

## 6.1.3 - TESSCut (API: with URL Requests).

This tutorial will show you how to create a cutout of TESS full frame images using the web-based TESSCut interface. We will be creating a cutout of the target Pi Mensae using the target name resolver available in the interface. This is a companion to the Python notebook that shows how to conduct a similar cutout request using URL Requests.

**Step 1 - Visit The TESSCut Webpage:** The first step is to visit the [TESSCut Web UI](#). Note you can specify a central coordinate in two ways: by entering a celestial coordinate or by entering a target name to resolve into coordinates. In this example, we will use the **Target Name** resolver option by clicking on that button (Item #1). Note that you can enter a coordinate and hit the **Check for Observations** button to make sure the TESSCut UI understands your position before you ask for cutouts. (Item #2).

The screenshot shows the TESSCut web interface. At the top, there's a navigation bar with 'TESSCut.MAST', 'Create Cutout', 'Quick Start', and 'Related Links'. Below that is a header with the TESSCut logo and 'FFI cutouts & sector information from MAST'. The main section is titled 'Create a Cutout'. It contains a form with the following sections:

- Position:** 'Supply the central coordinates or Target name.' It has two tabs: 'Coordinates' and 'Target name'. The 'Target name' tab is selected. There are input fields for 'RA' and 'DEC', and a 'Check for Observations' button. A red arrow labeled '2' points to this button.
- Cutout Size:** 'Choose how large the final cutout image will be. A 20x20 pixel cutout is roughly 10Mb per sector.' It has input fields for 'X (CCD column)' (value 10) and 'Y (CCD row)' (value 15). There is a 'Units' dropdown menu set to 'pixels'. A note says 'Maximum cutout area is 10,000 pixels (1 TESS pixel = ~ 21 arc seconds)'.
- Sectors:** 'Select the sector wanted for cutout.' It has a 'Sector' dropdown menu set to 'All' and a 'Refresh Sectors' button. A note says 'Click refresh for the option to choose a sector. Otherwise, all sectors will be selected.'

At the bottom of the form is a large orange button labeled 'Download FFI Cutout'. Below the button are two links: 'Get cURL Script' and 'Get URL'.

**Step 2 - Specify Cutout Parameters And Download The Cutout(s):** First we will enter the name of our target (**Pi Mensae**) in the Target box (Item #1). If you'd like to make sure the name resolver is converting your target into correct coordinates, you can always press the **Resolve Target** button to see what coordinates will be used before asking for a cutout. Next we will specify the size of our cutout (Item #2). Note that you can specify the size in several units (Item #3), including pixels or arcseconds, but be careful that you have selected the units you want because there is a limit on how large of a cutout you can make! If your cutout spans multiple sectors, cameras, or CCDs you will get a separate cutout FITS file for each region as a zip file. If you know you only want cutouts from a specific Sector, you can specify that in the **Sectors** area (Item #4), otherwise the default is to cutout across all available Sectors. Once you have all the parameters of the cutout filled in, you can use the **Download FFI Cutout** button (Item #5) to initiate the request and download the zip file containing your cutouts. Note that if you'd like to see what your cutout request would look like as a cURL command or URL request, perhaps to use and modify in the future, you can use the **Get cURL Script** and **Get URL** links below to see the corresponding calls that would result in the same cutout you asked for using the browser.

### Create a Cutout

Make a cutout of a TESS FFI time series for a region of the sky. You can download the entire set of FFI files from the [TESS FFI Download Scripts Homepage](#). [Learn more](#) about manipulating these files.

**Position** Supply the central coordinates or Target name.

**Cutout Size** Choose how large the final cutout image will be. A 20x20 pixel cutout is roughly 10Mb per sector.

X (CCD column)  Y (CCD row)  Units  Maximum cutout area is 10,000 pixels (1 TESS pixel = ~ 21 arc seconds)

**Sectors** Select the sector wanted for cutout.

Sector   Click refresh for the option to choose a sector. Otherwise, all sectors will be selected.

[Get cURL Script](#) [Get URL](#)

