

# MIRI Team Overview

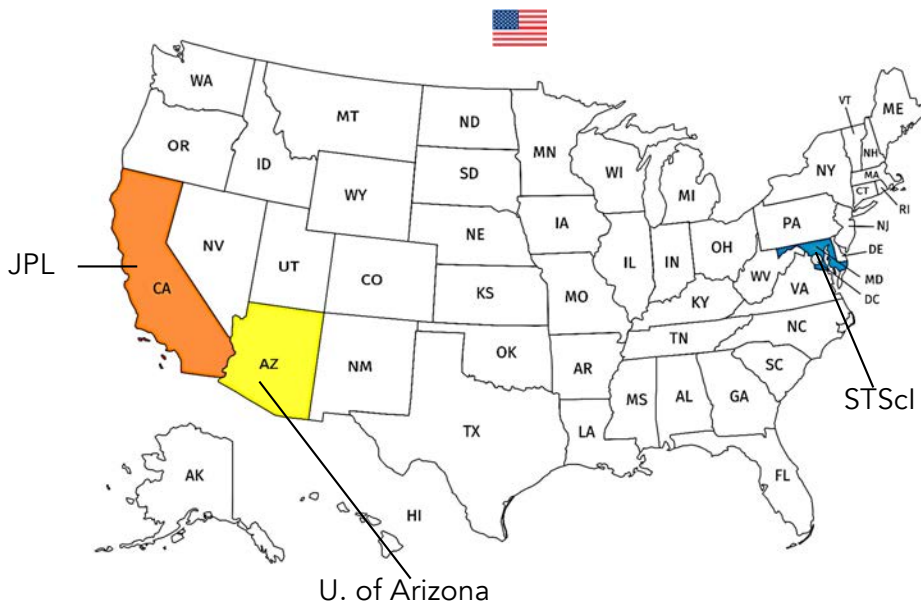
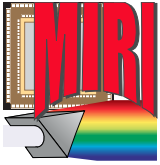
Macarena Garcia Marin  
MIRI Branch Lead

12/15/2020





# The MIRI Team Structure



NASA/GFSC JWST Project Office

12/10/2020

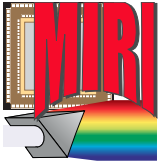


ESA/ESTEC JWST Project Office  
Prodex Office





# Meet the MIRI STScl Team

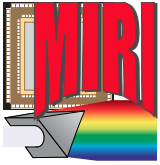


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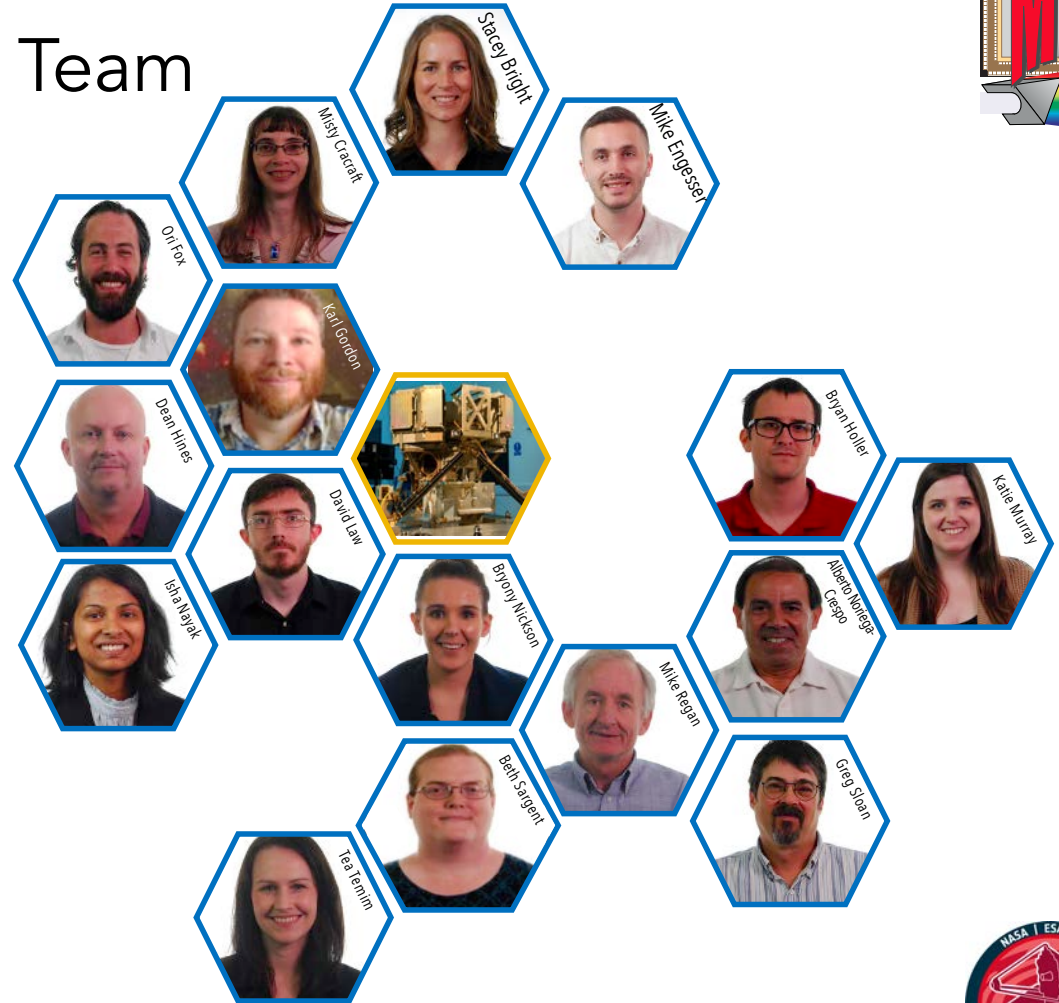




# Meet the MIRI STScI Team



MIRI STScI Instrument division

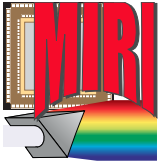


12/10/2020

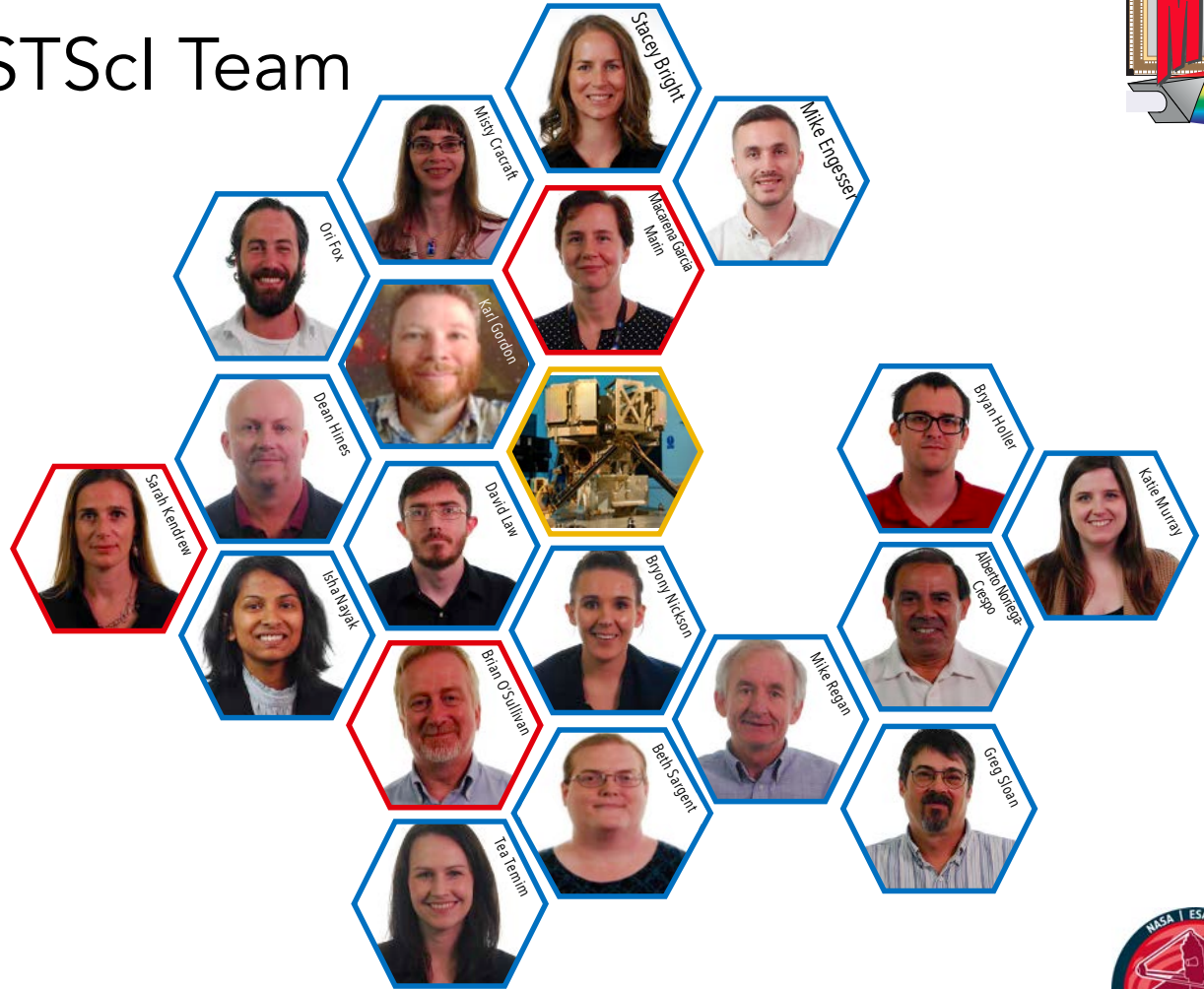




# Meet the MIRI STScI Team



MIRI STScI Instrument division  
MIRI ESA

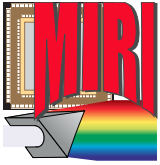


12/10/2020





# Meet the MIRI STScI Team

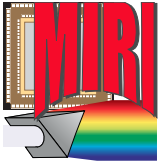


MIRI STScI Instrument division  
MIRI ESA  
MIRI ESA/AURA





# Meet the MIRI STScI Team

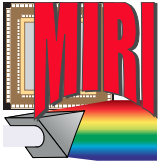


MIRI STScI Instrument division  
 MIRI ESA  
 MIRI ESA/AURA  
 MIRI UoA/STScI Pipeline development





# Meet the MIRI STScI Team



- MIRI STScI Instrument division
- MIRI ESA
- MIRI ESA/AURA
- MIRI UoA/STScI Pipeline development
- MIRI OSS



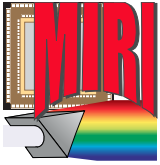
12/10/2020







# Meet the MIRI STScI Team



- MIRI STScI Instrument division
- MIRI ESA
- MIRI ESA/AURA
- MIRI UoA/STScI Pipeline development
- MIRI OSS
- MIRI Flight Operations

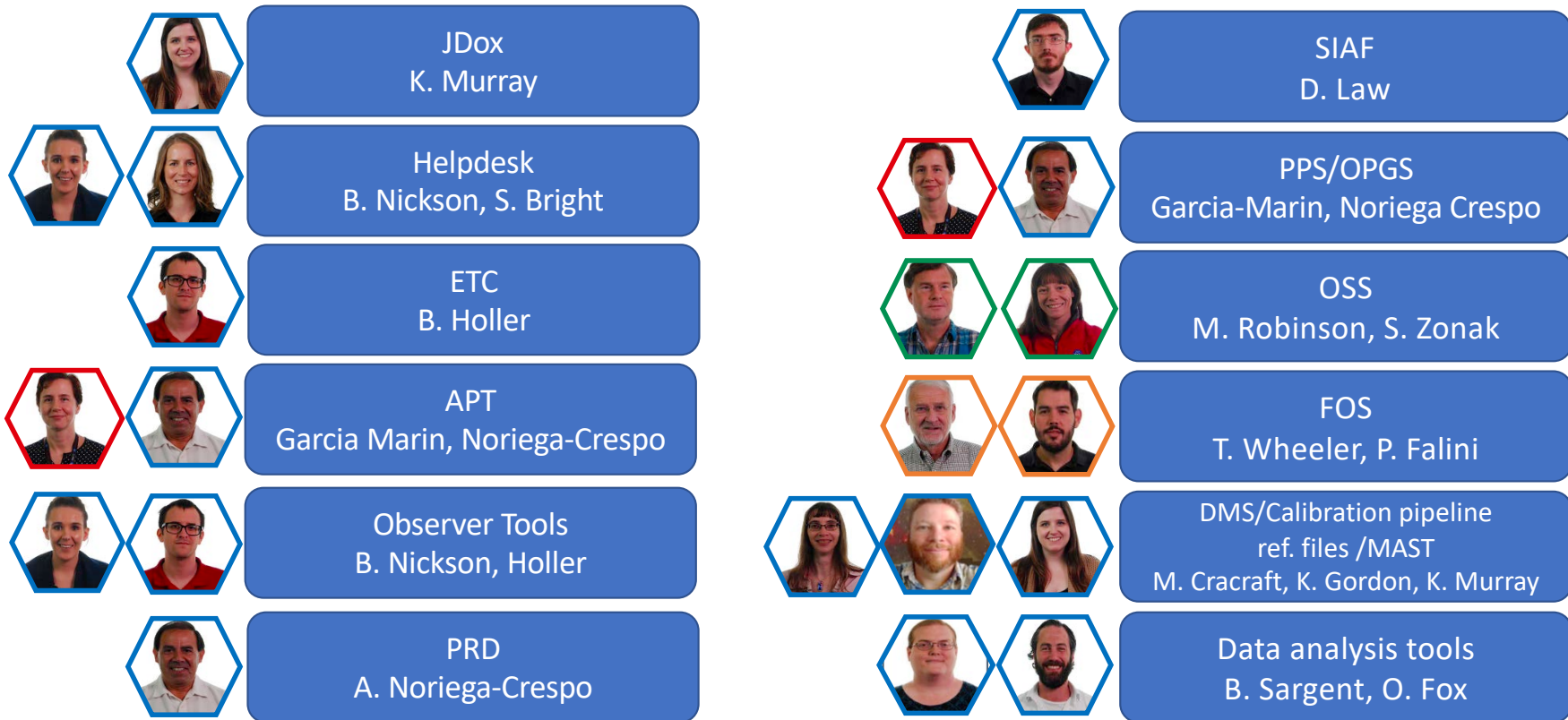
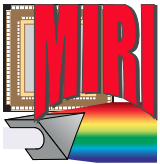


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# Main areas of work (front- to back-end)

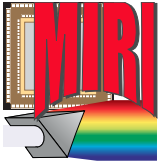


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# MIRI Imaging



Tea Temim



Mike Engesser



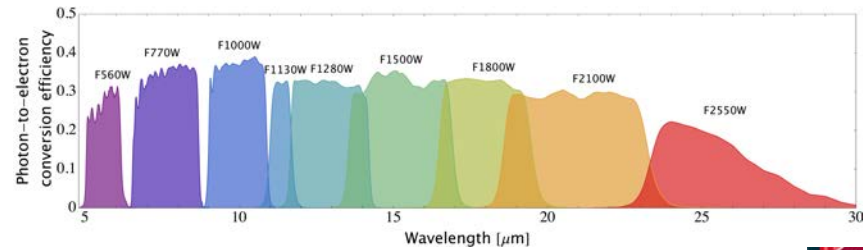
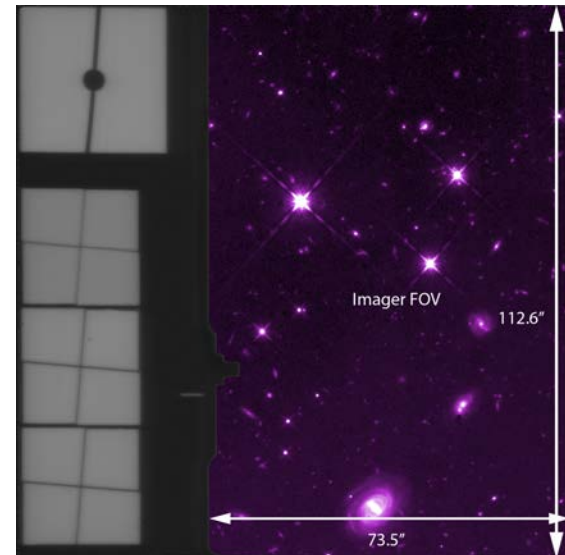
Karl Gordon



Mattia Libralato

Pipeline work:

- Catalog step.
- Introduction of configuration files.
- General testing.

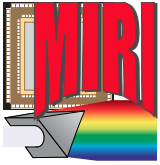


12/10/2020





# MIRI Medium Resolution Spectrometer



David Law



Beth Sargent



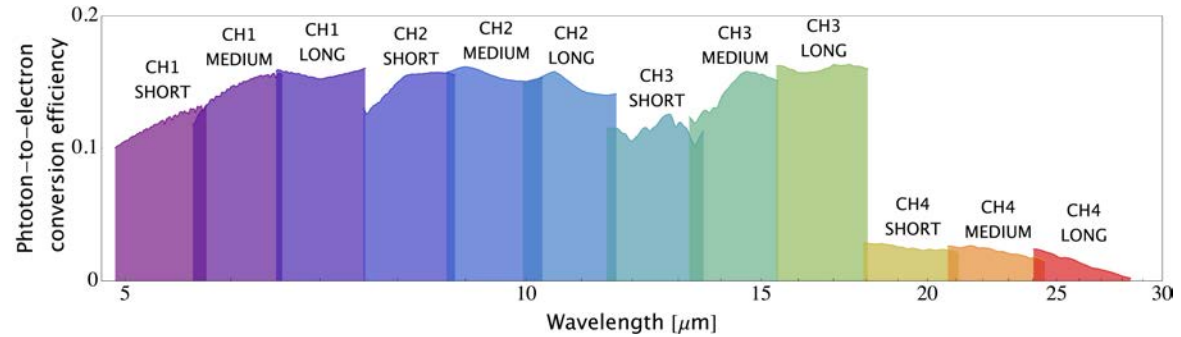
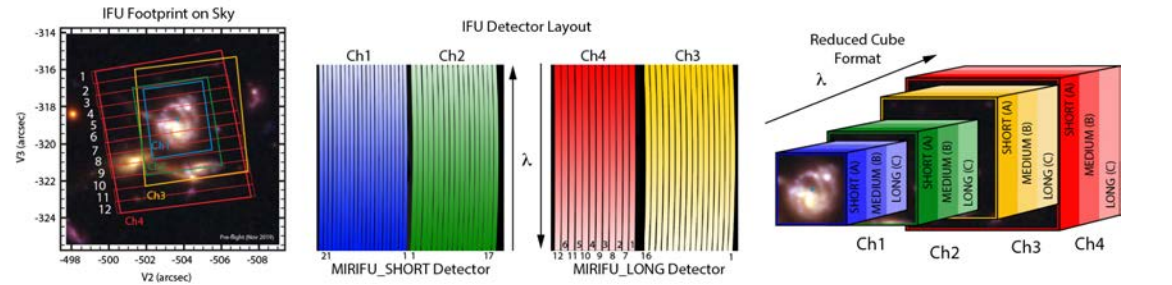
Jane Morrison



Isha Nayak



Mike Engesser



## Pipeline work:

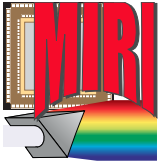
- Improvements in cube building, new weighting function.
- Included ability to create alpha (along-slice) beta (across slice) rotated cubes.
- MRS TSO pipeline testing.

Data analysis notebook.





# MIRI Low Resolution Spectrometer



S. Kendrew



G. C. Sloan



K. Murray

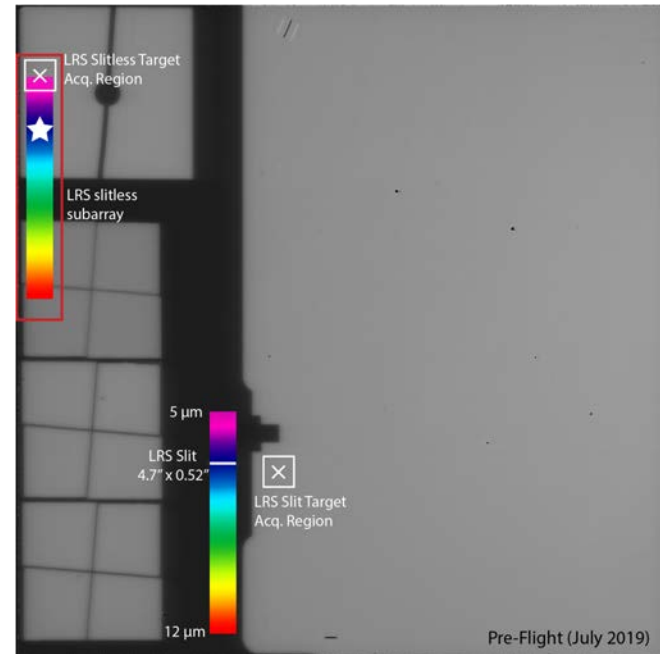


K. Gordon

## Pipeline work:

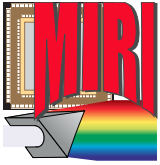
- Changes to the photometric calibration step (surface brightness units).
- Review of LRS background subtraction step (associations).
- TSO pipeline testing.

Data analysis notebook.





# MIRI Coronagraphy

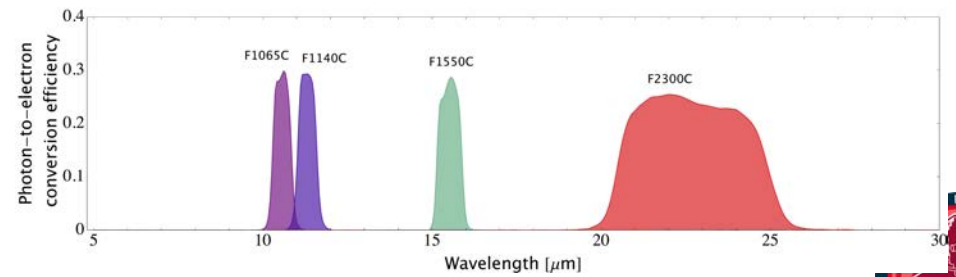
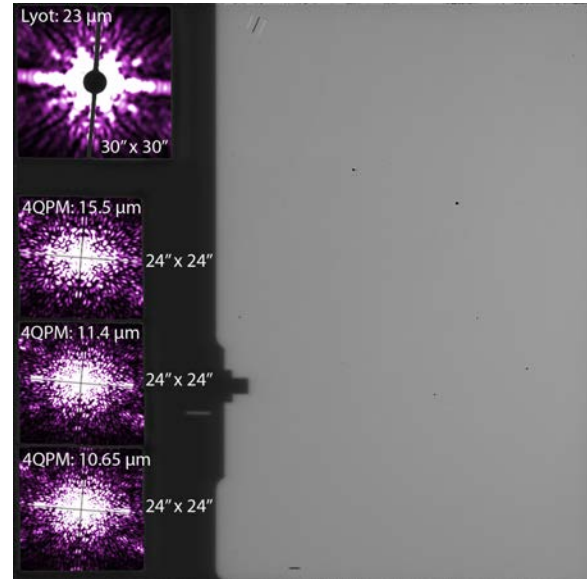


D. Hines



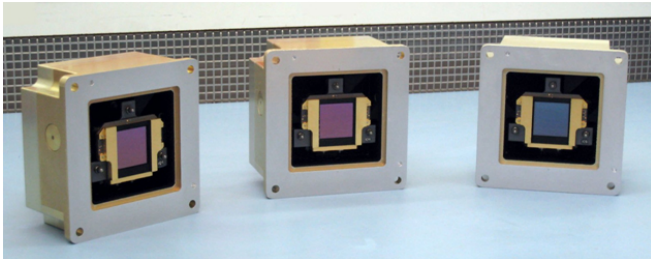
B. Nickson

- Included capability to obtain background observations.
- Significant pipeline testing effort, improvements in steps algorithms and steps sequence.





## Other relevant areas



## Detector characterization



J. Morrison



M. Regan



M. Engesser

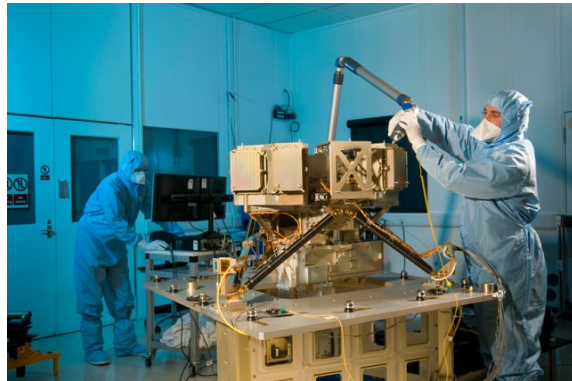
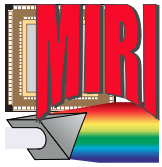


K. Gordon



O. Fox

- Frame resets.
- Improvements in linearity correction.
- Last frame effect.



## Engineering



B. O'Sullivan

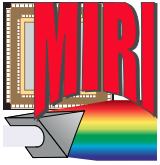
- MIRI functional testing campaigns.
- Interface with MIRI cooler team.
- Interface with Flight Operations Team.
- Support and coordination of MOC training and rehearsals.





## Preparation for MIRI instrument Commissioning

- Led by MIRI EC.
- Team members providing primary and back-up support at the MOC.
- All personnel scheduled for shift work or back-up have experience of MIRI SI testing or have received test operator training.
- Support of CARs (Commissioning Activity Requests) and CAPs (Commissioning Analysis Projects), including CAP meetings and rehearsals.
- Training will continue in 2021.

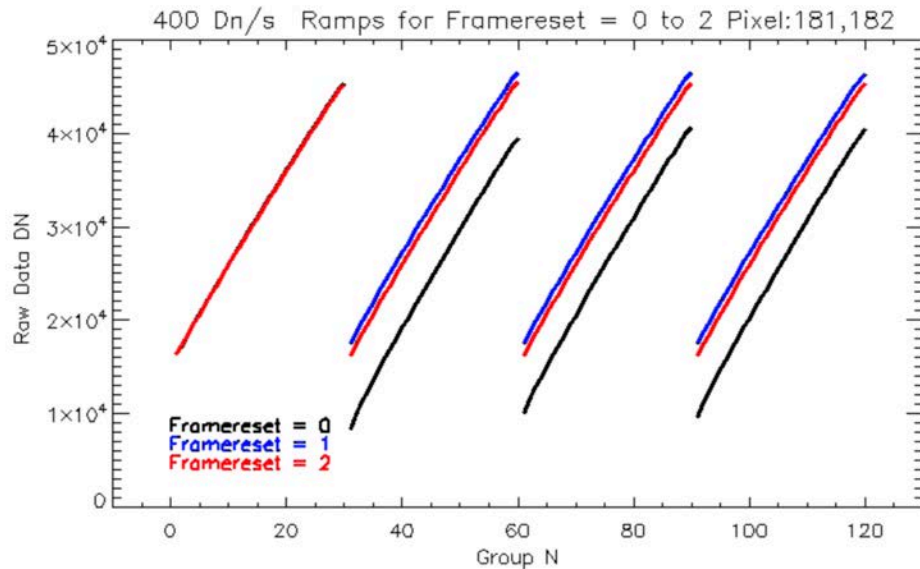
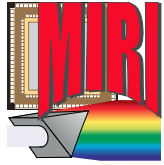






# Upcoming enhancements

## I. Insert extra reset in MIRI multiple integrations data

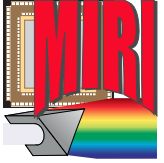


- RSCD effect:
    - At least 2% differences in slopes with a strong even/odd row pattern. Fast decay; the first few groups exhibit a large transient signal.
  - Impact:
    - 5% MIRI Imaging flux calibration requirement would not be achieved. Calibration transfers from very bright to faint calibrators would be compromised.
    - Integrations with few groups will have a higher systematic uncertainty.
  - One additional reset between integrations mitigates RSCD and facilitates MIRI calibration.
- Implementation in OSS 8.4 has begun.
  - Plan to launch with OSS 8.2 and plan to upgrade to OSS 8.4 towards the beginning of SI commissioning.
  - Plan is to obtain all MIRI science data with one extra reset.



# Upcoming enhancements

## I. Imaging TA



- Can be important when very high accuracy is required:
  - High precision TSO.
  - Precise PSF subtraction.
- Not in OSS 8.4, which was focused on SI commissioning needs.
- It is, however, on our priorities list.

