

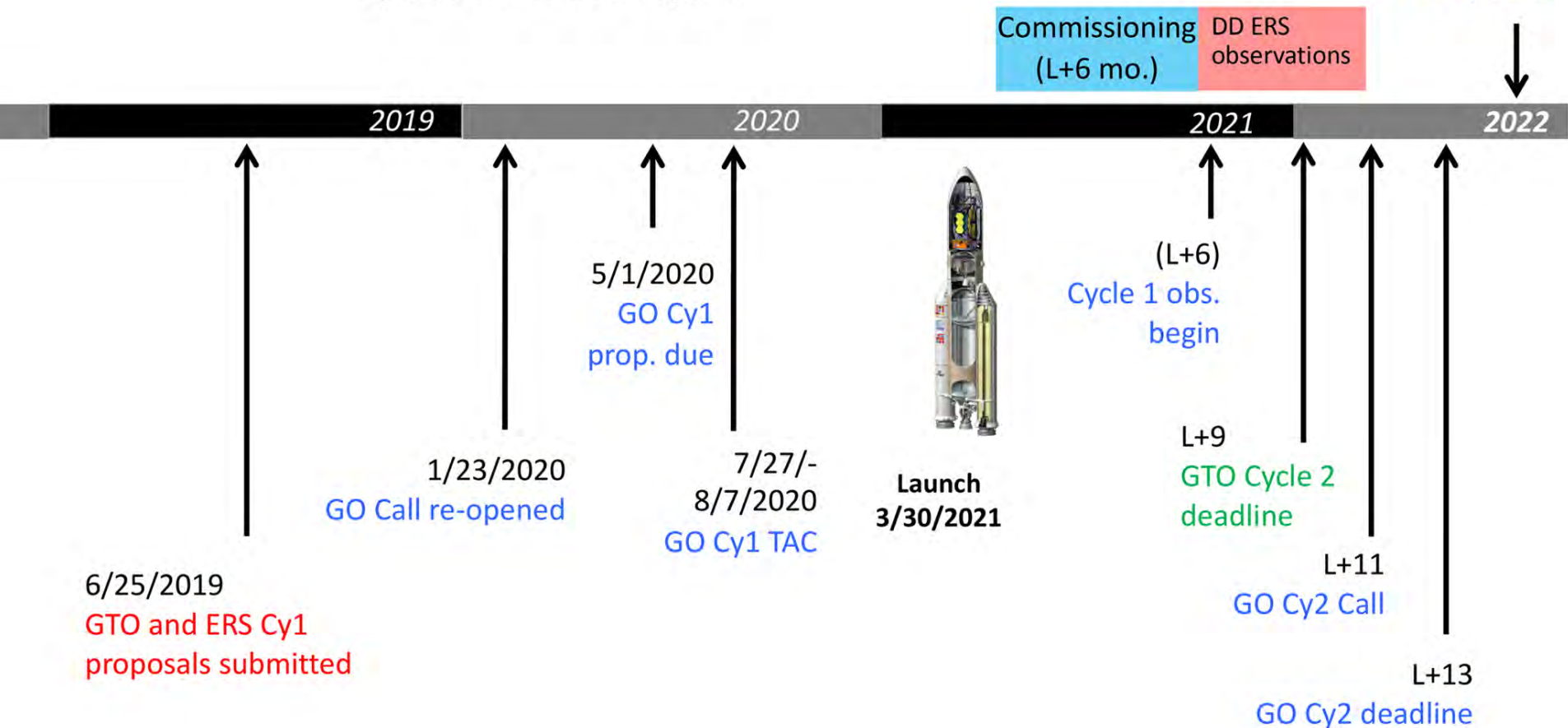
**James Webb Space Telescope Workshop  
AAS Meeting – Honolulu, HI  
January 3, 2020**

**Overview**

Tony Roman

# JWST Science Planning Timeline

Cycles 1 & 2 Call for Proposals



# Workshop Format

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- JDox
- ETC sessions
- APT sessions
  - Instruction/Demo
  - Exercises

# Workshop Staff - JDox

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**Stephanie La Massa**



**Klaus Pontoppidan**



**Bryan Holler**

# Workshop Staff - APT

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**Tony Roman**  
Overview



**Bill Januszewski**  
Targets



**Beth Perriello**  
Defining Observations



**Elizabeth Nance**  
Special Requirements



**Amber Armstrong**  
Aladin & Mosaics



**Michael Leveille**  
Visit Planner & Time Accounting

# Topics Not Covered in Detail

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- APT-Independent Target Visibility Tools
- Webb PSF Tool
- Space Telescope Image Product Simulator (STIPS)
- NIRSpec Micro-Shutter Assembly Planning Tool
- Moving Targets
- Parallels

# APT-Independent Target Visibility Tools

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- These tools are intended as “quick look” or pre-planning aids prior to performing detailed schedulability checks in APT.
  - Ex: ToO, a supernova goes off; is it visible to JWST now, and how long can I monitor it before losing visibility?
  - Ex: Timing possibilities for NIRCam pre-imaging and NIRSpect MSA follow-up spectroscopy: What windows are available and how long are they?
  - Ex: Many coronagraphy applications that involve observations at specific angles and/or angular offsets.
- The tools provide insight into available visibility windows AND the available position angles versus time for the various JWST instruments.
- There are currently two tools available:
  - *General Target Visibility Tool* – a command-line tool that provides visibility windows and reference PAs for all four science instruments (plus FGS and observatory V3 axis) all in one go.
  - *Coronagraphic Visibility Tool* – a GUI-based tool that provides general visibility windows for NIRCam and MIRI plus additional coronagraphic instrument mode support.
- Distributed as part of the STScI AstroConda python distribution
  - <http://astroconda.readthedocs.io/en/latest/>
- More information
  - <http://www.stsci.edu/jwst/science-planning/proposal-planning-toolbox/target-visibility-tools>



# Webb PSF Tool

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- Simulate point spread functions for JWST
- <https://jwst.stsci.edu/science-planning/proposal-planning-toolbox/psf-simulation-tool-webbpsf>

- Features
  - generate custom NIRCam and MIRI imaging simulations of stellar populations
  - select the number of stars they want, their spatial distribution, their distance, the star formation history, the chemistry, the IMF, and the binary fraction
  - perform astrometry and photometry on the images to optimize science programs
- Available at <https://jwst-docs.stsci.edu/other-tools/space-telescope-imaging-product-simulator>

- NIRSpec Micro-Shutter Assembly (MSA) has ~250,000 shutters
- For a given pointing and orientation, the MSA Planning tool helps determine which shutters to open.
- Indicates which shutters are stuck open and stuck closed.
- Splinter session later in the conference

# Moving Targets

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- JWST can track moving targets up to a rate of at least 30 milliarcseconds/second.
- Solar system target specification
  - Different from fixed or generic targets.
  - Similar to HST
- Past workshops on observing solar system targets with JWST
  - Division of Planetary Sciences 51st Meeting
    - September 15-20, 2019 – Geneva, Switzerland
  - Planning Solar System Observations with JWST
    - December 13-15, 2017 - ESTEC
  - Planning Solar System Observations with JWST
    - November 13-15, 2017 - STScI
  - Division of Planetary Sciences 49th Meeting
    - October 15-20, 2017 - Provo, UT

# Coordinated Parallels

- Operate two science instruments at the same time in the same observing program

MIRI Imaging	NIRCam Imaging	NIRSpec Multi-Object Spectroscopy	NIRISS Wide Field Slitless Spectroscopy
NIRCam Imaging	MIRI Imaging	NIRCam Imaging	MIRI Imaging
NIRISS Wide Field Slitless Spectroscopy	NIRISS Imaging		NIRCAM Imaging
	NIRISS Wide Field Slitless Spectroscopy		

# Pure Parallels

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- Operate two science instruments at the same time different observing programs
- Identify prime observations that can accept a parallel from another program.
- Pure parallel observers choose to which primes they want to match their parallels.

# YouTube

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- JWST Observer Channel
  - [www.youtube.com/JWSTObserver](http://www.youtube.com/JWSTObserver)
- Training videos
  - APT
  - ETC
  - MSA Planning Tool
  - Science Instruments Topics

# Further Questions

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- JWST Proposing Open House
  - Part 1 – Integral Field Unit Observing
    - Sunday, January 5, 2020, 9:30am – 11:30am
  - Part 2 – Grism Observing
    - Monday, January 6, 2020, 9:30am – 11:30am
  - Part 3 – NIRSpec Micro-Shutter Array
    - Tuesday, January 7, 2020, 9:30am – 11:30am
- Ask any of the STScI staff here today.
- Visit the STScI exhibit this week.
- JWST Help Desk: [jwsthelphelp.stsci.edu](http://jwsthelphelp.stsci.edu)