

KIC 008417078

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})
008417078-01	OBS	4693.01	23.621815	146.988599	56.6	7.371	9.5	9.9	1.39	6144	1.18	95.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008417078-01	OBS	PC	0.99	0	0	0	0	CENT_KIC_POS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

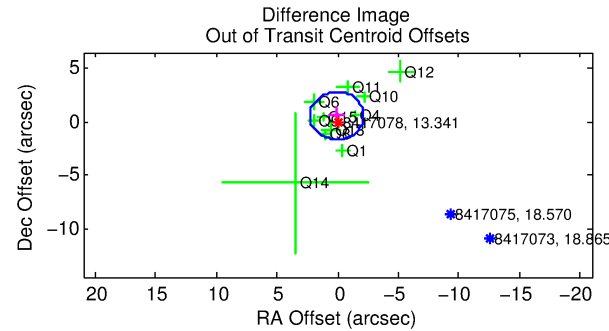
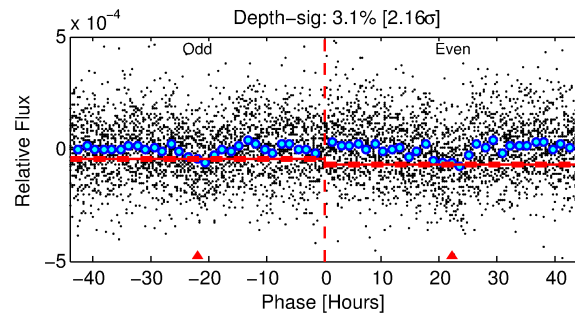
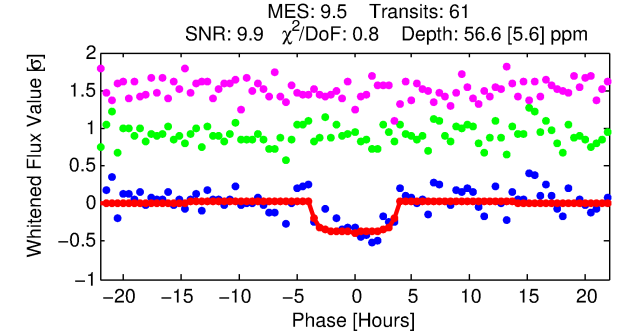
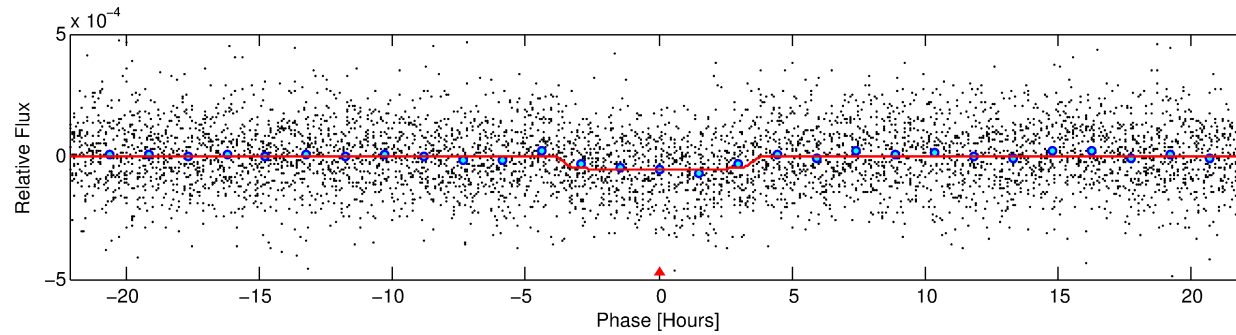
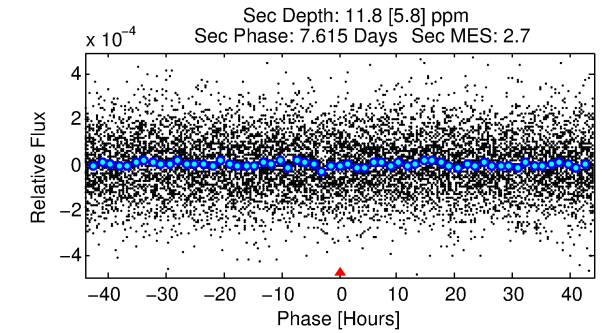
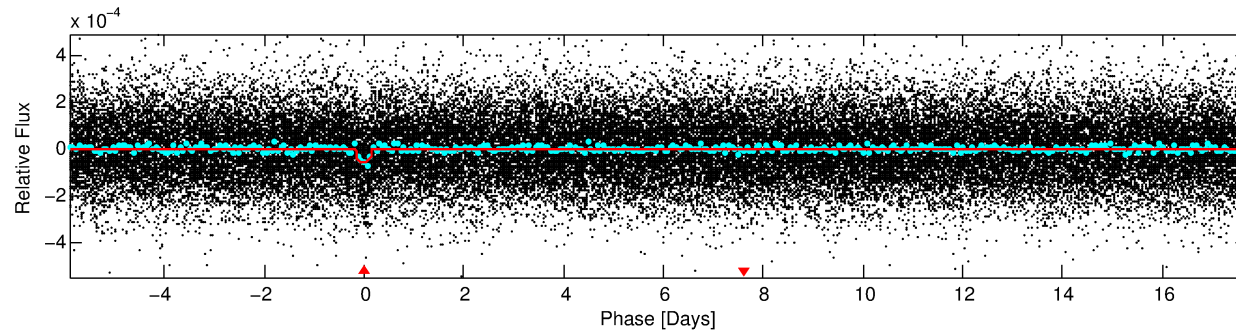
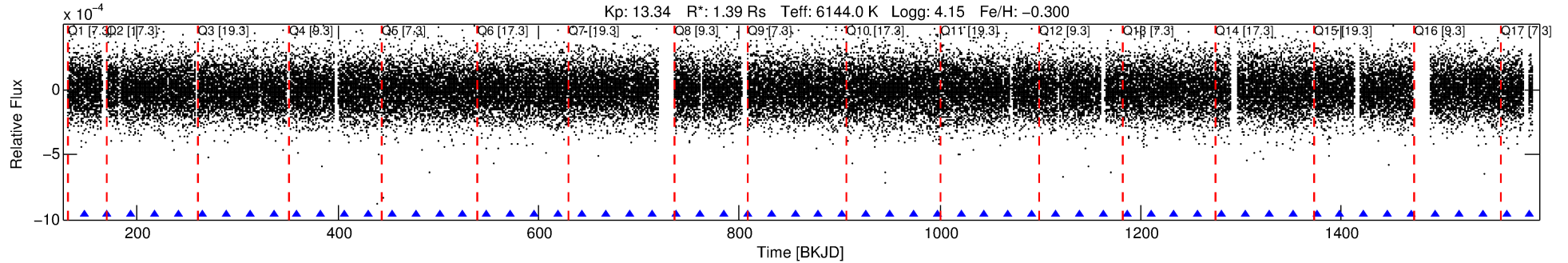
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008417078-01

No Significant Match Found

DV One-Page Summary

KIC: 8417078 Candidate: 1 of 1 Period: 23.622 d
KOI: K04693.01 Corr: 0.937



DV Fit Results:

Period = 23.62181 [0.00033] d
Epoch = 146.9886 [0.0118] BKJD
Rp/R* = 0.0077 [0.0030]
a/R* = 13.97 [28.79]
b = 0.83 [0.78]
Seff = 95.55 [37.14]
Teq = 797 [77] K
Rp = 1.18 [0.55] Re
a = 0.1610 [0.0382] AU
Ag = 122.06 [121.63] [1.00σ]
Teffp = 4097 [953] K [3.45σ]

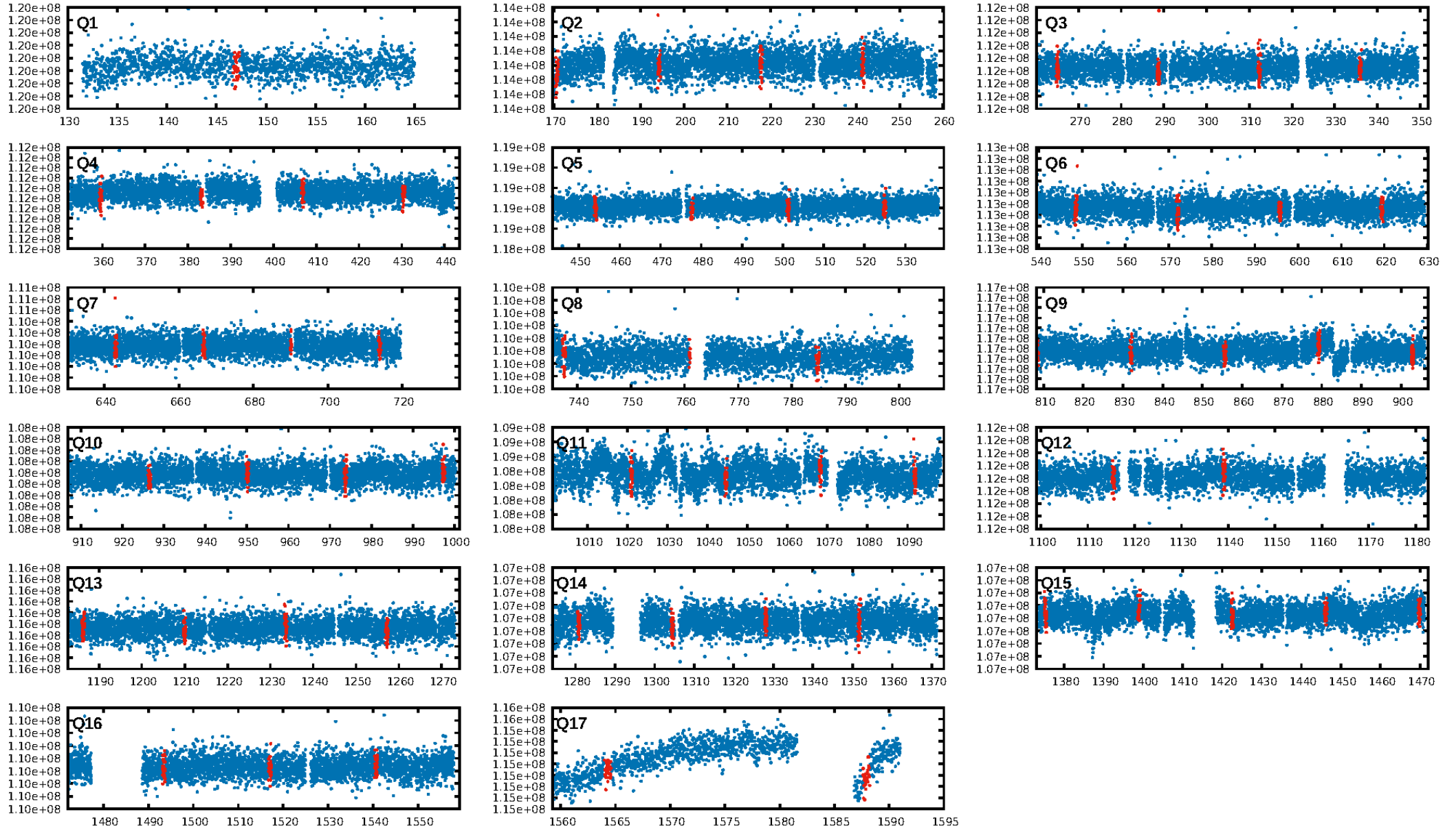
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.20e-20
RollingBand-fgt: 1.00 [58/58]
GhostDiagnostic-chr: 2.32
Centroid-sig: 8.7%
Centroid-so: 1.889 arcsec [1.93σ]
OotOffset-rm: 0.596 arcsec [0.80σ]
KicOffset-rm: 1.044 arcsec [1.58σ]
OotOffset-st: 3/2/3/3 [11]
KicOffset-st: 3/2/3/3 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 1.00 [17/17]

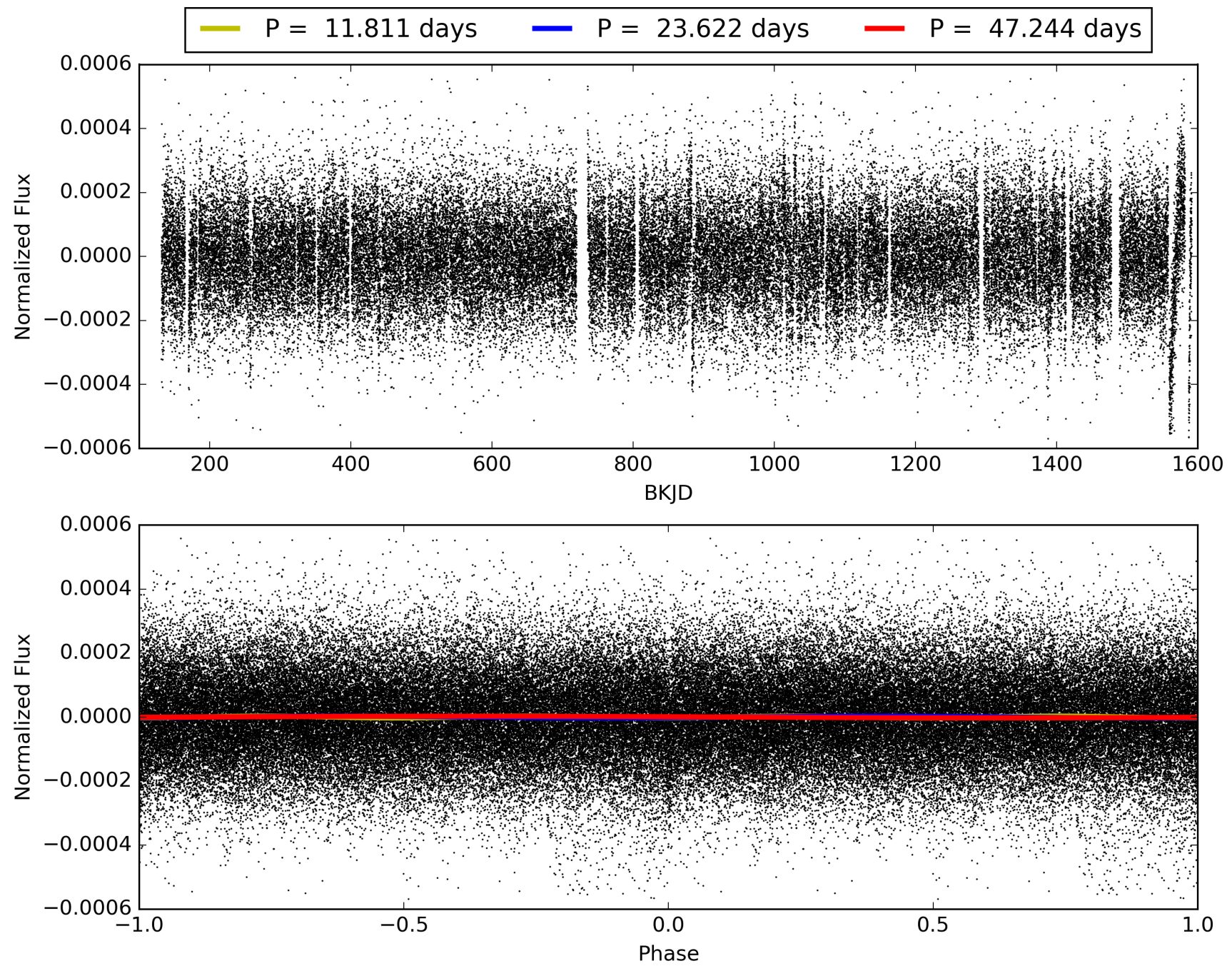
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:39:53 Z

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

TCE 008417078-01, PDC Light Curves

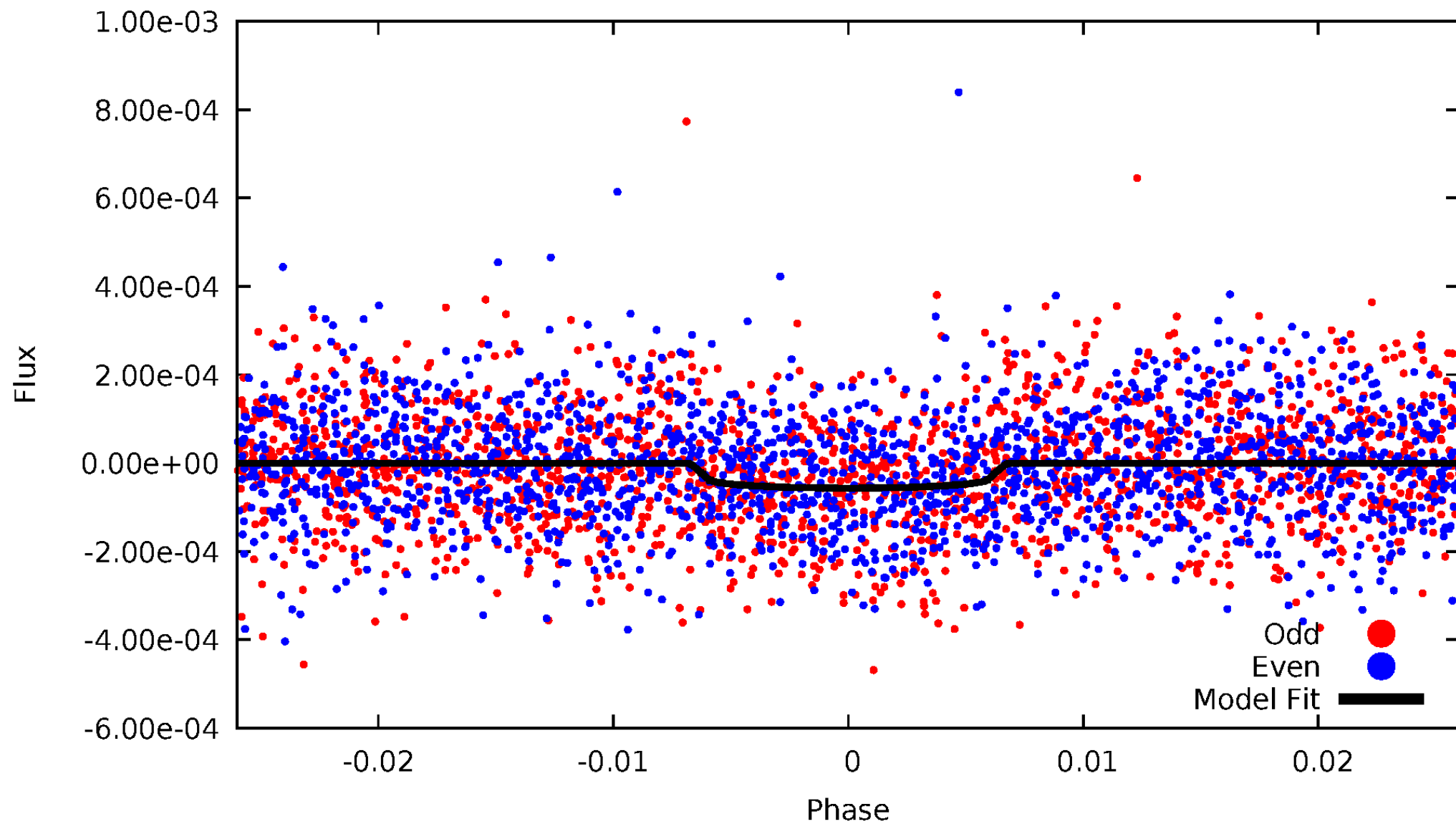


TCE 008417078-01



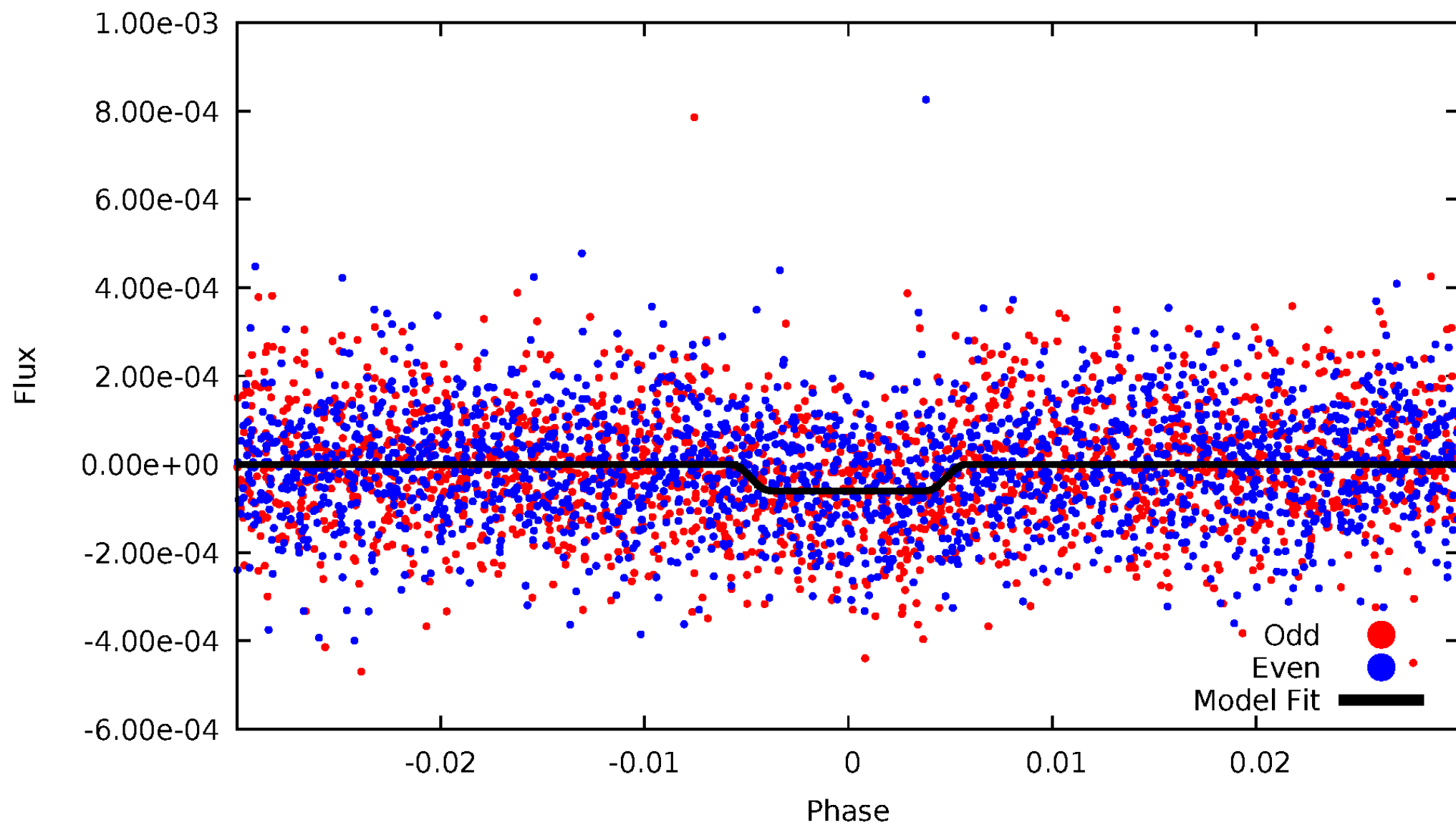
DV Odd/Even

TCE 008417078-01



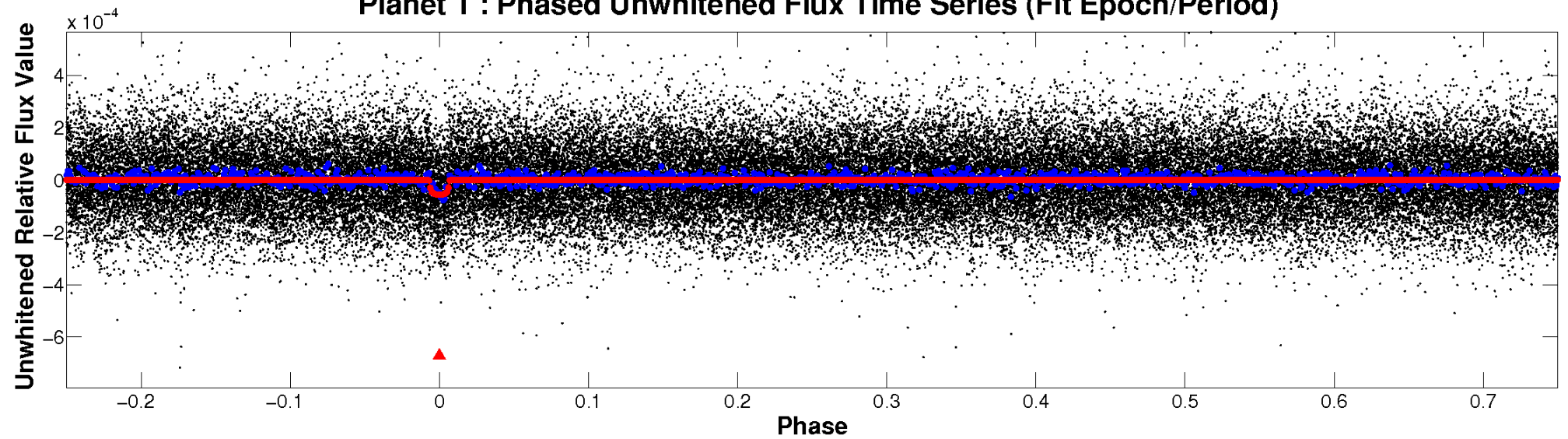
ALT Odd/Even

TCE 008417078-01

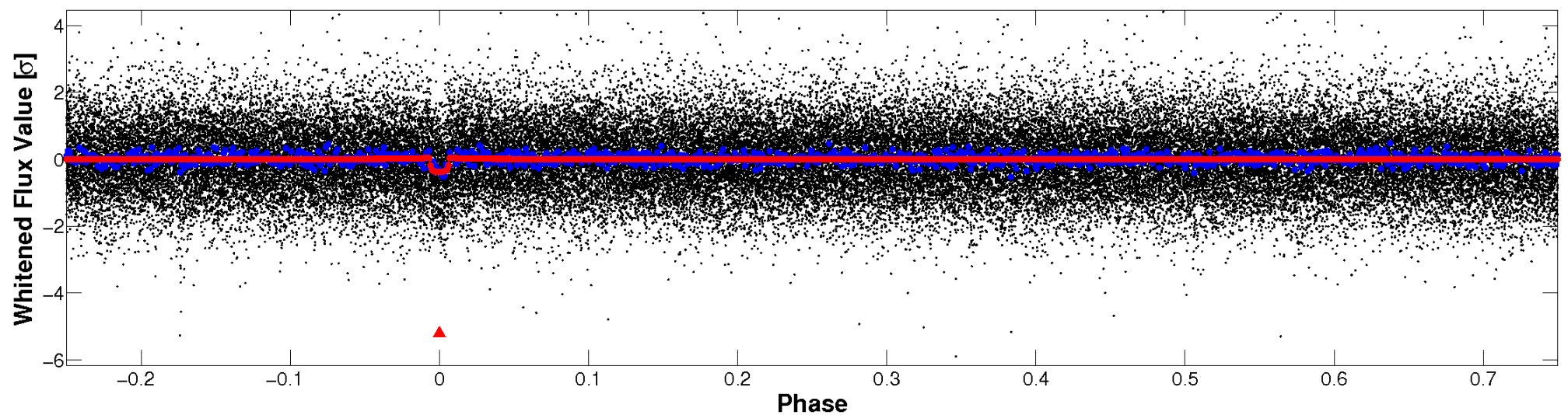


Non-Whitened Vs. Whitened Light Curve

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

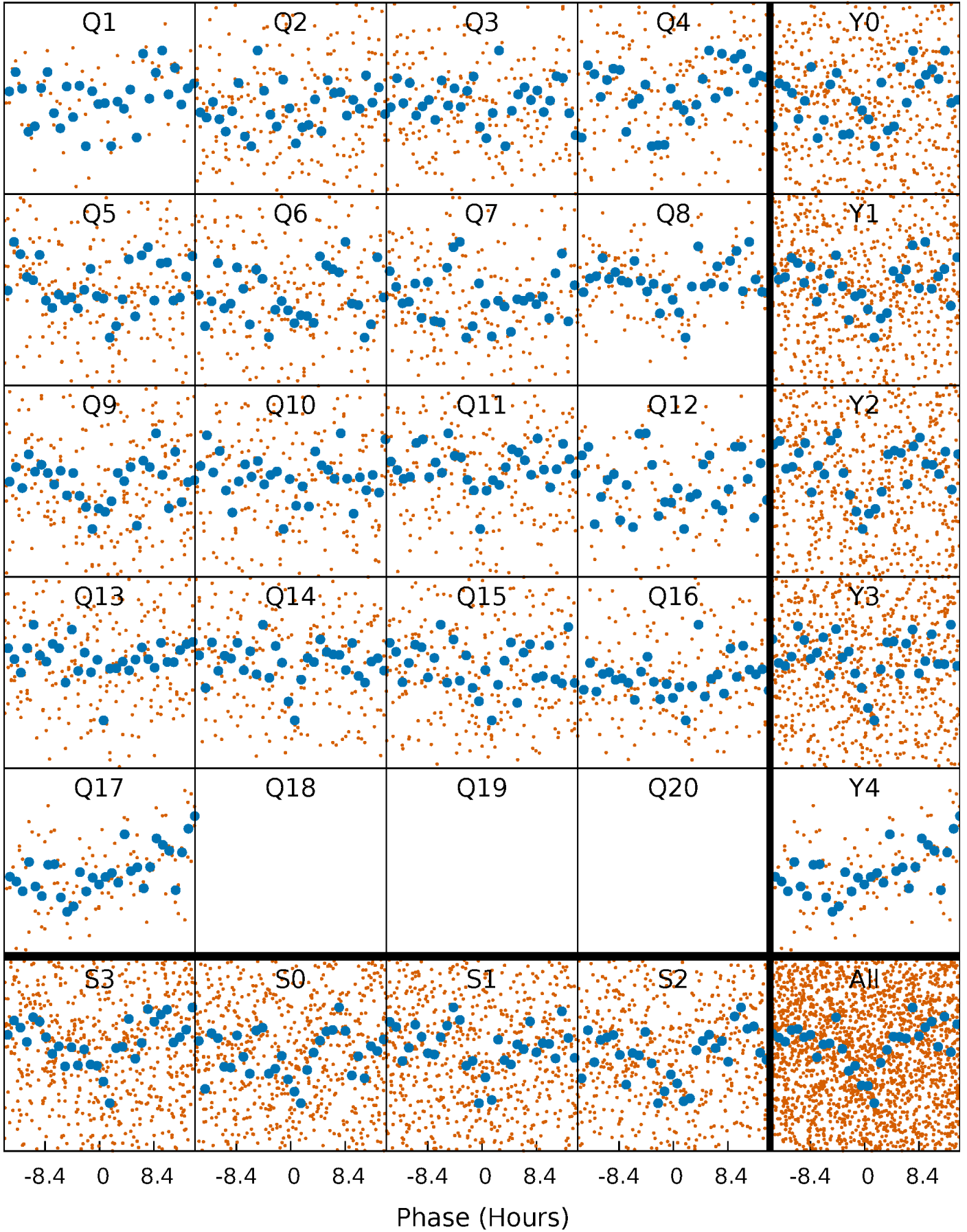


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



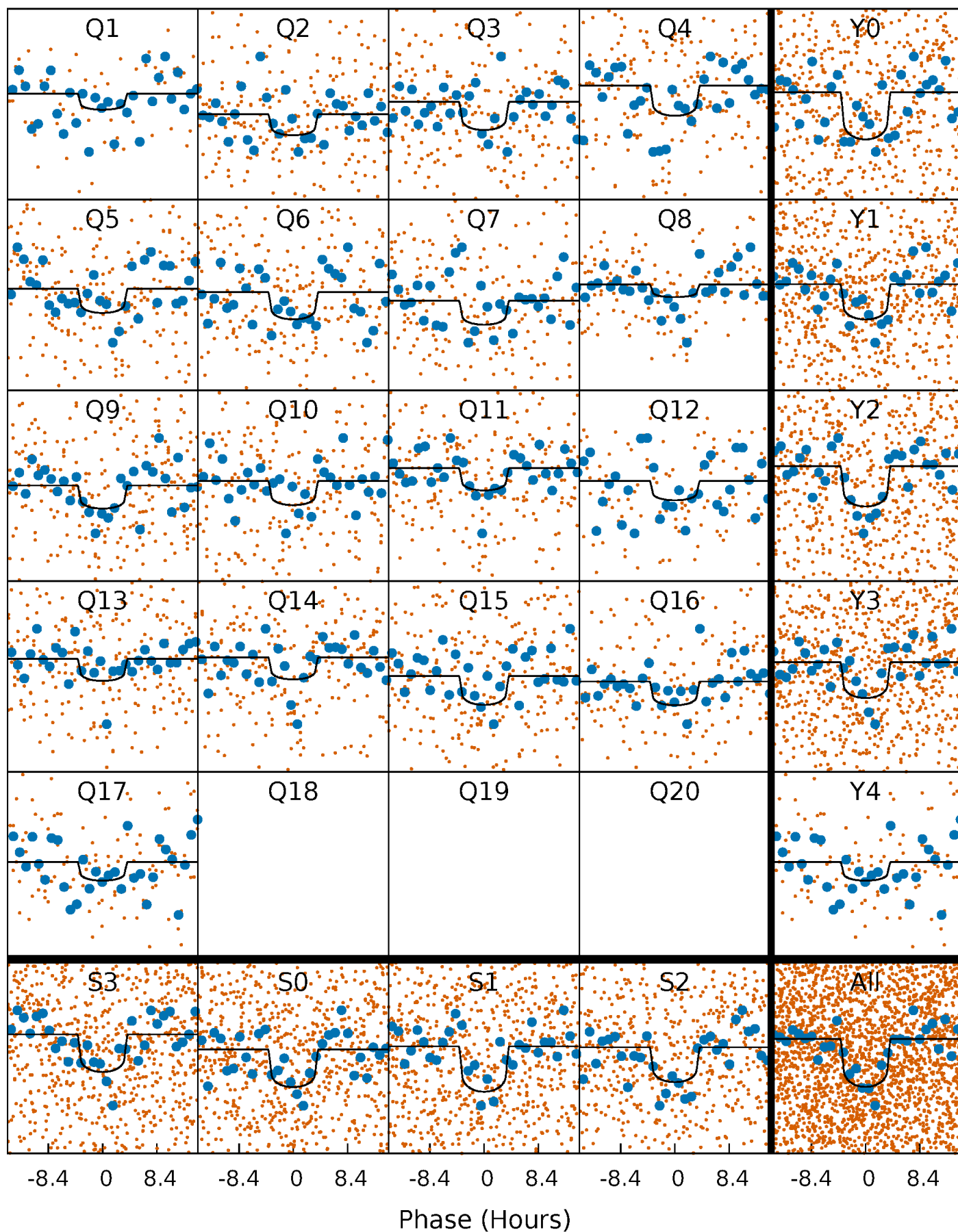
PDC Quarter-Phased Transit Curves

TCE 008417078-01 P= 23.621815 Days $T_0=146.988598$ (BKJD)



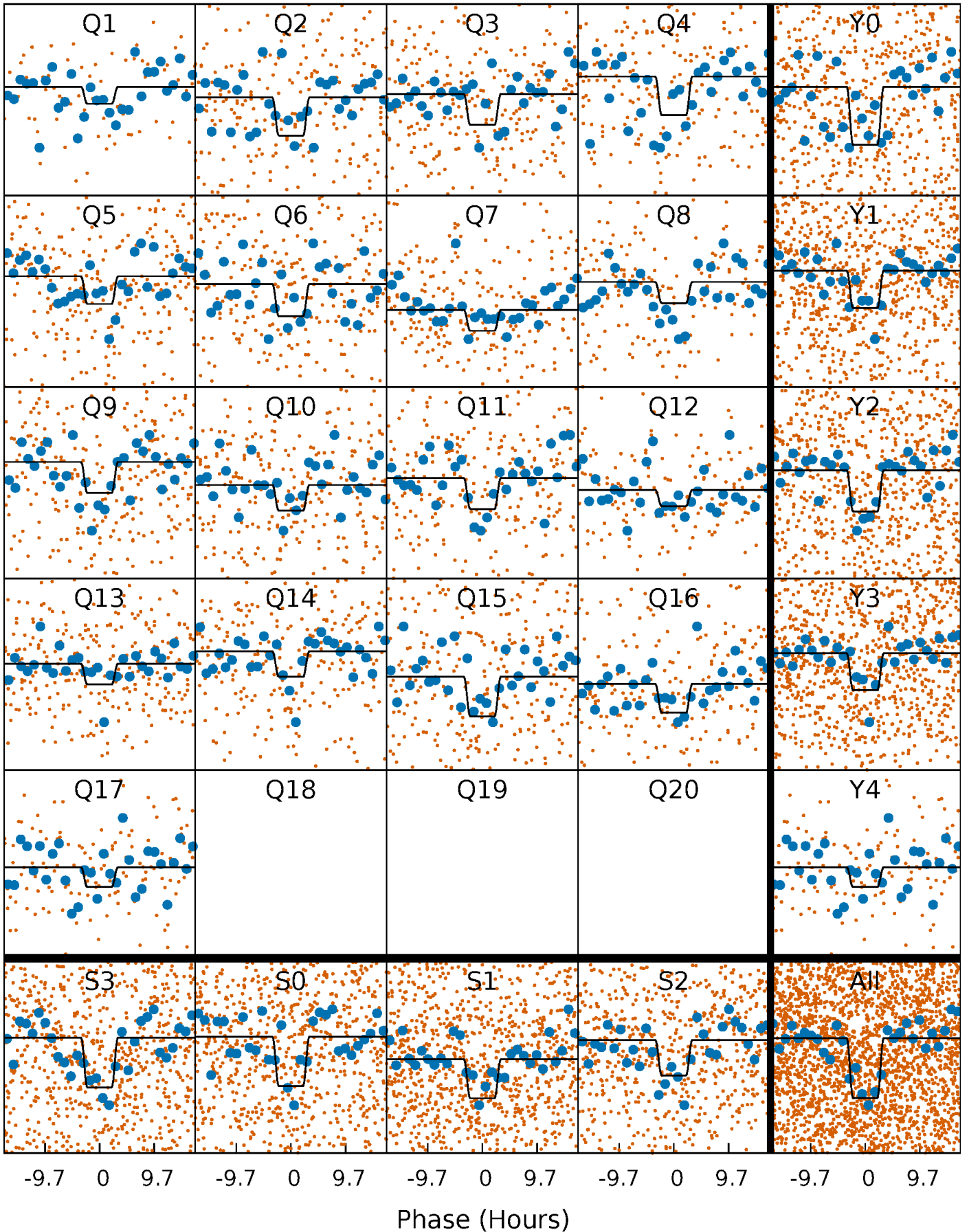
DV Quarter-Phased Transit Curves

TCE 008417078-01 P= 23.621815 Days $T_0=146.988598$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

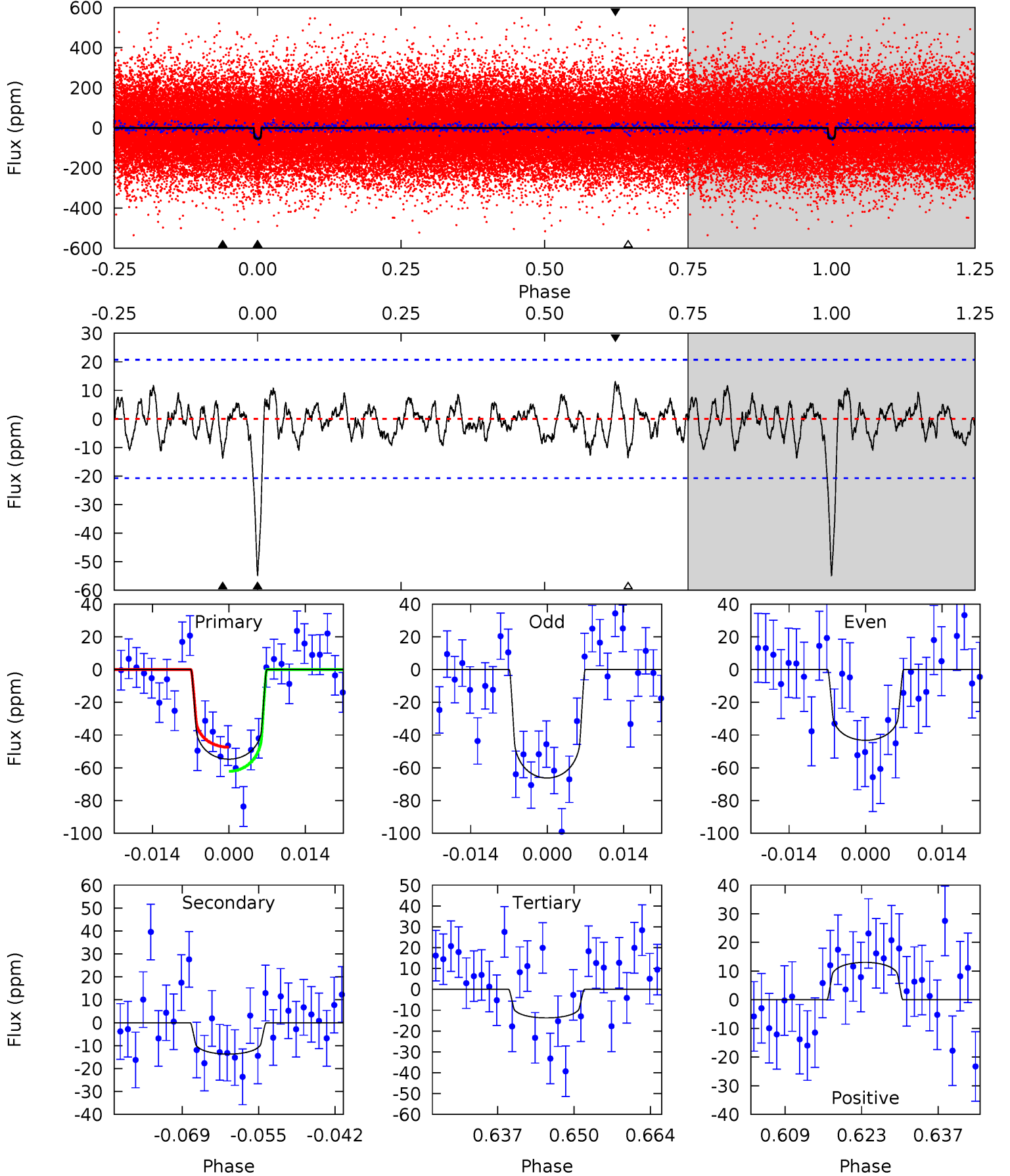
TCE 008417078-01 P= 23.621484 Days $T_0=147.011456$ (BKJD)



DV Model-Shift Uniqueness Test

008417078-01, $P = 23.621815$ Days, $E = 123.366783$ Days

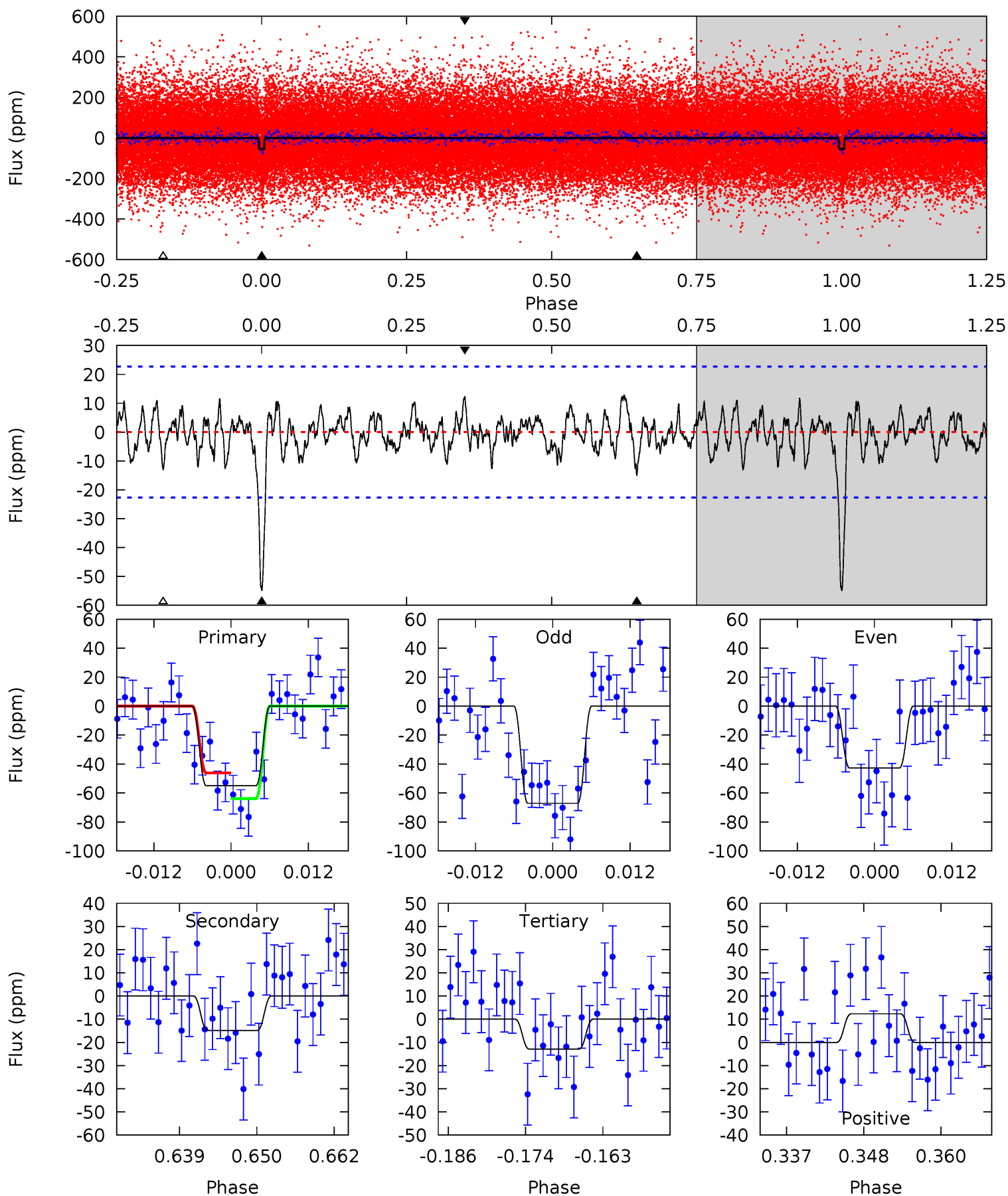
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	3.29	3.28	3.13	4.96	2.46	1.14	9.83	9.99	0.00	0.16	2.76	0.84	0.19	1.77



Alt Model-Shift Uniqueness Test

008417078-01, P = 23.621484 Days, E = 123.389972 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	3.28	2.84	2.71	5.00	2.52	1.09	9.27	9.41	0.43	0.57	2.68	1.07	0.19	1.96



Stellar Parameters For KIC 008417078

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6144^{+170}_{-170}	$4.149^{+0.216}_{-0.126}$	$-0.300^{+0.300}_{-0.300}$	$1.393^{+0.290}_{-0.355}$	$0.999^{+0.165}_{-0.124}$	$0.520^{+0.669}_{-0.185}$
	+3%/-3%	+5%/-3%	+100%/-100%	+21%/-25%	+17%/-12%	+129%/-36%
Source	PHO1	FLK73	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 008417078-01 / KOI 4693.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 4	$1.14^{+0.50}_{-0.47}$	1105^{+66}_{-73}	4422^{+1282}_{-579}	142^{+312}_{-77}
Alt.	-15 ± 5	$1.15^{+0.53}_{-0.45}$	1111^{+67}_{-75}	4537^{+1071}_{-626}	159^{+306}_{-90}

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 $A_{obs} \gg 1.0$

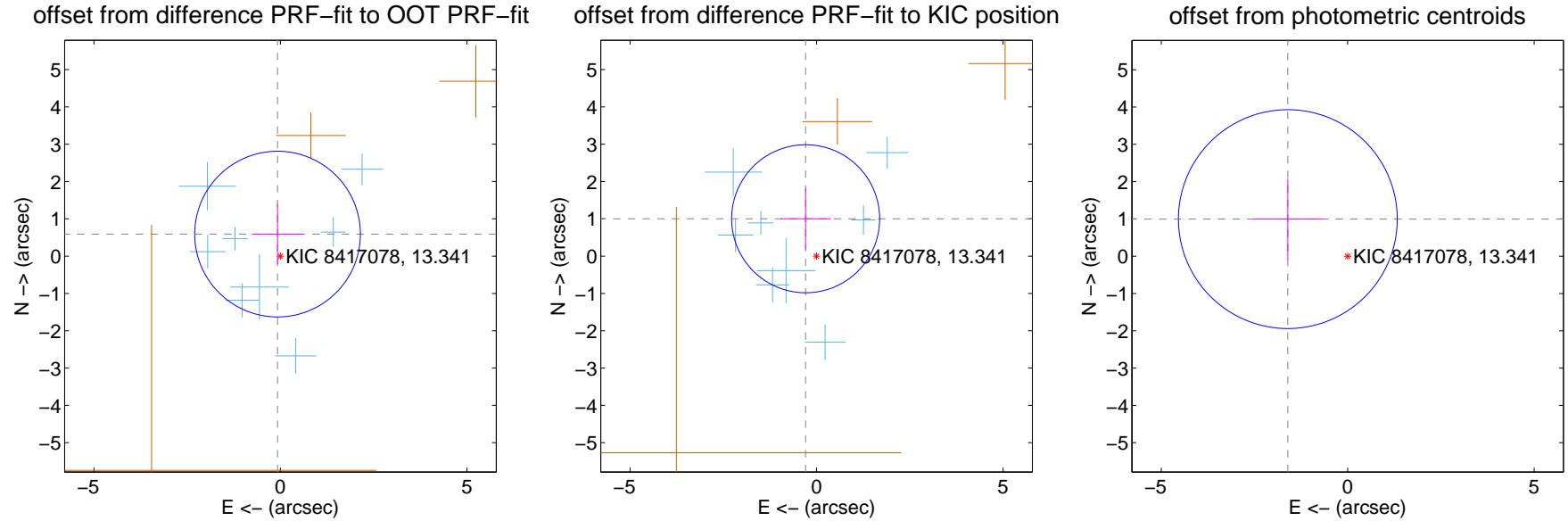
DV Centroid Data

Supplemental centroid analysis for 008417078-01. Kepler magnitude: 13.34. Transit SNR 9.85

There are 8 quarters with good PRF difference image offsets

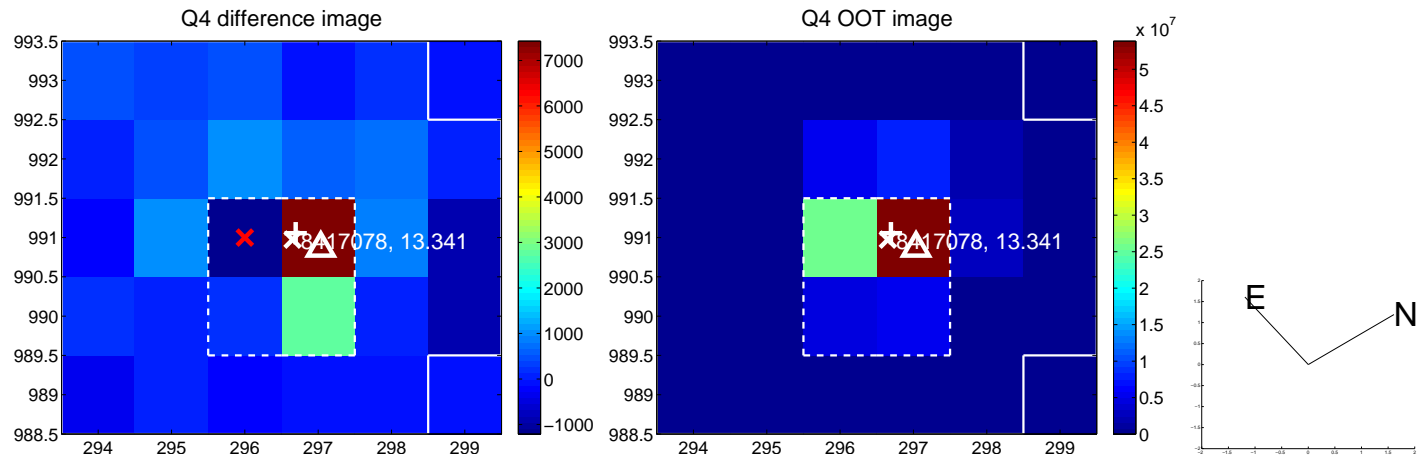
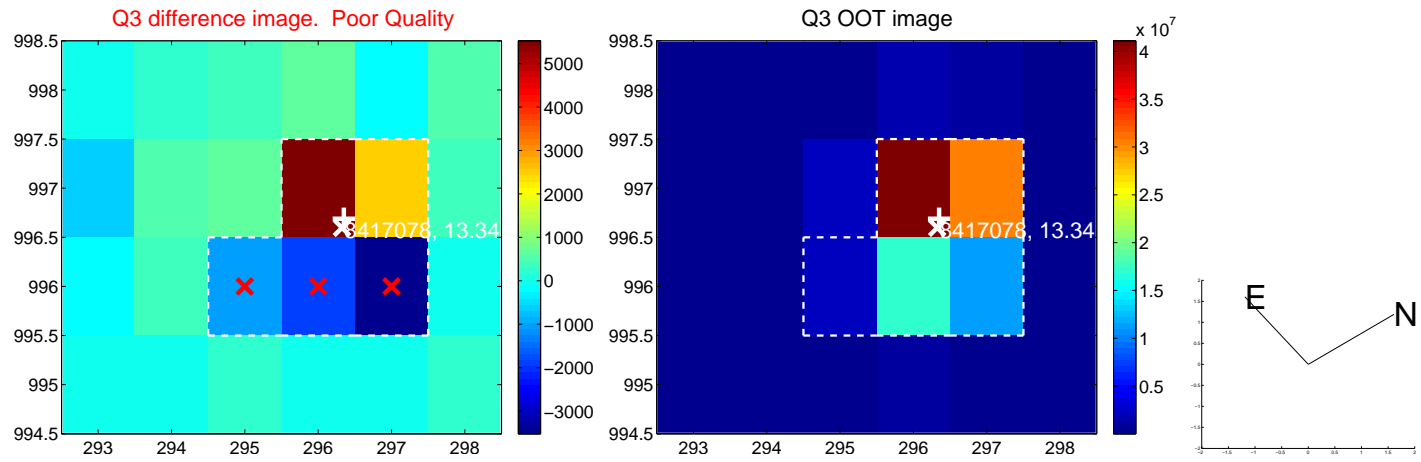
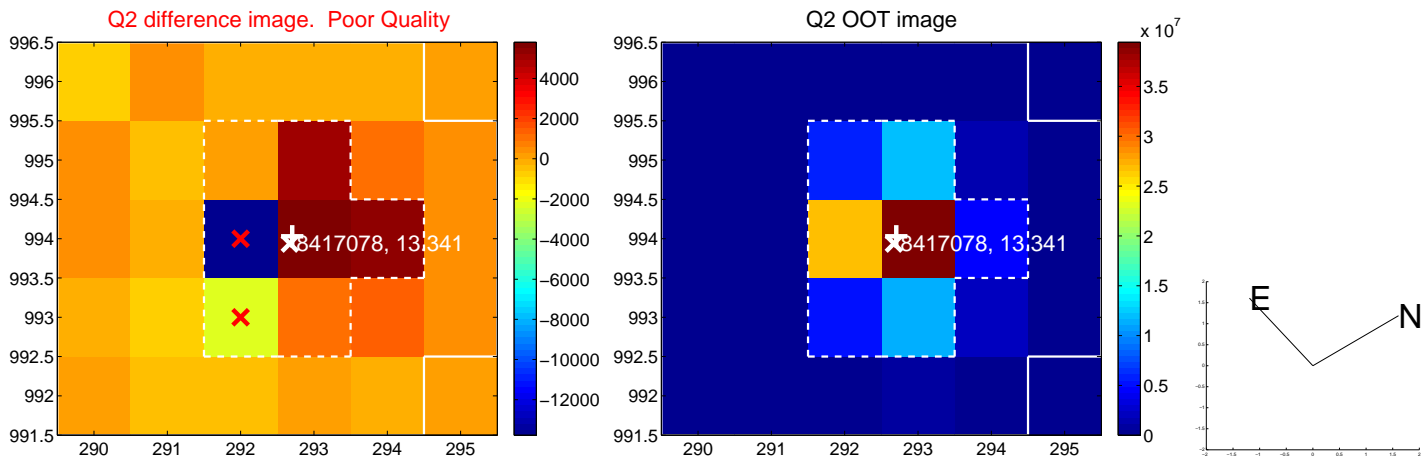
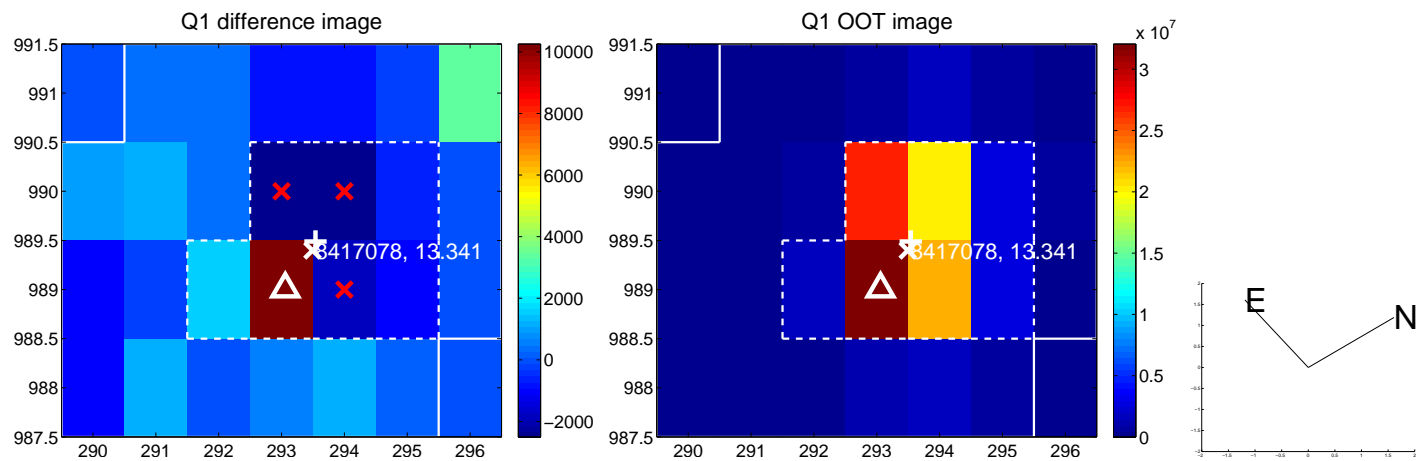
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.596 ± 0.740	0.80	0.078 ± 0.693	0.590 ± 0.806
PRF-fit source offset from KIC position	1.044 ± 0.661	1.58	0.293 ± 0.681	1.002 ± 0.817
photometric centroid source offset	1.89 ± 0.98	1.93	1.61 ± 0.94	0.99 ± 1.08

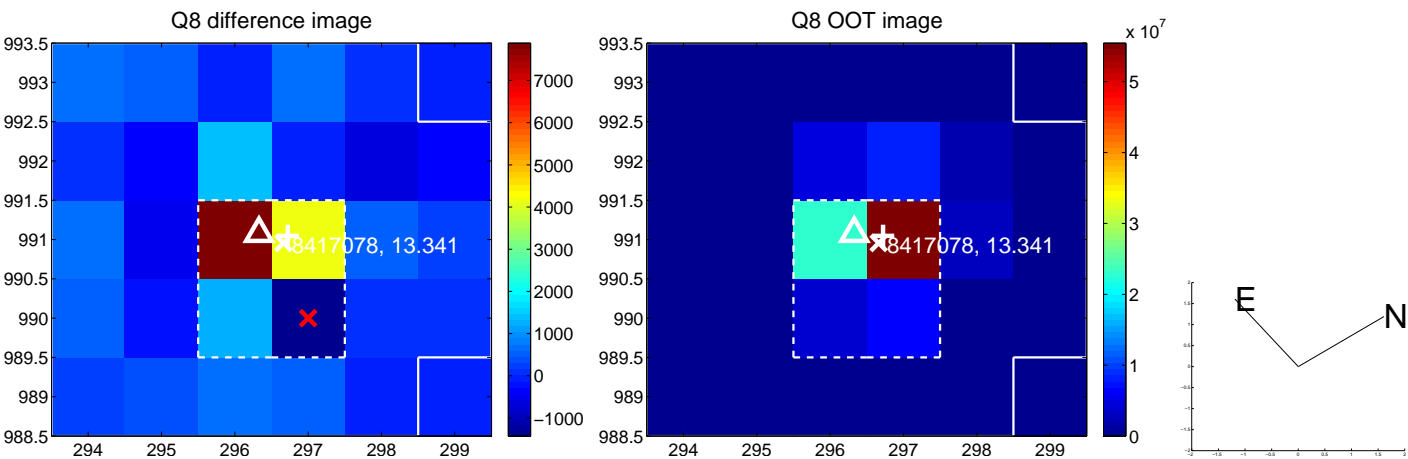
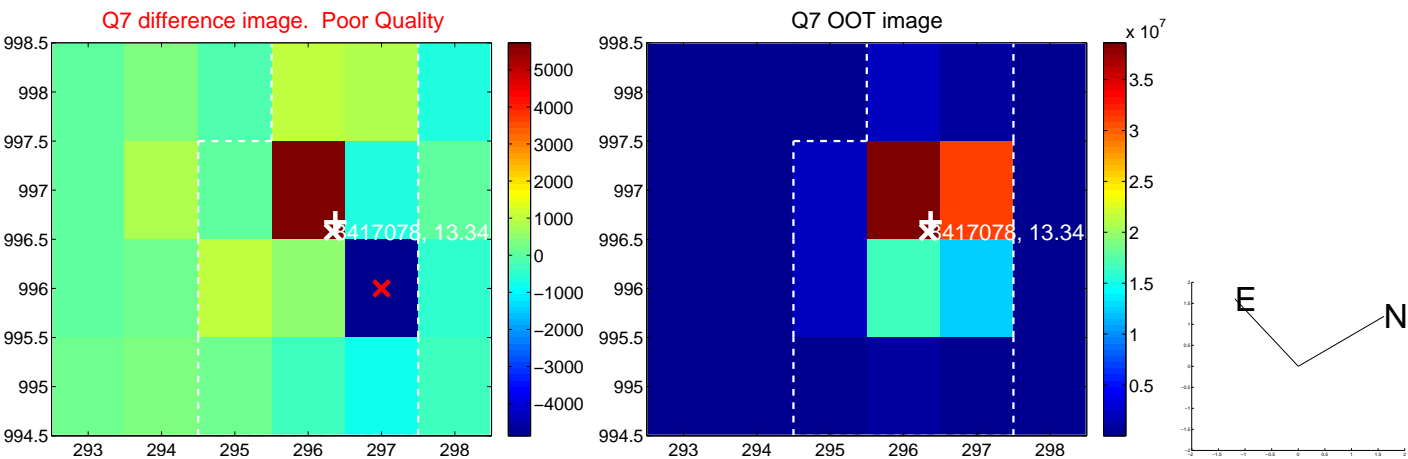
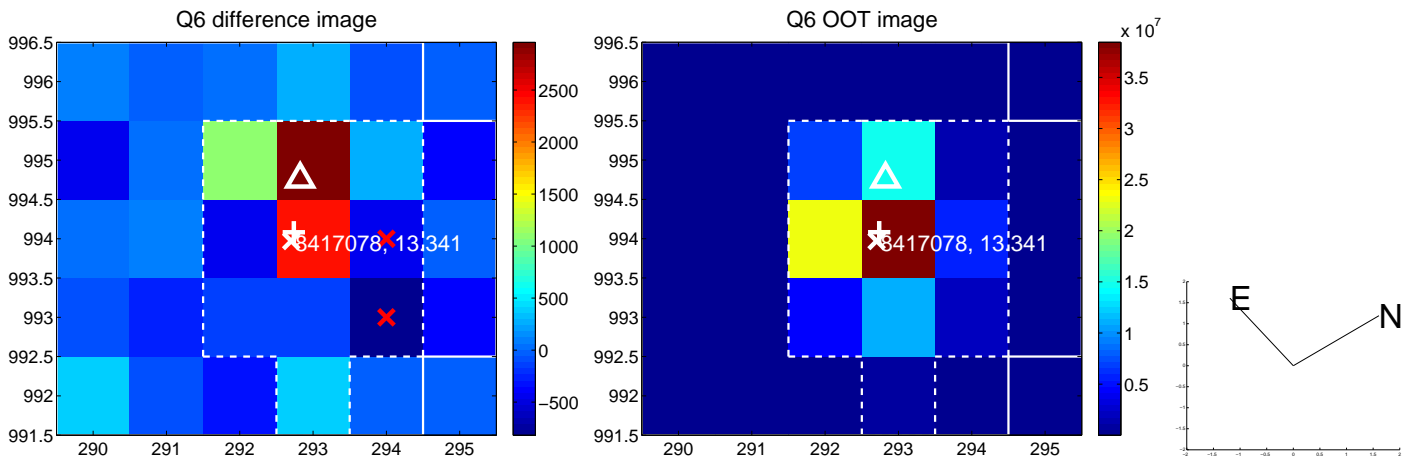
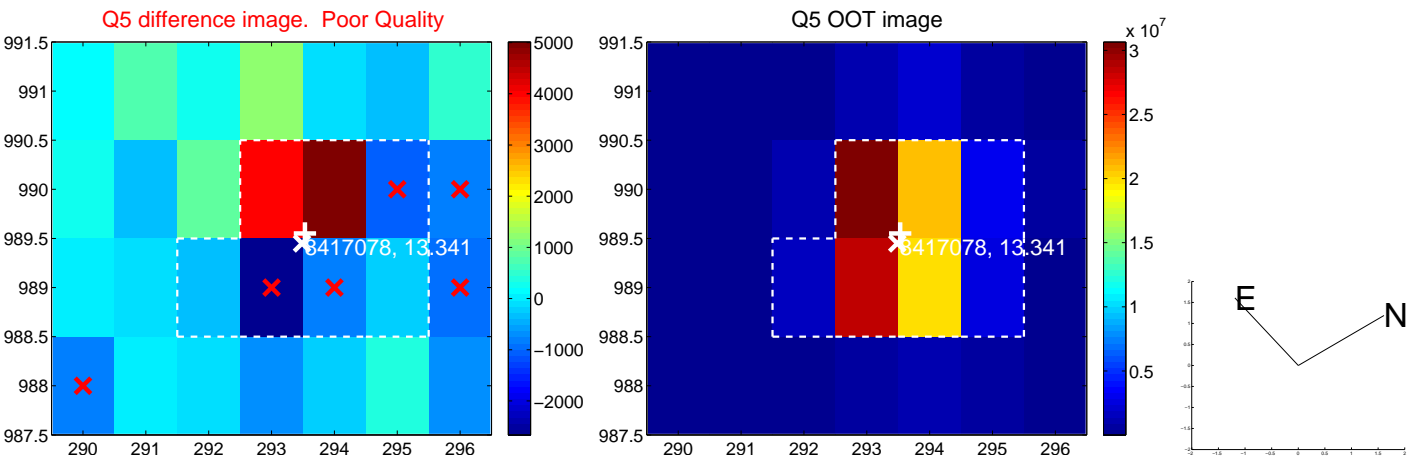


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

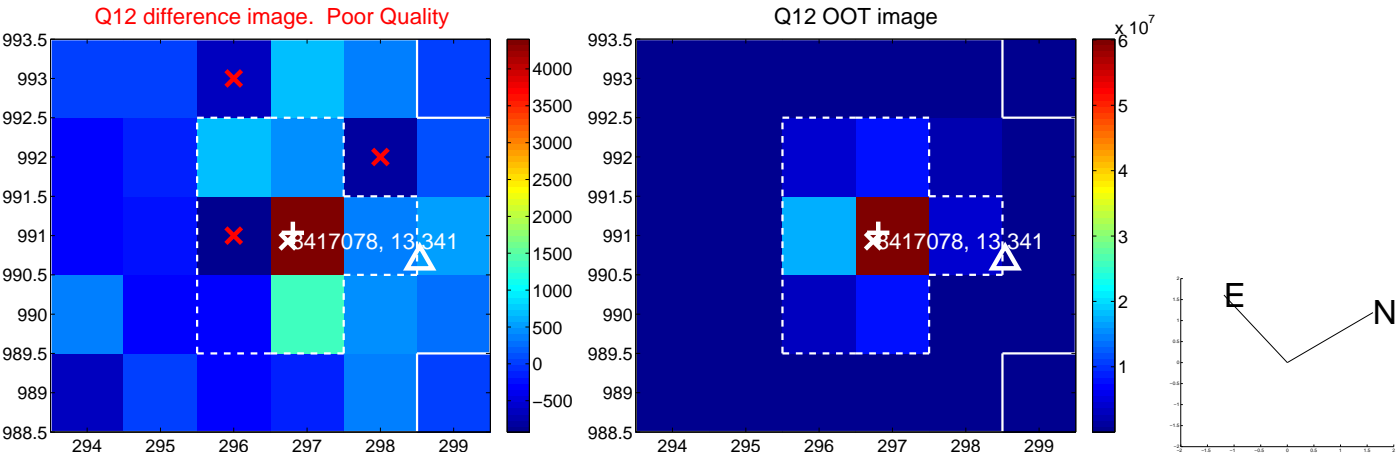
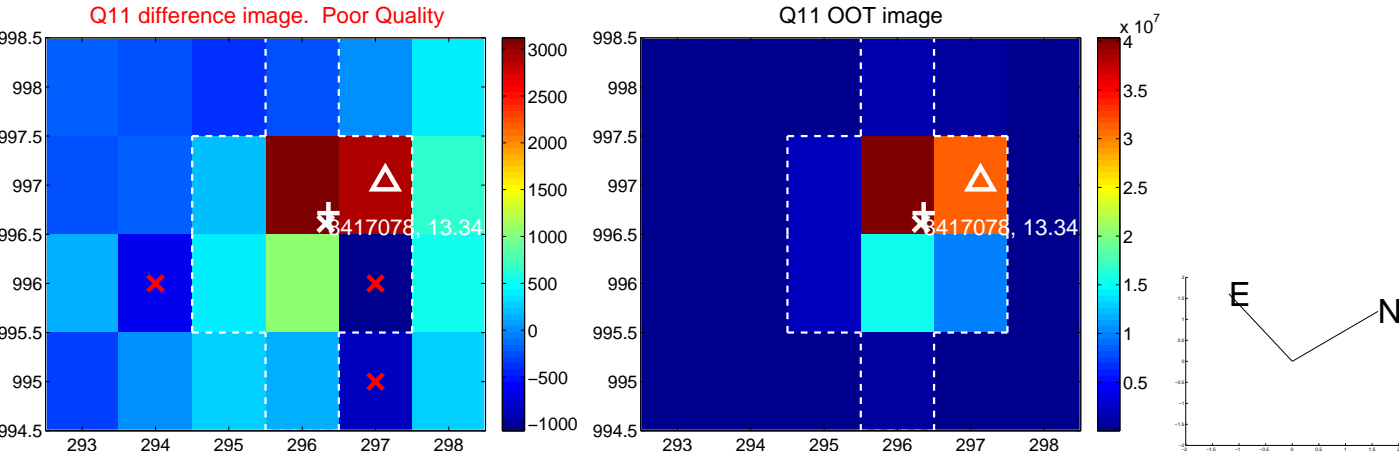
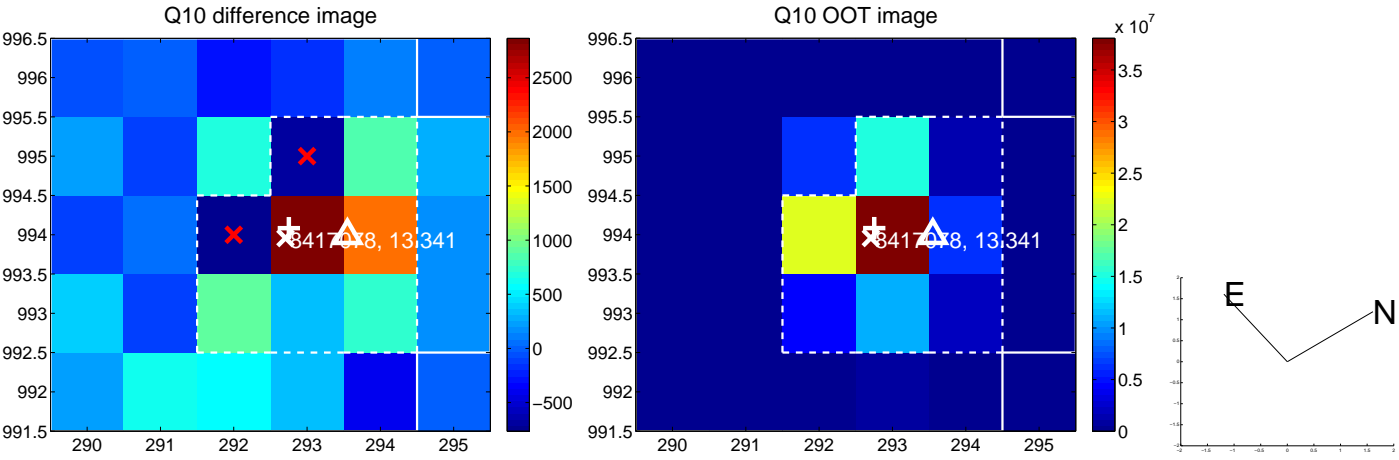
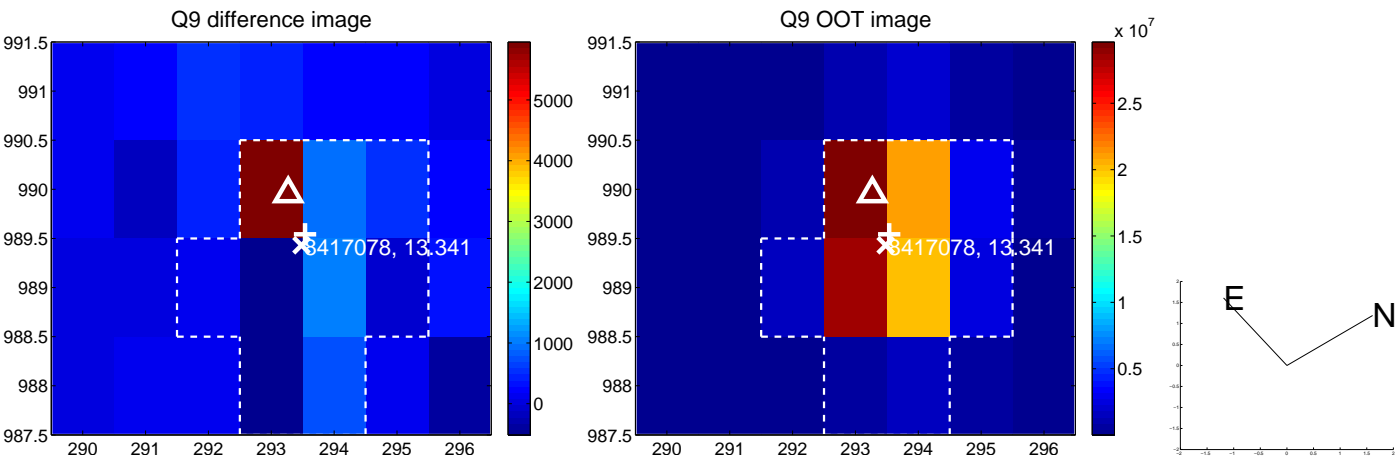
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



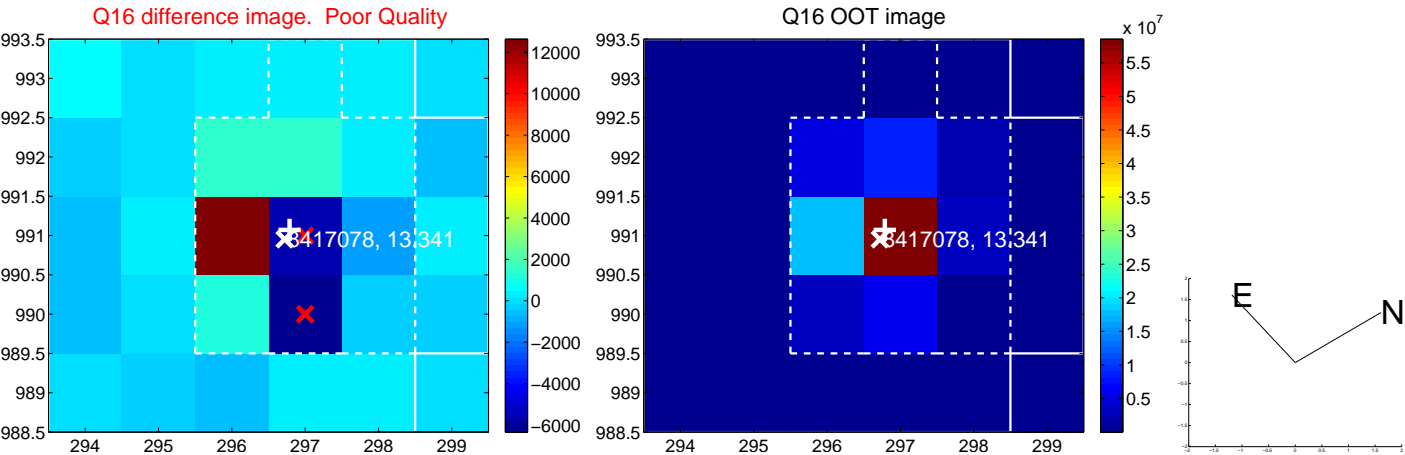
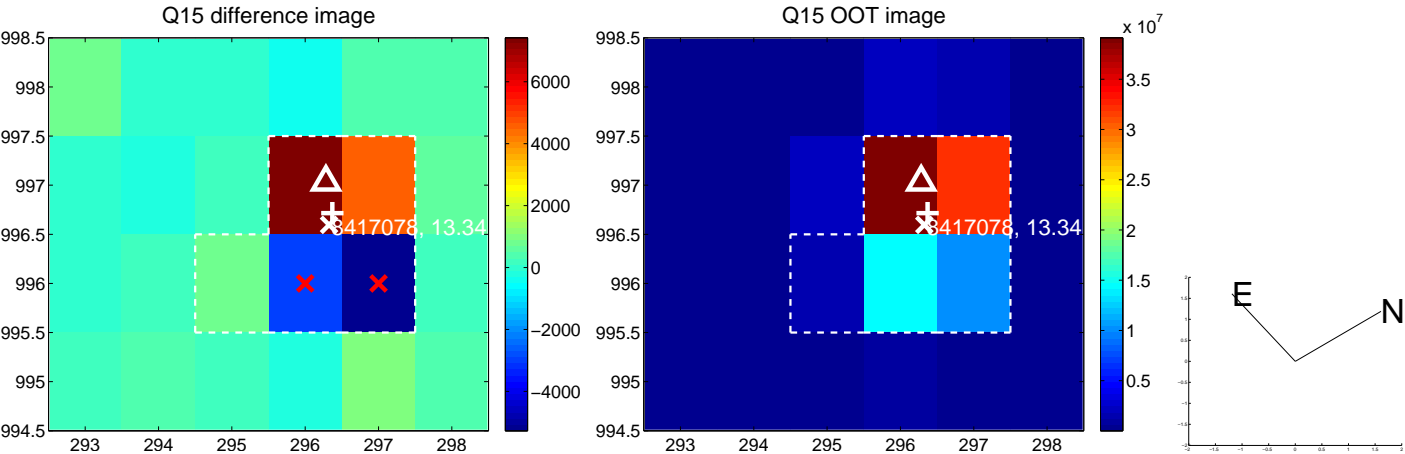
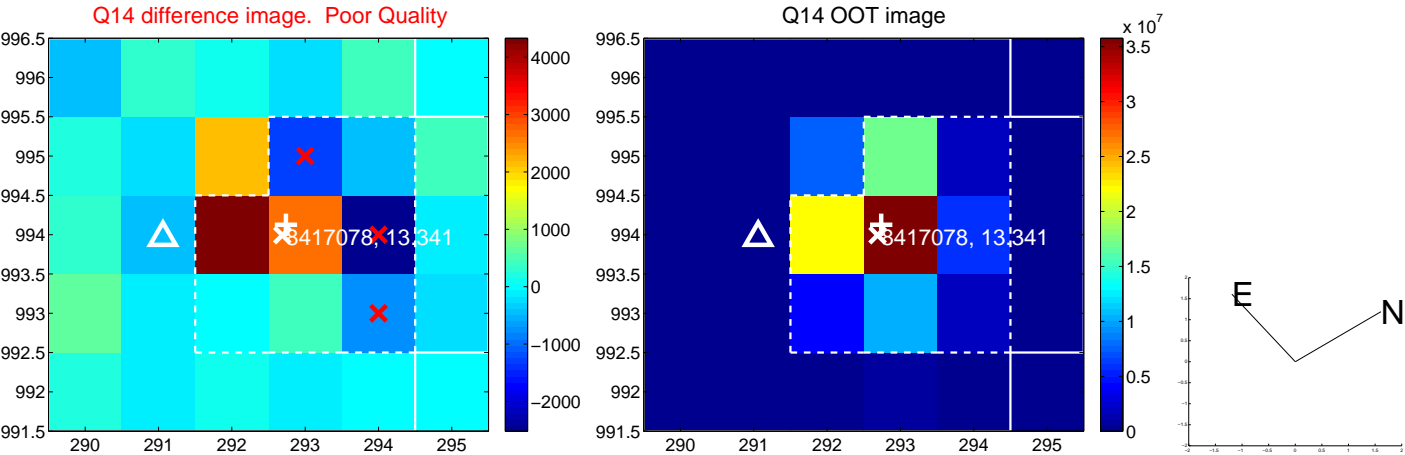
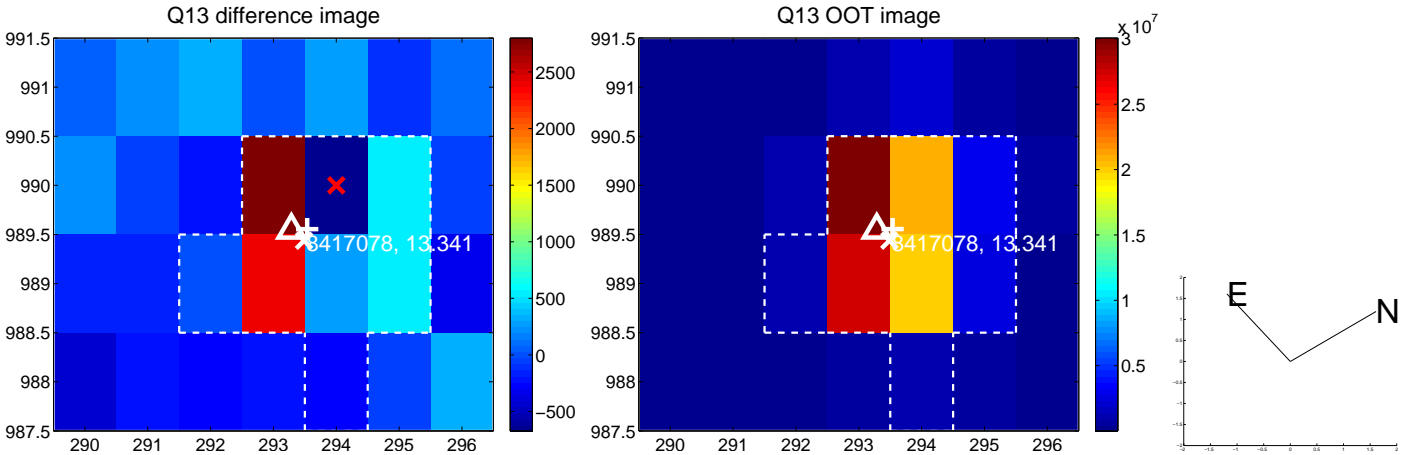
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



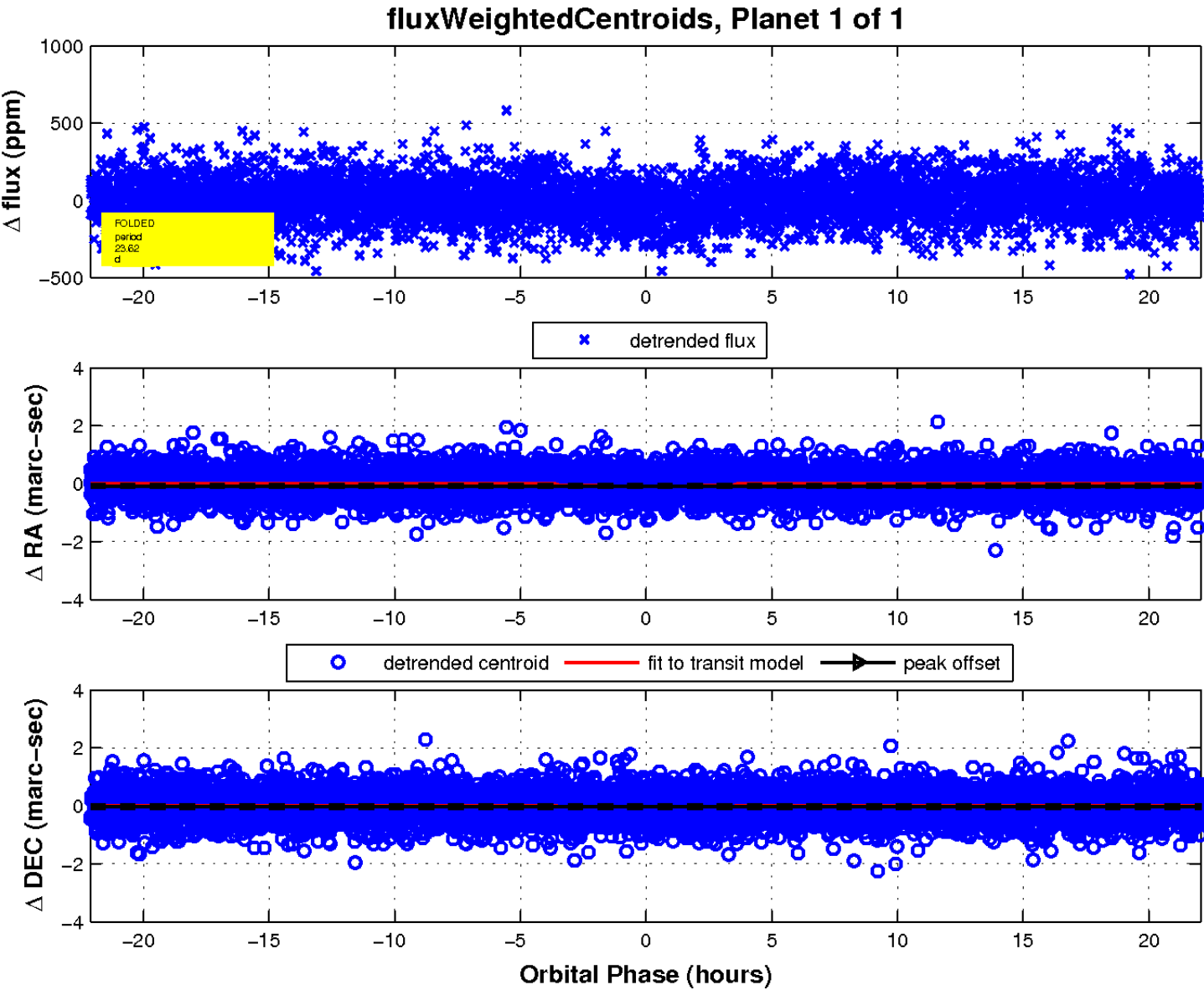
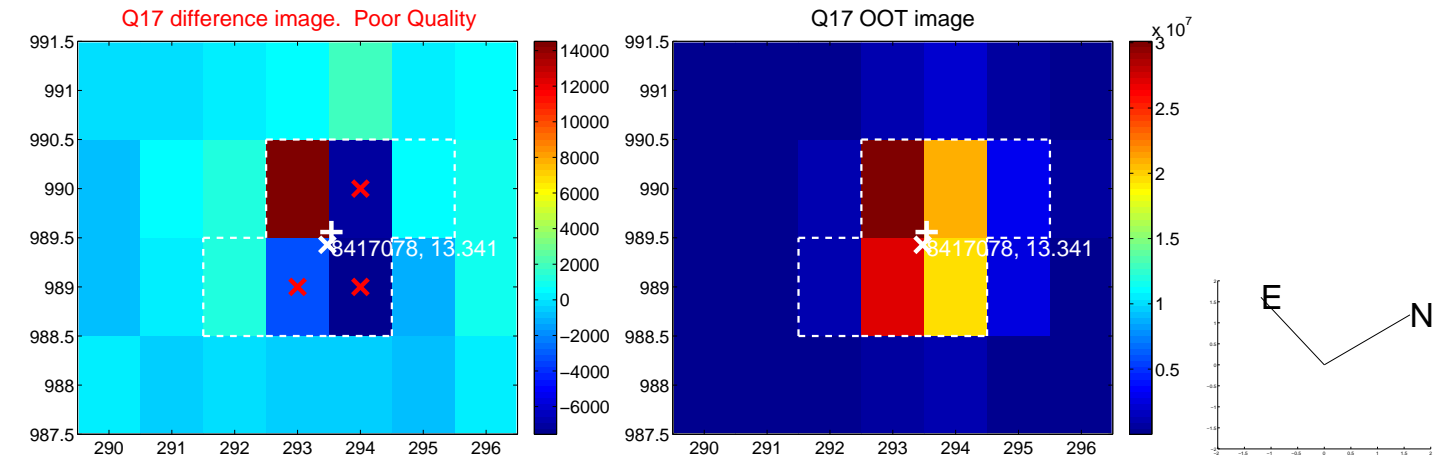
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

