

KIC 002558363

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 _⊕)
002558363-01	OBS	1021.01	0.546229	131.599583	166.1	1.184	11.9	11.0	0.71	5414	1.11	2697.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002558363-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—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 002558363-01

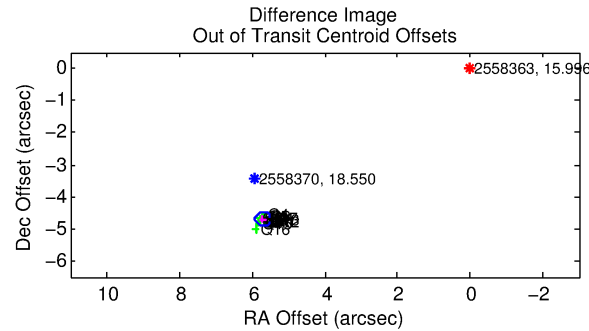
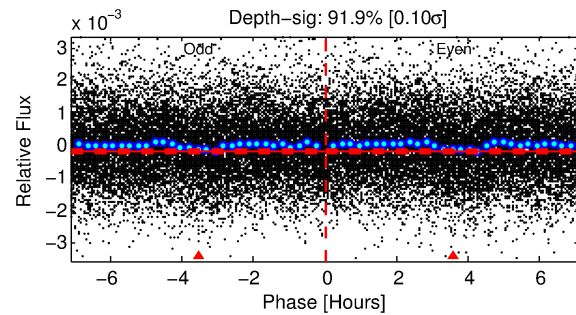
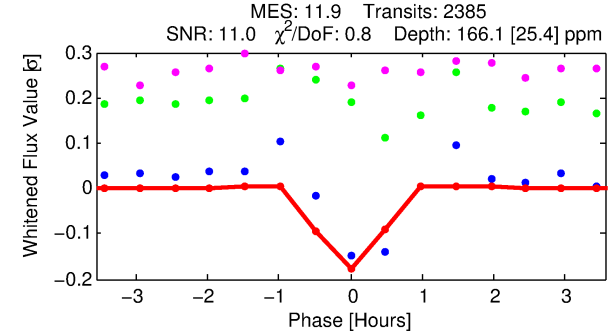
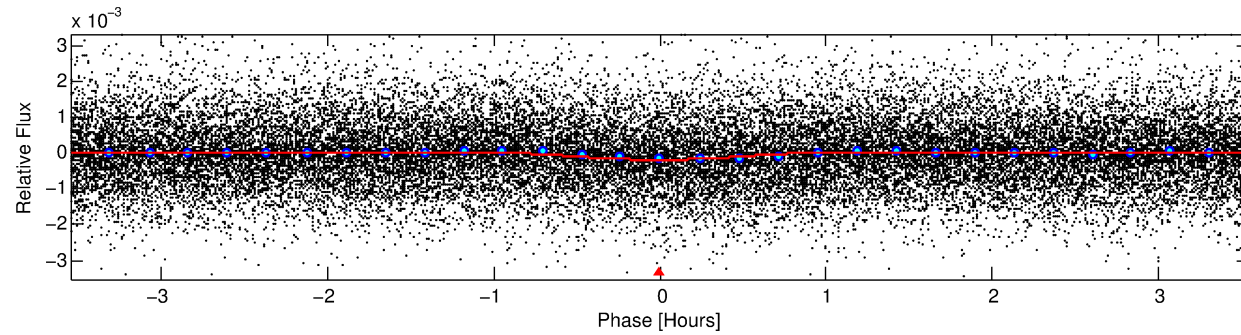
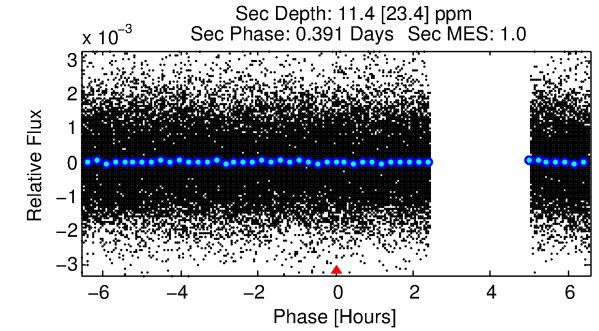
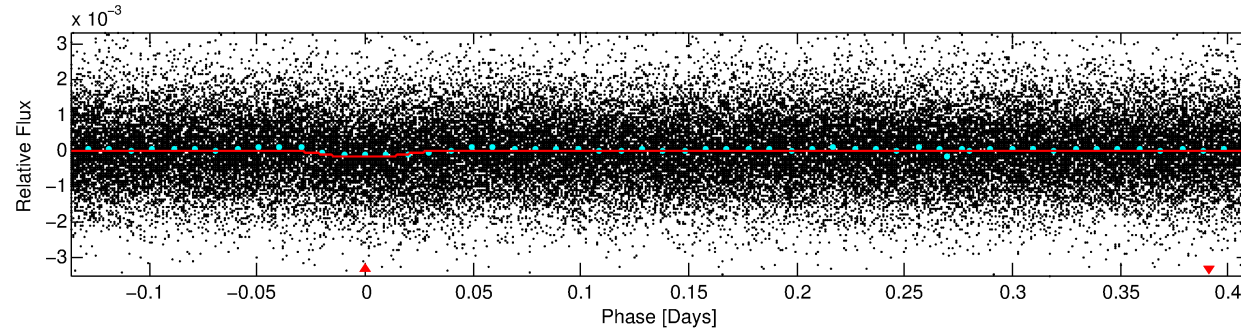
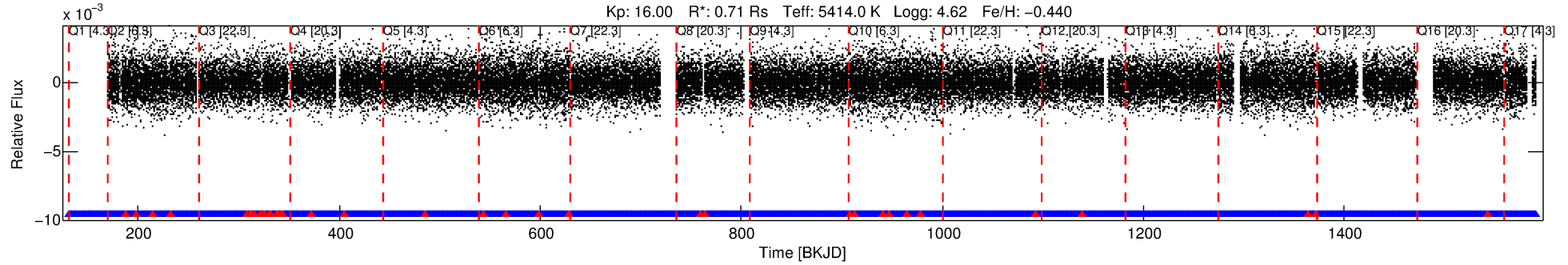
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
002558363-01	2558363	3855.01	2558370	1:1	6.9	-1	1	18.55	16.00	1068.30	Direct-PRF	0	4.12	1.29

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: 2558363 Candidate: 1 of 1 Period: 0.546 d
KOI: K01021 Corr: No Ephemeris Match

Kp: 16.00 R*: 0.71 Rs Teff: 5414.0 K Logg: 4.62 Fe/H: -0.440



DV Fit Results:

Period = 0.54623 [0.00001] d
Epoch = 131.5996 [0.0017] BKJD
Rp/R* = 0.0143 [0.0096]
a/R* = 1.87 [4.07]
b = 0.91 [0.63]
Seff = 2697.33 [620.14]
Teq = 1838 [106] K
Rp = 1.11 [0.77] Re
a = 0.0121 [0.0017] AU
Ag = 0.74 [1.81] [-0.15σ]
Teffp = 2632 [1616] K [0.49σ]

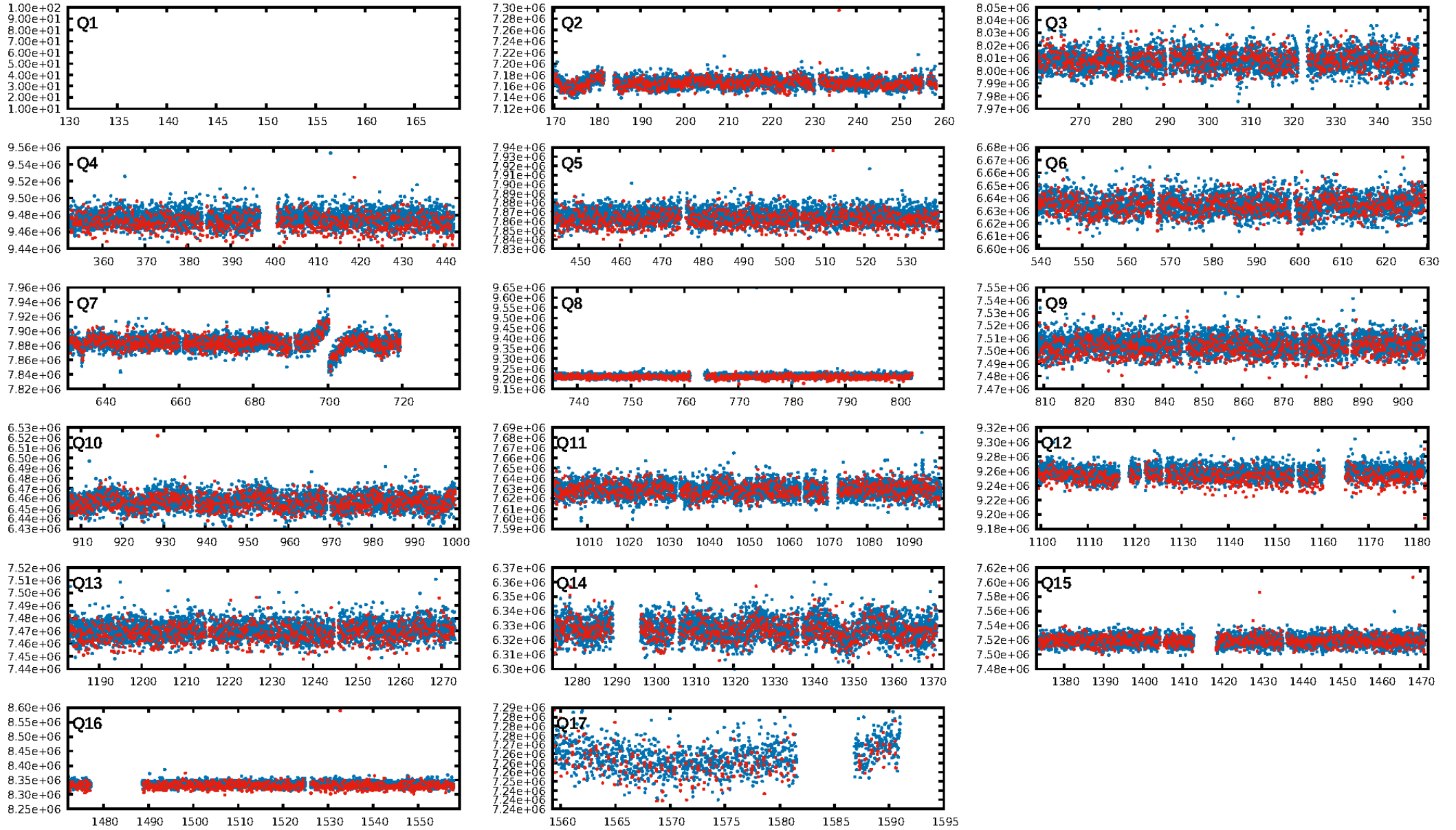
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 2.48e-33
RollingBand-fgt: 0.98 [2297/2337]
GhostDiagnostic-chr: -1.695
Centroid-sig: 0.0%
Centroid-so: 7.940 arcsec [7.72σ]
OotOffset-rm: 7.390 arcsec [101.61σ]
KicOffset-rm: 7.037 arcsec [97.94σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [16/16]

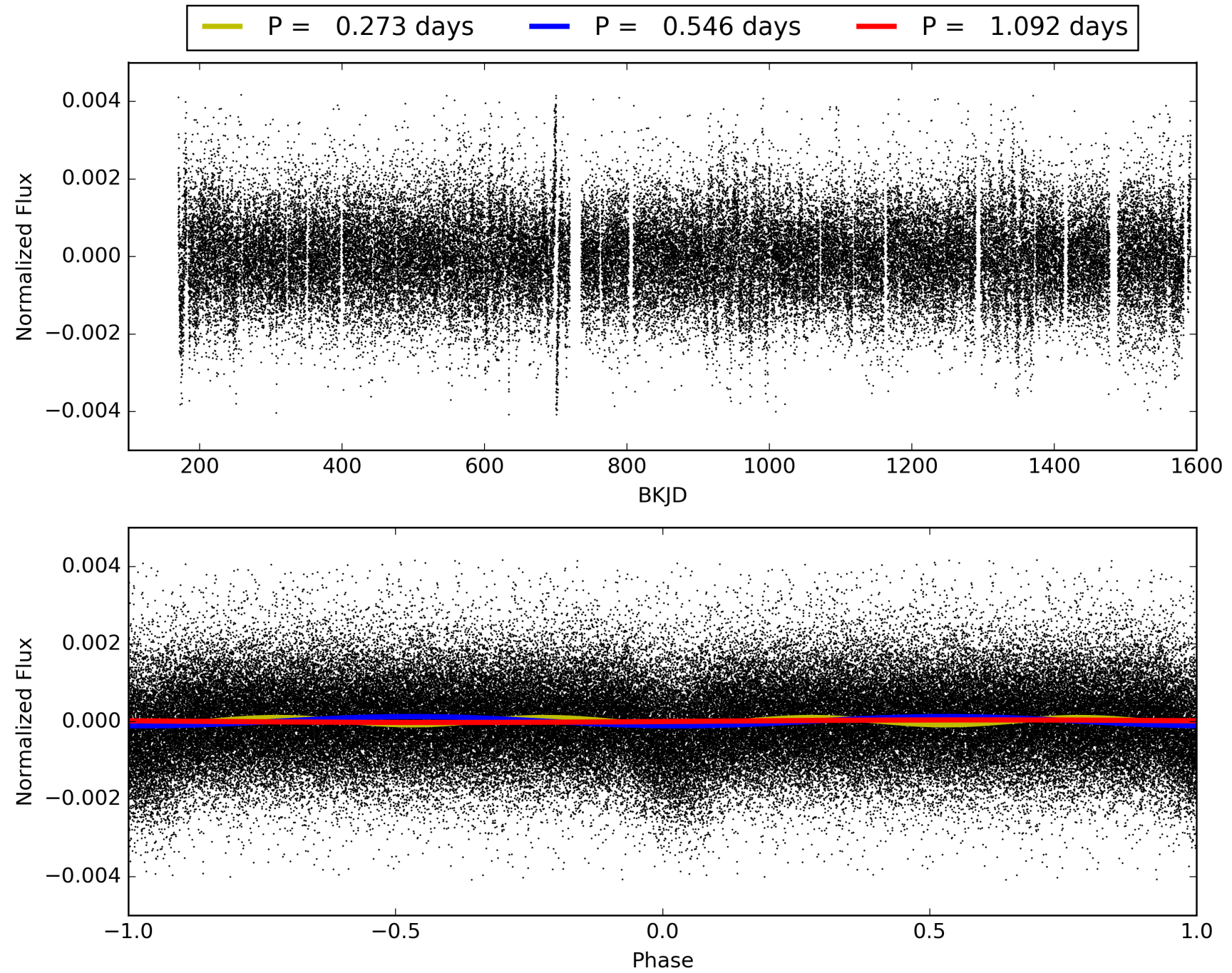
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 01:25:41 Z

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

TCE 002558363-01, PDC Light Curves

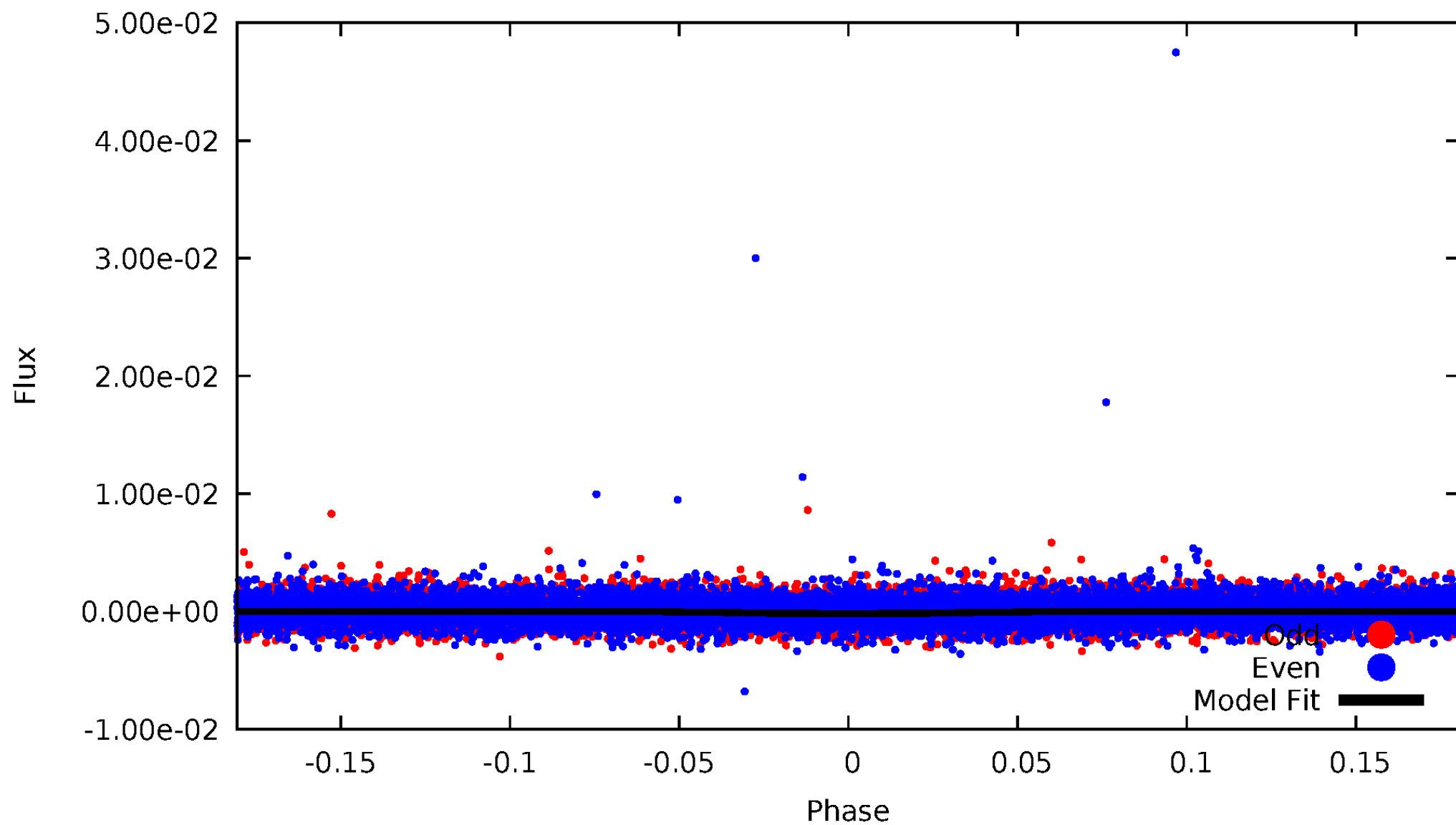


TCE 002558363-01



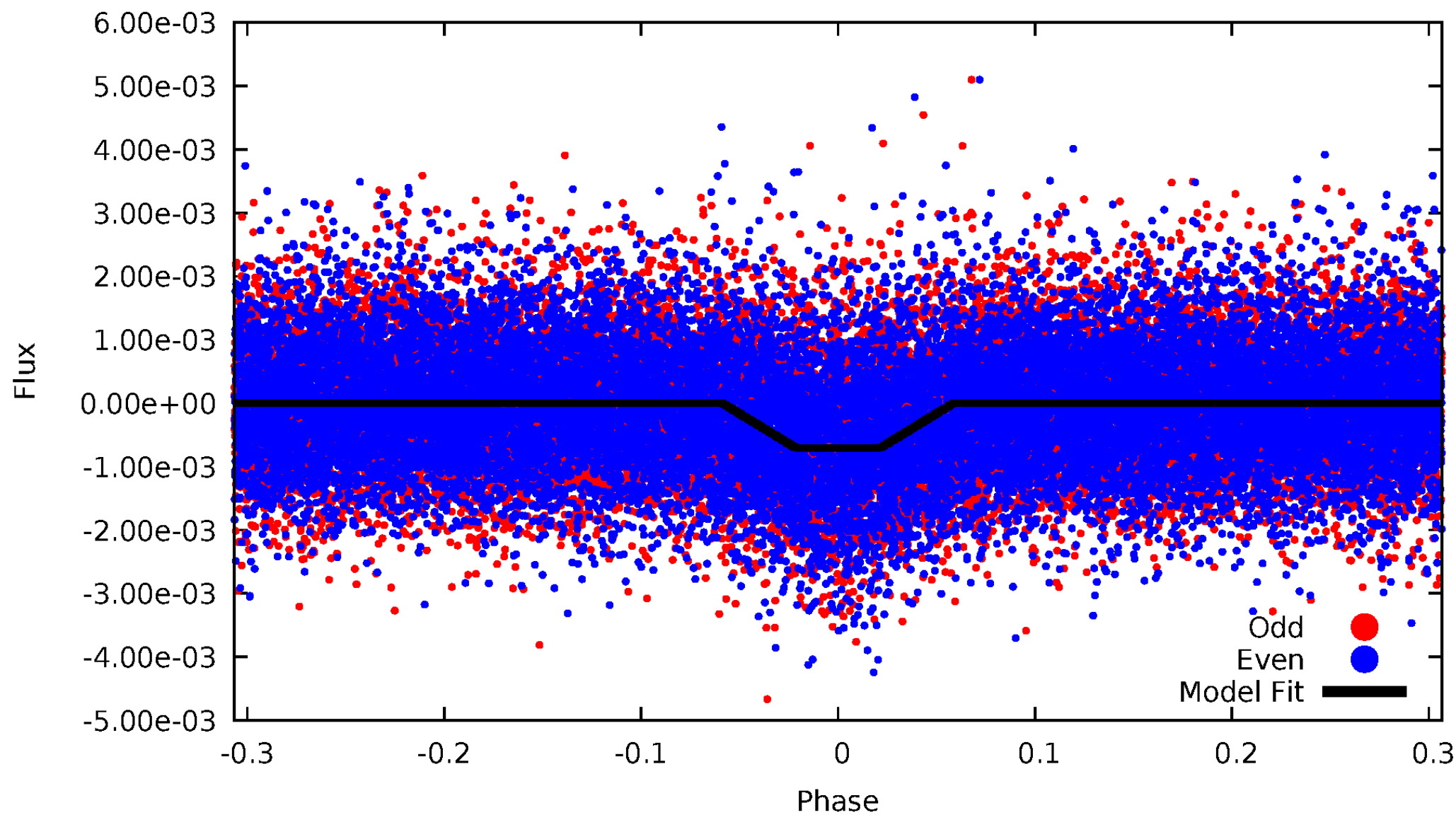
DV Odd/Even

TCE 002558363-01



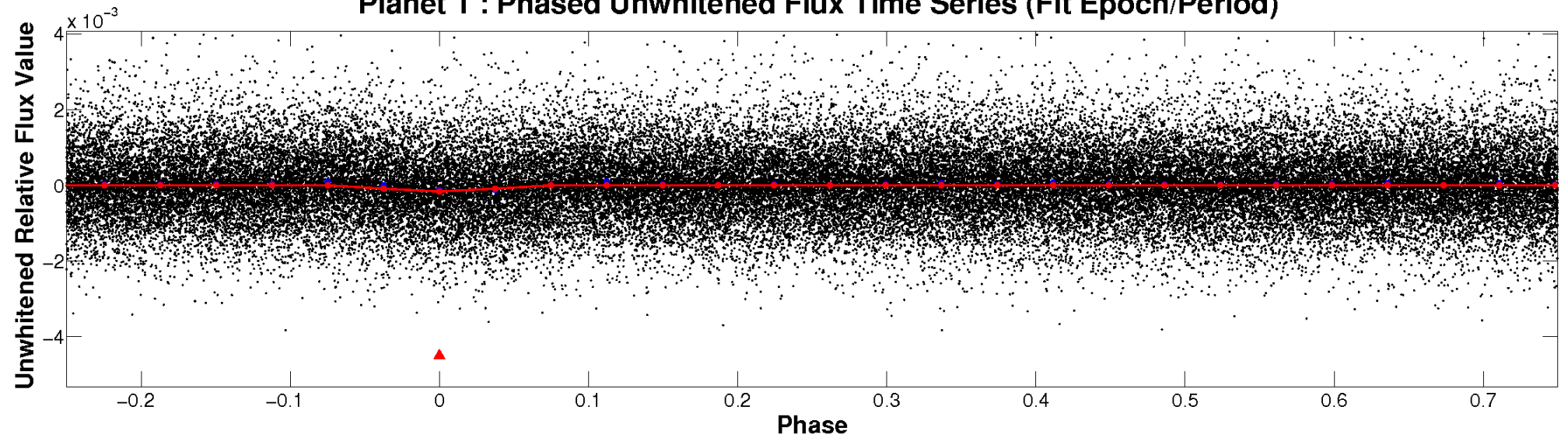
ALT Odd/Even

TCE 002558363-01

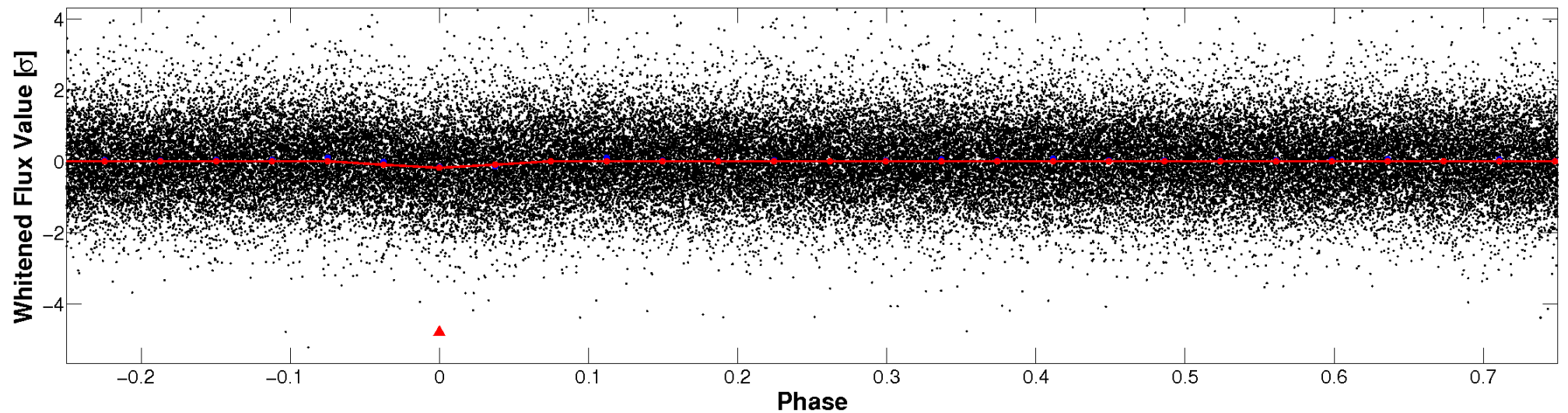


Non-Whitened Vs. Whitened Light Curve

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

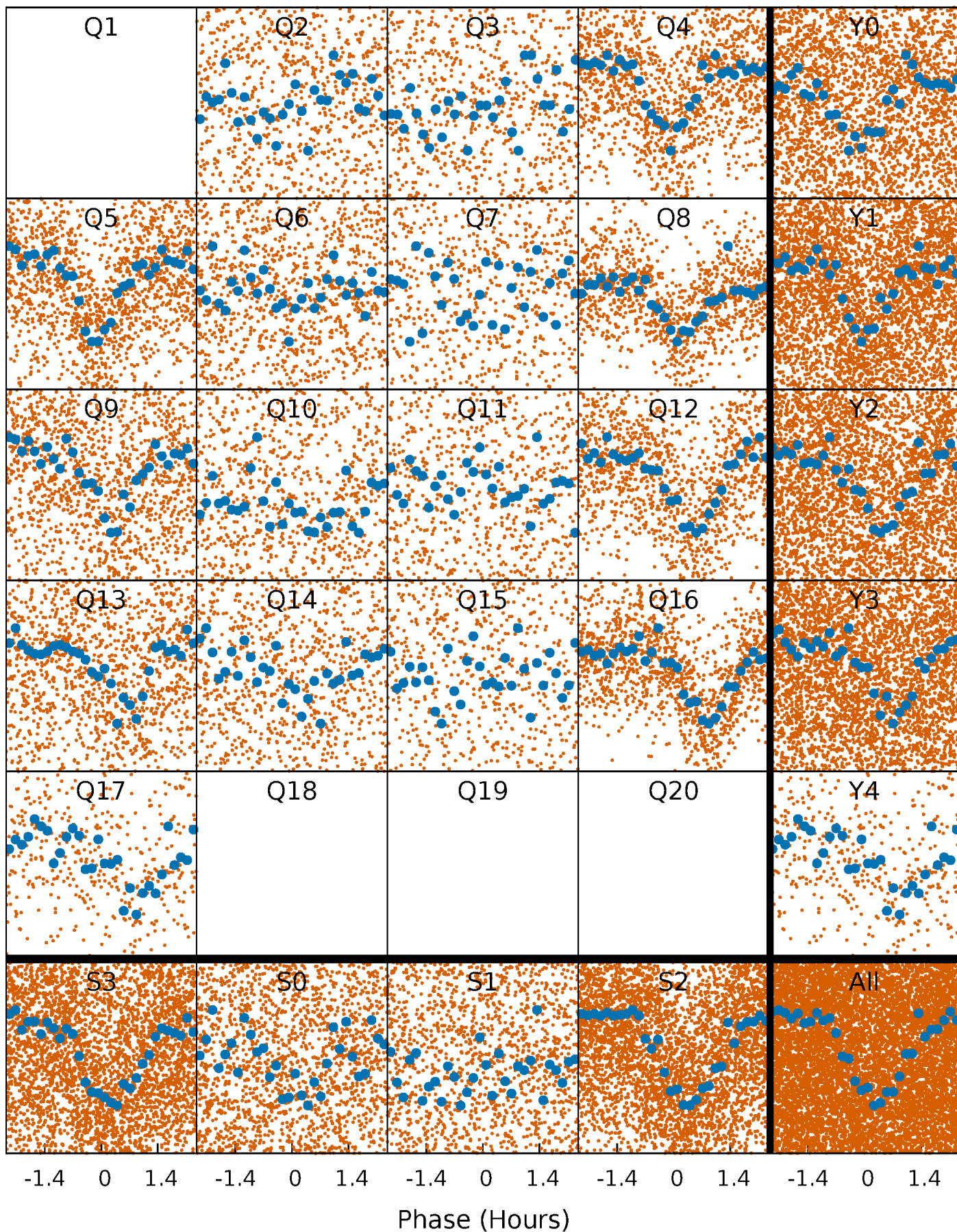


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



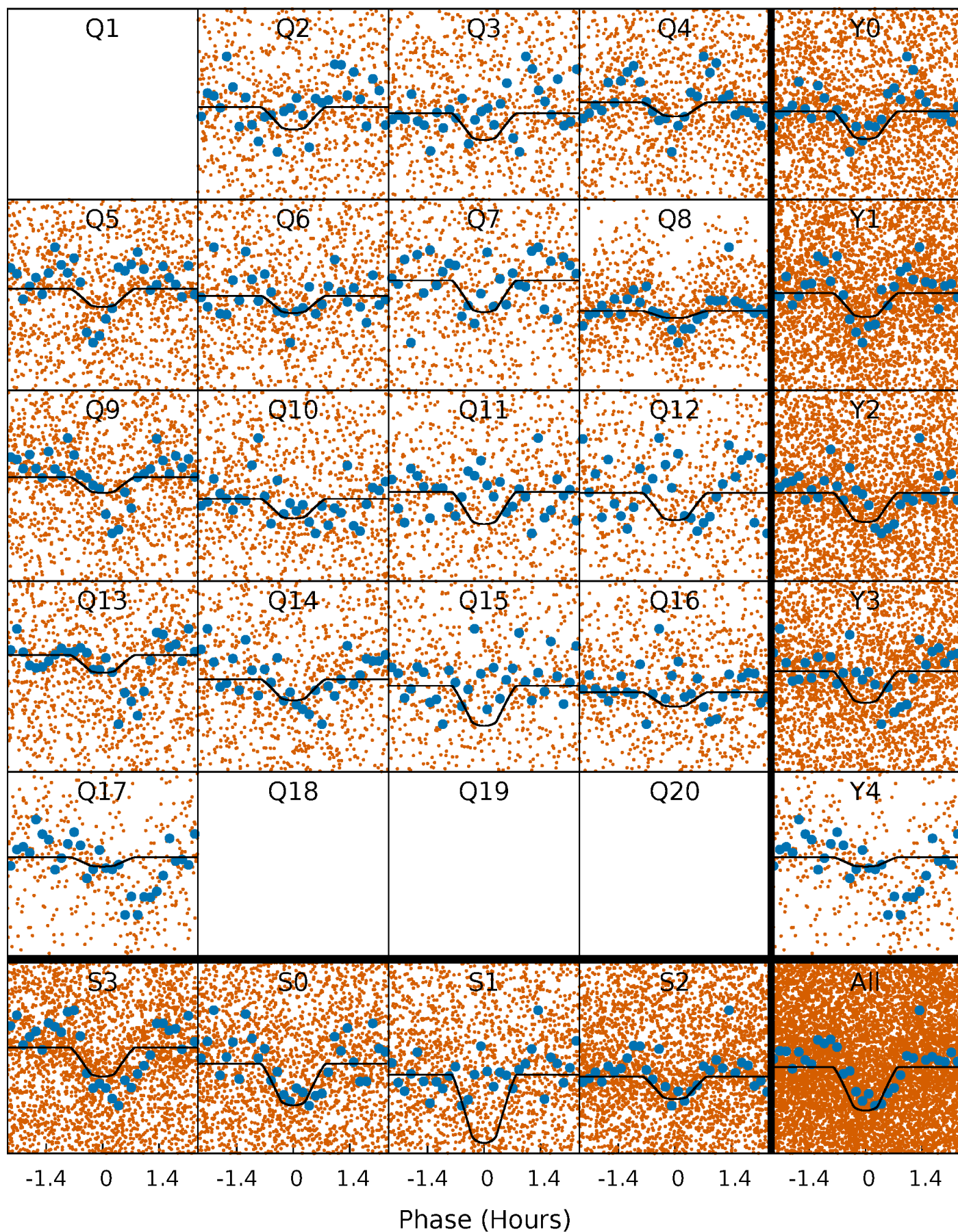
PDC Quarter-Phased Transit Curves

TCE 002558363-01 P= 0.546229 Days $T_0=131.599583$ (BKJD)



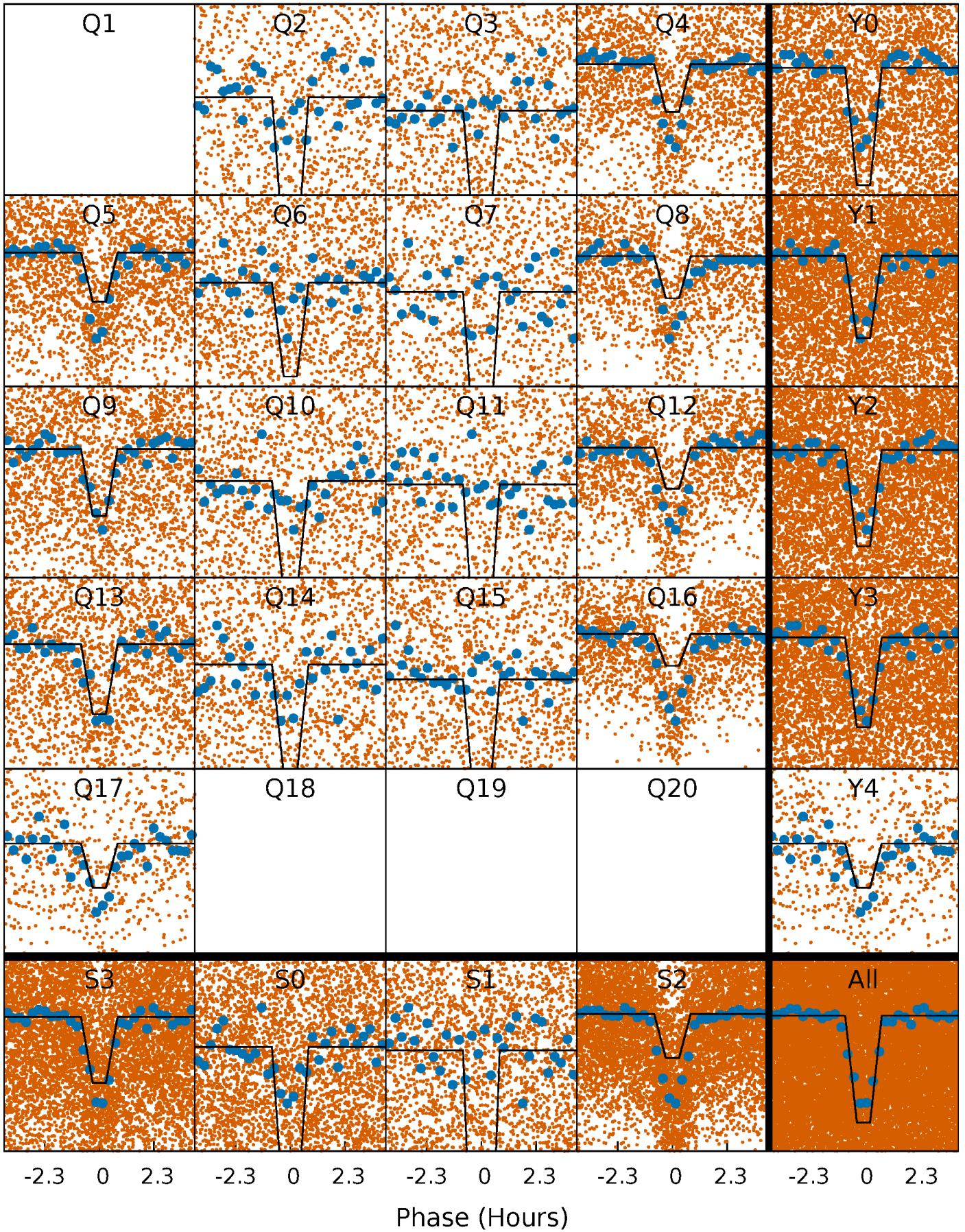
DV Quarter-Phased Transit Curves

TCE 002558363-01 P= 0.546229 Days $T_0=131.599583$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

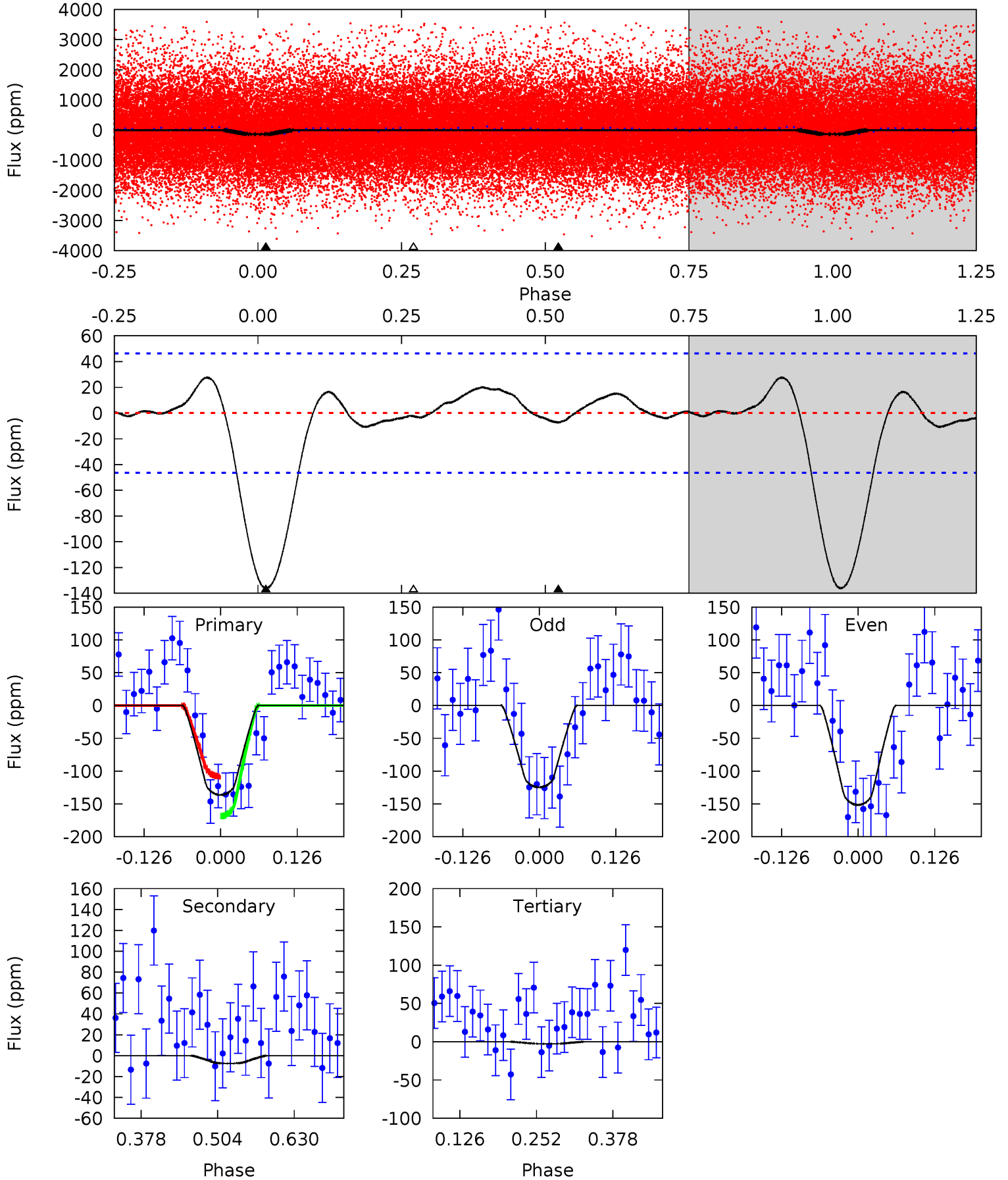
TCE 002558363-01 P= 0.546247 Days $T_0=131.585538$ (BKJD)



DV Model-Shift Uniqueness Test

002558363-01, P = 0.546229 Days, E = 131.599583 Days

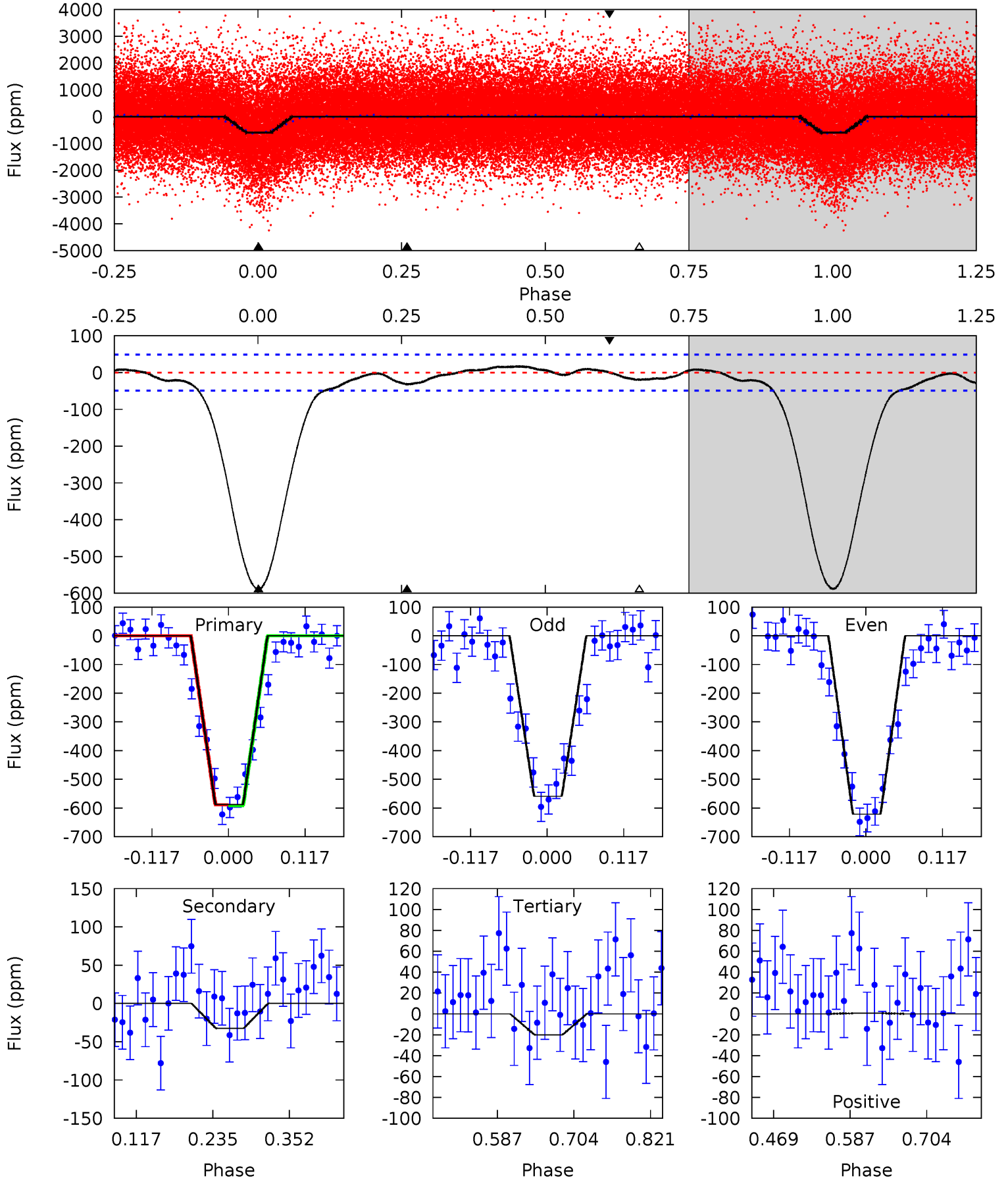
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	0.73	0.26	0	4.52	1.53	0.69	13.0	13.3	0.47	0.73	1.30	0.92	0.17	2.96



Alt Model-Shift Uniqueness Test

002558363-01, P = 0.546247 Days, E = 131.585538 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.6	3.02	1.87	0.06	4.53	1.57	1.39	52.7	54.5	1.15	2.96	2.89	1.00	0.03	0.16



Stellar Parameters For KIC 002558363

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5414^{+162}_{-162}	$4.625^{+0.035}_{-0.105}$	$-0.440^{+0.300}_{-0.300}$	$0.714^{+0.120}_{-0.055}$	$0.792^{+0.082}_{-0.082}$	$3.064^{+0.459}_{-1.051}$
	+3%/-3%	+1%/-2%	+68%/-68%	+17%/-8%	+10%/-10%	+15%/-34%
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 002558363-01 / KOI 1021.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-7 ± 10	$1.20^{+0.74}_{-0.63}$	2601^{+120}_{-105}	-1814^{+5481}_{-1170}	$0.295^{+1.770}_{-0.413}$
Alt.	-33 ± 11	$2.15^{+0.70}_{-0.80}$	2605^{+111}_{-105}	2770^{+685}_{-4747}	$0.551^{+0.860}_{-0.264}$

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 $A_{obs} \gg 1.0$

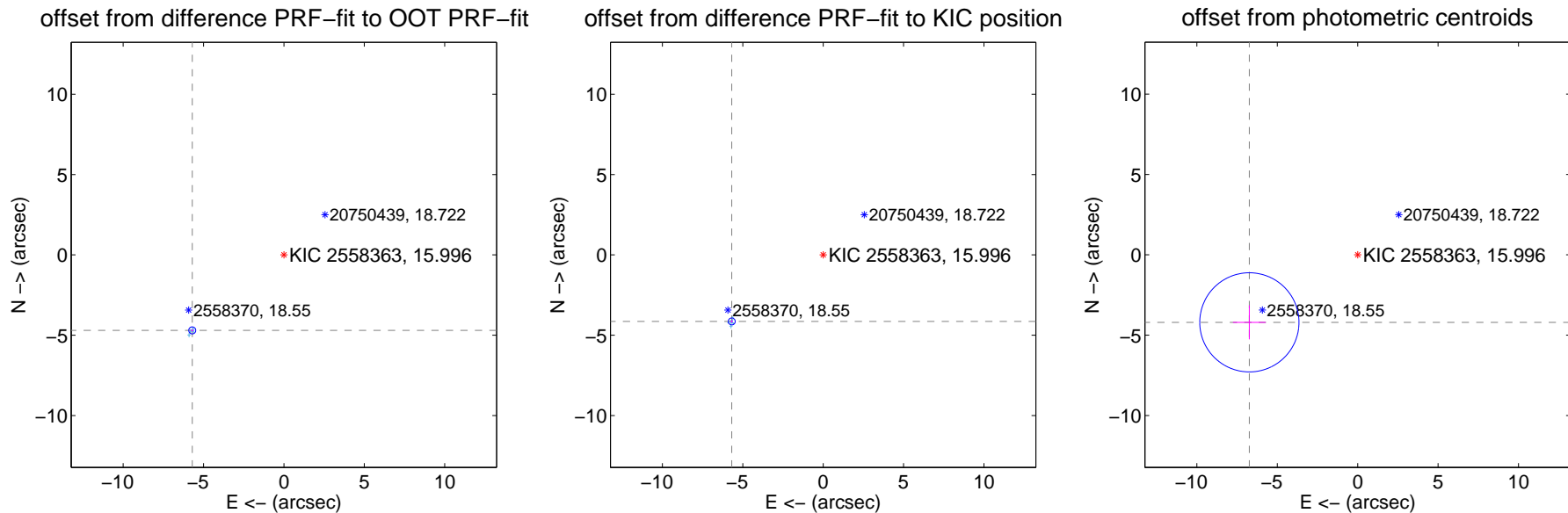
DV Centroid Data

Supplemental centroid analysis for 002558363-01. Kepler magnitude: 16.00. Transit SNR 11.02

There are 16 quarters with good PRF difference image offsets

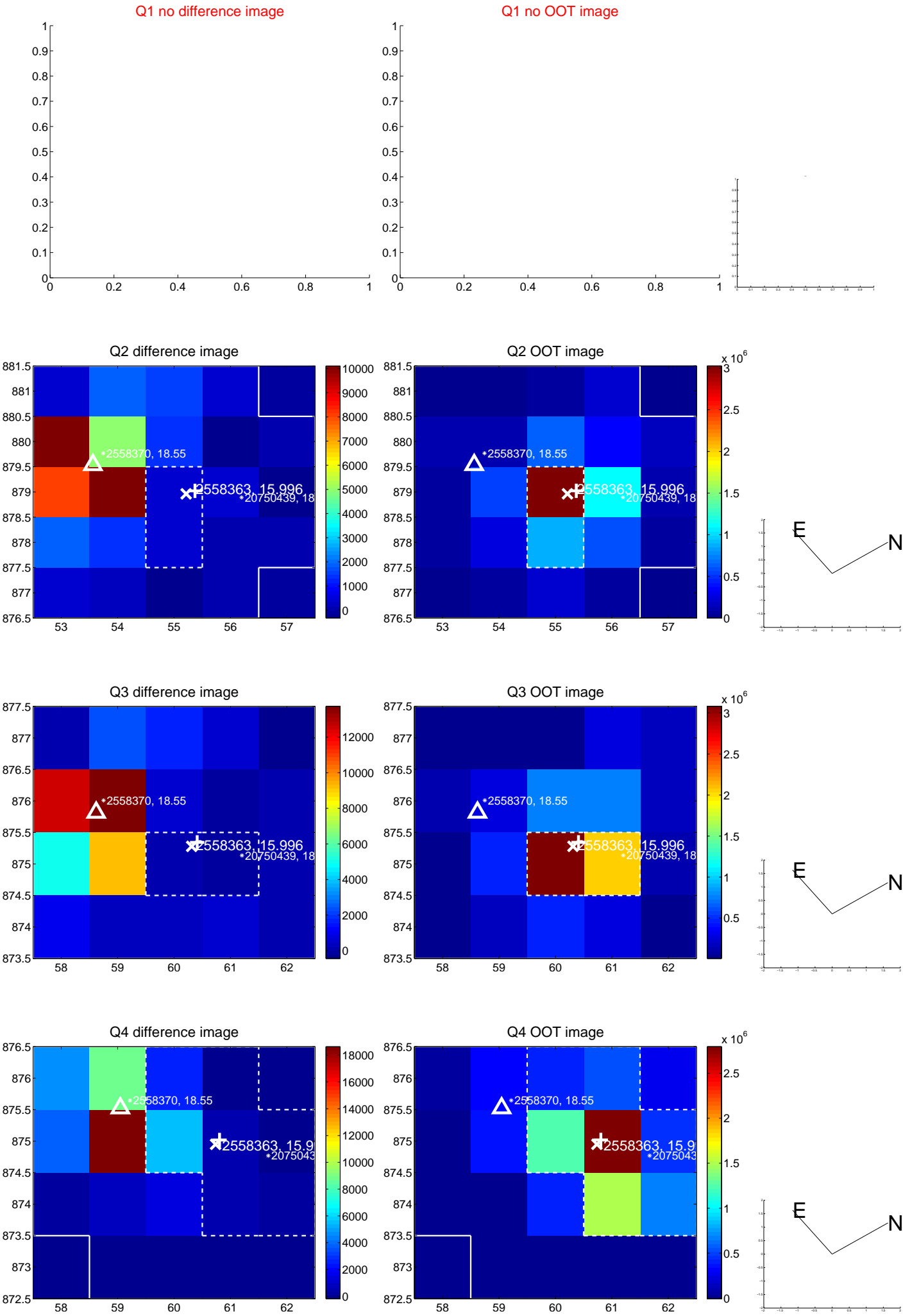
The direct PRF centroid is offset from the target star catalog position by about 0.53 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.390 \pm 0.073	101.61	5.704 \pm 0.070	-4.699 \pm 0.071
PRF-fit source offset from KIC position	7.037 \pm 0.072	97.94	5.689 \pm 0.070	-4.142 \pm 0.074
photometric centroid source offset	7.94 \pm 1.03	7.72	6.74 \pm 1.01	-4.20 \pm 1.06

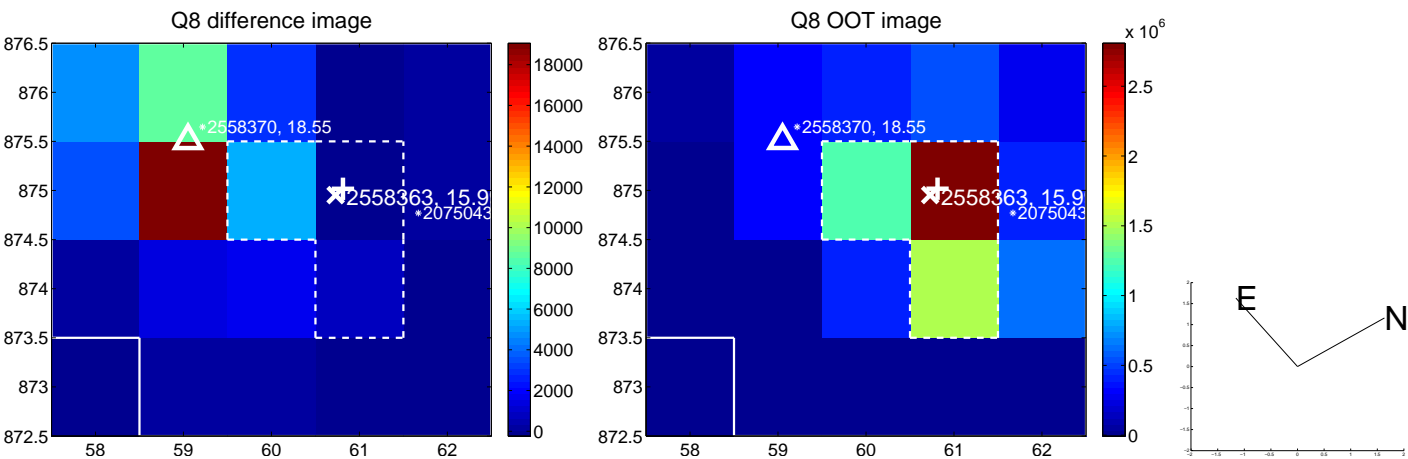
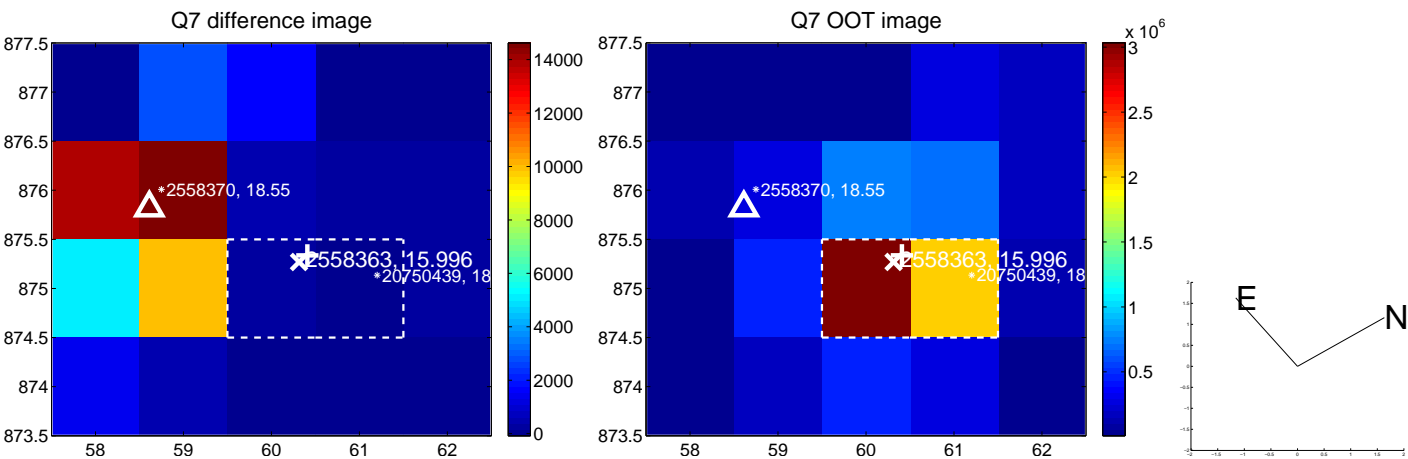
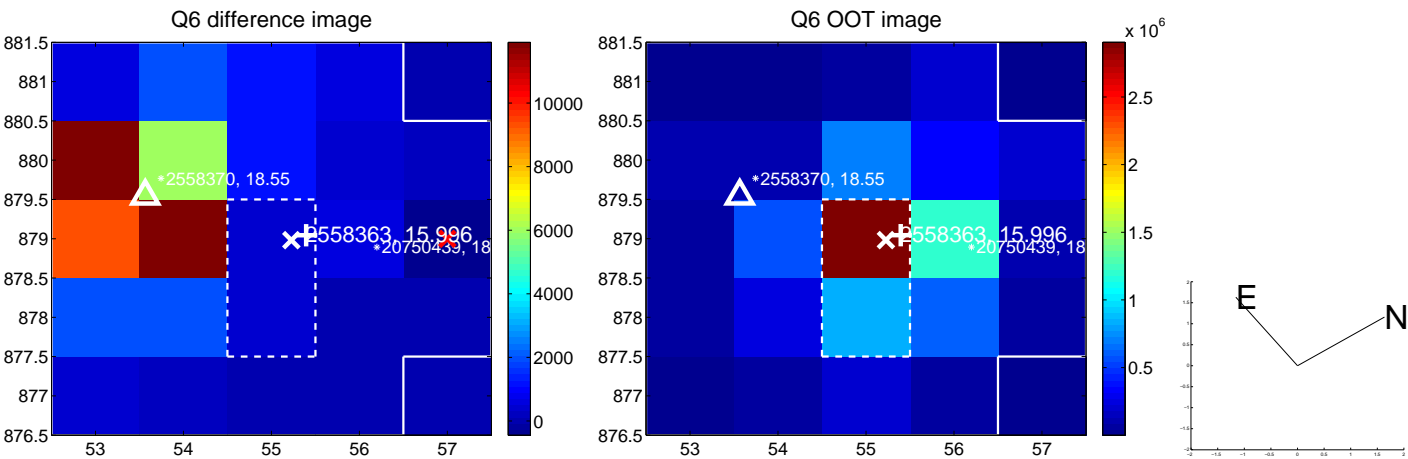
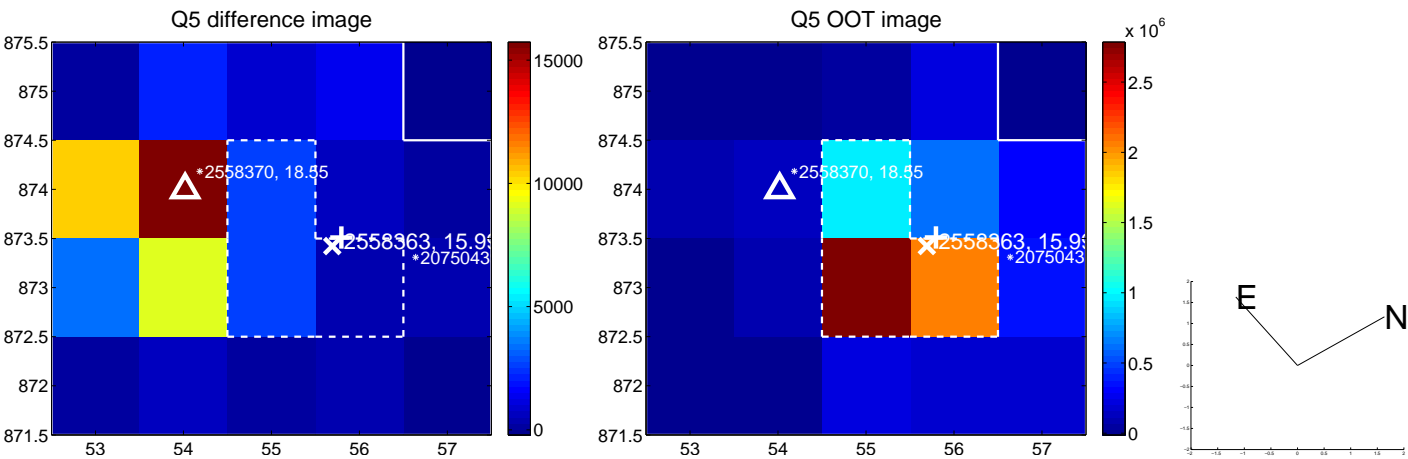


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

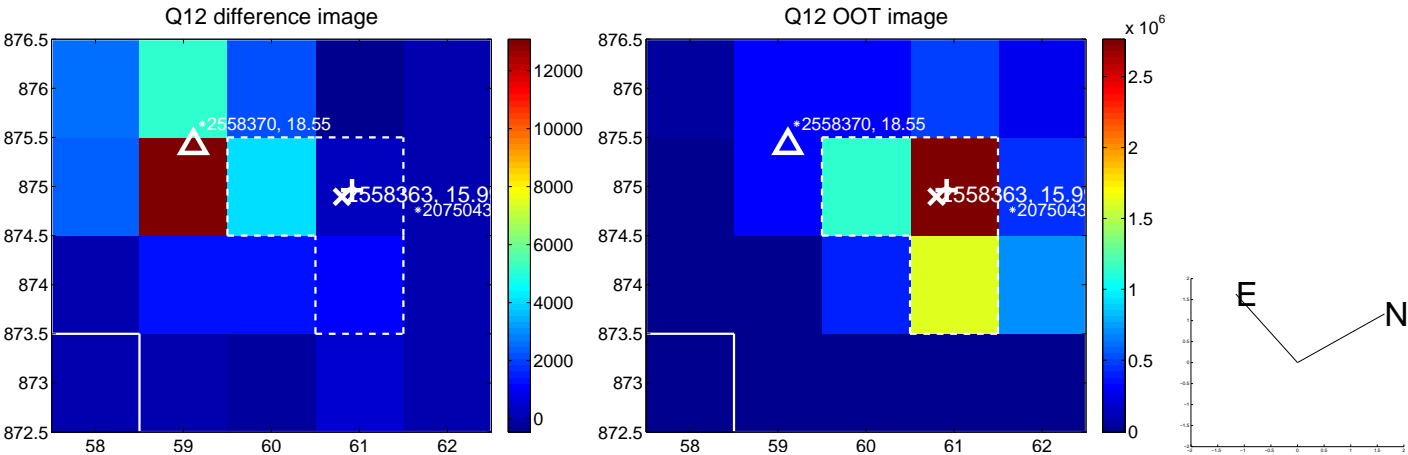
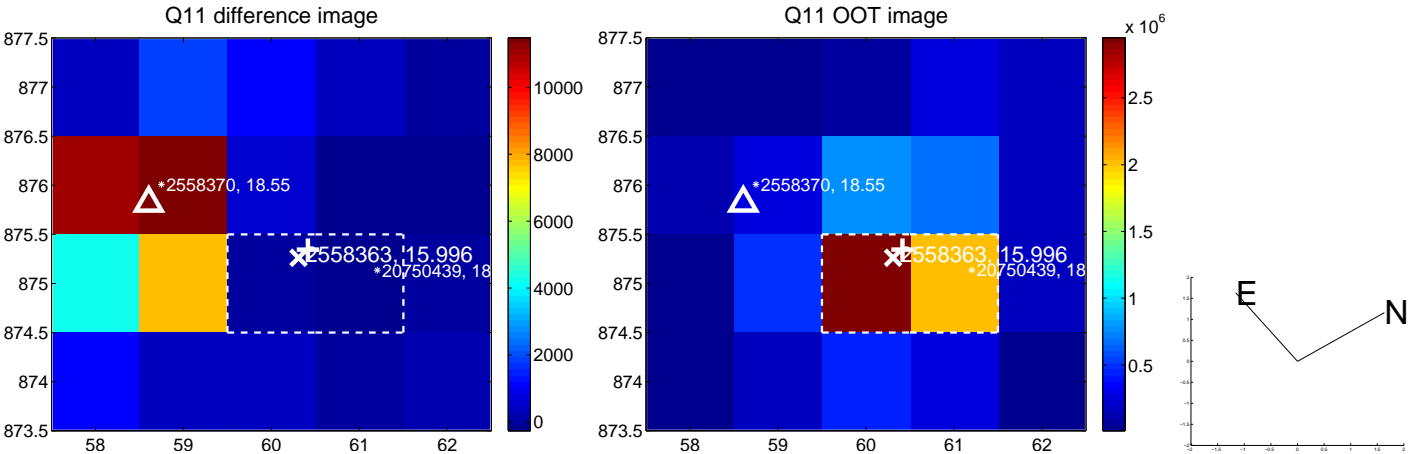
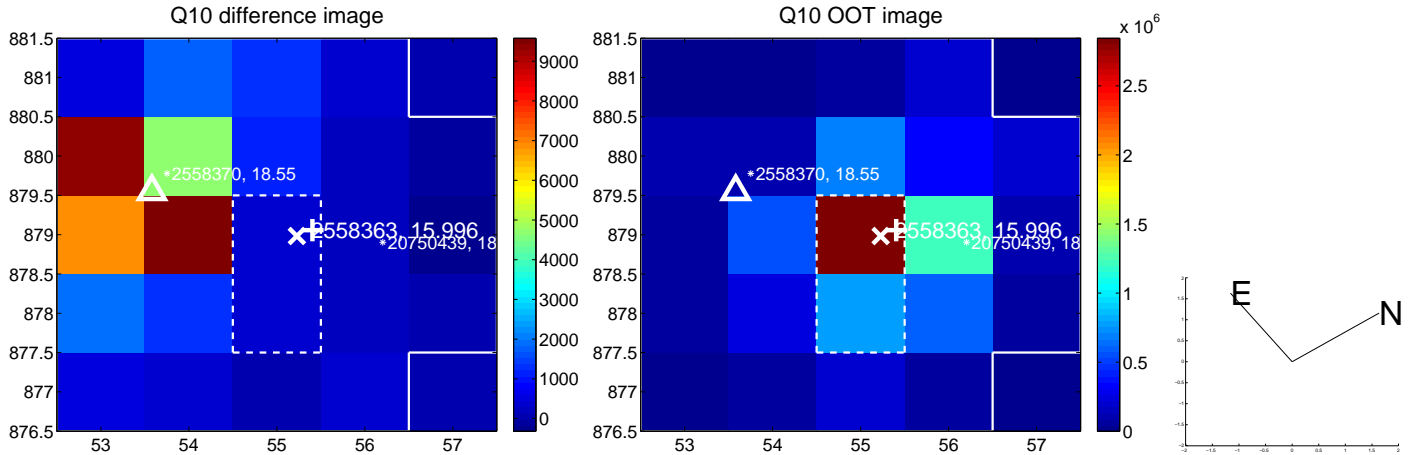
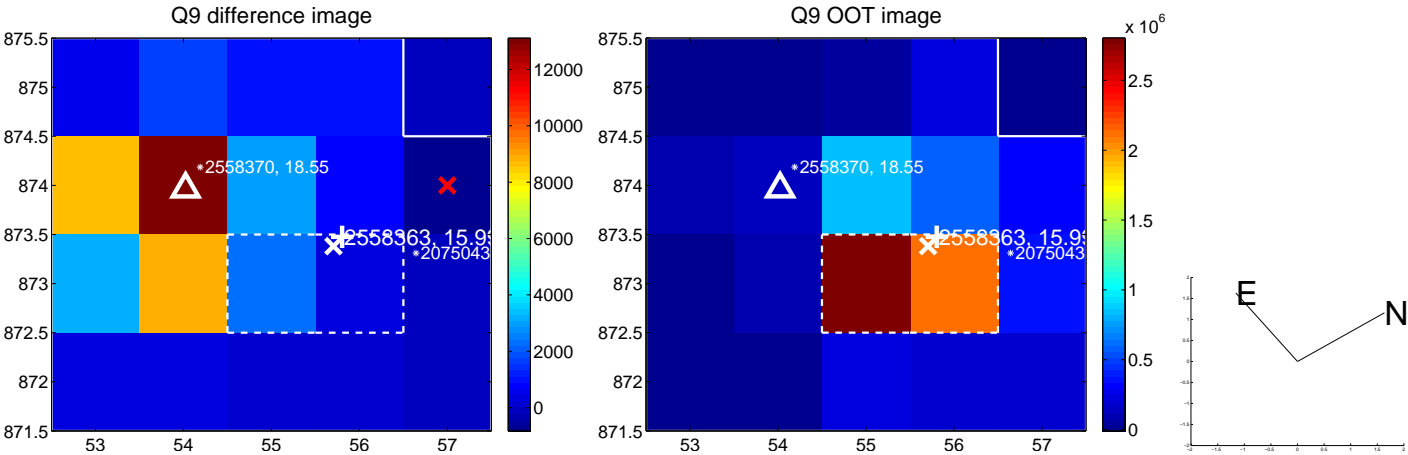
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



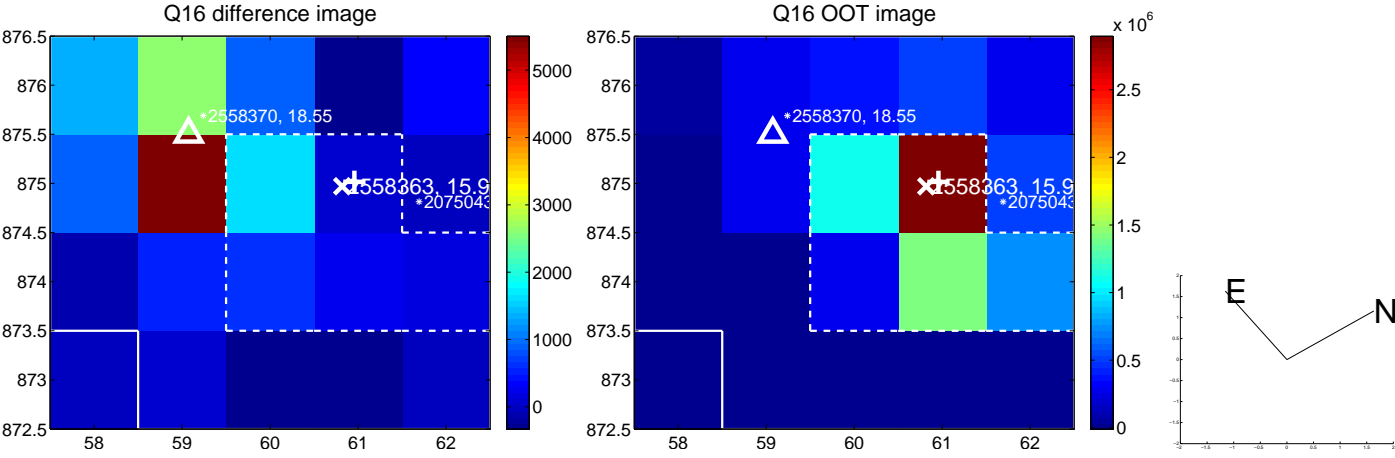
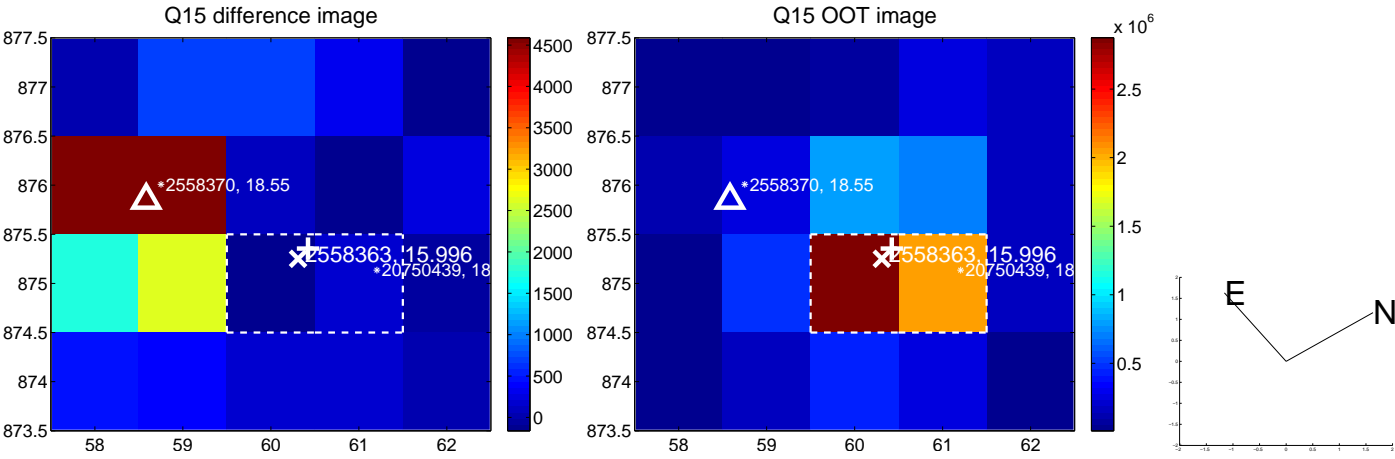
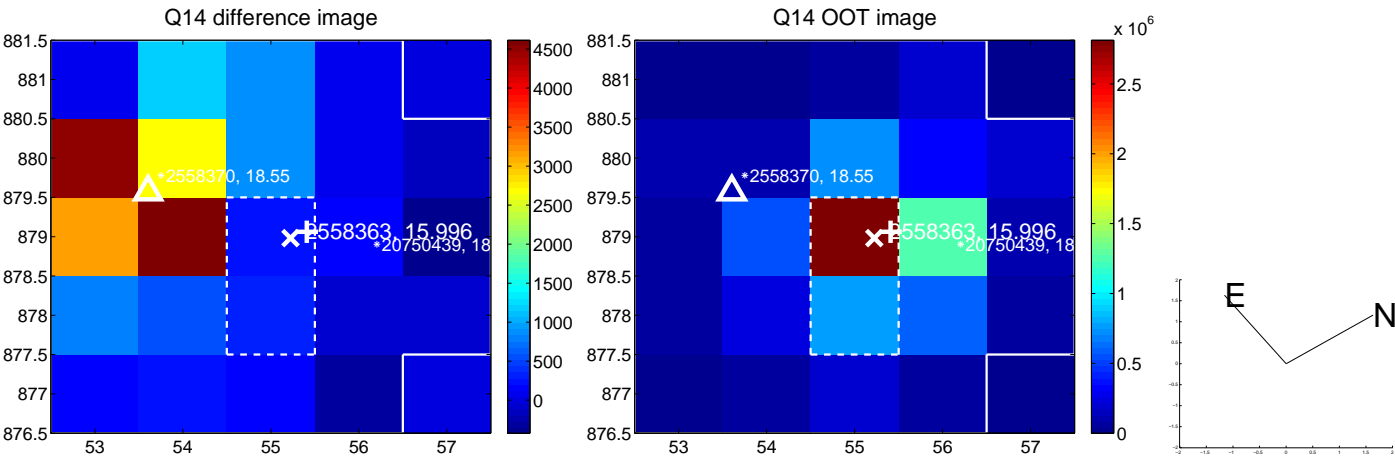
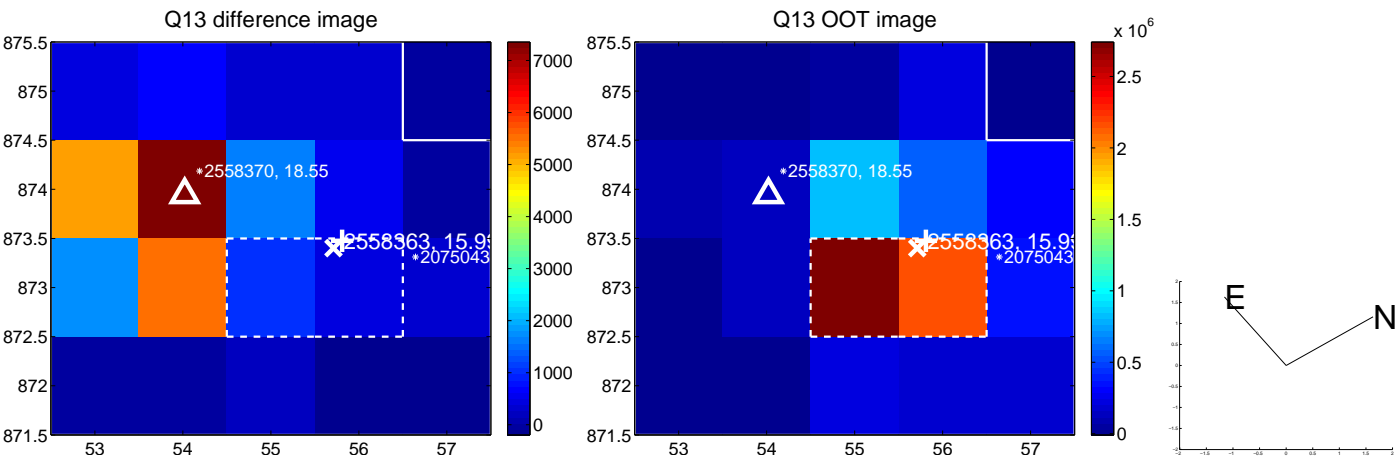
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



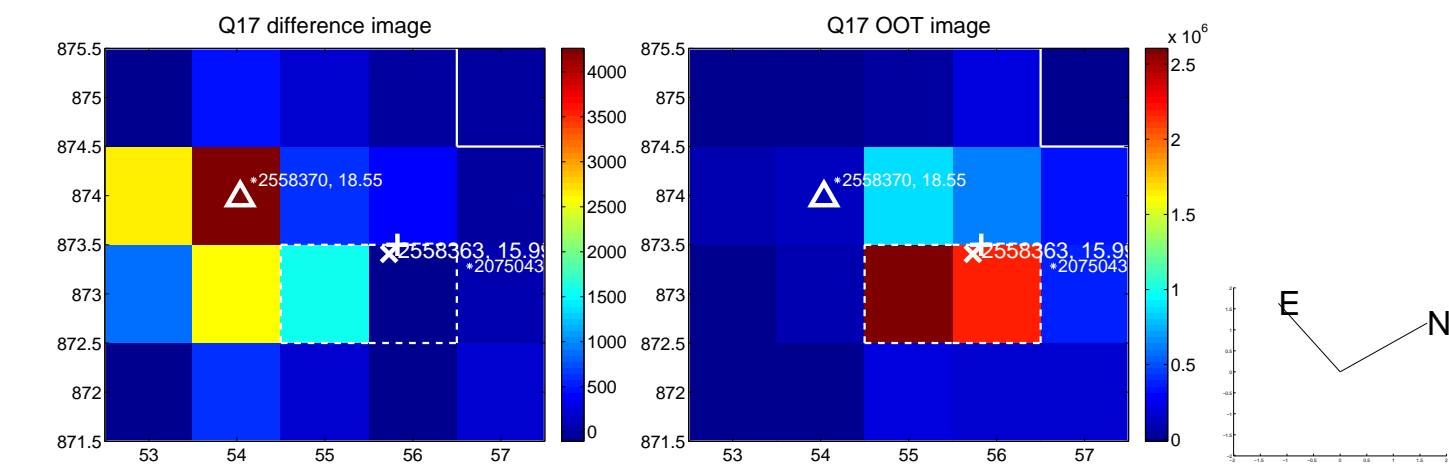
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



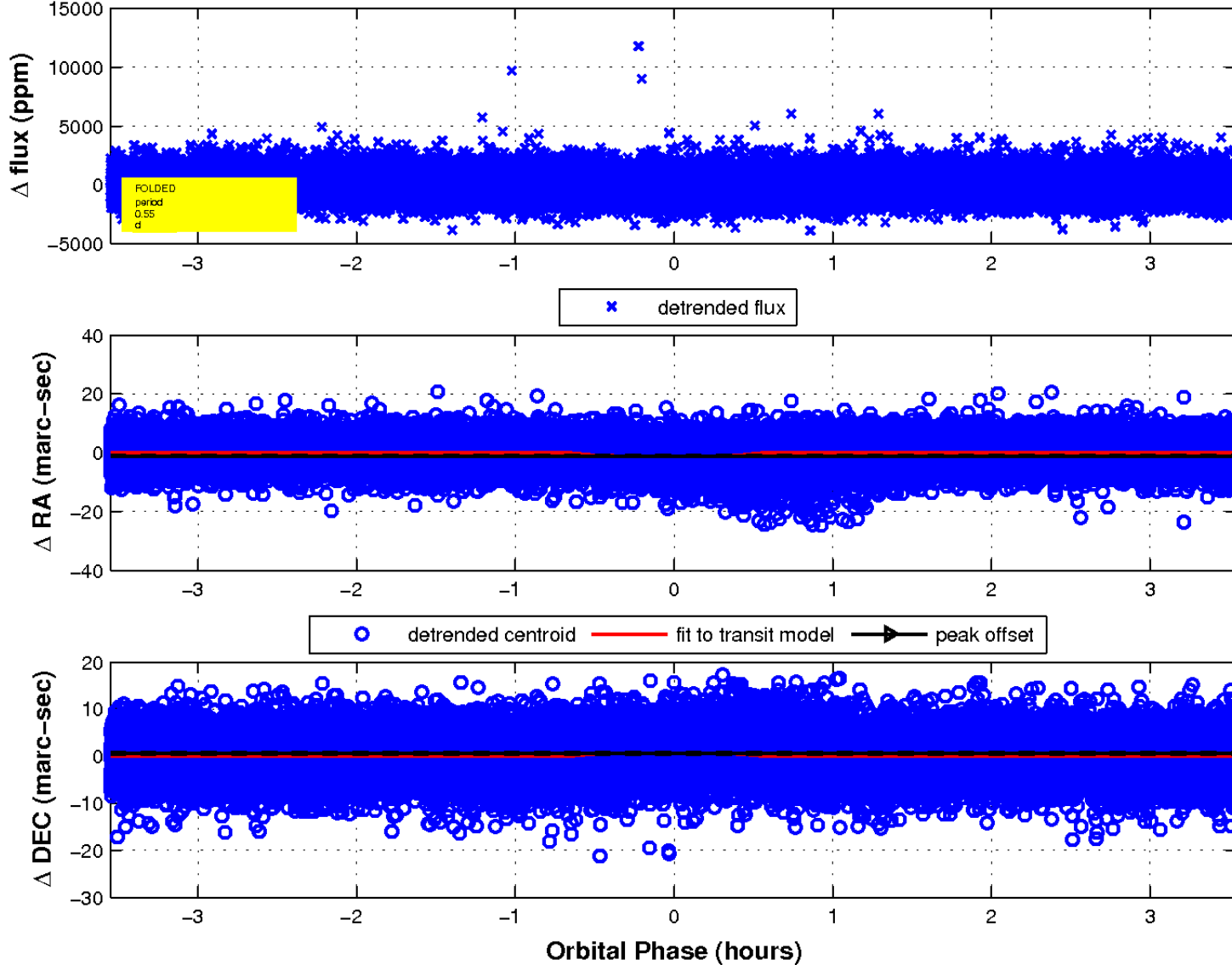
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

