

KIC 008654220

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})
008654220-01	OBS	No	363.635885	391.770216	1059.9	3.353	8.3	6.5	6.73	4466	26.08	16.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008654220-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

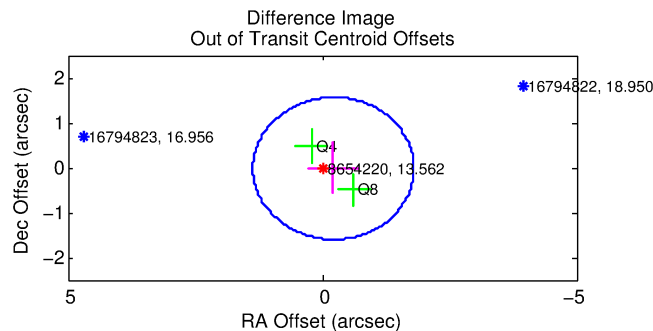
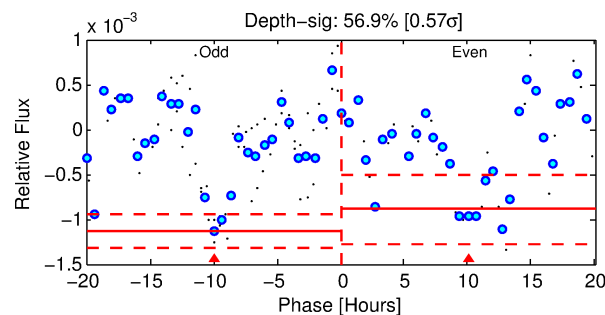
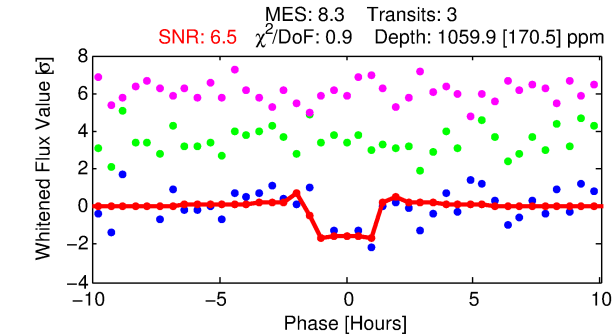
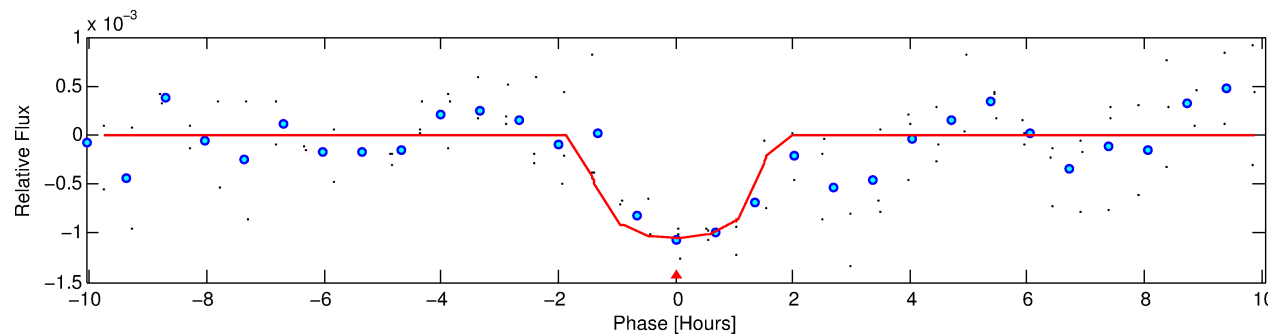
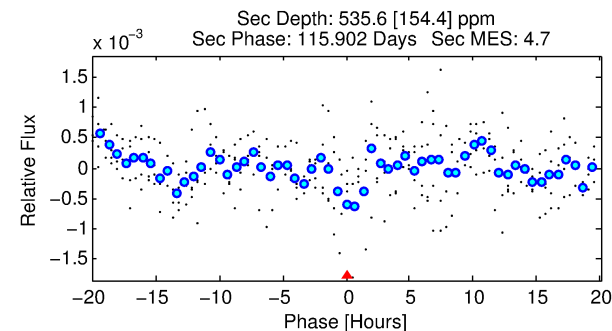
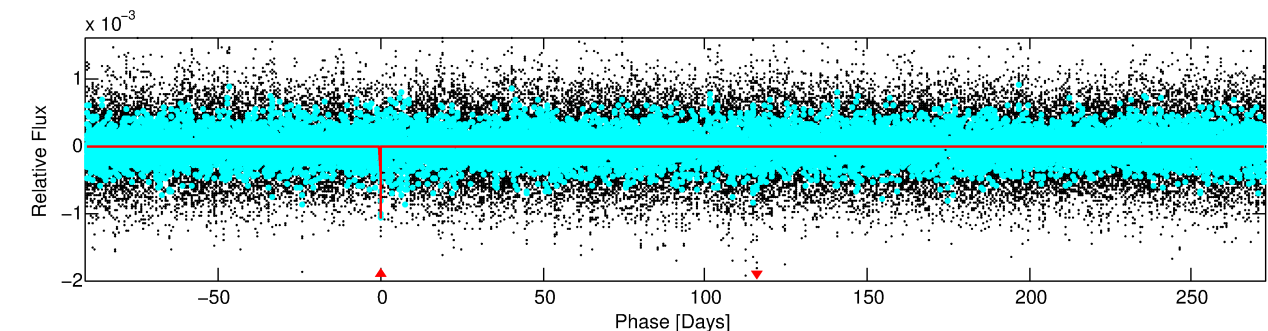
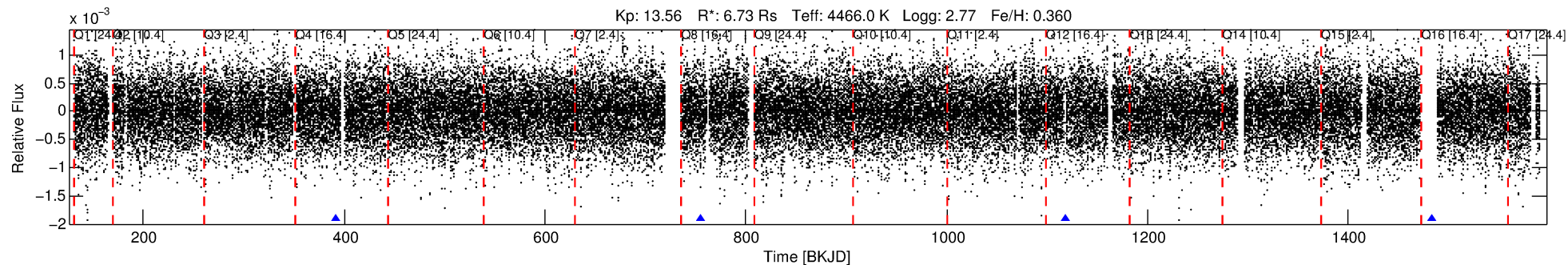
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008654220-01

No Significant Match Found

DV One-Page Summary

KIC: 8654220 Candidate: 1 of 1 Period: 363.636 d



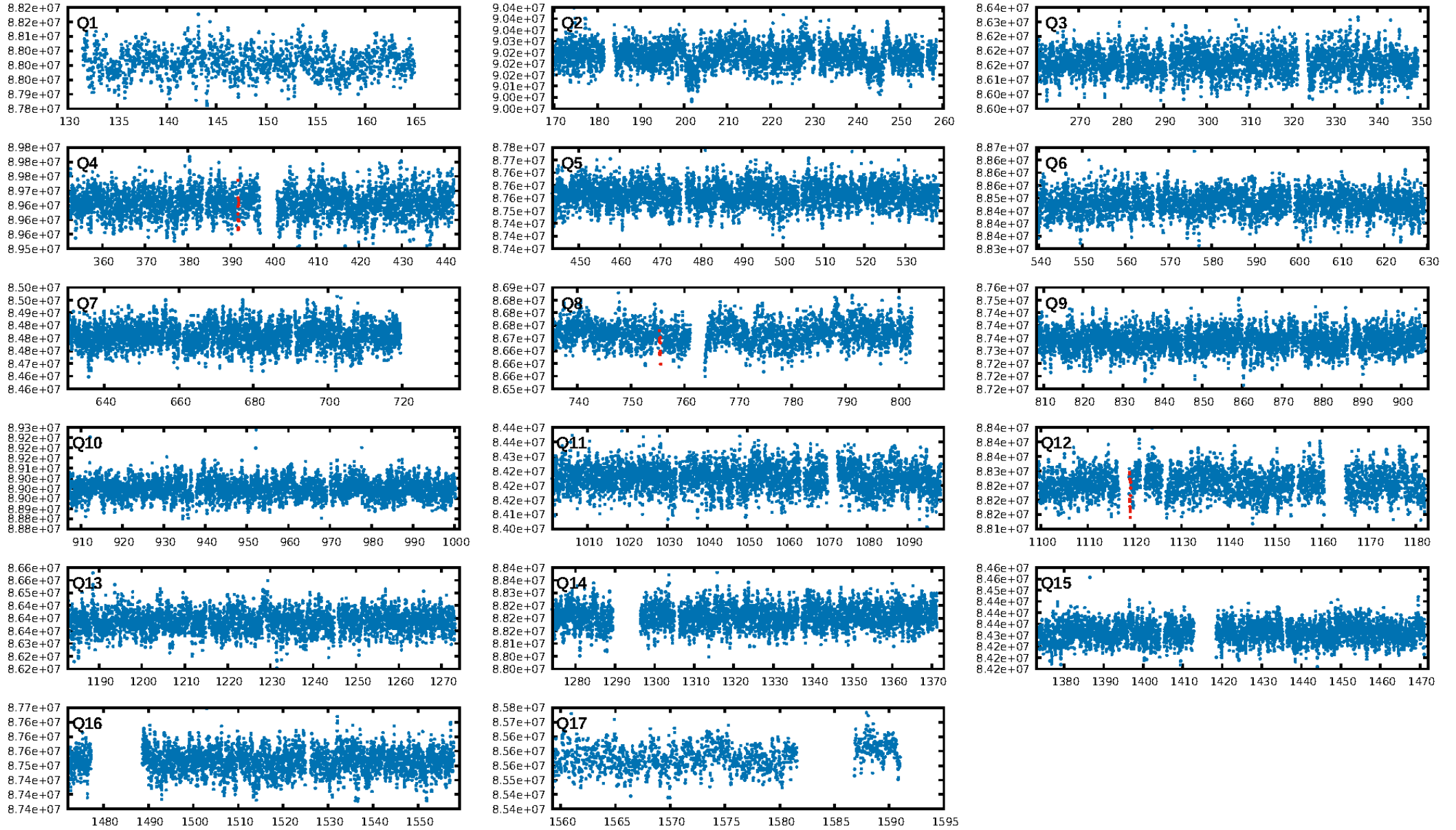
DV Fit Results:

Period = 363.63588 [0.00428] d
Epoch = 391.7702 [0.0055] BKJD
Rp/R* = 0.0355 [0.0543]
a/R* = 476.16 [2384.15]
b = 0.86 [1.55]
Seff = 16.53 [2.40]
Teff = 514 [19] K
Rp = 26.08 [40.04] Re
a = 0.9879 [0.1055] AU
Ag = 422.84 [1298.26] [0.32 σ]
Teffp = 3605 [2766] K [1.12 σ]

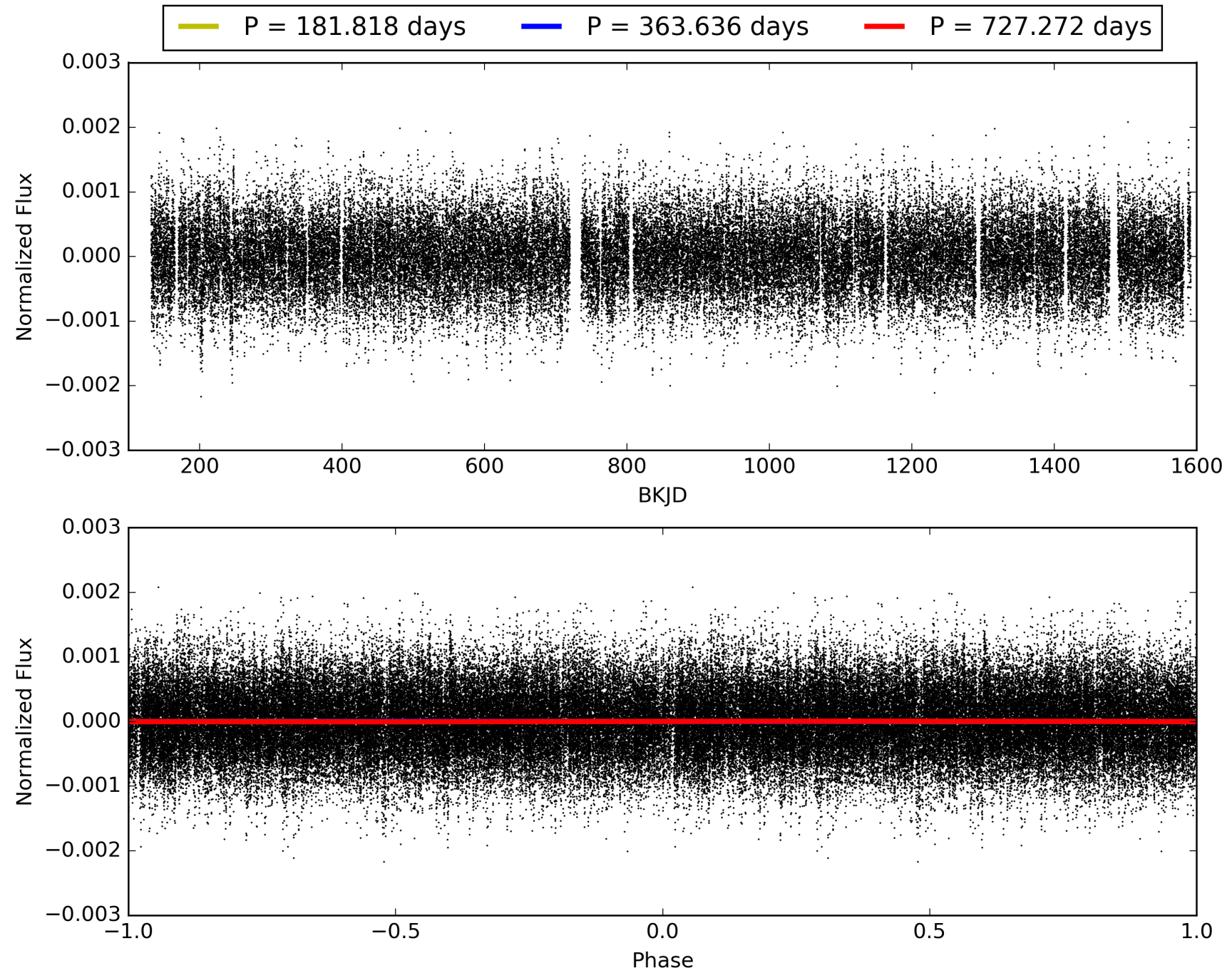
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 70.9%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 2.73e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.844
Centroid-sig: 2.2%
Centroid-so: 1.100 arcsec [1.63 σ]
OotOffset-rm: 0.217 arcsec [0.41 σ]
KicOffset-rm: 0.086 arcsec [0.17 σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 008654220-01, PDC Light Curves

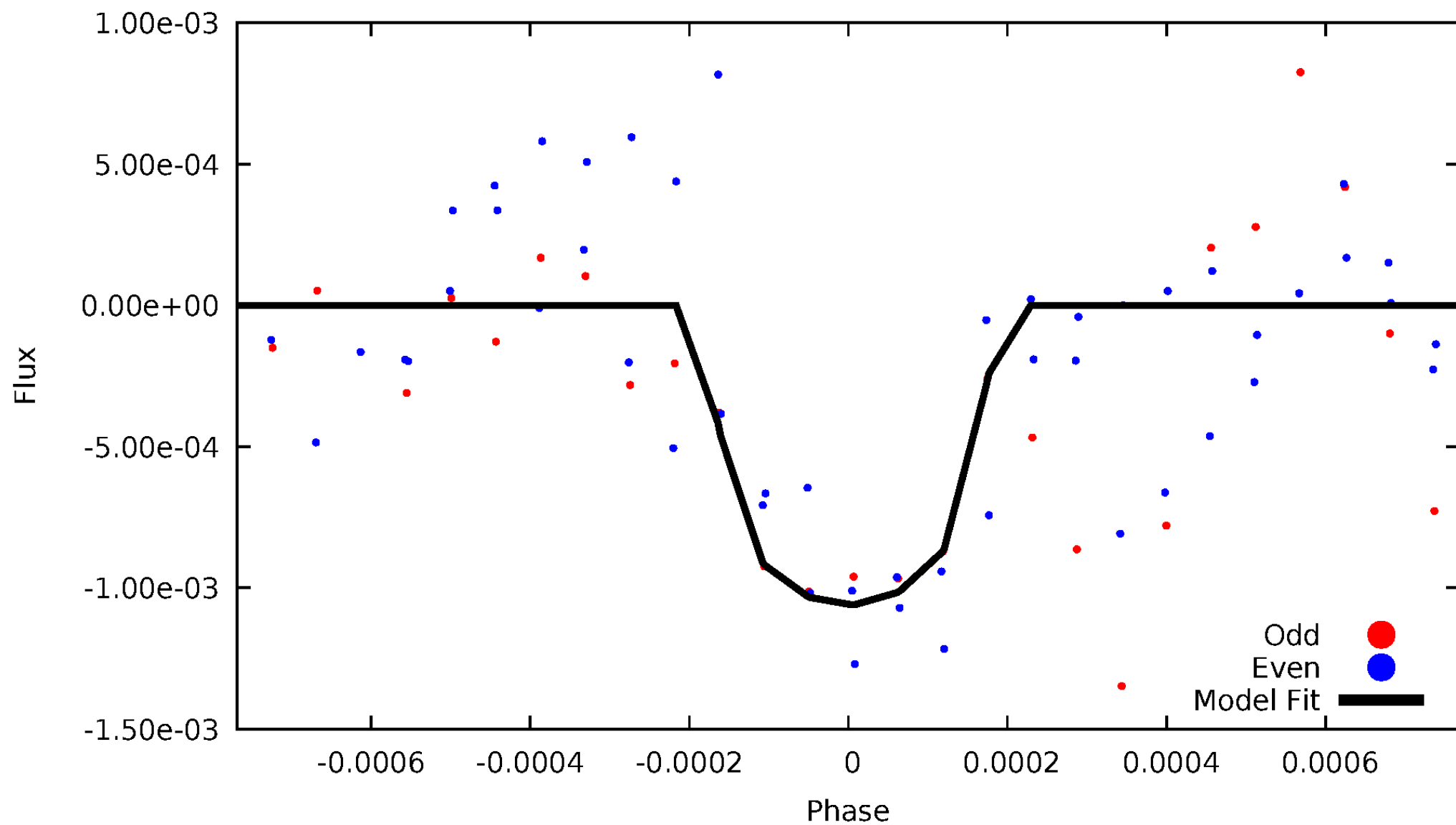


TCE 008654220-01



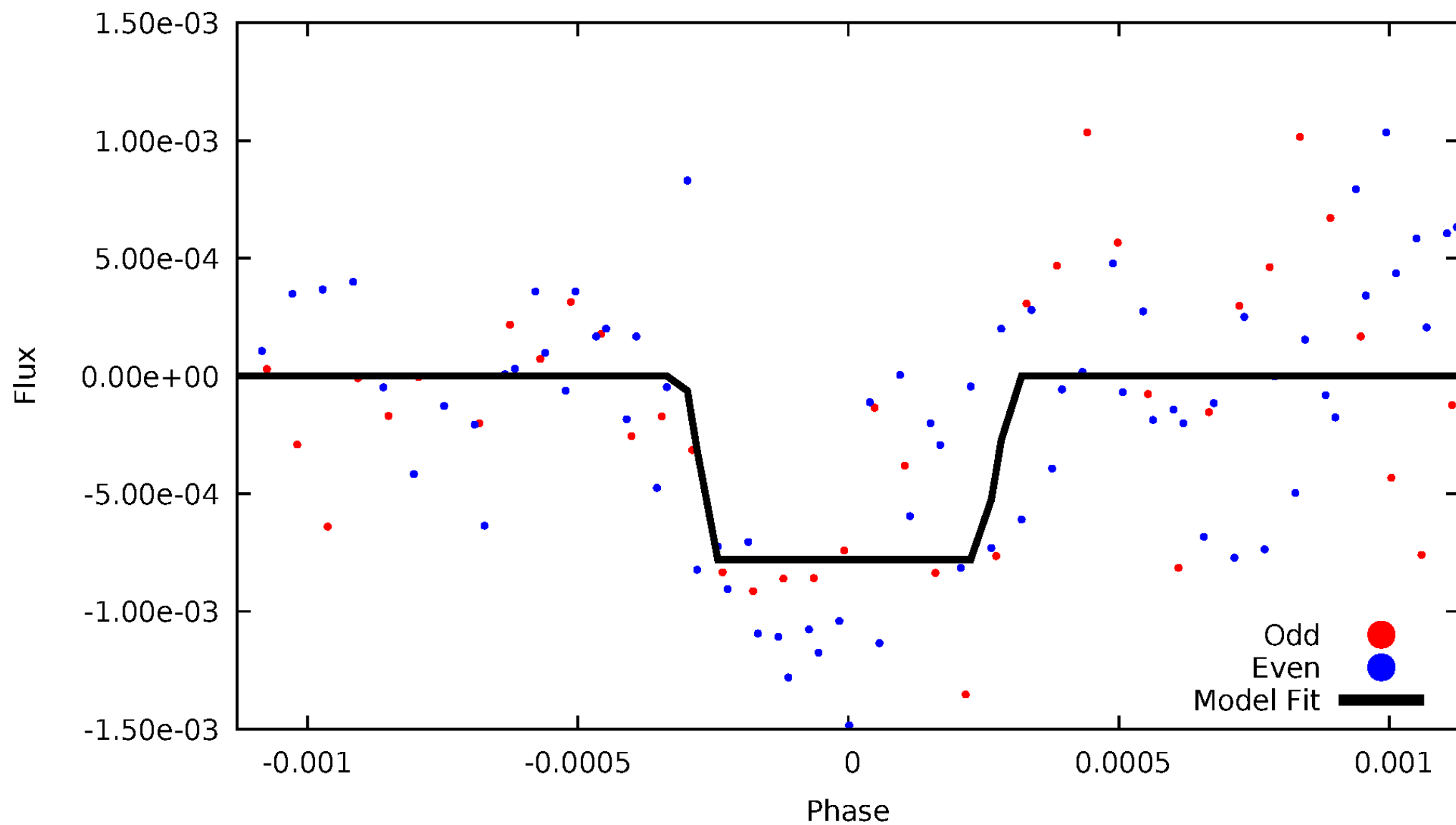
DV Odd/Even

TCE 008654220-01

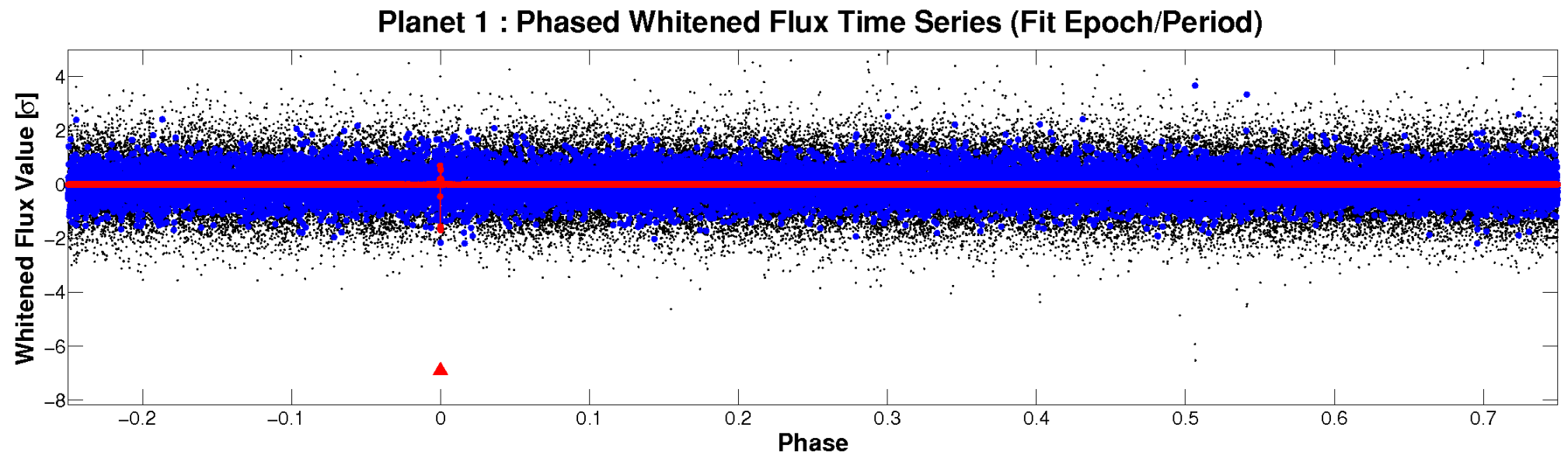
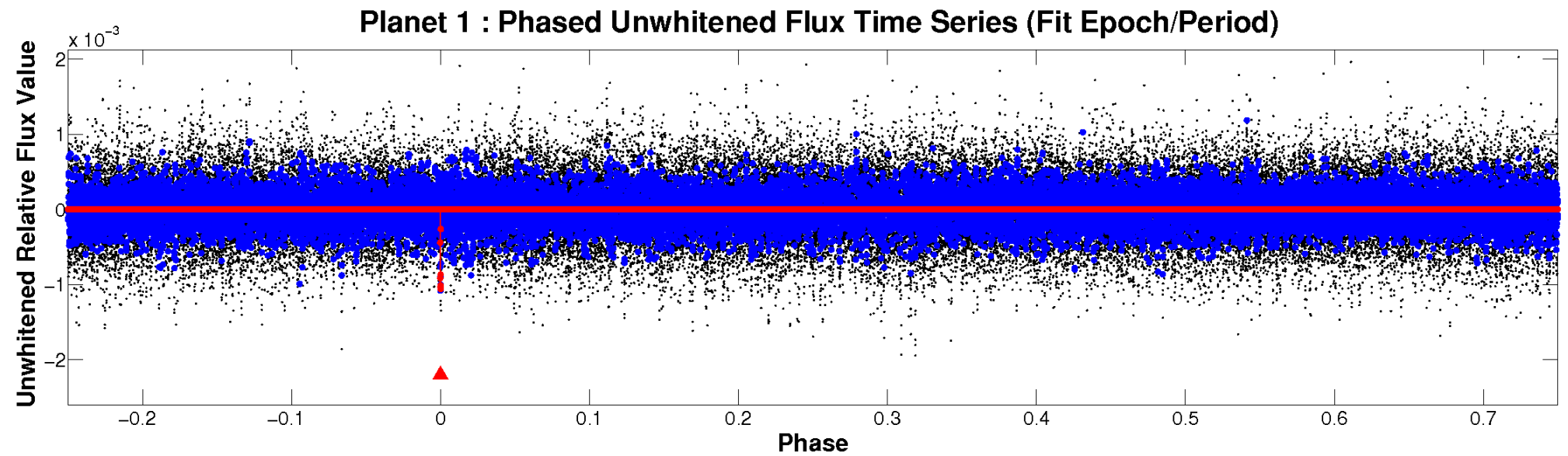


ALT Odd/Even

TCE 008654220-01

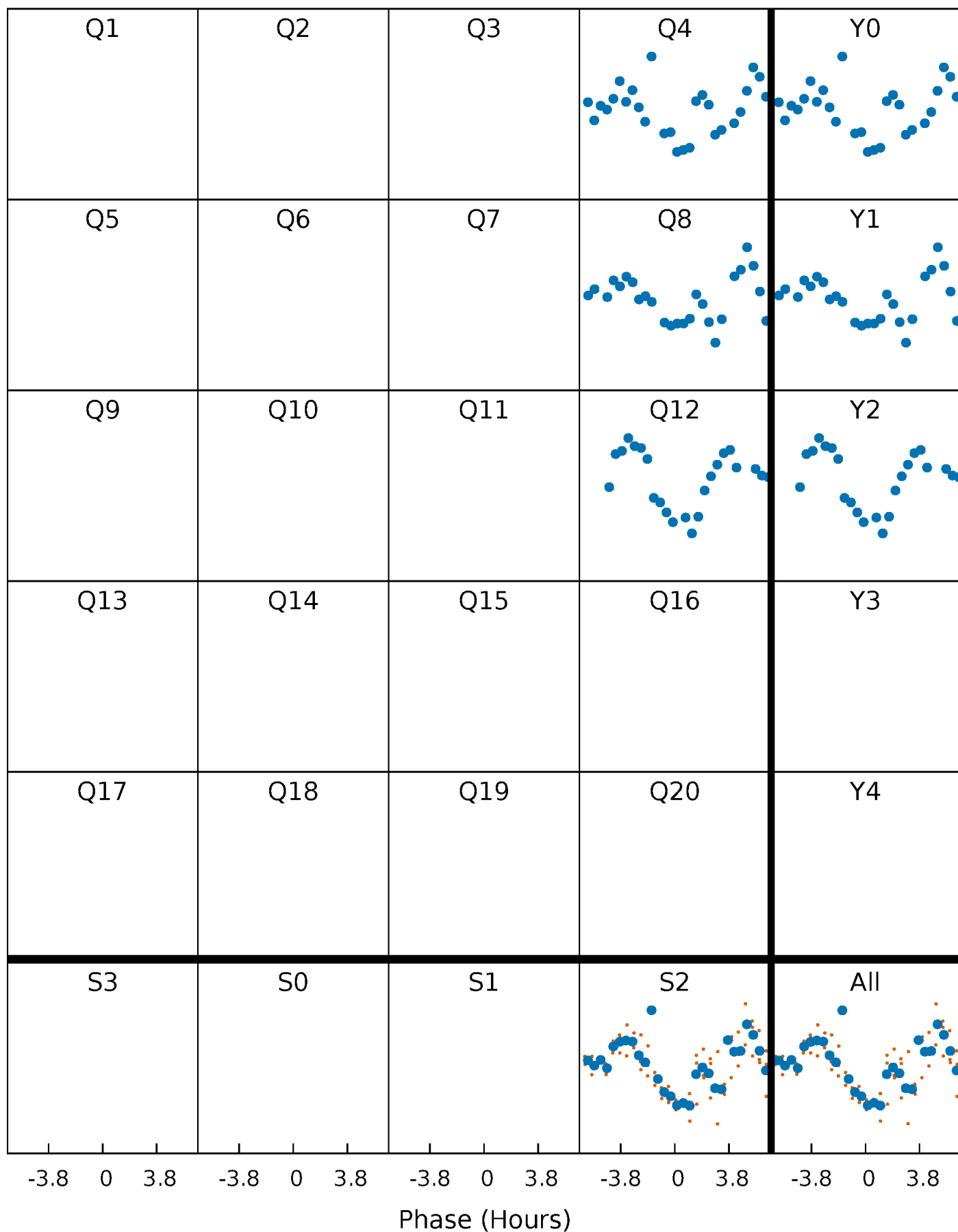


Non-Whitened Vs. Whitened Light Curve



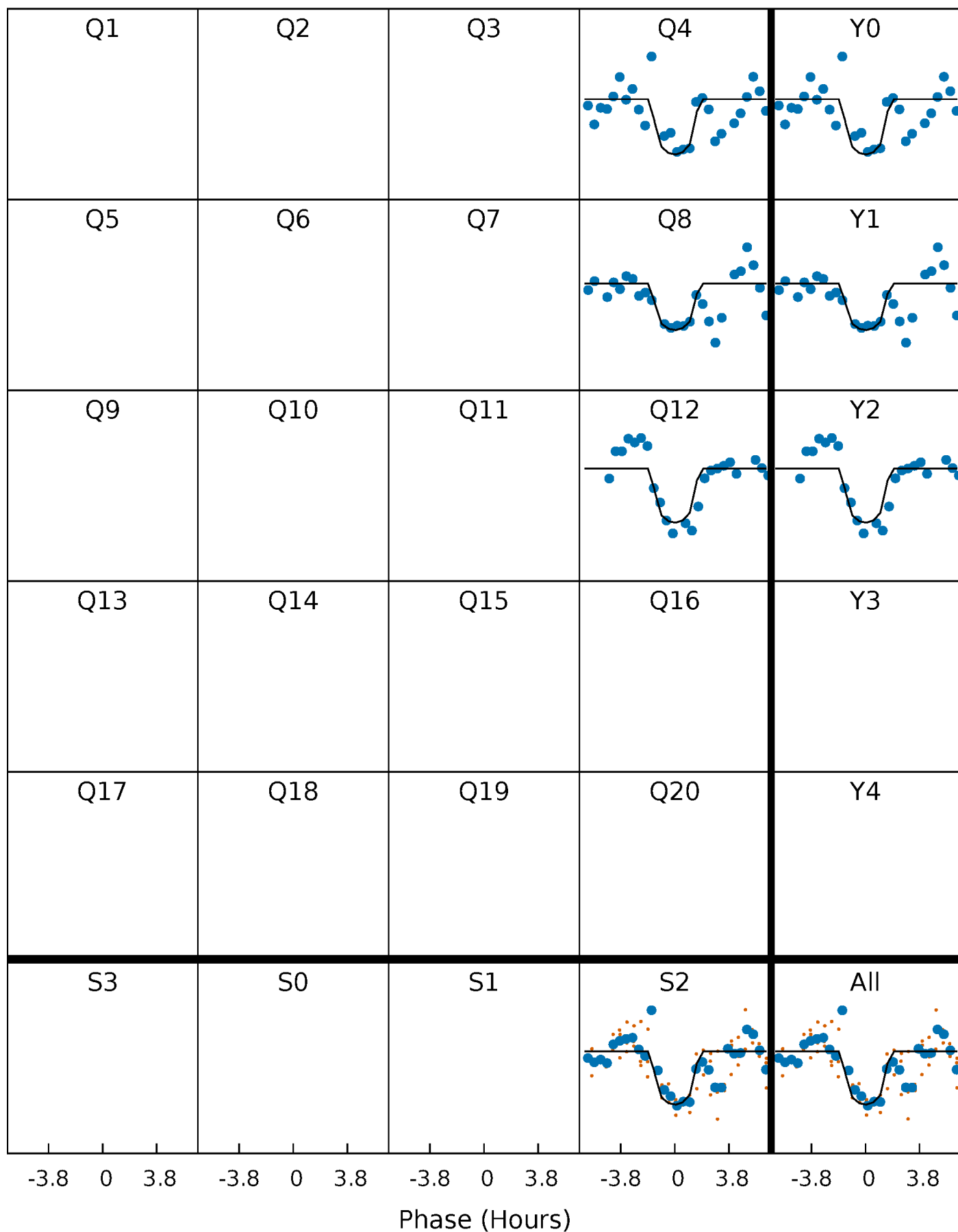
PDC Quarter-Phased Transit Curves

TCE 008654220-01 P=363.635885 Days $T_0=391.770216$ (BKJD)



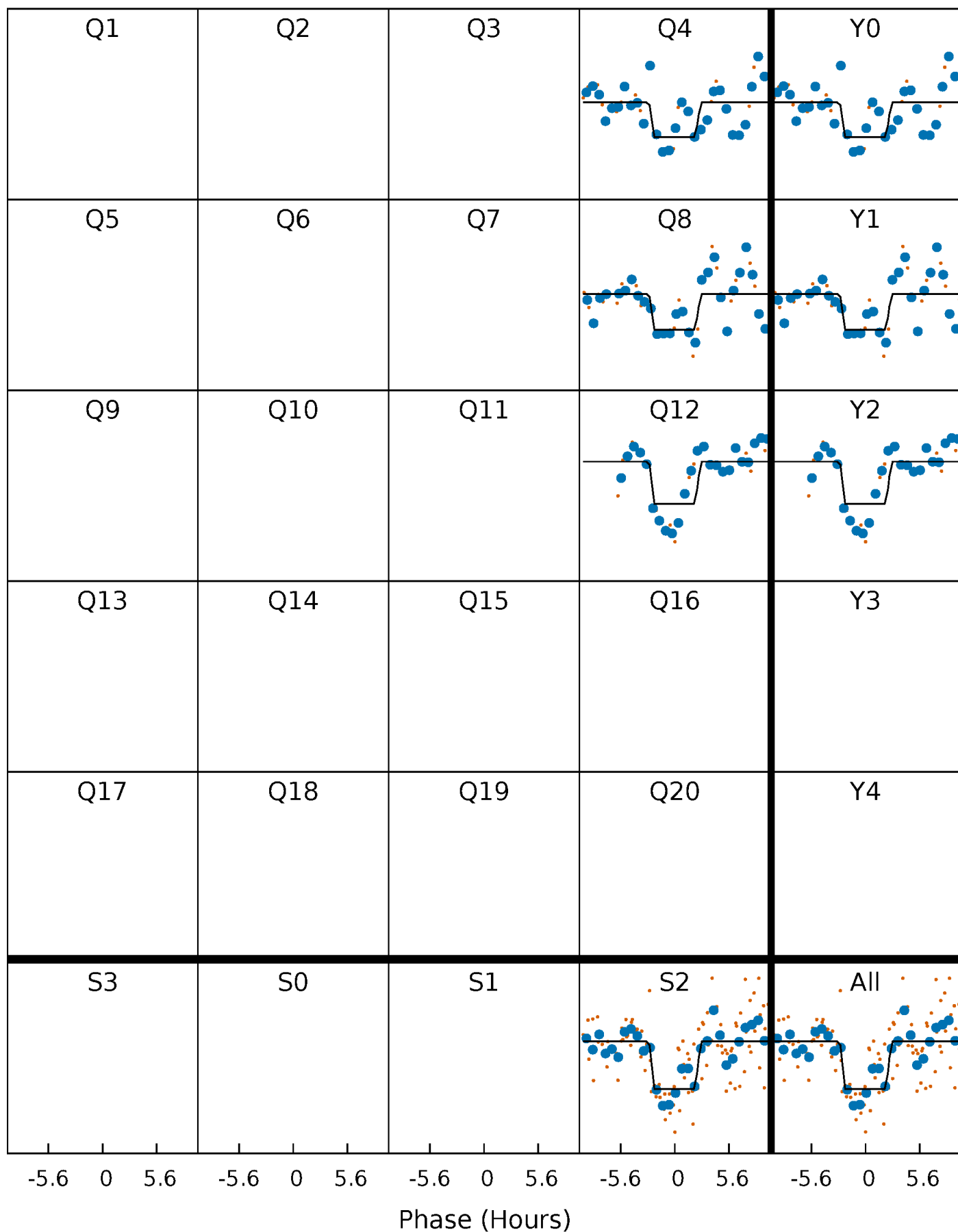
DV Quarter-Phased Transit Curves

TCE 008654220-01 P=363.635885 Days $T_0=391.770216$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

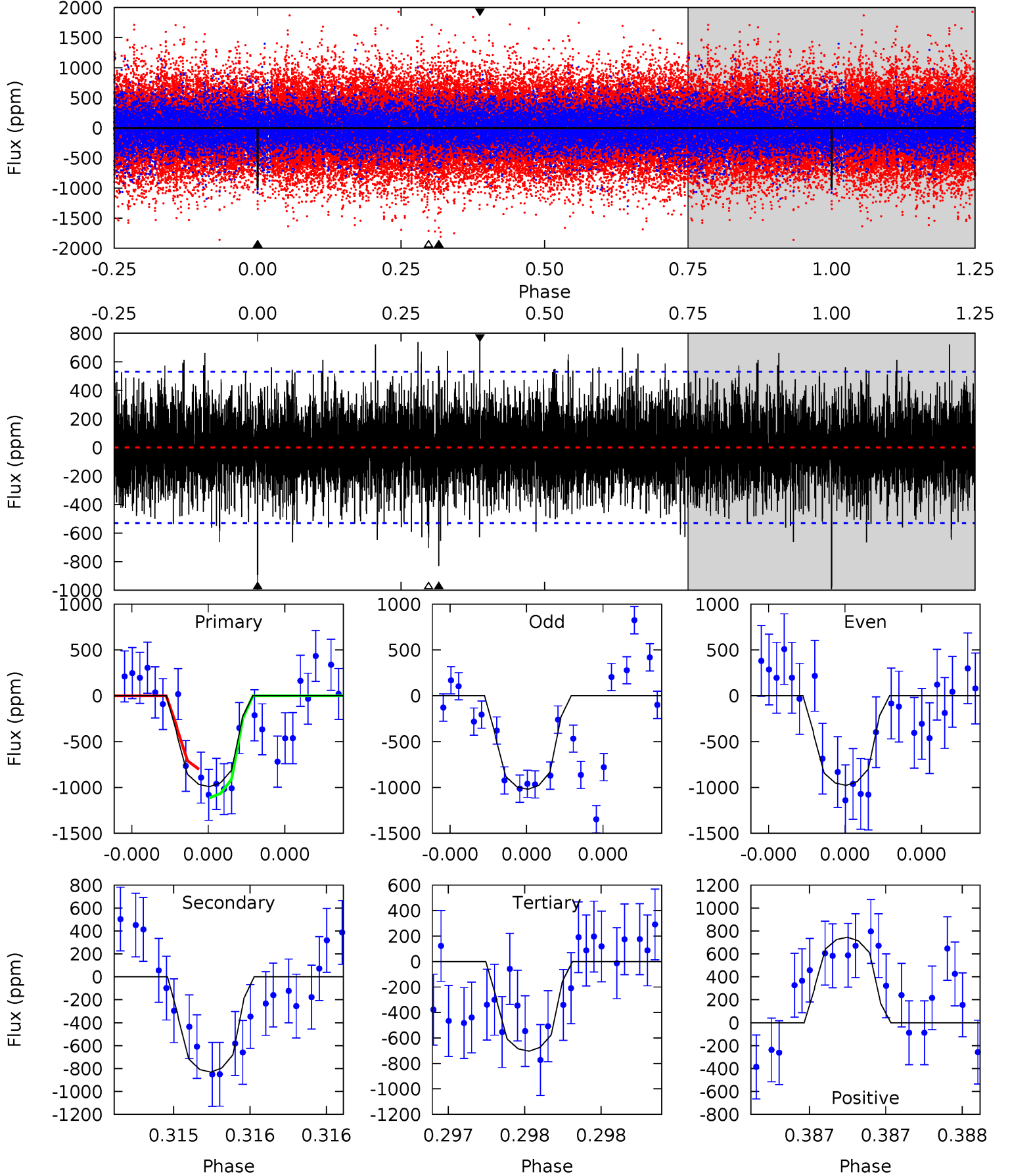
TCE 008654220-01 P=363.633187 Days $T_0=391.818919$ (BKJD)



DV Model-Shift Uniqueness Test

008654220-01, P = 363.635885 Days, E = 28.134331 Days

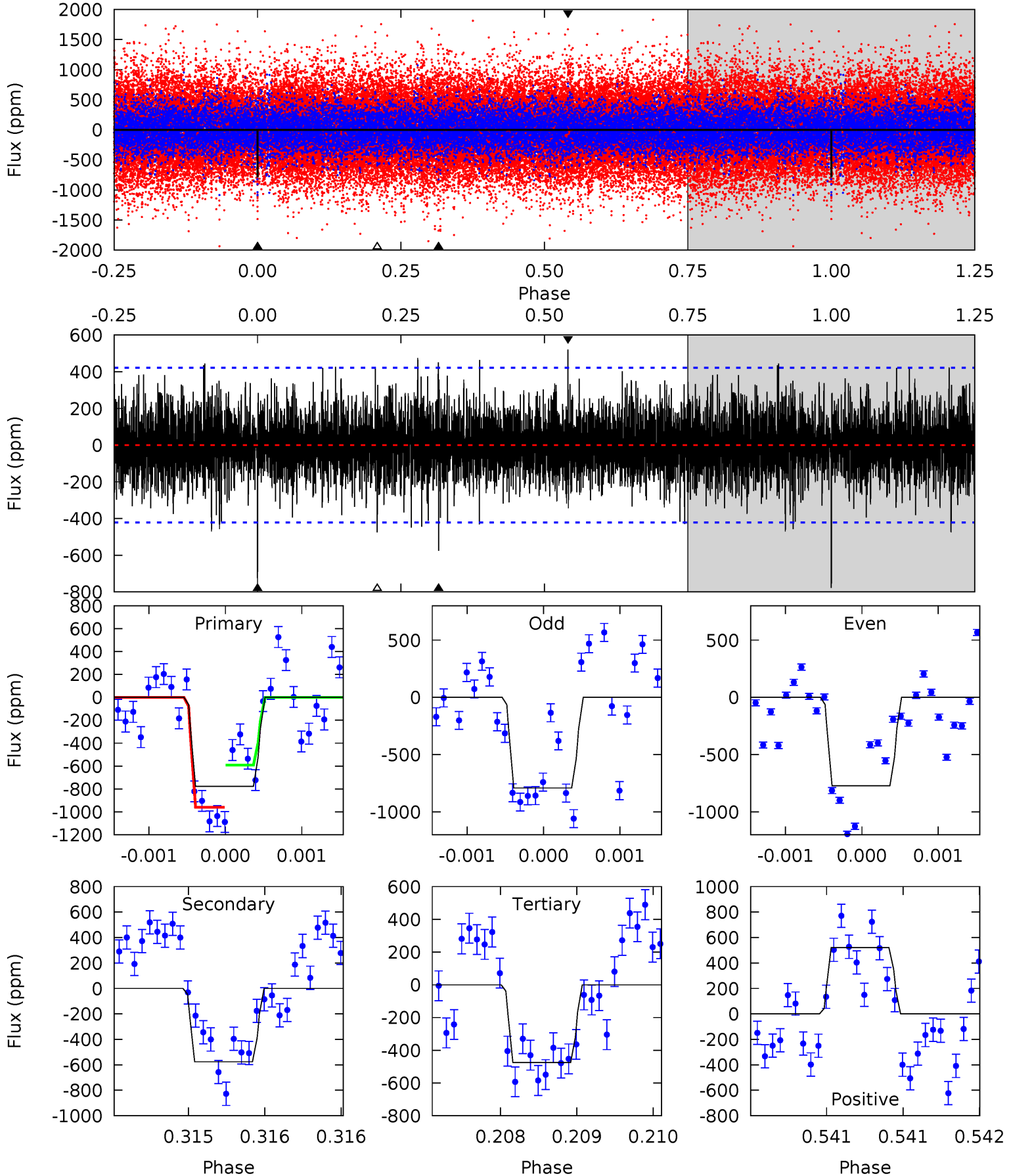
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	8.80	7.45	7.88	5.61	3.54	1.98	3.05	2.61	1.35	0.91	0.22	0.97	0.43	1.63



Alt Model-Shift Uniqueness Test

008654220-01, $P = 363.633187$ Days, $E = 28.185732$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	7.56	6.23	6.83	5.54	3.42	1.68	3.99	3.39	1.33	0.73	0.12	0.98	0.40	2.41



Stellar Parameters For KIC 008654220

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4466^{+100}_{-40}	$2.770^{+0.030}_{-0.030}$	$0.360^{+0.100}_{-0.150}$	$6.728^{+1.052}_{-0.186}$	$0.973^{+0.318}_{-0.017}$	$0.004^{+0.000}_{-0.001}$
	+2%/-1%	+1%/-1%	+28%/-42%	+16%/-3%	+33%/-2%	+9%/-18%
Source	PHO1	AST9	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 008654220-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-831 ± 94	$39.29^{+33.03}_{-26.67}$	720^{+18}_{-13}	3625^{+2054}_{-616}	295^{+2722}_{-209}
Alt.	-576 ± 76	$35.82^{+33.52}_{-24.02}$	719^{+19}_{-11}	3528^{+1806}_{-645}	250^{+2047}_{-185}

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

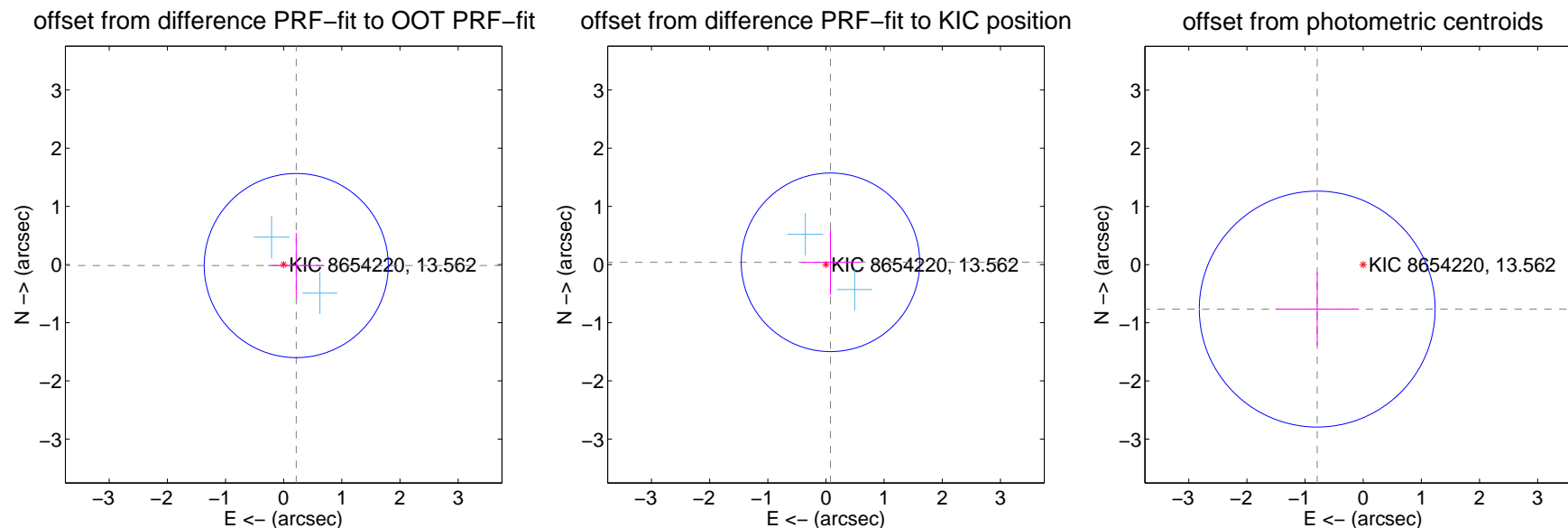
DV Centroid Data

Supplemental centroid analysis for 008654220-01. Kepler magnitude: 13.56. Transit SNR 6.54

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.217 ± 0.527	0.41	-0.216 ± 0.484	-0.018 ± 0.560
PRF-fit source offset from KIC position	0.086 ± 0.511	0.17	-0.078 ± 0.499	0.038 ± 0.559
photometric centroid source offset	1.10 ± 0.68	1.63	0.79 ± 0.72	-0.76 ± 0.63



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.

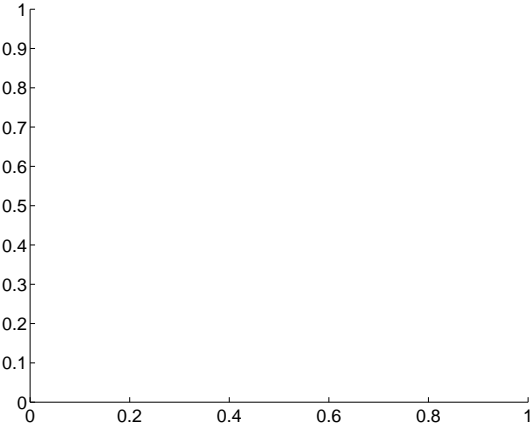
Q1 no difference image



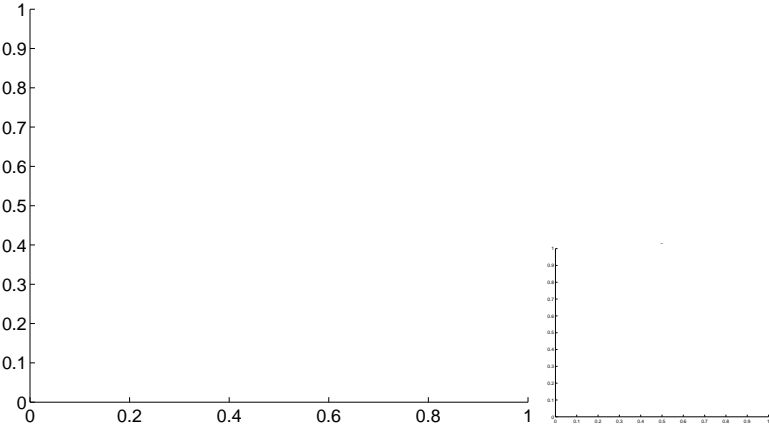
Q1 no OOT image



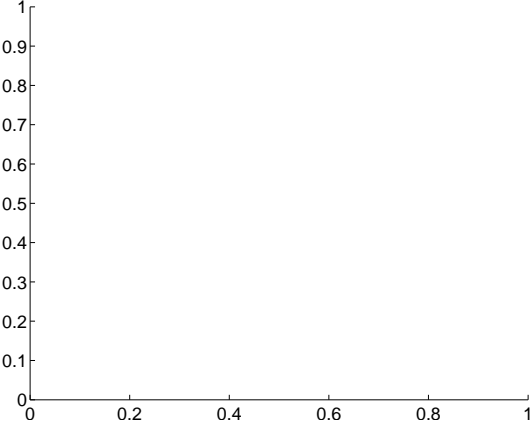
Q2 no difference image



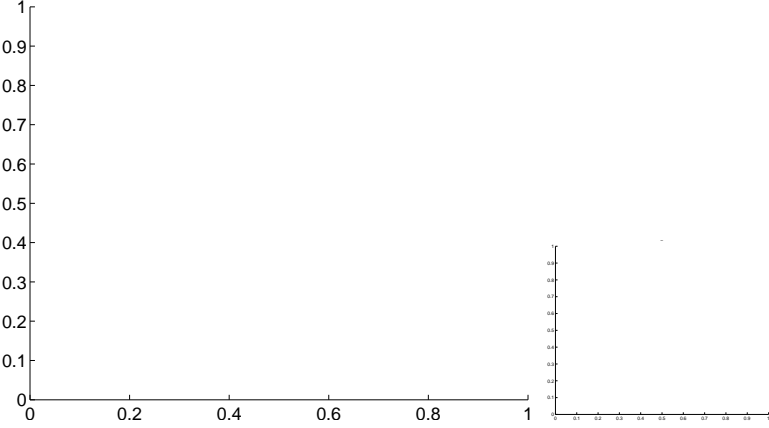
Q2 no OOT image



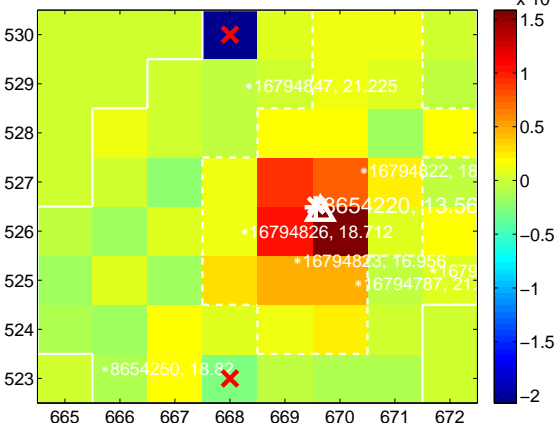
Q3 no difference image



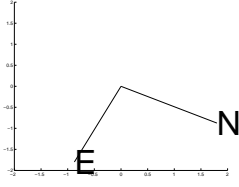
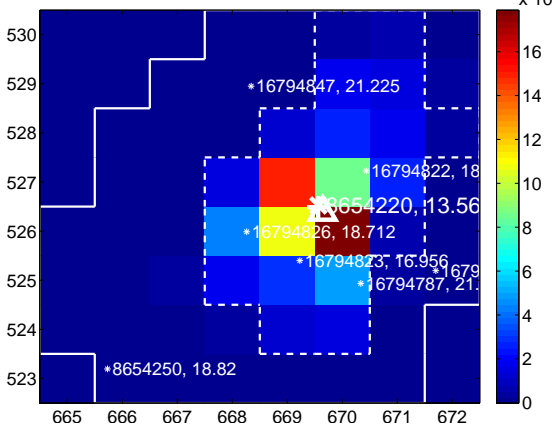
Q3 no OOT image



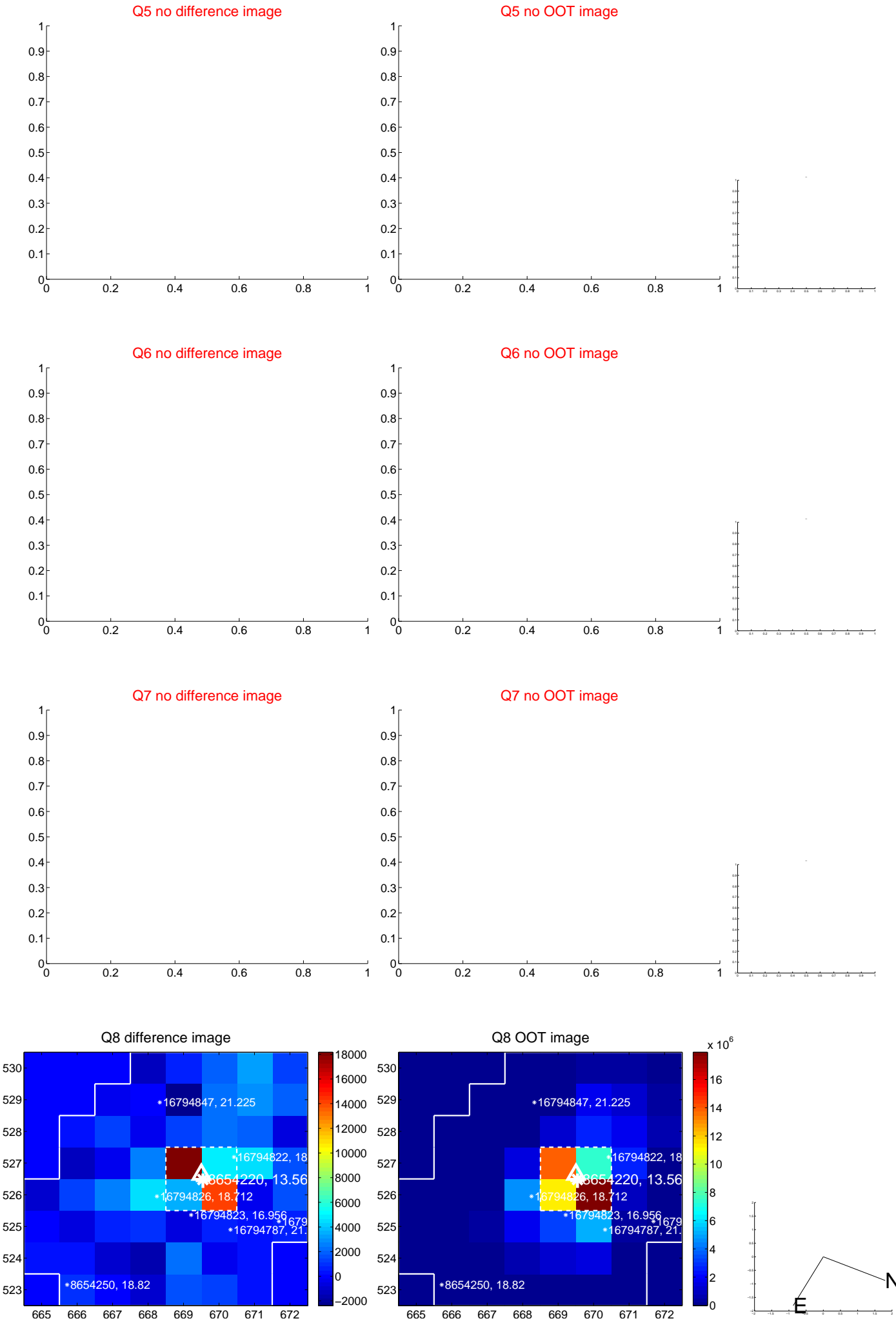
Q4 difference image



Q4 OOT image



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



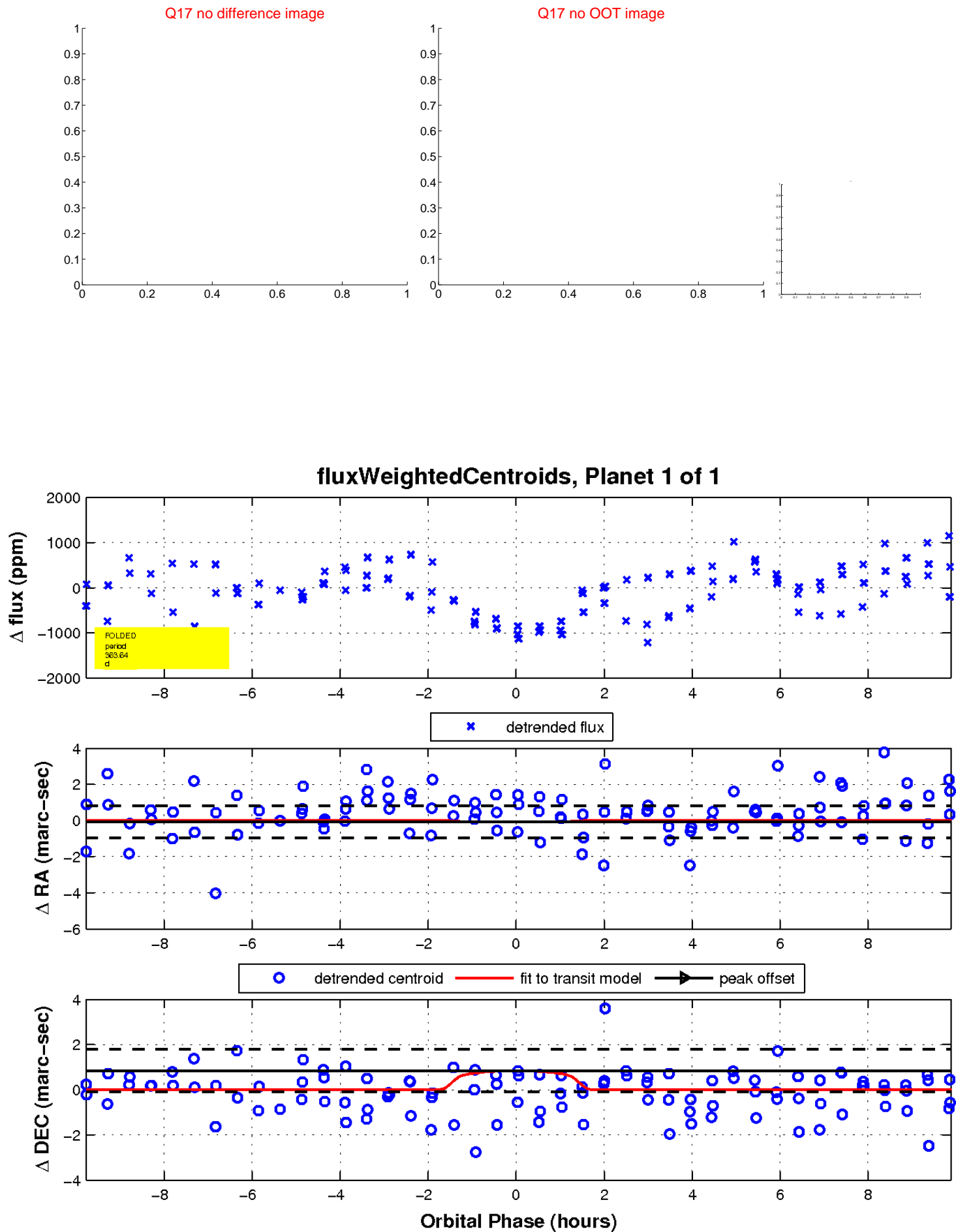
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

