

KIC 004769824

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})
004769824-01	OBS	6452.01	21.926553	135.570039	255.6	11.854	8.9	9.2	0.87	5853	2.74	34.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004769824-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—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 for comment definitions.

Ephemeris Match Information For 004769824-01

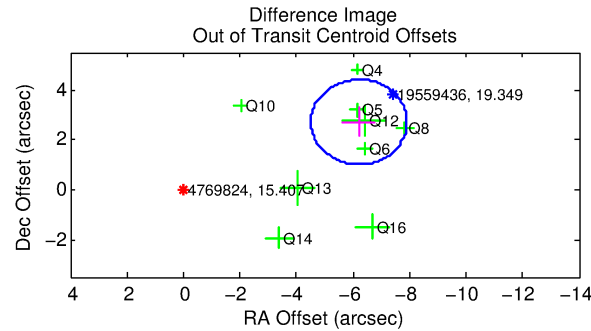
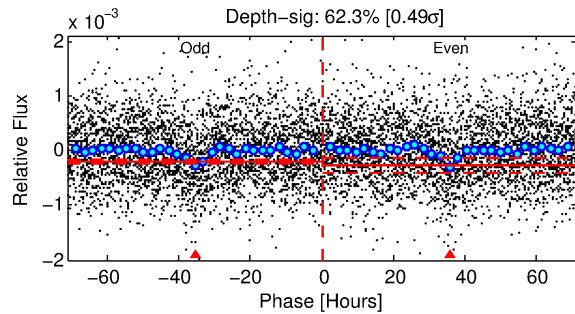
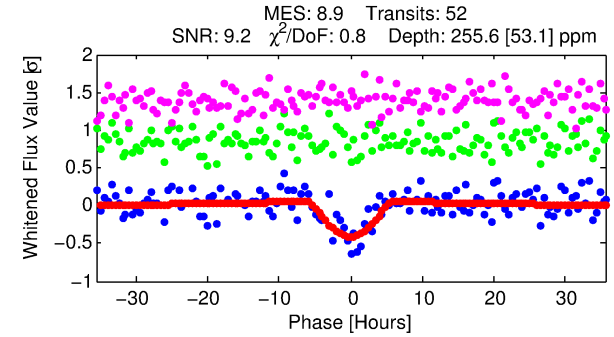
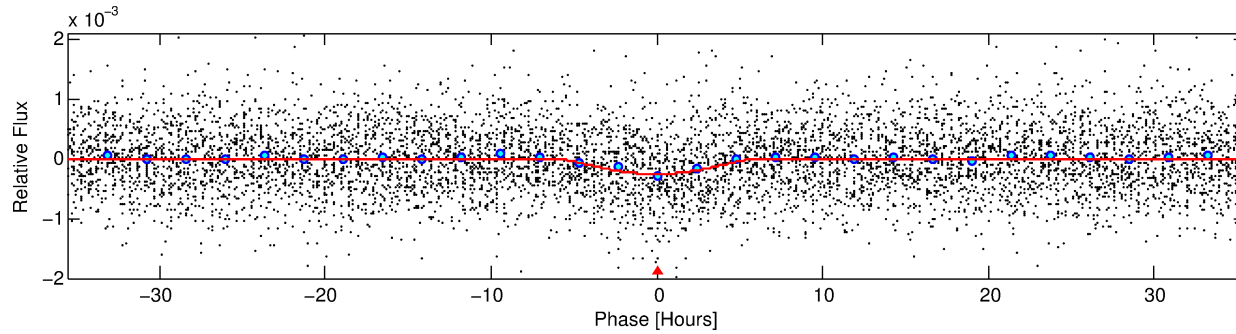
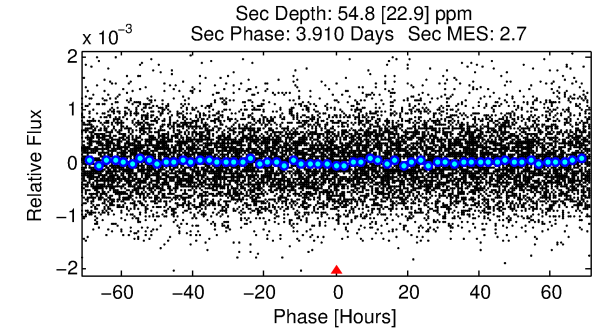
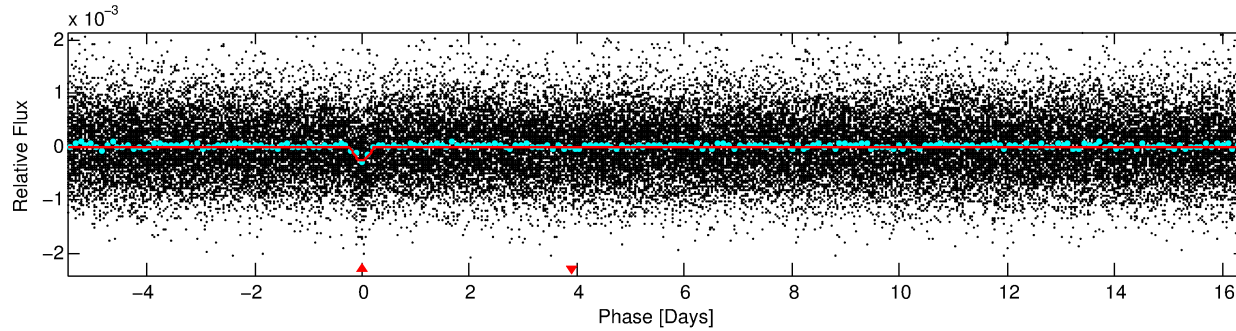
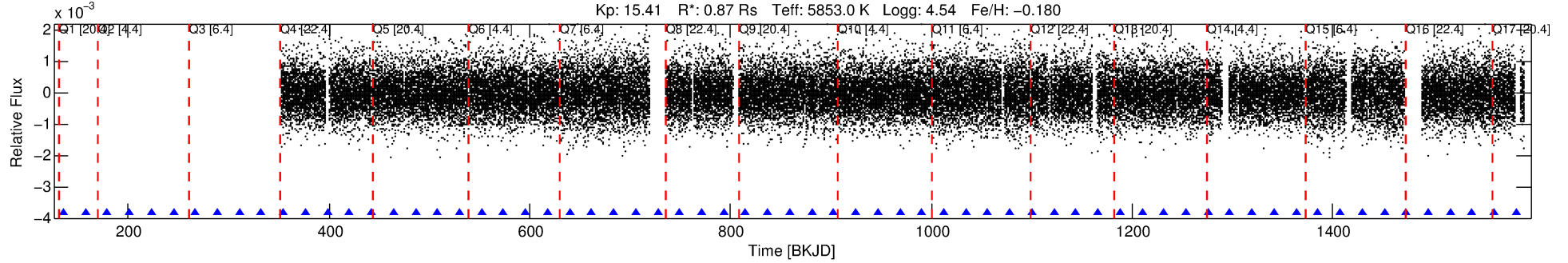
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004769824-01	4769824	5086.01	4769799	1:1	22.7	-6	1	10.95	15.41	91.84	Direct-PRF	0	2.83	1.24

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4769824 Candidate: 1 of 1 Period: 21.927 d
KOI: K06452 Corr: No Ephemeris Match

Kp: 15.41 R*: 0.87 Rs Teff: 5853.0 K Logg: 4.54 Fe/H: -0.180



DV Fit Results:

Period = 21.92655 [0.00089] d
Epoch = 135.5700 [0.0363] BKJD
Rp/R* = 0.0289 [0.0955]
a/R* = 3.63 [2.95]
b = 1.00 [0.15]
Seff = 34.58 [13.10]
Teq = 618 [59] K
Rp = 2.74 [9.08] Re
a = 0.1514 [0.0368] AU
Ag = 92.06 [609.91] [0.15σ]
Teff = 2961 [4899] K [0.48σ]

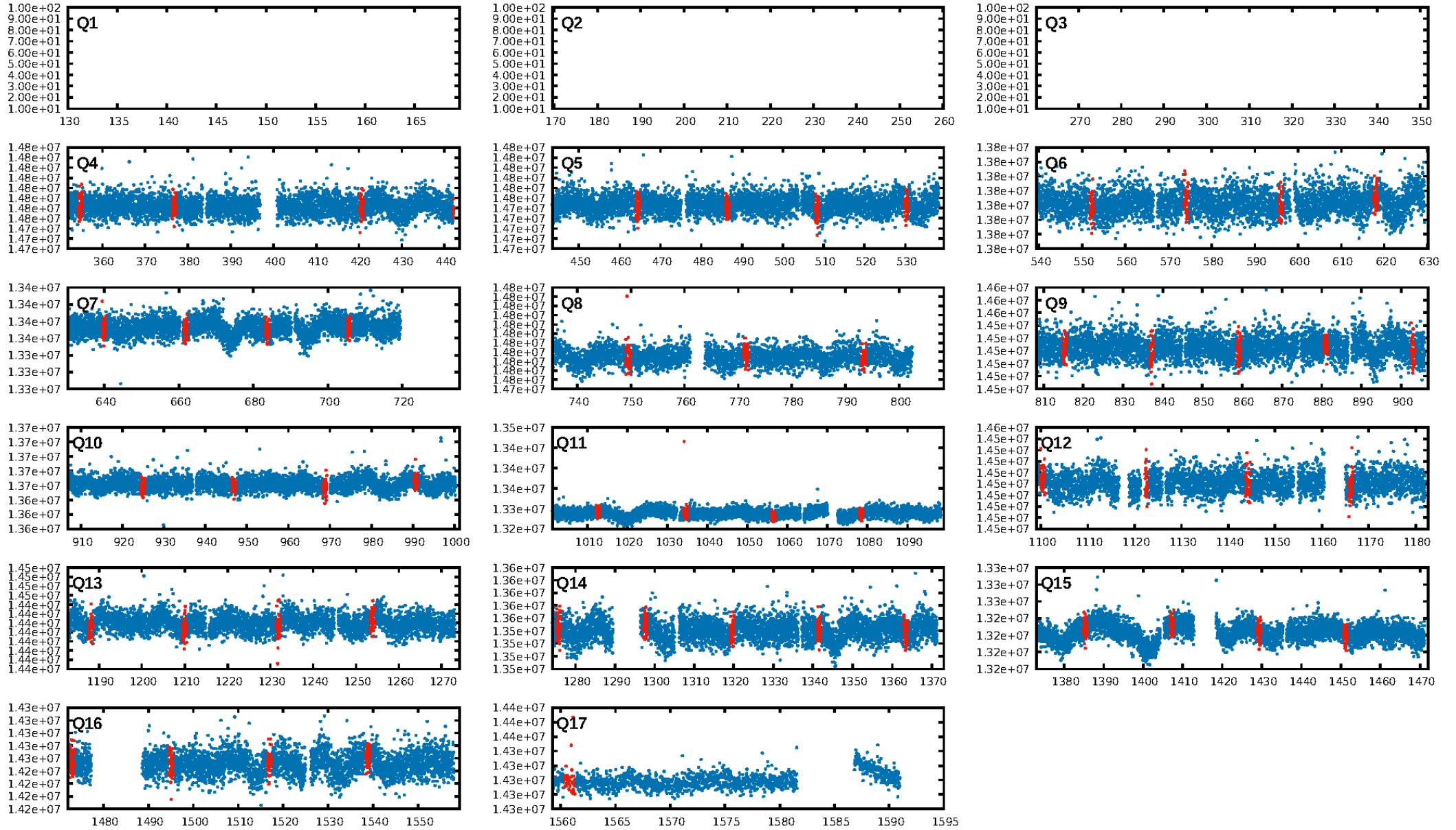
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 92.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.31e-19
RollingBand-fgt: 1.00 [51/51]
GhostDiagnostic-chr: -0.1238
Centroid-sig: 0.0%
Centroid-so: 10.433 arcsec [7.55σ]
OotOffset-rm: 6.770 arcsec [11.93σ]
KicOffset-rm: 6.711 arcsec [11.48σ]
OotOffset-st: 3/0/4/2 [9]
KicOffset-st: 3/0/4/2 [9]
DiffImageQuality-fgm: 0.22 [2/9]
DiffImageOverlap-fno: 1.00 [13/13]

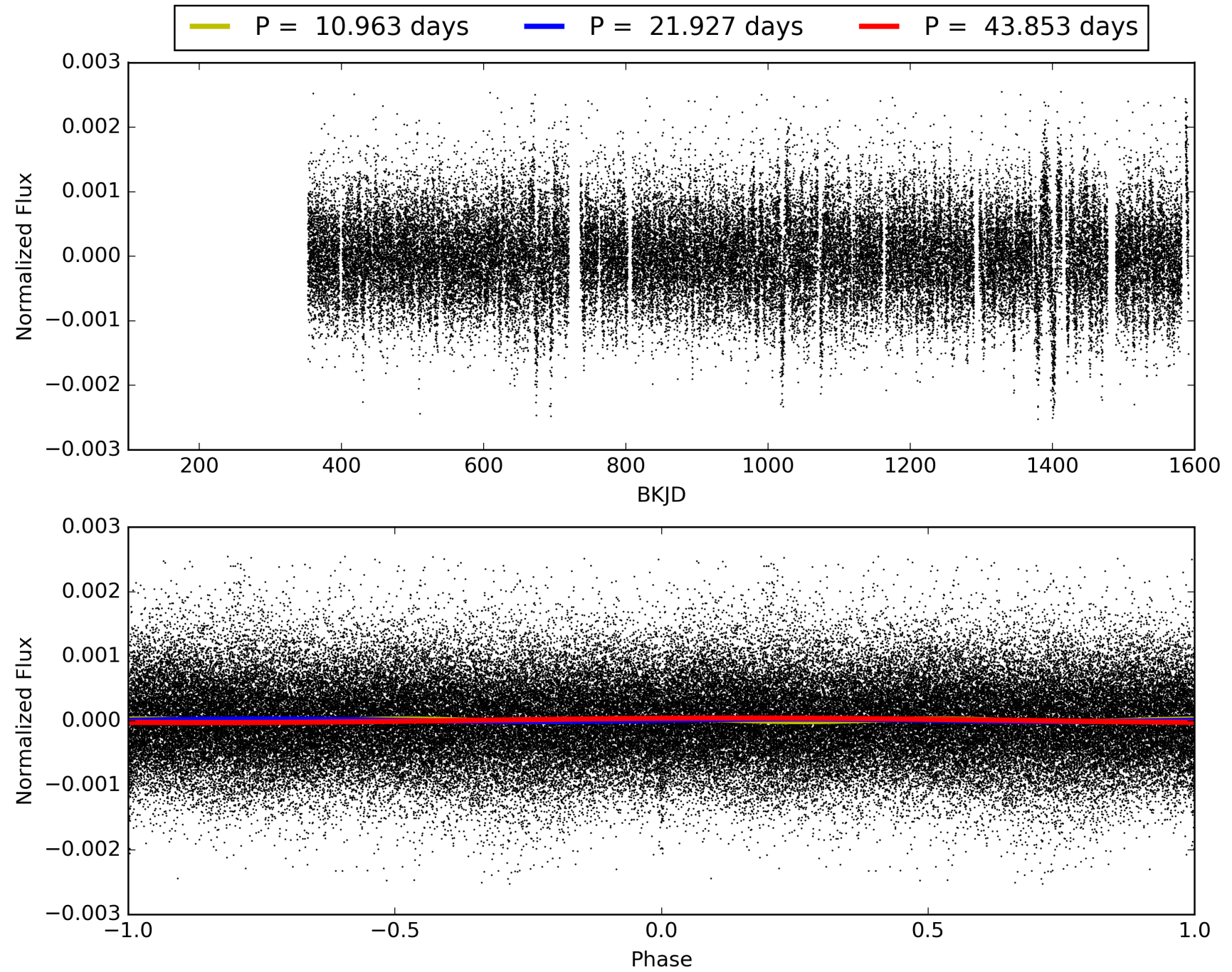
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:02:50 Z

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

TCE 004769824-01, PDC Light Curves

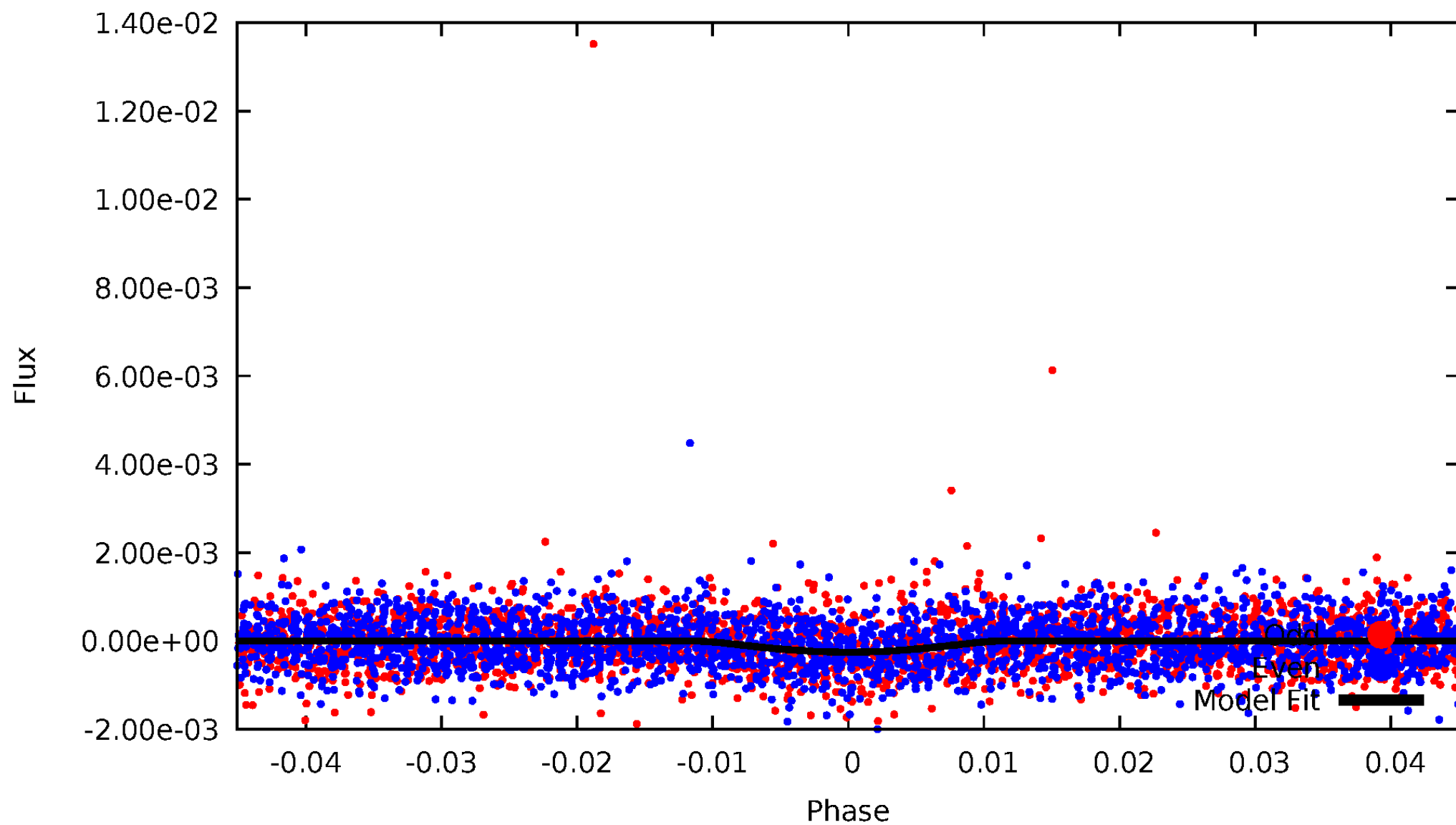


TCE 004769824-01



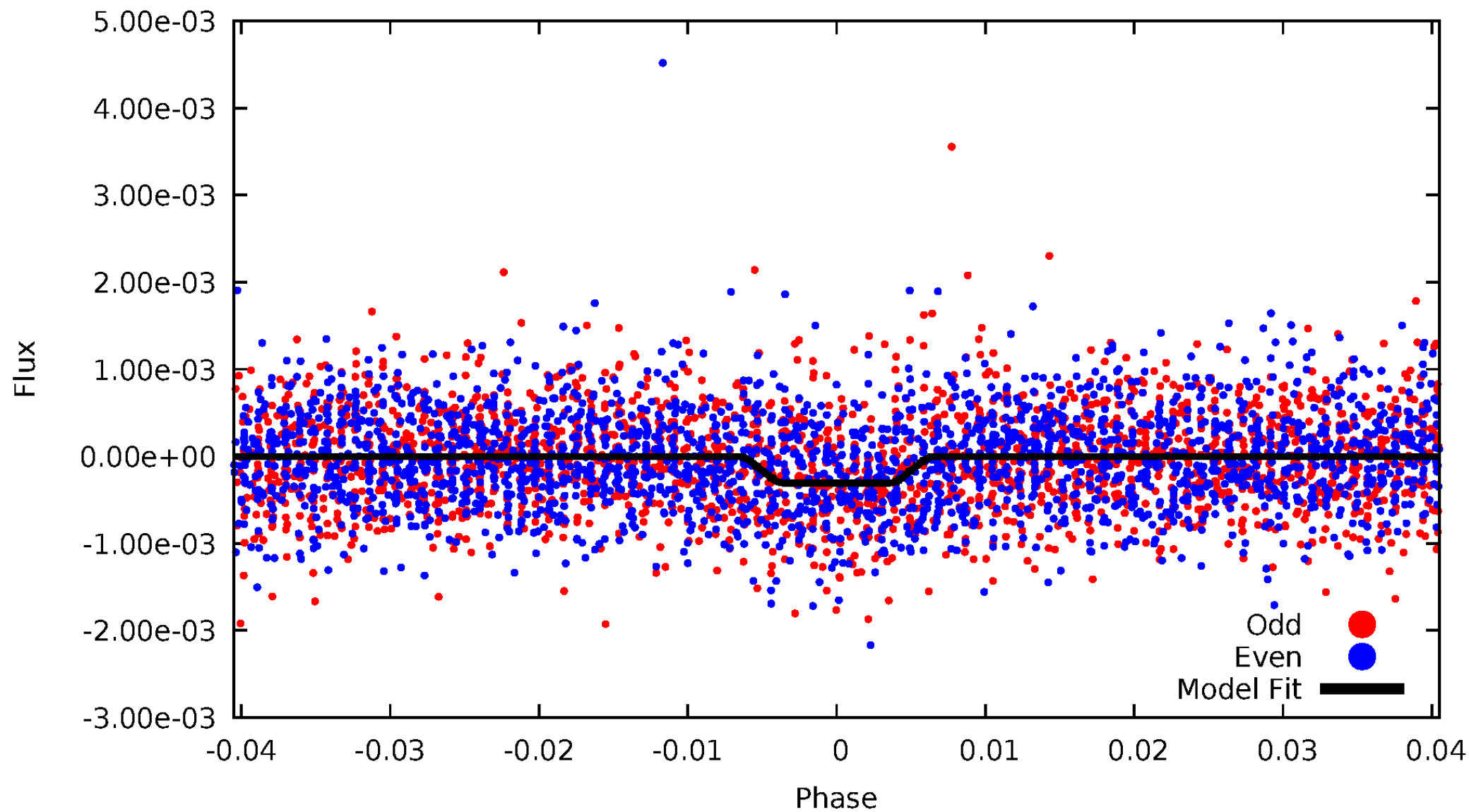
DV Odd/Even

TCE 004769824-01



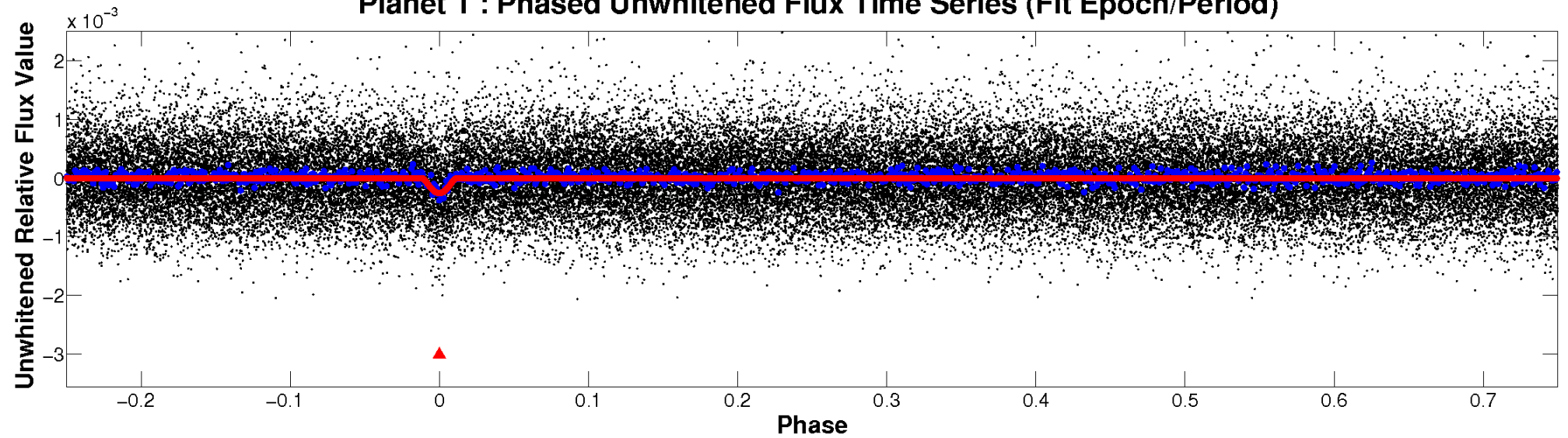
ALT Odd/Even

TCE 004769824-01

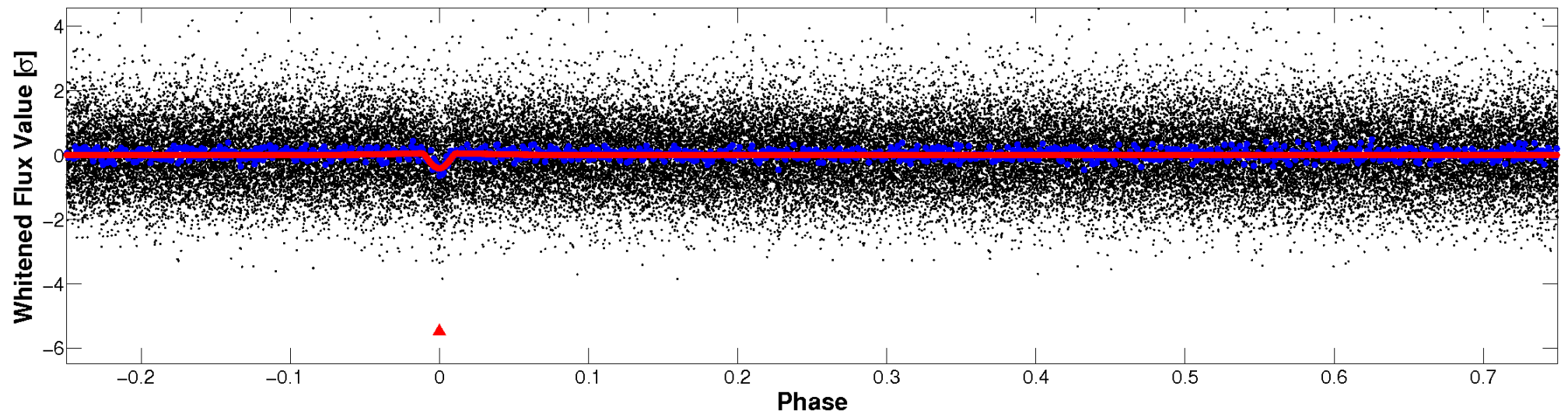


Non-Whitened Vs. Whitened Light Curve

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

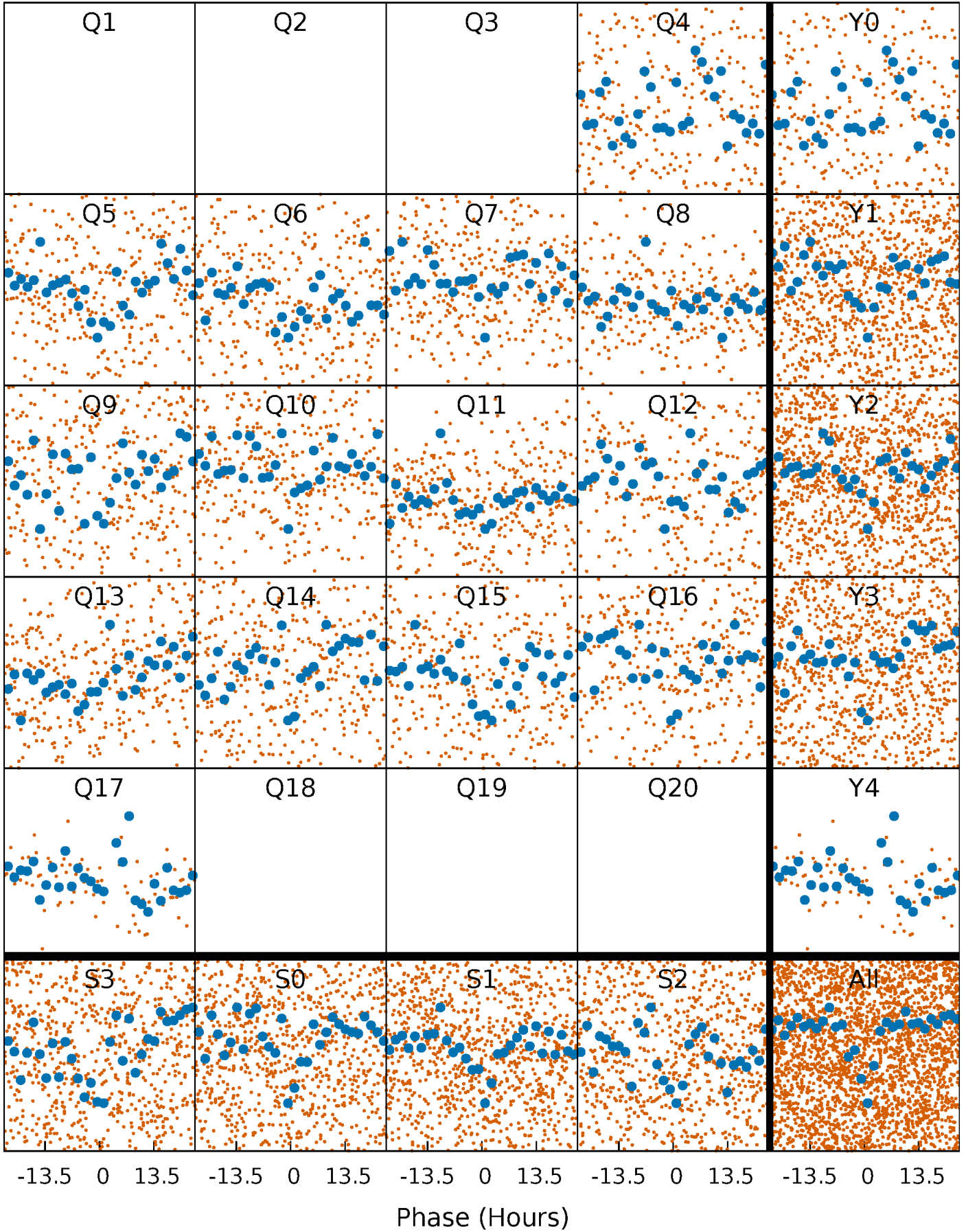


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



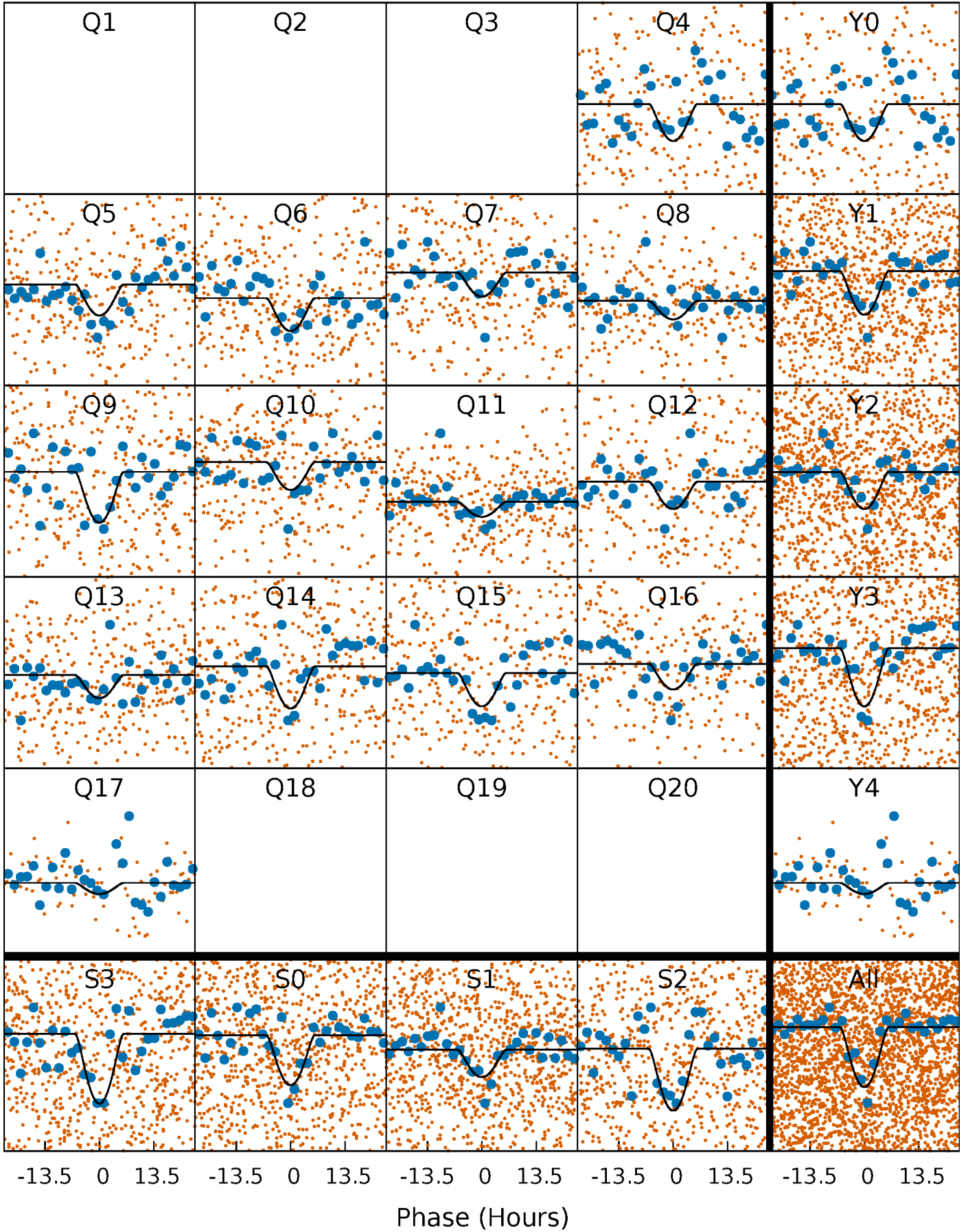
PDC Quarter-Phased Transit Curves

TCE 004769824-01 P= 21.926553 Days $T_0=135.570039$ (BKJD)



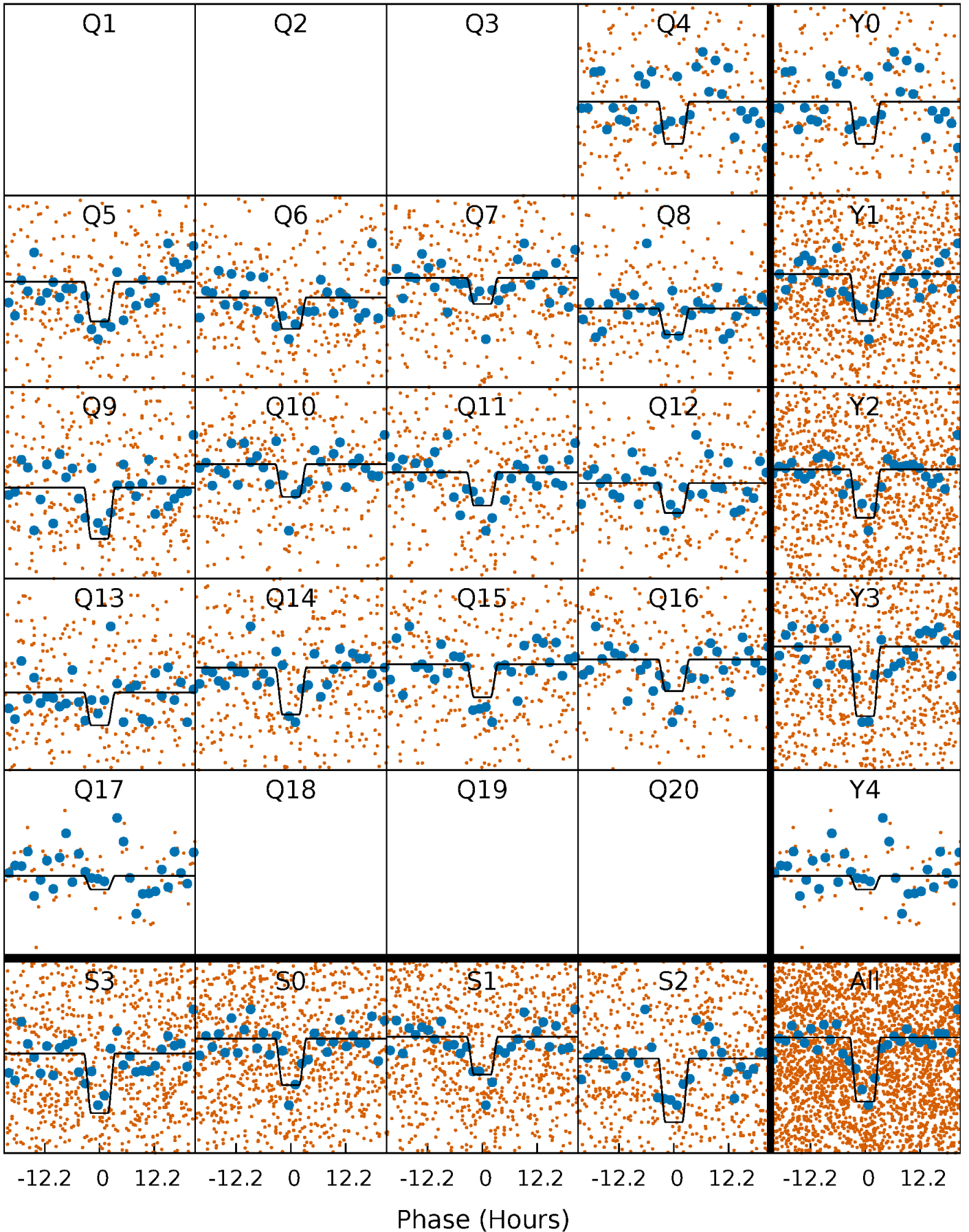
DV Quarter-Phased Transit Curves

TCE 004769824-01 P= 21.926553 Days $T_0=135.570039$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

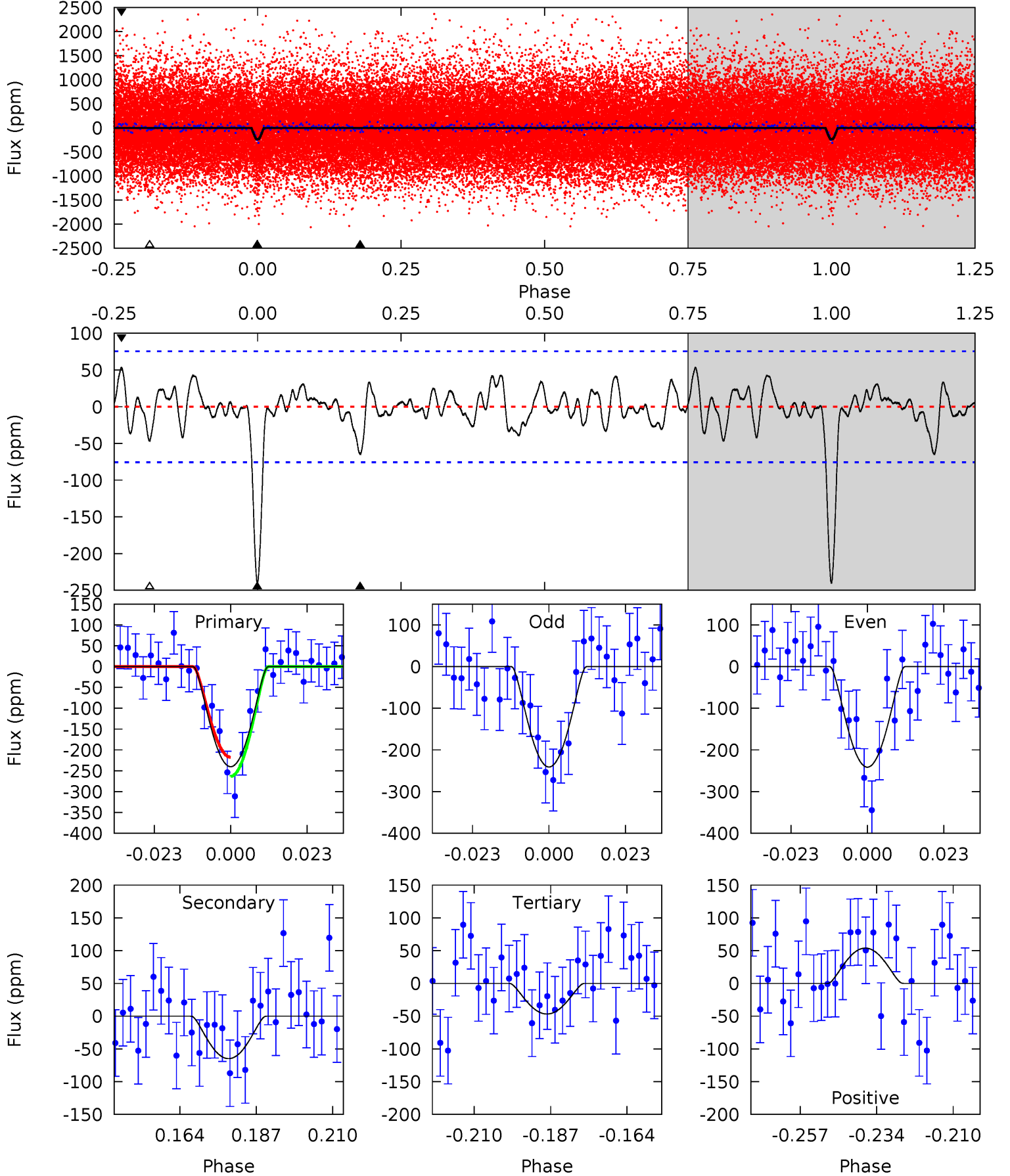
TCE 004769824-01 P= 21.926462 Days $T_0=135.572671$ (BKJD)



DV Model-Shift Uniqueness Test

004769824-01, P = 21.926553 Days, E = 135.570039 Days

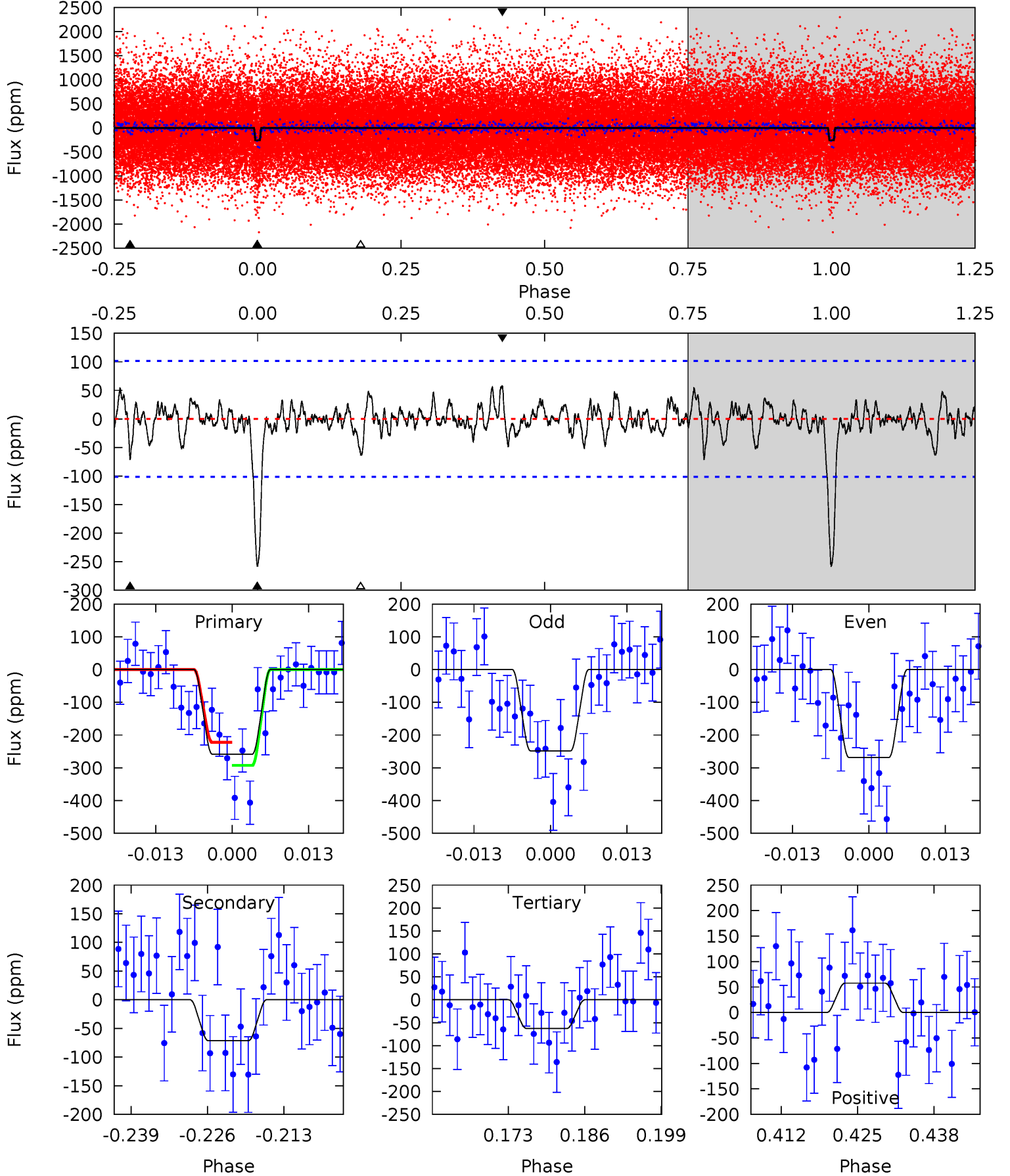
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	4.17	3.01	3.46	4.86	2.27	1.20	12.5	12.0	1.16	0.71	0.01	0.98	0.18	1.48



Alt Model-Shift Uniqueness Test

004769824-01, P = 21.926462 Days, E = 135.572671 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	3.50	3.08	2.82	4.97	2.48	0.95	9.59	9.84	0.43	0.68	0.49	0.94	0.18	1.73



Stellar Parameters For KIC 004769824

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5853^{+182}_{-203}	$4.544^{+0.036}_{-0.192}$	$-0.180^{+0.300}_{-0.300}$	$0.868^{+0.252}_{-0.084}$	$0.961^{+0.108}_{-0.120}$	$2.069^{+0.395}_{-1.040}$
	+3%/-3%	+1%/-4%	+167%/-167%	+29%/-10%	+11%/-12%	+19%/-50%
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 004769824-01 / KOI 6452.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-65 ± 16	$7.71^{+7.97}_{-5.20}$	892^{+62}_{-47}	2647^{+1122}_{-410}	13^{+118}_{-10}
Alt.	-71 ± 20	$7.58^{+7.02}_{-5.31}$	886^{+56}_{-43}	2725^{+1171}_{-433}	16^{+150}_{-12}

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

DV Centroid Data

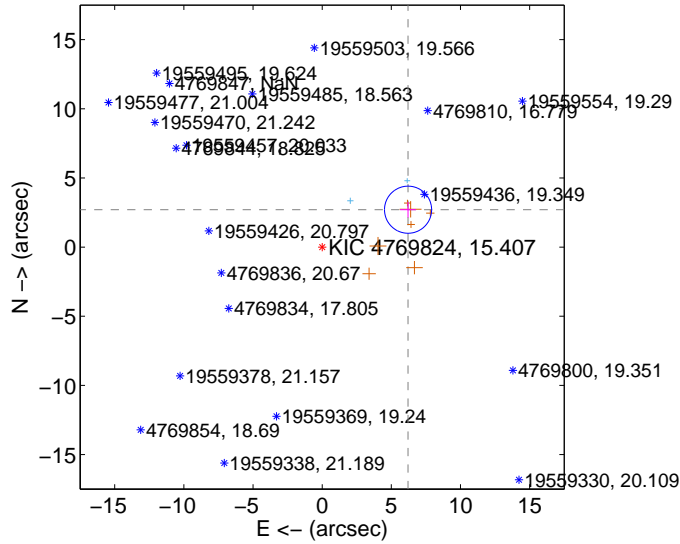
Supplemental centroid analysis for 004769824-01. Kepler magnitude: 15.41. Transit SNR 9.25

There are 2 quarters with good PRF difference image offsets

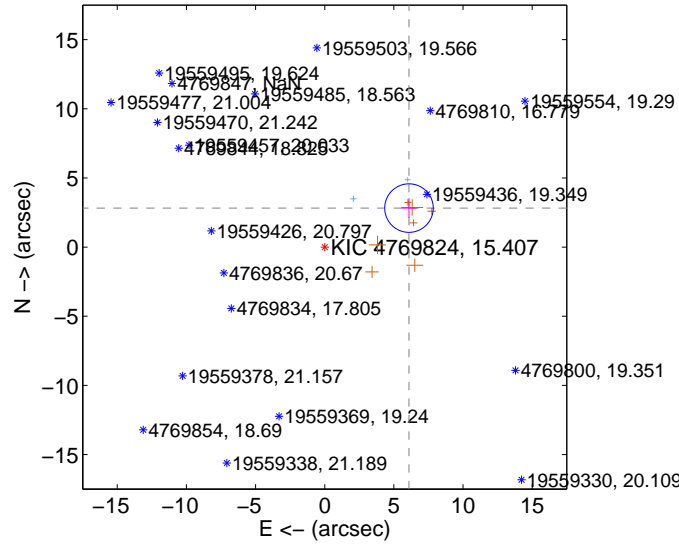
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.770 ± 0.567	11.93	-6.207 ± 0.577	2.703 ± 0.564
PRF-fit source offset from KIC position	6.711 ± 0.585	11.48	-6.090 ± 0.542	2.820 ± 0.709
photometric centroid source offset	10.43 ± 1.38	7.55	-10.41 ± 1.38	0.69 ± 1.46

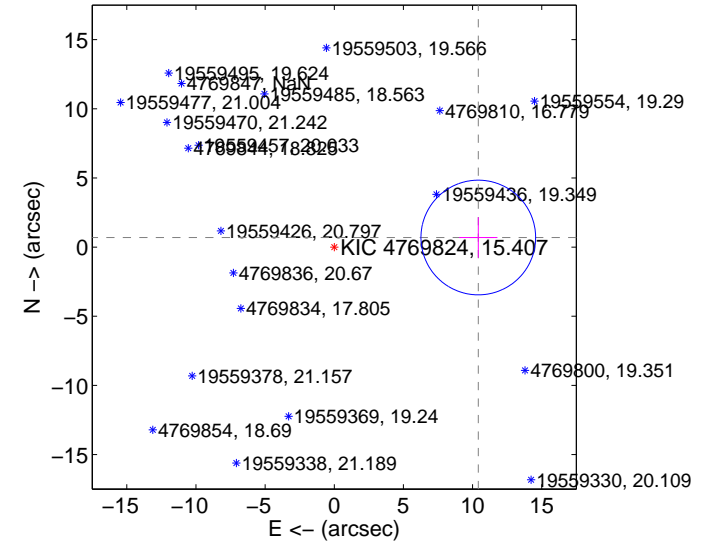
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

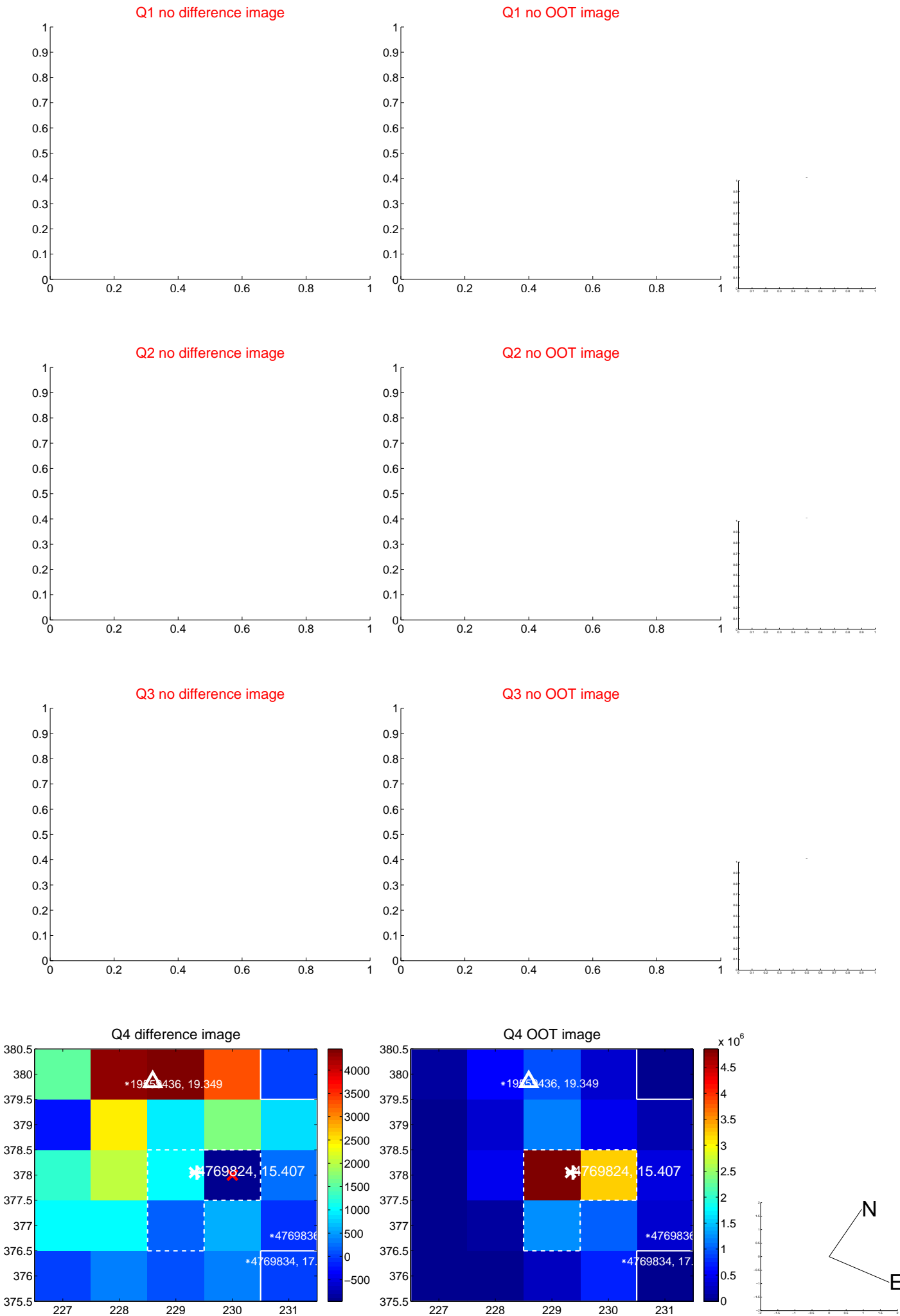


offset from photometric centroids

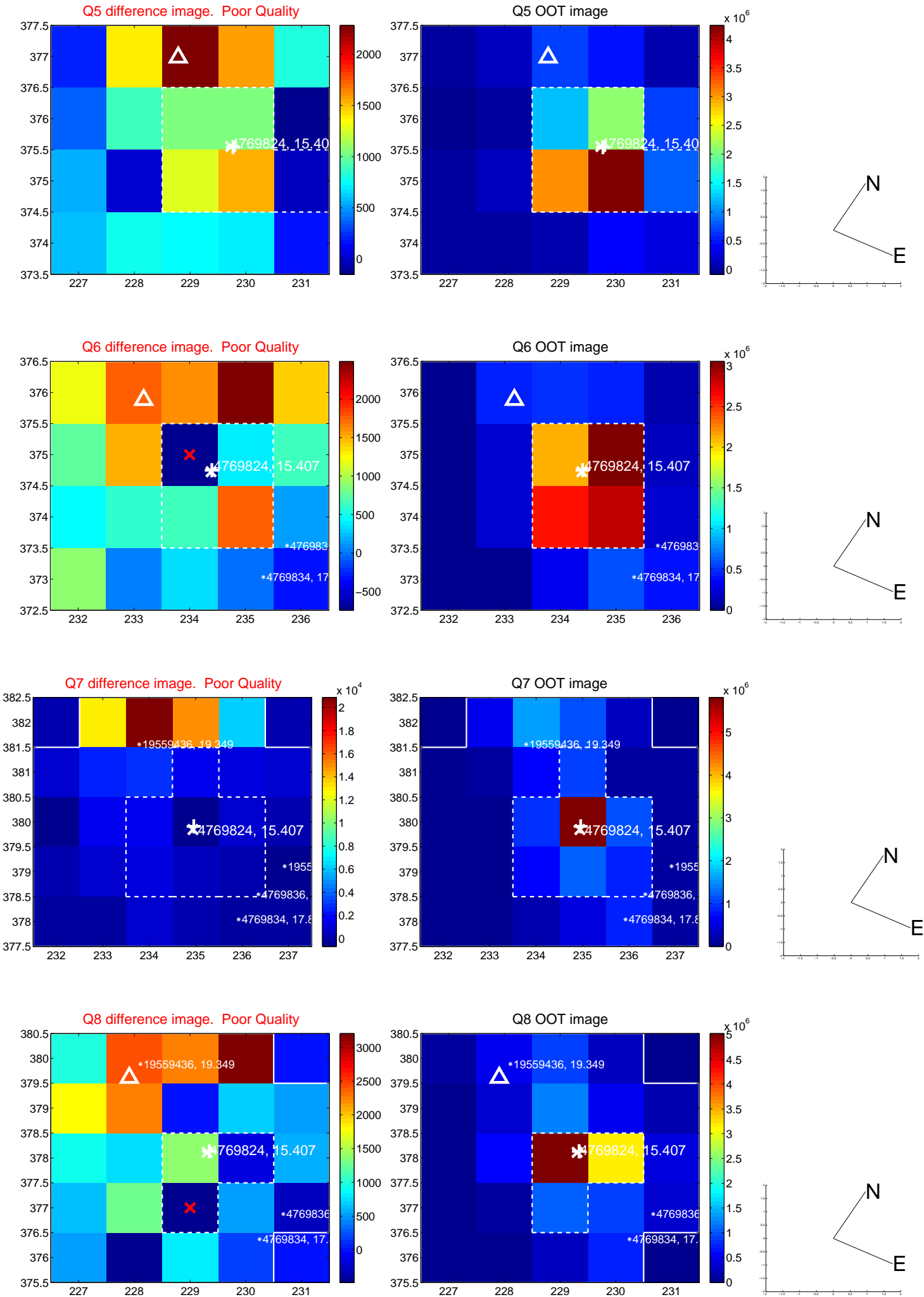


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

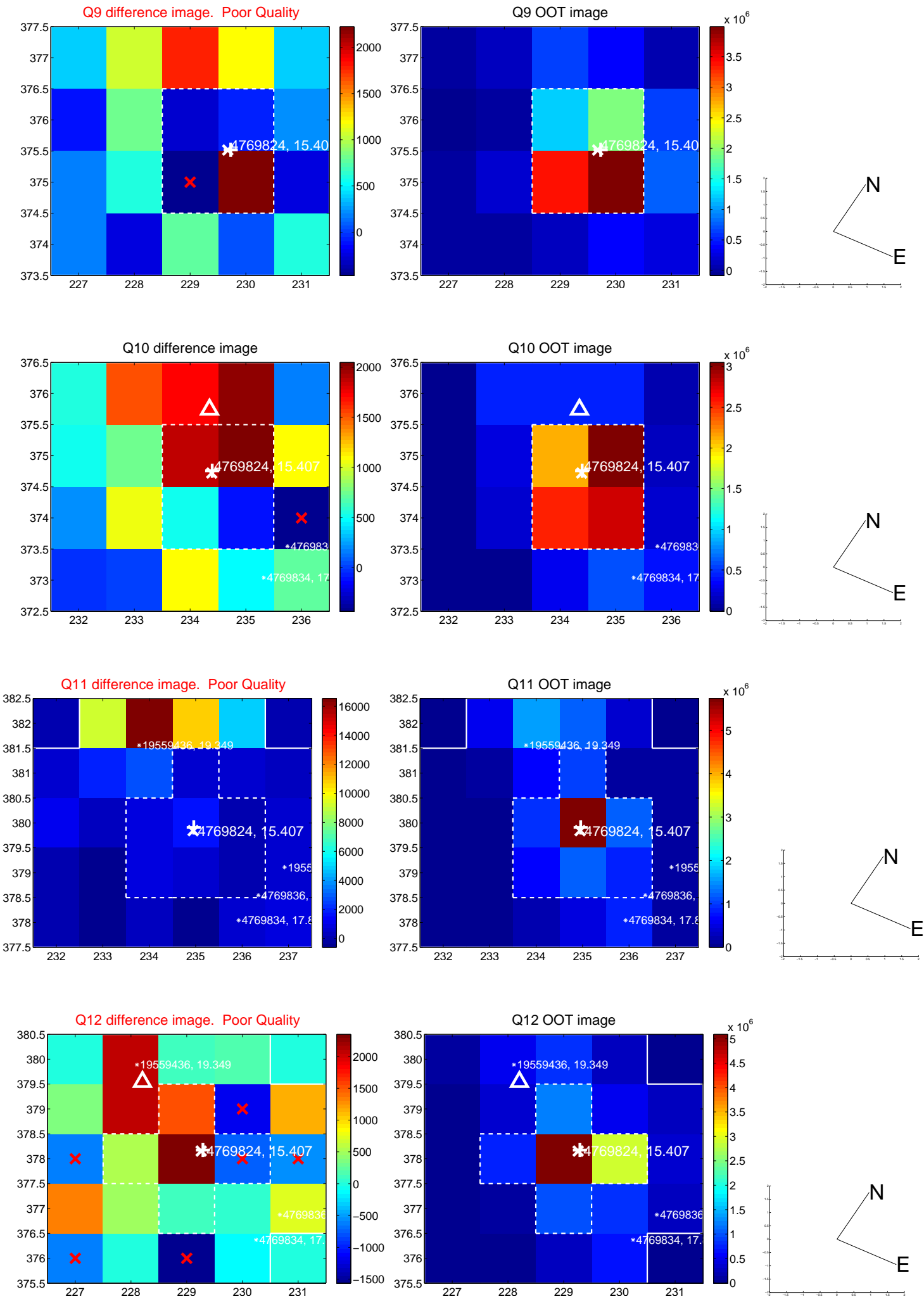
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



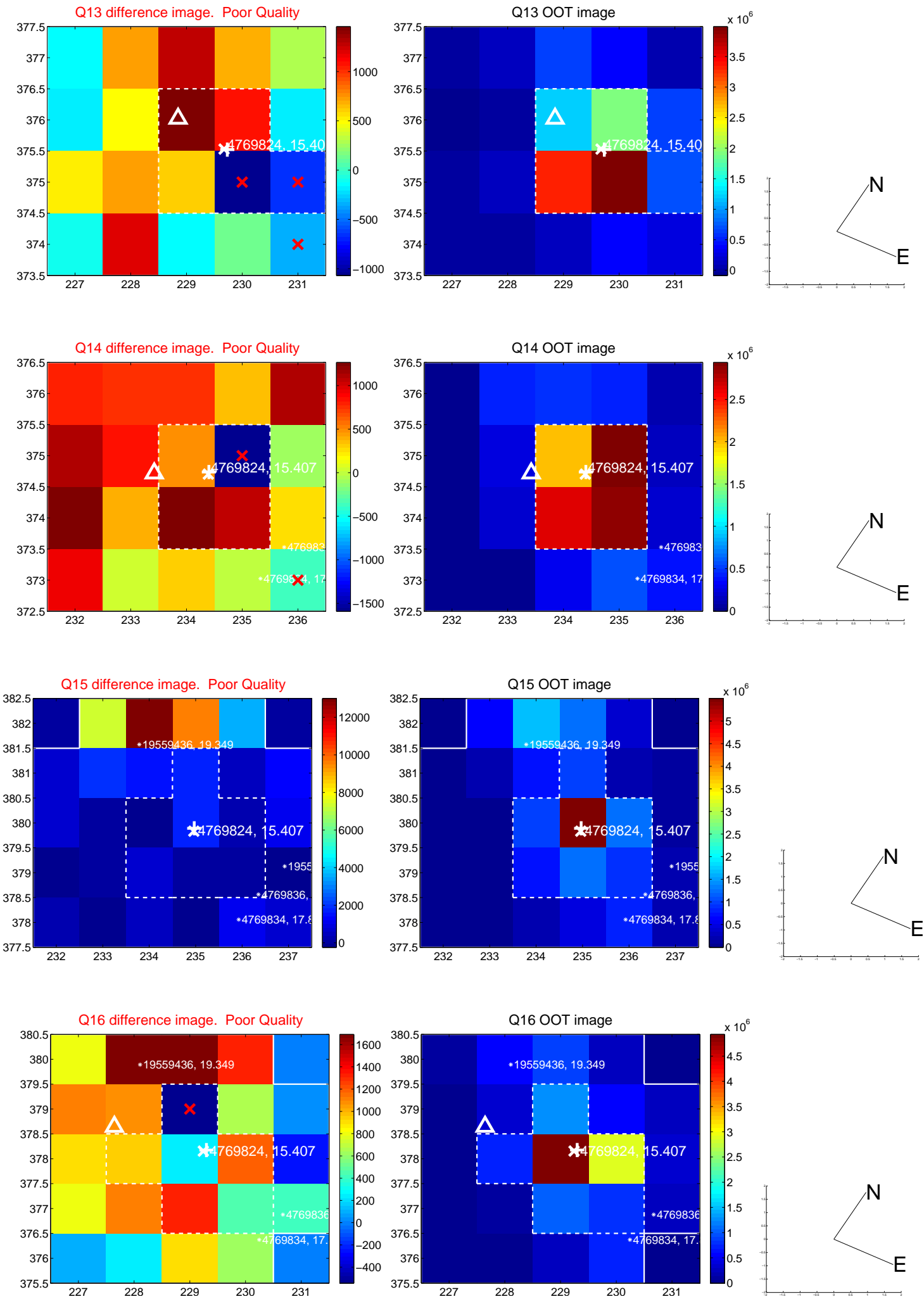
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



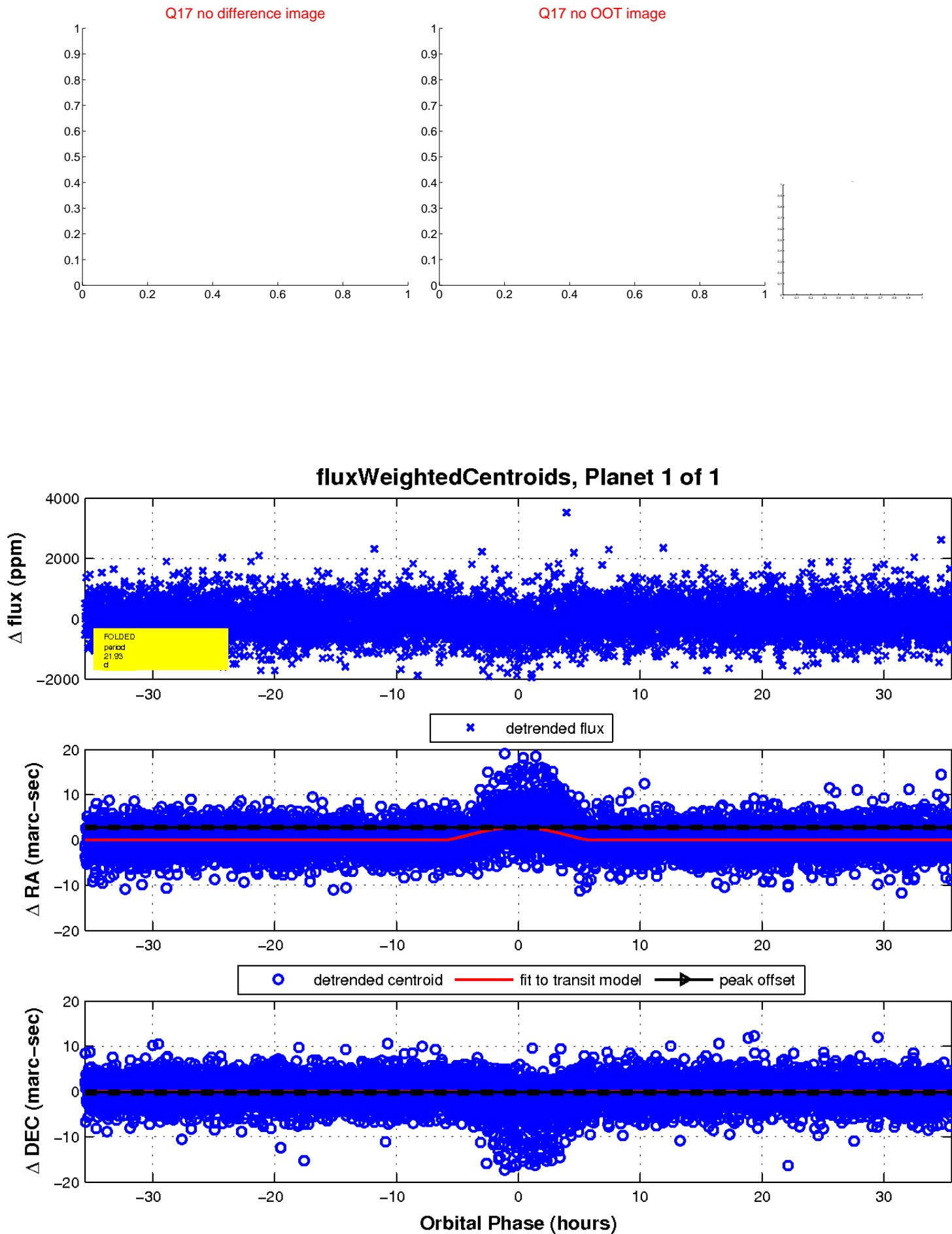
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

