

KIC 008868657

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})
008868657-01	OBS	7102.01	4.447329	133.857832	136.2	14.880	15.5	15.9	0.76	5531	1.20	195.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008868657-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—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.

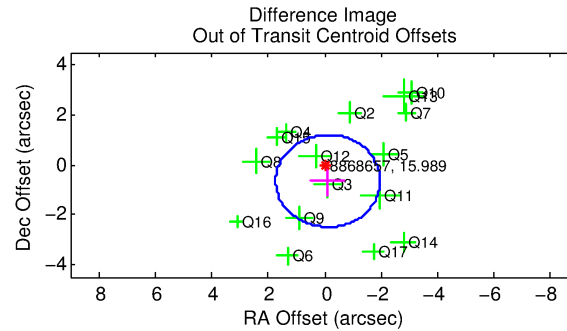
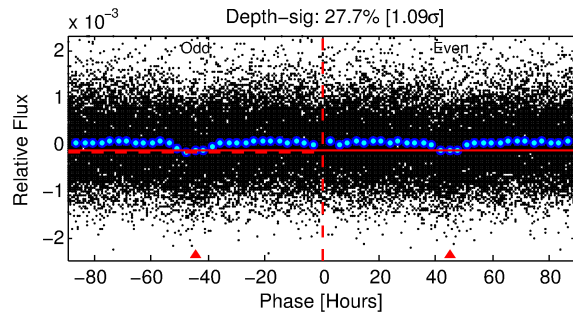
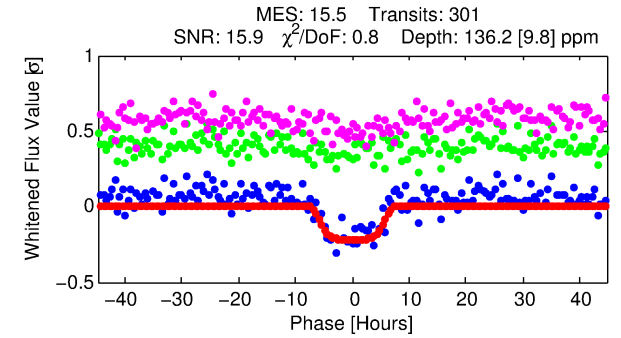
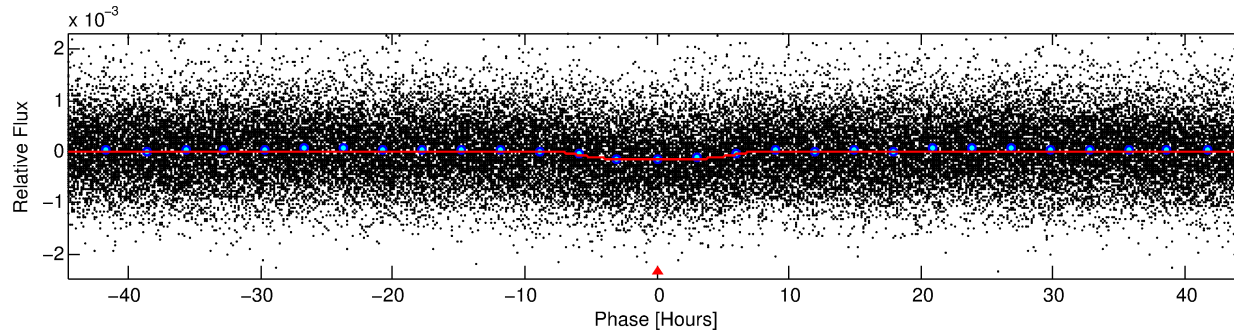
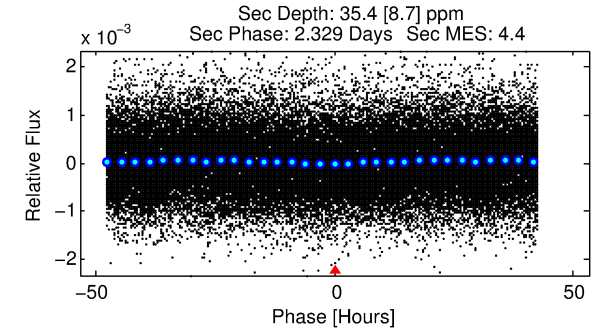
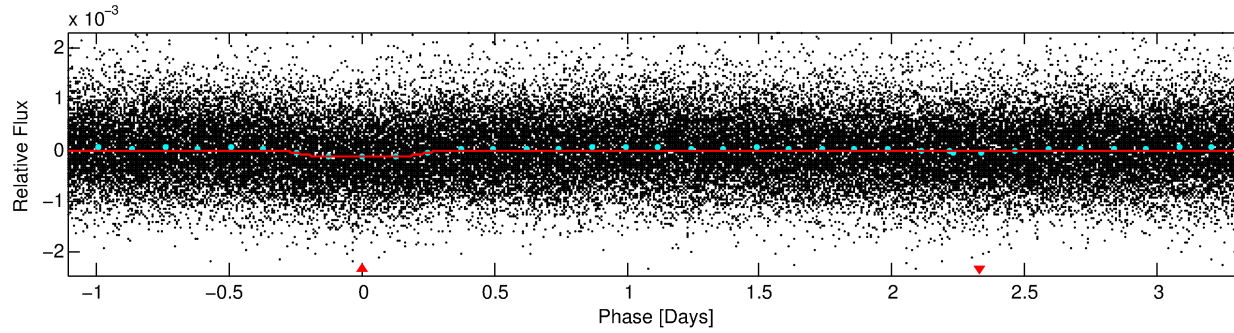
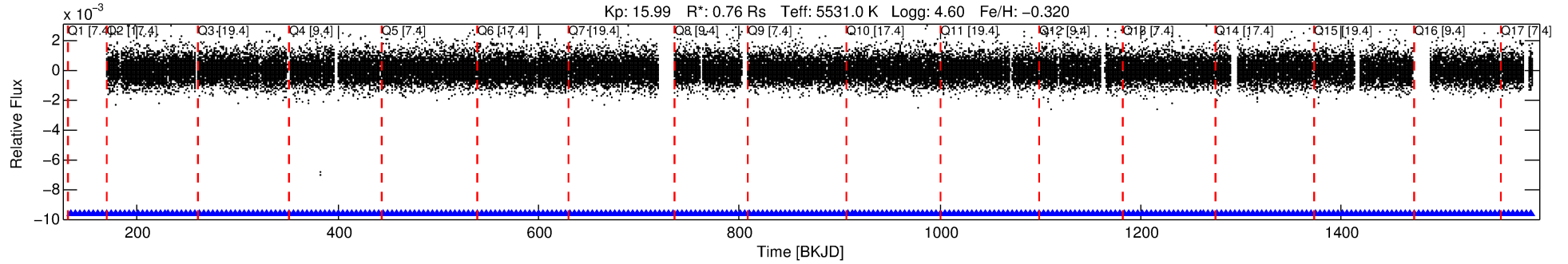
Ephemeris Match Information For 008868657-01

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
008868657-01	8868657	008868650-pri	8868650	1:1	74.2	13	-14	11.94	15.99	1833.80	Direct-PRF	0	0.62	0.52

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: 8868657 Candidate: 1 of 1 Period: 4.447 d
KOI: K07102.01 Corr: 0.956



DV Fit Results:

Period = 4.44733 [0.00012] d
Epoch = 133.8578 [0.0223] BKJD
Rp/R* = 0.0144 [0.0008]
a/R* = 1.18 [0.07]
b = 0.97 [0.01]
Seff = 195.90 [54.68]
Teff = 954 [67] K
Rp = 1.20 [0.26] Re
a = 0.0500 [0.0087] AU
Ag = 33.71 [12.47] [2.62σ]
Teffp = 3554 [264] K [9.56σ]

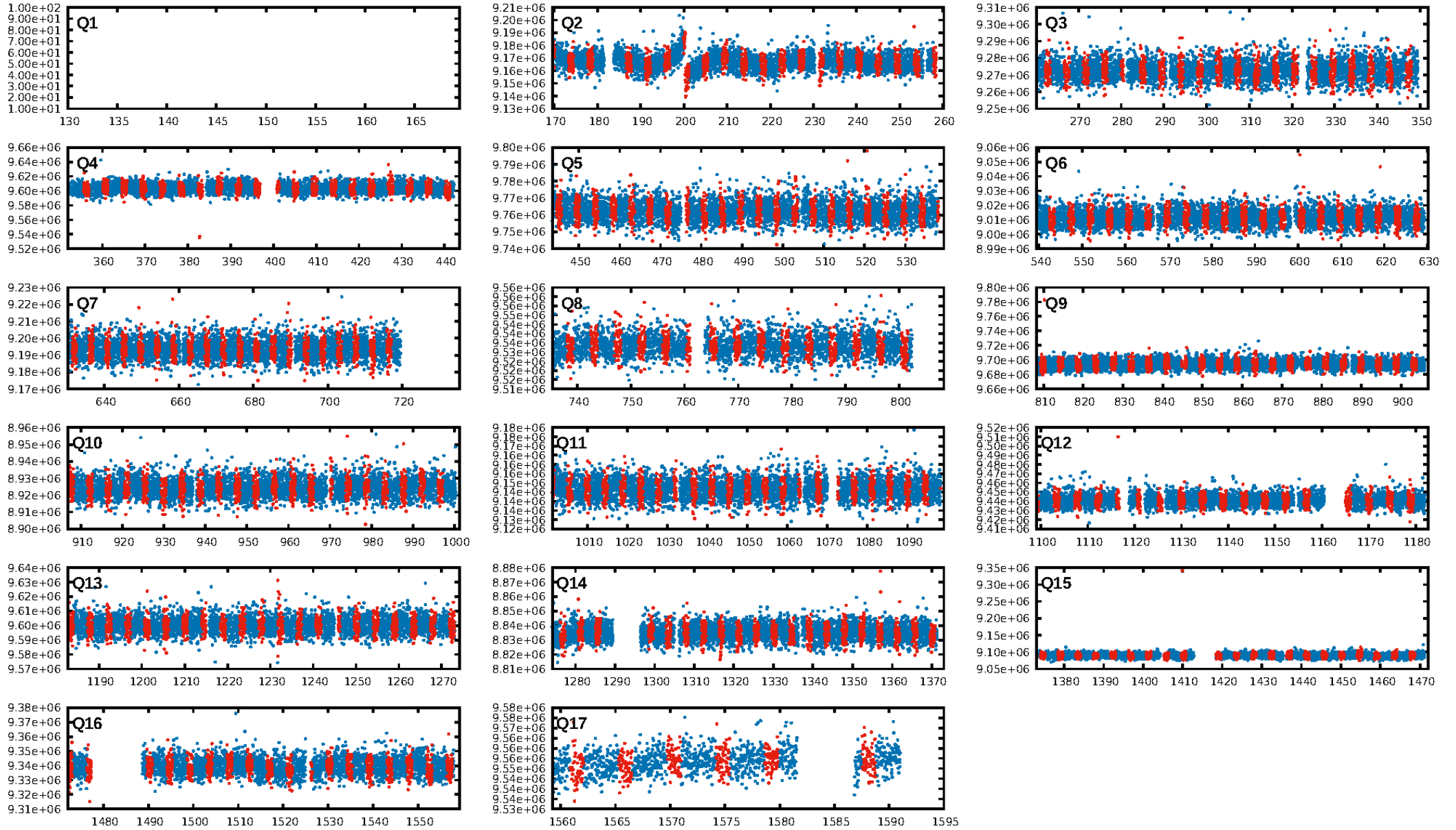
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.19e-47
RollingBand-fgt: 1.00 [295/295]
GhostDiagnostic-chr: 0.05713
Centroid-sig: 9.4%
Centroid-so: 1.599 arcsec [1.51σ]
OotOffset-rm: 0.663 arcsec [1.08σ]
KicOffset-rm: 0.707 arcsec [1.14σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.25 [4/16]
DiffImageOverlap-fno: 1.00 [16/16]

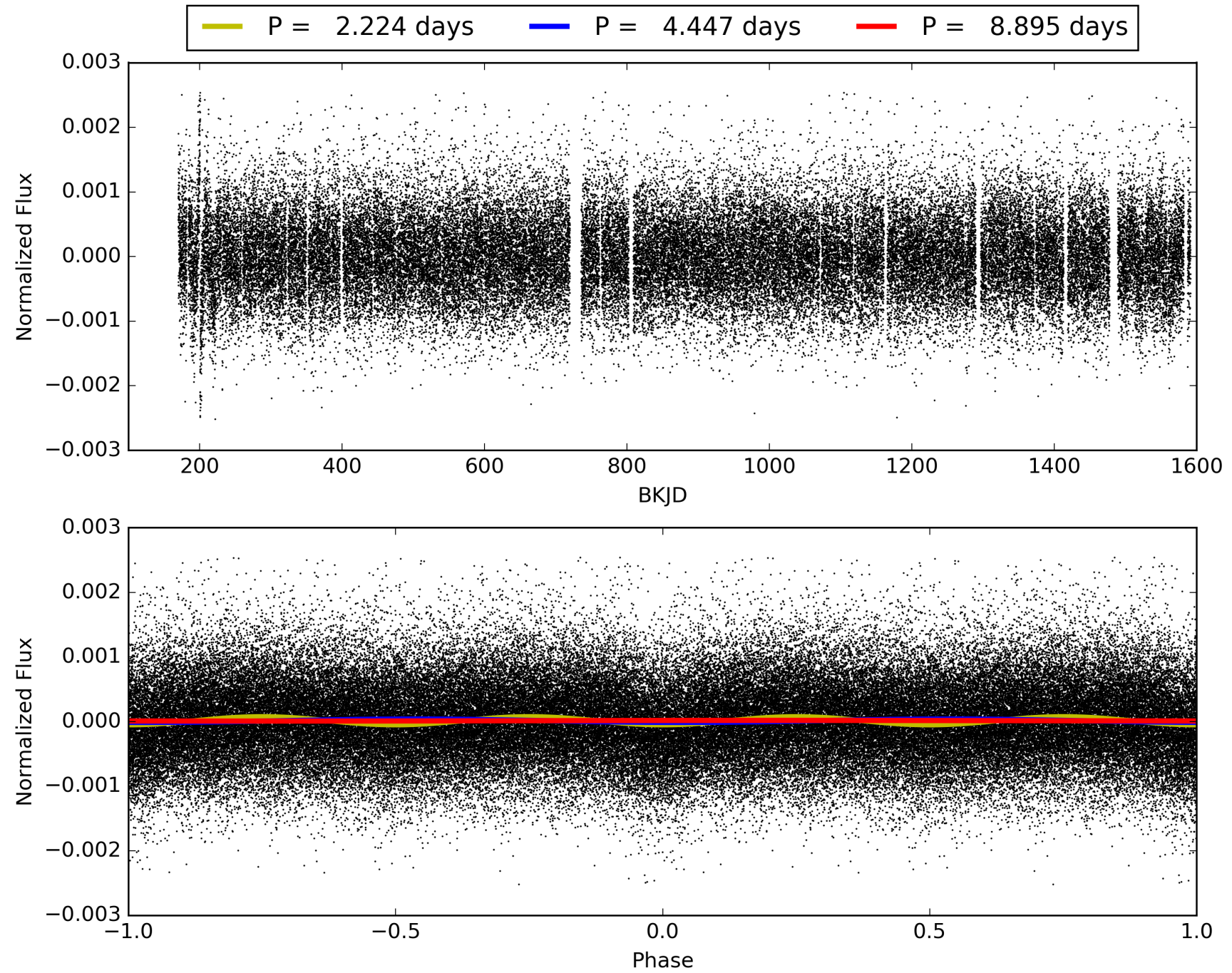
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:44:55 Z

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

TCE 008868657-01, PDC Light Curves

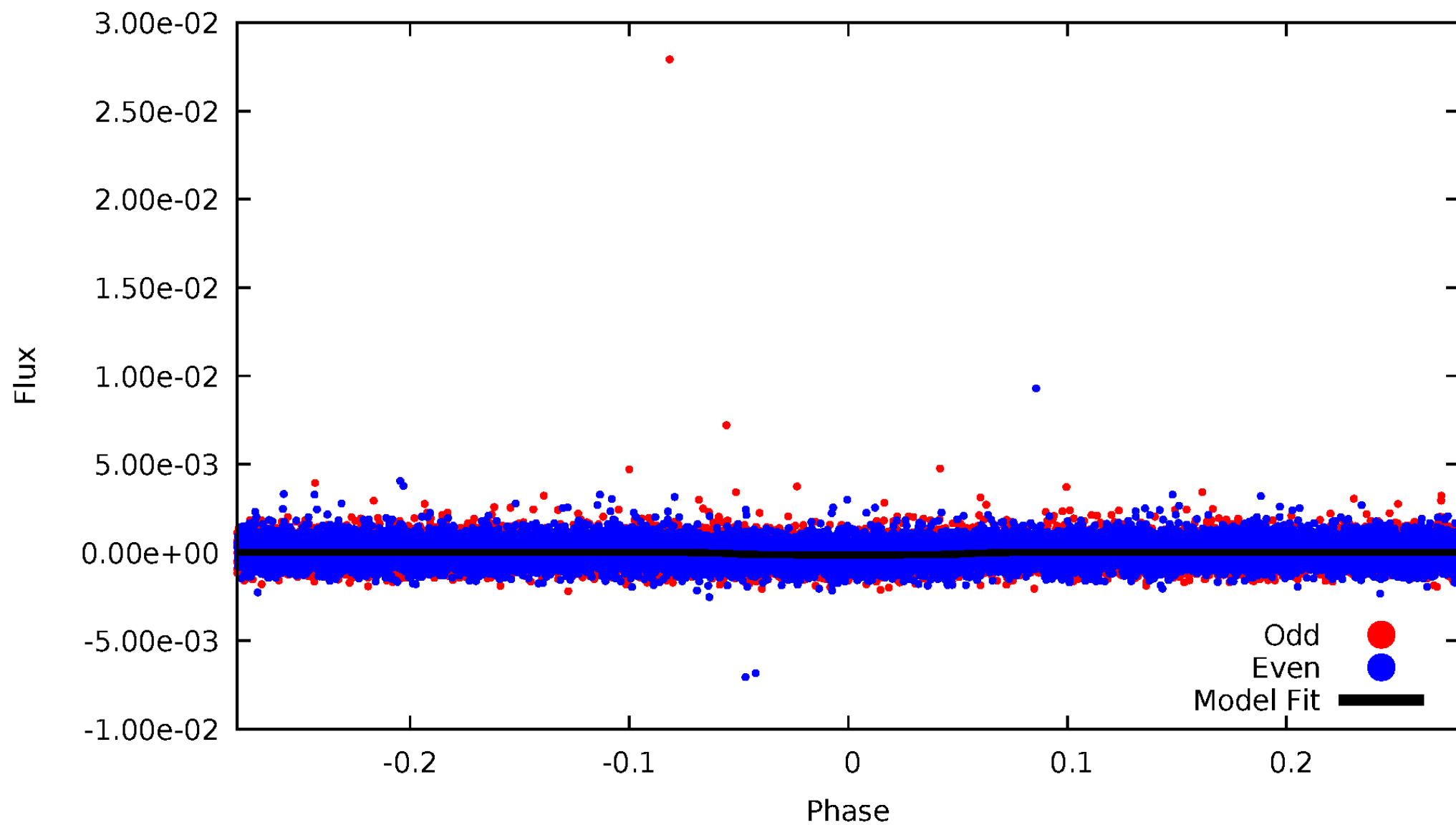


TCE 008868657-01



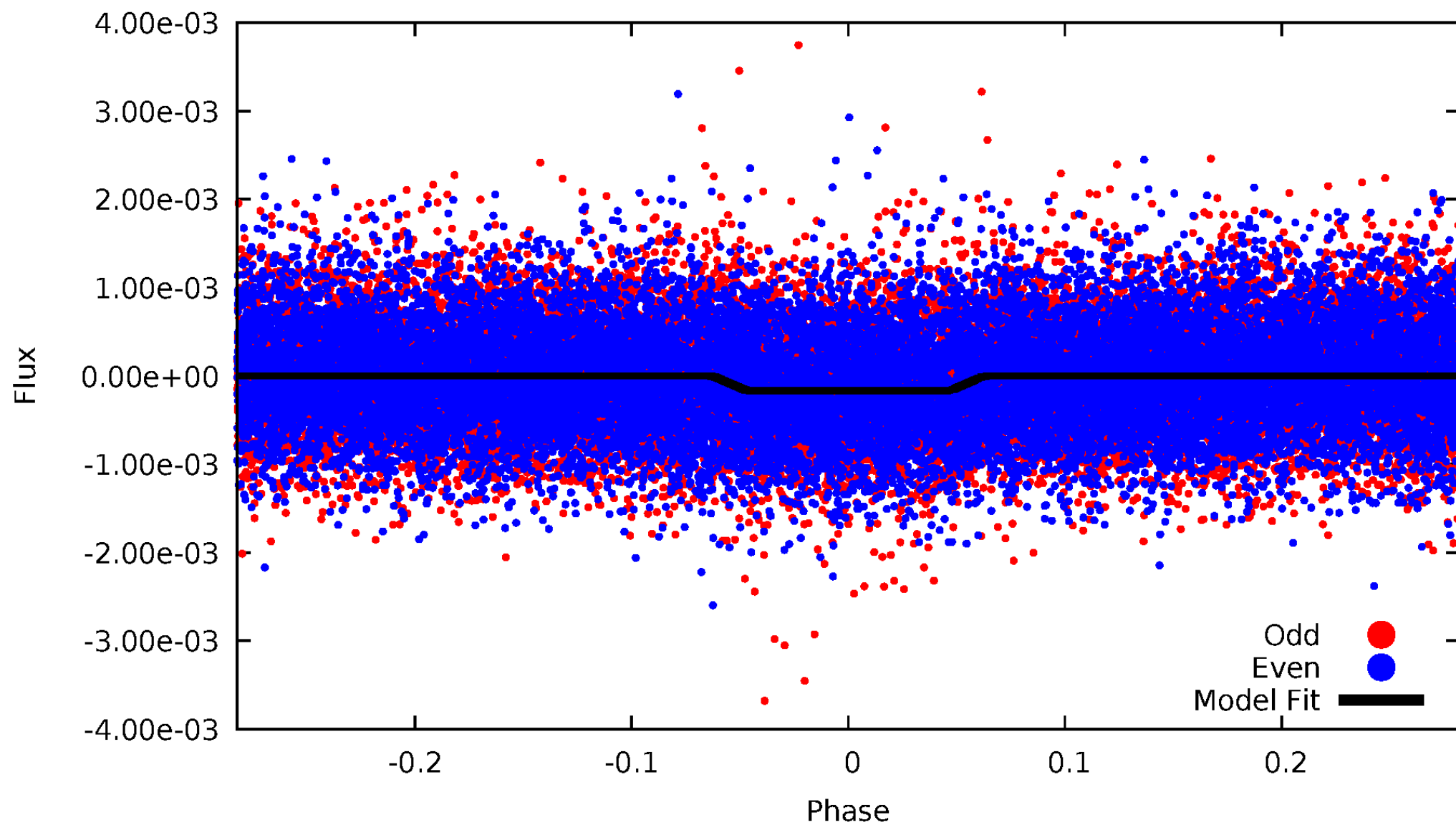
DV Odd/Even

TCE 008868657-01



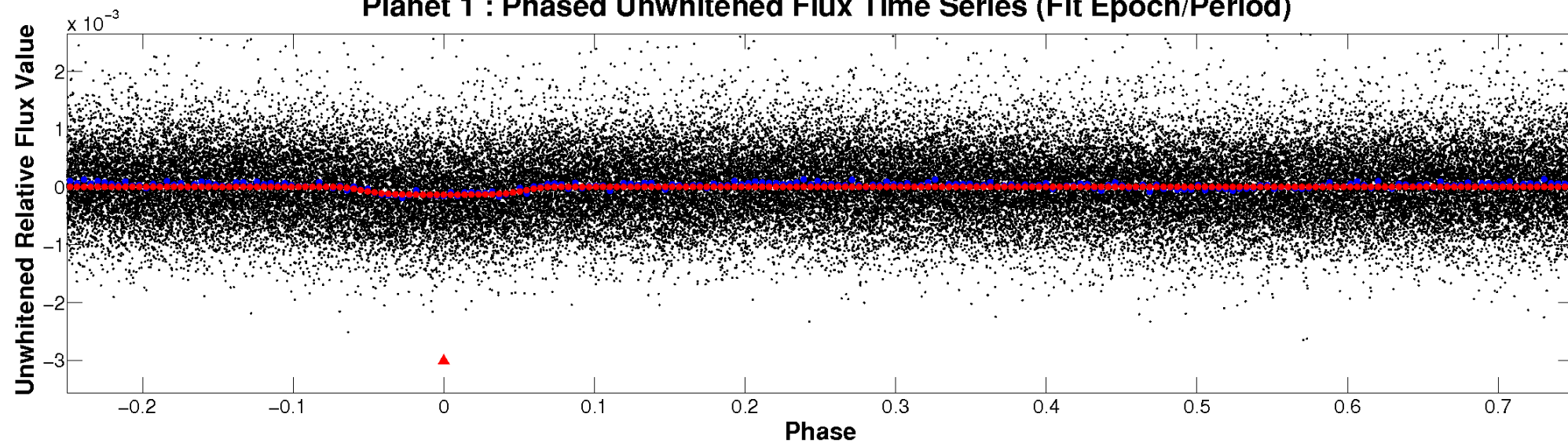
ALT Odd/Even

TCE 008868657-01

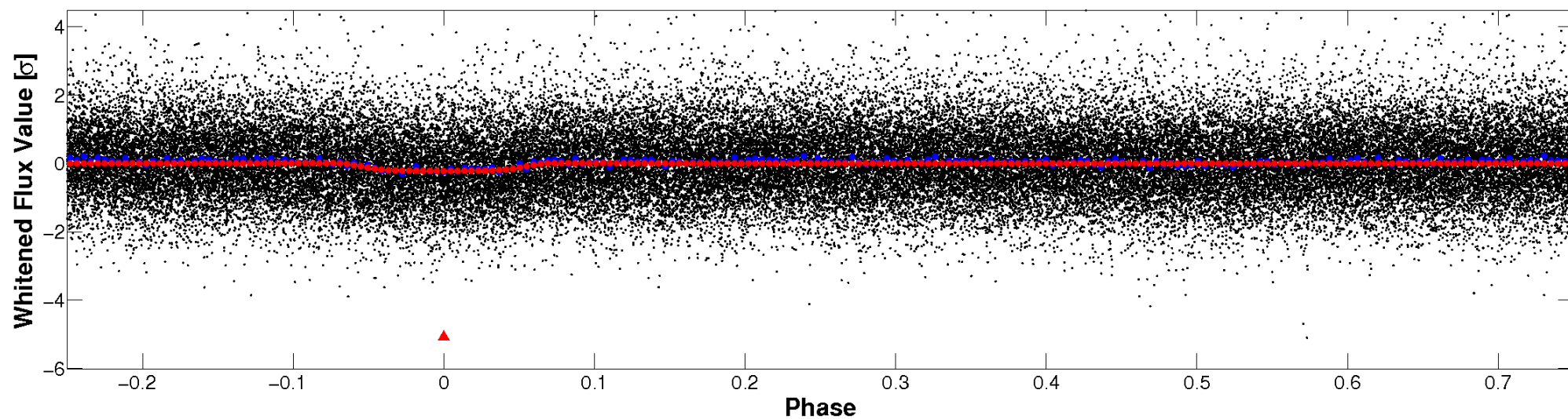


Non-Whitened Vs. Whitened Light Curve

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

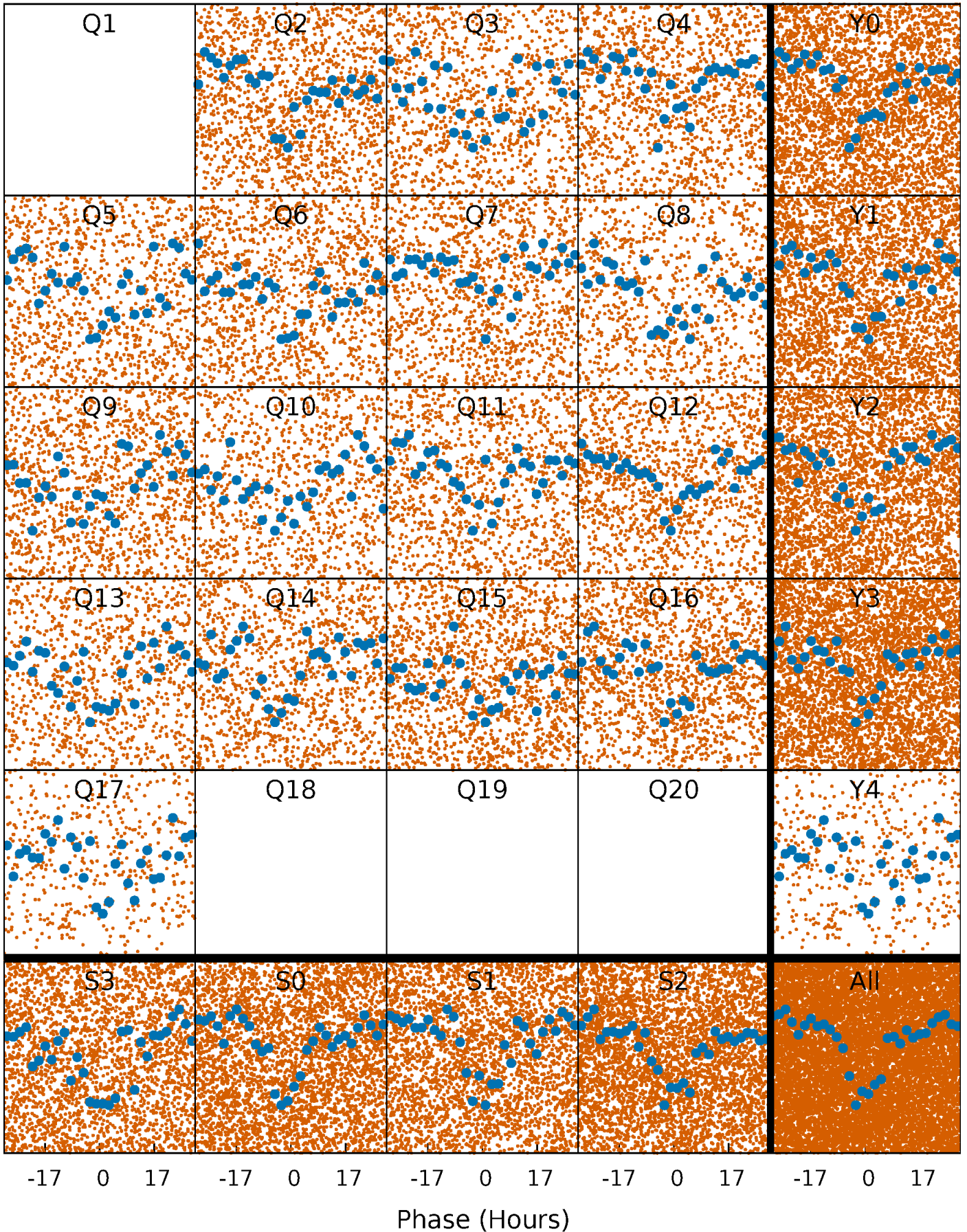


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



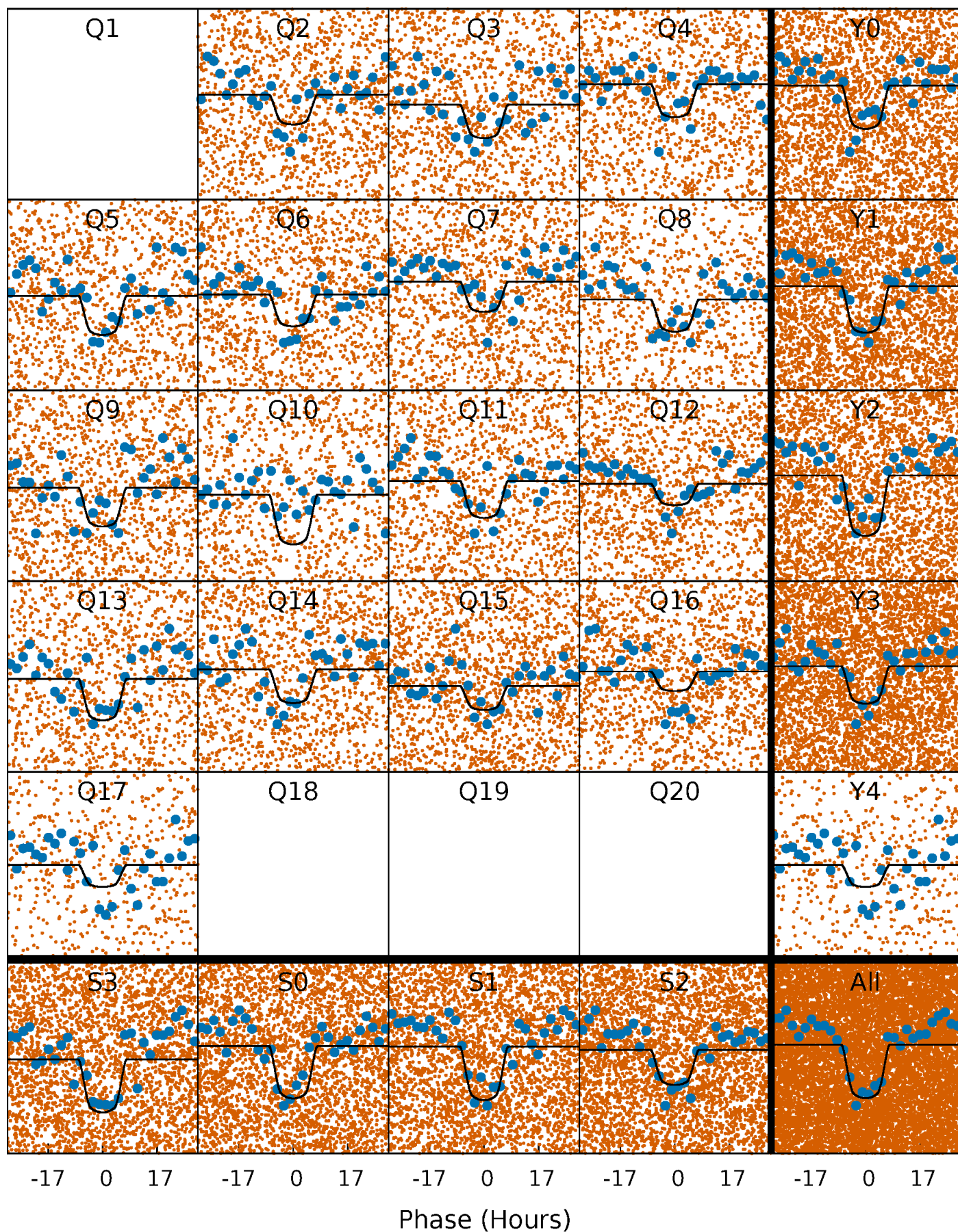
PDC Quarter-Phased Transit Curves

TCE 008868657-01 P= 4.447329 Days $T_0=133.857832$ (BKJD)



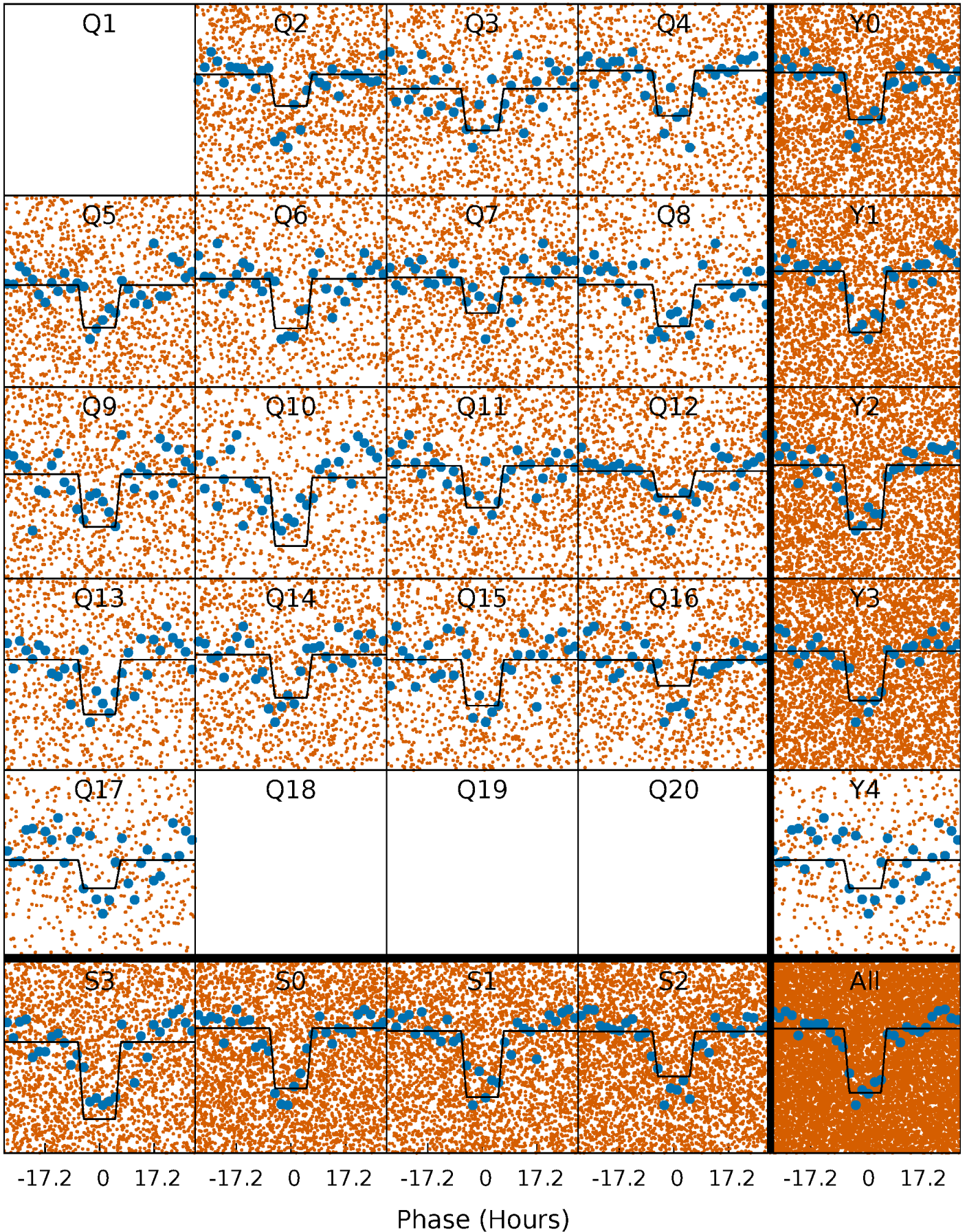
DV Quarter-Phased Transit Curves

TCE 008868657-01 P= 4.447329 Days $T_0=133.857832$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

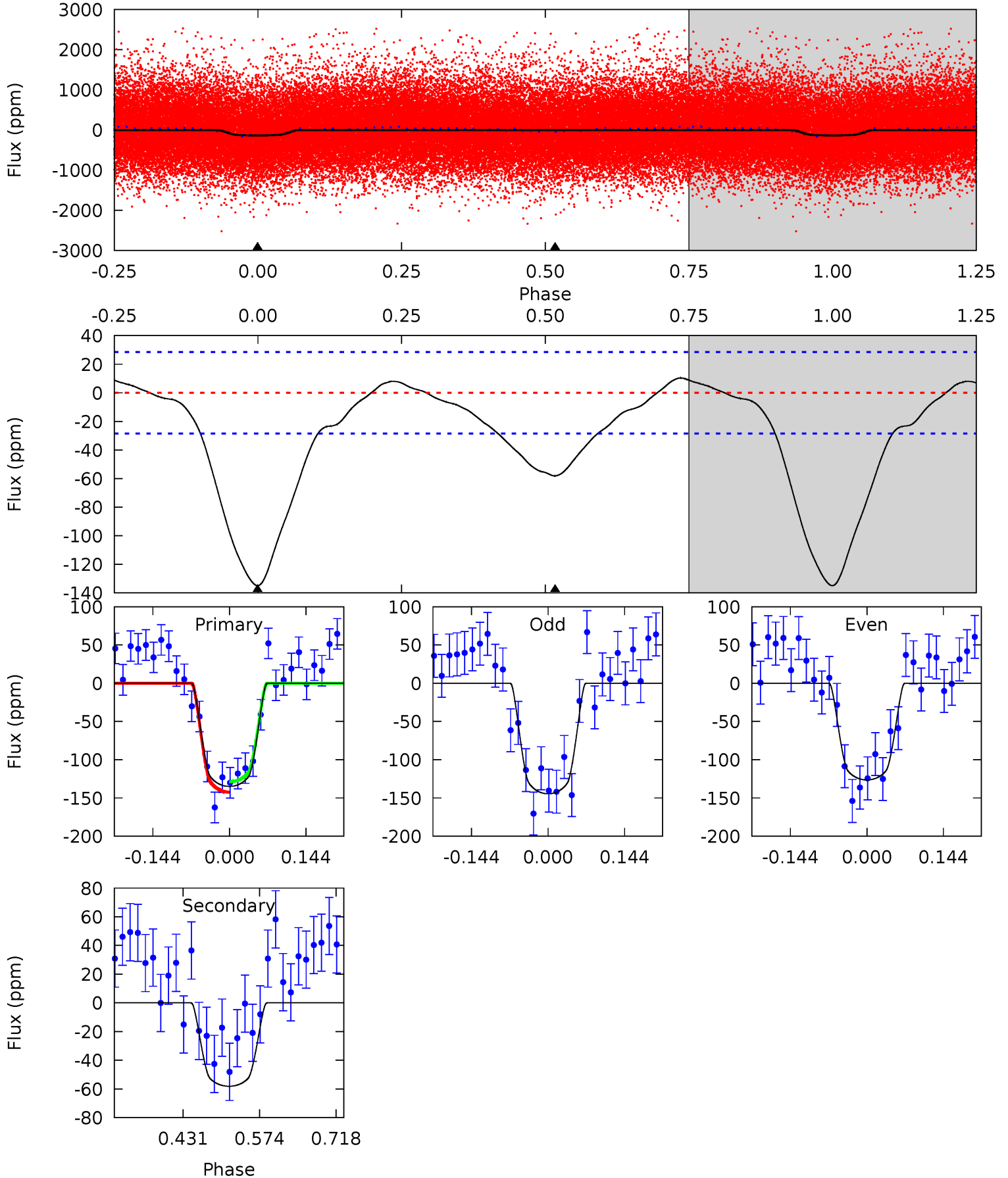
TCE 008868657-01 P= 4.447309 Days $T_0=133.857705$ (BKJD)



DV Model-Shift Uniqueness Test

008868657-01, P = 4.447329 Days, E = 133.857832 Days

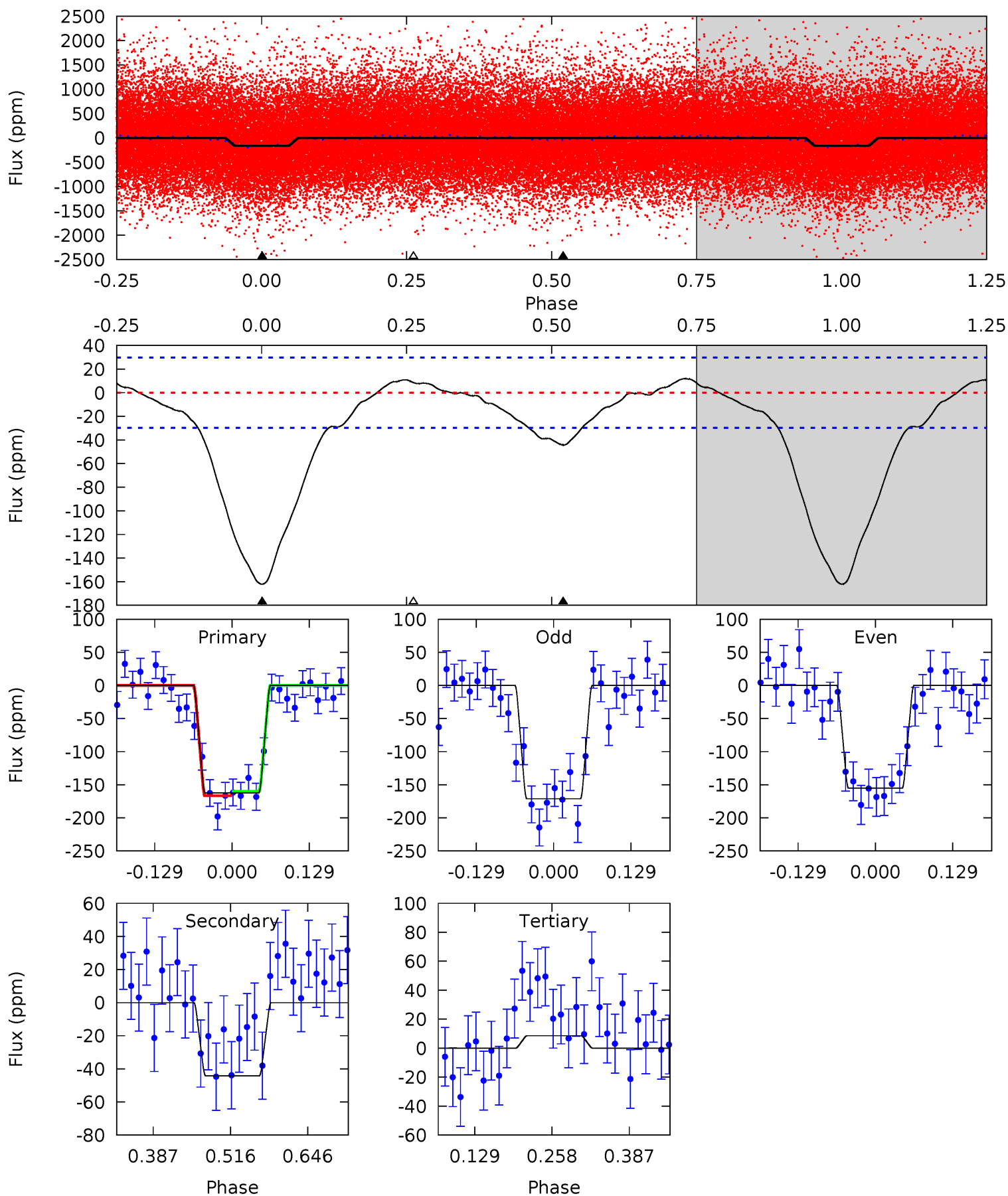
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	9.15	0	0	4.49	1.46	1.11	21.2	21.2	9.15	9.15	1.43	1.03	0.07	1.07



Alt Model-Shift Uniqueness Test

008868657-01, P = 4.447309 Days, E = 133.857705 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.6	6.72	-1.30	0	4.51	1.52	1.43	25.9	24.6	8.02	6.72	1.21	1.03	0.07	0.53



Stellar Parameters For KIC 008868657

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5531^{+167}_{-150}	$4.597^{+0.034}_{-0.136}$	$-0.320^{+0.300}_{-0.300}$	$0.764^{+0.161}_{-0.058}$	$0.855^{+0.082}_{-0.100}$	$2.701^{+0.496}_{-1.076}$
	+3%/-3%	+1%/-3%	+94%/-94%	+21%/-8%	+10%/-12%	+18%/-40%
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 008868657-01 / KOI 7102.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-58 ± 6	$1.24^{+0.15}_{-0.11}$	1358^{+68}_{-56}	4249^{+159}_{-158}	51^{+11}_{-10}
Alt.	-44 ± 7	$1.11^{+0.14}_{-0.10}$	1362^{+62}_{-58}	4200^{+183}_{-178}	48^{+12}_{-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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

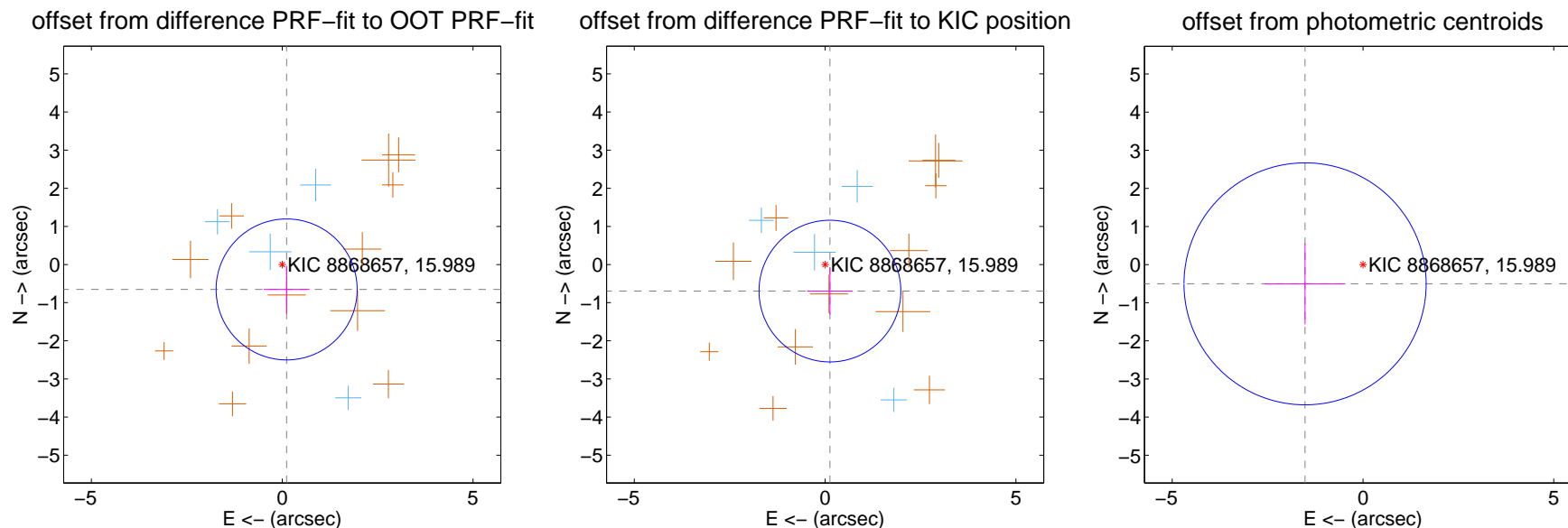
DV Centroid Data

Supplemental centroid analysis for 008868657-01. Kepler magnitude: 15.99. Transit SNR 15.90

There are 4 quarters with good PRF difference image offsets

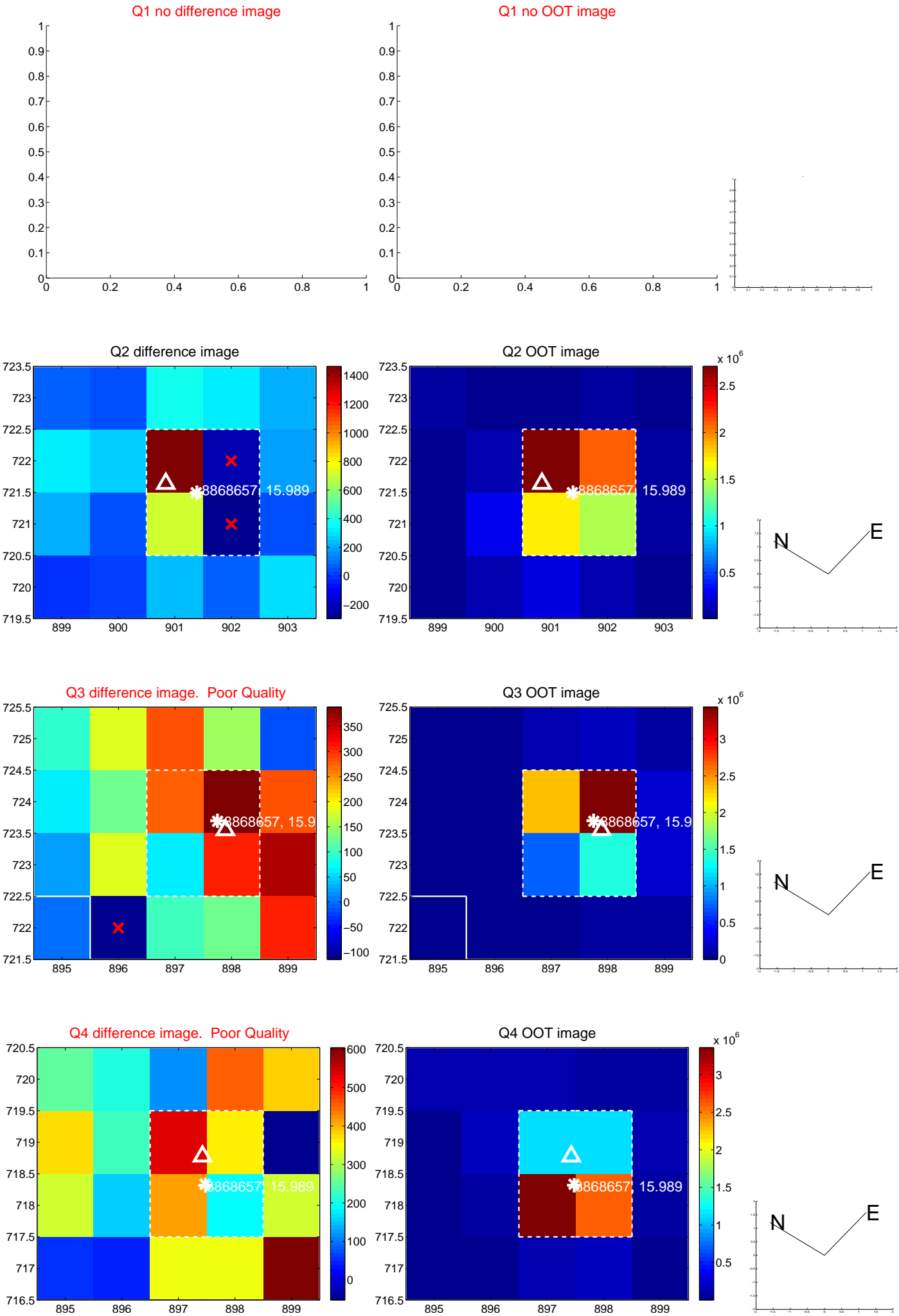
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.663 ± 0.616	1.08	-0.116 ± 0.600	-0.653 ± 0.616
PRF-fit source offset from KIC position	0.707 ± 0.619	1.14	-0.126 ± 0.598	-0.696 ± 0.620
photometric centroid source offset	1.60 ± 1.06	1.51	1.52 ± 1.06	-0.50 ± 1.06

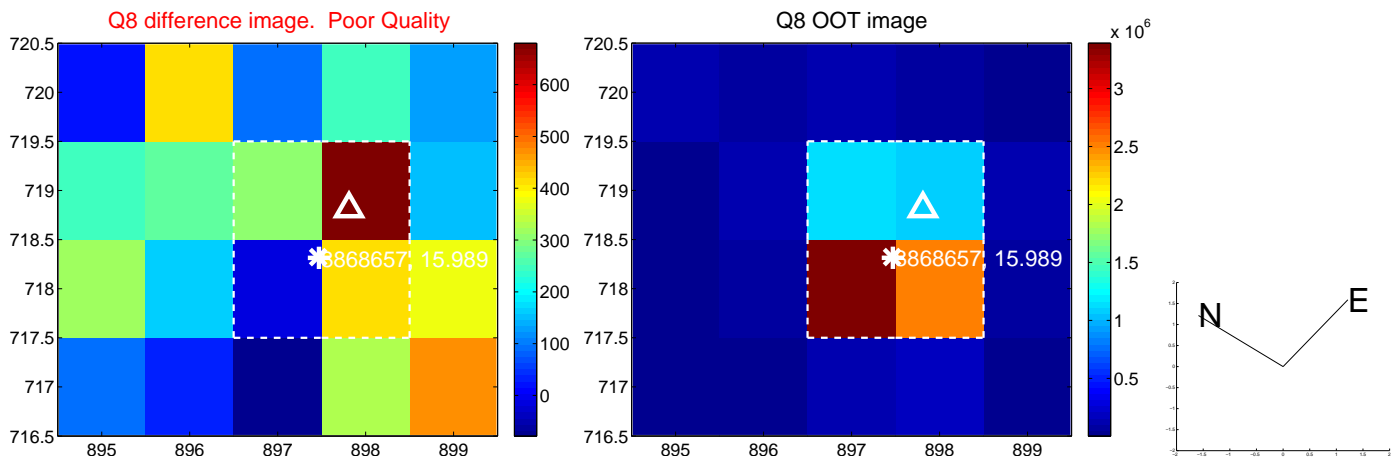
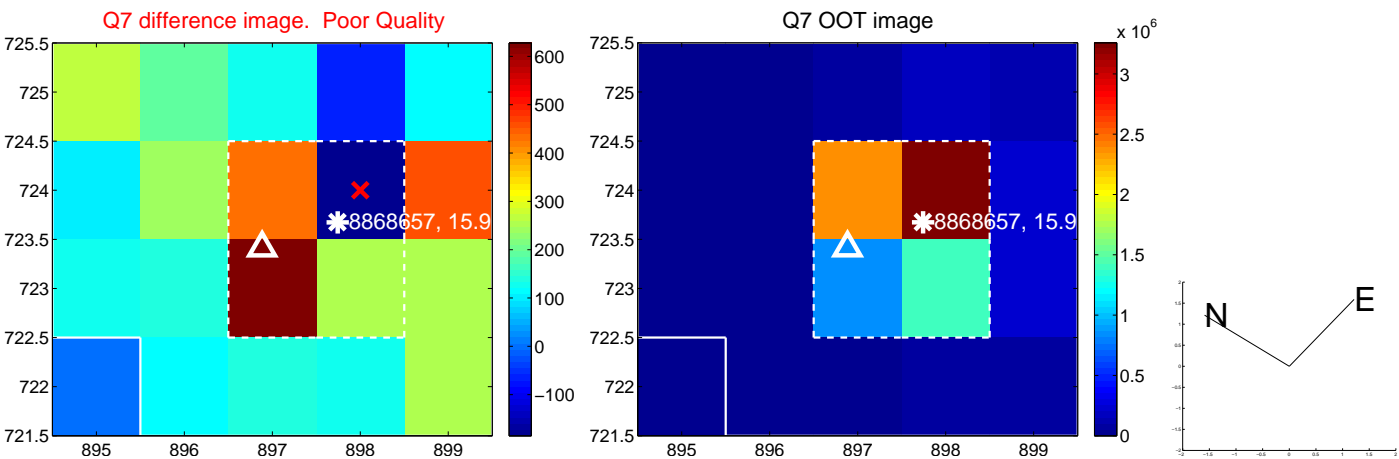
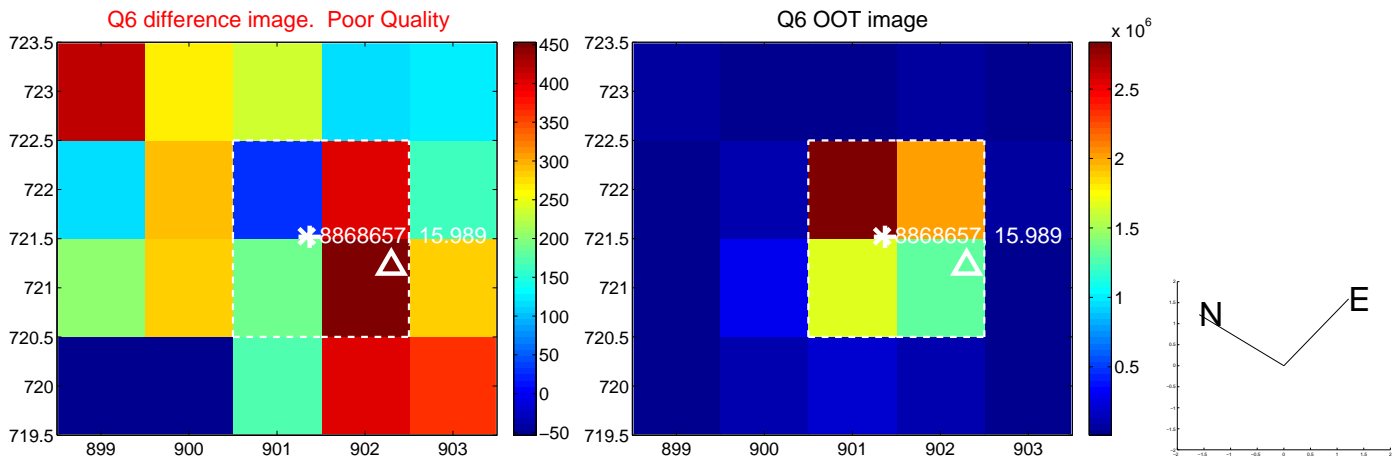
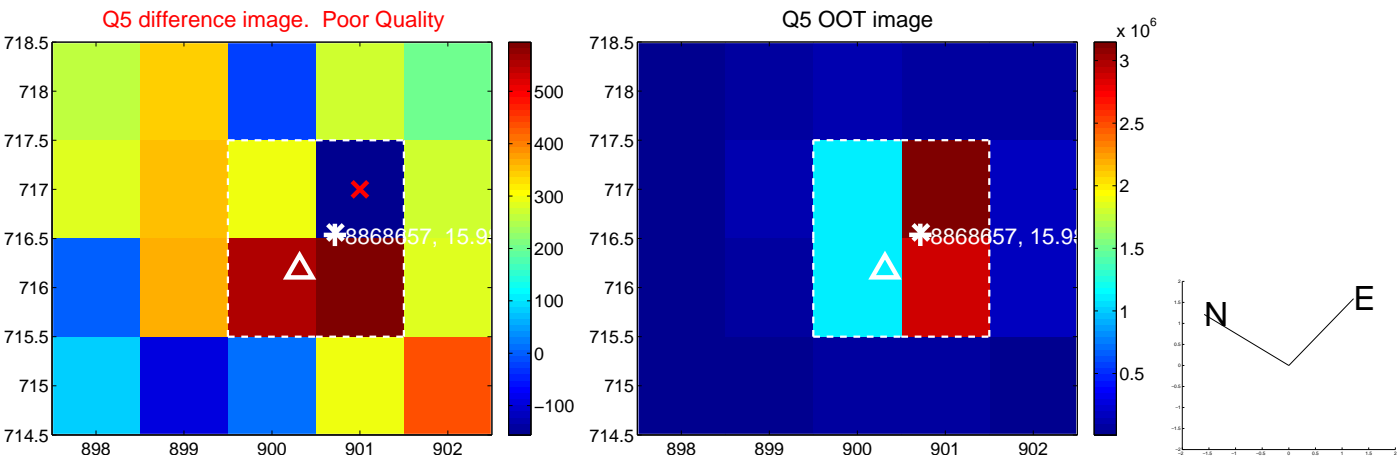


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

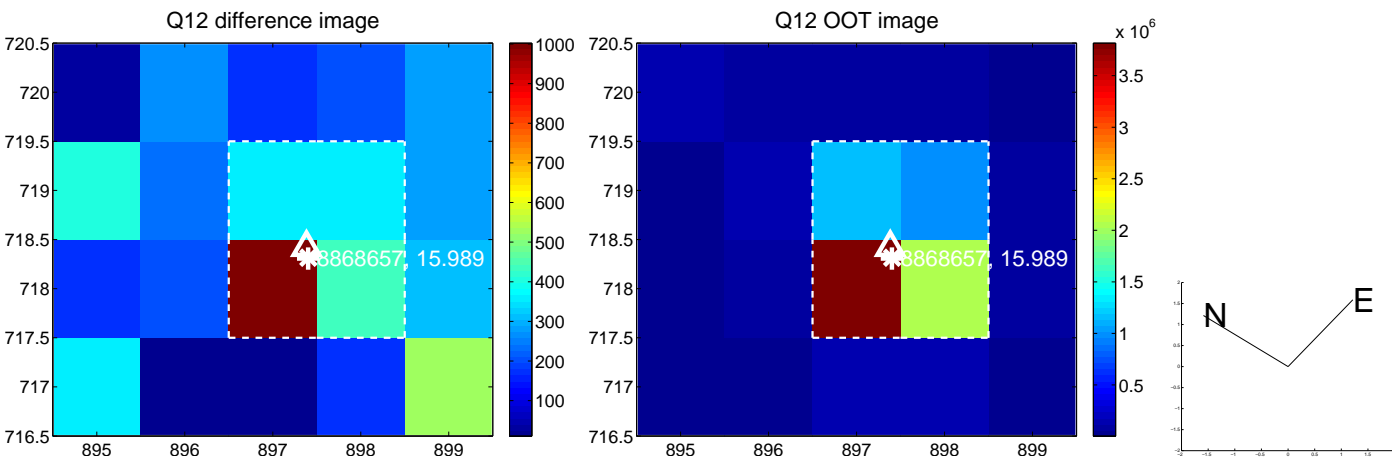
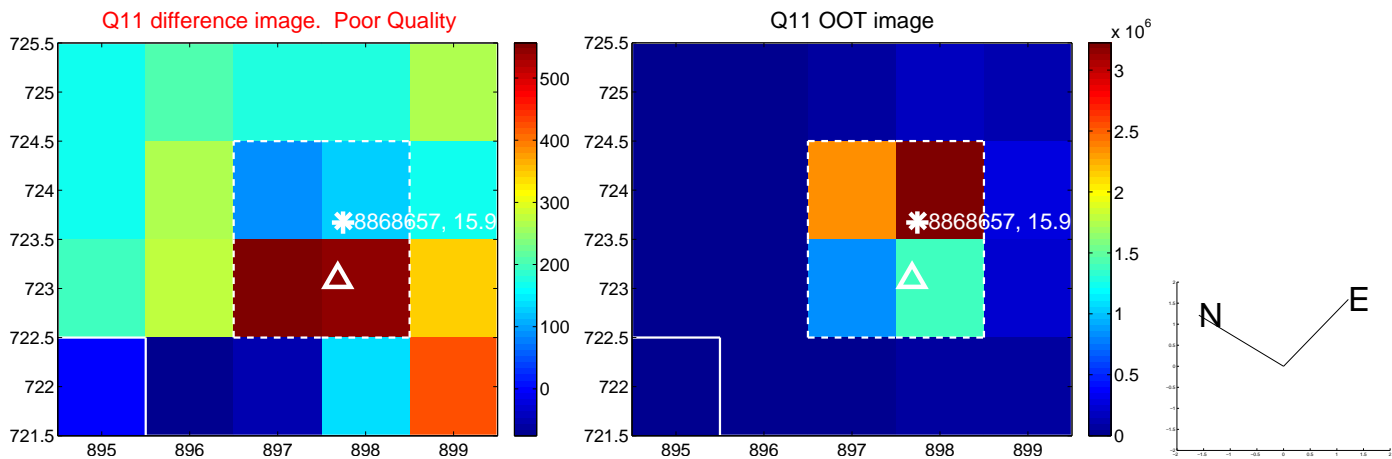
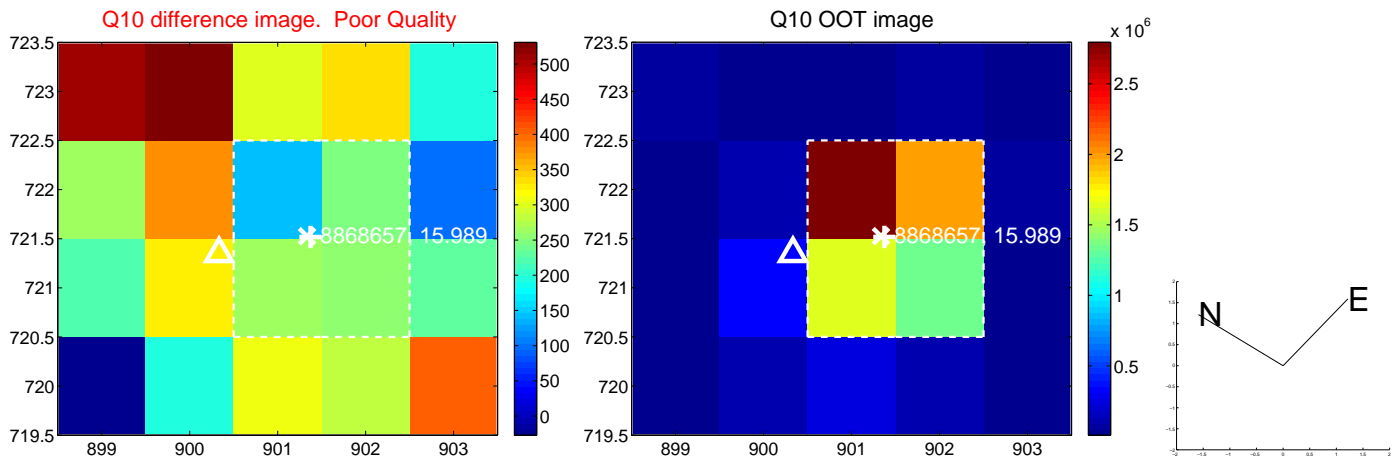
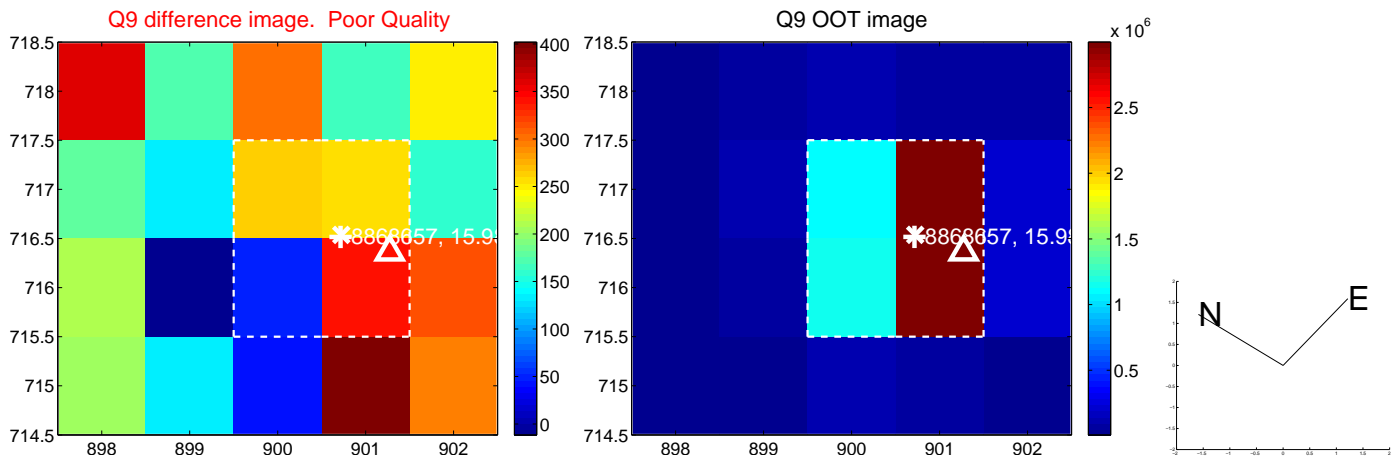
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



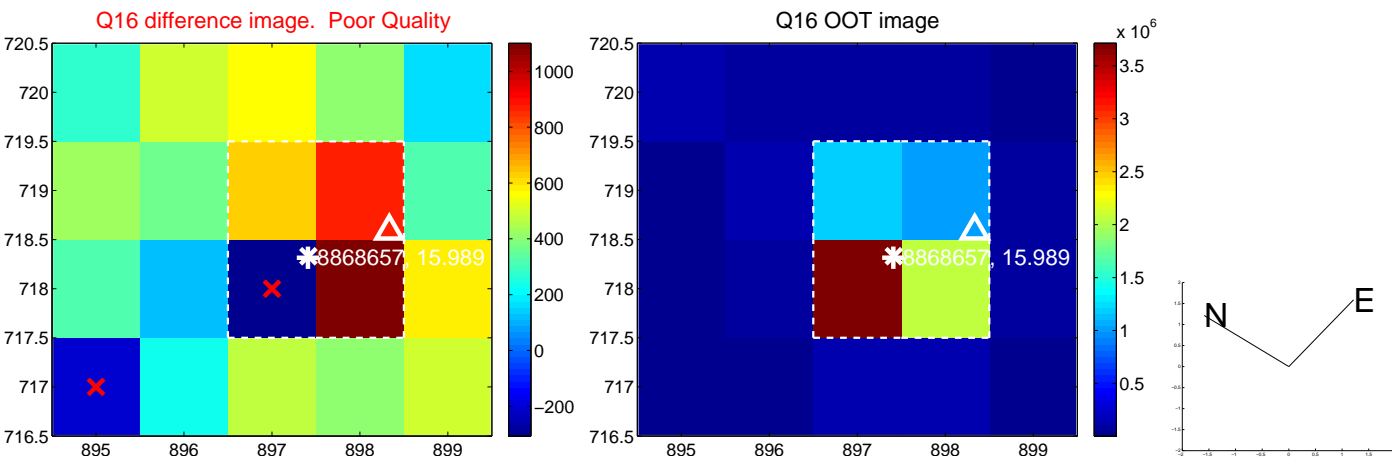
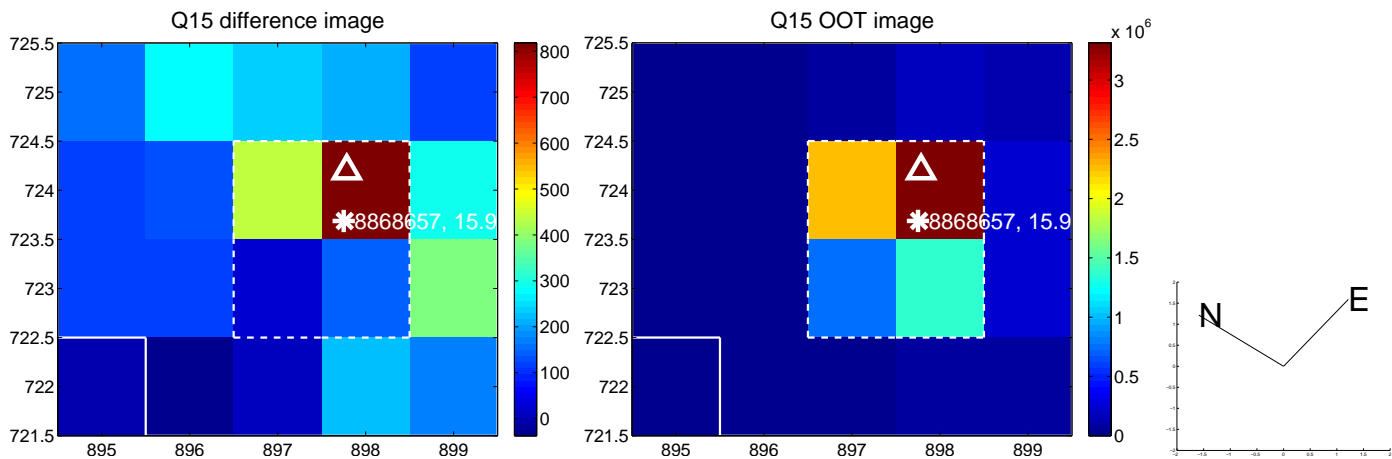
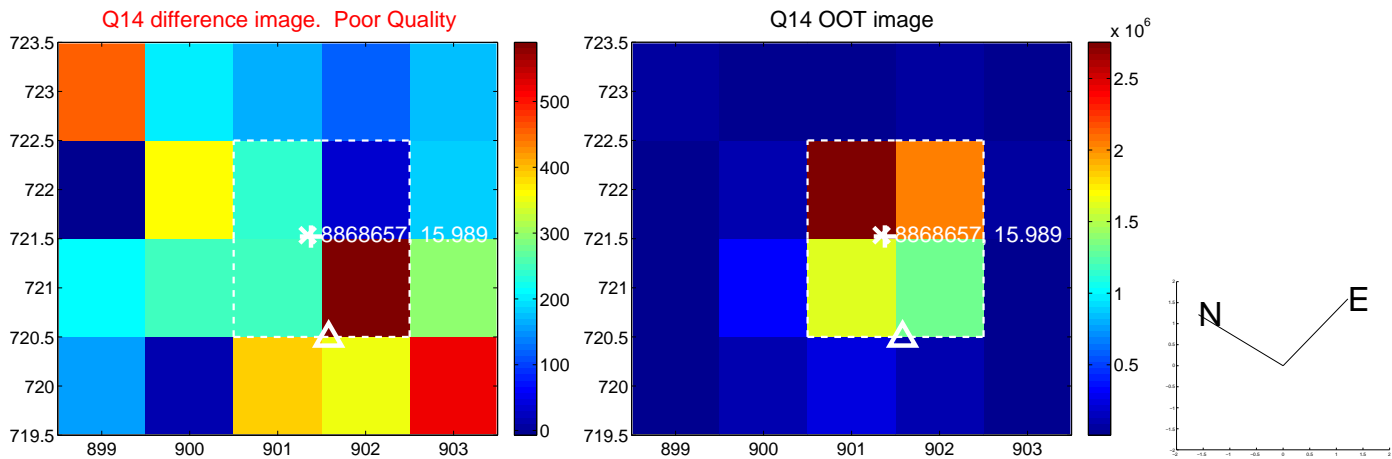
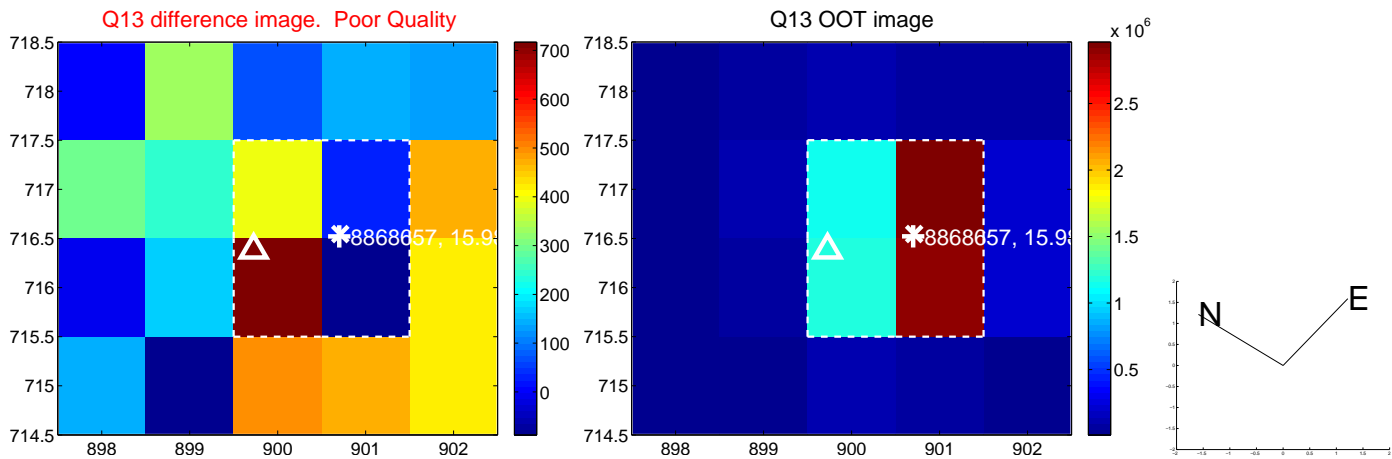
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



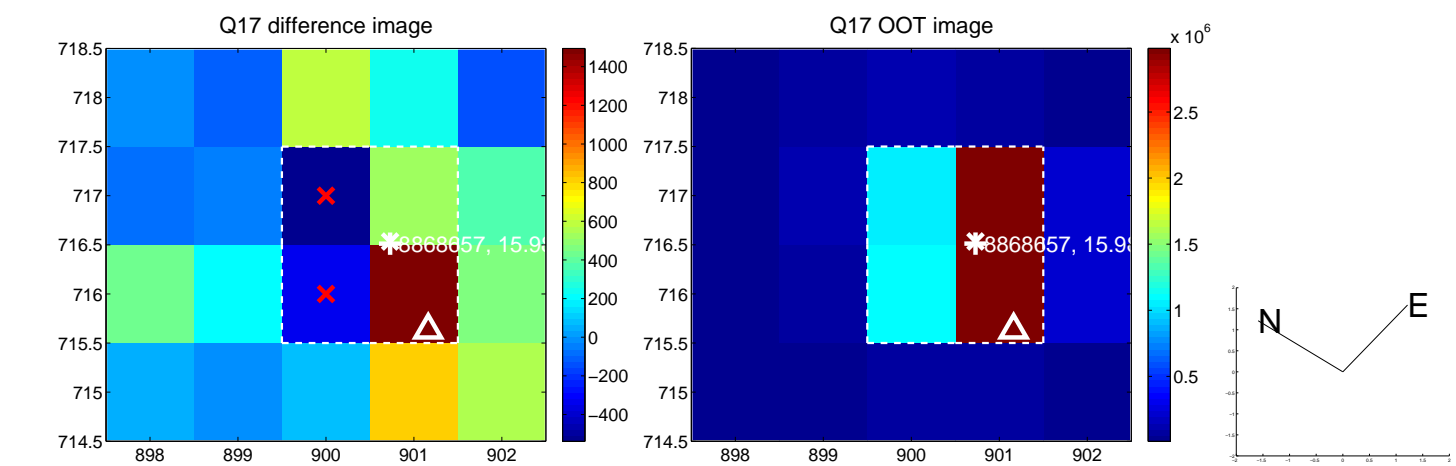
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



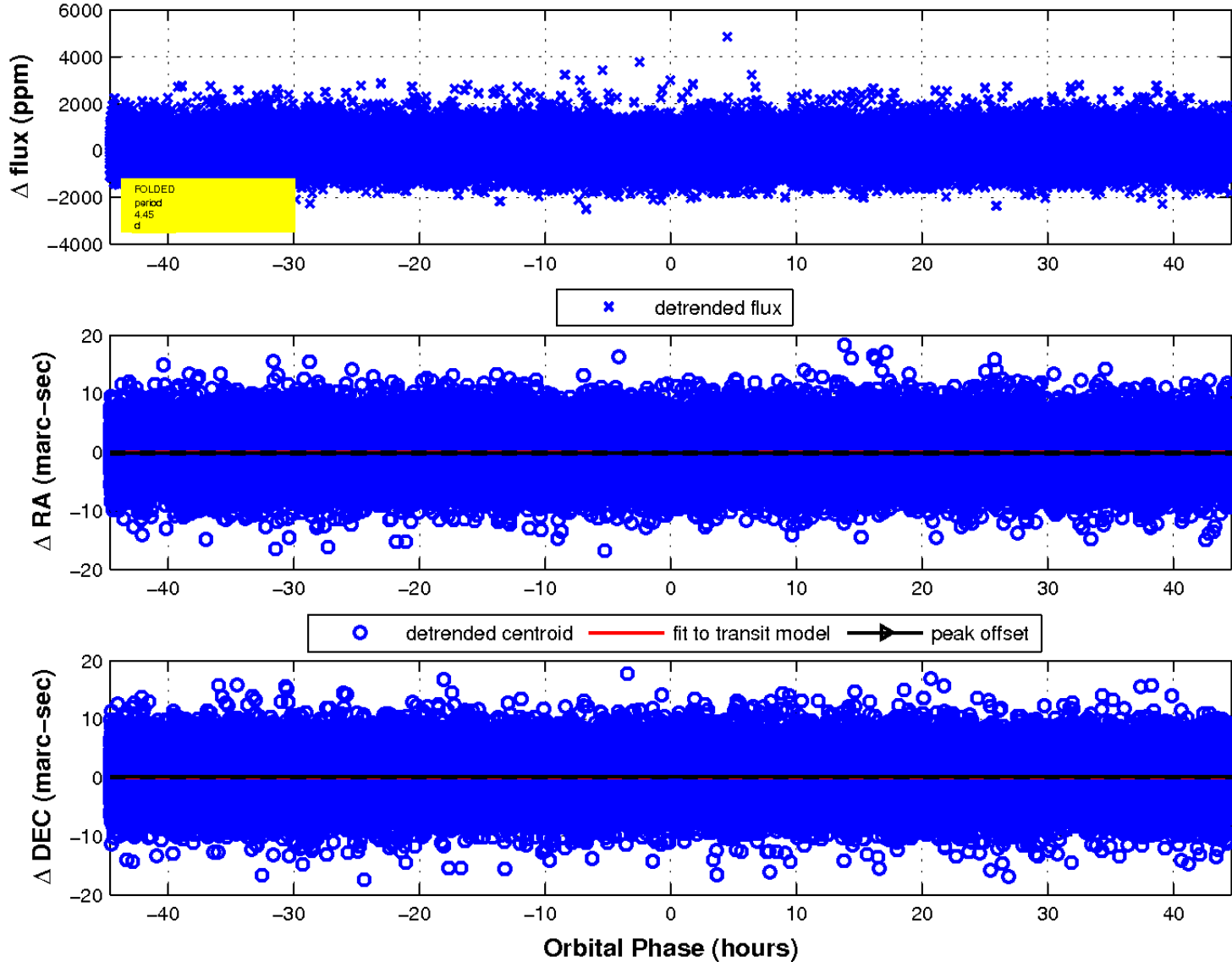
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

