

# KIC 003228824

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
003228824-01	OBS	1100.01	0.730893	132.263598	83.0	4.019	19.3	11.5	0.71	4768	0.63	1161.49

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003228824-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH

**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 003228824-01

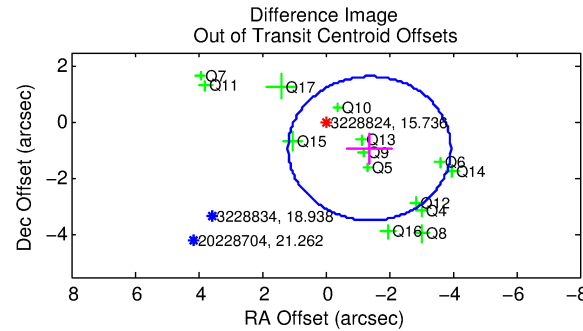
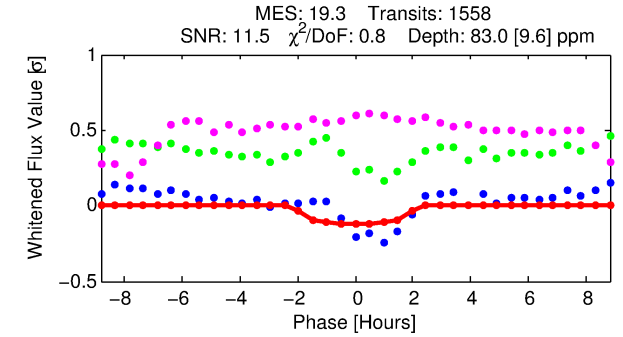
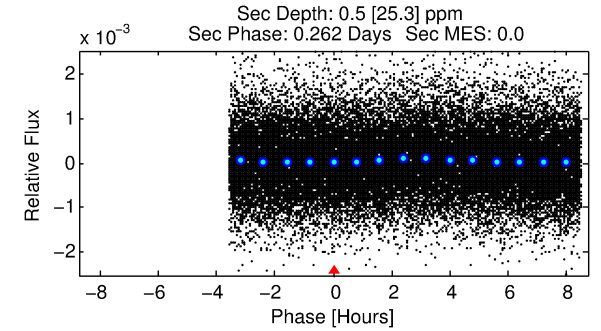
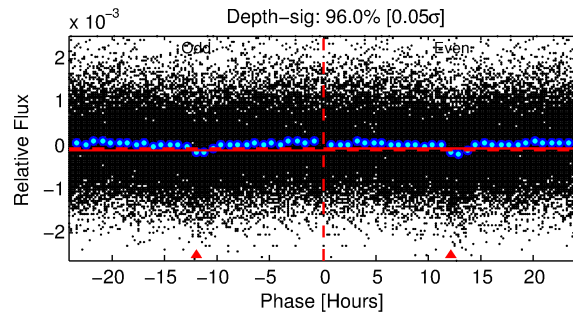
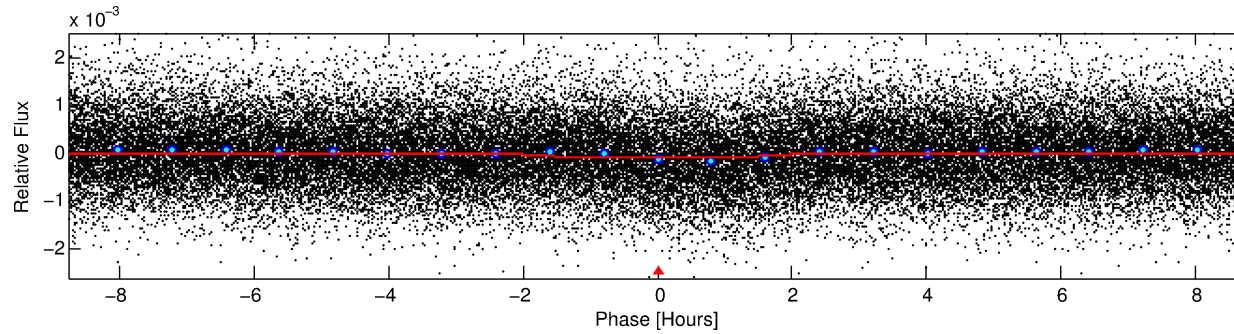
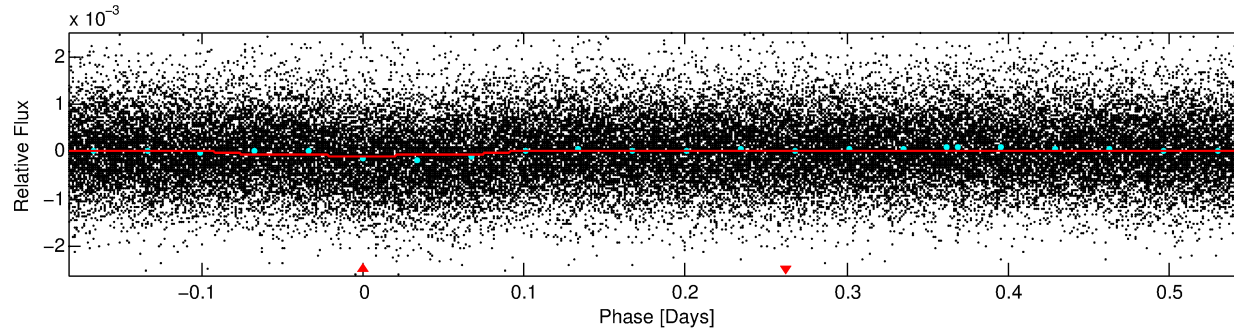
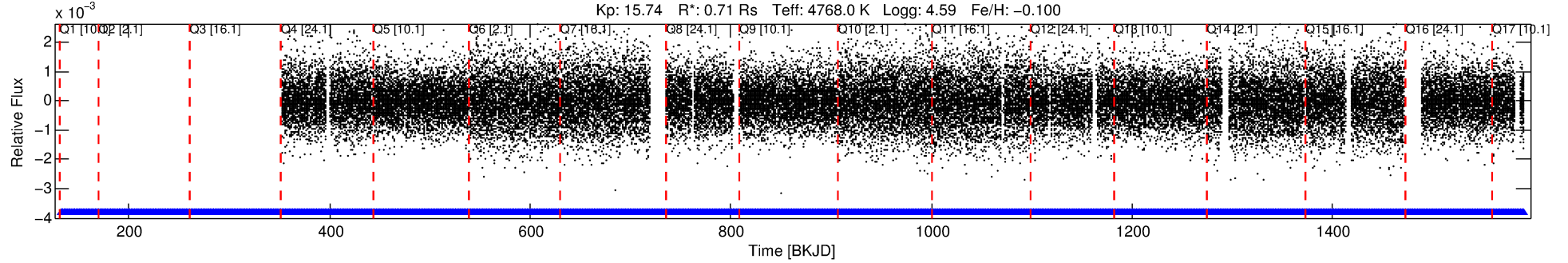
TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
003228824-01	3228824	003228804-01	3228804	1:1	11.2	3	1	15.01	15.74	1.07	Direct-PRF	0	4.79	2.63

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 3228824 Candidate: 1 of 1 Period: 0.731 d  
KOI: K01100.01 Corr: 0.841

Kp: 15.74 R\*: 0.71 Rs Teff: 4768.0 K Logg: 4.59 Fe/H: -0.100



## DV Fit Results:

Period = 0.73089 [0.00001] d  
Epoch = 132.2636 [0.0046] BKJD  
Rp/R\* = 0.0081 [0.0096]  
a/R\* = 1.50 [3.07]  
b = 0.28 [12.75]  
Seff = 1161.49 [199.00]  
Teq = 1489 [64] K  
Rp = 0.63 [0.75] Re  
a = 0.0142 [0.0010] AU  
Ag = 0.13 [7.06] [-0.12σ]  
Teffp = 1376 [19002] K [-0.01σ]

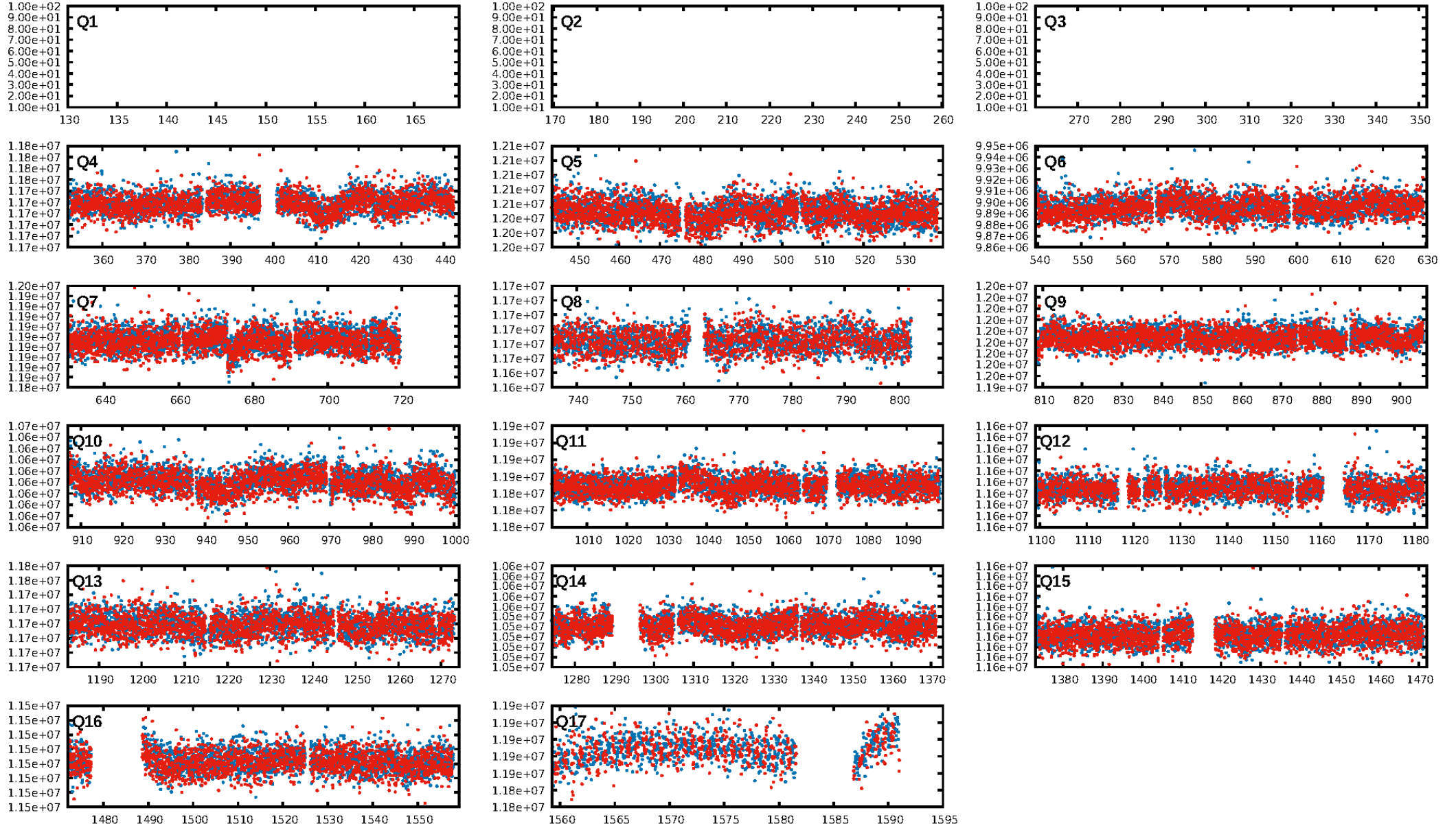
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.18e-64  
RollingBand-fgt: 1.00 [1521/1521]  
**GhostDiagnostic-chr: 0.09799**  
**Centroid-sig: 0.0%**  
Centroid-so: 2.140 arcsec [1.96σ]  
OotOffset-rm: 1.663 arcsec [1.95σ]  
**KicOffset-rm: 2.130 arcsec [4.44σ]**  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.00 [0/14]  
DiffImageOverlap-fno: 1.00 [14/14]

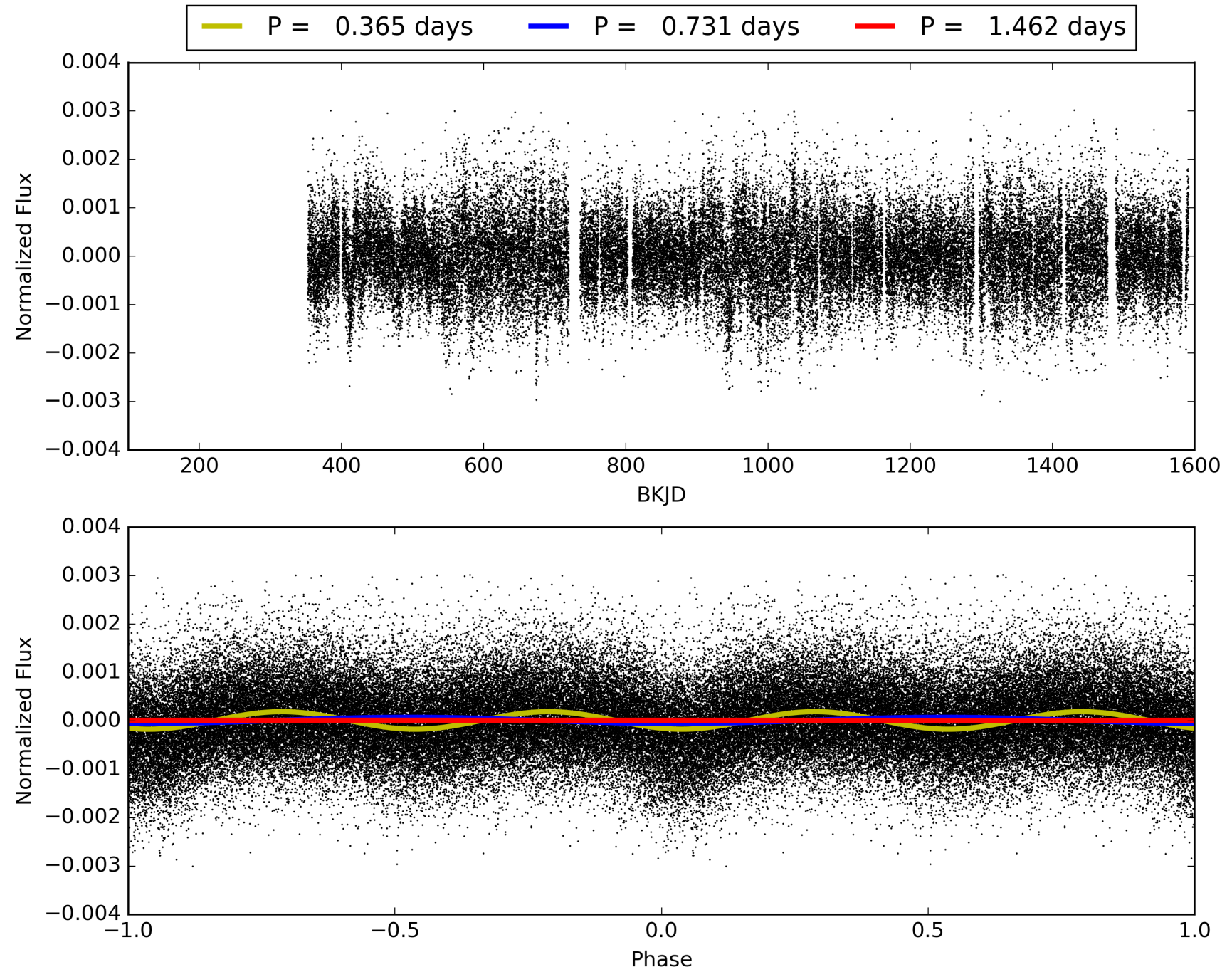
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:43:47 Z

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

# TCE 003228824-01, PDC Light Curves



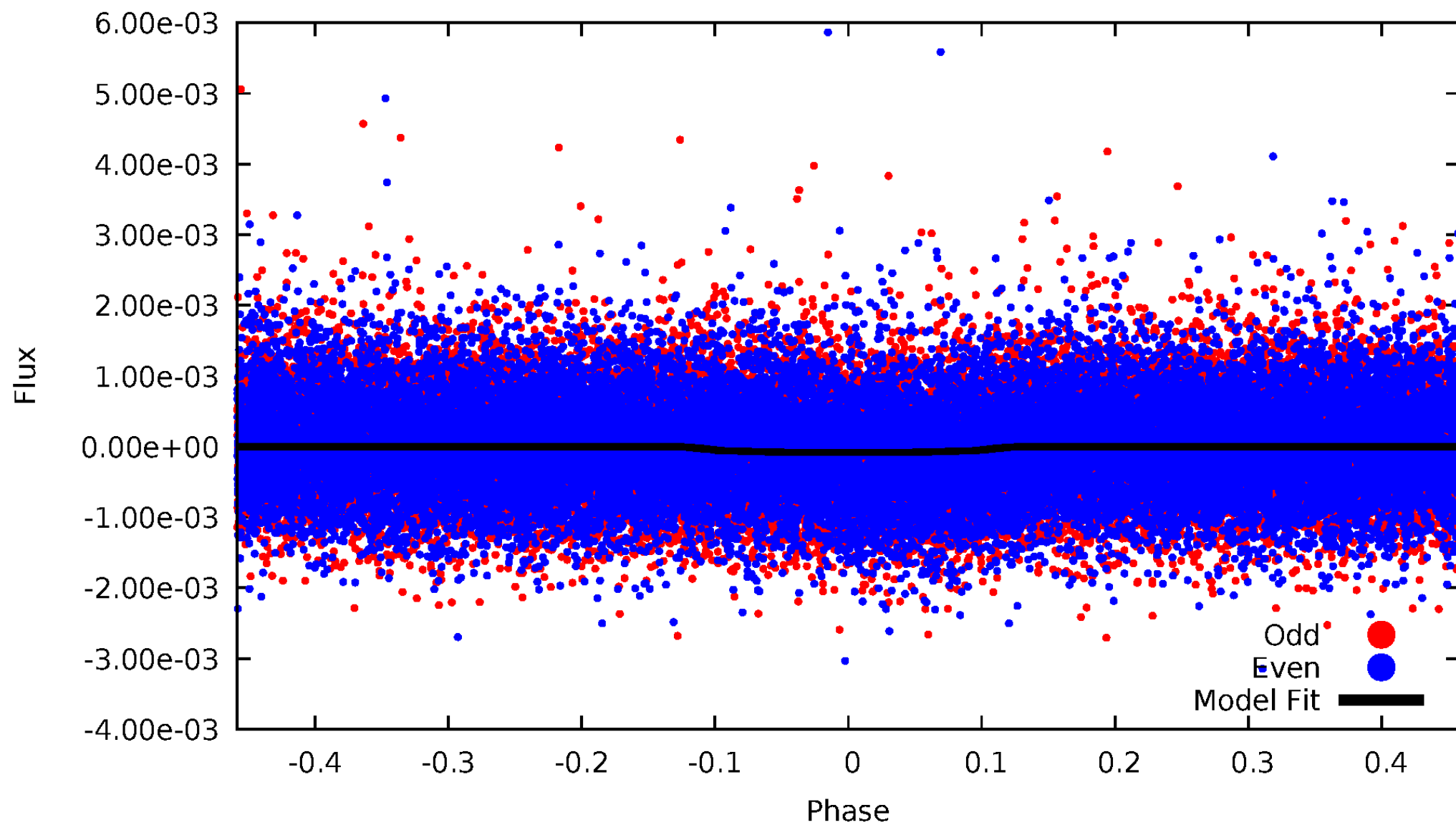
# TCE 003228824-01





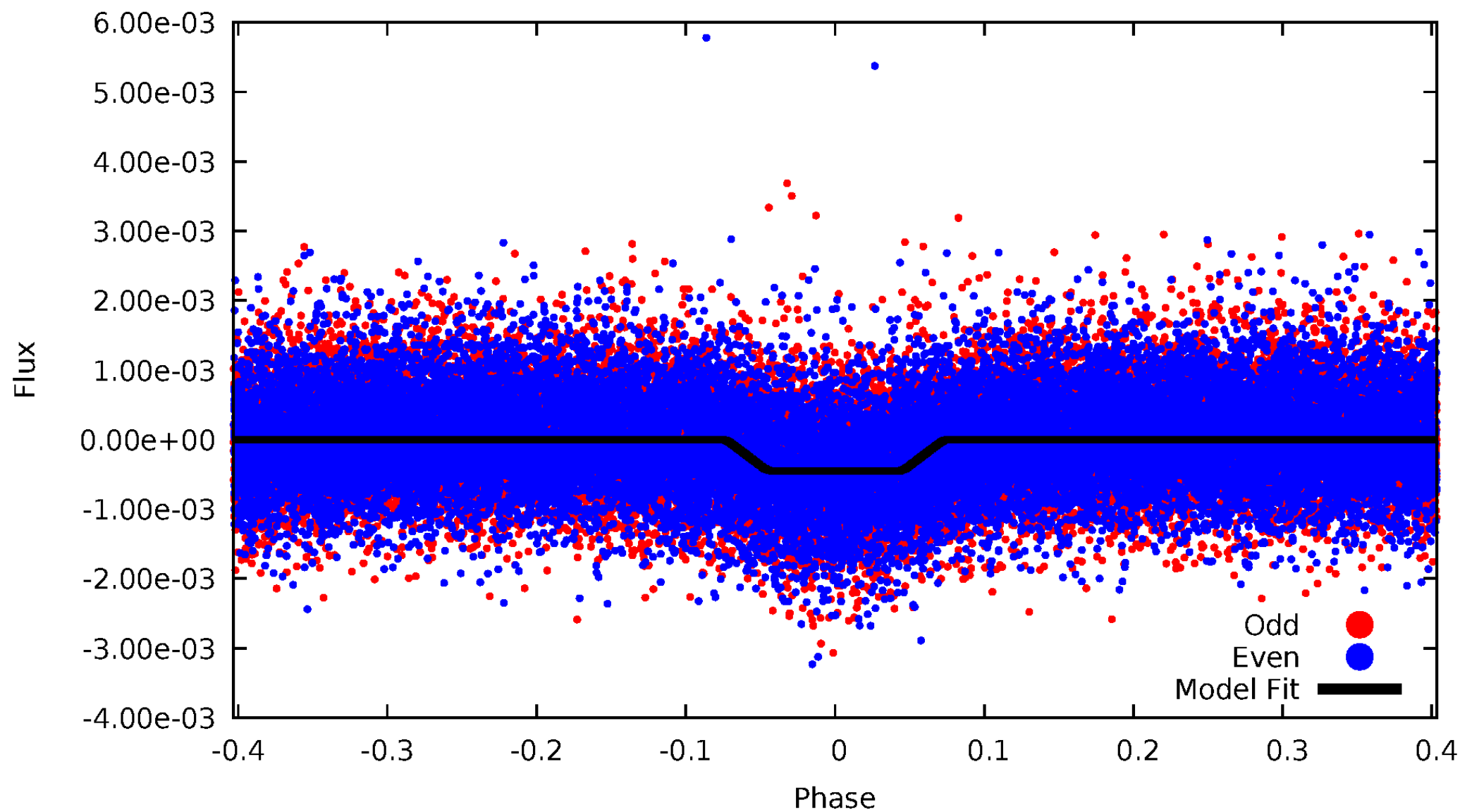
# DV Odd/Even

TCE 003228824-01

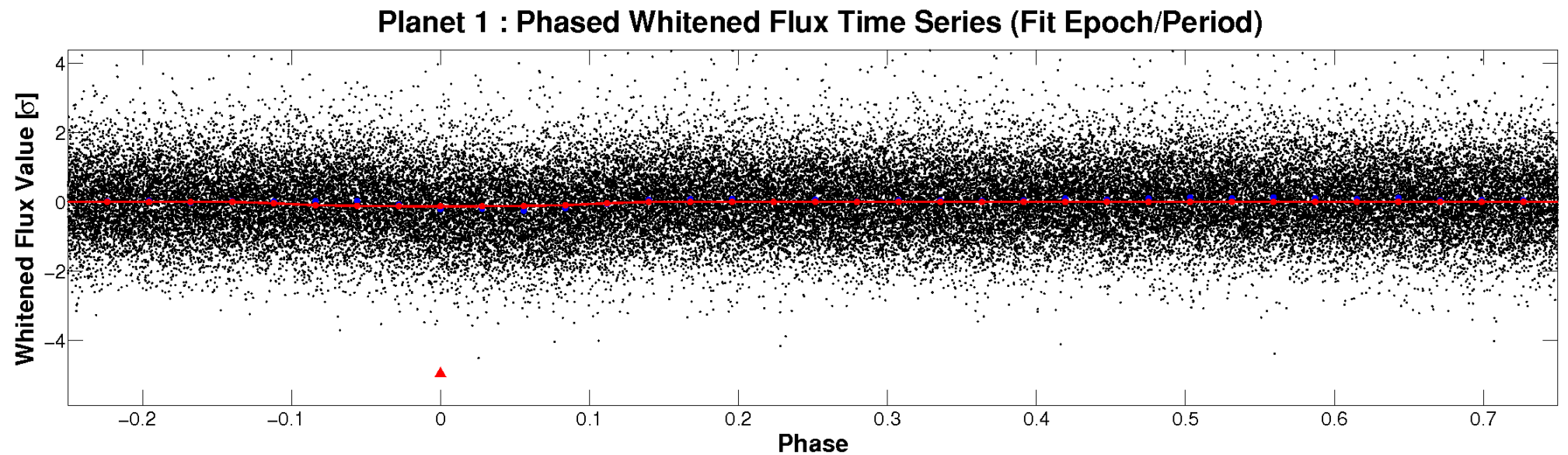
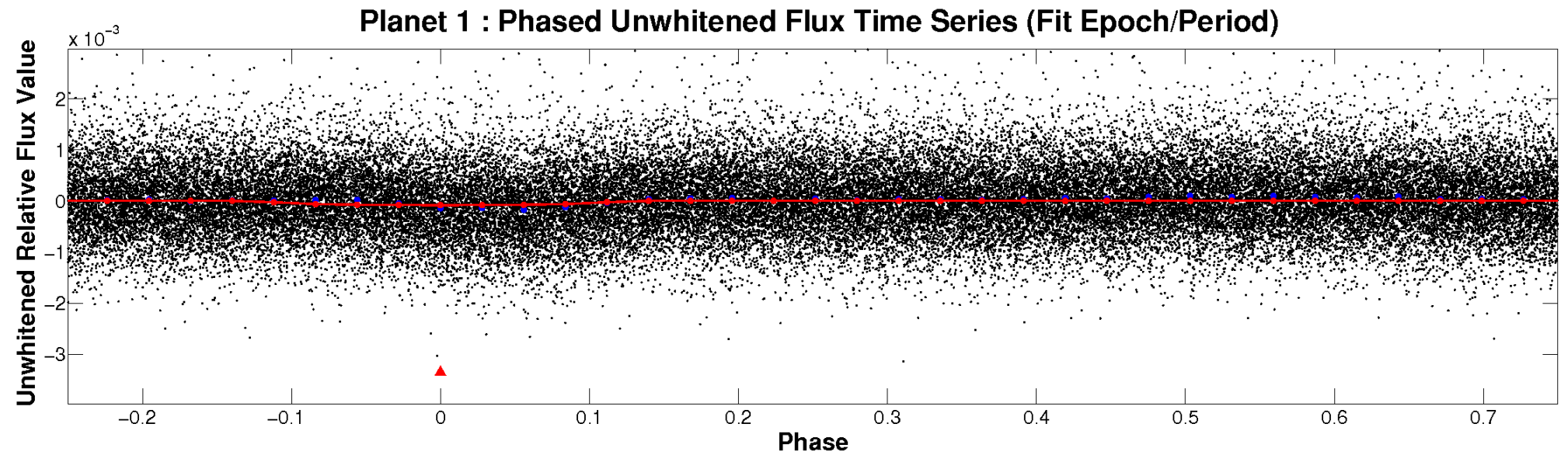


# ALT Odd/Even

TCE 003228824-01

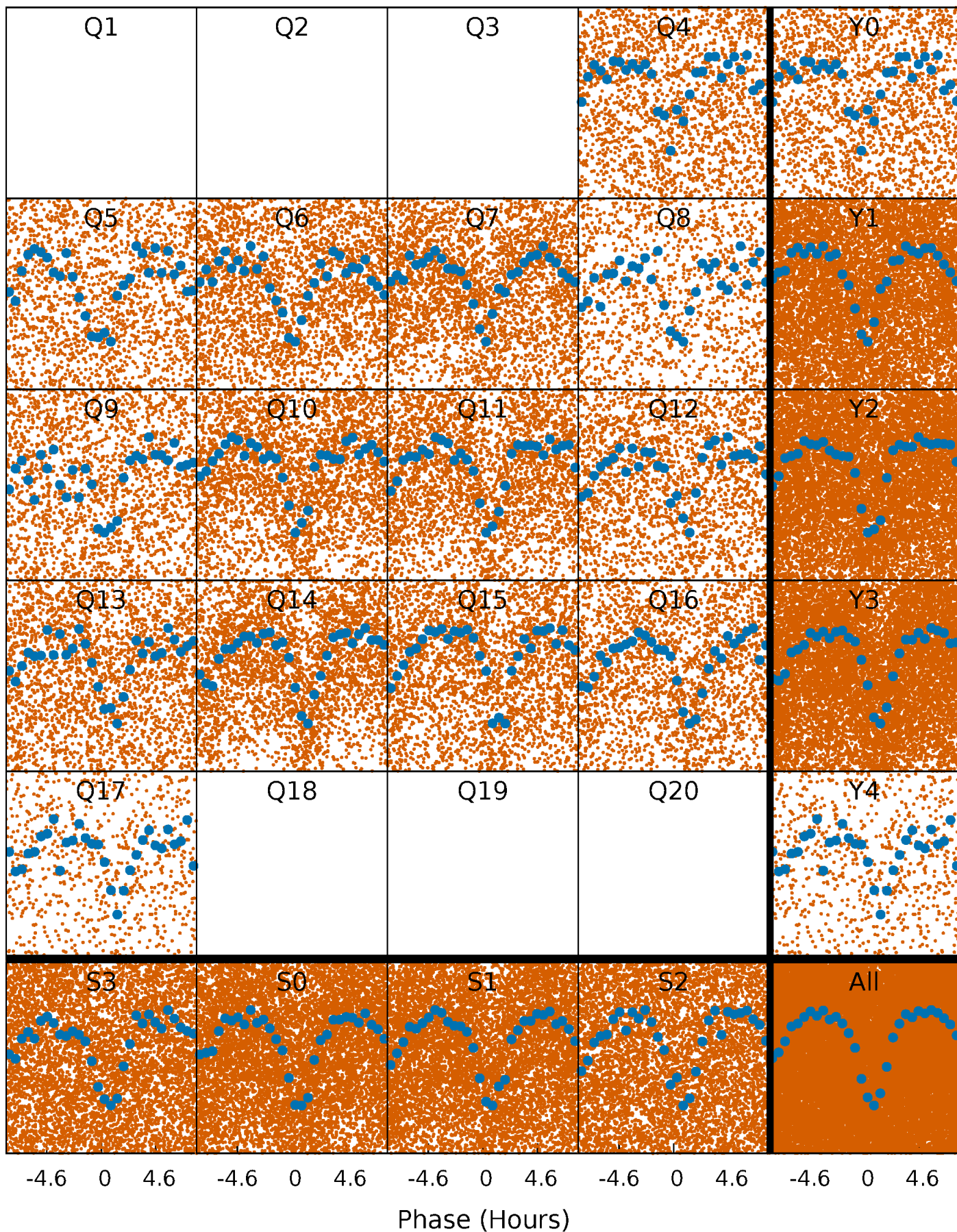


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

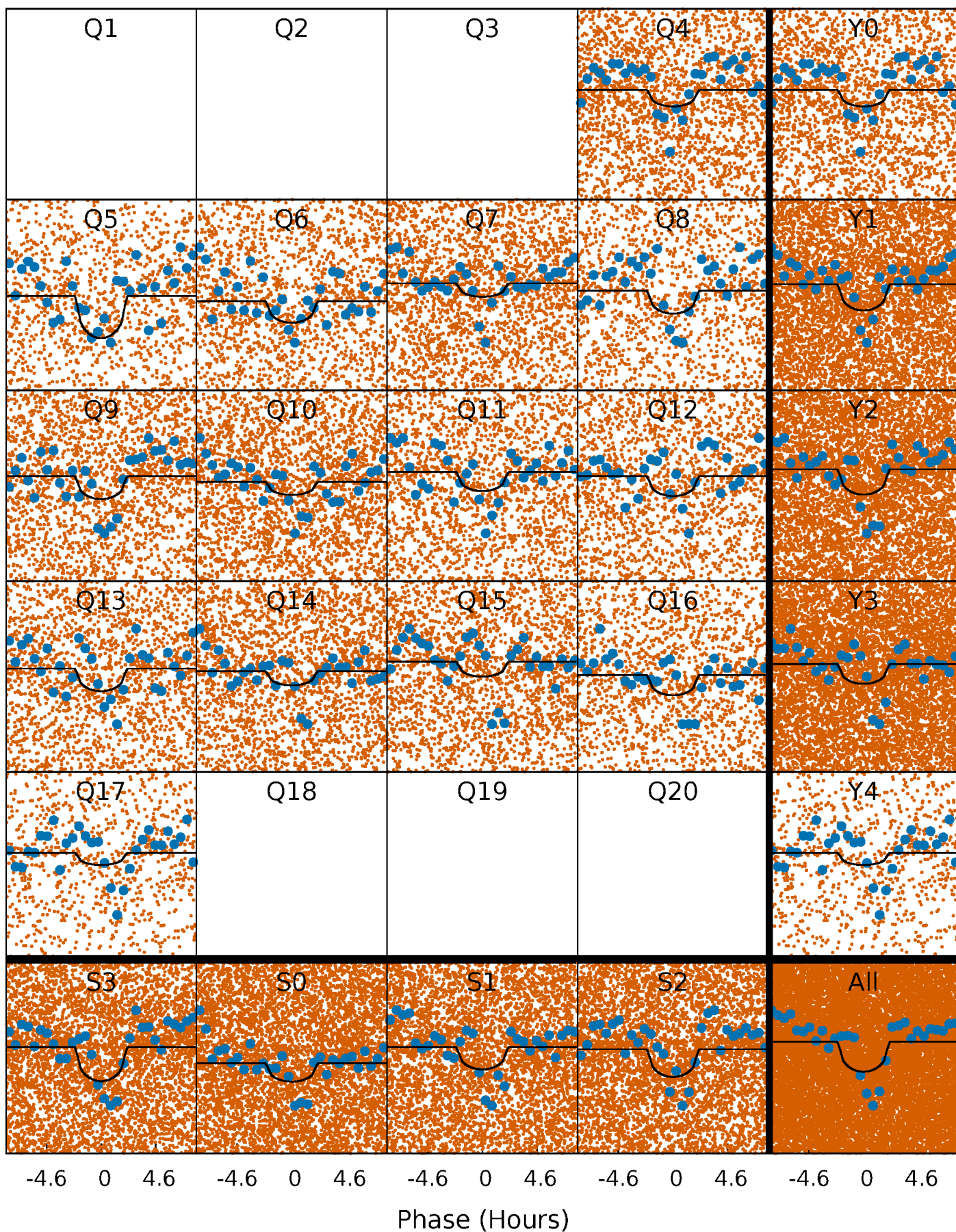
TCE 003228824-01 P= 0.730893 Days  $T_0=132.263599$  (BKJD)





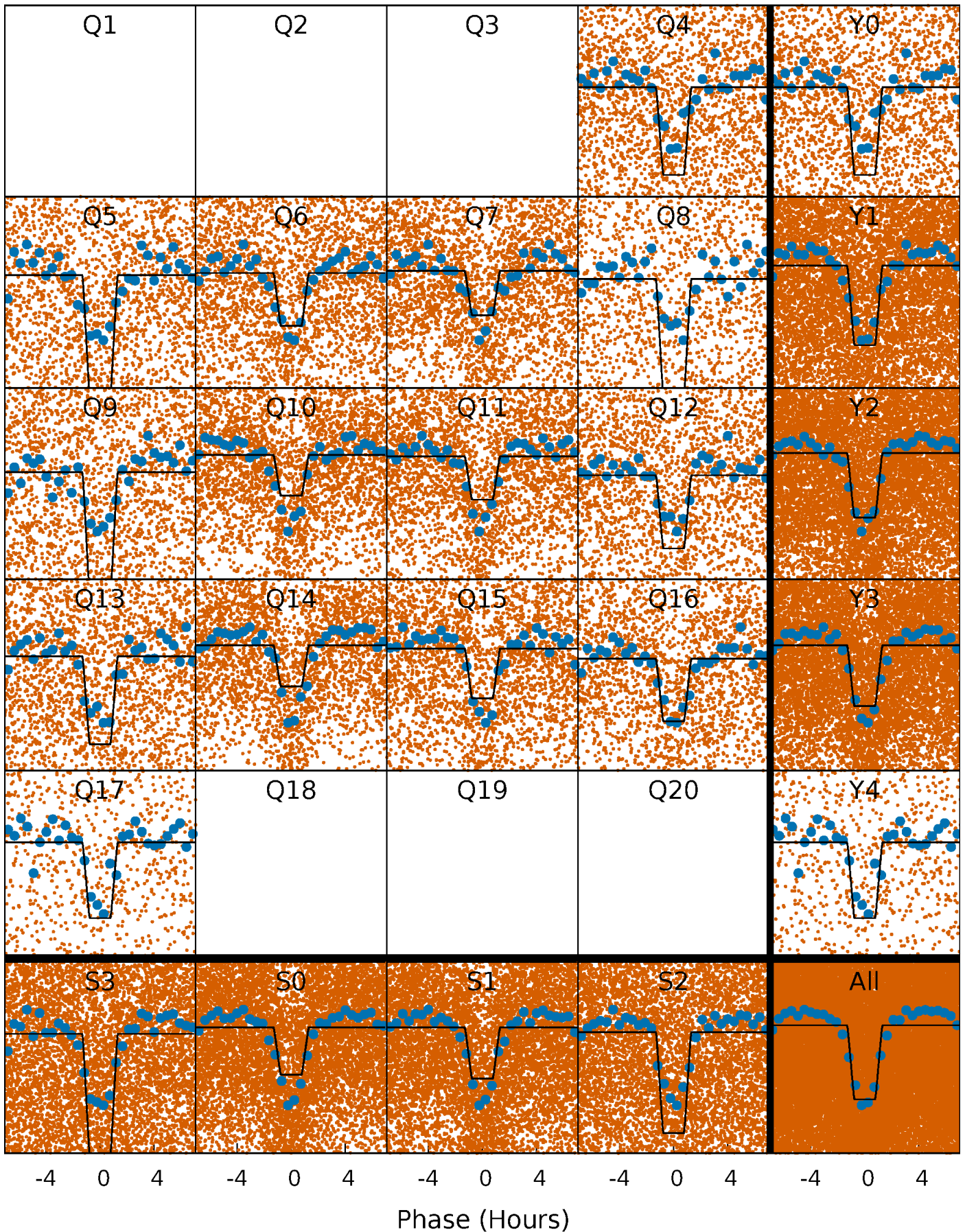
# DV Quarter-Phased Transit Curves

TCE 003228824-01 P= 0.730893 Days  $T_0=132.263599$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003228824-01 P= 0.730934 Days  $T_0=132.241582$  (BKJD)

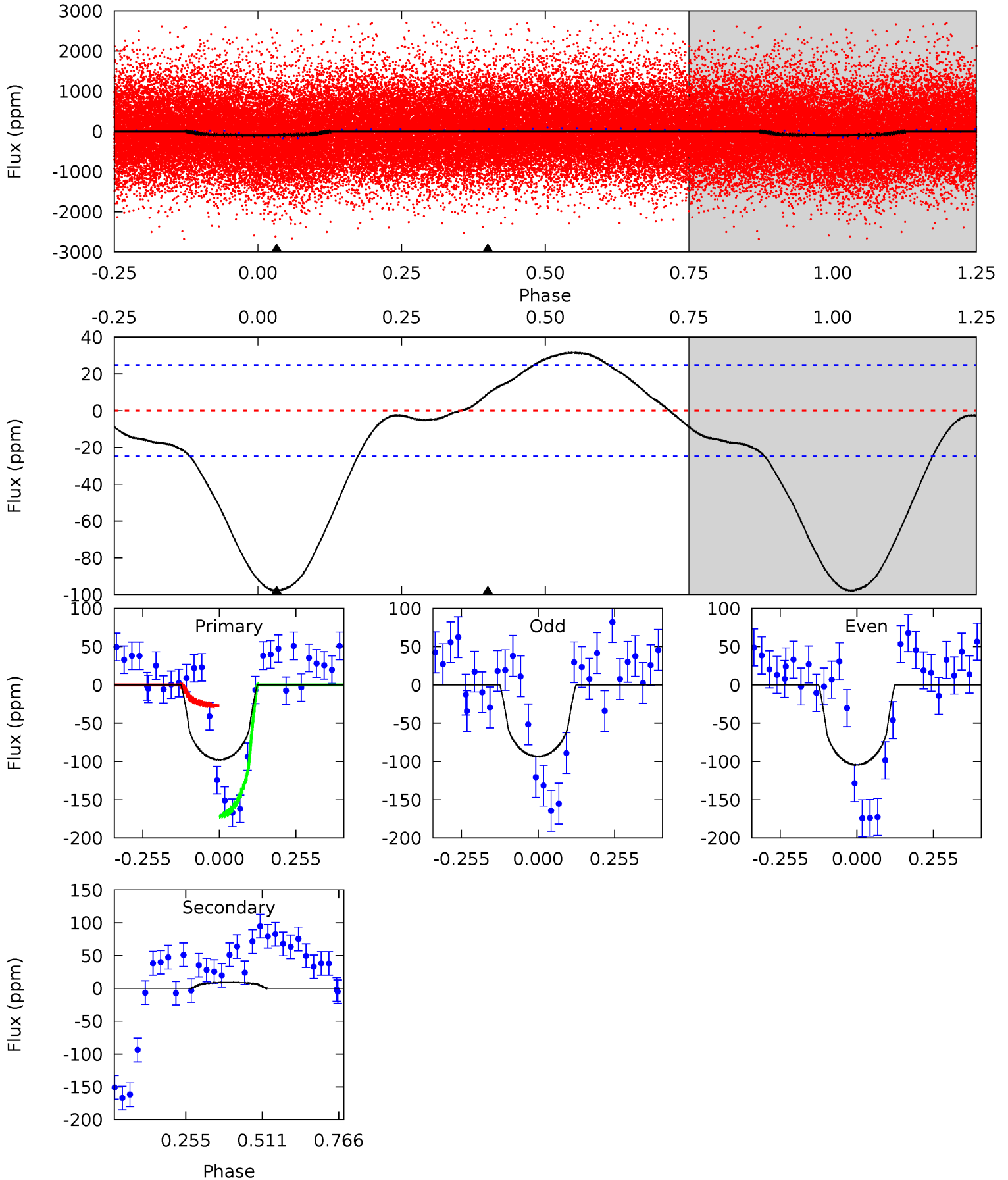




# DV Model-Shift Uniqueness Test

003228824-01, P = 0.730893 Days, E = 132.263599 Days

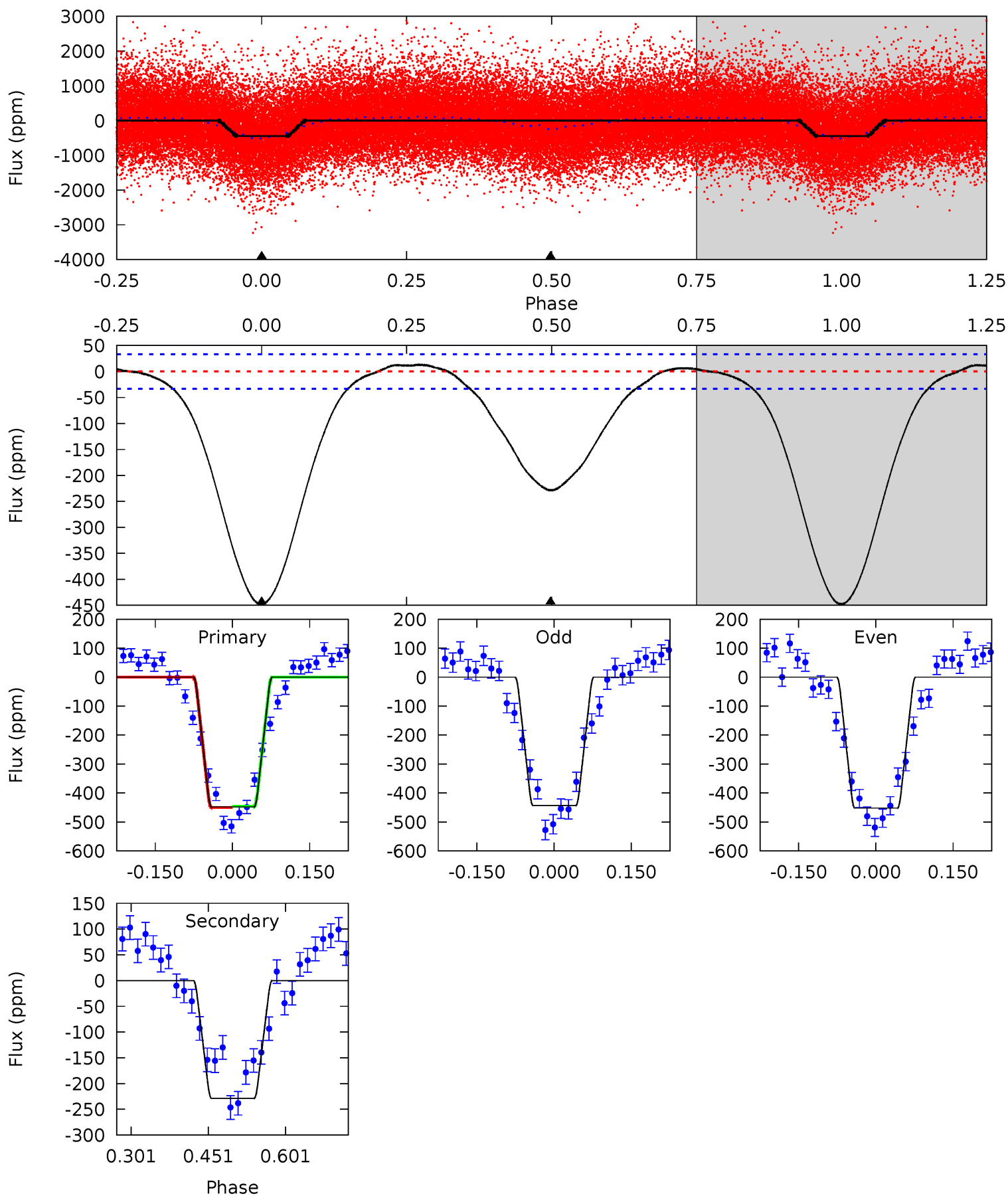
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	-1.63	0	0	4.36	1.14	1.51	17.2	17.2	-1.63	-1.63	0.97	0.88	0.24	12.6



# Alt Model-Shift Uniqueness Test

003228824-01, P = 0.730934 Days, E = 132.241582 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
60.5	30.9	0	0	4.48	1.44	1.64	60.5	60.5	30.9	30.9	0.60	1.03	0.03	0.28





### Stellar Parameters For KIC 003228824

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$4768^{+168}_{-168}$	$4.588^{+0.050}_{-0.036}$	$-0.100^{+0.300}_{-0.300}$	$0.711^{+0.057}_{-0.064}$	$0.714^{+0.079}_{-0.059}$	$2.794^{+0.628}_{-0.383}$
	+4%/-4%	+1%/-1%	+300%/-300%	+8%/-9%	+11%/-8%	+22%/-14%
Source	KIC0	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 003228824-01 / KOI 1100.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$9 \pm 6$	$0.82^{+0.63}_{-0.52}$	$2079^{+81}_{-84}$	$-3142^{+413}_{-1073}$	$-1.329^{+1.042}_{-8.304}$
Alt.	$-229 \pm 7$	$1.63^{+0.85}_{-0.74}$	$2075^{+85}_{-78}$	$4170^{+1197}_{-572}$	$9.573^{+22.544}_{-5.424}$

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

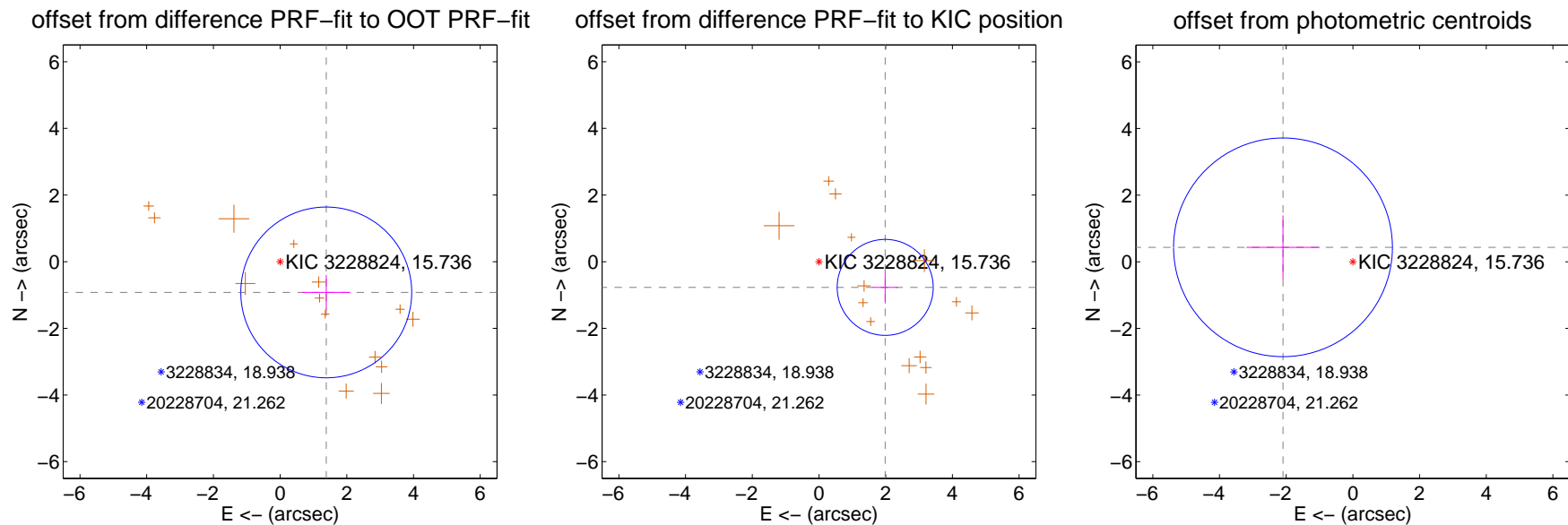
## DV Centroid Data

Supplemental centroid analysis for 003228824-01. Kepler magnitude: 15.74. Transit SNR 11.47

There are 0 quarters with good PRF difference image offsets

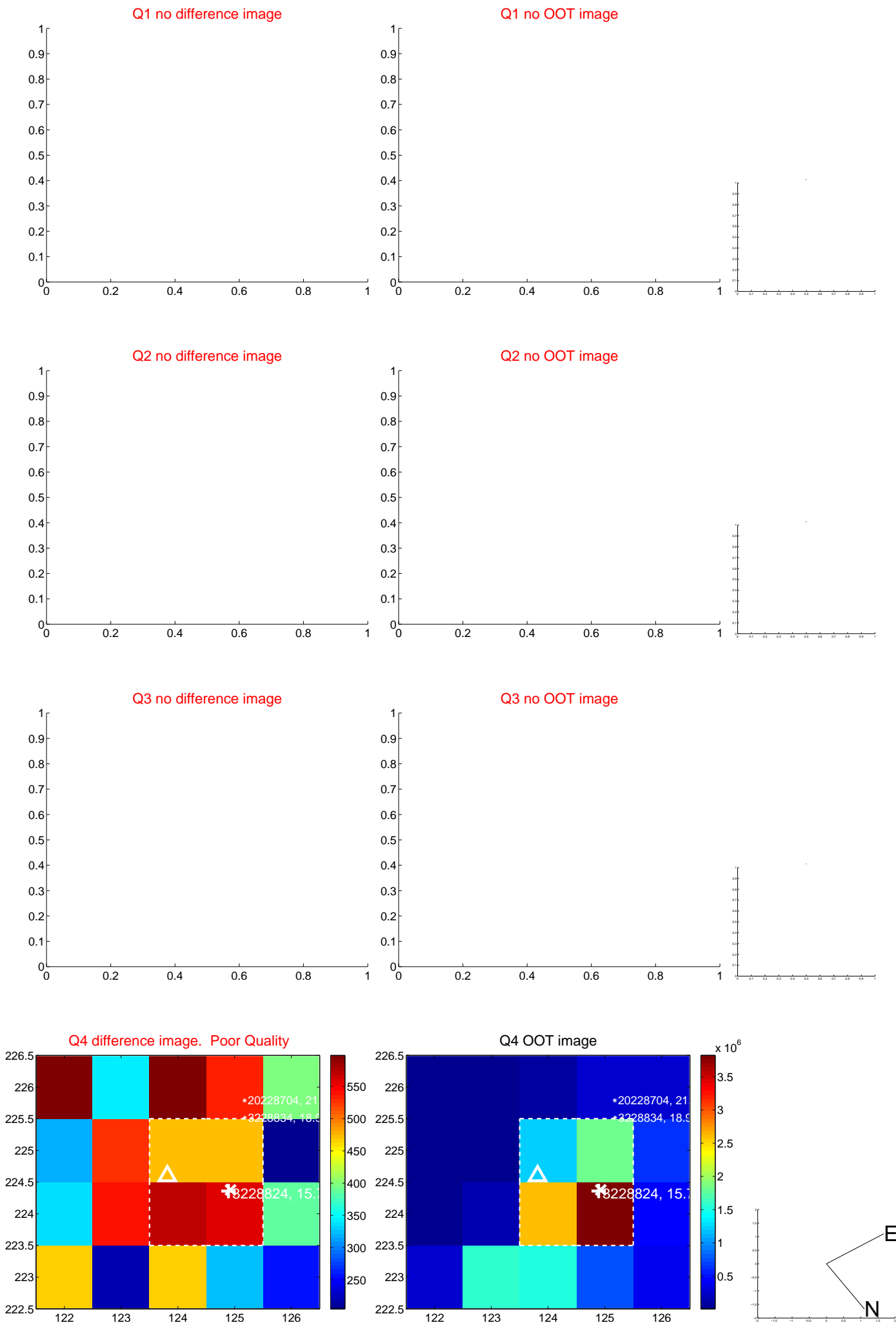
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.663 \pm 0.854$	1.95	$-1.384 \pm 0.721$	$-0.922 \pm 0.524$
PRF-fit source offset from KIC position	$2.130 \pm 0.480$	4.44	$-1.985 \pm 0.375$	$-0.771 \pm 0.484$
photometric centroid source offset	$2.14 \pm 1.09$	1.96	$2.10 \pm 1.10$	$0.43 \pm 0.96$

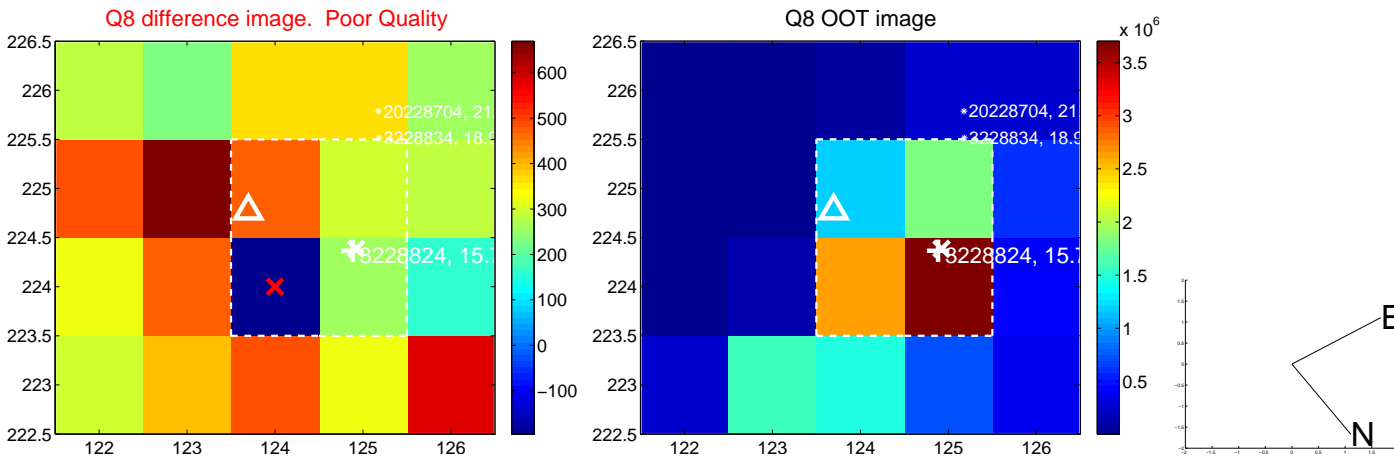
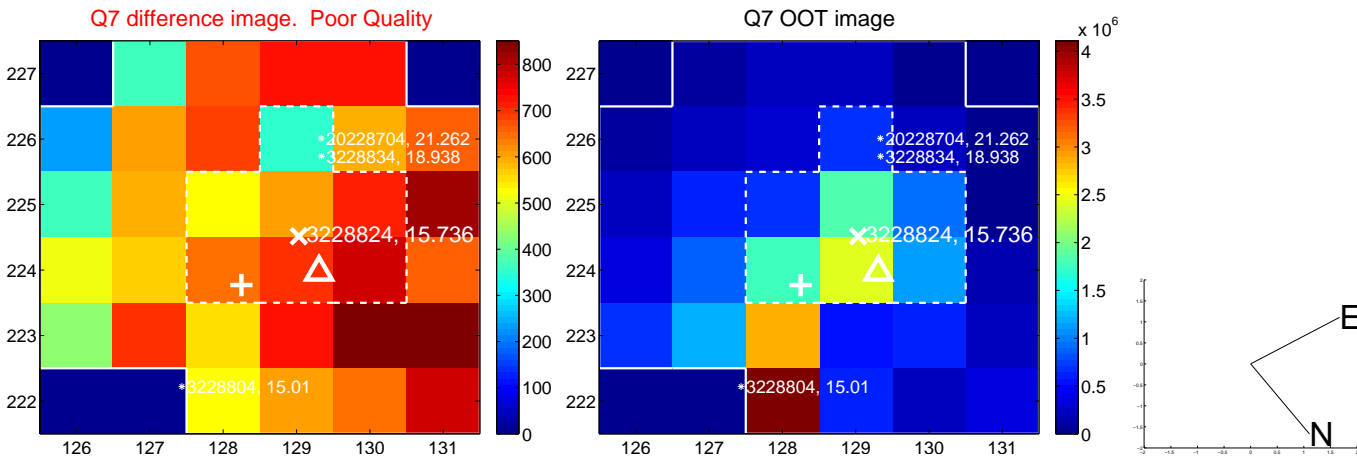
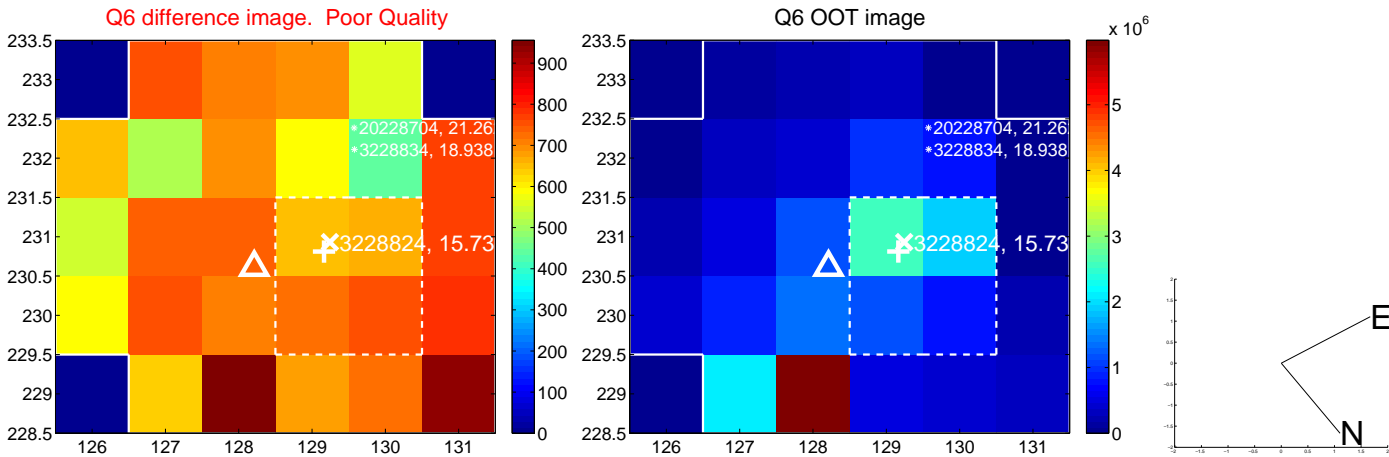
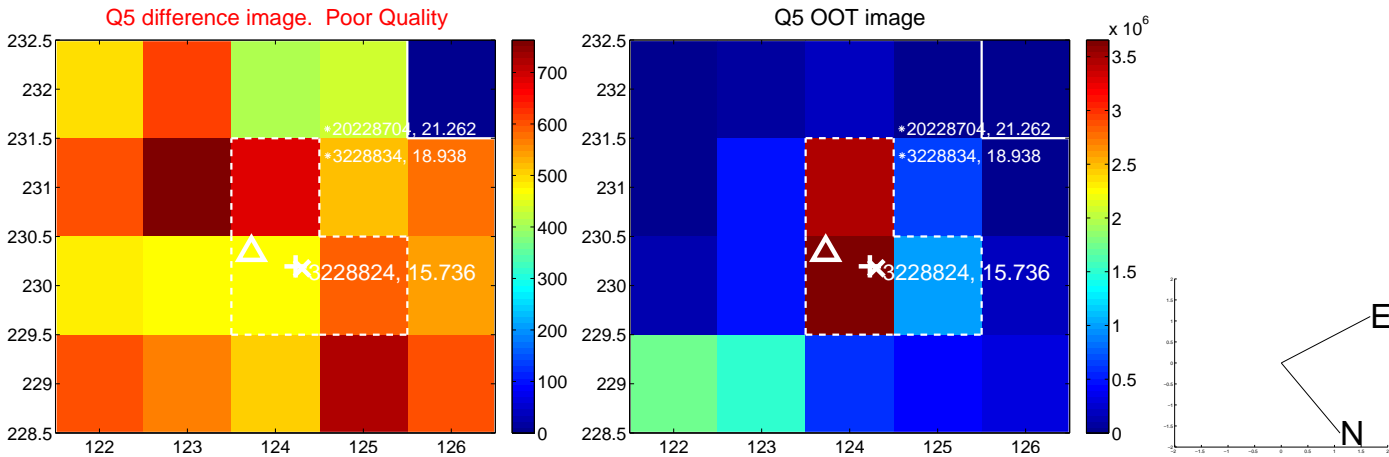


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

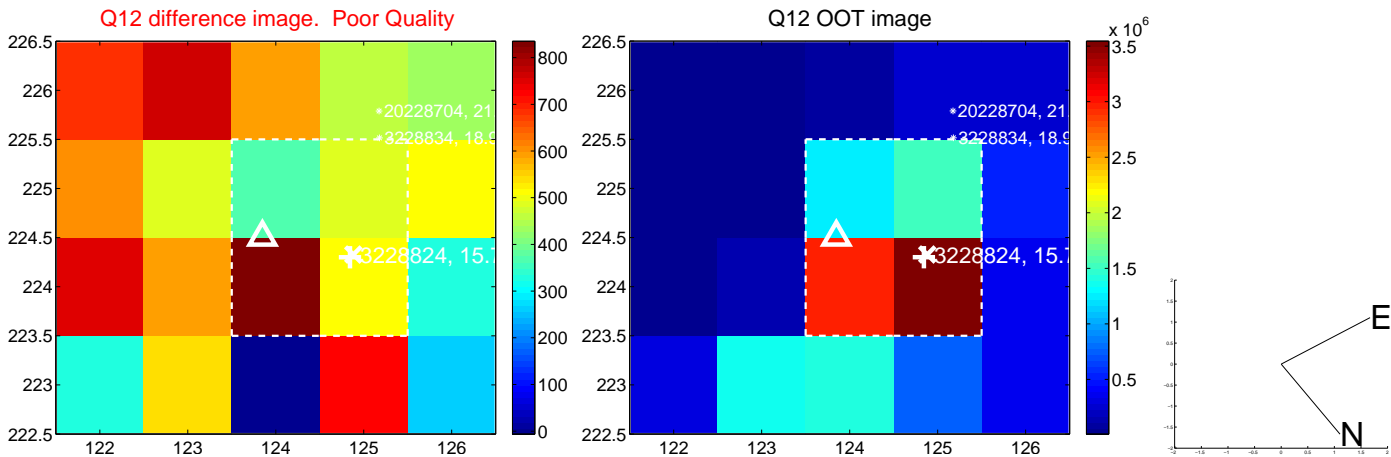
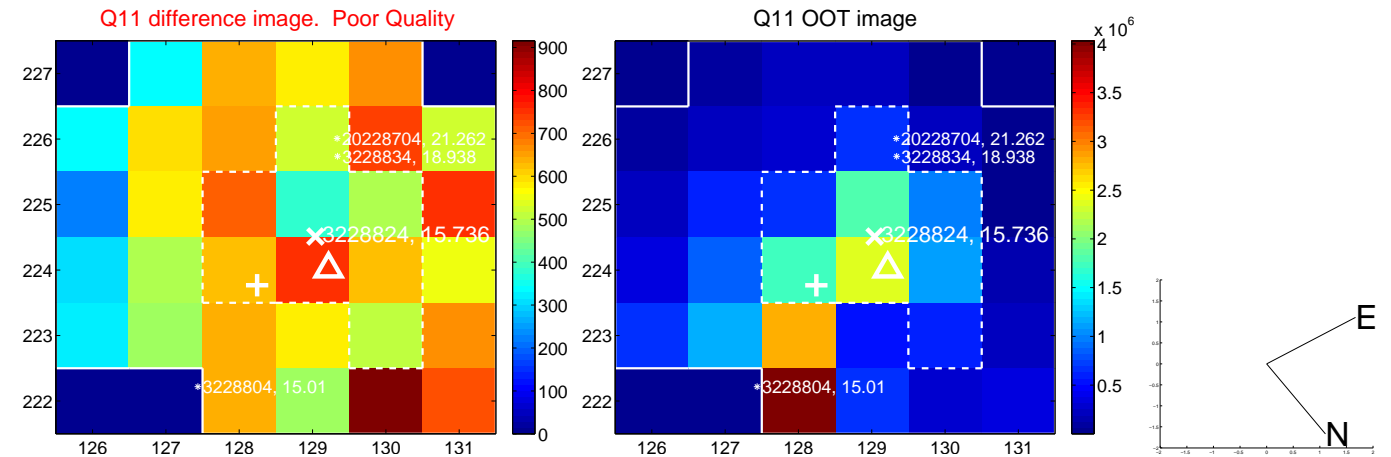
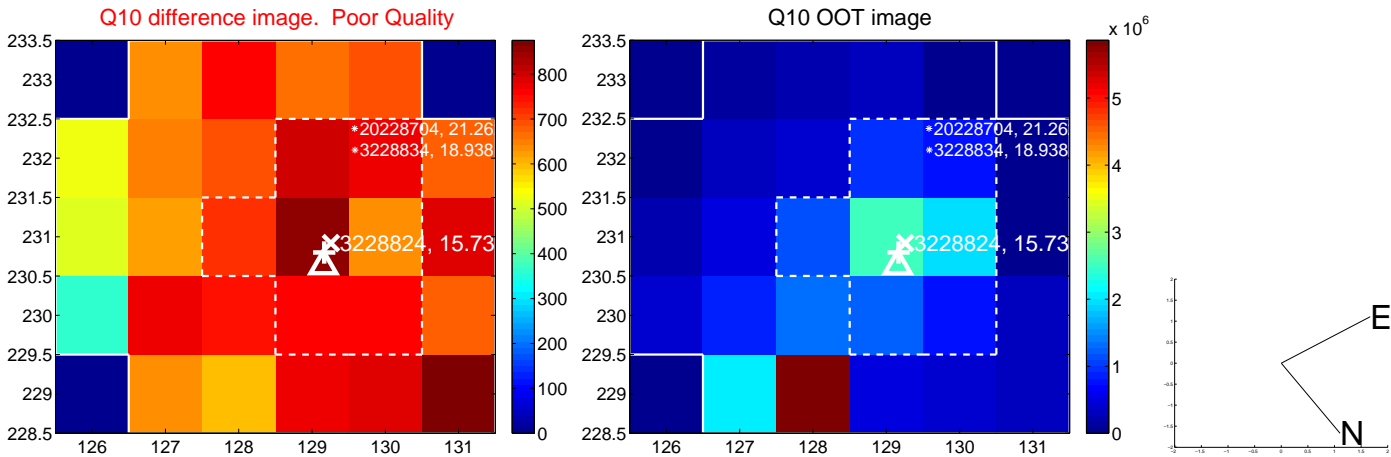
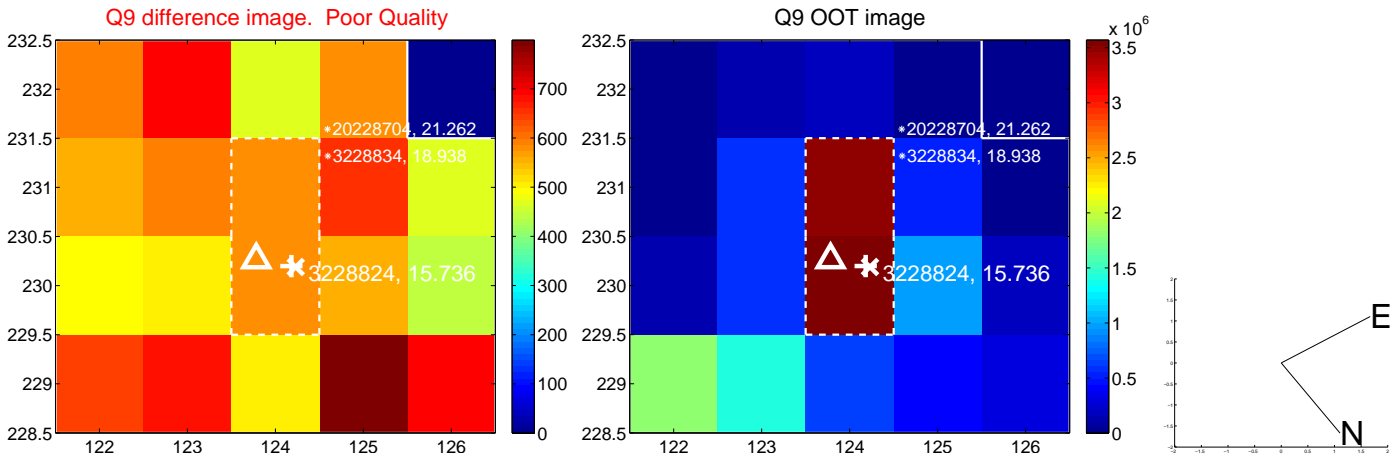


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

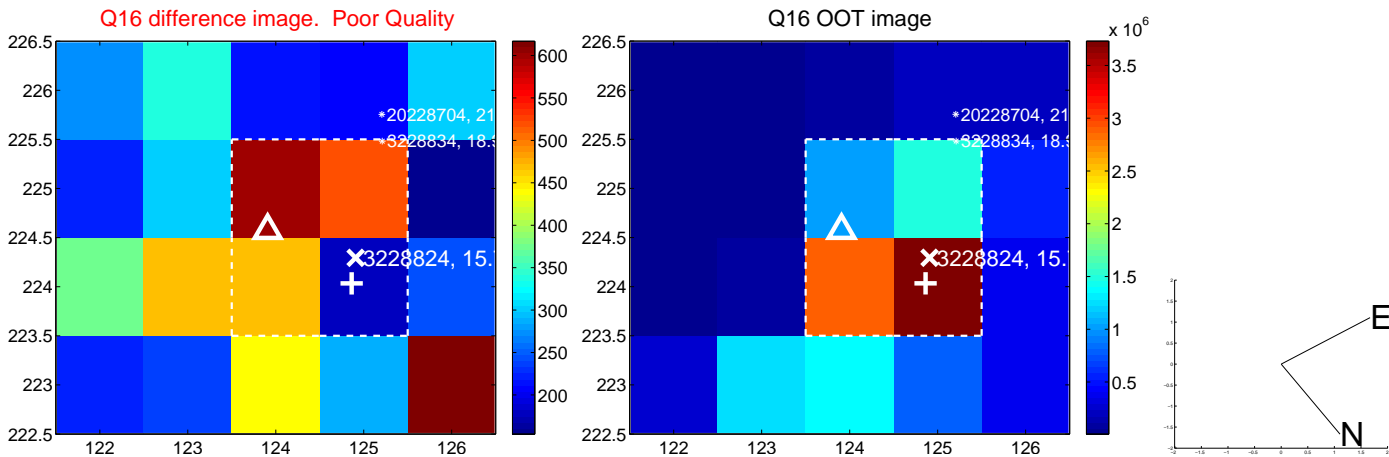
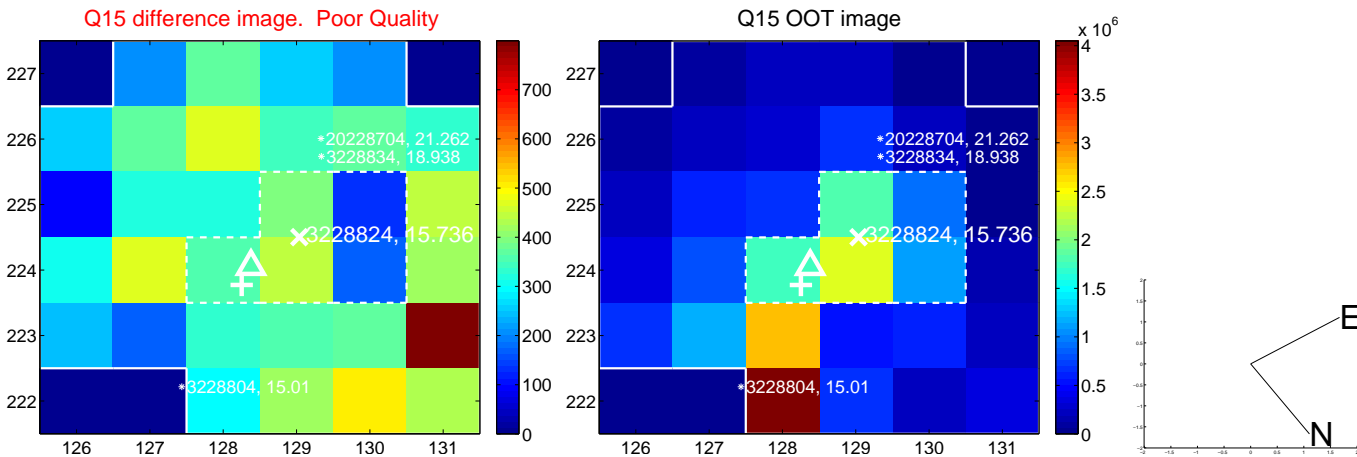
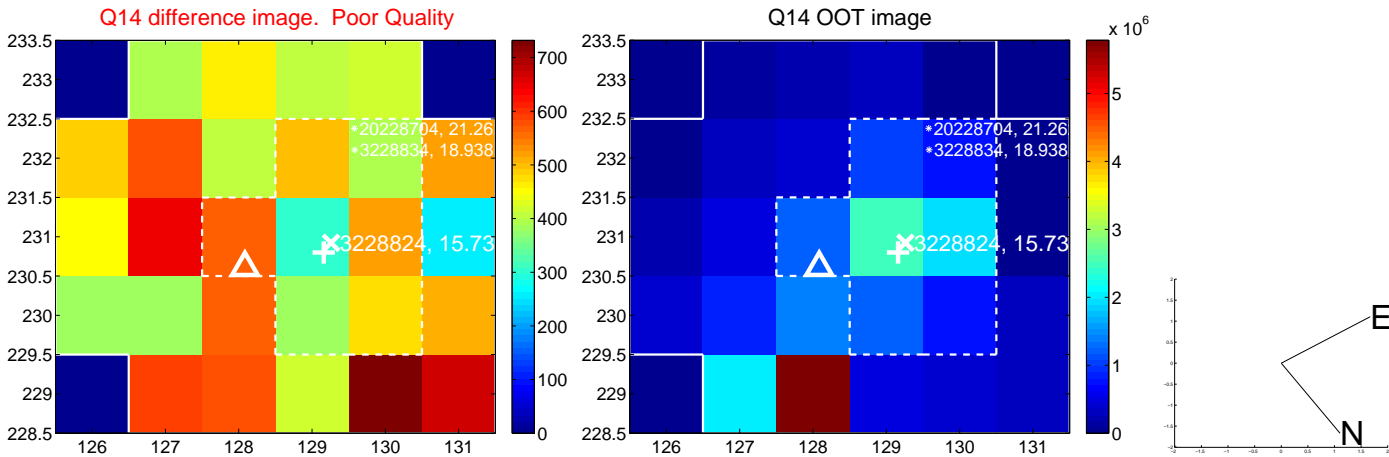
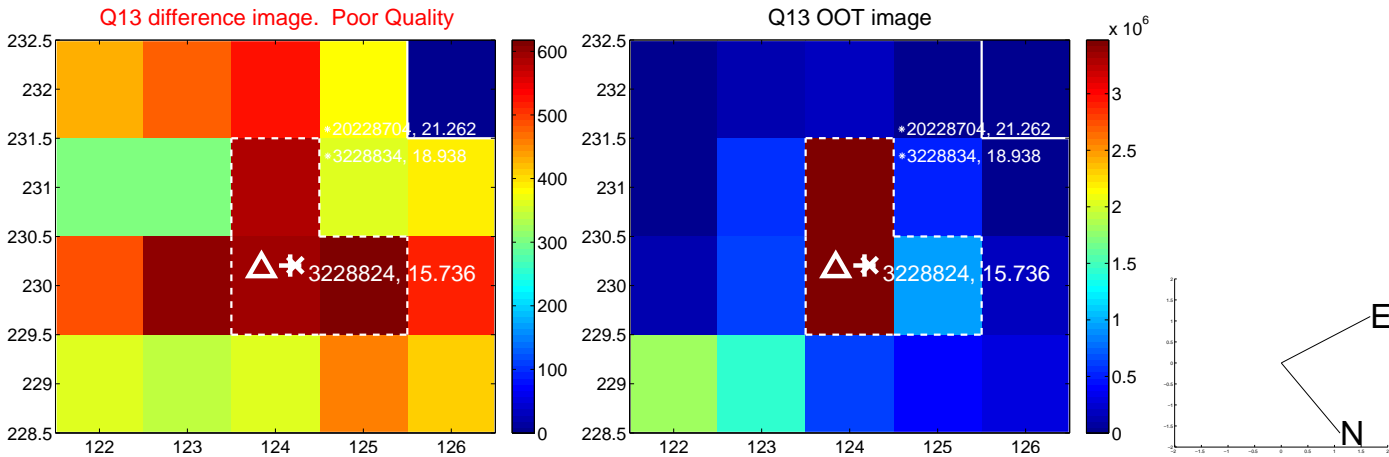




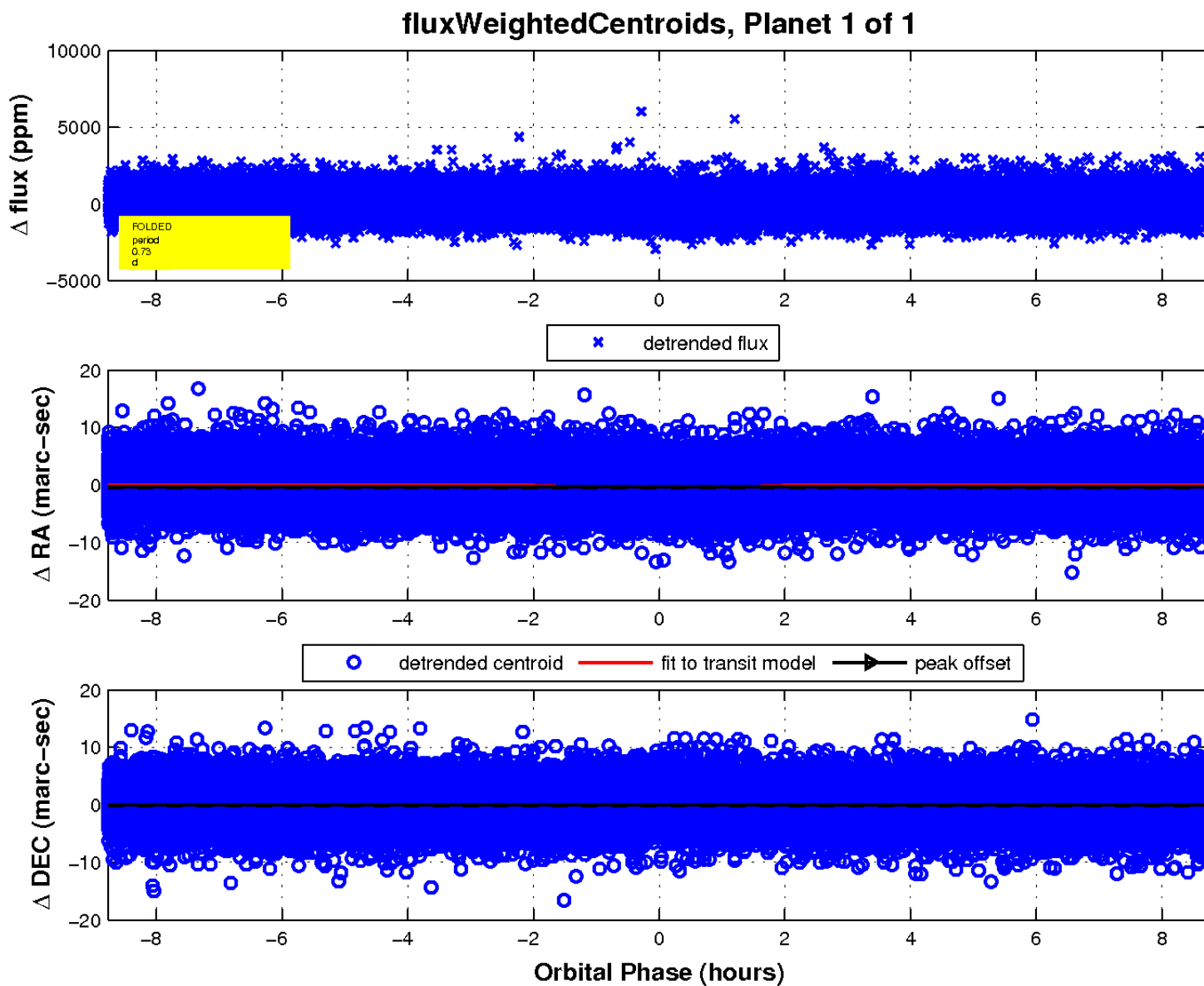
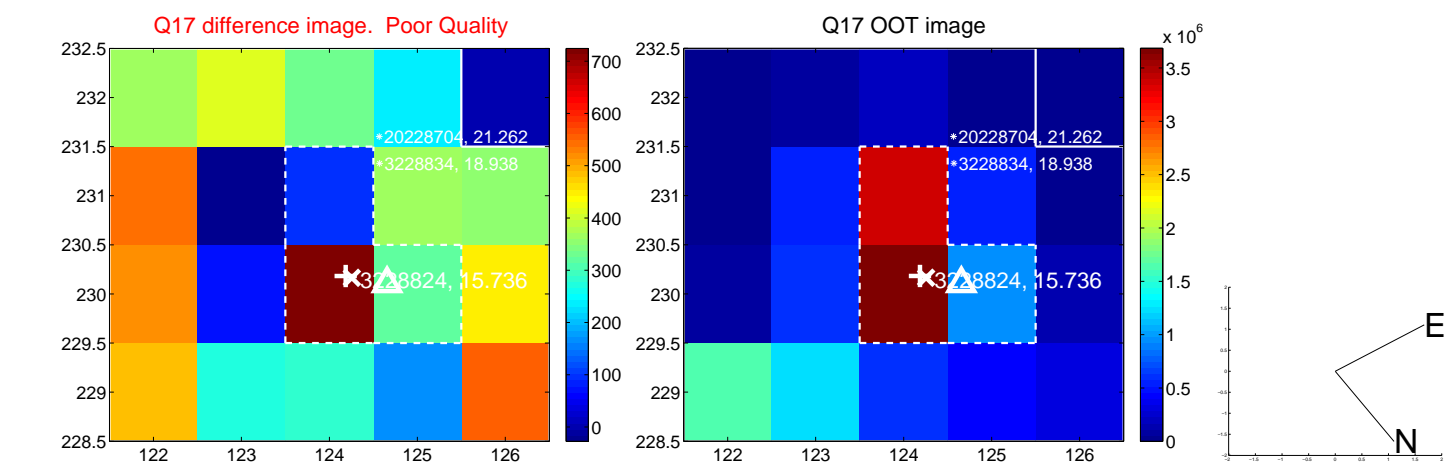
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

