

KIC 009945370

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})
009945370-01	OBS	2285.01	37.945690	134.780711	1034.6	4.139	21.2	23.3	0.86	5861	2.95	16.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009945370-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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 009945370-01

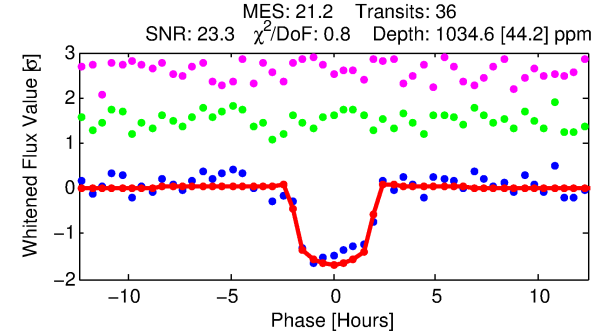
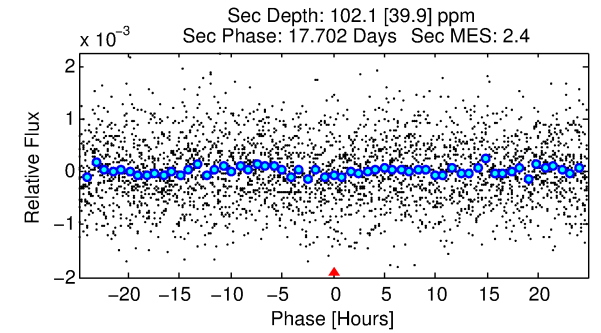
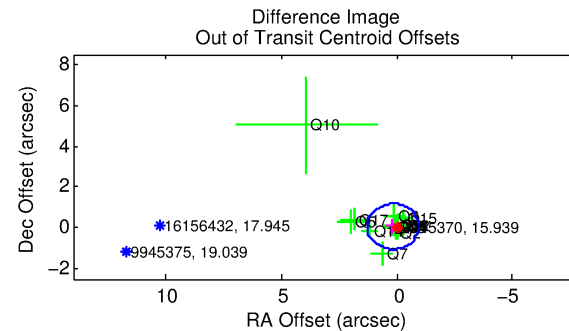
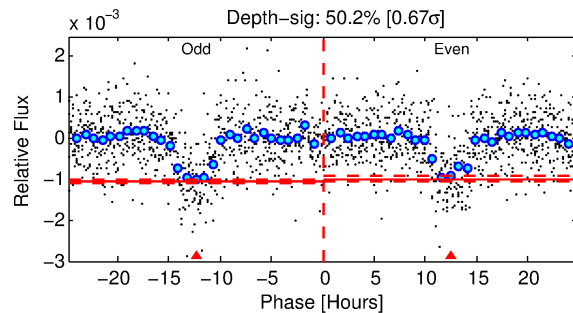
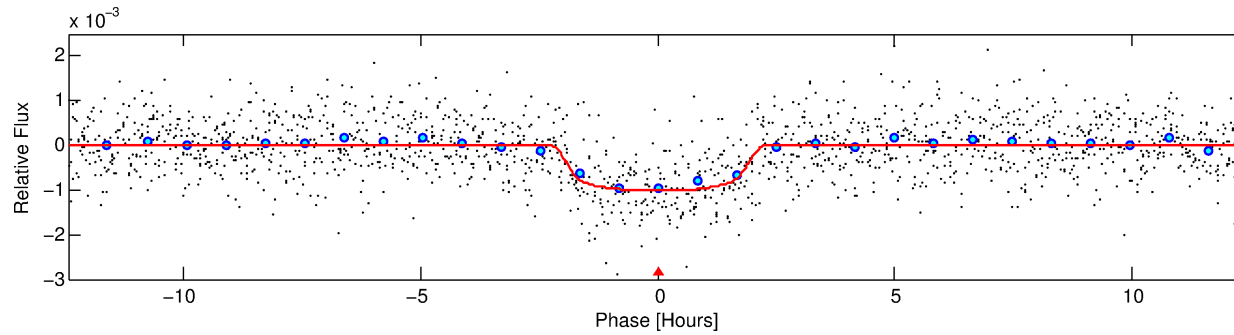
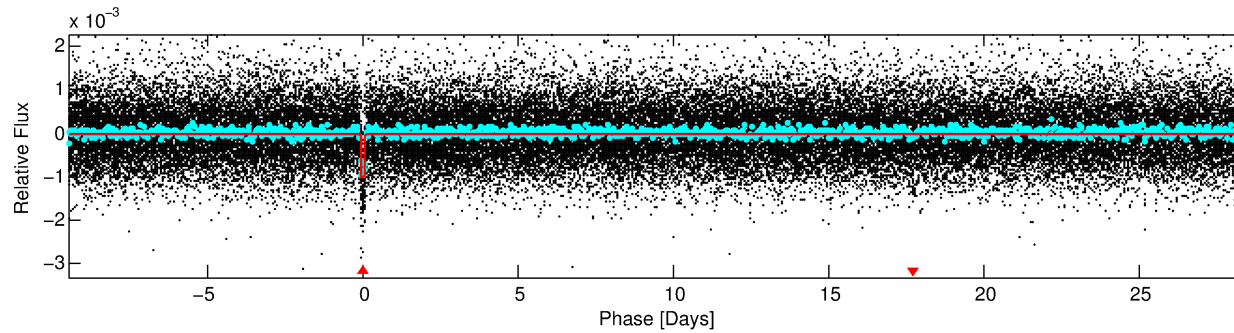
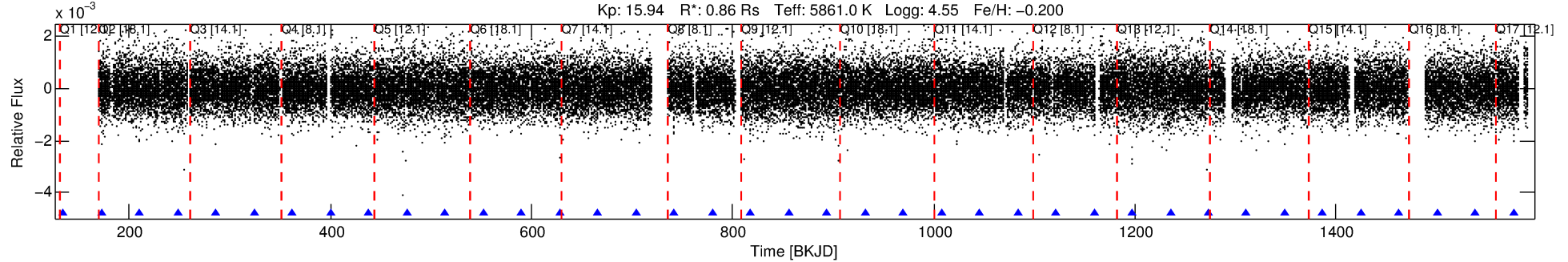
No Significant Match Found

DV One-Page Summary

KIC: 9945370 Candidate: 1 of 1 Period: 37.946 d

KOI: K02285.01 Corr: 0.986

Kp: 15.94 R*: 0.86 Rs Teff: 5861.0 K Logg: 4.55 Fe/H: -0.200



DV Fit Results:

Period = 37.94569 [0.00017] d
Epoch = 134.7807 [0.0038] BKJD
Rp/R* = 0.0313 [0.0111]
a/R* = 54.66 [89.38]
b = 0.67 [1.34]
Seff = 16.64 [6.43]
Teq = 515 [50] K
Rp = 2.95 [1.38] Re
a = 0.2180 [0.0554] AU
Ag = 306.45 [273.39] [1.12σ]
Teffp = 3332 [684] K [4.11σ]

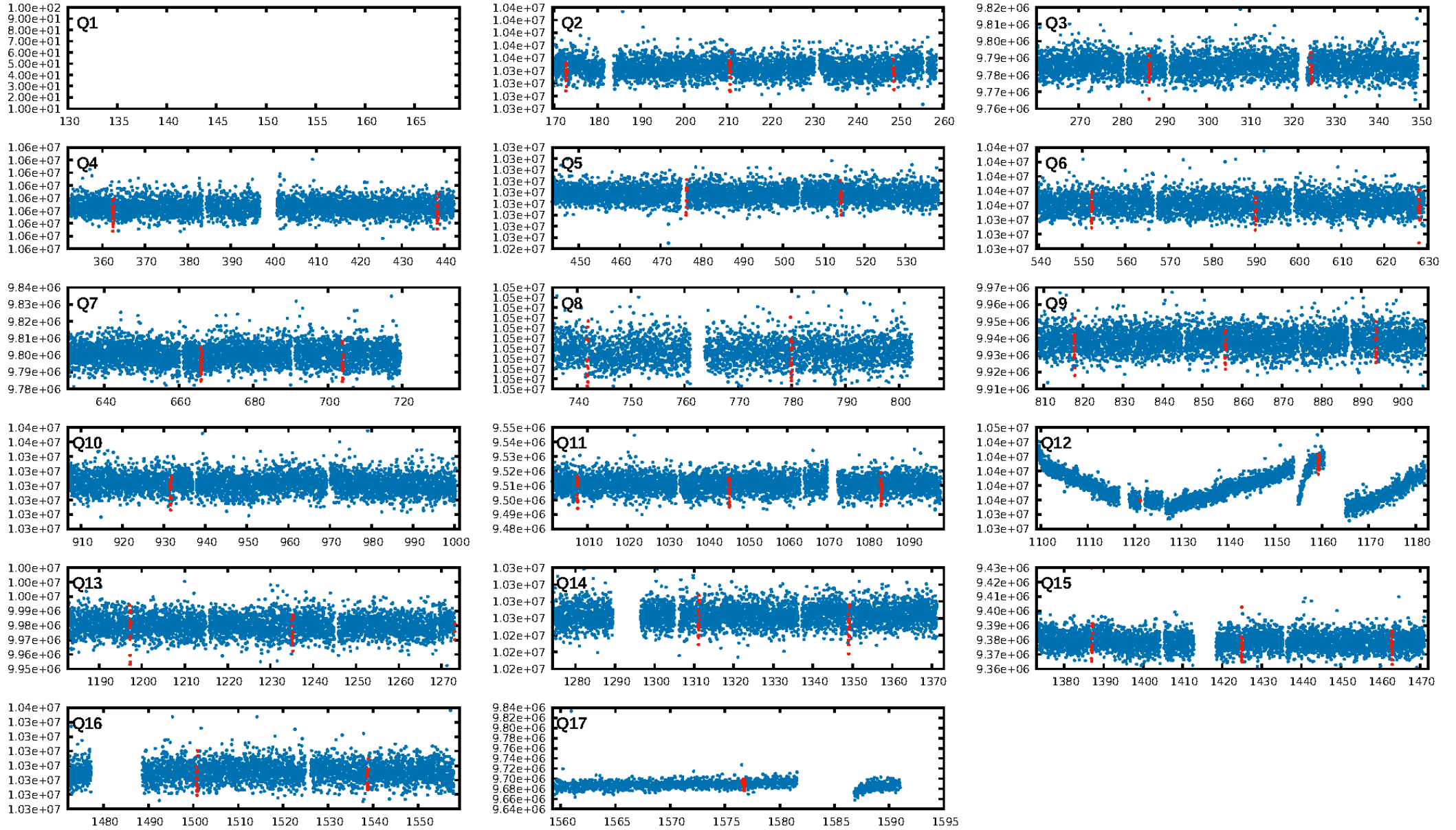
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 96.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.05e-97
RollingBand-fgt: 1.00 [35/35]
GhostDiagnostic-chr: 3.447
Centroid-sig: 81.1%
Centroid-so: 0.485 arcsec [0.77σ]
OotOffset-rm: 0.189 arcsec [0.51σ]
KicOffset-rm: 0.373 arcsec [0.90σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.93 [14/15]
DiffImageOverlap-fno: 1.00 [16/16]

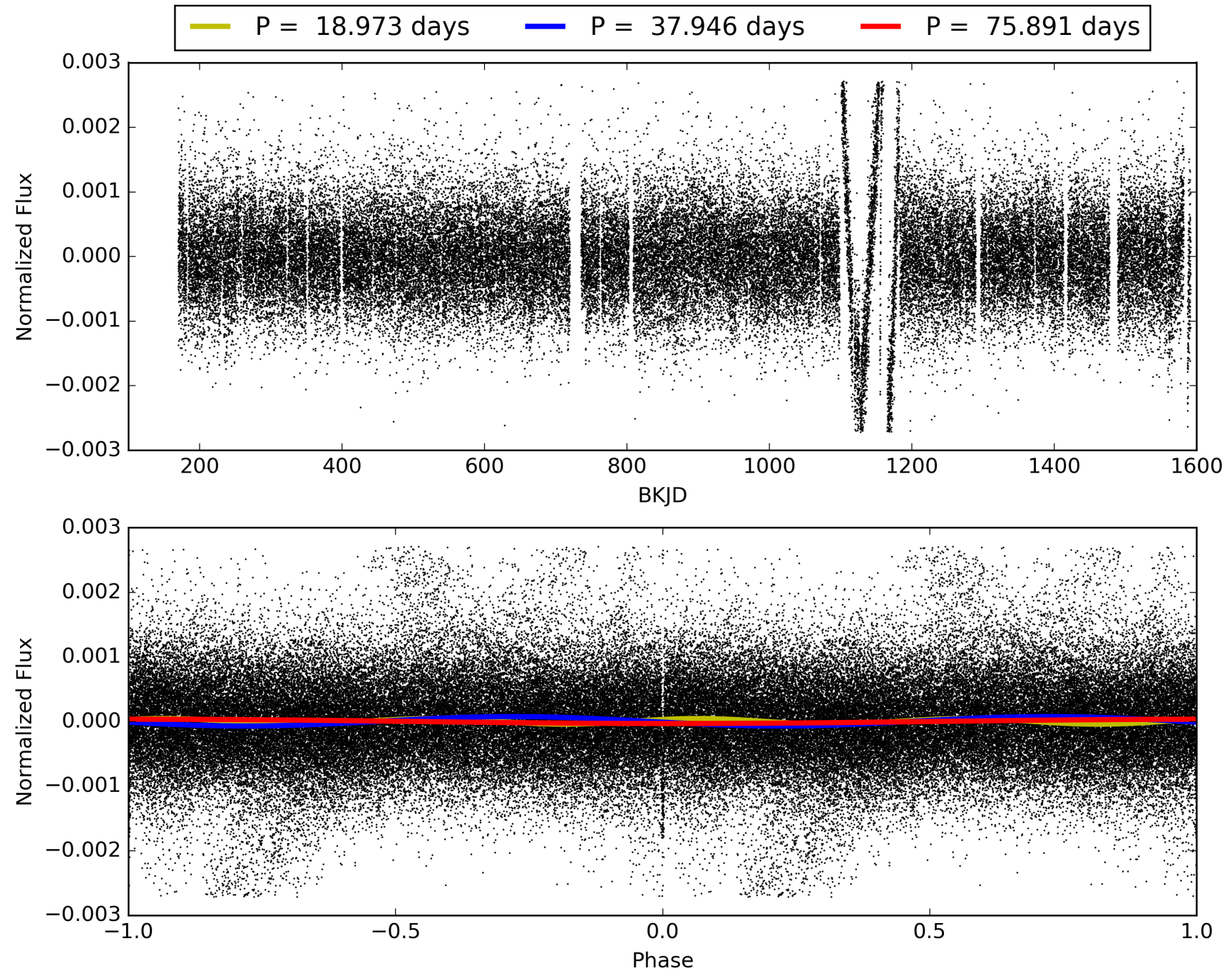
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:04:37 Z

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

TCE 009945370-01, PDC Light Curves

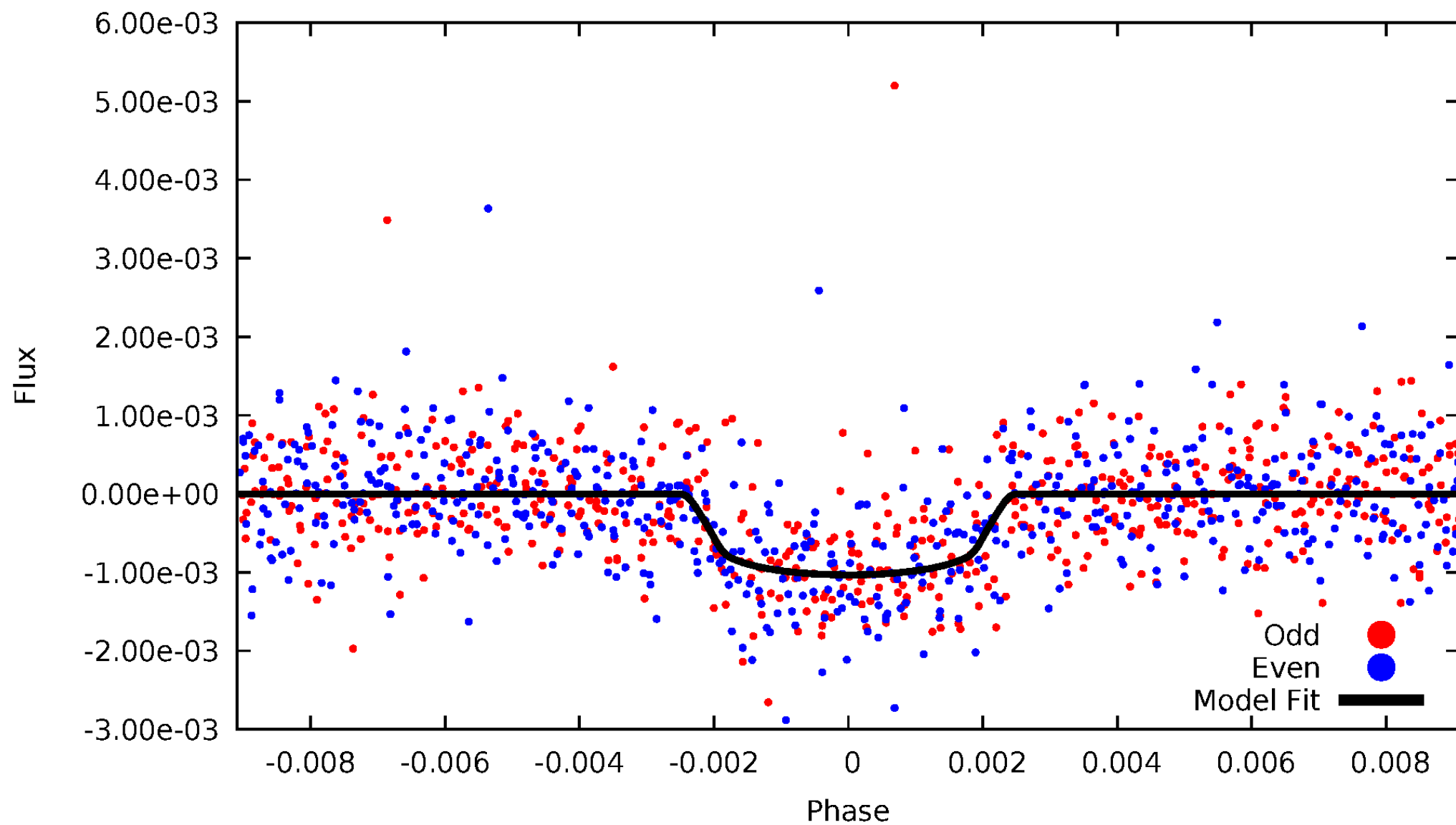


TCE 009945370-01



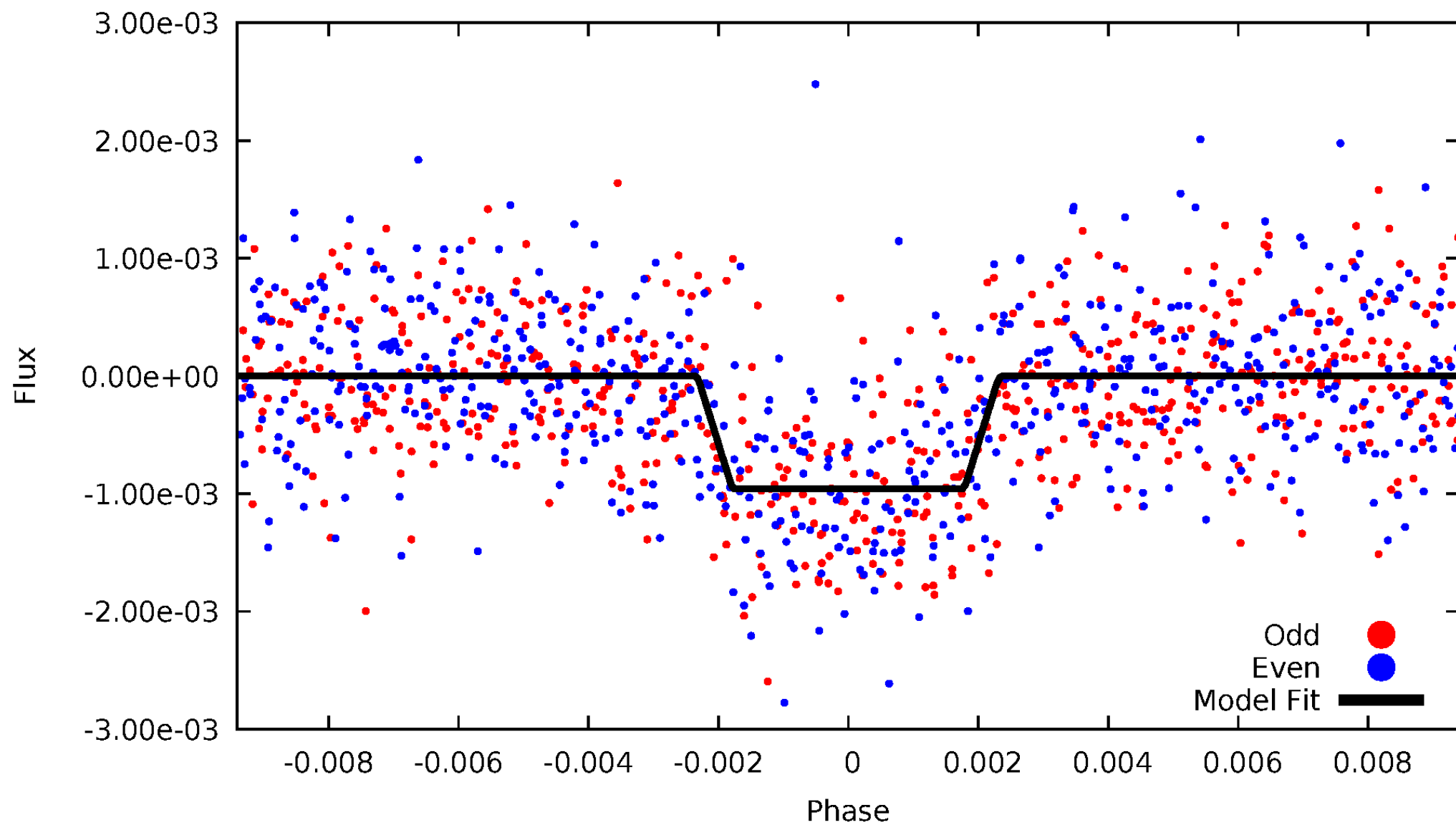
DV Odd/Even

TCE 009945370-01

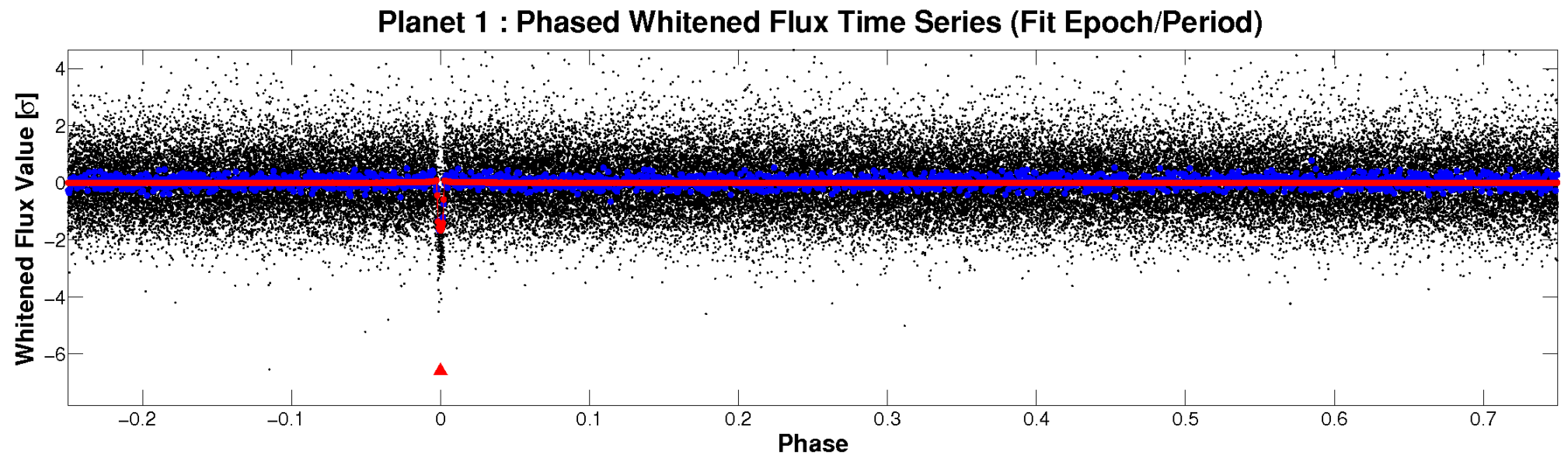
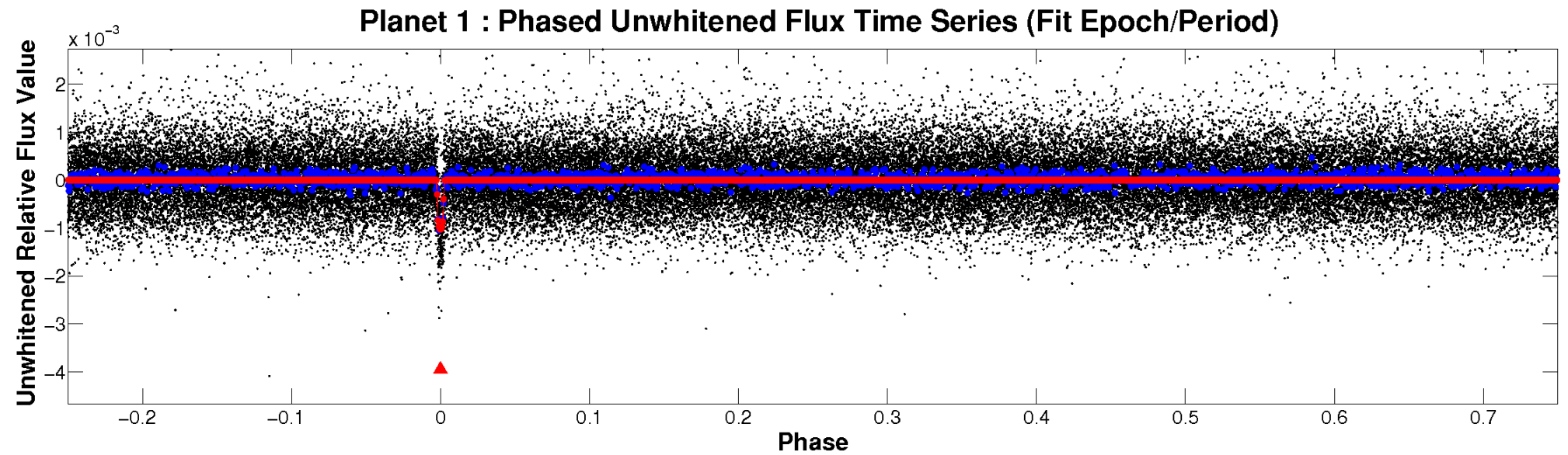


ALT Odd/Even

TCE 009945370-01

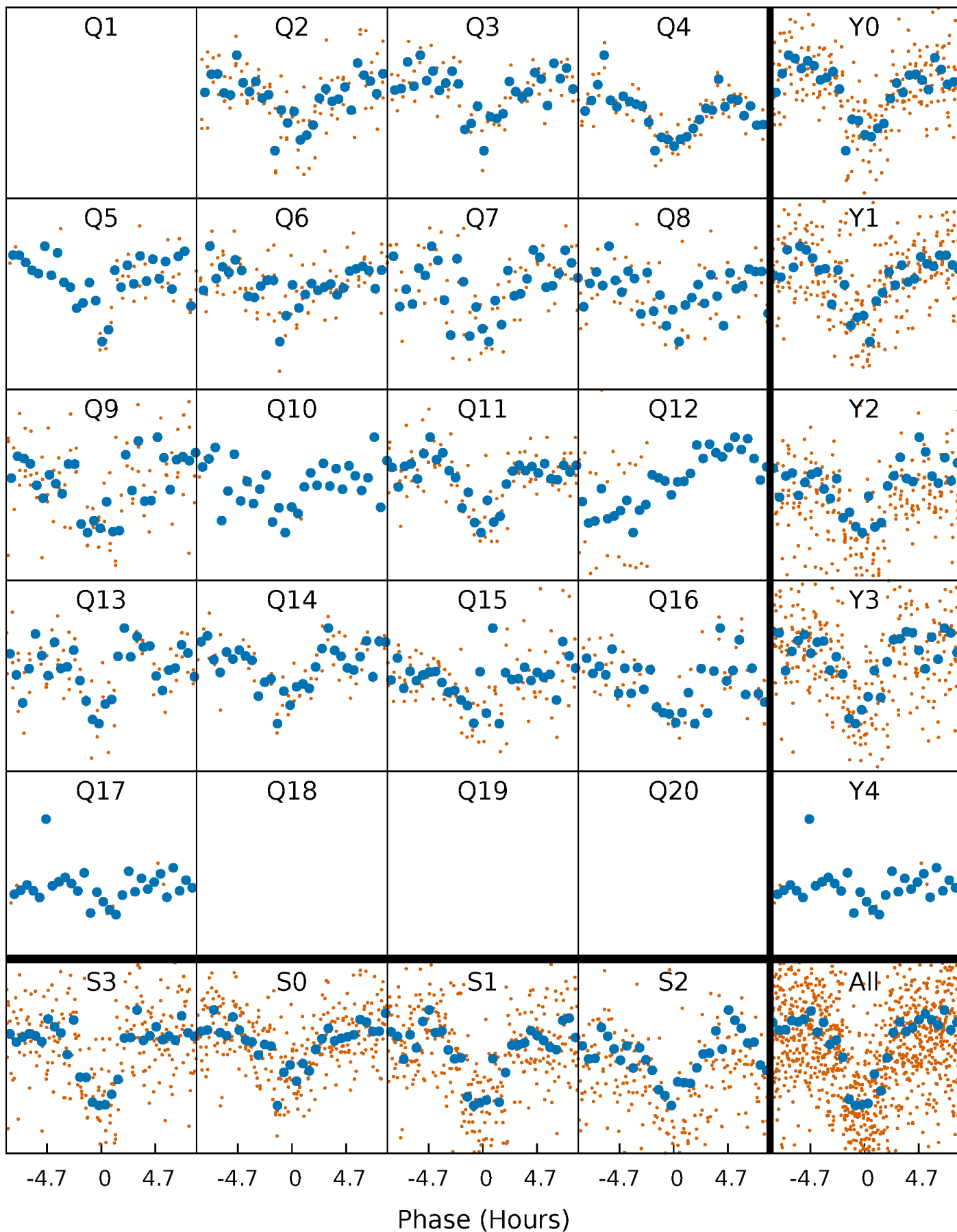


Non-Whitened Vs. Whitened Light Curve



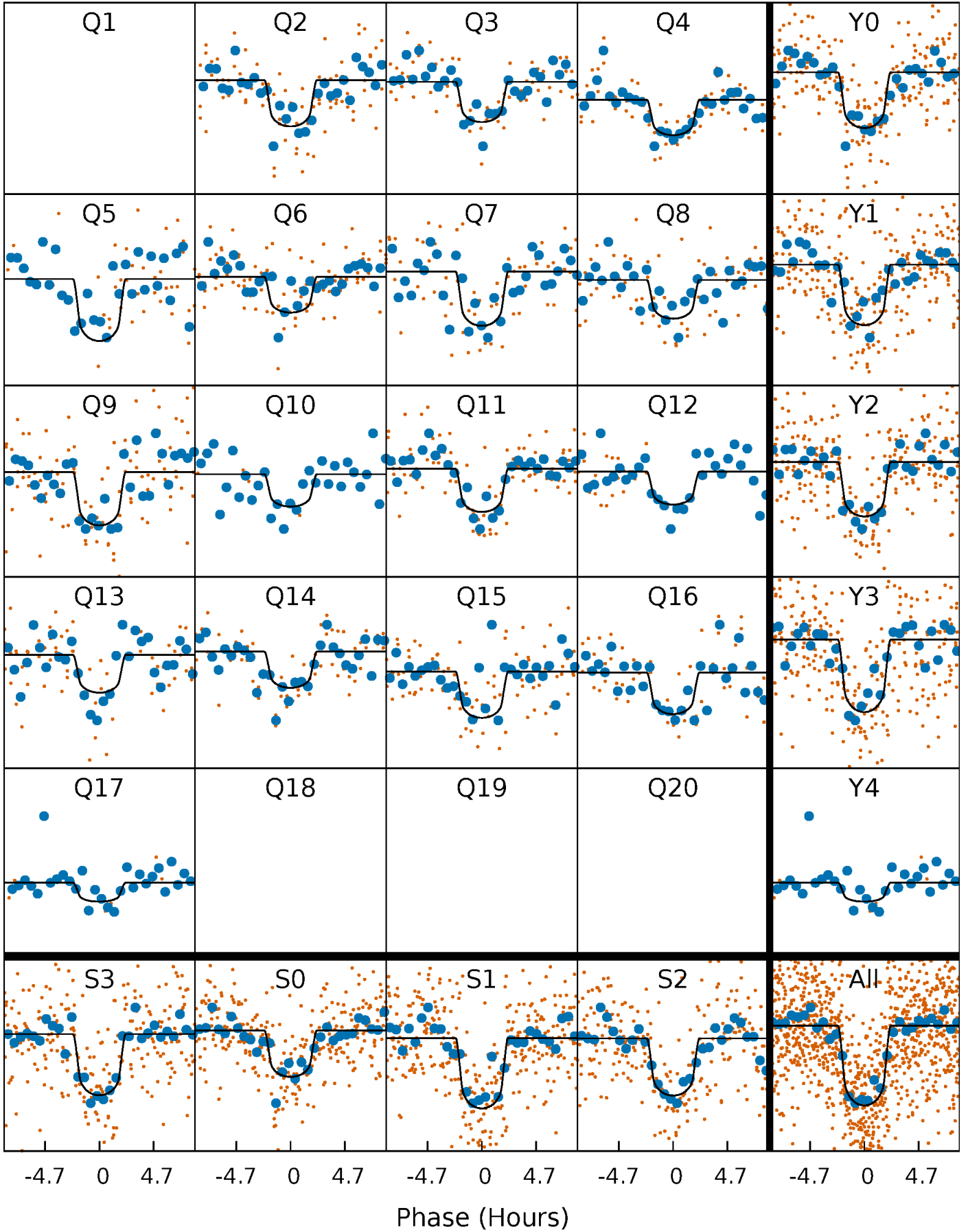
PDC Quarter-Phased Transit Curves

TCE 009945370-01 P= 37.945690 Days $T_0=134.780711$ (BKJD)



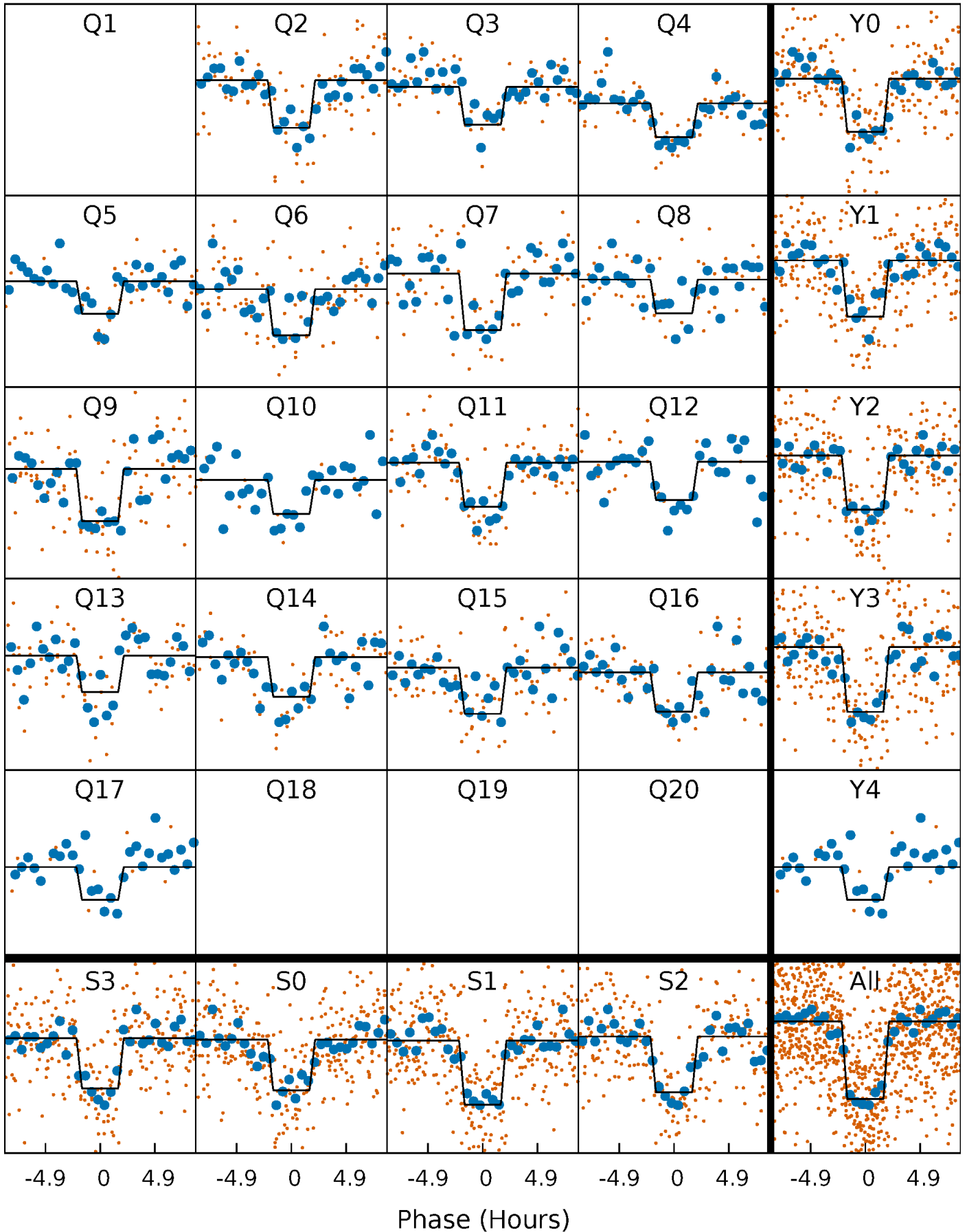
DV Quarter-Phased Transit Curves

TCE 009945370-01 P= 37.945690 Days $T_0=134.780711$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

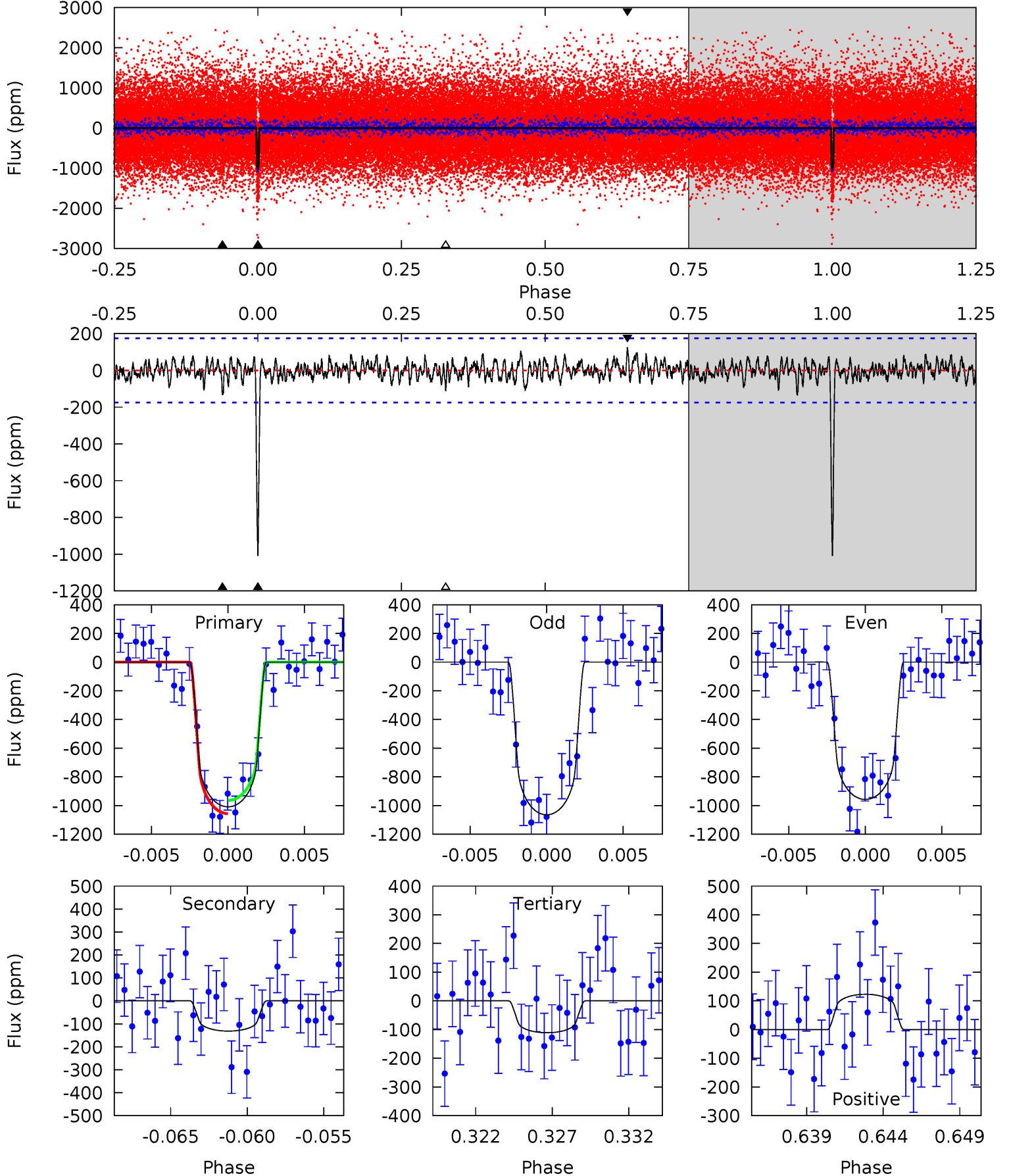
TCE 009945370-01 P= 37.945728 Days $T_0=134.781953$ (BKJD)



DV Model-Shift Uniqueness Test

009945370-01, $P = 37.945690$ Days, $E = 134.780711$ Days

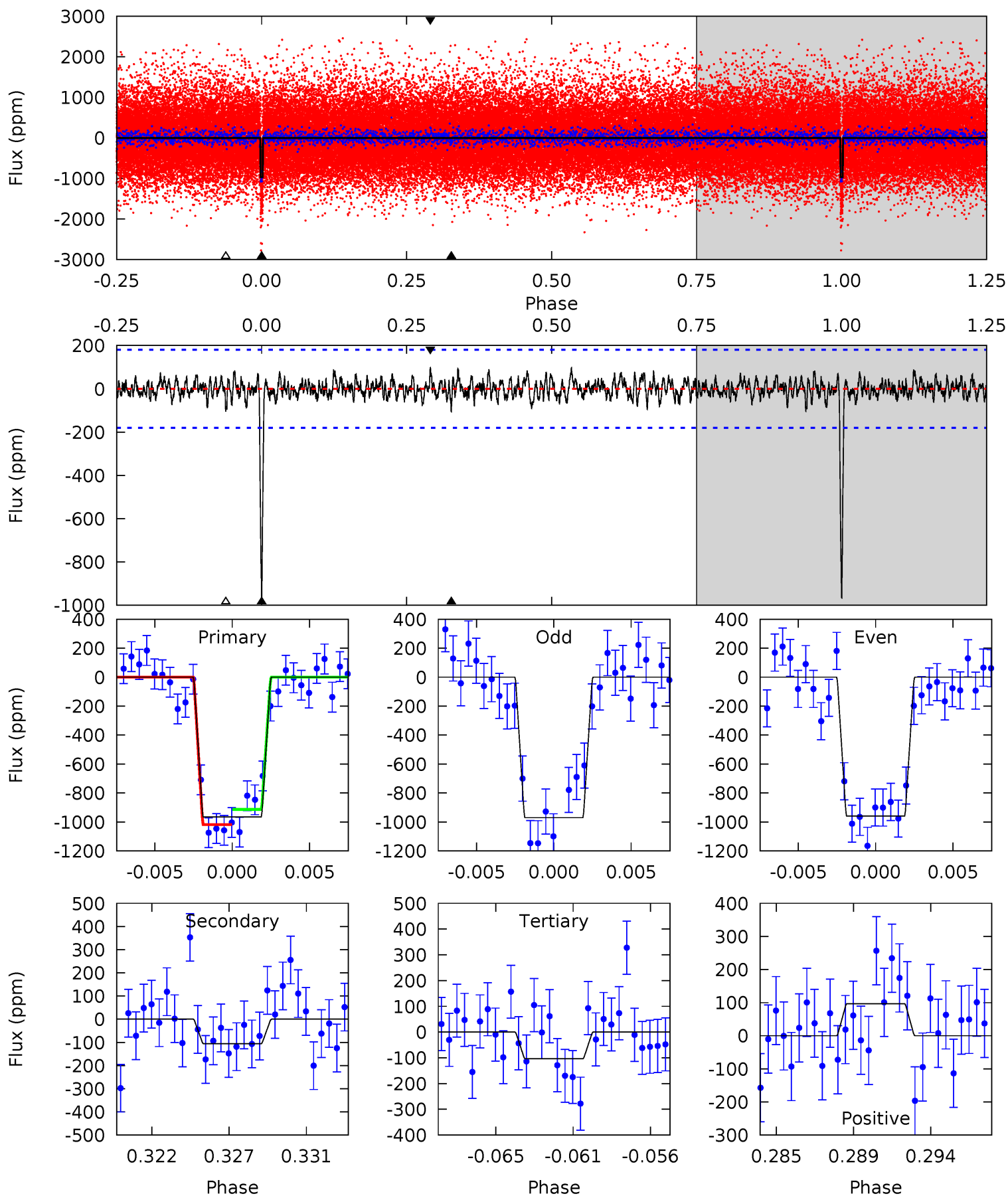
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.7	3.88	3.27	3.62	5.16	2.80	1.09	26.5	26.1	0.61	0.25	1.58	0.96	0.11	1.36



Alt Model-Shift Uniqueness Test

009945370-01, P = 37.945728 Days, E = 134.781953 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.7	3.03	2.97	2.78	5.17	2.83	0.94	24.7	24.9	0.06	0.25	0.15	0.96	0.09	1.50



Stellar Parameters For KIC 009945370

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5861^{+157}_{-174}	$4.546^{+0.037}_{-0.200}$	$-0.200^{+0.300}_{-0.300}$	$0.865^{+0.263}_{-0.070}$	$0.957^{+0.110}_{-0.121}$	$2.084^{+0.421}_{-1.085}$
	+3%/-3%	+1%/-4%	+150%/-150%	+30%/-8%	+11%/-13%	+20%/-52%
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 009945370-01 / KOI 2285.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-132 ± 34	$3.11^{+1.25}_{-1.03}$	737^{+49}_{-34}	3894^{+609}_{-435}	348^{+431}_{-186}
Alt.	-106 ± 35	$3.14^{+1.12}_{-1.13}$	737^{+52}_{-34}	3752^{+646}_{-421}	276^{+382}_{-151}

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 $A_{obs} \gg 1.0$

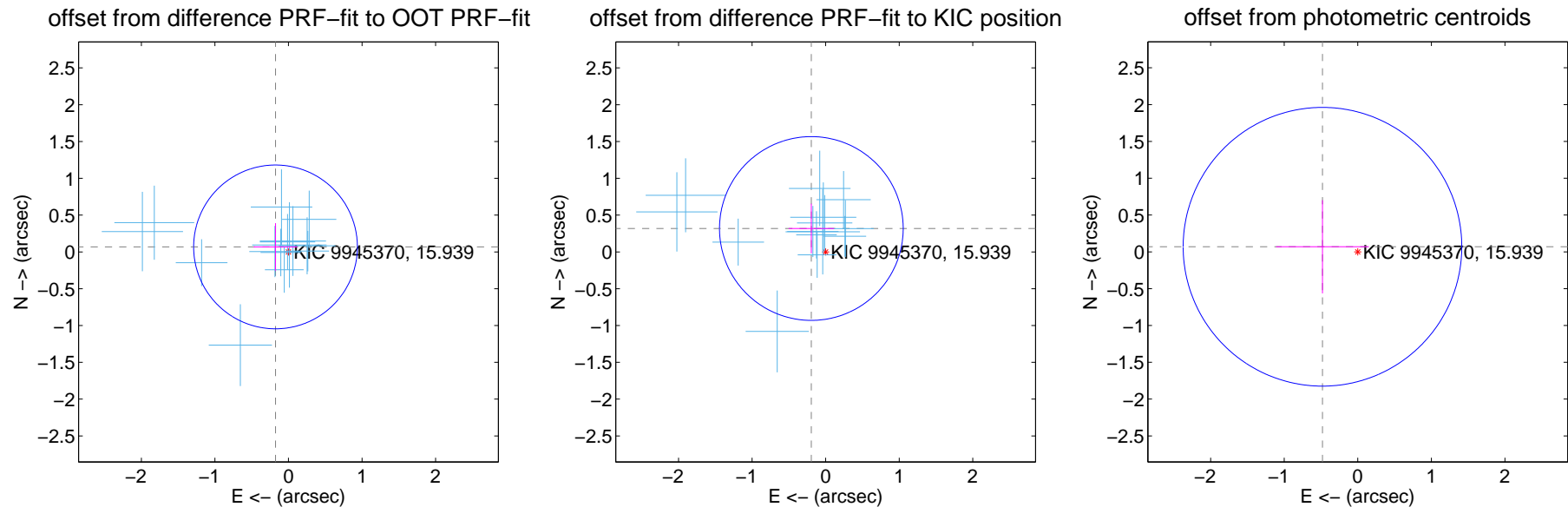
DV Centroid Data

Supplemental centroid analysis for 009945370-01. Kepler magnitude: 15.94. Transit SNR 23.26

There are 14 quarters with good PRF difference image offsets

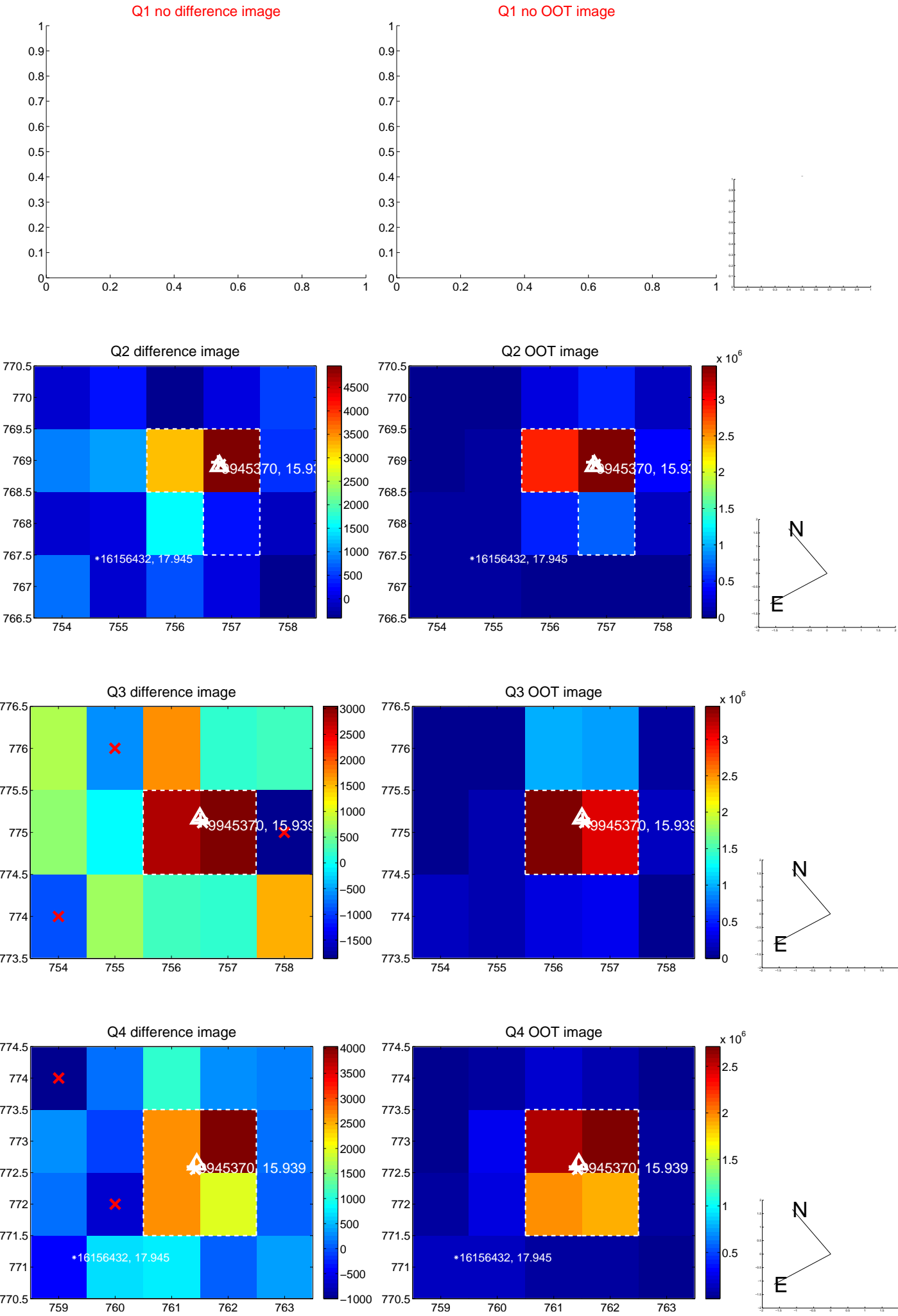
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.189 ± 0.371	0.51	0.176 ± 0.296	0.068 ± 0.323
PRF-fit source offset from KIC position	0.373 ± 0.416	0.90	0.195 ± 0.309	0.318 ± 0.338
photometric centroid source offset	0.49 ± 0.63	0.77	0.48 ± 0.63	0.07 ± 0.63

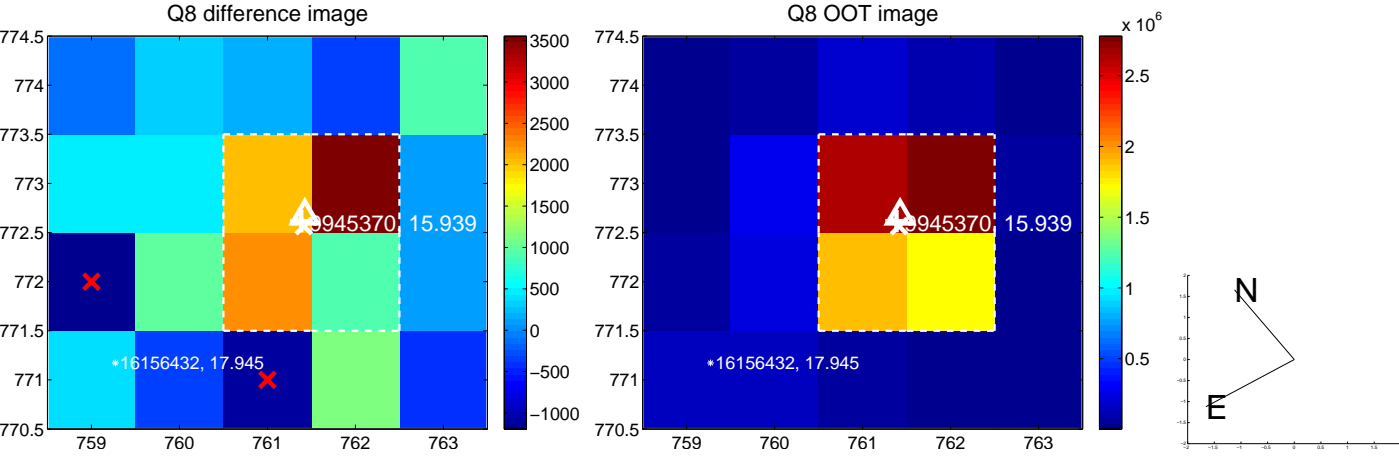
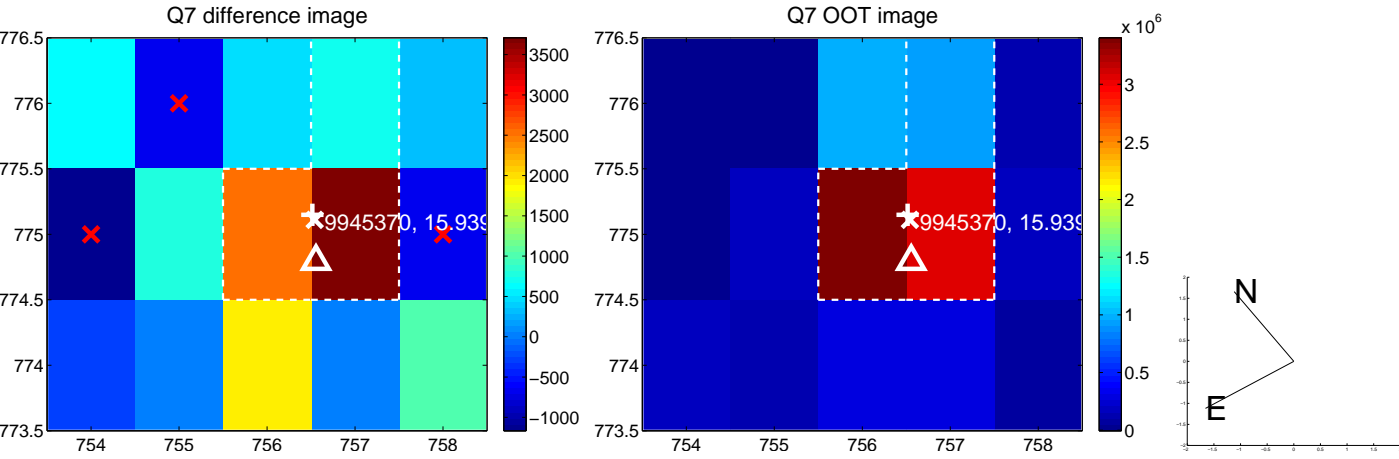
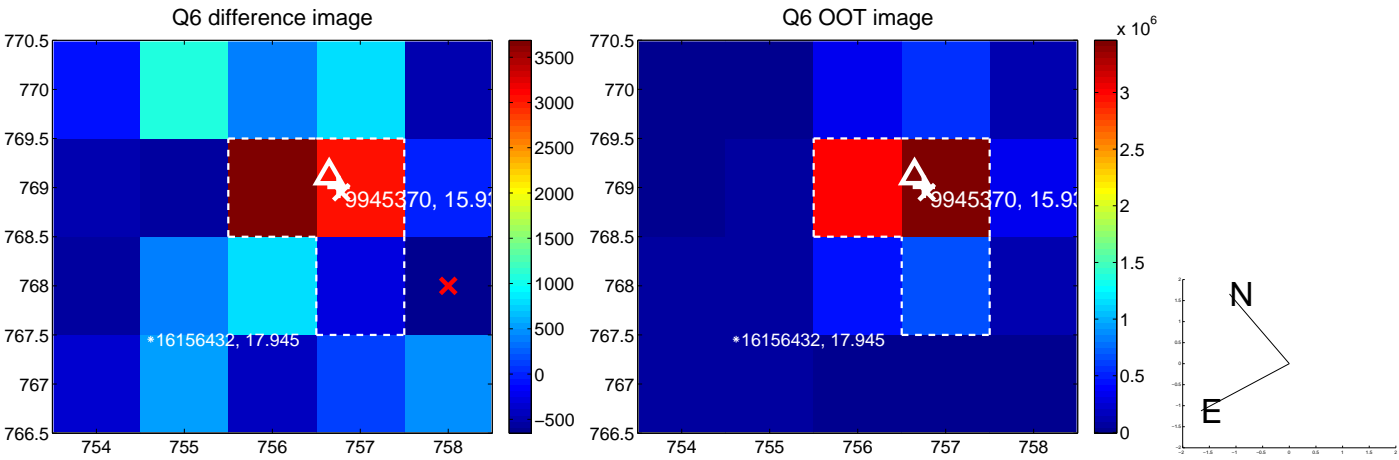
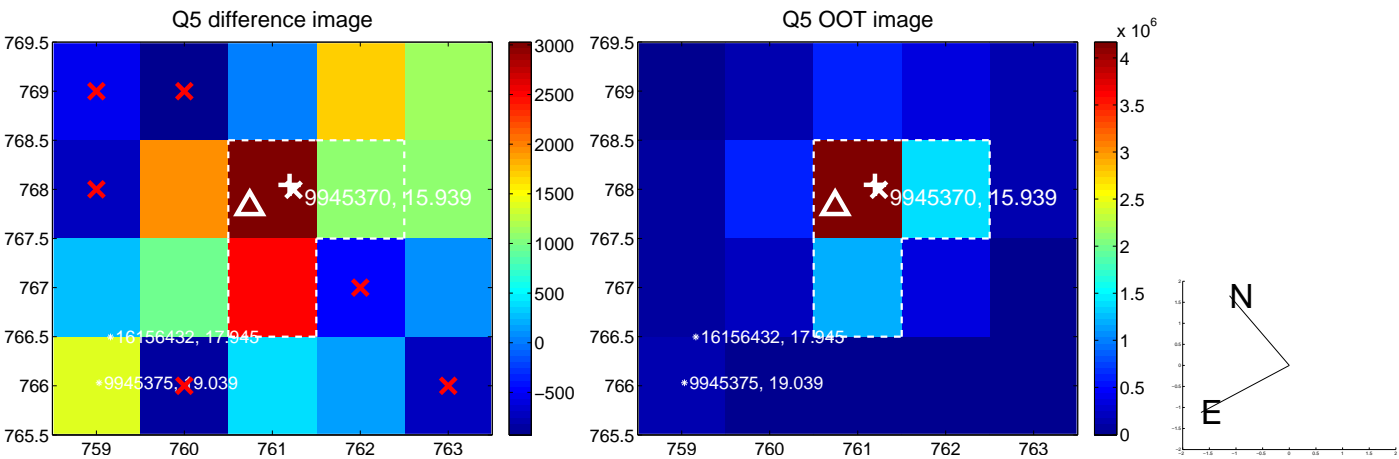


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

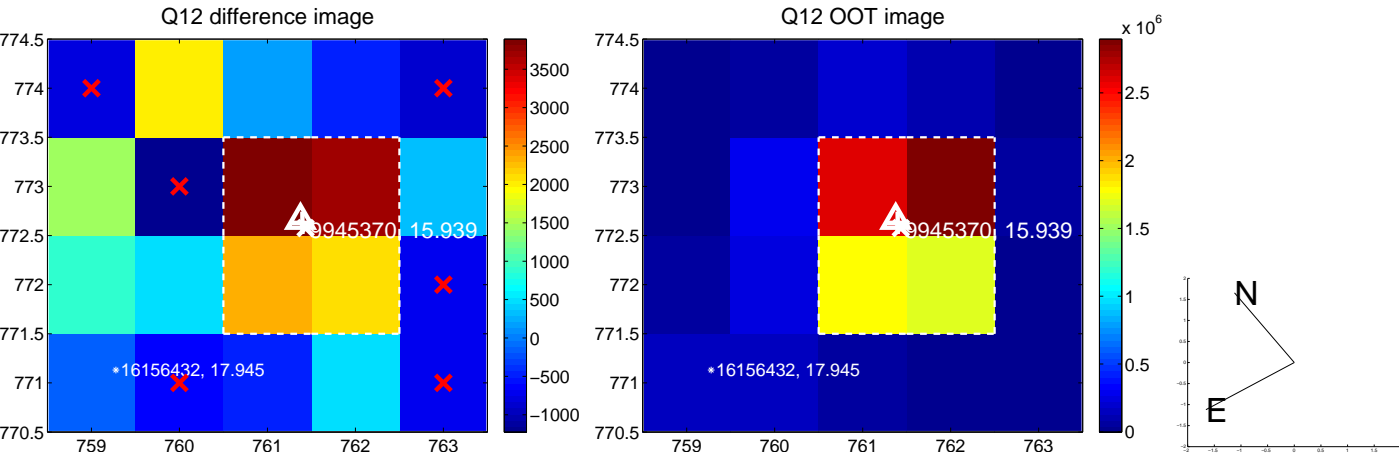
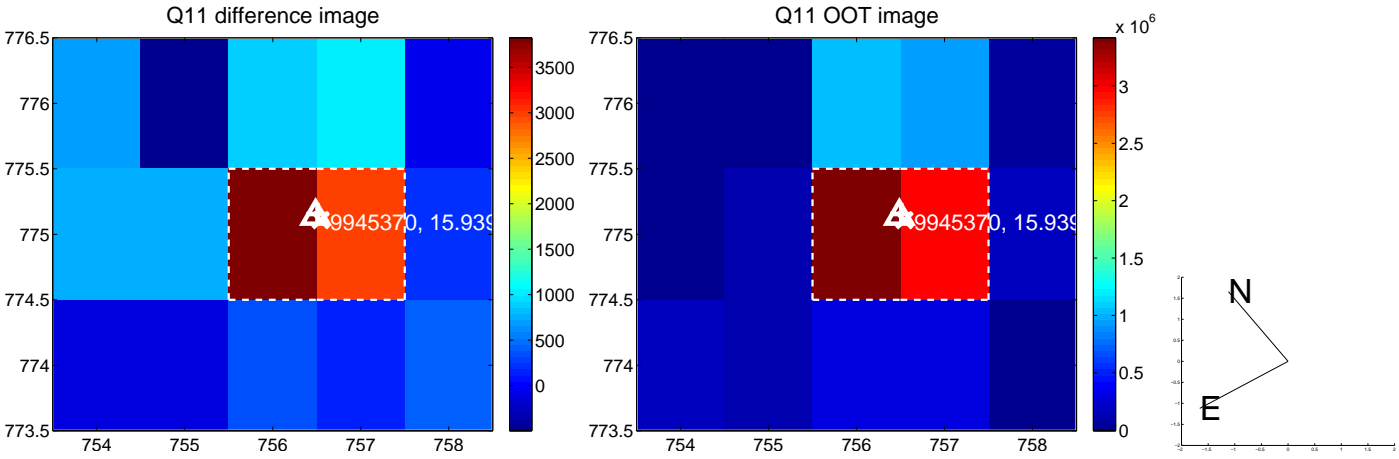
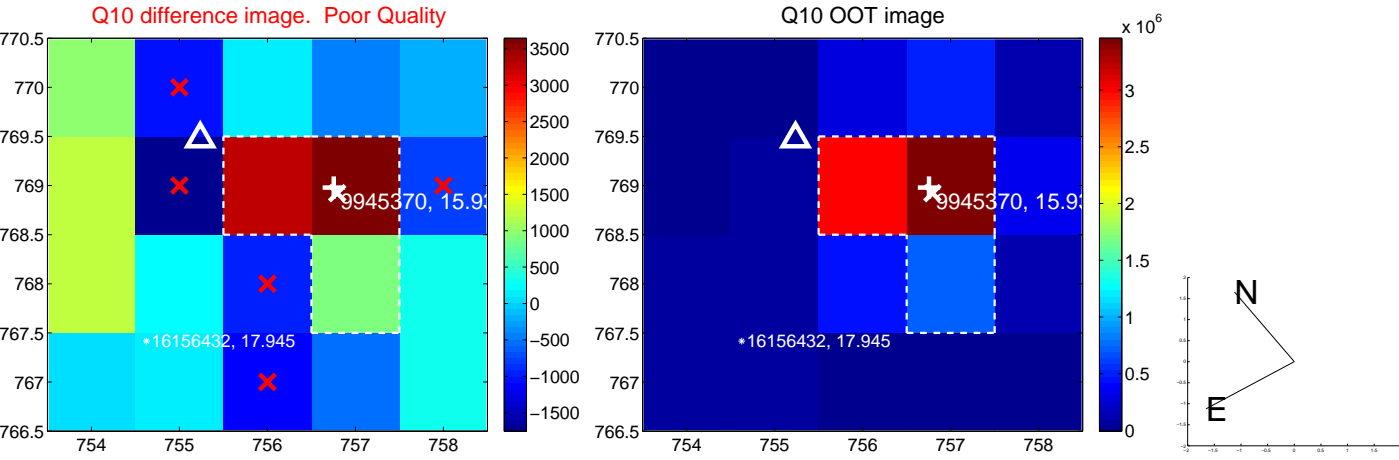
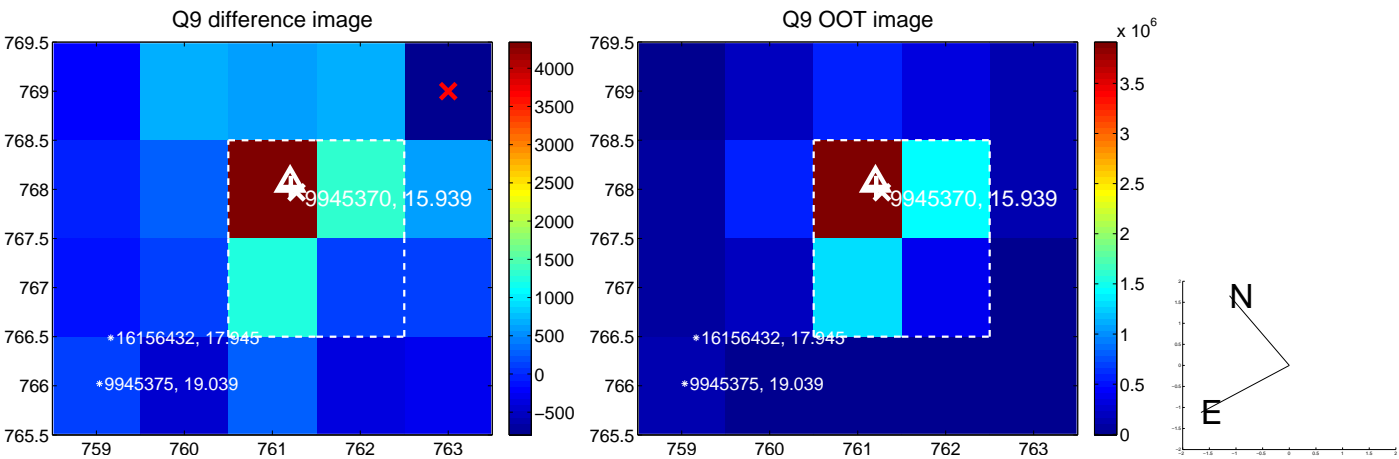
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



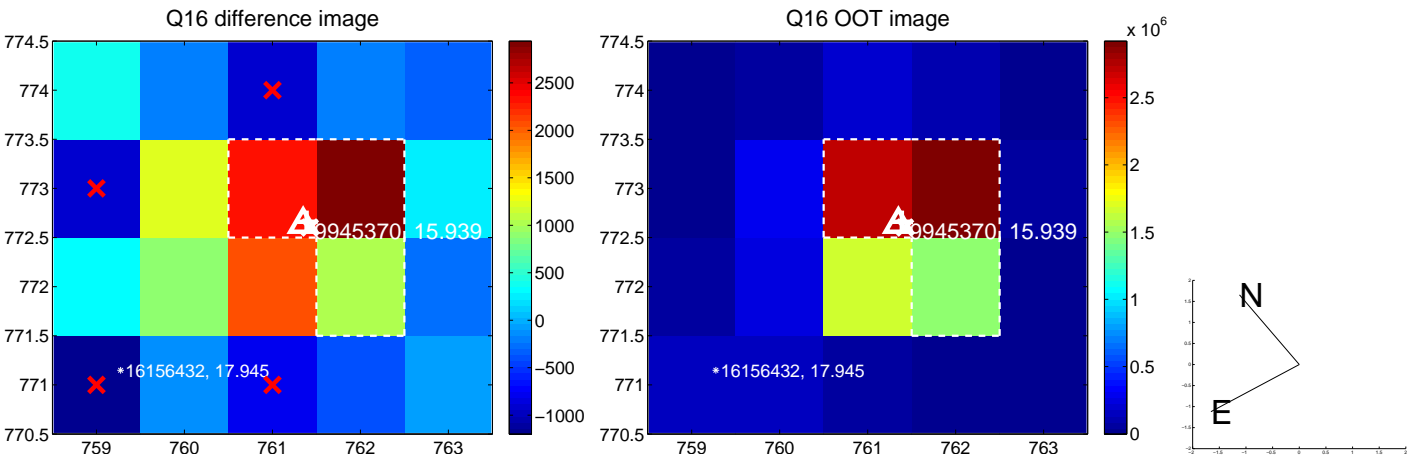
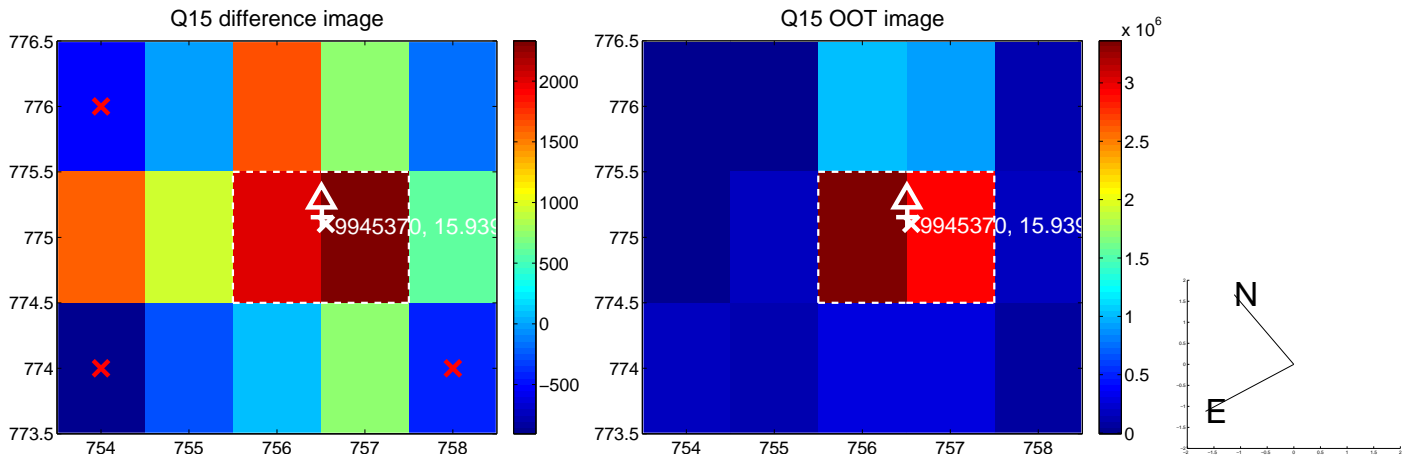
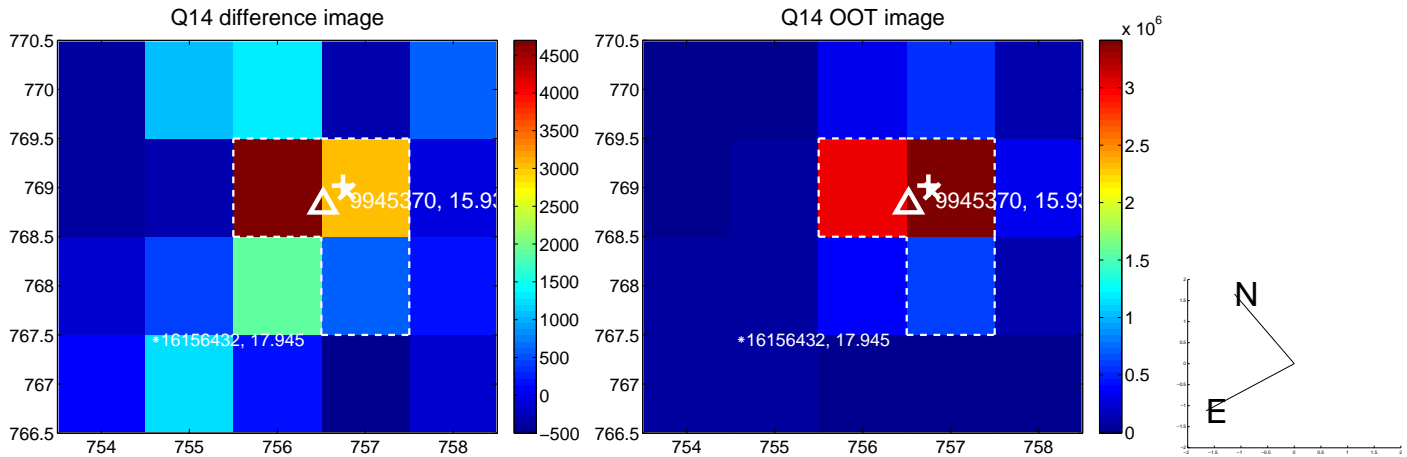
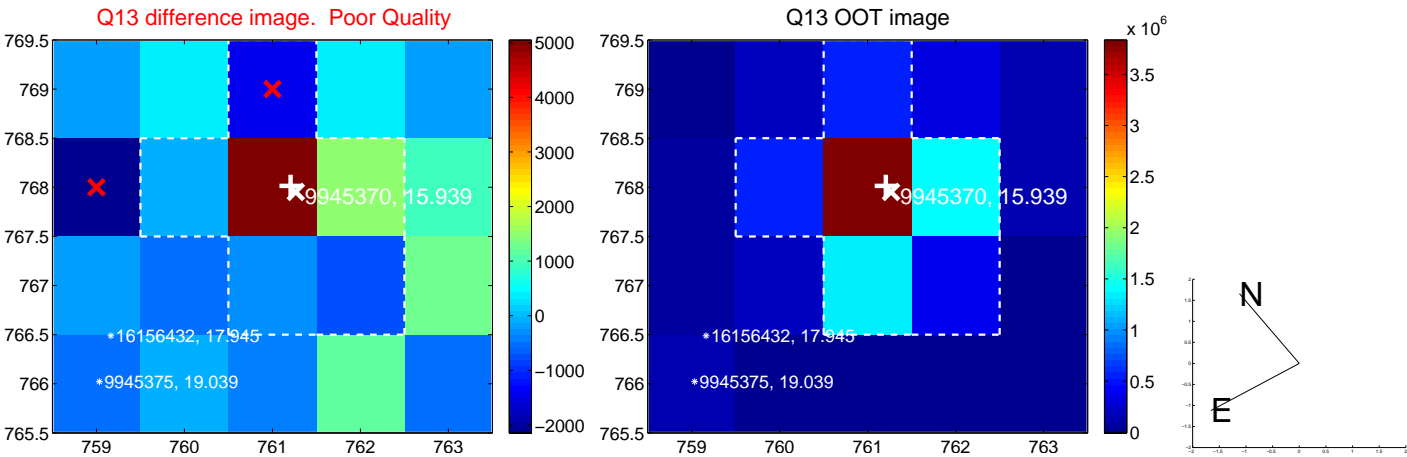
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

