



16089 - A new member of a new comet group: characterization of C/2019 Y4 (ATLAS)

Cycle: 27, Proposal Category: GO

(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) C2019Y4-OFFSET	WFC3/UVIS	1	08-Apr-2020 14:00:24.0	yes

1 Total Orbits Used

ABSTRACT

The recently discovered long-period comet C/2019 Y4 (ATLAS) has an orbit resembling comet C/1844 Y1 (Great Comet), suggesting a common origin. This is only the third identified long-period comet group. Here we request 1 (one) HST orbit to constrain the nucleus size of C/2019 Y4 and to search for smaller, young fragments in its vicinity, with the goal being to understand the mechanism that drives the disintegration of its progenitor.

OBSERVING DESCRIPTION

We will spend one HST/WFC3 orbit to image C/2019 Y4. The observation will be conducted right before the comet enters the HST solar exclusion zone (UT 2020 Apr 30 04:00) at a heliocentric distance of 0.9 au. Since the situation is highly dynamic and the brightness of the comet around the observation date is uncertain, we will use two different exposure schemes: a large number of short, sub-array exposures aiming for near-nucleus

features and fragments, and a small number of full-frame exposures aiming for fragments far from the nucleus. In case the comet disintegrates well before the time of observation, we will only conduct long, full-frame exposures to characterize the debris field, as the nucleus no longer exists and there is no concern of saturation.

Proposal 16089 - Visit 01 - A new member of a new comet group: characterization of C/2019 Y4 (ATLAS)

Visit	Proposal 16089, Visit 01, implementation							Wed Apr 08 18:00:25 GMT 2020		
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: WFC3/UVIS									
	Special Requirements: BETWEEN 20-APR-2020:08:30:00 AND 21-APR-2020:12:00:00									
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
	(1)	C2019Y4-OFFSET	TYPE=COMET,Q=0.2528606942259004,E=0.9992079311528602,I=45.37858785518691,O=120.567065117029,W=177.4112843664408,T=31-MAY-2020:00:25:43,TimeScale=TDB,EQUINOX=J2000,EPOCH=06-MAR-2020:00:00:00,EpochTimeScale=TDB	TYPE=POS_ANGLE,RAD=30,ANG=90,REF=NORTH				EARTH		
	Comments: Description=Comet									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) C2019Y4-OFFSET	WFC3/UVIS, ACCUM, UVIS	F350LP			Sequence 1-5 Non-Int in Visit 01	388 Secs (388 Secs)	
								[==>]		[1]
	2		(1) C2019Y4-OFFSET	WFC3/UVIS, ACCUM, UVIS	F350LP		POS TARG 0,.4	Sequence 1-5 Non-Int in Visit 01	385 Secs (385 Secs)	
								[==>]		[1]
	3		(1) C2019Y4-OFFSET	WFC3/UVIS, ACCUM, UVIS	F350LP		POS TARG .4,0	Sequence 1-5 Non-Int in Visit 01	385 Secs (385 Secs)	
								[==>]		[1]
4		(1) C2019Y4-OFFSET	WFC3/UVIS, ACCUM, UVIS	F350LP		POS TARG 0,-.4	Sequence 1-5 Non-Int in Visit 01	385 Secs (385 Secs)		
							[==>]		[1]	
5		(1) C2019Y4-OFFSET	WFC3/UVIS, ACCUM, UVIS	F350LP		POS TARG -0.4,0	Sequence 1-5 Non-Int in Visit 01	385 Secs (385 Secs)		
							[==>]		[1]	

