2.1 Levels of data processing

TESS provides several data levels for those investigating time series phenomena. Users should choose which they desire depending on their scientific needs. The highest level, most processed light curves are ready to search for exoplanets. However, this can remove some of the astrophysical signals. Scientists wanting to study stellar variability may choose to use the conditioned light curve, the Simple Aperture Photometry light curve, or perform their own detrending. The conditioned light curves (PDCSAP_FLUX column) attempt to remove systematic instrumental variations by fitting and removing those signals that are common to all stars on the same CCD. However, this fitting method is sometimes known to remove true astrophysical signals, forcing the user to revert to an earlier data level. For instance, the user can start with the pixel-level data or choose a different method to remove the instrumental systematics from the flux time series.

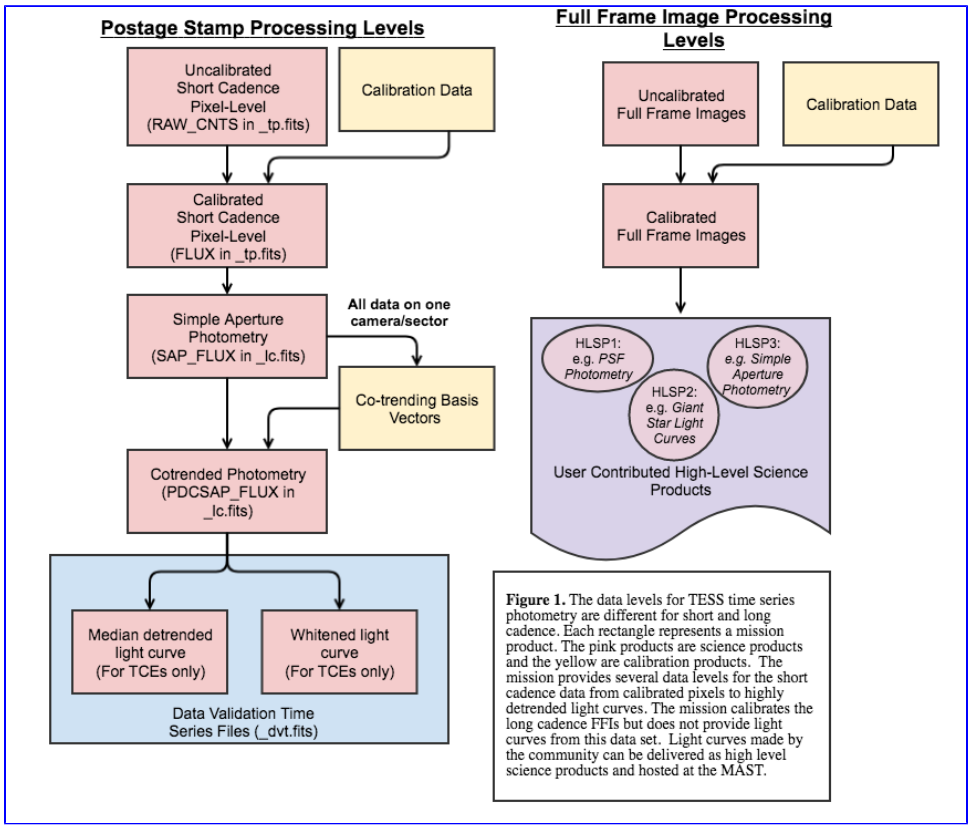


Figure 1. The data levels for TESS time series photometry are different for short and long cadence. Each rectangle represents a mission product. The pink products are science products and the yellow are calibration products. The mission provides several data levels for the short cadence data from calibrated pixels to highly detrended light curves. The mission calibrates the long cadence FFIs but does not provide light curves from this data set. Light curves made by the community can be delivered as high level science products and hosted at the MAST.