

KIC 008409295

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})
008409295-01	OBS	3404.01	82.293048	212.034565	378.9	7.630	11.8	11.8	0.96	5626	2.12	6.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008409295-01	OBS	PC	0.99	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.

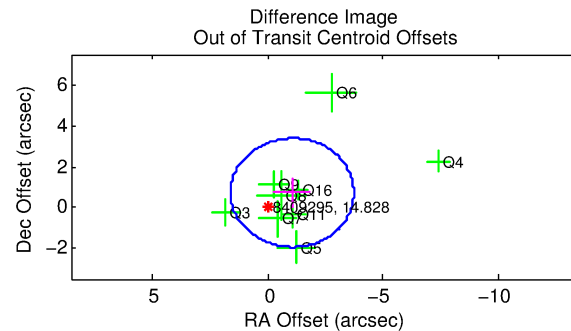
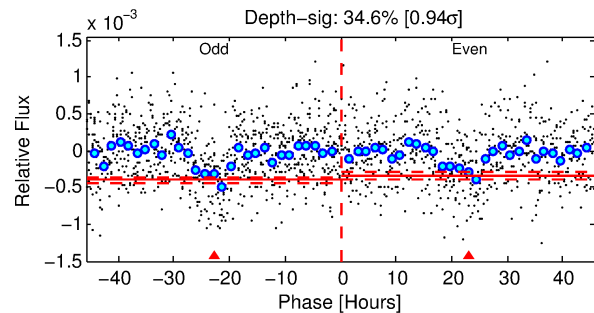
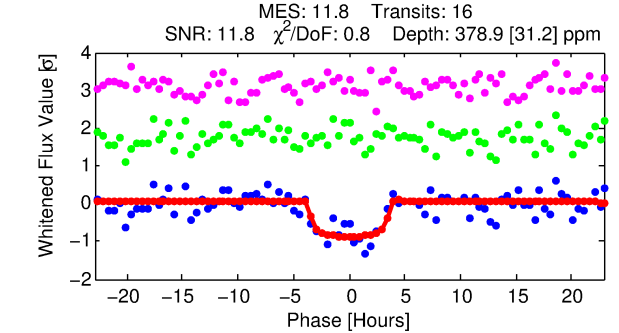
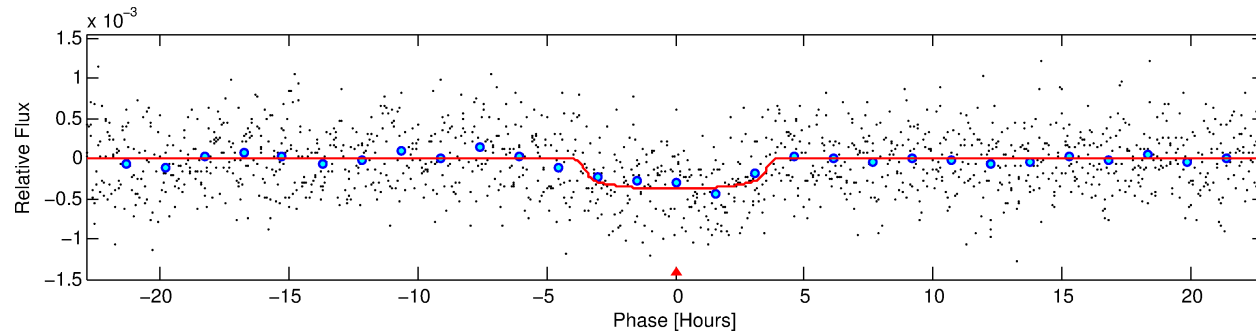
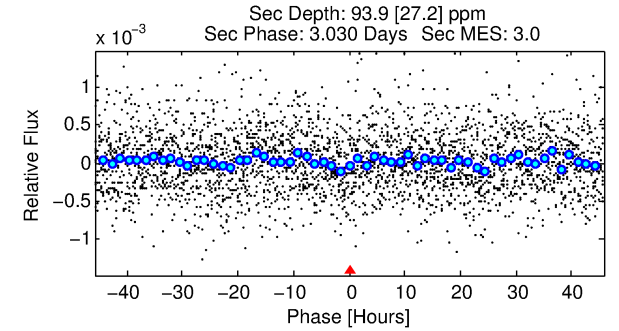
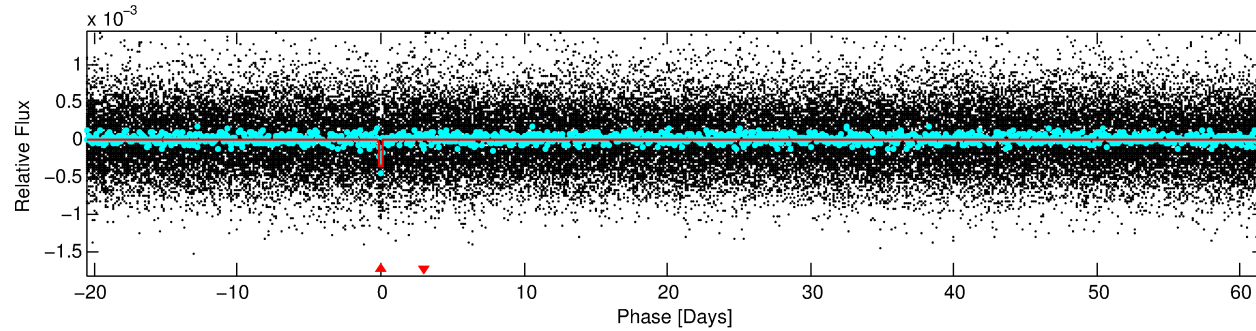
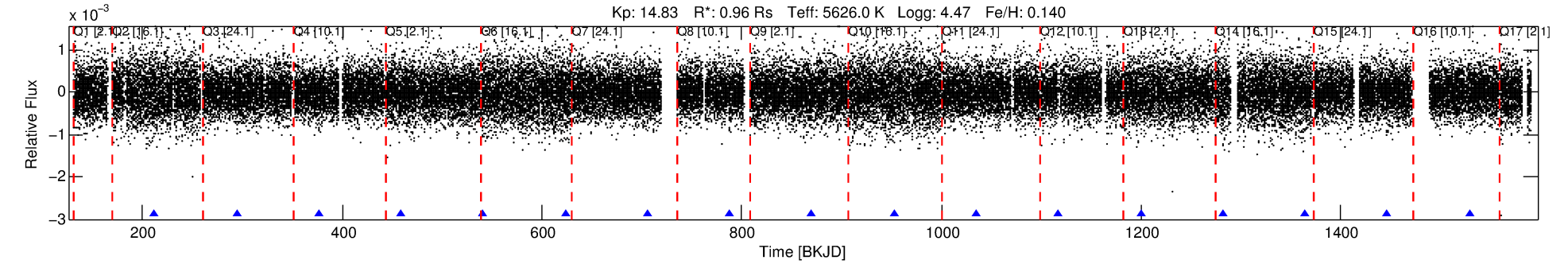
Ephemeris Match Information For 008409295-01

No Significant Match Found

DV One-Page Summary

KIC: 8409295 Candidate: 1 of 1 Period: 82.293 d

KOI: K03404.01 Corr: 0.945



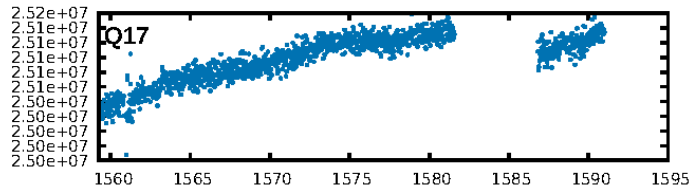
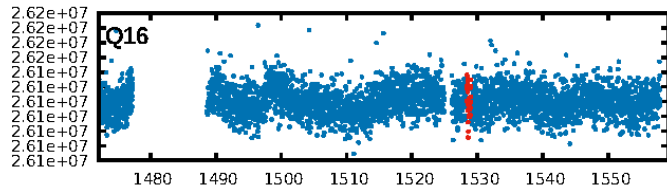
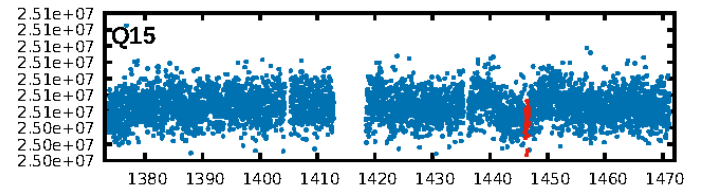
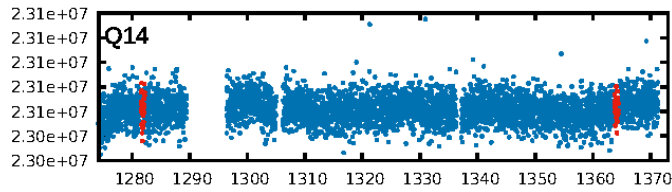
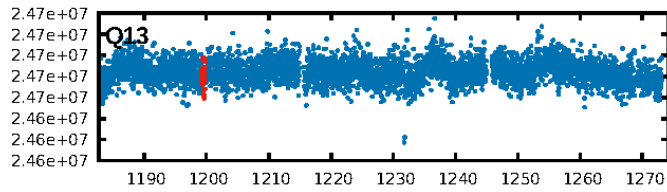
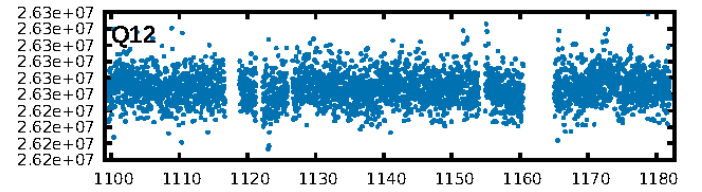
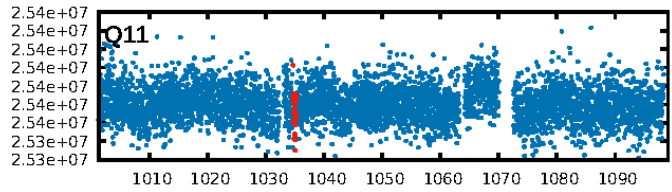
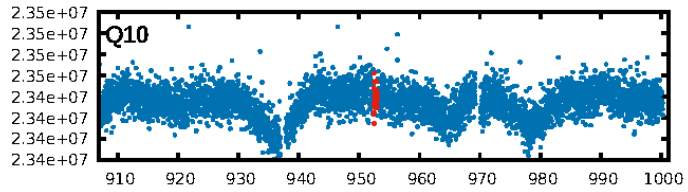
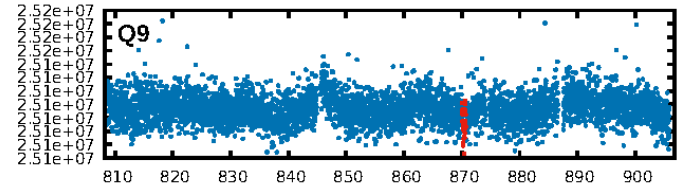
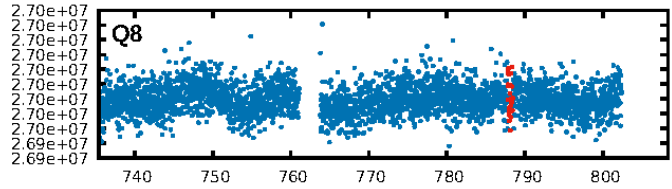
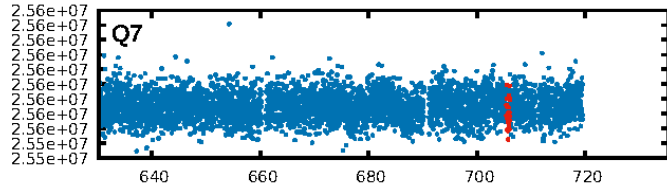
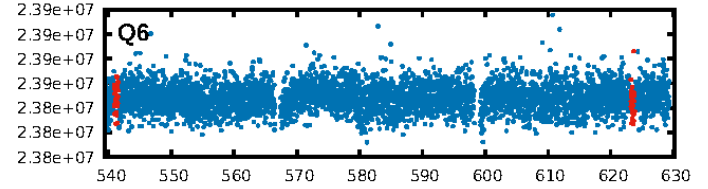
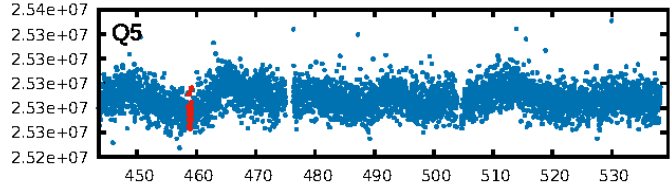
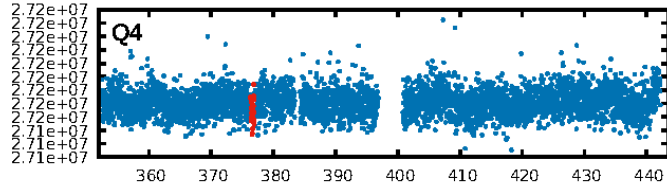
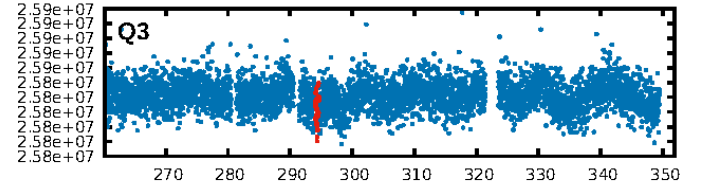
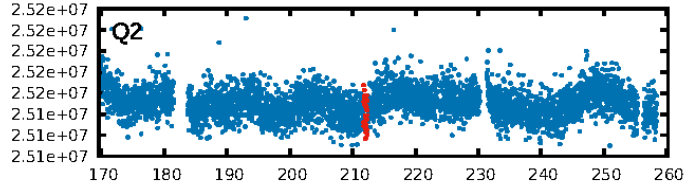
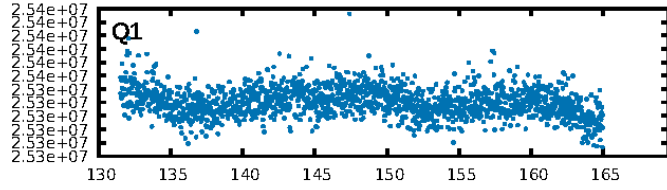
DV Fit Results:

Period = 82.29305 [0.00117] d
Epoch = 212.0346 [0.0110] BKJD
Rp/R* = 0.0203 [0.0056]
a/R* = 47.83 [56.38]
b = 0.84 [0.42]
Seff = 6.08 [1.30]
Teff = 400 [21] K
Rp = 2.12 [0.65] Re
a = 0.3677 [0.0477] AU
Ag = 1554.31 [1020.37] [1.52 σ]
Teffp = 3887 [609] K [5.72 σ]

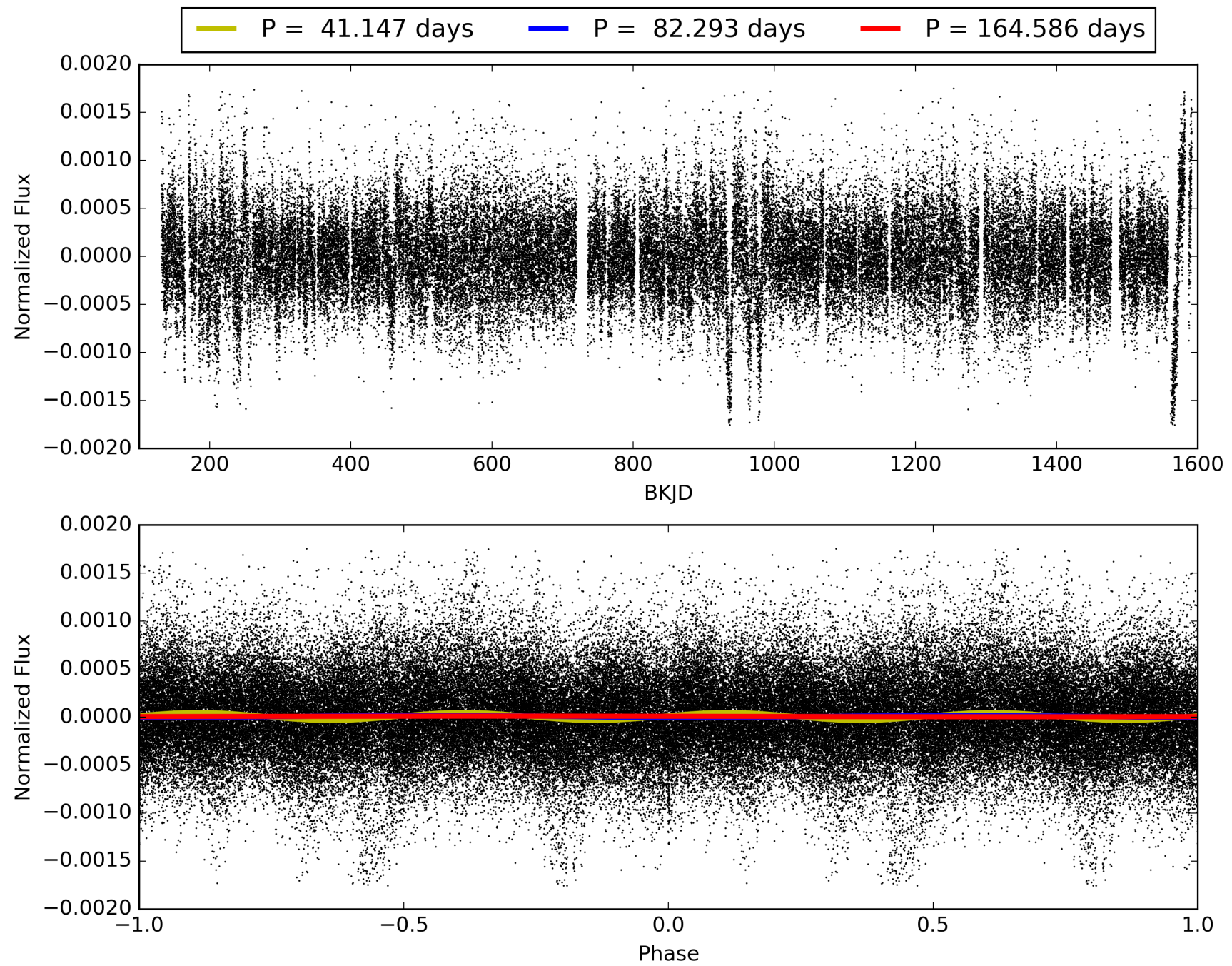
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 46.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.18e-30
RollingBand-fgt: 1.00 [16/16]
GhostDiagnostic-chr: 1.557
Centroid-sig: 81.3%
Centroid-so: 0.823 arcsec [0.72 σ]
OotOffset-rm: 1.281 arcsec [1.44 σ]
KicOffset-rm: 1.325 arcsec [1.62 σ]
OotOffset-st: 1/3/3/2 [9]
KicOffset-st: 1/3/3/2 [9]
DiffImageQuality-fgm: 0.78 [7/9]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 008409295-01, PDC Light Curves

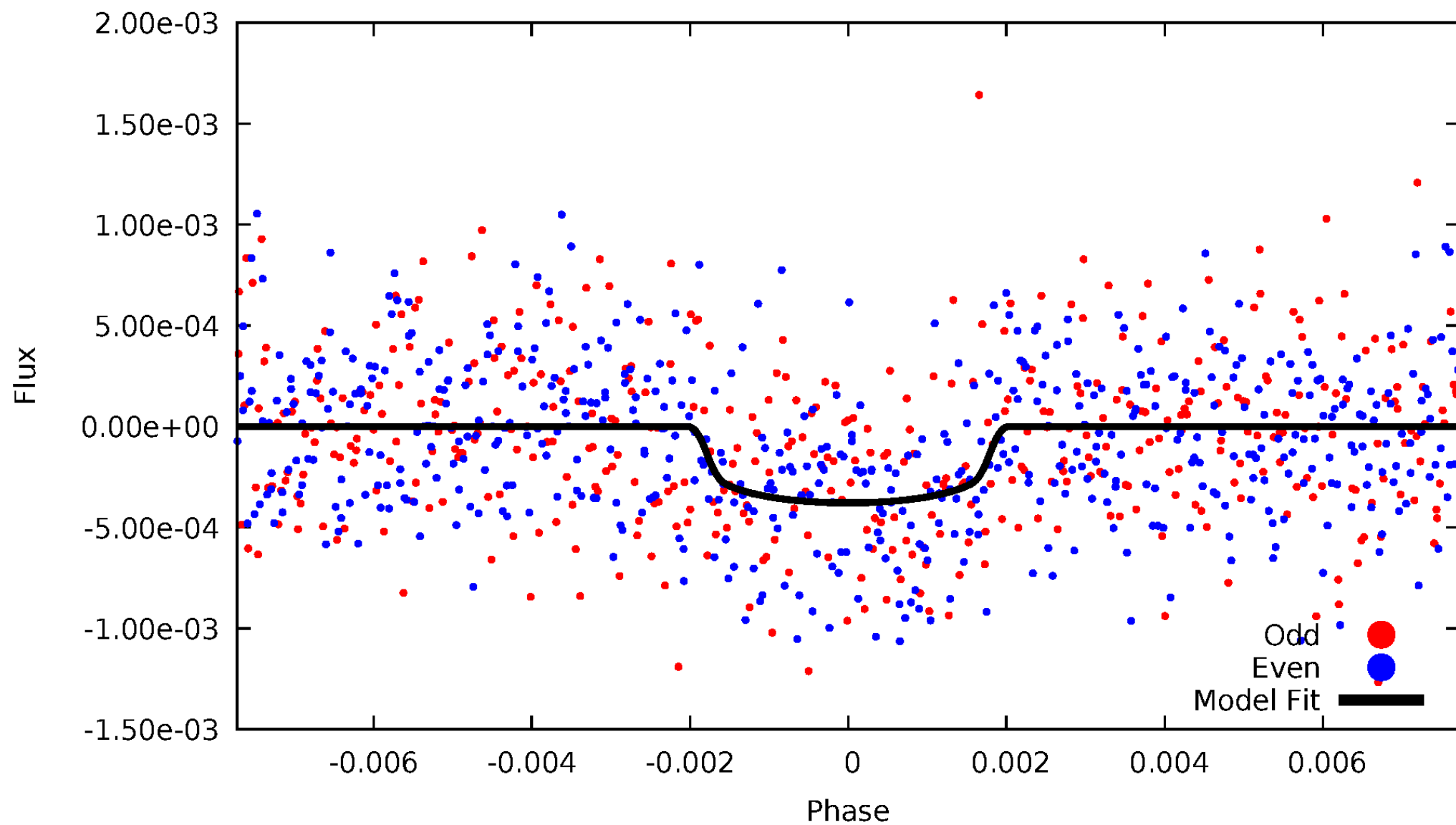


TCE 008409295-01



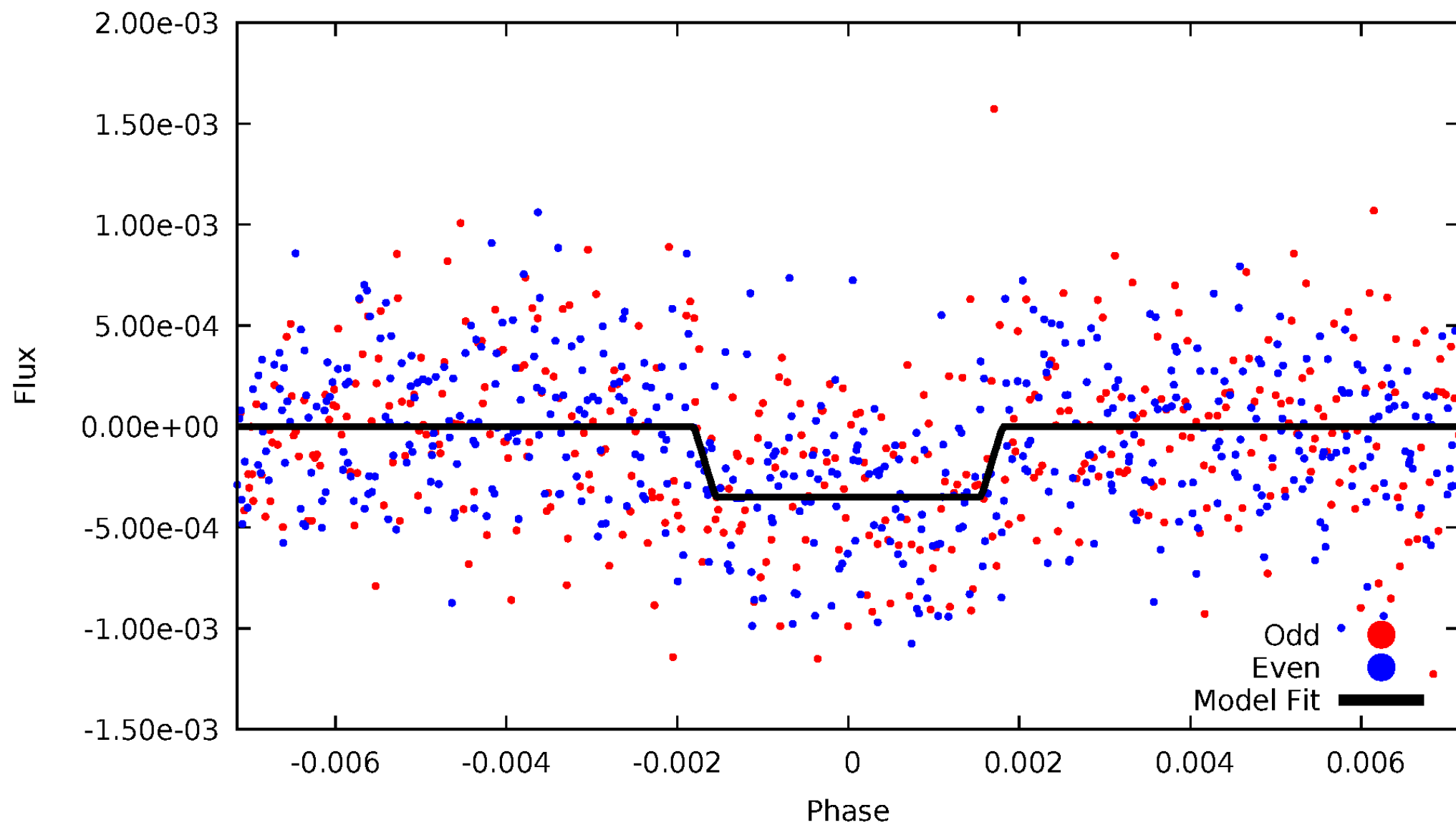
DV Odd/Even

TCE 008409295-01

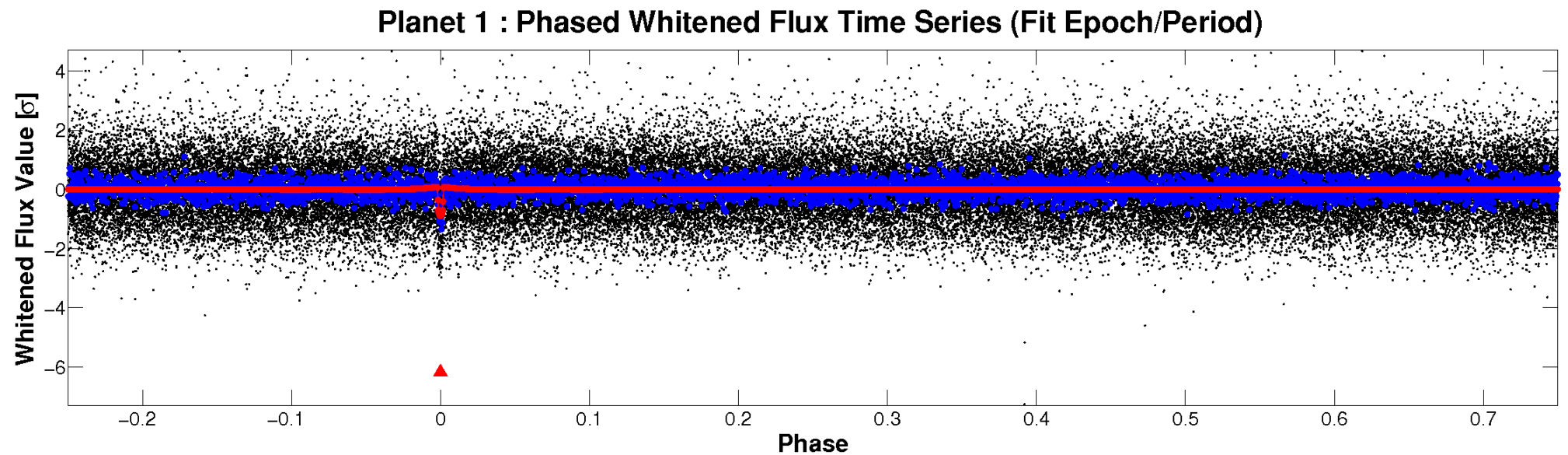
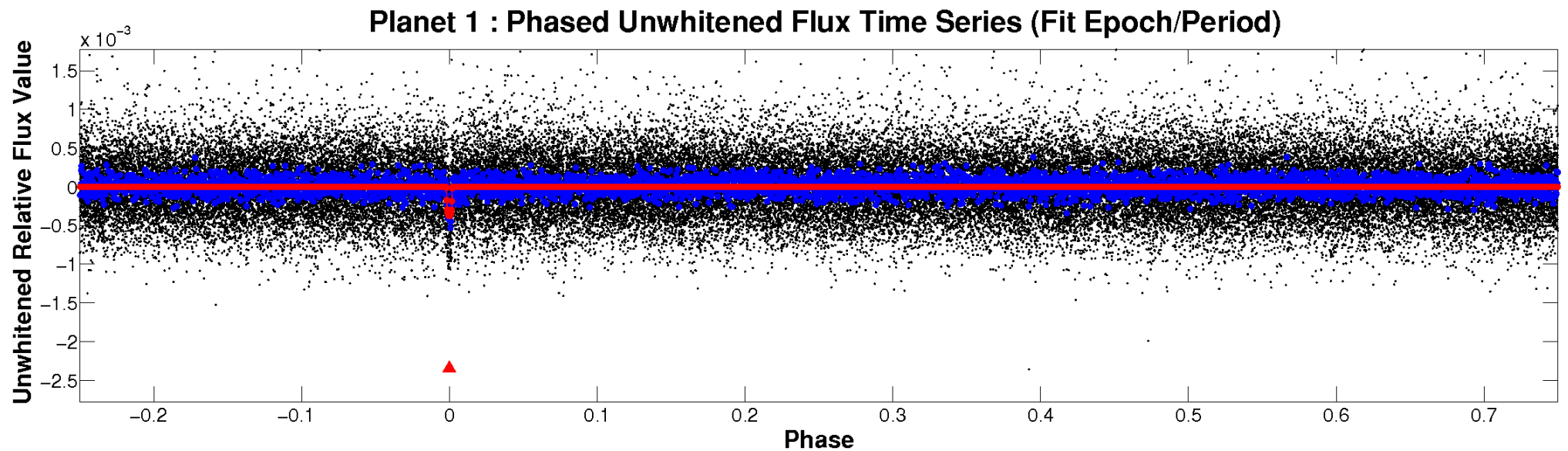


ALT Odd/Even

TCE 008409295-01

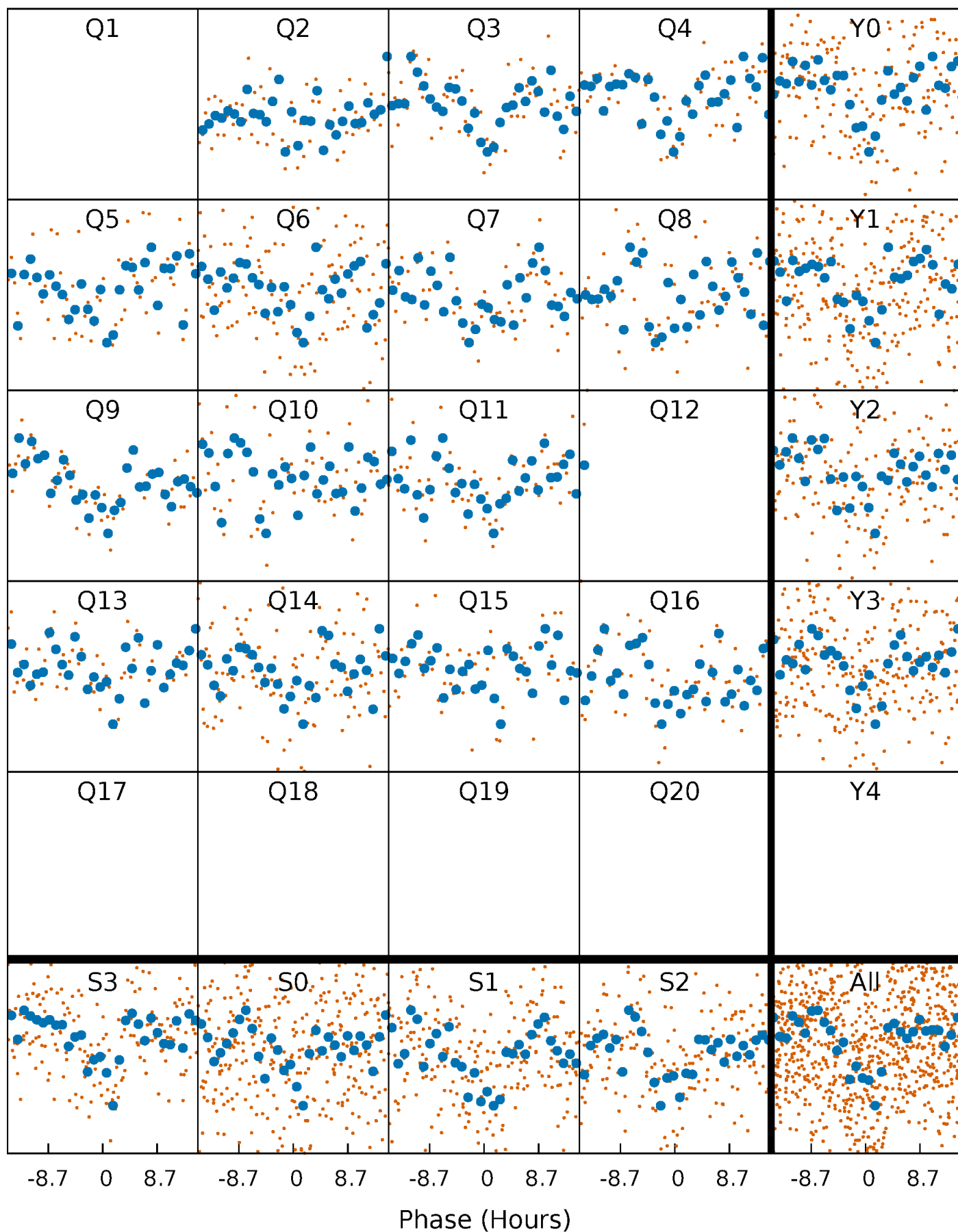


Non-Whitened Vs. Whitened Light Curve



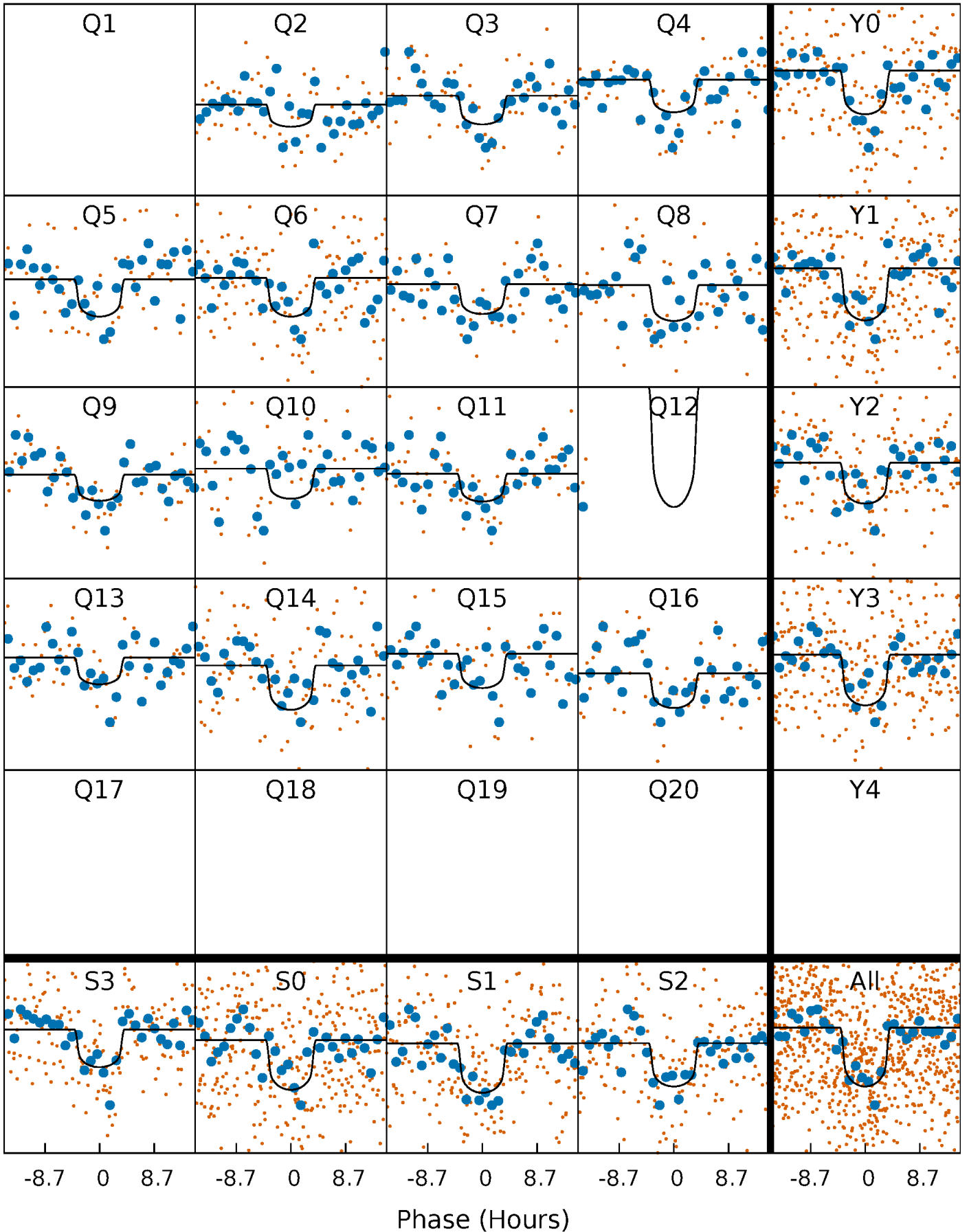
PDC Quarter-Phased Transit Curves

TCE 008409295-01 P= 82.293048 Days $T_0=212.034565$ (BKJD)



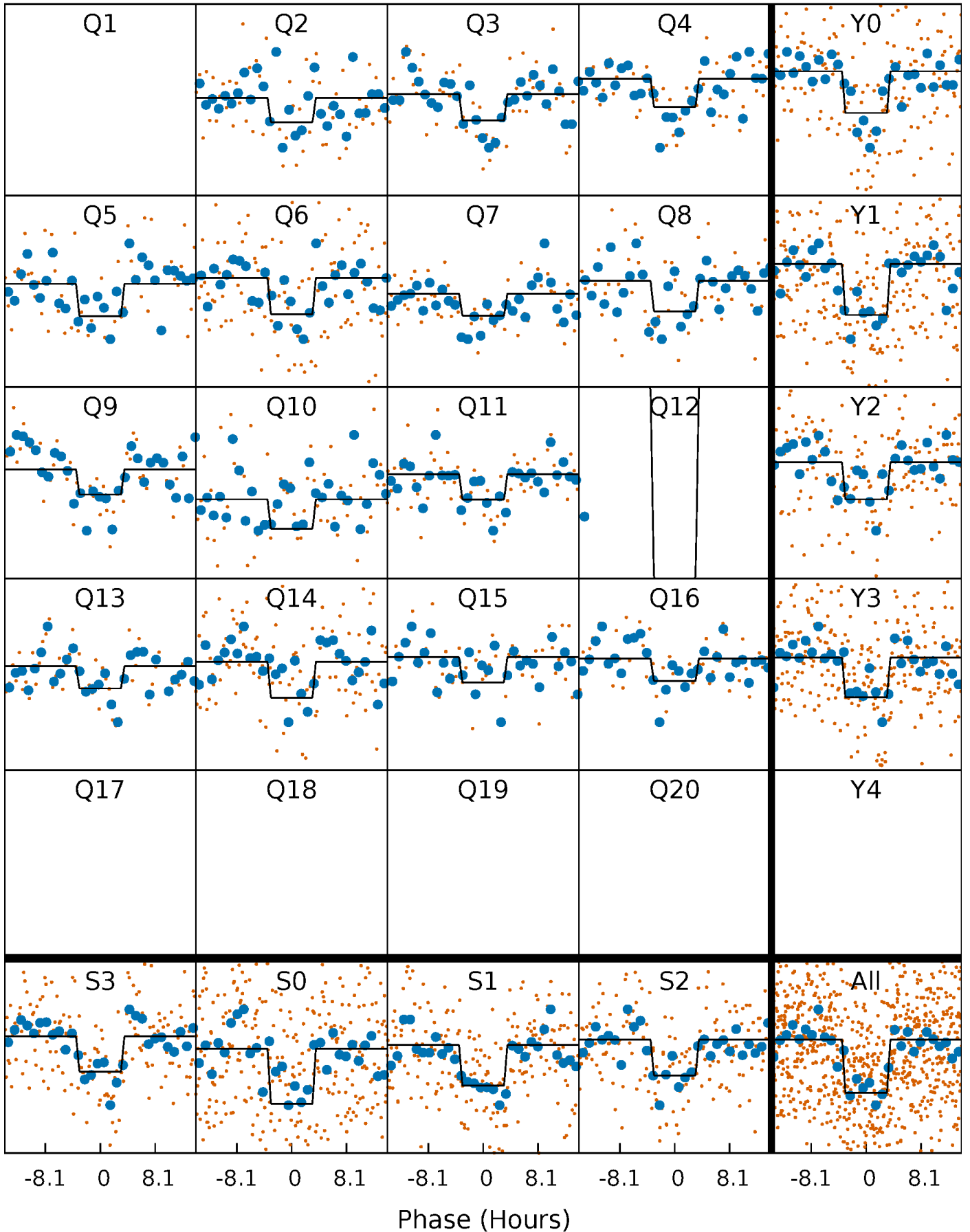
DV Quarter-Phased Transit Curves

TCE 008409295-01 P= 82.293048 Days $T_0=212.034565$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

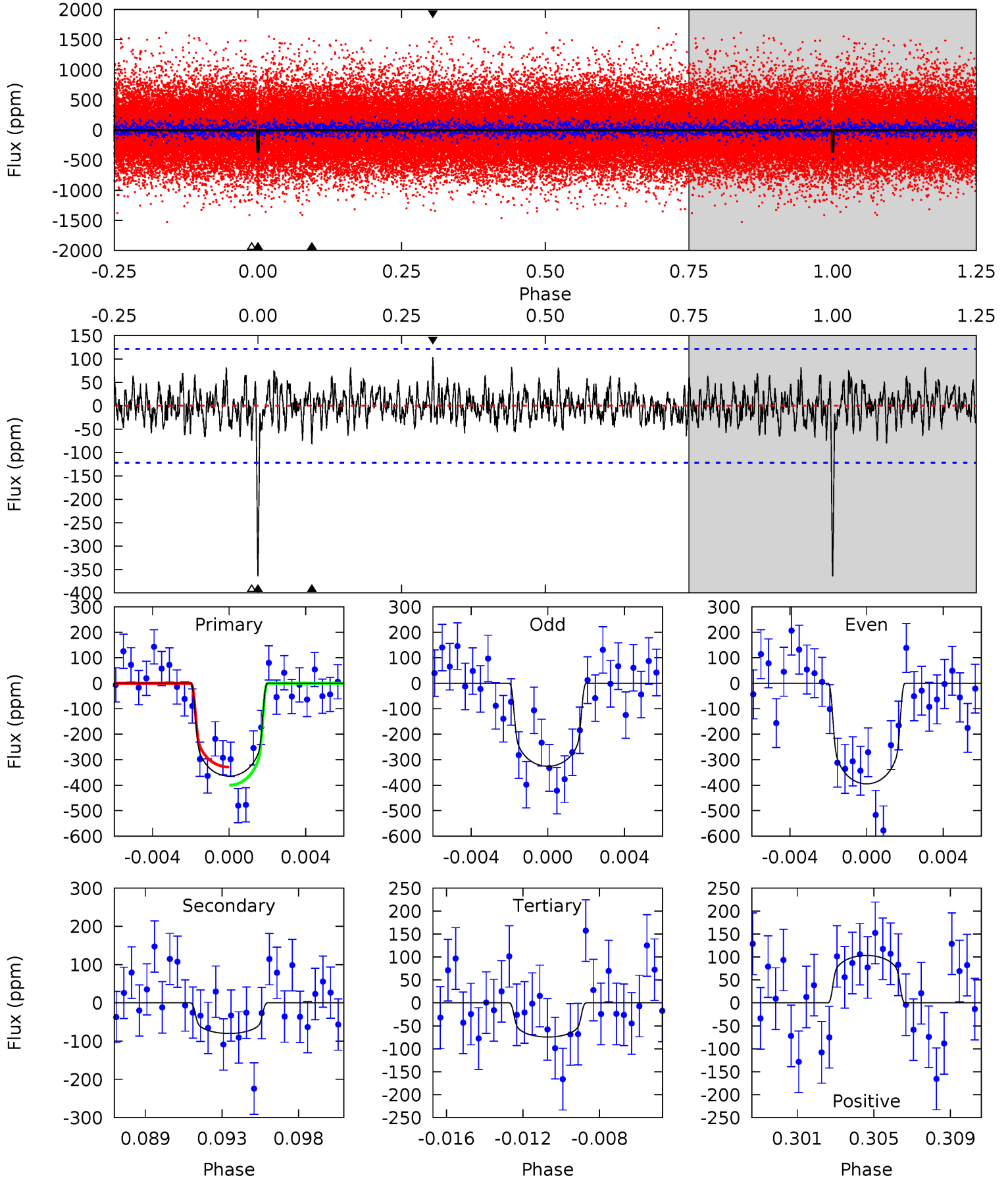
TCE 008409295-01 P= 82.292122 Days $T_0=212.034875$ (BKJD)



DV Model-Shift Uniqueness Test

008409295-01, P = 82.293048 Days, E = 129.741517 Days

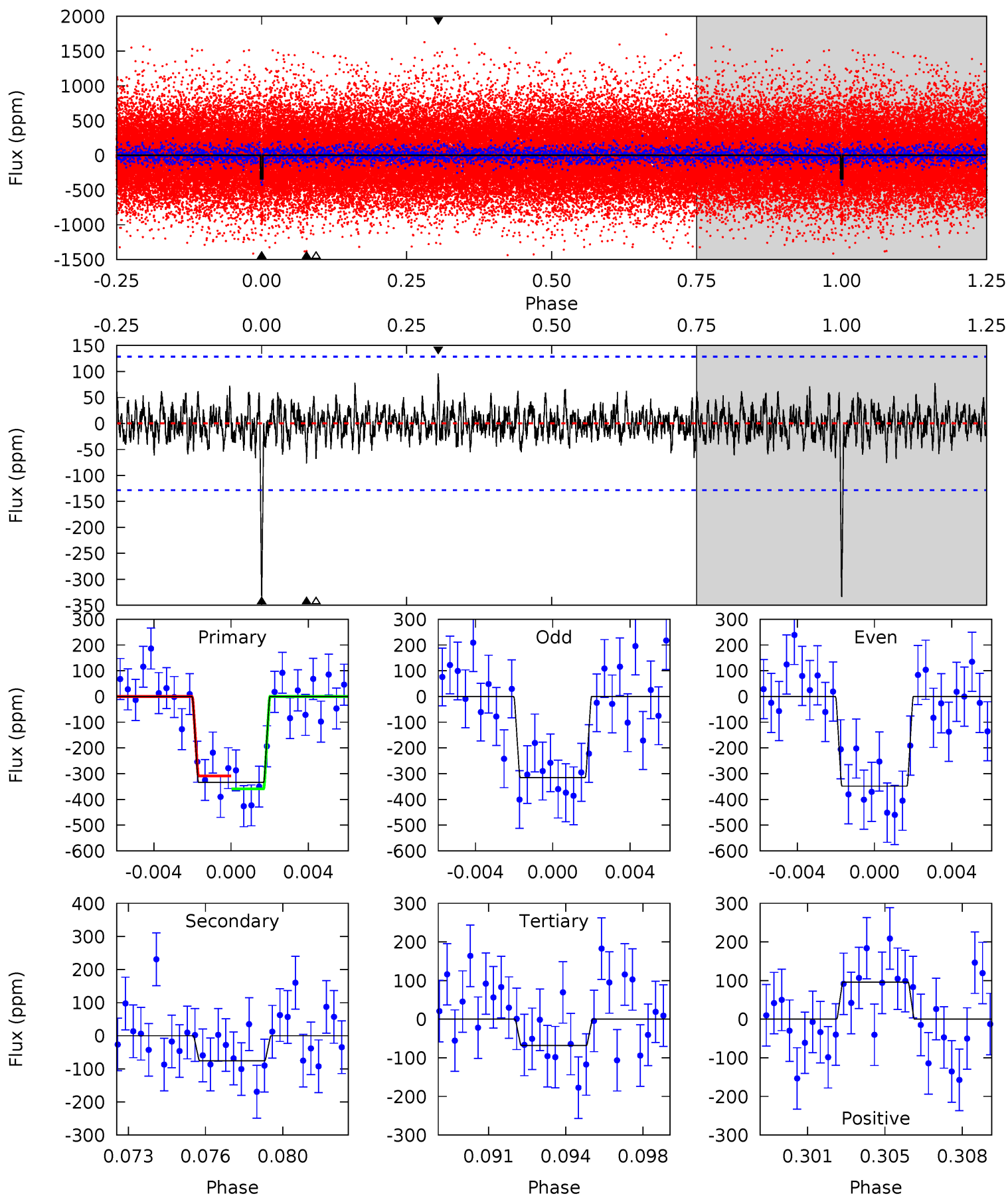
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	3.42	3.18	4.42	5.20	2.87	1.13	12.4	11.2	0.24	-1.00	1.47	0.99	0.22	1.52



Alt Model-Shift Uniqueness Test

008409295-01, P = 82.292122 Days, E = 129.742753 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	3.06	2.77	3.91	5.22	2.91	0.93	10.8	9.66	0.29	-0.84	0.68	0.96	0.22	1.01



Stellar Parameters For KIC 008409295

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5626^{+76}_{-84}	$4.467^{+0.051}_{-0.119}$	$0.140^{+0.150}_{-0.150}$	$0.957^{+0.132}_{-0.066}$	$0.977^{+0.050}_{-0.062}$	$1.572^{+0.296}_{-0.520}$
	+1%/-1%	+1%/-3%	+107%/-107%	+14%/-7%	+5%/-6%	+19%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 008409295-01 / KOI 3404.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-80 ± 23	$2.13^{+0.66}_{-0.58}$	563^{+20}_{-15}	4017^{+545}_{-373}	1245^{+1231}_{-558}
Alt.	-75 ± 25	$2.04^{+0.55}_{-0.63}$	563^{+23}_{-15}	4080^{+607}_{-433}	1330^{+1672}_{-645}

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 $A_{obs} \gg 1.0$

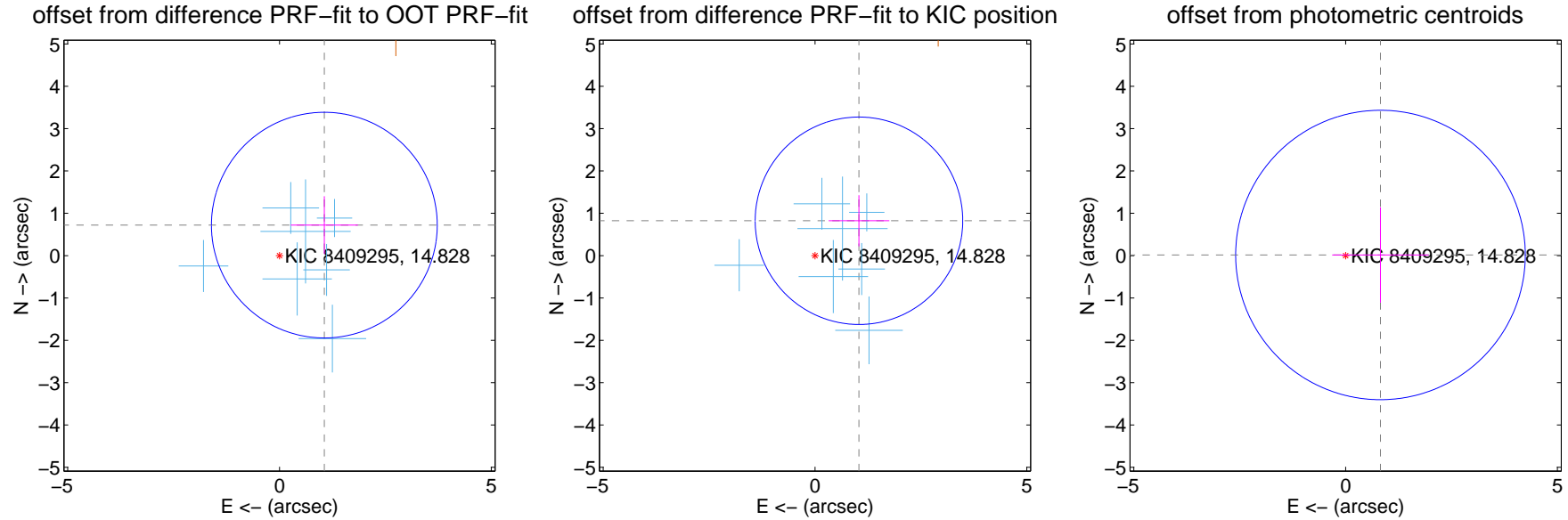
DV Centroid Data

Supplemental centroid analysis for 008409295-01. Kepler magnitude: 14.83. Transit SNR 11.82

There are 7 quarters with good PRF difference image offsets

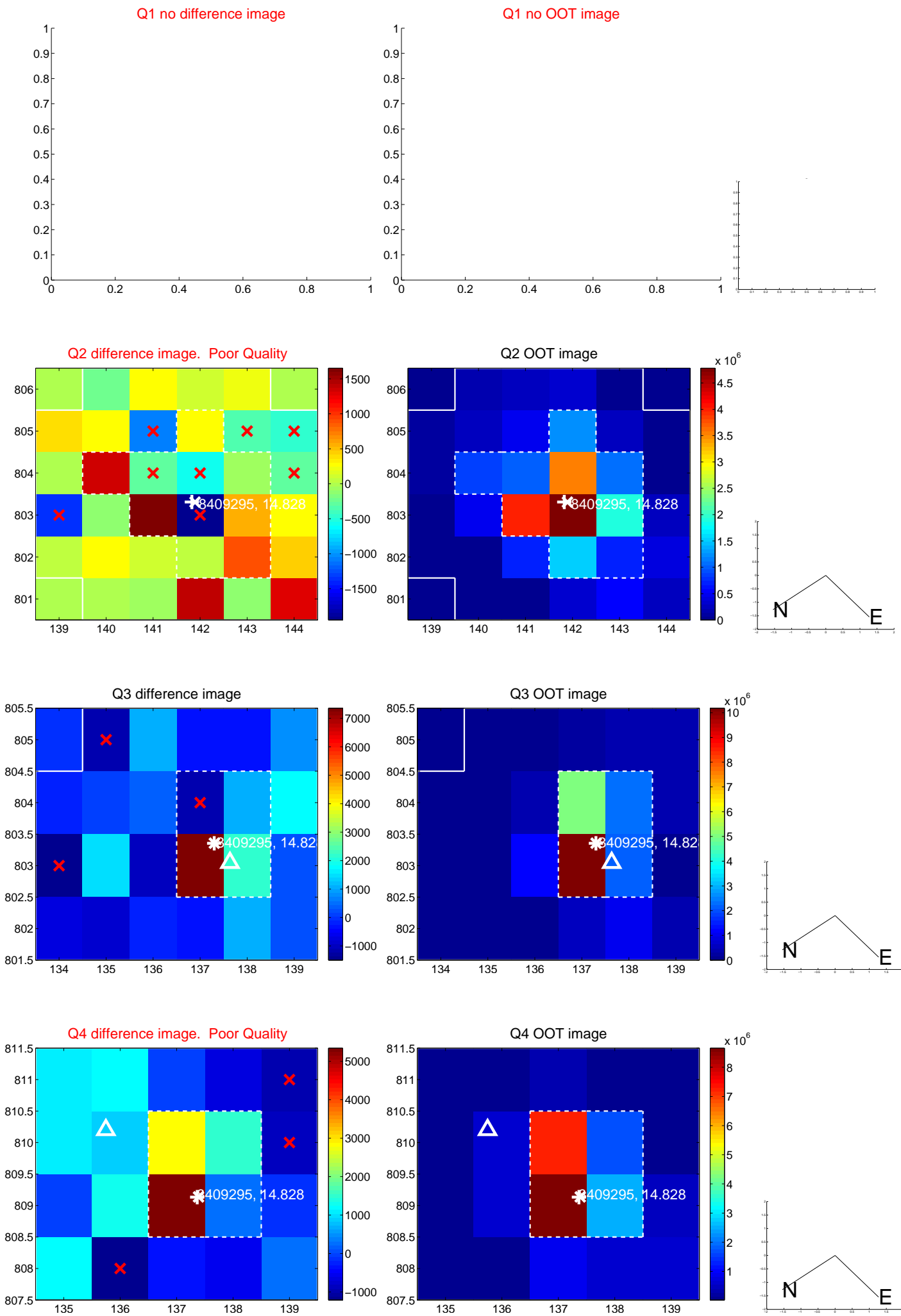
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.281 ± 0.889	1.44	-1.059 ± 0.792	0.721 ± 0.683
PRF-fit source offset from KIC position	1.325 ± 0.817	1.62	-1.038 ± 0.716	0.824 ± 0.603
photometric centroid source offset	0.82 ± 1.14	0.72	-0.82 ± 1.14	0.02 ± 1.12

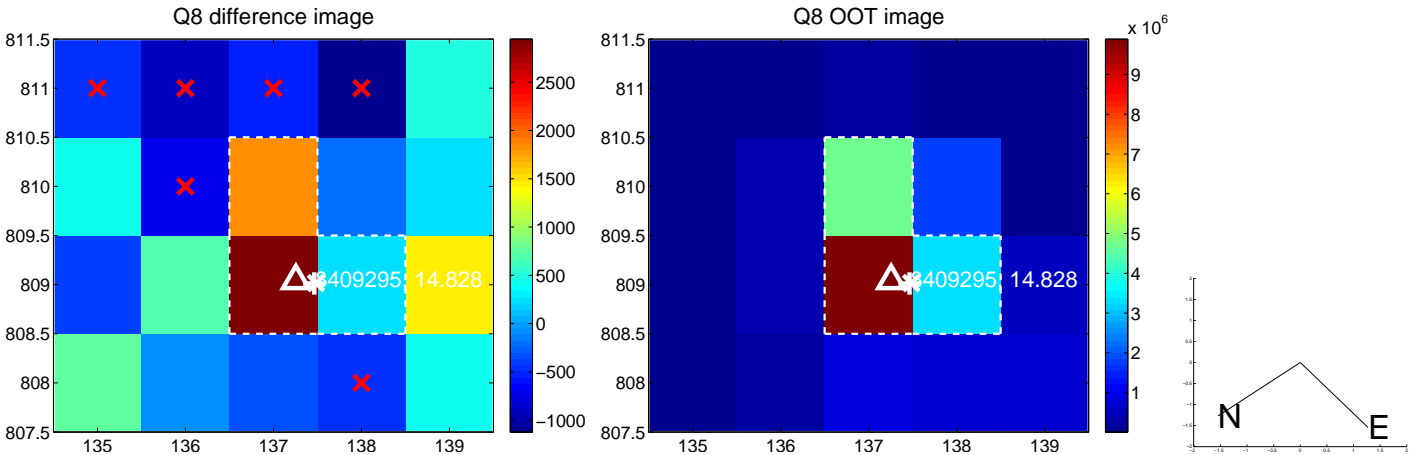
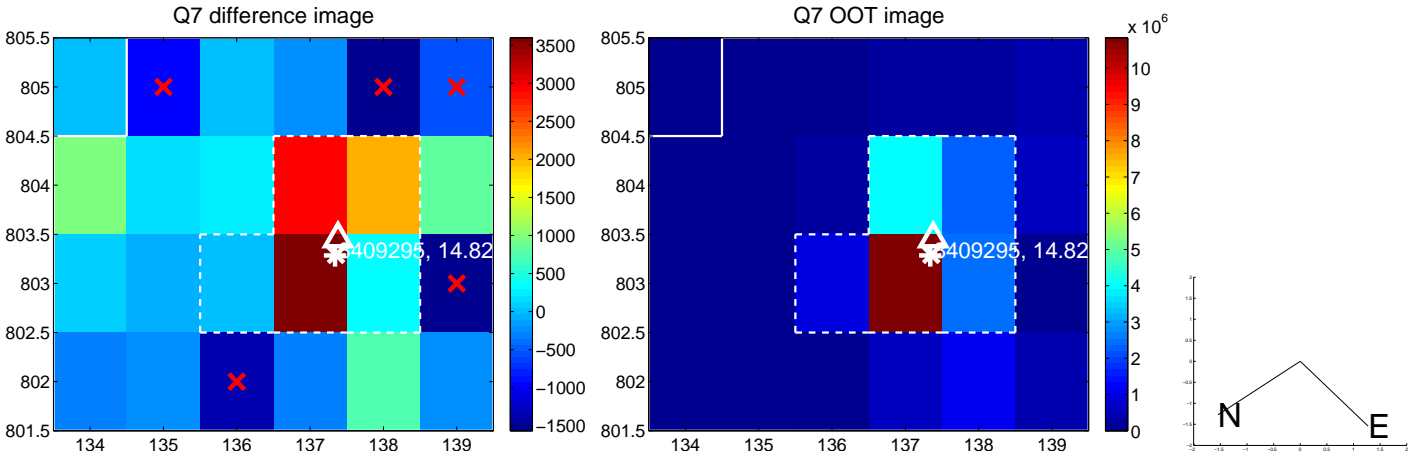
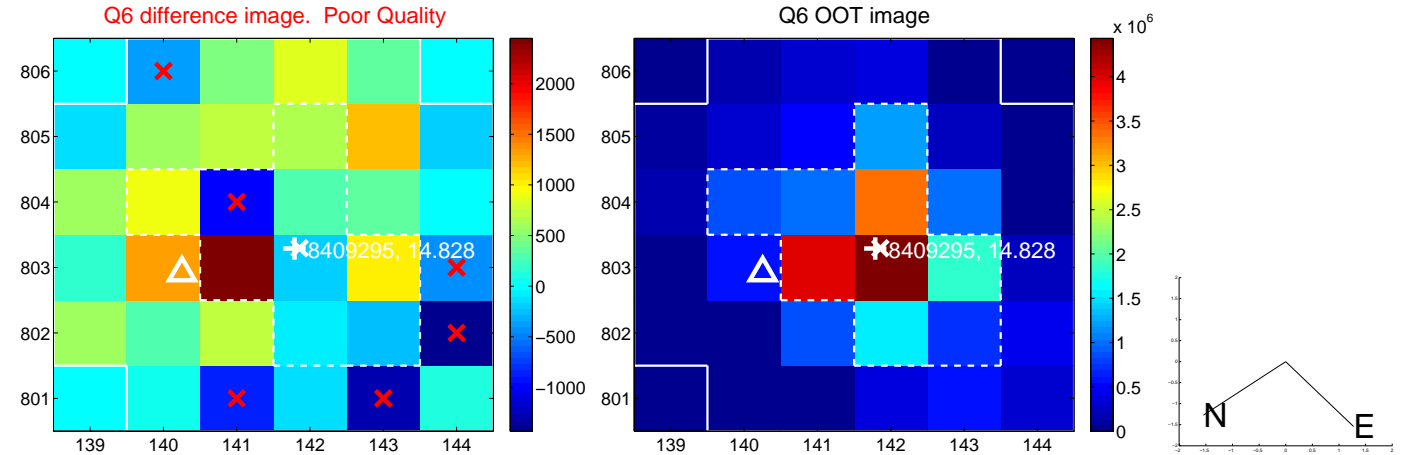
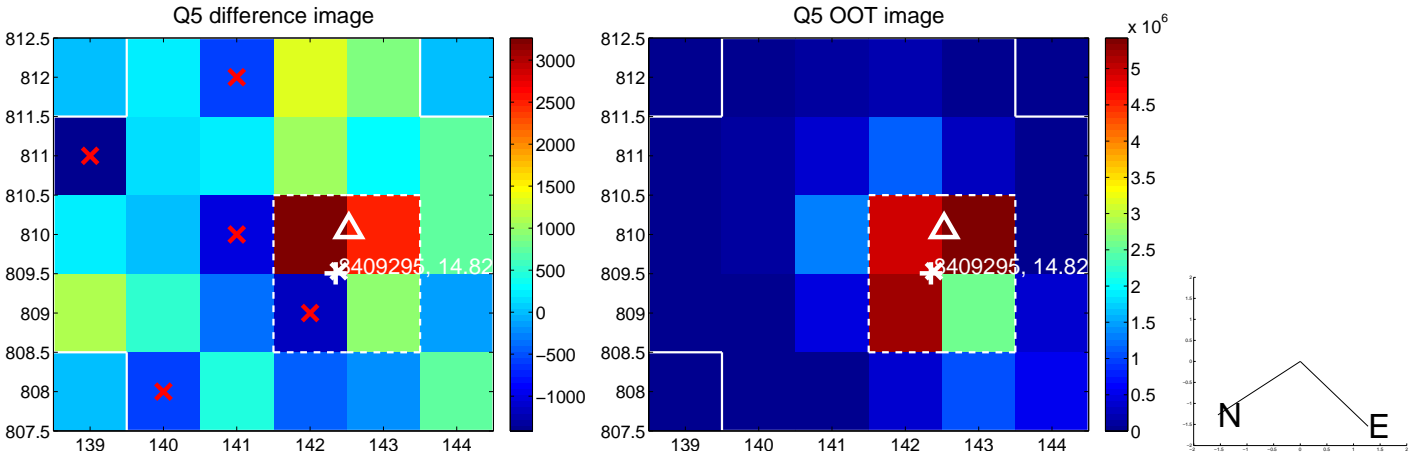


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

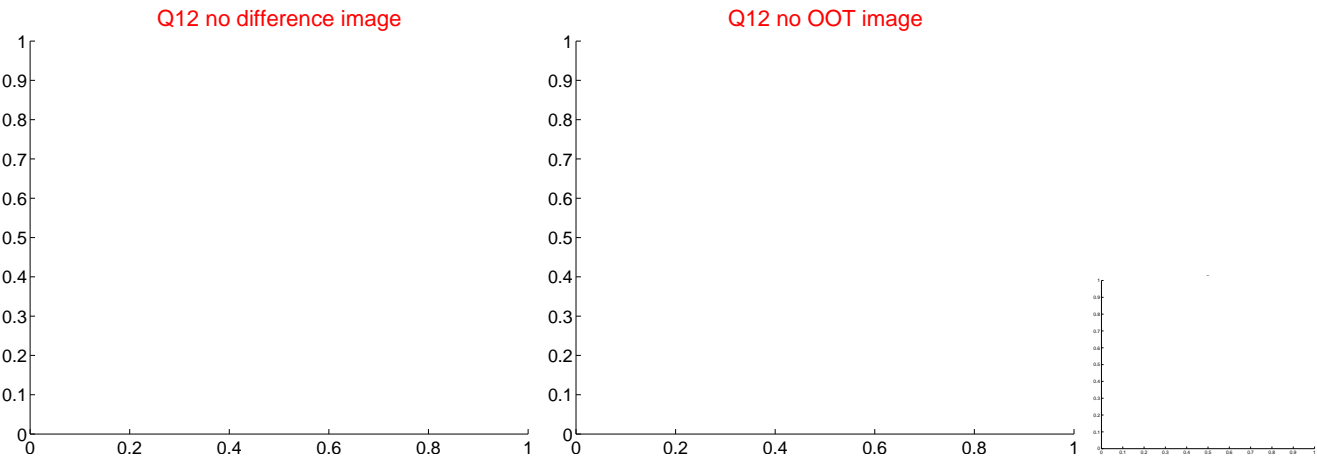
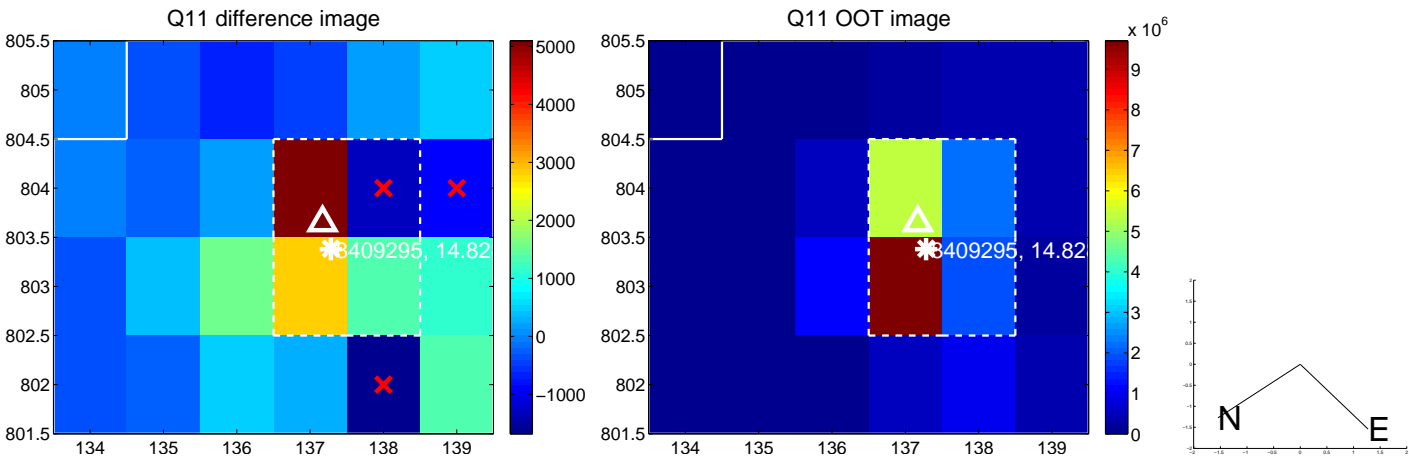
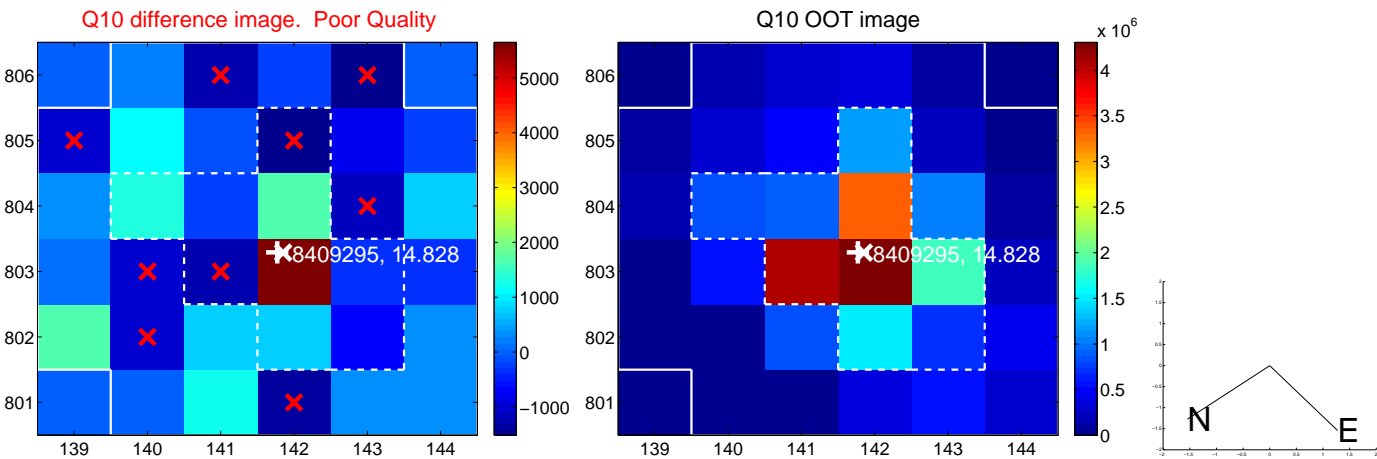
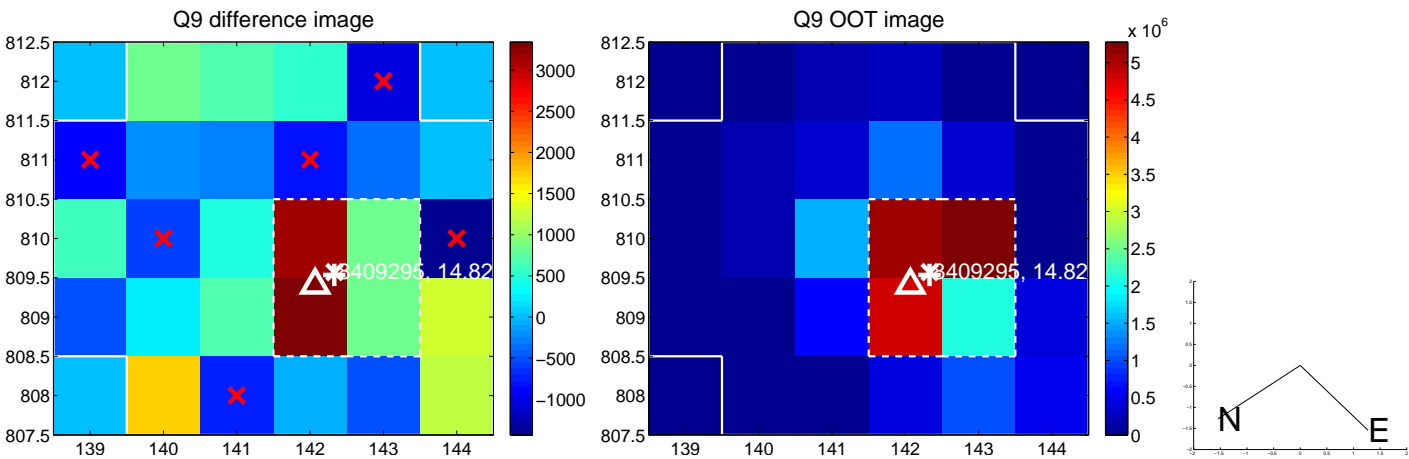
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



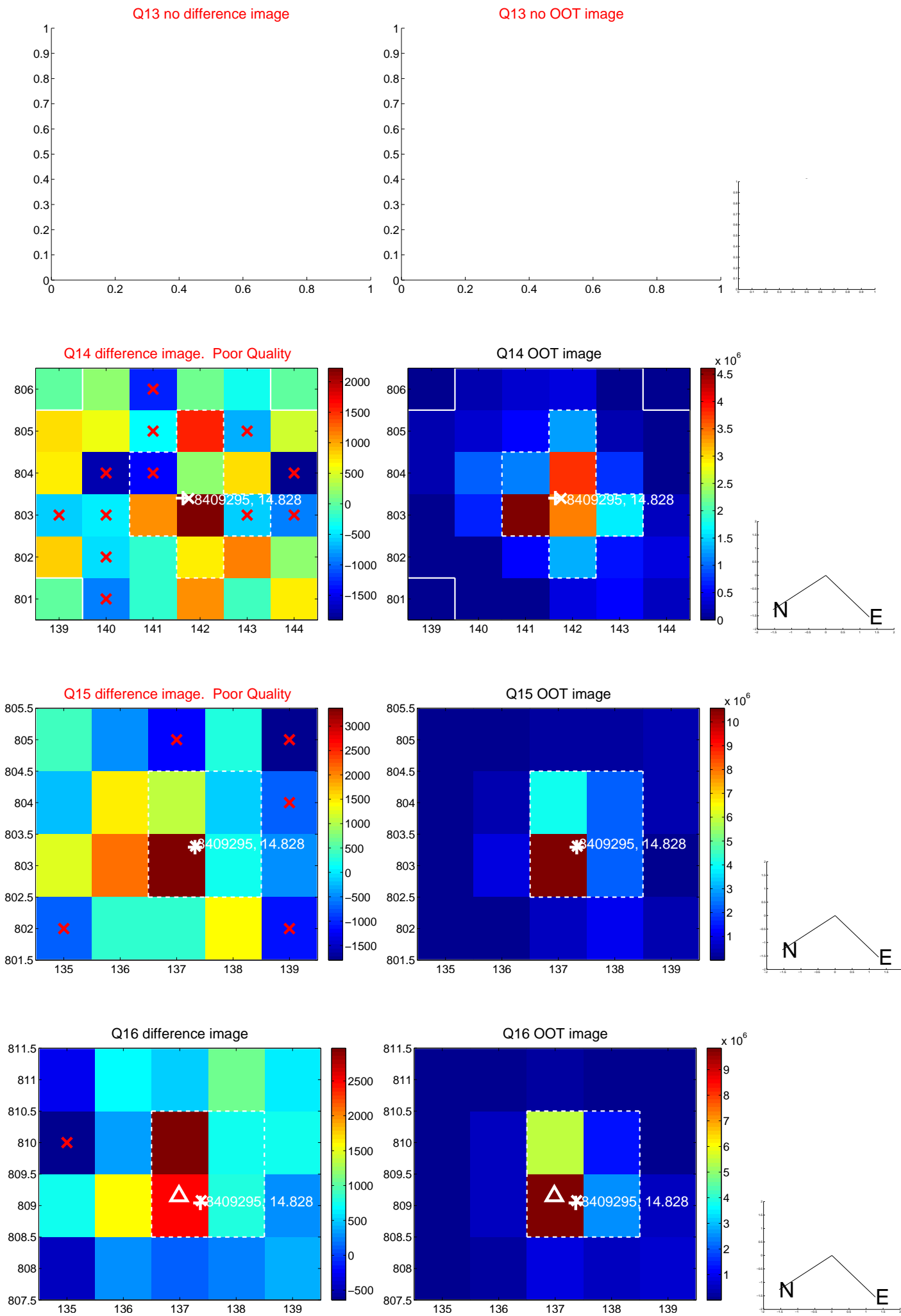
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



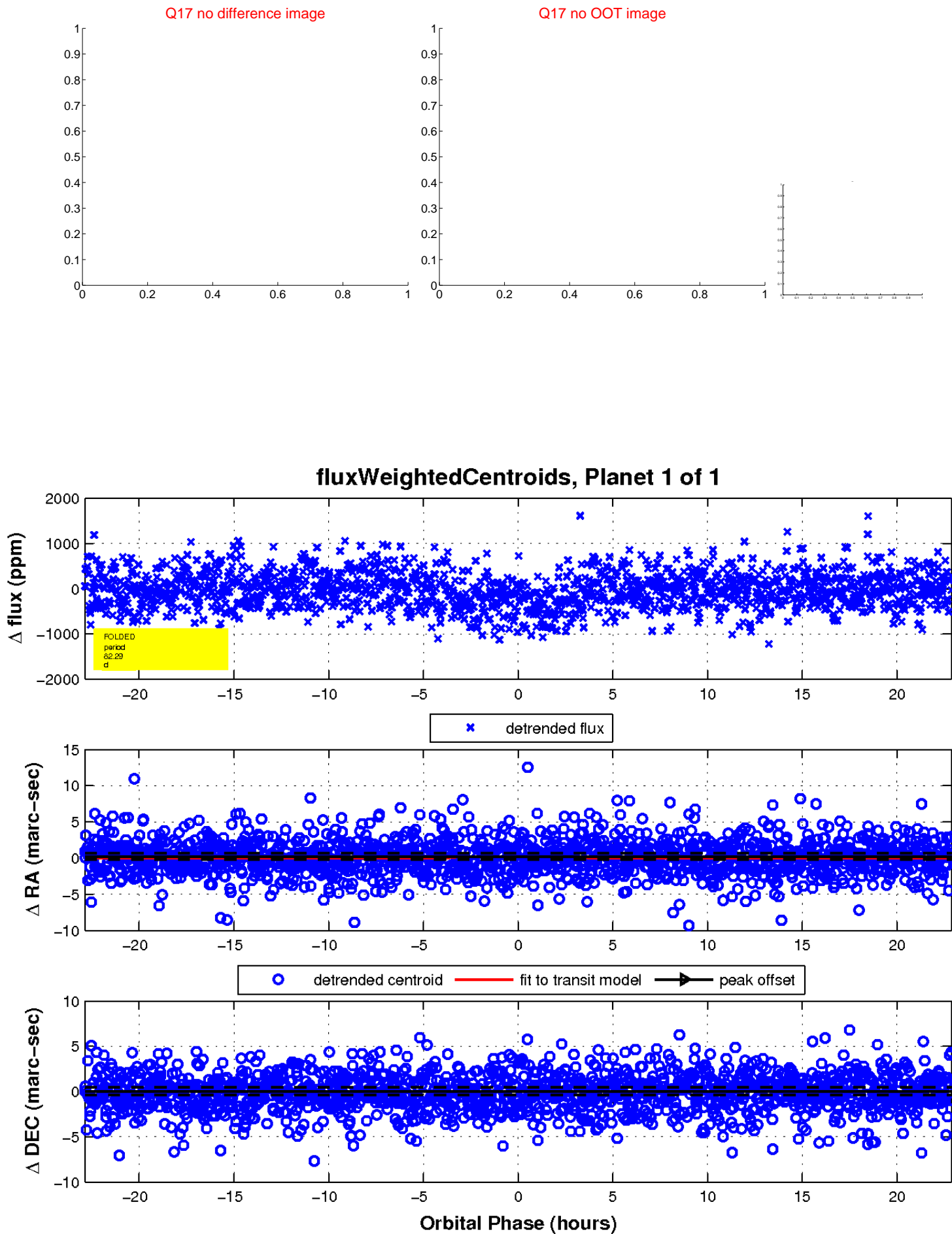
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UKIRT Image

Declination

