

KIC 003862171

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})
003862171-01	OBS	No	20.988979	146.298440	313.1	39.080	22.7	31.8	0.99	6137	2.36	54.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003862171-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

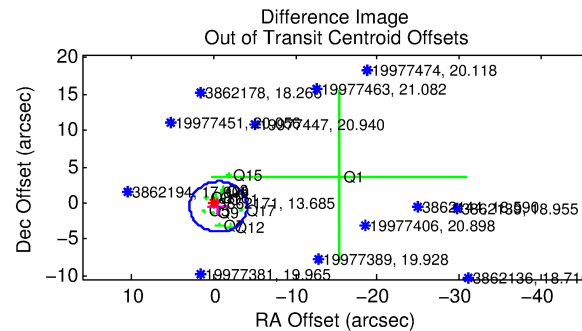
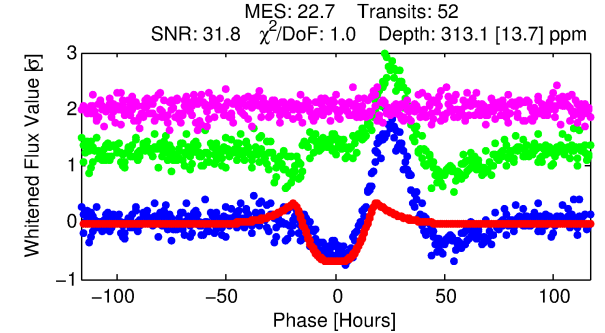
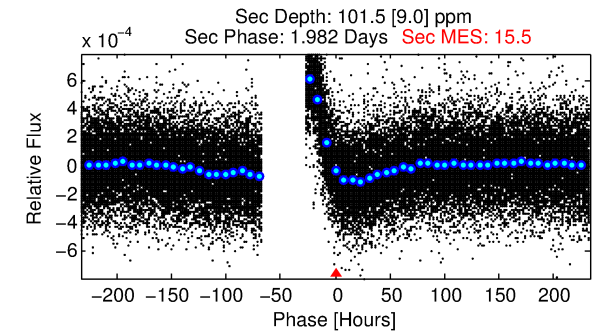
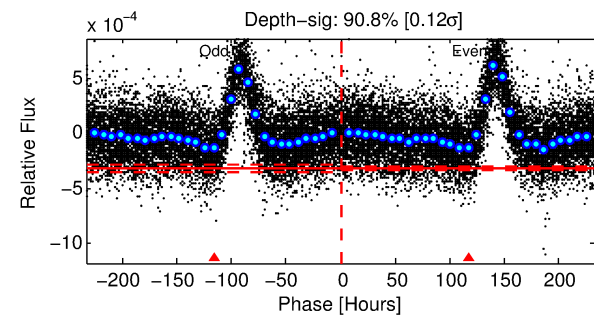
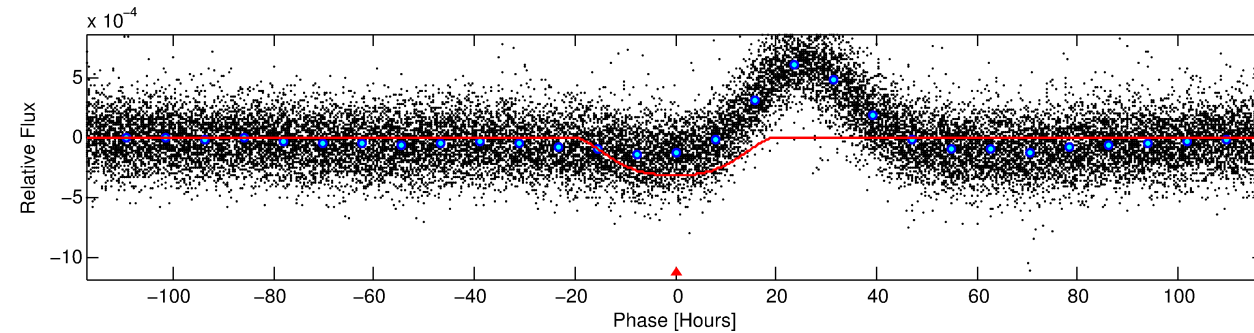
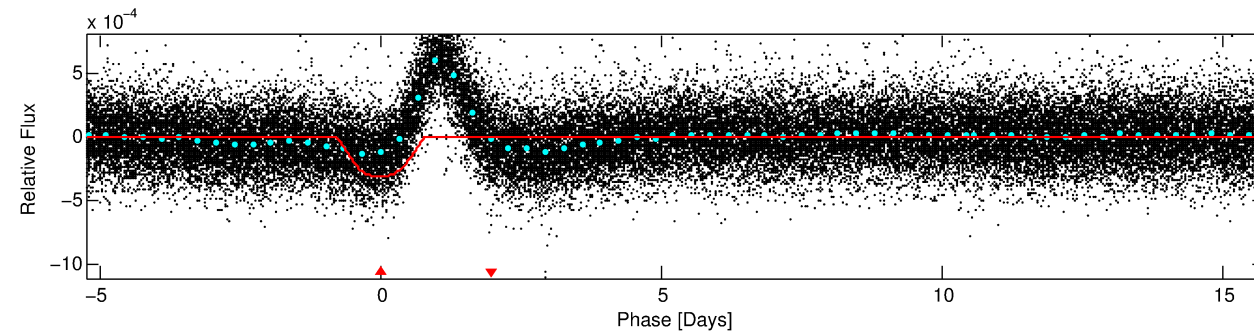
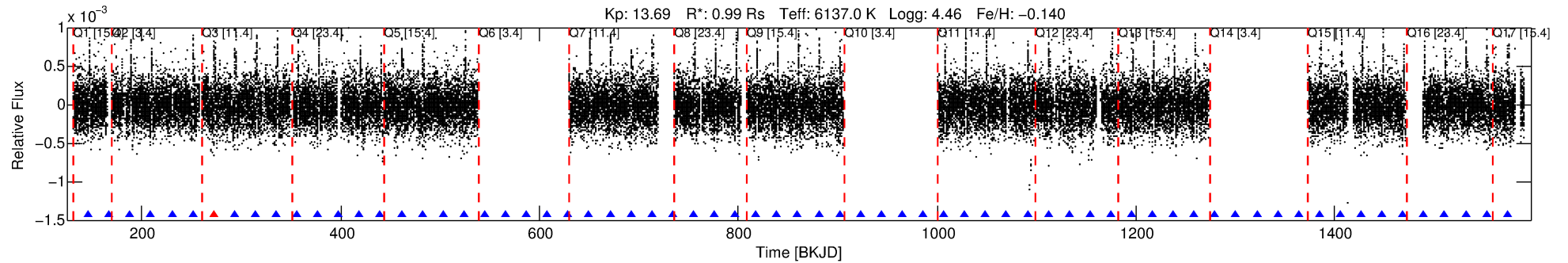
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003862171-01

No Significant Match Found

DV One-Page Summary

KIC: 3862171 Candidate: 1 of 1 Period: 20.989 d



DV Fit Results:

Period = 20.98898 [0.00051] d
Epoch = 146.2984 [0.0201] BKJD
Rp/R* = 0.0217 [0.0006]
a/R* = 1.57 [0.03]
b = 0.98 [0.00]
Seff = 54.74 [23.40]
Teff = 694 [74] K
Rp = 2.36 [0.77] Re
a = 0.1515 [0.0420] AU
Ag = 230.42 [96.77] [2.37 σ]
Teffp = 4178 [176] K [18.28 σ]

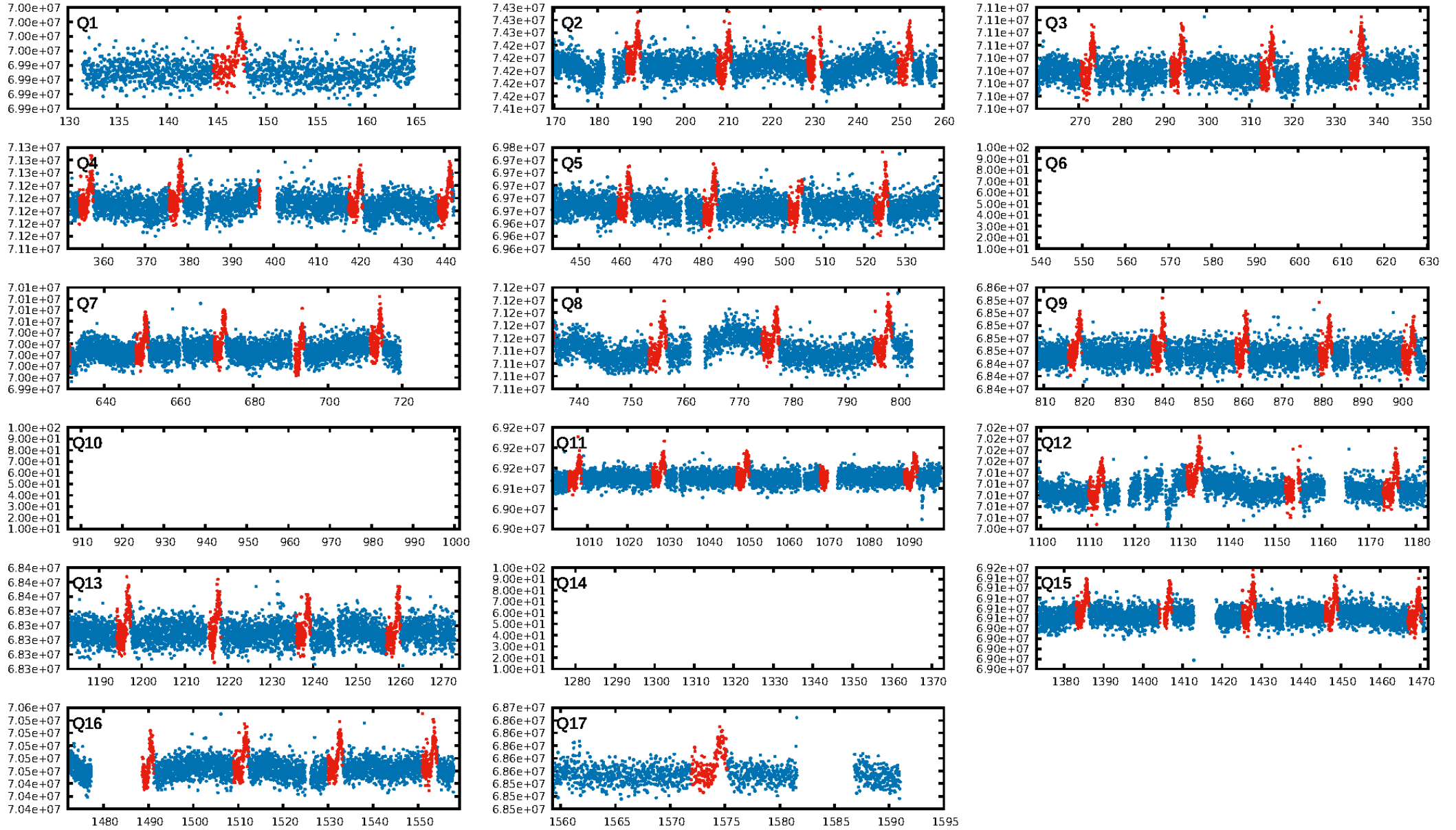
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.35e-110
RollingBand-fgt: 0.98 [49/50]
GhostDiagnostic-chr: 1.4
Centroid-sig: 4.3%
Centroid-so: 0.189 arcsec [0.82 σ]
OotOffset-rm: 0.811 arcsec [0.70 σ]
KicOffset-rm: 0.877 arcsec [0.77 σ]
OotOffset-st: 0/4/4/4 [12]
KicOffset-st: 0/4/4/4 [12]
DiffImageQuality-fgm: 0.75 [9/12]
DiffImageOverlap-fno: 1.00 [14/14]

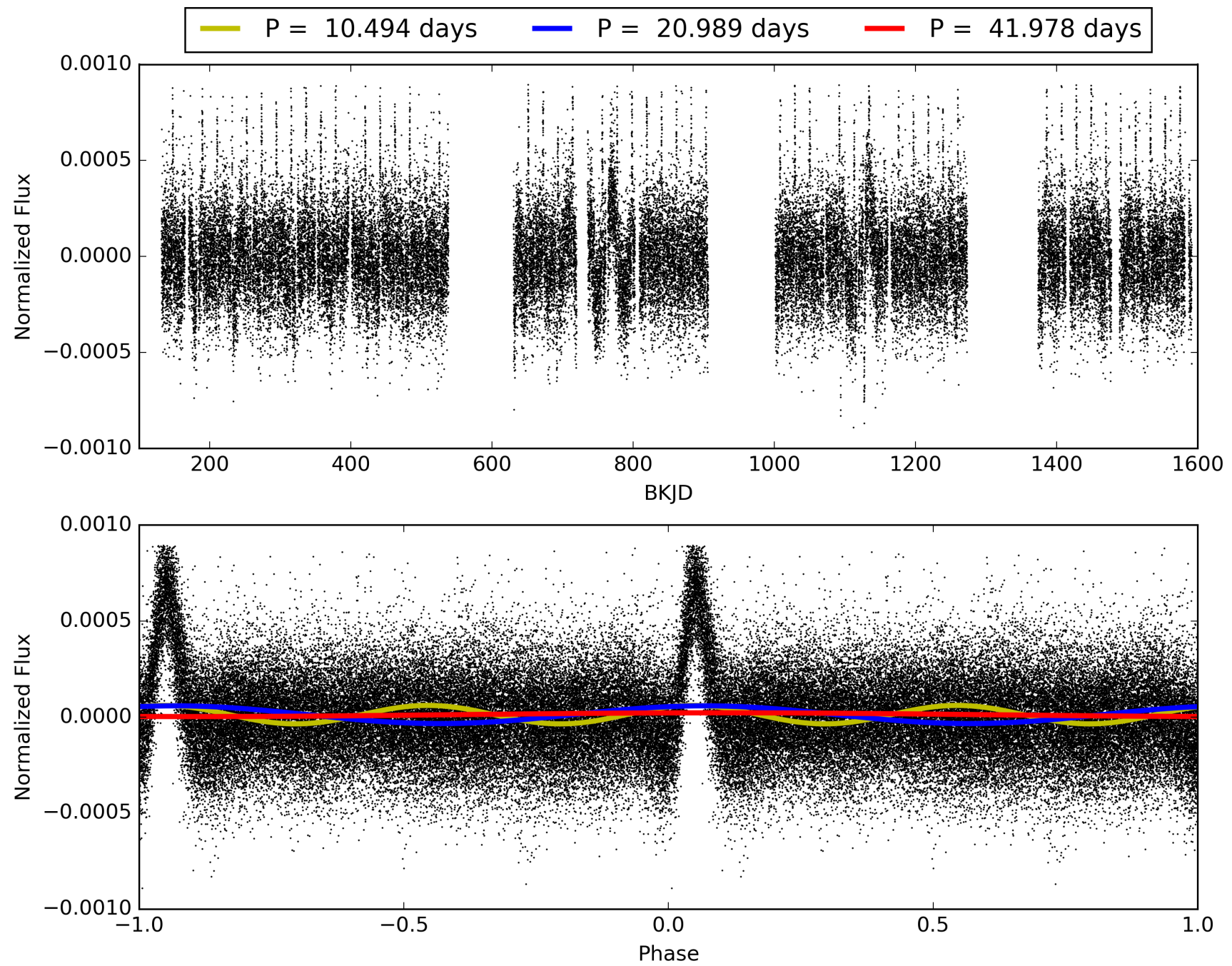
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:54:59 Z

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

TCE 003862171-01, PDC Light Curves

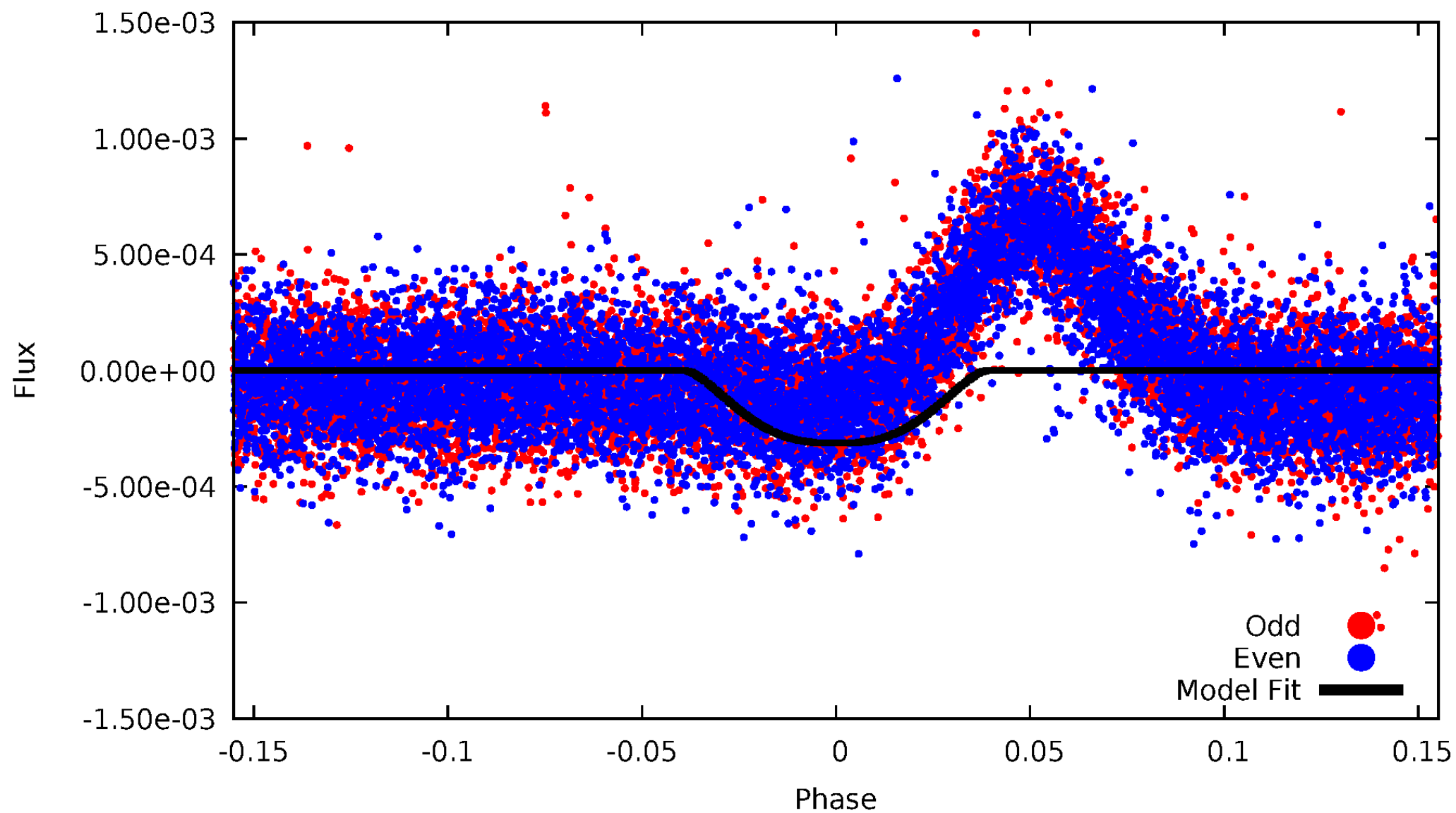


TCE 003862171-01



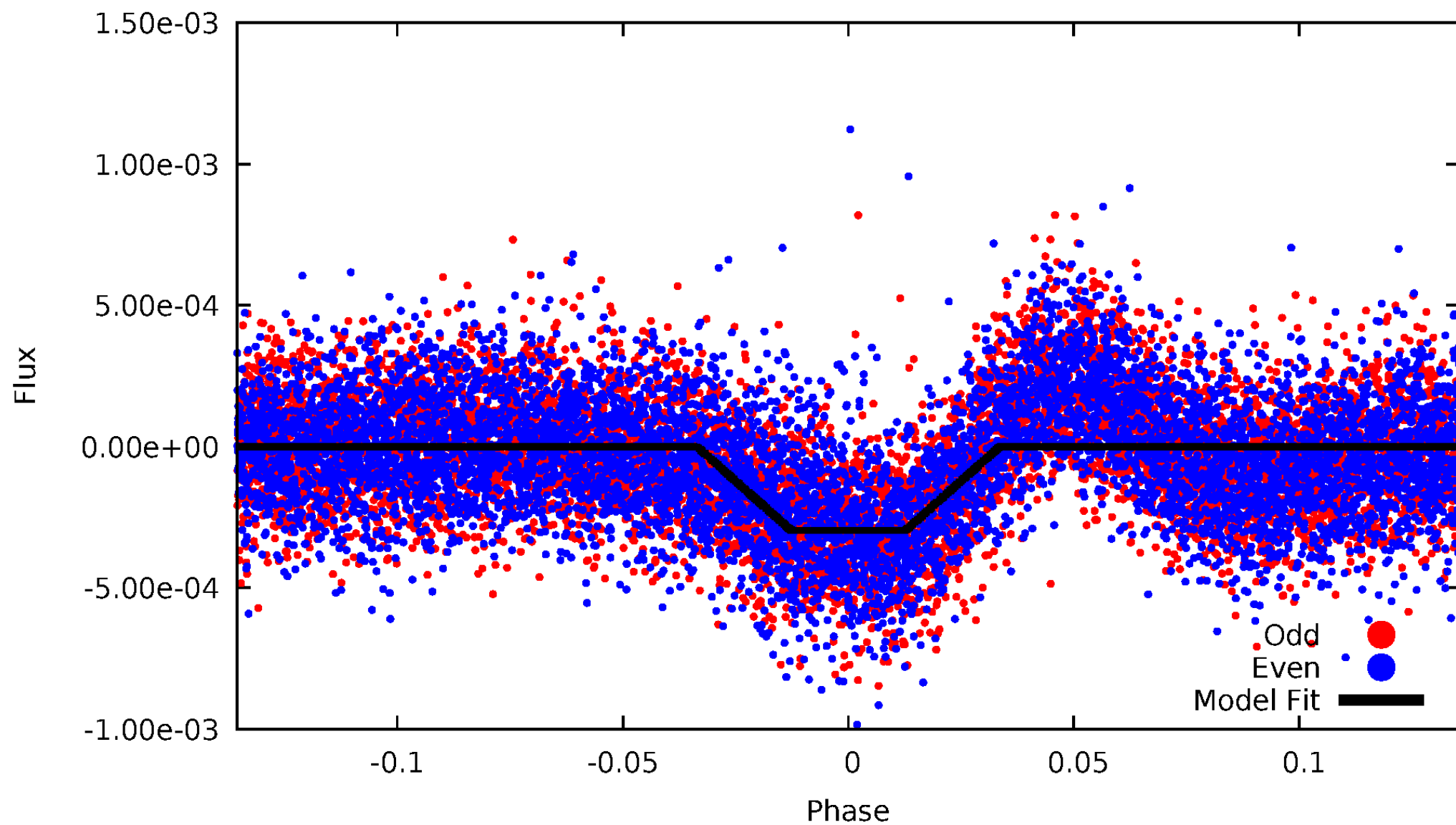
DV Odd/Even

TCE 003862171-01



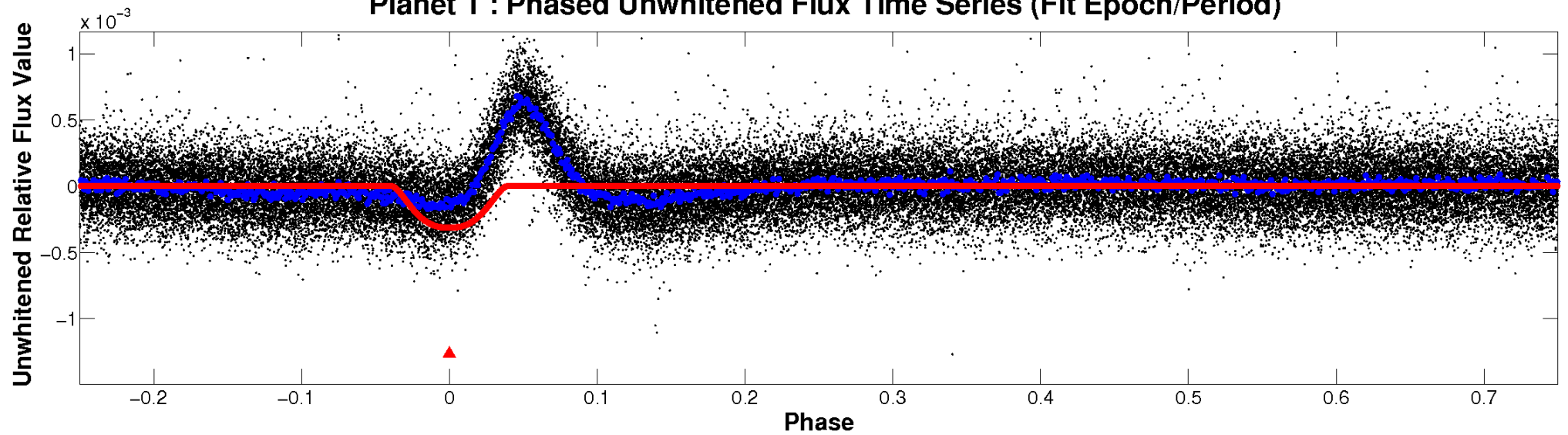
ALT Odd/Even

TCE 003862171-01

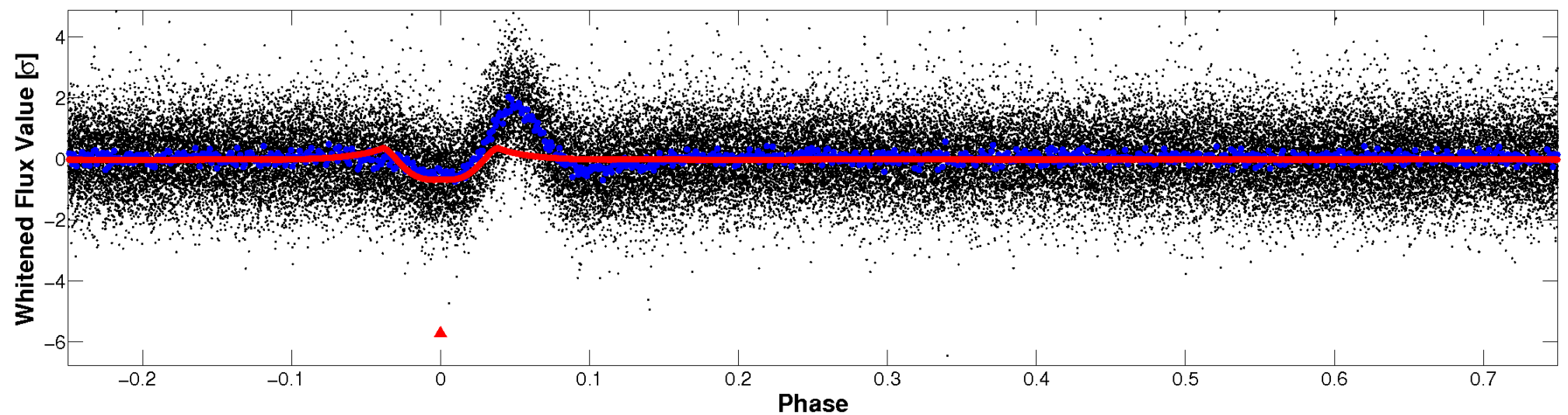


Non-Whitened Vs. Whitened Light Curve

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

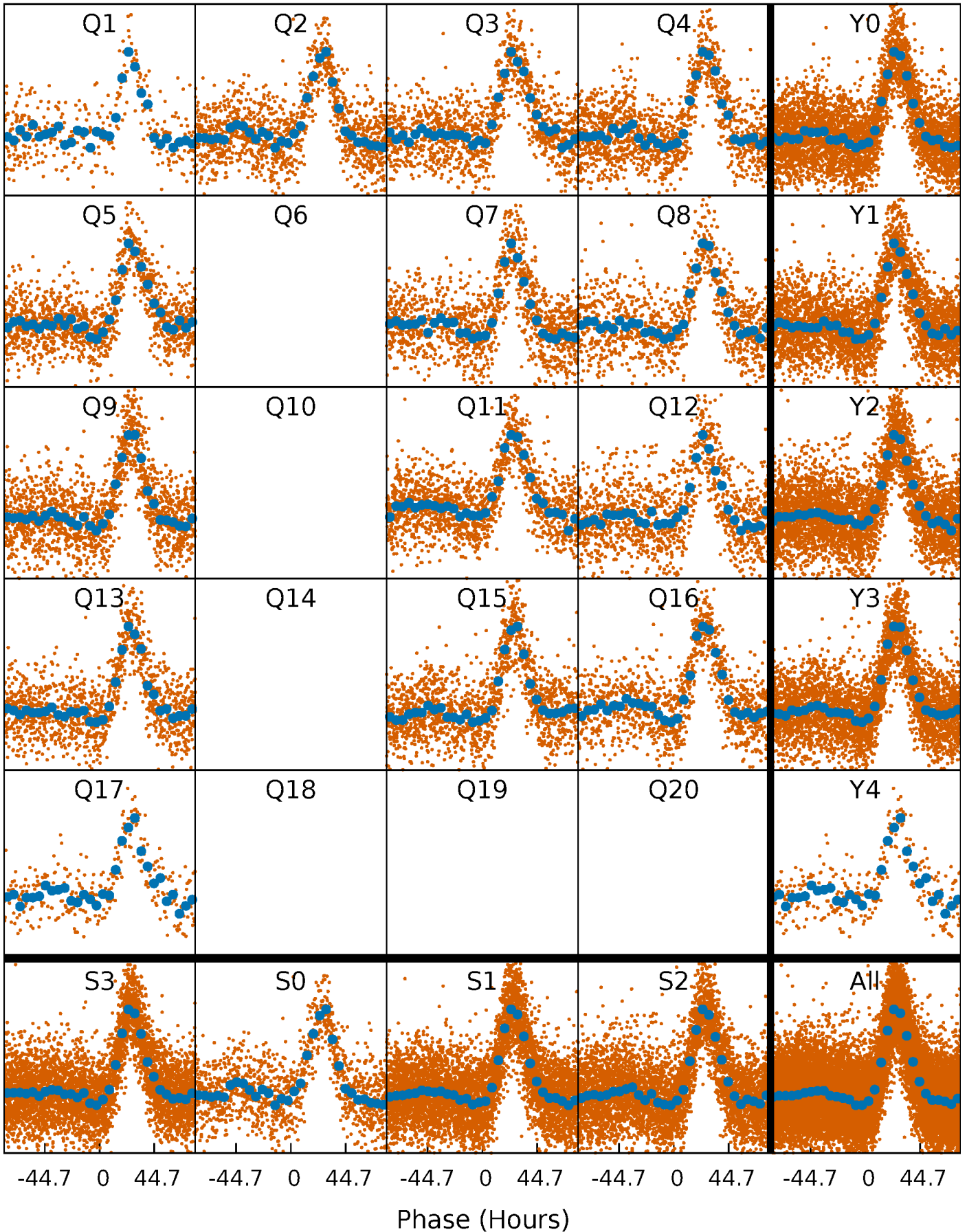


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



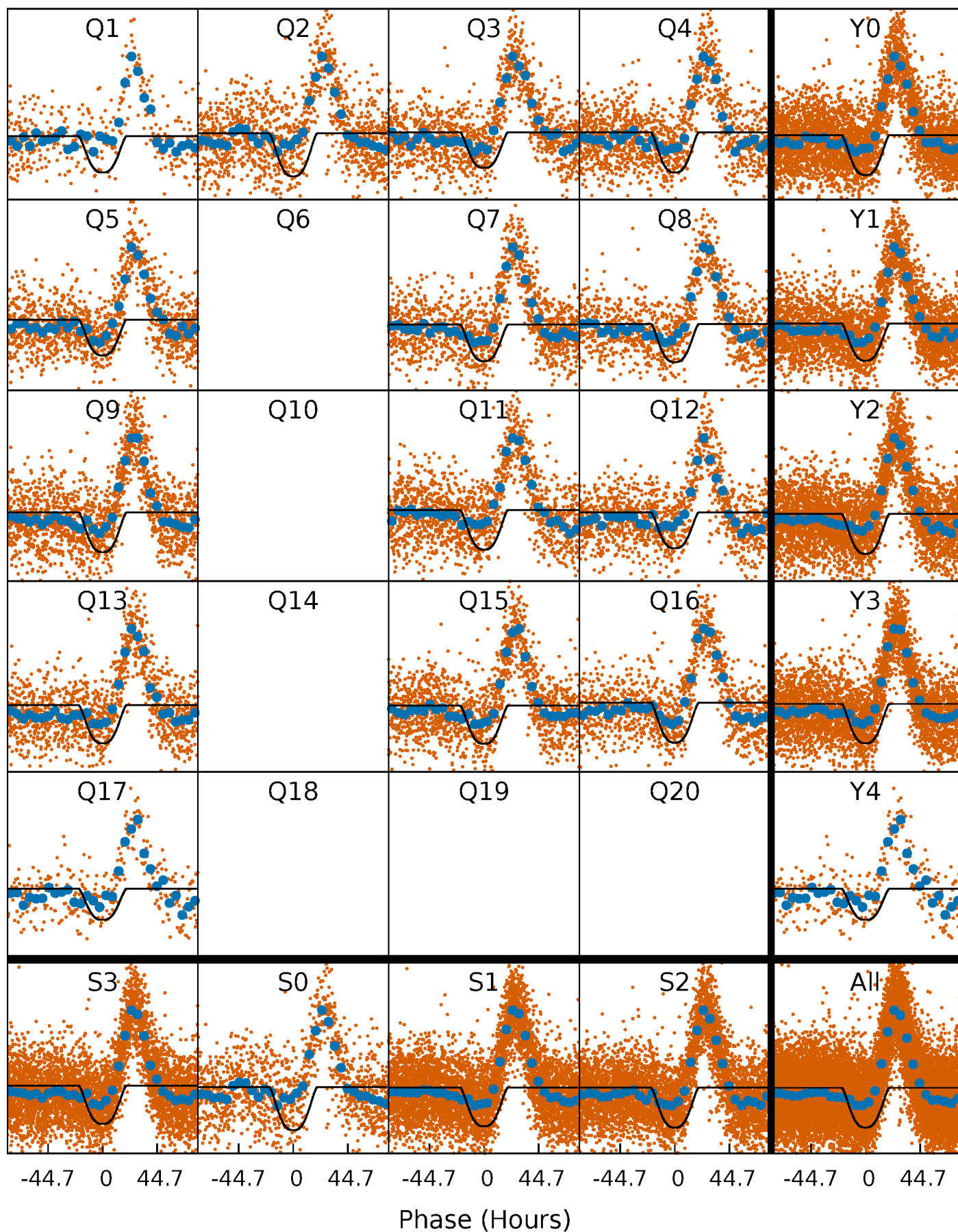
PDC Quarter-Phased Transit Curves

TCE 003862171-01 P= 20.988979 Days $T_0=146.298440$ (BKJD)



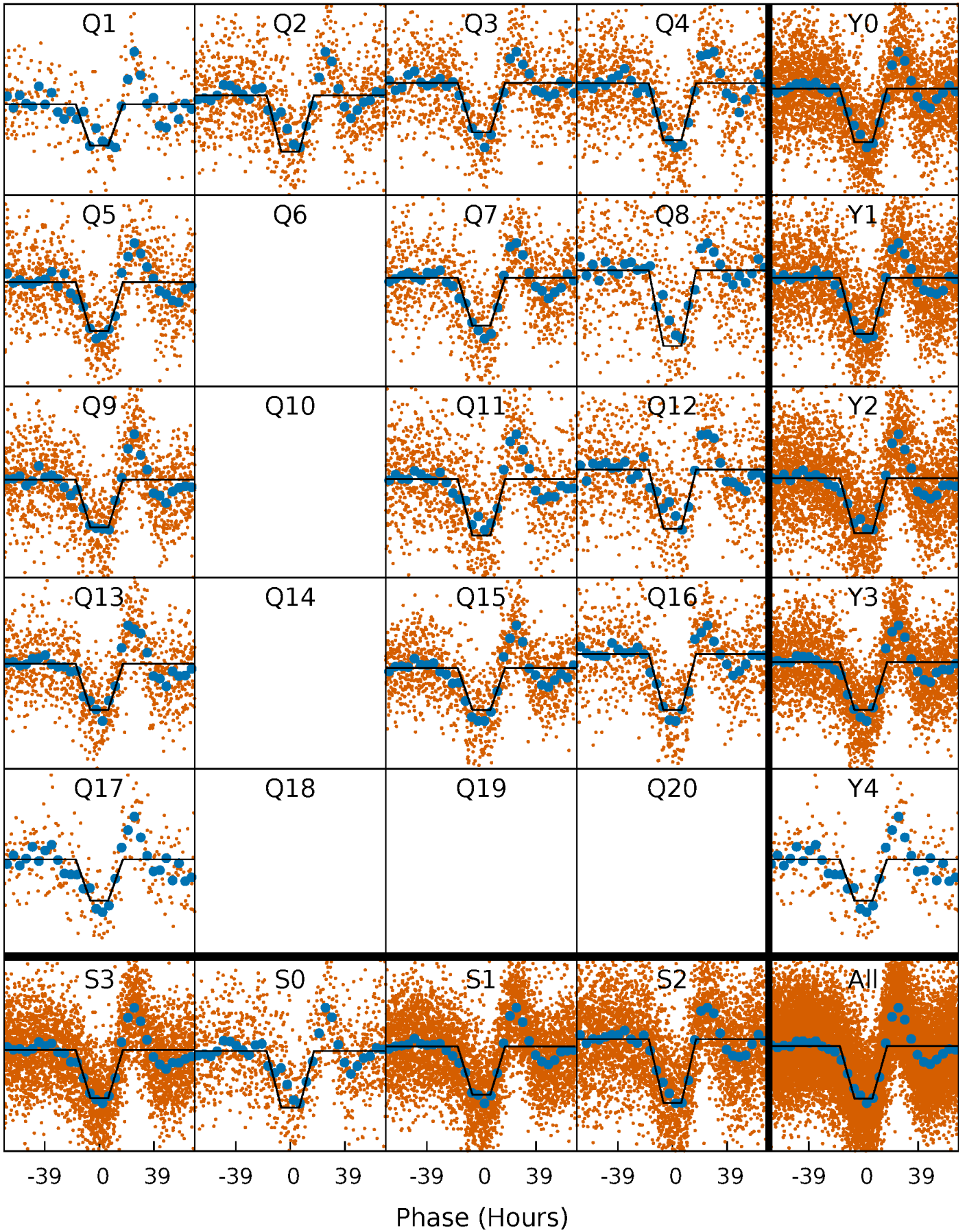
DV Quarter-Phased Transit Curves

TCE 003862171-01 P= 20.988979 Days $T_0=146.298440$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

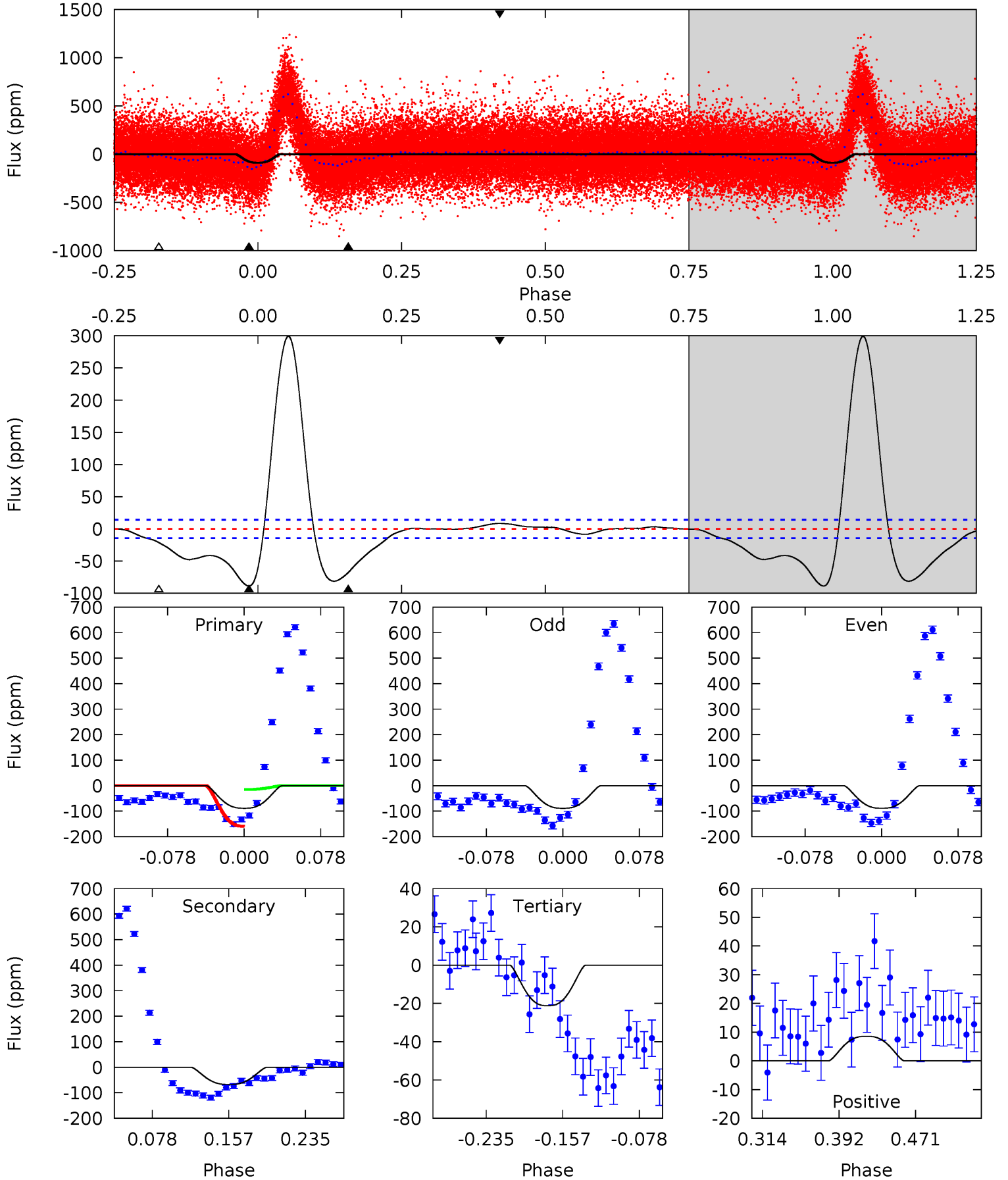
TCE 003862171-01 P= 20.990053 Days $T_0=146.330580$ (BKJD)



DV Model-Shift Uniqueness Test

003862171-01, P = 20.988979 Days, E = 125.309461 Days

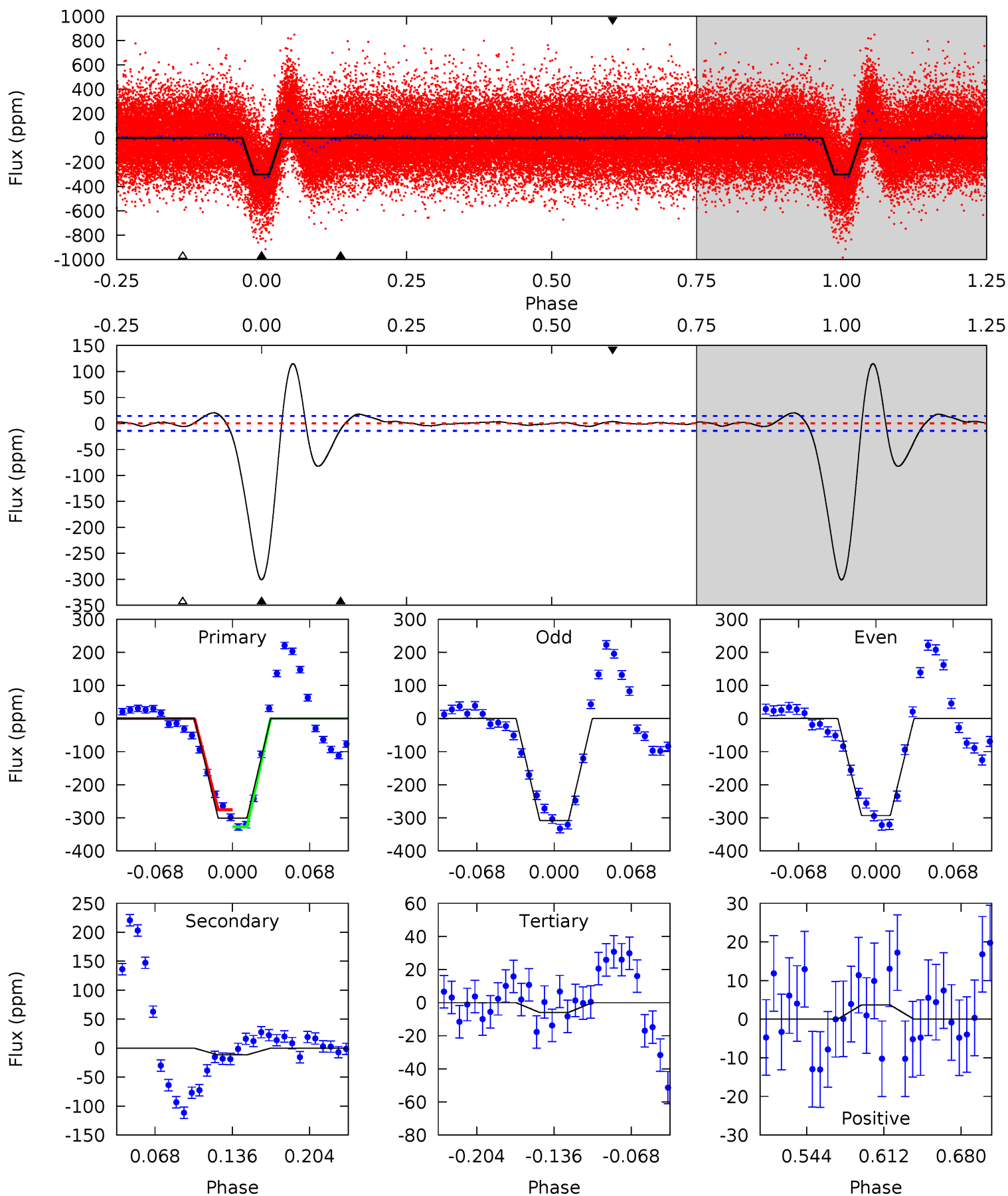
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.8	22.0	6.88	2.78	4.62	1.76	12.0	21.9	26.0	15.1	19.2	0.02	0.96	0.77	21.7



Alt Model-Shift Uniqueness Test

003862171-01, P = 20.990053 Days, E = 125.340527 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
97.2	3.77	1.93	1.19	4.64	1.82	1.50	95.3	96.0	1.84	2.58	2.39	0.96	0.28	8.27



Stellar Parameters For KIC 003862171

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6137^{+165}_{-202}	$4.465^{+0.056}_{-0.224}$	$-0.140^{+0.250}_{-0.350}$	$0.994^{+0.324}_{-0.108}$	$1.049^{+0.153}_{-0.139}$	$1.502^{+0.441}_{-0.806}$
	+3%/-3%	+1%/-5%	+179%/-250%	+33%/-11%	+15%/-13%	+29%/-54%
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 003862171-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-68 ± 3	$2.42^{+0.40}_{-0.22}$	988^{+71}_{-46}	4070^{+99}_{-105}	142^{+26}_{-33}
Alt.	-12 ± 3	$1.92^{+0.33}_{-0.17}$	990^{+78}_{-49}	3282^{+146}_{-169}	37^{+14}_{-13}

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

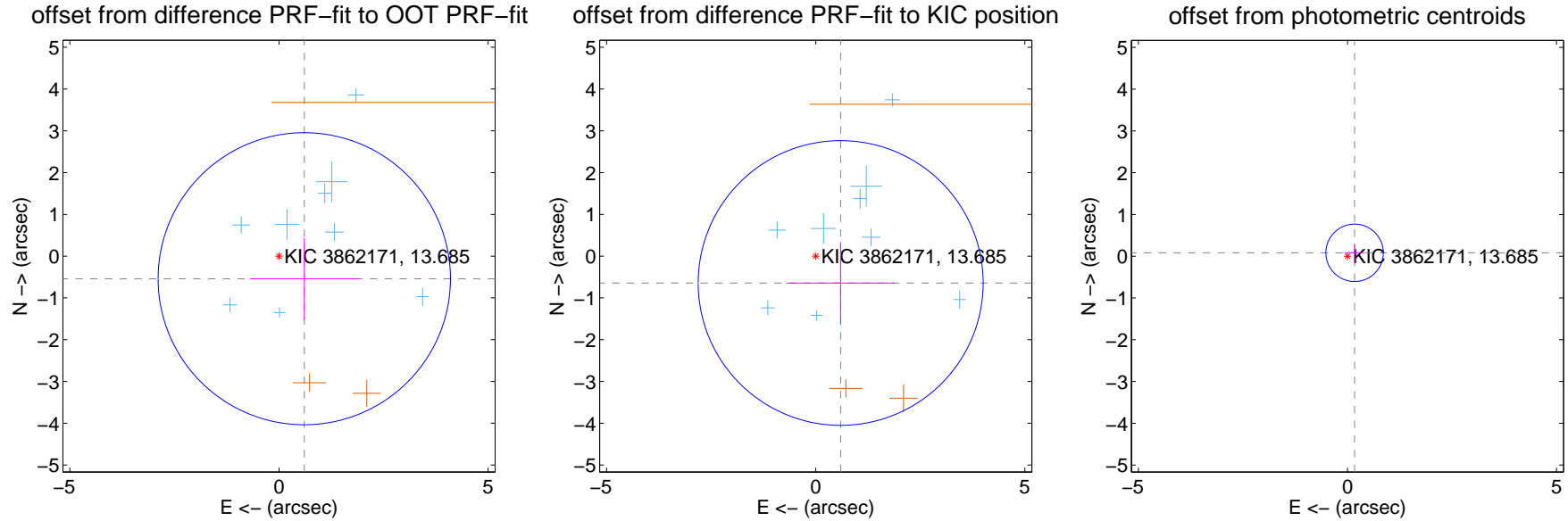
DV Centroid Data

Supplemental centroid analysis for 003862171-01. Kepler magnitude: 13.69. Transit SNR 31.82

There are 9 quarters with good PRF difference image offsets

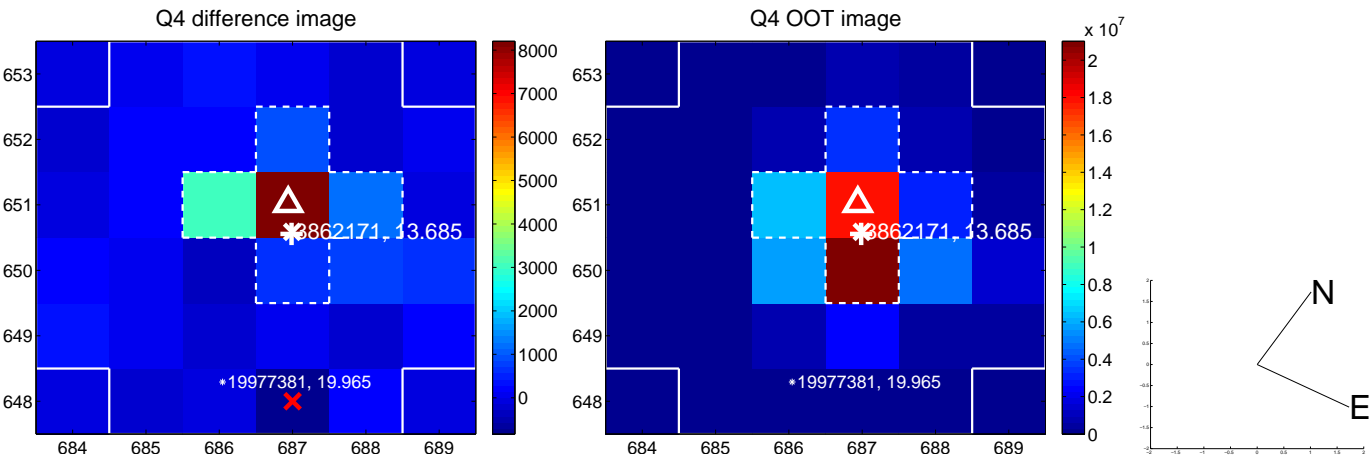
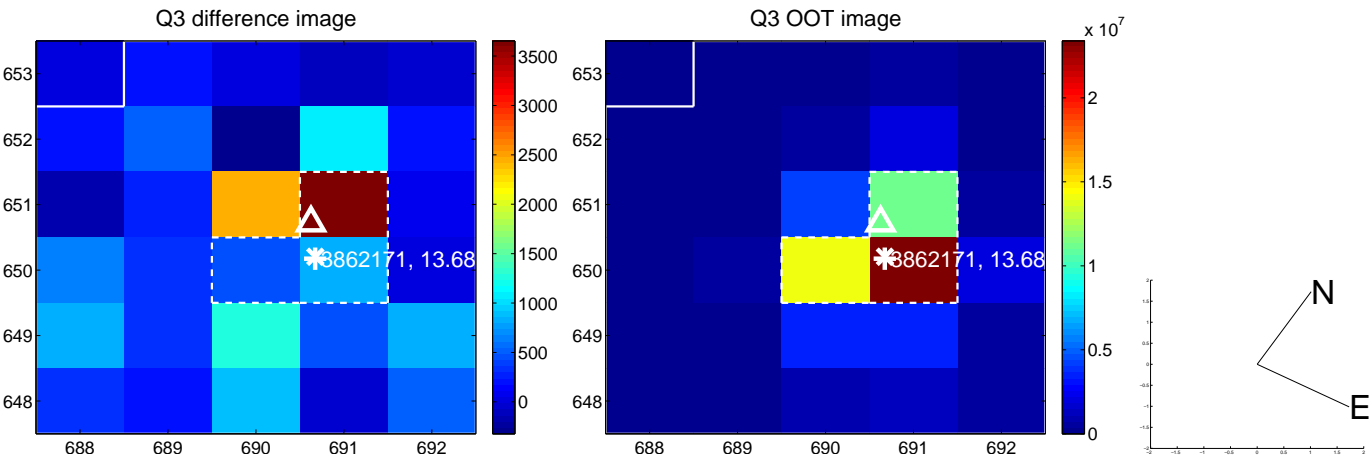
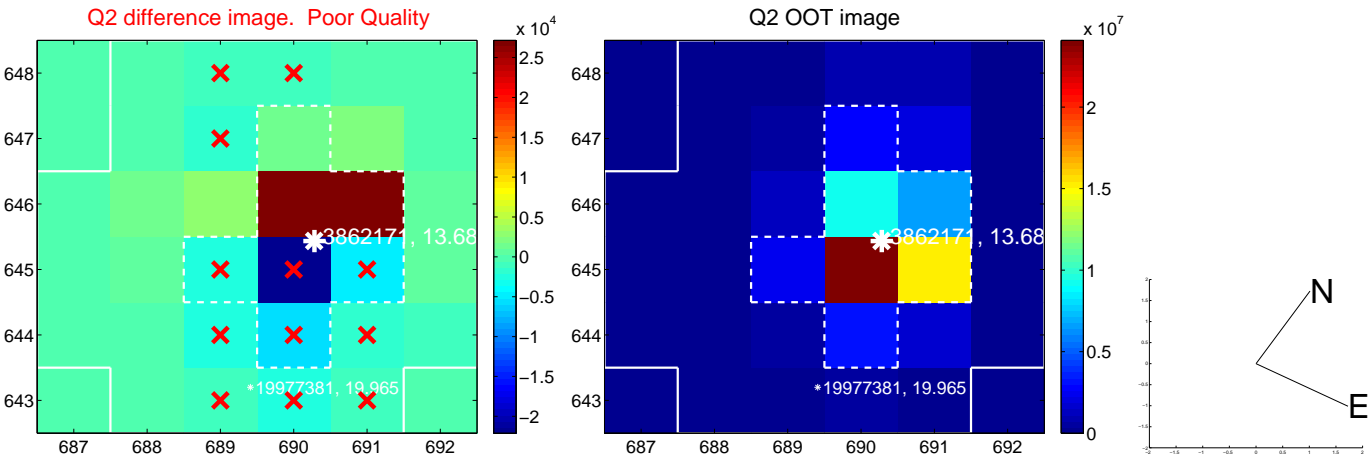
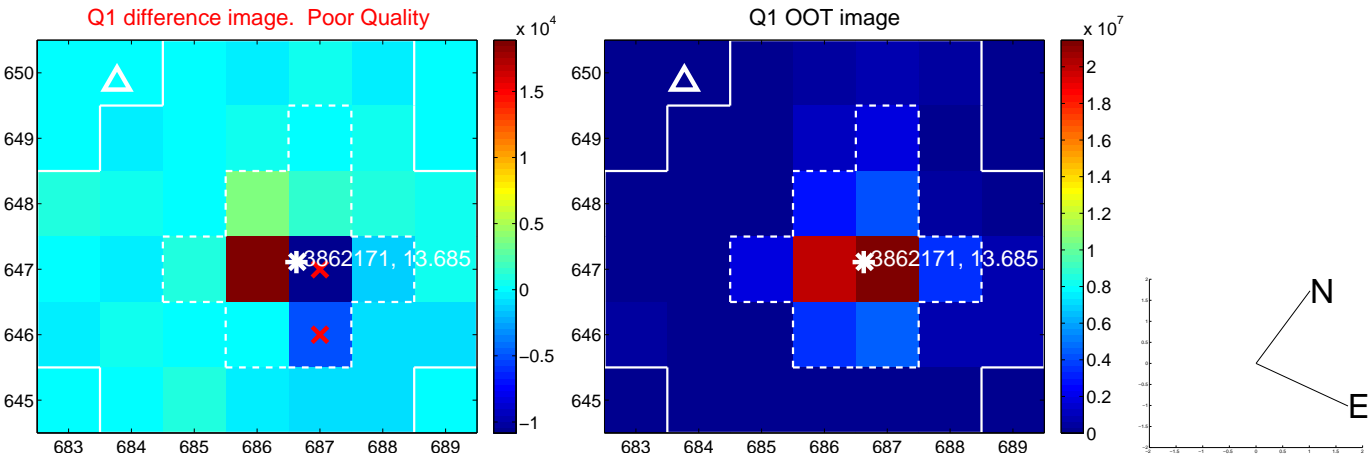
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.811 ± 1.165	0.70	-0.604 ± 1.296	-0.541 ± 0.977
PRF-fit source offset from KIC position	0.877 ± 1.136	0.77	-0.597 ± 1.296	-0.643 ± 0.977
photometric centroid source offset	0.19 ± 0.23	0.82	-0.17 ± 0.23	0.08 ± 0.21

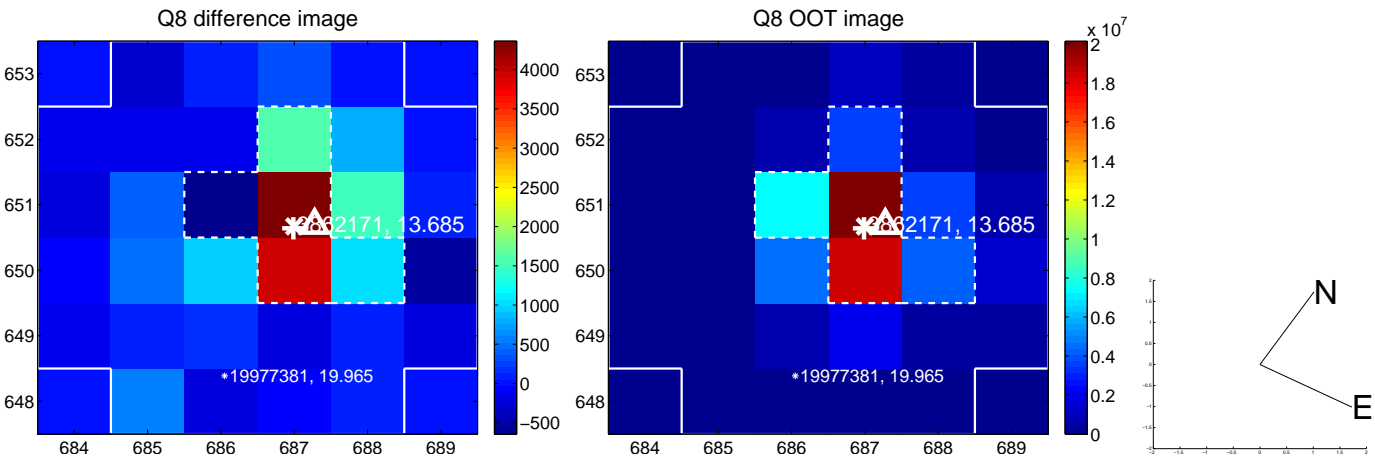
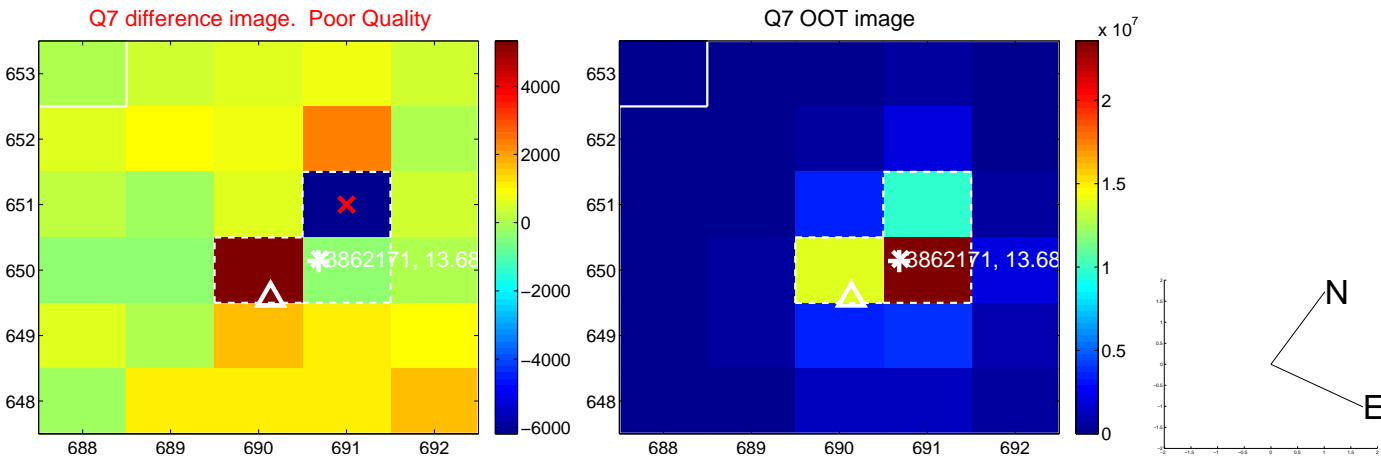
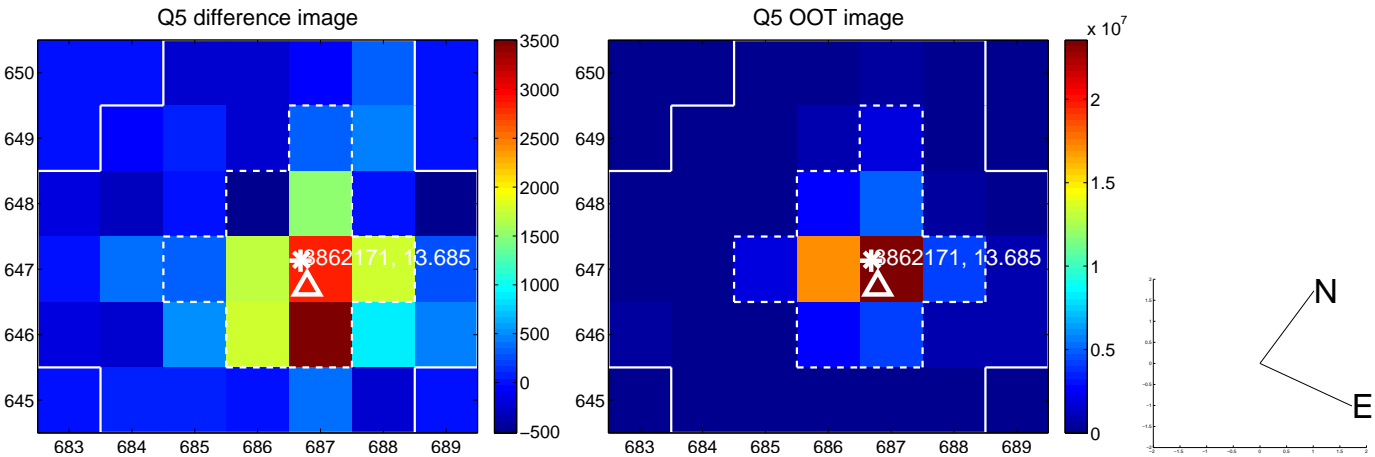


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

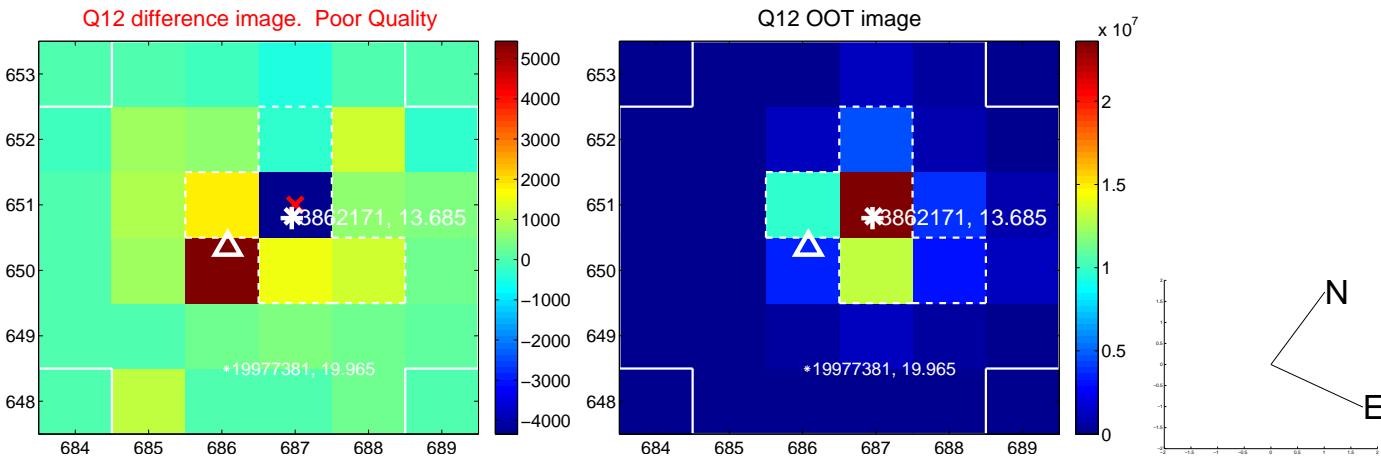
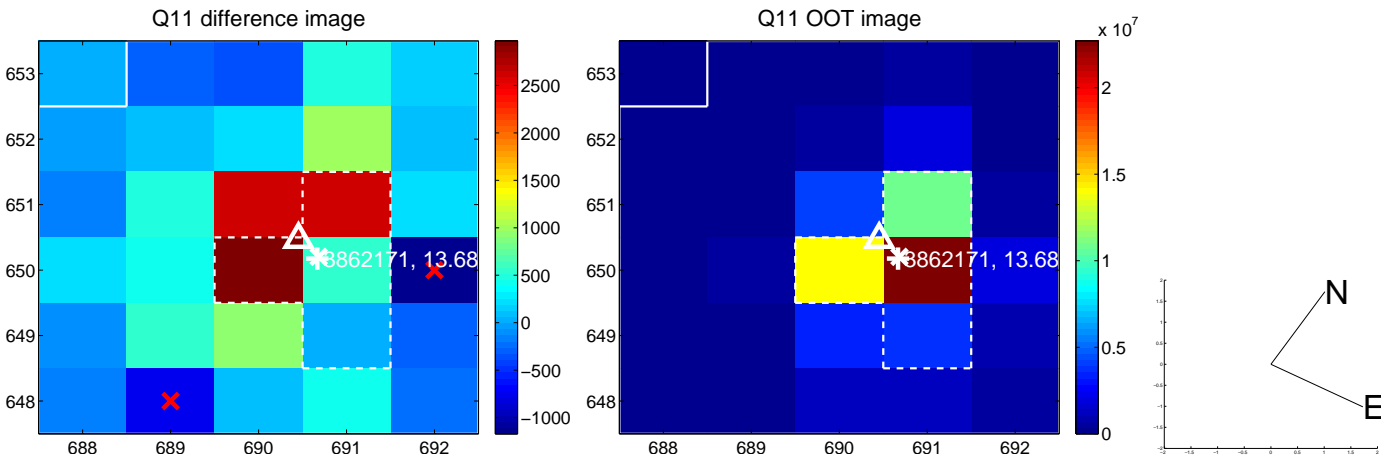
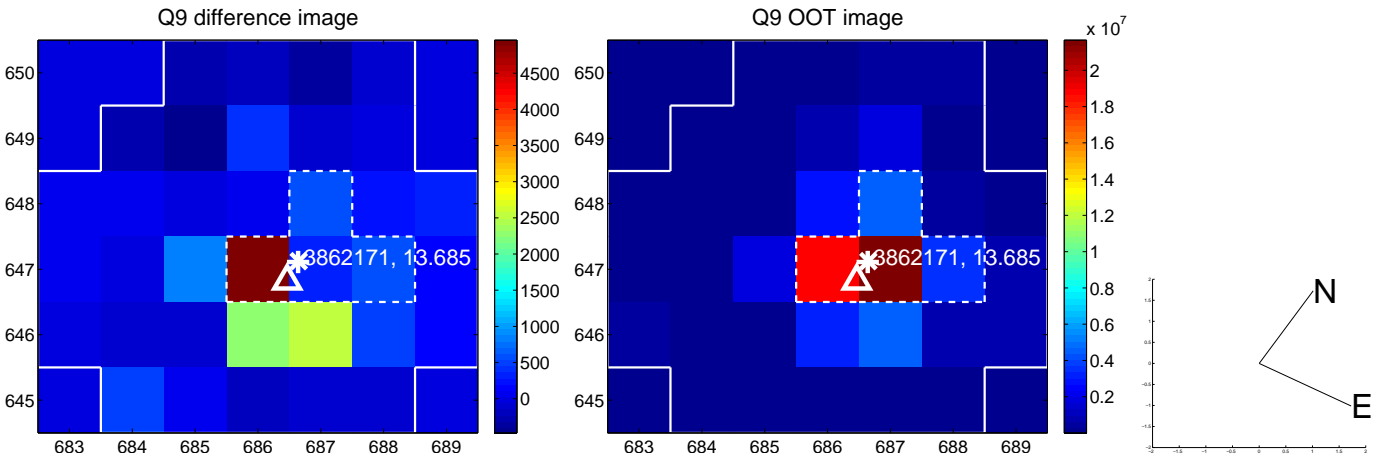
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



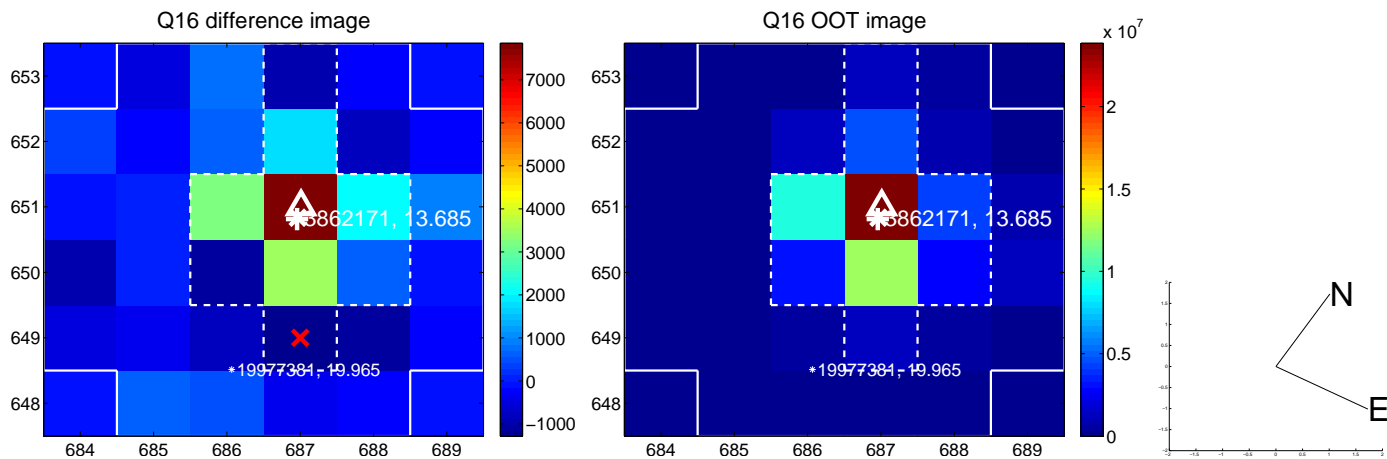
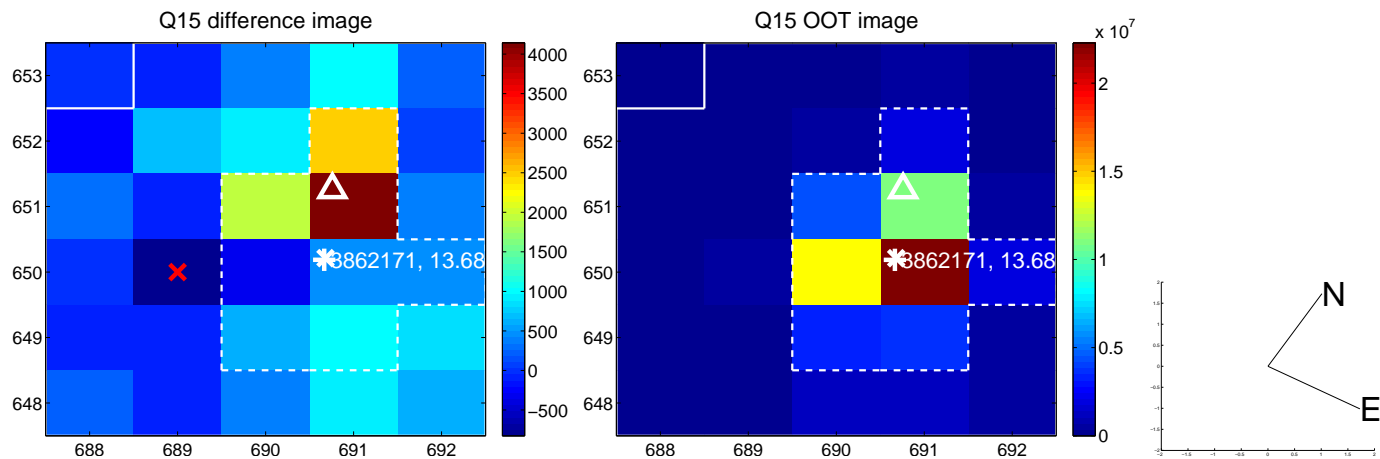
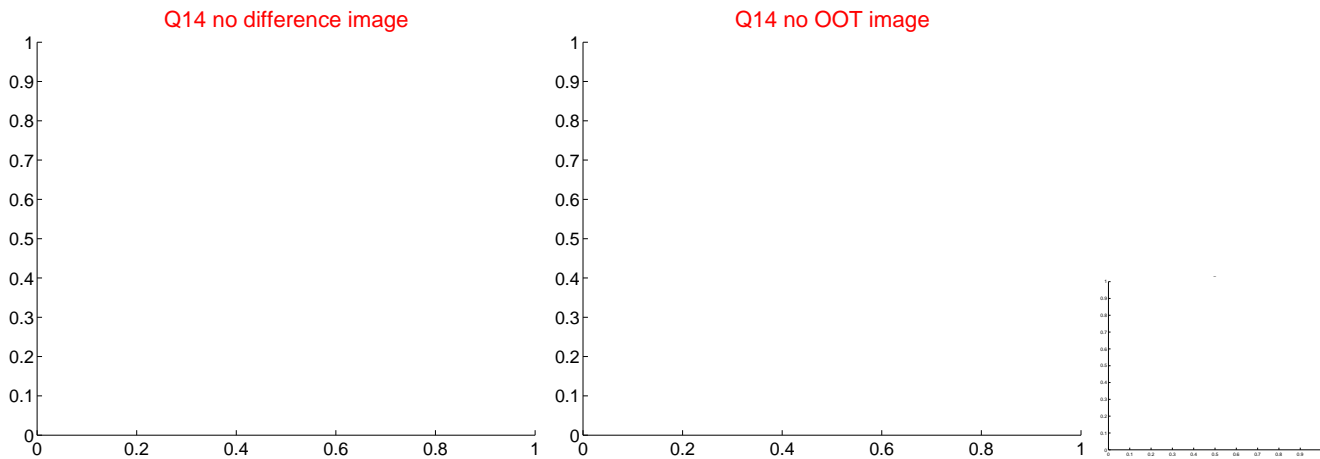
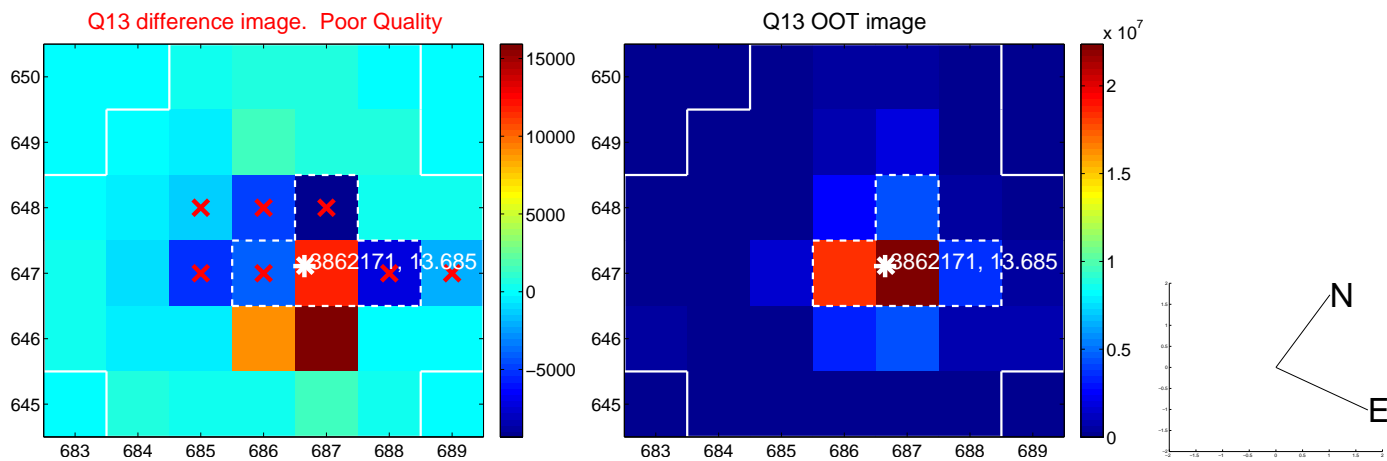
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



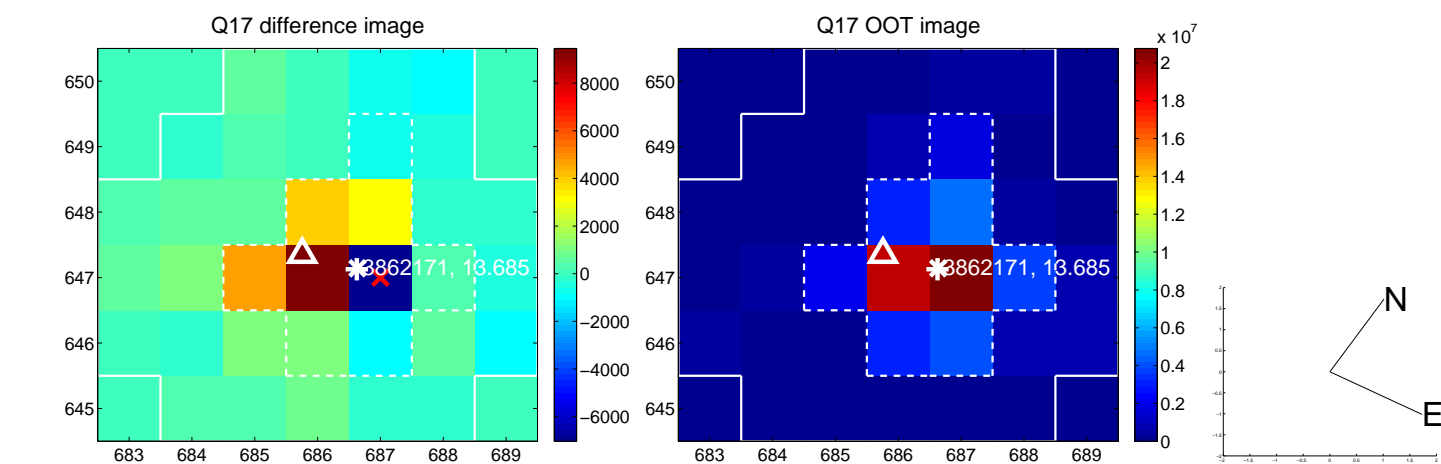
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



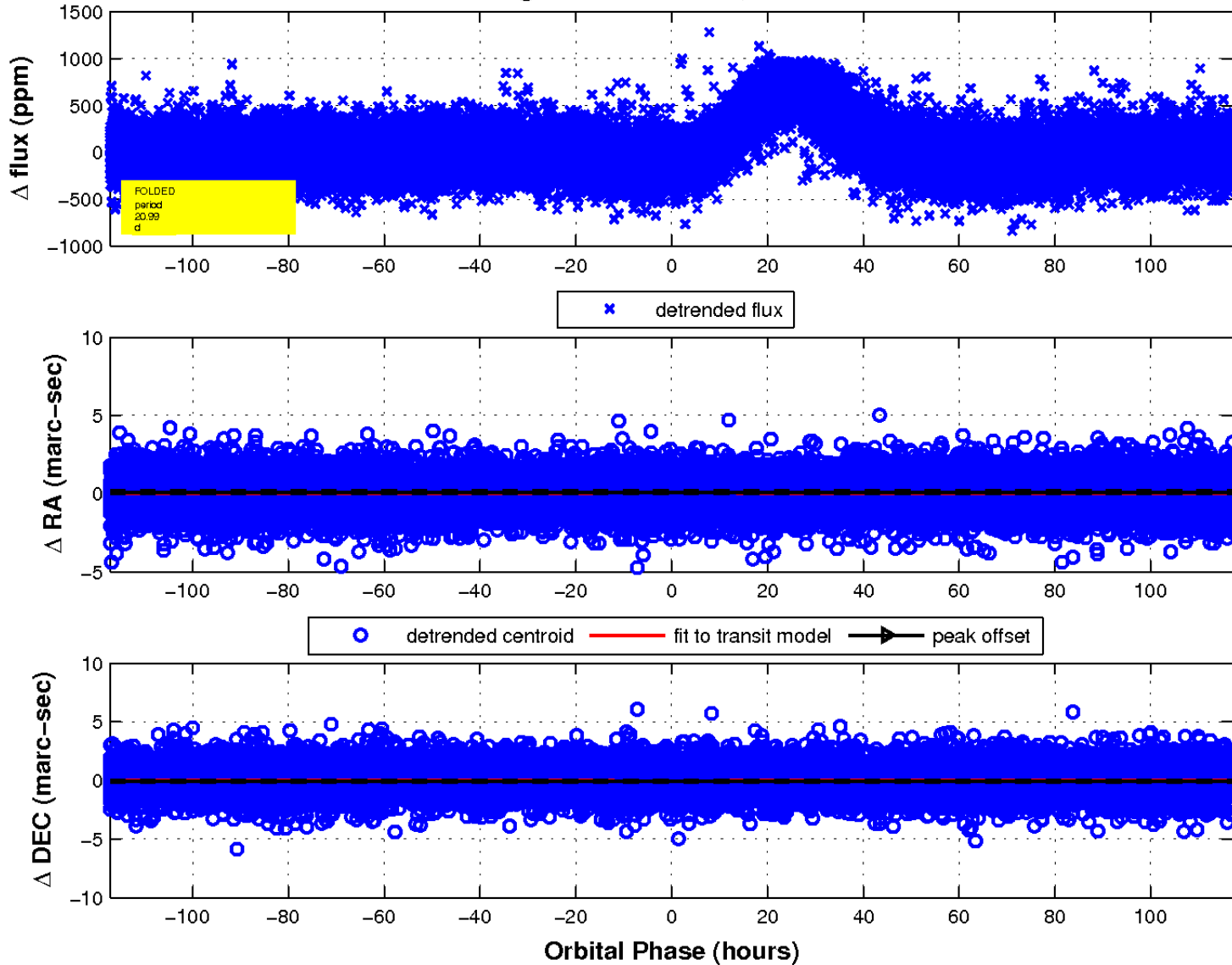
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

