

KIC 009086154

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})
009086154-01	OBS	4060.01	225.261316	224.990568	410.0	14.880	16.0	16.1	1.19	5799	2.54	2.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009086154-01	OBS	PC	0.90	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.

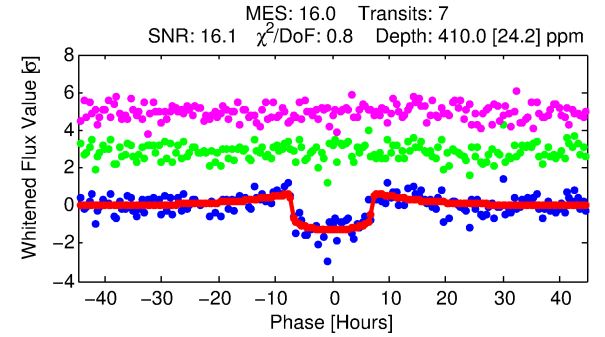
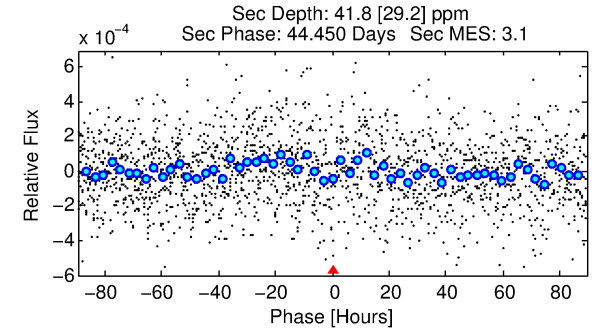
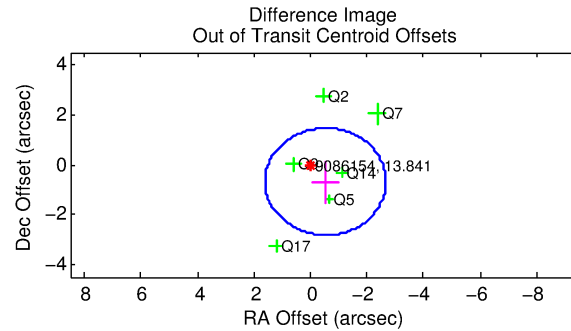
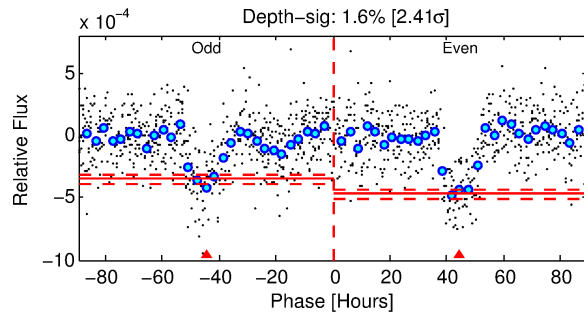
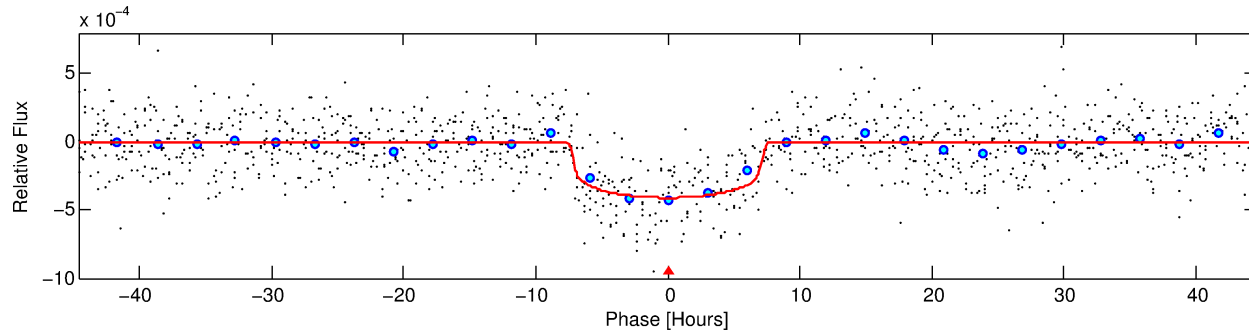
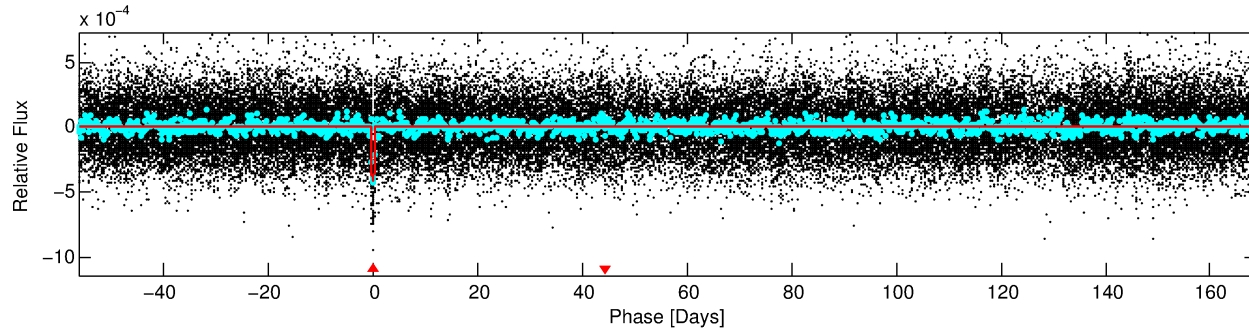
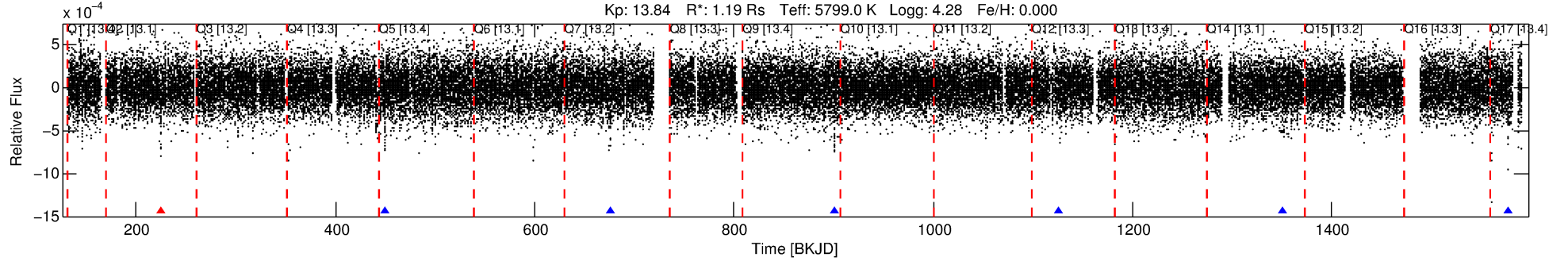
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009086154-01

No Significant Match Found

DV One-Page Summary

KIC: 9086154 Candidate: 1 of 1 Period: 225.261 d
KOI: K04060.01 Corr: 0.990



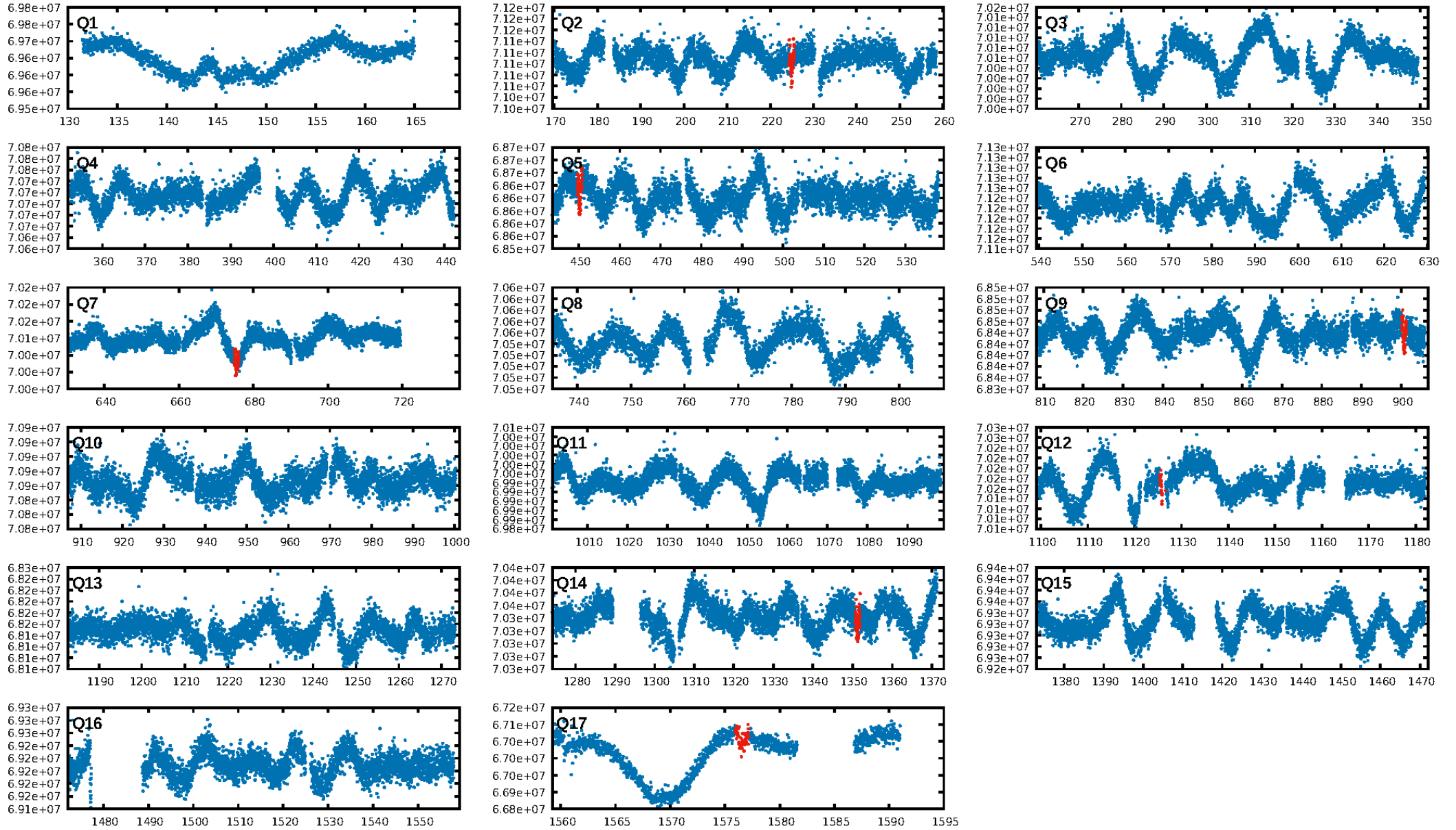
DV Fit Results:

Period = 225.26132 [0.00242] d
Epoch = 224.9906 [0.0087] BKJD
Rp/R* = 0.0196 [0.0032]
a/R* = 90.09 [63.11]
b = 0.66 [0.61]
Seff = 2.78 [0.72]
Teq = 329 [21] K
Rp = 2.54 [0.60] Re
a = 0.7191 [0.1142] AU
Ag = 1836.14 [1488.24] [1.23 σ]
Teffp = 3332 [646] K [4.64 σ]

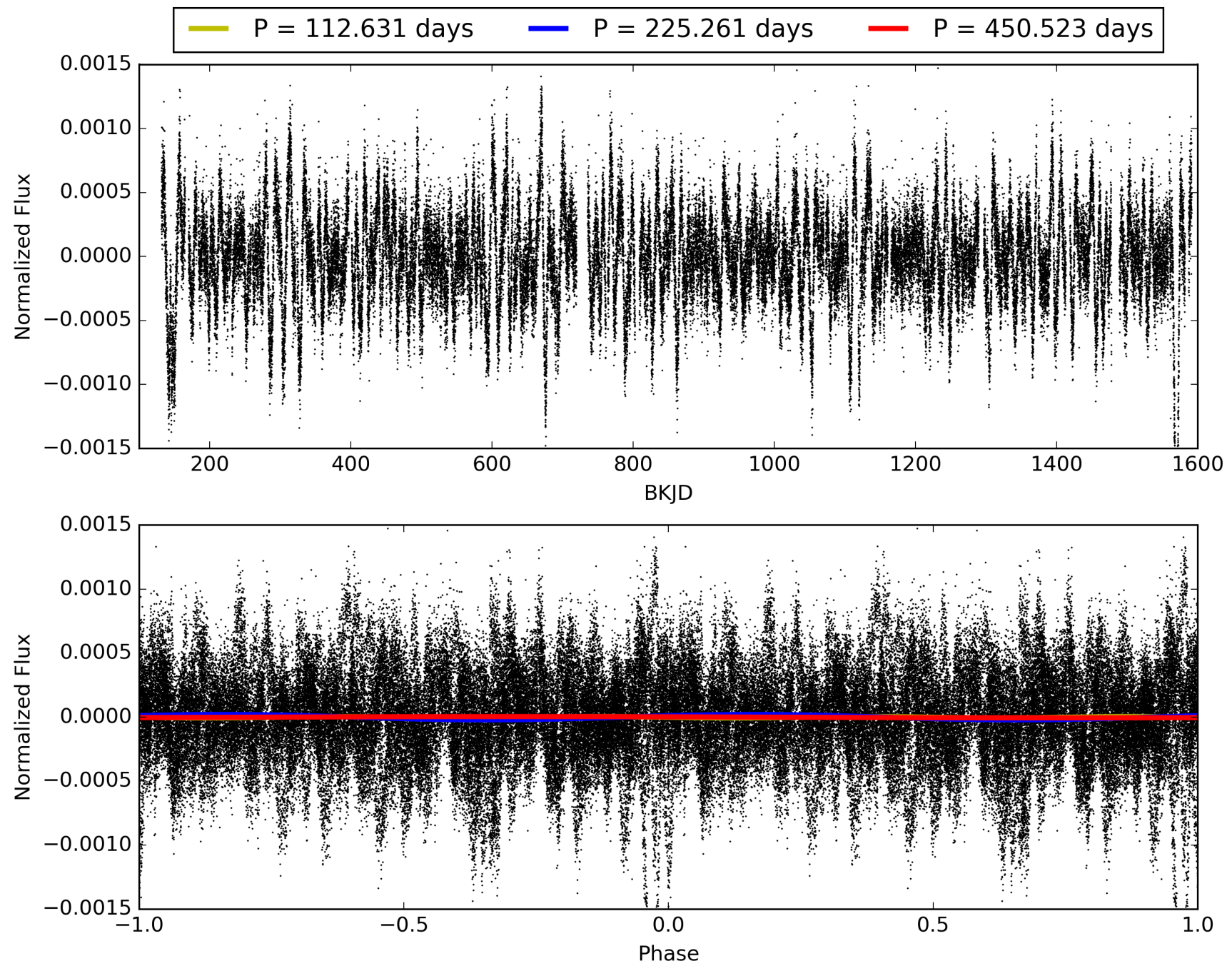
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 54.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.19e-47
RollingBand-fgt: 0.83 [5/6]
GhostDiagnostic-chr: 3.528
Centroid-sig: 78.4%
Centroid-so: 0.255 arcsec [0.41 σ]
OotOffset-rm: 0.860 arcsec [1.20 σ]
KicOffset-rm: 0.964 arcsec [1.37 σ]
OotOffset-st: 2/1/0/3 [6]
KicOffset-st: 2/1/0/3 [6]
DiffImageQuality-fgm: 0.83 [5/6]
DiffImageOverlap-fno: 1.00 [6/6]

TCE 009086154-01, PDC Light Curves

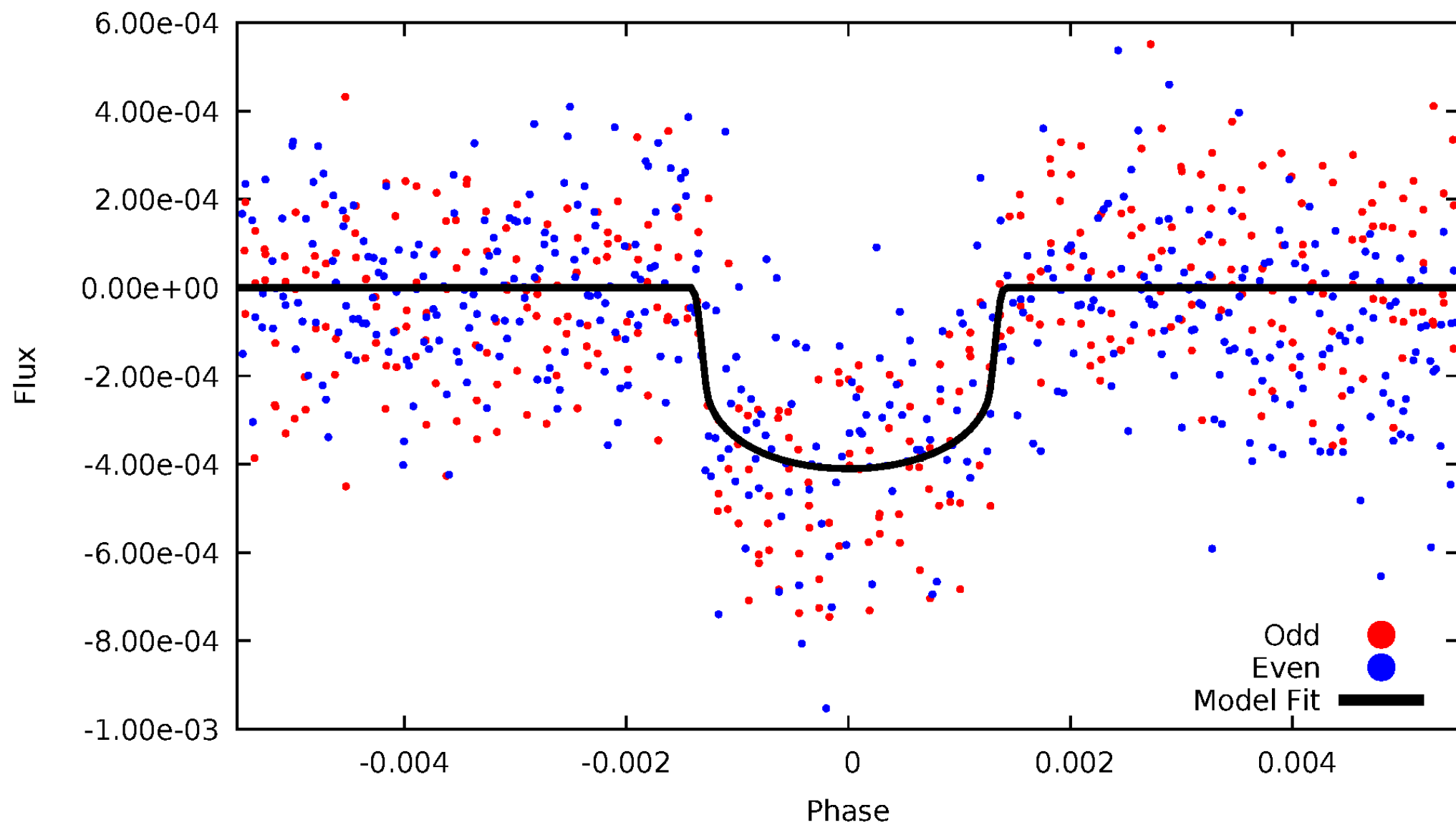


TCE 009086154-01



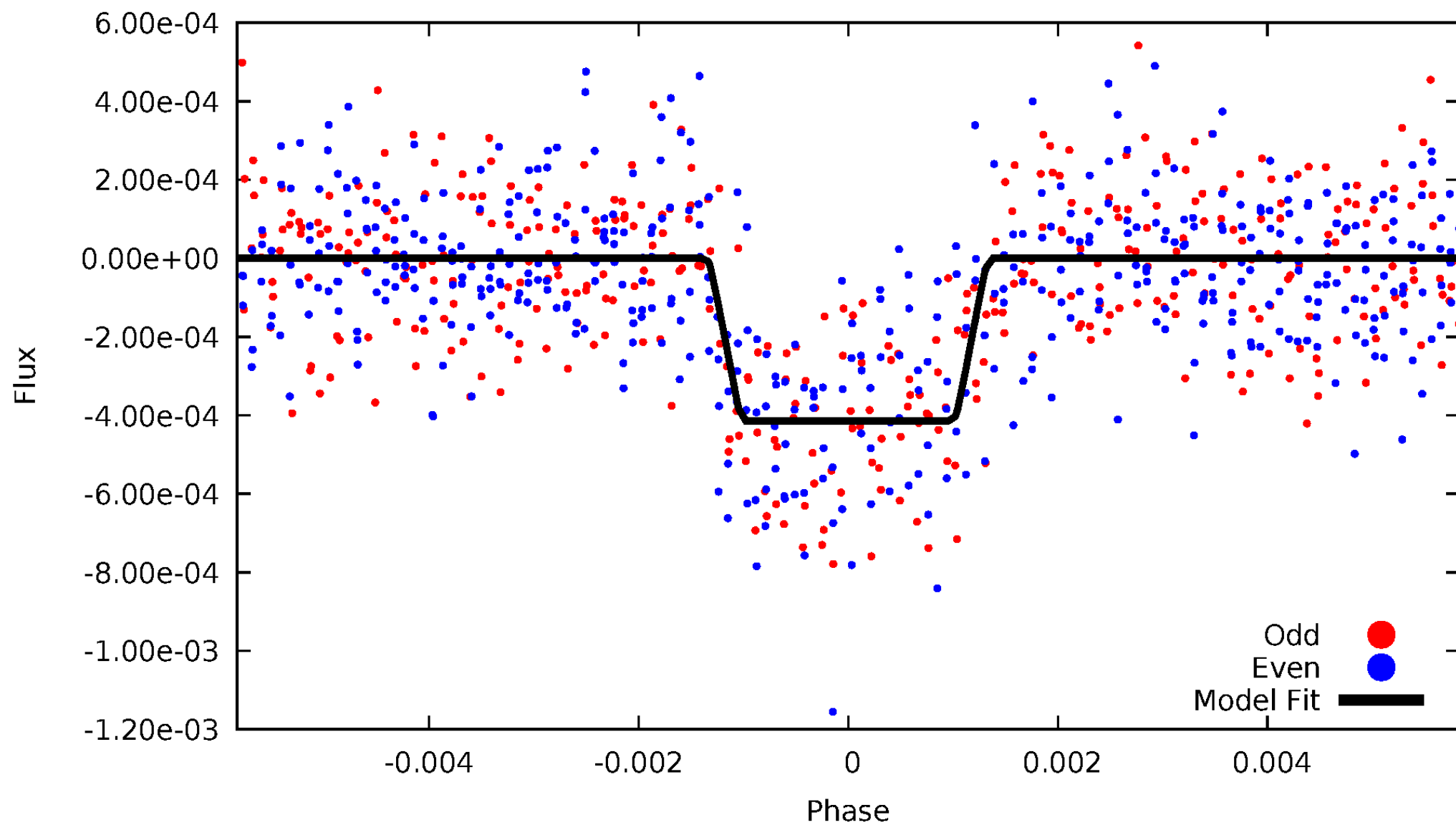
DV Odd/Even

TCE 009086154-01



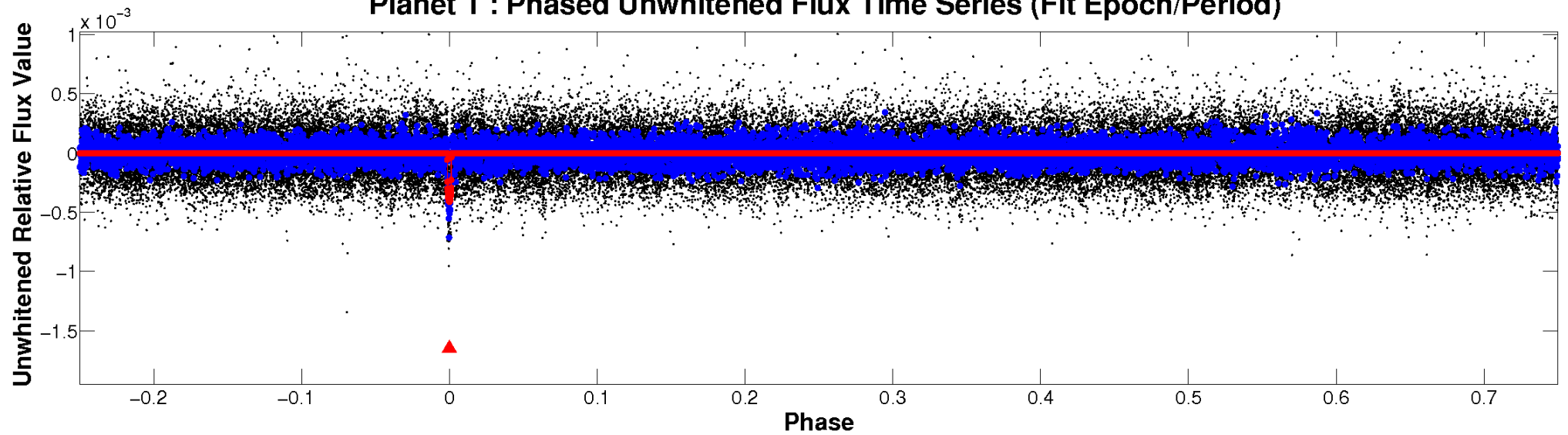
ALT Odd/Even

TCE 009086154-01

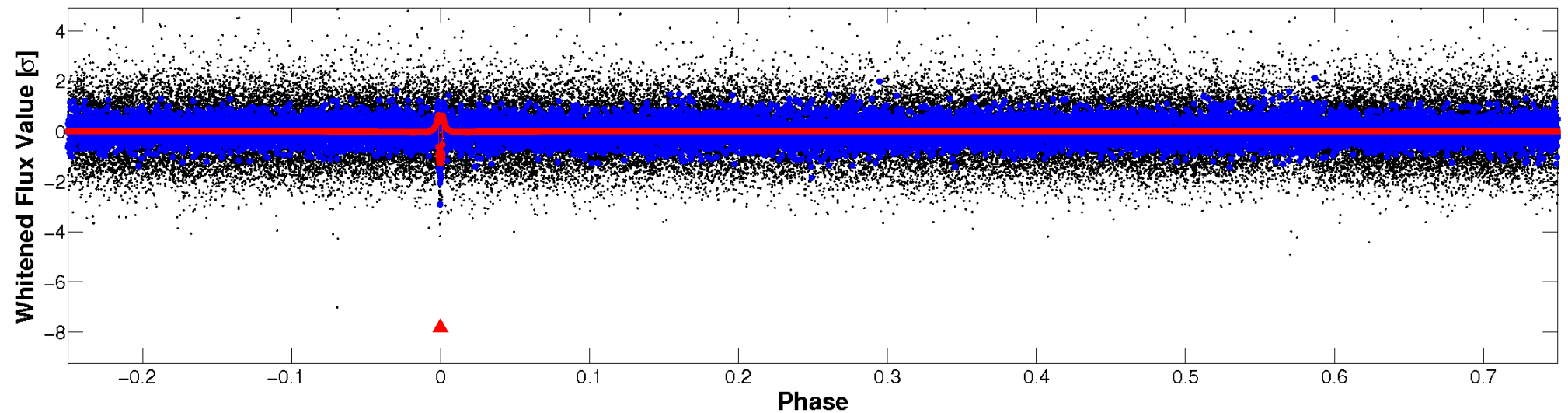


Non-Whitened Vs. Whitened Light Curve

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

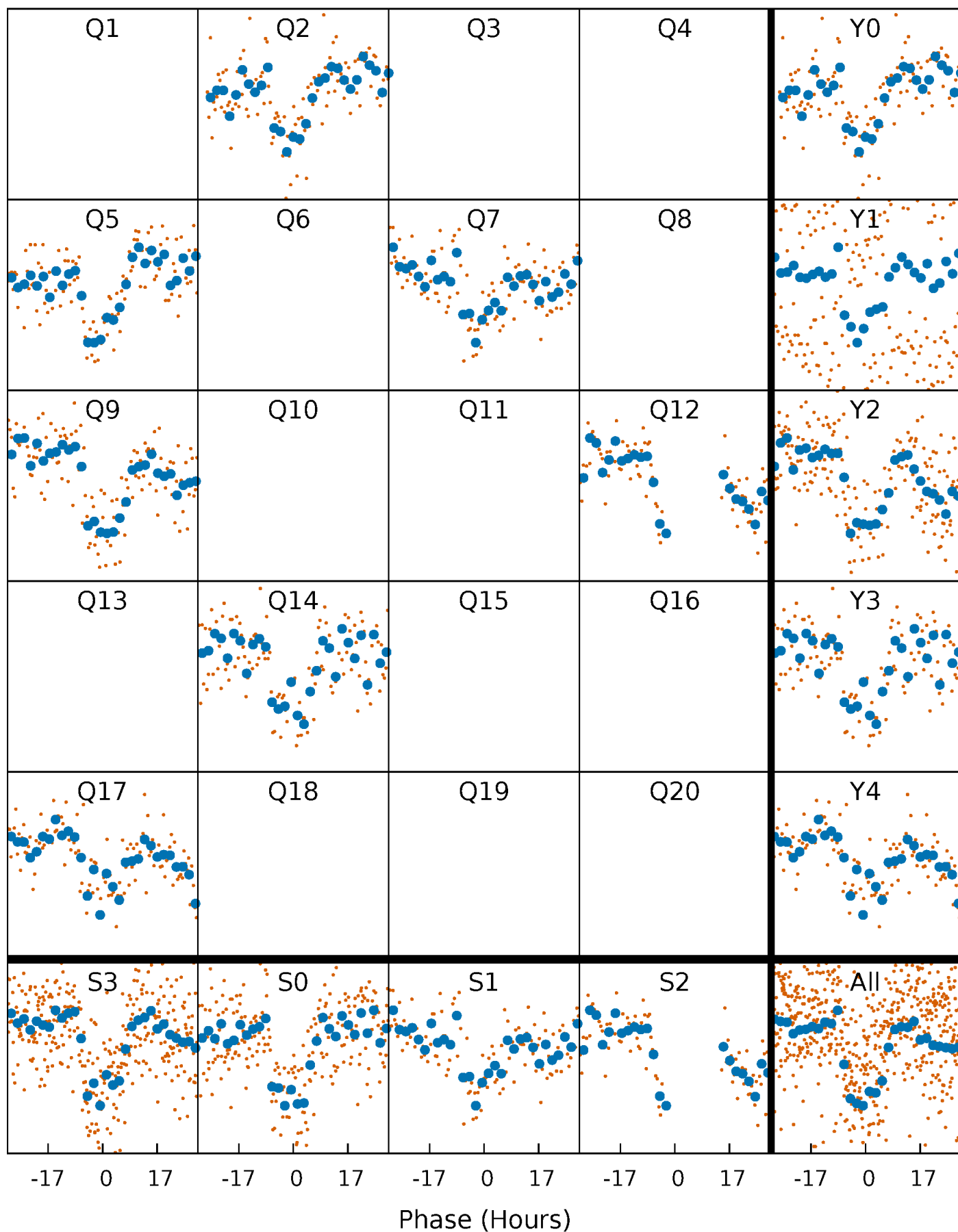


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



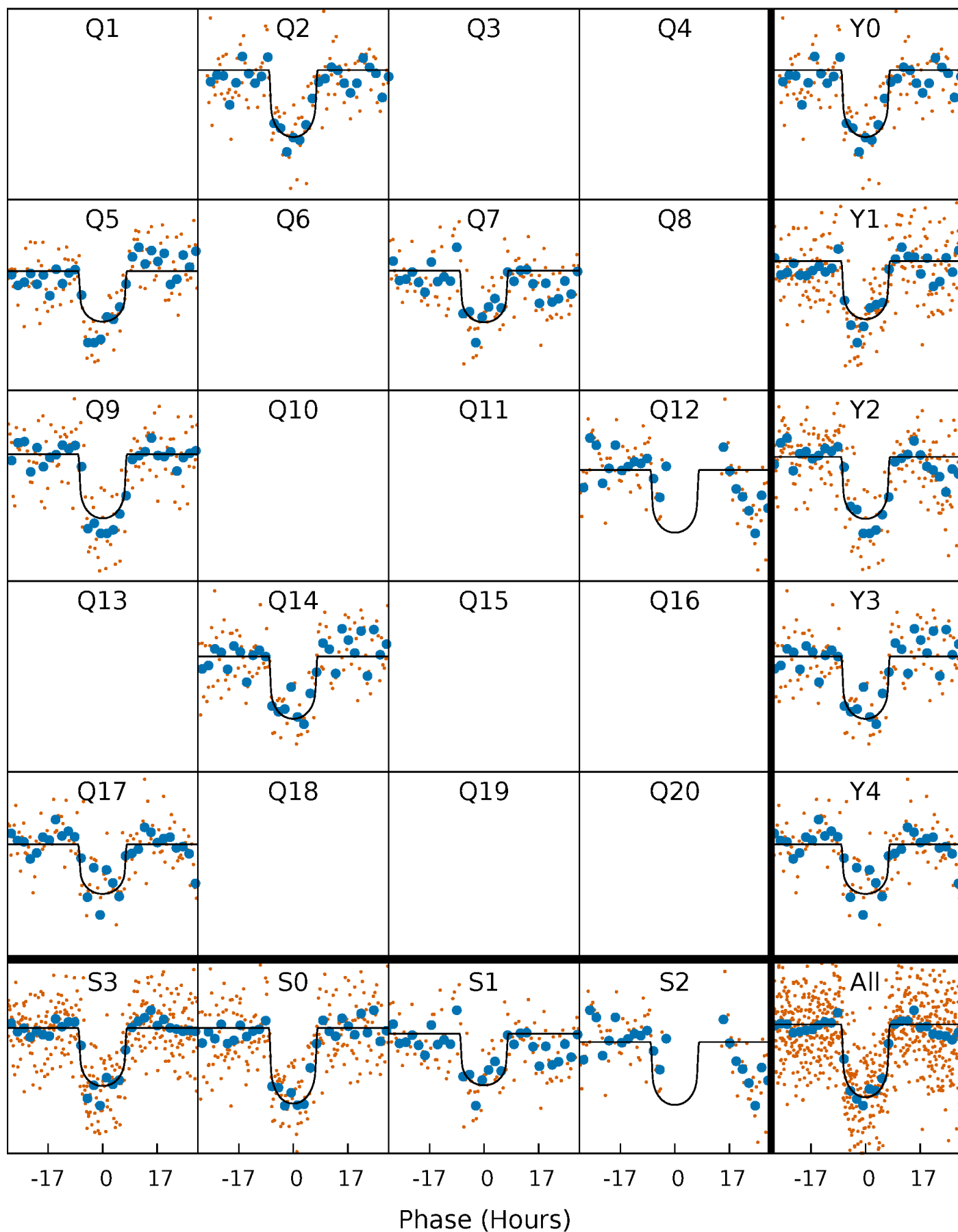
PDC Quarter-Phased Transit Curves

TCE 009086154-01 P=225.261316 Days $T_0=224.990568$ (BKJD)



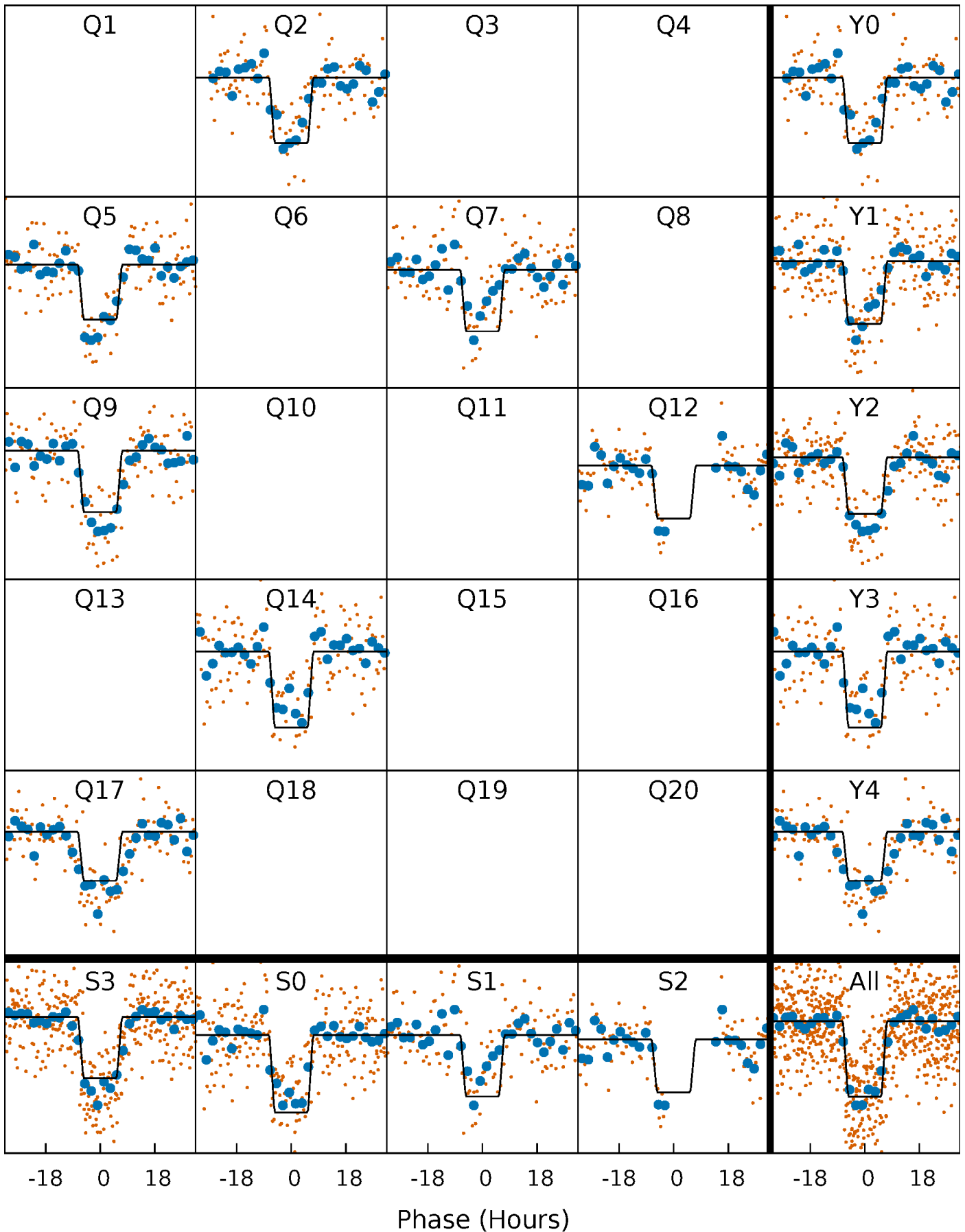
DV Quarter-Phased Transit Curves

TCE 009086154-01 P=225.261316 Days $T_0=224.990568$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

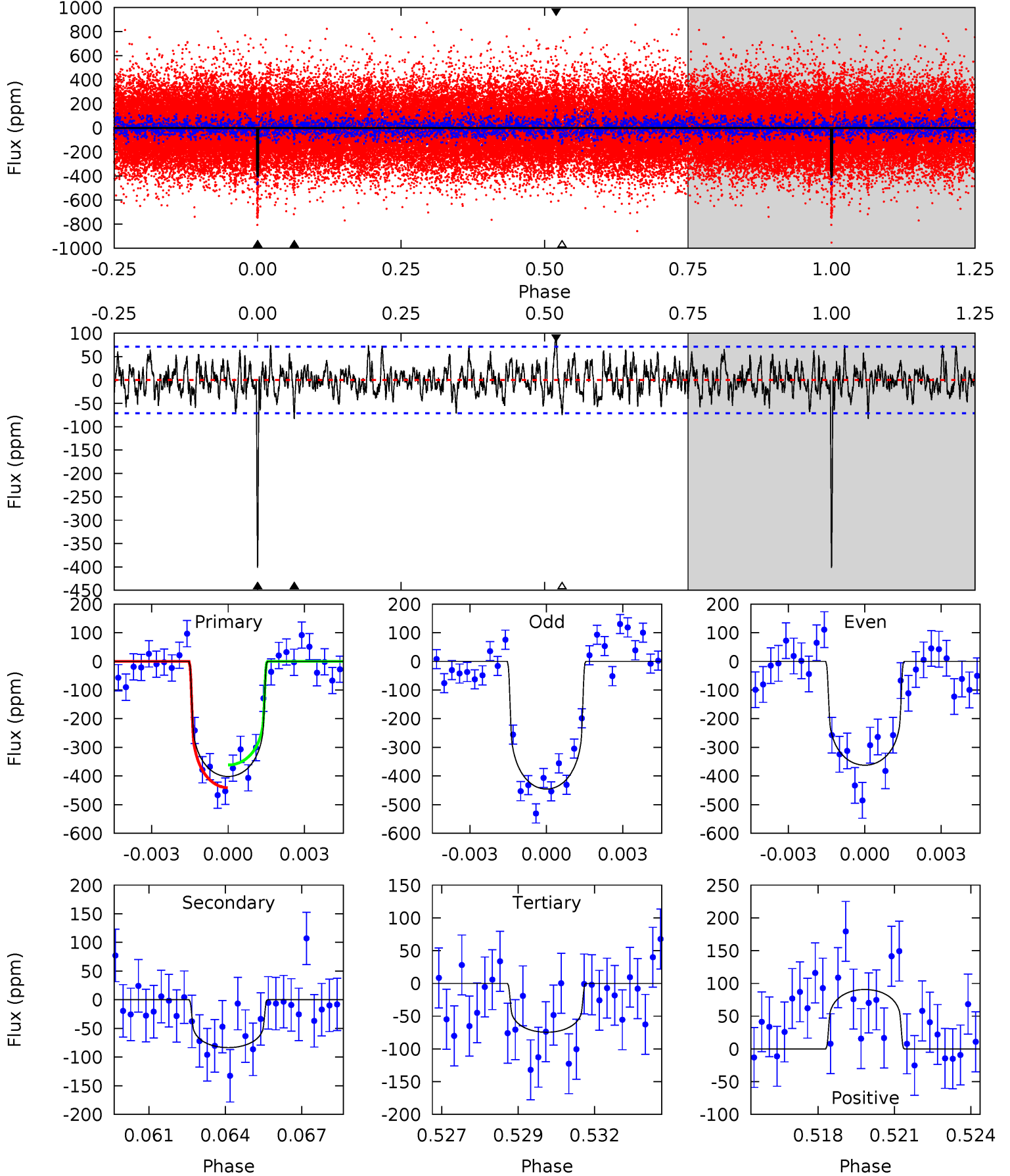
TCE 009086154-01 P=225.259565 Days $T_0=224.989703$ (BKJD)



DV Model-Shift Uniqueness Test

009086154-01, P = 225.261316 Days, E = 224.990568 Days

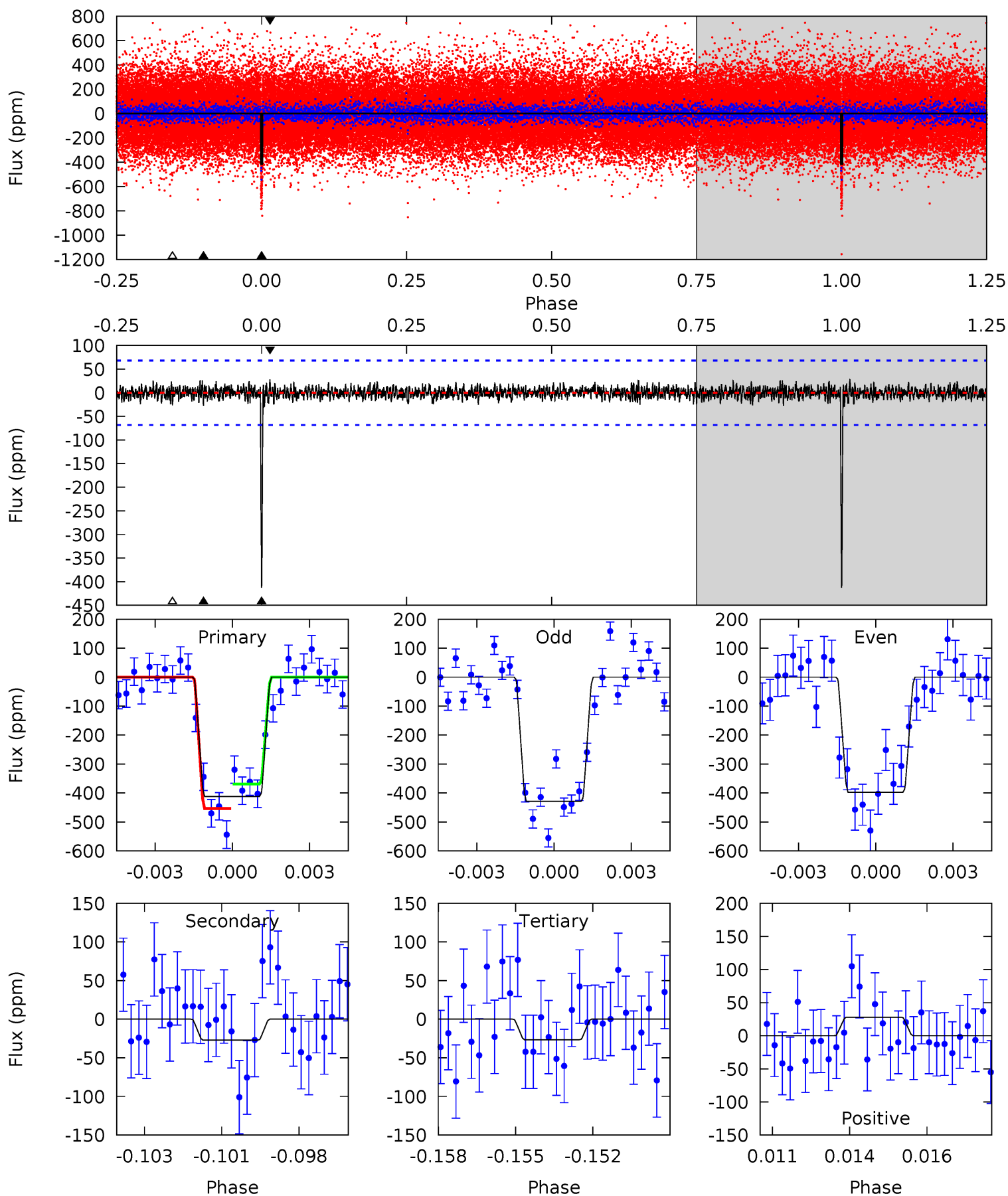
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.6	6.16	5.51	6.69	5.27	2.99	1.86	24.1	23.0	0.65	-0.53	3.07	0.98	0.18	2.94



Alt Model-Shift Uniqueness Test

009086154-01, P = 225.259565 Days, E = 224.989703 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.9	2.09	2.06	2.17	5.27	3.00	0.65	29.8	29.7	0.04	-0.08	1.20	0.88	0.06	3.27



Stellar Parameters For KIC 009086154

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5799^{+105}_{-117}	$4.276^{+0.143}_{-0.117}$	$0.000^{+0.150}_{-0.150}$	$1.191^{+0.186}_{-0.205}$	$0.977^{+0.078}_{-0.064}$	$0.814^{+0.545}_{-0.281}$
	+2%/-2%	+3%/-3%	+inf%/-inf%	+16%/-17%	+8%/-7%	+67%/-34%
Source	SPE57	SPE57	SPE57	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009086154-01 / KOI 4060.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-83 ± 14	$2.57^{+0.49}_{-0.52}$	460^{+23}_{-23}	4218^{+334}_{-277}	3652^{+2230}_{-1237}
Alt.	-27 ± 13	$2.63^{+0.54}_{-0.45}$	459^{+23}_{-23}	3423^{+305}_{-319}	1084^{+775}_{-553}

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 $A_{obs} \gg 1.0$

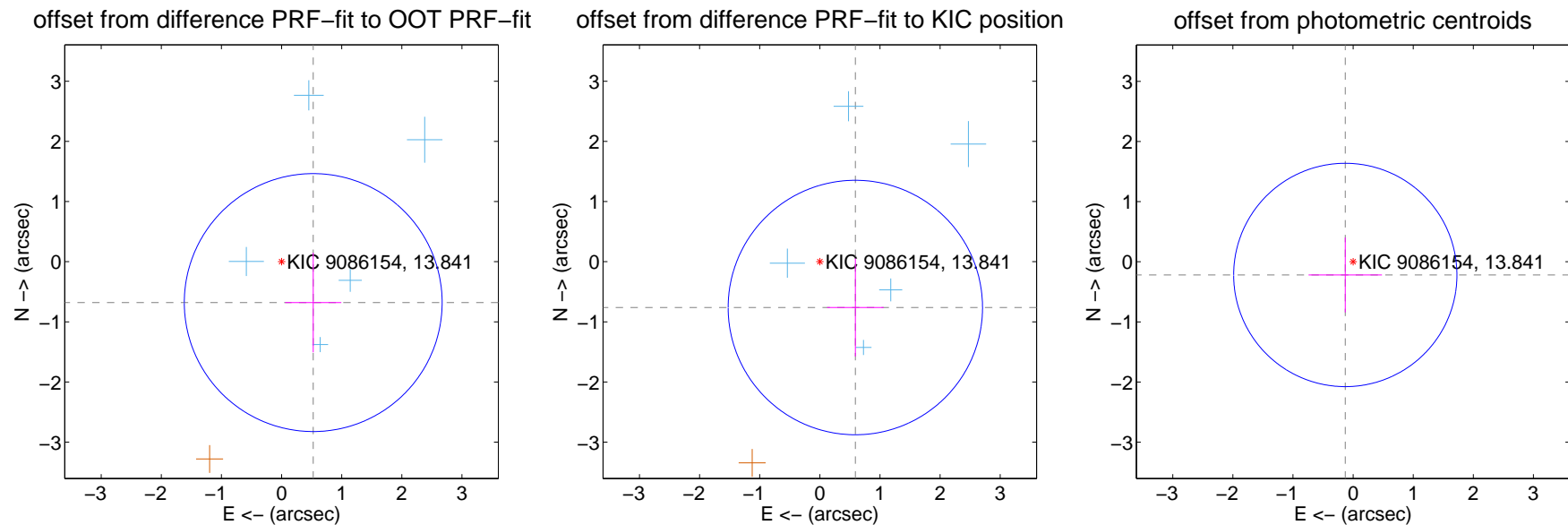
DV Centroid Data

Supplemental centroid analysis for 009086154-01. Kepler magnitude: 13.84. Transit SNR 16.07

There are 5 quarters with good PRF difference image offsets

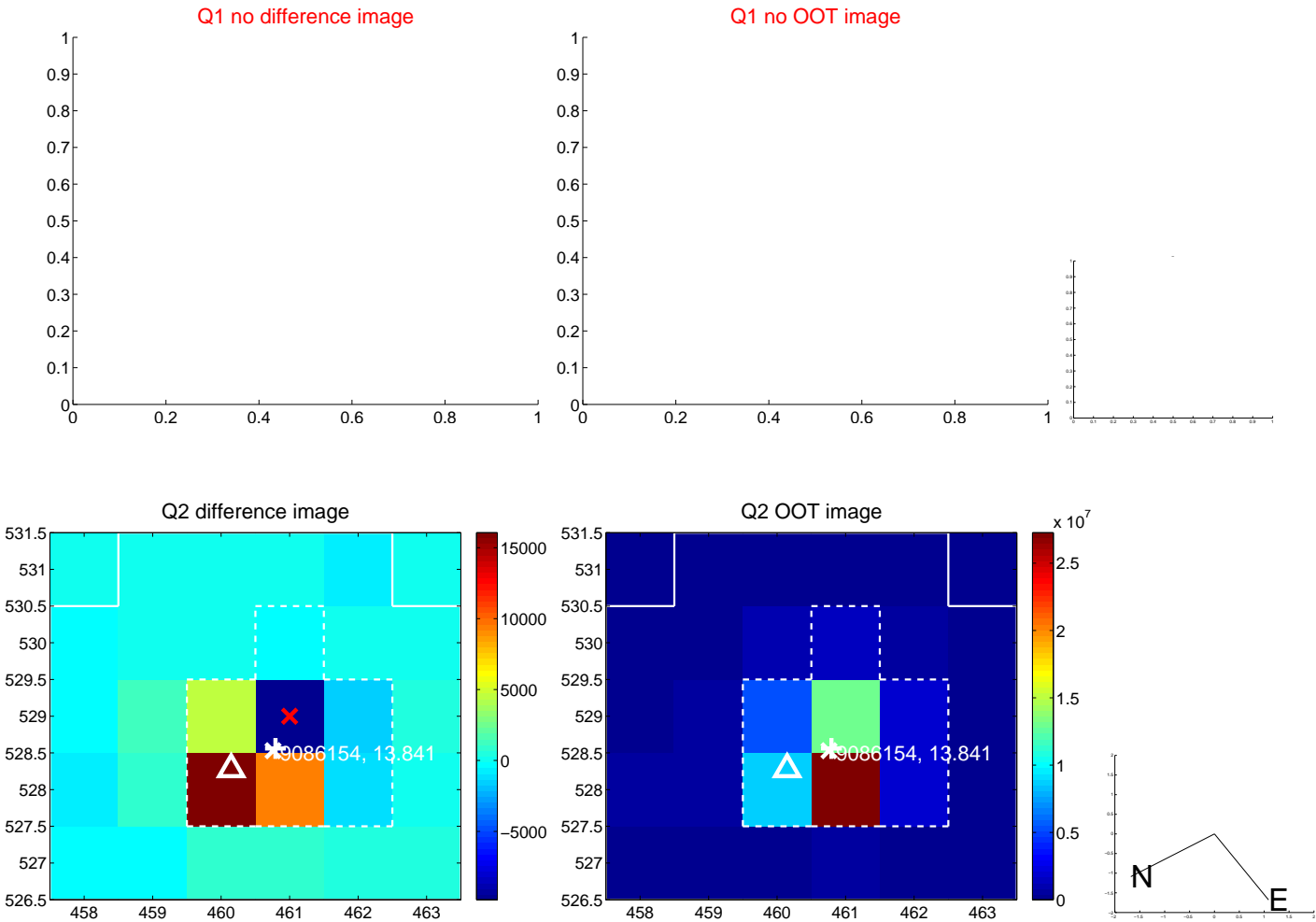
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.860 ± 0.715	1.20	-0.526 ± 0.468	-0.680 ± 0.828
PRF-fit source offset from KIC position	0.964 ± 0.705	1.37	-0.590 ± 0.471	-0.762 ± 0.814
photometric centroid source offset	0.25 ± 0.62	0.41	0.13 ± 0.61	-0.22 ± 0.62

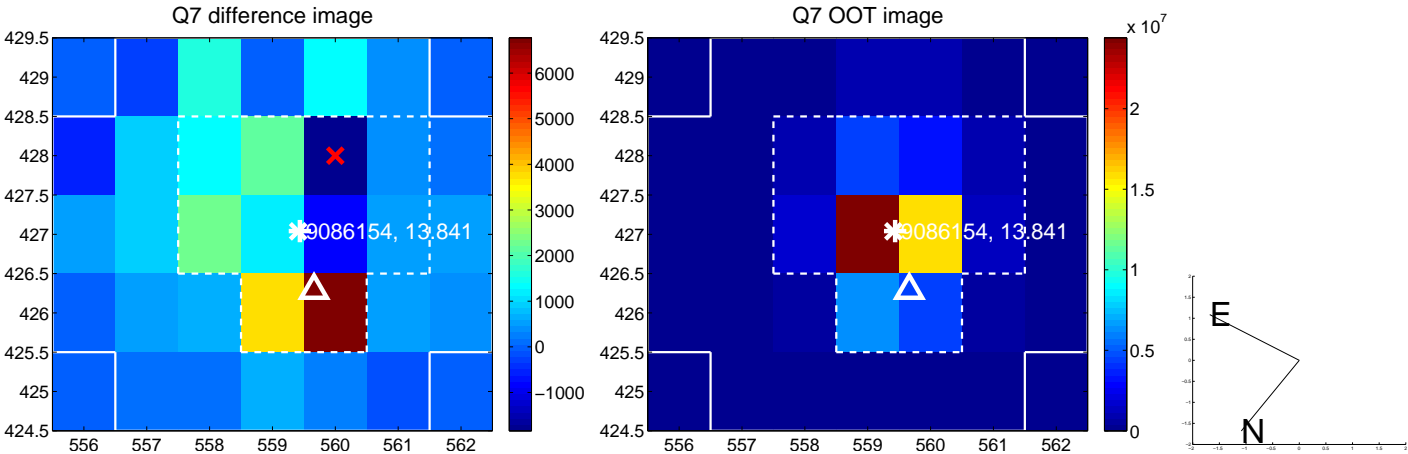
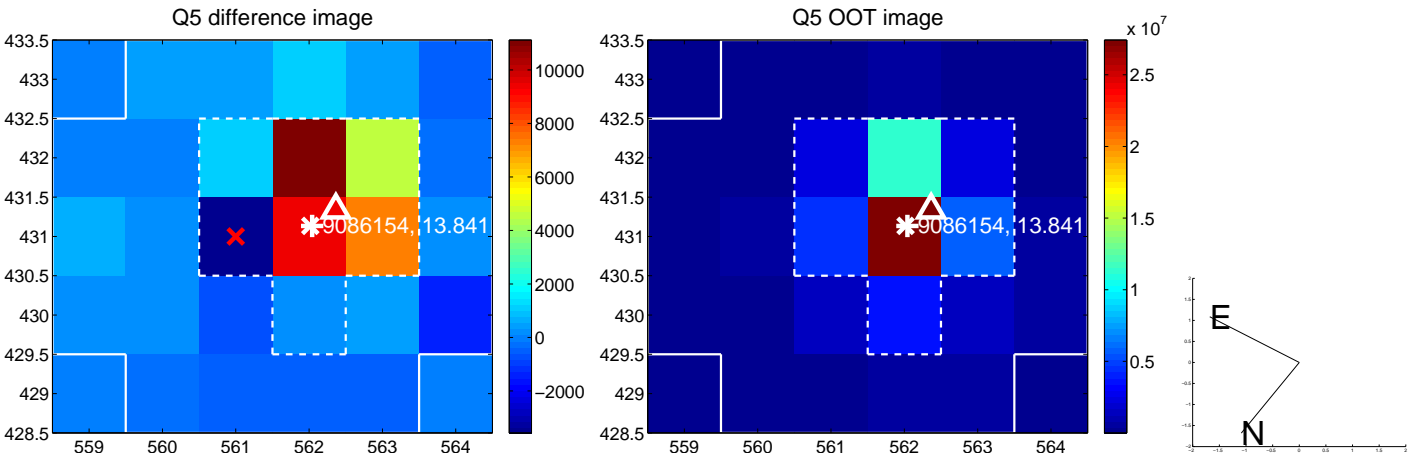


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

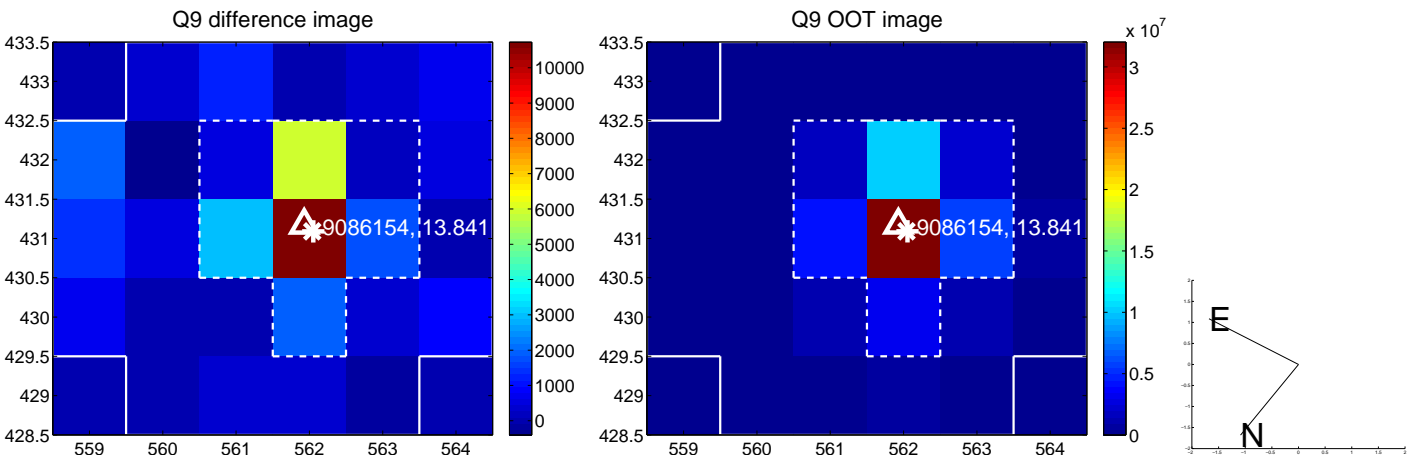
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.

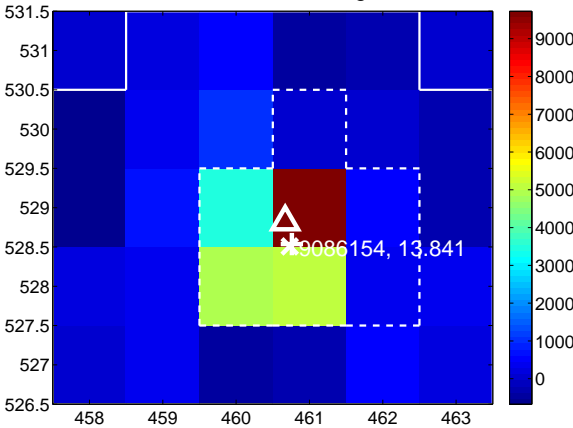
Q13 no difference image



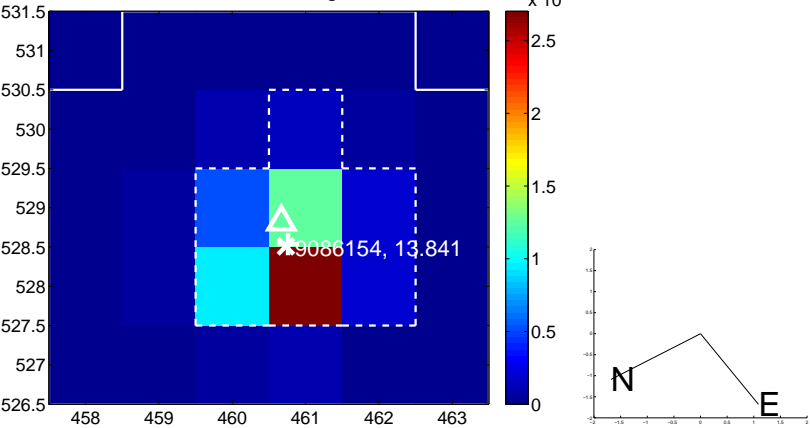
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



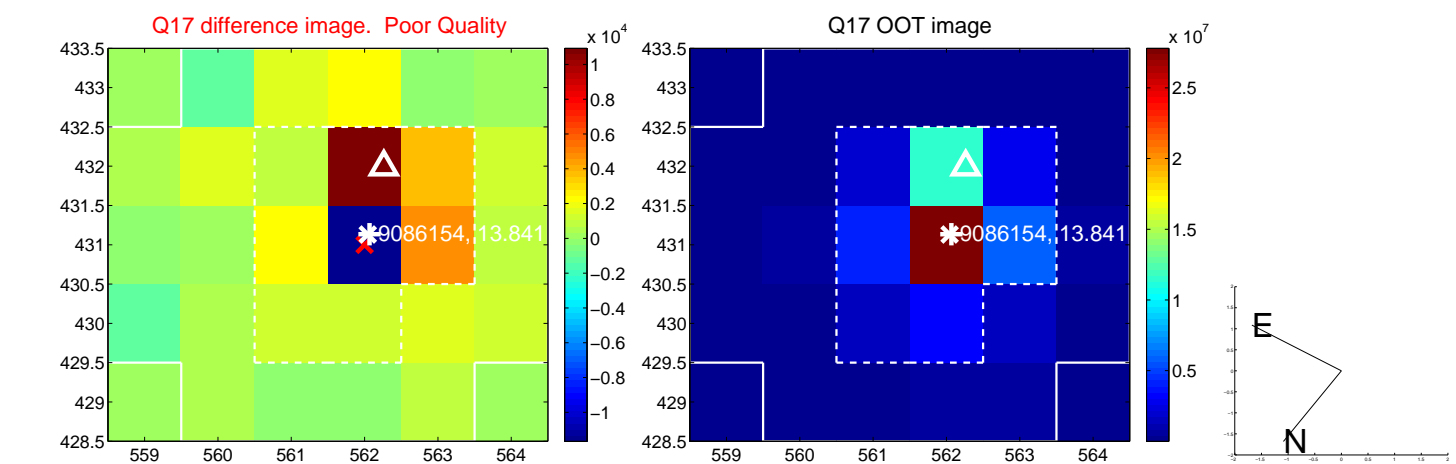
Q16 no difference image



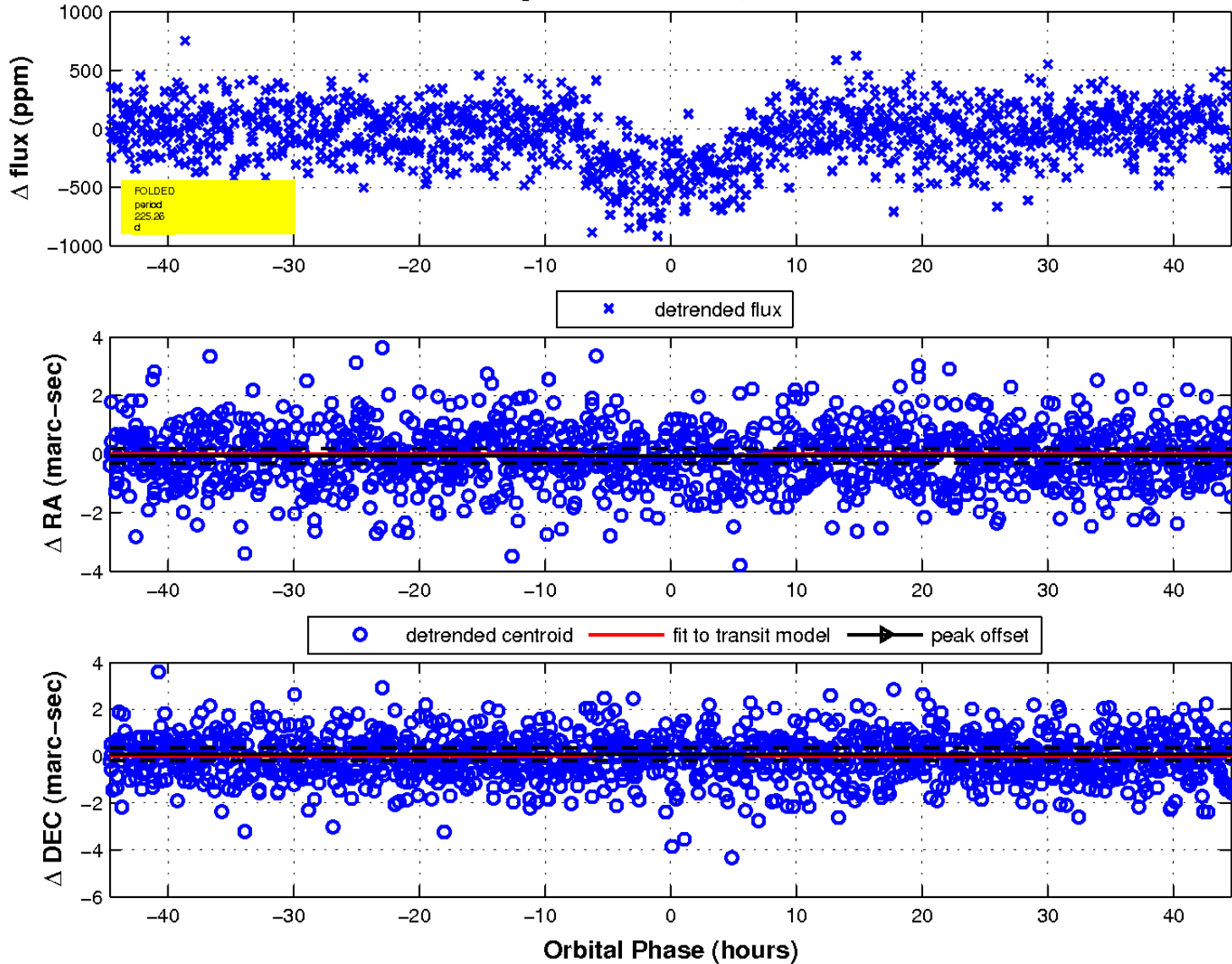
Q16 no OOT image



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

