

KIC 004245945

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})
004245945-01	OBS	No	11.257553	140.829473	235.6	17.106	8.1	9.2	0.75	5842	1.31	68.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004245945-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—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.

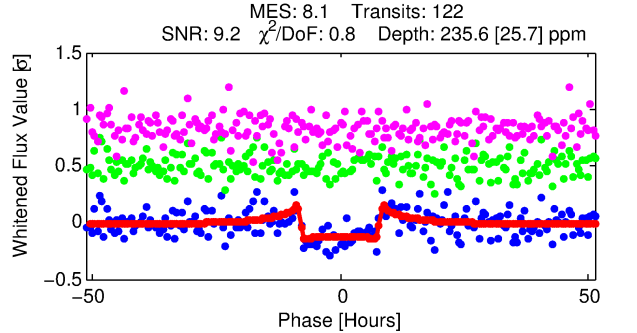
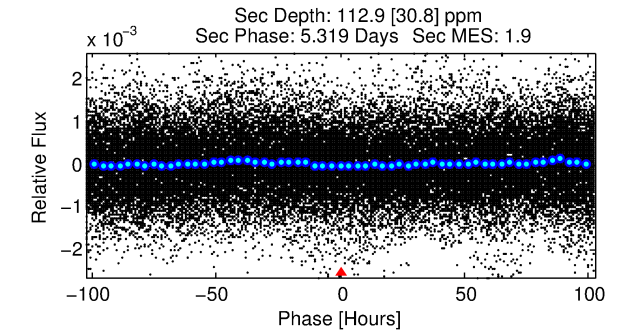
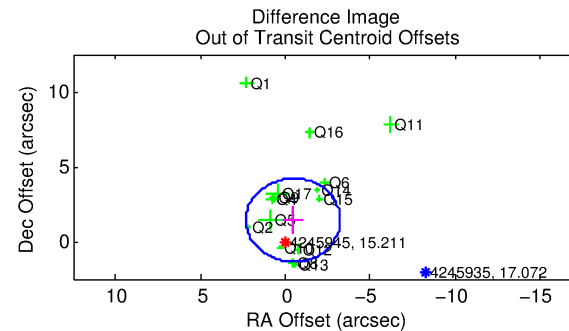
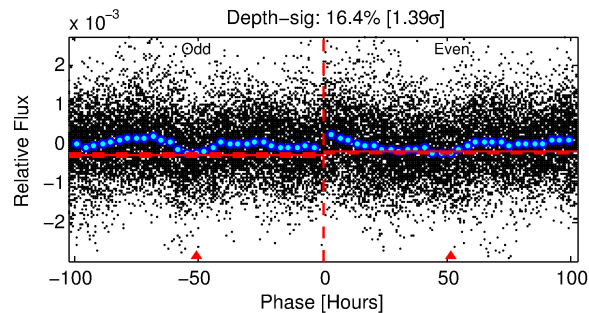
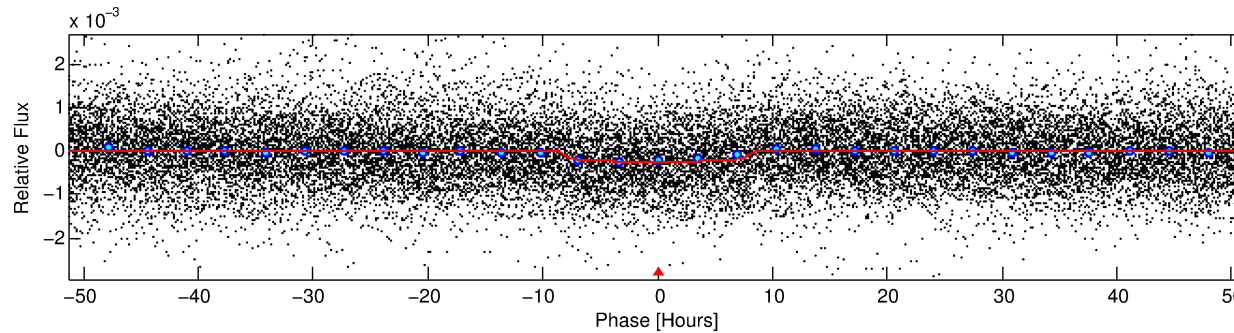
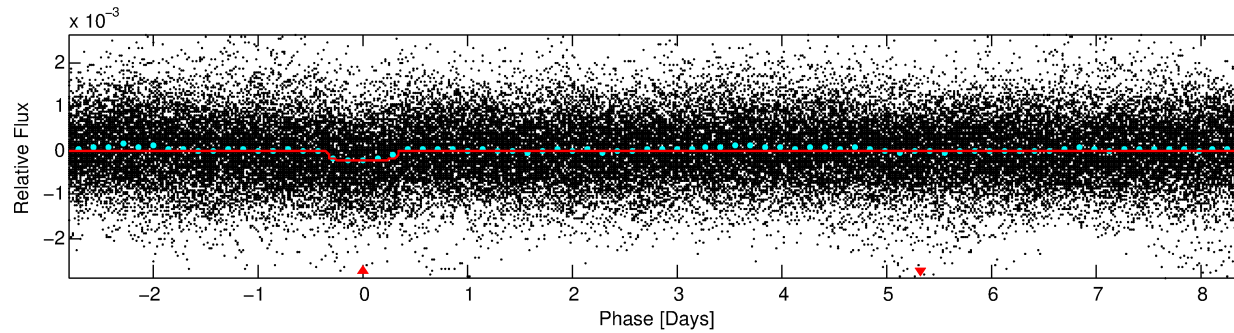
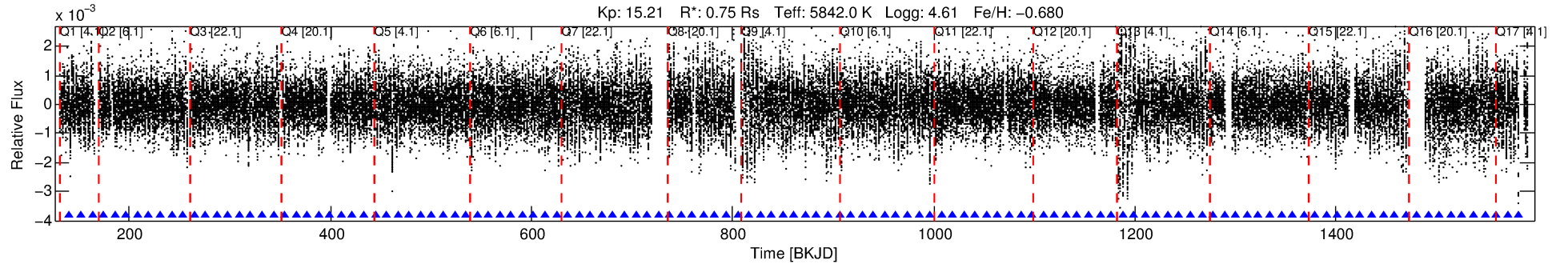
Ephemeris Match Information For 004245945-01

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
004245945-01	4245945	004245897-pri	4245897	1:1	47.3	-6	11	12.54	15.21	3207.20	Direct-PRF	0	0.88	1.23

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: 4245945 Candidate: 1 of 1 Period: 11.258 d



DV Fit Results:

Period = 11.25755 [0.00018] d
Epoch = 140.8295 [0.0123] BKJD
Rp/R* = 0.0161 [0.0014]
a/R* = 2.87 [0.79]
b = 0.86 [0.10]
Seff = 68.46 [20.46]
Teq = 733 [55] K
Rp = 1.31 [0.32] Re
a = 0.0922 [0.0177] AU
Ag = 308.62 [131.55] [2.34 σ]
Teff = 4753 [405] K [9.84 σ]

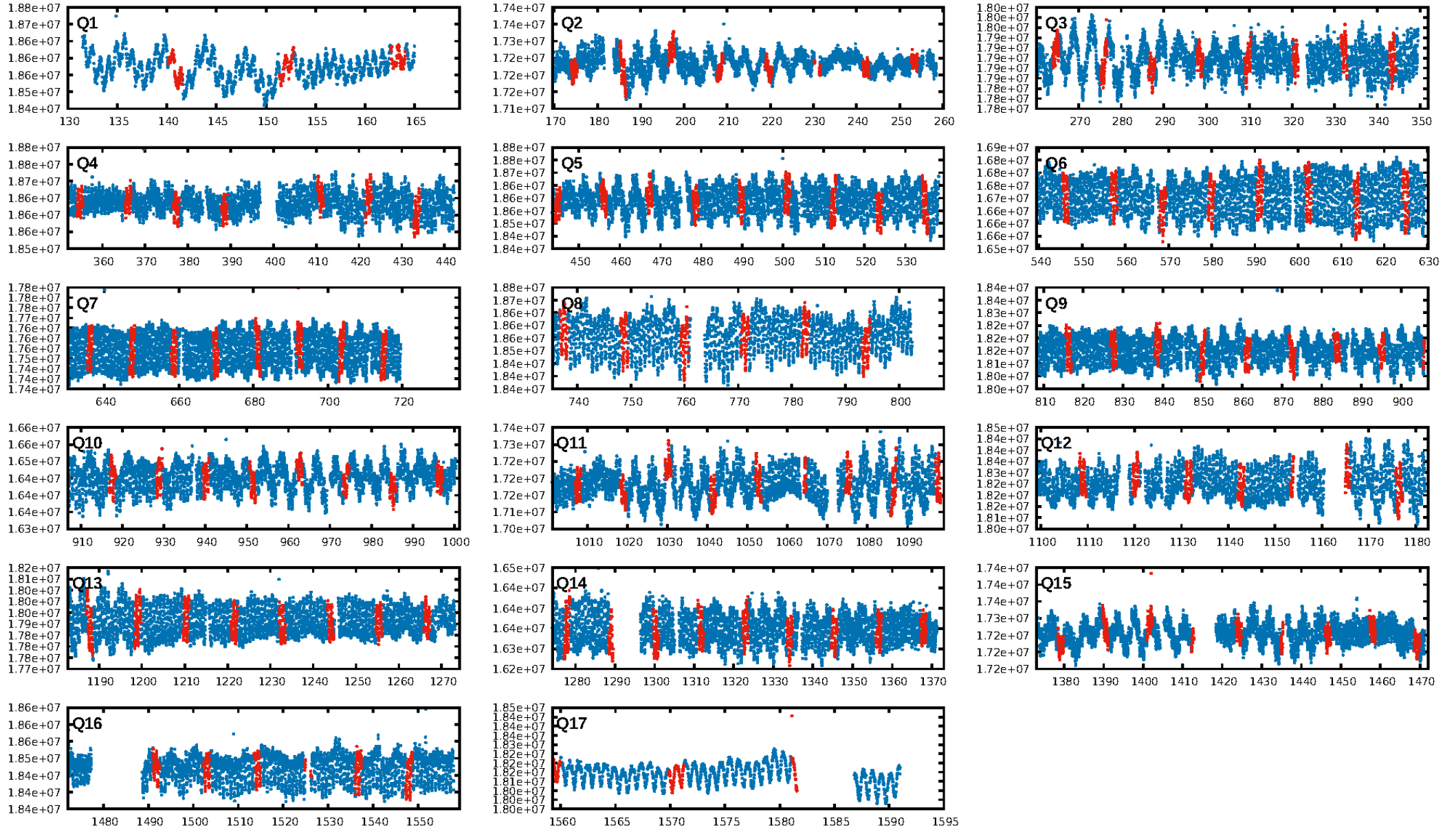
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.92e-13
RollingBand-fgt: 1.00 [116/116]
GhostDiagnostic-chr: -0.07707
Centroid-sig: 0.0%
Centroid-so: 2.075 arcsec [3.90 σ]
OotOffset-rm: 1.499 arcsec [1.61 σ]
KicOffset-rm: 1.377 arcsec [1.73 σ]
OotOffset-st: 4/2/4/5 [15]
KicOffset-st: 4/2/4/5 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 1.00 [17/17]

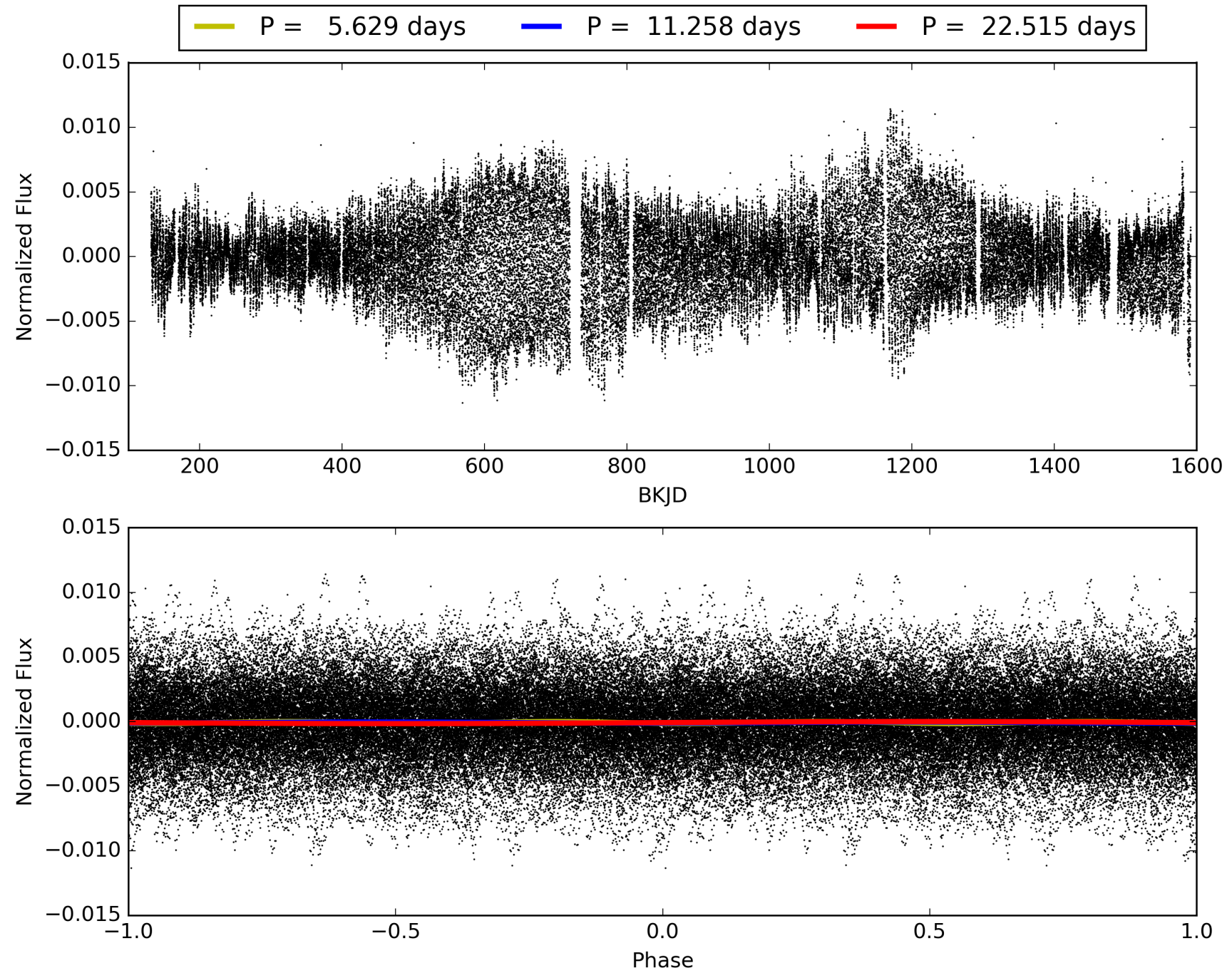
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:29:13 Z

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

TCE 004245945-01, PDC Light Curves

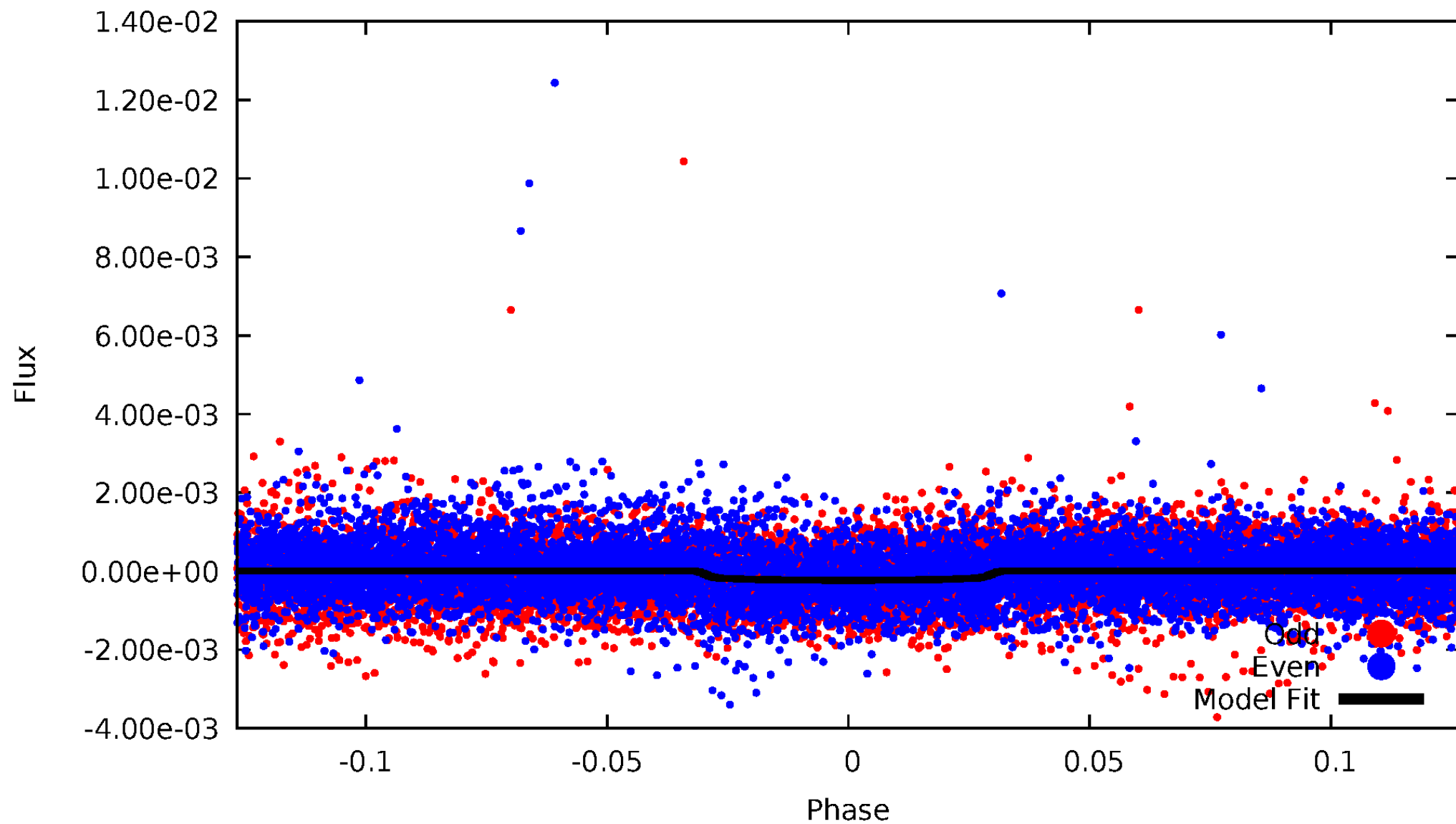


TCE 004245945-01



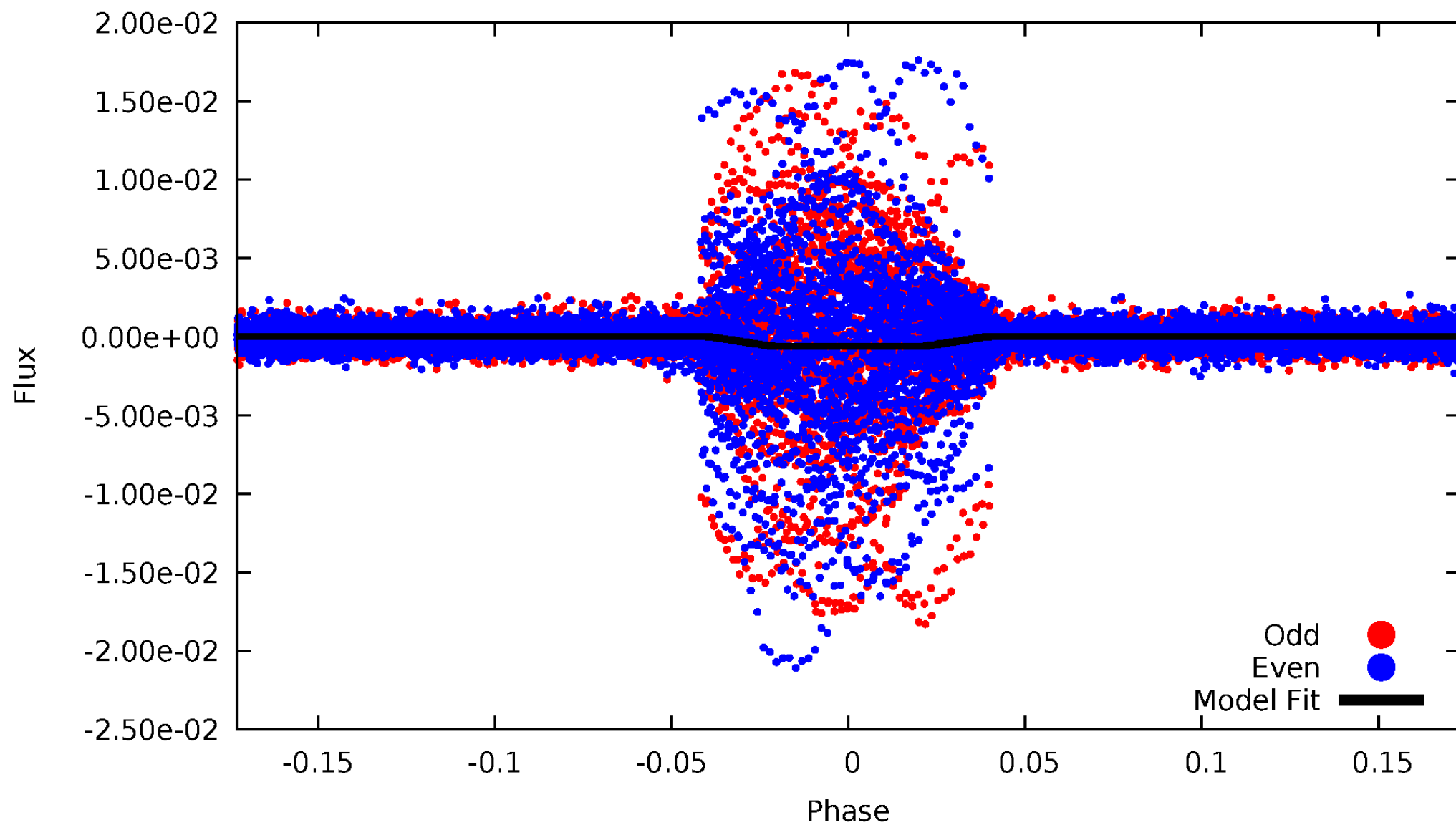
DV Odd/Even

TCE 004245945-01



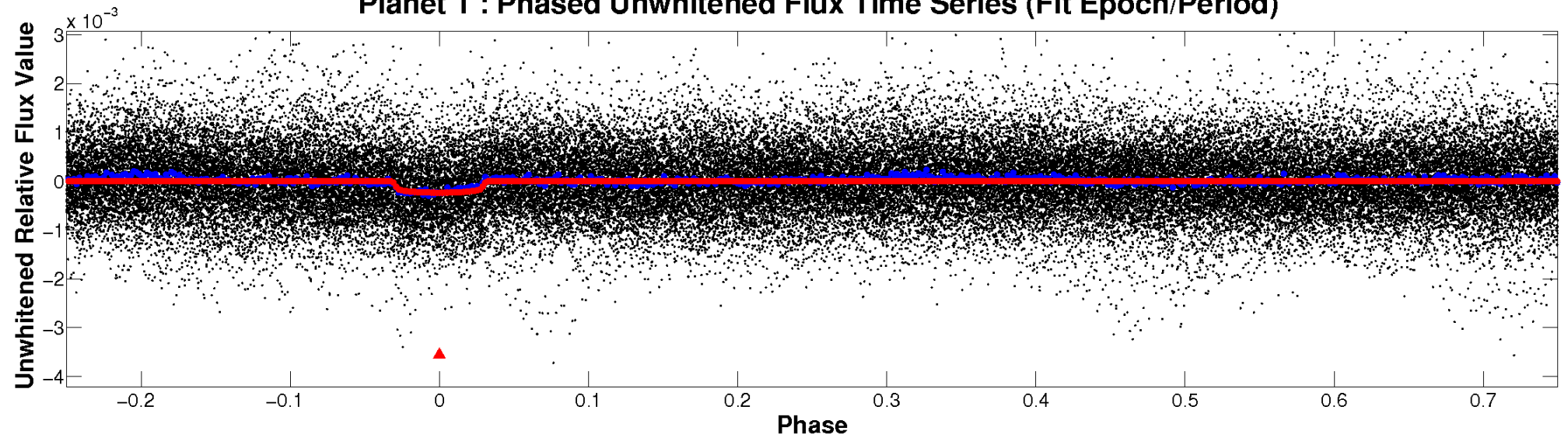
ALT Odd/Even

TCE 004245945-01

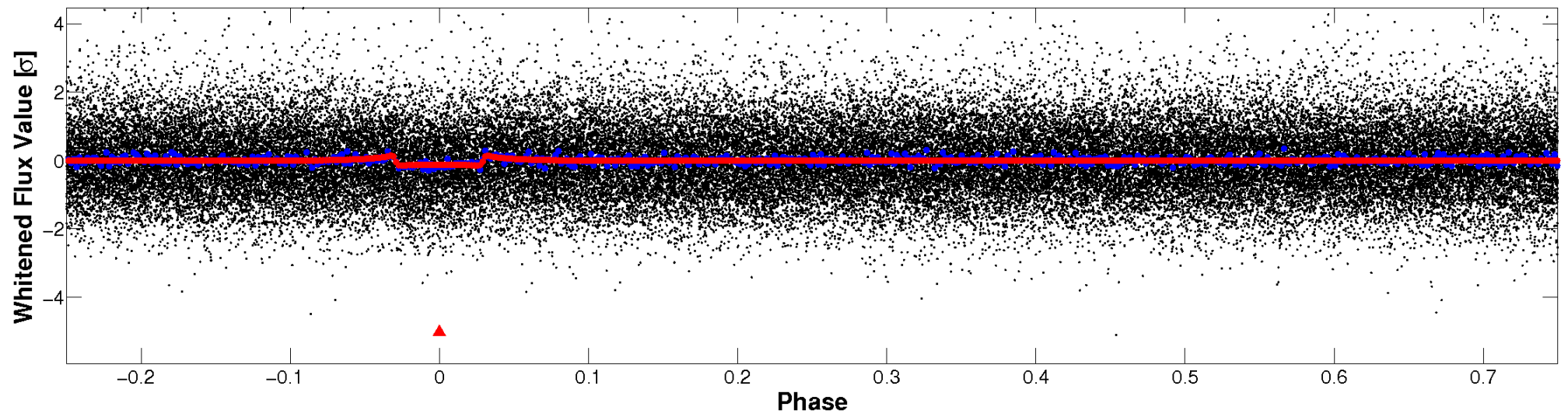


Non-Whitened Vs. Whitened Light Curve

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

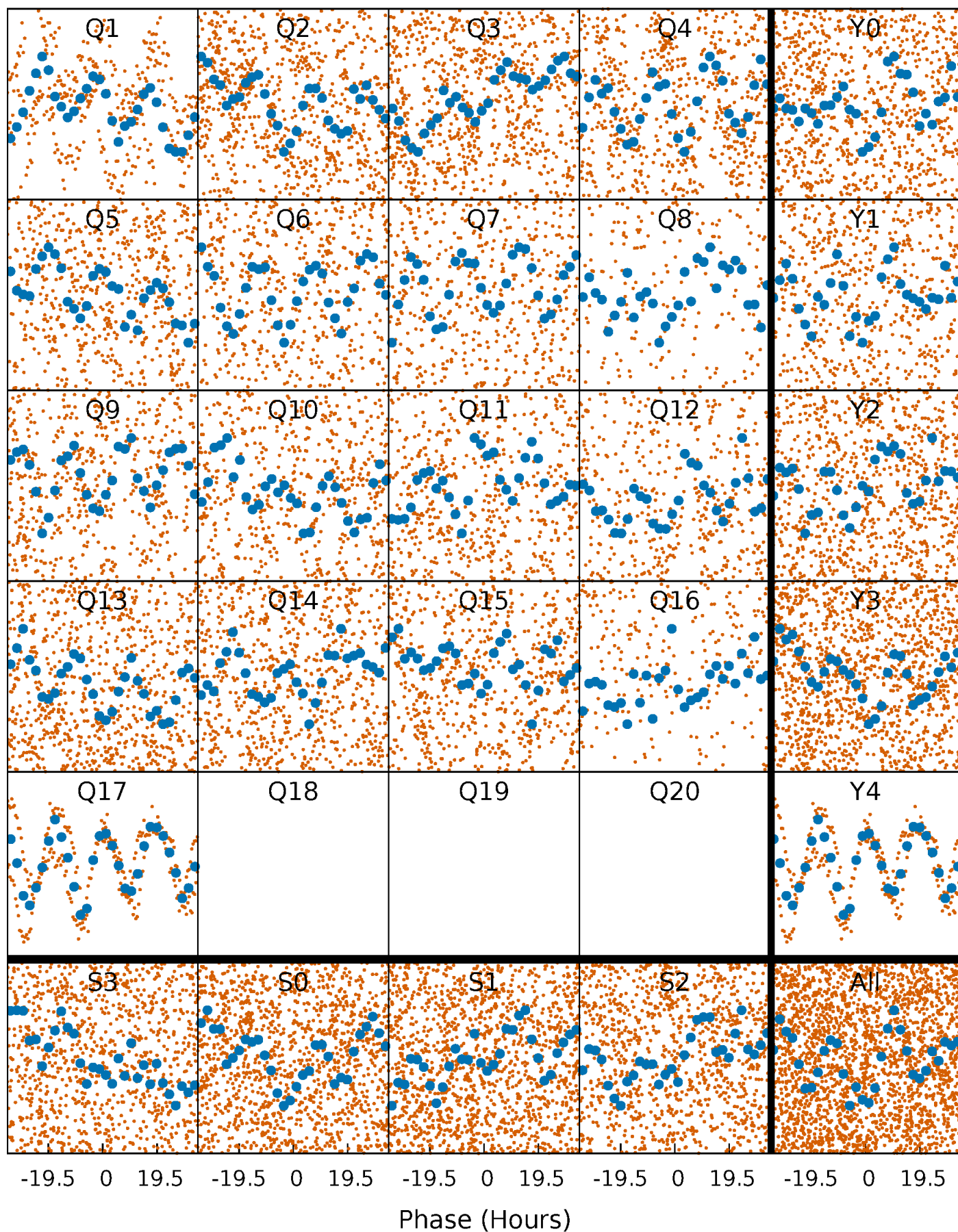


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



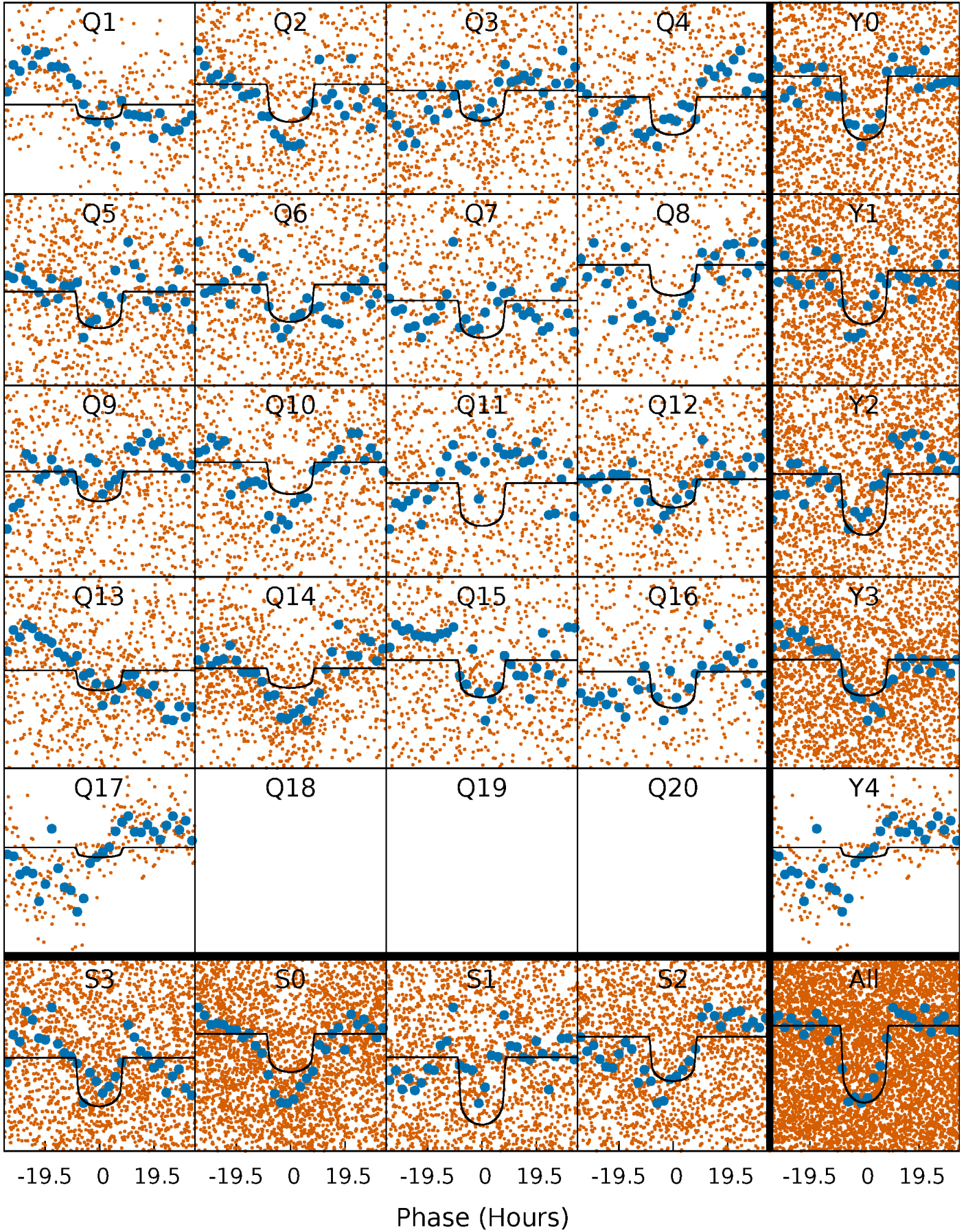
PDC Quarter-Phased Transit Curves

TCE 004245945-01 P= 11.257553 Days $T_0=140.829473$ (BKJD)



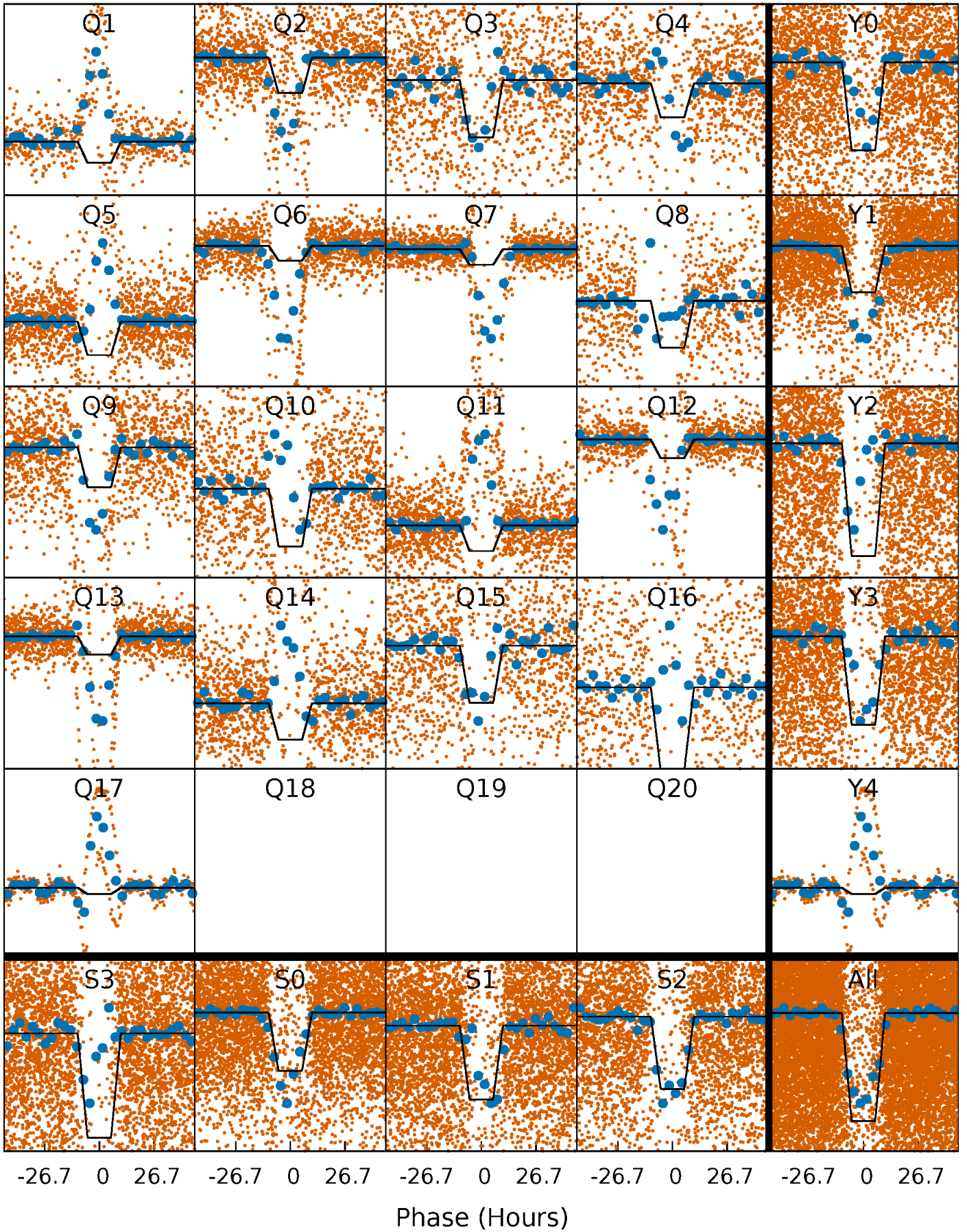
DV Quarter-Phased Transit Curves

TCE 004245945-01 P= 11.257553 Days $T_0=140.829473$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

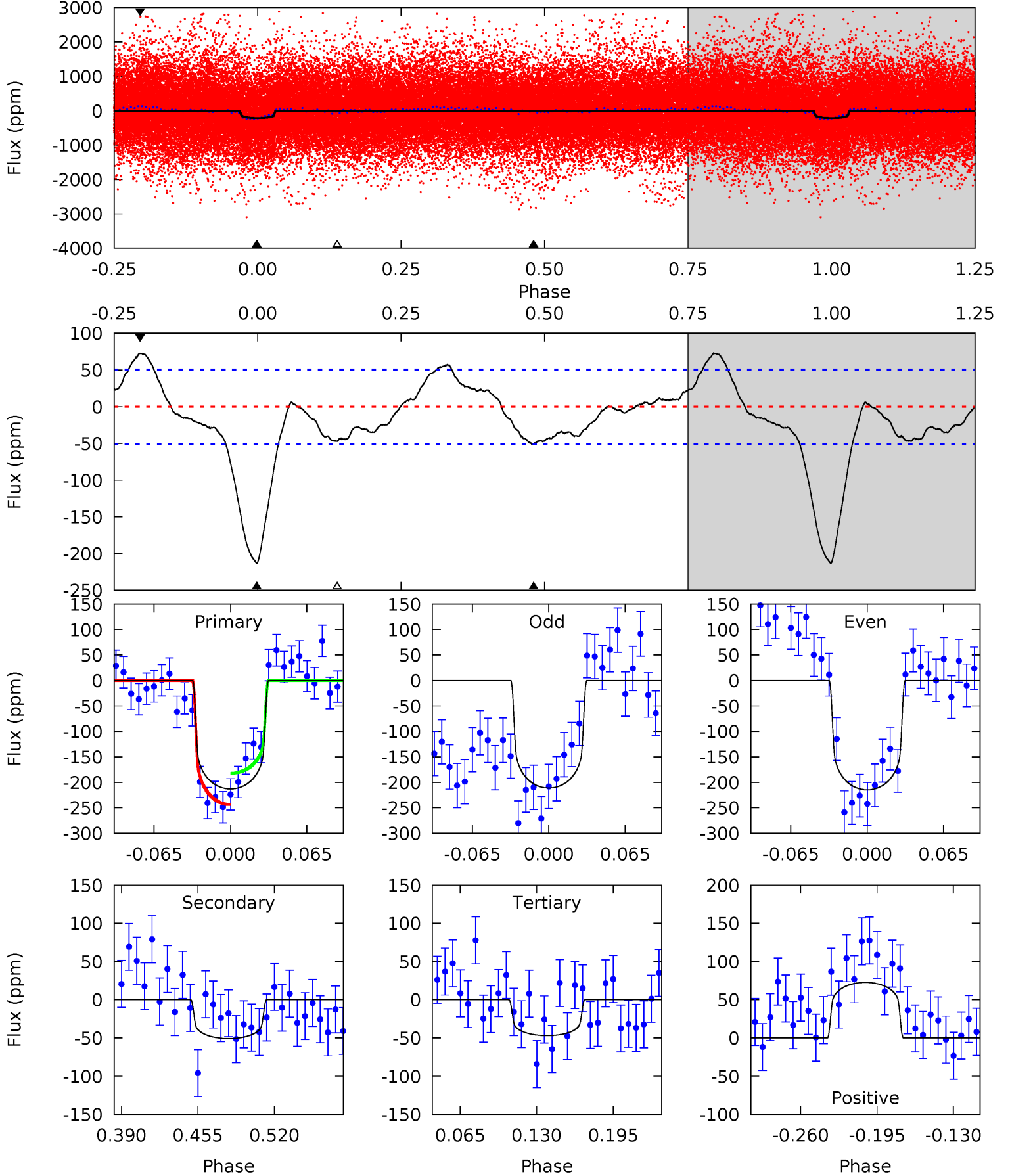
TCE 004245945-01 P= 11.257975 Days $T_0=140.793570$ (BKJD)



DV Model-Shift Uniqueness Test

004245945-01, $P = 11.257553$ Days, $E = 129.571920$ Days

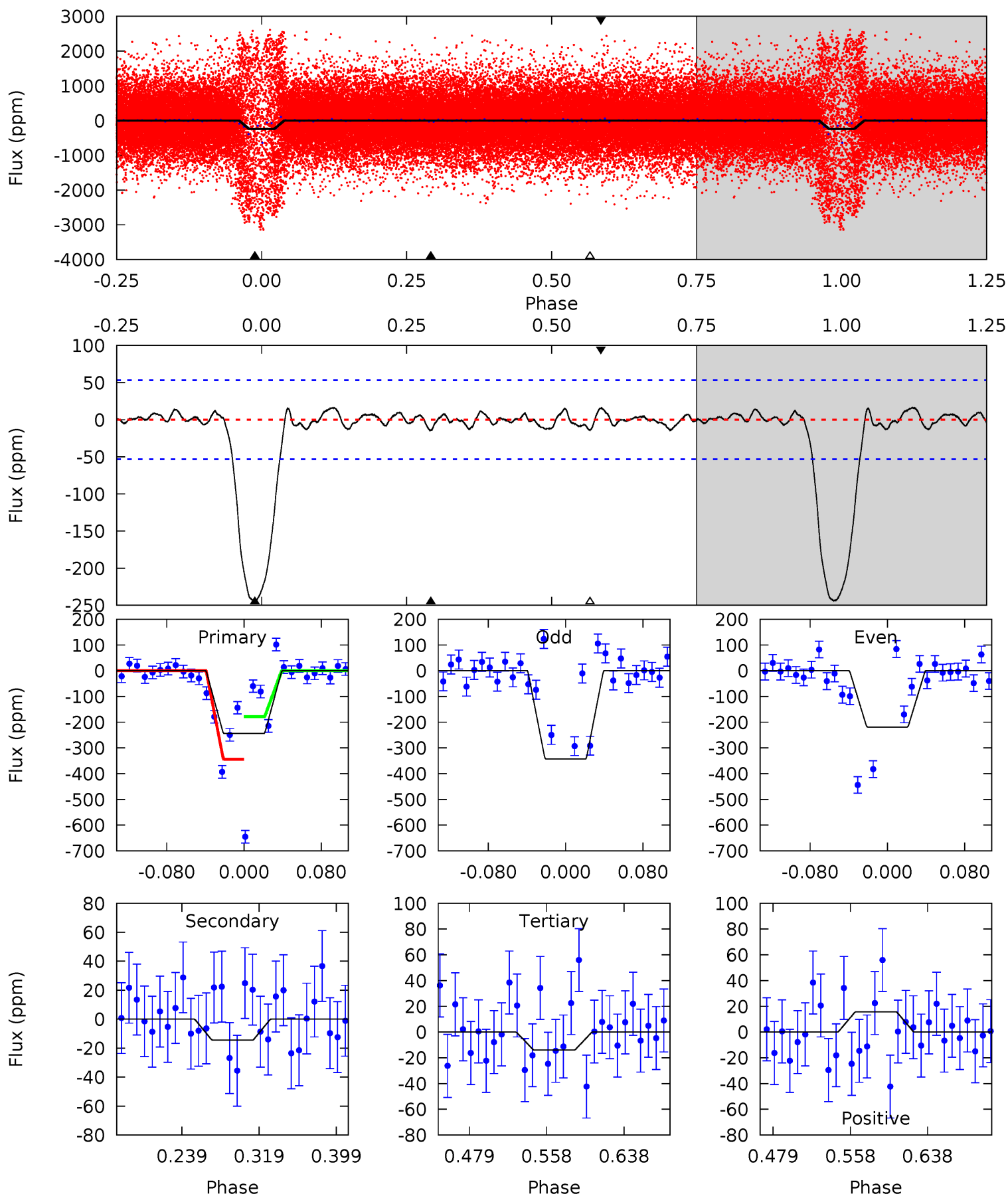
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.6	4.69	4.33	6.70	4.65	1.85	2.81	15.3	12.9	0.36	-2.01	0.17	0.98	0.25	2.84



Alt Model-Shift Uniqueness Test

004245945-01, P = 11.257975 Days, E = 129.535595 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	1.25	1.21	1.37	4.61	1.75	0.60	20.0	19.8	0.04	-0.11	5.34	0.83	0.06	0



Stellar Parameters For KIC 004245945

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5842^{+159}_{-159}	$4.608^{+0.038}_{-0.152}$	$-0.680^{+0.300}_{-0.300}$	$0.747^{+0.170}_{-0.057}$	$0.828^{+0.079}_{-0.079}$	$2.800^{+0.431}_{-1.221}$
	+3%/-3%	+1%/-3%	+44%/-44%	+23%/-8%	+10%/-10%	+15%/-44%
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 004245945-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-51 ± 11	$1.36^{+0.19}_{-0.14}$	1042^{+57}_{-40}	4161^{+217}_{-230}	126^{+42}_{-36}
Alt.	-14 ± 12	$2.08^{+0.27}_{-0.18}$	1046^{+51}_{-41}	2944^{+284}_{-537}	14^{+13}_{-11}

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

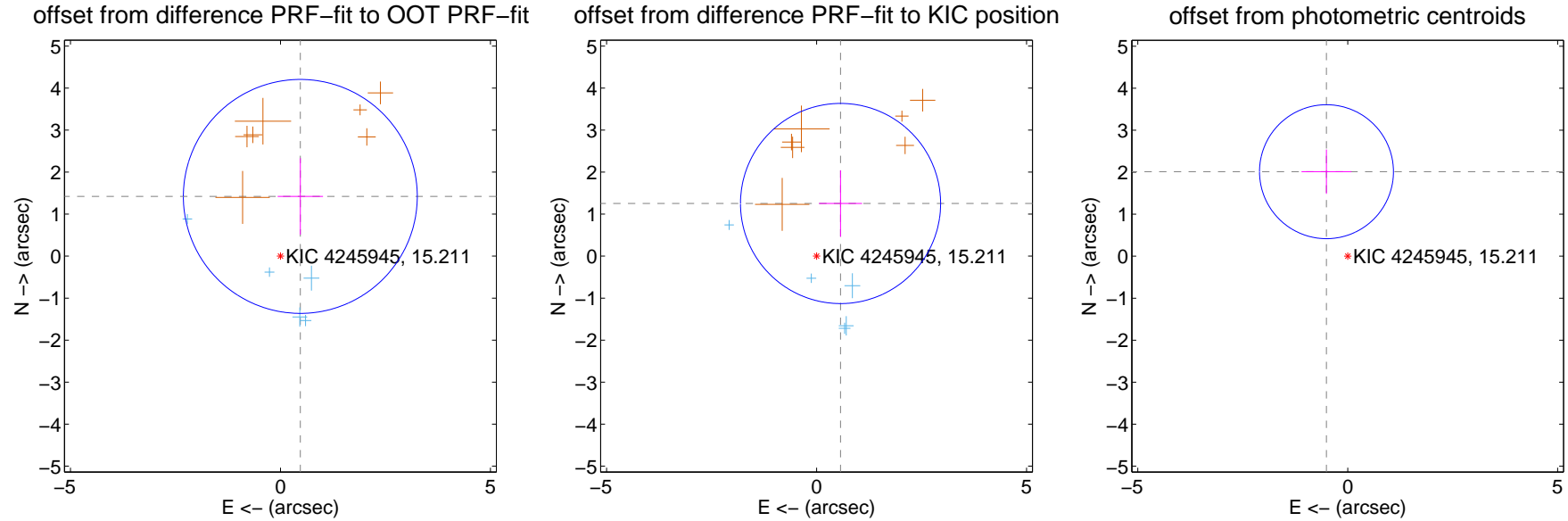
DV Centroid Data

Supplemental centroid analysis for 004245945-01. Kepler magnitude: 15.21. Transit SNR 9.20

There are 5 quarters with good PRF difference image offsets

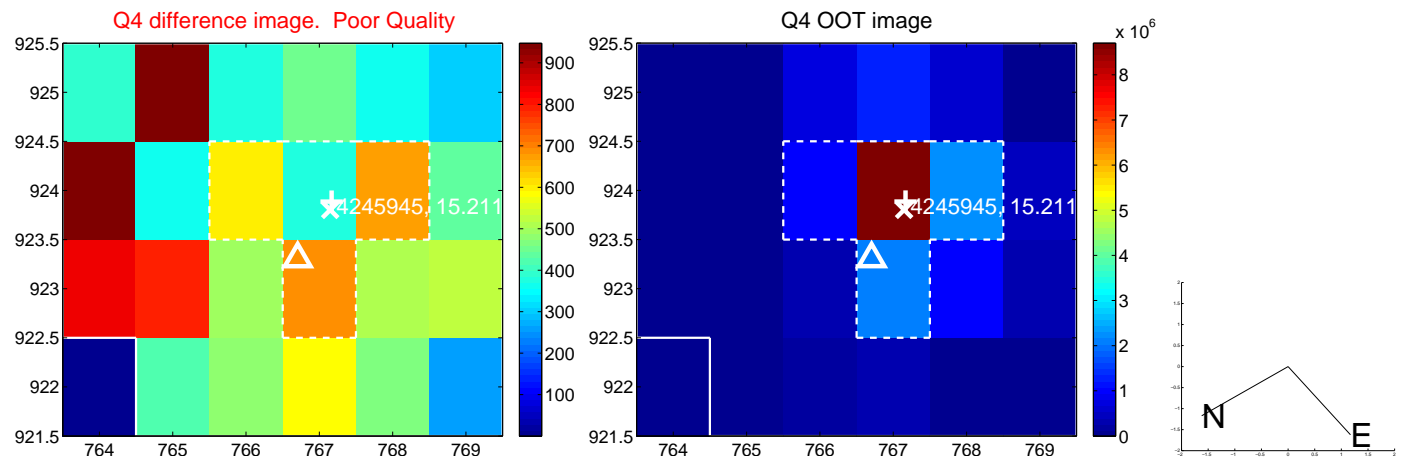
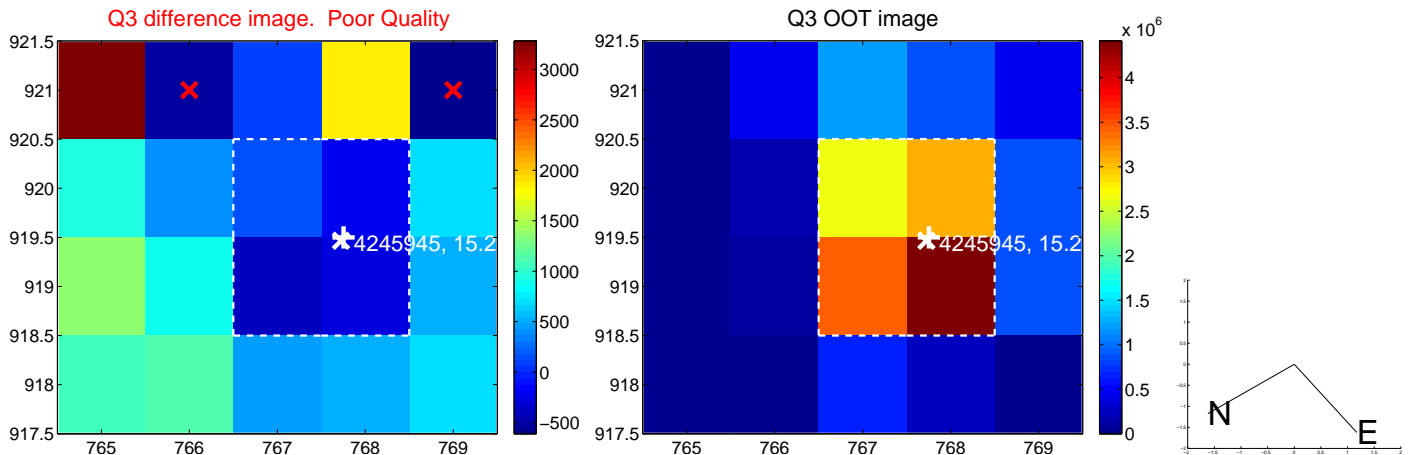
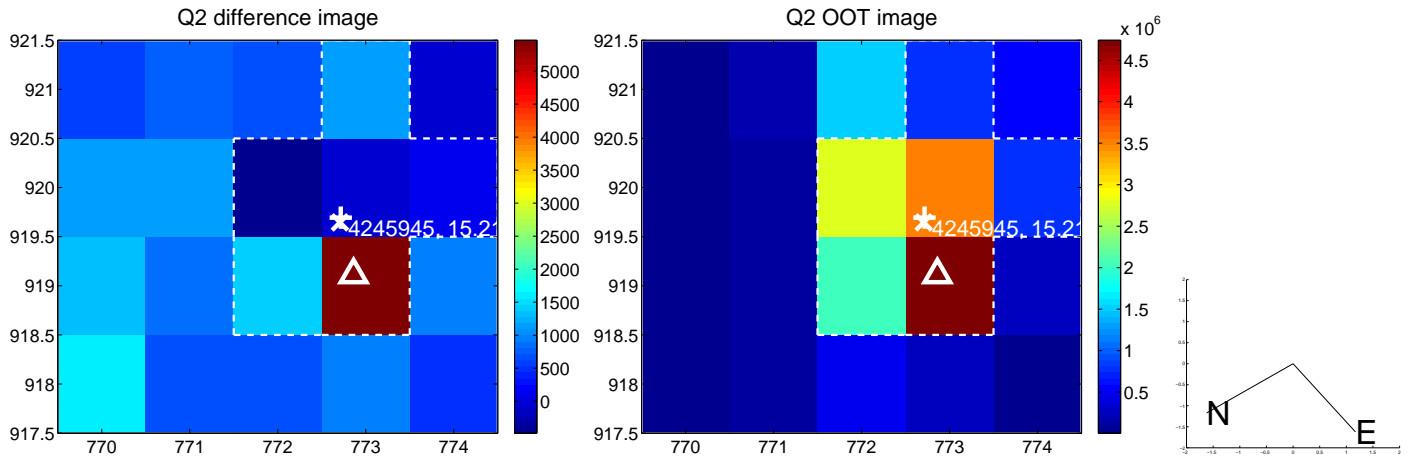
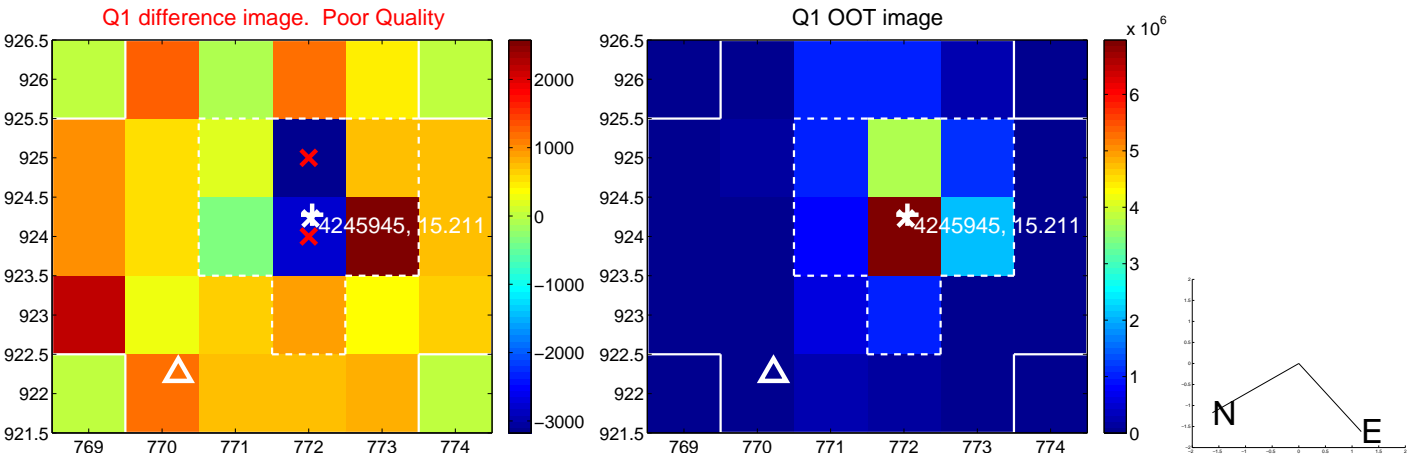
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.499 ± 0.928	1.61	-0.473 ± 0.540	1.422 ± 0.910
PRF-fit source offset from KIC position	1.377 ± 0.794	1.73	-0.571 ± 0.513	1.253 ± 0.792
photometric centroid source offset	2.08 ± 0.53	3.90	0.51 ± 0.59	2.01 ± 0.53

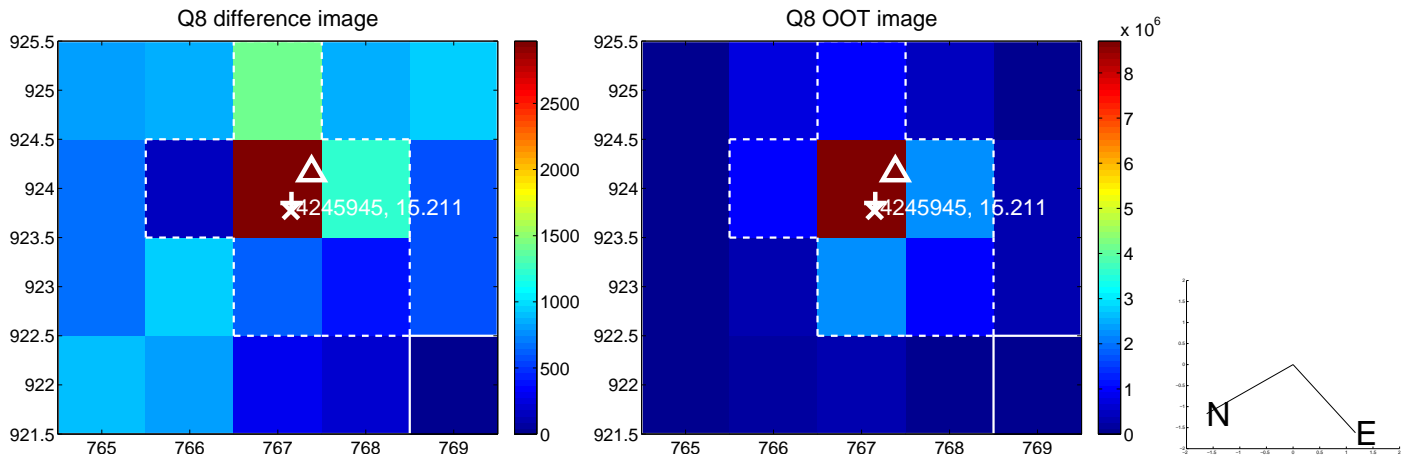
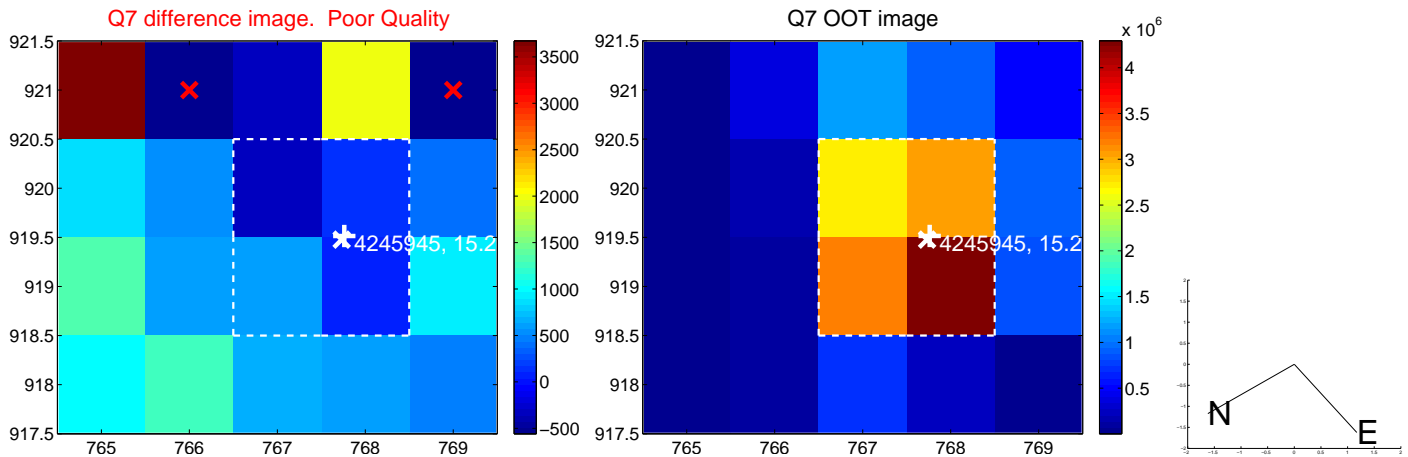
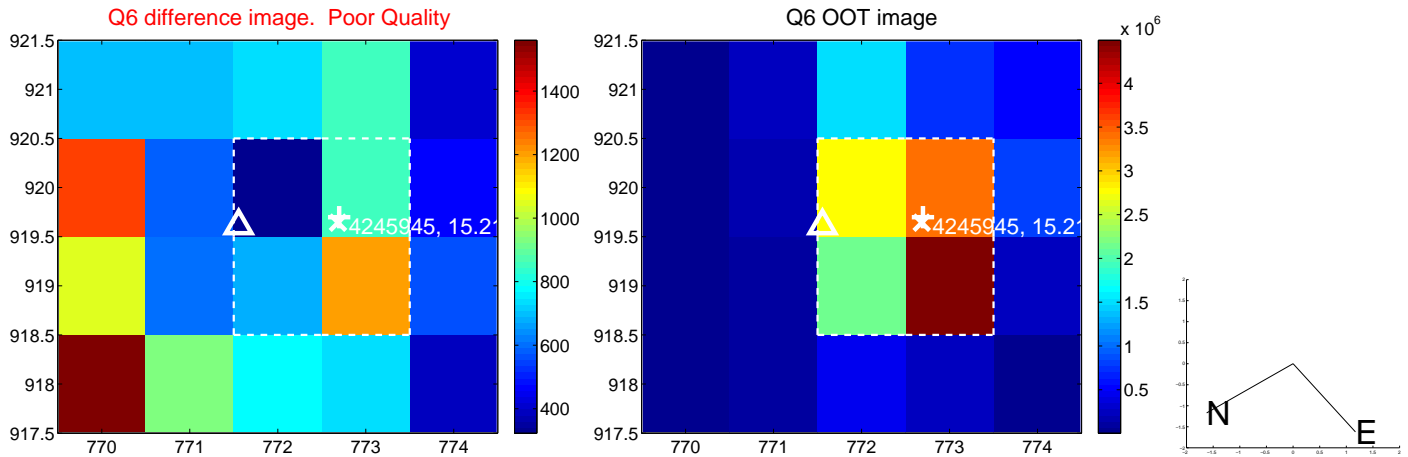
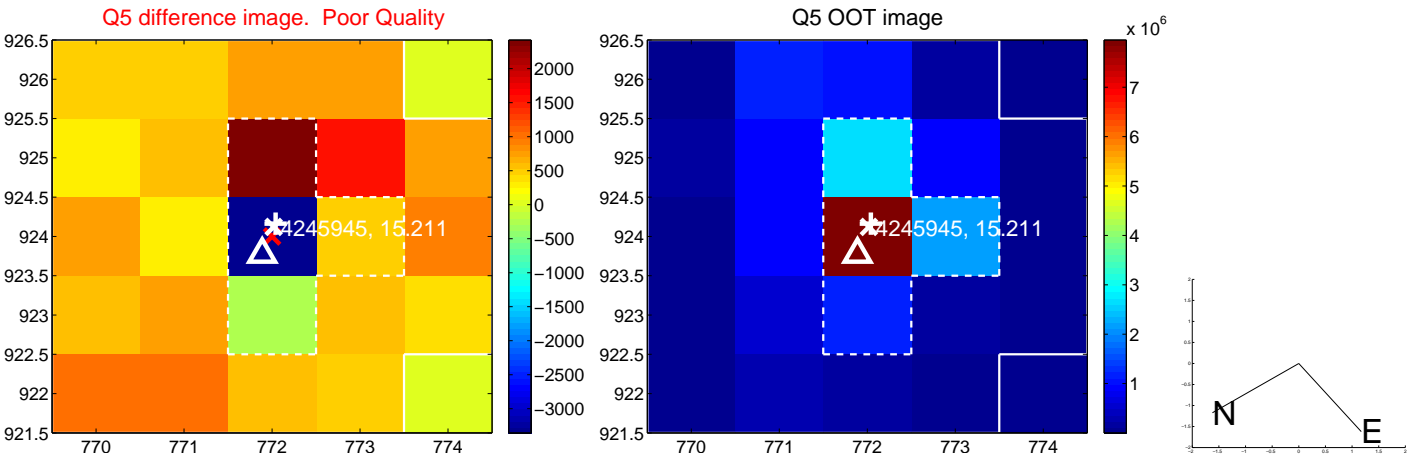


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

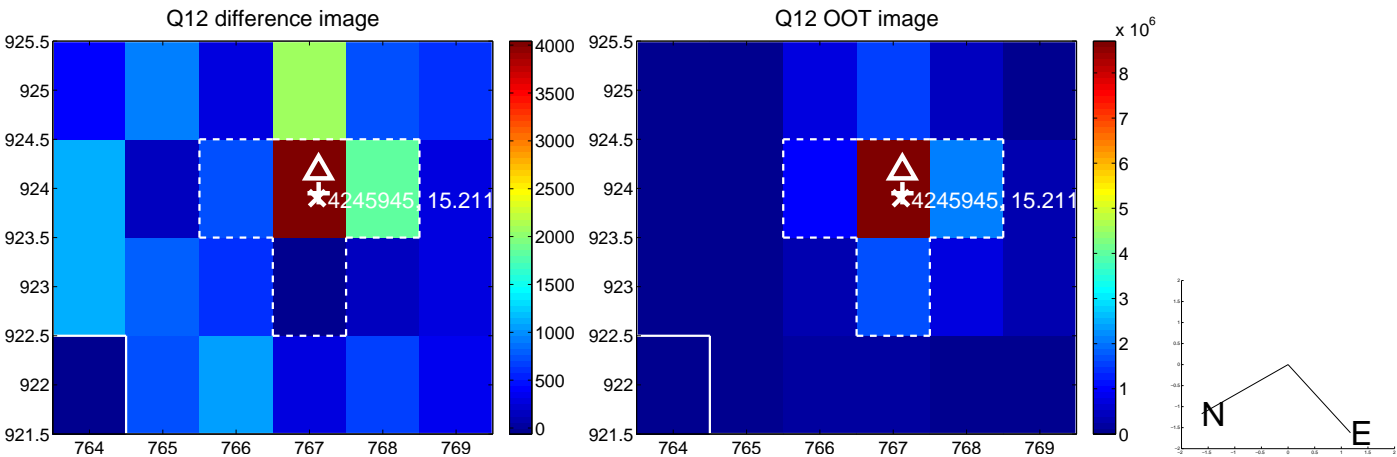
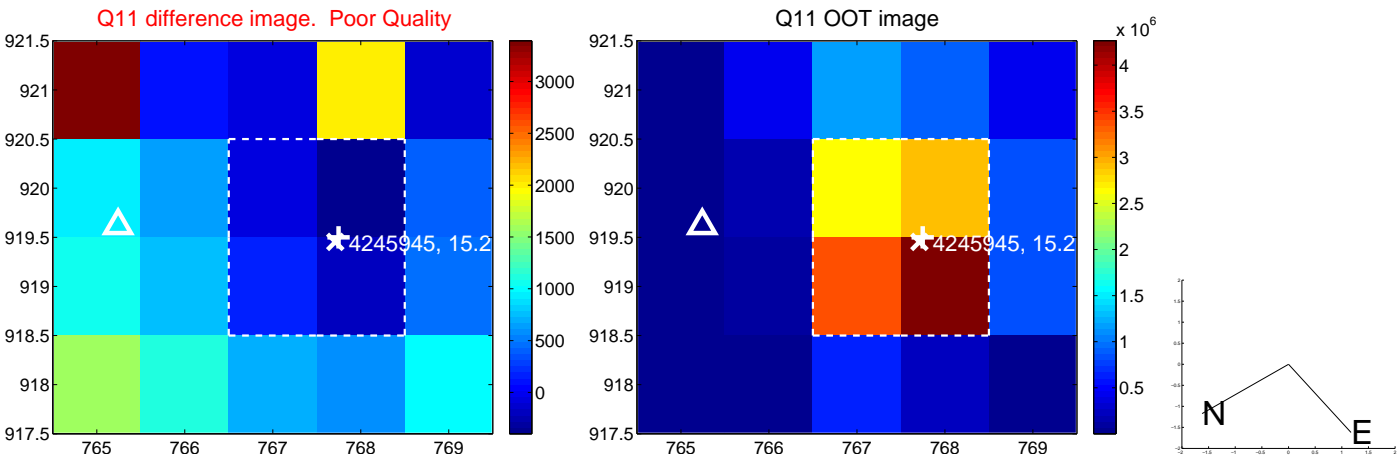
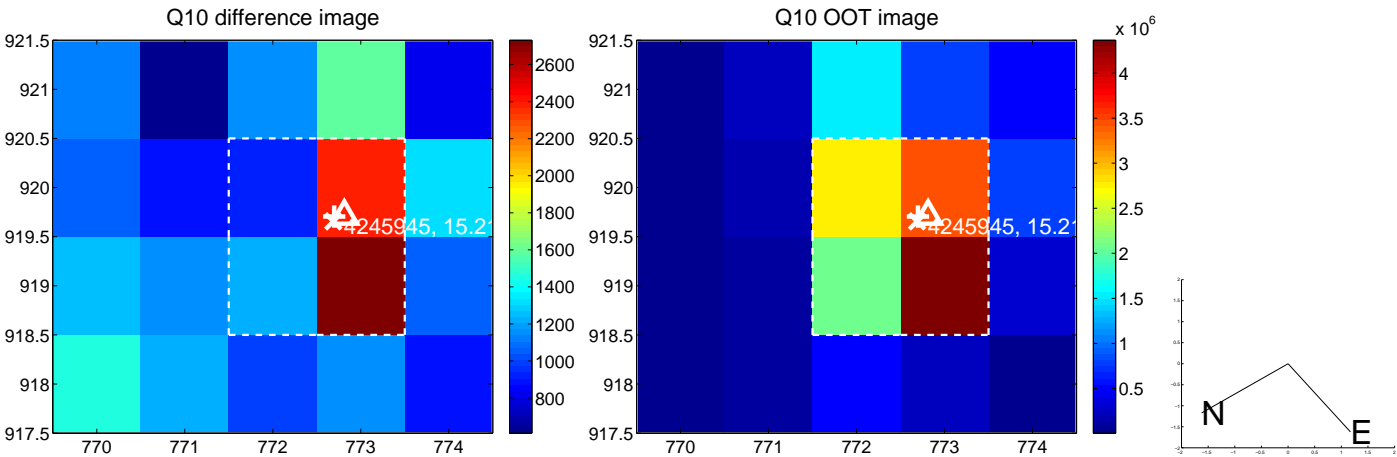
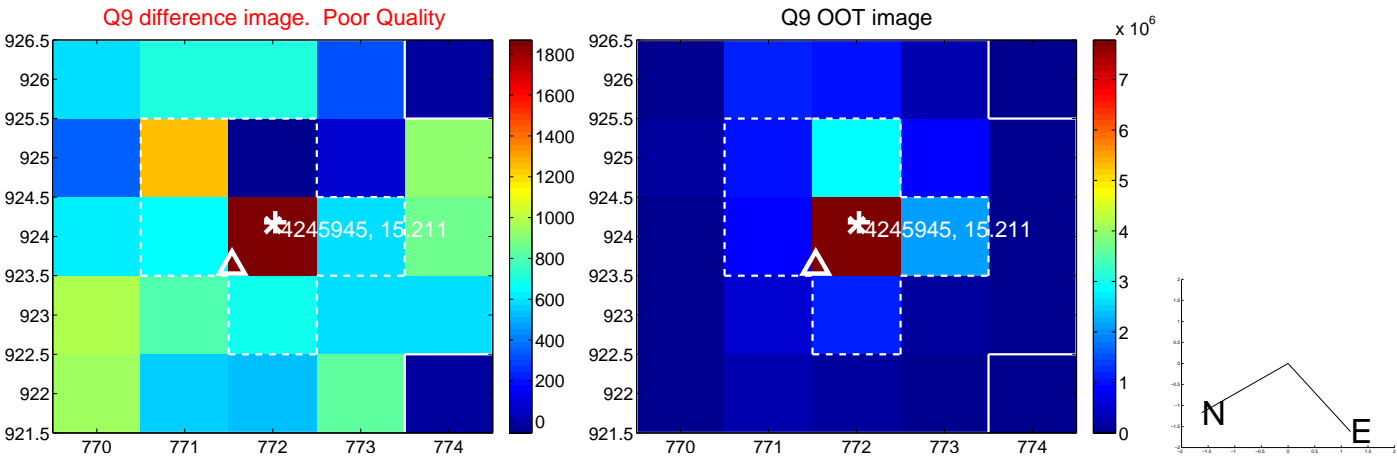
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



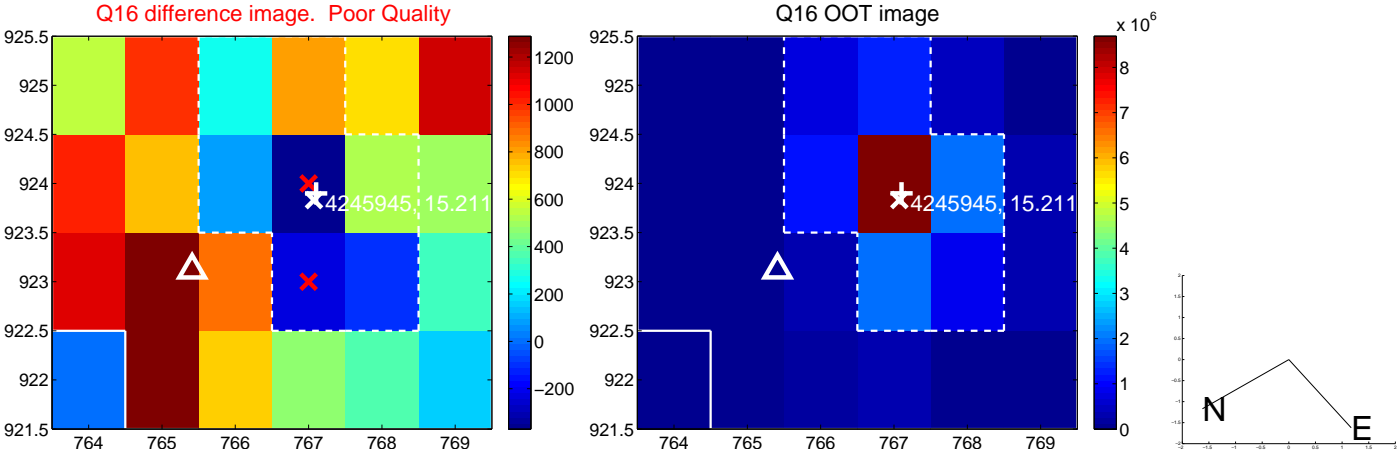
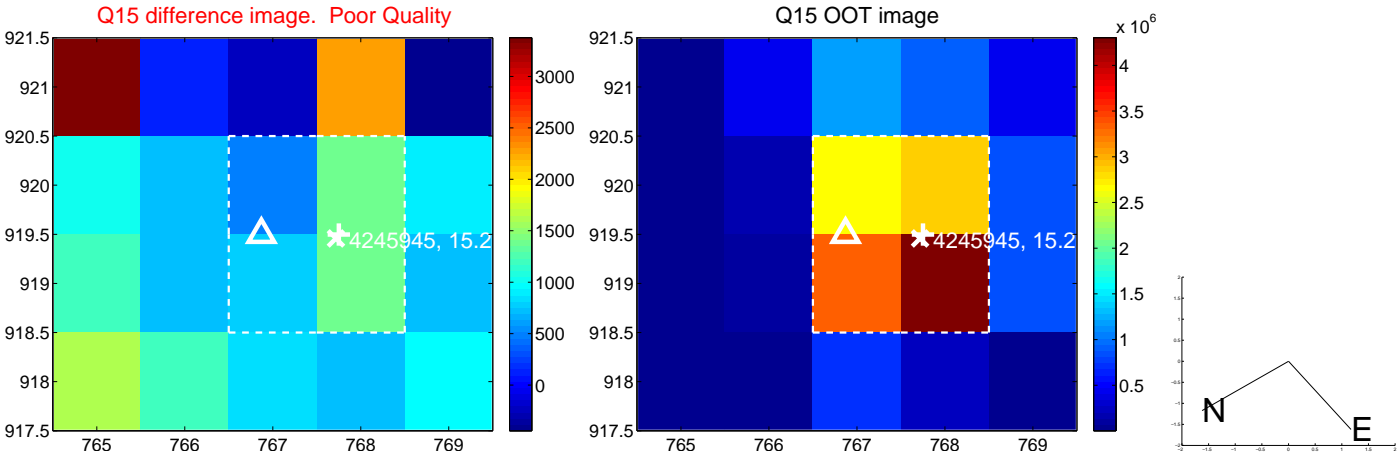
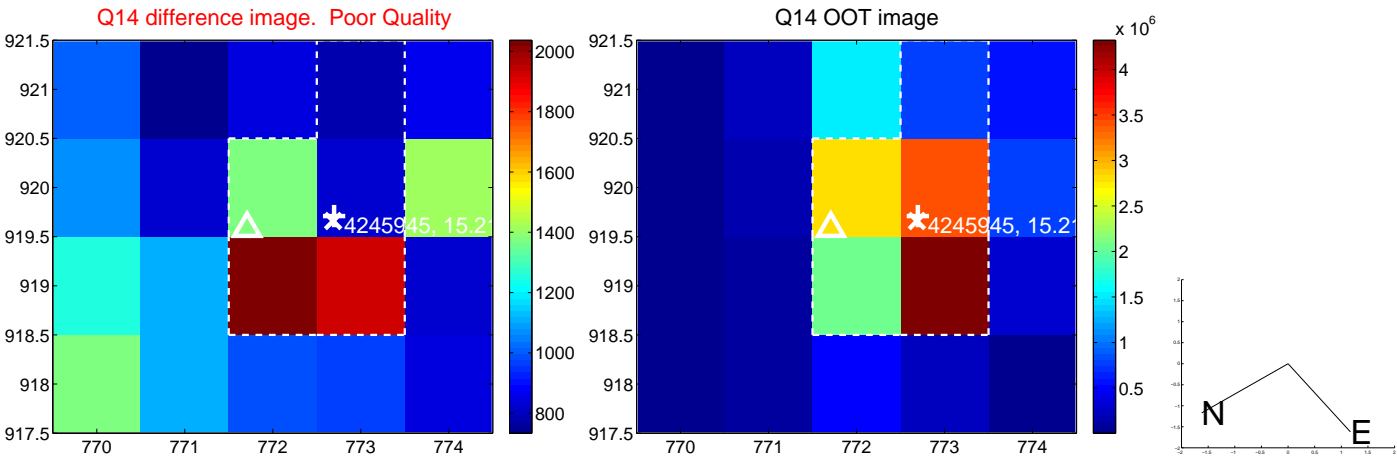
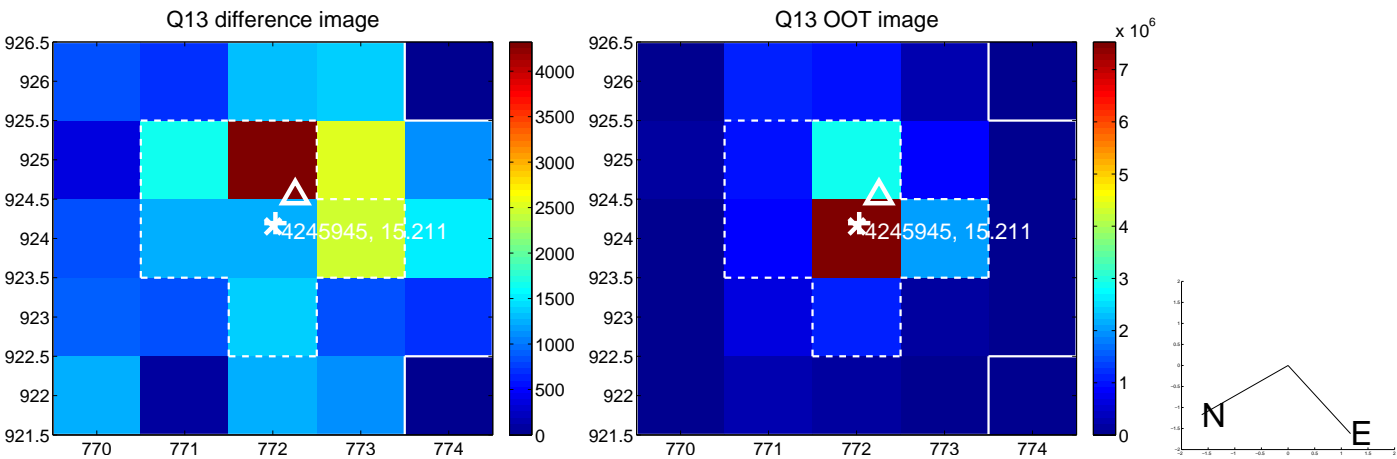
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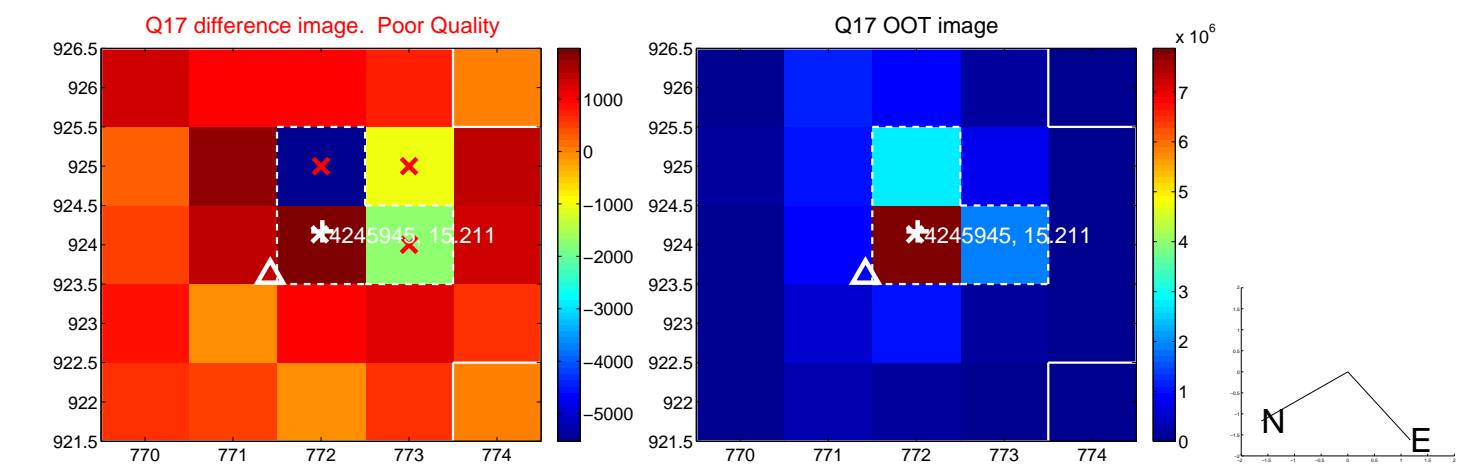
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



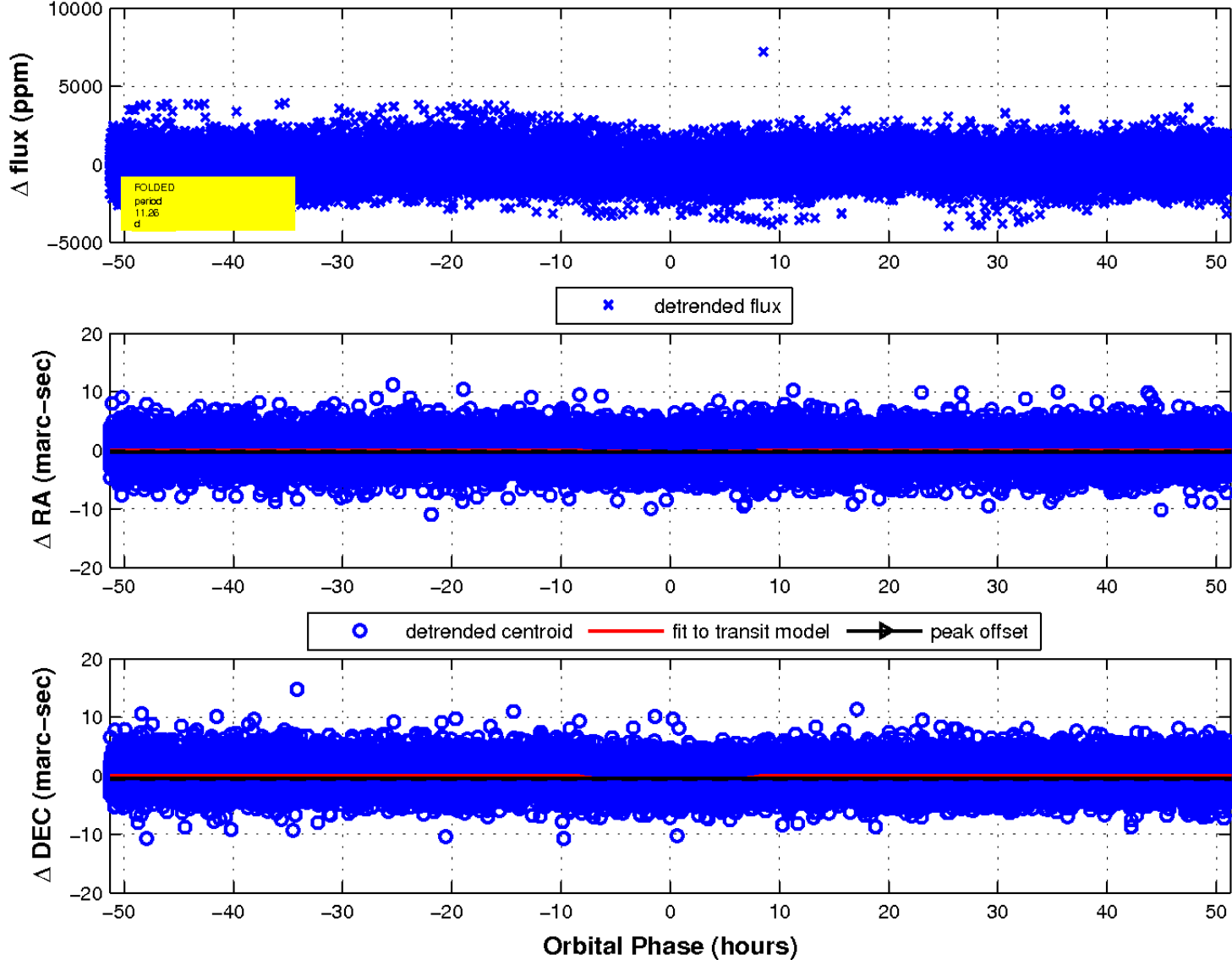
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

