

KIC 004245861

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})
004245861-01	OBS	5050.01	11.257997	140.789394	284.3	17.426	16.1	18.1	0.72	5242	1.32	46.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004245861-01	OBS	FP	0.00	0	0	1	1	HALO_GHOST—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 004245861-01

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
004245861-01	4245861	004245897-pri	4245897	1:1	59.0	6	-13	12.54	15.90	2665.10	Direct-PRF	0	0.57	0.02

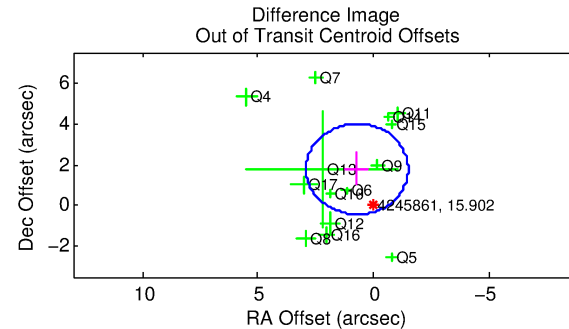
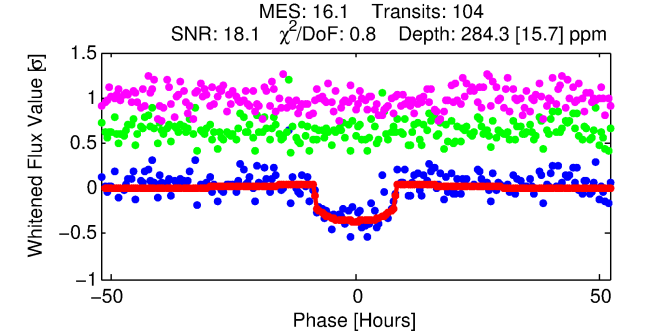
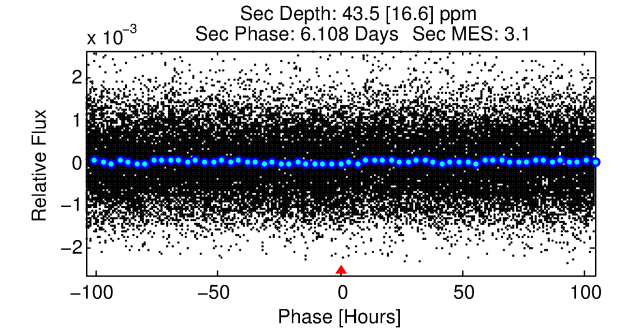
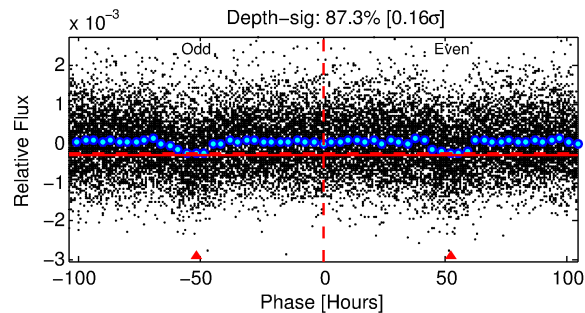
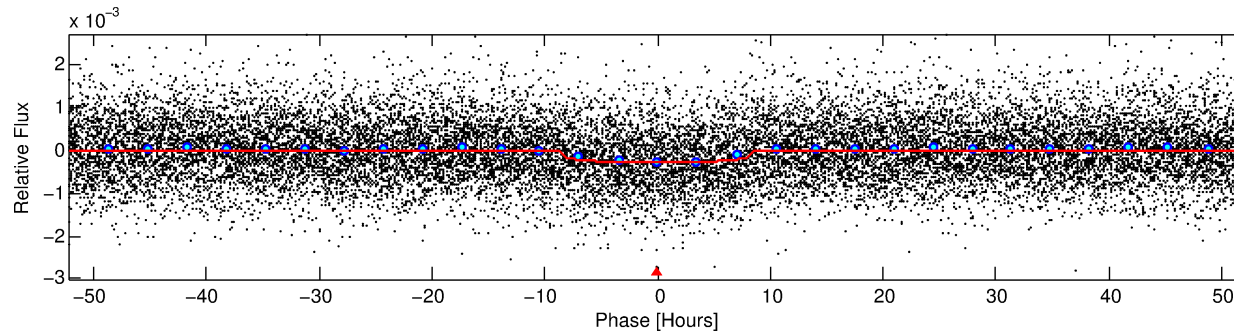
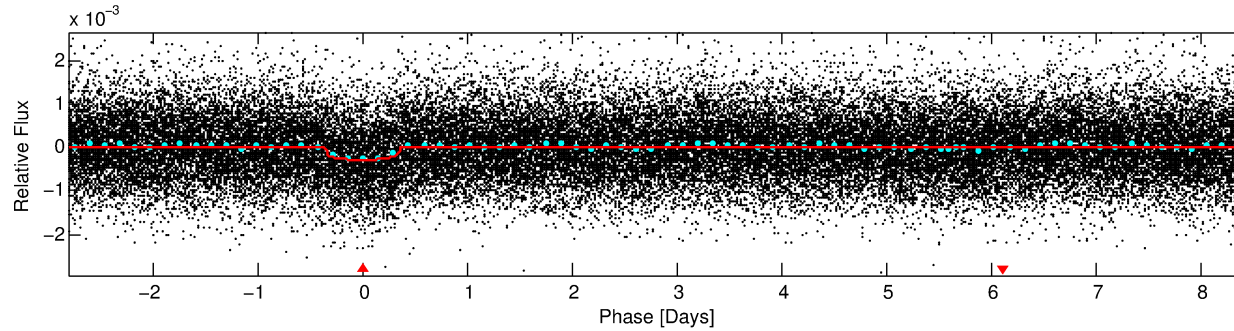
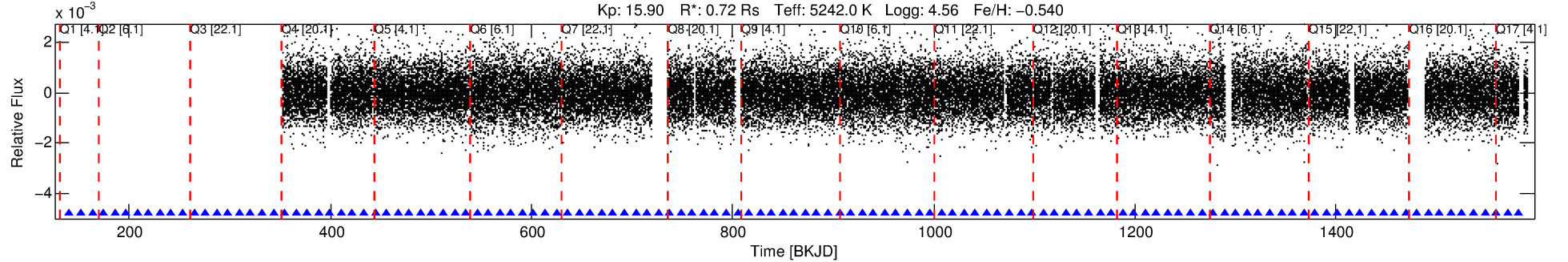
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match 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: 4245861 Candidate: 1 of 1 Period: 11.258 d

KOI: K05050.01 Corr: 0.979

Kp: 15.90 R*: 0.72 Rs Teff: 5242.0 K Logg: 4.56 Fe/H: -0.540



DV Fit Results:

Period = 11.25800 [0.00023] d
Epoch = 140.7894 [0.0174] BKJD
Rp/R* = 0.0167 [0.0033]
a/R* = 3.54 [2.64]
b = 0.74 [0.50]
Seff = 46.98 [10.00]
Teq = 668 [36] K
Rp = 1.32 [0.31] Re
a = 0.0866 [0.0093] AU
Ag = 103.50 [59.35] [1.73σ]
Teffp = 3292 [467] K [5.60σ]

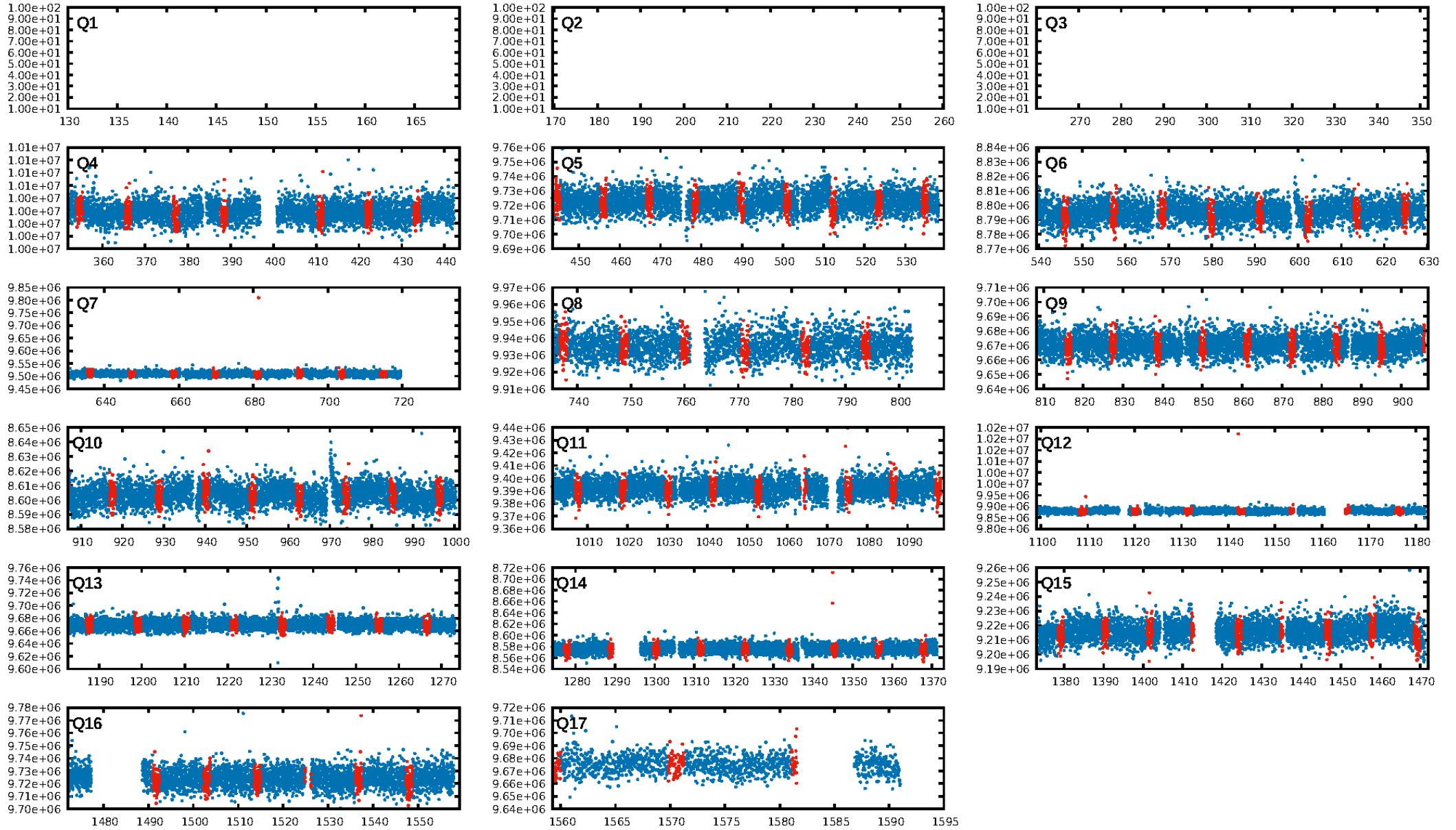
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 89.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.83e-57
RollingBand-fgt: 1.00 [101/101]
GhostDiagnostic-chr: 0.04082
Centroid-sig: 0.0%
Centroid-so: 3.708 arcsec [5.78σ]
OotOffset-rm: 1.923 arcsec [2.60σ]
KicOffset-rm: 1.469 arcsec [1.80σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.29 [4/14]
DiffImageOverlap-fno: 1.00 [14/14]

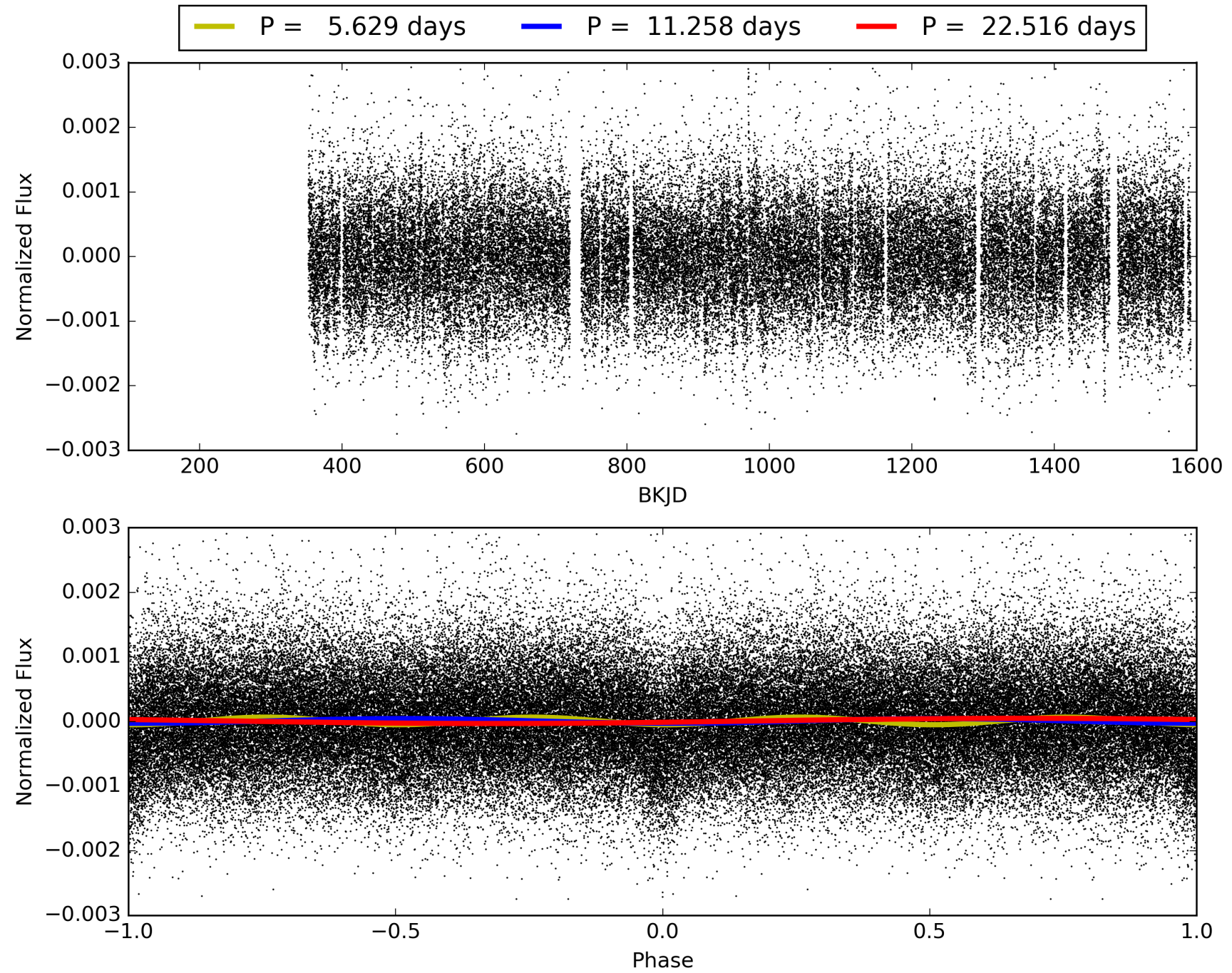
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:01:31 Z

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

TCE 004245861-01, PDC Light Curves

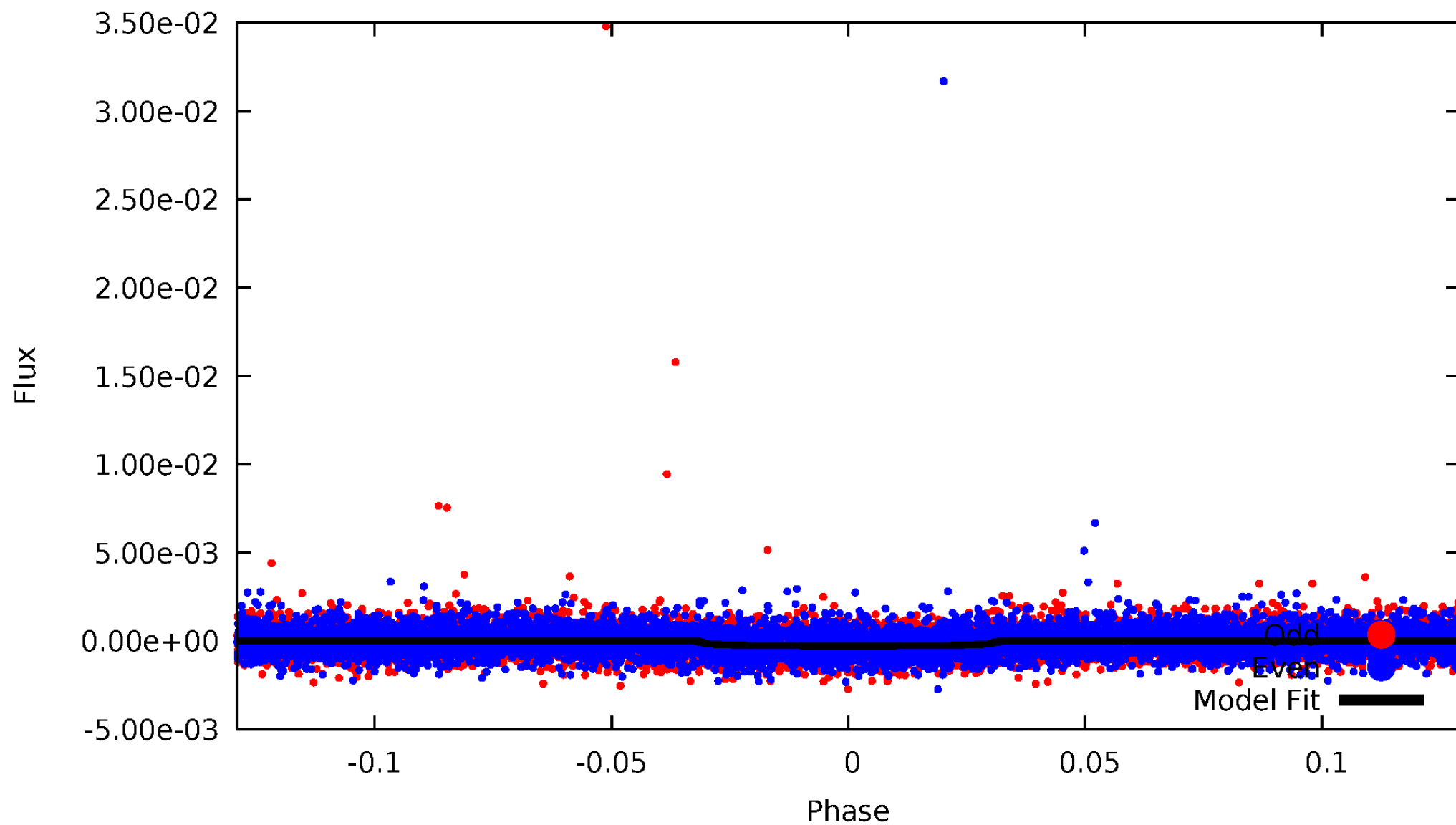


TCE 004245861-01



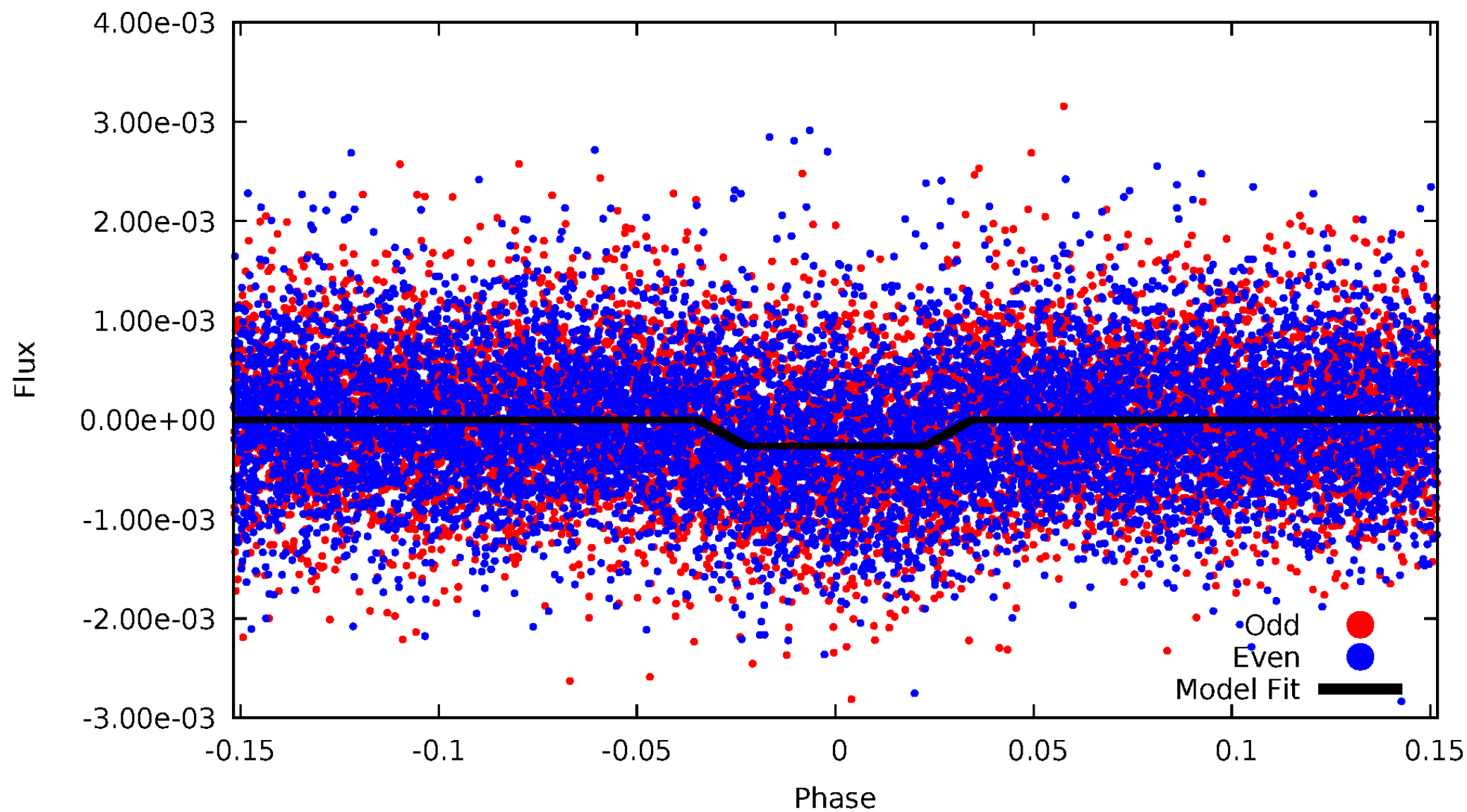
DV Odd/Even

TCE 004245861-01



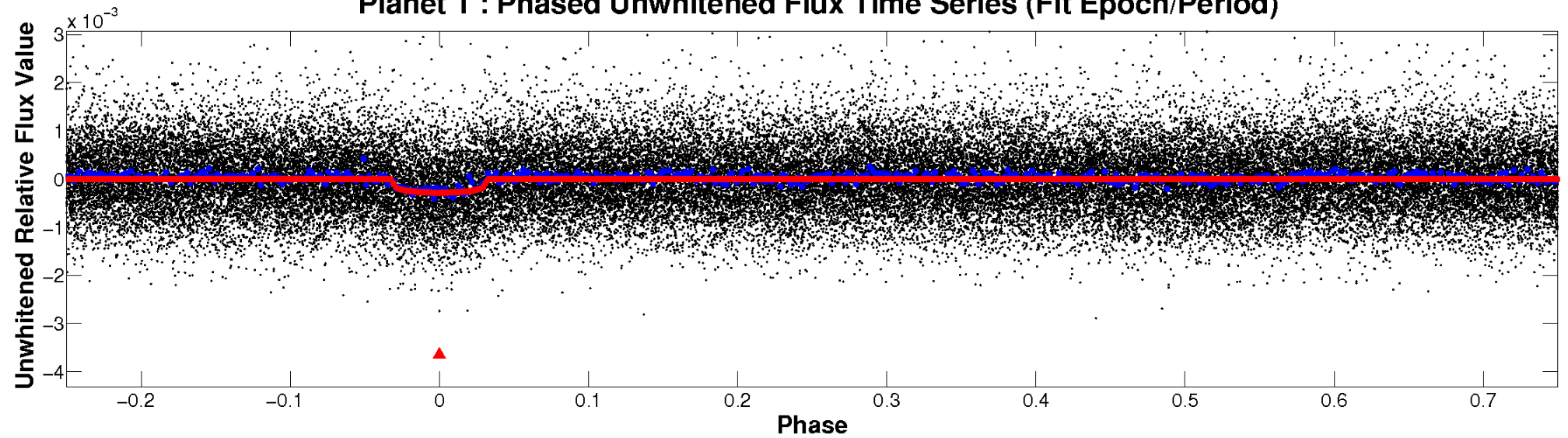
ALT Odd/Even

TCE 004245861-01

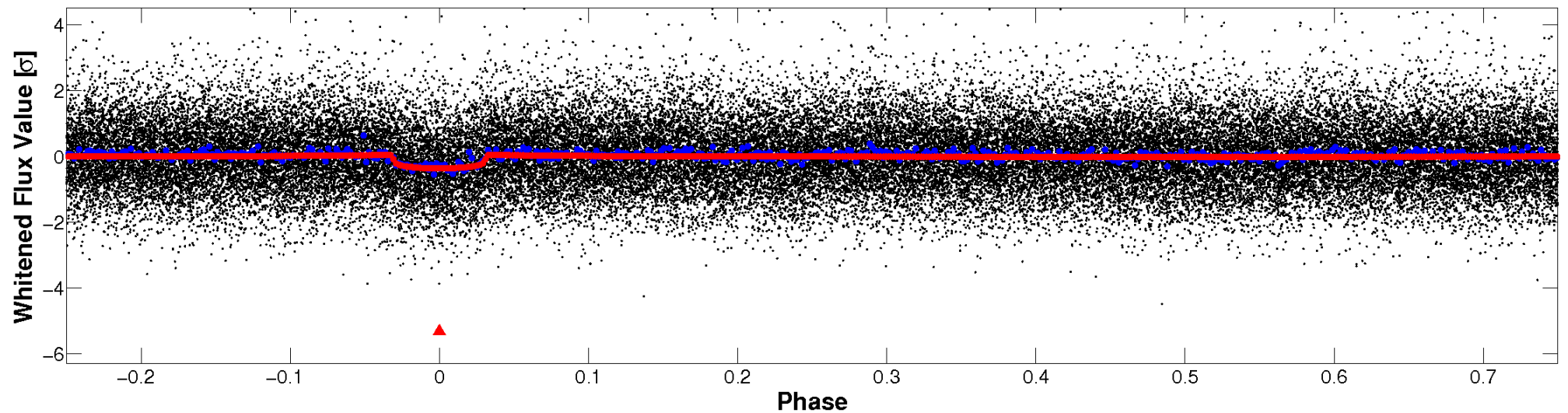


Non-Whitened Vs. Whitened Light Curve

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

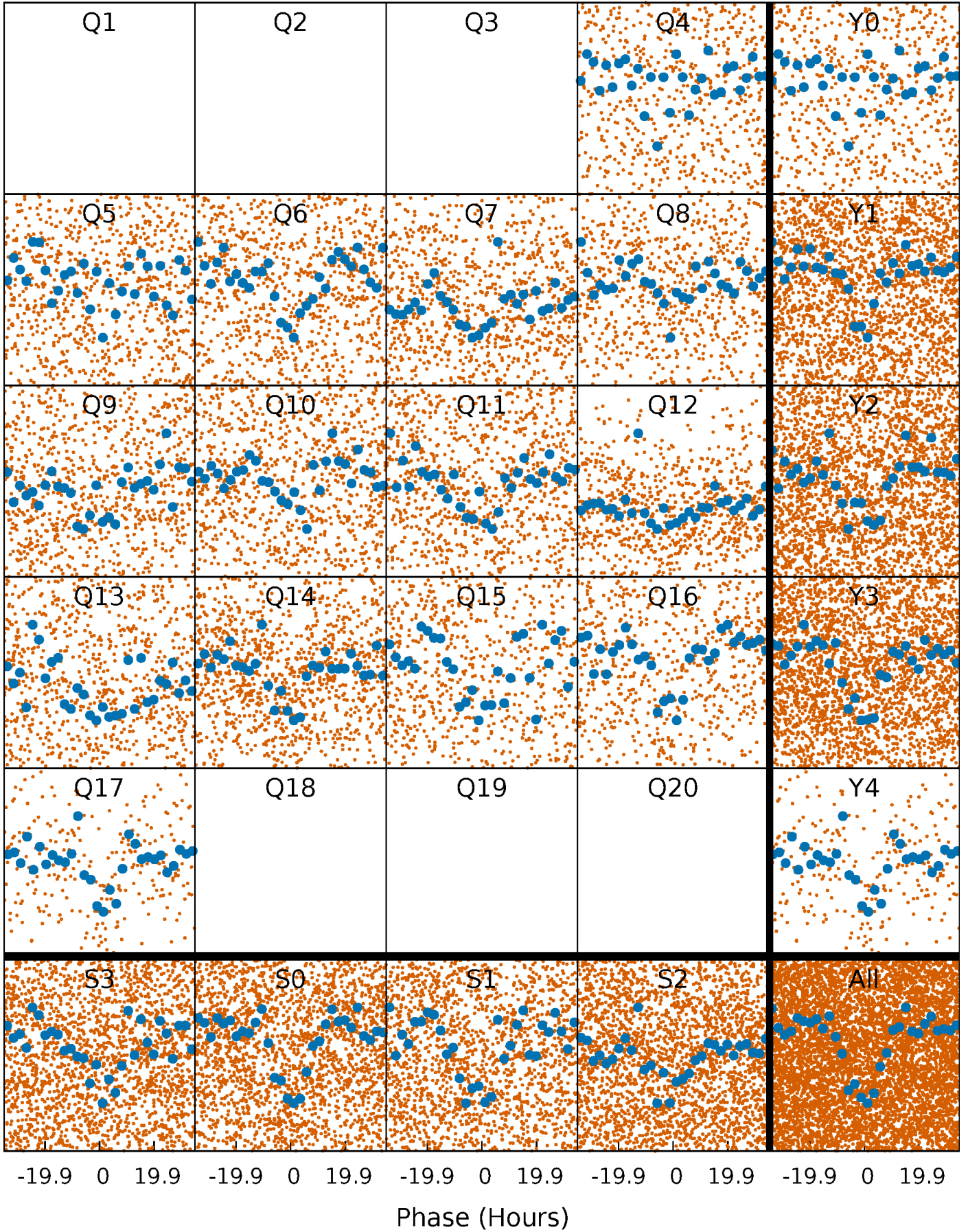


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



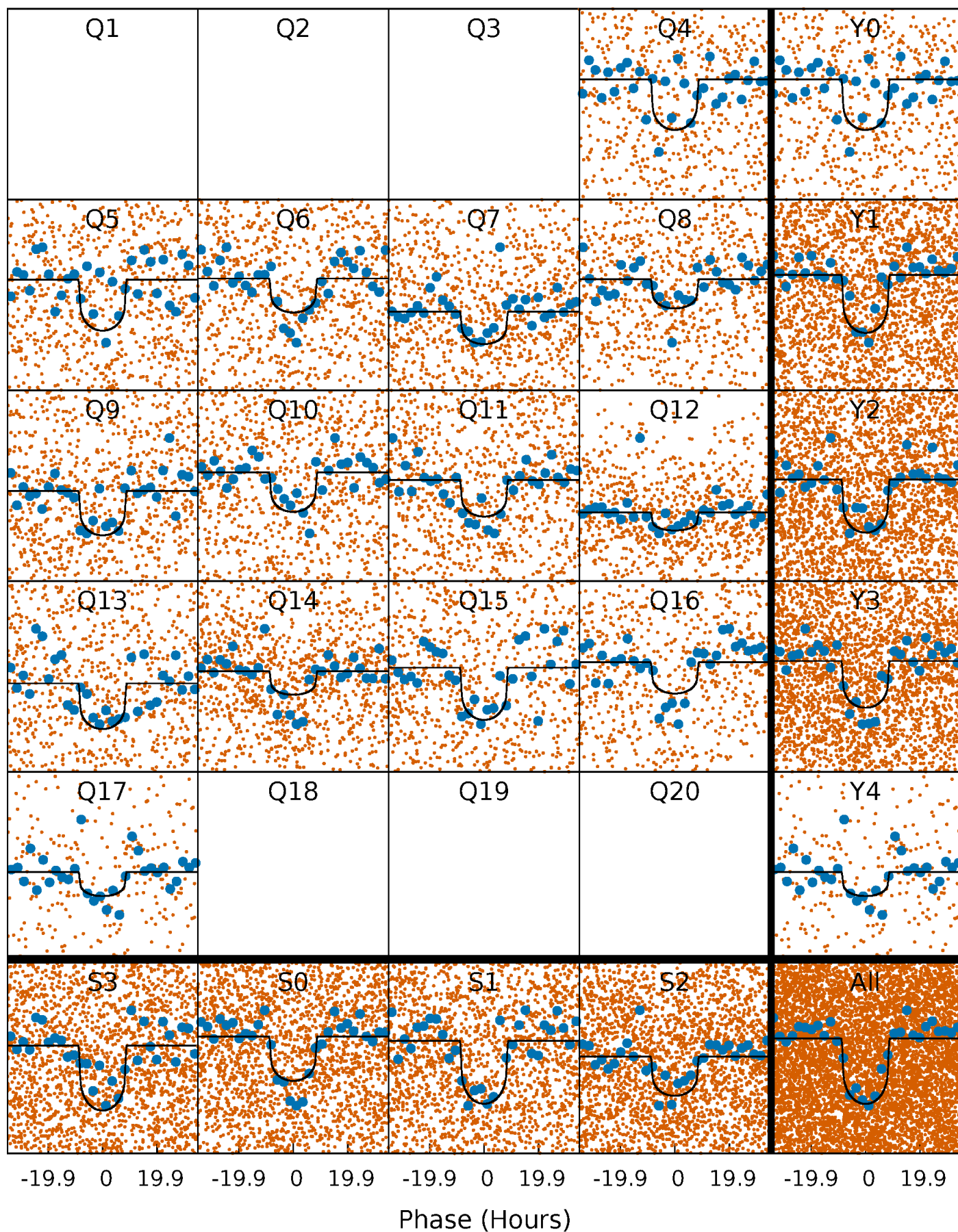
PDC Quarter-Phased Transit Curves

TCE 004245861-01 P= 11.257997 Days $T_0=140.789394$ (BKJD)



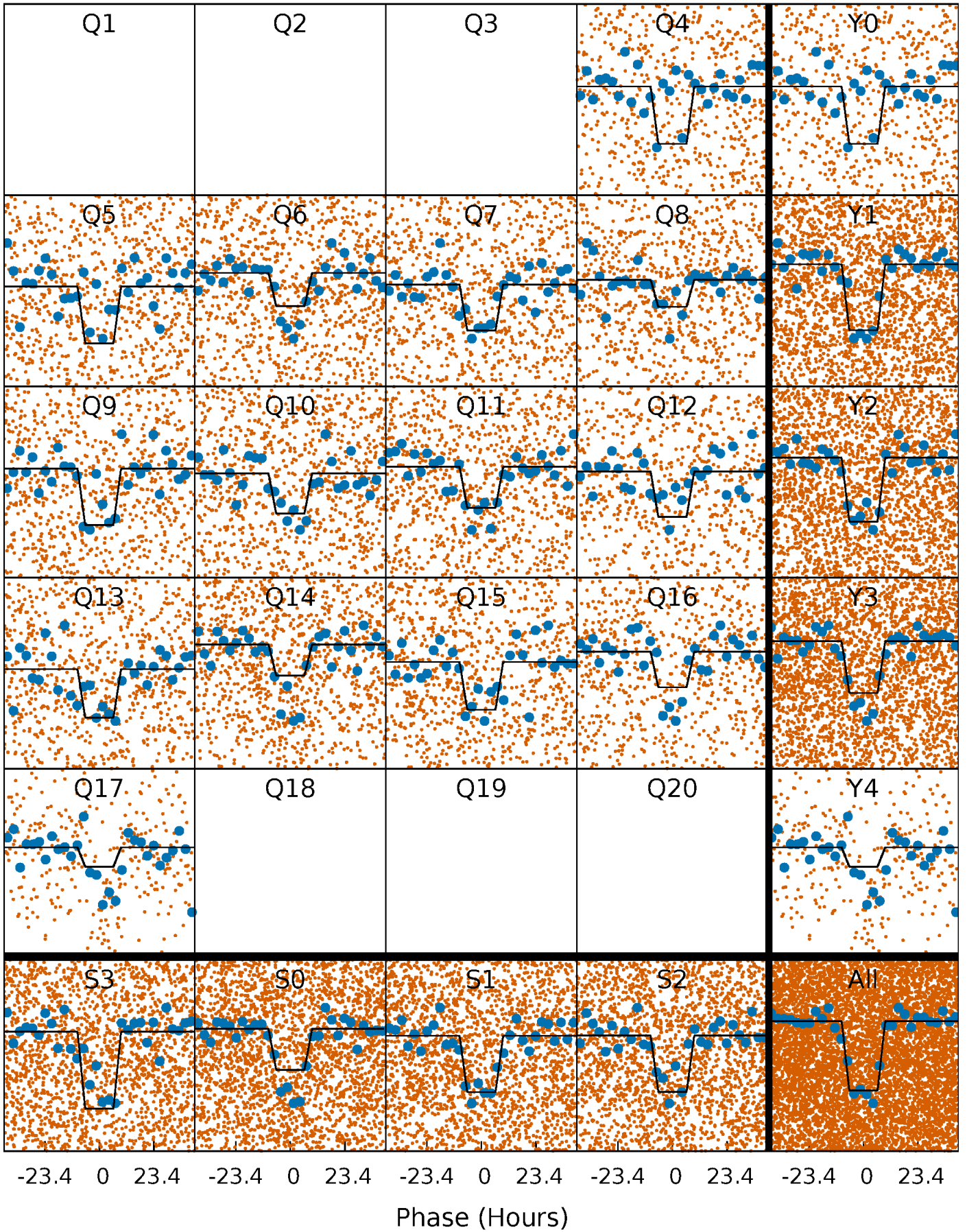
DV Quarter-Phased Transit Curves

TCE 004245861-01 P= 11.257997 Days $T_0=140.789394$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

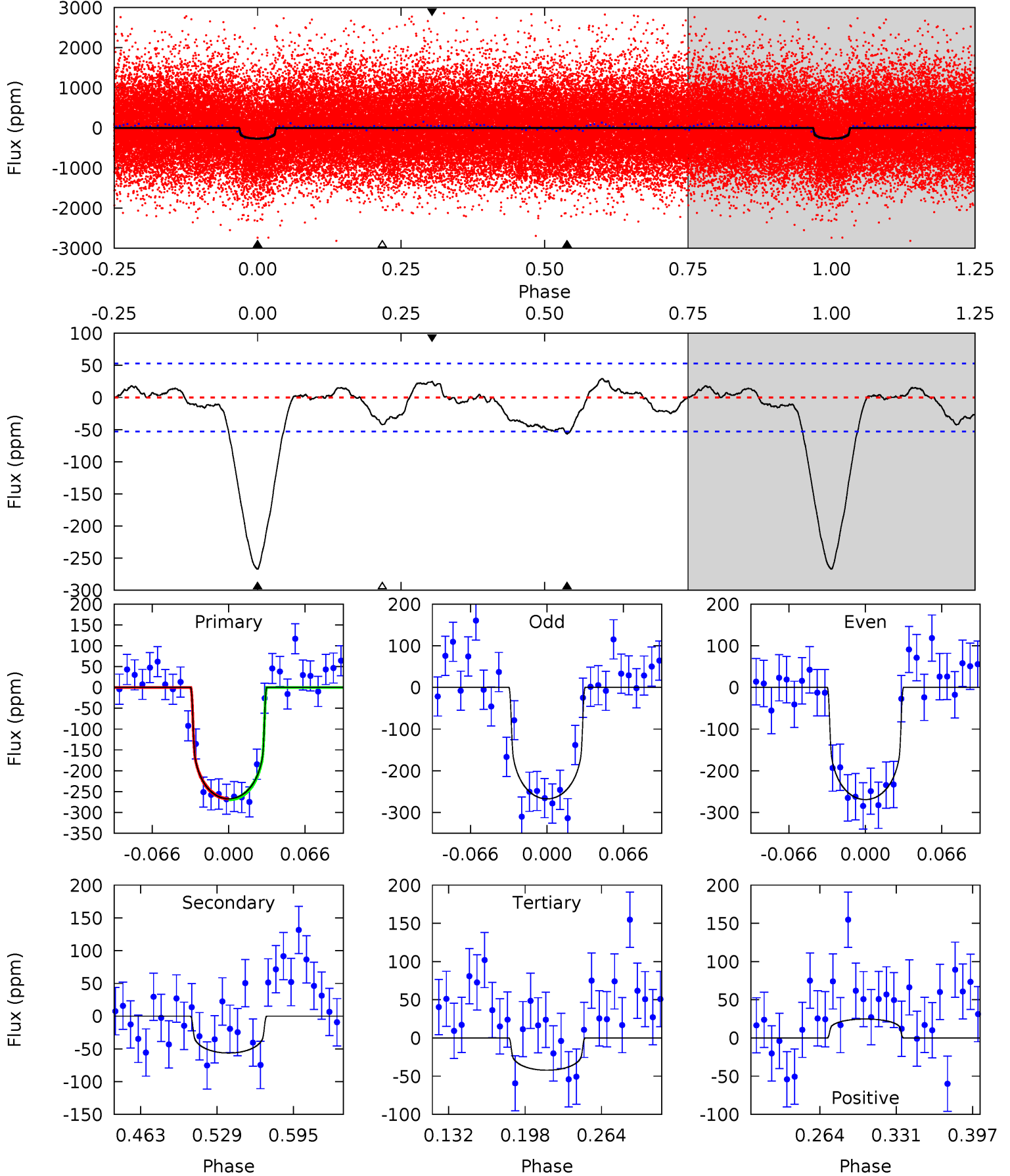
TCE 004245861-01 P= 11.257014 Days $T_0=140.850060$ (BKJD)



DV Model-Shift Uniqueness Test

004245861-01, P = 11.257997 Days, E = 140.789394 Days

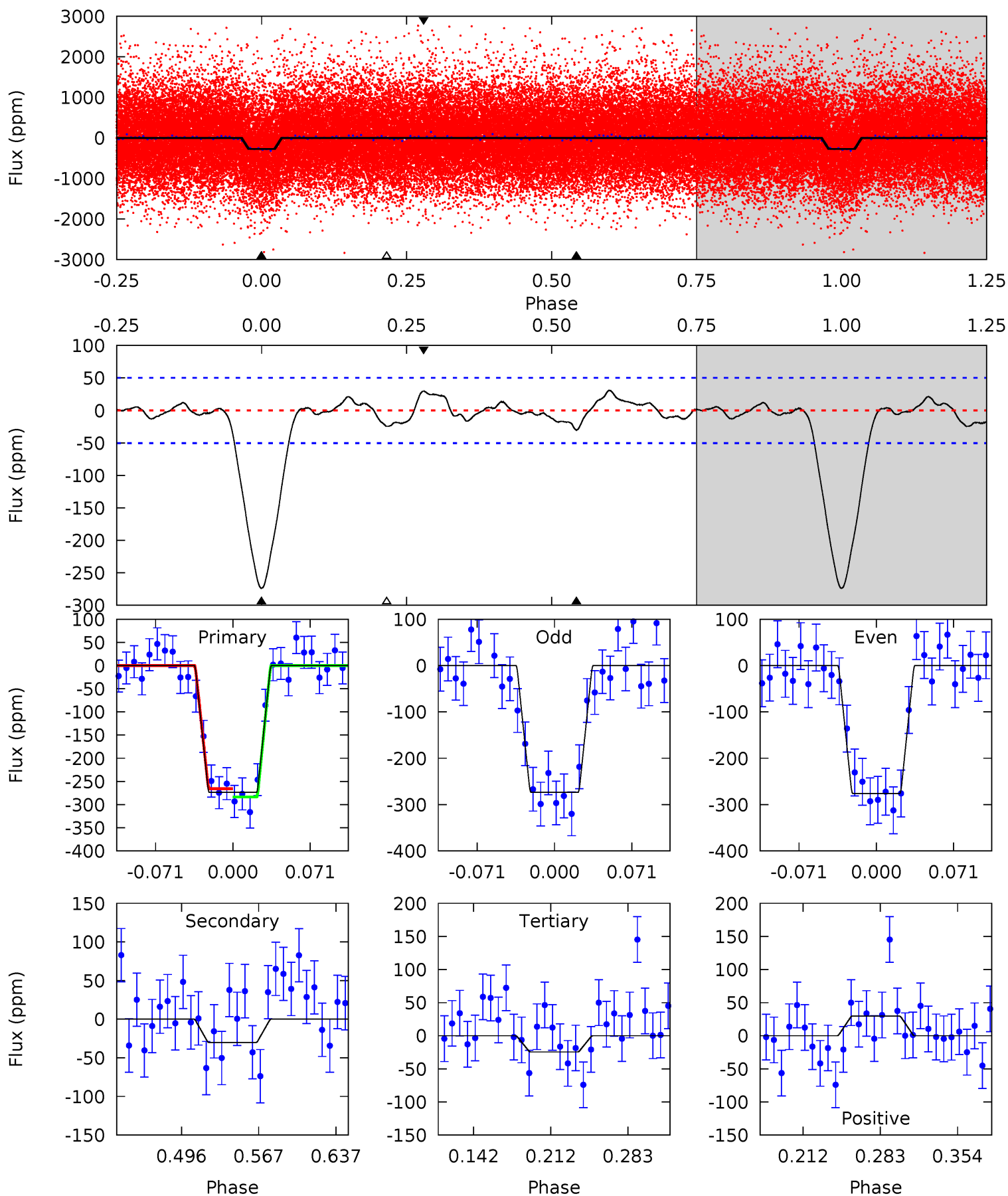
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	4.95	3.71	2.18	4.65	1.84	1.44	19.8	21.3	1.24	2.77	0.08	0.98	0.10	0.10



Alt Model-Shift Uniqueness Test

004245861-01, P = 11.257014 Days, E = 140.850060 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.2	2.77	2.26	2.73	4.64	1.81	1.04	23.0	22.5	0.51	0.04	0.12	1.02	0.10	0.84



Stellar Parameters For KIC 004245861

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5242^{+183}_{-183}	$4.556^{+0.090}_{-0.060}$	$-0.540^{+0.350}_{-0.300}$	$0.722^{+0.089}_{-0.081}$	$0.684^{+0.091}_{-0.042}$	$2.561^{+0.919}_{-0.570}$
	+3%/-3%	+2%/-1%	+65%/-56%	+12%/-11%	+13%/-6%	+36%/-22%
Source	KIC0	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 004245861-01 / KOI 5050.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-56 ± 11	$1.32^{+0.28}_{-0.29}$	929^{+45}_{-38}	3828^{+403}_{-283}	134^{+99}_{-50}
Alt.	-30 ± 11	$1.28^{+0.28}_{-0.26}$	928^{+40}_{-42}	3496^{+345}_{-337}	76^{+59}_{-35}

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 $A_{obs} \gg 1.0$

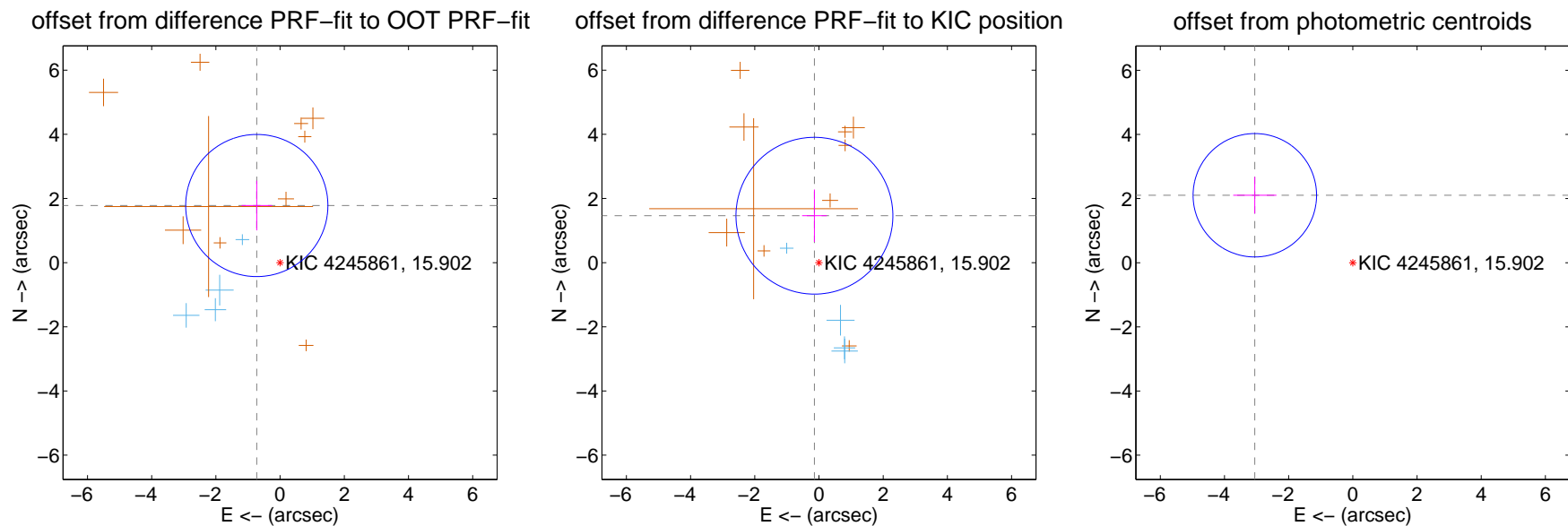
DV Centroid Data

Supplemental centroid analysis for 004245861-01. Kepler magnitude: 15.90. Transit SNR 18.06

There are 4 quarters with good PRF difference image offsets

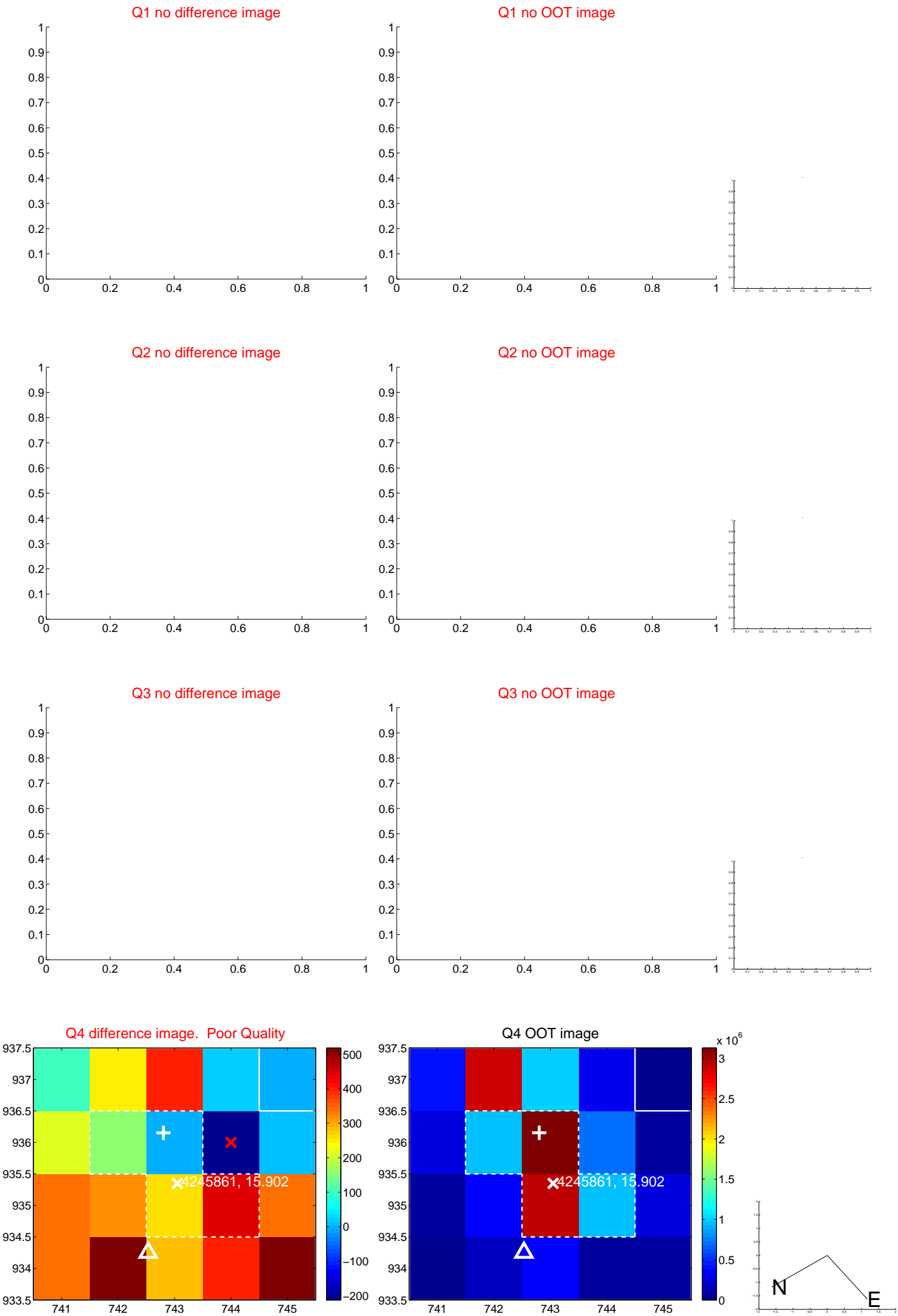
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.923 ± 0.738	2.60	0.726 ± 0.475	1.780 ± 0.773
PRF-fit source offset from KIC position	1.469 ± 0.814	1.80	0.142 ± 0.384	1.462 ± 0.817
photometric centroid source offset	3.71 ± 0.64	5.78	3.05 ± 0.67	2.10 ± 0.57

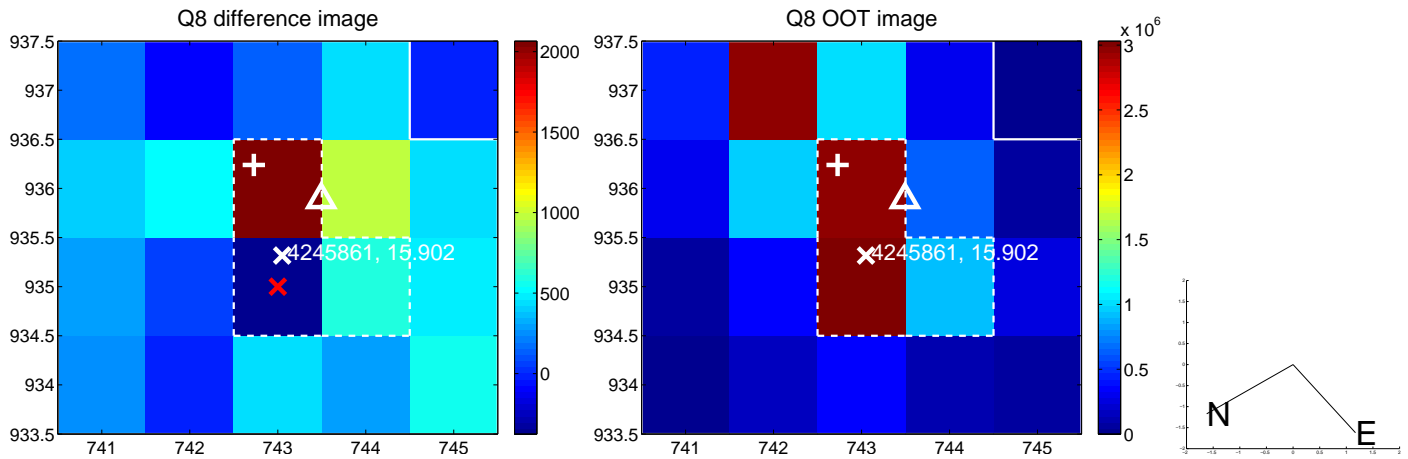
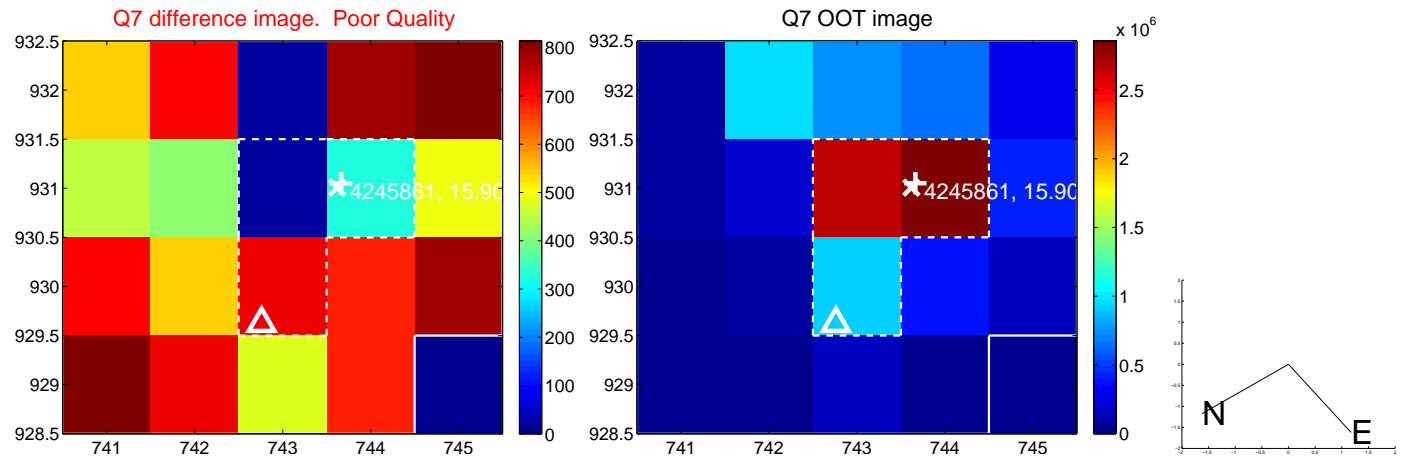
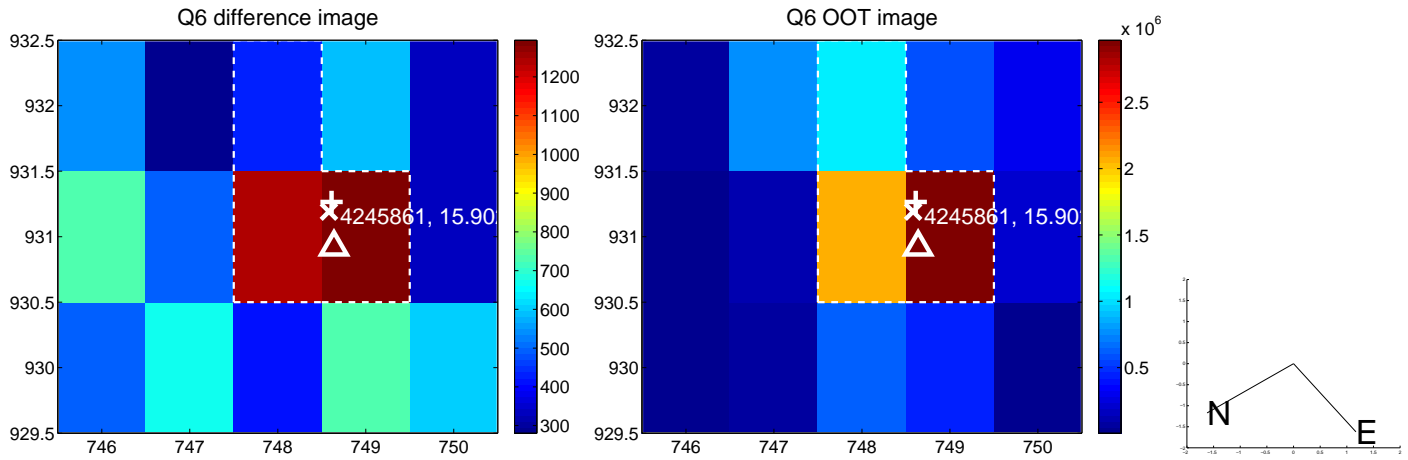
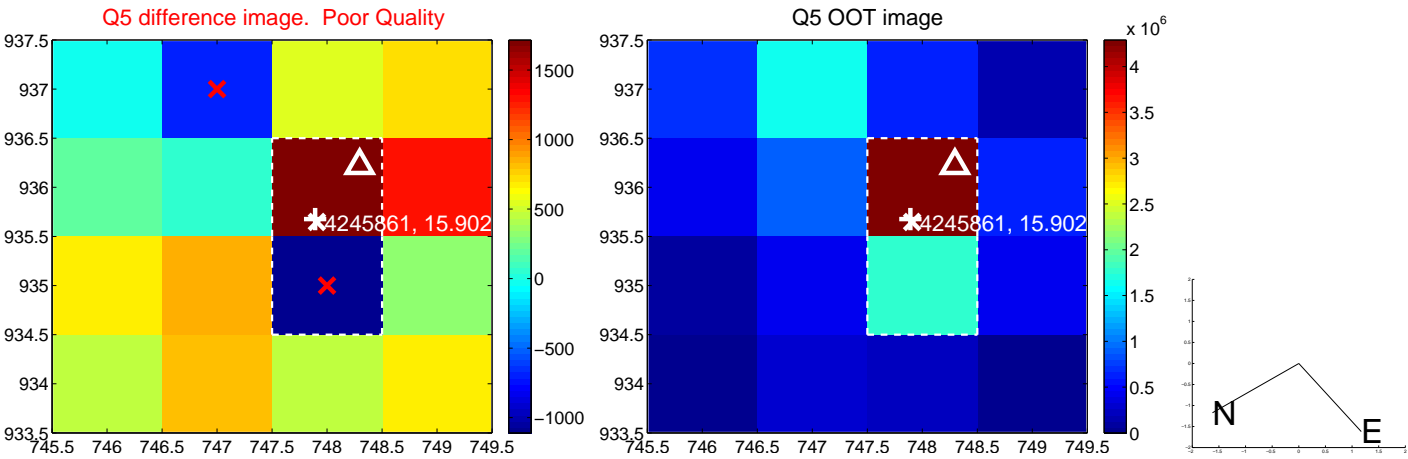


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

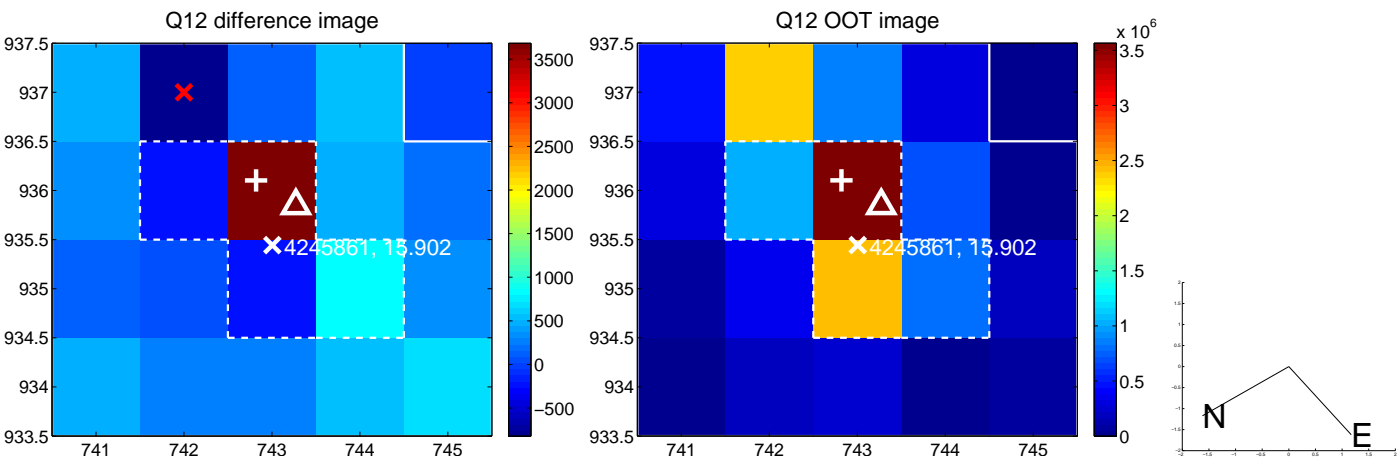
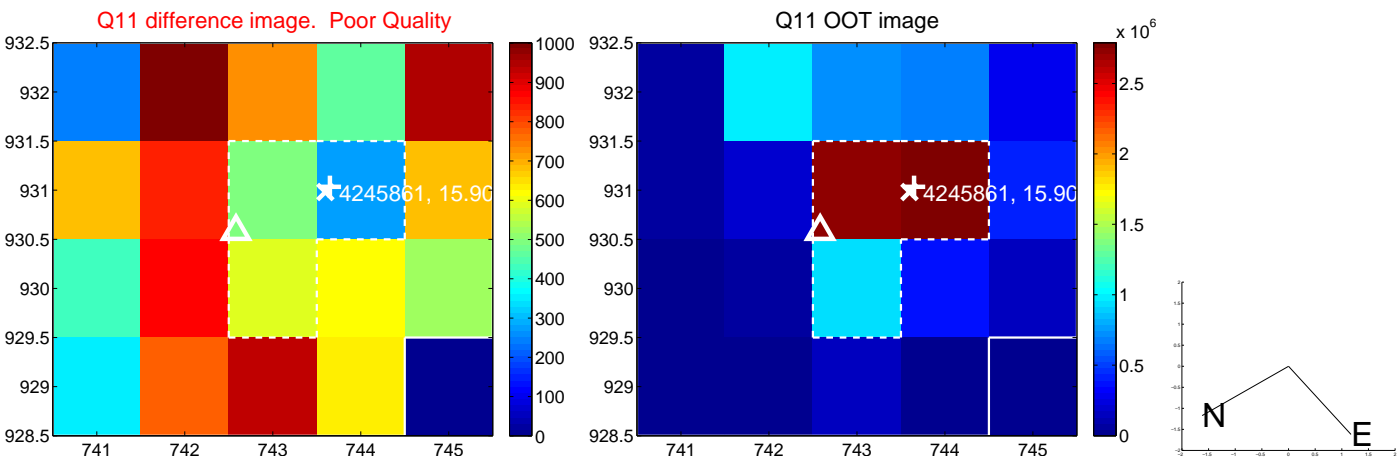
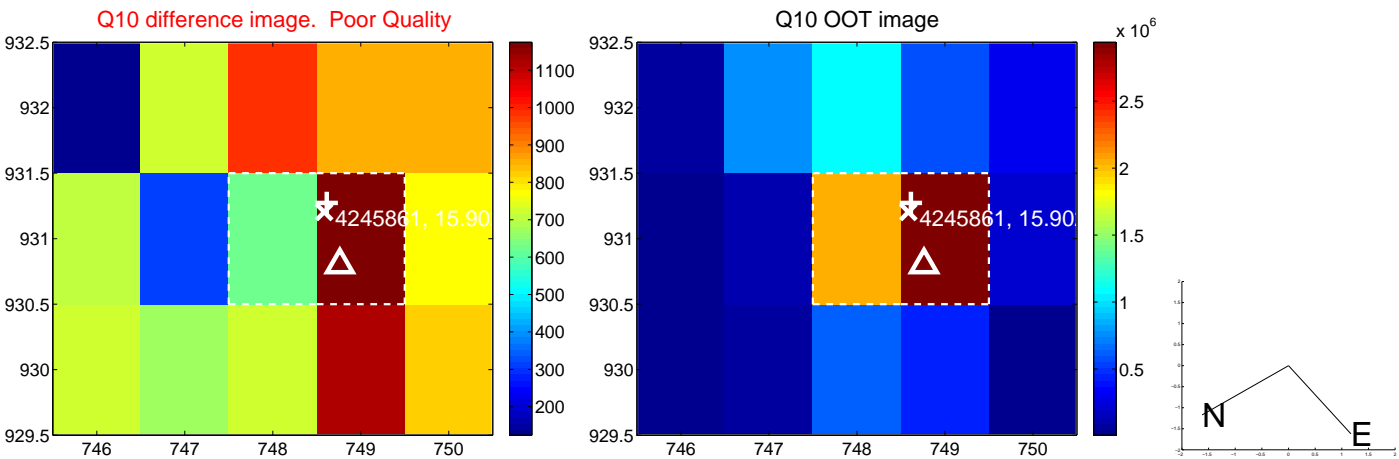
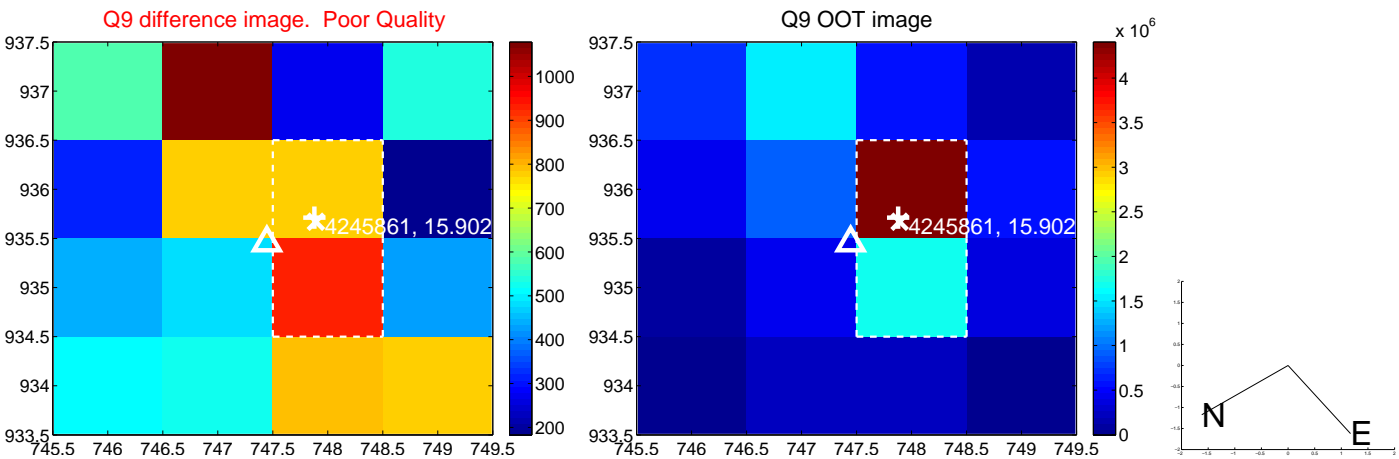
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



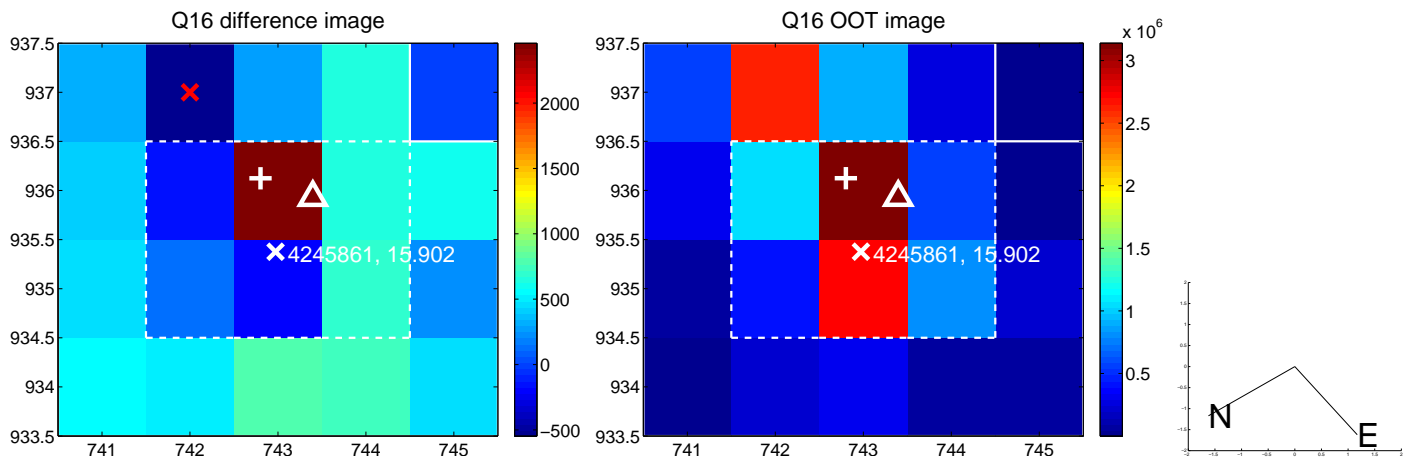
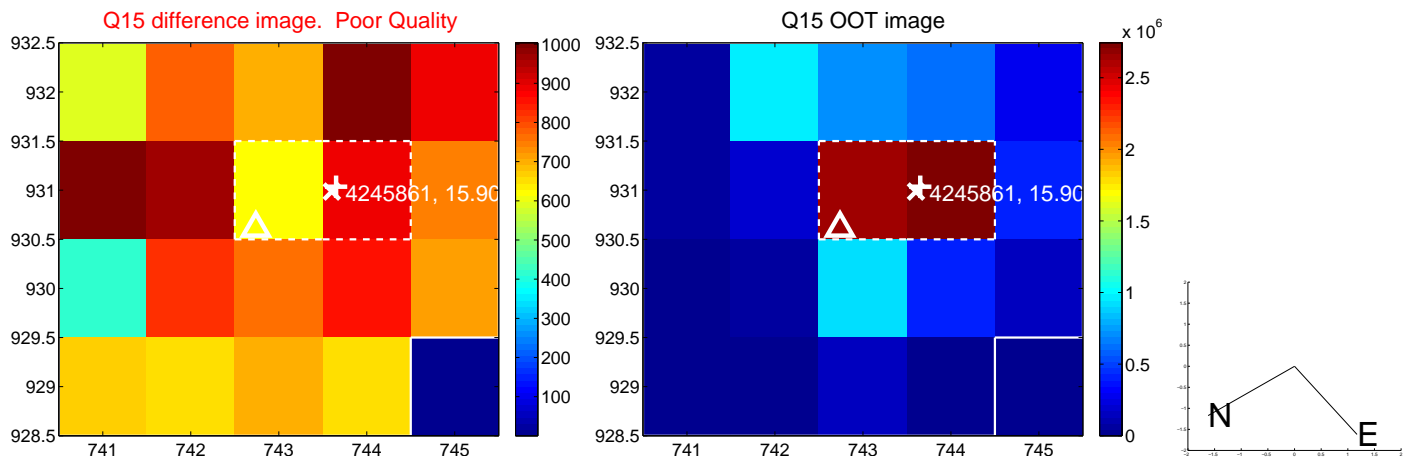
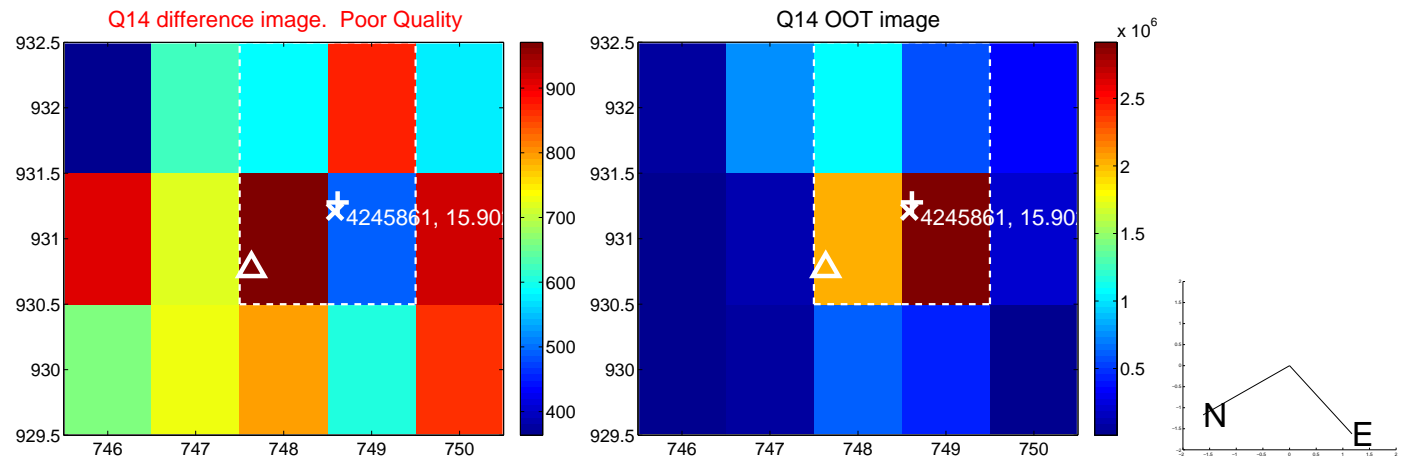
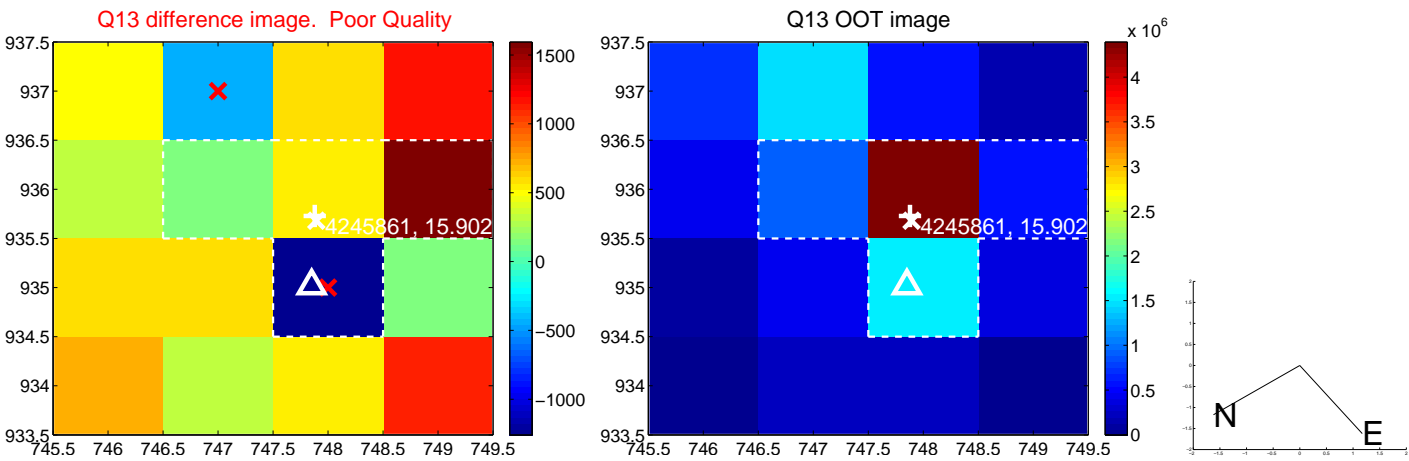
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



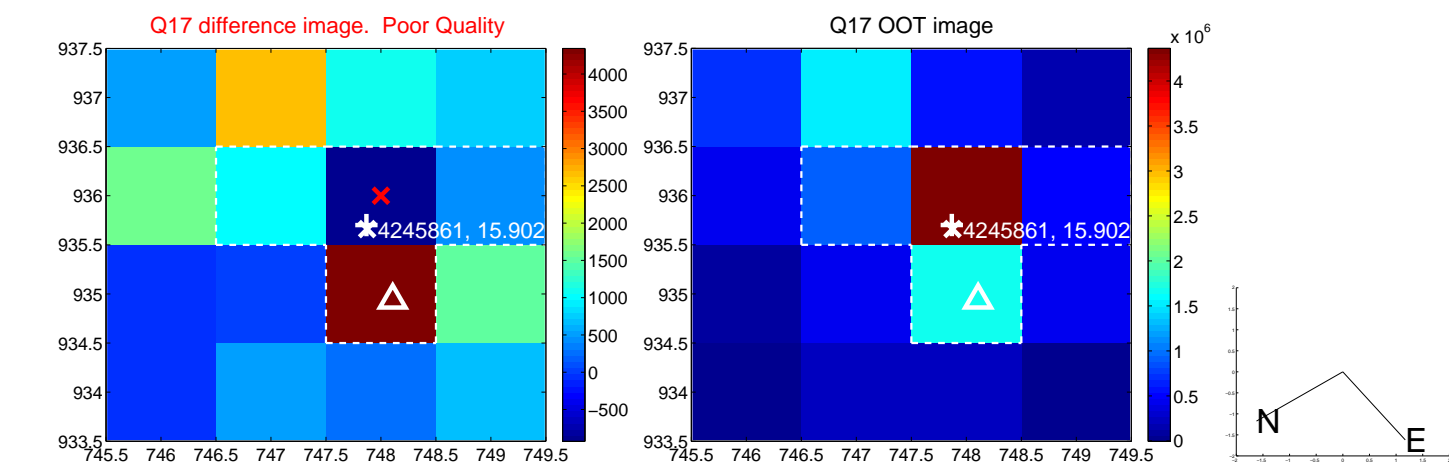
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



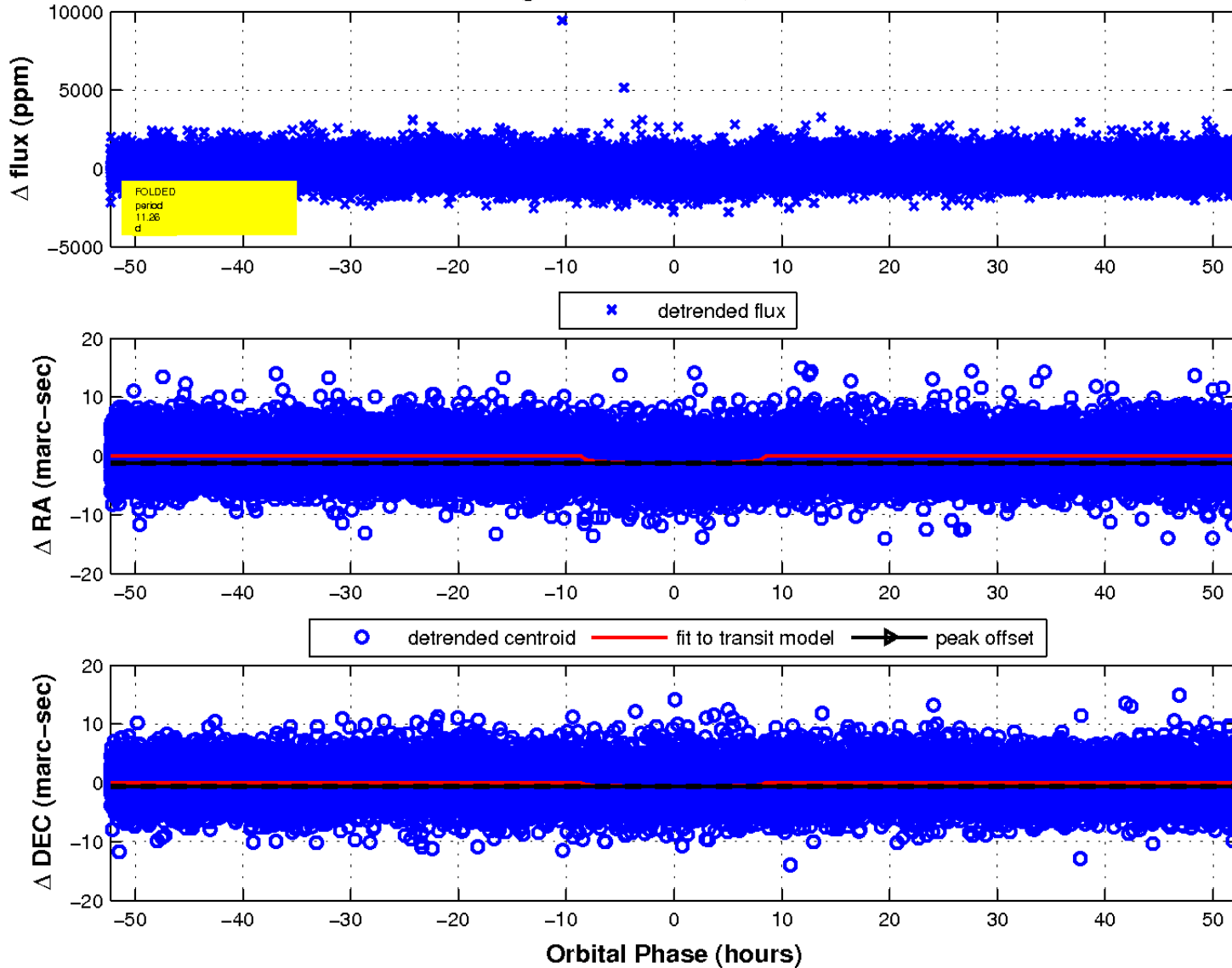
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

