**Instructions for generating a MIRI RGB mosaic**

The following assumes the user has already generated and mapped level 3 pipeline data for all the observations

Copy **plot\_pixseperate\_v3.py** over to the working directory

Open the script

**nano plot\_pixseperate.py**

set the inputs

run the script

**python plot\_pixseperate\_v3.py n**

Looking at the plotted spectrum: identify a strong absorption feature to use for the image

Determine the 3 wavelengths to use for Red, Green and Blue

Red: deep – warm and bright

Green: middle

Blue: shallow – cool and dim

Copy the script **visualise\_single.py** to the working directory

Open the script

line 14: change name of resulting png image

line 15: change directory path to fits file to use

line 16: change Red wavelength

line 17: change Green wavelength

line 18: change Blue wavelength

Run the script

**python visualise\_single.py**

The script will save all results in a new directory **rgb\_images**

The output will be a spectrum showing the locations of the above wavelengths, the user should check they are happy with this. Finally an RGB image for the single fits file will be generated

The user should check they are happy with this resulting image and if needed, change the above wavelengths until they are happy before moving onto the next step

Navigate to a directory where all the observations are accessable

Copy the scripts **build\_mosaic\_1.py** and **build\_mosaic\_2.py** to the new working directory

Make a new directory **mosaics**

**mkdir mosaics**

Open **build\_mosaic\_1.py**

line 18: input location of observation 1 navigated files

line 19: input location of observation 2 navigated files

line 20: input name of directory to store results in in **mosaics** (the script will make the directory)

run **build\_mosaic\_1.py**

**python build\_mosaic\_1.py**

Open **build\_mosaic\_2.py**

line 15: input location of observation 1 navigated files

line 16: input location of observation 2 navigated files

line 17: input name of directory where results from **build\_mosaic\_1.py** are located

line 18: input name of output mosaic file

line 19: input power cos(mu) should be to

run **build\_mosaic\_2.py**

**python build\_mosaic\_2.py**

Navigate back to the directory where **visualise\_single.py** is located

Copy **visualise\_mosaic.py** to this directory

Open **visualise\_mosaic.py**

line 16: input path to any of the original fits files used to make the mosaic

line 17: input path to mosaic file generated by **build\_mosaic\_2.py**

line 18: input path to mapping long/lat files

line 20: input Red wavelength

line 21: input Green wavelength

line 22: input Blue wavelength

line 24: input name of resulting mosaic

line 26: choose to set the long/lat bounds of the map figure

line 27: if line 26 is set to true: set range for longitude

line 28: if line 26 is set to true: set range for latitude

line 30: set to true to invert red and blue colours (useful for channel 1A Great Red Spot data – otherwise it appears blue!)