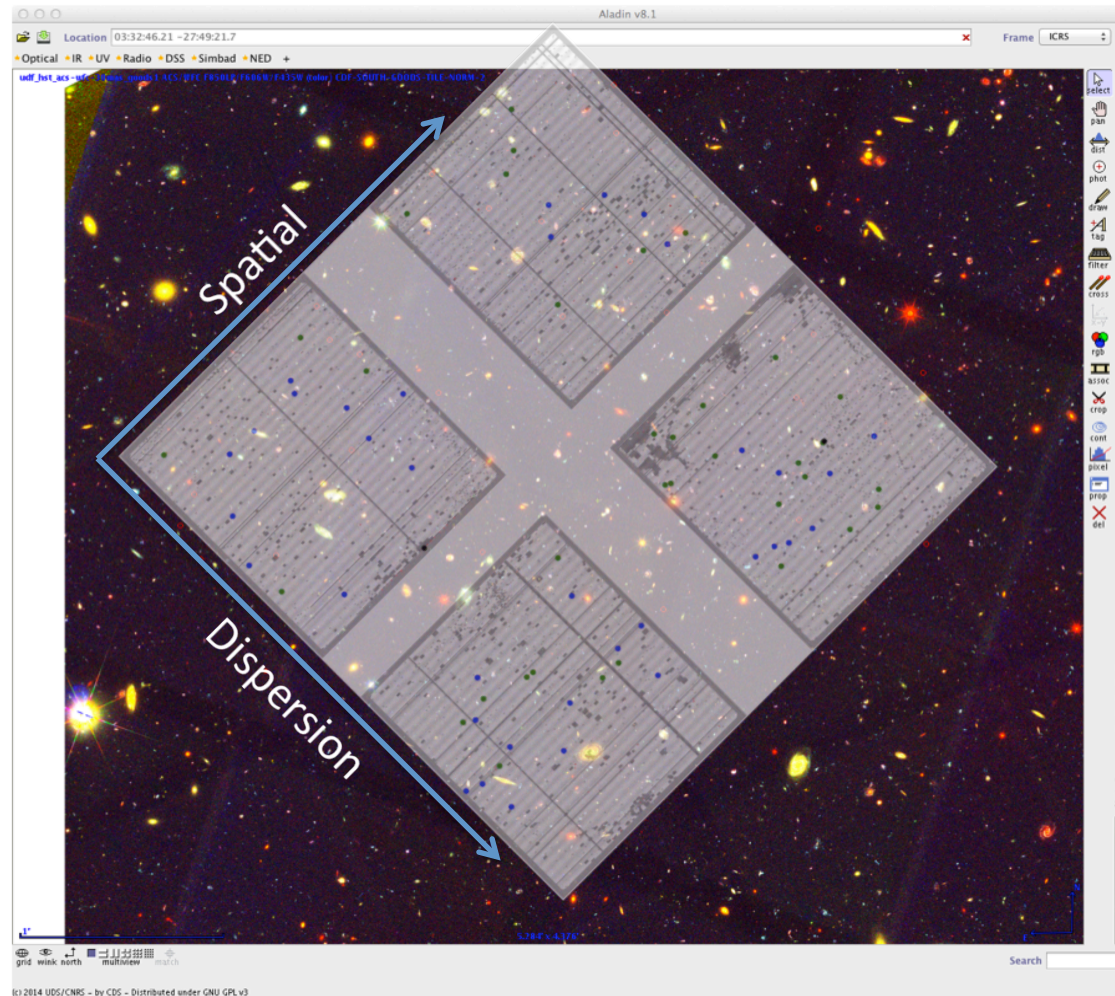


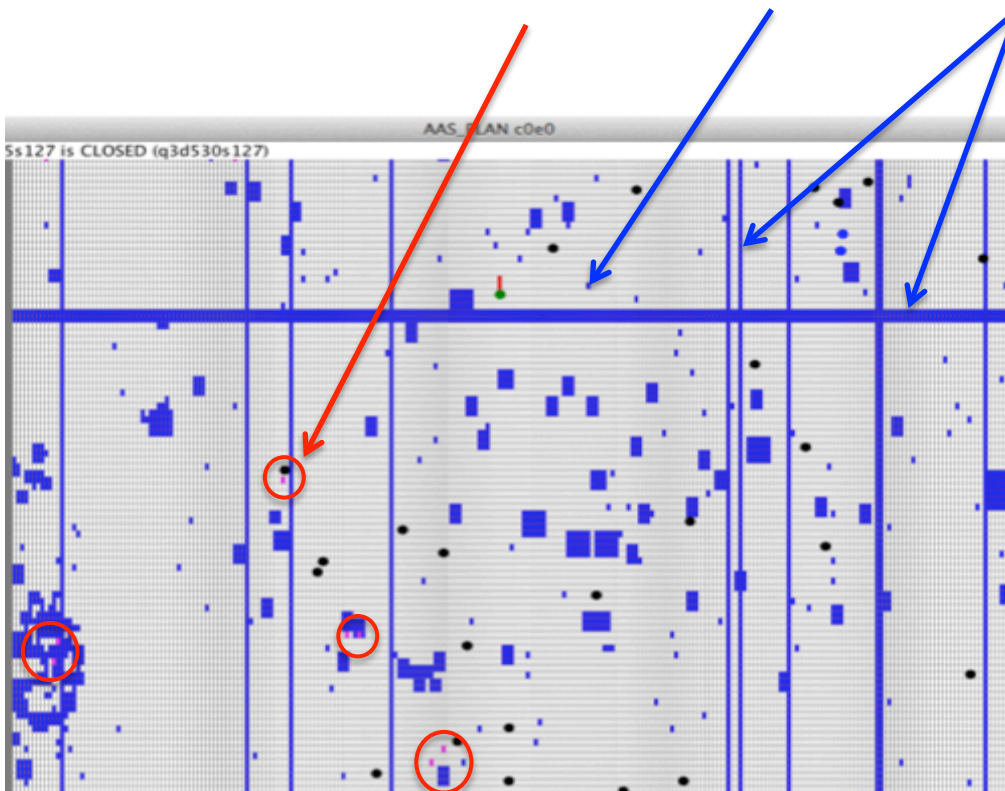
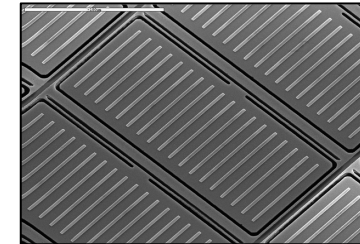
JWST/NIRSpec MOS Observing Mode

- JWST/NIRSpec Instrument
- $\sim 0.6 - 5 \mu\text{m}$
- Medium and High res ($R \sim 1000, 2700$), plus low-res Prism ($R \sim 100$, but larger multiplexing)
- The microshutter array (MSA) is a **four-quadrant fixed grid** of $\sim 250,000$ shutters.
- Capable of simultaneous observation of up to **$\sim 100-200$ sources** in a field.
- Flexibility to accommodate different scenes.



Manual planning of efficient observations will be difficult

- The MSA is a **fixed grid**. (There are bars between shutters where one should avoid placing targets.)
- It has a **variety of failed shutters** which inevitably occur during fabrication and testing: **stuck open**, **stuck closed**, **shorted rows and columns**...



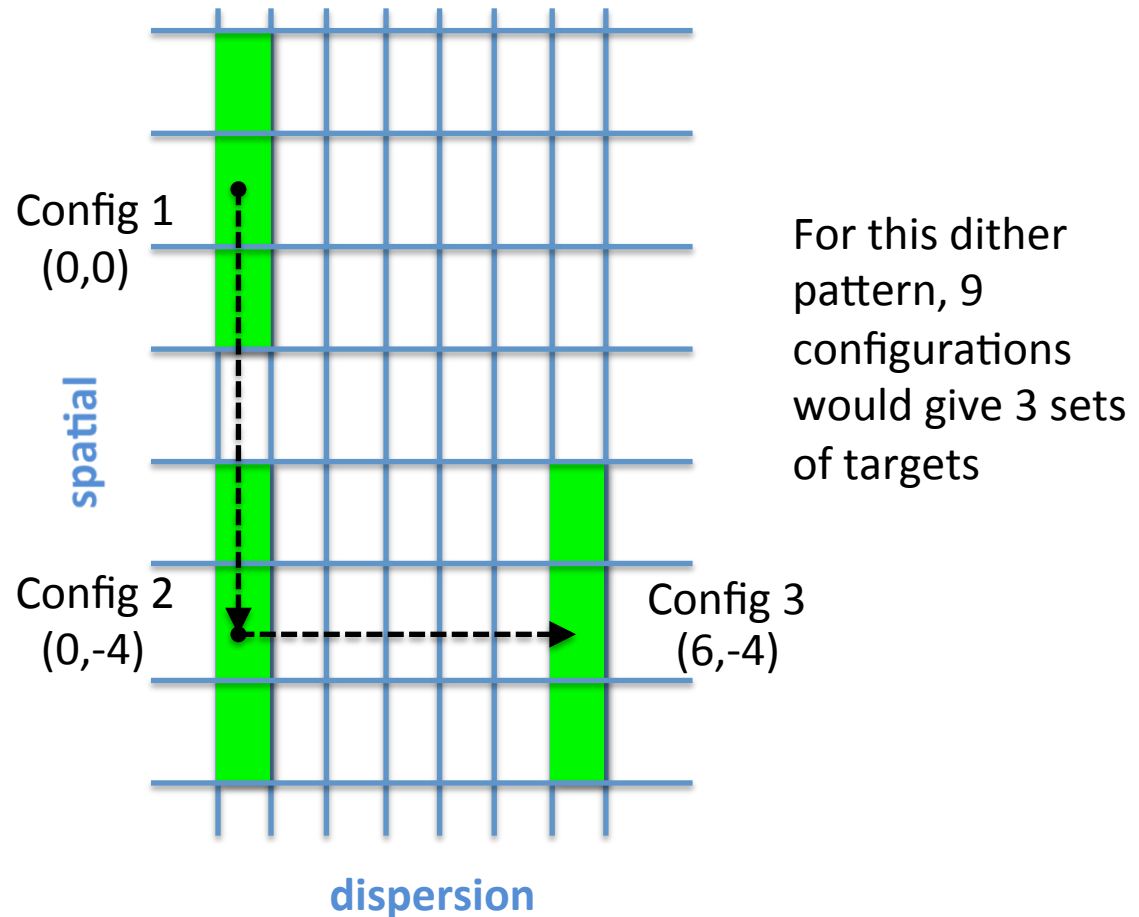
- Optical distortions
- Spectral wavelength gap due to gap between the 2 detectors.

An area of ~ 10% of the MSA's 250,000 shutters

User Inputs: Dithers and Number of Configurations

Users choose the number and size of dithers.

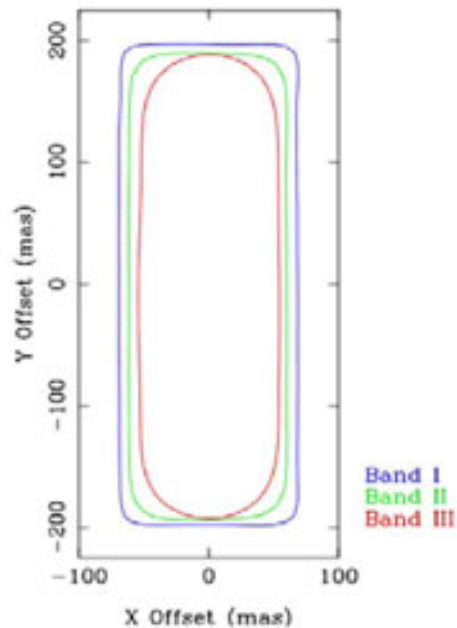
Users choose the number of configurations, produced by the plan.



The larger the dither, the greater the effect of distortions over the field of view. Dithers large enough to require the use of the flexible dither algorithm tend to result in a decrease in the number of primary sources observed.

User Inputs: Shutter Margin

Users choose how restrictive the shutter margin is



Shutter Acceptance Zone

0%



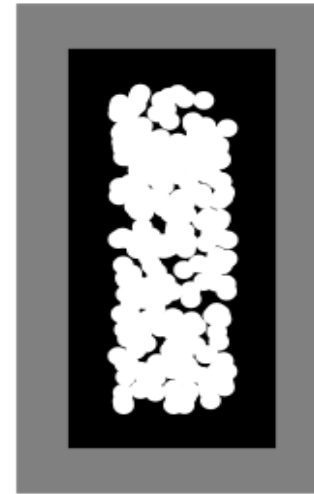
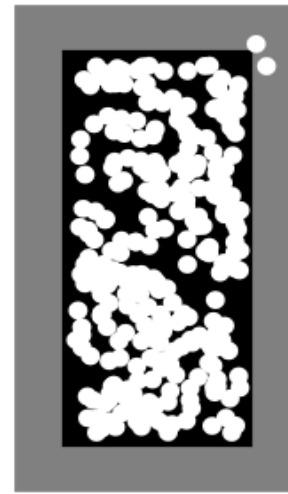
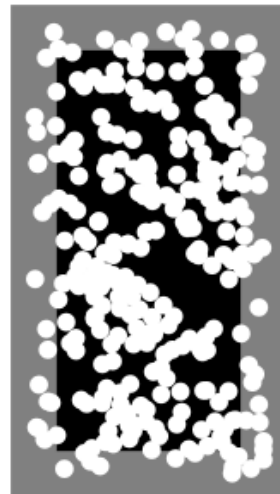
50%



90%



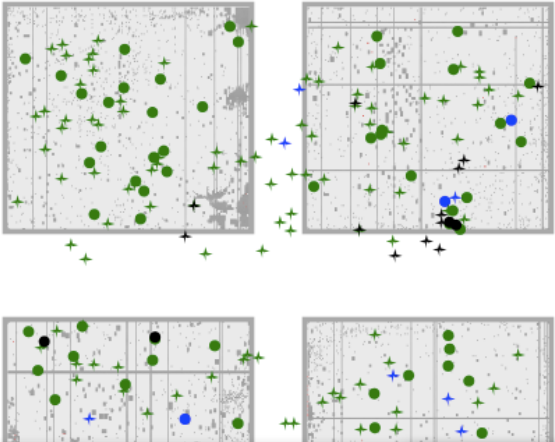
← Minimum slit transmission relative to a centered point source



Location in shutter affects throughput and accuracy in throughput correction. Restricting the location of the source in the shutter affects multiplexing.

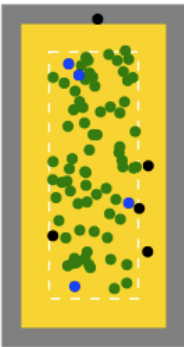
Plan Assessment Tools

q1d243s35 is CLOSED (q1d243s35)



Shutters

Source 3706



Shutters

Collapsed Shutters

Detector

Save as svg

Minimum Slit Transmission 75%

Multi-Shutter view Start Next Finish

JWST Phase I Proposal (HUDF_plans_SPIE.aptx)

Errors and Warnings

Run All Tools Stop

JWST Readme What's New? Roadmap

JWST Phase I Proposal (HUDF_plans_SPIE.aptx)

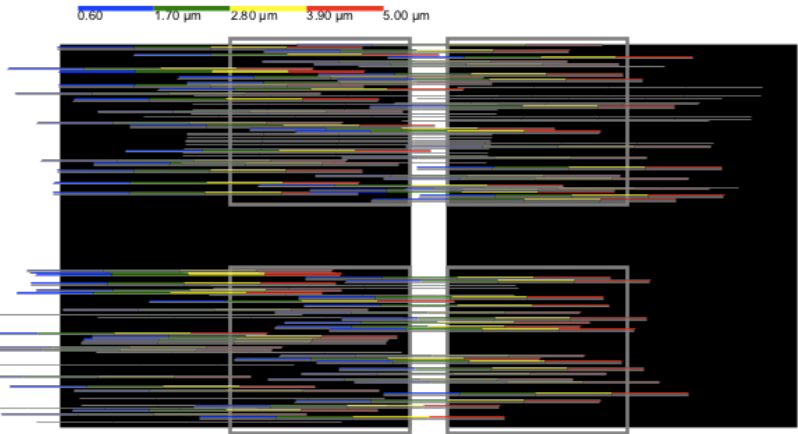
Output Allowed: 75%

0.0) arcseconds from the last pointing.'
EFAULT

Set size	Total weight	Show	Send Targets to Aladin
2417		Show	Send
2127		Show	Send
2490		Show	Send
2756		Show	Send

Z>4_fill2-4_step4_flex+20X_3shut_75%_m20 c0e0

Z>4_fill2-4_step4_flex+20X_3shut_75%_m20 c0e0



Shutters

Collapsed Shutters

Detector

Save as svg

Multi-Shutter view Start Next Finish

Add shutters plane to Aladin