

# KIC 008389300

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008389300-01	OBS	No	1.798121	132.452137	32.6	8.011	7.2	6.5	1.01	5910	1.22	1458.45

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008389300-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST

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

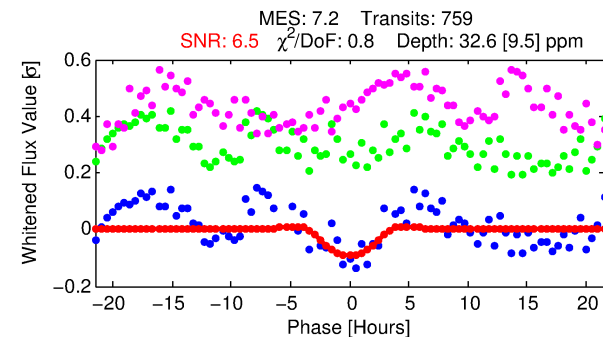
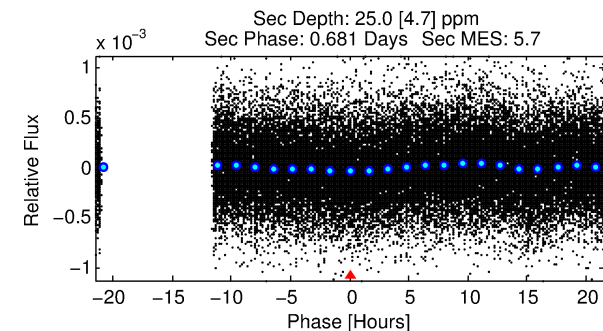
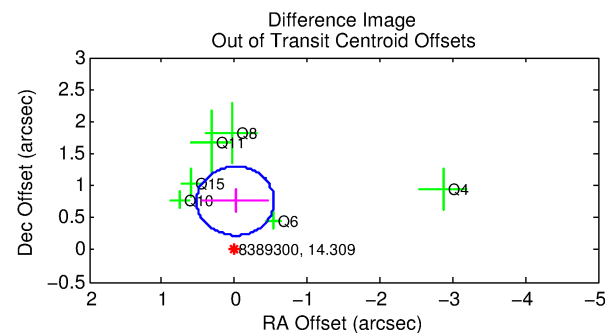
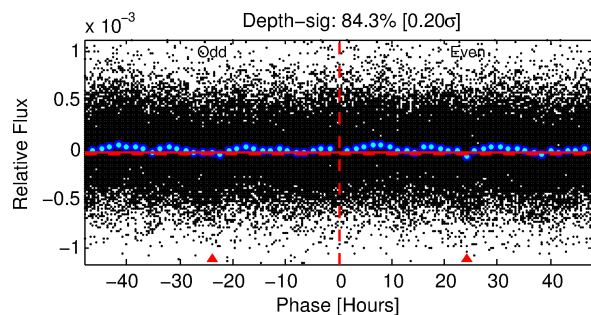
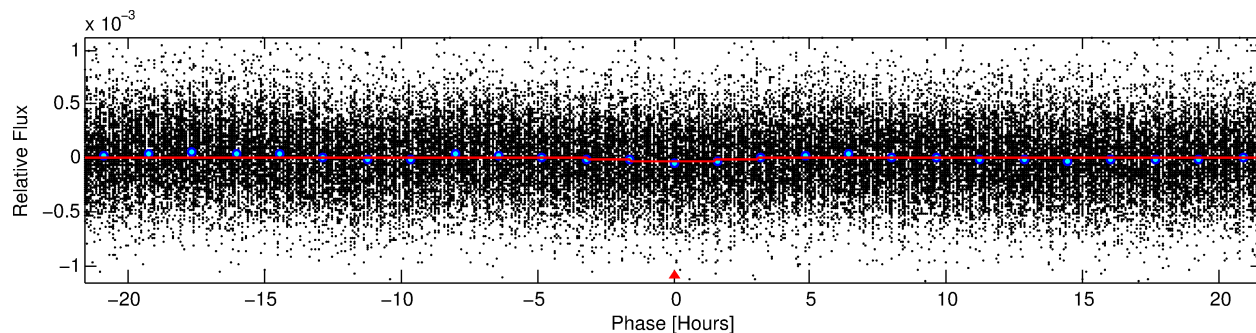
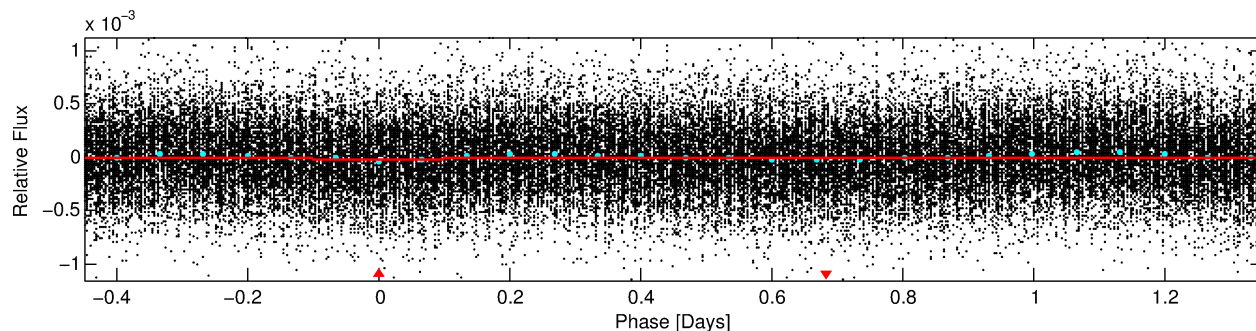
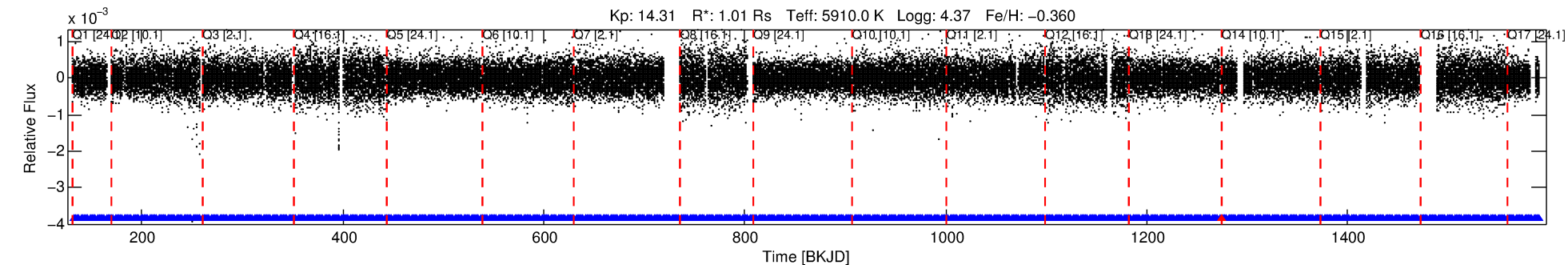
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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 008389300-01

No Significant Match Found

KIC: 8389300    Candidate: 1 of 1    Period: 1.798 d



DV Fit Results:

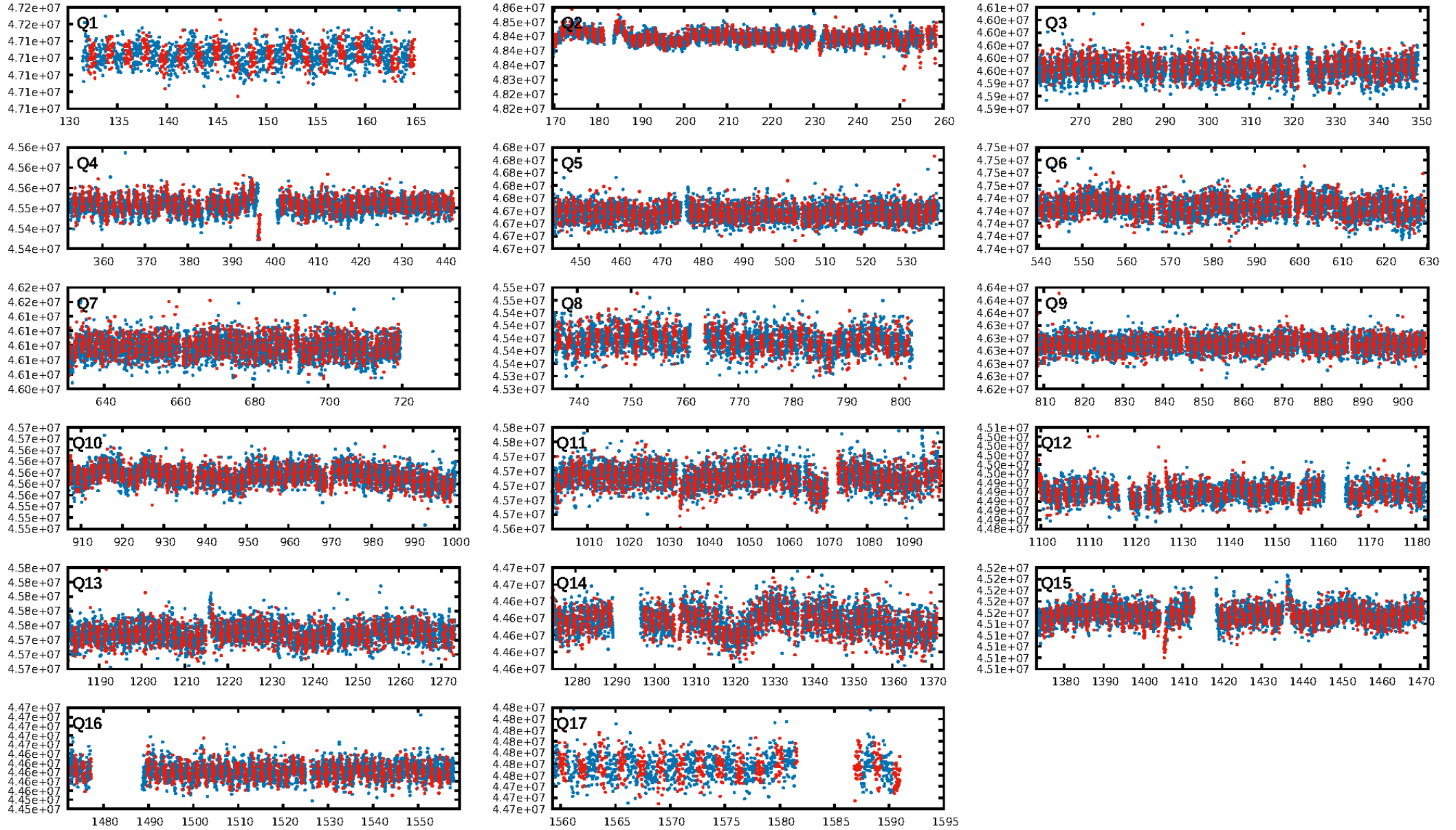
Period = 1.79812 [0.00006] d  
 Epoch = 132.4521 [0.0232] BKJD  
 Rp/R\* = 0.0110 [0.0486]  
 a/R\* = 1.04 [0.02]  
 b = 1.00 [0.08]  
 Seff = 1458.45 [525.65]  
 Teq = 1576 [142] K  
 Rp = 1.22 [5.38] Re  
 a = 0.0277 [0.0064] AU  
 Ag = 7.11 [62.69] [0.10σ]  
 Tefp = 3978 [8767] K [0.27σ]

DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 7.67e-10**  
RollingBand-fgt: 1.00 [723/724]  
GhostDiagnostic-chr: -0.08192

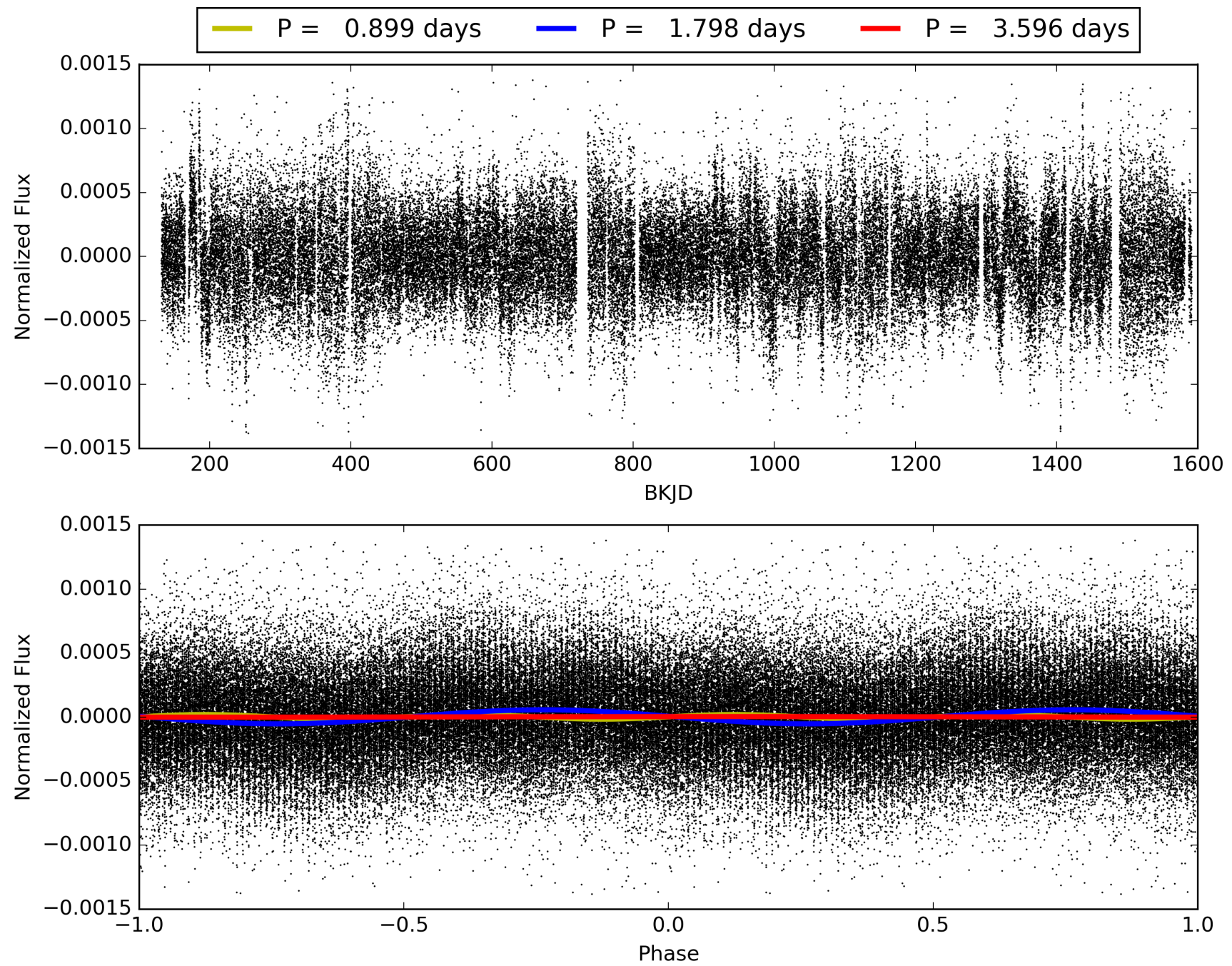
**Centroid-sig: 0.0%**  
**Centroid-so: 5.554 arcsec [6.80σ]**  
**OotOffset-rm: 0.761 arcsec [4.27σ]**  
**KicOffset-rm: 5.839 arcsec [19.74σ]**  
OotOffset-st: 2/2/2/0 [6]  
KicOffset-st: 2/2/2/0 [6]  
DiffImageQuality-fgm: 0.83 [5/6]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 008389300-01, PDC Light Curves



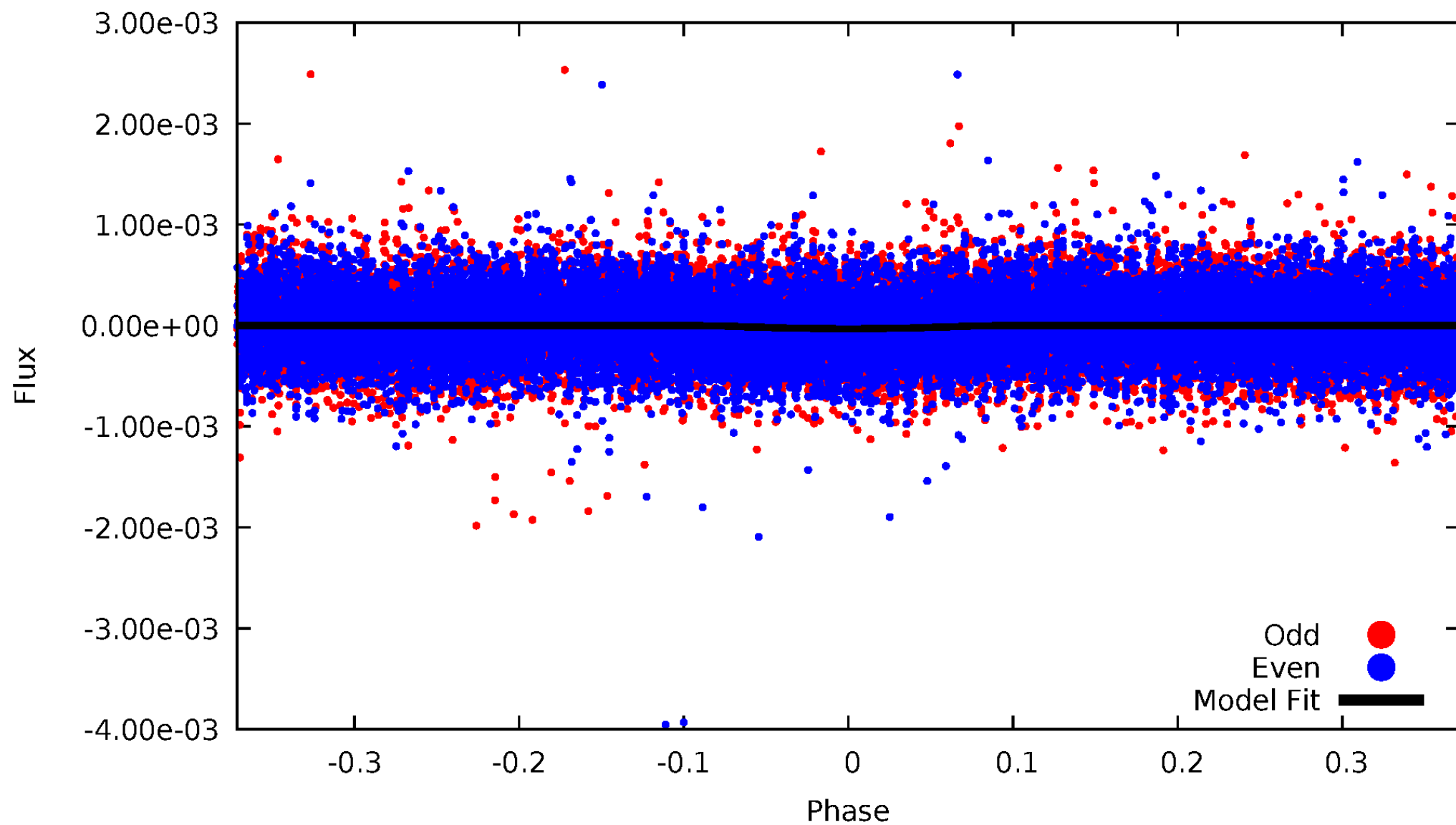


TCE 008389300-01



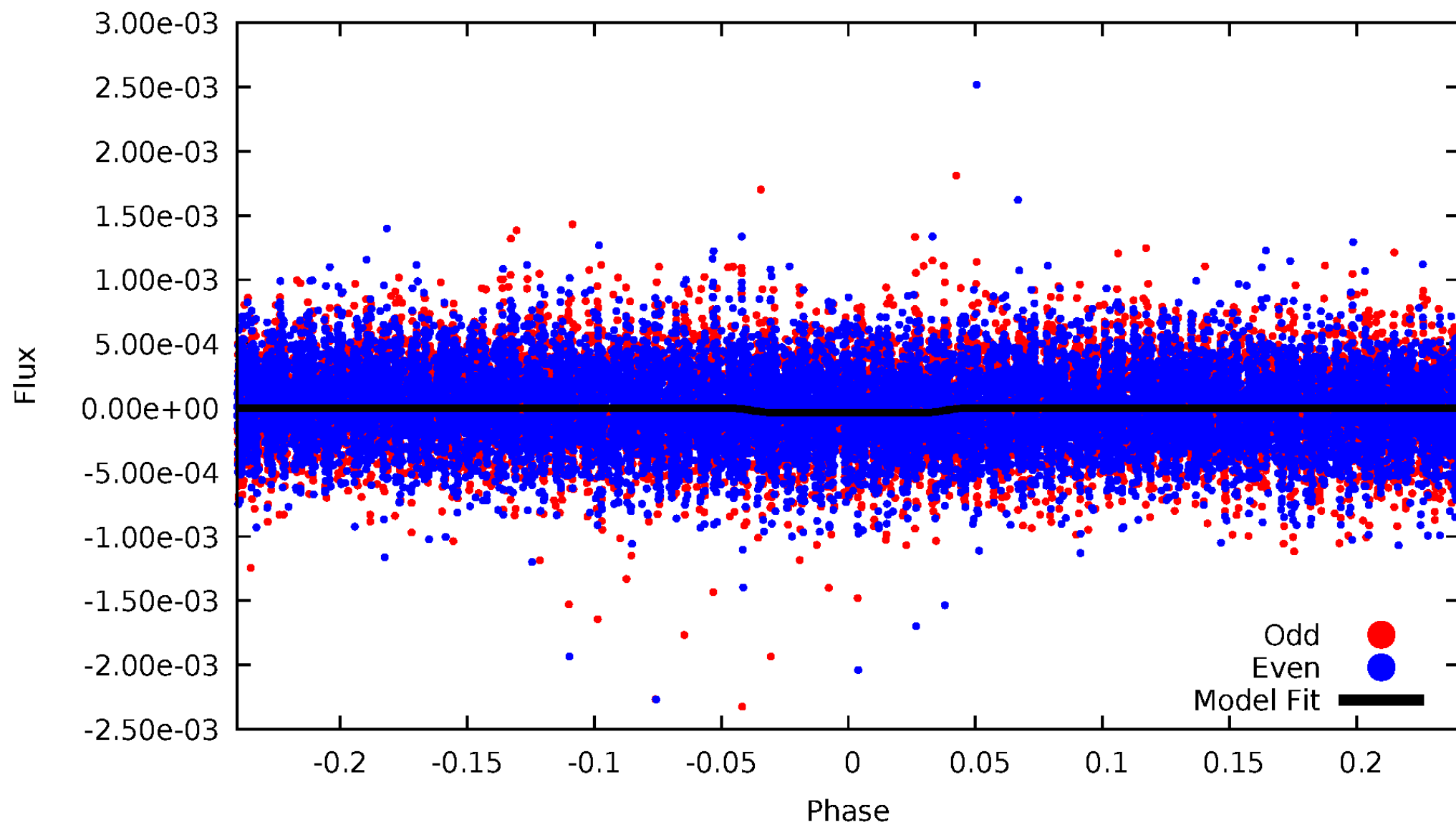
# DV Odd/Even

TCE 008389300-01



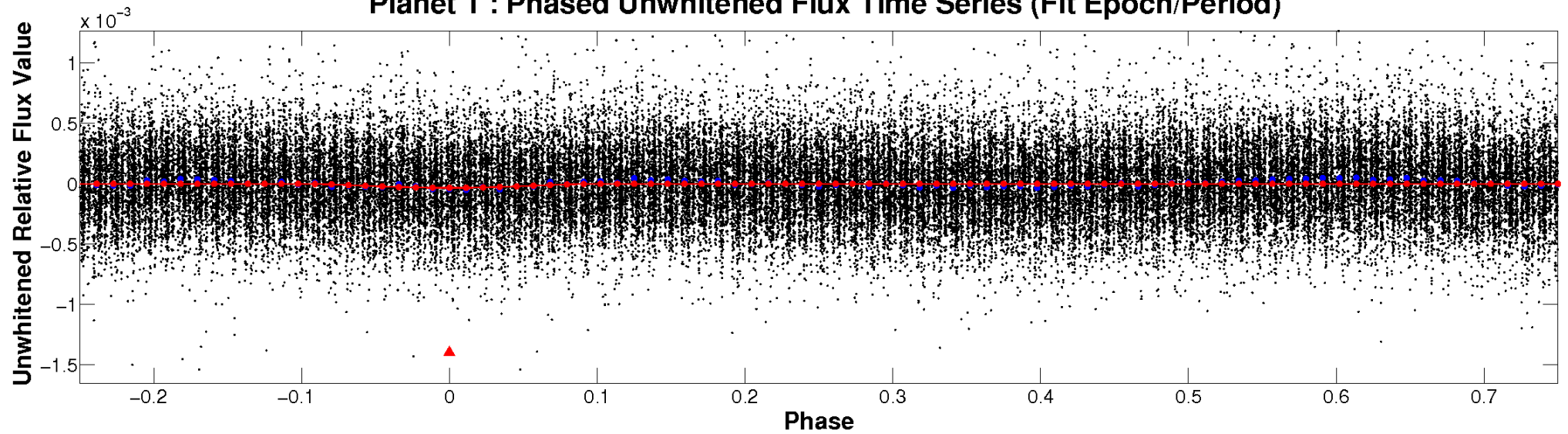
# ALT Odd/Even

TCE 008389300-01

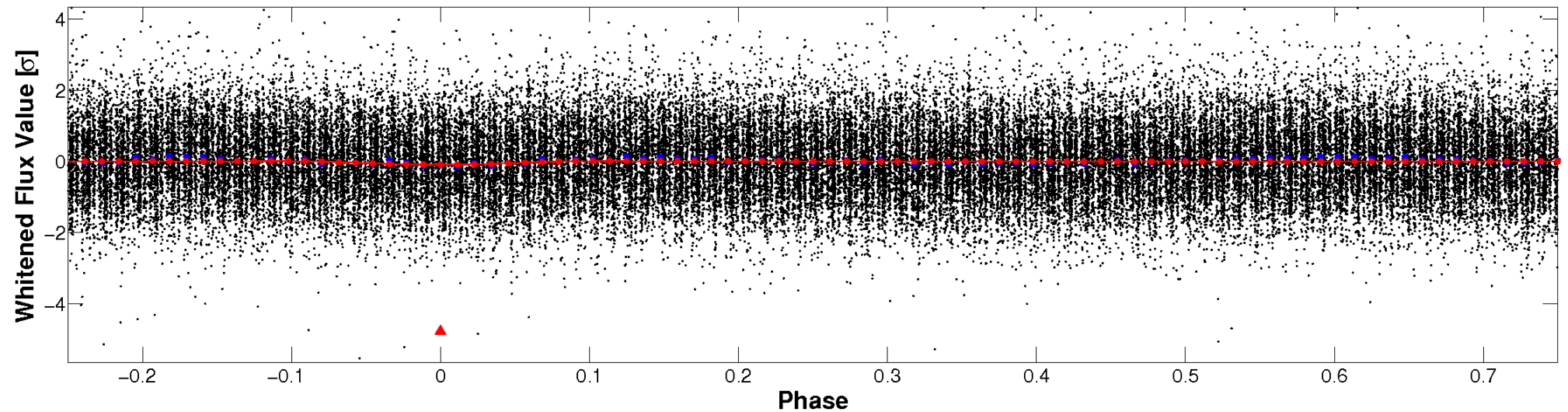


# Non-Whitened Vs. Whitened Light Curve

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



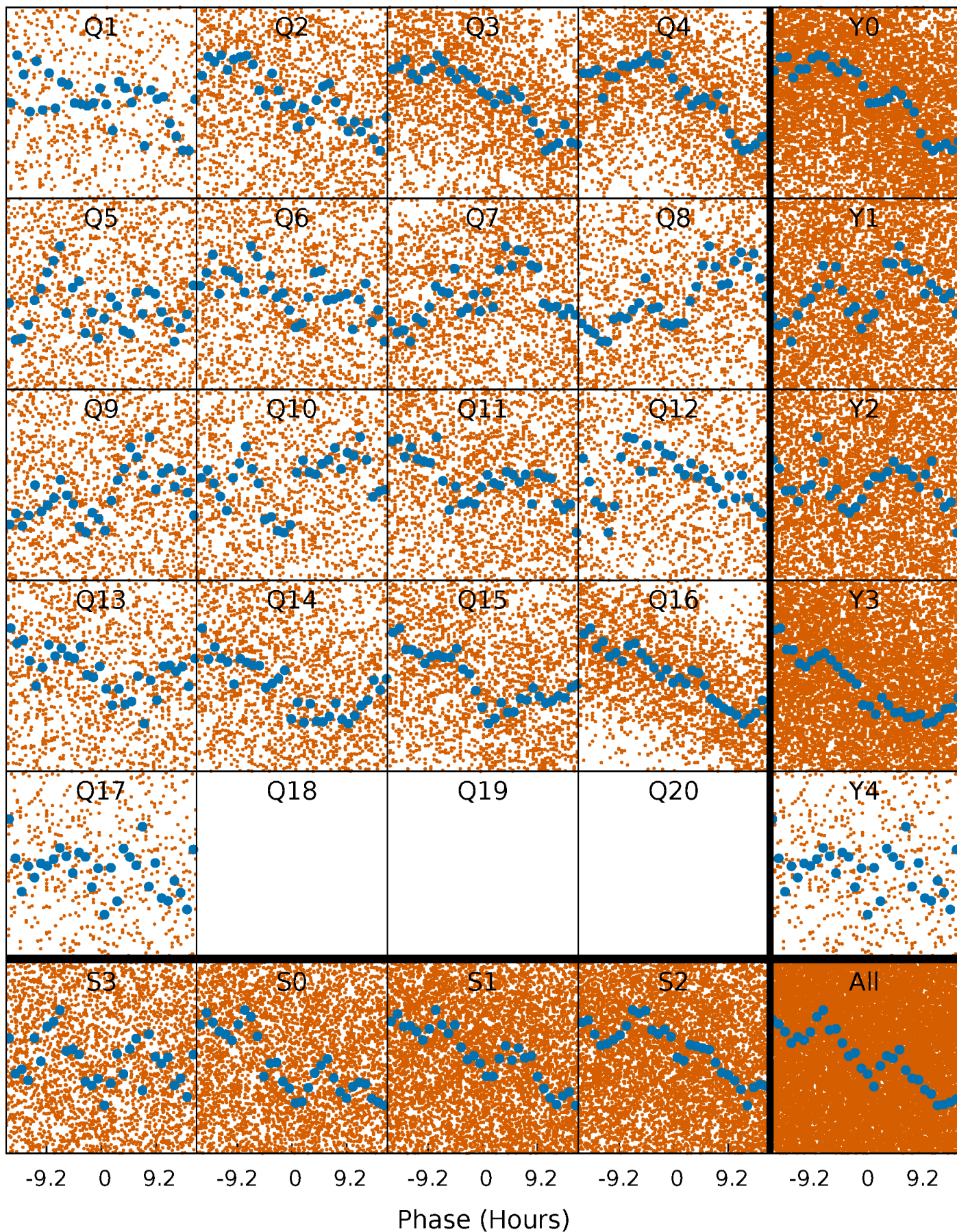
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

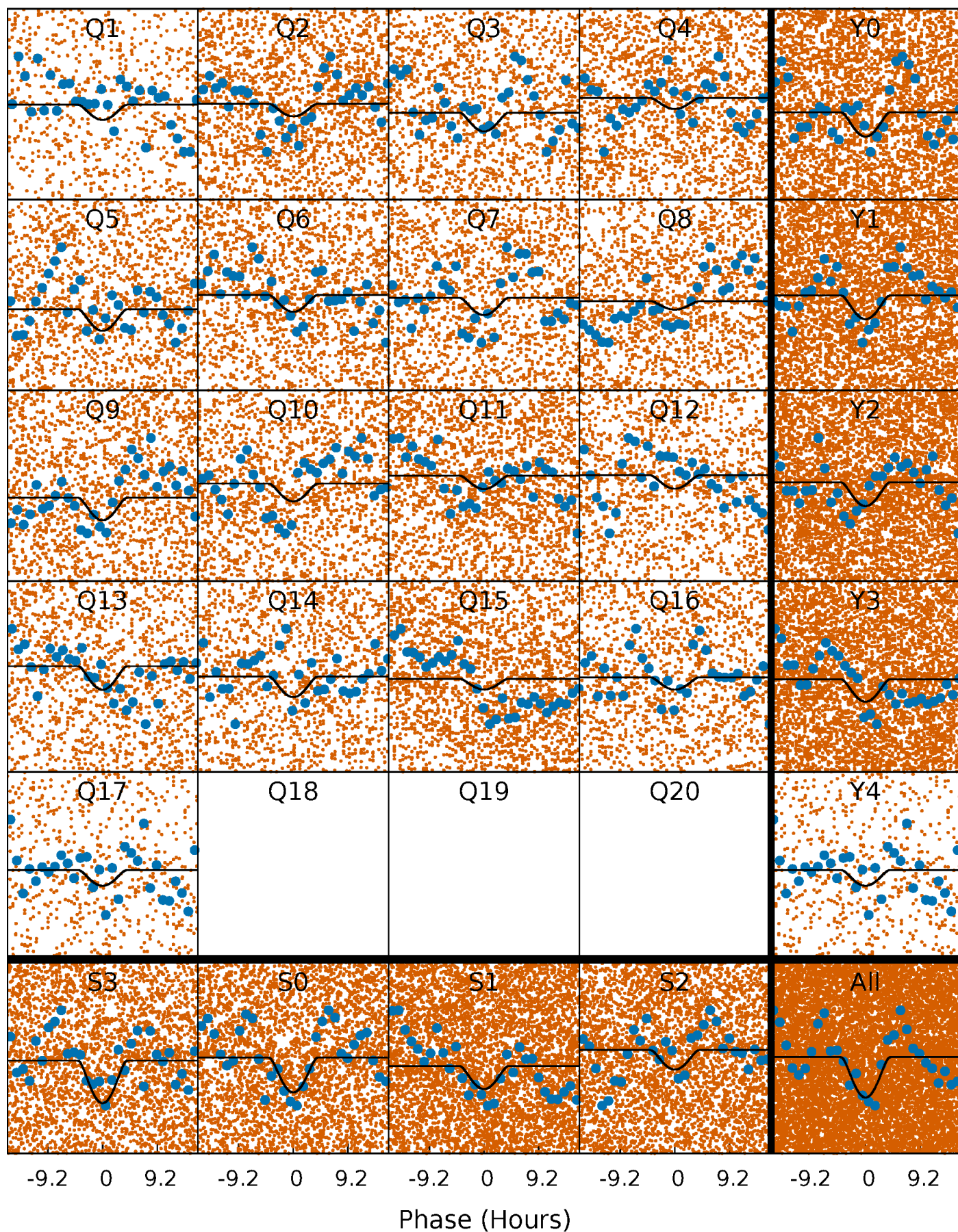
TCE 008389300-01 P= 1.798121 Days  $T_0=132.452137$  (BKJD)





# DV Quarter-Phased Transit Curves

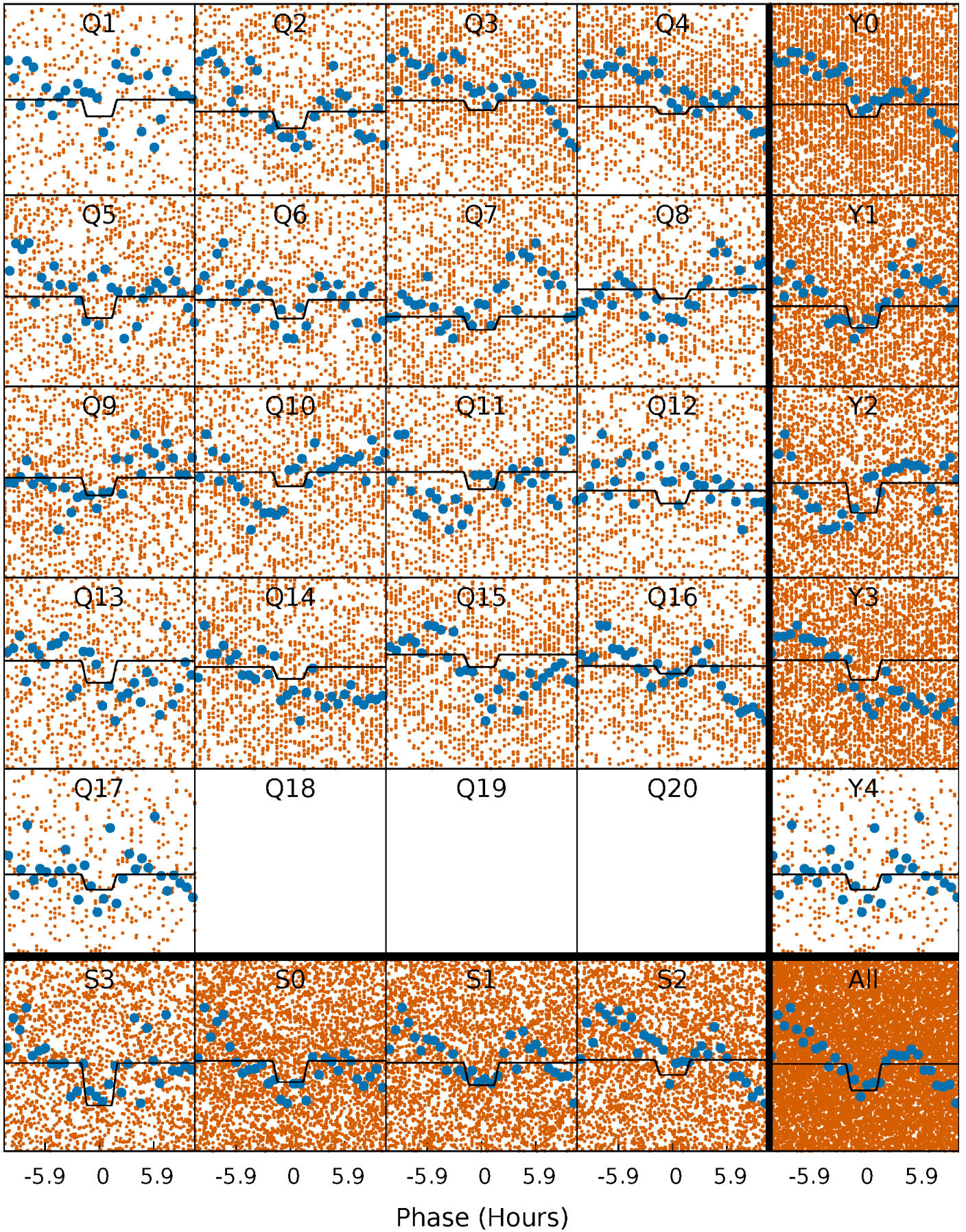
TCE 008389300-01 P= 1.798121 Days  $T_0=132.452137$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

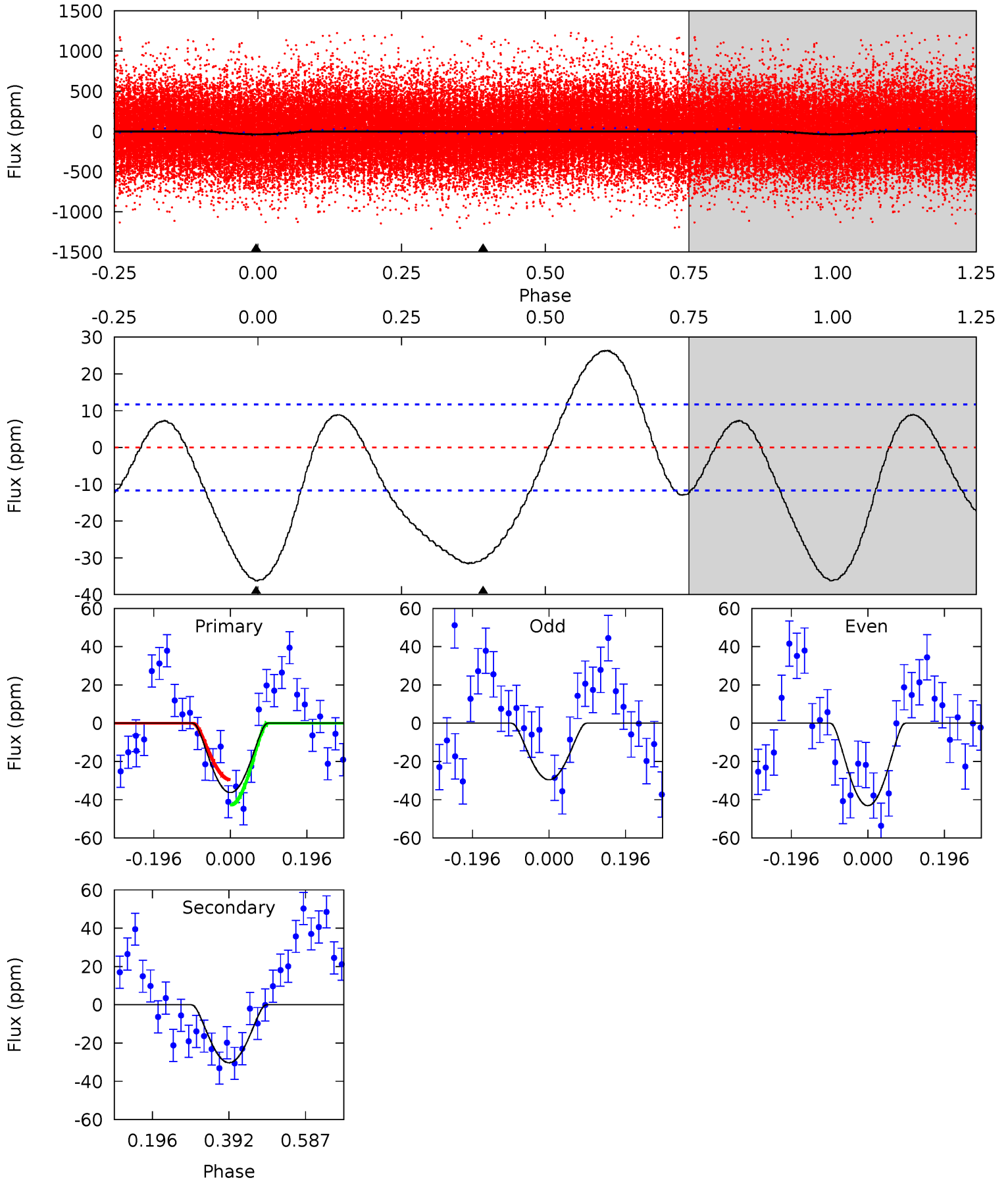
TCE 008389300-01 P= 1.798101 Days  $T_0=132.491696$  (BKJD)



# DV Model-Shift Uniqueness Test

008389300-01, P = 1.798121 Days, E = 130.654016 Days

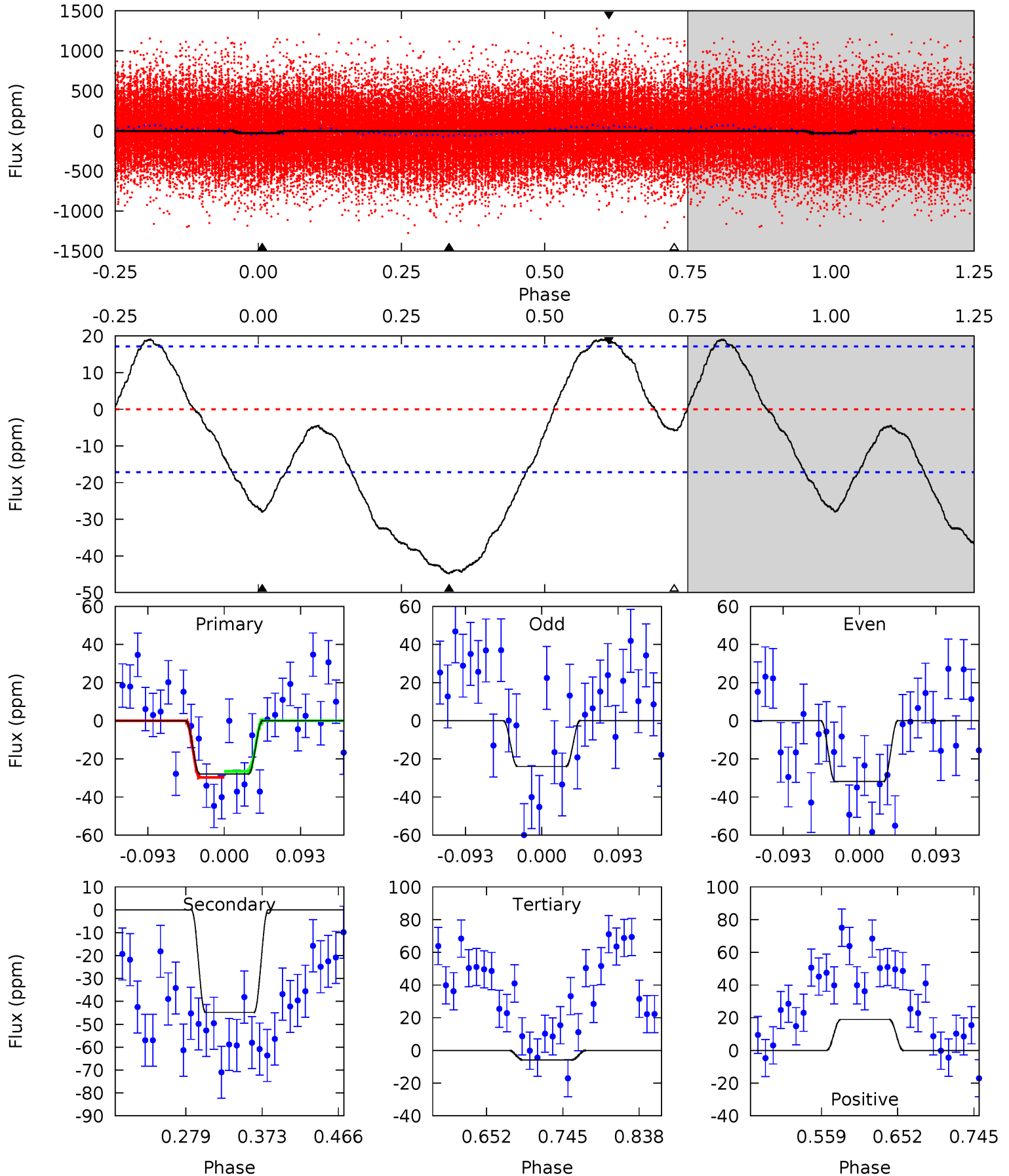
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	11.5	0	0	4.42	1.29	5.44	13.7	13.7	11.5	11.5	2.59	1.17	0.42	2.57



# Alt Model-Shift Uniqueness Test

008389300-01, P = 1.798101 Days, E = 130.693595 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
7.45	12.0	1.55	5.05	4.58	1.68	4.18	5.89	2.40	10.4	6.92	1.06	0.96	0.30	0.43





### Stellar Parameters For KIC 008389300

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5910^{+158}_{-175}$	$4.371^{+0.153}_{-0.187}$	$-0.360^{+0.300}_{-0.300}$	$1.013^{+0.278}_{-0.185}$	$0.879^{+0.119}_{-0.079}$	$1.192^{+0.875}_{-0.591}$
	+3%/-3%	+4%/-4%	+83%/-83%	+27%/-18%	+14%/-9%	+73%/-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 008389300-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-30 \pm 3$	$4.27^{+4.30}_{-2.98}$	$2211^{+162}_{-137}$	$2712^{+1609}_{-5061}$	$0.703^{+6.749}_{-0.523}$
Alt.	$-45 \pm 4$	$4.16^{+4.47}_{-2.96}$	$2217^{+161}_{-139}$	$2992^{+1715}_{-5083}$	$1.102^{+12.289}_{-0.845}$

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

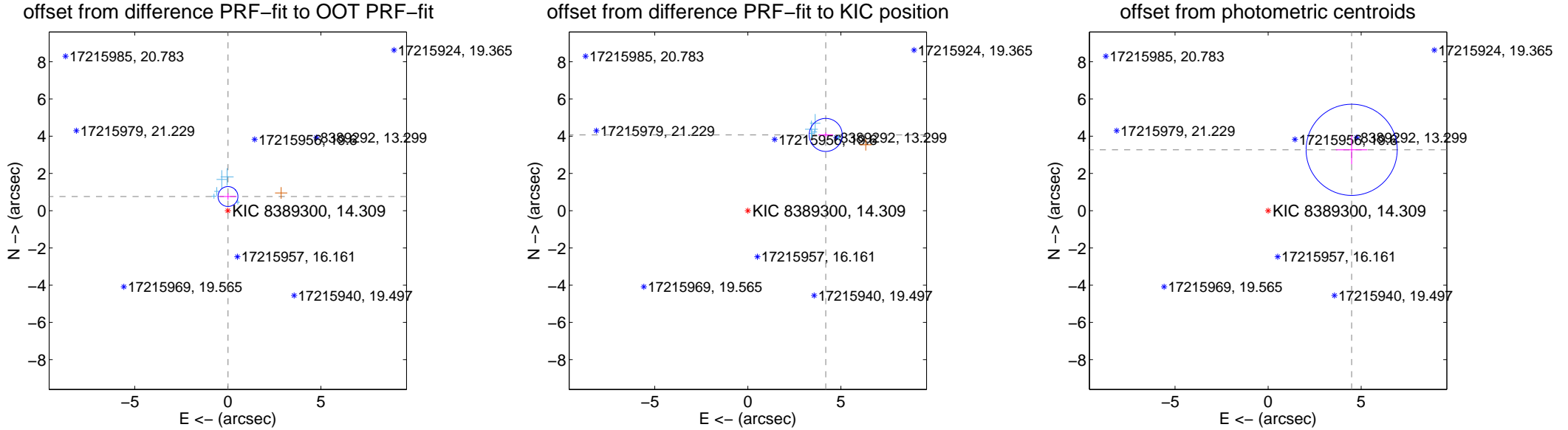
## DV Centroid Data

Supplemental centroid analysis for 008389300-01. Kepler magnitude: 14.31. Transit SNR 6.48

There are 5 quarters with good PRF difference image offsets

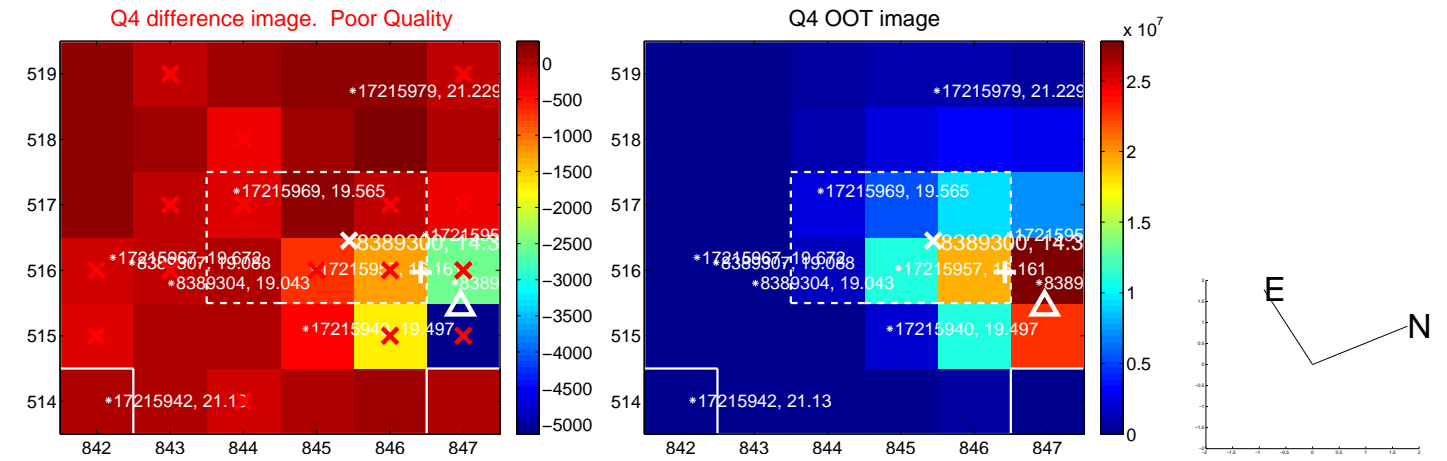
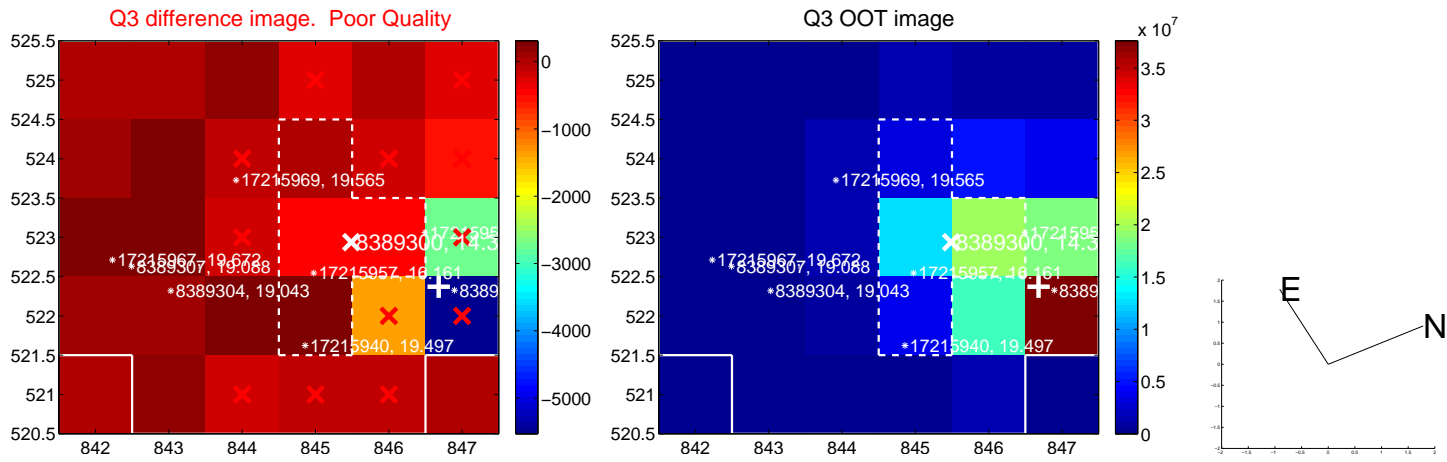
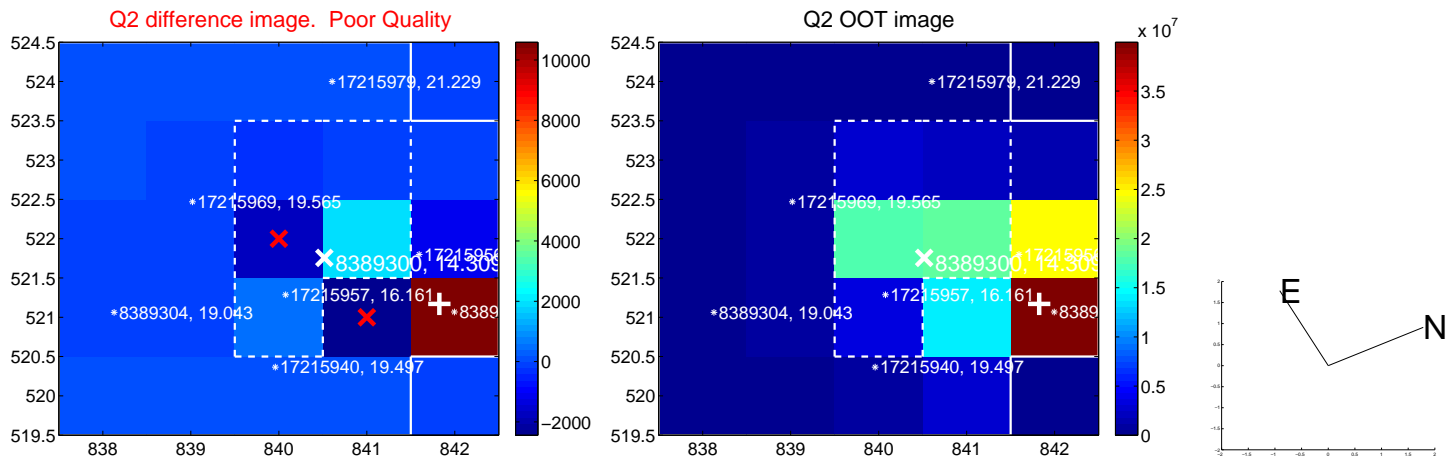
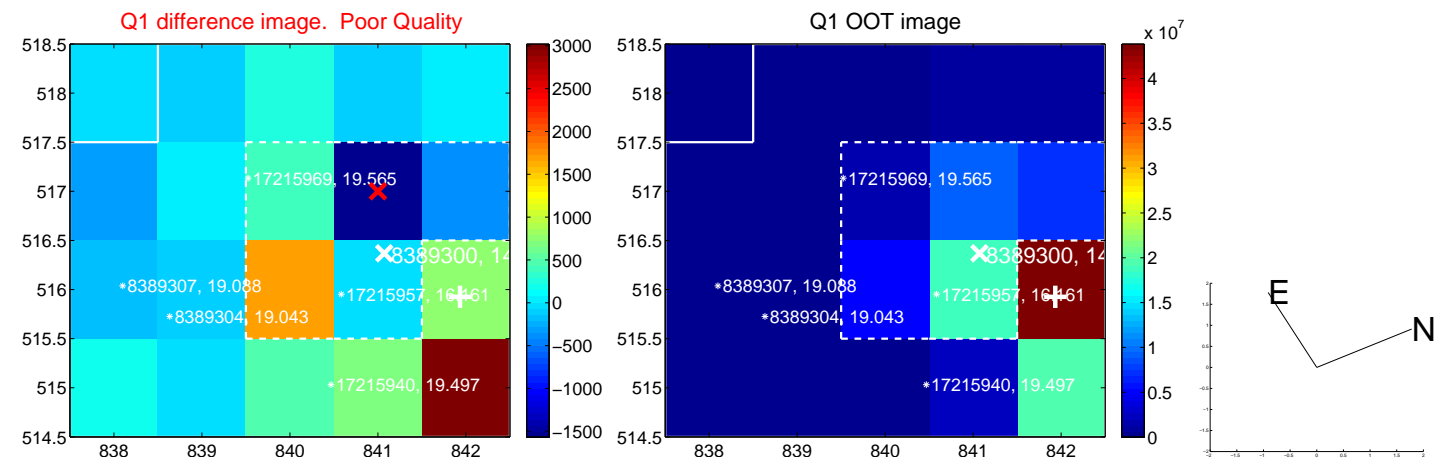
The OOT PRF centroid is offset from the target star catalog position by about 5.09 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.761 \pm 0.178$	4.27	$-0.010 \pm 0.457$	$0.761 \pm 0.179$
PRF-fit source offset from KIC position	$5.839 \pm 0.296$	19.74	$-4.186 \pm 0.394$	$4.071 \pm 0.127$
photometric centroid source offset	$5.55 \pm 0.82$	6.80	$-4.49 \pm 0.84$	$3.27 \pm 0.77$

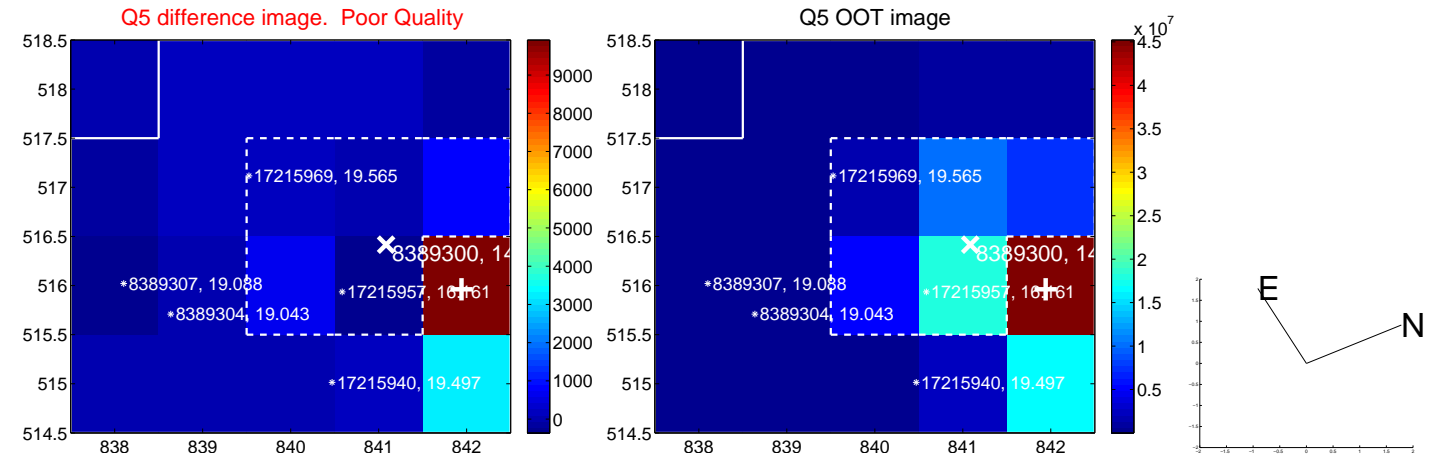


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

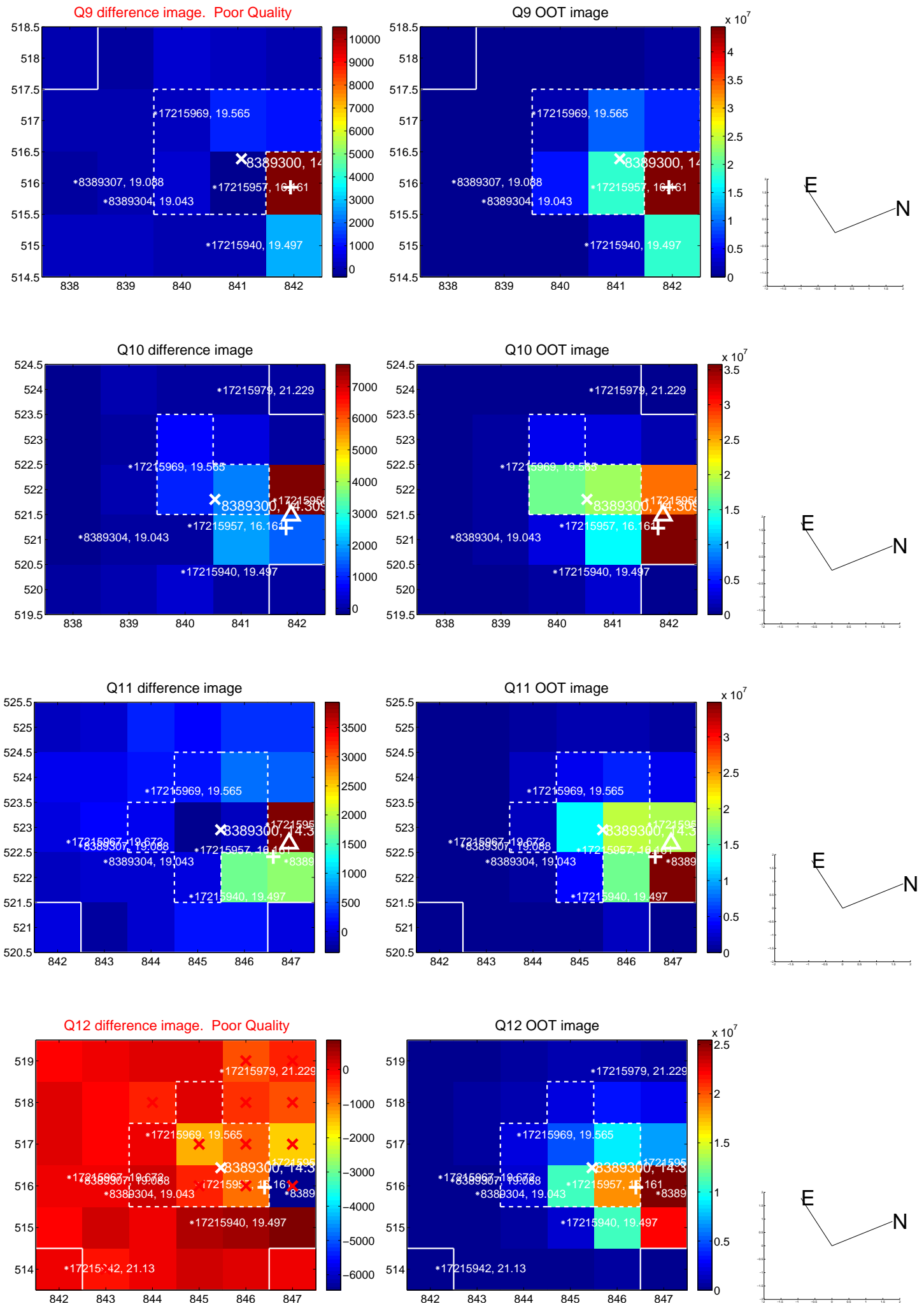


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

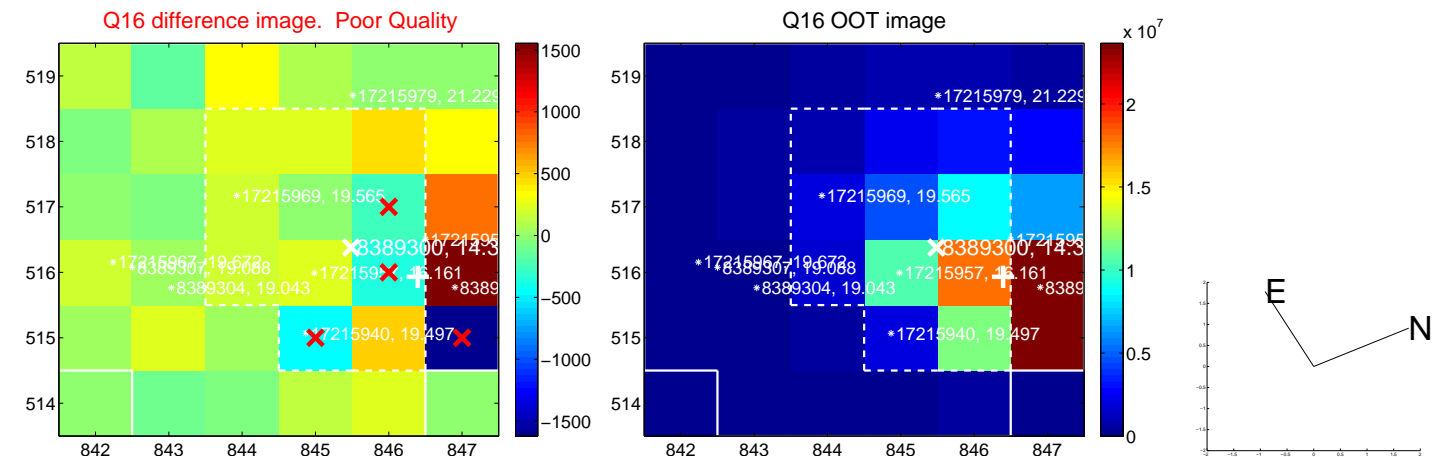
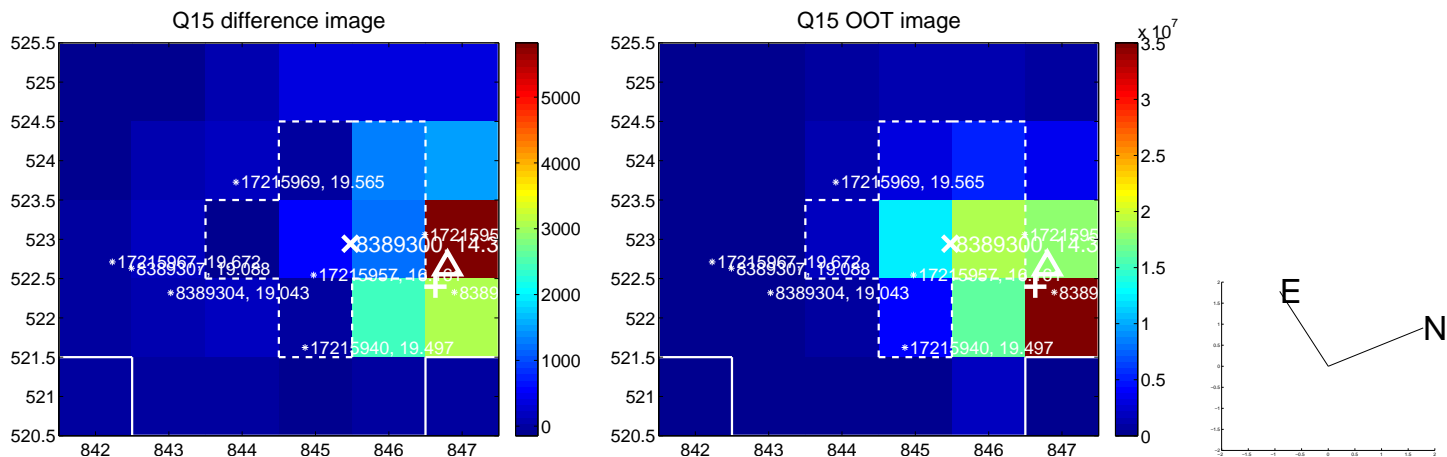
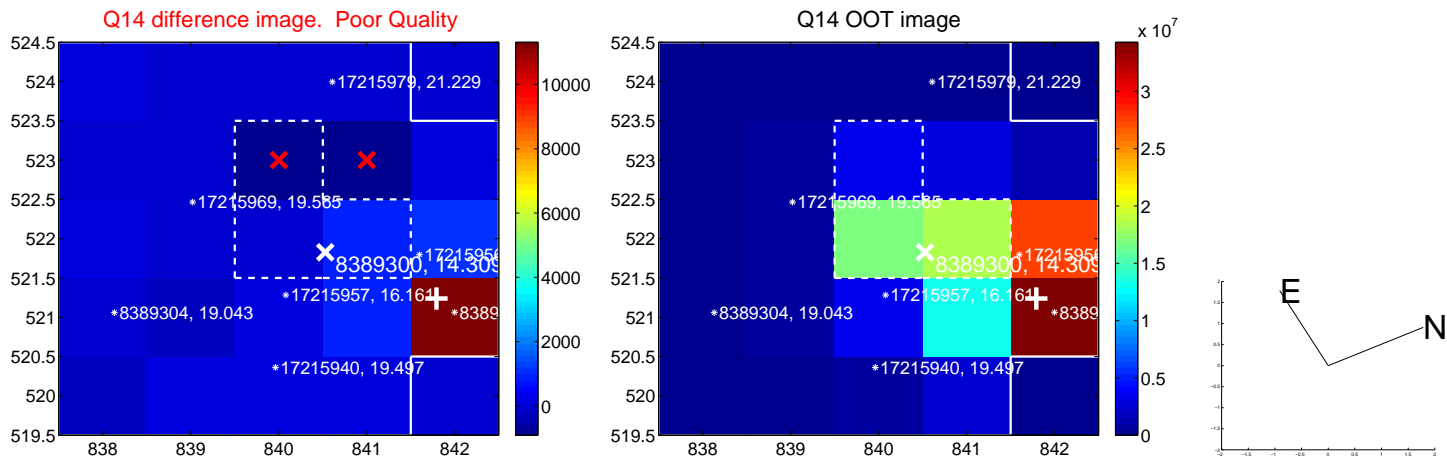
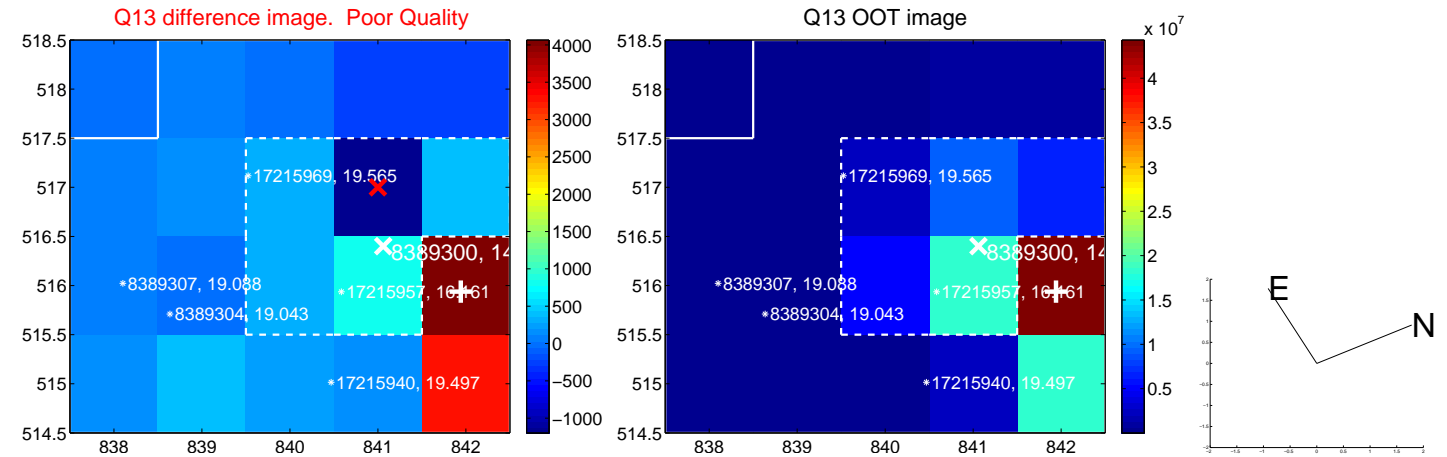




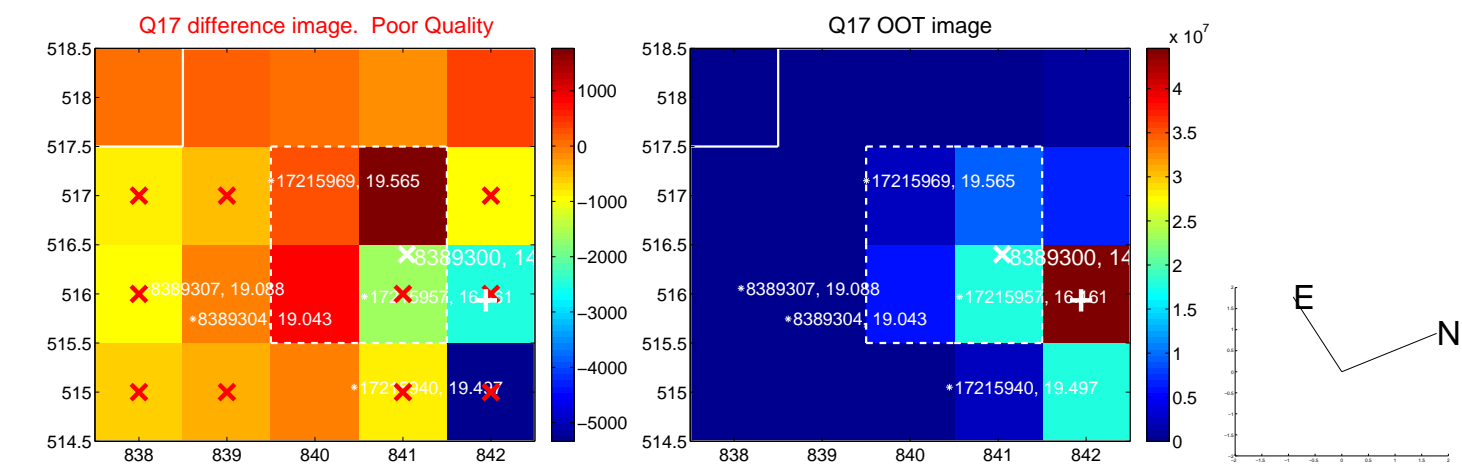
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



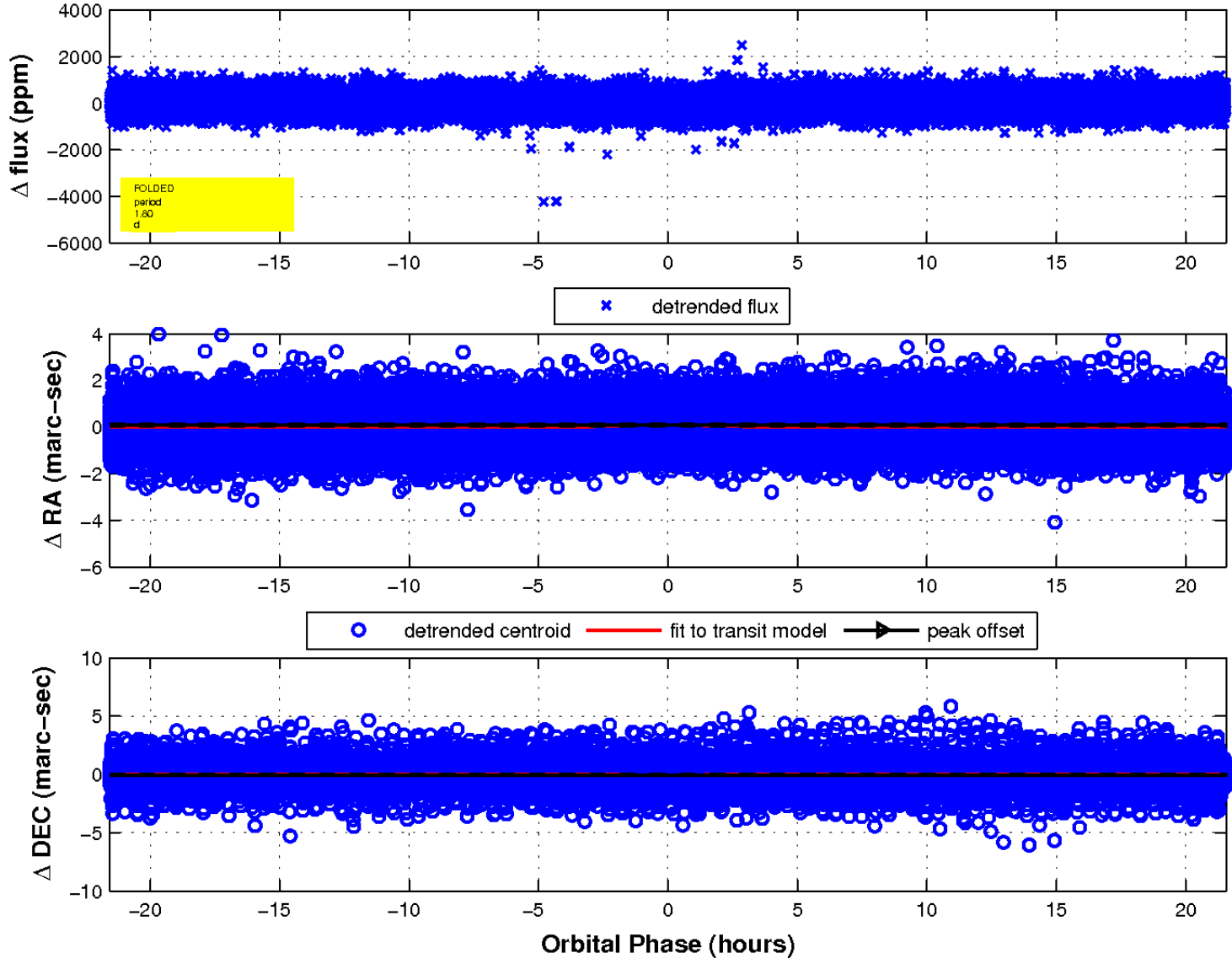
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

