

# KIC 010665228

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010665228-01	OBS	7358.01	11.325824	137.197113	296.5	2.647	7.5	7.7	0.73	5334	1.50	48.83

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010665228-01	OBS	PC	0.38	0	0	0	0	CENT_FEW_DIFFS

**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 010665228-01

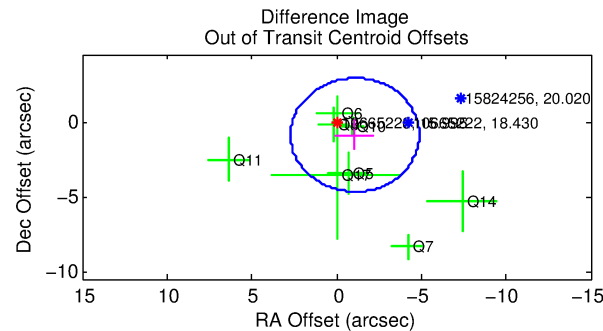
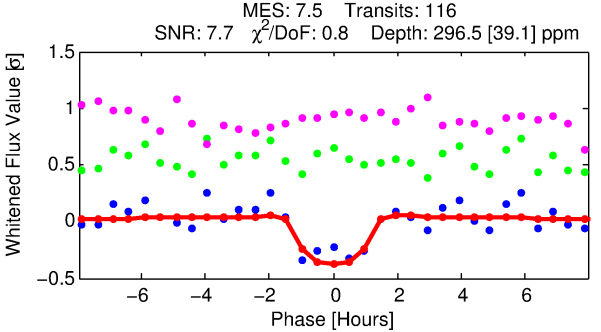
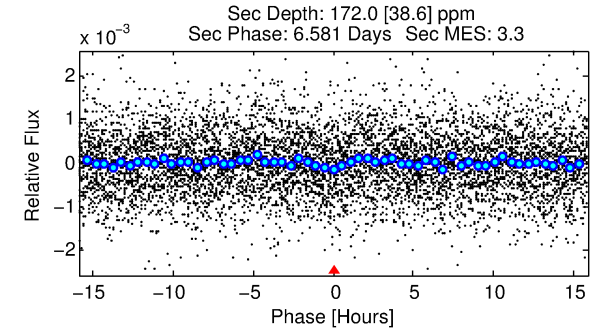
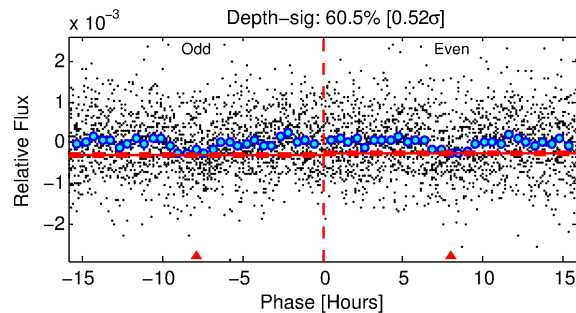
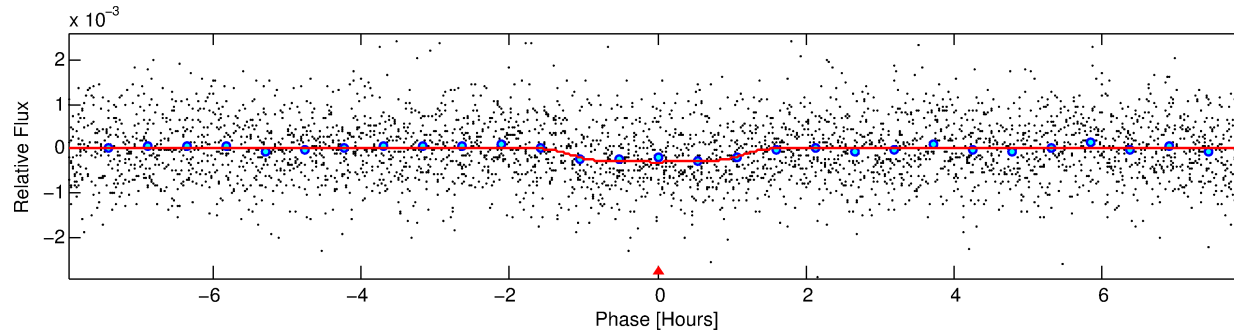
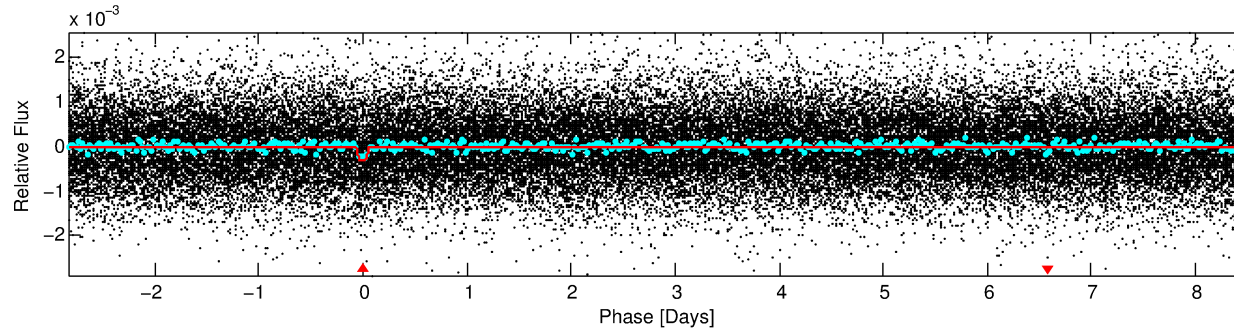
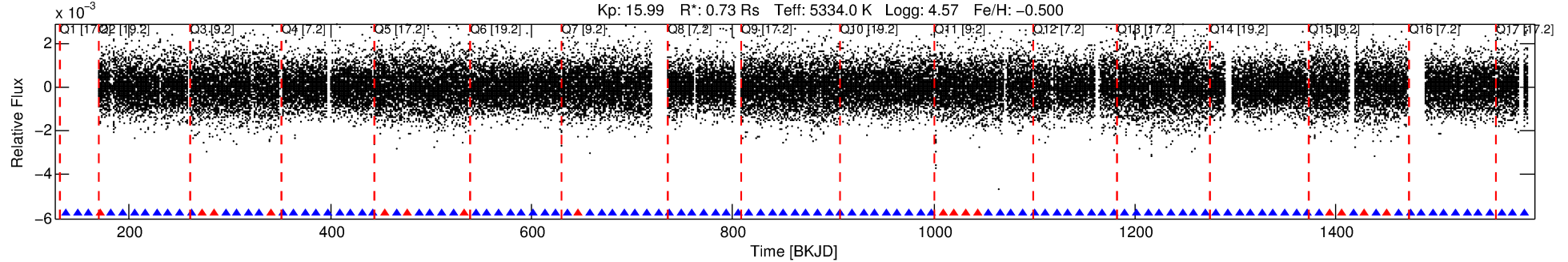
No Significant Match Found

# DV One-Page Summary

KIC: 10665228 Candidate: 1 of 1 Period: 11.326 d

KOI: K07358.01 Corr: 0.792

Kp: 15.99 R\*: 0.73 Rs Teff: 5334.0 K Logg: 4.57 Fe/H: -0.500



## DV Fit Results:

Period = 11.32582 [0.00011] d  
Epoch = 137.1971 [0.0075] BKJD  
Rp/R\* = 0.0189 [0.0124]  
a/R\* = 15.74 [45.48]  
b = 0.90 [0.64]  
Seff = 48.83 [10.03]  
Teq = 674 [35] K  
Rp = 1.50 [1.00] Re  
a = 0.0886 [0.0098] AU  
Ag = 332.05 [445.16] [0.74σ]  
Teff = 4449 [1490] K [2.53σ]

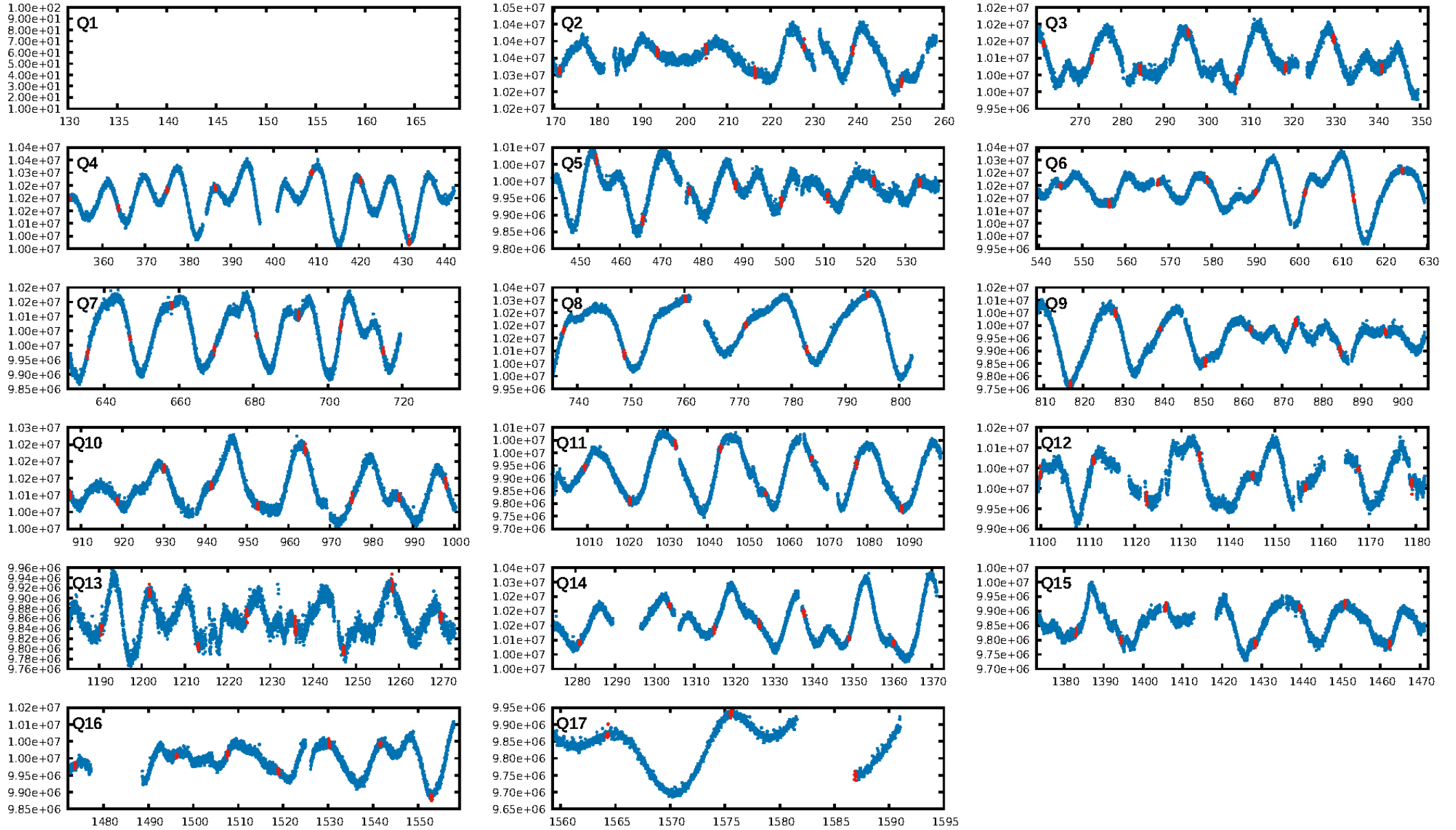
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.90e-13  
RollingBand-fgt: 0.86 [97/113]  
GhostDiagnostic-chr: 2.806  
Centroid-sig: 0.8%  
Centroid-so: 3.357 arcsec [1.72σ]  
OotOffset-rm: 1.401 arcsec [1.11σ]  
KicOffset-rm: 1.455 arcsec [1.14σ]  
OotOffset-st: 3/2/1/2 [8]  
KicOffset-st: 3/2/1/2 [8]  
DiffImageQuality-fgm: 0.12 [1/8]  
DiffImageOverlap-fno: 1.00 [16/16]

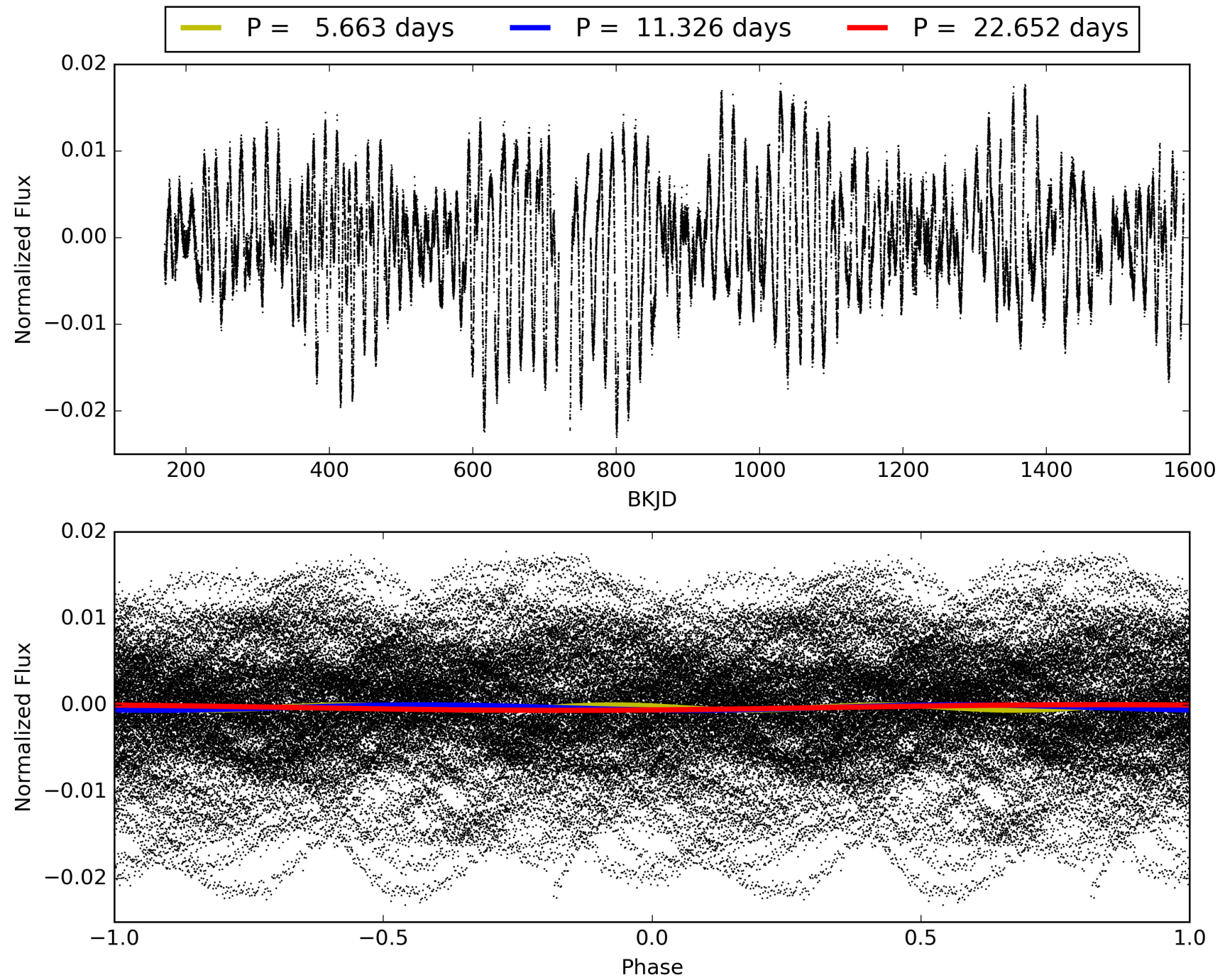
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:20:28 Z

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

# TCE 010665228-01, PDC Light Curves

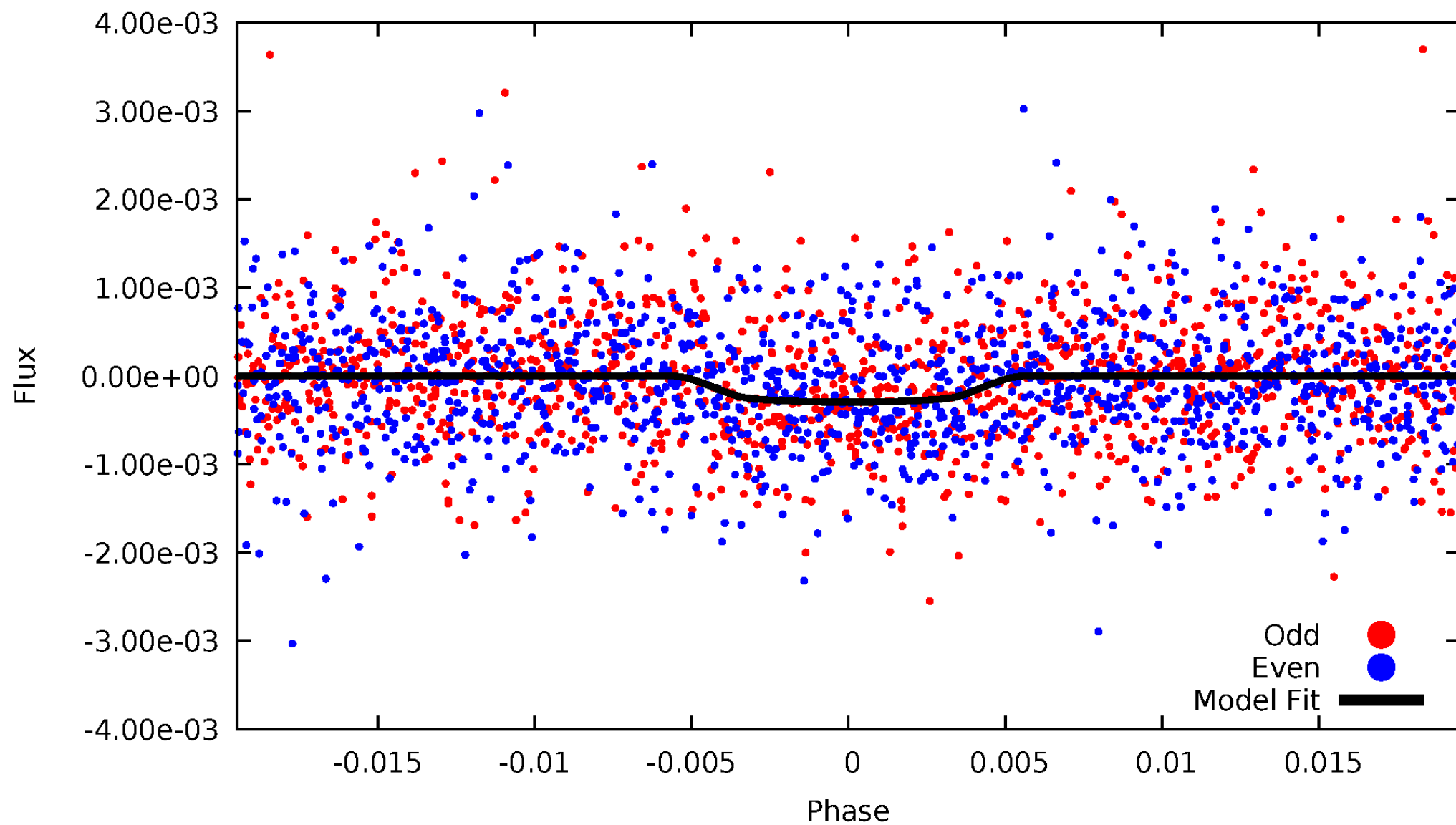


TCE 010665228-01



# DV Odd/Even

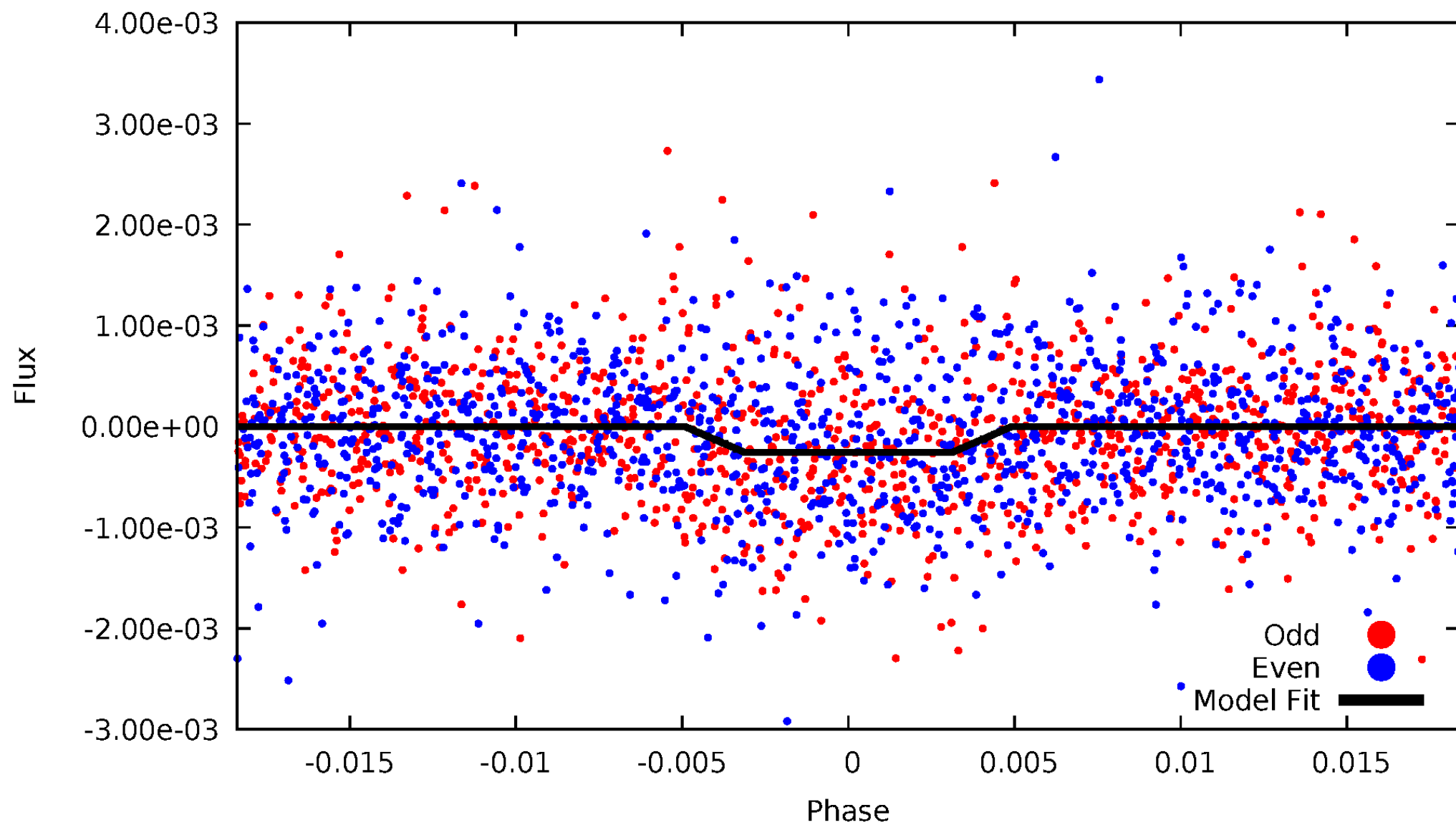
TCE 010665228-01





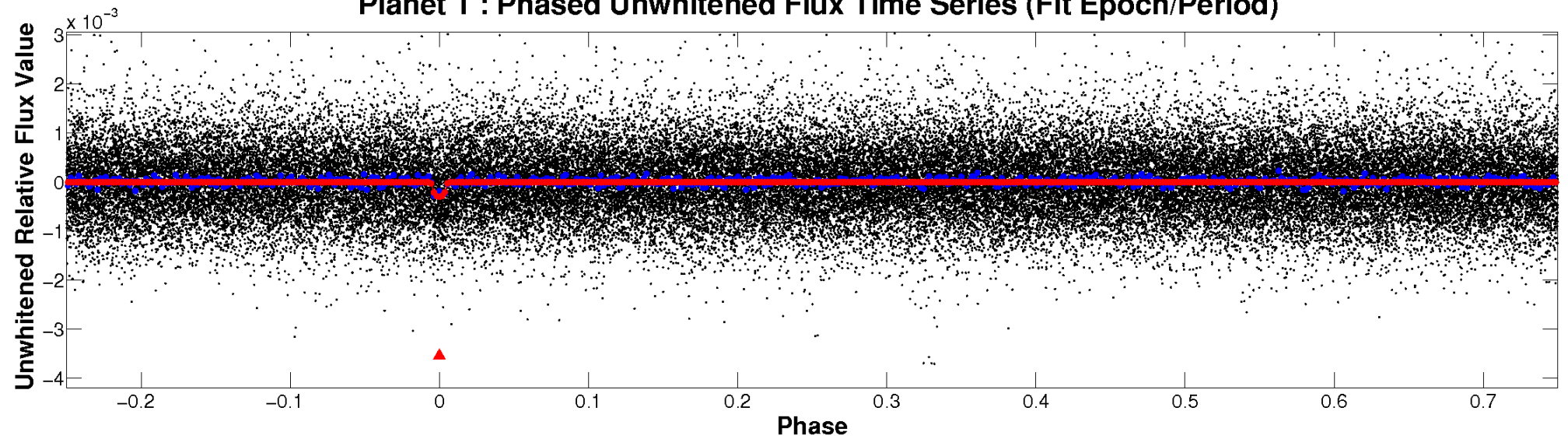
# ALT Odd/Even

TCE 010665228-01

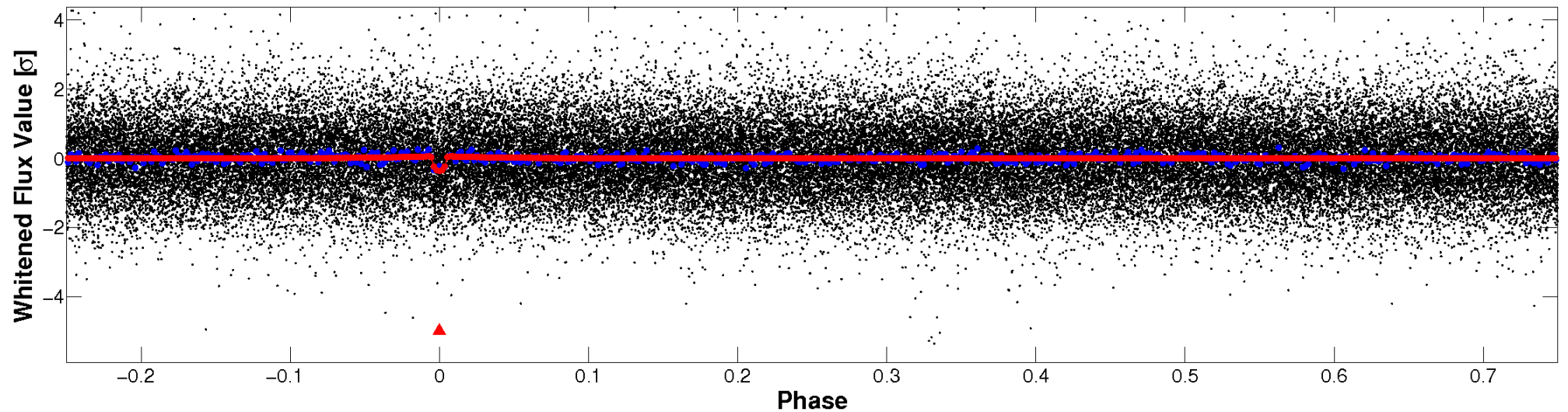


# Non-Whitened Vs. Whitened Light Curve

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

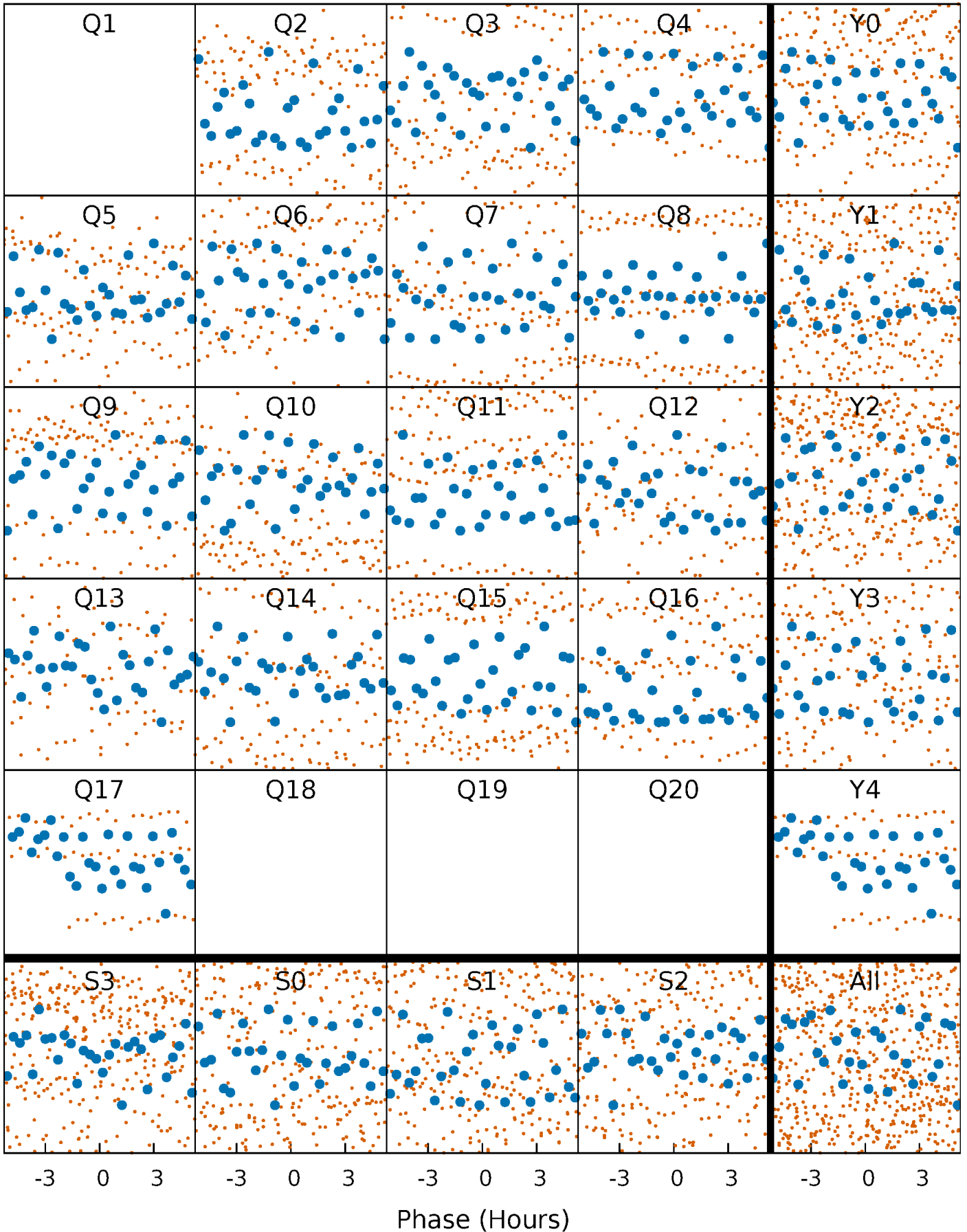


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

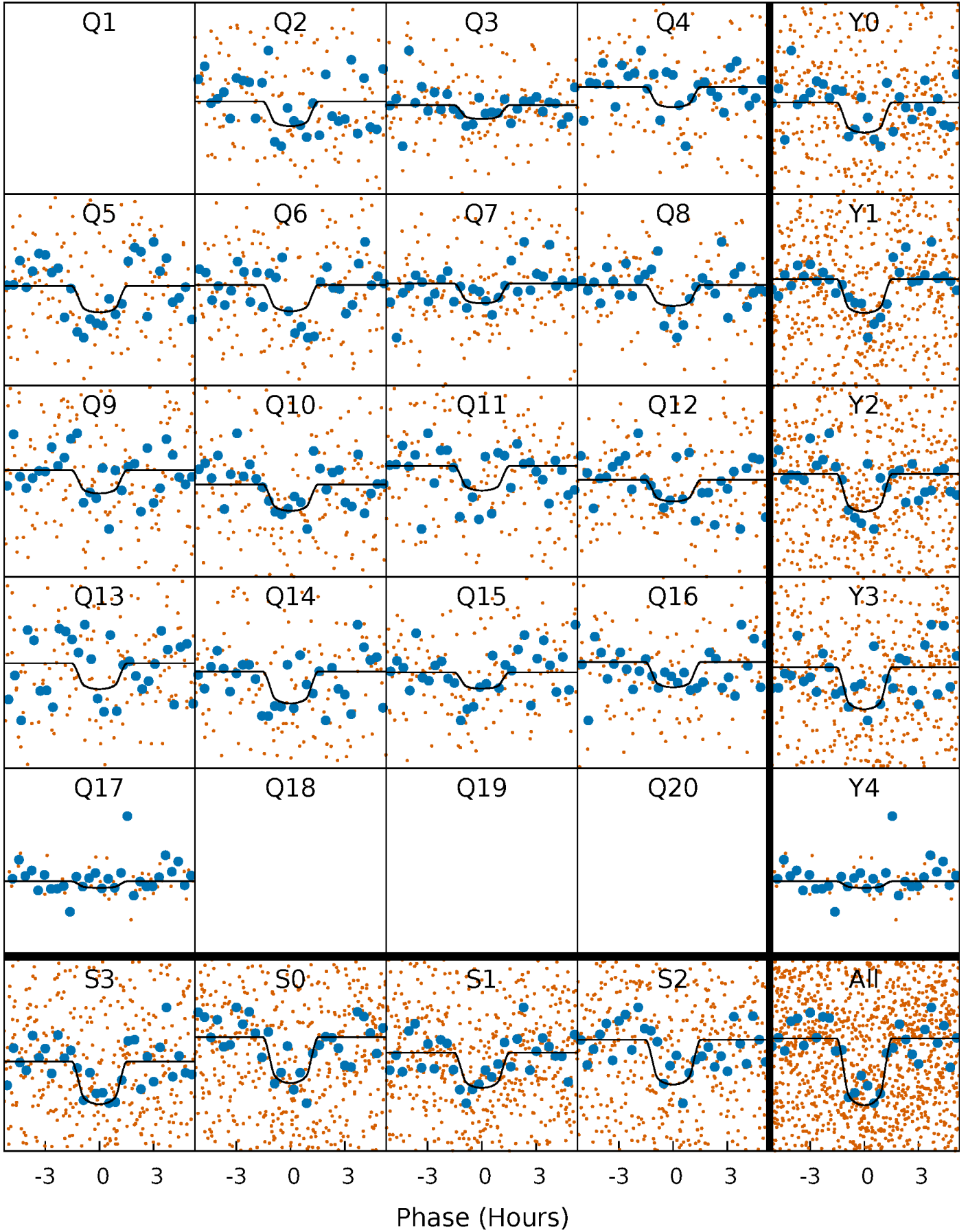
TCE 010665228-01 P= 11.325824 Days  $T_0=137.197113$  (BKJD)





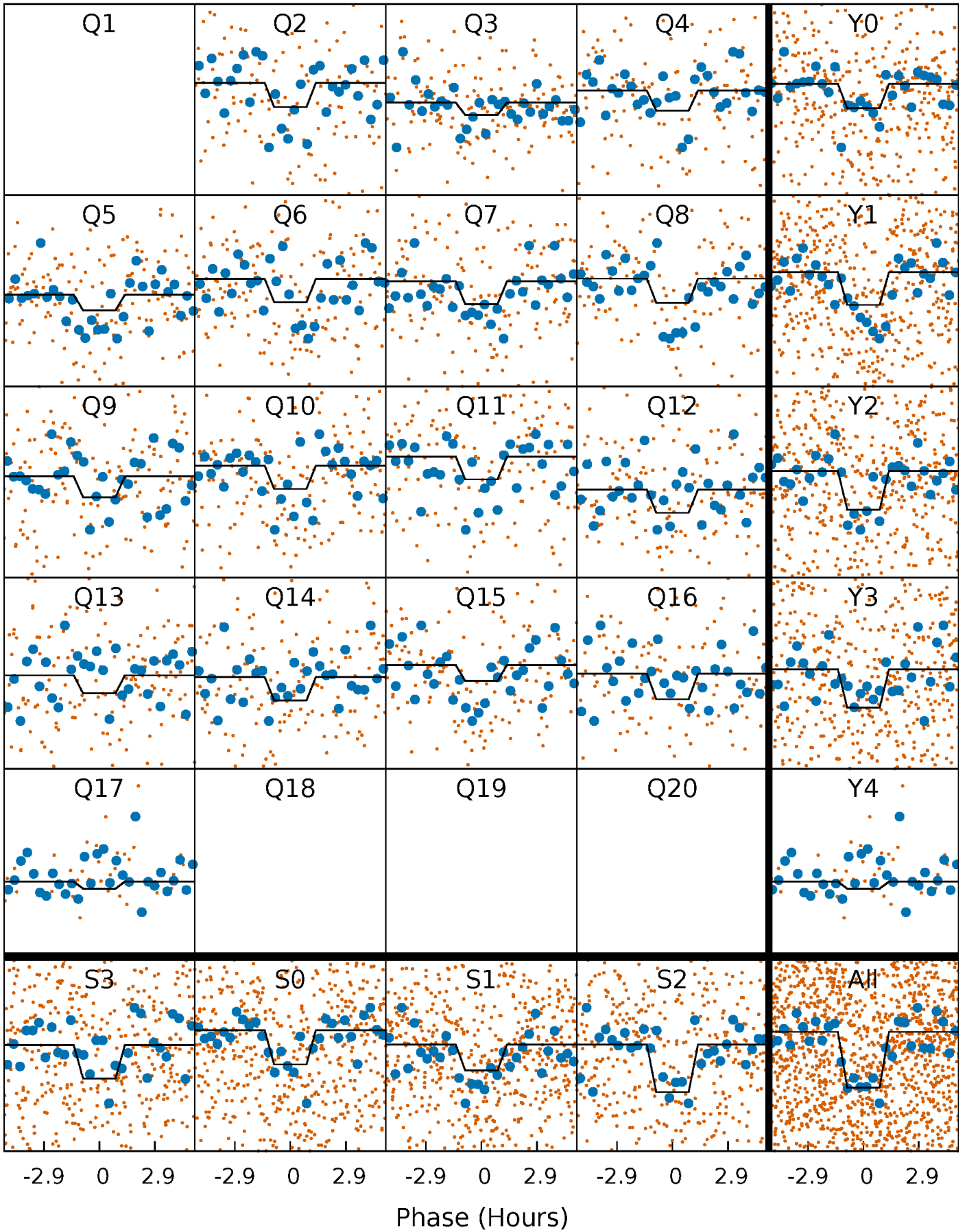
# DV Quarter-Phased Transit Curves

TCE 010665228-01 P= 11.325824 Days  $T_0=137.197113$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

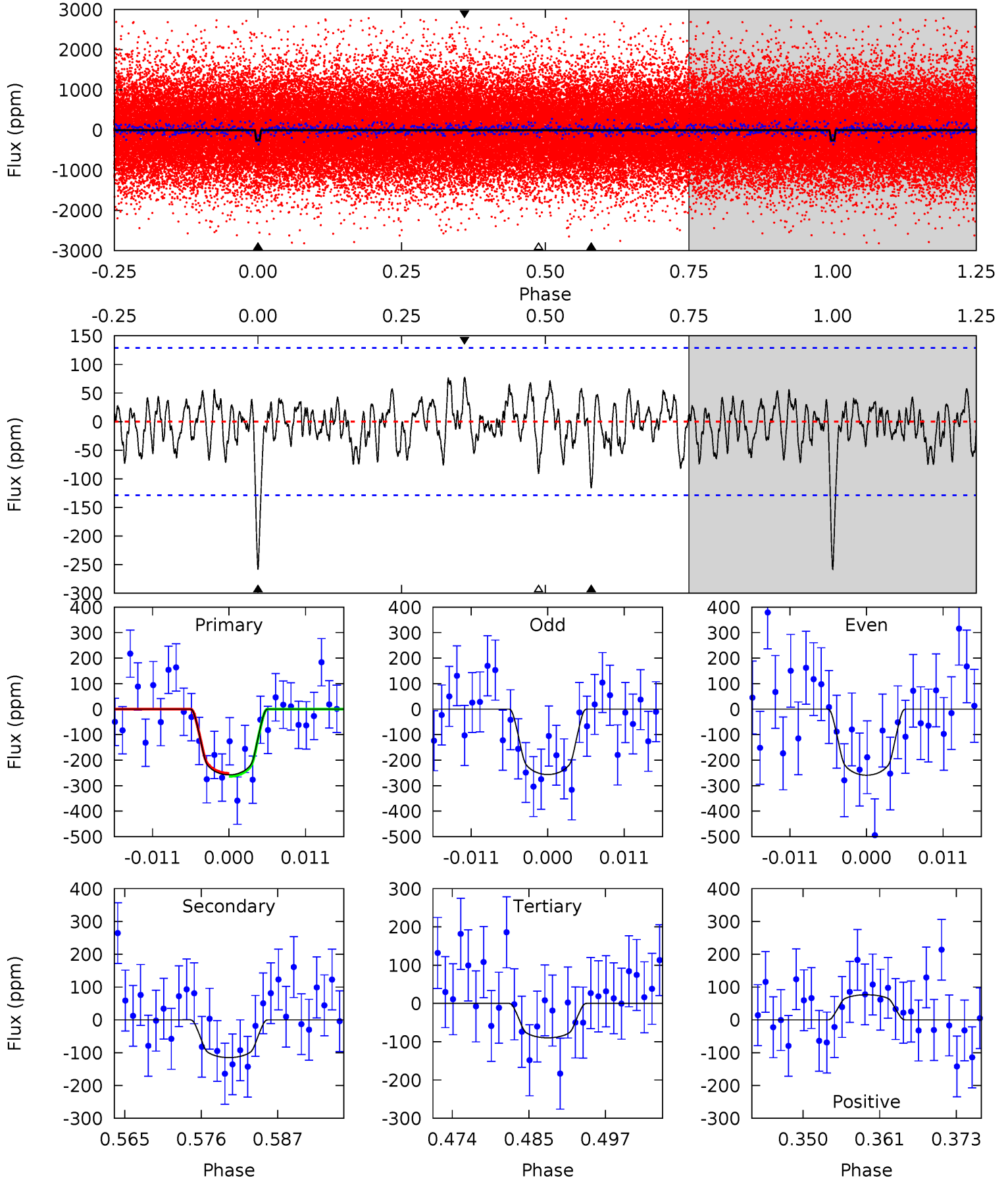
TCE 010665228-01 P= 11.325598 Days  $T_0=137.203395$  (BKJD)



# DV Model-Shift Uniqueness Test

010665228-01, P = 11.325824 Days, E = 137.197113 Days

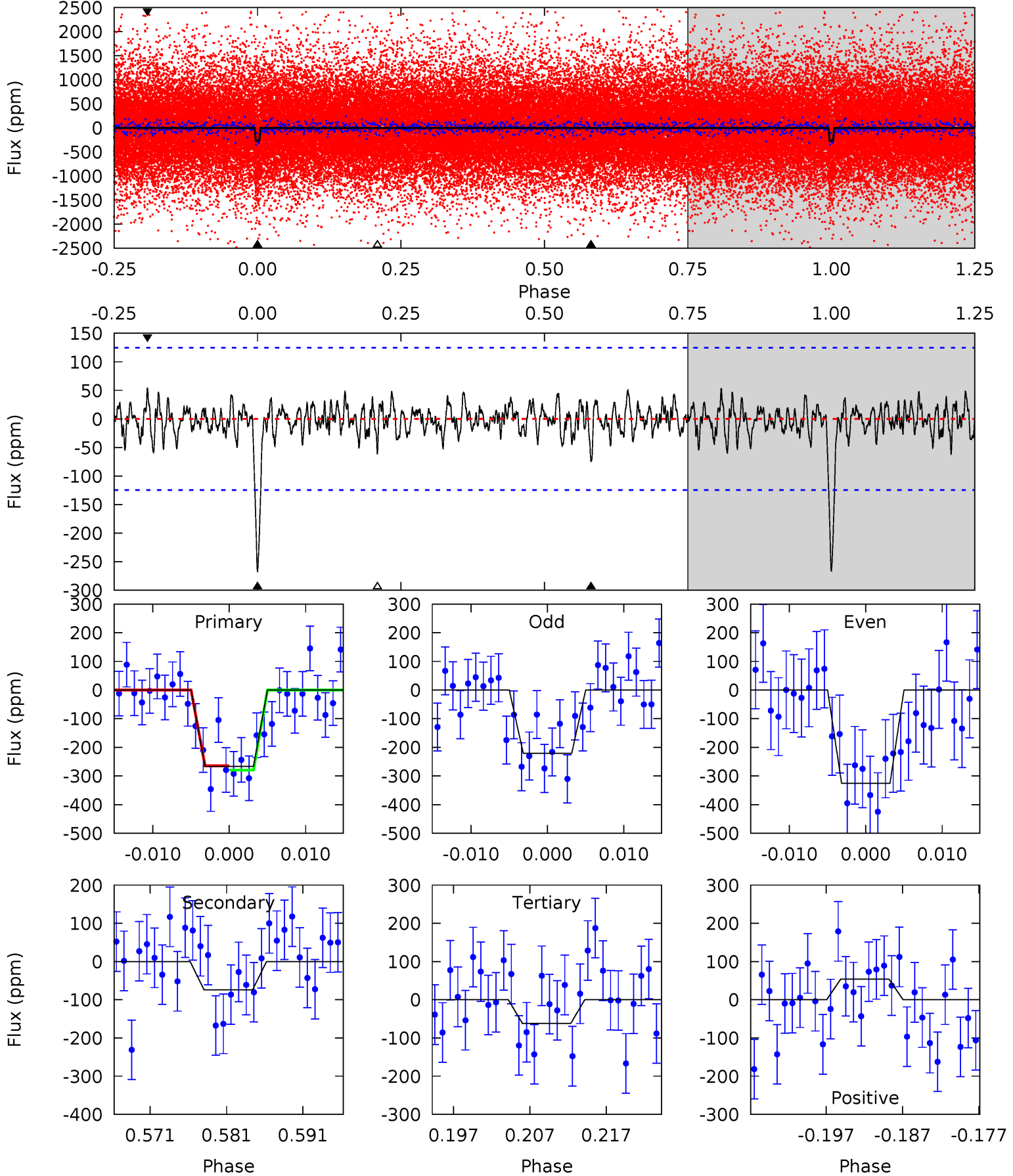
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	4.47	3.49	2.97	5.00	2.53	1.23	6.52	7.04	0.98	1.50	0.05	1.17	0.23	0.23



# Alt Model-Shift Uniqueness Test

010665228-01,  $P = 11.325598$  Days,  $E = 137.203395$  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
10.8	3.00	2.49	2.17	5.03	2.58	0.81	8.29	8.61	0.51	0.83	2.11	1.03	0.17	0.31



### Stellar Parameters For KIC 010665228

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5334^{+186}_{-167}$	$4.574^{+0.063}_{-0.077}$	$-0.500^{+0.300}_{-0.300}$	$0.727^{+0.102}_{-0.068}$	$0.723^{+0.094}_{-0.054}$	$2.652^{+0.753}_{-0.699}$
	+3%/-3%	+1%/-2%	+60%/-60%	+14%/-9%	+13%/-7%	+28%/-26%
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 010665228-01 / KOI 7358.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-115 \pm 26$	$1.54^{+0.99}_{-0.82}$	$946^{+43}_{-41}$	$4209^{+1574}_{-704}$	$210^{+740}_{-137}$
Alt.	$-74 \pm 25$	$1.35^{+1.07}_{-0.85}$	$947^{+43}_{-39}$	$4053^{+2031}_{-732}$	$175^{+930}_{-122}$

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



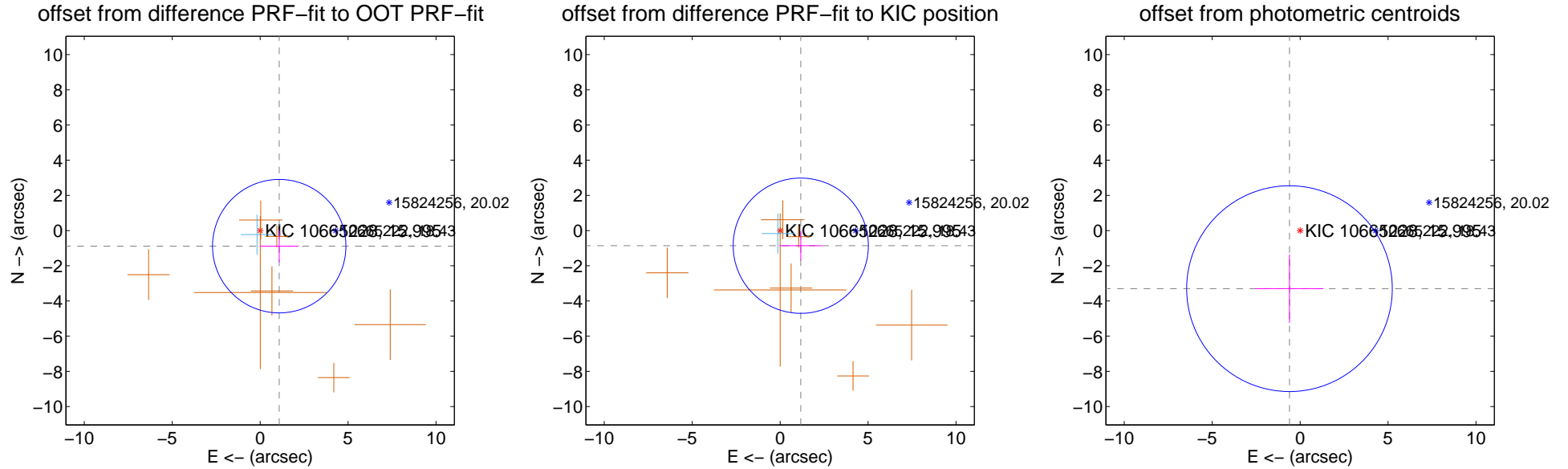
## DV Centroid Data

Supplemental centroid analysis for 010665228-01. Kepler magnitude: 15.99. Transit SNR 7.69

There are 1 quarters with good PRF difference image offsets

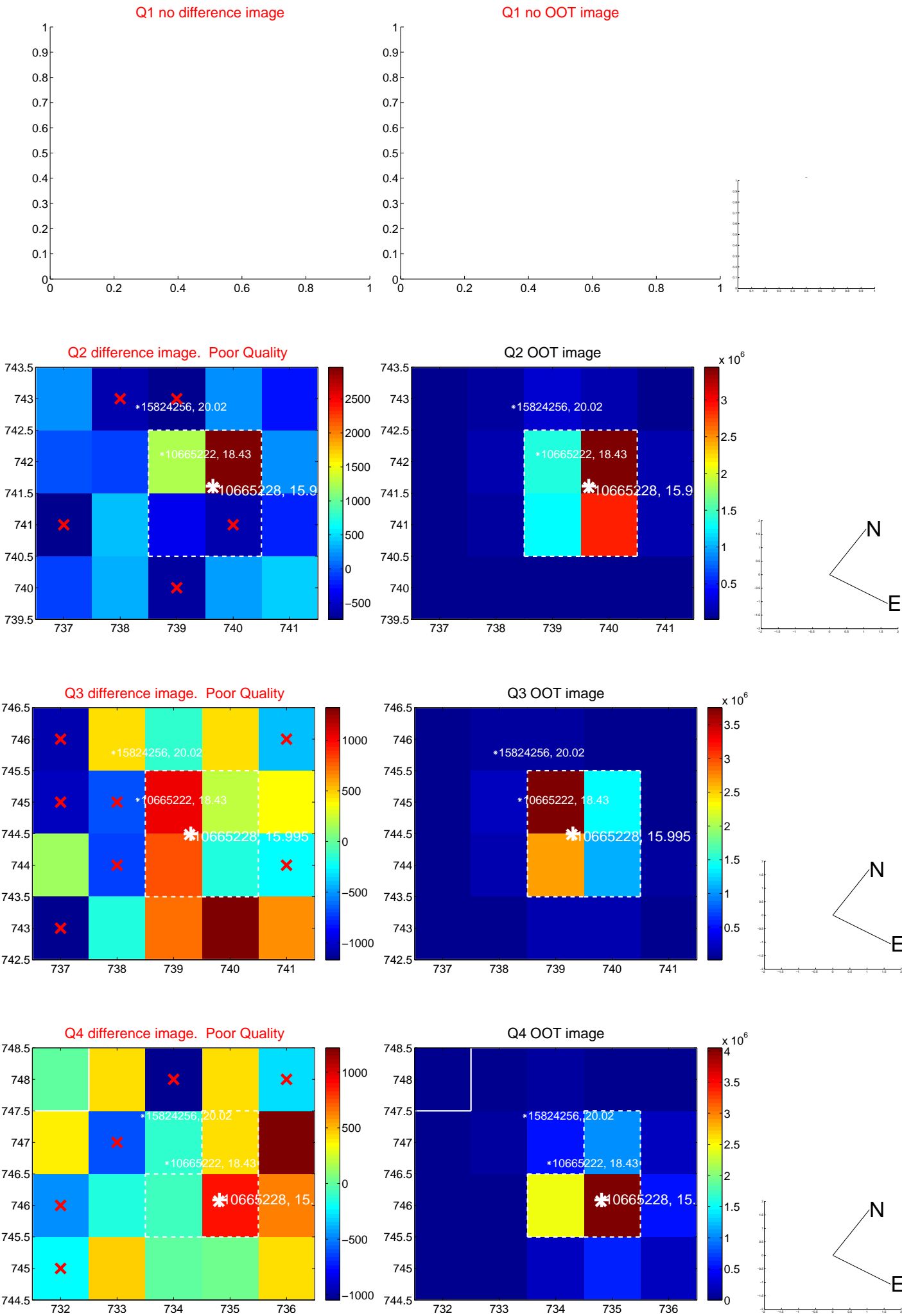
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.401 \pm 1.264$	1.11	$-1.085 \pm 1.109$	$-0.887 \pm 0.907$
PRF-fit source offset from KIC position	$1.455 \pm 1.281$	1.14	$-1.173 \pm 1.224$	$-0.860 \pm 0.836$
photometric centroid source offset	$3.36 \pm 1.95$	1.72	$0.61 \pm 1.94$	$-3.30 \pm 1.95$

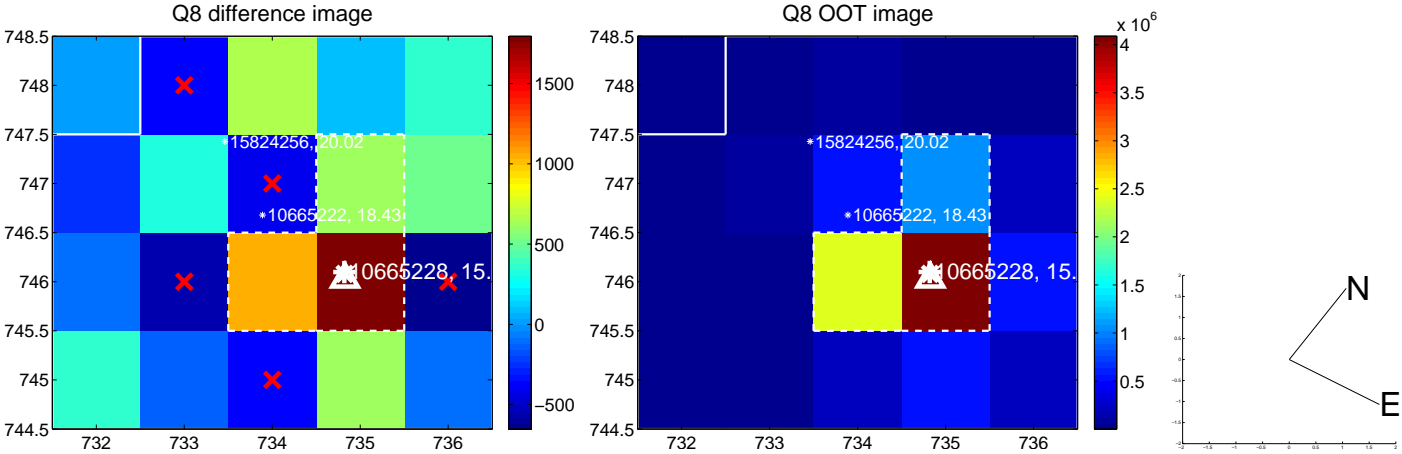
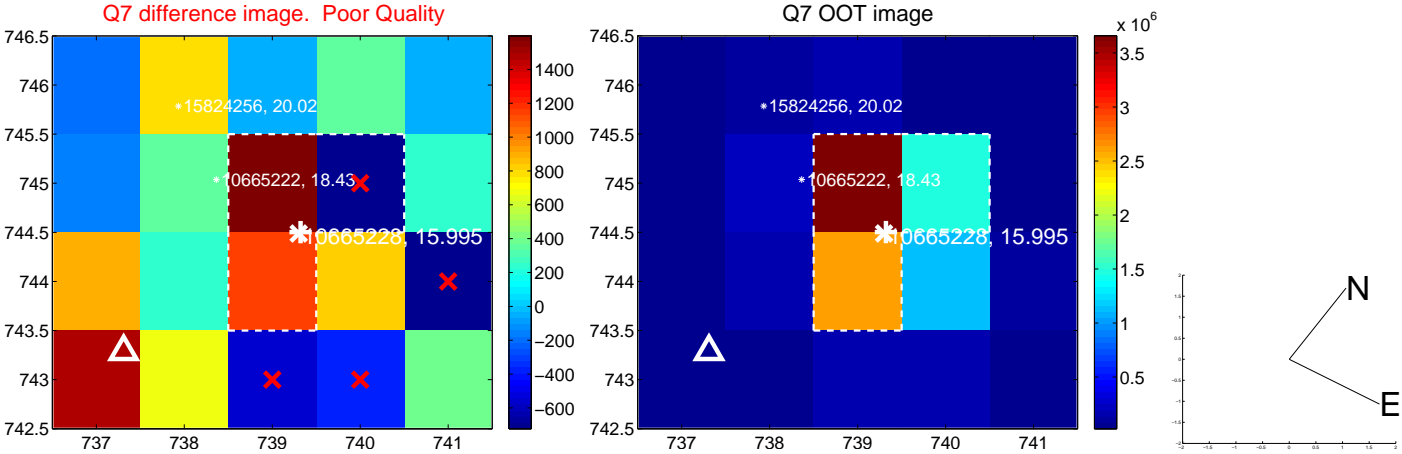
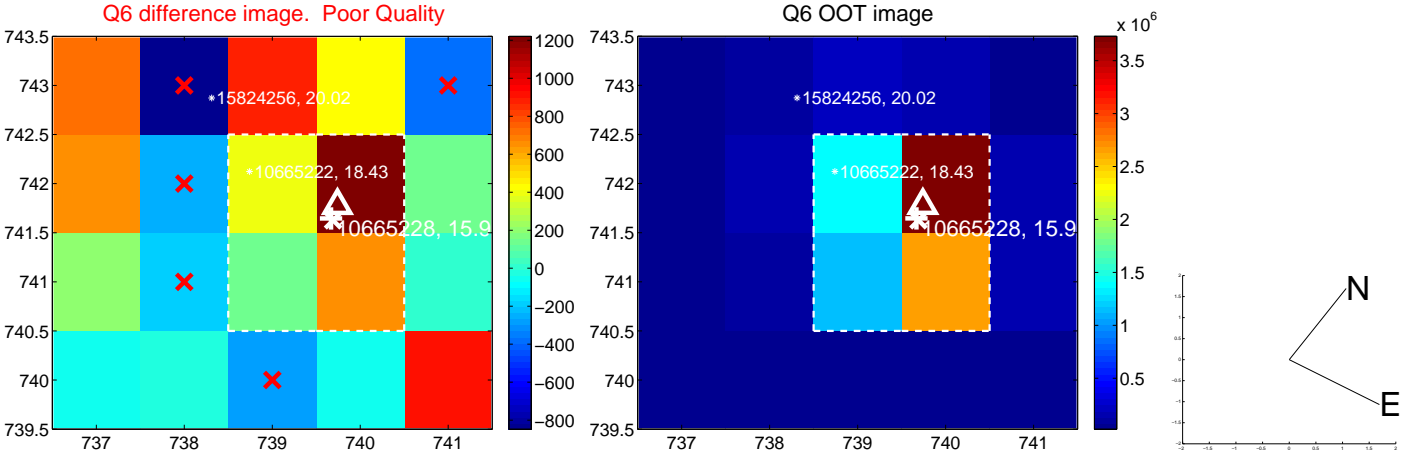
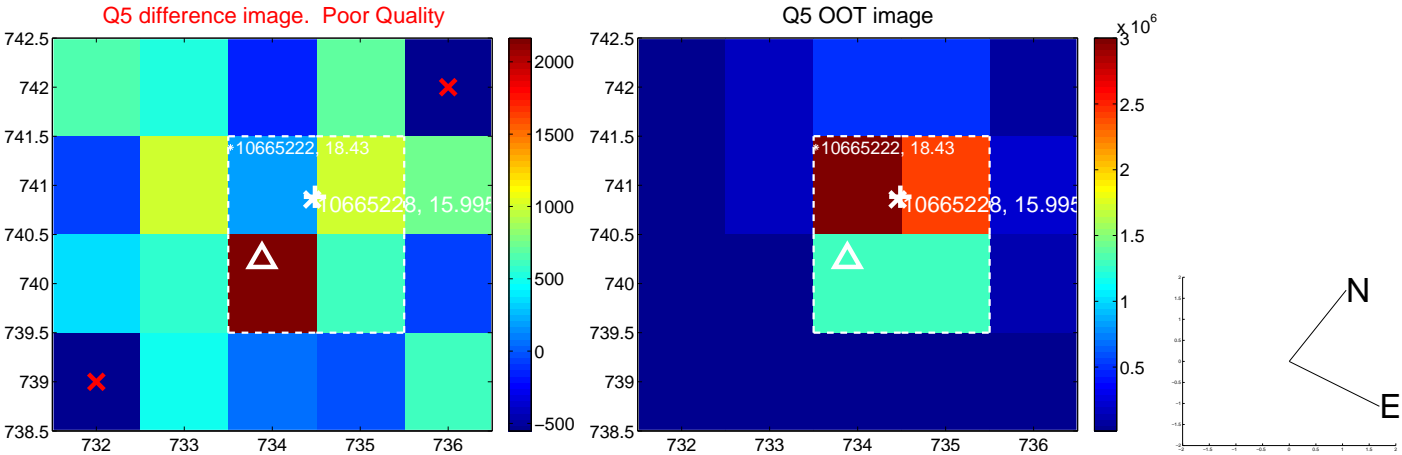


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

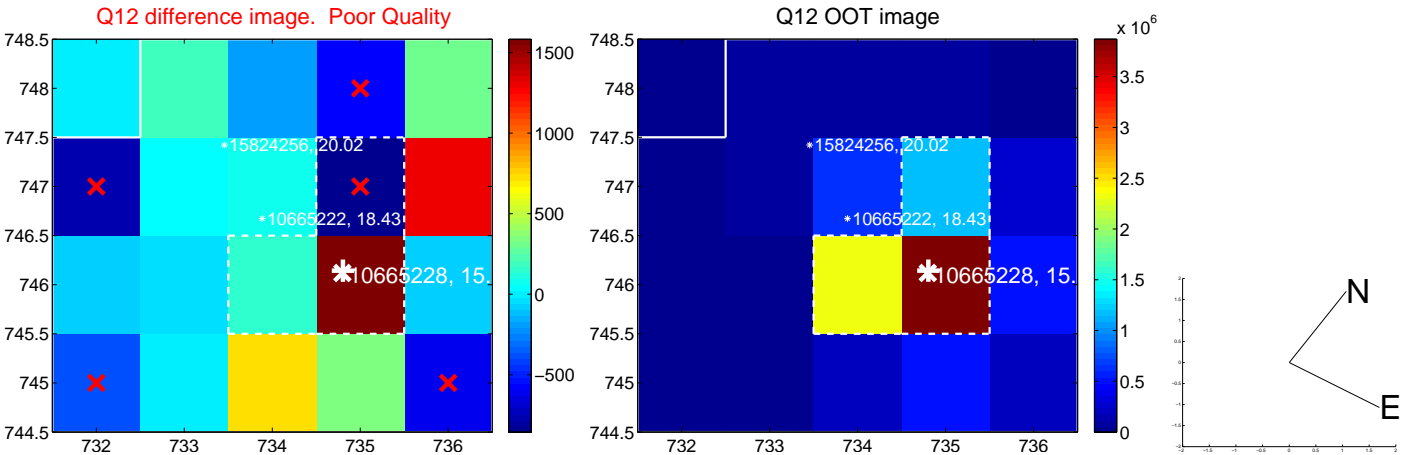
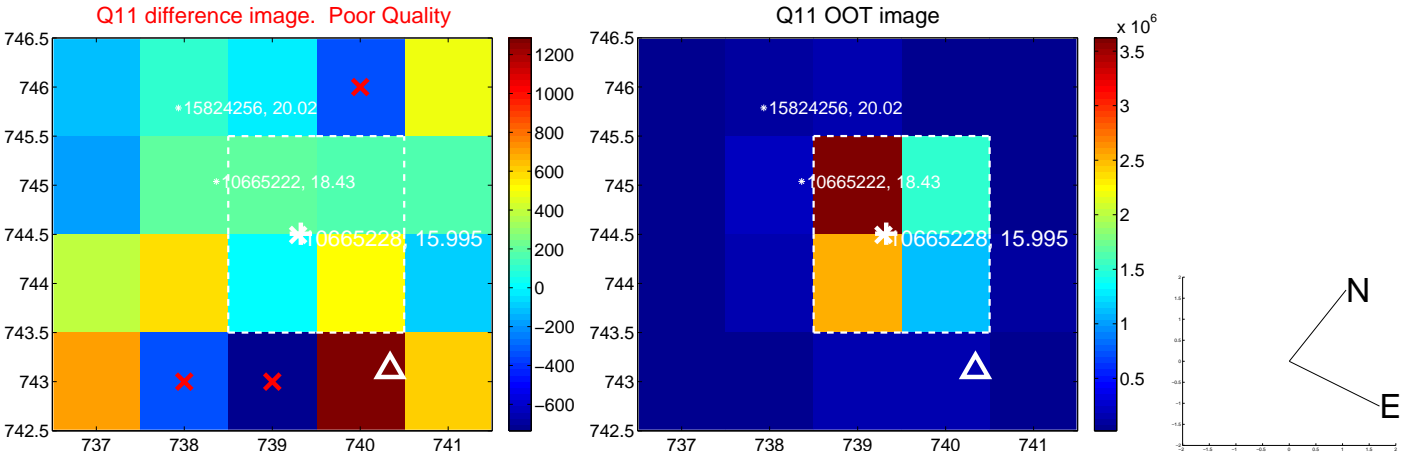
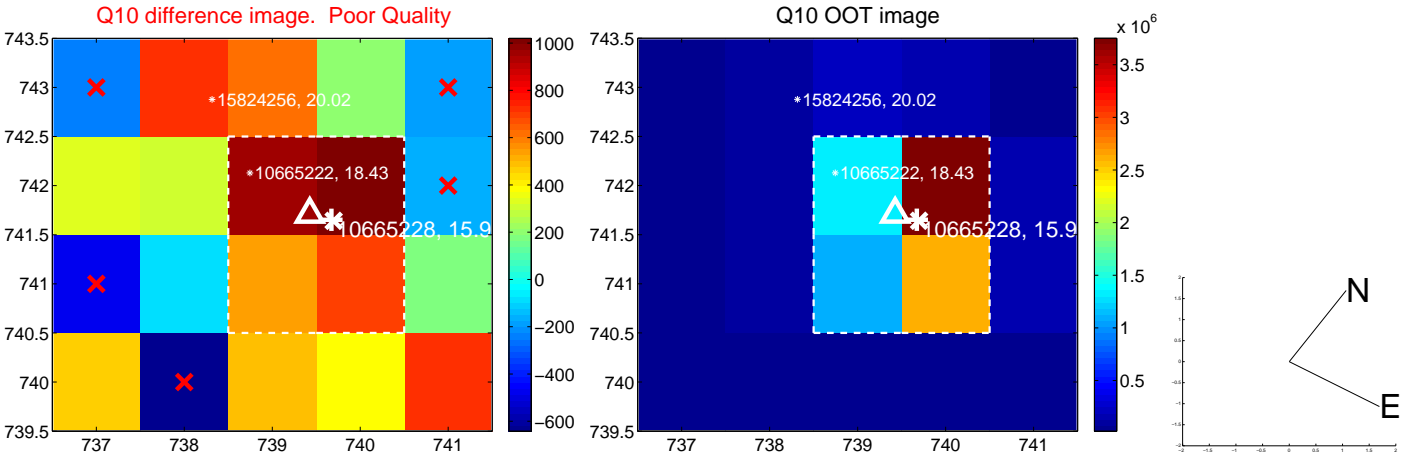
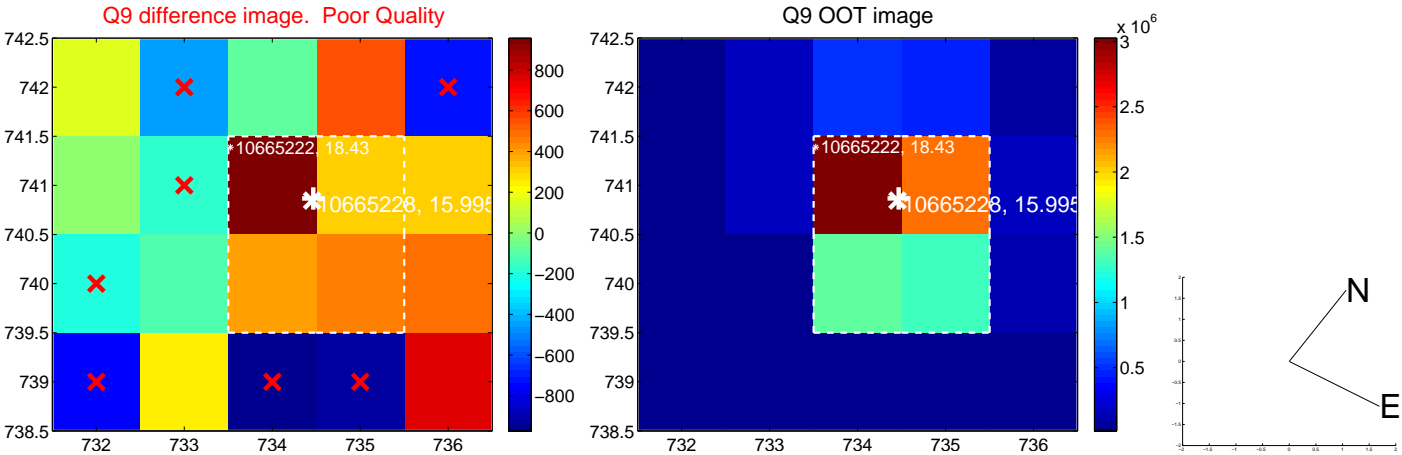
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



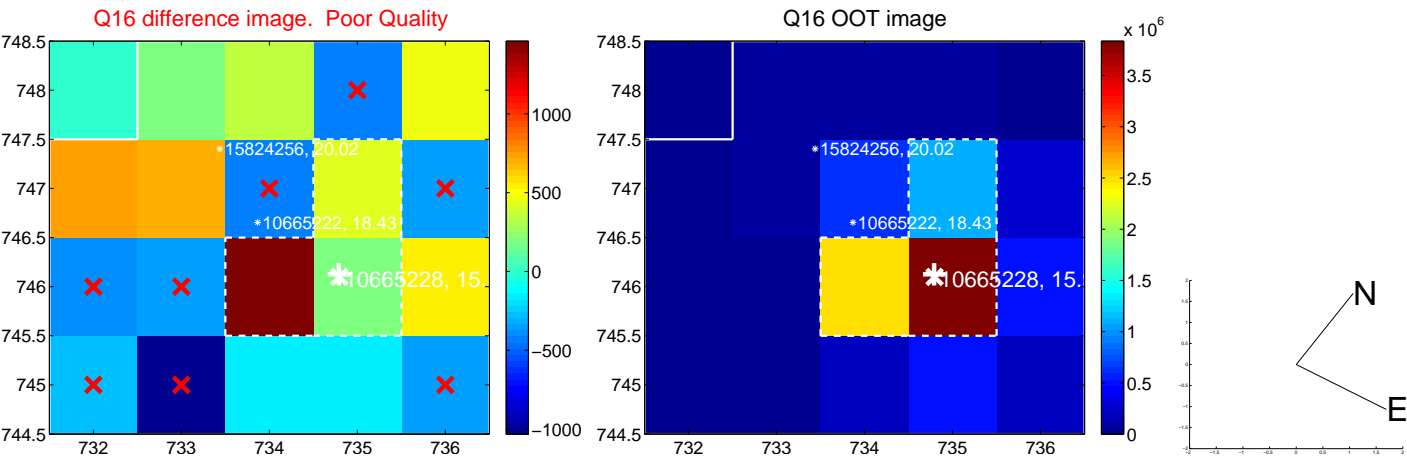
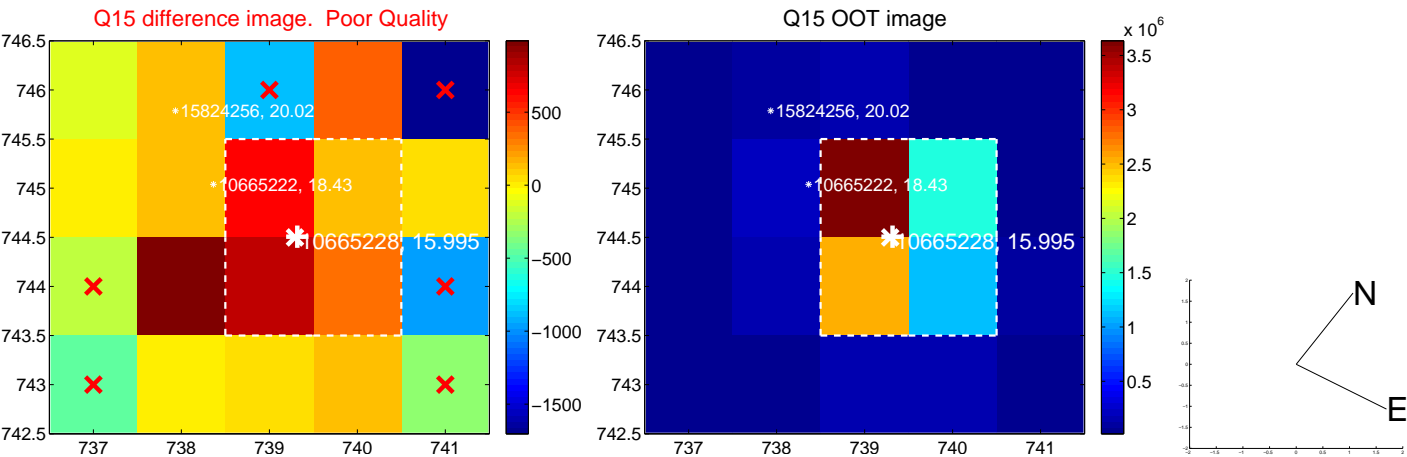
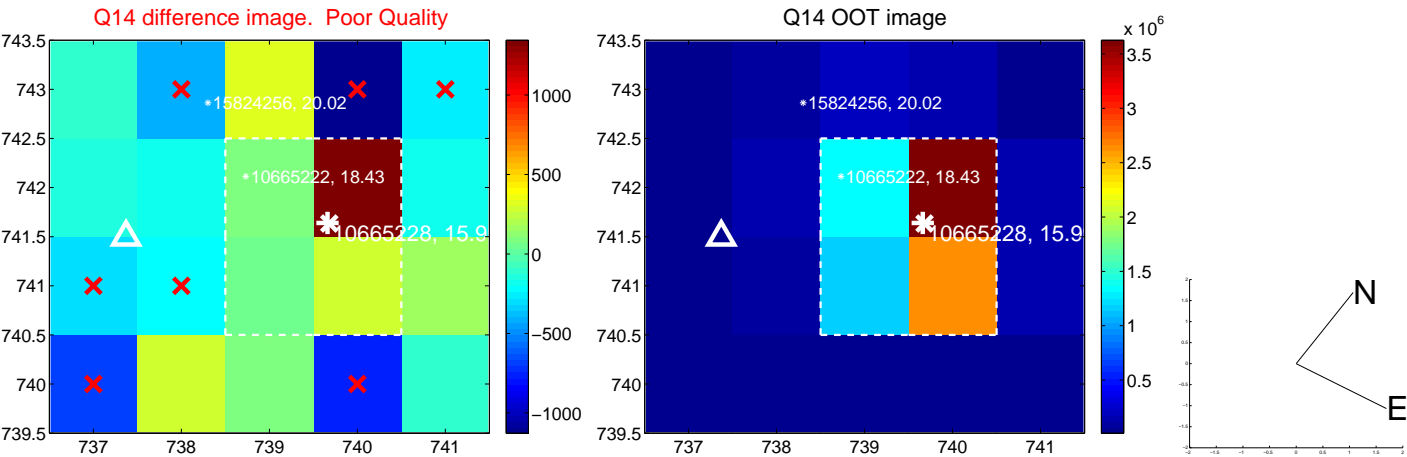
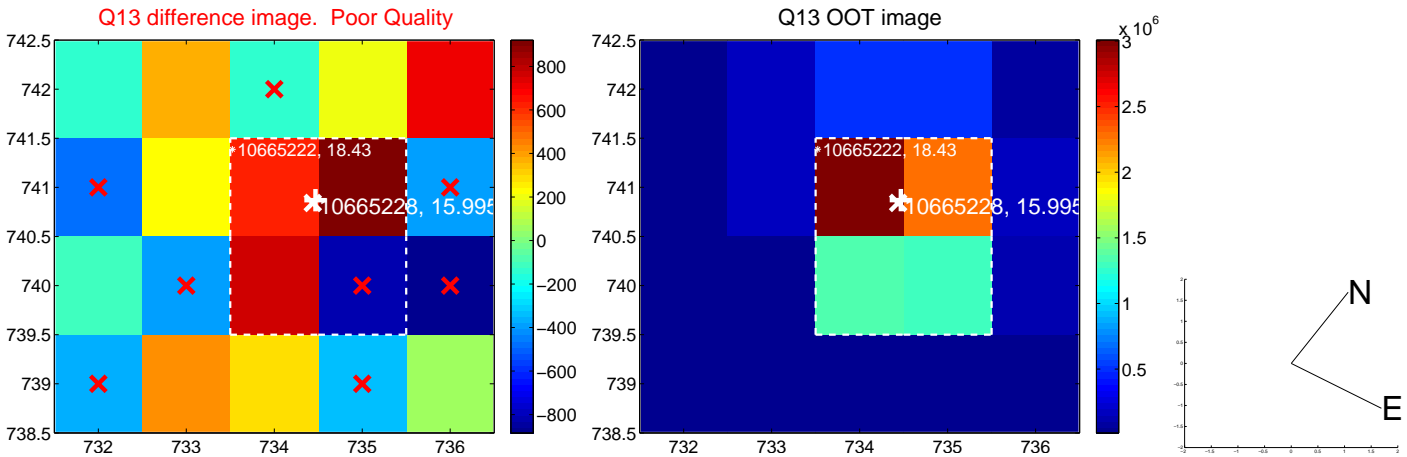
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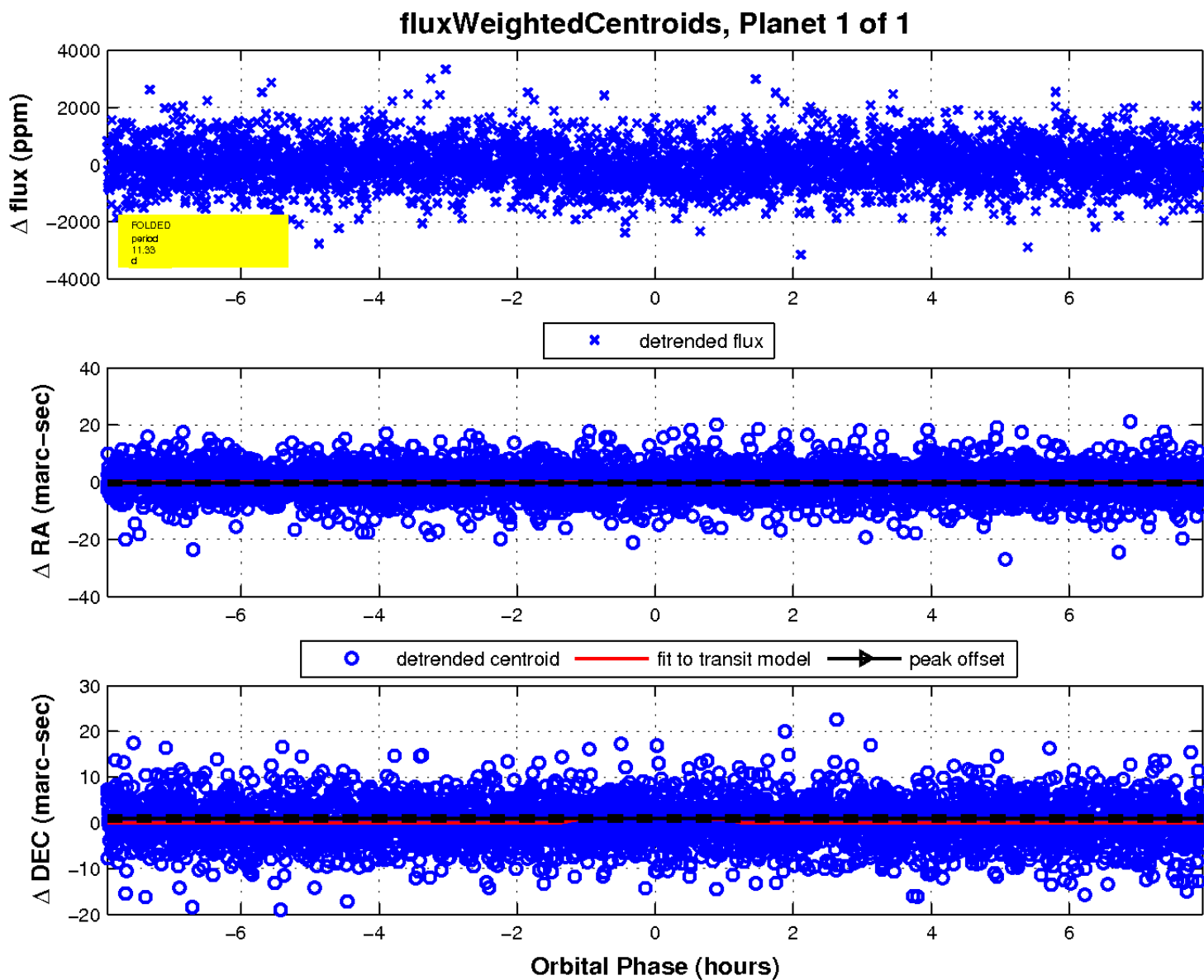
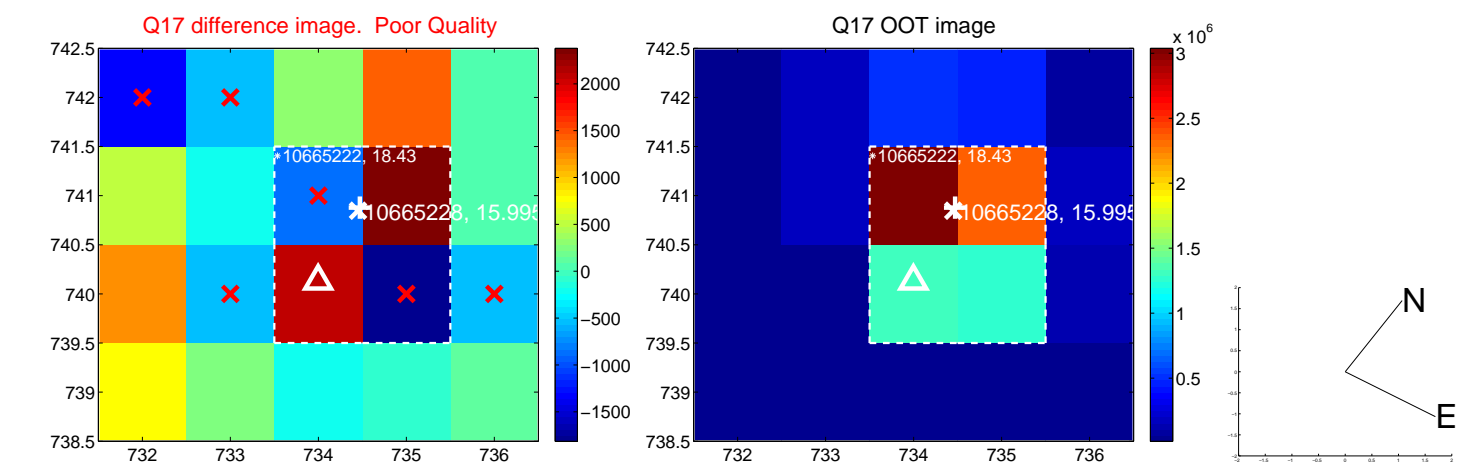


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

