Data Products and Data Retrieval via Python Notebook Tutorials

https://github.com/spacetelescope/notebooks

ESS Archive Documentation Center

TESS Archive Do

TESS Tutorials are listed and described in the **TESS Archive Manual**.

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Notebook that explores the TESS Pixel Response Function Model

Sample the PRF at sub-pixel locations.

The PRF varies quite a bit depending on where on the pixel the star's light falls. As a result it is instructive to plot the PRF for one pixel at var locations. In the following we show a 5x5 grid of the prf above. Note that there are actually 9 different intra-pixel locations provided in the TE Here we plot them on a linear scale because most of the variation is in the brightest pixels of the PRF.

In [11]: # Define the location for which we want to retrieve the PRF.

col = 125.0 row = 1044.0ccd = 2

camera = 2 sector = 1

This is the directory where MAST stores the prf FITS files. path = "https://archive.stsci.edu/missions/tess/models/prf_fitsfiles/

kwargs['vmax'] = .2 plt.figure(figsize = (14, 14))

Loop over the 5 different locations for row add in np.arange(0.9, 0, -.2):

for col_add in np.arange(0.1, 1, .2

Sample of PRFs across the chip

Let's plot the PRF across a single CCD to show how it varies. The PRF images are plotted using a log scale to see the difference in the wings of the PRF

Notice that the nice round PRF shape is in the corner of our grid, near (1850,1850). This is because there are 4 CCDs for each camera and so this location is nearest to the center of the focal plane and has the least optical distortion. Note that the read-out direction of the CCDs is different for each CCD. See Figure 2.6 of the Instrument Manual to determine the actual orientation of each CCD.

Beginner - Search the exoCTL

centered on K2 Campaign 2.

Walkthroughs: Browser-Based

As an experiment you should change the ccd value see how it varies from one CCD to another across the TESS field-of-view.

In [10]: # Define the CCD for which we want to retrieve the PRFs sector = 1 #Values 1 - 13 camera = 3 **#values 1 - 4** ccd = 1 #Values 1 - 4

Create plot plt.figure(figsize=(14, 14)) plt.title("Intra Pixel PRF")

Loop over the 25 different locat 0=tolgn

for row in np.arange(50, 1851, 600) for col in np.arange(50, 1851, 600) nplot=nplot + 1

plt.subplot(4, 4, nplot

Data Analysis on the Cloud via **TESS Science Platform**

https://tessworkshop.science.stsci.edu

JupyterHub software platform running on Amazon installed with common TESS software tools.

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			This example shows how to use astroquery to get the cloud url, retrieve and open the file. By: Susan E. Mullally, Senior Archive Scientist for MAST								
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Enabling TESS Science at the MAST



https://archive.stsci.edu/tess

Access to Community Data Products via HLSPs



https://archive.stsci.edu/hlsp/

High Level Science Products are community provided data products. MAST archives them and makes them available alongside the mission data.

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Primary Investigator: Rasmus Handberg 1.7 million FFI HLSP Authors: Rasmus Handberg, Mikkel Lund, Daniel Huber **Light Curves** Released: 2019-06-10 Updated: 2019-06-10 from T'DA Primary Reference(s): Lund et al. 2015 ば & Lund et al. 2017 ば

TESS Data For Asteroseismology

Lightcurves (TASOC)

archive.stsci.edu/hlsp/tasoc/



https://exo.MAST.stsci.edu





The TESS Asteroseismic Consortium (TASC) provides this HLSP. The data platform is known as the TESS Asteroseismic Science Operations Center (TASOC). The TASC partakes in a coordinated activity called "TESS Data For Asteroseismology" (T'DA), which produces data products for the TASC.





Show in the Exoplanet Characterization Toolkit: Contamination Overlap I JWST Groups and Integrations

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