

KIC 009838537

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 _⊕)
009838537-01	OBS	7966.01	1.332599	132.024895	24.9	5.044	9.6	10.9	0.84	5852	0.43	1379.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009838537-01	OBS	FP	0.00	0	0	1	1	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.

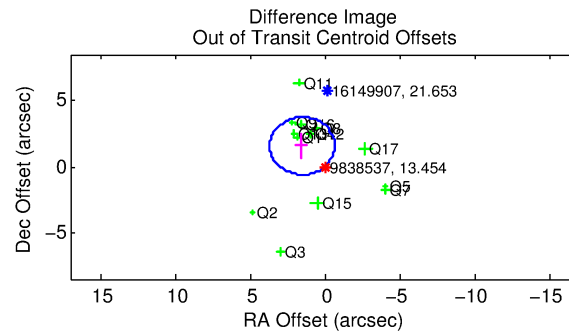
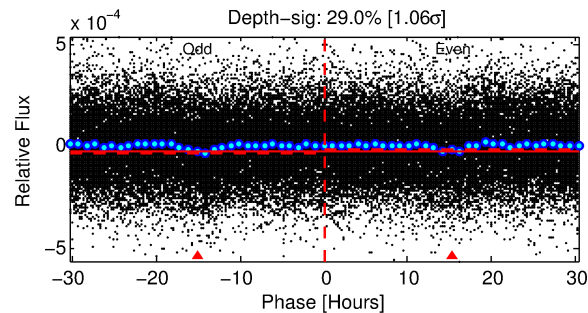
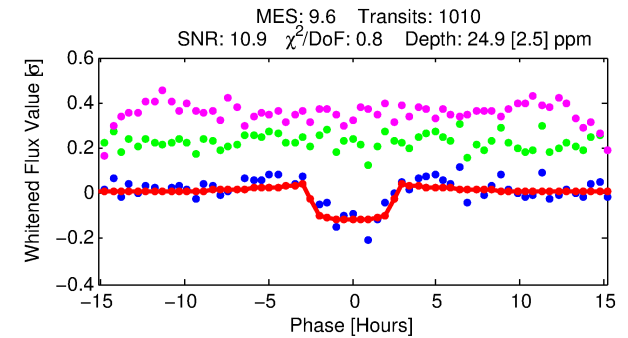
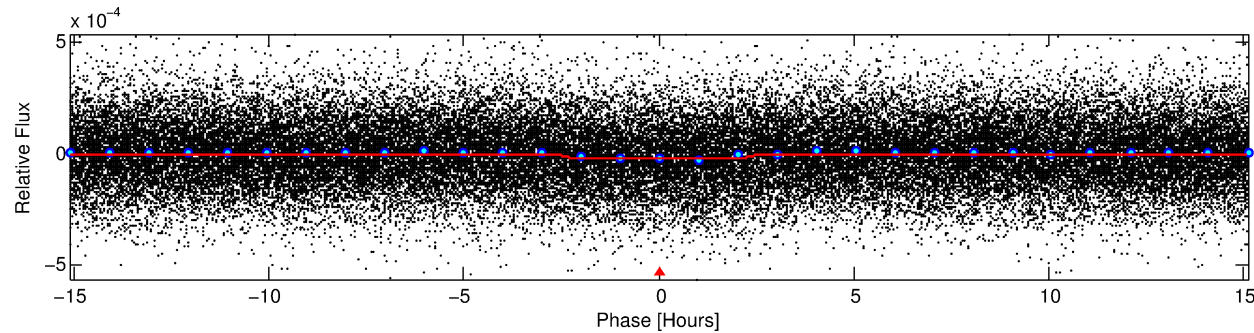
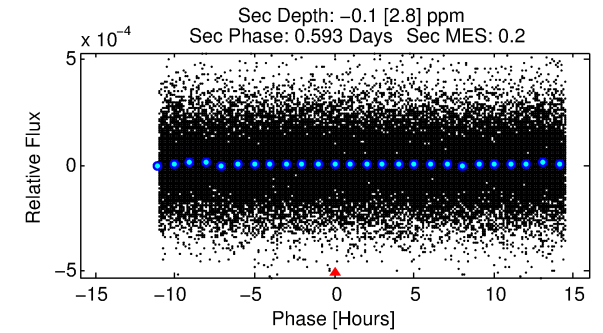
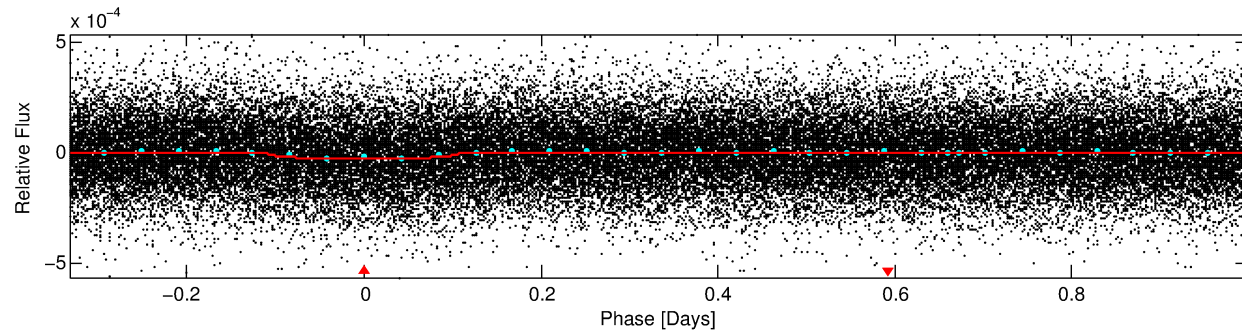
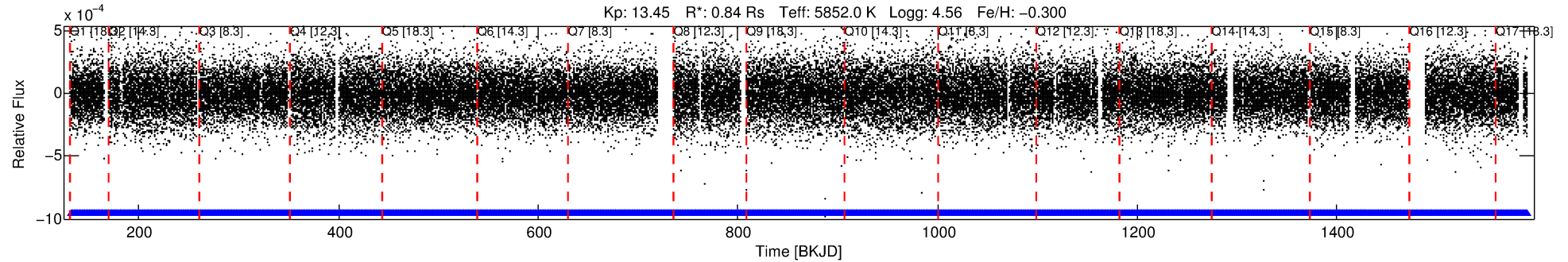
Ephemeris Match Information For 009838537-01

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
009838537-01	9838537	BR-Cyg-pri	9899416	1:1	1056.9	265	3	10.03	13.46	26755.00	Col-Anomaly	0	2.21	1.63

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: 9838537 Candidate: 1 of 1 Period: 1.333 d



DV Fit Results:

Period = 1.33260 [0.00001] d
Epoch = 132.0249 [0.0040] BKJD
Rp/R* = 0.0047 [0.0016]
a/R* = 1.93 [2.25]
b = 0.47 [2.71]
Seff = 1379.31 [525.34]
Teff = 1554 [148] K
Rp = 0.43 [0.19] Re
a = 0.0231 [0.0057] AU
Ag = N/A
Teffp = N/A

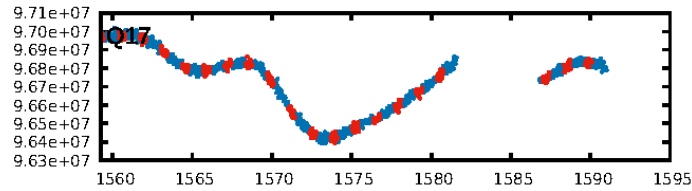
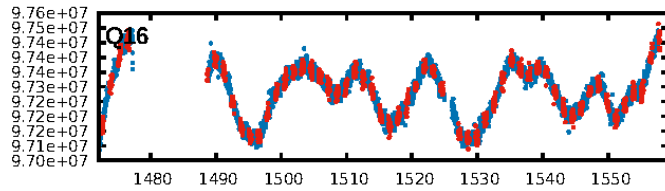
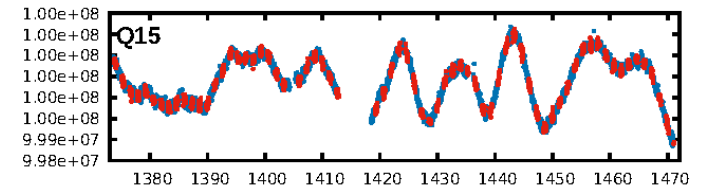
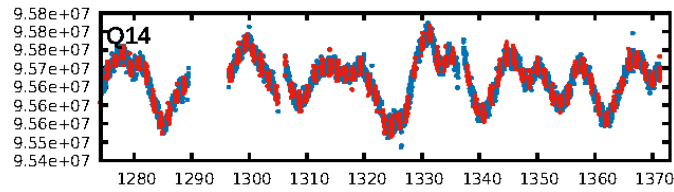
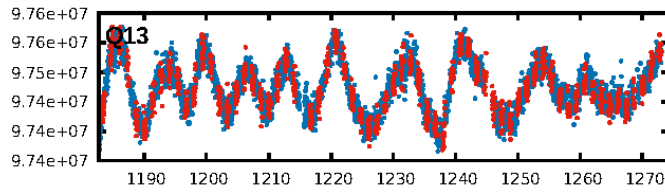
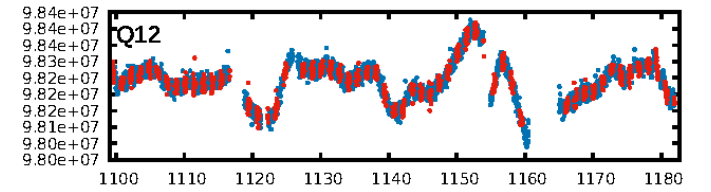
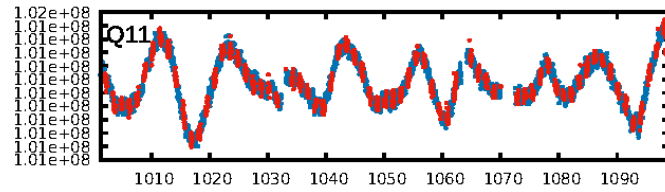
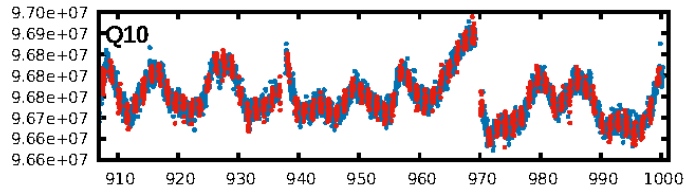
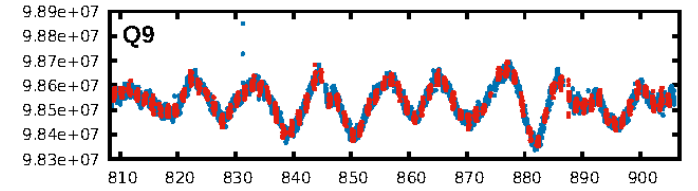
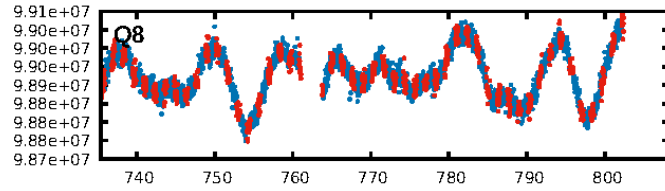
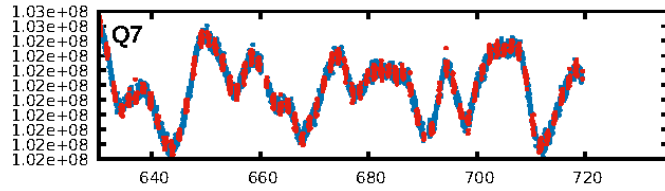
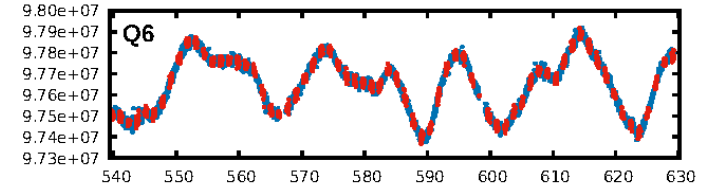
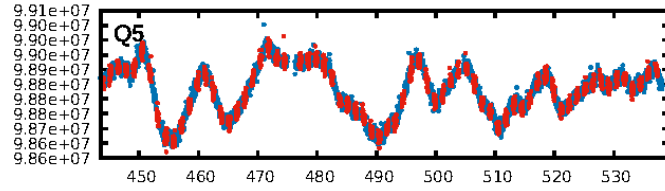
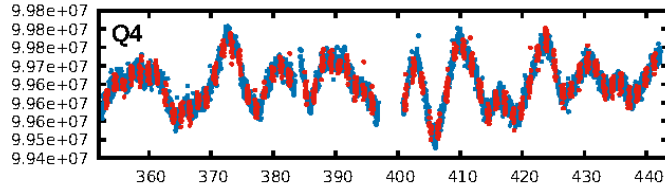
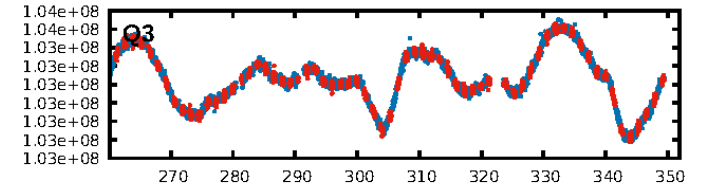
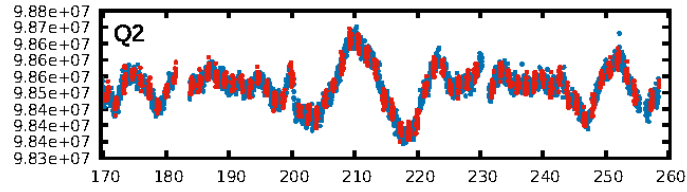
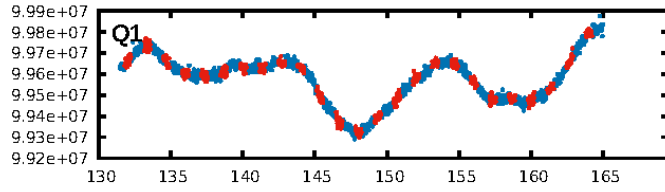
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.91e-17
RollingBand-fgt: 1.00 [965/965]
GhostDiagnostic-chr: 0.05062
Centroid-sig: 0.0%
Centroid-so: 6.533 arcsec [7.51σ]
OotOffset-rm: 2.171 arcsec [3.00σ]
KicOffset-rm: 2.244 arcsec [2.61σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [17/17]

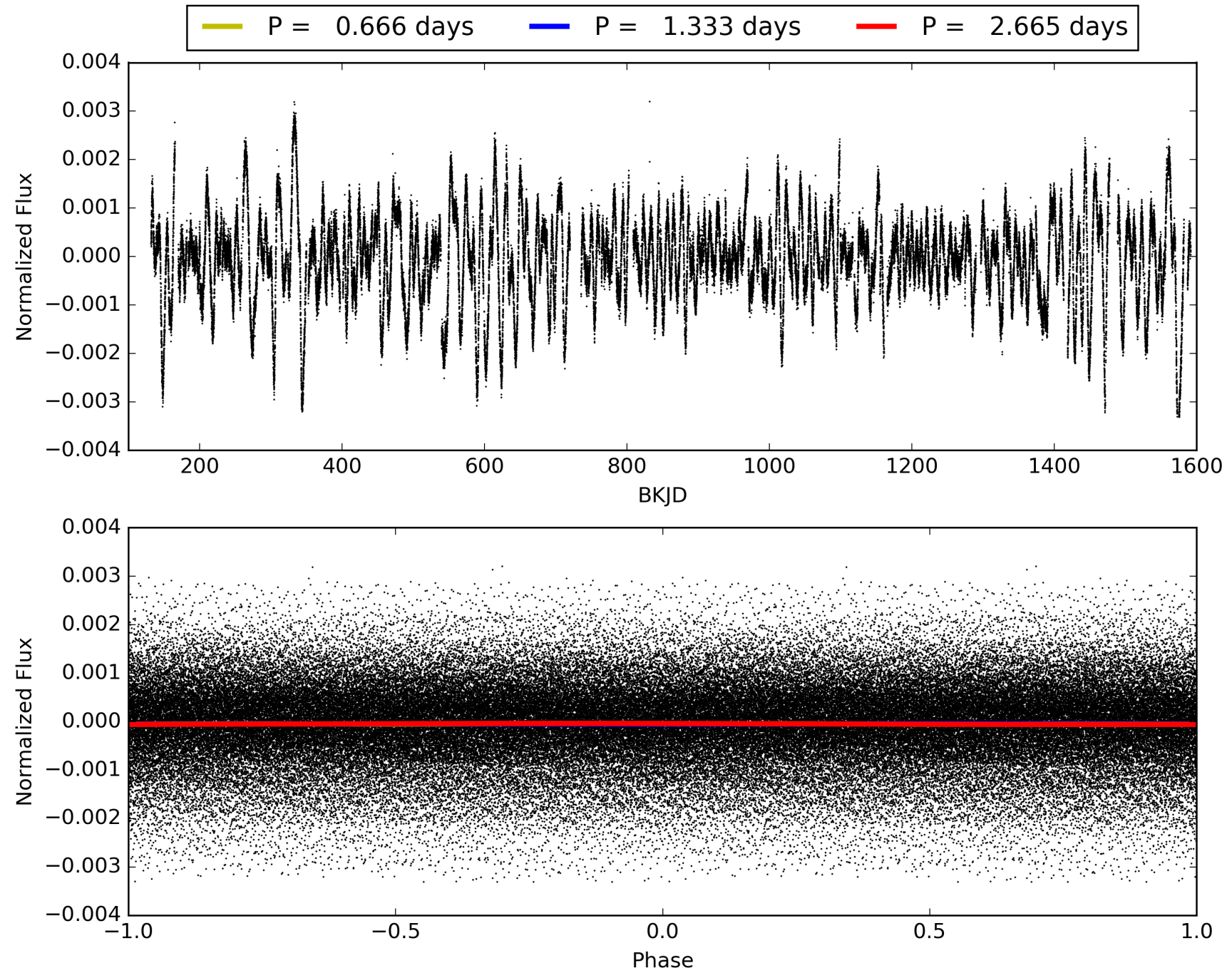
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009838537-01, PDC Light Curves

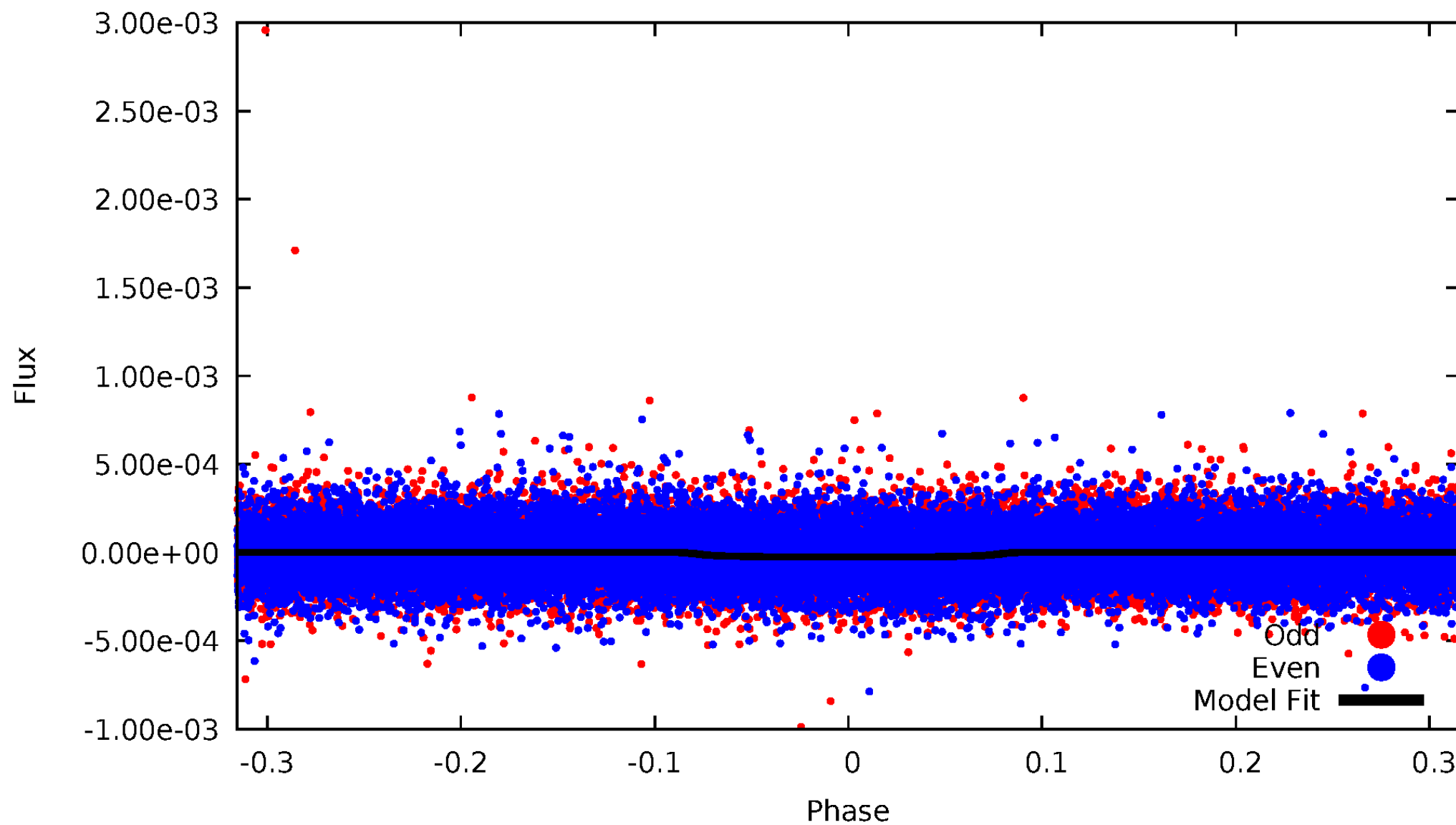


TCE 009838537-01



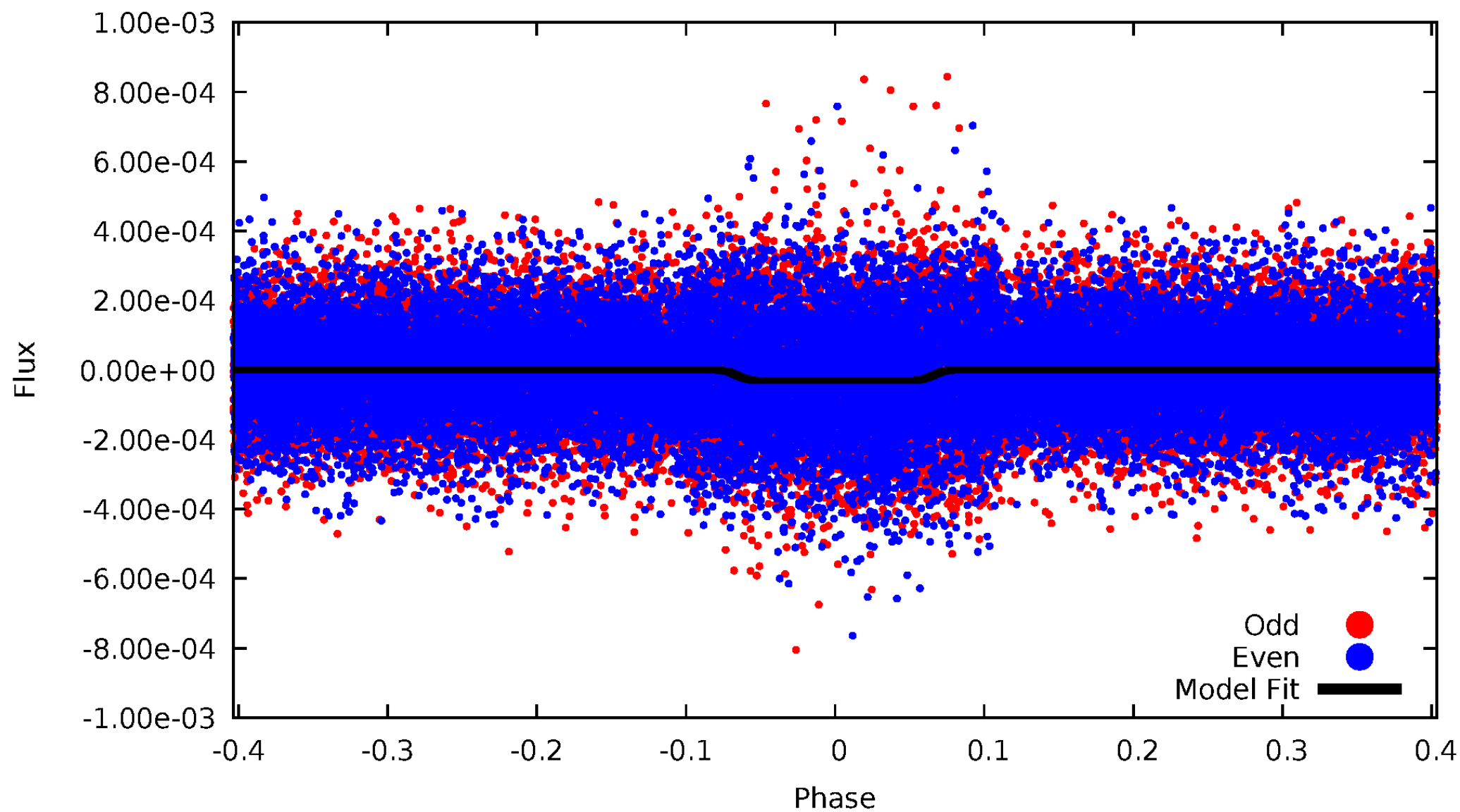
DV Odd/Even

TCE 009838537-01



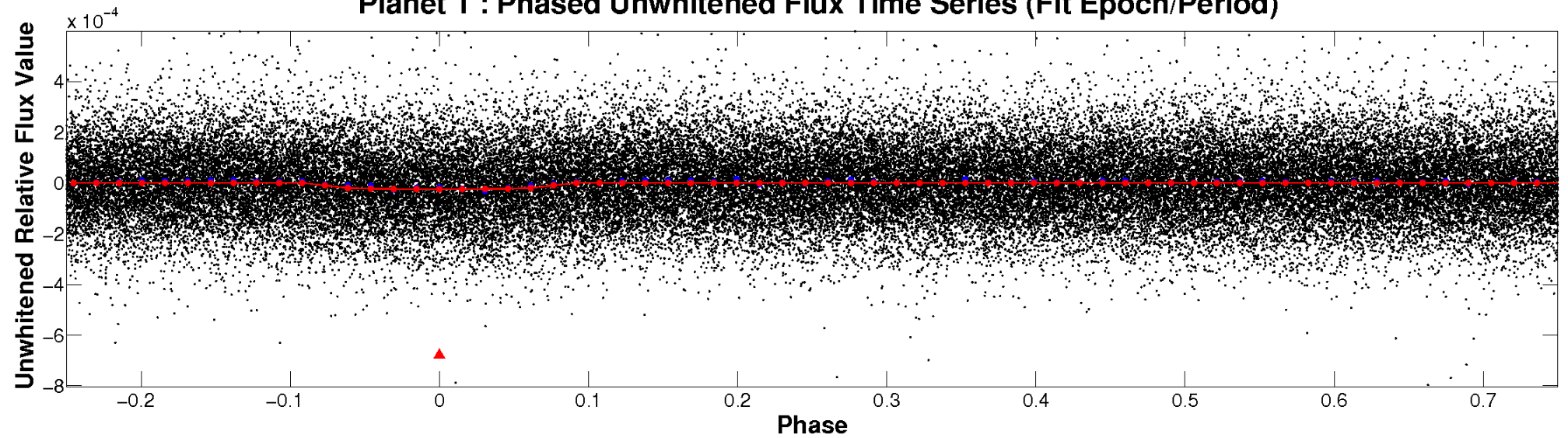
ALT Odd/Even

TCE 009838537-01

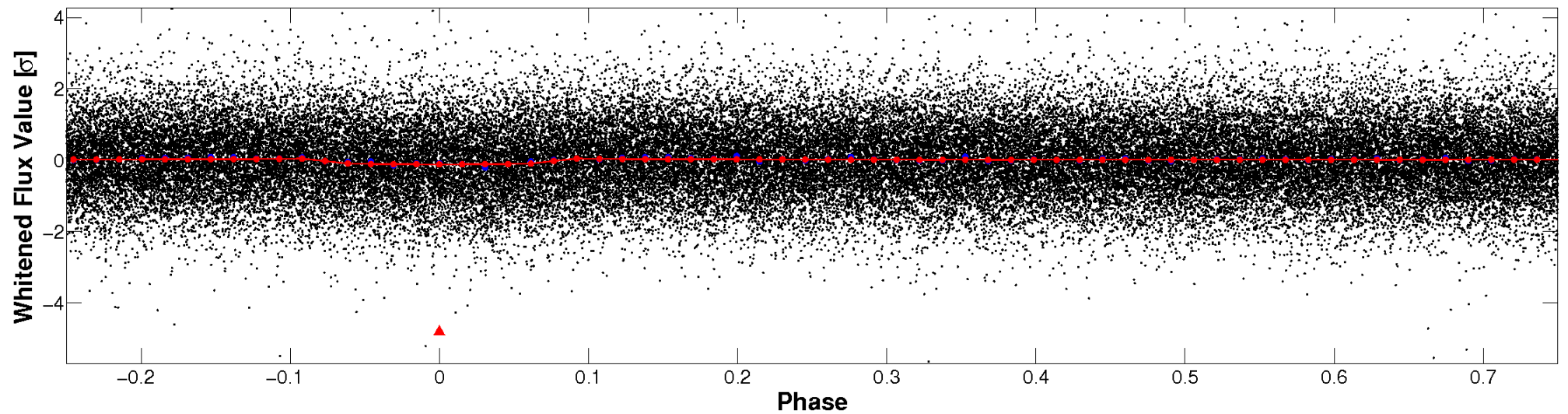


Non-Whitened Vs. Whitened Light Curve

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

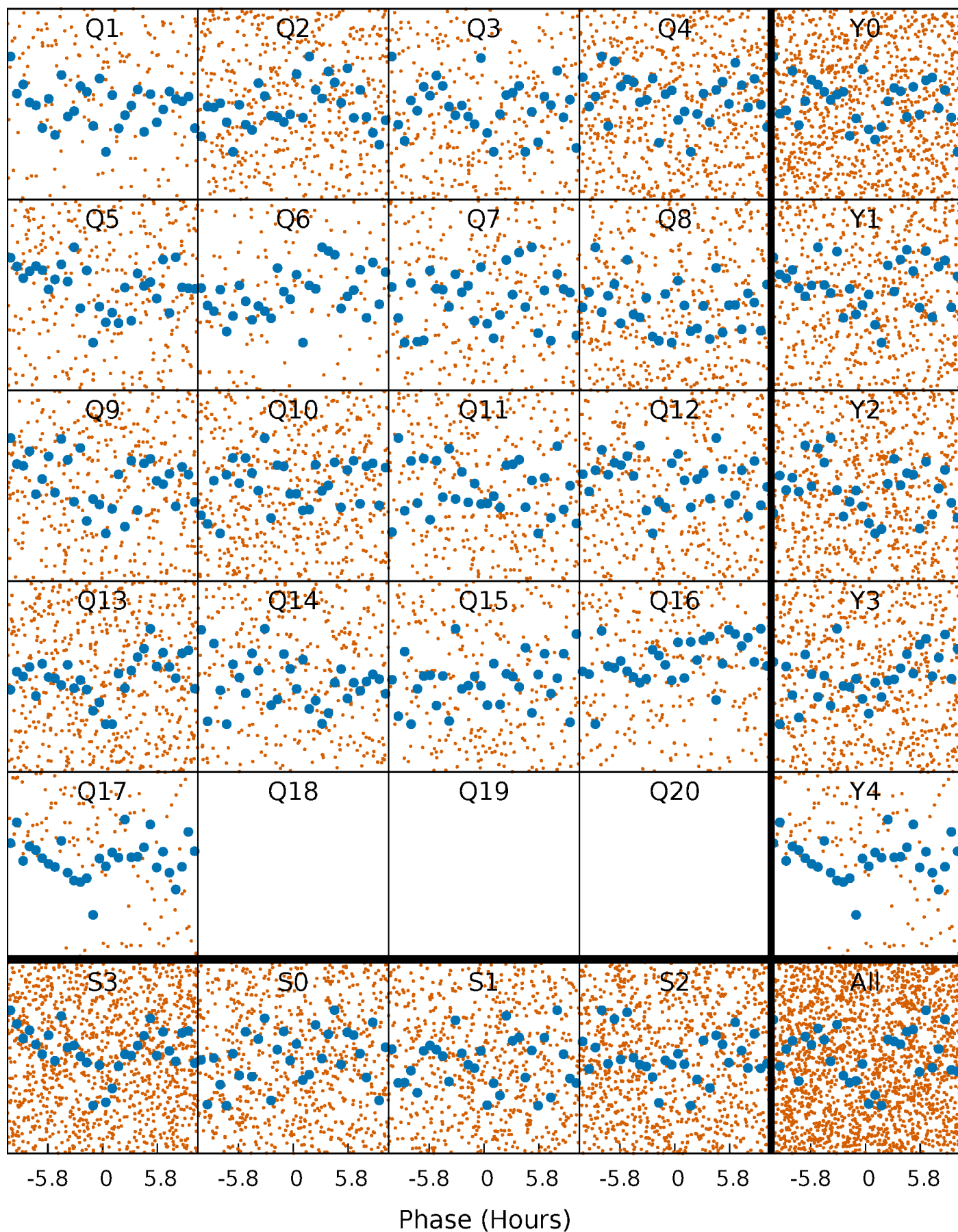


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



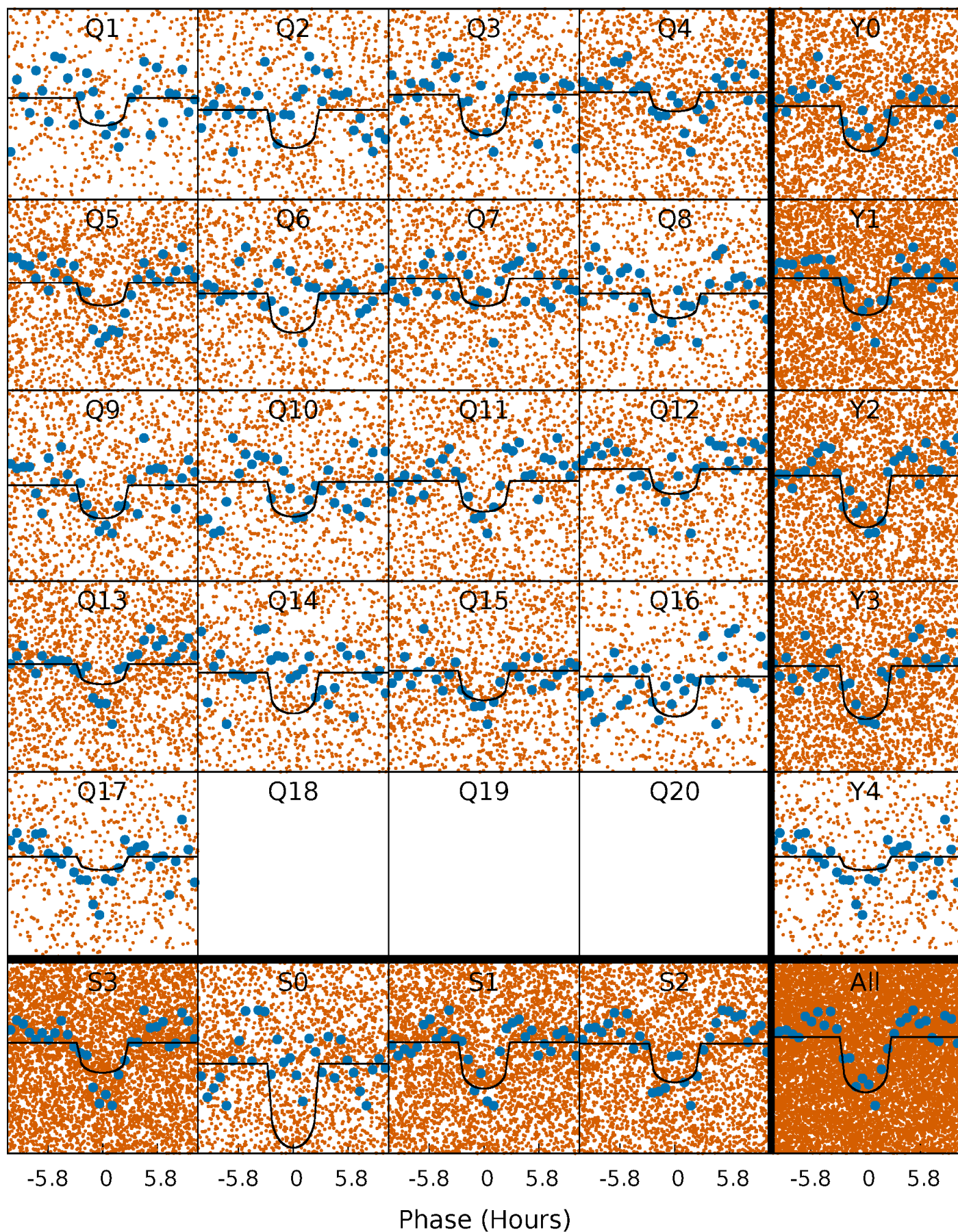
PDC Quarter-Phased Transit Curves

TCE 009838537-01 P= 1.332599 Days $T_0=132.024895$ (BKJD)



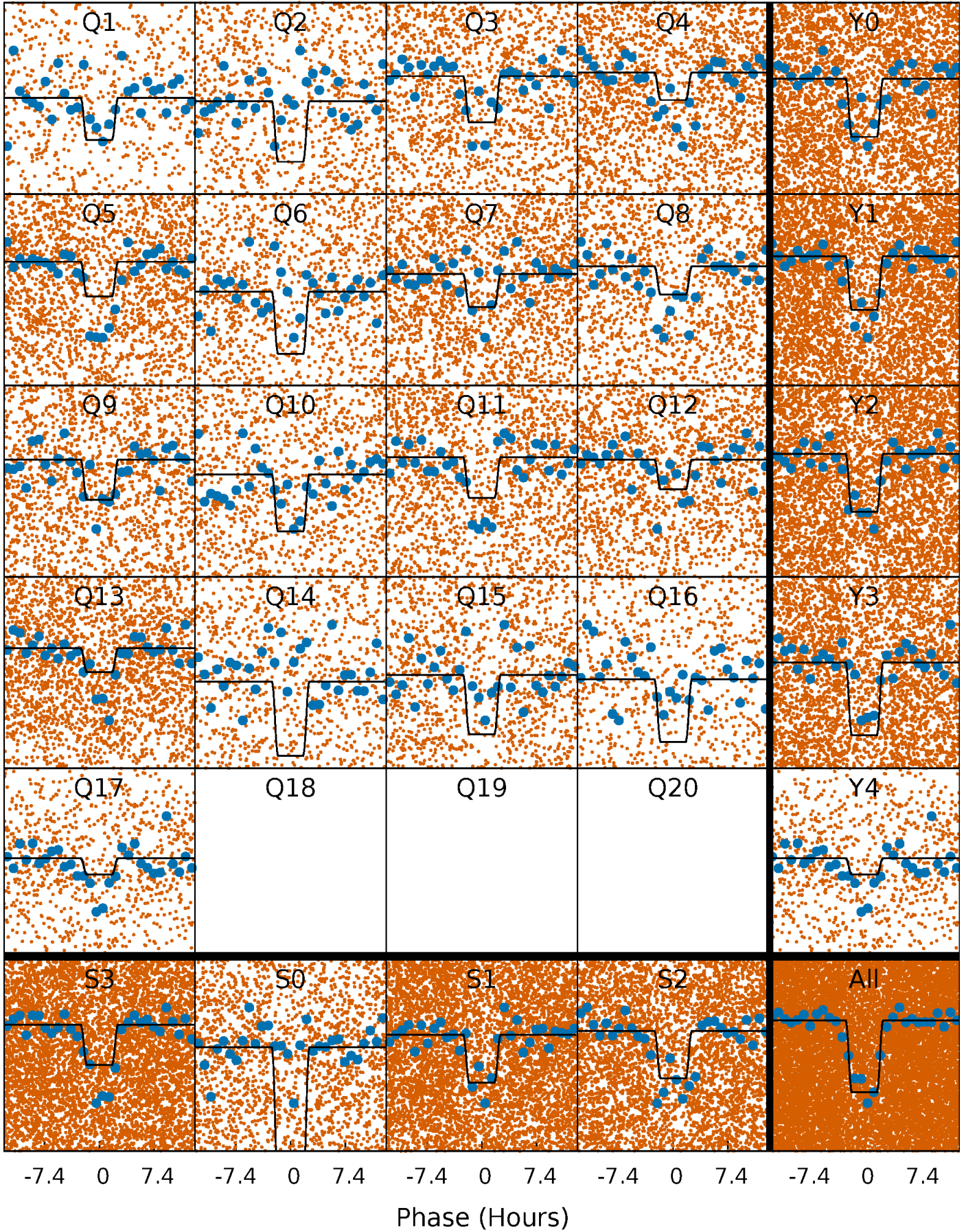
DV Quarter-Phased Transit Curves

TCE 009838537-01 P= 1.332599 Days $T_0=132.024895$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

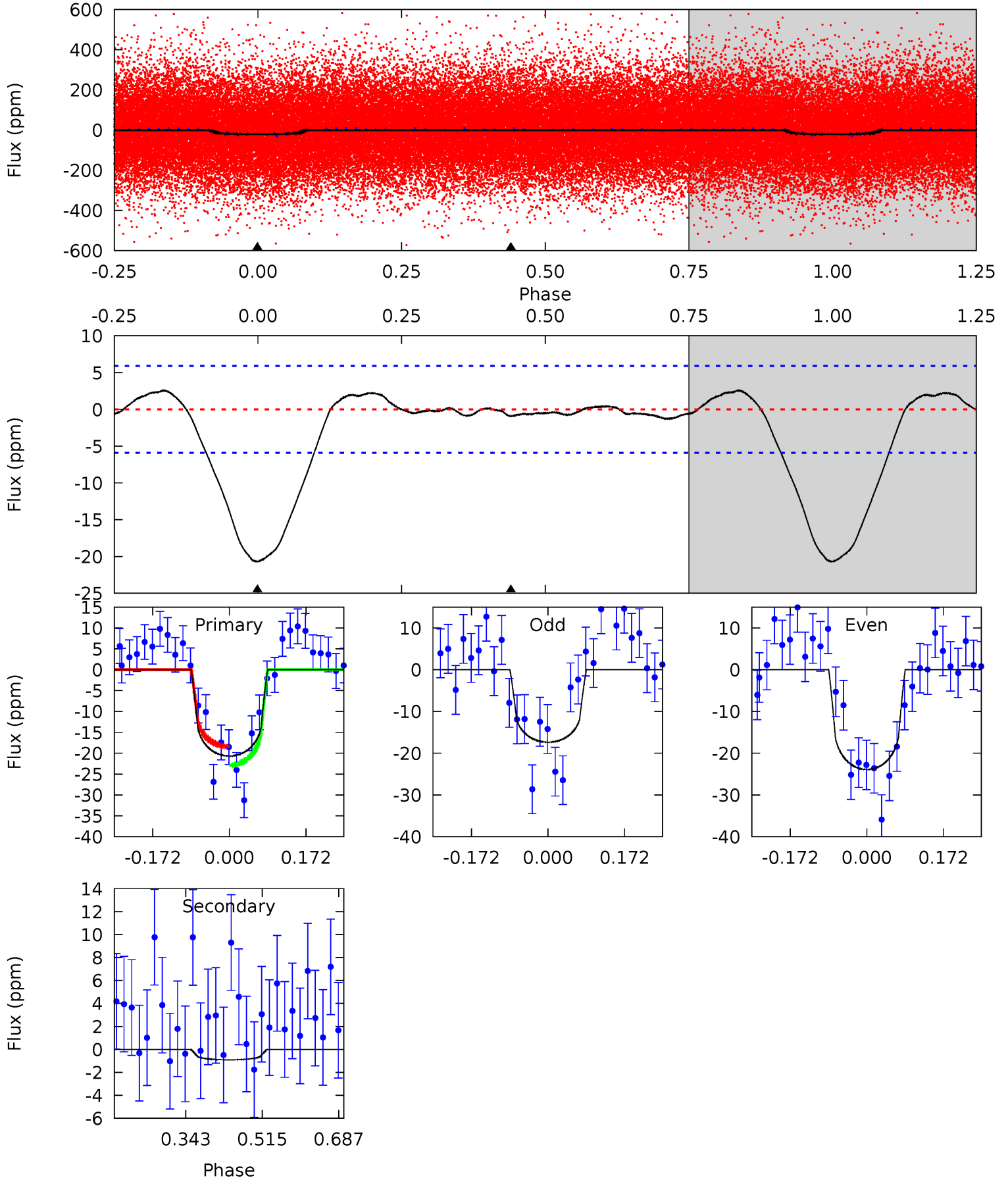
TCE 009838537-01 P= 1.332549 Days $T_0=132.055965$ (BKJD)



DV Model-Shift Uniqueness Test

009838537-01, P = 1.332599 Days, E = 130.692296 Days

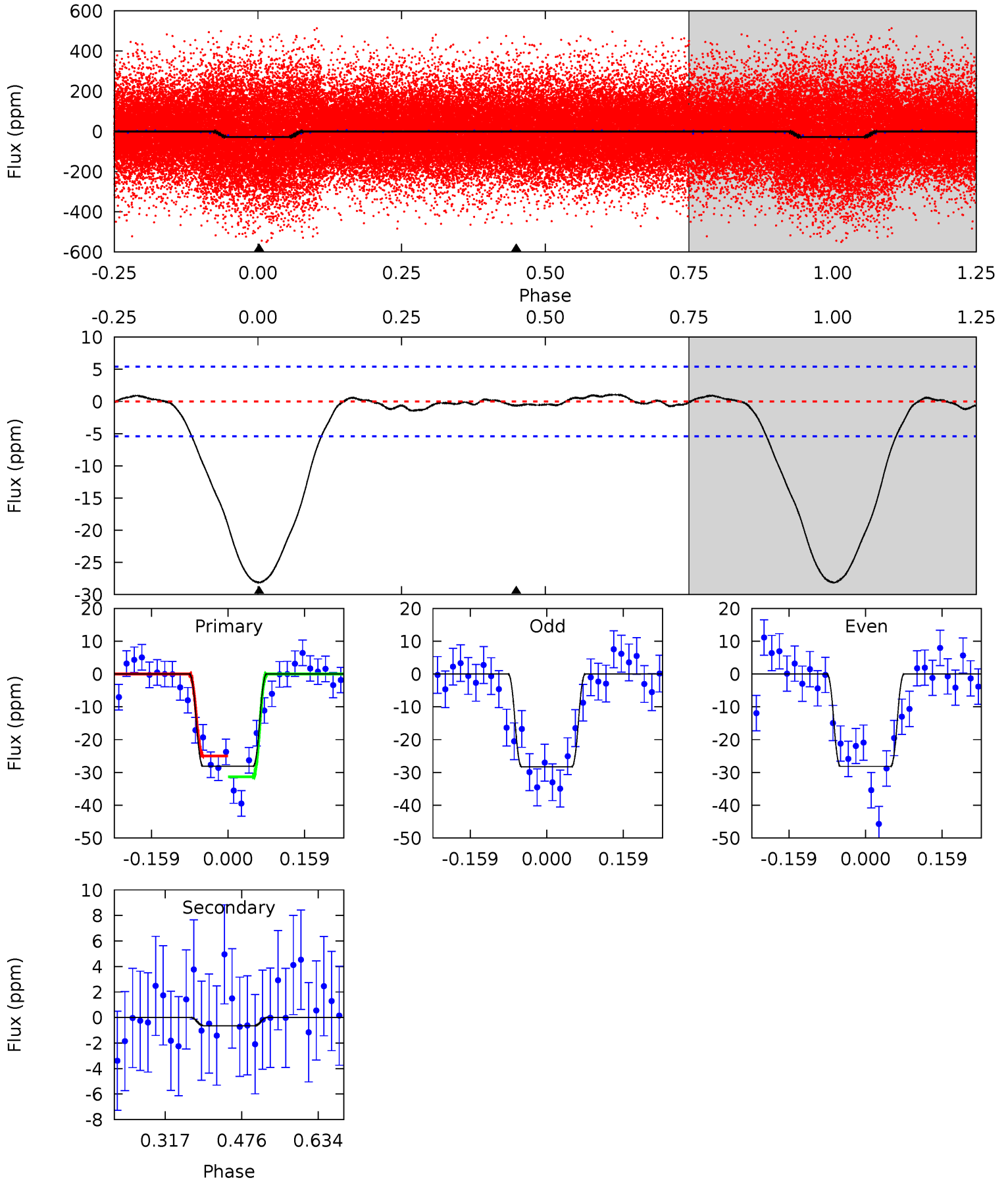
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	0.69	0	0	4.45	1.37	0.90	15.6	15.6	0.69	0.69	2.46	0.91	0.11	1.69



Alt Model-Shift Uniqueness Test

009838537-01, P = 1.332549 Days, E = 130.723416 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.2	0.53	0	0	4.47	1.41	0.56	23.2	23.2	0.53	0.53	0.04	0.87	0.04	2.62



Stellar Parameters For KIC 009838537

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5852^{+140}_{-158}	$4.559^{+0.036}_{-0.204}$	$-0.300^{+0.300}_{-0.300}$	$0.837^{+0.236}_{-0.079}$	$0.928^{+0.099}_{-0.109}$	$2.230^{+0.433}_{-1.129}$
	+2%/-3%	+1%/-4%	+100%/-100%	+28%/-9%	+11%/-12%	+19%/-51%
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 009838537-01 / KOI 7966.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1 ± 1	$0.46^{+0.17}_{-0.16}$	2227^{+145}_{-95}	3021^{+789}_{-6091}	$1.114^{+2.788}_{-1.677}$
Alt.	-1 ± 1	$0.51^{+0.17}_{-0.16}$	2230^{+151}_{-97}	2764^{+738}_{-5806}	$0.707^{+1.782}_{-1.233}$

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 $A_{obs} \gg 1.0$

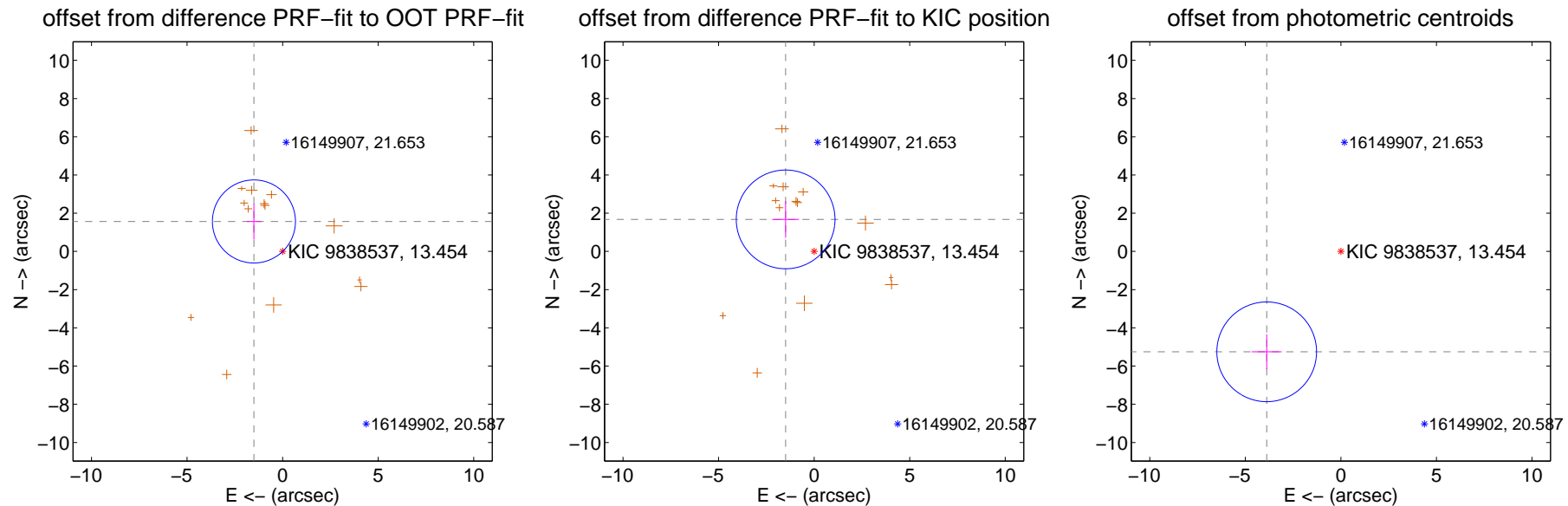
DV Centroid Data

Supplemental centroid analysis for 009838537-01. Kepler magnitude: 13.45. Transit SNR 10.92

There are 0 quarters with good PRF difference image offsets

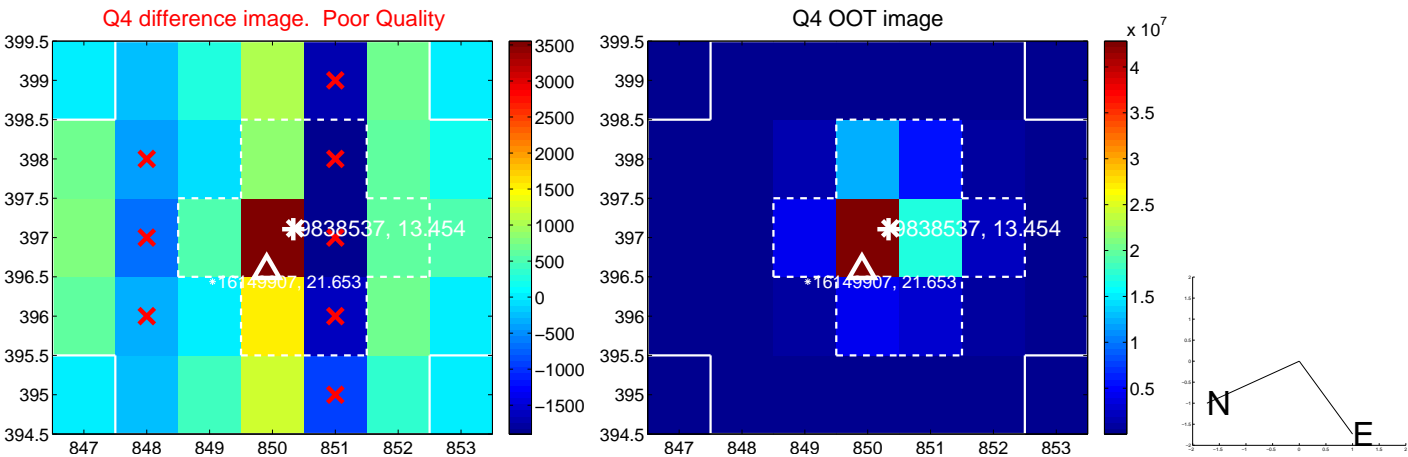
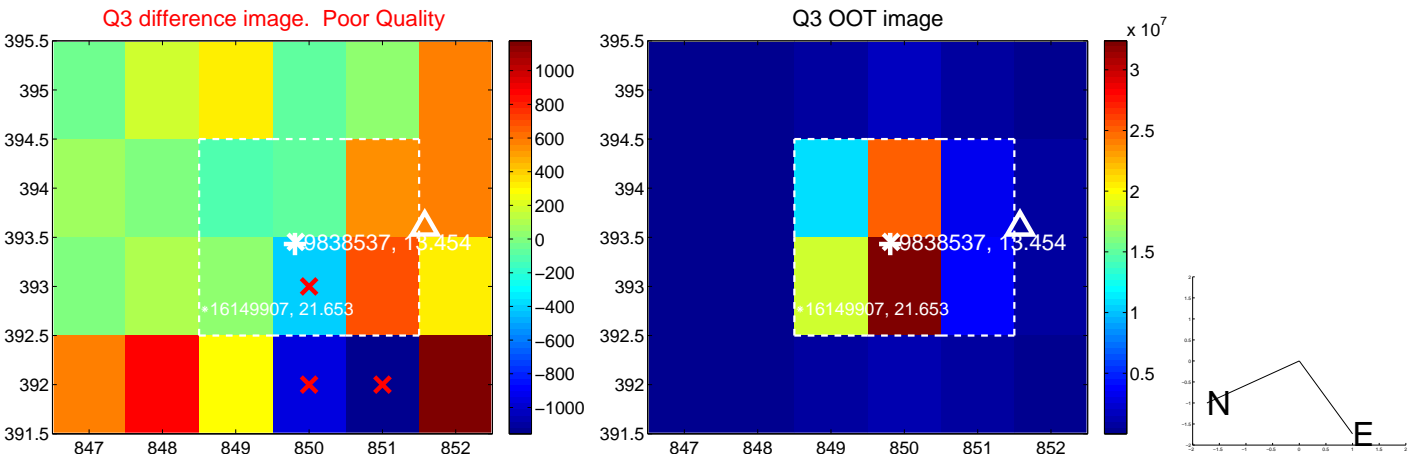
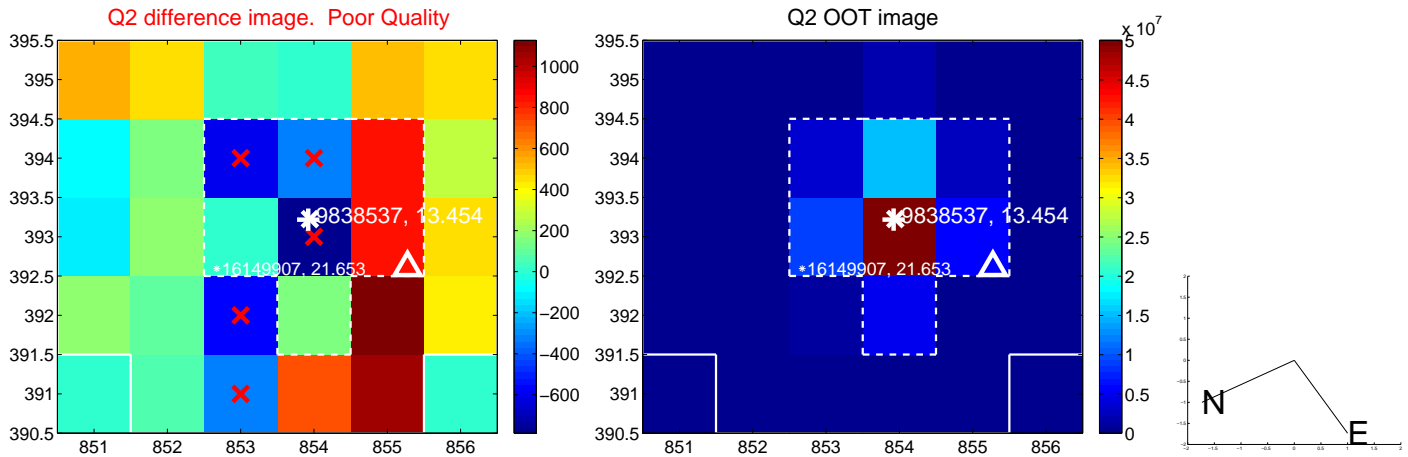
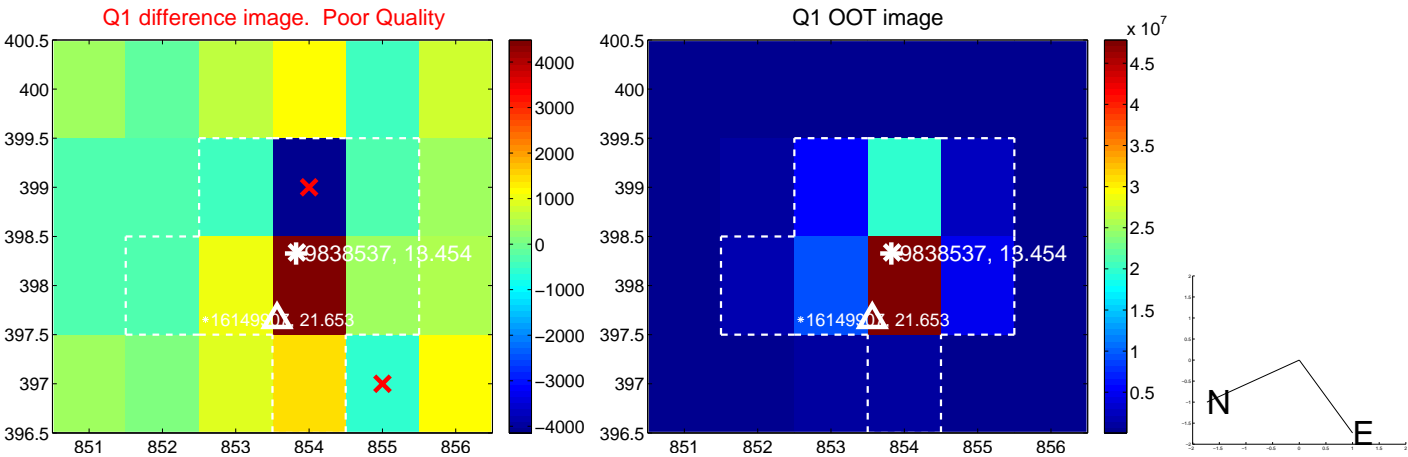
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.171 ± 0.724	3.00	1.502 ± 0.377	1.568 ± 0.936
PRF-fit source offset from KIC position	2.244 ± 0.861	2.61	1.492 ± 0.701	1.677 ± 0.961
photometric centroid source offset	6.53 ± 0.87	7.51	3.88 ± 0.78	-5.25 ± 0.91

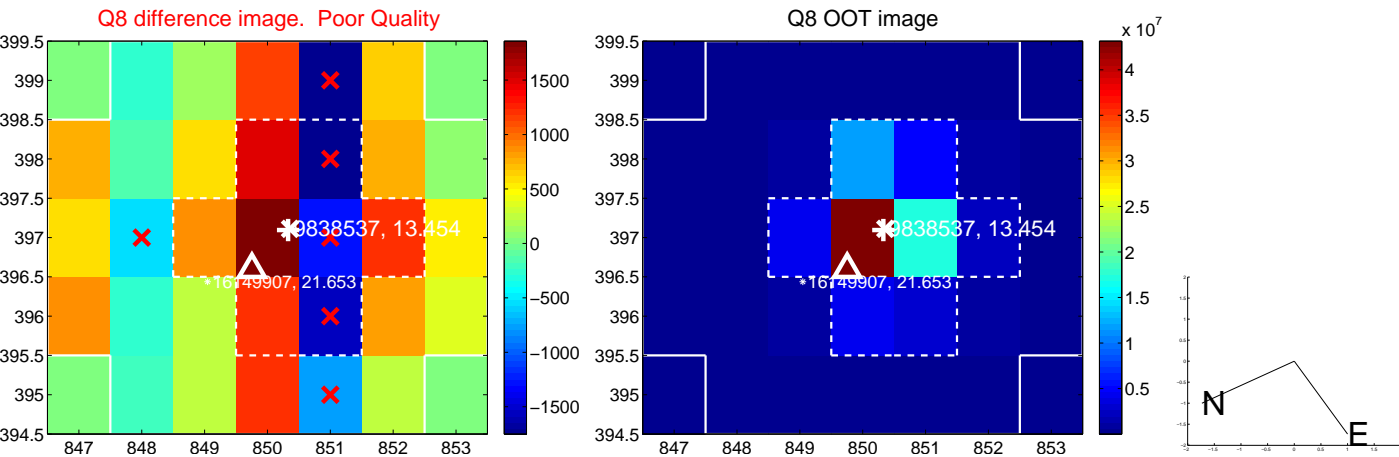
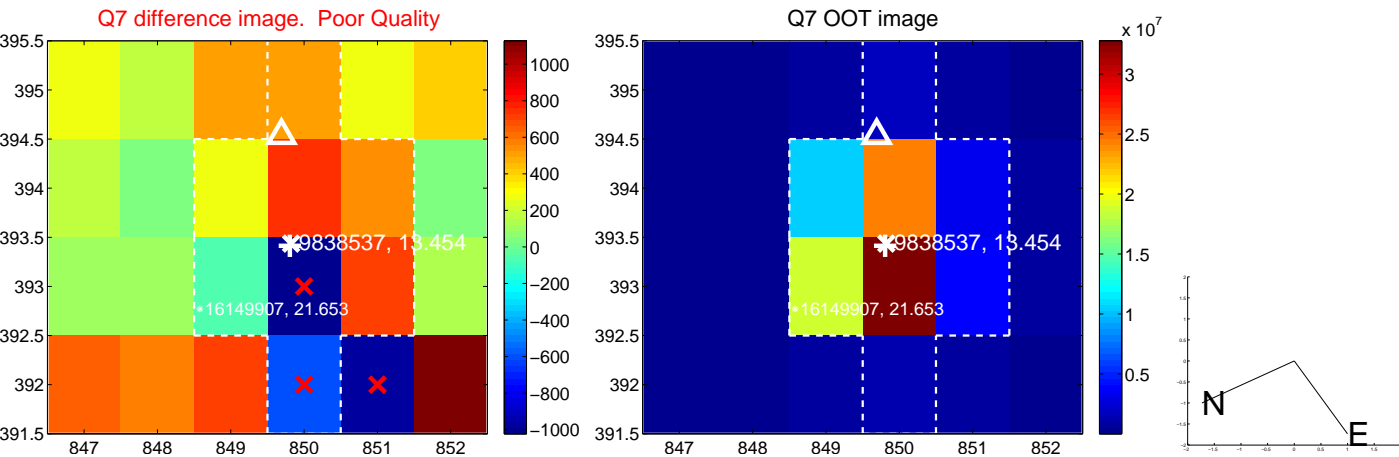
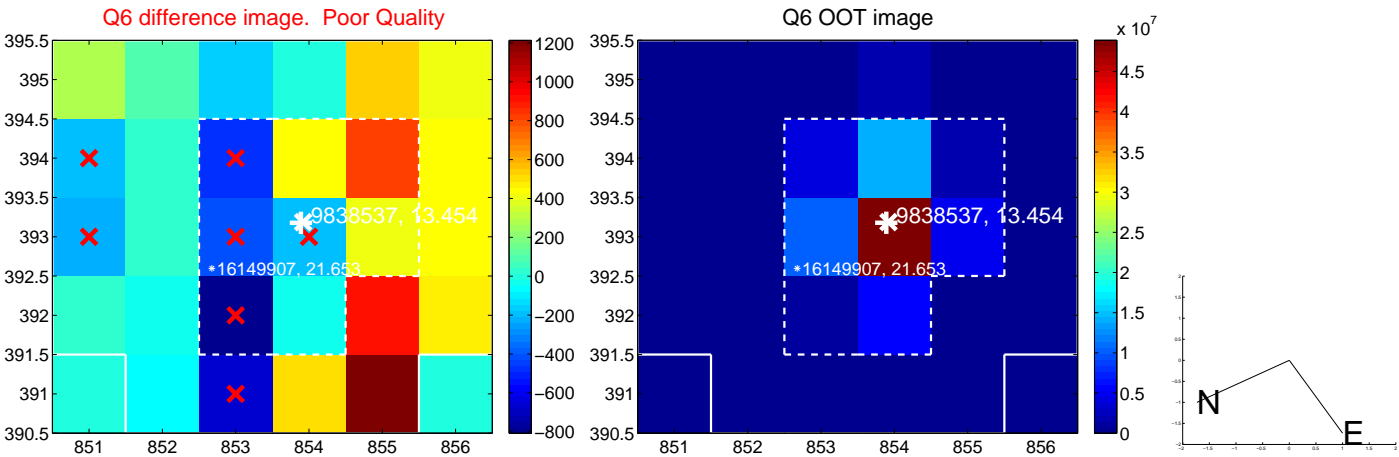
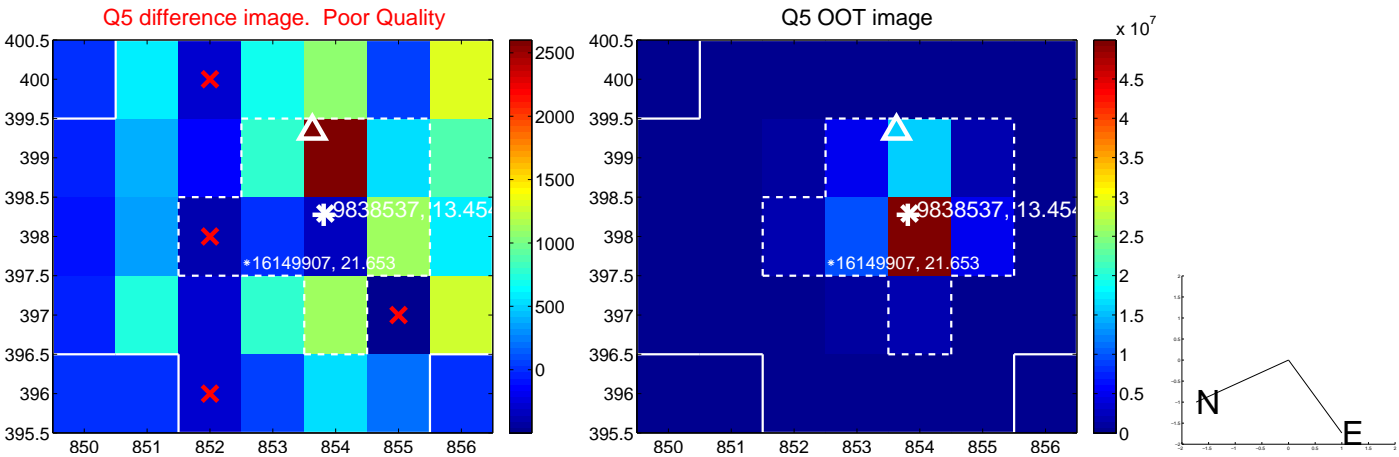


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

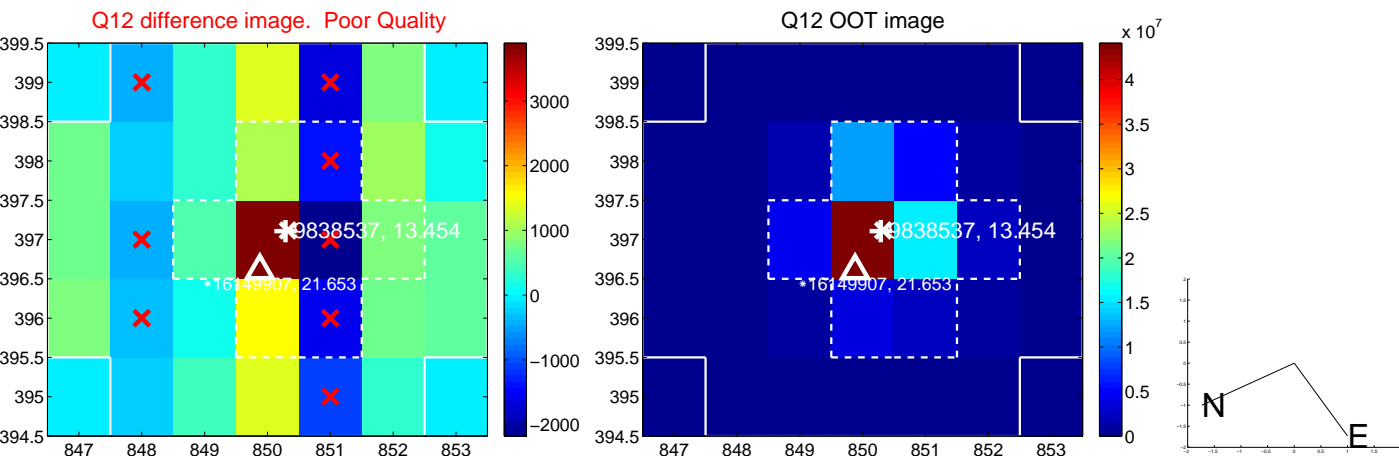
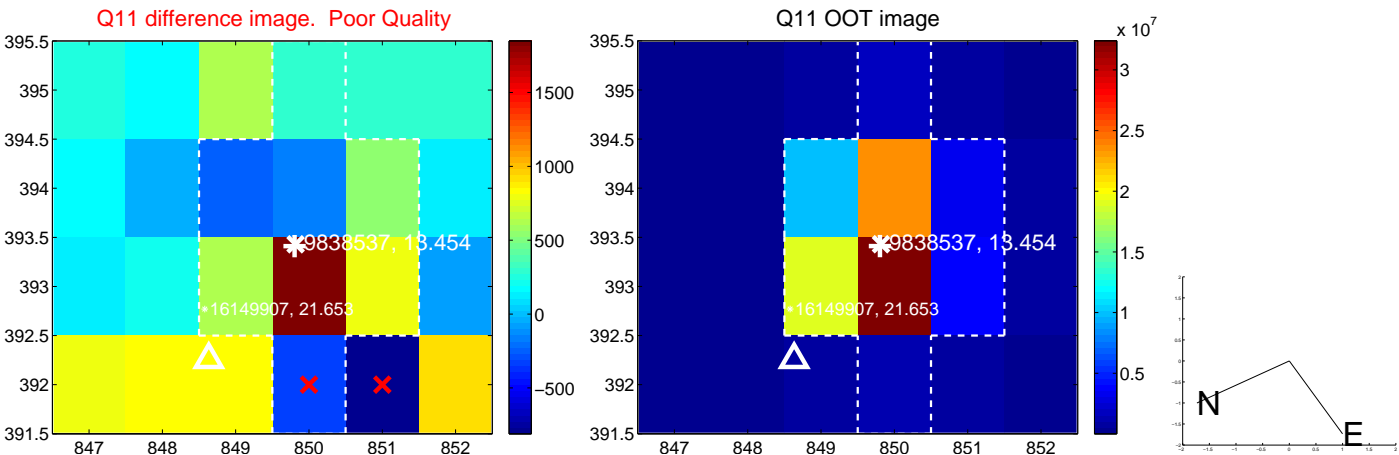
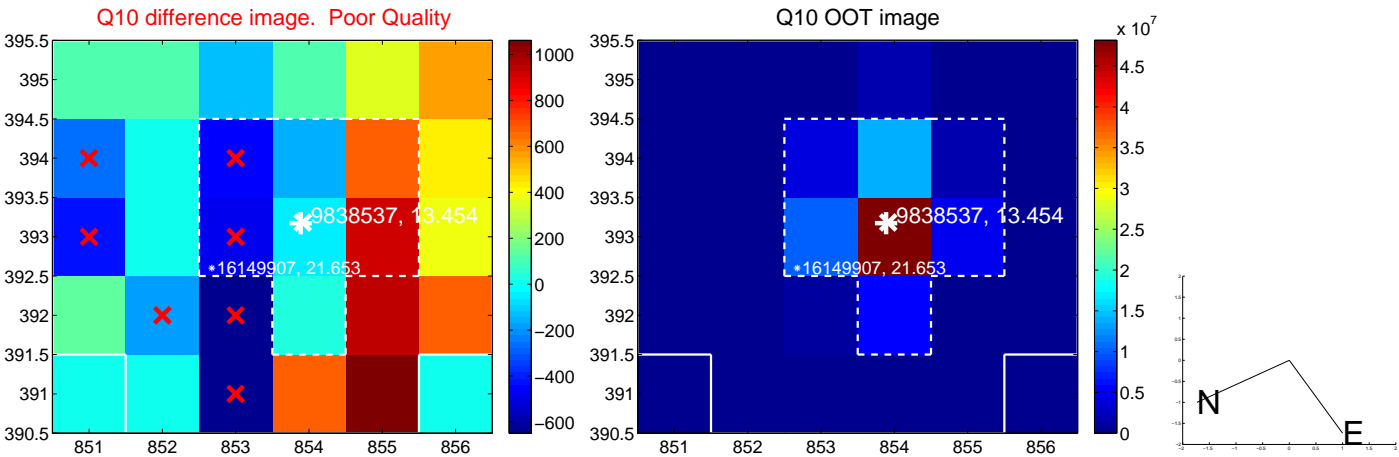
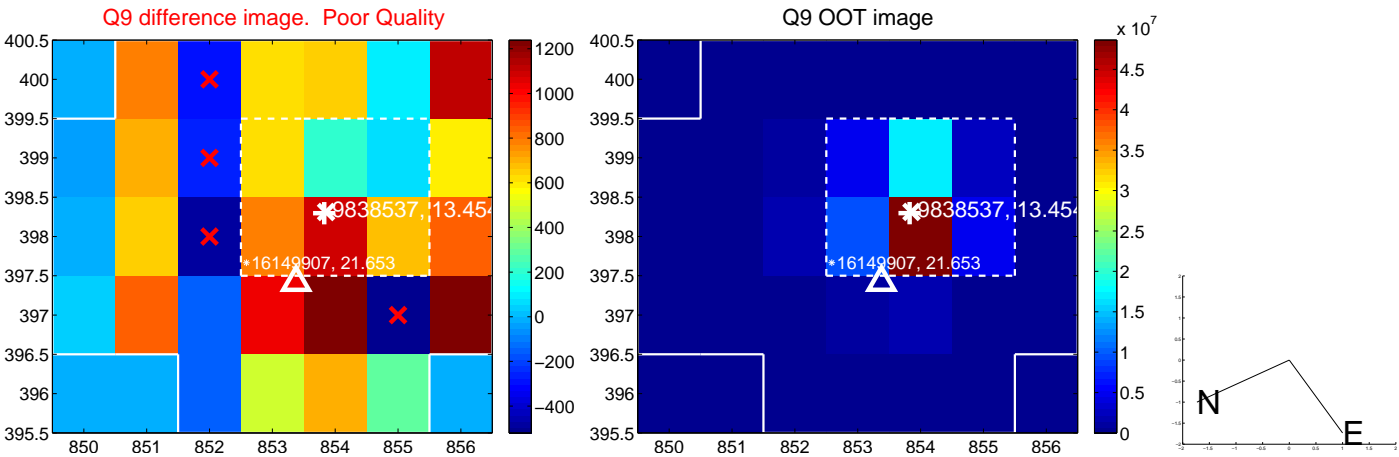
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



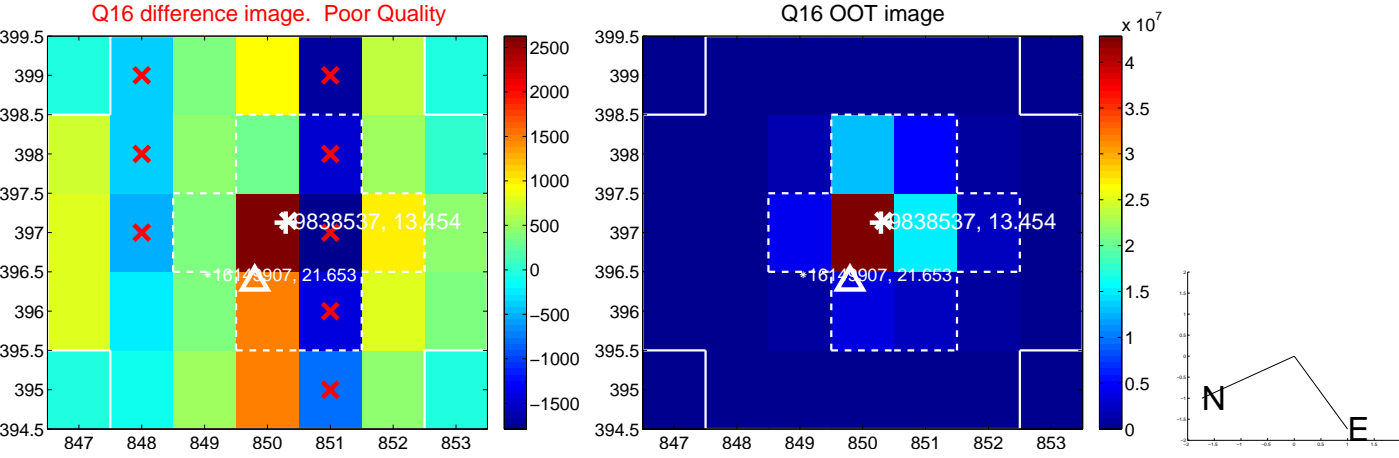
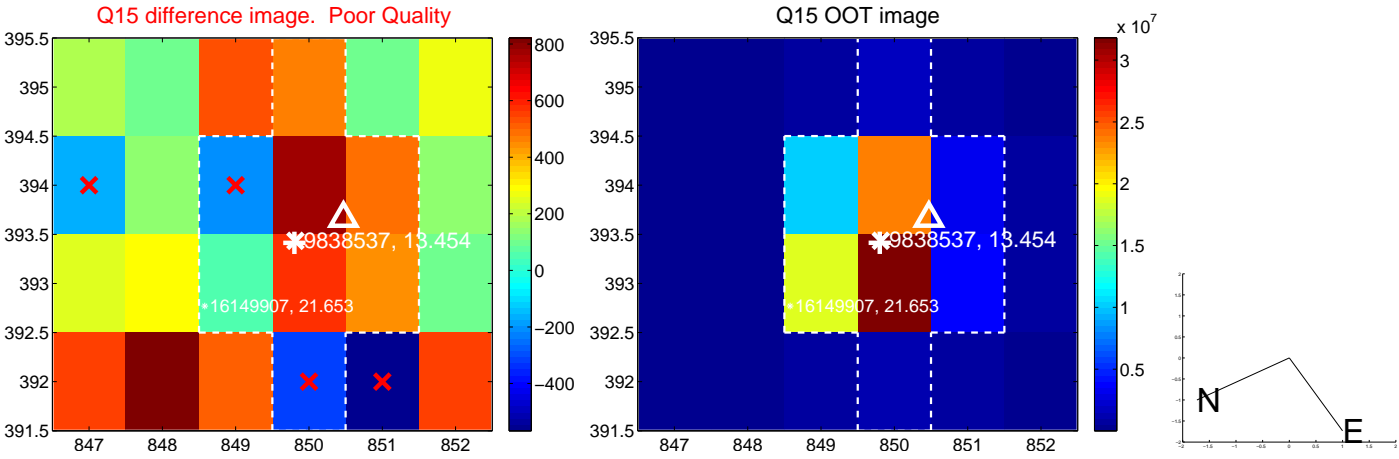
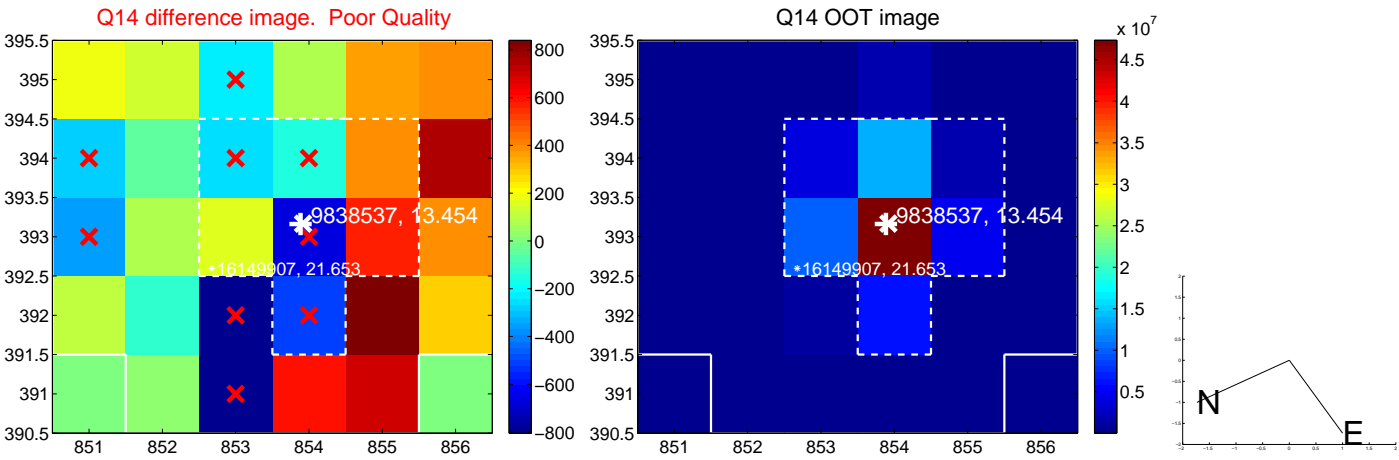
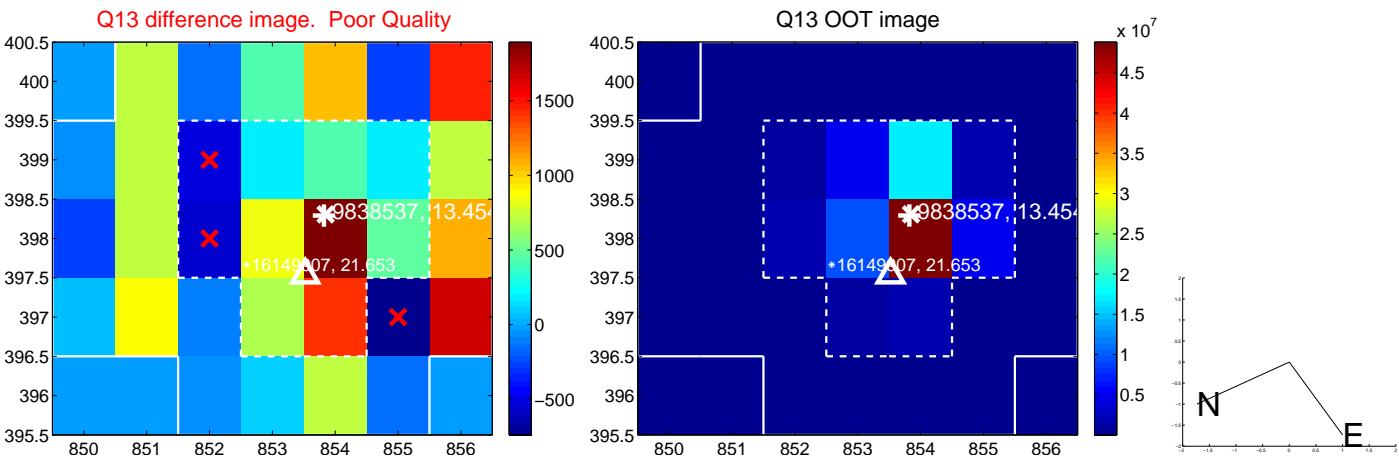
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



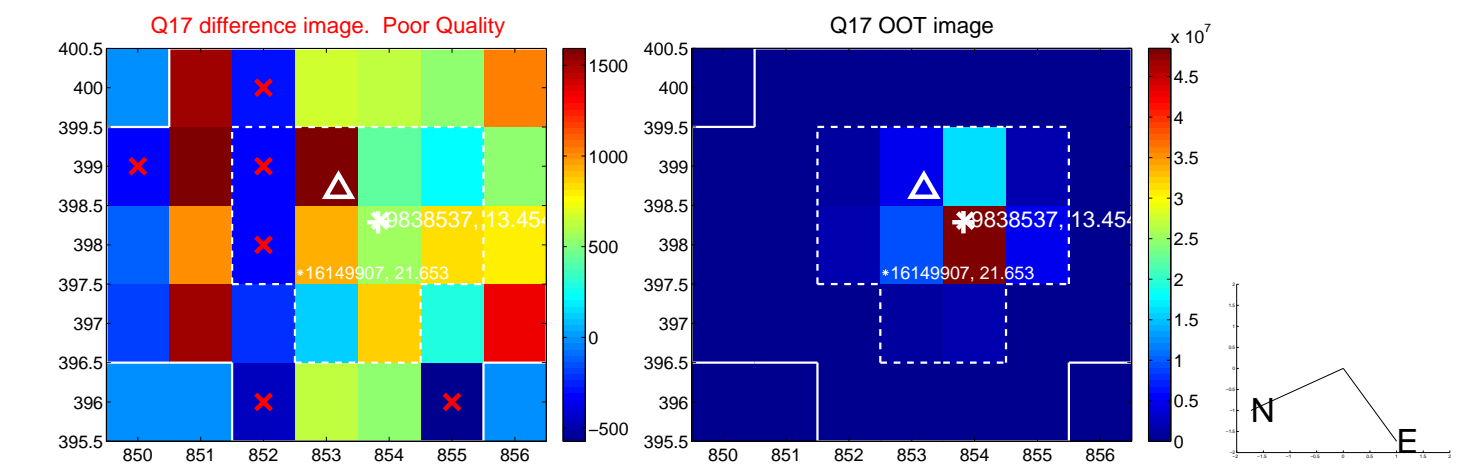
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



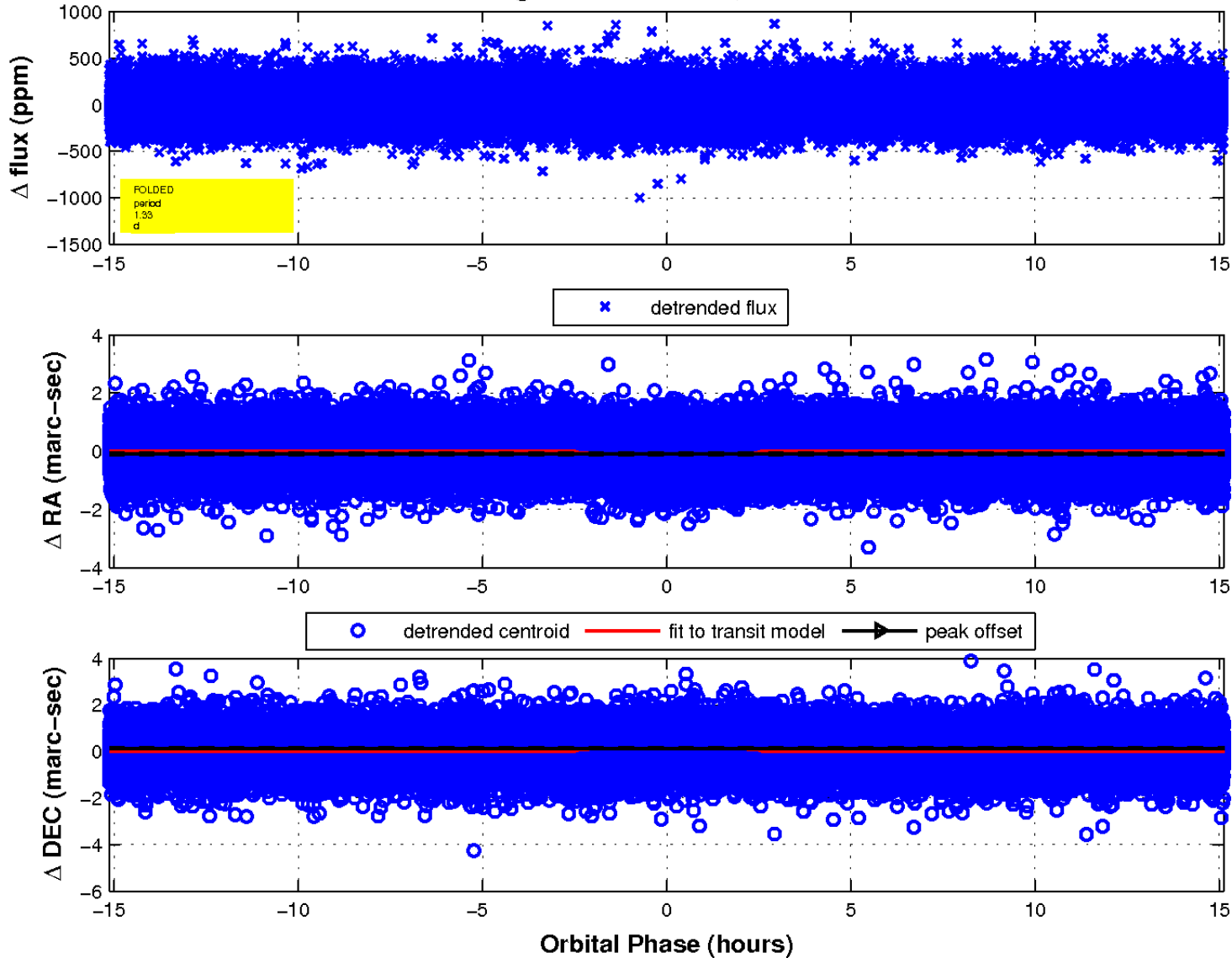
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

