

KIC 004245933

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})
004245933-01	OBS	2190.01	11.257957	140.789541	632.7	21.880	25.7	31.1	0.59	4257	1.96	14.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004245933-01	OBS	FP	0.00	0	0	1	1	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 004245933-01

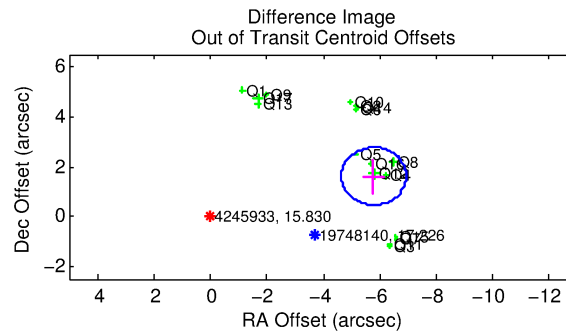
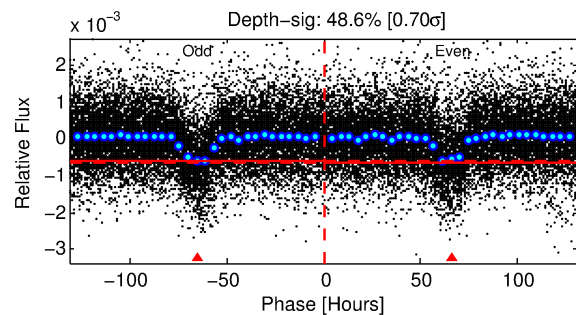
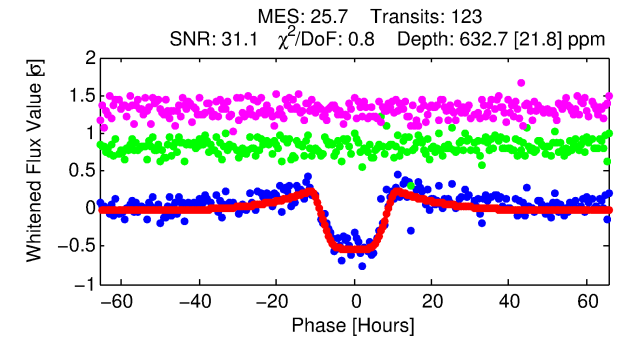
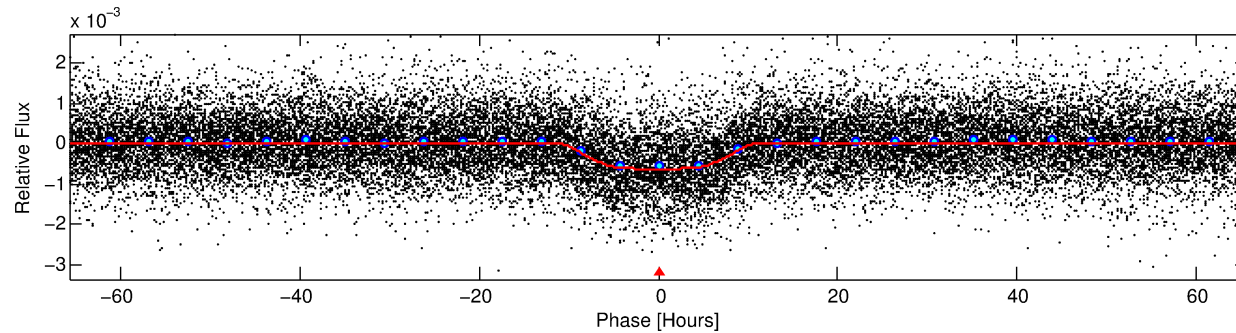
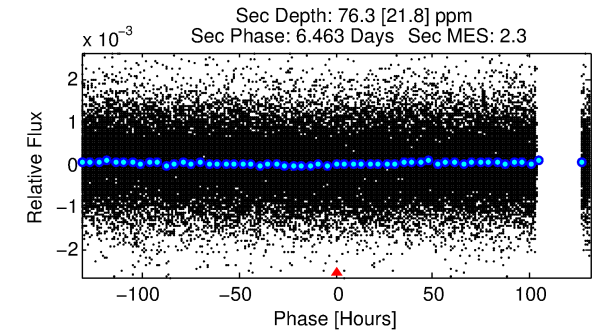
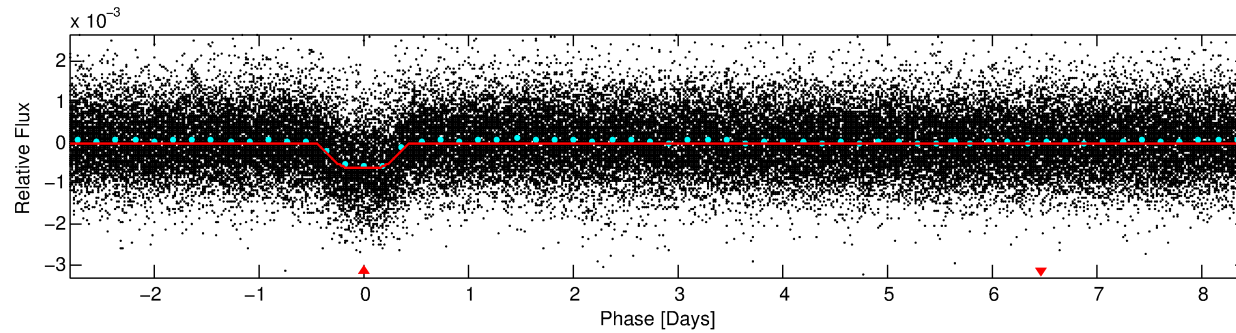
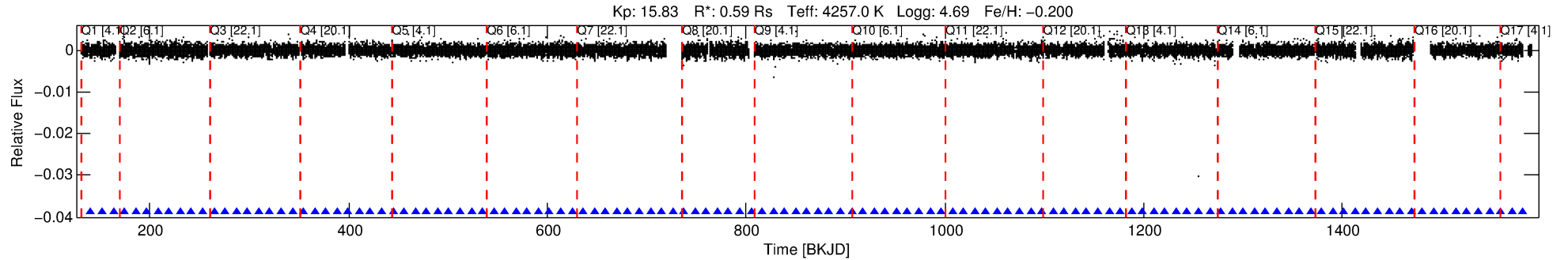
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004245933-01	4245933	004245897-pri	4245897	1:1	34.7	-9	1	12.54	15.83	1195.70	Direct-PRF	0	0.45	0.02

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: 4245933 Candidate: 1 of 1 Period: 11.258 d

KOI: K02190.01 Corr: 0.925



DV Fit Results:

Period = 11.25796 [0.00016] d
Epoch = 140.7895 [0.0118] BKJD
Rp/R* = 0.0307 [0.0008]
a/R* = 1.82 [0.07]
b = 0.95 [0.01]
Seff = 14.45 [2.45]
Teff = 497 [21] K
Rp = 1.96 [0.21] Re
a = 0.0836 [0.0068] AU
Ag = 76.21 [23.54] [3.19σ]
Teffp = 2271 [181] K [9.75σ]

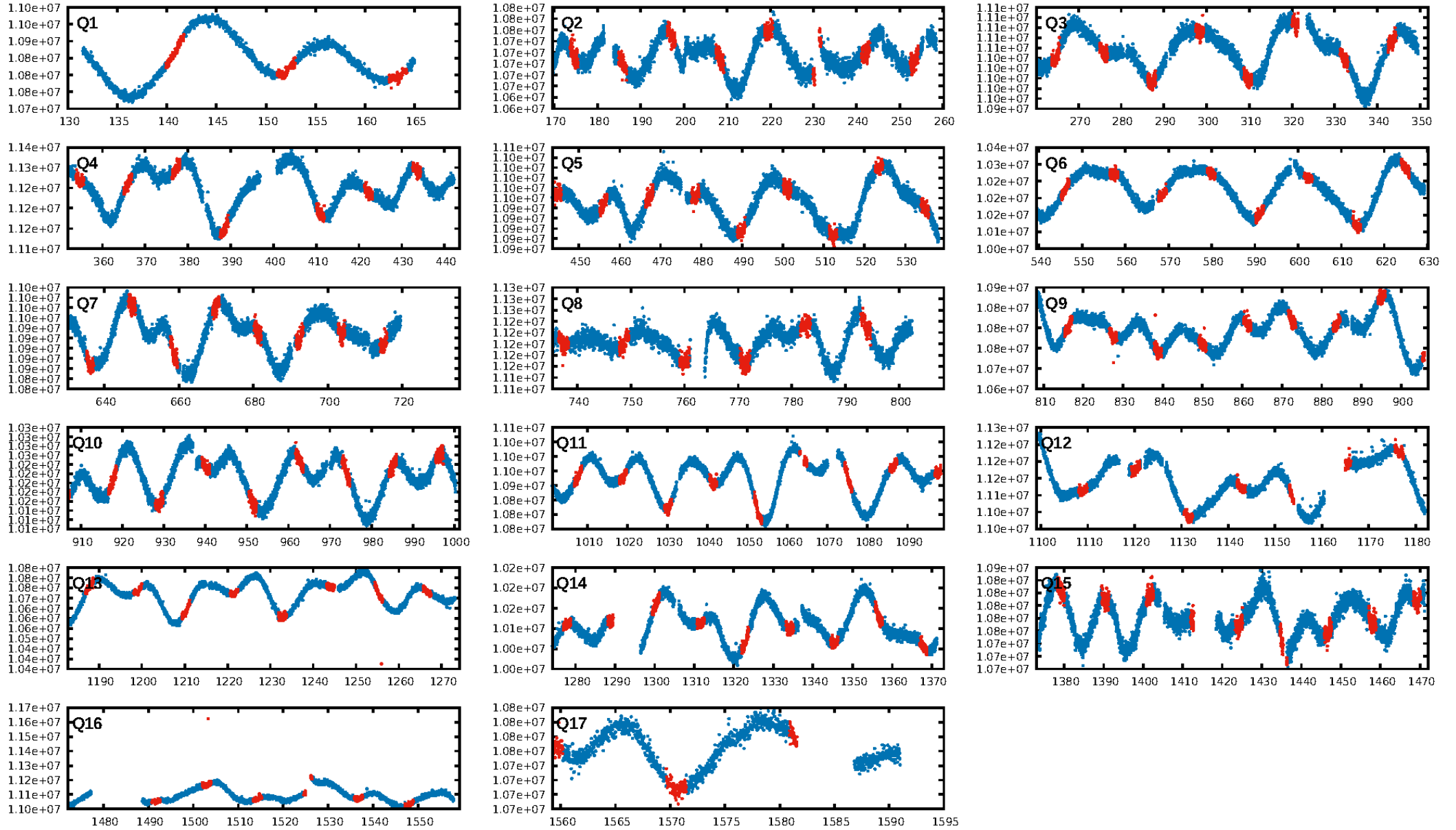
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.10e-164
RollingBand-fgt: 1.00 [117/117]
GhostDiagnostic-chr: -0.0671
Centroid-sig: 0.0%
Centroid-so: 7.202 arcsec [18.68σ]
OotOffset-rm: 6.004 arcsec [15.66σ]
KicOffset-rm: 6.262 arcsec [16.83σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 1.00 [17/17]

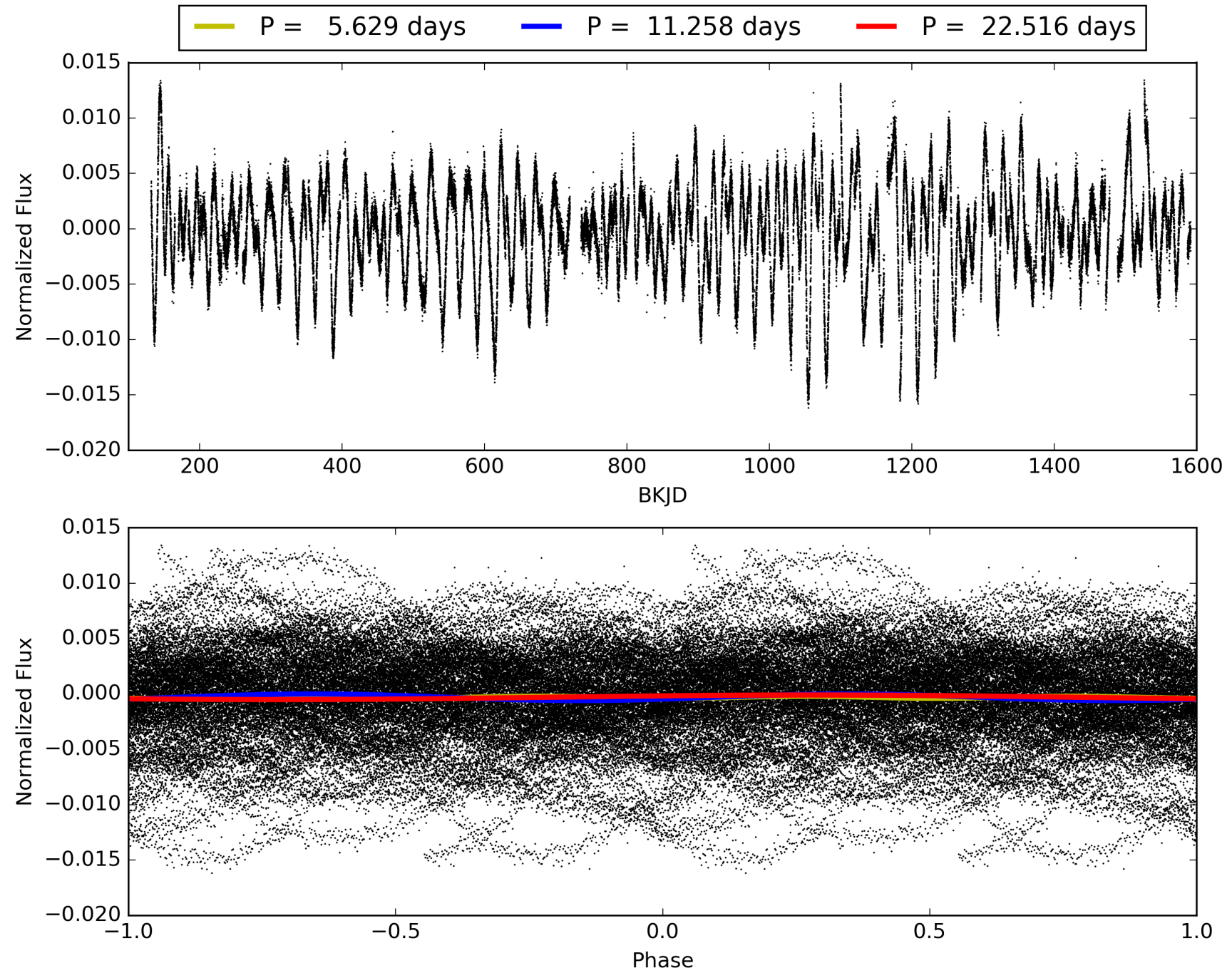
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:23:44 Z

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

TCE 004245933-01, PDC Light Curves

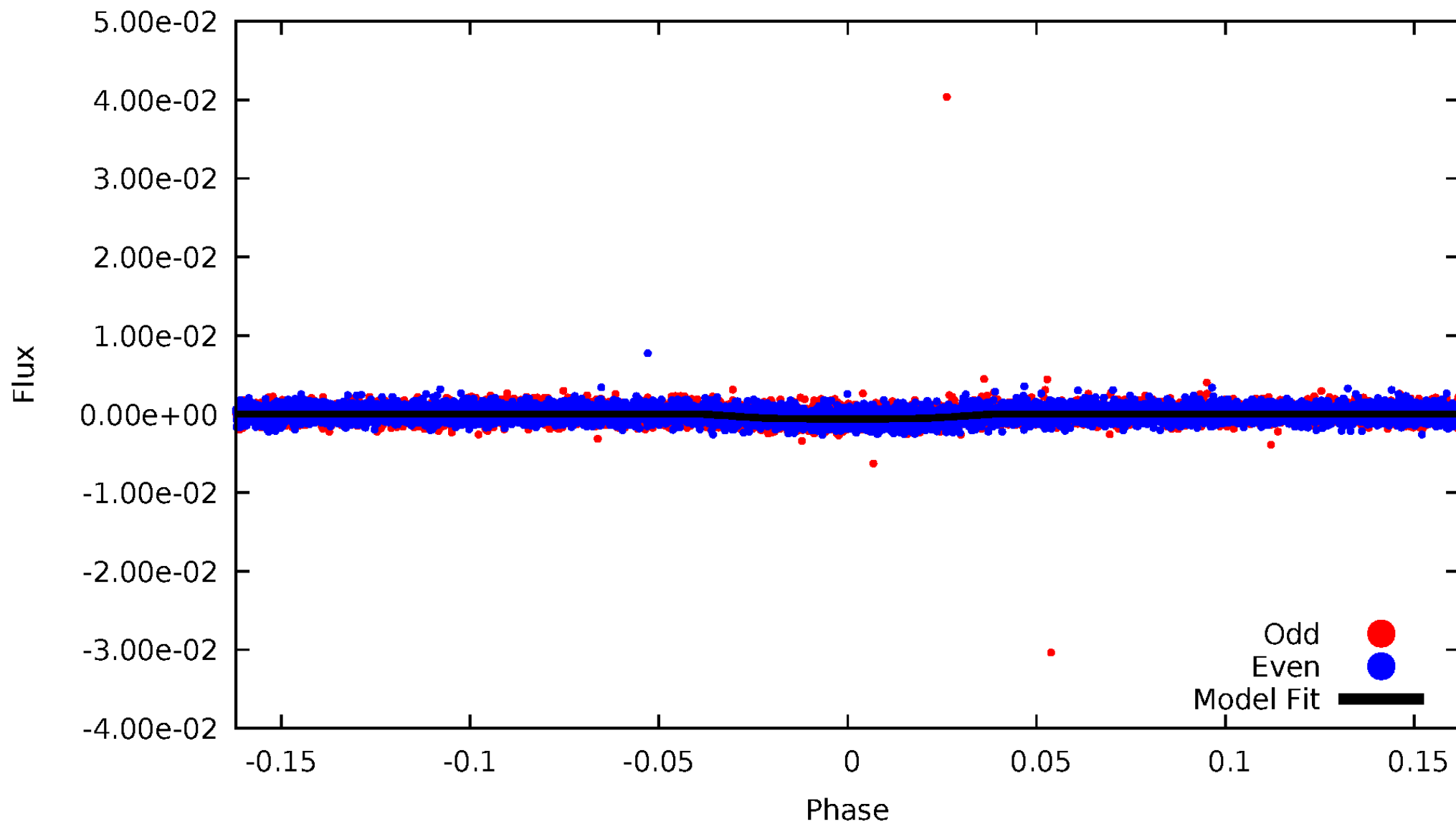


TCE 004245933-01



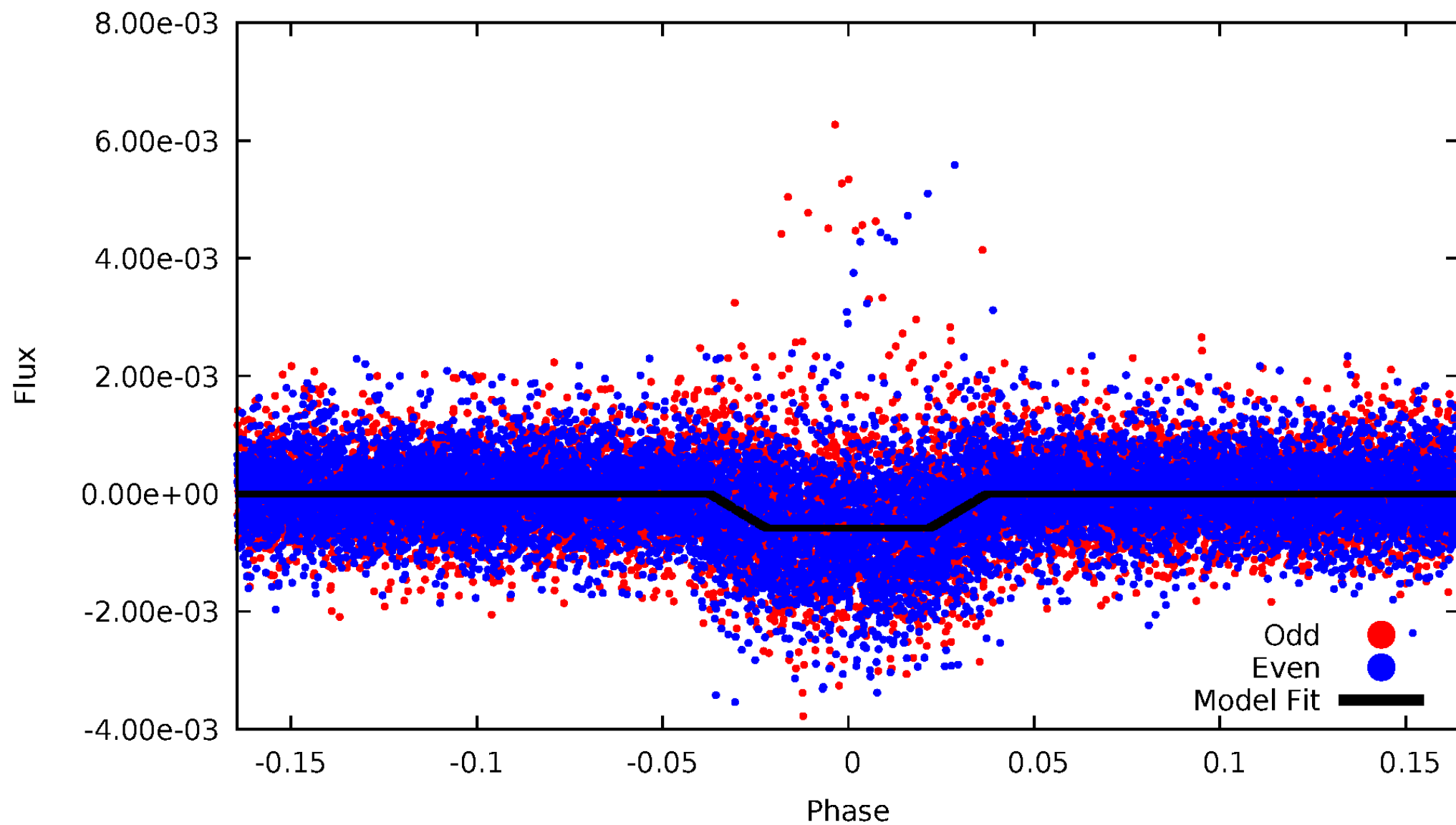
DV Odd/Even

TCE 004245933-01



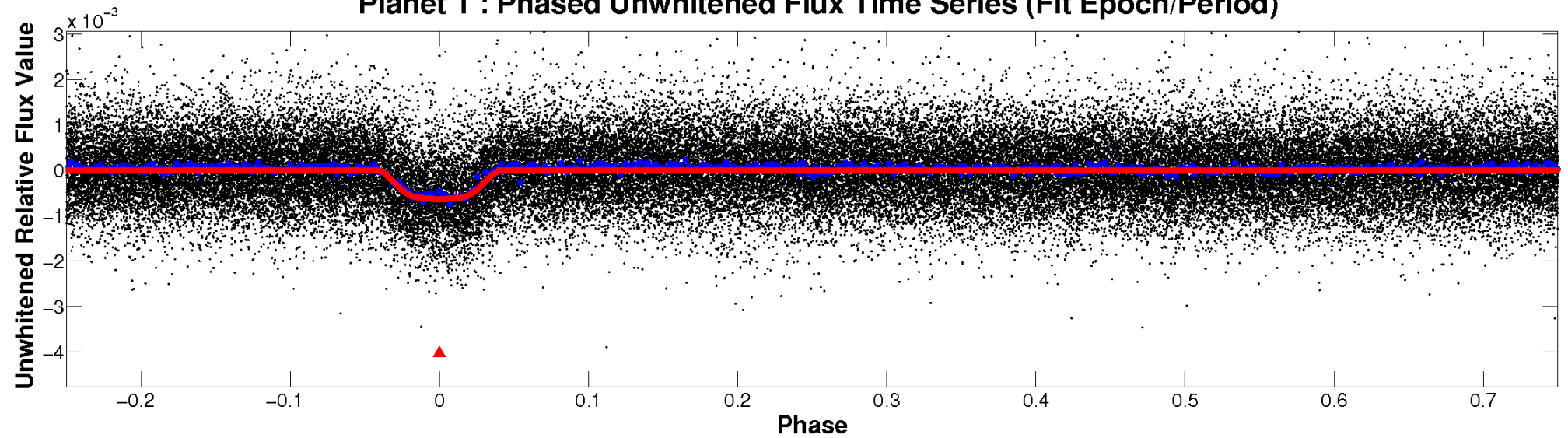
ALT Odd/Even

TCE 004245933-01

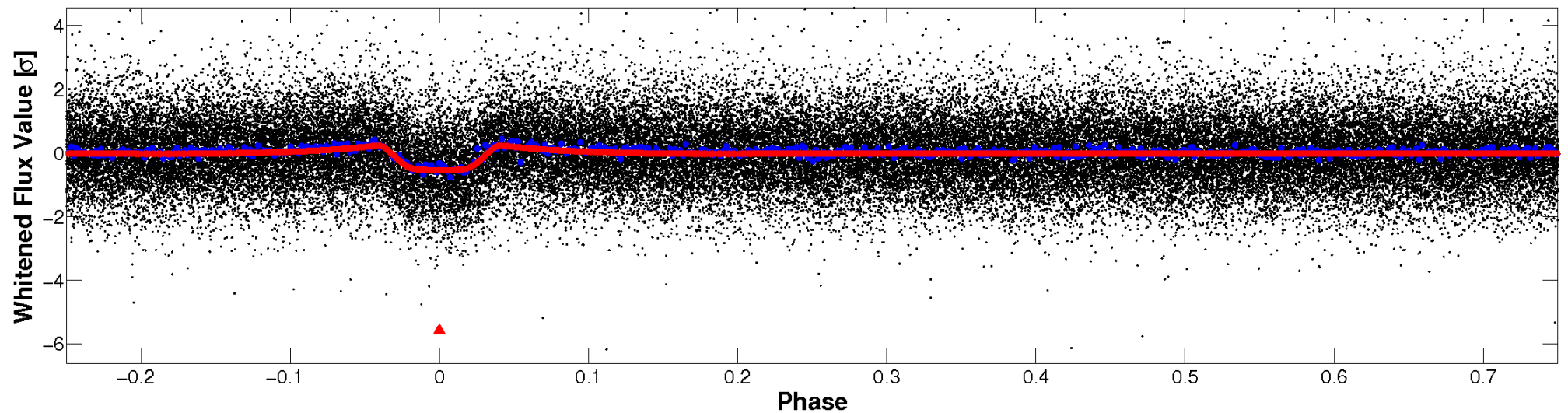


Non-Whitened Vs. Whitened Light Curve

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

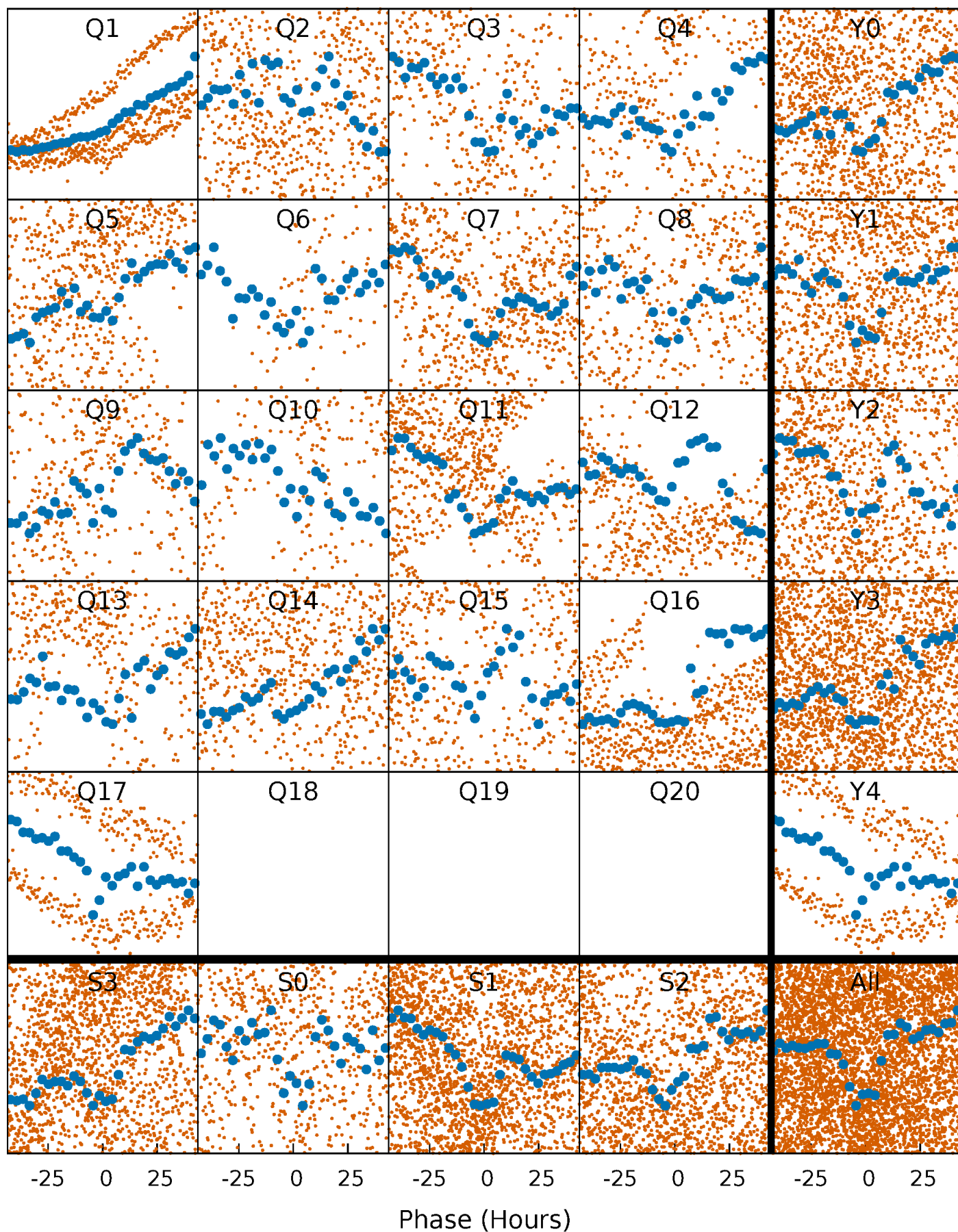


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



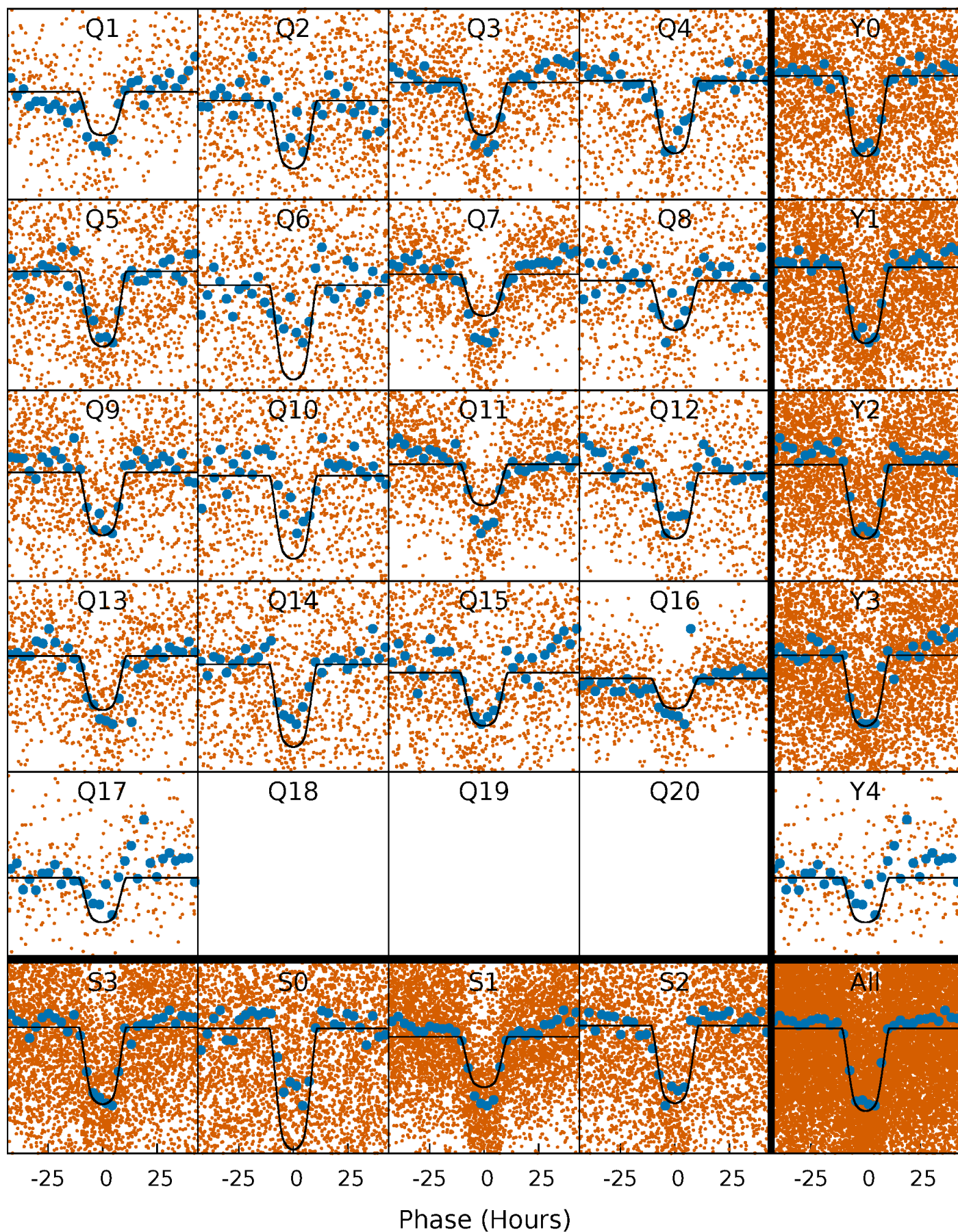
PDC Quarter-Phased Transit Curves

TCE 004245933-01 P= 11.257957 Days $T_0=140.789541$ (BKJD)



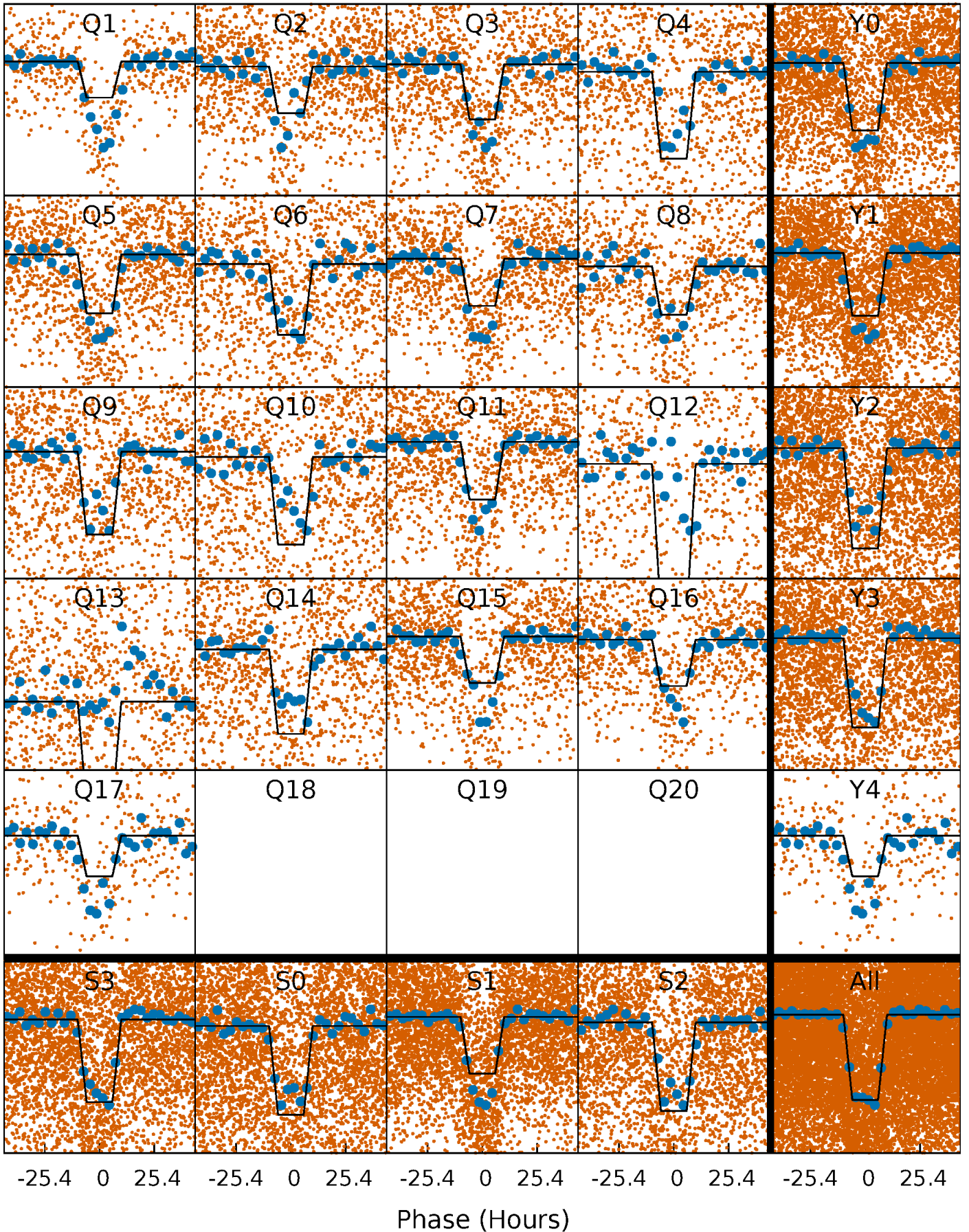
DV Quarter-Phased Transit Curves

TCE 004245933-01 P= 11.257957 Days $T_0=140.789541$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

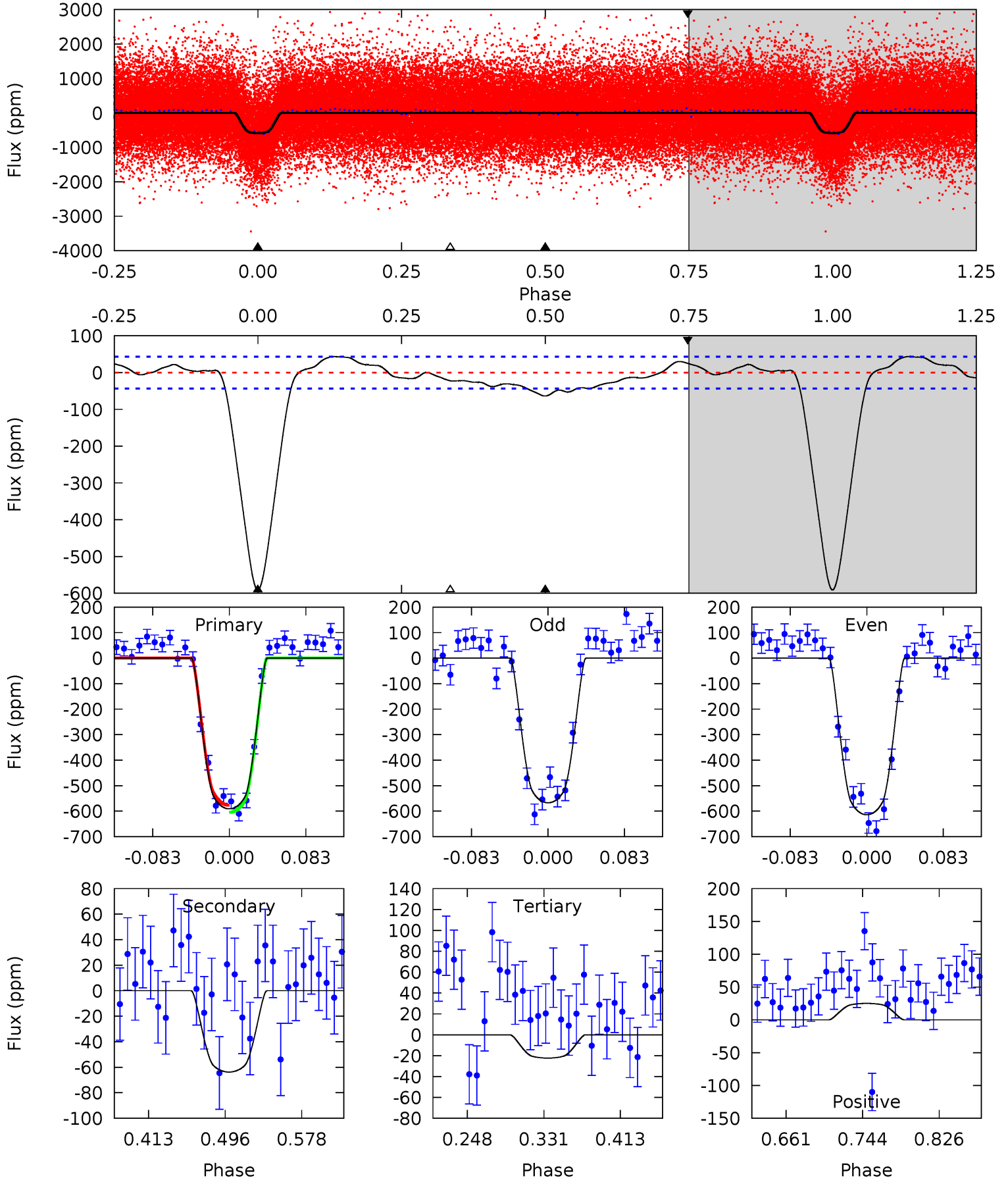
TCE 004245933-01 P= 11.257975 Days $T_0=140.788996$ (BKJD)



DV Model-Shift Uniqueness Test

004245933-01, P = 11.257957 Days, E = 129.531584 Days

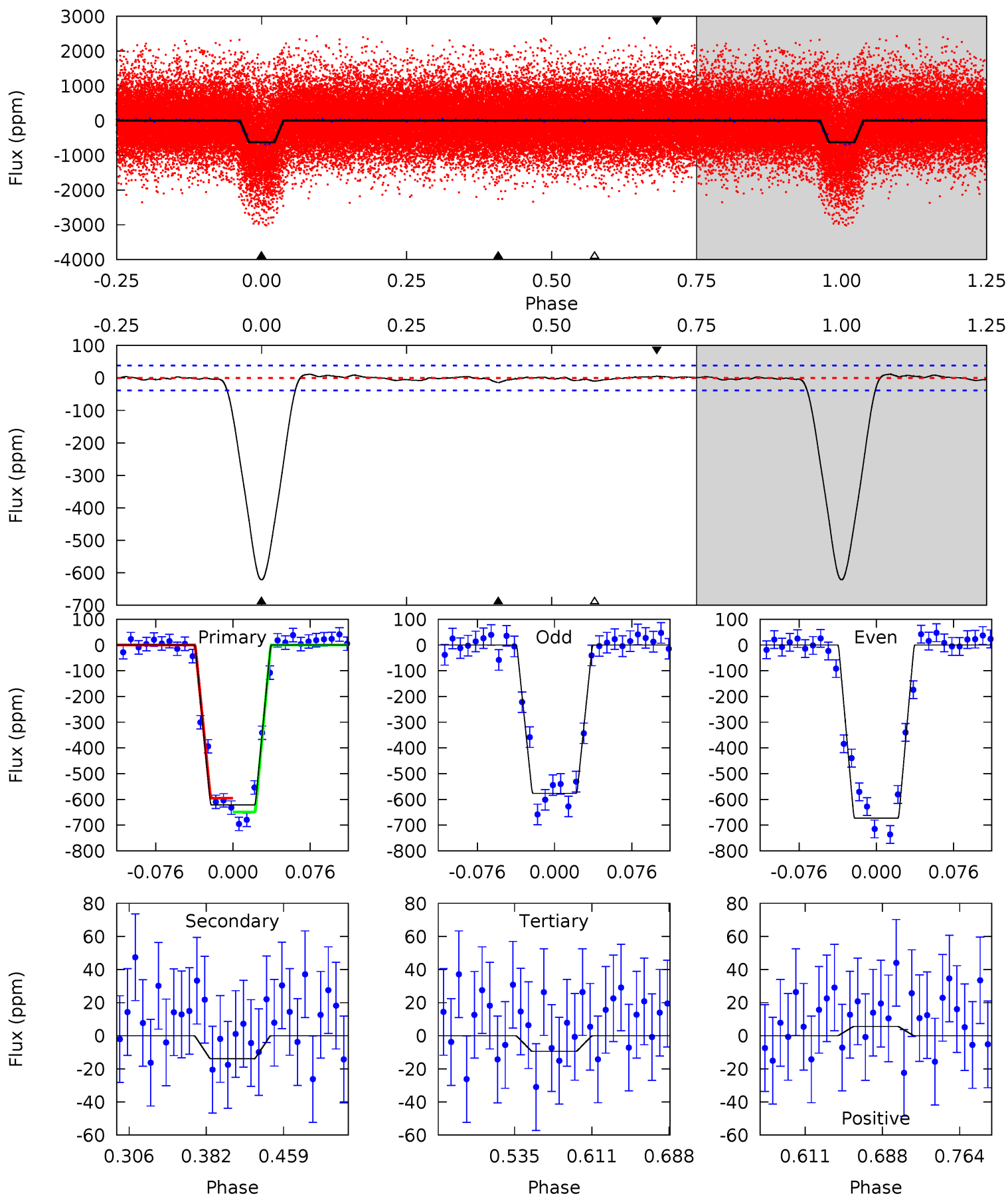
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
62.7	6.77	2.37	2.66	4.60	1.74	2.30	60.3	60.1	4.40	4.11	2.49	1.05	0.07	1.48



Alt Model-Shift Uniqueness Test

004245933-01, P = 11.257975 Days, E = 129.531021 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
74.9	1.68	1.14	0.68	4.62	1.77	0.53	73.7	74.2	0.54	1.00	5.78	0.92	0.02	3.24



Stellar Parameters For KIC 004245933

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4257^{+115}_{-140}	$4.691^{+0.032}_{-0.052}$	$-0.200^{+0.300}_{-0.300}$	$0.586^{+0.062}_{-0.045}$	$0.623^{+0.056}_{-0.062}$	$4.371^{+0.734}_{-0.839}$
	+3%/-3%	+1%/-1%	+150%/-150%	+11%/-8%	+9%/-10%	+17%/-19%
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 004245933-01 / KOI 2190.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-64 ± 9	$1.98^{+0.12}_{-0.11}$	696^{+24}_{-27}	2782^{+86}_{-85}	62^{+11}_{-10}
Alt.	-14 ± 8	$1.55^{+0.10}_{-0.09}$	697^{+25}_{-23}	2452^{+143}_{-213}	23^{+12}_{-13}

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

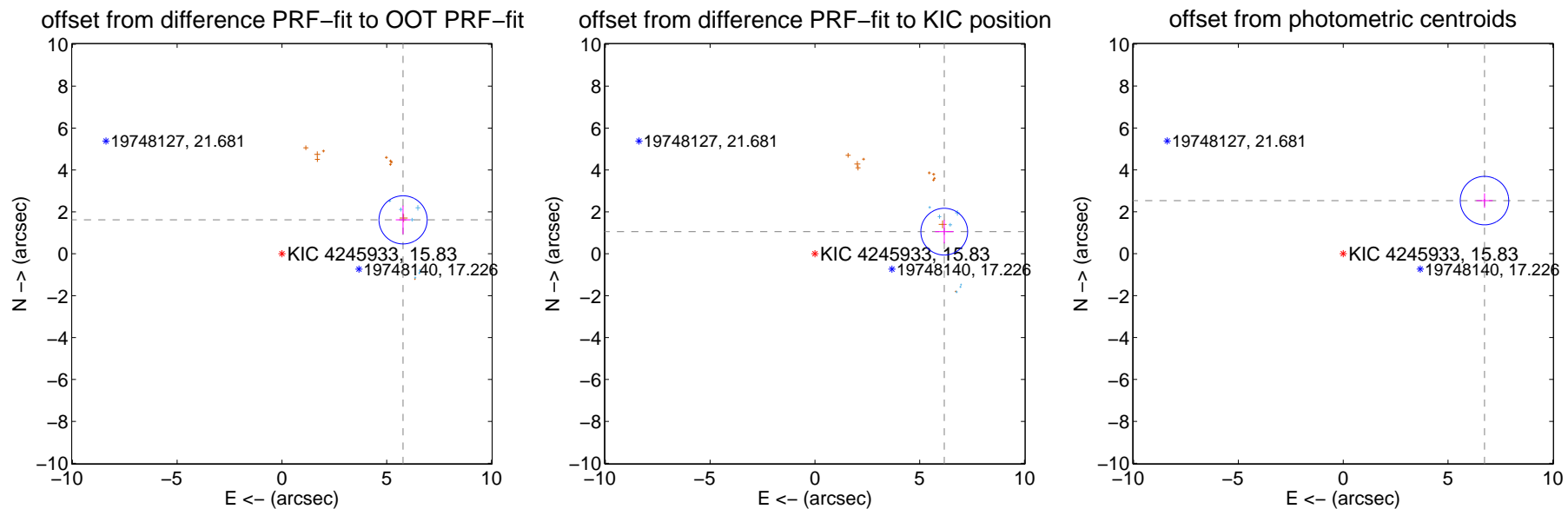
DV Centroid Data

Supplemental centroid analysis for 004245933-01. Kepler magnitude: 15.83. Transit SNR 31.12

There are 7 quarters with good PRF difference image offsets

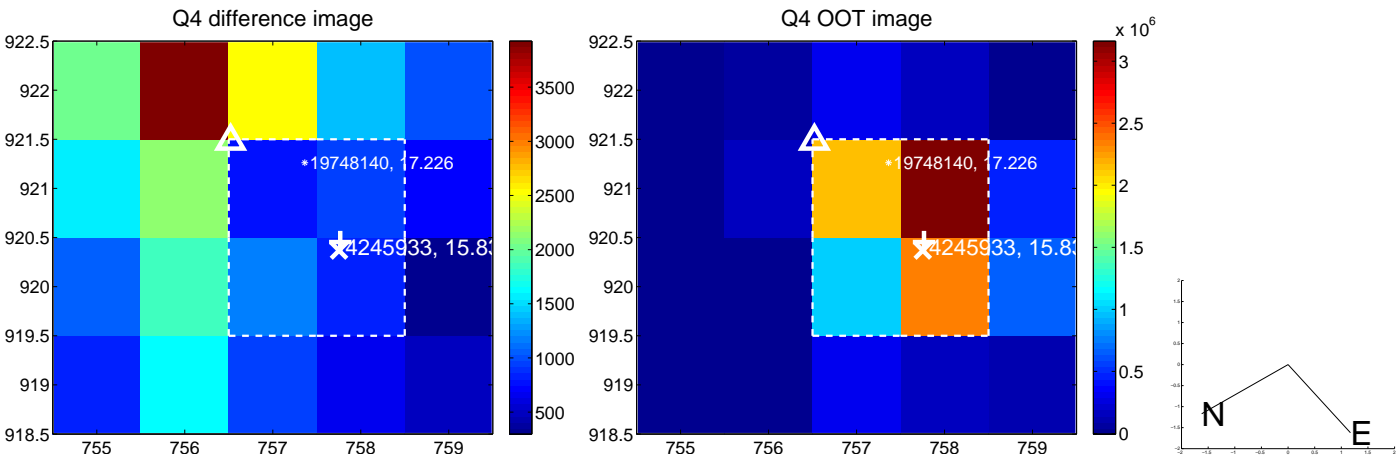
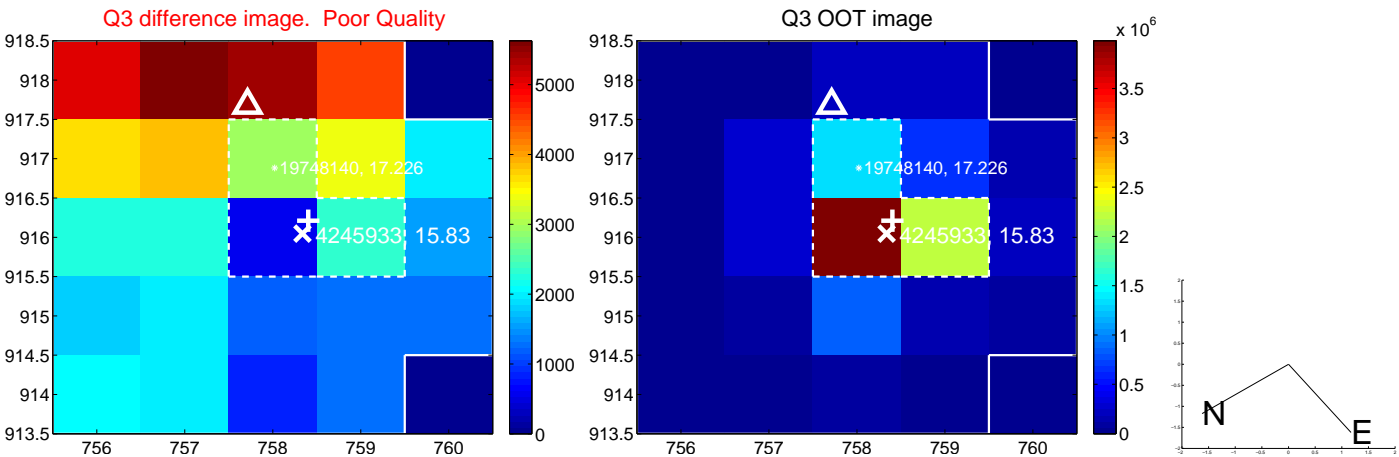
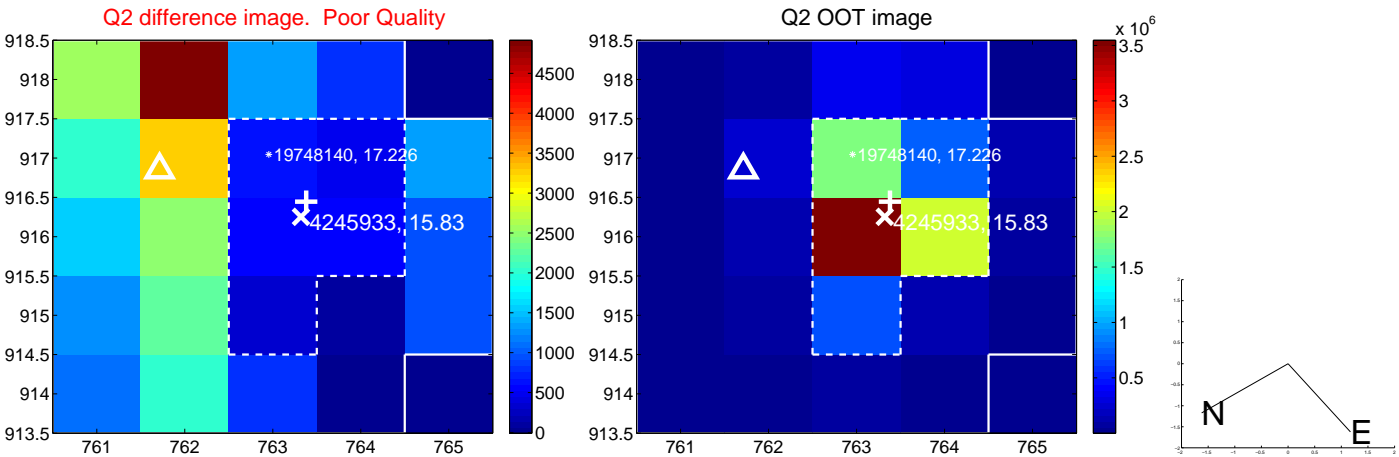
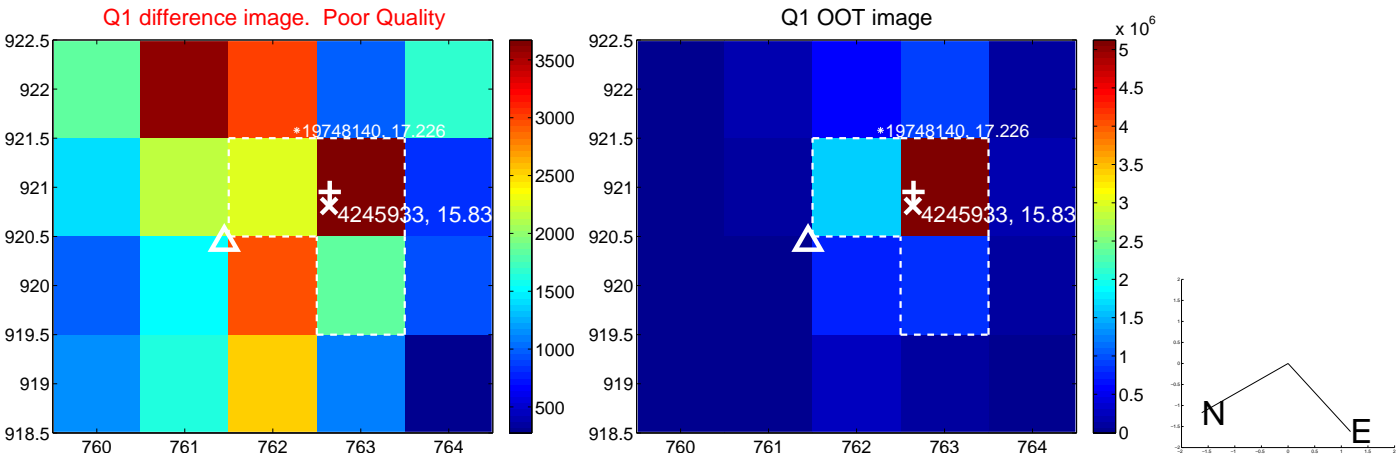
The direct PRF centroid is offset from the target star catalog position by about 0.57 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.004 ± 0.383	15.66	-5.782 ± 0.350	1.619 ± 0.680
PRF-fit source offset from KIC position	6.262 ± 0.372	16.83	-6.172 ± 0.442	1.056 ± 0.562
photometric centroid source offset	7.20 ± 0.39	18.68	-6.74 ± 0.39	2.53 ± 0.34

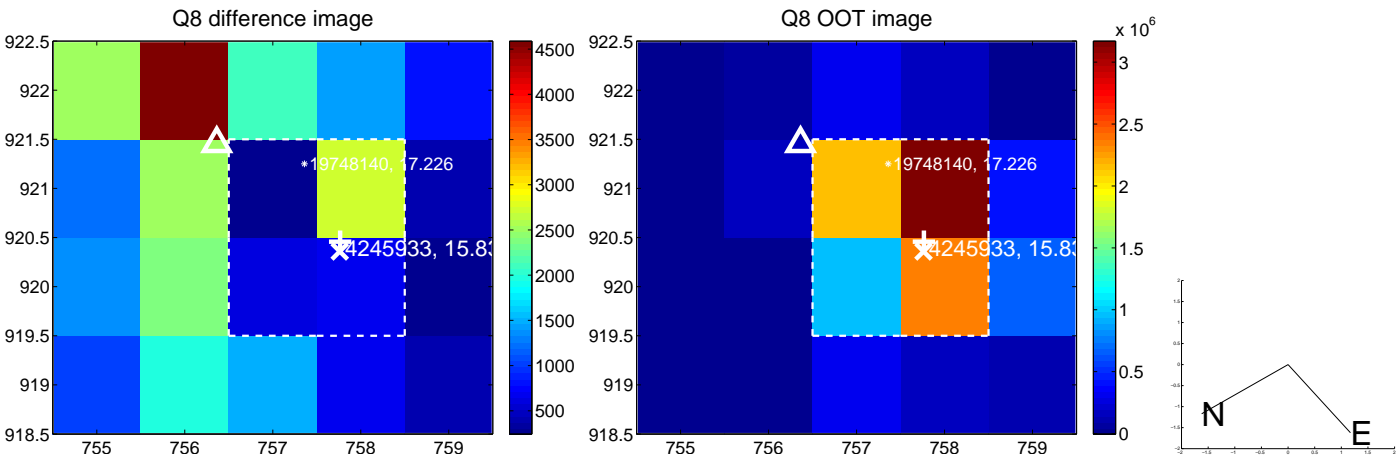
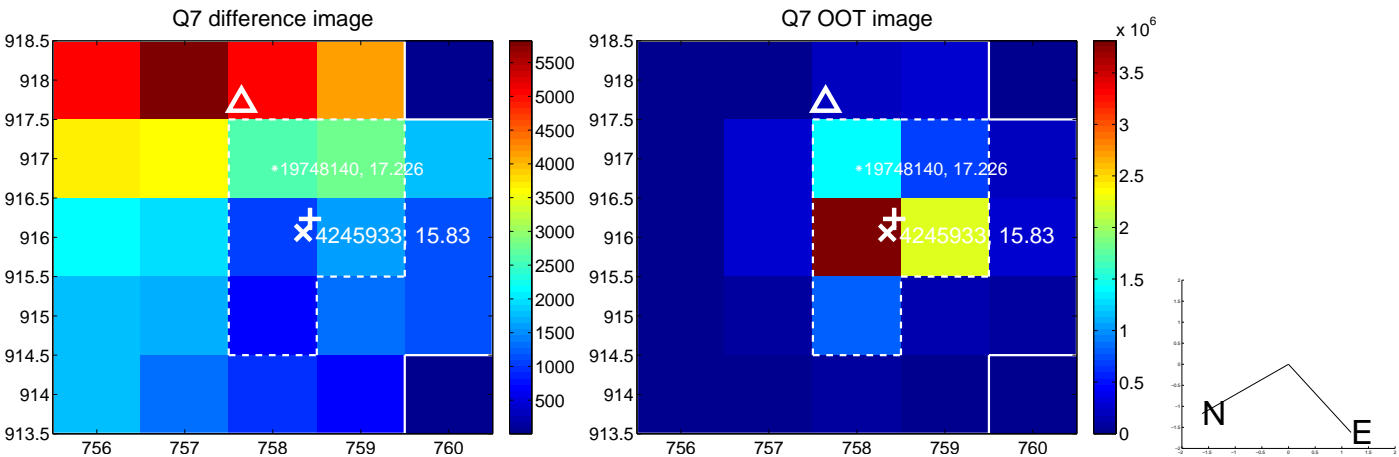
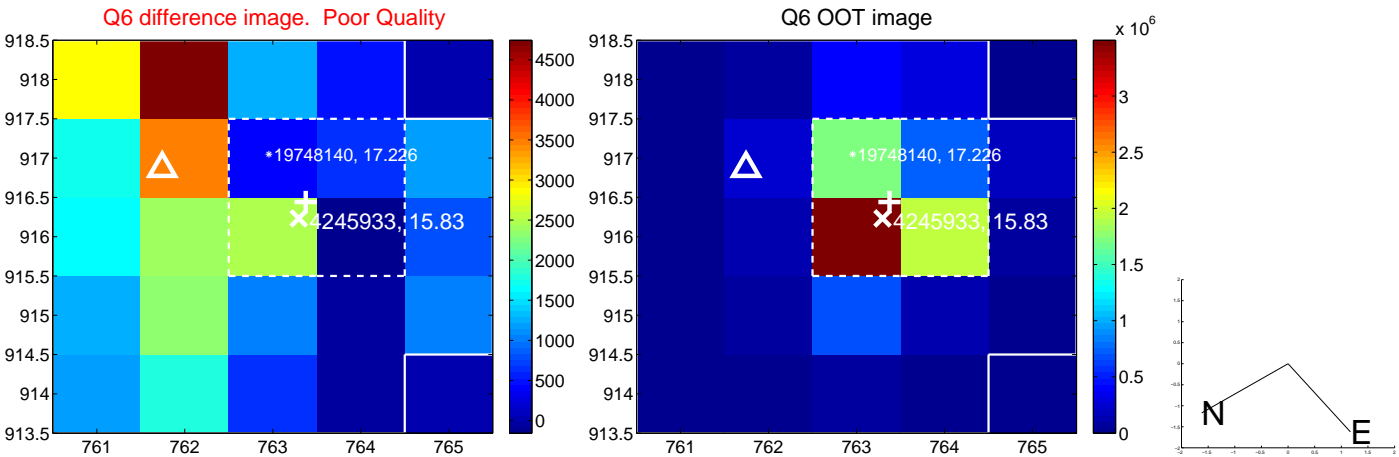
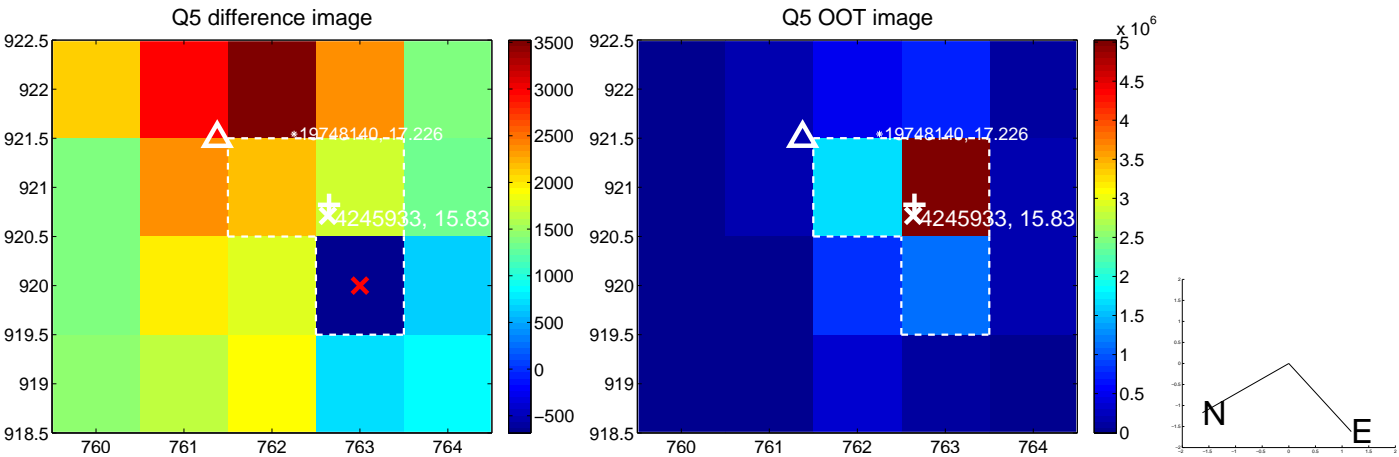


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

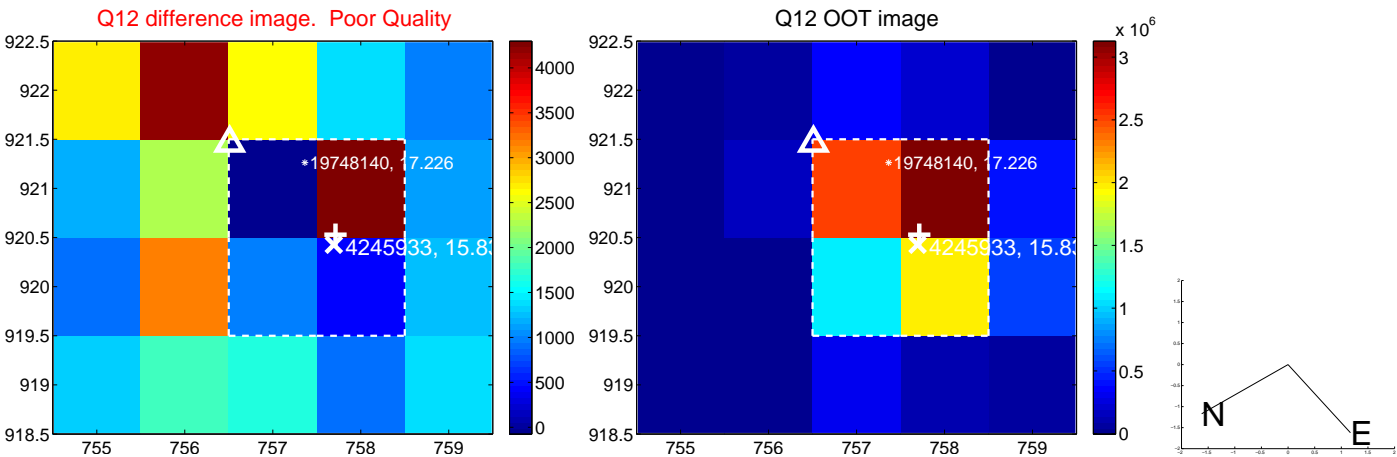
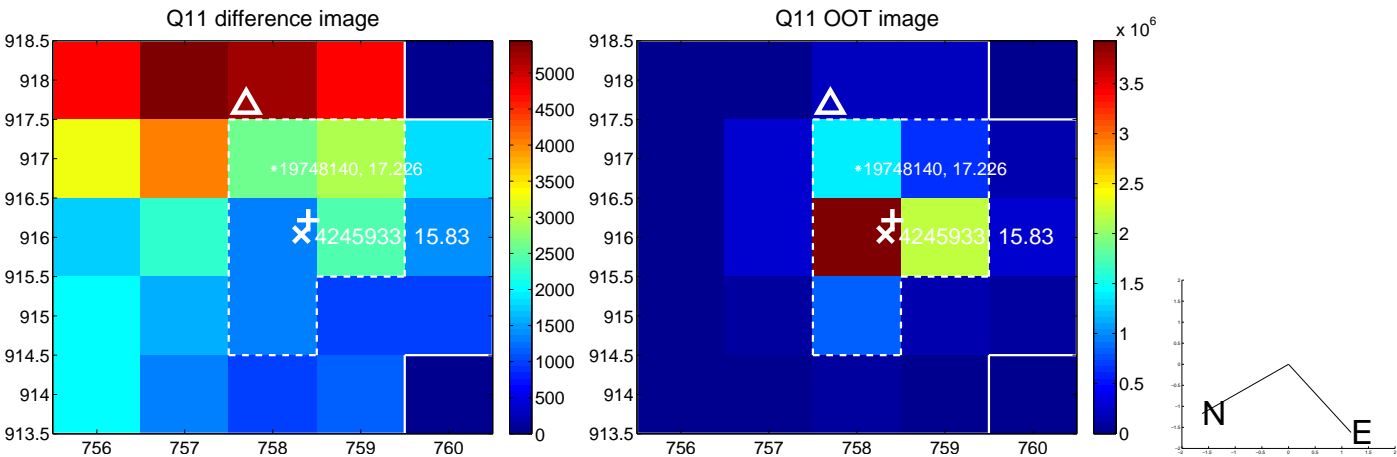
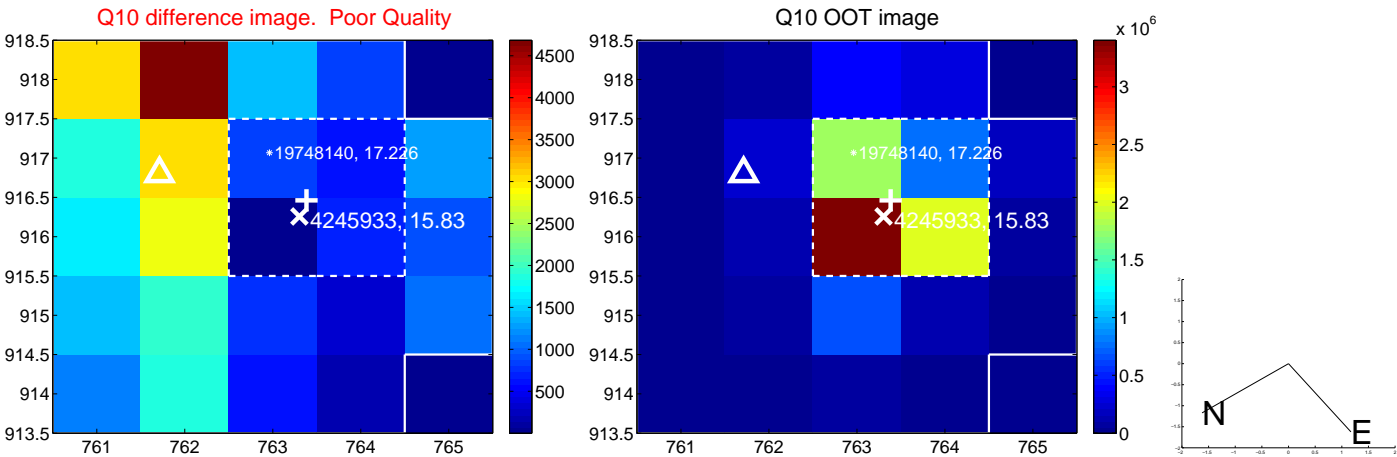
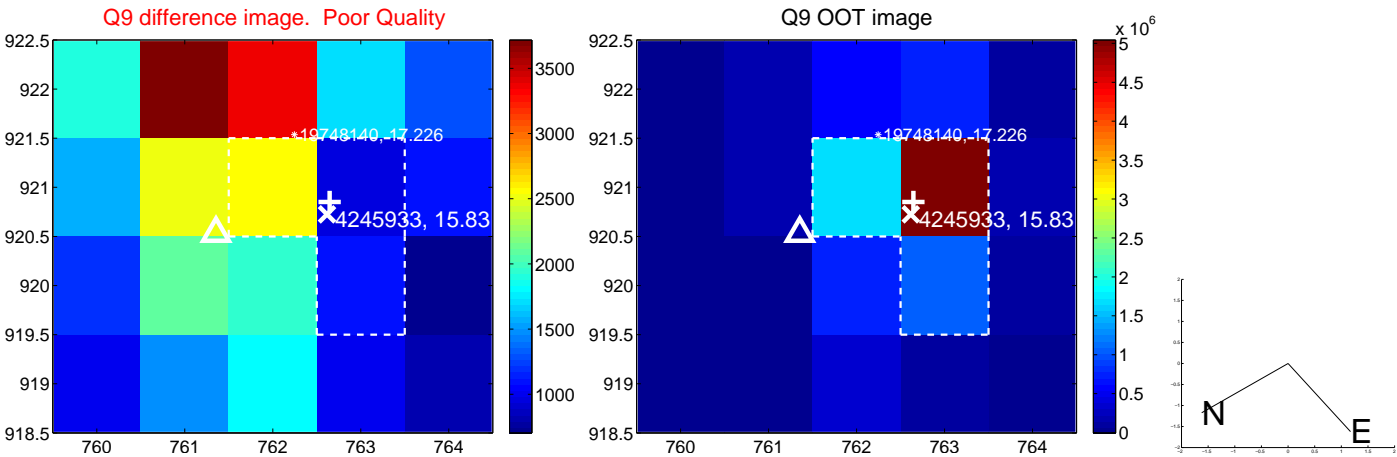
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



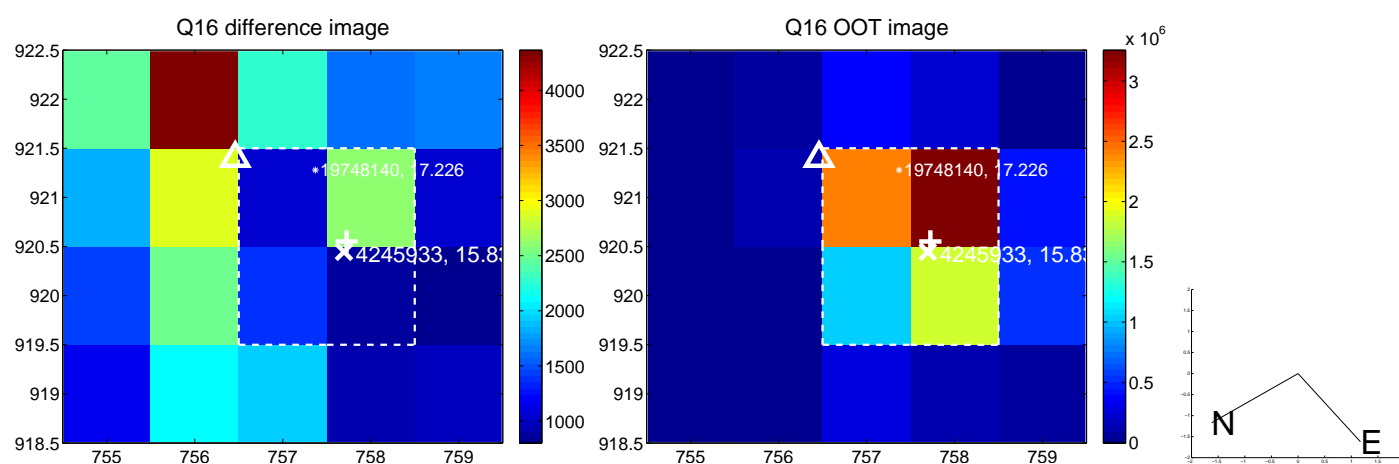
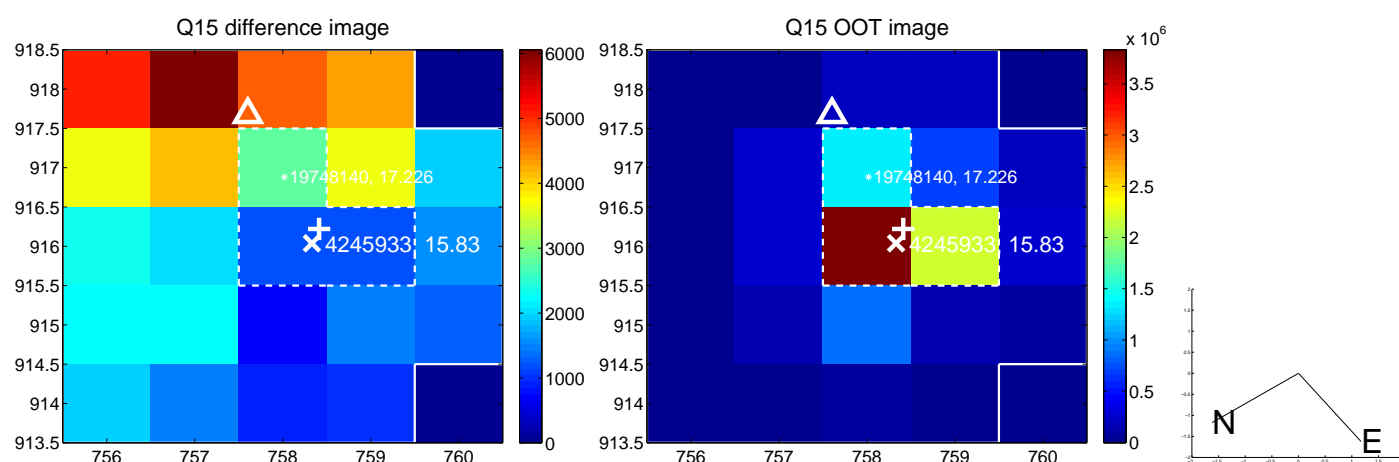
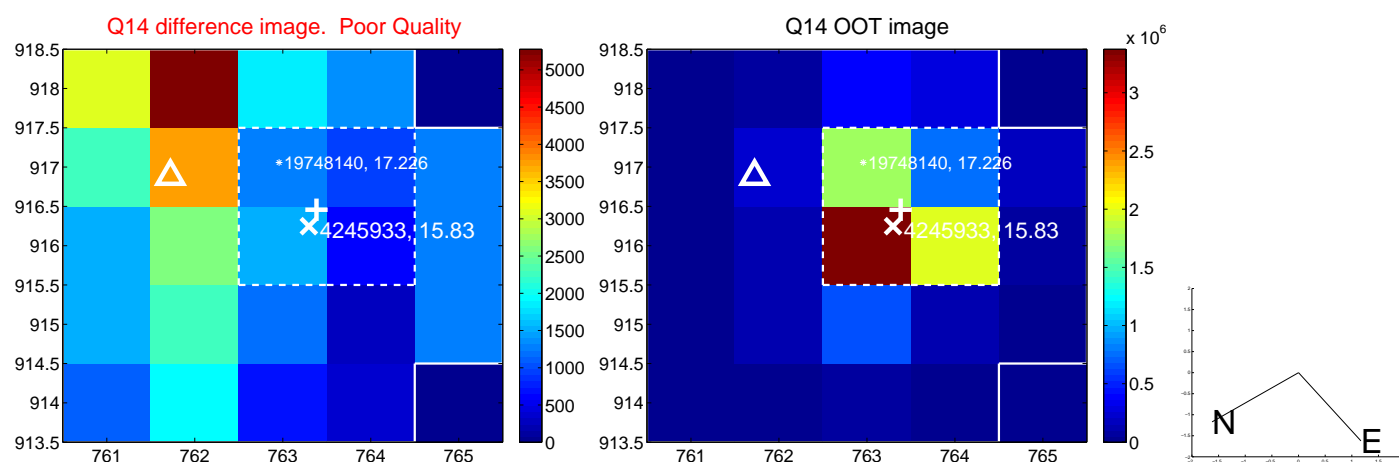
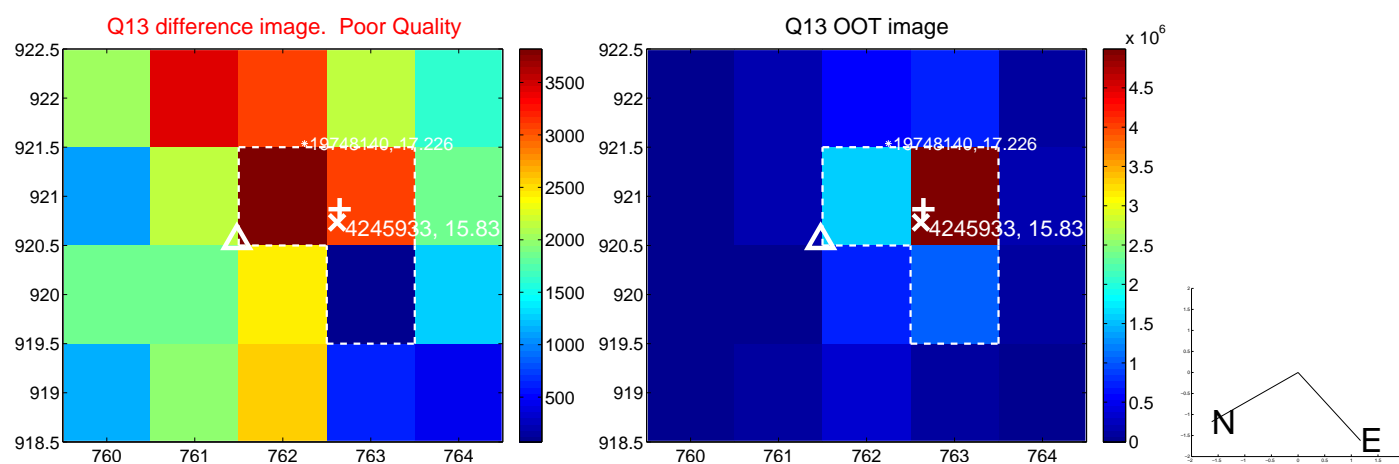
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



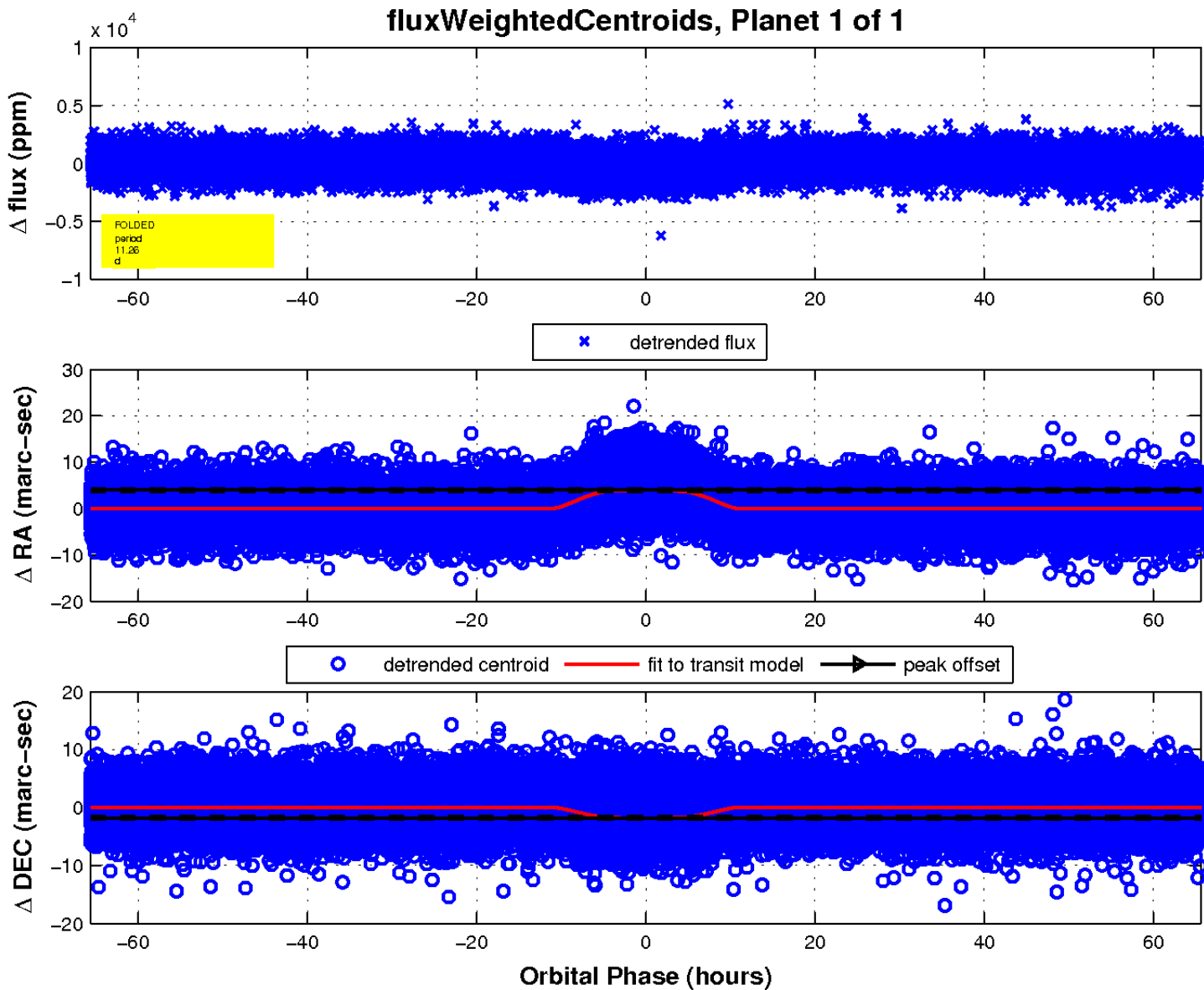
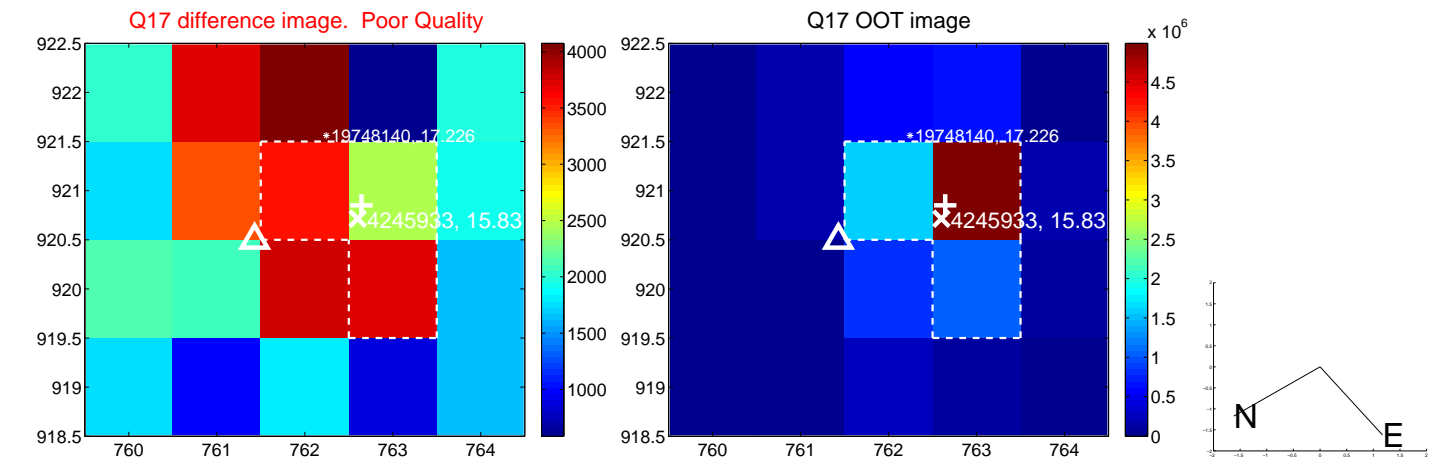
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

