

KIC 012254909

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})
012254909-01	OBS	2372.01	5.349794	133.881368	83.1	4.402	19.2	19.4	1.18	6074	1.28	423.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012254909-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

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

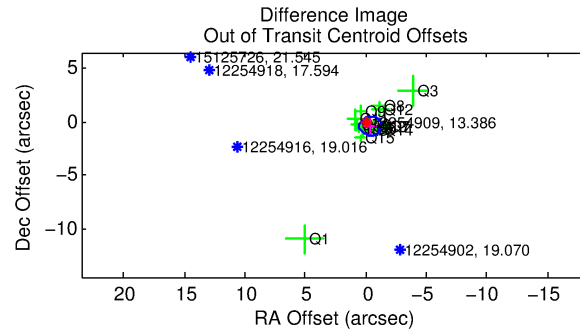
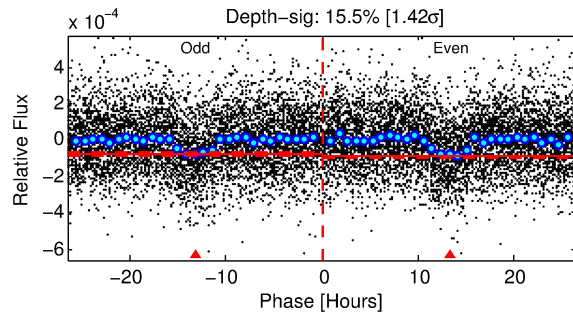
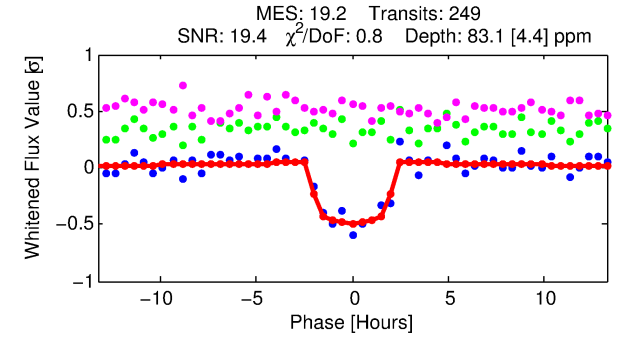
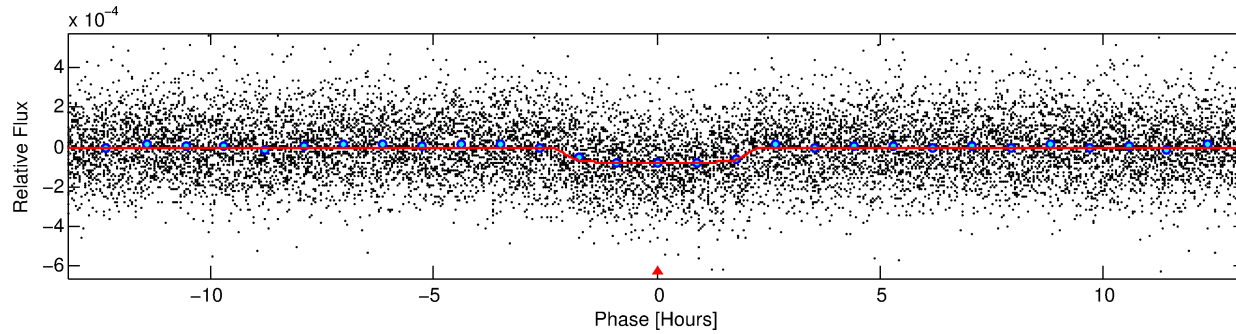
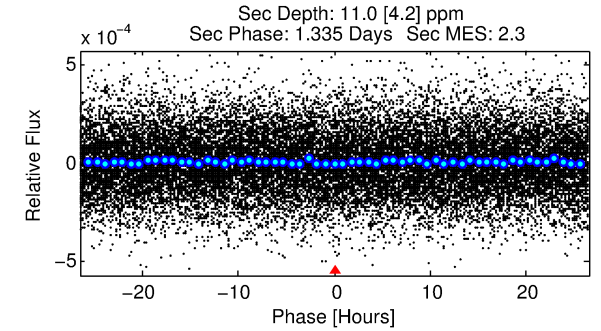
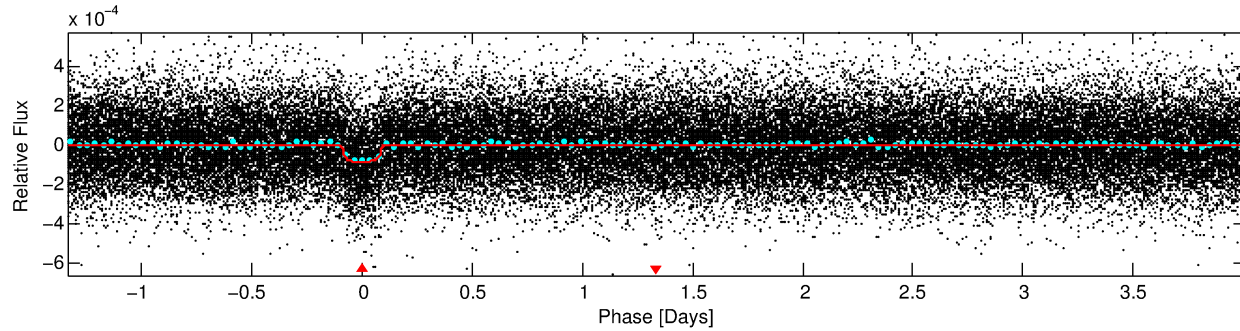
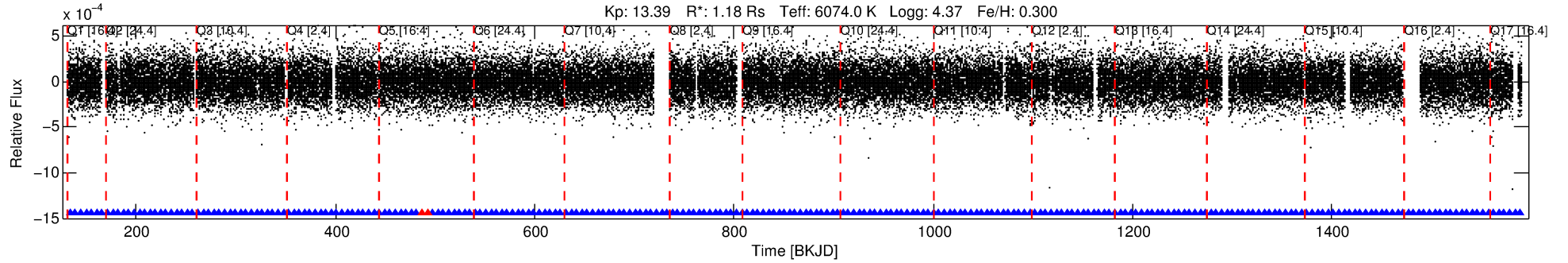
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012254909-01

No Significant Match Found

DV One-Page Summary

KIC: 12254909 Candidate: 1 of 1 Period: 5.350 d
KOI: K02372.01 Corr: 0.974



DV Fit Results:

Period = 5.34979 [0.00003] d
Epoch = 133.8814 [0.0034] BKJD
Rp/R* = 0.0099 [0.0023]
a/R* = 4.26 [4.64]
b = 0.91 [0.23]
Seff = 423.64 [94.45]
Teq = 1157 [64] K
Rp = 1.28 [0.36] Re
a = 0.0635 [0.0088] AU
Ag = 14.75 [9.27] [1.48σ]
Teffp = 3505 [529] K [4.41σ]

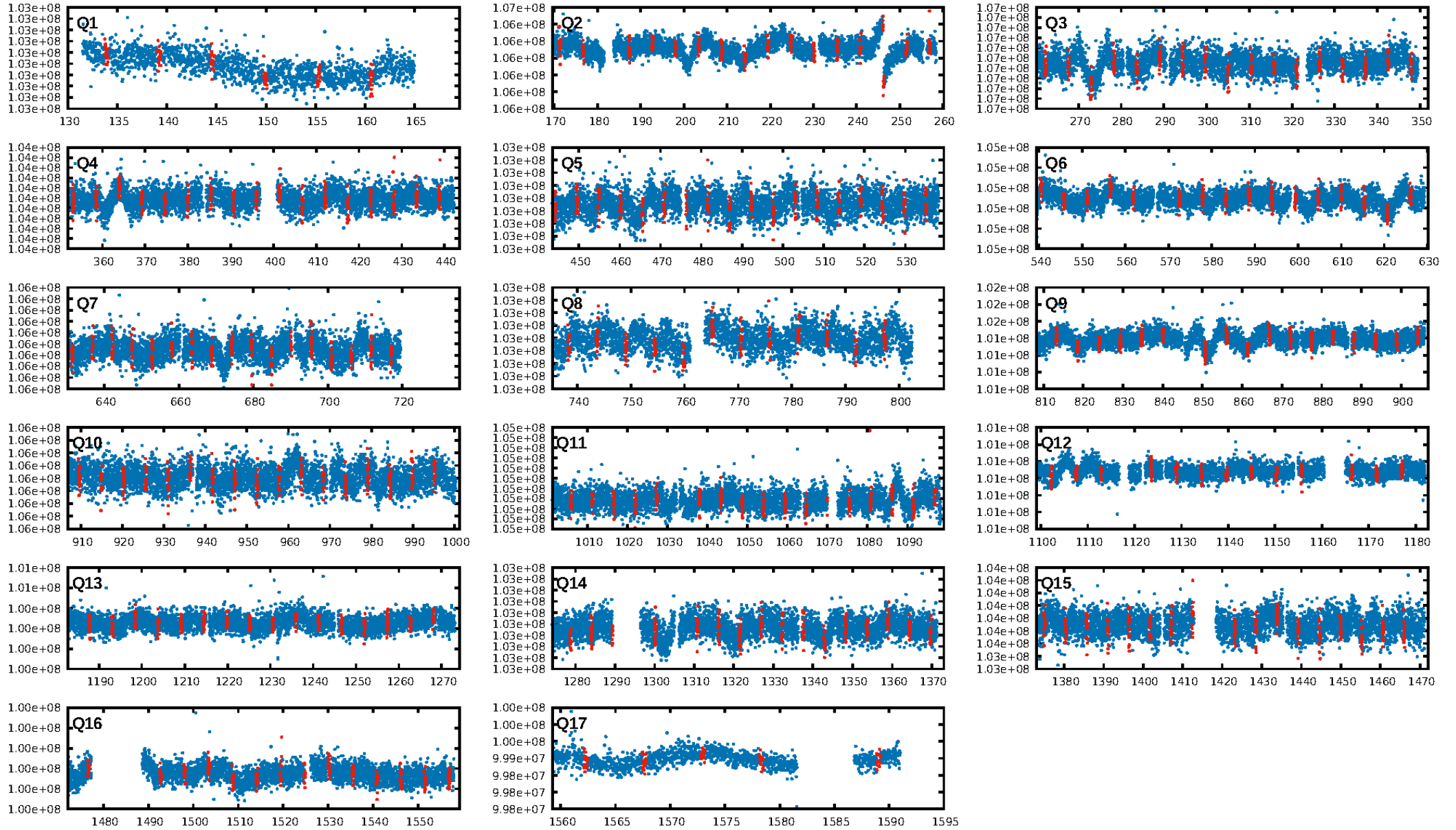
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.02e-79
RollingBand-fgt: 0.99 [236/238]
GhostDiagnostic-chr: 7.512
Centroid-sig: 88.8%
Centroid-so: 0.170 arcsec [0.24σ]
OotOffset-rm: 0.519 arcsec [1.76σ]
KicOffset-rm: 0.478 arcsec [1.58σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 1.00 [17/17]

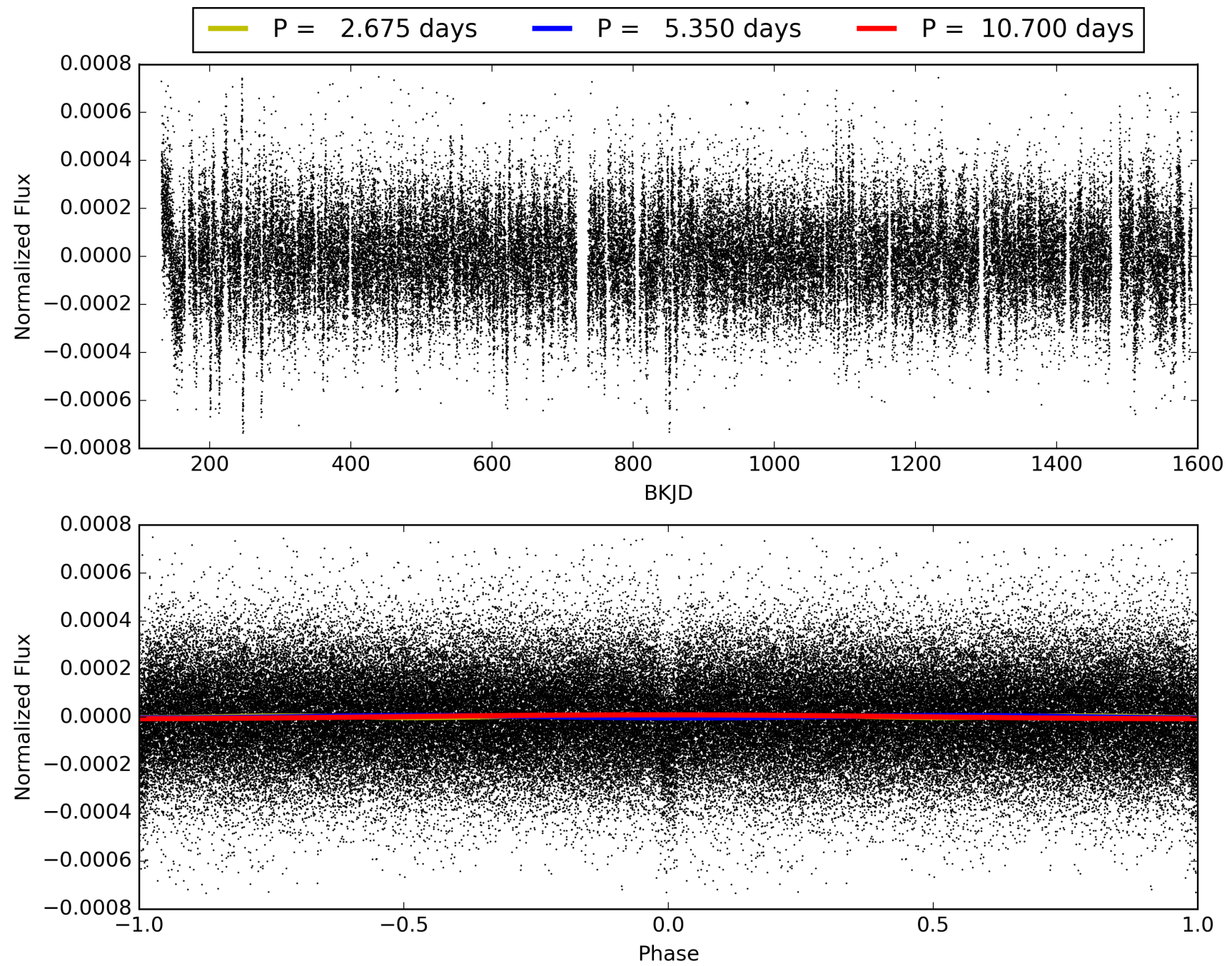
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:32:22 Z

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

TCE 012254909-01, PDC Light Curves

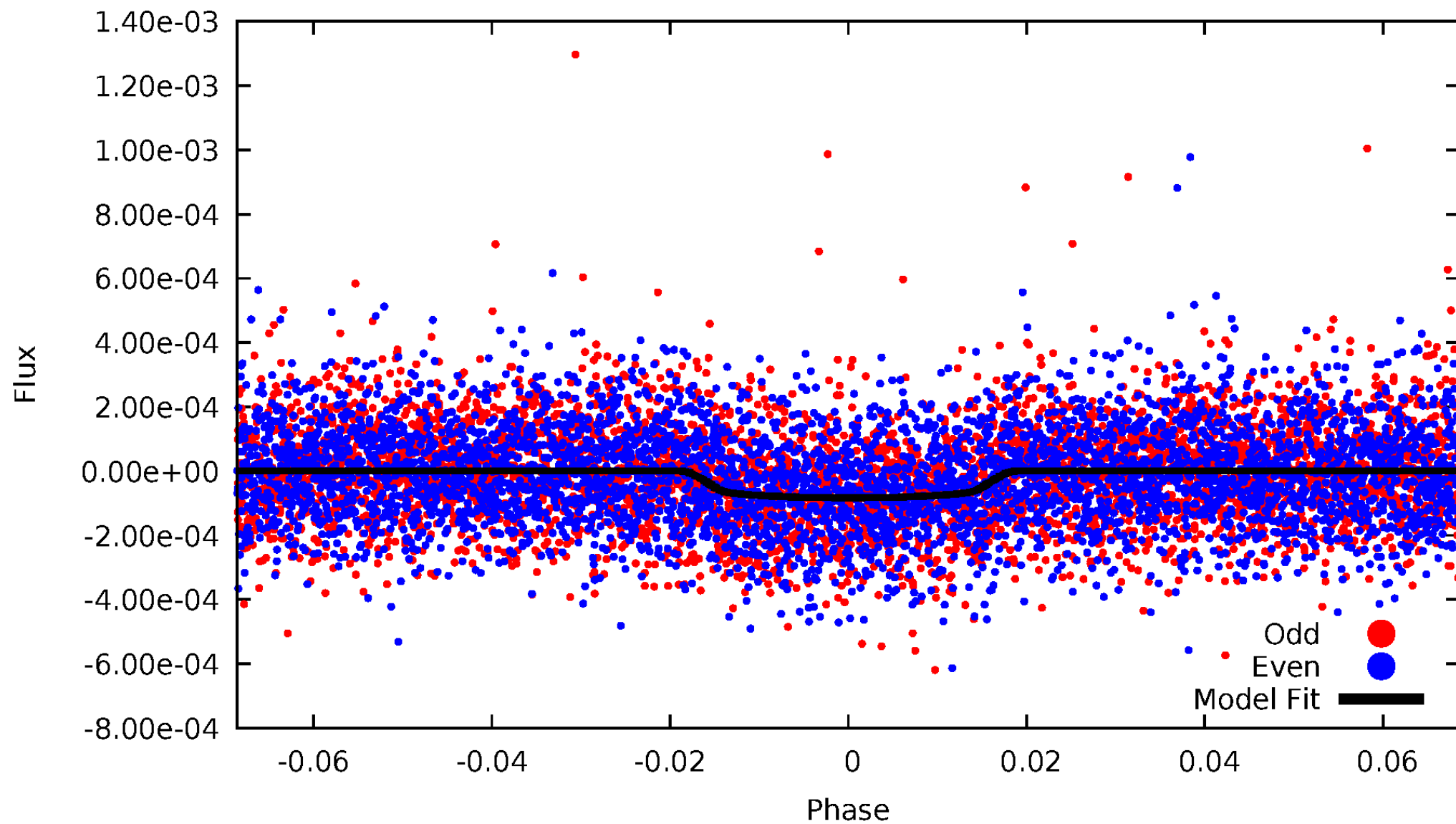


TCE 012254909-01



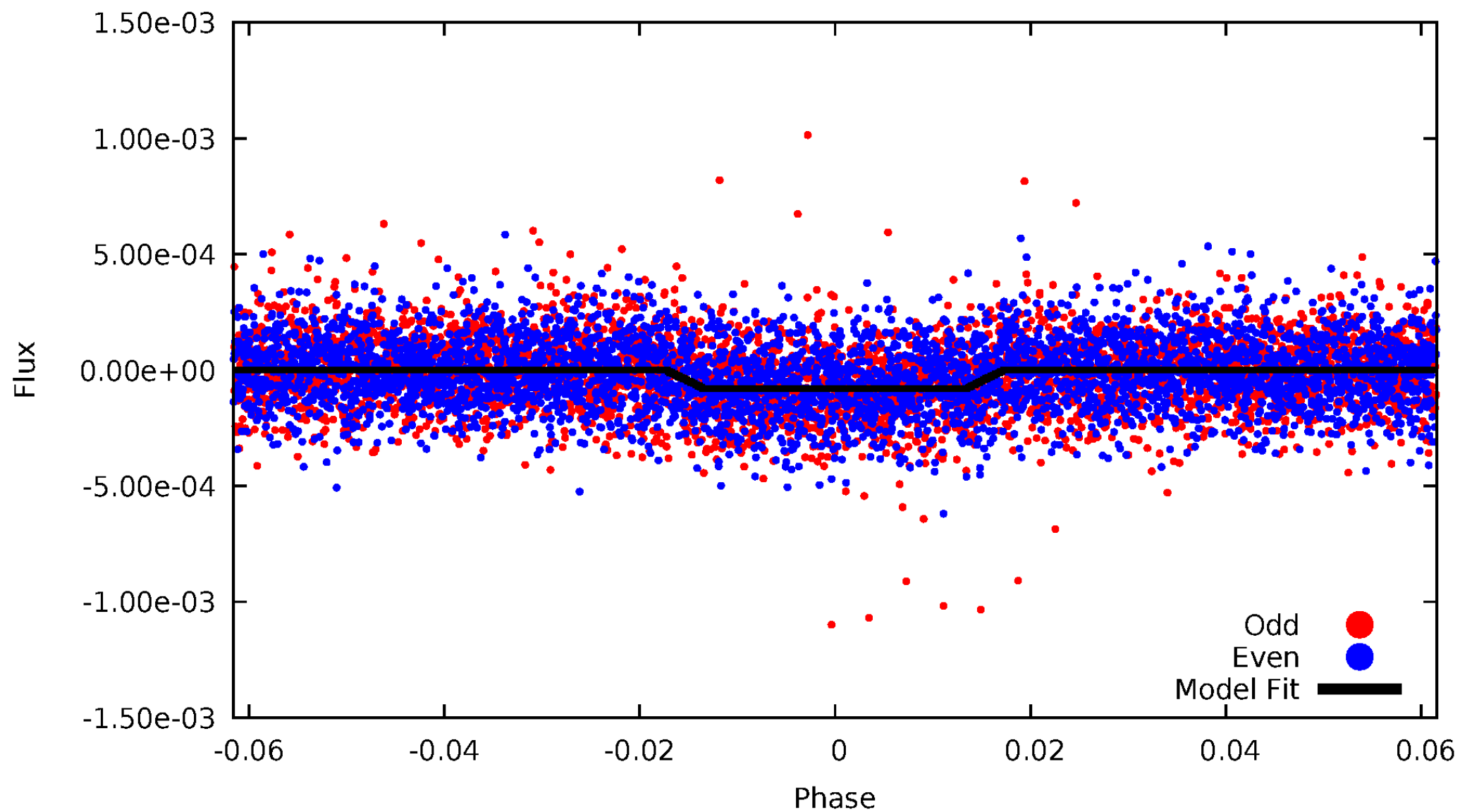
DV Odd/Even

TCE 012254909-01



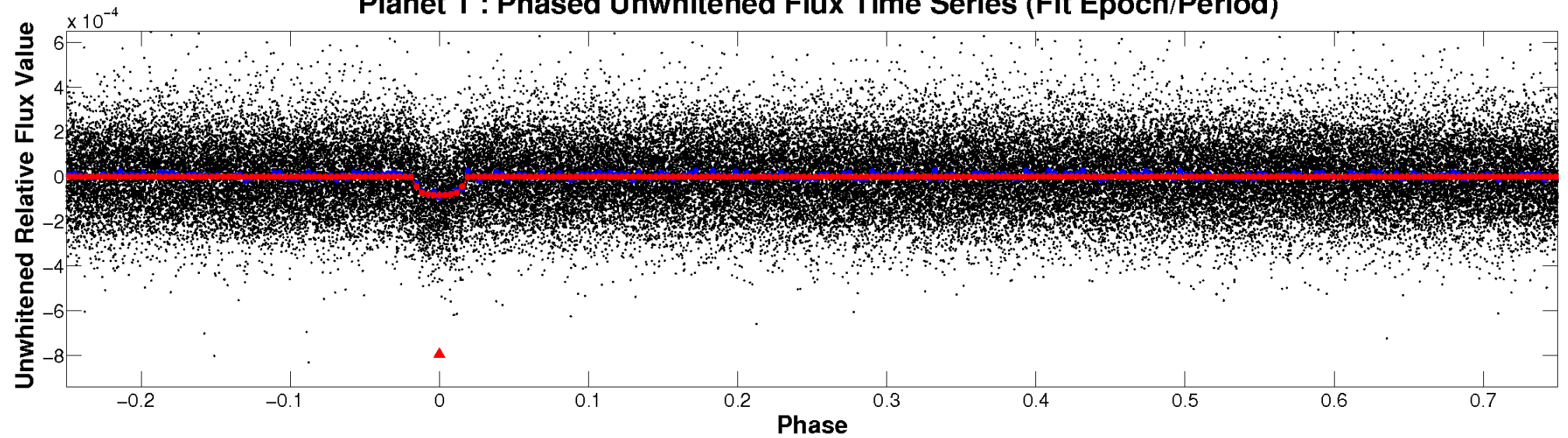
ALT Odd/Even

TCE 012254909-01

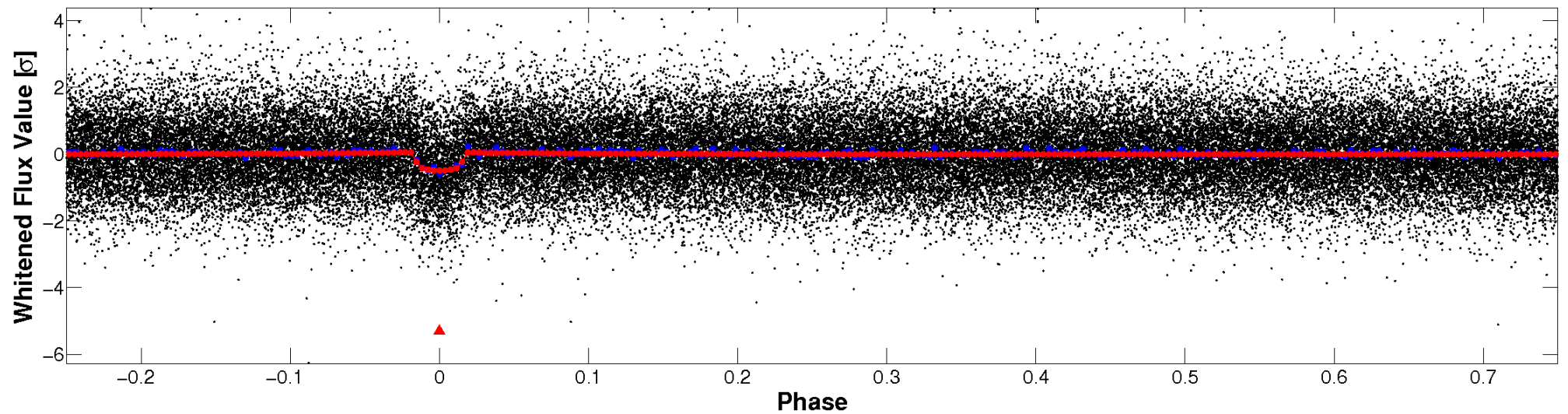


Non-Whitened Vs. Whitened Light Curve

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

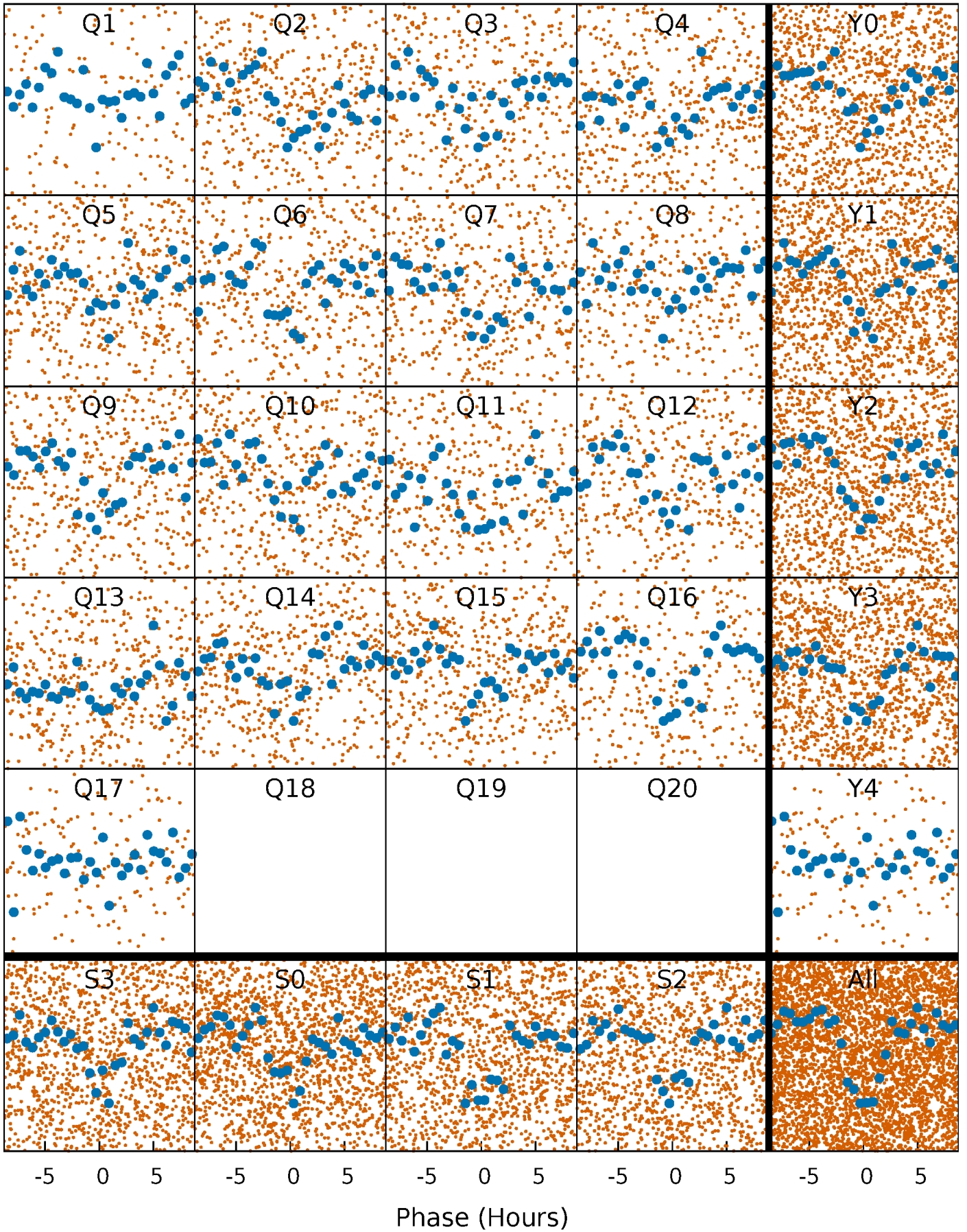


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



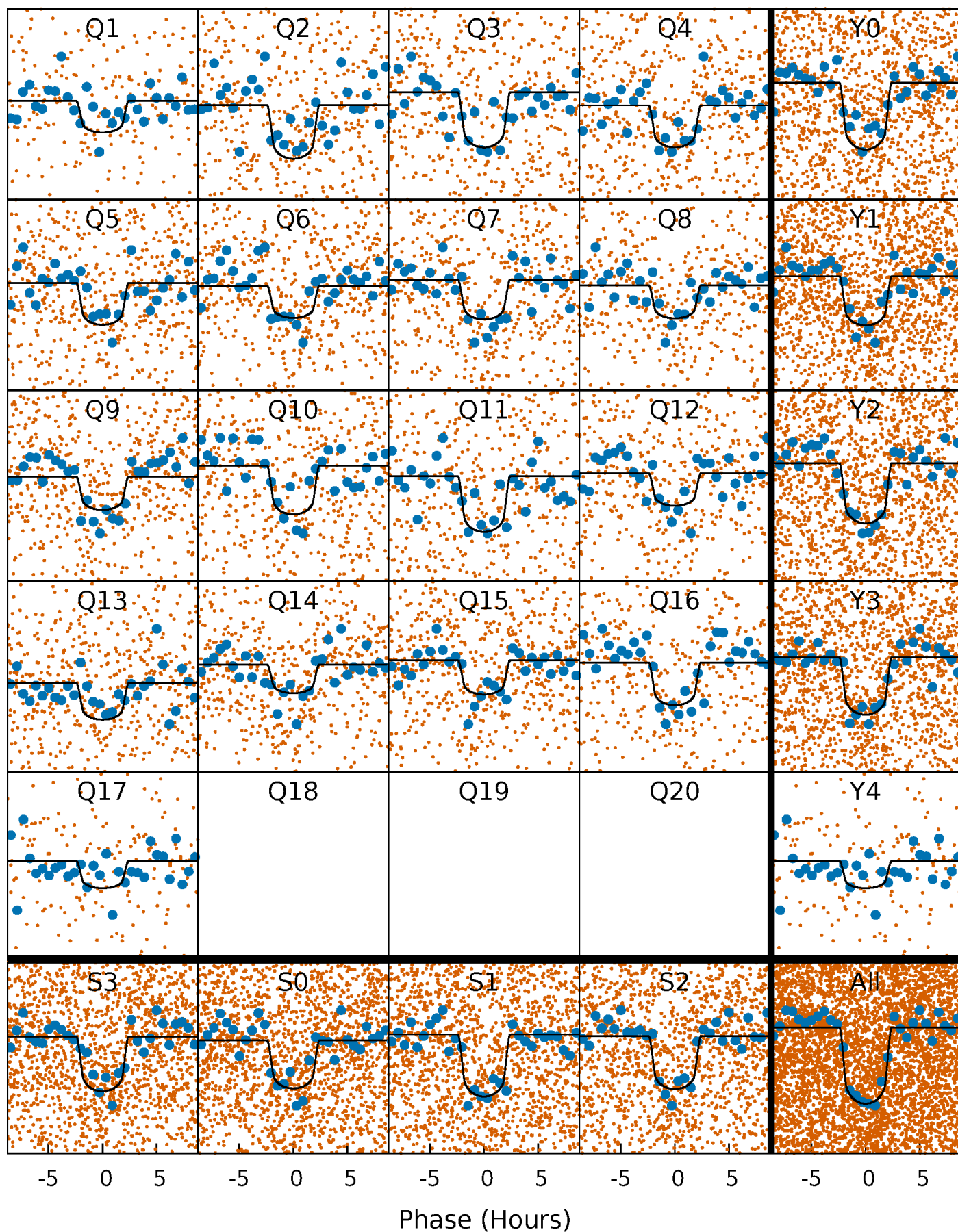
PDC Quarter-Phased Transit Curves

TCE 012254909-01 P= 5.349794 Days $T_0=133.881368$ (BKJD)



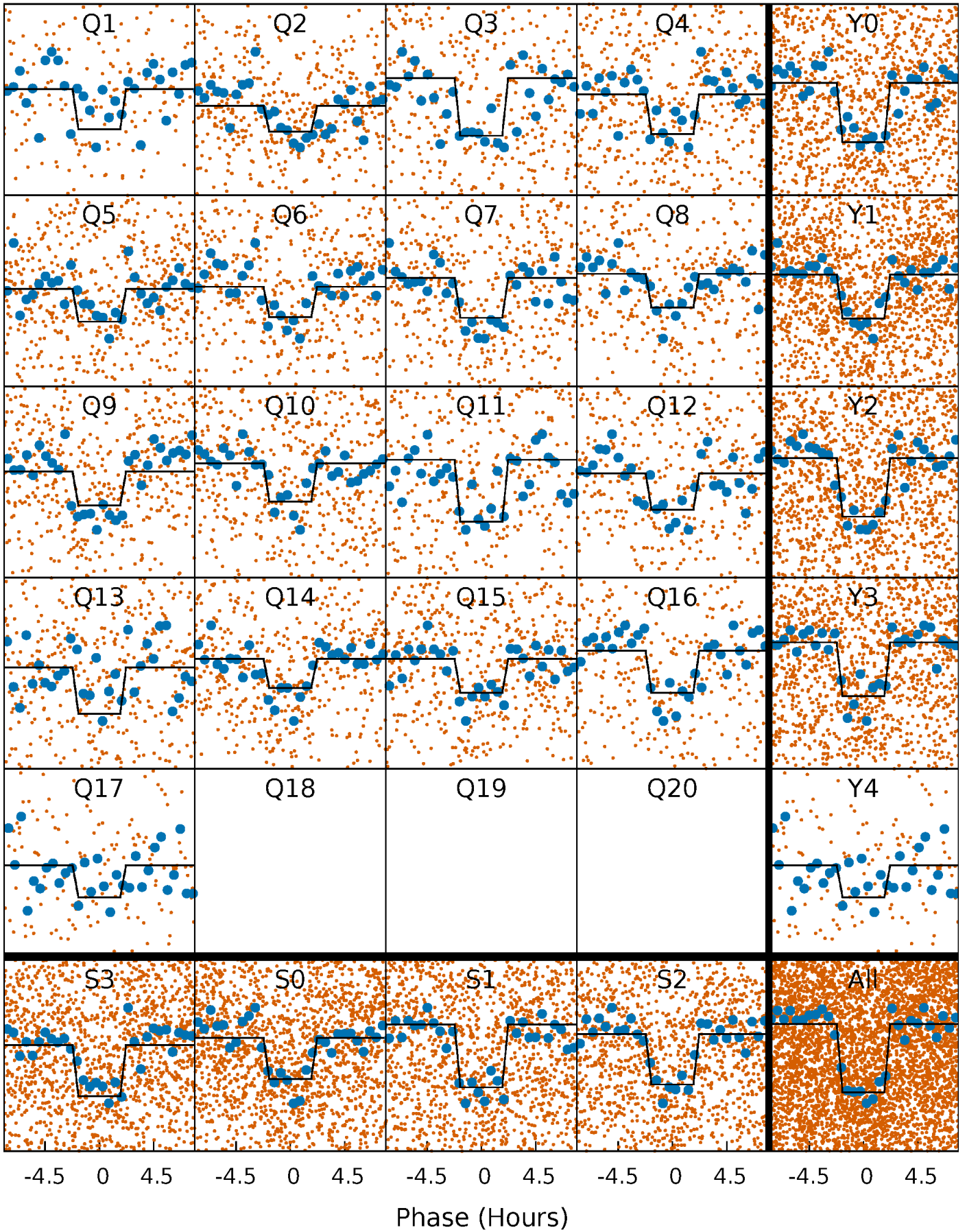
DV Quarter-Phased Transit Curves

TCE 012254909-01 P= 5.349794 Days $T_0=133.881368$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

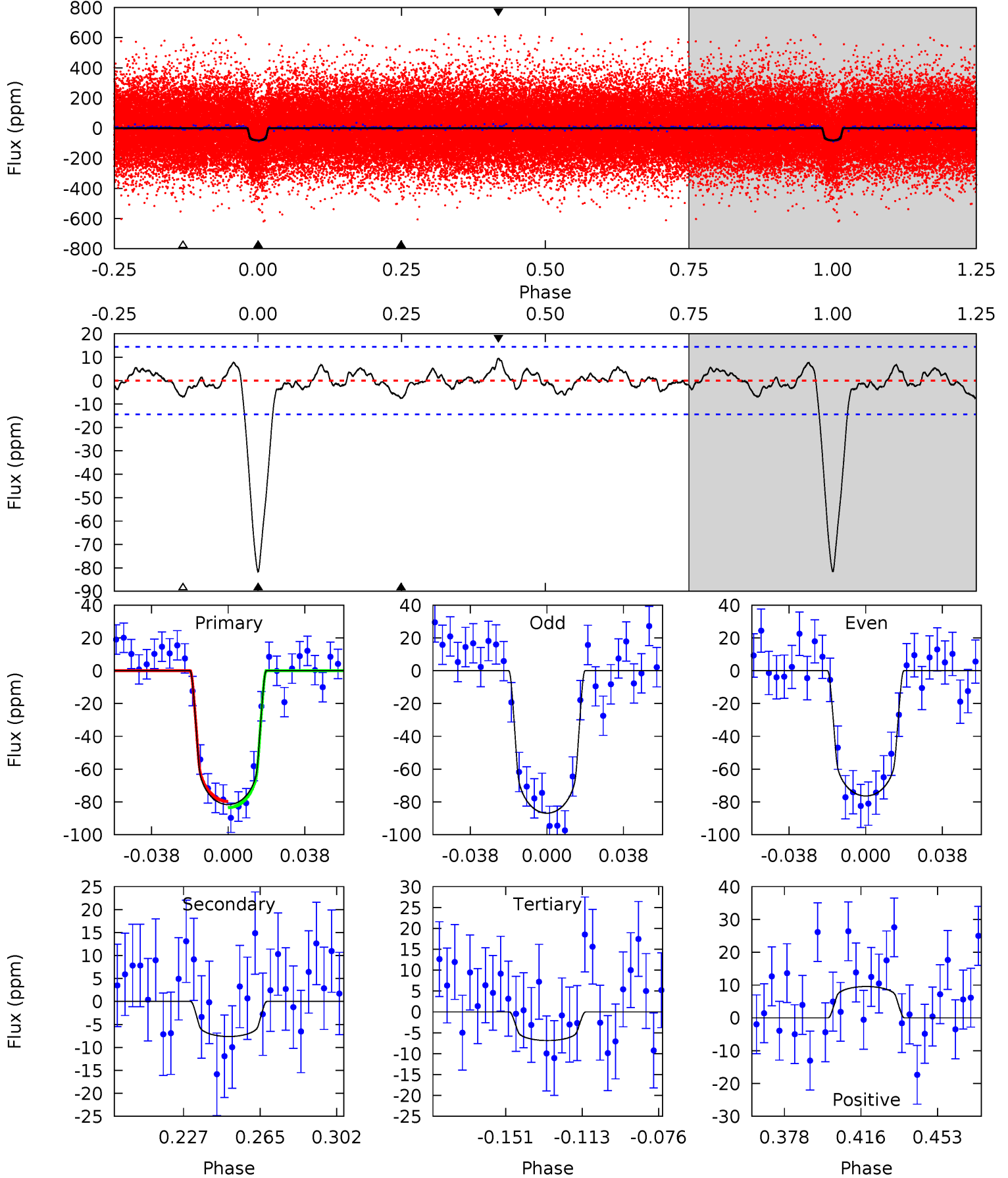
TCE 012254909-01 P= 5.349800 Days $T_0=133.883730$ (BKJD)



DV Model-Shift Uniqueness Test

012254909-01, P = 5.349794 Days, E = 128.531574 Days

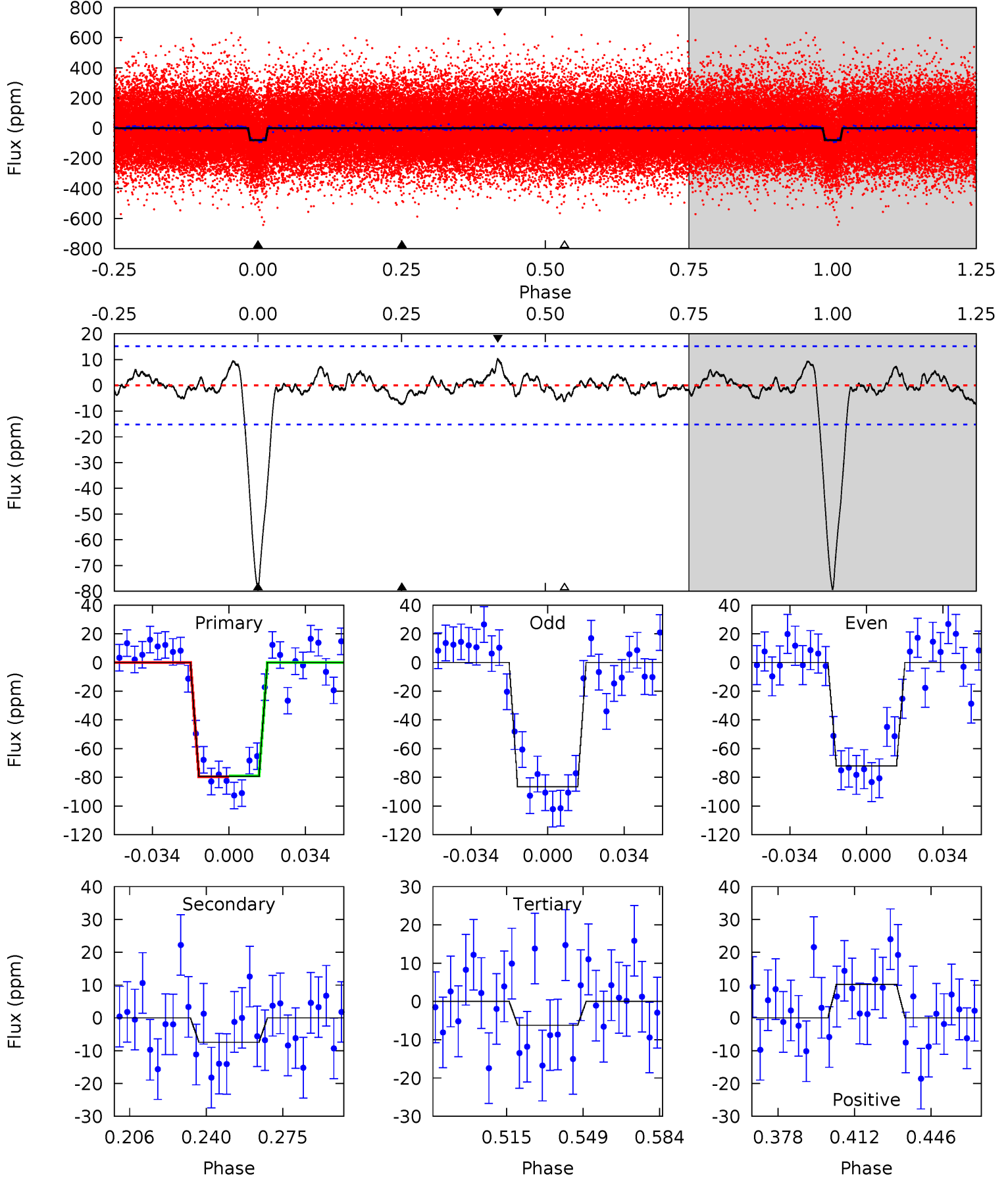
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	2.52	2.26	3.15	4.76	2.08	1.01	24.7	23.8	0.26	-0.63	1.73	0.98	0.10	0.61



Alt Model-Shift Uniqueness Test

012254909-01, P = 5.349800 Days, E = 128.533930 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.0	2.35	1.96	3.22	4.78	2.12	0.93	23.0	21.8	0.39	-0.87	2.30	1.07	0.11	0.10



Stellar Parameters For KIC 012254909

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6074^{+108}_{-145}	$4.368^{+0.051}_{-0.110}$	$0.300^{+0.100}_{-0.150}$	$1.183^{+0.195}_{-0.097}$	$1.197^{+0.070}_{-0.088}$	$1.018^{+0.199}_{-0.347}$
	+2%/-2%	+1%/-3%	+33%/-50%	+16%/-8%	+6%/-7%	+20%/-34%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 012254909-01 / KOI 2372.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 3	$1.31^{+0.31}_{-0.30}$	1630^{+61}_{-57}	3607^{+384}_{-347}	$9.620^{+8.477}_{-4.564}$
Alt.	-7 ± 3	$1.17^{+0.31}_{-0.28}$	1620^{+66}_{-53}	3714^{+483}_{-442}	12^{+11}_{-6}

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

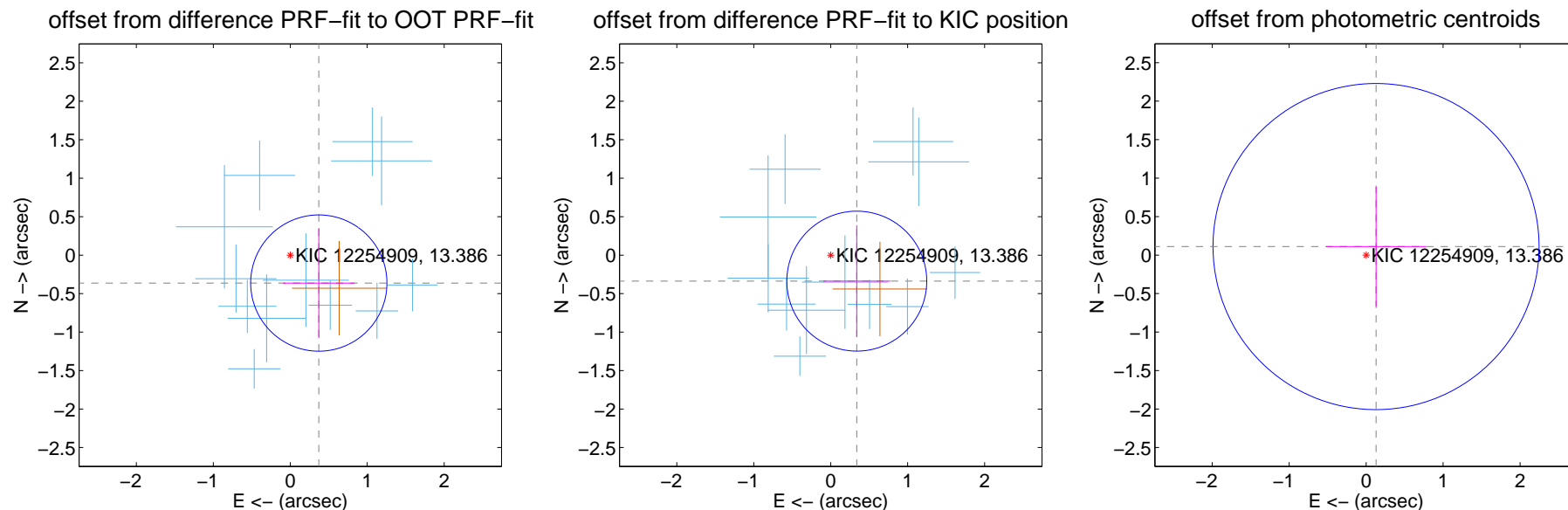
DV Centroid Data

Supplemental centroid analysis for 012254909-01. Kepler magnitude: 13.39. Transit SNR 19.41

There are 12 quarters with good PRF difference image offsets

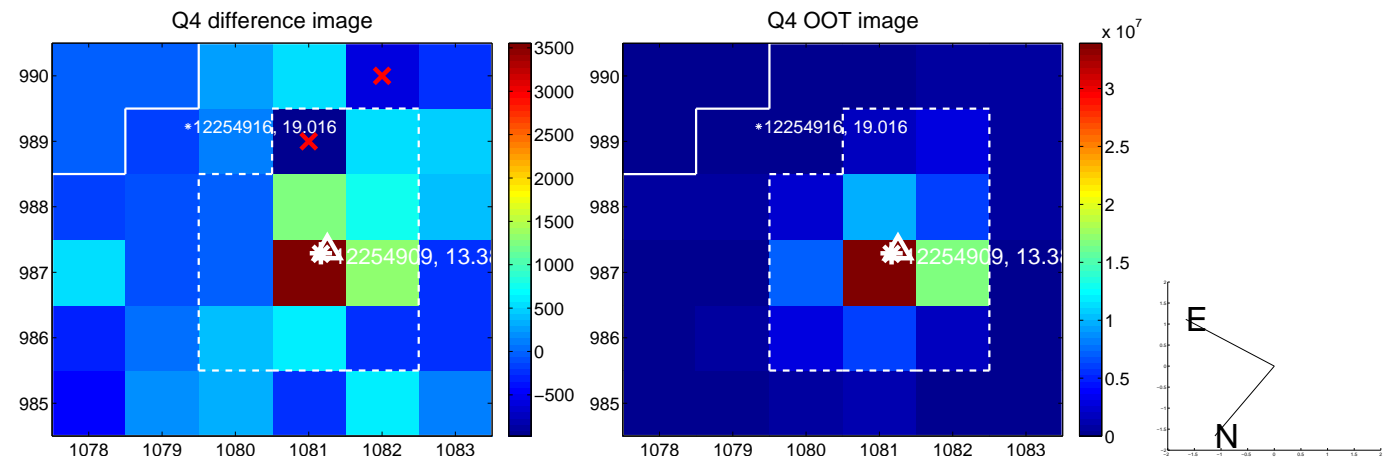
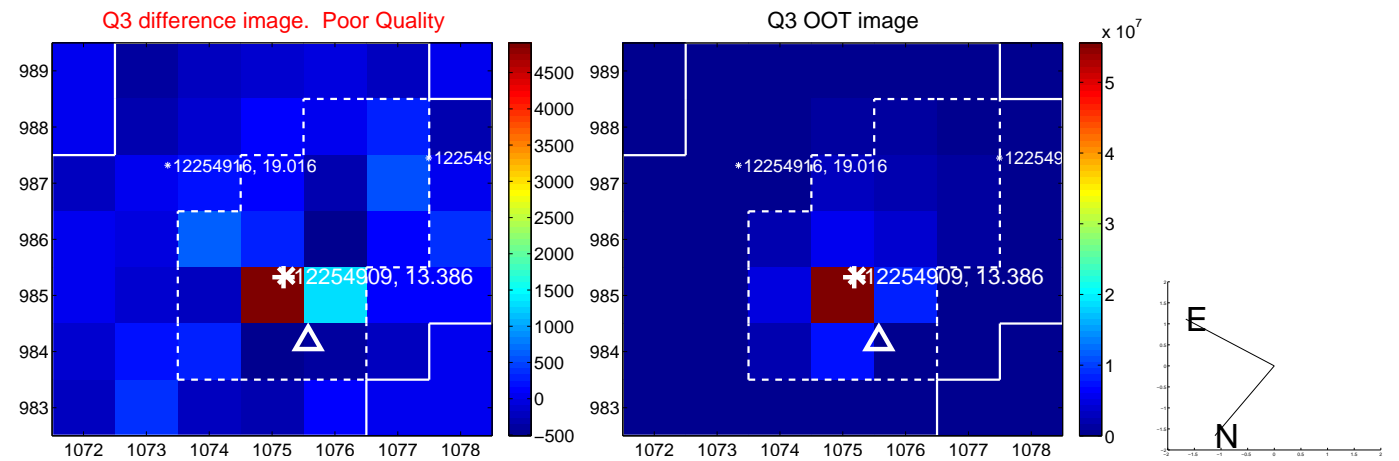
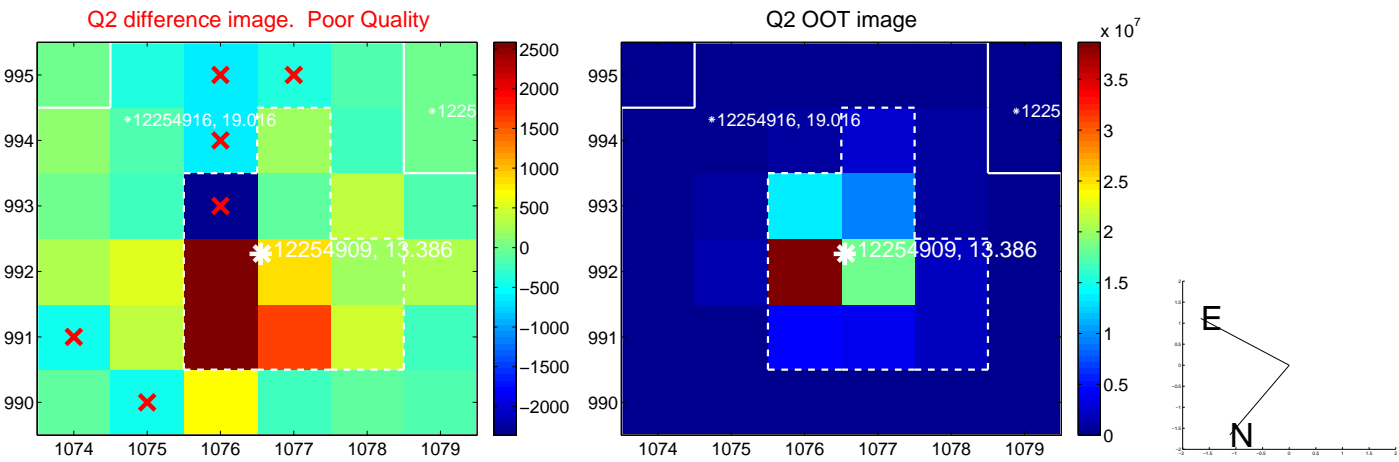
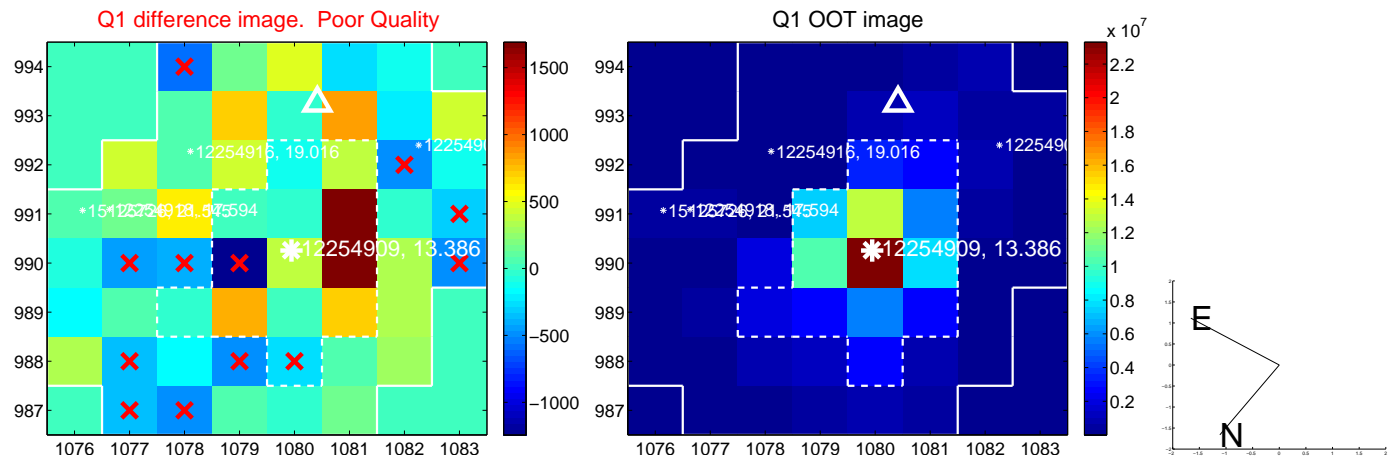
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.519 ± 0.295	1.76	-0.371 ± 0.465	-0.363 ± 0.714
PRF-fit source offset from KIC position	0.478 ± 0.303	1.58	-0.339 ± 0.436	-0.338 ± 0.726
photometric centroid source offset	0.17 ± 0.71	0.24	-0.13 ± 0.65	0.11 ± 0.78

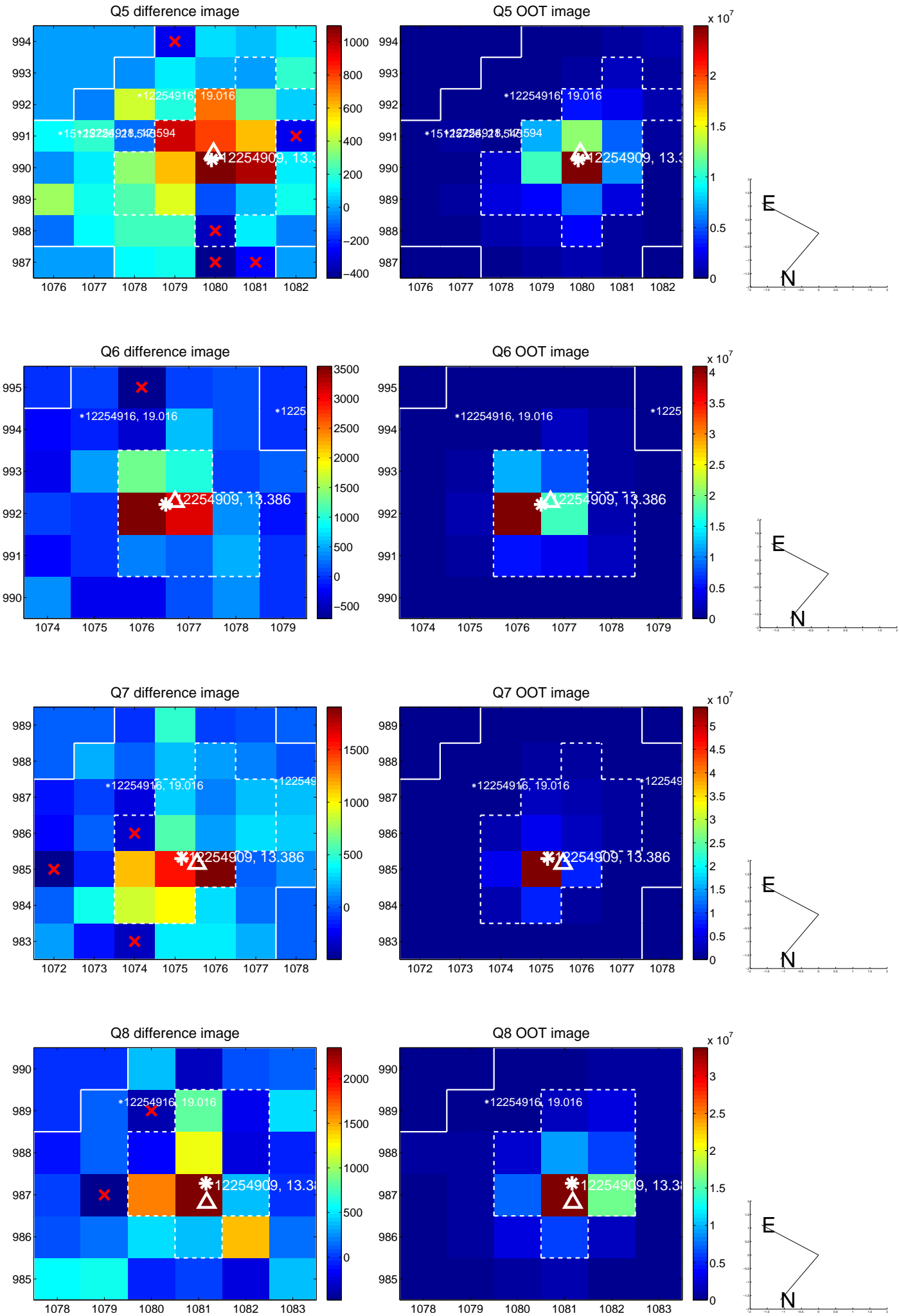


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

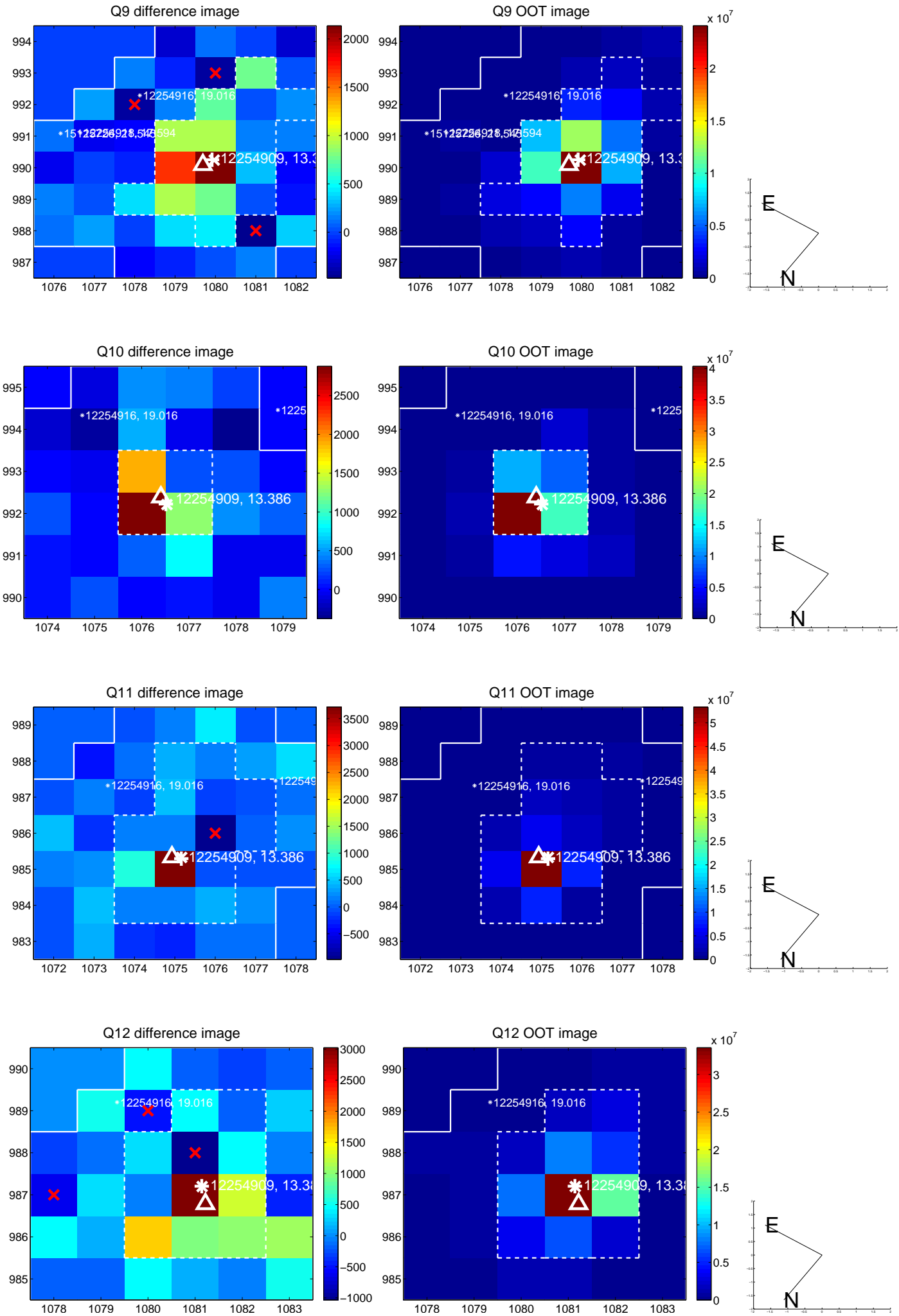
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



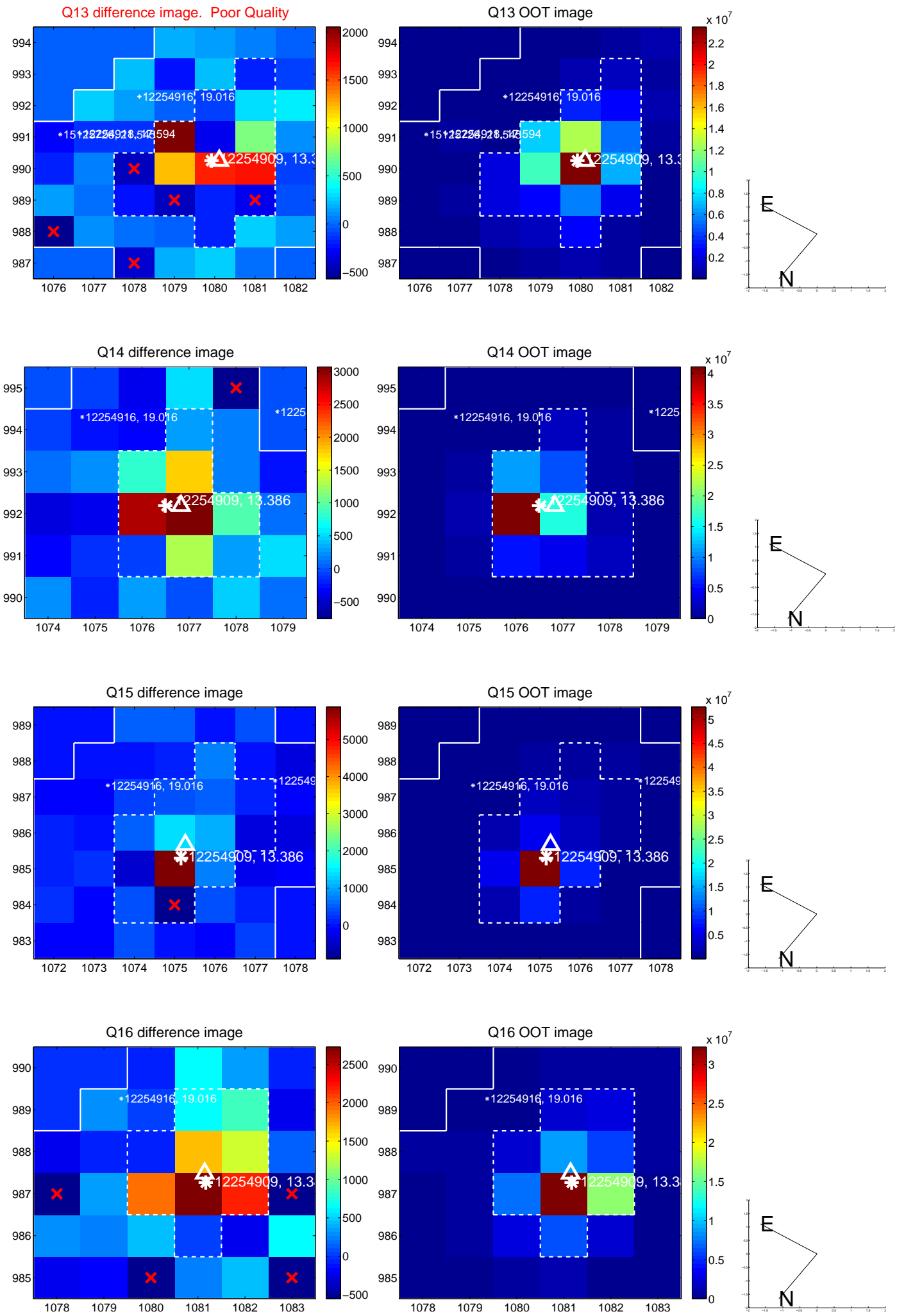
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



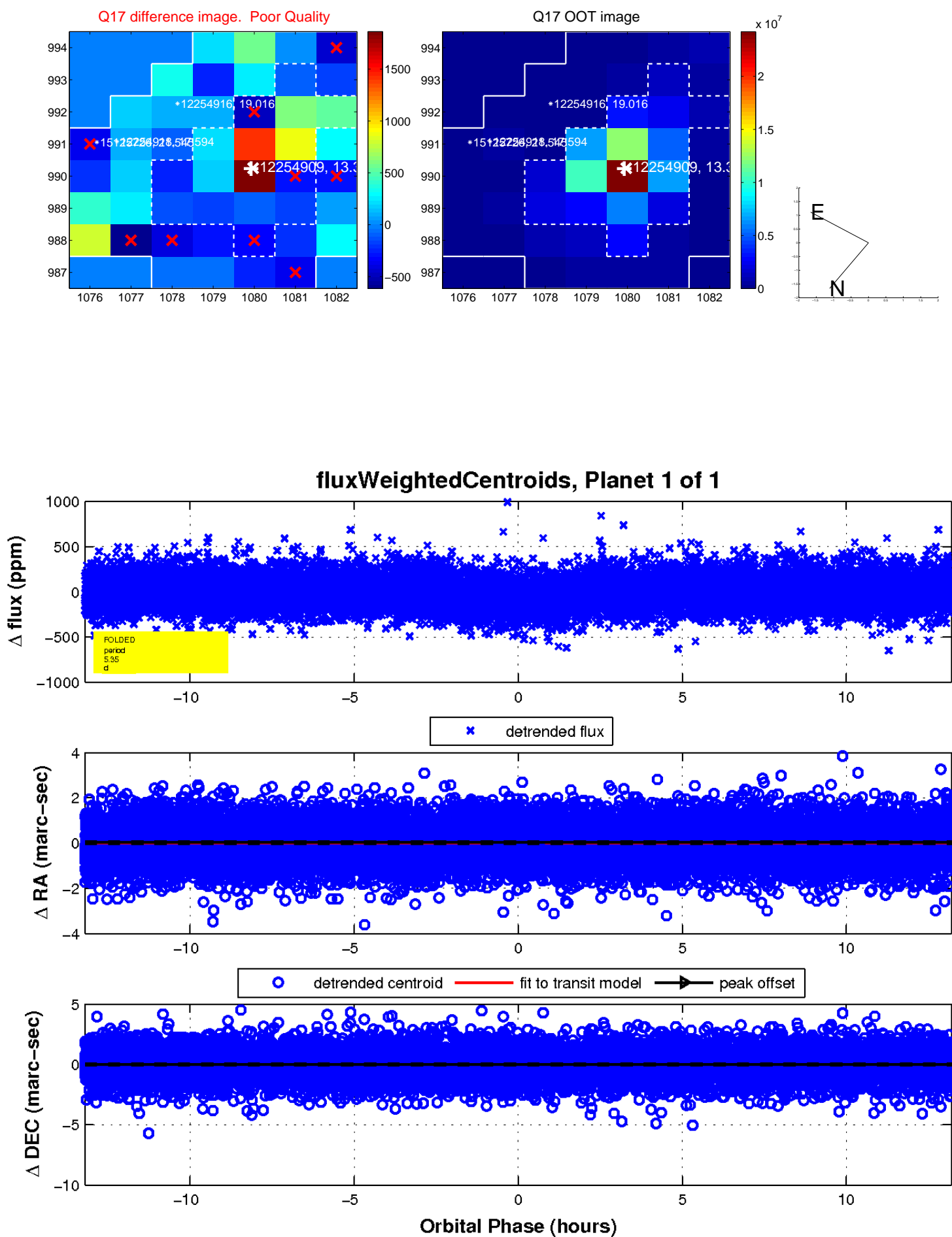
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

