

KIC 005470862

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})
005470862-01	OBS	No	12.423410	134.260610	89.6	11.105	7.3	7.2	0.91	5778	1.09	73.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005470862-01	OBS	FP	0.00	1	0	0	1	LPP_DV—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.

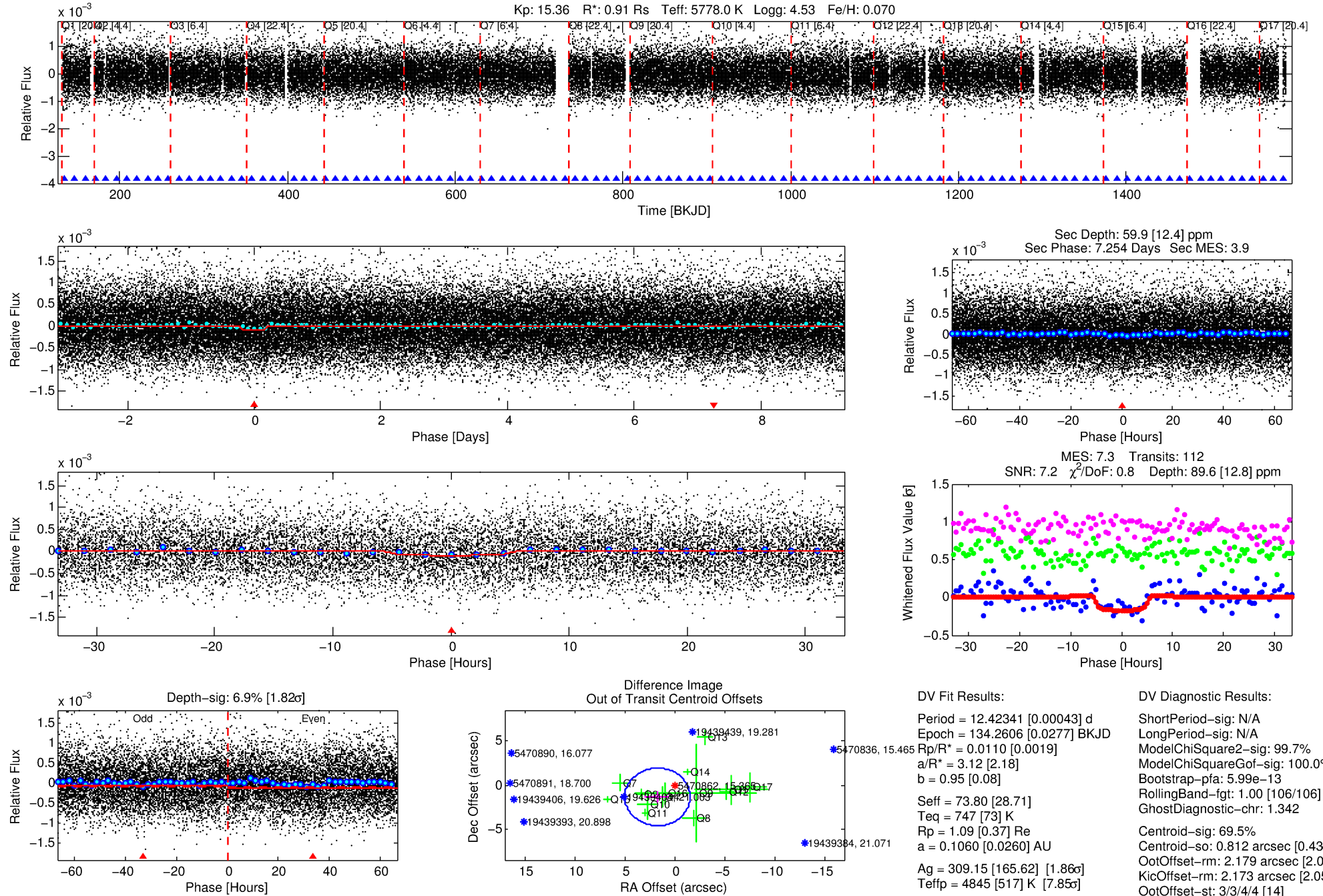
Ephemeris Match Information For 005470862-01

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
005470862-01	5470862	005385509-02	5385509	1:1	518.6	130	0	15.71	15.36	2.84	Col-Anomaly	1	0.24	3.49

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: 5470862 Candidate: 1 of 1 Period: 12.423 d



DV Fit Results:

Period = 12.42341 [0.00043] d
Epoch = 134.2606 [0.0277] BKJD
Rp/R* = 0.0110 [0.0019]
a/R* = 3.12 [2.18]
b = 0.95 [0.08]
Seff = 73.80 [28.71]
Teff = 747 [73] K
Rp = 1.09 [0.37] Re
a = 0.1060 [0.0260] AU
Ag = 309.15 [165.62] [1.86 σ]
Teffp = 4845 [517] K [7.85 σ]

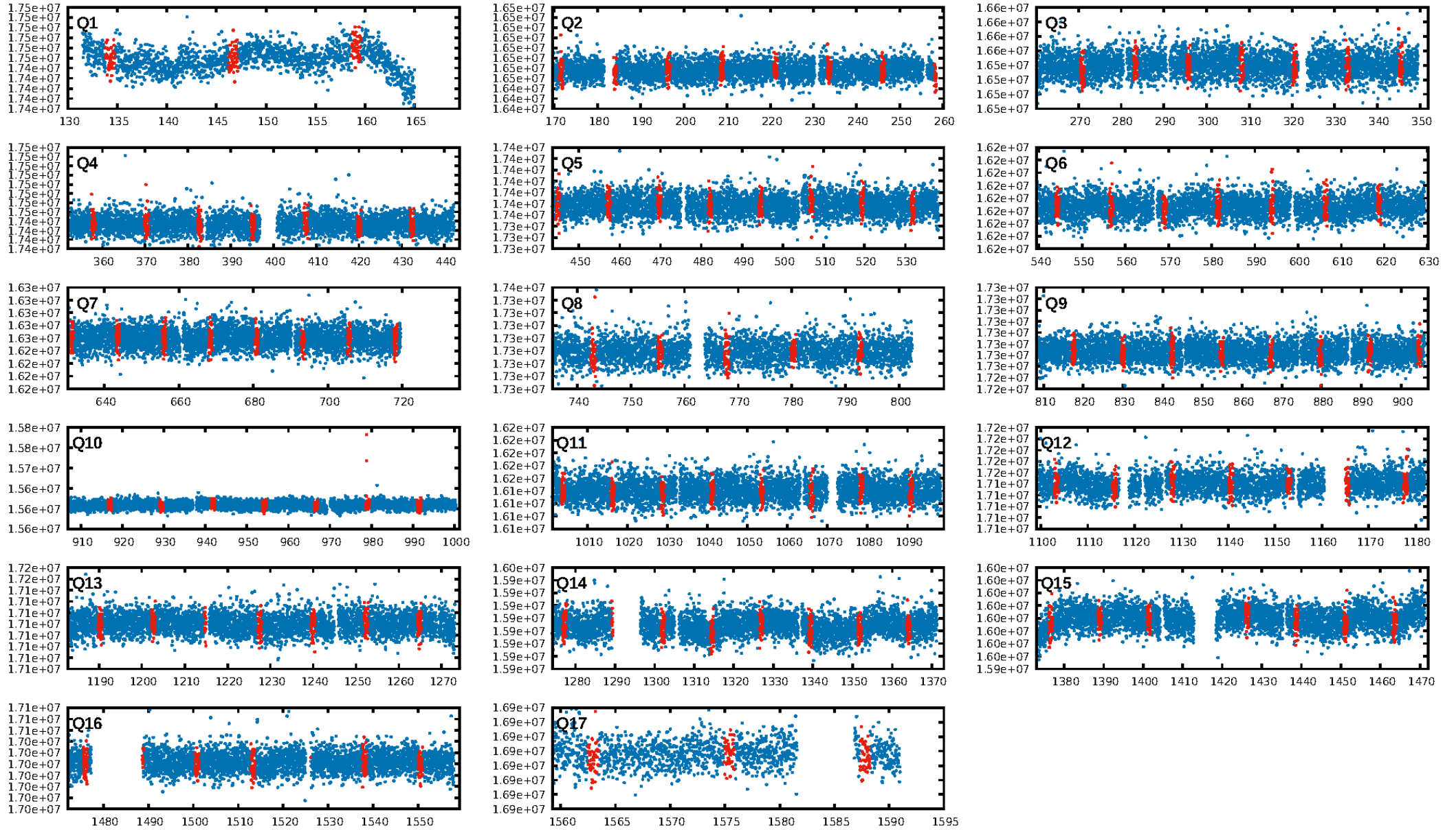
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.99e-13
RollingBand-fgt: 1.00 [106/106]
GhostDiagnostic-chr: 1.342
Centroid-sig: 69.5%
Centroid-so: 0.812 arcsec [0.43 σ]
OotOffset-rm: 2.179 arcsec [2.00 σ]
KicOffset-rm: 2.173 arcsec [2.05 σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.29 [4/14]
DiffImageOverlap-fno: 1.00 [17/17]

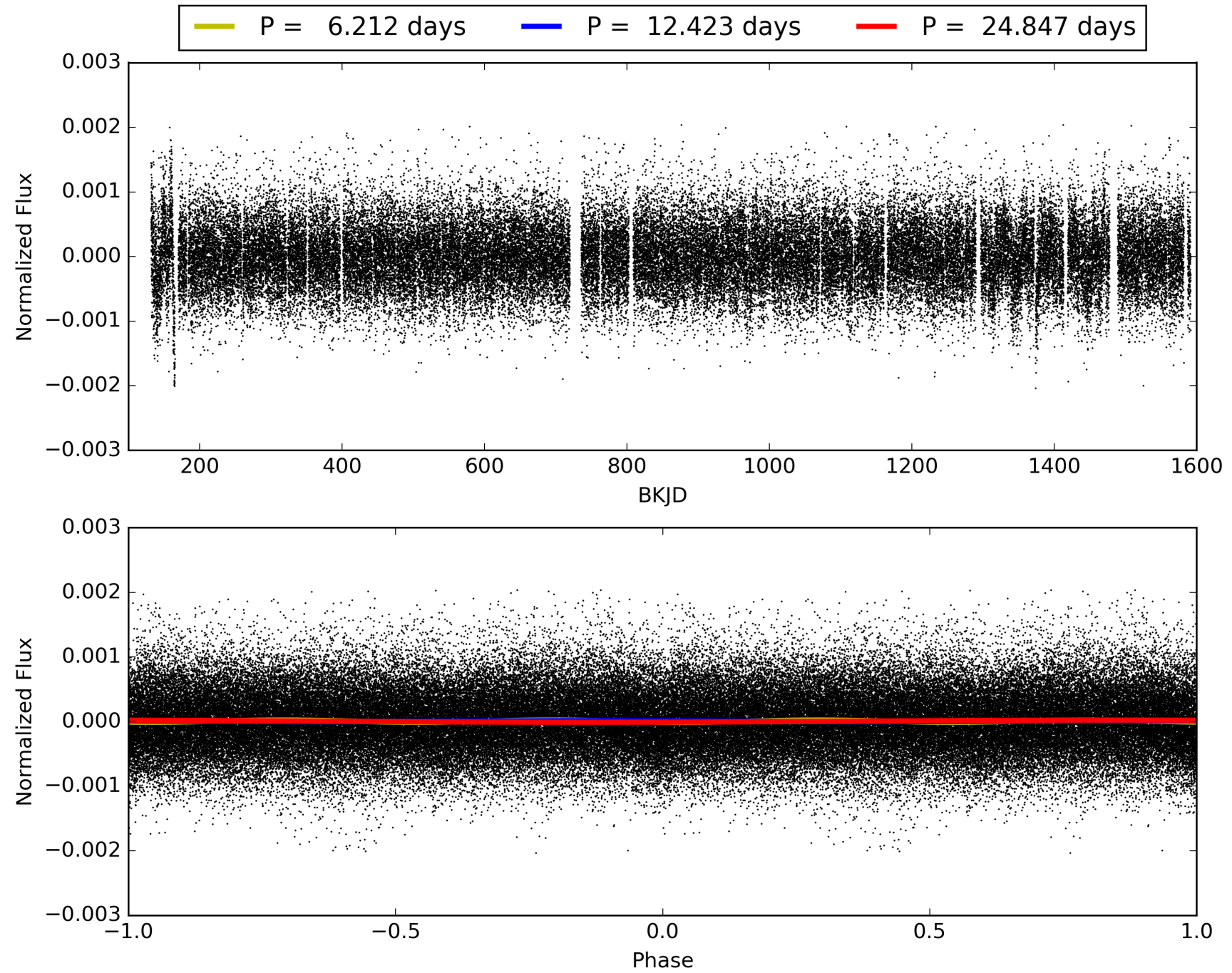
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:50:00 Z

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

TCE 005470862-01, PDC Light Curves

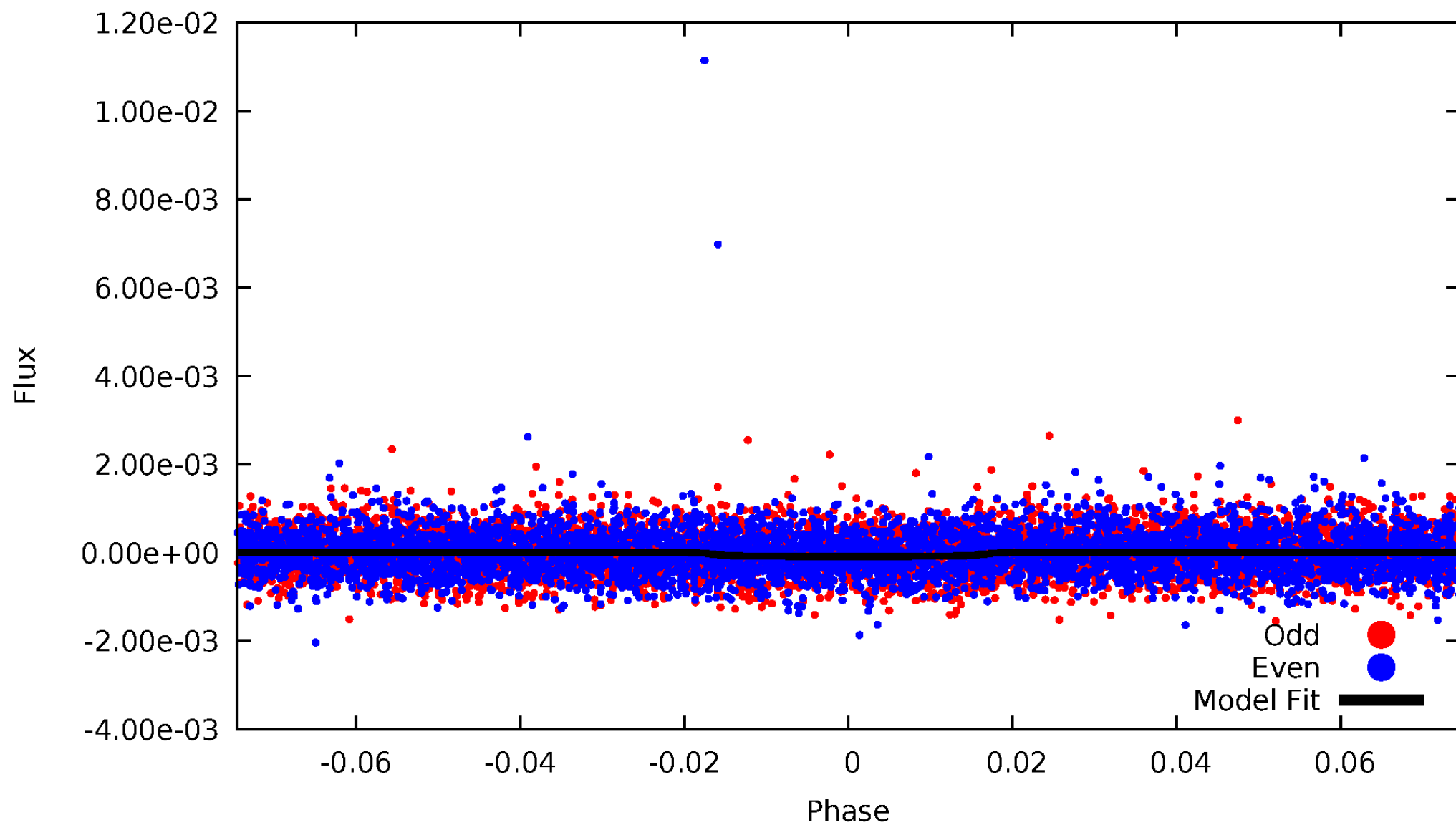


TCE 005470862-01



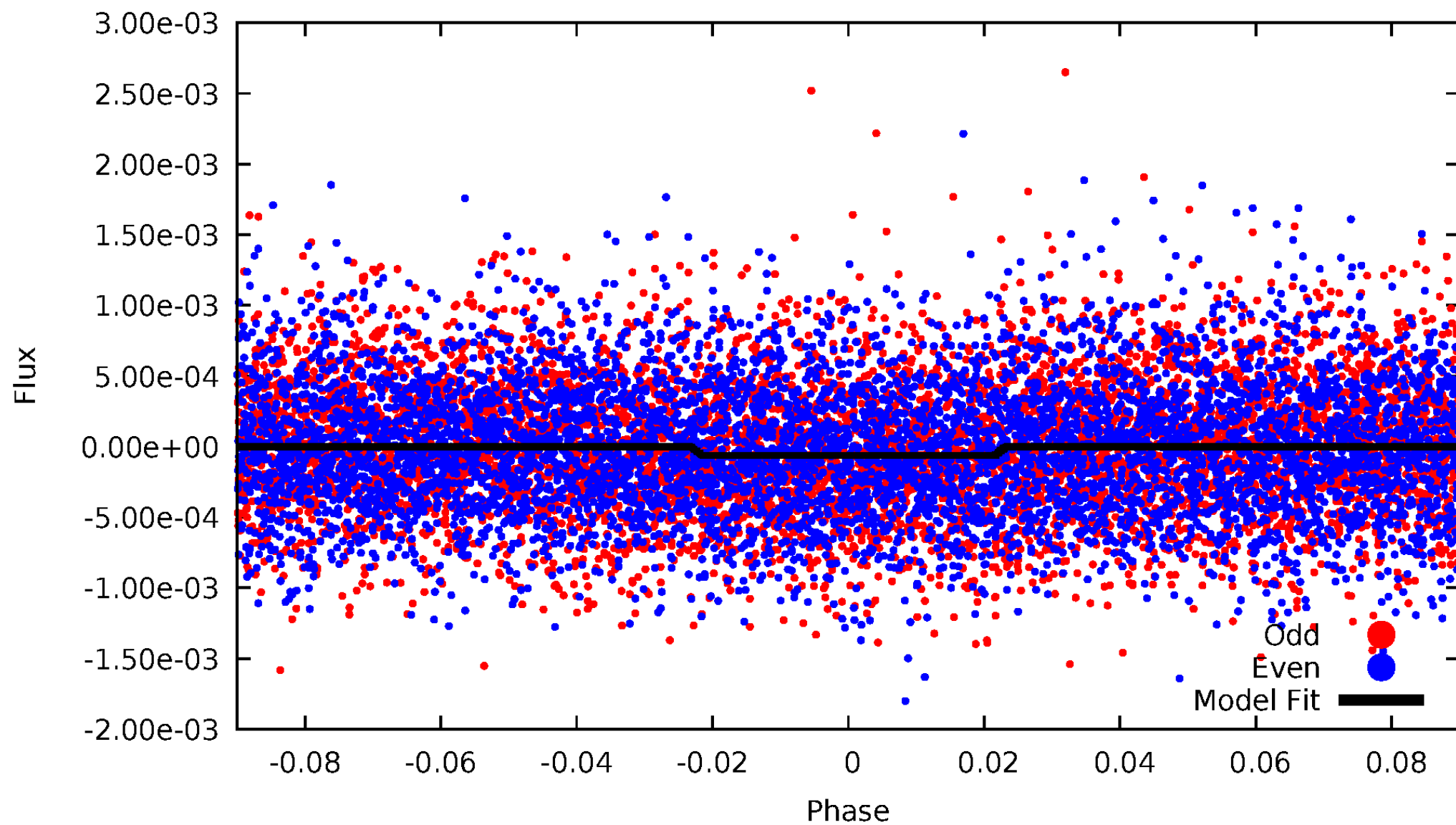
DV Odd/Even

TCE 005470862-01

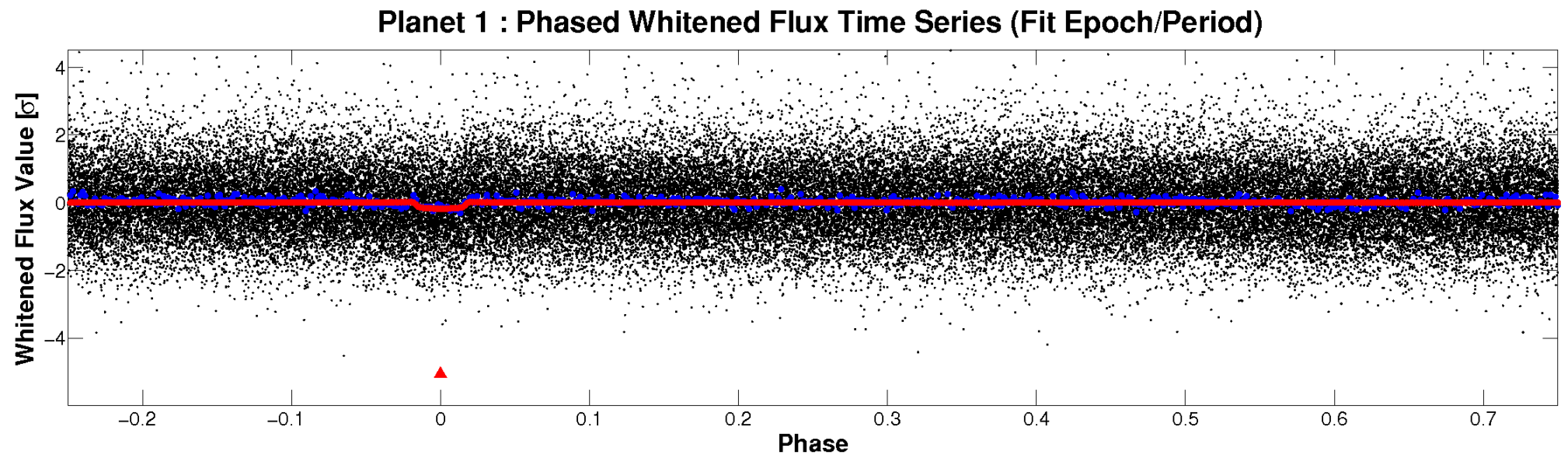
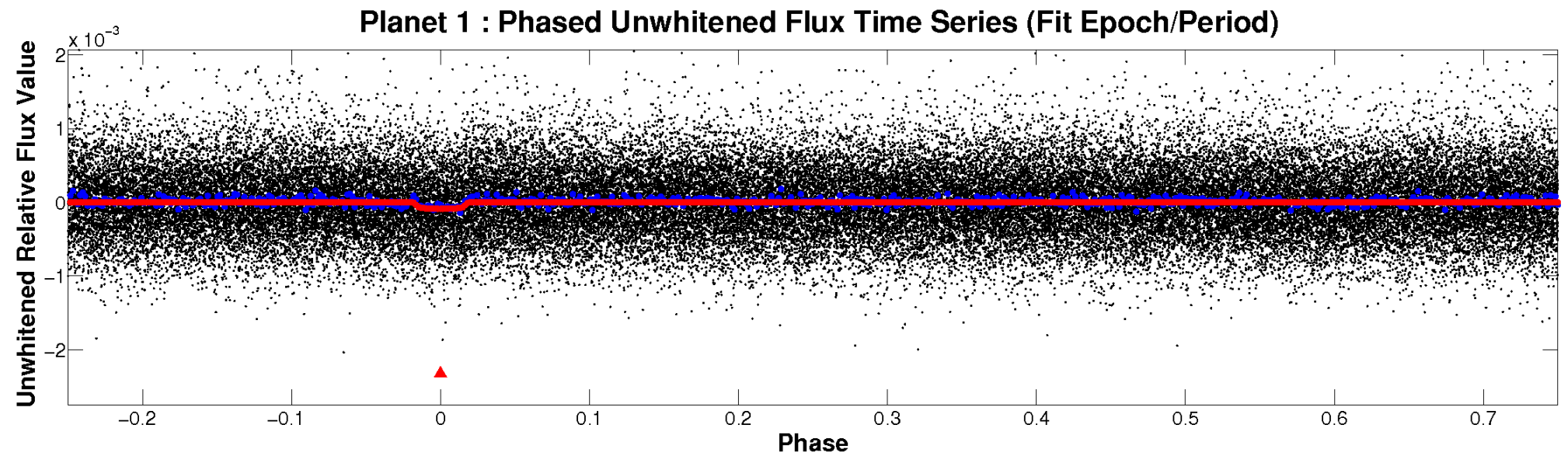


ALT Odd/Even

TCE 005470862-01

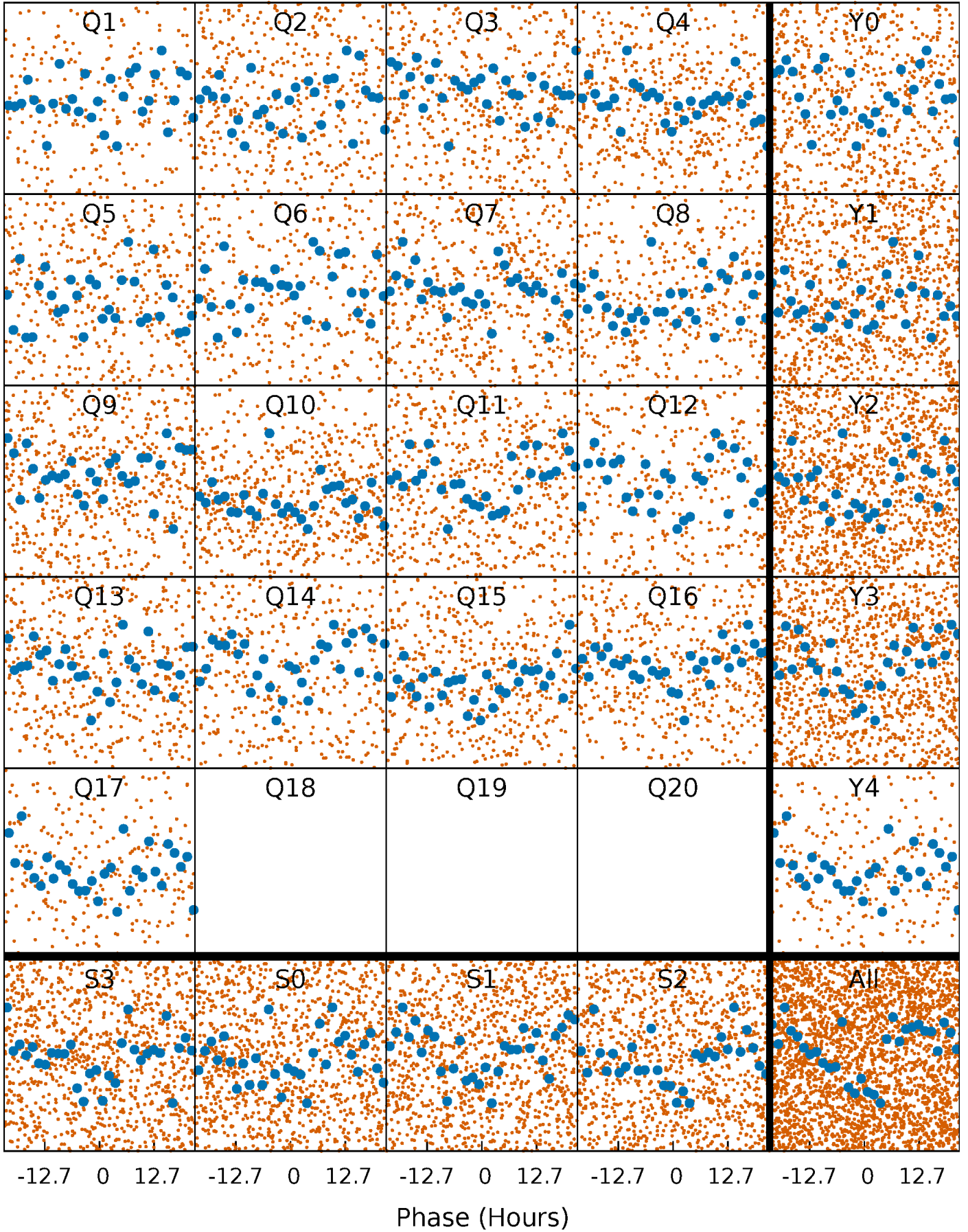


Non-Whitened Vs. Whitened Light Curve



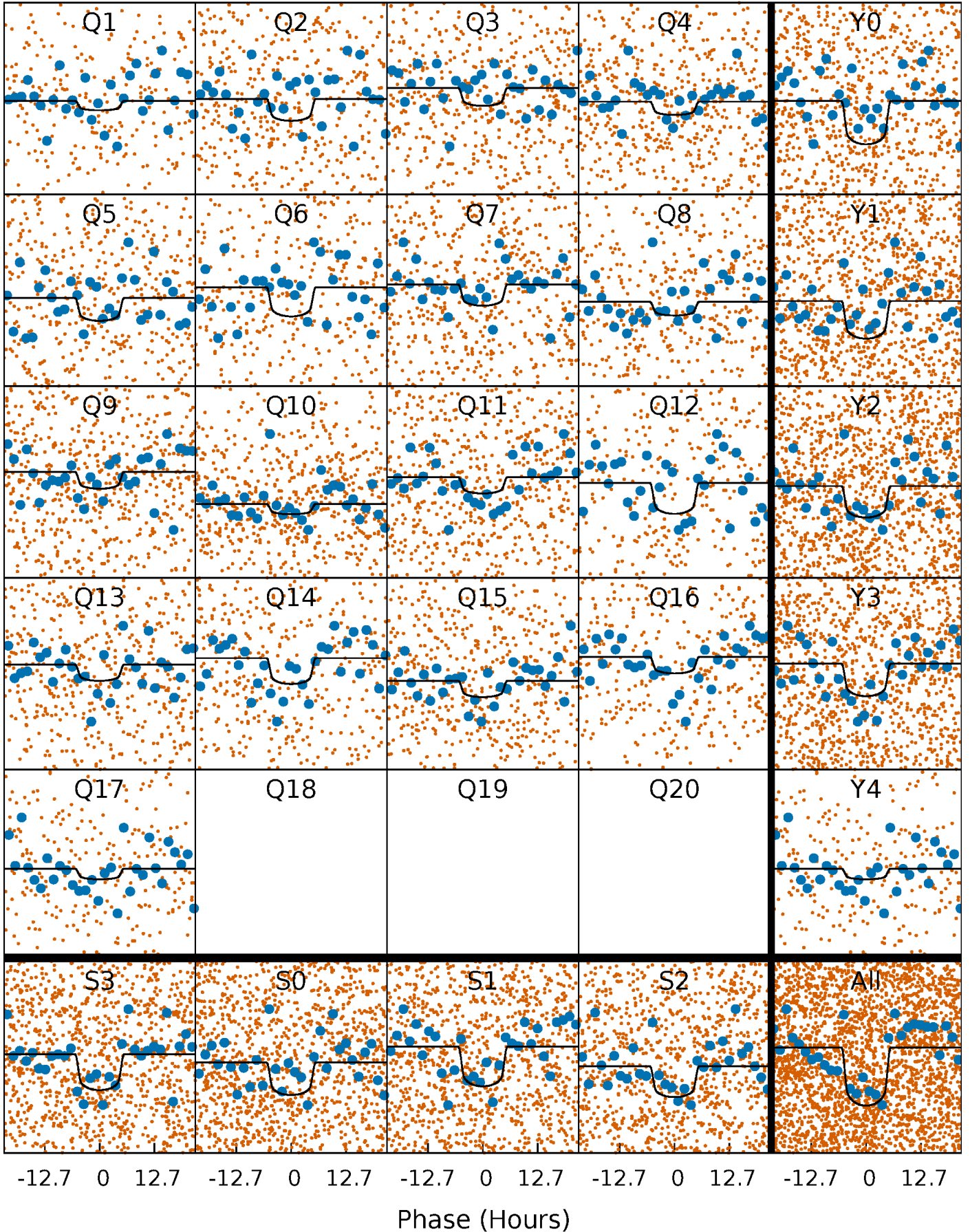
PDC Quarter-Phased Transit Curves

TCE 005470862-01 P= 12.423410 Days $T_0=134.260610$ (BKJD)



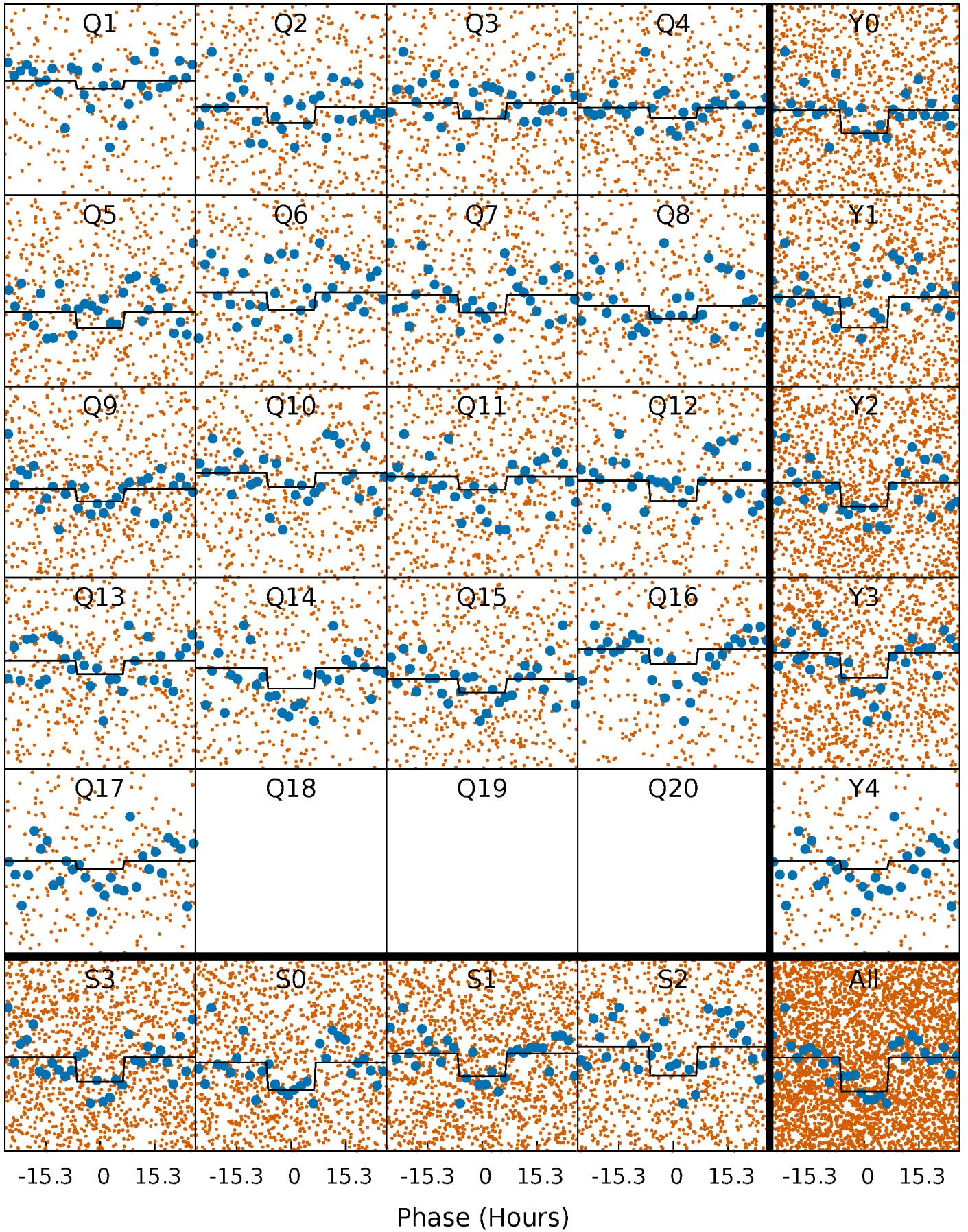
DV Quarter-Phased Transit Curves

TCE 005470862-01 P= 12.423410 Days $T_0=134.260610$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

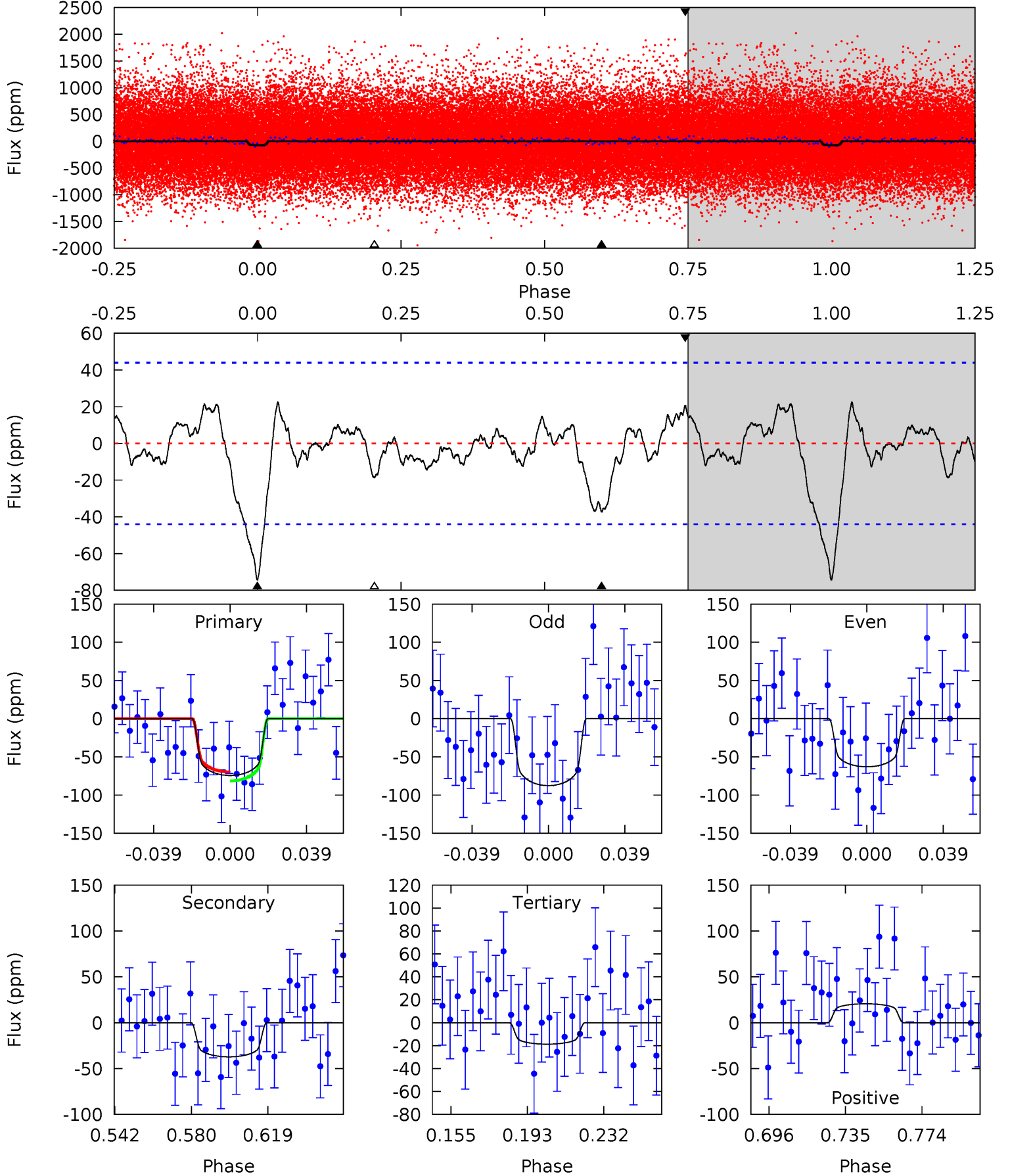
TCE 005470862-01 P= 12.423117 Days $T_0=134.181899$ (BKJD)



DV Model-Shift Uniqueness Test

005470862-01, P = 12.423410 Days, E = 121.837200 Days

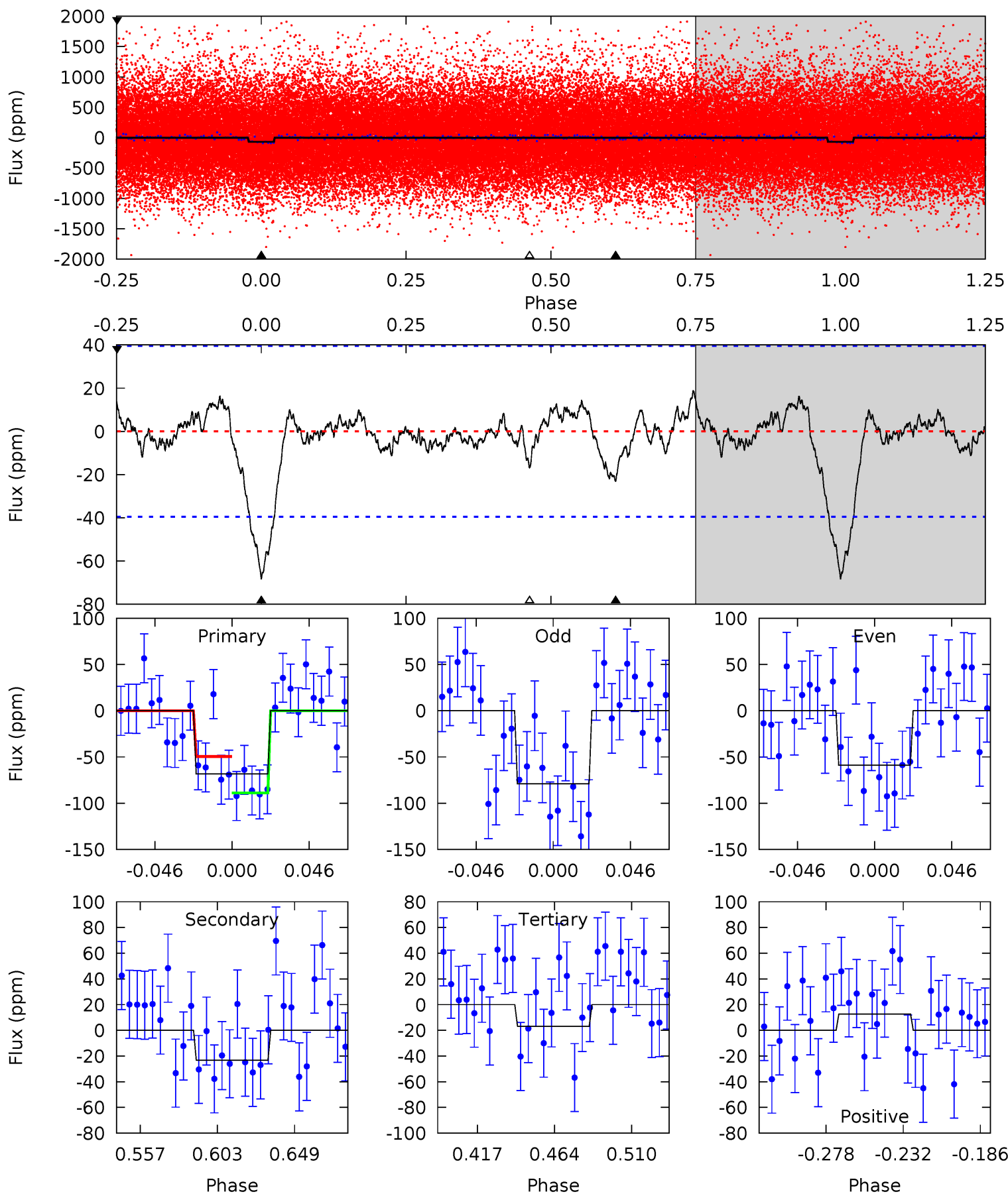
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.05	4.04	2.03	2.23	4.76	2.07	0.96	6.02	5.82	2.01	1.81	1.34	0.98	0.23	0.64



Alt Model-Shift Uniqueness Test

005470862-01, $P = 12.423117$ Days, $E = 121.758782$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.17	2.78	2.02	1.51	4.72	1.99	0.75	6.15	6.66	0.76	1.26	1.20	1.06	0.22	2.35



Stellar Parameters For KIC 005470862

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5778^{+160}_{-220}	$4.531^{+0.035}_{-0.196}$	$0.070^{+0.250}_{-0.250}$	$0.911^{+0.265}_{-0.083}$	$1.028^{+0.110}_{-0.122}$	$1.914^{+0.354}_{-0.943}$
	+3%/-4%	+1%/-4%	+357%/-357%	+29%/-9%	+11%/-12%	+19%/-49%
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 005470862-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-37 ± 9	$1.15^{+0.25}_{-0.21}$	1070^{+75}_{-52}	4460^{+448}_{-374}	166^{+98}_{-62}
Alt.	-23 ± 8	$0.83^{+0.23}_{-0.20}$	1067^{+72}_{-51}	4629^{+662}_{-523}	201^{+188}_{-94}

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 $A_{obs} \gg 1.0$

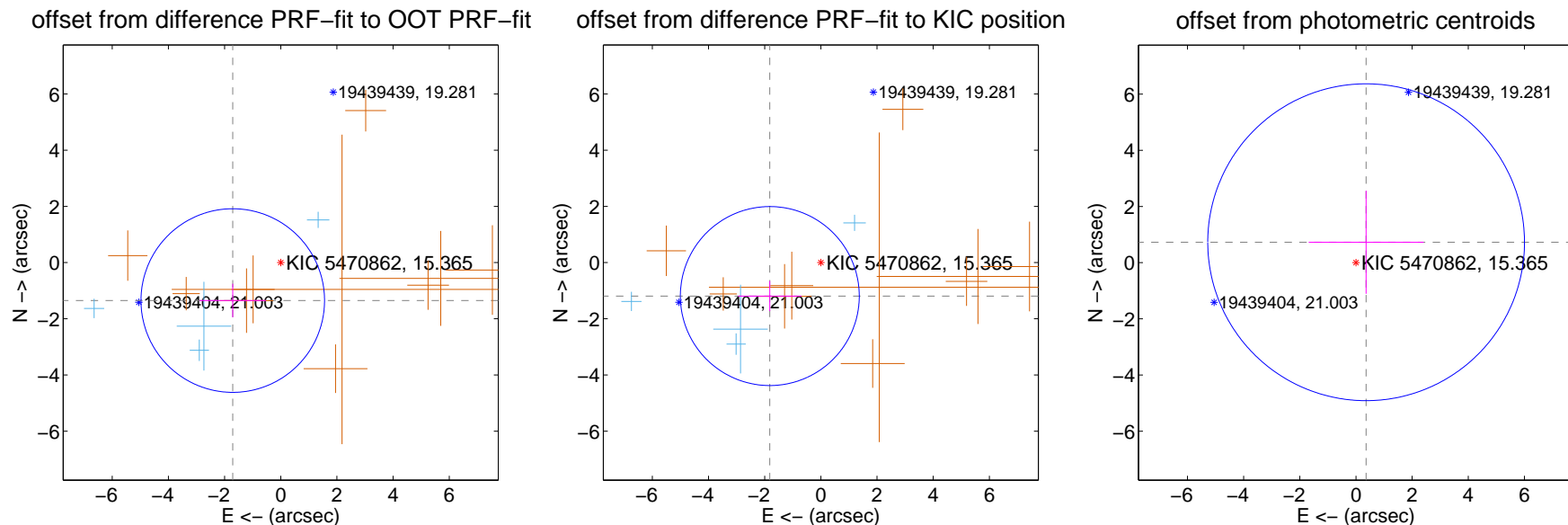
DV Centroid Data

Supplemental centroid analysis for 005470862-01. Kepler magnitude: 15.37. Transit SNR 7.18

There are 4 quarters with good PRF difference image offsets

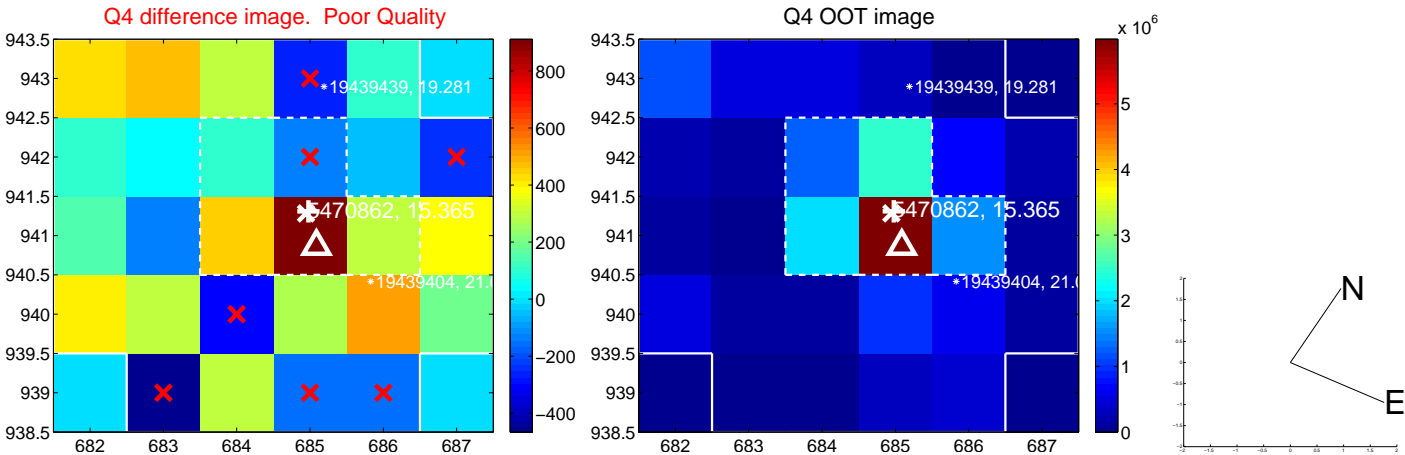
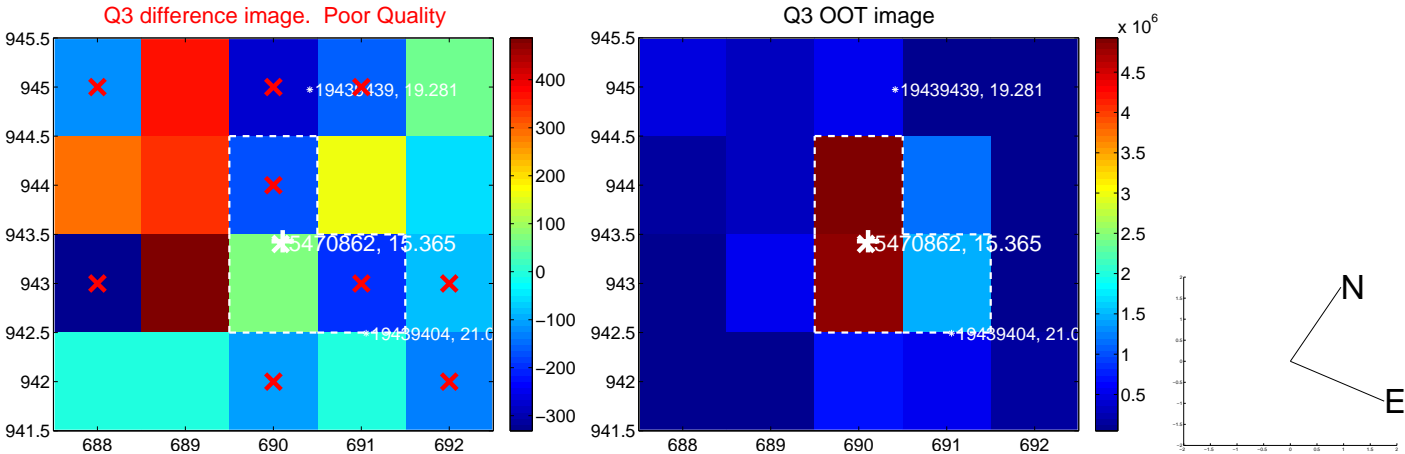
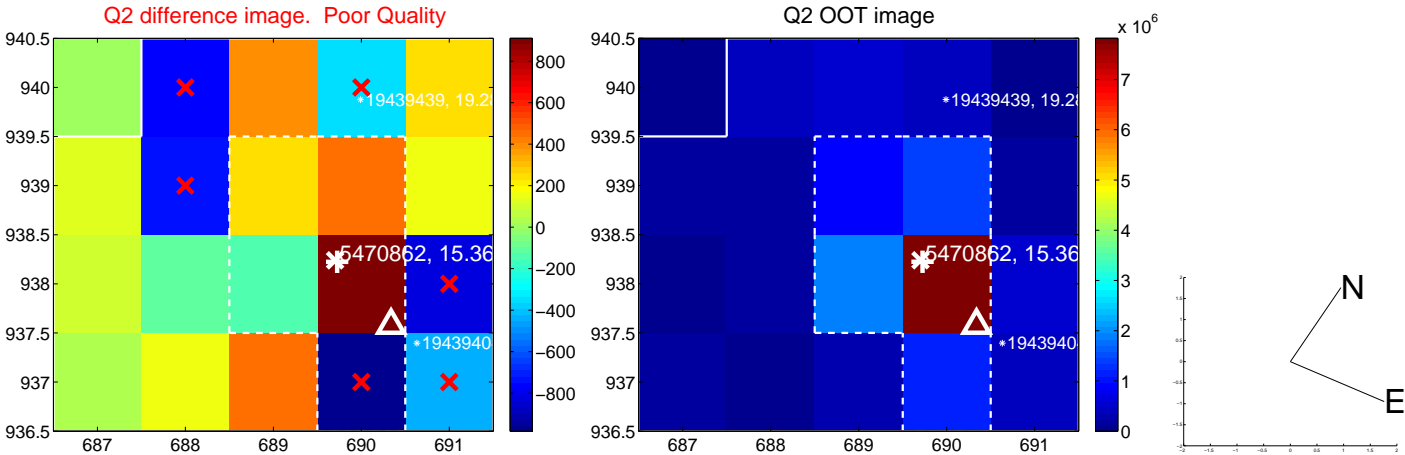
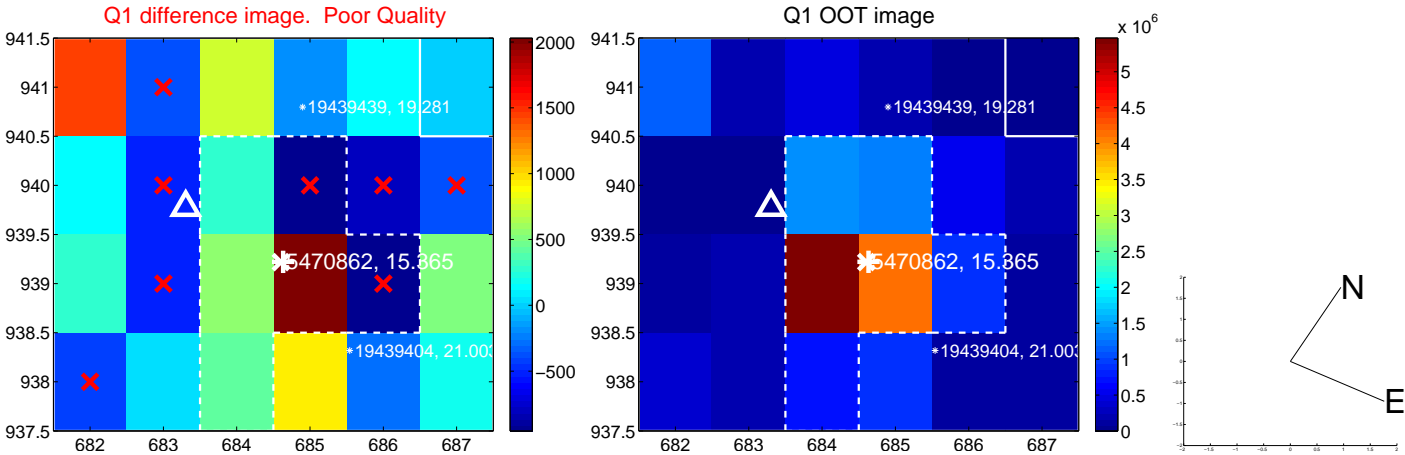
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.179 ± 1.089	2.00	1.709 ± 1.179	-1.351 ± 0.597
PRF-fit source offset from KIC position	2.173 ± 1.062	2.05	1.818 ± 1.127	-1.191 ± 0.537
photometric centroid source offset	0.81 ± 1.88	0.43	-0.36 ± 2.05	0.73 ± 1.84

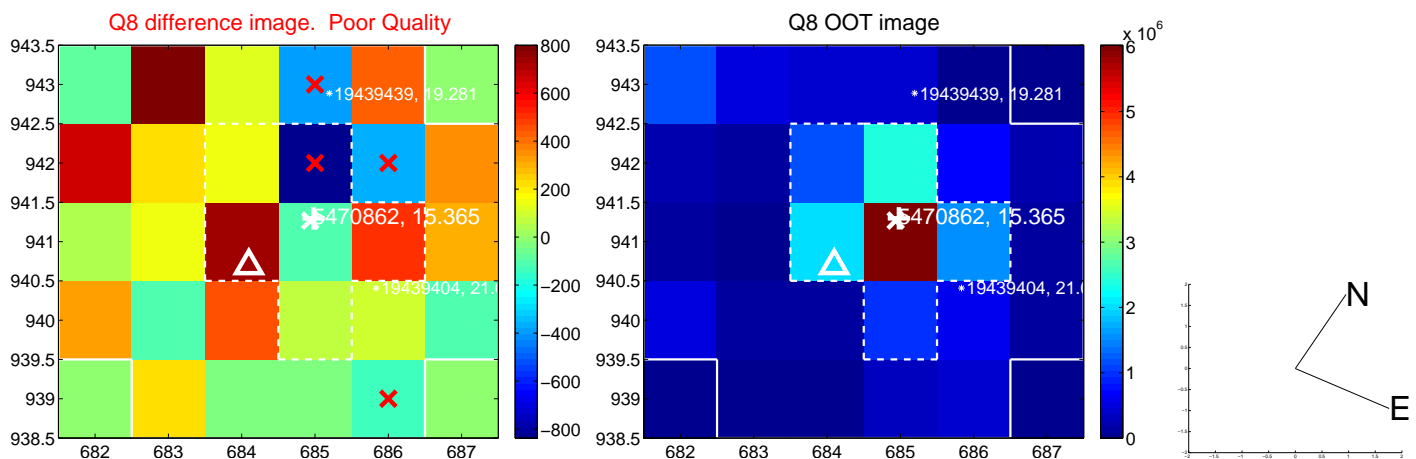
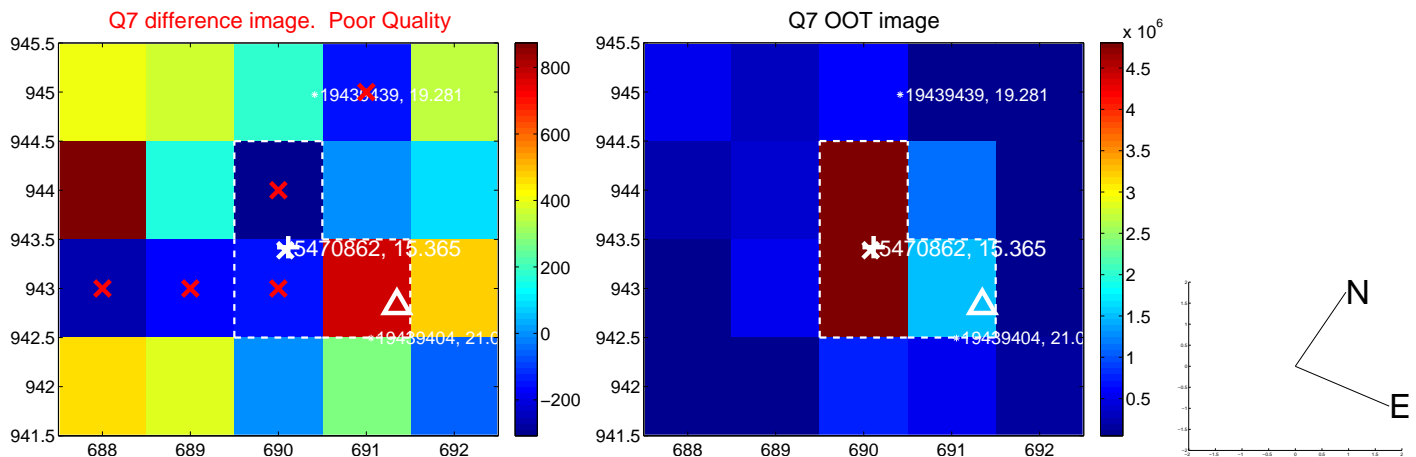
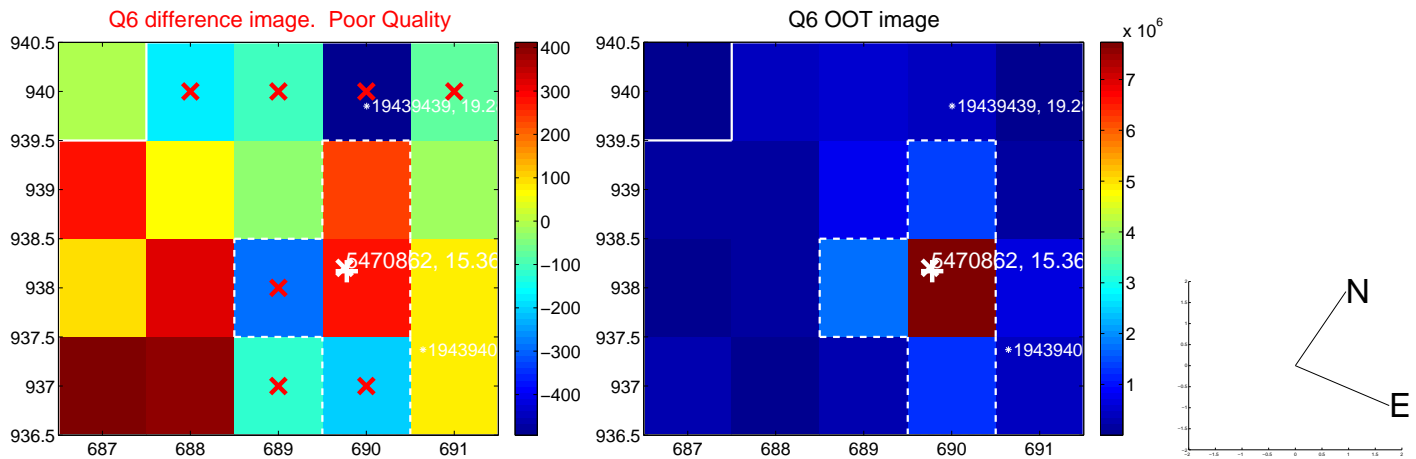
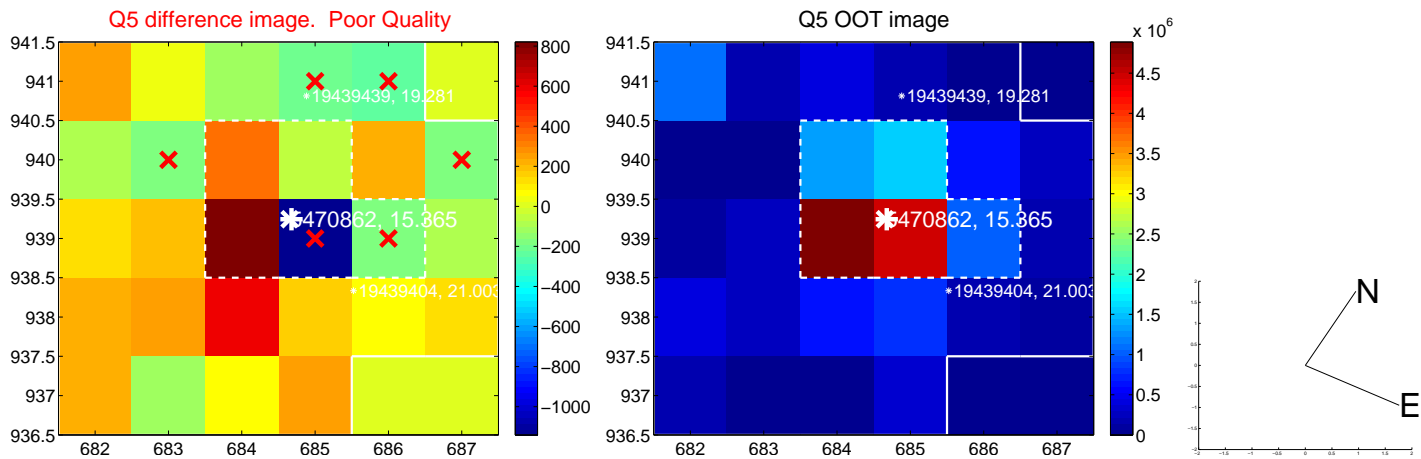


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

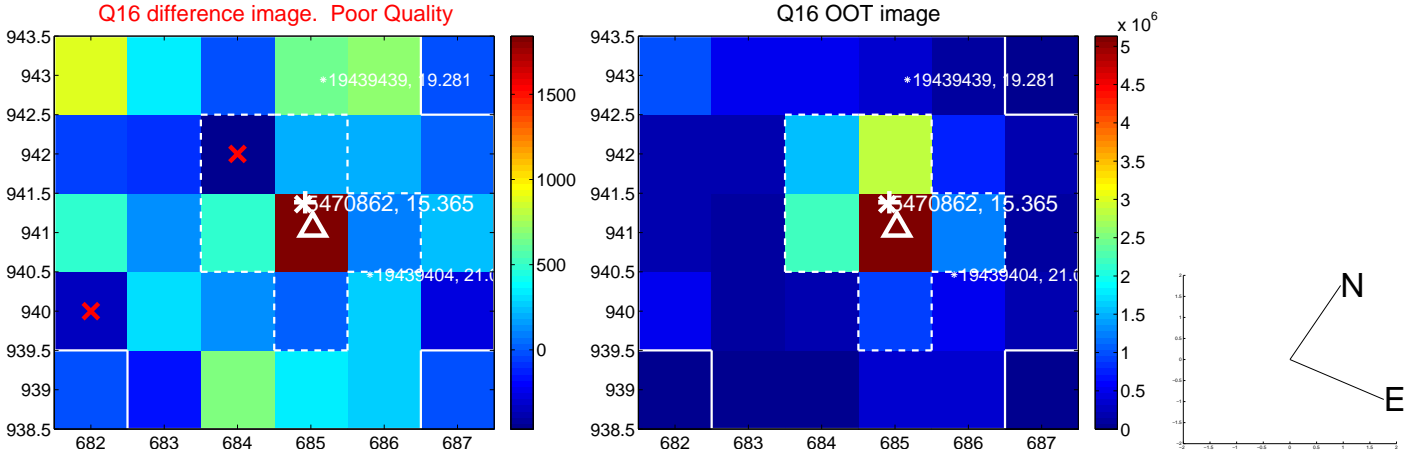
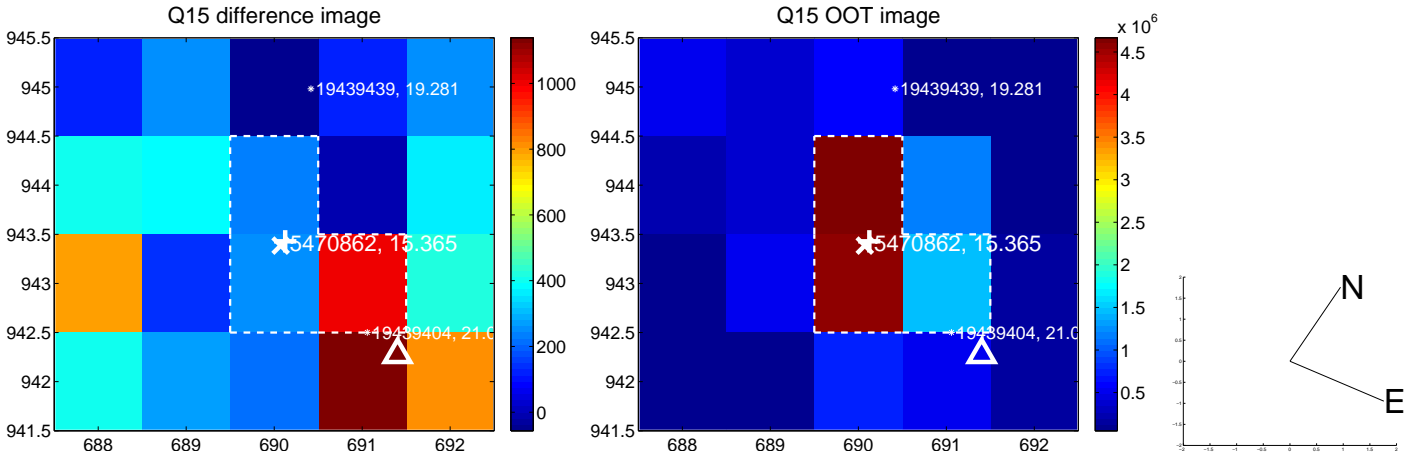
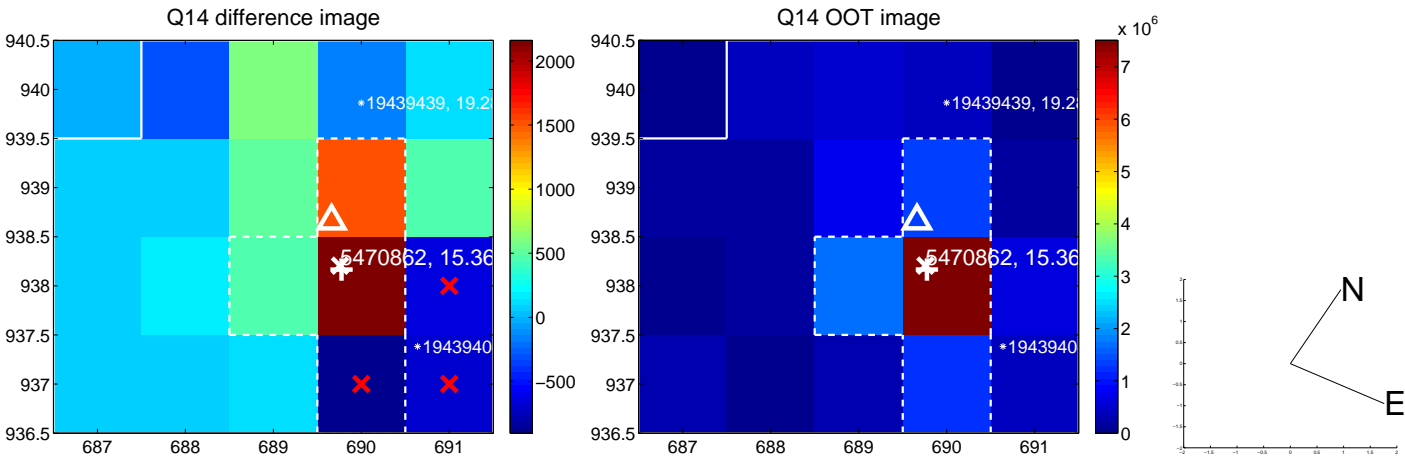
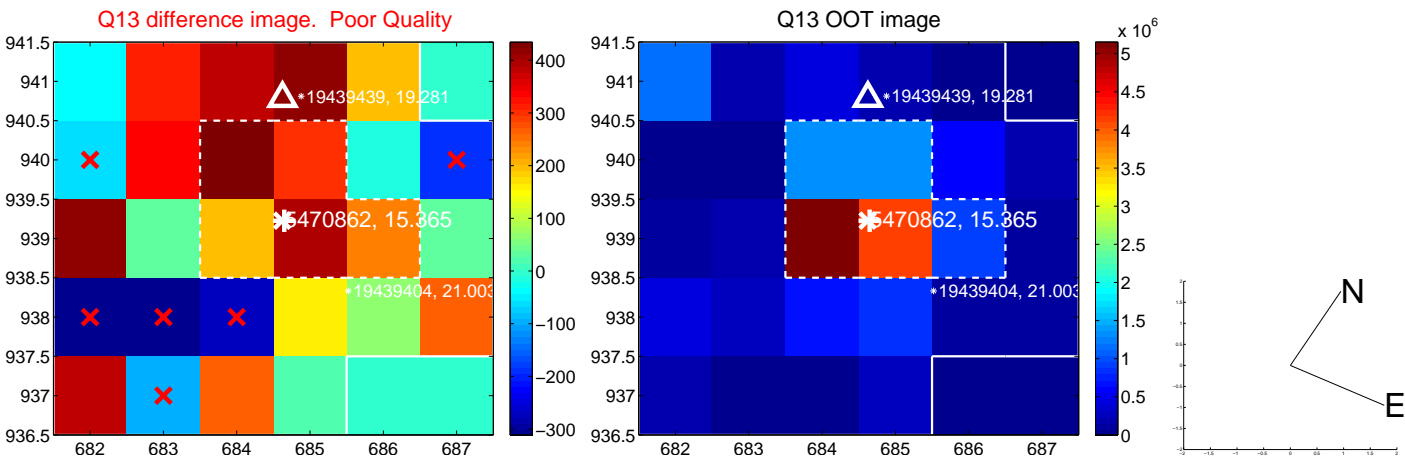
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



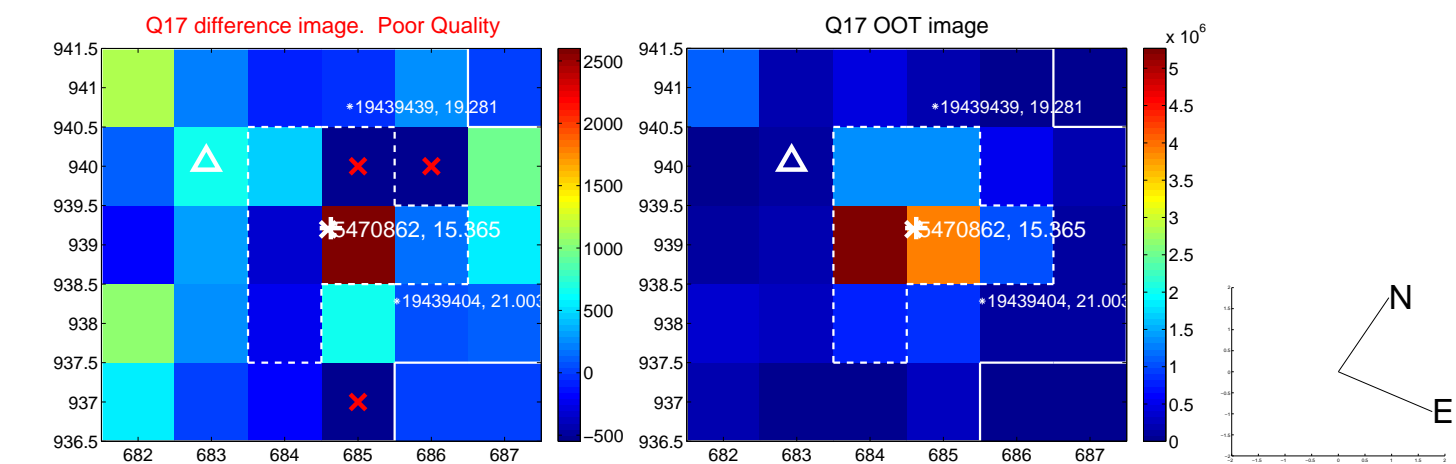
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



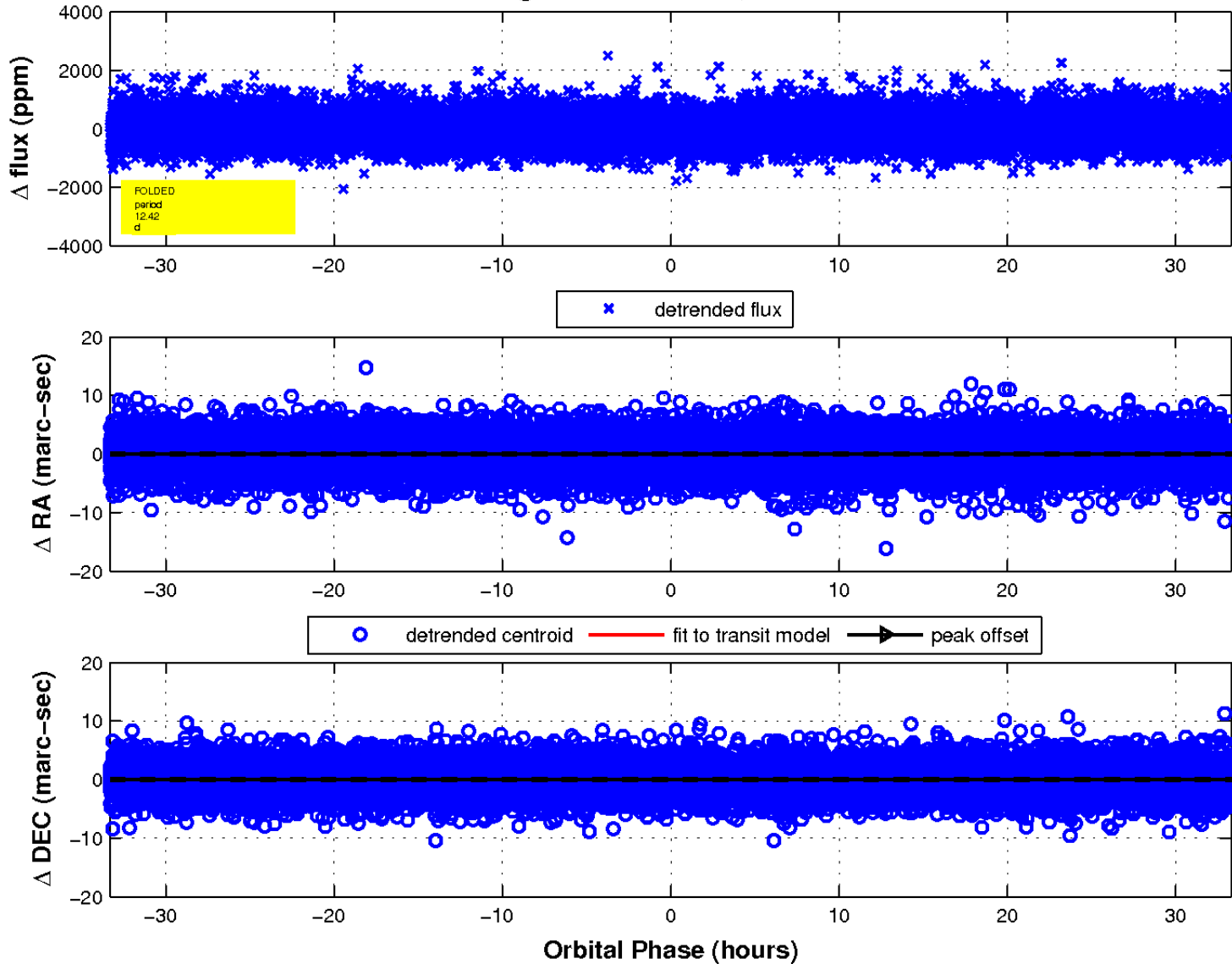
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

