some unknown mechanism. Observations with the unique high resolution and sensitivity provided by HST are urgently needed to determine which mechanism is causing the disruption: a collision of asteroids, rotational mass loss, or ice sublimation.

OBSERVING DESCRIPTION

We are requesting two HST orbits for deep WFC3 imaging at two epochs to determine the current state and early evolution of this unfolding asteroid disruption event. The first orbit (visit) should be scheduled as soon as possible, and the second visit should be scheduled 2-3 weeks later. In each orbit, we will obtain five long exposures (420s) using the broad F350LP filter for the greatest sensitivity in detecting faint fragments and dust. The multiple exposures will also allow us to reject cosmic rays, detector artifacts, and background star trails. We will include one dither shift to avoid missing data in the WFC3 interchip gap. The large WFC3 field-of-view (160x160 arcsec) helps to ensure that even with some possible pointing uncertainty (due to the non-gravitational forces involved in a disruption event) we can confidently place the target in the aperture. This observing strategy is identical to the one used successfully many times for previous active asteroid observations, and will add to a very uniform and high-quality collection of archival images of active asteroids with HST. The first visit for this program should be scheduled as soon as possible in a non-disruptive manner. The second visit is less urgent and can be scheduled 2-3 weeks later. A precise interval is not important.

Proposal 14524 - Visit 01 - WFC3 imaging of active asteroid P/2016 G1

Visit	Proposal 14524, Visit 01, scheduled										Fri Jul 29 17:44:08 GMT 2016
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: WFC3/UVIS										
	Special Requirements: BEFORE 03-JUL-2016:06:00:00										
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center				
	(1)	P2016-G1	TYPE=COMET,Q=2.0406618994078 74,E=.2100254027633657,I=10.96792 0669499,O=204.0747464141863,W=1 11.2801773466586,T=26-JAN- 2017:05:23:25,TTimeScale=UTC,EQ UINOX=J2000,EPOCH=18-APR- 2016:00:00:00,EpochTimeScale=TDB				EARTH				
	Comments: Extended=YES										
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1		(1) P2016-G1	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO		Sequence 1-2 Non-Int in Visit 01	420 Secs X 3 (1260 Secs)		
									[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]		[1]
	2		(1) P2016-G1	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO	POS TARG 0.2,2.0	Sequence 1-2 Non-Int in Visit 01	420 Secs X 2 (840 Secs)		
									[==>(Copy 1)] [==>(Copy 2)]		[1]



Proposal 14524 - Visit 02 - WFC3 imaging of active asteroid P/2016 G1

Visit	Proposal 14524, Visit 02, implementation Fri Jul 29 17:44:08 GMT 2016									
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01 BY 12 D TO 22 D									
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	P2016-G1	TYPE=COMET,Q=2.0406618994078 74,E=,2100254027633657,I=10.96792 0669499,O=204.0747464141863,W=1 11.2801773466586,T=26-JAN-2017:05:23:25,TimeScale=UTC,EQ UINOX=J2000,EPOCH=18-APR-2016:00:00:00,EpochTimeScale=TDB <i>Comments: Extended=YES</i>				EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) P2016-G1	WFC3/UVIS, ACCUM, UVIS2	F350LP	CR-SPLIT=NO		Sequence 1-1 Non-Int in Visit 02	580 Secs X 4 (2320 Secs) [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)]	[1]
Orbit Structure	Orbit 1 Server Version: 20160601									
	Moving Target Tracking Setup Exp. 1, copy 1 Exp. 1, copy 2 Exp. 1, copy 3 Exp. 1, copy 4 Unused Orbital Visibility = 4 Occultation GS Acq 0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec									