

KIC 009714696

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})
009714696-01	OBS	0616.01	1.433339	132.587662	242.4	1.376	27.4	32.3	1.00	6077	1.84	1874.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009714696-01	OBS	PC	0.93	0	0	0	0	CENT_KIC_POS

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 009714696-01

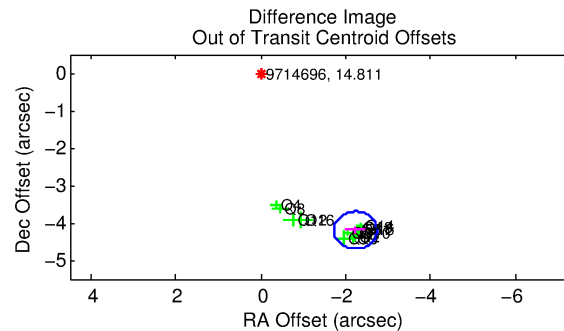
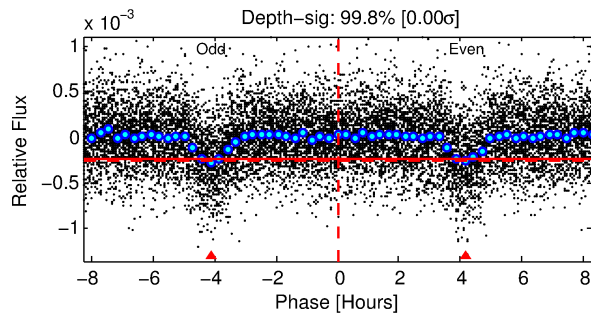
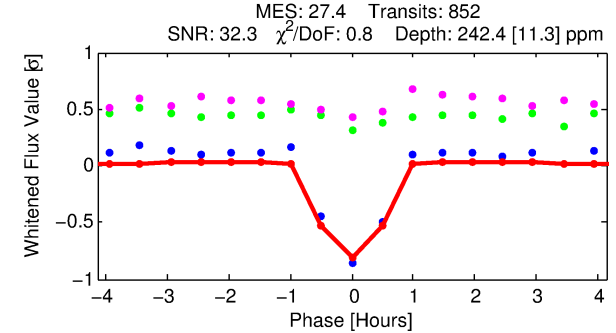
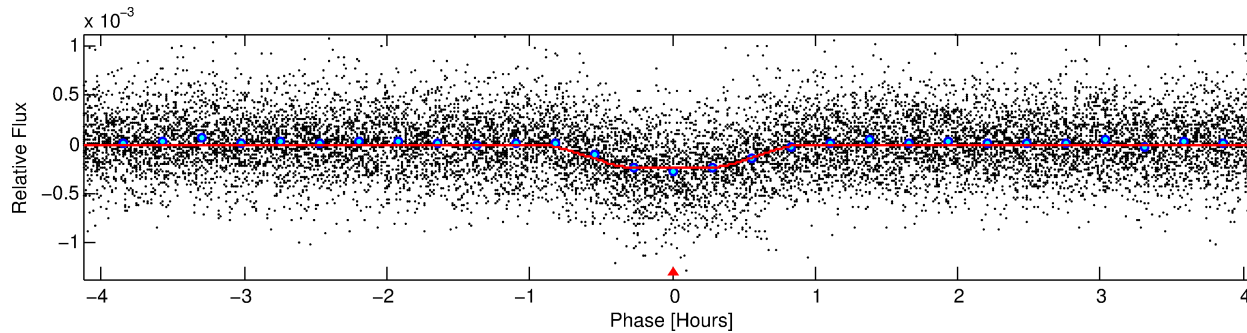
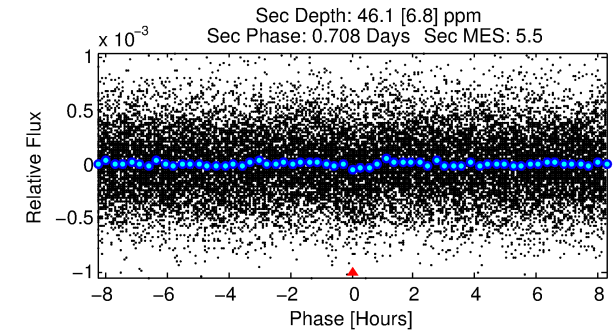
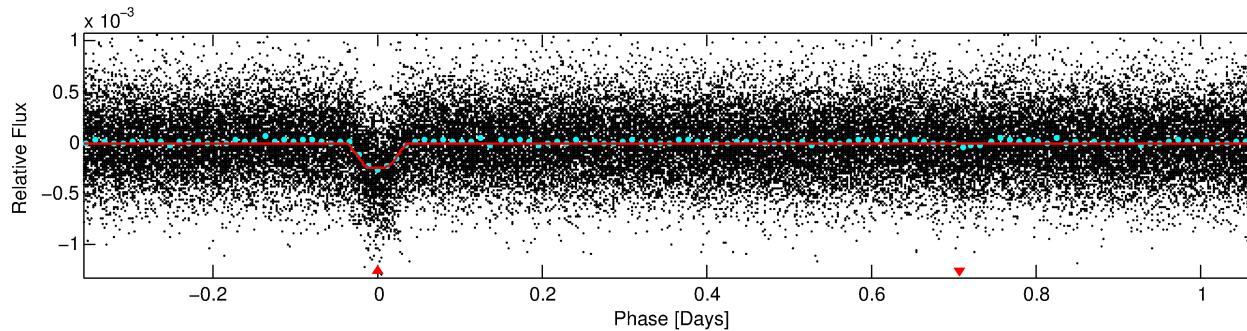
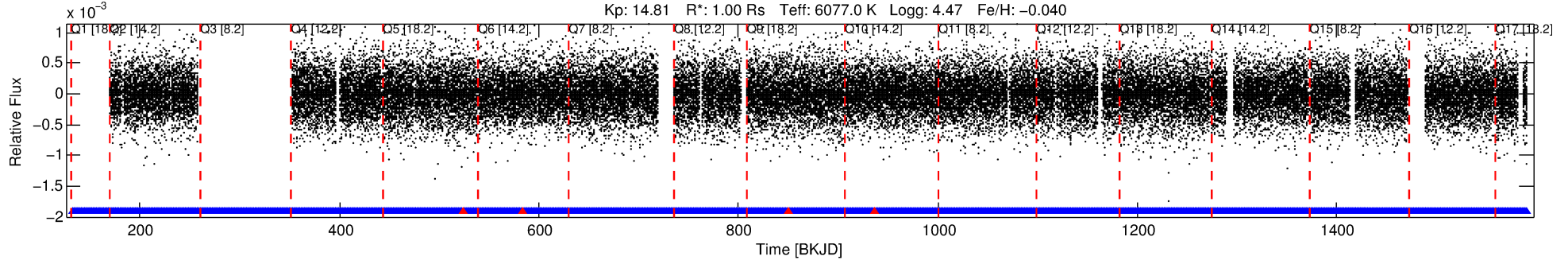
No Significant Match Found

DV One-Page Summary

KIC: 9714696 Candidate: 1 of 1 Period: 1.433 d

KOI: K00616.01 Corr: 0.962

Kp: 14.81 R*: 1.00 Rs Teff: 6077.0 K Logg: 4.47 Fe/H: -0.040



DV Fit Results:

Period = 1.43334 [0.00000] d
Epoch = 132.5877 [0.0007] BKJD
Rp/R* = 0.0169 [0.0042]
a/R* = 3.87 [4.53]
b = 0.90 [0.27]
Seff = 1874.55 [694.61]
Teq = 1678 [155] K
Rp = 1.84 [0.69] Re
a = 0.0255 [0.0060] AU
Ag = 4.85 [3.00] [1.29σ]
Teffp = 3850 [512] K [4.06σ]

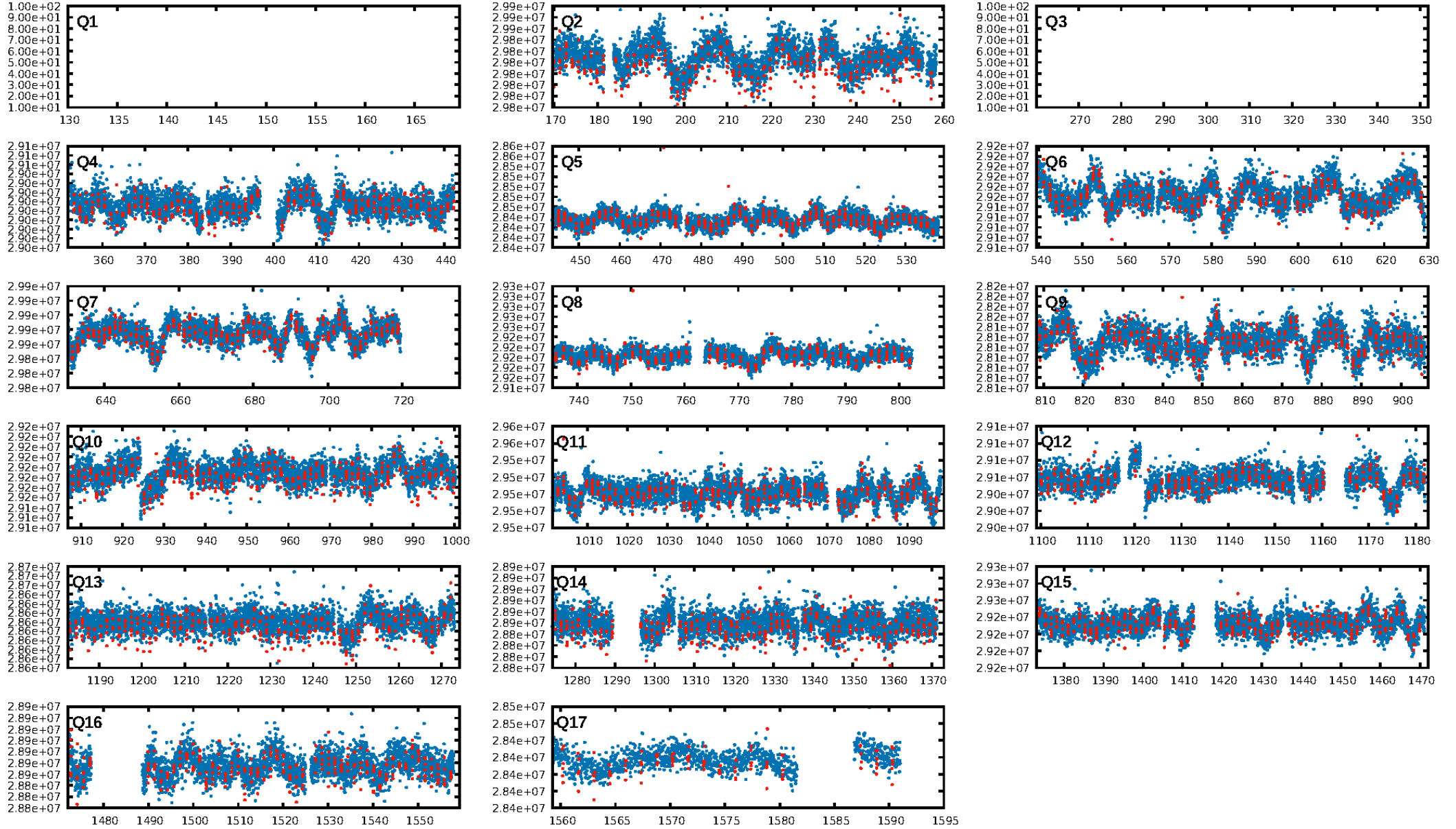
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.81e-158
RollingBand-fgt: 1.00 [830/834]
GhostDiagnostic-chr: 0.3037
Centroid-sig: 0.0%
Centroid-so: 8.073 arcsec [22.21σ]
OotOffset-rm: 4.758 arcsec [28.54σ]
KicOffset-rm: 4.999 arcsec [61.00σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [15/15]

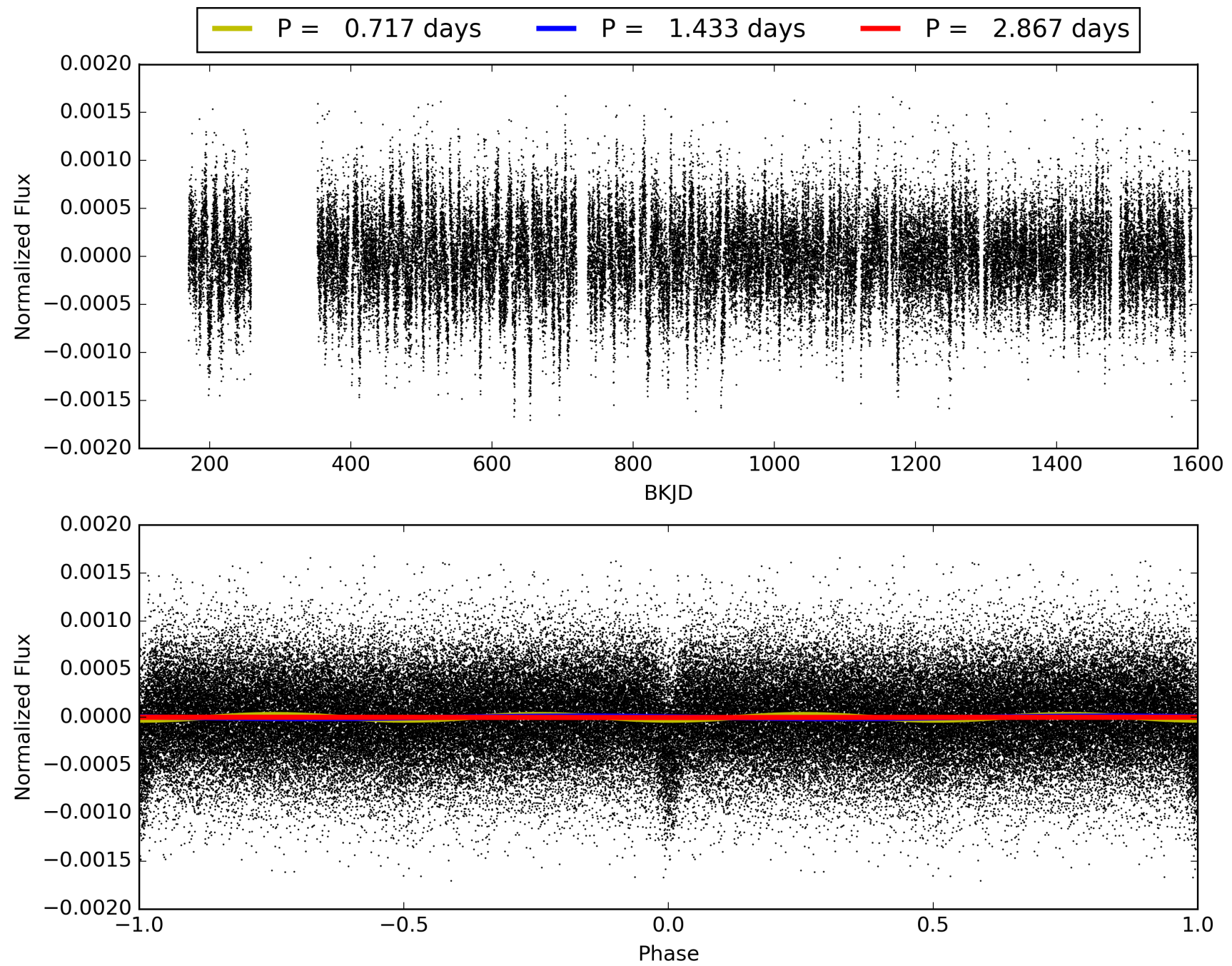
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:19:09 Z

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

TCE 009714696-01, PDC Light Curves

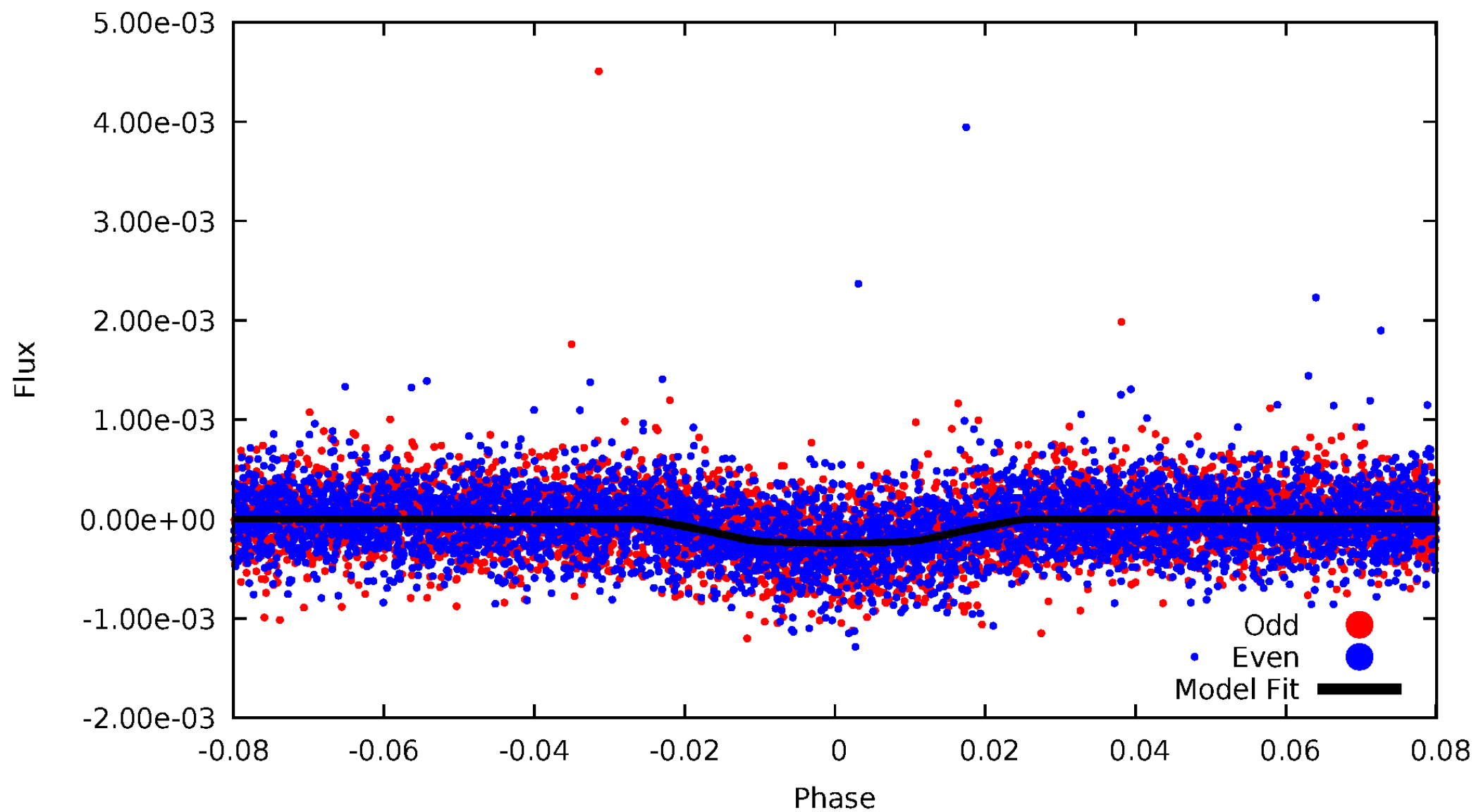


TCE 009714696-01



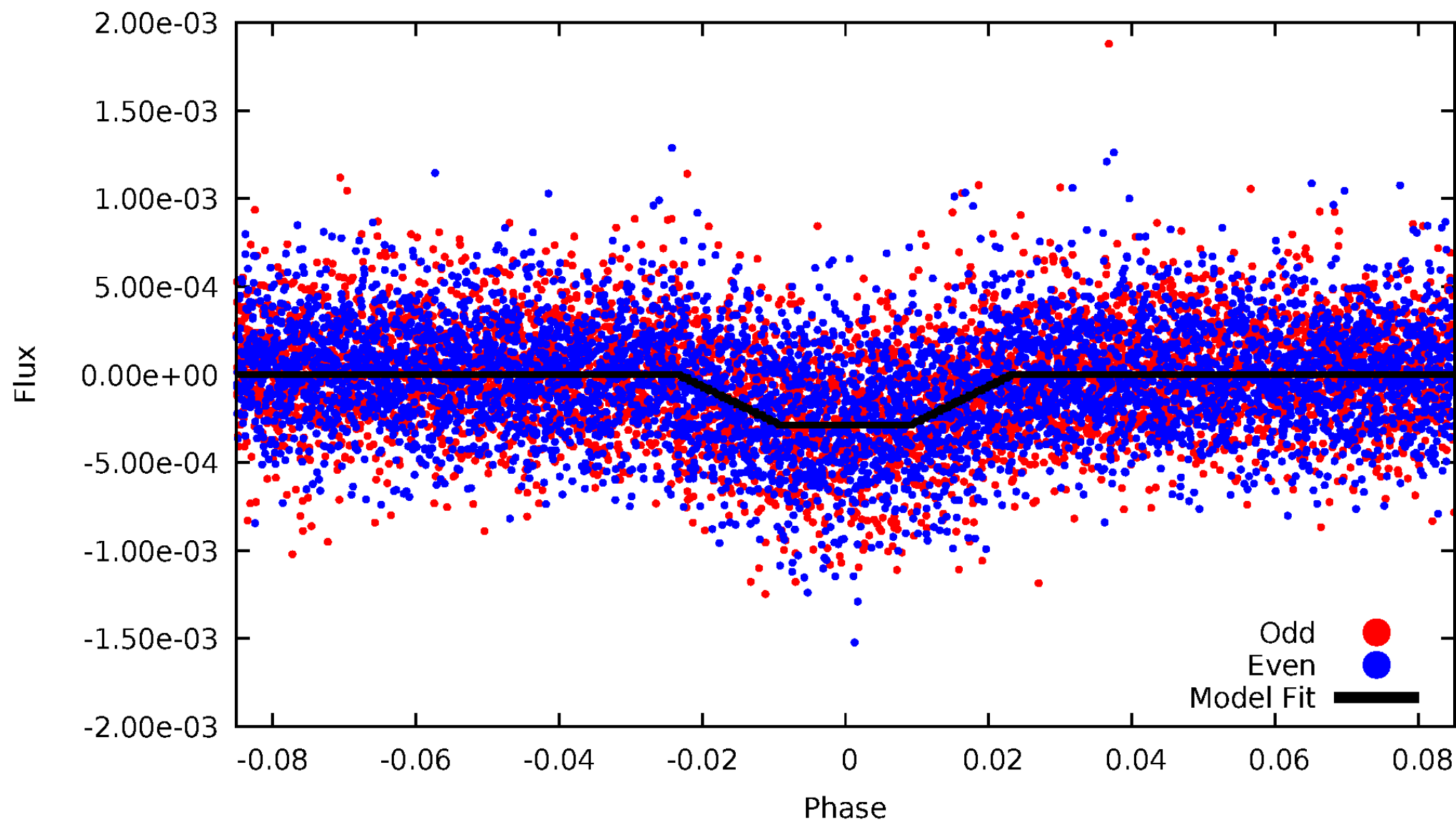
DV Odd/Even

TCE 009714696-01

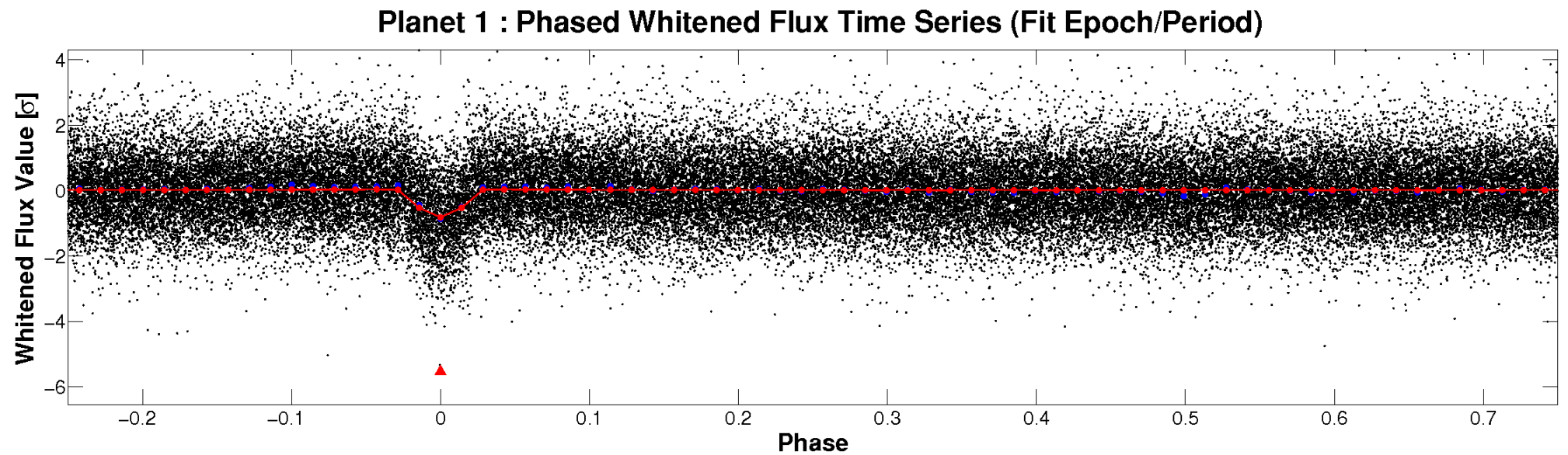
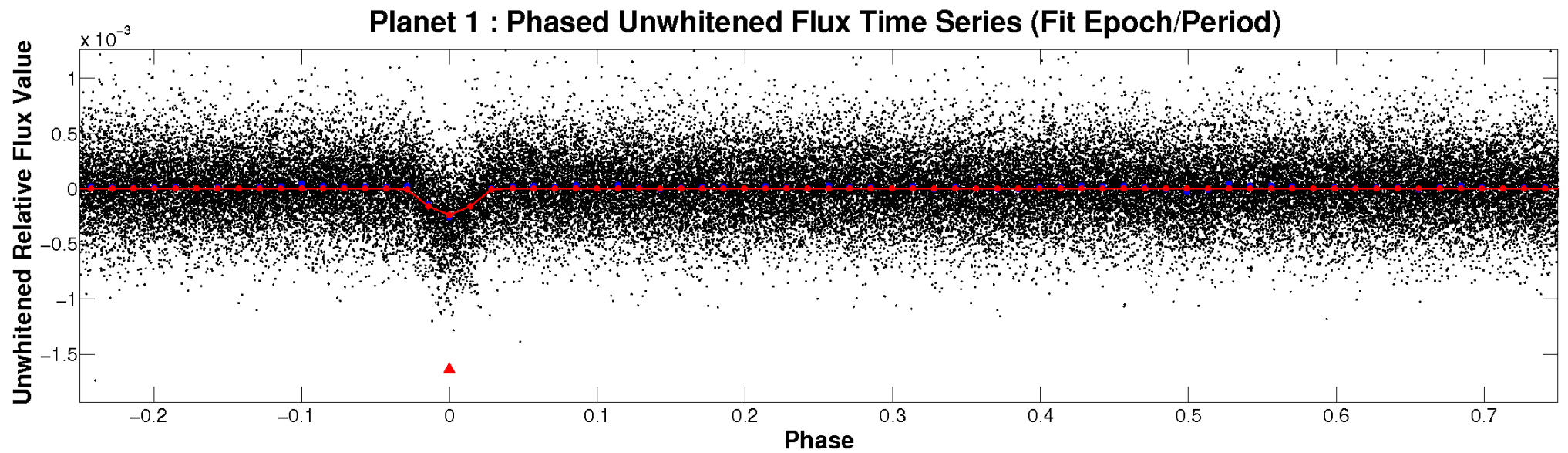


ALT Odd/Even

TCE 009714696-01

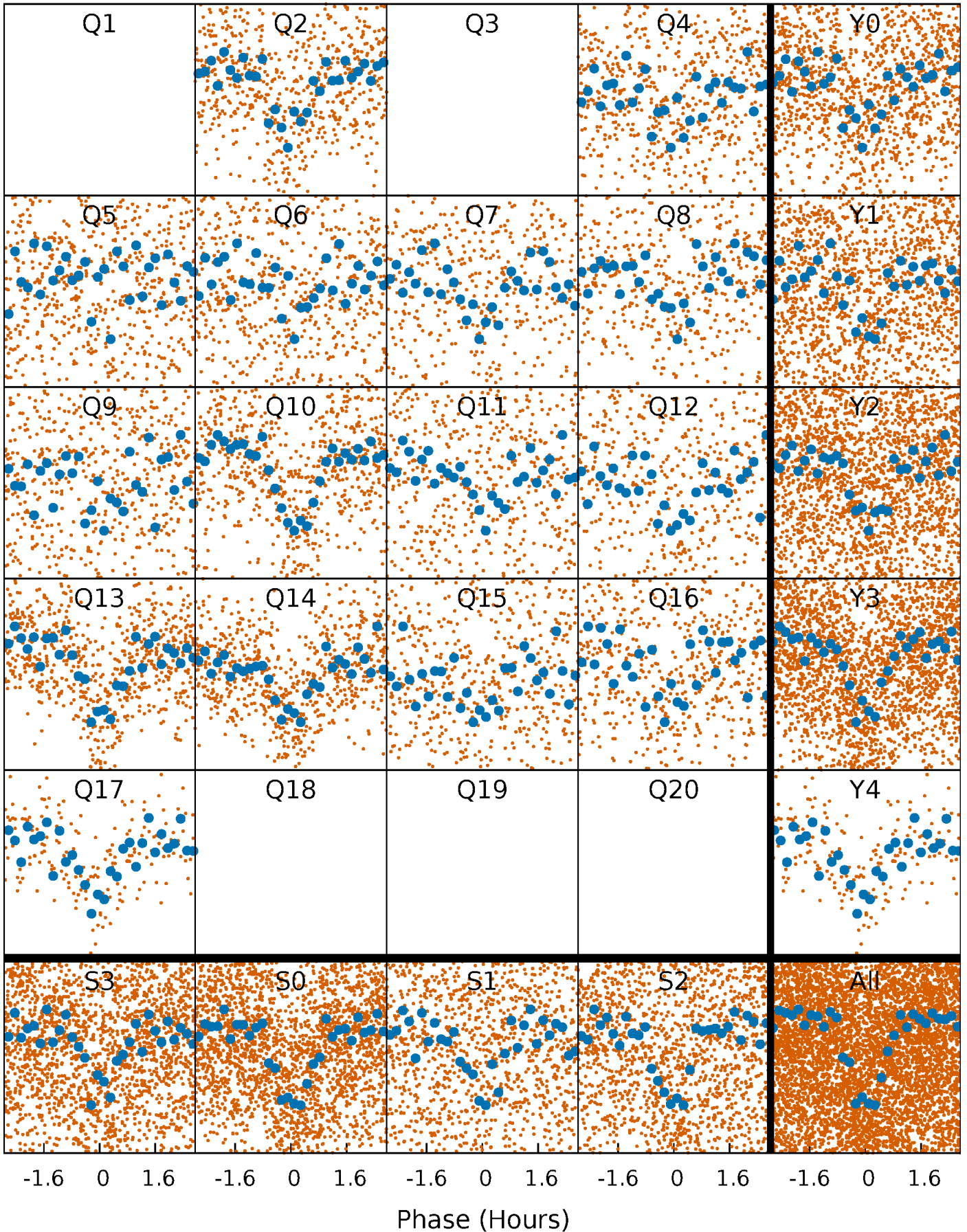


Non-Whitened Vs. Whitened Light Curve



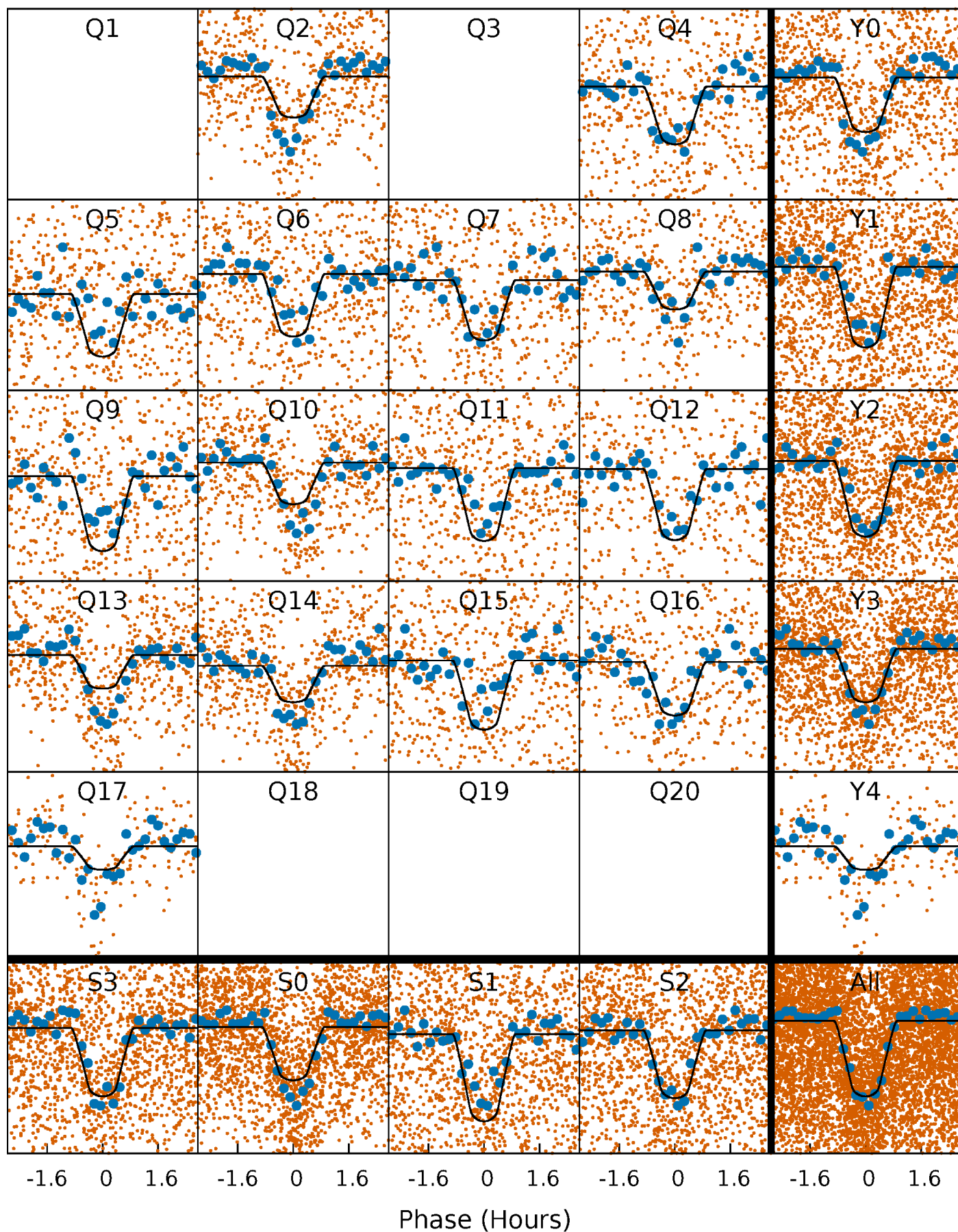
PDC Quarter-Phased Transit Curves

TCE 009714696-01 P= 1.433340 Days $T_0=132.587662$ (BKJD)



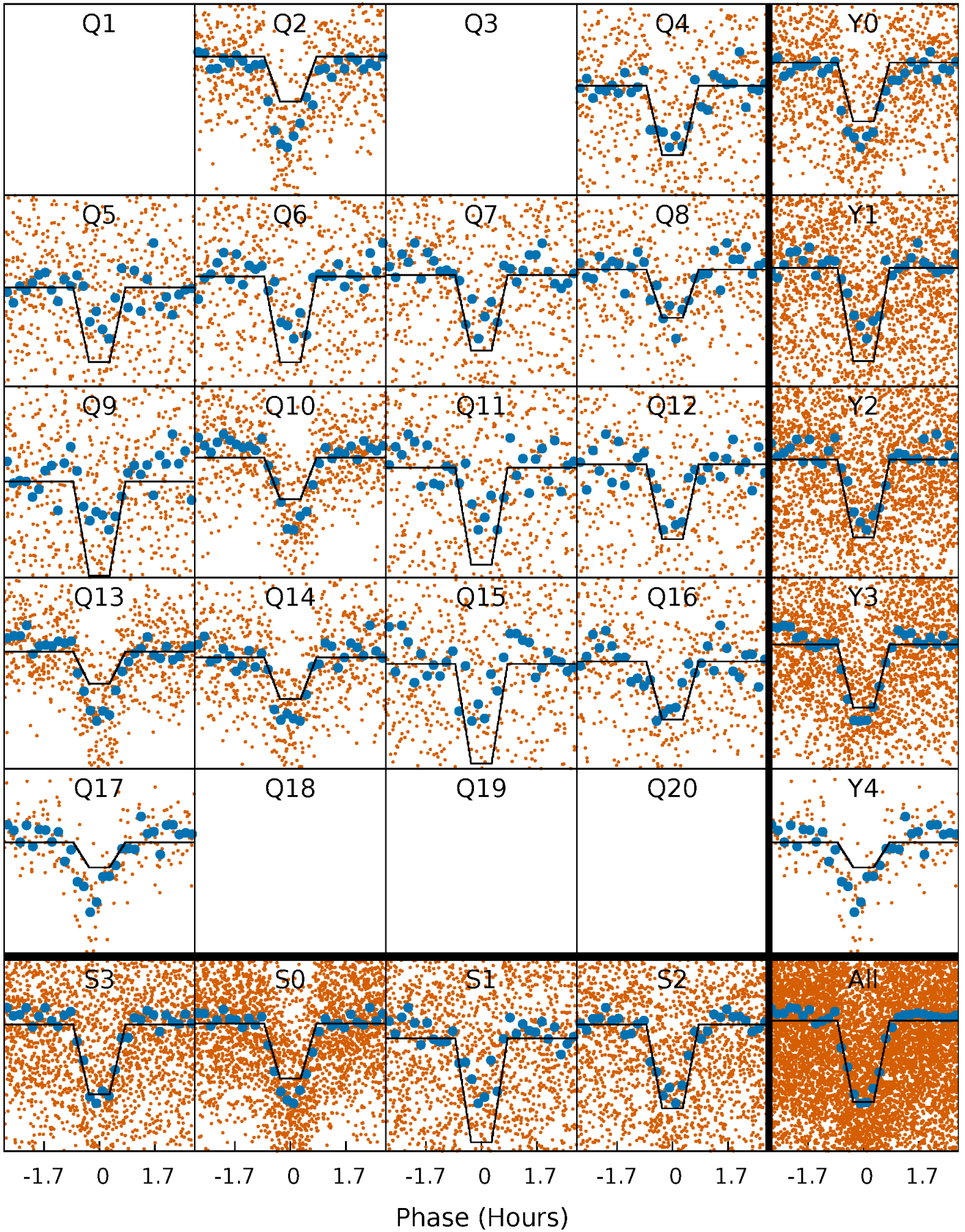
DV Quarter-Phased Transit Curves

TCE 009714696-01 P= 1.433340 Days $T_0=132.587662$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

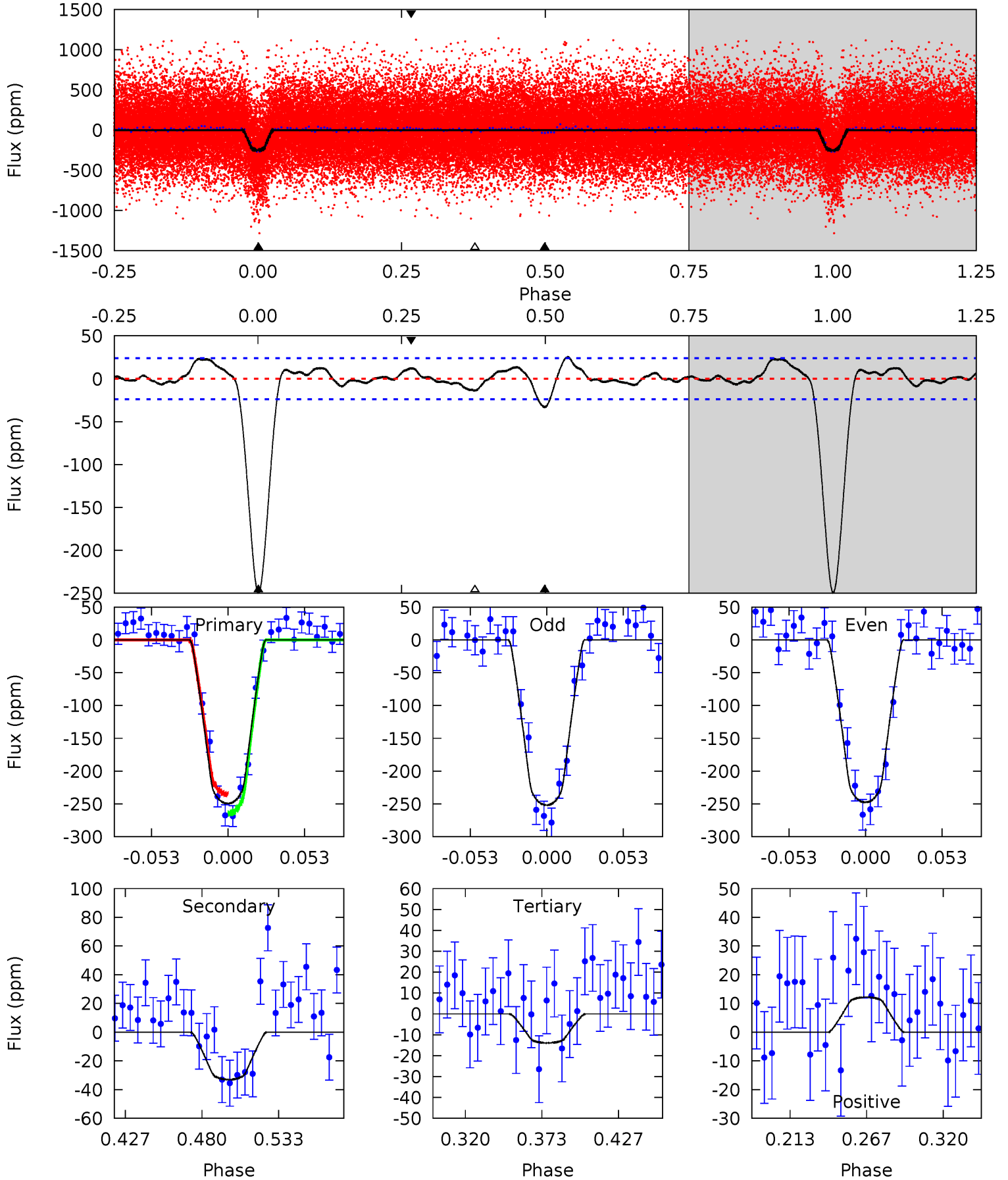
TCE 009714696-01 P= 1.433342 Days $T_0=132.587659$ (BKJD)



DV Model-Shift Uniqueness Test

009714696-01, P = 1.433340 Days, E = 132.587662 Days

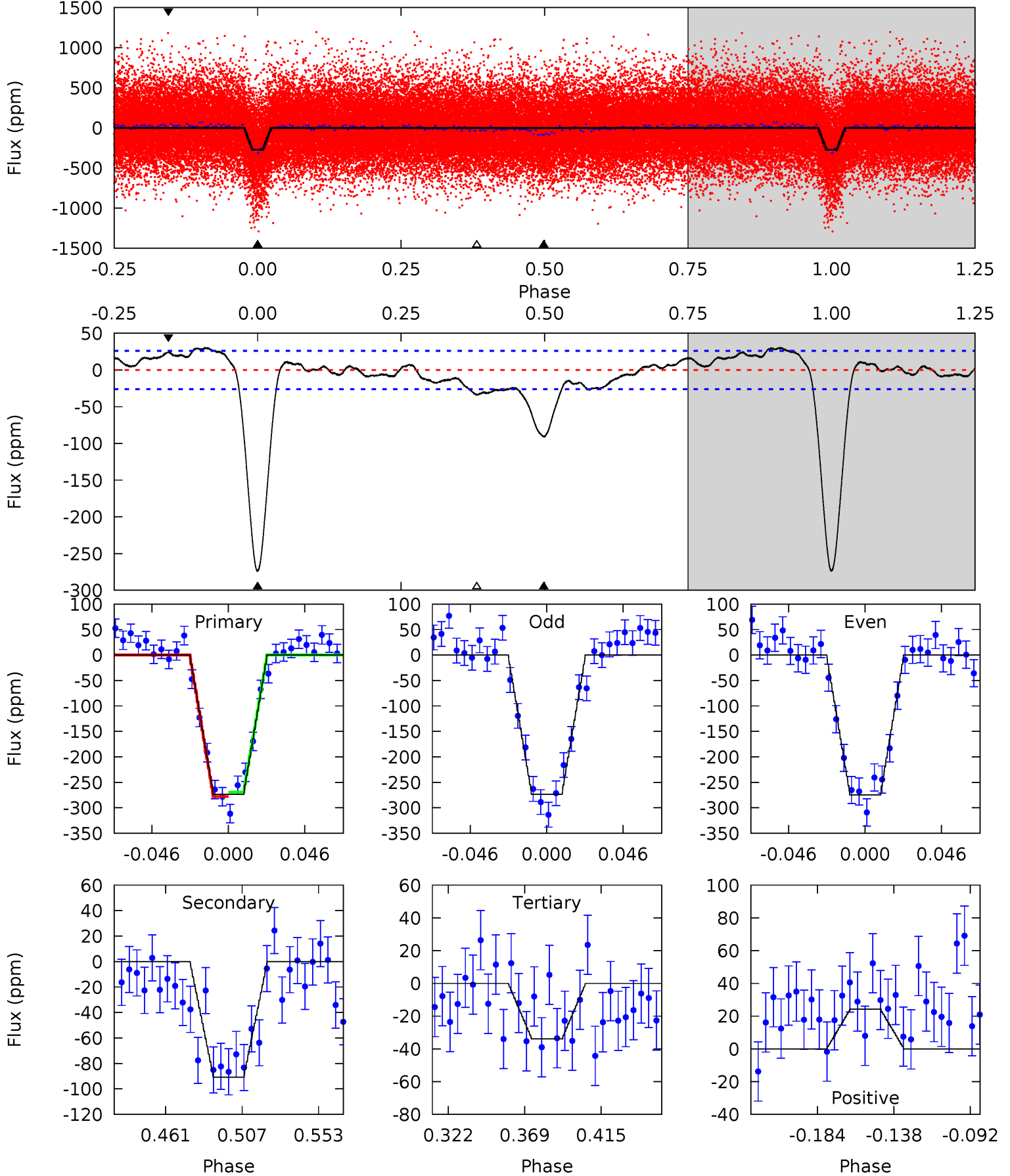
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.1	6.51	2.74	2.40	4.69	1.93	1.48	46.3	46.7	3.77	4.11	0.42	0.99	0.09	2.89



Alt Model-Shift Uniqueness Test

009714696-01, P = 1.433342 Days, E = 132.587659 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.4	16.4	6.12	4.37	4.72	1.99	2.97	43.3	45.0	10.3	12.0	0.13	1.01	0.10	0.79



Stellar Parameters For KIC 009714696

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6077^{+168}_{-210}	$4.471^{+0.050}_{-0.188}$	$-0.040^{+0.250}_{-0.350}$	$0.999^{+0.280}_{-0.120}$	$1.077^{+0.126}_{-0.153}$	$1.519^{+0.389}_{-0.749}$
	+3%/-3%	+1%/-4%	+625%/-875%	+28%/-12%	+12%/-14%	+26%/-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 009714696-01 / KOI 0616.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-33 ± 5	$1.95^{+0.56}_{-0.50}$	2394^{+162}_{-113}	3803^{+440}_{-327}	$3.032^{+2.497}_{-1.243}$
Alt.	-91 ± 6	$1.91^{+0.54}_{-0.52}$	2400^{+145}_{-114}	4676^{+664}_{-429}	$8.724^{+7.533}_{-3.392}$

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

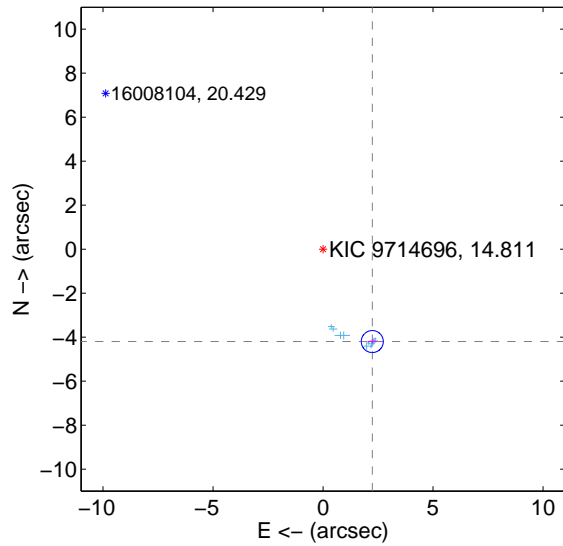
Supplemental centroid analysis for 009714696-01. Kepler magnitude: 14.81. Transit SNR 32.34

There are 15 quarters with good PRF difference image offsets

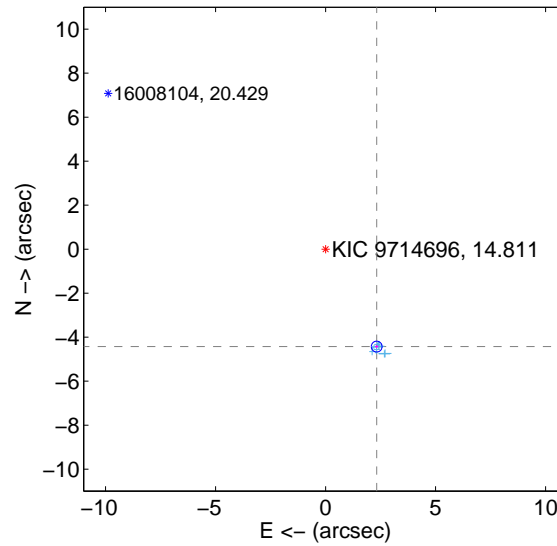
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.758 ± 0.167	28.54	-2.238 ± 0.211	-4.198 ± 0.098
PRF-fit source offset from KIC position	4.999 ± 0.082	61.00	-2.323 ± 0.079	-4.427 ± 0.079
photometric centroid source offset	8.07 ± 0.36	22.21	-3.91 ± 0.40	-7.06 ± 0.35

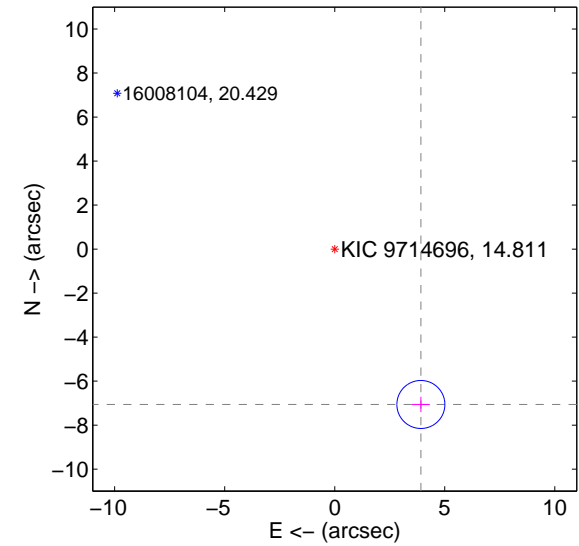
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



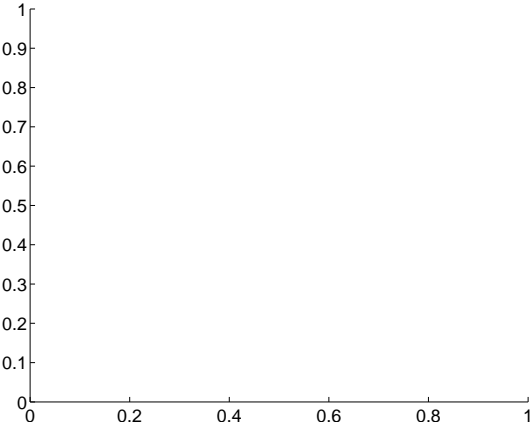
offset from photometric centroids



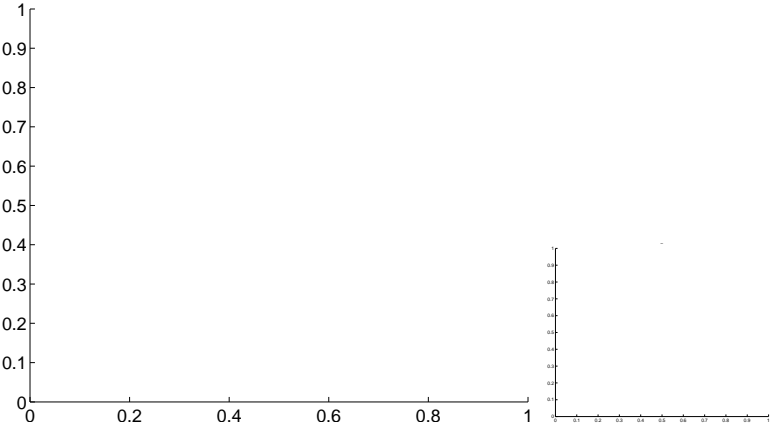
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

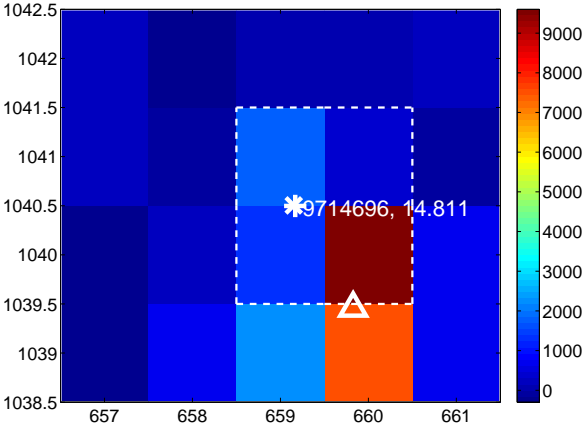
Q1 no difference image



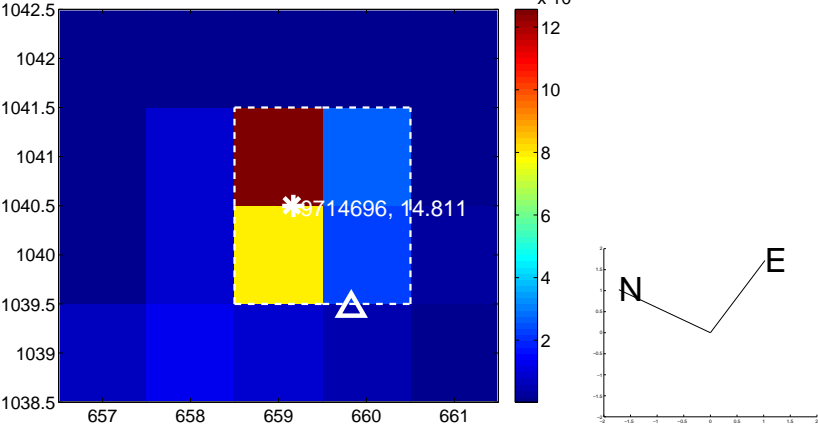
Q1 no OOT image



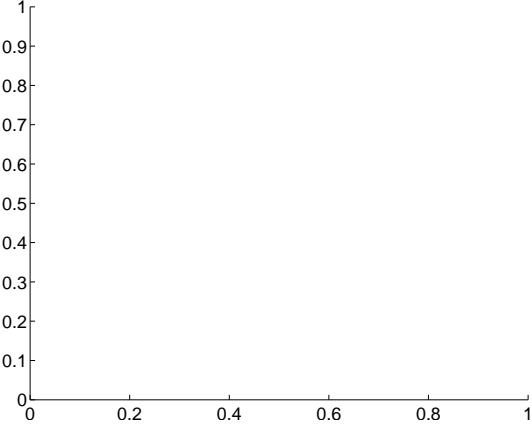
Q2 difference image



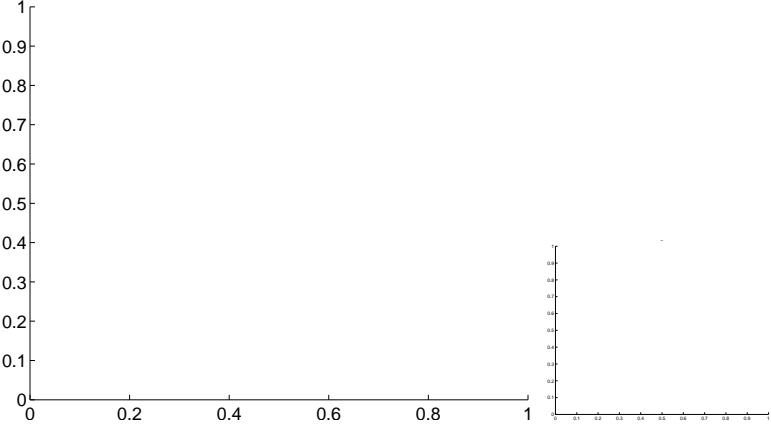
Q2 OOT image



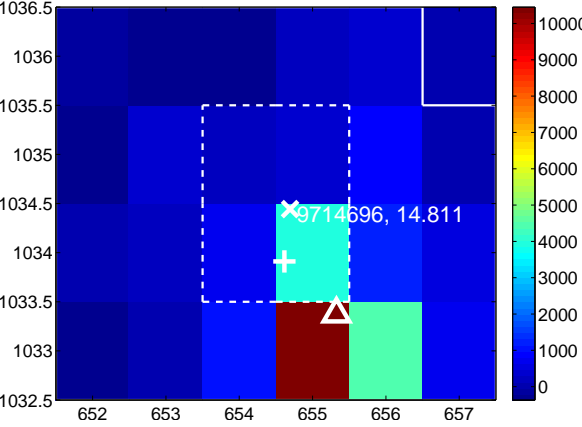
Q3 no difference image



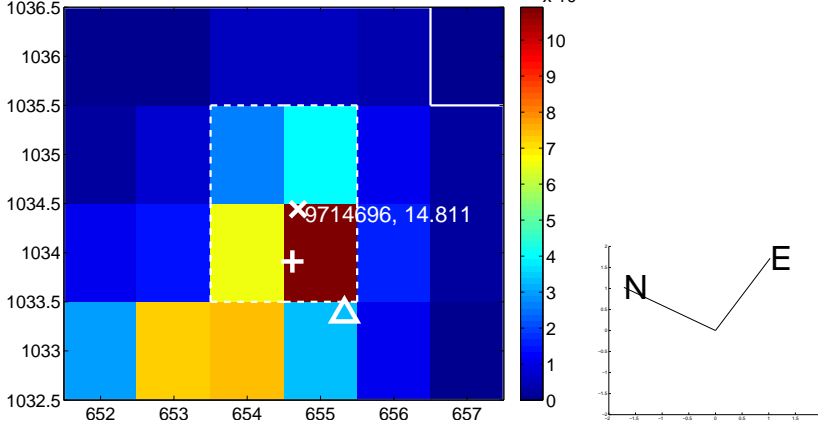
Q3 no OOT image



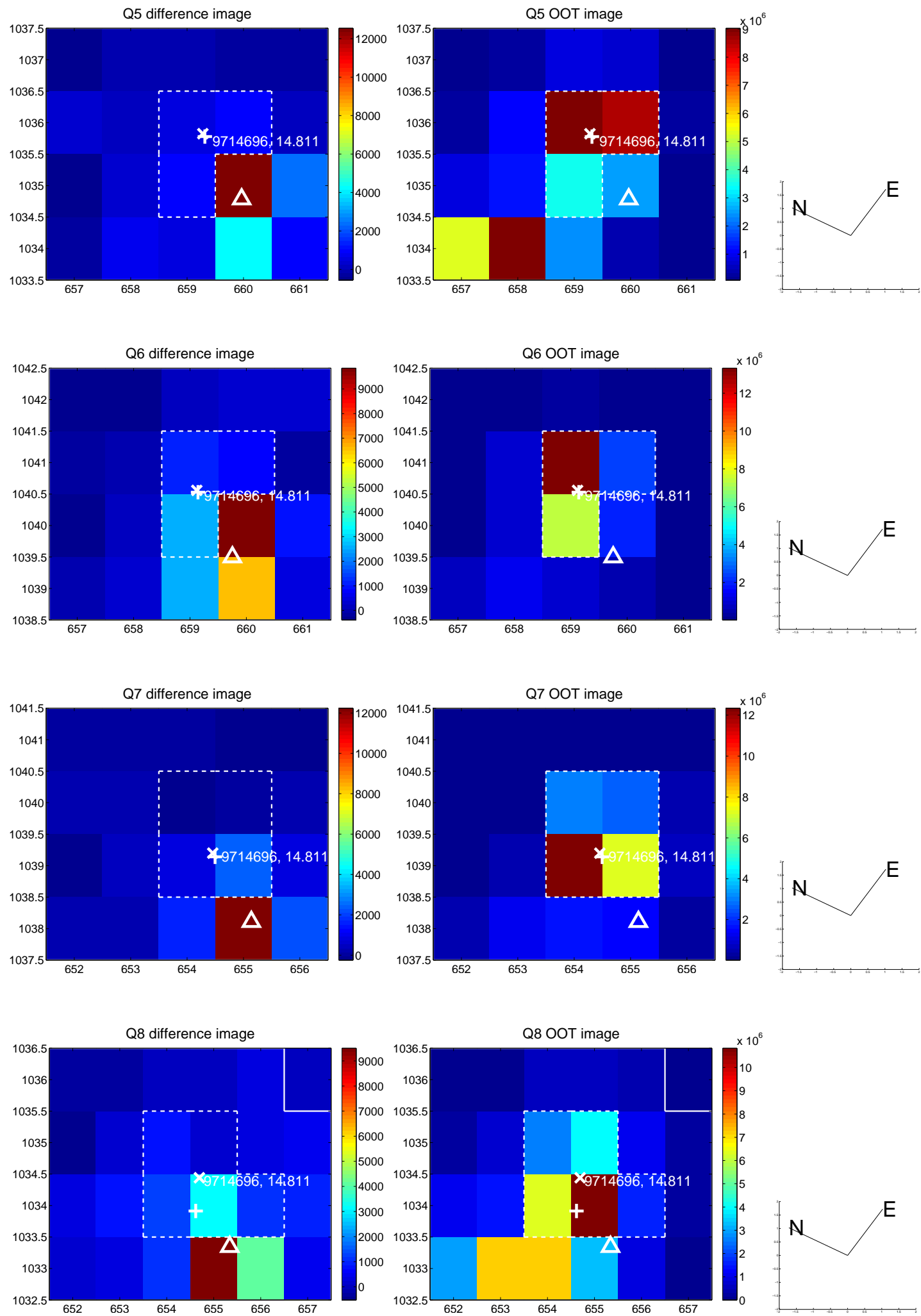
Q4 difference image



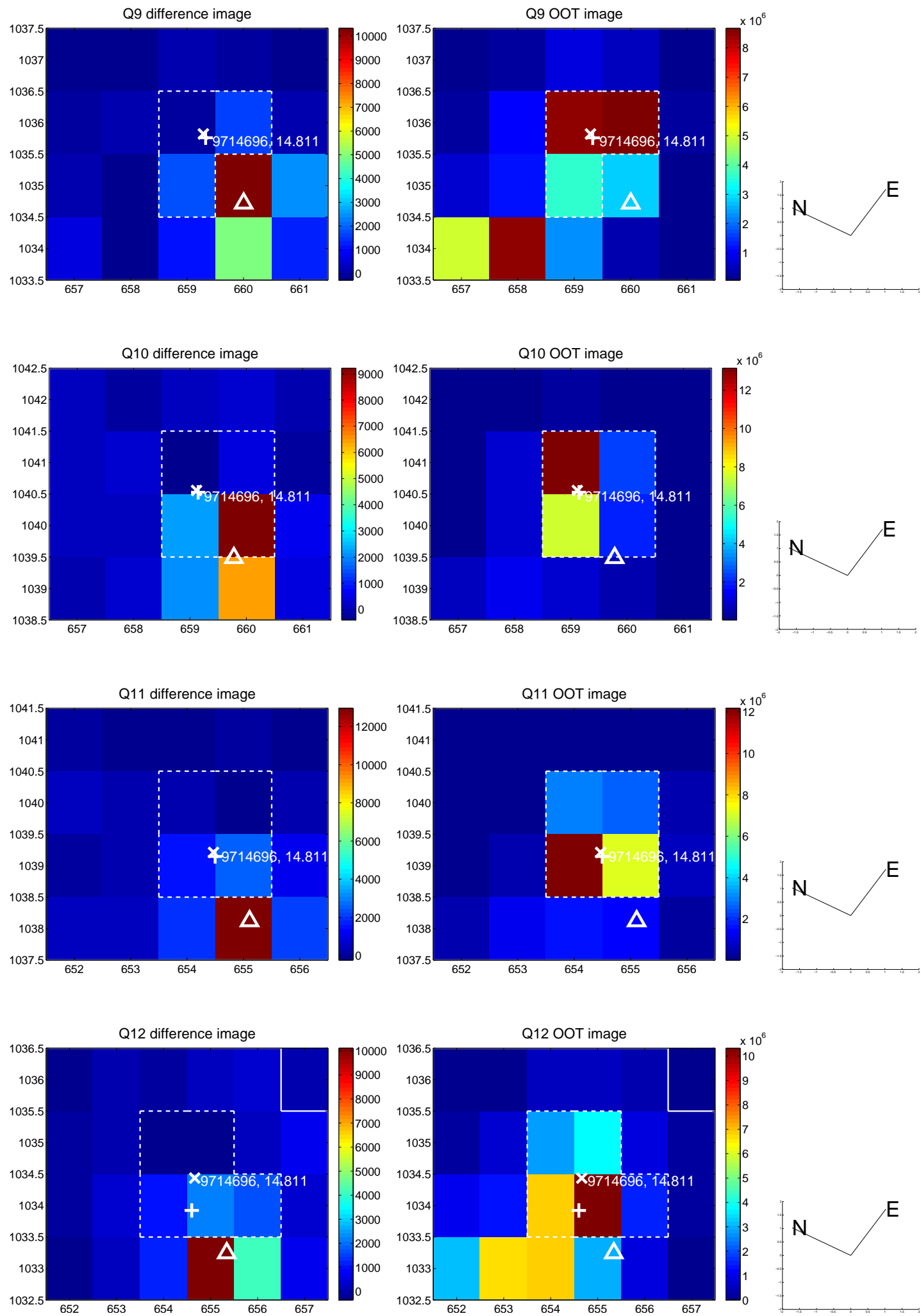
Q4 OOT image



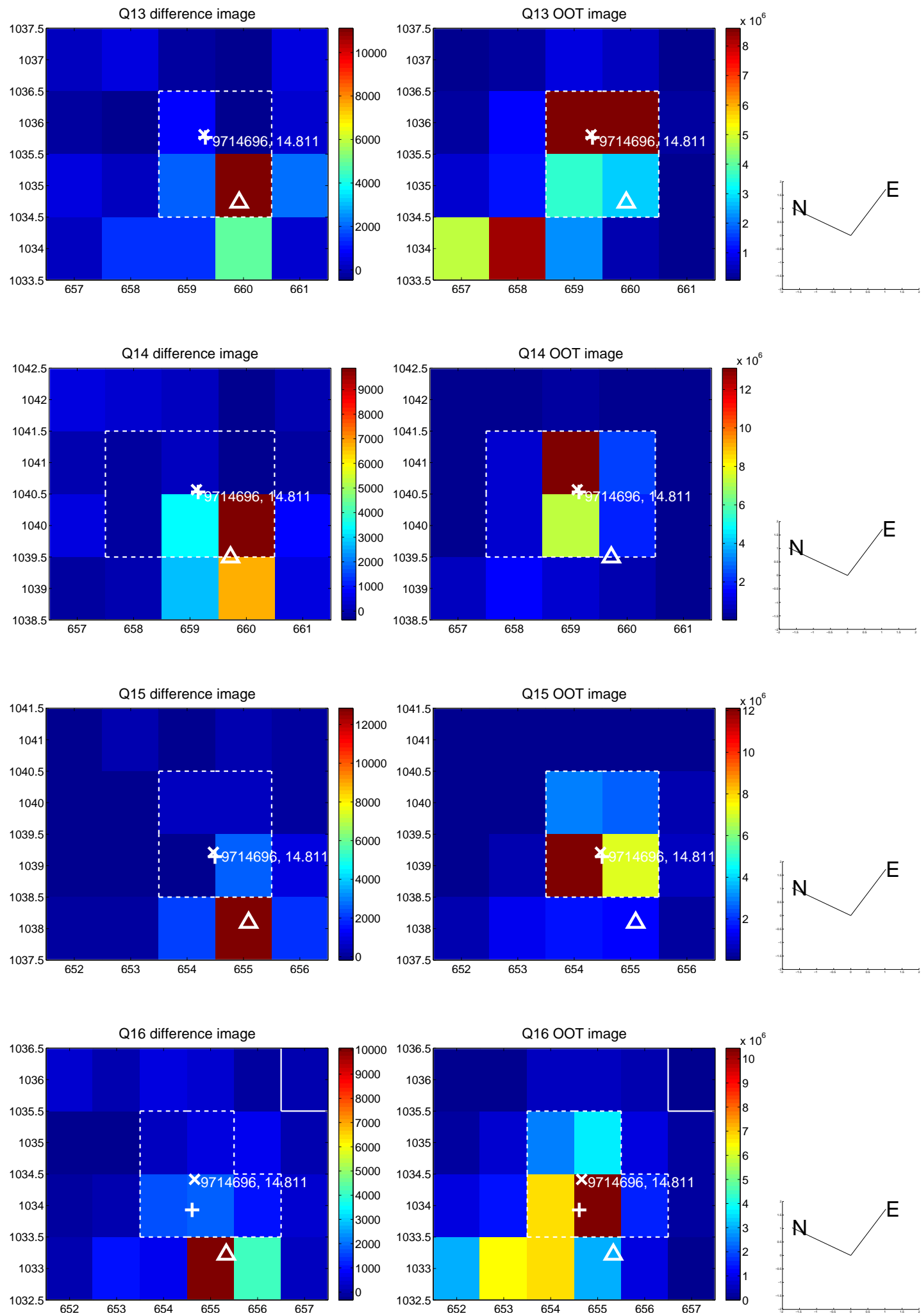
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



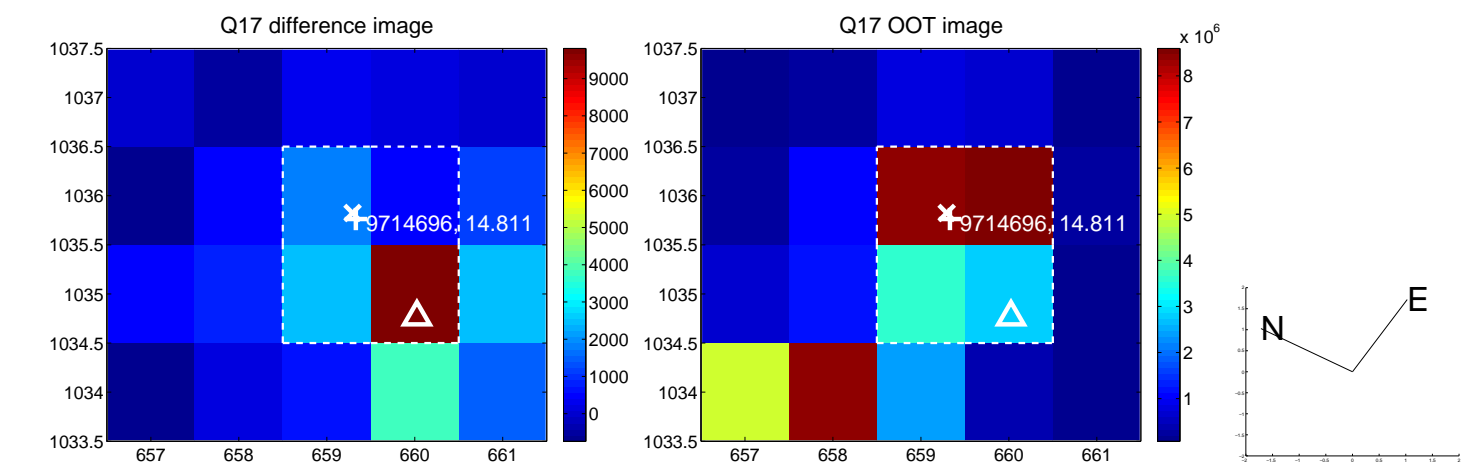
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



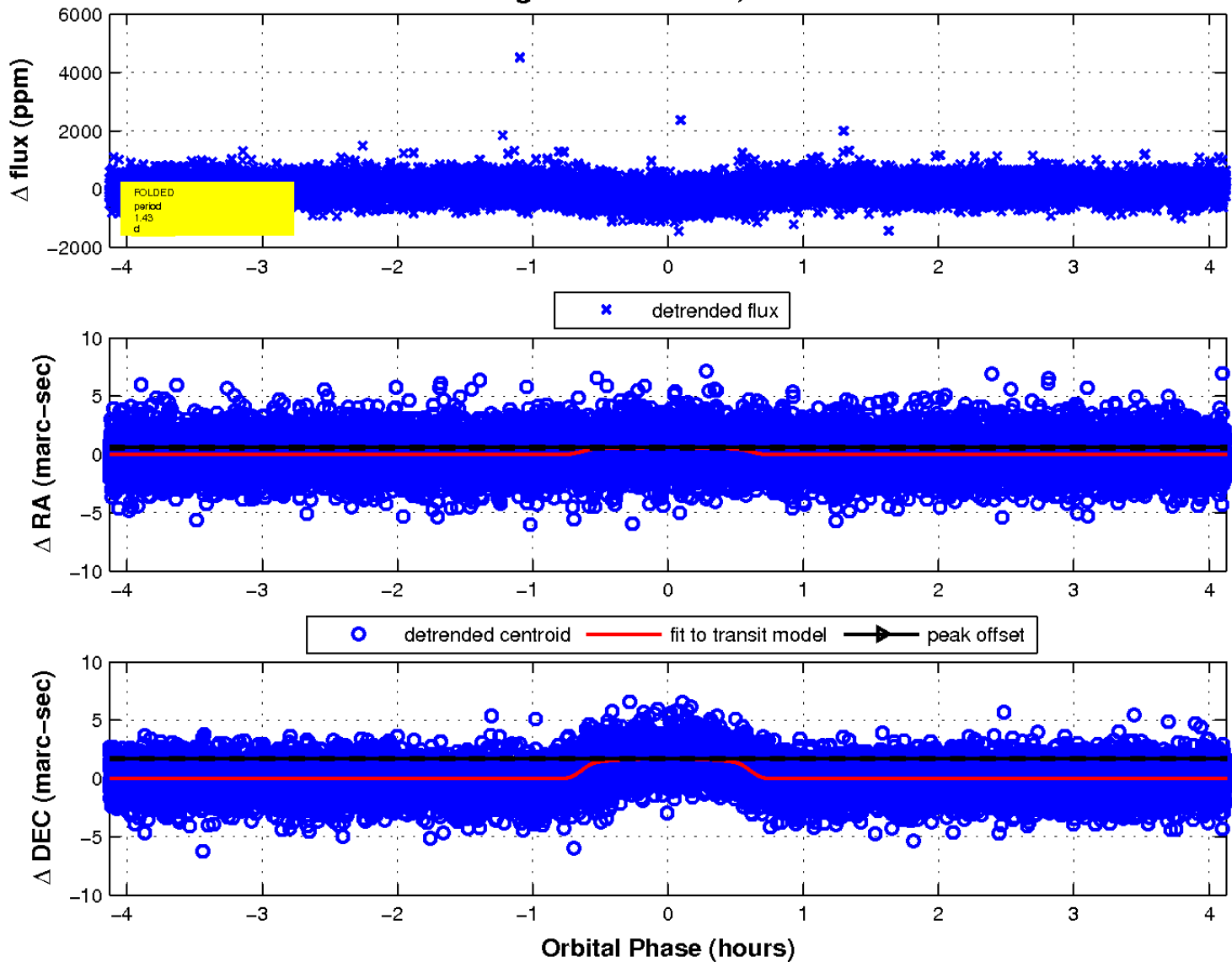
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

