



## 4523 - Titan Surface and Atmosphere - JWST Cycle 3 GTO Project

Cycle: 3, Proposal Category: GTO

### INVESTIGATORS

<i>Name</i>	<i>Institution</i>
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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	NIRCam Titan	NIRCam Imaging	(1) Titan_Any

### ABSTRACT

Titan's atmosphere is unique in the solar system - the only solid body world with a cycle of methane weather. Titan's year is 29.5 times longer than that of the Earth, caused by the length of Saturn's orbit, combined with a 27 degree obliquity. In this proposal we will renew observations of Titan's weather close to equinox (2025) searching for signatures of clouds in several narrow band filters able to penetrate to the lower atmosphere, between strong NIR absorptions of methane. Comparison of results to Titan GCMs will inform us as to how well our models can replicate its climate, and what further refinements are necessary.

### OBSERVING DESCRIPTION

NIRCam - observations in three narrow band filters (F187N, F212N, F466N) and one medium band filter (F300M) to search for clouds in the lower atmosphere around the time of equinox. At the previous equinox, 15 years ago, Titan displayed a dramatic change in cloud appearance.

Proposal 4523 - Targets - Titan Surface and Atmosphere - JWST Cycle 3 GTO Project

Solar System Targets	#	Name	Level 1	Level 2	Level 3
	(1)	Titan_Any	STD=SATURN	STD=TITAN	
<i>Comments: Extended=YES</i>					

Proposal 4523 - Observation 1 - Titan Surface and Atmosphere - JWST Cycle 3 GTO Project

Mon Sep 09 17:00:09 GMT 2024

<b>Observation</b>	<p><b>Proposal 4523, Observation 1: NIRCam Titan</b></p> <p><b>Diagnostic Status: Warning</b></p> <p>Observing Template: NIRCam Imaging</p> <p><i>Comments: The Cycle 3 planning window does not extend out to Titan equinox in March 2025. We would like our observation to be scheduled as late as possible in the Cycle 3 window, so as to be as close to equinox as possible.</i></p>																																						
<b>Diagnostics</b>	<p>(Visit 1:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(NIRCam Titan (Obs 1)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>																																						
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<b>Special Requirements</b>	<p>DEFAULT WINDOW: NOT OCCULTATION OF Titan_Any BY SATURN FROM JWST</p> <p>DEFAULT WINDOW: SEPARATION OF Titan_Any RHEA FROM JWST GREATER THAN 10"</p> <p>DEFAULT WINDOW: ANGULAR RATE Titan_Any FROM JWST LESS THAN 0.075</p> <p>SEPARATION OF TITAN SATURN FROM JWST GREATER THAN 1.8'</p> <p>SEPARATION OF Titan_Any HYPERION FROM JWST GREATER THAN 10"</p>																																						