

# KIC 003854496

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003854496-01	OBS	6368.01	9.458704	136.824023	272.7	3.716	7.9	8.1	1.07	6247	1.97	187.20

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003854496-01	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

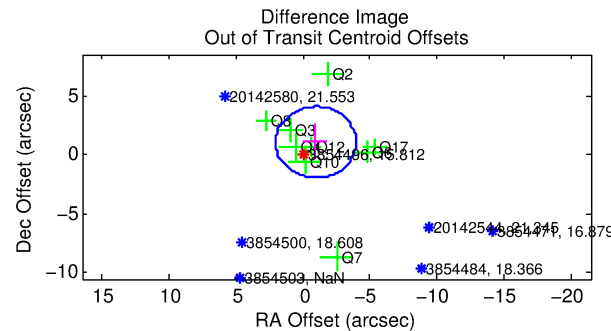
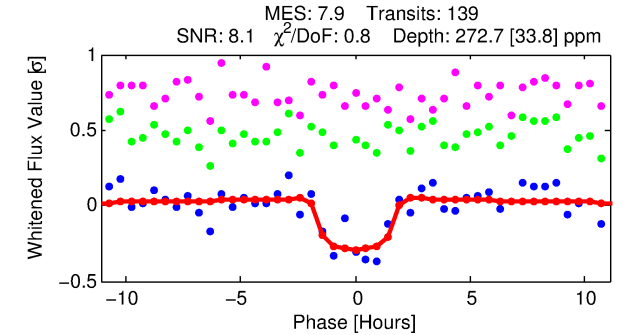
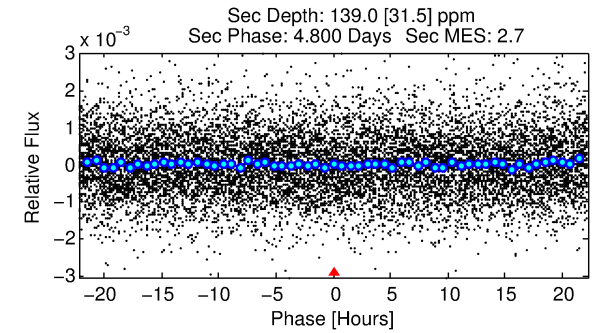
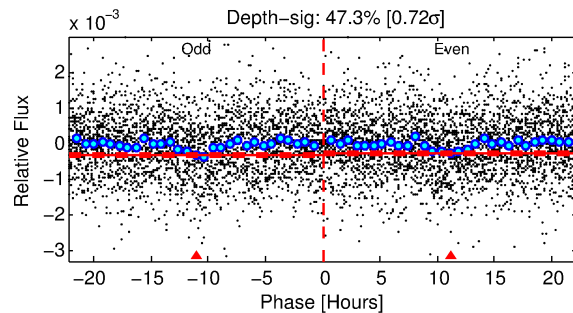
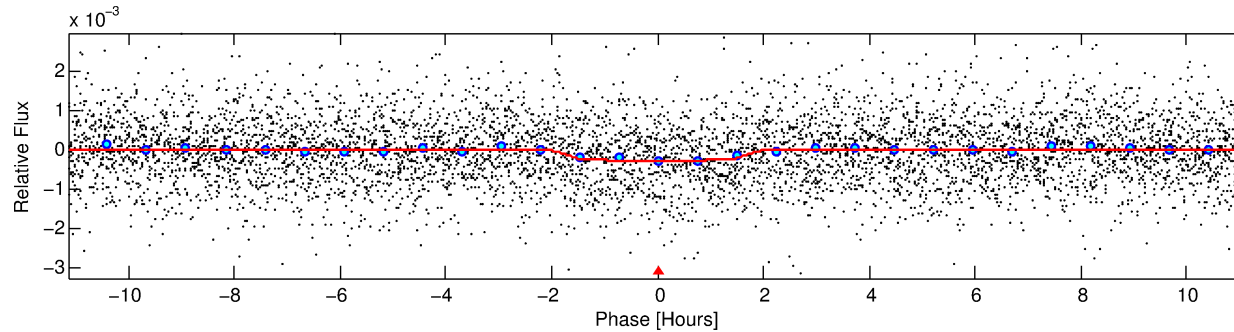
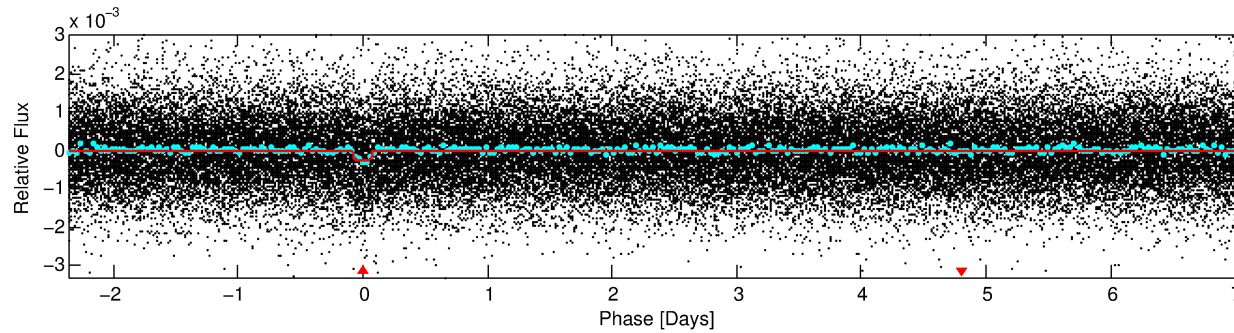
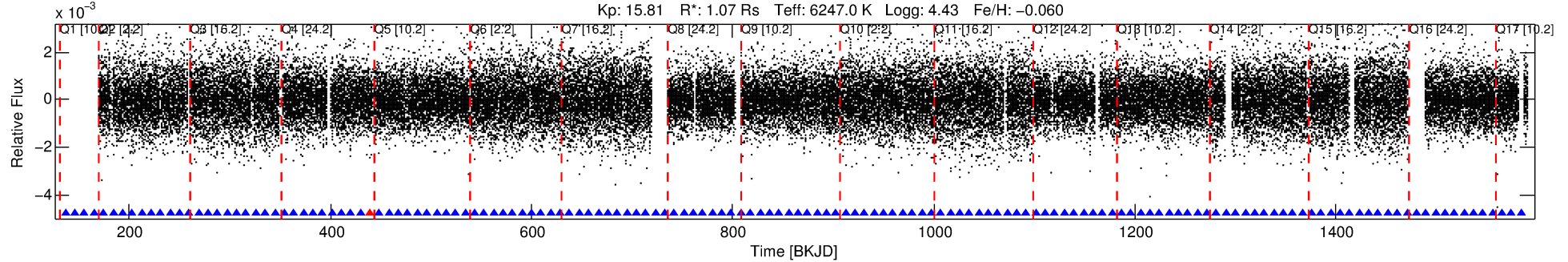
## Ephemeris Match Information For 003854496-01

No Significant Match Found

# DV One-Page Summary

KIC: 3854496 Candidate: 1 of 1 Period: 9.459 d  
KOI: K06368.01 Corr: 0.963

Kp: 15.81 R\*: 1.07 Rs Teff: 6247.0 K Logg: 4.43 Fe/H: -0.060



## DV Fit Results:

Period = 9.45870 [0.00010] d  
Epoch = 136.8240 [0.0089] BKJD  
Rp/R\* = 0.0169 [0.0139]  
a/R\* = 11.58 [49.09]  
b = 0.83 [1.67]  
Seff = 187.20 [68.54]  
Teq = 943 [86] K  
Rp = 1.97 [1.71] Re  
a = 0.0910 [0.0210] AU  
Ag = 163.15 [275.33] [0.59σ]  
Teffp = 5212 [2165] K [1.97σ]

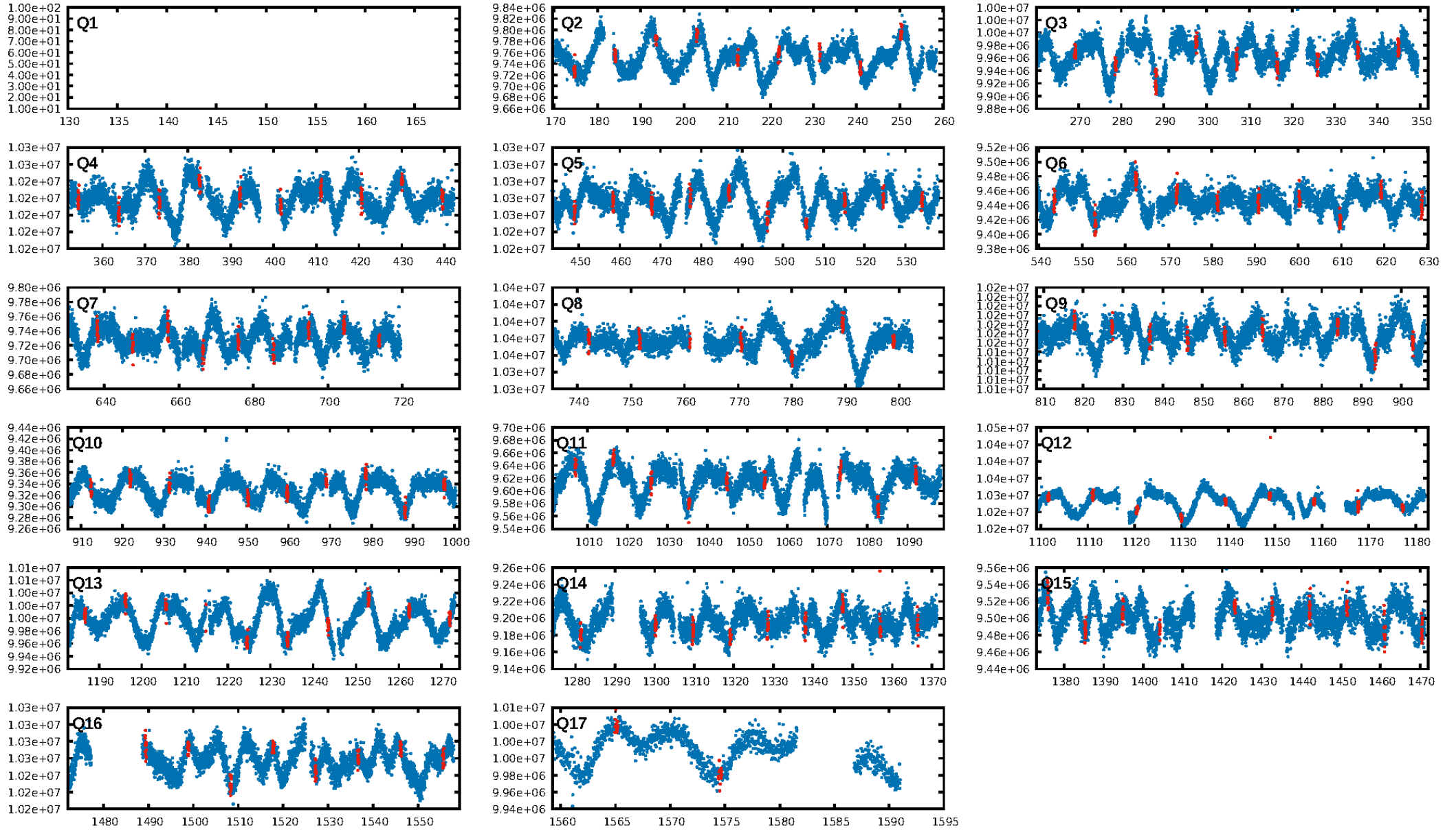
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.55e-15  
RollingBand-fgt: 0.99 [136/137]  
GhostDiagnostic-chr: 1.177  
Centroid-sig: 23.4%  
Centroid-so: 1.428 arcsec [0.93σ]  
OotOffset-rm: 1.434 arcsec [1.43σ]  
OotOffset-st: 3/2/3/1 [9]  
KicOffset-rm: 1.399 arcsec [1.07σ]  
KicOffset-st: 3/2/3/1 [9]  
DiffImageQuality-fgm: 0.00 [0/9]  
DiffImageOverlap-fno: 1.00 [16/16]

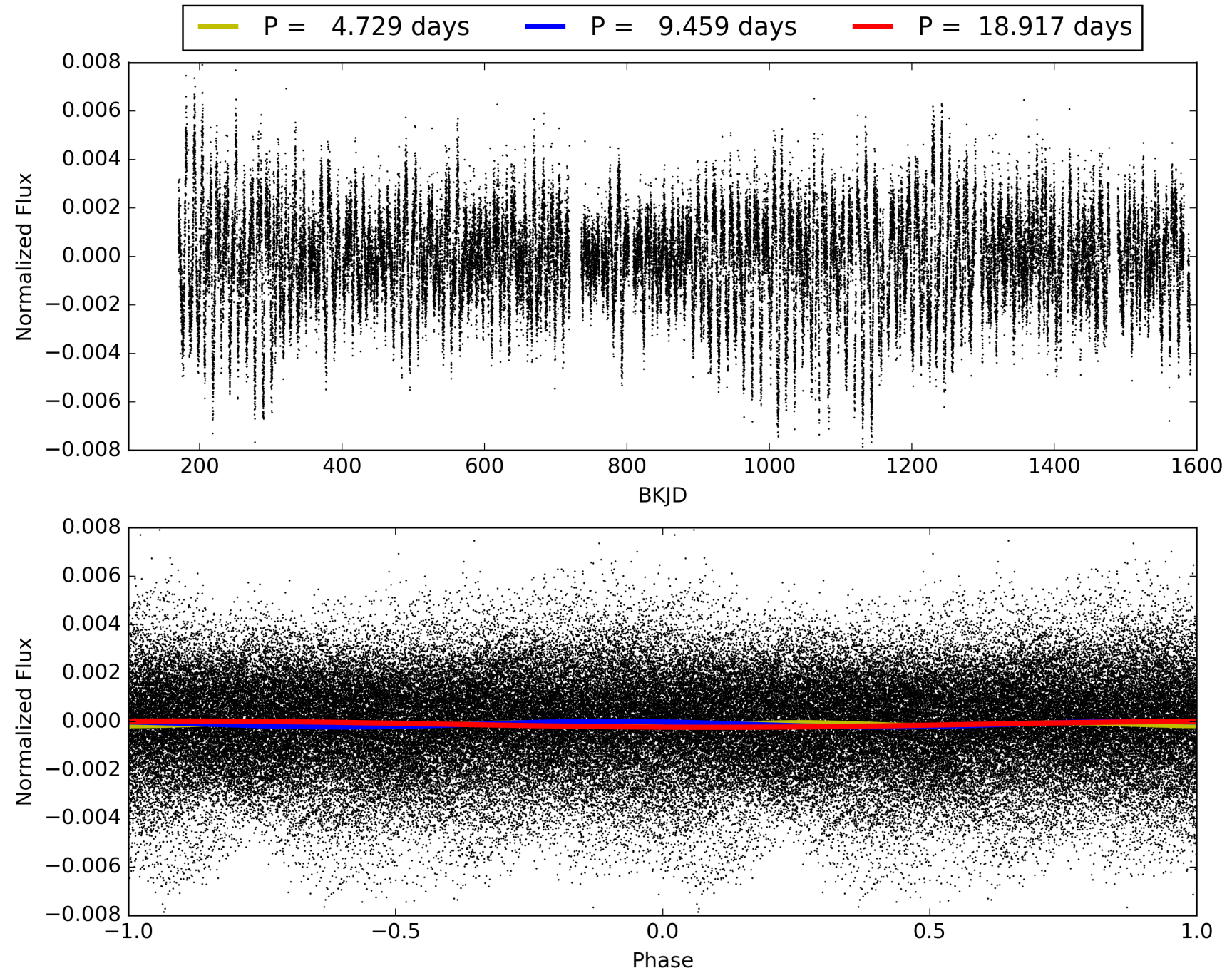
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 21:10:37 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003854496-01, PDC Light Curves

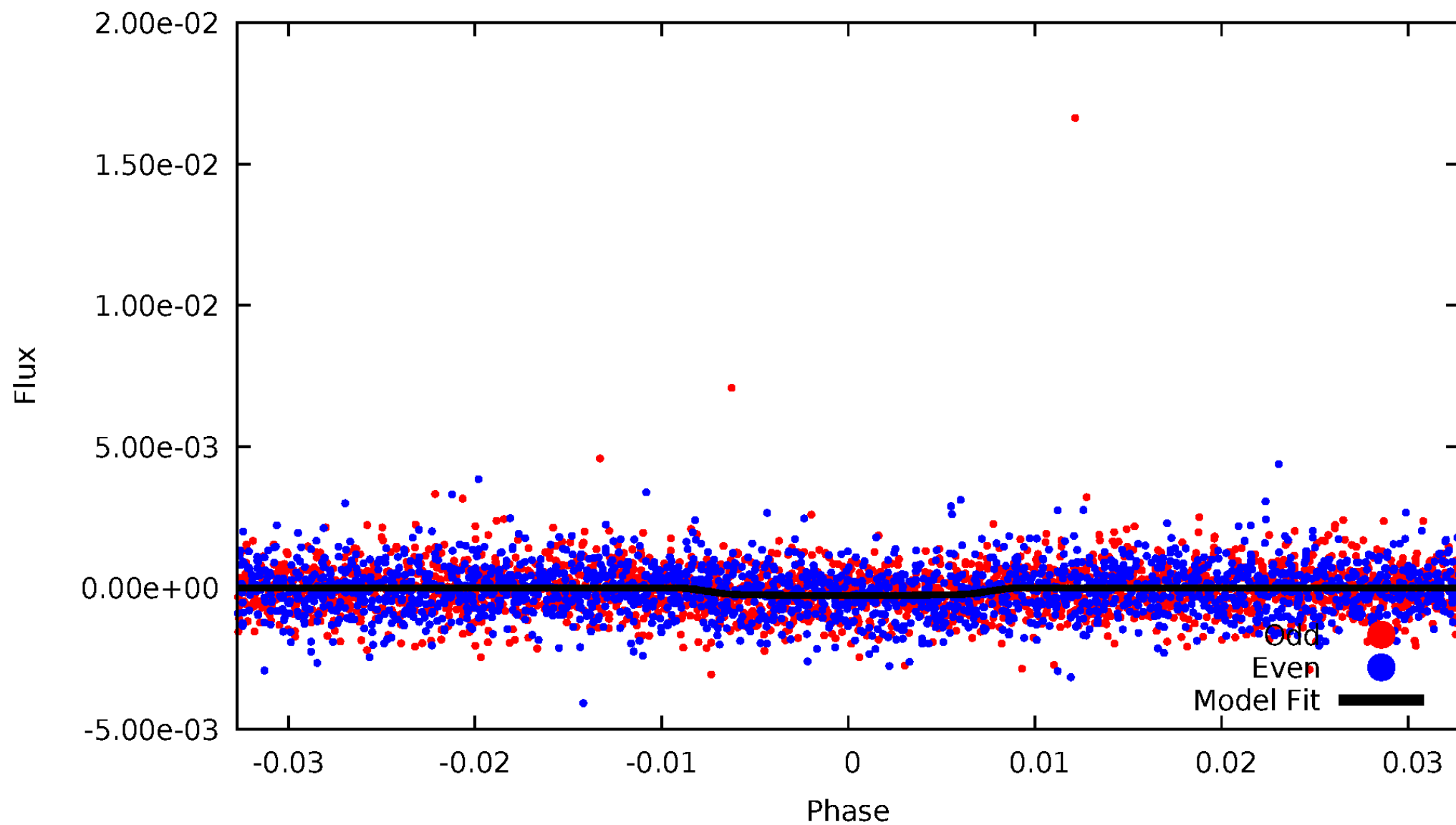


TCE 003854496-01



# DV Odd/Even

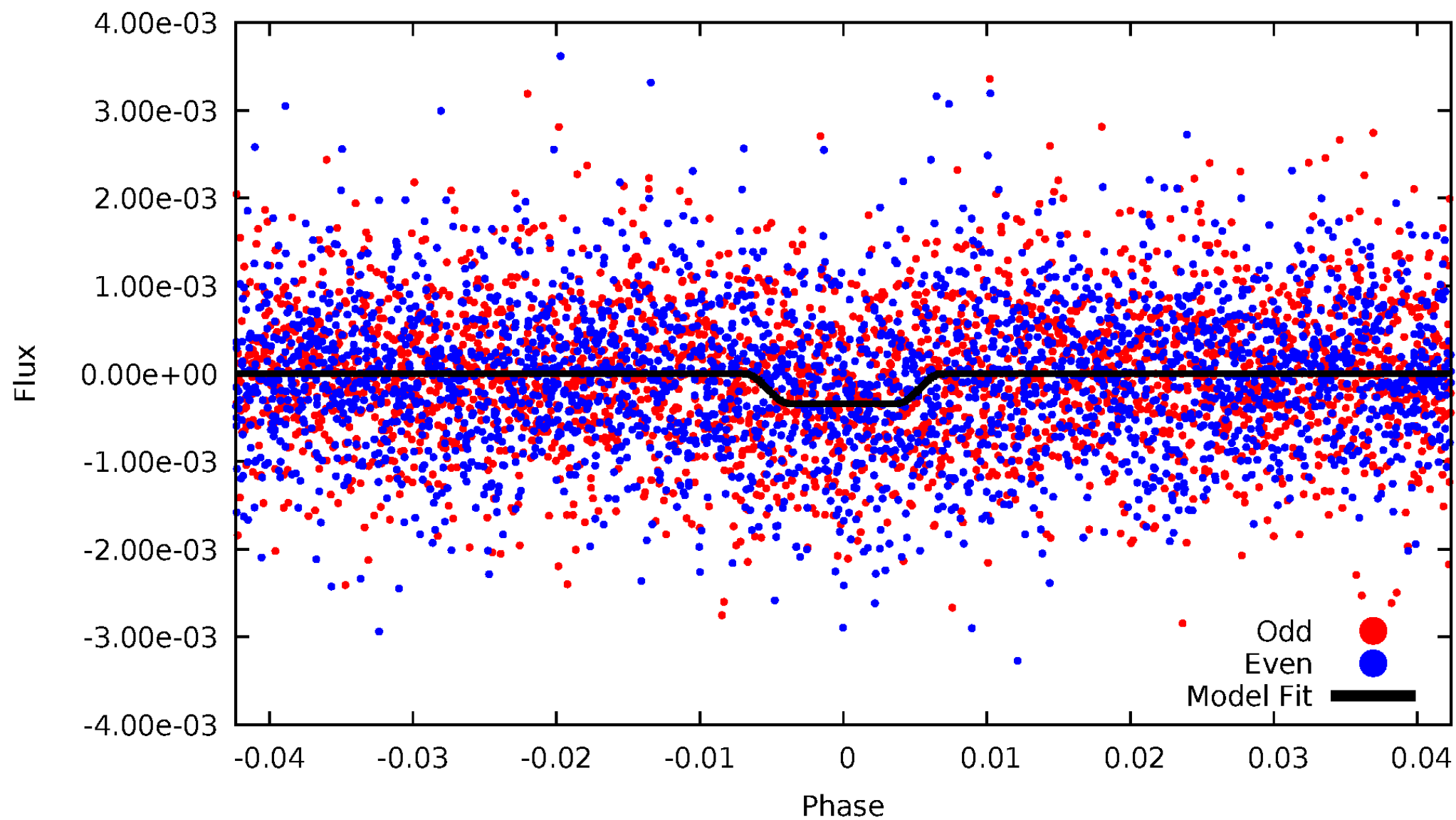
TCE 003854496-01





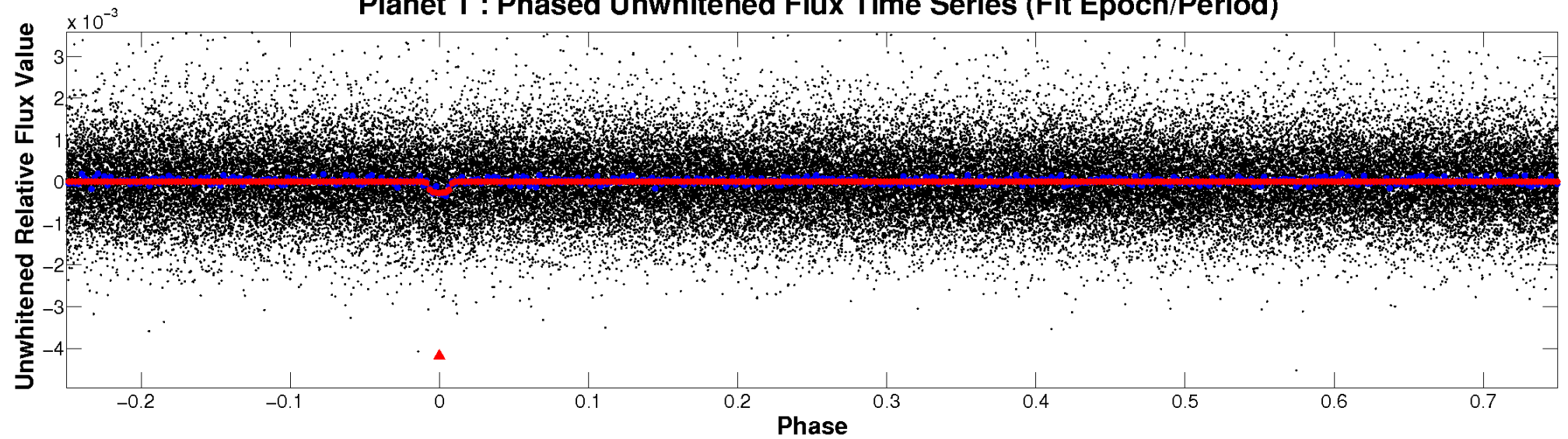
# ALT Odd/Even

TCE 003854496-01

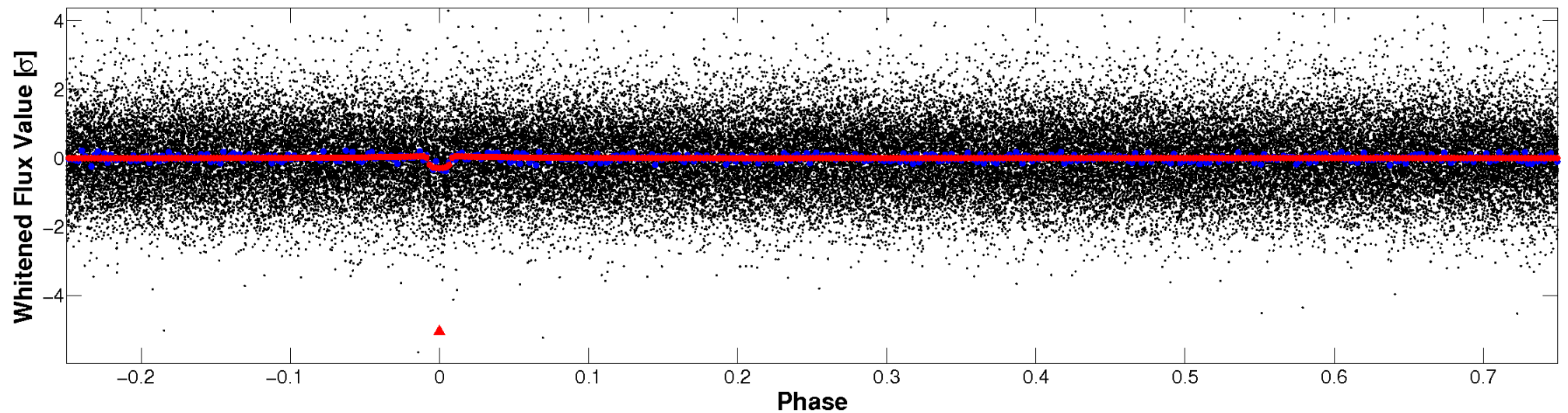


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

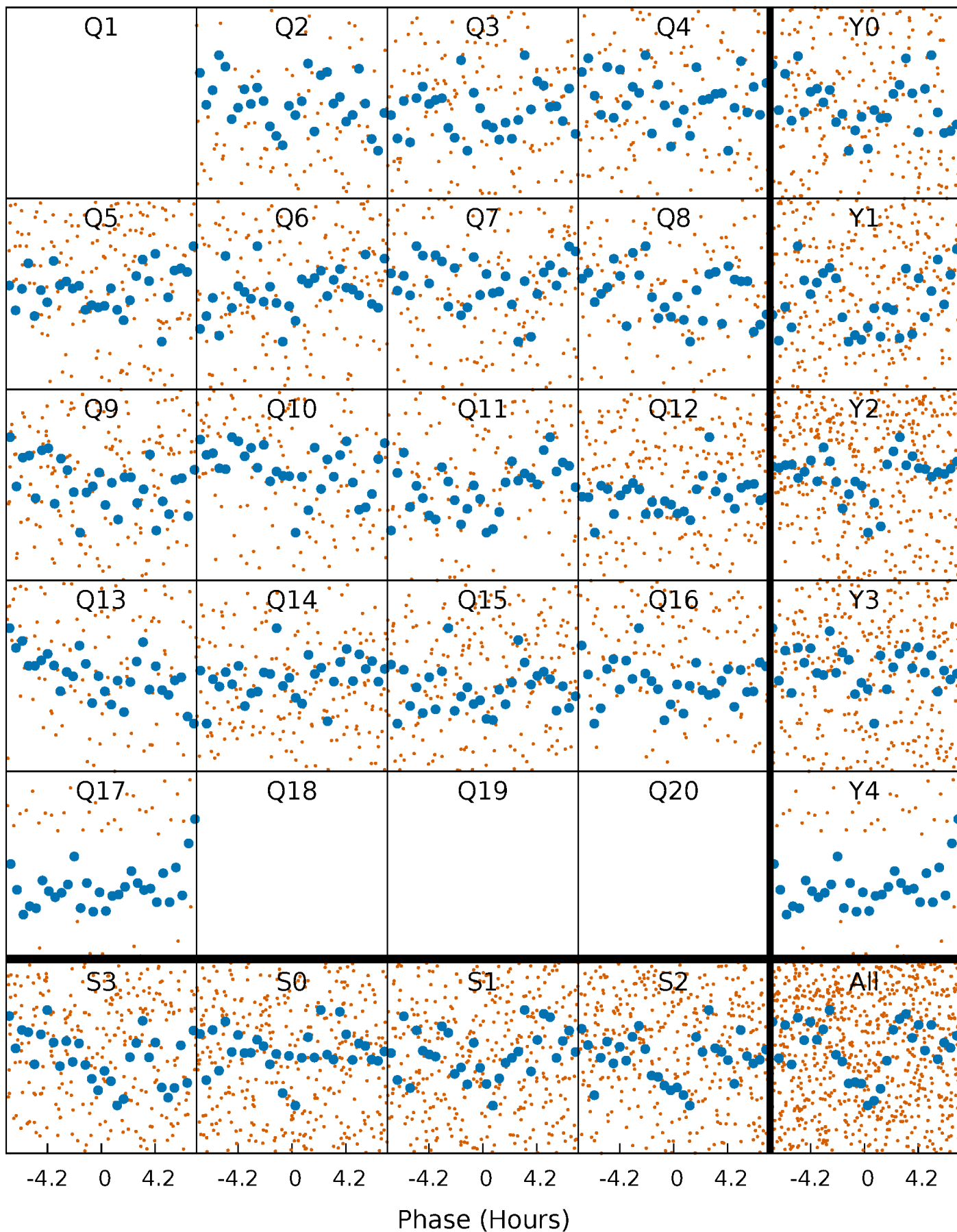


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

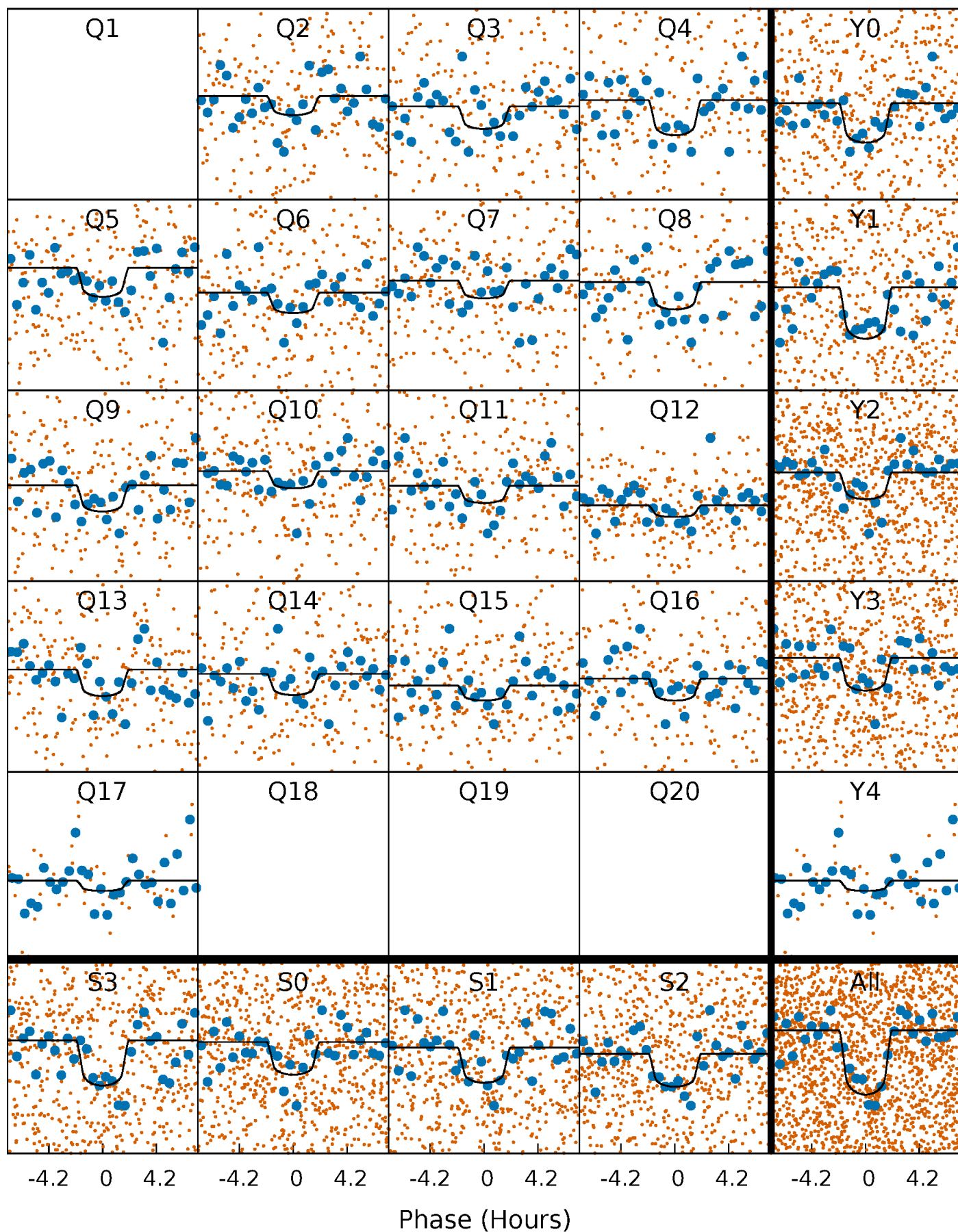
TCE 003854496-01 P= 9.458704 Days  $T_0=136.824023$  (BKJD)





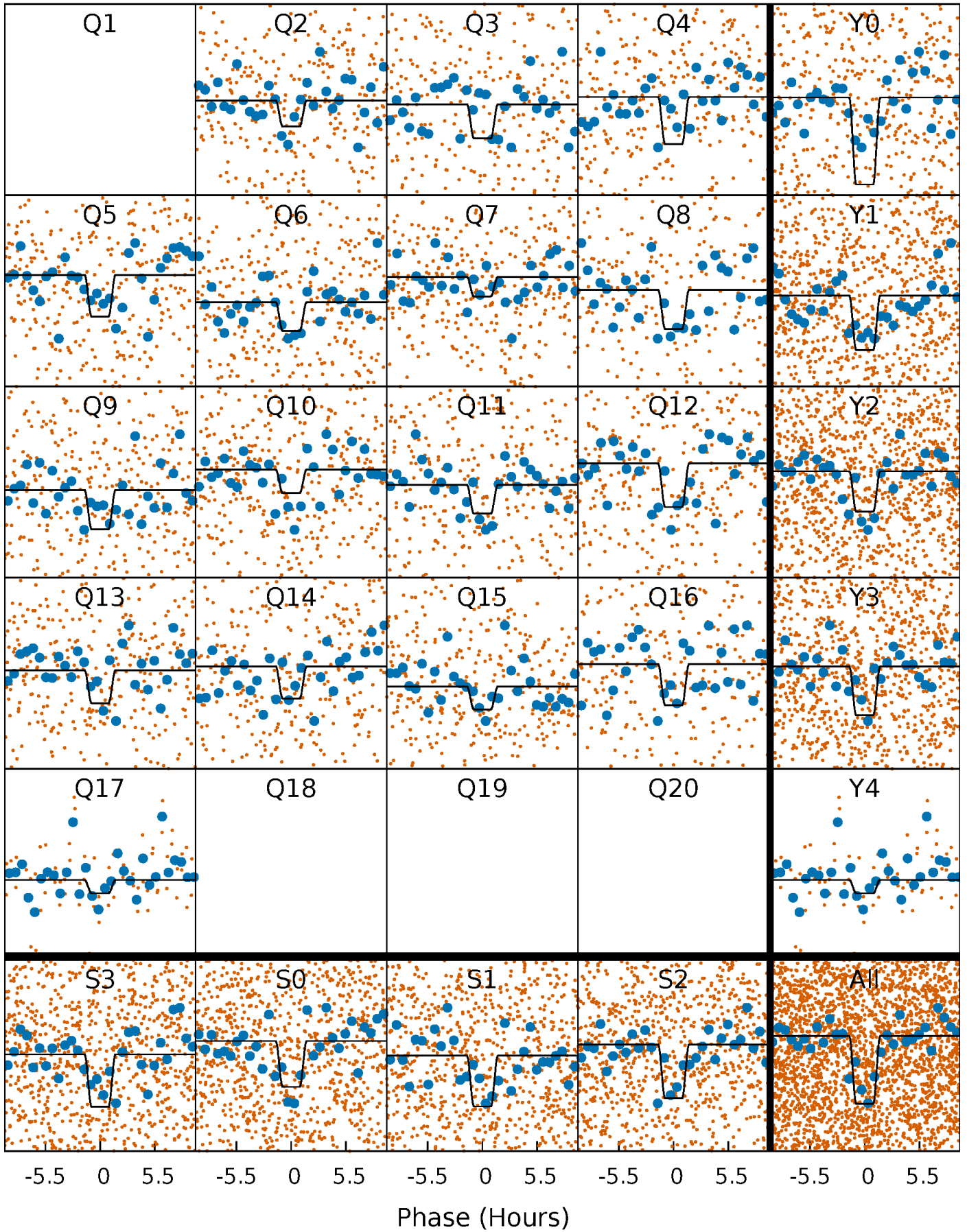
# DV Quarter-Phased Transit Curves

TCE 003854496-01 P= 9.458704 Days  $T_0=136.824023$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

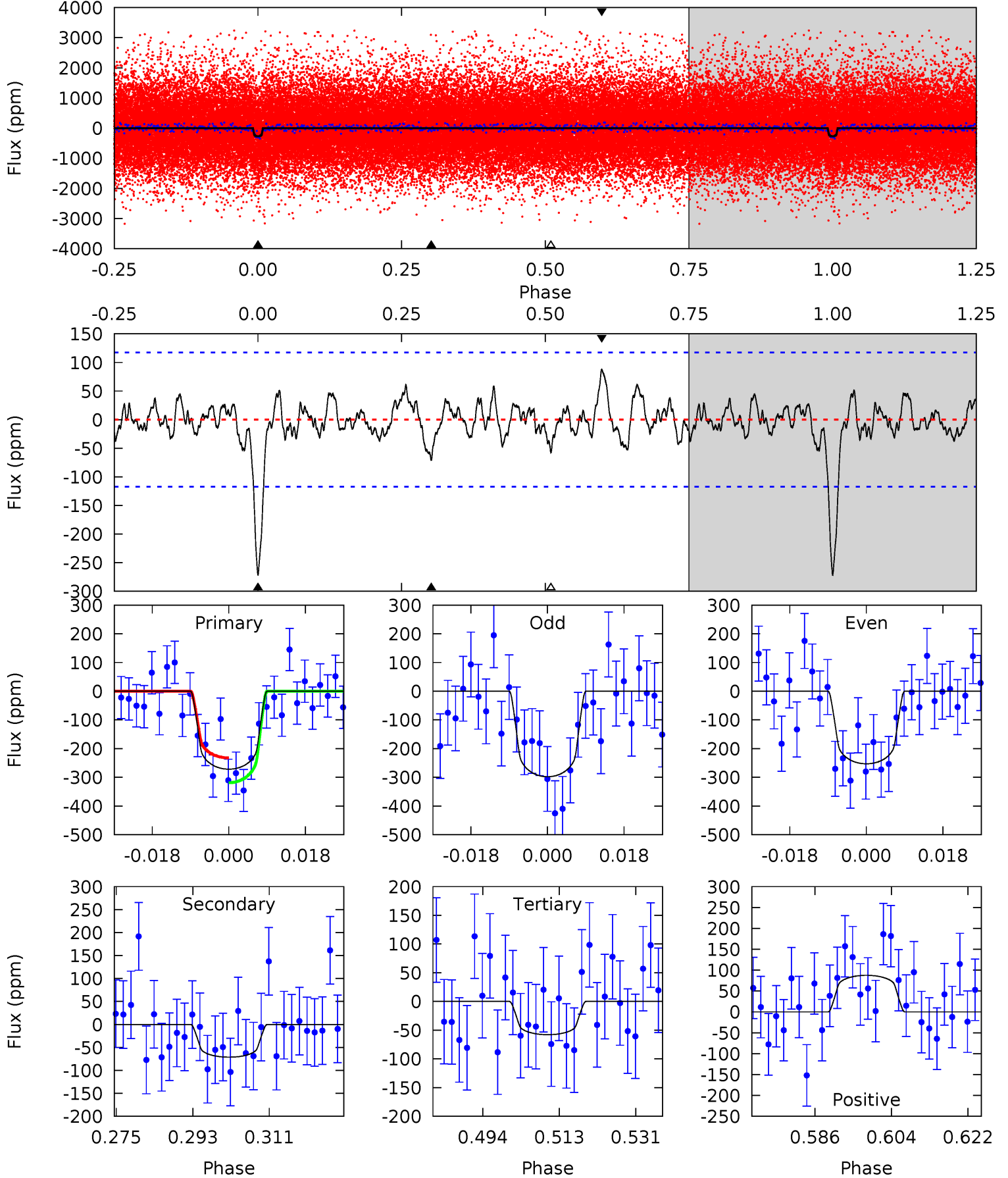
TCE 003854496-01 P= 9.459015 Days  $T_0=136.805173$  (BKJD)



# DV Model-Shift Uniqueness Test

003854496-01, P = 9.458704 Days, E = 136.824023 Days

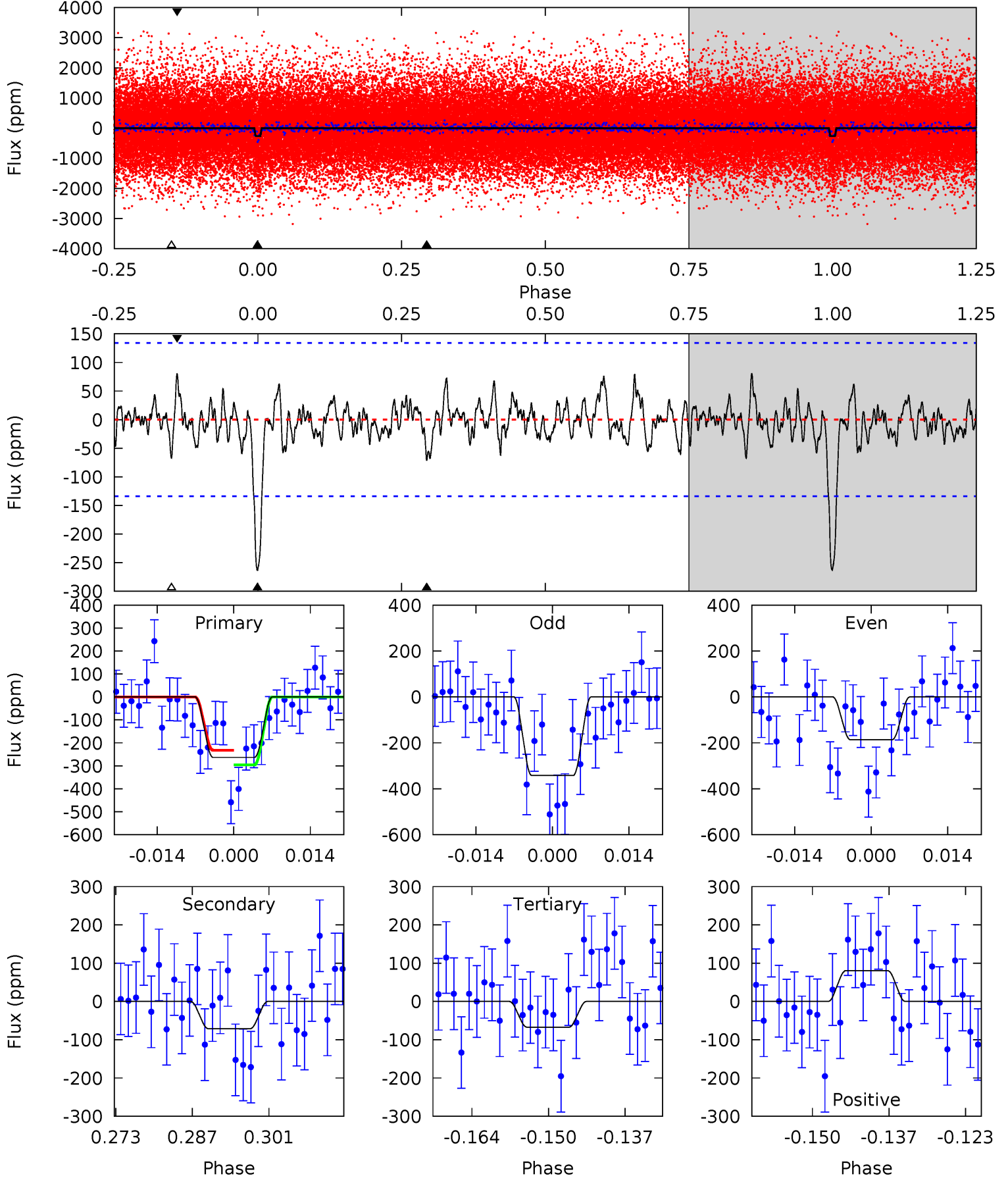
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	2.98	2.42	3.66	4.91	2.36	1.03	8.95	7.71	0.56	-0.68	0.95	0.97	0.24	1.81



# Alt Model-Shift Uniqueness Test

003854496-01, P = 9.459015 Days, E = 136.805173 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.77	2.64	2.50	2.99	4.97	2.47	0.95	7.27	6.78	0.14	-0.34	2.88	1.16	0.23	1.18



### Stellar Parameters For KIC 003854496

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6247^{+174}_{-239}$	$4.433^{+0.060}_{-0.180}$	$-0.060^{+0.250}_{-0.300}$	$1.066^{+0.296}_{-0.127}$	$1.122^{+0.145}_{-0.145}$	$1.304^{+0.408}_{-0.647}$
	+3%/-4%	+1%/-4%	+417%/-500%	+28%/-12%	+13%/-13%	+31%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 003854496-01 / KOI 6368.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-71 \pm 24$	$2.33^{+1.66}_{-1.31}$	$1339^{+93}_{-64}$	$4315^{+1792}_{-799}$	$59^{+229}_{-41}$
Alt.	$-71 \pm 27$	$2.36^{+1.64}_{-1.32}$	$1337^{+83}_{-66}$	$4226^{+1866}_{-733}$	$51^{+235}_{-34}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming A=0.3)

$A_{\text{obs}}$  = Observed Albedo (Assuming T=0)

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$



## DV Centroid Data

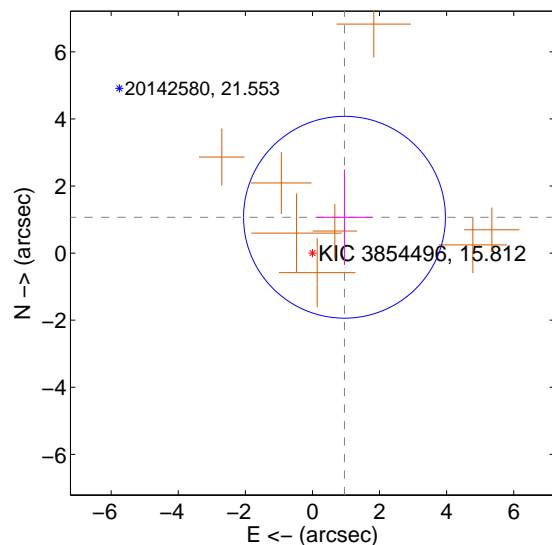
Supplemental centroid analysis for 003854496-01. Kepler magnitude: 15.81. Transit SNR 8.06

There are 0 quarters with good PRF difference image offsets

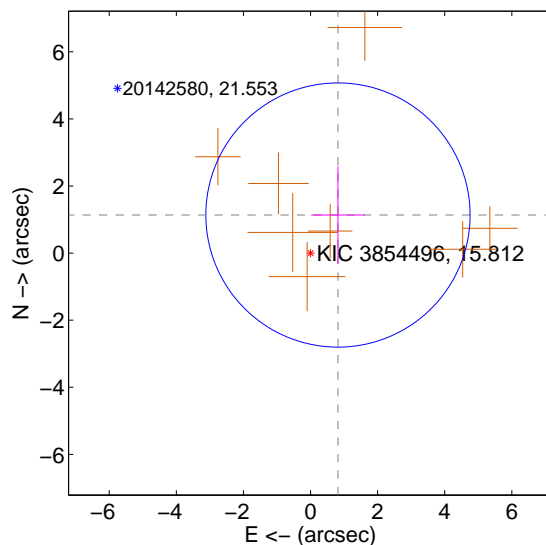
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.434 \pm 1.003$	1.43	$-0.956 \pm 0.833$	$1.069 \pm 1.424$
PRF-fit source offset from KIC position	$1.399 \pm 1.313$	1.07	$-0.818 \pm 0.798$	$1.135 \pm 1.450$
photometric centroid source offset	$1.43 \pm 1.53$	0.93	$0.34 \pm 1.70$	$-1.39 \pm 1.52$

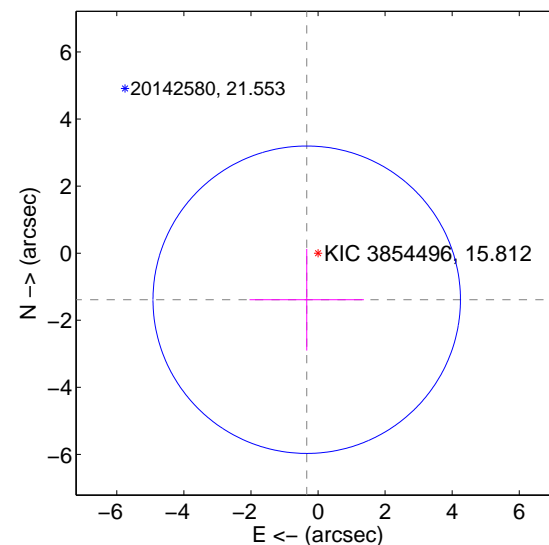
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

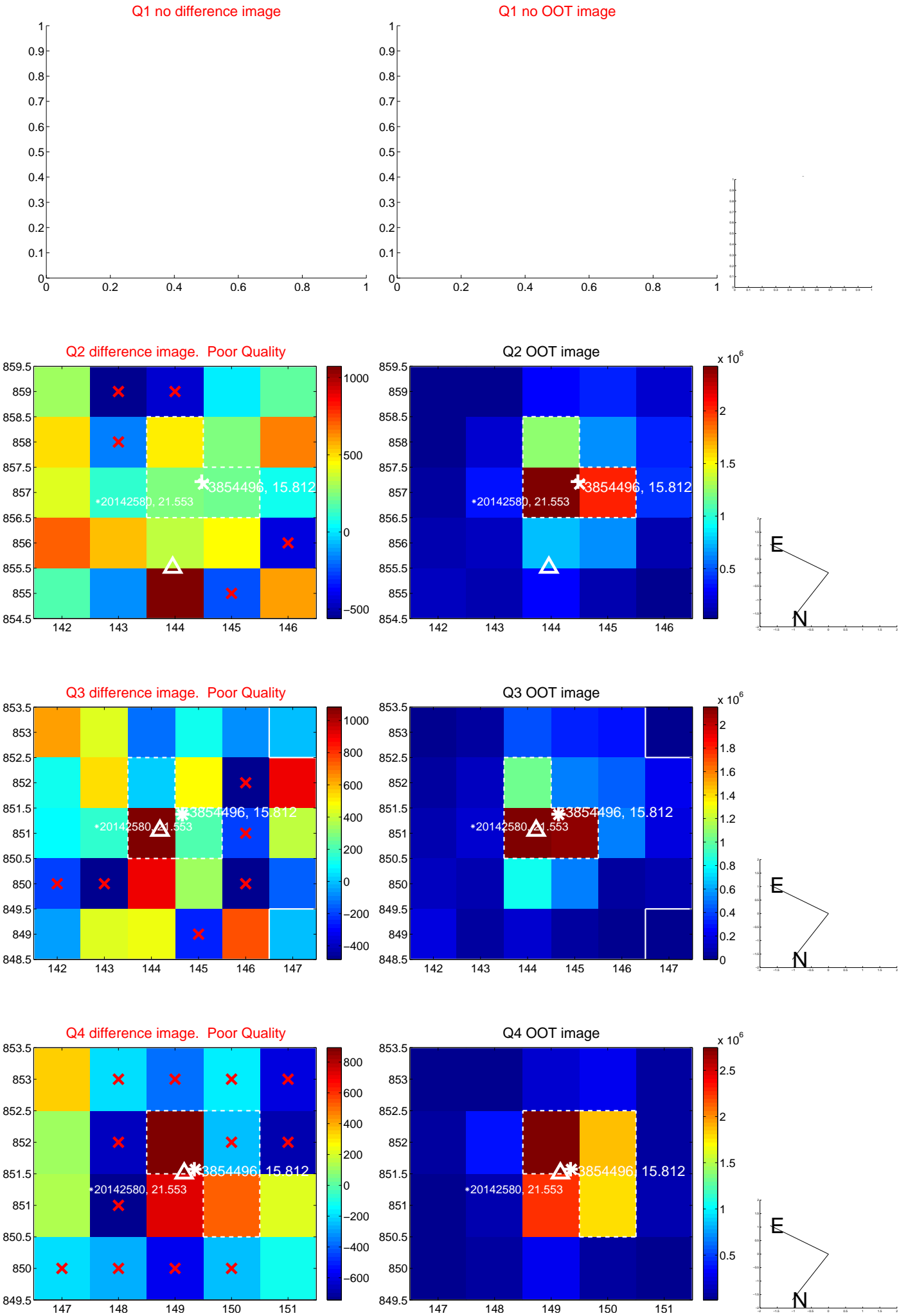


offset from photometric centroids

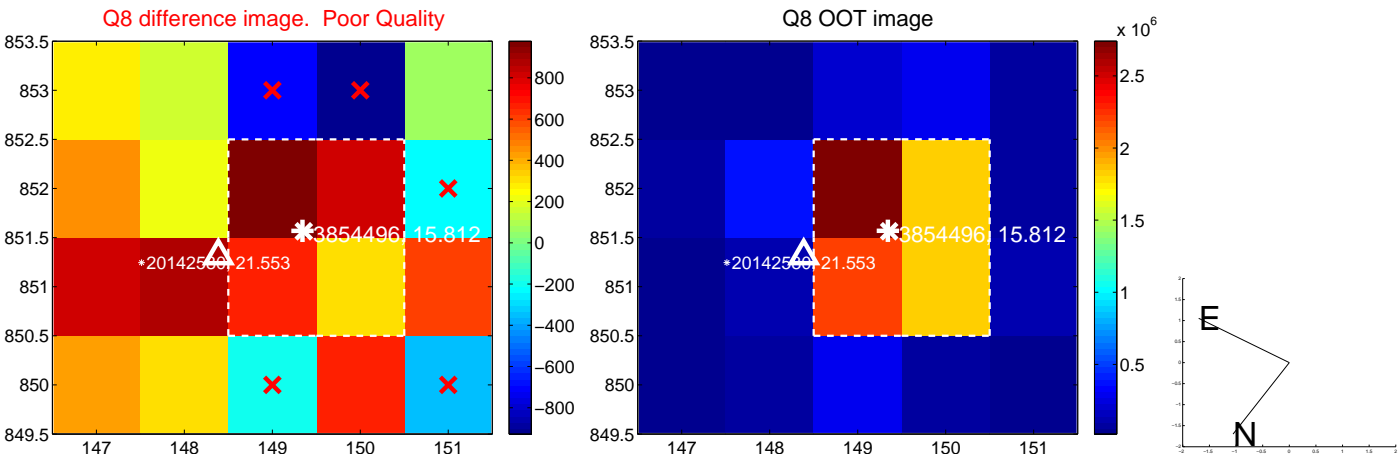
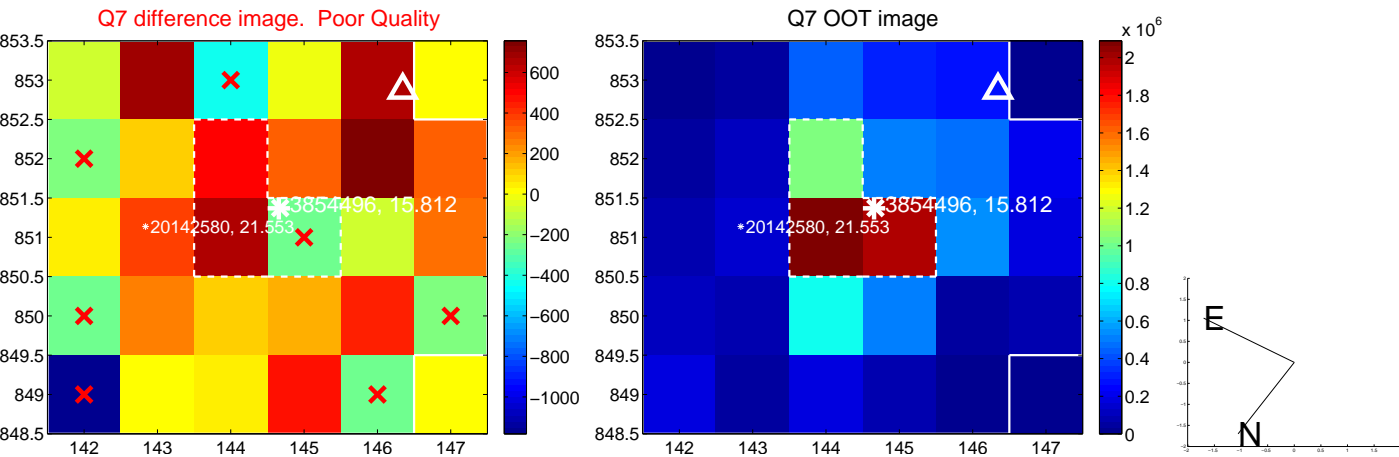
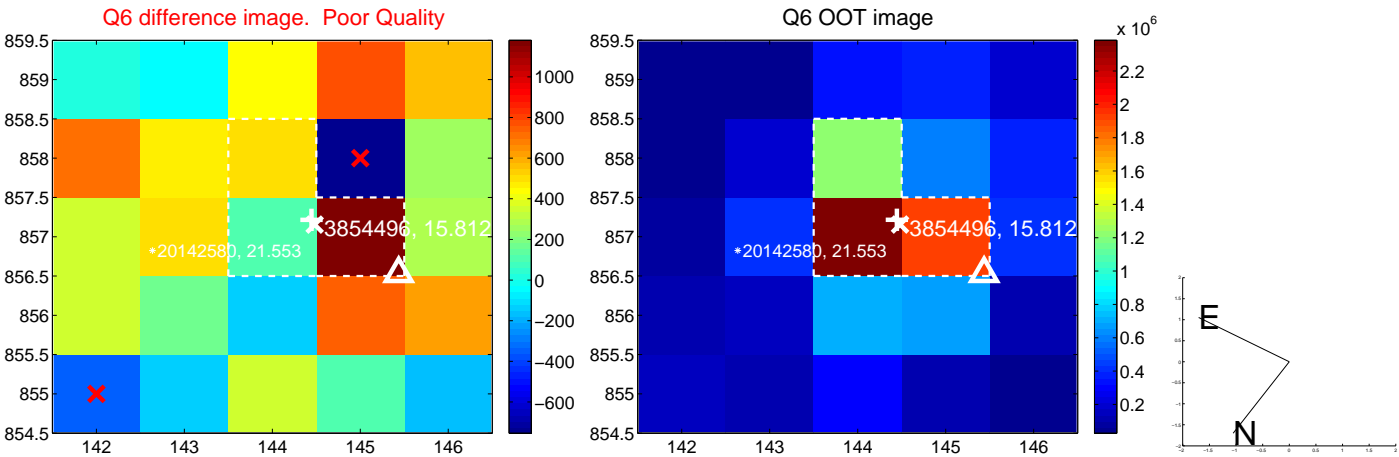
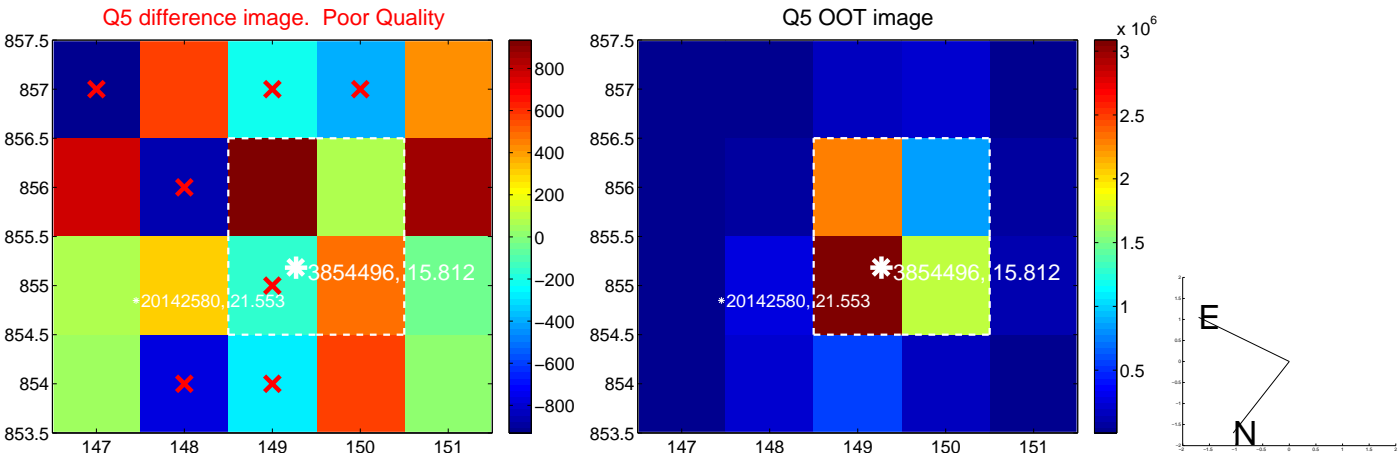


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

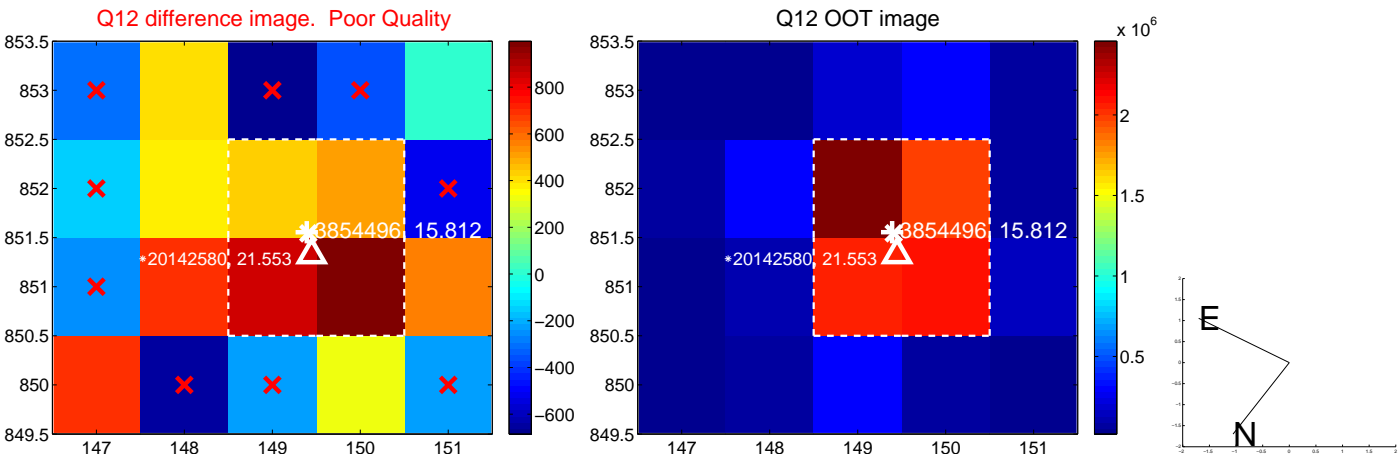
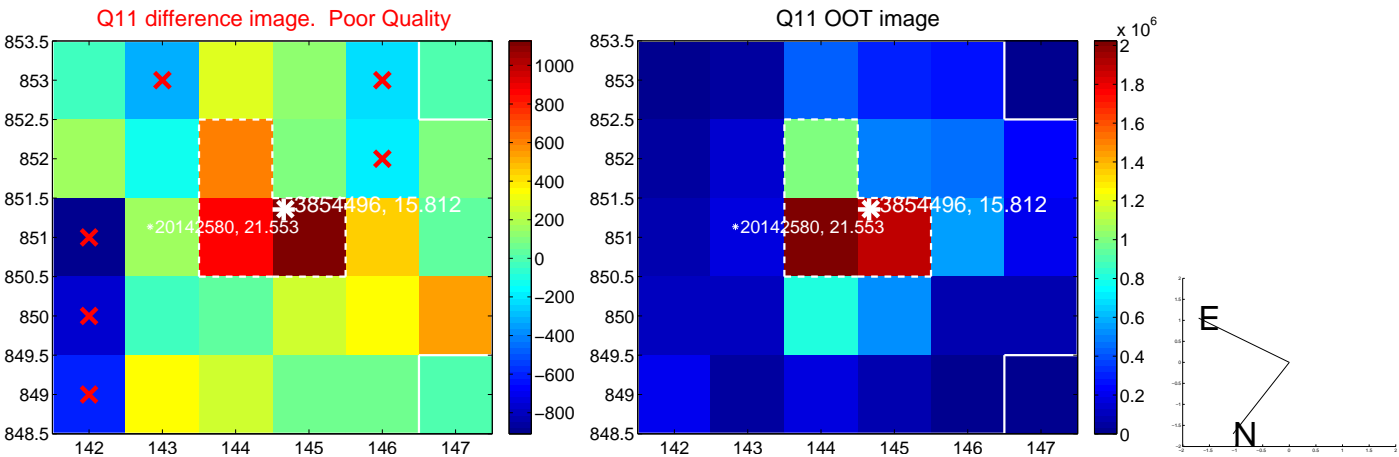
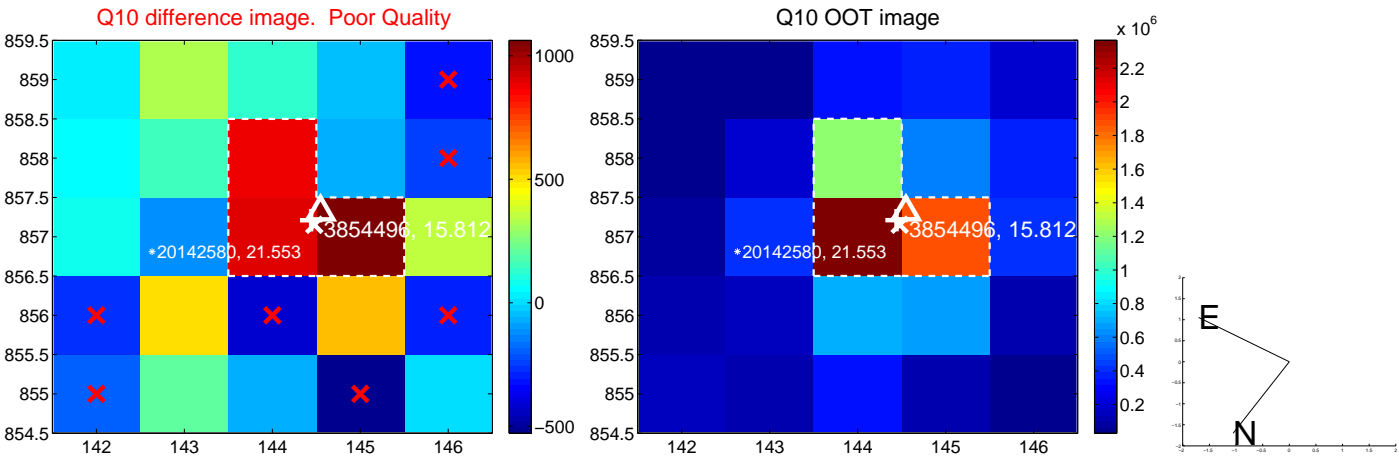
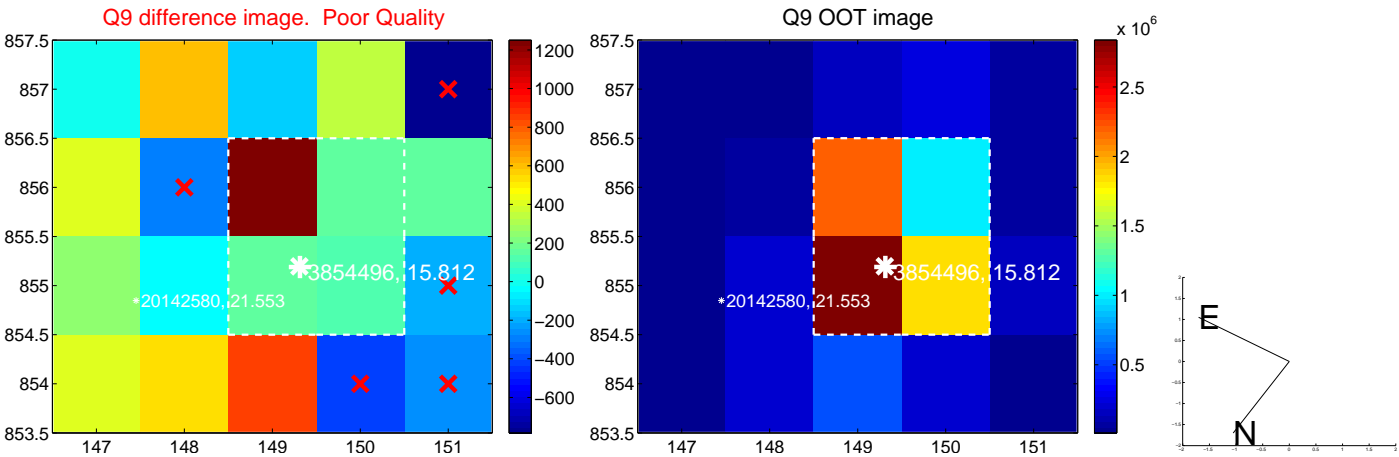
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



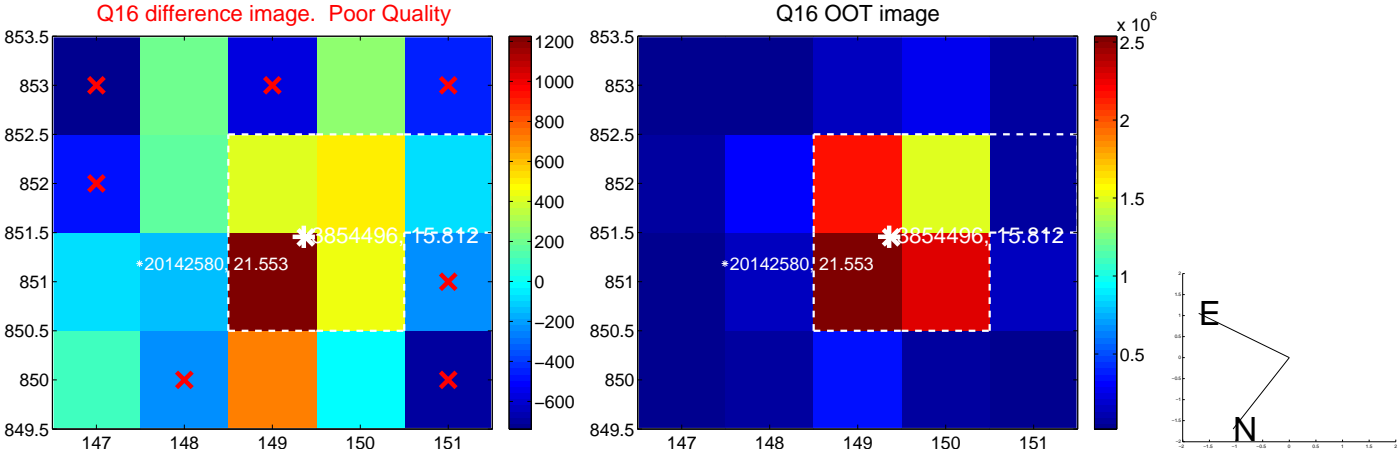
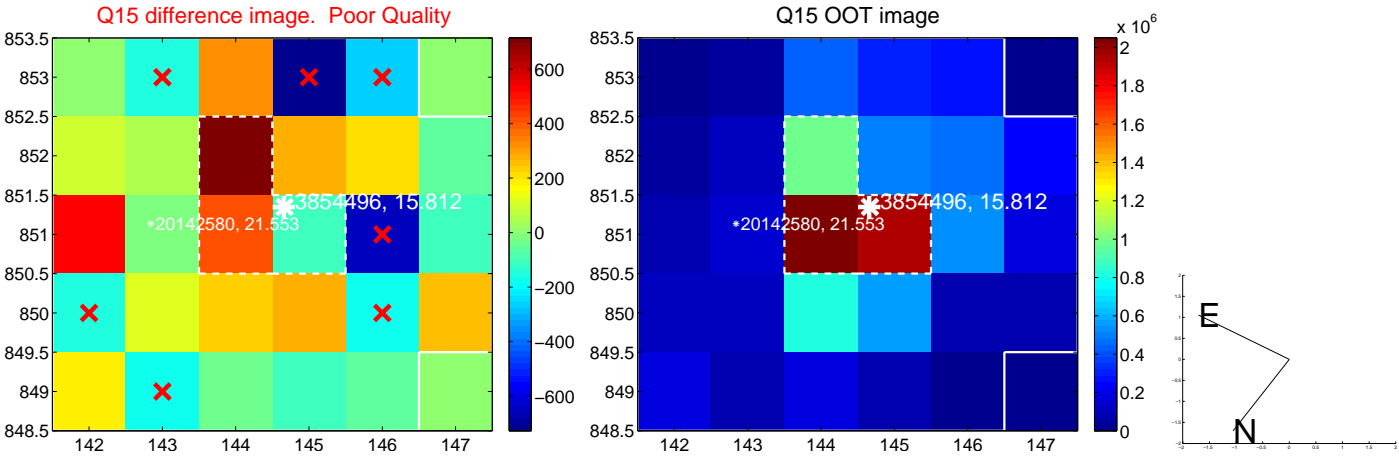
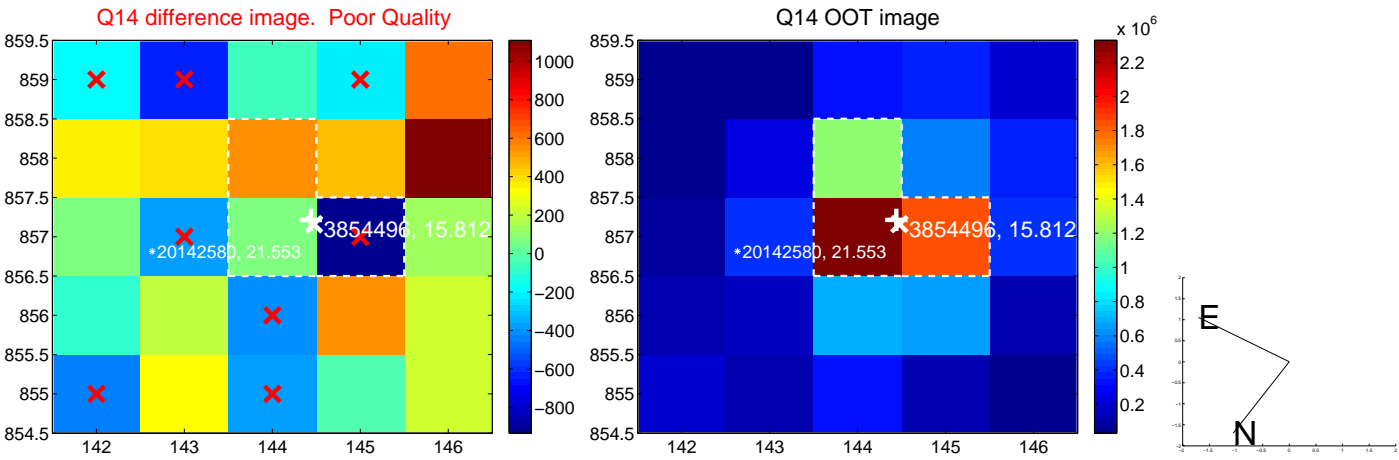
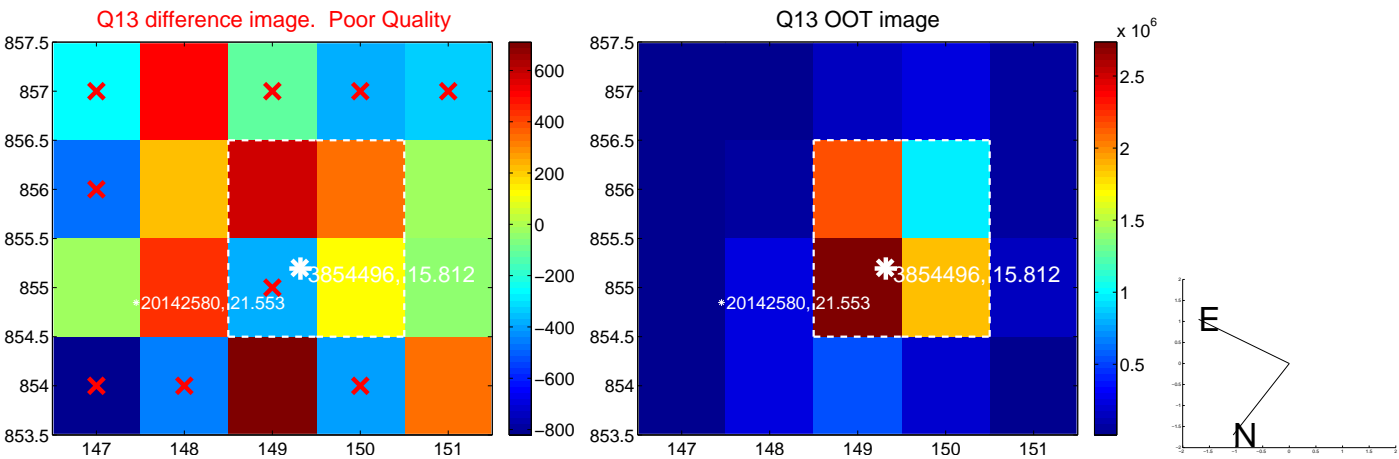
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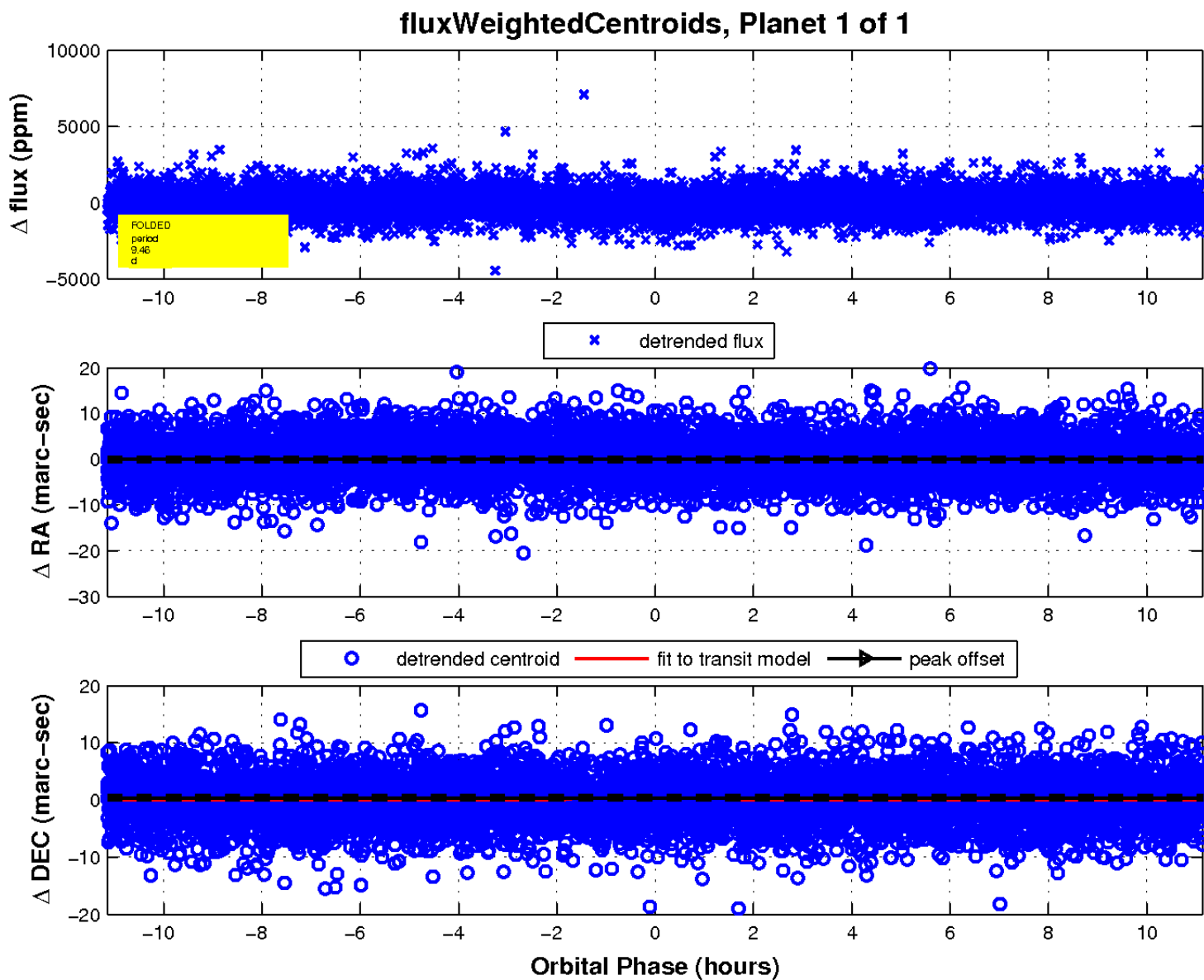
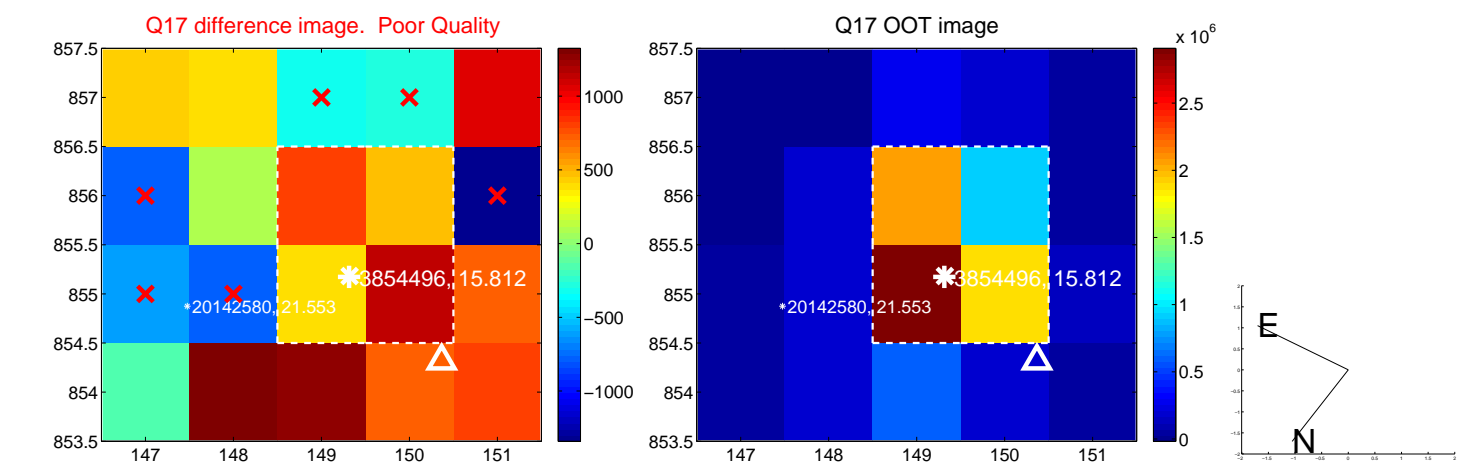


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination

