

# KIC 005174858

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005174858-01	OBS	2532.01	7.970941	134.053530	498.3	1.229	14.2	18.2	0.83	5237	1.97	79.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005174858-01	OBS	PC	1.00	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.

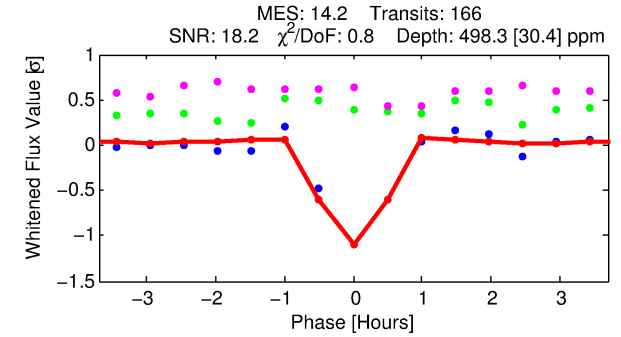
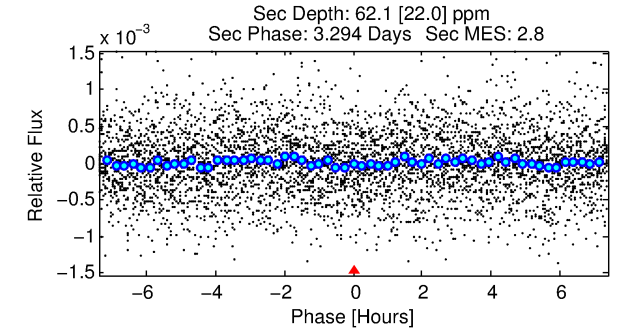
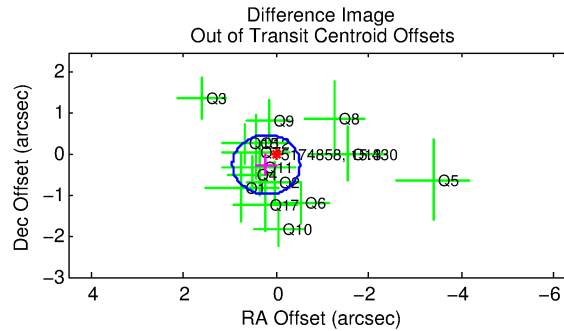
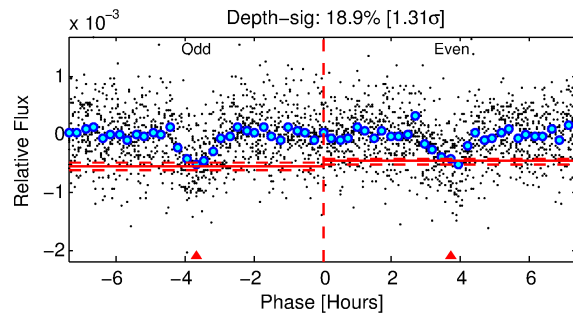
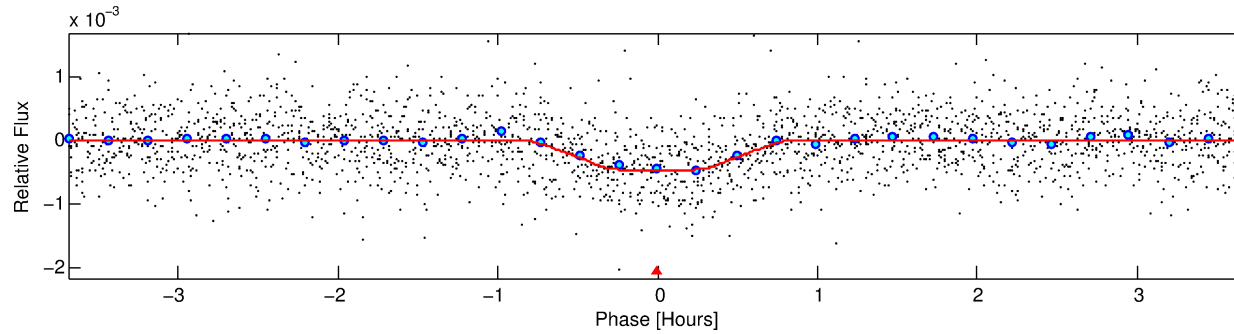
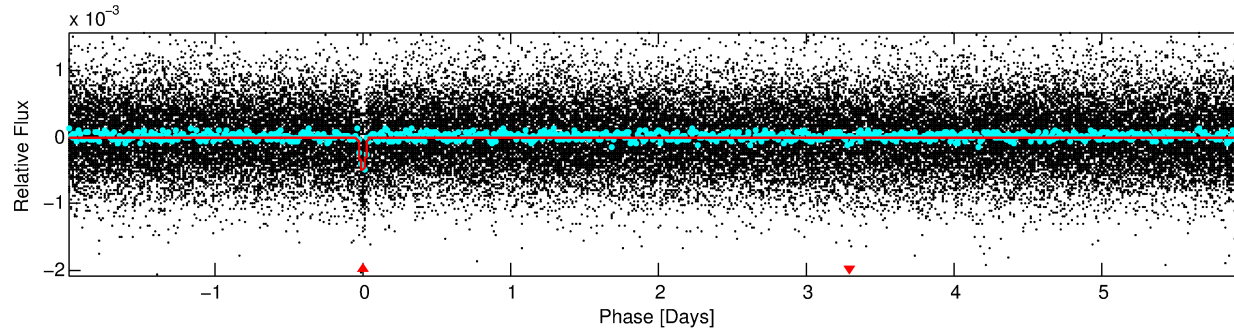
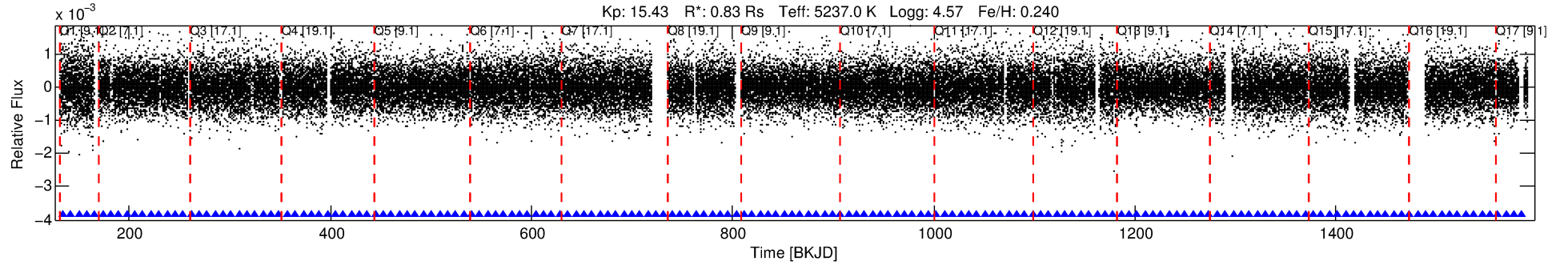
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005174858-01

No Significant Match Found

# DV One-Page Summary

KIC: 5174858 Candidate: 1 of 1 Period: 7.971 d  
KOI: K02532.01 Corr: 0.949



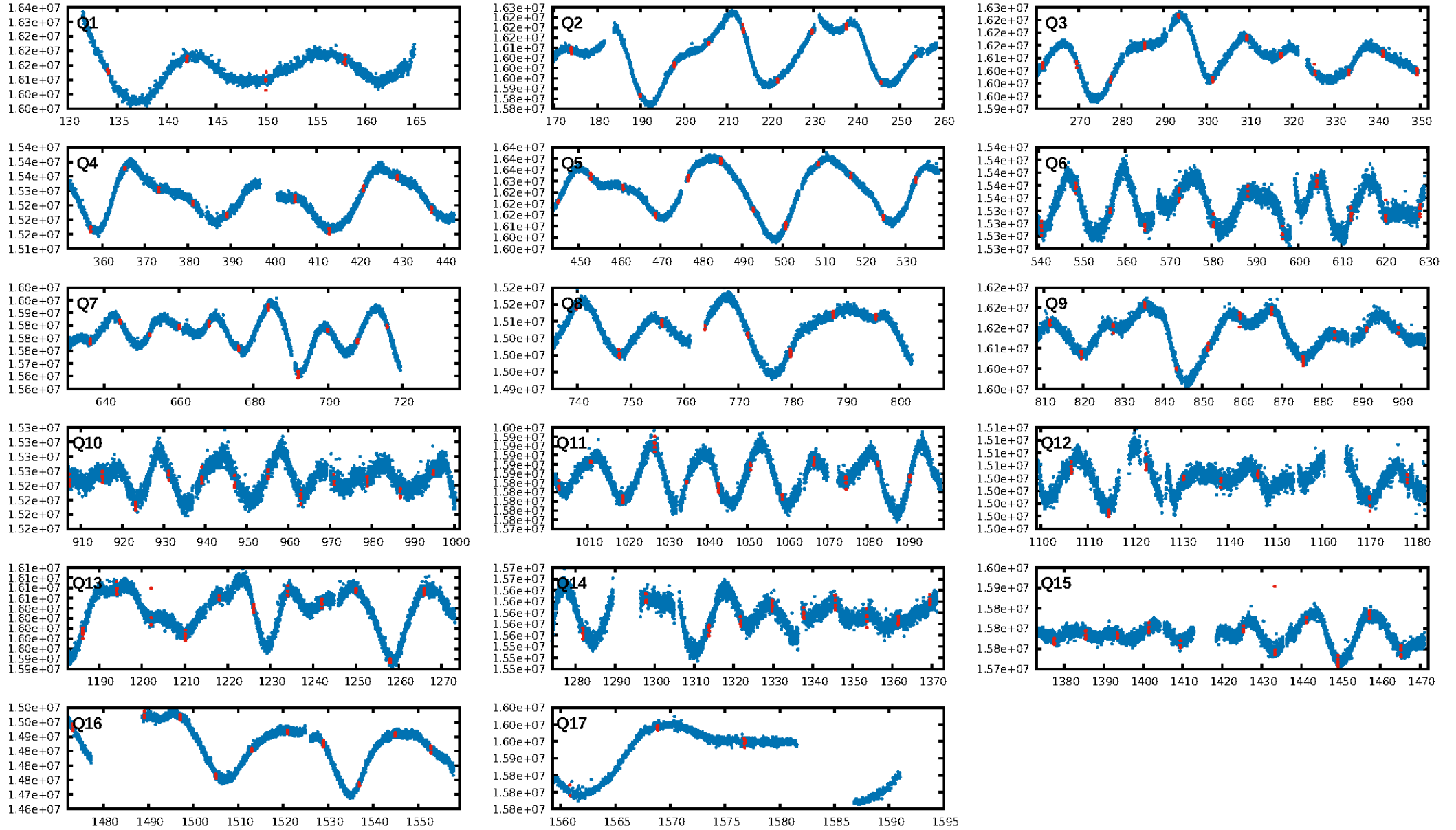
## DV Fit Results:

Period = 7.97094 [0.00002] d  
Epoch = 134.0535 [0.0017] BKJD  
Rp/R\* = 0.0219 [0.0125]  
a/R\* = 37.41 [76.55]  
b = 0.69 [1.60]  
Seff = 79.16 [18.39]  
Teq = 761 [44] K  
Rp = 1.97 [1.17] Re  
a = 0.0762 [0.0101] AU  
Ag = 50.91 [61.80] [0.81 $\sigma$ ]  
Teffp = 3141 [945] K [2.52 $\sigma$ ]

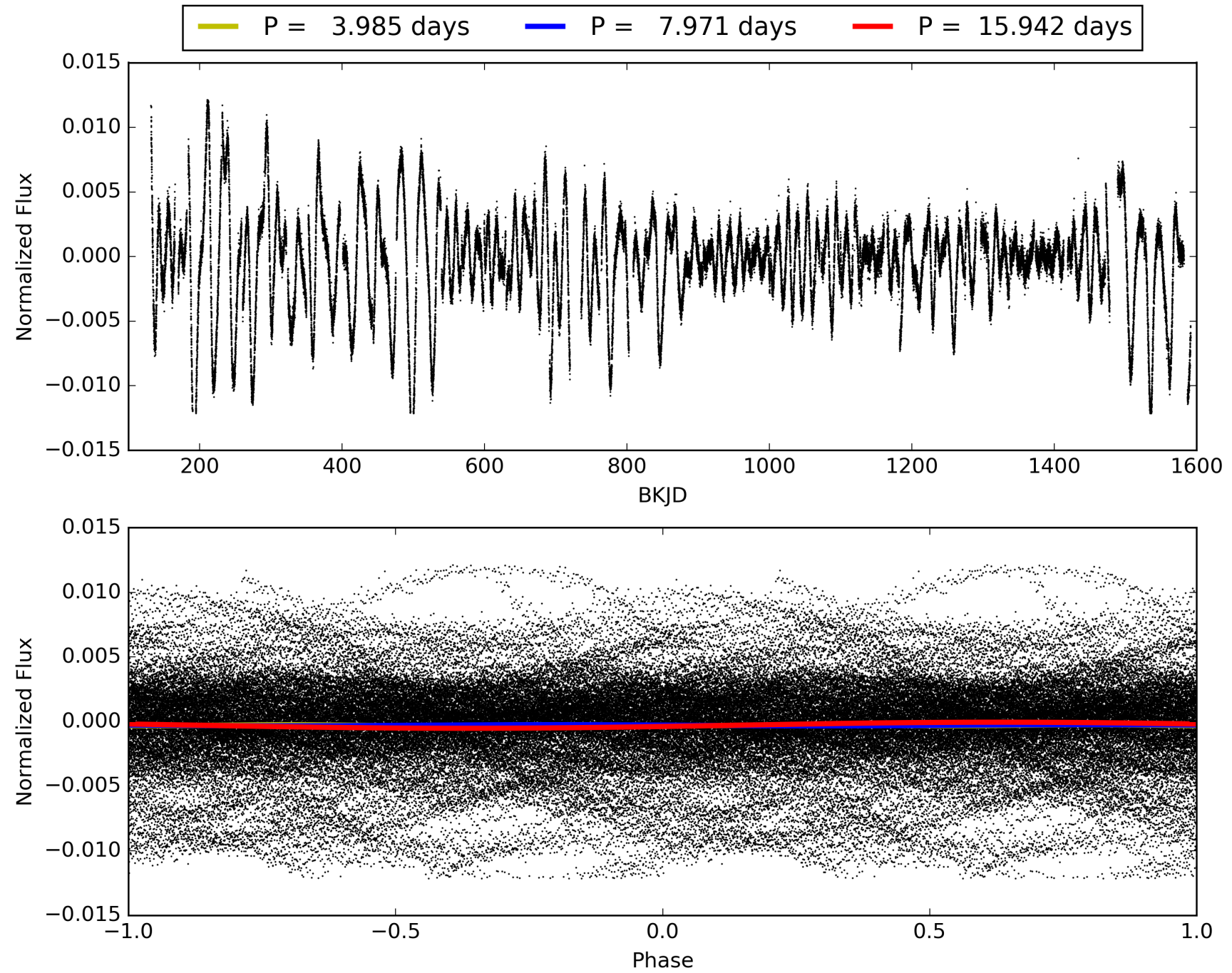
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.90e-44  
RollingBand-fgt: 1.00 [159/159]  
GhostDiagnostic-chr: 3.231  
Centroid-sig: 0.3%  
Centroid-so: 1.706 arcsec [2.25 $\sigma$ ]  
OotOffset-rm: 0.330 arcsec [1.36 $\sigma$ ]  
KicOffset-rm: 0.275 arcsec [0.95 $\sigma$ ]  
OotOffset-st: 3/4/3/5 [15]  
KicOffset-st: 3/4/3/5 [15]  
DiffImageQuality-fgm: 0.93 [14/15]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 005174858-01, PDC Light Curves

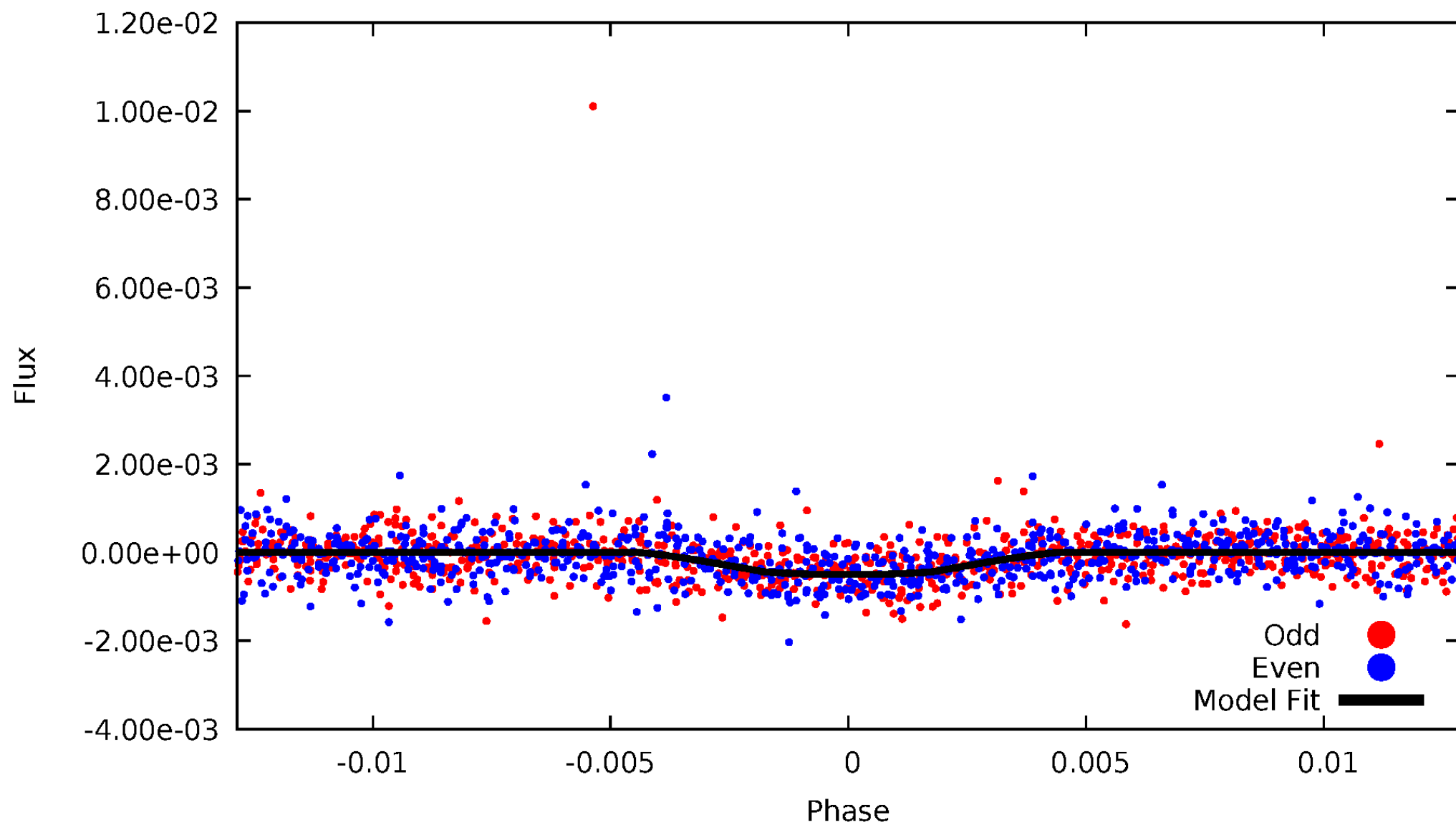


TCE 005174858-01



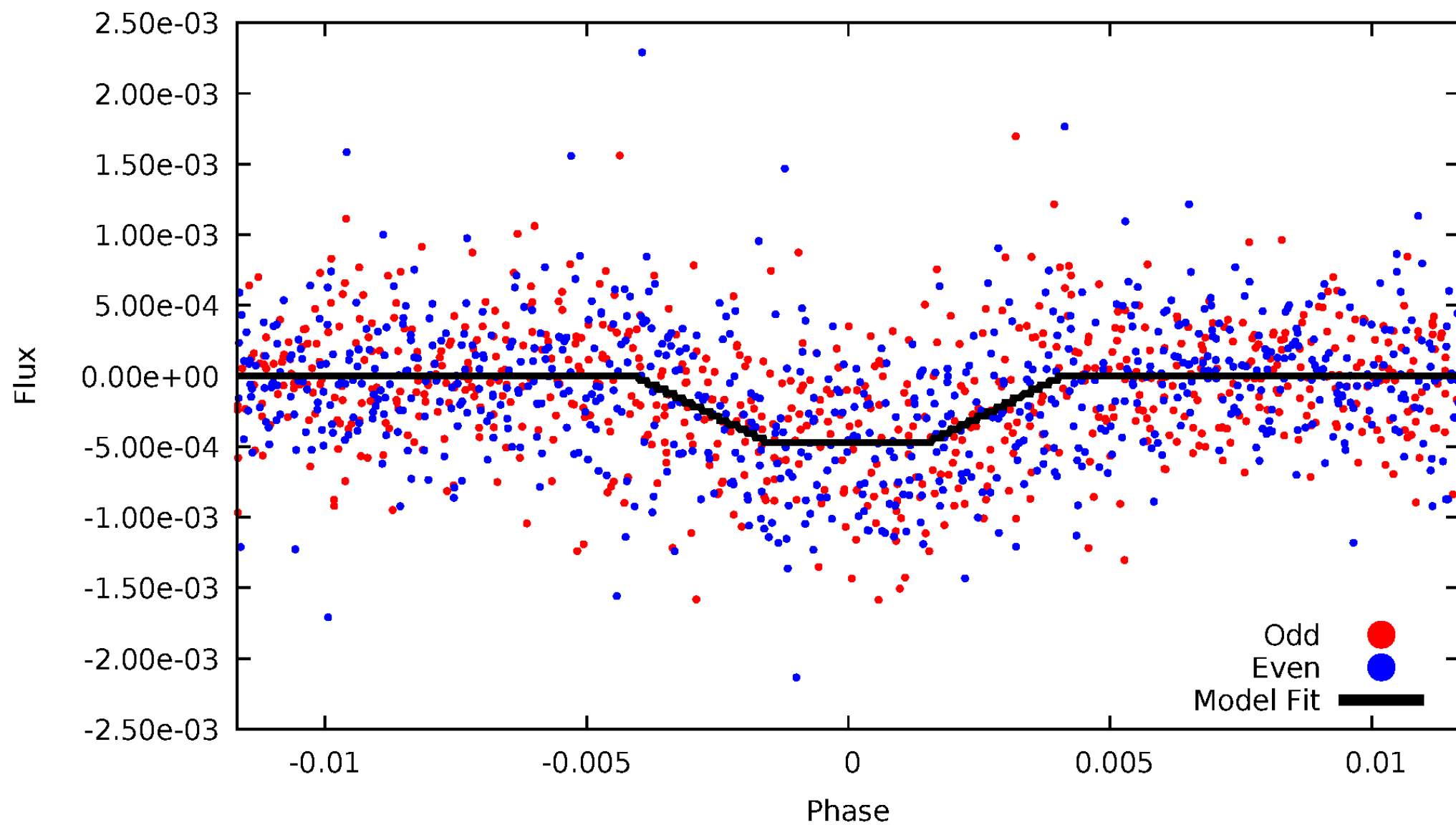
# DV Odd/Even

TCE 005174858-01



# ALT Odd/Even

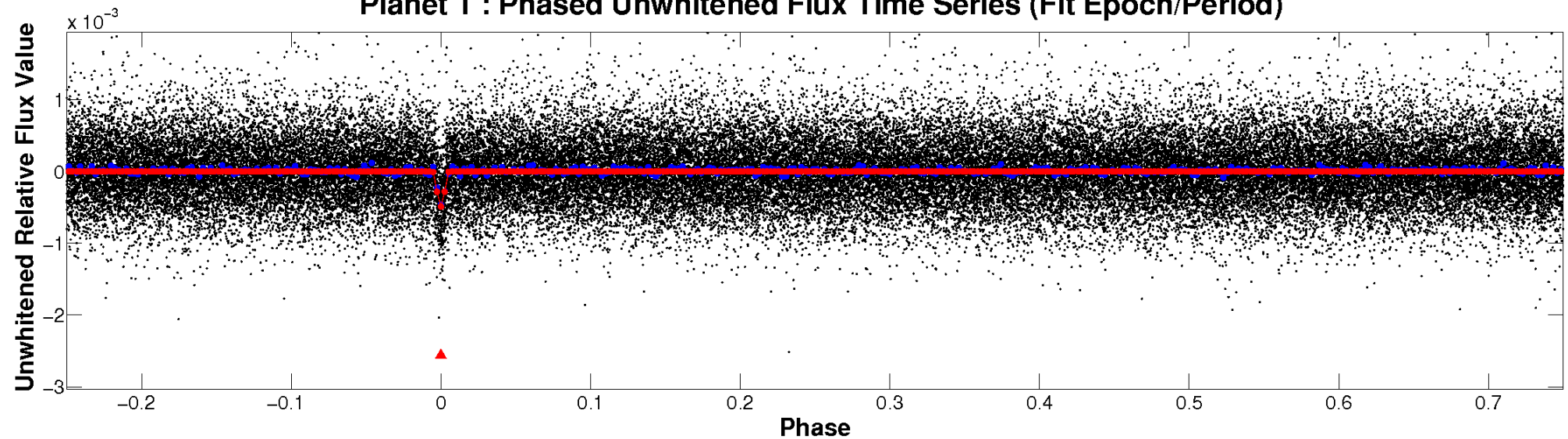
TCE 005174858-01



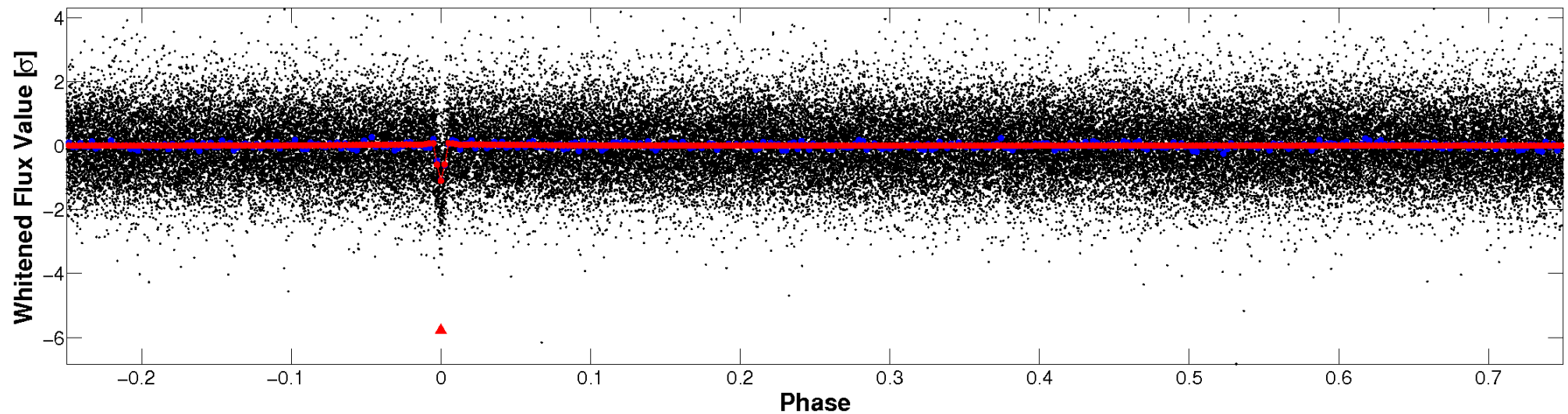


# Non-Whitened Vs. Whitened Light Curve

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

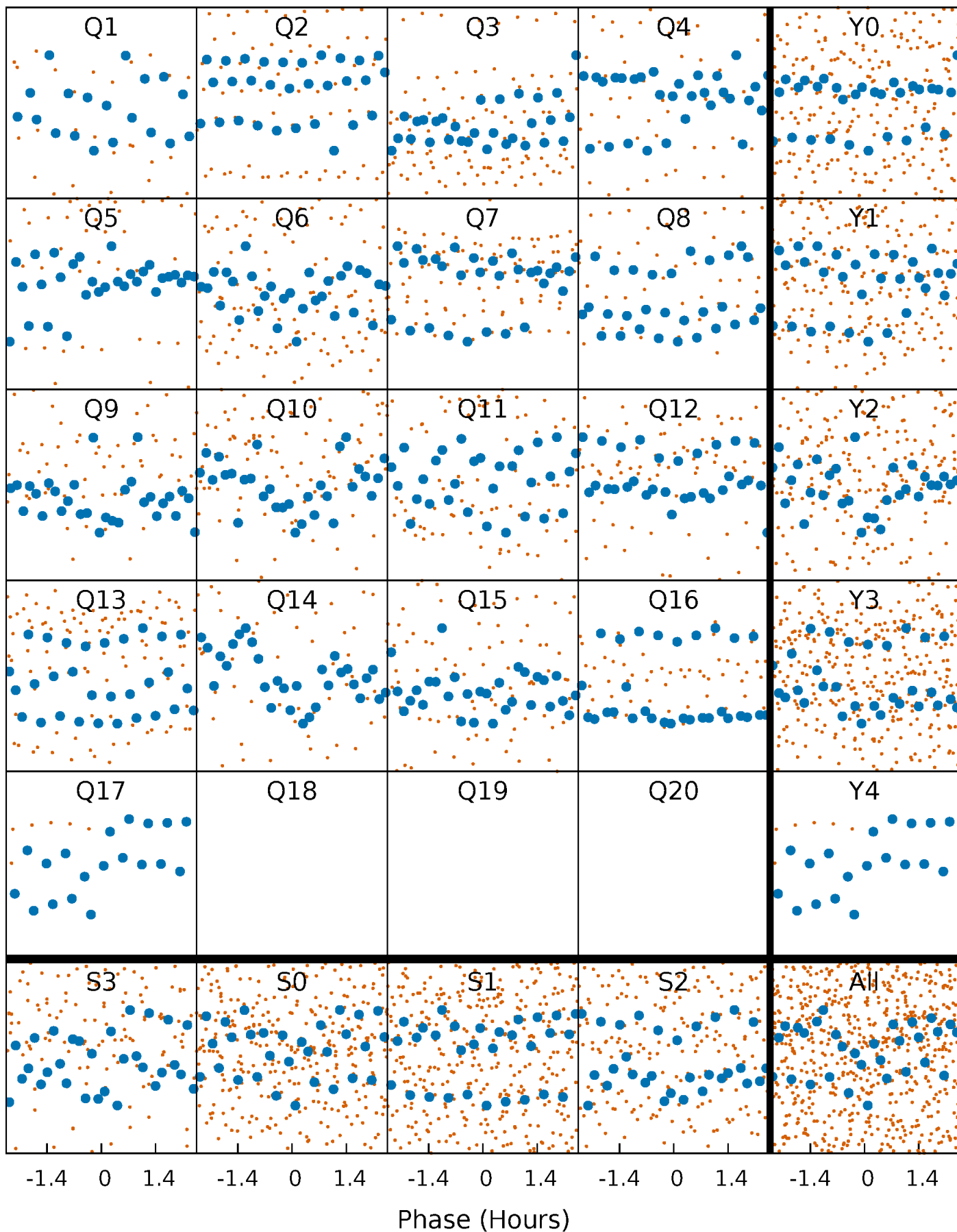


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

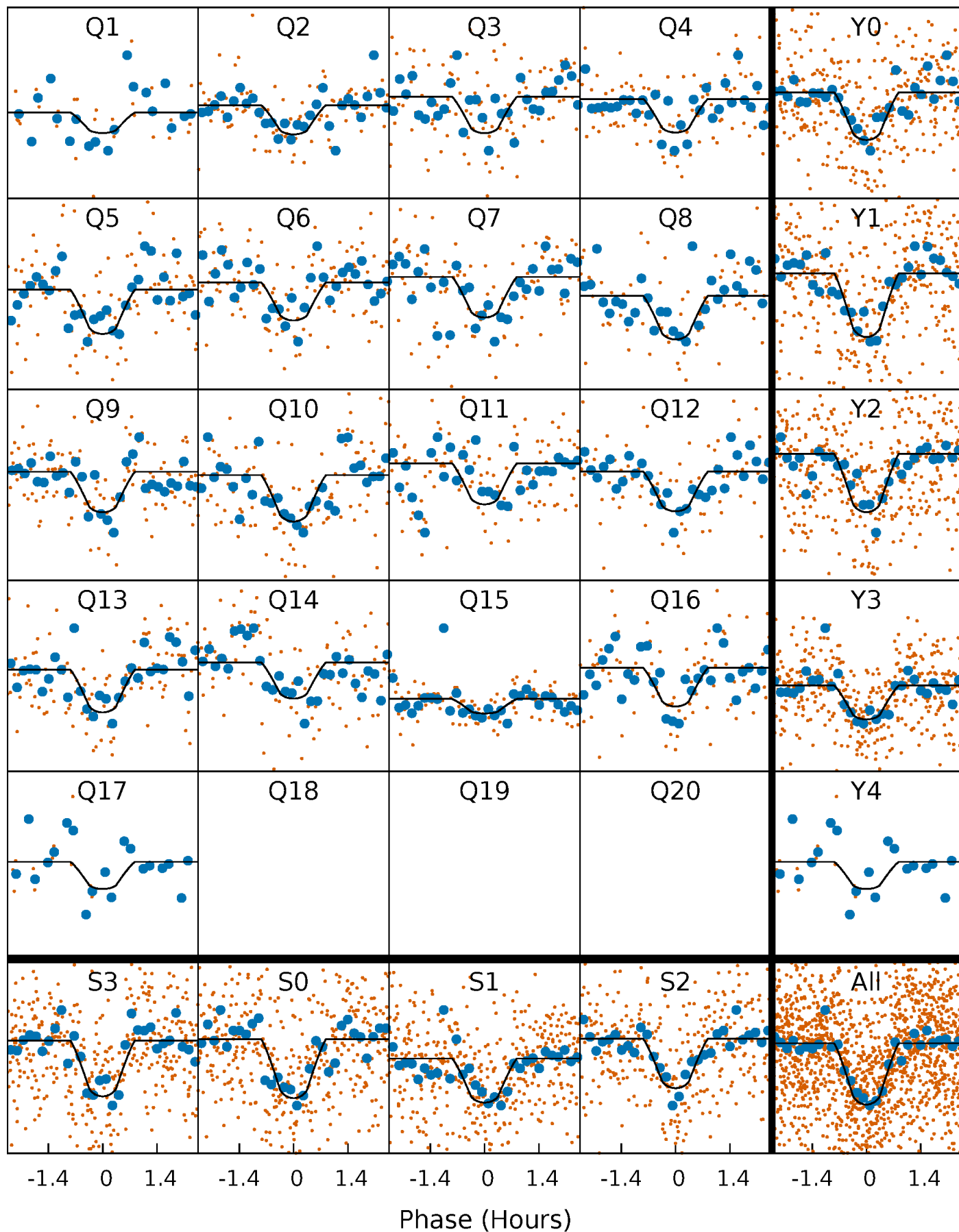
TCE 005174858-01 P= 7.970941 Days  $T_0=134.053530$  (BKJD)





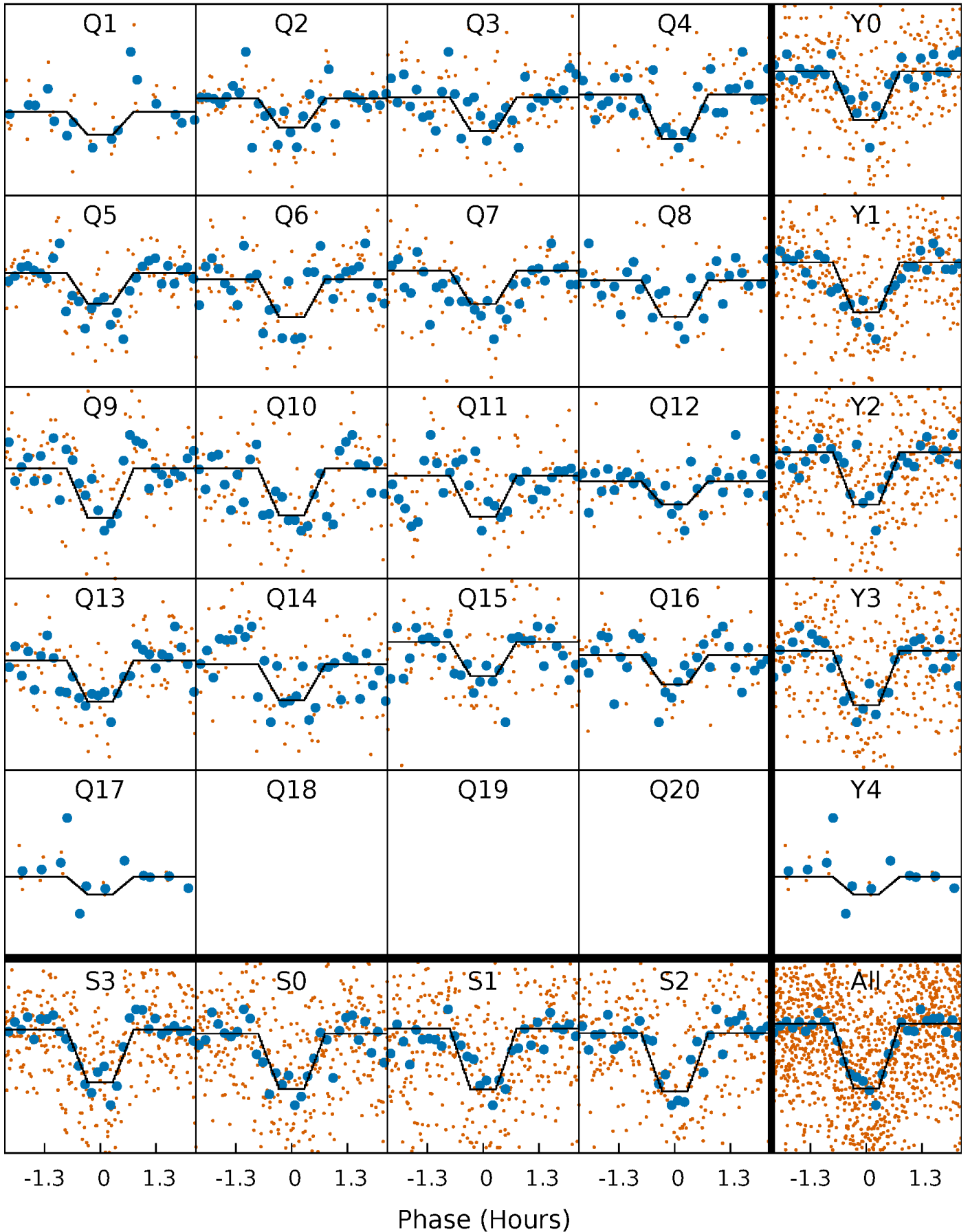
# DV Quarter-Phased Transit Curves

TCE 005174858-01 P= 7.970941 Days  $T_0=134.053530$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

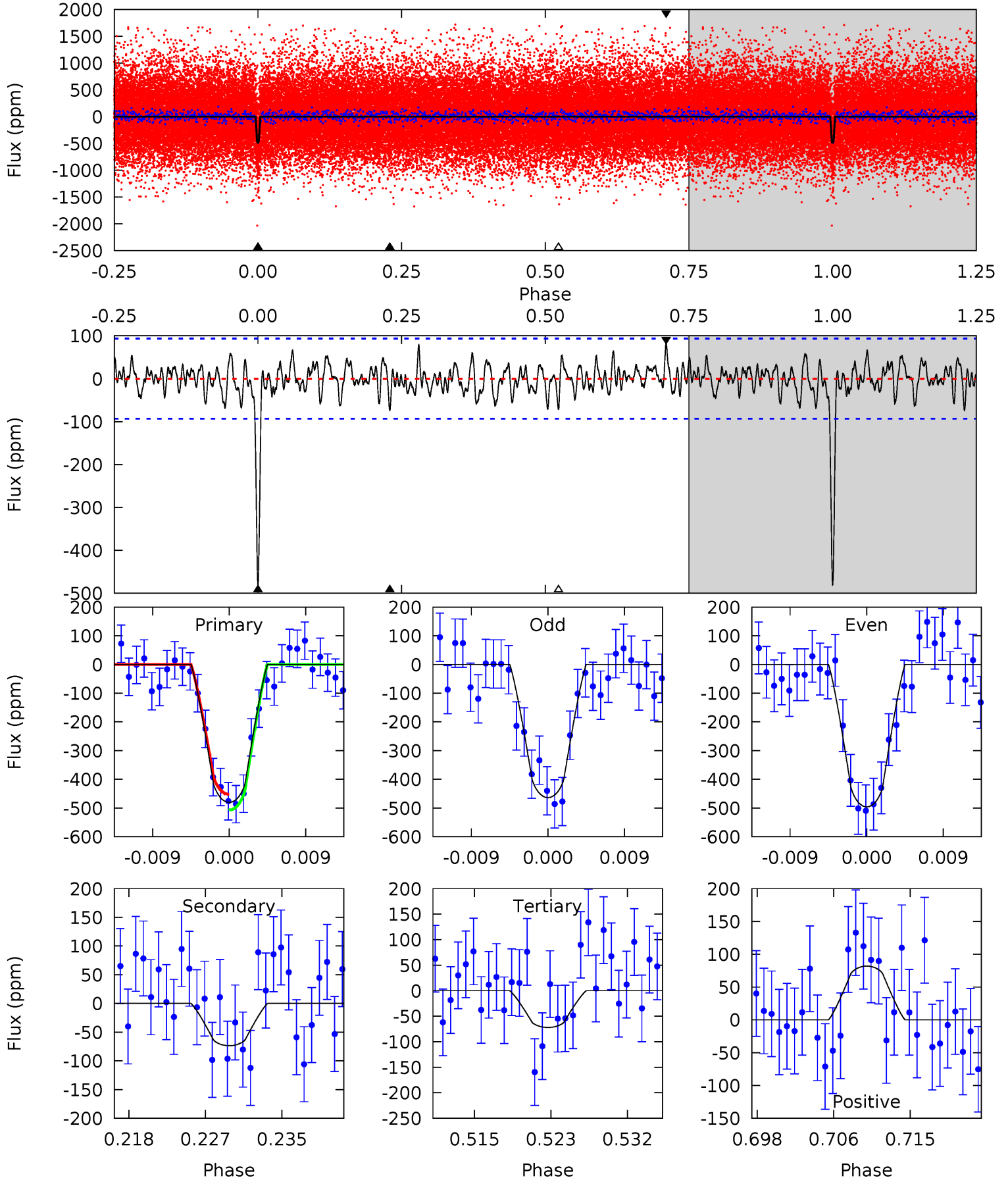
TCE 005174858-01 P= 7.970968 Days  $T_0=134.051440$  (BKJD)



# DV Model-Shift Uniqueness Test

005174858-01, P = 7.970941 Days, E = 126.082589 Days

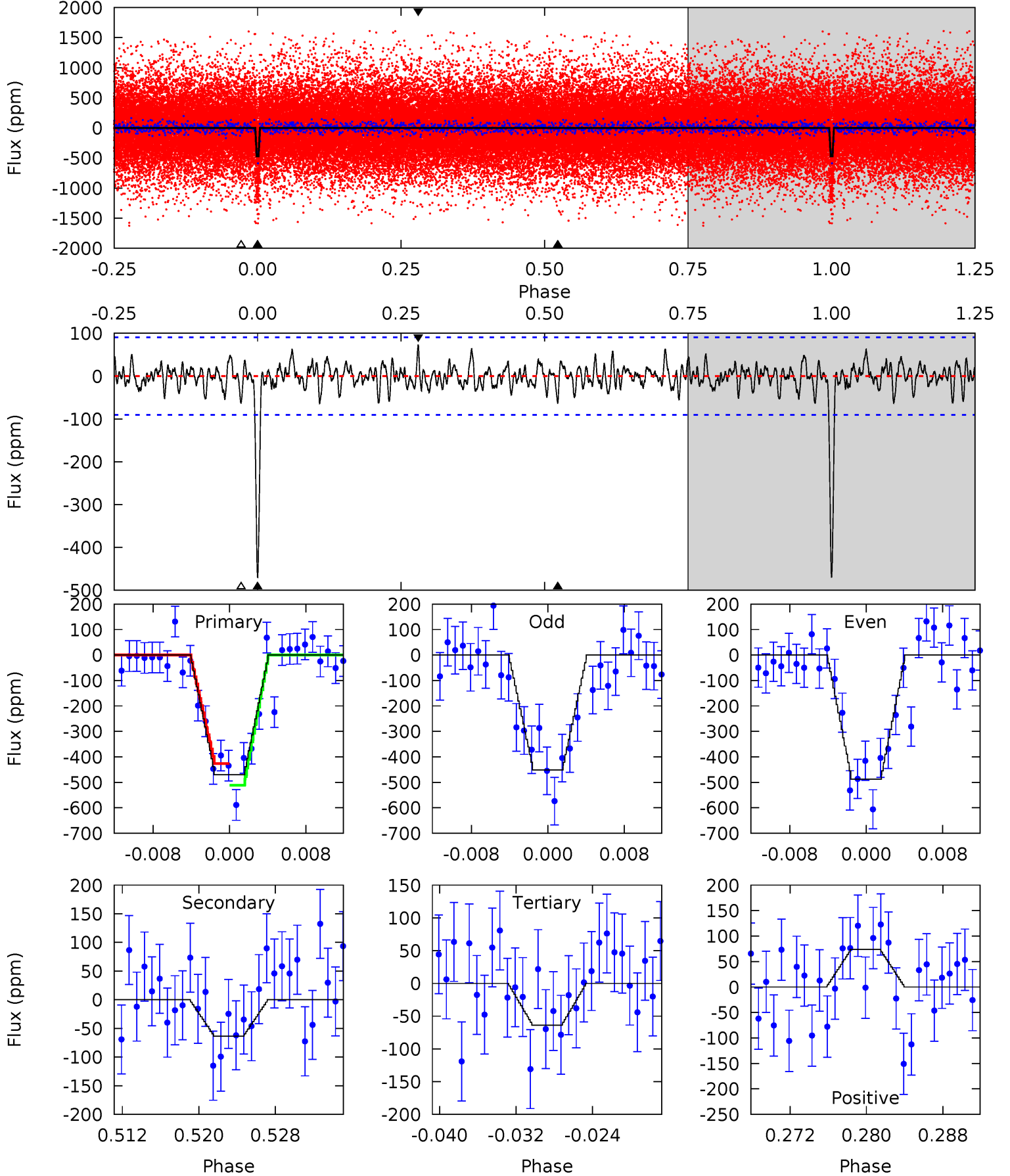
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.0	3.98	3.90	4.43	5.05	2.62	1.42	22.1	21.6	0.08	-0.45	0.87	1.03	0.15	1.48



# Alt Model-Shift Uniqueness Test

005174858-01, P = 7.970968 Days, E = 126.080472 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
26.4	3.58	3.57	4.14	5.07	2.65	1.21	22.8	22.2	0.00	-0.57	1.01	0.98	0.14	2.40



### Stellar Parameters For KIC 005174858

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5237^{+157}_{-157}$	$4.572^{+0.028}_{-0.112}$	$0.240^{+0.200}_{-0.300}$	$0.826^{+0.124}_{-0.057}$	$0.927^{+0.046}_{-0.093}$	$2.315^{+0.328}_{-0.759}$
	+3%/-3%	+1%/-2%	+83%/-125%	+15%/-7%	+5%/-10%	+14%/-33%
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 005174858-01 / KOI 2532.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-74 \pm 18$	$2.13^{+1.16}_{-1.06}$	$1078^{+48}_{-40}$	$3576^{+985}_{-442}$	$49^{+148}_{-29}$
Alt.	$-64 \pm 18$	$2.12^{+1.09}_{-1.12}$	$1079^{+43}_{-41}$	$3550^{+976}_{-485}$	$46^{+140}_{-28}$

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

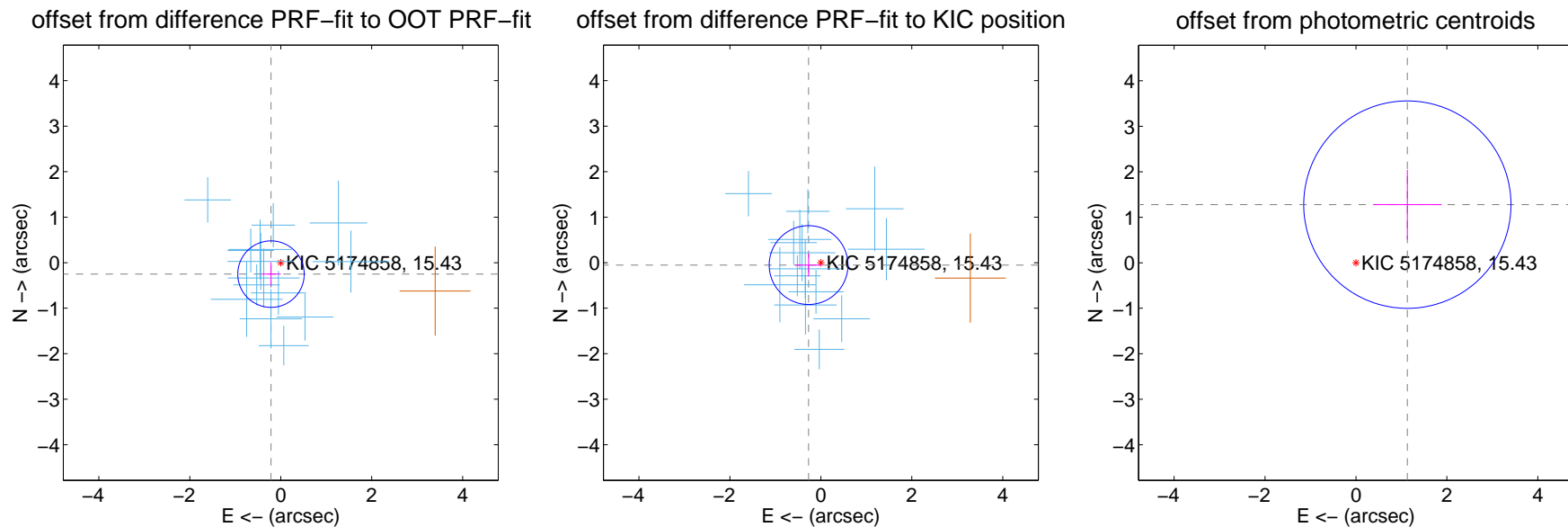
## DV Centroid Data

Supplemental centroid analysis for 005174858-01. Kepler magnitude: 15.43. Transit SNR 18.17

There are 14 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

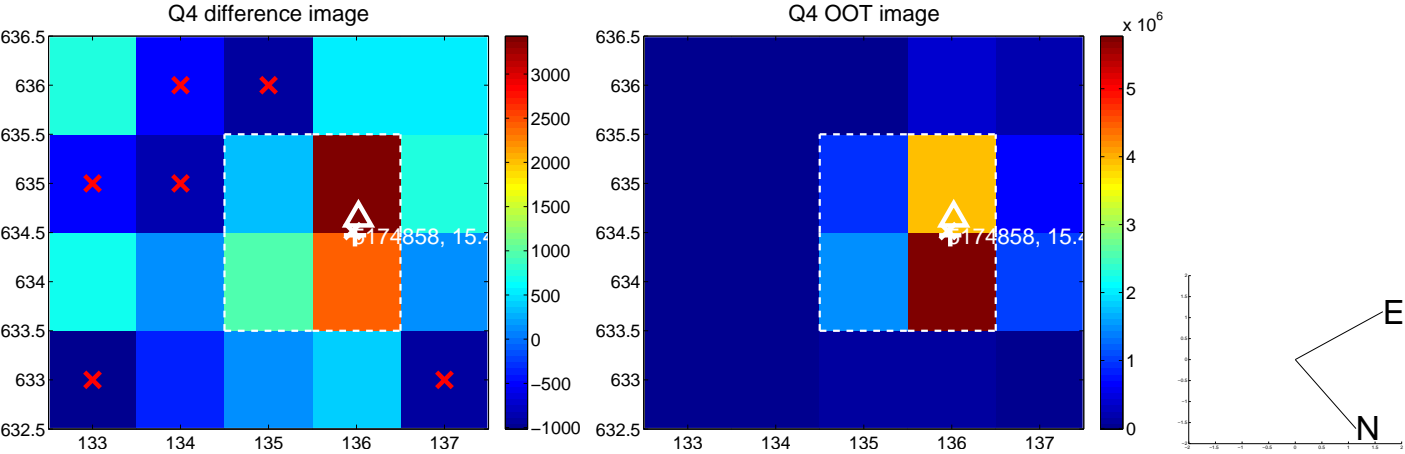
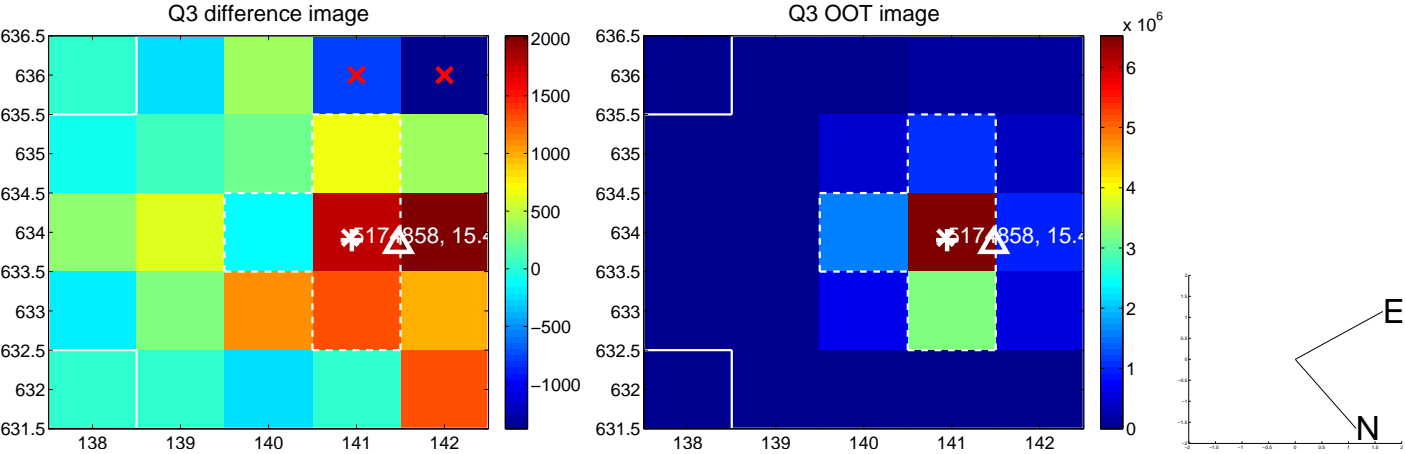
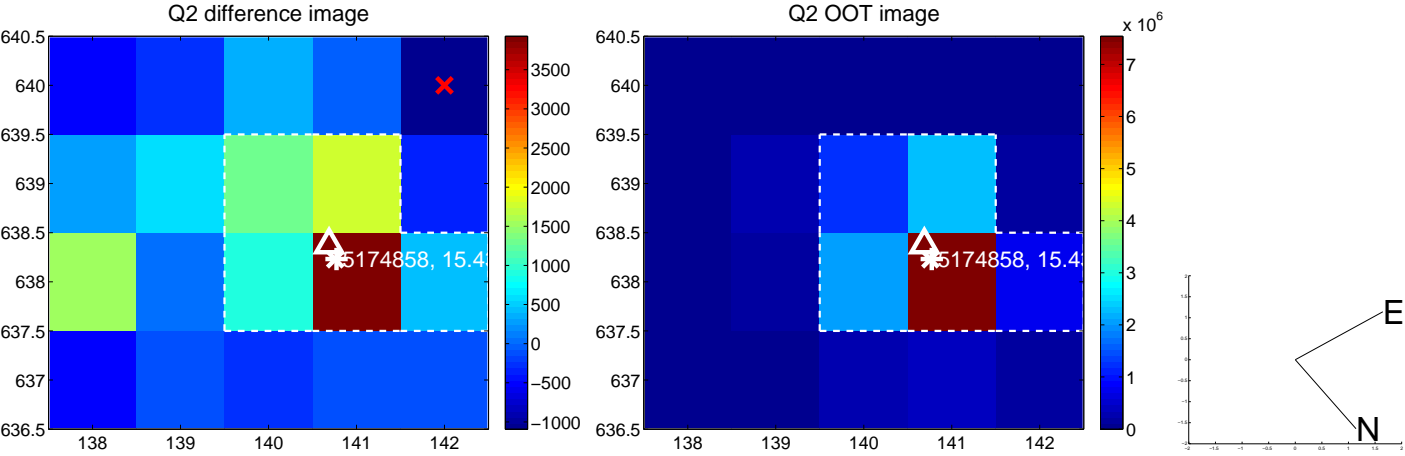
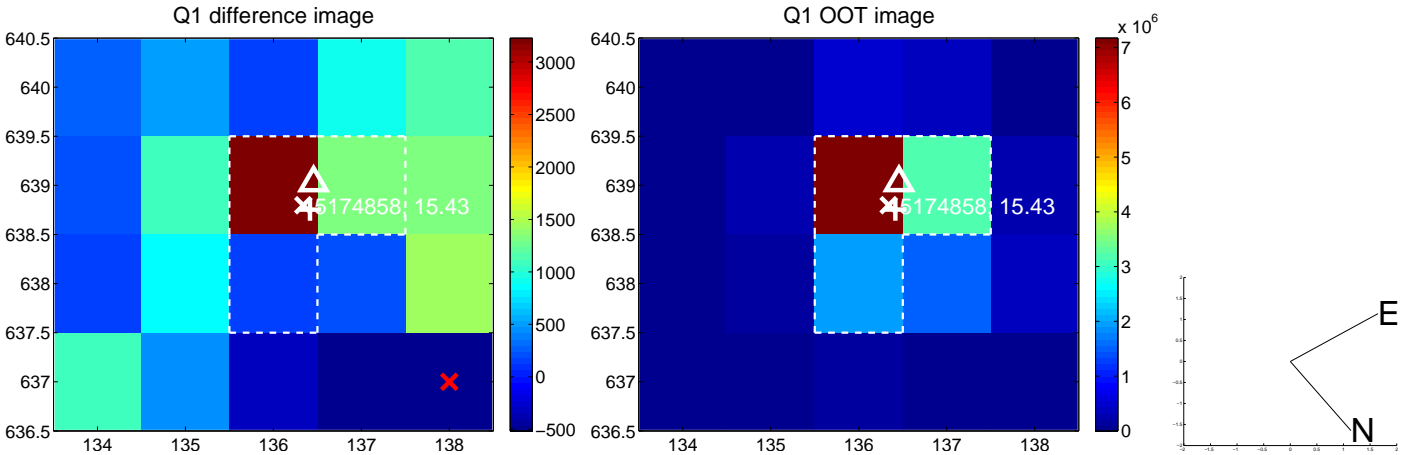
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.330 \pm 0.244$	1.36	$0.214 \pm 0.215$	$-0.251 \pm 0.262$
PRF-fit source offset from KIC position	$0.275 \pm 0.289$	0.95	$0.270 \pm 0.291$	$-0.053 \pm 0.254$
photometric centroid source offset	$1.71 \pm 0.76$	2.25	$-1.13 \pm 0.75$	$1.28 \pm 0.77$



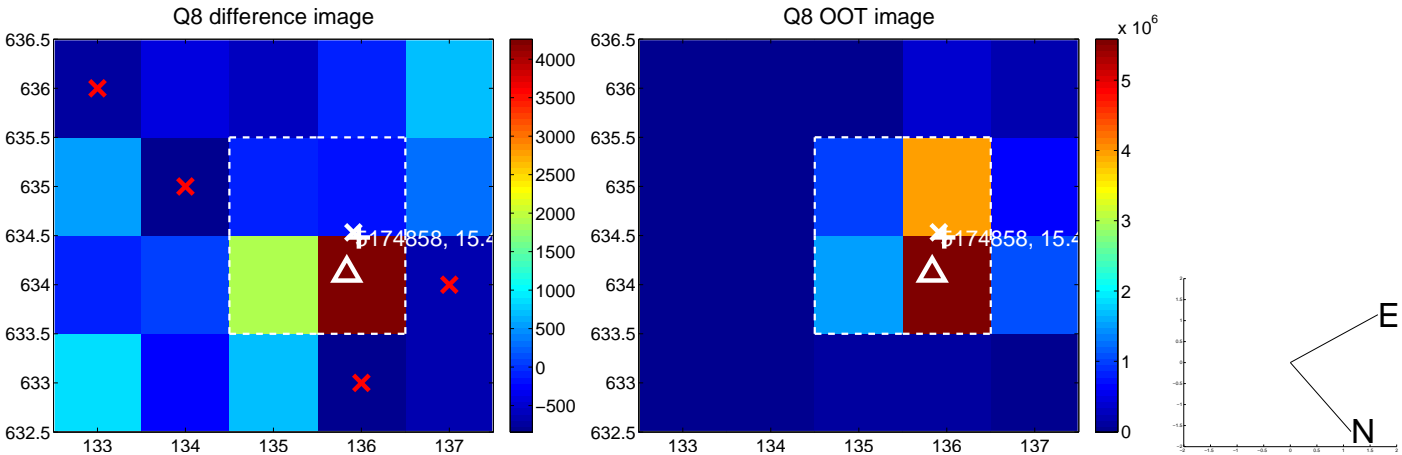
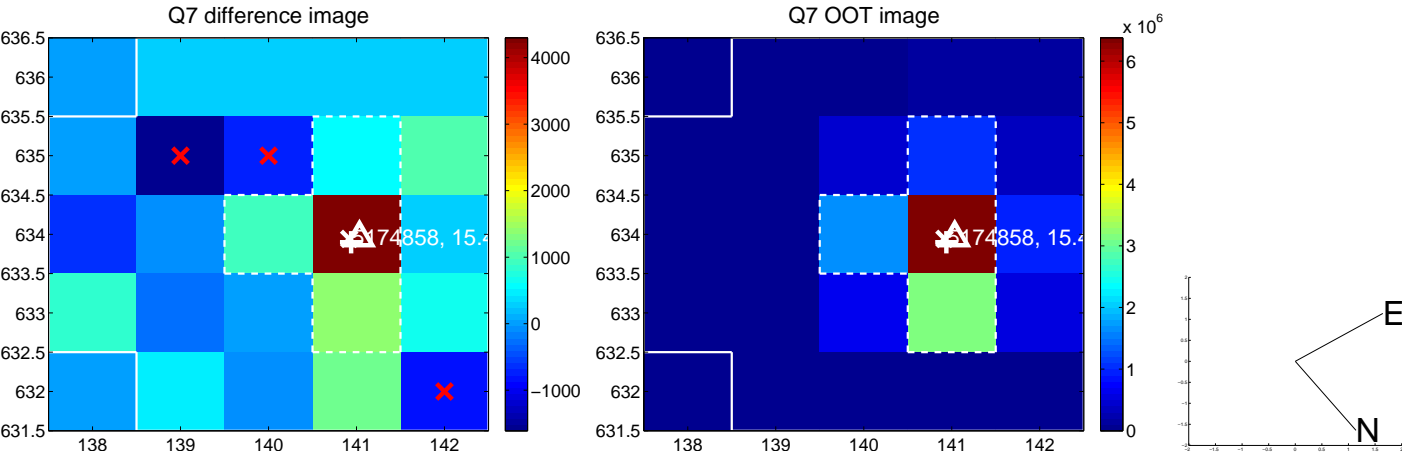
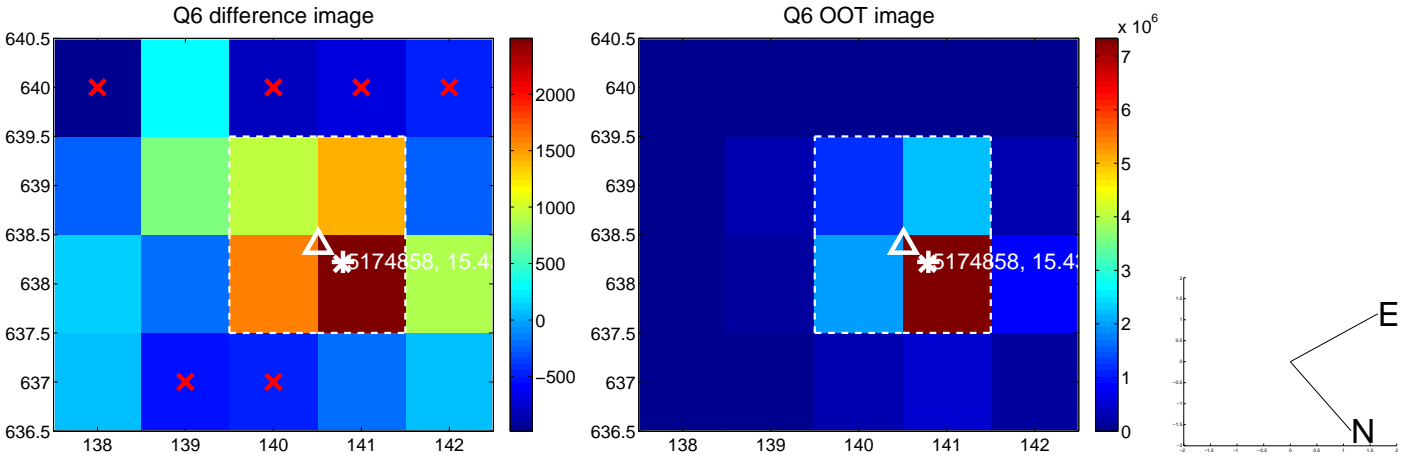
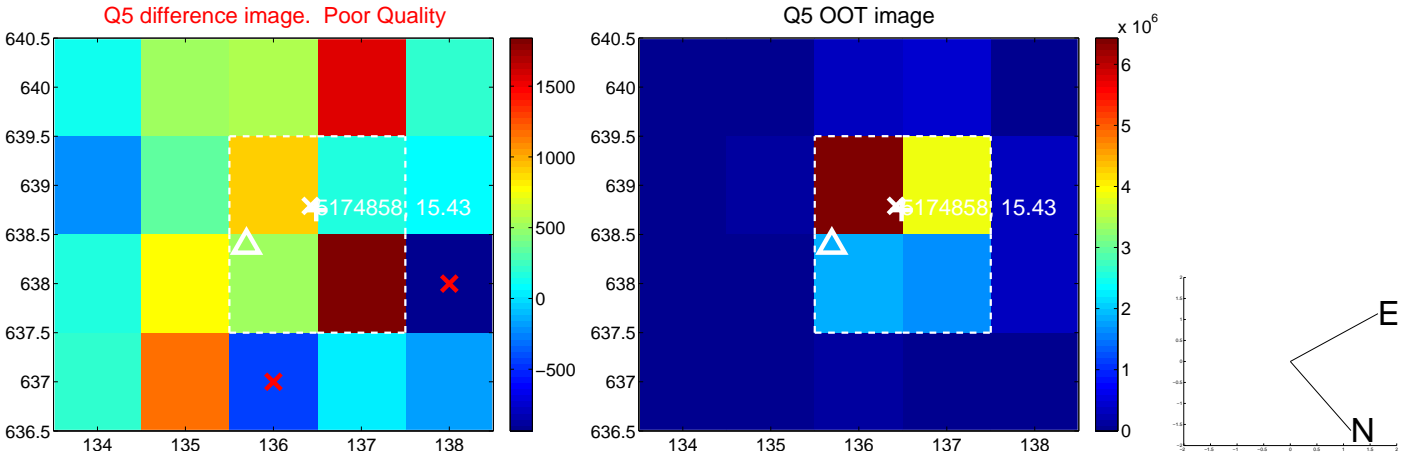
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



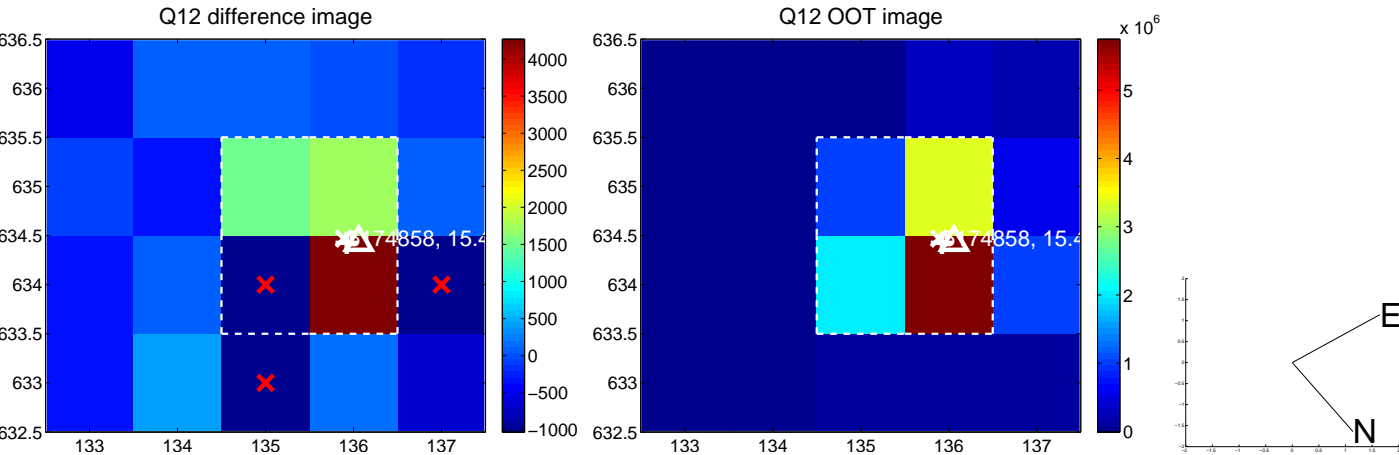
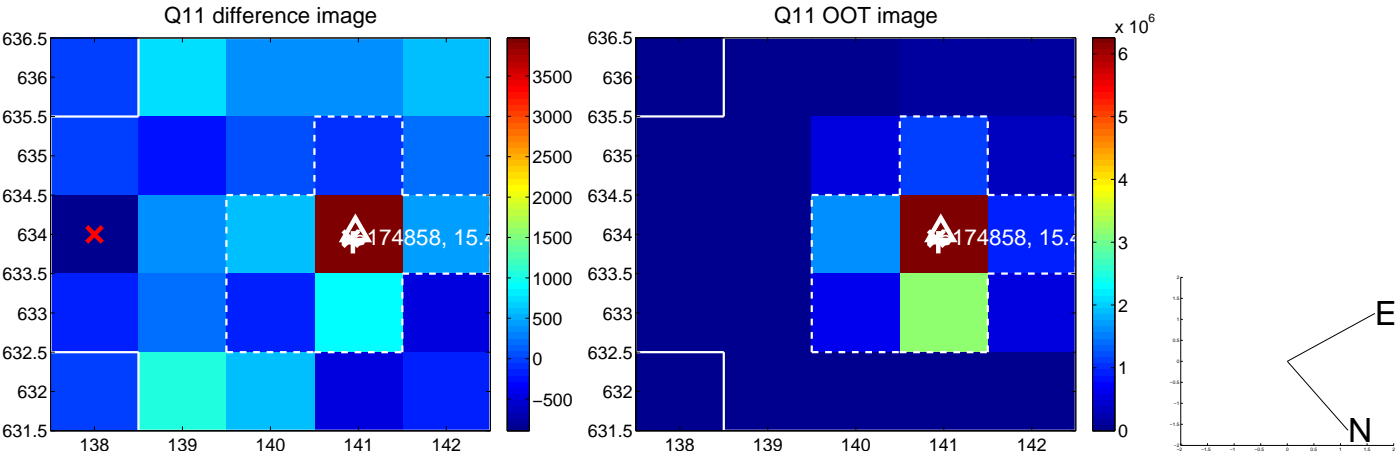
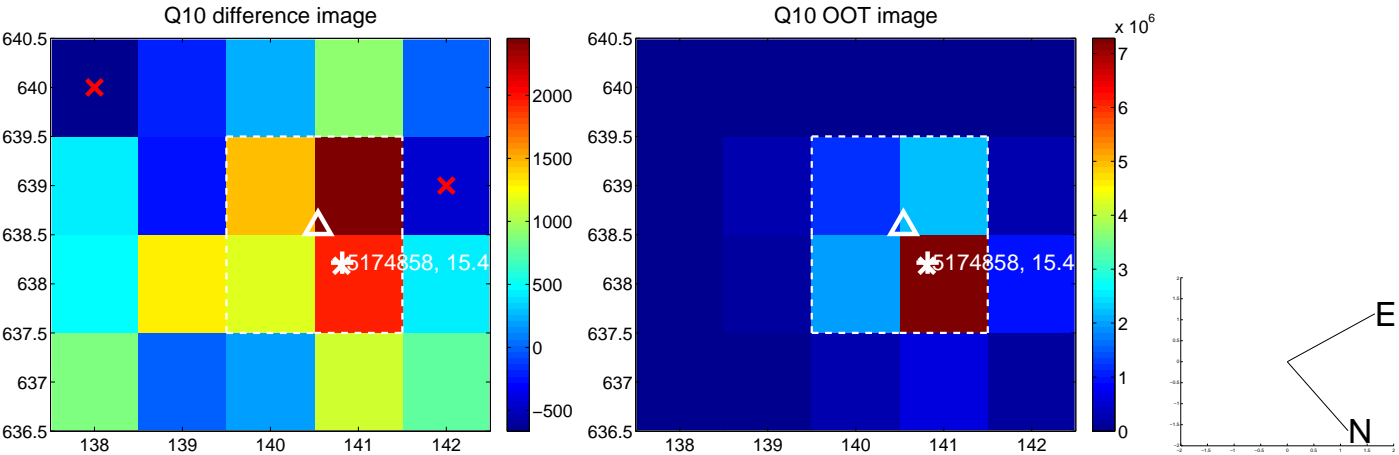
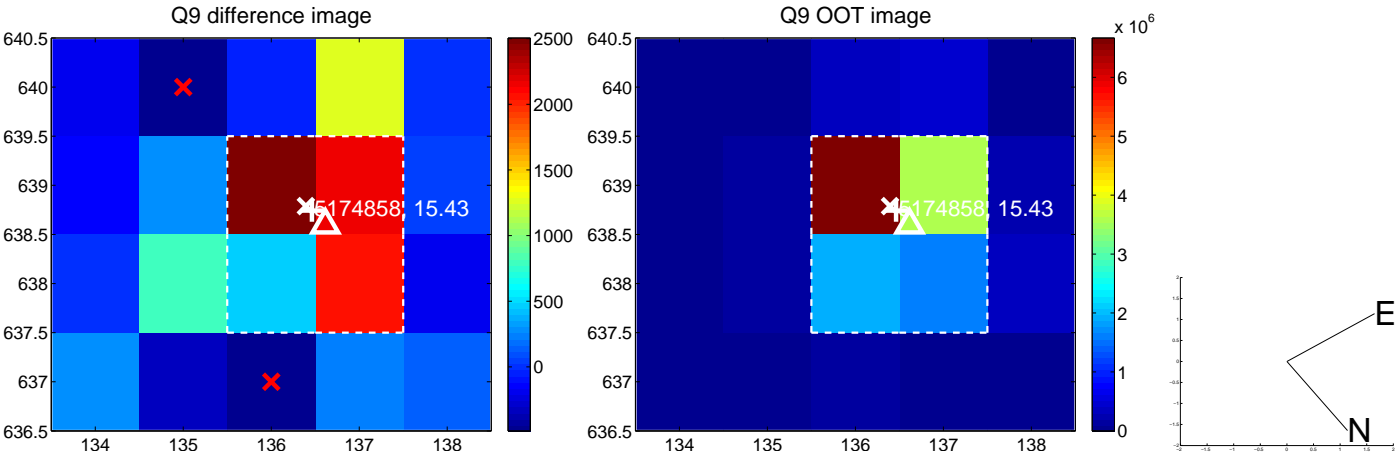
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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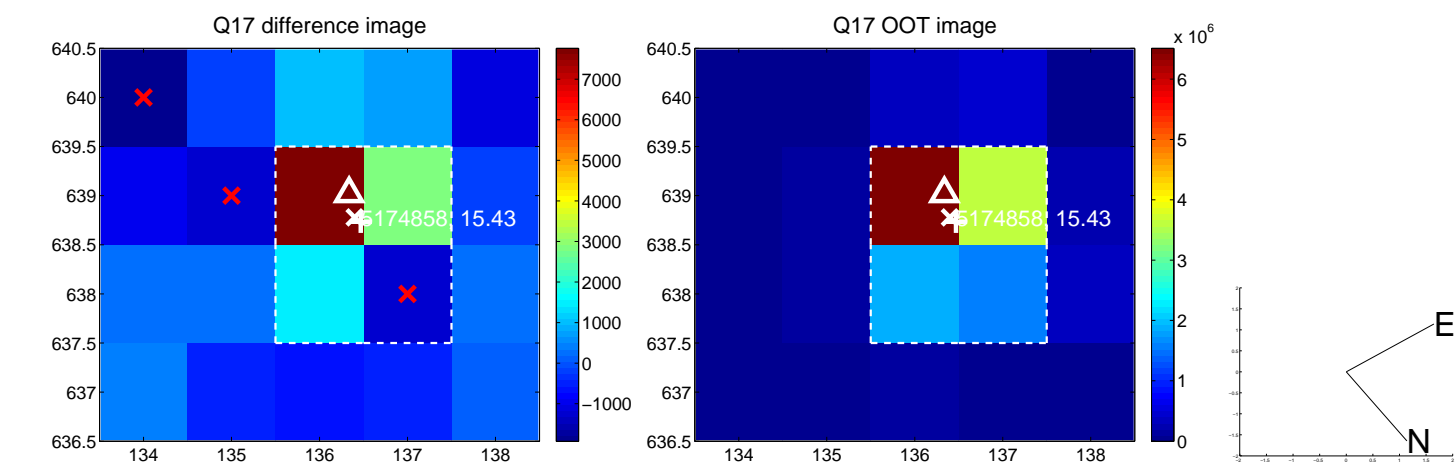


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

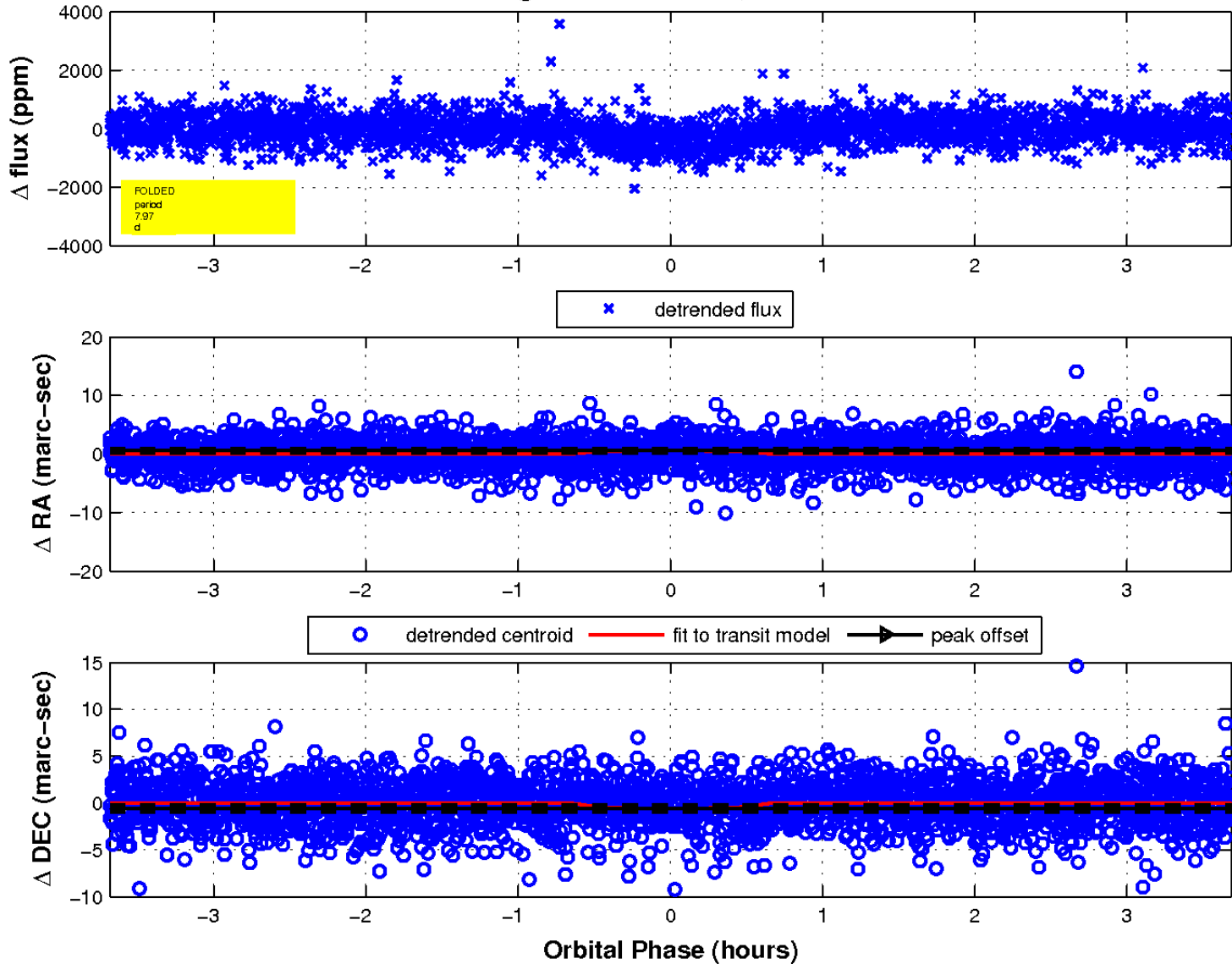




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

