

KIC 009084778

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
009084778-01	OBS	1631.01	0.592239	131.660839	1501.3	0.855	75.9	112.5	0.59	4920	2.84	1371.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009084778-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT

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 009084778-01

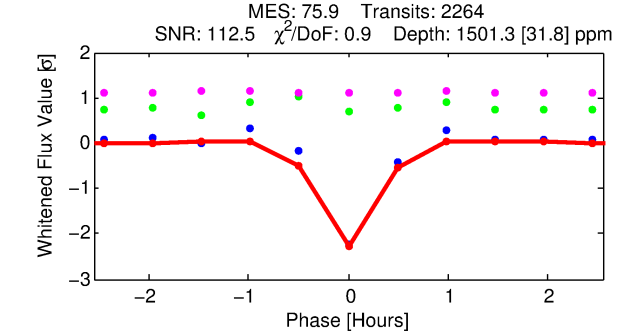
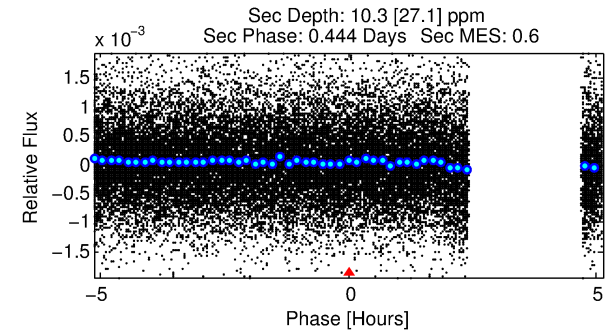
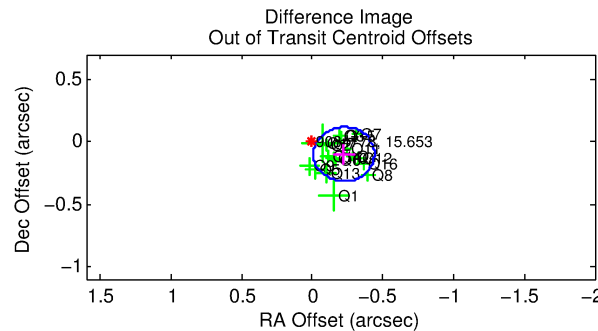
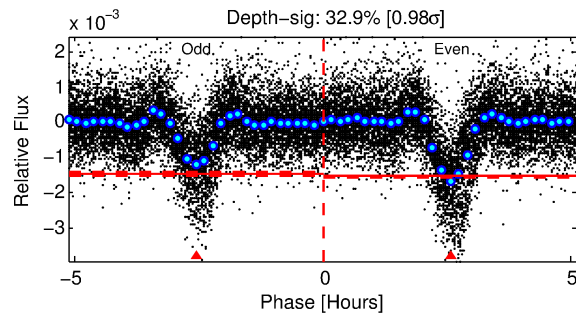
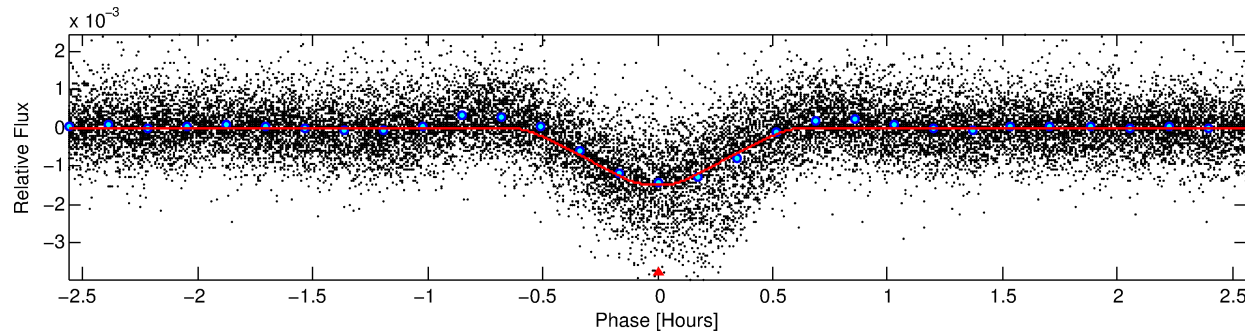
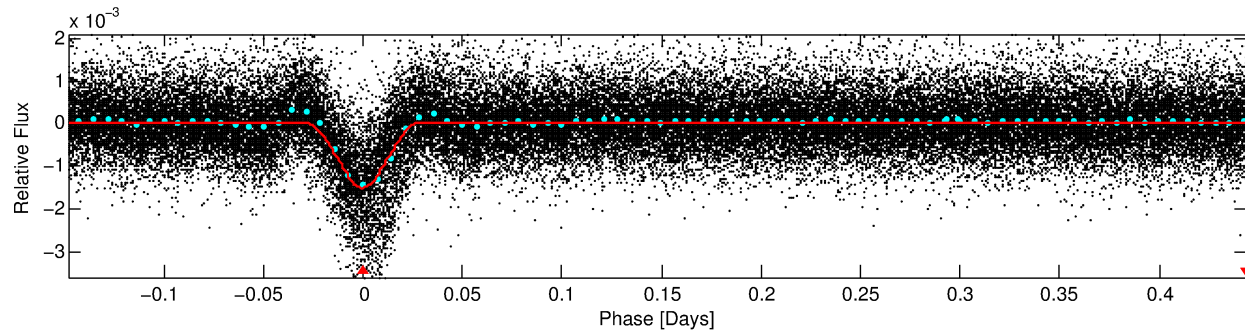
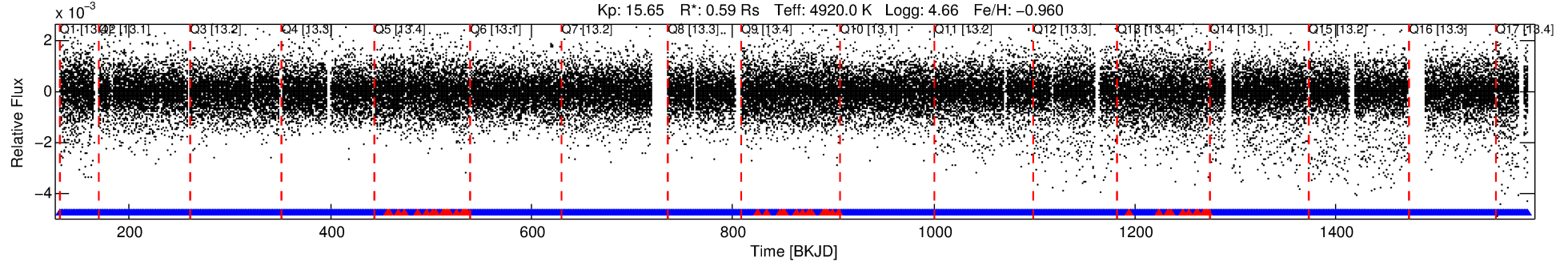
No Significant Match Found

DV One-Page Summary

KIC: 9084778 Candidate: 1 of 1 Period: 0.592 d

KOI: K01631.01 Corr: 0.790

Kp: 15.65 R*: 0.59 Rs Teff: 4920.0 K Logg: 4.66 Fe/H: -0.960



DV Fit Results:

Period = 0.59224 [0.00000] d
Epoch = 131.6608 [0.0001] BKJD
Rp/R* = 0.0440 [0.0027]
a/R* = 2.93 [0.54]
b = 0.90 [0.05]
Seff = 1371.36 [212.70]
Teq = 1552 [60] K
Rp = 2.84 [0.28] Re
a = 0.0116 [0.0008] AU
Ag = 0.09 [0.25] [-3.65σ]
Teffp = 1330 [874] K [-0.25σ]

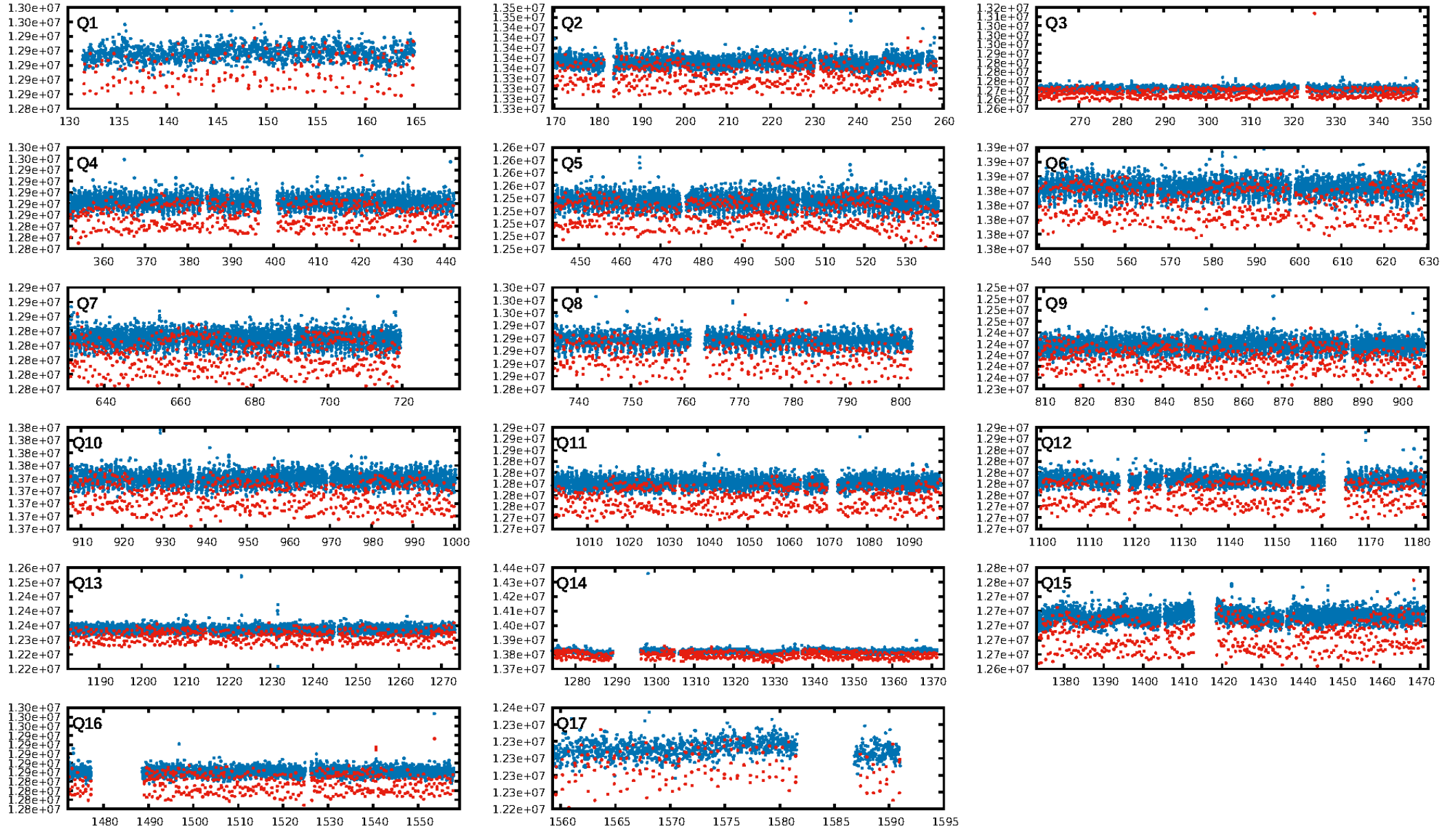
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.97 [2099/2161]
GhostDiagnostic-chr: 1.376
Centroid-sig: 0.0%
Centroid-so: 0.314 arcsec [3.07σ]
OotOffset-rm: 0.244 arcsec [3.38σ]
KicOffset-rm: 0.134 arcsec [1.77σ]
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]

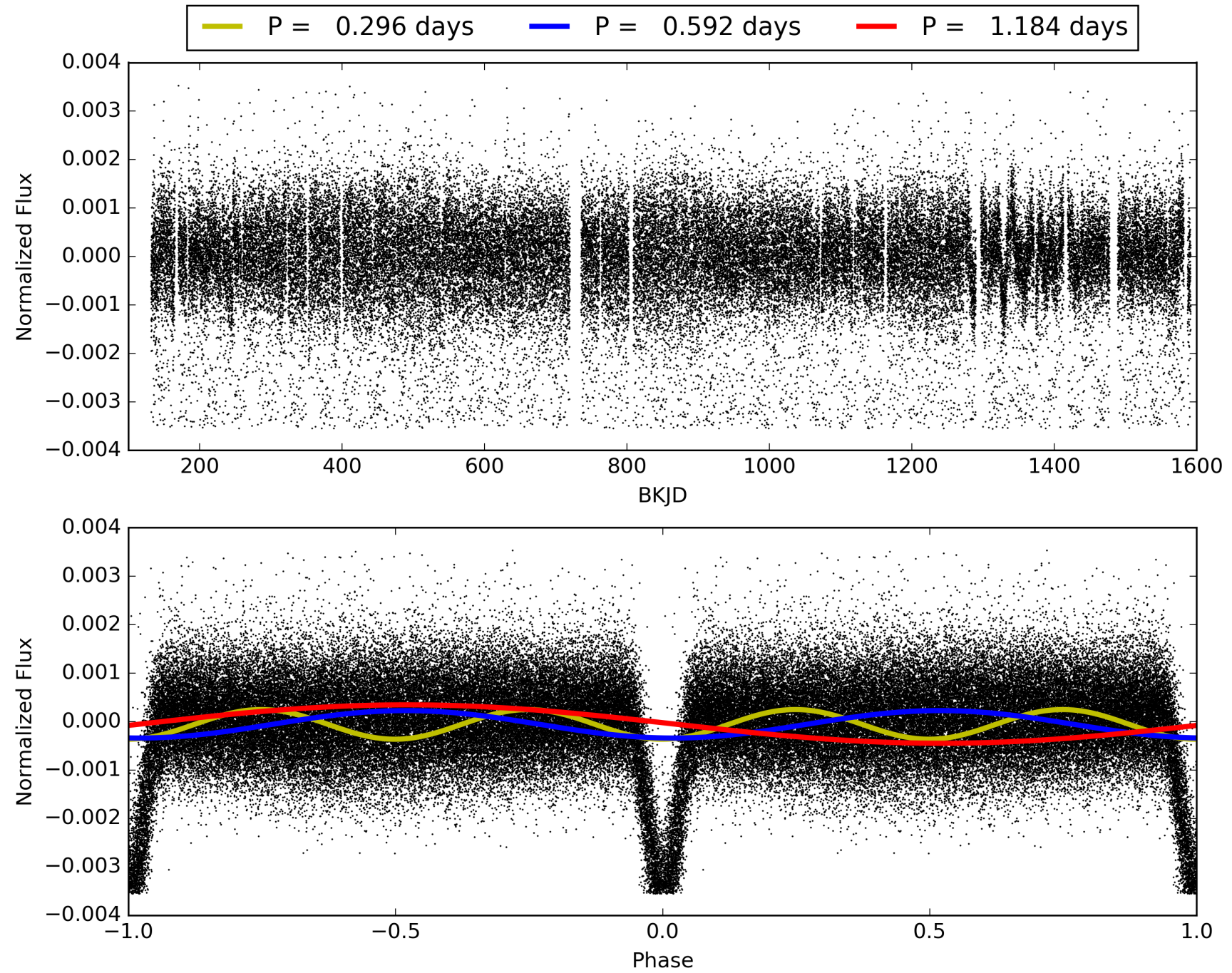
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:17:53 Z

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

TCE 009084778-01, PDC Light Curves

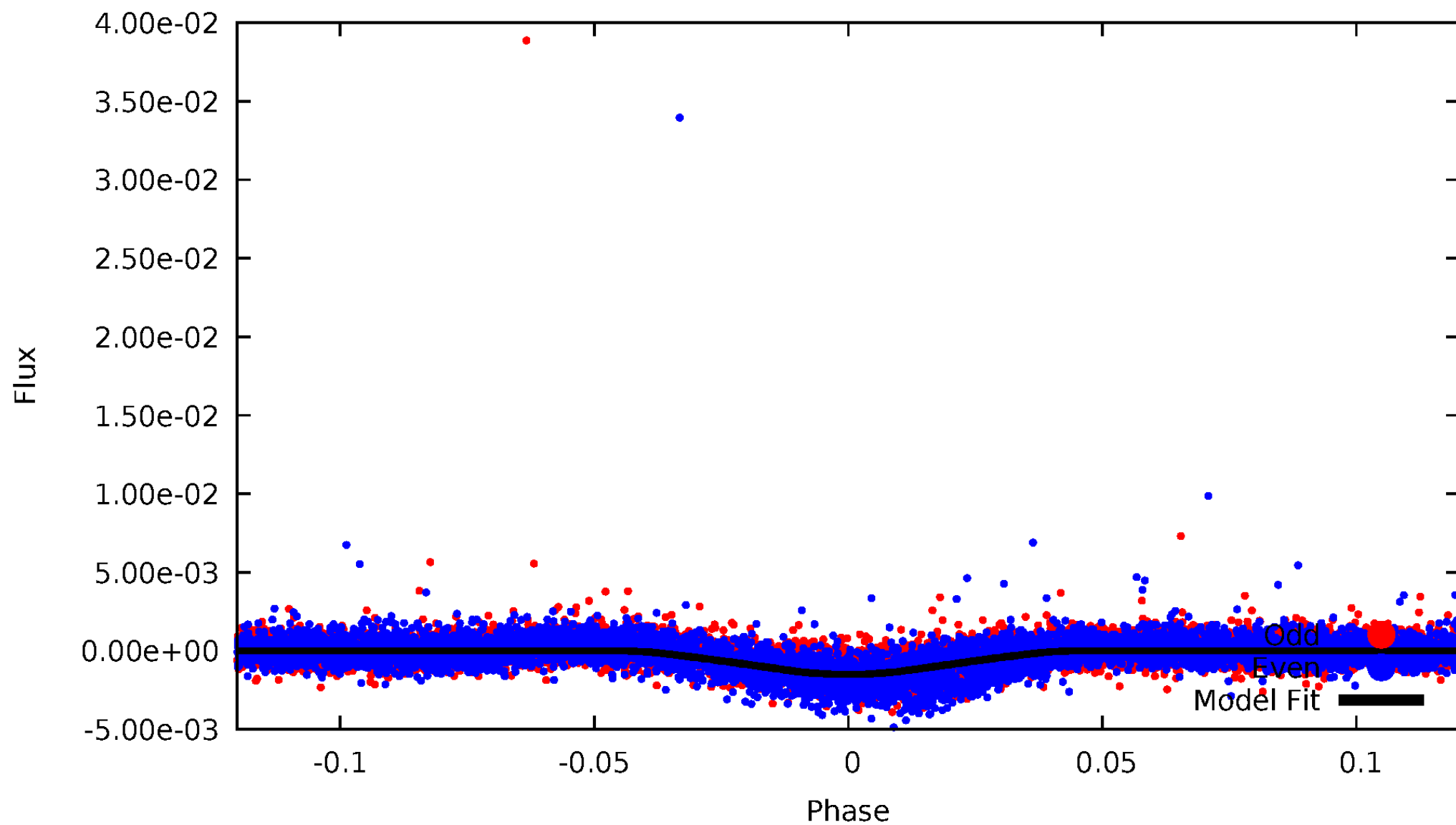


TCE 009084778-01



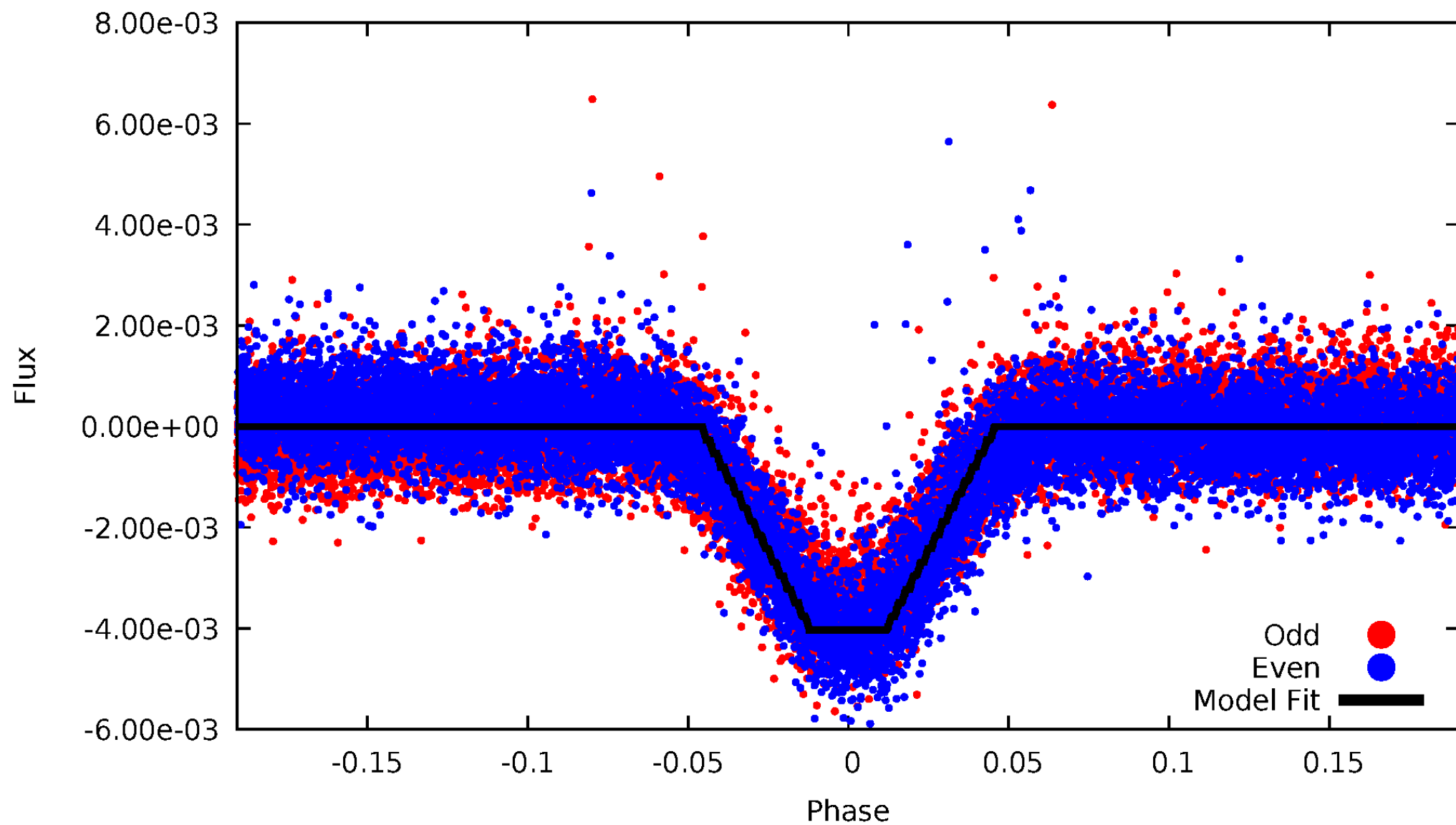
DV Odd/Even

TCE 009084778-01



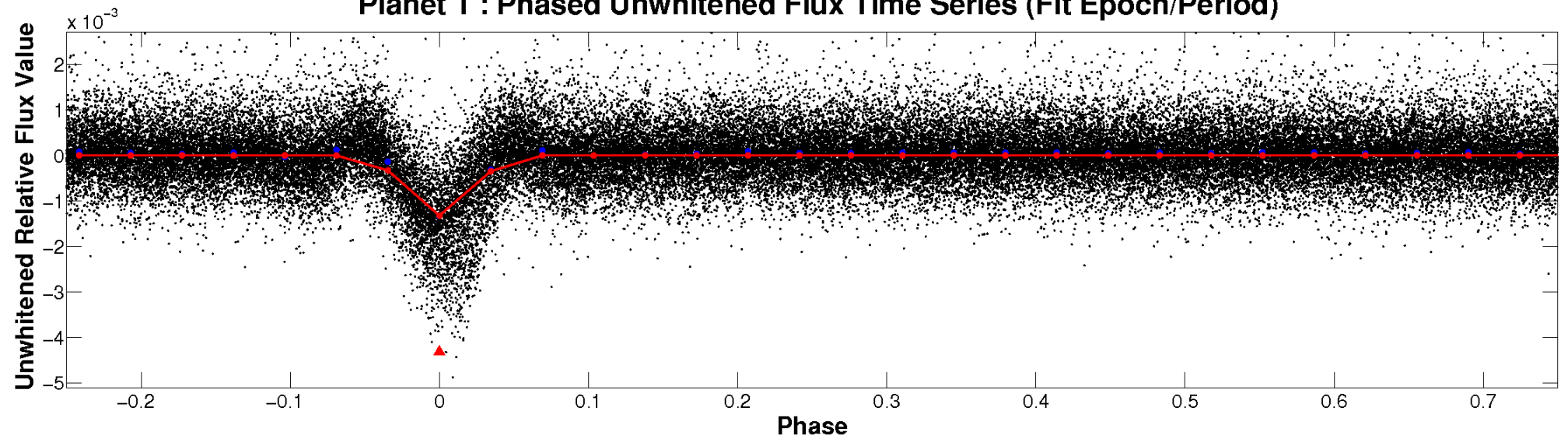
ALT Odd/Even

TCE 009084778-01

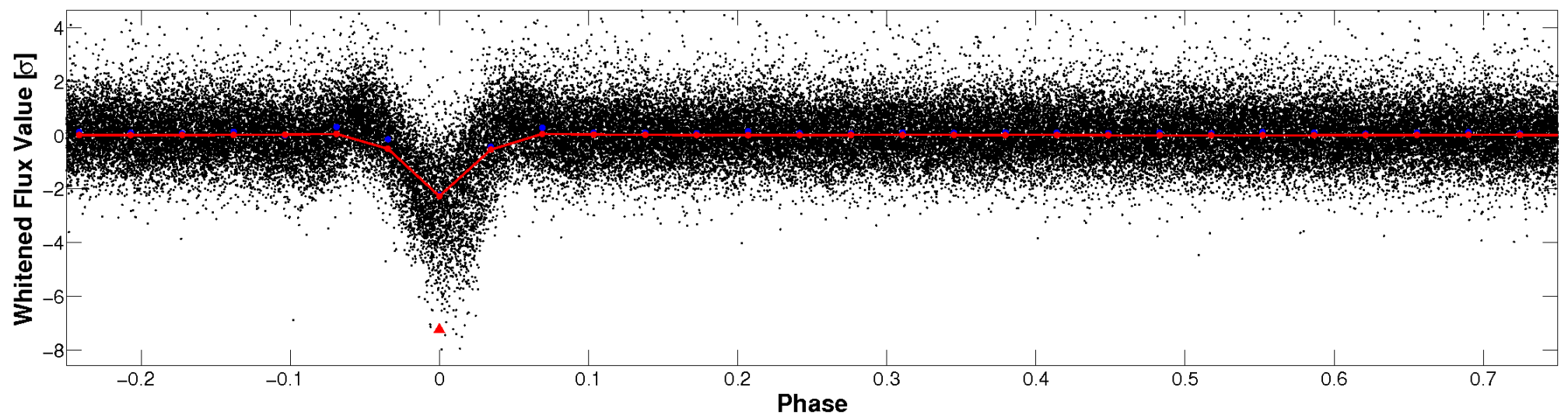


Non-Whitened Vs. Whitened Light Curve

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

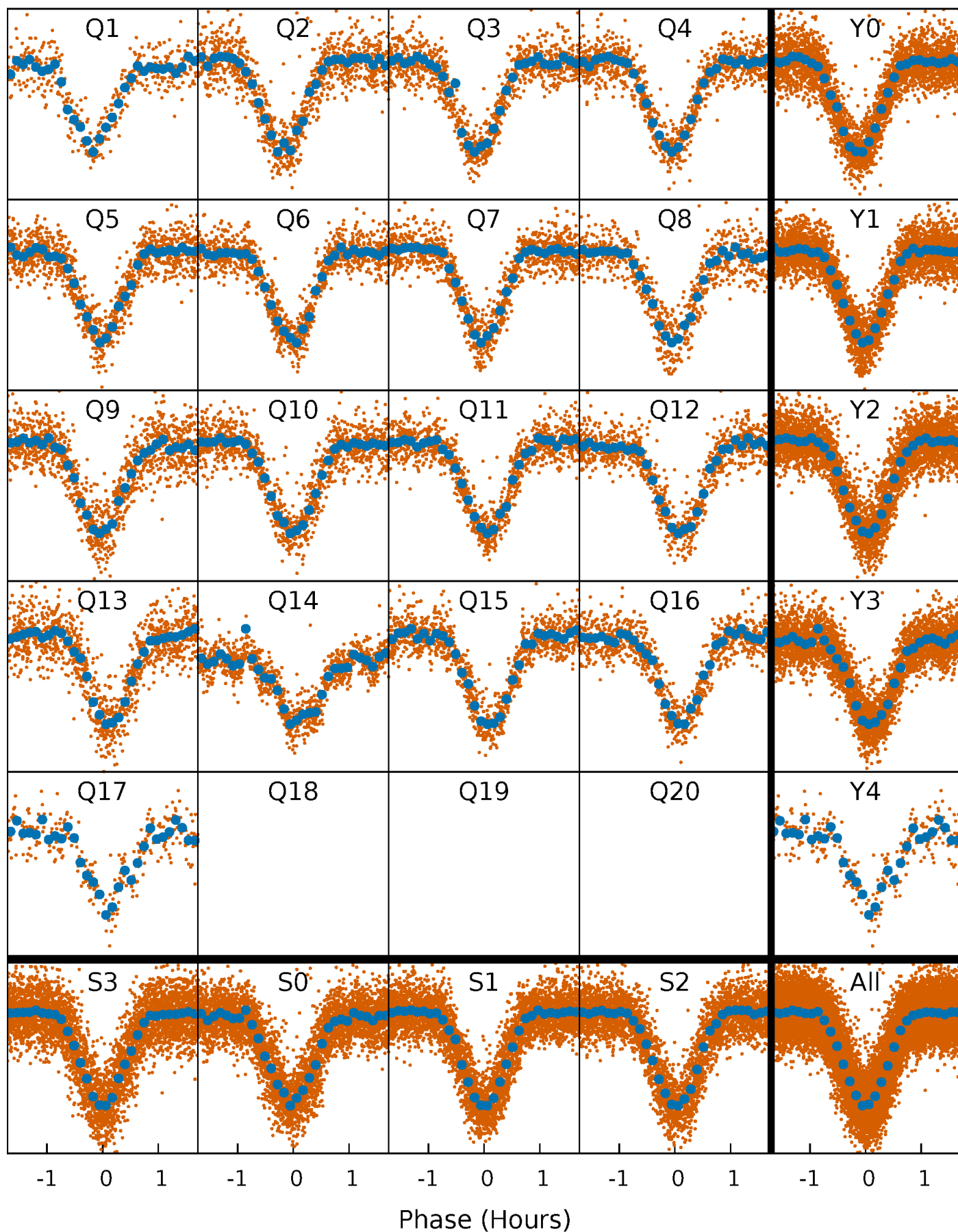


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



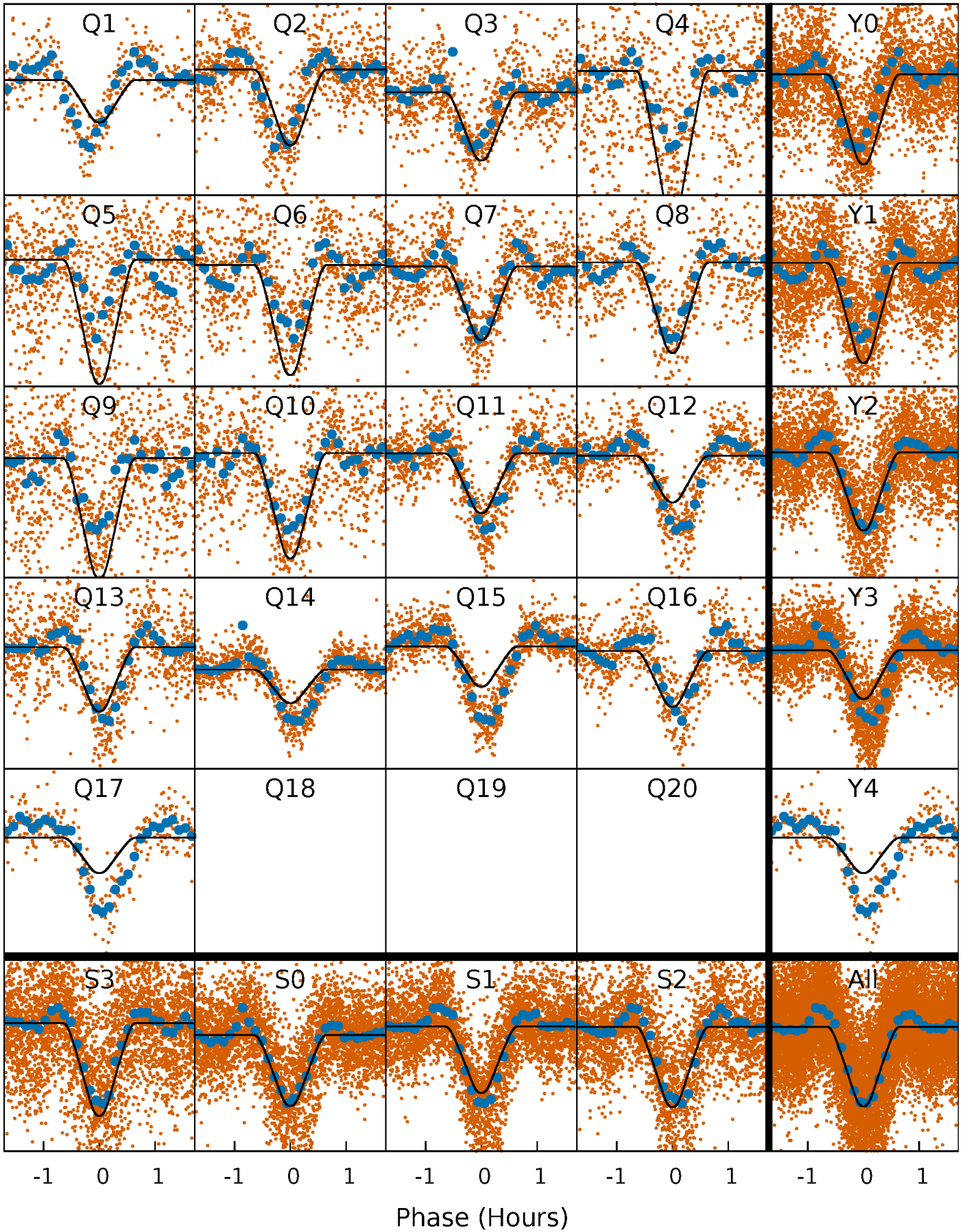
PDC Quarter-Phased Transit Curves

TCE 009084778-01 P= 0.592239 Days $T_0=131.660839$ (BKJD)



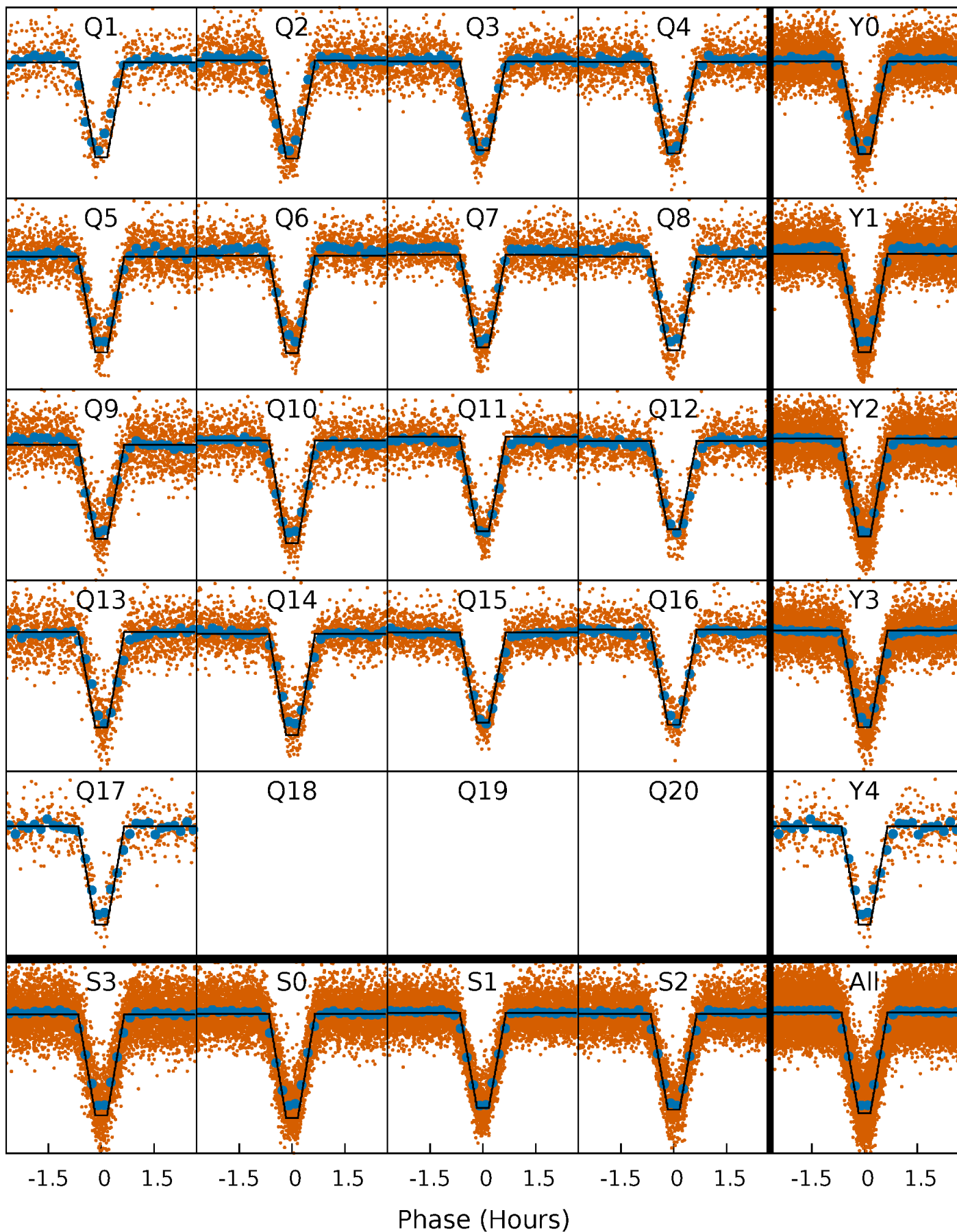
DV Quarter-Phased Transit Curves

TCE 009084778-01 P= 0.592239 Days $T_0=131.660839$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

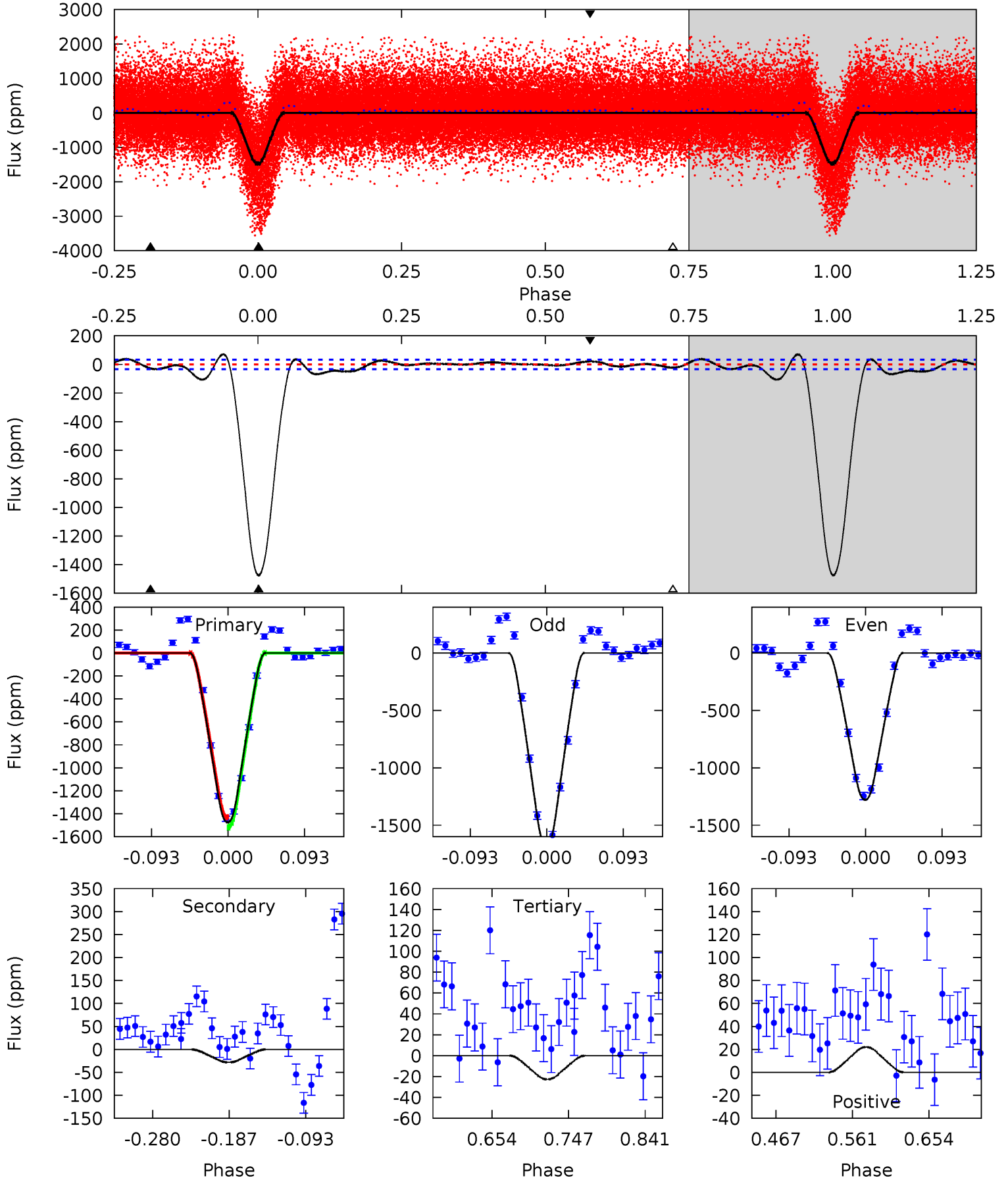
TCE 009084778-01 P= 0.592241 Days $T_0=131.658247$ (BKJD)



DV Model-Shift Uniqueness Test

009084778-01, P = 0.592239 Days, E = 131.068600 Days

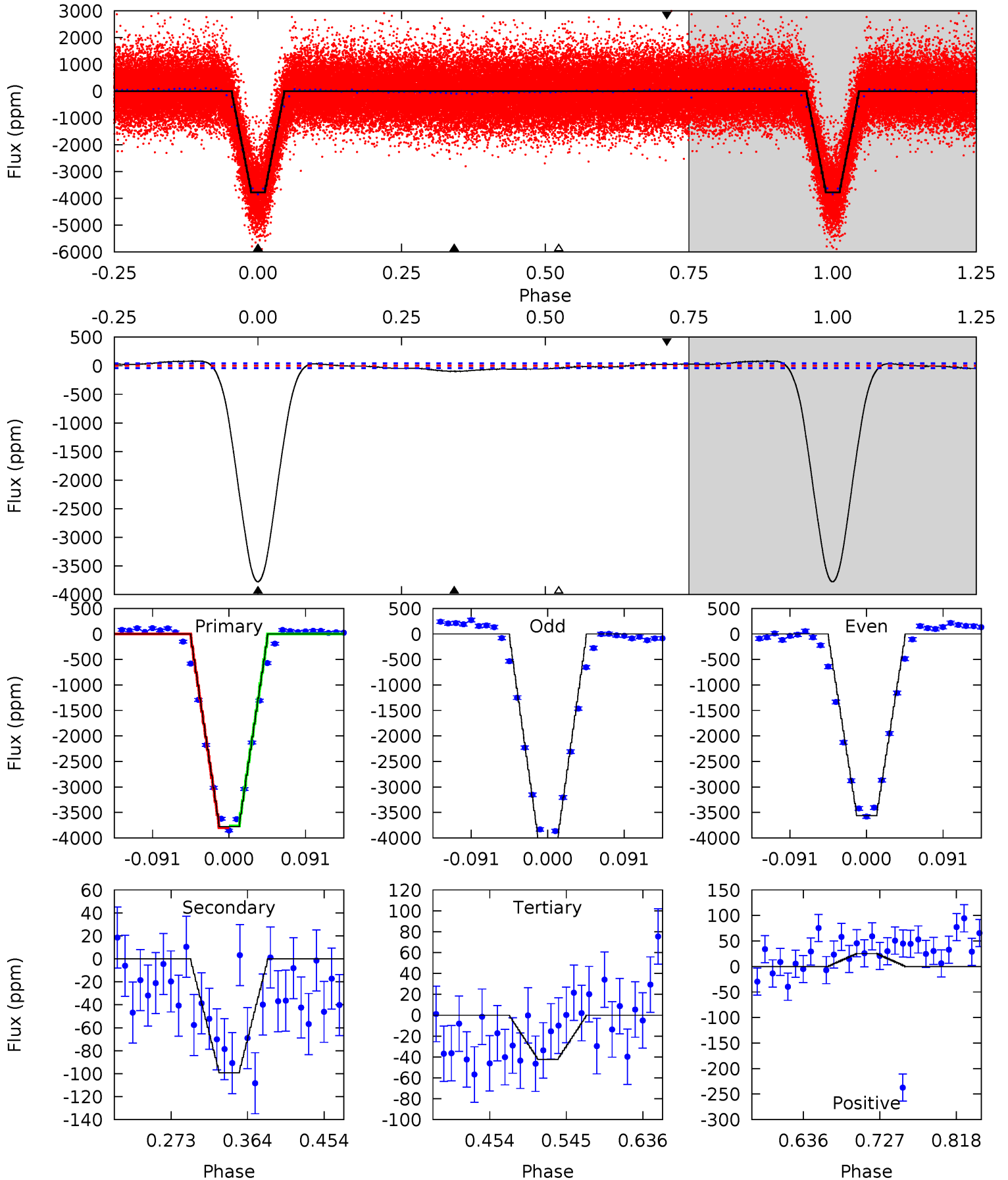
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
202.6	3.88	3.12	3.02	4.58	1.68	2.88	199.5	199.6	0.76	0.86	27.7	1.04	0.05	6.10



Alt Model-Shift Uniqueness Test

009084778-01, P = 0.592241 Days, E = 131.066006 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
416.0	10.9	4.66	2.79	4.58	1.69	4.38	411.3	413.2	6.28	8.15	24.3	0.98	0.02	1.86



Stellar Parameters For KIC 009084778

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4920^{+146}_{-146}	$4.664^{+0.056}_{-0.032}$	$-0.960^{+0.300}_{-0.300}$	$0.591^{+0.045}_{-0.045}$	$0.588^{+0.050}_{-0.025}$	$4.005^{+0.842}_{-0.579}$
	+3%/-3%	+1%/-1%	+31%/-31%	+8%/-8%	+9%/-4%	+21%/-14%
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 009084778-01 / KOI 1631.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-28 ± 7	$2.82^{+0.20}_{-0.20}$	2150^{+80}_{-65}	-2025^{+4102}_{-258}	$0.262^{+0.086}_{-0.074}$
Alt.	-99 ± 9	$4.08^{+0.24}_{-0.23}$	2160^{+71}_{-75}	2340^{+115}_{-143}	$0.441^{+0.071}_{-0.057}$

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 $A_{obs} \gg 1.0$

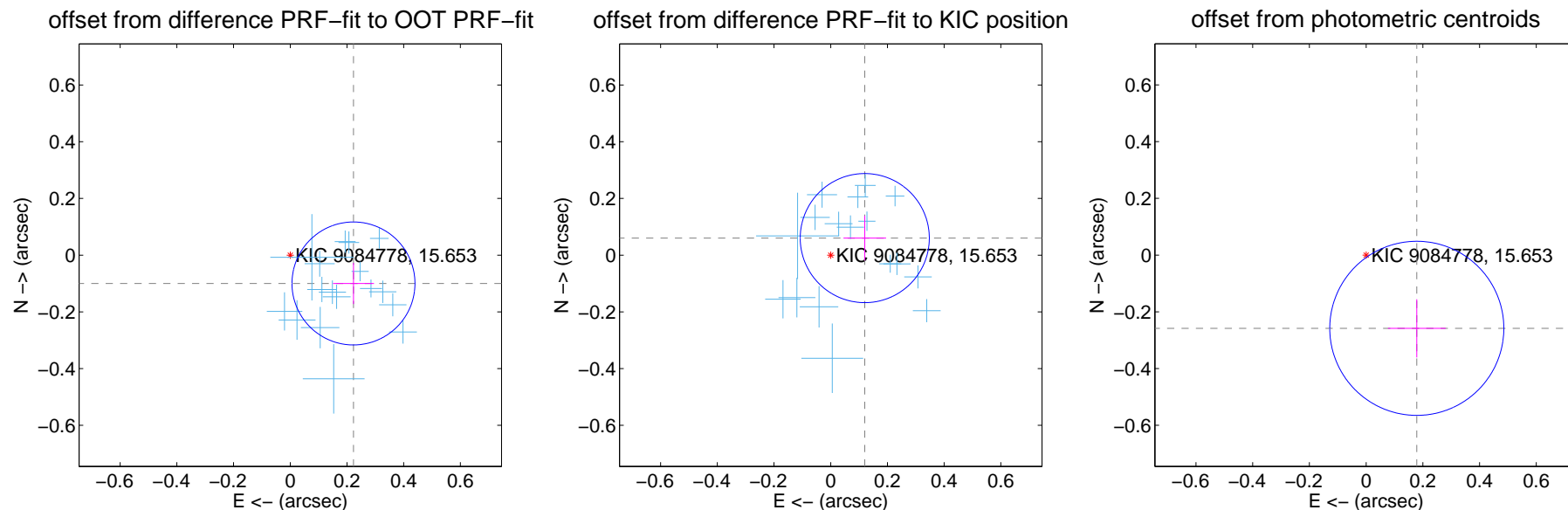
DV Centroid Data

Supplemental centroid analysis for 009084778-01. Kepler magnitude: 15.65. Transit SNR 112.45

There are 17 quarters with good PRF difference image offsets

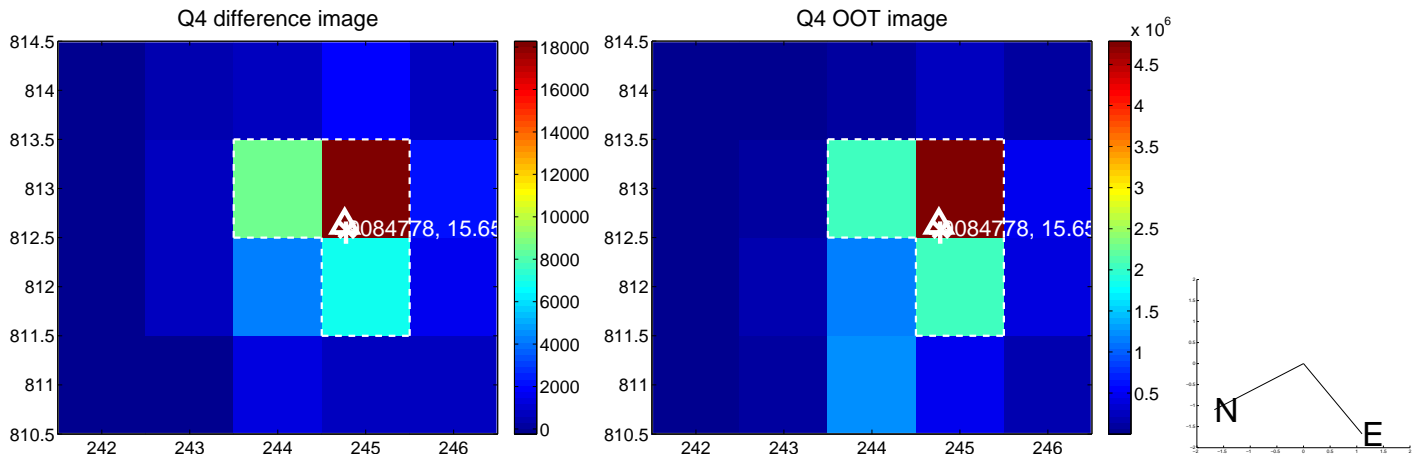
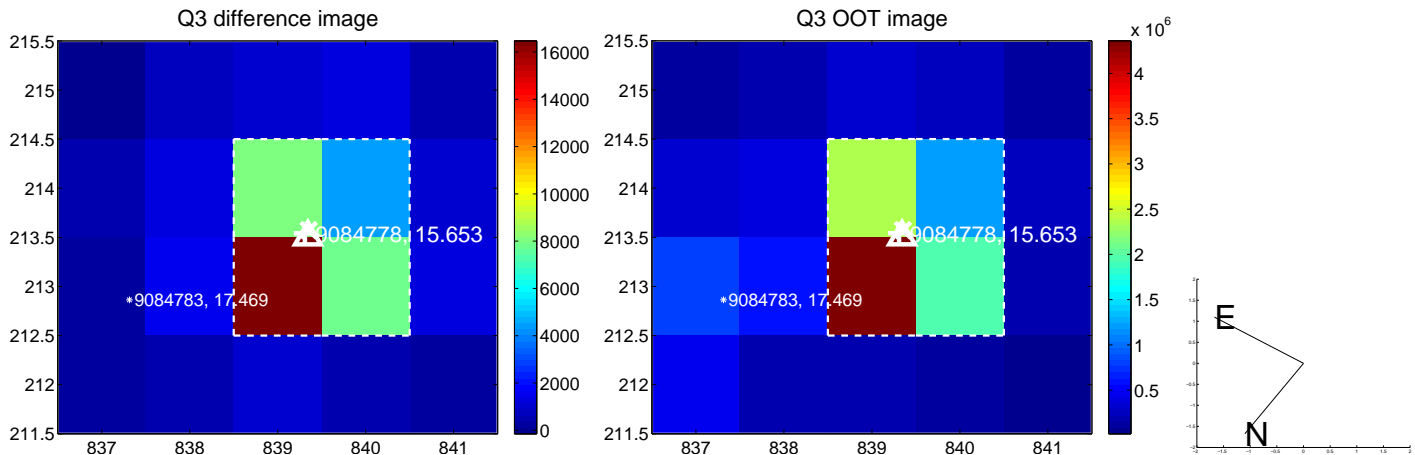
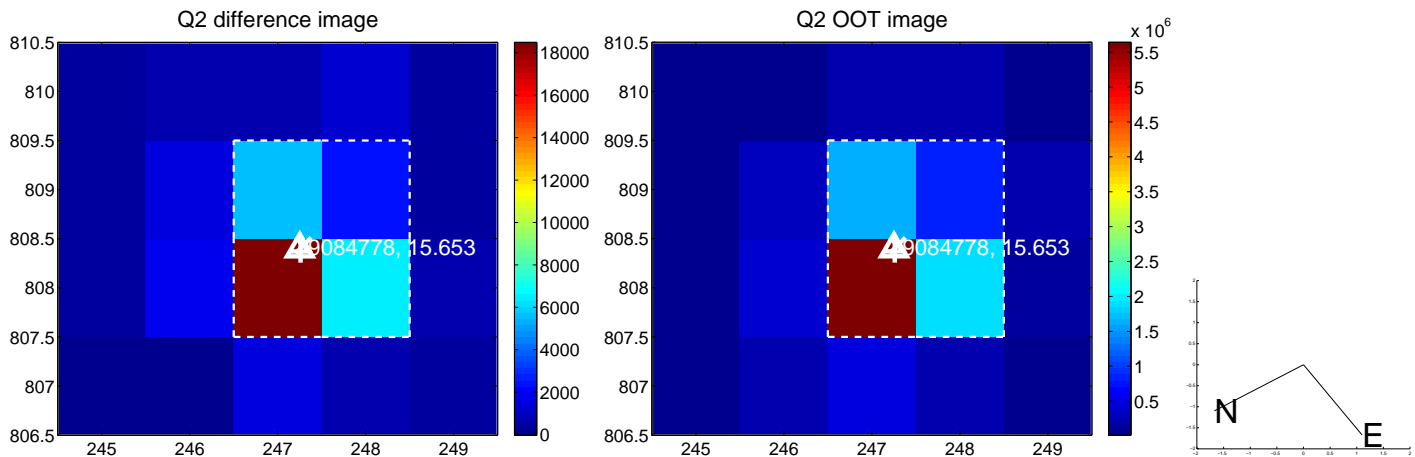
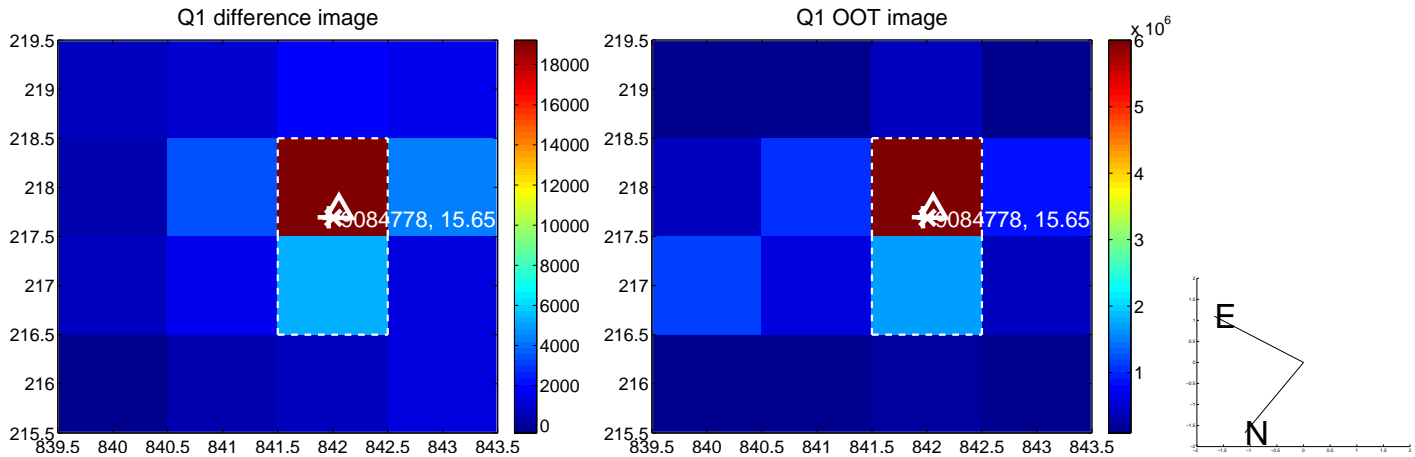
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.244 ± 0.072	3.38	-0.223 ± 0.072	-0.100 ± 0.073
PRF-fit source offset from KIC position	0.134 ± 0.076	1.77	-0.120 ± 0.075	0.060 ± 0.079
photometric centroid source offset	0.31 ± 0.10	3.07	-0.18 ± 0.10	-0.26 ± 0.10

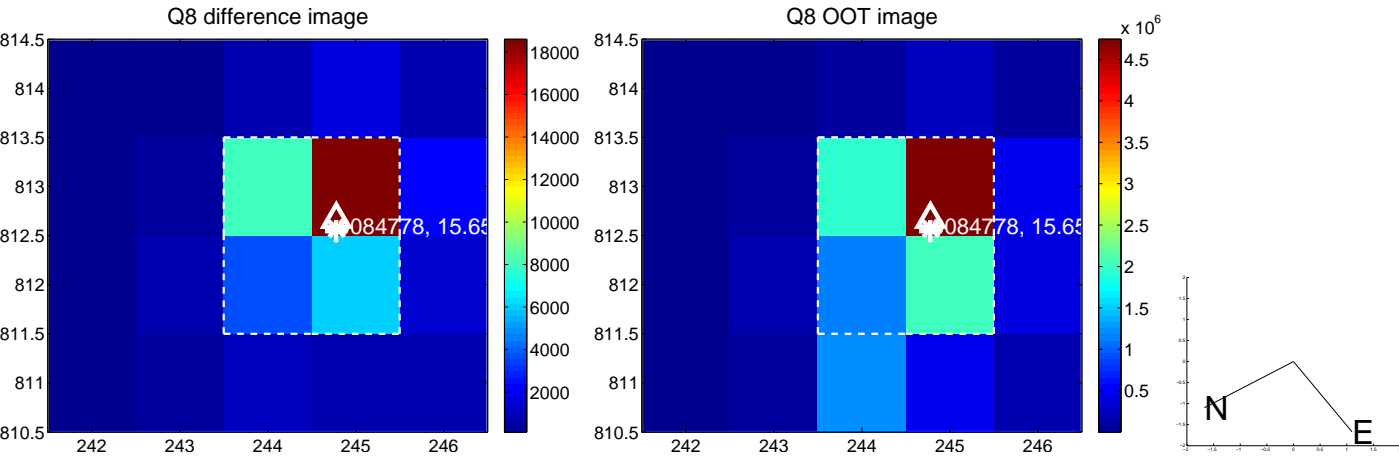
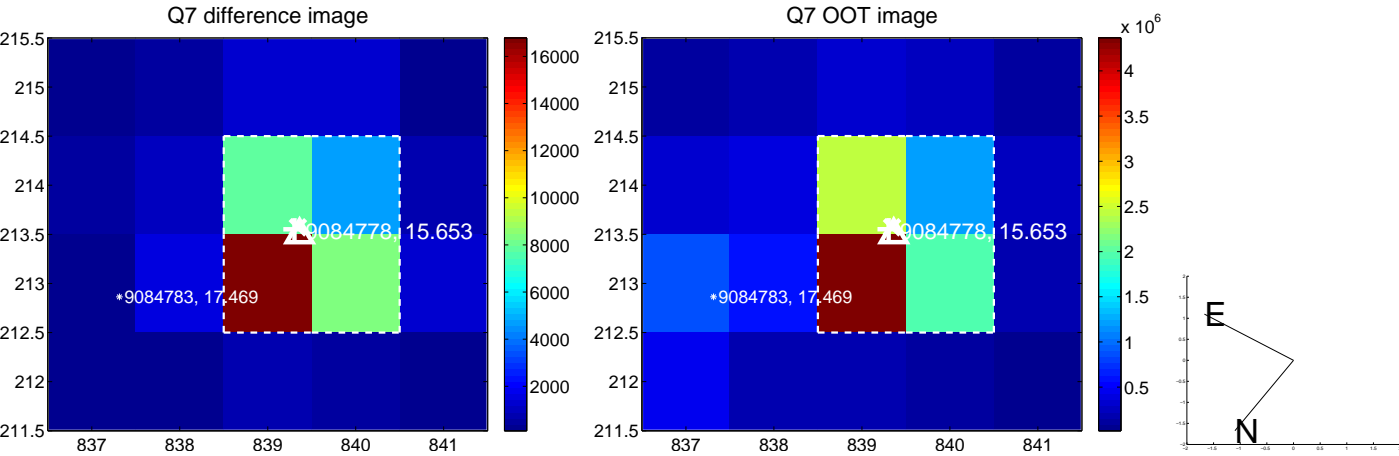
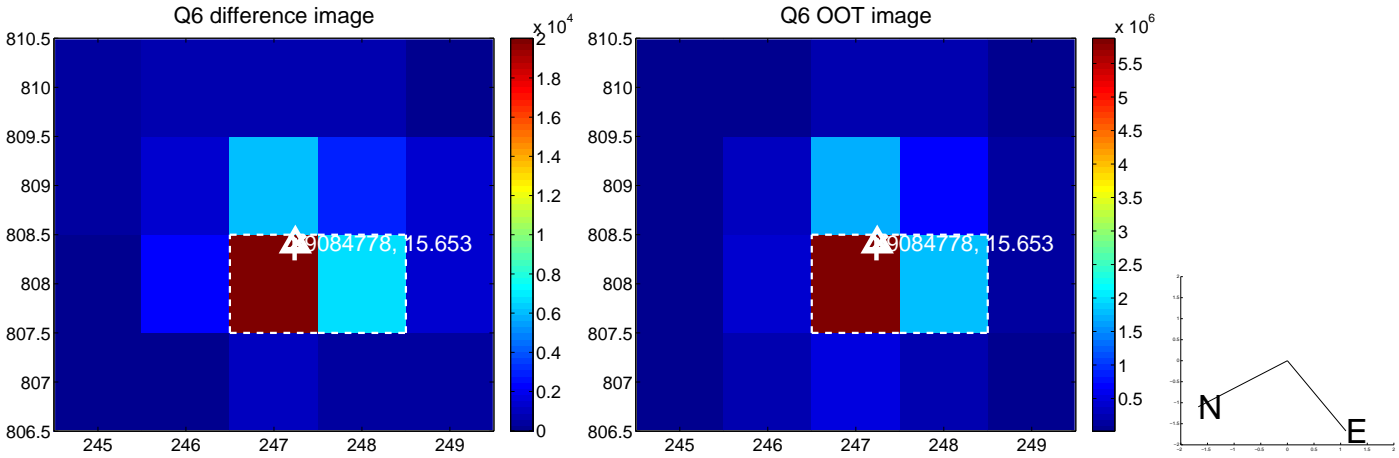
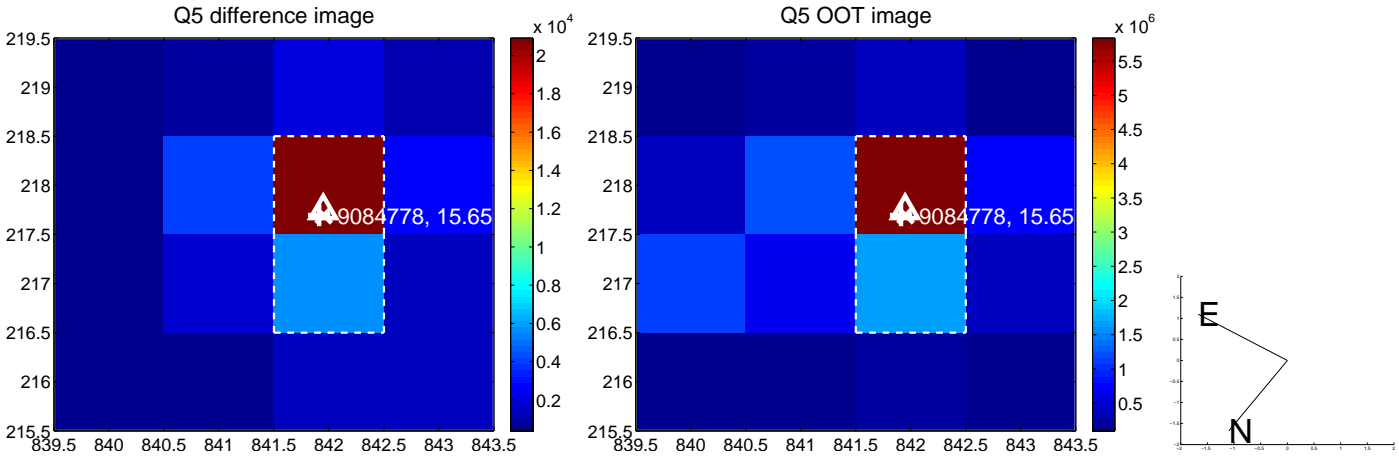


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

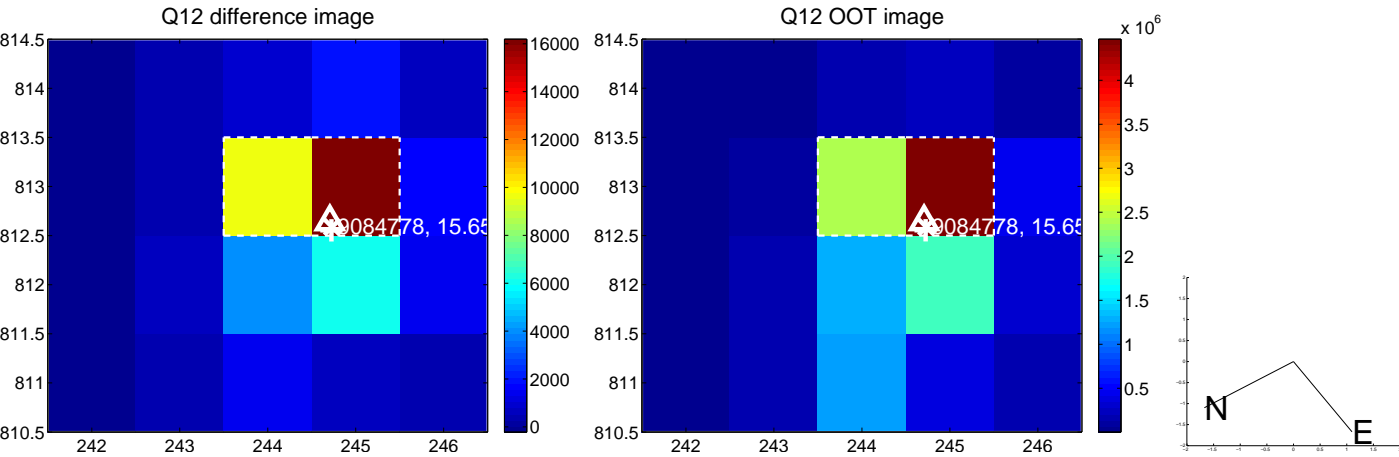
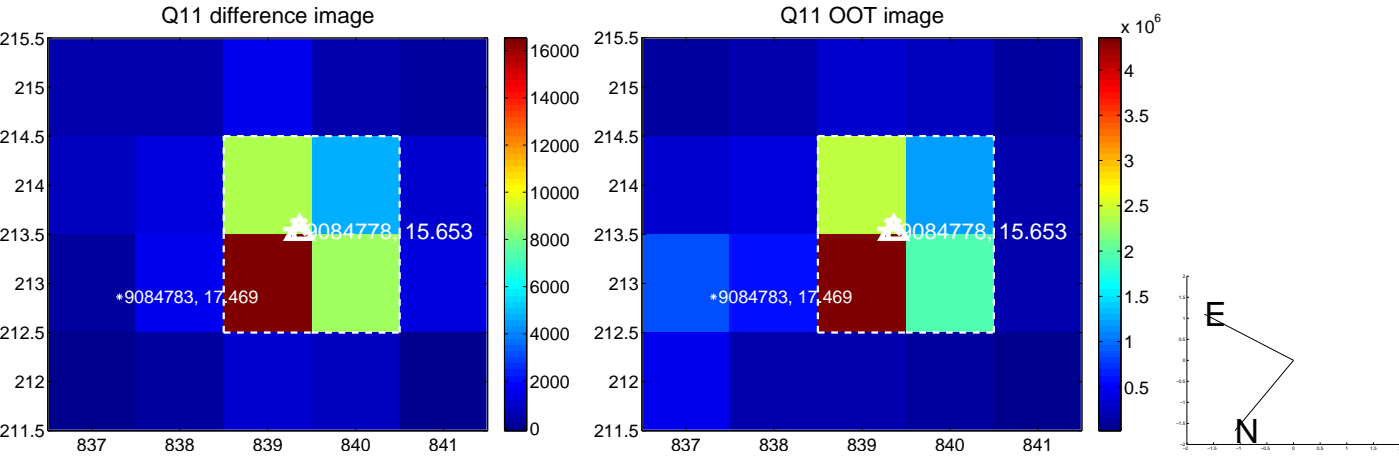
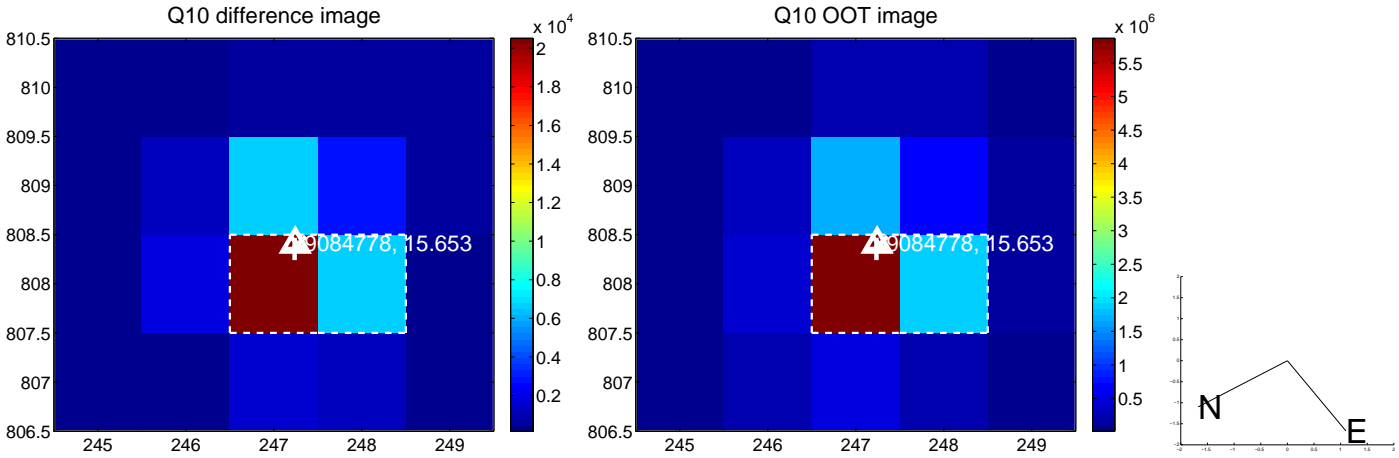
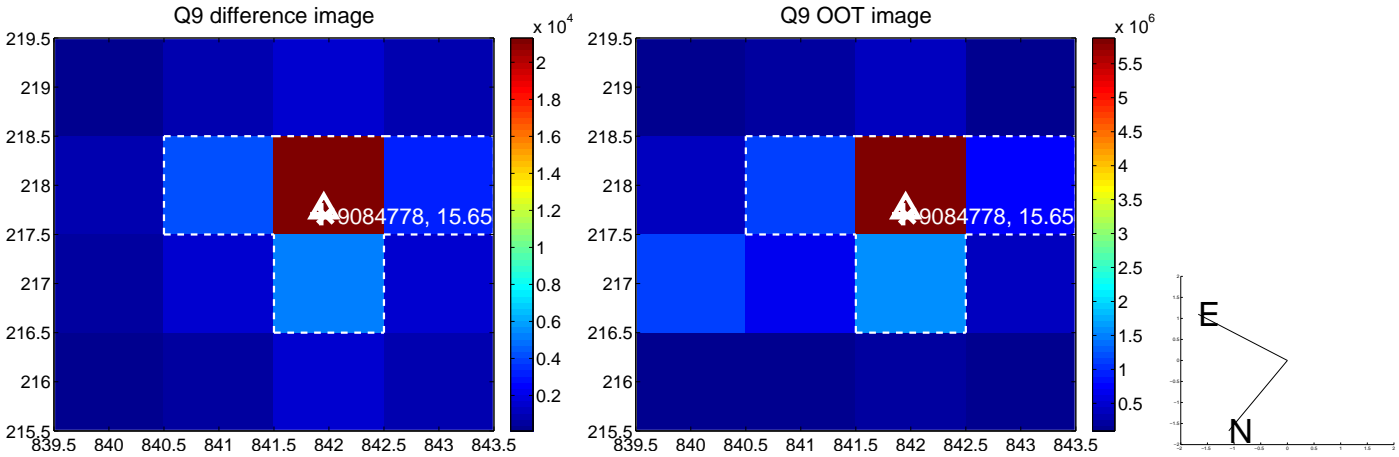
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



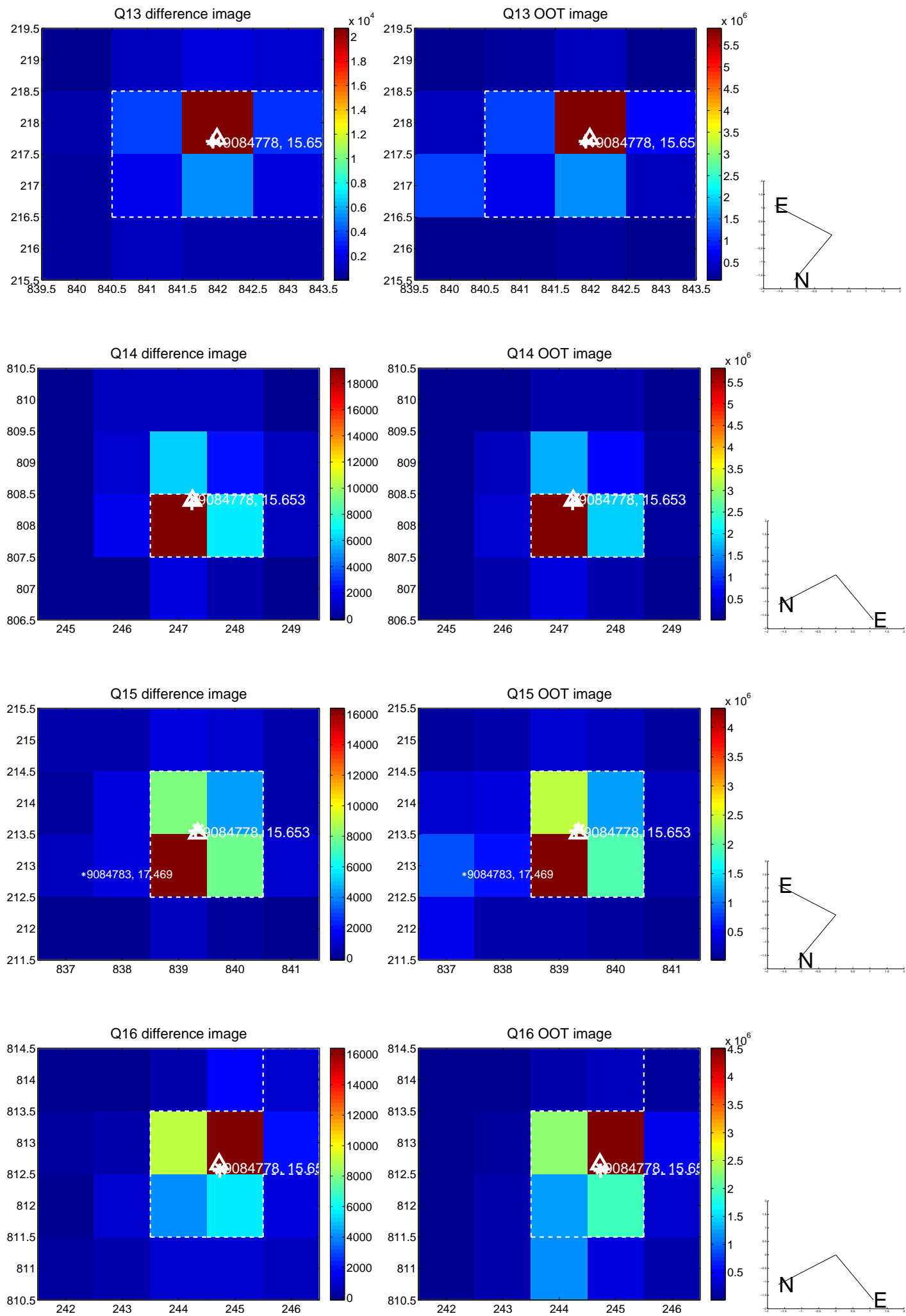
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



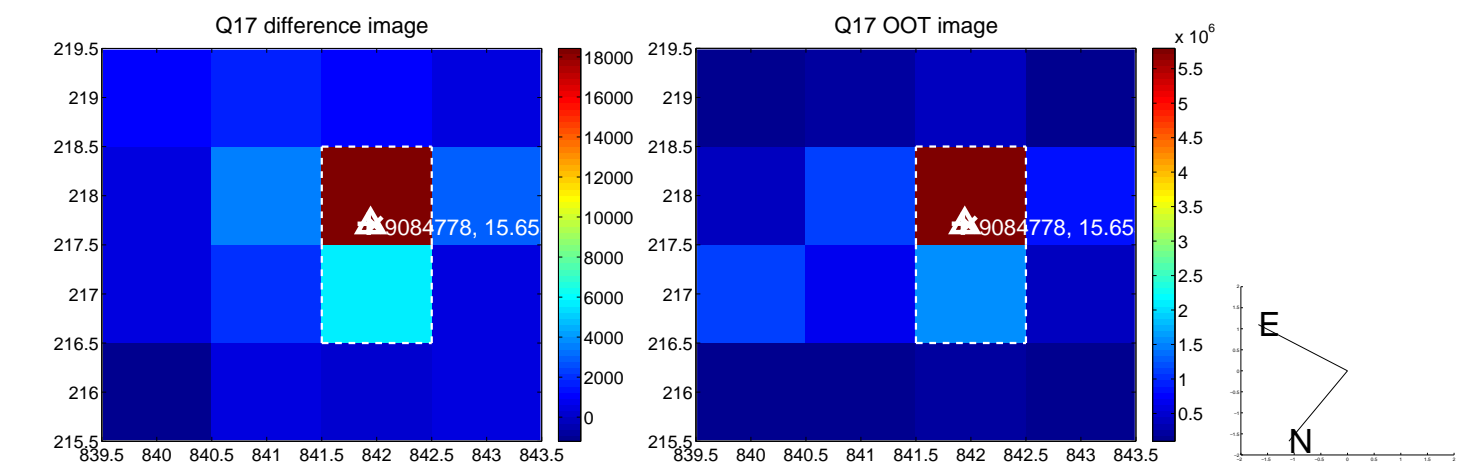
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



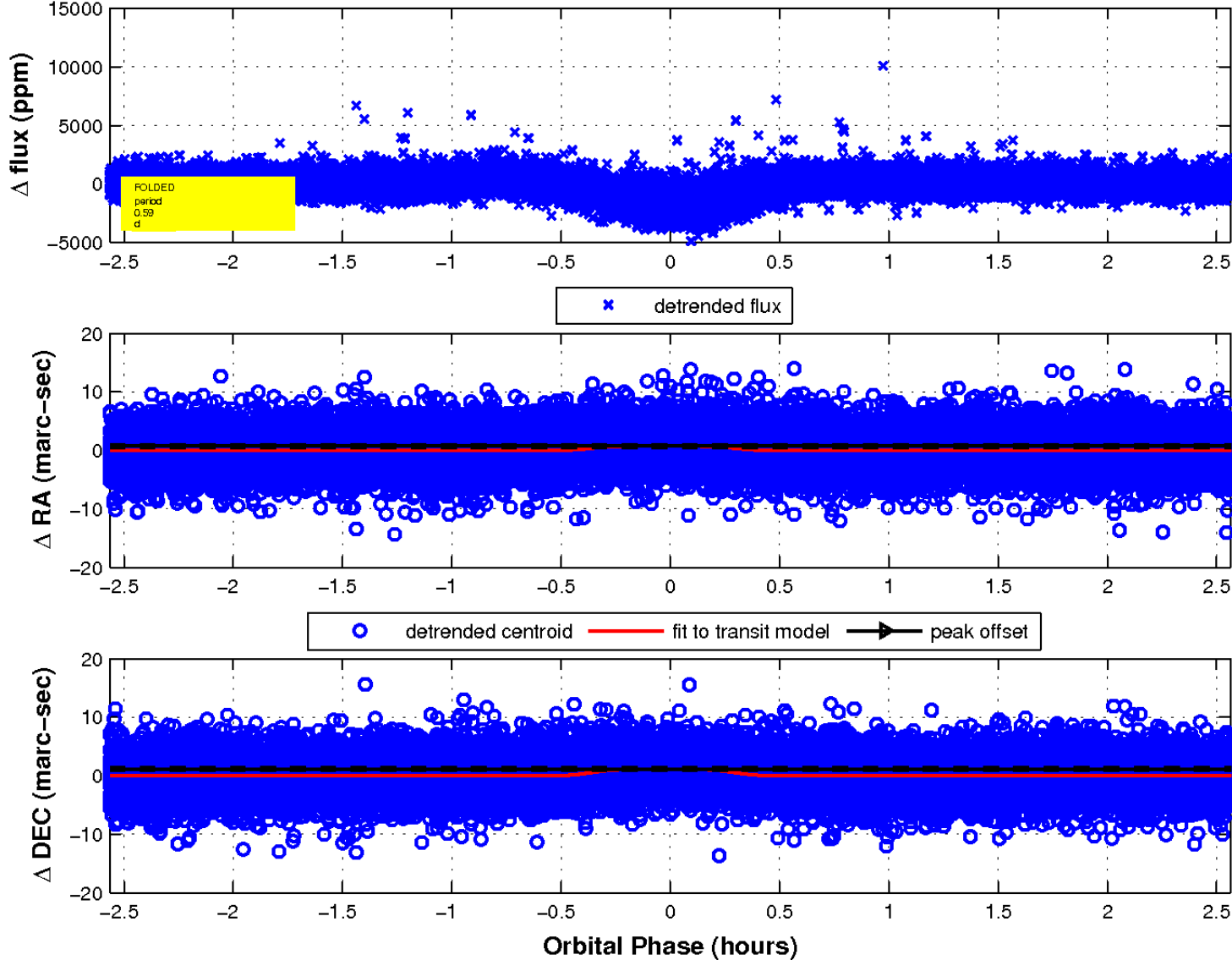
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

