

# KIC 005802478

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005802478-01	OBS	1834.01	3.791859	134.137268	419.2	3.082	34.5	35.6	0.91	6171	2.52	493.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802478-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—CENT_RESOLVED_OFFSET—EPHEM_MATCH

**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 005802478-01

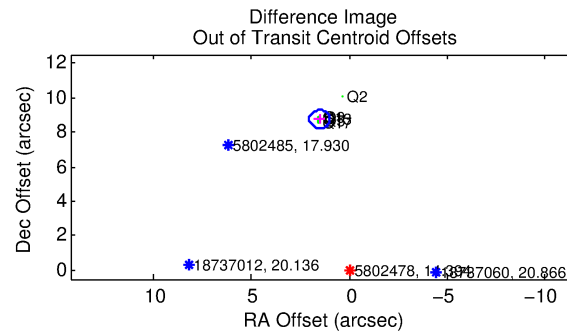
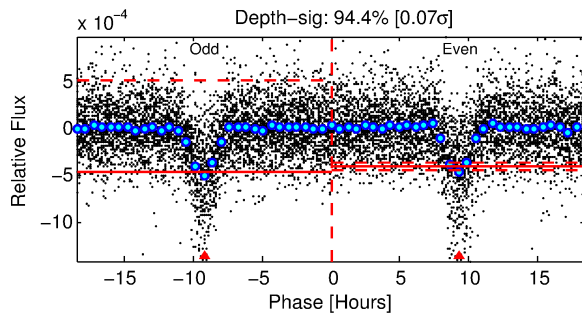
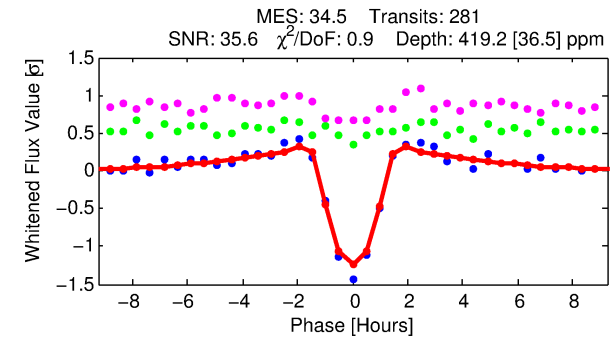
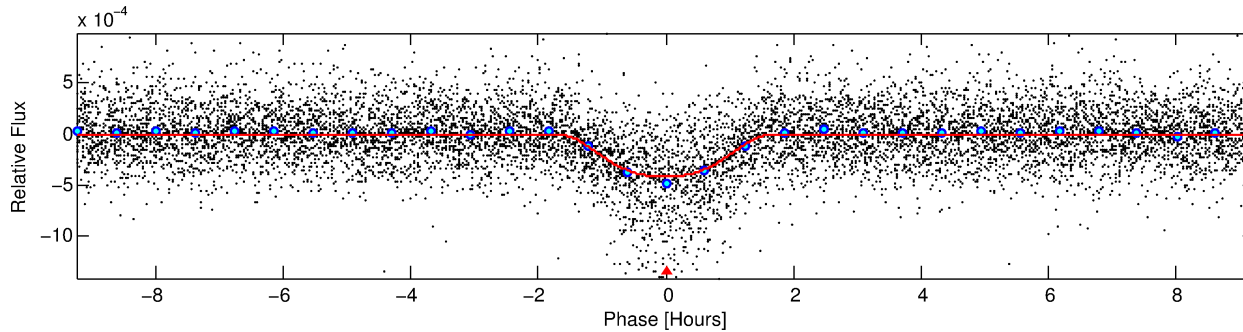
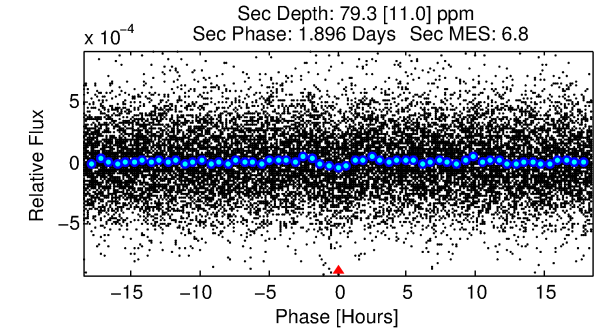
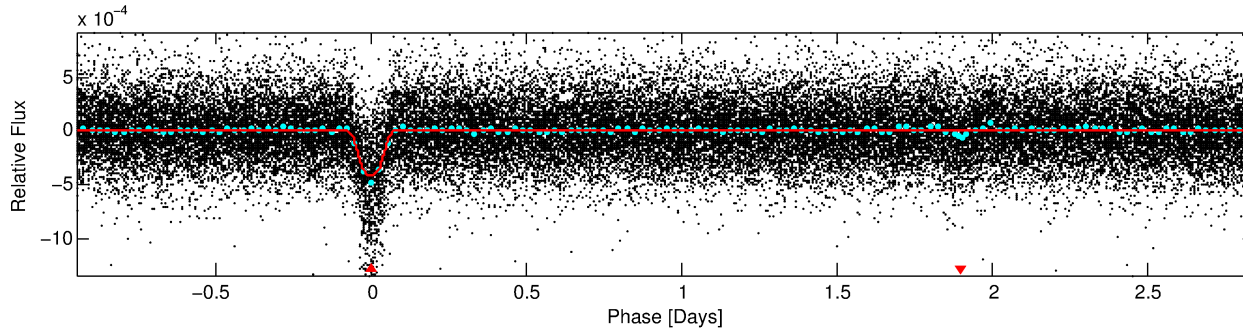
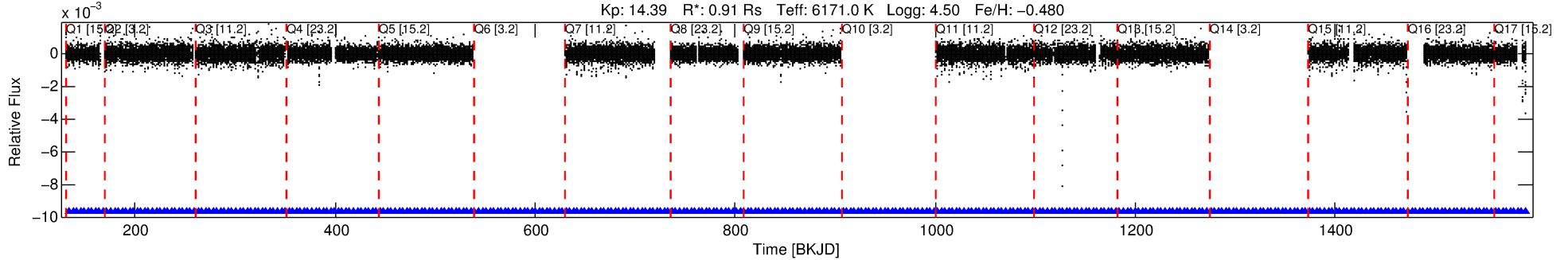
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
005802478-01	5802478	6628.01	5802470	1:1	17.5	4	1	13.76	14.39	574.87	Direct-PRF	0	0.23	0.13

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 5802478 Candidate: 1 of 1 Period: 3.792 d  
KOI: K01834.01 Corr: 0.928

Kp: 14.39 R\*: 0.91 Rs Teff: 6171.0 K Logg: 4.50 Fe/H: -0.480



## DV Fit Results:

Period = 3.79186 [0.00001] d  
Epoch = 134.1373 [0.0014] BKJD  
Rp/R\* = 0.0254 [0.0022]  
a/R\* = 3.07 [0.22]  
b = 0.98 [0.01]  
Seff = 493.41 [196.01]  
Teq = 1202 [119] K  
Rp = 2.52 [0.77] Re  
a = 0.0467 [0.0118] AU  
Ag = 14.99 [6.55] [2.13σ]  
Teff = 3656 [238] K [9.21σ]

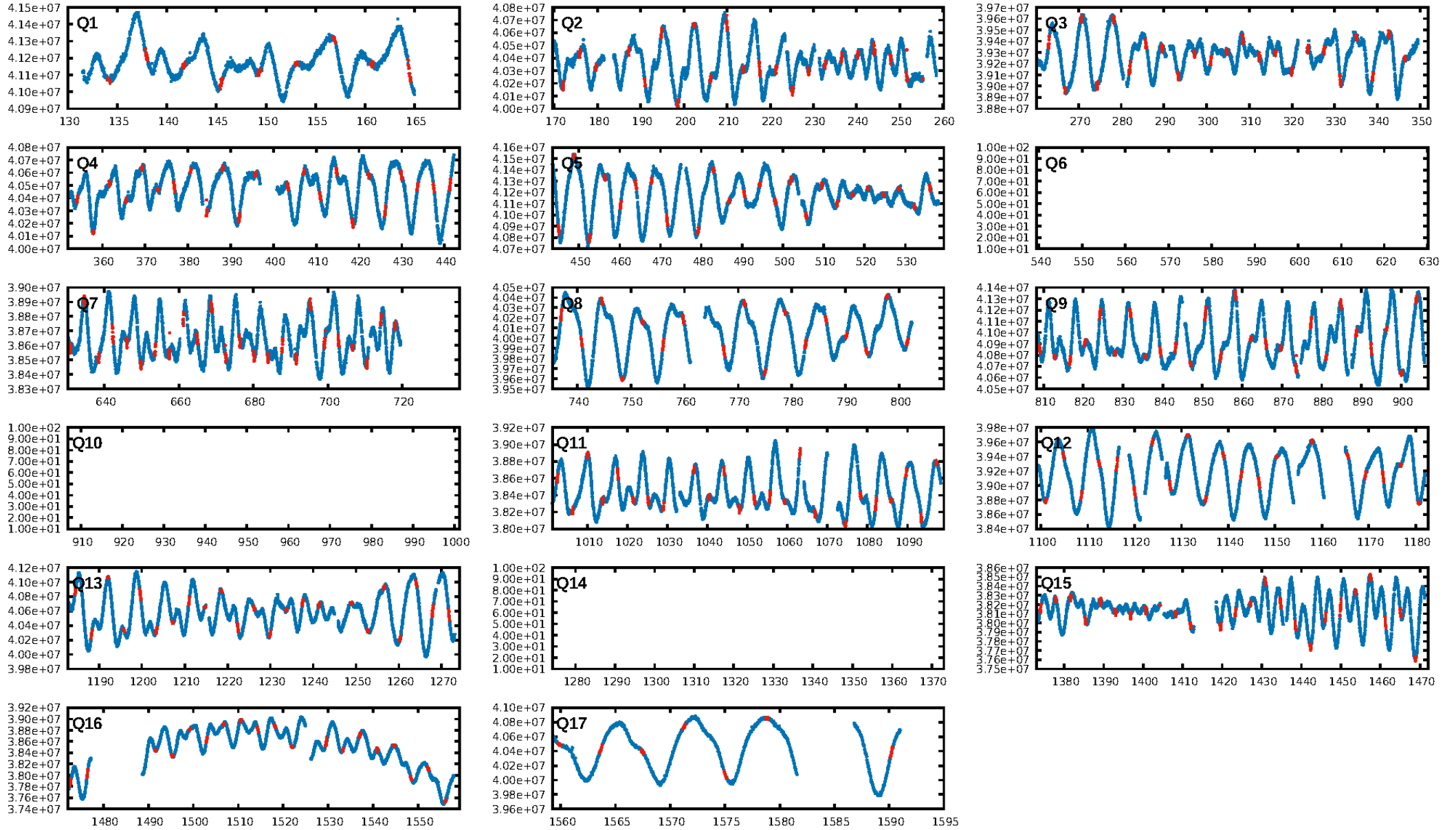
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.93e-237  
RollingBand-fgt: 1.00 [265/265]  
GhostDiagnostic-chr: -0.2918  
Centroid-sig: N/A  
Centroid-so: 38.375 arcsec [140.66σ]  
OotOffset-rm: 8.878 arcsec [50.71σ]  
KicOffset-rm: 8.808 arcsec [44.05σ]  
OotOffset-st: 1/0/0/5 [6]  
KicOffset-st: 1/0/0/5 [6]  
DiffImageQuality-fgm: 1.00 [6/6]  
DiffImageOverlap-fno: 1.00 [14/14]

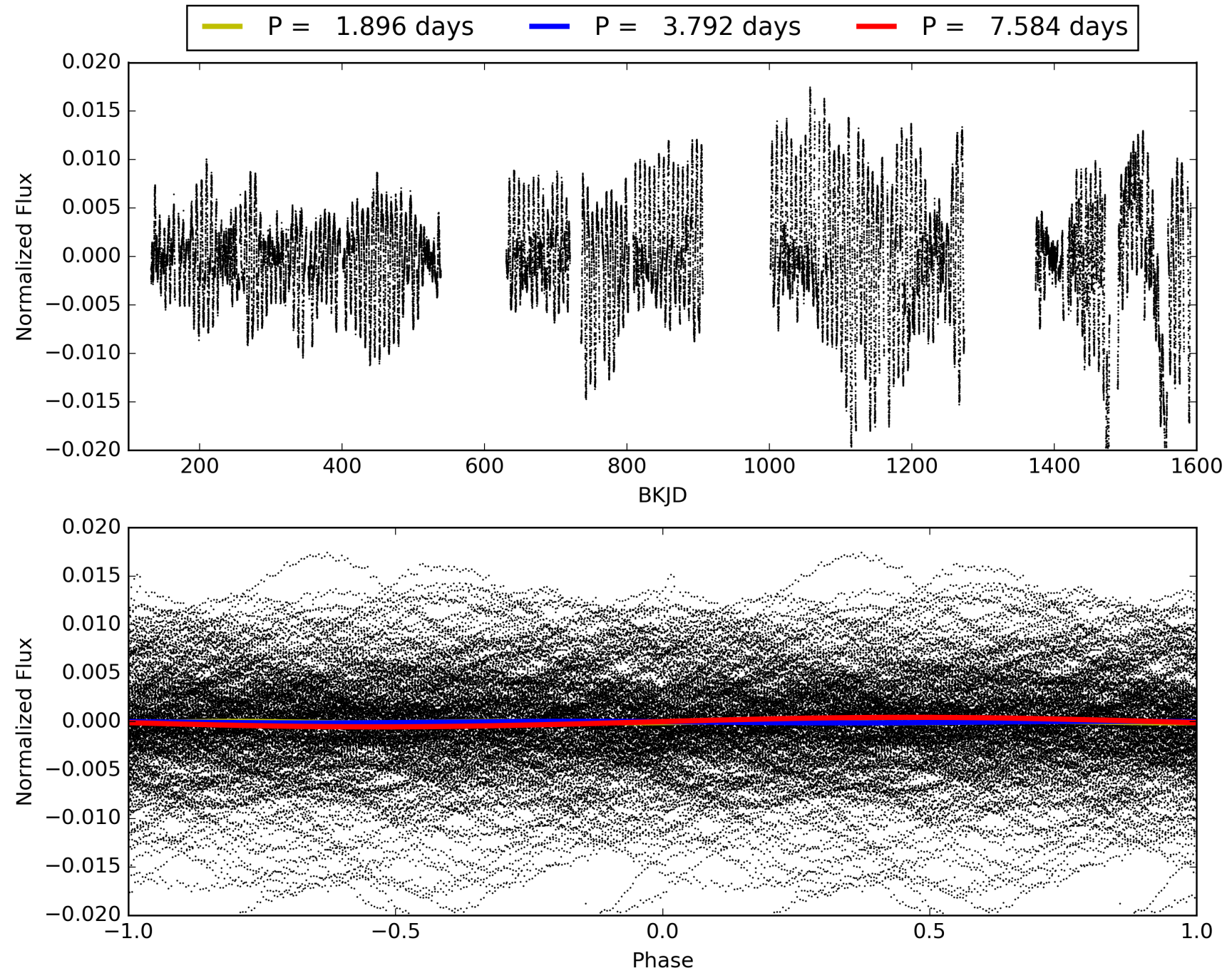
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:46:37 Z

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

# TCE 005802478-01, PDC Light Curves

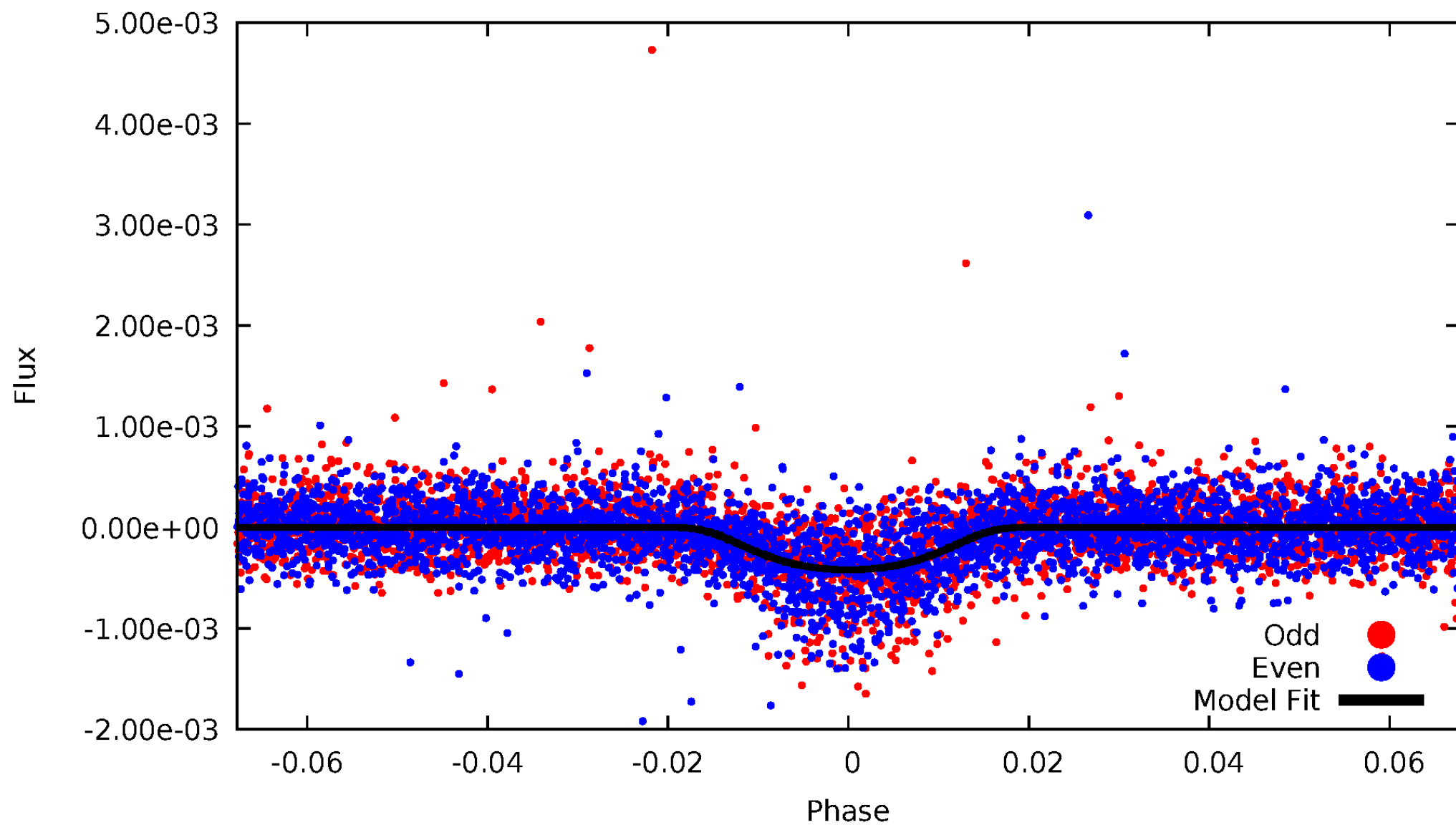


TCE 005802478-01



# DV Odd/Even

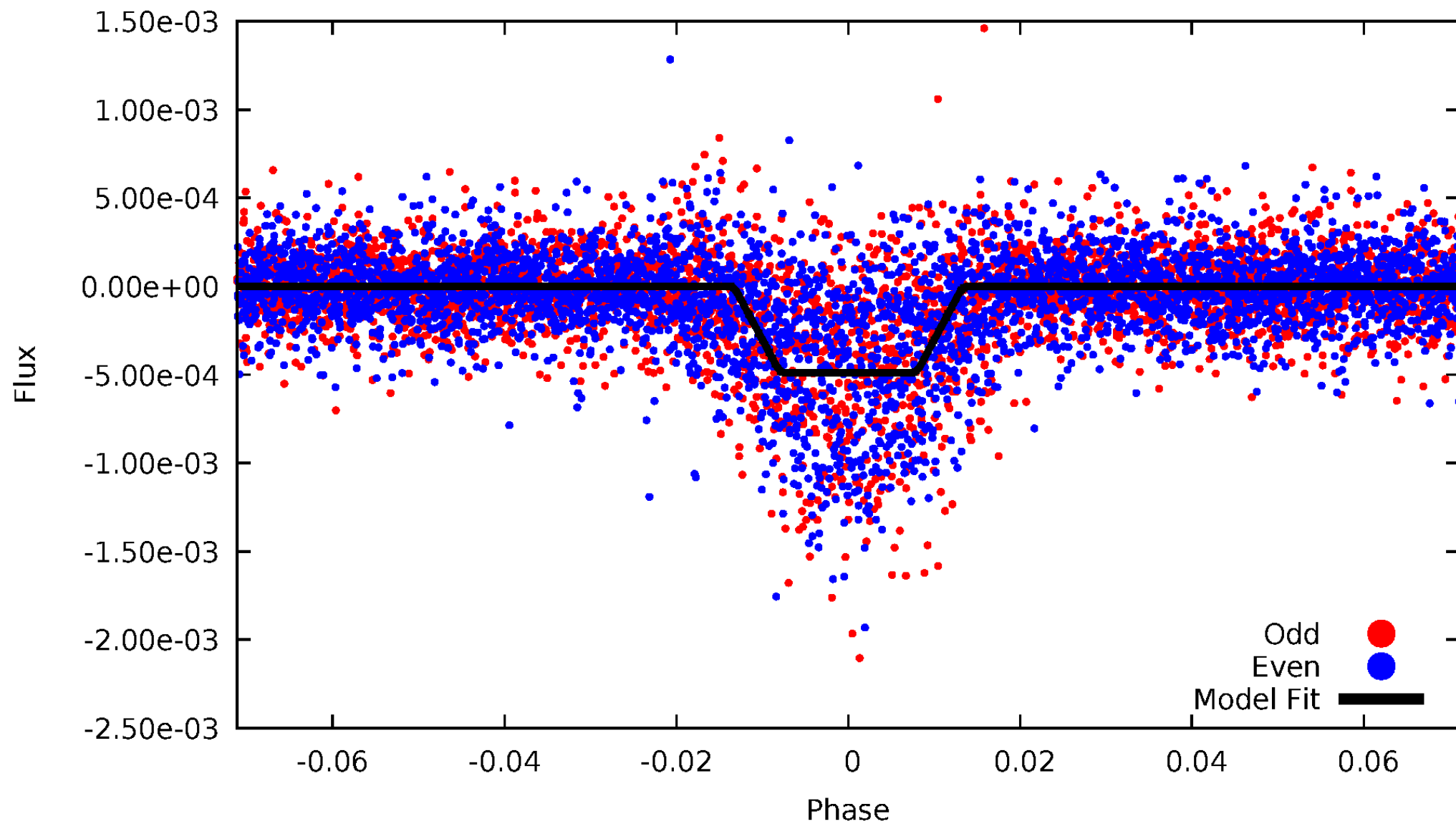
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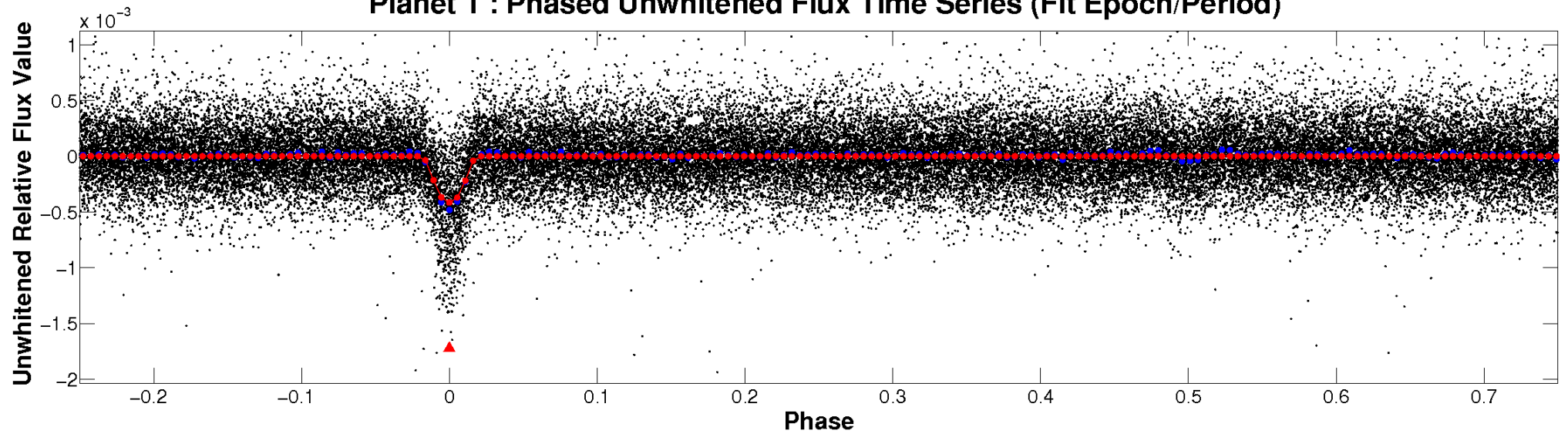
# ALT Odd/Even

TCE 005802478-01

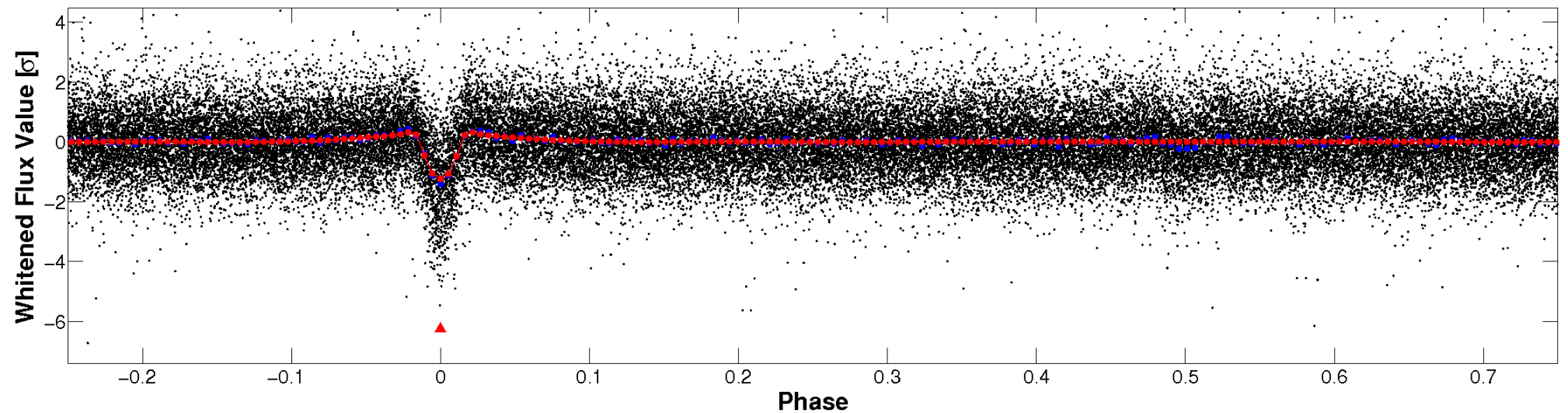


# Non-Whitened Vs. Whitened Light Curve

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

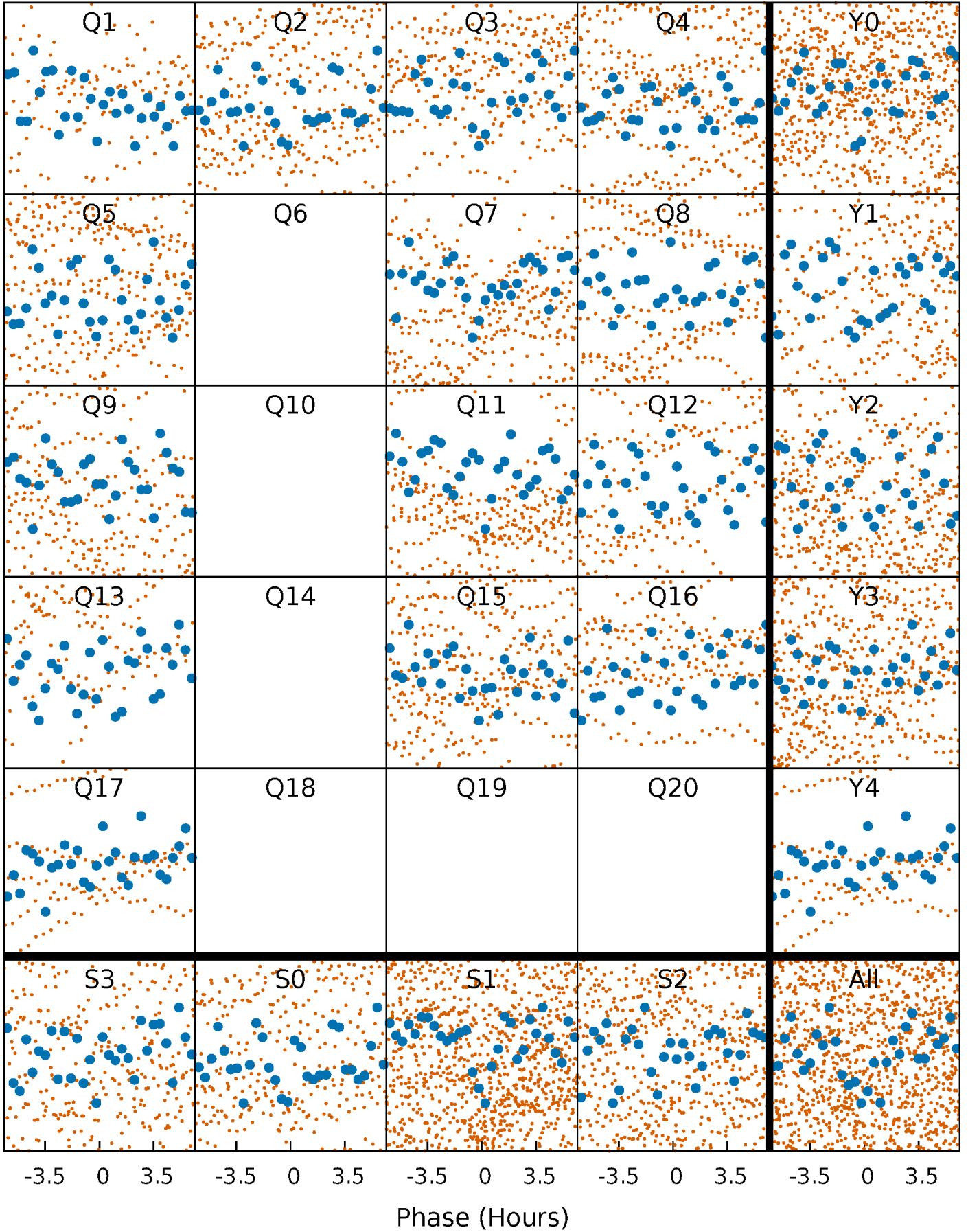


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

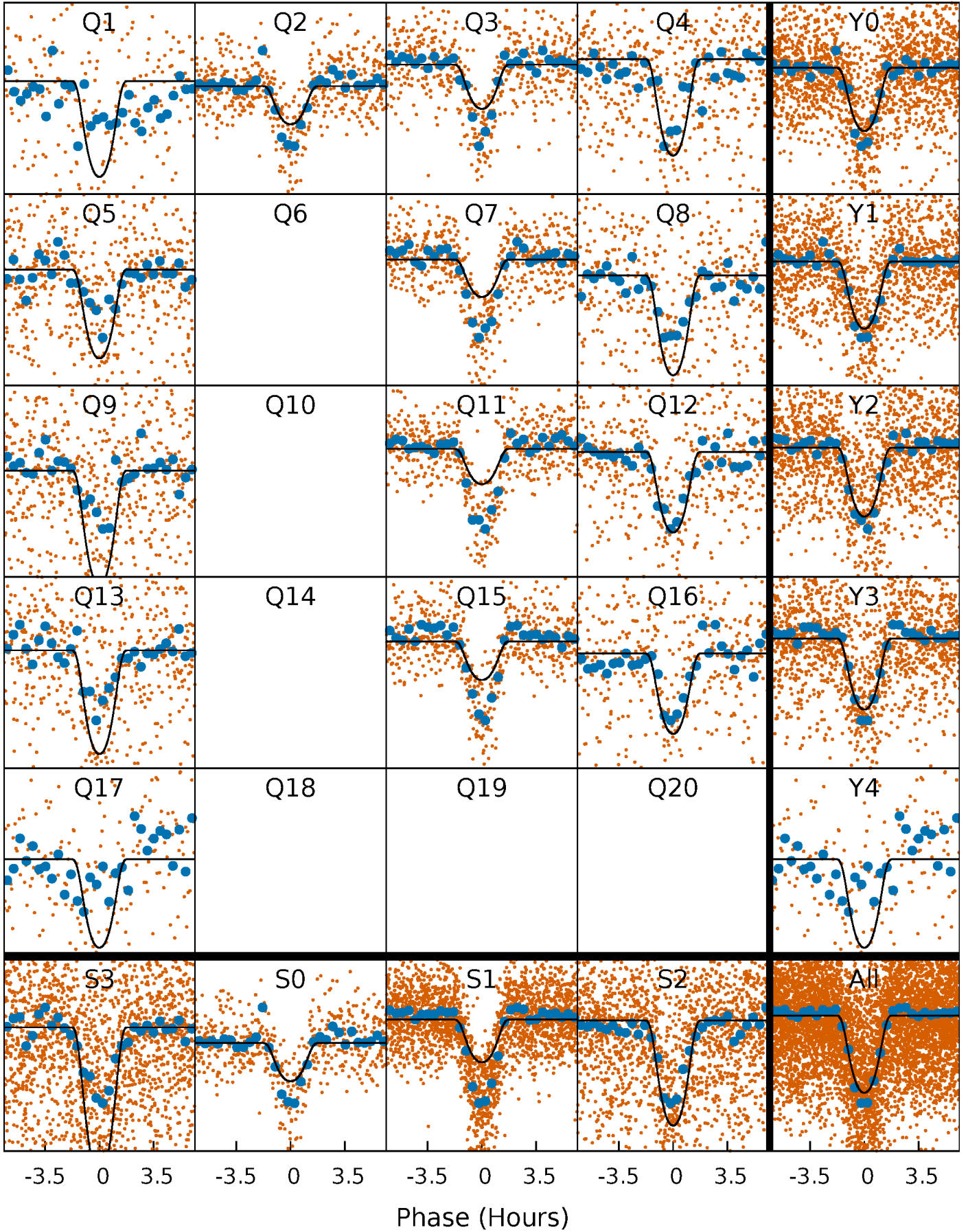
TCE 005802478-01   P= 3.791859 Days    $T_0=134.137268$  (BKJD)





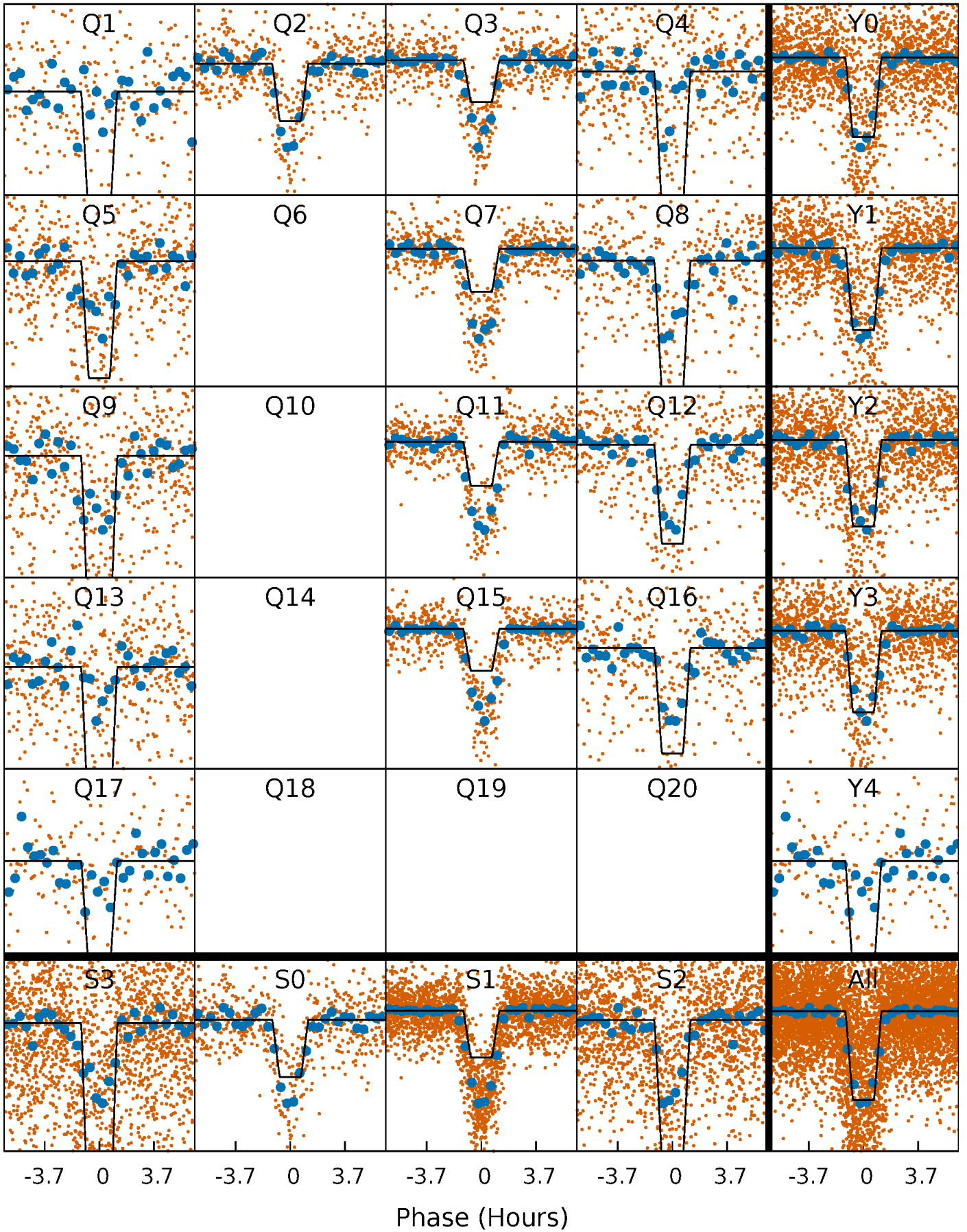
# DV Quarter-Phased Transit Curves

TCE 005802478-01 P= 3.791859 Days  $T_0=134.137268$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

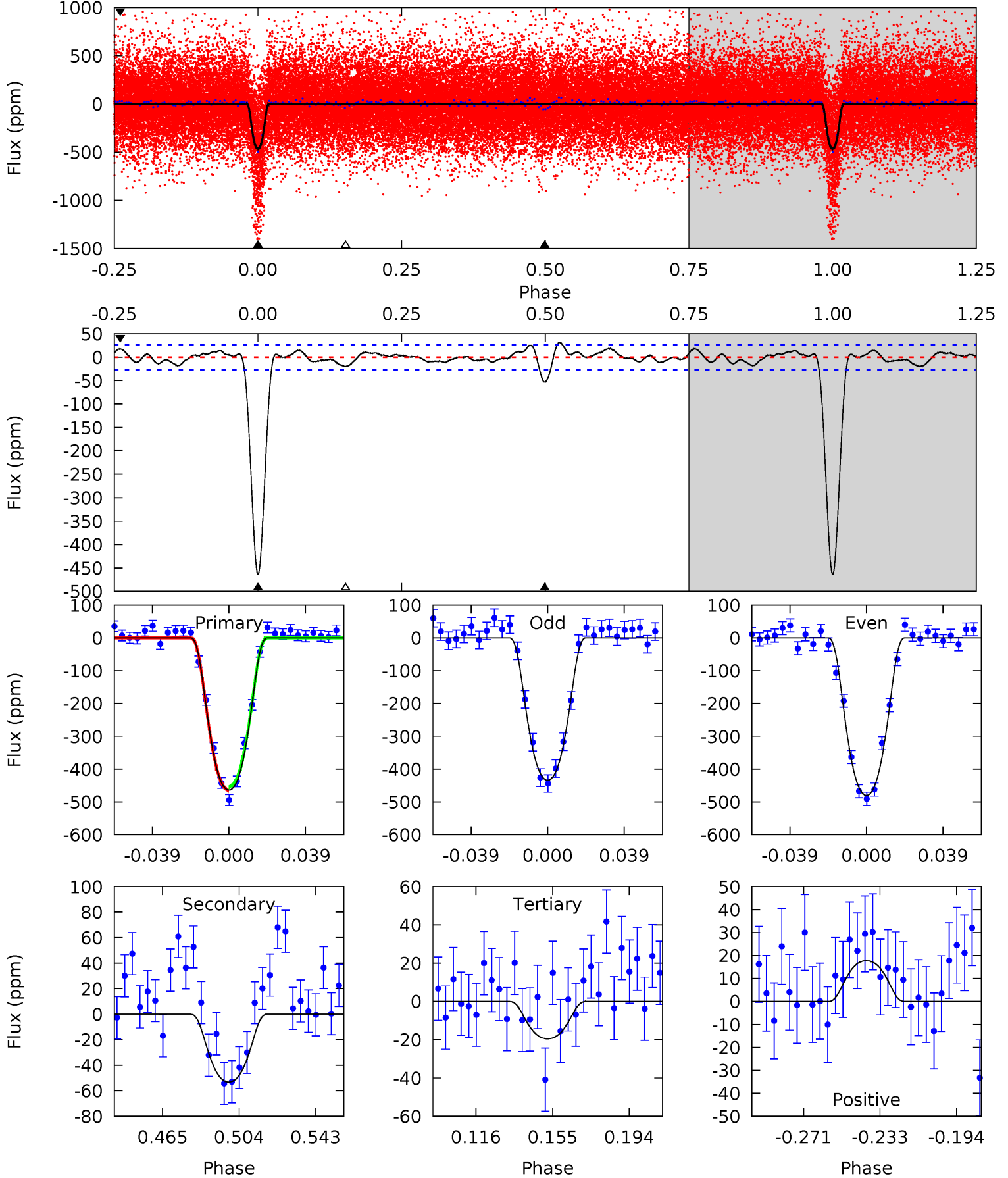
TCE 005802478-01 P= 3.791846 Days  $T_0=134.139520$  (BKJD)



# DV Model-Shift Uniqueness Test

005802478-01, P = 3.791859 Days, E = 130.345409 Days

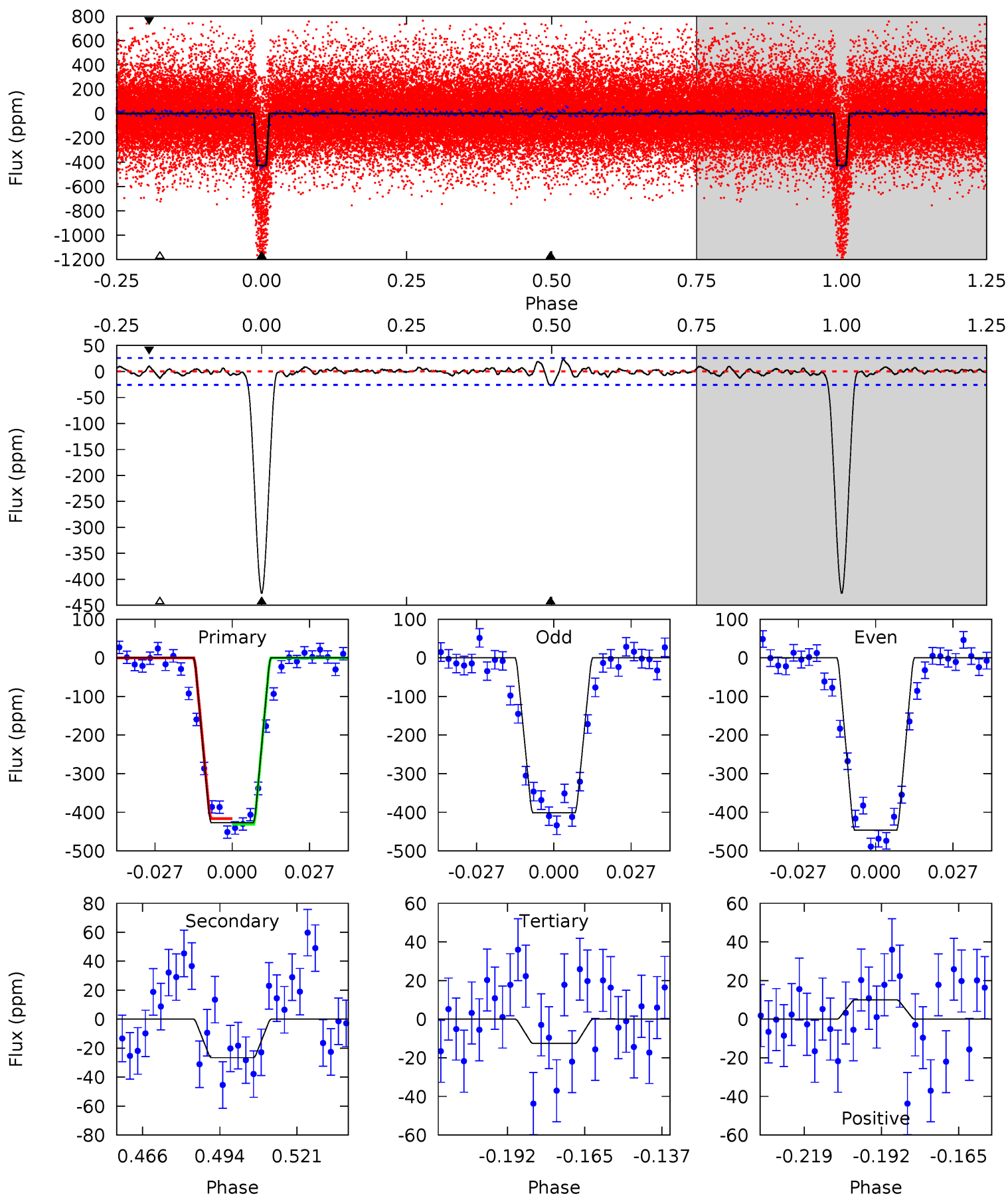
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
83.0	9.51	3.49	3.18	4.76	2.07	1.48	79.5	79.8	6.02	6.33	4.14	1.13	0.06	1.02



# Alt Model-Shift Uniqueness Test

005802478-01, P = 3.791846 Days, E = 130.347674 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
79.8	4.96	2.35	1.87	4.83	2.21	0.80	77.4	77.9	2.61	3.09	4.17	1.11	0.05	1.39



### Stellar Parameters For KIC 005802478

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6171^{+166}_{-203}$	$4.495^{+0.065}_{-0.208}$	$-0.480^{+0.300}_{-0.300}$	$0.910^{+0.268}_{-0.089}$	$0.944^{+0.115}_{-0.115}$	$1.763^{+0.485}_{-0.915}$
	+3%/-3%	+1%/-5%	+62%/-62%	+29%/-10%	+12%/-12%	+28%/-52%
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 005802478-01 / KOI 1834.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-53 \pm 6$	$2.60^{+0.40}_{-0.31}$	$1700^{+117}_{-84}$	$3681^{+159}_{-142}$	$9.039^{+3.059}_{-2.082}$
Alt.	$-27 \pm 5$	$2.27^{+0.37}_{-0.29}$	$1700^{+117}_{-80}$	$3441^{+172}_{-190}$	$5.965^{+2.248}_{-1.806}$

$T_{\text{max}}$  = 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  $A_{\text{obs}} \gg 1.0$



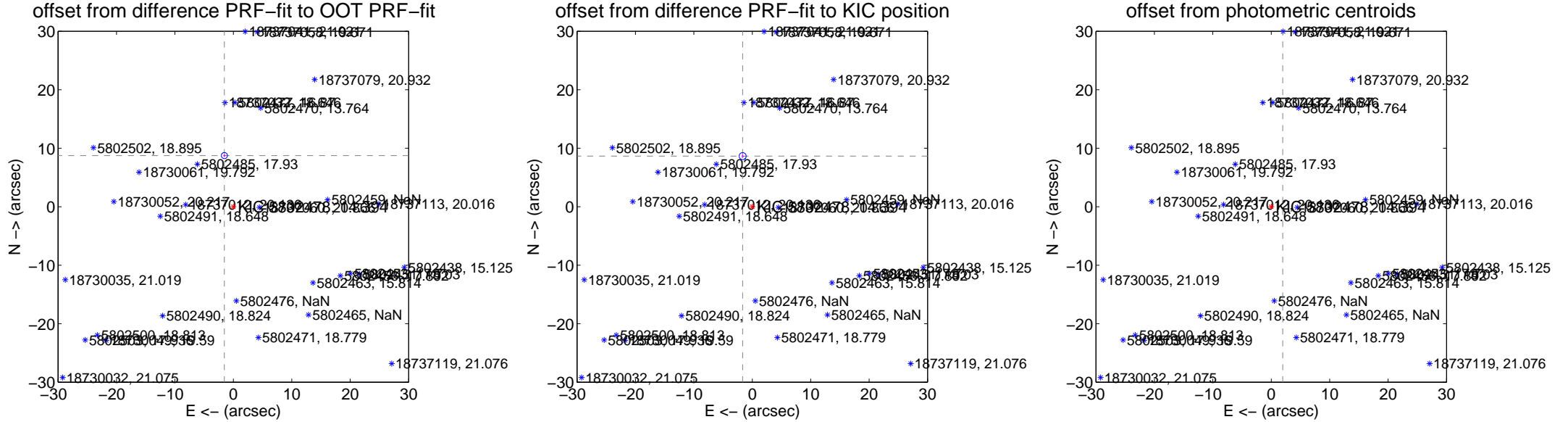
## DV Centroid Data

Supplemental centroid analysis for 005802478-01. Kepler magnitude: 14.39. Transit SNR 35.57

There are 6 quarters with good PRF difference image offsets

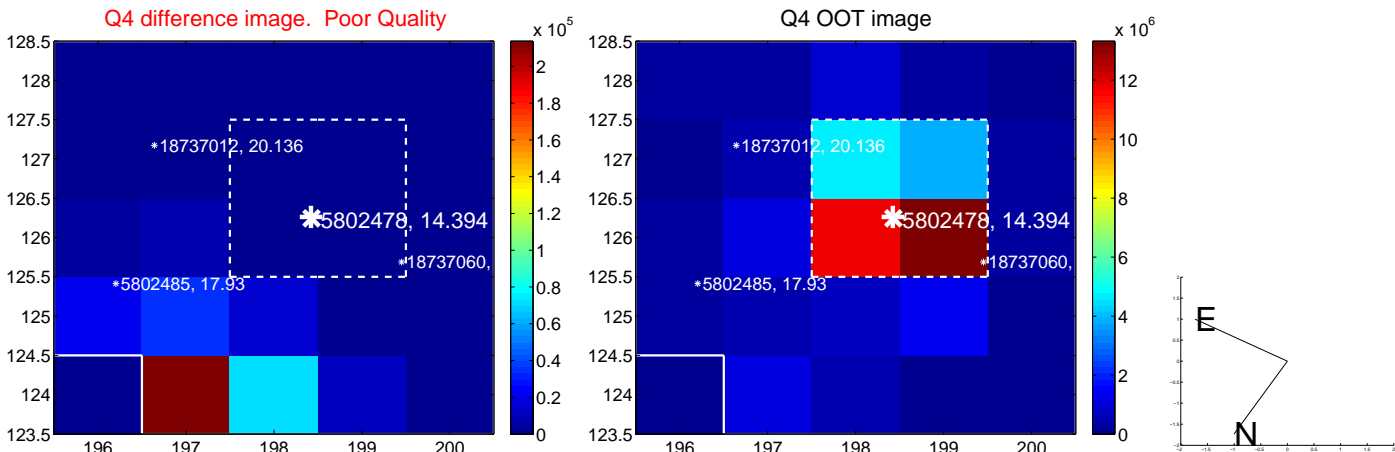
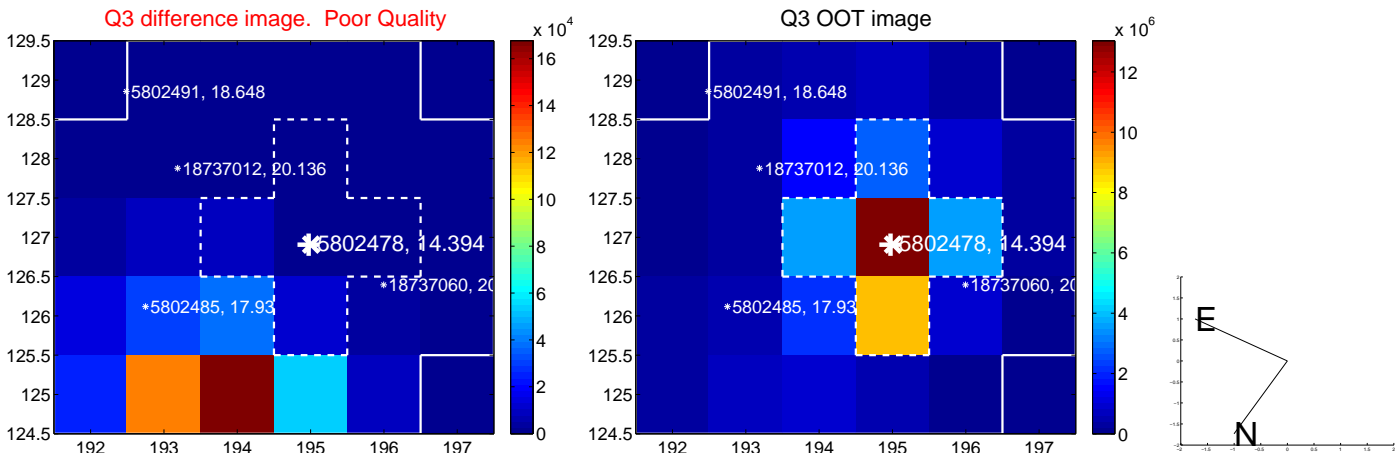
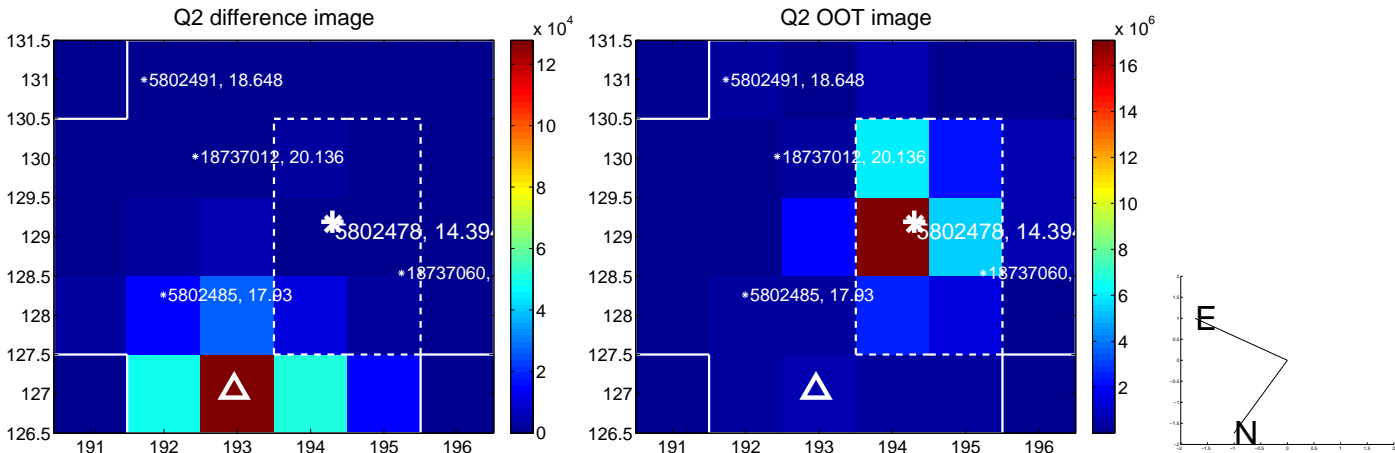
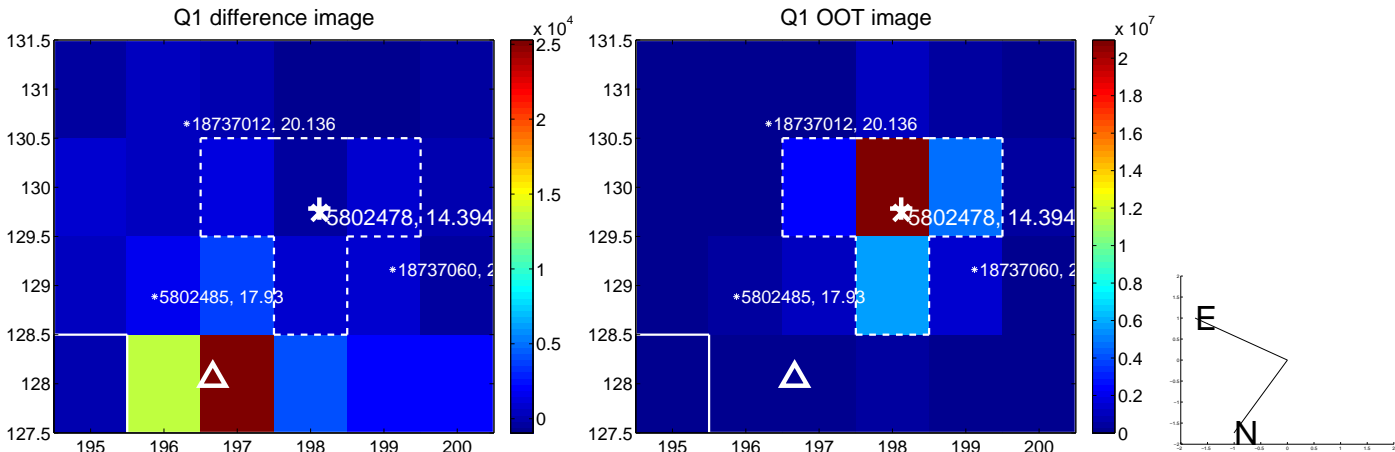
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$8.878 \pm 0.175$	50.71	$1.535 \pm 0.194$	$8.744 \pm 0.206$
PRF-fit source offset from KIC position	$8.808 \pm 0.200$	44.05	$1.649 \pm 0.216$	$8.652 \pm 0.239$
photometric centroid source offset	$38.37 \pm 0.27$	140.66	$-1.97 \pm 0.31$	$38.32 \pm 0.27$

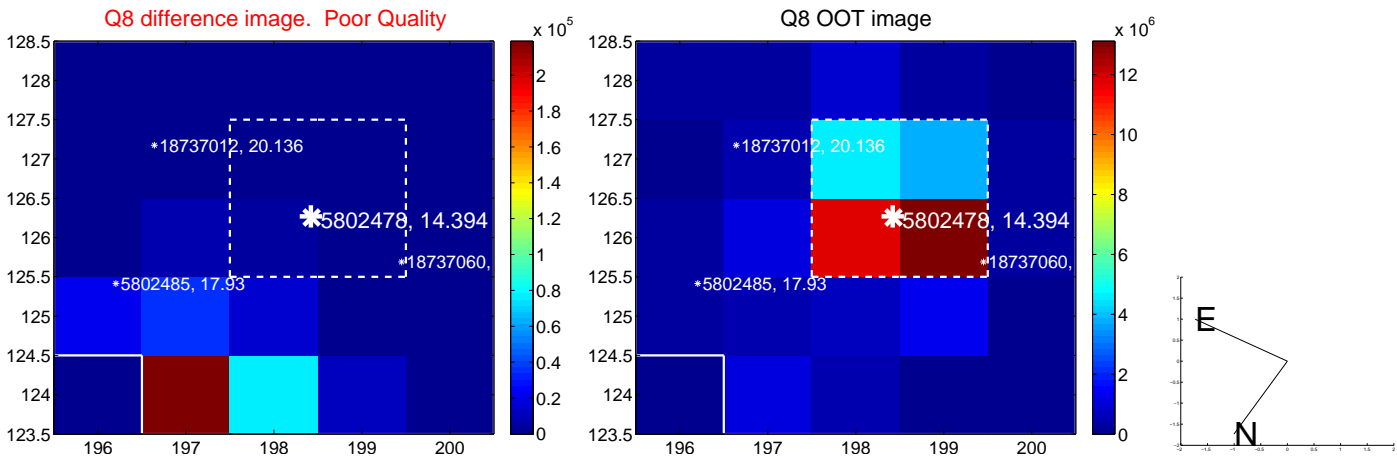
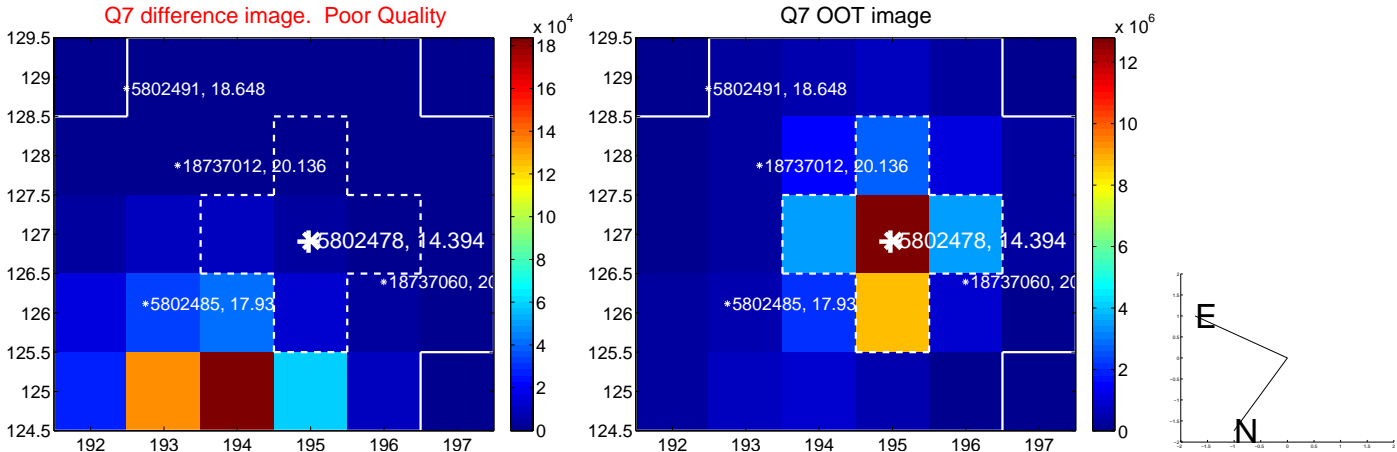
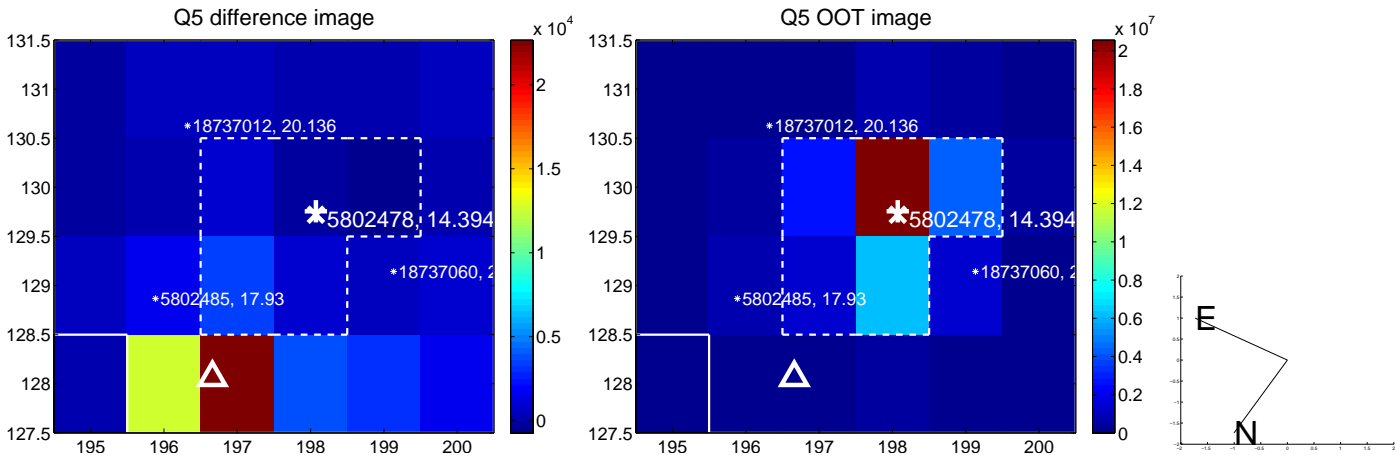


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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.

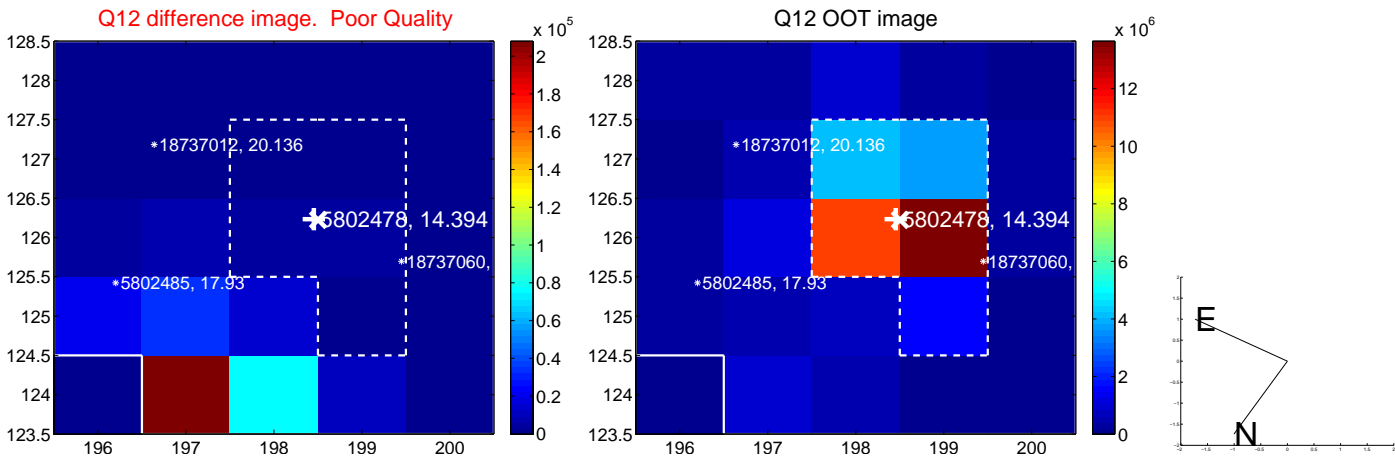
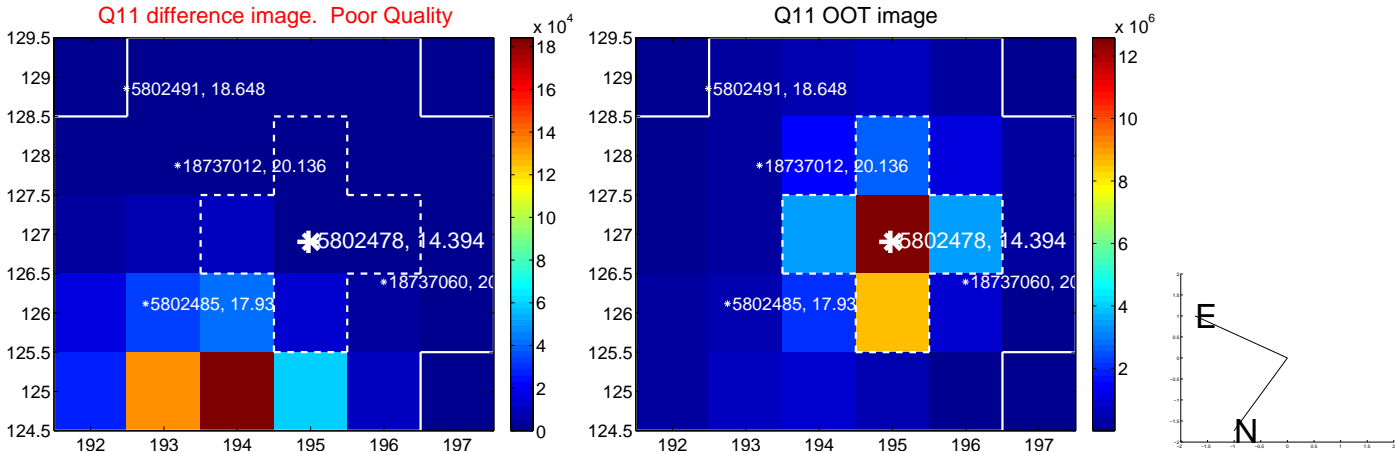
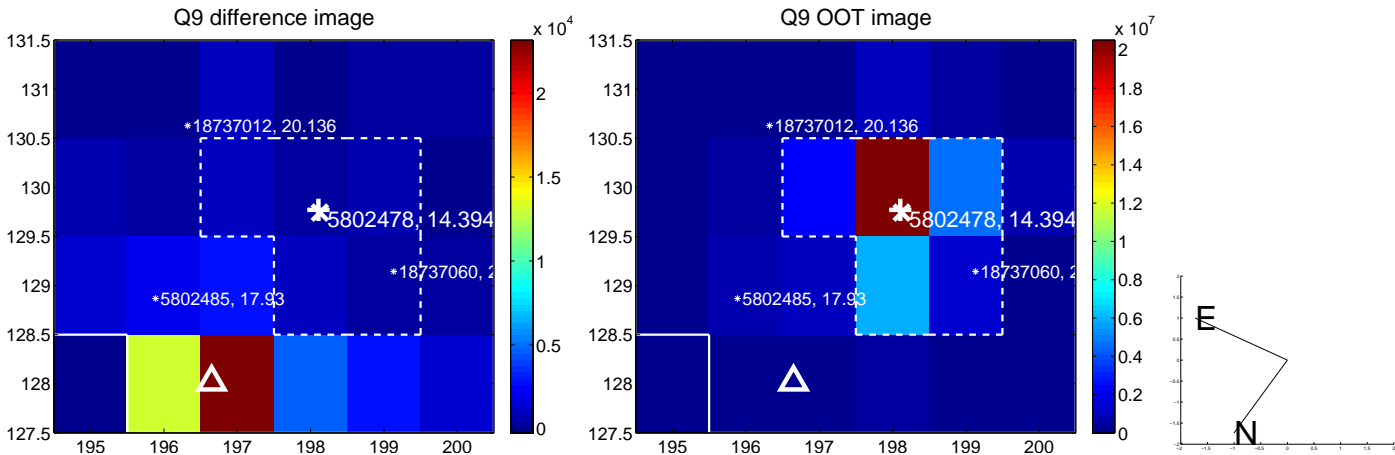
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



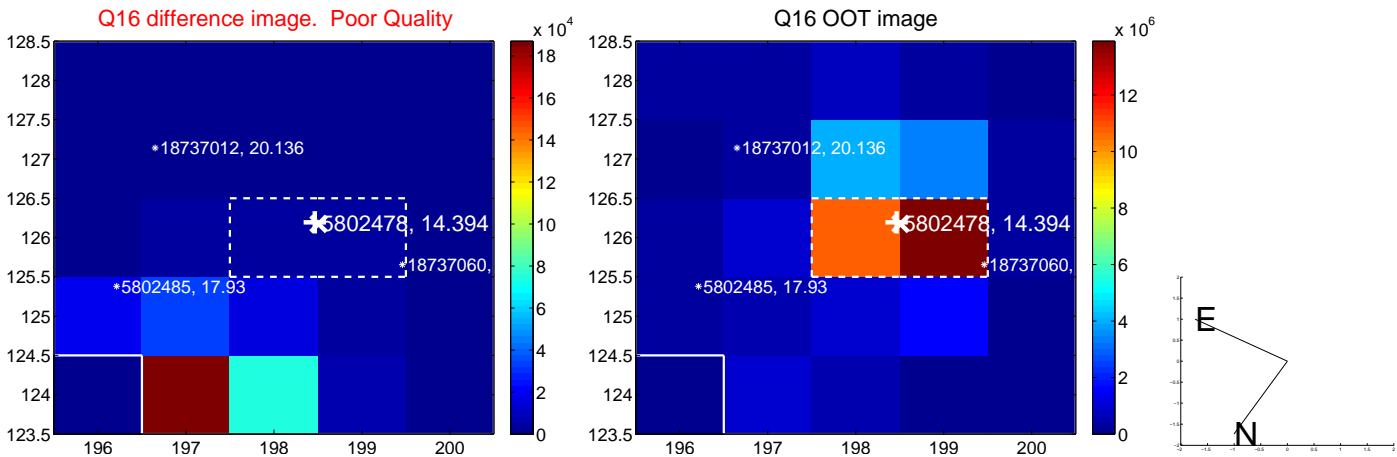
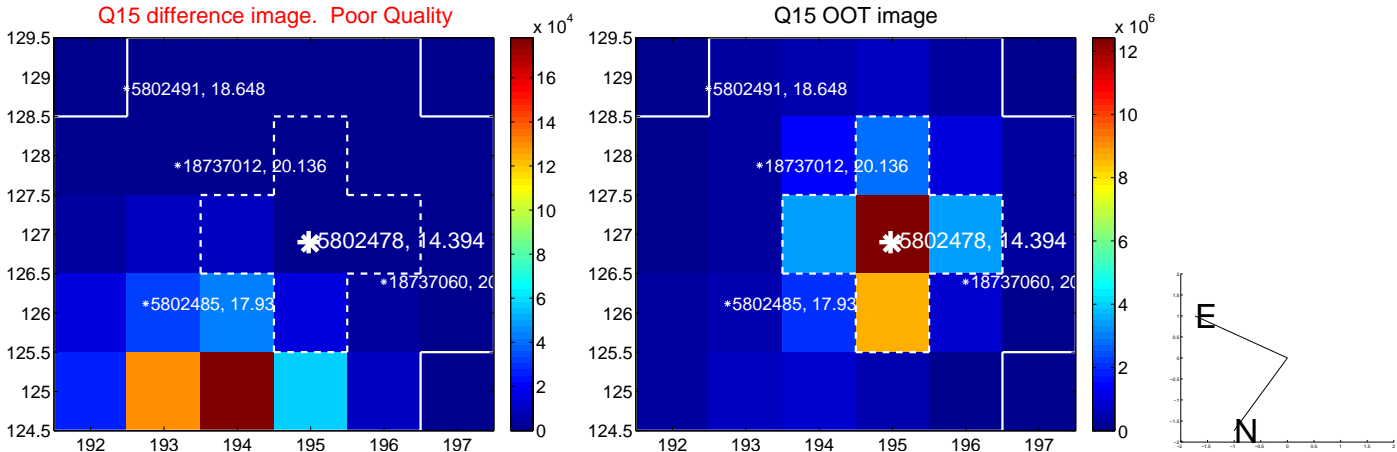
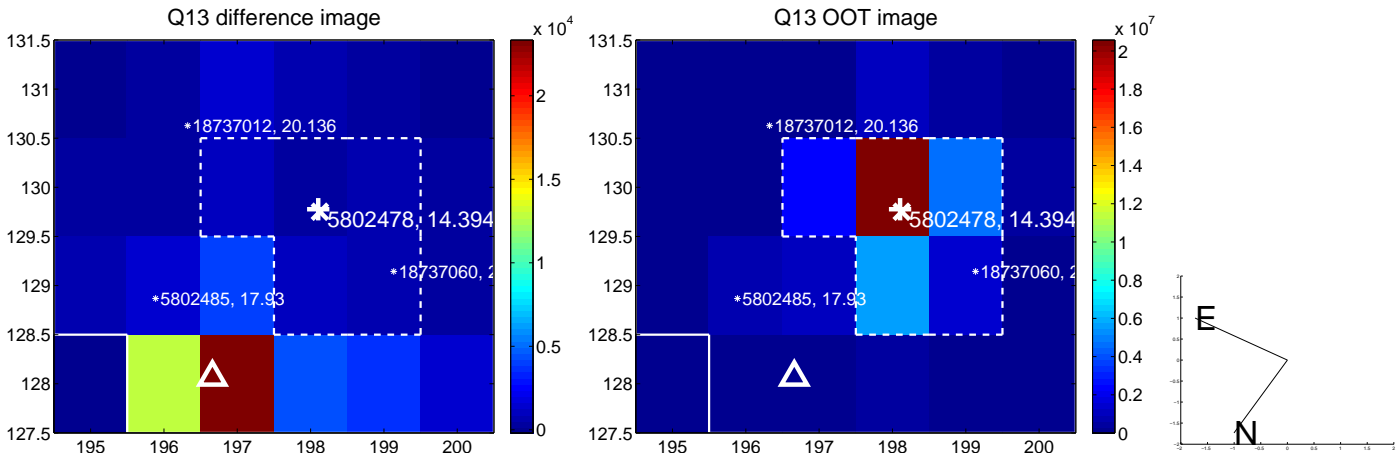
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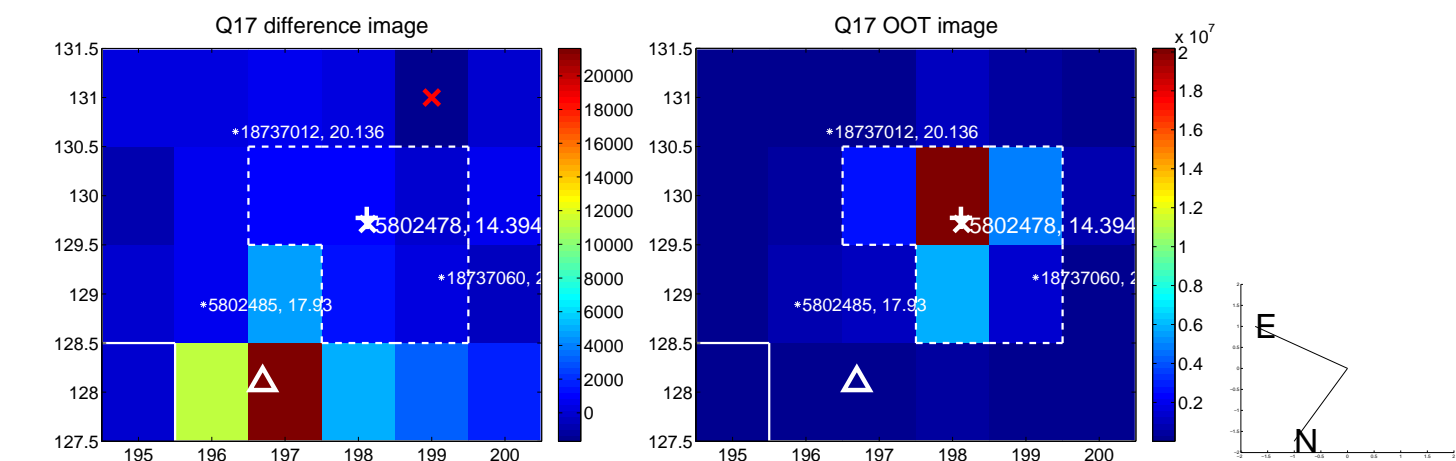


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

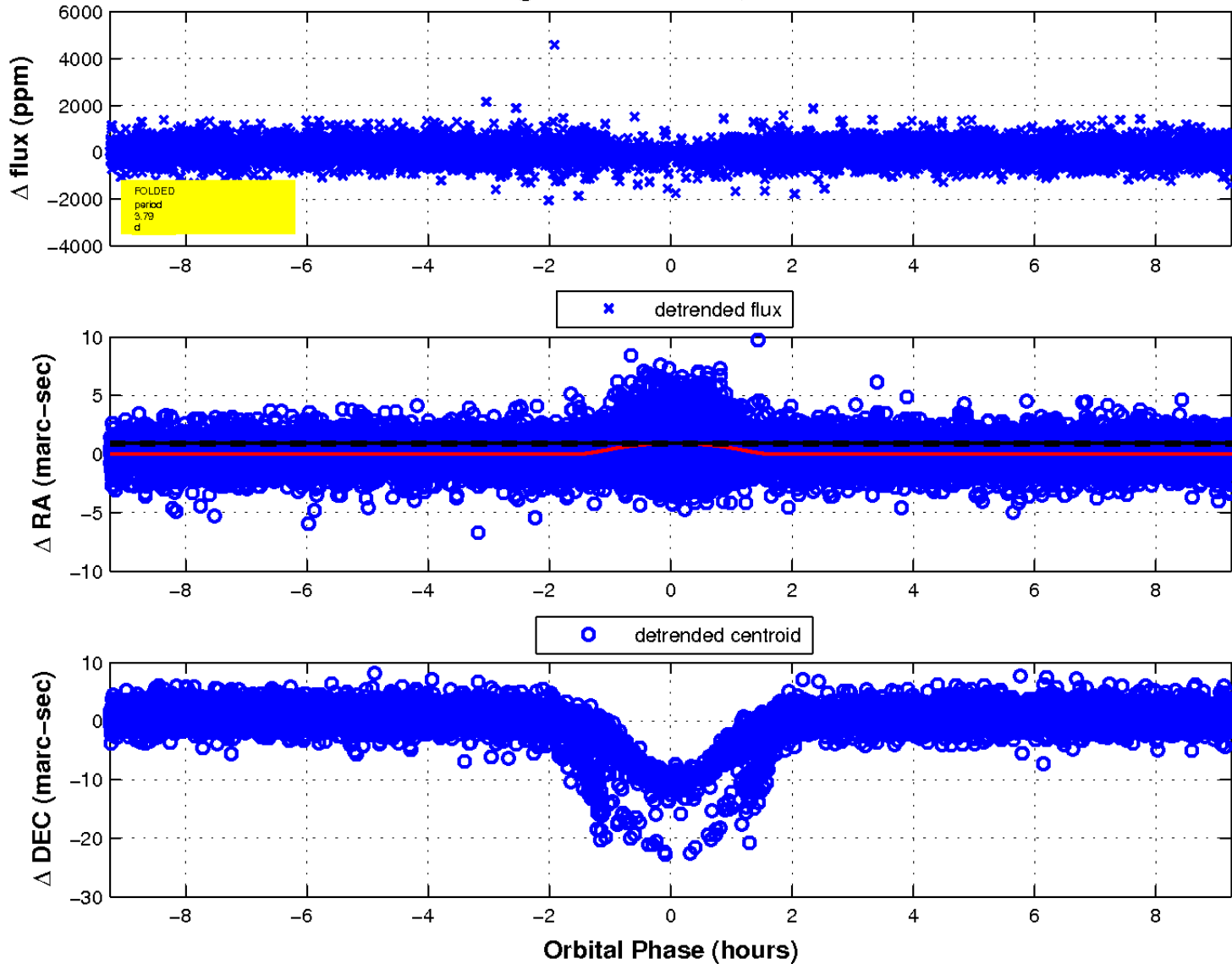




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

