

KIC 004650733

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})
004650733-01	OBS	1659.01	29.539073	143.917096	406.6	4.257	15.5	17.3	1.24	6572	2.81	61.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004650733-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

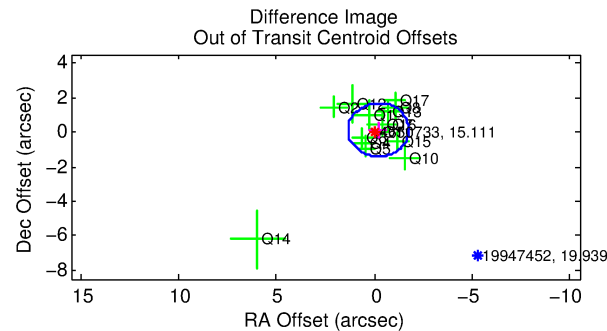
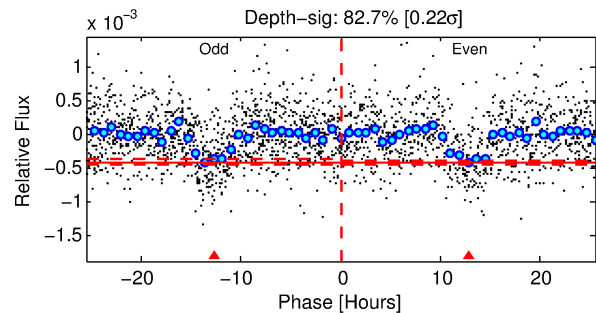
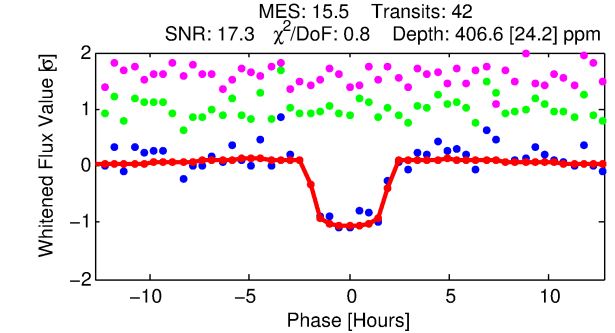
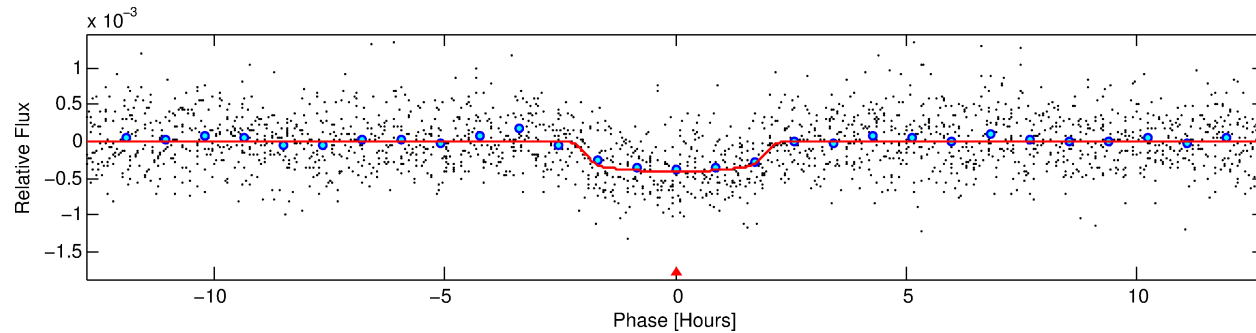
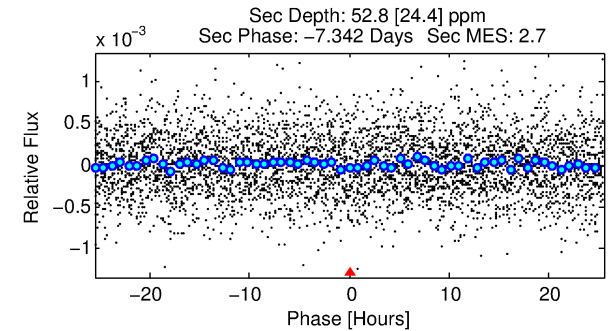
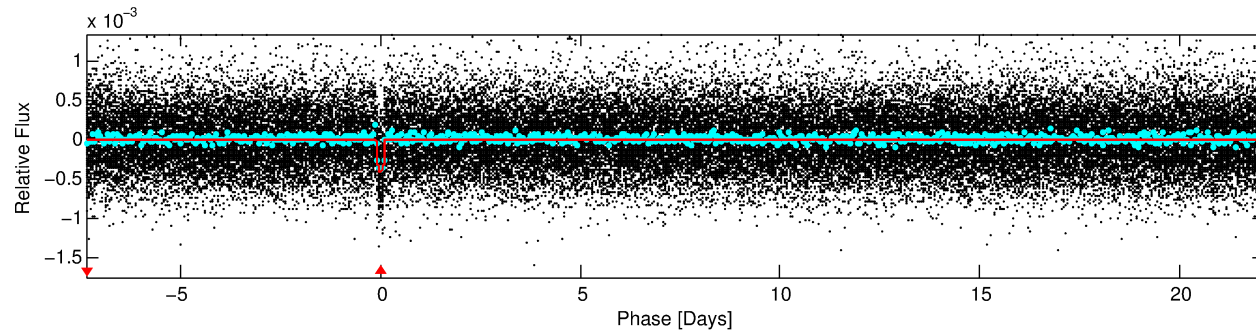
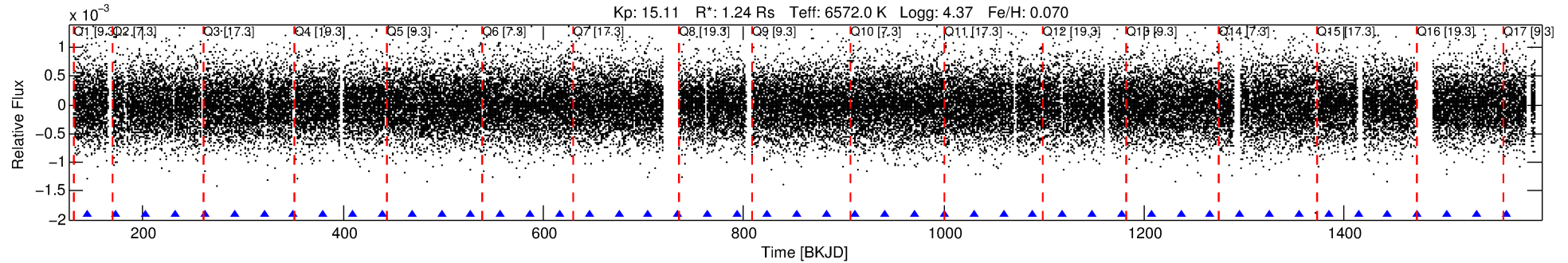
Ephemeris Match Information For 004650733-01

No Significant Match Found

DV One-Page Summary

KIC: 4650733 Candidate: 1 of 1 Period: 29.539 d

KOI: K01659.01 Corr: 0.990



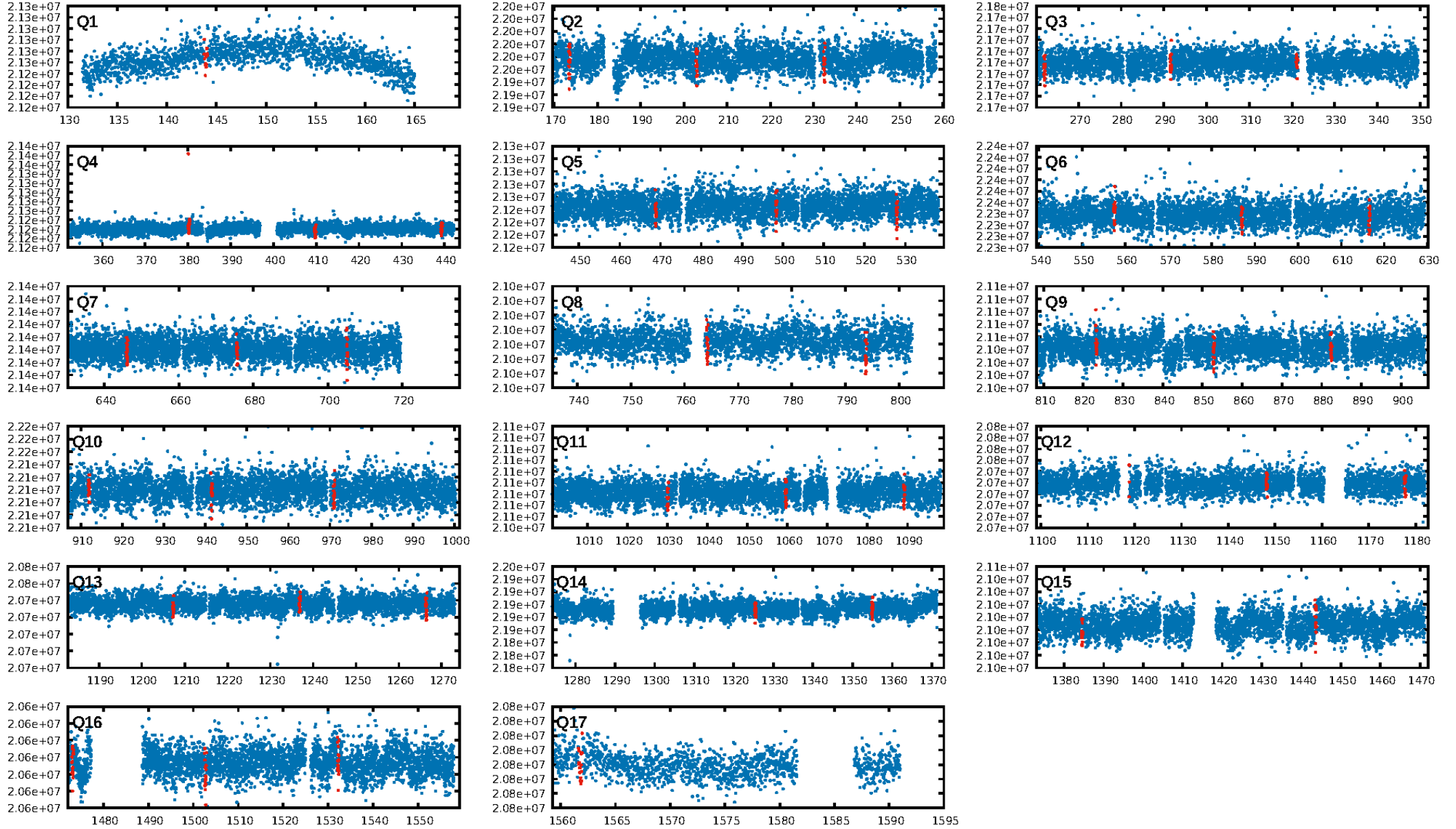
DV Fit Results:

Period = 29.53907 [0.00018] d
Epoch = 143.9171 [0.0050] BKJD
Rp/R* = 0.0208 [0.0056]
a/R* = 30.75 [45.47]
b = 0.84 [0.52]
Seff = 61.61 [25.36]
Teff = 714 [74] K
Rp = 2.81 [1.17] Re
a = 0.2039 [0.0538] AU
Ag = 153.20 [123.86] [1.23σ]
Teffp = 3886 [708] K [4.46σ]

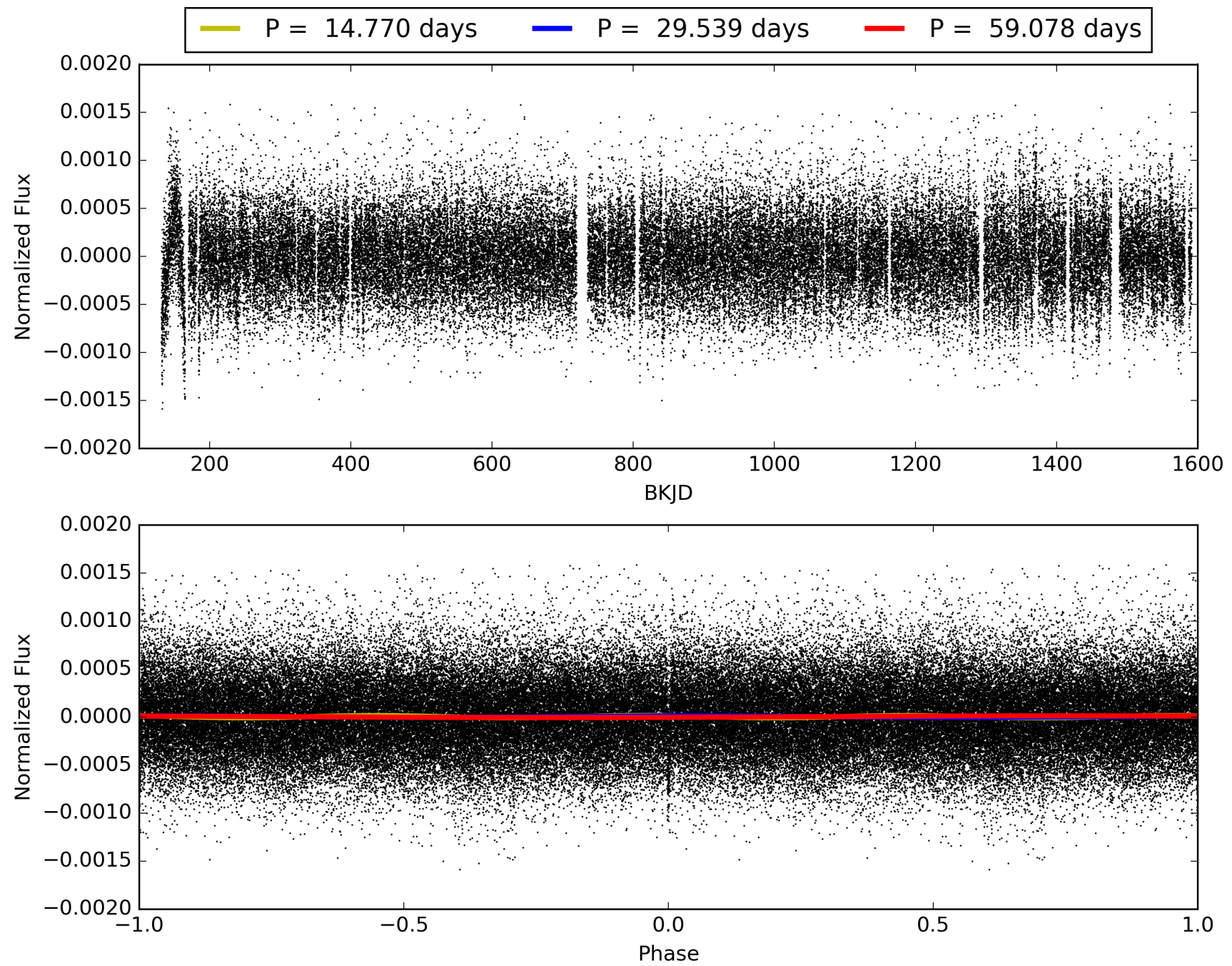
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 78.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.79e-54
RollingBand-fgt: 1.00 [40/40]
GhostDiagnostic-chr: 2.085
Centroid-sig: 1.4%
Centroid-so: 1.393 arcsec [1.74σ]
OotOffset-rm: 0.235 arcsec [0.46σ]
KicOffset-rm: 0.357 arcsec [0.58σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.87 [13/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 004650733-01, PDC Light Curves

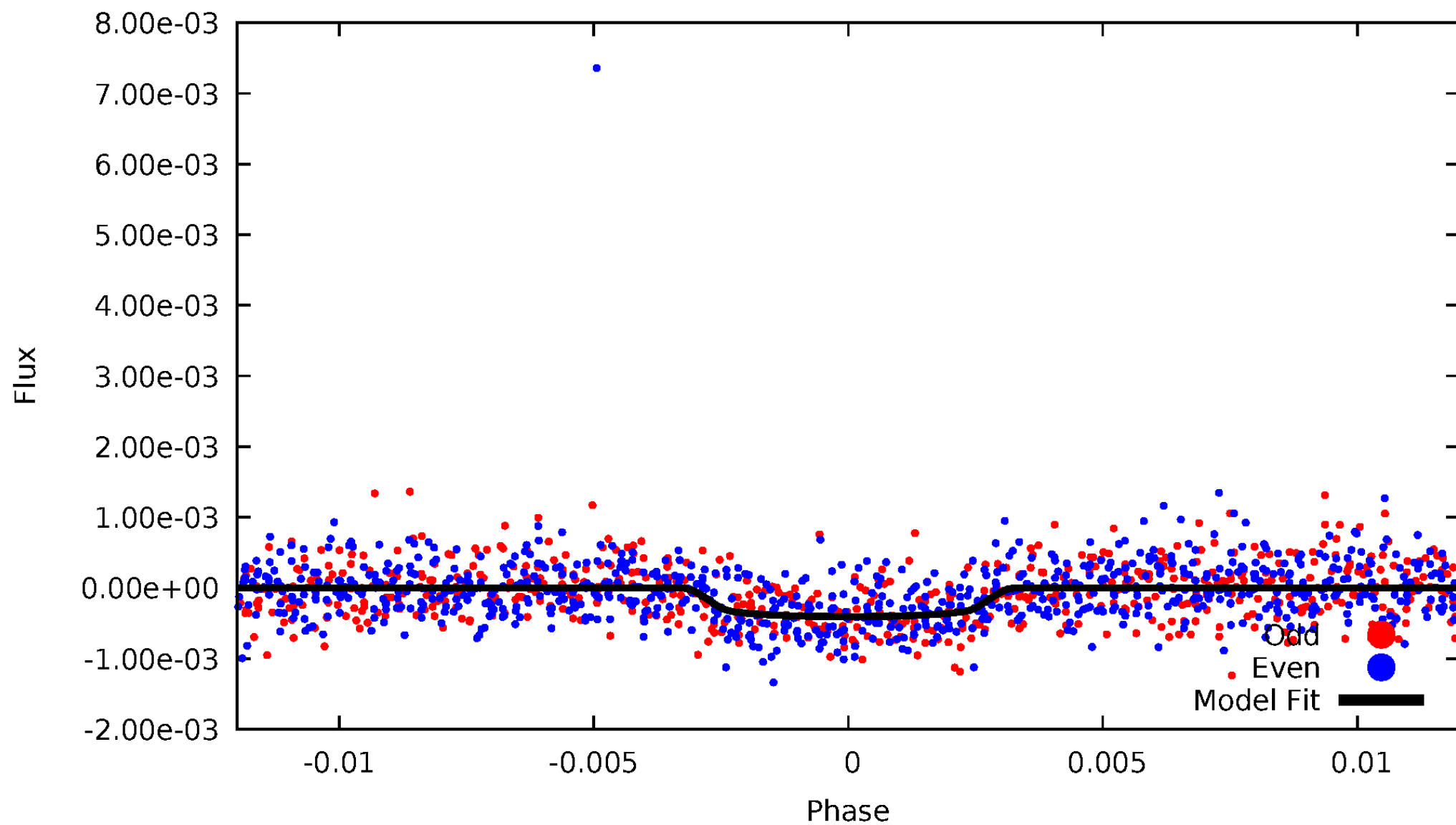


TCE 004650733-01



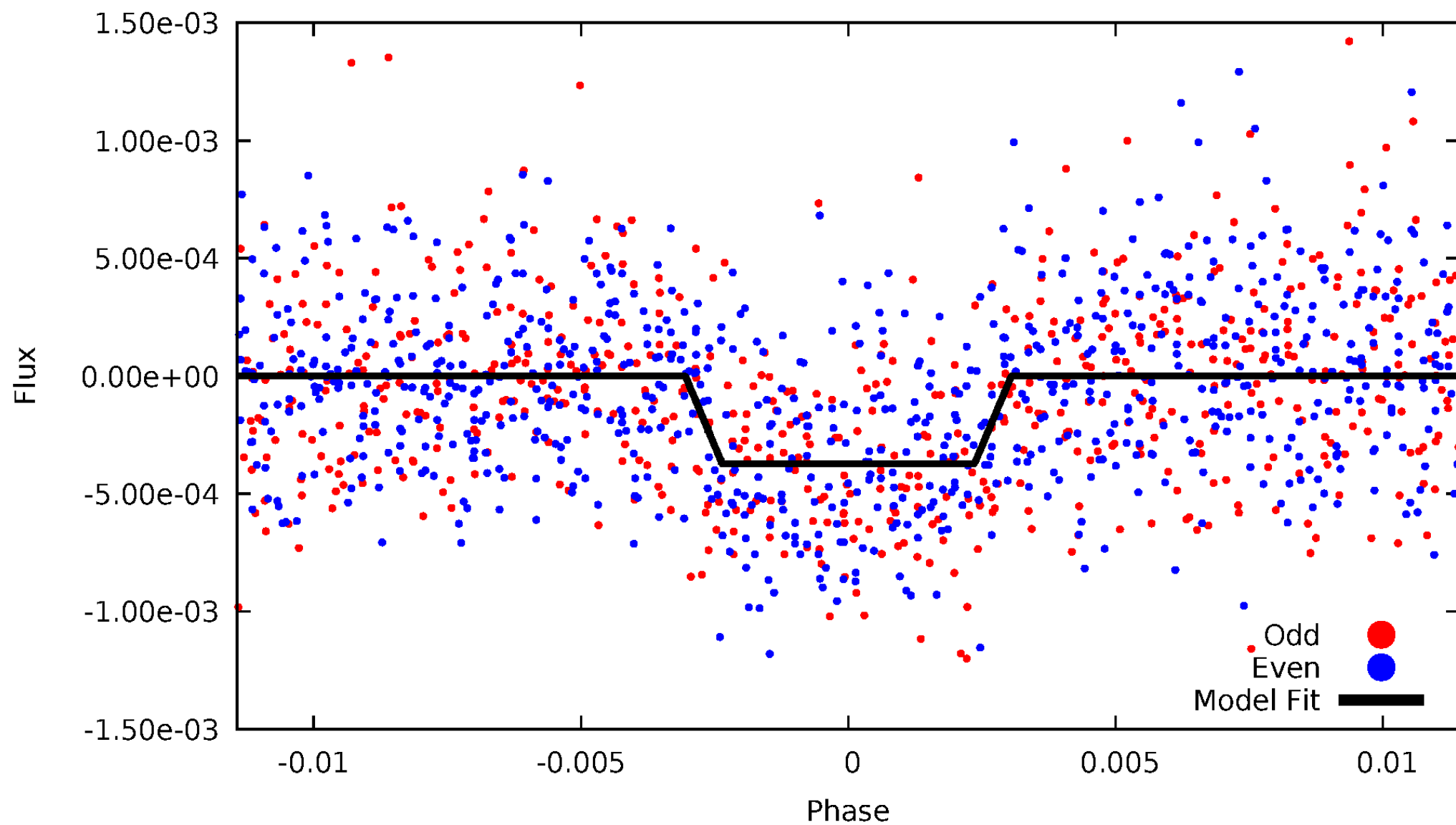
DV Odd/Even

TCE 004650733-01

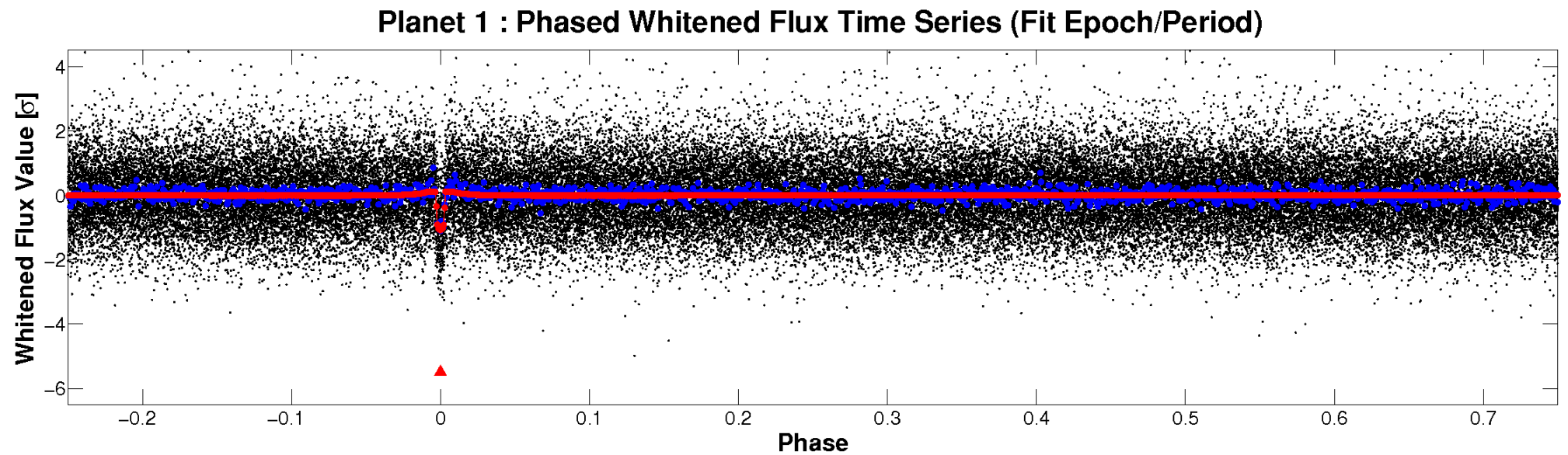
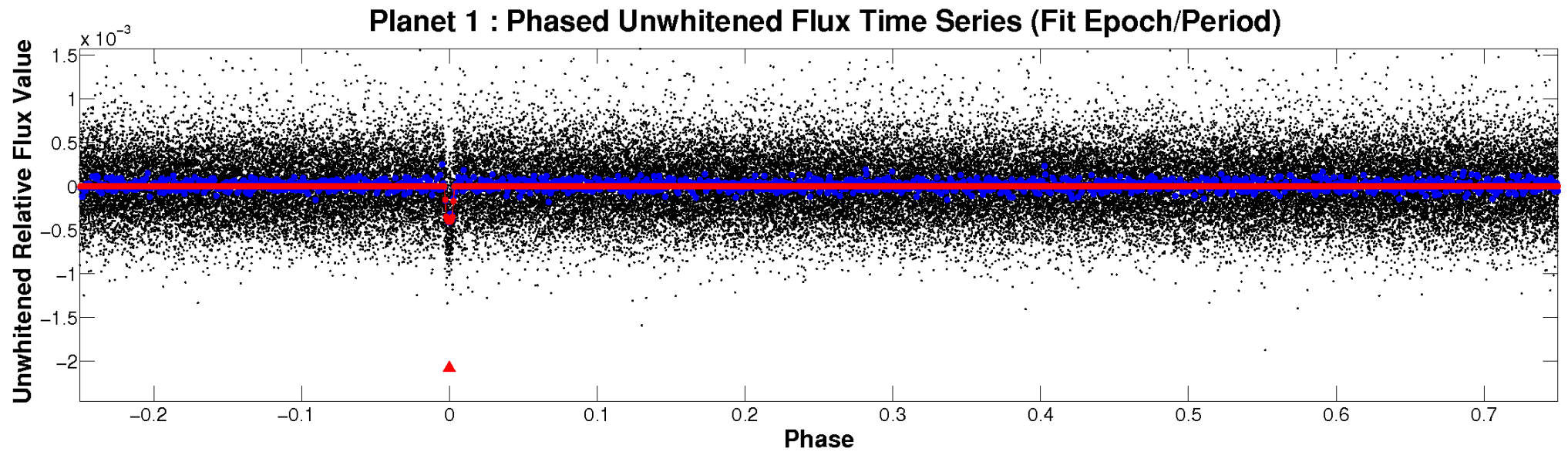


ALT Odd/Even

TCE 004650733-01

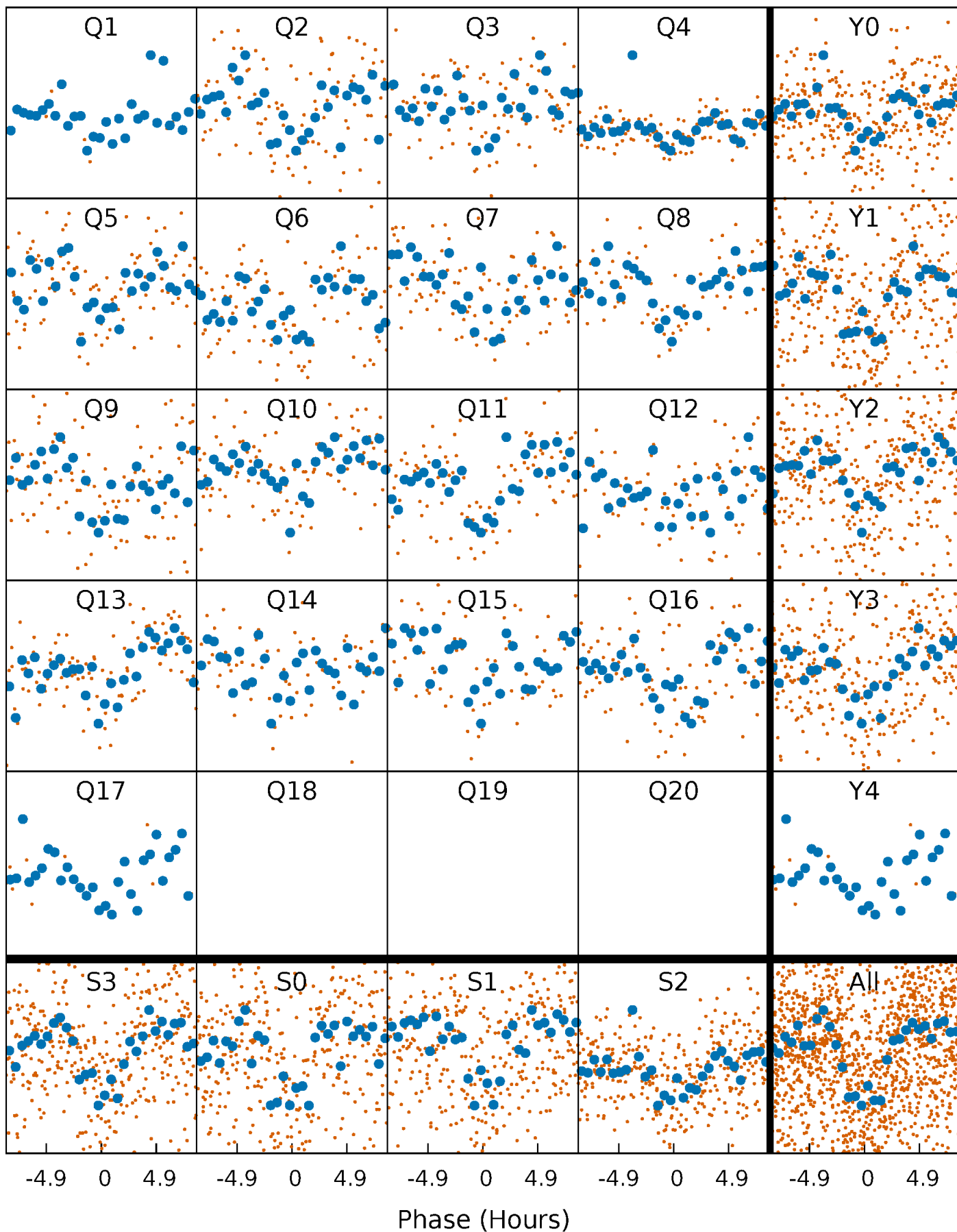


Non-Whitened Vs. Whitened Light Curve



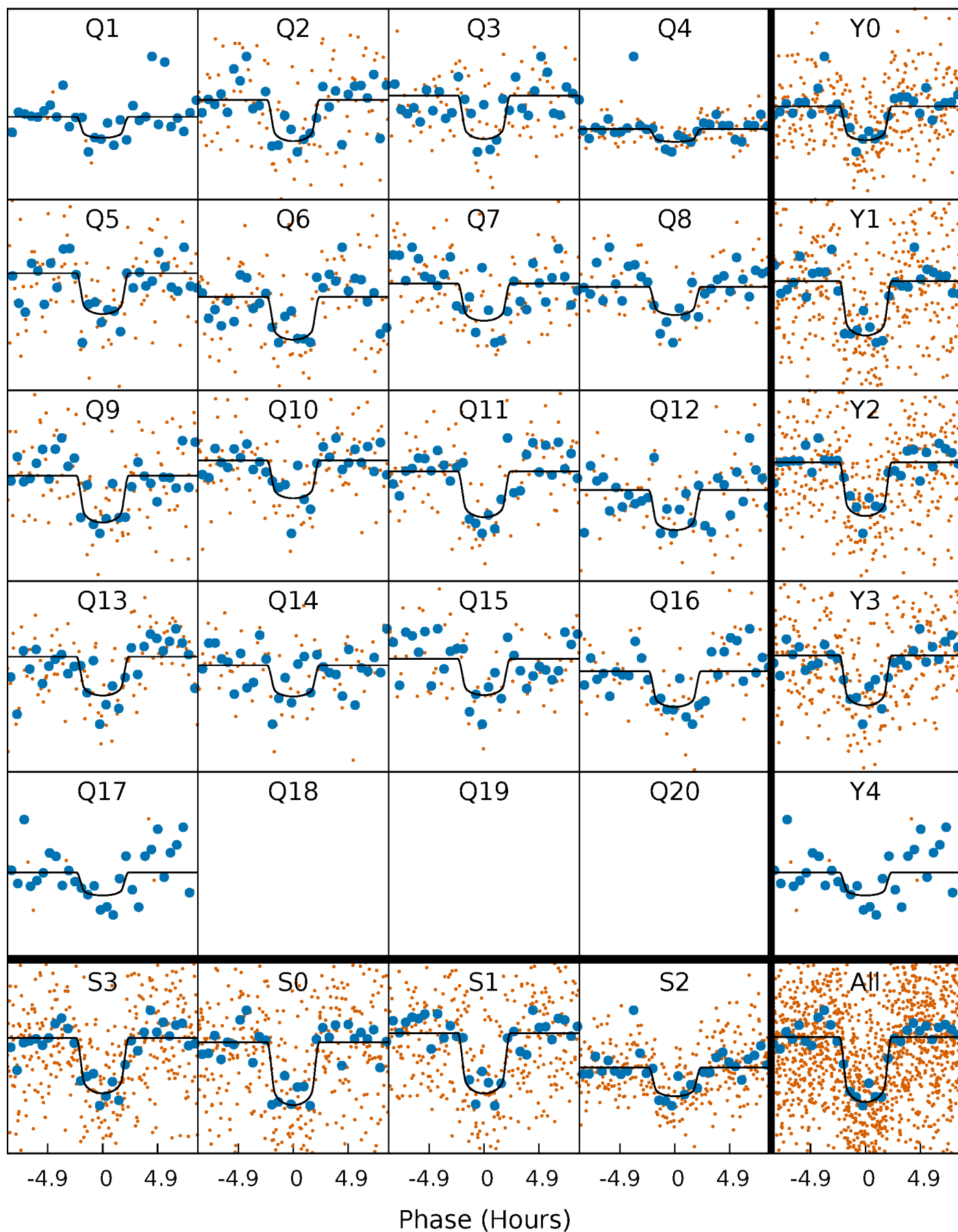
PDC Quarter-Phased Transit Curves

TCE 004650733-01 P= 29.539073 Days $T_0=143.917096$ (BKJD)



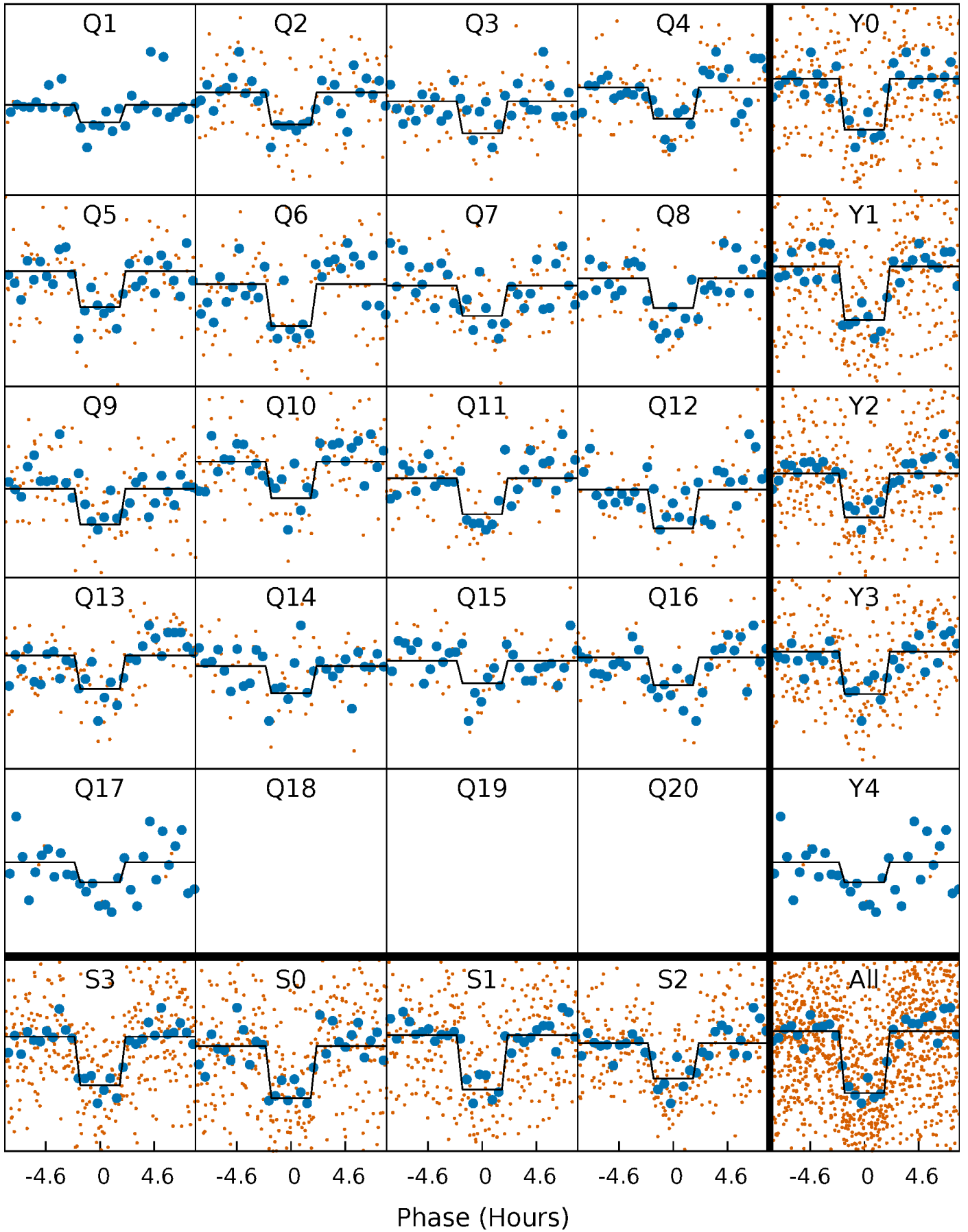
DV Quarter-Phased Transit Curves

TCE 004650733-01 P= 29.539073 Days $T_0=143.917096$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

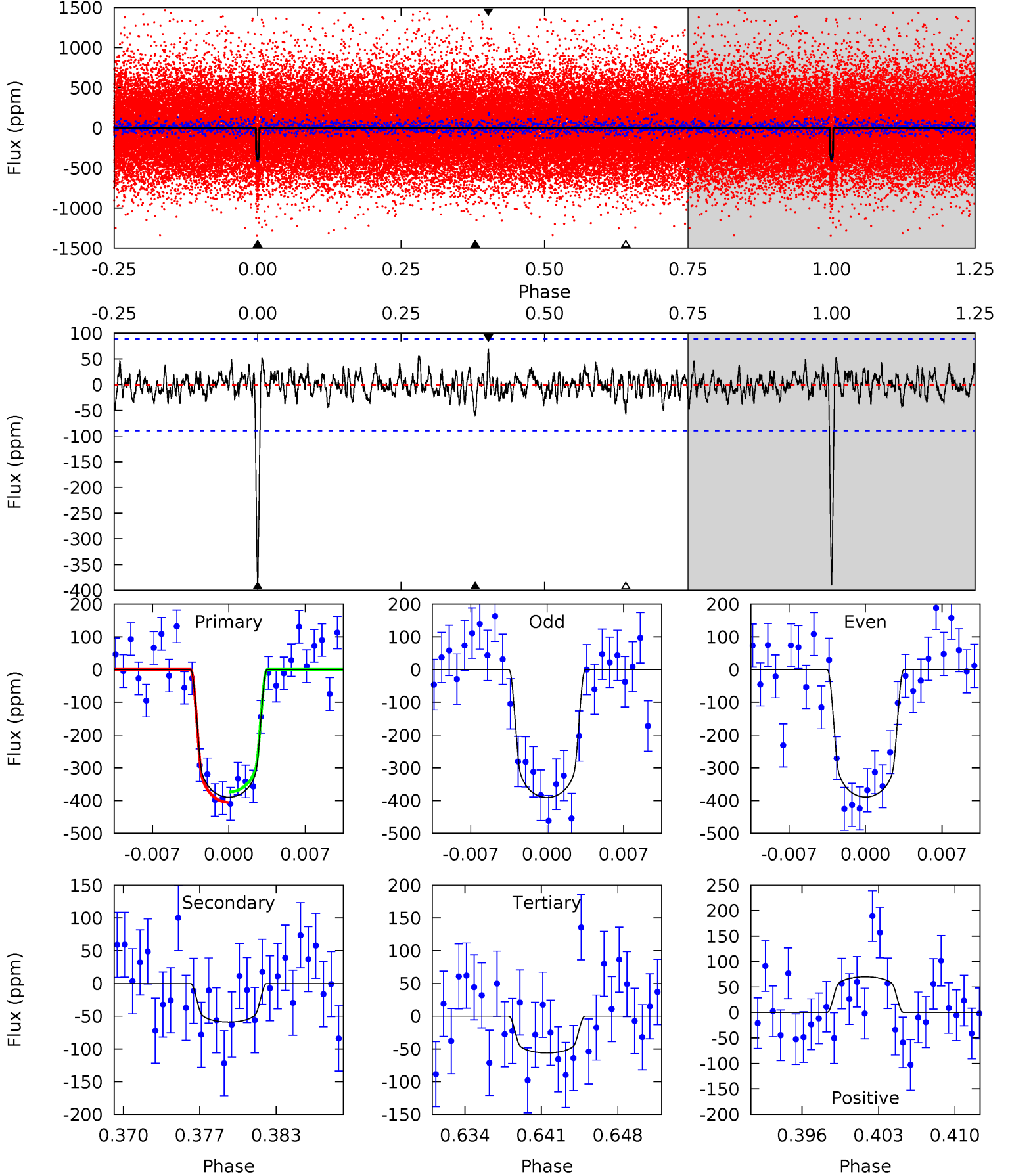
TCE 004650733-01 P= 29.539088 Days $T_0=143.916440$ (BKJD)



DV Model-Shift Uniqueness Test

004650733-01, P = 29.539073 Days, E = 114.378023 Days

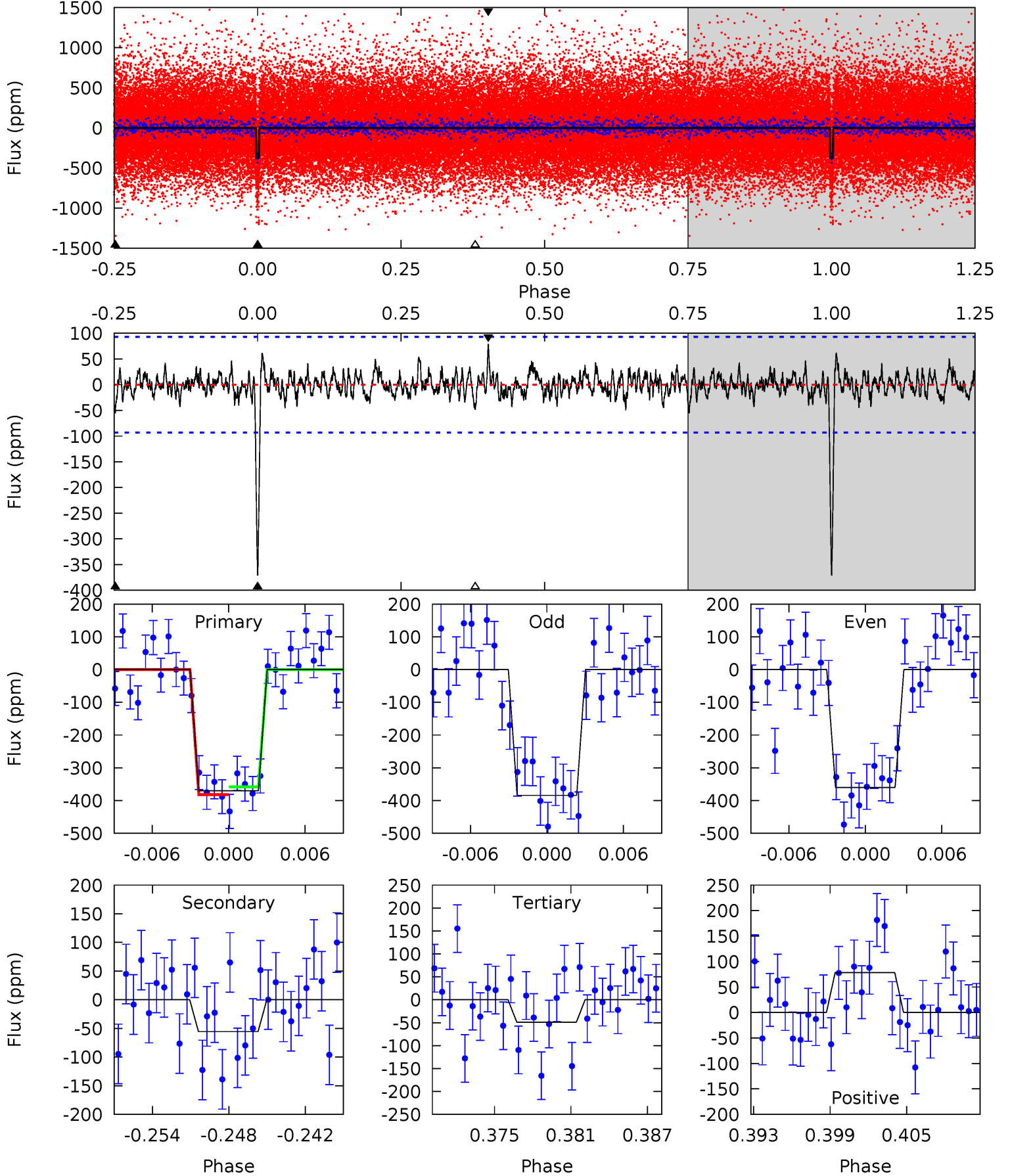
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.3	3.38	3.22	4.01	5.11	2.72	1.01	19.1	18.3	0.16	-0.63	0.04	0.98	0.15	0.92



Alt Model-Shift Uniqueness Test

004650733-01, $P = 29.539088$ Days, $E = 114.377352$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.4	3.06	2.69	4.32	5.12	2.75	0.96	17.7	16.1	0.37	-1.26	0.66	1.03	0.17	0.65



Stellar Parameters For KIC 004650733

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6572^{+160}_{-251}	$4.365^{+0.065}_{-0.208}$	$0.070^{+0.200}_{-0.350}$	$1.238^{+0.390}_{-0.139}$	$1.298^{+0.163}_{-0.200}$	$0.964^{+0.278}_{-0.513}$
	+2%/-4%	+1%/-5%	+286%/-500%	+32%/-11%	+13%/-15%	+29%/-53%
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 004650733-01 / KOI 1659.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-59 ± 17	$2.85^{+0.96}_{-0.77}$	1012^{+70}_{-50}	4228^{+608}_{-428}	157^{+160}_{-74}
Alt.	-56 ± 18	$2.74^{+0.82}_{-0.81}$	1017^{+78}_{-49}	4292^{+642}_{-464}	166^{+177}_{-81}

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 $A_{obs} \gg 1.0$

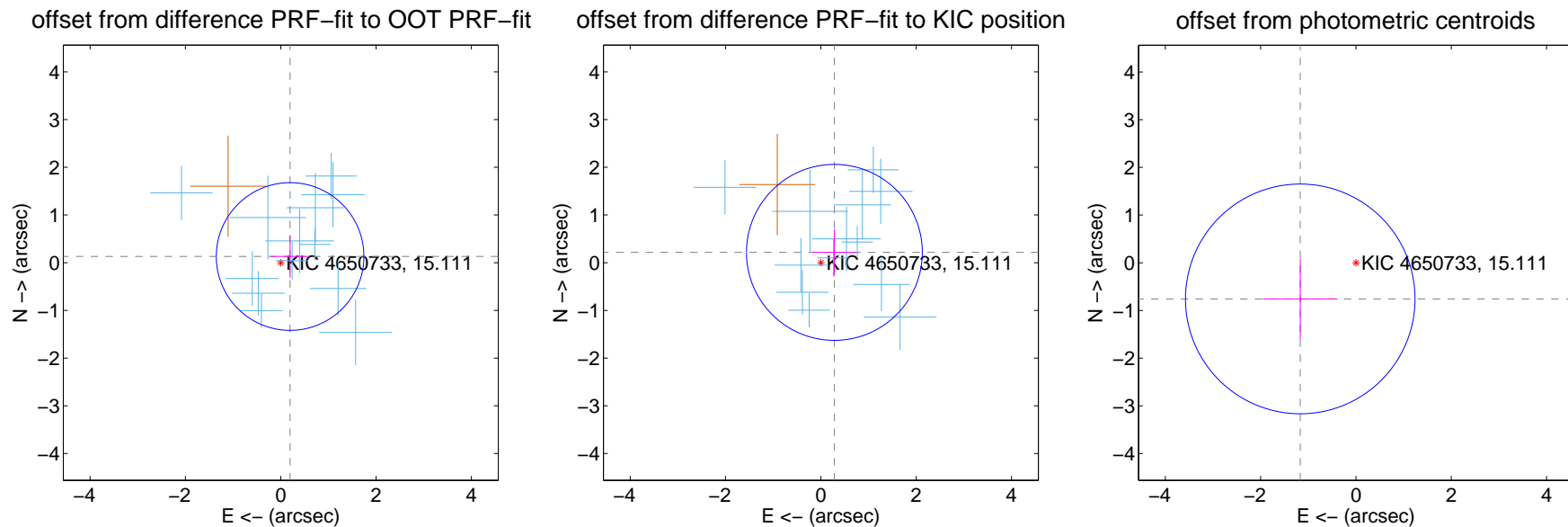
DV Centroid Data

Supplemental centroid analysis for 004650733-01. Kepler magnitude: 15.11. Transit SNR 17.33

There are 13 quarters with good PRF difference image offsets

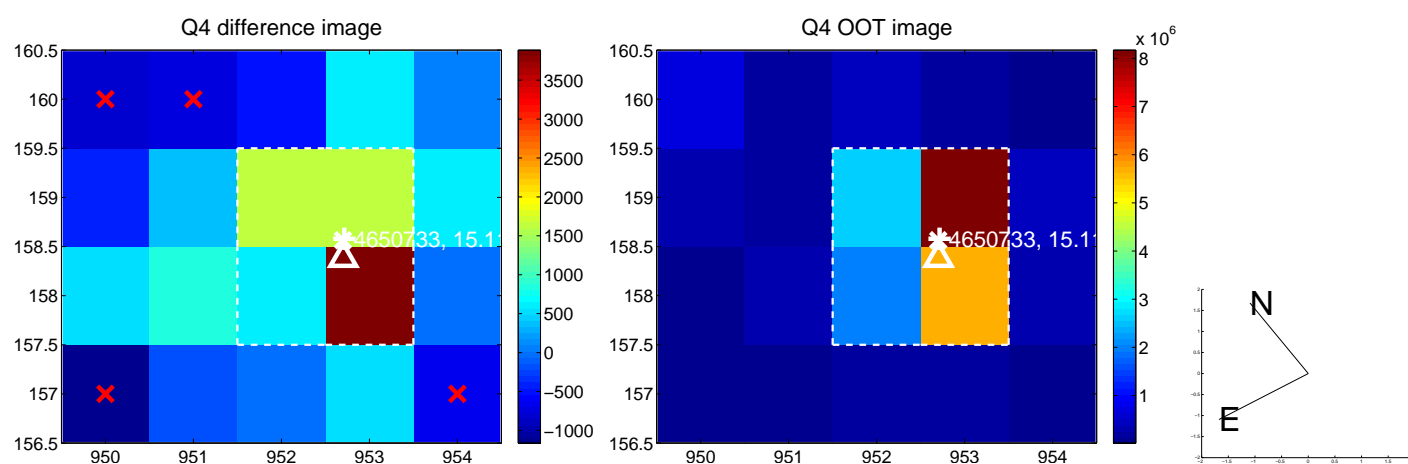
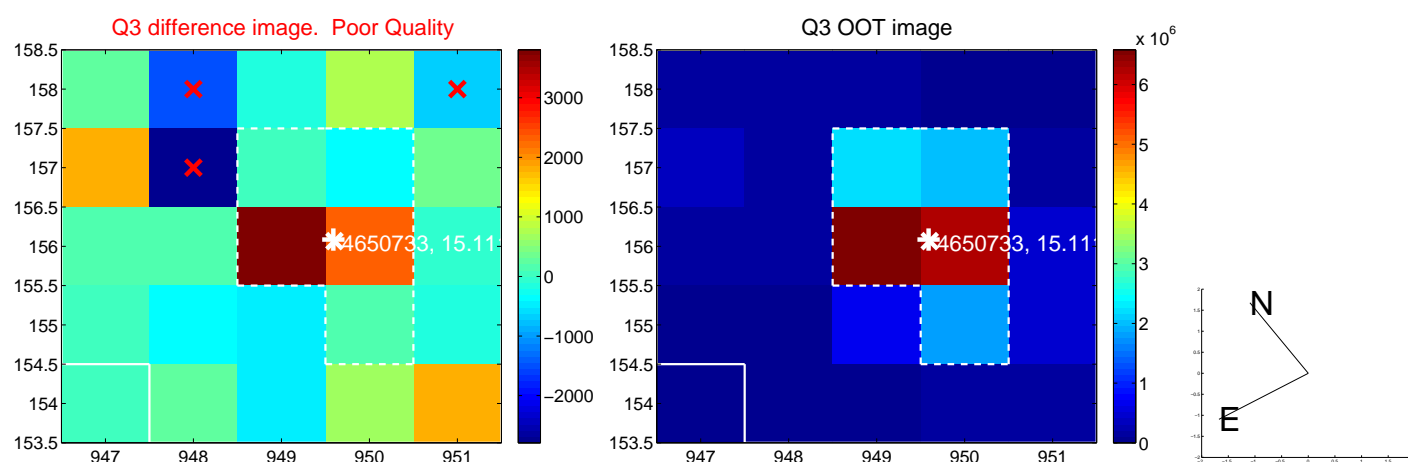
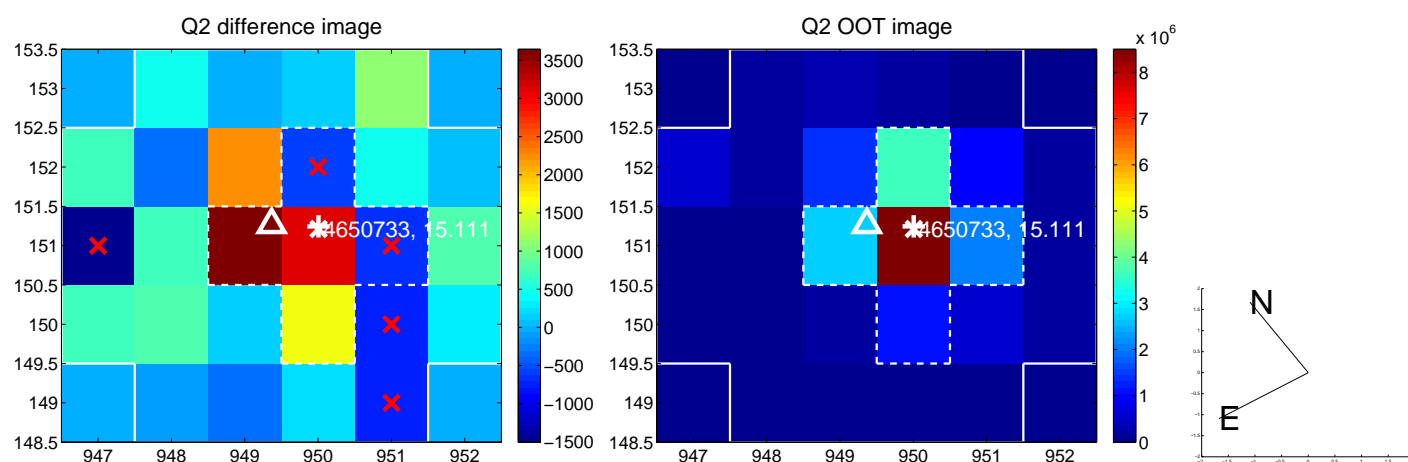
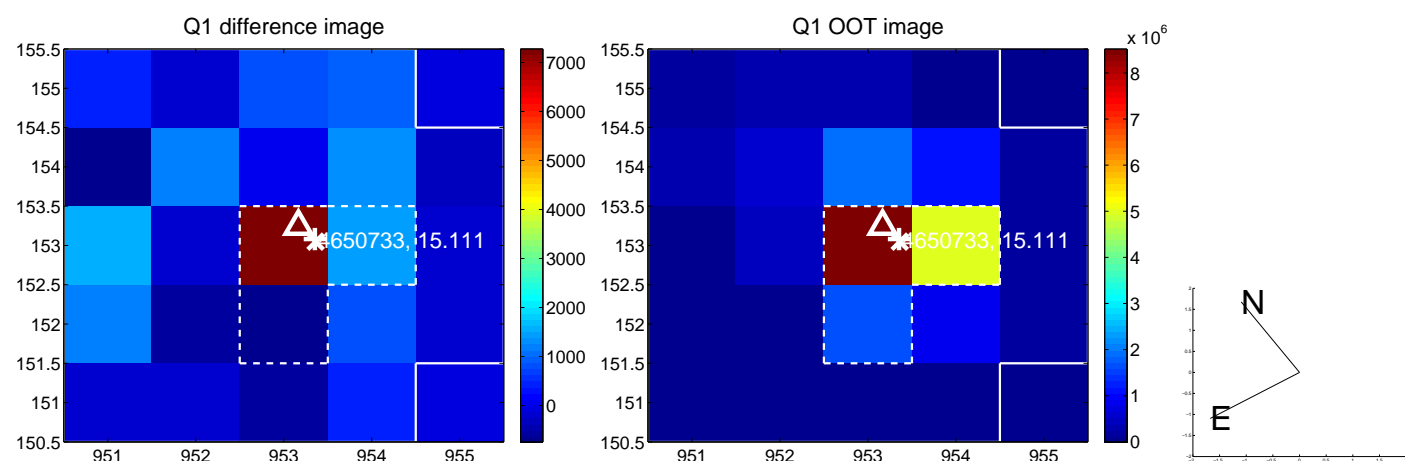
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.235 ± 0.516	0.46	-0.196 ± 0.406	0.130 ± 0.447
PRF-fit source offset from KIC position	0.357 ± 0.615	0.58	-0.284 ± 0.462	0.216 ± 0.489
photometric centroid source offset	1.39 ± 0.80	1.74	1.17 ± 0.78	-0.76 ± 0.85

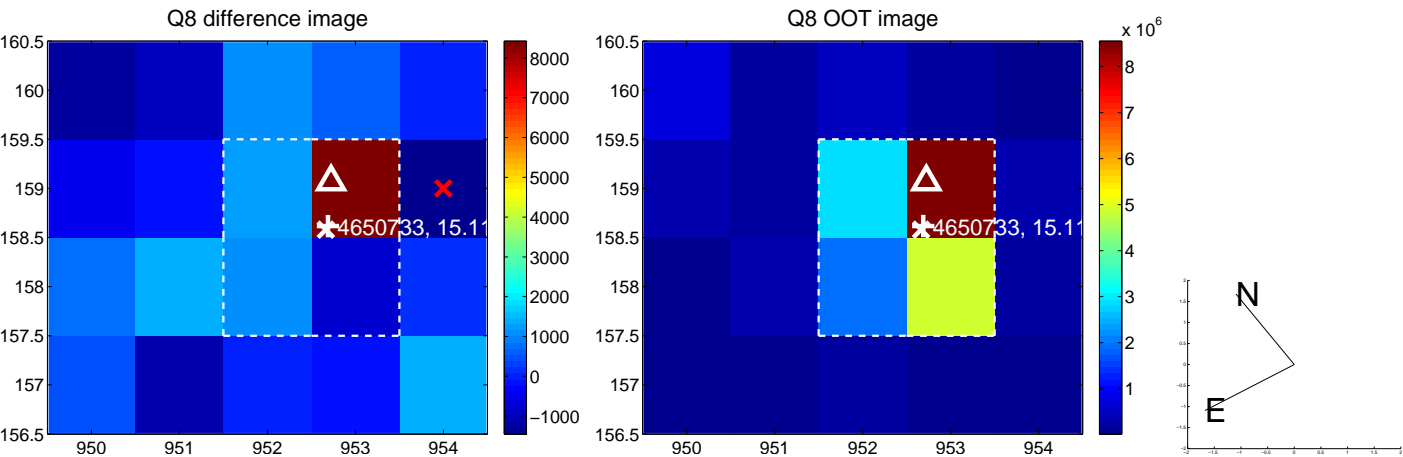
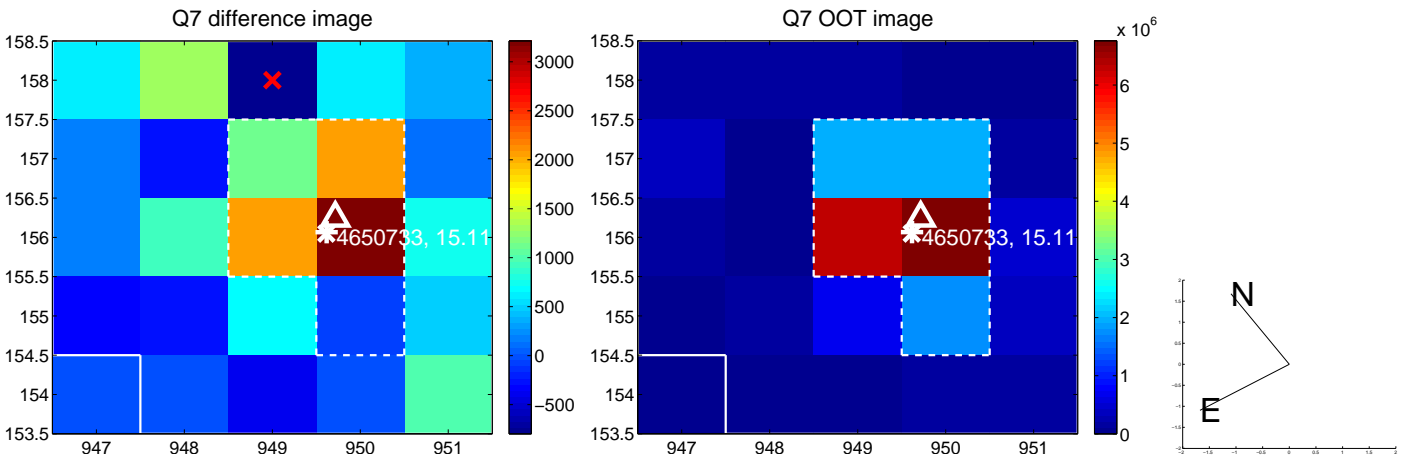
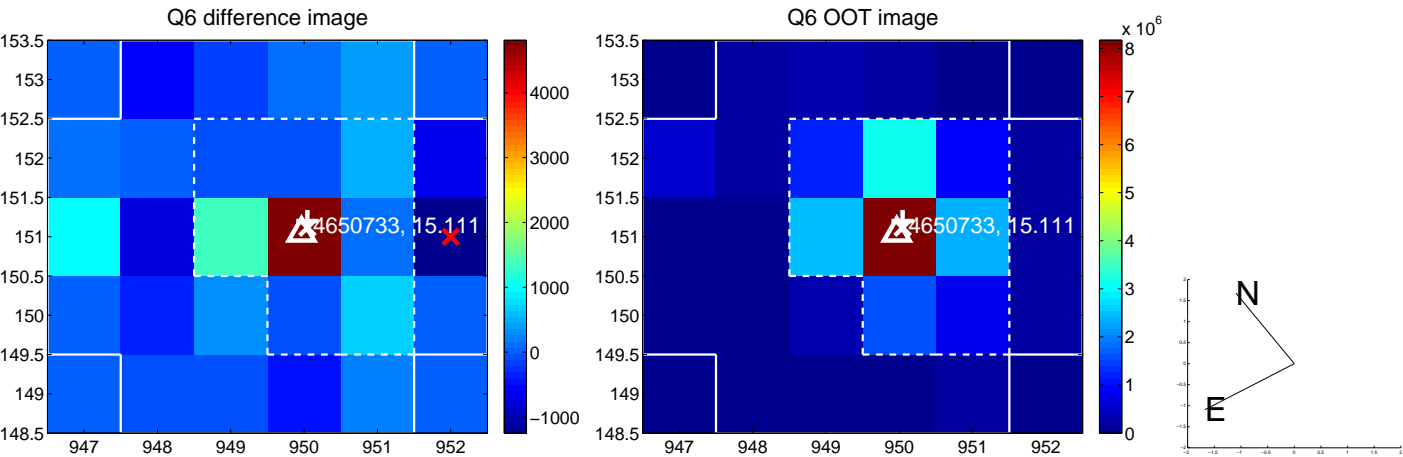
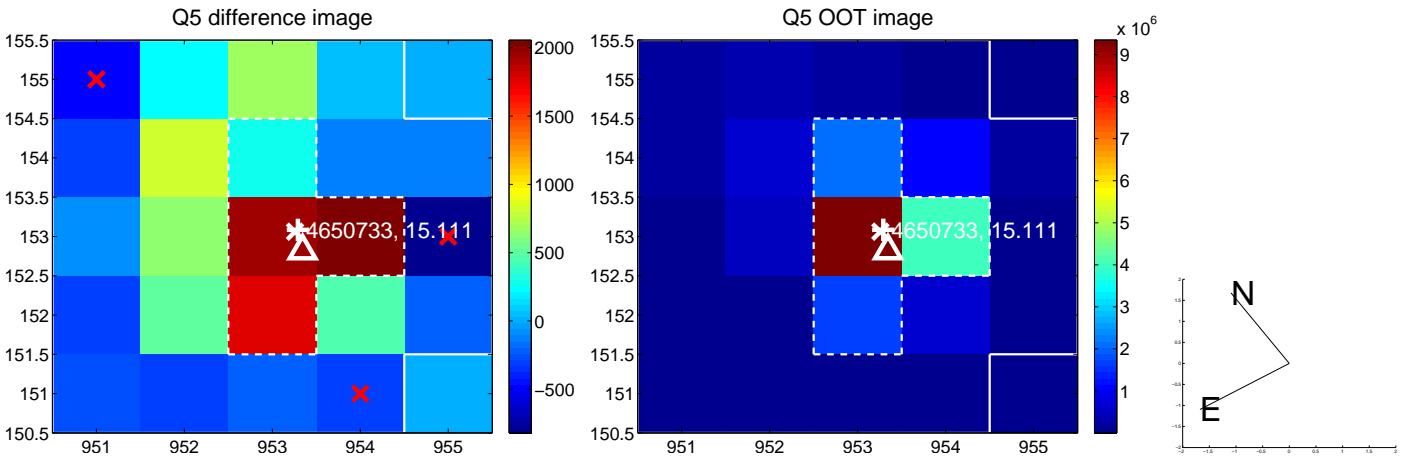


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

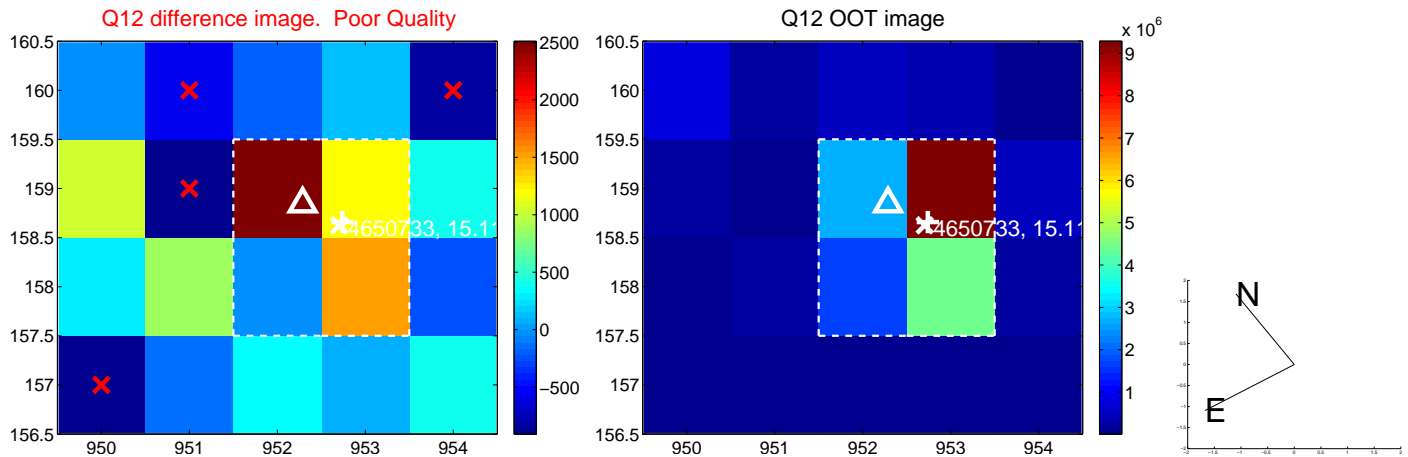
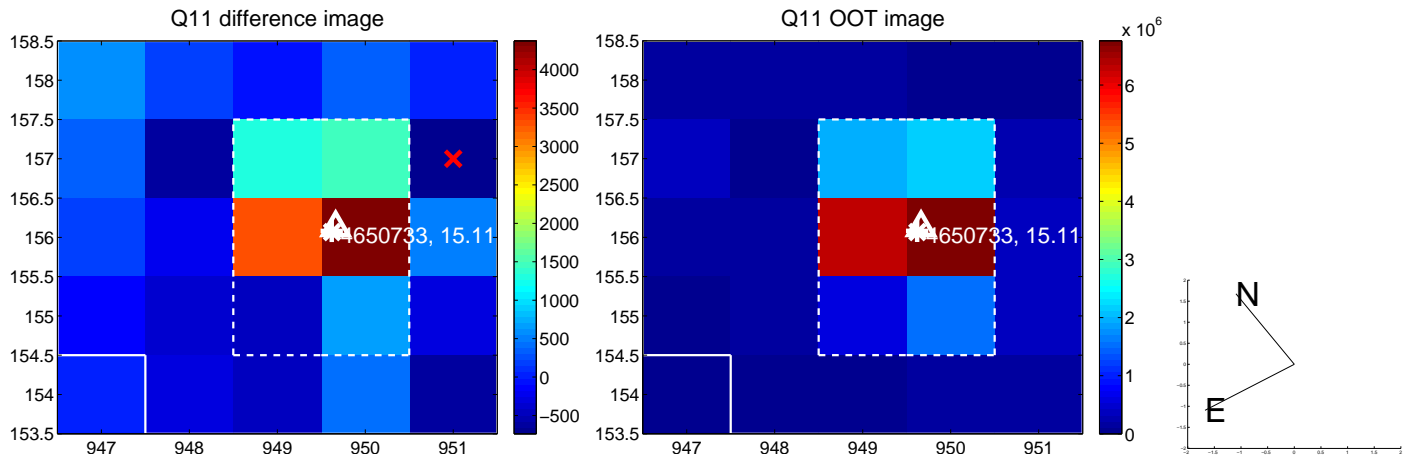
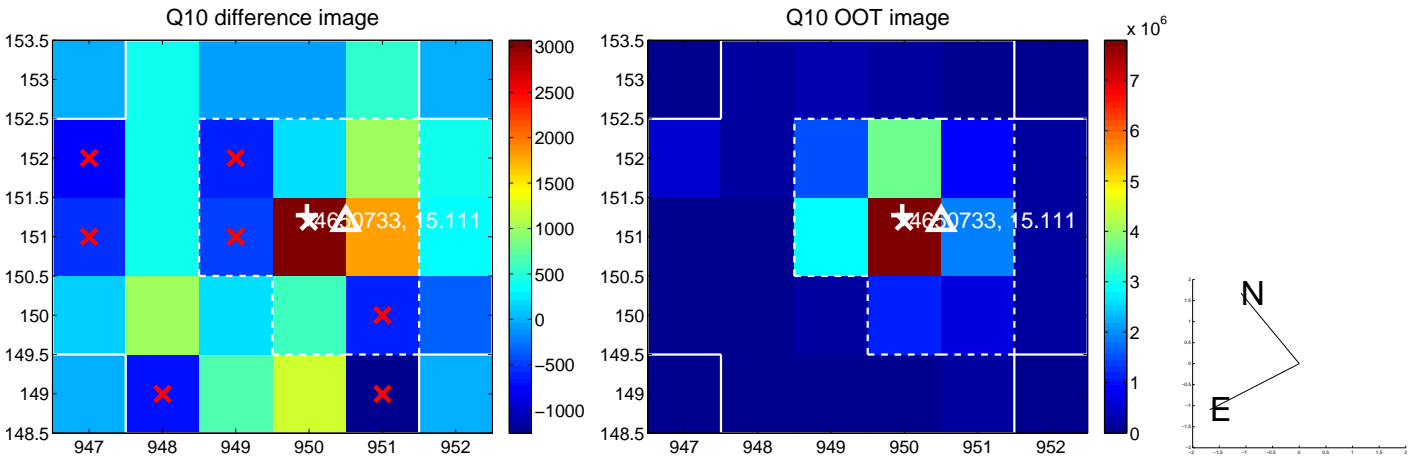
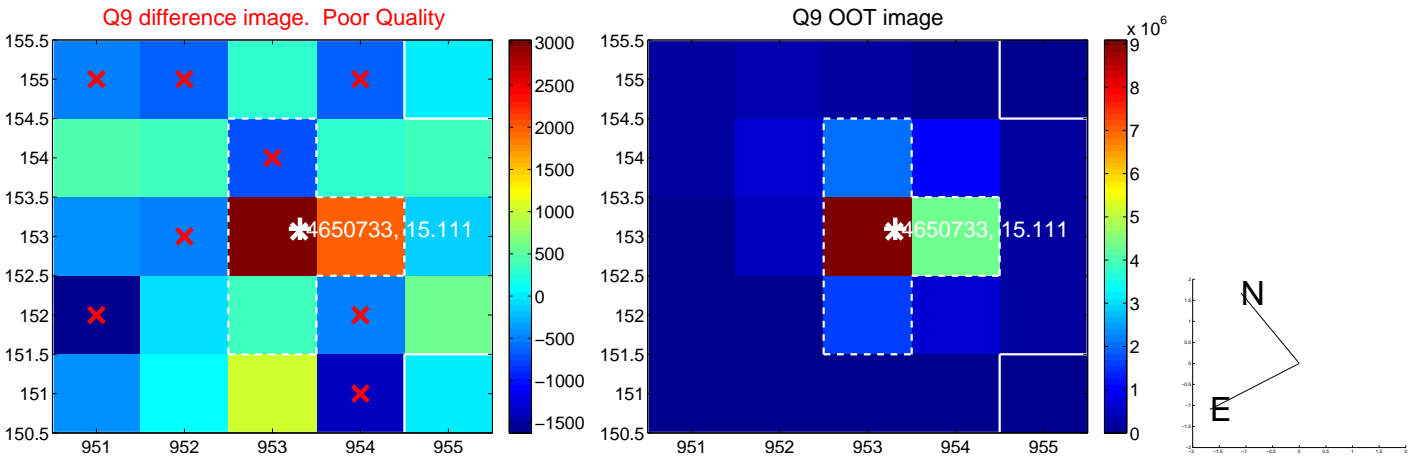
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



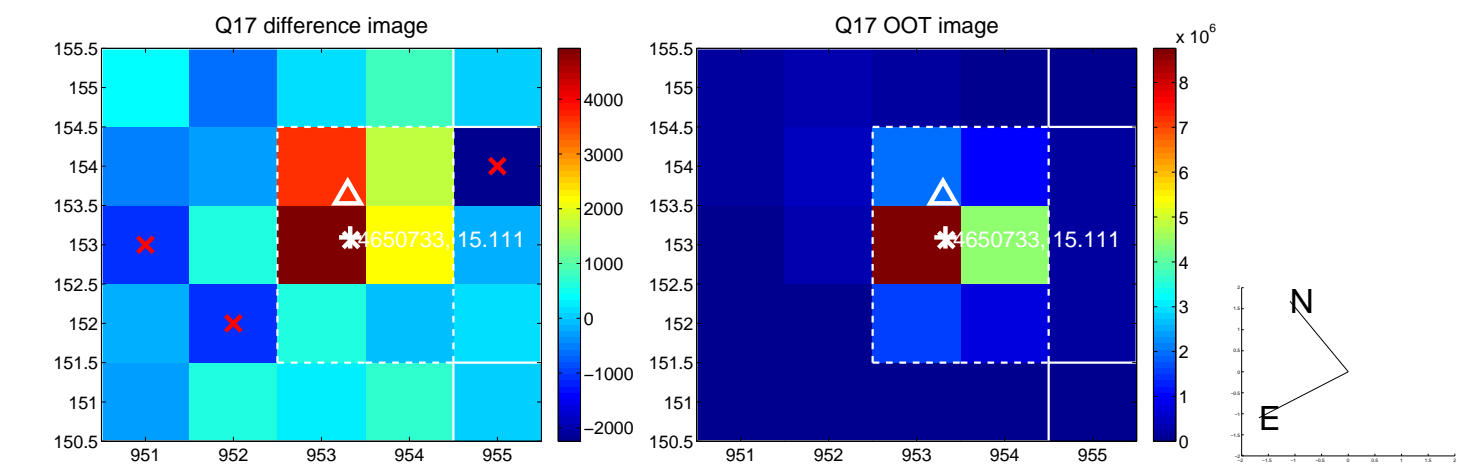
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



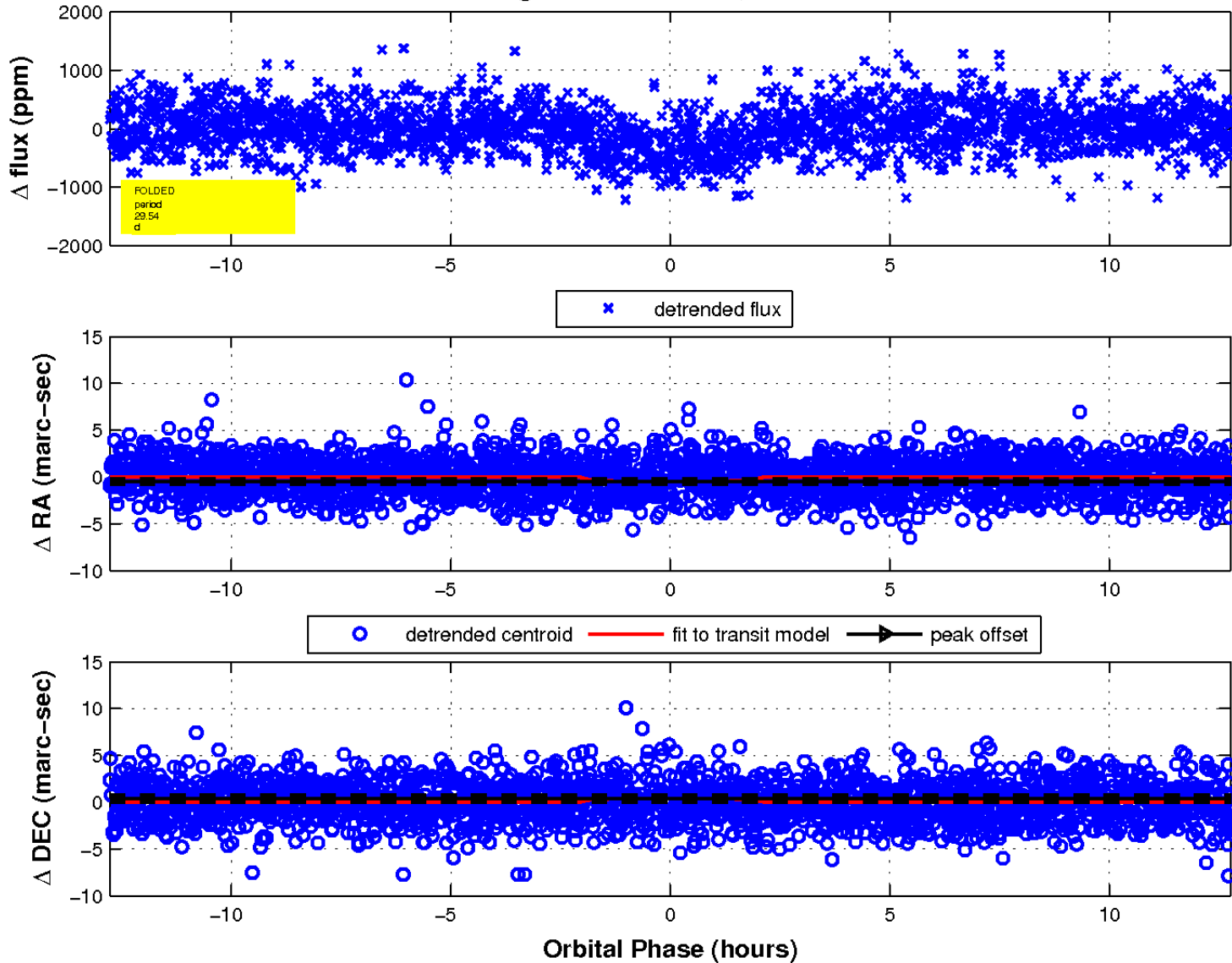
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

