



9334 - Moving Target Shadow Observation Testing

Cycle: 4, Proposal Category: ENG

INVESTIGATORS

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OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
Observation Folder				
	1	MT Shadow SLOW rate	NIRCam Imaging	(1) 54P_deVico_Slow
	2	MT Shadow FAST	NIRCam Imaging	(5) 63P_Wild1_Fast
	3	MT Shadow FAST 10P	NIRCam Imaging	(14) 10P_Temple_2
	4	MT Shadow FAST 324P	NIRCam Imaging	(17) 324P_LaSagra_Fast

ABSTRACT

Testing / demonstration of the Moving Target Shadow Observation capability.

Initial testing (c. Dec. 2025) is limited to NIRCam and includes imaging of 2 targets moving at different rates.

OBSERVING DESCRIPTION

Observations of 2 targets moving at rates typical for the inner asteroid belt (Medium rate, ~3 mas/s = 11"/hr) and for NEOs (Fast rate, ~15 mas/s = 54"/hr).

Filter changes and dithers are included in order to test repeatability the timing of those operations between the science visit and the shadow visit.

The visit for the Fast target (an asteroid) spans about 2000 sec, uses the INTRASCA dither (~8" offsets) and 2 filter settings. Exposure time is about 80 sec/dither. This is primarily a test/demonstration of dithering. Total charged time for each visit is 1.6 hr.

The visit for the for the Medium rate target (a comet) spans about 4500 sec, uses the SUBPIXEL dithers (~1" offsets) and has 3 filter settings. Exposure time is about 5 min per dither. Total charged time for each visit is 2.5 hr.

Total charged time for the two observations (4 visits) is 8.1 hr.

2 observations marked as ON HOLD are not expected to execute, and account for 4.3 hours of the total charged time on the Proposal Information form.

Proposal 9334 - Targets - Moving Target Shadow Observation Testing

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
	(10)	NGC-2168	RA: 06 09 7.5000 (92.2812500d) Dec: +24 20 15.00 (24.33750d) Equinox: J2000	Proper Motion RA: 2.2784 mas/yr Proper Motion Dec: -2.933600012511306 mas/yr Parallax: 0.0011301000000000002" Epoch of Position: 2000	
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>					
<i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i>					
<i>Category=Calibration</i>					
<i>Description=[Open star clusters]</i>					

Proposal 9334 - Targets - Moving Target Shadow Observation Testing

#	Name	Level 1	Level 2	Level 3
(1)	54P_deVico_Slow	TYPE=COMET,Q=2.175873287354348,E=0.4260847 609982111,I=6.064462593433547 ,O=358.8163647448546,W=1.789058657203447,T=03 -SEP- 2024:15:26:15,TTIME=J2000,E POCH=04-SEP-2021:00:00:00,EpochTimeScale=TDB		
<p><i>Comments: Selected for March 2026 MT Shadow on-orbit test</i> <i>Apparent rate will be ~1.7 mas/s (slow)</i> <i>Vivable Feb 25 - Apr 18</i> <i>Extended=Unknown</i></p>				
(5)	63P_Wild1_Fast	TYPE=COMET,Q=1.950895669304361,E=0.6509642 033833045,I=19.78072201707476 ,O=358.0316715844609,W=168.9473497506386,T=10 -APR- 2013:16:38:50,TTIME=J2000,E POCH=27-JUL- 2012:00:00:00,EpochTimeScale=TDB,R0=2.808 ,DT=0. ,A1=1.907558441162E-9,A2=-1.101262122393E- 9,A3=0. ,ALN=0.1112620426,NM=2.15,NN=5.093,NK=4.6142 ,AMRAT=0.		
<p><i>Comments: Extended=Unknown</i></p>				
(13)	29P_SchwassmannWachmann 1_Slow	TYPE=COMET,Q=5.775128023153281,E=0.0447981 4451705345,I=9.36477140871115 ,O=312.3909165450346,W=50.66270007179723,T=16 -APR- 2019:10:13:18,TTIME=J2000,E POCH=14-OCT-2022:00:00:00,EpochTimeScale=TDB		
<p><i>Comments: Visible 2026-04-23 - 06-15</i> <i>Apparent rate ~ 2mas/s SLOW</i> <i>Extended=Unknown</i></p>				
(14)	10P_Temple_2	TYPE=COMET,Q=1.419972737957491,E=0.5366375 142985185,I=12.02851238664864 ,O=117.8057876334806,W=195.5267894440256,T=14 -NOV- 2015:17:04:09,TTIME=J2000,E POCH=27-OCT- 2013:00:00:00,EpochTimeScale=TDB,R0=2.808 ,DT=0. ,A1=2.222231961787E-10,A2=7.295990362763E- 12,A3=4.31967433542E-11 ,ALN=0.1112620426,NM=2.15,NN=5.093,NK=4.6142 ,AMRAT=0.		
<p><i>Comments: Visible 2026-03-30 - 05-29</i> <i>Apparent rate ~ 21mas/s</i> <i>Extended=Unknown</i></p>				
(17)	324P_LaSagra_Fast	TYPE=COMET,Q=2.617981346524649,E=0.1537858 473884784,I=21.42002742328922 ,O=270.6510104220577,W=58.90024879383949,T=22 -JUN- 2010:21:26:10,TTIME=J2000,E POCH=12-DEC-2012:00:00:00,EpochTimeScale=TDB		
<p><i>Comments: Apparent rate ~ 10mas/s, FAST (ish)</i> <i>Extended=Unknown</i></p>				

Solar System Targets

Proposal 9334 - Observation 1 - Moving Target Shadow Observation Testing

Wed Apr 22 15:00:09 GMT 2026

Observation	Proposal 9334, Observation 1: MT Shadow SLOW rate Diagnostic Status: Warning Observing Template: NIRCam Imaging									
	(Visit 1:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Shadow Visit 1:2) Warning (Form): Overheads are provisional until the Visit Planner has been run. (MT Shadow SLOW rate (Obs 1)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.									
Diagnosics										
Solar System Targets	#	Name	Level 1	Level 2	Level 3					
	(1)	54P_deVico_Slow	TYPE=COMET,Q=2.175873287354348,E=0.4260847 609982111,I=6.064462593433547 .O=358.8163647448546,W=1.789058657203447,T=03 -SEP- 2024:15:26:15,TimeScale=TDB,EQUINOX=J2000,E POCH=04-SEP-2021:00:00:00,EpochTimeScale=TDB							
Template	<i>Comments: Selected for March 2026 MT Shadow on-orbit test</i> <i>Apparent rate will be ~1.7 mas/s (slow)</i> <i>Vivable Feb 25 - Apr 18</i> <i>Extended=Unknown</i>									
	Module	Subarray								
	B	FULL								
Mosaic	Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order			
	2	1	95.0	95.0	0.0	0.0	DEFAULT			
Dithers	#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions				
	1	NONE		STANDARD		3				
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	Optional ETC ID
	1	F070W	F277W	RAPID	7	1	3	3	225.472	
	2	F200W	F444W	RAPID	7	1	3	3	225.472	

Proposal 9334 - Observation 1 - Moving Target Shadow Observation Testing

Special Requirements

Before Date 01-MAY-2026:00:00:00
Sequence Visits within 53.0 Days
Visits Same PA
Offset 35.0 arcsec, 35.0 arcsec
Moving Target Shadow Min interval 10.0 Days

DEFAULT WINDOW: ANGULAR RATE 54P_deVico_Slow FROM JWST LESS THAN 0.075

Proposal 9334 - Observation 2 - Moving Target Shadow Observation Testing

Wed Apr 22 15:00:09 GMT 2026

Observation	Proposal 9334, Observation 2: MT Shadow FAST Diagnostic Status: Warning Observing Template: NIRCcam Imaging									
	(Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Shadow Visit 2:2) Warning (Form): Overheads are provisional until the Visit Planner has been run. (MT Shadow FAST (Obs 2)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.									
Diagnosics										
Solar System Targets	#	Name	Level 1	Level 2	Level 3					
	(5)	63P_Wild1_Fast	TYPE=COMET,Q=1.950895669304361,E=0.6509642 033833045,I=19.78072201707476 ,O=358.0316715844609,W=168.9473497506386,T=10 -APR- 2013:16:38:50,TimeScale=TDB,EQUINOX=J2000,E POCH=27-JUL- 2012:00:00:00,EpochTimeScale=TDB,R0=2.808 ,DT=0. ,A1=1.907558441162E-9,A2=-1.101262122393E- 9,A3=0. ,ALN=0.1112620426,NM=2.15,NN=5.093,NK=4.6142 ,AMRAT=0.							
<i>Comments: Extended=Unknown</i>										
Template	Module				Subarray					
	B				FULL					
Dithers	#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions				
	1	INTRASCA	4	STANDARD	8" (SMALL)	1				
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	Optional ETC ID
	1	F115W	F356W	RAPID	3	1	4	4	128.841	
	2	F200W	F430M	RAPID	9	1	4	4	386.524	

Proposal 9334 - Observation 2 - Moving Target Shadow Observation Testing

Special Requirements

Before Date 01-MAY-2026:00:00:00
Sequence Visits within 53.0 Days
Visits Same PA
Offset 35.0 arcsec, 35.0 arcsec
Moving Target Shadow Min interval 10.0 Days

DEFAULT WINDOW: ANGULAR RATE 63P_Wild1_Fast FROM JWST LESS THAN 0.075

Proposal 9334 - Observation 3 - Moving Target Shadow Observation Testing

Wed Apr 22 15:00:09 GMT 2026

Observation	Proposal 9334, Observation 3: MT Shadow FAST 10P Diagnostic Status: Warning Observing Template: NIRCam Imaging									
	(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Shadow Visit 3:2) Warning (Form): Overheads are provisional until the Visit Planner has been run. (MT Shadow FAST 10P (Obs 3)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.									
Solar System Targets	#	Name	Level 1	Level 2	Level 3					
	(14)	10P_Temple_2	TYPE=COMET,Q=1.419972737957491,E=0.5366375 142985185,I=12.02851238664864 ,O=117.8057876334806,W=195.5267894440256,T=14 -NOV- 2015:17:04:09,TimeScale=TDB,EQUINOX=J2000,E POCH=27-OCT- 2013:00:00:00,EpochTimeScale=TDB,R0=2.808 ,DT=0. ,A1=2.222231961787E-10,A2=7.295990362763E- 12,A3=4.31967433542E-11 ,ALN=0.1112620426,NM=2.15,NN=5.093,NK=4.6142 ,AMRAT=0.			Comments: Visible 2026-03-30 - 05-29 Apparent rate ~ 21mas/s Extended=Unknown				
Template	Module				Subarray					
	B				FULL					
Dithers	#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions				
	1	INTRASCA	4	STANDARD	8" (SMALL)	1				
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	Optional ETC ID
	1	F150W2	F356W	RAPID	3	1	4	4	128.841	
	2	F200W	F430M	RAPID	9	1	4	4	386.524	

Proposal 9334 - Observation 3 - Moving Target Shadow Observation Testing

Special Requirements

Before Date 01-MAY-2026:00:00:00
Sequence Visits within 53.0 Days
Visits Same PA
Offset 35.0 arcsec, 35.0 arcsec
Moving Target Shadow Min interval 10.0 Days

DEFAULT WINDOW: ANGULAR RATE 10P_Temple_2 FROM JWST LESS THAN 0.075

Proposal 9334 - Observation 4 - Moving Target Shadow Observation Testing

Wed Apr 22 15:00:09 GMT 2026

Observation	<p>Proposal 9334, Observation 4: MT Shadow FAST 324P</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRCcam Imaging</p>									
Diagnostics	<p>(Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(Shadow Visit 4:2) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(MT Shadow FAST 324P (Obs 4)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>									
Solar System Targets	#	Name	Level 1	Level 2	Level 3					
	(17)	324P_LaSagra_Fast	TYPE=COMET,Q=2.617981346524649,E=0.1537858 473884784,I=21.42002742328922 .O=270.6510104220577,W=58.90024879383949,T=22 -JUN- 2010:21:26:10,TimeScale=TDB,EQUINOX=J2000,E POCH=12-DEC-2012:00:00:00,EpochTimeScale=TDB			<p><i>Comments: Apparent rate ~ 10mas/s, FAST (ish)</i></p> <p><i>Extended=Unknown</i></p>				
Template	Module			Subarray						
	B			FULL						
Dithers	#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions				
	1	INTRASCA	4	STANDARD	8" (SMALL)	1				
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	Optional ETC ID
	1	F150W2	F356W	RAPID	3	1	4	4	128.841	
	2	F200W	F430M	RAPID	9	1	4	4	386.524	
Special Requirements	<p>Sequence Visits within 53.0 Days</p> <p>Visits Same PA</p> <p>Offset 35.0 arcsec, 35.0 arcsec</p> <p>Moving Target Shadow Min interval 10.0 Days</p> <p>DEFAULT WINDOW: ANGULAR RATE 324P_LaSagra_Fast FROM JWST LESS THAN 0.075</p>									