

JWST Proposal Planning Tools

General Target Visibility Tool

Exposure Time Calculator (ETC)

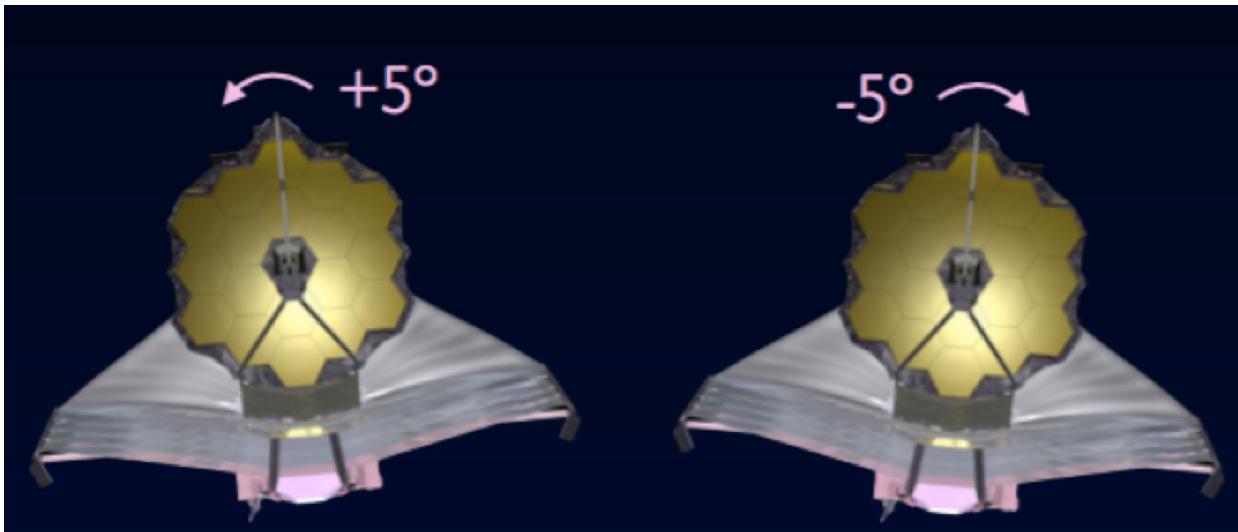
Astronomer's Proposal Tool (APT)



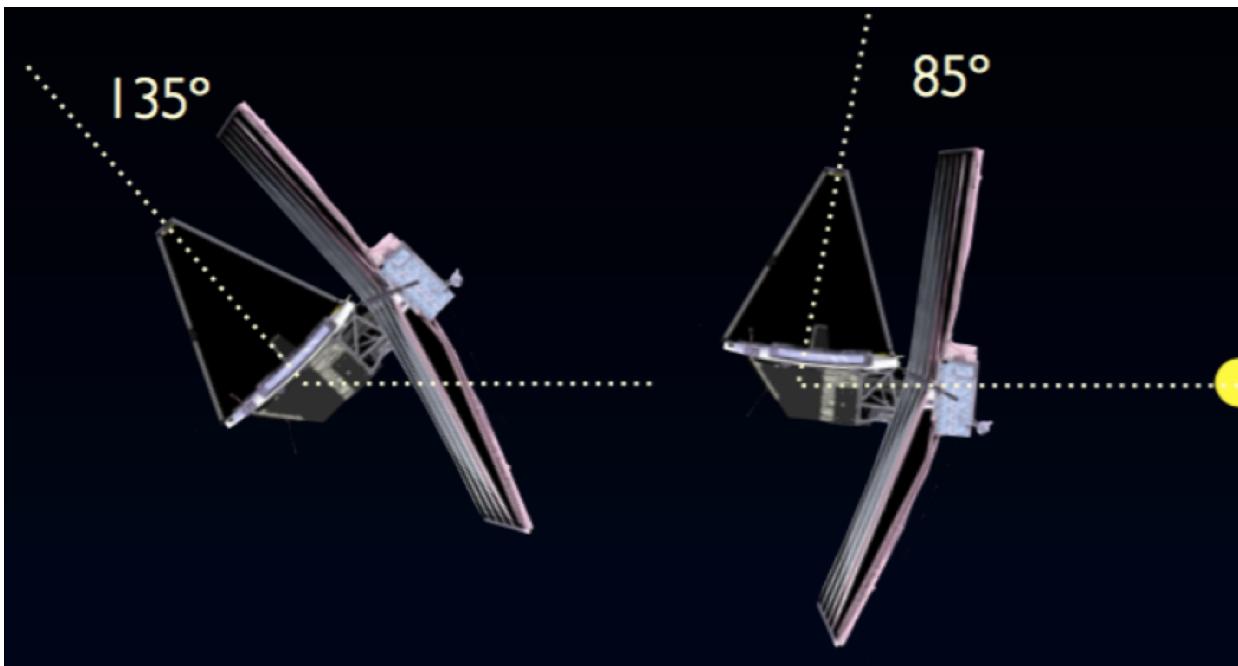
Bill Blair, Jeff Valenti, Karl Gordon, Klaus Pontoppidan

Martha Boyer, STScI

JWST Visibility

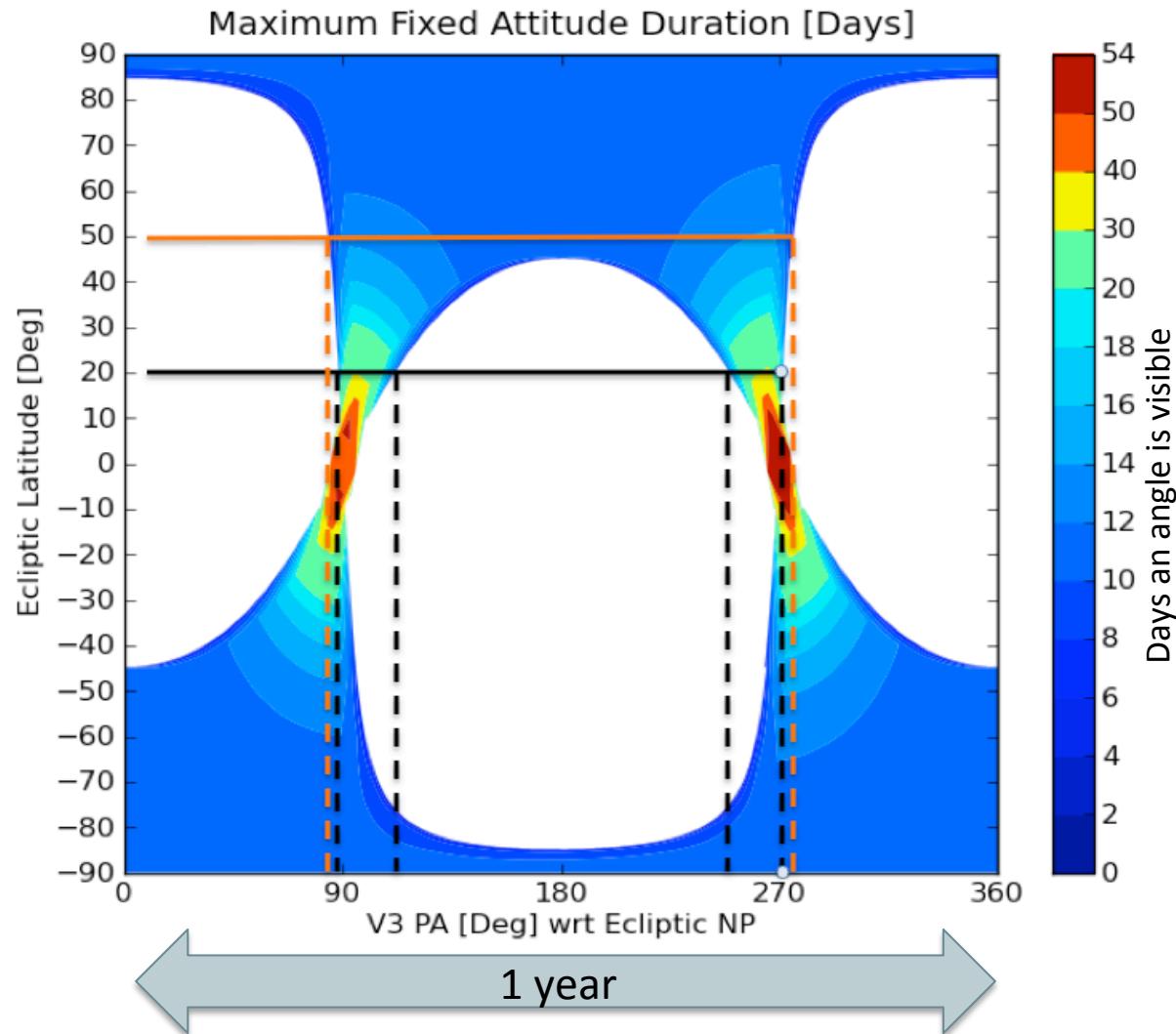


Roll about
the bore sight



Allowed Solar
elongation
angles

Position Angle Restrictions



Target Visibility Tools

General Target Visibility Tool (GTVT)

Coronagraphic Visibility Tool (CVT)

- ❖ Calculate available visibility windows and allowed position angles versus time for a given target.
- ❖ APT does everything the GTVT does, but it's much more cumbersome.
- ❖ The TVTs are quick-look/pre-planning tools. They do not include all of the constraints for planning observations (so always check APT visibility before submitting).

Downloading the Visibility Tools

- ❖ Packaged as part of the standard STScI *AstroConda* (or *MiniConda*) environments.
- ❖ Instructions, help files, examples are available on the JWST User Documentation site:

<https://jwst-docs.stsci.edu/>

Look specifically for the articles on “JWST Target Visibility Tools”:

<https://jwst-docs.stsci.edu/display/JPP/JWST+Target+Visibility+Tools>

[https://jwst-docs.stsci.edu/display/JPP/JWST+General+Target+Visibility+Tool
+Help](https://jwst-docs.stsci.edu/display/JPP/JWST+General+Target+Visibility+Tool+Help)

[https://jwst-docs.stsci.edu/display/JPP/JWST+Coronagraphic+Visibility+Tool
+Help](https://jwst-docs.stsci.edu/display/JPP/JWST+Coronagraphic+Visibility+Tool+Help)

General Target Visibility Tool (GTVT)

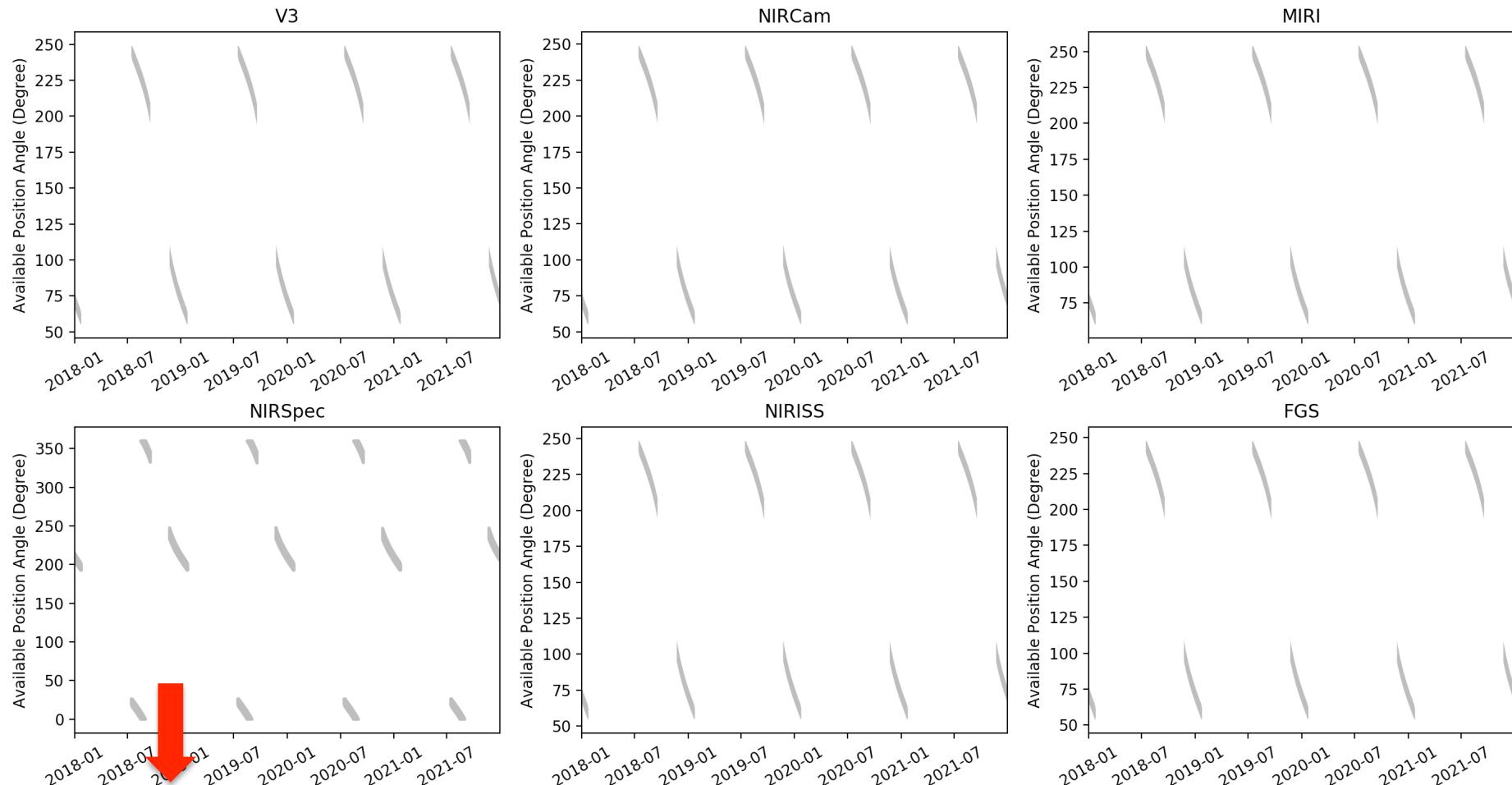
- ❖ This is a flexible python-based command-line tool.
 - ❖ Simplest usage:
 - ❖ `jwst_gtvt RA Dec`
 - ❖ Various command-line flags can be added to adjust/customize outputs
 - ❖ By default, plots print to the screen in an interactive window.
- ❖ This tool can be used for batch processing multiple targets by calling the command line tool multiple times and redirecting outputs to files.

GTVT

jwst_gtvt 10.684708 +41.268750 --name "M31"

jwst_gtvt 10.684708 +41.268750 --name "M31" --save_plot

M31 (RA = 010.684708, DEC = +41.268750)



GTVT

jwst_gtvt 10.684708 +41.268750 --save_table M31.dat

Target		
RA	Dec	ecliptic latitude
10.685	41.269	33.349

Ecliptic latitude reported in output file

Checked interval [2018-01-01, 2021-12-31]

Window [days]			Normal V3 PA [deg]			
Start	End	Duration	Start	End	RA	Dec
2018-01-01	2018-01-24	23.90	71.98866	58.37830	10.68471	41.26875
2018-07-14	2018-09-18	66.03	245.25202	200.94540	10.68471	41.26875
2018-11-22	2019-01-24	63.00	102.98091	58.52238	10.68471	41.26875
2019-07-14	2019-09-19	67.00	245.38582	200.17026	10.68471	41.26875
2019-11-22	2020-01-24	62.99	103.25986	58.66788	10.68471	41.26875
2020-07-13	2020-09-18	67.00	245.52216	200.44658	10.68471	41.26875
2020-11-22	2021-01-24	63.00	102.44659	58.24863	10.68471	41.26875
2021-07-14	2021-09-18	66.00	245.13026	200.72320	10.68471	41.26875
2021-11-22	2021-12-31	38.10	102.72882	72.60921	10.68471	41.26875

Date	V3PA		NIRCam		NIRSpec		NIRISS		MIRI		FGS	
	min	max	min	max	min	max	min	max	min	max	min	max
2018-01-01	66.72	77.26	66.69	77.23	204.20	214.75	66.15	76.69	71.73	82.28	65.47	76.01
2018-01-02	66.14	76.64	66.11	76.62	203.63	214.13	65.57	76.07	71.16	81.66	64.89	75.39
2018-01-03	65.57	76.03	65.54	76.01	203.05	213.52	65.00	75.46	70.58	81.05	64.32	74.78
2018-01-04	65.00	75.43	64.97	75.40	202.48	212.92	64.43	74.86	70.01	80.44	63.75	74.18
2018-01-05	64.43	74.83	64.40	74.80	201.92	212.32	63.86	74.26	69.44	79.84	63.18	73.58
2018-01-06	63.86	74.23	63.84	74.21	201.35	211.72	63.29	73.66	68.88	79.25	62.61	72.98



Exposure Time Calculator

- ❖ Moving beyond the standard web form ETCs
- ❖ More complete calculation with more options
 - ❖ Detector/Instrument setup
 - ❖ Detector readout pattern, integration time, # of integrations, filters, etc. (same as used in APT)
 - ❖ Extraction details (strategy)
 - ❖ Named Pandeyia
 - ❖ Can be used for other missions (e.g., WFIRST)
 - ❖ Can be scripted via the python engine

Exposure Time Calculator (ETC)

ETC Engine: Pandeia

ETC engine
Python library

JWST reference database

Separate from other JWST reference data

Throughputs
noise properties
PSFs

Web application @
jwst/etc.stsci.edu

User interface relevant for
most users of the ETC
Collaborative functionality

JWST Background Model

Currently only available
through the web application

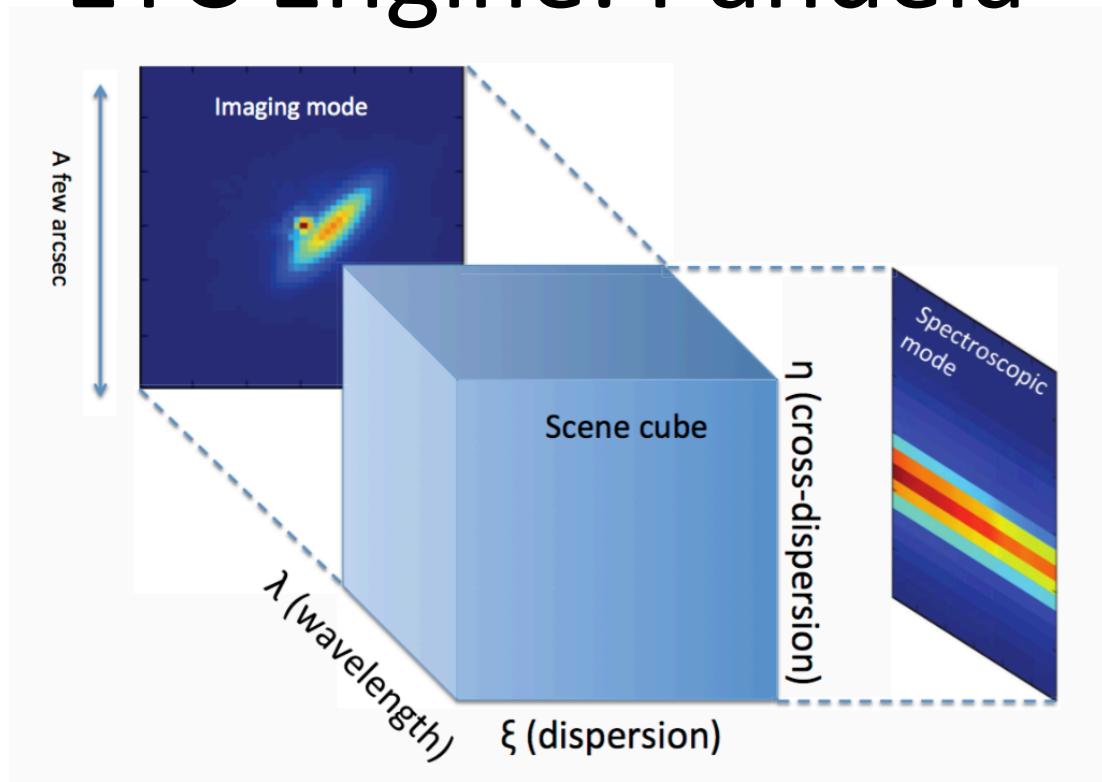
Pip install pandeia.engine

<http://ssb.stsci.edu/pandeia/engine/1.0/>

Examples at: <https://github.com/spacetelescope/JWSTUserTraining2016>

Exposure Time Calculator (ETC)

ETC Engine: Pandeia



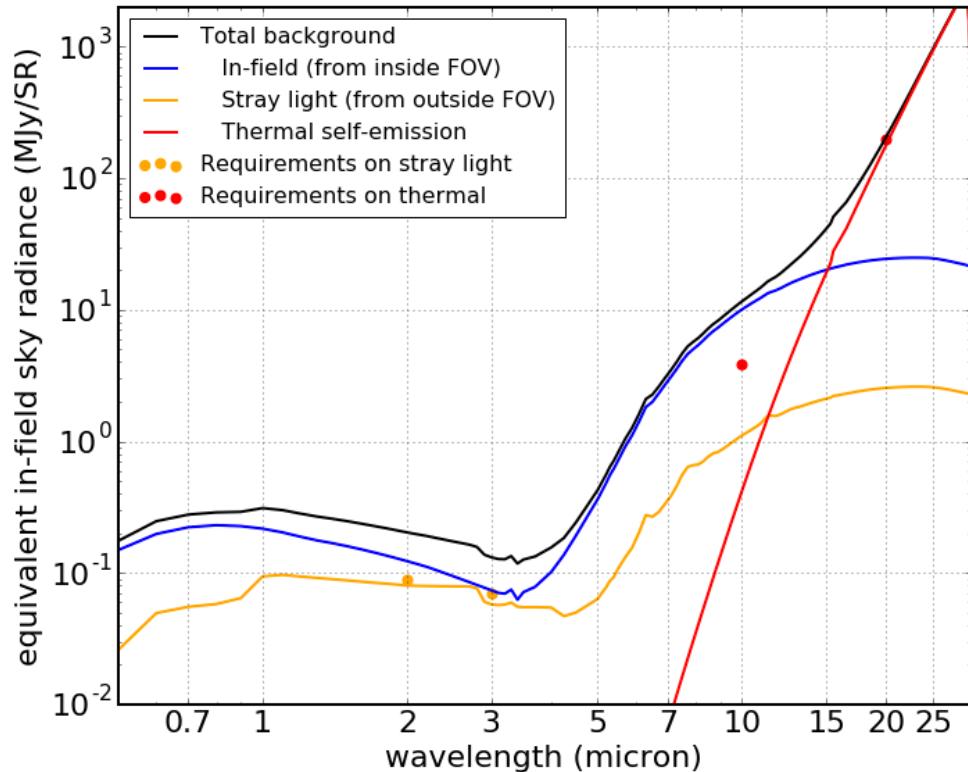
Pip install pandeia.engine

<http://ssb.stsci.edu/pandeia/engine/1.0/>

Examples at: <https://github.com/spacetelescope/JWSTUserTraining2016>

Background

- ❖ Zody + ISM from COBE/DIRBE
- ❖ ISM portion includes PAHs. Intensity set by Schlegel et al. extinction maps, fit to IRAS + DIRBE/COBE.
- ❖ Stray Light: Lightsey 2016 SPIE.



- ❖ Calculated one of two ways:
 - ❖ For a given RA, Dec, and date
 - ❖ As a percentile of the background for that position over the visibility (Low, Medium, High)

Welcome to the JWST Exposure Time Calculator

[Create User](#)[Login](#)[Work Anonymously](#)

News

Welcome to the public release of the JWST ETC!

The ETC is scheduled to be unavailable all day Wednesday, May 31, to prepare for the planned release of ETC1.1 on Thursday, June 1.

Readme

- Log in with MyST, or work anonymously
- The JWST ETC allows you to have multiple **workbooks**. Each workbook allows you to define **sources**, place them in **scenes**, and use the scenes in **calculations**. Sources may be used in multiple scenes, and scenes may be used by multiple calculations, which will be automatically recalculated to reflect any changes made. Reasonable default values are provided for all fields.
- Workbooks for logged-in users are automatically saved and will be available in your workbook list upon return. If you are working anonymously, you can log in with MyST at any time, and your workbooks will be transferred to your user account.
- For ETC Documentation, see Help->[User Guide](#). For help or to provide feedback, contact the JWST Help Desk (Help->[Help Desk](#)).
- We recommend the use of Firefox, or Chrome. Safari has been observed to occasionally cause problems.
- Be sure to read the Help->[Known Issues](#) for **important information about system accuracy, limitations, and workarounds**.

System Performance

Calculation run times for certain instrument modes (NIRISS WFSS, SOSS; NIRSpec IFU; coronagraphy) are longer because the underlying computations are more complex.

The use of highly sampled spectra may result in significantly longer run times for spectroscopic modes.

Occasionally the UI may appear to be unresponsive or stalled. Try reloading the page; this often clears the issue.

Exposure Time Calculator

Available Workbooks

#	Name -	Load	Description -	Options
5265	M31 Imaging	[Load]	M31 Imaging	[copy][remove]
5266	Favorite Target	[Load]	MRS vs LRS	[copy][remove]

List of Workbooks
If you are logged in, they are
automatically saved.

Share with
collaborators

[Create New Workbook](#)[Get a Copy of a Sample Workbook ▾](#)

Select a Workbook

User ▾

Read

Write

Grant

Revoke

User Email

Add User by Email



STScI JWST Exposure Time Ca × M31 Imaging - STScI JWST Ex × Martha

Secure https://jwst.etc.stsci.edu/workbook.html?wb_id=5265#

Apps STScI Dustings ADS Calendar Feedly Tweetdeck Confluence JDox PHAT astro4astro Google's Python RunMap » Other Bookmarks

Exposure Time Calculator Edit ▾ Expand ▾ anon_2875 Help

M31 Imaging M31 Imaging

Calculations Scenes and Sources Upload Spectra Caveats and Limitations

Scenes

ID	Name	Sources	# Calcs
1	Star Field	1,2	3

New Add Source Remove Source Delete

Sources In the scenes

Select a Source

ID	Pk	Name	Scenes	# Calc
1	<input checked="" type="checkbox"/>	Bright	1	3
2	<input type="checkbox"/>	Faint	1	3

New Delete

Source parameters

Source Editor

ID Continuum Renorm Lines Shape

Offset

Normalize Source Flux Density
Renormalization applied after redshift

Normalize at wavelength

0.1	mJy
lambda	2
μm	

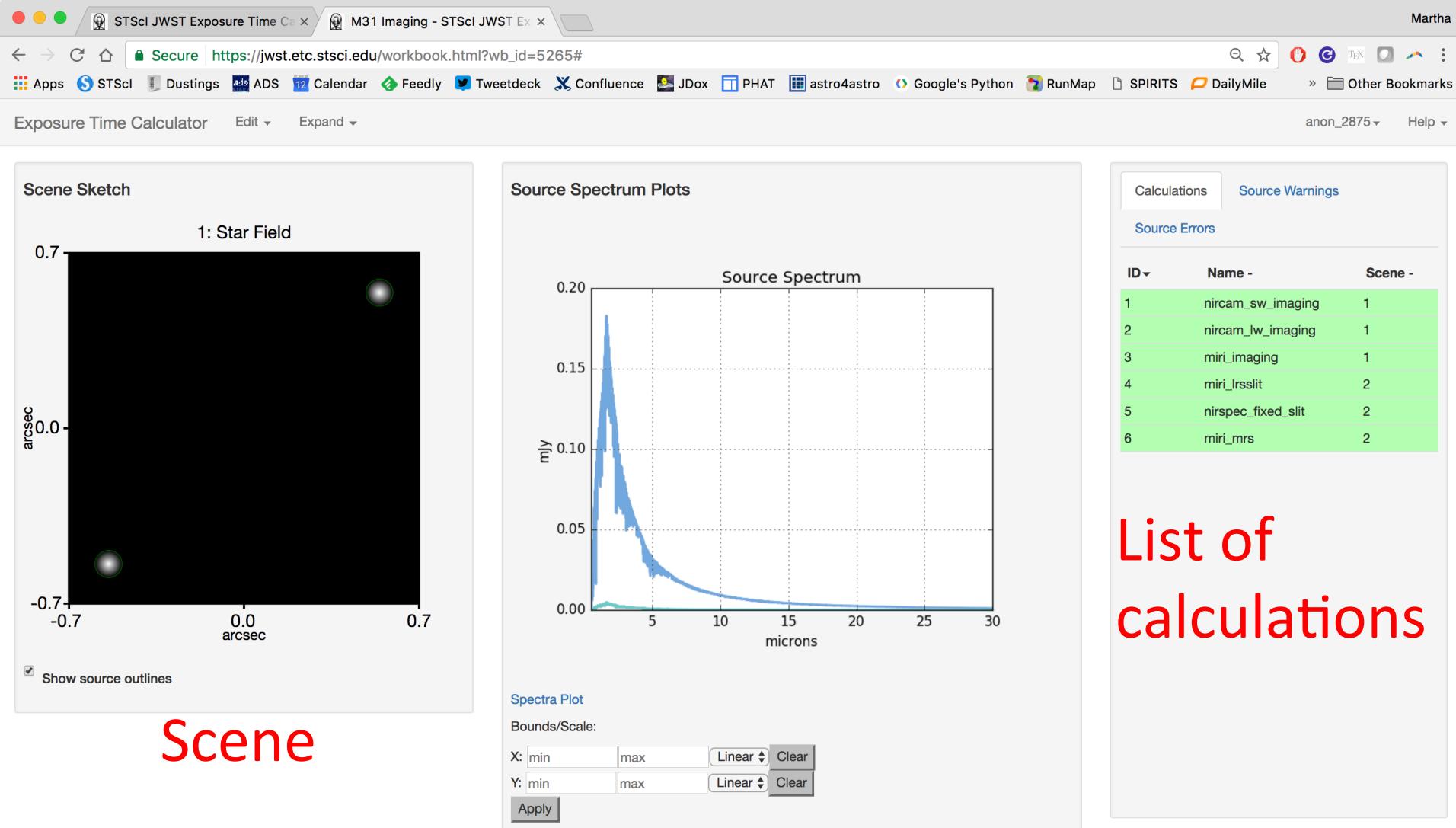
Normalize in bandpass

18	vegamag	at
JWST	MIRI/IMAGING	F560W

Source selected: 1 Reset Save

Scene Sketch Source Spectrum Plots Calculations

Martha



Scene

Source Spectra

session log = trans.main_server_i-005840844ee62d9e6_WSSVC-0.1990

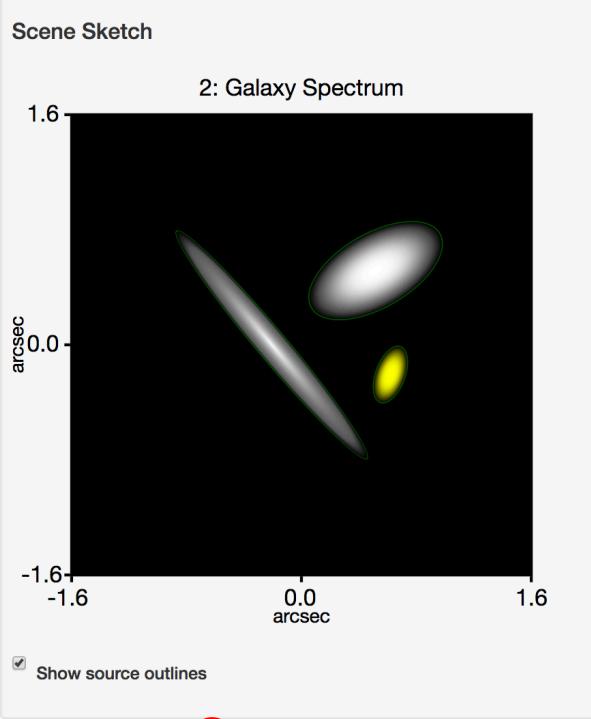
List of calculations

STScI JWST Exposure Time Ca × M31 Imaging - STScI JWST Ex × Martha

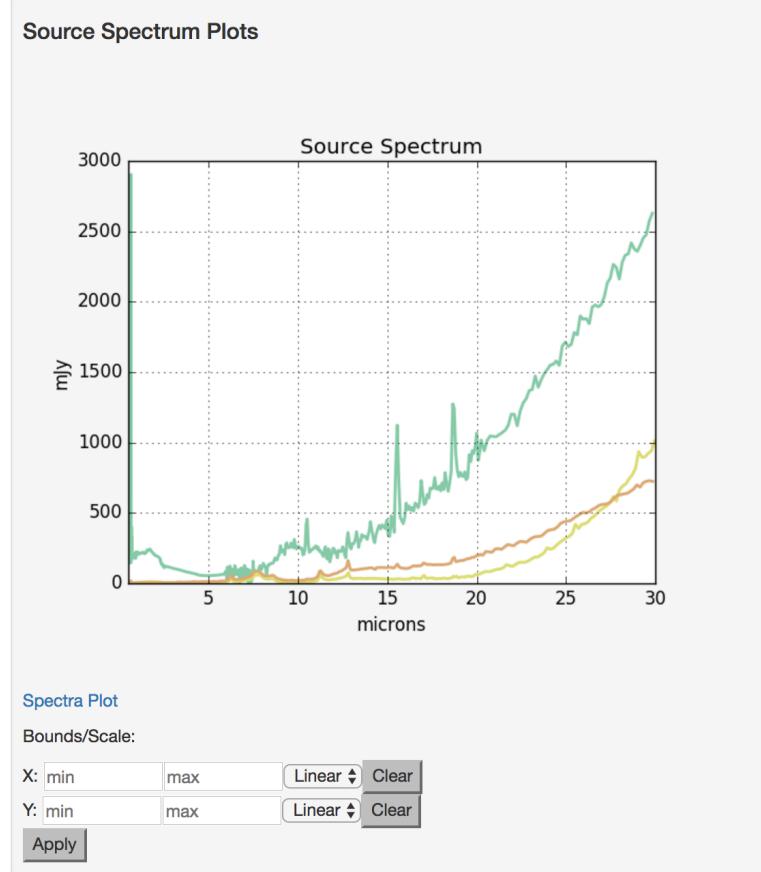
Secure https://jwst.etc.stsci.edu/workbook.html?wb_id=5265#

Apps STScI Dustings ADS Calendar Feedly Tweetdeck Confluence JDox PHAT astro4Astro Google's Python RunMap SPIRITS DailyMile Other Bookmarks

Exposure Time Calculator Edit Expand anon_2875 Help



Scene



Source Spectra

Calculations Source Warnings

Source Errors

ID	Name	Scene
1	nircam_sw_imaging	1
2	nircam_lw_imaging	1
3	miri_imaging	1
4	miri_irsslit	2
5	nirspec_fixed_slit	2
6	miri_mrs	2

List of calculations

session log = trans.main_server_i-005840844ee62d9e6_WSSVC-0.1990

STScI JWST Exposure Time Ca × M31 Imaging - STScI JWST Ex × Martha

Secure https://jwst.etc.stsci.edu/workbook.html?wb_id=5265#

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Exposure Time Calculator Edit ▾ Expand ▾ anon_2875 Help ▾

M31 Imaging M31 Imaging

Calculations Scenes and Sources Upload Spectra Caveats and Limitations

MIRI ▾ NIRCam ▾ NIRISS ▾ NIRSpec ▾

ID	Plot	Mode	Scene	(s)	SNR	⚠
3	<input checked="" type="checkbox"/>	miri imaging	1	5605.50	3.06	✓
2	<input checked="" type="checkbox"/>	nircam lw_imaging	1	590.70	76.38	✓
1	<input checked="" type="checkbox"/>	nircam sw_imaging	1	19976.40	260.47	⚠
-	-	-	-	-	-	-

Calculations

Scene ★ Backgrounds Instrument Setup Detector Setup Strategy

NIRCam SW Imaging

Filter F070W

Total System Throughput

NIRCAM SW-IMAGING SW F070W

λ (μm)

Calculation selected: 1, Mode: nircam sw_imaging

Reset Calculate

Detector Setup and strategy

Images

Calculation selected: 1, Mode: nircam sw_imaging

2D SNR Detector Saturation

Plots

ApFlux ApBackground SNR SNR (time) Contrast

Signal to Noise

Reports

Calculation selected: 1, Mode: nircam sw_imaging

Report Warnings Errors

Downloads

STScI JWST Exposure Time Ca × M31 Imaging - STScI JWST Ex × Martha

Secure https://jwst.etc.stsci.edu/workbook.html?wb_id=5265#

Apps STScI Dustings ADS Calendar Feedly Tweetdeck Confluence JDox PHAT astro4astro Google's Python RunMap SPIRITS DailyMile Other Bookmarks

Exposure Time Calculator Edit Expand anon_2875 Help

M31 Imaging M31 Imaging

Calculations Scenes and Sources Upload Spectra Caveats and Limitations

ID	Plot	Mode	Scene	(s)	SNR	⚠
3	<input checked="" type="checkbox"/>	miri imaging	1	5605.50	3.06	<input checked="" type="checkbox"/>
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1	<input checked="" type="checkbox"/>	nircam sw_imaging	1	19976.40	260.47	<input type="checkbox"/>
-	-	-	-	-	-	-

Scene ★ Backgrounds Instrument Setup Detector Setup Strategy

Subarrays Readout patterns

FULL MEDIUM2

Groups Integrations Exposures

10 1 20

Exposure time: 05:32:56 (19976.40 s)

Readout pattern, Groups, Integrations, exposures

Calculation selected: 1, Mode: nircam sw_imaging

Reset Calculate

Images

Calculation selected: 1, Mode: nircam sw_imaging

2D SNR Detector Saturation

Plots

ApFlux ApBackground SNR SNR (time) Contrast

Signal to Noise

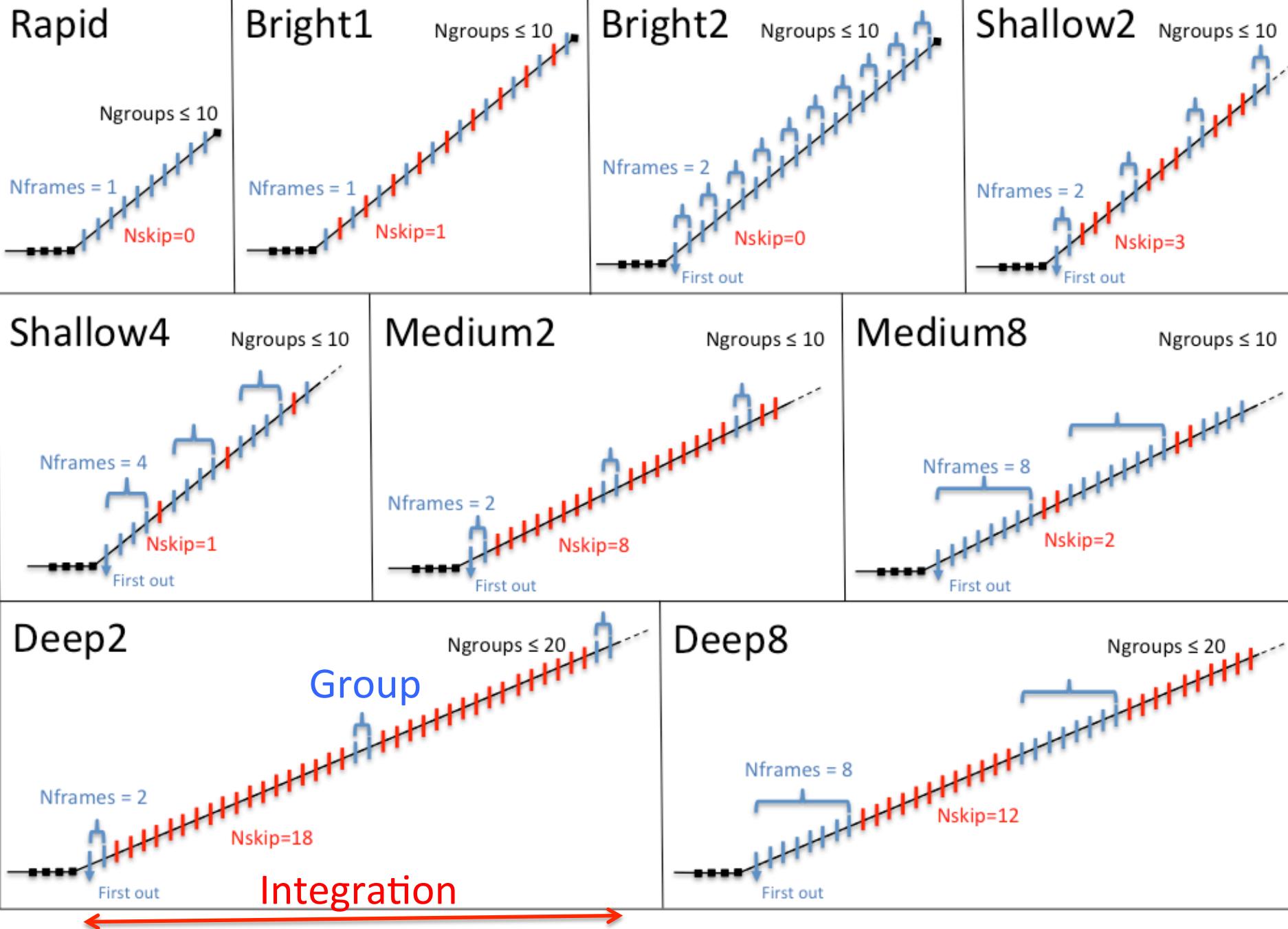
Reports

Calculation selected: 1, Mode: nircam sw_imaging

Report Warnings Errors

Downloads

https://jwst.etc.stsci.edu/workbook.html?wb_id=5265#detectorsetup



STScI JWST Exposure Time Ca × M31 Imaging - STScI JWST Ex × Martha

Secure https://jwst.etc.stsci.edu/workbook.html?wb_id=5265#

Apps STScI Dustings ADS Calendar Feedly Tweetdeck Confluence JDox PHAT astro4astro Google's Python RunMap SPIRITS DailyMile Other Bookmarks

Exposure Time Calculator Edit Expand anon_2875 Help

M31 Imaging M31 Imaging

Calculations Scenes and Sources Upload Spectra Caveats and Limitations

ID	Plot	Mode	Scene	(s)	SNR	
3	<input checked="" type="checkbox"/>	miri imaging	1	5605.50	3.06	<input checked="" type="checkbox"/>
2	<input checked="" type="checkbox"/>	nircam lw_imaging	1	590.70	76.38	<input checked="" type="checkbox"/>
1	<input checked="" type="checkbox"/>	nircam sw_imaging	1	19976.40	260.47	<input type="warning"/>
-	-	---	-	--.-	--.-	-

Aperture size
Background estimate

Scene ★ Backgrounds Instrument Setup Detector Setup Strategy

Imaging Aperture Photometry

Aperture location Aperture radius

Centered on source 0.1 arcsec

2: Faint X, Y: 0.5,0.5 arcsec

Specify offsets in scene

X: 0 arcsec Y: 0 arcsec

Perform Background Subtraction Using background region noiseless sky background

Sky annulus

Inner radius 0.22 arcsec Outer radius 0.4 arcsec

Shape circular

Calculation selected: 1, Mode: nircam sw_imaging

Reset Calculate

Images

Calculation selected: 1, Mode: nircam sw_imaging

2D SNR Detector Saturation

Plots

ApFlux ApBackground SNR SNR (time) Contrast

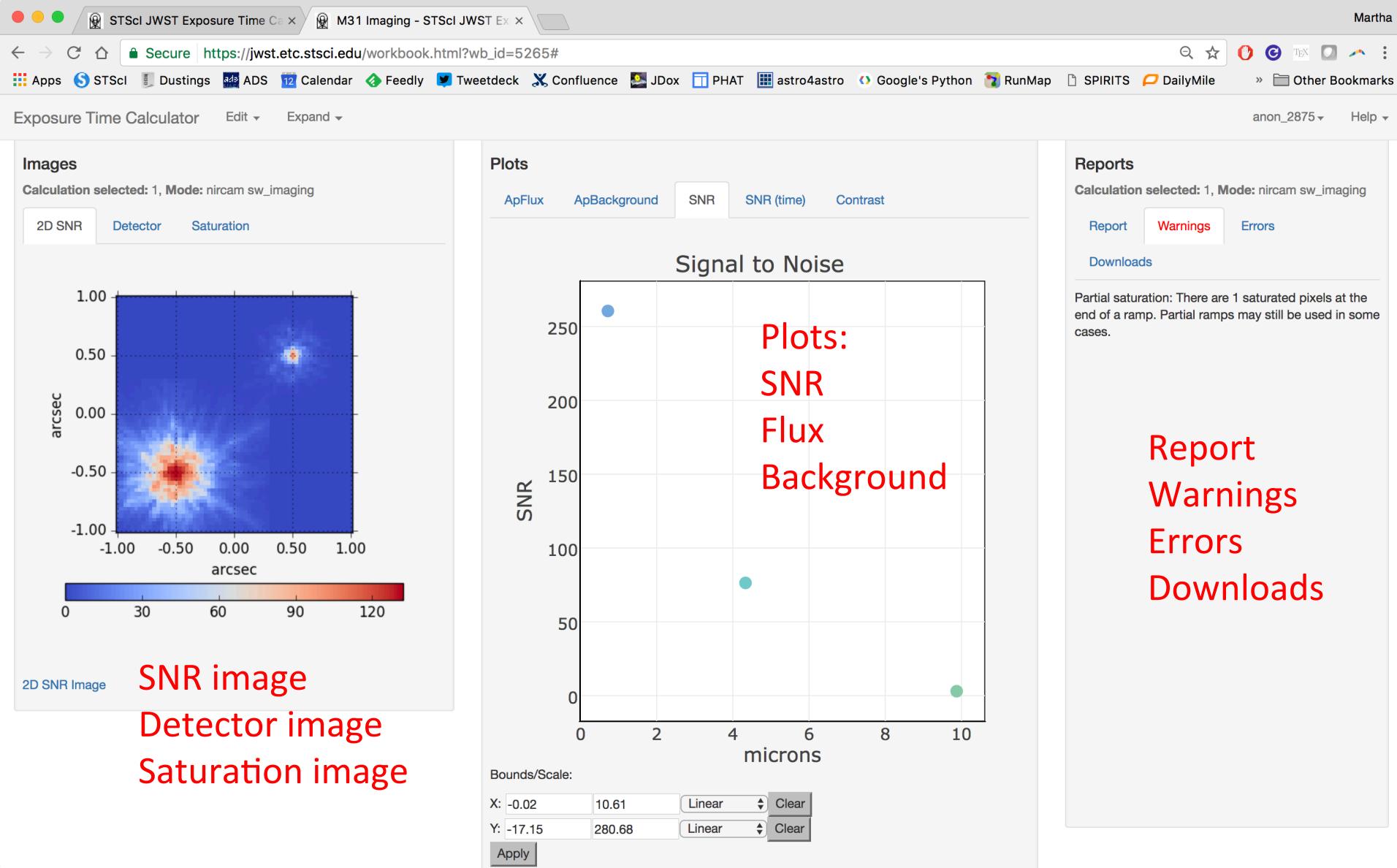
Signal to Noise

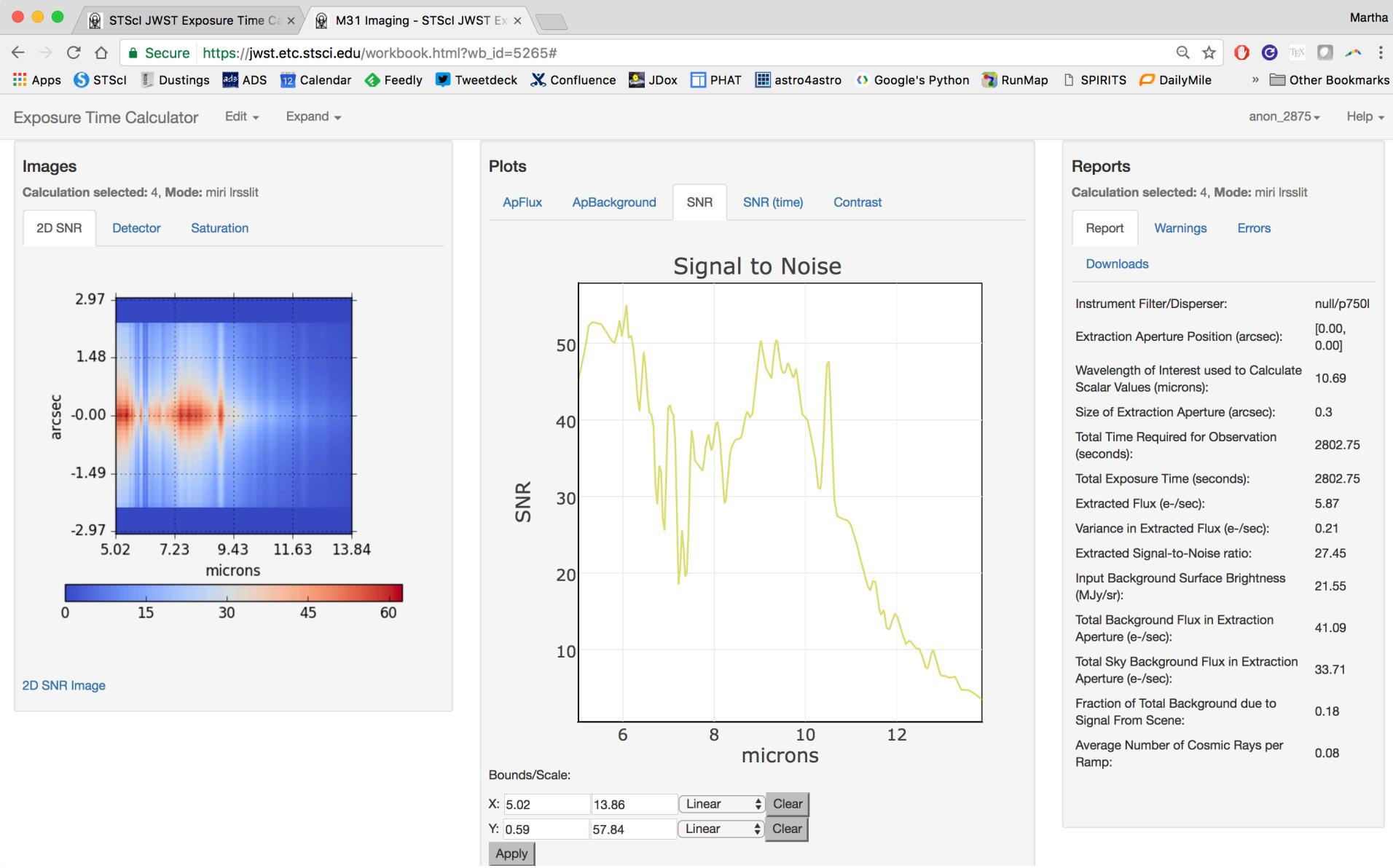
Reports

Calculation selected: 1, Mode: nircam sw_imaging

Report Warnings Errors

Downloads





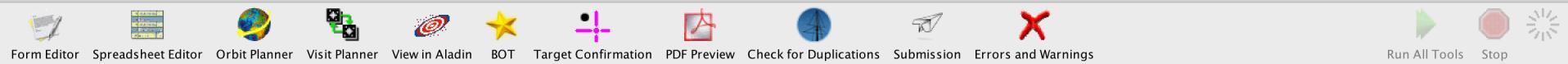


Astronomer's Proposal Tool (APT)

- ❖ JWST has a *single stream* proposal system: observation design must be submitted and ready for scheduling with the proposal (no phase 2). Exceptions:
 - ❖ Target of Opportunity proposals
 - ❖ NIRSpec MSA proposals requiring NIRCam pre-imaging
 - ❖ (Possibly others, TBD by the Science Mission Office)
- ❖ APT is the tool you use to construct, validate, and submit proposals to JWST.
 - ❖ Same tool used for HST
- ❖ Thursday June 1 release: APT 25.1.1
 - ❖ Download Latest Version: <http://apt.stsci.edu/>

Astronomer's Proposal Tool (APT)

- ❖ JWST Scheduling will be driven by *time needed*, not by “integral orbital viewing periods”
 - ❖ Orbits are the natural unit for HST, but not JWST.
- ❖ Observation template approach
 - ❖ Once an instrument and observing mode (or template) are selected, only the specific parameters needed or allowed for that mode are presented to the user in the Active GUI window.
- ❖ APT handles much of the book keeping in the background.
 - ❖ “Visits” are the basic scheduling units used by the planning system.
 - ❖ APT determines whether an observation requires multiple “visits” and does the visit breaking.



New Document

Astronomer's Proposal Tools

Version 25.1.1 Beta (Fri May 26 2017)

● Copyright 2002 – 2007 United States Government as represented by the Administrator of the National Aeronautics and Space Administration. All Rights Reserved.

● This software has made use of the Aladin Sky Atlas (<http://aladin.u-strasbg.fr/>) developed at the *Centre de Données astronomiques de Strasbourg* (CDS – <http://cdsweb.u-strasbg.fr/>)

● This software has made use of the SIMBAD database, operated at CDS, Strasbourg, France.

● This software has made use of the NASA/IPAC Extragalactic Database (NED) which is operated by the Jet Propulsion Laboratory, California Institute of Technology, under contract with the National Aeronautics and Space Administration.

● This software uses portions of the JSky library which is maintained by the European Southern Observatory.

● This product includes code licensed from RSA Data Security.

● This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>).

Copyright © 1999 The Apache Software Foundation. All rights reserved.

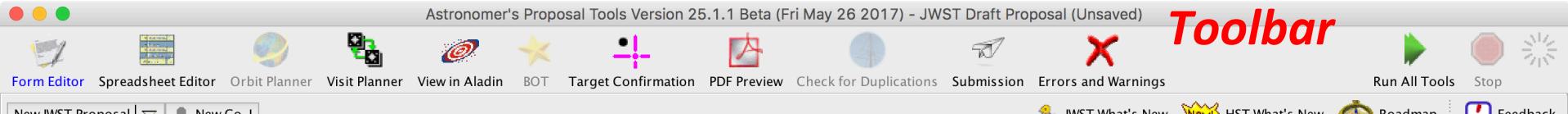
1. Redistributions of source code must retain the above copyright notice this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. The end-user documentation included with the redistribution, if any, must include the following acknowledgment:

"This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>)."

Alternately, this acknowledgment may appear in the software itself, if and wherever such third party acknowledgments normally appear.

Show:

No errors & warnings (Click for Details)

Toolbar

New JWST Proposal | New Co-I

JWST What's New | HST What's New | Roadmap | Feedback

JWST Draft Proposal (Unsaved)

- Proposal Information**
 - Proposal Description
 - Unnamed PI
 - Unnamed Col
- Targets**
 - Fixed Targets
 - 1 M-31
- Observations**
 - Observation Folder
 - NIRCam + MIRI Imaging (C)
 - Visit 1:1
 - Visit 1:2
 - Visit 1:3
 - Visit 1:4
- Observation Links

Tree Editor**Proposal Information of JWST Draft Proposal (Unsaved)**

Title: My Amazing Idea

Abstract: Abstract for the best JWST proposal ever.

Remaining characters: 1659

Proposal ID:

Category: GO Calibration Treasury

Pure Parallel Proposal:

Cycle: 1

Science Time (hours): 5.05

Charged Time (hours): 8.93

Proprietary Period: Default Default is 12 Months

Allow Restricted: (this session only)

Scientific Category: Stellar Populations

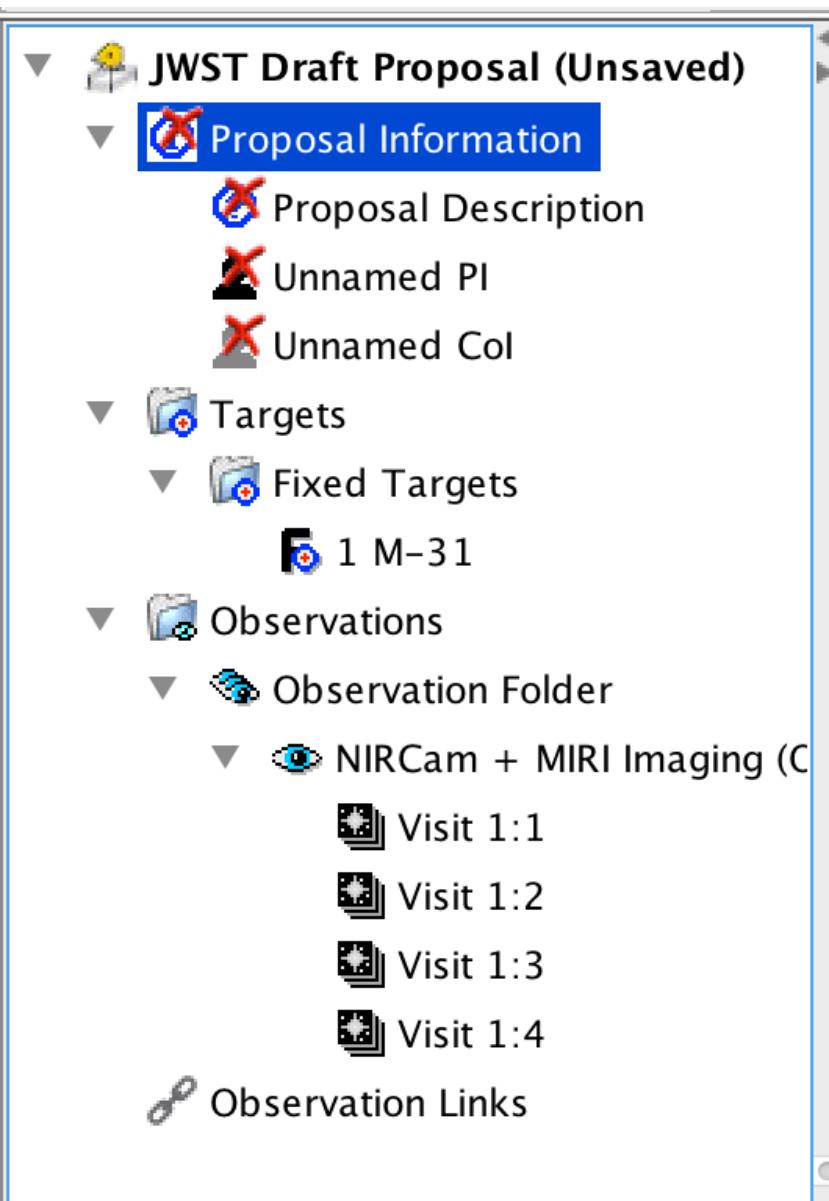
Science Keywords: +/- Astrometry, Cool Stars
 Choose 2 to 5 science keywords.

Alternate Category: None Selected (Optional)

Active GUI WindowEdit Previous New Edit Proposal Description

X 4 errors & warnings (Click for Details)

Tree Editor



*Red X = Errors/Warnings
(rollover text)*

Astronomer's Proposal Tools Version 25.1.1 Beta (Fri May 26 2017) - JWST Draft Proposal (Unsaved)

Toolbar

Form Editor Spreadsheet Editor Orbit Planner Visit Planner View in Aladin BOT Target Confirmation PDF Preview Check for Duplications Submission Errors and Warnings Run All Tools Stop JWST What's New HST What's New Roadmap Feedback

New JWST Proposal New Co-I

JWST Draft Proposal (Unsaved)

Proposal Information

- Proposal Description
- Unnamed PI
- Unnamed Col

Targets

- Fixed Targets
 - 1 M-31

Observations

- Observation Folder
 - NIRCam + MIRI Imaging (C)
 - Visit 1:1
 - Visit 1:2
 - Visit 1:3
 - Visit 1:4

Observation Links

Tree Editor

Active GUI Window

Context-sensitive Help (opens JDoc)

Time summary as you fill in observing parameters

Proposal Information of JWST Draft Proposal (Unsaved)

Title: My Amazing Idea

Abstract: Abstract for the best JWST proposal ever.
Remaining characters: 1659

Proposal ID: []

Category: GO Calibration Treasury

Pure Parallel Proposal:

Cycle: 1 Explain unschedulable observations

Science Time (hours): 5.05

Charged Time (hours): 8.93 Request custom time allocation Future cycles

Proprietary Period: Default Default is 12 Months

Allow Restricted: (this session only)

Scientific Category: Stellar Populations

Science Keywords: +/- Astrometry, Cool Stars
Choose 2 to 5 science keywords.

Alternate Category: None Selected (Optional) Coordinated telescopes

Edit Previous New Edit Proposal Description

4 errors & warnings (Click for Details)

Context-sensitive Help in APT (JDox)

The screenshot shows a web browser window for the JWST User Documentation (<https://jwst-docs.stsci.edu>). The title bar indicates it's a secure connection. The page header includes the URL, a user profile for 'Martha', and various bookmark links like Apps, STScI, Dustings, ADS, Calendar, Feedly, Tweetdeck, Confluence, JDox, PHAT, and Other Bookmarks.

A banner at the top states: "the JWST user documentation is under development; current versions are preliminary and subject to revision."

James Webb Space Telescope User Documentation

Navigation menu: HOME | INSTRUMENTS ▾ | PLANNING ▾ | CALL FOR PROPOSALS ▾ | POLICIES ▾ | DATA ▾ | Search

JWST User Documentation Home

JWST Observatory and Instrumentation

Icon: A yellow hexagonal grid with a central black dot, representing the telescope's primary mirror segments.

Search input and button.

Expand all | Collapse all

- › Mid-Infrared Instrument, MIRI
- › Near Infrared Camera, NIRCAM
- › Near Infrared Imager and Slitless Spectrograph, NIRISS
- › Near Infrared Spectrograph, NIRSpec
- Fine Guidance Sensor, FGS
- › JWST Observatory

JWST Observation Planning

Icon: A circular graphic showing a star with multiple diffraction spikes.

Search input and button.

Expand all | Collapse all

- › JWST Proposing Tools
- › JWST Proposal Planning
- › JWST Observing Modes and Strategies

JWST Opportunities and Policies

Icon: JWST logo featuring a stylized telescope and the text "James Webb Space Telescope" and "NASA • ESA • CSA".

JWST Data

Icon: A purple and orange abstract graphic representing astronomical data.

Form Editor Spreadsheet Editor Orbit Planner Visit Planner View in Aladin BOT Target Confirmation PDF Preview Check for Duplications Submission Errors and Warnings Run All Tools Stop

New JWST Proposal New ▾ JWST What's New HST What's New Roadmap Feedback

JWST Draft Proposal (Unsaved)
Proposal Information
Proposal Description
Unnamed PI
Unnamed Col
Targets
Fixed Targets
1 M-31
Observations
Observation Folder
NIRCam + MIRI Imaging (C)
Visit 1:1
Visit 1:2
Visit 1:3
Visit 1:4
Observation Links

Fixed Targets of JWST Draft Proposal (Unsaved)
Fixed Targets
Finds target with NED/Simbad
Create new target from scratch
Import Targets... Import Fixed Targets from whitespace, CSV, TSV, or VOTable
Import list of targets
Edit Targets ← New ▾ Edit 1 M-31

4 errors & warnings (Click for Details)

Form Editor Spreadsheet Editor Orbit Planner Visit Planner View in Aladin BOT Target Confirmation PDF Preview Check for Duplications Submission Errors and Warnings Run All Tools Stop

New JWST Proposal New ▾ JWST What's New HST What's New Roadmap Feedback

JWST Draft Proposal (Unsaved)

1 M-31 of JWST Draft Proposal (Unsaved)

Number: 1
 Name in the Proposal: M-31 (unique within proposal)
 Name for the Archive: M 31 (standard resolvable name)
 Category: Galaxy
 Description: +/– Ring galaxies, Spiral galaxies
 Choose 1 to 5 items after selecting a category.

J2000 Coordinates (ICRS): RA: 00 42 44.3300 Dec: +41 16 7.50
 Uncertainty: RA: [] Arcsec Dec: [] Arcsec
 Extended: Unknown Recommended for spectroscopy (for advice to data reduction pipeline)

Background Target
 Observations of this target require companion background observation(s)

Proper Motion: RA: [] None Selected Dec: [] None Selected
 Epoch: []
 Annual Parallax (arcsec): []

This object was generated by the targetselector and retrieved from the SIMBAD database.

Comments:

Edit Fixed Targets New Edit Observations

4 errors & warnings (Click for Details)

Astronomer's Proposal Tools Version 25.1.1 Beta (Fri May 26 2017) - JWST Draft Proposal (Unsaved)

Form Editor Spreadsheet Editor Orbit Planner Visit Planner View in Aladin BOT Target Confirmation PDF Preview Check for Duplications Submission Errors and Warnings Run All Tools Stop

New JWST Proposal New ▾ JWST What's New HST What's New Roadmap Feedback

JWST Draft Proposal (Unsaved)

- Proposal Information
- Proposal Description
- Unnamed PI
- Unnamed Col
- Targets
- Fixed Targets
 - 1 M-31
- Observations
- Observation Folder
 - NIRCam + MIRI Imaging (C)
 - Visit 1:1
 - Visit 1:2
 - Visit 1:3
 - Visit 1:4
- Observation Links

NIRCam + MIRI Imaging (Obs 1) of JWST Draft Proposal (Unsaved)

Number: 1 Status: UNKNOWN
 Label: NIRCam + MIRI Imaging
 Prime Instrument: NIRCAM
 Template: NIRCam Imaging
 Coordinated Parallel: NIRCam-MIRI Imaging
 Target: 1 M-31

Splitting Distance	Number of Visits
Visit Splitting: 60.0 Arcsec	4
Science	Total Charged
NIRCam Imaging Duration (secs) 18180	32303
MIRI Imaging Duration (secs) 18000	

Data volume: 50,342 MB

NIRCam Imaging **MIRI Imaging** **Mosaic Properties** **Special Requirements** **Comments**

Module: ALL Subarray: FULL

Dither Parameters: Primary Dither Type: INTRAMODULE Primary Dithers: 3 Subpixel Dither Type: NIRCam Only NIRCAM Positions: 3

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/E...	Total Dithers	Total Integrati...	Total Exposure...
1	F115W	F444W	SHALLOW2	10	1	9	9	4638.28

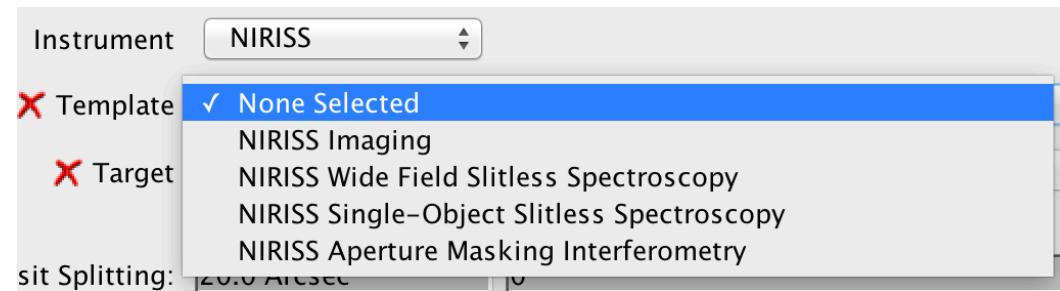
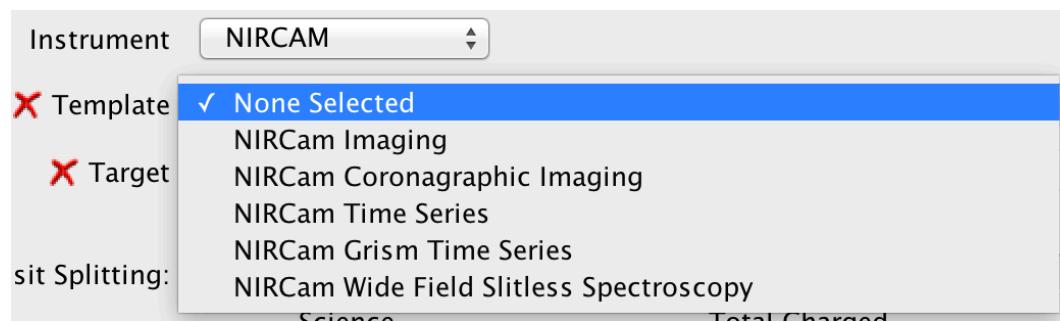
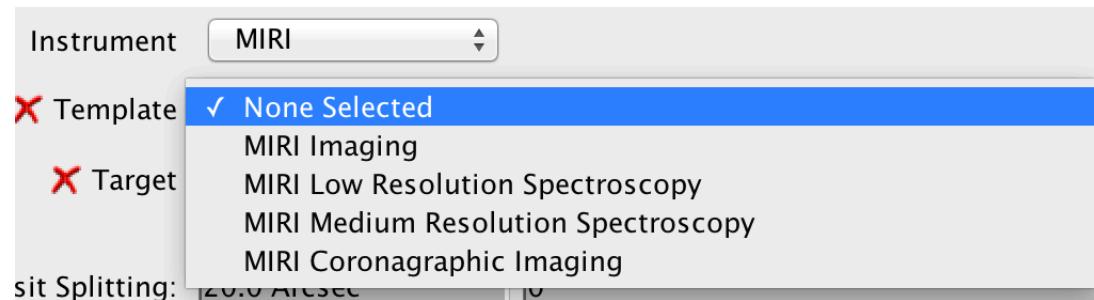
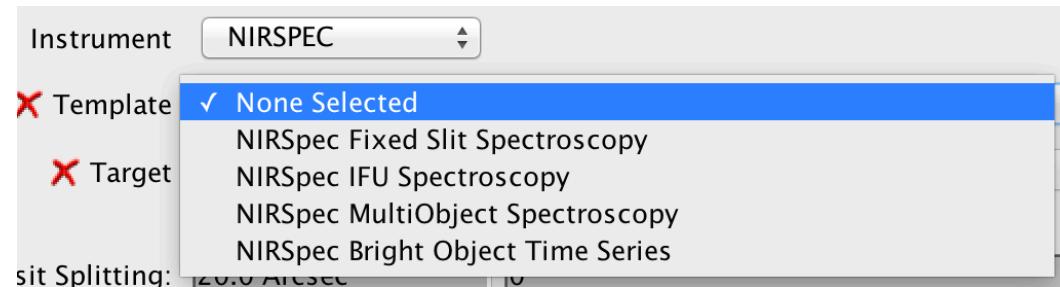
Filters: Add Duplicate Insert Above Remove

Edit Observation Folder New ▾ Edit Visit 1:1

Each choice brings up relevant options

- **Instrument**
- **Template**
- **Parallel**
- **Instrument Setup**

✗ 4 errors & warnings (Click for Details)



*Choose primary instrument template options
Subarray, dithers, filters, readout pattern, target acquisition...*



NIRCam Imaging MIRI Imaging Mosaic Properties Special Requirements Comments

Module ALL

Subarray FULL

Dither Parameters	Primary Dither Type	Primary Dithers	Subpixel Dither Type	NIRCAM Positions					
INTRAMODULE	3	NIRCam Only	3						
	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/E...	Total Dithers	Total Integrati...	Total Exposure...
	1	F115W	F444W	SHALLOW2	10	1	9	9	4638.28

Filters

Add Duplicate Insert Above Remove

Edit Observation Folder New Edit Visit 1:1

 4 errors & warnings (Click for Details)

Choose parallel instrument template options (if using)



NIRCam Imaging **MIRI Imaging** Mosaic Properties Special Requirements Comments

Subarray **FULL**

Filters

#	Filter	Readout Pattern	Groups/Int	Integrations/E...	Exposures/Dith	Total Dithers	Total Integrati...	Total Exposure...
1	F1000W	FAST	180	1	1	9	9	4495.565

Add Duplicate Insert Above Remove

Edit Observation Folder ↻ New ↘ ↗ Edit Visit 1:1

X 4 errors & warnings (Click for Details)

Setup a mosaic



NIRCam Imaging MIRI Imaging **Mosaic Properties** Special Requirements Comments

Rows: Columns:

Row Overlap %: Column Overlap %:

Row shift: Column shift:

[View in Aladin](#)

Mosaic Tiles:

Tile Number	Tile State	Visits
1	Tile Included	[Visit 1:1]
2	Tile Included	[Visit 1:2]
3	Tile Included	[Visit 1:3]
4	Tile Included	[Visit 1:4]

Edit Observation Folder New Edit Visit 1:1

4 errors & warnings (Click for Details)

*Set any special requirements:
Position angle, observation grouping, timing, offsets*



NIRCam Imaging MIRI Imaging Mosaic Properties **Special Requirements** Comments

Group Visits within 53.0 Days

Visits Same PA

Edit

Aperture PA Range 200 to 245 Degrees (V3 200.026475 to 245.026475)

No Parallel

Add...

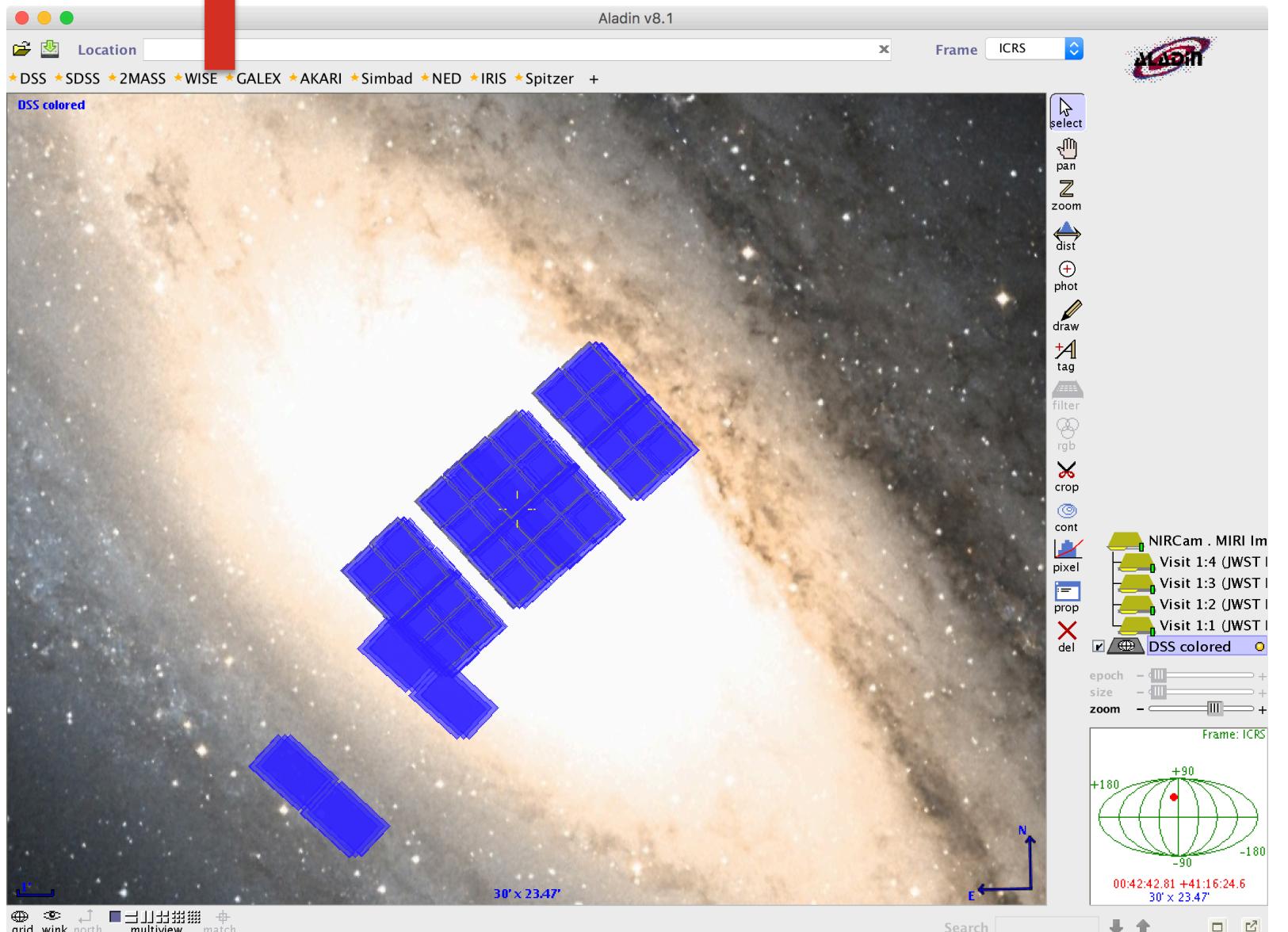
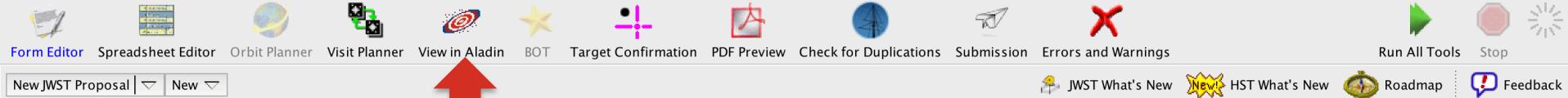
Remove

Edit



Edit Observation Folder ↵ New ↴ Edit Visit 1:1

 4 errors & warnings (Click for Details)



Form Editor Spreadsheet Editor Orbit Planner Visit Planner [View in Aladin](#) BOT Target Confirmation PDF Preview Check for Duplications Submission Errors and Warnings Run All Tools Stop

New JWST Proposal New ▾ JWST What's New HST What's New Roadmap Feedback

JWST Draft Proposal (Unsaved)

- Proposal Information
- Proposal Description
- Unnamed PI
- Unnamed Col

Targets

- Fixed Targets
 - 1 M-31

Observations

- Observation Folder
 - NIRCam + MIRI Imaging (C)
 - Visit 1:1
 - Visit 1:2
 - Visit 1:3
 - Visit 1:4

Observation Links

APT Aladin Controls (all JWST apertures are preliminary)

Create POS TARGS POS TARG XY Axes FoV Single Aperture Coverage Circles Orient Ranges Grid Apply Proper Motion to Epoch 2017.91 BOT Data Labels Load DSS JWST GS GS Check Reset Orients Color Map Lock Context

Manage Proposal Changes

No Pending Changes

Clear Selected Clear All Commit Selected Commit All

**Plot focal plane, allowed position angles.
Save or discard changes made in Aladin.**

 Graphically repositioning targets and exposures in Aladin creates pending changes which can be committed back to the proposal.

Note that when the Create POS TARGS button is toggled, an exposure will be offset from its target instead of moving the target.

4 errors & warnings (Click for Details)

Run Smart Accounting!!

APT File Edit Tools Visit Planner Help

Force Update Display Set Processing Date Range Run Smart Accounting

JWST Draft Proposal Tools Version 25.1.1 Beta (Fri May 26 2017) - JWST Draft Proposal (Unsaved)

Form Editor Spreadsheet Editor Orbit Planner Visit Planner View in Aladin BOT Target Confirmation PDF Preview Check for Duplications Submission Errors and Warnings Run All Tools Stop

New JWST Proposal New

JWST Draft Proposal (Unsaved)

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- 1 M-31

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 - Visit 1:1
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 - Visit 1:4

Observation Links

Zoom

Current Range (UT): ~ 17 Months

17.150:20:28:45

Mar-19 06-May-19 01-Jul-19 26-Aug-19 21-Oct-19 16-Dec-19 10-Feb-20 06-Apr-20 01-Jun-20

00:00 00:00:00 00:00:00 00:00:00 00:00:00 00:00:00 00:00:00 00:00:00 00:00:00

NIRCam + MIRI Imaging (Obs 1)

Visit 1:1

Relative Suitability

GROUP Visits (00000:001:00)

SAME ORIENT Visits (00000:001:00)

Off-Normal Constraint

Field of Regard

Guide Star Constraint

ABSOLUTE ORIENT (200.03 :)

Earth Avoidance

Moon Avoidance

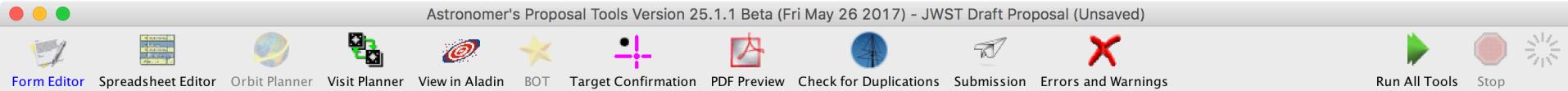
Total Absolute

Absolute Roll Constraint

Update Display Reports Print

All selected visits are schedulable.

The screenshot shows the JWST Draft Proposal Tools version 25.1.1 Beta. The 'Visit Planner' tab is active. A red arrow points to the 'Run Smart Accounting' button in the top menu bar. The main window displays a timeline from March 19 to June 20, 2017, with various constraint bars for observations. A sidebar on the left shows the project structure and observation details.



New JWST Proposal

New ▾

New

JWST What's New

HST What's New

Roadmap

Feedback

JWST Draft Proposal (Unsaved)

Proposal Information

Proposal Description

Unnamed PI

Unnamed Col

Targets

Fixed Targets

1 M-31

Observations

Observation Folder

NIRCam + MIRI Imaging (Obs 1)

Visit 1:1

Visit 1:2

Visit 1:3

Visit 1:4

Observation Links

Number: 1 Status: UNKNOWN

Label: NIRCam + MIRI Imaging

Prime Instrument: NIRCAM

Template: NIRCam Imaging

Coordinated Parallel: NIRCam-MIRI Imaging

Target: 1 M-31

	Splitting Distance	Number of Visits
Visit Splitting:	60.0 Arcsec	4
	Science	Total Charged
NIRCam Imaging Duration (secs)	18180	32303
MIRI Imaging Duration (secs)	18000	
Data volume:	50,342 MB	

NIRCam Imaging

MRI Imaging

Mosaic Properties

Special Requirements

Comments

Module: ALL

Subarray: FULL

Primary Dither Type

INTRAMODULE

Primary Dithers

Subpixel Dither Type

NIRCAM Positions

	Splitting Distance	Number of Visits
Visit Splitting:	60.0 Arcsec	4
	Science	Total Charged
NIRCam Imaging Duration (secs)	18180	32158
MIRI Imaging Duration (secs)	18000	

Data volume: 50,342 MB

Form Editor Spreadsheet Editor Orbit Planner Visit Planner View in Aladin BOT Target Confirmation PDF Preview Check for Duplications Submission Errors and Warnings Run All Tools Stop

New JWST Proposal New ▾ JWST What's New HST What's New Roadmap Feedback

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1 M-31

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NIRCam + MIRI Imaging (C)
Visit 1:1
Visit 1:2
Visit 1:3
Visit 1:4

Observation Links

Visit 1:1 Status: Unknown

	Science Instrument Overheads	Slew	Observatory Overheads	Direct Scheduling Overheads	Total Charged
Visit Duration (secs)	4545	1762	207	1043	0
Data volume:	12,585 MB				

Science Instrument Overheads Slew Observatory Overheads Direct Scheduling Overheads Total Charged

Visit Duration (secs)	4545	1762	207	1043	0
Data volume:	12,585 MB				

Absolute data limit per visit: 58 GB
Downlink every 12 hours – 28 GB limit in a single downlink window.

Edit NIRCam + MIRI Imaging (Obs 1) ← New ▾ Edit Visit 1:2

✗ 4 errors & warnings (Click for Details)



Export...

Export...

(Cmd-click to multiselect.)

- Diagnostic Summary [\[.diag\]...](#)
- PDF [\[.pdf\]...](#)
- TAC PDF [\[.pdf\]...](#)
- xml file [\[.xml\]...](#)
- sql file [\[.sql\]...](#)
- NIRSpec MSA Catalog Associated Images
- Target Confirmation Charts
- Visit Coverage
- Visit Positions/Coverage to MAST
- MSA Target Info [\[.csv\]...](#)
- times file [\[.times\]...](#)
- pointing file [\[.pointing\]...](#)
- MOSS files to proposal directory
- Smart Accounting visit sequences
- Approved SQL file [\[.approved.sql\]...](#)
- SPAR SQL file [\[.spar.sql\]...](#)
- Send To ProPer
- pointing_json file [\[.json\]...](#)

Cancel

OK

Times file: Summary of overheads for every visit

Pointing file: Summary of each exposure, including dithers

...And lots more!

Form Editor Spreadsheet Editor Orbit Planner Visit Planner View in Aladin BOT Target Confirmation PDF Preview Check for Duplications Submission Errors and Warnings Run All Tools Stop

New JWST Proposal New ▾

JWST Draft Proposal (Unsaved)

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NIRCam + MIRI Imaging (Obs 1)
Visit 1:1
Visit 1:2
Visit 1:3
Visit 1:4

Observation Links

NIRCam + MIRI Imaging (Obs 1) Draft Proposal (Unsaved)

Number: 1 Status: UNKNOWN

Label: NIRCam + MIRI Imaging

Prime Instrument: NIRCAM

Template: NIRCam Imaging

Coordinated Parallel: NIRCam-MIRI Imaging

Target: 1 M-31

Splitting Distance Number of Visits

Visit Splitting: 60.0 Arcsec 4

Science Total Charged

NIRCam Imaging Duration (secs) 18180 32303

MIRI Imaging Duration (secs) 18000

Data volume: 50,342 MB

NIRCam Imaging MIRI Imaging Mosaic Properties Special Requirements Comments

Module: ALL Subarray: FULL

Dither Parameters Primary Dither Type Primary Dithers Subpixel Dither Type NIRCAM Positions

INTRAMODULE 3 NIRCam Only 3

Filters

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/E...	Total Dithers	Total Integrati...	Total Exposure...
1	F115W	F444W	SHALLOW2	10	1	9	9	4638.28

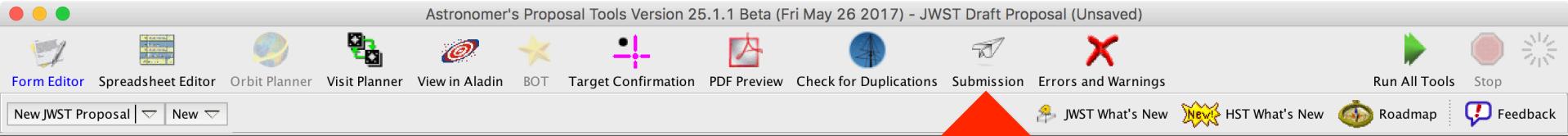
Add Duplicate Insert Above Remove

Edit Observation Folder New ▾ Edit Visit 1:1

 Submission Errors and Warnings

JWST What's New HST What's New Roadmap Feedback

4 errors & warnings (Click for Details)



New JWST Proposal | New ▾

JWST What's New

HST What's New

Roadmap

Feedback

Edit Observation Folder ↲ New ↳ Edit Visit 1:1

X 4 errors & warnings (Click for Details)

Links

- ❖ JWST Community Lectures:
<https://jwst.stsci.edu/science-planning/workshops-and-lectures/jwst-community-lectures>
- ❖ JWST Proposal Planning Workshop (May 2017):
<https://webcast.stsci.edu/webcast/searchresults.xhtml?searchtype=20&eventid=256&sortmode=2>
- ❖ Documentation (JDox/JDocs): jwst-docs.stsci.edu
- ❖ Helpdesk: stsci.service-now.com/jwst
- ❖ ETC: jwst/etc.stsci.edu
- ❖ APT: apt.stsci.edu

