Team Expertise and Resources

The team for this project is made up of key scientists in the JWST absolute flux calibration effort at STScI and members of the TESS asteroseismic and exoplanet communities. These combined efforts will be able to analyze the light curve data and place it in the correct context for those deciding how to best calibrate the JWST observations. The team also contains those with significant ground based observing experience who can expand the program to include long-term ground-based monitoring of these targets. All the analysis required for this program can be done on a laptop. The specific team members and their roles are as follows:

Susan Mullally, STScI, has experience working with time series data, variable stars and exoplanets. She is also familiar with the TESS archive and data analysis. She has studied time variability using the Whole Earth Telescope, Kepler and TESS to find and study objects like pulsating white dwarf stars, eccentric binary stars, and transiting exoplanets. Dr. Mullally will lead the effort to analyze the data that results from this program.

Karl Gordon, STScI, is the lead of the JWST absolute flux calibration program for all five instruments (NIRCam, NIRSpec, NIRISS, FGS, and MIRI). Dr. Gordon has worked on data reduction and absolute calibration for a number of years including (in addition to JWST) the mid- and far-infrared instrument MIPS on the Spitzer Space Telescope. He will coordinate the impact of the results on the overall JWST absolute flux calibration program.

Kelly Hambleton, Villanova University, is an expert in A star variability and in time series data reduction. She is also the primary contact for pulsating stars with LSST. She will help interpret any variability discovered in the light curves.

JJ Hermes, Boston University, is an expert in white dwarf stars and their use as photometric standards. He will help with the data analysis and the interpretation of any variability seen in the light curves.

Greg Sloan, STScI, is the calibration lead for MIRI on JWST and lead for coordinating the Cycle 1 Calibration for all JWST instruments. He has decades of experience with infrared spectroscopy and led the spectrophotometric calibration of the Infrared Spectrograph on the Spitzer Space Telescope. He previously worked with infrared spectra from the Infrared Space Observatory and the Infrared Astronomical Satellite. He will help determine how the JWST calibration will respond to any reported variability in the spectrophotometric standards.

Catherine Kaleida, STScI is the Deputy Lead for the JWST Data Management System Development. She is familiar with ground-based follow-up and has led students in projects to observe Targets of Opportunity using the SMARTS 0.9-m Telescopes at the Cerro Tololo Inter-American Observatory. She has expertise in the Data Management System for JWST including the JWST pipeline. Dr. Kaleida will assist in the effort to analyze the data that results from this program, and will lead efforts to obtain additional observations from ground-based observatories to cover variability ranges not provided by the TESS data from this program.