

# KIC 009575728

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009575728-01	OBS	5692.01	2.641810	132.534955	55.5	2.496	10.9	10.0	0.68	4147	0.64	114.35

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009575728-01	OBS	PC	0.99	0	0	0	0	CENT_KIC_POS

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

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

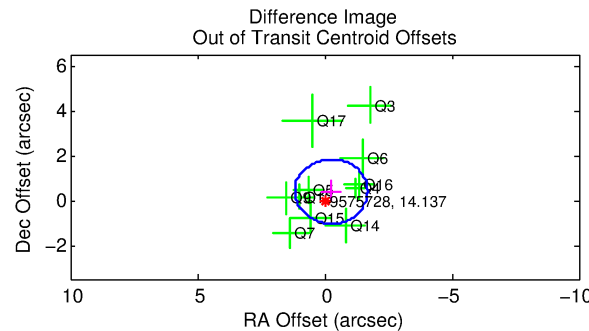
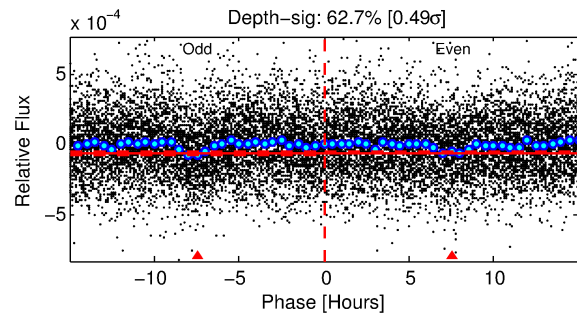
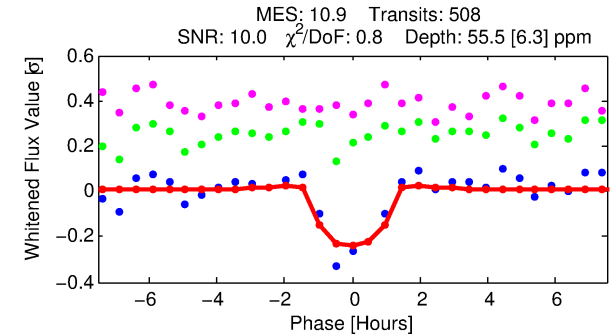
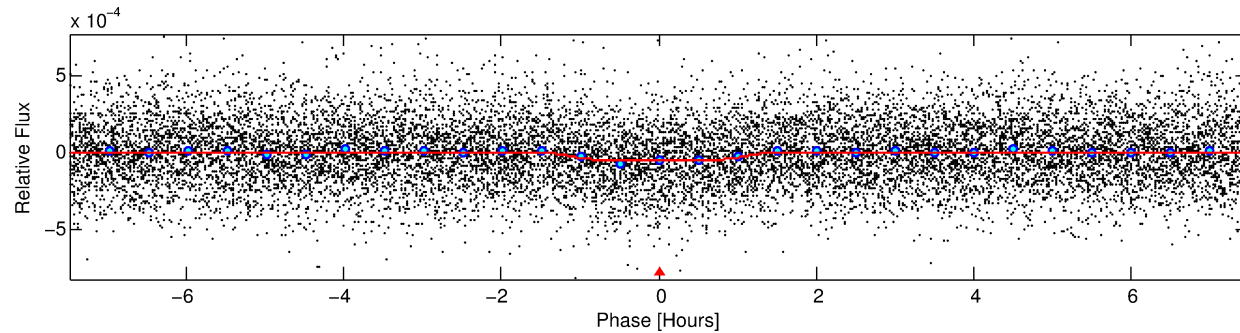
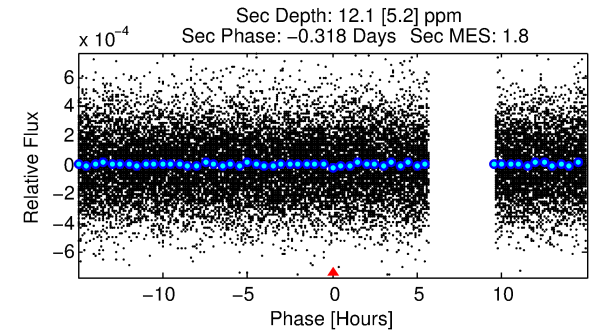
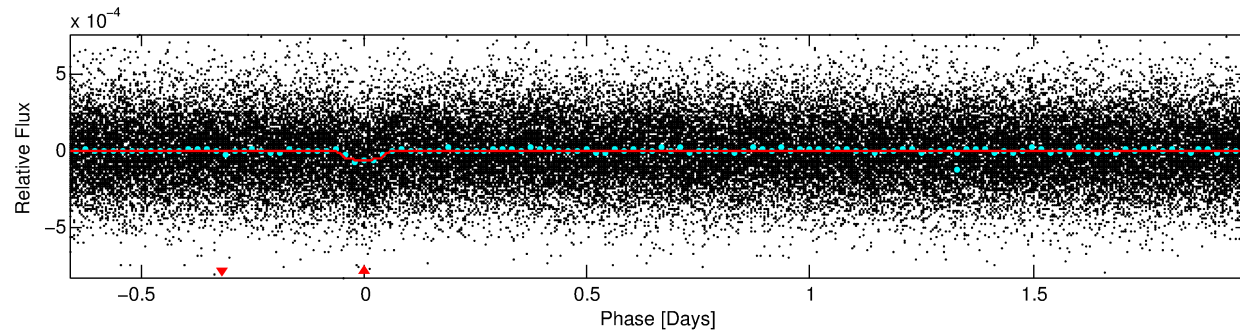
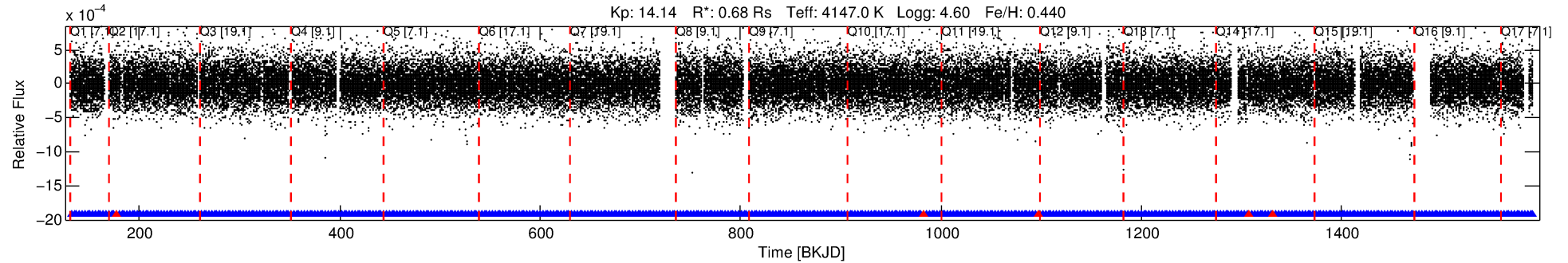
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009575728-01

No Significant Match Found

# DV One-Page Summary

KIC: 9575728 Candidate: 1 of 1 Period: 2.642 d  
KOI: K05692.01 Corr: 0.903



## DV Fit Results:

Period = 2.64181 [0.00002] d  
Epoch = 132.5350 [0.0037] BKJD  
Rp/R\* = 0.0085 [0.0061]  
a/R\* = 3.76 [9.08]  
b = 0.90 [0.55]  
Seff = 114.35 [12.34]  
Teff = 834 [22] K  
Rp = 0.64 [0.45] Re  
a = 0.0329 [0.0016] AU  
Ag = 17.82 [26.53] [0.63σ]  
Teffp = 2649 [986] K [1.84σ]

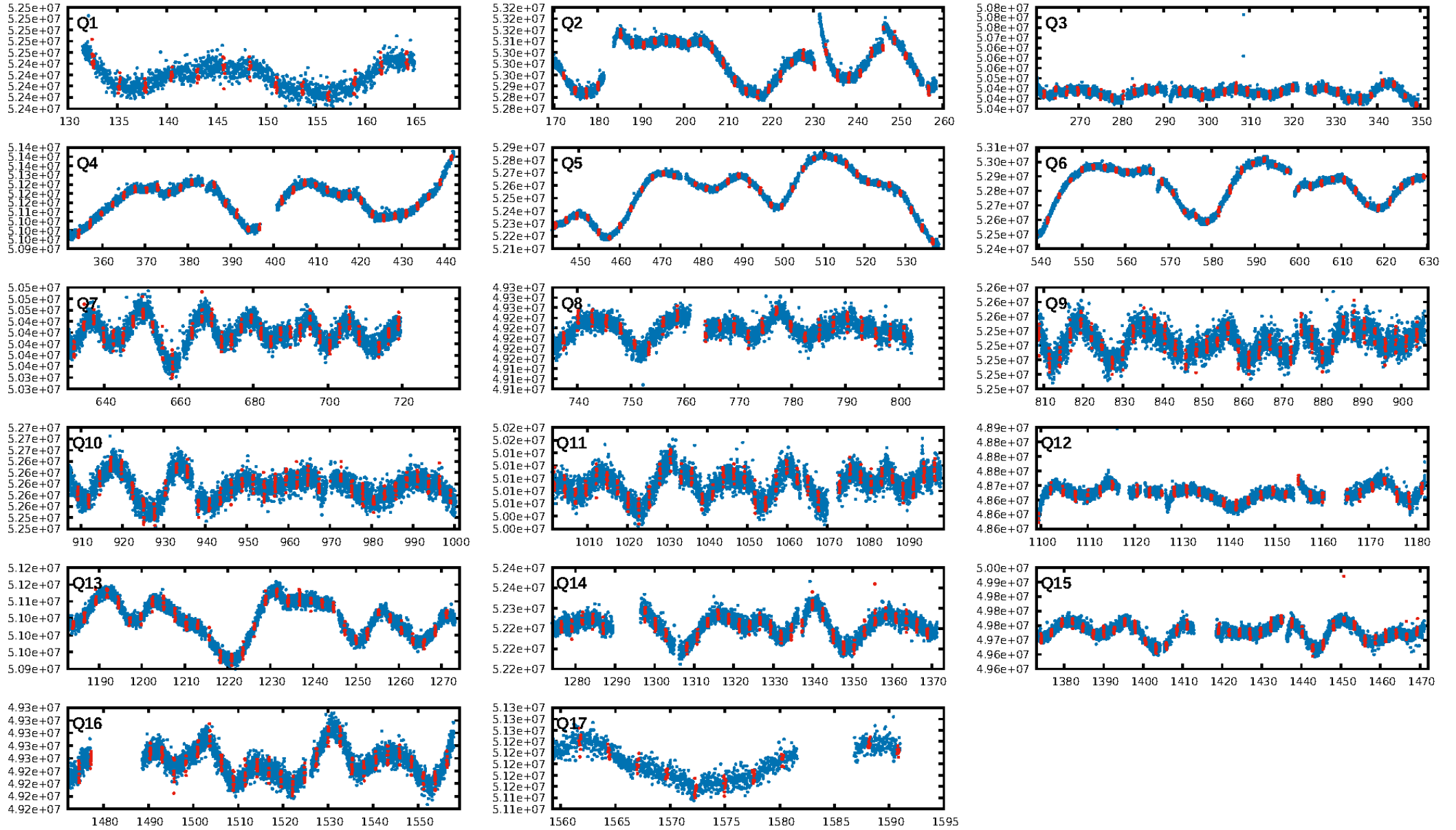
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.47e-27  
RollingBand-fgt: 0.99 [480/485]  
GhostDiagnostic-chr: -5.218  
Centroid-sig: 0.0%  
Centroid-so: 1.824 arcsec [1.36σ]  
OotOffset-rm: 0.472 arcsec [0.99σ]  
KicOffset-rm: 0.813 arcsec [1.86σ]  
OotOffset-st: 2/3/2/4 [11]  
KicOffset-st: 2/3/2/4 [11]  
DiffImageQuality-fgm: 0.73 [8/11]  
DiffImageOverlap-fno: 1.00 [17/17]

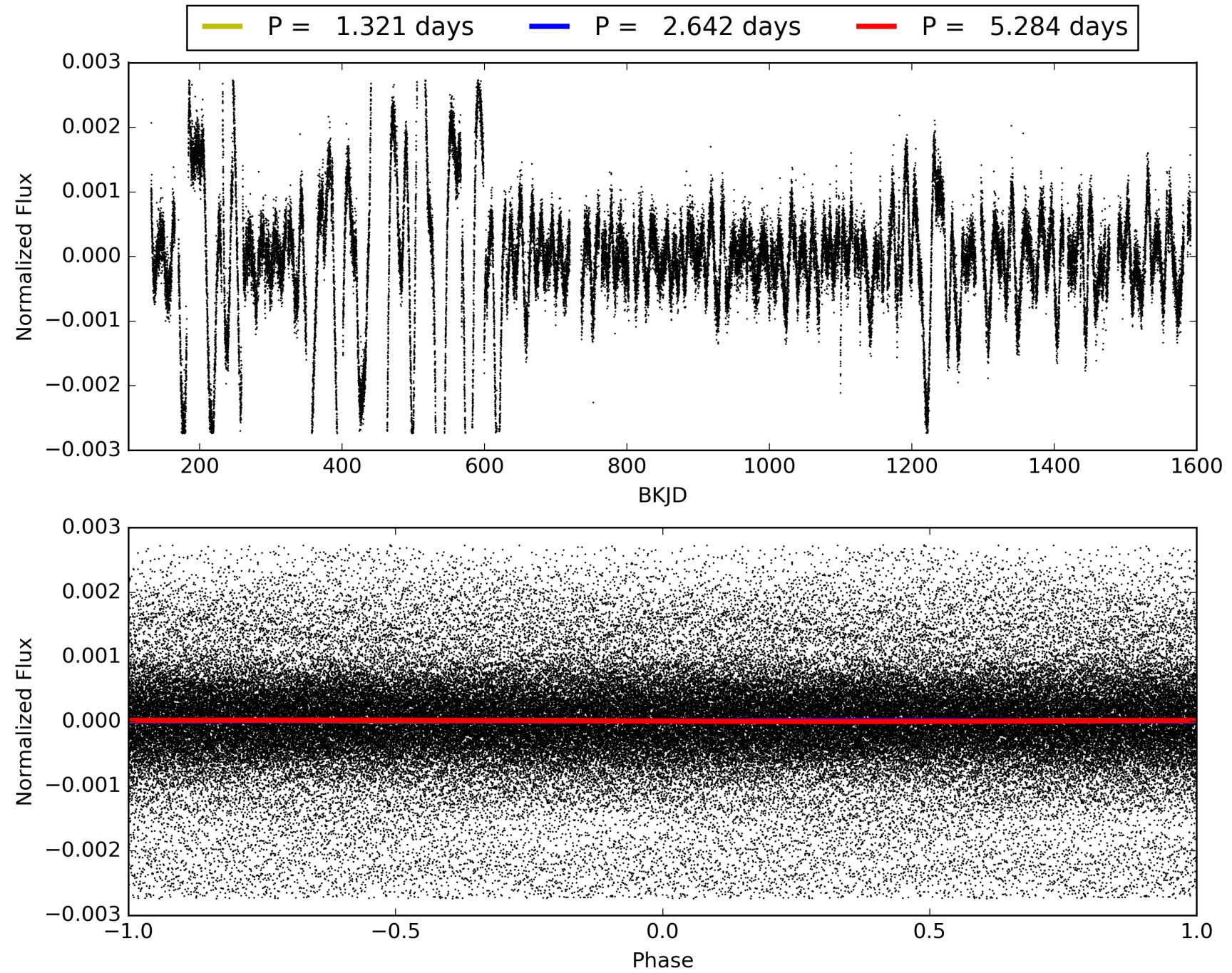
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:42:43 Z

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

# TCE 009575728-01, PDC Light Curves

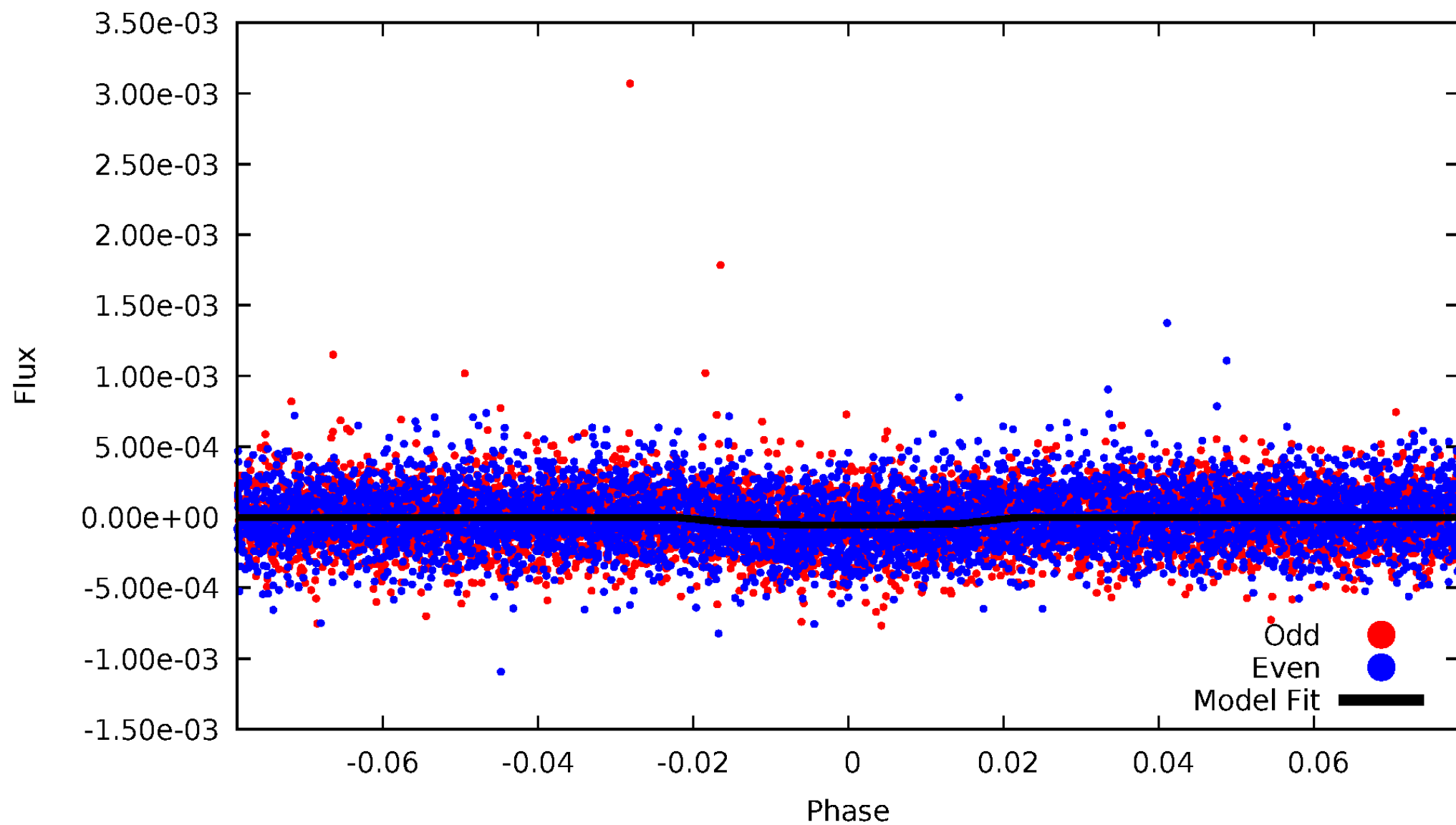


TCE 009575728-01



# DV Odd/Even

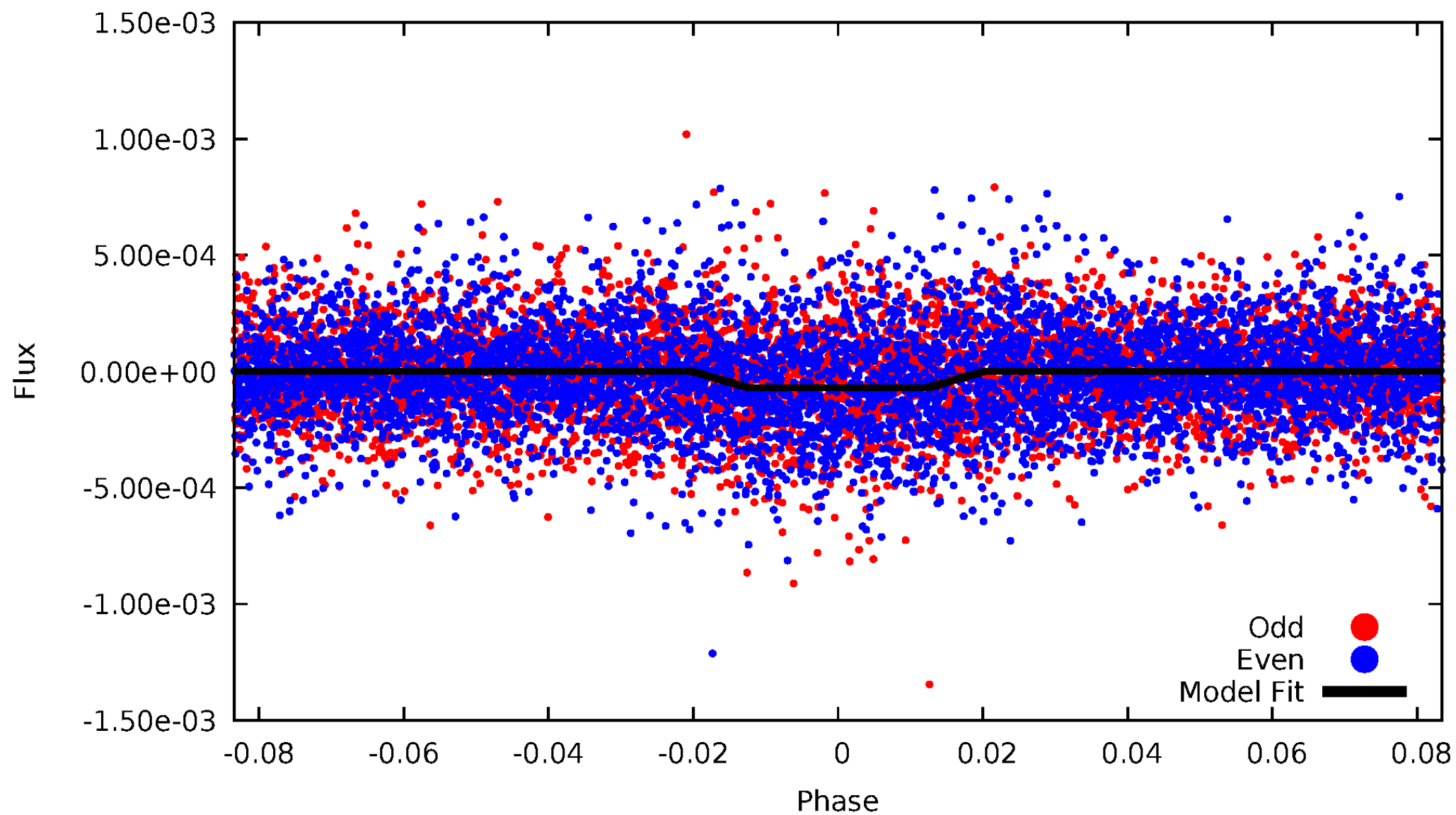
TCE 009575728-01



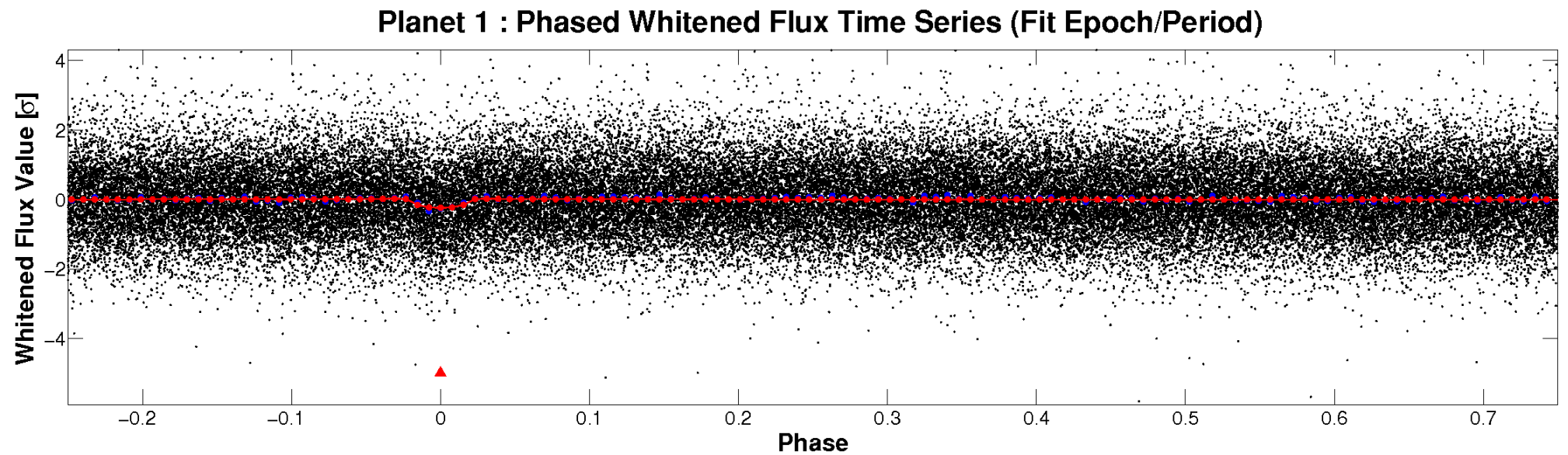
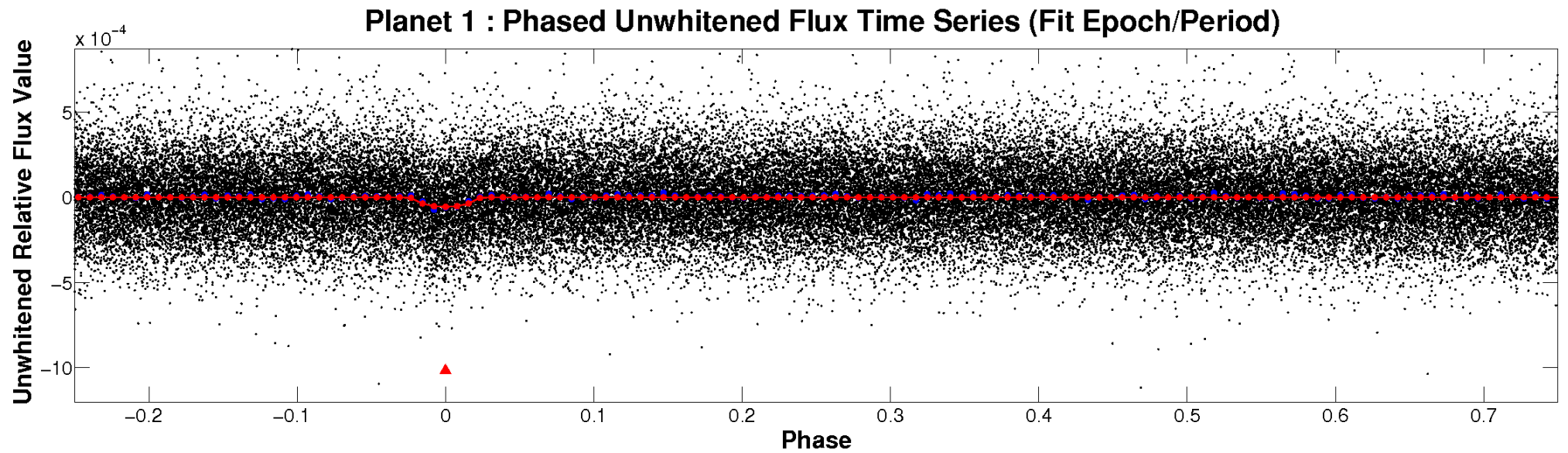


# ALT Odd/Even

TCE 009575728-01

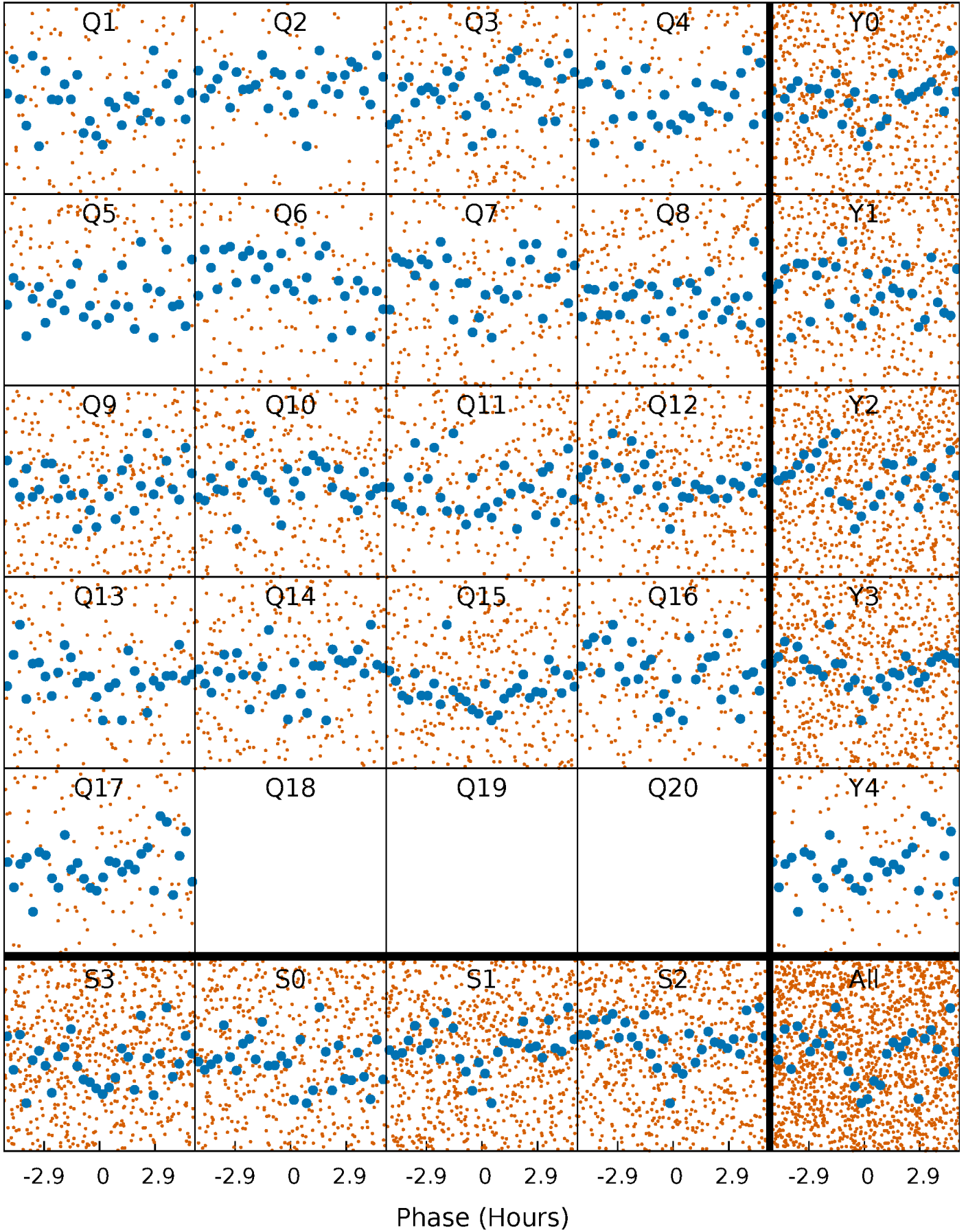


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

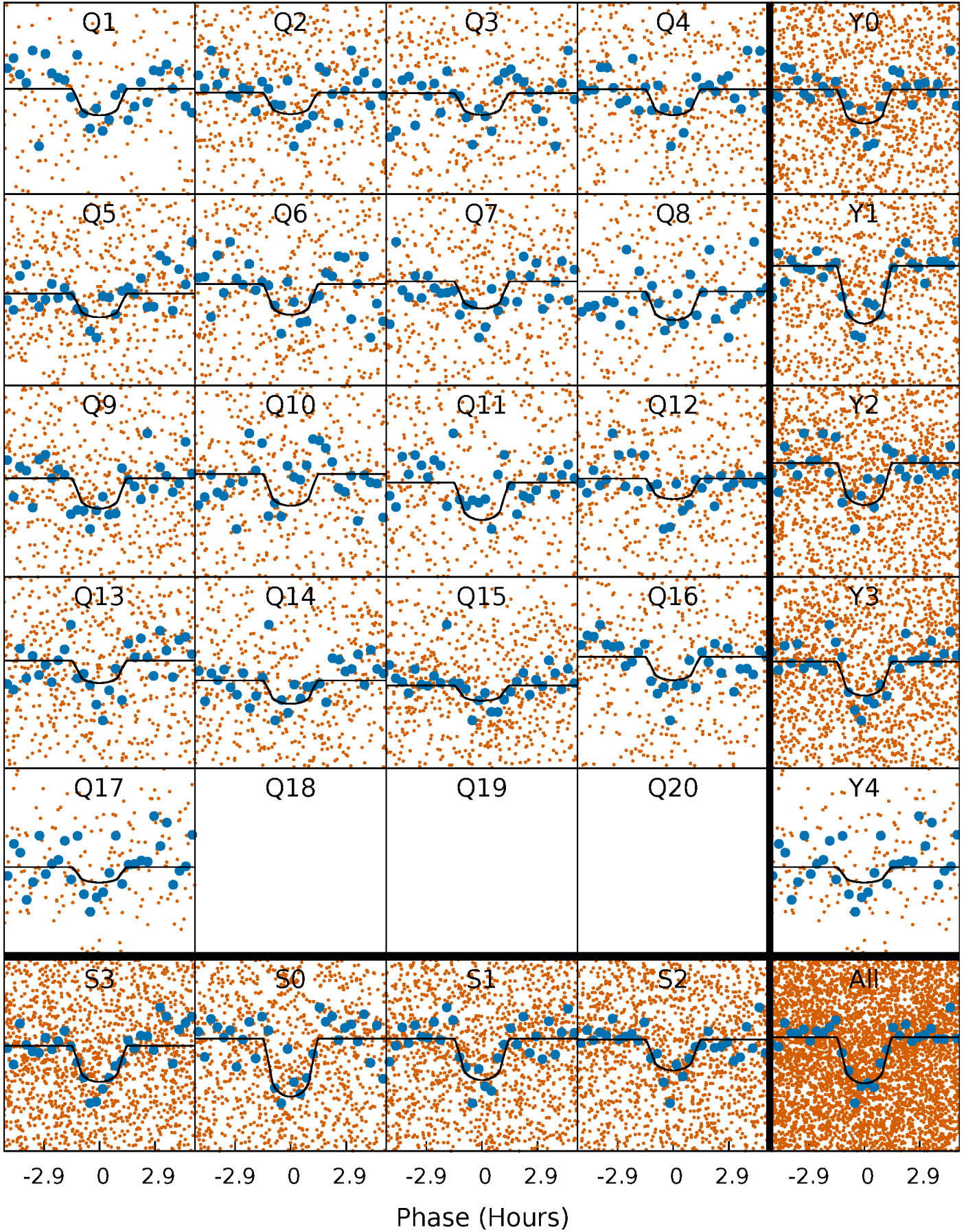
TCE 009575728-01 P= 2.641810 Days  $T_0=132.534955$  (BKJD)





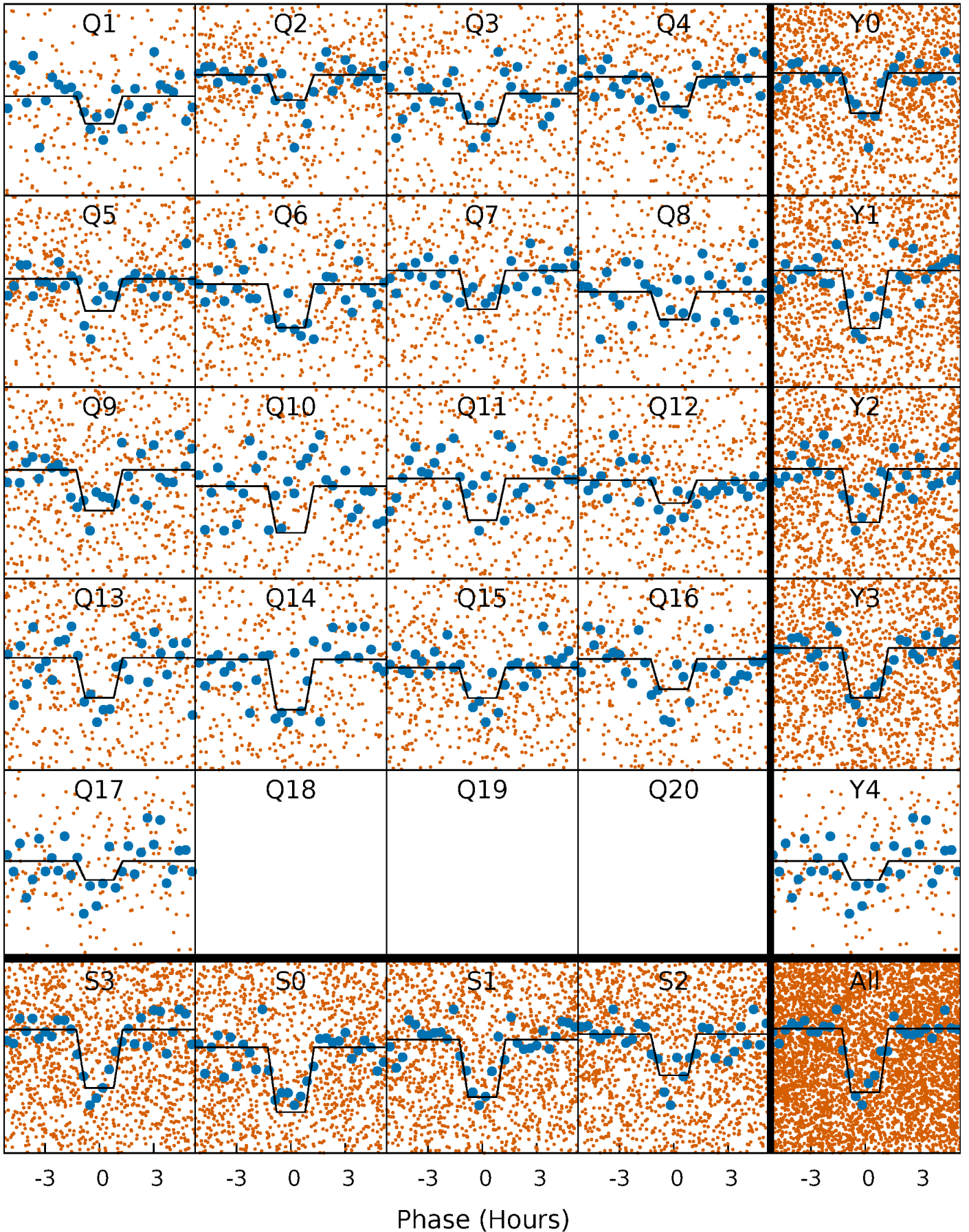
# DV Quarter-Phased Transit Curves

TCE 009575728-01 P= 2.641810 Days  $T_0=132.534955$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

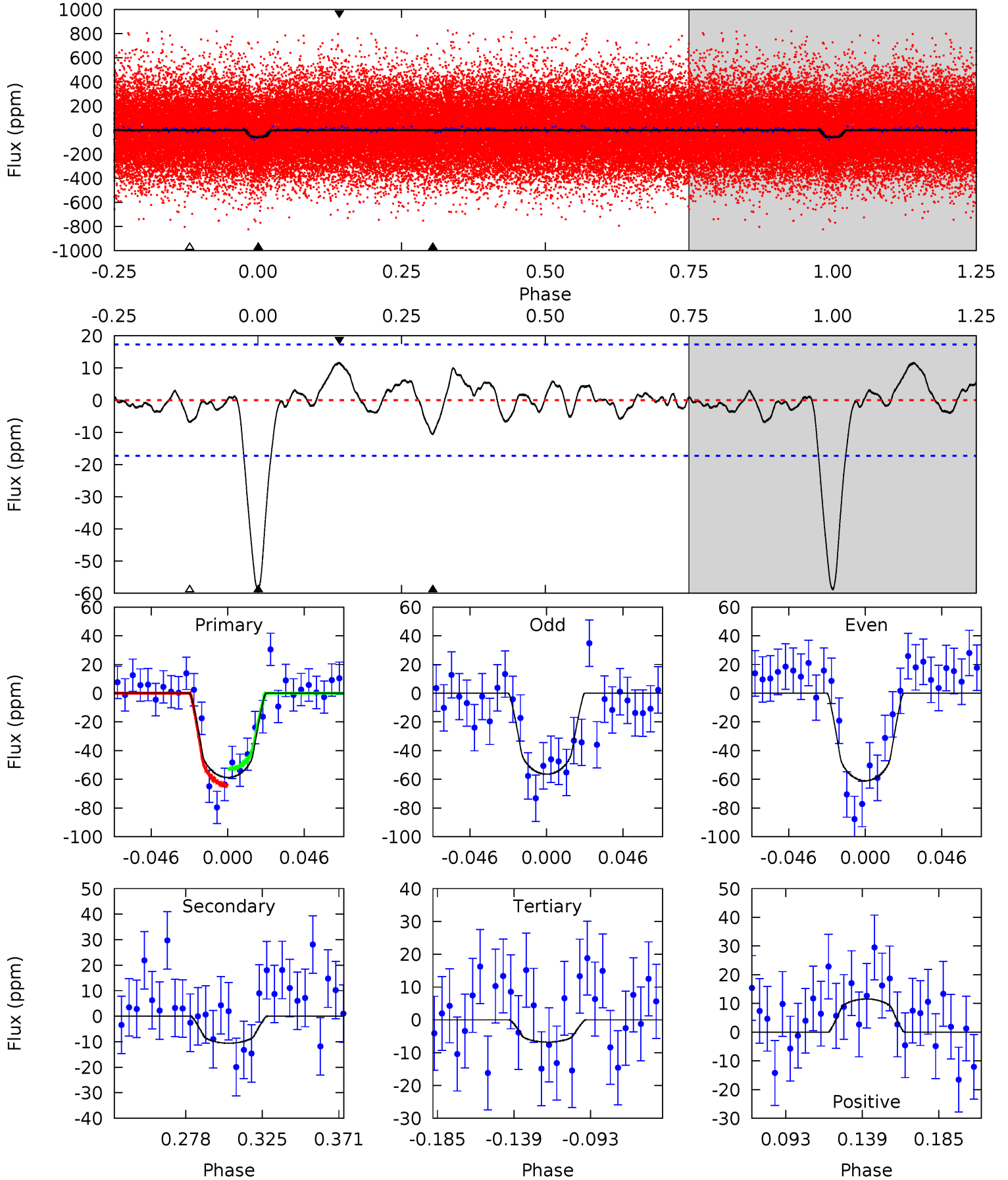
TCE 009575728-01 P= 2.641824 Days  $T_0=132.534640$  (BKJD)



# DV Model-Shift Uniqueness Test

009575728-01, P = 2.641810 Days, E = 129.893145 Days

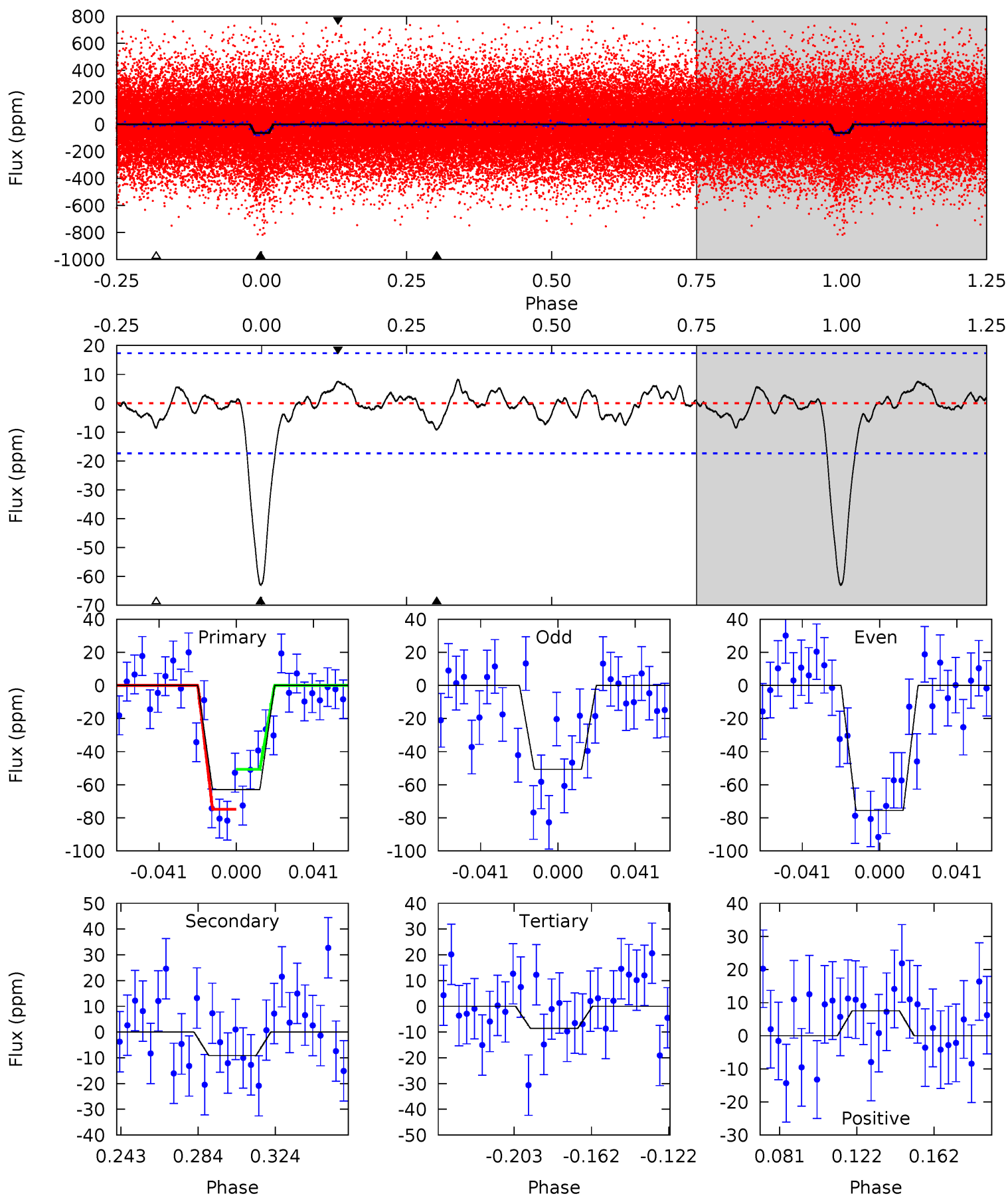
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	2.89	1.85	3.15	4.72	1.99	1.00	14.2	12.9	1.04	-0.26	0.63	0.96	0.16	1.53



# Alt Model-Shift Uniqueness Test

009575728-01, P = 2.641824 Days, E = 129.892816 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
17.3	2.50	2.35	2.06	4.75	2.05	0.93	14.9	15.2	0.15	0.44	3.41	0.88	0.12	3.31





### Stellar Parameters For KIC 009575728

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4147^{+82}_{-82}$	$4.601^{+0.042}_{-0.007}$	$0.440^{+0.050}_{-0.150}$	$0.683^{+0.014}_{-0.036}$	$0.678^{+0.022}_{-0.022}$	$2.999^{+0.502}_{-0.121}$
	+2%/-2%	+1%/-0%	+11%/-34%	+2%/-5%	+3%/-3%	+17%/-4%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 009575728-01 / KOI 5692.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-11 \pm 4$	$0.67^{+0.42}_{-0.38}$	$1157^{+25}_{-27}$	$2996^{+874}_{-434}$	$14^{+63}_{-10}$
Alt.	$-9 \pm 4$	$0.65^{+0.45}_{-0.35}$	$1156^{+26}_{-27}$	$2893^{+877}_{-397}$	$11^{+51}_{-8}$

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



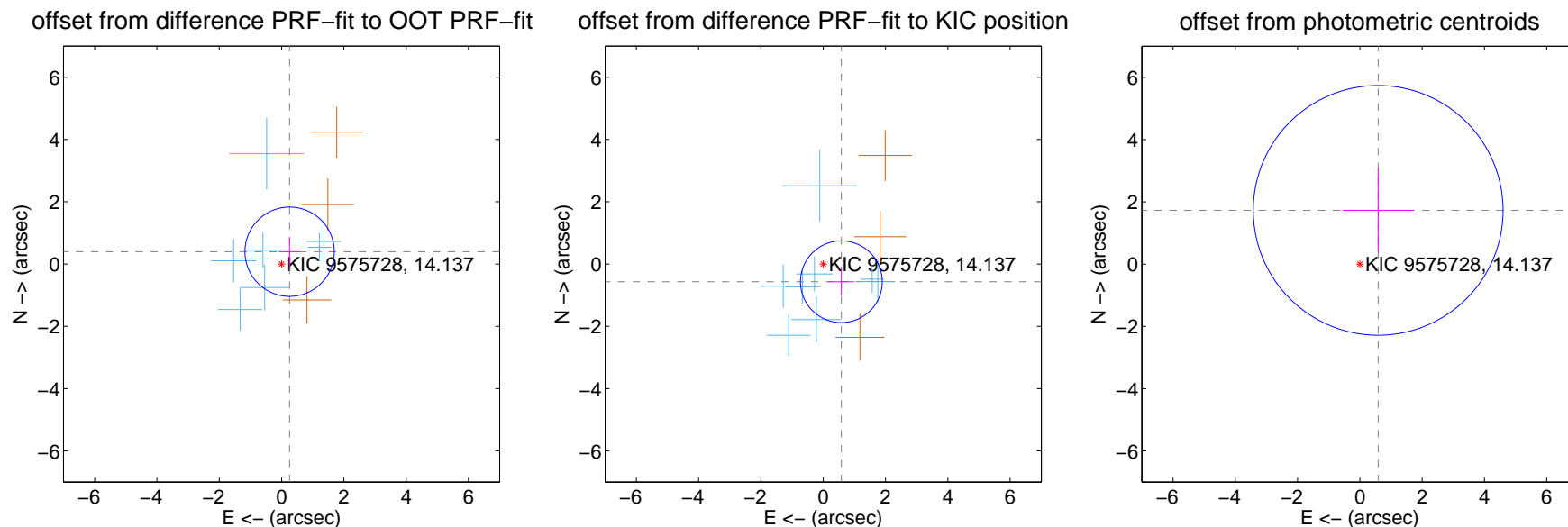
## DV Centroid Data

Supplemental centroid analysis for 009575728-01. Kepler magnitude: 14.14. Transit SNR 10.04

There are 8 quarters with good PRF difference image offsets

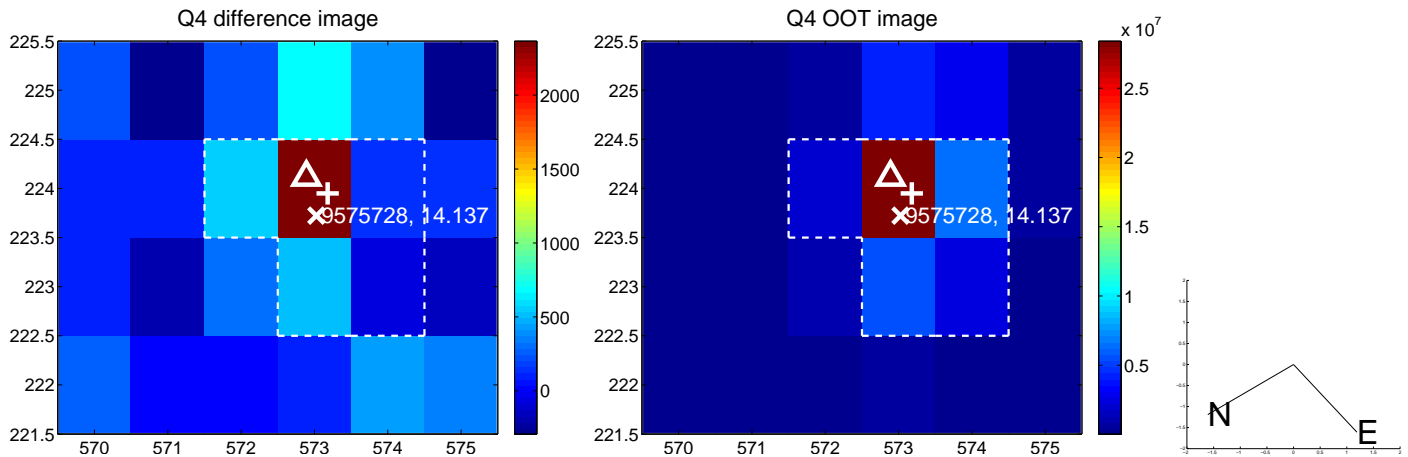
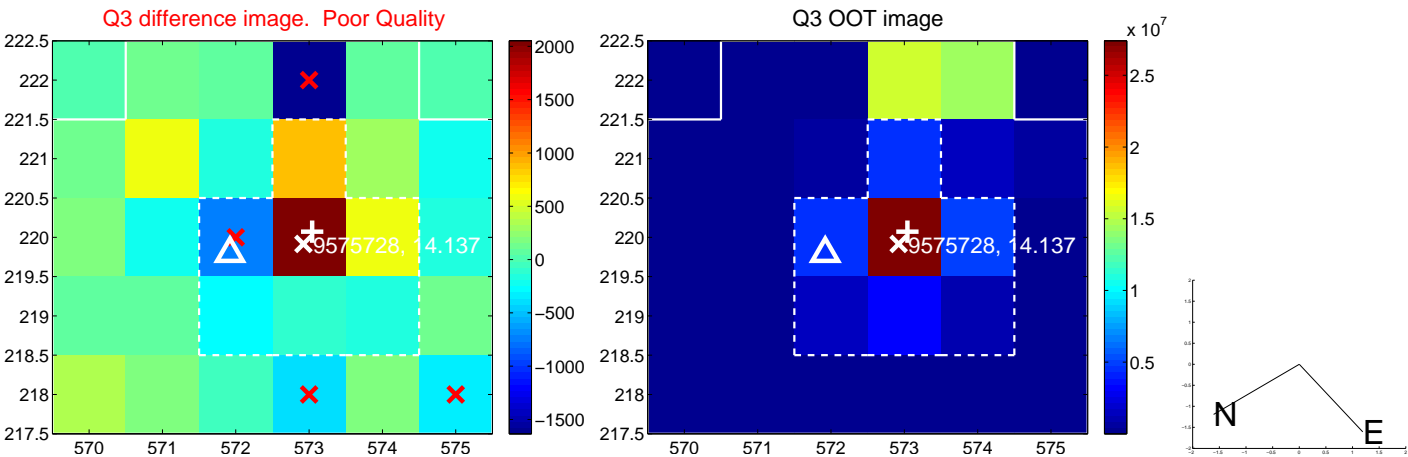
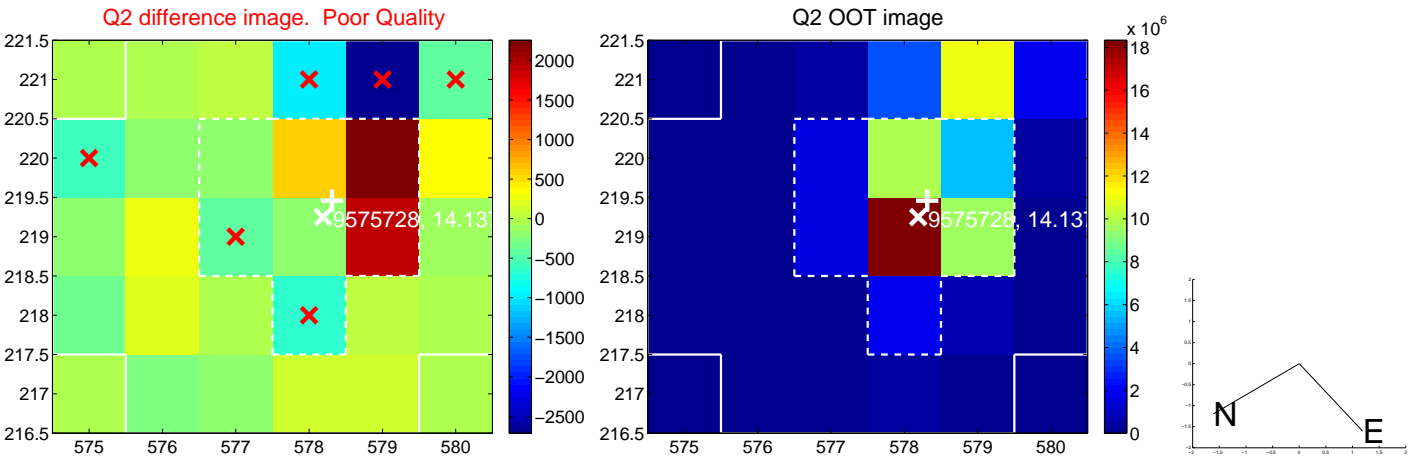
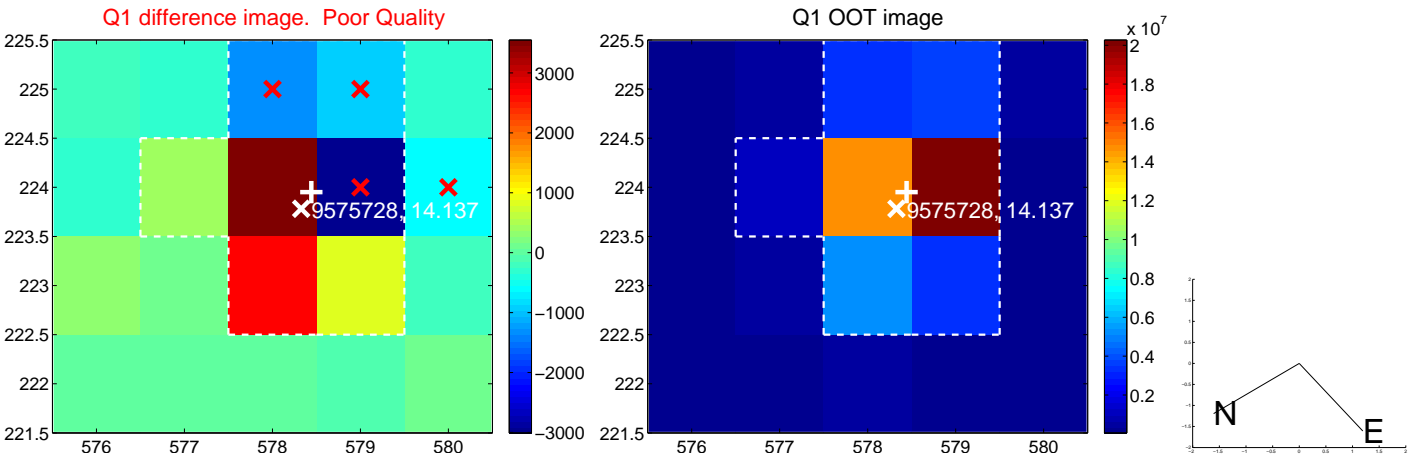
The direct PRF centroid is offset from the target star catalog position by about 1.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.472 \pm 0.478$	0.99	$-0.258 \pm 0.343$	$0.395 \pm 0.451$
PRF-fit source offset from KIC position	$0.813 \pm 0.438$	1.86	$-0.582 \pm 0.423$	$-0.568 \pm 0.453$
photometric centroid source offset	$1.82 \pm 1.34$	1.36	$-0.59 \pm 1.14$	$1.73 \pm 1.36$

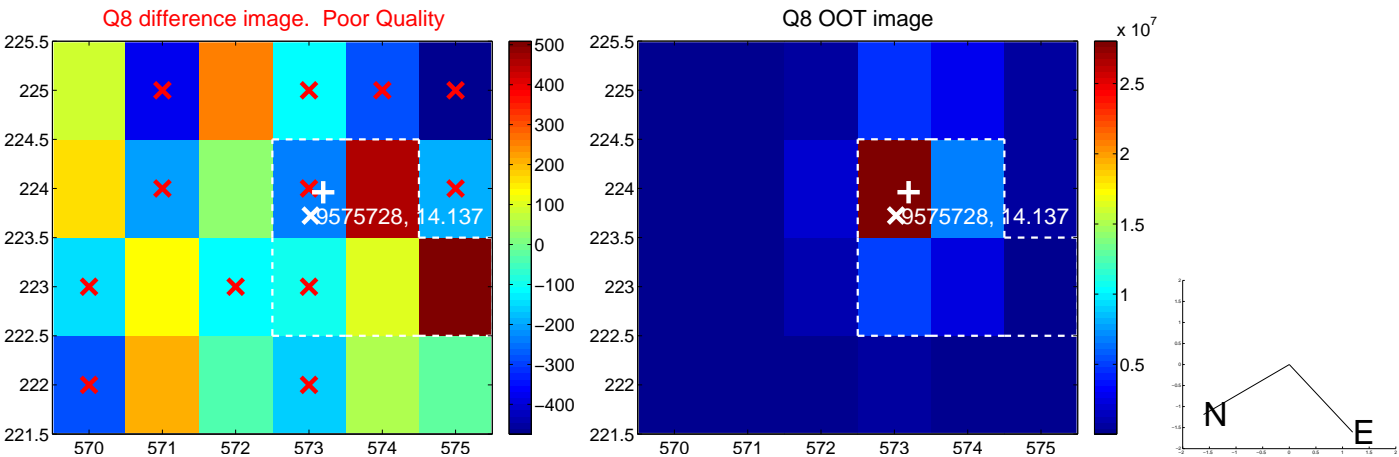
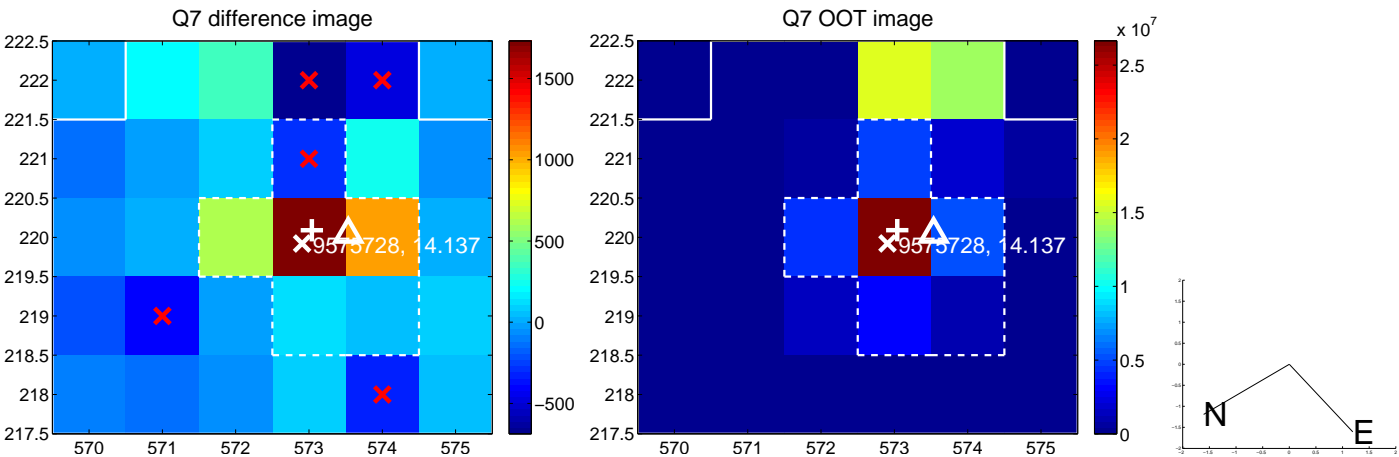
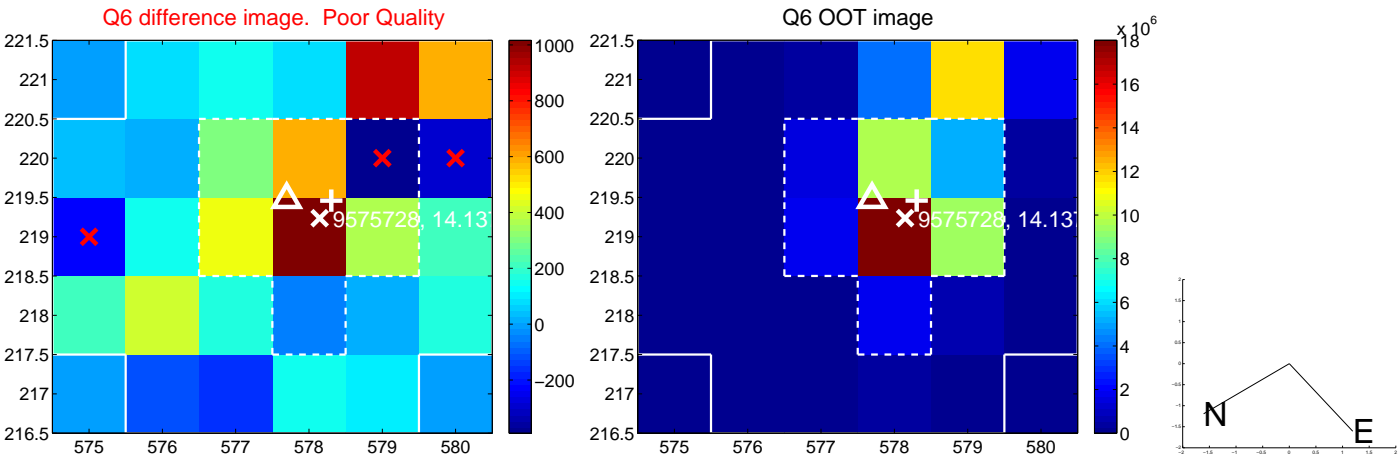
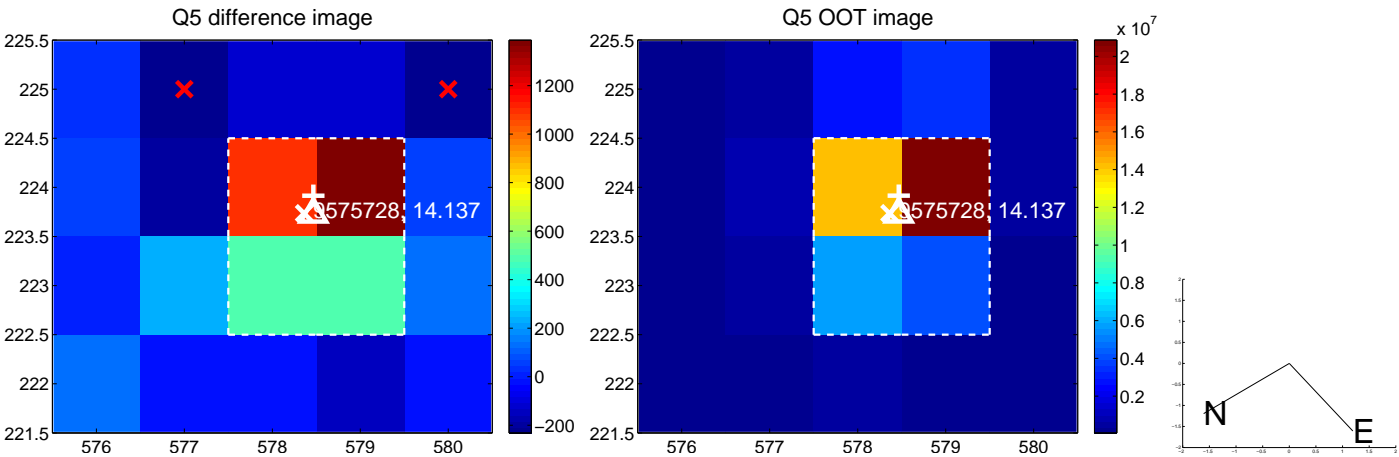


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

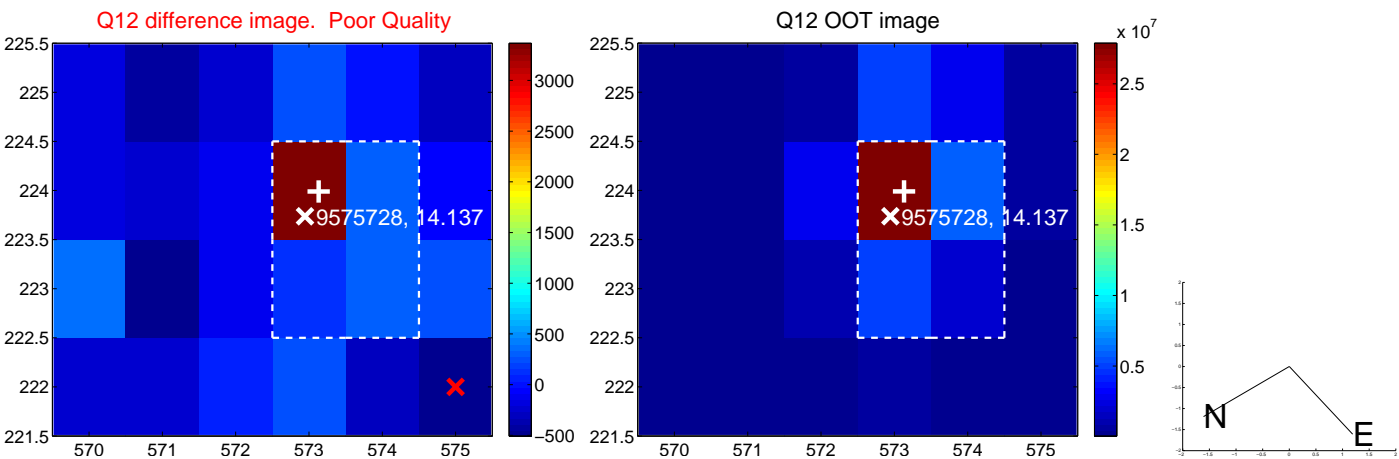
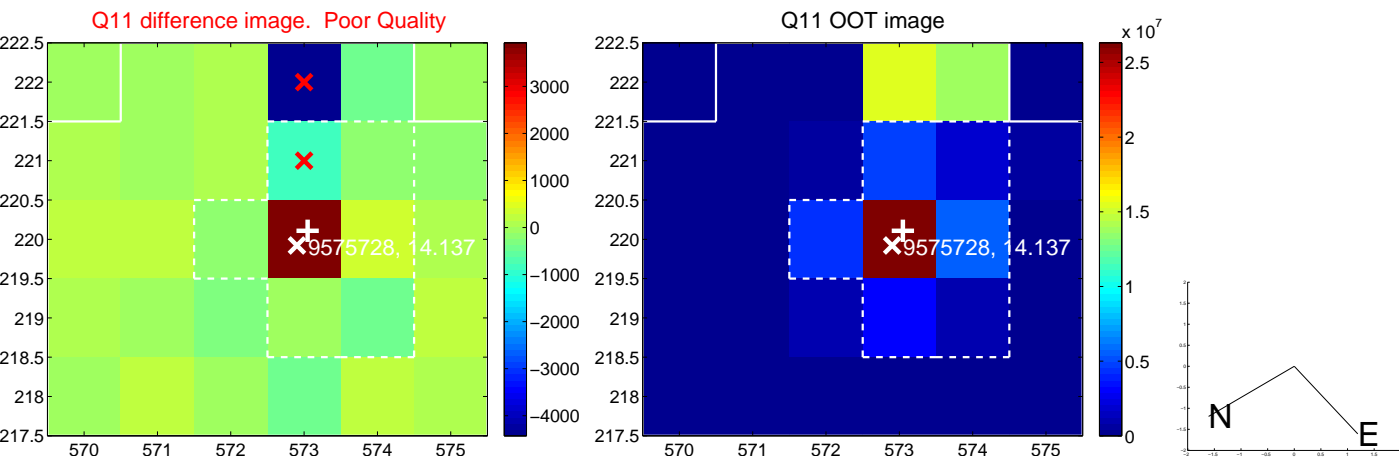
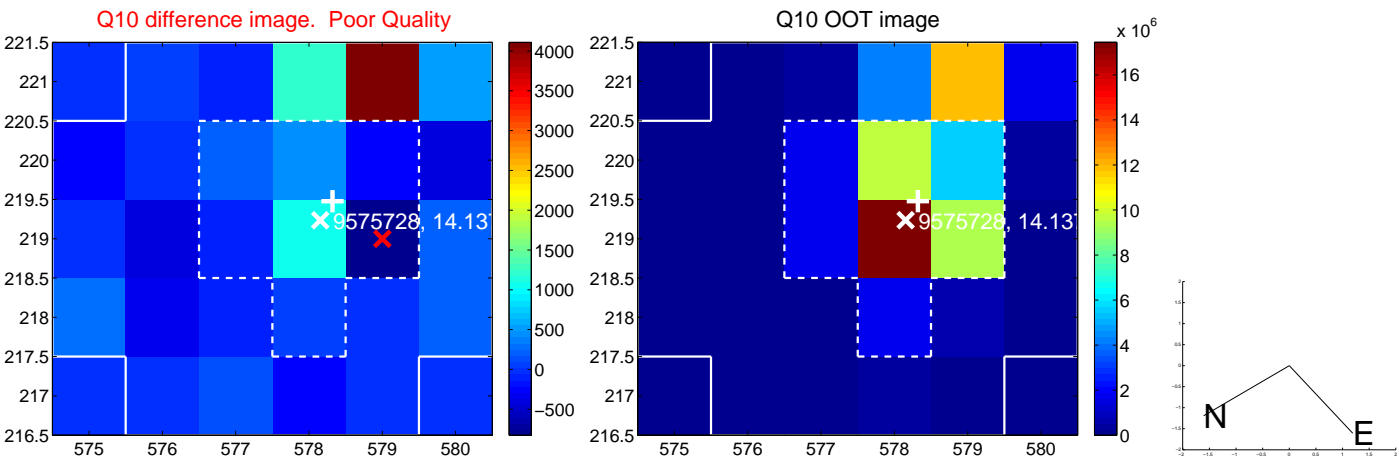
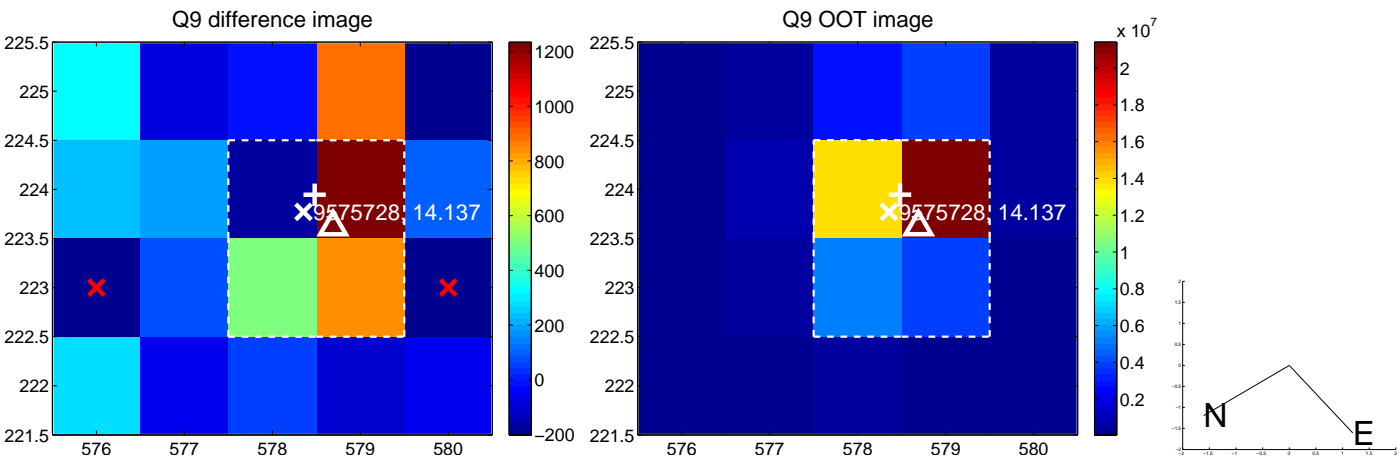
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



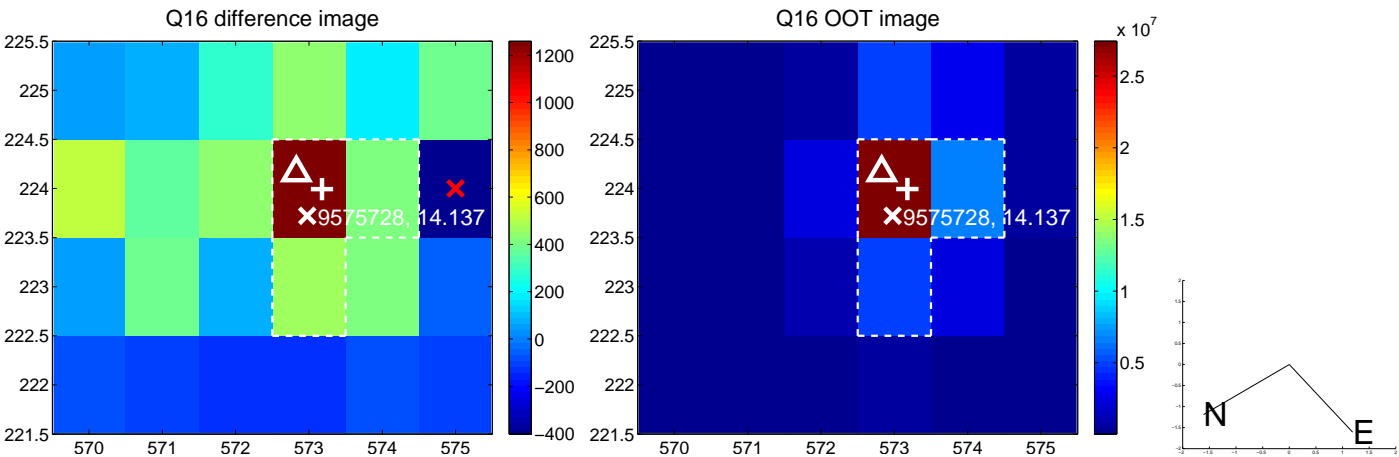
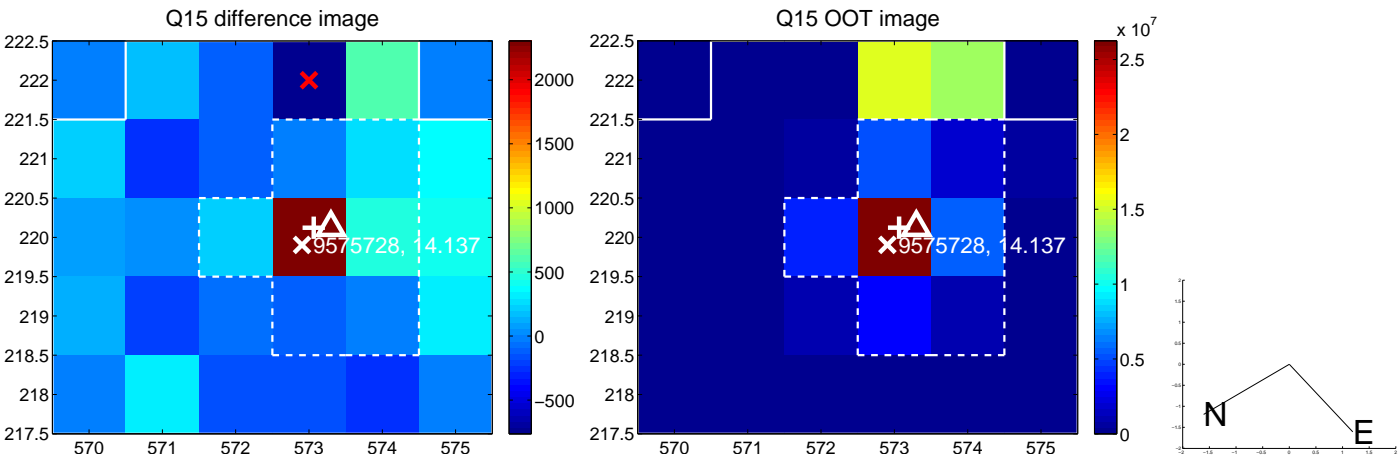
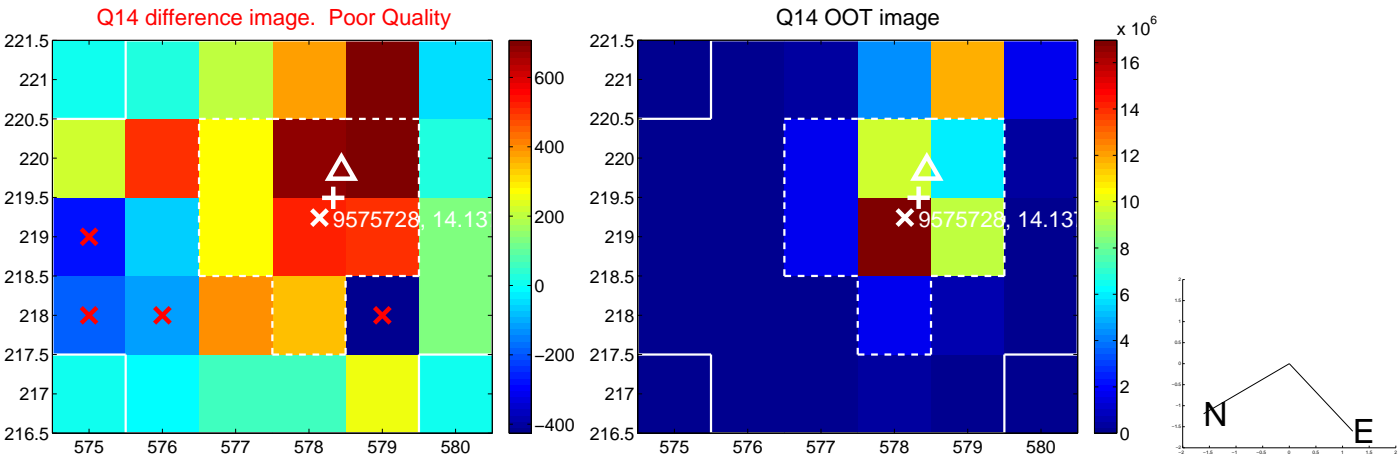
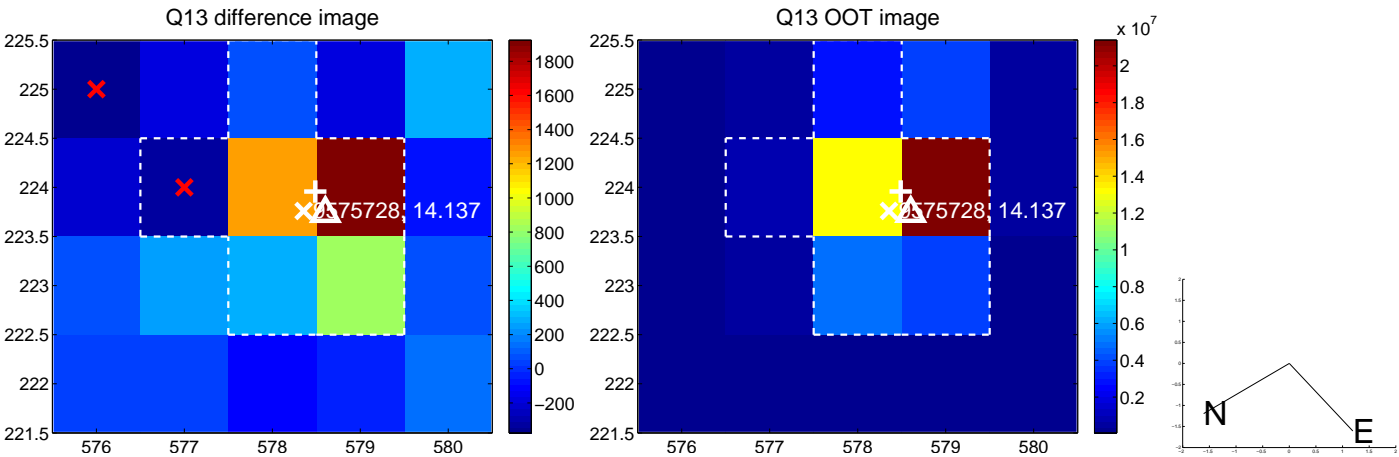
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

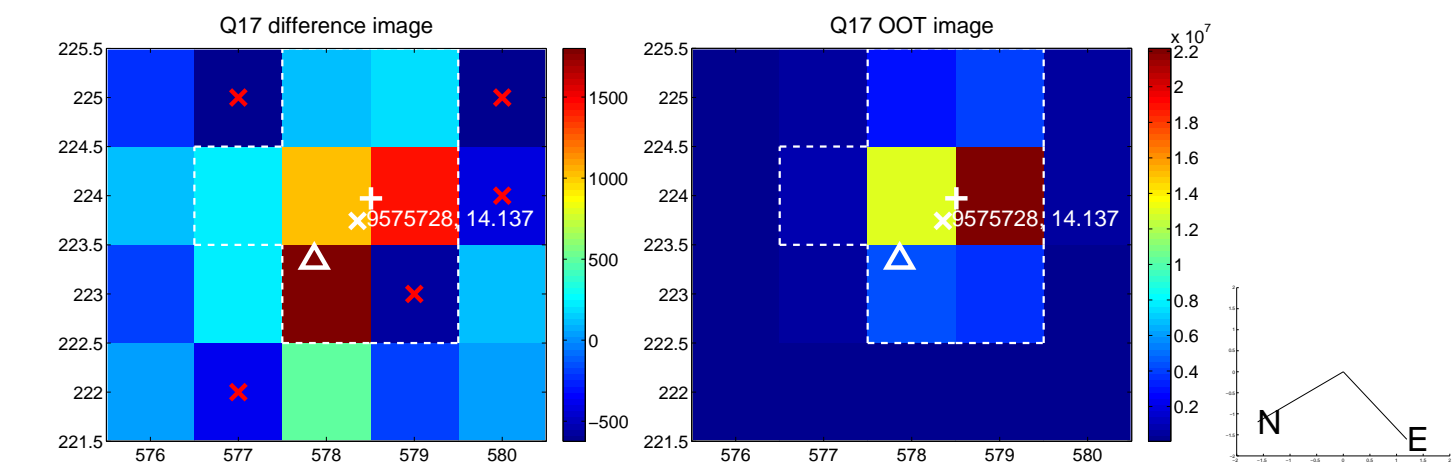


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

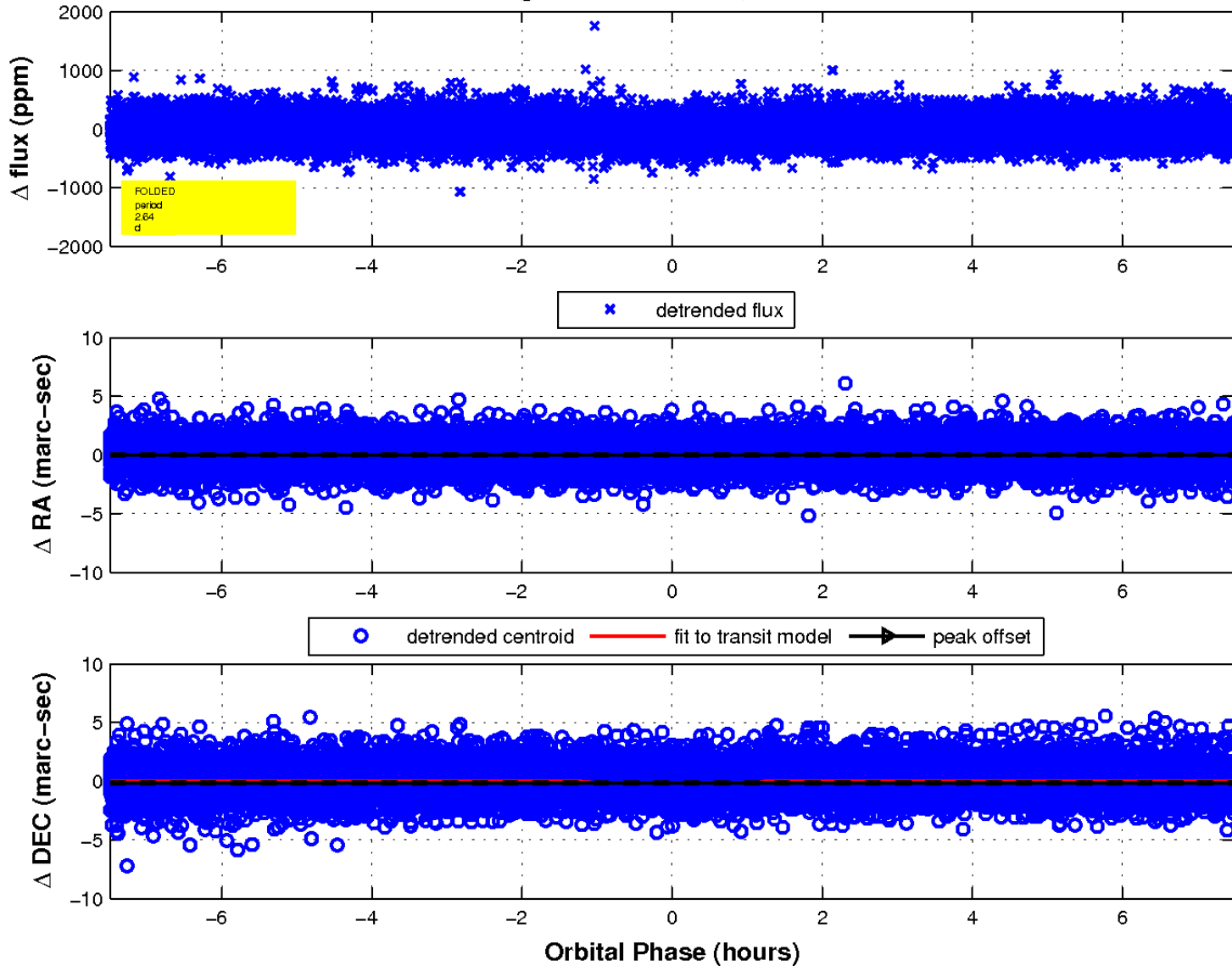




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

