

Test NIRISS Test NIRISS For RCA

Calculations Scenes and Sources Upload Spectra Caveats and Limitations

MIRI NIRCam NIRISS NIRSpec

ID	Mode	Scene	(s)	SNR	
1	niriss_soss	1	16.48	278.12	
-	-	-	-	-	-

Scene Backgrounds Instrument Setup Detector Setup Strategy

Subarray: SUBSTRIP256 Readout pattern: NISRAPID

Groups per integration: 2 Integrations per exposure: 1 Exposures per specification: 1

Total exposure time: 00:00:16 (16.48 s)

Total integrations: 1

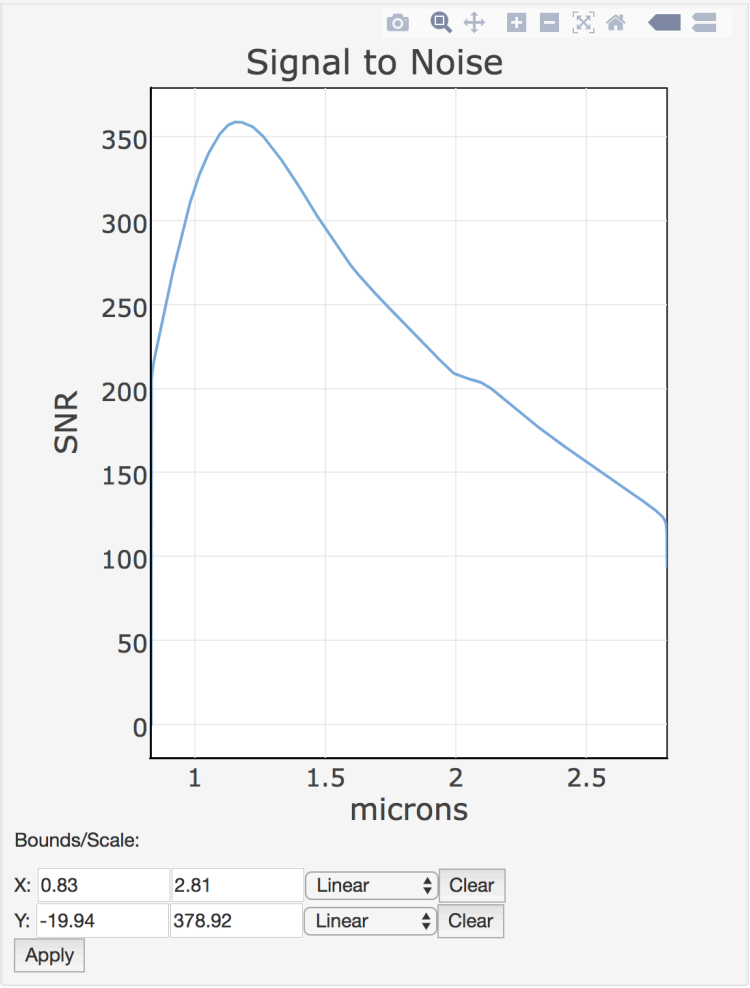
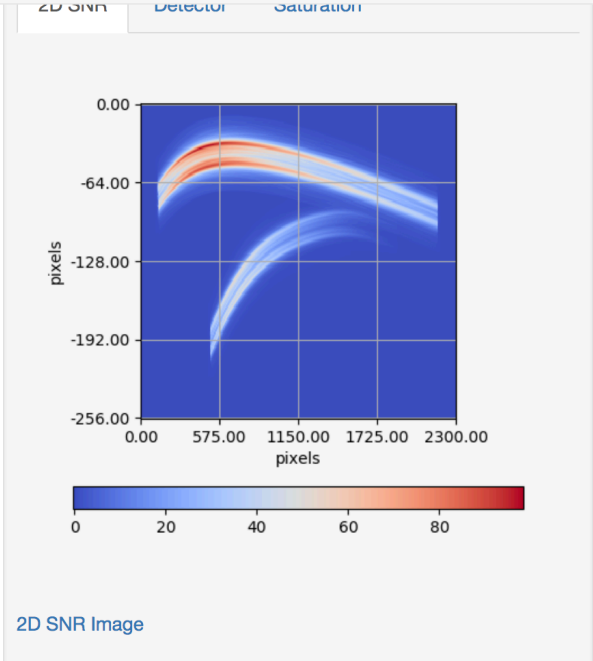
Calculation selected: 1, Mode: niriss\_soss

Reset Calculate

Images  
Calculation selected: 1, Mode: niriss\_soss

Plots  
ApFlux ApBackground SNR SNR (time) Contrast

Reports  
Calculation selected: 1, Mode: niriss\_soss



report | warnings | errors

Downloads

Instrument Filter/Dispenser:	null/gr700xd
Extraction Aperture Position (arcsec):	[0.00, 0.00]
Wavelength of Interest used to Calculate Scalar Values (microns):	1.57
Size of Extraction Aperture (arcsec):	N/A
Total Time Required for Strategy (seconds):	16.48
Total Exposure Time (seconds):	16.48
Extracted Flux (e-/sec):	17792.85
Standard Deviation in Extracted Flux (e-/sec):	63.98
Extracted Signal-to-Noise ratio:	278.12
Input Background Surface Brightness (MJy/sr):	0.33
Total Background Flux in Extraction Aperture (e-/sec):	310.58
Total Sky Background Flux in Extraction Aperture (e-/sec):	310.58
Fraction of Total Background	0.00

HAT-P-1 New Version HAT-P-1 New Version

[Calculations](#) [Scenes and Sources](#) [Upload Spectra](#) [Caveats and Limitations](#)

ID ▲	☑	Mode -	Scene -	(s) -	SNR -	⚠
5	<input type="checkbox"/>	nircam target_acq	1	0.06	132.36	✔
4	<input type="checkbox"/>	nircam ssgrism	1	79.72	201.28	✔
3	<input type="checkbox"/>	nircam ssgrism	1	39.86	193.20	✔
2	<input type="checkbox"/>	niriss target_acq	1	0.20	150.94	✔
1	<input checked="" type="checkbox"/>	niriss soss	1	32964.00	1839.72	✔
-	-	---	-	--	--	-

[Scene ★](#) [Backgrounds](#) [Instrument Setup](#) [Detector Setup](#) [Strategy](#)

**Subarray** **Readout pattern**

**Groups per integration** **Integrations per exposure** **Exposures per specification**

**Total exposure time:** 09:09:24 (32964.00 s)

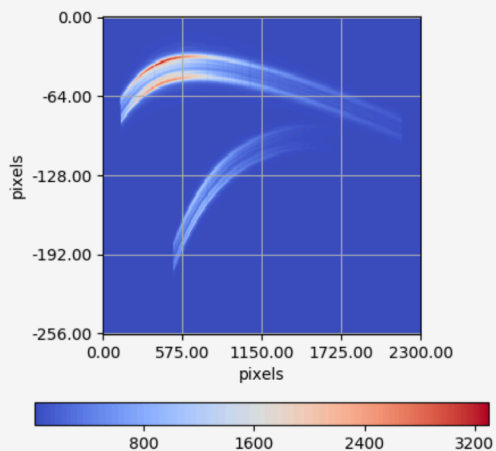
**Total integrations:** 2000

**Calculation selected: 1, Mode: niriss soss**

### Images

Calculation selected: 1, Mode: niriss\_soss

[2D SNR](#) [Detector](#) [Saturation](#)



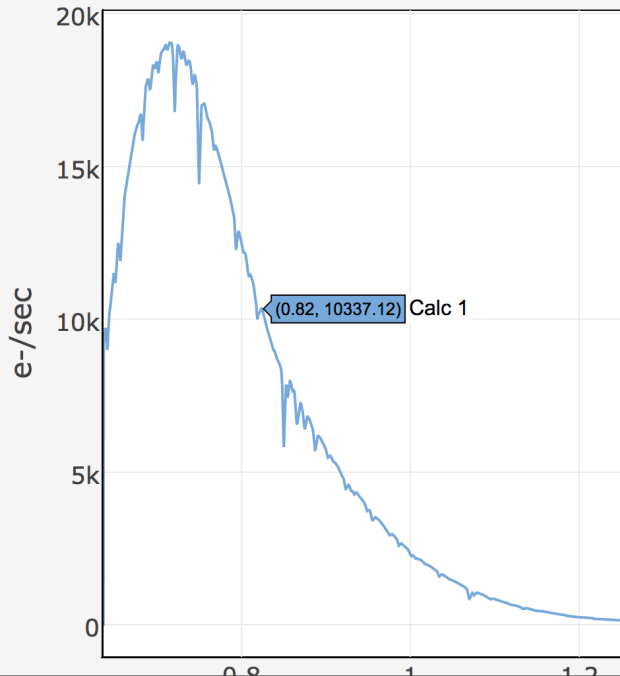
Detector Image

### Plots

[ApFlux](#) [ApBackground](#) [SNR](#) [SNR \(time\)](#) [Contrast](#)



### Extracted Flux From Source



### Reports

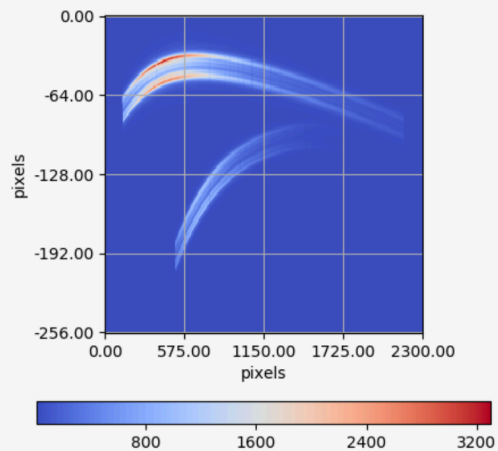
Calculation selected: 1, Mode: niriss\_soss

[Report](#) [Warnings](#) [Errors](#)

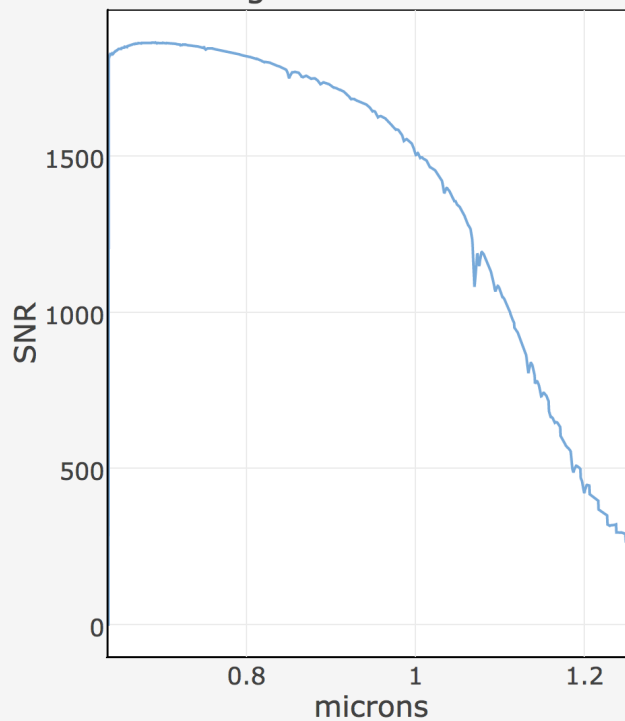
#### Downloads

Instrument Filter/Disperser:	null/gr700xd
Extraction Aperture Position (arcsec):	[0.00, 0.00]
Wavelength of Interest used to Calculate Scalar Values (microns):	0.77
Size of Extraction Aperture (arcsec):	N/A
Total Time Required for Strategy (seconds):	32964.00
Total Exposure Time (seconds):	32964.00
Extracted Flux (e-/sec):	15591.54
Standard Deviation in Extracted Flux (e-/sec):	8.47
Extracted Signal-to-Noise ratio:	1839.72
Input Background Surface Brightness (MJy/sr):	0.49
Total Background Flux in Extraction Aperture (e-/sec):	310.57

2D SNR Detector Saturation



### Signal to Noise



Bounds/Scale:

X: 0.64 1.26 Linear Clear

Report Warnings Errors

#### Downloads

Instrument Filter/Disperser:	null/gr700xd
Extraction Aperture Position (arcsec):	[0.00, 0.00]
Wavelength of Interest used to Calculate Scalar Values (microns):	0.77
Size of Extraction Aperture (arcsec):	N/A
Total Time Required for Strategy (seconds):	32964.00
Total Exposure Time (seconds):	32964.00
Extracted Flux (e-/sec):	15591.54
Standard Deviation in Extracted Flux (e-/sec):	8.47
Extracted Signal-to-Noise ratio:	1839.72
Input Background Surface Brightness (MJy/sr):	0.49
Total Background Flux in Extraction Aperture (e-/sec):	310.57
Total Sky Background Flux in Extraction Aperture (e-/sec):	310.57
Fraction of Total Background due to Signal From Scene:	0.00



## New JWST Calculation

Name

Provide a name for this calculation

Stellar Model  Phoenix Grid Models  User Defined Stellar Spectrum

° Kelvin

Stellar temperature

Stellar metallicity

Stellar log g

Magnitude  K

Magnitude of Stellar Target

Planet Model

Constant Value     Upload Spectrum     Select From Grid

1250.0    Equilibrium Chemistry    Nothing

Temperature (K)

Select Chemistry Type

Clouds or Scattering

1.5    MJ

Planet Mass

1.25    RJ

Planet Radius

1    RS

Stellar Radius

Transit Duration    10000    sec

For phase curves, will derive duration of phase from input file.

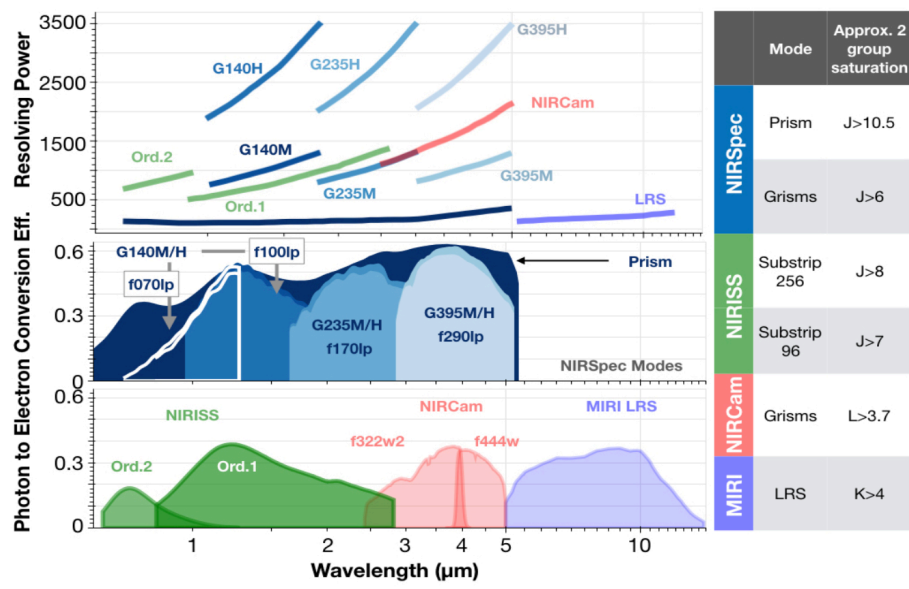
Baseline    0.5    Fraction of time: in/out

Define length of out of transit observing time

Number of Transits    1

Or number of phase observations

### JWST Instrument Modes



Instrument:

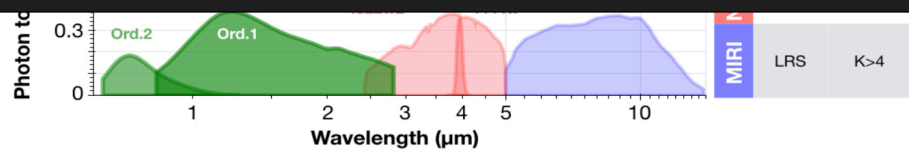
Mode:

Number of Groups per Integration:

Recommended to compute optimal groups per integration first (type "optimize"). But, you can also input any number from 2-65536.

Calculation Limit:





**Instrument** NIRISS Single Object Slitless Spectroscopy

**Mode** Substrip 256

**Number of Groups per Integration** optimize

Recommended to compute optimal groups per integration first (type "optimize"). But, you can also input any number from 2-65536.

**Saturation Limit** 80 % Full Well

Percent fullwell or number of electrons.

**Noise Floor**  Constant Minimum Noise  User Defined Noise Model

20 ppm

Constant Minimum Noise

Submit



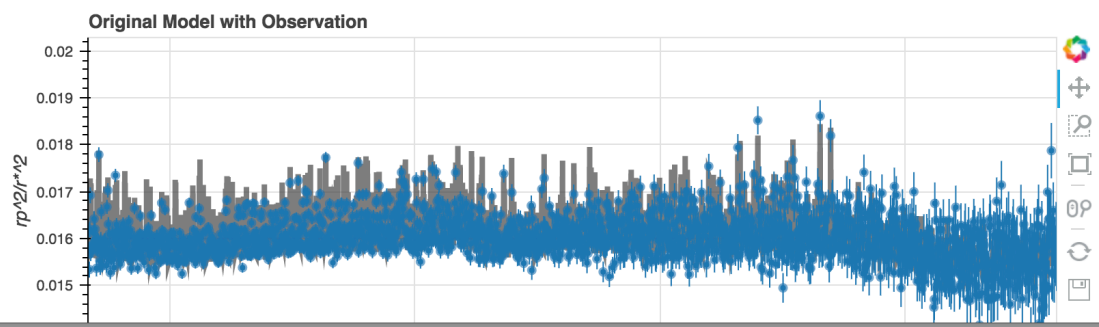


# Analyze

- 1D Plots
- 2D Images
- Original Inputs
- Timing Output
- Warnings

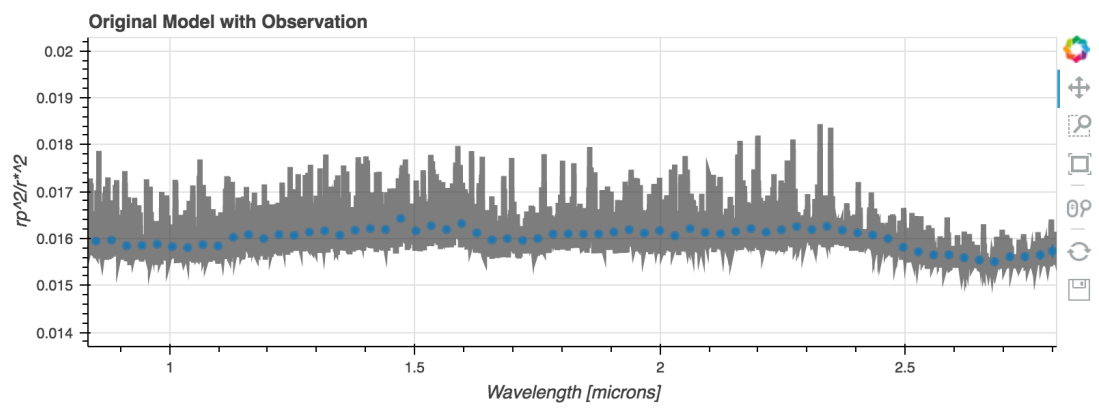
## 1D Plots

binning: -3.045771598815918 Num Trans: 1

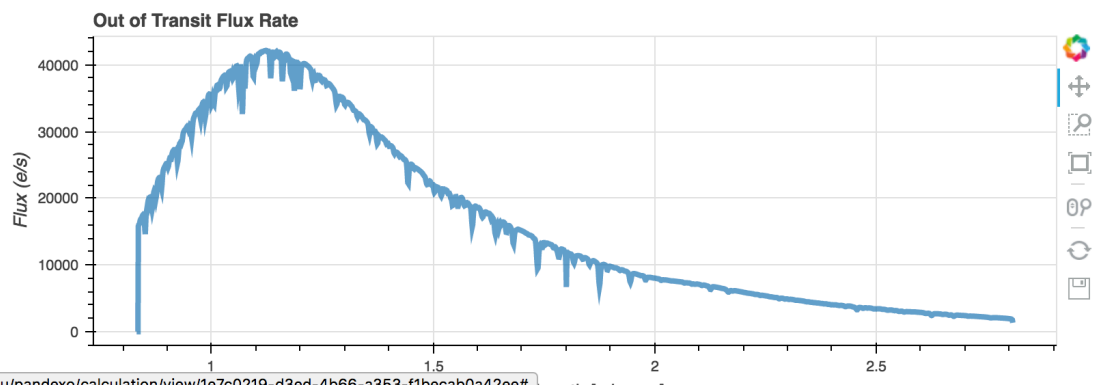


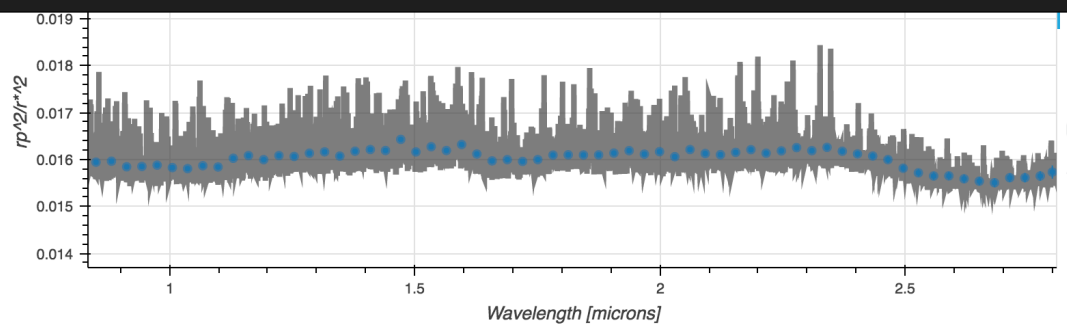
# 1D Plots

binning: -1.49577  Num Trans: 1

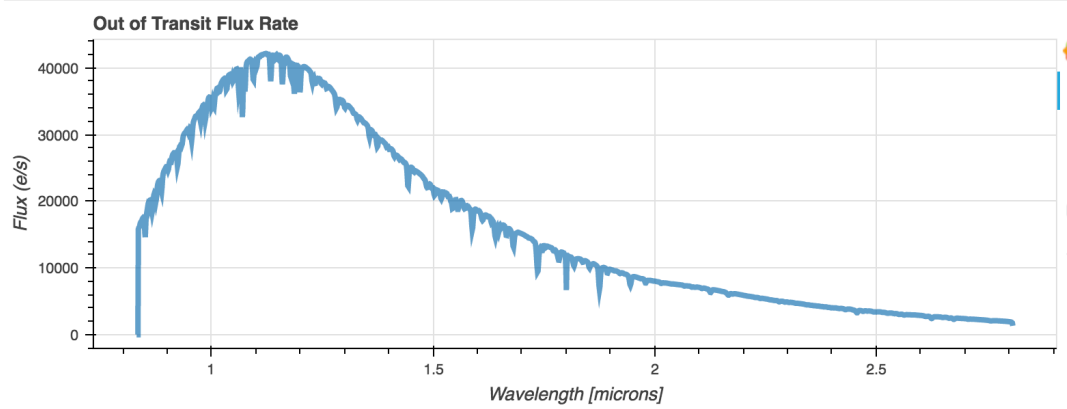


Total Flux | Background Flux | SNR | Error | Original Model



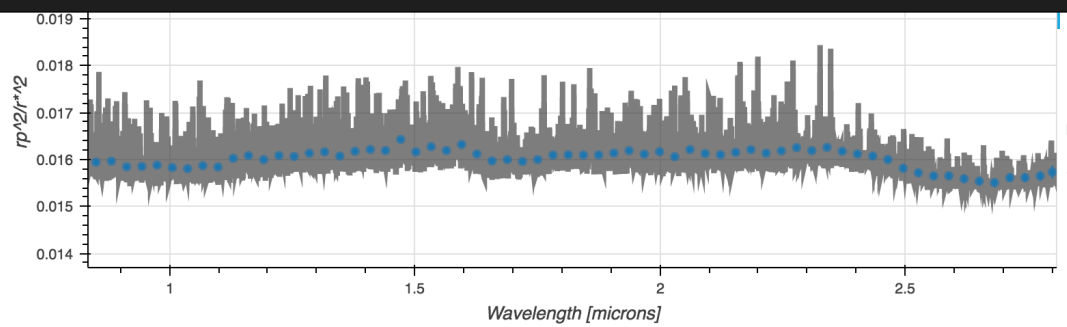


Total Flux Background Flux SNR Error Original Model

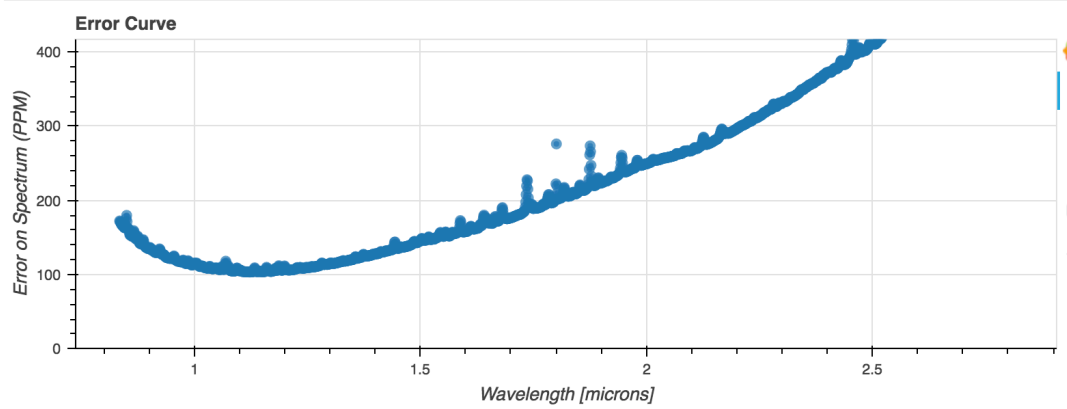


## 2D Images





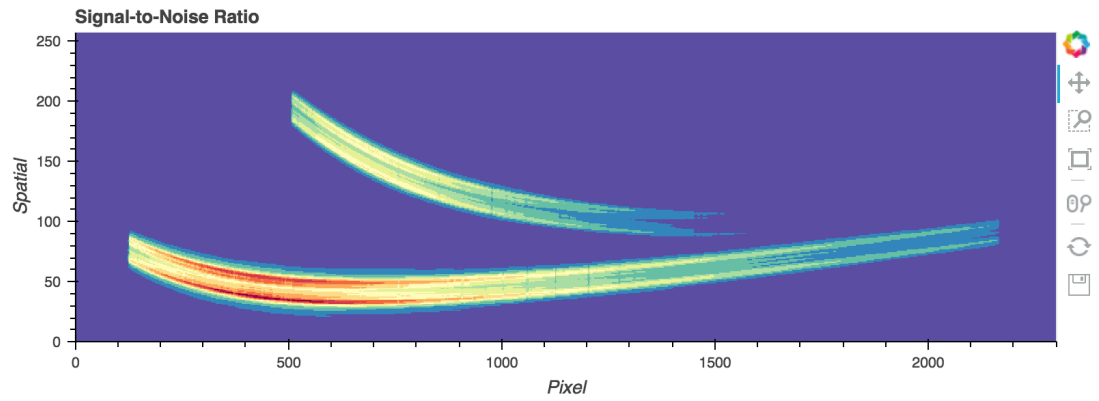
Total Flux Background Flux SNR Error Original Model



## 2D Images



SNR | Saturation



## Table of Original Inputs

All inputs used for the calculation

	Value
Target Mag	8.858
Saturation Level (electrons)	57600
Instrument	niriss
Mode	so55
Aperture	so55
Disperser	gr700xd
Subarray	substrip256

## Table of Original Inputs

All inputs used for the calculation

	Value
Target Mag	8.858
Saturation Level (electons)	57600
Instrument	niriss
Mode	soSS
Aperture	soSS
Disperser	gr700xd
Subarray	substrip256
Readmode	nirapid
Filter	None
Primary/Secondary	rp^2/r**2

## Timing Info

All the timing info needed for your observation. Overhead calculation assumes 30 minute target acquisition time.

	Value
Transit Duration	2.777778
Seconds per Frame	5.491300
Time/Integration incl reset (sec)	16.473900

## Timing Info

All the timing info needed for your observation. Overhead calculation assumes 30 minute target acquisition time.

	Value
Transit Duration	2.777778
Seconds per Frame	5.491300
Time/Integration incl reset (sec)	16.473900
APT: Num Groups per Integration	2.000000
Num Integrations Out of Transit	1216.000000
Num Integrations In Transit	608.000000
APT: Num Integrations per Occultation	1824.000000
Observing Efficiency (%)	33.333333
Transit+Baseline, no overhead (hrs)	8.346776
Number of Transits	1.000000

## Warnings

Pay attention to these warnings! If you do not see 'All good' written in each box, reconsider your run.

	Value
Group Number Too Low?	All good
Group Number Too High?	All good
Non-linear?	All good



Num Integrations In Transit	608.000000
APT: Num Integrations per Occultation	1824.000000
Observing Efficiency (%)	33.333333
Transit+Baseline, no overhead (hrs)	8.346776
Number of Transits	1.000000

## Warnings

Pay attention to these warnings! If you do not see 'All good' written in each box, reconsider your run.

	Value
Group Number Too Low?	All good
Group Number Too High?	All good
Non linear?	All good
Saturated?	All good
% full well high?	All good
Num Groups Reset?	All good

[Download Data](#)

