

NIRISS Imaging APT Template Guide

This article provides instructions for filling out the JWST NIRISS imaging template.

Introduction

Main article: [NIRISS Imaging, JWST Parallel Observations](#)

See also: [NIRISS Imaging Recommended Strategies](#), [JWST APT Coordinated Parallel Observations](#)

[Imaging](#) is one of four modes on the [Near Infrared Imager and Slitless Spectrograph \(NIRISS\)](#), offering image capability over the wavelength range from 0.8 to 5.0 μm . This mode is currently supported to be used *in parallel* when [NIRCam Imaging](#) is used as the prime science mode. Other prime+parallel combinations involving NIRISS imaging in parallel will be considered for implementation in Cycle 2.

The user will have control over the following parameters: (1) [filters](#), and (2) [readout pattern](#) and [exposure time](#) (via [number of groups](#) and [integrations](#)).

Step-by-step APT instructions

Generic

The following parameters are generic to all templates, and are not discussed in this article: [Observation Number](#), [Observation Label](#), [Observations Comments](#), [Target Name](#), [ETC Workbook Calculation ID](#), [Mosaic Properties](#), and [Special Requirements](#).

NIRISS imaging

Filters

Main Article: [NIRISS Filters](#)

See Also: [NIRISS Detector Readout Patterns](#)

Specify:

- [FILTER: F090W, F115W, F140M, F150W, F158M, F200W, F277W, F356W, F380M, F430M, F444W, F480M](#)
- [READOUT PATTERN](#)

- **NISRAPID:** all frames are read and stored. Generally this can be used if the number of frames per integration is small and data volume is not an issue. There is a limit of 30 on the **number of groups** per ramp in **NISRAPID** read out.
- **NIS:** four frames are averaged per group. Used for producing a lower data rate for longer **integrations** of faint targets.
- **GROUPS/INT:** the **number of groups** during an integration, equal to the number of frames read per integration (for **NISRAPID**), or the number of frames read out divided by 4 (for **NIS**).
- **INTEGRATIONS/EXP:** the **number of integrations** during an exposure, where an integration is the time between detector resets.
- **ETC WKBK. CALC ID:** the accompanying ETC workbook ID number for the calculation (optional).

The Exposure Time Calculator (ETC) should be used to determine the combination of **GROUPS/INT** and **INTEGRATIONS/EXP** necessary to achieve the required signal-to-noise. Individual integrations longer than 1000 seconds are discouraged because of the effect of cosmic ray hits on the detector. For long exposures, a suitable number of integrations and a number of groups less than or equal to 25 is suggested.