

KIC 009991621

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})
009991621-01	OBS	3382.01	18.925044	145.552241	153.6	4.666	14.7	14.5	0.91	5455	1.31	39.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009991621-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET

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 009991621-01

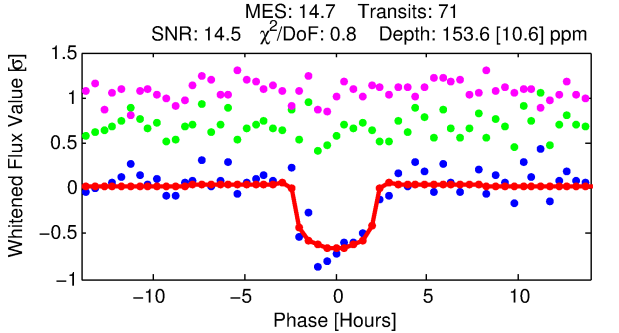
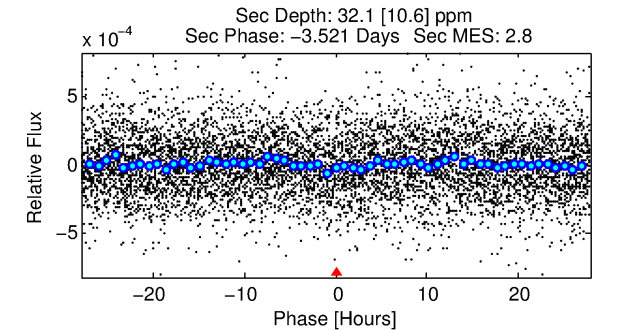
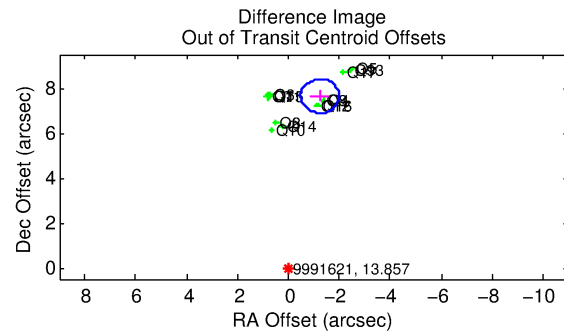
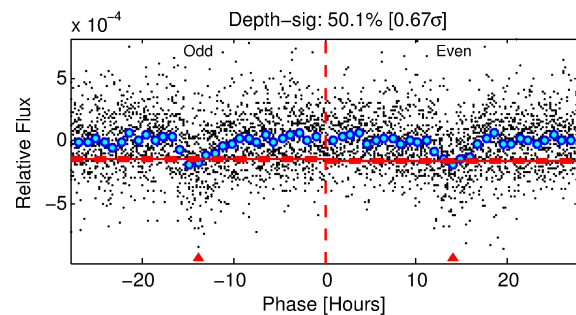
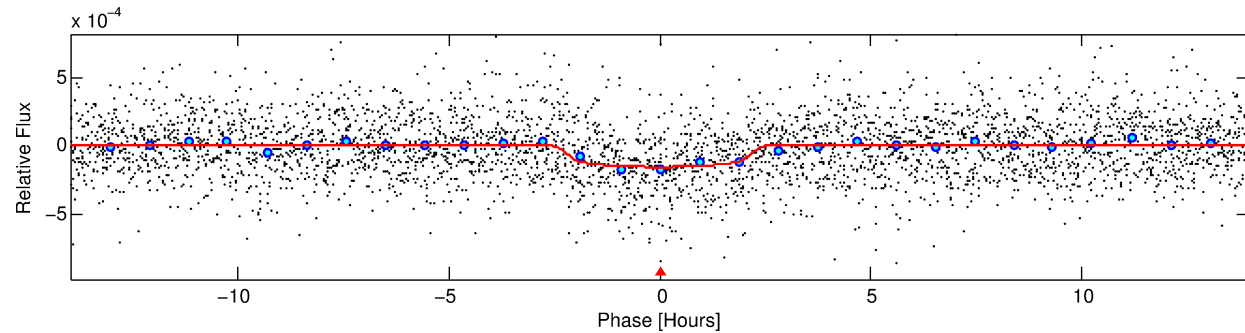
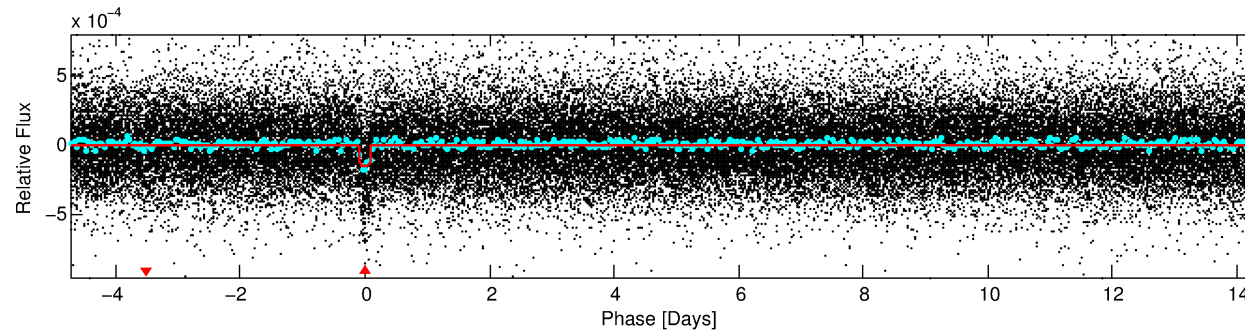
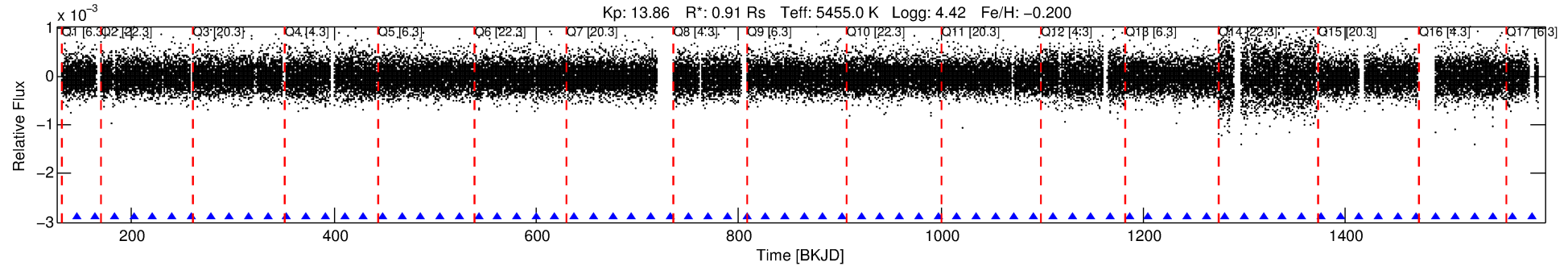
No Significant Match Found

DV One-Page Summary

KIC: 9991621 Candidate: 1 of 1 Period: 18.925 d

KOI: K03382.01 Corr: 0.824

Kp: 13.86 R*: 0.91 Rs Teff: 5455.0 K Logg: 4.42 Fe/H: -0.200



DV Fit Results:

Period = 18.92504 [0.00016] d
Epoch = 145.5522 [0.0066] BKJD
Rp/R* = 0.0132 [0.0057]
a/R* = 16.29 [30.95]
b = 0.87 [0.56]
Seff = 39.54 [14.73]
Teq = 639 [60] K
Rp = 1.31 [0.65] Re
a = 0.1288 [0.0291] AU
Ag = 170.83 [169.65] [1.00σ]
Teffp = 3574 [836] K [3.50σ]

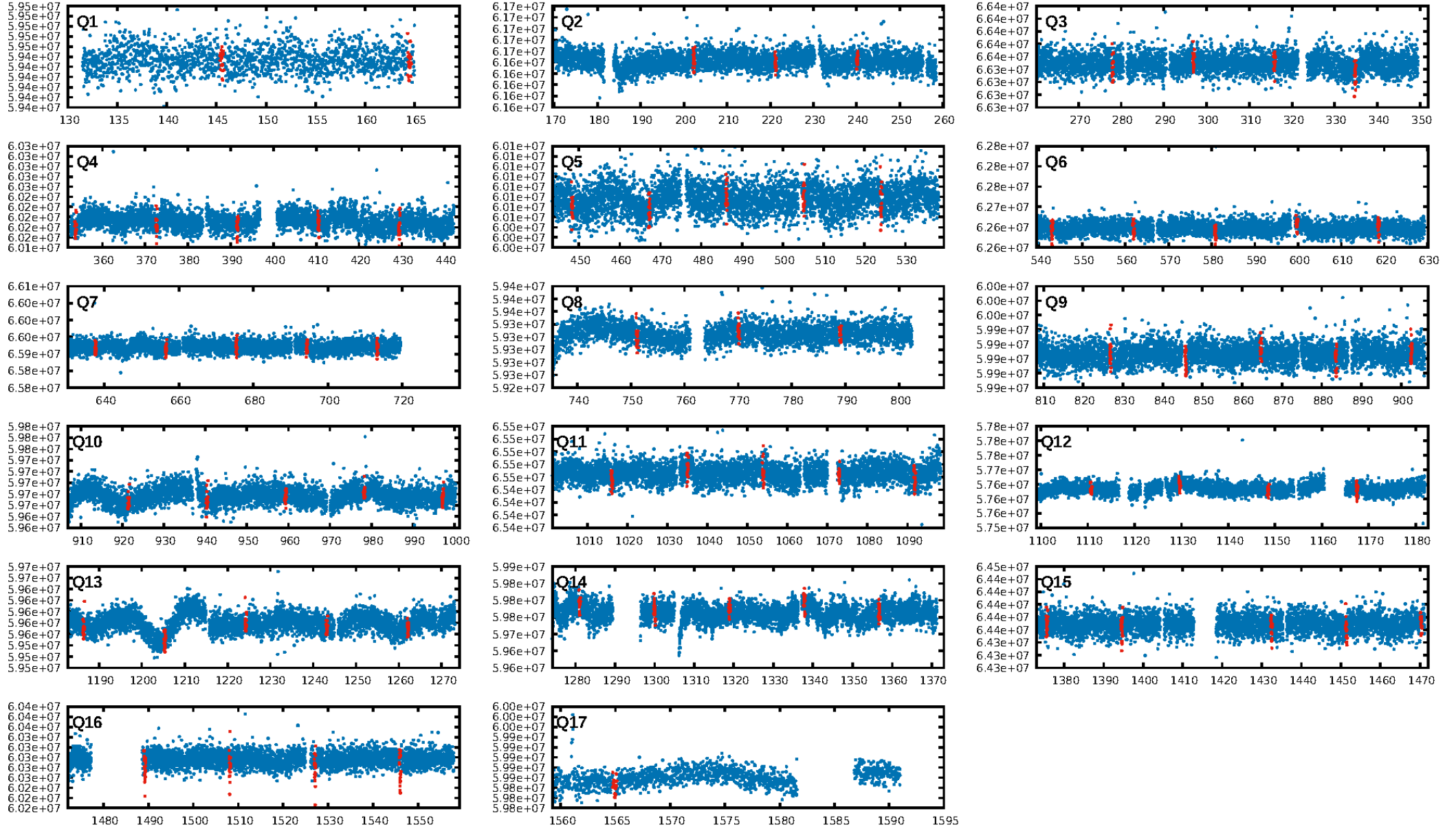
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.8%
ModelChiSquare2-fgt: 100.0%
Bootstrap-pfa: 2.19e-46
RollingBand-fgt: 1.00 [68/68]
GhostDiagnostic-chr: -0.491
Centroid-sig: 0.0%
Centroid-so: 32.792 arcsec [36.86σ]
OotOffset-rm: 7.739 arcsec [30.71σ]
KicOffset-rm: 8.087 arcsec [28.78σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

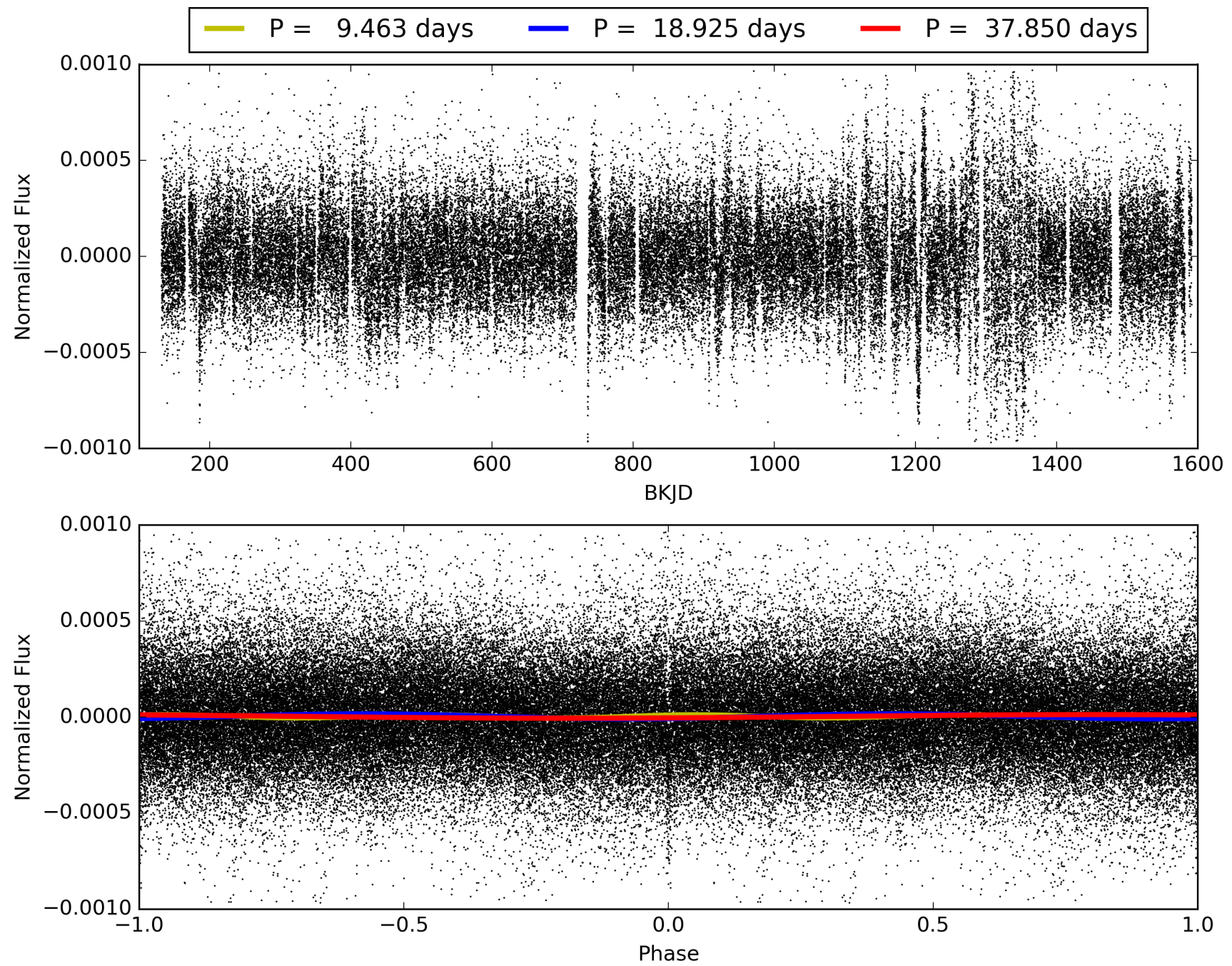
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:18:42 Z

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

TCE 009991621-01, PDC Light Curves

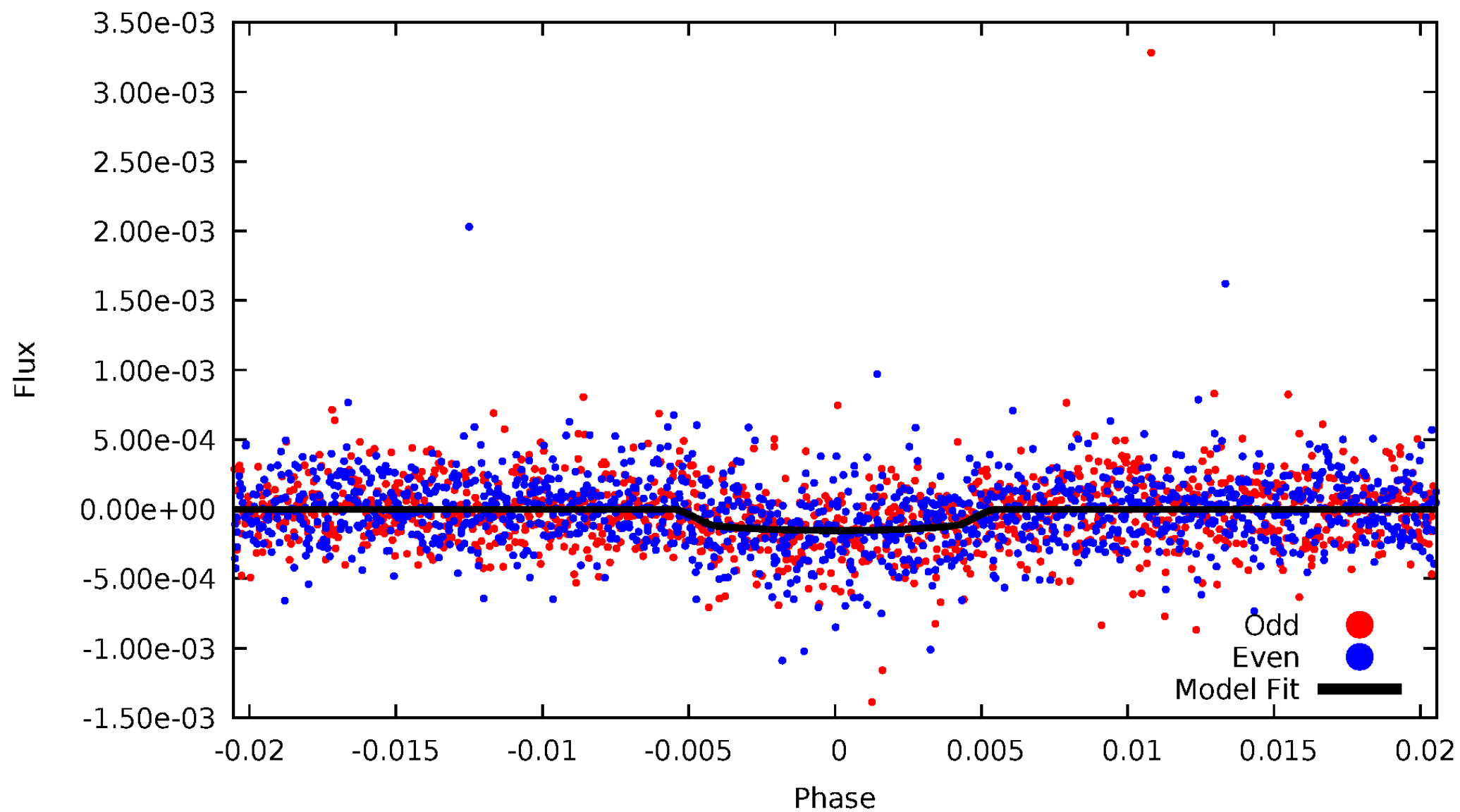


TCE 009991621-01



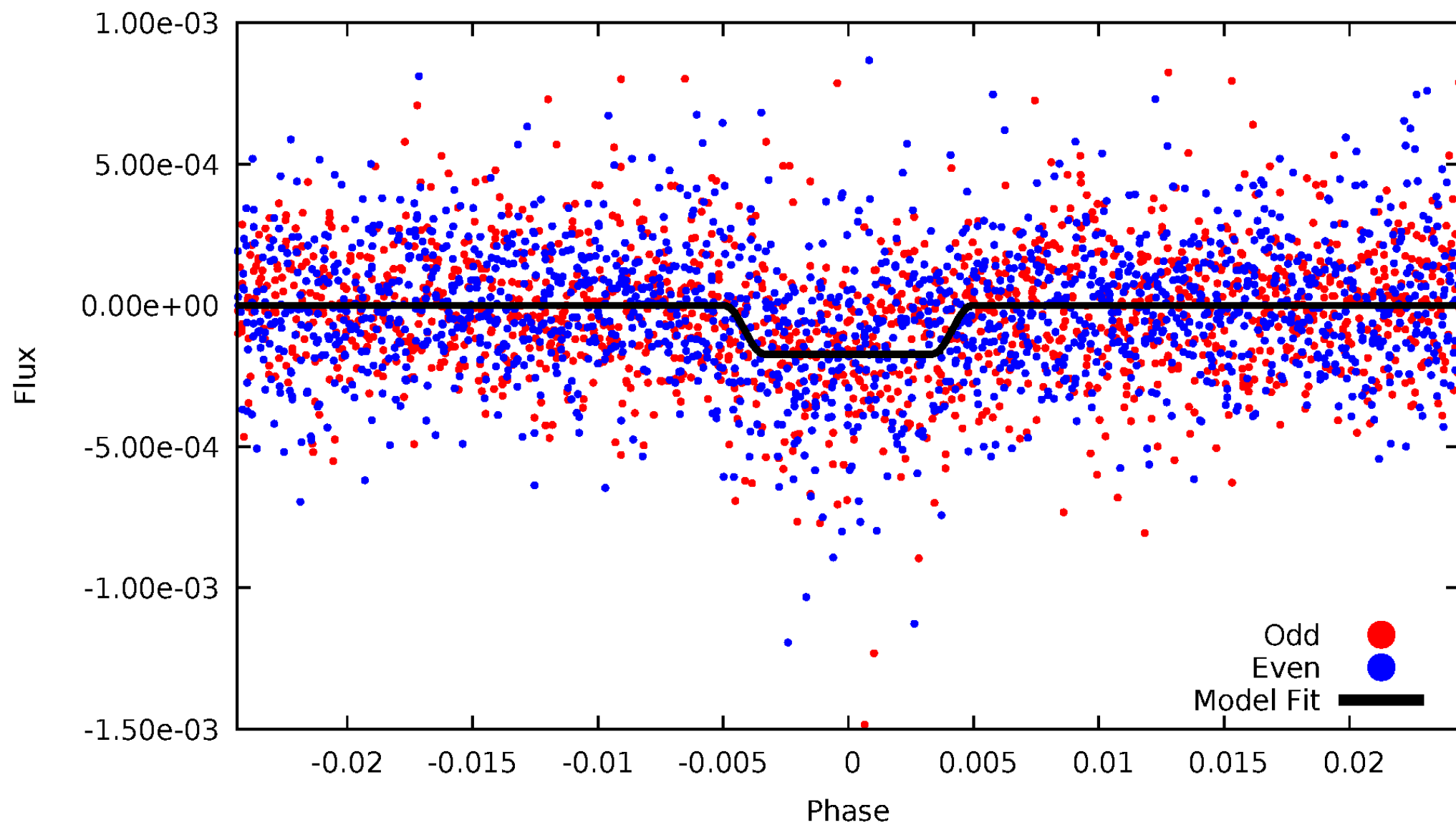
DV Odd/Even

TCE 009991621-01

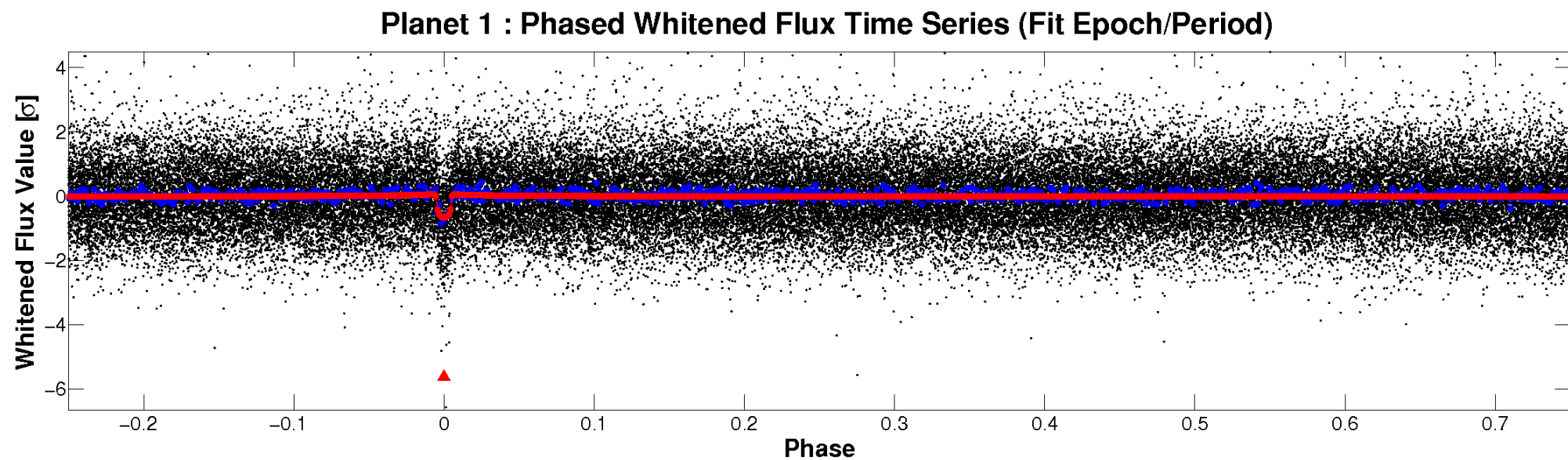
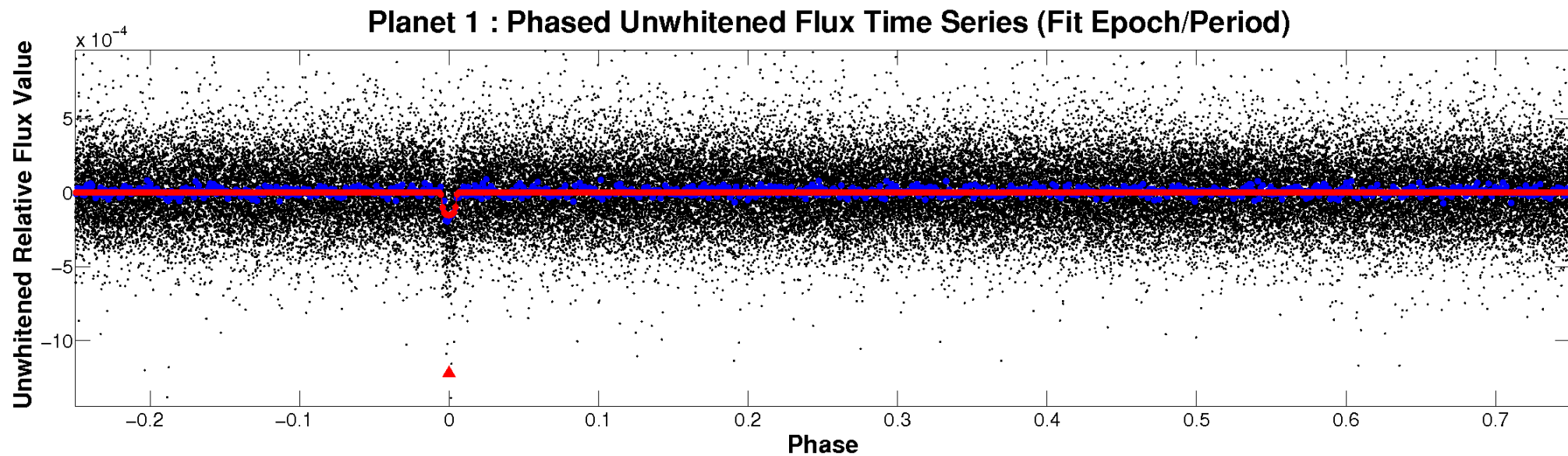


ALT Odd/Even

TCE 009991621-01

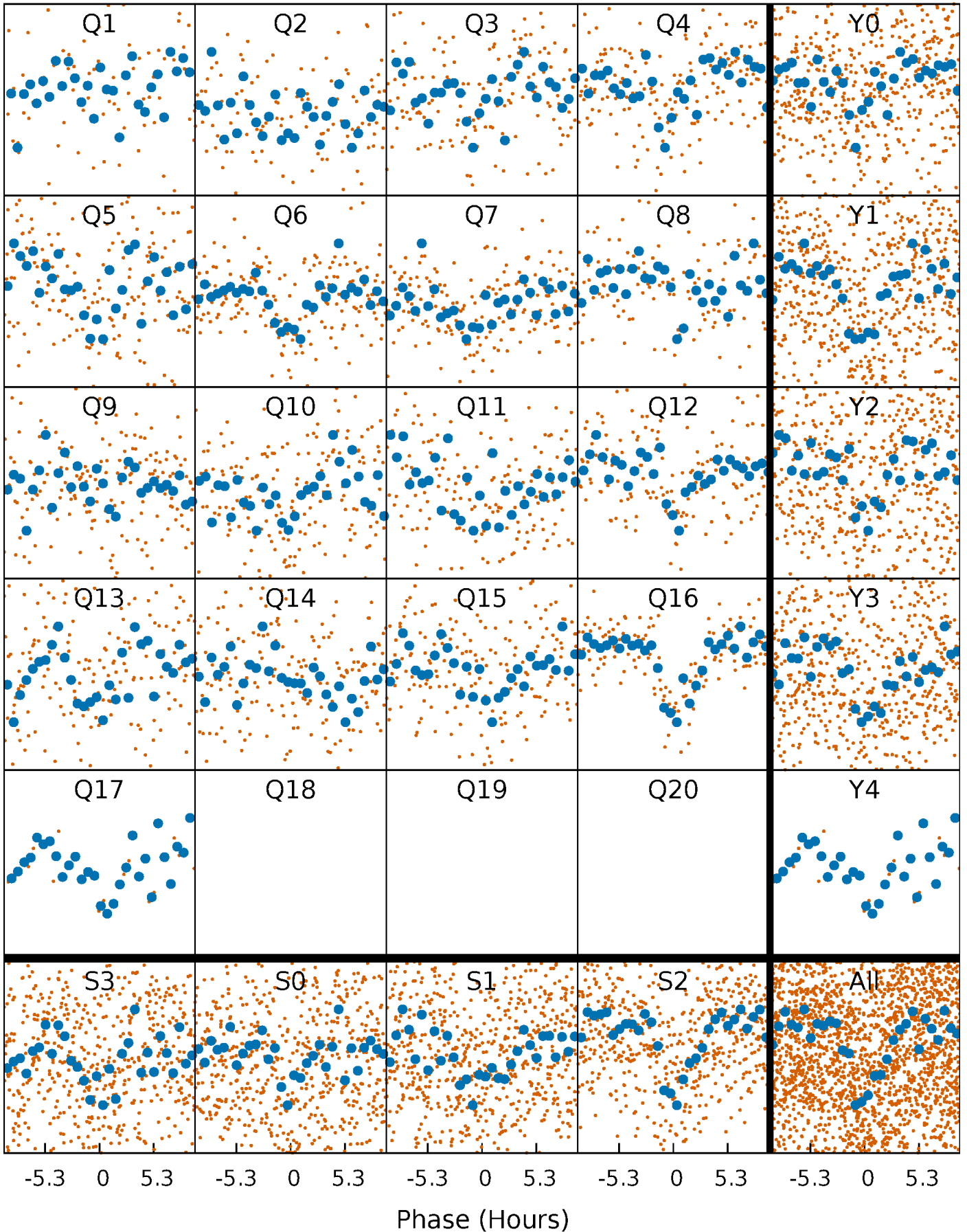


Non-Whitened Vs. Whitened Light Curve



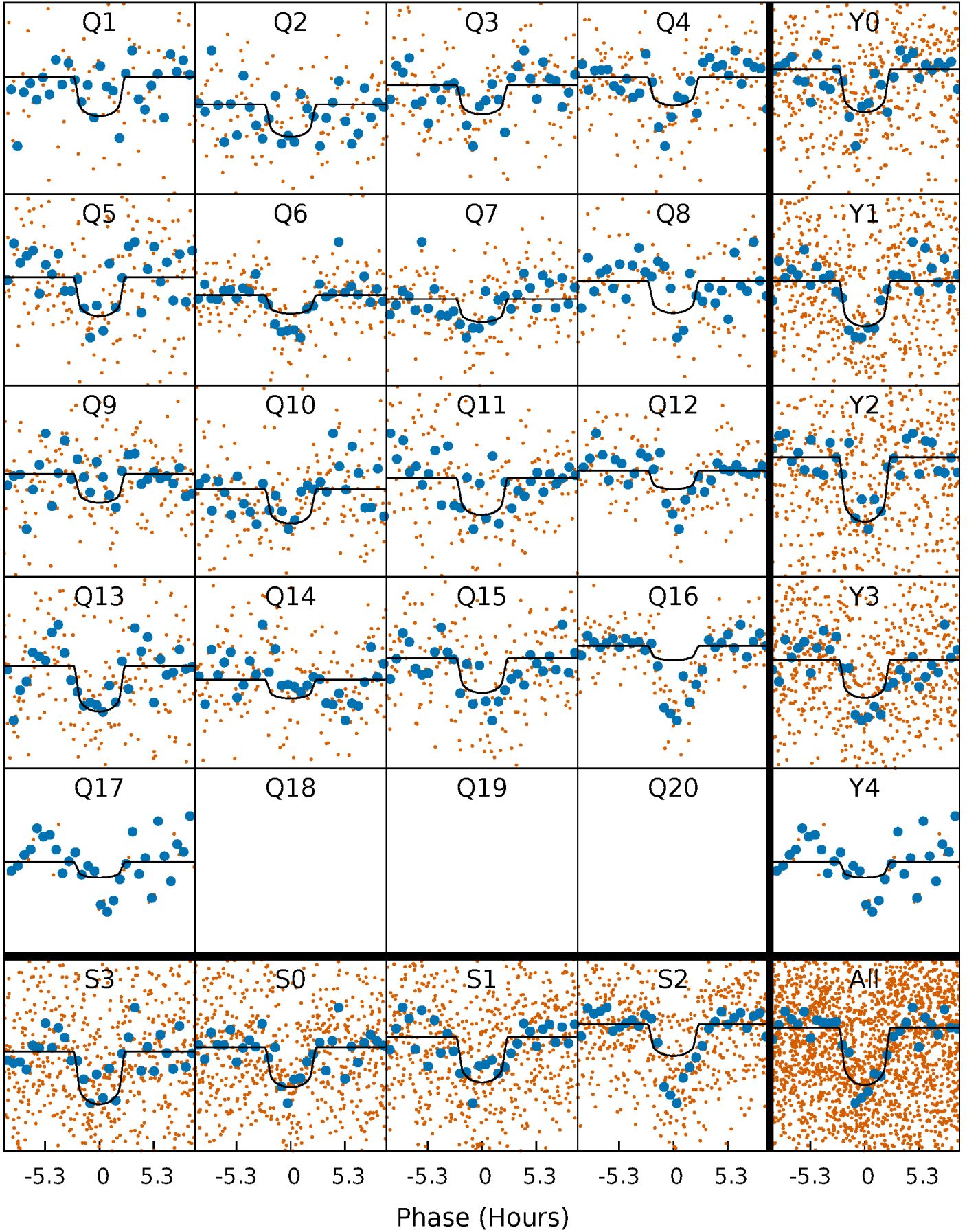
PDC Quarter-Phased Transit Curves

TCE 009991621-01 P= 18.925044 Days $T_0=145.552241$ (BKJD)



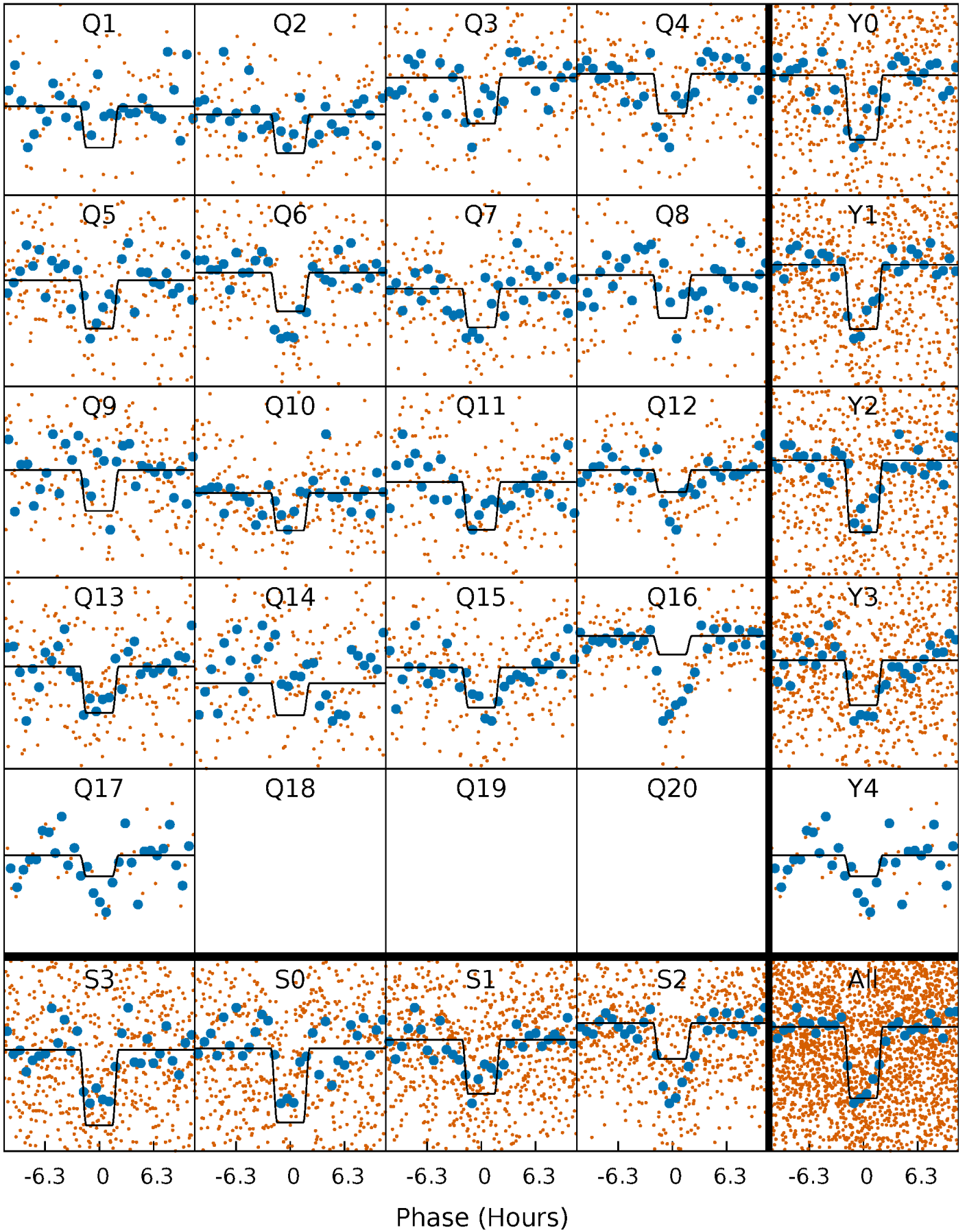
DV Quarter-Phased Transit Curves

TCE 009991621-01 P= 18.925044 Days $T_0=145.552241$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

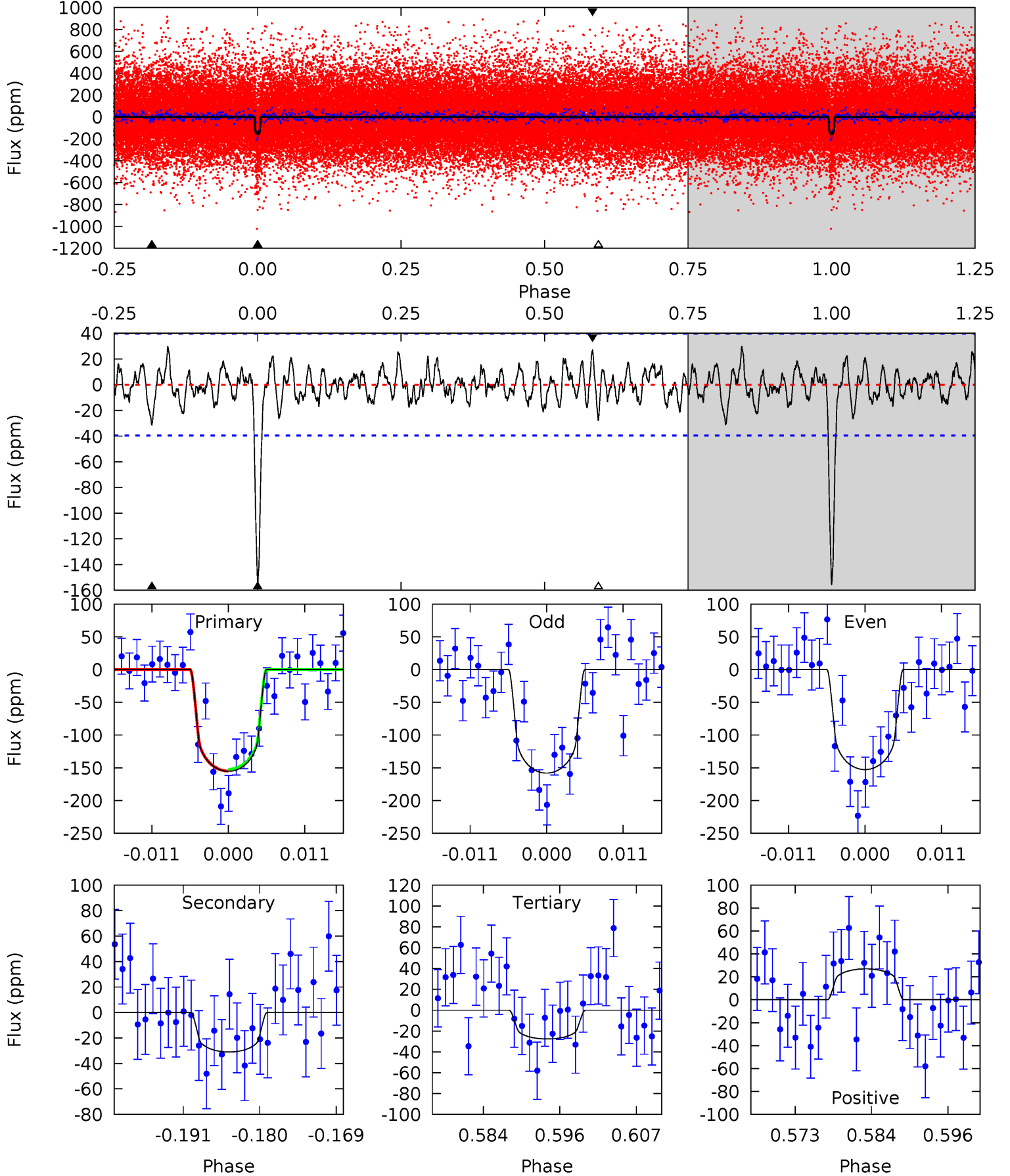
TCE 009991621-01 P= 18.925207 Days $T_0=145.551960$ (BKJD)



DV Model-Shift Uniqueness Test

009991621-01, P = 18.925044 Days, E = 126.627197 Days

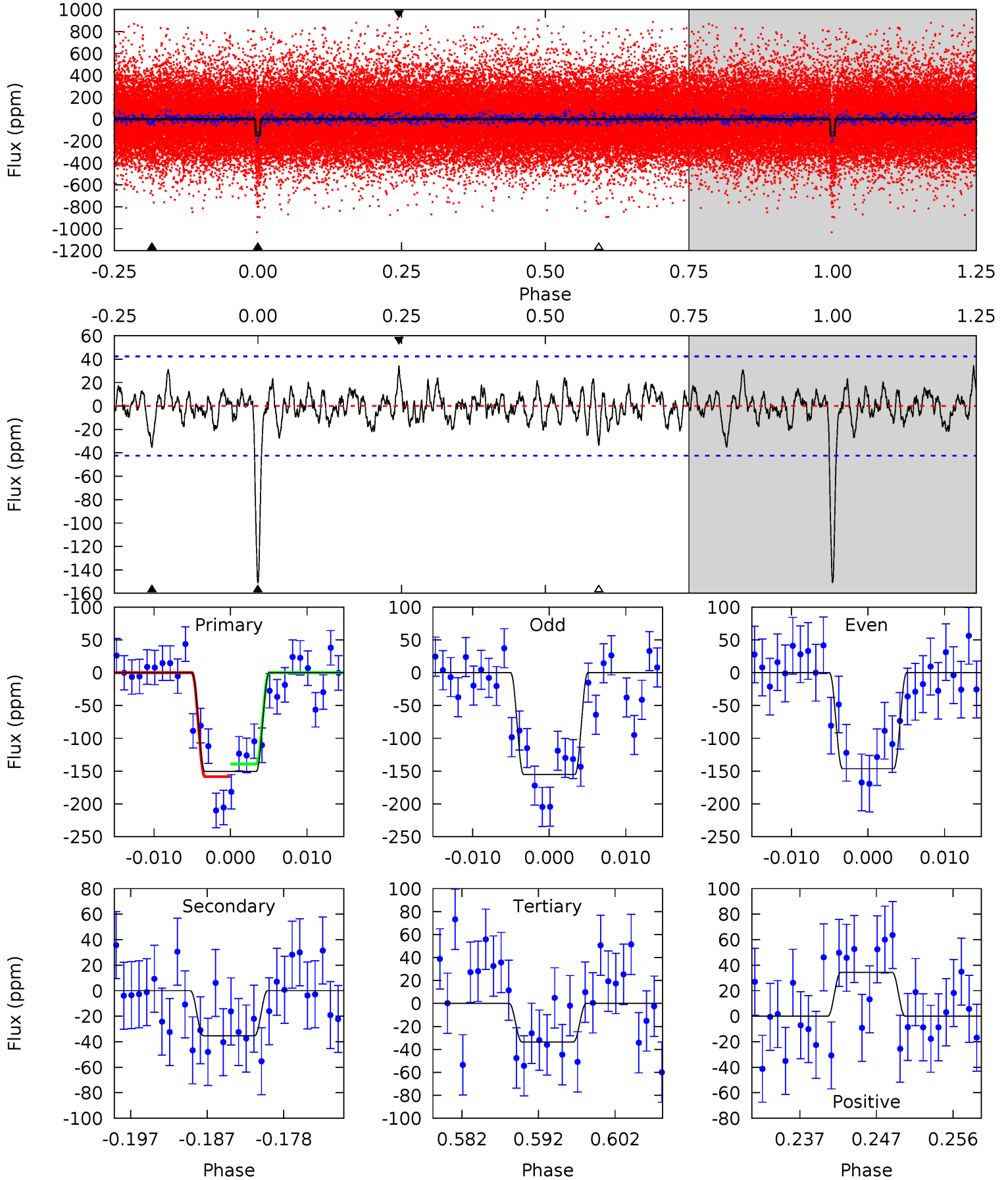
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.6	3.92	3.49	3.40	5.00	2.54	1.24	16.1	16.2	0.43	0.52	0.35	1.21	0.16	0.17



Alt Model-Shift Uniqueness Test

009991621-01, P = 18.925207 Days, E = 126.626753 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	4.17	3.97	4.07	5.03	2.58	1.20	13.9	13.8	0.20	0.10	0.53	1.28	0.19	1.14



Stellar Parameters For KIC 009991621

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5455^{+162}_{-146}	$4.421^{+0.153}_{-0.204}$	$-0.200^{+0.300}_{-0.300}$	$0.909^{+0.222}_{-0.148}$	$0.795^{+0.125}_{-0.054}$	$1.492^{+0.905}_{-0.718}$
	+3%/-3%	+3%/-5%	+150%/-150%	+24%/-16%	+16%/-7%	+61%/-48%
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 009991621-01 / KOI 3382.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-31 ± 8	$1.34^{+0.57}_{-0.59}$	899^{+63}_{-56}	3899^{+848}_{-469}	159^{+319}_{-85}
Alt.	-35 ± 8	$1.31^{+0.64}_{-0.57}$	901^{+71}_{-53}	3980^{+887}_{-508}	189^{+365}_{-110}

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

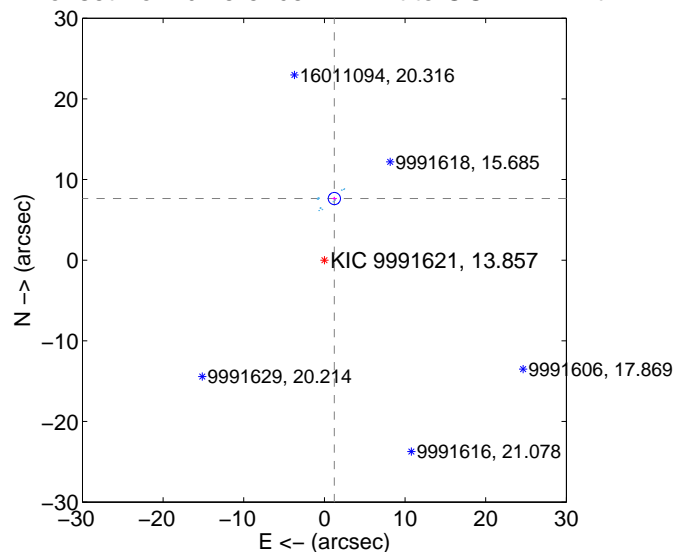
Supplemental centroid analysis for 009991621-01. Kepler magnitude: 13.86. Transit SNR 14.51

There are 16 quarters with good PRF difference image offsets

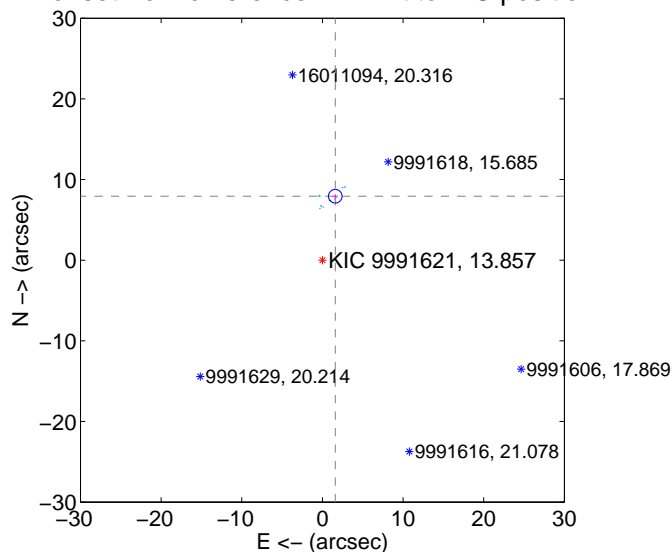
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.739 \pm 0.252	30.71	-1.235 \pm 0.324	7.640 \pm 0.217
PRF-fit source offset from KIC position	8.087 \pm 0.281	28.78	-1.595 \pm 0.326	7.928 \pm 0.239
photometric centroid source offset	32.79 \pm 0.89	36.86	1.48 \pm 0.92	32.76 \pm 0.89

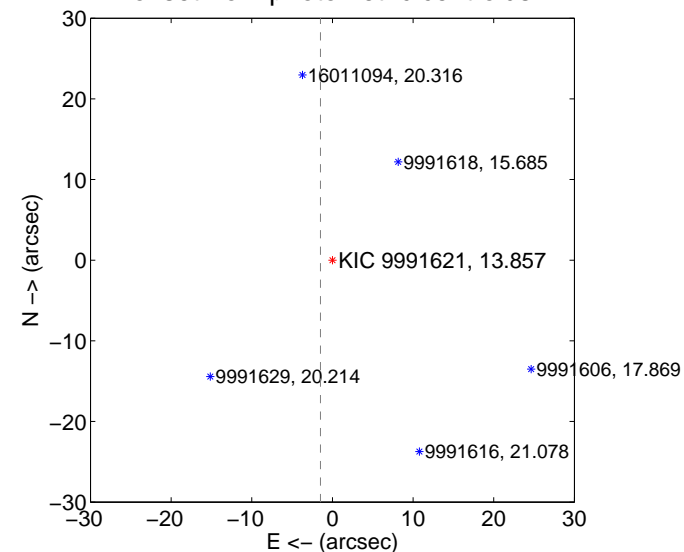
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

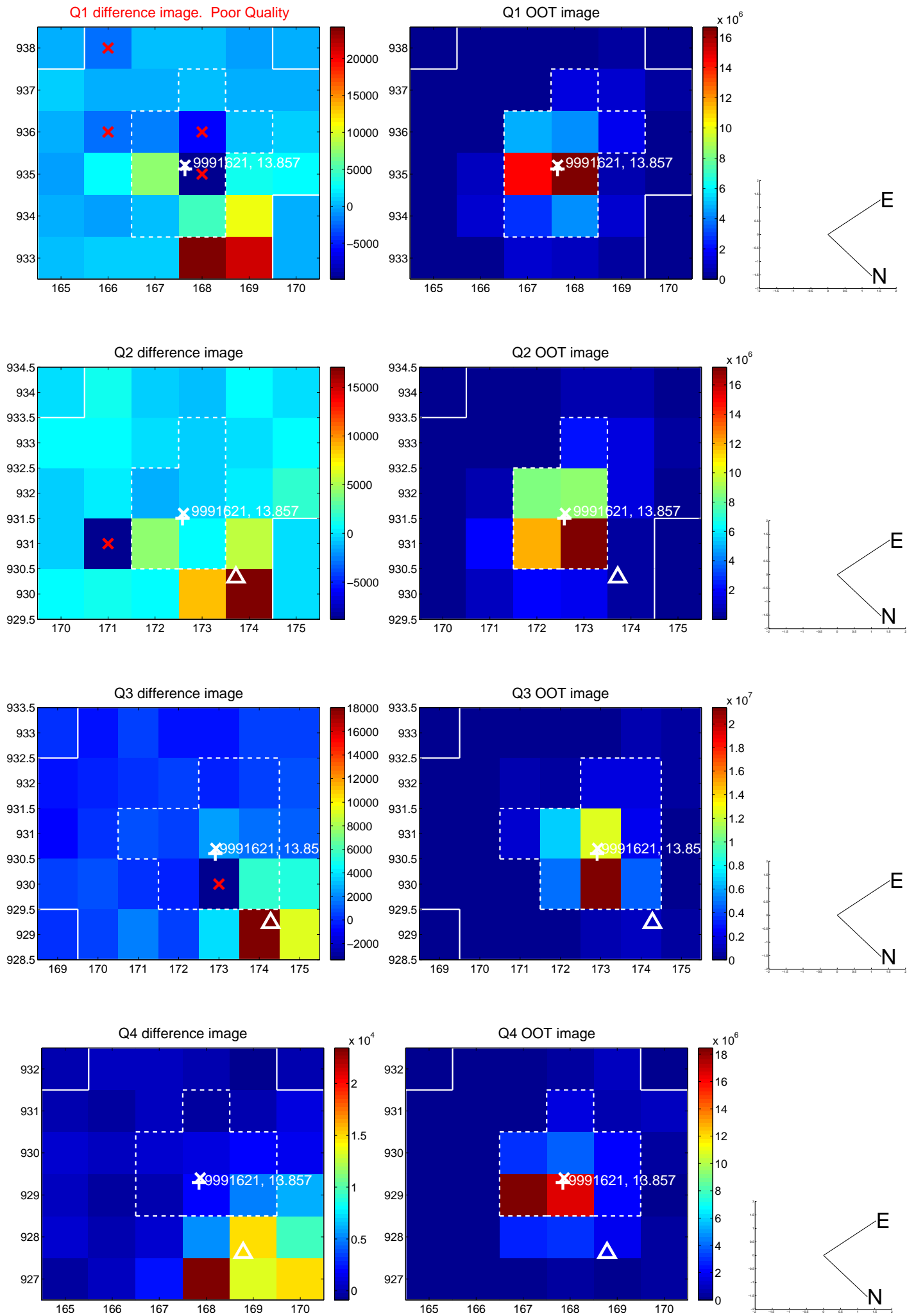


offset from photometric centroids

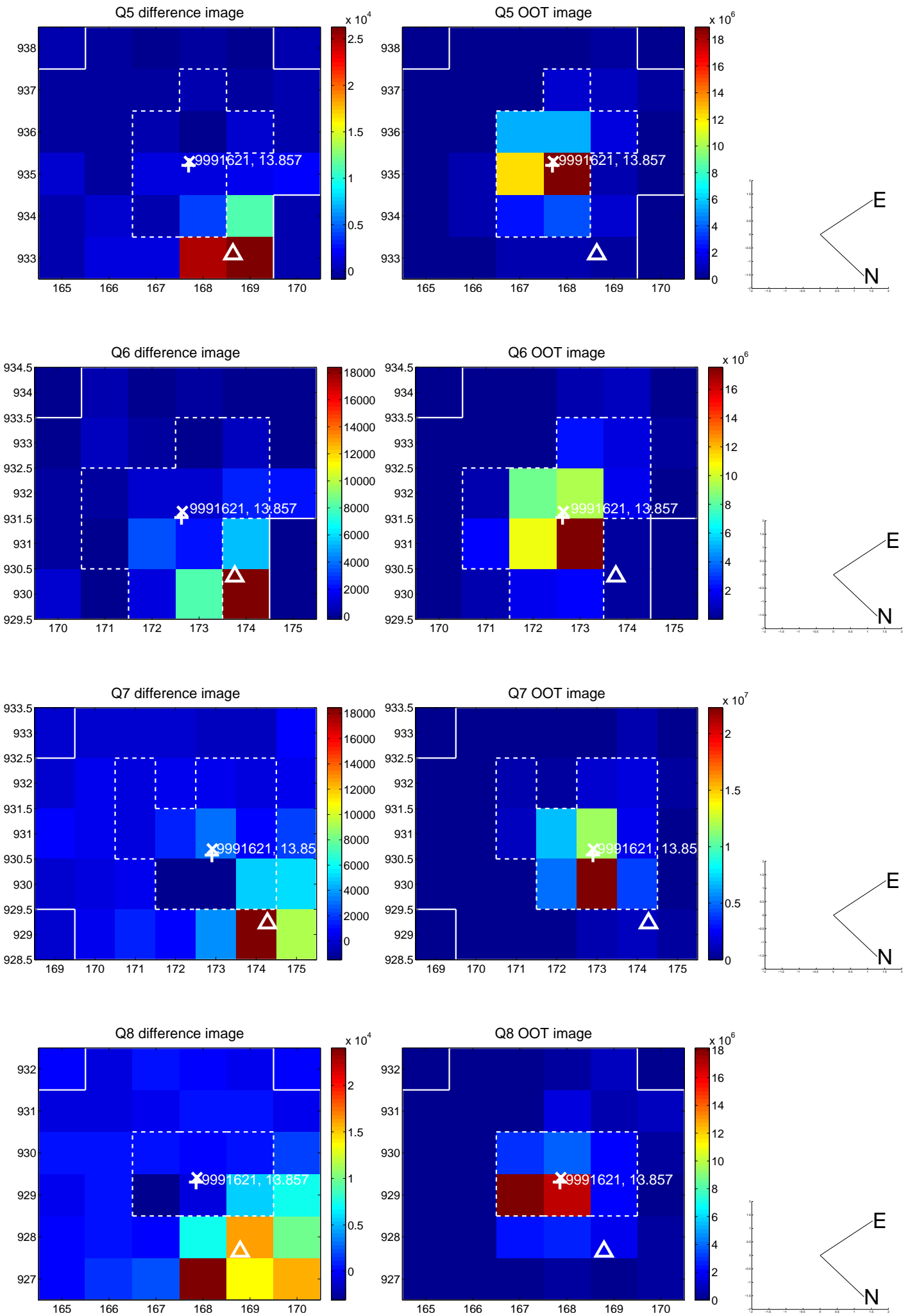


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

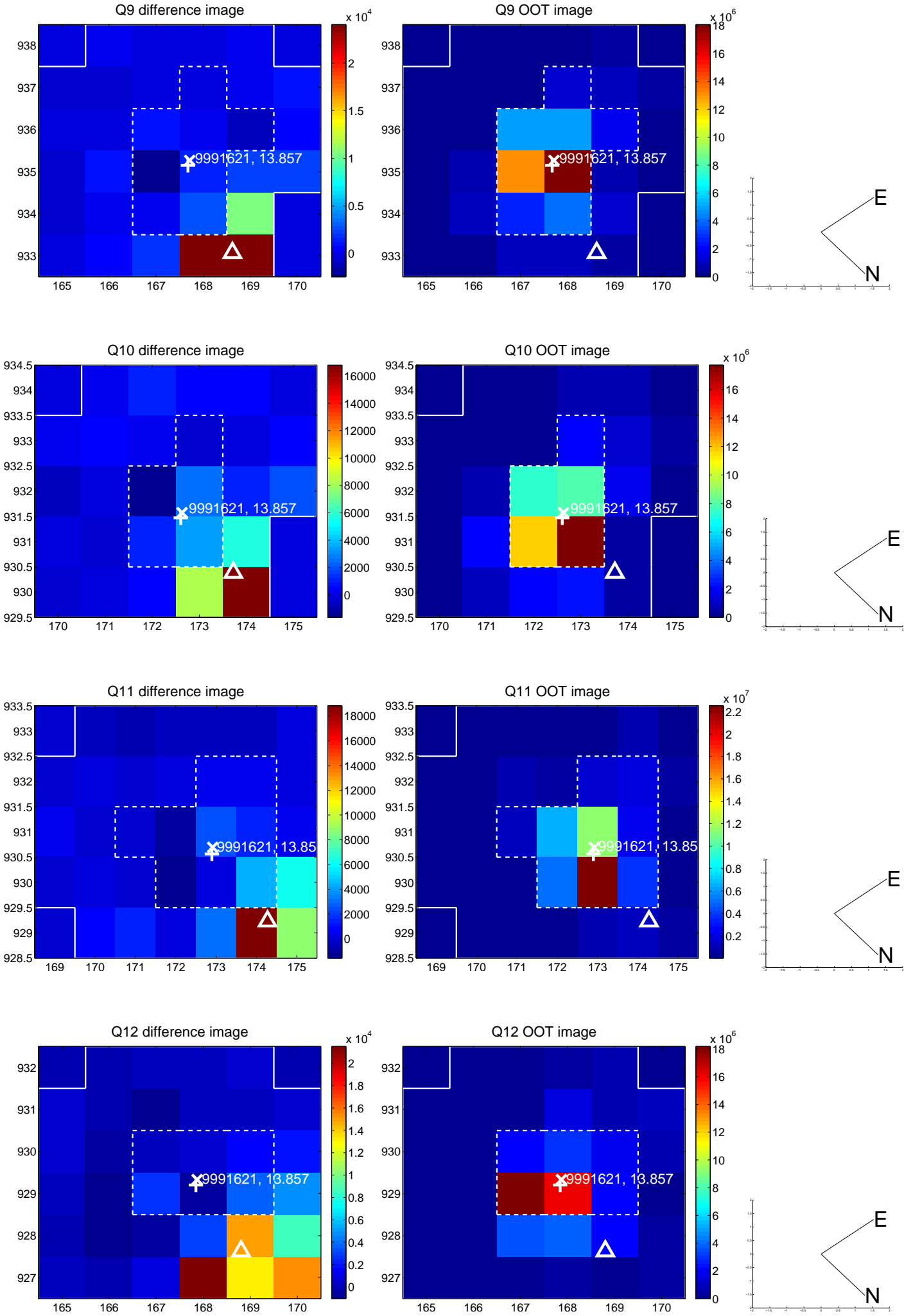
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



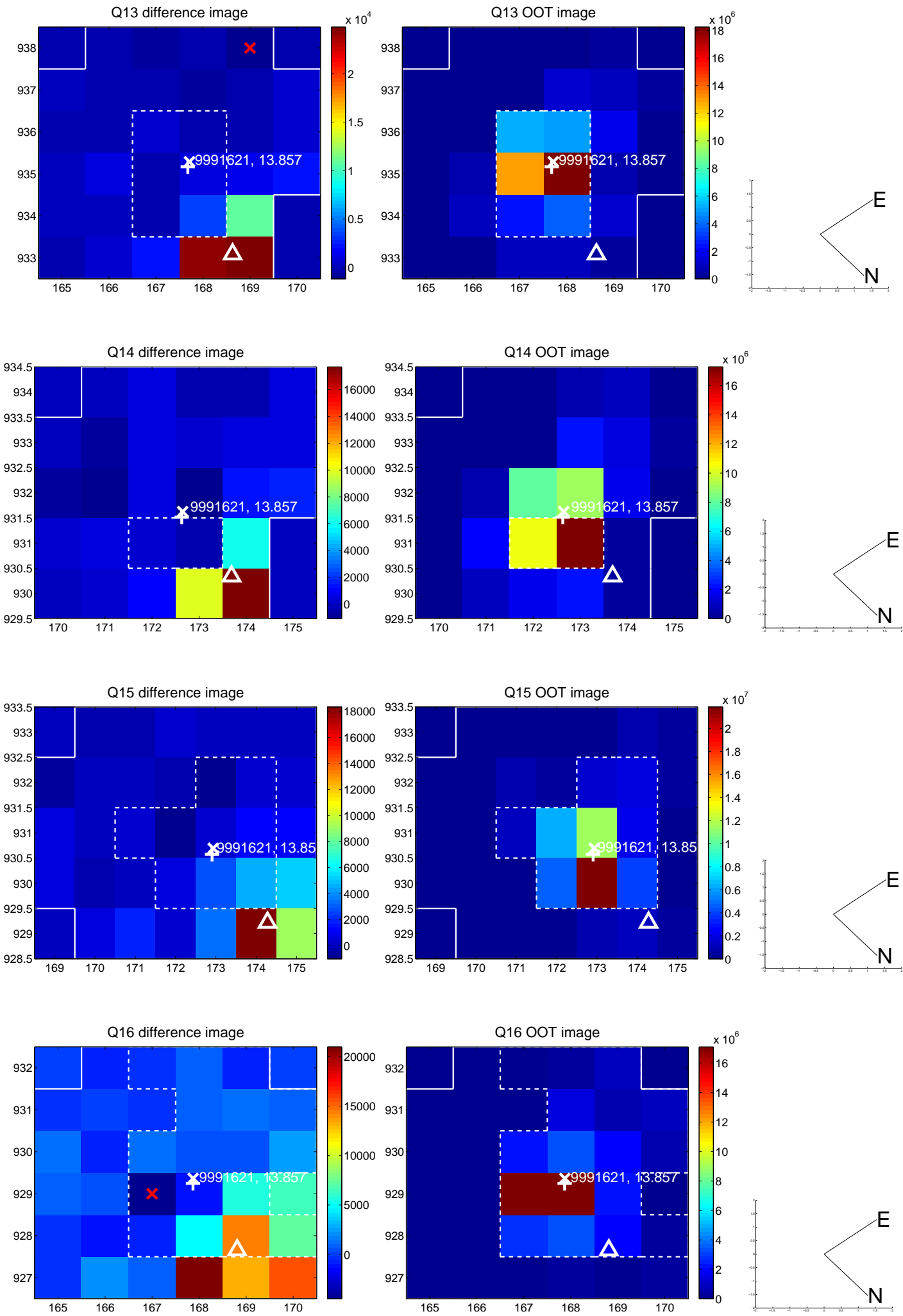
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



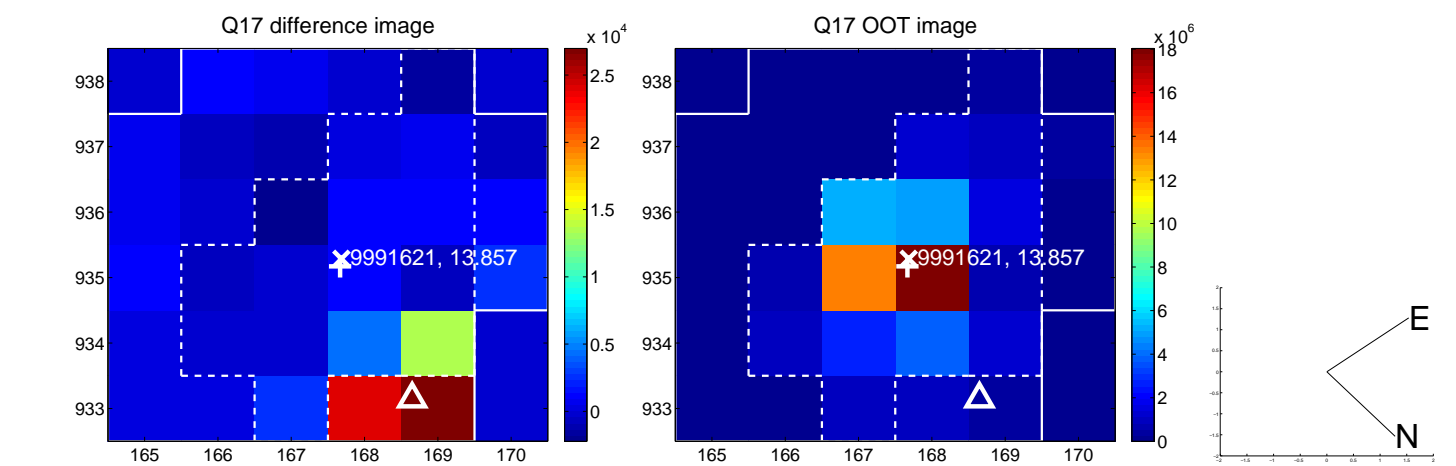
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



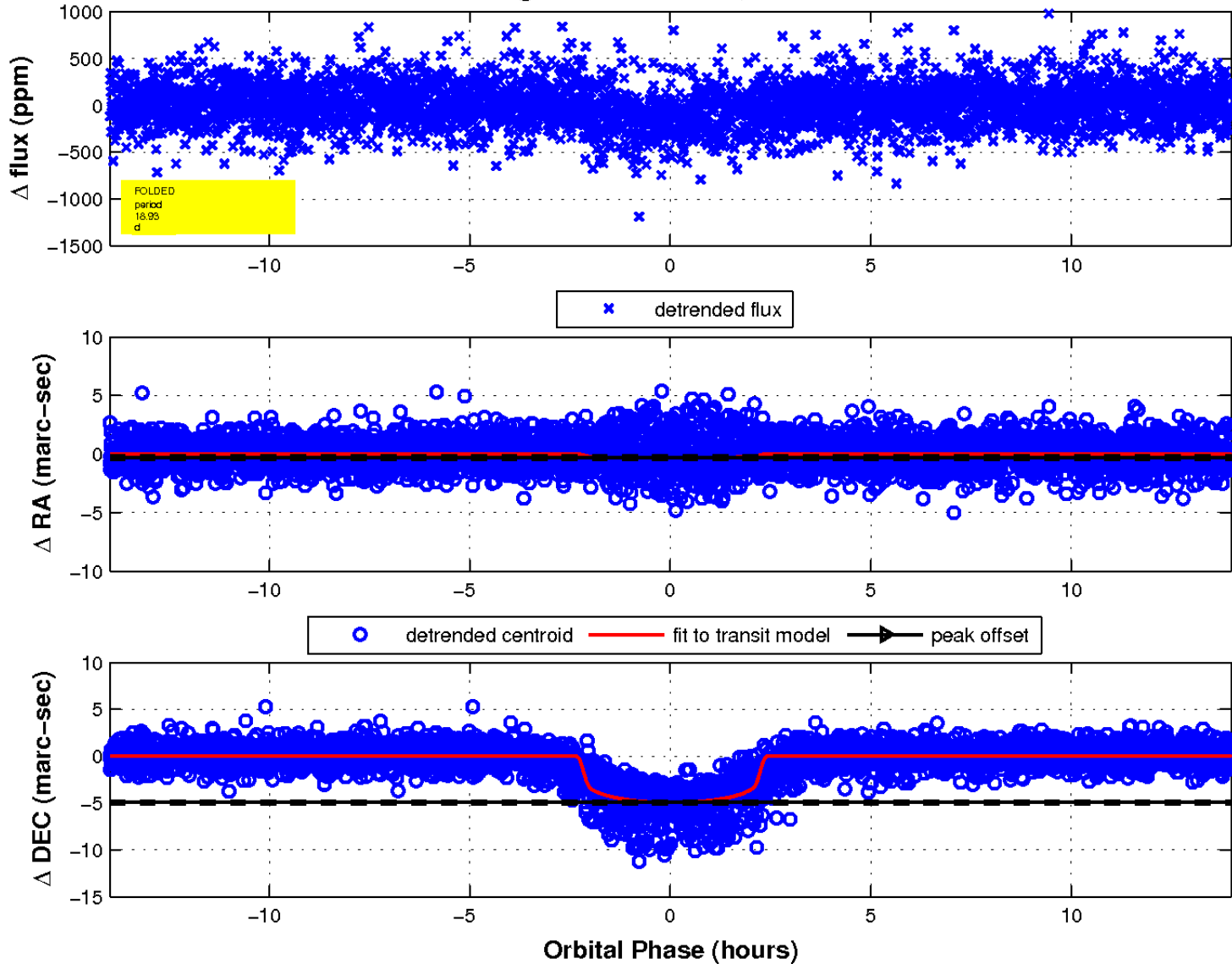
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

