

KIC 010481045

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})
010481045-01	OBS	2320.01	2.037470	131.547862	117.3	4.132	14.8	15.2	0.77	5751	1.17	674.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010481045-01	OBS	FP	0.00	0	0	1	1	CENT_UNRESOLVED_OFFSET—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 010481045-01

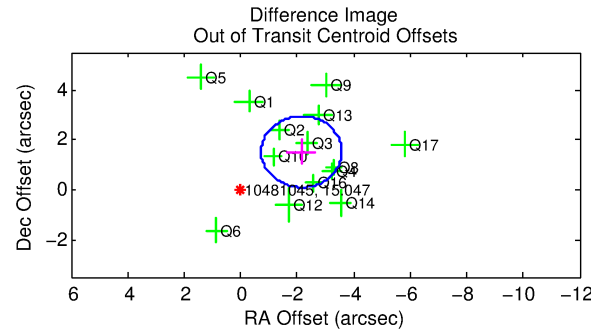
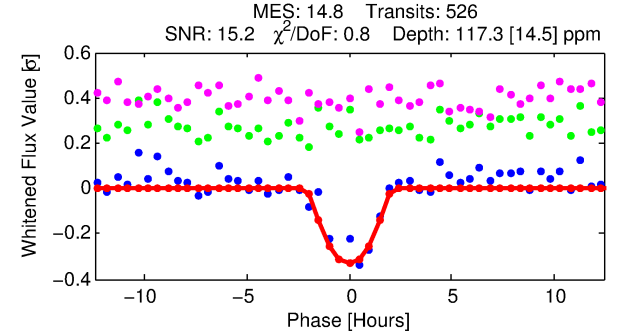
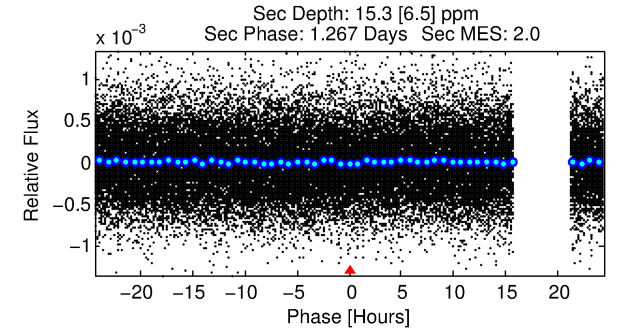
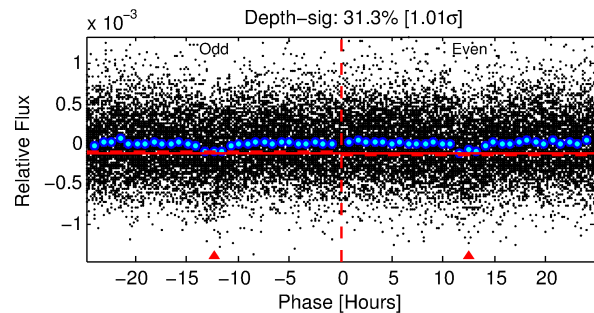
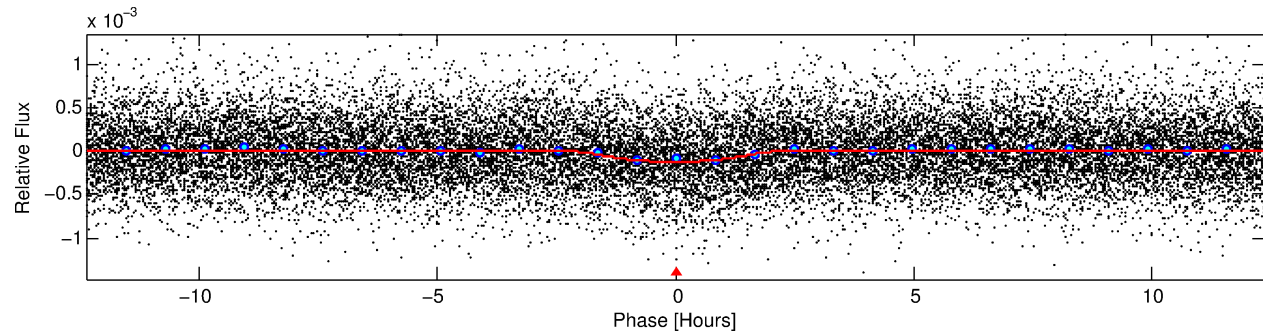
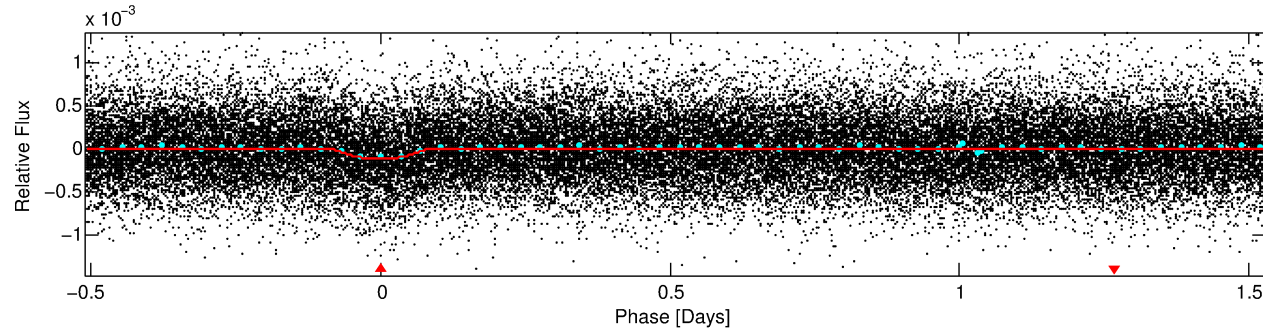
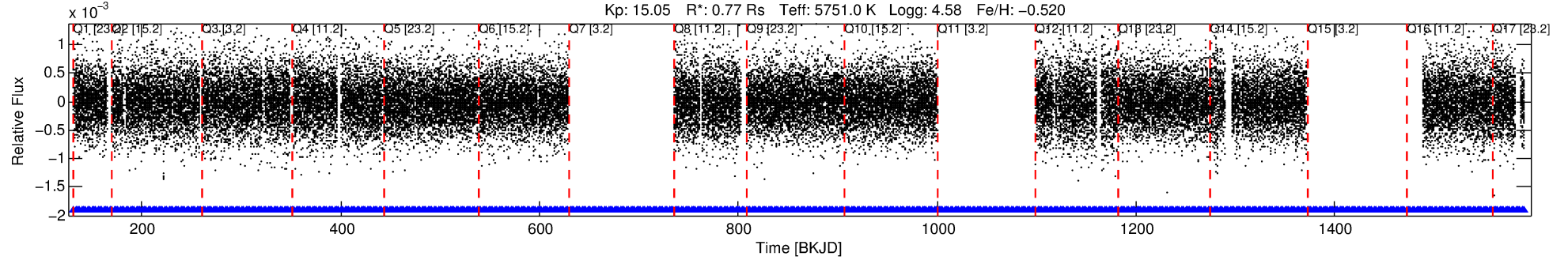
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010481045-01	10481045	5797.01	10480952	1:1	96.7	24	2	12.22	15.05	2818.50	Direct-PRF	0	0.58	0.24

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: 10481045 Candidate: 1 of 1 Period: 2.037 d

KOI: K02320.01 Corr: 0.851



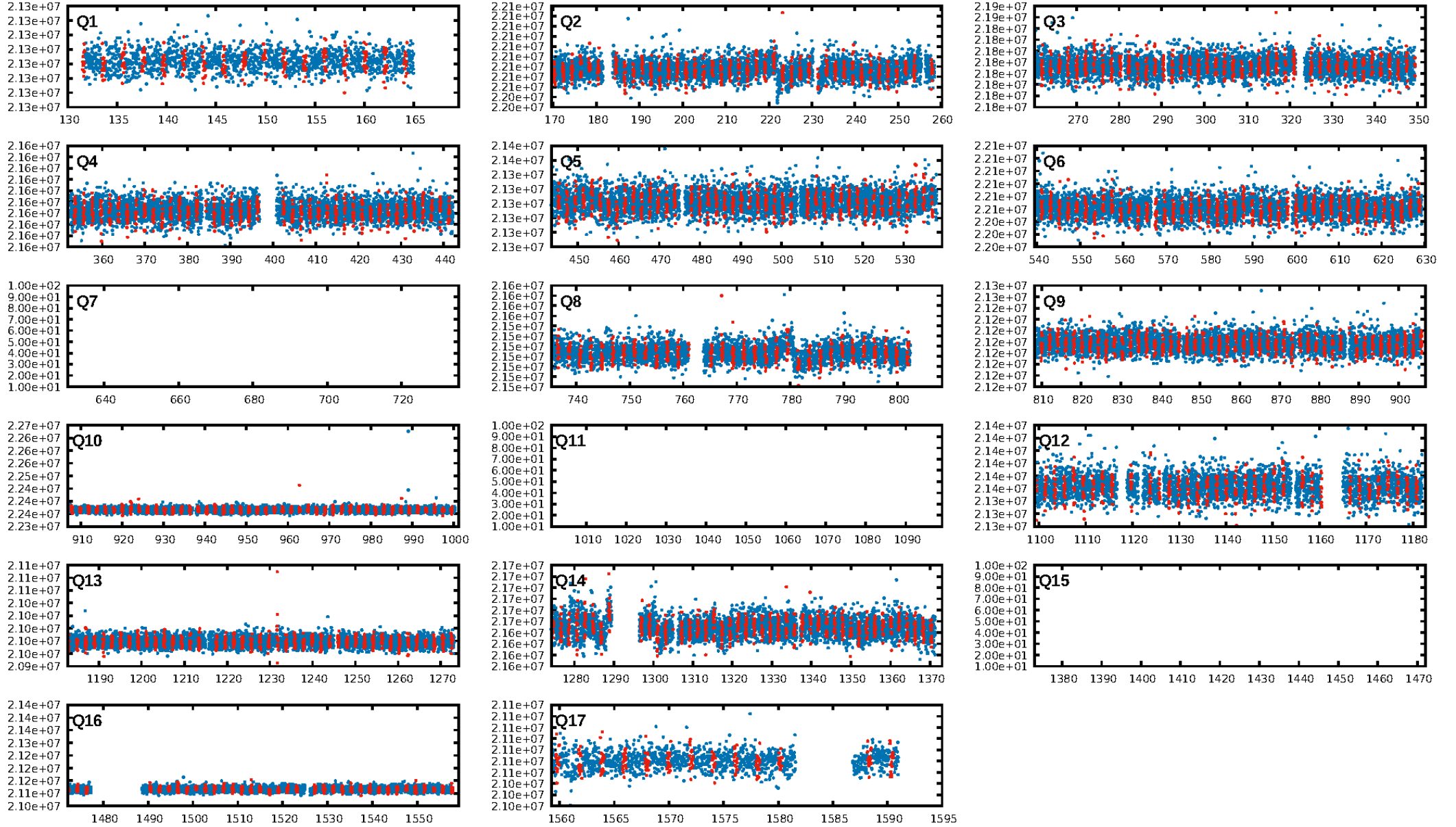
DV Fit Results:

Period = 2.03747 [0.00002] d
Epoch = 131.5479 [0.0049] BKJD
Rp/R* = 0.0138 [0.0012]
a/R* = 1.34 [0.10]
b = 0.99 [0.01]
Seff = 674.38 [204.33]
Teff = 1299 [98] K
Rp = 1.17 [0.29] Re
a = 0.0295 [0.0057] AU
Ag = 5.38 [2.88] [1.52 σ]
Teffp = 3059 [362] K [4.69 σ]

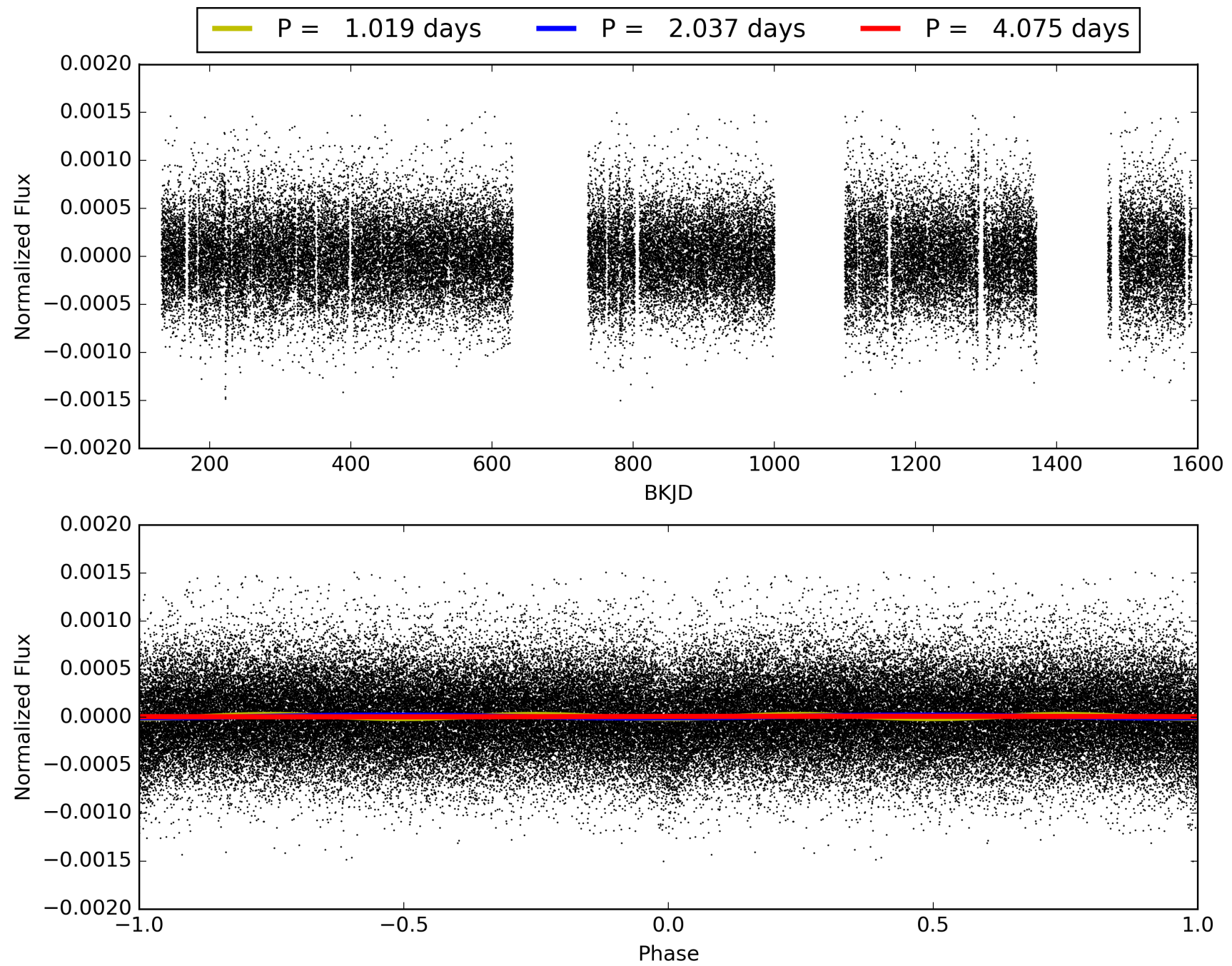
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.72e-48
RollingBand-fgt: 1.00 [496/496]
GhostDiagnostic-chr: 0.2088
Centroid-sig: 0.0%
Centroid-so: 3.246 arcsec [3.31 σ]
OotOffset-rm: 2.629 arcsec [5.53 σ]
KicOffset-rm: 2.582 arcsec [5.45 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010481045-01, PDC Light Curves

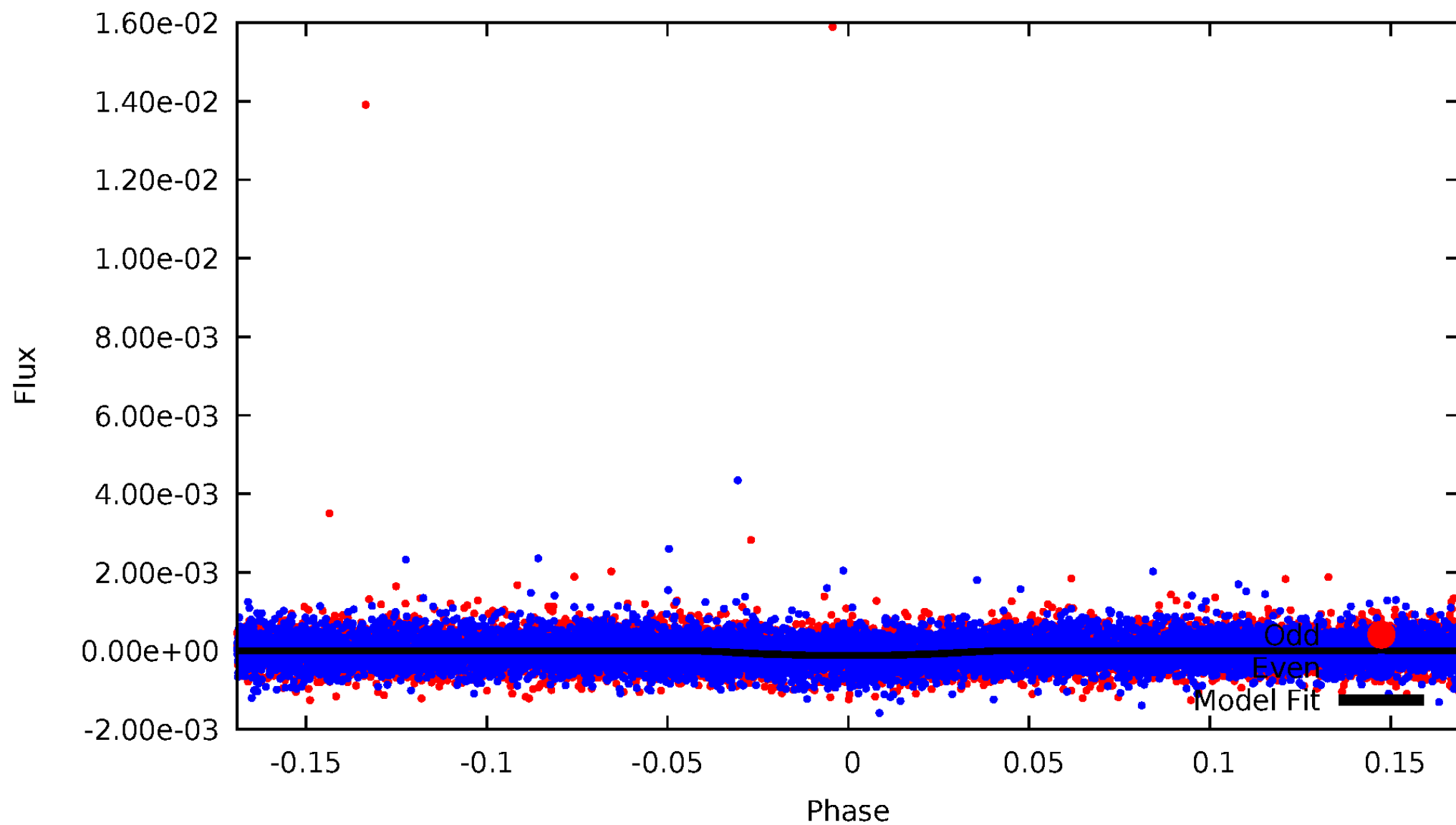


TCE 010481045-01



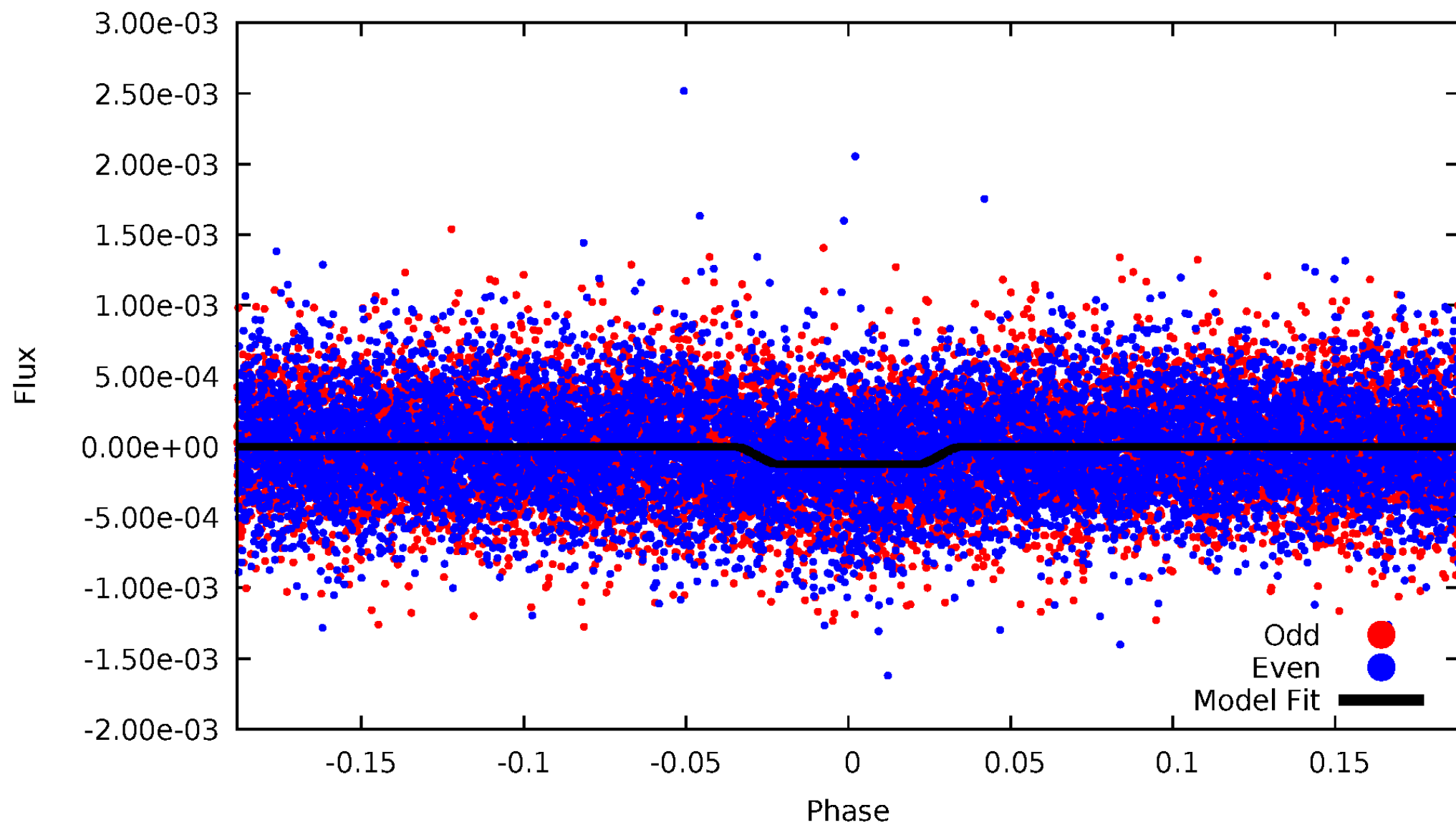
DV Odd/Even

TCE 010481045-01



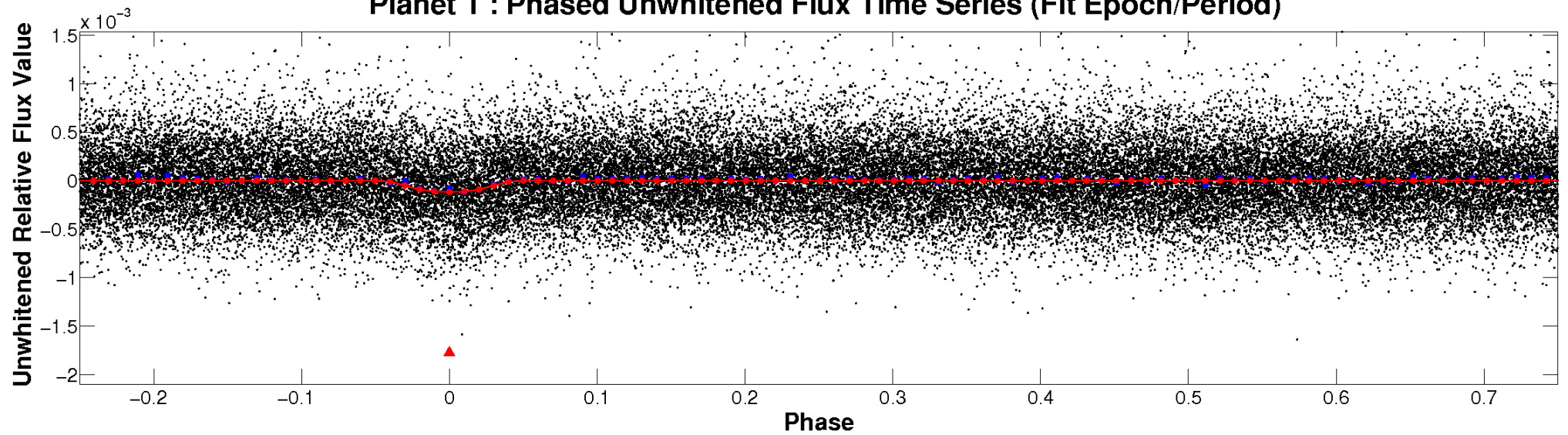
ALT Odd/Even

TCE 010481045-01

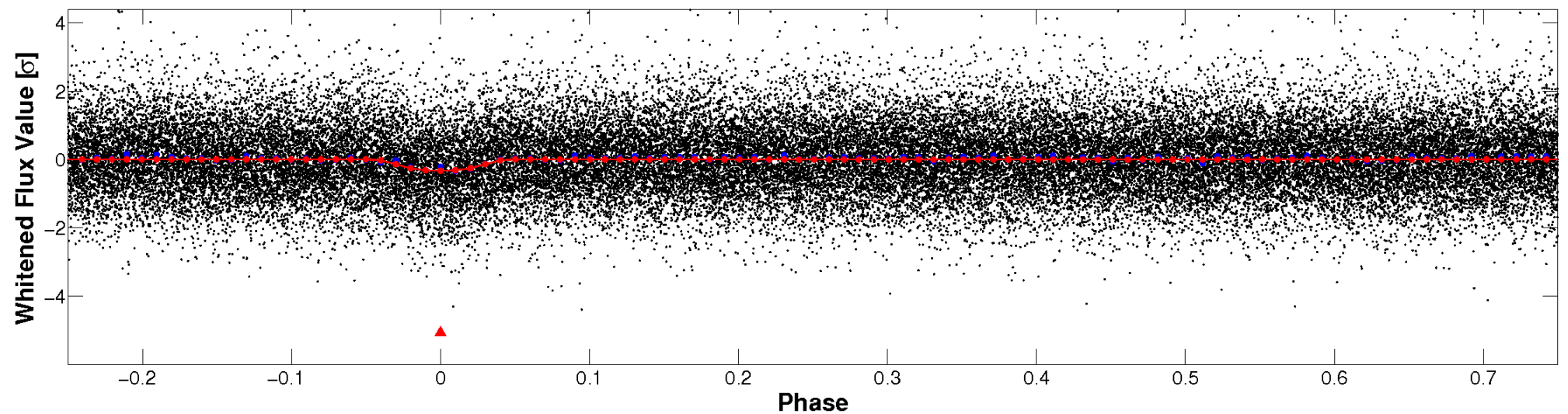


Non-Whitened Vs. Whitened Light Curve

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

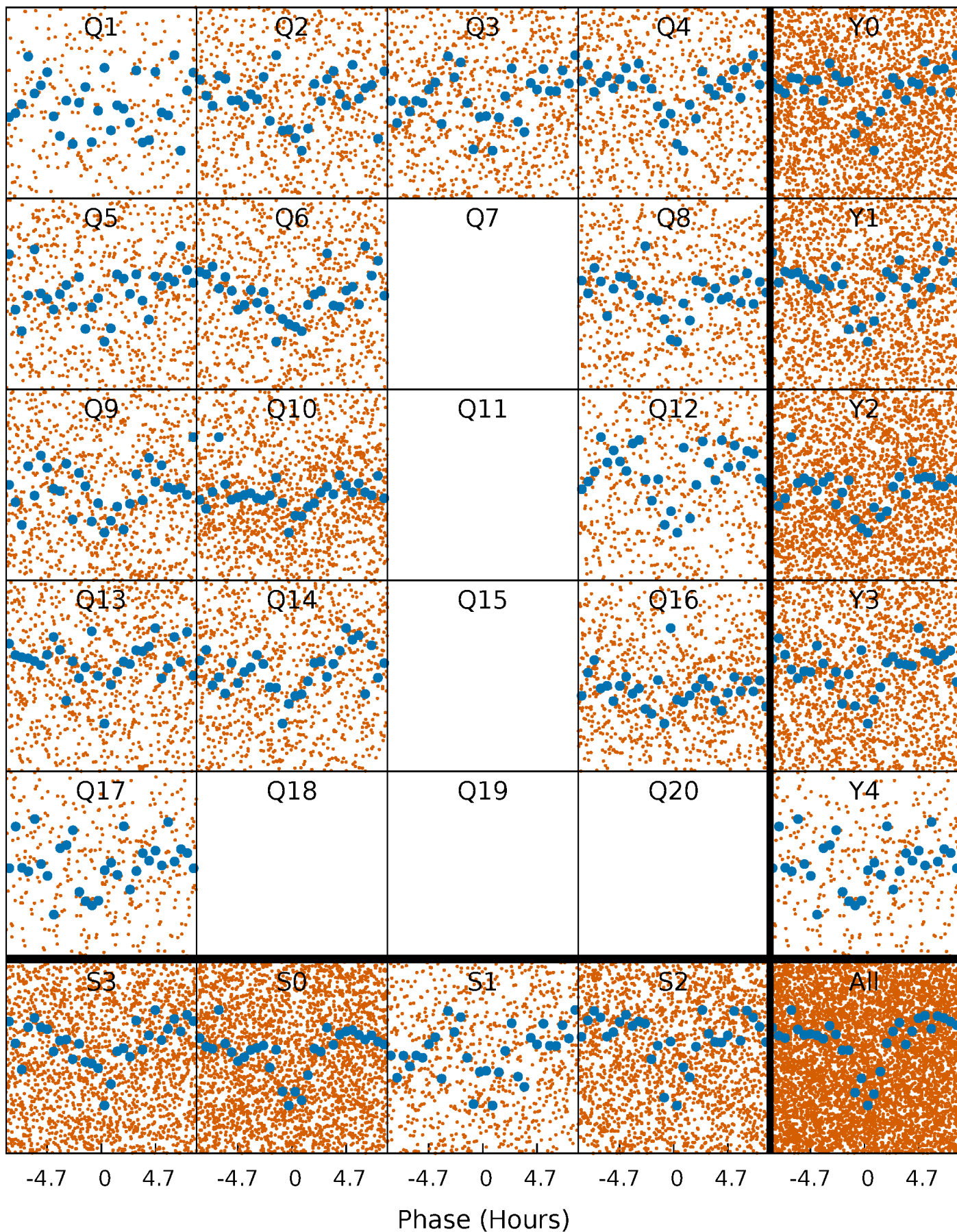


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



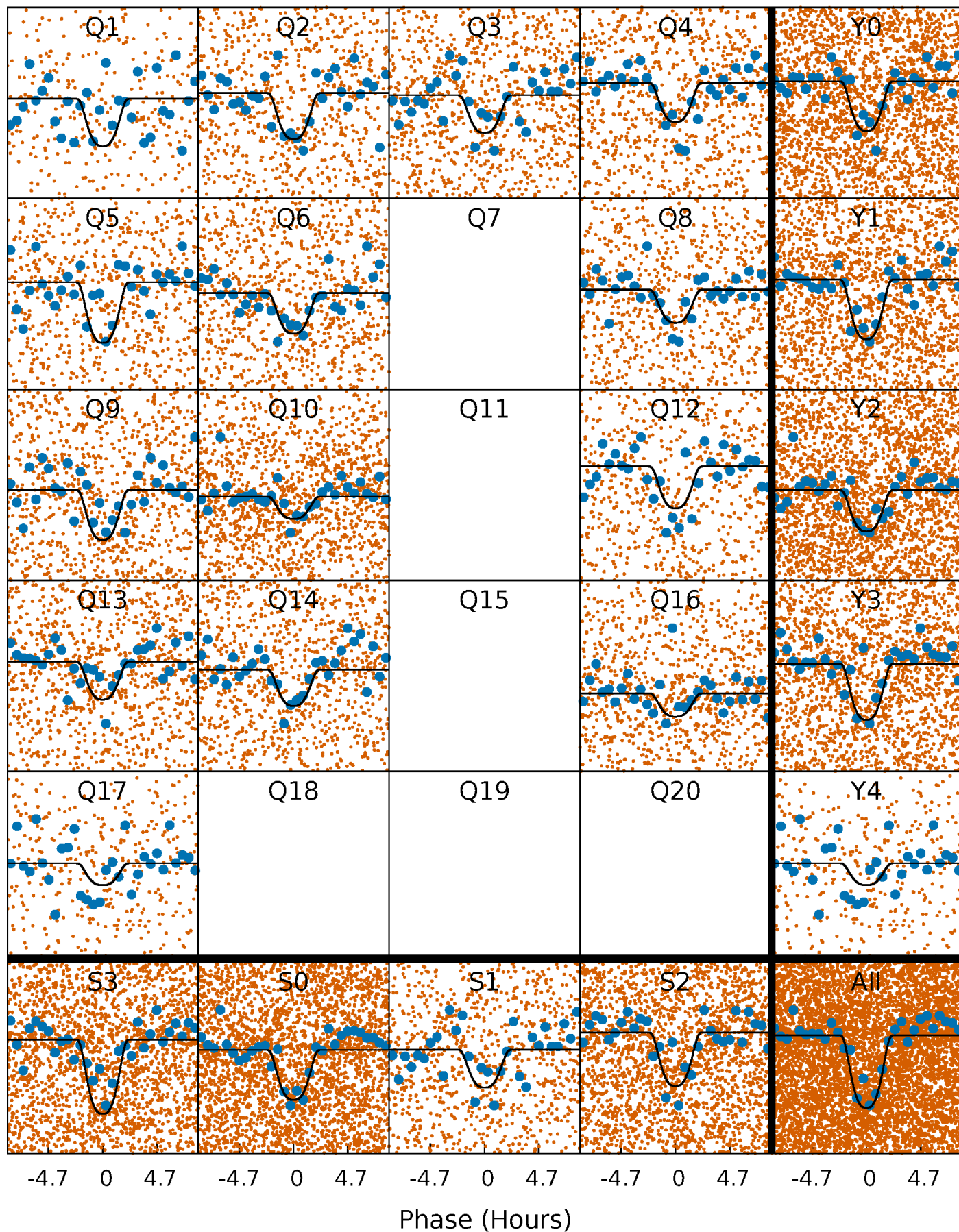
PDC Quarter-Phased Transit Curves

TCE 010481045-01 P= 2.037470 Days $T_0=131.547862$ (BKJD)



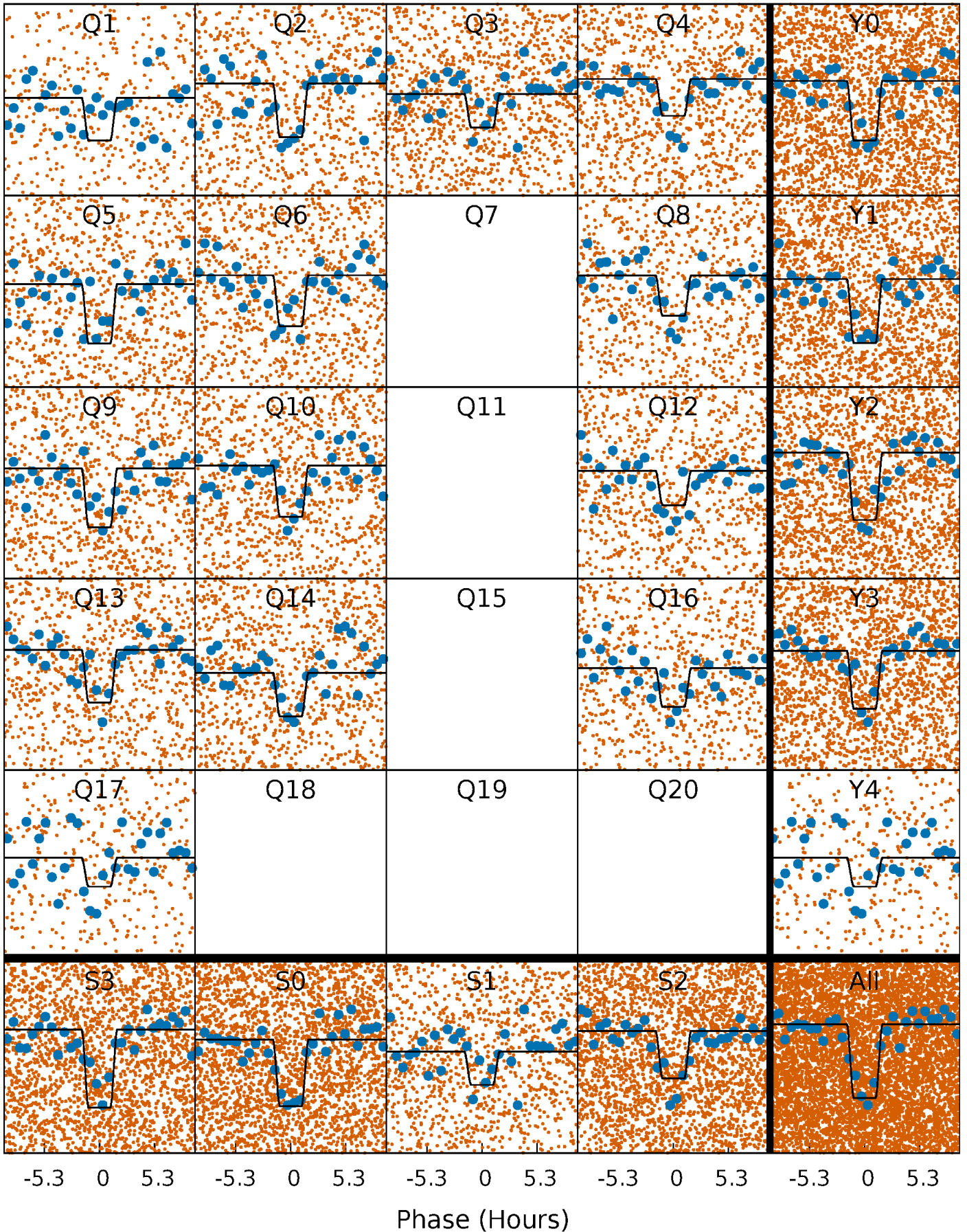
DV Quarter-Phased Transit Curves

TCE 010481045-01 P= 2.037470 Days $T_0=131.547862$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

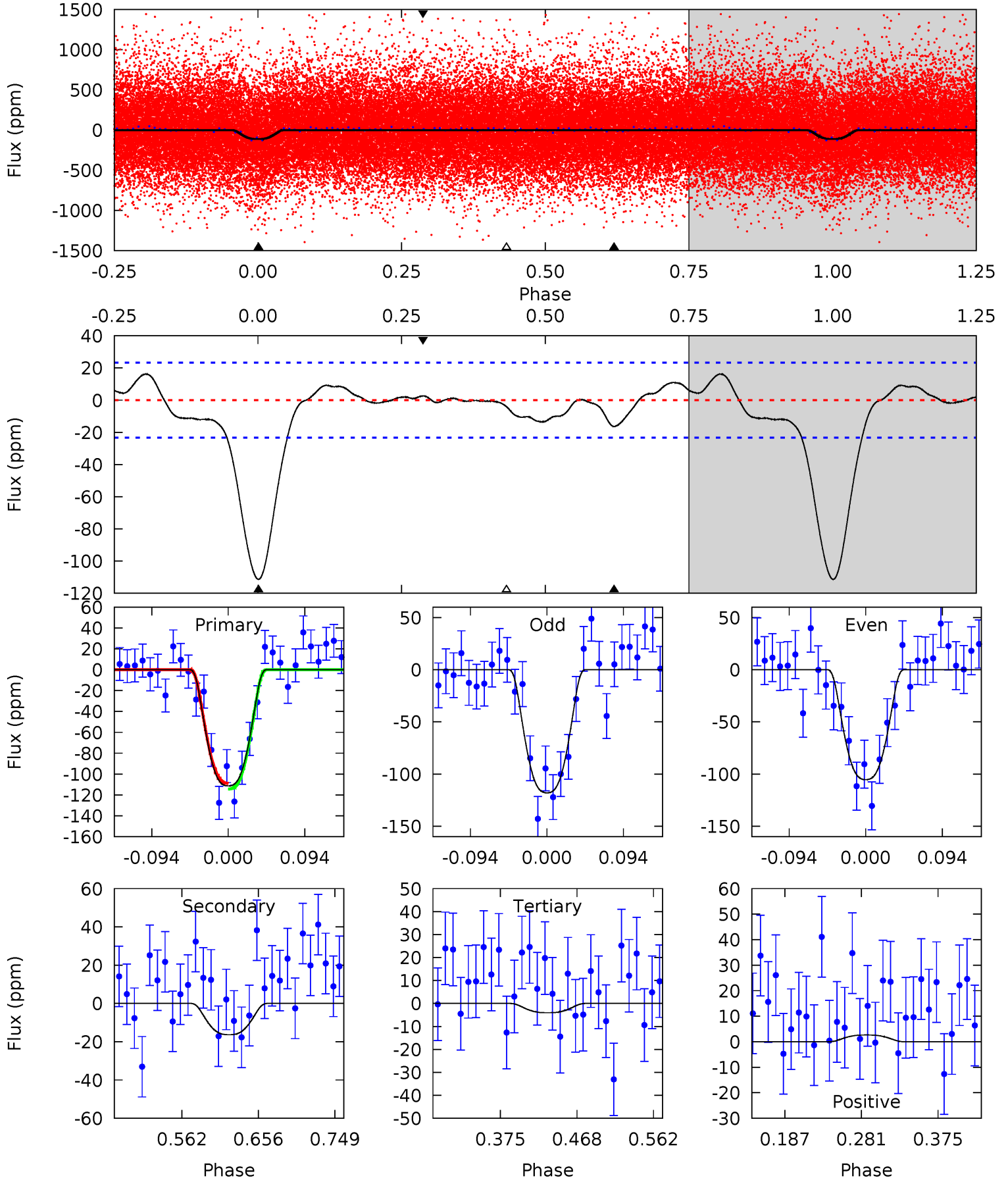
TCE 010481045-01 P= 2.037429 Days $T_0=131.562839$ (BKJD)



DV Model-Shift Uniqueness Test

010481045-01, P = 2.037470 Days, E = 129.510392 Days

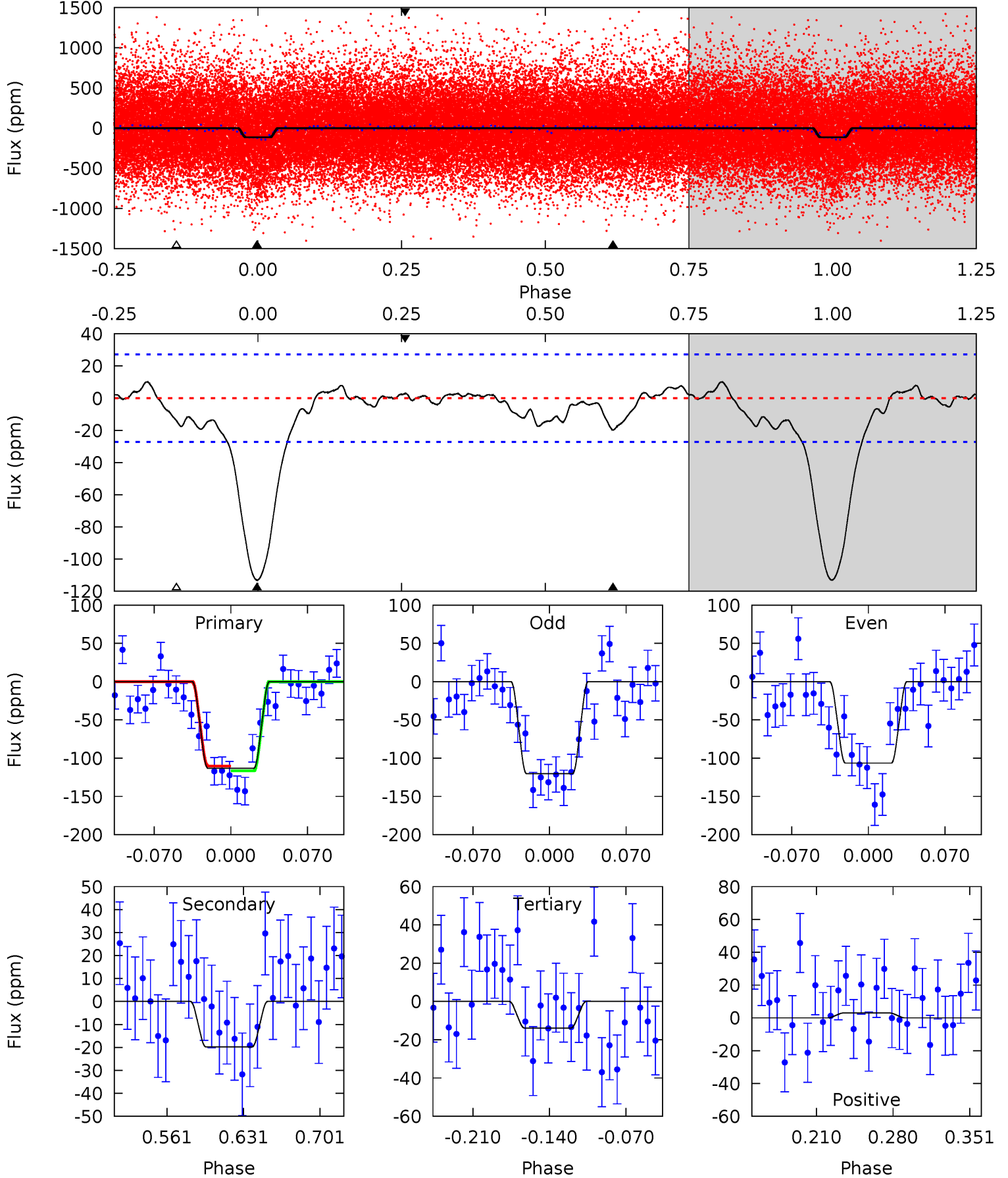
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	3.21	0.79	0.52	4.58	1.68	1.48	21.1	21.3	2.42	2.69	1.25	0.89	0.13	0.54



Alt Model-Shift Uniqueness Test

010481045-01, P = 2.037429 Days, E = 129.525410 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	3.39	2.38	0.50	4.64	1.81	1.24	17.0	18.8	1.01	2.88	1.18	1.03	0.08	0.53



Stellar Parameters For KIC 010481045

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5751^{+173}_{-173}	$4.577^{+0.050}_{-0.150}$	$-0.520^{+0.300}_{-0.300}$	$0.774^{+0.181}_{-0.072}$	$0.826^{+0.087}_{-0.079}$	$2.504^{+0.515}_{-1.070}$
	+3%/-3%	+1%/-3%	+58%/-58%	+23%/-9%	+11%/-10%	+21%/-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 010481045-01 / KOI 2320.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-16 ± 5	$1.21^{+0.17}_{-0.14}$	1843^{+104}_{-78}	3530^{+203}_{-222}	$5.333^{+2.212}_{-1.886}$
Alt.	-20 ± 6	$0.97^{+0.15}_{-0.13}$	1841^{+109}_{-77}	3923^{+288}_{-268}	$9.898^{+4.330}_{-3.545}$

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

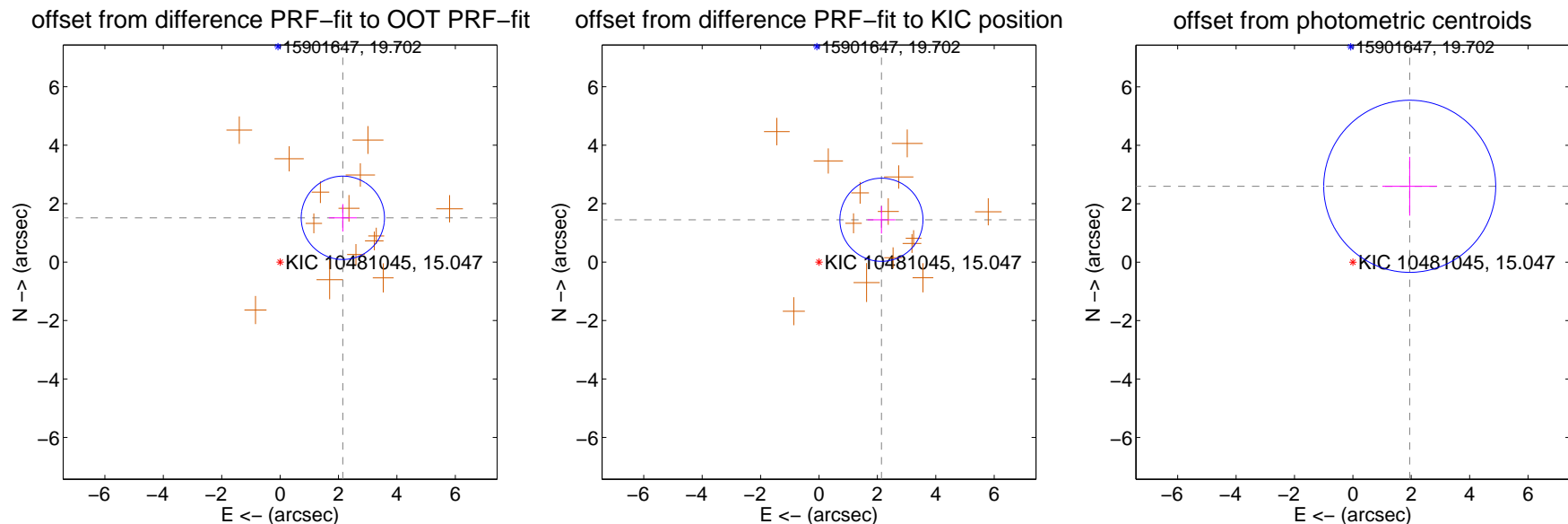
DV Centroid Data

Supplemental centroid analysis for 010481045-01. Kepler magnitude: 15.05. Transit SNR 15.15

There are 0 quarters with good PRF difference image offsets

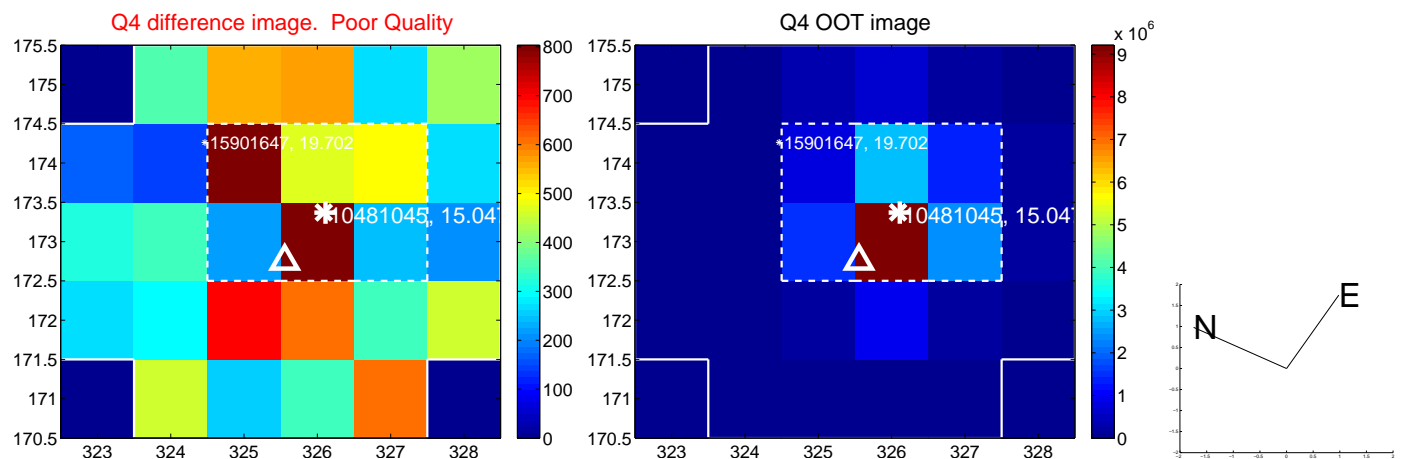
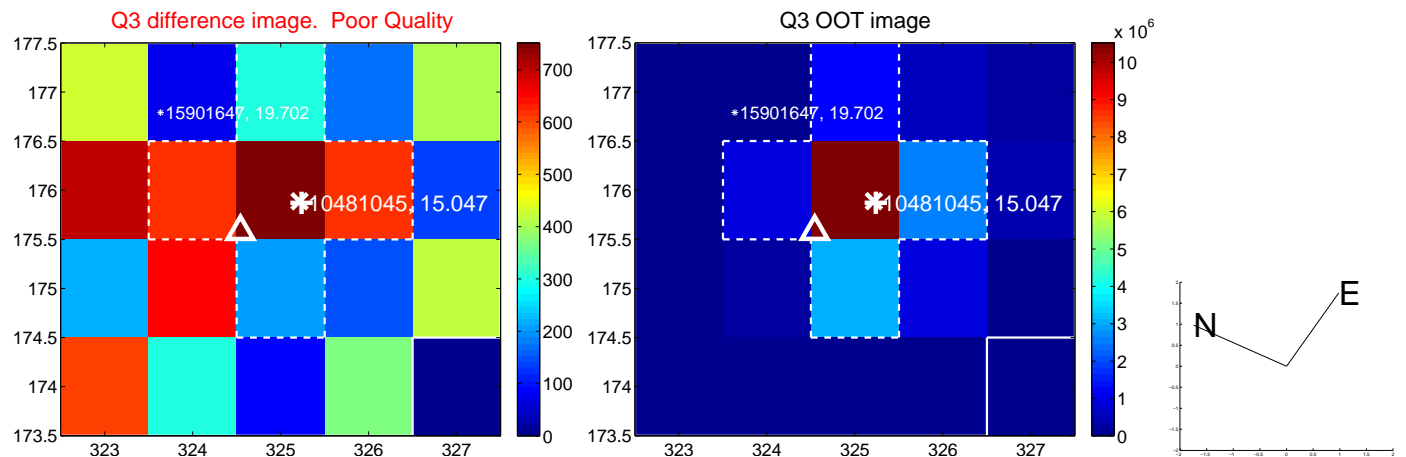
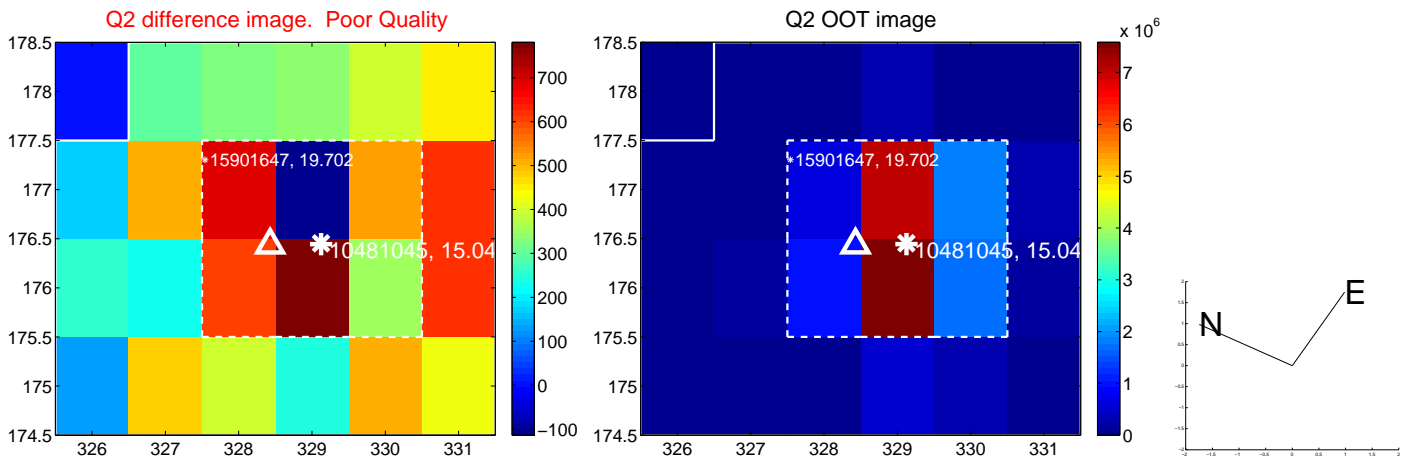
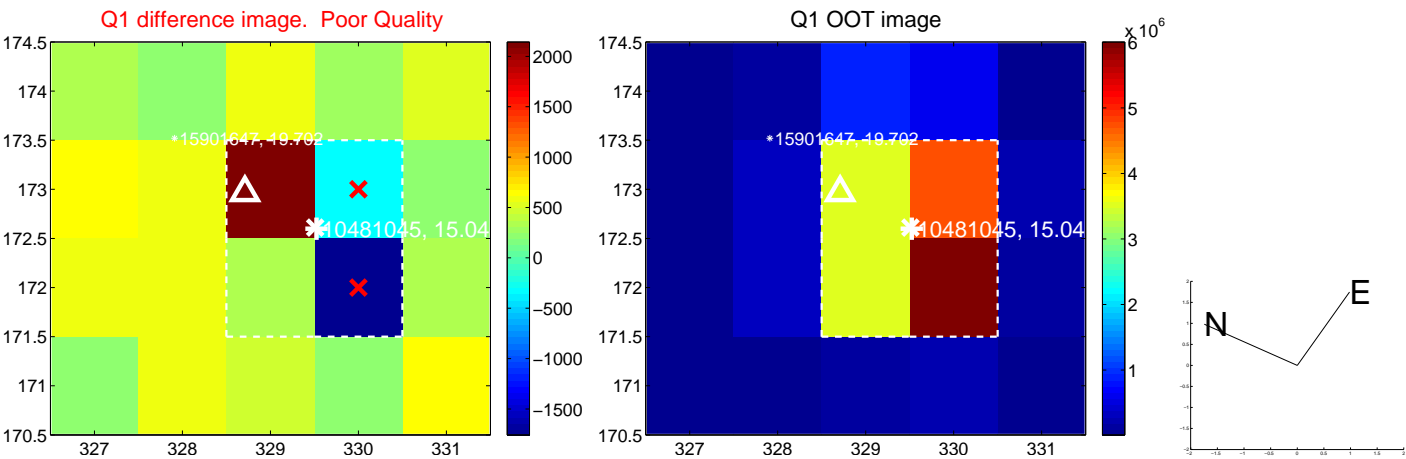
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.629 ± 0.475	5.53	-2.148 ± 0.478	1.515 ± 0.470
PRF-fit source offset from KIC position	2.582 ± 0.474	5.45	-2.138 ± 0.477	1.448 ± 0.468
photometric centroid source offset	3.25 ± 0.98	3.31	-1.95 ± 0.94	2.60 ± 1.01

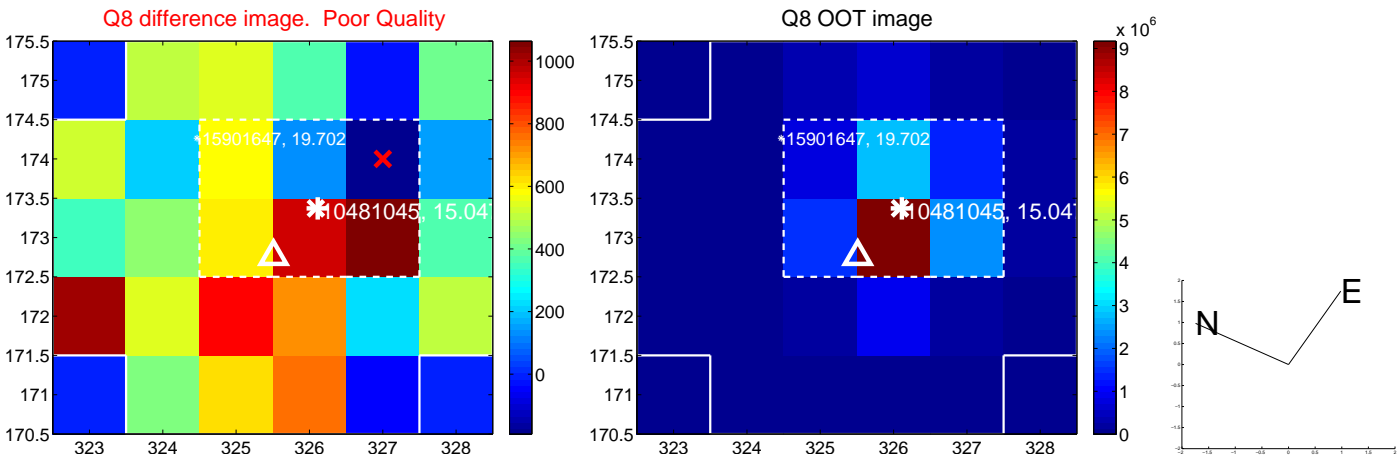
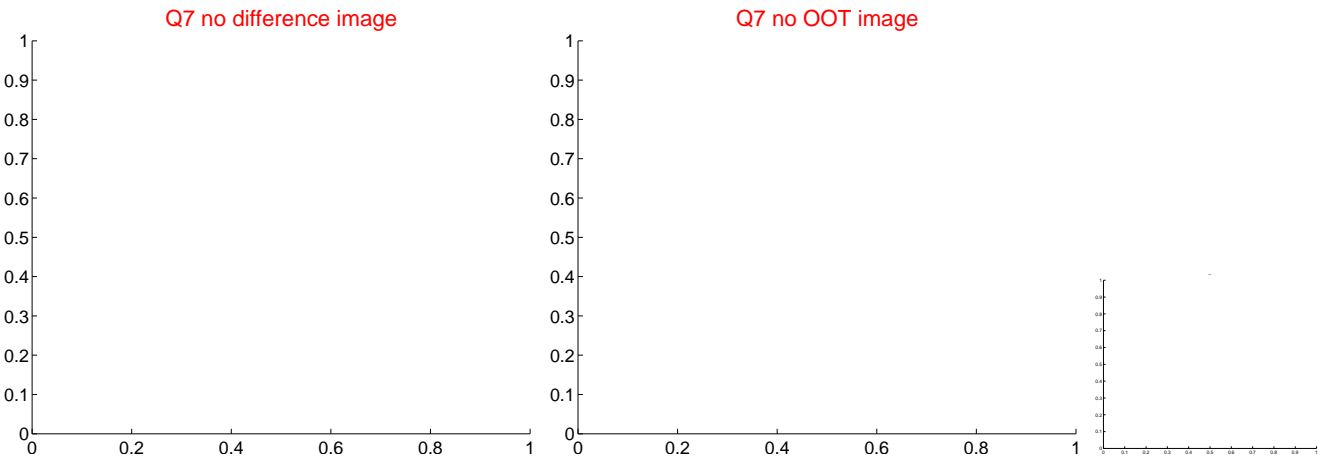
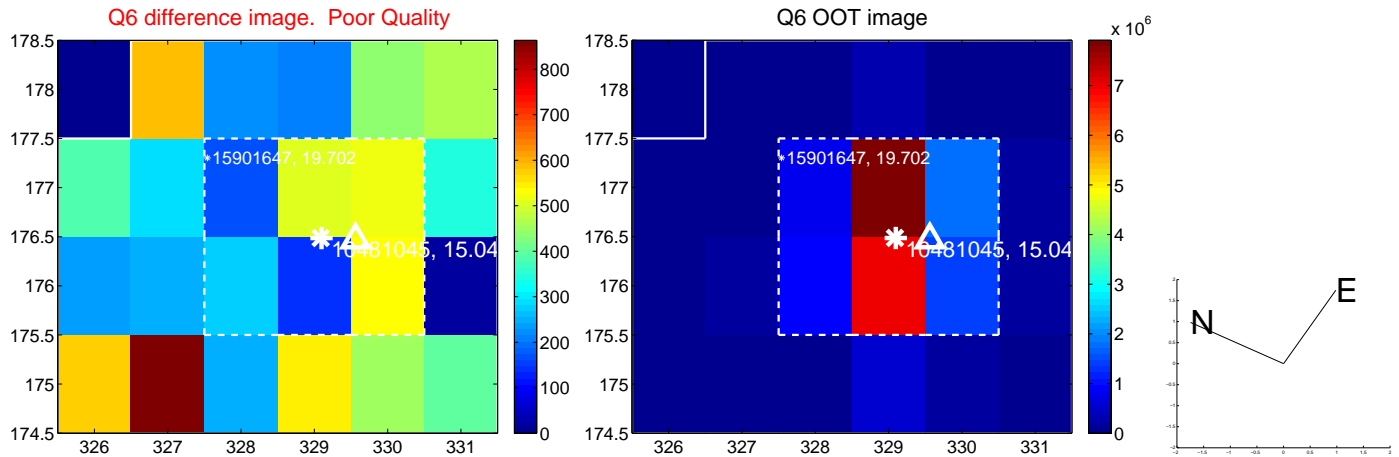
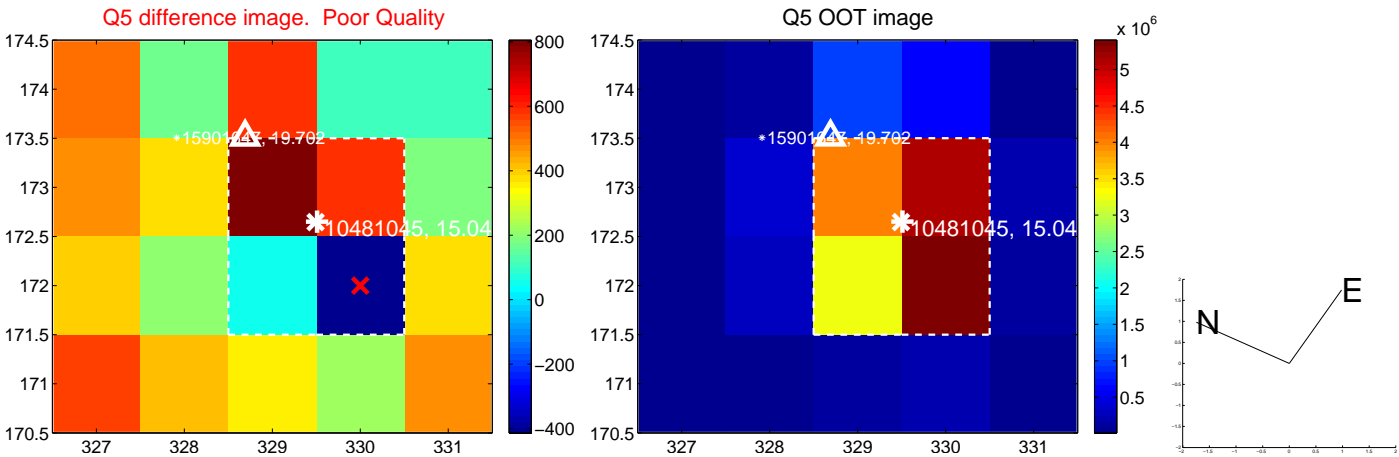


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

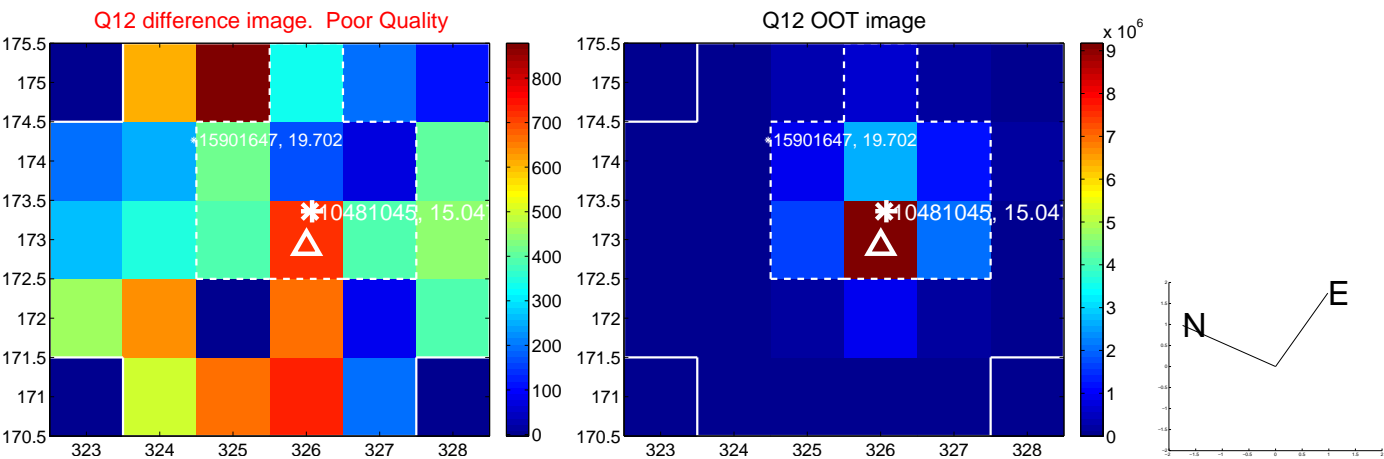
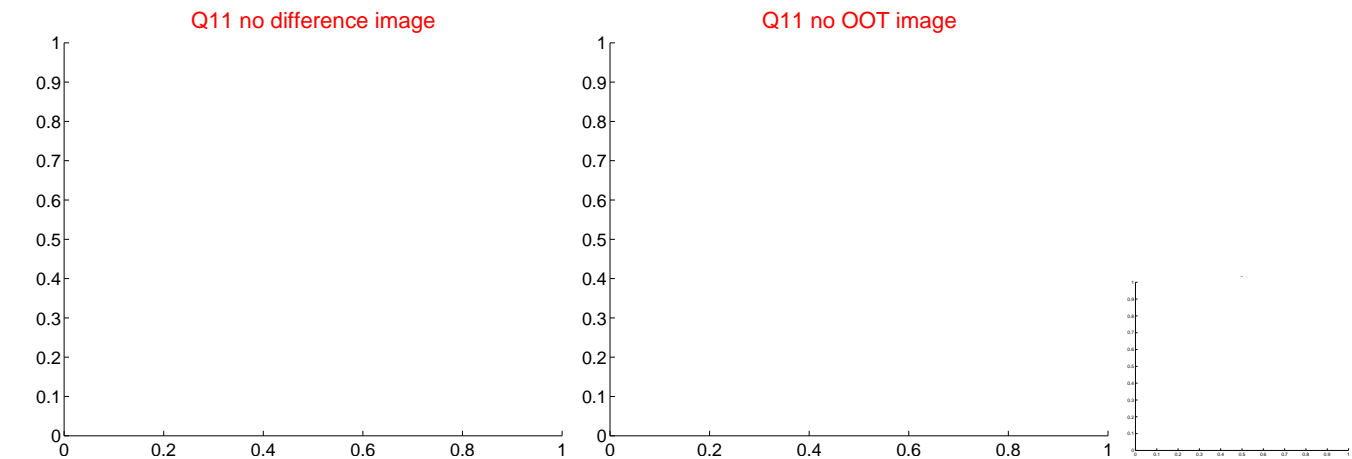
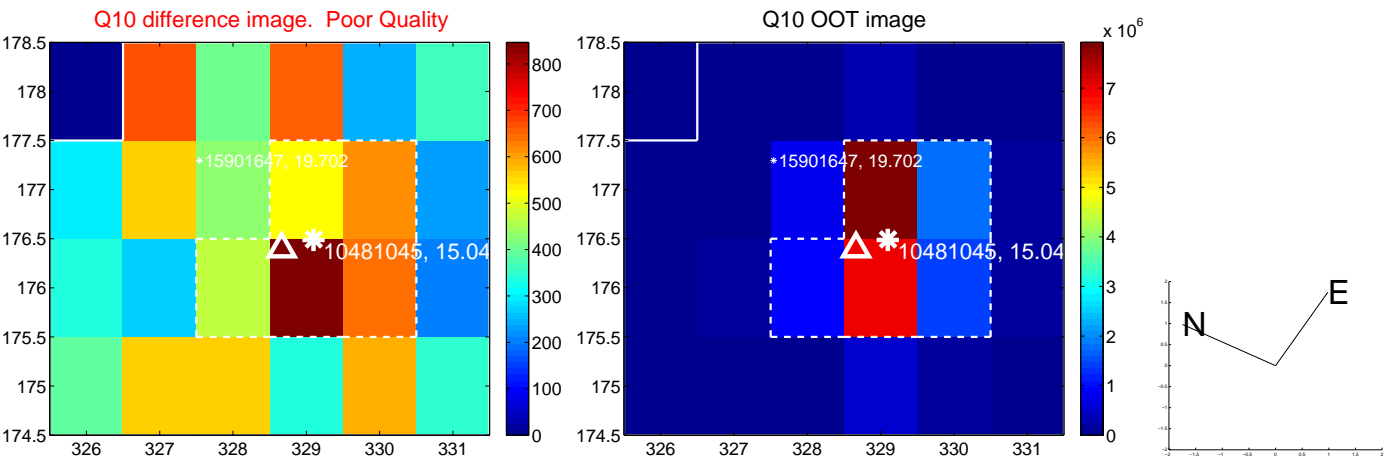
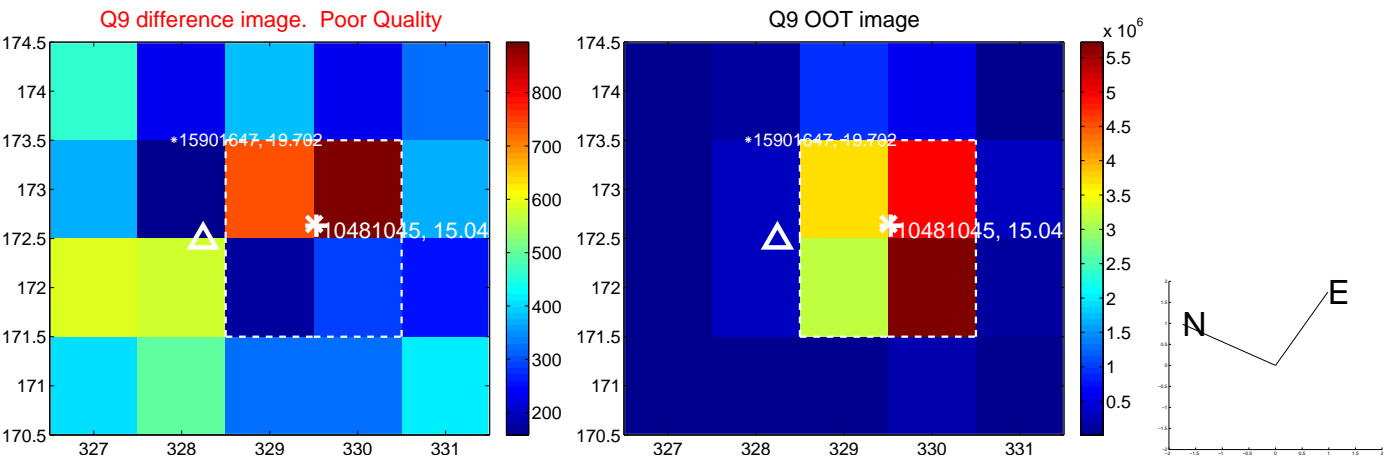
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



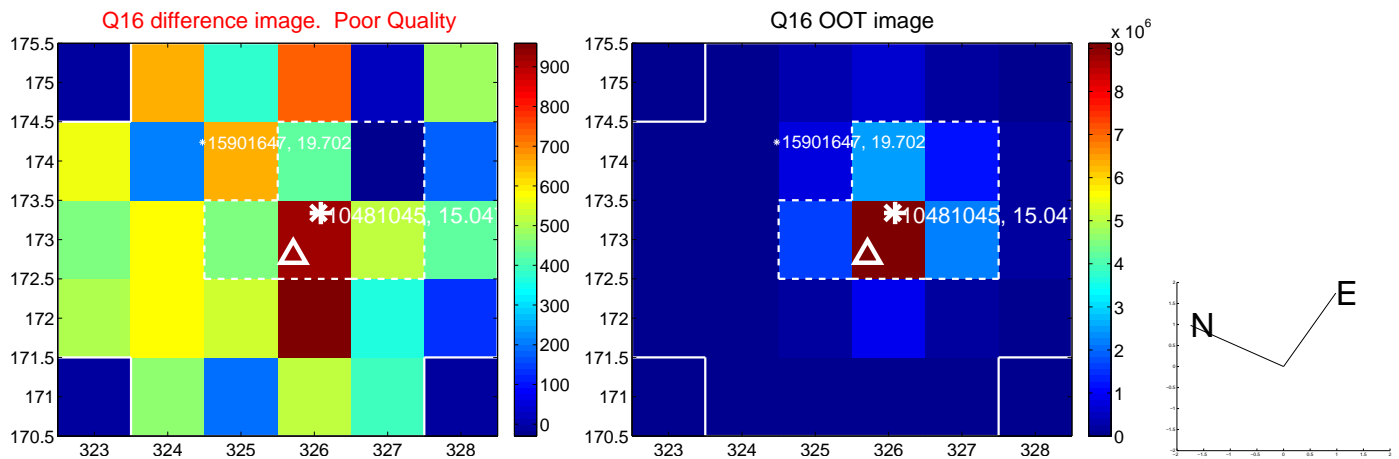
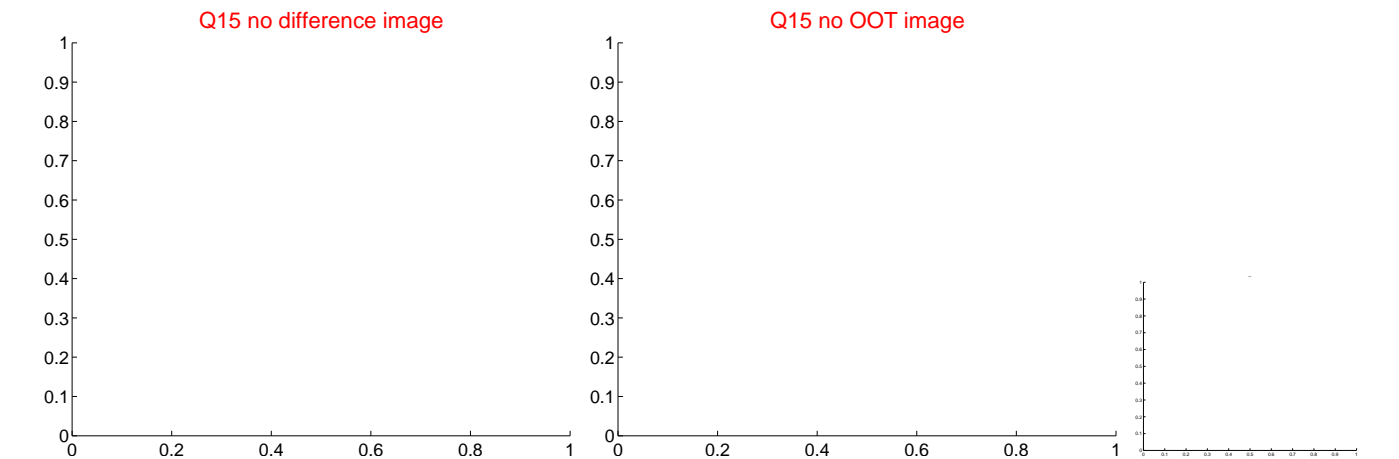
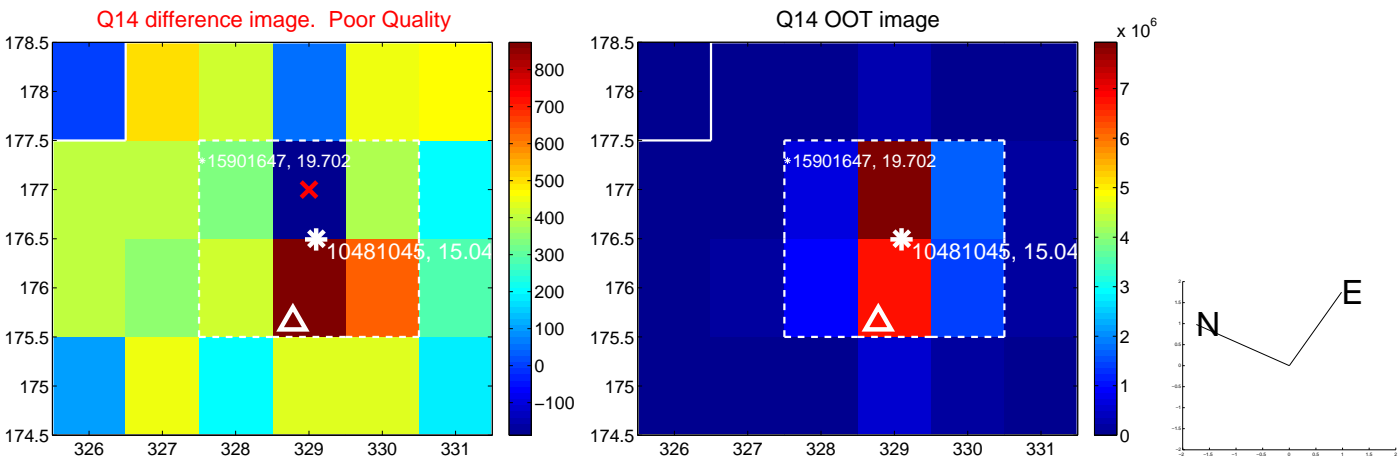
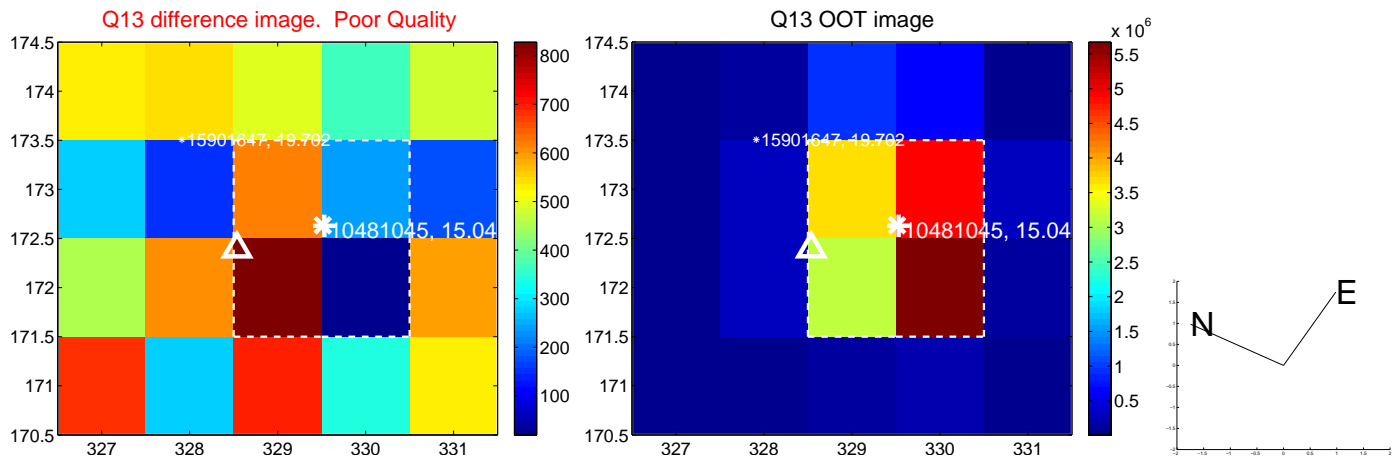
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



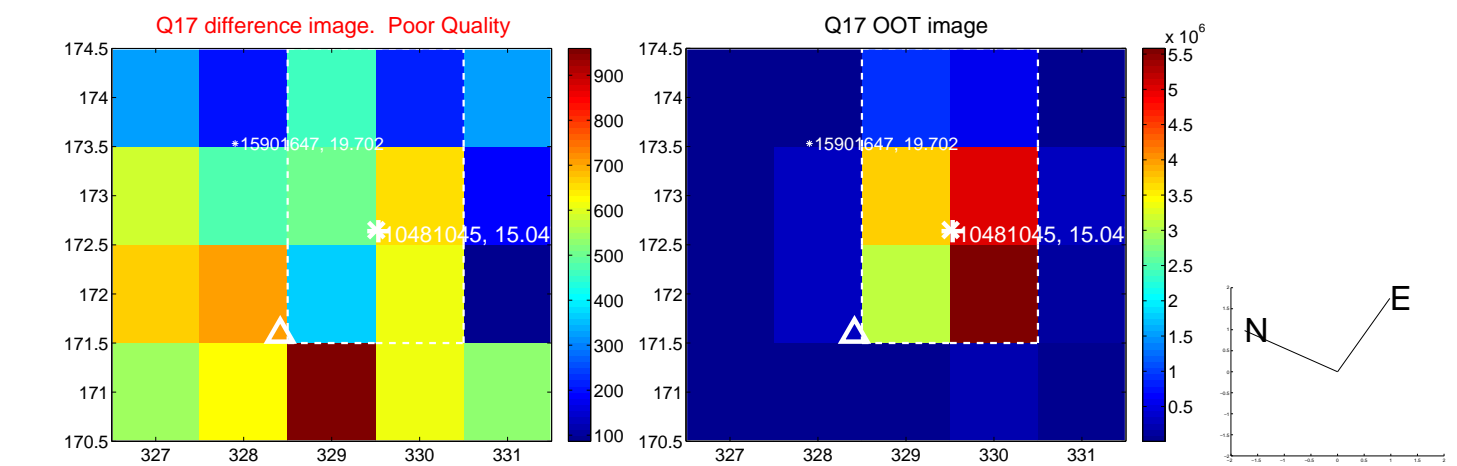
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



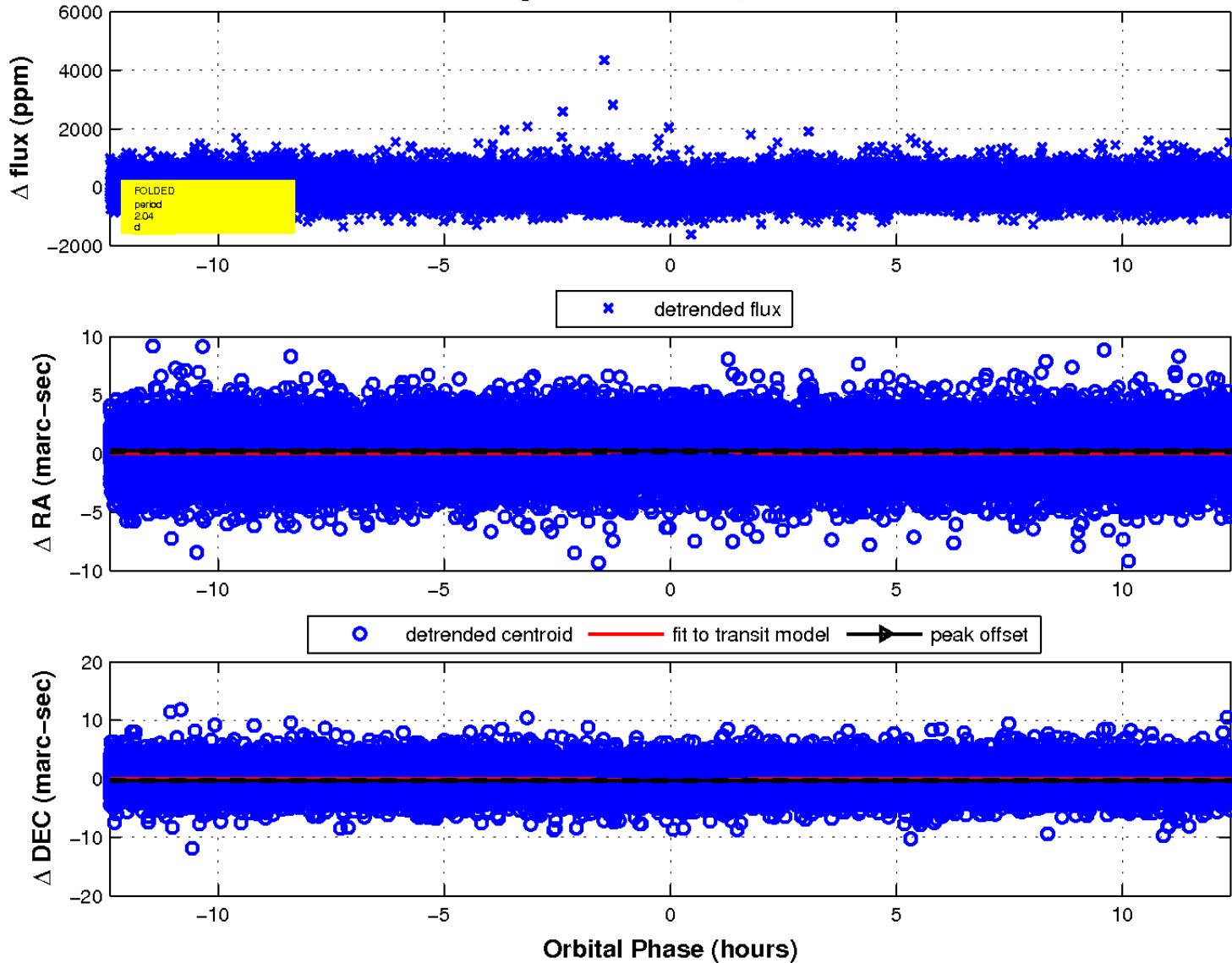
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

