

KIC 002452450

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})
002452450-01	OBS	0380.01	8.097060	138.422517	505.5	5.572	99.1	65.5	1.46	6573	4.07	496.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002452450-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—SEASONAL_DEPTH_ALT—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 002452450-01

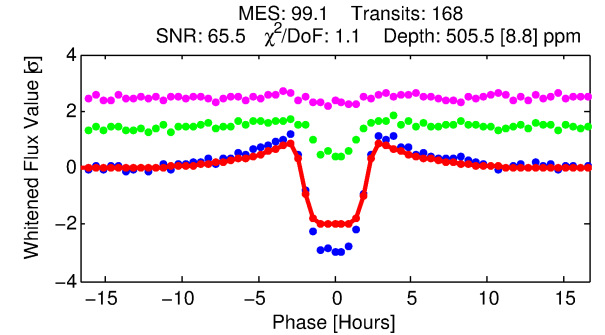
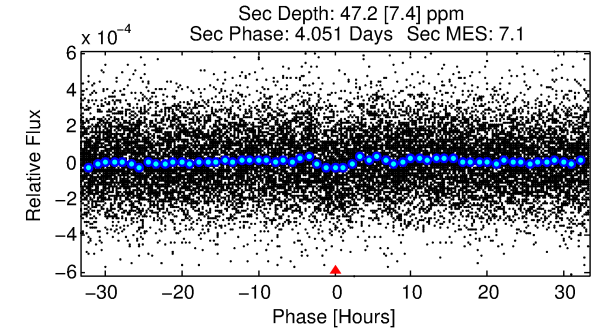
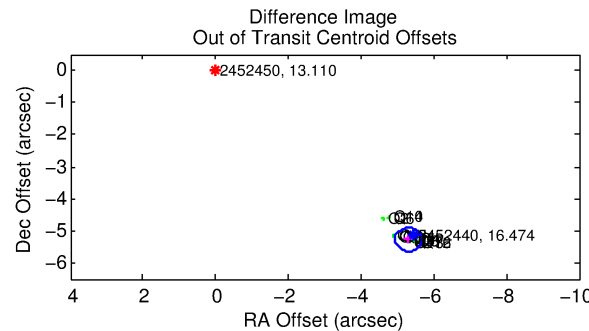
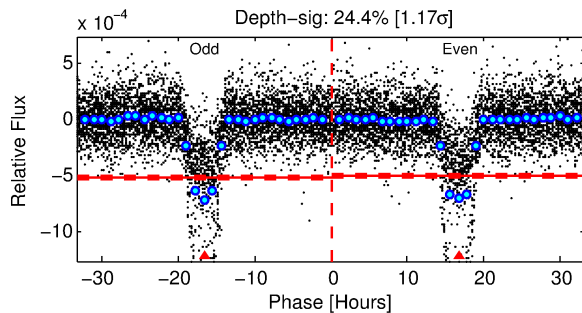
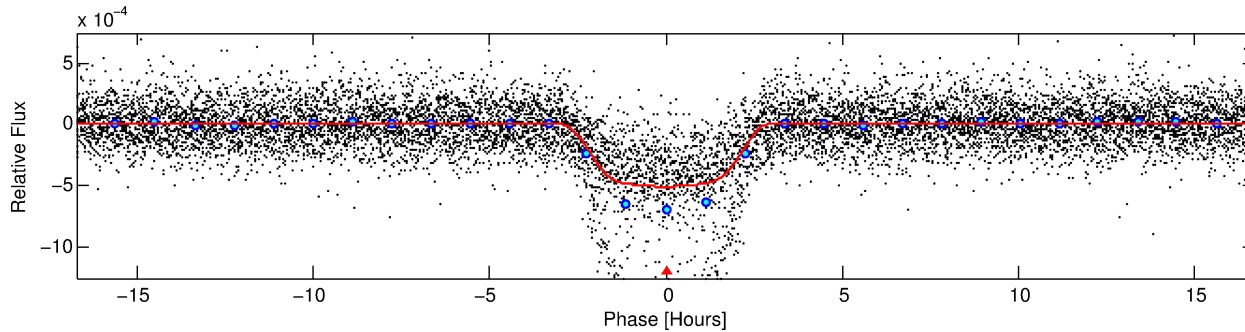
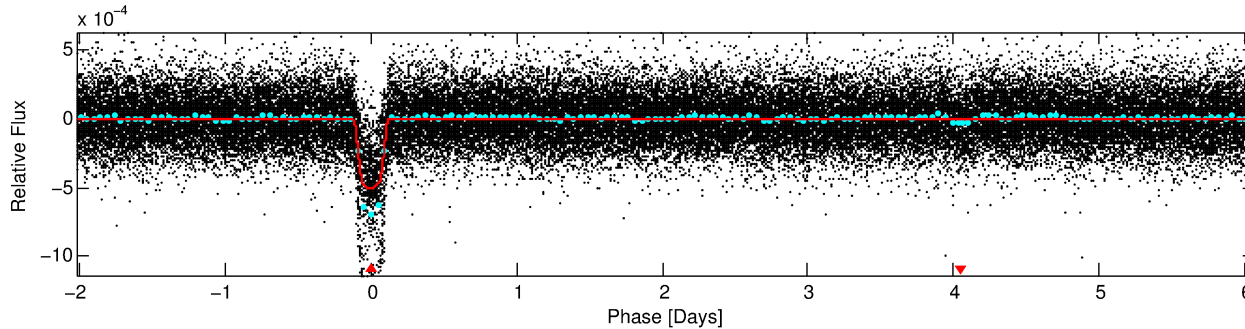
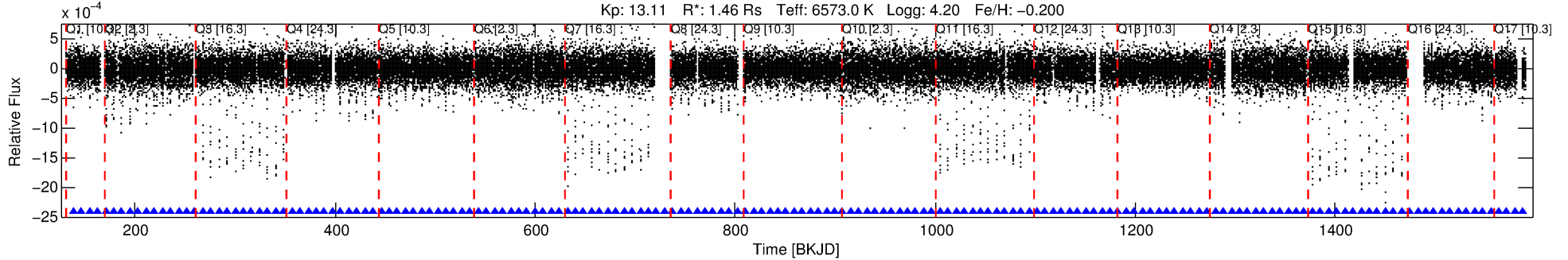
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
002452450-01	2452450	3687.01	2452440	1:1	7.4	0	-2	16.47	13.11	141.48	Direct-PRF	0	0.02	0.01

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: 2452450 Candidate: 1 of 1 Period: 8.097 d
KOI: K00380.01 Corr: 0.996

Kp: 13.11 R*: 1.46 Rs Teff: 6573.0 K Logg: 4.20 Fe/H: -0.200



DV Fit Results:

Period = 8.09706 [0.00001] d
Epoch = 138.4225 [0.0015] BKJD
Rp/R* = 0.0256 [0.0003]
a/R* = 4.30 [0.15]
b = 0.95 [0.00]
Seff = 496.69 [111.98]
Teq = 1204 [68] K
Rp = 4.07 [0.64] Re
a = 0.0844 [0.0121] AU
Ag = 11.19 [3.04] [3.35σ]
Teffp = 3404 [141] K [14.04σ]

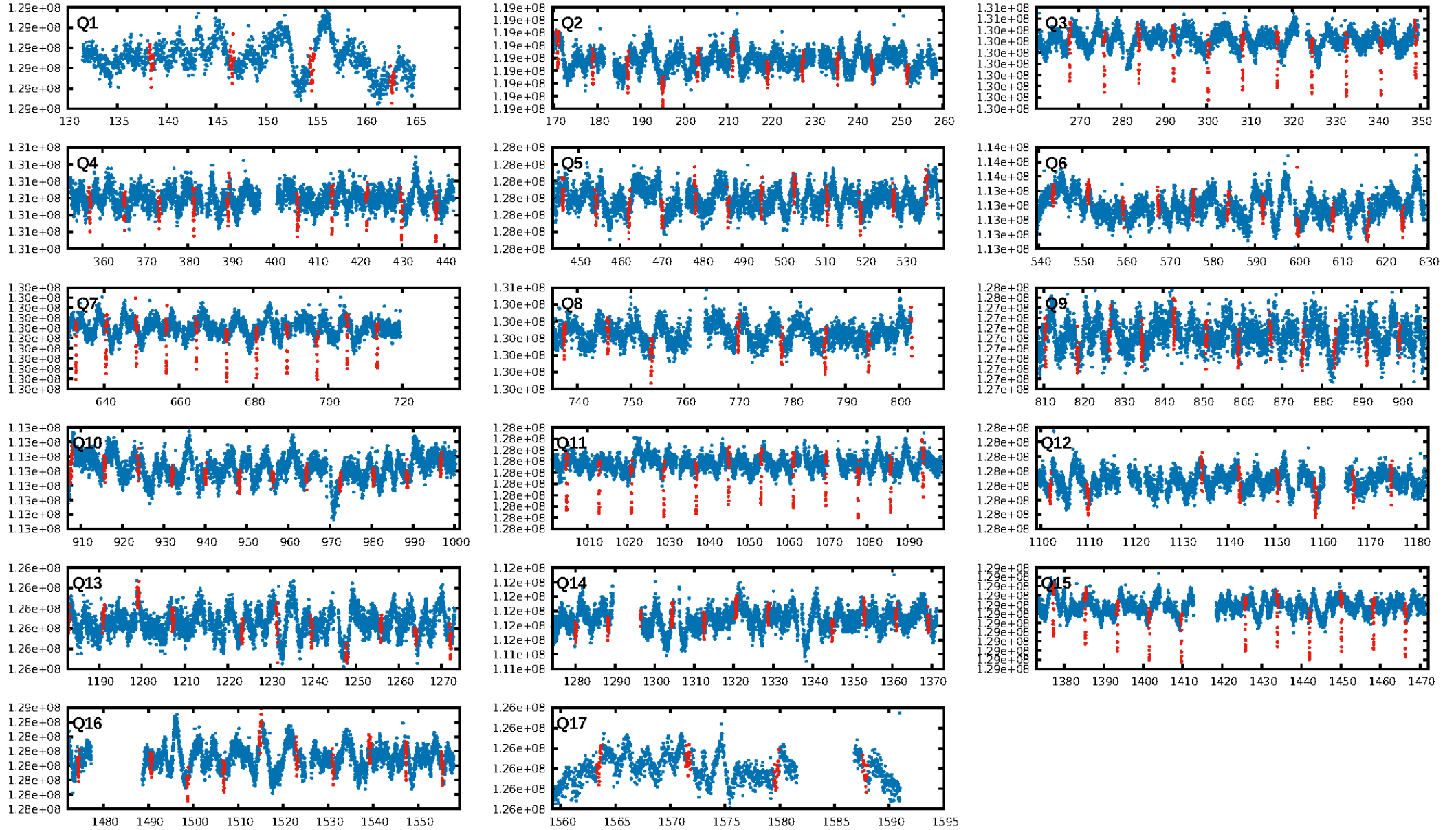
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [160/160]
GhostDiagnostic-chr: -0.2486
Centroid-sig: 0.0%
Centroid-so: 22.859 arcsec [172.71σ]
OotOffset-rm: 7.467 arcsec [61.65σ]
KicOffset-rm: 7.356 arcsec [75.69σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

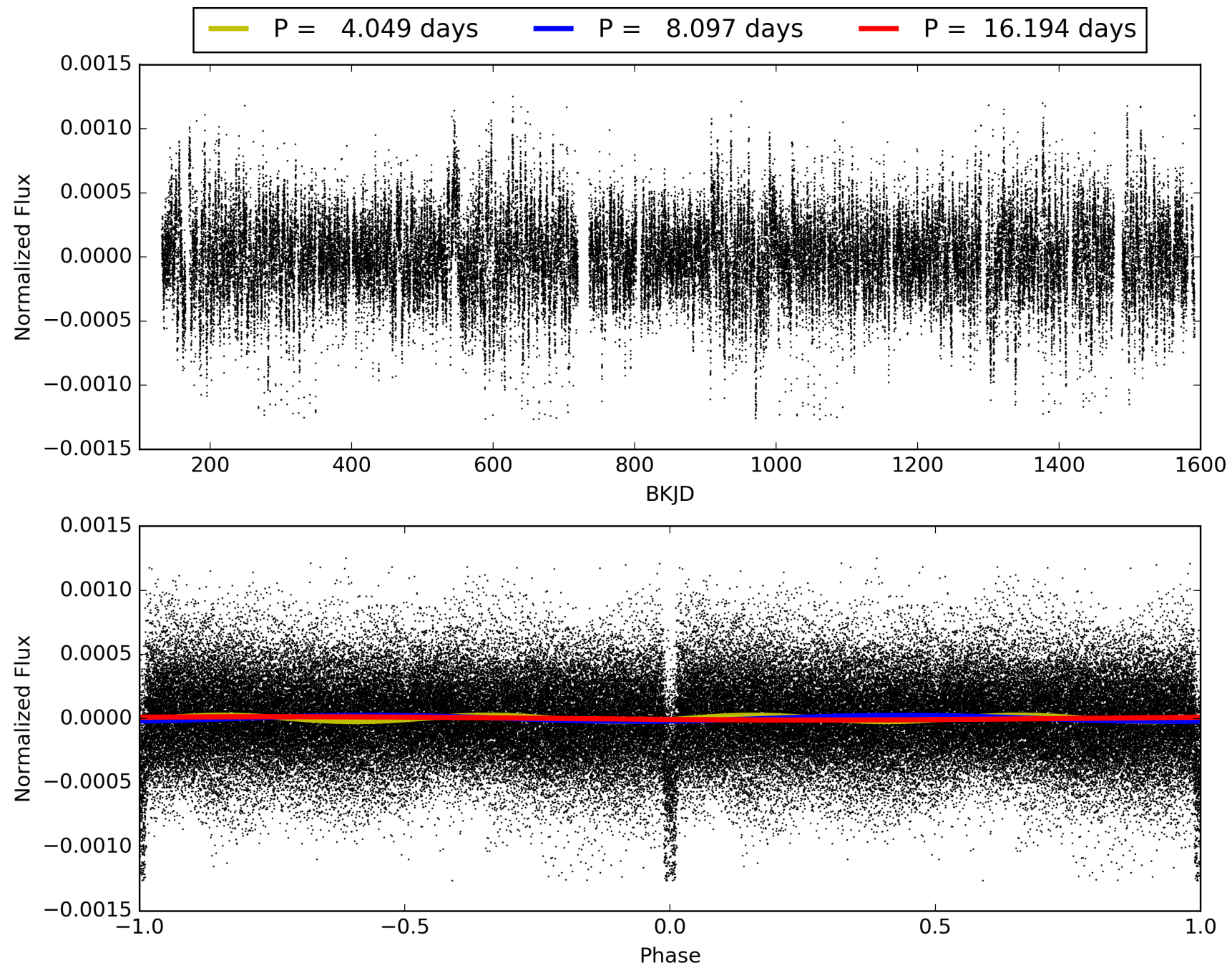
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:21:51 Z

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

TCE 002452450-01, PDC Light Curves

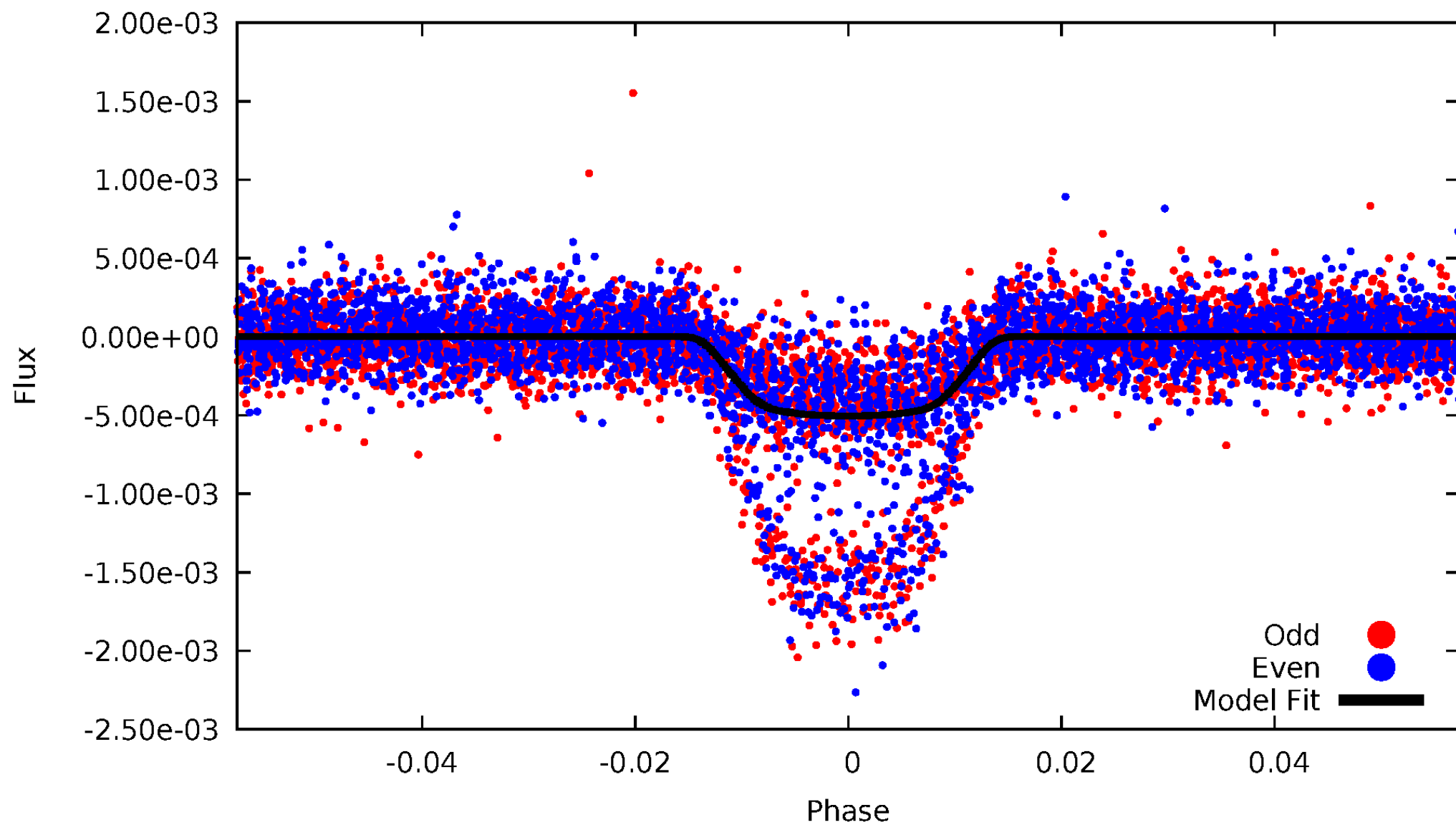


TCE 002452450-01



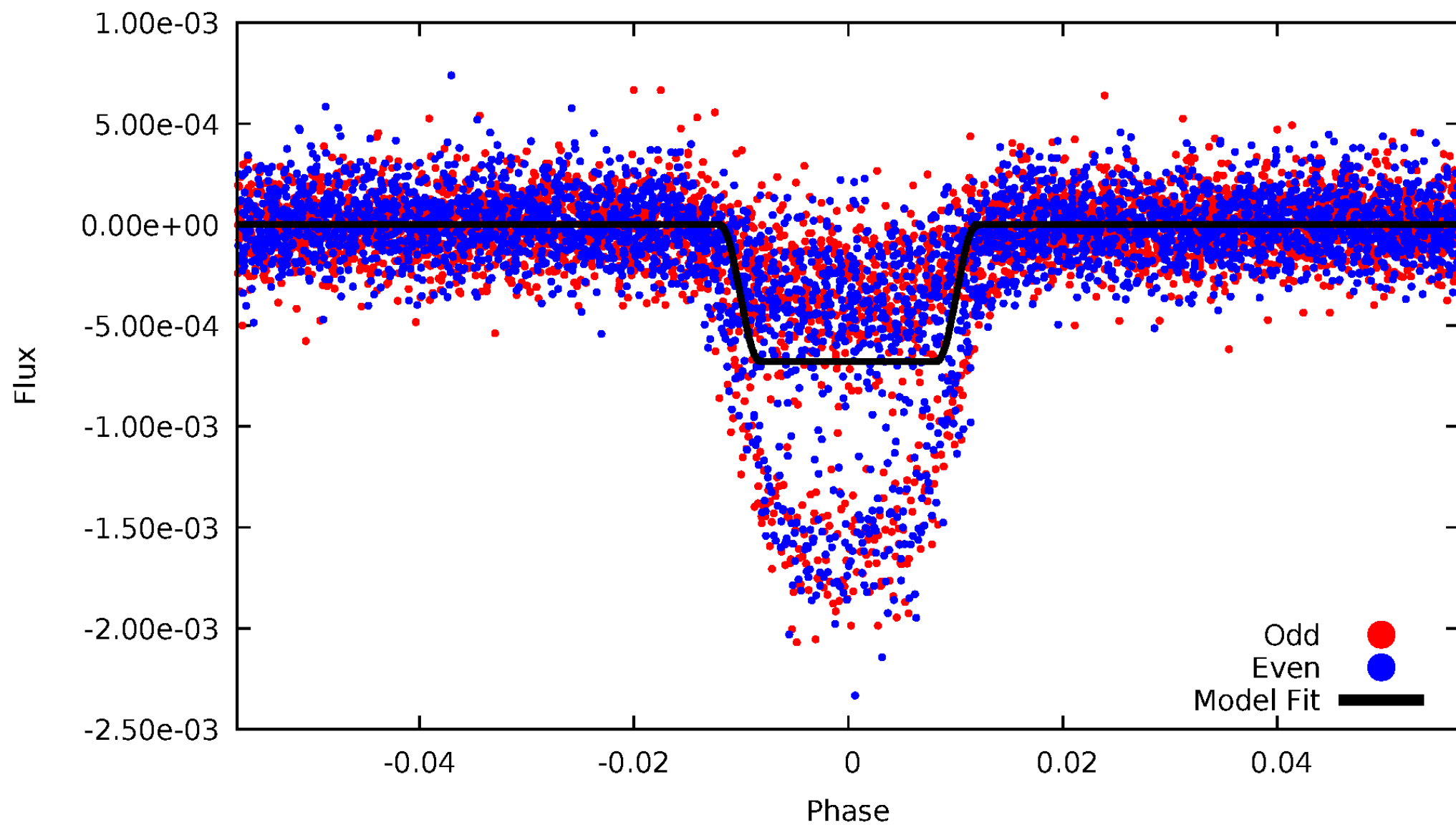
DV Odd/Even

TCE 002452450-01



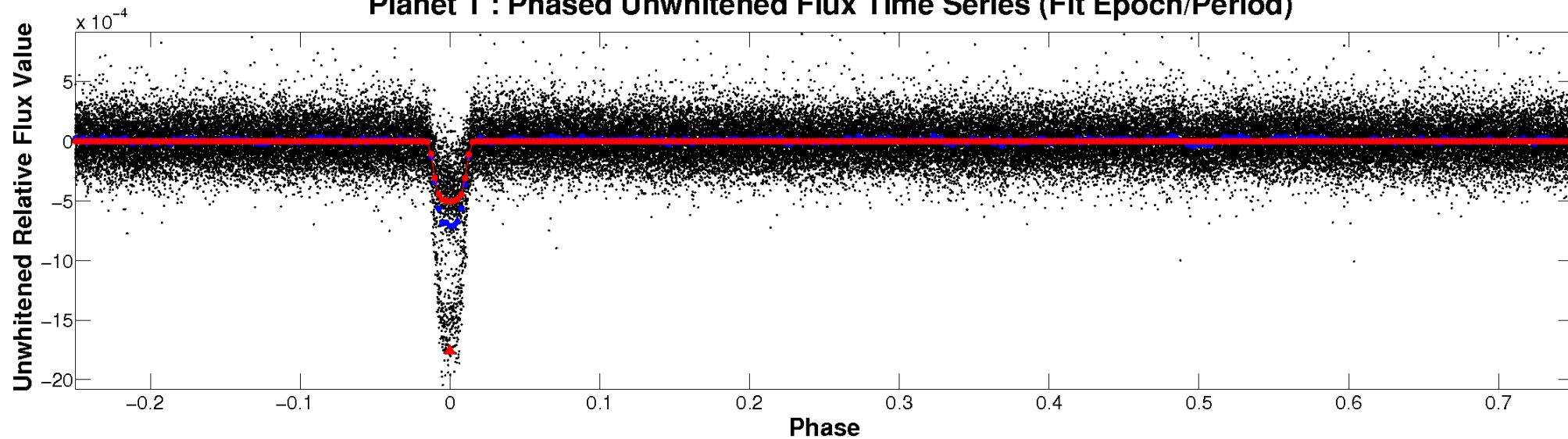
ALT Odd/Even

TCE 002452450-01

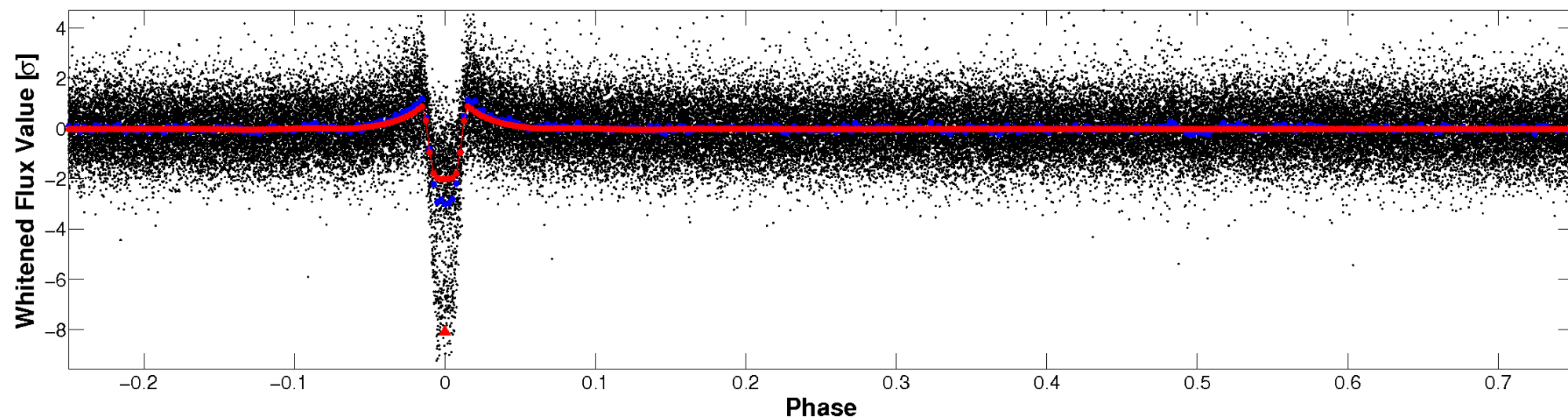


Non-Whitened Vs. Whitened Light Curve

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

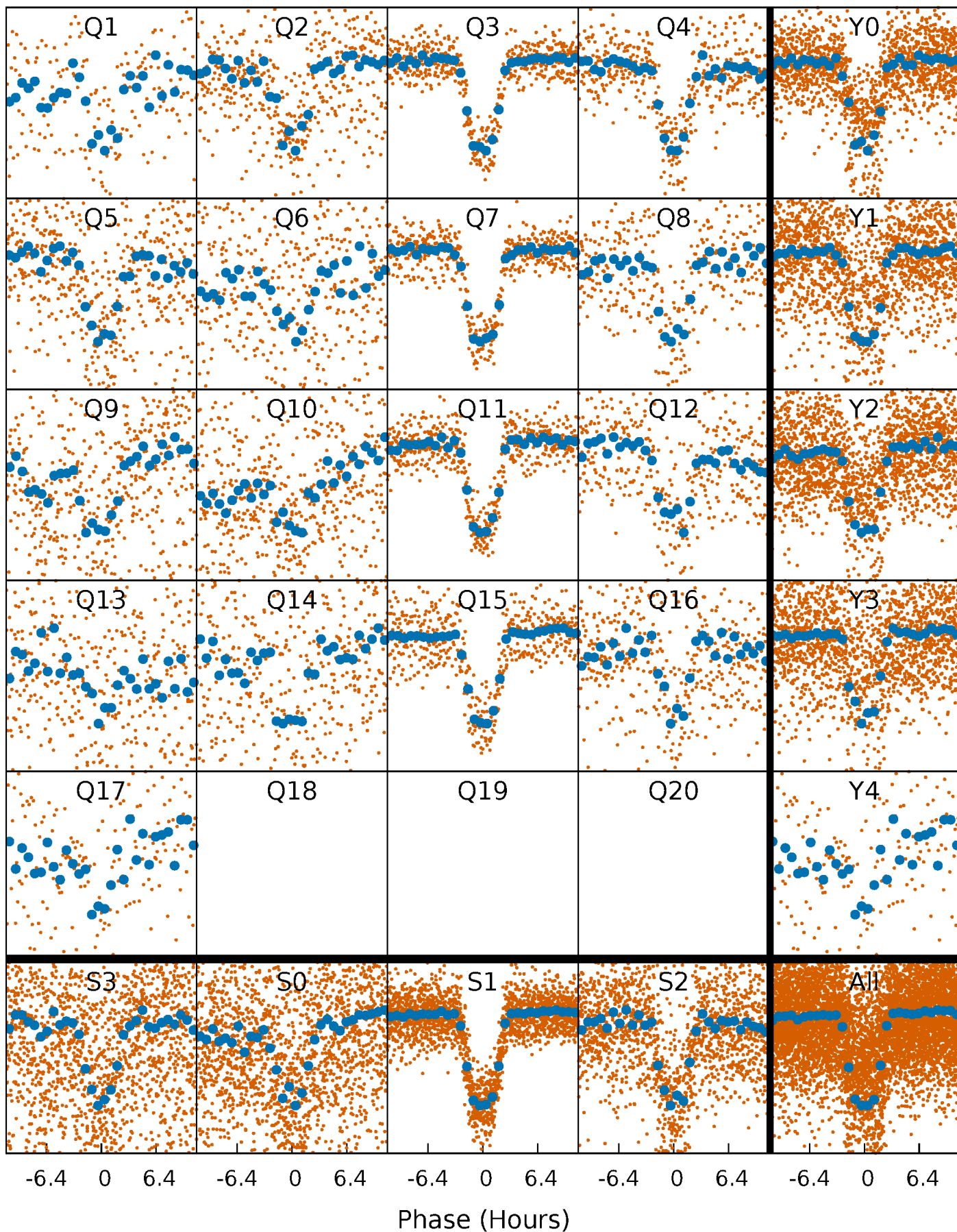


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



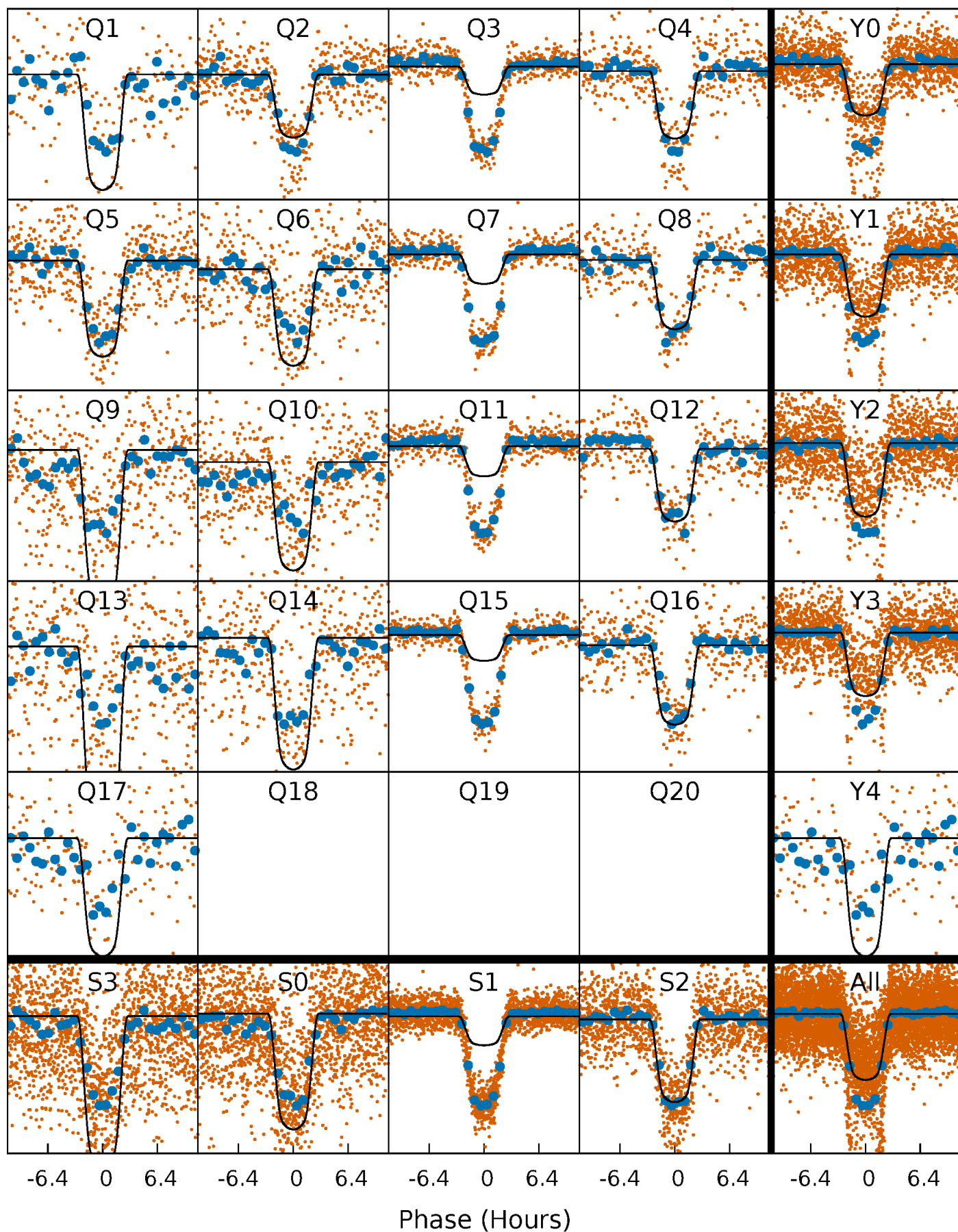
PDC Quarter-Phased Transit Curves

TCE 002452450-01 P= 8.097060 Days $T_0=138.422517$ (BKJD)



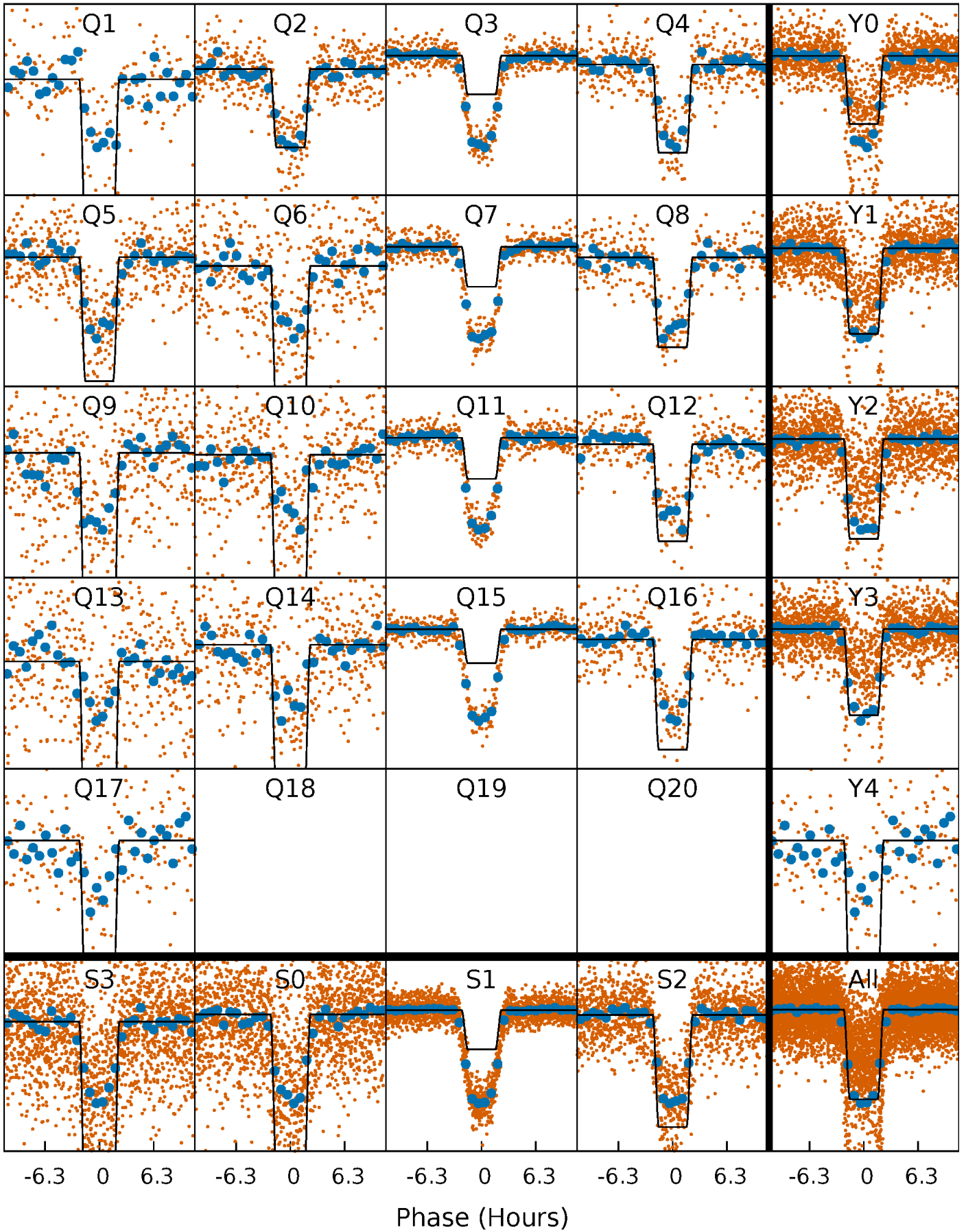
DV Quarter-Phased Transit Curves

TCE 002452450-01 P= 8.097060 Days $T_0=138.422517$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

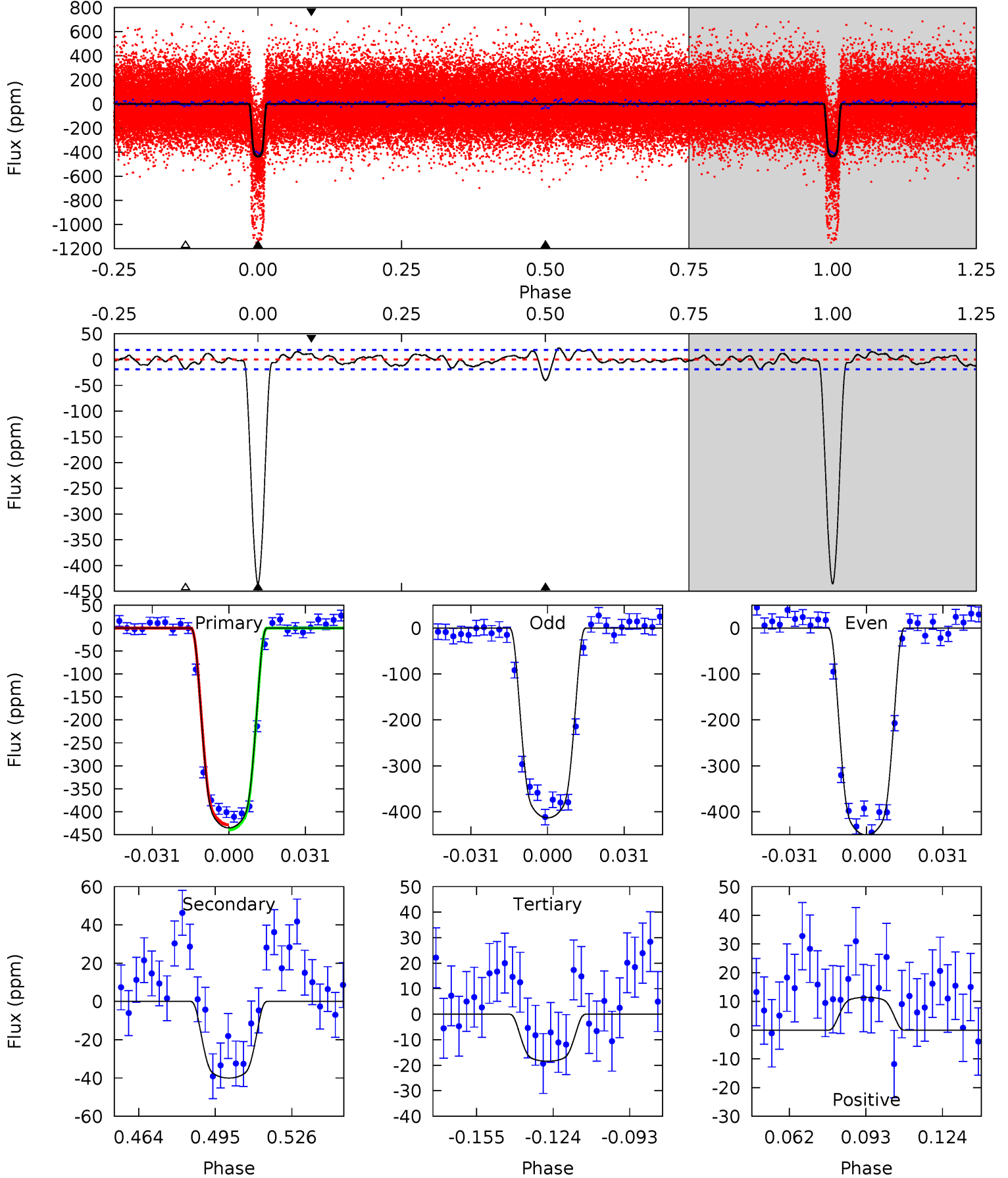
TCE 002452450-01 P= 8.097066 Days $T_0=138.421922$ (BKJD)



DV Model-Shift Uniqueness Test

002452450-01, P = 8.097060 Days, E = 130.325457 Days

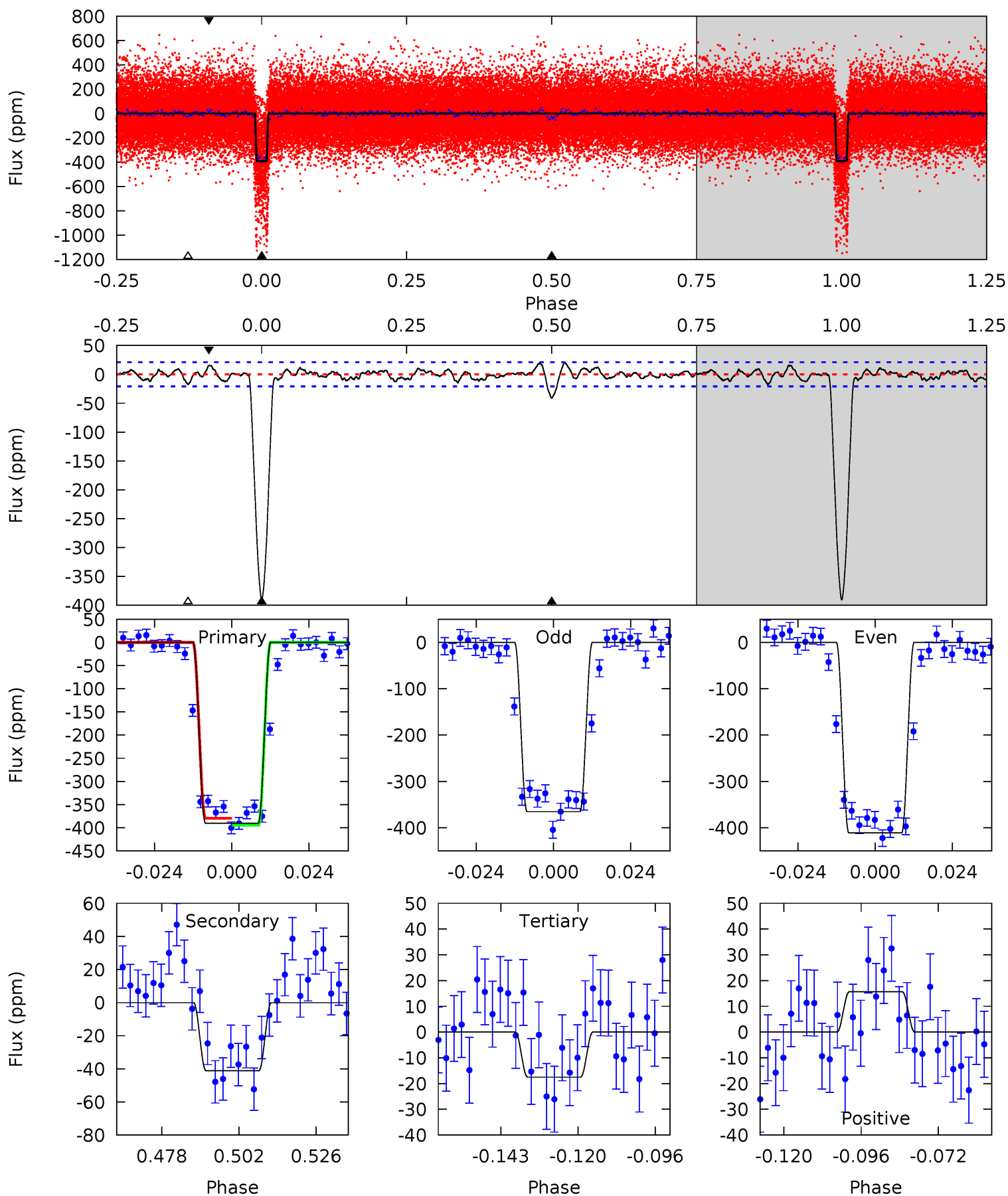
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
111.5	10.3	4.72	2.94	4.81	2.16	1.91	106.8	108.6	5.53	7.32	4.77	1.50	0.05	1.42



Alt Model-Shift Uniqueness Test

002452450-01, P = 8.097066 Days, E = 130.324856 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
90.6	9.53	4.07	3.63	4.86	2.26	1.40	86.5	86.9	5.46	5.90	5.28	1.54	0.05	1.73



Stellar Parameters For KIC 002452450

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6573^{+79}_{-79}	$4.200^{+0.126}_{-0.115}$	$-0.200^{+0.150}_{-0.150}$	$1.455^{+0.230}_{-0.230}$	$1.230^{+0.090}_{-0.108}$	$0.562^{+0.310}_{-0.184}$
	+1%/-1%	+3%/-3%	+75%/-75%	+16%/-16%	+7%/-9%	+55%/-33%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 002452450-01 / KOI 0380.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-40 ± 4	$4.07^{+0.37}_{-0.35}$	1681^{+75}_{-78}	3666^{+65}_{-72}	$9.501^{+2.051}_{-1.667}$
Alt.	-41 ± 4	$4.17^{+0.34}_{-0.38}$	1686^{+75}_{-70}	3666^{+72}_{-81}	$9.277^{+2.088}_{-1.512}$

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 $A_{obs} \gg 1.0$

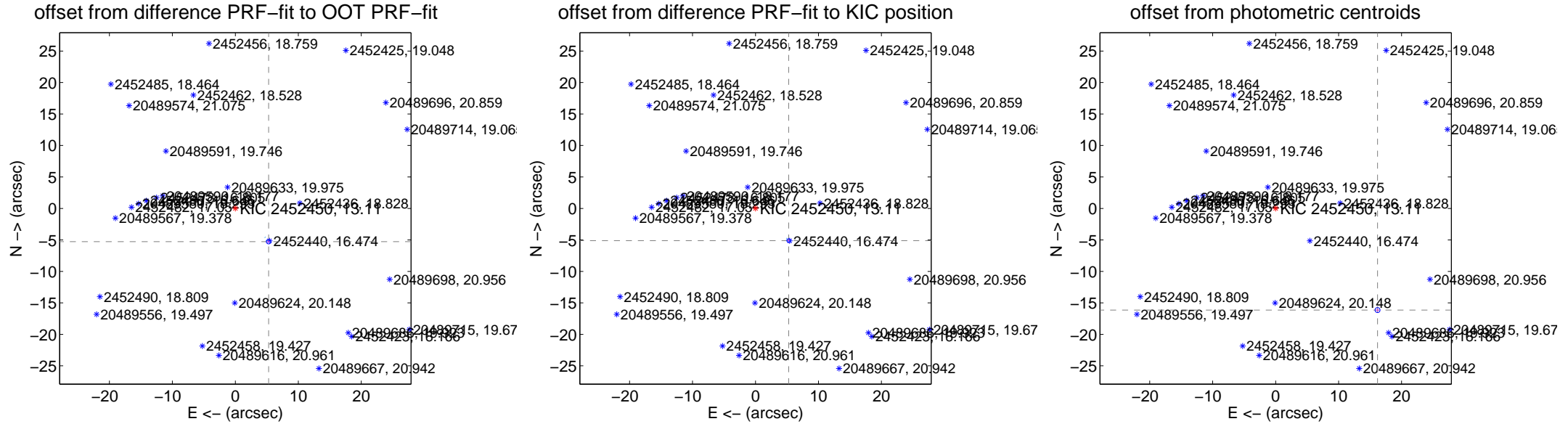
DV Centroid Data

Supplemental centroid analysis for 002452450-01. Kepler magnitude: 13.11. Transit SNR 65.54

There are 17 quarters with good PRF difference image offsets

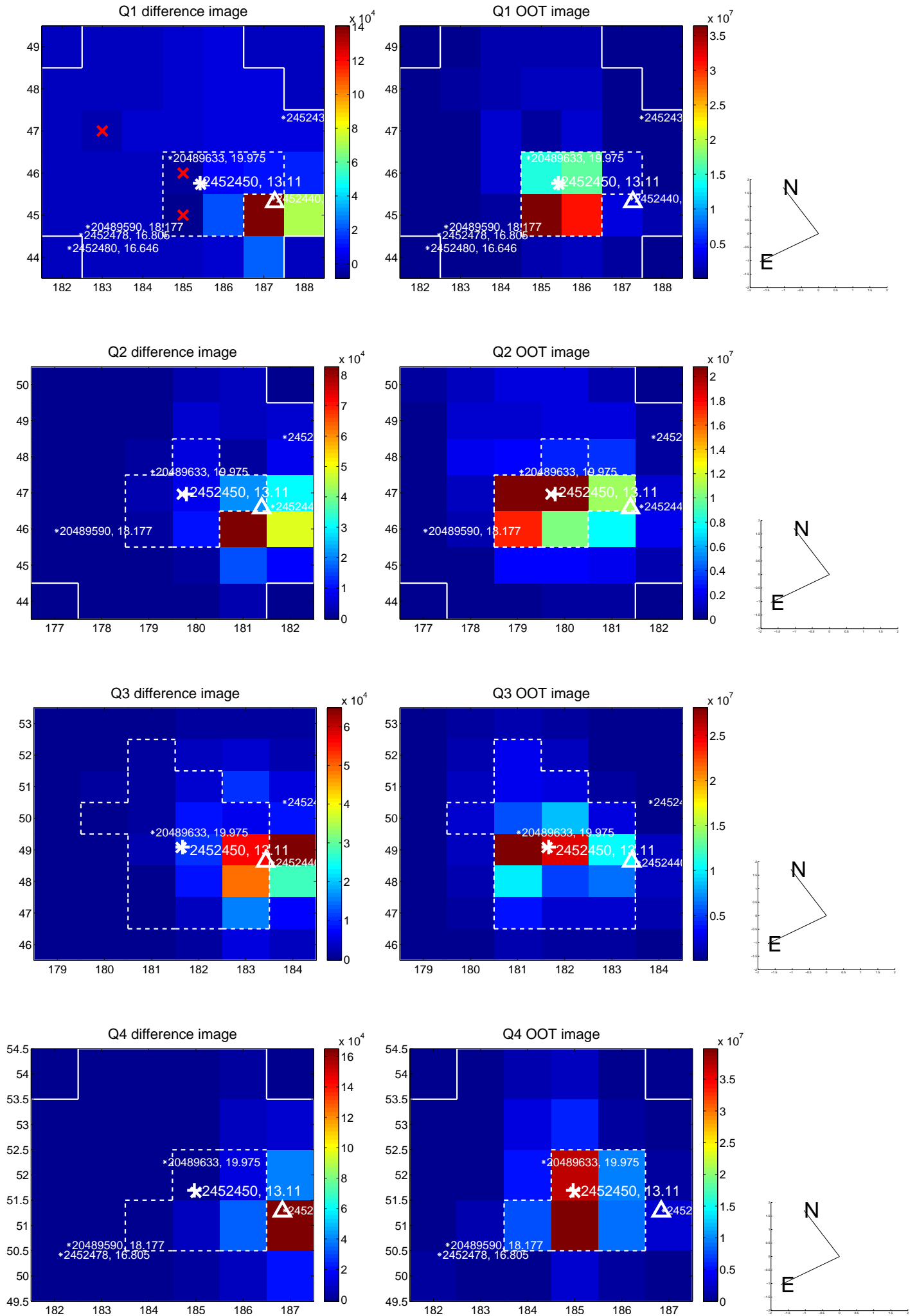
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.467 \pm 0.121	61.65	-5.287 \pm 0.099	-5.272 \pm 0.100
PRF-fit source offset from KIC position	7.356 \pm 0.097	75.69	-5.283 \pm 0.090	-5.119 \pm 0.082
photometric centroid source offset	22.86 \pm 0.13	172.71	-16.19 \pm 0.13	-16.14 \pm 0.13

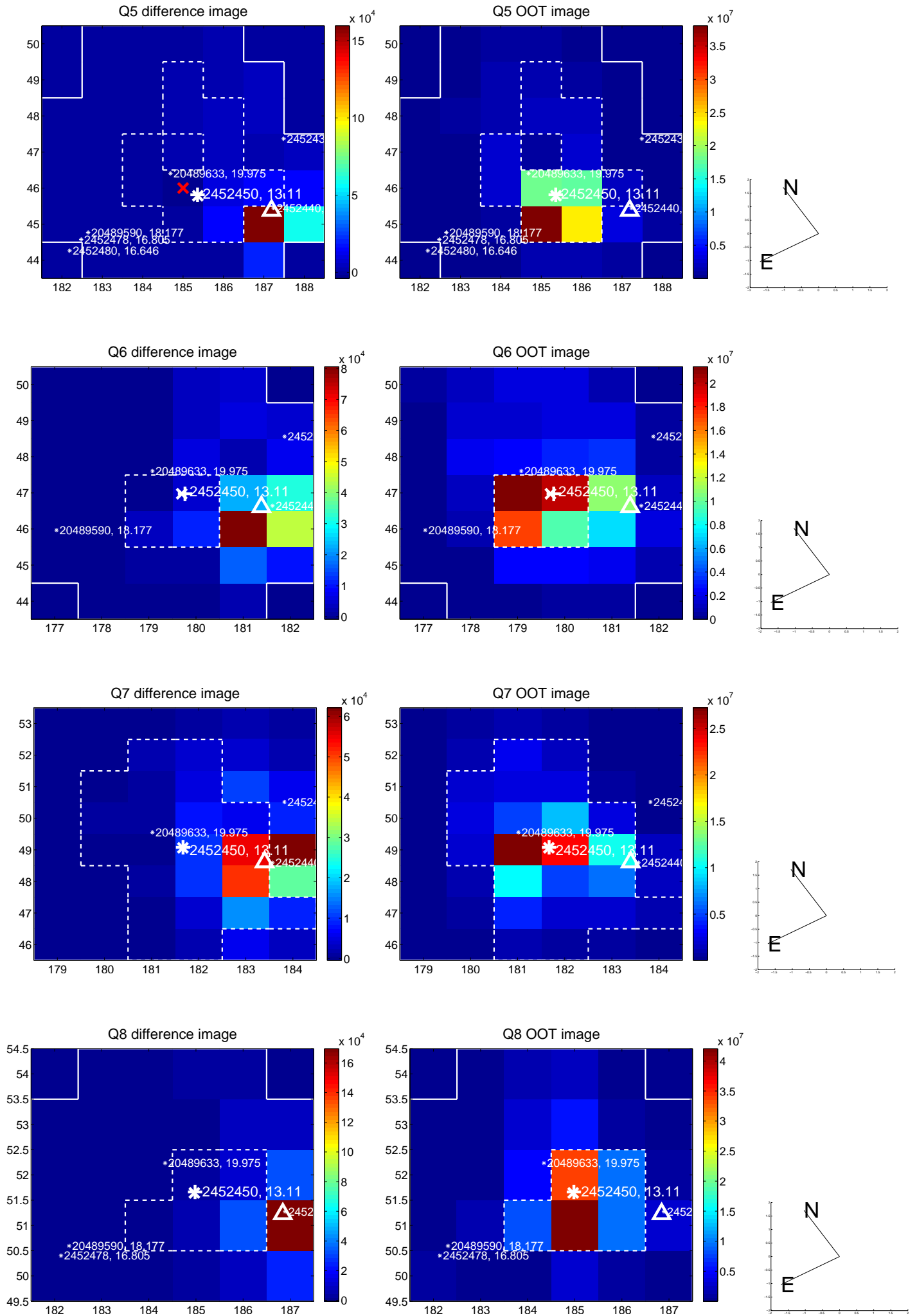


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

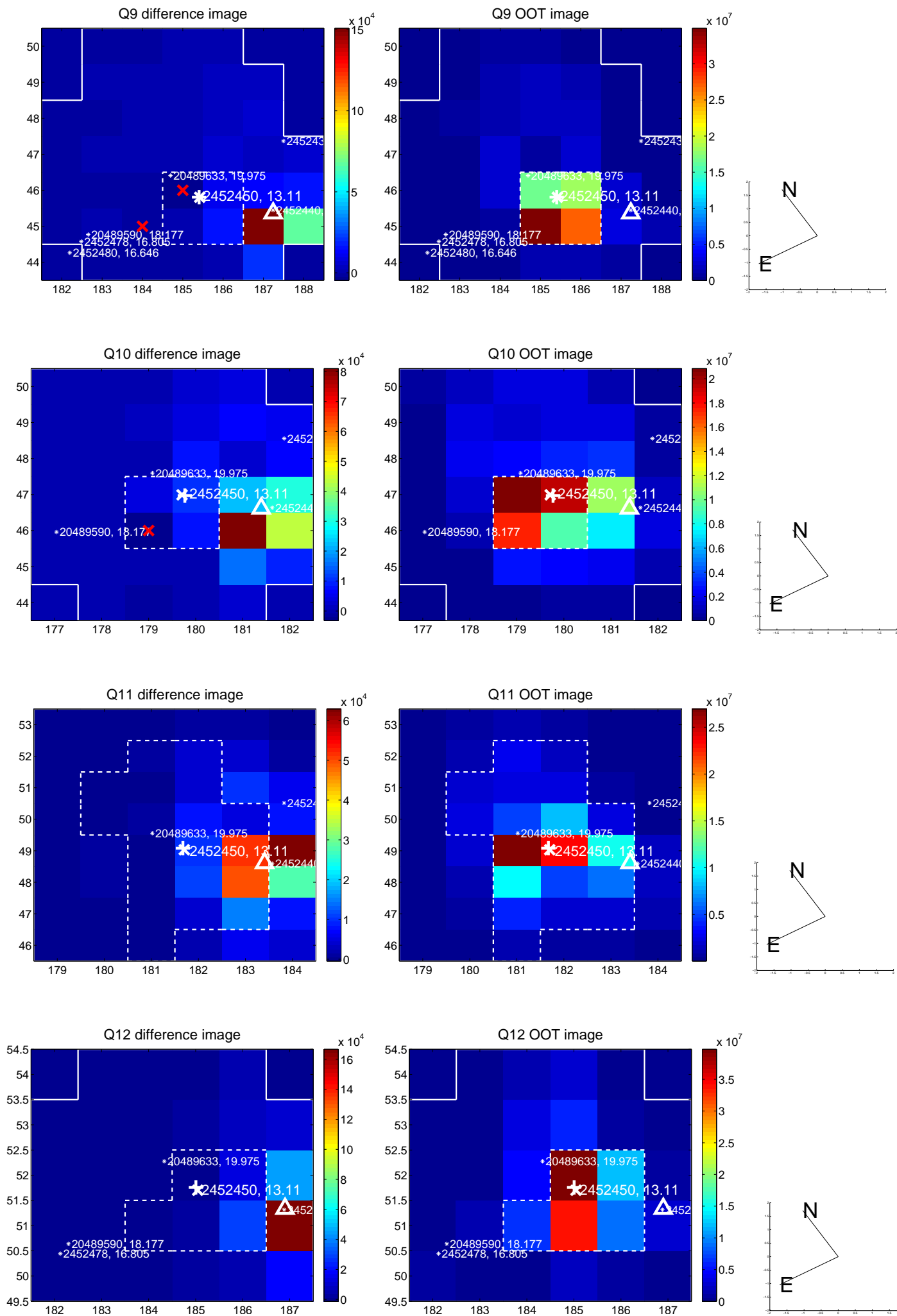
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



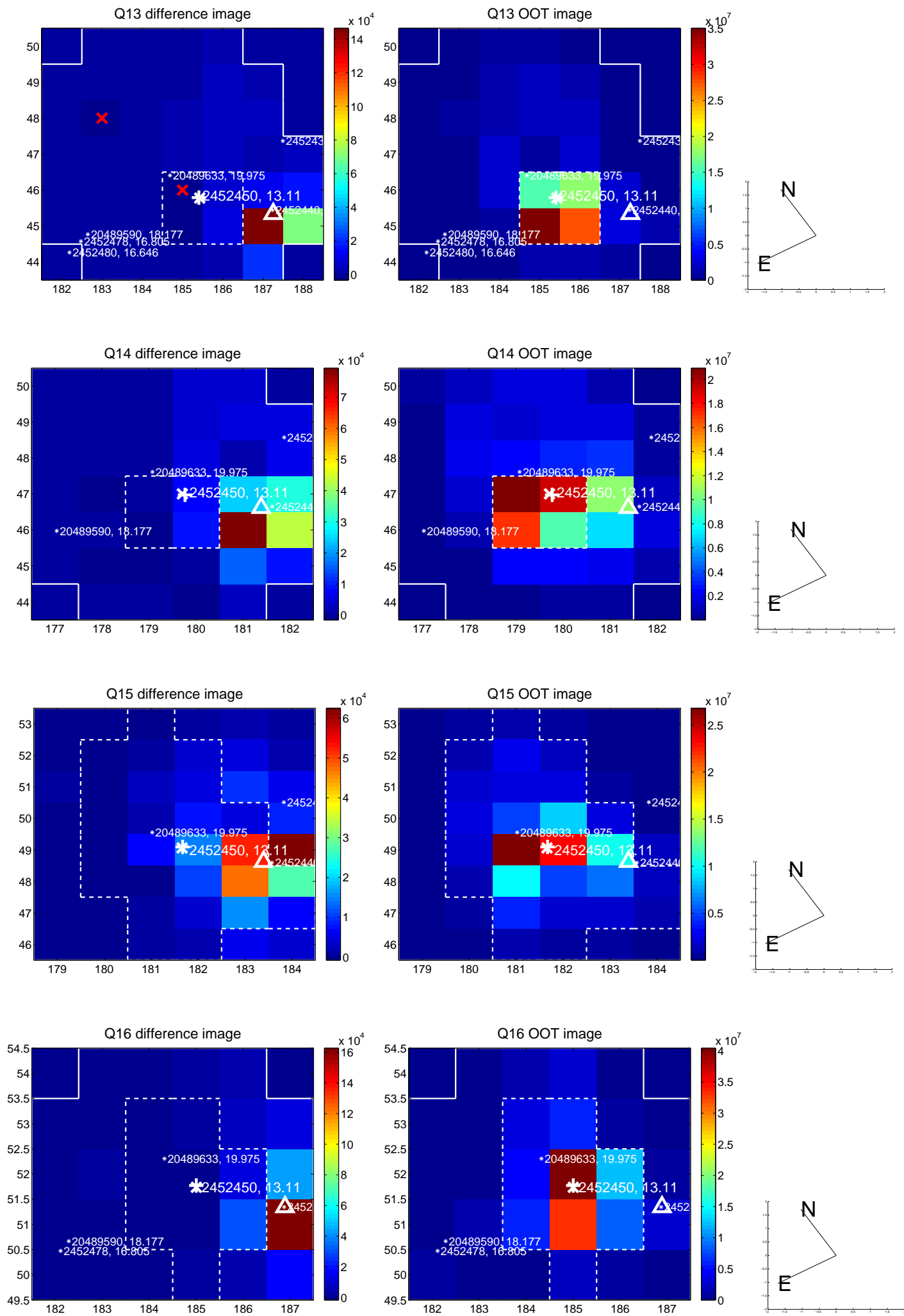
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



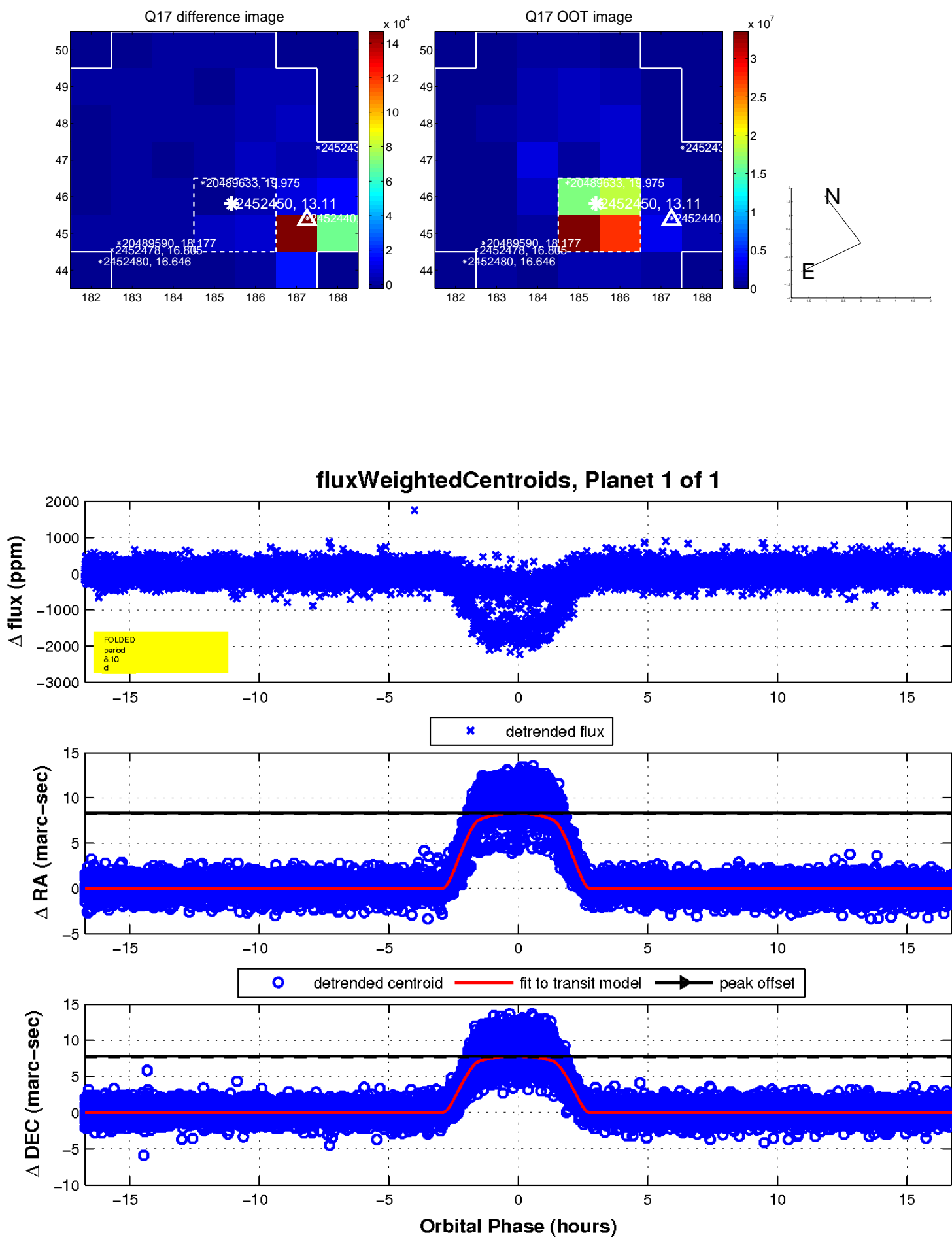
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

