

KIC 009573685

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})
009573685-01	OBS	2057.01	5.945640	133.995493	409.9	2.325	26.8	29.2	0.56	3974	1.40	24.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009573685-01	OBS	PC	1.00	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.

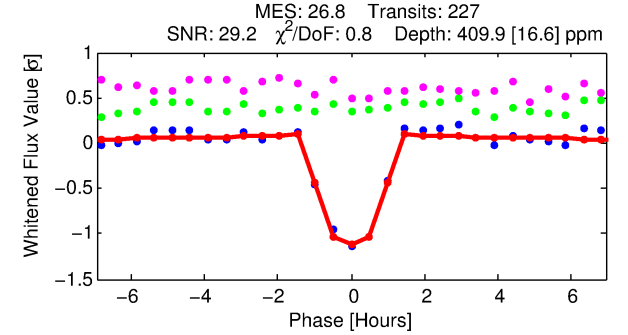
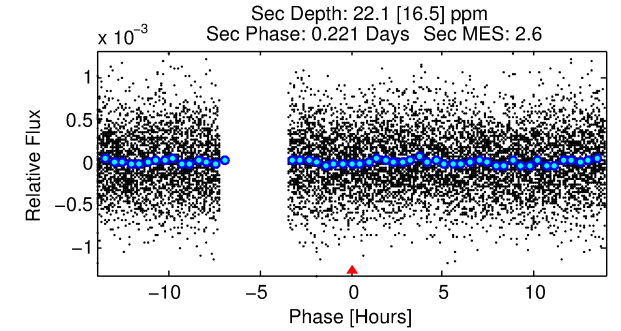
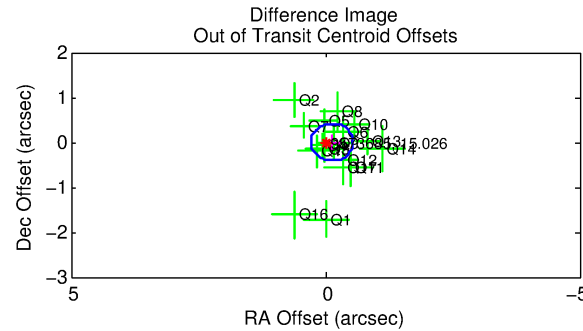
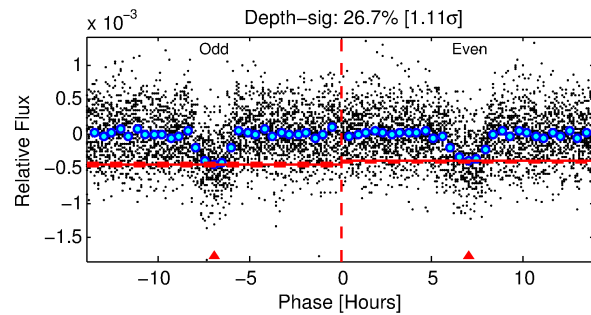
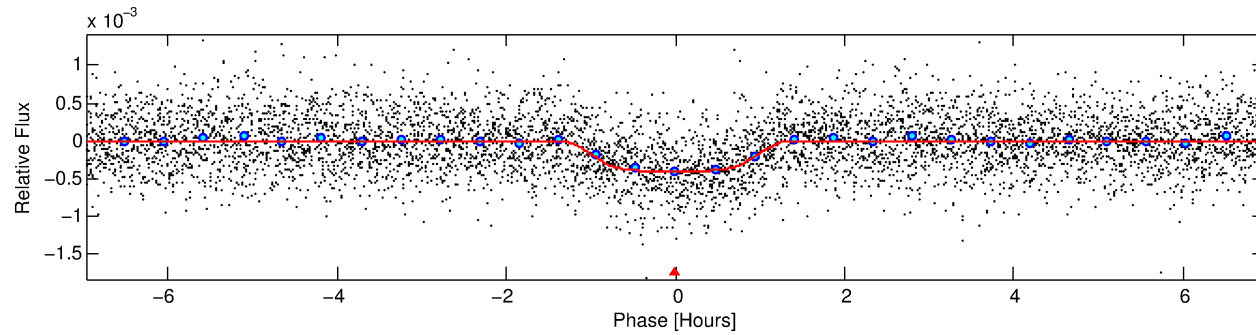
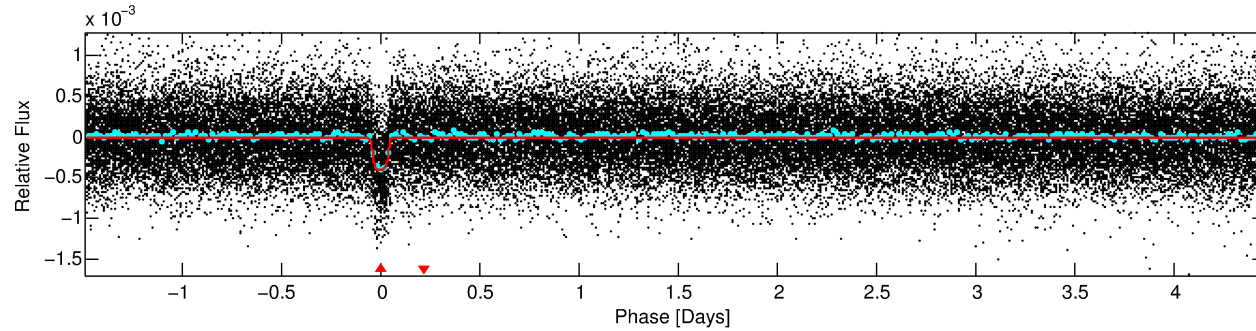
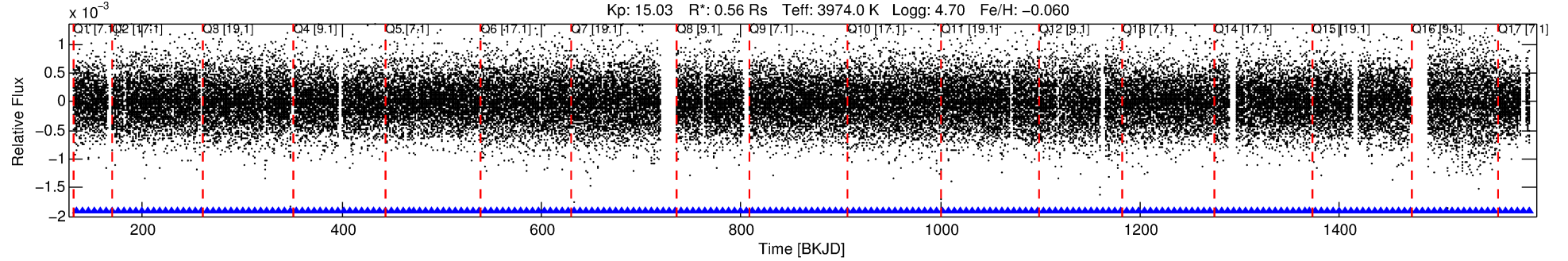
Ephemeris Match Information For 009573685-01

No Significant Match Found

DV One-Page Summary

KIC: 9573685 Candidate: 1 of 1 Period: 5.946 d

KOI: K02057.01 Corr: 0.967



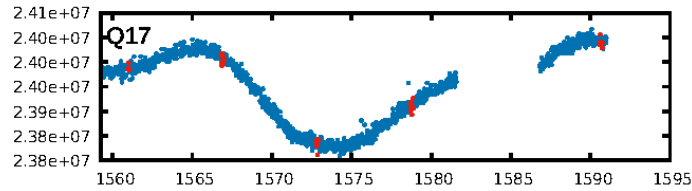
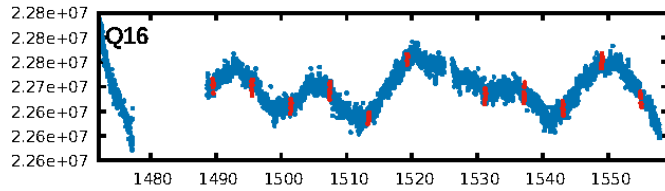
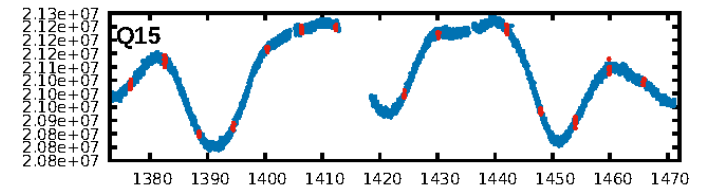
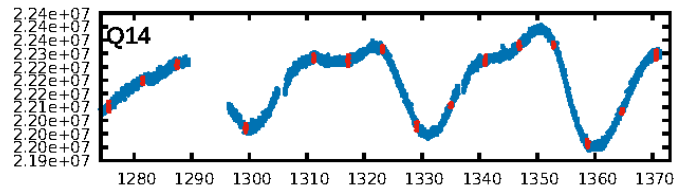
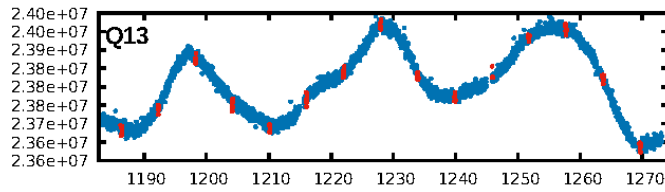
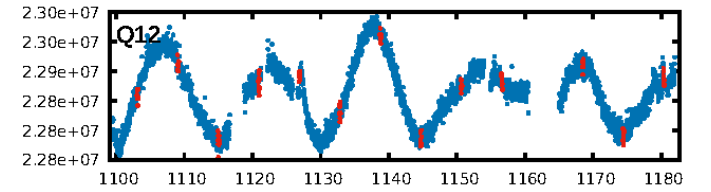
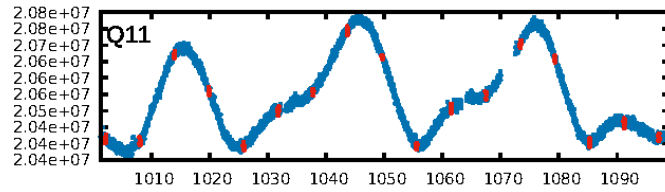
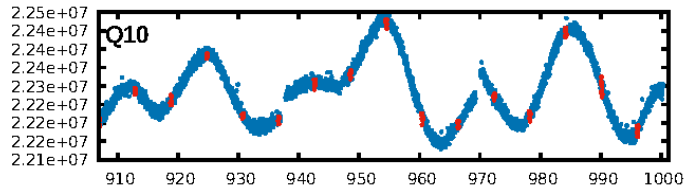
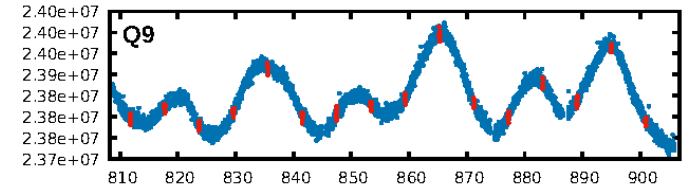
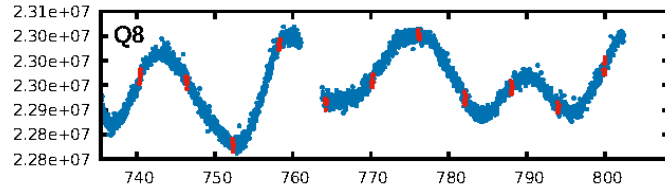
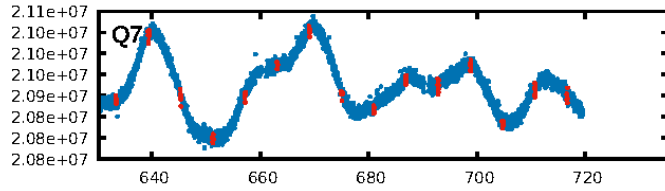
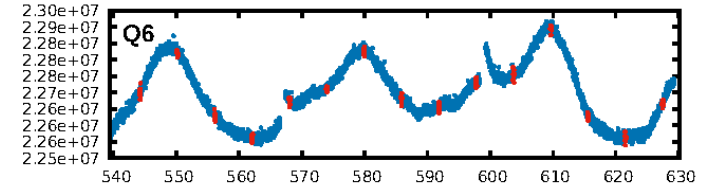
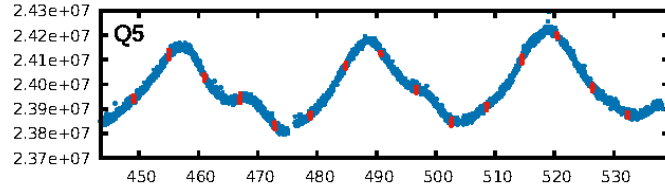
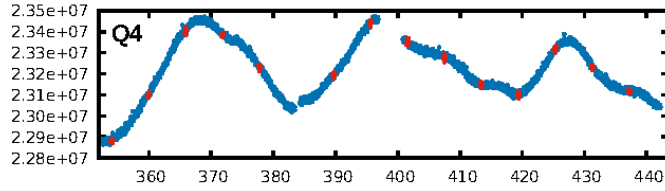
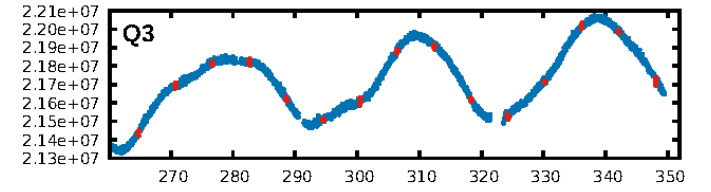
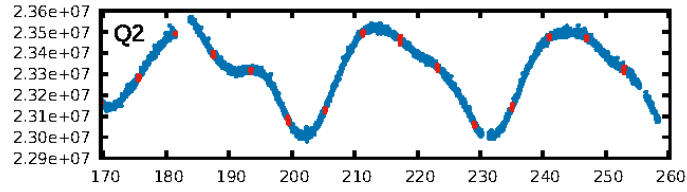
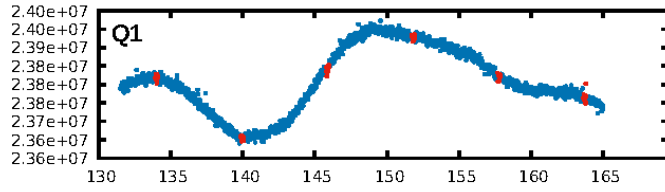
DV Fit Results:

Period = 5.94564 [0.00001] d
Epoch = 133.9955 [0.0016] BKJD
Rp/R* = 0.0227 [0.0033]
a/R* = 9.02 [5.45]
b = 0.91 [0.11]
Seff = 24.72 [2.43]
Teq = 569 [14] K
Rp = 1.40 [0.22] Re
a = 0.0536 [0.0024] AU
Ag = 17.93 [14.37] [1.18 σ]
Teffp = 1809 [363] K [3.41 σ]

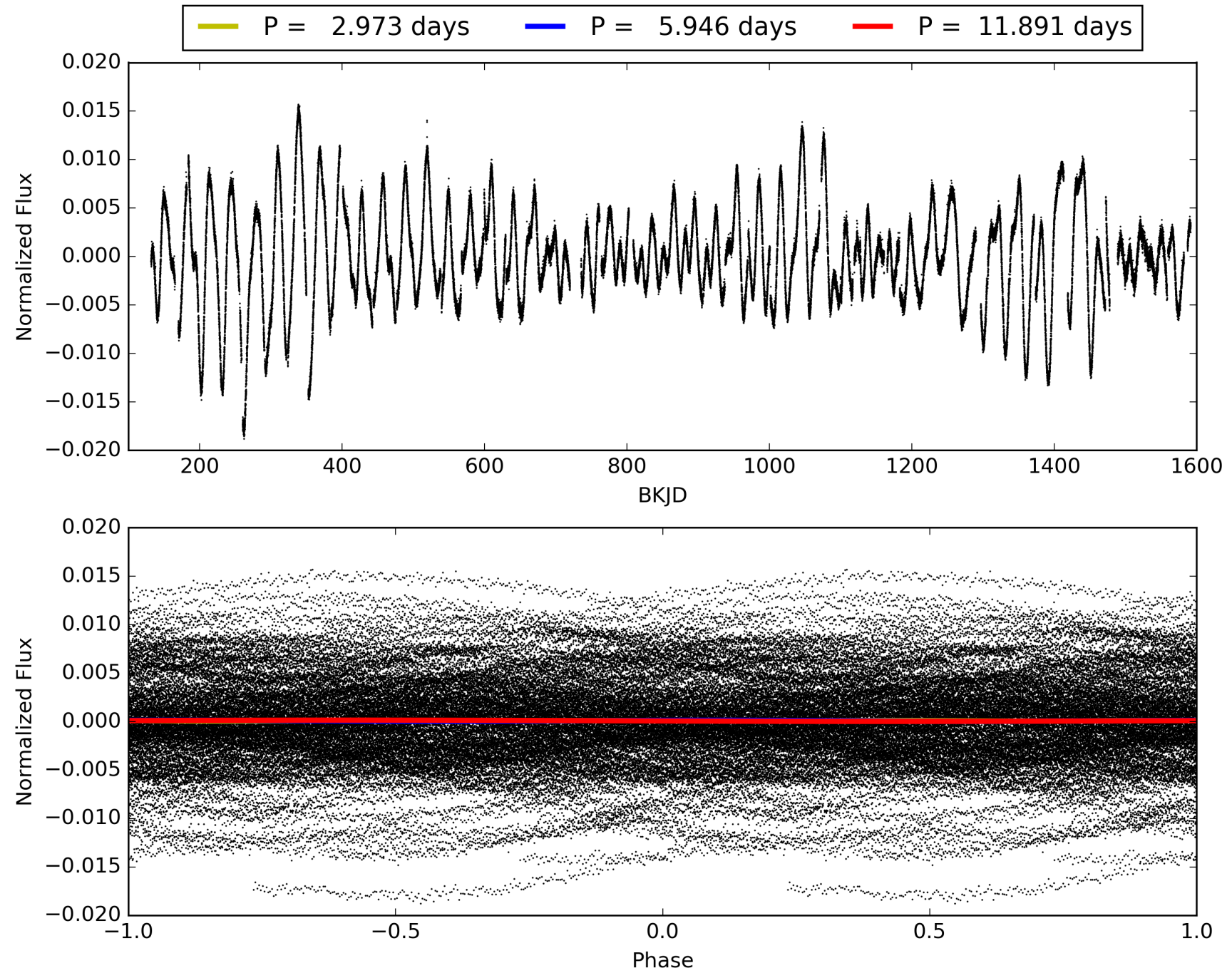
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.04e-152
RollingBand-fgt: 1.00 [216/216]
GhostDiagnostic-chr: 10.4
Centroid-sig: 10.7%
Centroid-so: 0.928 arcsec [2.24 σ]
OotOffset-rm: 0.128 arcsec [0.93 σ]
KicOffset-rm: 0.420 arcsec [2.31 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009573685-01, PDC Light Curves

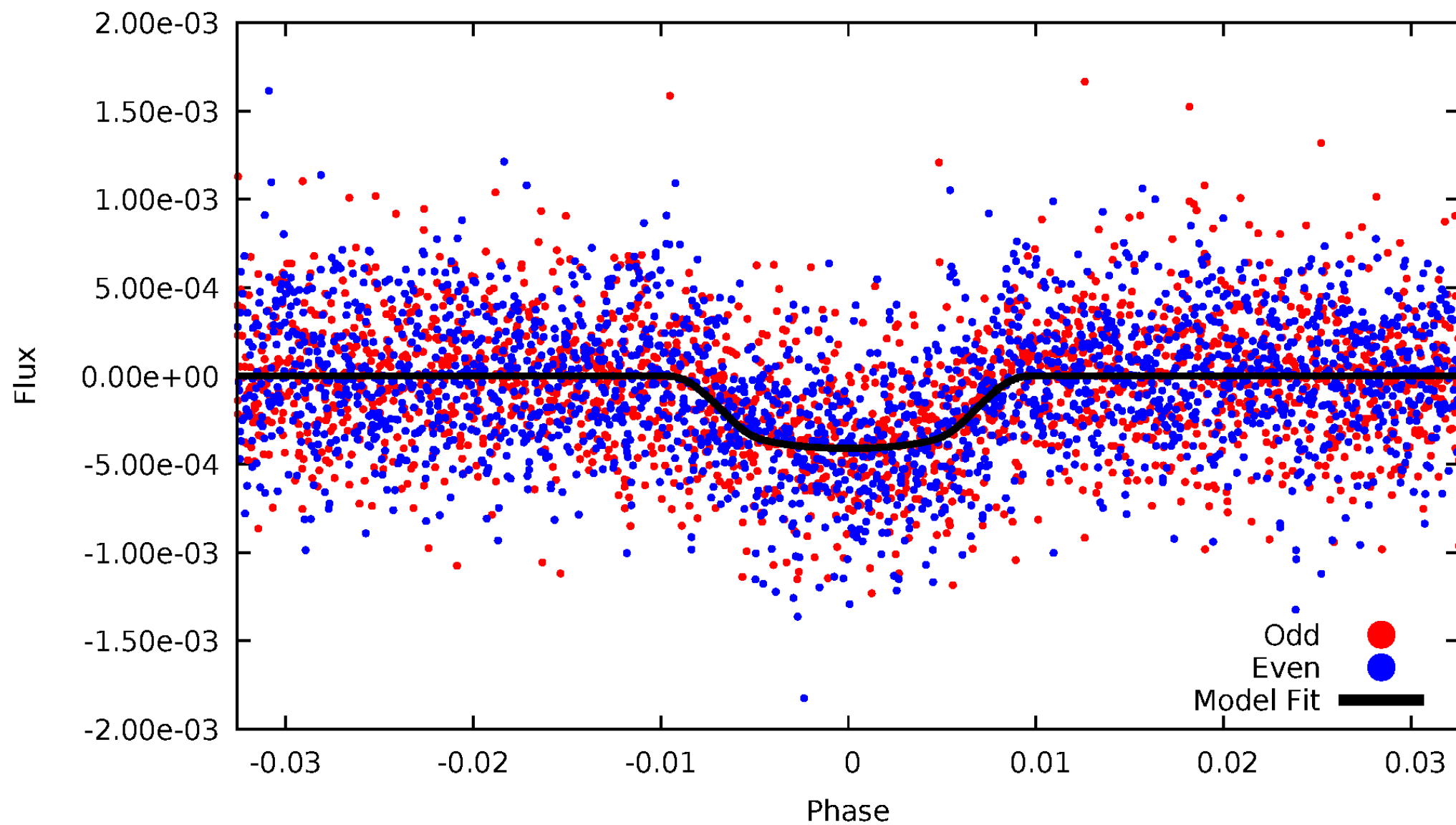


TCE 009573685-01



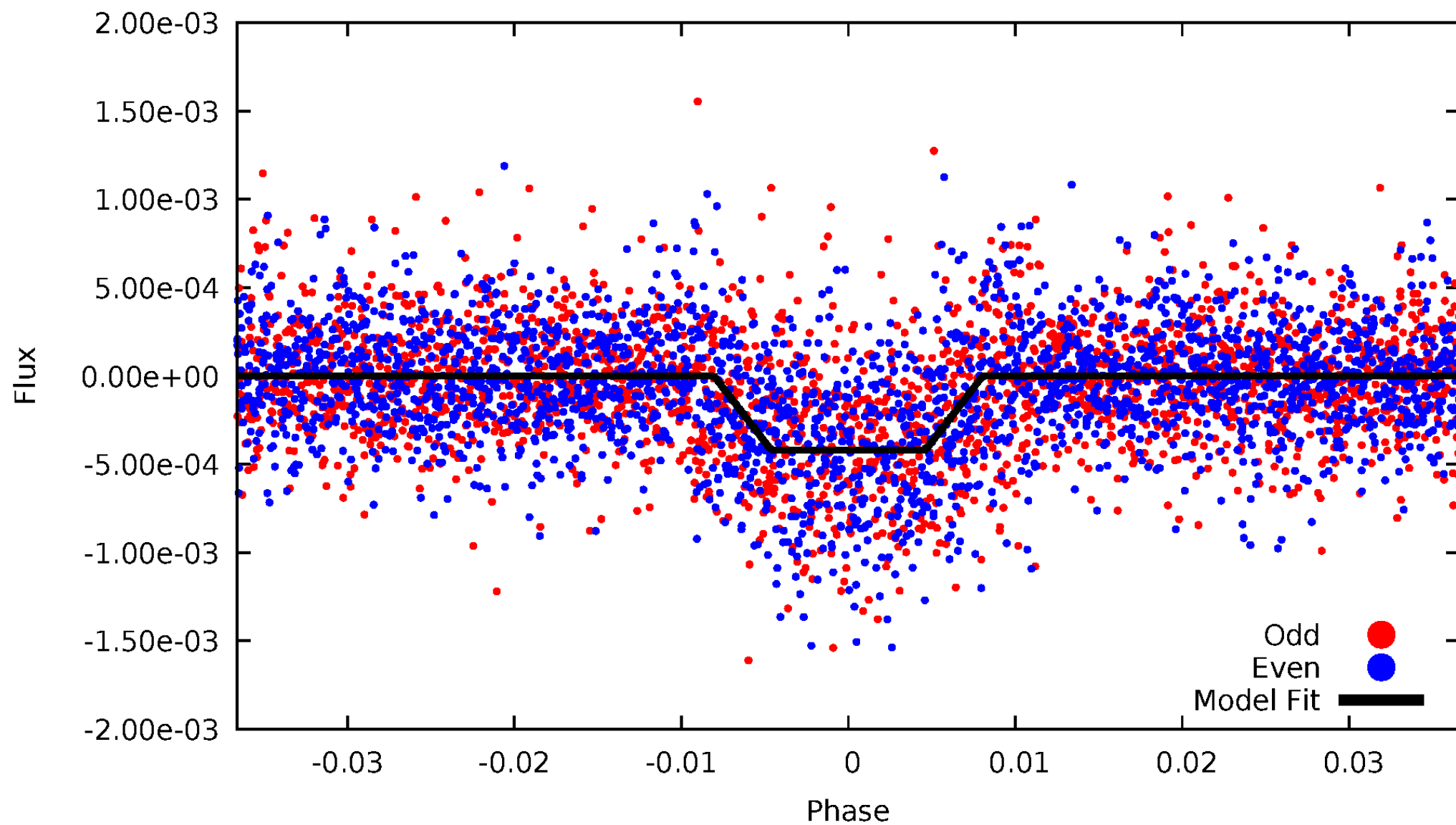
DV Odd/Even

TCE 009573685-01



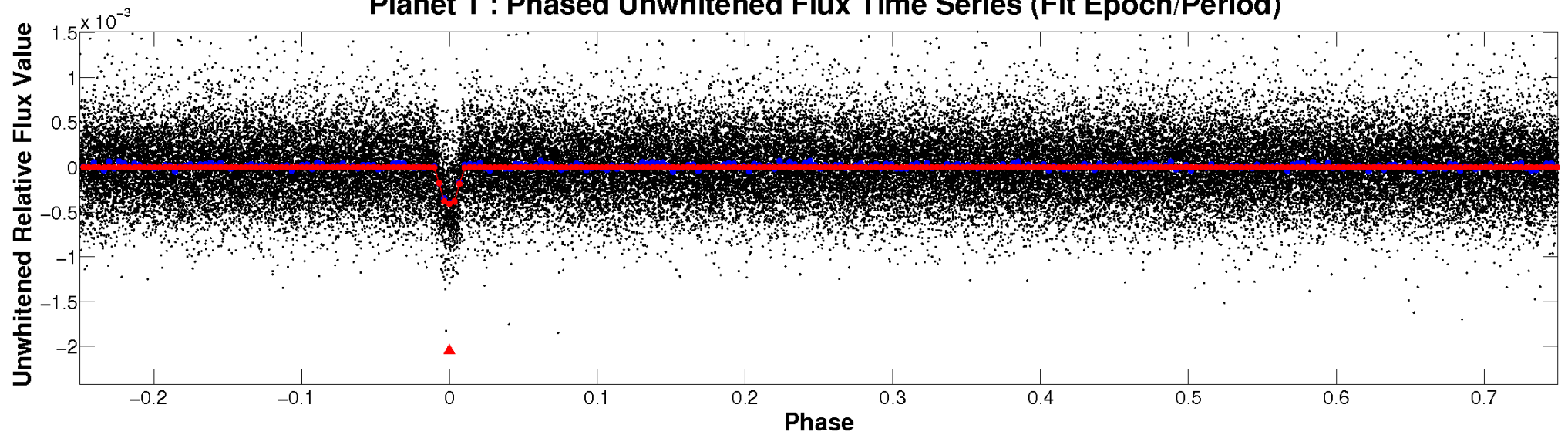
ALT Odd/Even

TCE 009573685-01

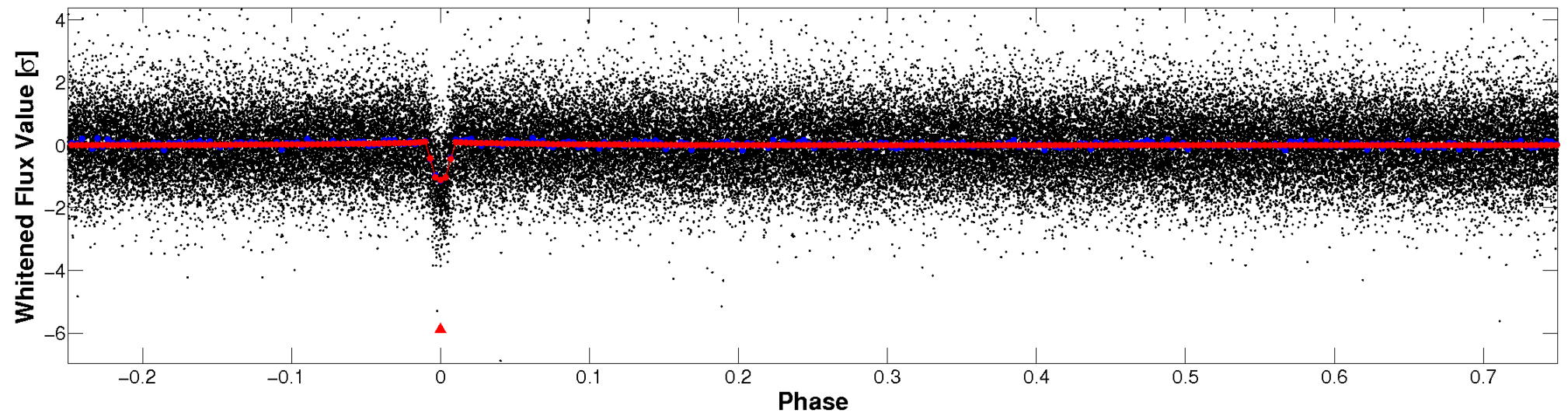


Non-Whitened Vs. Whitened Light Curve

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

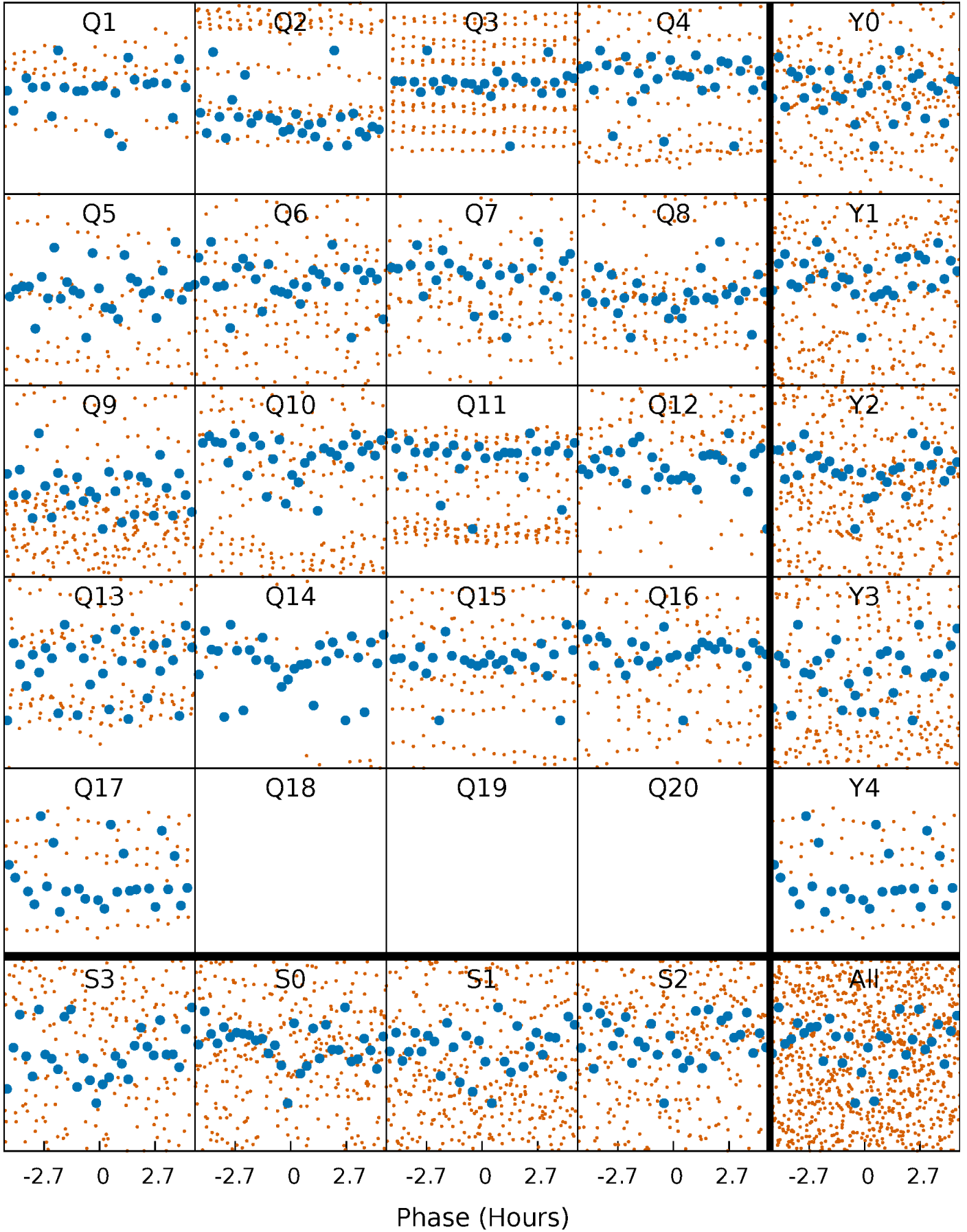


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



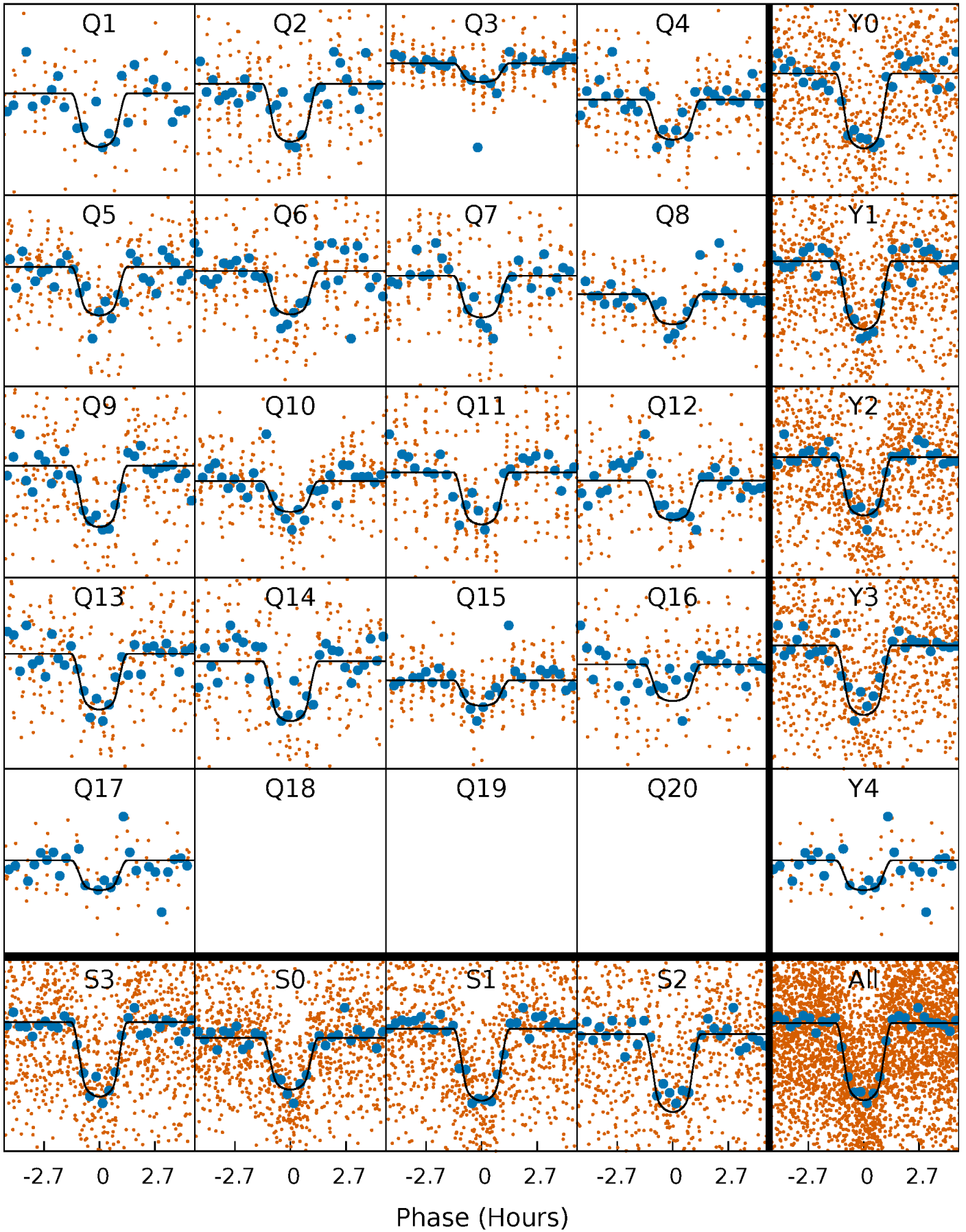
PDC Quarter-Phased Transit Curves

TCE 009573685-01 P= 5.945640 Days $T_0=133.995493$ (BKJD)



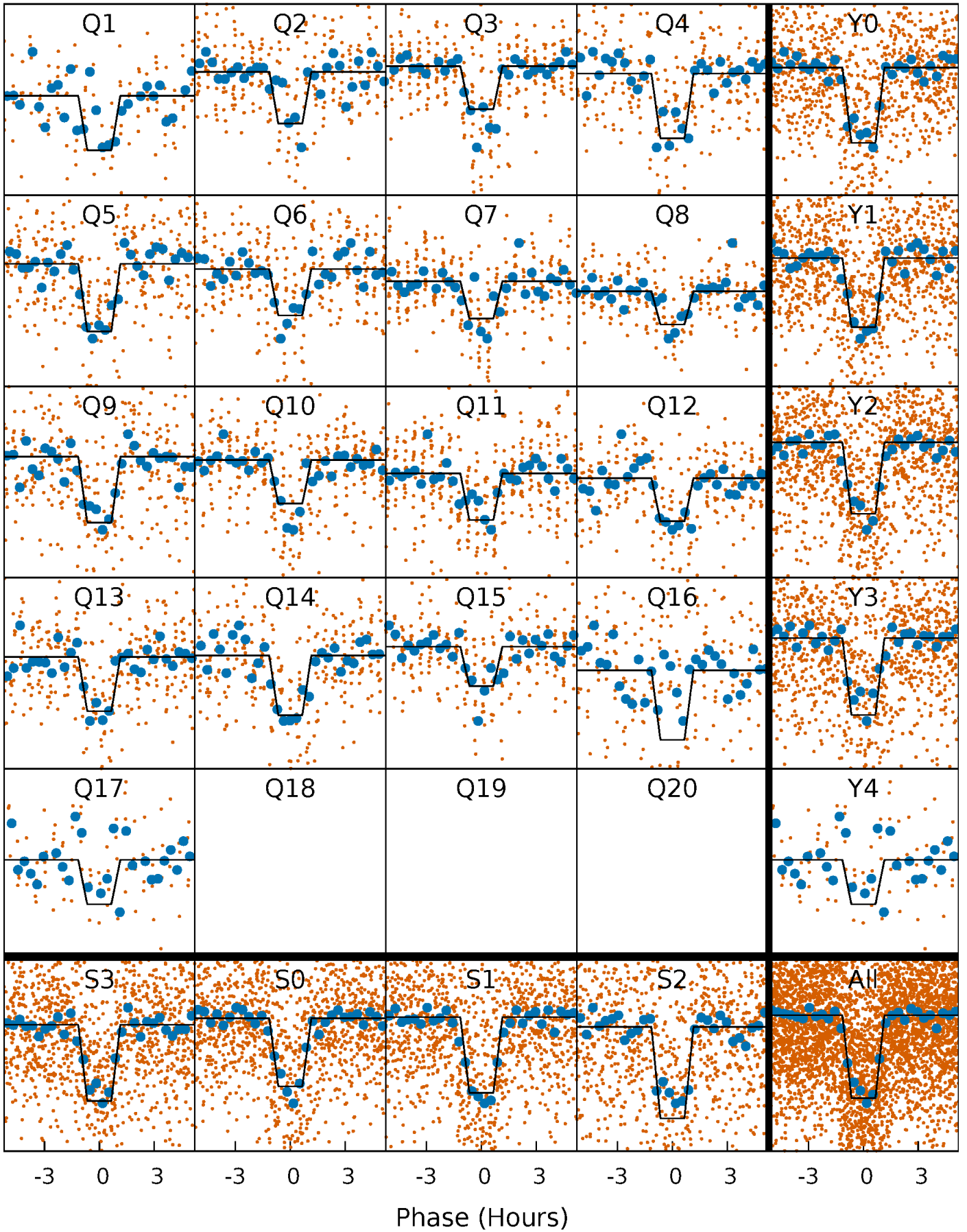
DV Quarter-Phased Transit Curves

TCE 009573685-01 P= 5.945640 Days $T_0=133.995493$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

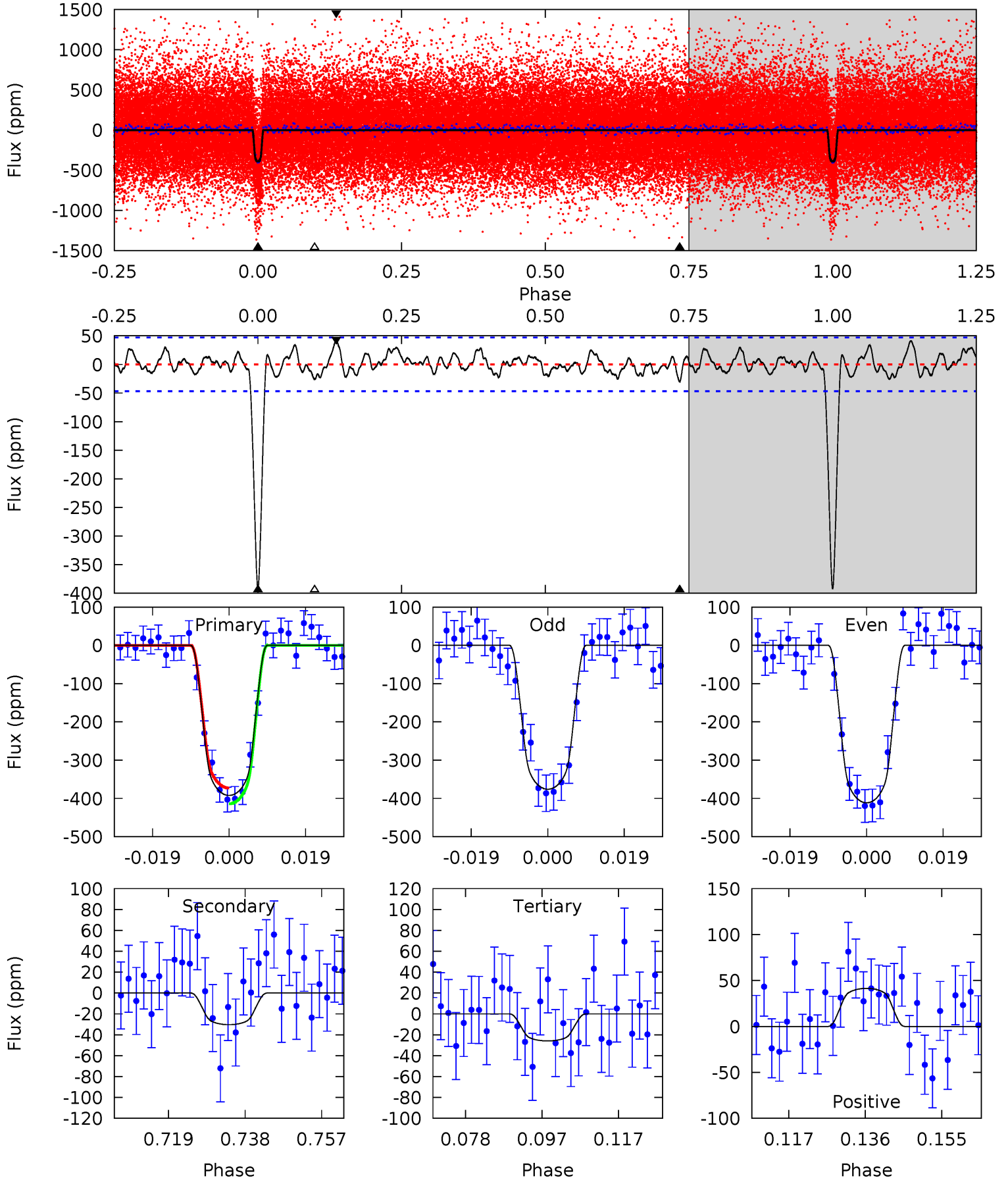
TCE 009573685-01 P= 5.945608 Days $T_0=133.999744$ (BKJD)



DV Model-Shift Uniqueness Test

009573685-01, P = 5.945640 Days, E = 128.049853 Days

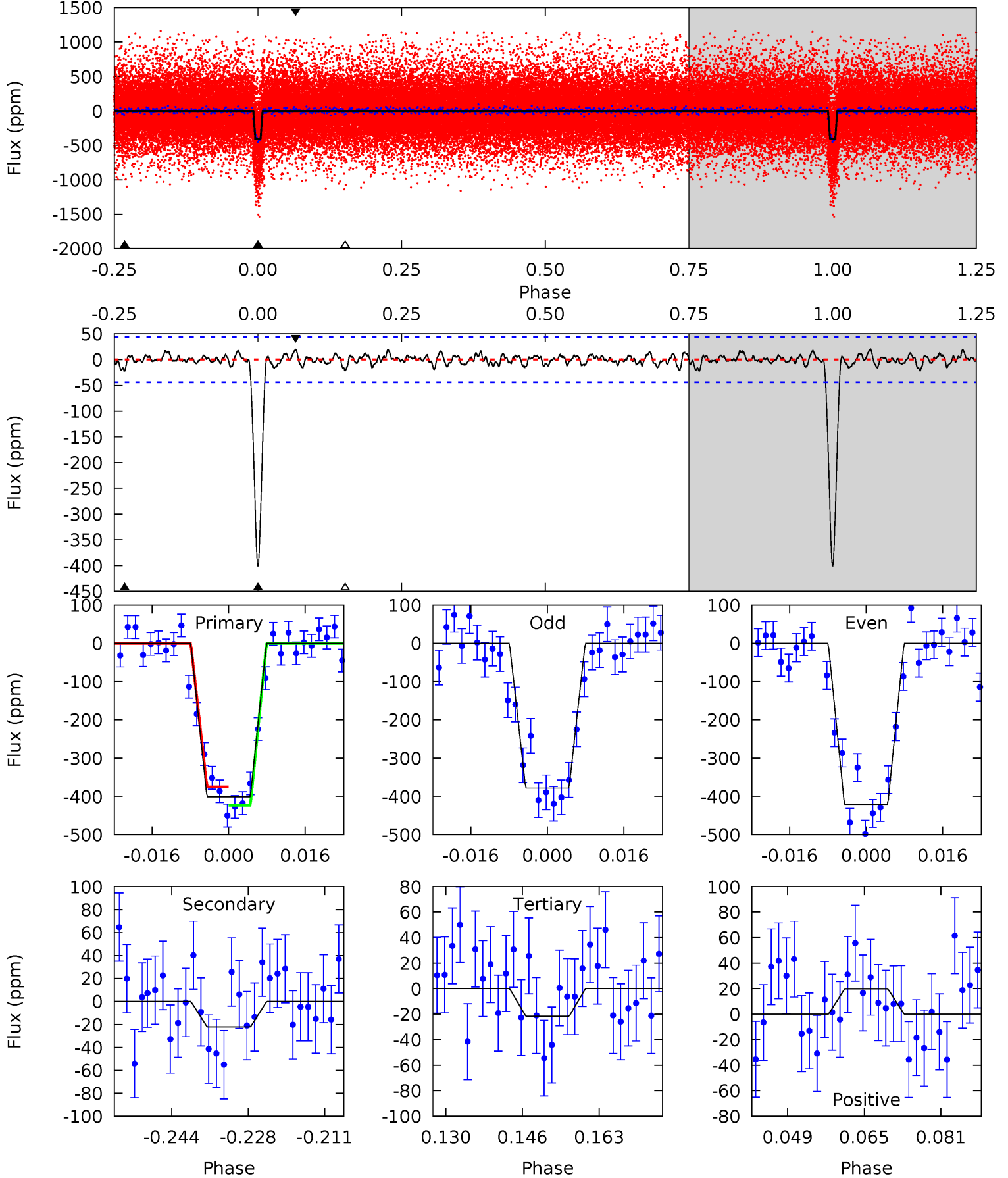
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.9	3.16	2.70	4.32	4.90	2.34	1.37	38.2	36.6	0.46	-1.16	1.85	0.95	0.10	2.15



Alt Model-Shift Uniqueness Test

009573685-01, P = 5.945608 Days, E = 128.054136 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.8	2.47	2.41	2.21	4.93	2.40	0.83	42.4	42.6	0.07	0.26	2.39	0.98	0.05	2.70



Stellar Parameters For KIC 009573685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3974^{+79}_{-79}	$4.700^{+0.027}_{-0.027}$	$-0.060^{+0.150}_{-0.150}$	$0.564^{+0.030}_{-0.034}$	$0.581^{+0.032}_{-0.035}$	$4.569^{+0.618}_{-0.493}$
	+2%/-2%	+1%/-1%	+250%/-250%	+5%/-6%	+6%/-6%	+14%/-11%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 009573685-01 / KOI 2057.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-30 ± 10	$1.40^{+0.20}_{-0.21}$	795^{+17}_{-19}	2602^{+140}_{-155}	24^{+12}_{-9}
Alt.	-22 ± 9	$1.26^{+0.20}_{-0.22}$	794^{+18}_{-17}	2580^{+169}_{-190}	22^{+15}_{-10}

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

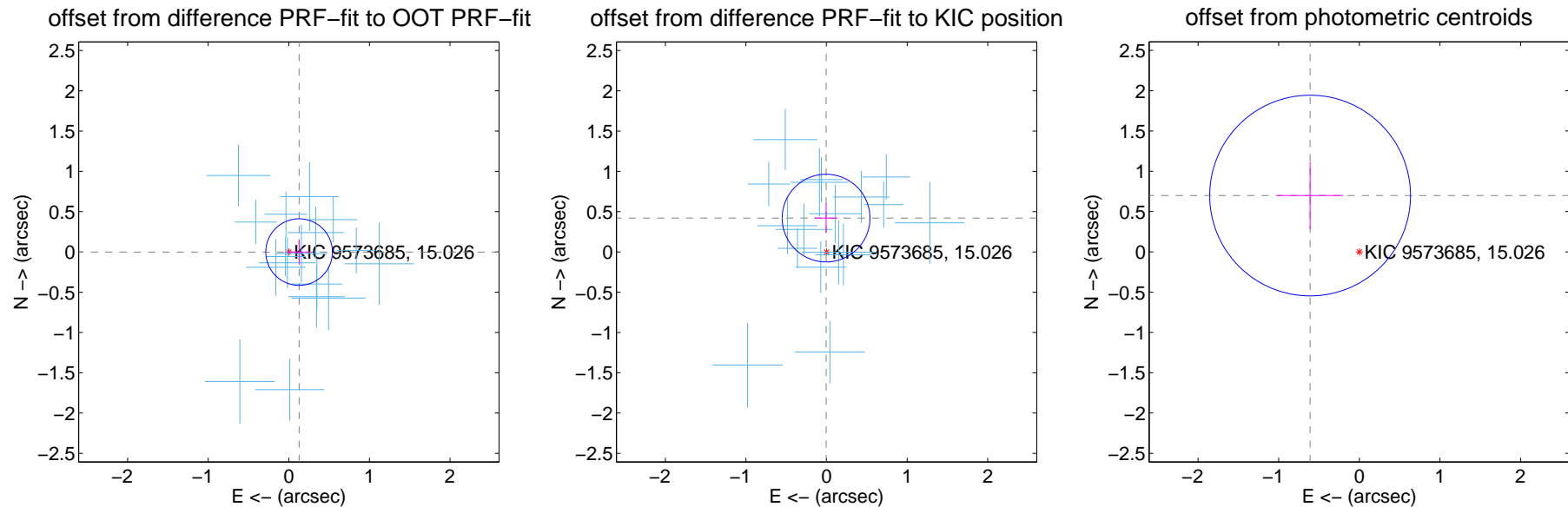
DV Centroid Data

Supplemental centroid analysis for 009573685-01. Kepler magnitude: 15.03. Transit SNR 29.19

There are 17 quarters with good PRF difference image offsets

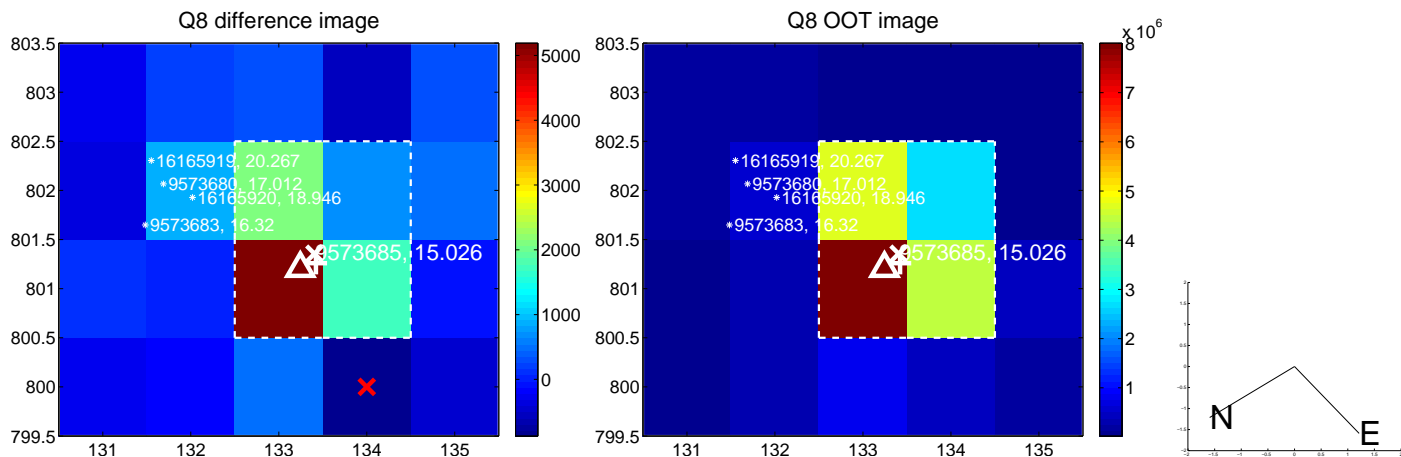
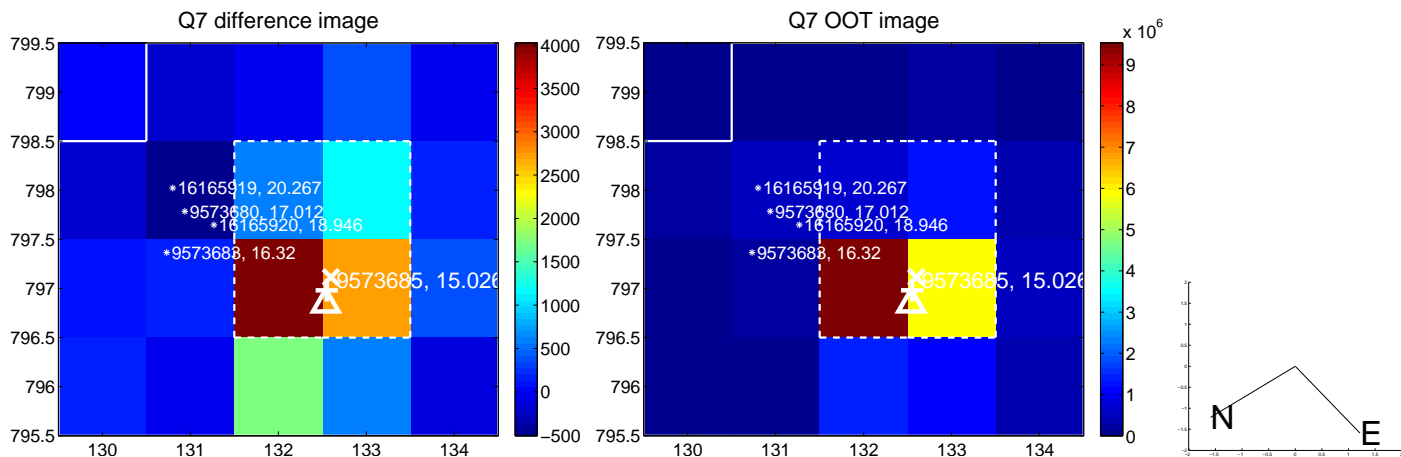
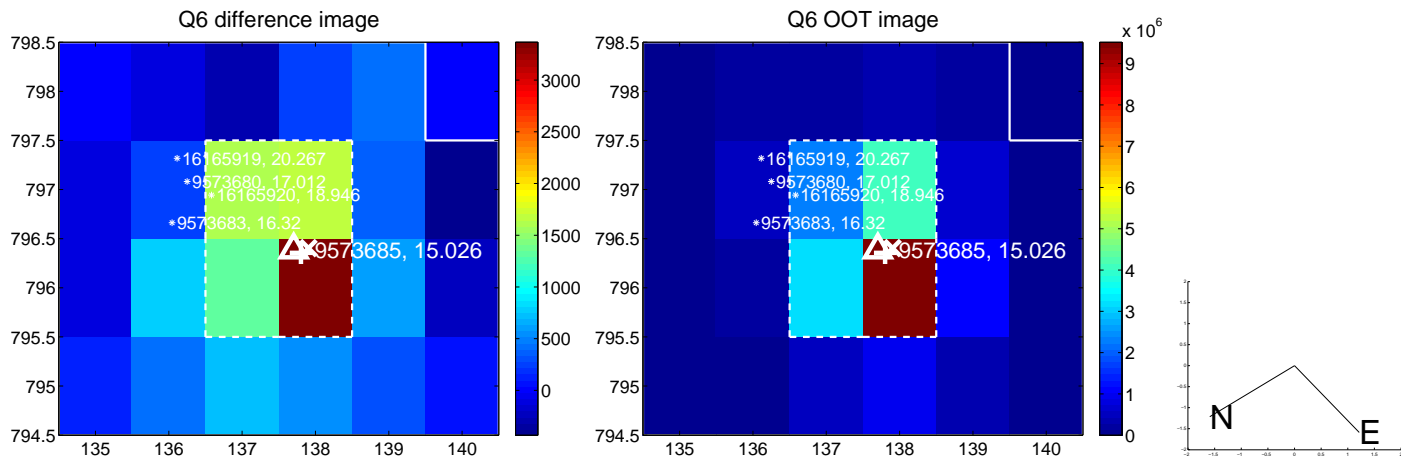
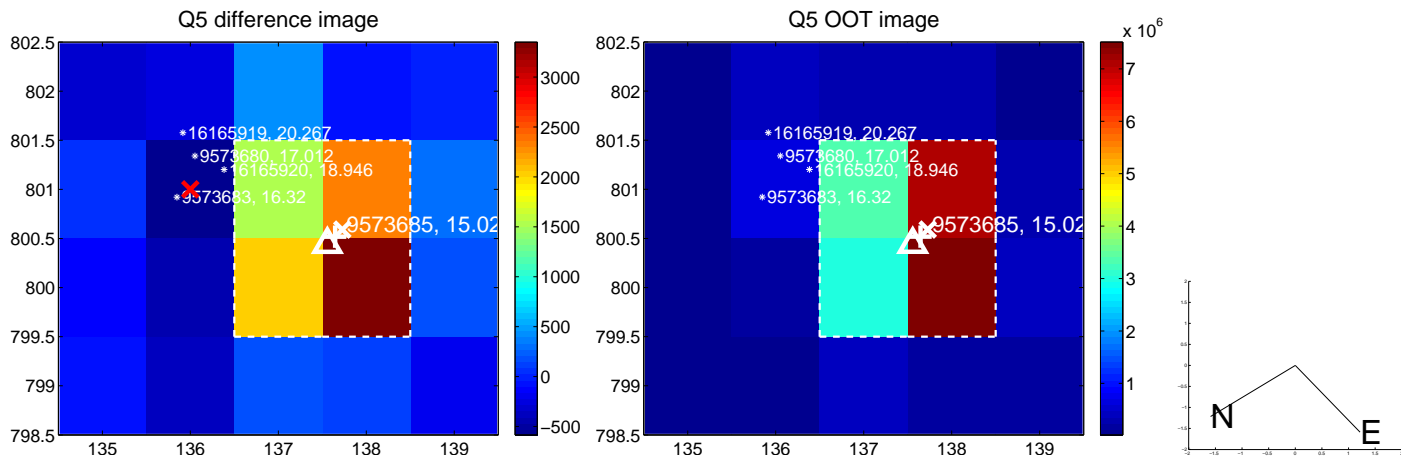
The direct PRF centroid is offset from the target star catalog position by about 0.54 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.128 ± 0.138	0.93	-0.128 ± 0.138	-0.002 ± 0.158
PRF-fit source offset from KIC position	0.420 ± 0.181	2.31	0.006 ± 0.145	0.420 ± 0.182
photometric centroid source offset	0.93 ± 0.42	2.24	0.61 ± 0.41	0.70 ± 0.42

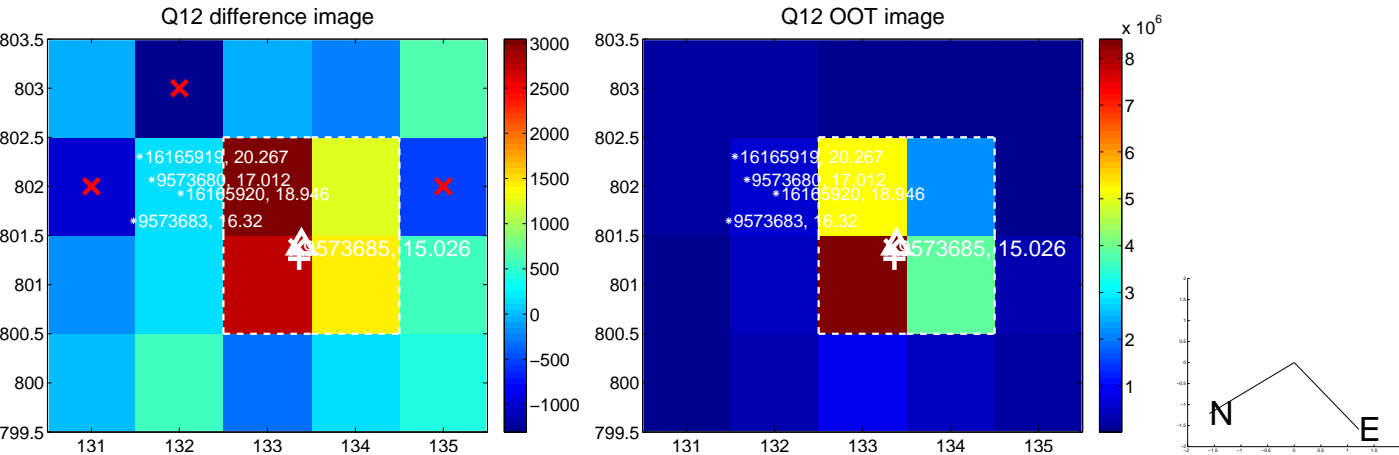
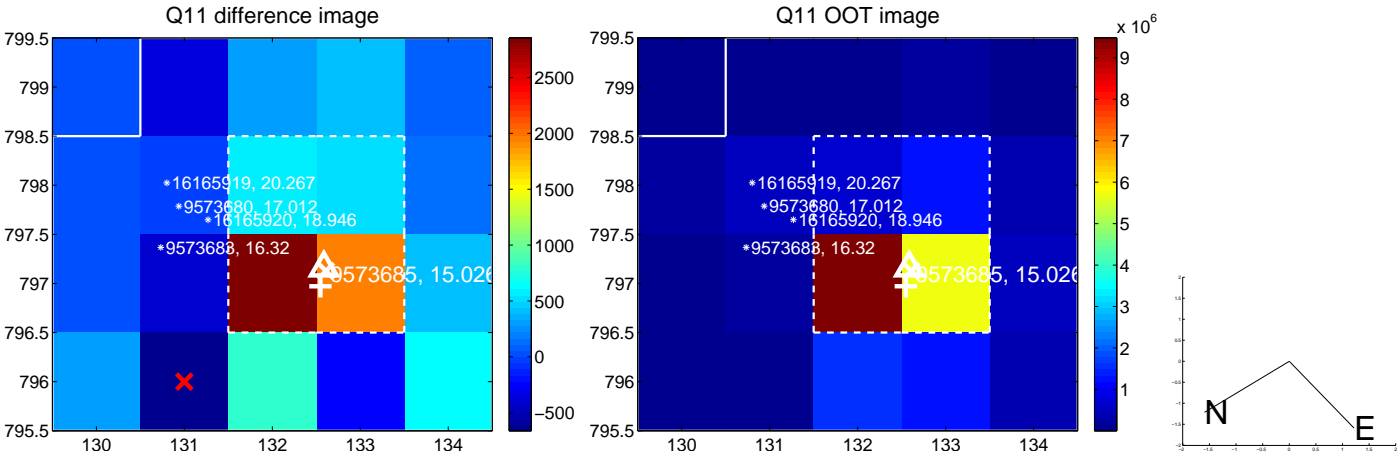
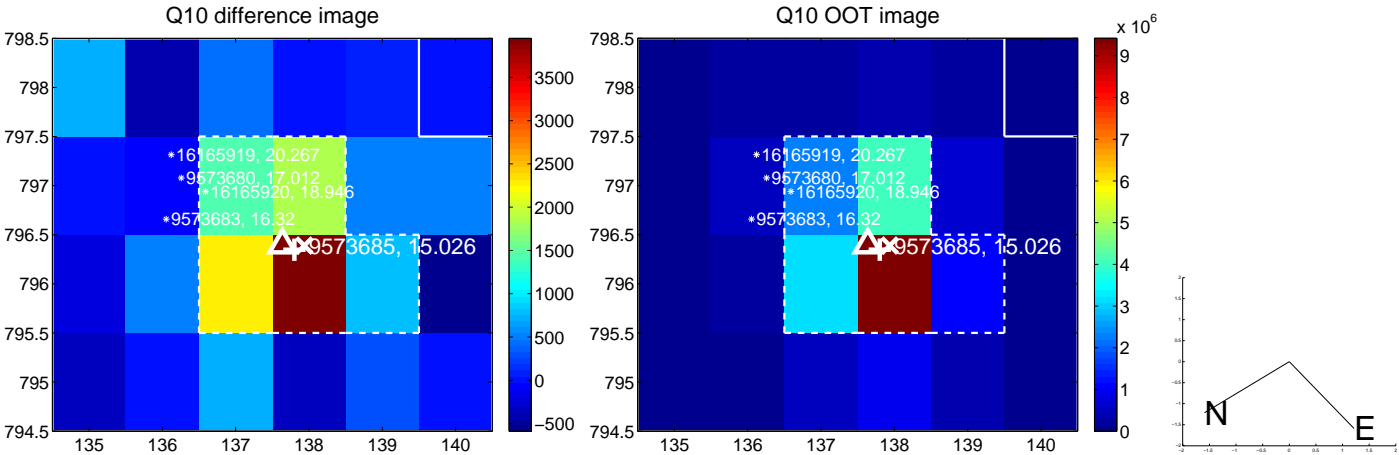
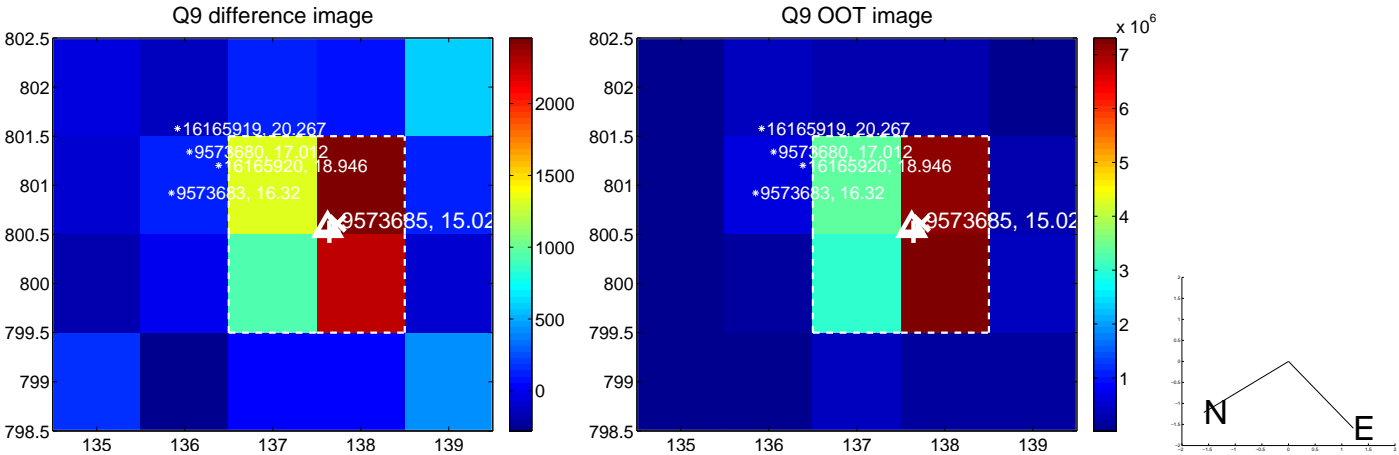


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

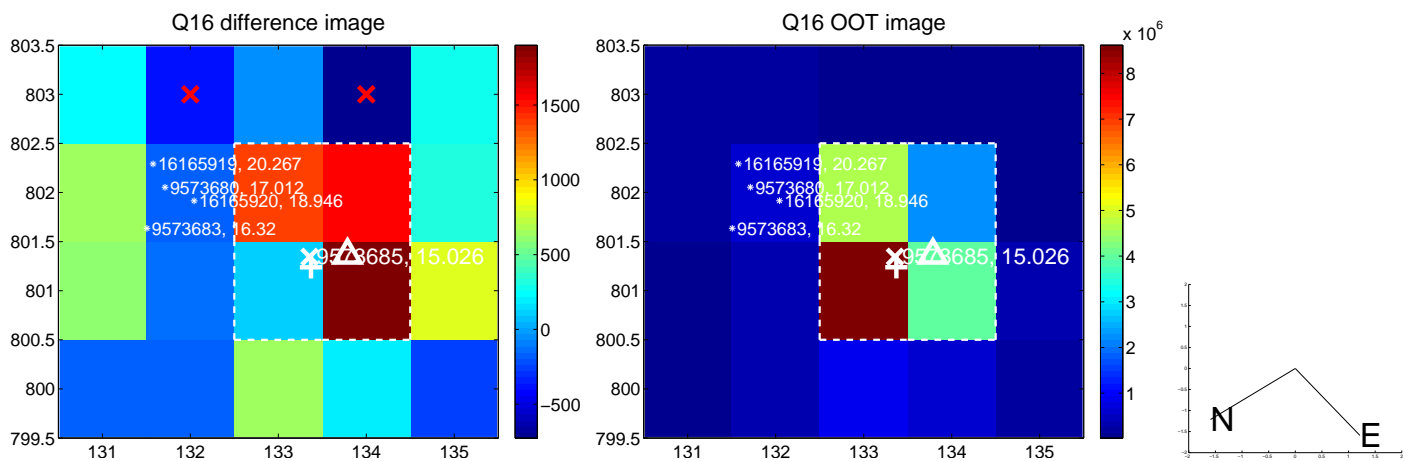
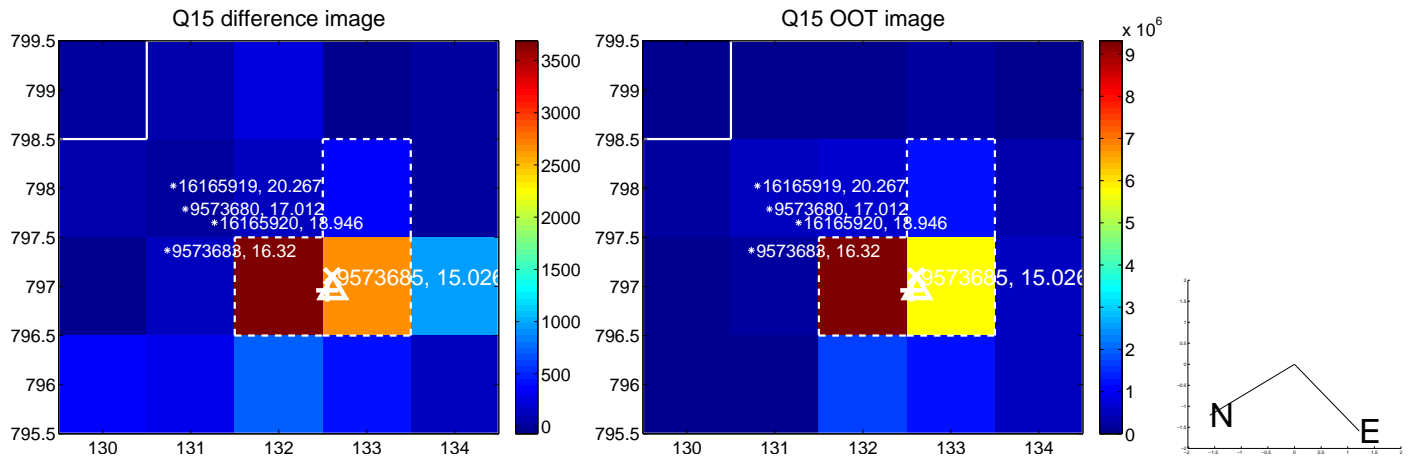
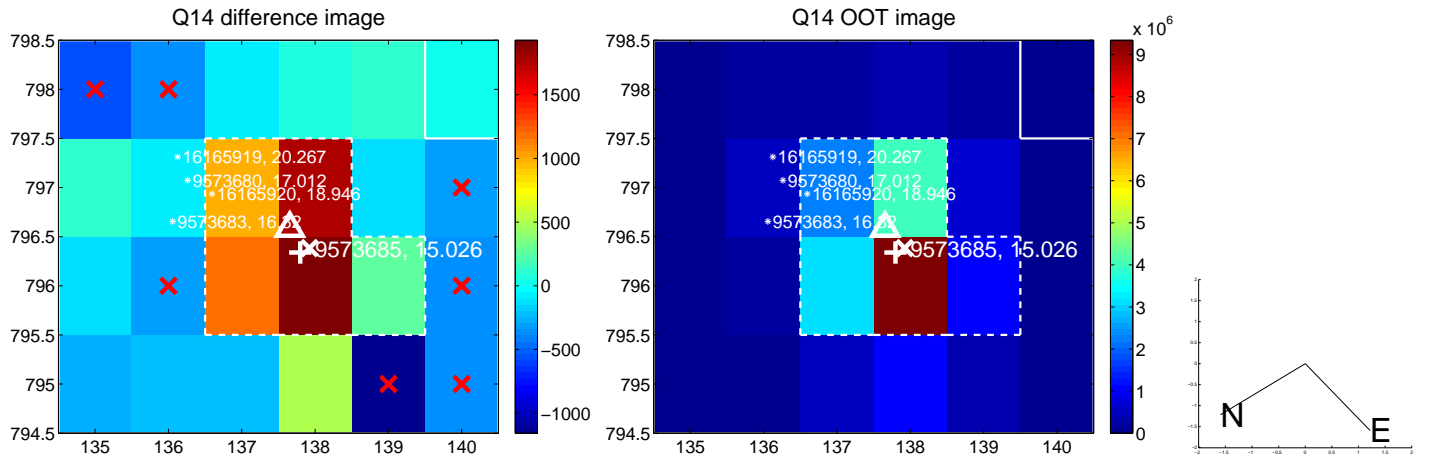
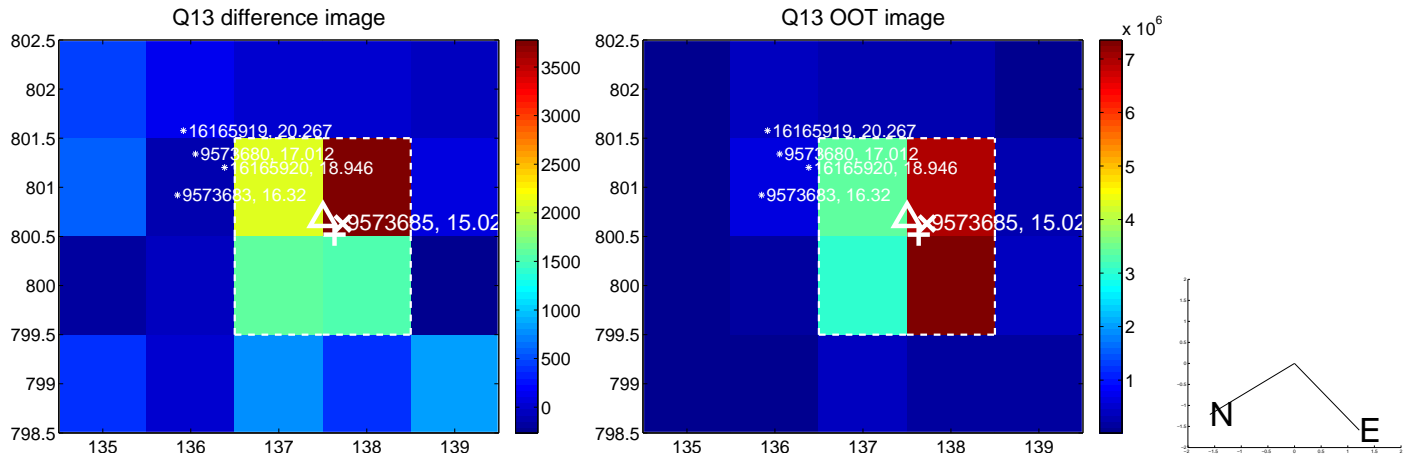
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



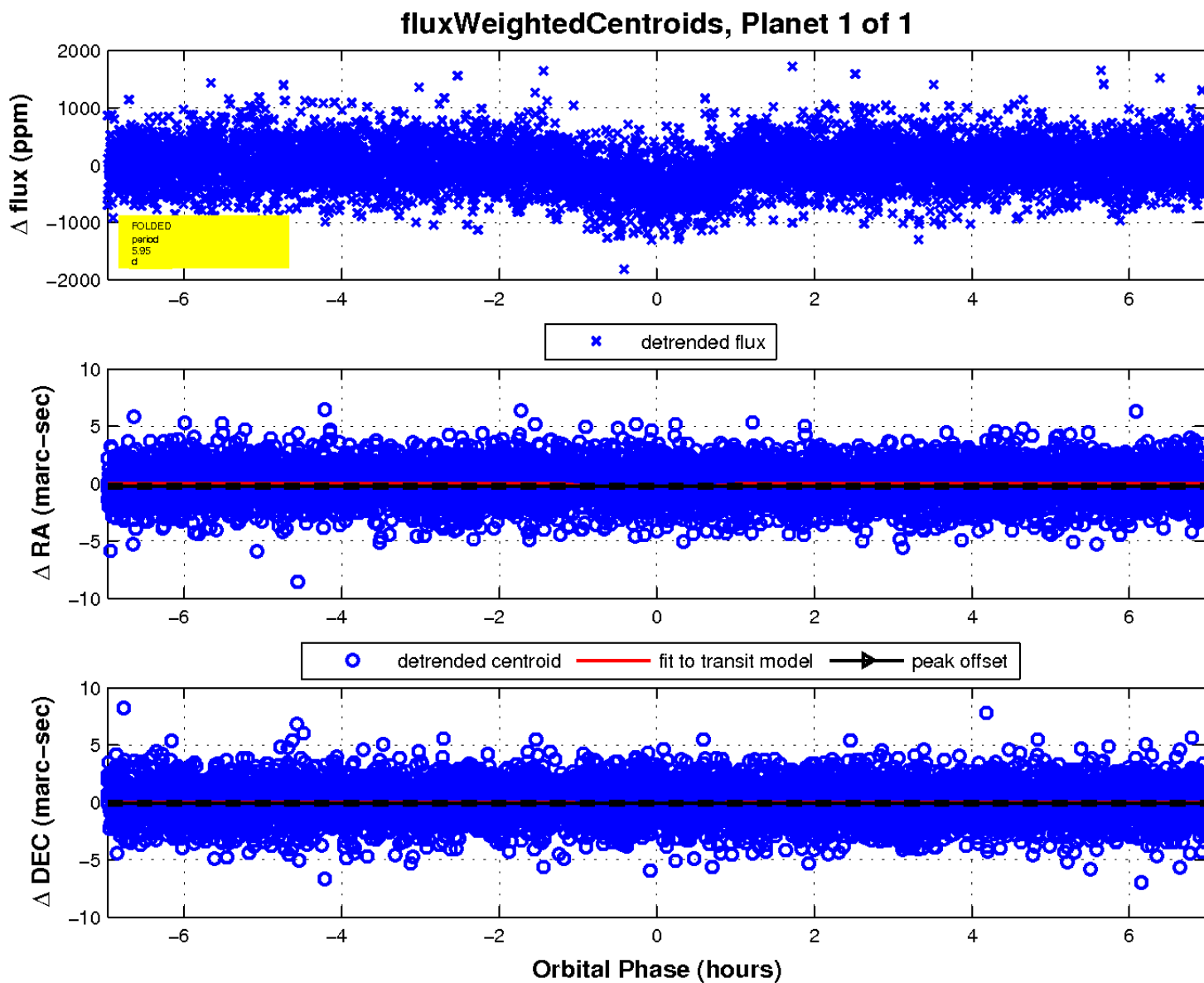
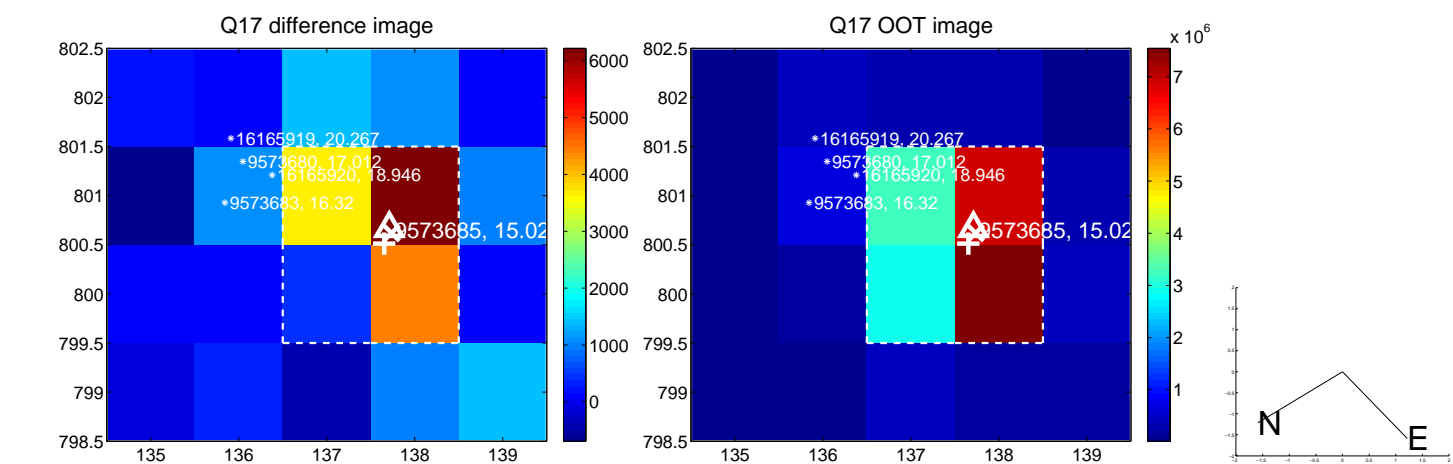
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

