

# KIC 004844470

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004844470-01	OBS	3469.01	60.532454	134.578770	501.5	7.148	12.7	14.1	0.85	5631	2.00	7.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004844470-01	OBS	PC	0.95	0	0	0	0	NO_COMMENT

**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 004844470-01

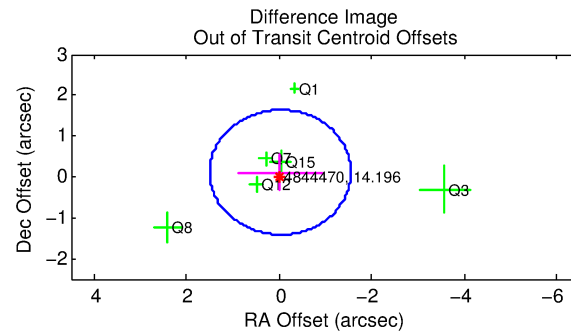
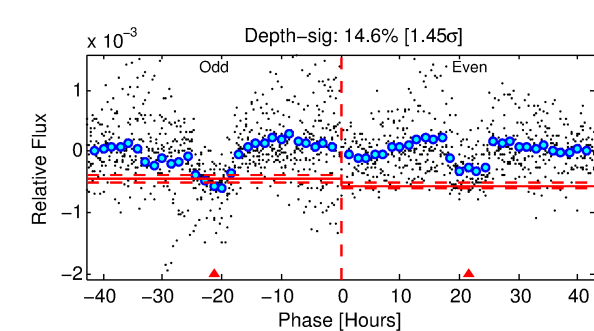
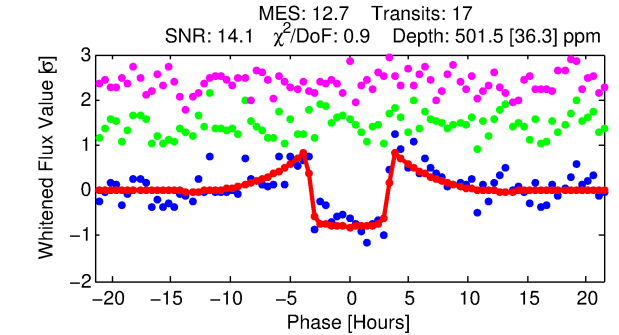
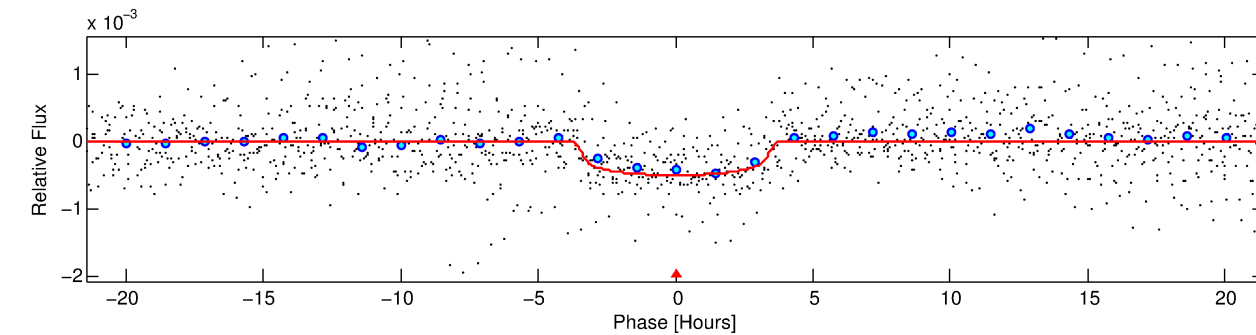
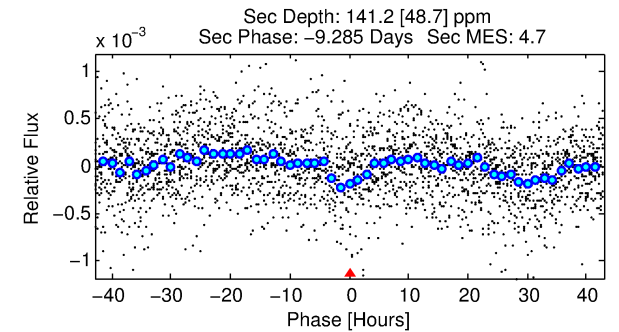
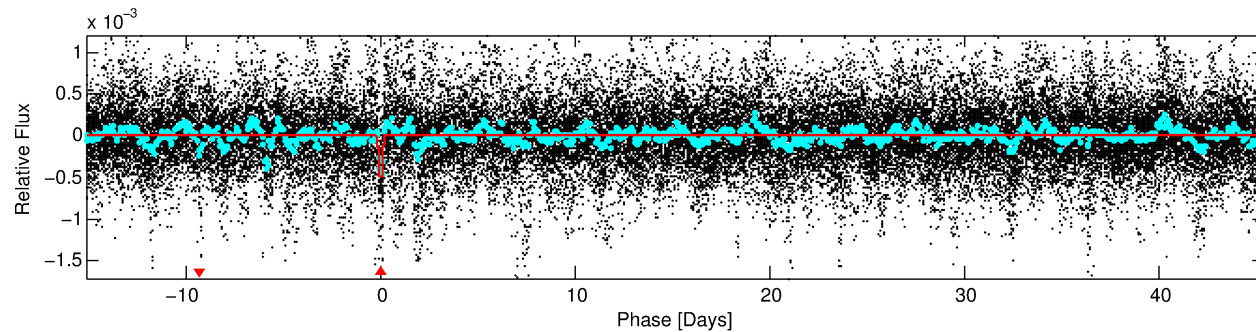
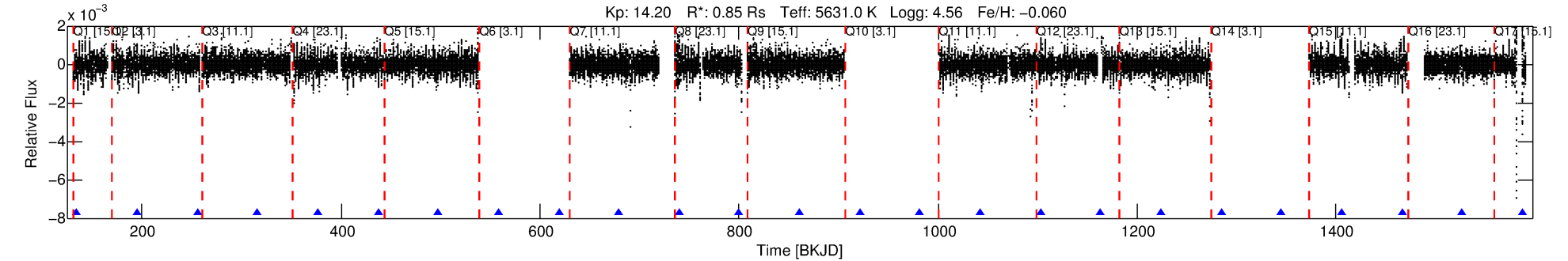
No Significant Match Found

# DV One-Page Summary

KIC: 4844470 Candidate: 1 of 1 Period: 60.532 d

KOI: K03469.01 Corr: 0.983

Kp: 14.20 R\*: 0.85 Rs Teff: 5631.0 K Logg: 4.56 Fe/H: -0.060



## DV Fit Results:

Period = 60.53245 [0.00037] d  
Epoch = 134.5788 [0.0051] BKJD  
Rp/R\* = 0.0217 [0.0070]  
a/R\* = 50.08 [67.43]  
b = 0.67 [1.13]  
Seff = 7.38 [2.61]  
Teq = 420 [37] K  
Rp = 2.00 [0.85] Re  
a = 0.2960 [0.0689] AU  
Ag = 1694.30 [1368.31] [1.24σ]  
Teffp = 4168 [773] K [4.84σ]

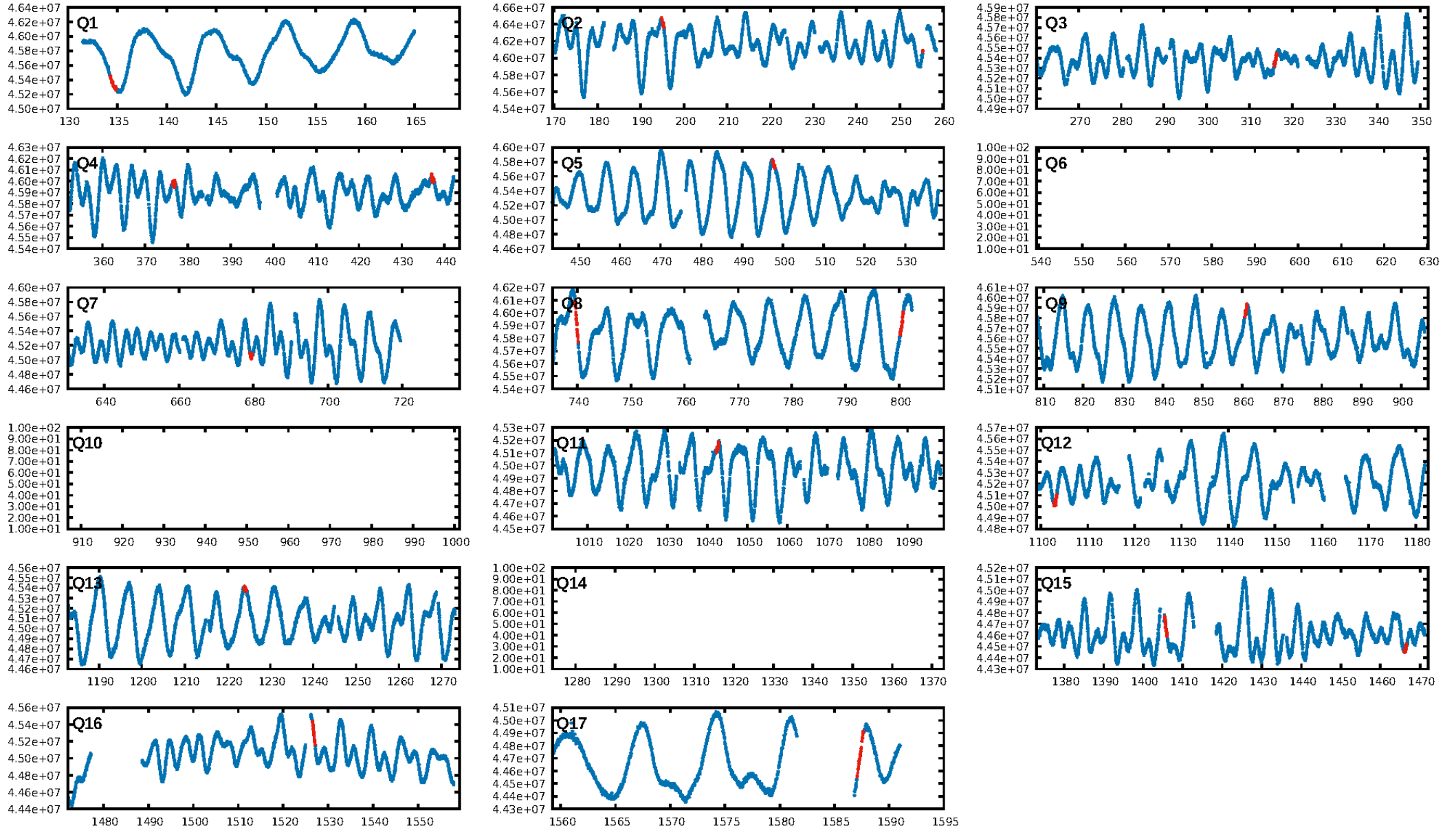
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 85.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 7.37e-27  
RollingBand-fgt: 1.00 [15/15]  
GhostDiagnostic-chr: -3.395  
Centroid-sig: 7.3%  
Centroid-so: 0.562 arcsec [1.20σ]  
OotOffset-rm: 0.114 arcsec [0.22σ]  
KicOffset-rm: 0.019 arcsec [0.03σ]  
OotOffset-st: 0/3/2/1 [6]  
KicOffset-st: 0/3/2/1 [6]  
DiffImageQuality-fgm: 0.83 [5/6]  
DiffImageOverlap-fno: 1.00 [12/12]

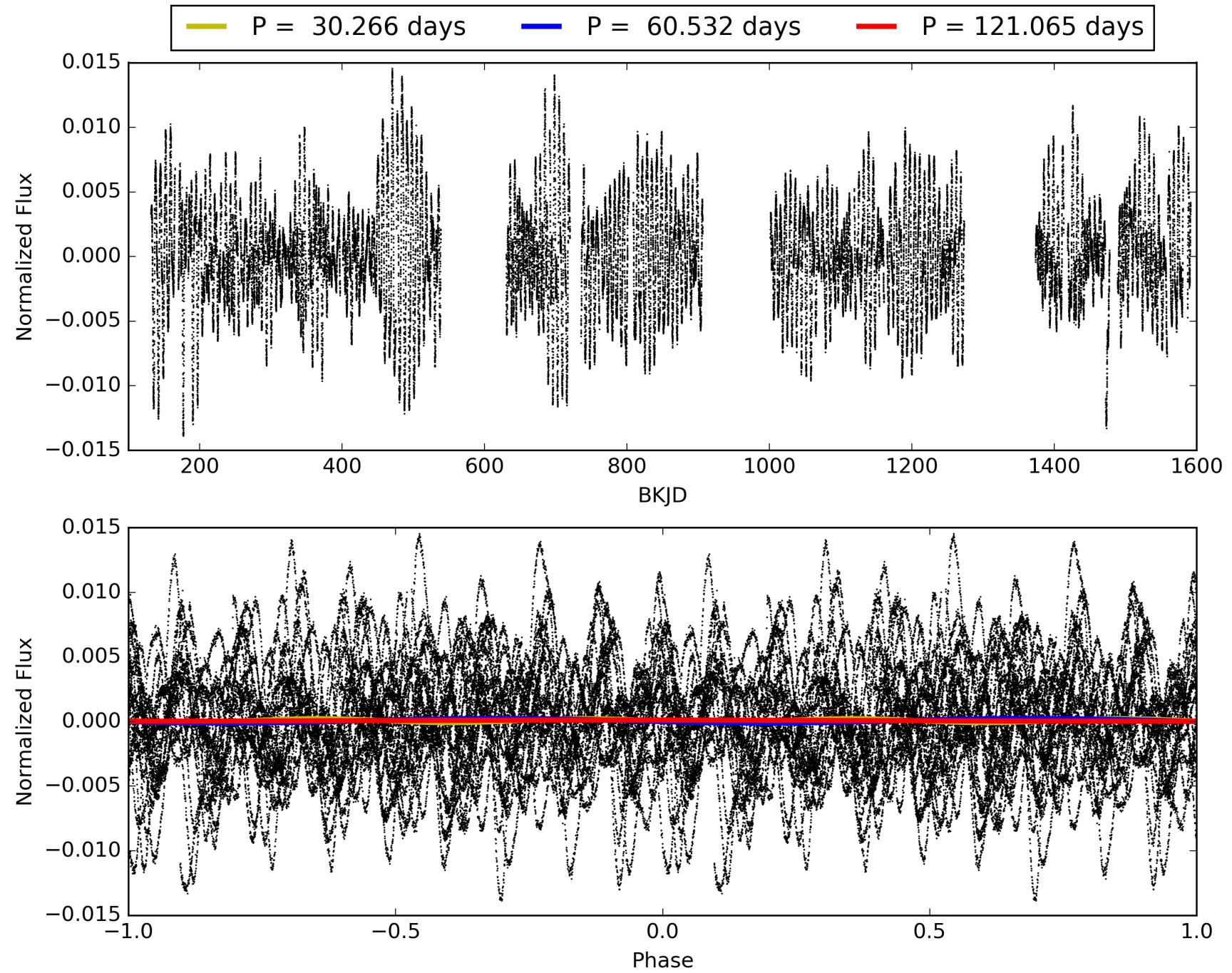
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:20:27 Z

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

# TCE 004844470-01, PDC Light Curves

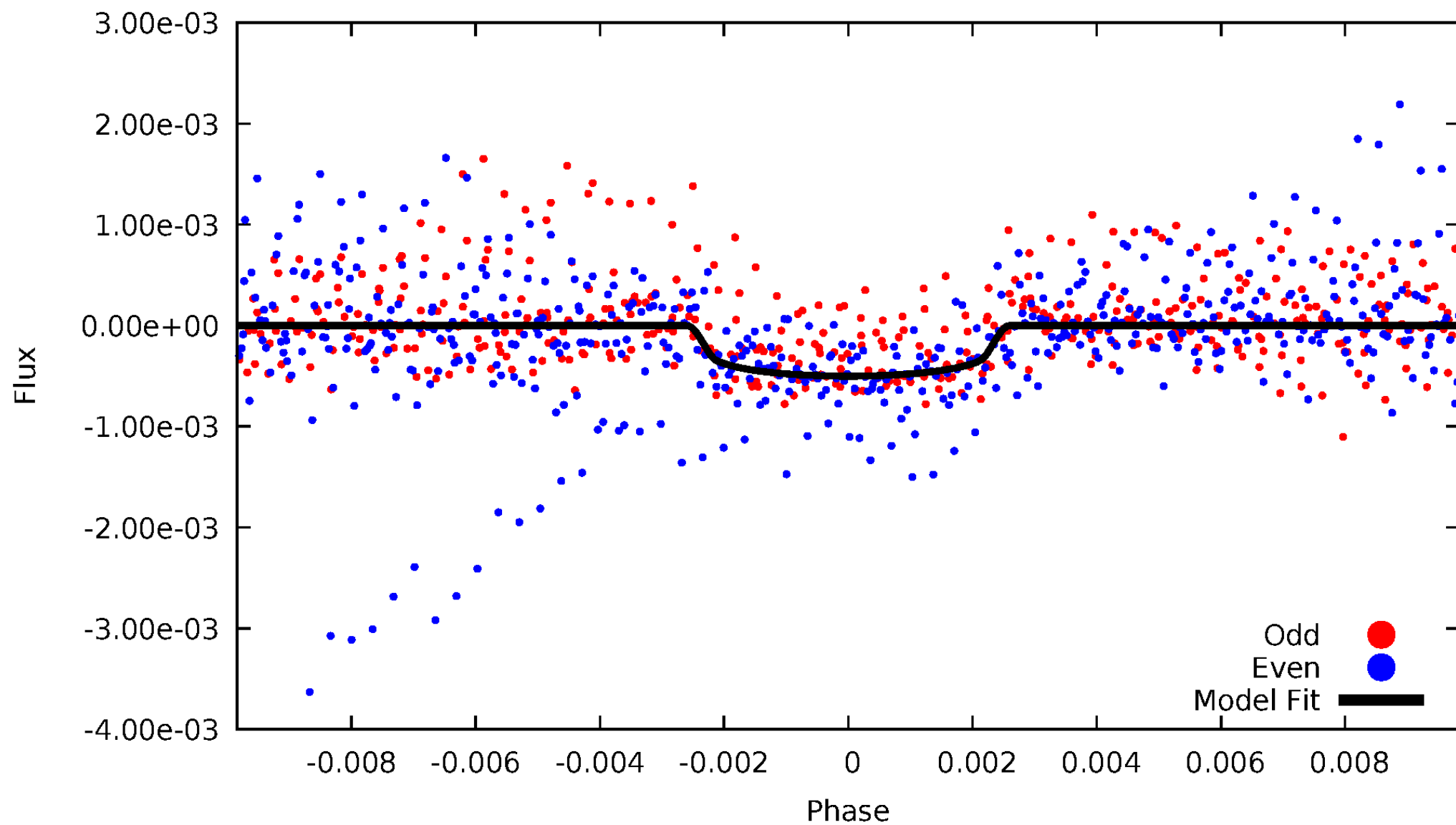


TCE 004844470-01



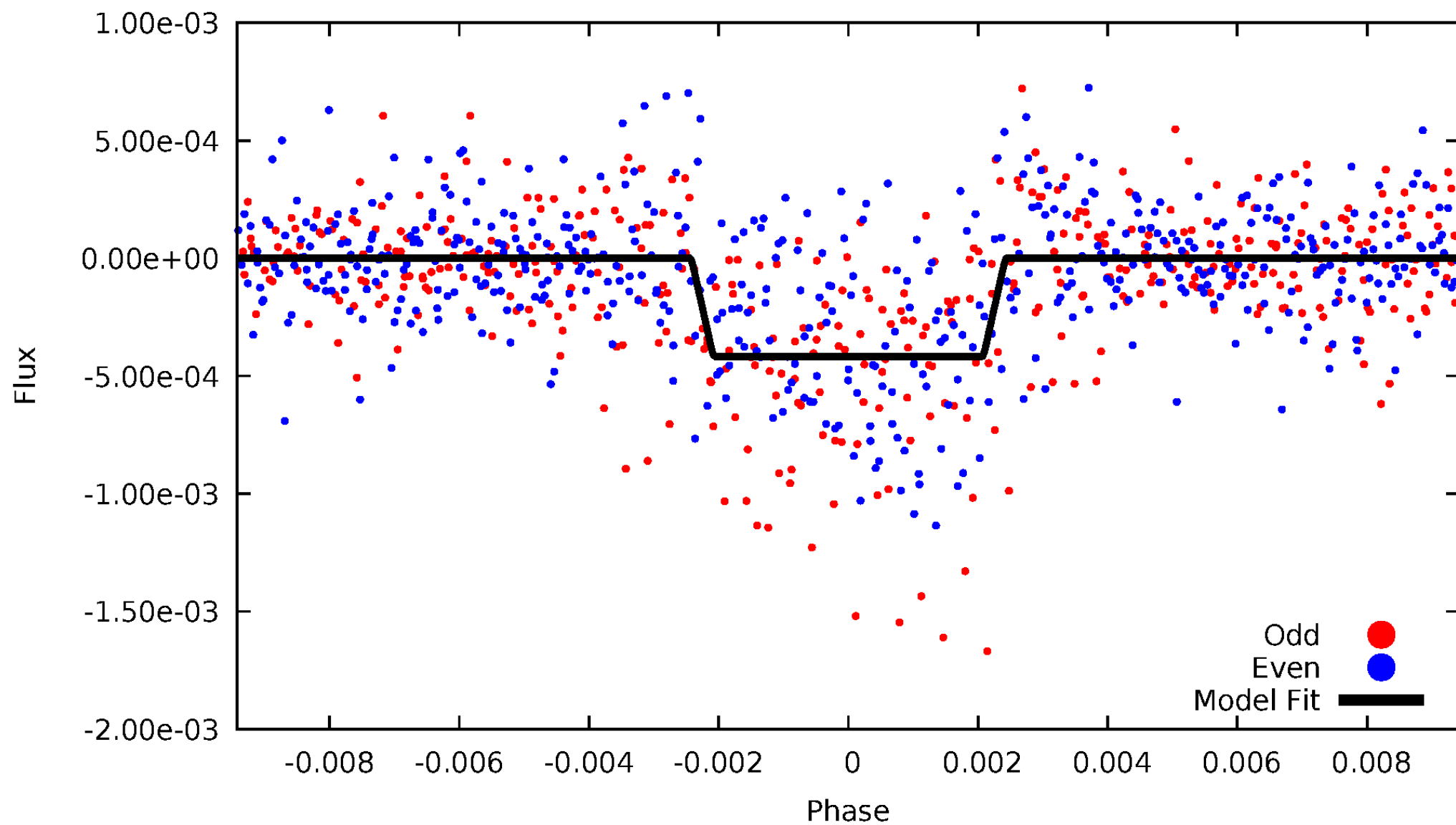
# DV Odd/Even

TCE 004844470-01



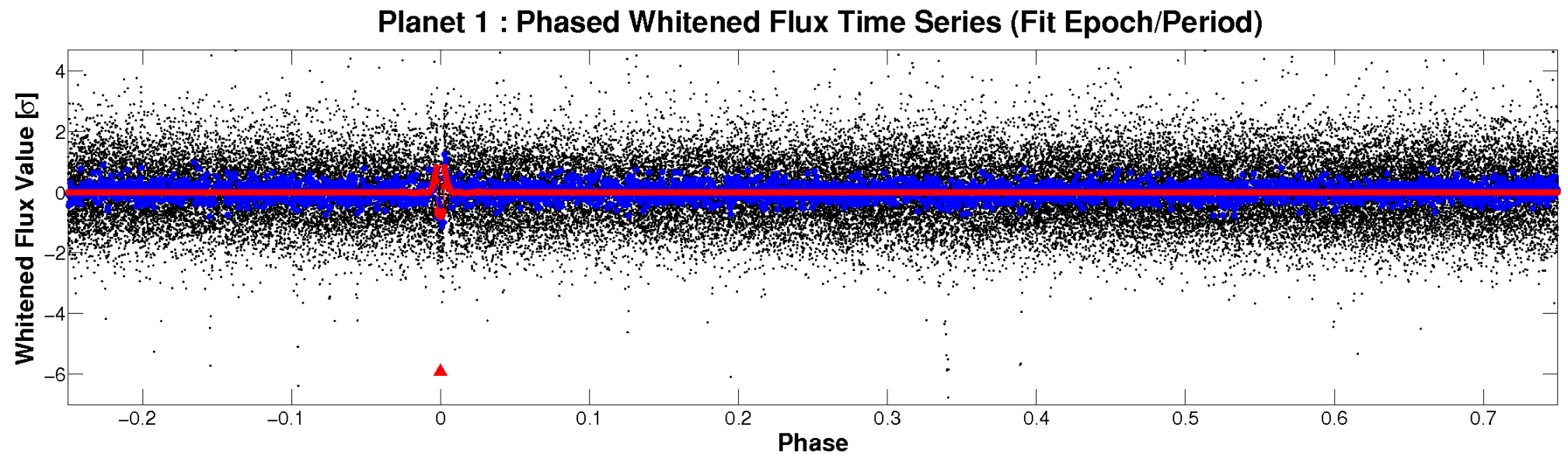
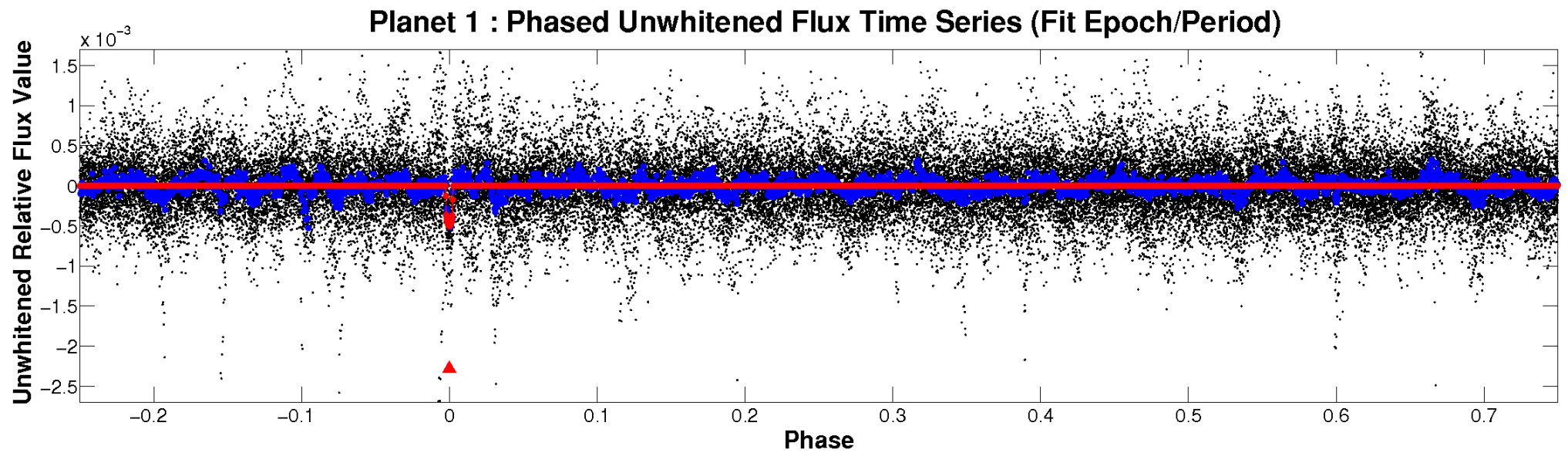
# ALT Odd/Even

TCE 004844470-01



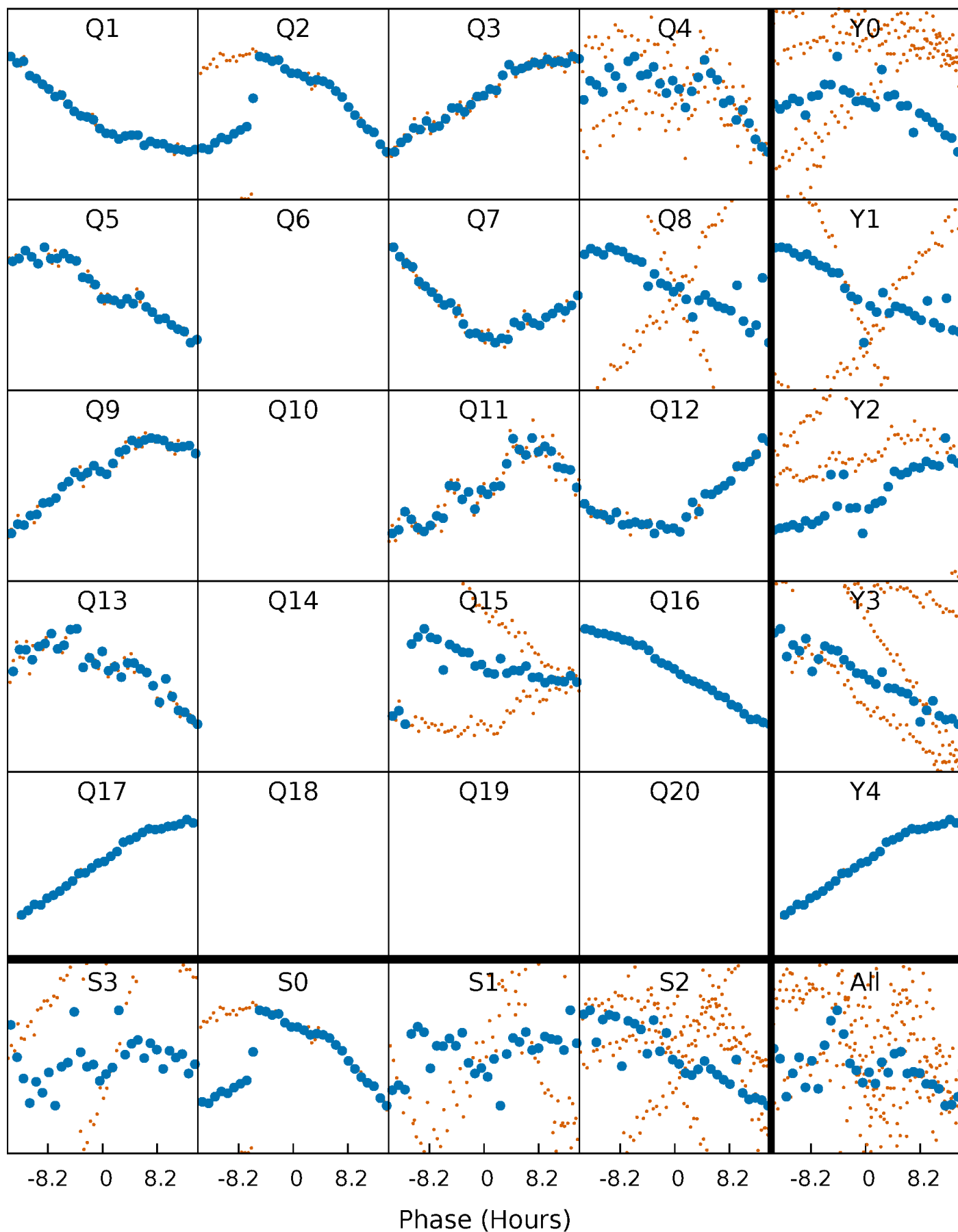


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

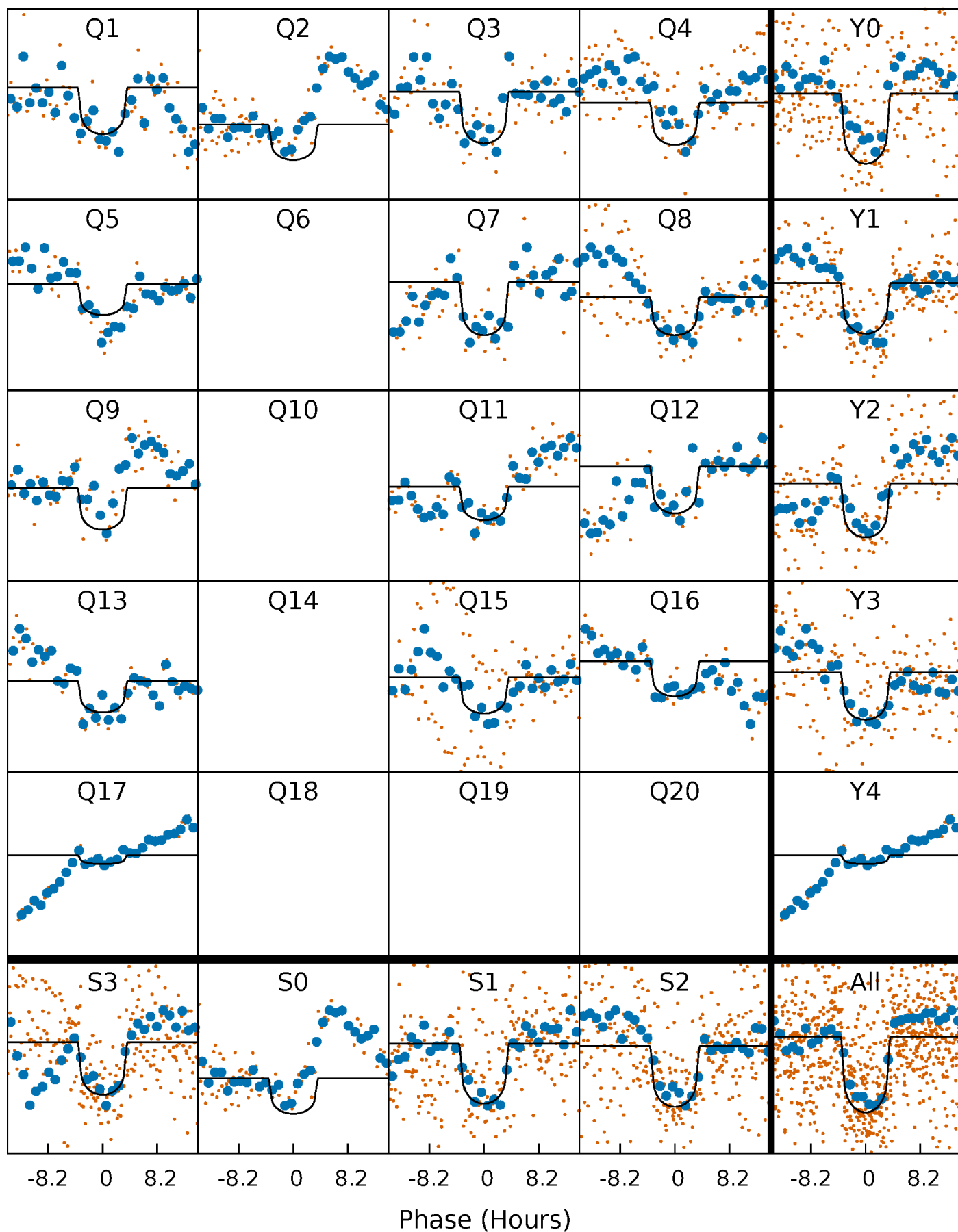
TCE 004844470-01 P= 60.532454 Days  $T_0=134.578770$  (BKJD)





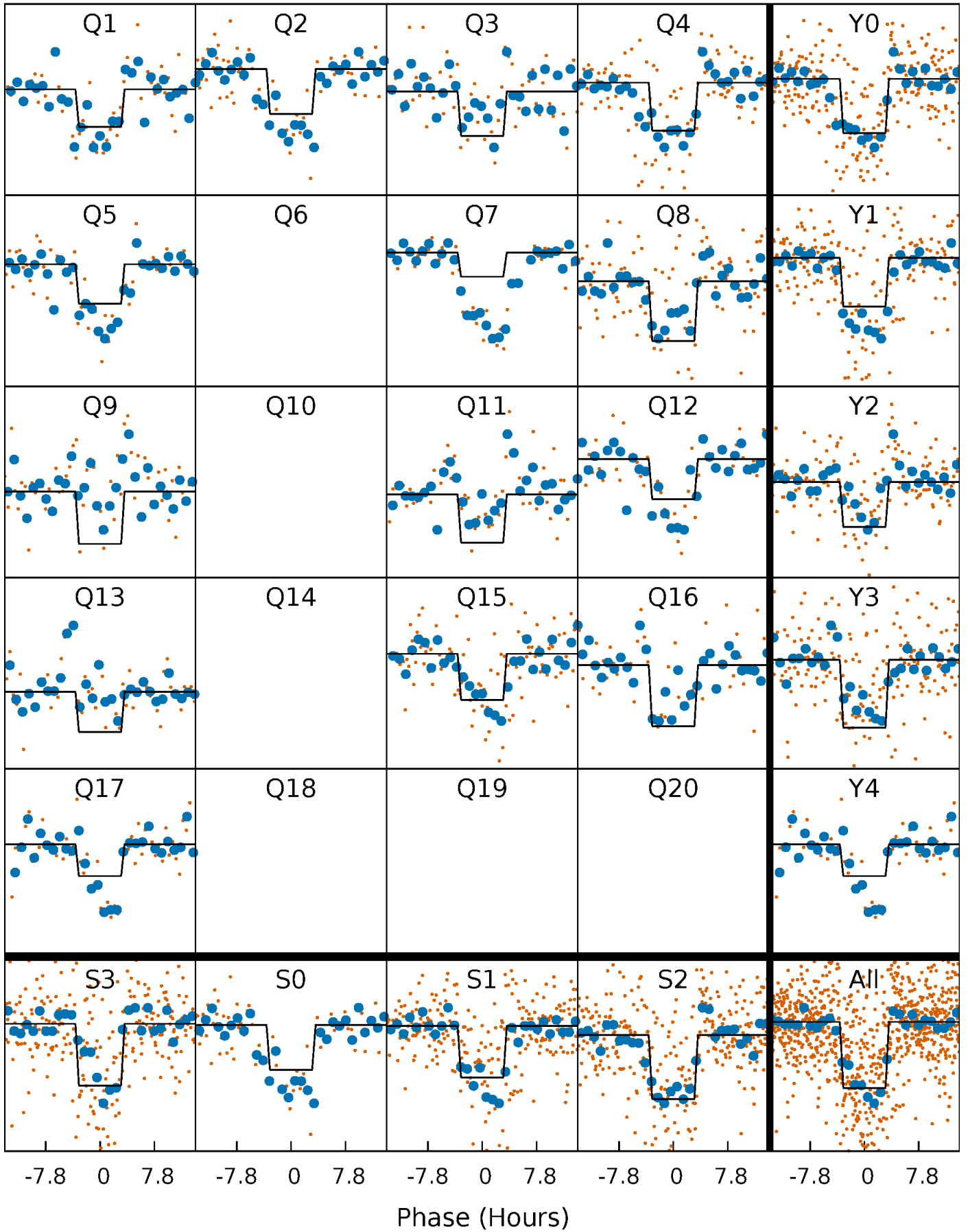
# DV Quarter-Phased Transit Curves

TCE 004844470-01 P= 60.532454 Days  $T_0=134.578770$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

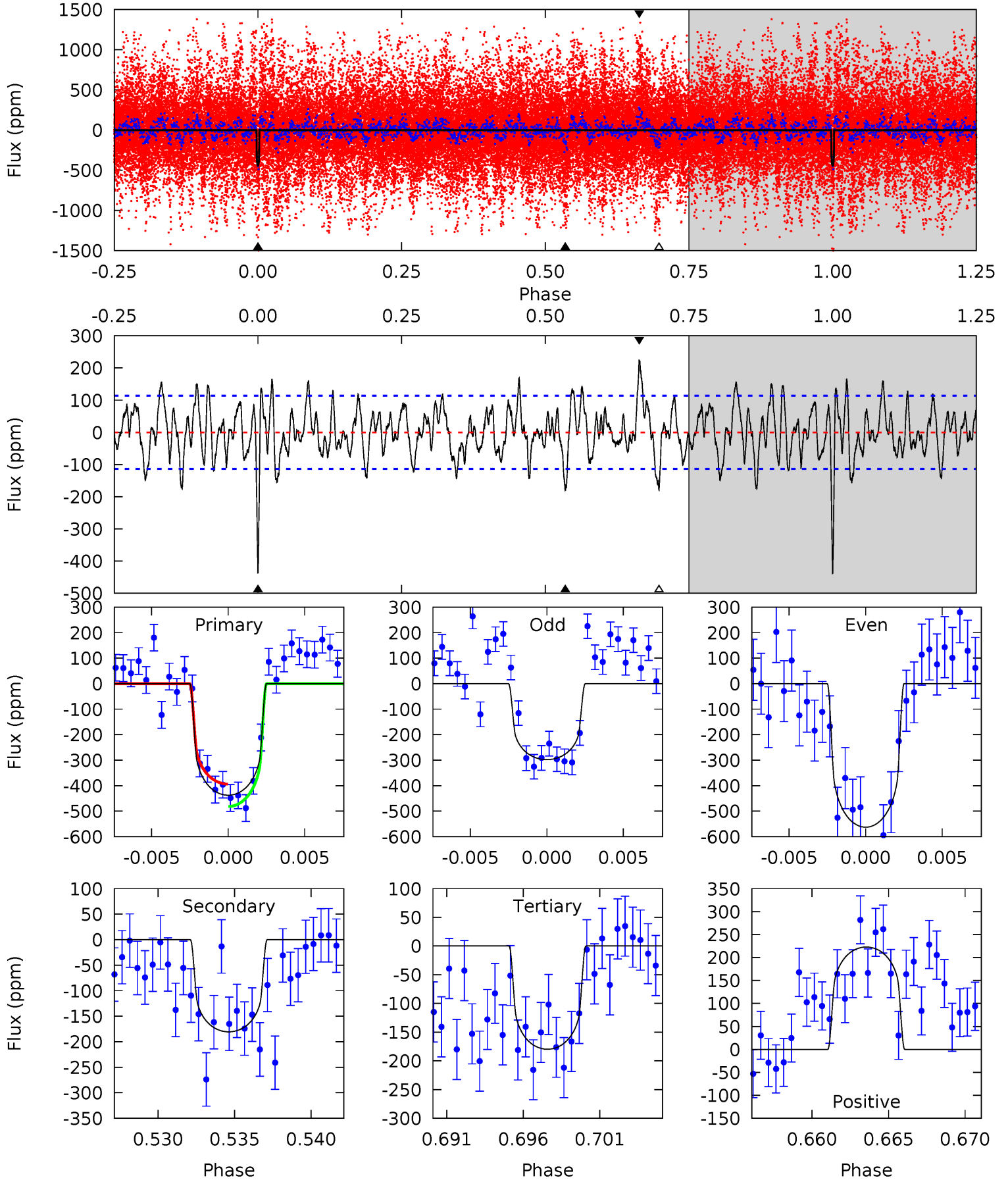
TCE 004844470-01 P= 60.532549 Days  $T_0=134.577627$  (BKJD)



# DV Model-Shift Uniqueness Test

004844470-01, P = 60.532454 Days, E = 74.046316 Days

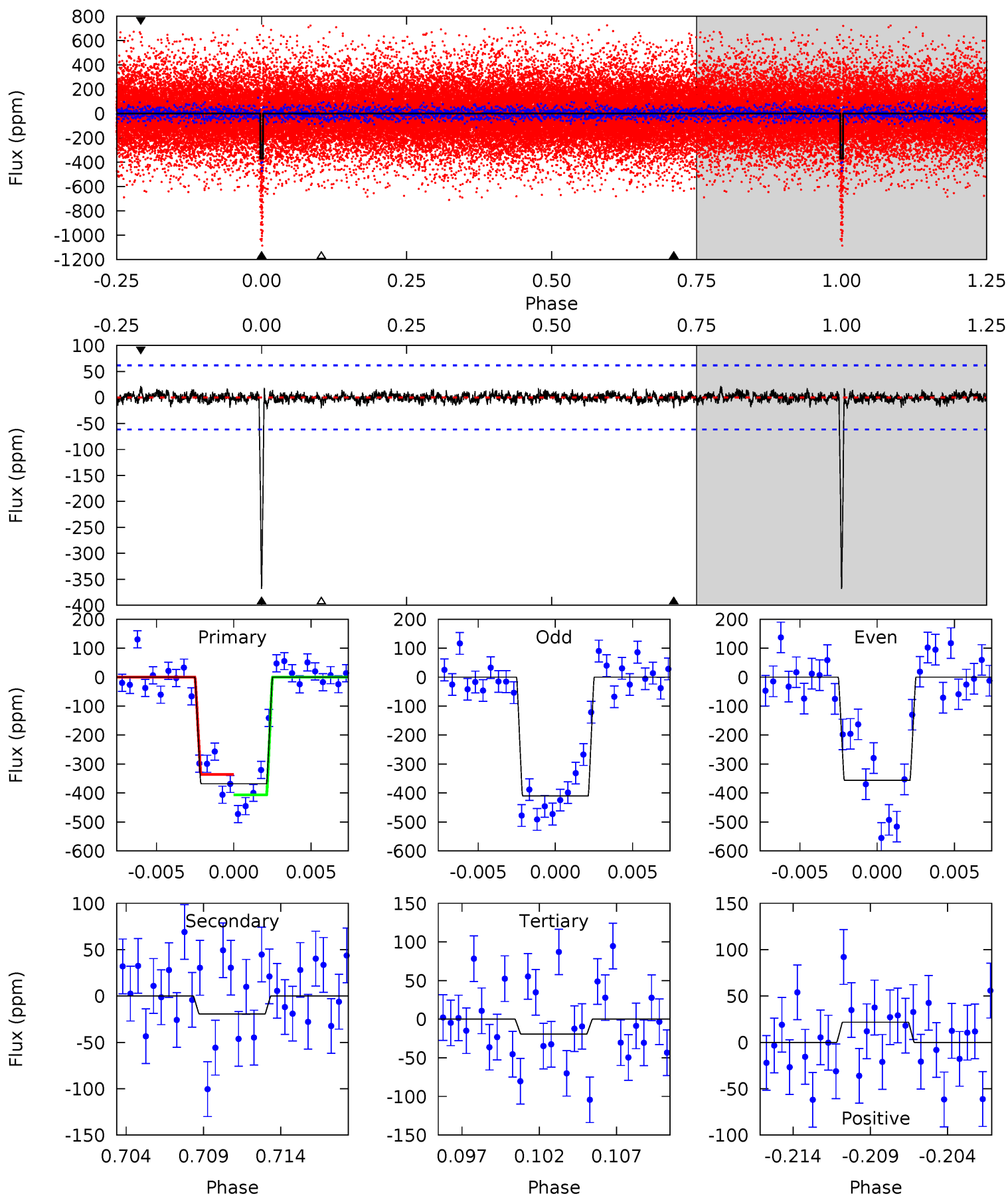
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	8.18	8.14	10.1	5.15	2.79	2.98	11.7	9.72	0.04	-1.91	6.01	0.91	0.34	1.99



# Alt Model-Shift Uniqueness Test

004844470-01,  $P = 60.532549$  Days,  $E = 74.045078$  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
30.8	1.62	1.62	1.82	5.16	2.82	0.47	29.2	29.0	0.00	-0.20	2.27	0.93	0.06	2.93



### Stellar Parameters For KIC 004844470

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5631^{+152}_{-152}$	$4.557^{+0.035}_{-0.184}$	$-0.060^{+0.300}_{-0.300}$	$0.847^{+0.235}_{-0.073}$	$0.946^{+0.094}_{-0.115}$	$2.191^{+0.394}_{-1.060}$
	+3%/-3%	+1%/-4%	+500%/-500%	+28%/-9%	+10%/-12%	+18%/-48%
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 004844470-01 / KOI 3469.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-181±22	$2.12^{+0.74}_{-0.73}$	$601^{+38}_{-25}$	$4550^{+855}_{-441}$	$1857^{+2518}_{-823}$
Alt.	-19±12	$2.03^{+0.69}_{-0.69}$	$602^{+36}_{-25}$	$3174^{+536}_{-478}$	$216^{+374}_{-147}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

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

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

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

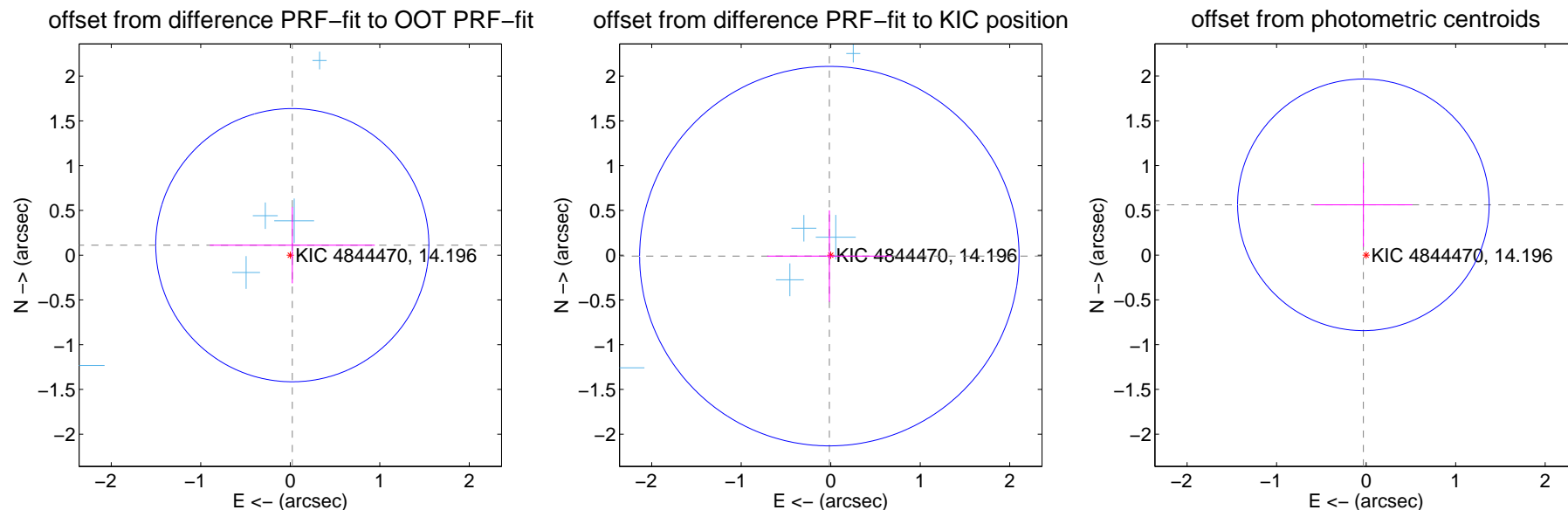
## DV Centroid Data

Supplemental centroid analysis for 004844470-01. Kepler magnitude: 14.20. Transit SNR 14.09

There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

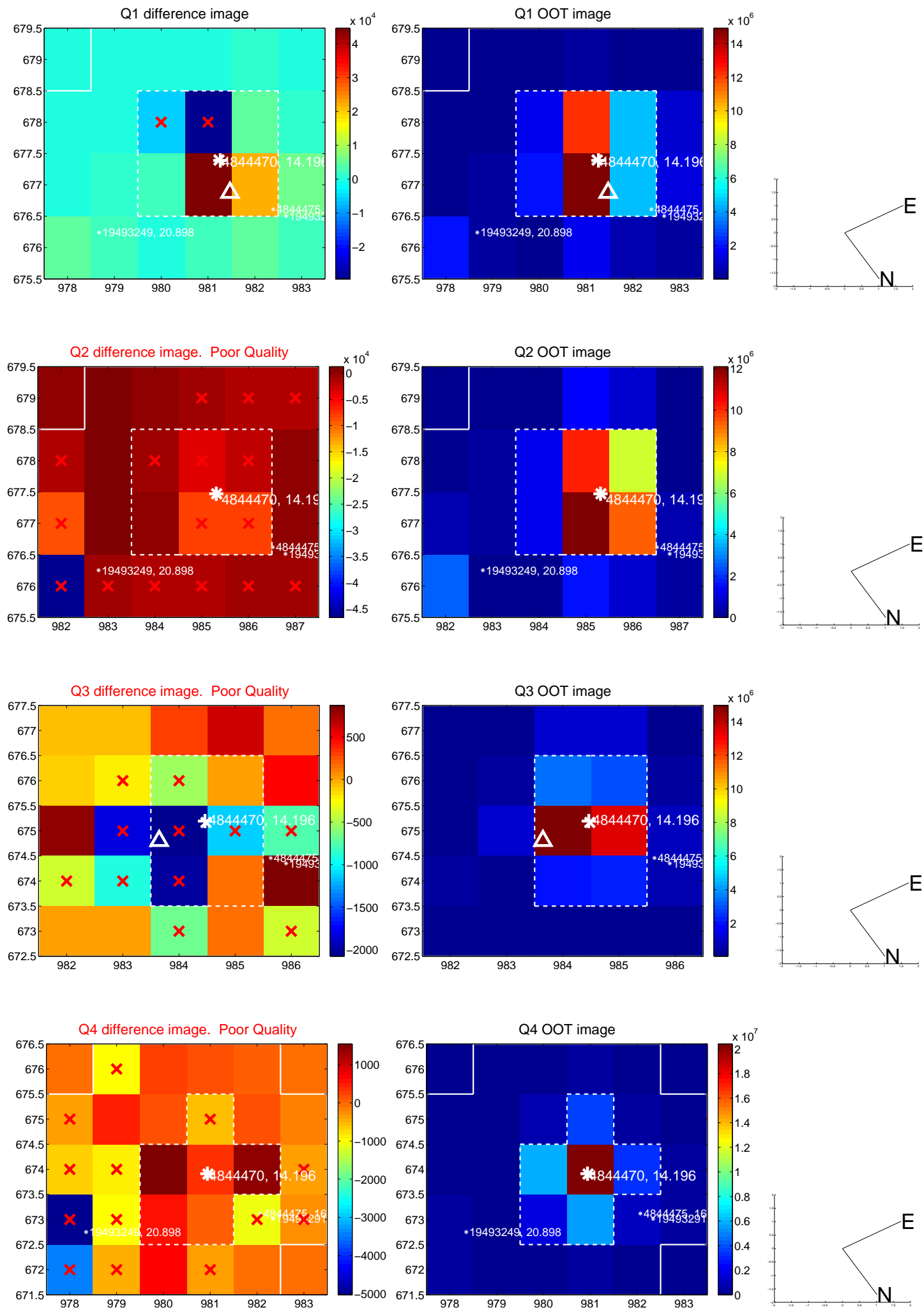
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.114 \pm 0.509$	0.22	$-0.023 \pm 0.922$	$0.111 \pm 0.426$
PRF-fit source offset from KIC position	$0.019 \pm 0.707$	0.03	$0.015 \pm 0.693$	$-0.011 \pm 0.510$
photometric centroid source offset	$0.56 \pm 0.47$	1.20	$0.03 \pm 0.55$	$0.56 \pm 0.47$



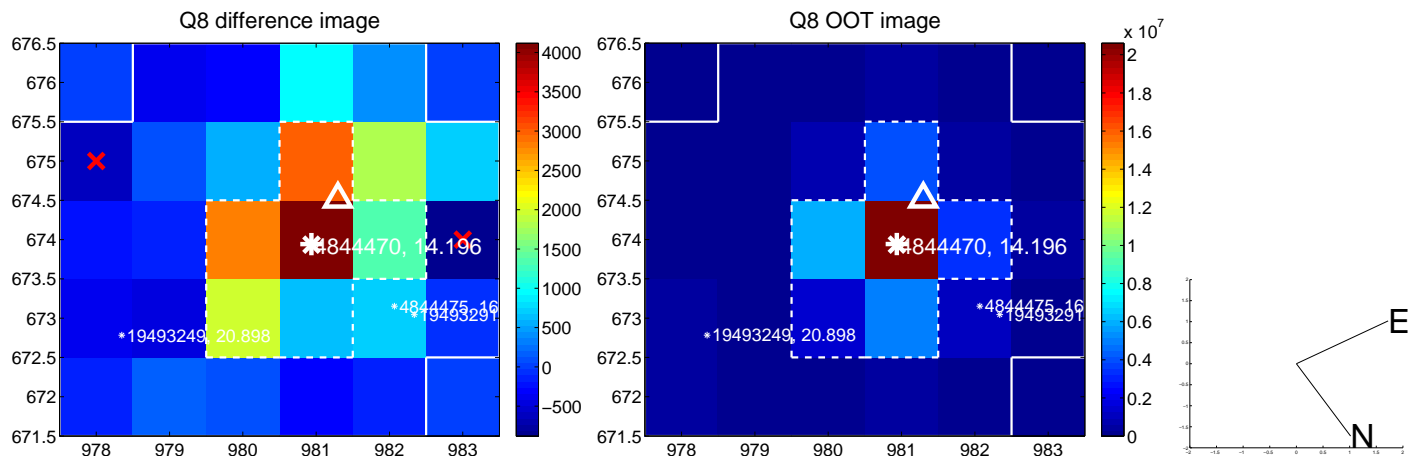
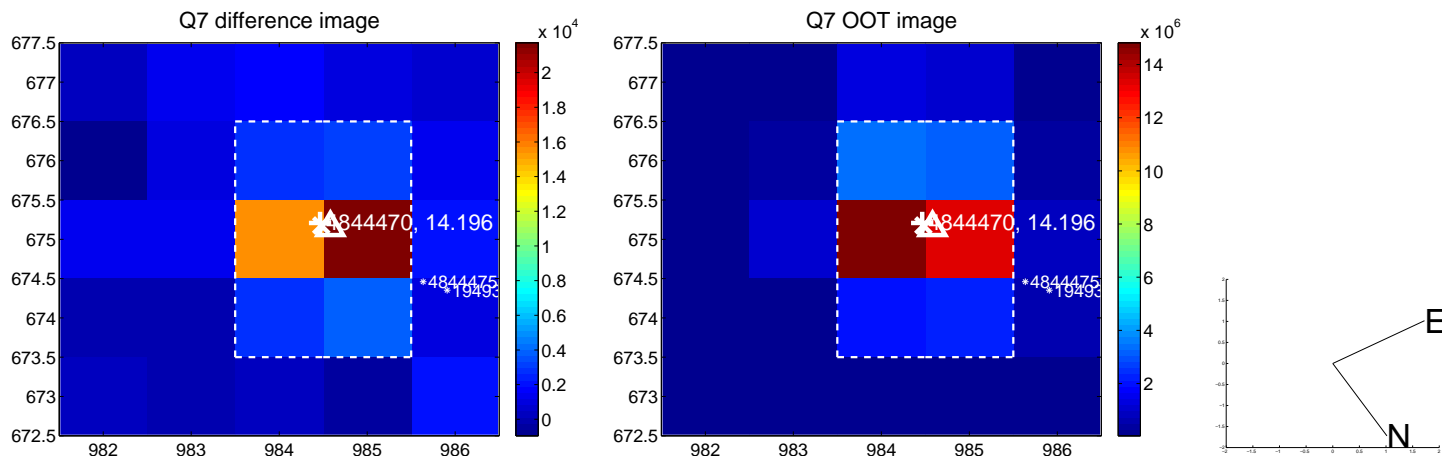
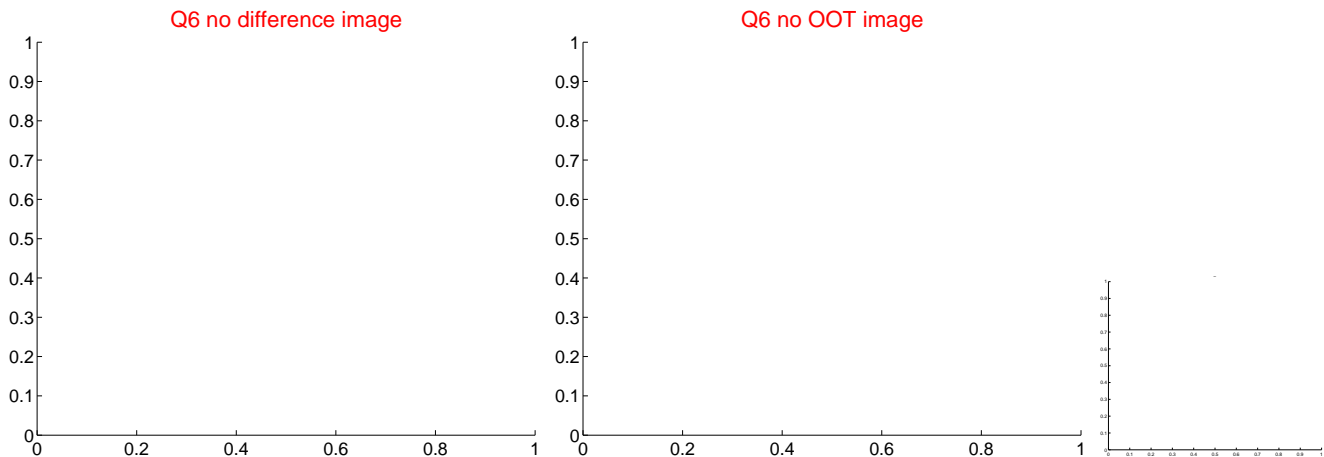
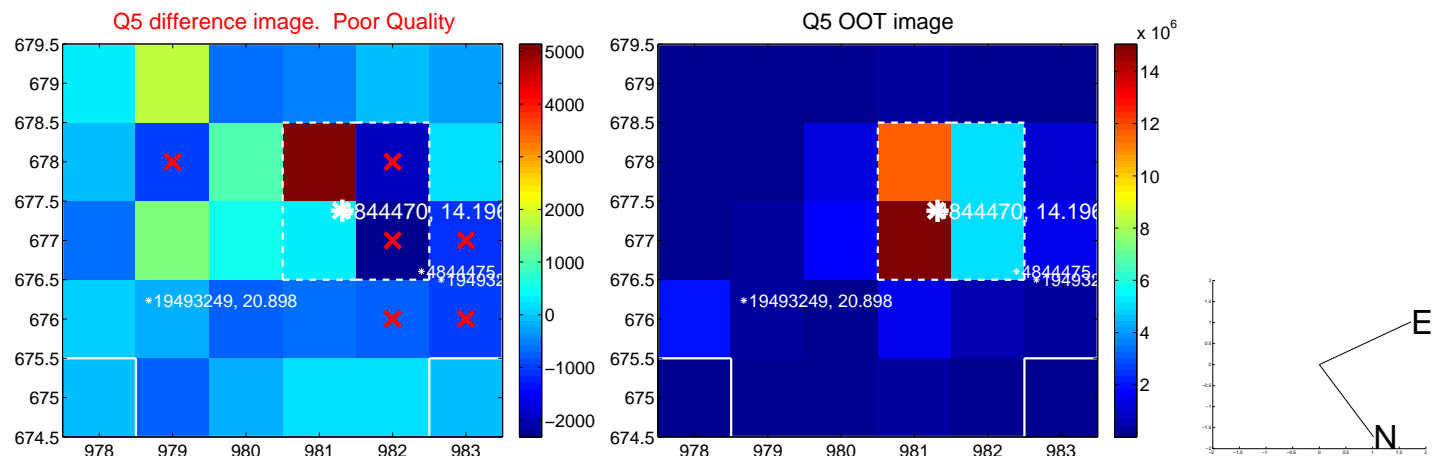
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



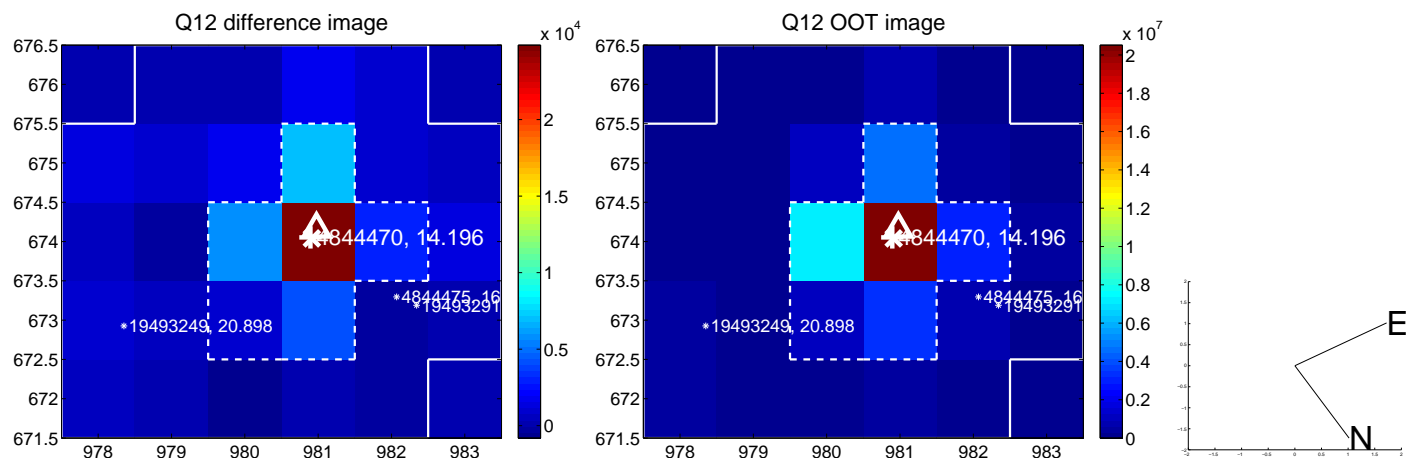
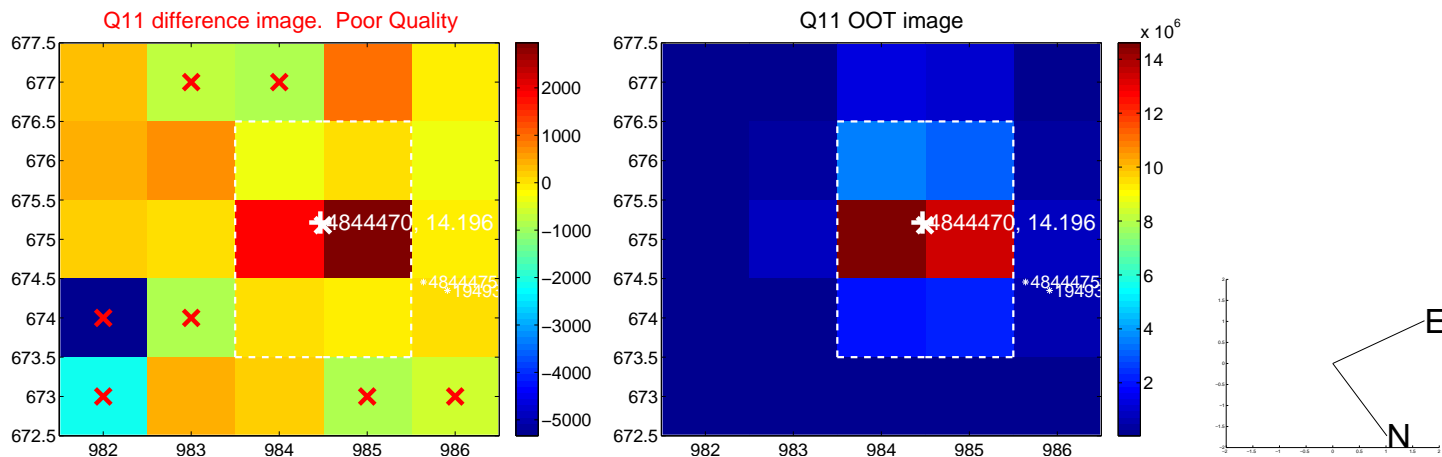
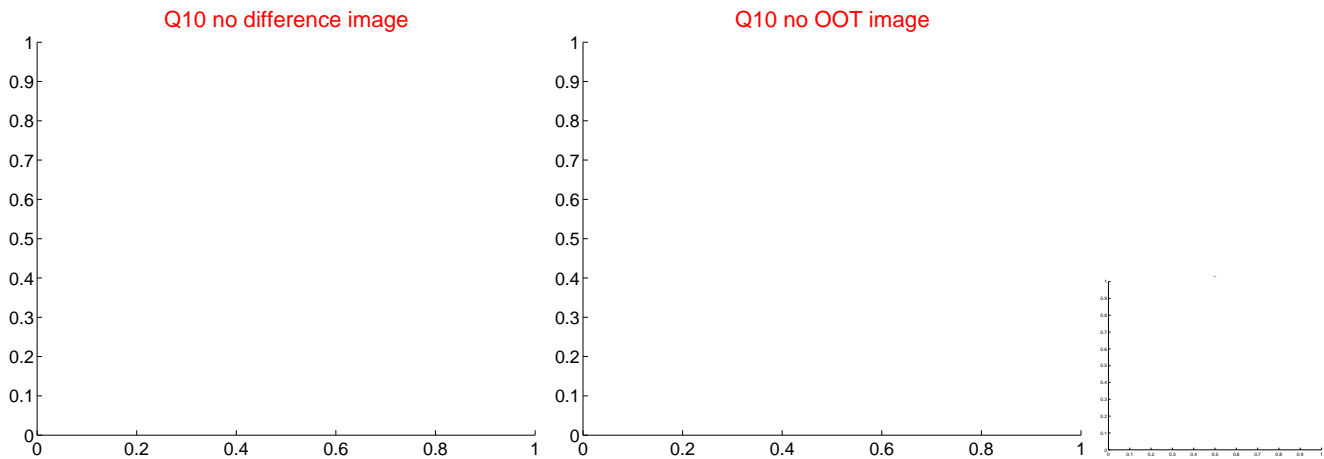
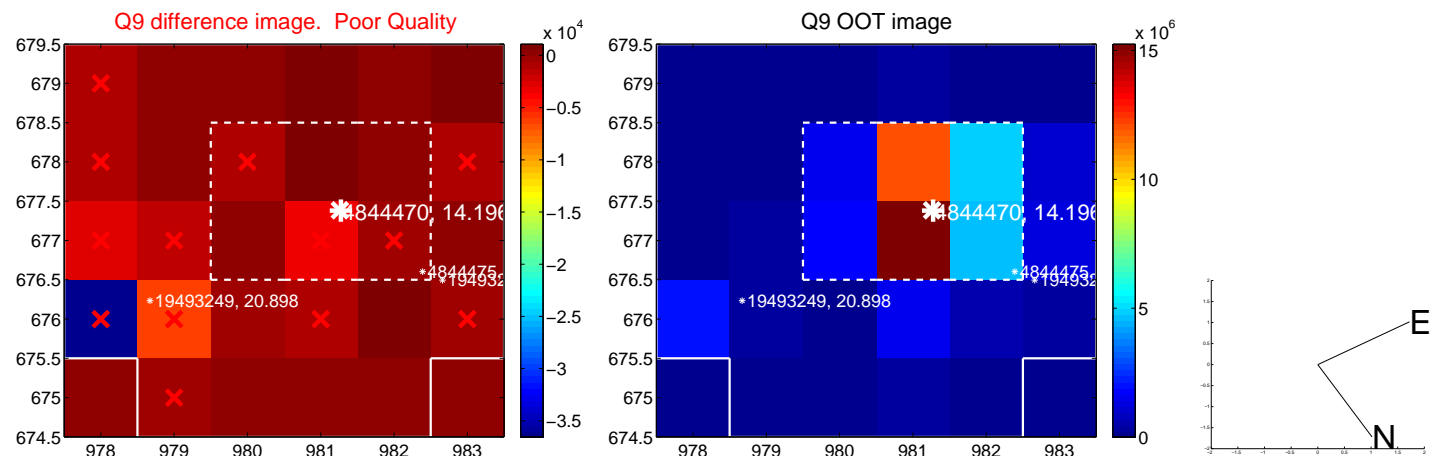
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



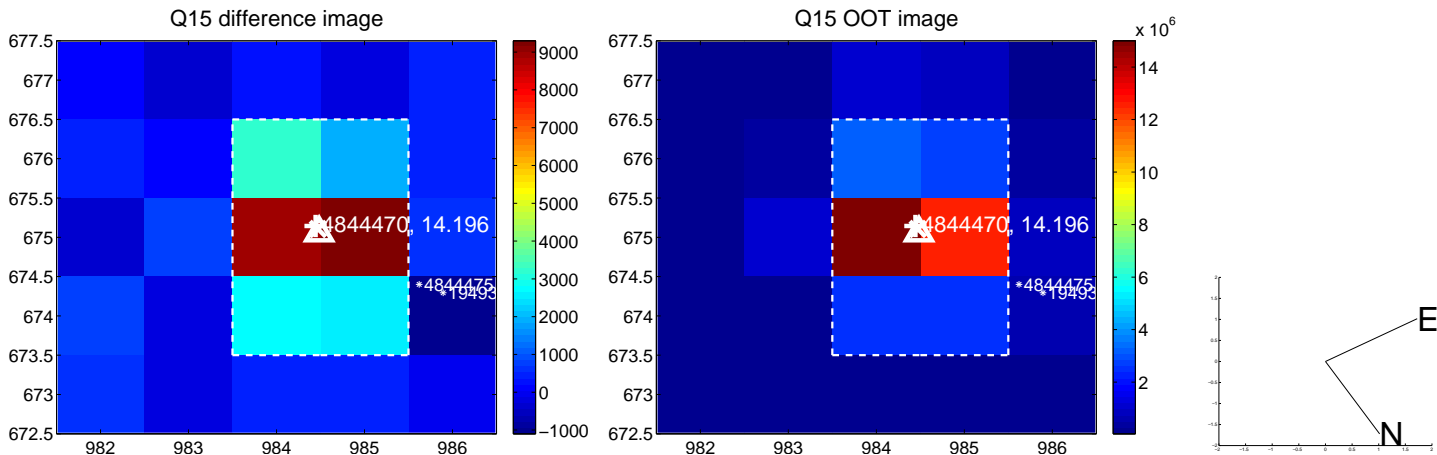
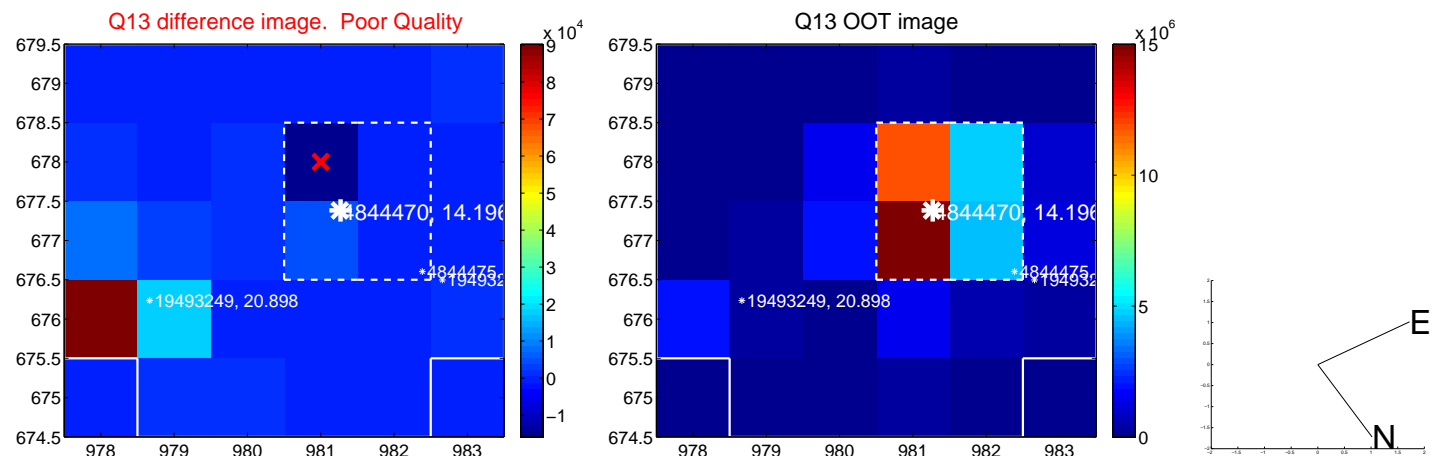
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



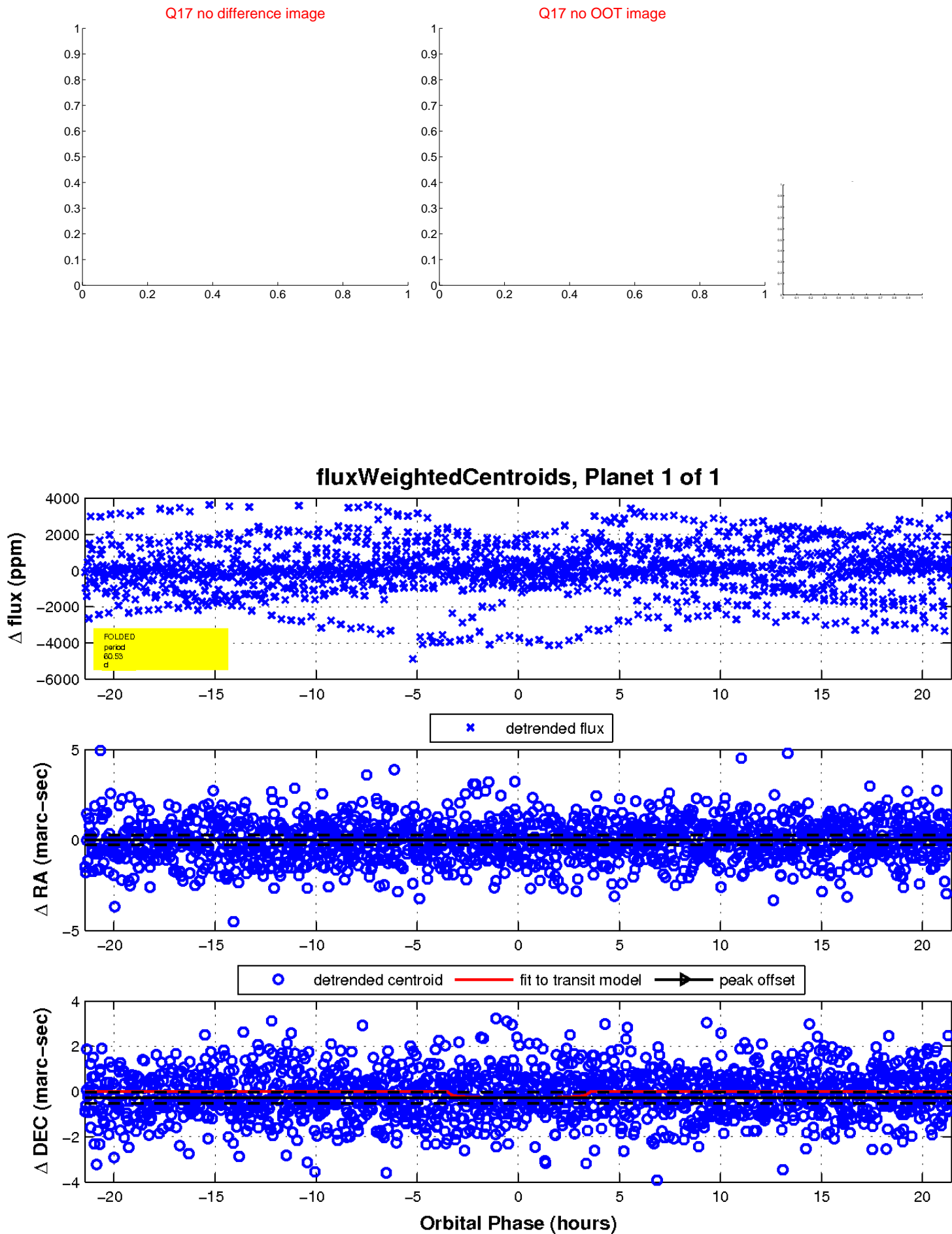
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

