

KIC 002714954

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})
002714954-01	OBS	No	0.968221	132.432538	29.1	9.527	10.8	10.2	1.04	5808	0.56	3089.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002714954-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_FEW_DIFFS—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.

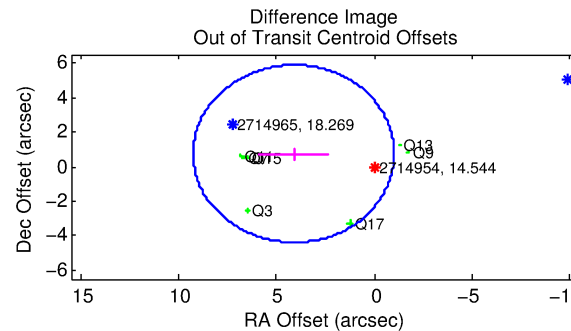
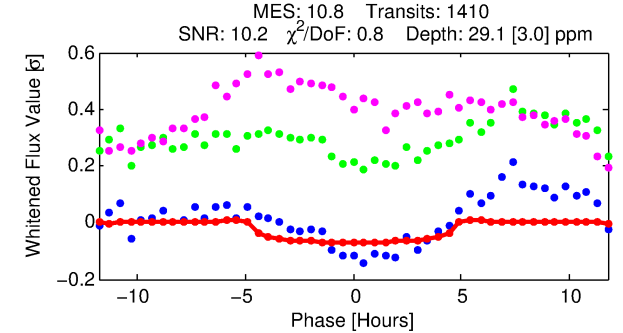
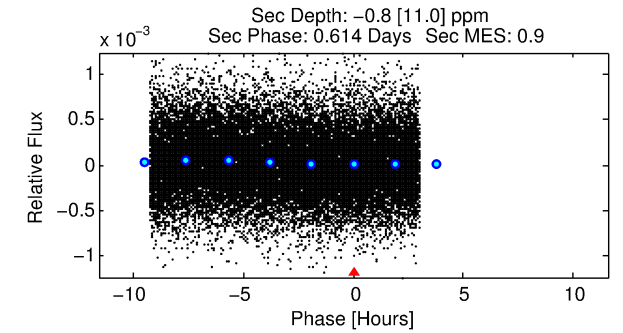
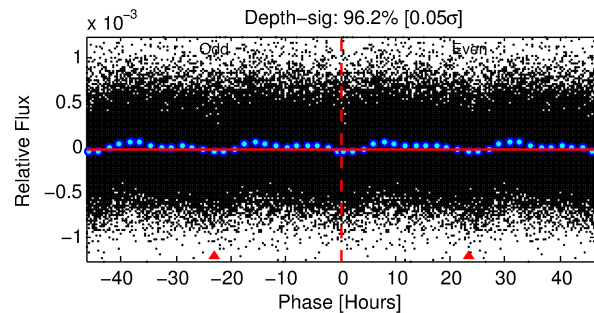
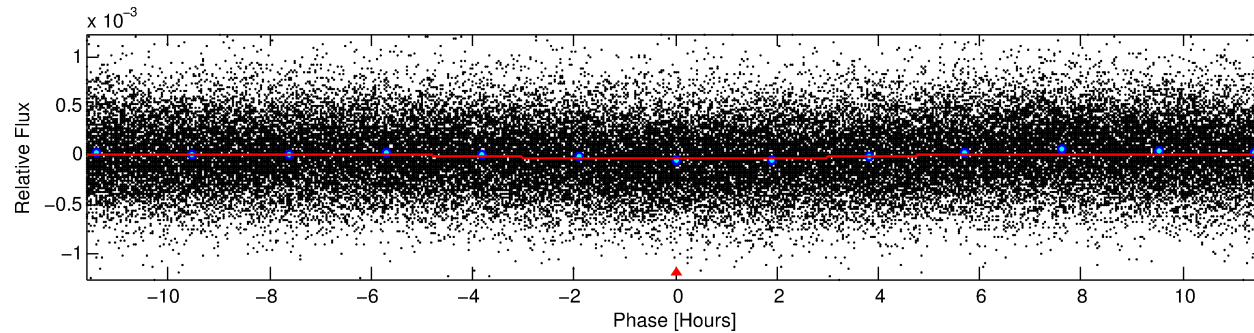
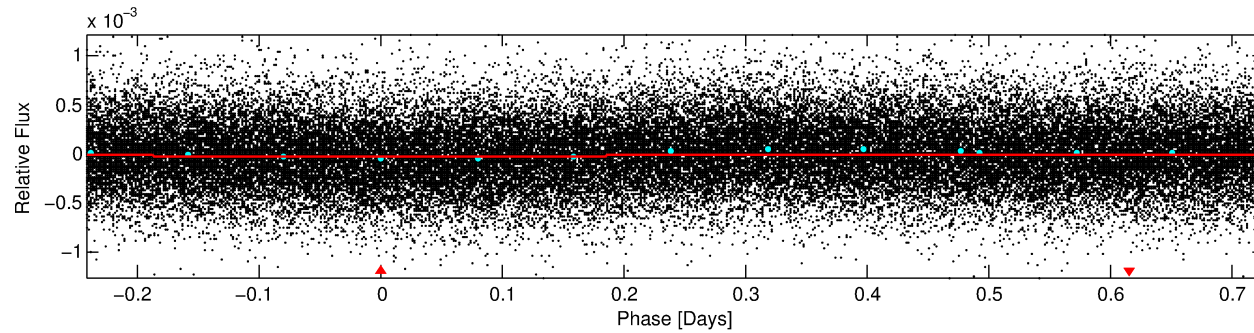
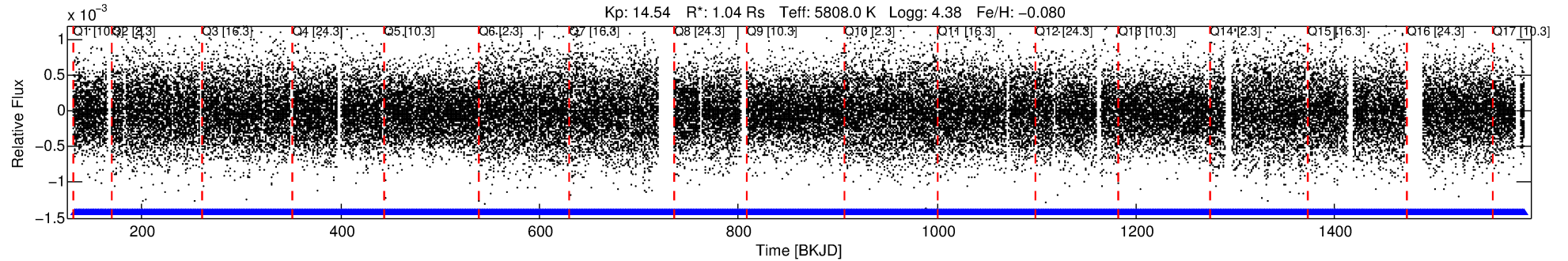
Ephemeris Match Information For 002714954-01

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
002714954-01	2714954	002714887-01	2714887	1:3	54.5	-12	-5	14.43	14.54	1.90	Direct-PRF	1	2.90	0.52

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: 2714954 Candidate: 1 of 1 Period: 0.968 d



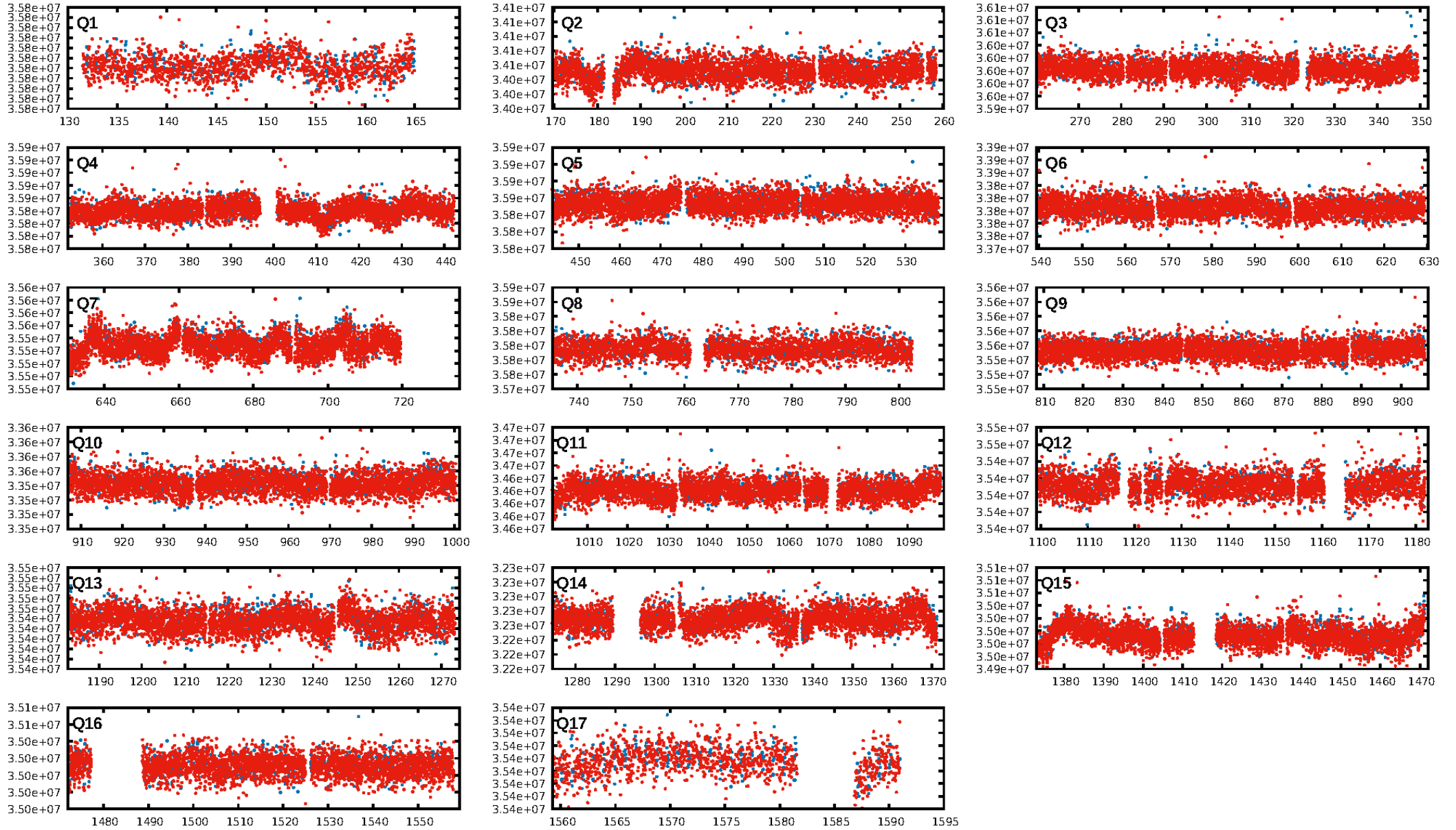
DV Fit Results:

Period = 0.96822 [0.00002] d
Epoch = 132.4325 [0.0085] BKJD
Rp/R* = 0.0049 [0.0052]
a/R* = 1.05 [0.41]
b = 0.08 [56.35]
Seff = 3089.88 [1115.76]
Teff = 1901 [172] K
Rp = 0.55 [0.60] Re
a = 0.0188 [0.0044] AU
Ag = N/A
Teffp = N/A

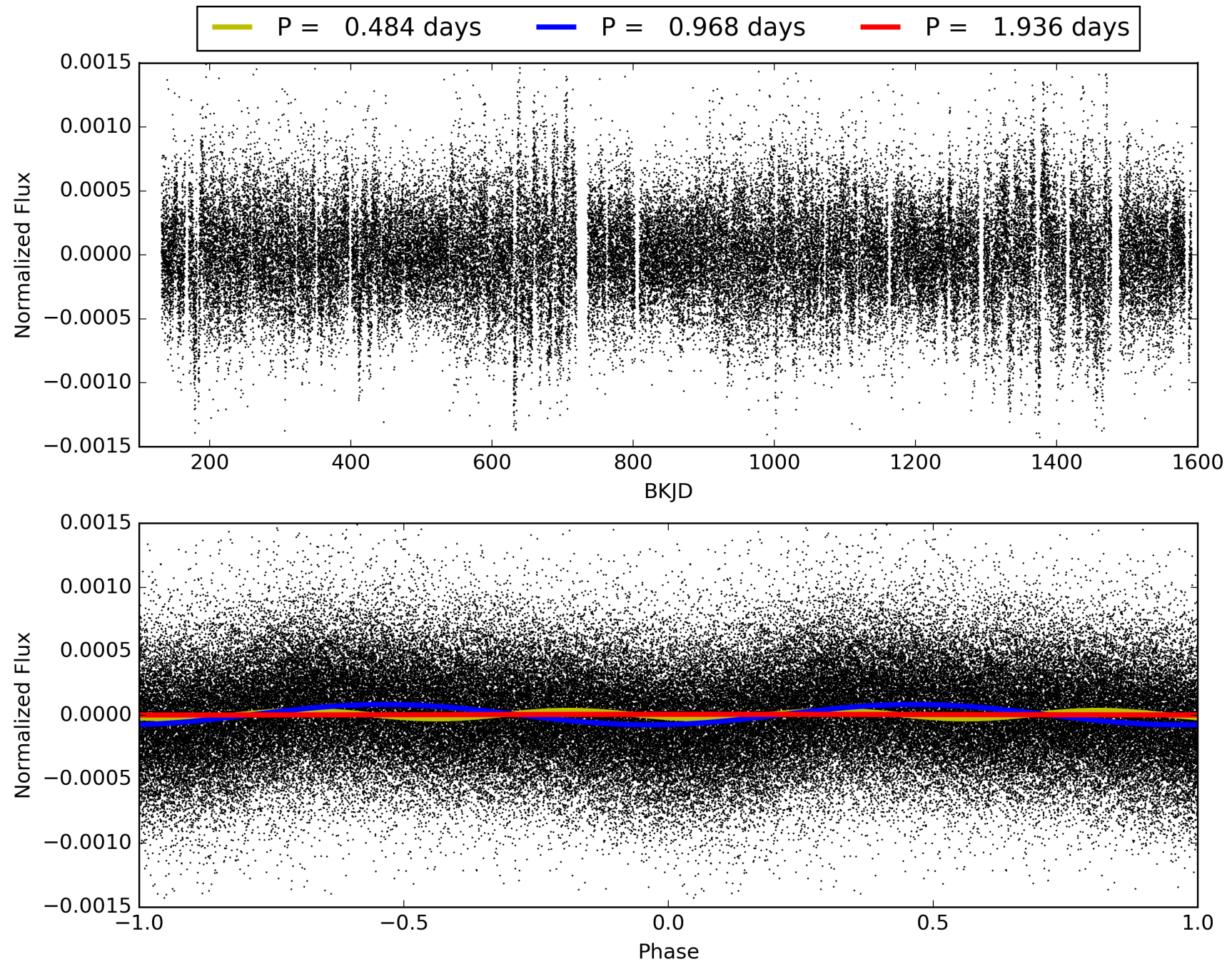
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1347/1347]
GhostDiagnostic-chr: 0.06813
Centroid-sig: 0.0%
Centroid-so: 9.082 arcsec [7.24 σ]
OotOffset-rm: 4.189 arcsec [2.45 σ]
KicOffset-rm: 4.064 arcsec [2.40 σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 0.29 [2/7]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 002714954-01, PDC Light Curves

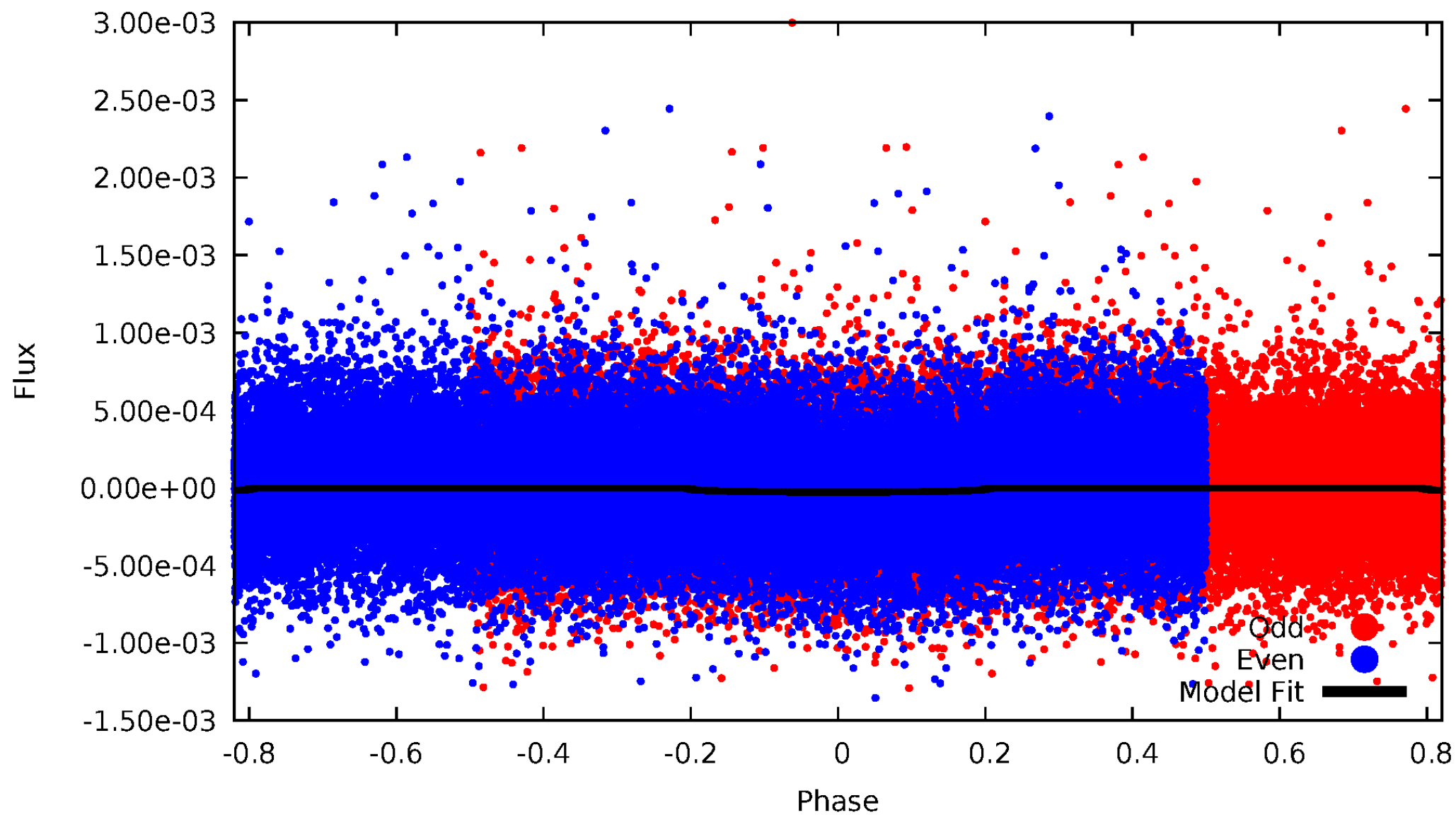


TCE 002714954-01



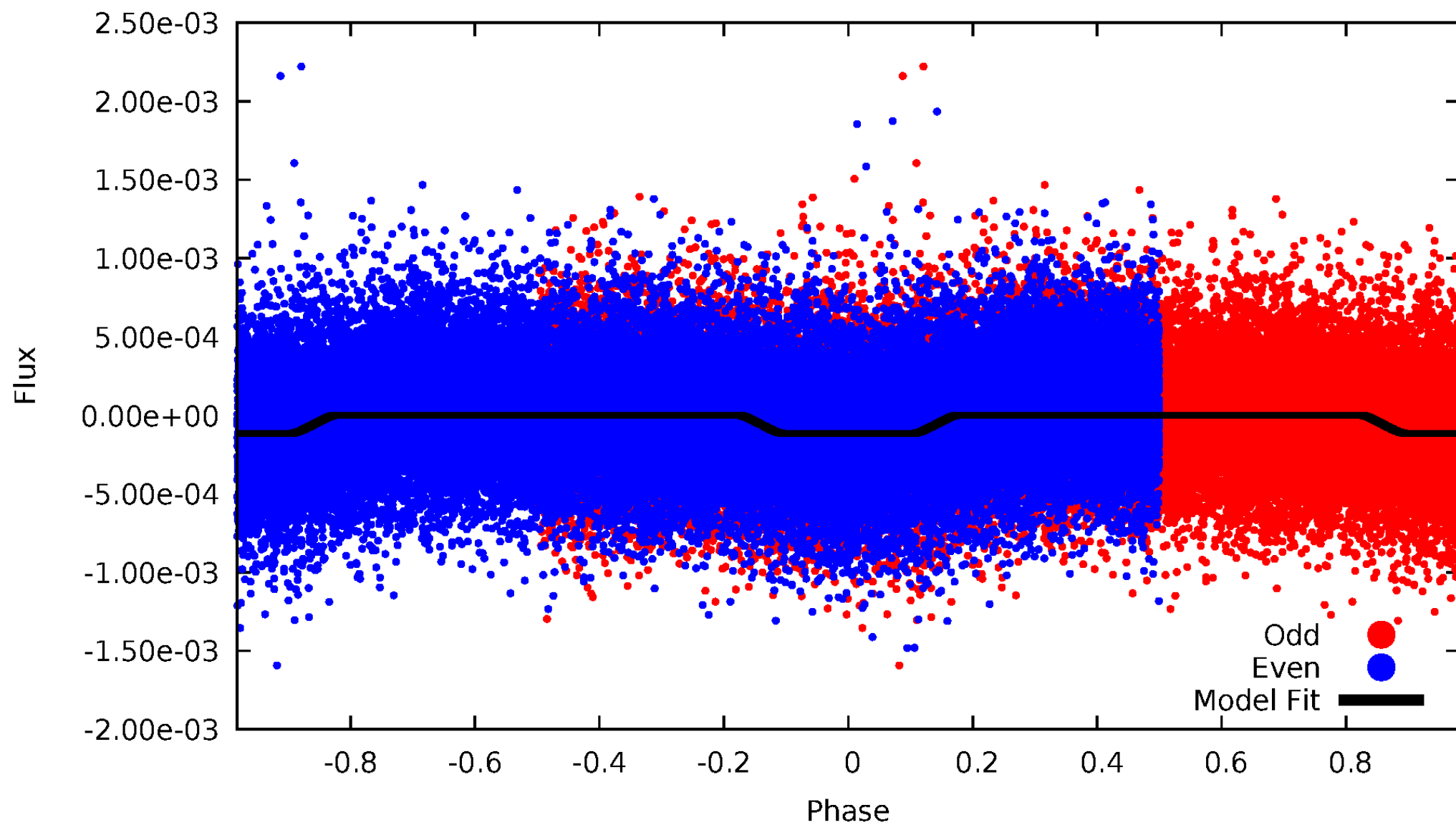
DV Odd/Even

TCE 002714954-01



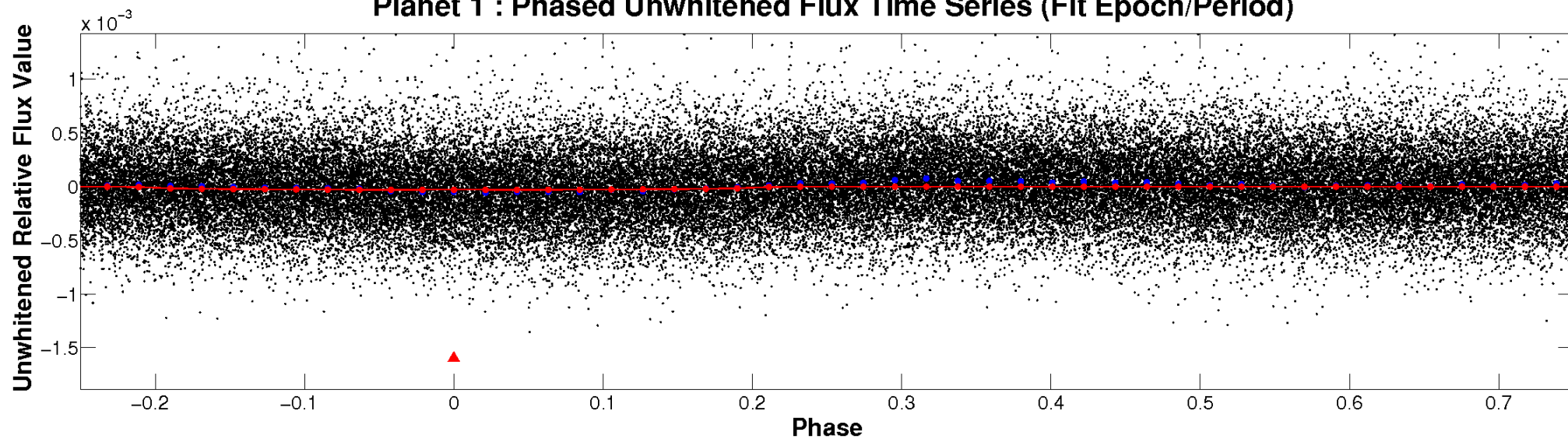
ALT Odd/Even

TCE 002714954-01

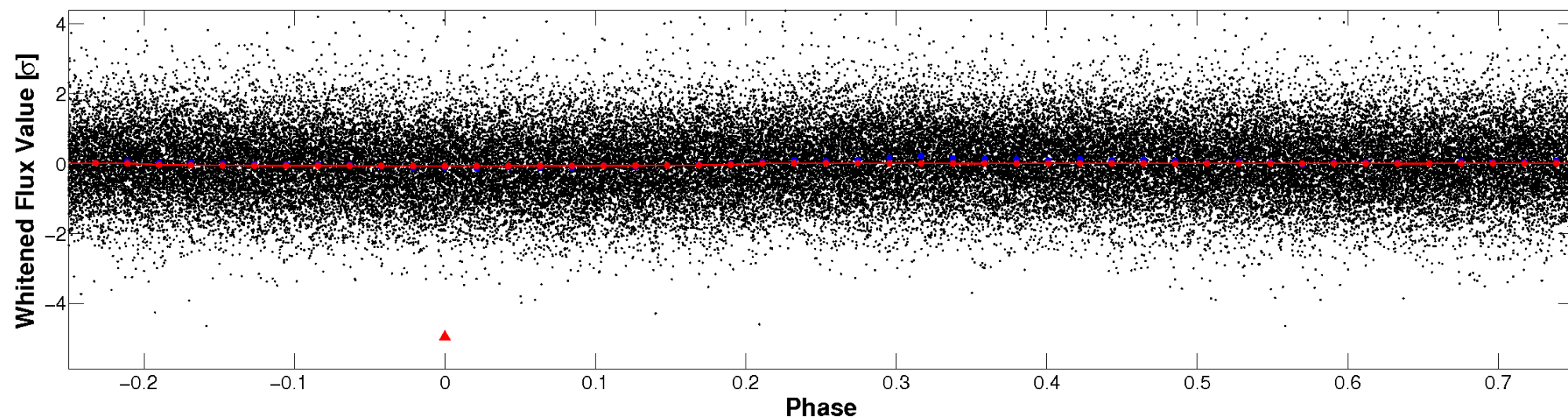


Non-Whitened Vs. Whitened Light Curve

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

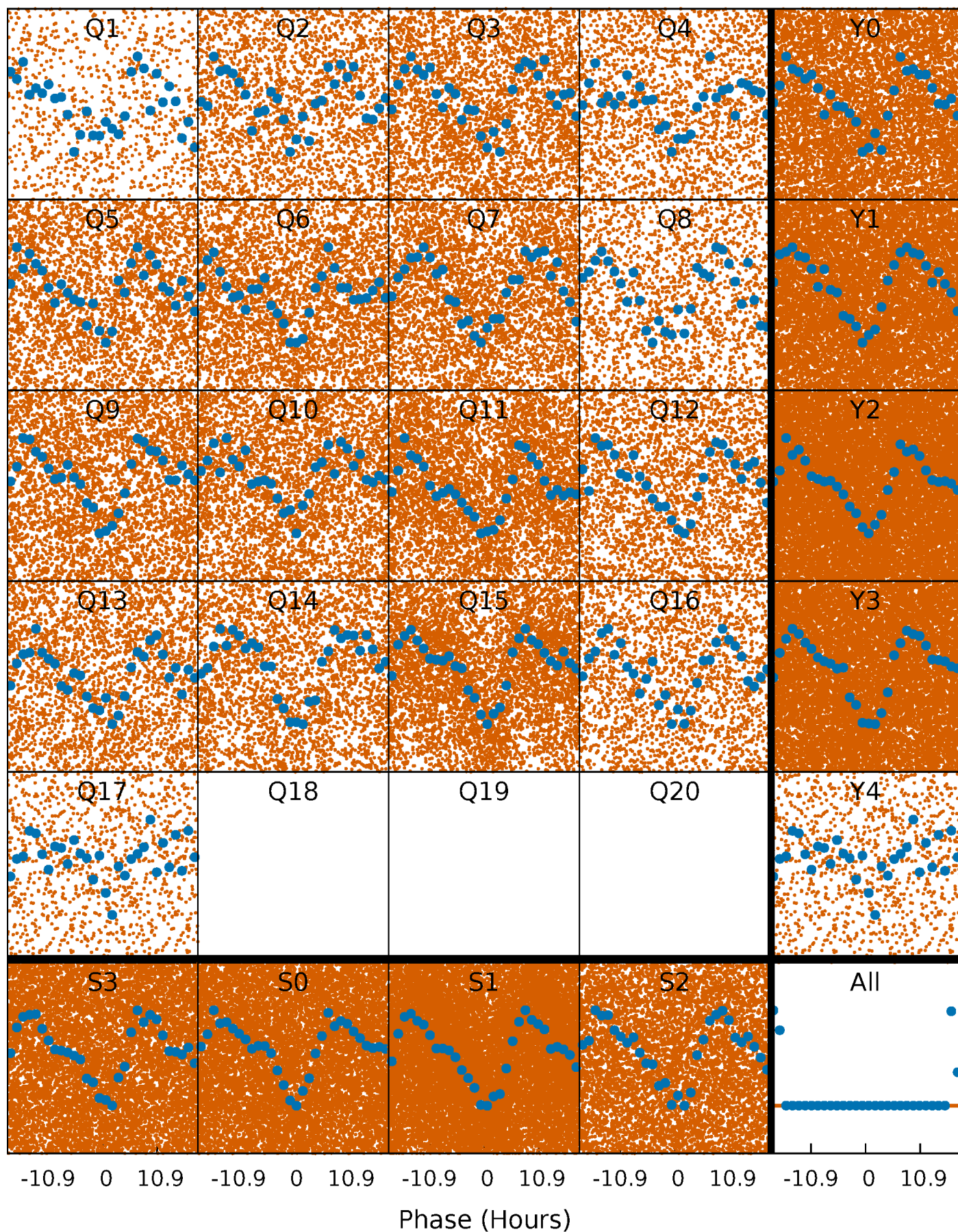


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



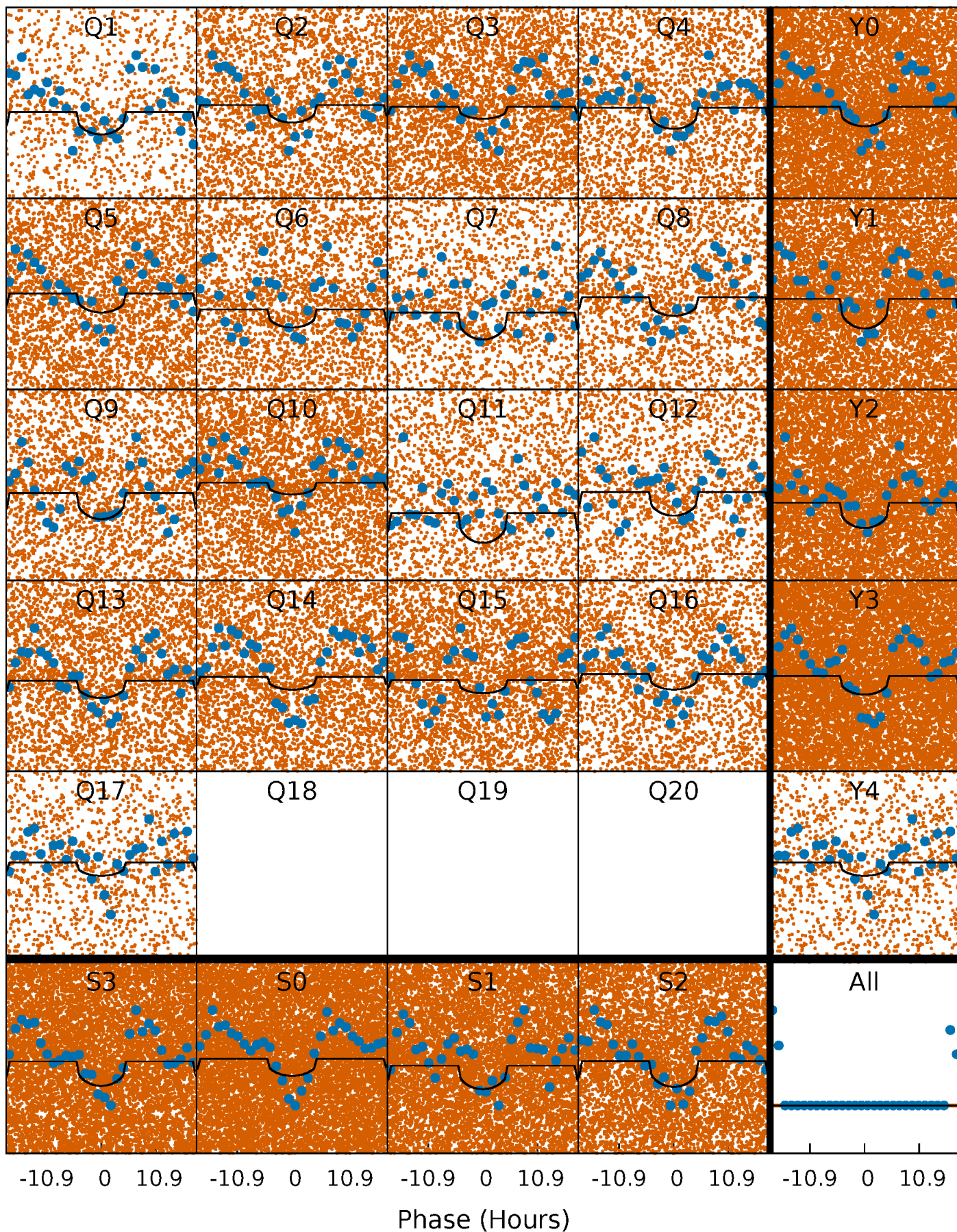
PDC Quarter-Phased Transit Curves

TCE 002714954-01 P= 0.968221 Days $T_0=132.432538$ (BKJD)



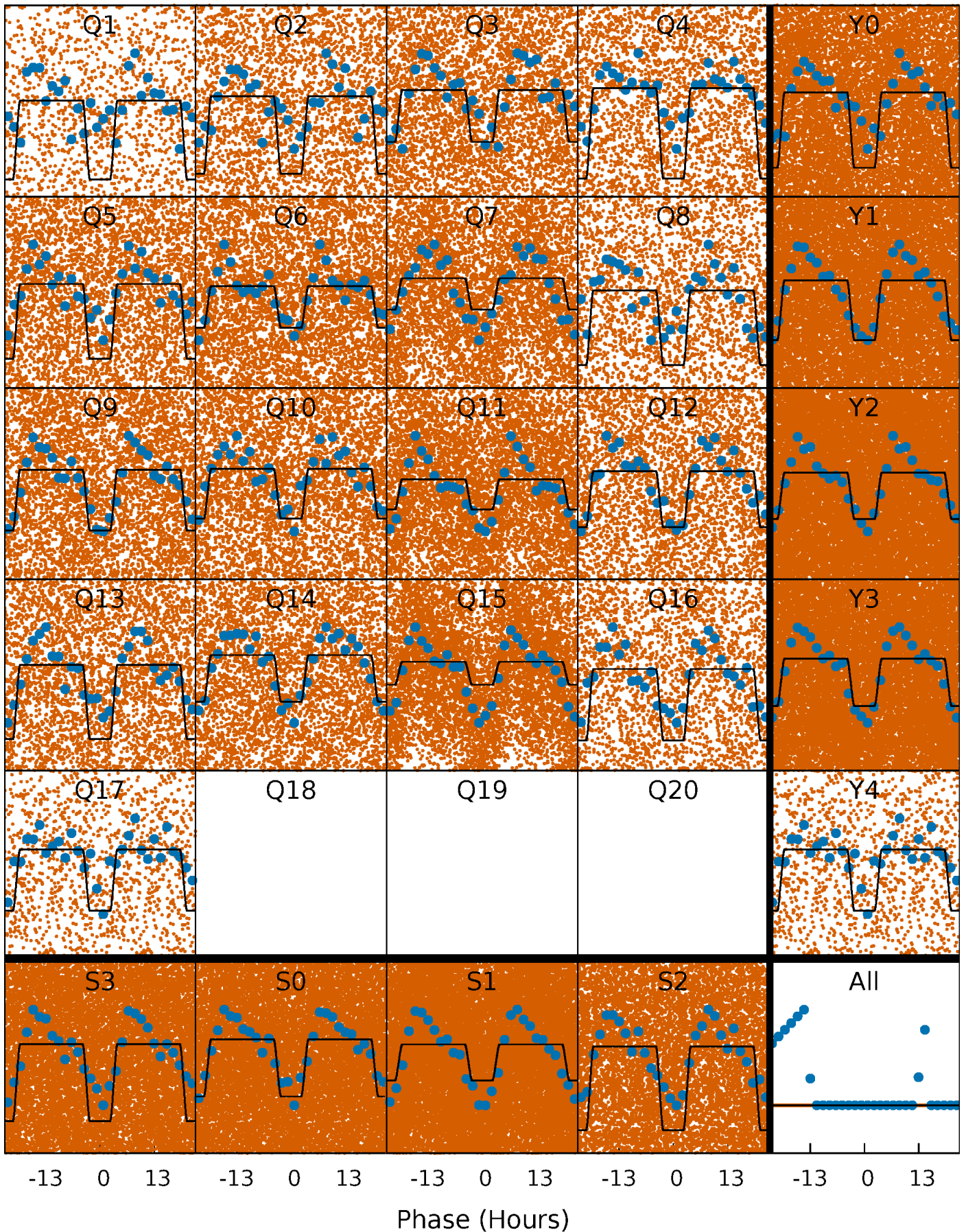
DV Quarter-Phased Transit Curves

TCE 002714954-01 P= 0.968221 Days $T_0=132.432538$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

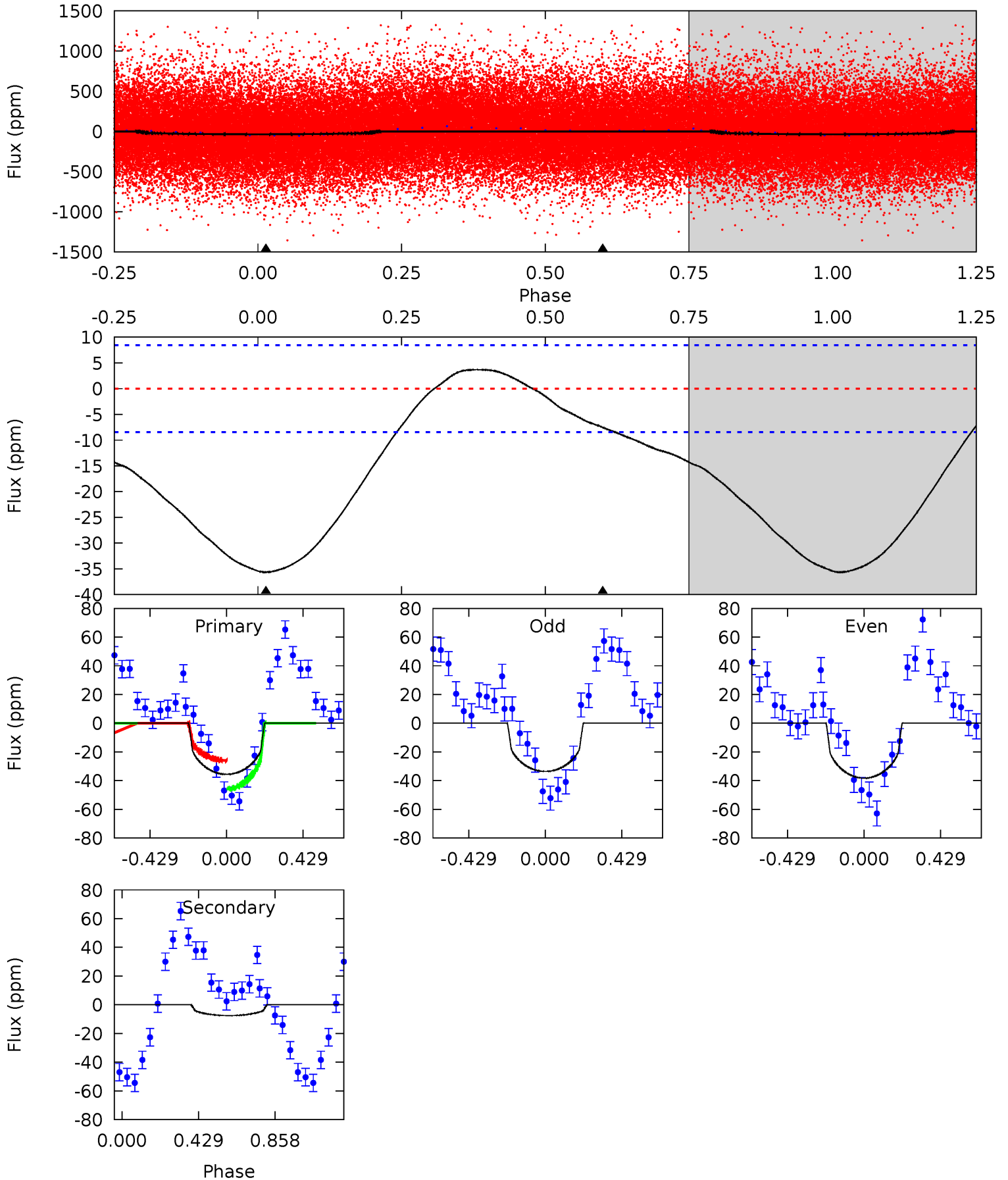
TCE 002714954-01 P= 0.968276 Days $T_0=132.395931$ (BKJD)



DV Model-Shift Uniqueness Test

002714954-01, P = 0.968221 Days, E = 131.464317 Days

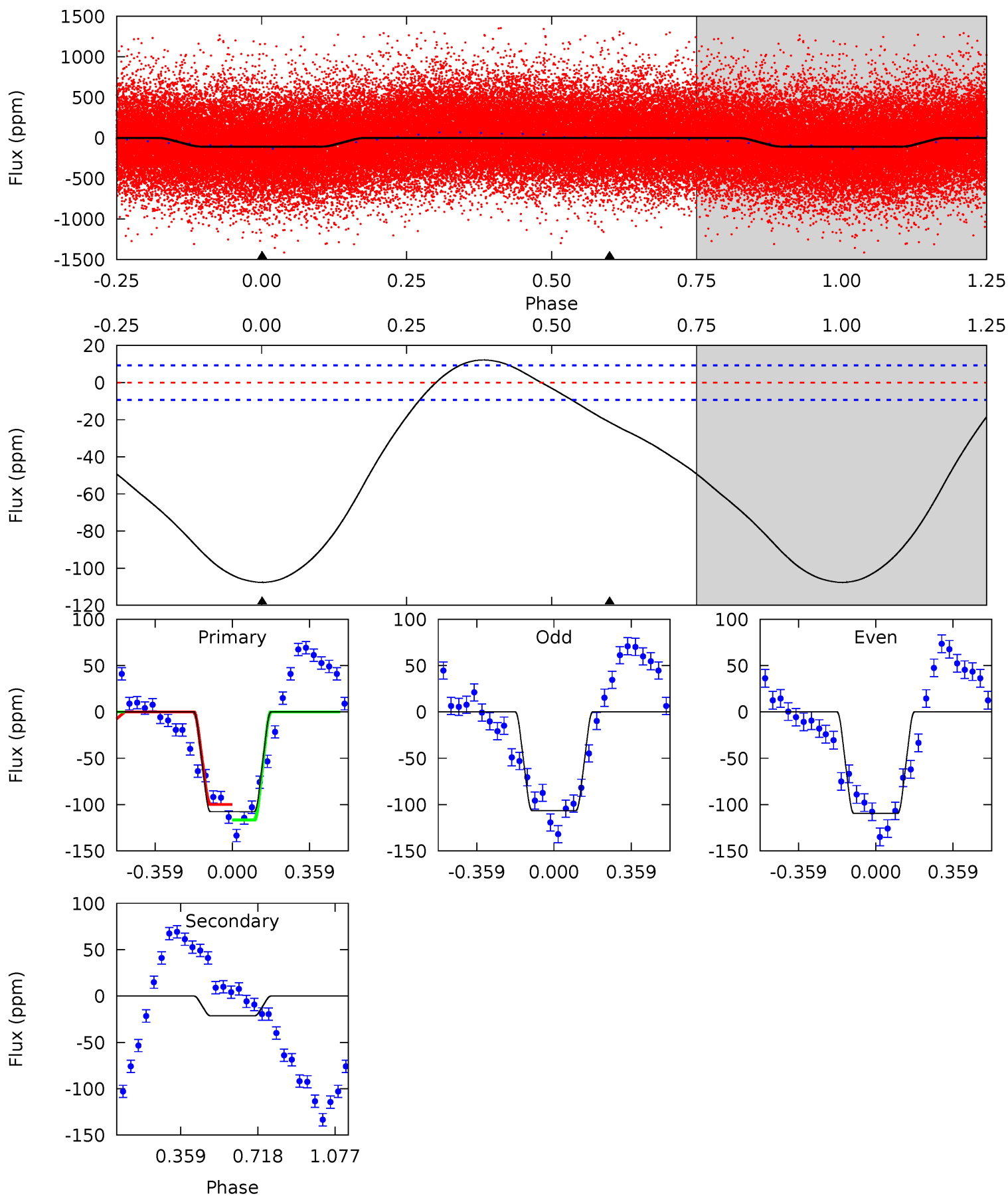
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	3.80	0	0	4.25	0.79	1.44	18.0	18.0	3.80	3.80	1.18	1.06	0.09	5.12



Alt Model-Shift Uniqueness Test

002714954-01, P = 0.968276 Days, E = 131.427655 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.6	9.83	0	0	4.29	0.92	3.89	49.6	49.6	9.83	9.83	0.68	1.19	0.10	4.00



Stellar Parameters For KIC 002714954

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5808^{+157}_{-175}	$4.384^{+0.124}_{-0.186}$	$-0.080^{+0.300}_{-0.300}$	$1.036^{+0.288}_{-0.177}$	$0.947^{+0.127}_{-0.092}$	$1.201^{+0.651}_{-0.568}$
	+3%/-3%	+3%/-4%	+375%/-375%	+28%/-17%	+13%/-10%	+54%/-47%
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 002714954-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8 ± 2	$0.74^{+0.59}_{-0.46}$	2677^{+183}_{-151}	3987^{+2234}_{-873}	$2.652^{+16.327}_{-1.879}$
Alt.	-21 ± 2	$1.26^{+0.61}_{-0.56}$	2674^{+192}_{-148}	4010^{+1062}_{-588}	$2.689^{+5.895}_{-1.496}$

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 $A_{obs} \gg 1.0$

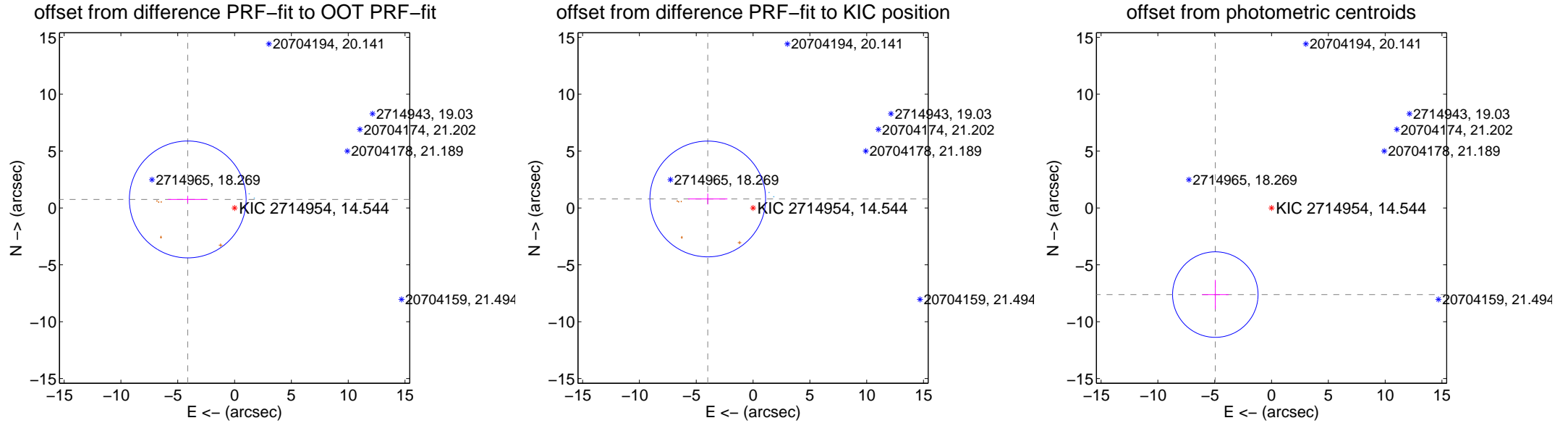
DV Centroid Data

Supplemental centroid analysis for 002714954-01. Kepler magnitude: 14.54. Transit SNR 10.18

There are 2 quarters with good PRF difference image offsets

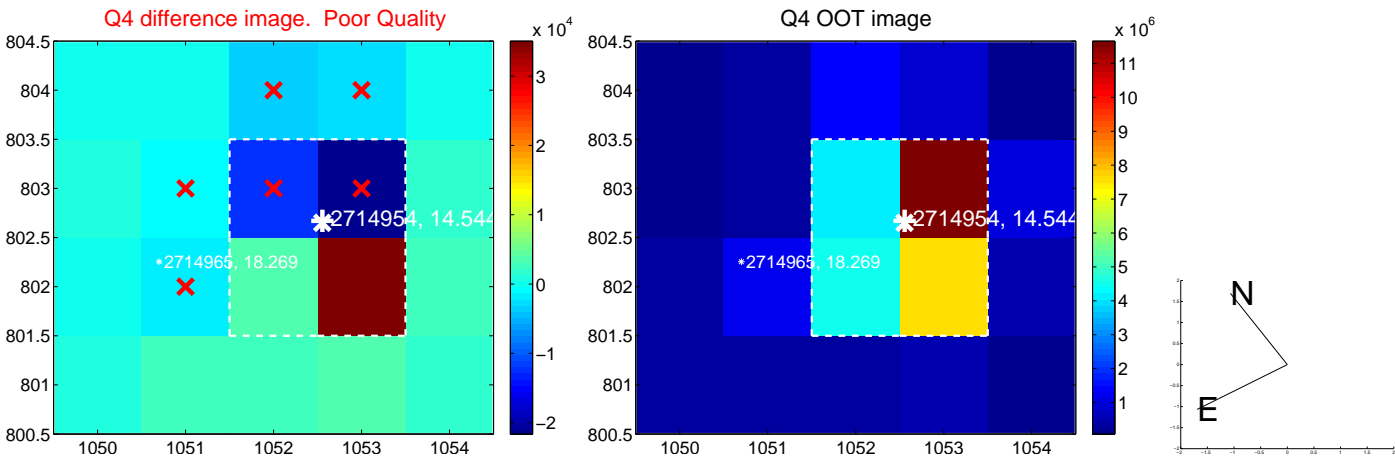
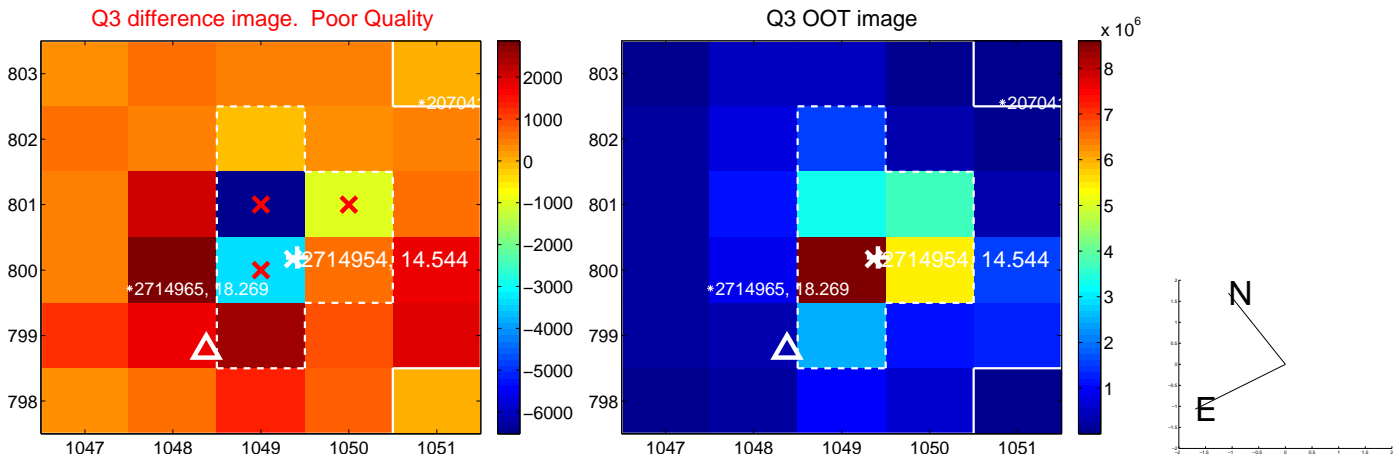
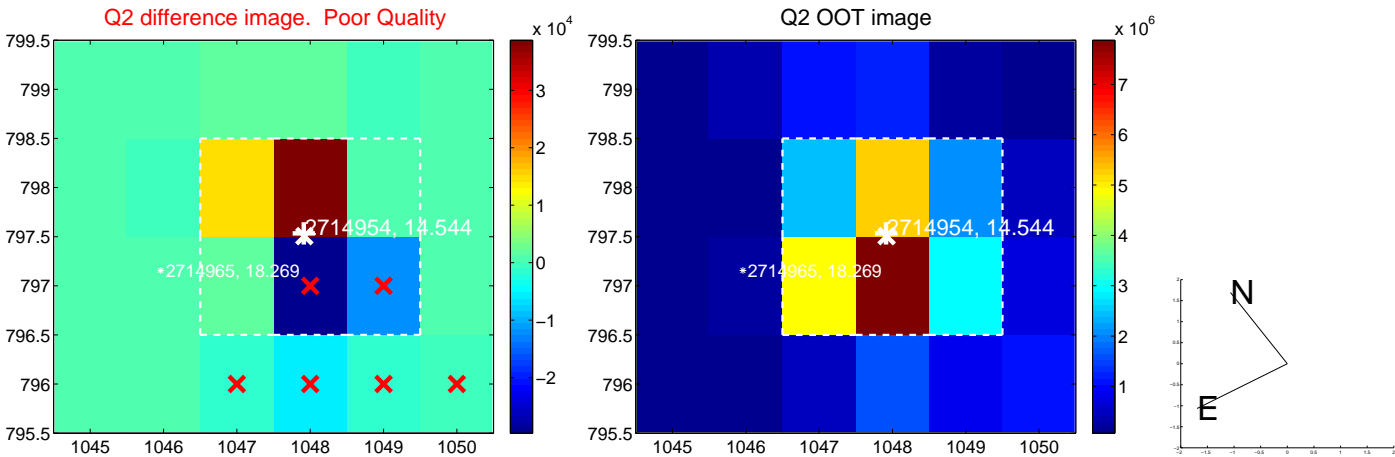
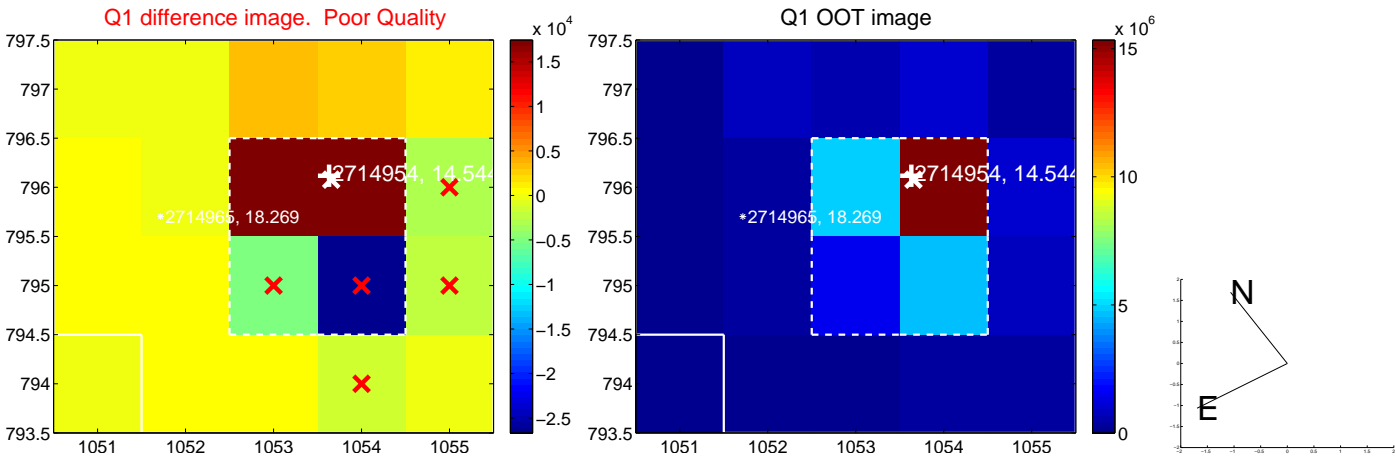
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.189 ± 1.712	2.45	4.122 ± 1.739	0.748 ± 0.321
PRF-fit source offset from KIC position	4.064 ± 1.696	2.40	3.987 ± 1.727	0.789 ± 0.476
photometric centroid source offset	9.08 ± 1.25	7.24	4.95 ± 1.17	-7.62 ± 1.29

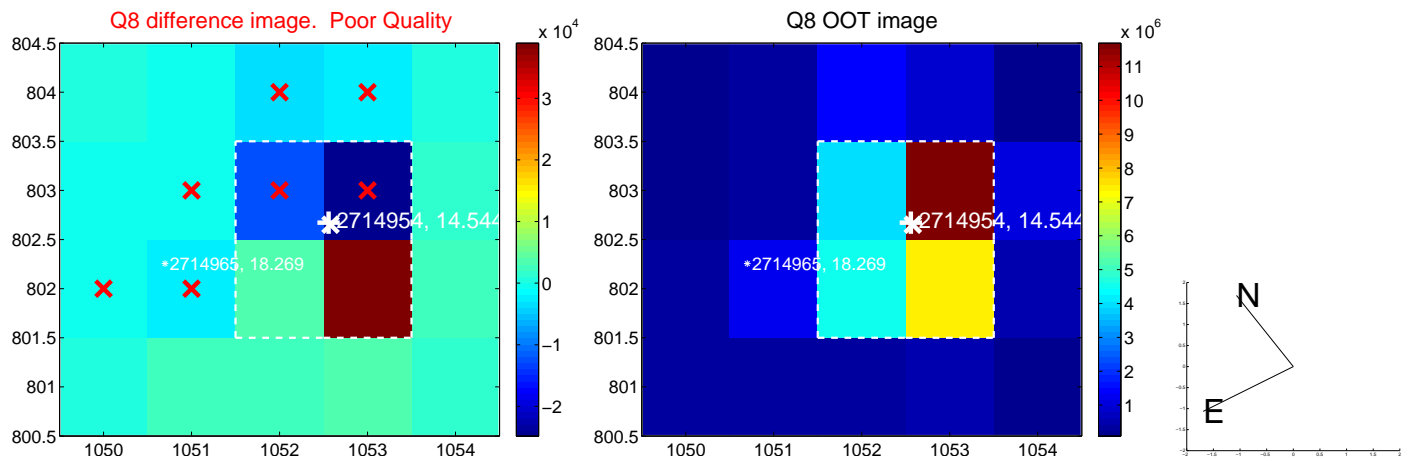
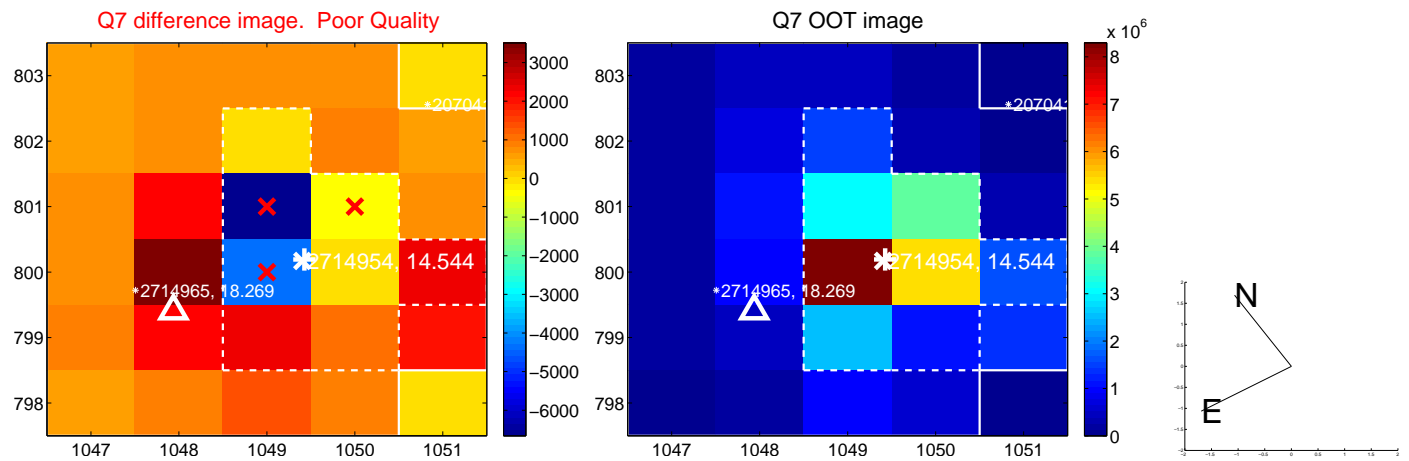
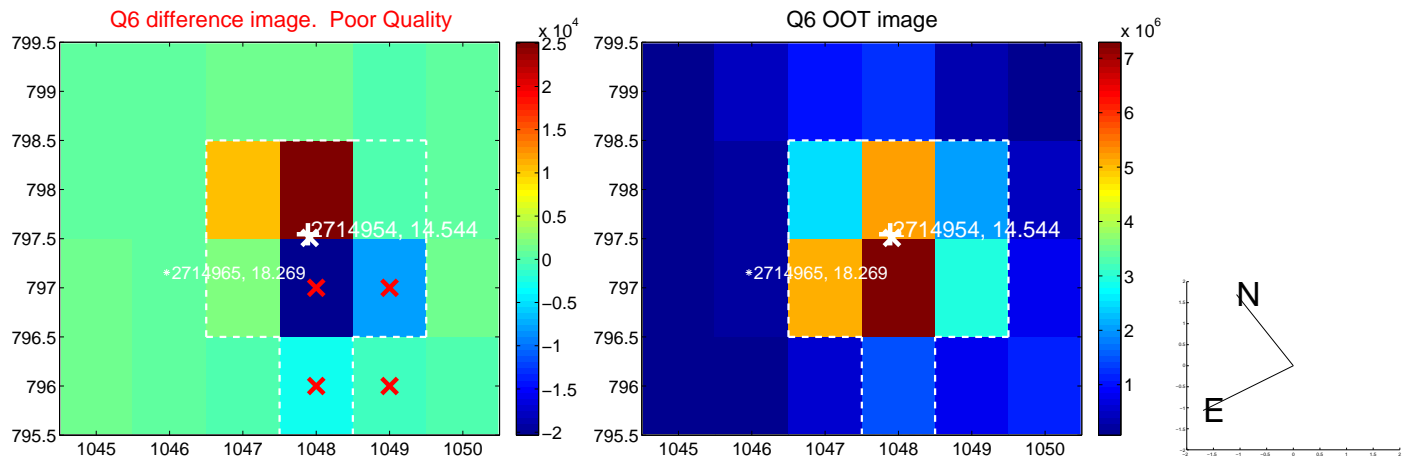
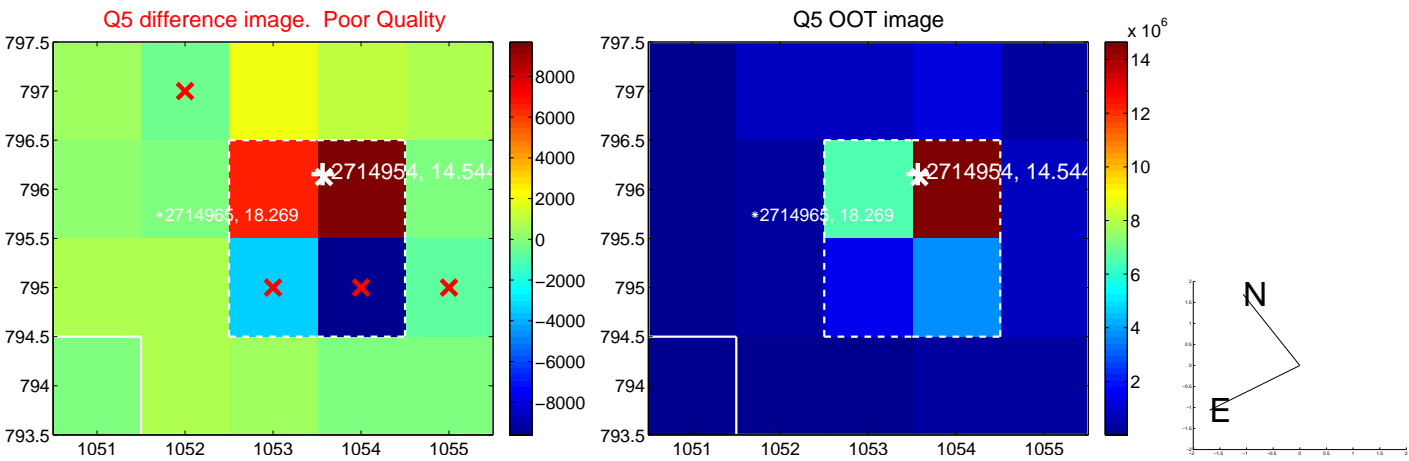


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

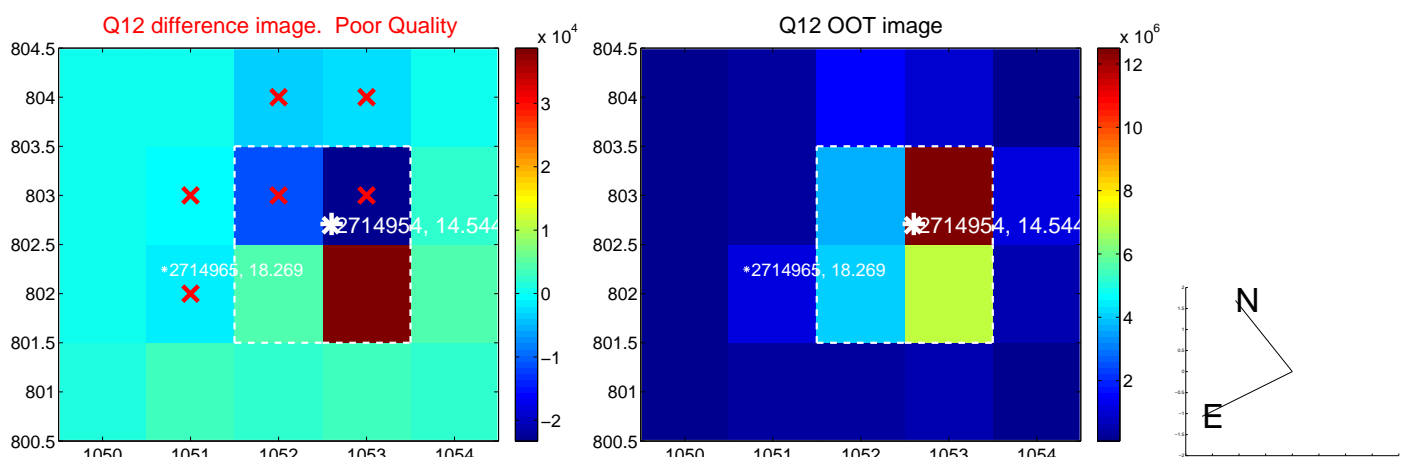
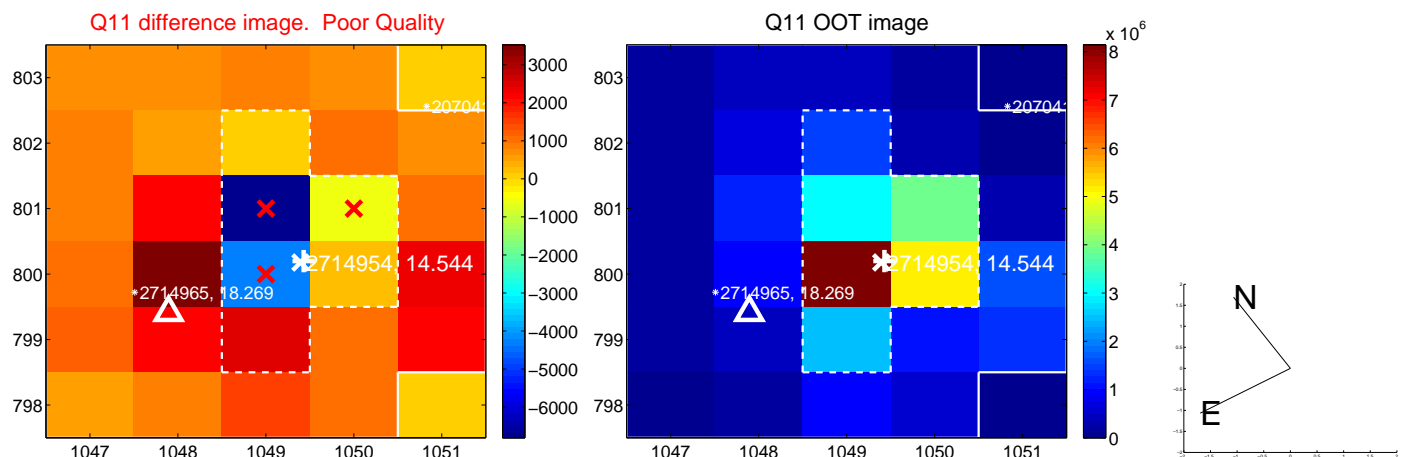
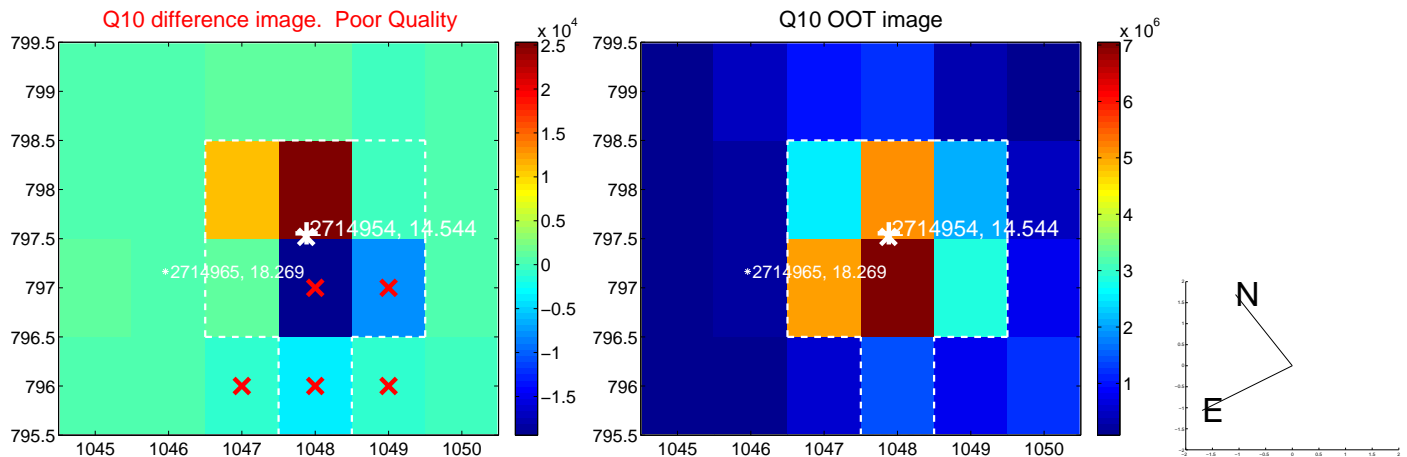
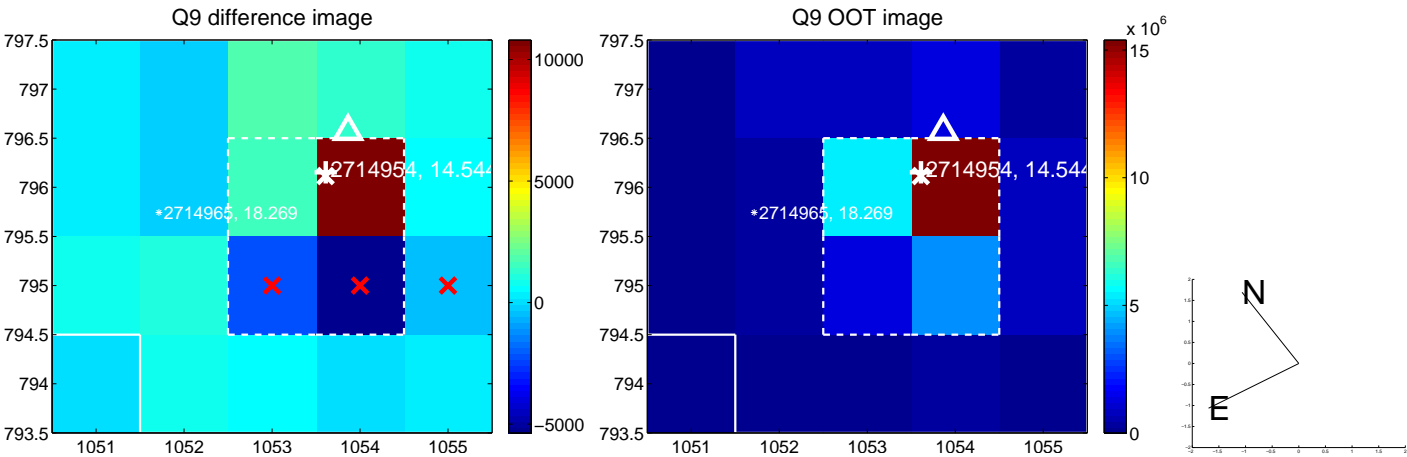
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



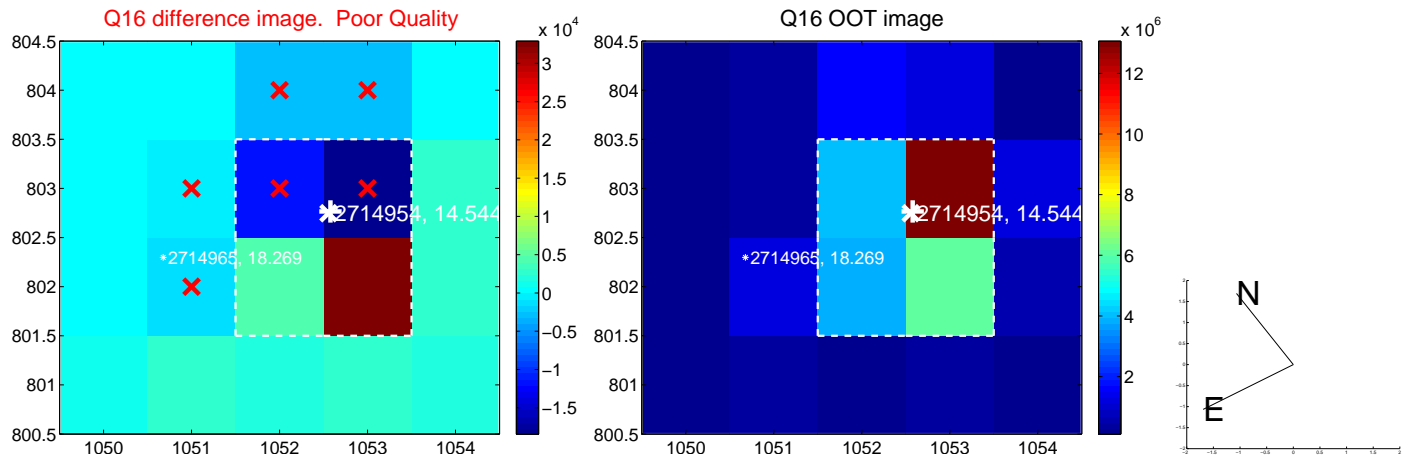
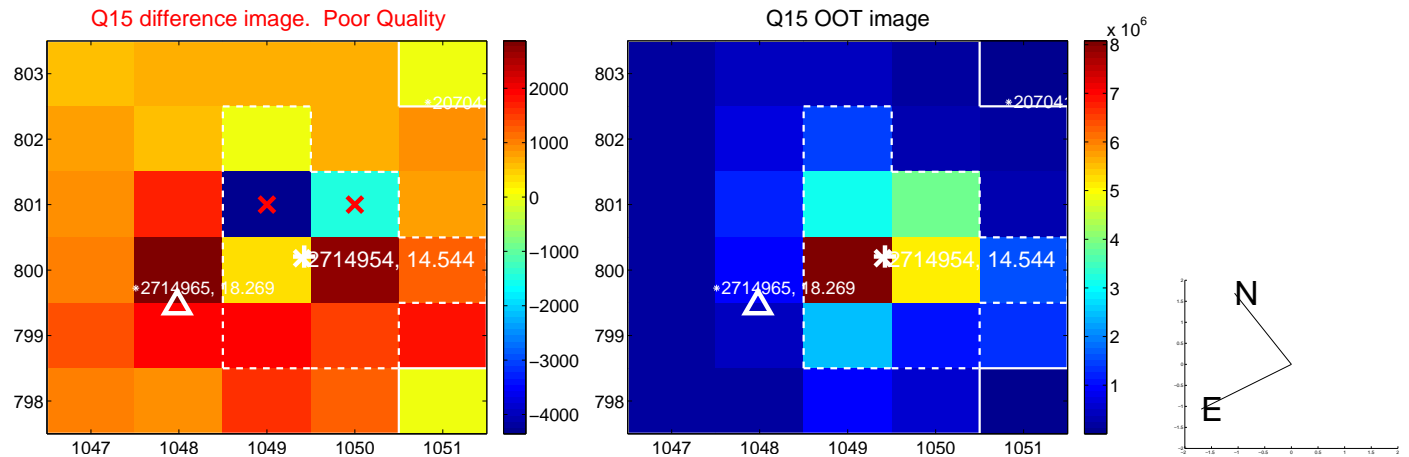
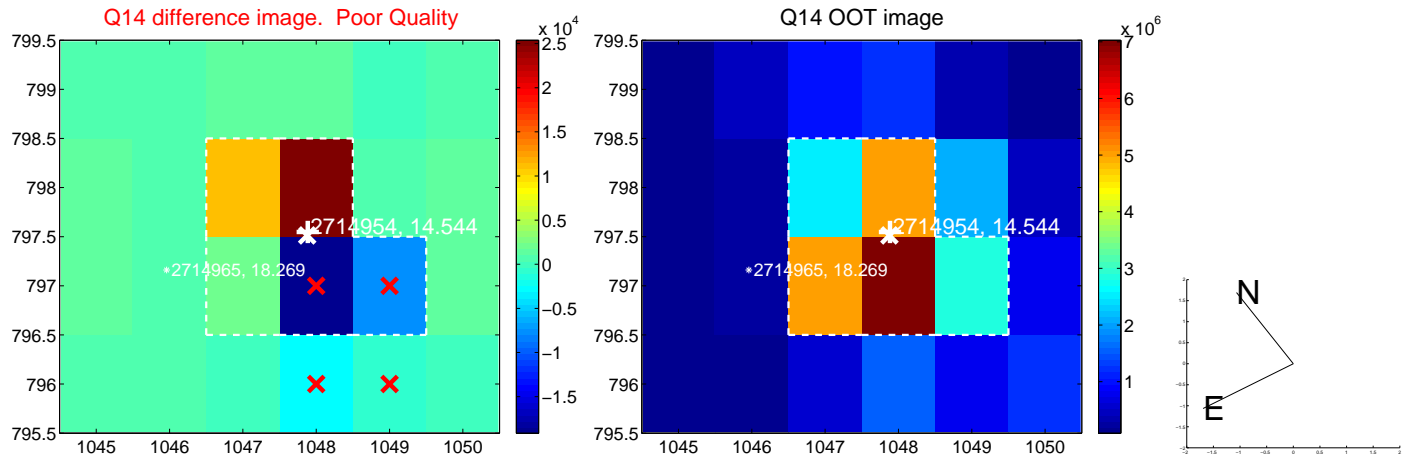
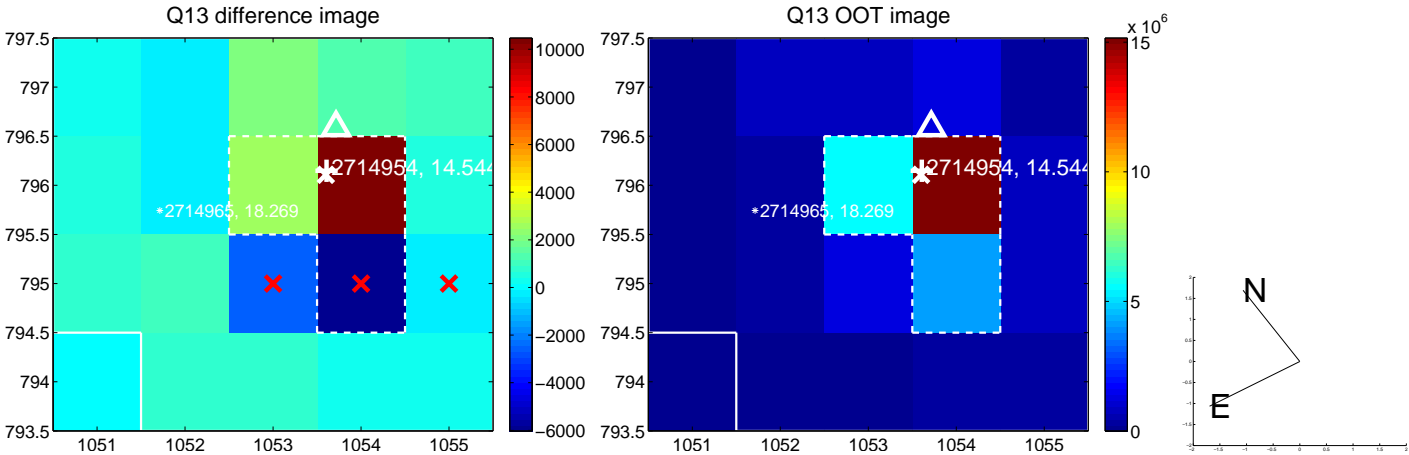
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



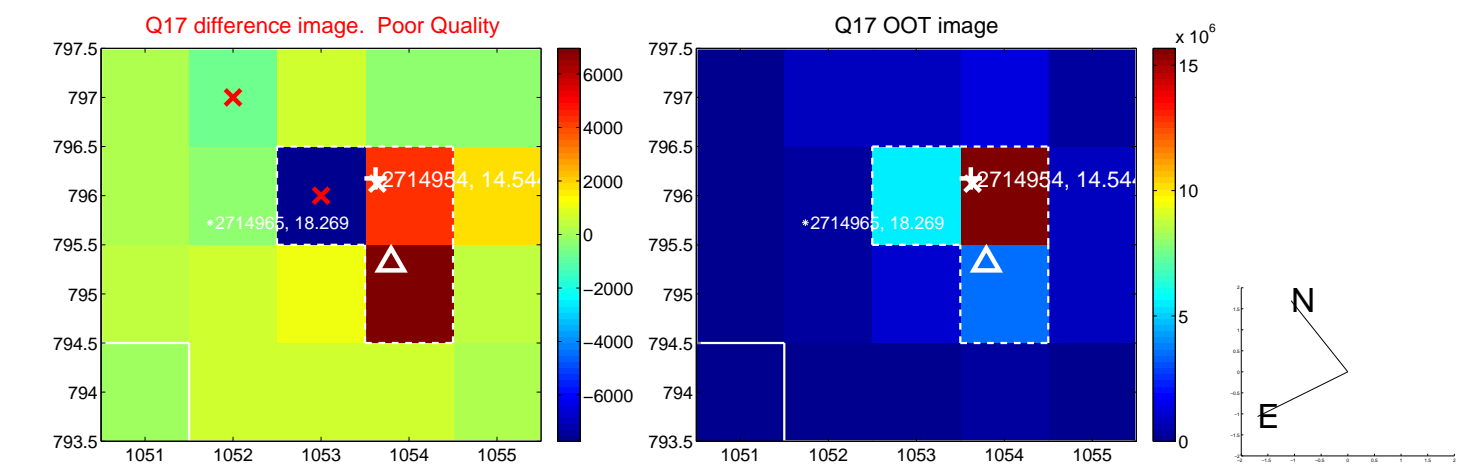
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



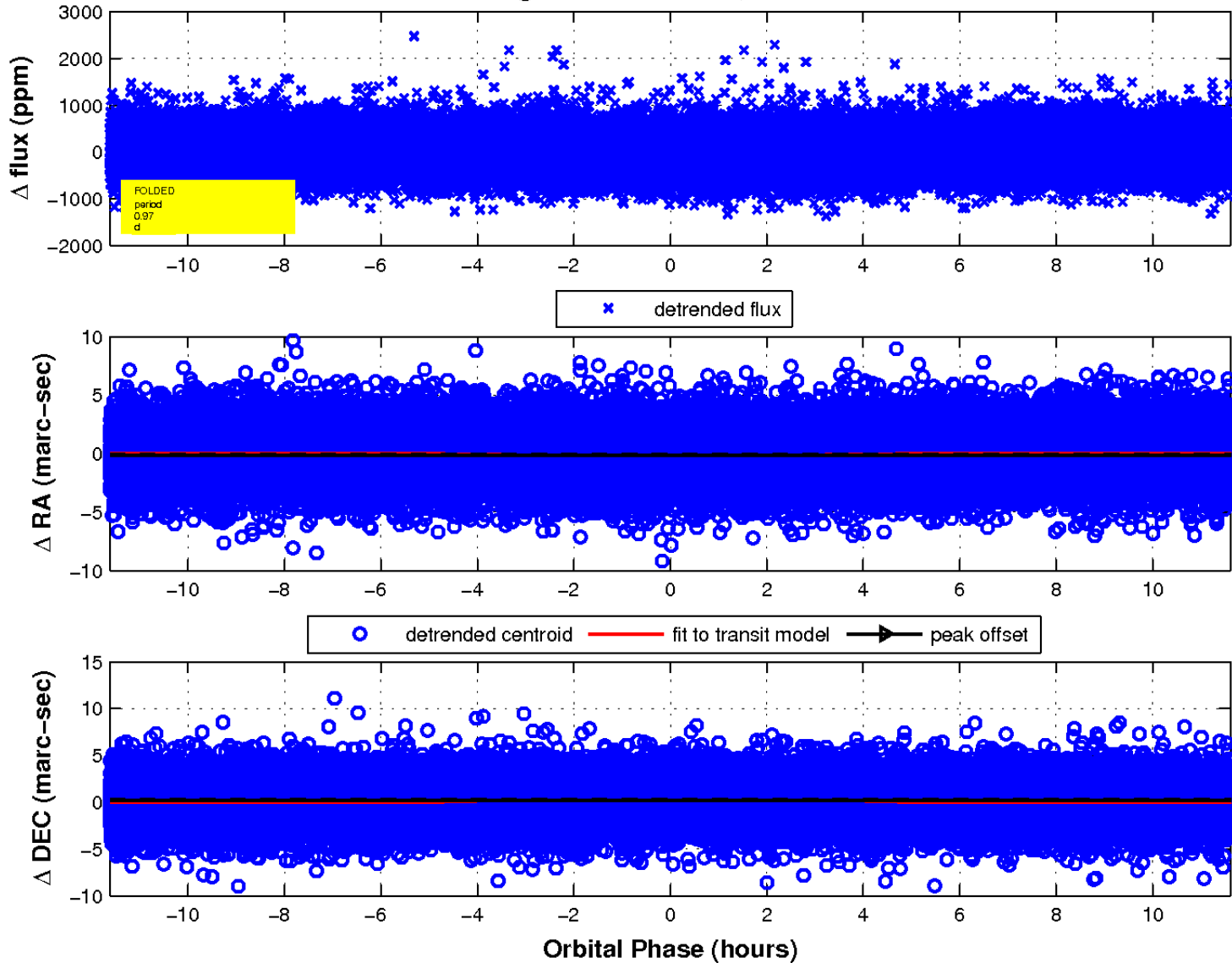
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

