



15456 - Mars at opposition 2018

Cycle: 25, Proposal Category: GO/DD

(Availability Mode: AVAILABLE)

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) MARS-OPPOSITION-2018	WFC3/UVIS	1	03-Jul-2018 15:00:56.0	yes

1 Total Orbits Used

ABSTRACT

We propose to image Mars with WFC3 near opposition, which occurs on 27 July 2018. This program essentially repeats the same observations conducted for the Mars 2016 opposition (HST program 14499), and is also intended to produce images for public release and archival research.

OBSERVING DESCRIPTION

We propose to observe Mars near opposition, which occurs on 27 July 2018, to obtain WFC3/UVIS multi-color imaging. Mars will be near the Earth evenly illuminated by the Sun, which is ideal for our observations. It will also be easily visible to the public in the nighttime sky. Within our one HST

Proposal 15456 (STScI Edit Number: 1, Created: Tuesday, July 3, 2018 2:00:57 PM EST) - Overview

orbit, we will sweep through a set of four WFC3 filters (F275W, F410M, F502N, F673N) several times each, and include a small dither shift, to mitigate cosmic rays and detector artifacts. Mars will easily fit within the 1K subarray, which will minimize CTE effects and allow us to obtain over 20 exposures per orbit. We hedge a bit with exposure times for each filter, since it is difficult to know in advance which Mars features might be prominent at the time of the observation (e.g. polar caps, clouds, a nearly global dust storm is underway in June 2018, and may persist through our observations in July). Exposure times will generally be short, but some may saturate in spots. We will not use post-flash which might increase the chance of saturation, and we feel the bright halo of Mars (overlapping PSF wings off the disk) will adequately fill charge traps during CCD readout. We seek approval to specify BLADE=A for all exposures to mitigate shutter-driven vibrations. We have included a wide UV filter (F275W) which also does not require very long exposures times and could reveal interesting Martian cloud structure. We would like to schedule this observation a week or so before the opposition date, so the public release can coincide with the opposition.

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Visit	Proposal 15456, Visit 01, implementation						Tue Jul 03 19:00:58 GMT 2018
	Diagnostic Status: Warning						
	Scientific Instruments: WFC3/UVIS						
	Special Requirements: BETWEEN 16-JUL-2018:00:00:00 AND 23-JUL-2018:00:00:00						
Diagnostics	(Exposure 1 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 2 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 3 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 4 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 5 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 6 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 7 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 8 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 9 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 10 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 11 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 12 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 13 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 14 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 15 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 16 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 17 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 18 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 19 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 20 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 21 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 22 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	(Exposure 23 (Sequence 1-23 Non-Int in Visit 01)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser						
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window
(1)		MARS- OPPOSITION-2018	STD=MARS				EARTH
Comments: Description=Mars just before opposition 2018 Extended=YES							

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Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F275W	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	6 Secs (6 Secs) [==>]	[1]
	2		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F275W	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	12 Secs (12 Secs) [==>]	[1]
	3		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F410M	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	0.5 Secs (0.5 Secs) [==>]	[1]
	4		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F502N	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	1.0 Secs (1 Secs) [==>]	[1]
	5		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F673N	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	0.5 Secs (0.5 Secs) [==>]	[1]
	6		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F410M	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	0.8 Secs (0.8 Secs) [==>]	[1]
	7		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F502N	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	1.5 Secs (1.5 Secs) [==>]	[1]
	8		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F673N	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	0.5 Secs (0.5 Secs) [==>]	[1]
	9		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F410M	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	1.0 Secs (1 Secs) [==>]	[1]
	10		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F502N	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	2.0 Secs (2 Secs) [==>]	[1]
	11		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F673N	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	0.5 Secs (0.5 Secs) [==>]	[1]
	12		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F275W	BLADE=A	POS TARG -0.2,-0.2	Sequence 1-23 Non-Int in Visit 01	12 Secs (12 Secs) [==>]	[1]
	13		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F410M	BLADE=A		Sequence 1-23 Non-Int in Visit 01	1.0 Secs (1 Secs) [==>]	[1]
	14		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F502N	BLADE=A		Sequence 1-23 Non-Int in Visit 01	2.0 Secs (2 Secs) [==>]	[1]
	15		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F673N	BLADE=A		Sequence 1-23 Non-Int in Visit 01	0.5 Secs (0.5 Secs) [==>]	[1]
	16		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F410M	BLADE=A		Sequence 1-23 Non-Int in Visit 01	0.8 Secs (0.8 Secs) [==>]	[1]
	17		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F502N	BLADE=A		Sequence 1-23 Non-Int in Visit 01	1.5 Secs (1.5 Secs) [==>]	[1]
	18		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F673N	BLADE=A		Sequence 1-23 Non-Int in Visit 01	0.5 Secs (0.5 Secs) [==>]	[1]
	19		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F410M	BLADE=A		Sequence 1-23 Non-Int in Visit 01	0.5 Secs (0.5 Secs) [==>]	[1]
	20		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F502N	BLADE=A		Sequence 1-23 Non-Int in Visit 01	1.0 Secs (1 Secs) [==>]	[1]
	21		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F673N	BLADE=A		Sequence 1-23 Non-Int in Visit 01	0.5 Secs (0.5 Secs) [==>]	[1]
	22		(1) MARS-OPPOSITION-2018	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F275W	BLADE=A		Sequence 1-23 Non-Int in Visit 01	12 Secs (12 Secs) [==>]	[1]

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