

# KIC 007841514

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007841514-01	OBS	No	0.860636	132.089586	48.1	2.873	16.7	11.5	1.24	6242	0.90	6069.38

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007841514-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

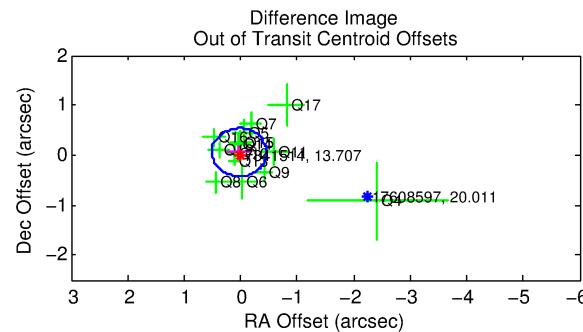
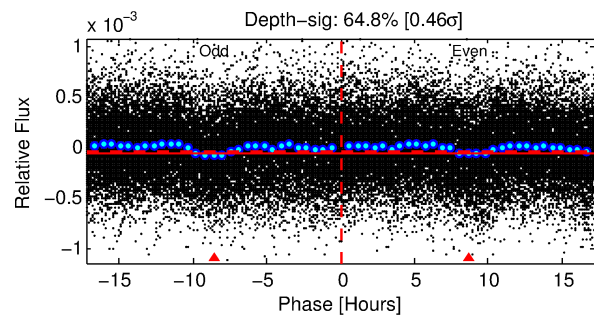
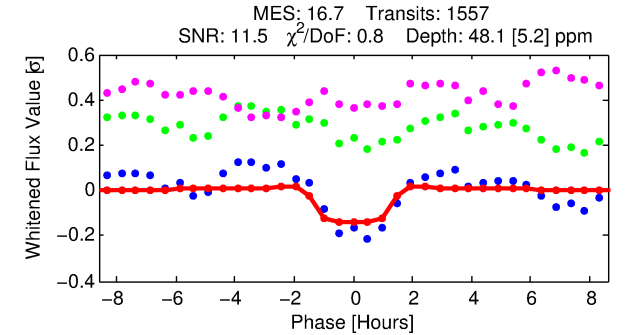
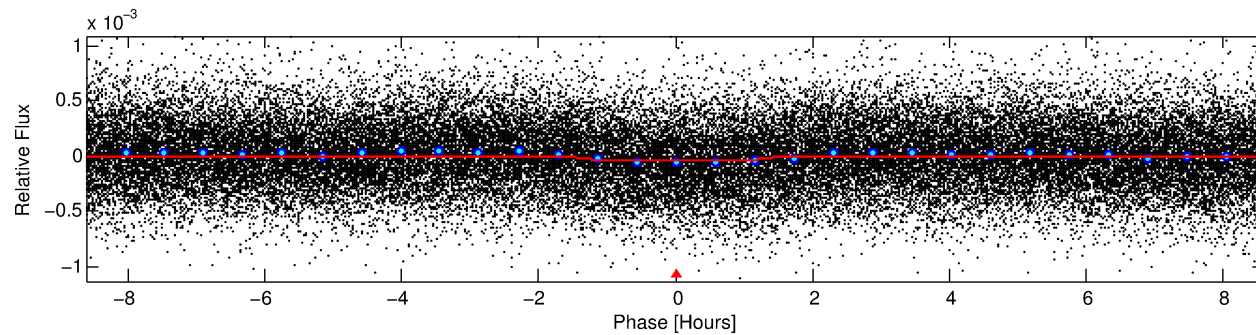
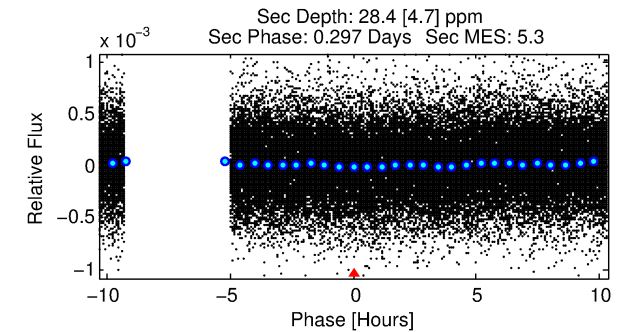
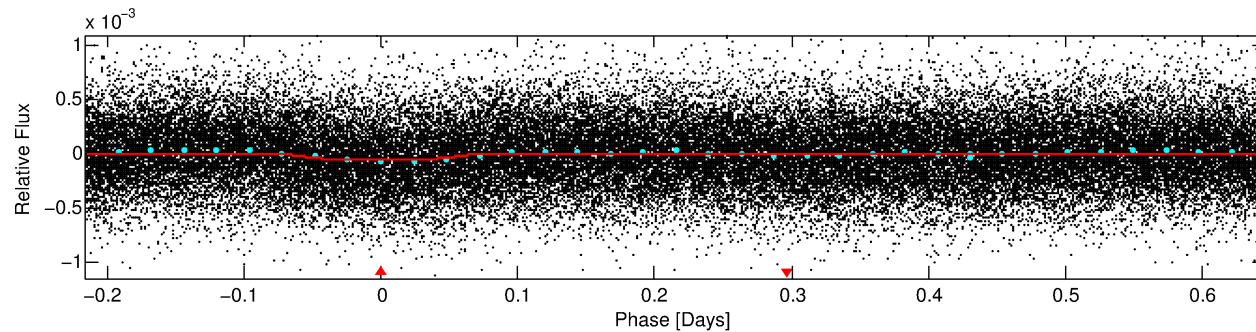
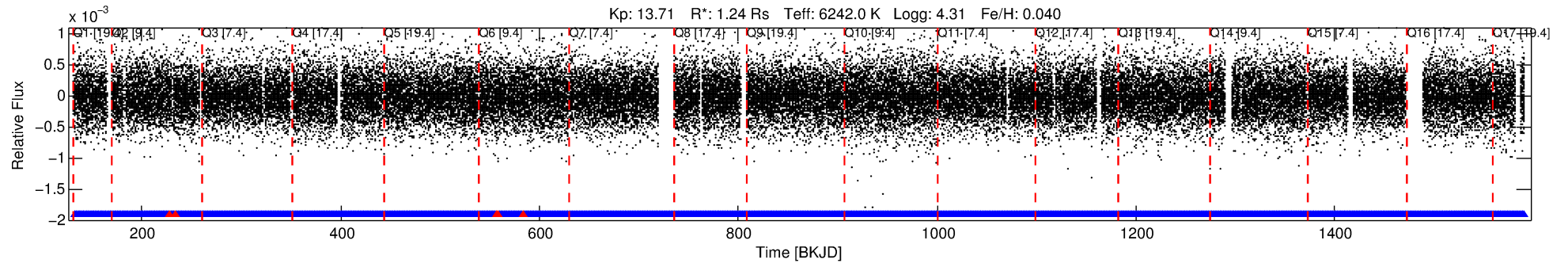
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007841514-01

No Significant Match Found

# DV One-Page Summary

KIC: 7841514 Candidate: 1 of 1 Period: 0.861 d



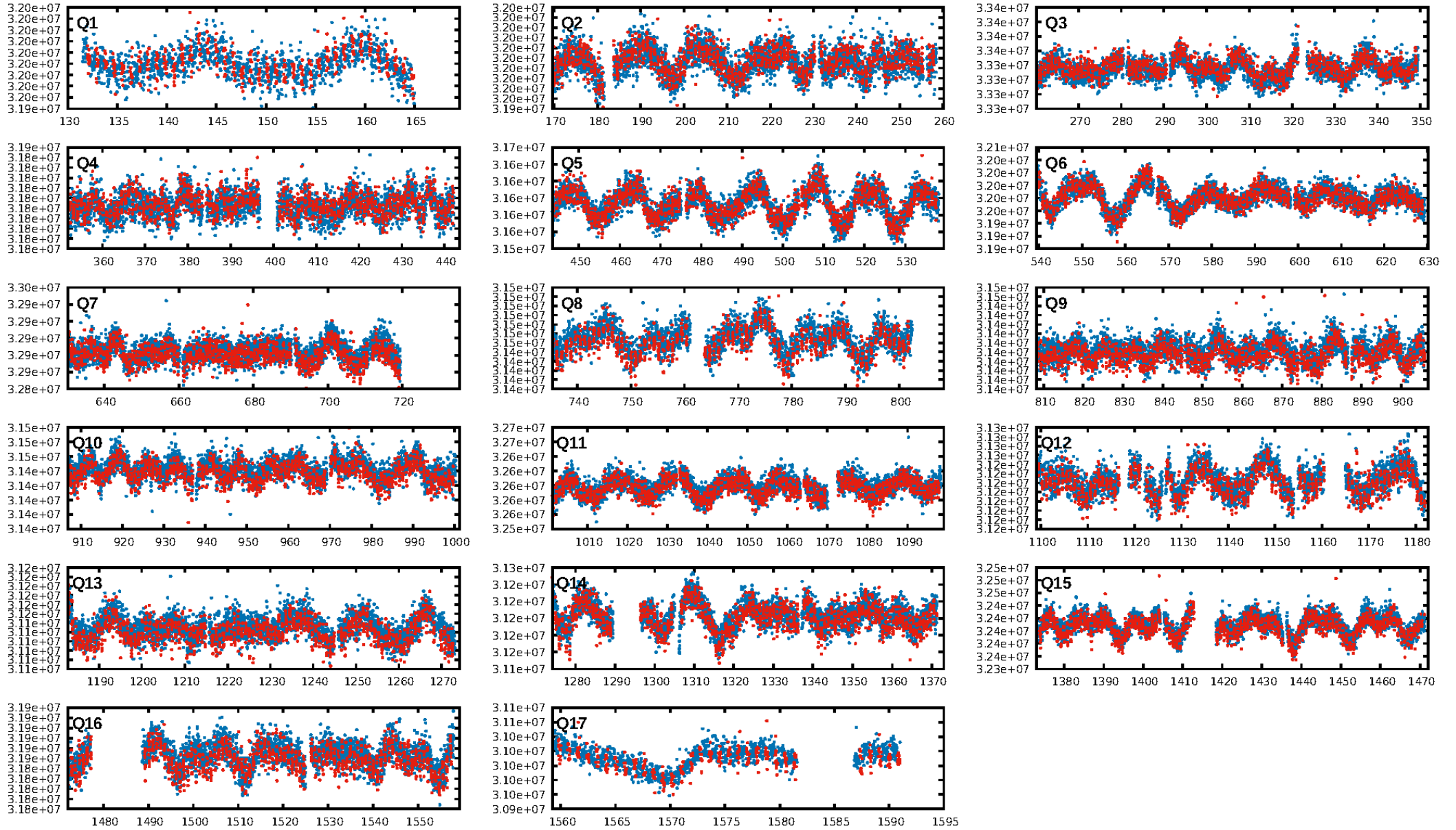
## DV Fit Results:

Period = 0.86064 [0.00001] d  
Epoch = 132.0896 [0.0028] BKJD  
Rp/R\* = 0.0067 [0.0022]  
a/R\* = 1.96 [2.40]  
b = 0.63 [1.61]  
Seff = 6069.38 [2490.38]  
Teff = 2251 [231] K  
Rp = 0.90 [0.42] Re  
a = 0.0185 [0.0049] AU  
Ag = 6.59 [5.15] [1.09σ]  
Teffp = 5576 [983] K [3.29σ]

## DV Diagnostic Results:

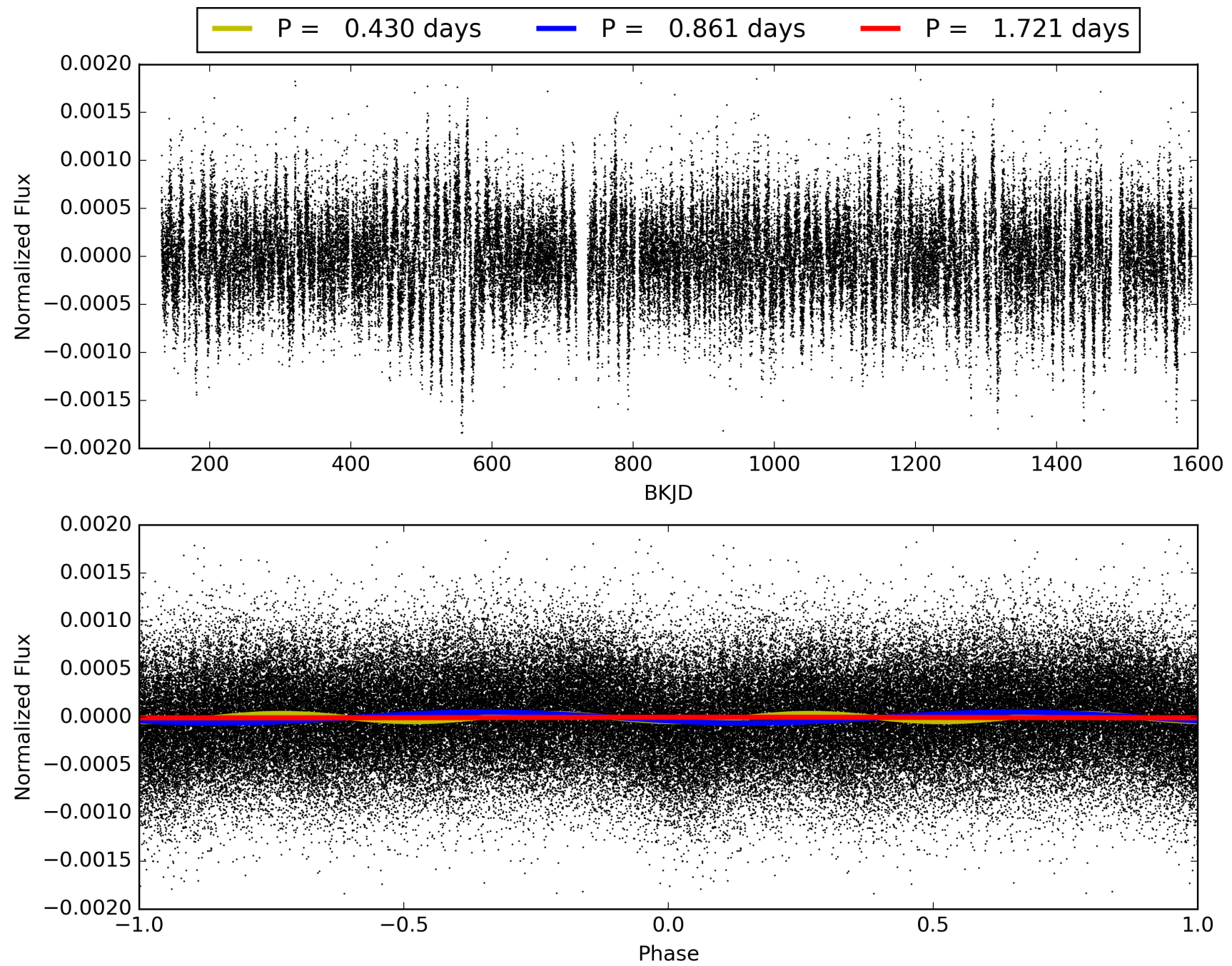
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.09e-52  
RollingBand-fgt: 1.00 [1482/1487]  
GhostDiagnostic-chr: 4.384  
Centroid-sig: 0.0%  
Centroid-so: 2.155 arcsec [2.64σ]  
OotOffset-rm: 0.064 arcsec [0.40σ]  
KicOffset-rm: 0.041 arcsec [0.23σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.93 [13/14]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 007841514-01, PDC Light Curves



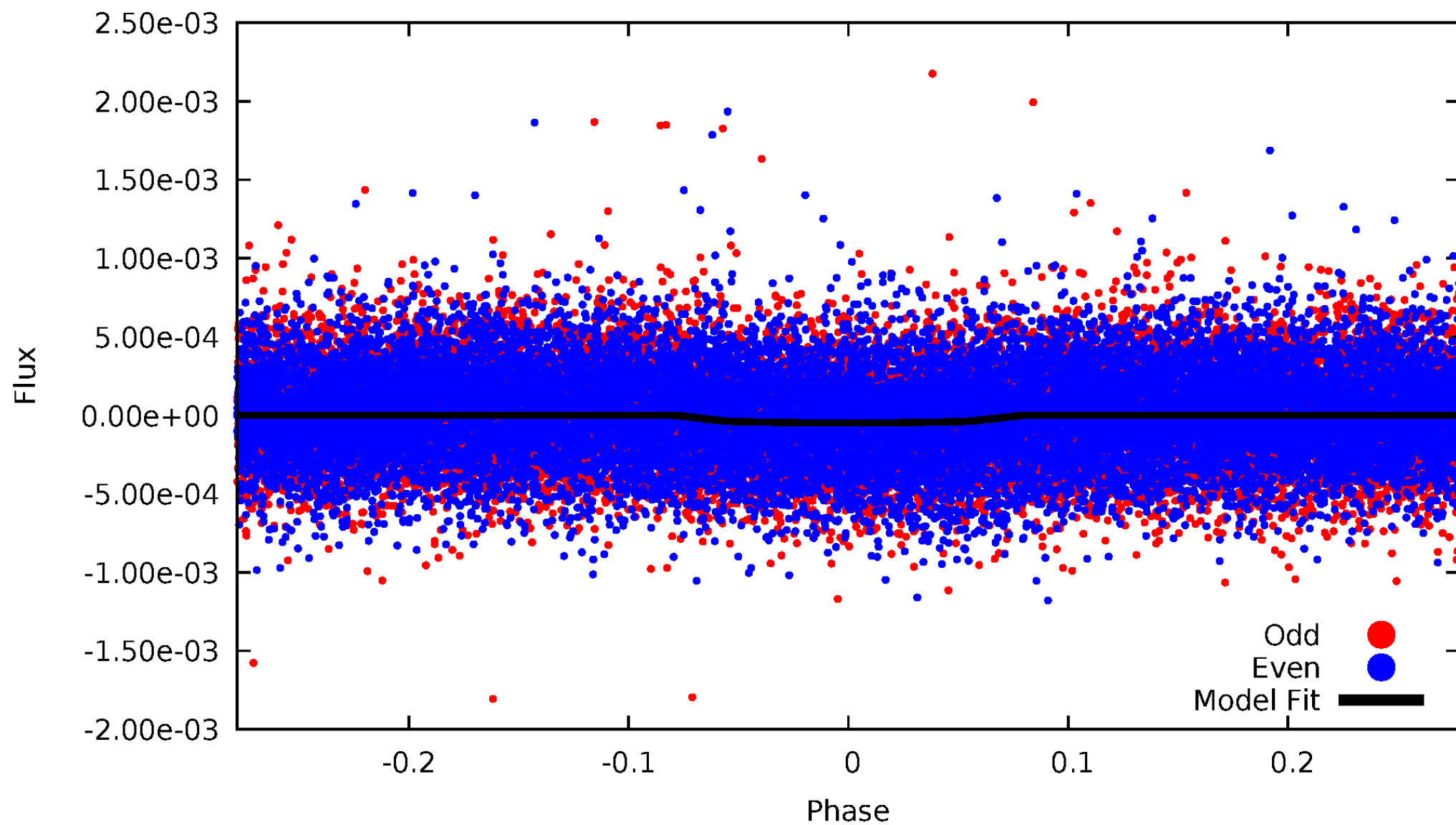


TCE 007841514-01



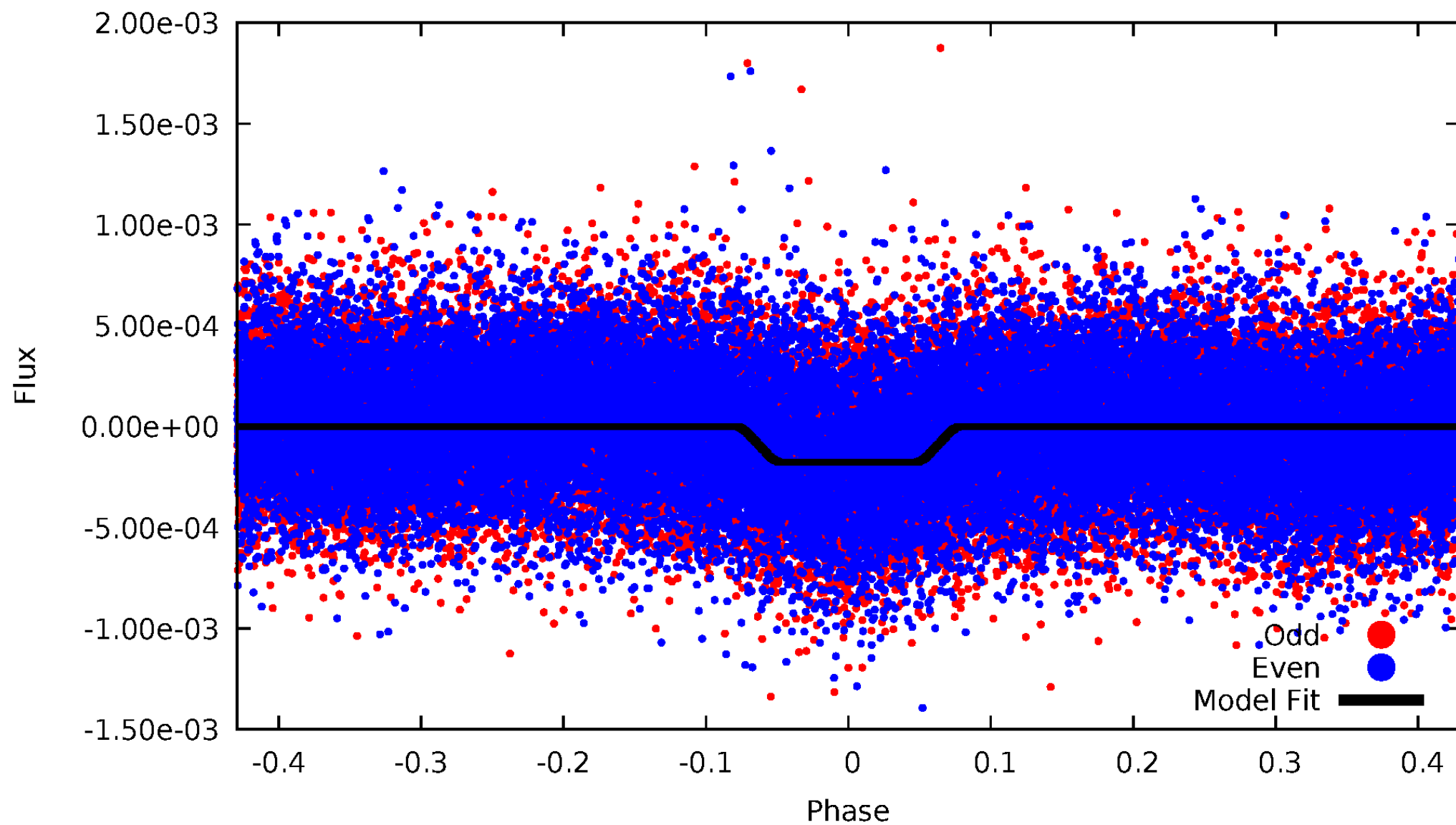
# DV Odd/Even

TCE 007841514-01

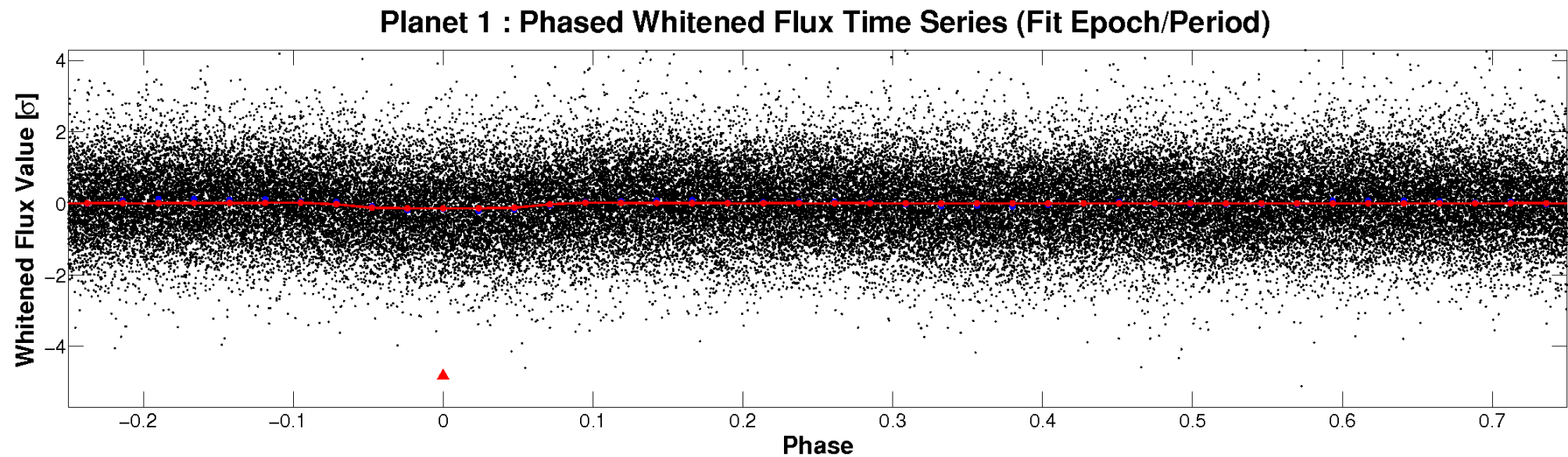
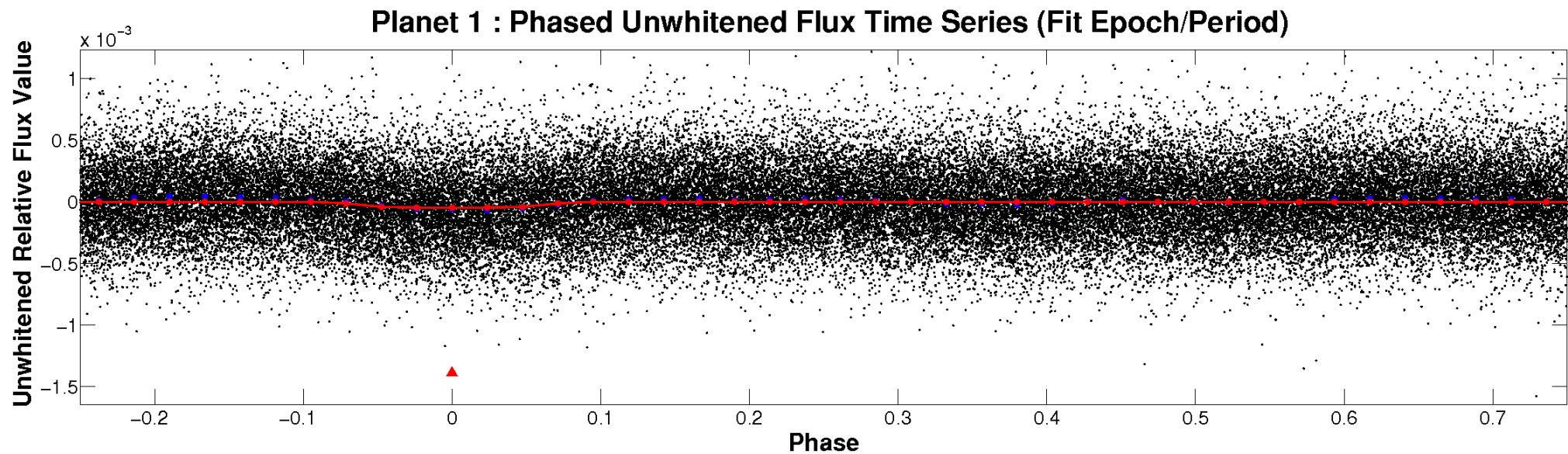


# ALT Odd/Even

TCE 007841514-01



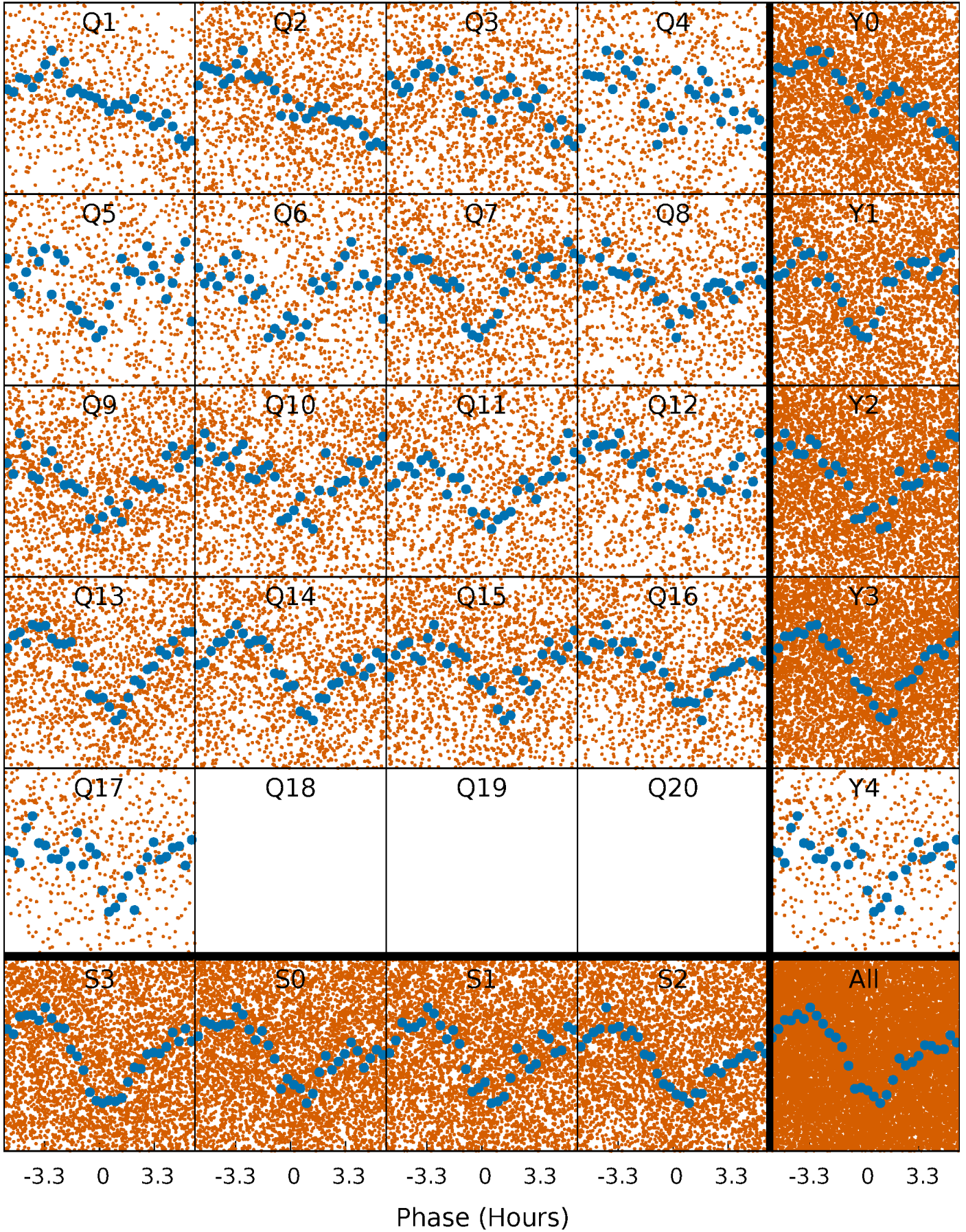
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

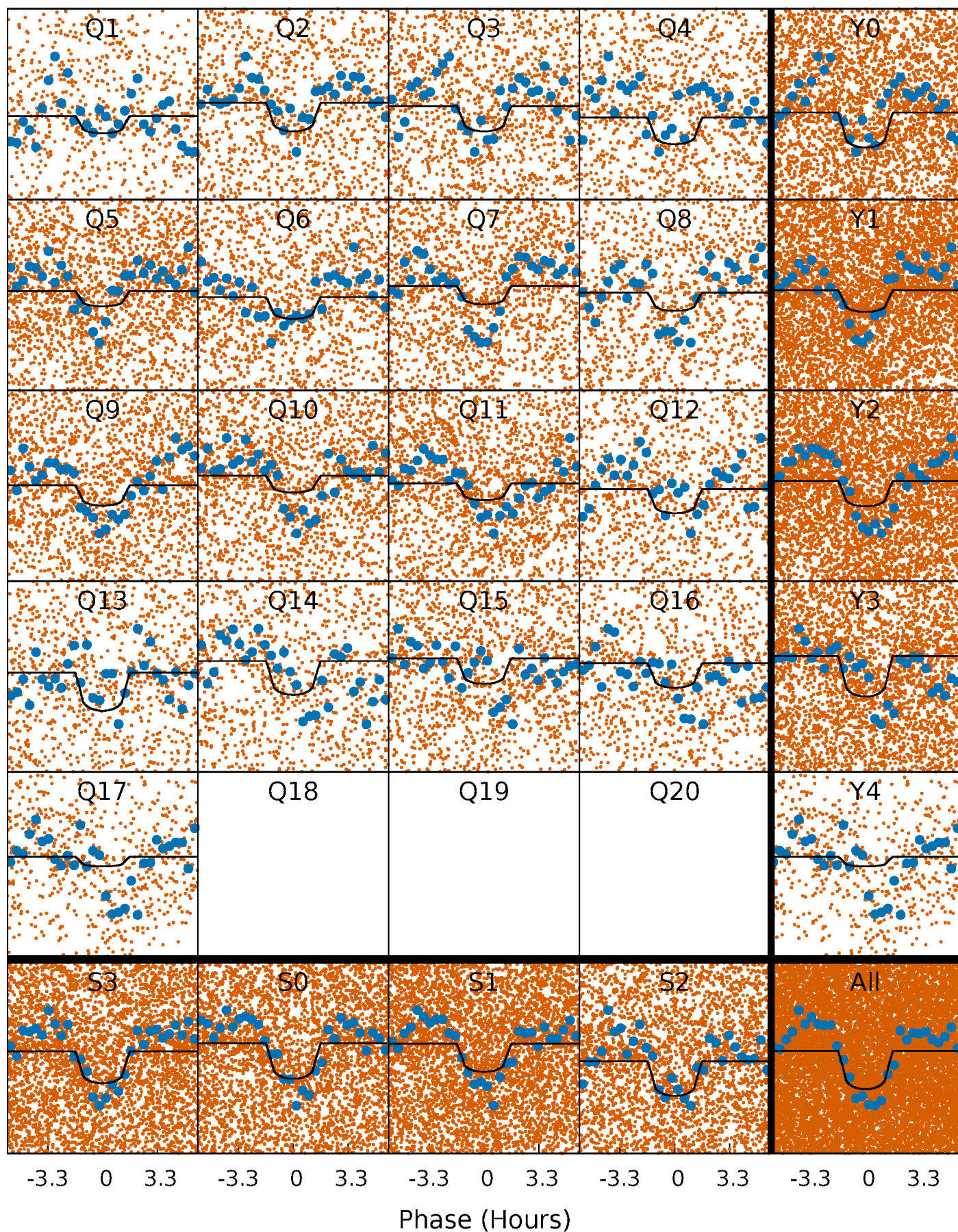
TCE 007841514-01 P= 0.860636 Days  $T_0=132.089586$  (BKJD)





# DV Quarter-Phased Transit Curves

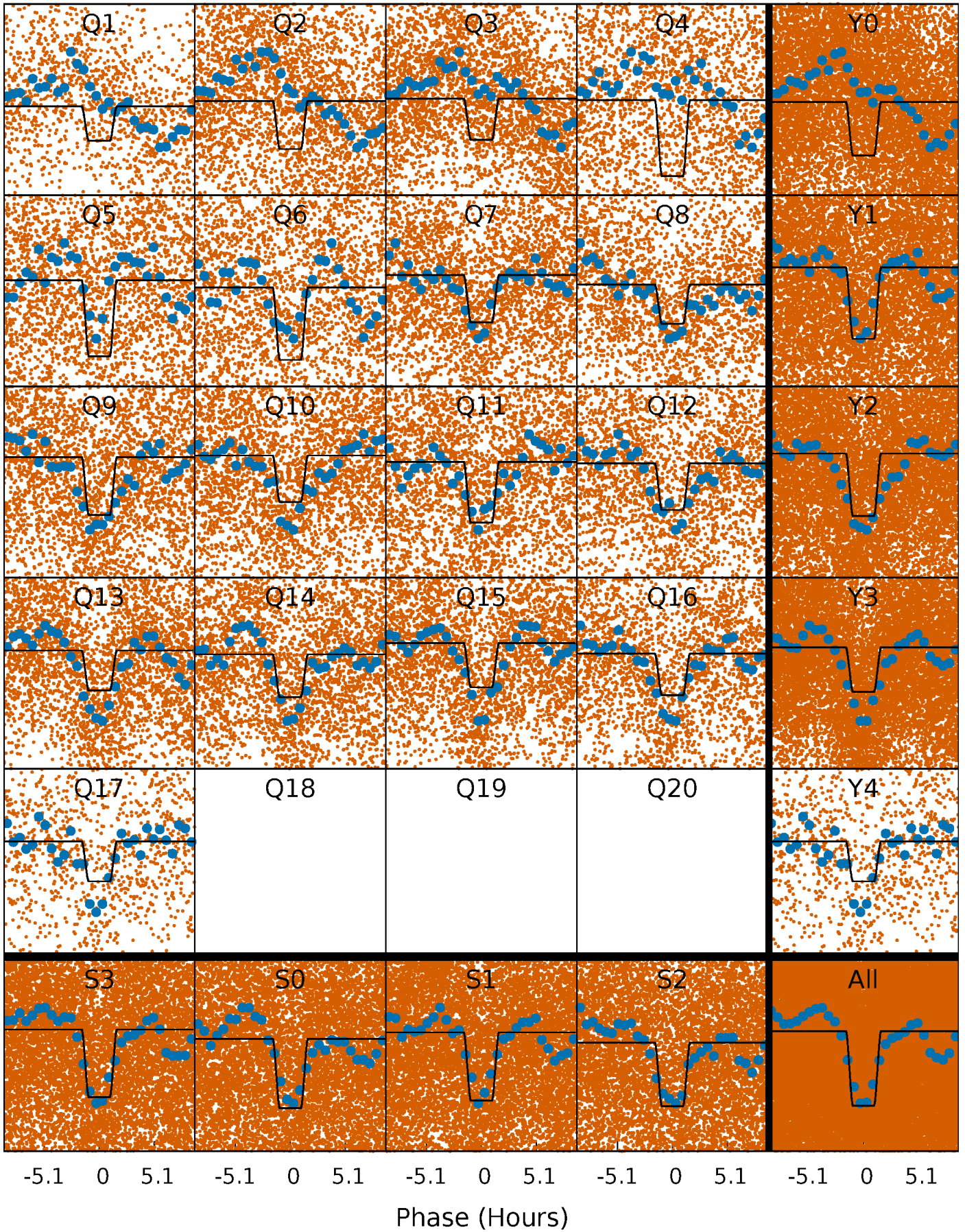
TCE 007841514-01 P= 0.860636 Days  $T_0=132.089586$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

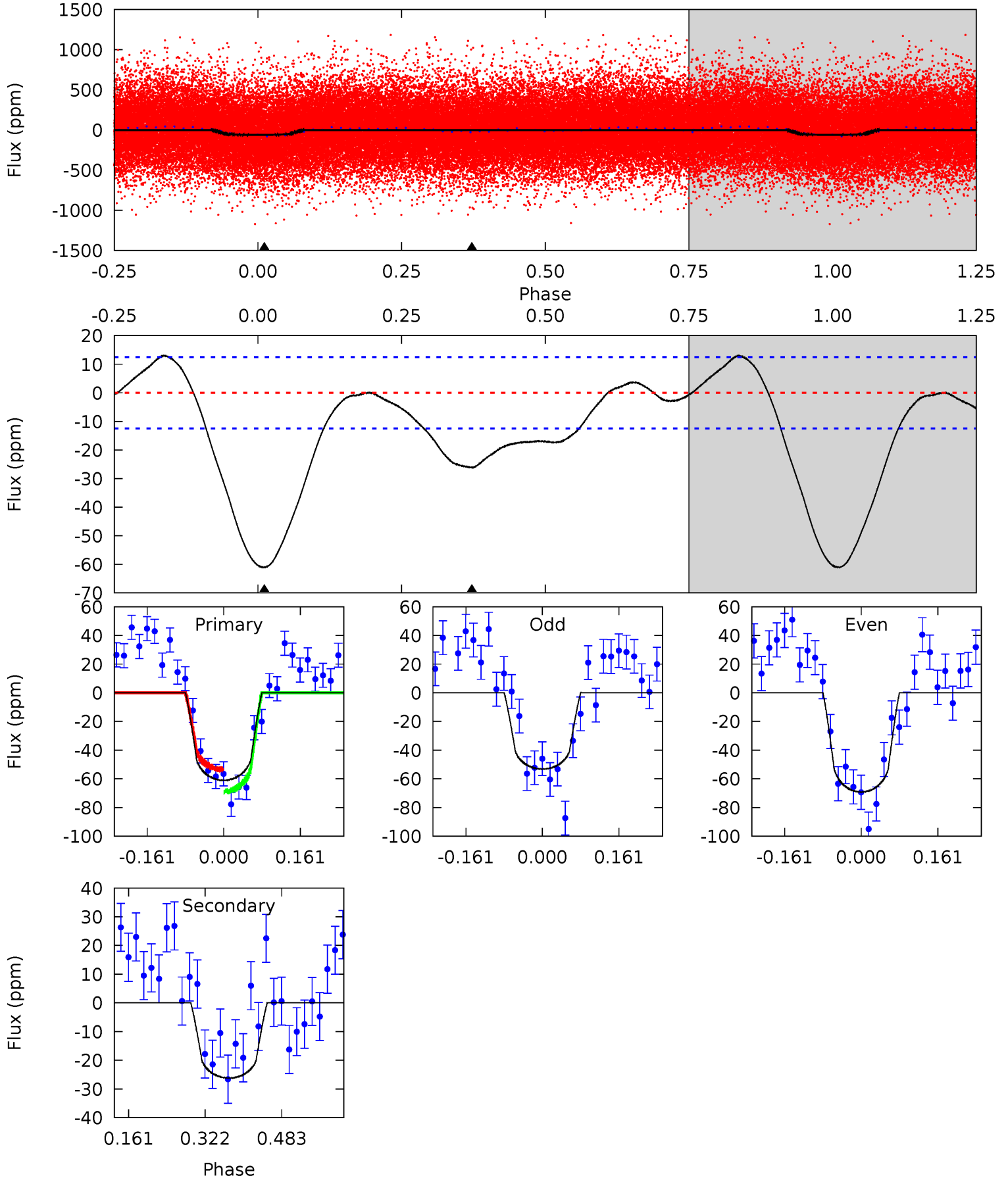
TCE 007841514-01 P= 0.860688 Days  $T_0=132.062208$  (BKJD)



# DV Model-Shift Uniqueness Test

007841514-01, P = 0.860636 Days, E = 131.228950 Days

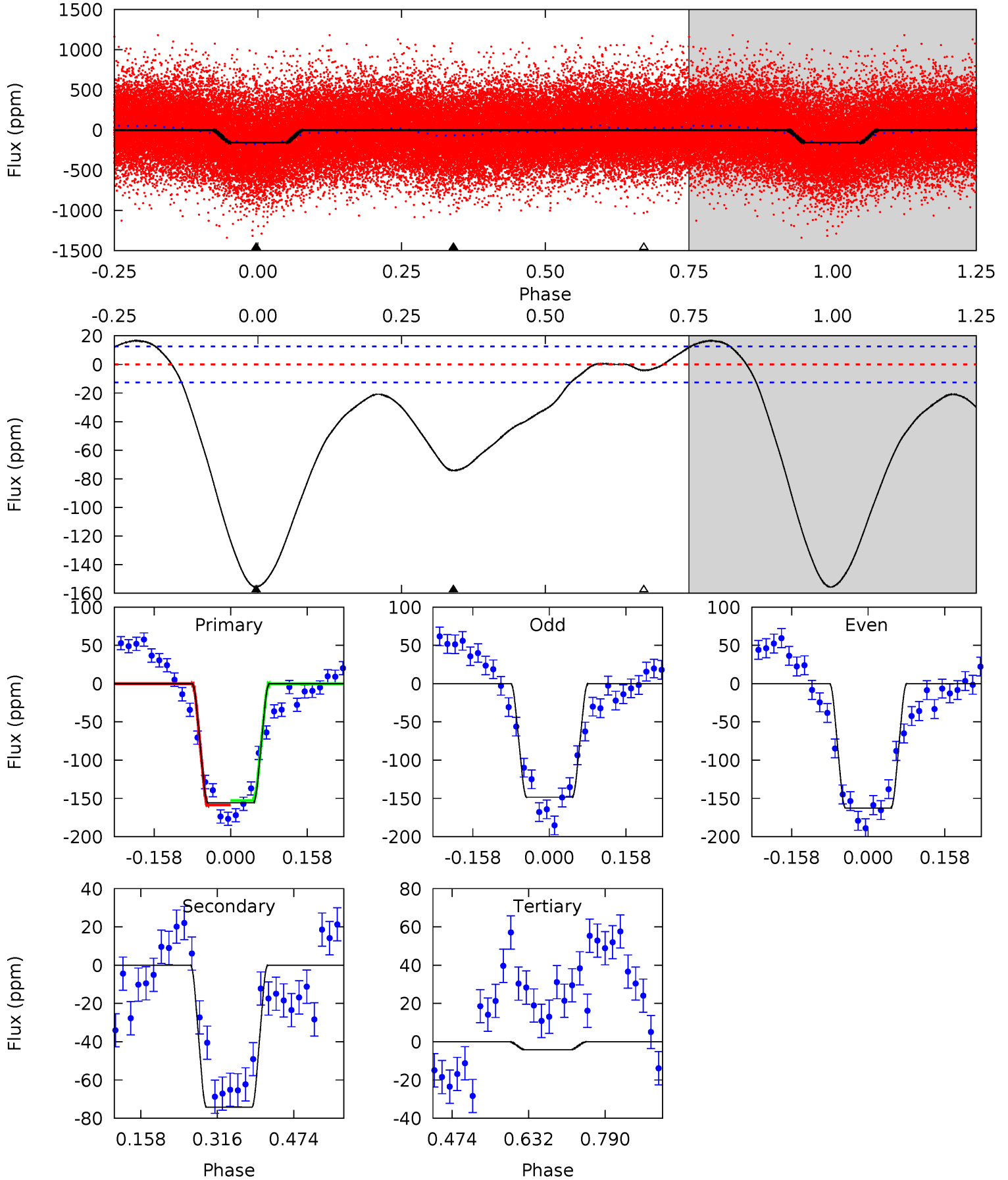
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.8	9.37	0	0	4.46	1.40	2.40	21.8	21.8	9.37	9.37	2.87	0.98	0.18	2.76



# Alt Model-Shift Uniqueness Test

007841514-01, P = 0.860688 Days, E = 131.201520 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
55.2	26.3	1.48	0	4.47	1.41	4.99	53.8	55.2	24.8	26.3	2.50	1.00	0.10	1.02





### Stellar Parameters For KIC 007841514

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6242^{+195}_{-260}$	$4.312^{+0.124}_{-0.201}$	$0.040^{+0.250}_{-0.300}$	$1.239^{+0.396}_{-0.213}$	$1.148^{+0.187}_{-0.153}$	$0.850^{+0.455}_{-0.473}$
	+3%/-4%	+3%/-5%	+625%/-750%	+32%/-17%	+16%/-13%	+54%/-56%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 007841514-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-26 \pm 3$	$0.92^{+0.35}_{-0.31}$	$3154^{+233}_{-186}$	$5375^{+1277}_{-687}$	$5.682^{+7.688}_{-2.685}$
Alt.	$-74 \pm 3$	$1.84^{+0.40}_{-0.38}$	$3178^{+227}_{-219}$	$5006^{+512}_{-363}$	$4.161^{+2.417}_{-1.318}$

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

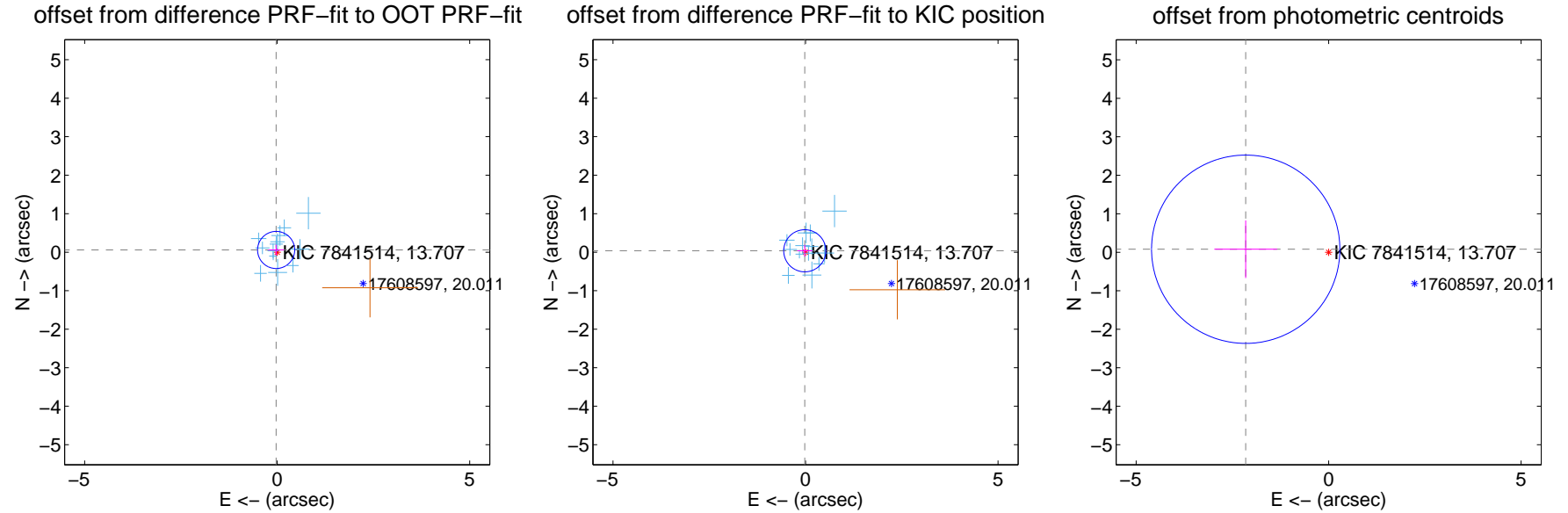
## DV Centroid Data

Supplemental centroid analysis for 007841514-01. Kepler magnitude: 13.71. Transit SNR 11.53

There are 13 quarters with good PRF difference image offsets

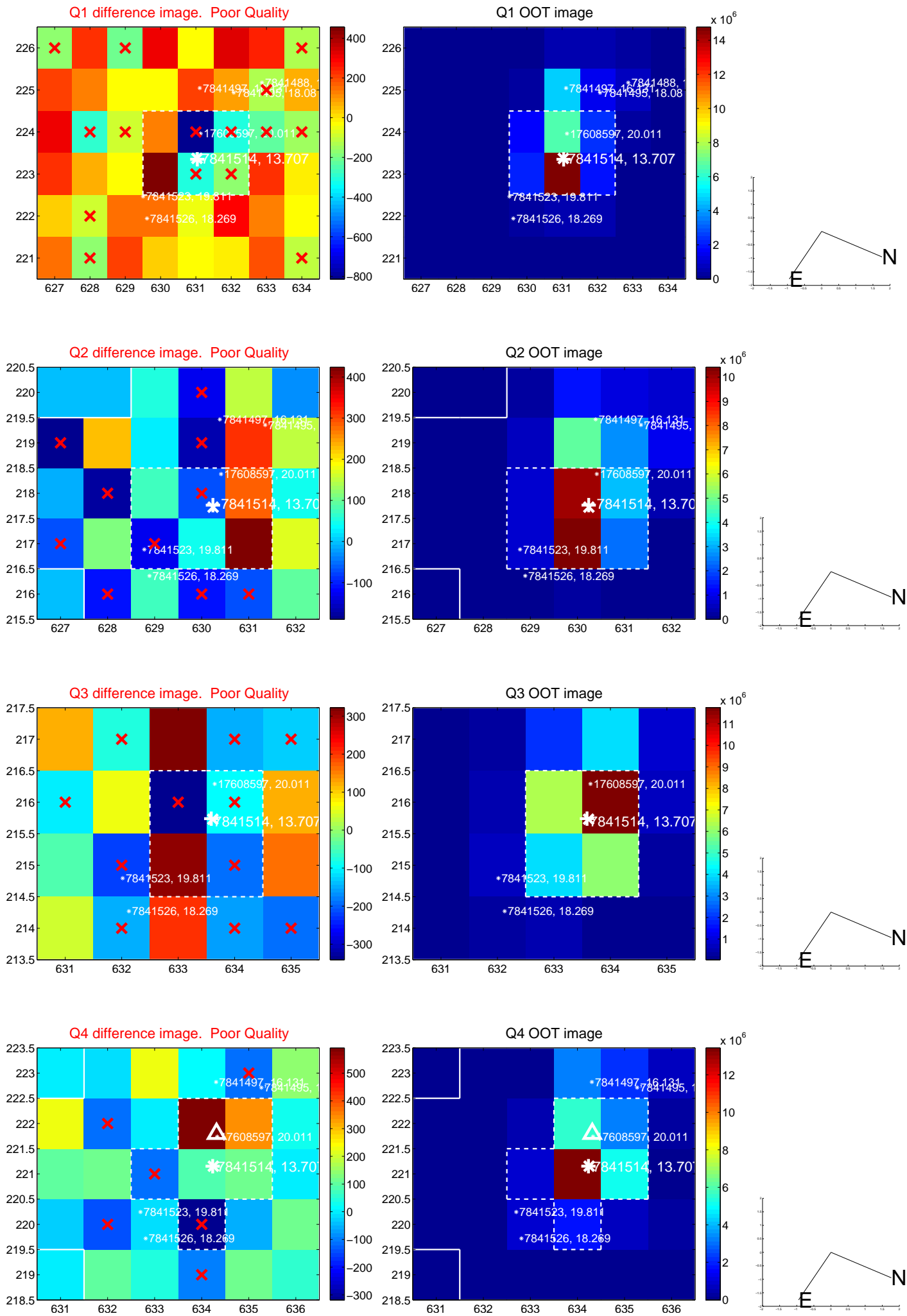
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.064 \pm 0.161$	0.40	$0.027 \pm 0.203$	$0.058 \pm 0.137$
PRF-fit source offset from KIC position	$0.041 \pm 0.182$	0.23	$0.019 \pm 0.197$	$0.037 \pm 0.153$
photometric centroid source offset	$2.16 \pm 0.82$	2.64	$2.15 \pm 0.82$	$0.08 \pm 0.75$

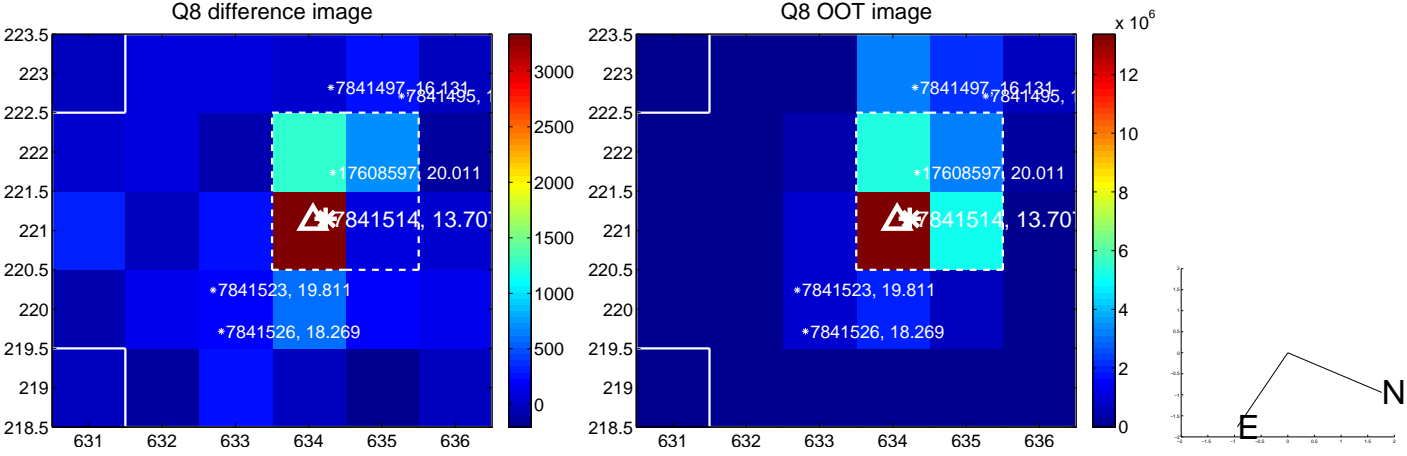
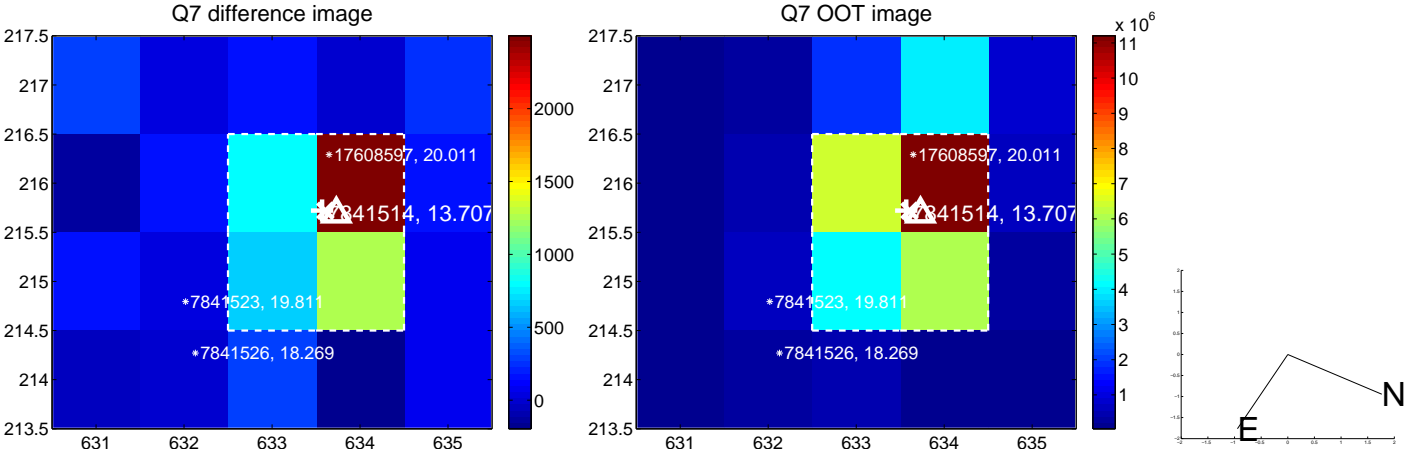
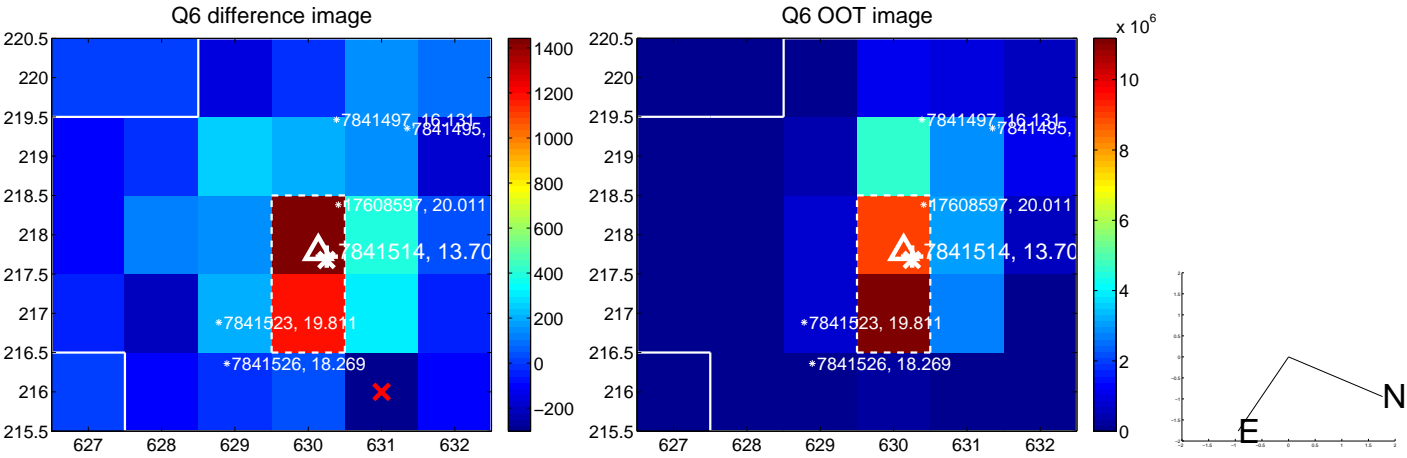
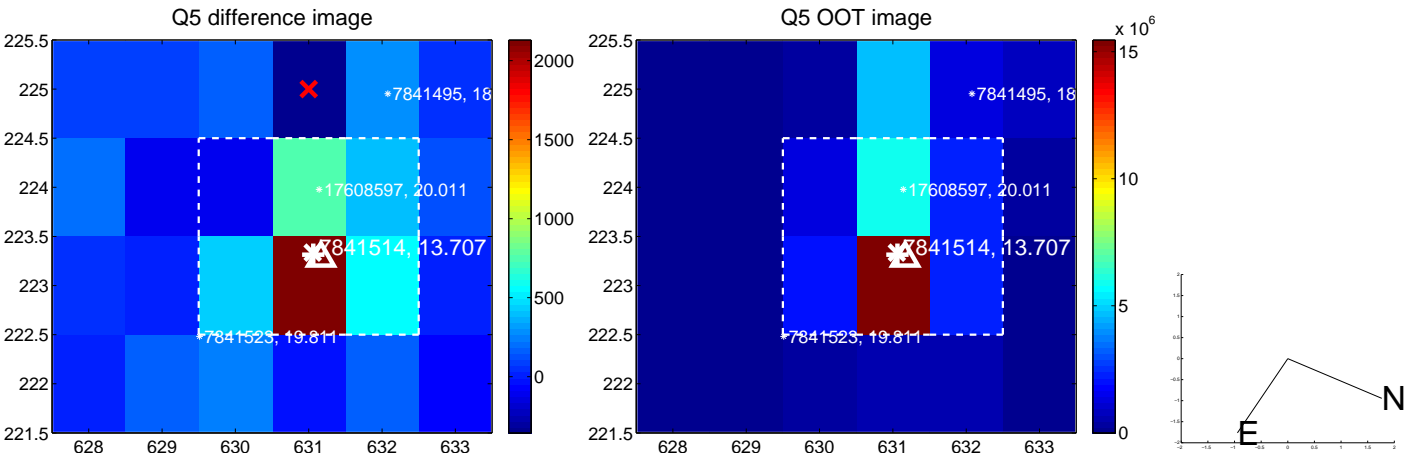


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

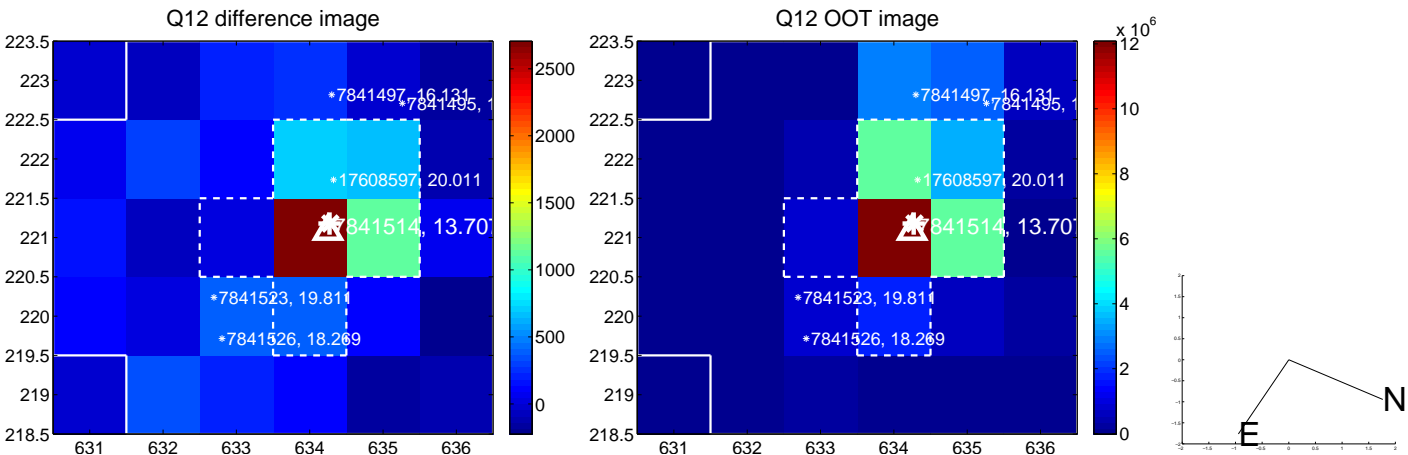
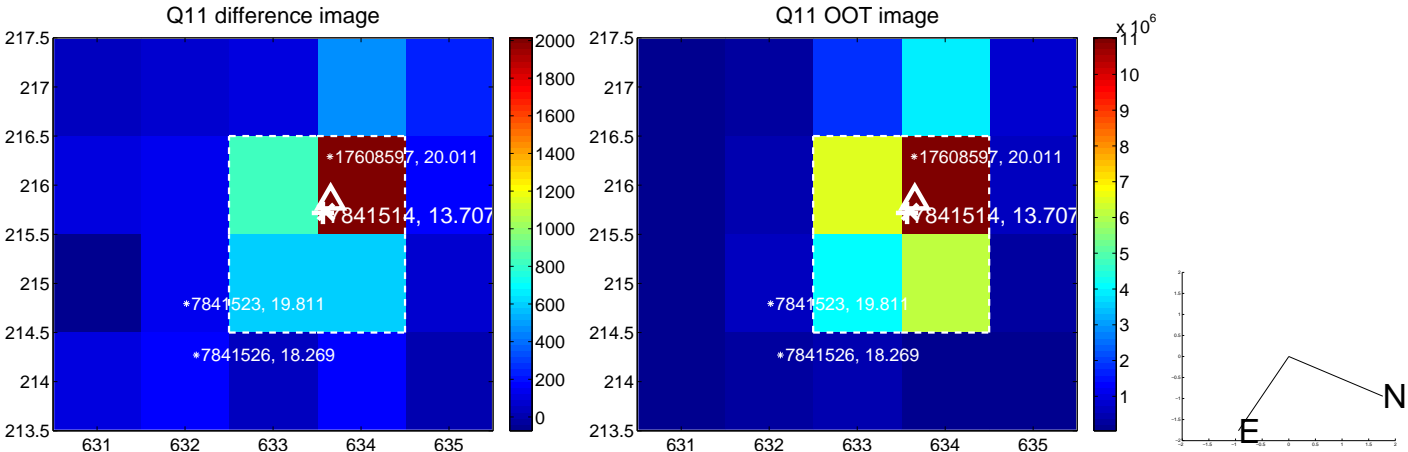
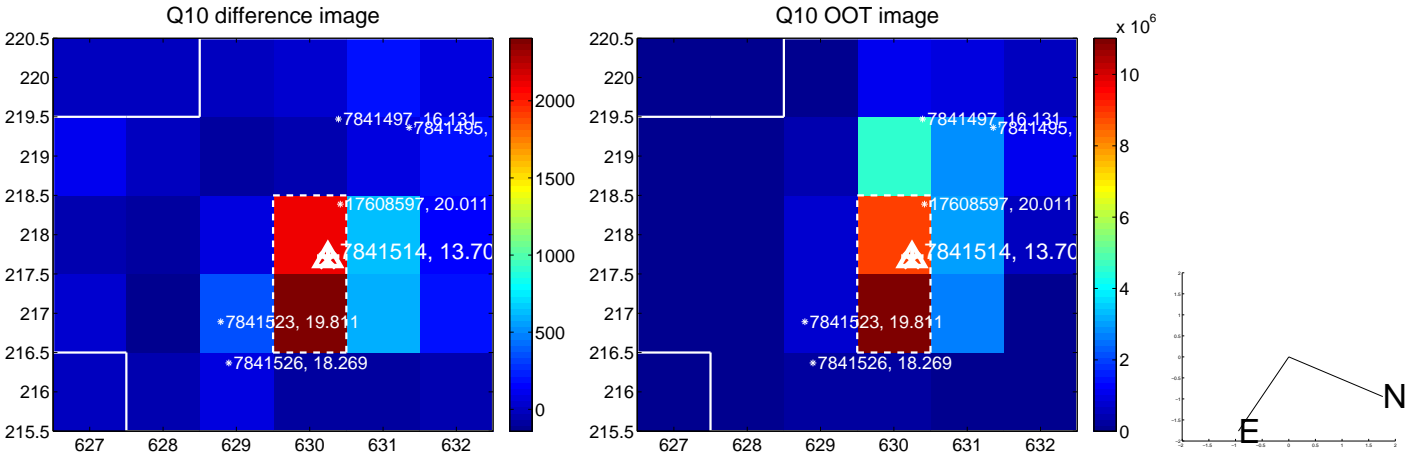
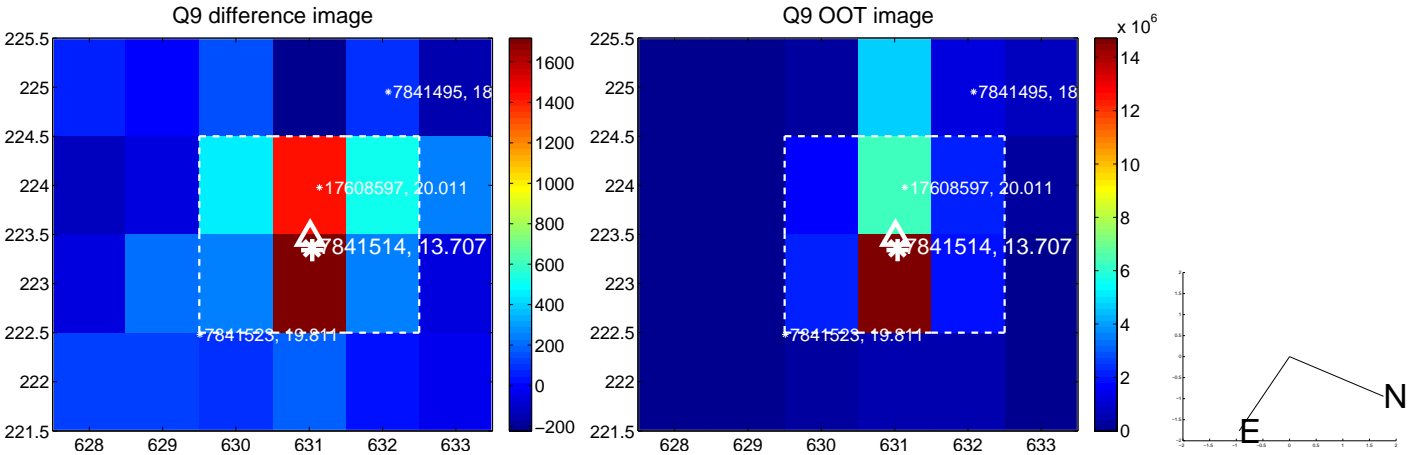


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

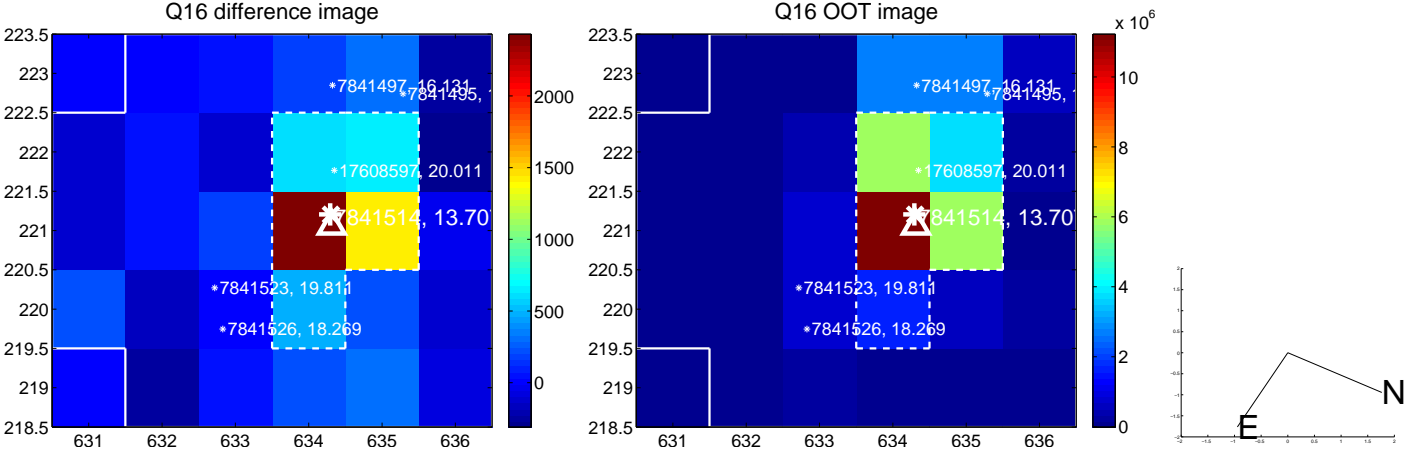
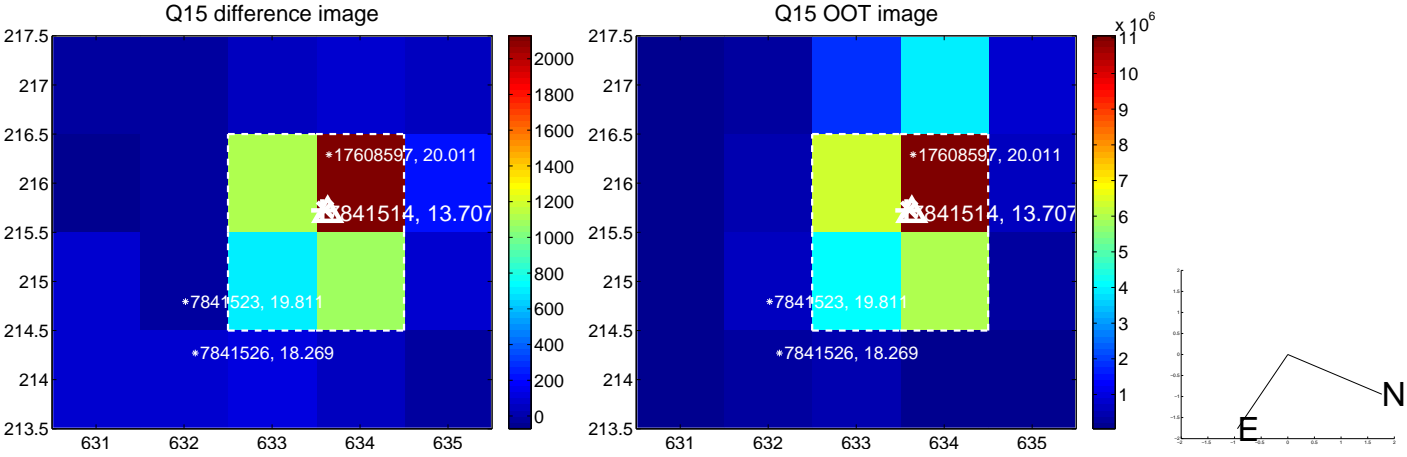
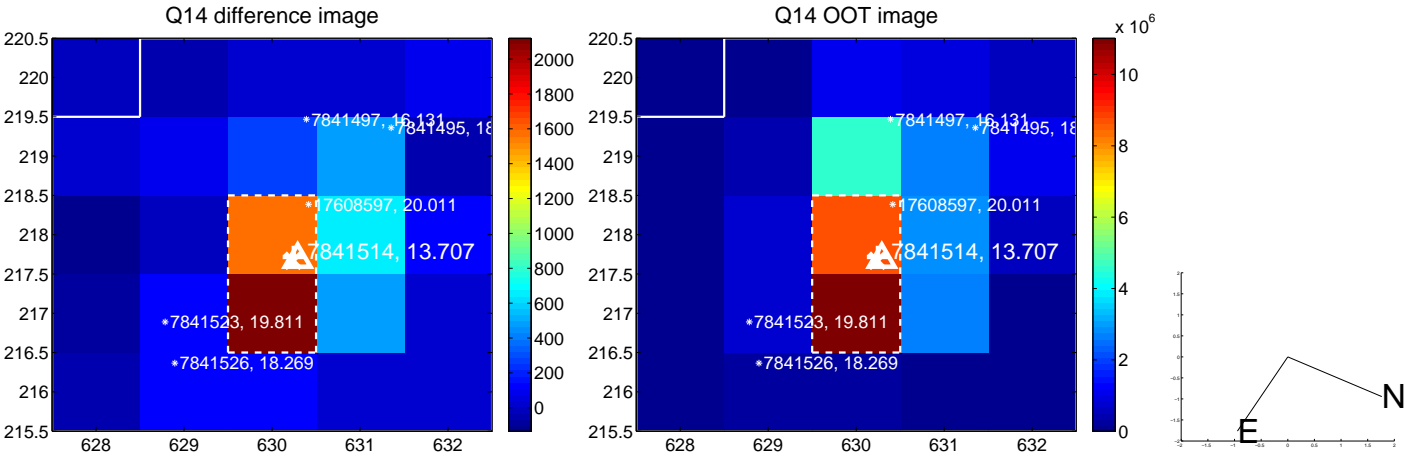
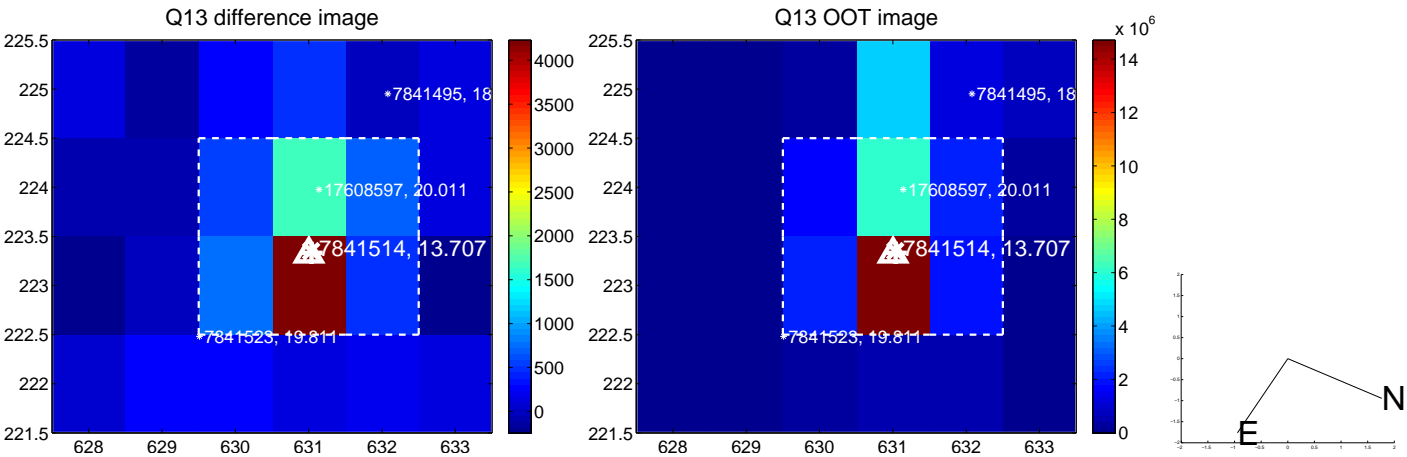




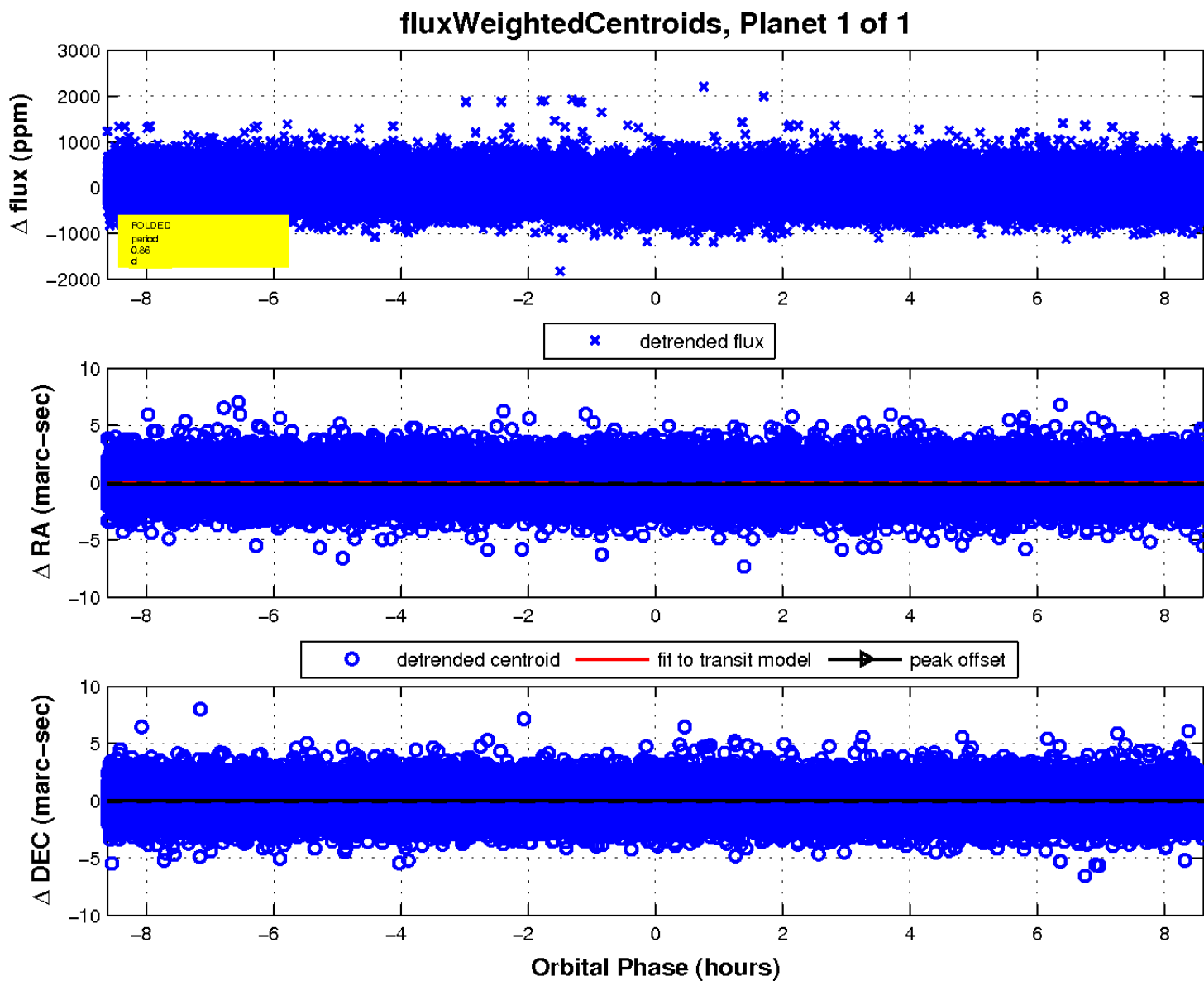
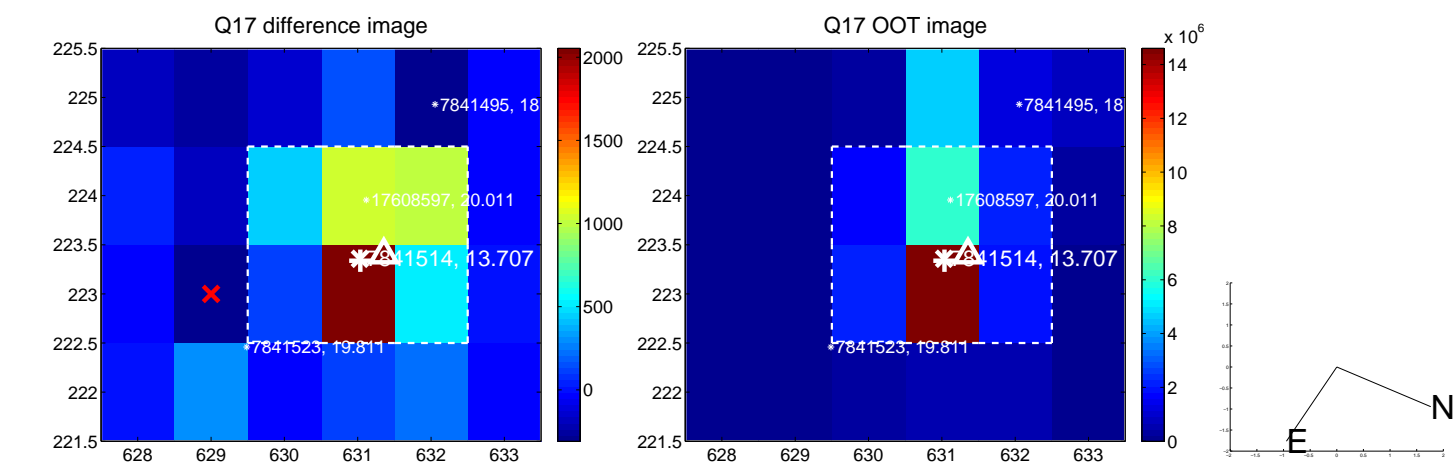
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

