

KIC 002437488

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})
002437488-01	OBS	3920.01	7.234930	134.586801	775.3	7.226	29.4	25.7	9.04	4735	37.07	5134.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002437488-01	OBS	FP	0.00	0	1	1	1	MOD_ODDEVEN_DV—CENT_RESOLVED_OFFSET—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 002437488-01

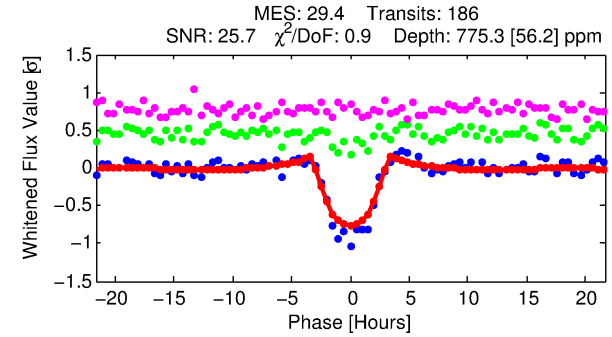
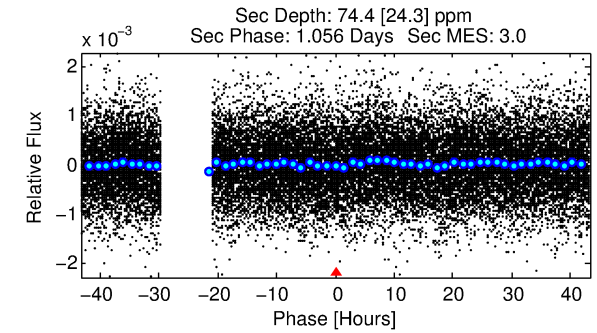
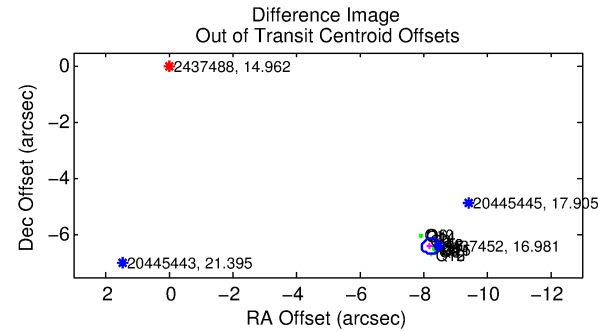
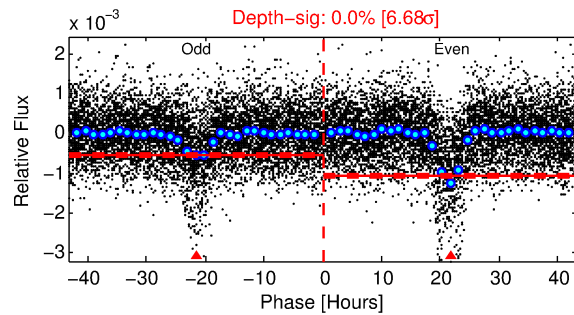
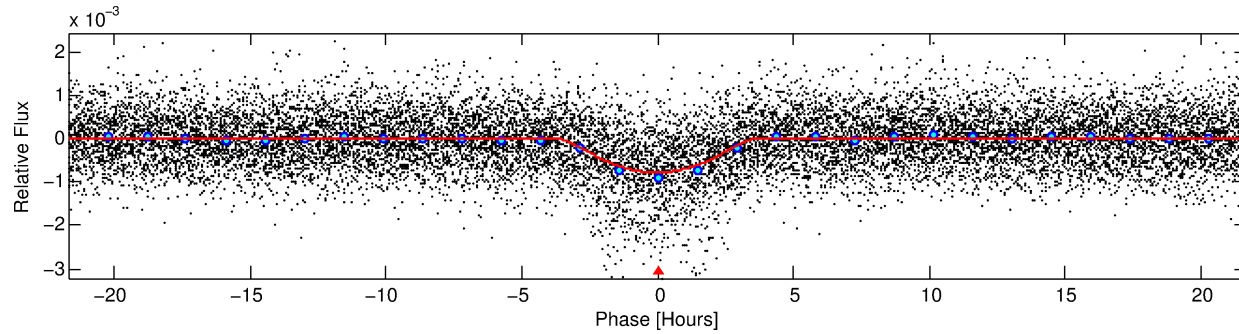
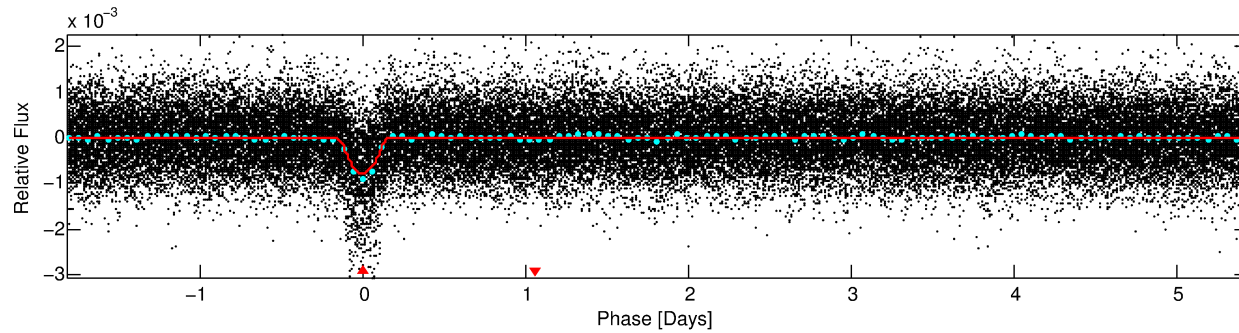
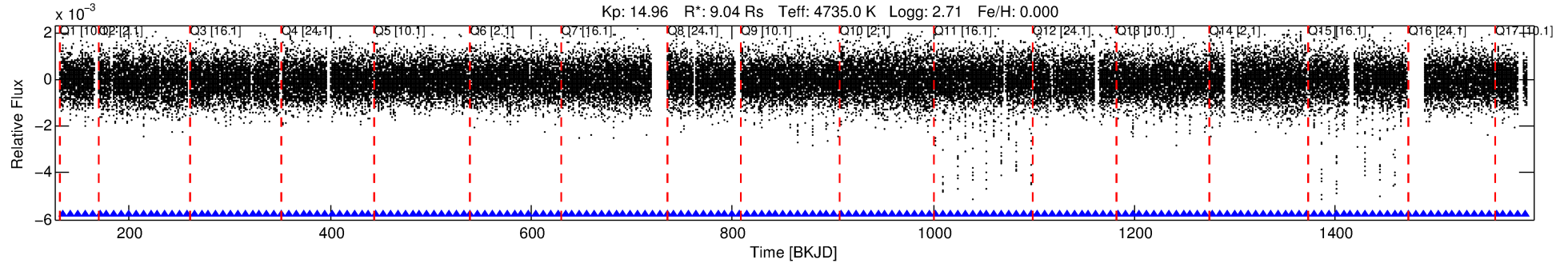
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
002437488-01	2437488	6268.01	2437452	1:1	10.6	0	3	16.98	14.96	253.30	Direct-PRF	0	0.22	0.16

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: 2437488 Candidate: 1 of 1 Period: 7.235 d
KOI: K03920 Corr: No Ephemeris Match

Kp: 14.96 R*: 9.04 Rs Teff: 4735.0 K Logg: 2.71 Fe/H: 0.000



DV Fit Results:

Period = 7.23493 [0.00005] d
Epoch = 134.5868 [0.0052] BKJD
Rp/R* = 0.0376 [0.0054]
a/R* = 2.95 [0.21]
b = 0.97 [0.01]
Seff = 5134.17 [777.65]
Teq = 2158 [82] K
Rp = 37.07 [7.91] Re
a = 0.0847 [0.0091] AU
Ag = 0.21 [0.10] [-8.17σ]
Teffp = 2269 [253] K [0.42σ]

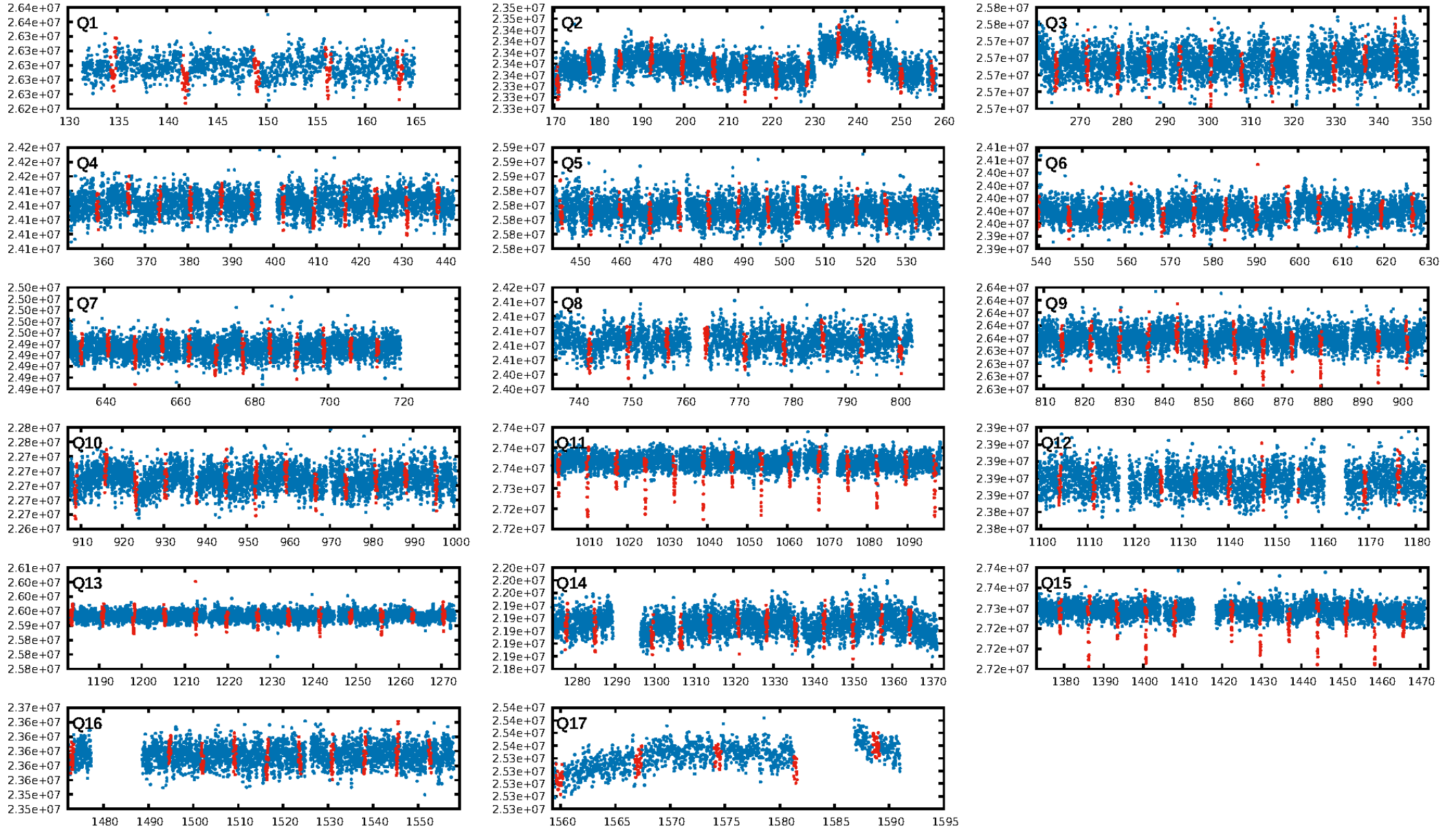
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.41e-162
RollingBand-fgt: 1.00 [176/176]
GhostDiagnostic-chr: -0.3024
Centroid-sig: 0.0%
Centroid-so: 41.867 arcsec [223.45σ]
OotOffset-rm: 10.430 arcsec [112.60σ]
KicOffset-rm: 10.593 arcsec [133.54σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

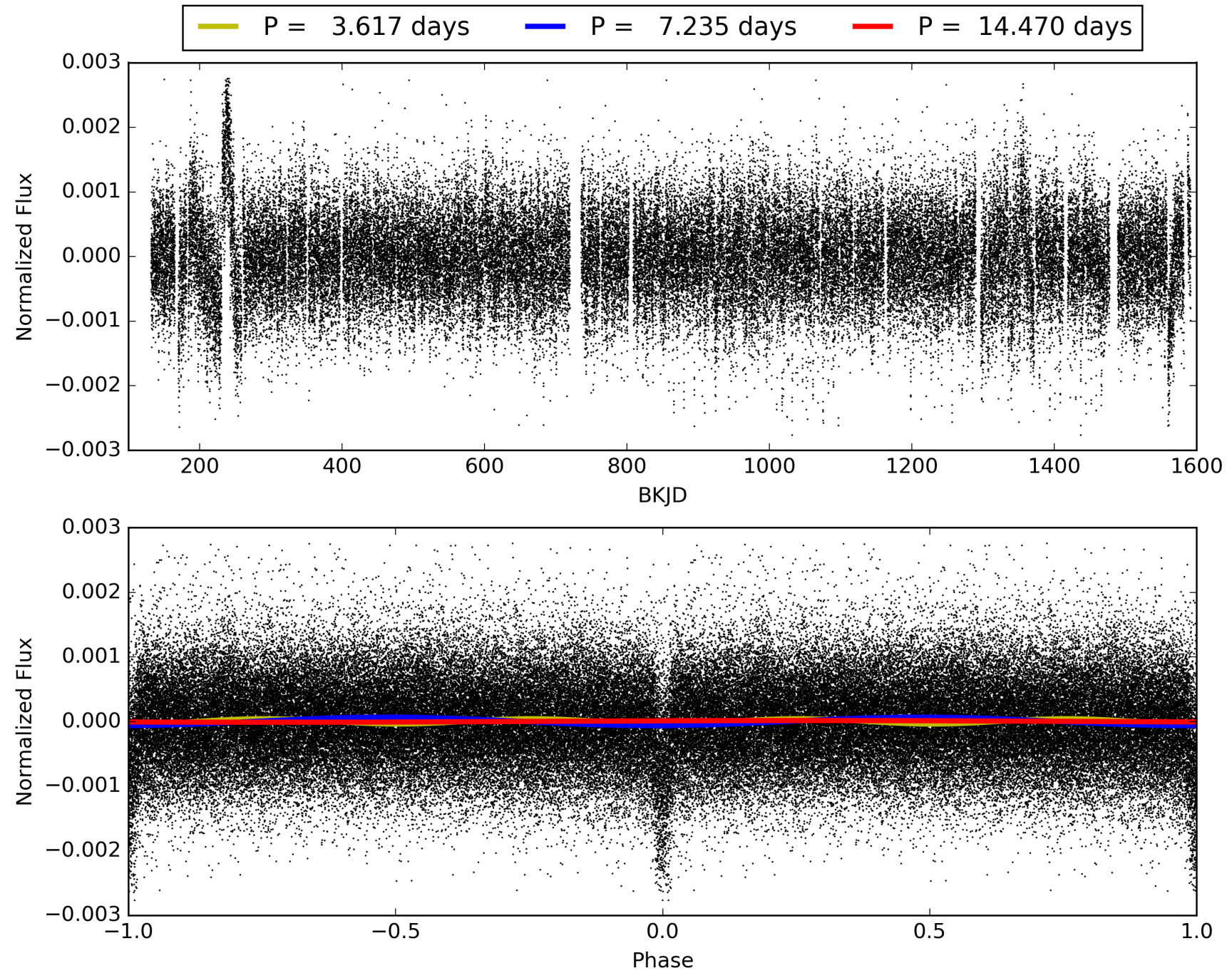
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:30:35 Z

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

TCE 002437488-01, PDC Light Curves

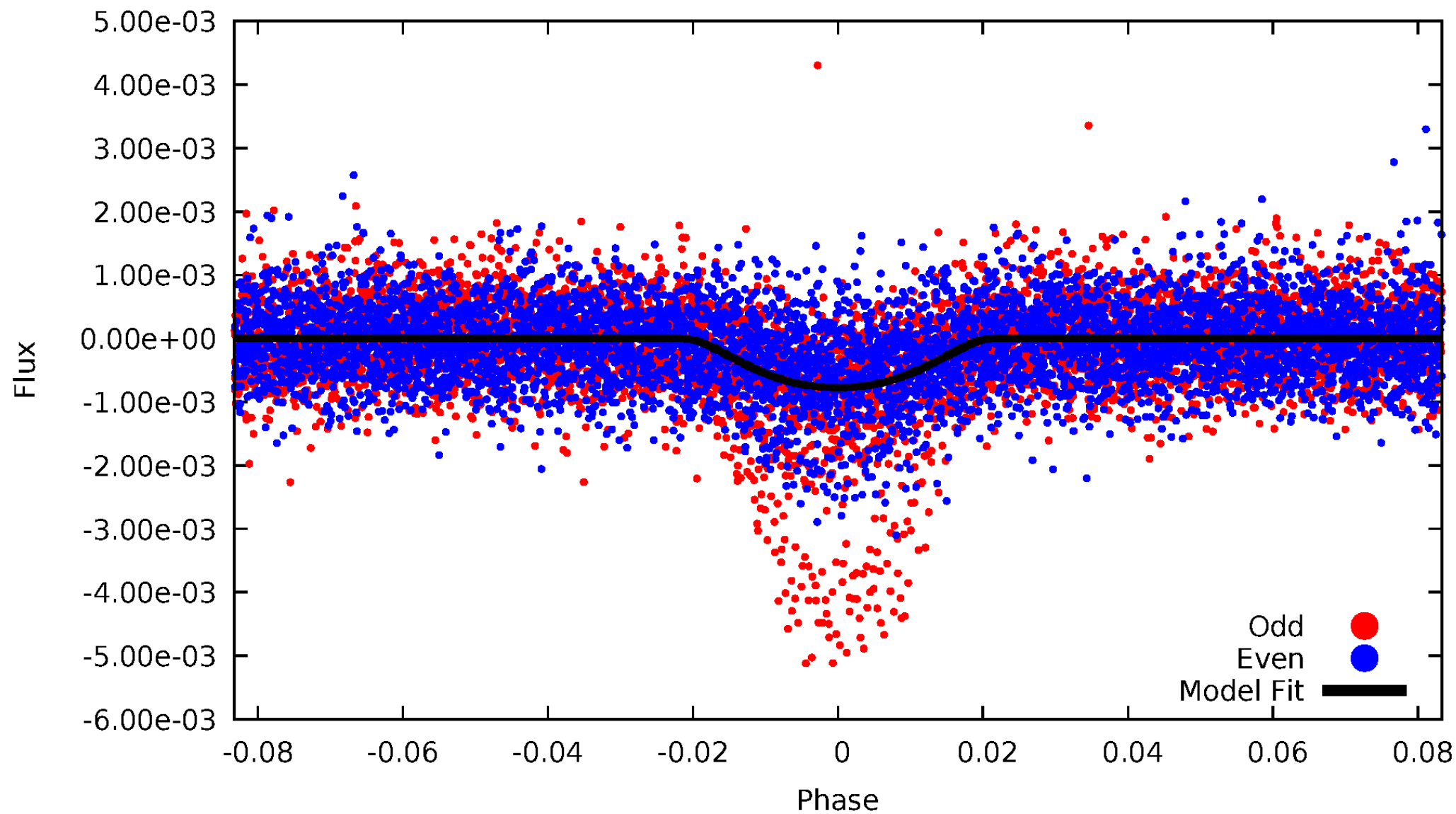


TCE 002437488-01



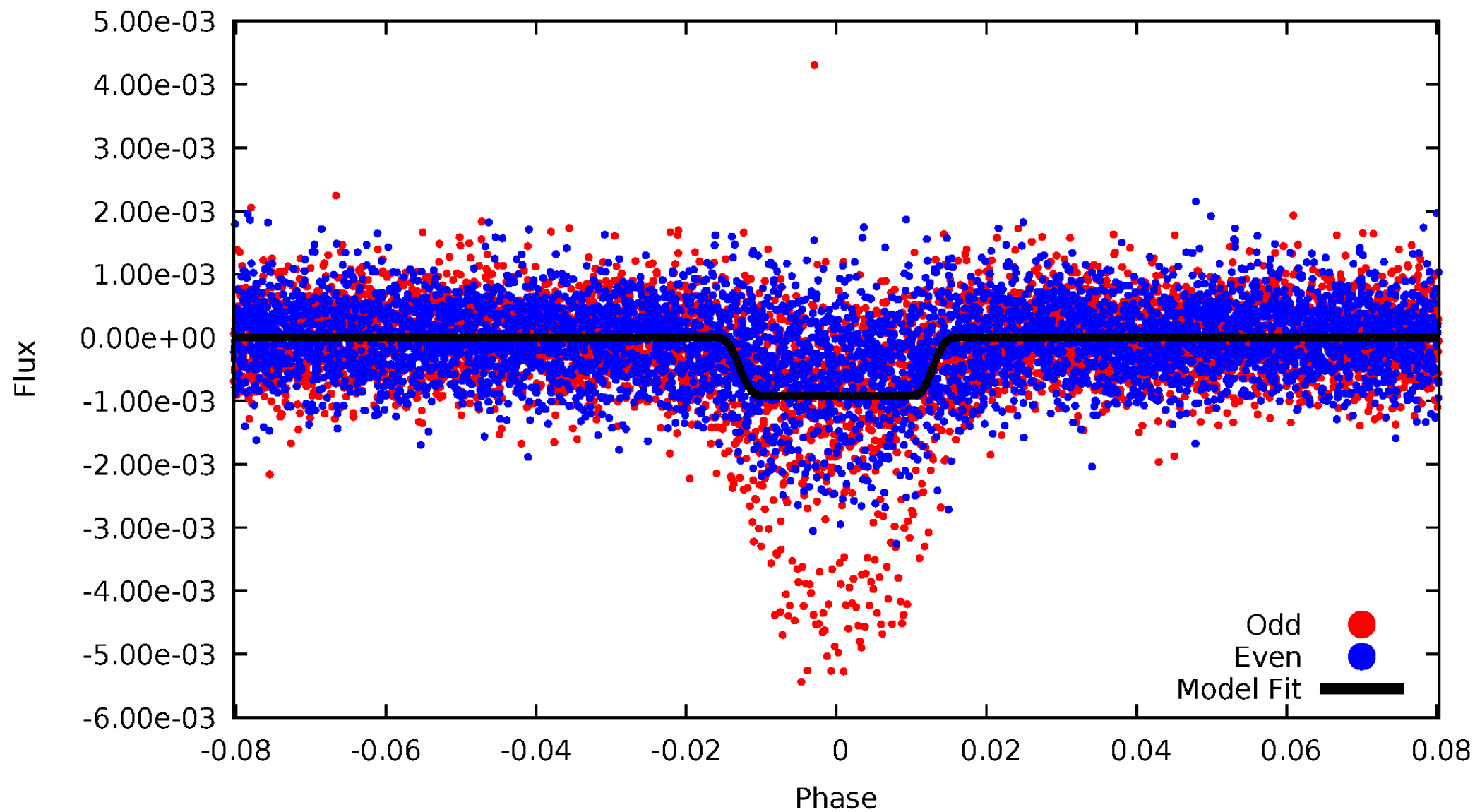
DV Odd/Even

TCE 002437488-01

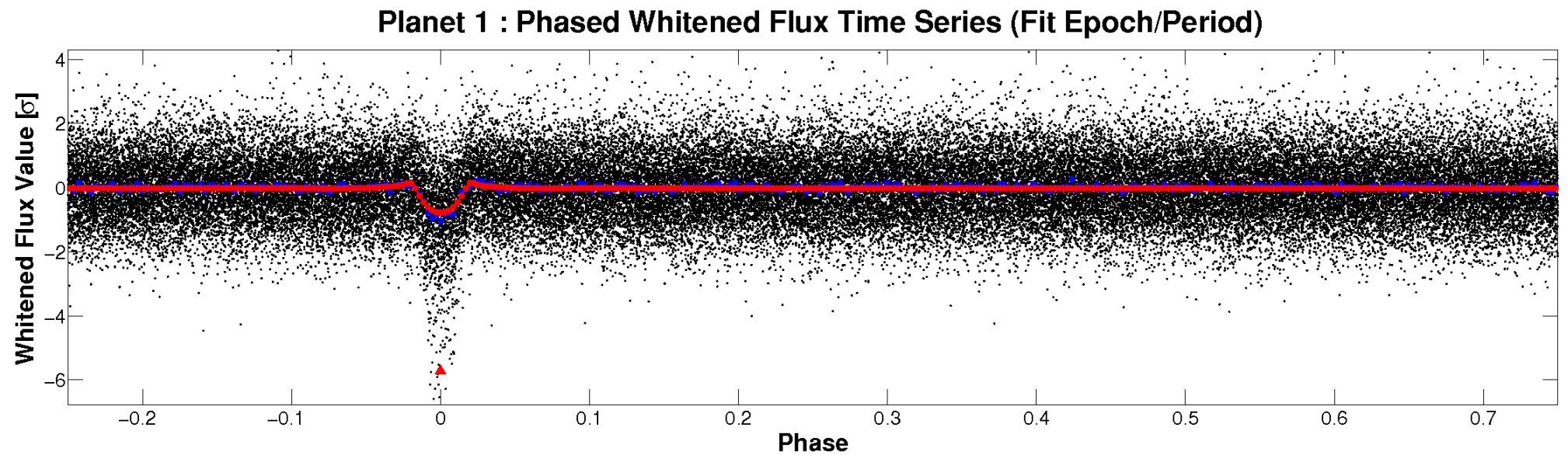
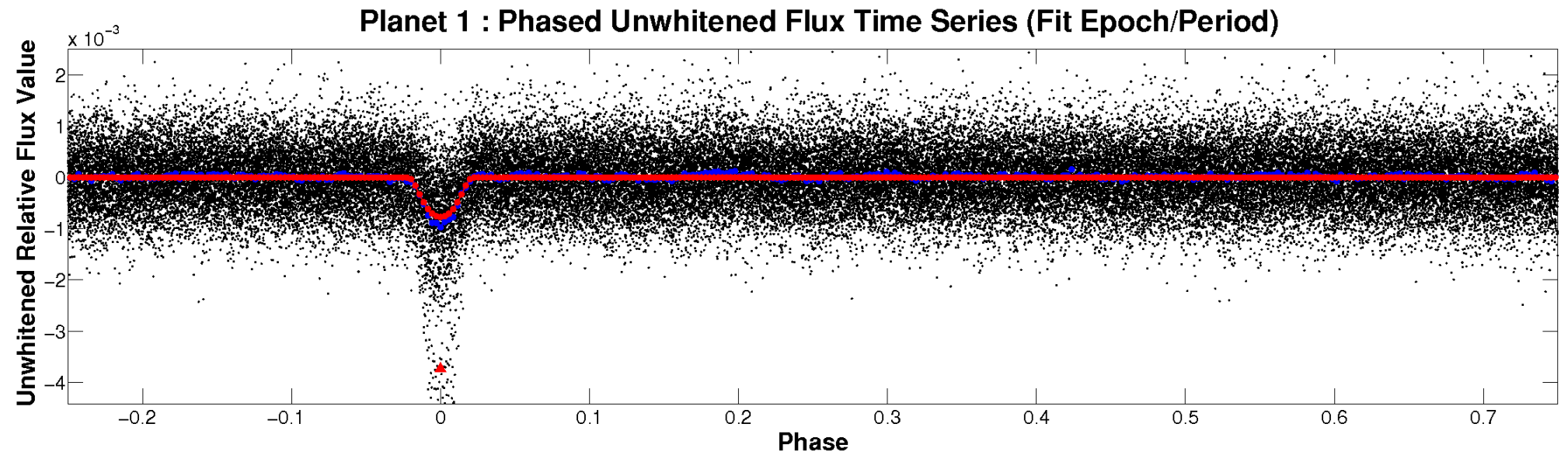


ALT Odd/Even

TCE 002437488-01

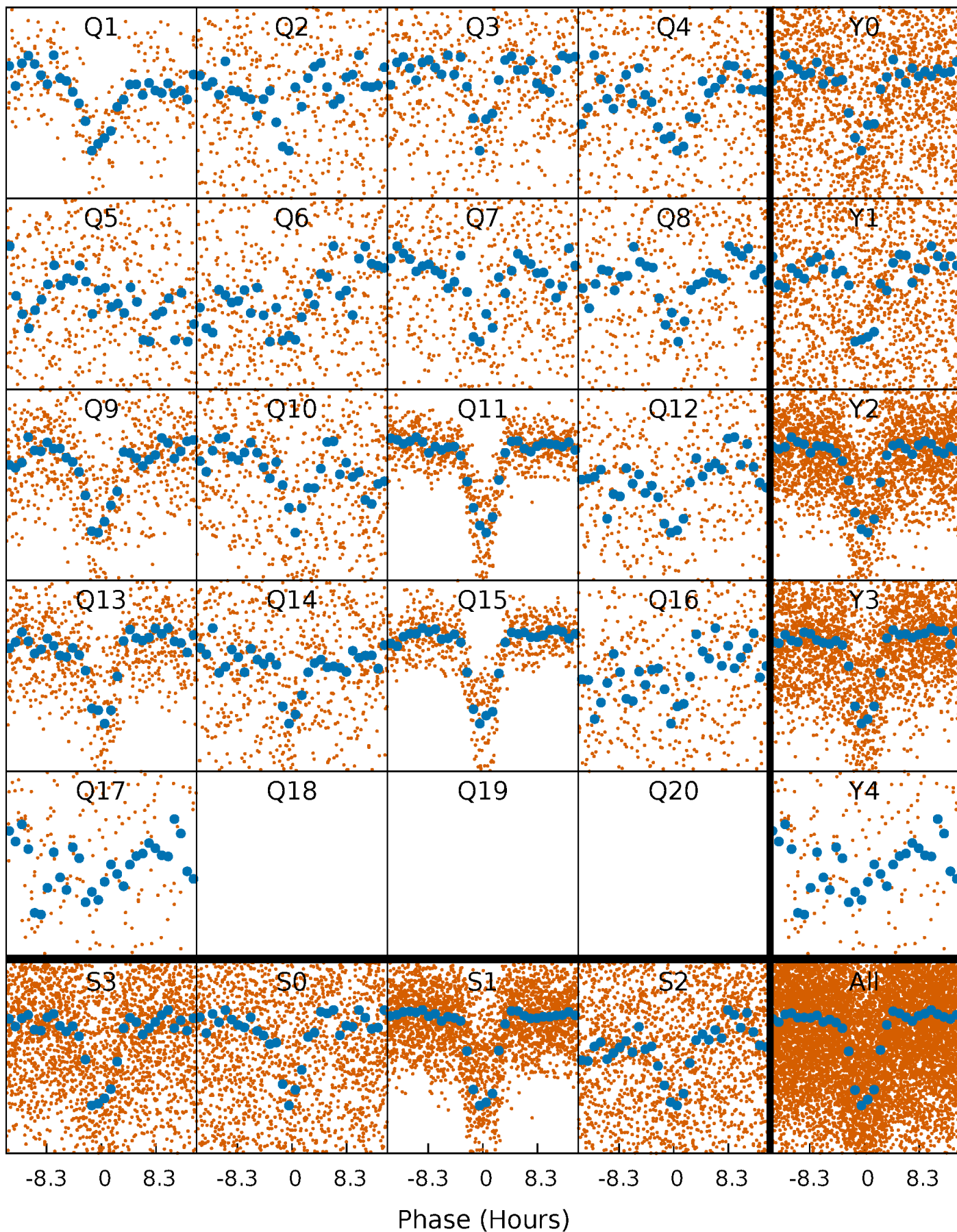


Non-Whitened Vs. Whitened Light Curve



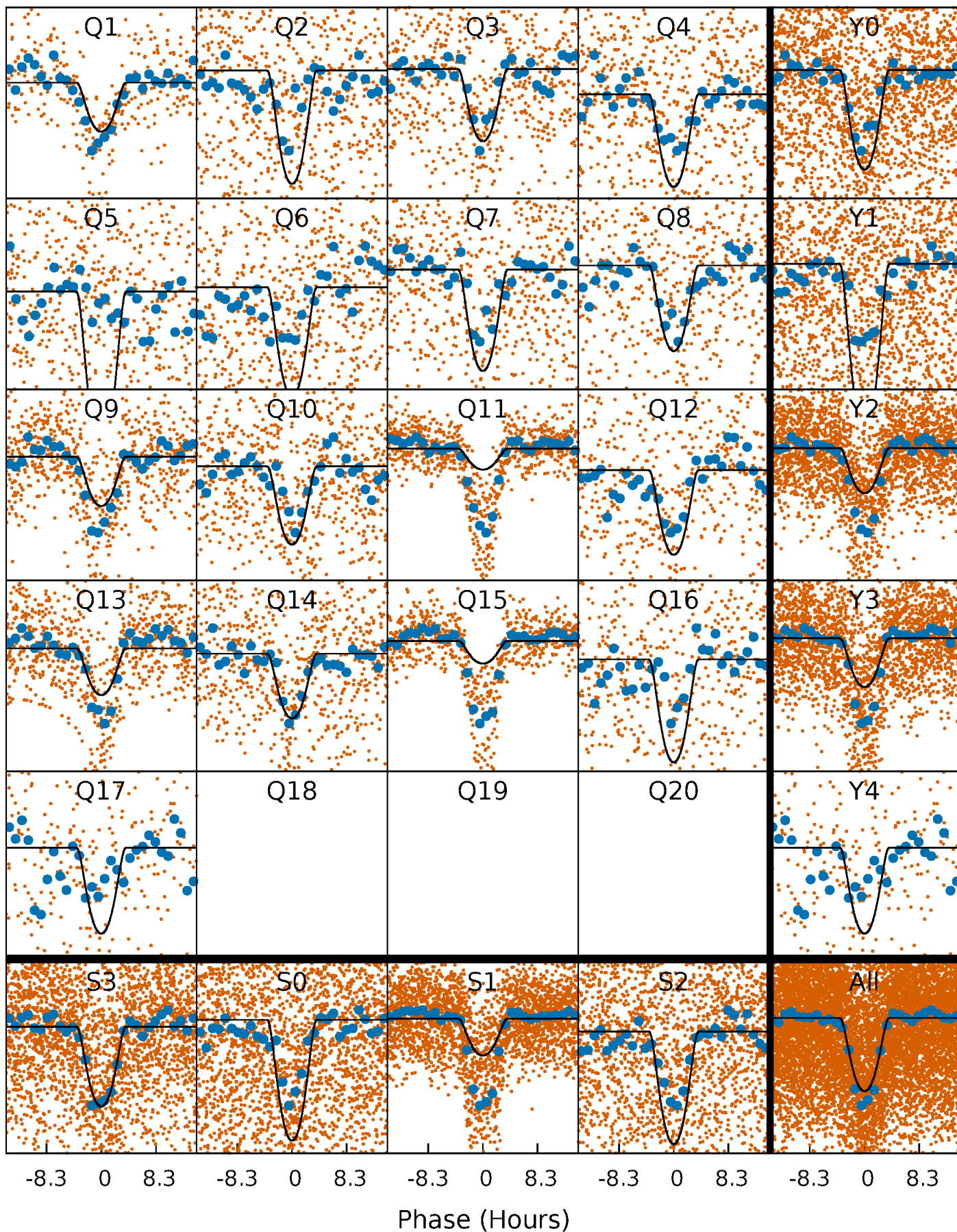
PDC Quarter-Phased Transit Curves

TCE 002437488-01 P= 7.234930 Days $T_0=134.586801$ (BKJD)



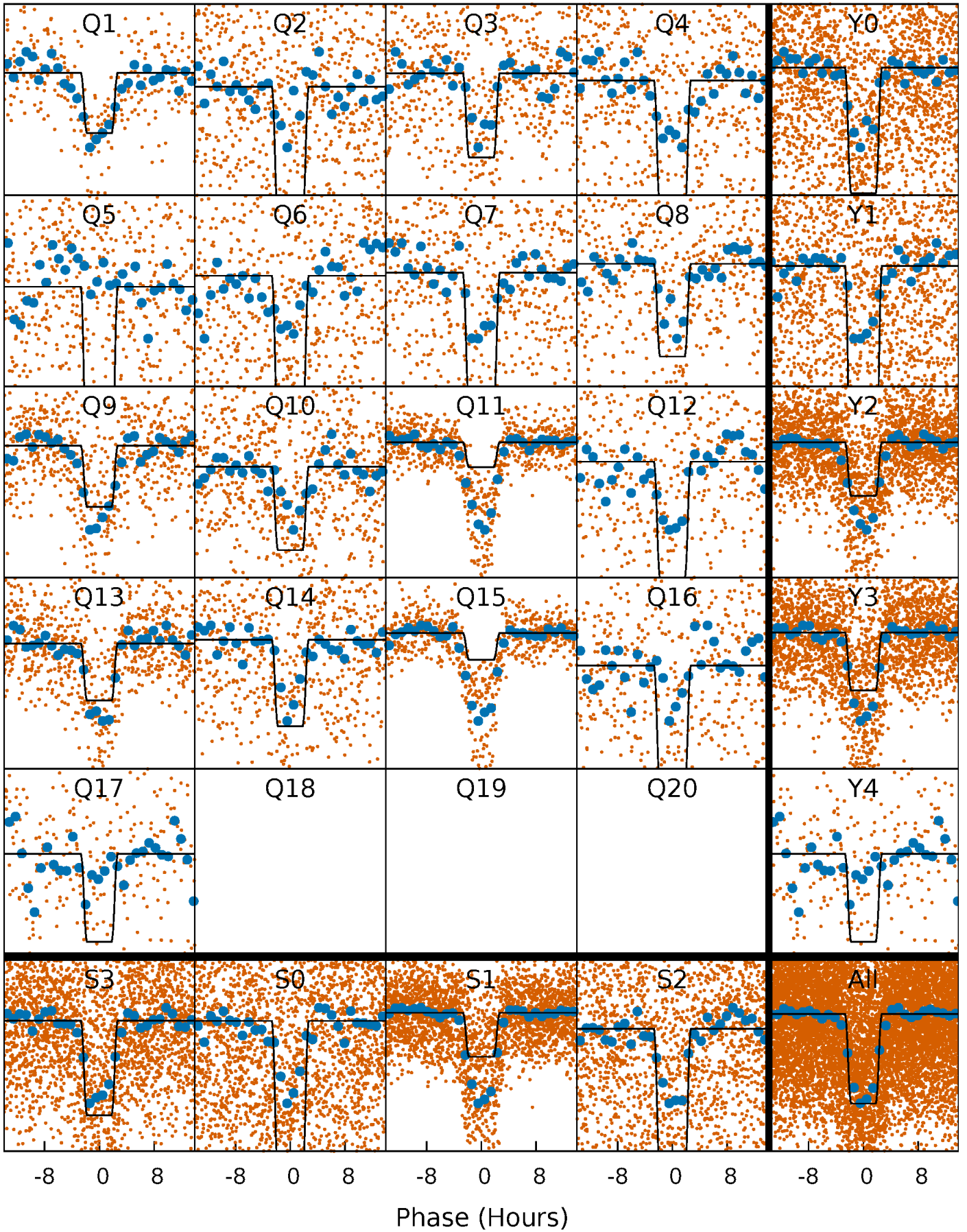
DV Quarter-Phased Transit Curves

TCE 002437488-01 P= 7.234930 Days $T_0=134.586801$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

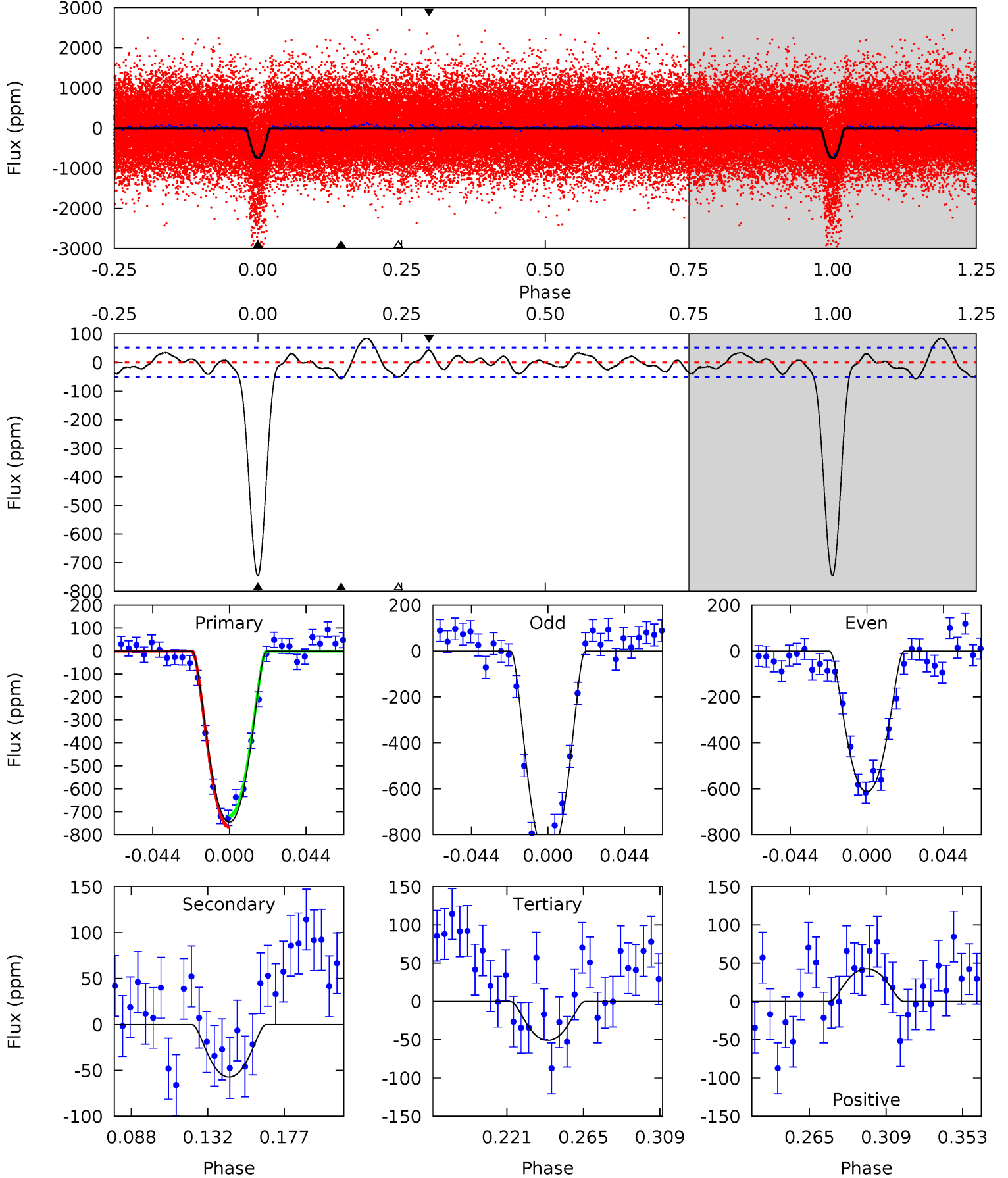
TCE 002437488-01 P= 7.234966 Days $T_0=134.582303$ (BKJD)



DV Model-Shift Uniqueness Test

002437488-01, P = 7.234930 Days, E = 127.351871 Days

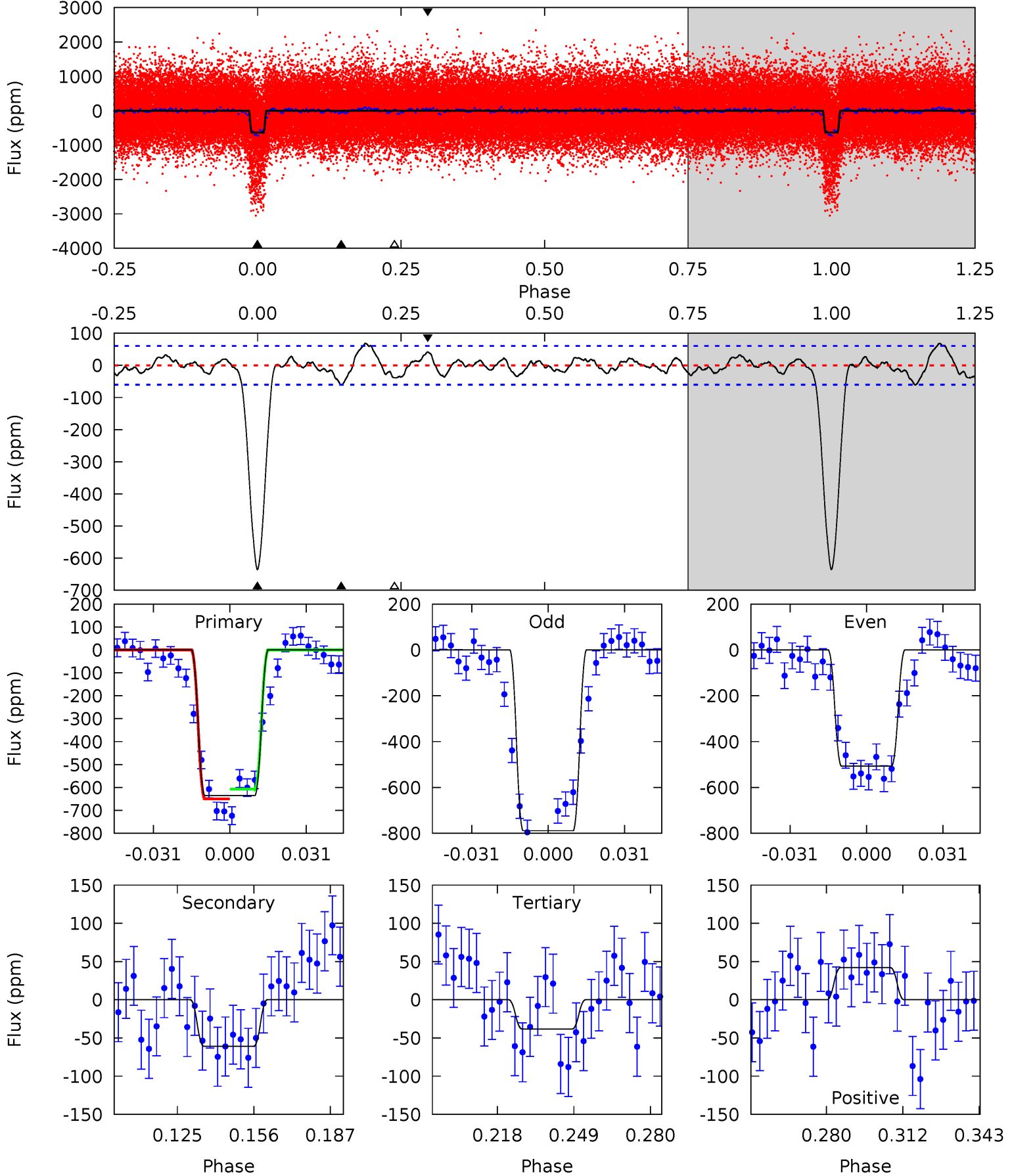
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
67.8	5.21	4.63	3.88	4.73	2.01	2.05	63.2	63.9	0.57	1.33	13.3	1.39	0.10	2.12



Alt Model-Shift Uniqueness Test

002437488-01, P = 7.234966 Days, E = 127.347337 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.5	4.84	3.06	3.34	4.80	2.15	1.54	47.5	47.2	1.78	1.50	11.2	1.41	0.10	1.67



Stellar Parameters For KIC 002437488

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4735^{+105}_{-117}	$2.715^{+0.030}_{-0.030}$	$0.000^{+0.200}_{-0.250}$	$9.043^{+1.037}_{-1.426}$	$1.549^{+0.435}_{-0.479}$	$0.003^{+0.001}_{-0.000}$
	+2%/-2%	+1%/-1%	+inf%/-inf%	+11%/-16%	+28%/-31%	+23%/-13%
Source	PHO1	AST9	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 002437488-01 / KOI 3920.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-57 ± 11	$37.74^{+6.64}_{-6.51}$	3020^{+90}_{-86}	-2746^{+274}_{-130}	$0.159^{+0.081}_{-0.047}$
Alt.	-61 ± 13	$30.17^{+6.25}_{-5.96}$	3022^{+89}_{-92}	-2297^{+4961}_{-409}	$0.265^{+0.148}_{-0.089}$

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 $A_{\text{obs}} \gg 1.0$

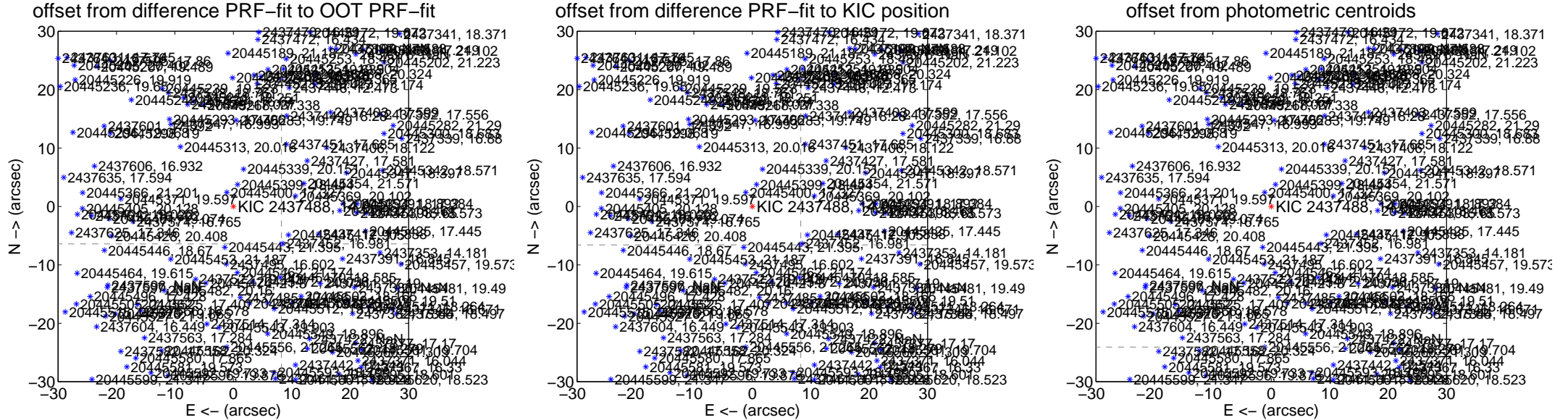
DV Centroid Data

Supplemental centroid analysis for 002437488-01. Kepler magnitude: 14.96. Transit SNR 25.67

There are 16 quarters with good PRF difference image offsets

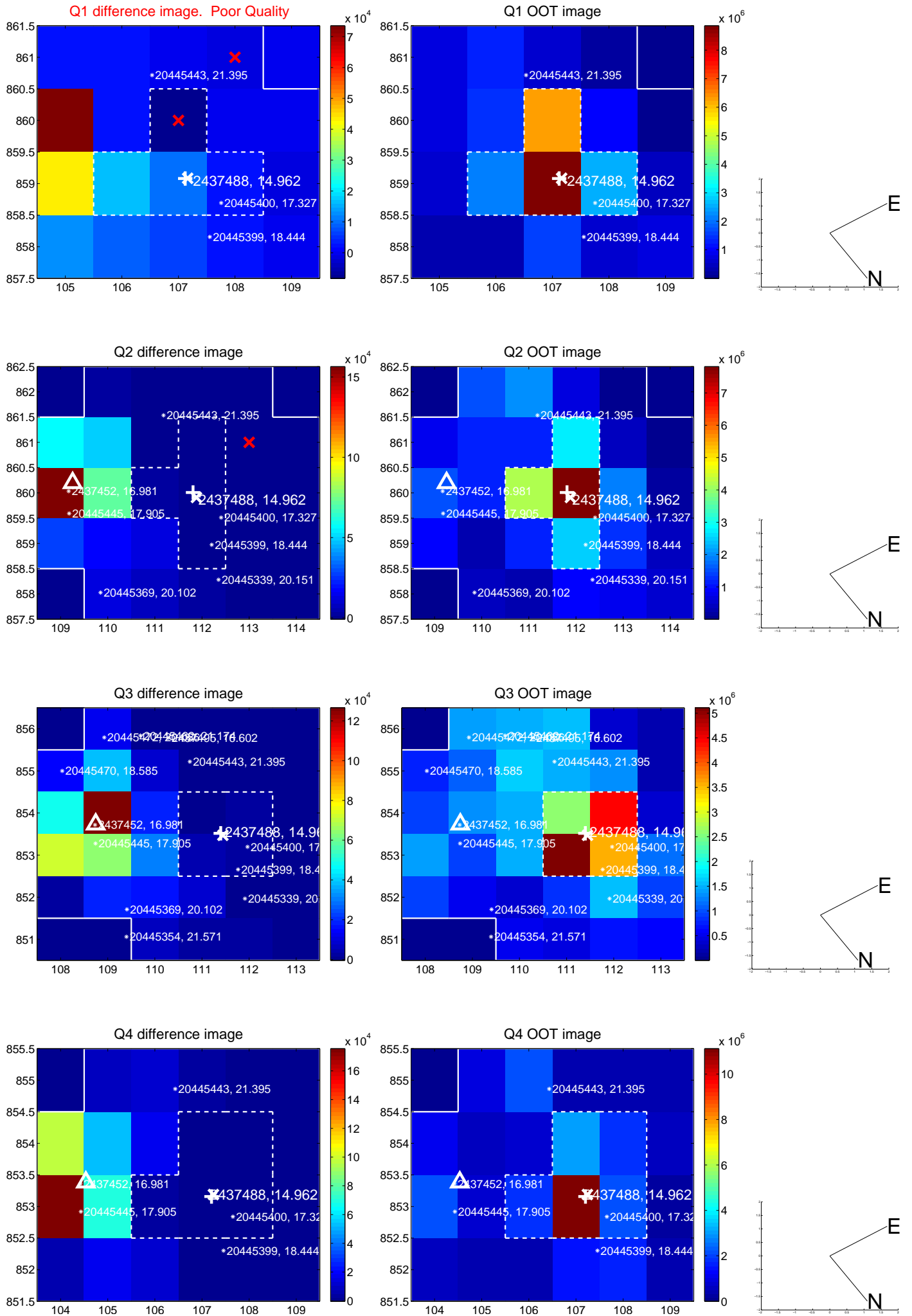
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.430 \pm 0.093	112.60	-8.228 \pm 0.080	-6.410 \pm 0.084
PRF-fit source offset from KIC position	10.593 \pm 0.079	133.54	-8.300 \pm 0.088	-6.583 \pm 0.073
photometric centroid source offset	41.87 \pm 0.19	223.45	-34.26 \pm 0.19	-24.07 \pm 0.19

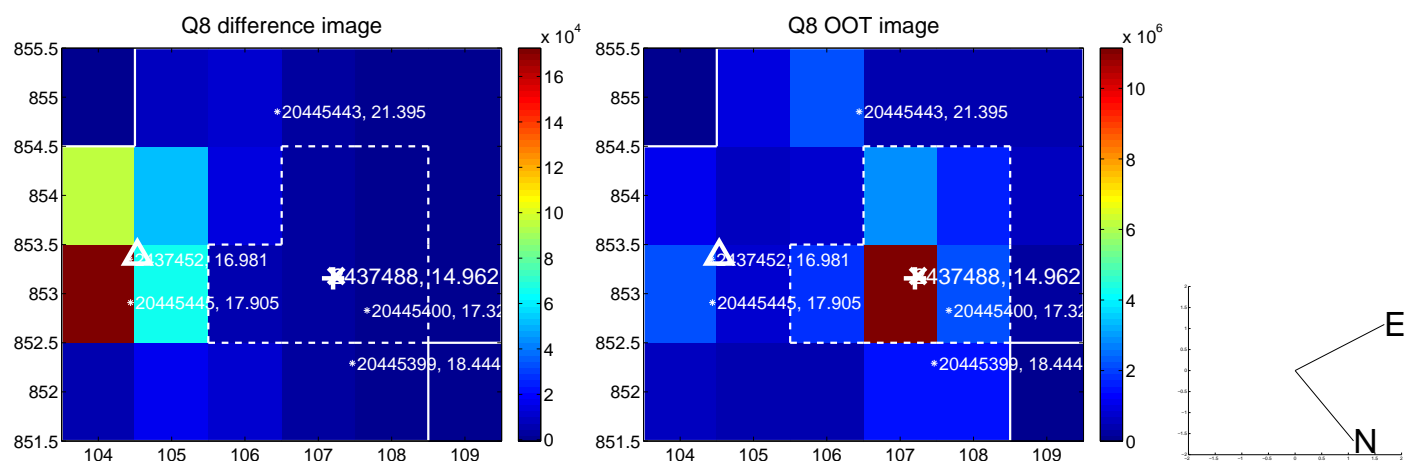
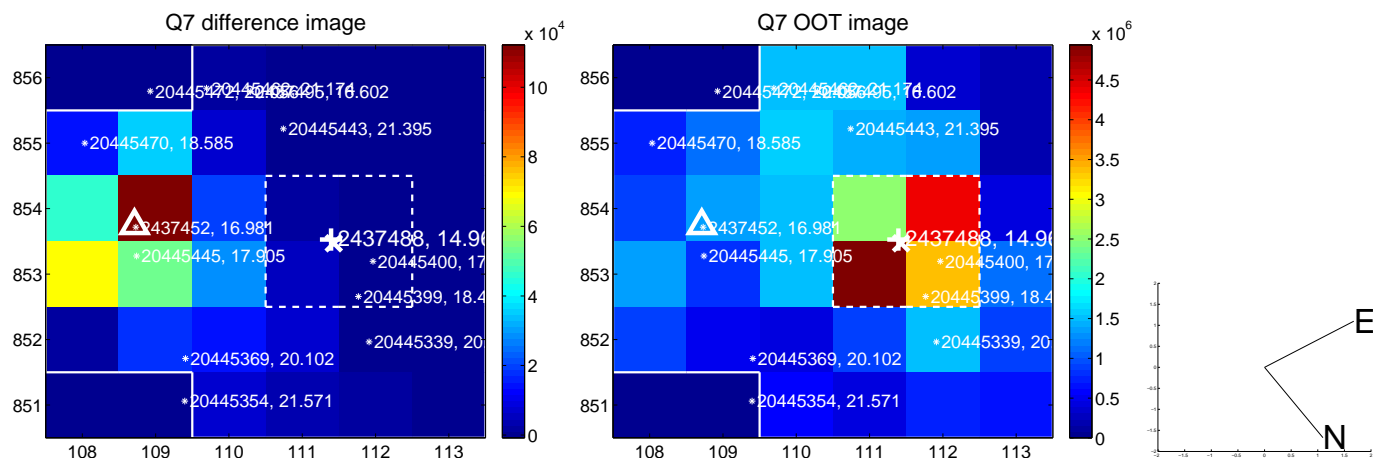
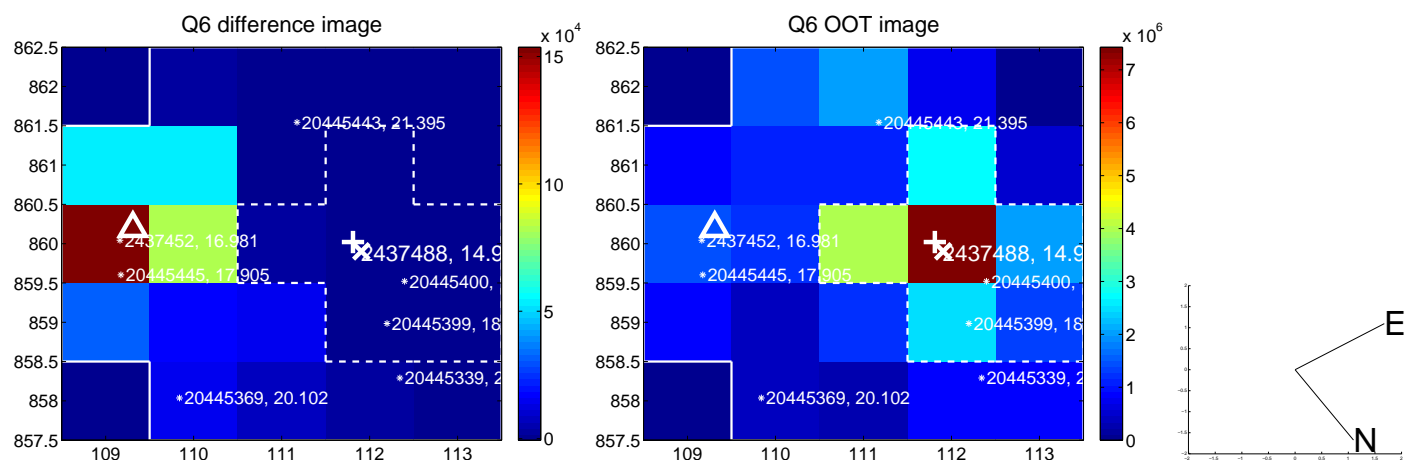
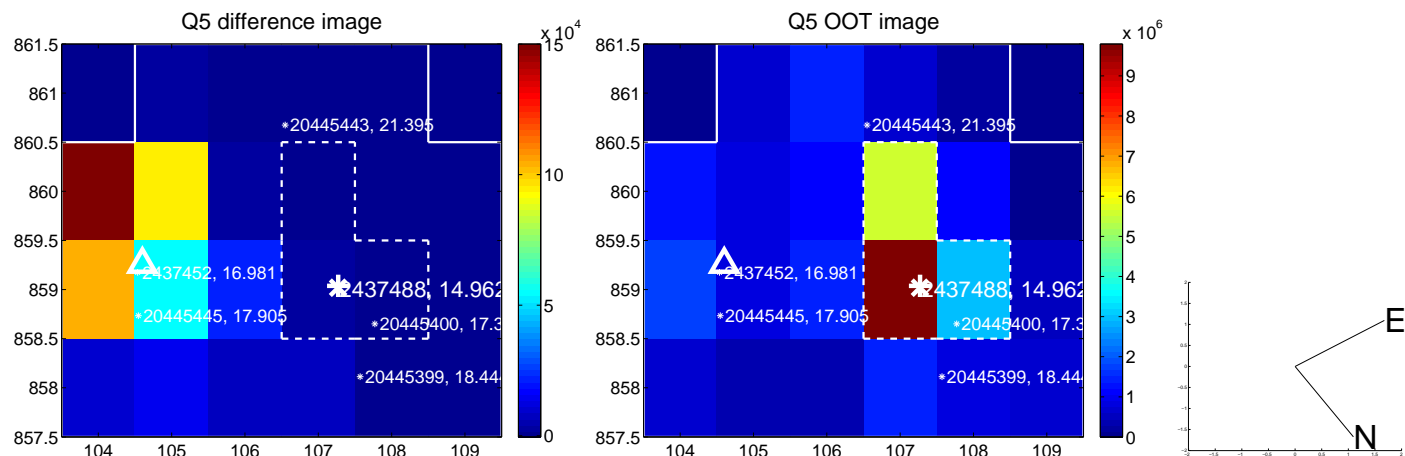


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

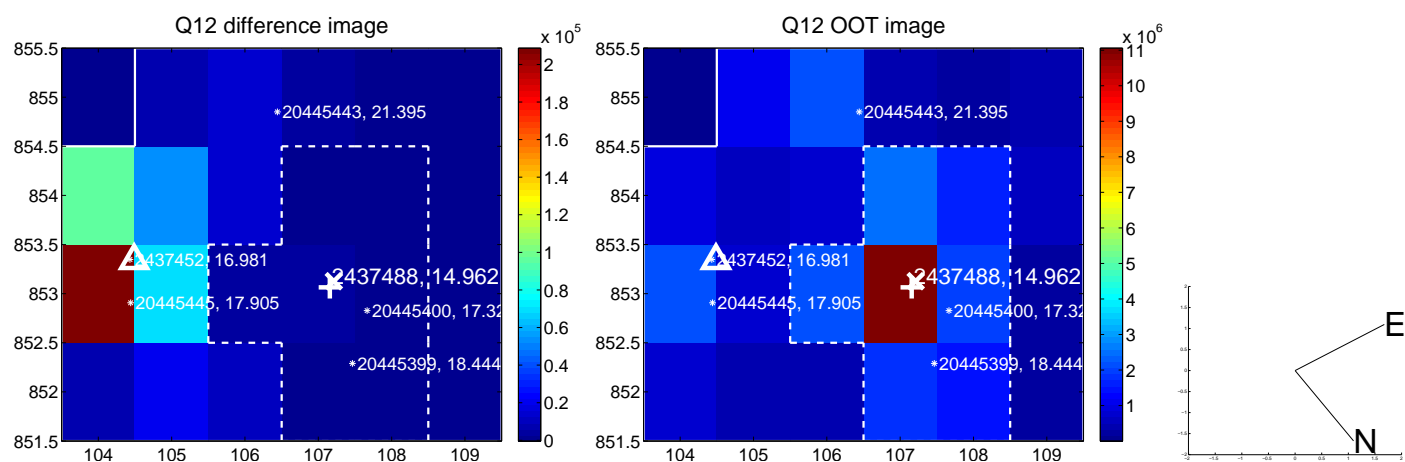
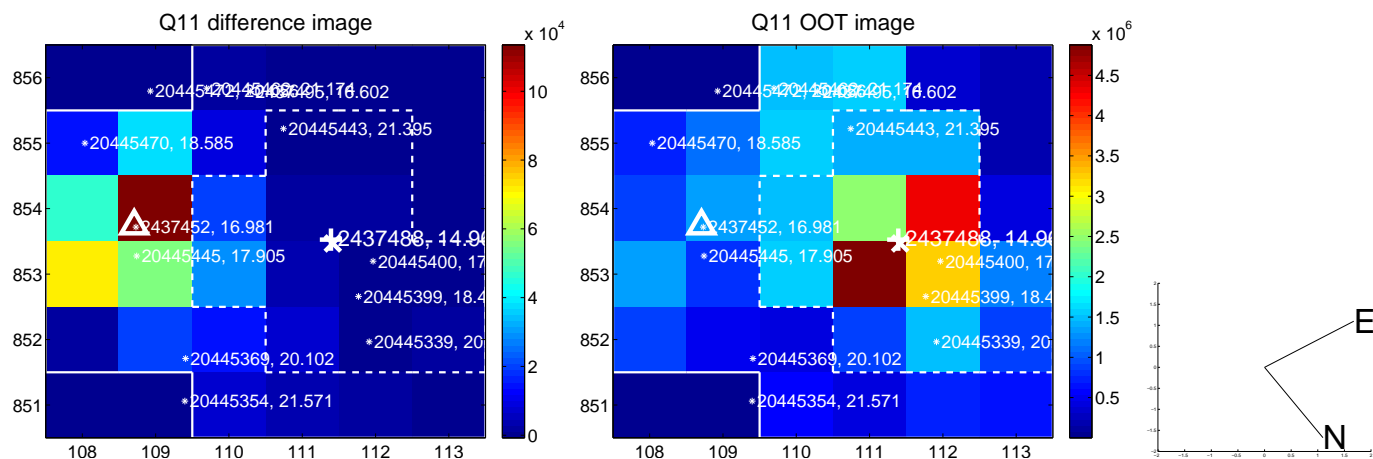
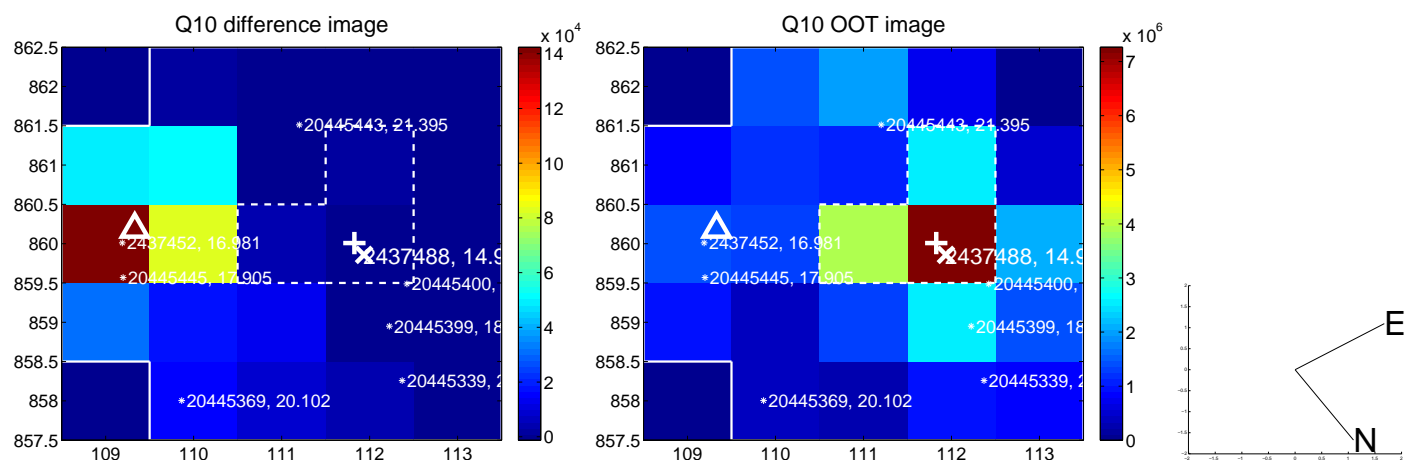
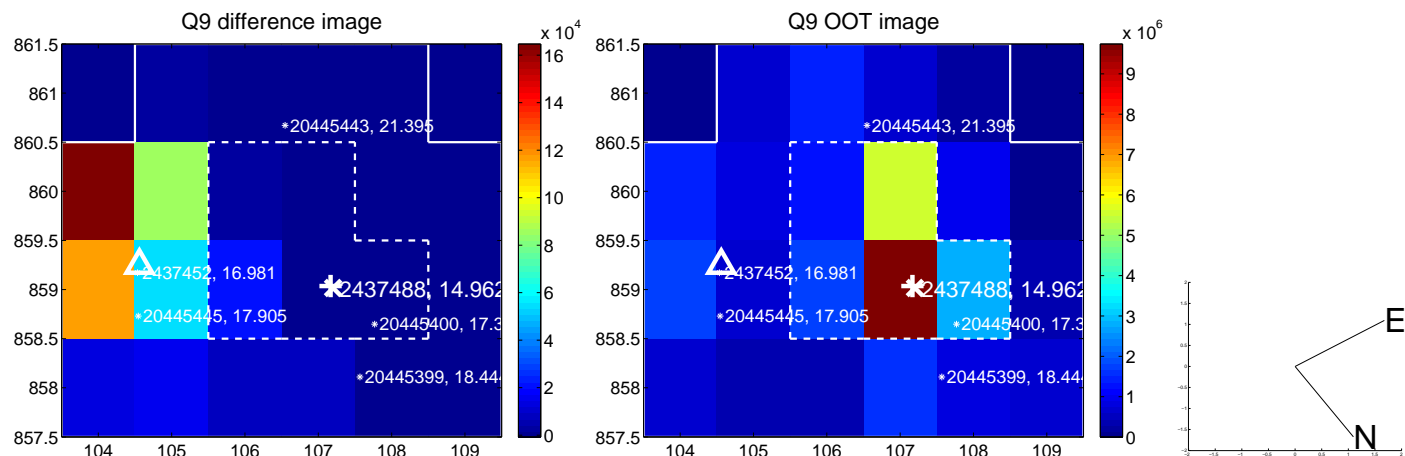
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



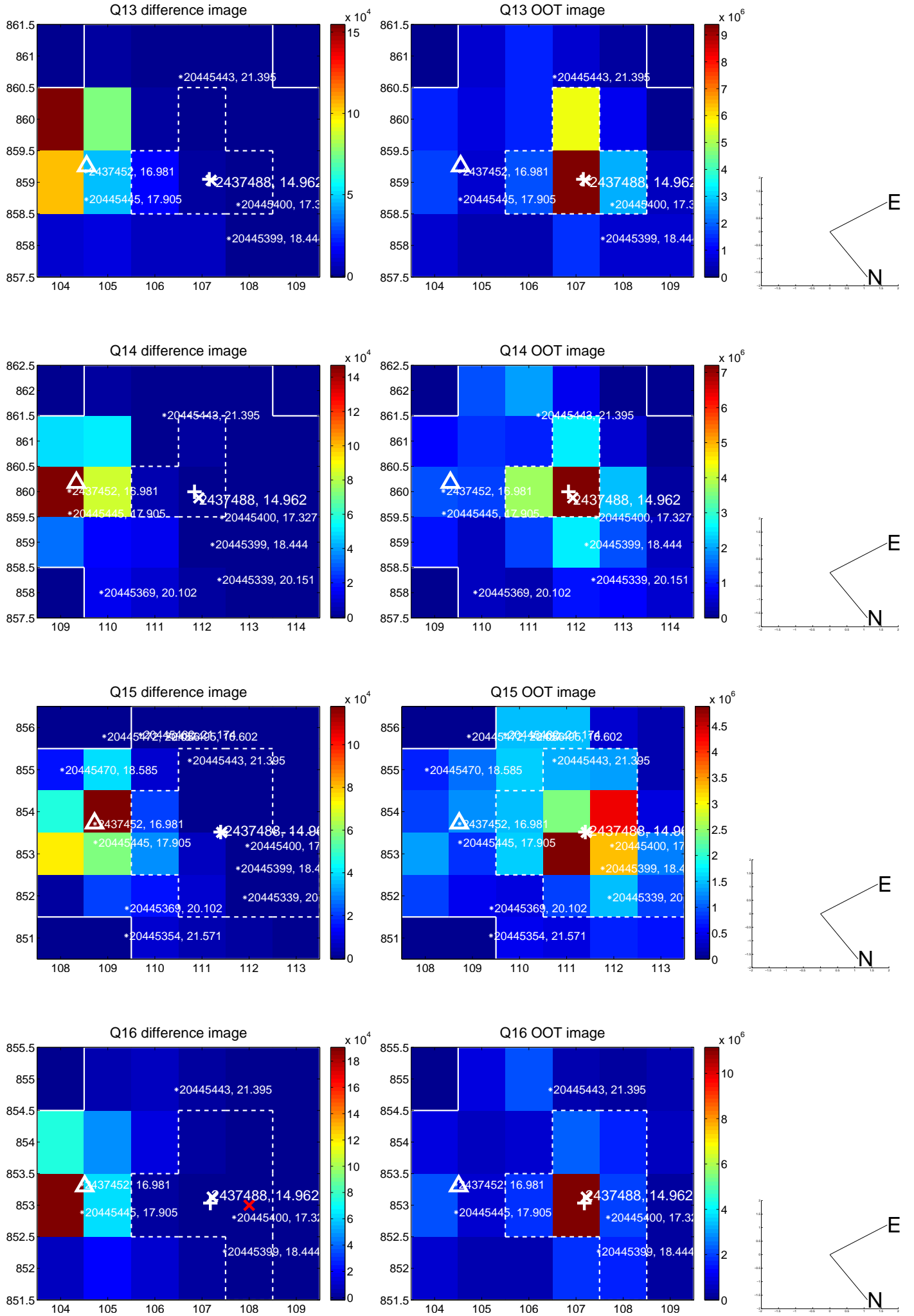
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



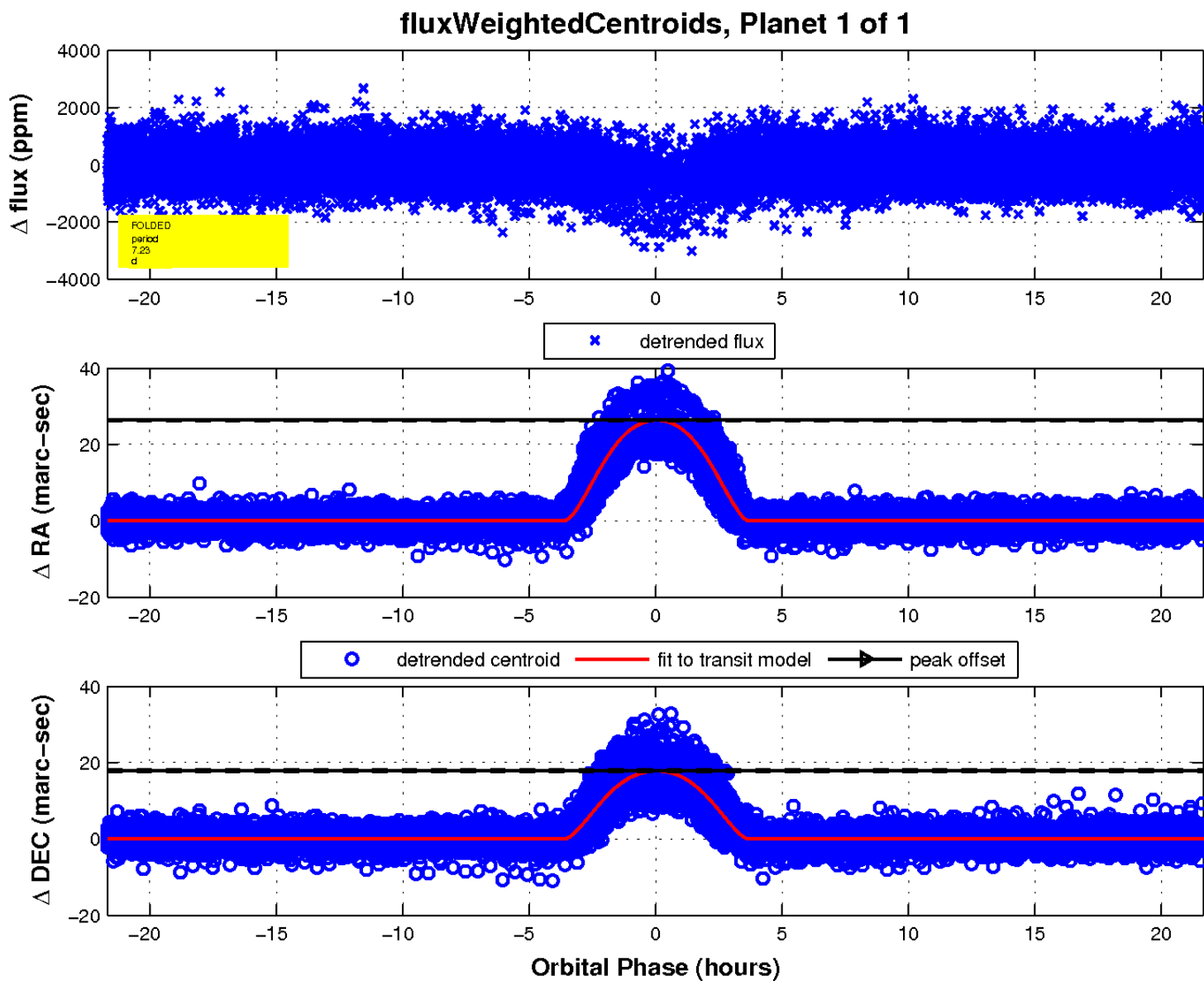
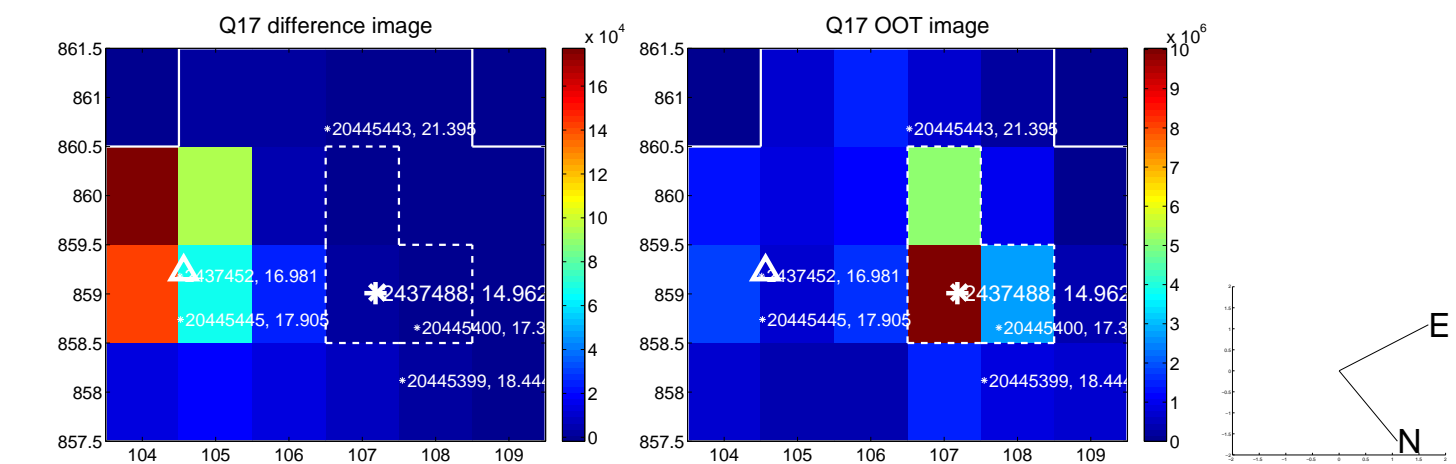
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

