

KIC 003836522

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 _⊕)
003836522-01	OBS	5012.01	1.540371	132.005266	358.5	1.954	46.5	50.0	0.95	5466	2.15	1205.96

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003836522-01	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 003836522-01

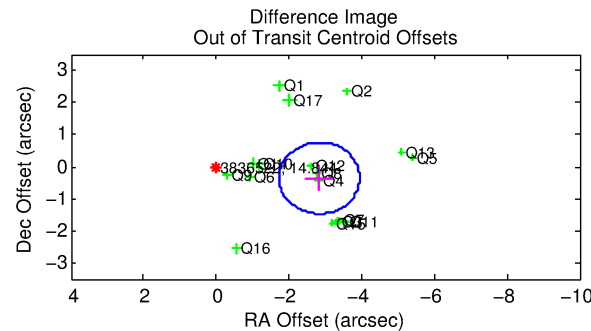
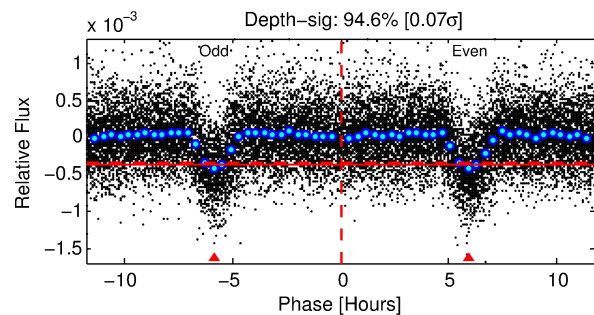
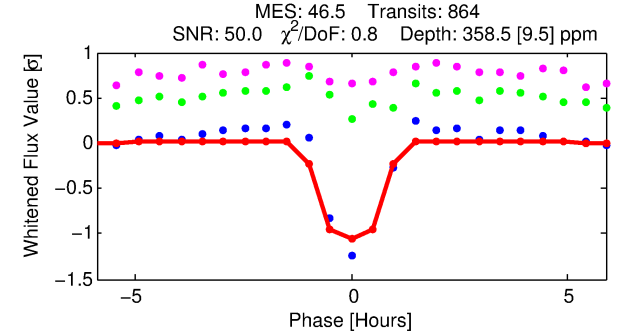
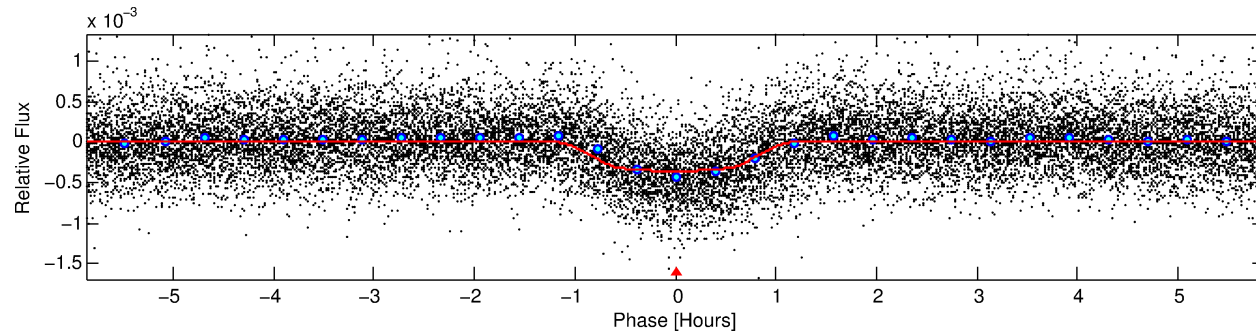
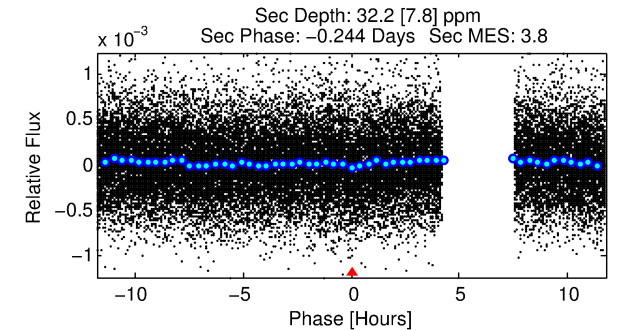
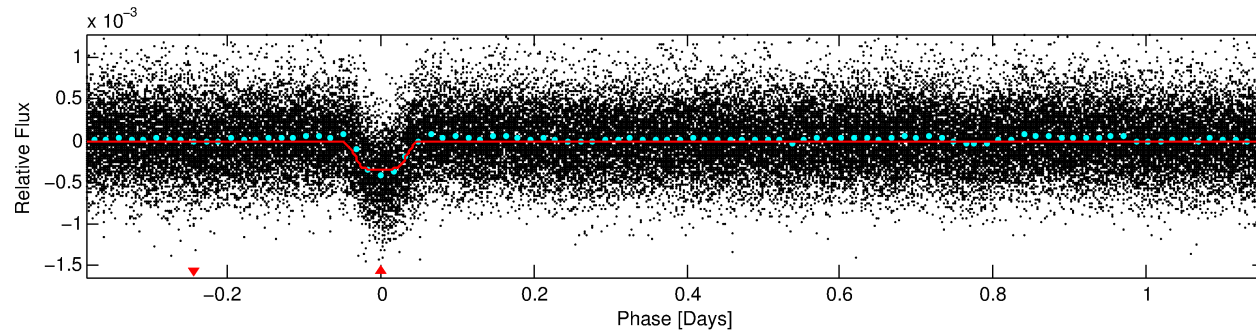
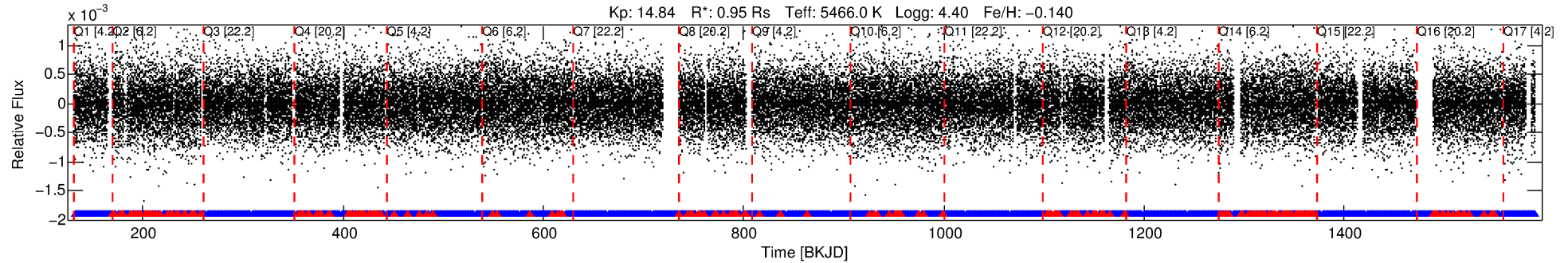
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
003836522-01	3836522	6363.01	3836413	1:1	110.5	-16	-23	13.76	14.84	207.15	Direct-PRF	0	1.25	0.56

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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 σ_P < 5.0 and σ_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: 3836522 Candidate: 1 of 1 Period: 1.540 d

KOI: K05012.01 Corr: 0.933



DV Fit Results:

Period = 1.54037 [0.00000] d
Epoch = 132.0053 [0.0006] BKJD
Rp/R* = 0.0208 [0.0028]
a/R* = 3.04 [1.58]
b = 0.90 [0.13]
Seff = 1205.96 [443.74]
Teff = 1503 [138] K
Rp = 2.15 [0.62] Re
a = 0.0244 [0.0055] AU
Ag = 2.28 [1.13] [1.12σ]
Teffp = 2853 [269] K [4.47σ]

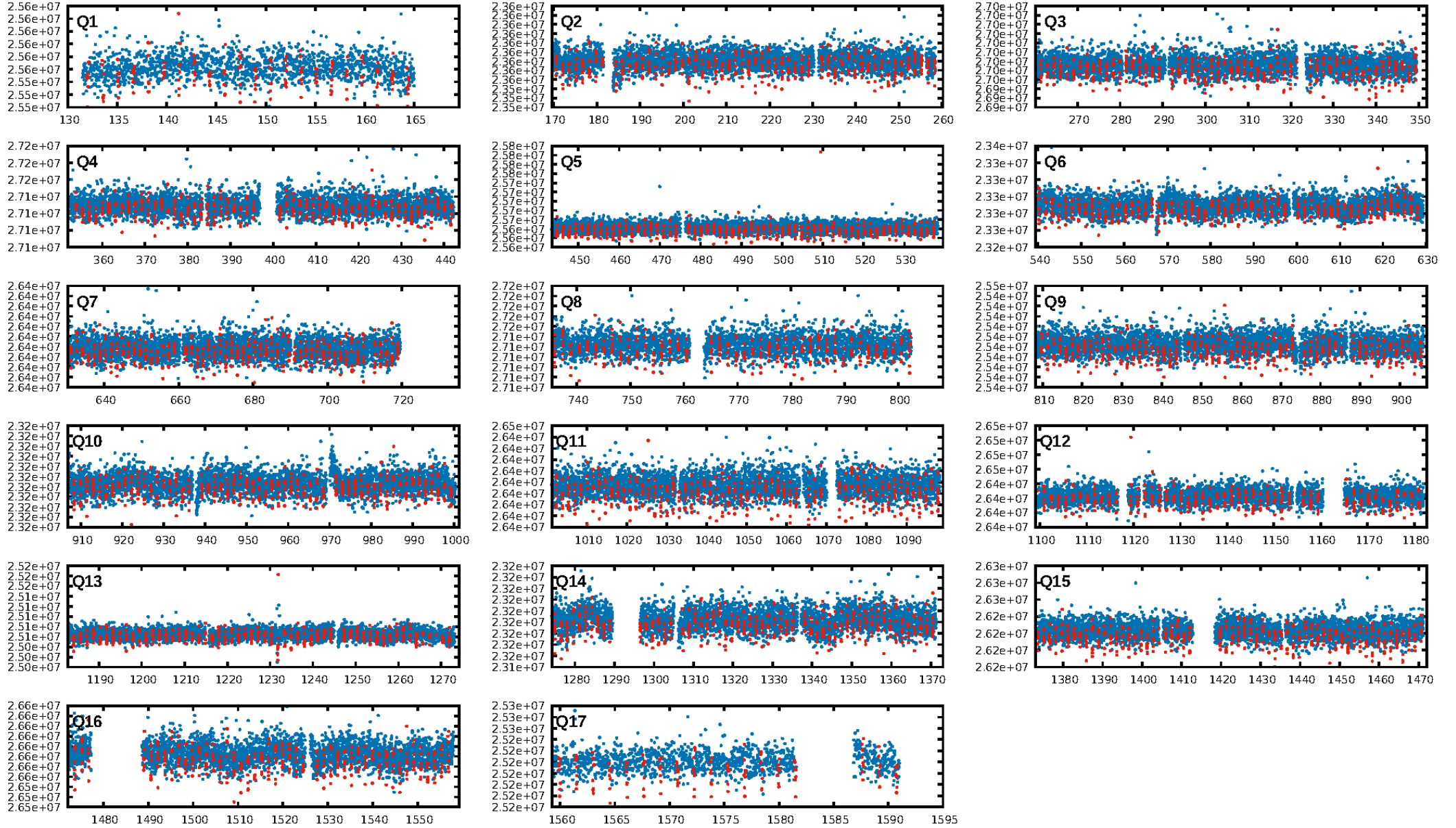
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.79 [650/824]
GhostDiagnostic-chr: 0.1477
Centroid-sig: 0.0%
Centroid-so: 5.278 arcsec [17.26σ]
OotOffset-rm: 2.849 arcsec [7.69σ]
KicOffset-rm: 2.961 arcsec [8.06σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.24 [4/17]
DiffImageOverlap-fno: 1.00 [17/17]

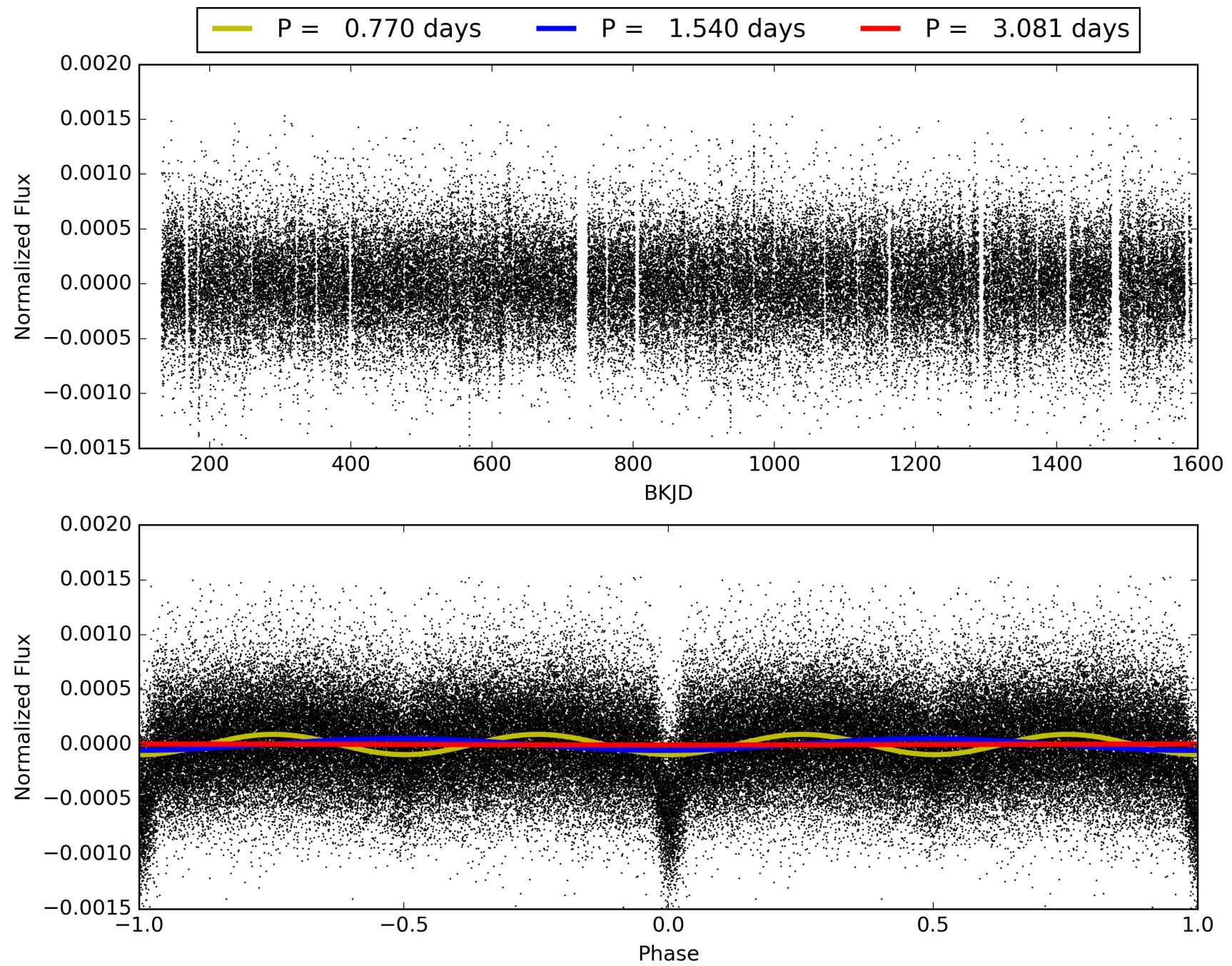
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:04:37 Z

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

TCE 003836522-01, PDC Light Curves

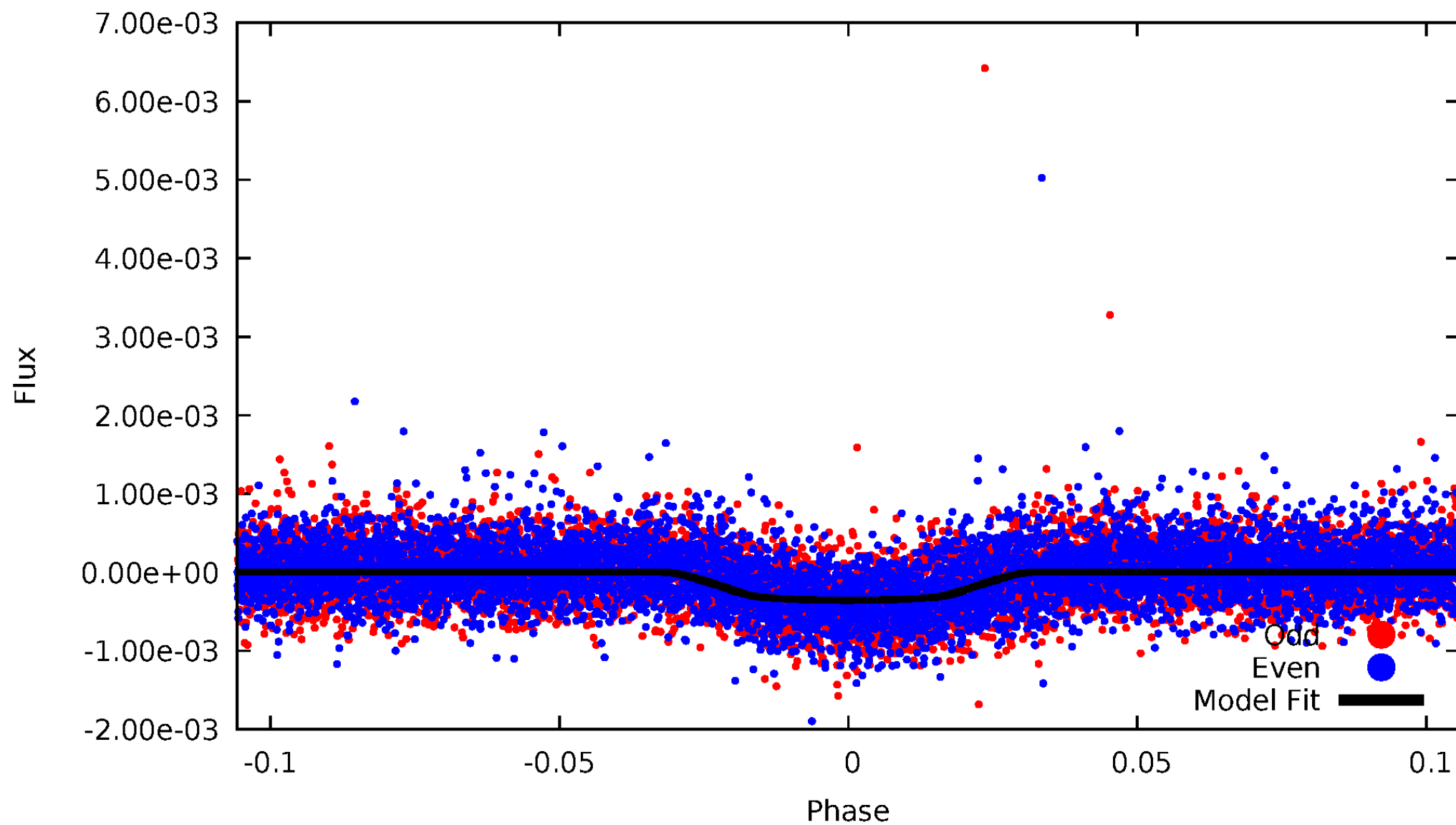


TCE 003836522-01



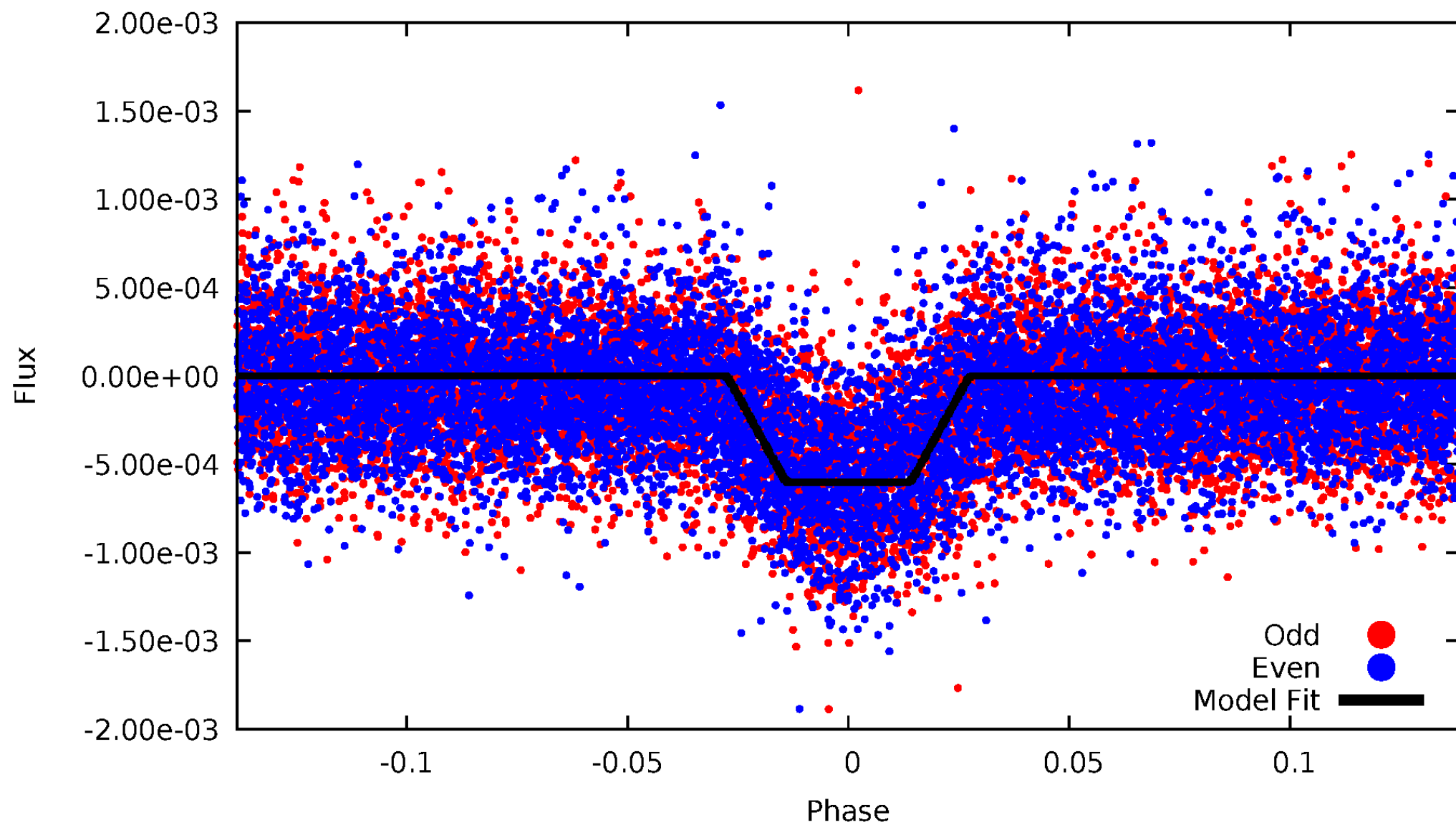
DV Odd/Even

TCE 003836522-01



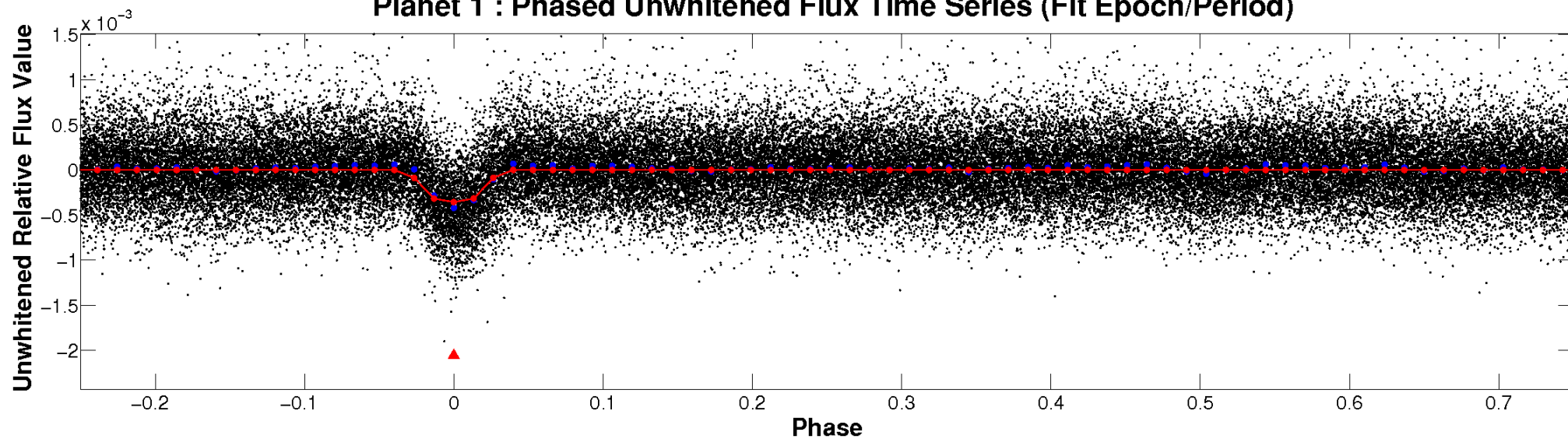
ALT Odd/Even

TCE 003836522-01

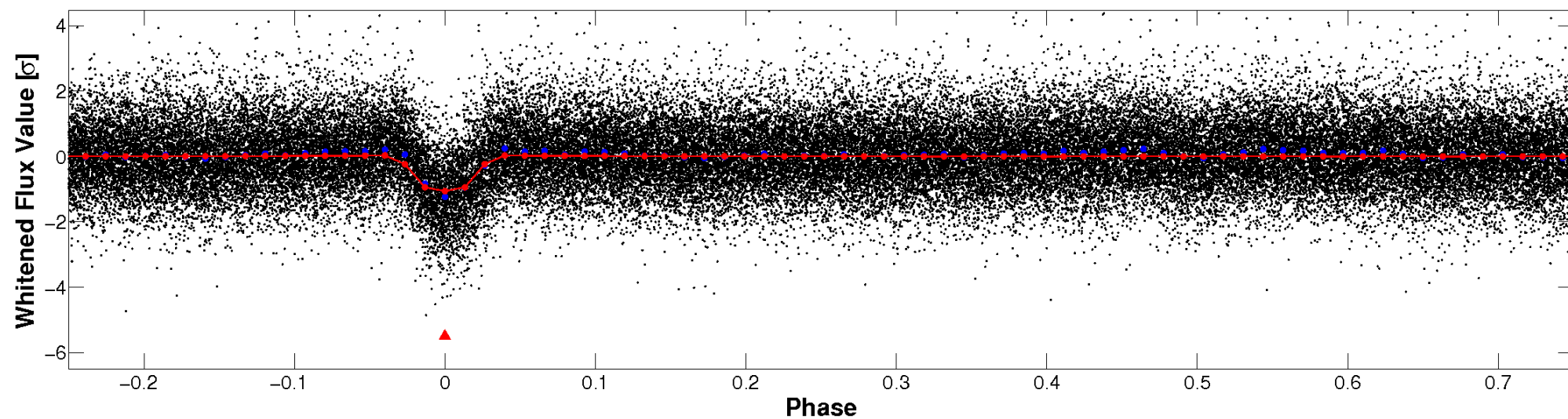


Non-Whitened Vs. Whitened Light Curve

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

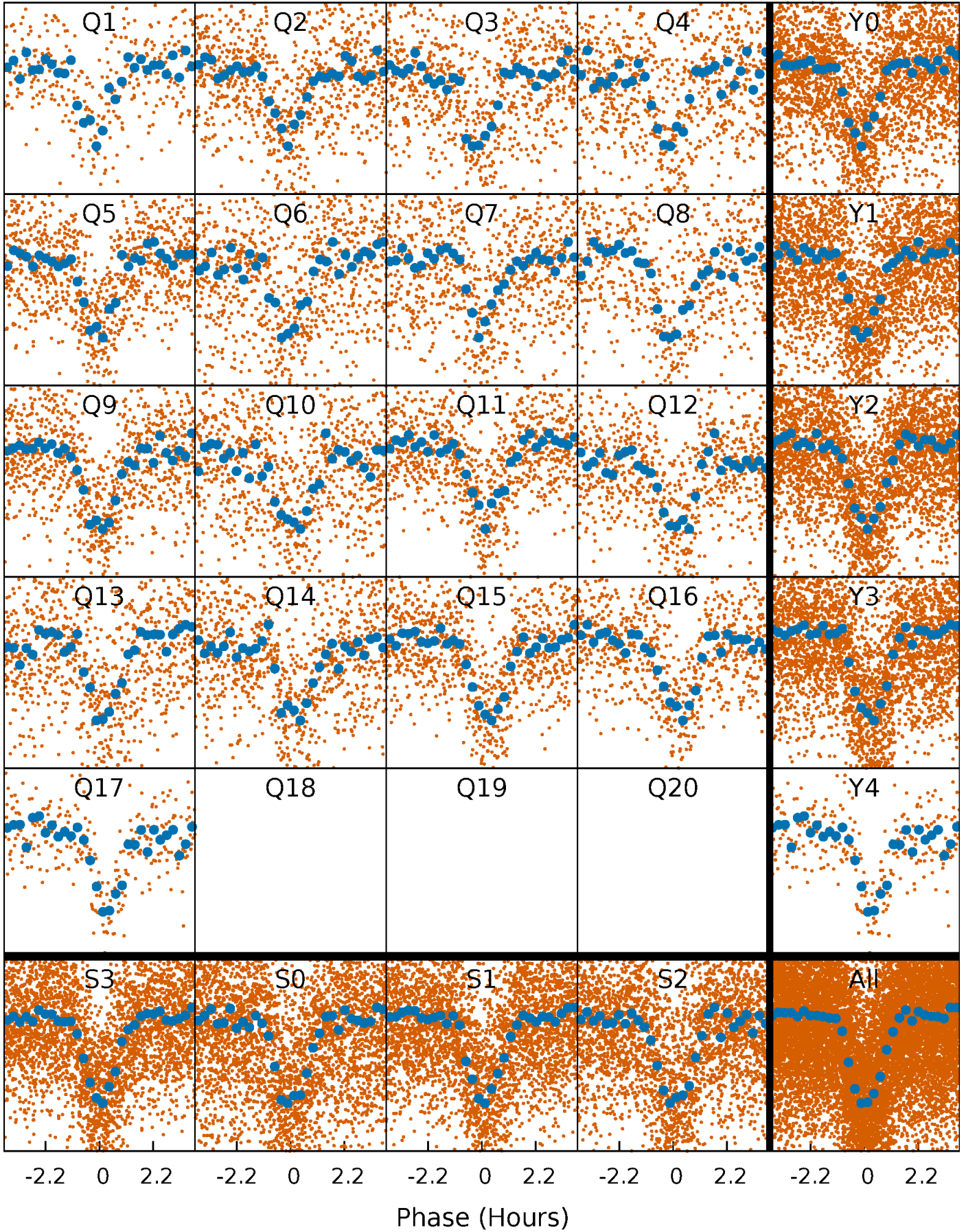


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



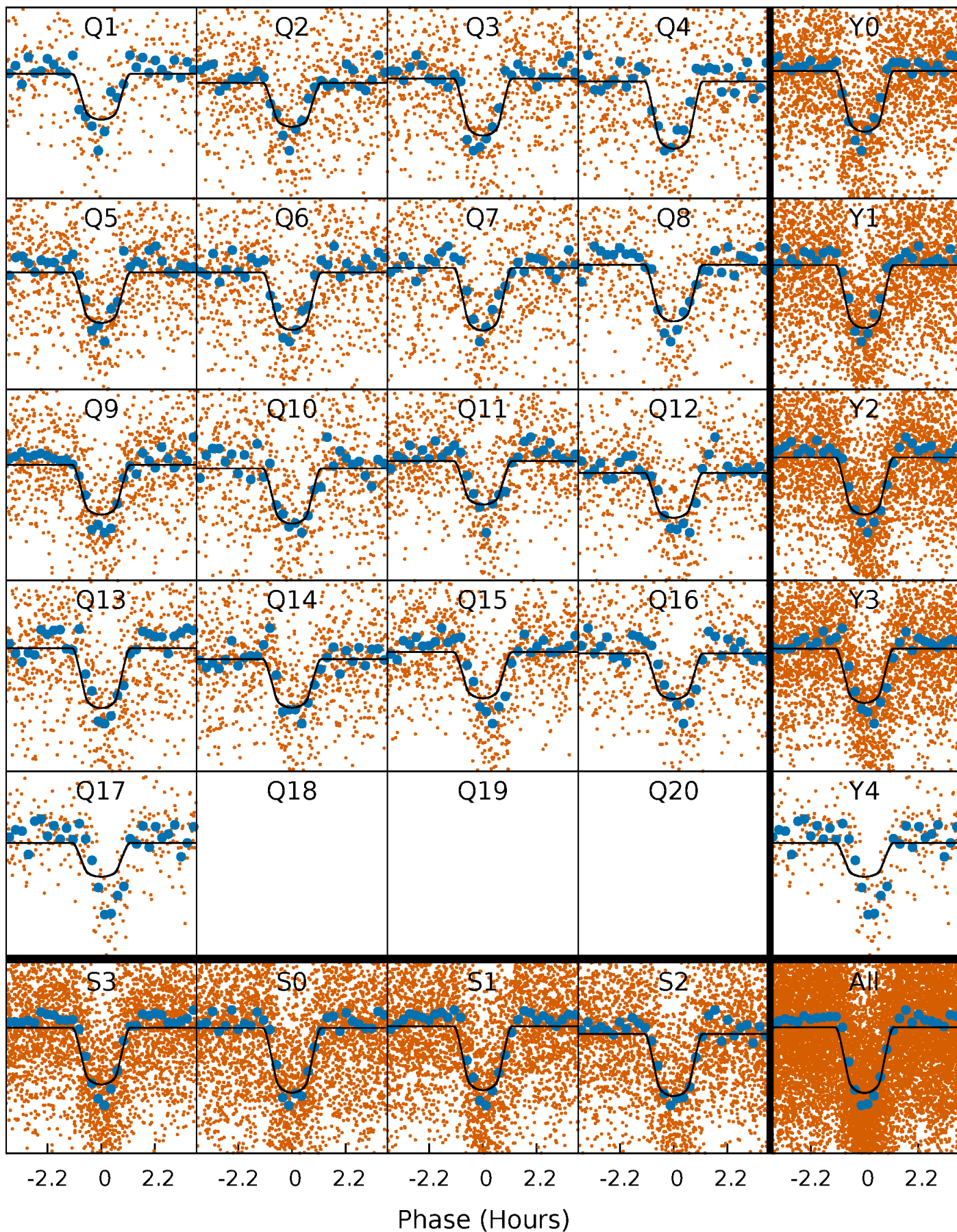
PDC Quarter-Phased Transit Curves

TCE 003836522-01 P= 1.540371 Days $T_0=132.005266$ (BKJD)



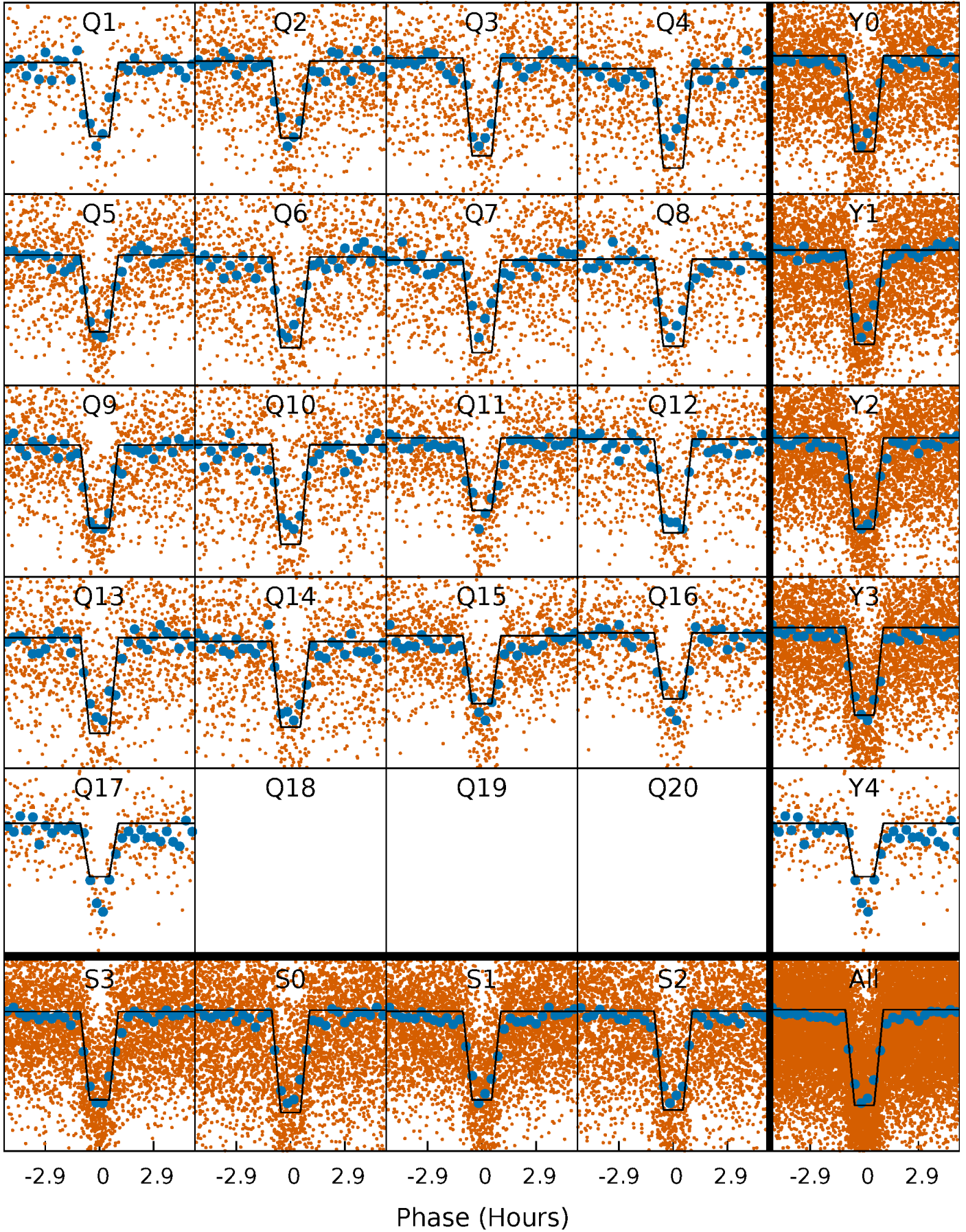
DV Quarter-Phased Transit Curves

TCE 003836522-01 P= 1.540371 Days $T_0=132.005266$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

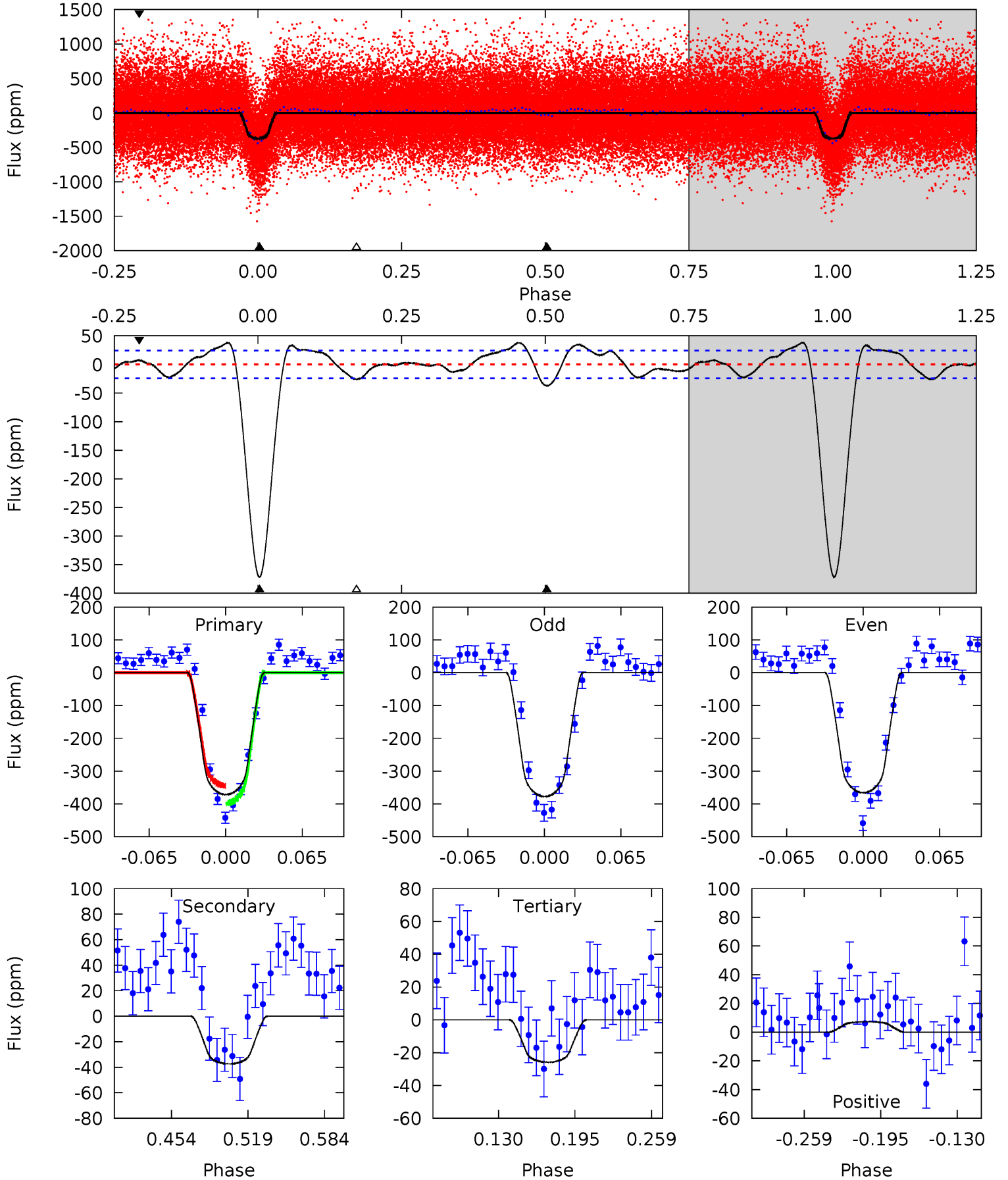
TCE 003836522-01 P= 1.540387 Days $T_0=132.001093$ (BKJD)



DV Model-Shift Uniqueness Test

003836522-01, P = 1.540371 Days, E = 130.464895 Days

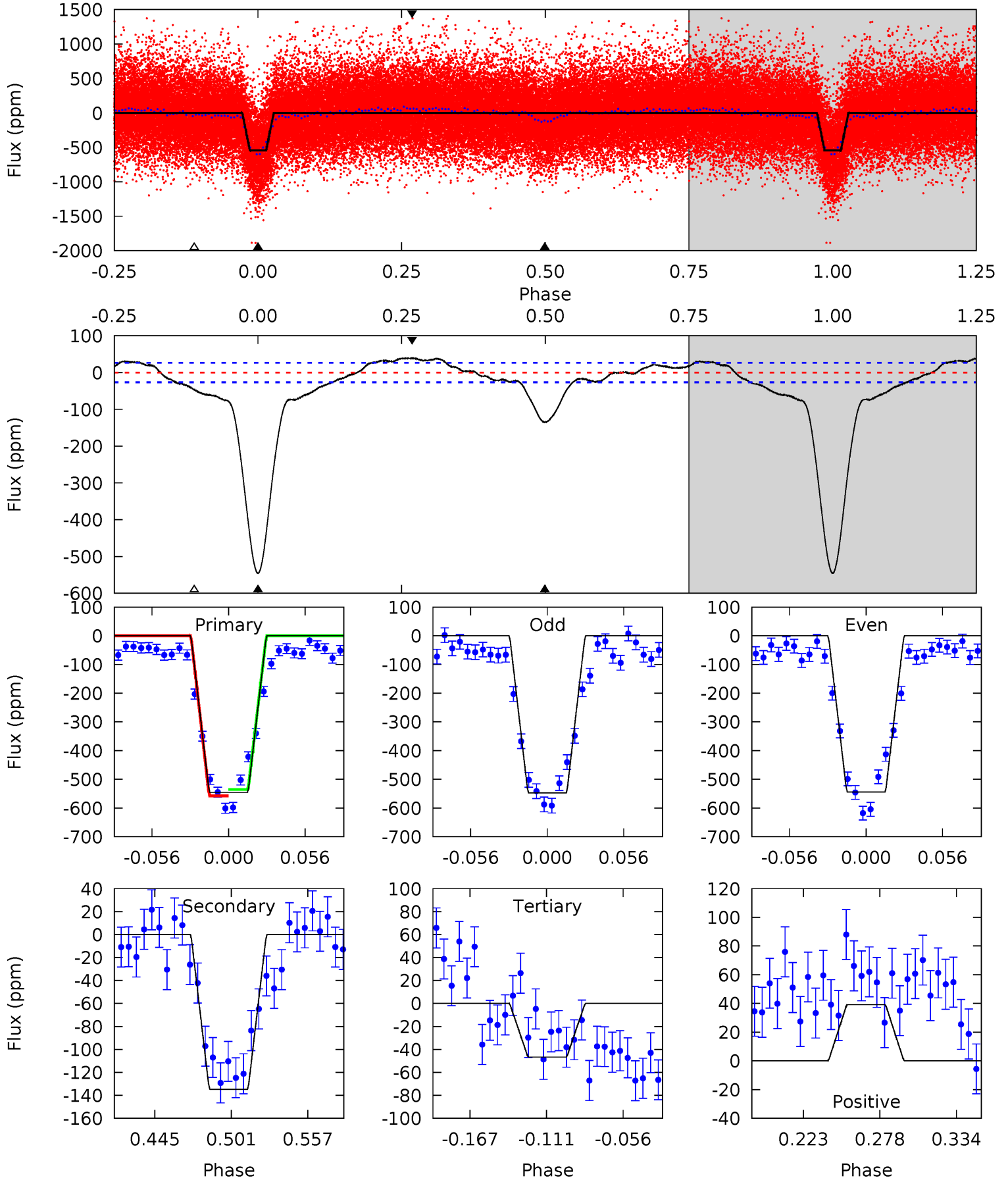
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.7	7.21	4.98	1.39	4.65	1.85	2.85	66.8	70.3	2.23	5.82	1.13	1.00	0.09	5.19



Alt Model-Shift Uniqueness Test

003836522-01, P = 1.540387 Days, E = 130.460706 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
96.7	23.9	8.26	6.93	4.69	1.91	5.52	88.4	89.8	15.6	16.9	0.26	1.02	0.07	1.97



Stellar Parameters For KIC 003836522

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5466^{+164}_{-147}	$4.396^{+0.162}_{-0.198}$	$-0.140^{+0.300}_{-0.300}$	$0.946^{+0.240}_{-0.160}$	$0.813^{+0.119}_{-0.064}$	$1.354^{+0.874}_{-0.679}$
	+3%/-3%	+4%/-5%	+214%/-214%	+25%/-17%	+15%/-8%	+65%/-50%
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 003836522-01 / KOI 5012.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-37 ± 5	$2.20^{+0.44}_{-0.38}$	2116^{+157}_{-129}	3379^{+209}_{-186}	$2.559^{+1.162}_{-0.837}$
Alt.	-135 ± 6	$2.57^{+0.47}_{-0.43}$	2102^{+162}_{-120}	4014^{+201}_{-171}	$6.756^{+2.705}_{-1.942}$

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

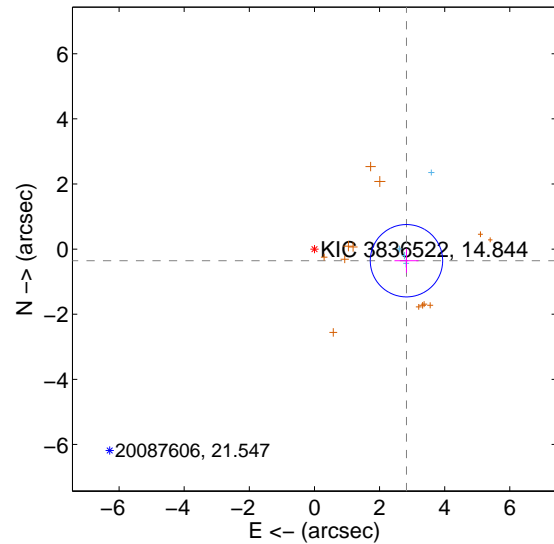
Supplemental centroid analysis for 003836522-01. Kepler magnitude: 14.84. Transit SNR 50.04

There are 4 quarters with good PRF difference image offsets

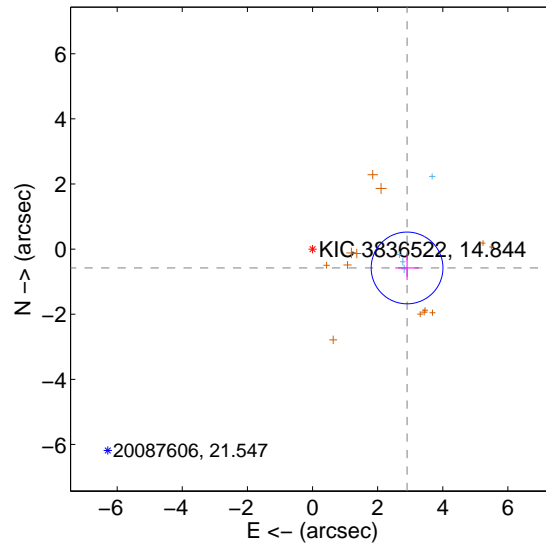
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.849 ± 0.370	7.69	-2.826 ± 0.370	-0.357 ± 0.368
PRF-fit source offset from KIC position	2.961 ± 0.367	8.06	-2.904 ± 0.367	-0.579 ± 0.371
photometric centroid source offset	5.28 ± 0.31	17.26	-5.26 ± 0.31	0.44 ± 0.32

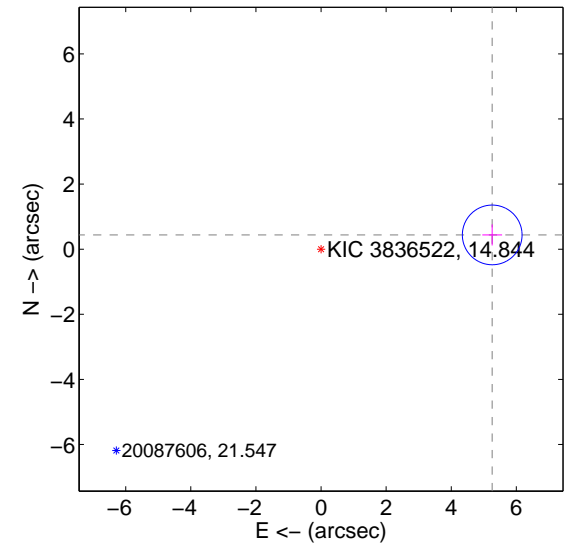
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

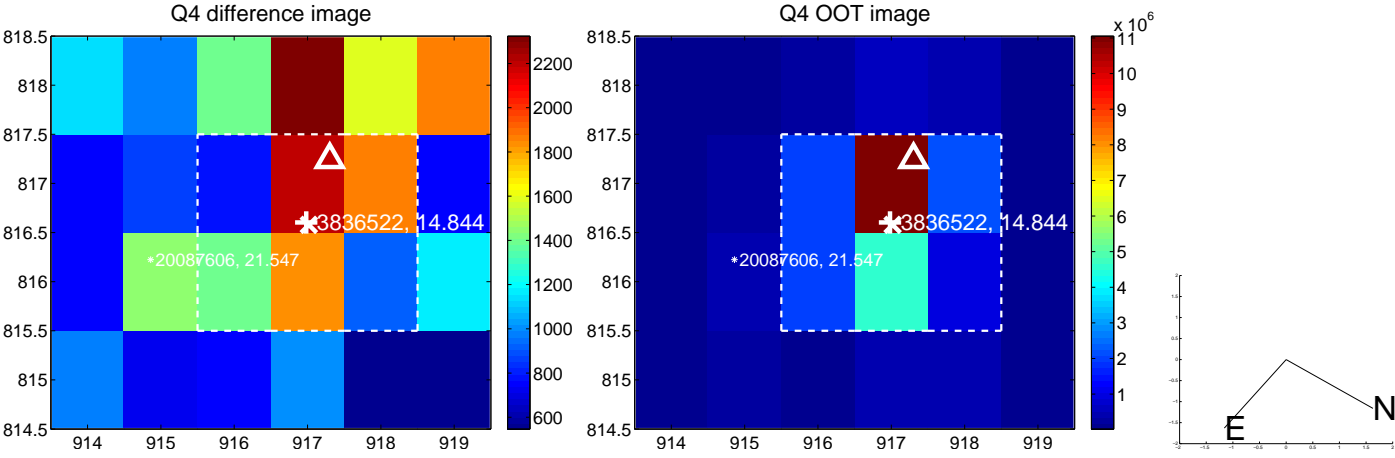
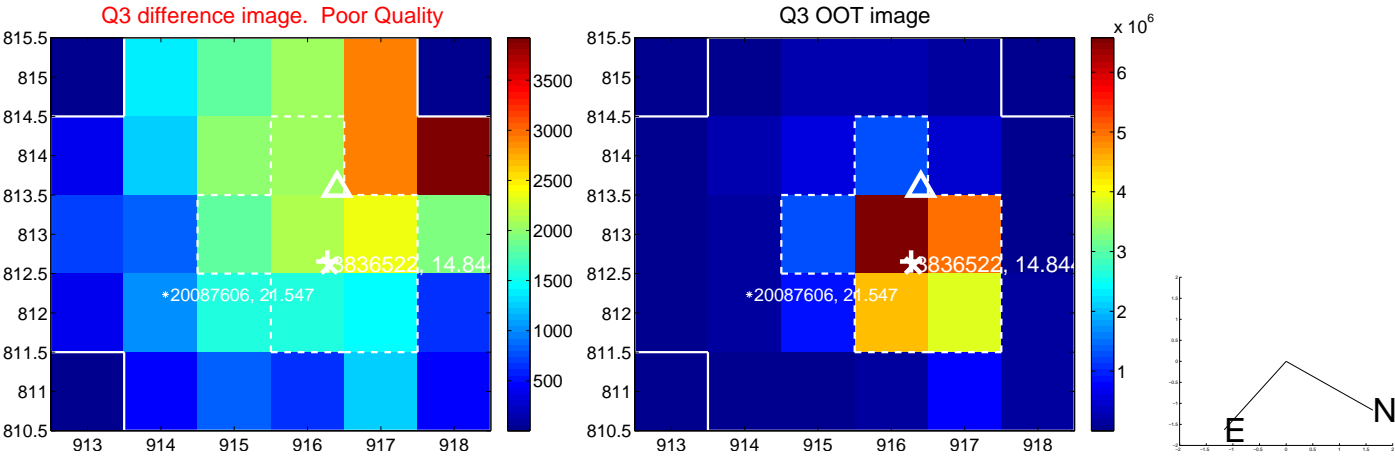
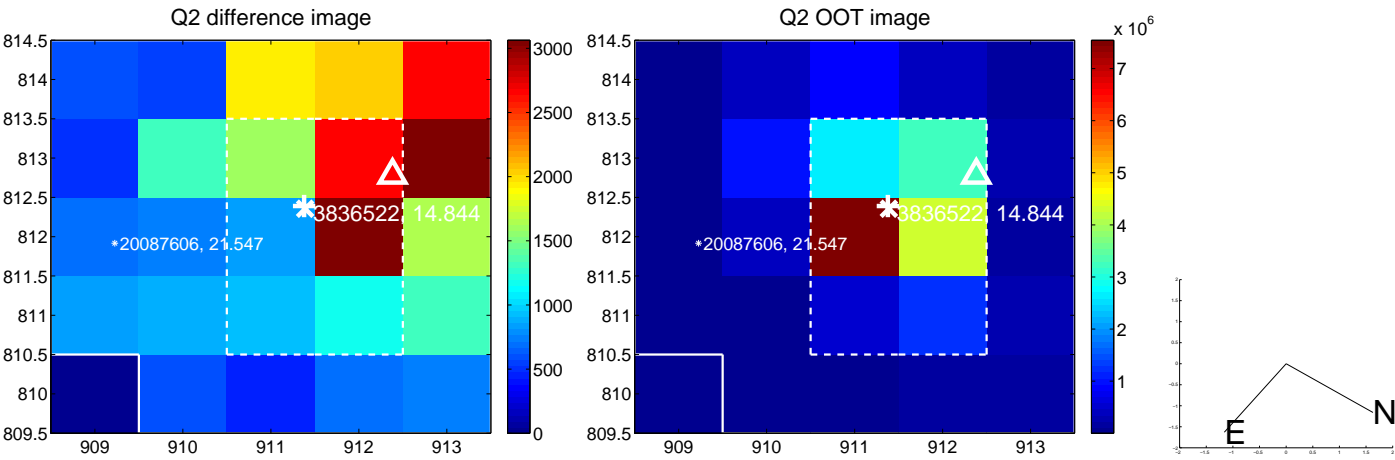
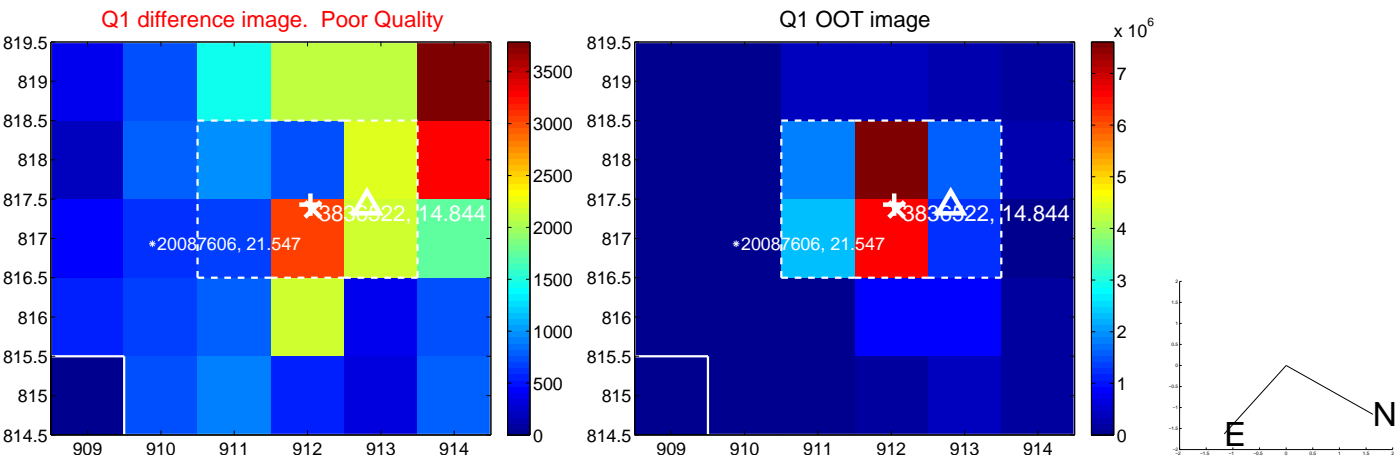


offset from photometric centroids

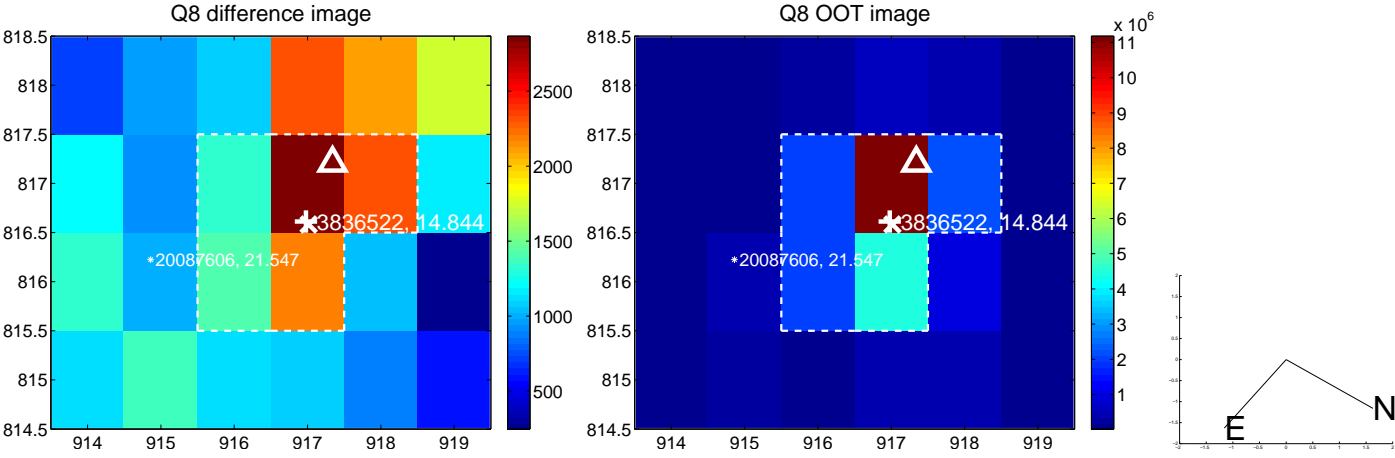
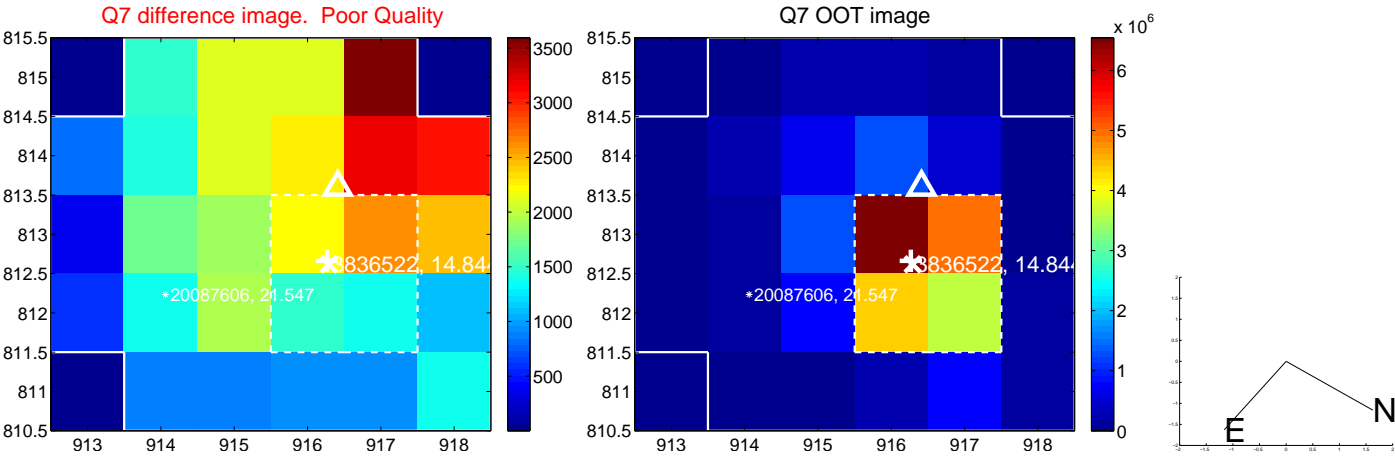
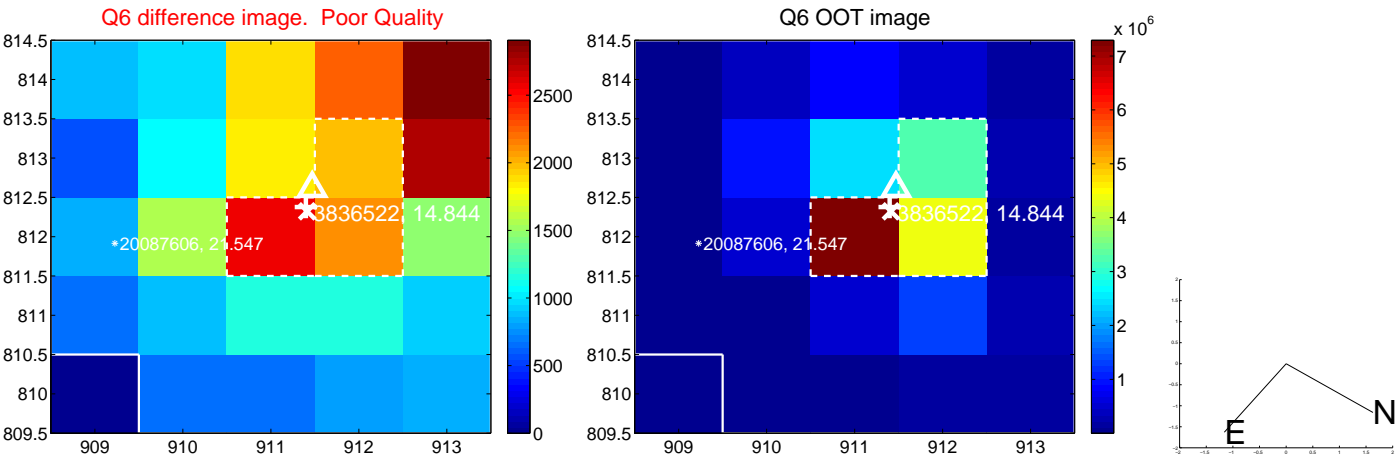
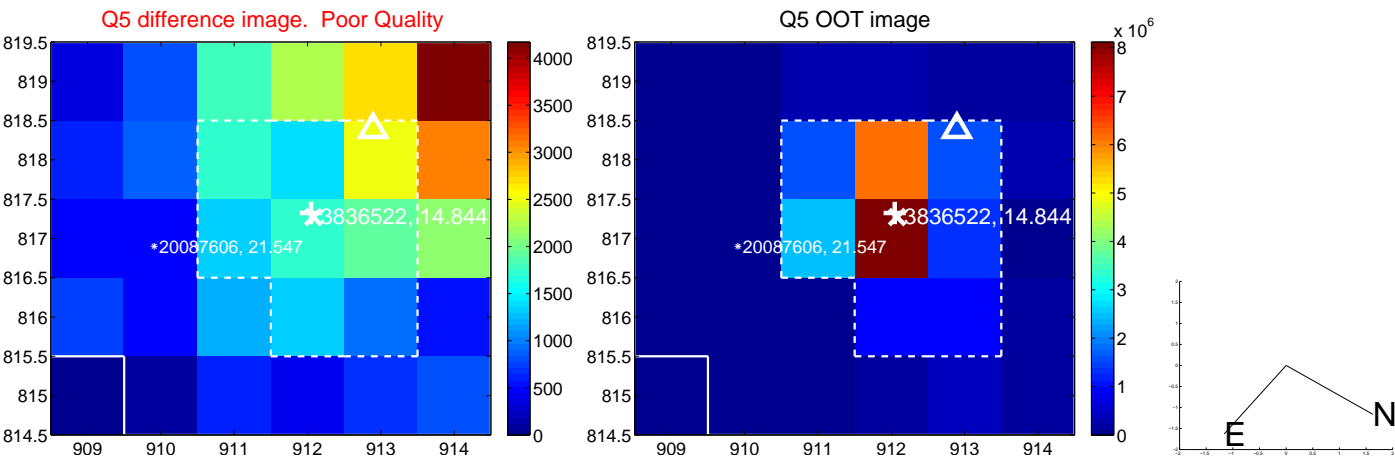


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

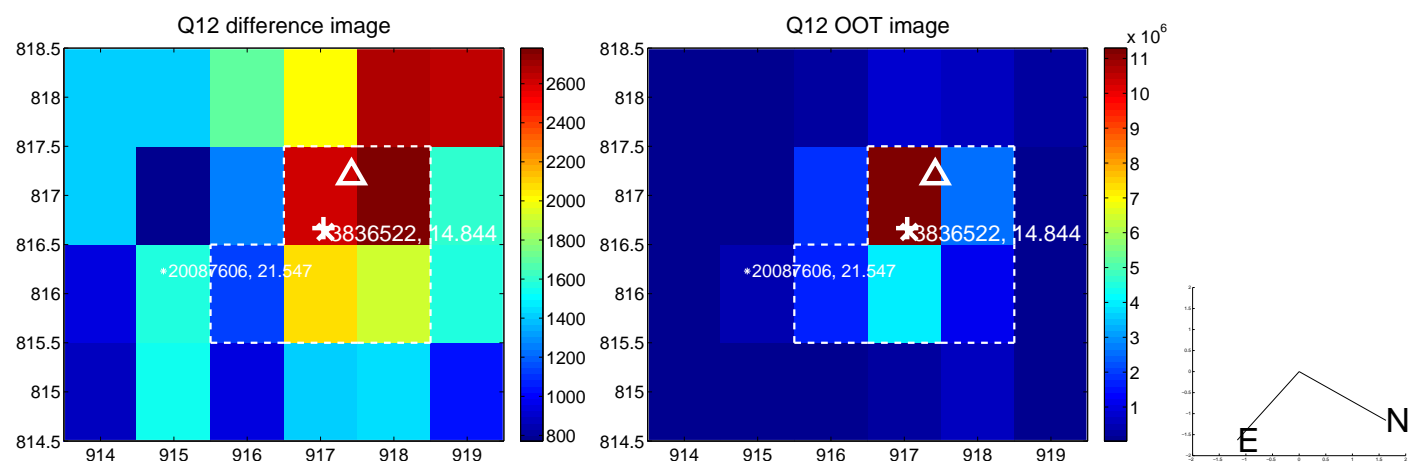
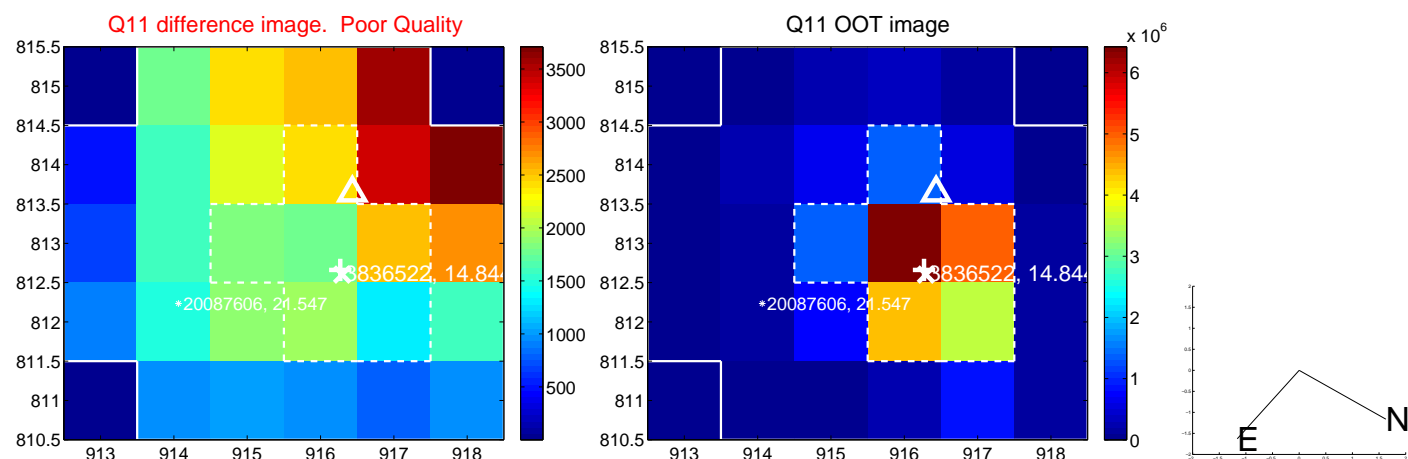
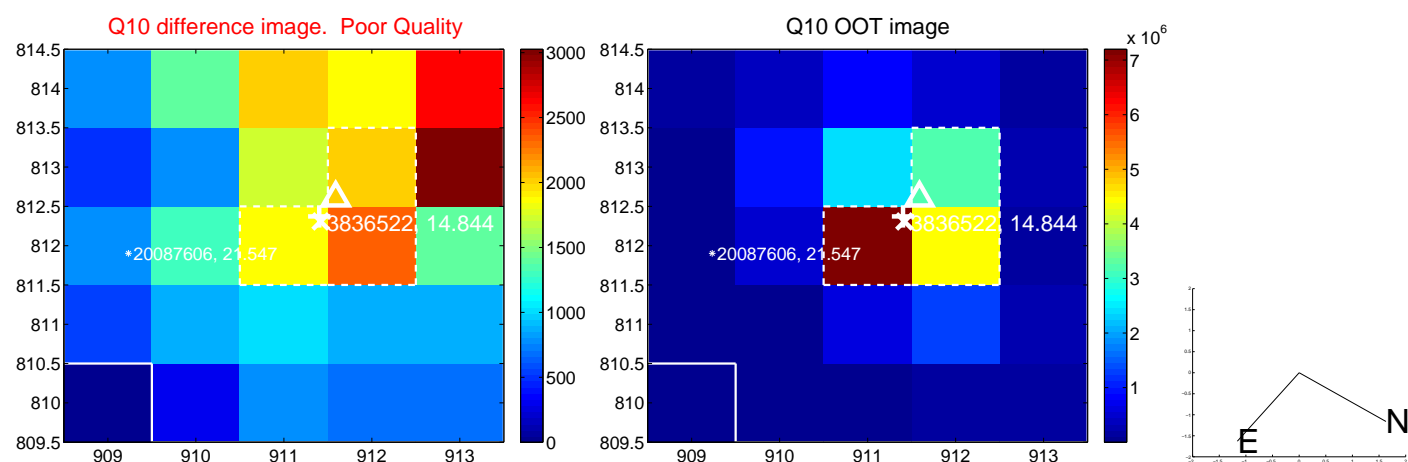
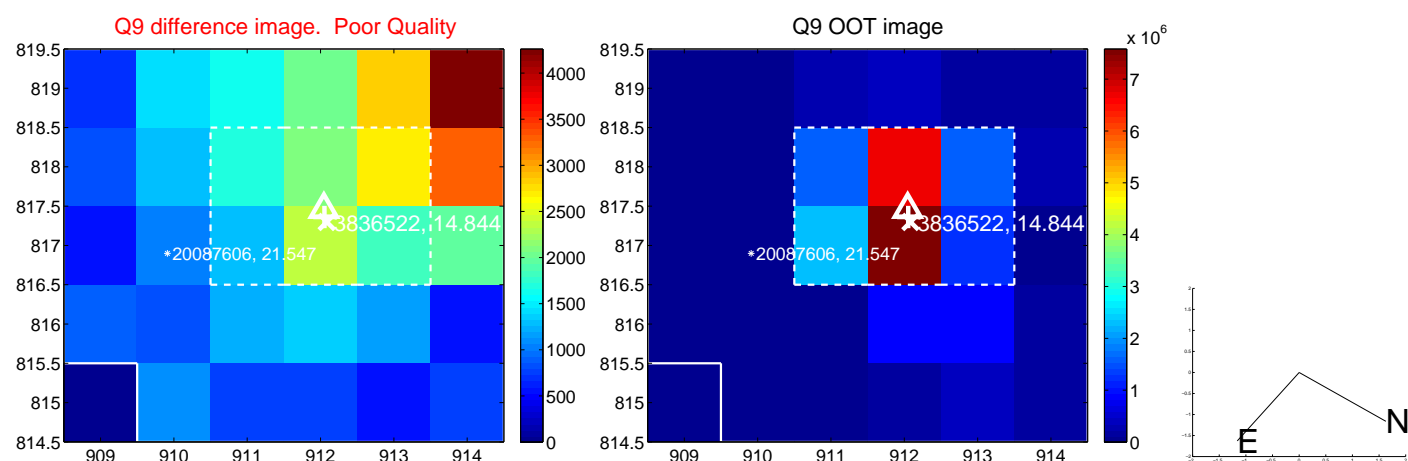
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



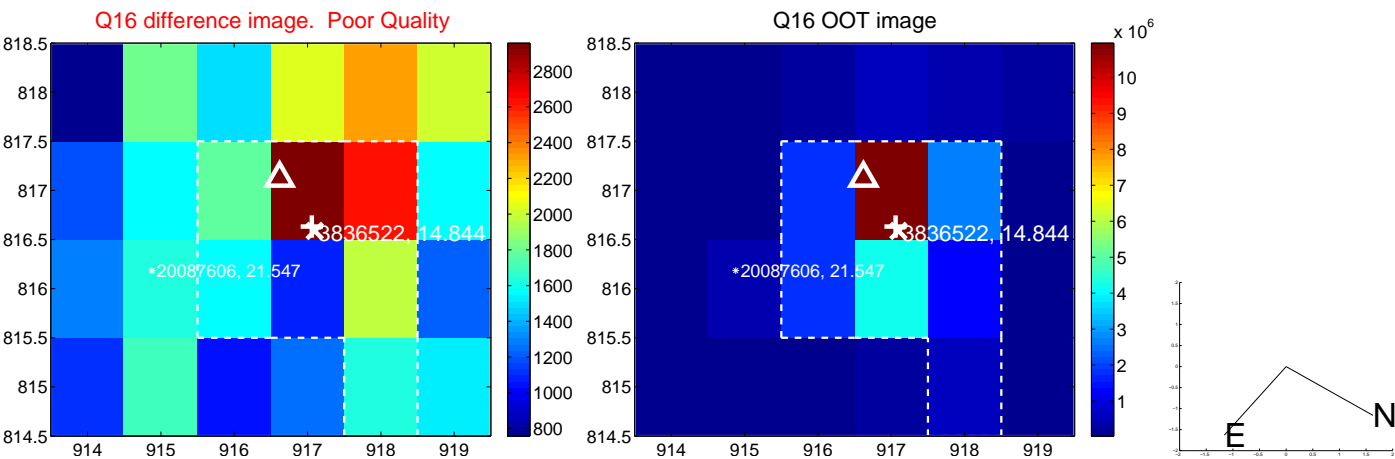
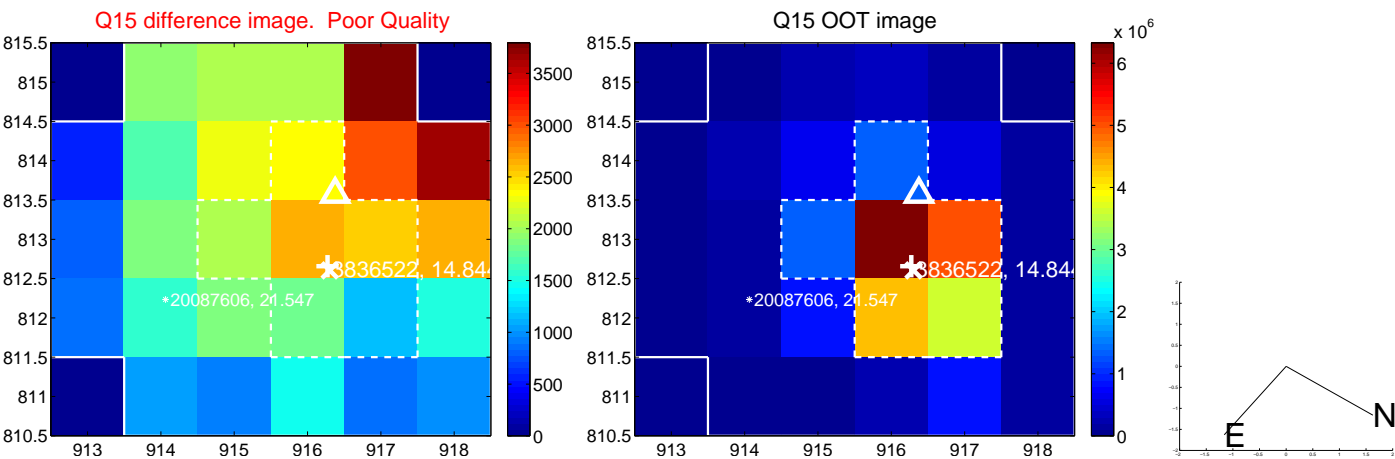
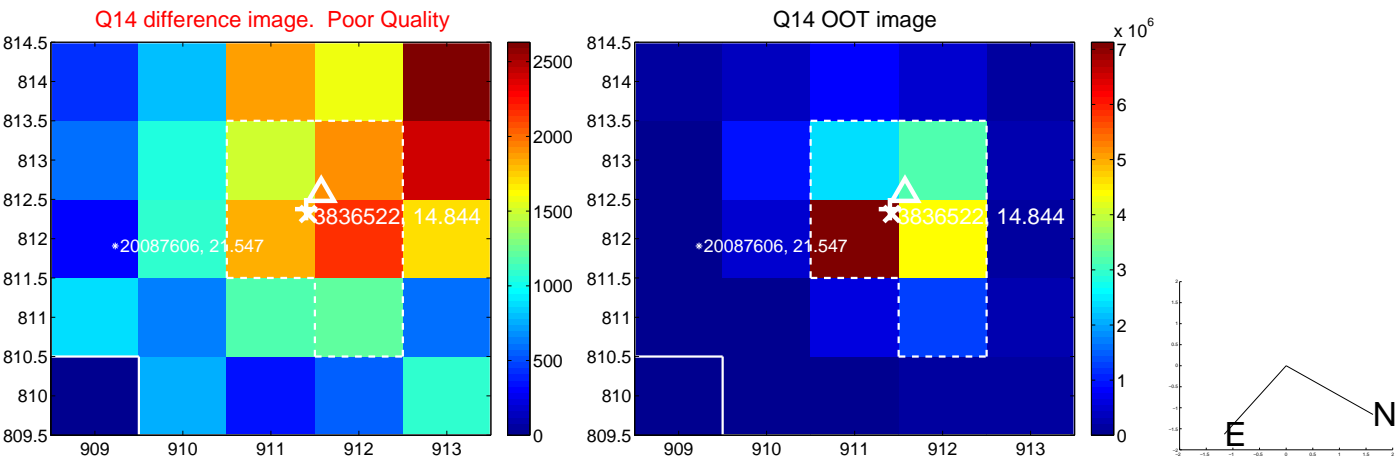
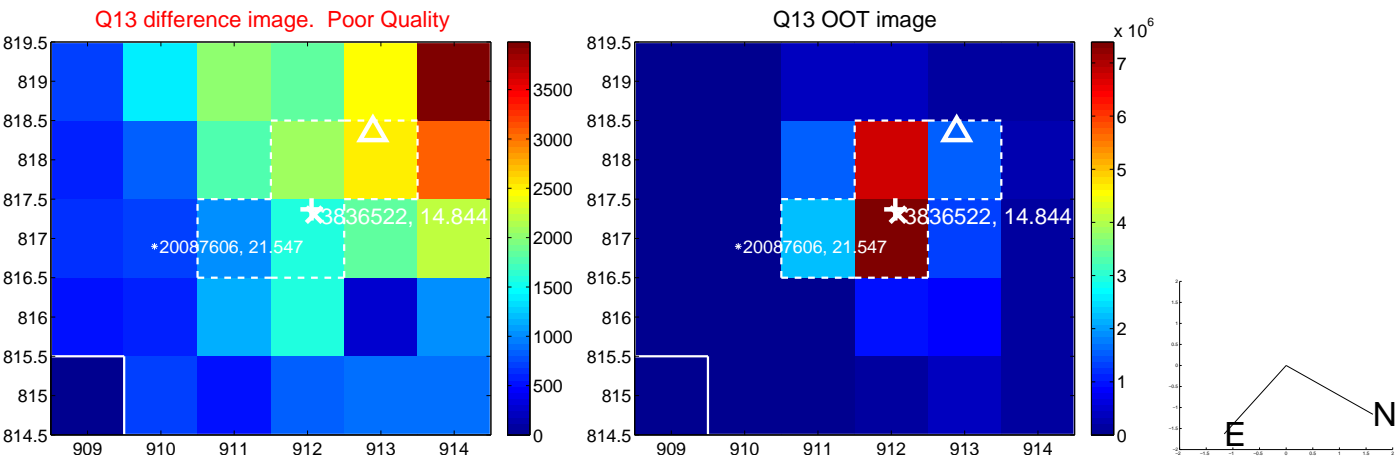
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



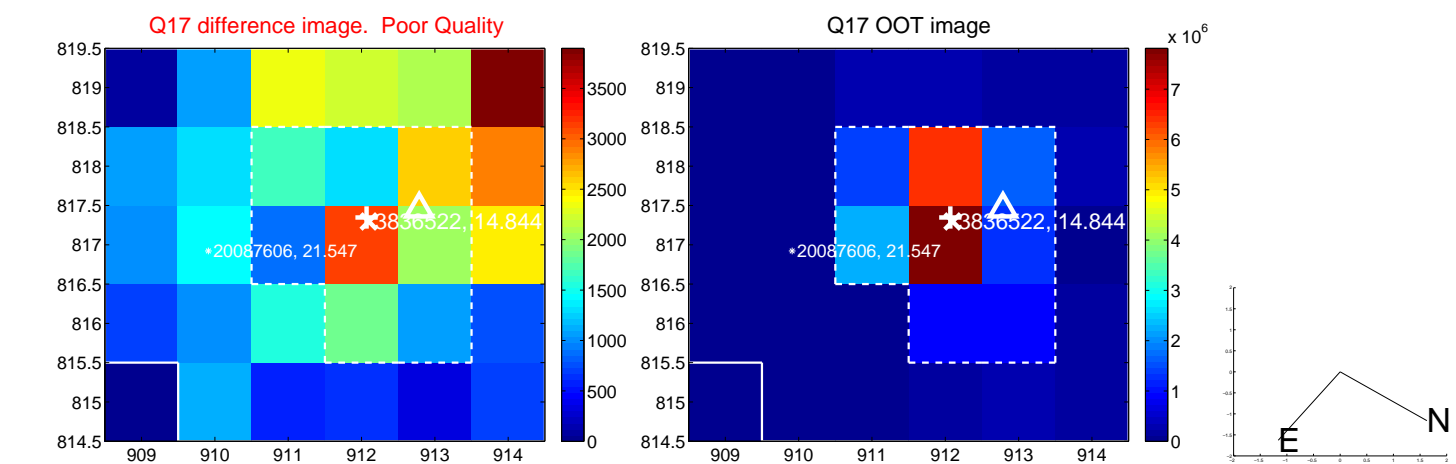
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



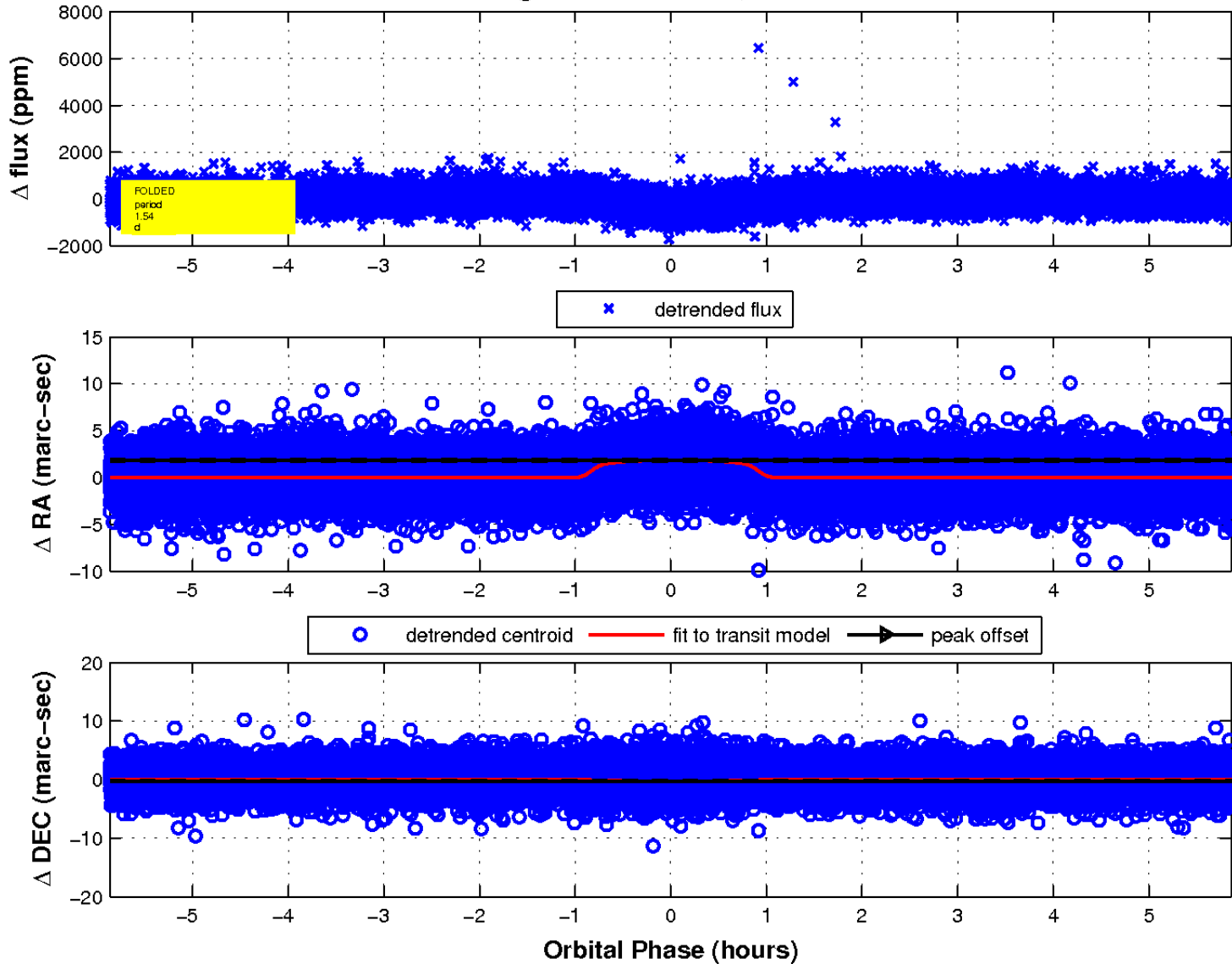
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

