

# 1245 - Near-Earth Objects

Cycle: 1, Proposal Category: GTO

## **INVESTIGATORS**

Name	Institution	E-Mail
Dr. Cristina A. Thomas (PI)	Northern Arizona University	cristina.thomas@nau.edu
Dr. Andrew S. Rivkin (CoI)	The Johns Hopkins University Applied Physics Labor	andy.rivkin@jhuapl.edu
	atory	

### **OBSERVATIONS**

Folder	Observation	Label	Observing Template	Science Target
Phaetho	on			
	2	Phaethon/NIRSpec	NIRSpec Fixed Slit Spectroscopy	(1) PHAETHON
	4	Phaethon/MIRI	MIRI Medium Resolution Spectroscopy	(1) PHAETHON
	18	Phaethon/NIRCam	NIRCam Imaging	(1) PHAETHON
Didymo	s Impact			
	30	Fixed Pointing	Pointing Only	(4) NEAR-DIDYMOS
	31	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS
	32	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS
	33	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS
	34	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS
	35	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS
	36	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS
	37	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS
	38	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS
	39	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS
	40	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS
	41	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS

JWST Proposal 1245 (Created: Monday, November 21, 2022 at 11:00:30 AM Eastern Standard Time) - Overview

Folder	Observation	Label	Observing Template	Science Target
	42	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS
Didymo	s Characterizati	on		
	20	Didymos/NIRSpec	NIRSpec Fixed Slit Spectroscopy	(2) DIDYMOS
	21	Didymos/MIRI	MIRI Medium Resolution Spectroscopy	(2) DIDYMOS
	24	Didymos/MIRI Backgr ound	MIRI Medium Resolution Spectroscopy	(3) DIDYMOS-BACKGROUND
	43	Didymos/NIRCam	NIRCam Imaging	(2) DIDYMOS

#### **ABSTRACT**

Near-Earth Objects (NEOs) are of interest for various reasons, including their scientific significance and impact hazard mitigation. Though several recent missions have visited NEOs, most have lacked spectral capabilities in the wavelength regions covered by JWST. These observations will target two NEOs of particular interest, (3200) Phaethon and (65803) Didymos, which are the destinations of upcoming missions with limited or no infrared capabilities. The objects selected have different compositions, orbits, source regions, and sizes. Together they will help us understand the range of objects present in the near-Earth asteroid population. (3200) Phaethon is a B-type NEO with a perihelion well inside the orbit of Mercury and an orbit that links it to the Geminid meteor shower. Phaethon the only asteroid identified as a meteor shower parent body. It has shown activity in the past, but the nature of the activity is still unclear. Our observations will examine its composition (NIRSpec & MIRI) and search for activity (NIRCam). Phaethon is the target of the future JAXA DESTINY+ mission. (65803) Didymos is a binary S-type NEO that is the target of NASA's DART mission. NIRCam observations of Didymos will be timed to coincide with the DART impact into the secondary of the Didymos system in fall 2022. After the impact, we will observe the spectrum (NIRSpec & MIRI) and search for remaining dust (MIRI imaging). S-type asteroids are extremely common in near-Earth space, but few have spectral observations beyond 2.5 microns. Both targets have been well characterized from the ground and we have selected a number of JWST observing modes to best complement our current understanding of the objects.

#### **OBSERVING DESCRIPTION**

We will obtain observations of two near-Earth objects: (3200) Phaethon and (65803) Didymos. We will observe these targets in NIRCam, NIRSpec, and MIRI. For the spectral modes, we plan for signal-to-noise (SNR) > 75 for most wavelengths.

Of particular interest for our scientific case:

- 1. NIRSpec. The 3 micron spectral region contains diagnostic absorption features of volatiles and organics. This region is very difficult to observe from the ground and observations in this region would add to our understanding of these objects.
- 2. MIRI. Spitzer observations have shown that there are a number of spectral features of interest in the mid-infrared wavelength region. We

JWST Proposal 1245 (Created: Monday, November 21, 2022 at 11:00:30 AM Eastern Standard Time) - Overview investigate the these features to determine additional constraints on composition and on regolith grain size.

3. NIRCam. Phaethon has been shown to exhibit cometary-like activity. We use observations with selected NIRCam filters to investigate CO, CO2, H2O, and dust near the object. Didymos will be impacted by the DART spacecraft in fall 2022. We will use NIRCam to observe the ejecta from the impact.

For (3200) Phaethon, we use the observing windows of 2021 Dec 15 20:00 UT to 2022 Jan 26 23:00 UT and 2022 Aug 27 11:00 UT to 2022 Oct 13 10:00 UT. These dates are when the object is within the available elongation window of the observatory. The object does not exceed the nominal non-sidereal tracking limit. The V magnitude is V=17.44-18.02. The albedo is 0.1066 and the diameter is 5.1 km.

For (65803) Didymos, we have two observing sequences: during impact (Sept 30 2022) and after impact. For the impact observation, the non-sidereal rate of motion of the object will be in excess of the nominal limit. We will create an ephemeris file that tracks at maximum allowed rate and allow Didymos to move across the NIRCam field of view. For the second sequence, we use the observing window of 2022 Nov 6 07:00 UT to 2022 Dec 11 01:00 UT. The target is within the elongation windows during these dates and the rate of motion is below the nominal non-sidereal tracking limit. The V magnitude is V=16.15-16.23 and the target is ~0.1-0.2 AU from the observatory. The albedo is 0.15 and the diameter is 0.78 km.

The impact observations of Didymos (19:1 & 23:1) are a non-interruptible sequence to image the impact of the DART spacecraft at Didymos and the subsequent evolution of the impact ejecta. The non-sidereal motion of Didymos will be in excess of the JWST limits, so ephemerides will be calculated for each visit at the maximum rate of motion. These observations should be taken together so that we can best understand the evolution of the ejecta immediately following the impact.

Proposal 1245 - Targets - Near-Earth Objects

_		<u> 45 - Targets - Near-</u>	Lartii Objects		
र	#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
Targets	(4)	NEAR-DIDYMOS	RA: 03 51 34.6800 (57.8945000d)		
a c			Dec: -35 42 45.36 (-35.71260d)		
			Equinox: J2000		
9	Comments:		1		
Fixed	Category=Un				
ᆮ	Description=[				
	#	Name	Level 1	Level 2	Level 3
argets	(1)	PHAETHON	TYPE=ASTEROID,A=1.271339178861476,E=0.8898 786009875023,I=22.26032099241133,O=265.2156688 824448,W=322.1874914189535,M=92.825534133117 4,EQUINOX=J2000,EPOCH=15-NOV-2019:00:00:00.EpochTimeScale=TDB,R0=1.,A1=0.,A 2=-5.44480485587E-15,A3=0.,ALN=1.,NM=2.,NN=0.,NK=0.,AMRAT=0.		
l Ĕ	Comments: Ex	stended=NO			
Solar System Ta	(2)	DIDYMOS	TYPE=ASTEROID,A=1.644309100221705,E=0.3840 309442624079,I=3.408560509334979 ,O=73.2071194101355,W=319.3234075546097,M=90. 71883994985548,EQUINOX=J2000,EPOCH=13-FEB-2019:12:00:00,EpochTimeScale=TDB,R0=1. ,A1=0.,A2=-1.999856067414E-14,A3=0. ,ALN=1.,NM=2.,NN=0.,NK=0.,AMRAT=0.		
၂ တ	Comments: Ex	xtended=NO			
	(3)	DIDYMOS-BACKGROUND	TYPE=ASTEROID,A=1.644310109777266,E=0.3839 32031784022,I=3.408085041536477,O=73.239239131 19975,W=319.2450713457229,M=355.509243001592 4,EQUINOX=J2000,EPOCH=27-MAR-2012:00:00:00,EpochTimeScale=TDB	TYPE=POS_ANGLE,RAD=60,ANG=0,REF=NORTH	
	Comments: Ex	xtended=NO			

Pro	posal 1245	<u> 5 - Observat</u>	ion 2 - Nea	ar-Earth Ob	ojects							
_		Observation 2: Pha									Mon Nov 21 1	6:00:30 GMT 2022
Observation	Diagnostic Statu	us: Warning										
ا ڏ	Observing Temp	olate: NIRSpec Fixe	d Slit Spectroscop	ру								
l se												
ō												
S	(Visit 2:1) Warni	ing (Form): Overhe	ads are provisiona	al until the Visit P	lanner has been rui	1.						
Diagnostics												
2												
<u> </u>												
_												
System Targets		ame	Level			Level 2	2			Level 3		
Įğ	(1) PI	HAETHON			1.27133917886147 032099241133,O=							
] [			82444	8,W=322.187491	4189535,M=92.82							
١Ę			4,EQU 2019:0	JINOX=J2000,EP 00:00:00,EpochTi	meScale=TDB,R0:	=1.,A1=0.,A						
st			2=-5.4	14480485587E-	=2.,NN=0.,NK=0.,							
တြ	Comments: Exter	ndad-NO	13,43	_0.,ALI\-1.,I\IVI-	-2.,1 <b>V</b> 1V-0.,1V <b>IX</b> -0.,1	AWIKA 1=0.						
Solar	Comments. Exter	naca=110										
ြတ္တ												
uc	#	Target	TA Method	Subarray	Filter	Readout Pa	ttern	Groups/Int	Integrations/Exp	Total		ETC Wkbk.Calc
Acquisition	1	SAME	WATA	SUB32	CLEAR	ND CD A DID	D(	3	1	Integrations 1	<b>Time</b> 0.26	ID 42020.37
∐∺	1	SAME	WAIA	SUB32	CLEAR	NRSRAPID	סטי	3	1	1	0.26	42020.37
2												
	6124					C	. h					
<u>a</u> t	Slit S200A1						i <mark>barray</mark> JBS200					
l d	3200A1					30	J <b>B3</b> 200	AI				
Template												
	#				Primary Dither	Positions			Sub-Pixel P	attern		
Je l	1				2				NONE			
Dithers												
	#	Grating/Filter	Slit	Readout	Groups/Int	Integrations/Ex #		Autocal	Total Dithe	rs Total	Total Exposure	e ETC
e l				Pattern		р				Integrations	Time	Wkbk.Calc ID
E	1	PRISM/CLEAR	S200A1	NRSRAPID	20	3 1		NONE	2	6	196.431	120704.2
👸												
Spectral Elements												
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<u>P</u>	posal 1245 - Observation 2 - Near-Earth Objects
Ŀ	Between Dates 27-AUG-2022:11:00:00 and 12-OCT-2022:23:00:00
L	DEFAULT WINDOW: ANGULAR RATE PHAETHON FROM JWST LESS THAN 0.03
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		<u> 15 - Obser</u>			h Objects								
ö		, Observation 4:	Phaethon/MIR	I								Mon Nov 21 1	6:00:30 GMT 2022
vat	_	ntus: Warning hplate: MIRI Med	lium Desolution	Cnastrosaony									
Šer	Observing Ten	iipiate: MIKI Med	num Resolution .	spectroscopy									
Observation													
Diagnostics	(Visit 4:1) Wan	rning (Form): Ov	erheads are provi	isional until the	Visit Planner ha	s been run.							
_	#	Name	I	evel 1			Level 2			Leve	el 3		
System Targets		PHAETHON	Т	YPE=ASTERC		9178861476,E=0.8	898						
Гаг						41133,O=265.2156 ,M=92.825534133							
Έ			4	,EQUINOX=J2	000,EPOCH=15	5-NOV- =TDB,R0=1.,A1=0							
ste			2	=-5.444804855	87E-								
Š	G . F		1	5,A3=0.,ALN=	1.,NM=2.,NN=0	).,NK=0.,AMRAT	=0.						
a	Comments: Ex	tended=NO											
Solar													
	#						Target						
Acquisition	1						NONE						
l is													
8													
_													
ate	AcqFilter			Primary	Channel		•	neous Imaging		•	nager Subarray		
[편	F560W			ALL			NO			FU	JLL		
Template													
	#			Dither Ty	vne		Optimi	zed For		Di	rection		
Je l	1			4-Point	, <b>F</b> -			SOURCE			EGATIVE		
Dithers													
Spectral Elements	#	Wavelength Range	Detector	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit	Dither	Total Dithers	Total Integrations	Total Exposure	ETC Wkbk.Calc ID
μe		LONG(C)	MOGLONG		EAGED 1				D'al 1			Time	42020.7
<u> </u>	1	LONG(C) LONG(C)	MRSLONG MRSSHORT		FASTR1 FASTR1	63 63	2 2	1	Dither 1 Dither 1	4	8	1409.72 1409.72	42020.7 42020.47
1 = 1	2	MEDIUM(B)	MRSLONG		FASTR1	63	2	1	Ditner 1 Dither 1	4	8	1409.72	42020.47
<u>#</u>	2	MEDIUM(B)	MRSSHORT		FASTR1	63	2	1	Dither 1	4	8	1409.72	42020.46
l e	3	SHORT(A)	MRSLONG		FASTR1	63	2	1	Dither 1	4	8	1409.72	42020.22
S	3	SHORT(A)	MRSSHORT		FASTR1	63	2	1	Dither 1	4	8	1409.72	42020.45

Between Dates 29-NOV-2022:00:00:00 and 20-DEC-2022:00:00:00
No Parallel Attachments
DEFAULT WINDOW: ANGULAR RATE PHAETHON FROM JWST LESS THAN 0.03

Pro	oposal 1245 - Observa	ation 18 - Near-Ea	rth Objects						
	Proposal 1245, Observation 18:		·					Mon Nov	21 16:00:30 GMT 2022
Ιij	Diagnostic Status: Warning								
≥	Observing Template: NIRCam Im	aging							
se									
Observation									
Diagnostics	(Visit 18:1) Warning (Form): Ove	rheads are provisional until th	ne Visit Planner has be	een run.					
ş	# Name	Level 1			Level 2		Level 3		
Solar System Targets	(1) PHAETHON	786009875023, 824448,W=322 4,EQUINOX=J	OID,A=1.2713391788 I=22.2603209924113 .1874914189535,M=9 2000,EPOCH=15-NO	3,O=265.2156688 92.825534133117 V-					
Ę		2019:00:00:00,I 2=-5.44480485	EpochTimeScale=TDI 587F-	B,R0=1.,A1=0.,A					
Ιš		15,A3=0.,ALN=	=1.,NM=2.,NN=0.,NK	X=0.,AMRAT=0.					
15	Comments: Extended=NO								
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_									
ate	Module B				Subarray				
밀	В				SUB640				
Template									
	#	Primary Dither Type	Primary Di	thers	Subpixel Dither Ty	pe Dithe	r Size	Subpixel P	ositions
Pe l	1	SUBARRAY_DITHER	4		STANDARD			1	
Dithers									
Spectral Elements	# Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	<b>Total Integrations</b>	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
١٤	1 F090W	F430M	RAPID	7	4	16	4	536.115	120704.39
<u>=</u> [									
1 5									
b d									
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nts	Between Dates 27-AUG-2022:11: Offset 9.0 arcsec, 9.0 arcsec	00:00 and 12-OCT-2022:23:0	00:00						
ĮΨ	DEFAULT WINDOW: ANGULA	AR RATE PHAETHON FRO	M IWST LESS THAN	N 0 03					
l ë	DEFREET WINDOW. THIOCE	in millimization and	WIS WELL ELECTION	1 0.03					
호									
2									
<u>'a</u>									
Special Requiremer									
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Proposal 1245 - Observation 30 - Near-Earth Objects Observation Proposal 1245, Observation 30: Fixed Pointing Mon Nov 21 16:00:30 GMT 2022 Diagnostic Status: Warning Observing Template: Pointing Only Diagnostics (Visit 30:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. Name **Target Coordinates Targ. Coord. Corrections** Miscellaneous **Fixed Targets** (4) NEAR-DIDYMOS RA: 03 51 34.6800 (57.8945000d) Dec: -35 42 45.36 (-35.71260d) Equinox: J2000 Comments: Category=Unidentified Description=[Blank field] Template Aperture **Duration** NRCB5\_SUB400P Spectral Elements Special Requirements Aperture PA Range 293.80969493 to 293.80969493 Degrees (V3 293.501 to 293.501) PCS Mode COARSE No Parallel Attachments Required Special Commanding Pointing Only Sequence Observations 30, 42, Non-interruptible

Pro	posal 1245 - Observa		arth Objects						
Observation	Proposal 1245, Observation 31: D Diagnostic Status: Error Observing Template: NIRCam Imag MOSS Planning Start: 25-SEP-2022 MOSS Planning End: 28-SEP-2022 Comments: DART impact time is See	ging 2	<sup>-</sup> +/- 10 miniutes. Obs	erve as close as pe	ossible to that time.			Mon Nov	21 16:00:30 GMT 2022
Diagnostics	(Didymos/NIRCam (Obs 31)) Error (Visit 31:1) Warning (Form): Overh				ter than 100.0 milliarcsecc	onds/second.			
ts	# Name	Level 1			Level 2		Level 3		
Solar System Targets	(2) DIDYMOS  Comments: Extended=NO	309442624079, ,O=73.2071194 718839949855- 2019:12:00:00, ,A1=0.,A2=-1.9	OID,A=1.6443091002 I=3.40856050933497 101355,W=319.32346 48,EQUINOX=12000, EpochTimeScale=TDl 199856067414E-14,A 2.,NN=0.,NK=0.,AMI	9 075546097,M=90. EPOCH=13-FEB- B,R0=1. 3=0.					
ē	Module				Subarray				
Template	В				SUB400P				
ſS	#	Primary Dither Type	Primary Di	thers	Subpixel Dither Ty	pe Dithe	r Size	Subpixel P	ositions
Dithers	1	NONE			STANDARD			1	
ents	# Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	<b>Total Integrations</b>	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
Spectral Elements	1 F070W	F323N+F322W2	RAPID	3	47	47	1	312.336	
Special Requirements	Aperture PA Range 275.02984889 Guide Star ID S33I017491 Group Observations 31, 32, 33, 34, DEFAULT WINDOW: ANGULAR	35, 36, 37, 38, 39, 40, 41, 4	2 within 8 Hours						

Pro	posal 1245 - Observ	ration 32 - Near-Ea	arth Objects						
Observation	Proposal 1245, Observation 32 Diagnostic Status: Error Observing Template: NIRCam In MOSS Planning Start: 25-SEP-2 MOSS Planning End: 28-SEP-20 Comments: DART impact time is	maging 022 022	T +/- 10 miniutes. Obs	erve as close as po	ossible to that time.			Mon Nov	21 16:00:30 GMT 2022
Diagnostics	(Didymos/NIRCam (Obs 32)) Er (Visit 32:1) Warning (Form): Ov				ter than 100.0 milliarcsecc	onds/second.			
ts	# Name	Level 1			Level 2		Level 3		
Solar System Targets	(2) DIDYMOS  Comments: Extended=NO	309442624079 ,O=73.207119 718839949855 2019:12:00:00 ,A1=0.,A2=-1.	COID,A=1.6443091002,I=3.408560509334974101355,W=319.3234448,EQUINOX=I2000,EpochTimeScale=TDl999856067414E-14,A:2.,NN=0.,NK=0.,AMI	9 075546097,M=90. EPOCH=13-FEB- B,R0=1. 3=0.					
Ę.	Module				Subarray				
Template	В				SUB400P				
ſS	#	Primary Dither Type	Primary Di	thers	Subpixel Dither Ty	pe Dithe	r Size	Subpixel P	ositions
Dithers	1	NONE			STANDARD			1	
ents	# Short Filte	er Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	<b>Total Integrations</b>	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
Spectral Elements	1 F070W	F323N+F322W2	RAPID	3	47	47	1	312.336	
Special Requirements	Guide Star ID S33I017465 Group Observations 31, 32, 33, 3 DEFAULT WINDOW: ANGUL			0.11					

Pro	pposal 1245 - Obse	ervation 33 - Near-E	arth Obiects										
Observation	Proposal 1245, Observation Diagnostic Status: Error Observing Template: NIRCan MOSS Planning Start: 25-SE MOSS Planning End: 28-SEF Comments: DART impact tim	<b>33: Didymos/NIRCam</b> In Imaging P-2022 P-2022 e is September 26, 2022 23:14 U	T +/- 10 miniutes. Obs					Mon Nov 2	21 16:00:30 GMT 2022				
Diagnostics													
ts	# Name	Level 1			Level 2		Level 3						
Solar System Targets	(2) DIDYMOS  Comments: Extended=NO	309442624079 ,0=73.207119 718839949855 2019:12:00:00 ,A1=0.,A2=-1.	ROID,A=1.644309100; J=3.40856050933497 4101355,W=319.32344 448,EQUINOX=J2000, EpochTimeScale=TD: 999856067414E-14,A: -2.,NN=0.,NK=0.,AMI	9 075546097,M=90. EPOCH=13-FEB- B,R0=1. 3=0.									
Š													
te	Module				Subarray								
Template	В				SUB400P								
S	#	Primary Dither Type	Primary Di	thers	Subpixel Dither Ty	ype Dithe	r Size	Subpixel Po	ositions				
Dithers	1	NONE			STANDARD			1					
ents	# Short I	ilter Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID				
Spectral Elements	1 F070W	F323N+F322W2	RAPID	3	47	47	1	312.336					
Special Requirements		3, 34, 35, 36, 37, 38, 39, 40, 41, ULAR RATE DIDYMOS FROM		0.11									

Pro	posal 1245 - Obser	vation 34 - Near-Ea	arth Objects						
Observation	Proposal 1245, Observation 3 Diagnostic Status: Error Observing Template: NIRCam MOSS Planning Start: 25-SEP- MOSS Planning End: 28-SEP- Comments: DART impact time	Imaging 2022 2022	T +/- 10 miniutes. Obs	erve as close as po	ossible to that time.			Mon Nov	21 16:00:30 GMT 2022
Diagnostics	(Didymos/NIRCam (Obs 34)) I (Visit 34:1) Warning (Form): C	Error (Form): JWST cannot trac	k a moving target at ar	n angular rate grea		onds/second.			
ts	# Name	Level 1			Level 2		Level 3		
Solar System Targets	(2) DIDYMOS  Comments: Extended=NO	309442624079 ,O=73.207119· 718839949855 2019:12:00:00 ,A1=0.,A2=-1.	COID,A=1.6443091002,I=3.408560509334974101355,W=319.3234448,EQUINOX=12000,EpochTimeScale=TDl999856067414E-14,A:2.,NN=0.,NK=0.,AMI	9 075546097,M=90. EPOCH=13-FEB- B,R0=1. 3=0.					
ē	Module				Subarray				
Template	В				SUB400P				
ſS	#	Primary Dither Type	Primary Di	thers	Subpixel Dither Ty	pe Dithe	er Size	Subpixel P	ositions
Dithers	1	NONE			STANDARD			1	
ents	# Short Fil	ter Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	<b>Total Integrations</b>	<b>Total Dithers</b>	Total Exposure Time	ETC Wkbk.Calc ID
Spectral Elements	1 F070W	F323N+F322W2	RAPID	3	47	47	1	312.336	
Special Requirements	Guide Star ID S33A009070 Group Observations 31, 32, 33, DEFAULT WINDOW: ANGU			0.11					

Pro	posal 1	1245 - Observation	on 35 - Near-Ea	rth Obiects										
ď	Proposal 1 Diagnostic Observing MOSS Plan MOSS Plan	1245, Observation 35: Did e Status: Error Template: NIRCam Imagir nning Start: 25-SEP-2022 nning End: 28-SEP-2022	<b>ymos/NIRCam</b> g		erve as close as po	ossible to that time.			Mon Nov	21 16:00:30 GMT 2022				
Diagnostics														
ts	#	Name	Level 1			Level 2		Level 3						
Solar System Targets	(2)  Comments.	DIDYMOS : Extended=NO	309442624079, ,O=73.2071194 7188399498554 2019:12:00:00, ,A1=0.,A2=-1.9	OID,A=1.6443091002 I=3.408560509334979 101355,W=319.32344 I8,EQUINOX=12000, EpochTimeScale=TDJ 99856067414E-14,A.2 2.,NN=0.,NK=0.,AMF	9 075546097,M=90. EPOCH=13-FEB- B,R0=1. 3=0.									
လွ														
_	Module					Subarray								
Jat	В					SUB400P								
Template														
SIS	#	P	rimary Dither Type	Primary Di	thers	Subpixel Dither Ty	pe Dithe	r Size	Subpixel Po	ositions				
Dithers	1	N	ONE			STANDARD			1					
ents	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	<b>Total Integrations</b>	<b>Total Dithers</b>	Total Exposure Time	ETC Wkbk.Calc ID				
Spectral Elements	1	F070W	F323N+F322W2	RAPID	3	47	47	1	312.336					
Special Requirements	_	servations 31, 32, 33, 34, 35 Γ WINDOW: ANGULAR F			0.11									

Pro	posal 1245 - Observa	tion 36 - Near-Ea	arth Objects									
servat	Proposal 1245, Observation 36: I Diagnostic Status: Error Observing Template: NIRCam Ima MOSS Planning Start: 25-SEP-202 MOSS Planning End: 28-SEP-2022 Comments: DART impact time is So	ging 2	+/- 10 miniutes. Obs	erve as close as pe	ossible to that time.			Mon Nov	21 16:00:30 GMT 2022			
Diagnostics	(Didymos/NIRCam (Obs 36)) Erro (Visit 36:1) Warning (Form): Over				ter than 100.0 milliarcsecc	onds/second.						
ts	# Name	Level 1			Level 2		Level 3					
Solar System Targets	71883994985548,EQUINOX=J2000,EPOCH=13-FEB- 2019:12:00:00,EpochTimeScale=TDB,R0=1. ,A1=0,A2=-1.999856067414E-14,A3=0. ,ALN=1.,NM=2.,NN=0.,NK=0.,AMRAT=0.  Comments: Extended=NO											
ē	Module				Subarray							
Template	В				SUB400P							
ร	#	Primary Dither Type	Primary Di	thers	Subpixel Dither Ty	pe Dithe	r Size	Subpixel P	ositions			
Dithers	1	NONE			STANDARD			1				
ents	# Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	<b>Total Integrations</b>	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID			
Spectral Elements	1 F070W	F323N+F322W2	RAPID	3	47	47	1	312.336				
Special Requirements	Guide Star ID S33A009053 Group Observations 31, 32, 33, 34, DEFAULT WINDOW: ANGULAI			0.11								

Pro	pposal 1245 - Observa	ation 37 - Near-Fa	arth Ohiects											
Observation	Proposal 1245, Observation 37: Diagnostic Status: Error Observing Template: NIRCam Im MOSS Planning Start: 25-SEP-202 MOSS Planning End: 28-SEP-202 Comments: DART impact time is S	Proposal 1245, Observation 37: Didymos/NIRCam  Mon Nov 21 16:00:30 GMT 2022  Diagnostic Status: Error  Observing Template: NIRCam Imaging  MOSS Planning Start: 25-SEP-2022  MOSS Planning End: 28-SEP-2022  Comments: DART impact time is September 26, 2022 23:14 UT +/- 10 miniutes. Observe as close as possible to that time.  (Didymos/NIRCam (Obs 37)) Error (Form): JWST cannot track a moving target at an angular rate greater than 100.0 milliarcseconds/second.  (Visit 37:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Diagnostics	` '	, ,	0 0	0	et than 100.0 milliareseed	nus/second.								
sts	# Name	Level 1			Level 2		Level 3							
Solar System Targets	(2) DIDYMOS  Comments: Extended=NO	309442624079 ,O=73.2071194 718839949855 2019:12:00:00, ,A1=0.,A2=-1.9	OID,A=1.644309100: I=3.40856050933497 101355,W=319.32344 48,EQUINOX=12000, EpochTimeScale=TD: 199856067414E-14,A: 2.,NN=0.,NK=0.,AMI	9 075546097,M=90. EPOCH=13-FEB- B,R0=1. 3=0.										
So														
ŧ	Module				Subarray									
Template	В				SUB400P									
ร	#	Primary Dither Type	Primary Di	thers	Subpixel Dither Ty	pe Dithe	r Size	Subpixel P	ositions					
Dithers	1	NONE			STANDARD			1						
ents	# Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	<b>Total Integrations</b>	<b>Total Dithers</b>	Total Exposure Time	ETC Wkbk.Calc ID					
Spectral Elements	1 F070W	F323N+F322W2	RAPID	3	47	47	1	312.336						
Special Requirements	Guide Star ID S33A018484 Group Observations 31, 32, 33, 34 DEFAULT WINDOW: ANGULA			0.11										

Pro	posal 1245 -	Observation	n 38 - Near-Ea	rth Objects							
Observation	Proposal 1245, Obs Diagnostic Status: I Observing Template MOSS Planning Stat MOSS Planning End Comments: DART in	ervation 38: Didyn Error : NIRCam Imaging tt: 25-SEP-2022 lt: 28-SEP-2022 apact time is Septen	mos/NIRCam	'+/- 10 miniutes. Obsi					Mon Nov	21 16:00:30 GMT 2022	
Diagnostics			orm): JWST cannot track s are provisional until th			ter than 100.0 milliarcseco	onds/second.				
ts	# Name	e	Level 1			Level 2		Level 3			
Solar System Targets	(2) DIDY  Comments: Extended	YMOS d=NO	309442624079, ,O=73.2071194 7188399498554 2019:12:00:00,I ,A1=0.,A2=-1.9	OID,A=1.6443091002 I=3.408560509334979 101355,W=319.32340 8,EQUINOX=J2000, EpochTimeScale=TDI 99856067414E-14,A3 2,,NN=0.,NK=0.,AMF	9 075546097,M=90. EPOCH=13-FEB- 3,R0=1. 3=0.						
ဖြ											
ē	Module					Subarray					
Template	В					SUB400P					
S	#	Pri	mary Dither Type	Primary Di	thers	Subpixel Dither Ty	ype Dithe	er Size	Subpixel P	ositions	
Dithers	1	NC	NE	-		STANDARD			1		
ents	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
Spectral Elements		F070W	F323N+F322W2	RAPID	3	47	47	1	312.336		
Special Requirements		31, 32, 33, 34, 35,	36, 37, 38, 39, 40, 41, 4 ATE DIDYMOS FROM		0.11						

Pro	nosal 1245 - Obs	ervation 39 - Near-E	arth Ohiects										
Observation	Proposal 1245, Observation Diagnostic Status: Error Observing Template: NIRC MOSS Planning Start: 25-S MOSS Planning End: 28-SI Comments: DART impact ti	Proposal 1245, Observation 39: Didymos/NIRCam  Mon Nov 21 16:00:30 GMT 2022  Diagnostic Status: Error  Observing Template: NIRCam Imaging  MOSS Planning Start: 25-SEP-2022  MOSS Planning End: 28-SEP-2022  Comments: DART impact time is September 26, 2022 23:14 UT +/- 10 miniutes. Observe as close as possible to that time.  (Didymos/NIRCam (Obs 39)) Error (Form): JWST cannot track a moving target at an angular rate greater than 100.0 milliarcseconds/second.  (Visit 39:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.											
Diagnostics	` *	**	0 0	0									
ts	# Name	Level 1	· ·		Level 2	· ·	Level 3						
Solar System Targets	(2) DIDYMOS  Comments: Extended=NO	30944262407; ,O=73.207119 71883994985; 2019:12:00:00 ,A1=0.,A2=-1	ROID,A=1.644309100; J=3.40856050933497 4101355,W=319.3234 488,EQUINOX=J2000; ,EpochTimeScale=TD 999856067414E-14,A -2.,NN=0.,NK=0.,AMI	9 075546097,M=90. EPOCH=13-FEB- B,R0=1. 3=0.									
-	Module				Subarray								
Template	В				SUB400P								
ſS	#	Primary Dither Type	Primary Di	thers	Subpixel Dither Ty	pe Dithe	r Size	Subpixel P	ositions				
Dithers	1	NONE			STANDARD			1					
ents	# Short	Filter Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID				
Spectral Elements	1 F070V	V F323N+F322W2	RAPID	3	47	47	1	312.336					
Special Requirements		33, 34, 35, 36, 37, 38, 39, 40, 41, GULAR RATE DIDYMOS FRO		0.11									

Dro	nnosal 1	1245 - Observation	on 40 - Near-Ea	orth Ohiacts							
Observation	Proposal 1 Diagnostic Observing MOSS Pla	1245, Observation 40: Did c Status: Error g Template: NIRCam Imagin anning Start: 25-SEP-2022 anning End: 28-SEP-2022	ymos/NIRCam	IIIII Objects					Mon Nov	21 16:00:30 GMT 2022	
Diagnostics	-	/NIRCam (Obs 40)) Error (I			-	ter than 100.0 milliarcseco	onds/second.				
ţ	#	Name	Level 1			Level 2		Level 3			
System Targets	(2)	DIDYMOS	309442624079, ,O=73.2071194 718839949855- 2019:12:00:00, ,A1=0.,A2=-1.9	OID,A=1.6443091002 I=3.408560509334979 101355,W=319.32340 48,EQUINOX=12000, EpochTimeScale=TDI 999856067414E-14,AC 2.,NN=0.,NK=0.,AMF	9 075546097,M=90. EPOCH=13-FEB- B,R0=1. 3=0.						
Solar	Comments	s: Extended=NO									
ĭte	Module					Subarray					
Template	В					SUB400P					
S	#	P	rimary Dither Type	Primary Di	thers	Subpixel Dither Ty	pe Dithe	r Size	Subpixel P	ositions	
Dithers	1	Ν	NONE			STANDARD			1		
ents	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	<b>Total Integrations</b>	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
Spectral Elements	1	F070W	F323N+F322W2	RAPID	3	47	47	1	312.336		
Special Requirements	Group Obs	el Attachments r ID S2FT001510 servations 31, 32, 33, 34, 35 T WINDOW: ANGULAR I									

Dro	posal 1245 - Ol	hearyation .	11 - Noar-Ea	rth Objects						
	Proposal 1245, Observa			IIII Objects					Mon Nov 2	21 16:00:30 GMT 2022
Observation	Diagnostic Status: Erro	•	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						1,1011 1,07	1 10100130 01111 2022
2	Observing Template: NI	RCam Imaging								
-se	MOSS Planning Start: 25	5-SEP-2022								
ŏ	MOSS Planning End: 28	3-SEP-2022								
Diagnostics	(Didymos/NIRCam (Obs (Visit 41:1) Warning (Fo				-	er than 100.0 milliarcsecc	onds/second.			
ts	# Name		Level 1			Level 2		Level 3		
Solar System Targets	(2) DIDYMC  Comments: Extended=N		309442624079, ,O=73.2071194 7188399498554 2019:12:00:00,J ,A1=0.,A2=-1.9	OID,A=1.6443091002 I=3.408560509334979 101355,W=319.32340 8,EQUINOX=J2000,I EpochTimeScale=TDE 99856067414E-14,A3 L,NN=0.,NK=0.,AMR	) 075546097,M=90. EPOCH=13-FEB- 3,R0=1. ==0.					
	Comments: Extended=N	0								
ige	Module					Subarray				
Template	В					SUB400P				
ร	#	Prima	ry Dither Type	Primary Dit	thers	Subpixel Dither Ty	vpe Dithe	r Size	Subpixel Po	ositions
Dithers	1	NONE	I.			STANDARD			1	
ents	# Sh	ort Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	<b>Total Integrations</b>	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
Spectral Elements	1 F0	70W	F323N+F322W2	RAPID	3	47	47	1	312.336	
ents	No Parallel Attachments Guide Star ID S2FT0020	063								
Ĭ	Group Observations 31,	32, 33, 34, 35, 36,	37, 38, 39, 40, 41, 4	2 within 8 Hours						
Special Requirements	DEFAULT WINDOW: A	ANGULAR RATE	E DIDYMOS FROM	JWST LESS THAN (	0.11					
Specia										

D	anneal 40.45. Observation 40. Nam Forth Objects					
Observation	Proposal 1245 - Observation 42 - Near-Earth Objects  Proposal 1245, Observation 42: Didymos/NIRCam  Diagnostic Status: Error  Observing Template: NIRCam Imaging  MOSS Planning Start: 25-SEP-2022  MOSS Planning End: 28-SEP-2022				Mon Nov 2	21 16:00:30 GMT 2022
Diagnostics		er than 100.0 milliarcseco	nds/second.			
ts	# Name Level 1	Level 2		Level 3		
Solar System Targets	(2) DIDYMOS TYPE=ASTEROID,A=1.644309100221705,E=0.3840 309442624079,I=3.408560509334979 ,O=73.2071194101355,W=319.3234075546097,M=90. 71883994985548,EQUINOX=12000,EPOCH=13-FEB-2019:12:00:00,EpochTimeScale=TDB,R0=1. ,A1=0.,A2=-1.999856067414E-14,A3=0. ,ALN=1.,NM=2.,NN=0.,NK=0.,AMRAT=0. Comments: Extended=NO					
Į̈́						
		Subarray				
Ĭ <u>a</u>	В	SUB400P				
Template						
ers	# Primary Dither Type Primary Dithers	Subpixel Dither Ty	pe Dithe	r Size	Subpixel Po	ositions
Dithers	1 NONE	STANDARD			1	
ents	# Short Filter Long Filter Readout Pattern Groups/Int	Integrations/Exp	<b>Total Integrations</b>	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
Spectral Elements	1 F070W F323N+F322W2 RAPID 3	47	47	1	312.336	
irements	No Parallel Attachments Guide Star ID S33I000349 Sequence Observations 30, 42, Non-interruptible Group Observations 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42 within 8 Hours					
Special Requirements	DEFAULT WINDOW: ANGULAR RATE DIDYMOS FROM JWST LESS THAN 0.11					

Pro	Proposal 1245 - Observation 20 - Near-Earth Objects												
	Proposal 1245, Observation 20: Didymos/NIRSpec  Mon Nov 21 16:00:30 GMT 2022												
Ιij	Diagnostic Stat	us: Warning											
ĬŽ	Observing Temp	plate: NIRSpec Fixe	ed Slit Spectroscop	ру									
Observation													
ŏ													
Ś	(Visit 20:1) War	rning (Form): Over	heads are provision	nal until the Visit	Planner has been ru	ın.							
Diagnostics			•										
۱ĕ													
<u>ا</u> ق													
Ë													
ts	# N	Vame	Level	1		Lev	el 2			Level 3			
Solar System Targets	(2) D	DIDYMOS			1.64430910022170	)5,E=0.3840							
⊒			.O=73	2624079,I=3.408 3.2071194101355.	W=319.323407554	16097.M=90.							
Έ			71883	994985548,EQUI	INOX=J2000,EPO	CH=13-FEB-							
Į į					meScale=TDB,R0=67414E-14,A3=0.	=1.							
ڇّا			,ALN:	=1.,NM=2.,NN=0	.,NK=0.,AMRAT=	=0.							
۳	Comments: Exte	ended=NO											
Į													
_	#	Target	TA Method	Subarray	Filter	Readout	Pattern	Groups/Int	Integrations/Exp	Total	Total Exposure	ETC Wkbk.Calc	
Acquisition	π							-		Integrations	Time	ID	
ui:	1	SAME	WATA	SUB32	F140X	NRSRAI	PIDD6	3	1	1	0.26	121330.9	
<del>5</del>													
_													
at I	Slit						Subarra						
를	S200A1						SUBS20	0A1					
Template													
	#				Primary Dither	Dogitions			Sub-Pixel	Dottorn			
ē	1				2	1 OSITIONS			NONE	i attern			
Dithers					2				NONE				
	#	Grating/Filter	Slit	Readout	Groups/Int	Integrations/Ex	#	Autoca	l Total Dith	ers Total	Total Exposure	ETC	
e l				Pattern		р				Integrations		Wkbk.Calc ID	
Spectral Elements	1	PRISM/CLEAR	S200A1	NRSRAPID	2	12	1	NONE	2	24	112.668	121330.1	
🛎													
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(O)													

Proposal 1245 - Observation 20 - Near-Earth Objects

Between Dates 13-NOV-2022:00:00:00 and 11-DEC-2022:01:00:00

DEFAULT WINDOW: ANGULAR RATE DIDYMOS FROM JWST LESS THAN 0.03

DEFAULT WINDOW: ANGULAR RATE DIDYMOS FROM JWST LESS THAN 0.03

Mon Nov 21 16:00:30 GMT 2022

Observing Template: MIRI Medium Resolution Spectroscopy

Diagnostic Status: Warning

Diagnostics (Visit 21:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(Visit 21:1) Informational (Form): Visit schedulable, but most scheduling windows are when JWST is pointed in direction of greatest micrometeoroid impact risk. This is likely due to scheduling special requirements.

ts	#	Name	Level 1	Level 2	Level 3	
Solar System Targe	# (2)  Comm	DIDYMOS nents: Extended=NO	TYPE=ASTEROID,A=1.644 309442624079,I=3.40856050 ,O=73.2071194101355,W=3 71883994985548,EQUINOX 2019:12:00:00,EpochTimeSc ,A1=0.,A2=-1.999856067414 ,ALN=1.,NM=2.,NN=0.,NK=	19334979 19.3234075546097,M=90. =12000,EPOCH=13-FEB- ale=TDB,R0=1. IE-14,A3=0.		

Acquisition Target NONE

Template AcqFilter **Primary Channel Imager Subarray Simultaneous Imaging** FND ALL NO **FULL** 

Dithers **Dither Type Optimized For** Direction 4-Point POINT SOURCE NEGATIVE

**Total Dithers** Total **ETC** Wavelength Detector Filter Readout Groups/Int Integrations/E Exposures/Dit Dither Total Spectral Elements Range Pattern **Integrations** Exposure Wkbk.Calc ID хp Time 30 2 8 LONG(C) MRSLONG FASTR1 Dither 1 4 677.11 41640.18 2 LONG(C) 30 Dither 1 8 677.11 41640.12 MRSSHORT FASTR1 4 2 8 MEDIUM(B) MRSLONG FASTR1 30 Dither 1 677.11 41640.17 MEDIUM(B) FASTR1 30 2 Dither 1 8 677.11 41640.11 MRSSHORT 4 2 SHORT(A) MRSLONG FASTR1 30 Dither 1 4 8 677.11 41640.16 SHORT(A) MRSSHORT FASTR1 30 Dither 1 8 677.11 41640.10

Between Dates 13-NOV-2022:00:00:00 and 11-DEC-2022:01:00:00
No Parallel Attachments
Sequence Observations 21, 24, Non-interruptible
DEFAULT WINDOW: ANGULAR RATE DIDYMOS FROM JWST LESS THAN 0.03

Observation 고	Proposal 1245, O Diagnostic Status	bservation 24: Didymos/M			Mon Nov 21 16:00:30 GMT 2022
Diagnostics	(Visit 24:1) Warni (Visit 24:1) Inform		rovisional until the Visit Planner has been run. ulable, but most scheduling windows are when JWST is p	pointed in direction of greatest micrometeoroid impa	act risk. This is likely due to scheduling special requirements.
S	# Na	me	Level 1	Level 2	Level 3
Solar System Targets	Comments: Extend		TYPE=ASTEROID,A=1.644310109777266,E=0.3839 32031784022,I=3.408085041536477,O=73.239239131 19975,W=319.2450713457229,M=355.509243001592 4,EQUINOX=J2000,EPOCH=27-MAR-2012:00:00:00,EpochTimeScale=TDB	TYPE=POS_ANGLE,RAD=60,ANG=0,REF=NO	ORTH
Ž	#			Target	
Acquisition	1			NONE	
ŧ	AcqFilter		Primary Channel	Simultaneous Imaging	Imager Subarray
Template	FND		ALL	NO	FULL
ေ	# V	Vavelength Detector	Filter Readout Groups/Int In	ntegrations/E Exposures/Dit Dither Tot	tal Dithers Total Total ETC

L	_													
Ī	ents	#	Wavelength Range	Detector	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Dither	<b>Total Dithers</b>	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
ı	em	1	LONG(C)	MRSLONG		FASTR1	30	1	1	None	1	1	83.251	41640.18
ı	Eler	1	LONG(C)	MRSSHORT		FASTR1	30	1	1	None	1	1	83.251	41640.12
ı	ā	2	MEDIUM(B)	MRSLONG		FASTR1	30	1	1	None	1	1	83.251	41640.17
ı	ž	2	MEDIUM(B)	MRSSHORT		FASTR1	30	1	1	None	1	1	83.251	41640.11
ı	Spe	3	SHORT(A)	MRSLONG		FASTR1	30	1	1	None	1	1	83.251	41640.16
1	U)	3	SHORT(A)	MRSSHORT		FASTR1	30	1	1	None	1	1	83.251	41640.10

Between Dates 13-NOV-2022:00:00:00 and 11-DEC-2022:01:00:00
No Parallel Attachments
Sequence Observations 21, 24, Non-interruptible
DEFAULT WINDOW: ANGULAR RATE DIDYMOS-BACKGROUND FROM JWST LESS THAN 0.03

, P	Proposal 1245, Observation 43: Die	lymos/NIRCam						Mon Nov	21 16:00:30 GMT 202
, ,	Diagnostic Status: Warning								
	Observing Template: NIRCam Imagi	ng							
,	(Visit 43:1) Warning (Form): Overhe	ads are provisional until t	he Visit Planner has be	een run.					
•									
-									
3	# Name	Level 1			Level 2		Level 3		
(	(2) DIDYMOS		OID,A=1.6443091002 ,I=3.408560509334979						
		,O=73.2071194	1101355,W=319.32340	)75546097,M=90.					
		2019:12:00:00.	48,EQUINOX=J2000,l EpochTimeScale=TDI	B.R0=1.					
		,A1=0.,A2=-1.9	999856067414E-14,A3 2.,NN=0.,NK=0.,AMR	3=0.					
		,ALI\-1.,I\IVI	2.,1 <b>\1\</b> -0.,1\ <b>1</b> \	CA1=0.					
L	Comments: Extended=NO								
ŀ	Comments: Extended=NO								
	Comments: Extended=NO								
-	Comments: Extended=NO  Module				Subarray				
					Subarray SUB400P				
-	Module				, <b>.</b>				
. ]	Module B				SUB400P				
]	Module B	Primary Dither Type	Primary Di	thers	SUB400P Subpixel Dither Ty	ype Dithe	ır Size	Subpixel P	ositions
-	Module B	Primary Dither Type NONE	Primary Di	thers	SUB400P	ype Dithe	r Size	Subpixel P	ositions
]	Module B # 1	NONE			SUB400P  Subpixel Dither Ty  STANDARD			1	
]	Module B		Primary Di Readout Pattern	thers  Groups/Int	SUB400P Subpixel Dither Ty	ype Dithe Total Integrations			
]	# 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NONE			SUB400P  Subpixel Dither Ty  STANDARD			Total Exposure Time 33.227	ETC Wkbk.Calc
]	# 1 1 Short Filter 1 F070W 2 F070W	Long Filter  F323N+F322W2 F323N+F322W2	Readout Pattern	Groups/Int  3 3	SUB400P  Subpixel Dither Ty STANDARD  Integrations/Exp	Total Integrations  5 5		1 Total Exposure Time	ETC Wkbk.Calc
]	# 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NONE  Long Filter  F323N+F322W2 F323N+F322W2 F323N+F322W2	Readout Pattern  RAPID  RAPID  RAPID	Groups/Int  3 3 5	SUB400P  Subpixel Dither Ty STANDARD  Integrations/Exp 5	Total Integrations  5  5  8		Total Exposure Time 33.227 33.227 79.663	ETC Wkbk.Calc
]	# 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	F323N+F322W2 F323N+F322W2 F323N+F322W2 F323N+F322W2 F323N+F322W2	Readout Pattern  RAPID  RAPID  RAPID  RAPID  RAPID	Groups/Int  3 3 5 5	SUB400P  Subpixel Dither Ty STANDARD  Integrations/Exp  5 5 8 8	Total Integrations  5  5  8  8		Total Exposure Time  33.227 33.227 79.663 79.663	ETC Wkbk.Calc
]	# 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NONE  Long Filter  F323N+F322W2 F323N+F322W2 F323N+F322W2	Readout Pattern  RAPID  RAPID  RAPID	Groups/Int  3 3 5	SUB400P  Subpixel Dither Ty STANDARD  Integrations/Exp 5	Total Integrations  5  5  8		Total Exposure Time 33.227 33.227 79.663	ETC Wkbk.Calc