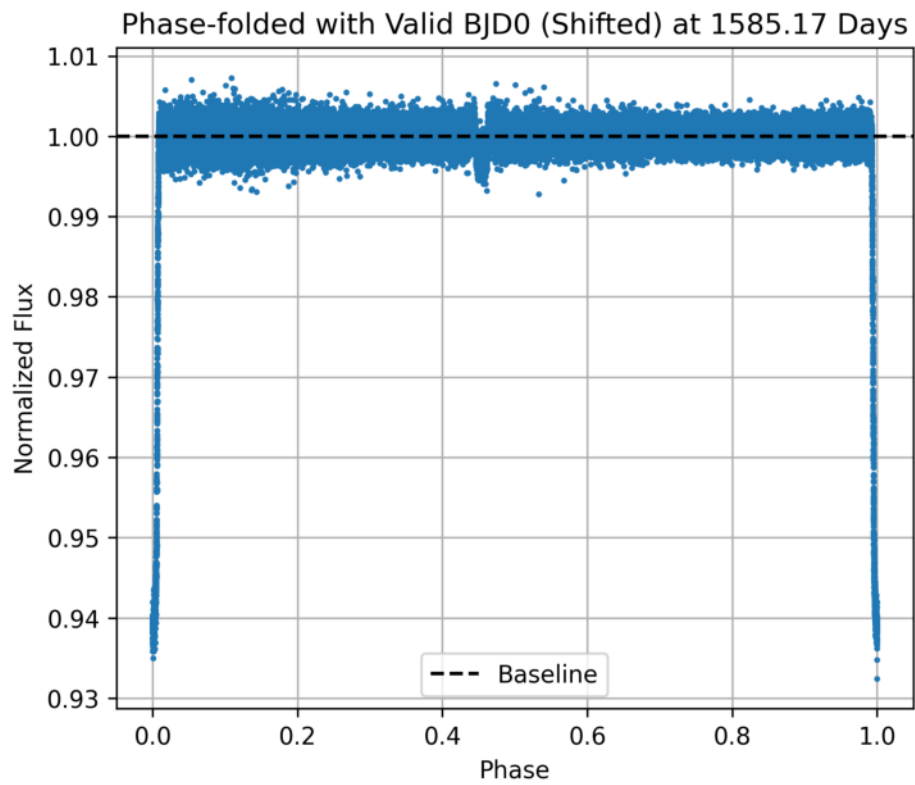# TIC260128333 — Detrending Diagnostic
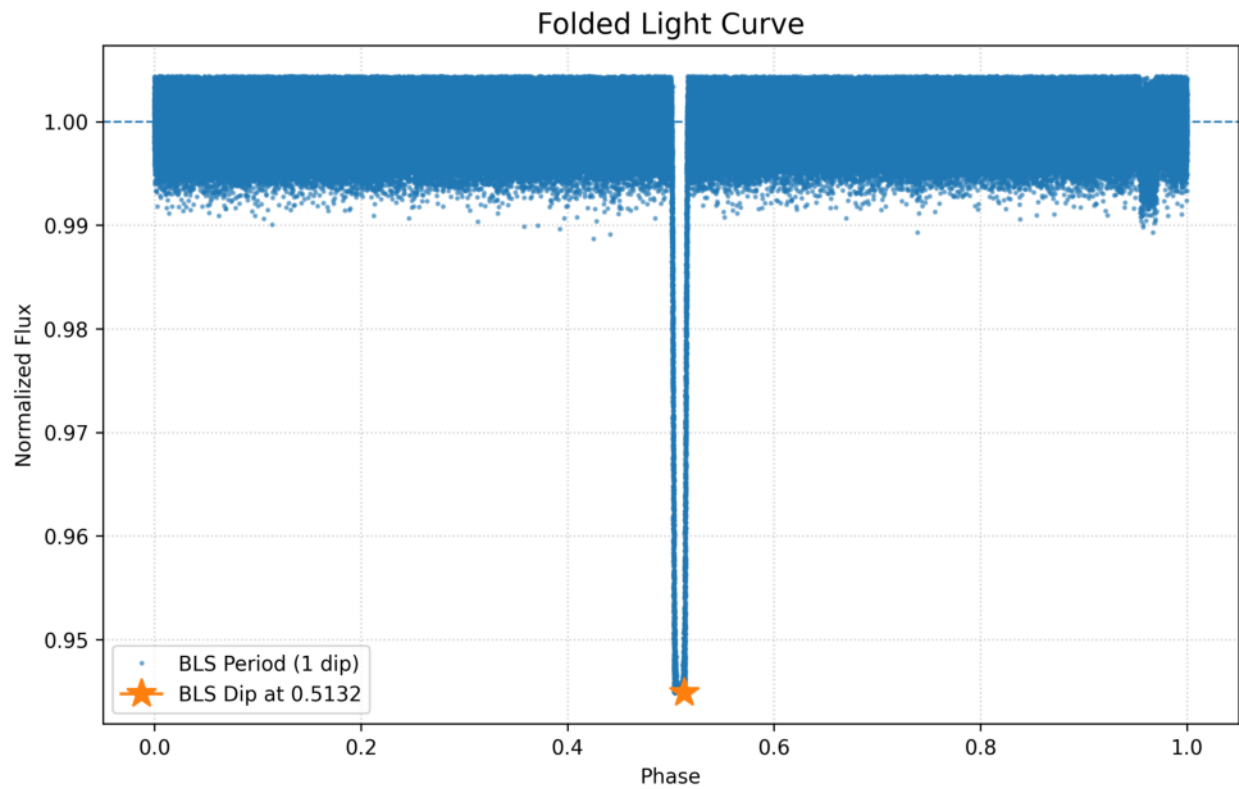
Timing (raw)

{

 "_rows": [

   "Start time: 1764951574.1910098",

   "End time: 1764953228.457435",

   "Total time: 1654.2664251327515 seconds"
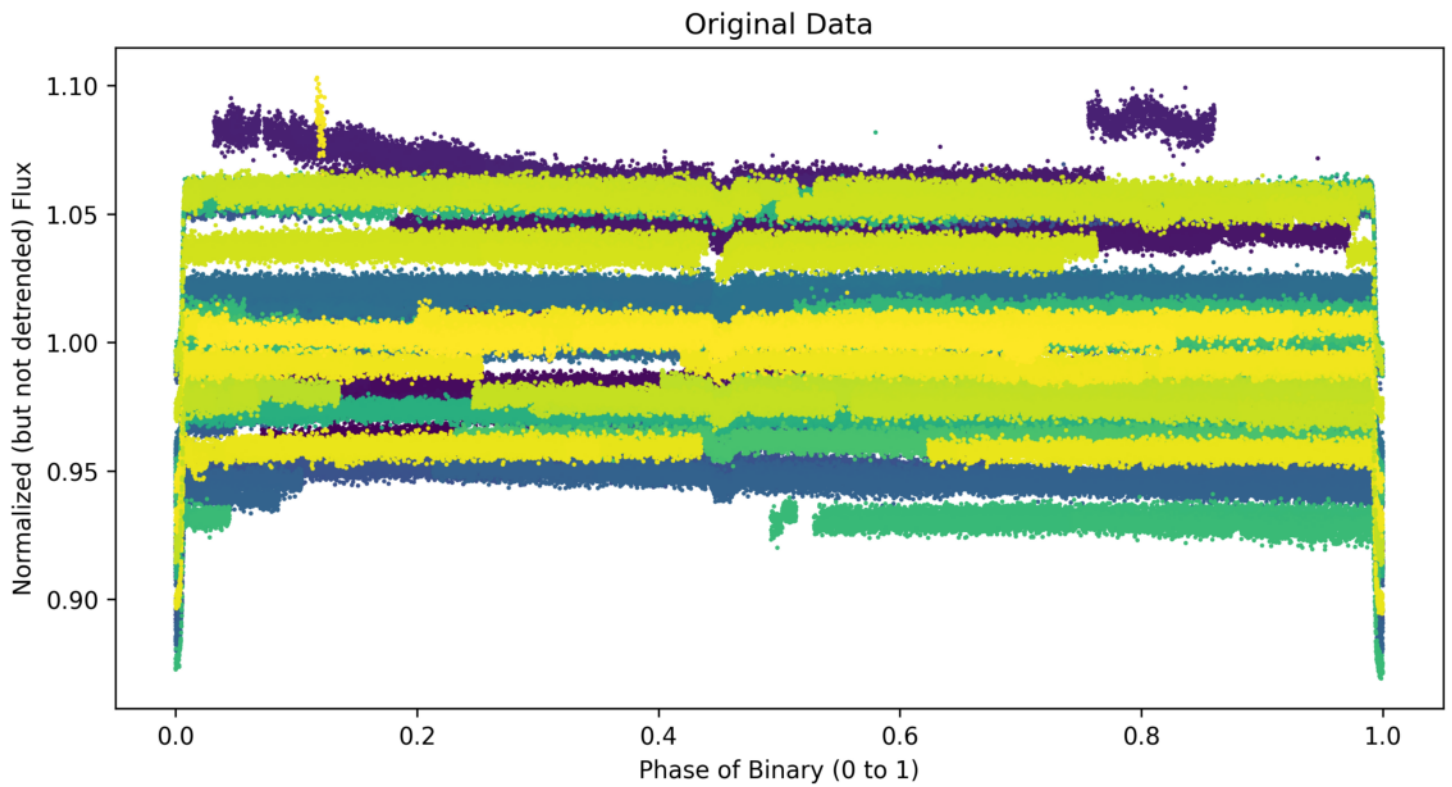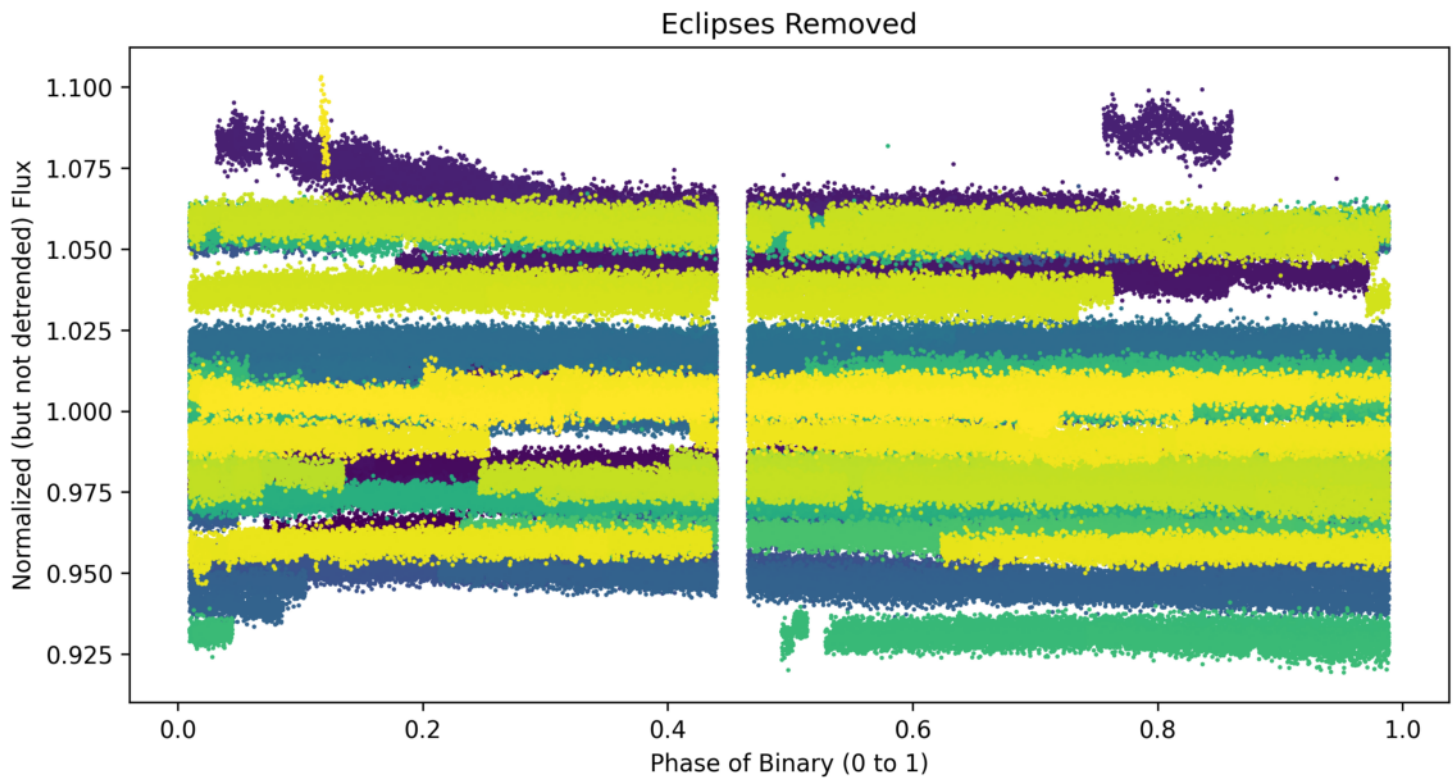
 ]

}

Data Preparation: BJD0Validation_260128333.png

Phase-folded with Valid BJD0 (Shifted) at 1585.17 Days

Data Preparation: BLS_Double_Period_260128333.png

Folded Light Curve

Data Preparation: Original_Data_260128333.png

Original Data

Data Preparation: Phase_Folded_Eclipses_Removed_260128333.png

Eclipses Removed

Data Preparation: Primary_Eclipse_Estimate_260128333.png

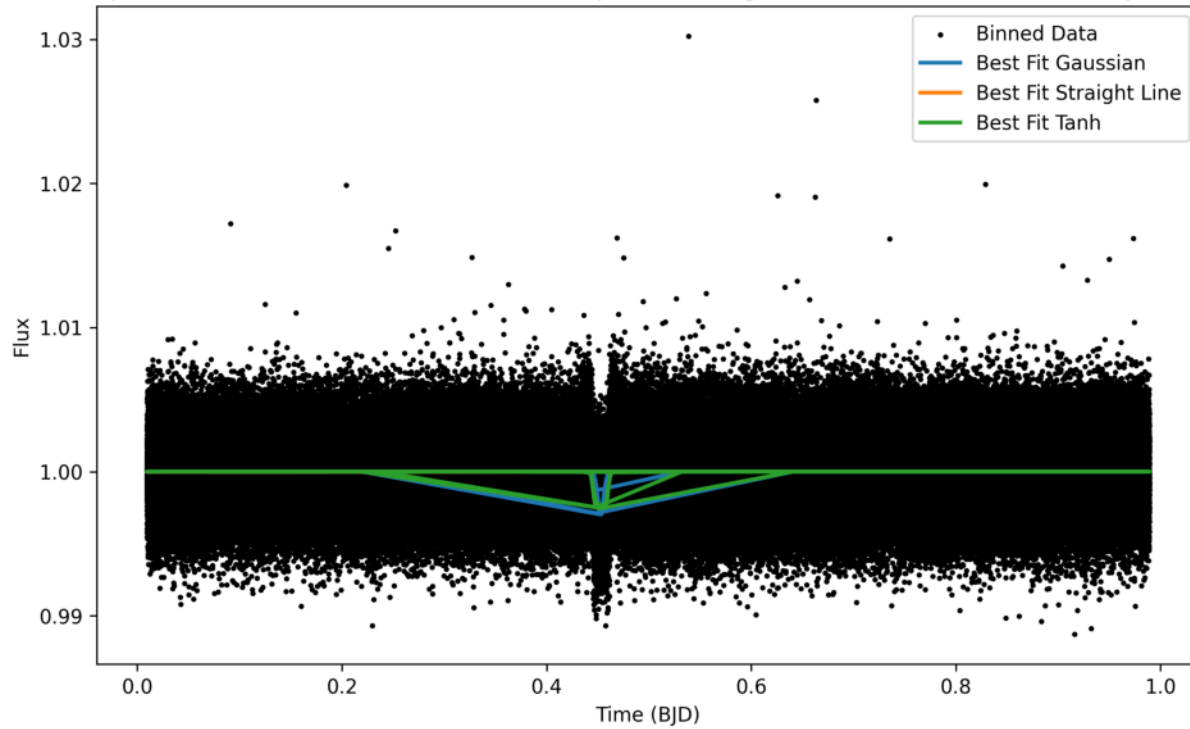## Primary Eclipse Position and Estimated Depth

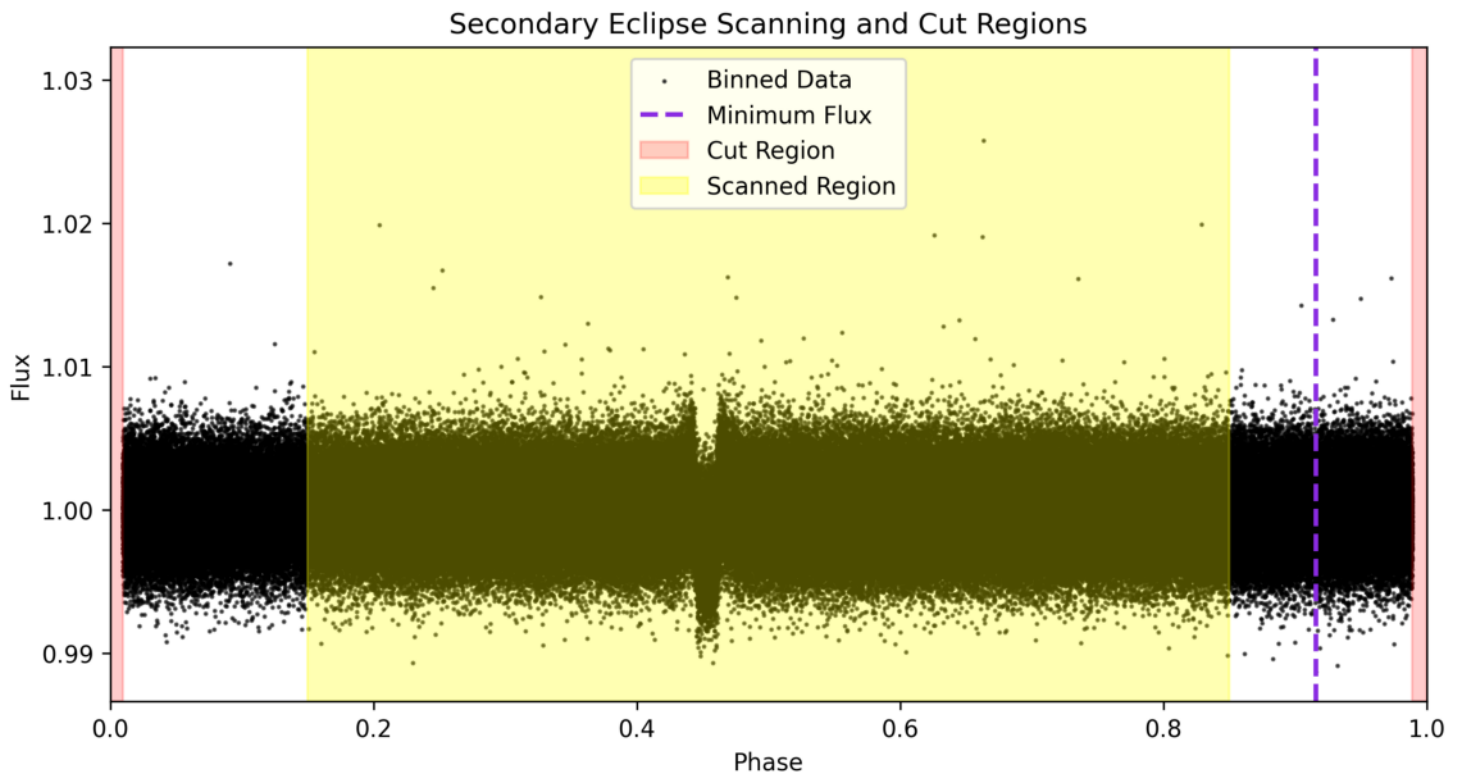# Data Preparation: Primary_Eclipse_Fit_260128333.png

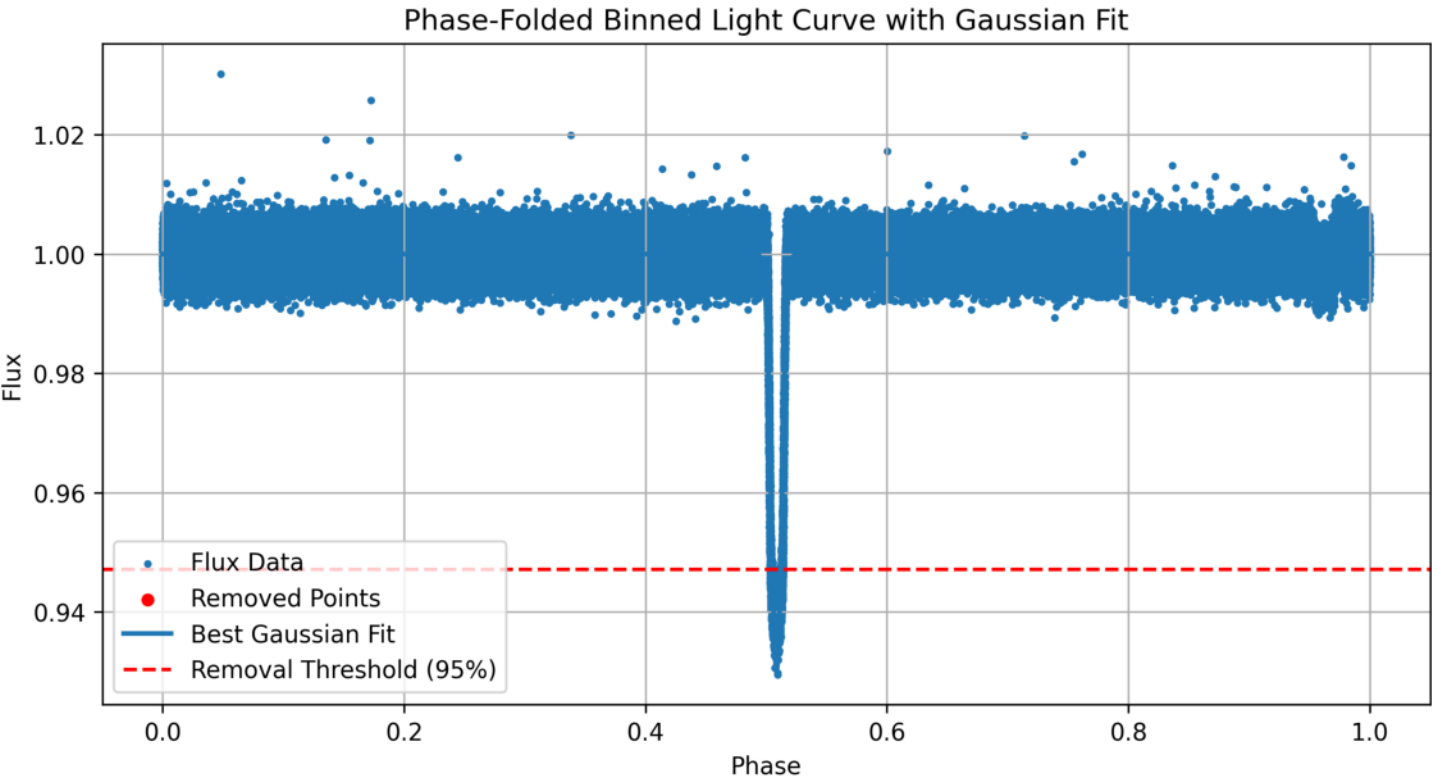# Data Preparation: Secondary_Eclipse_Candidate_260128333.png

Secondary Eclipse Candidate at Phase 0.453
Reduced Chi-squared (Gaussian): 0.989, Reduced Chi-squared (Straight Line): 1.002, Reduced Chi-squared (Tanh): 0.984
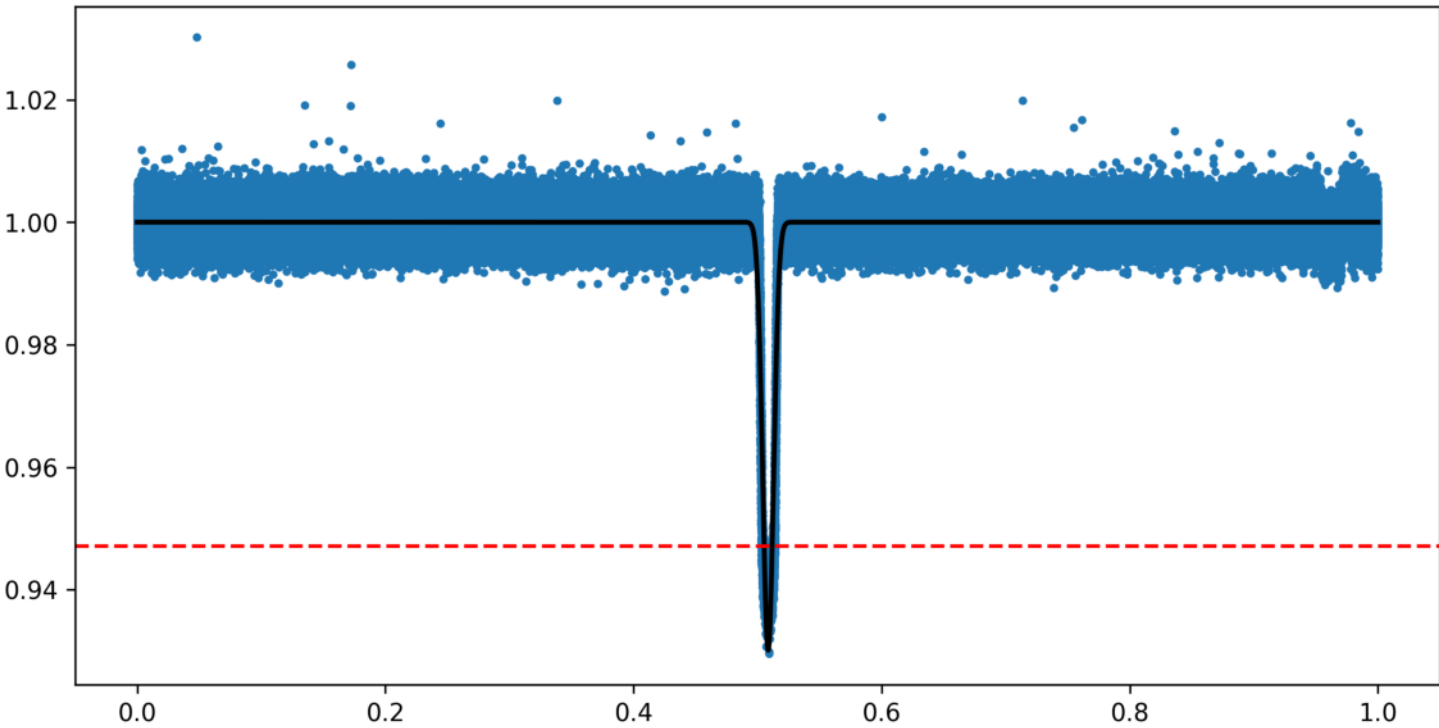
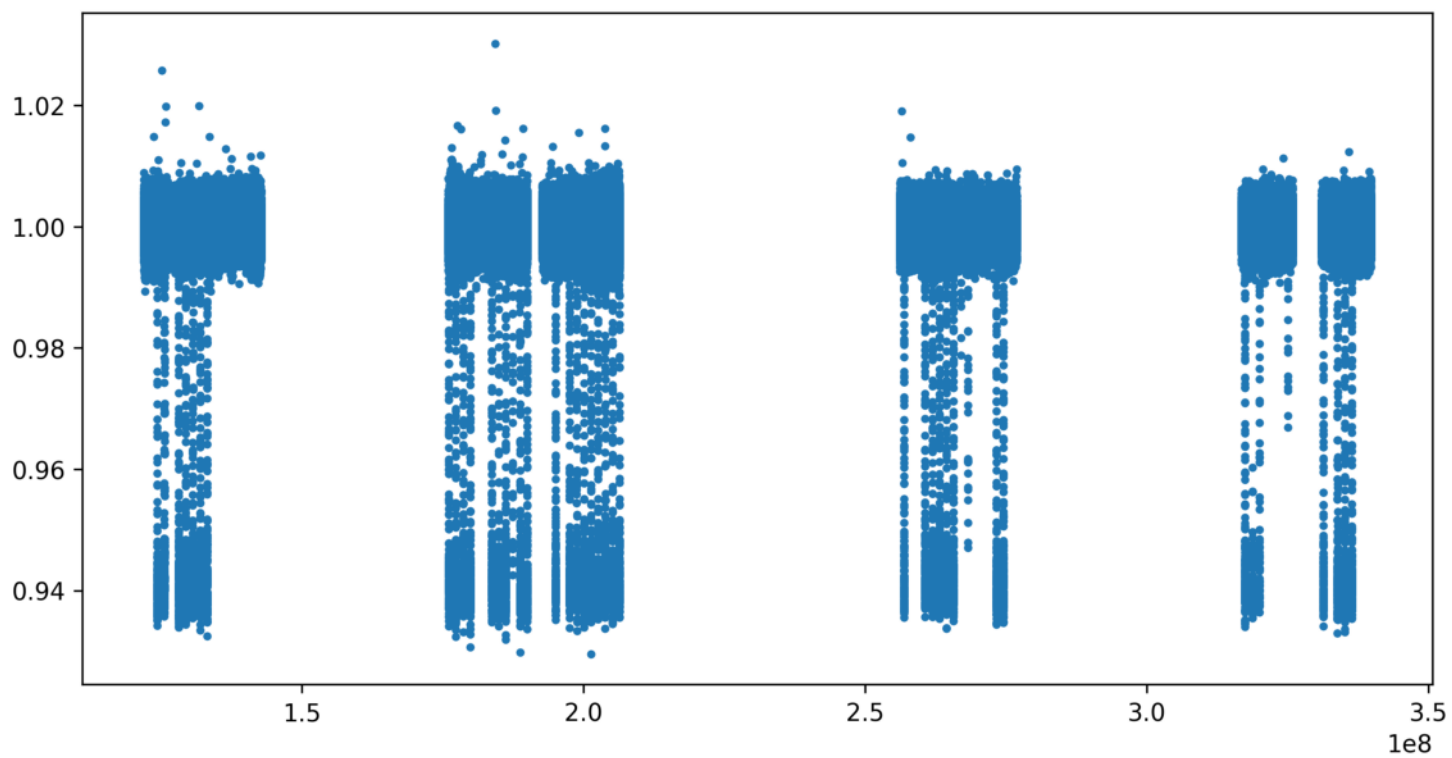# Data Preparation: Secondary_Eclipse_Scanning_260128333.png

Secondary Eclipse Scanning and Cut Regions

Data Preparation: Spurious_Signals_Removed_260128333.png

Phase-Folded Binned Light Curve with Gaussian Fit

- Flux Data
- Removed Points
- Best Gaussian Fit
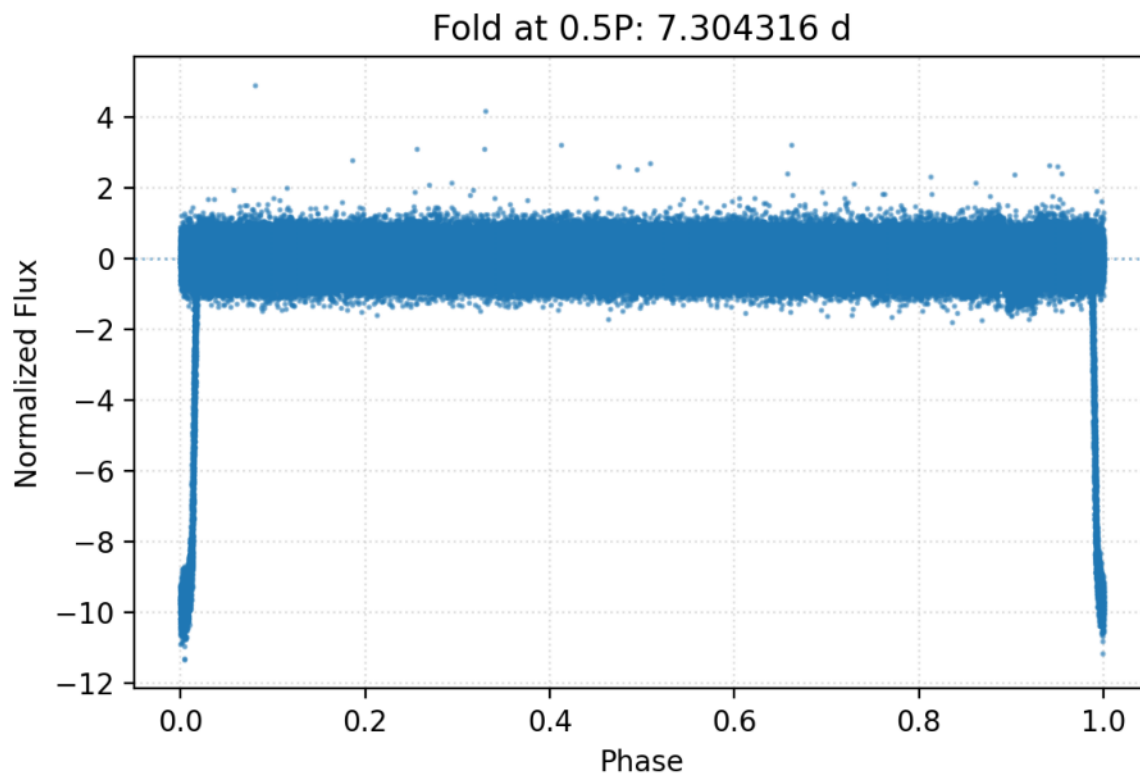- Removal Threshold (95%)

Phase

Flux

Data Preparation: Spurious_Signals_Removed_PHASE_260128333.png

Data Preparation: Spurious_Signals_Removed_TIME_260128333.png

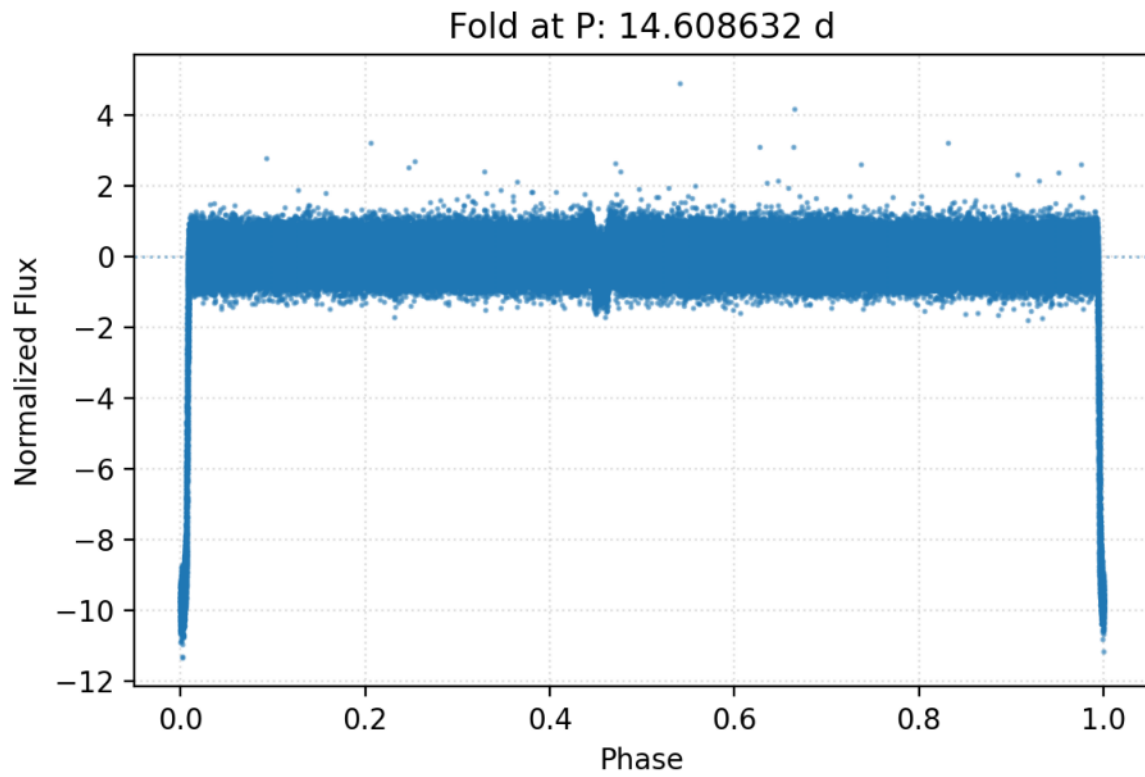## Data Preparation: target_harmonics_0p5P.png

Fold at 0.5P: 7.304316 d

Data Preparation: target_harmonics_2p0P.png

Fold at 2.0P: 29.217264 d

Data Preparation: target_harmonics_P.png

Fold at P: 14.608632 d

Data Preparation: Validated_Period_Extra_260128333.png
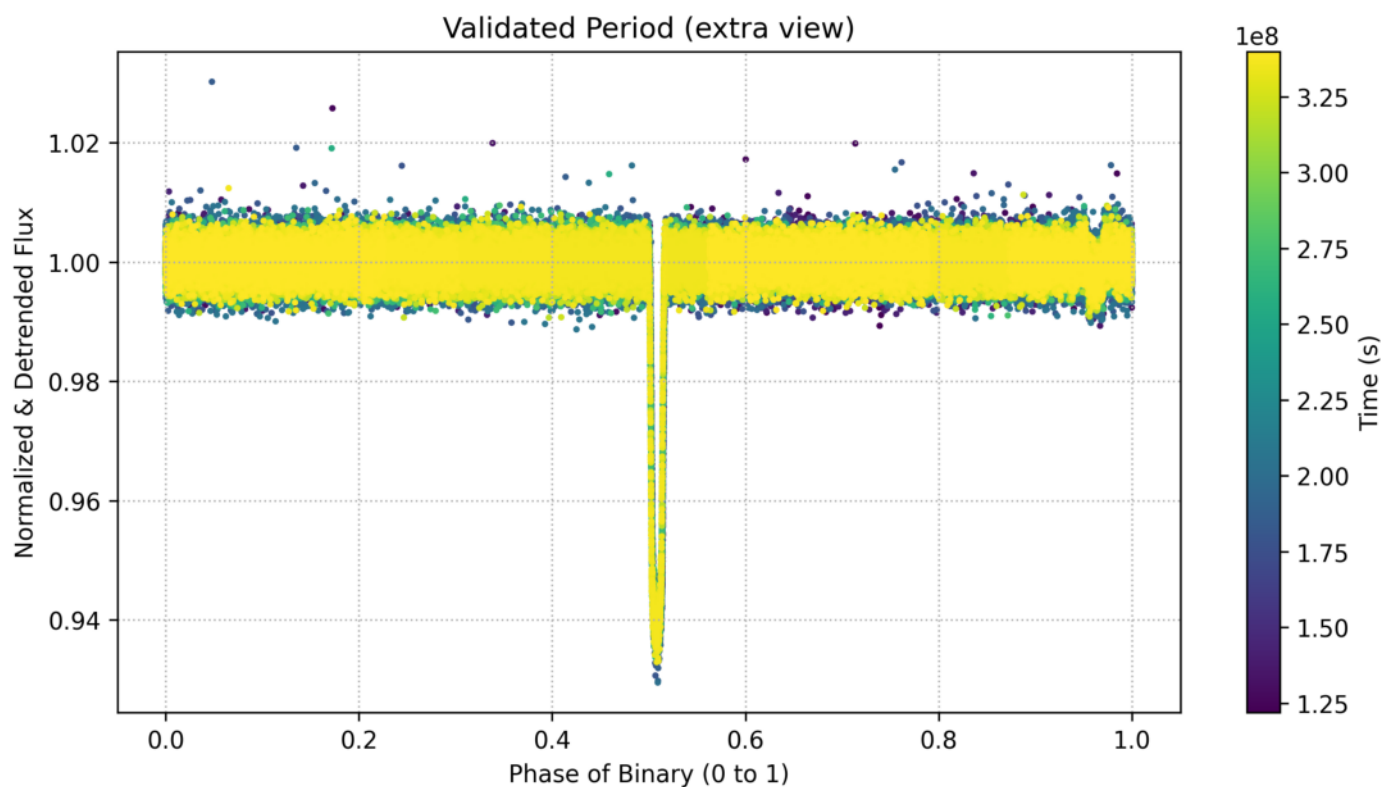

Validated Period (extra view)

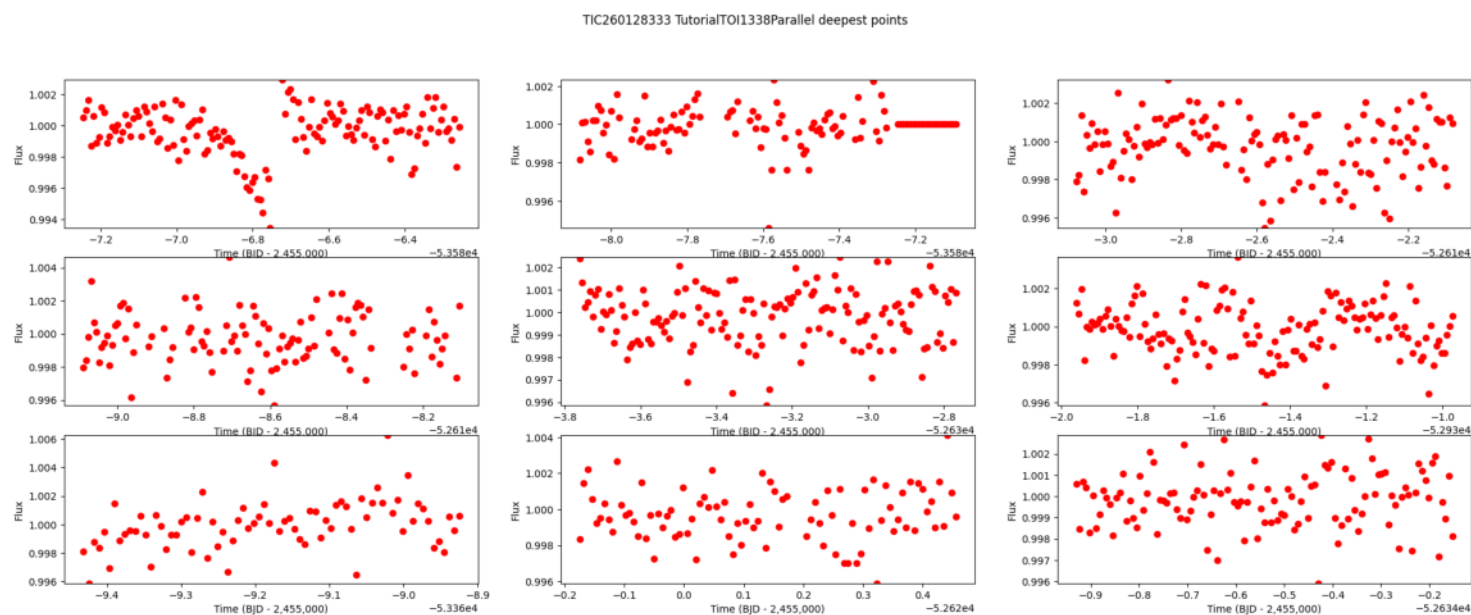# Figure: TIC260128333_TutorialTOI1338Parallel_deepestPoints.png

TIC260128333 TutorialTOI1338Parallel deepest points

Figure: TIC260128333_TutorialTOI1338Parallel_hookGaps.png
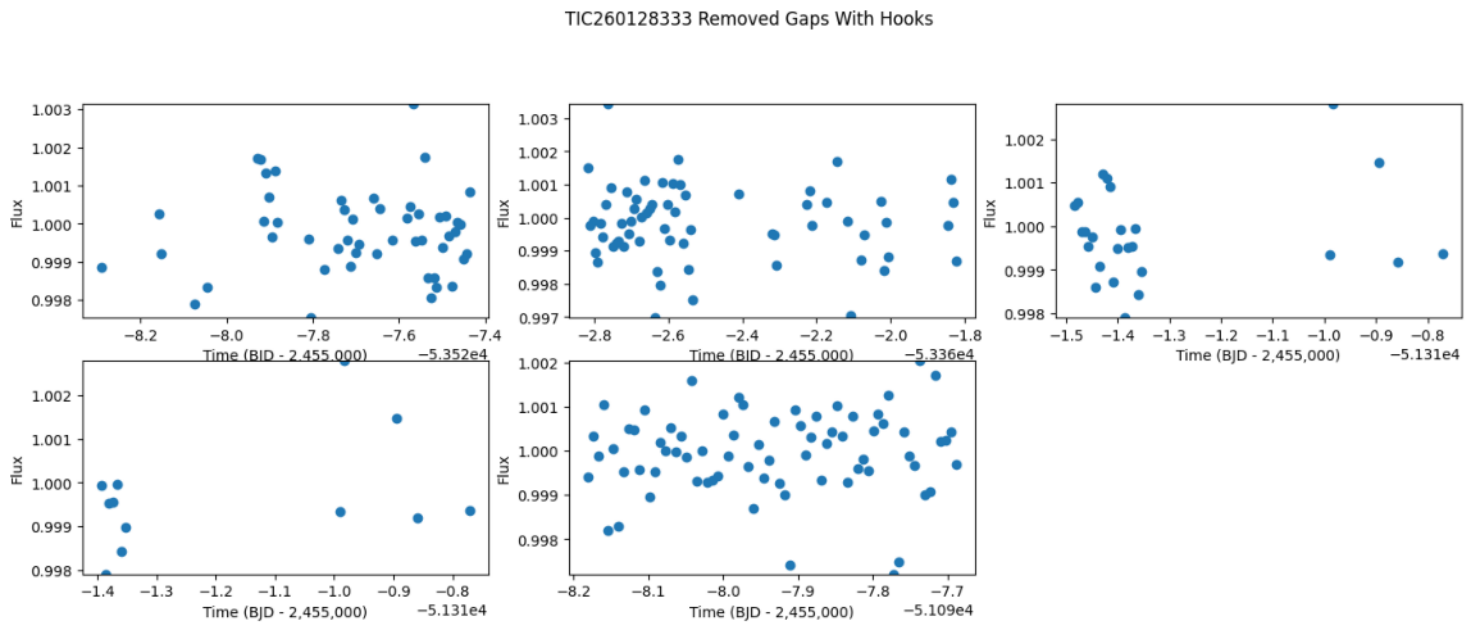

TIC260128333 Removed Gaps With Hooks

Figure: TIC260128333_TutorialTOI1338Parallel_hookJumps.png

TIC260128333 Removed Jumps In The Data

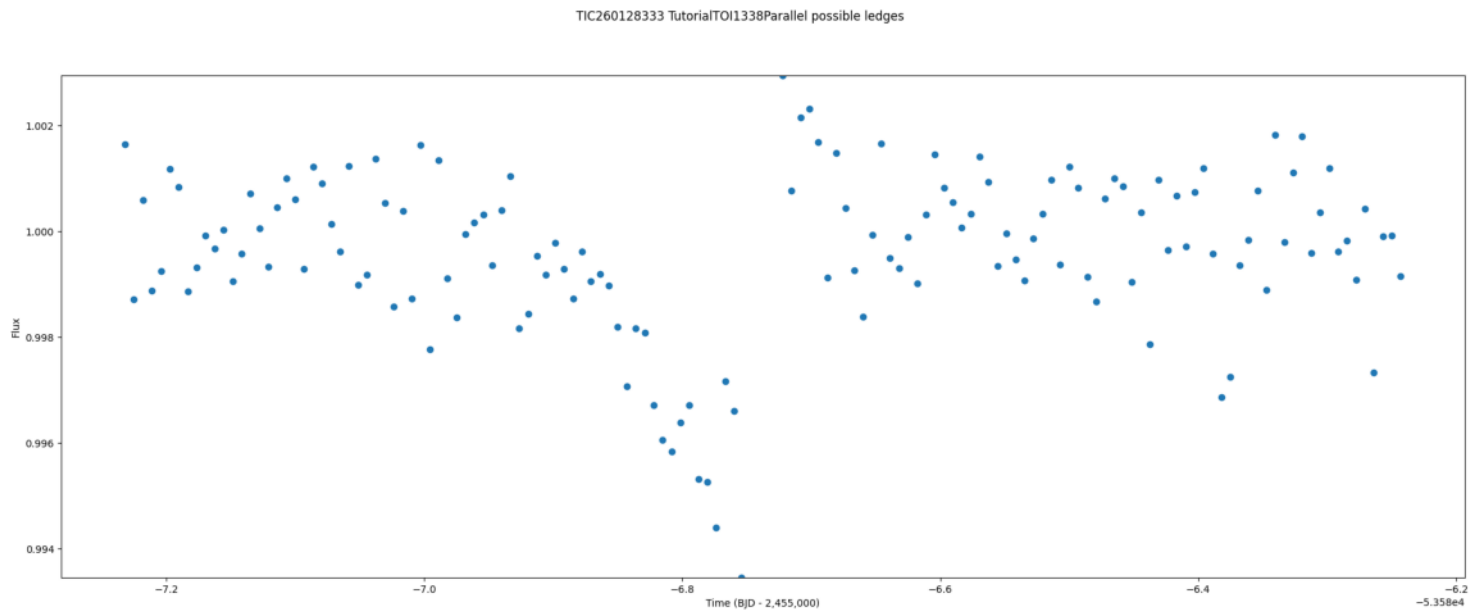Figure: TIC260128333_TutorialTOI1338Parallel_potentialLedges.png

TIC260128333 TutorialTOI1338Parallel possible ledges

Figure: TIC_260128333_phase_folded_eclipses_removed.png
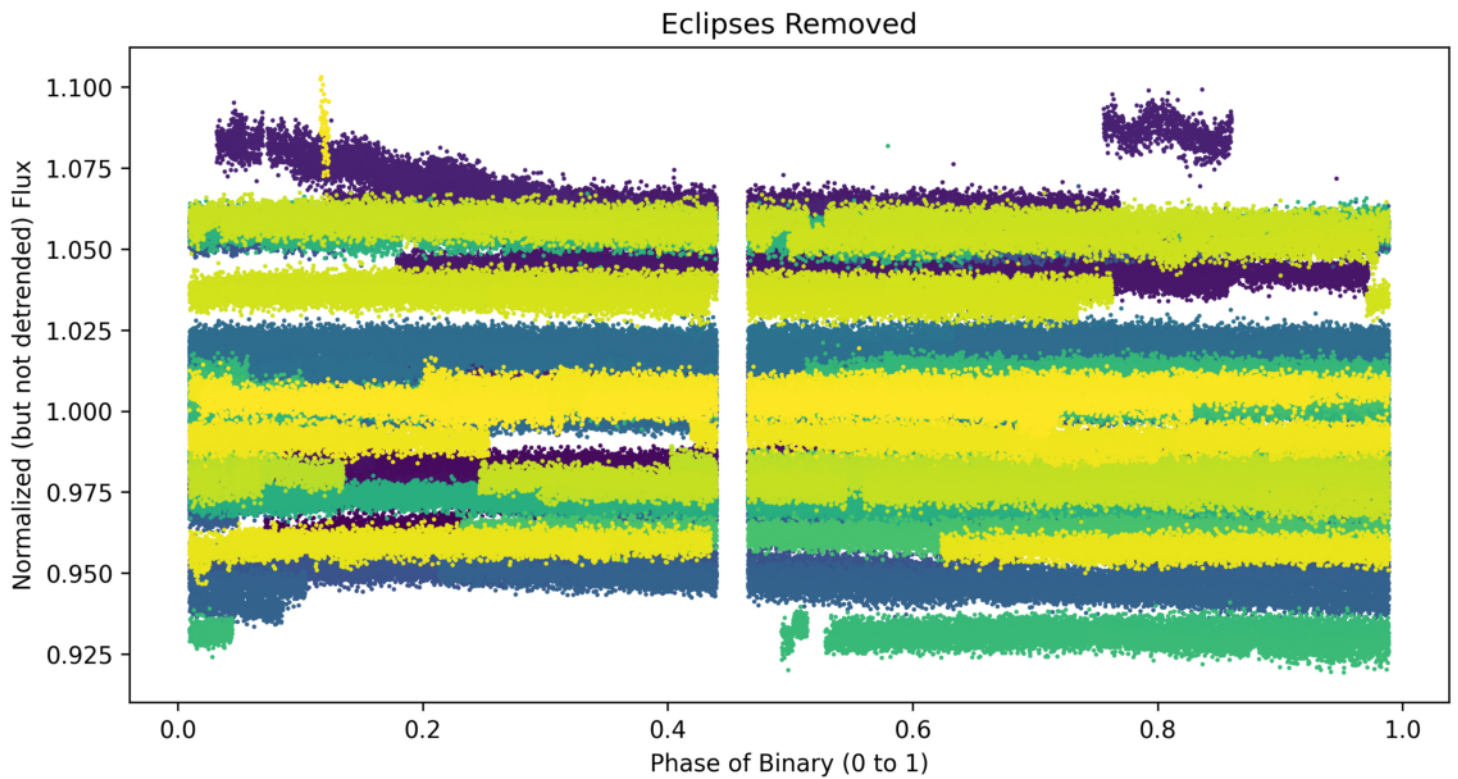

Eclipses Removed

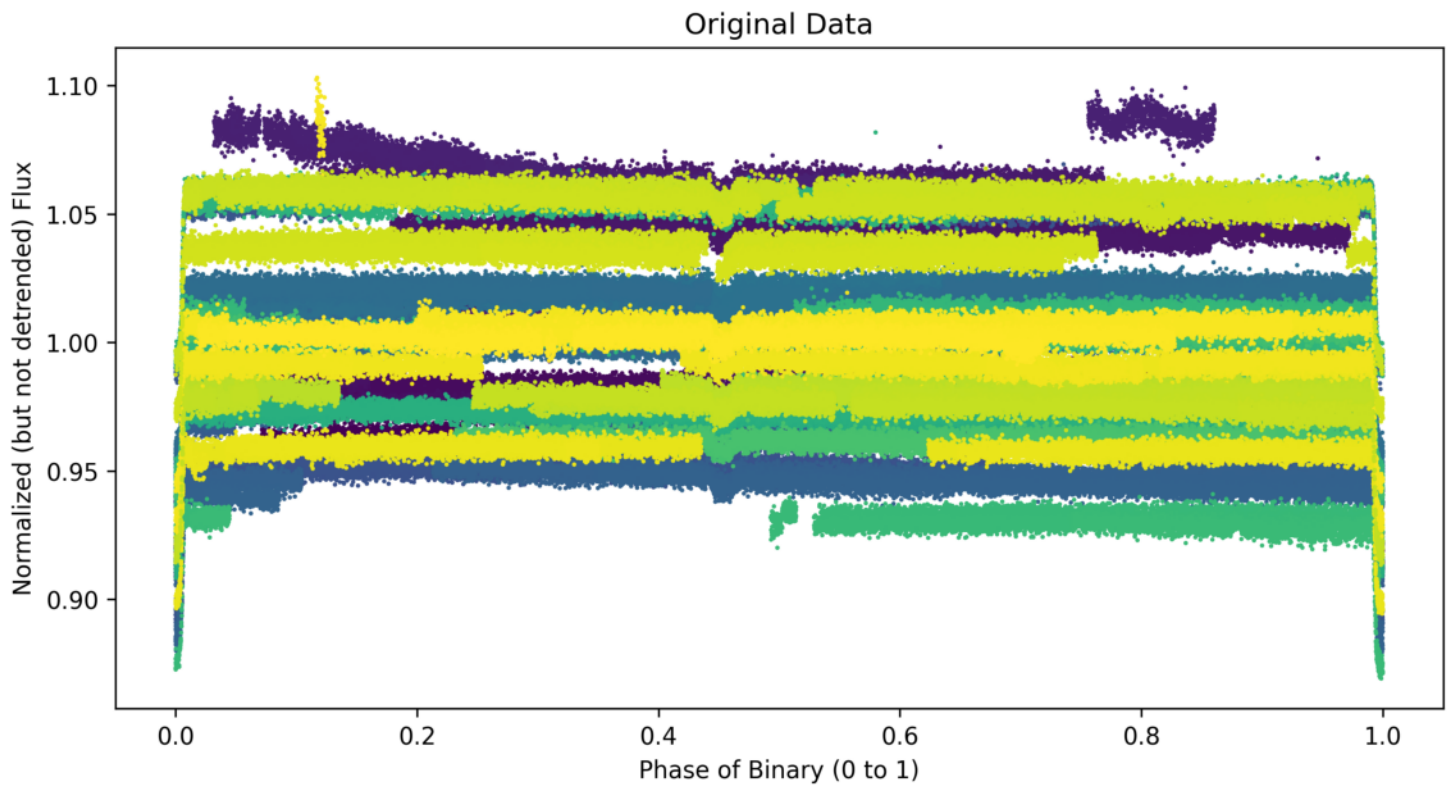# Figure: TIC_260128333_phase_folded_original_data.png

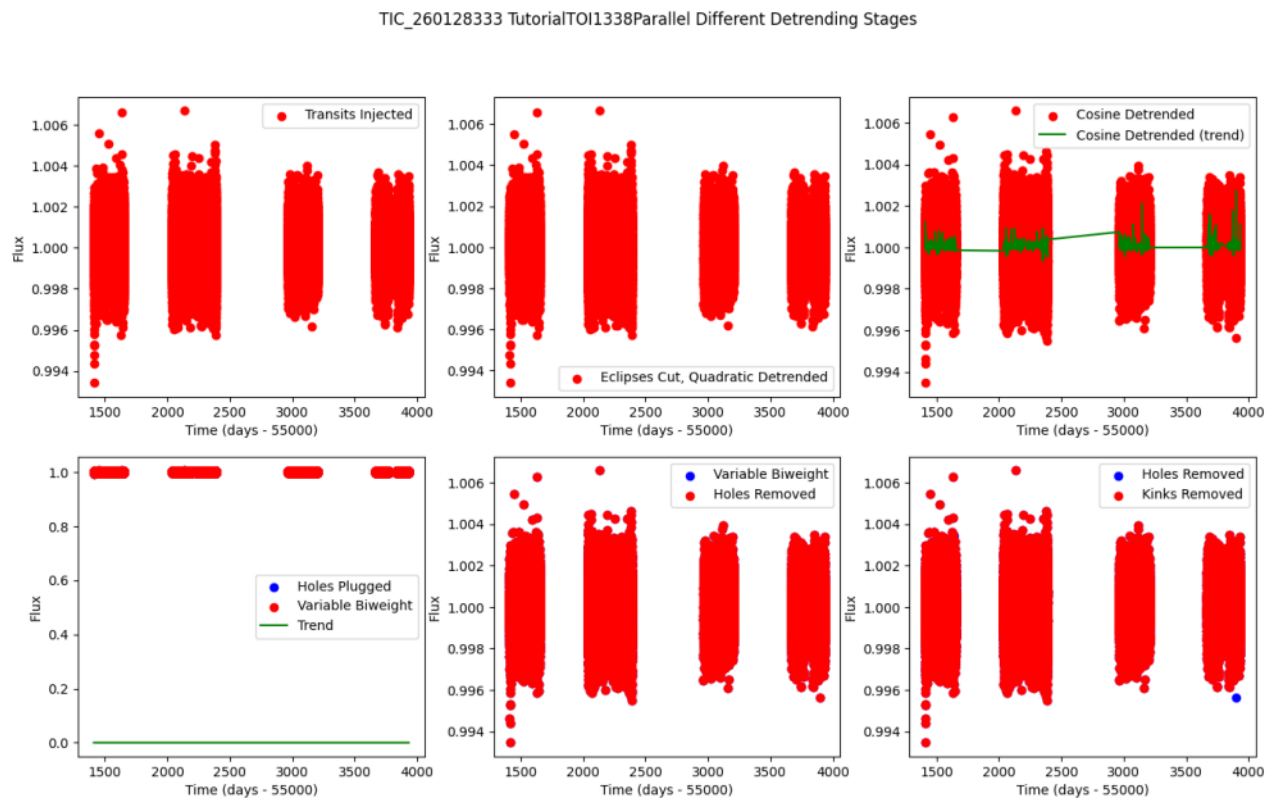# Figure: TIC_260128333_TutorialTOI1338Parallel_detrendingStages.png

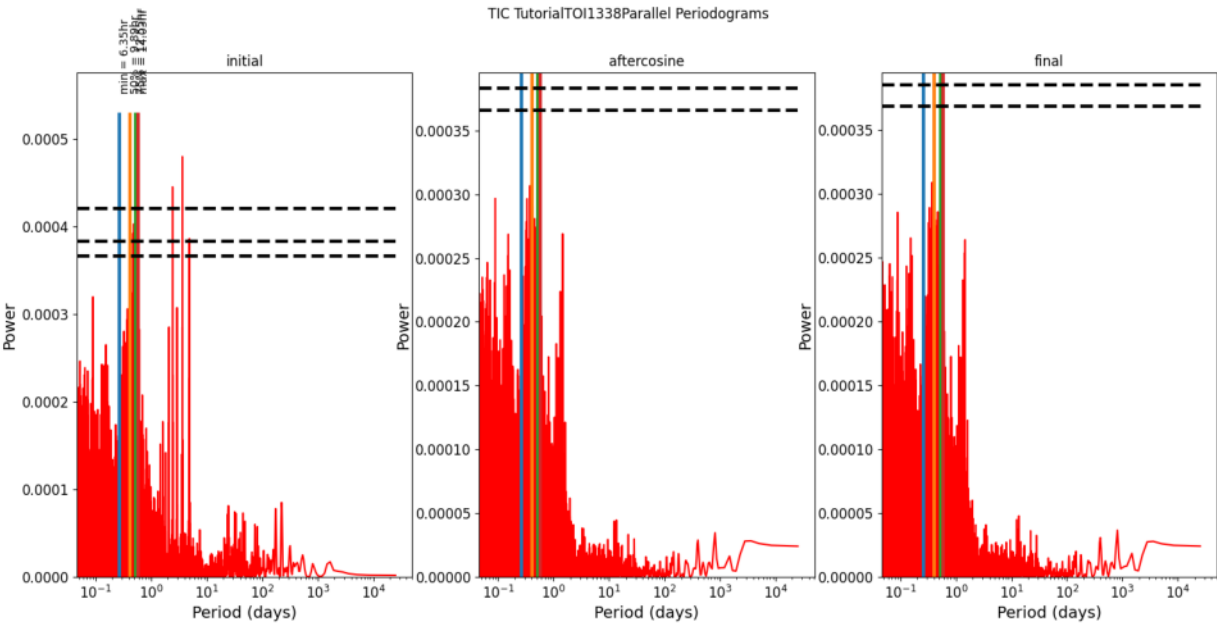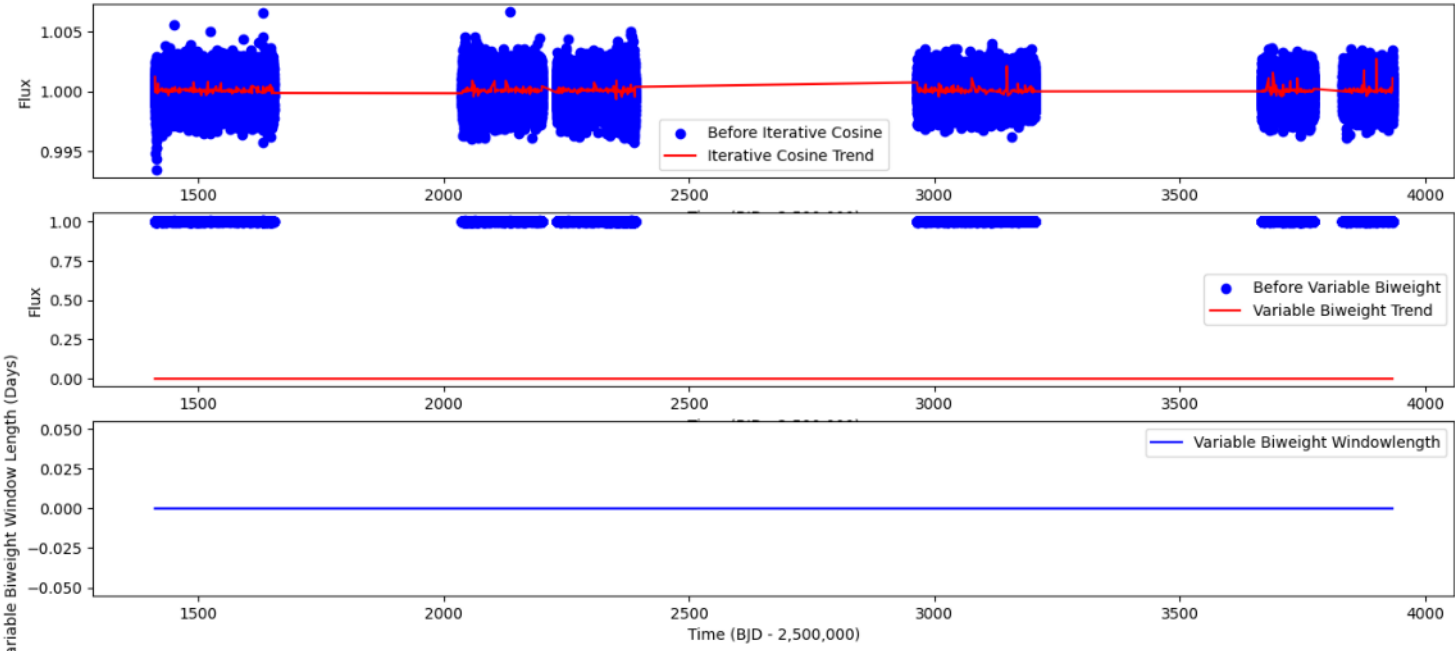# Figure: TIC_260128333_TutorialTOI1338Parallel_periodograms.png

Figure: TIC_260128333_TutorialTOI1338Parallel_trends.png

Binary Starting Parameters

Binary Starting Parameters (CSV)

```
{
  "mA (mSun)": "1.2",
  "mB (mSun)": "0.325",
  "RA (RSun)": "1.25",
  "RB (RSun)": "0.3134562733739666",
  "bjd0 (Days - 2550000)": "-53414.833326",
  "theta (deg)": "125.19447335031276",
  "Pbin (days)": "14.608635335577416",
  "ecc": "0.1555219999999999",
  "omega (deg)": "117.77090183134572"
}
```

Source file

LightCurves\Processed\TutorialTOI1338Parallel\TIC_260128333_TutorialTOI1338Parallel_binaryStartingParams.csv