

# Near Infrared Imager and Slitless Spectrograph



The JWST Near Infrared Imager and Slitless Spectrograph (NIRISS) provides observing modes for slitless spectroscopy, high-contrast interferometric imaging, and imaging, over wavelengths between 0.6 and 5.0  $\mu\text{m}$  over a 2.2' x 2.2' FOV. Although NIRISS is packaged with the [Fine Guidance Sensor \(FGS\)](#), the two instruments are functionally independent of each other.

When used in specific combinations, optical elements in the NIRISS pupil and filter wheel enable four observing modes:

- [Wide field slitless spectroscopy \(WFSS\)](#) over the entire field of view, using one or both of a pair of identical gratings and a selection of blocking filters to isolate specific wavelength intervals between 0.8 and 2.2  $\mu\text{m}$ . The gratings are mounted to disperse light in orthogonal directions on the detector.
- [Single object slitless spectroscopy \(SOSS\)](#) with a cross-dispersed grism designed to deliver broad wavelength coverage and spectro-photometric stability, optimized for time-series observations (TSOs).
- [Aperture masking interferometry \(AMI\)](#) through specific filters that is enabled by a mask with seven sub-apertures.
- [Imaging](#) in seven wide- and five medium-band filters that are closely matched to the NIRCam filter set between 0.9 and 5.0  $\mu\text{m}$ .

# More about NIRISS

[Instrument Hardware and Operations](#)

[Downloadable Instrument PDF](#)

[Proposal Planning, Strategies, and Science Use Cases](#)

[Data Access, Calibration, and Analysis](#)

## External NIRISS links and documents

[STScI NIRISS website](#)

[CSA NIRISS website](#)

[NASA NIRISS website](#)

## Lectures

[JWST Community Lecture Series - NIRISS Overview \(R. Doyon\)](#)

## Other documents

[JWST Pocket Guide](#)

[JWST technical documents](#)

[NIRISS](#)

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[NIRISS Single-Object Slitless Spectroscopy APT Template](#)  
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[NIRISS Bright Limits](#)

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[NIRISS SOSS Time-Series Observations of HAT-P-1](#)

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[NIRISS Imaging Dithers](#)

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[NIRISS Imaging](#)

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[NIRISS Apertures](#)

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[NIRISS Pupil and Filter Wheels](#)

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