

KIC 006863839

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
006863839-01	OBS	1373.01	1.926319	131.766082	159.3	2.583	27.8	30.5	0.90	6063	1.35	1149.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006863839-01	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 006863839-01

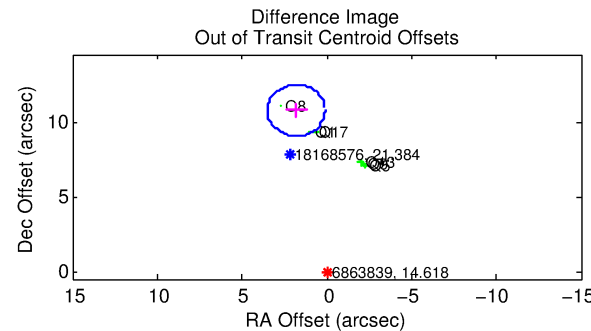
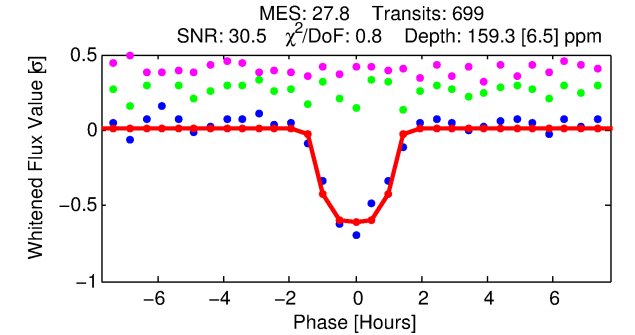
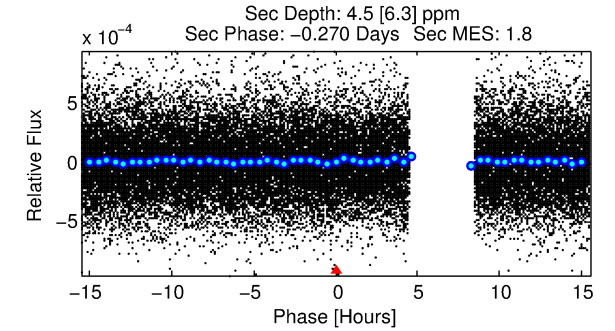
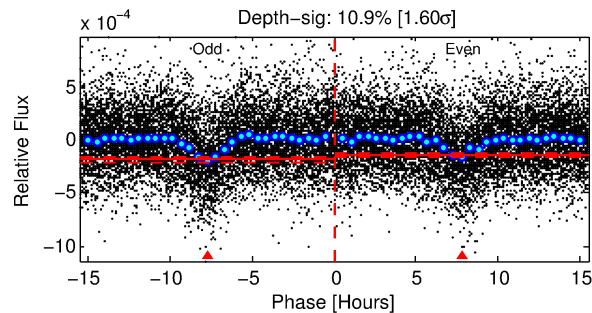
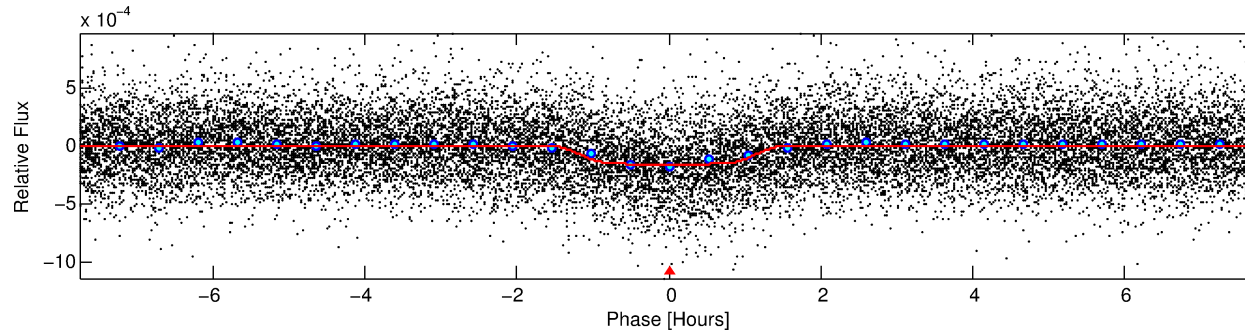
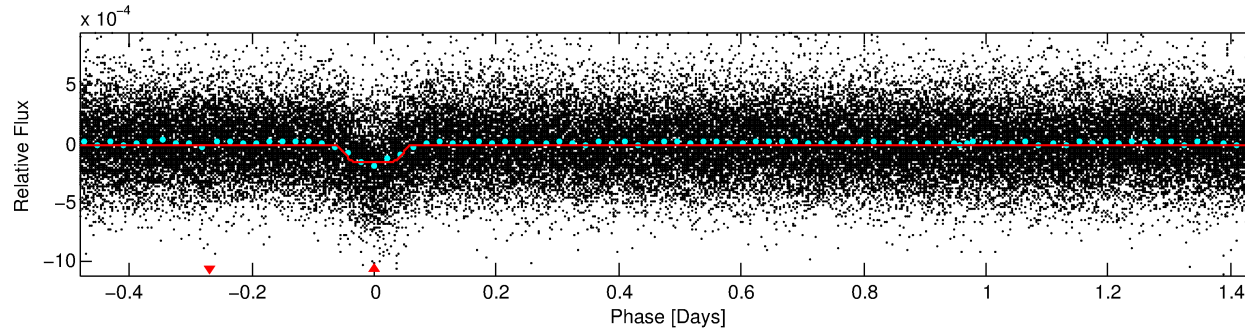
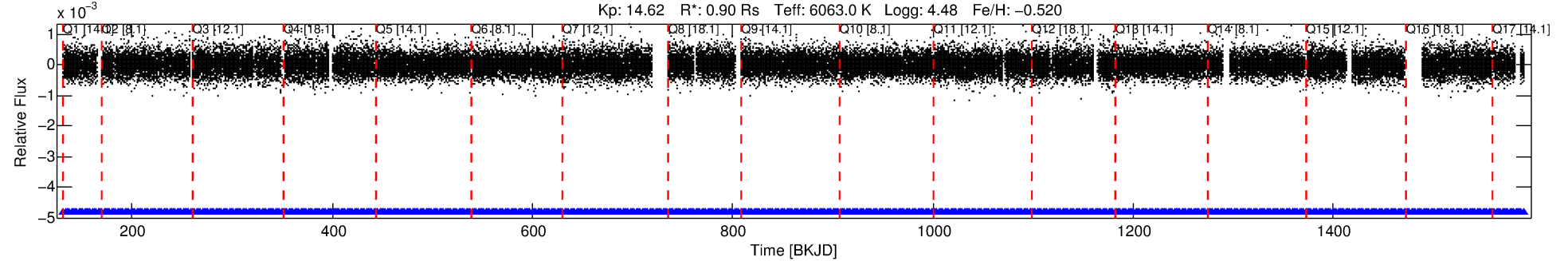
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
006863839-01	6863839	6779.01	6863840	1:1	17.0	4	-3	15.14	14.62	2556.30	Direct-PRF	0	1.78	1.10

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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 σ_P < 5.0 and σ_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: 6863839 Candidate: 1 of 1 Period: 1.926 d
KOI: K01373.01 Corr: 0.931

Kp: 14.62 R*: 0.90 Rs Teff: 6063.0 K Logg: 4.48 Fe/H: -0.520



DV Fit Results:

Period = 1.92632 [0.00000] d
Epoch = 131.7661 [0.0012] BKJD
Rp/R* = 0.0138 [0.0021]
a/R* = 2.64 [1.92]
b = 0.92 [0.15]
Seff = 1149.51 [416.75]
Teq = 1485 [135] K
Rp = 1.35 [0.42] Re
a = 0.0292 [0.0068] AU
Ag = 1.16 [1.71] [0.10σ]
Teffp = 2384 [854] K [1.04σ]

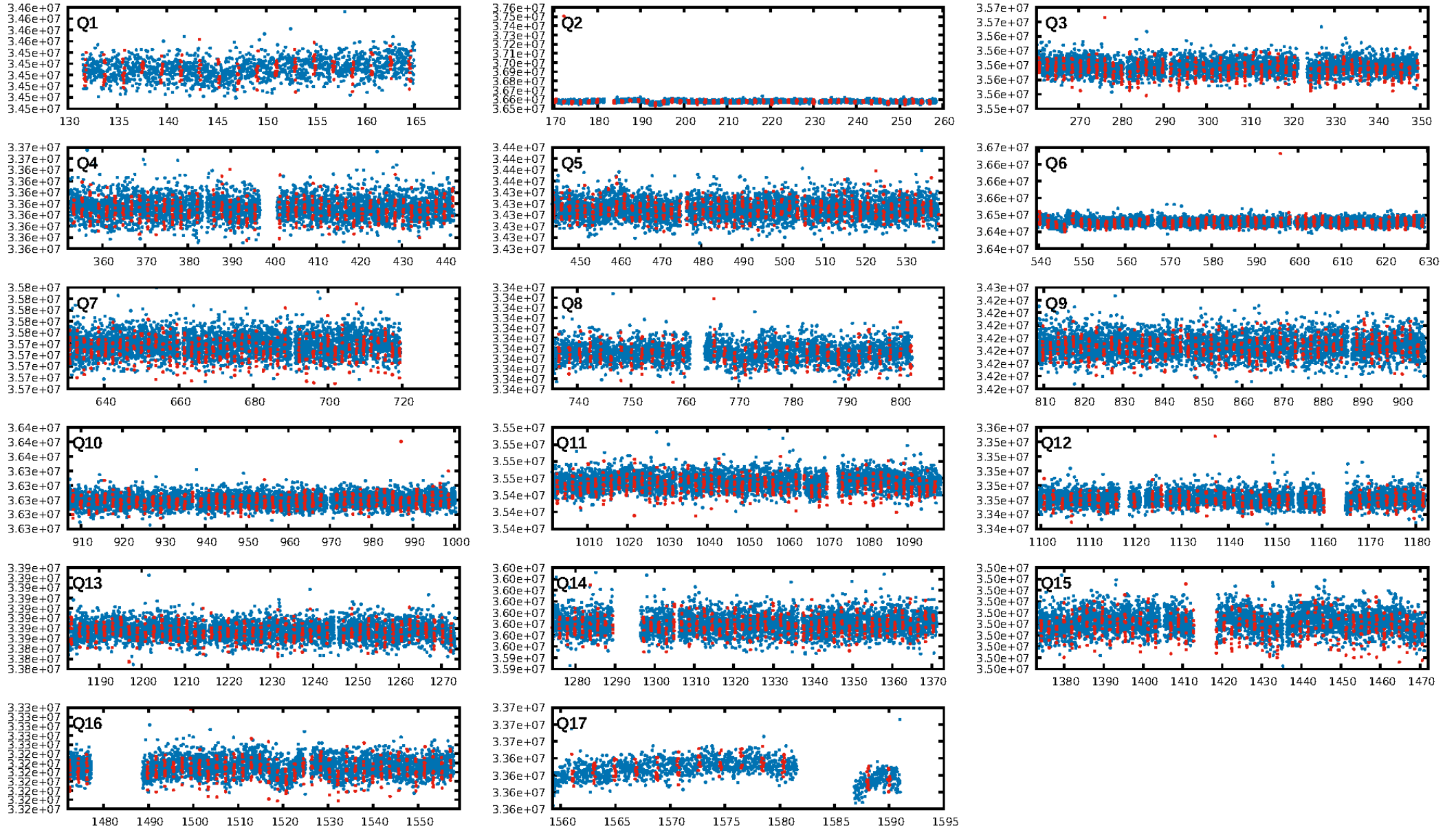
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.11e-163
RollingBand-fgt: 1.00 [668/668]
GhostDiagnostic-chr: -0.2229
Centroid-sig: 0.0%
Centroid-so: 84.324 arcsec [195.15σ]
OotOffset-rm: 10.905 arcsec [19.13σ]
KicOffset-rm: 10.914 arcsec [18.17σ]
OotOffset-st: 0/0/1/5 [6]
KicOffset-st: 0/0/1/5 [6]
DiffImageQuality-fgm: 1.00 [6/6]
DiffImageOverlap-fno: 1.00 [17/17]

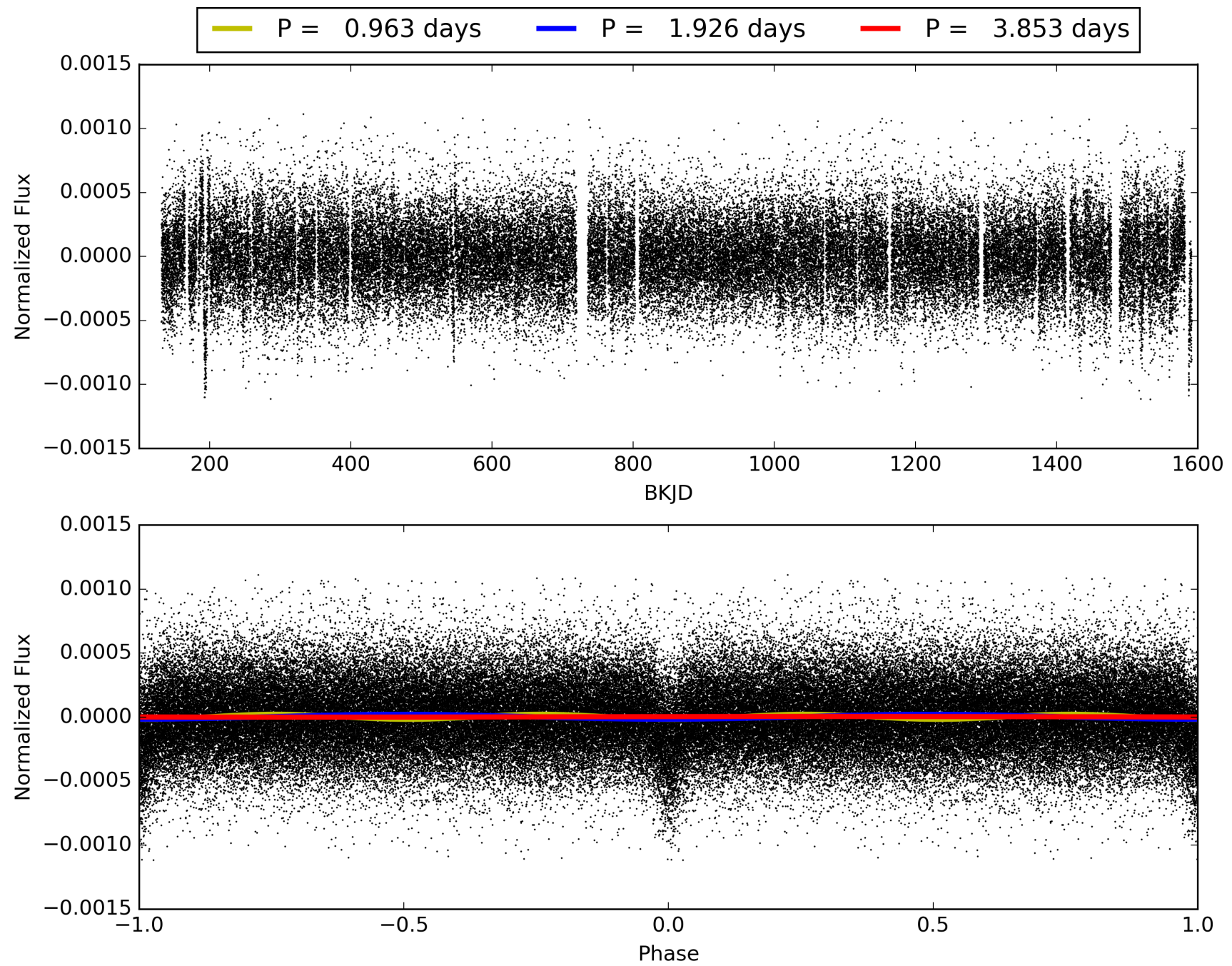
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:48:17 Z

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

TCE 006863839-01, PDC Light Curves

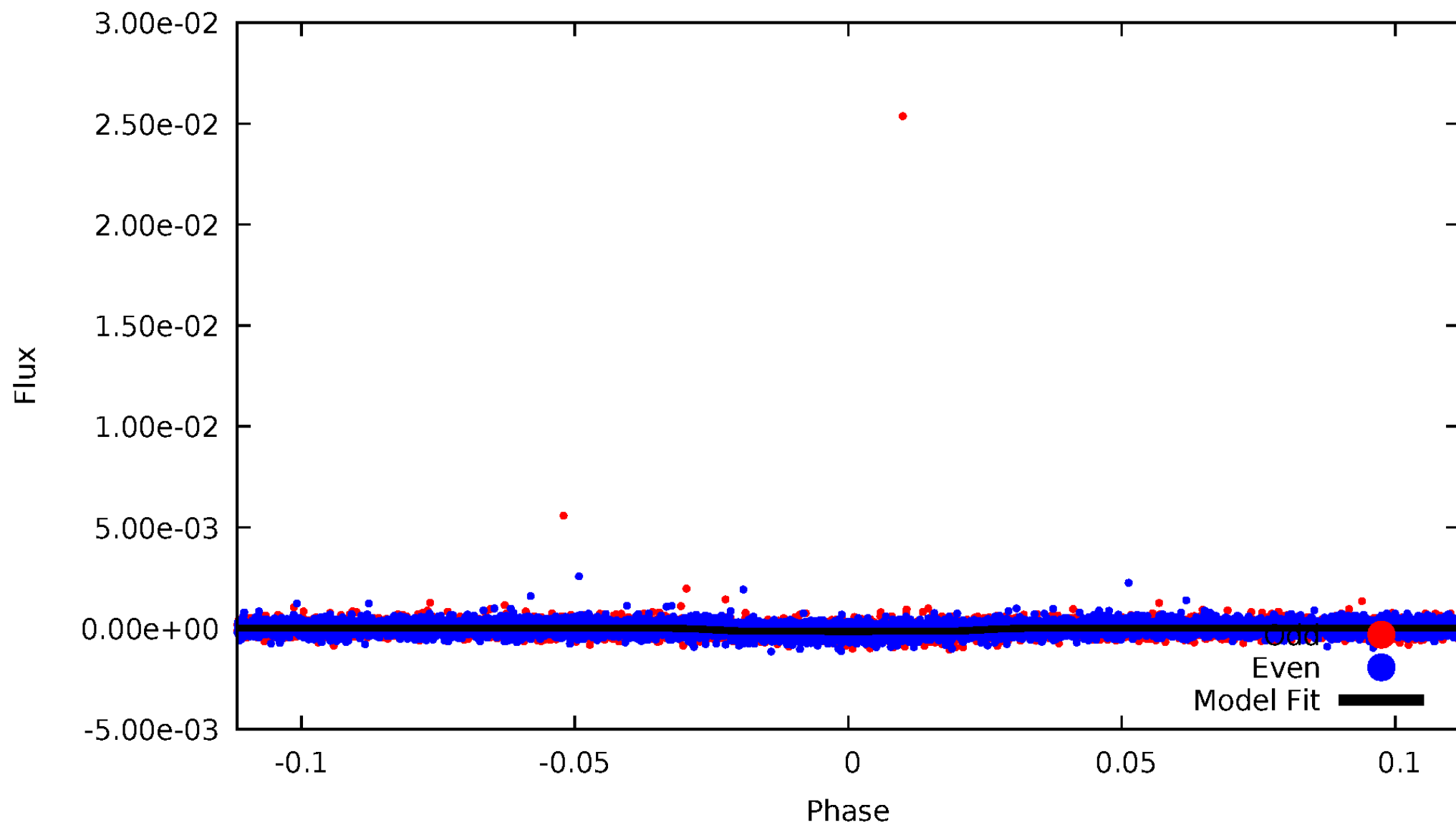


TCE 006863839-01



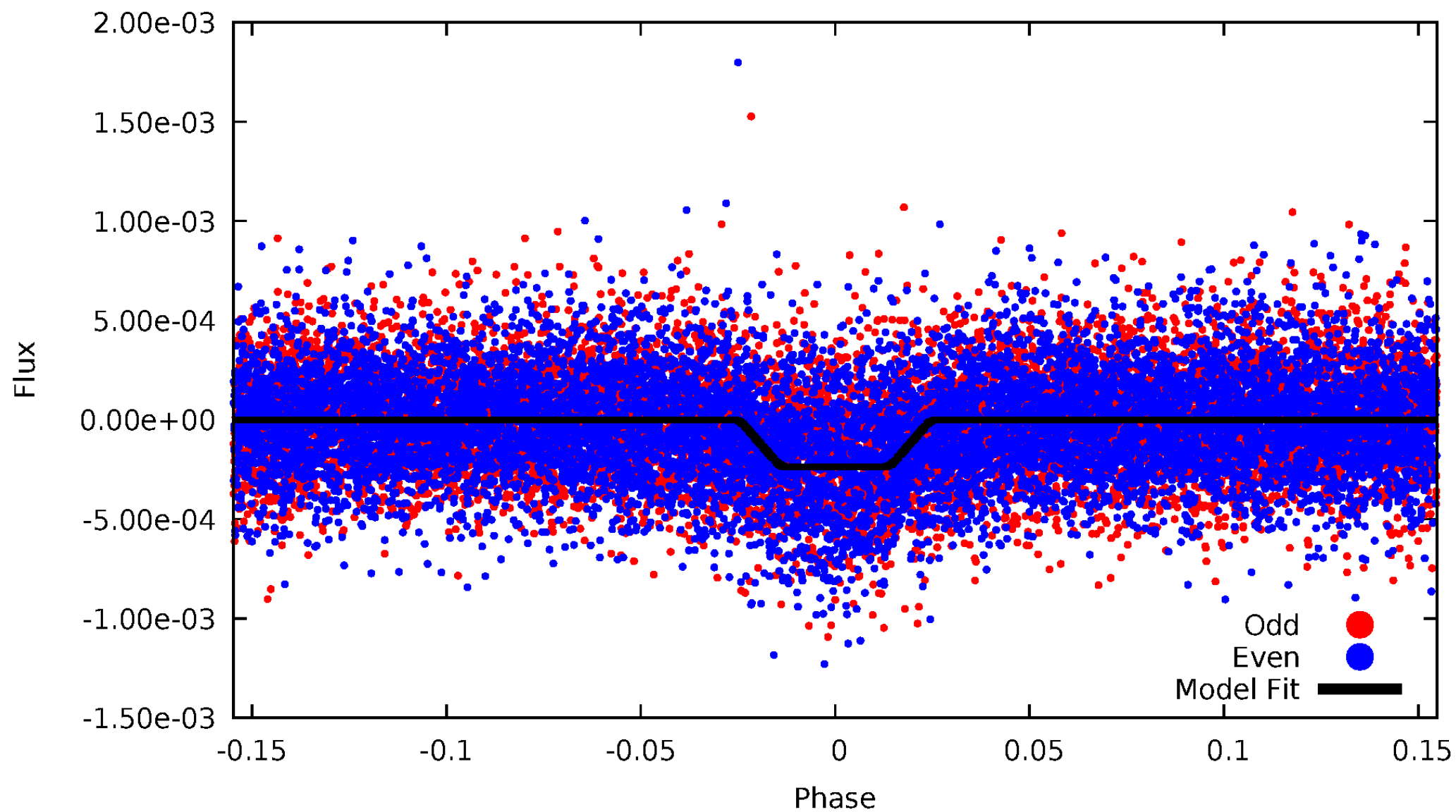
DV Odd/Even

TCE 006863839-01



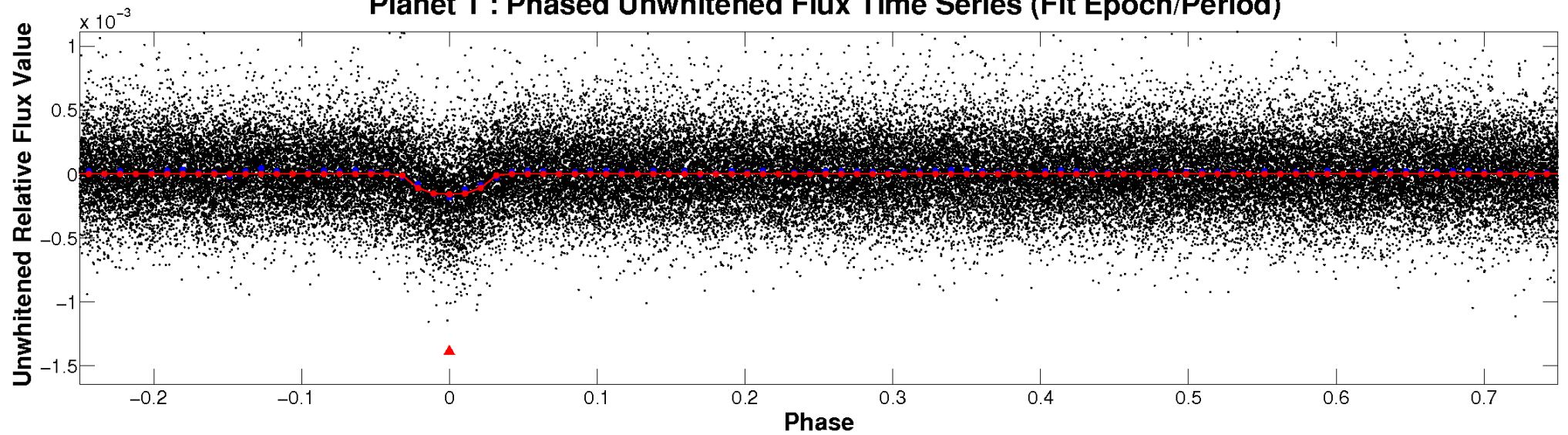
ALT Odd/Even

TCE 006863839-01

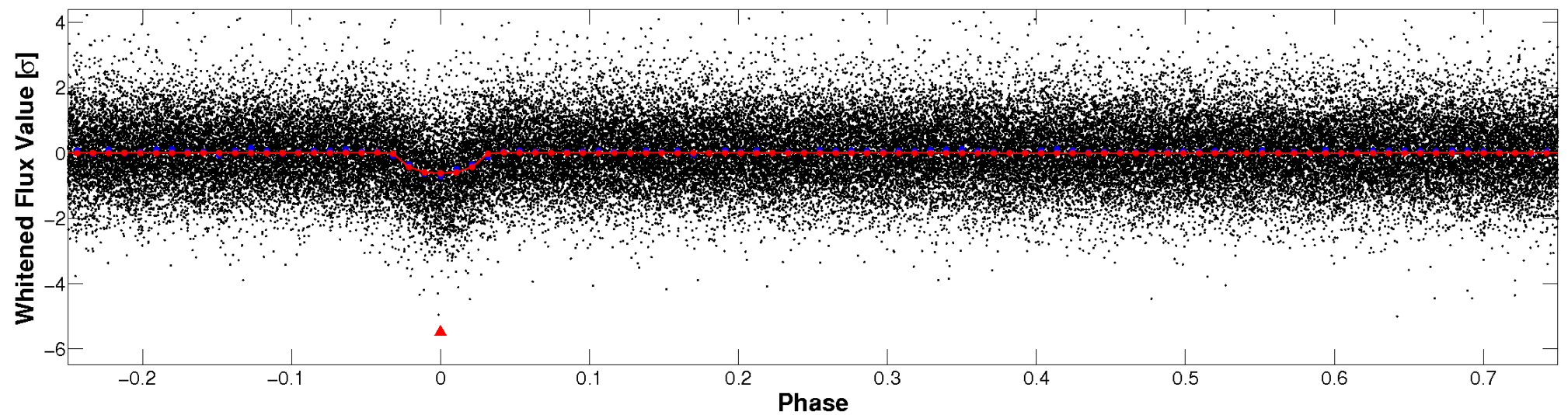


Non-Whitened Vs. Whitened Light Curve

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

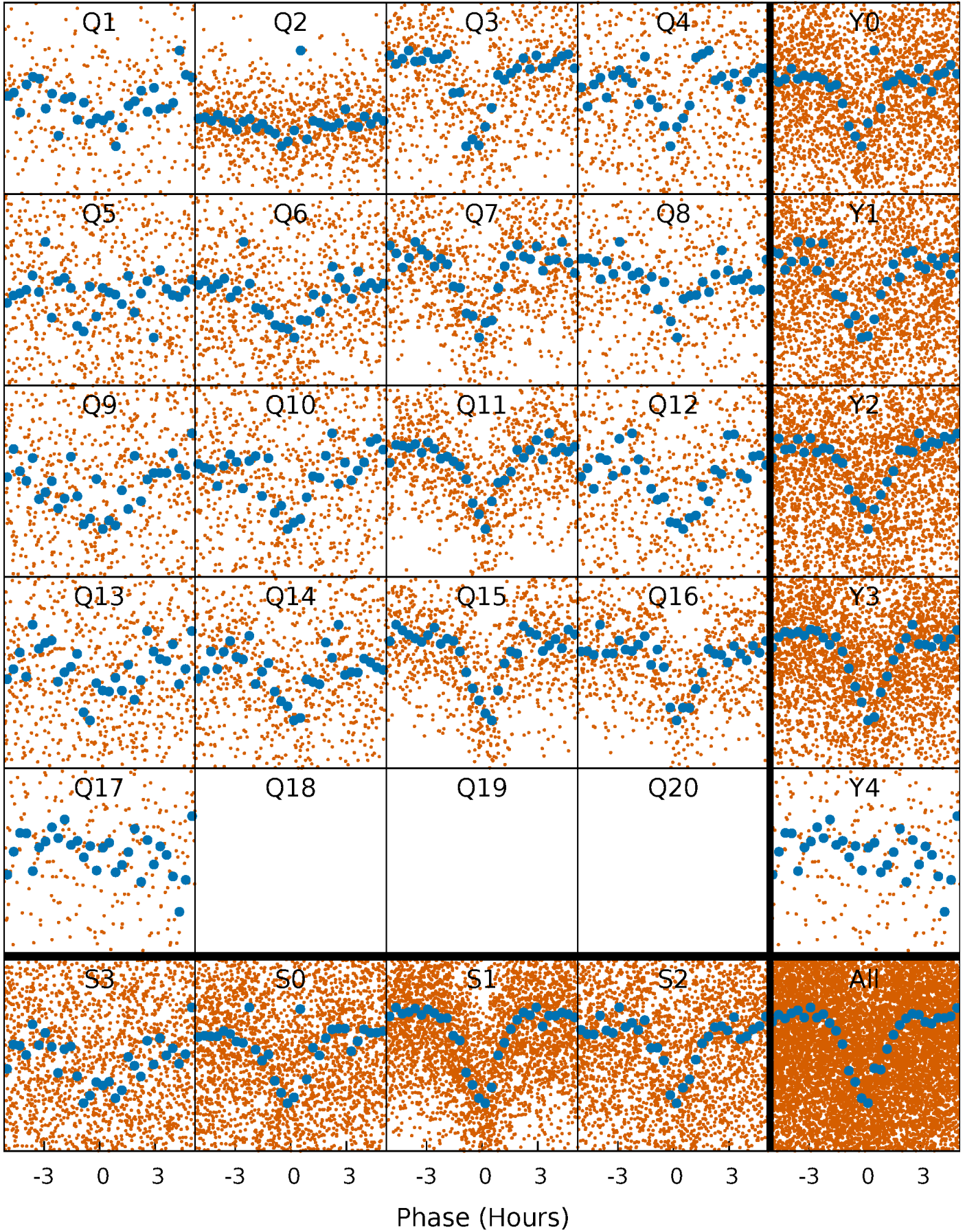


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



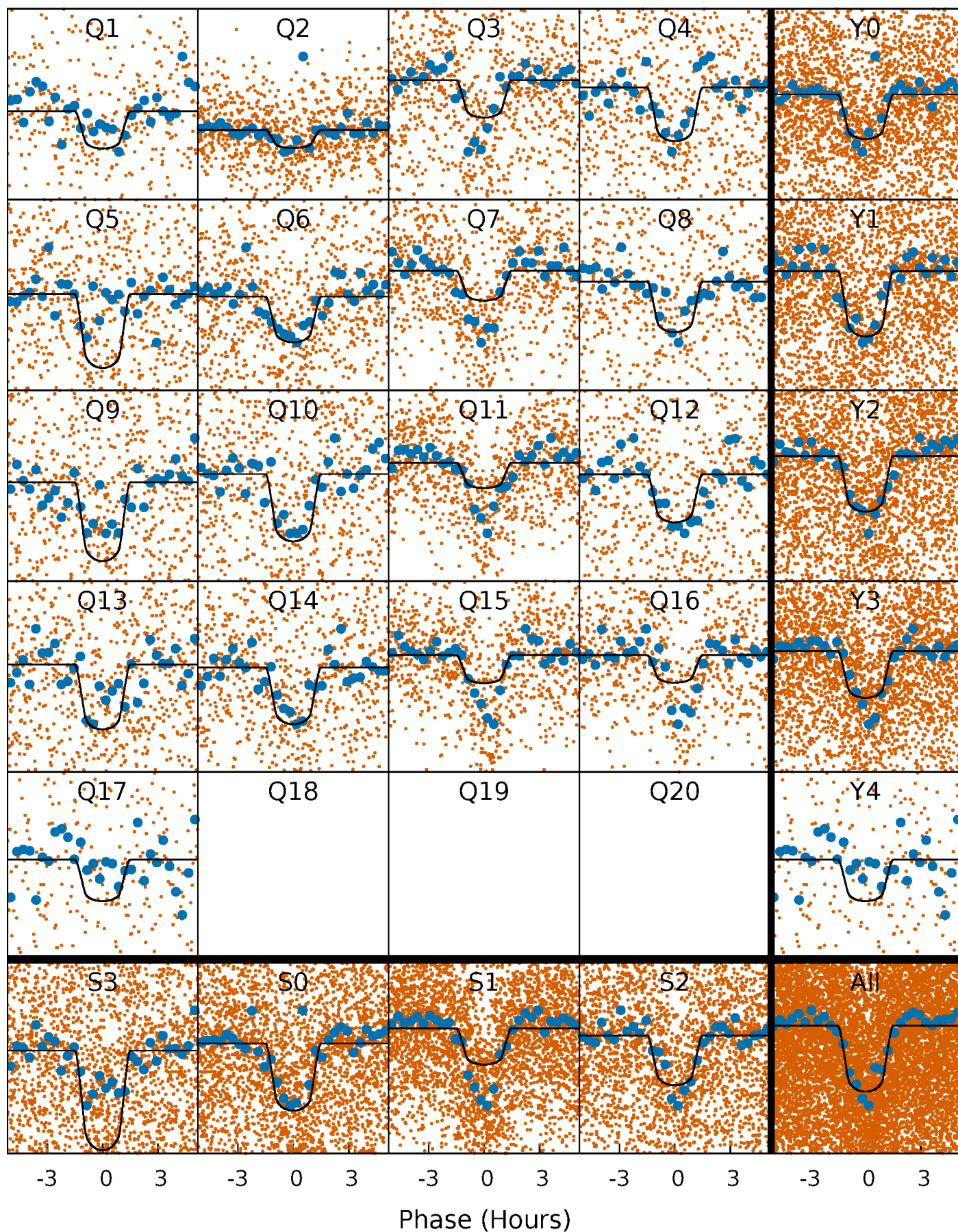
PDC Quarter-Phased Transit Curves

TCE 006863839-01 P= 1.926319 Days $T_0=131.766082$ (BKJD)



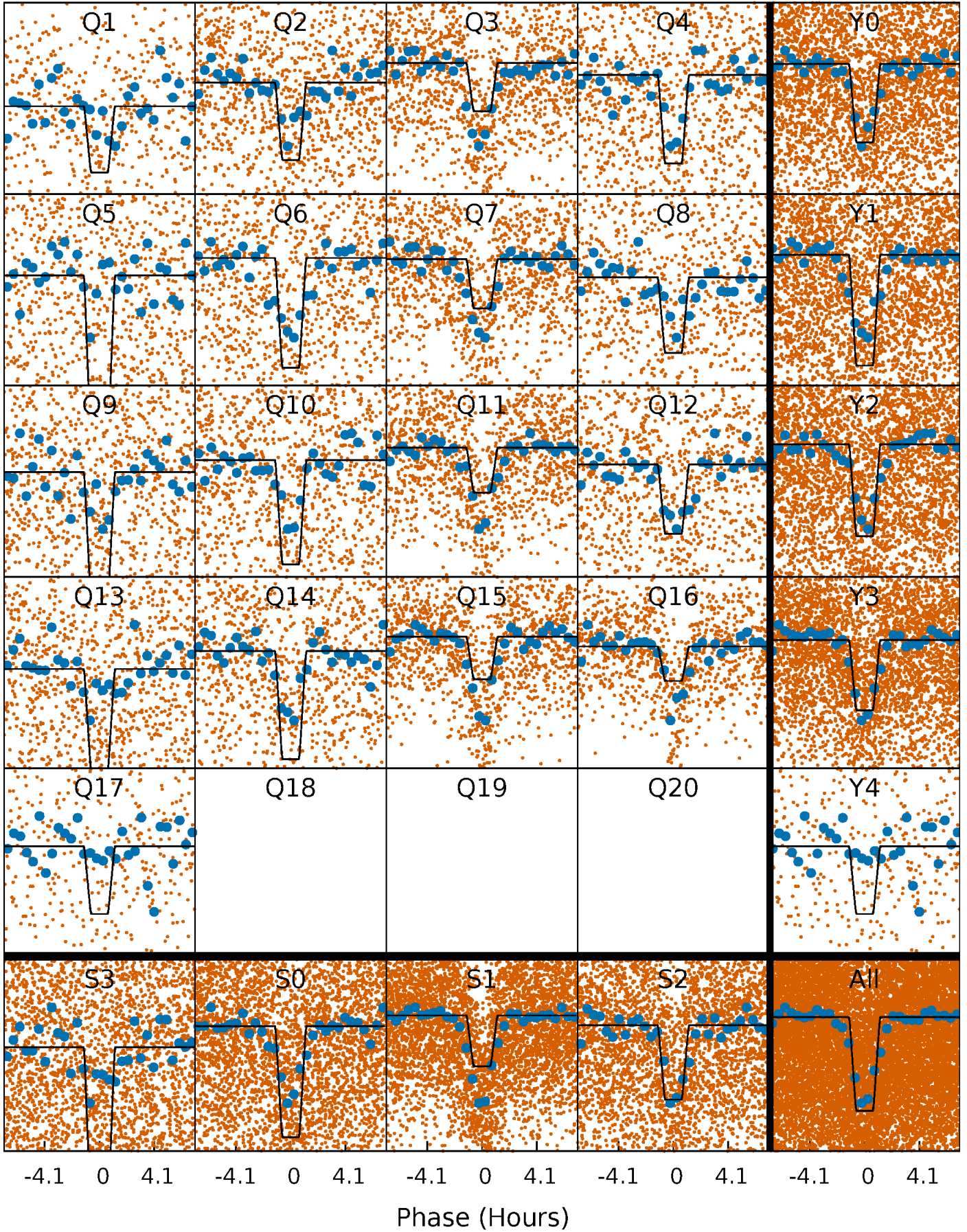
DV Quarter-Phased Transit Curves

TCE 006863839-01 P= 1.926319 Days $T_0=131.766082$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

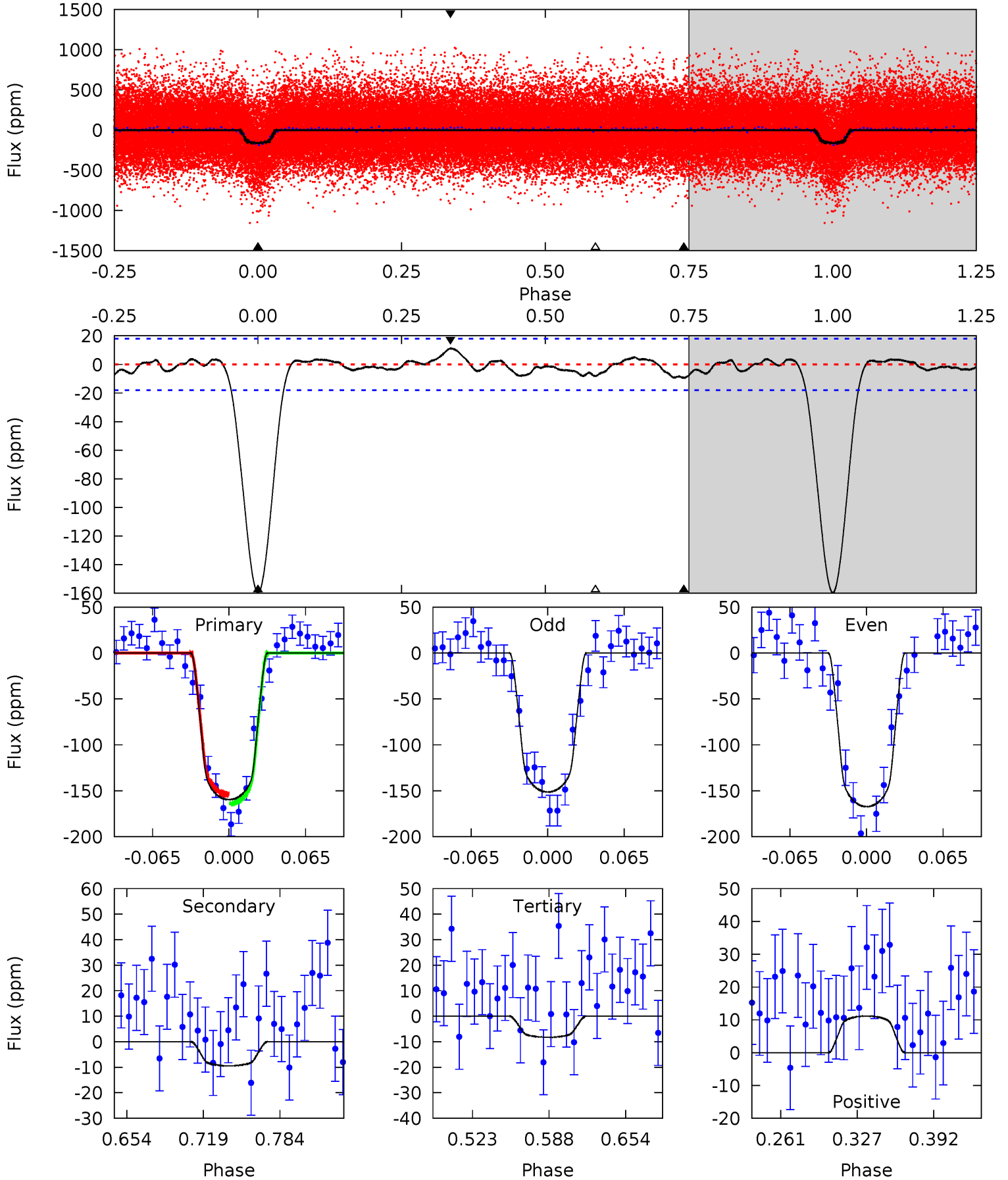
TCE 006863839-01 P= 1.926353 Days $T_0=131.753381$ (BKJD)



DV Model-Shift Uniqueness Test

006863839-01, P = 1.926319 Days, E = 129.839763 Days

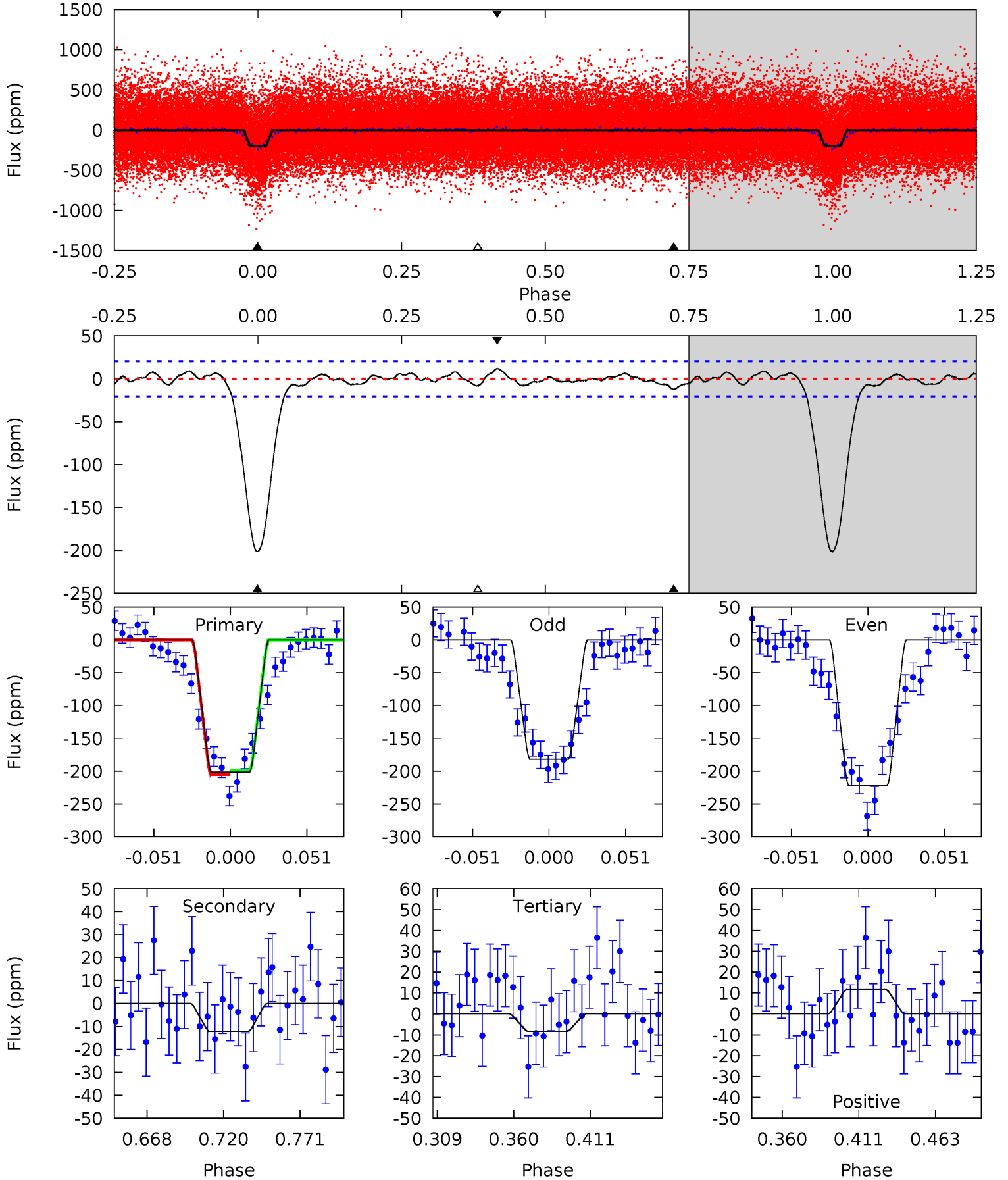
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.3	2.44	2.13	2.89	4.65	1.84	1.03	39.1	38.4	0.31	-0.45	2.06	0.97	0.07	1.29



Alt Model-Shift Uniqueness Test

006863839-01, P = 1.926353 Days, E = 129.827028 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.3	2.80	1.92	2.68	4.70	1.95	1.04	44.4	43.6	0.88	0.12	4.64	1.05	0.05	0.71



Stellar Parameters For KIC 006863839

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6063^{+163}_{-181}	$4.481^{+0.081}_{-0.189}$	$-0.520^{+0.300}_{-0.300}$	$0.899^{+0.245}_{-0.105}$	$0.893^{+0.099}_{-0.089}$	$1.731^{+0.581}_{-0.848}$
	+3%/-3%	+2%/-4%	+58%/-58%	+27%/-12%	+11%/-10%	+34%/-49%
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 006863839-01 / KOI 1373.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-9 ± 4	$1.40^{+0.31}_{-0.27}$	2099^{+139}_{-101}	3301^{+319}_{-359}	$2.185^{+1.641}_{-1.086}$
Alt.	-12 ± 4	$1.54^{+0.33}_{-0.25}$	2097^{+143}_{-98}	3322^{+274}_{-302}	$2.297^{+1.441}_{-1.041}$

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

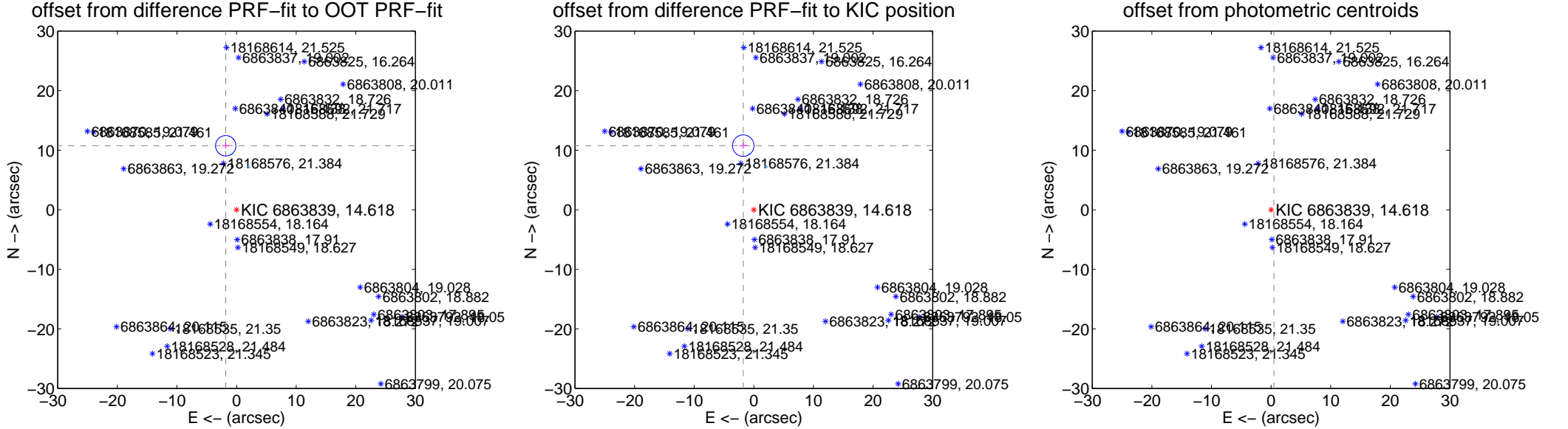
DV Centroid Data

Supplemental centroid analysis for 006863839-01. Kepler magnitude: 14.62. Transit SNR 30.51

There are 6 quarters with good PRF difference image offsets

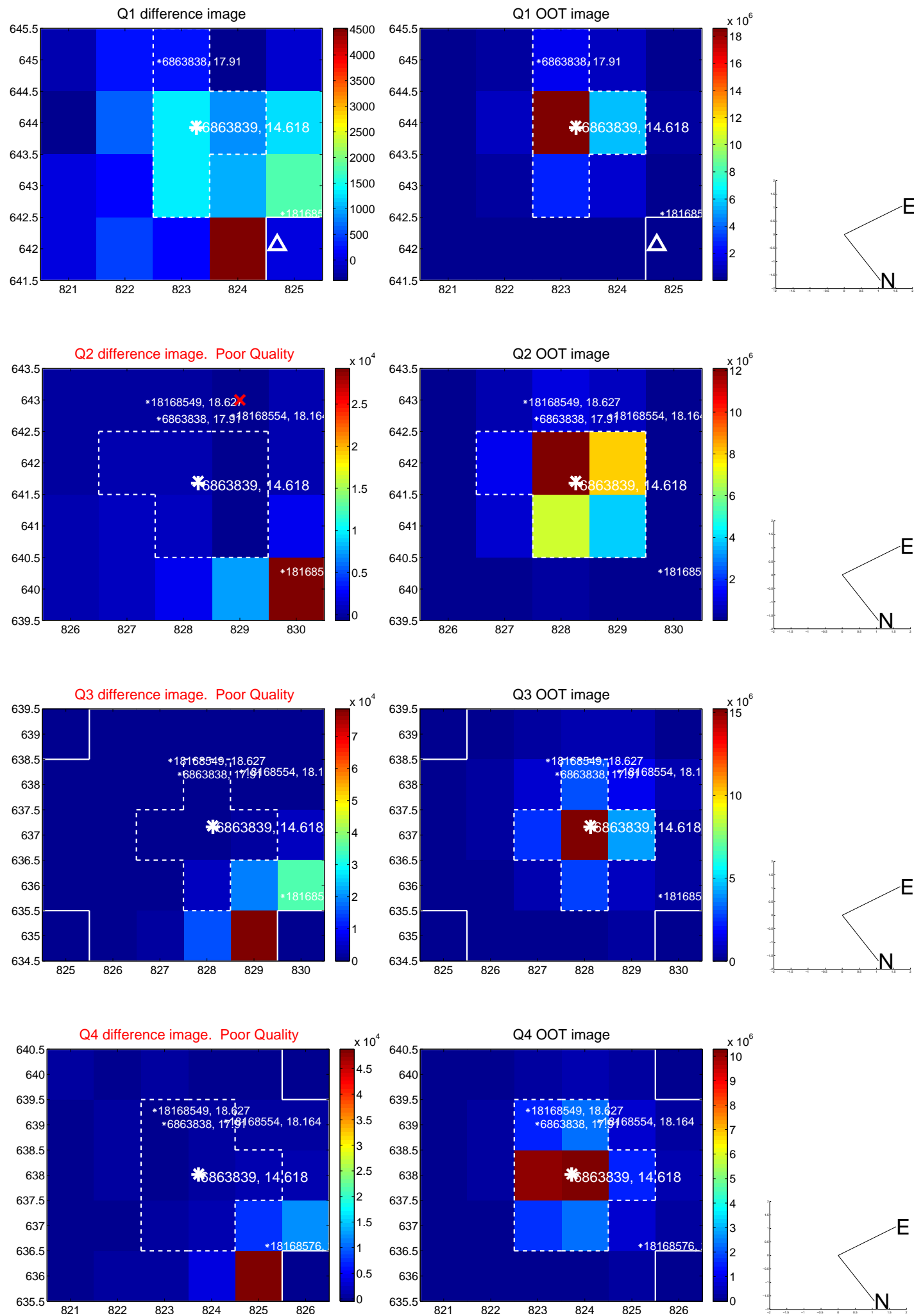
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.905 \pm 0.570	19.13	1.811 \pm 0.605	10.754 \pm 0.478
PRF-fit source offset from KIC position	10.914 \pm 0.601	18.17	1.774 \pm 0.648	10.769 \pm 0.503
photometric centroid source offset	84.32 \pm 0.43	195.15	-0.48 \pm 0.40	84.32 \pm 0.43

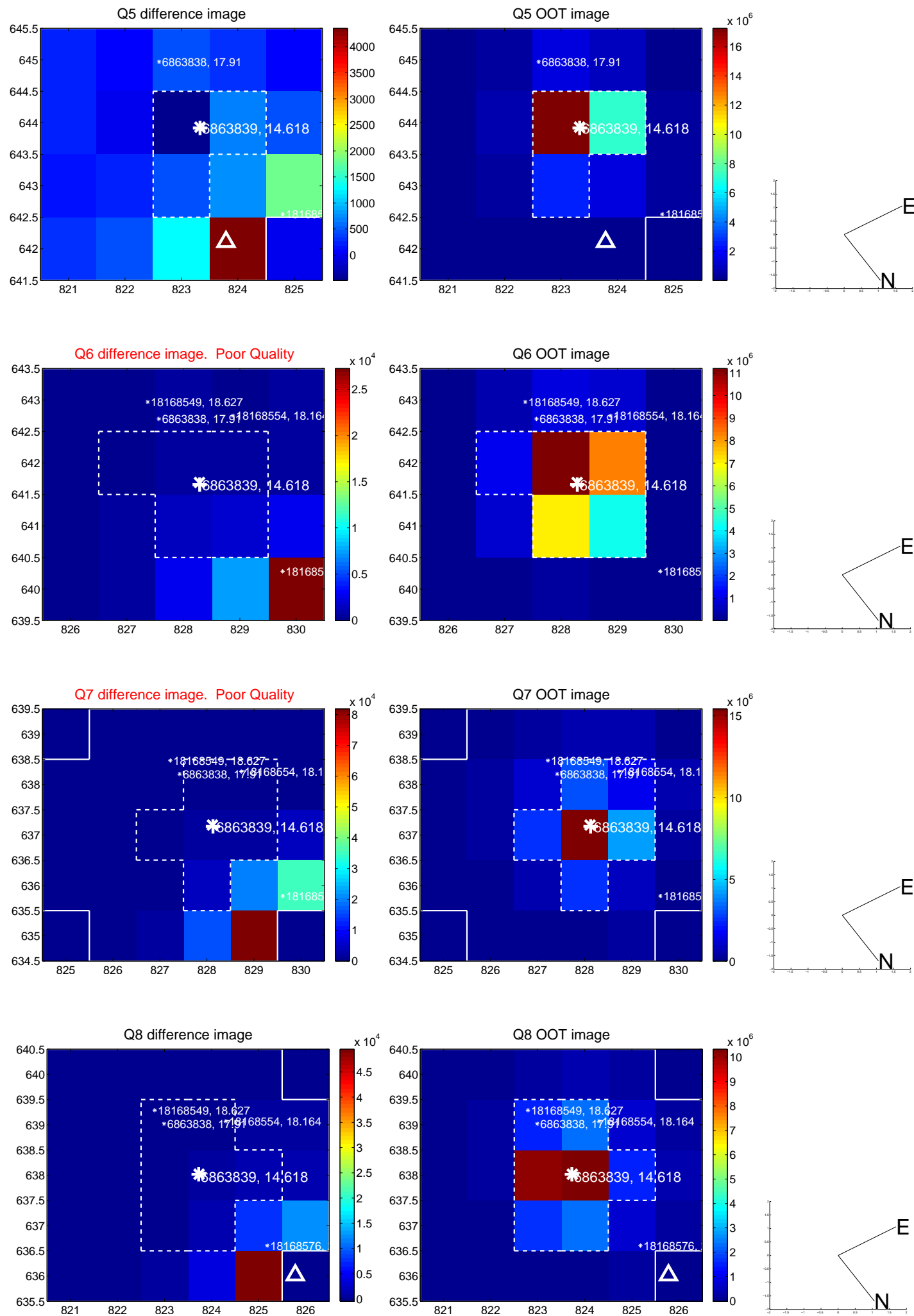


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

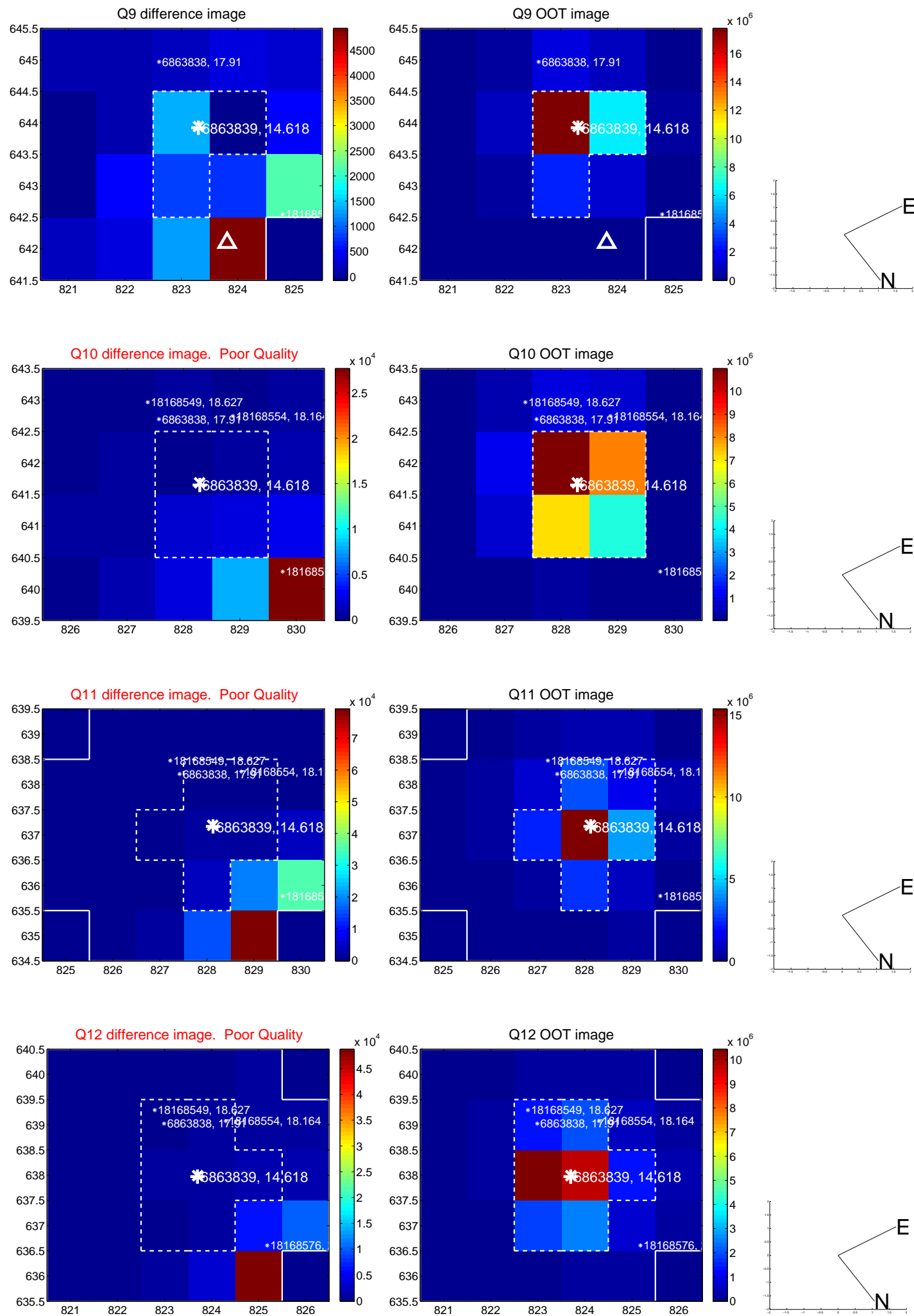
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



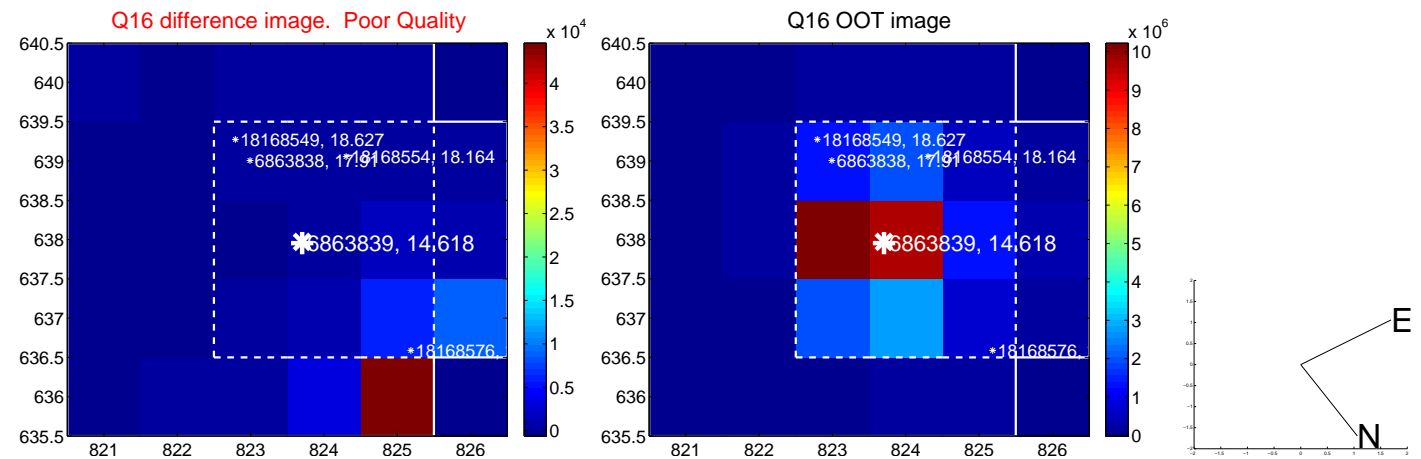
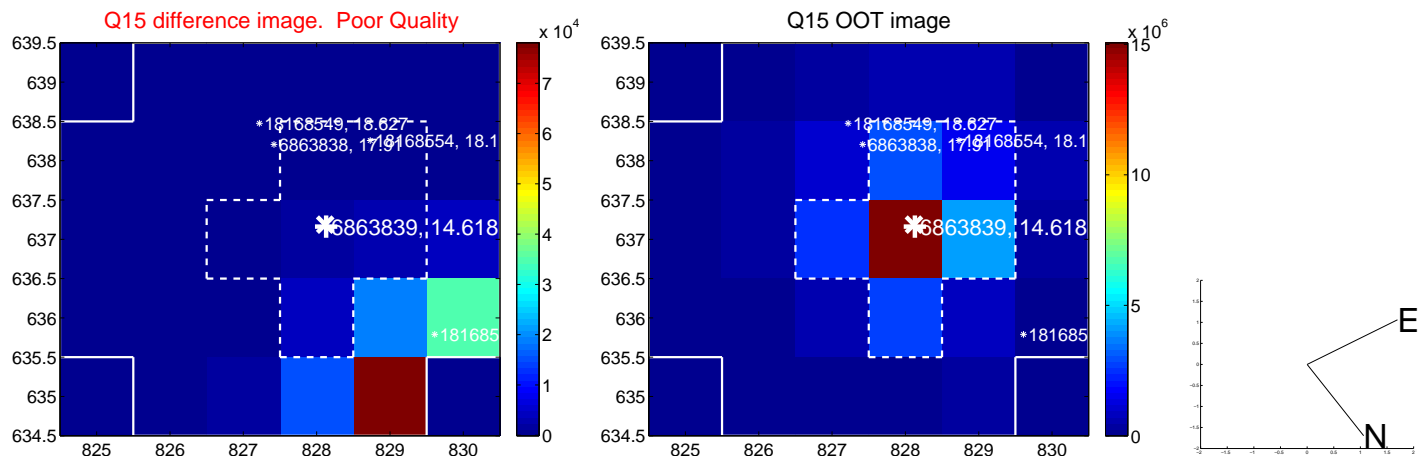
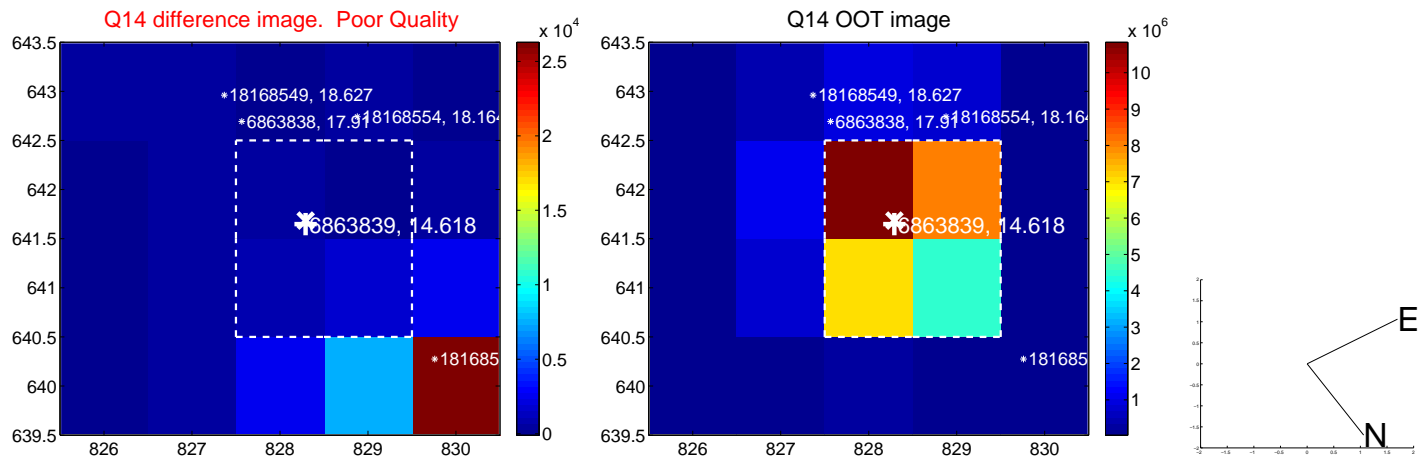
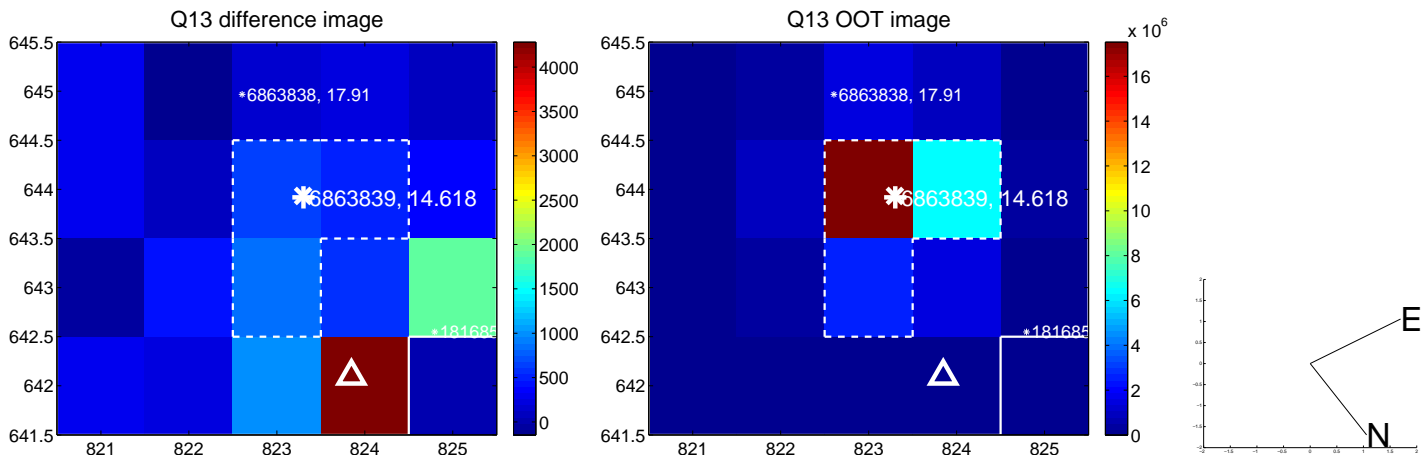
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

