

Chapter 2 lc plots

June 6, 2022

```
[1]: import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import lightkurve as lk
import periodogram_properties as pprop
import autolcper
import warnings
warnings.filterwarnings("ignore")
# %matplotlib auto
```

0.1 TIC 140757590

Contact binary (EW type) Observed for 5 sectors between sectors 9 and 13 in year 1 period of 0.41839 days

```
[2]: autolcper.automator(ticid=140757590,save=True)
```

The PostScript backend does not support transparency; partially transparent artists will be rendered opaque.

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LS Period : 0.10459330548105829 d

BLS Period : 0.4184190383121709 d

T0 : 1544.5716492067852

Transit duration : 0.05 d

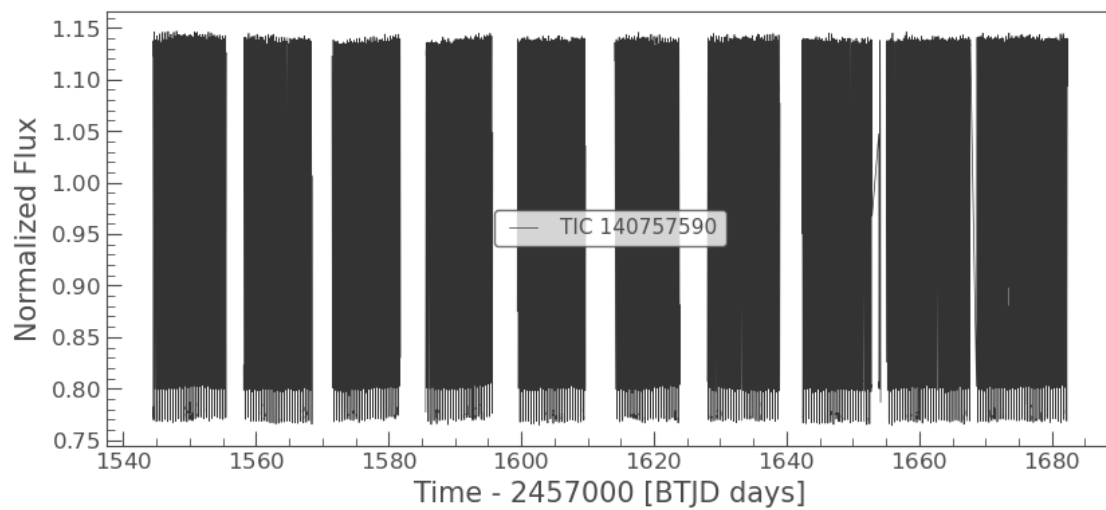
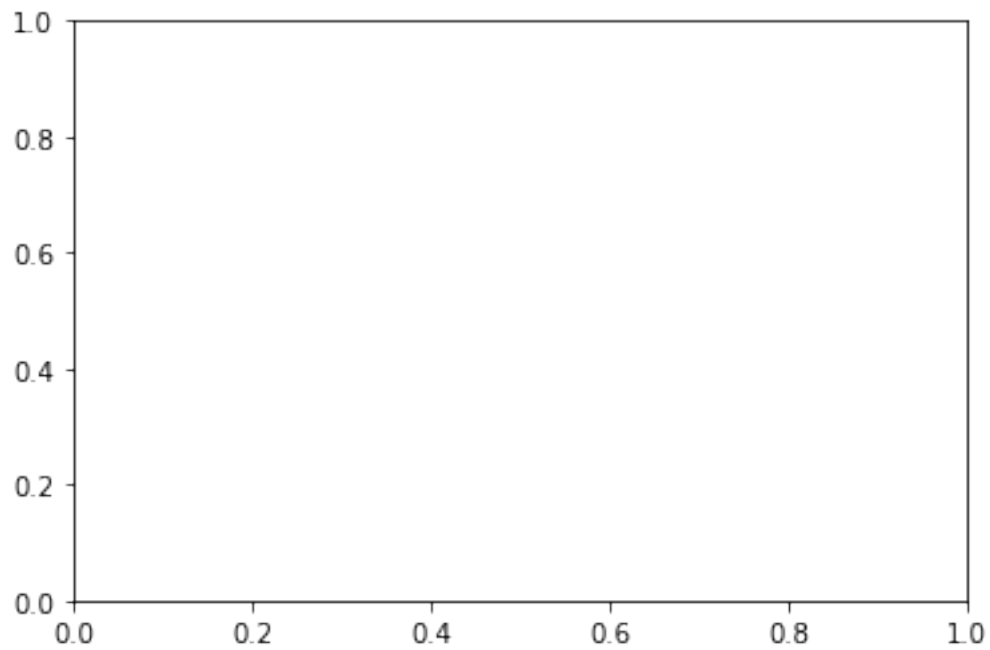
The PostScript backend does not support transparency; partially transparent artists will be rendered opaque.

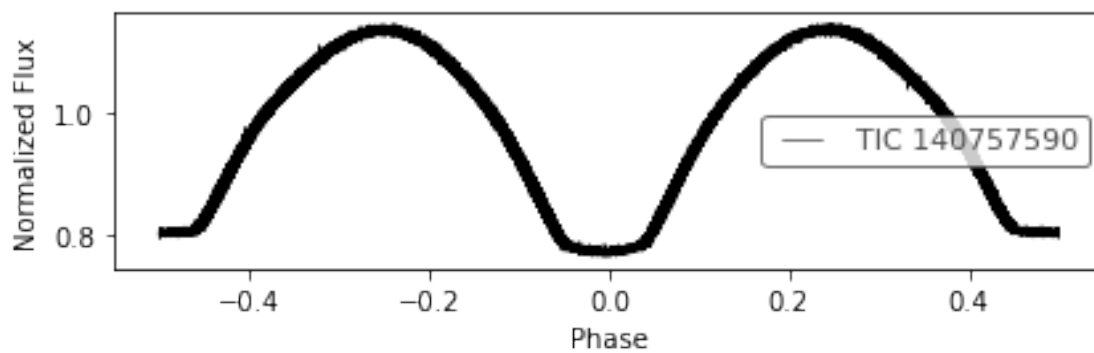
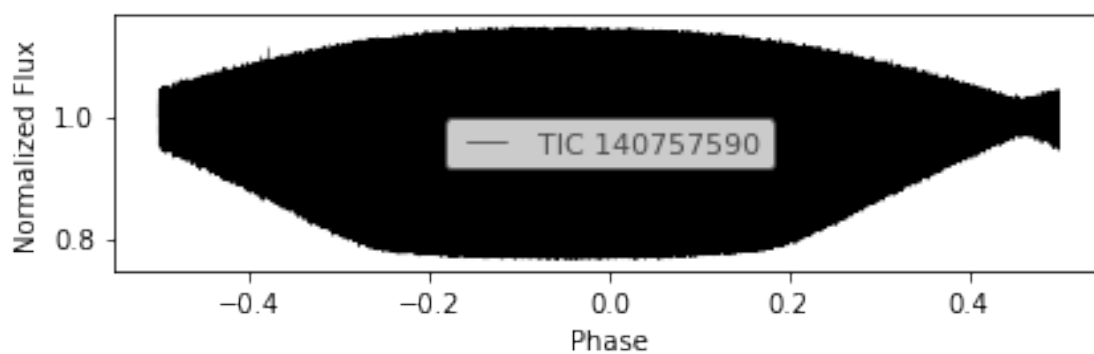
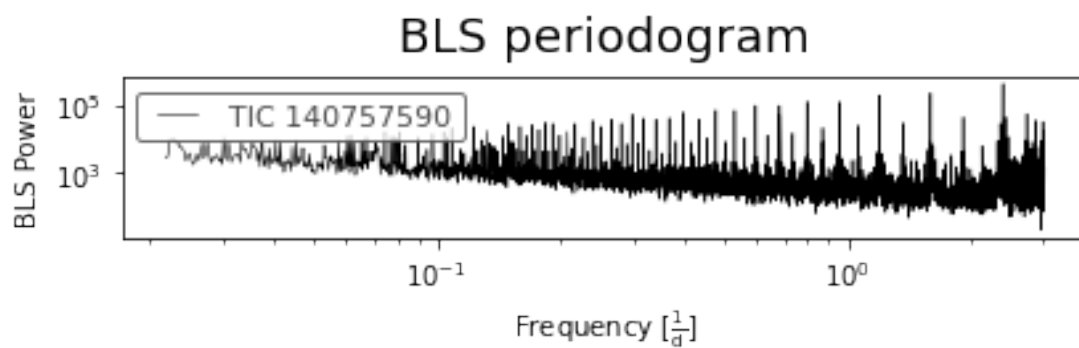
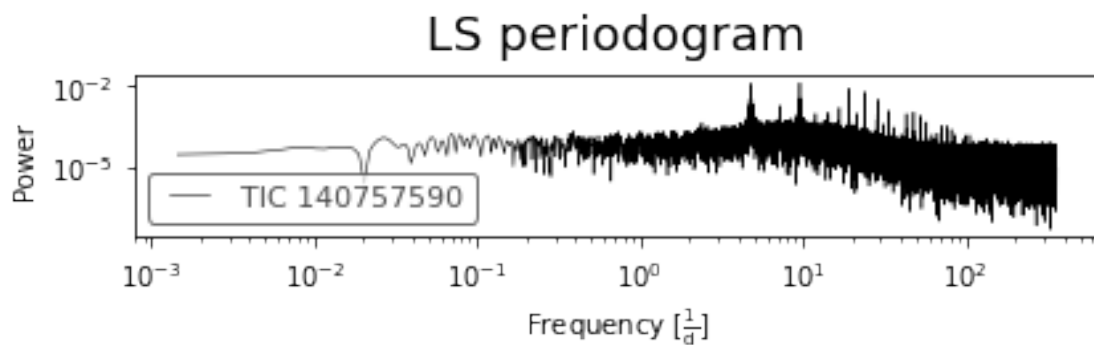
The PostScript backend does not support transparency; partially transparent artists will be rendered opaque.

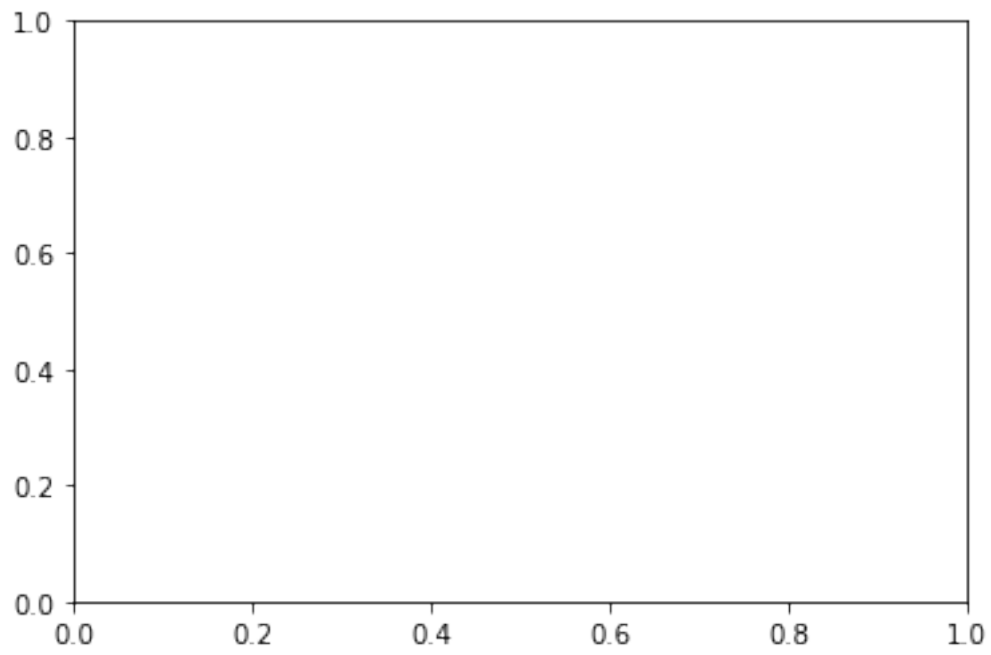
The PostScript backend does not support transparency; partially transparent

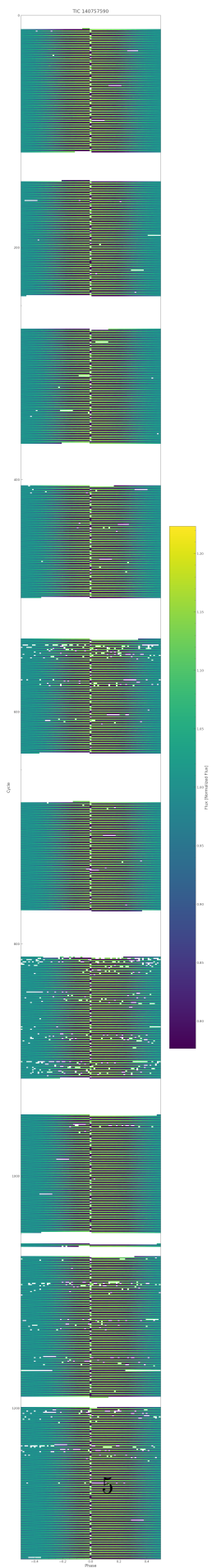
artists will be rendered opaque.

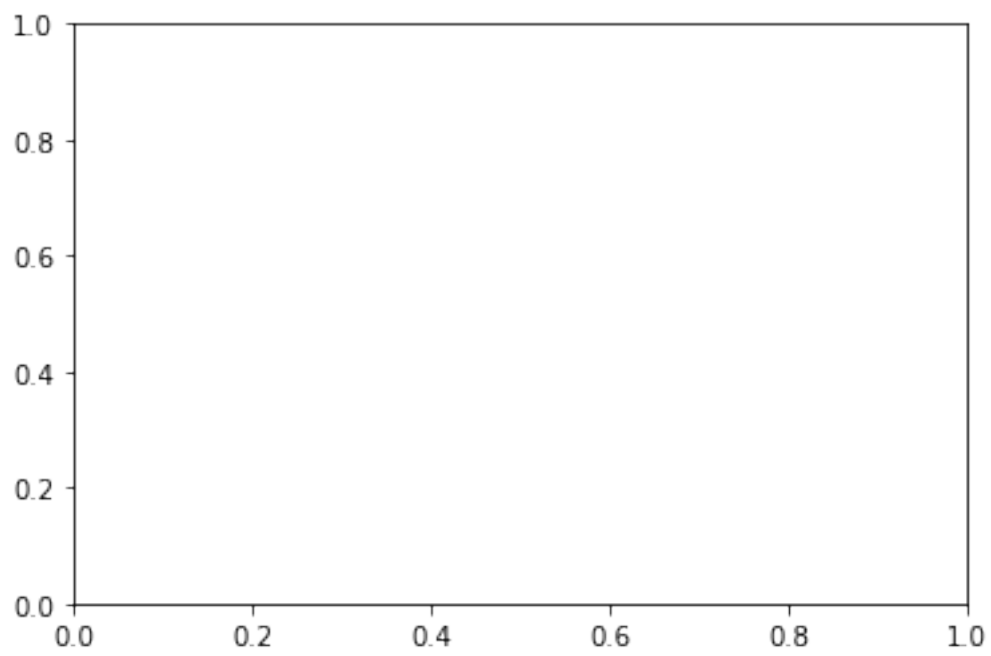
The PostScript backend does not support transparency; partially transparent artists will be rendered opaque.

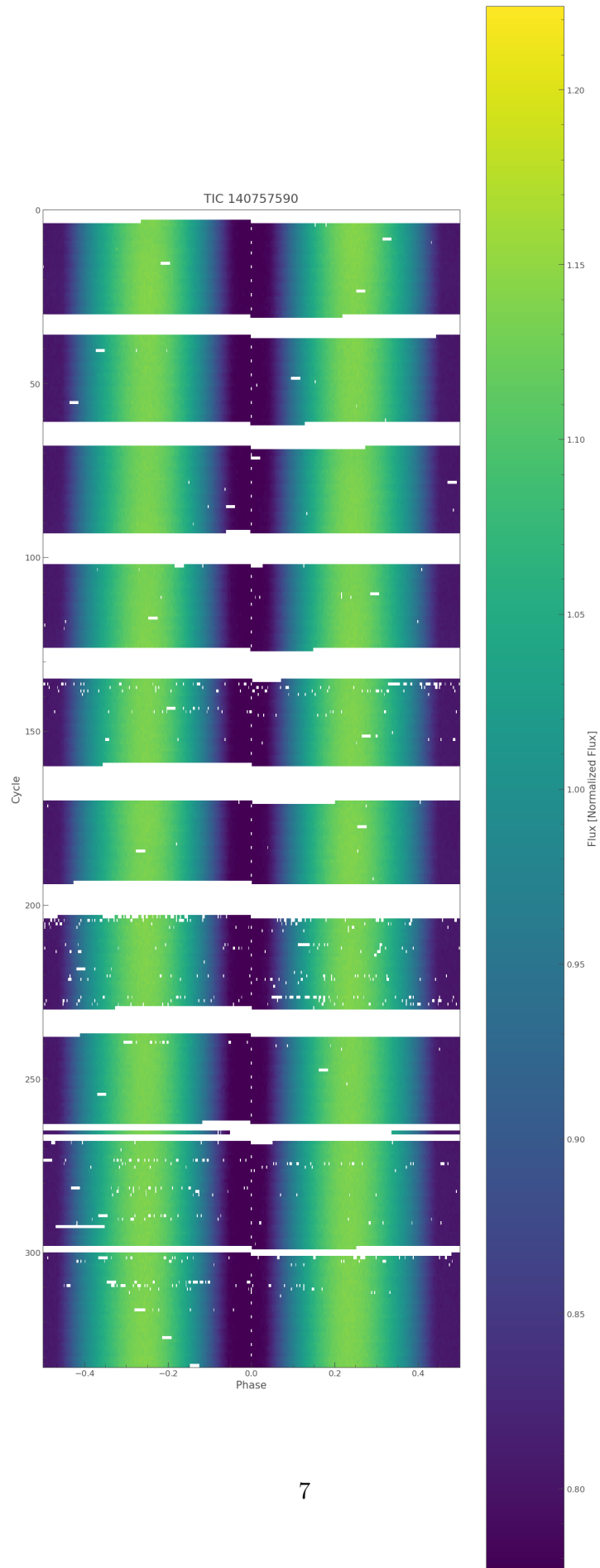












0.2 TIC 38846515

WASP-100 star of type F2 Contains eclipsing planet with orbital period 2.84938 days all sectors in year 1

```
[3]: autolcper.automator(ticid=38846515,save=True)
```

Warning: 30% (5871/19412) of the cadences will be ignored due to the quality mask (quality_bitmask=175).

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LS Period : 1.4245455191221557 d

BLS Period : 2.849513158321518 d

T0 : 1329.5853299362525

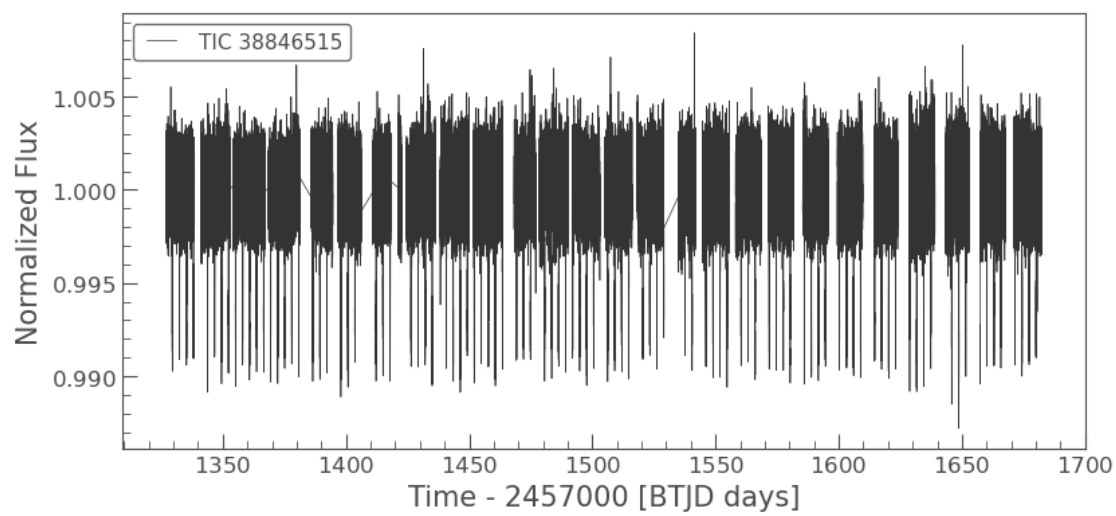
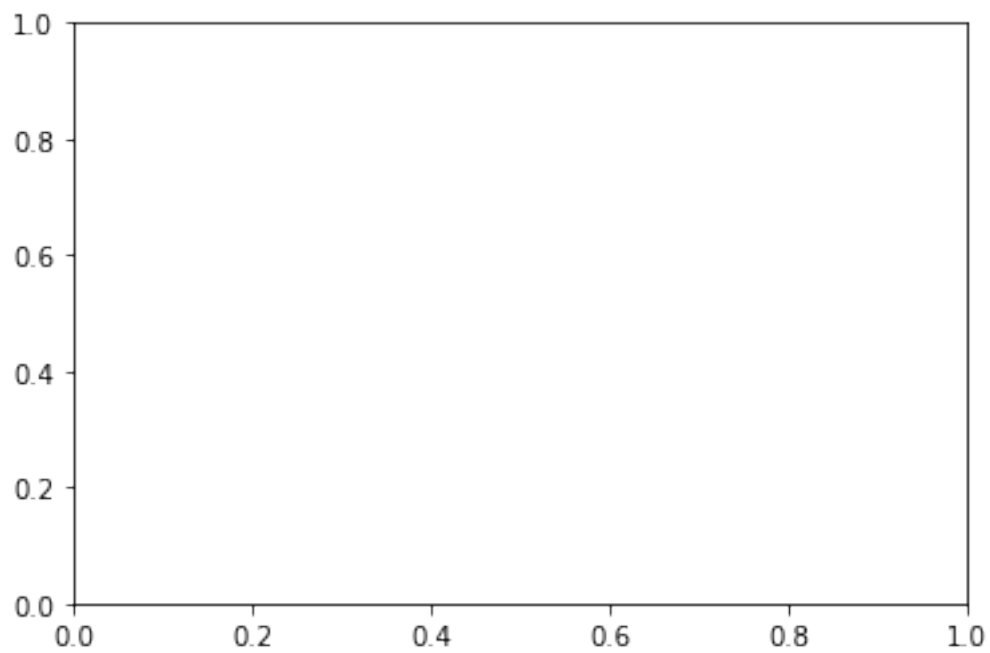
Transit duration : 0.15 d

The PostScript backend does not support transparency; partially transparent artists will be rendered opaque.

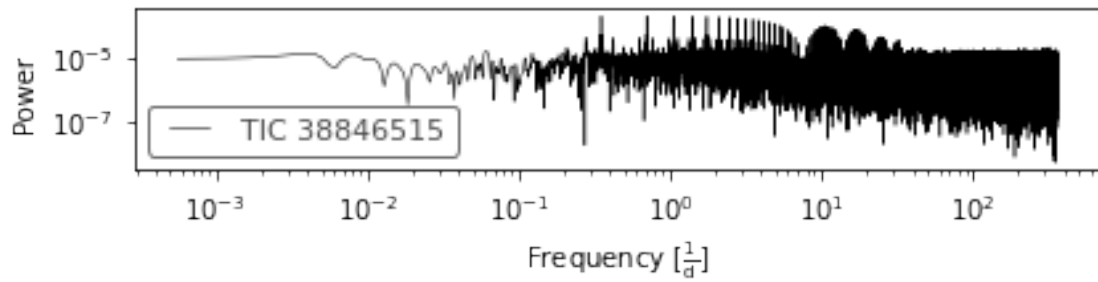
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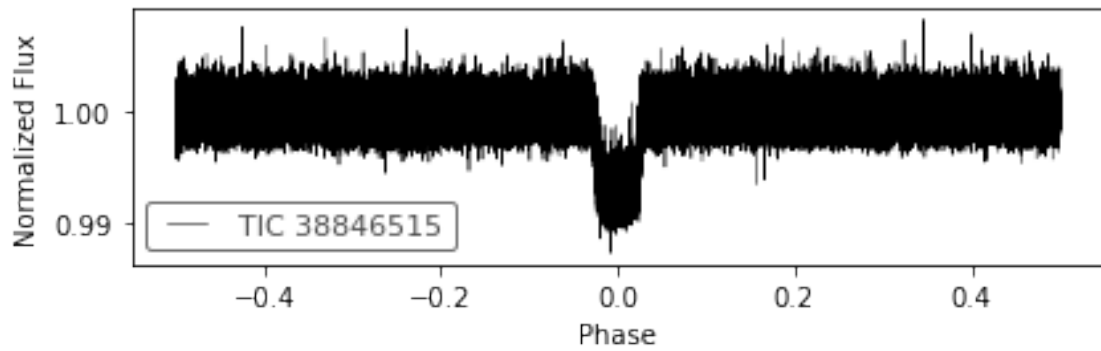
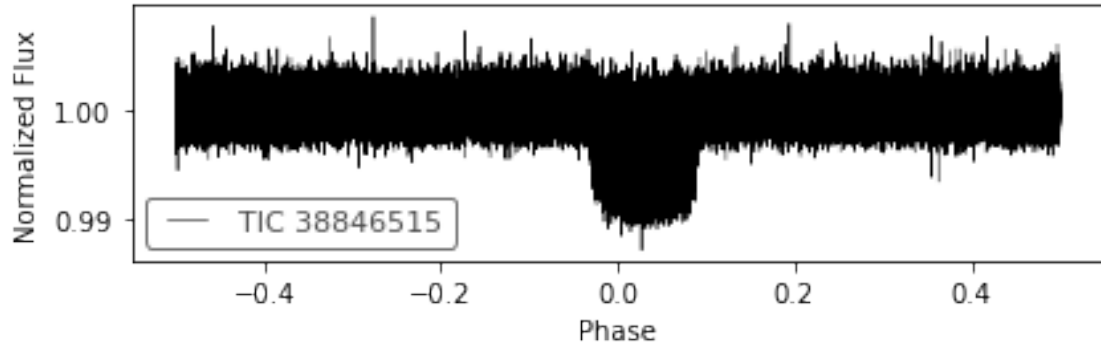
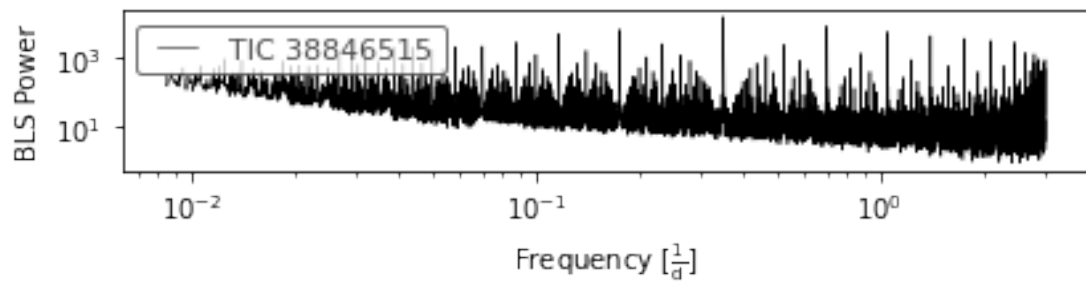
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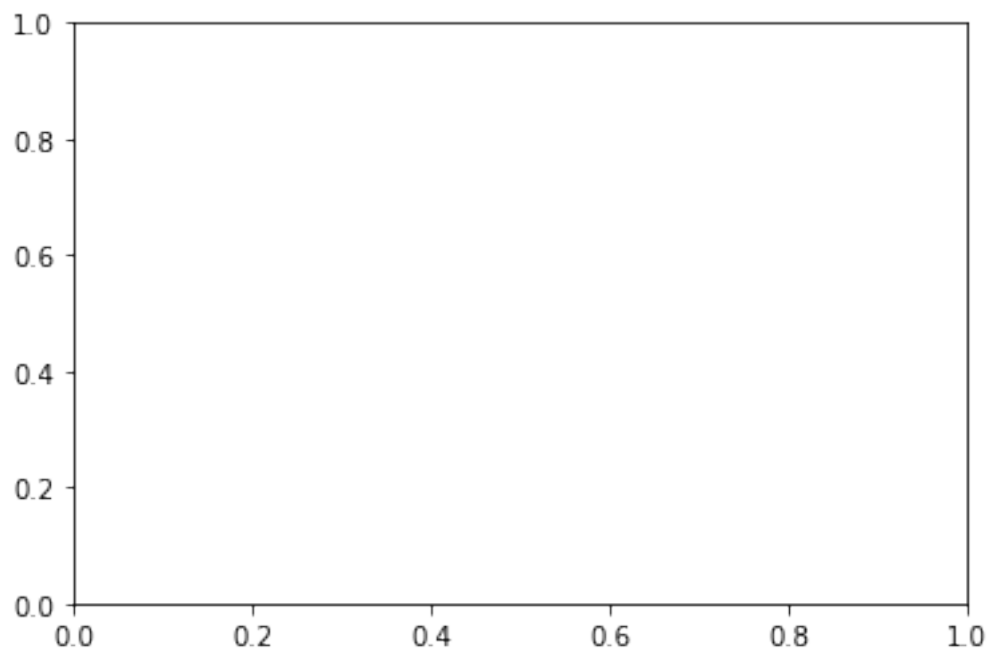


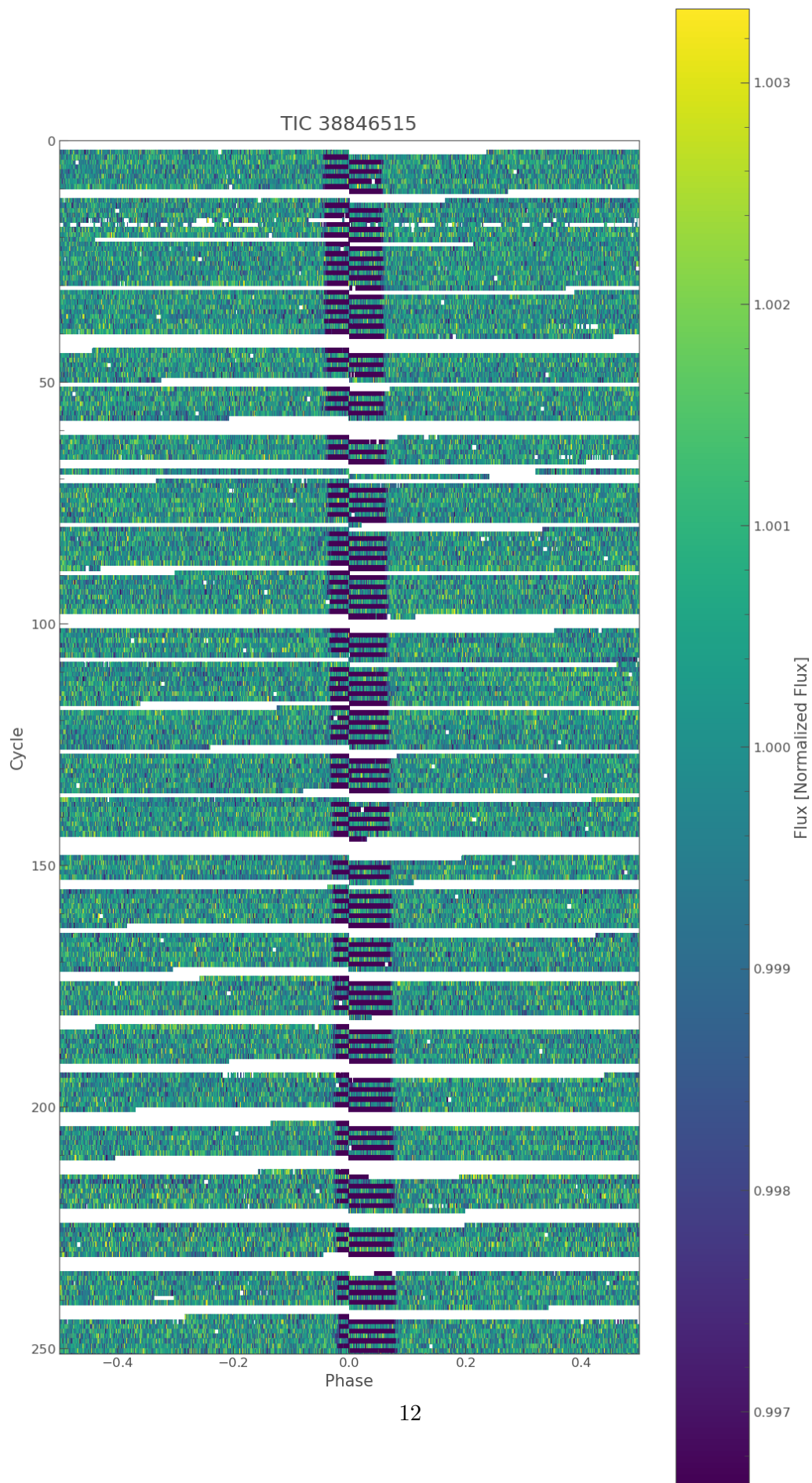
LS periodogram

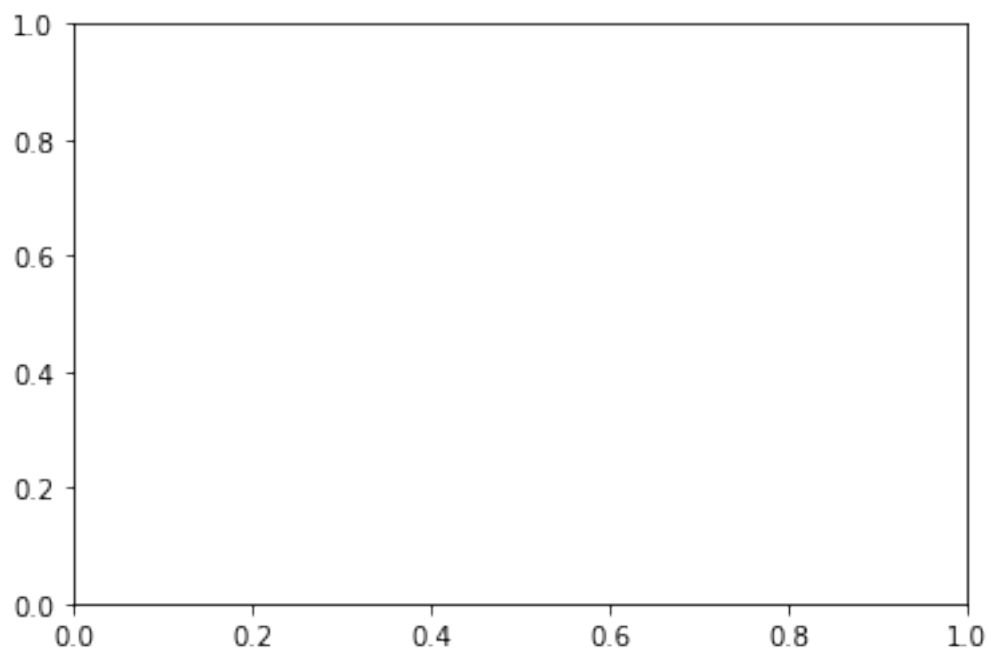


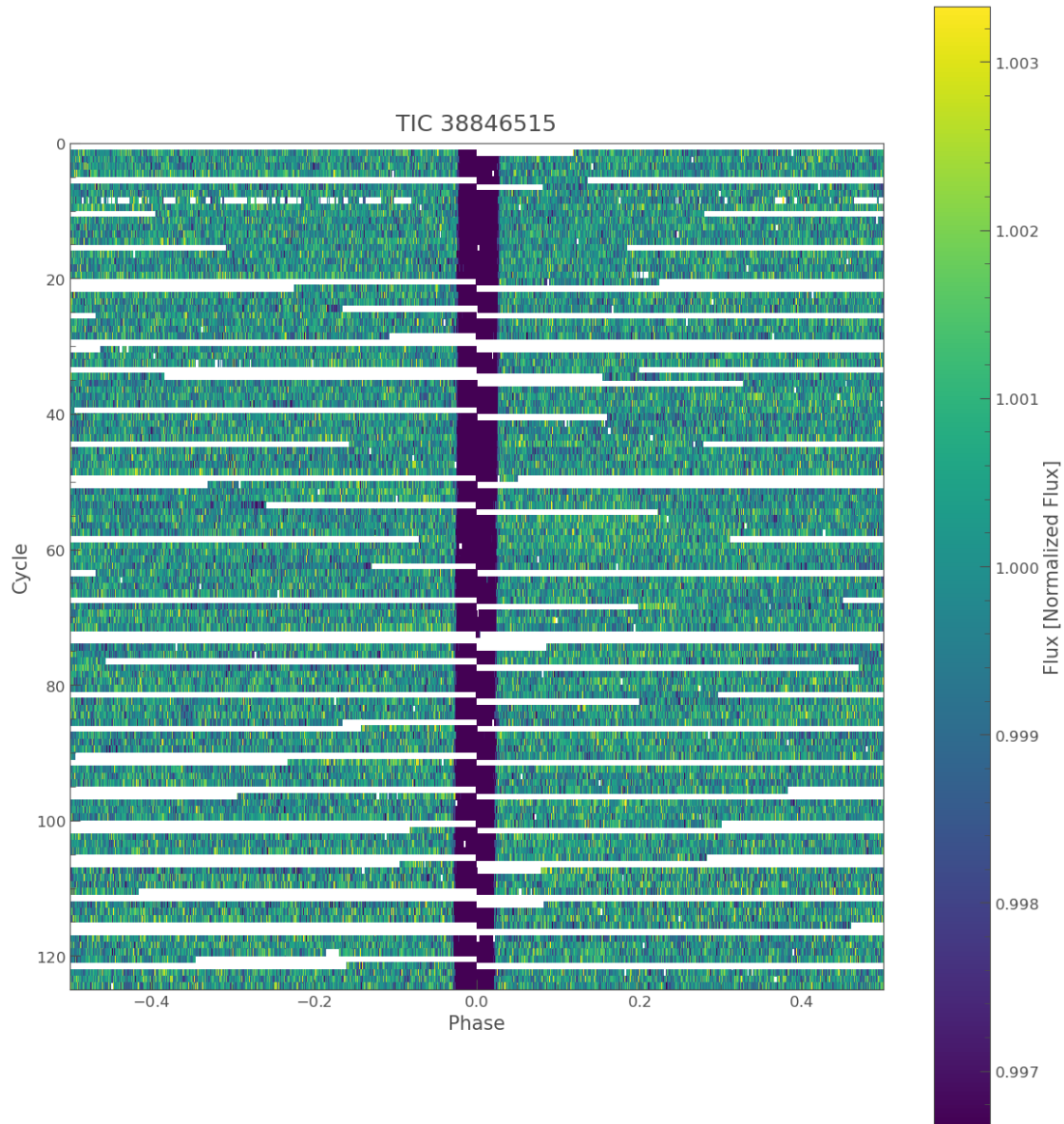
BLS periodogram











0.3 TIC 357911163

sectors 11 and 12 of year 1 eclipsing binary

```
[4]: autolcper.automator(ticid=357911163,save=True)
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LS Period : 1.1949091870810453 d

BLS Period : 4.7804072958059685 d

T0 : 1599.8251103378348

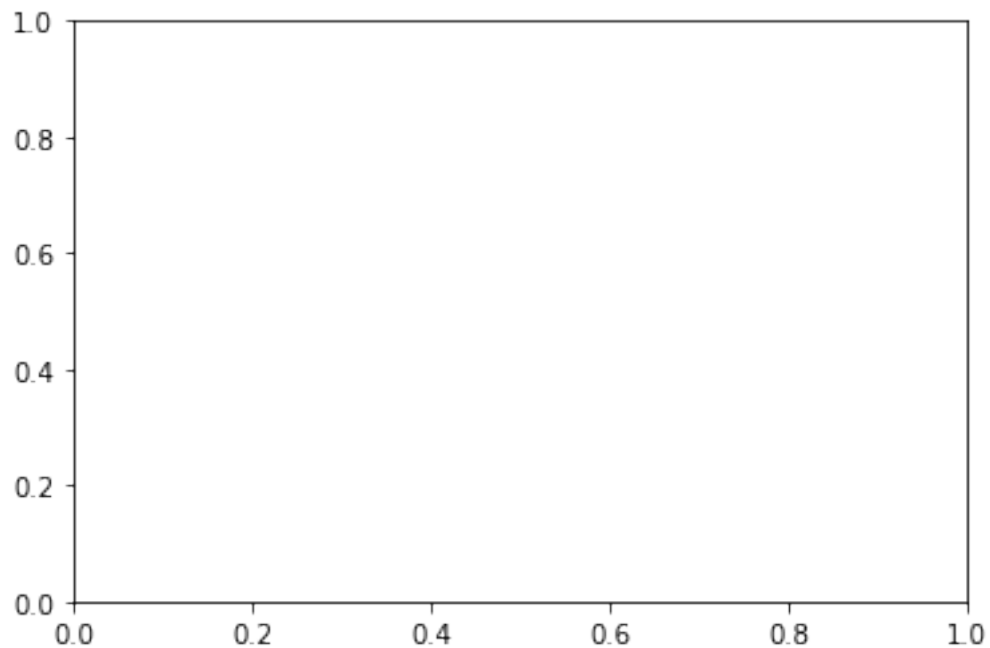
Transit duration : 0.1 d

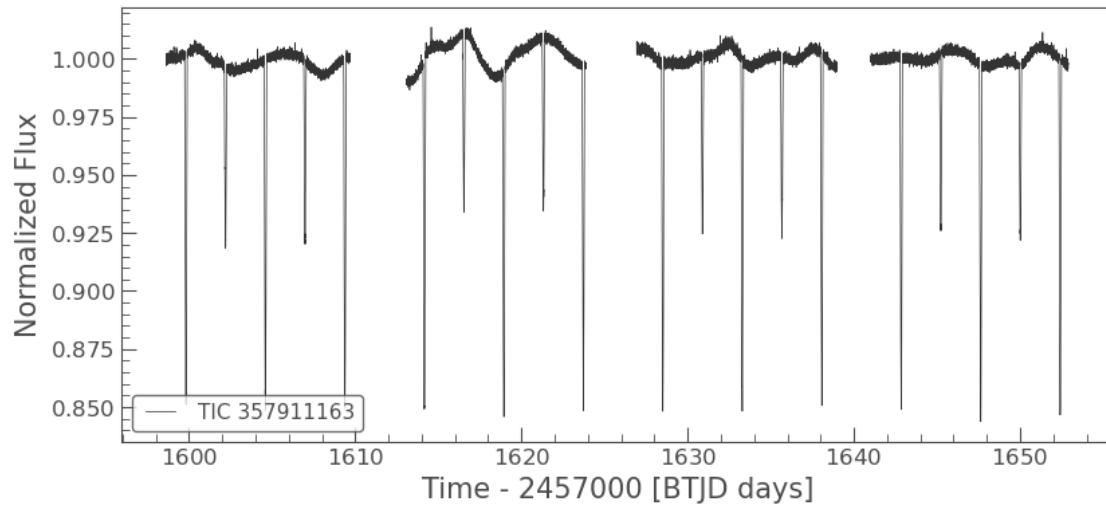
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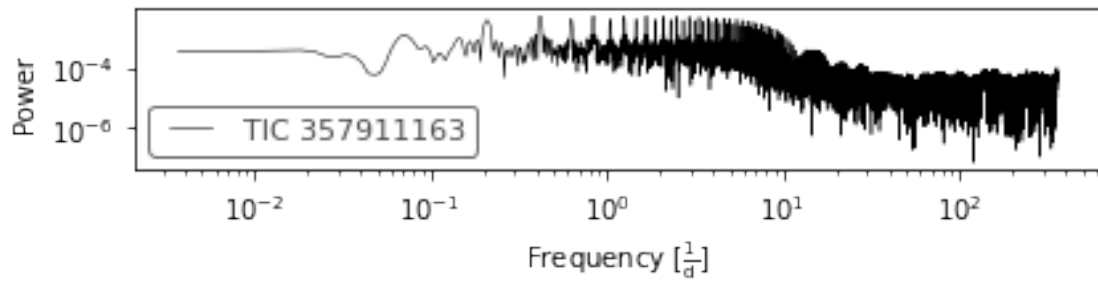
The PostScript backend does not support transparency; partially transparent artists will be rendered opaque.

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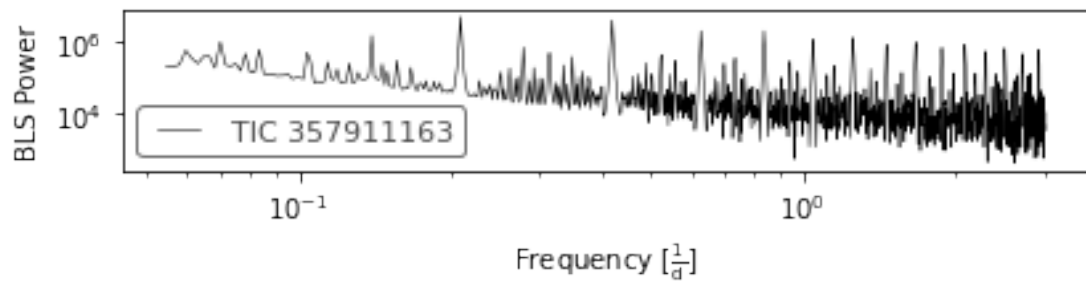


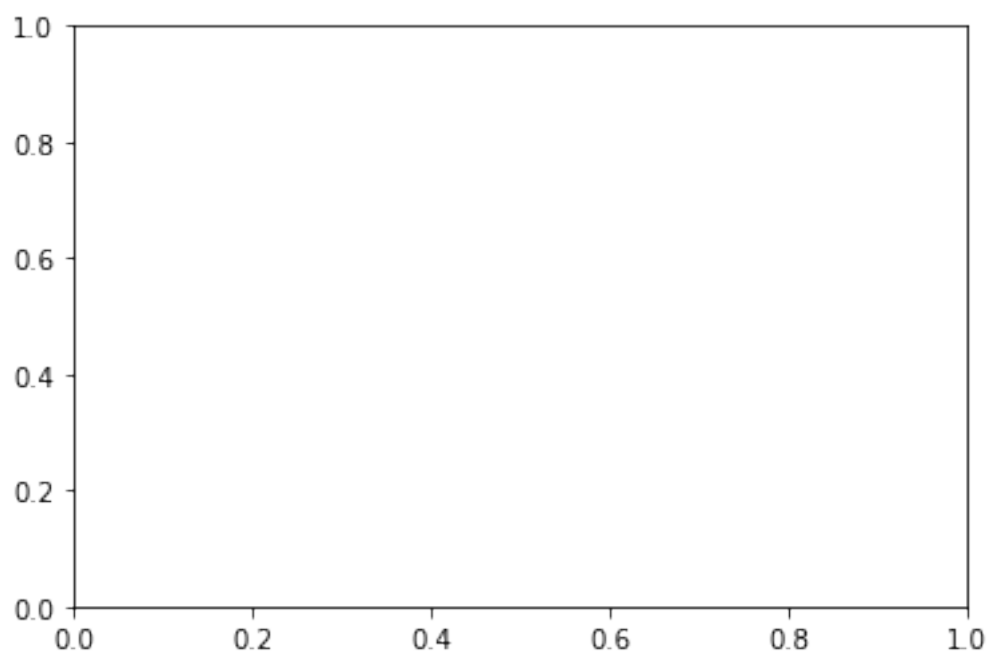
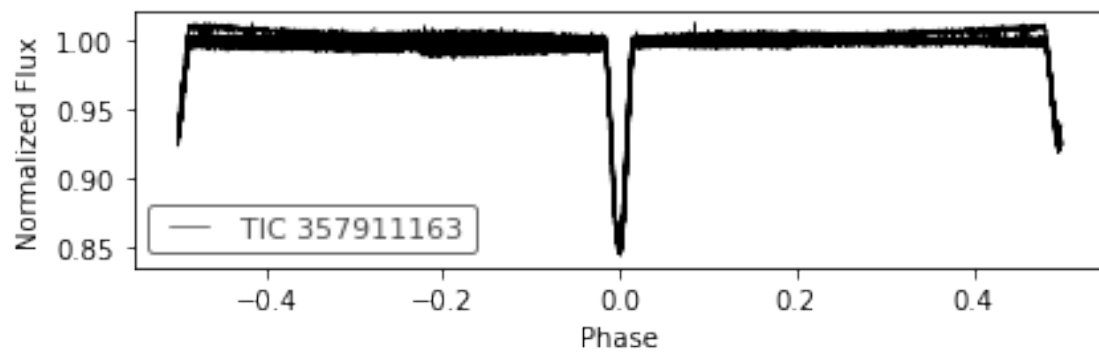
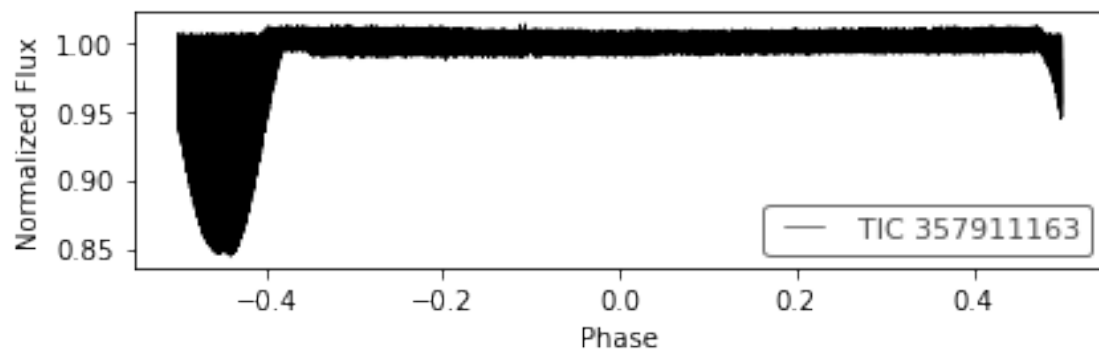


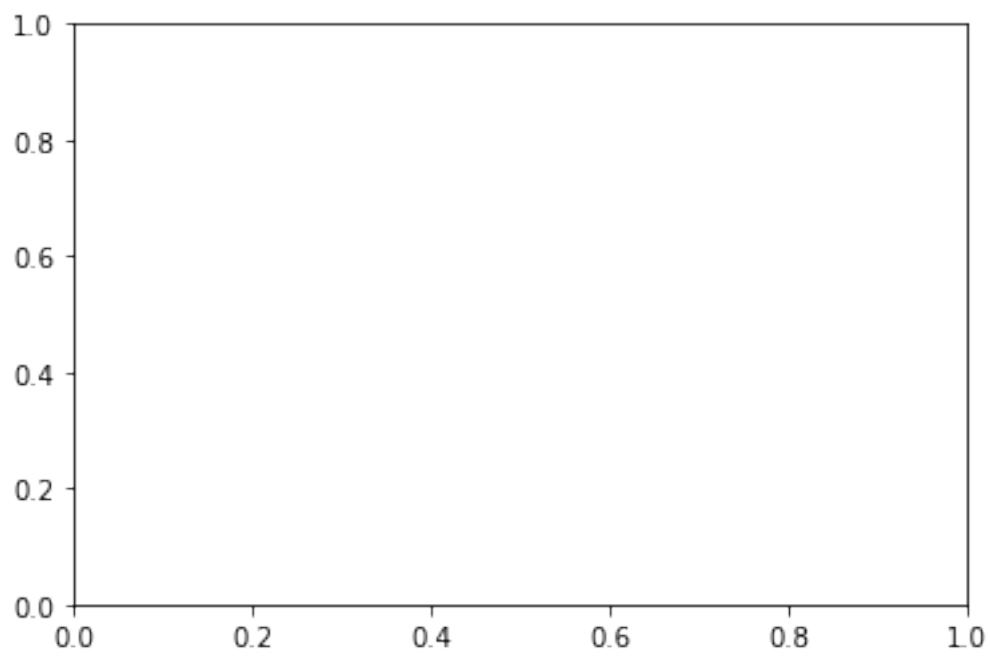
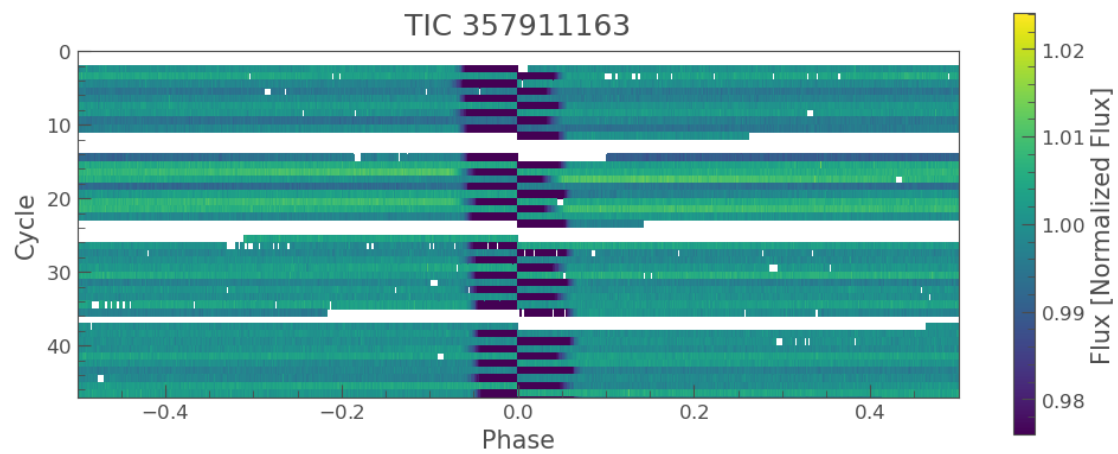
LS periodogram

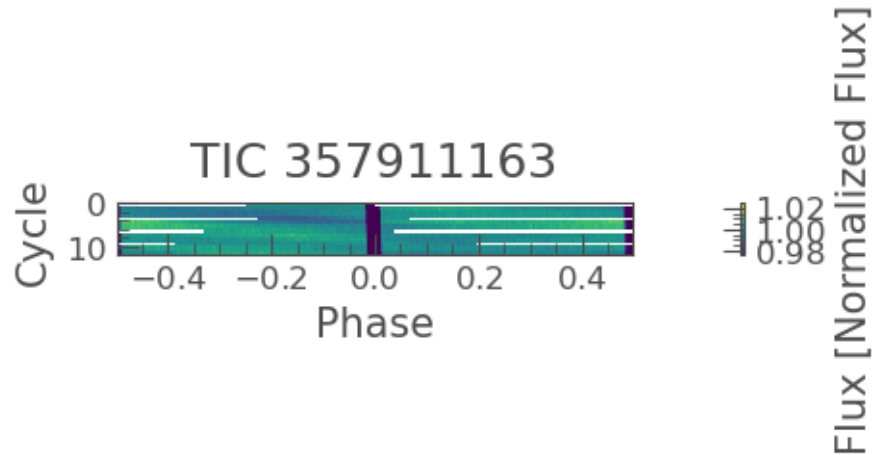


BLS periodogram









0.4 TIC 35516889

WASP-19 main sequence star of spectral type G planet with an orbital period of 0.78884 days sector 8 of year 1

```
[5]: autolcper.automator(ticid=35516889,save=True)
```

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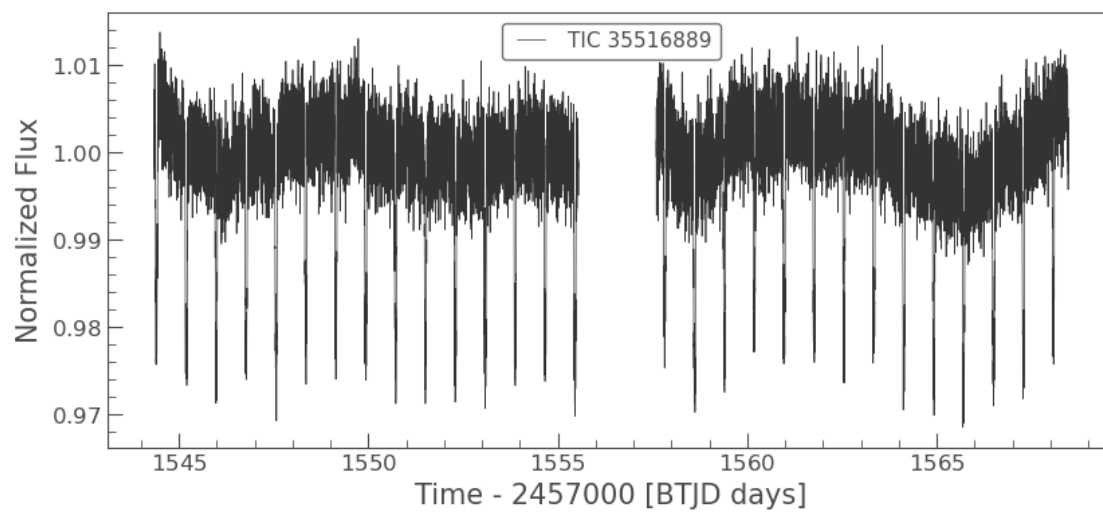
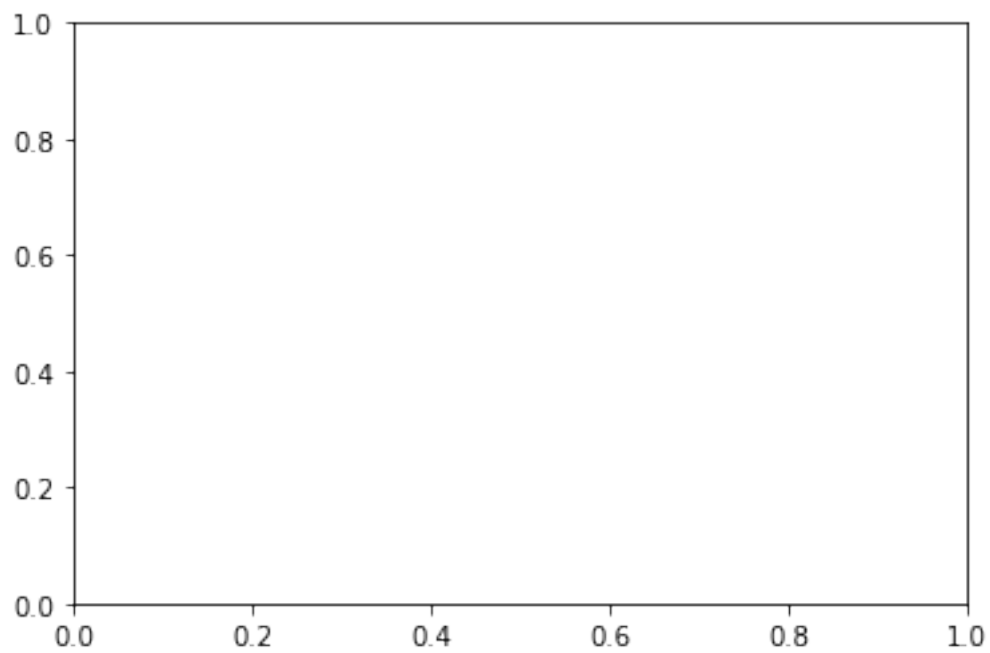
The PostScript backend does not support transparency; partially transparent artists will be rendered opaque.

LS Period : 0.11267413127212085 d

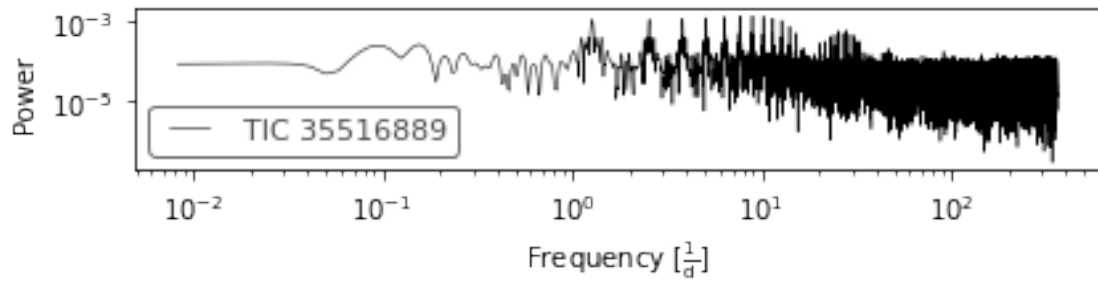
BLS Period : 0.7895805864054031 d

T0 : 1544.398406060177

Transit duration : 0.05 d



LS periodogram



BLS periodogram

