

KIC 008487838

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 _⊕)
008487838-01	OBS	4596.01	0.530965	131.728146	32.6	2.274	13.3	13.5	0.94	5893	0.64	5682.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008487838-01	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.

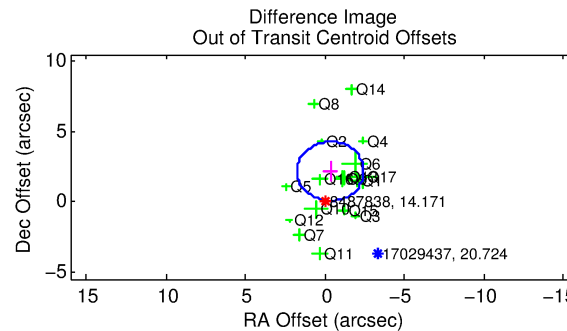
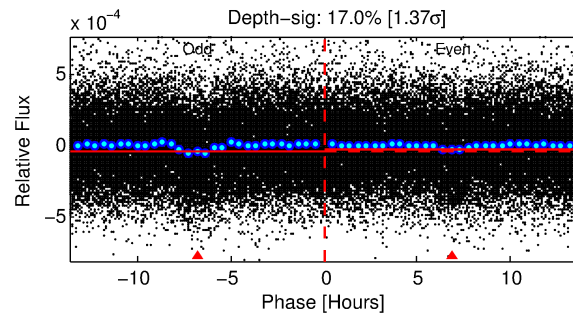
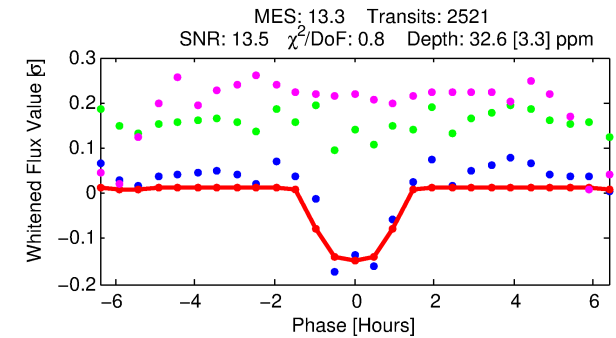
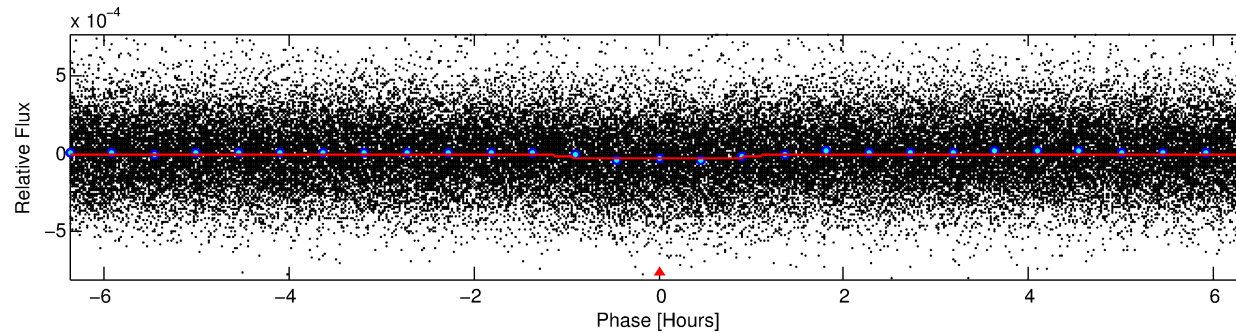
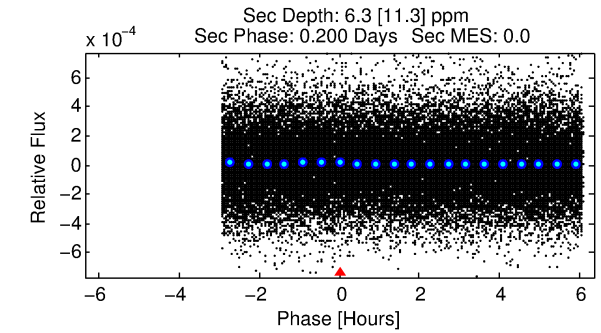
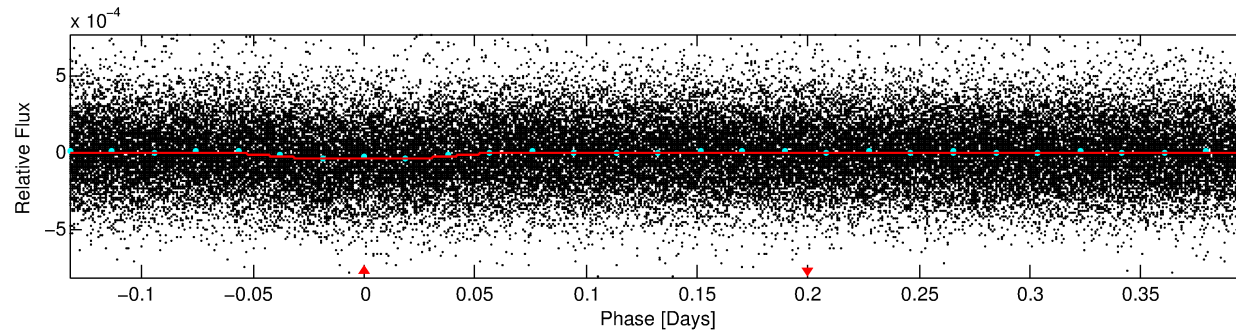
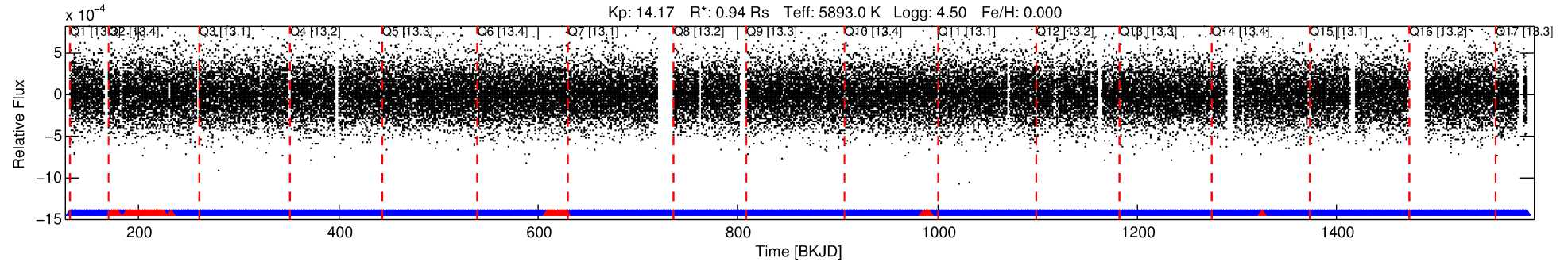
Ephemeris Match Information For 008487838-01

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
008487838-01	8487838	008552540-01	8552540	1:2	223.6	17	54	10.29	14.17	14086.00	Direct-PRF	0	1.70	0.81

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: 8487838 Candidate: 1 of 1 Period: 0.531 d
KOI: K04596 Corr: No Ephemeris Match



DV Fit Results:

Period = 0.53096 [0.00001] d
Epoch = 131.7281 [0.0022] BKJD
Rp/R* = 0.0062 [0.0028]
a/R* = 1.23 [0.91]
b = 0.90 [0.45]
Seff = 5682.58 [2181.09]
Teq = 2214 [212] K
Rp = 0.64 [0.33] Re
a = 0.0130 [0.0032] AU
Ag = 1.42 [2.90] [0.15σ]
Teffp = 3739 [1876] K [0.81σ]

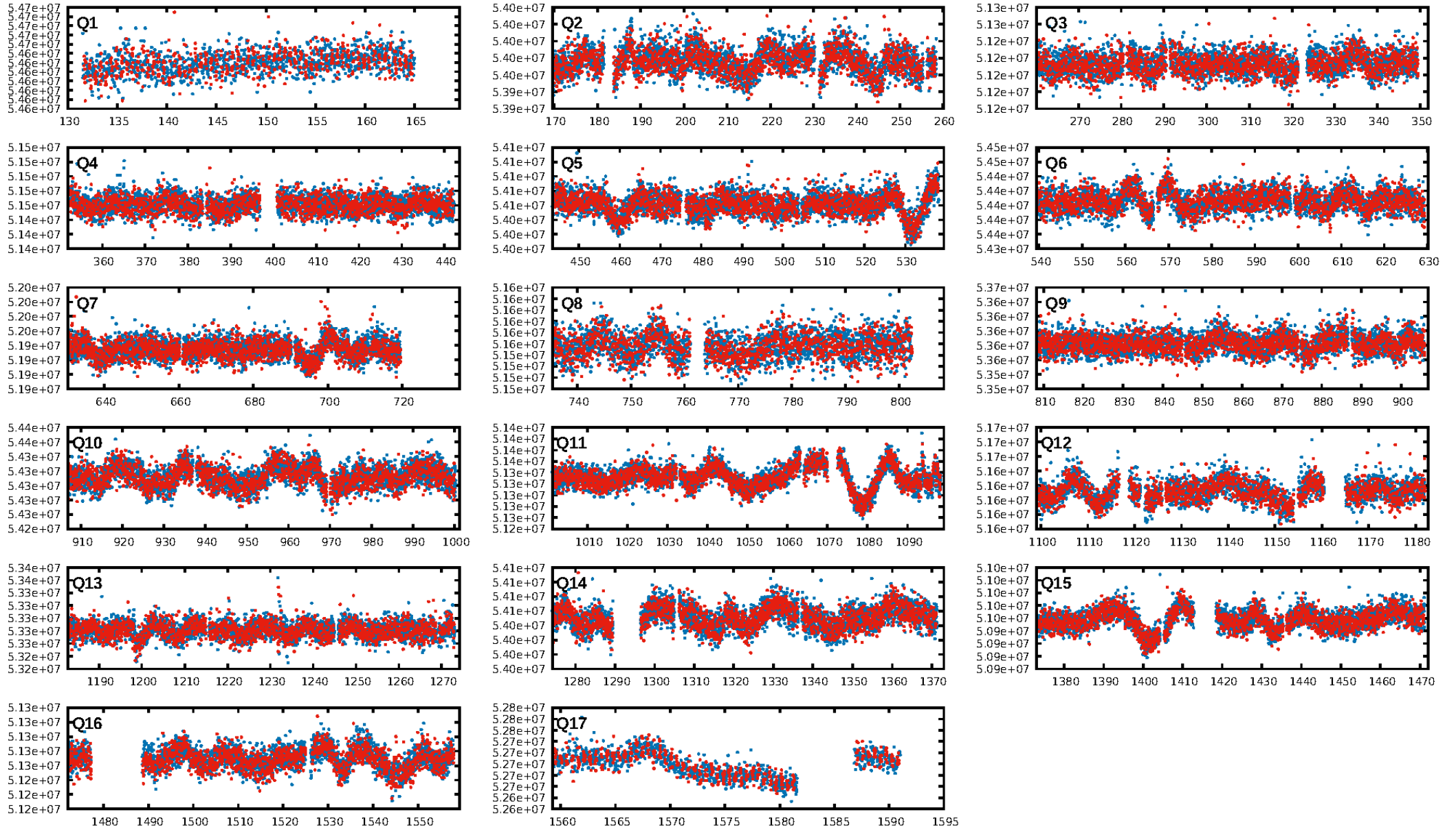
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 8.24e-36
RollingBand-fgt: 0.96 [2301/2408]
GhostDiagnostic-chr: -0.1765
Centroid-sig: 79.7%
Centroid-so: 0.461 arcsec [0.47σ]
OotOffset-rm: 2.205 arcsec [3.15σ]
KicOffset-rm: 2.295 arcsec [3.04σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.12 [2/17]
DiffImageOverlap-fno: 1.00 [17/17]

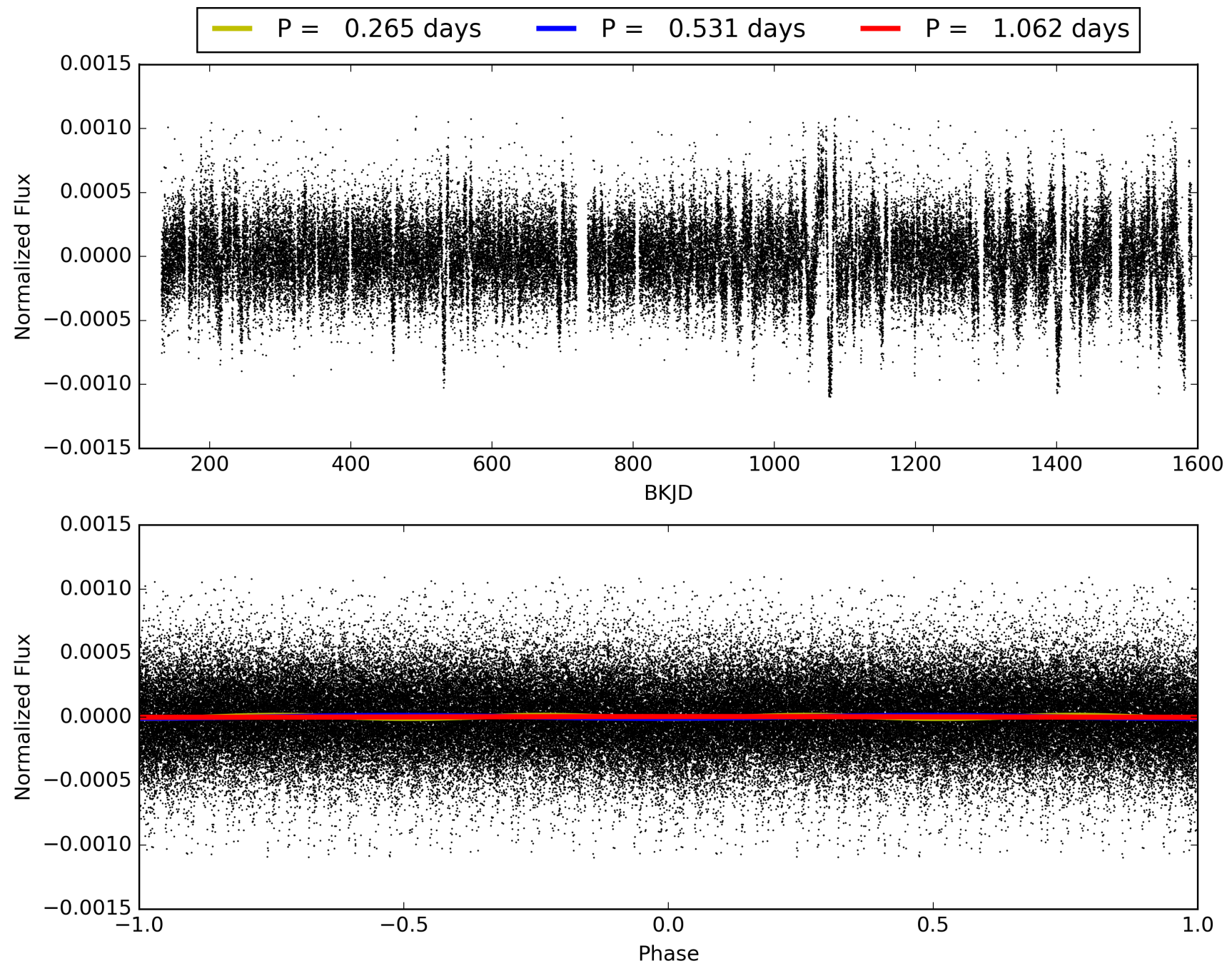
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:38:40 Z

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

TCE 008487838-01, PDC Light Curves

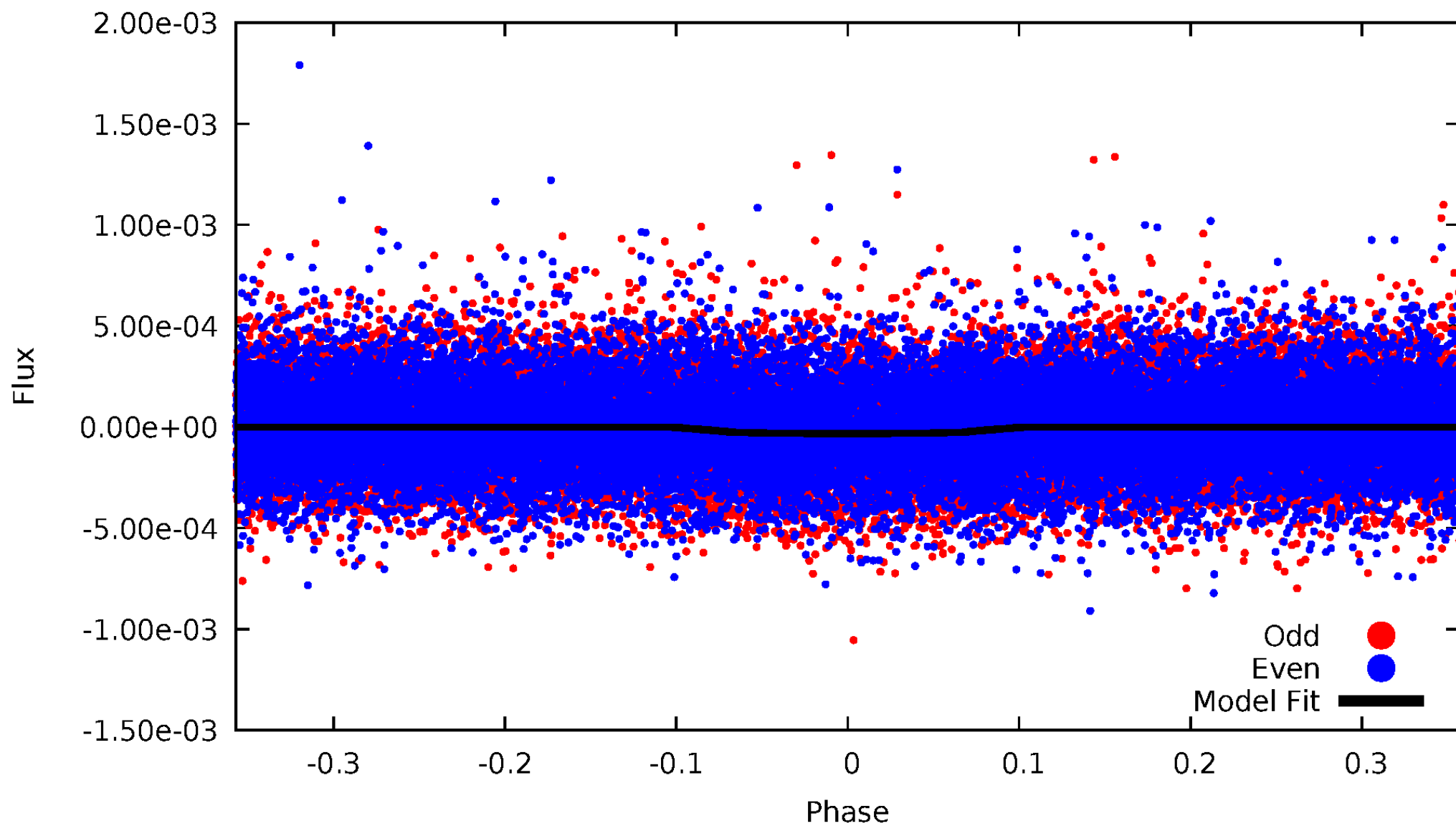


TCE 008487838-01



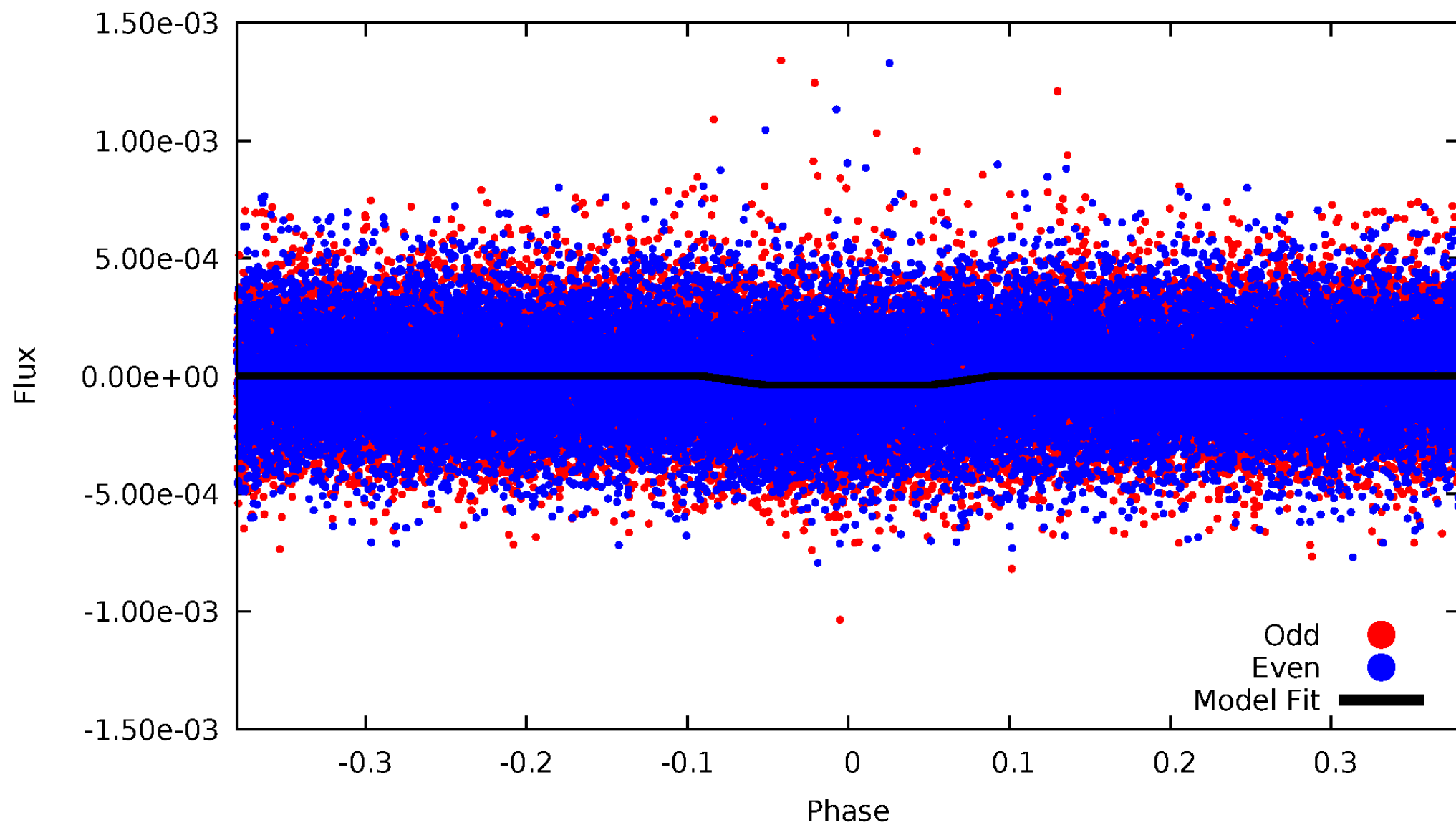
DV Odd/Even

TCE 008487838-01



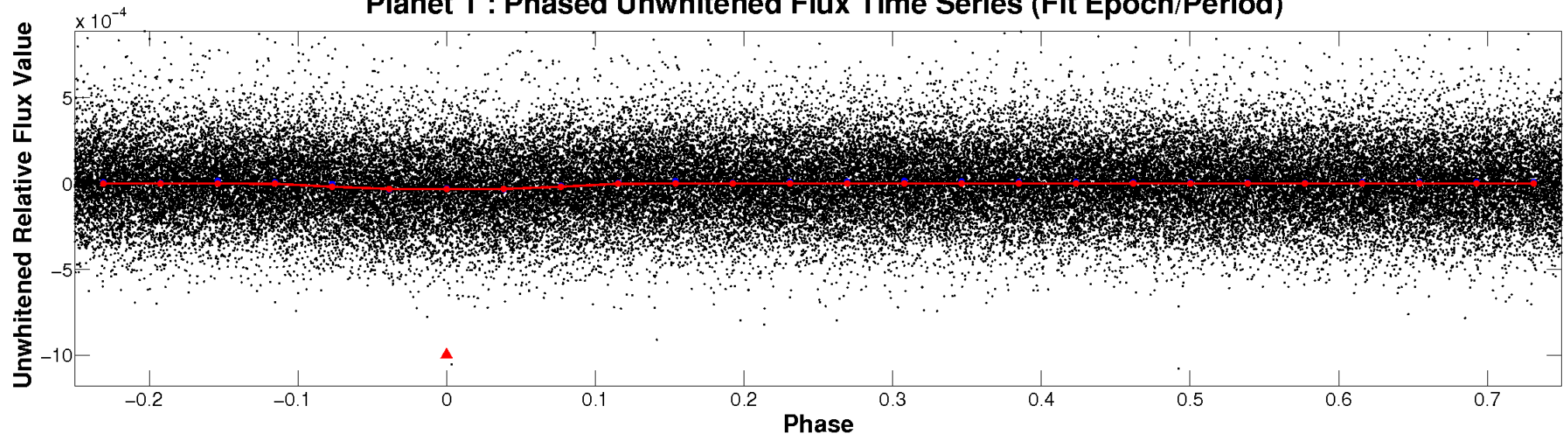
ALT Odd/Even

TCE 008487838-01

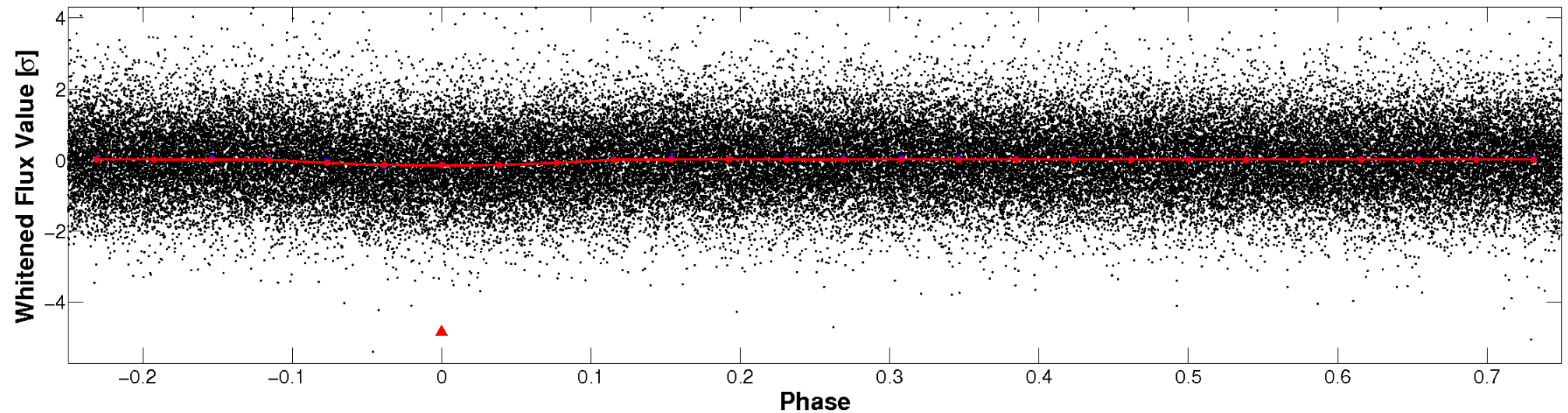


Non-Whitened Vs. Whitened Light Curve

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

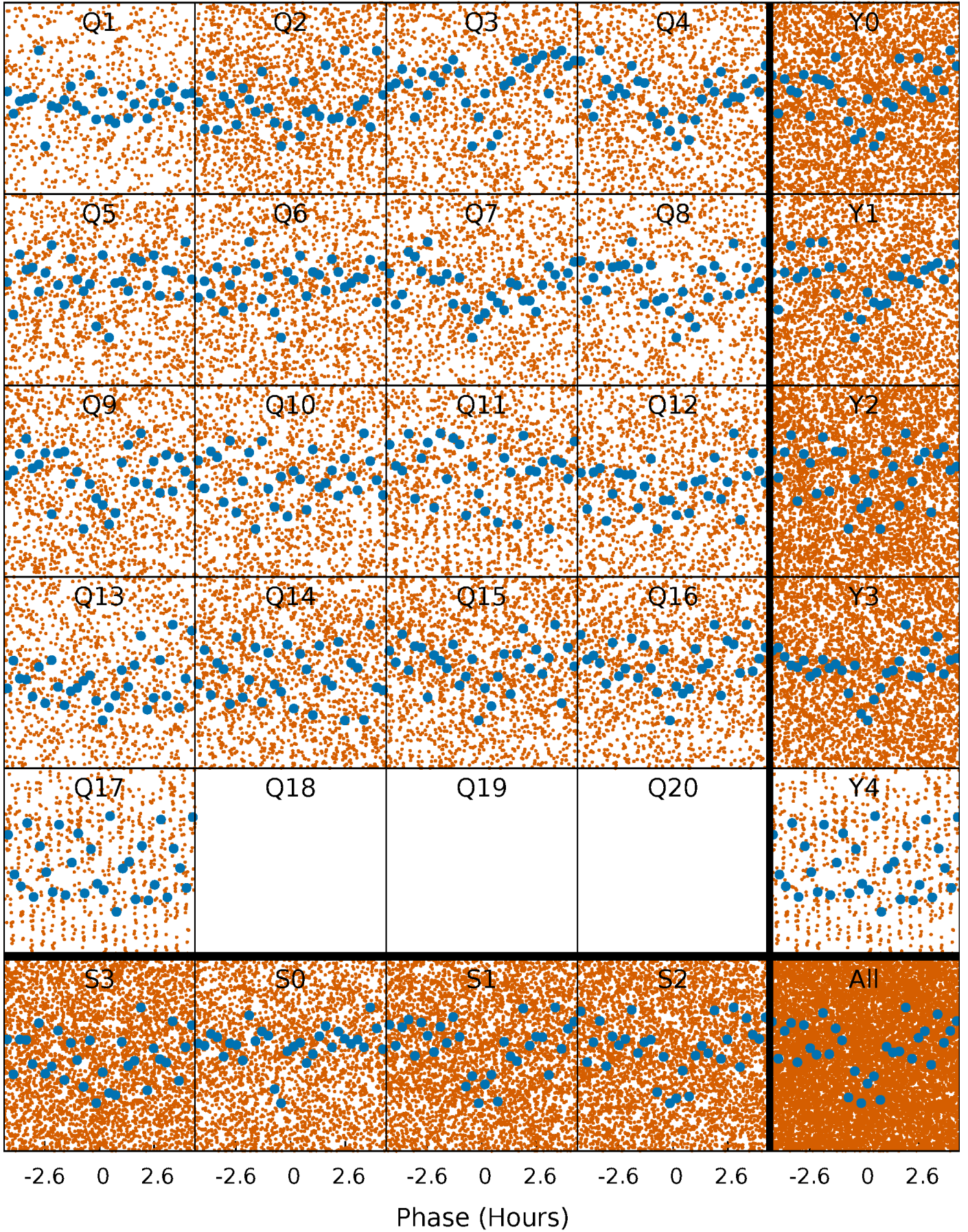


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



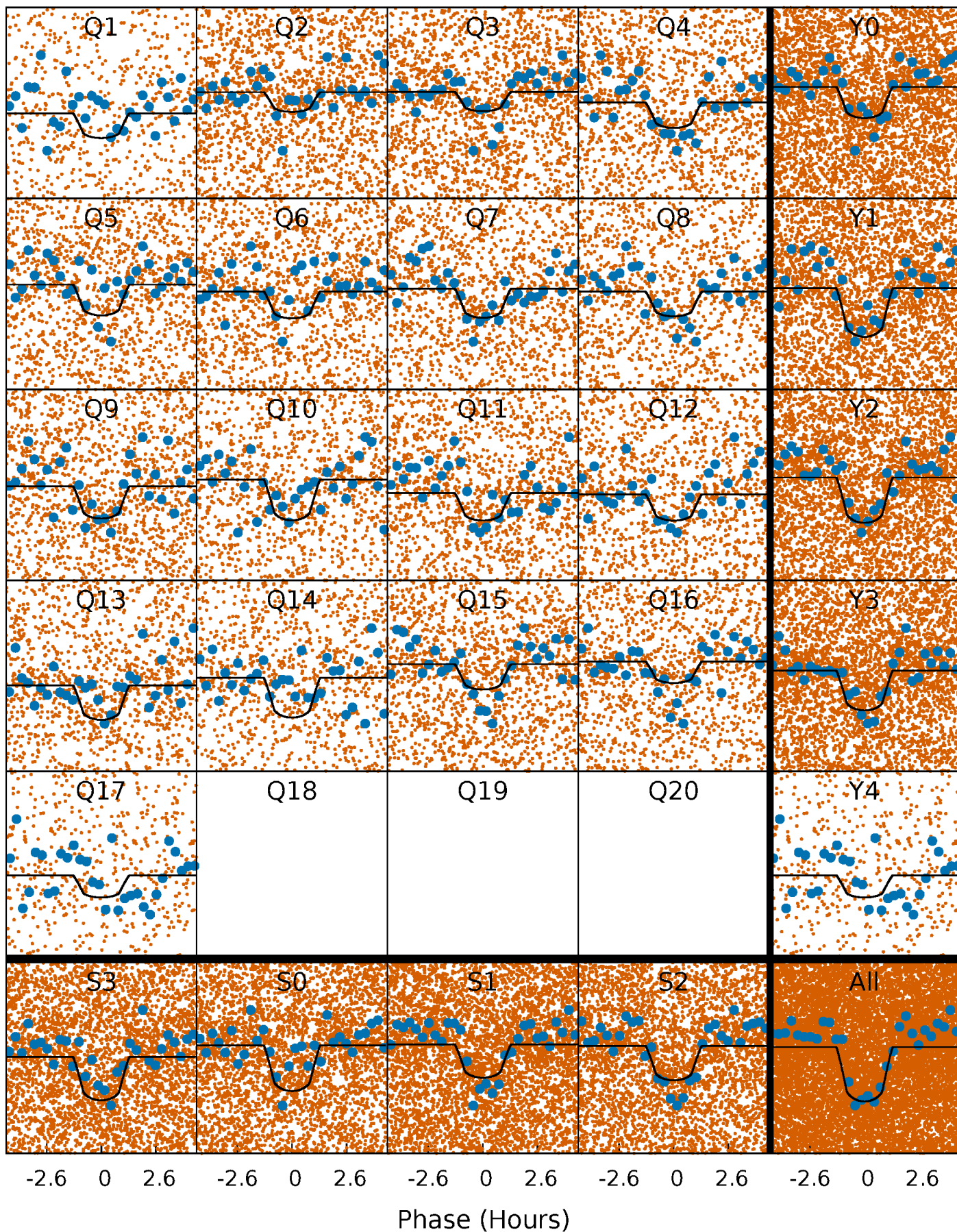
PDC Quarter-Phased Transit Curves

TCE 008487838-01 P= 0.530965 Days $T_0=131.728146$ (BKJD)



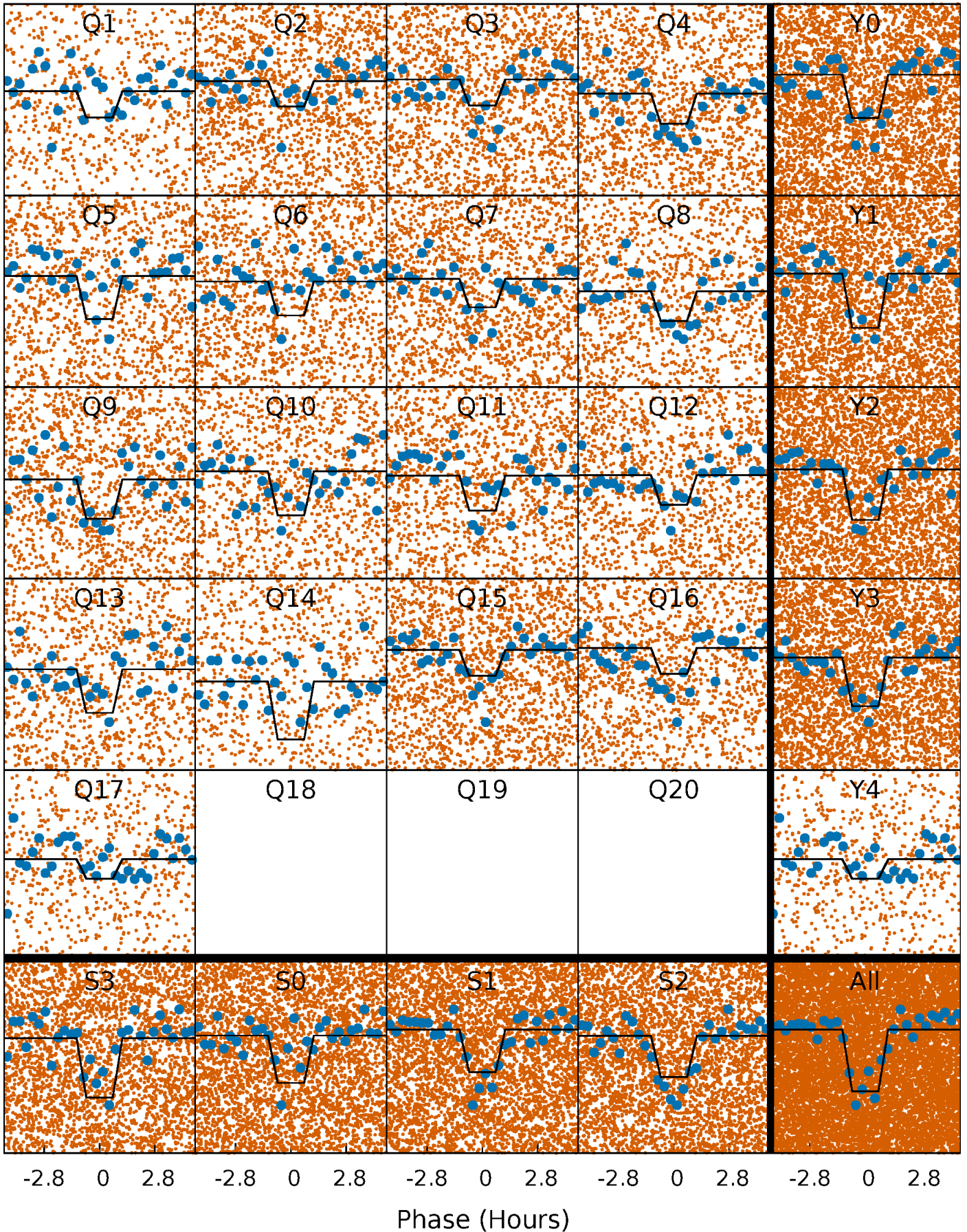
DV Quarter-Phased Transit Curves

TCE 008487838-01 P= 0.530965 Days $T_0=131.728146$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

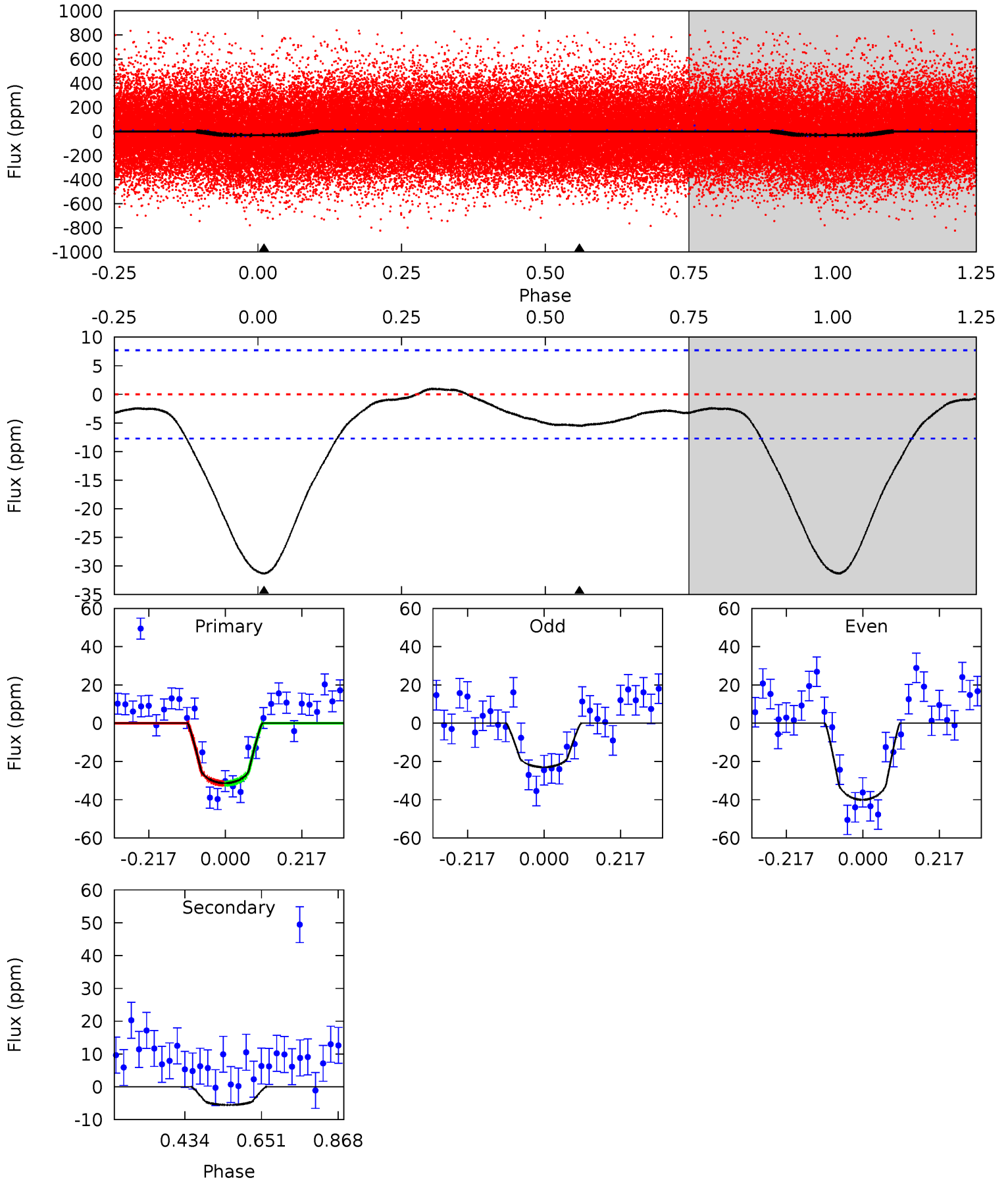
TCE 008487838-01 P= 0.530968 Days $T_0=131.726252$ (BKJD)



DV Model-Shift Uniqueness Test

008487838-01, P = 0.530965 Days, E = 131.197181 Days

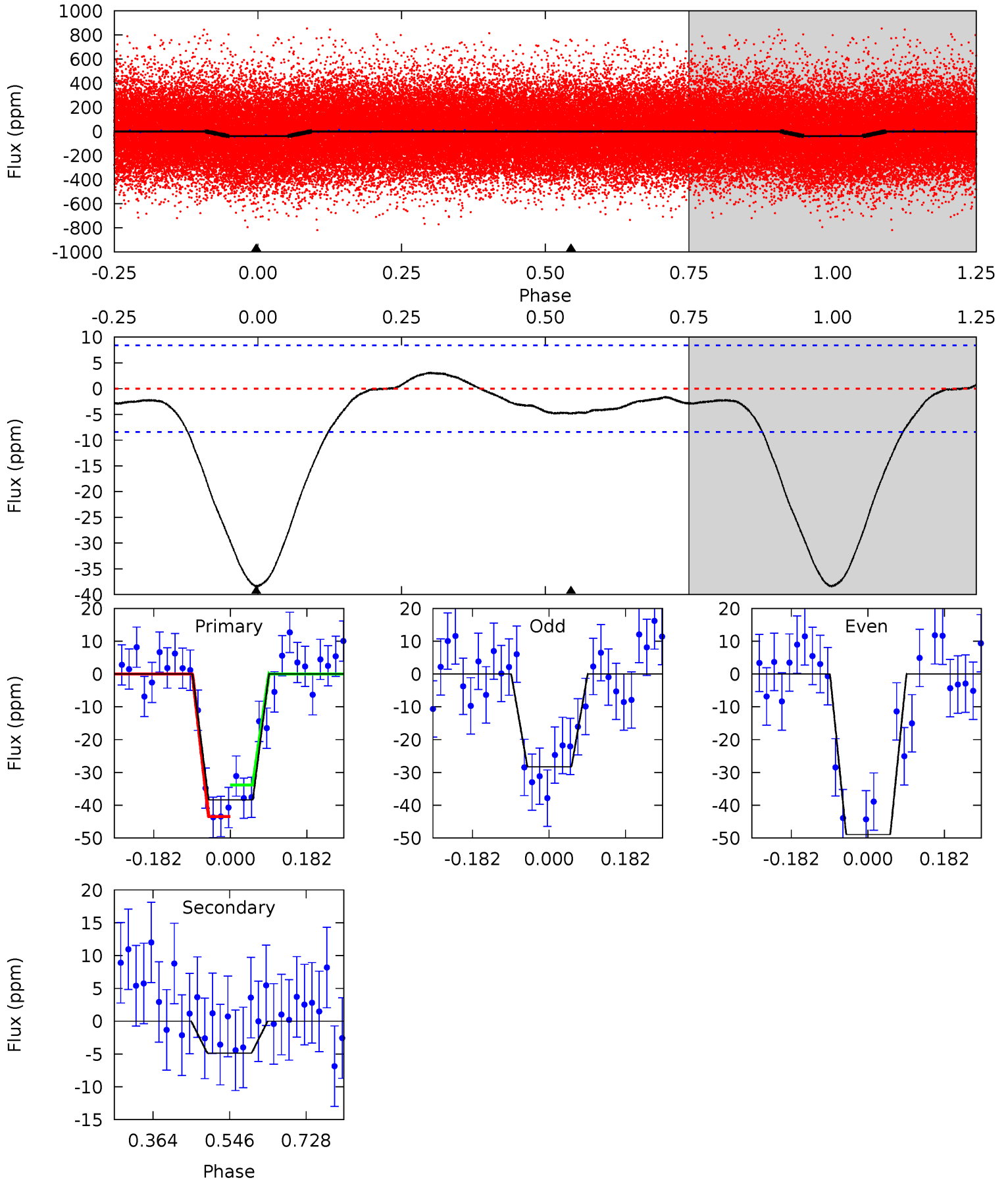
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	3.16	0	0	4.40	1.23	0.64	17.9	17.9	3.16	3.16	4.88	0.91	0.03	0.01



Alt Model-Shift Uniqueness Test

008487838-01, P = 0.530968 Days, E = 131.195284 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	2.58	0	0	4.44	1.33	1.13	20.2	20.2	2.58	2.58	5.48	0.96	0.08	0



Stellar Parameters For KIC 008487838

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5893^{+146}_{-176}	$4.505^{+0.048}_{-0.204}$	$0.000^{+0.250}_{-0.300}$	$0.941^{+0.264}_{-0.094}$	$1.033^{+0.115}_{-0.127}$	$1.748^{+0.444}_{-0.855}$
	+2%/-3%	+1%/-5%	+inf%/-inf%	+28%/-10%	+11%/-12%	+25%/-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 008487838-01 / KOI 4596.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-6 ± 2	$0.67^{+0.29}_{-0.29}$	3158^{+203}_{-146}	3762^{+1089}_{-809}	$1.142^{+2.369}_{-0.680}$
Alt.	-5 ± 2	$0.68^{+0.33}_{-0.29}$	3167^{+202}_{-144}	3566^{+1041}_{-924}	$0.915^{+1.811}_{-0.536}$

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 $A_{obs} \gg 1.0$

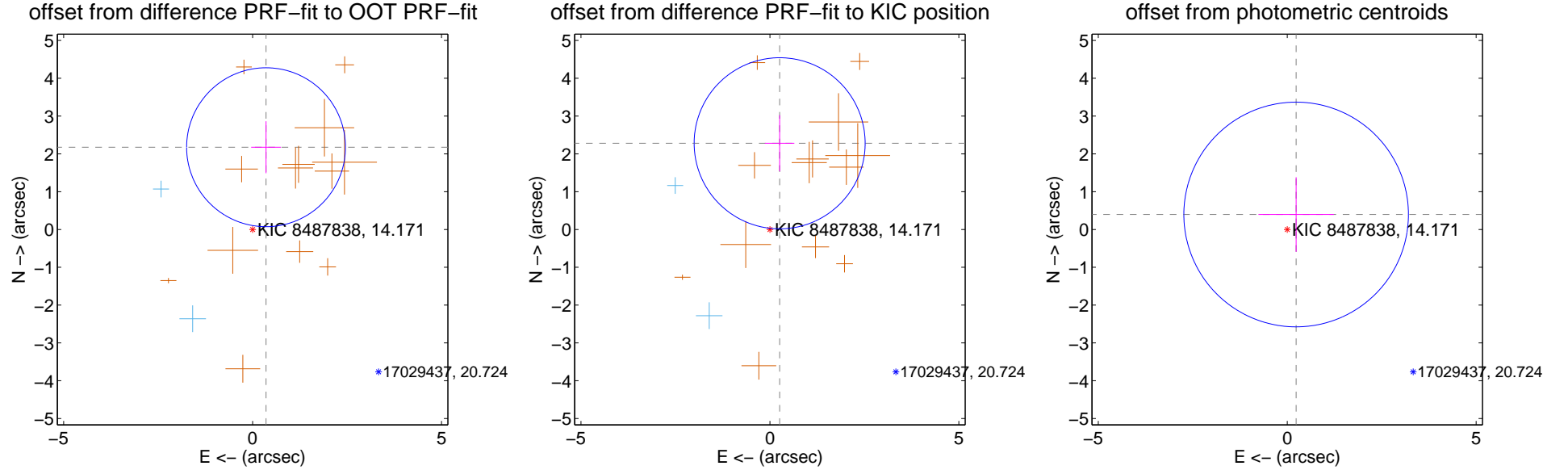
DV Centroid Data

Supplemental centroid analysis for 008487838-01. Kepler magnitude: 14.17. Transit SNR 13.47

There are 2 quarters with good PRF difference image offsets

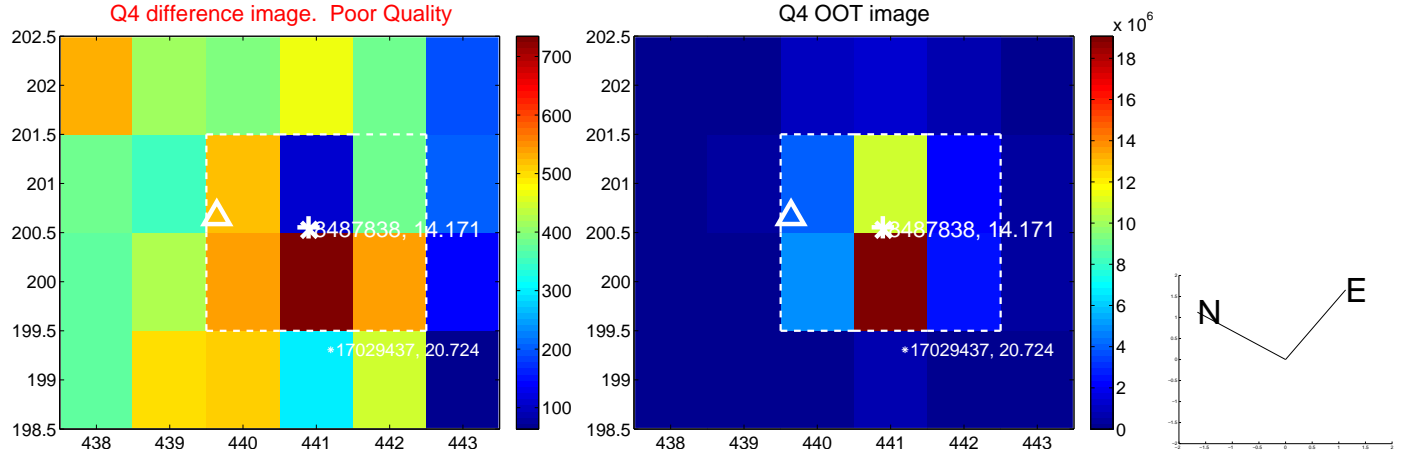
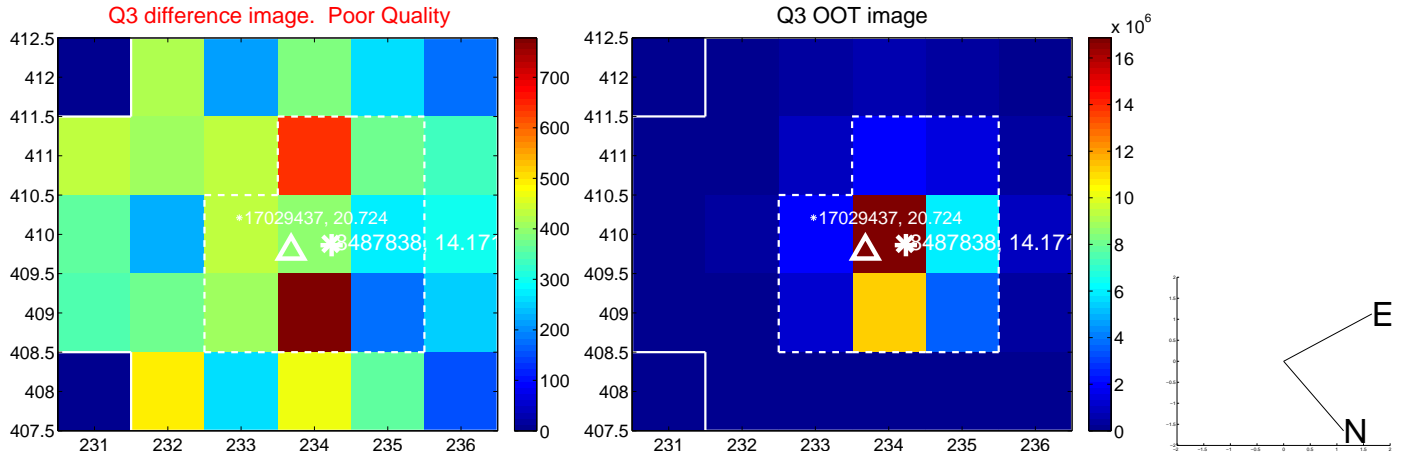
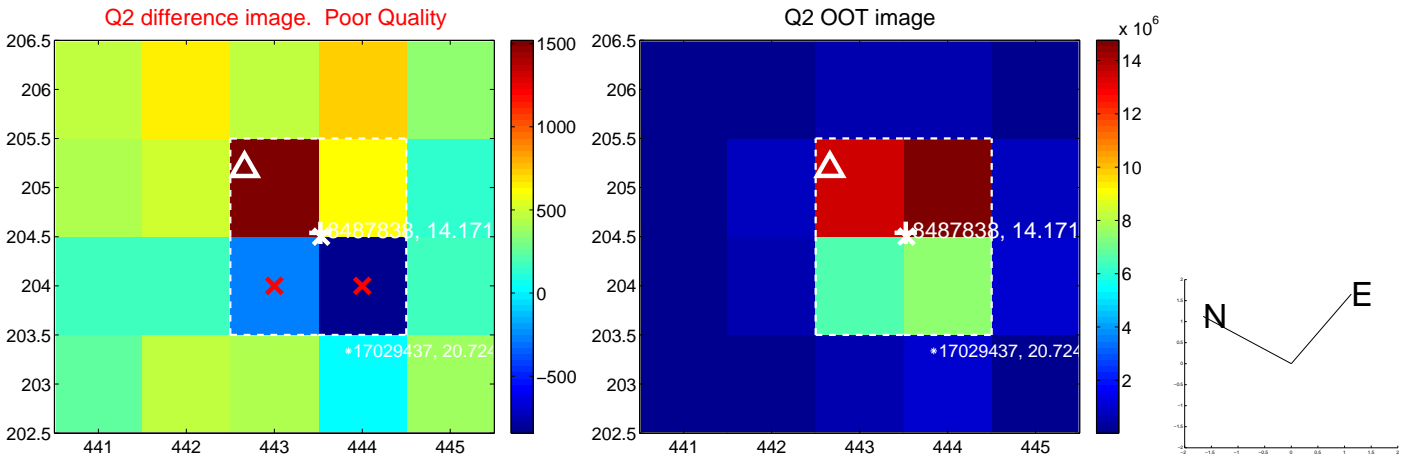
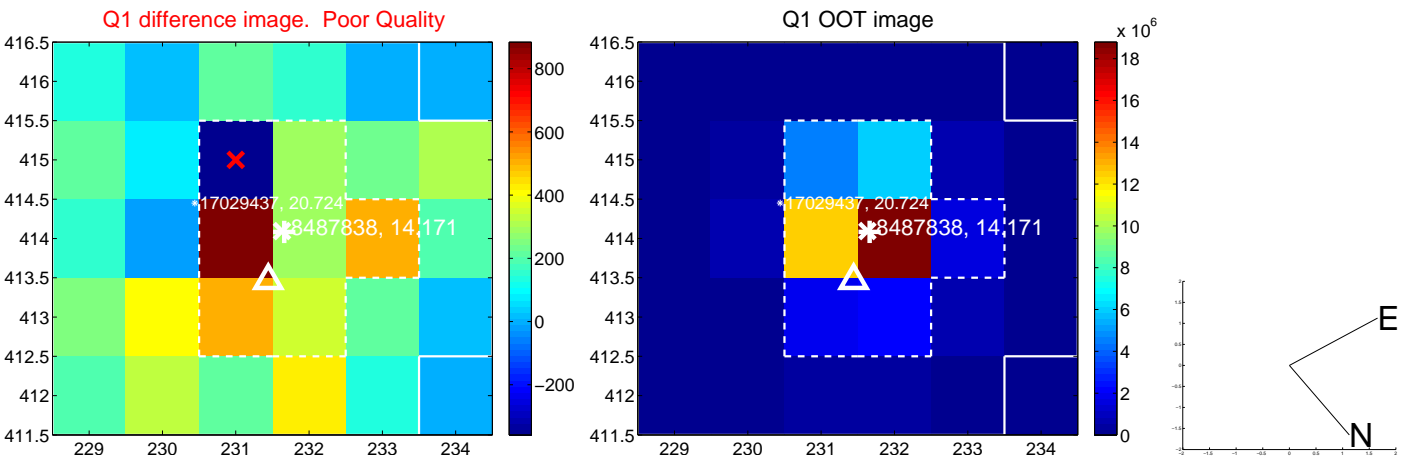
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.205 ± 0.701	3.15	-0.356 ± 0.394	2.176 ± 0.688
PRF-fit source offset from KIC position	2.295 ± 0.754	3.04	-0.258 ± 0.390	2.280 ± 0.743
photometric centroid source offset	0.46 ± 0.99	0.47	-0.24 ± 1.00	0.40 ± 0.99

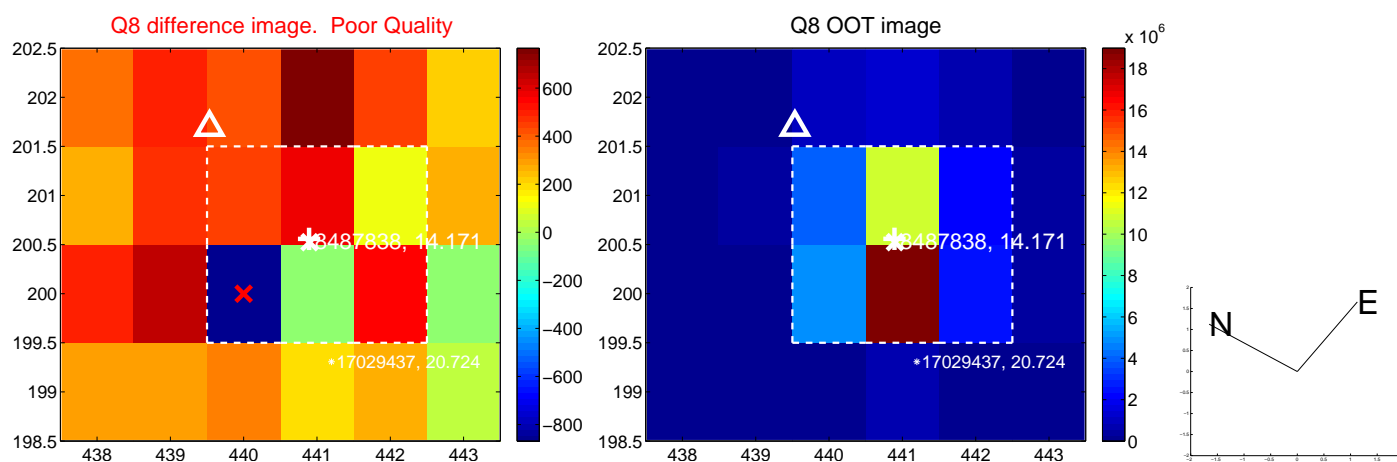
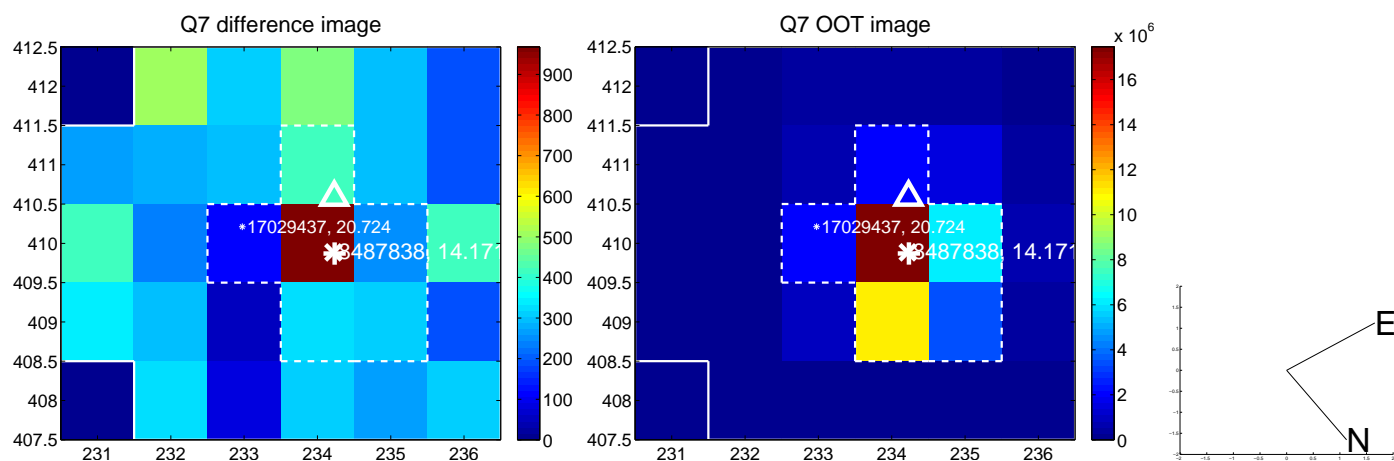
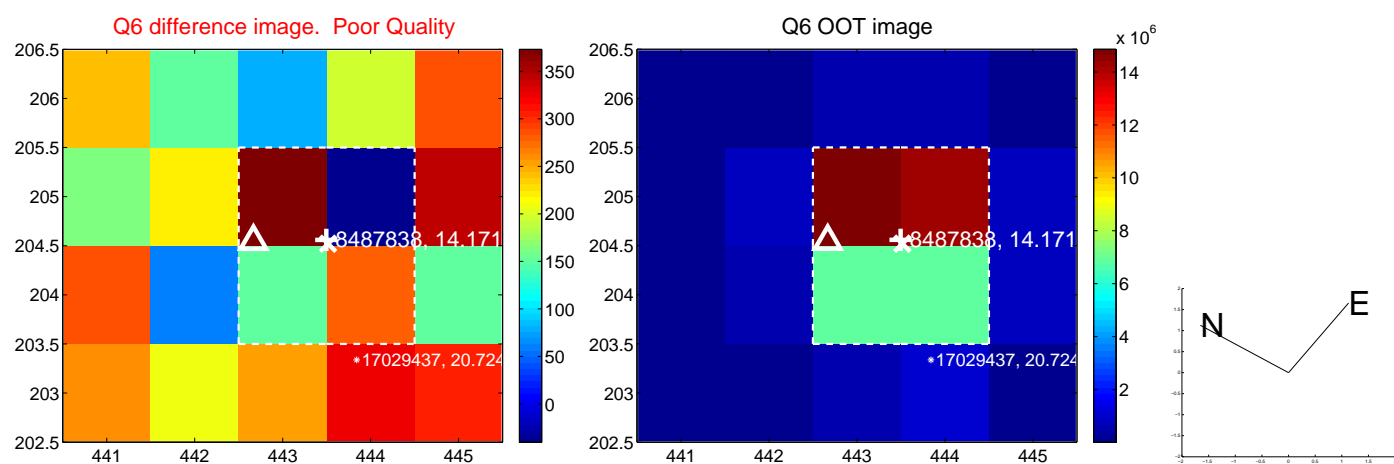
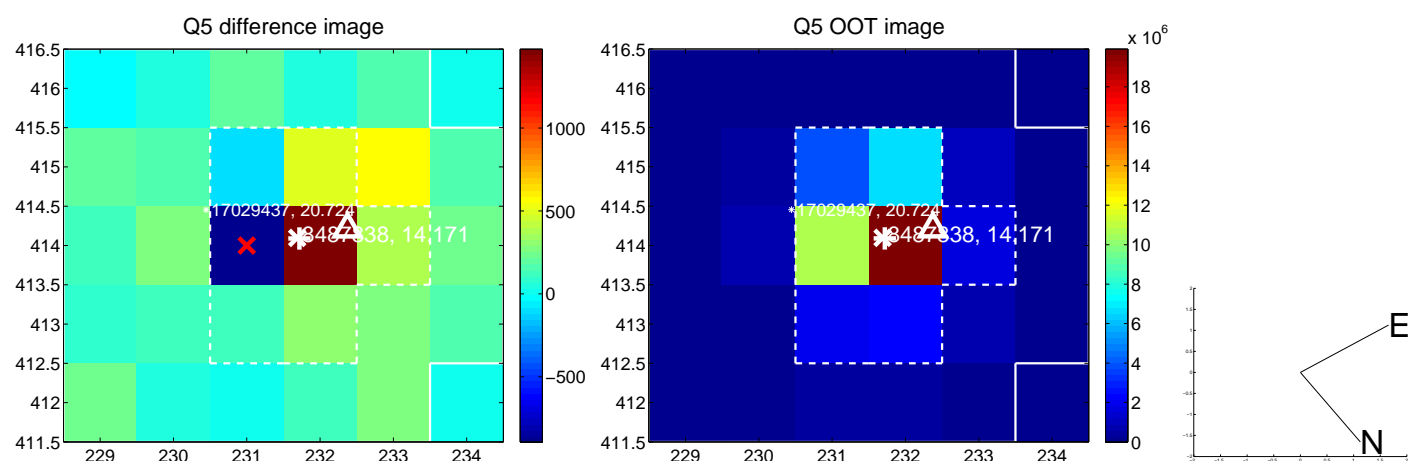


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

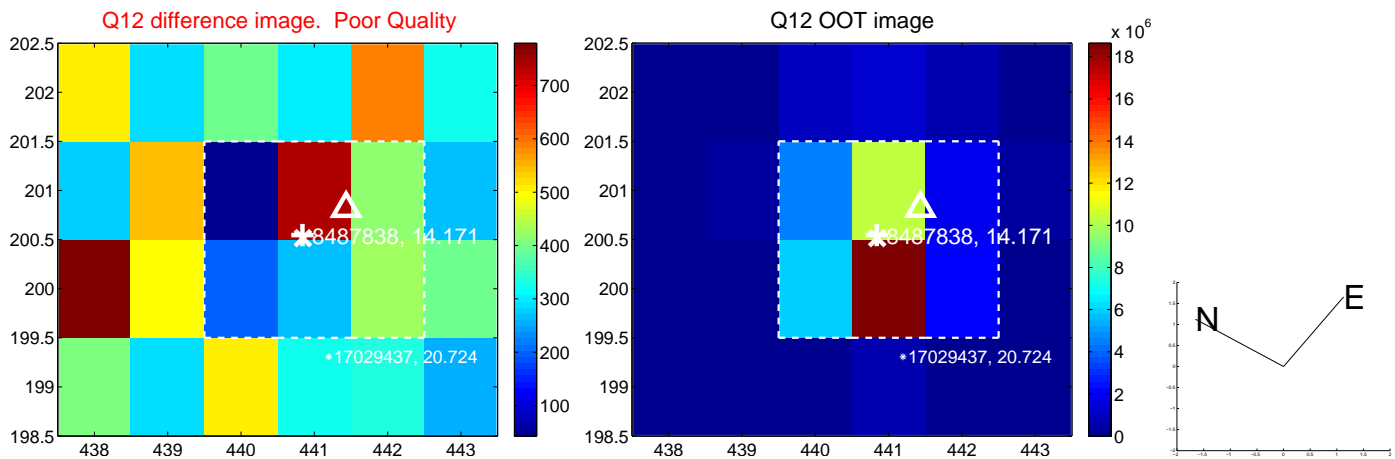
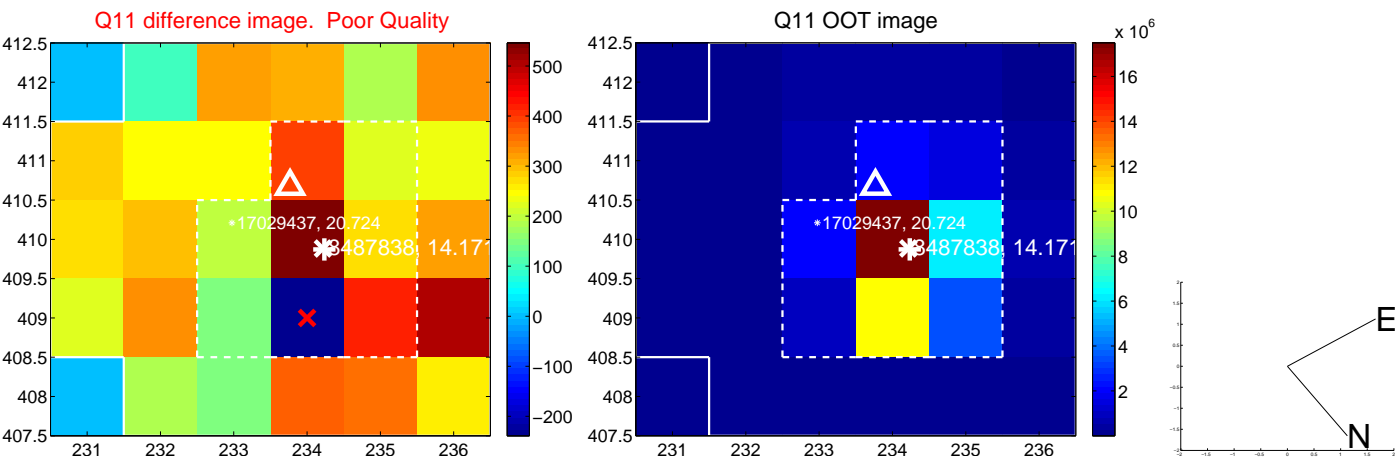
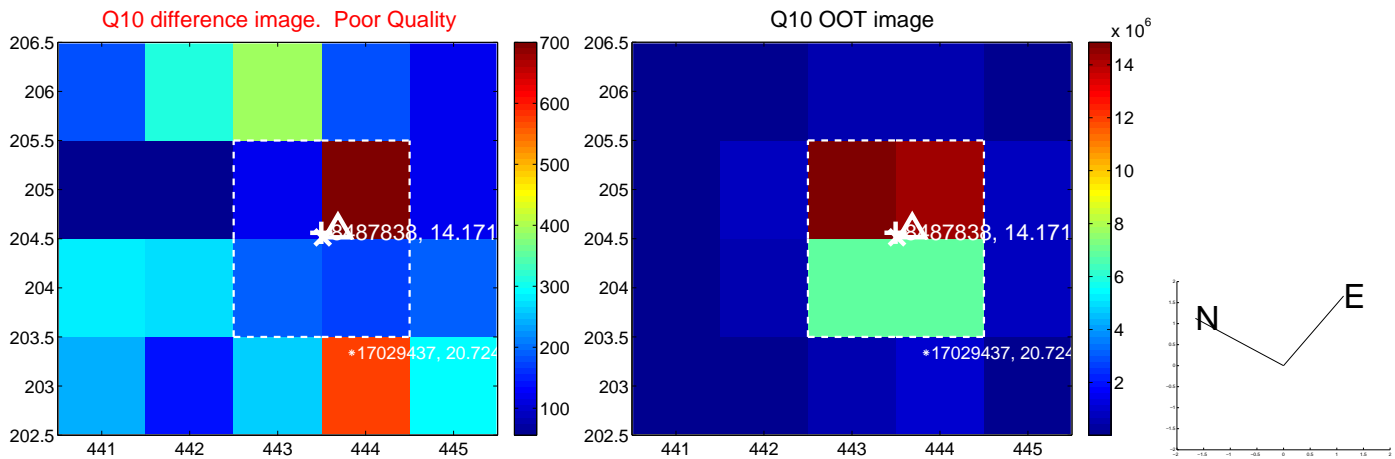
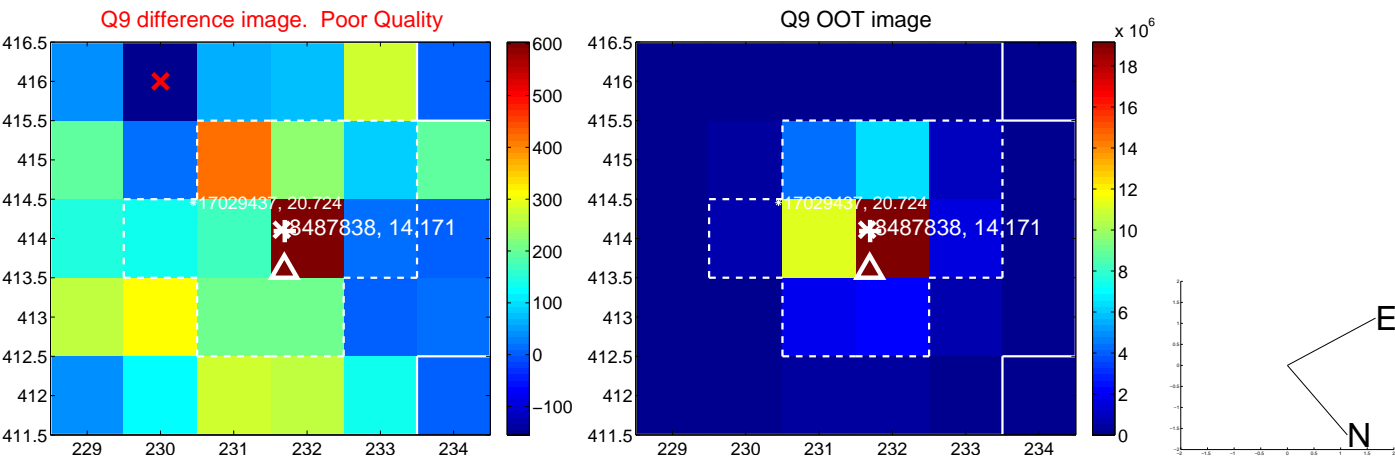
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



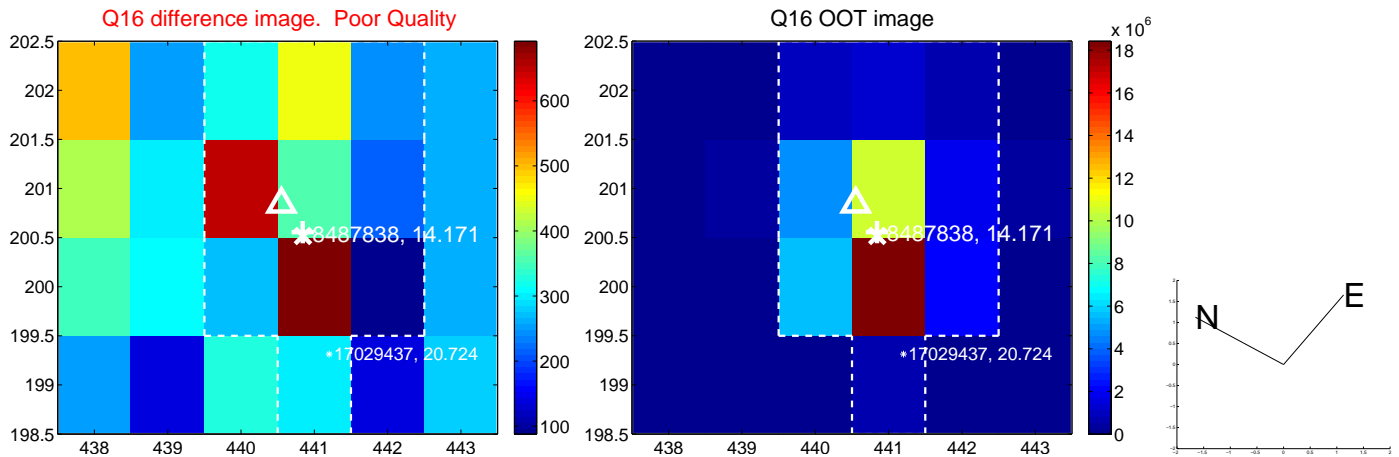
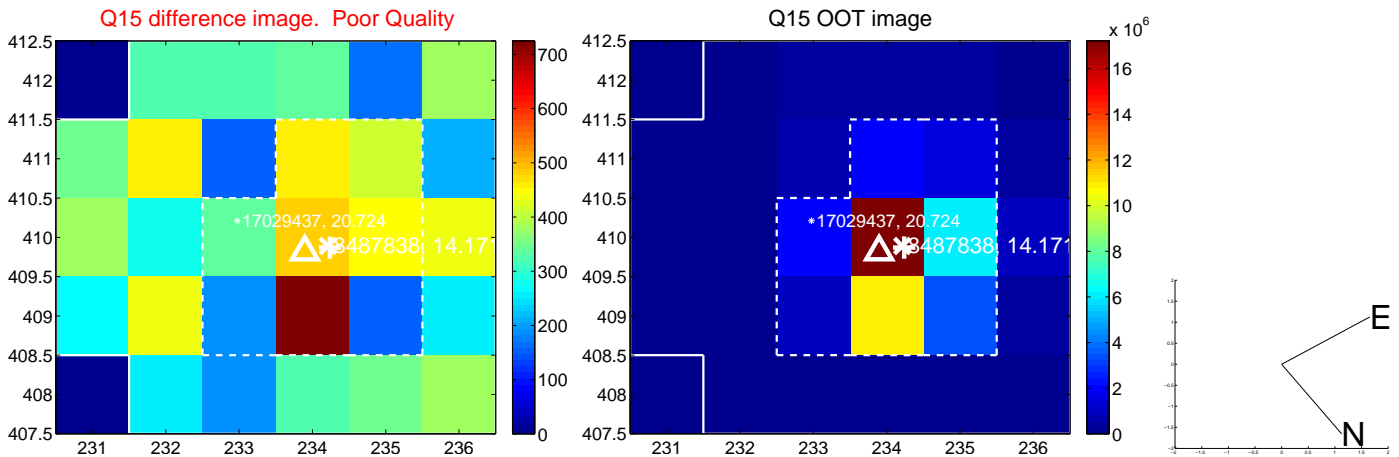
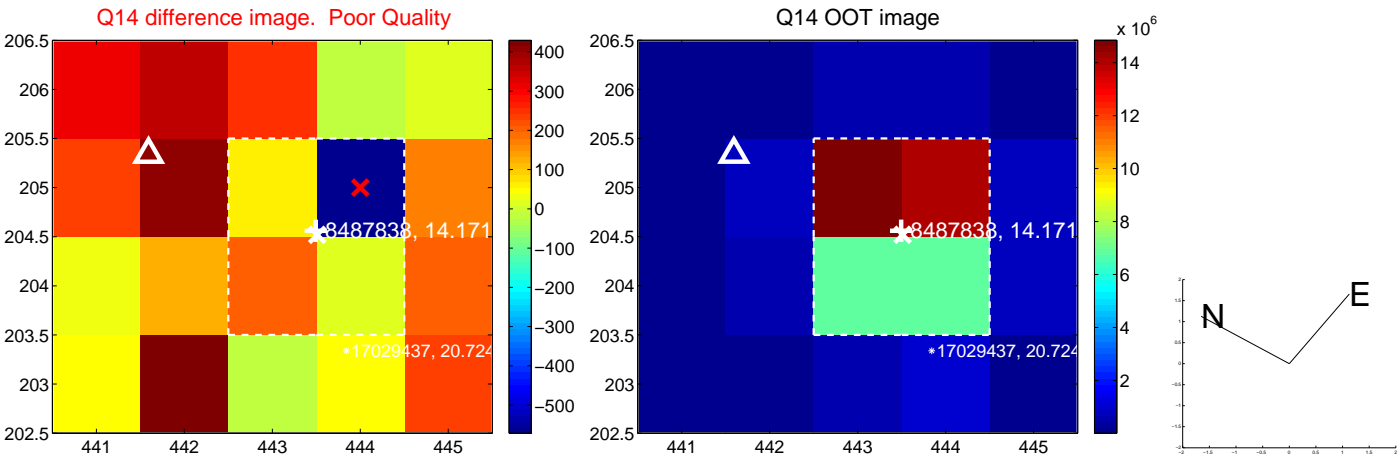
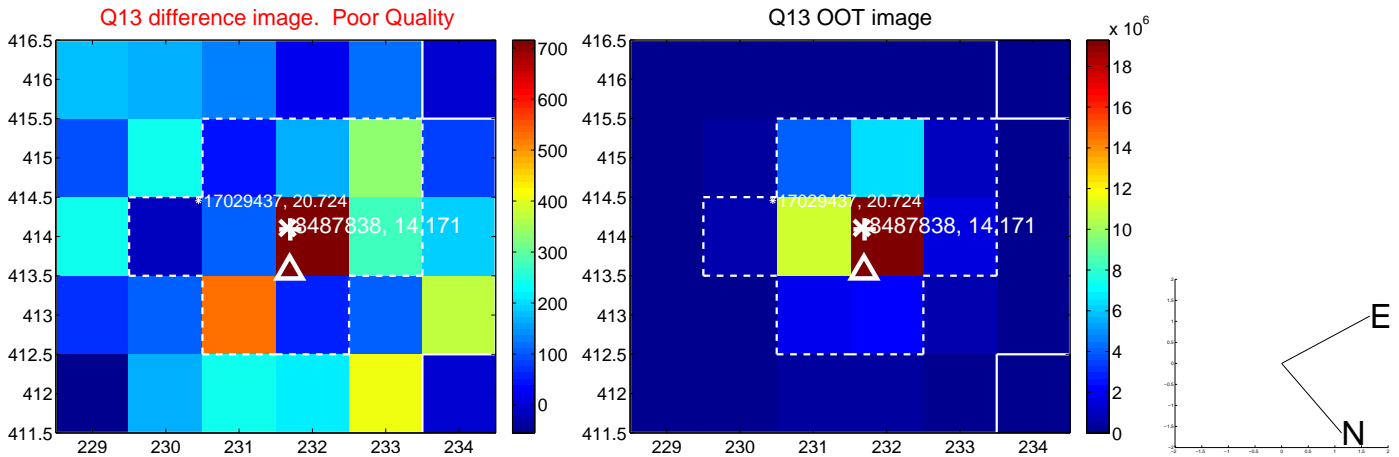
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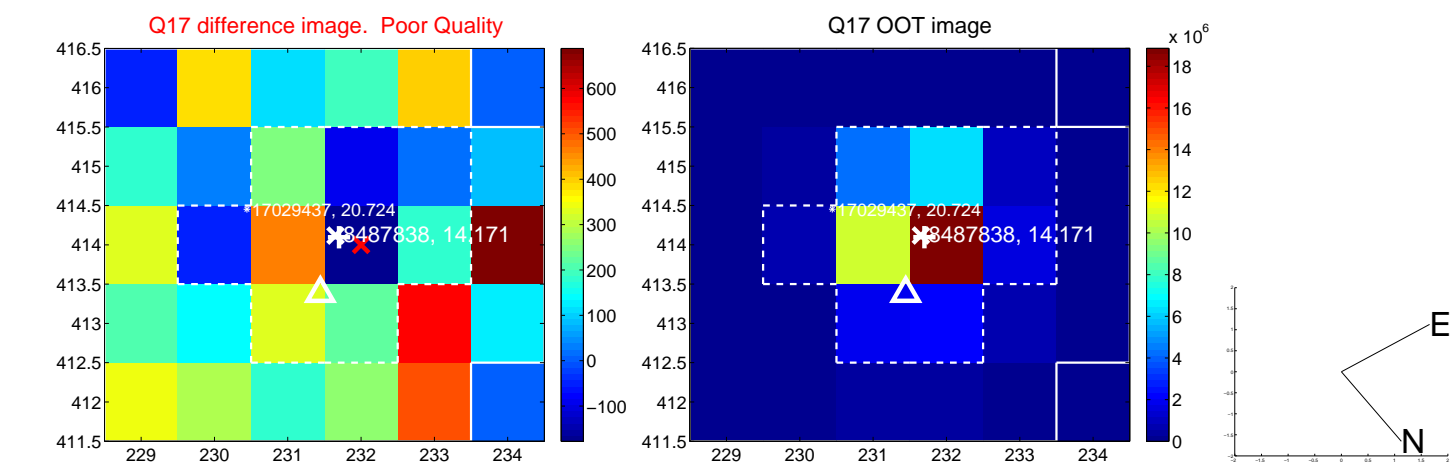
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



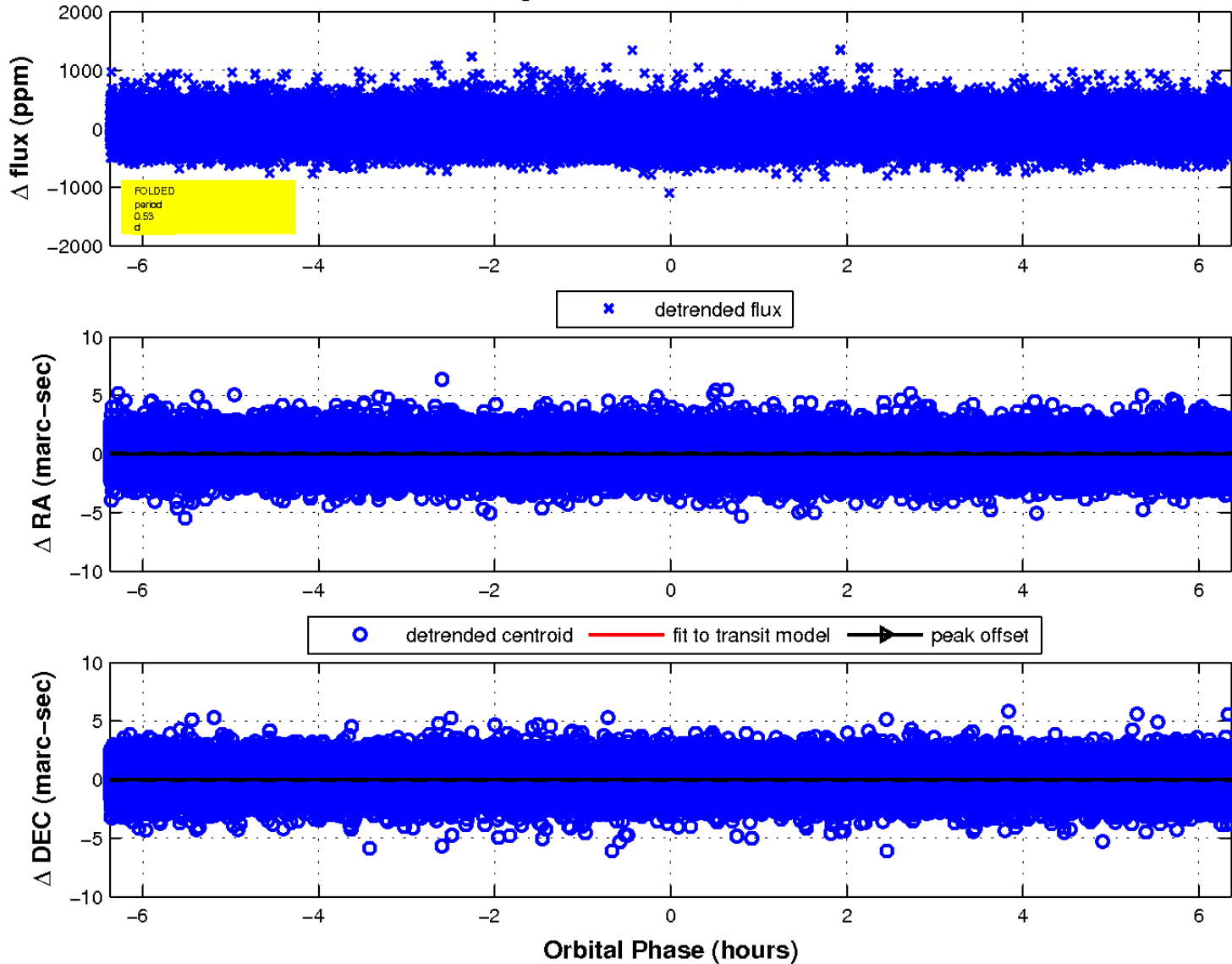
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

