

KIC 004247811

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})
004247811-01	OBS	4678.01	2.050471	133.274248	52.3	7.033	11.5	13.0	0.85	5568	0.66	761.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004247811-01	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 004247811-01

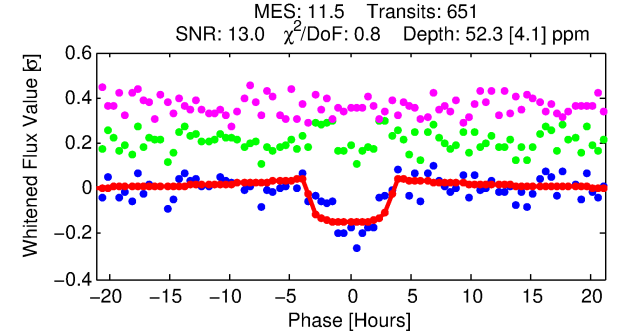
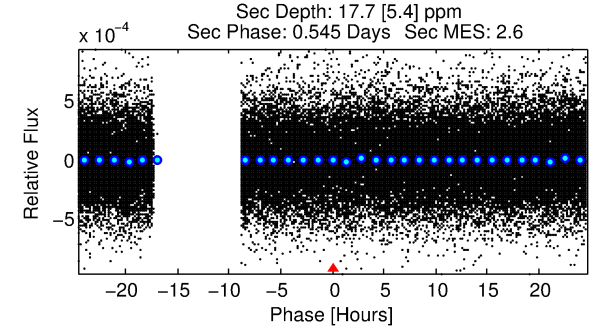
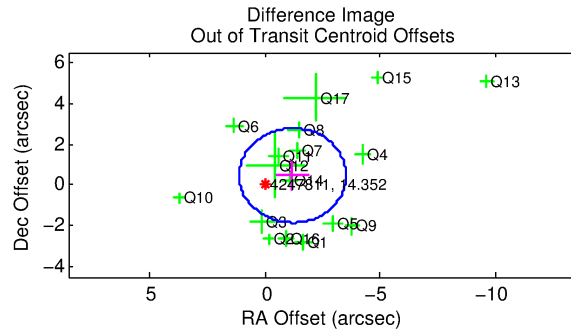
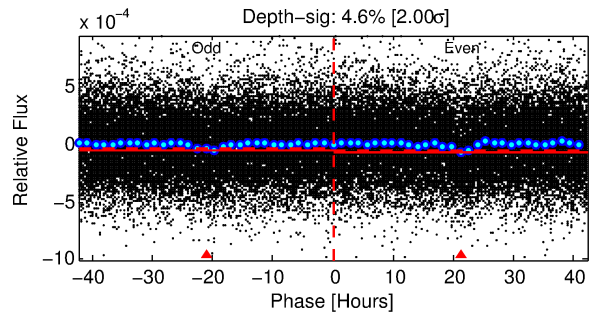
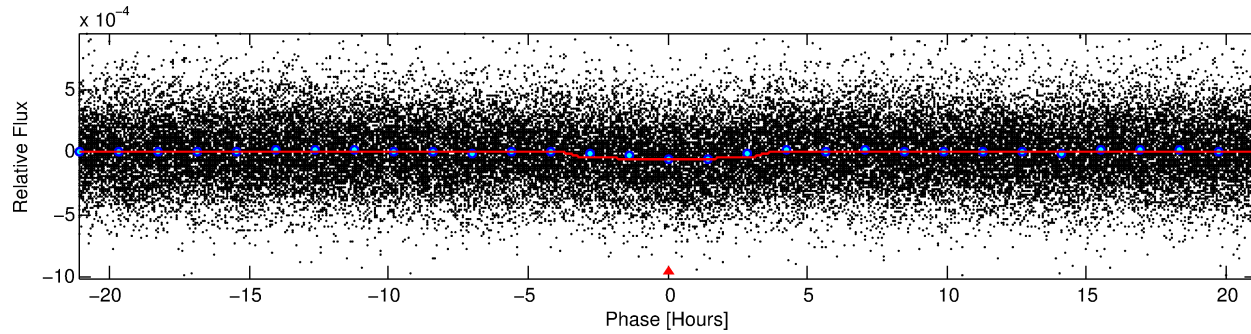
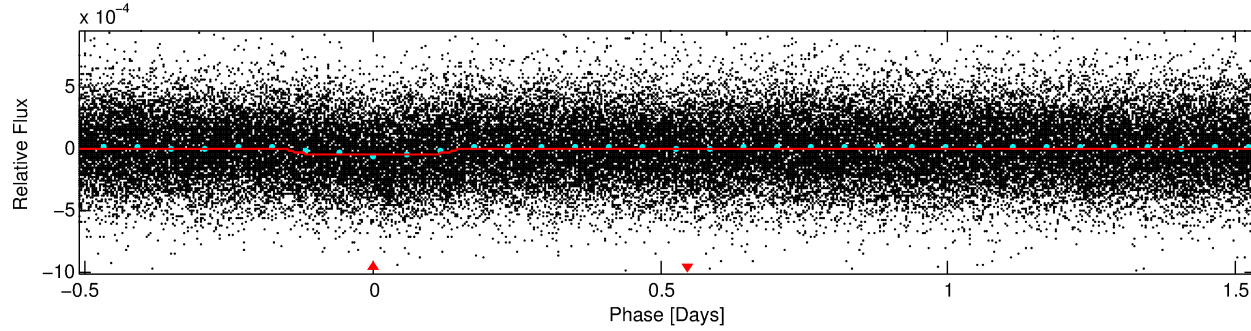
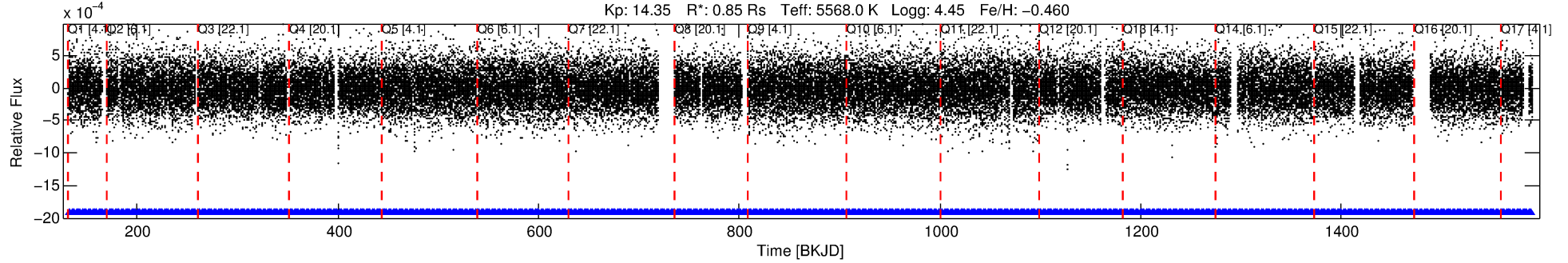
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004247811-01	4247811	28.01	4247791	1:2	44.7	-10	-6	11.26	14.35	2347.30	Direct-PRF	0	2.47	0.78

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: 4247811 Candidate: 1 of 1 Period: 2.050 d
KOI: K04678 Corr: No Ephemeris Match

Kp: 14.35 R*: 0.85 Rs Teff: 5568.0 K Logg: 4.45 Fe/H: -0.460



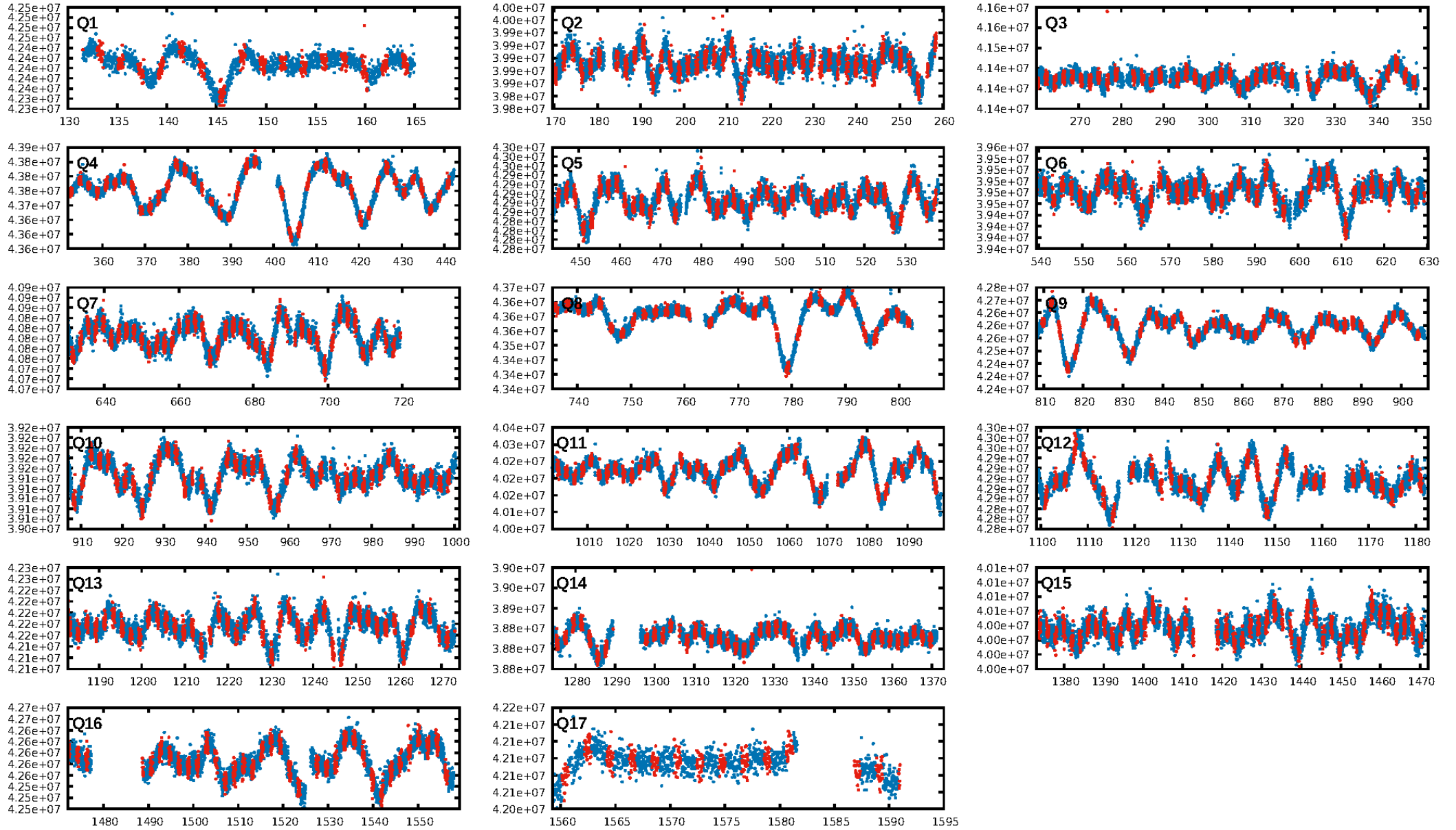
DV Fit Results:

Period = 2.05047 [0.00002] d
Epoch = 133.2742 [0.0048] BKJD
Rp/R* = 0.0071 [0.0033]
a/R* = 1.81 [2.64]
b = 0.70 [1.54]
Seff = 761.25 [229.52]
Teq = 1339 [101] K
Rp = 0.66 [0.34] Re
a = 0.0287 [0.0053] AU
Ag = 18.50 [18.93] [0.92σ]
Teffp = 4295 [1066] K [2.76σ]

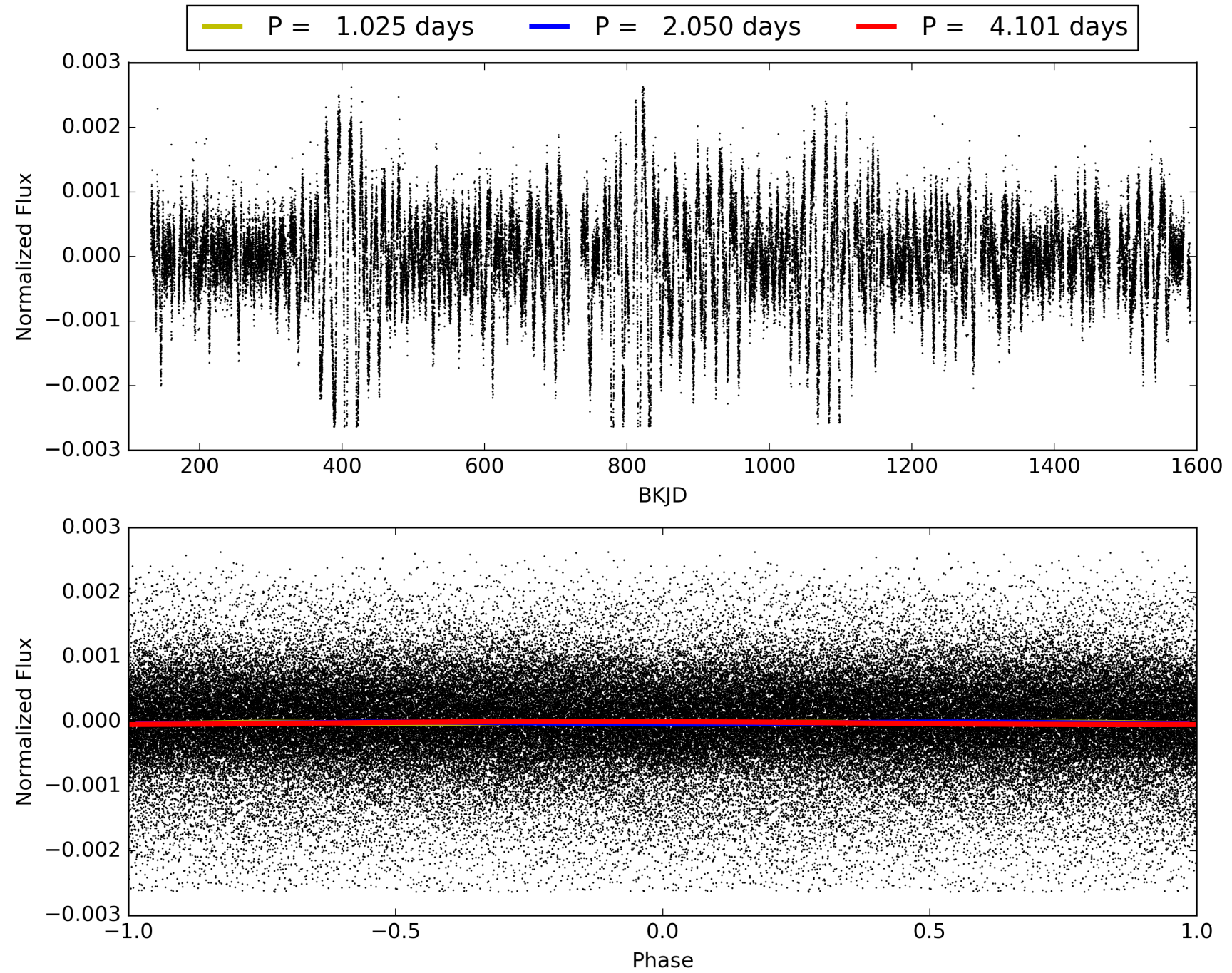
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.39e-27
RollingBand-fgt: 1.00 [622/622]
GhostDiagnostic-chr: 0.0232
Centroid-sig: 0.7%
Centroid-so: 1.553 arcsec [1.99σ]
OotOffset-rm: 1.285 arcsec [1.67σ]
KicOffset-rm: 1.602 arcsec [2.21σ]
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]

TCE 004247811-01, PDC Light Curves

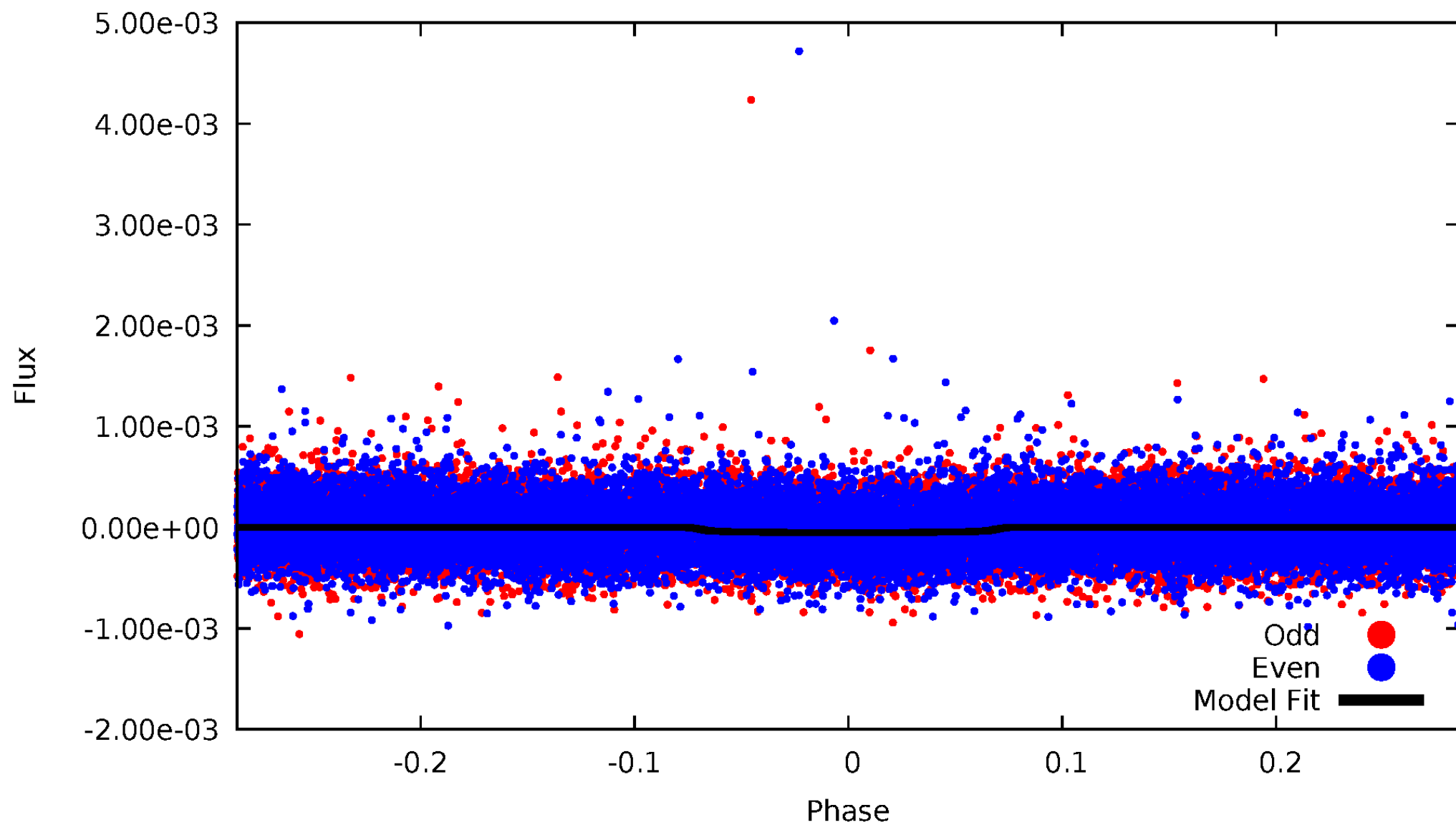


TCE 004247811-01



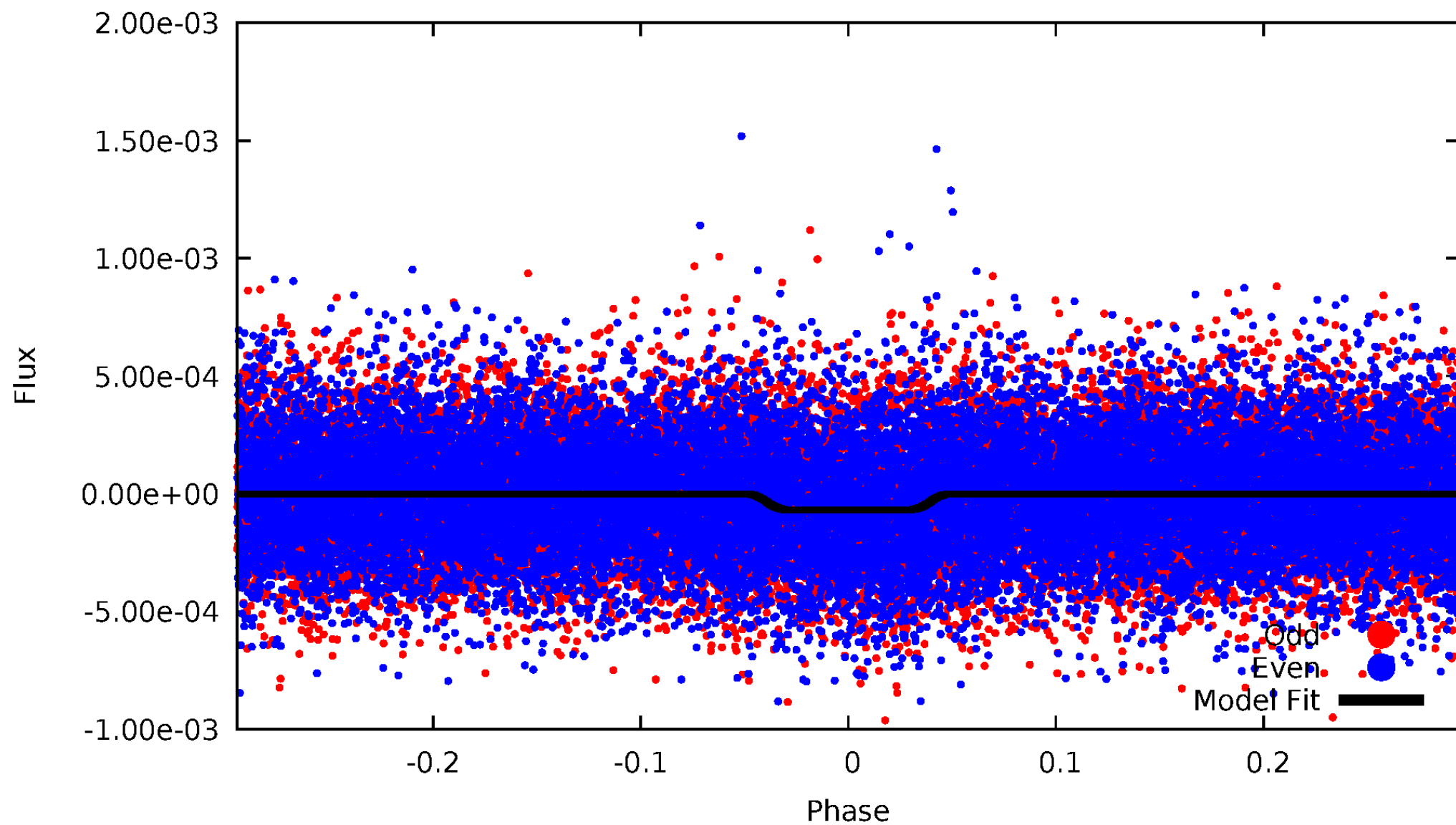
DV Odd/Even

TCE 004247811-01

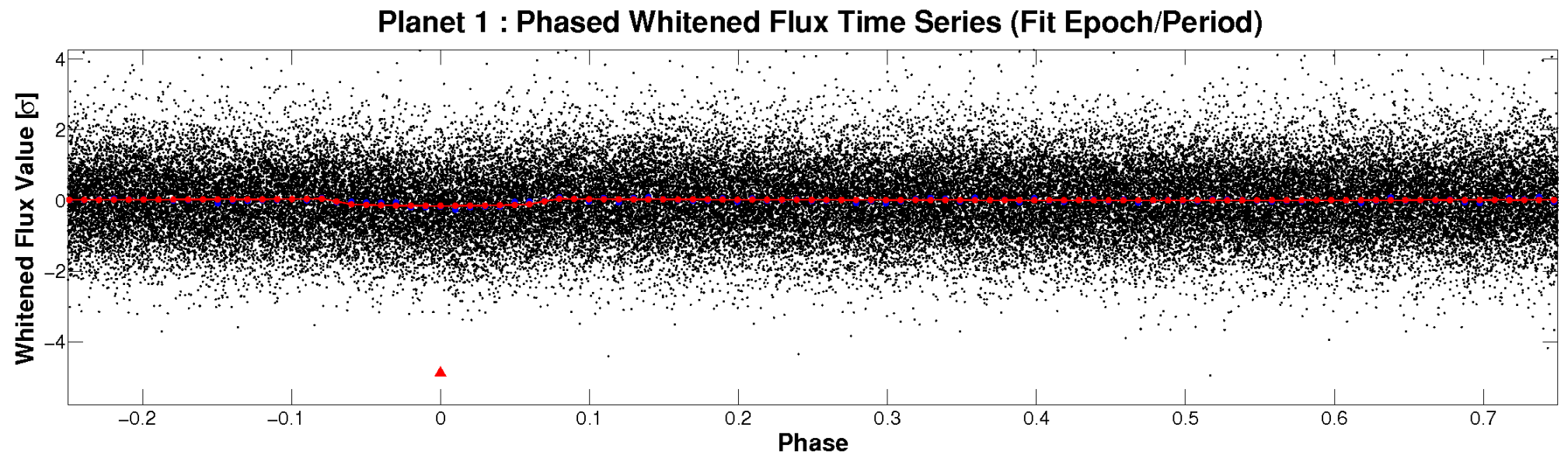
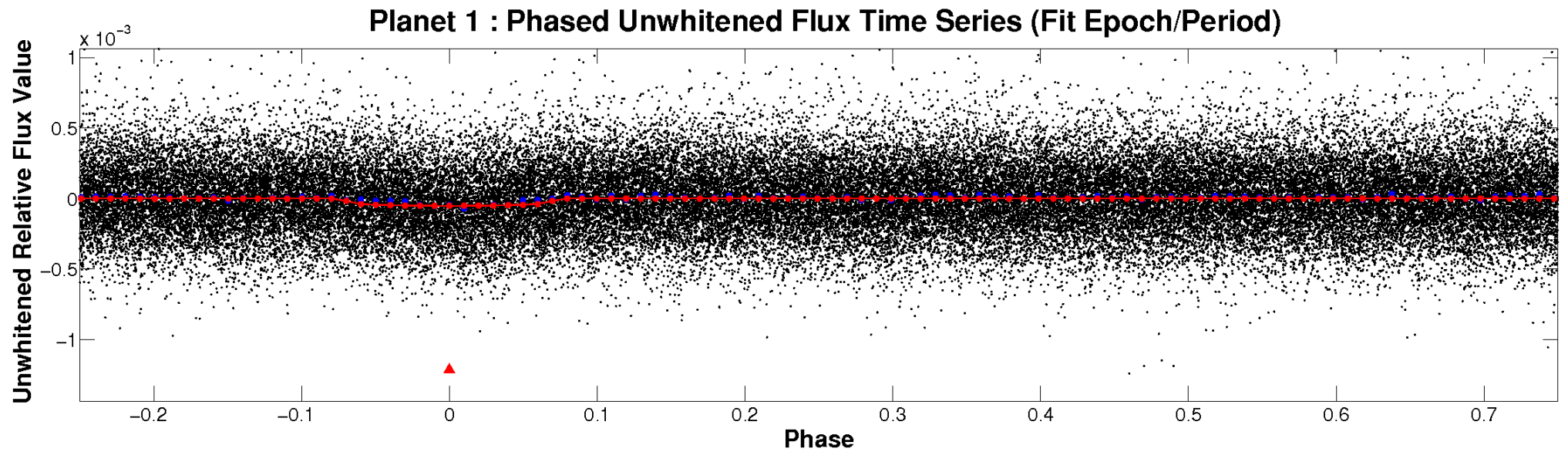


ALT Odd/Even

TCE 004247811-01

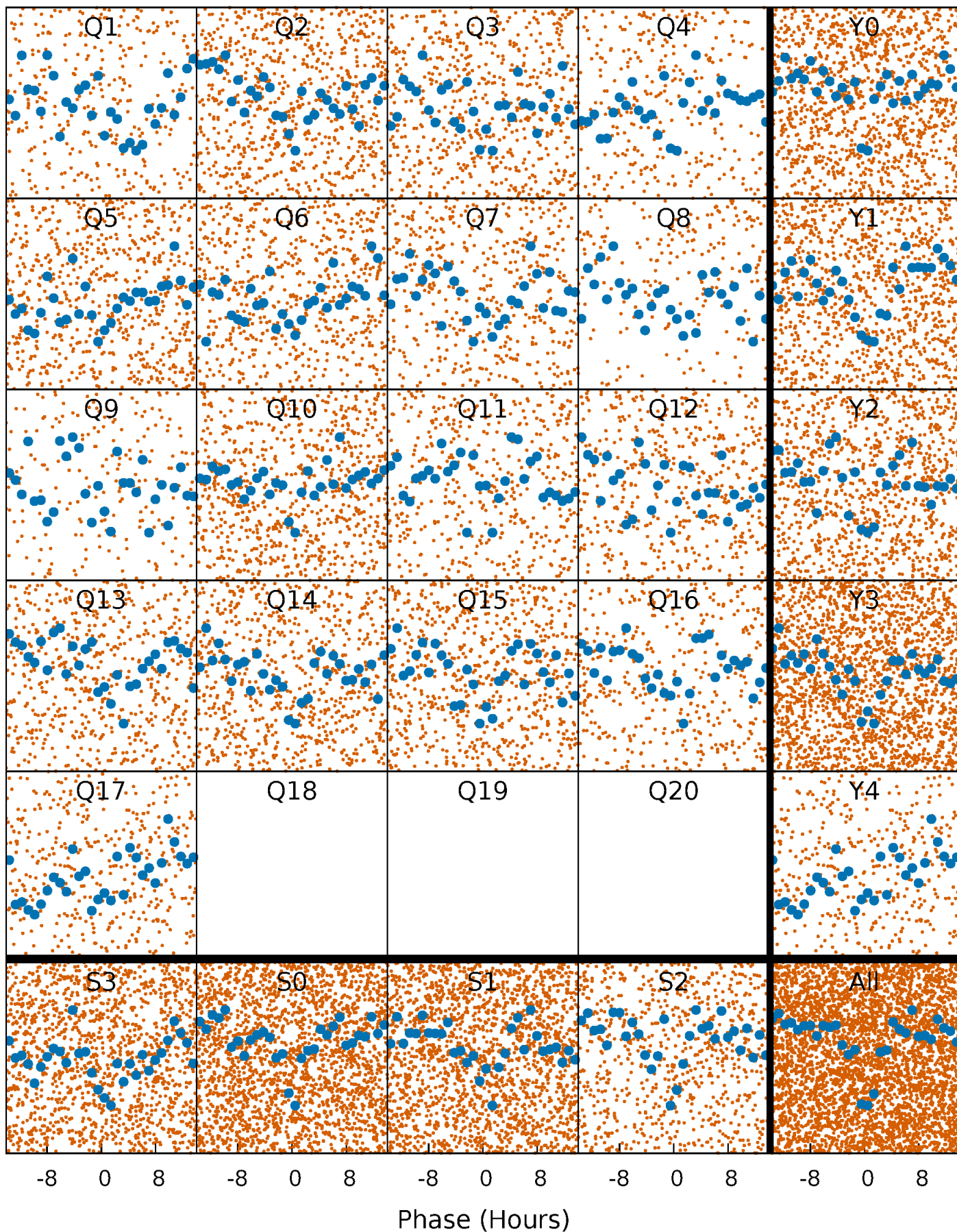


Non-Whitened Vs. Whitened Light Curve



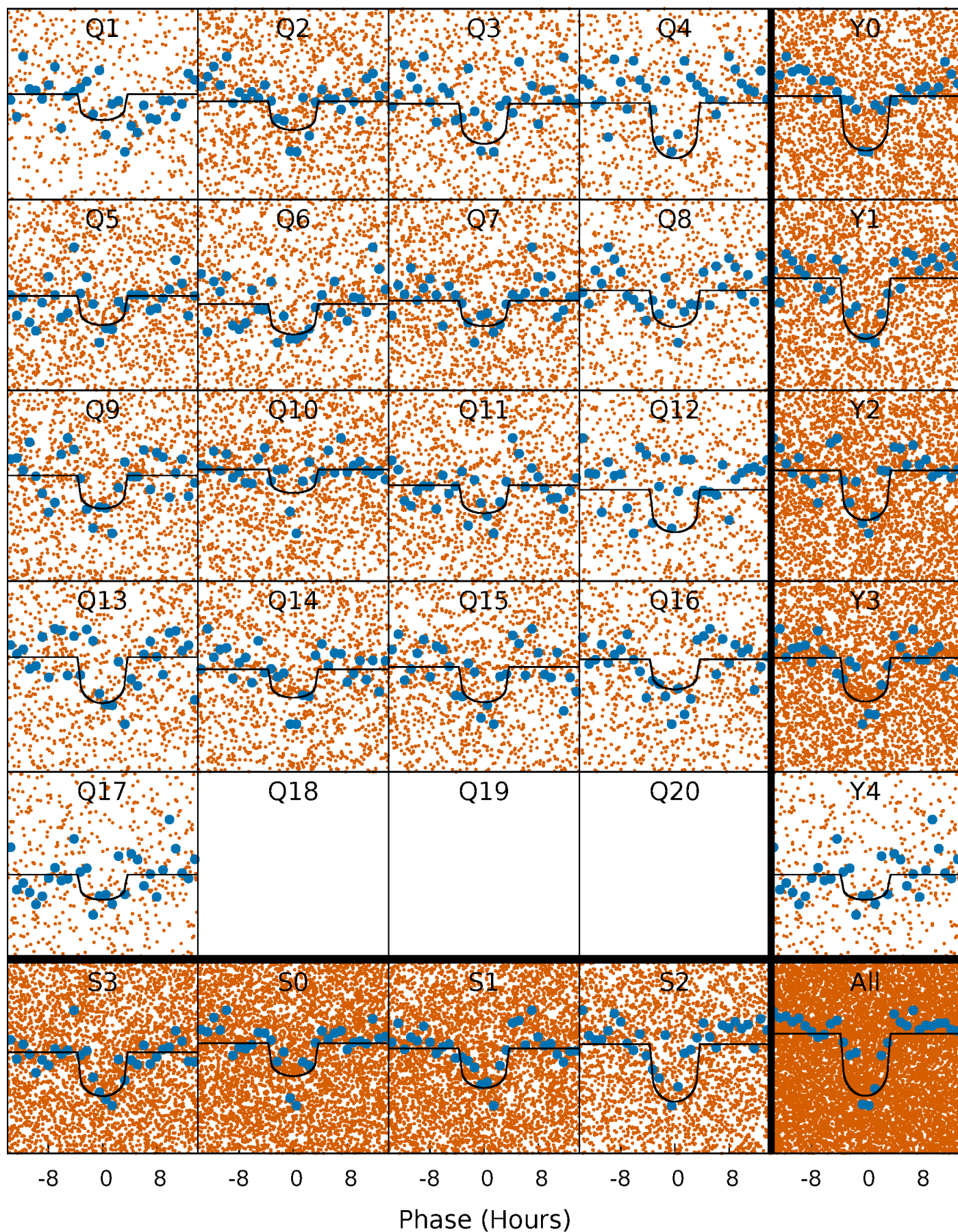
PDC Quarter-Phased Transit Curves

TCE 004247811-01 P= 2.050471 Days $T_0=133.274248$ (BKJD)



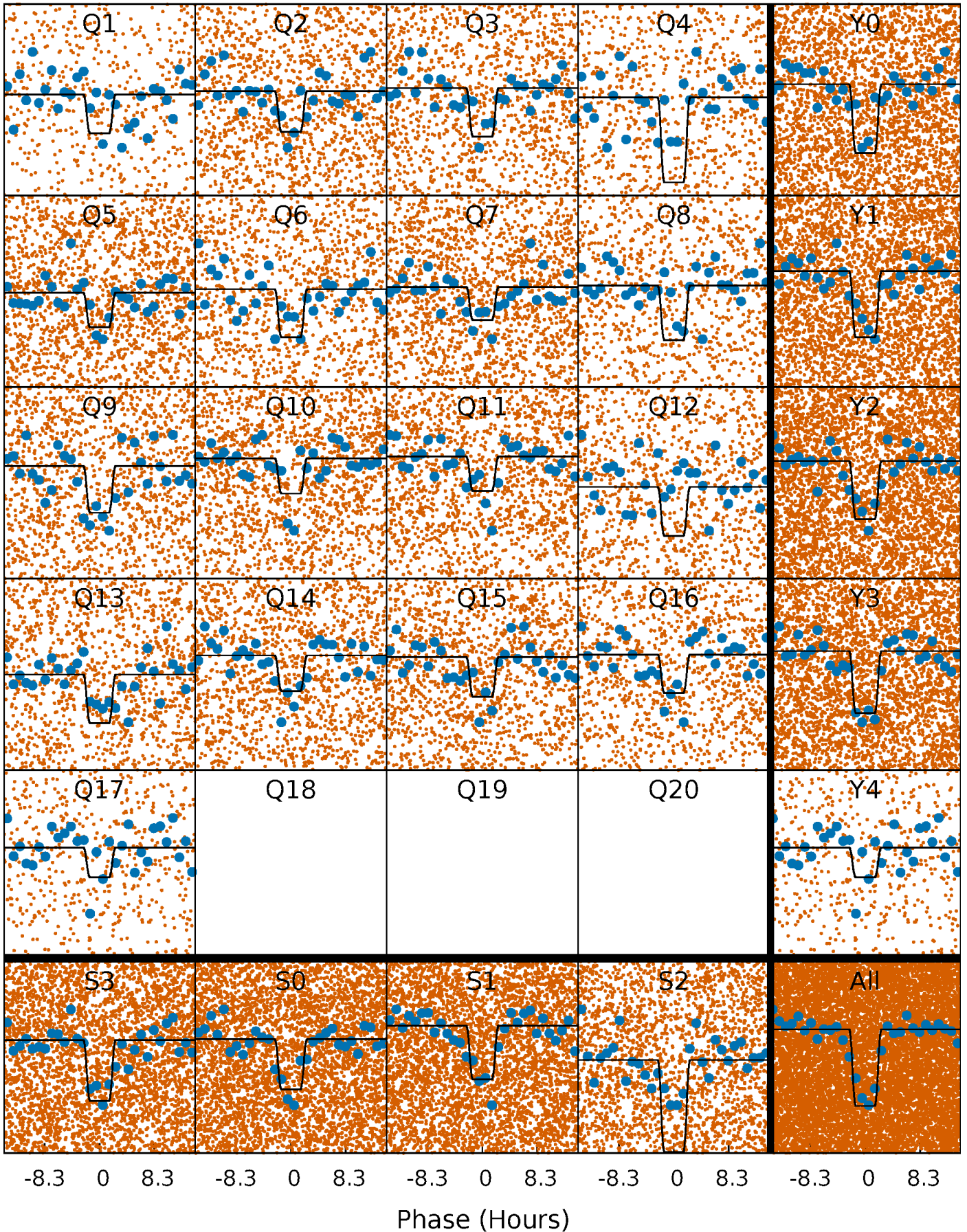
DV Quarter-Phased Transit Curves

TCE 004247811-01 P= 2.050471 Days $T_0=133.274248$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

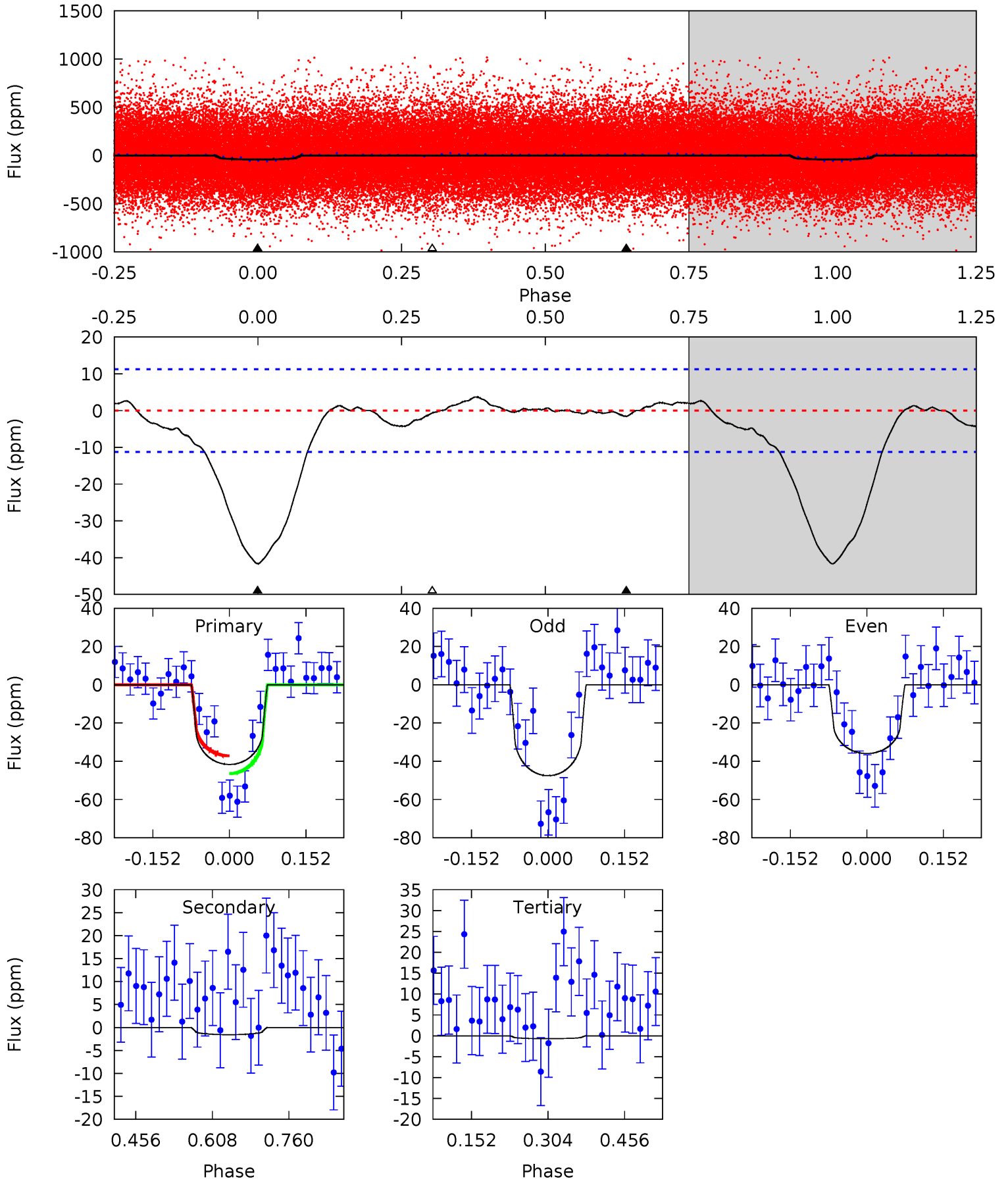
TCE 004247811-01 P= 2.050492 Days $T_0=133.276961$ (BKJD)



DV Model-Shift Uniqueness Test

004247811-01, P = 2.050471 Days, E = 131.223777 Days

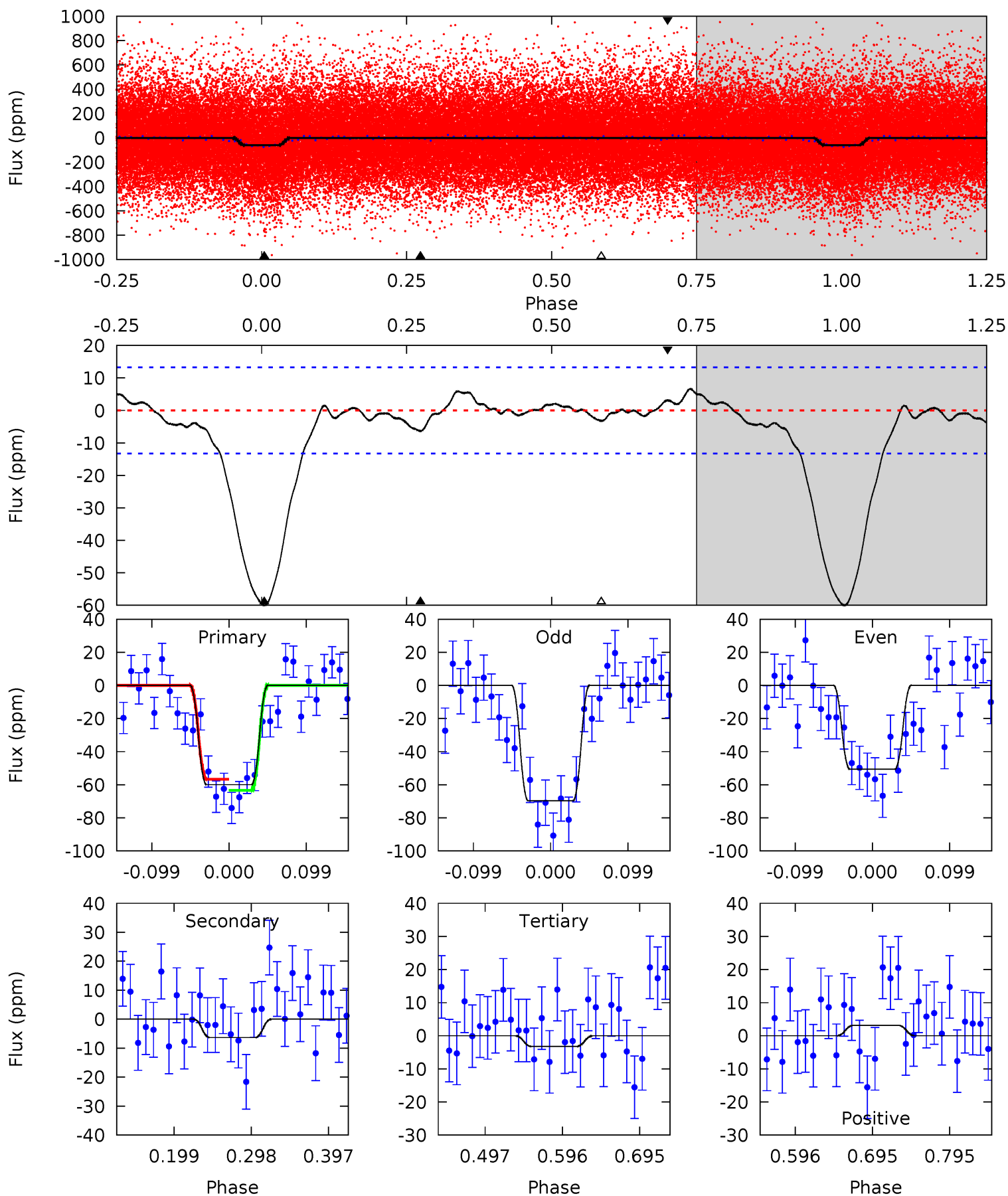
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	0.63	0.27	0	4.48	1.43	0.90	16.3	16.6	0.36	0.63	2.30	0.92	0.08	1.85



Alt Model-Shift Uniqueness Test

004247811-01, P = 2.050492 Days, E = 131.226469 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	2.19	1.11	1.07	4.57	1.65	0.85	19.5	19.6	1.08	1.11	3.27	1.01	0.10	1.16



Stellar Parameters For KIC 004247811

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5568^{+167}_{-150}	$4.451^{+0.126}_{-0.154}$	$-0.460^{+0.300}_{-0.300}$	$0.854^{+0.184}_{-0.123}$	$0.752^{+0.120}_{-0.048}$	$1.698^{+1.000}_{-0.731}$
	+3%/-3%	+3%/-3%	+65%/-65%	+22%/-14%	+16%/-6%	+59%/-43%
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 004247811-01 / KOI 4678.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2 ± 3	$0.66^{+0.33}_{-0.30}$	1879^{+118}_{-95}	2813^{+916}_{-5778}	$1.320^{+5.796}_{-2.411}$
Alt.	-6 ± 3	$0.79^{+0.33}_{-0.29}$	1878^{+115}_{-91}	3461^{+656}_{-528}	$4.446^{+7.854}_{-2.811}$

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

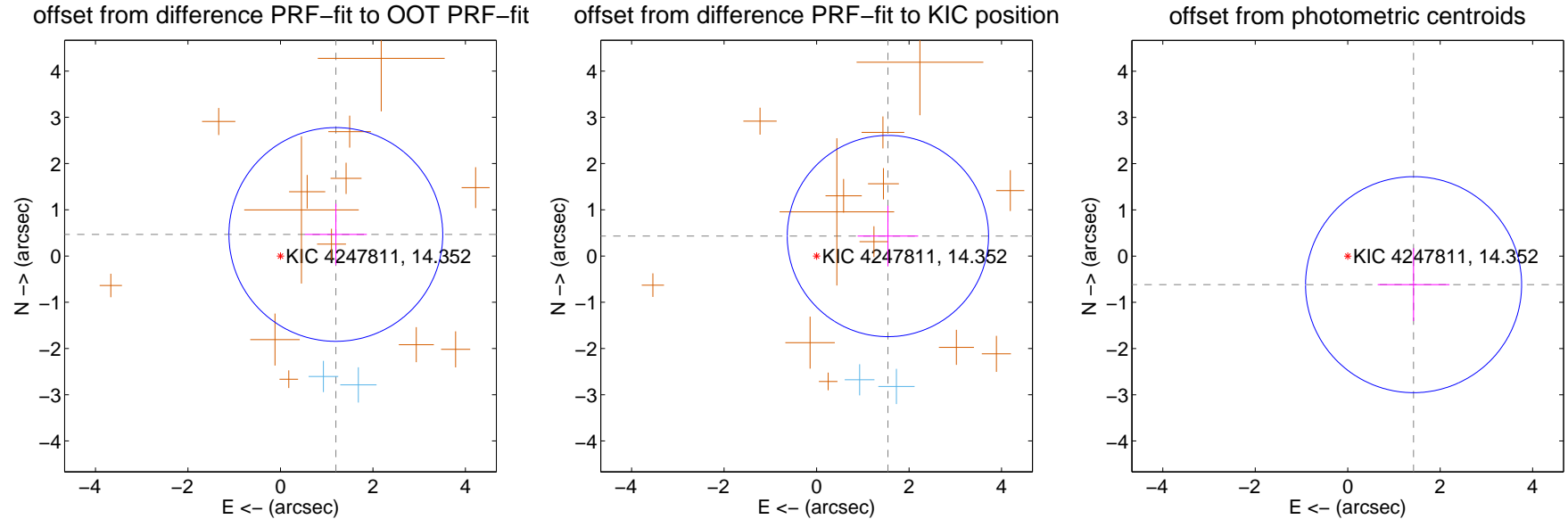
DV Centroid Data

Supplemental centroid analysis for 004247811-01. Kepler magnitude: 14.35. Transit SNR 12.98

There are 2 quarters with good PRF difference image offsets

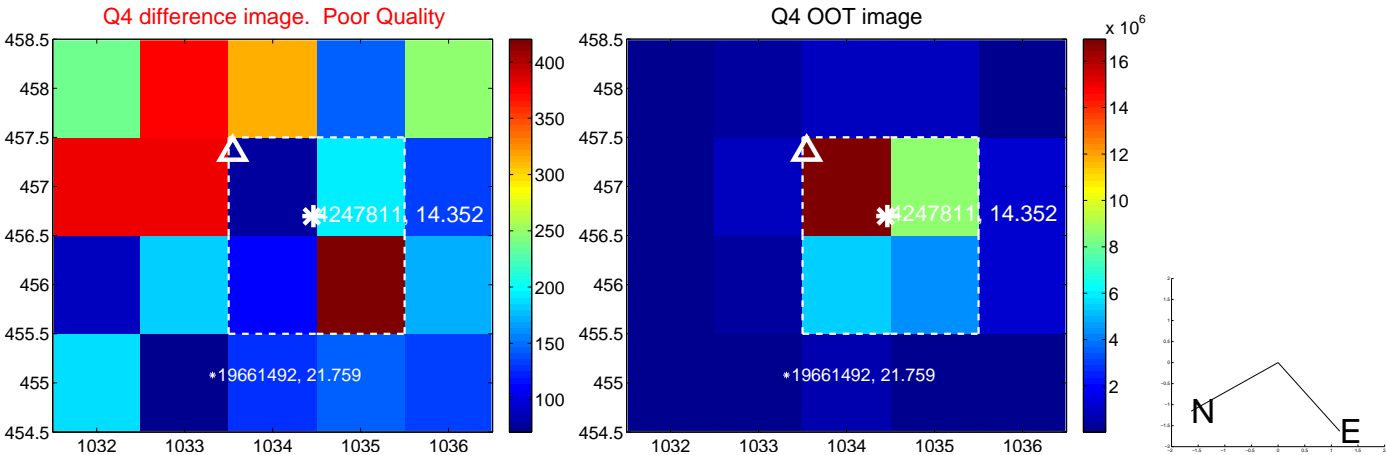
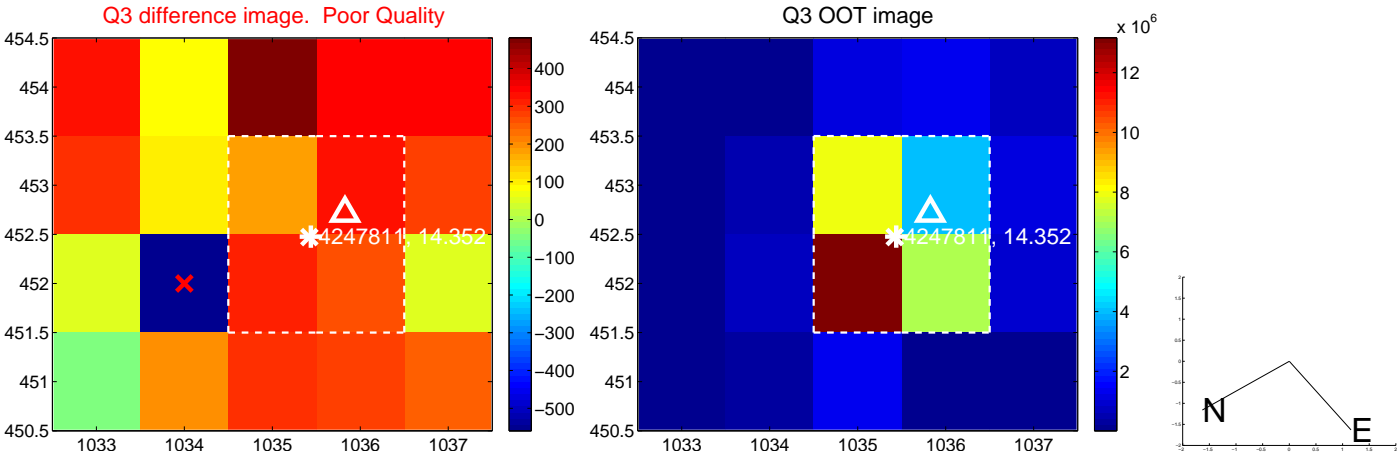
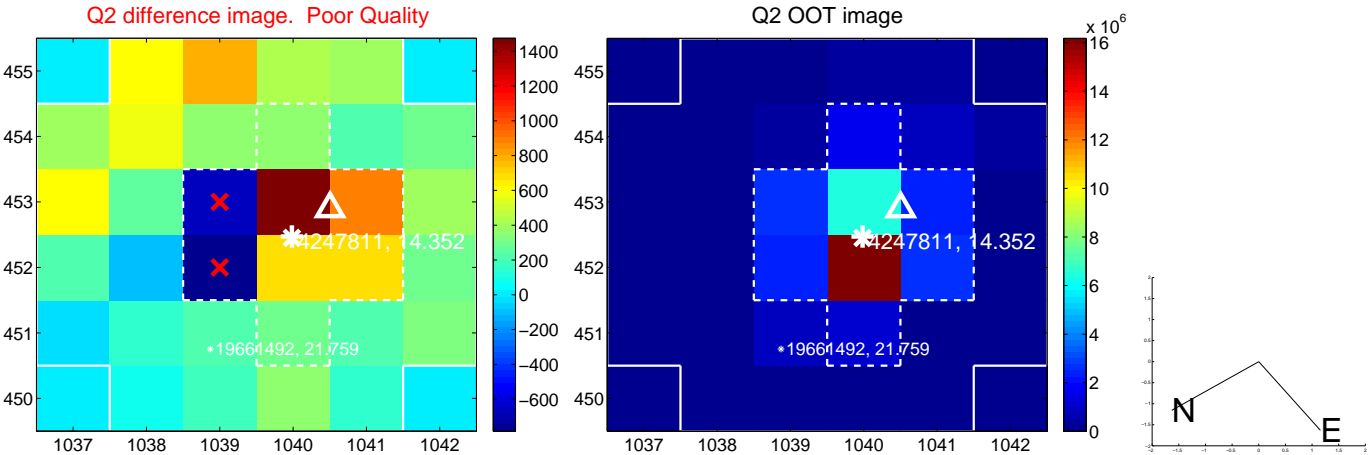
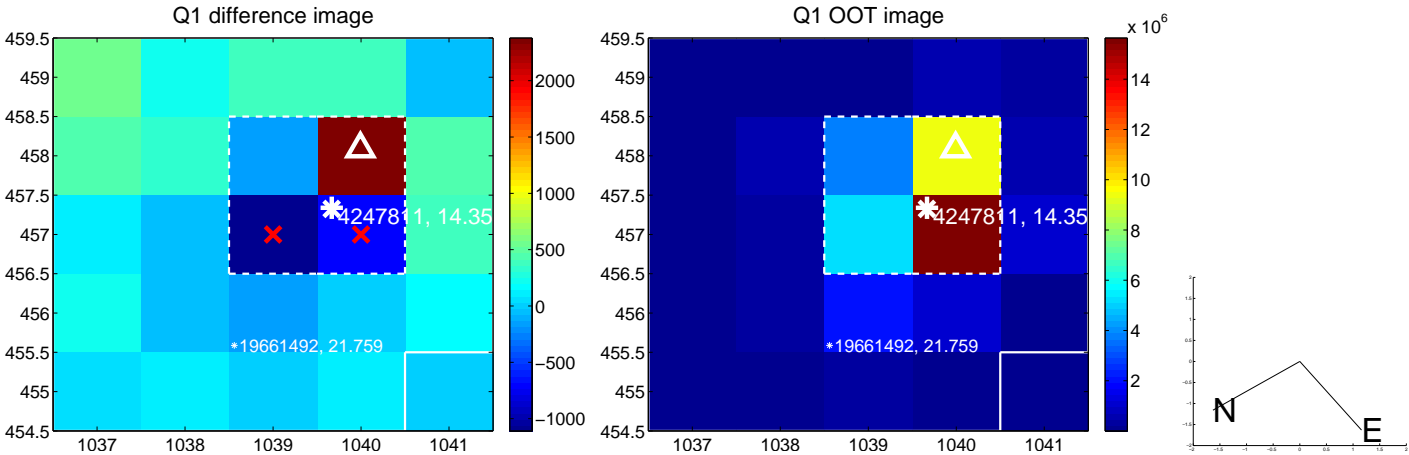
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.285 ± 0.770	1.67	-1.197 ± 0.670	0.466 ± 0.663
PRF-fit source offset from KIC position	1.602 ± 0.725	2.21	-1.542 ± 0.655	0.432 ± 0.655
photometric centroid source offset	1.55 ± 0.78	1.99	-1.42 ± 0.78	-0.62 ± 0.79

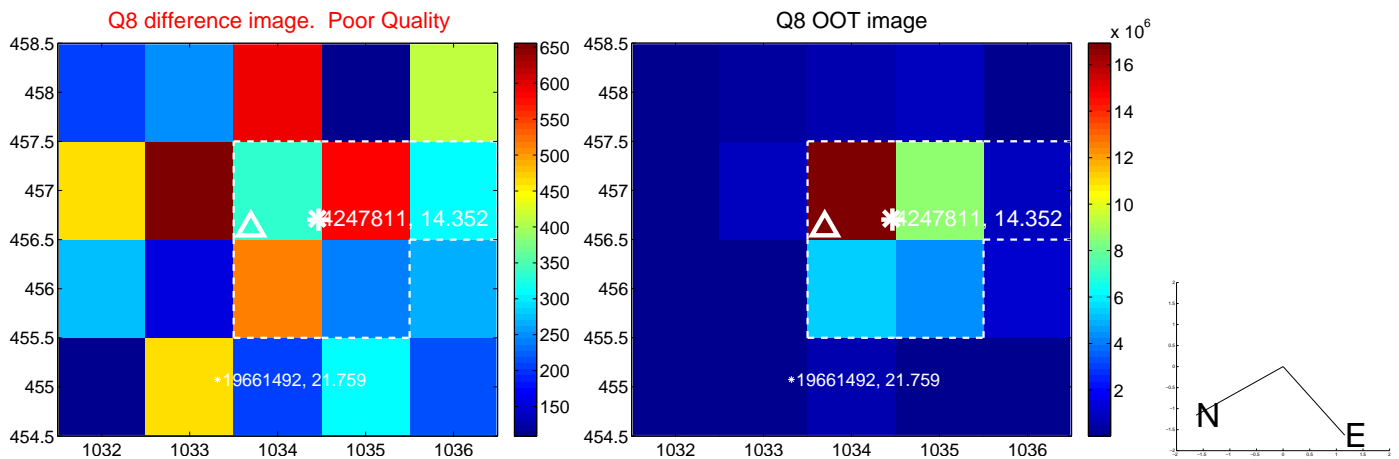
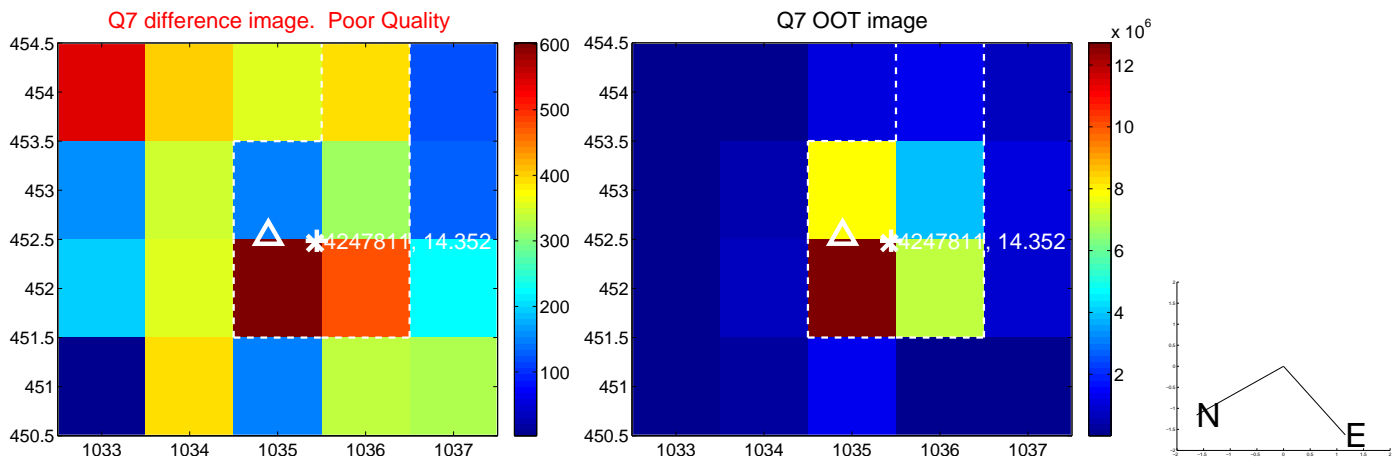
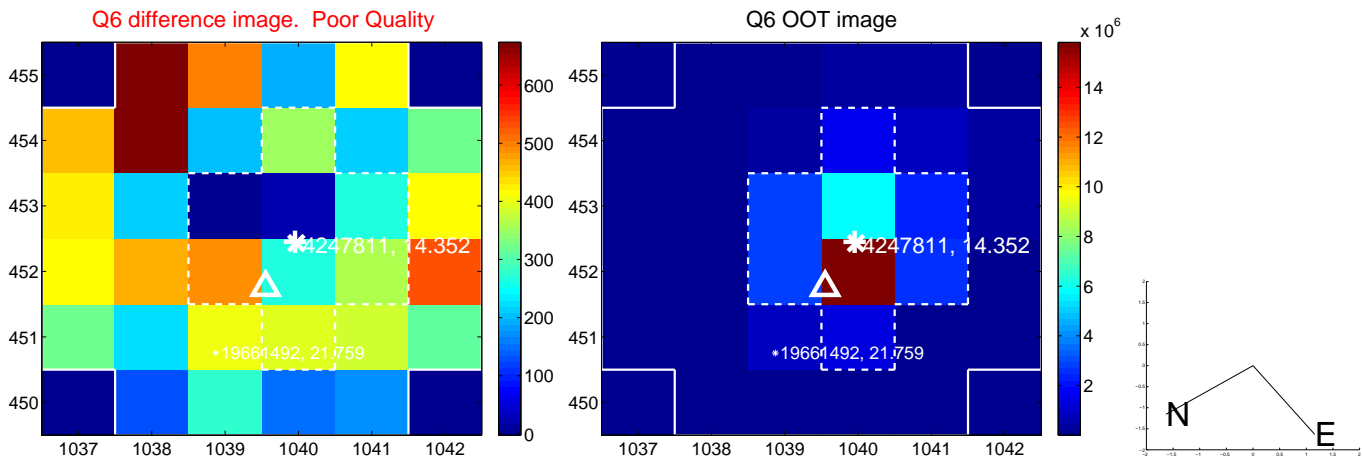
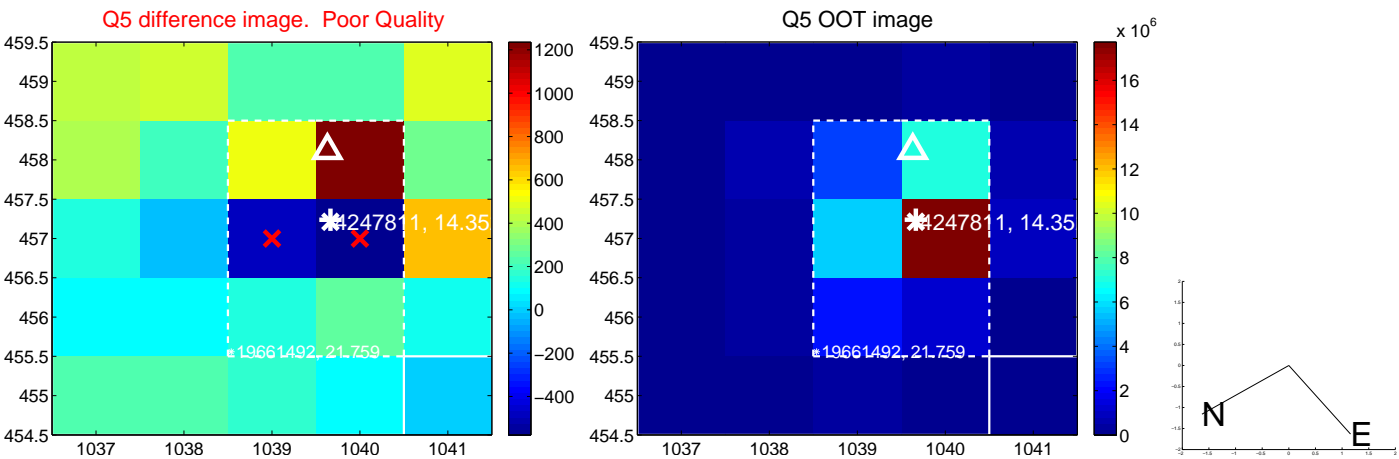


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

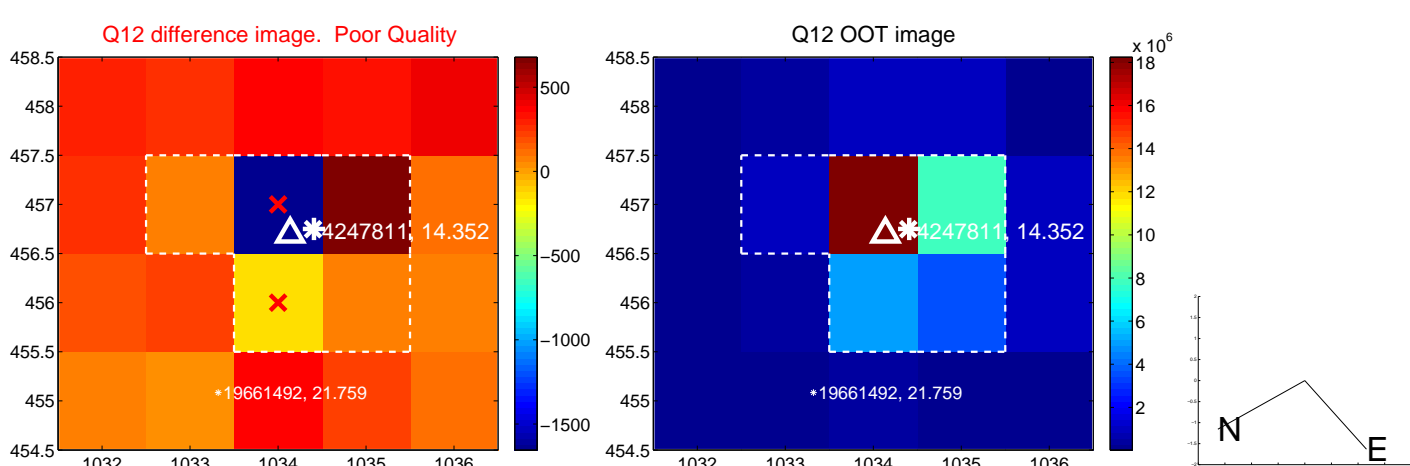
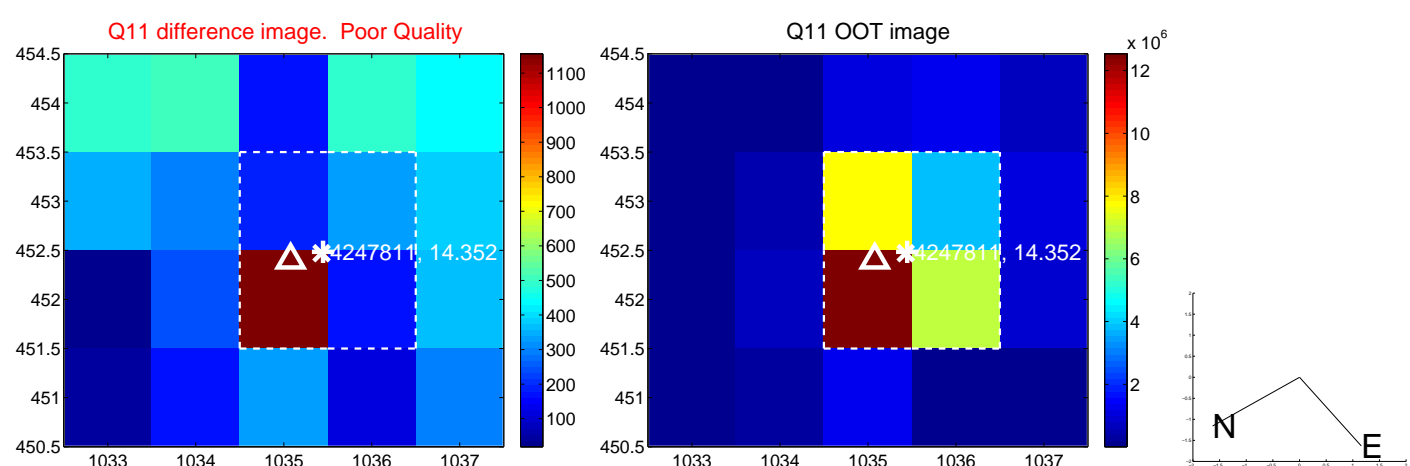
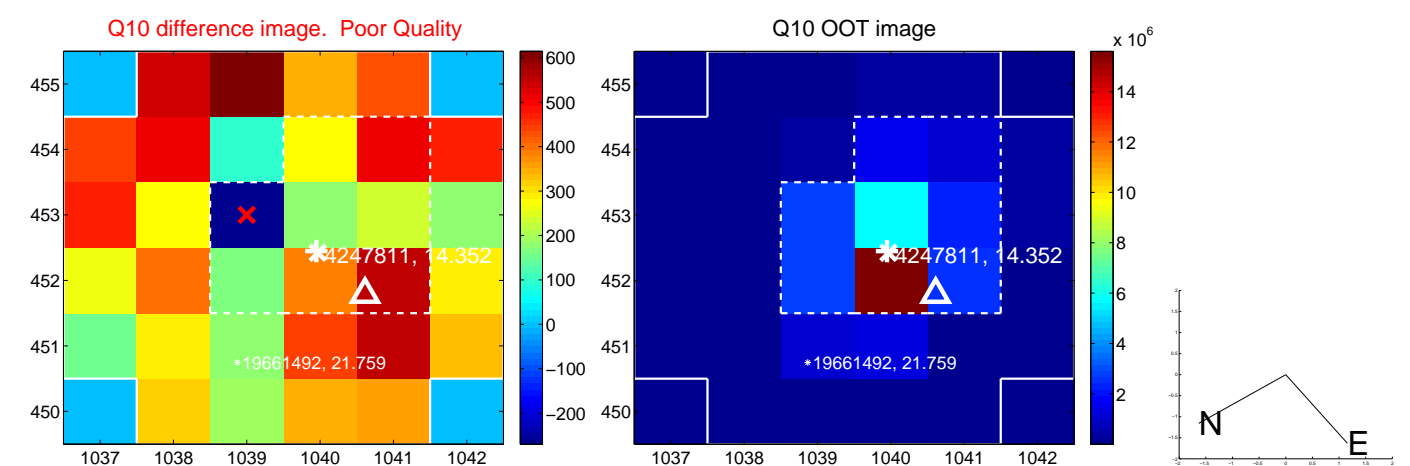
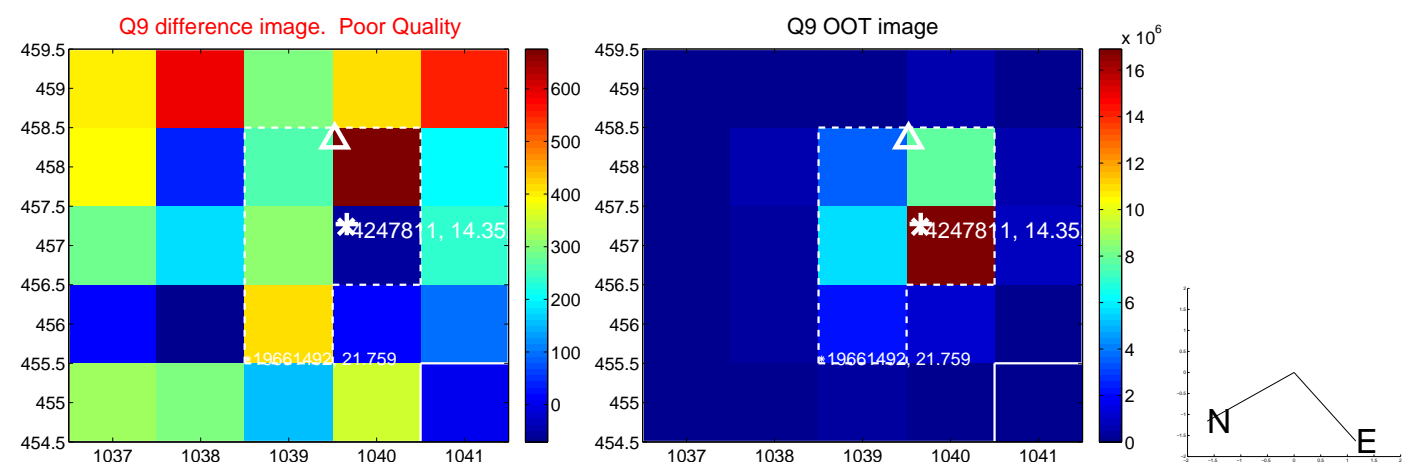
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



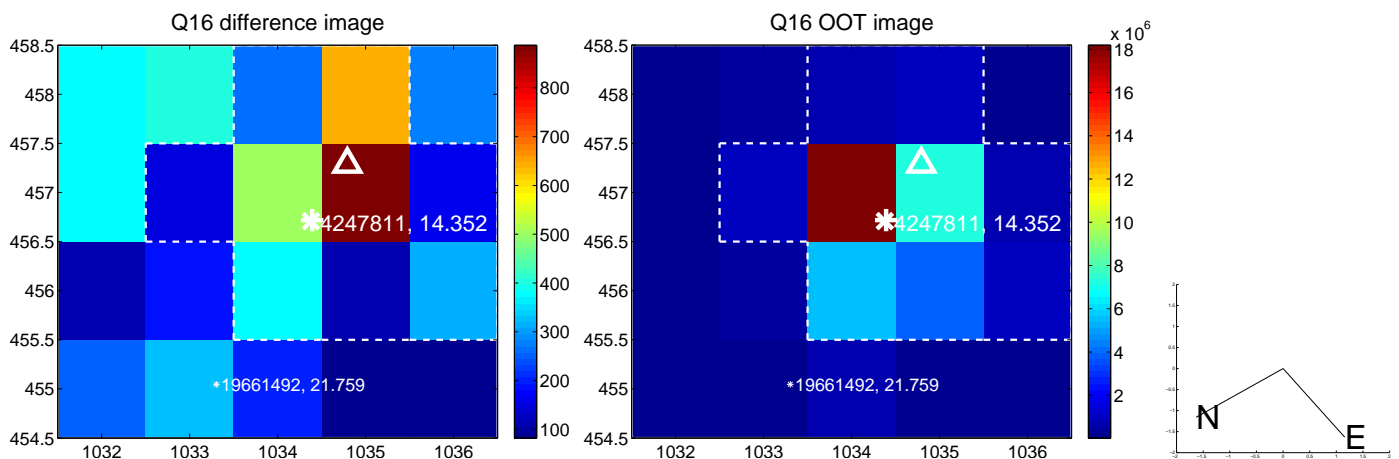
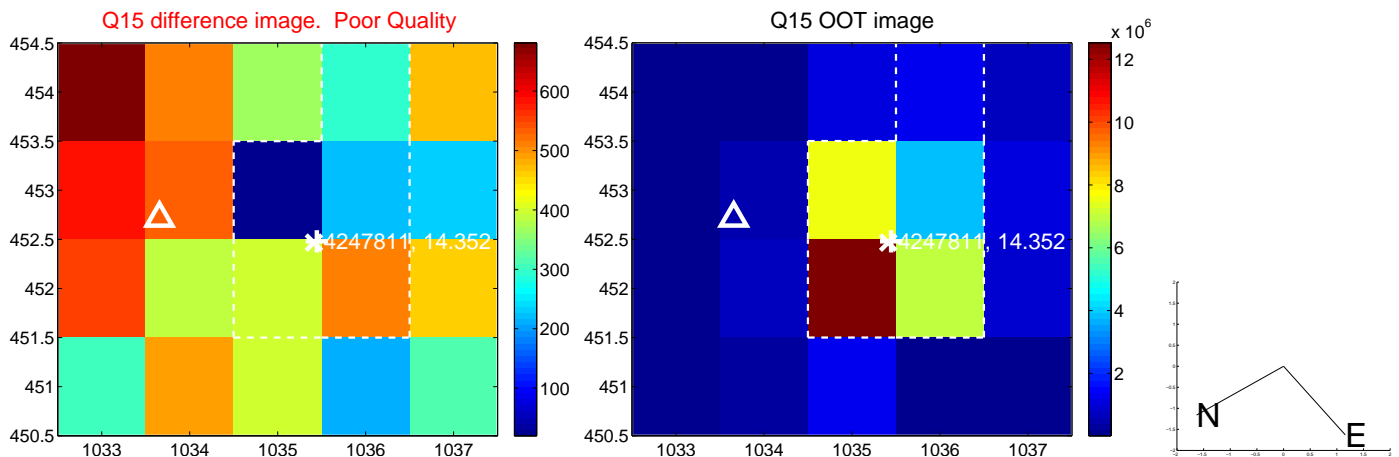
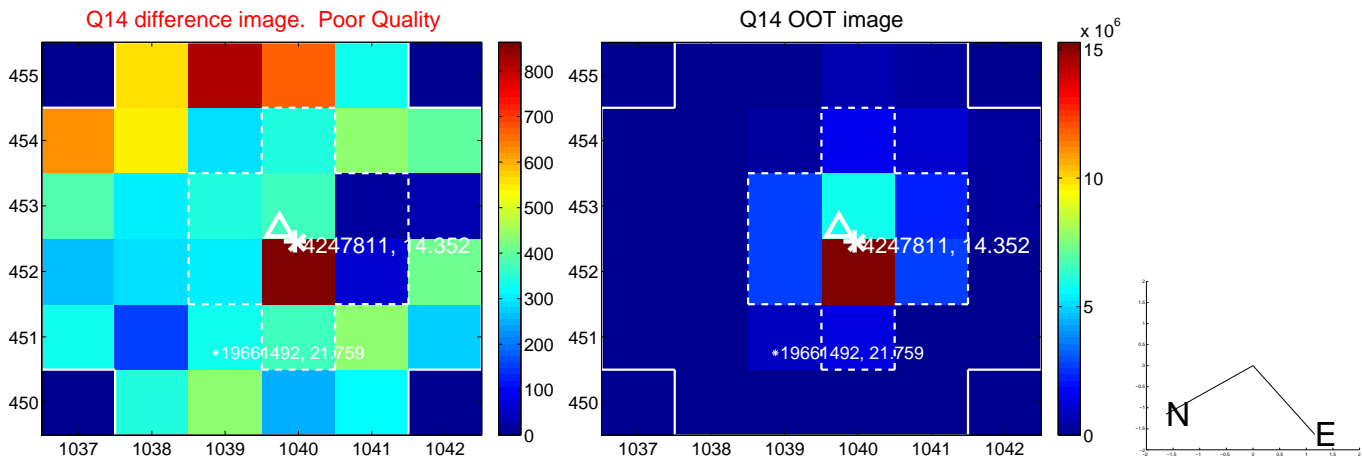
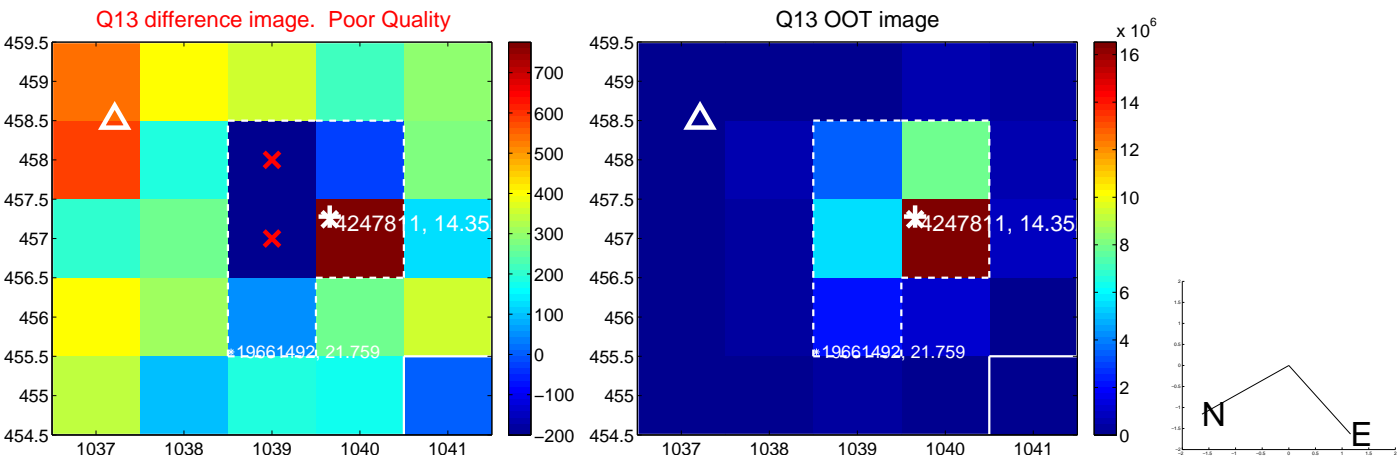
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



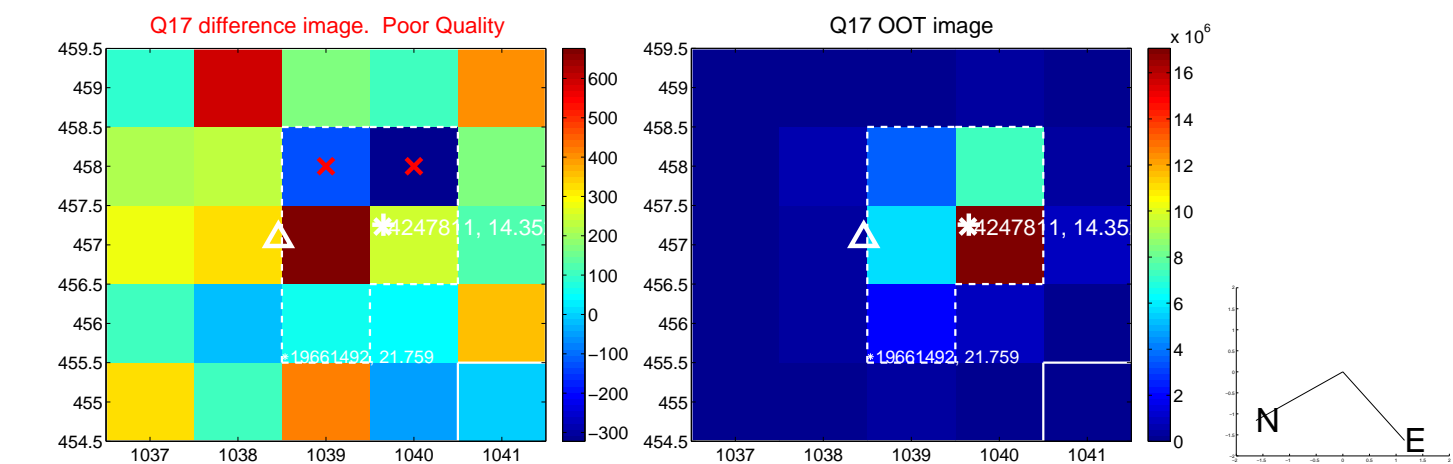
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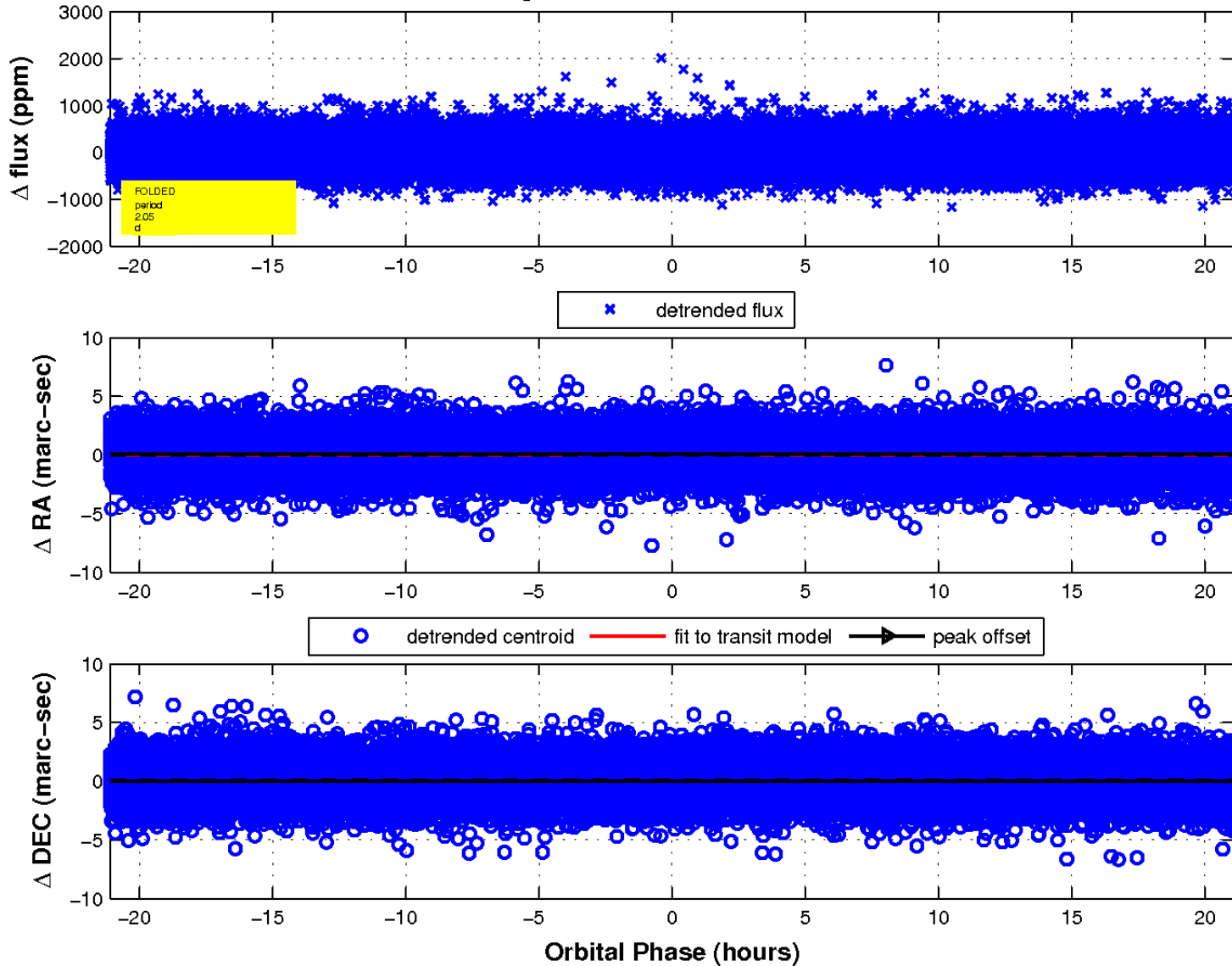
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

