

KIC 009724984

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})
009724984-01	OBS	0325.01	7.863361	131.685898	459.7	3.397	78.2	69.3	1.91	5731	6.32	483.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009724984-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—EPHEM_MATCH

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 009724984-01

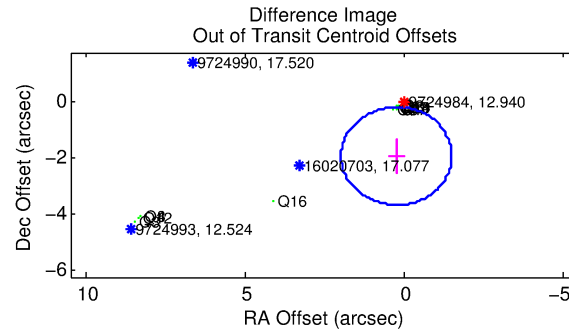
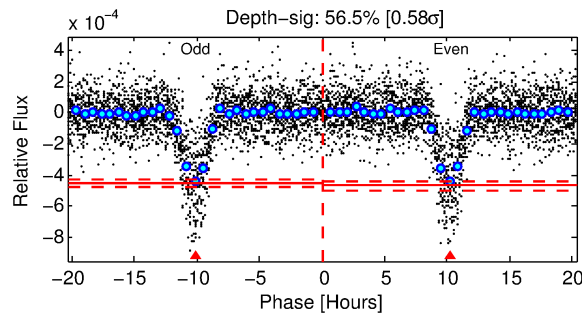
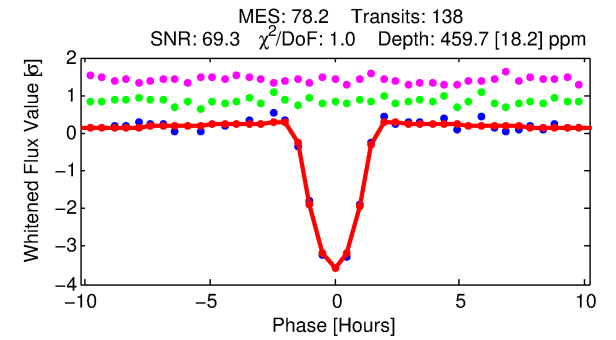
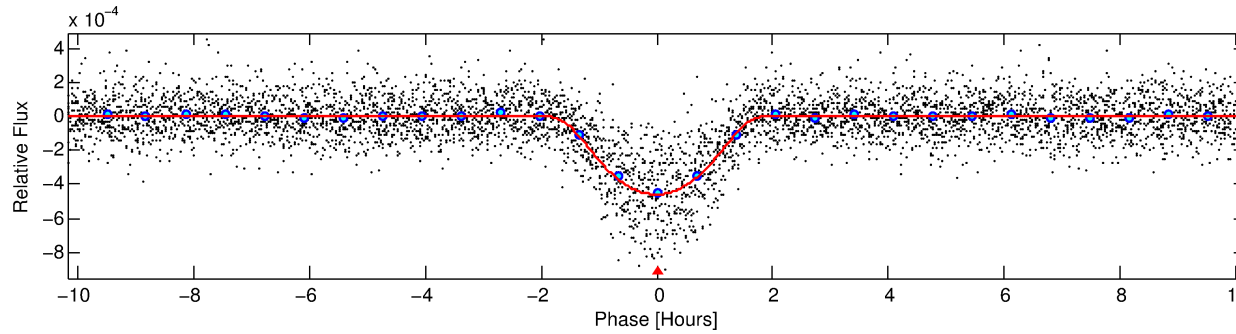
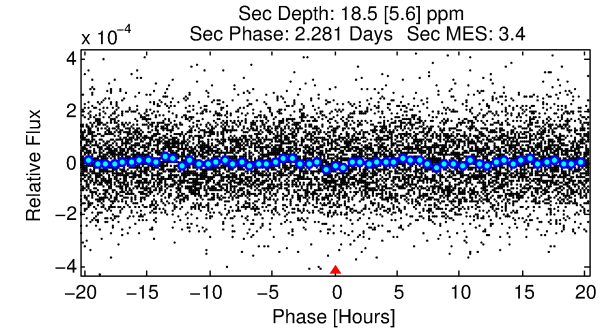
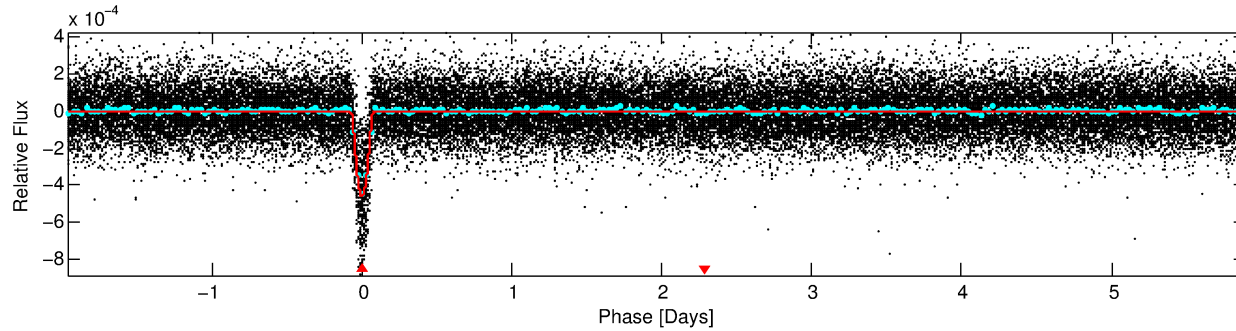
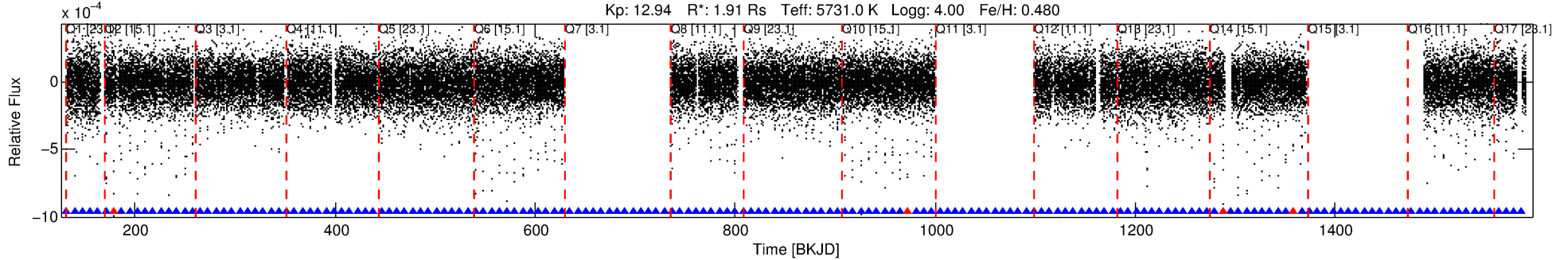
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
009724984-01	9724984	5708.01	9724993	1:1	9.7	-1	2	12.52	12.94	39.90	Direct-PRF	0	0.02	0.02

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 9724984 Candidate: 1 of 1 Period: 7.863 d
KOI: K00325.01 Corr: 0.992

Kp: 12.94 R*: 1.91 Rs Teff: 5731.0 K Logg: 4.00 Fe/H: 0.480



DV Fit Results:

Period = 7.86336 [0.00001] d
Epoch = 131.6859 [0.0011] BKJD
Rp/R* = 0.0303 [0.0048]
a/R* = 5.55 [0.40]
b = 0.98 [0.01]
Seff = 483.22 [233.10]
Teq = 1196 [144] K
Rp = 6.32 [2.28] Re
a = 0.0856 [0.0256] AU
Ag = 1.86 [1.19] [0.72σ]
Teff = 2159 [245] K [3.39σ]

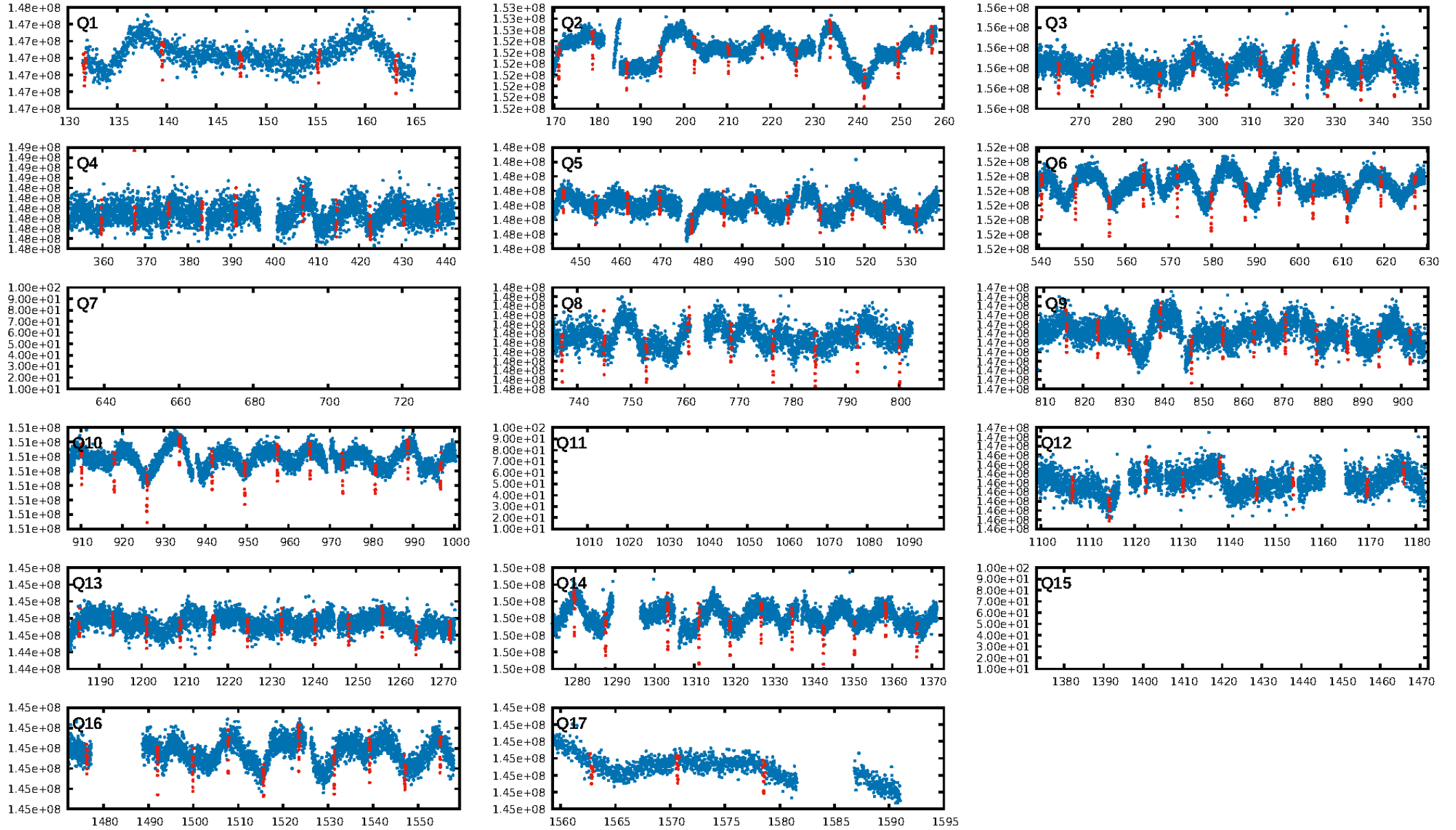
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.97 [126/130]
GhostDiagnostic-chr: -0.6007
Centroid-sig: 0.0%
Centroid-so: 66.296 arcsec [258.86σ]
OotOffset-rm: 1.960 arcsec [3.38σ]
KicOffset-rm: 9.892 arcsec [130.84σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

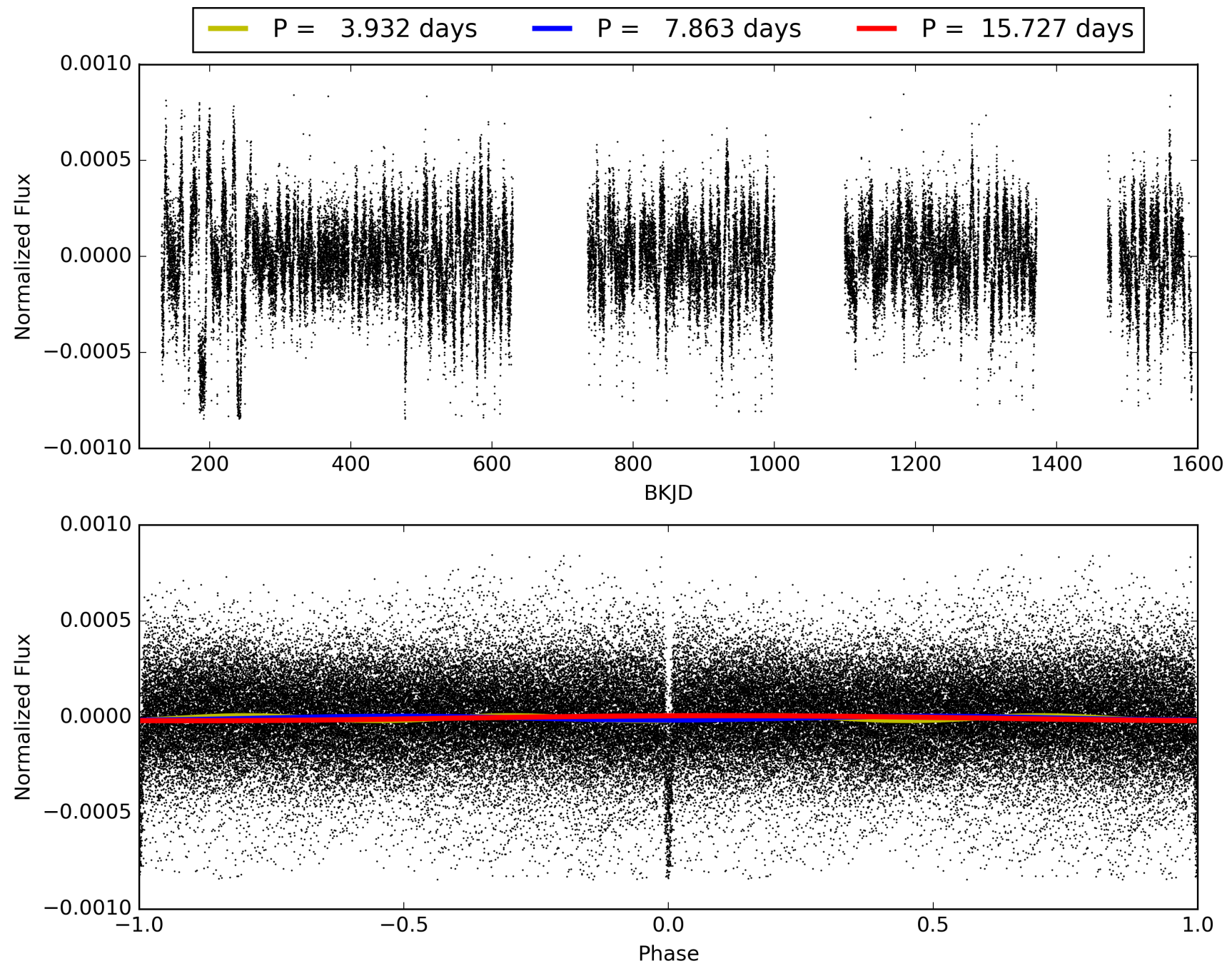
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:16:06 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009724984-01, PDC Light Curves

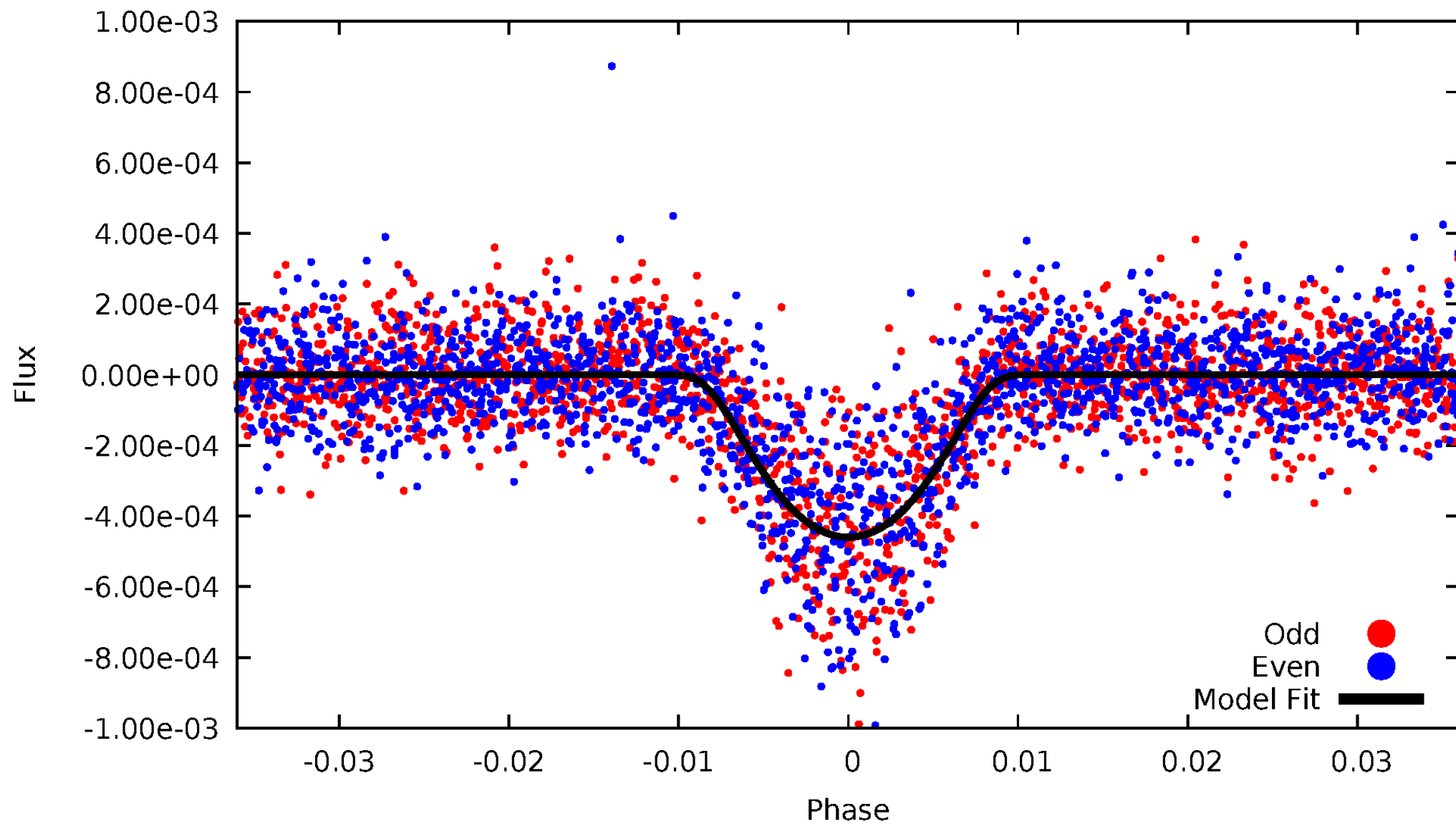


TCE 009724984-01



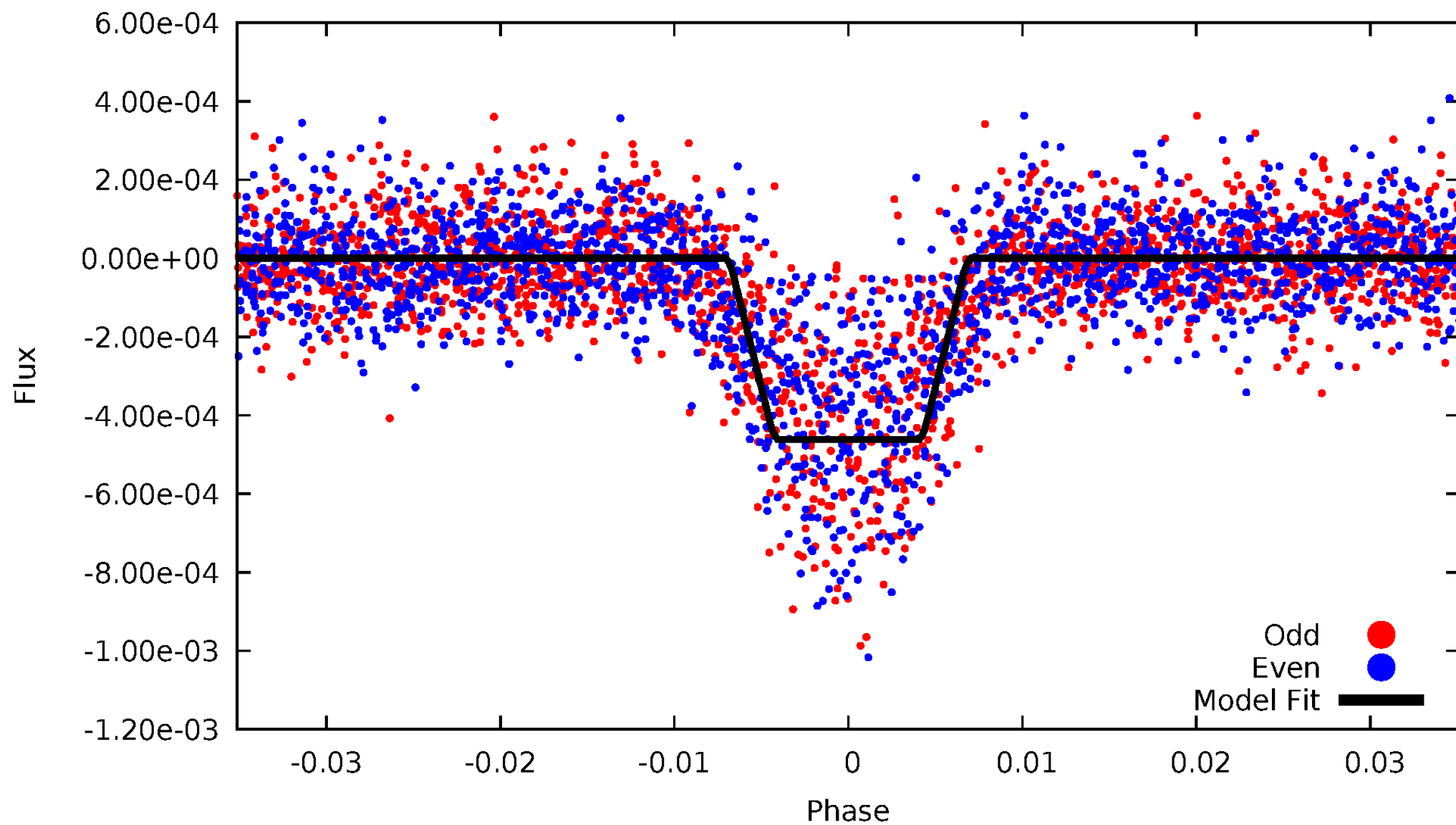
DV Odd/Even

TCE 009724984-01



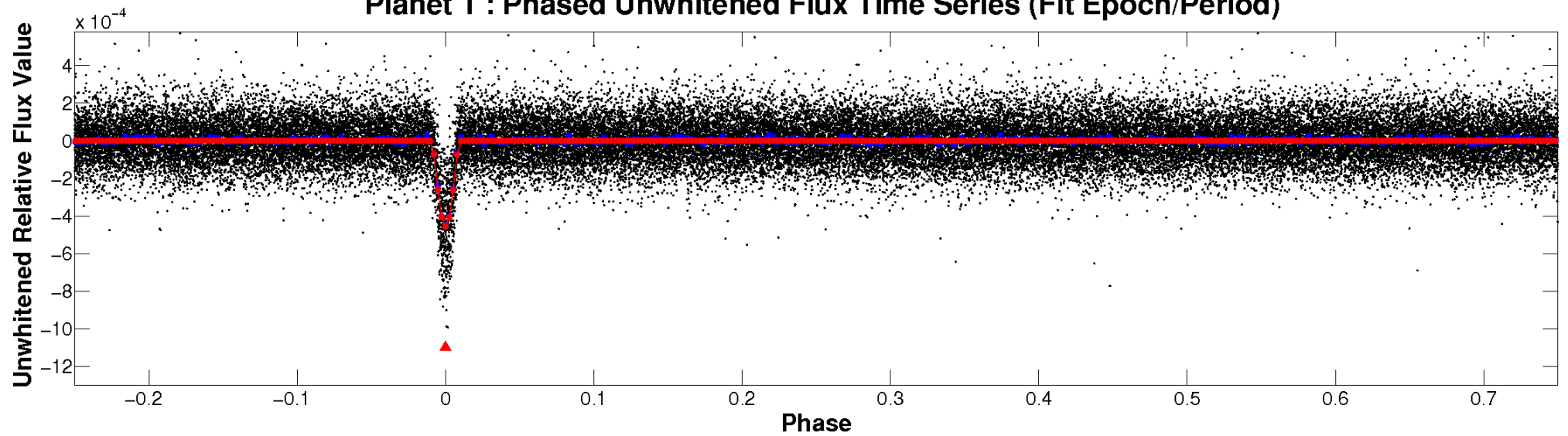
ALT Odd/Even

TCE 009724984-01

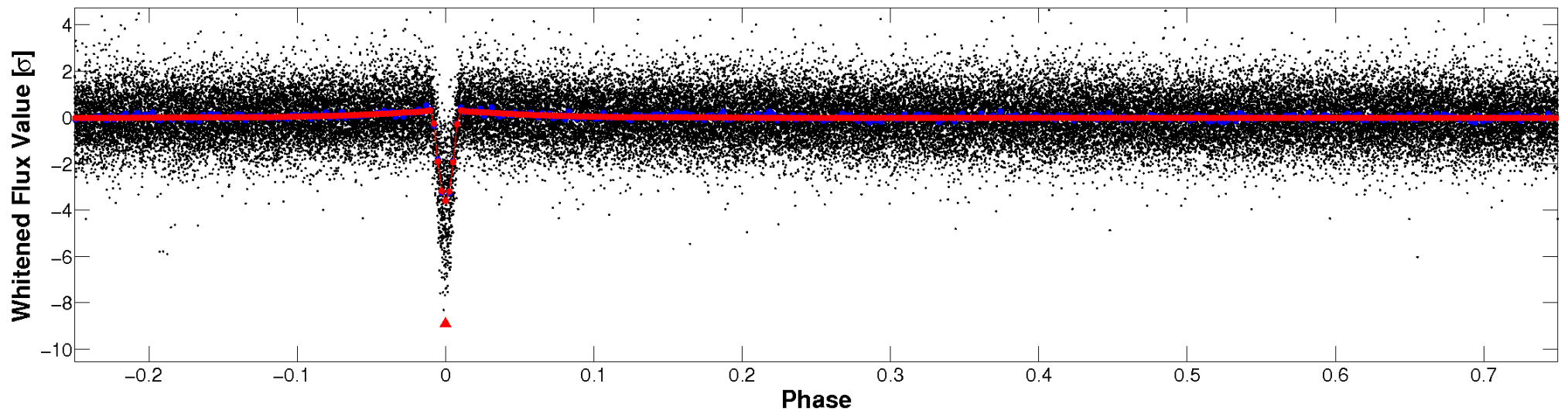


Non-Whitened Vs. Whitened Light Curve

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

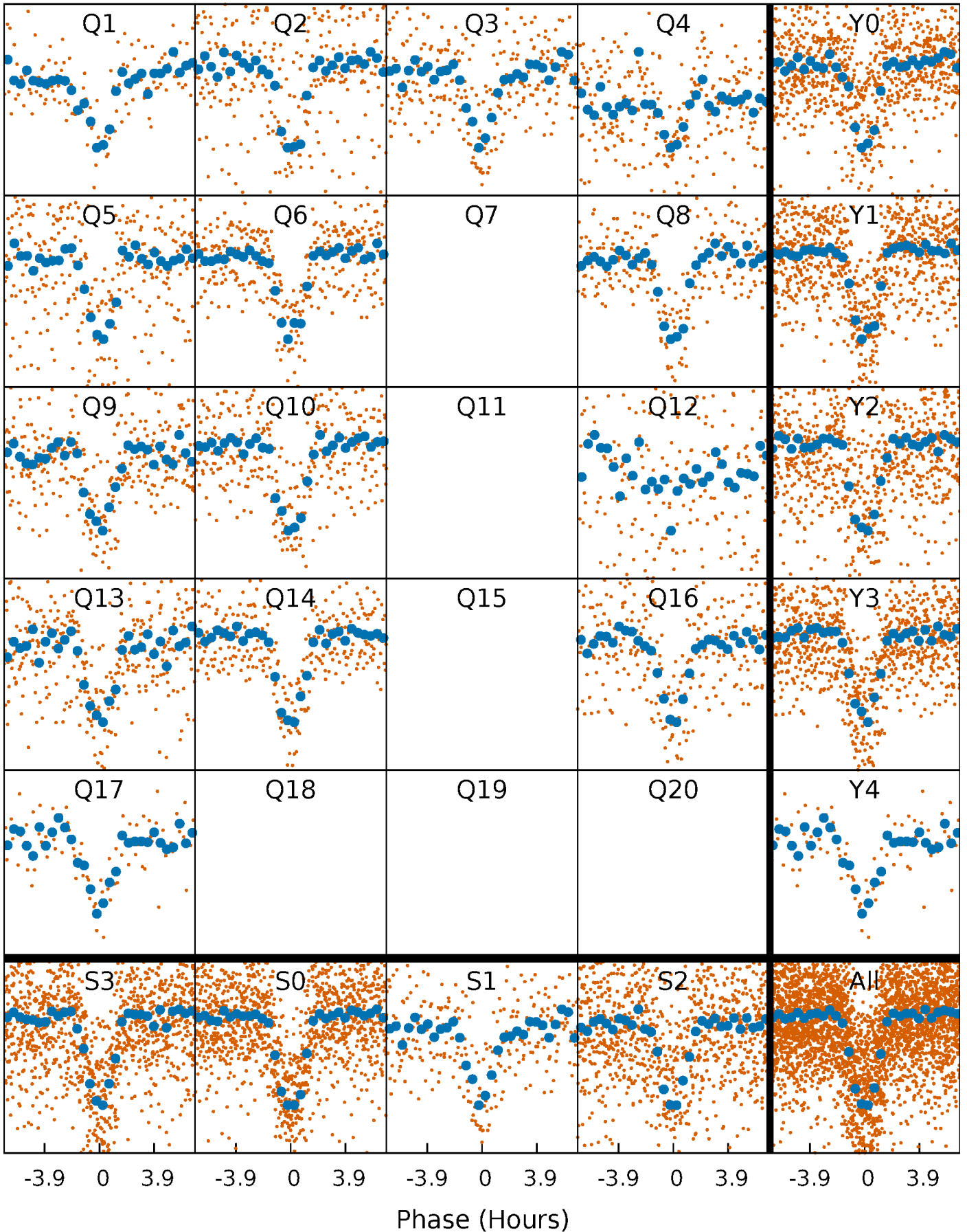


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



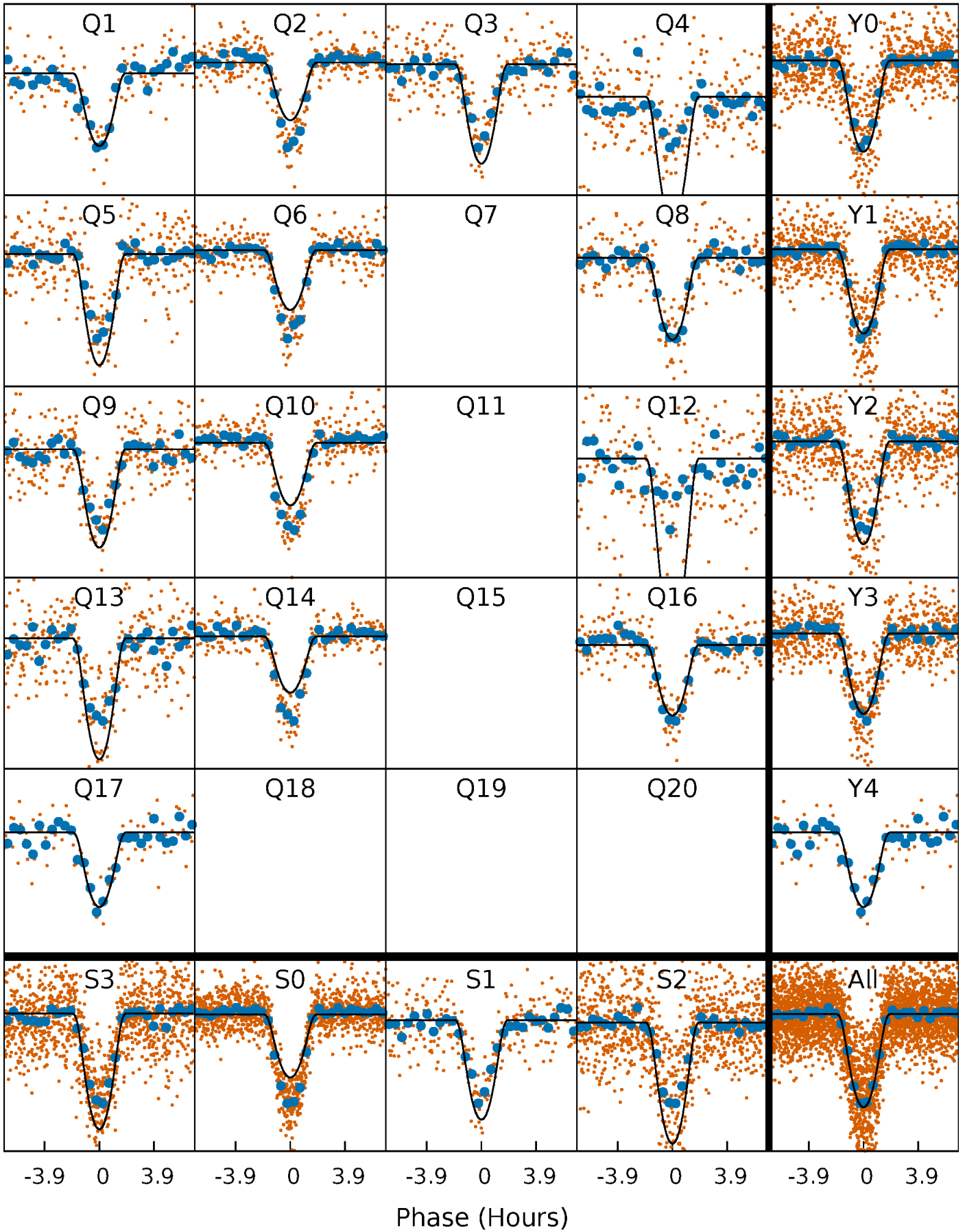
PDC Quarter-Phased Transit Curves

TCE 009724984-01 P= 7.863361 Days $T_0=131.685898$ (BKJD)



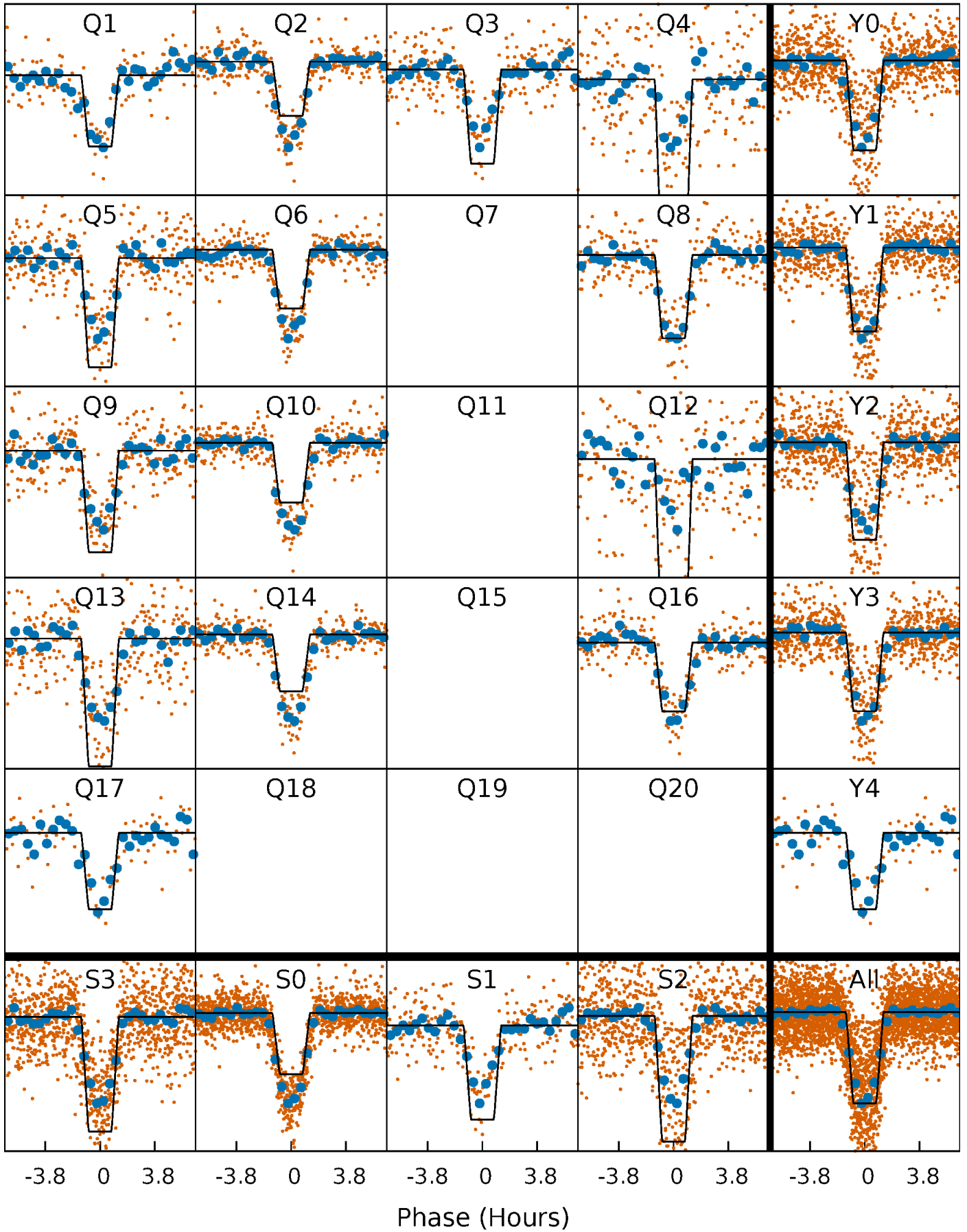
DV Quarter-Phased Transit Curves

TCE 009724984-01 P= 7.863361 Days $T_0=131.685898$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

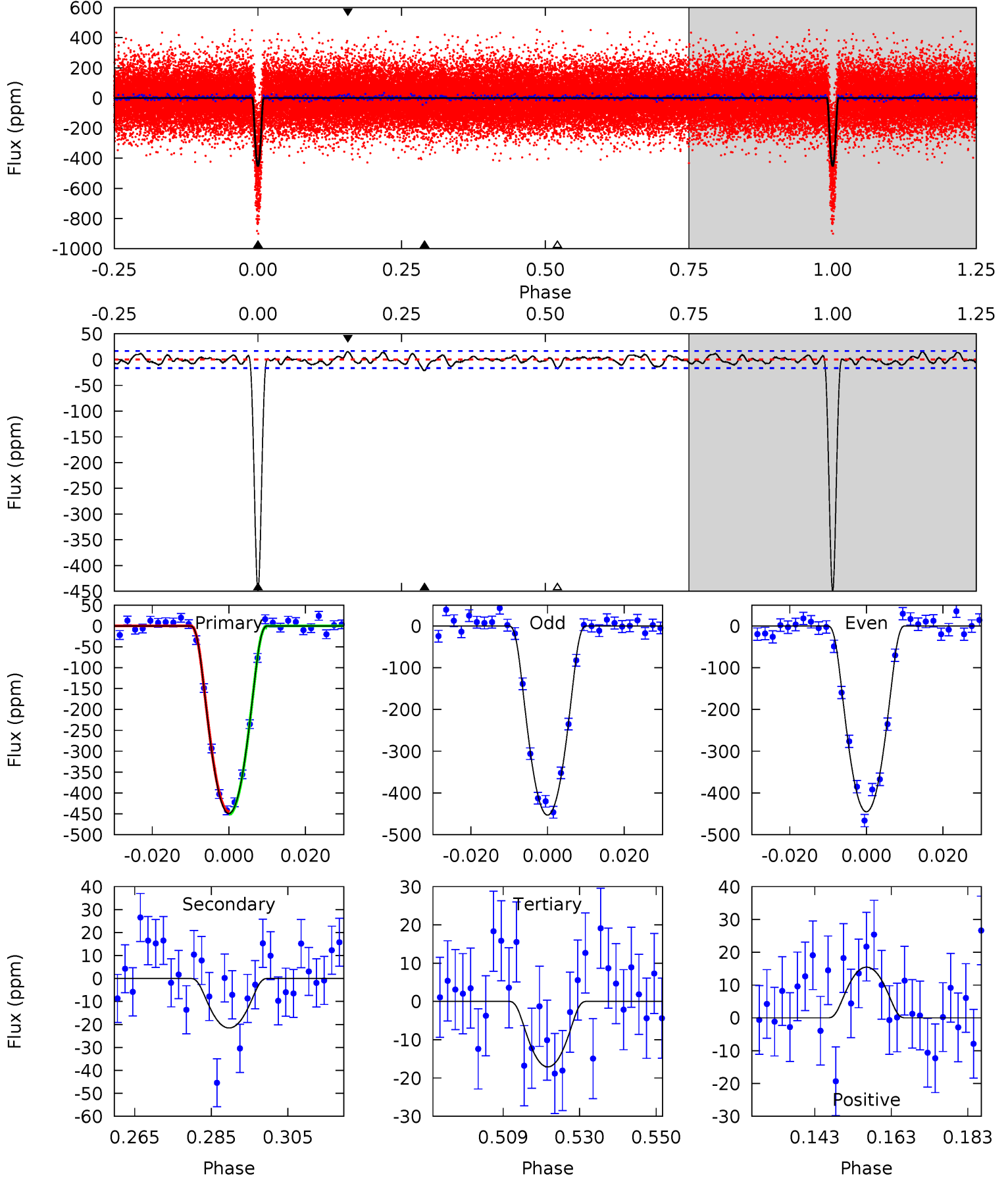
TCE 009724984-01 P= 7.863317 Days $T_0=131.689707$ (BKJD)



DV Model-Shift Uniqueness Test

009724984-01, P = 7.863361 Days, E = 123.822537 Days

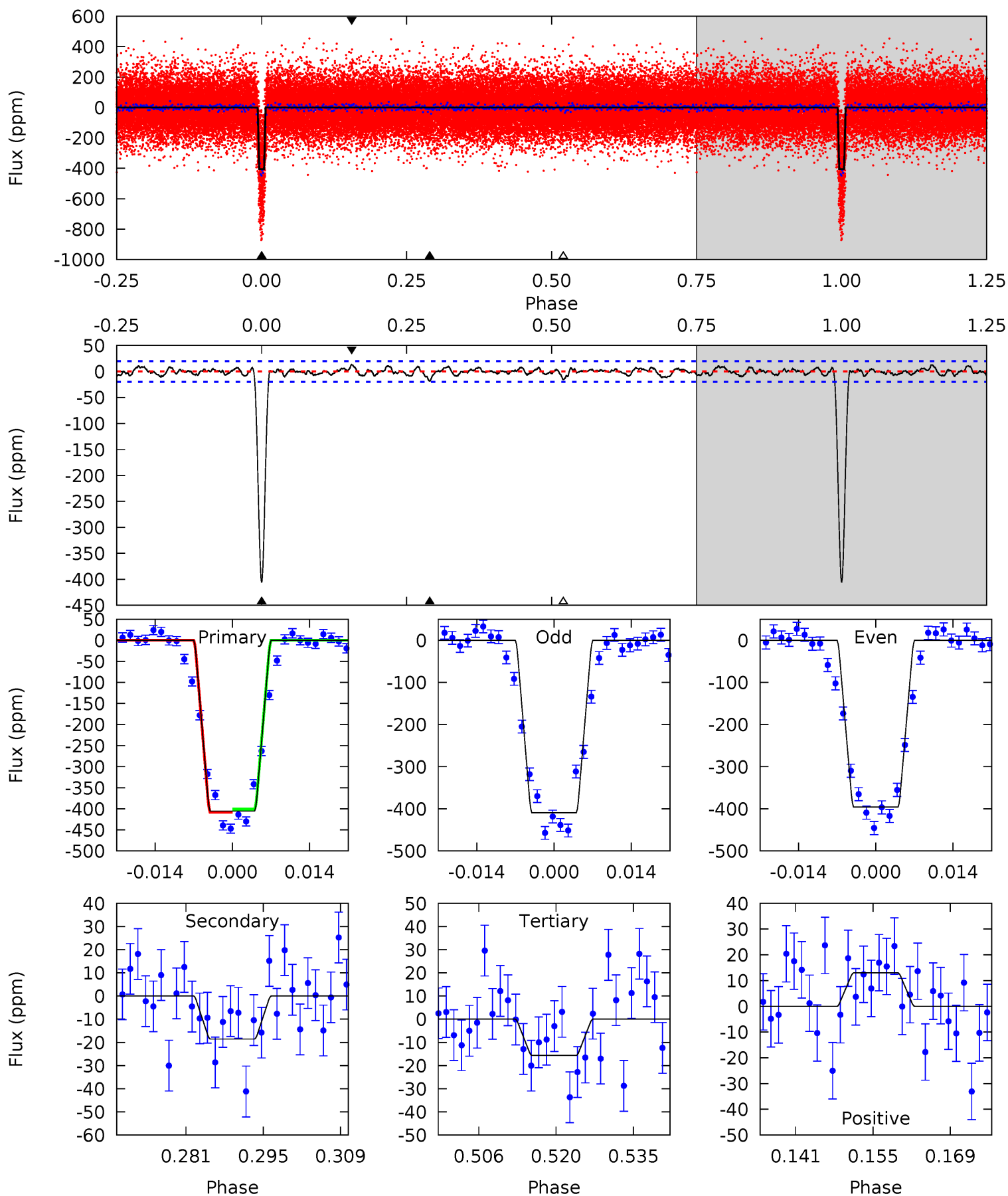
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
132.8	6.37	5.05	4.57	4.89	2.32	1.71	127.8	128.3	1.31	1.80	1.18	1.07	0.03	0.84



Alt Model-Shift Uniqueness Test

009724984-01, P = 7.863317 Days, E = 123.826390 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
100.8	4.62	3.90	3.23	4.96	2.46	1.20	96.9	97.6	0.72	1.39	1.70	1.08	0.03	0.96



Stellar Parameters For KIC 009724984

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5731^{+170}_{-170}	$4.005^{+0.270}_{-0.090}$	$0.480^{+0.050}_{-0.250}$	$1.913^{+0.286}_{-0.621}$	$1.351^{+0.104}_{-0.311}$	$0.272^{+0.505}_{-0.081}$
	+3%/-3%	+7%/-2%	+10%/-52%	+15%/-32%	+8%/-23%	+186%/-30%
Source	PHO1	FLK73	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 009724984-01 / KOI 0325.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-22 ± 3	$6.04^{+1.30}_{-1.36}$	1650^{+95}_{-138}	2874^{+190}_{-159}	$2.347^{+1.561}_{-0.788}$
Alt.	-19 ± 4	$4.20^{+1.07}_{-1.11}$	1646^{+87}_{-134}	3132^{+288}_{-219}	$4.107^{+3.656}_{-1.627}$

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

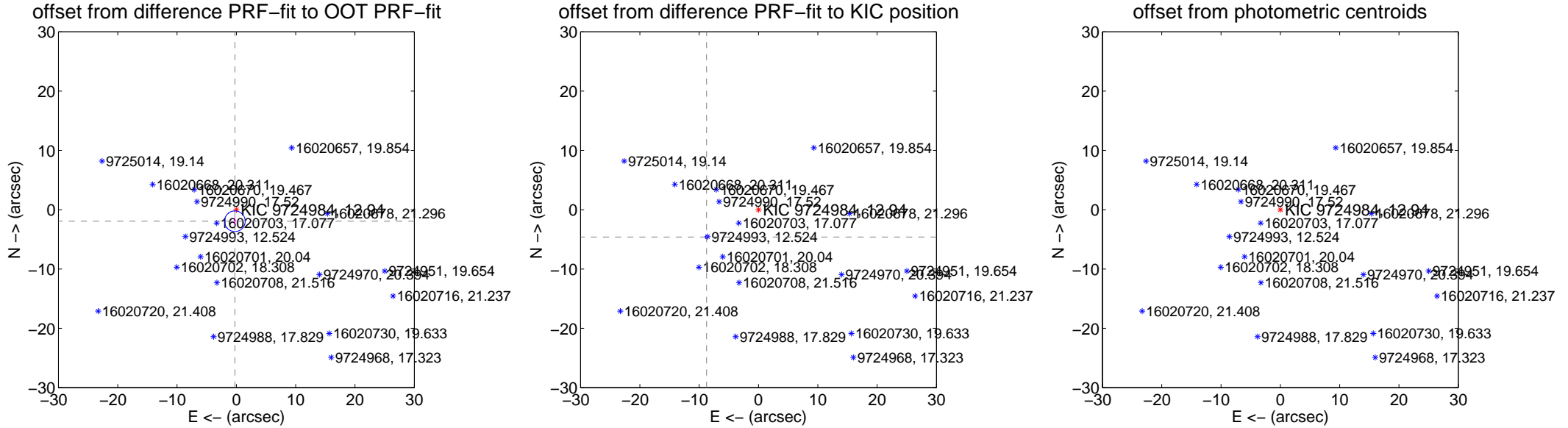
DV Centroid Data

Supplemental centroid analysis for 009724984-01. Kepler magnitude: 12.94. Transit SNR 69.29

There are 14 quarters with good PRF difference image offsets

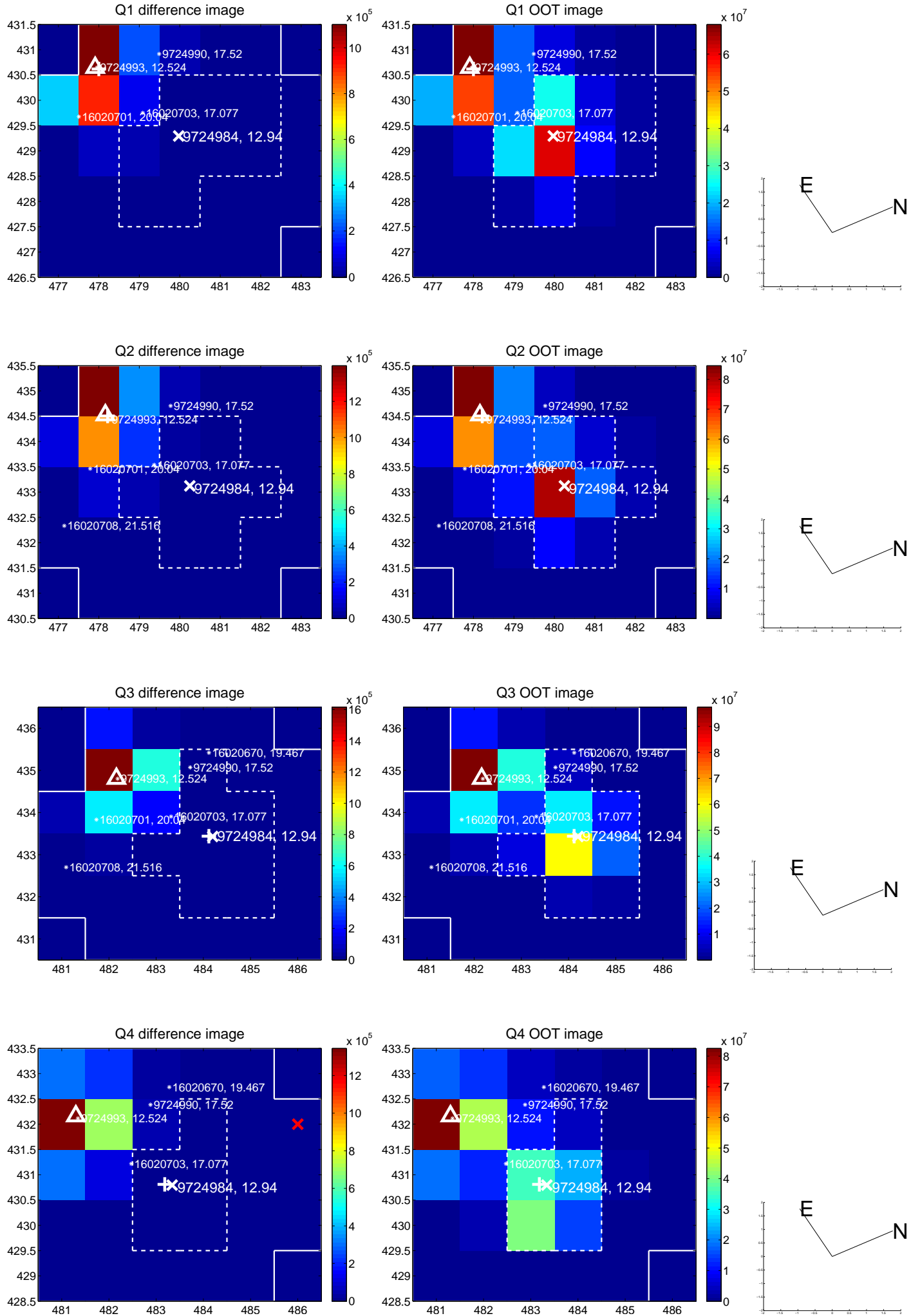
The OOT PRF centroid is offset from the target star catalog position by about 9.44 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.960 ± 0.581	3.38	0.252 ± 0.245	-1.944 ± 0.585
PRF-fit source offset from KIC position	9.892 ± 0.076	130.84	8.751 ± 0.073	-4.612 ± 0.070
photometric centroid source offset	66.30 ± 0.26	258.85	57.23 ± 0.28	-33.48 ± 0.18

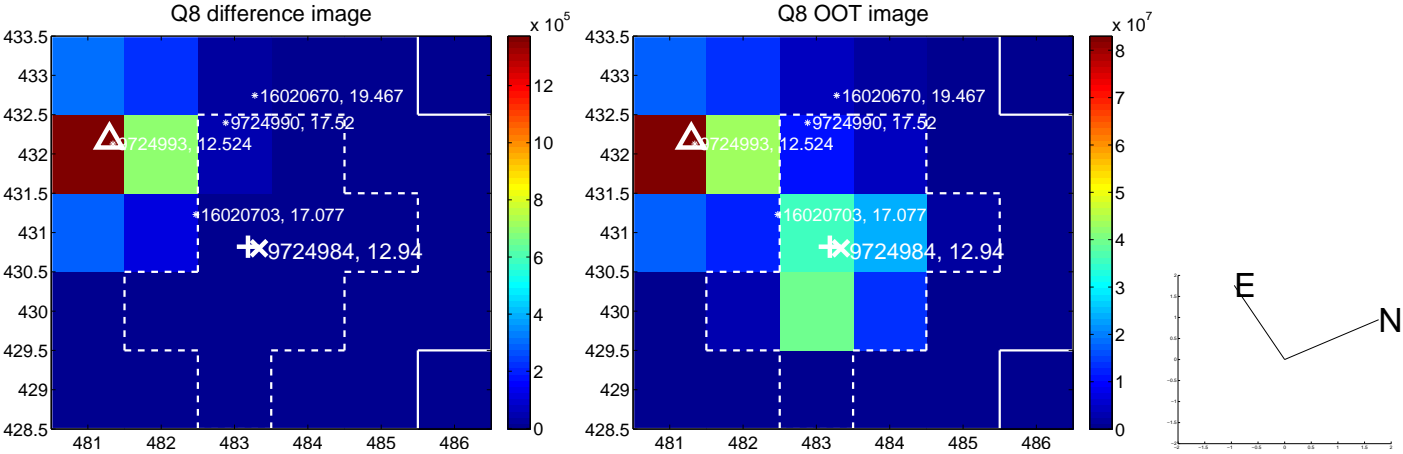
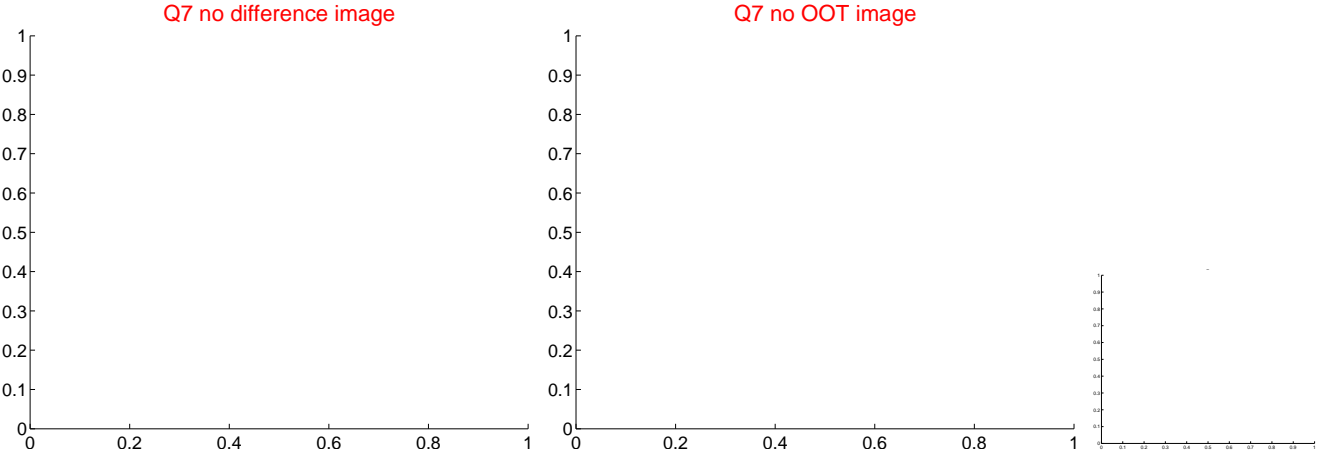
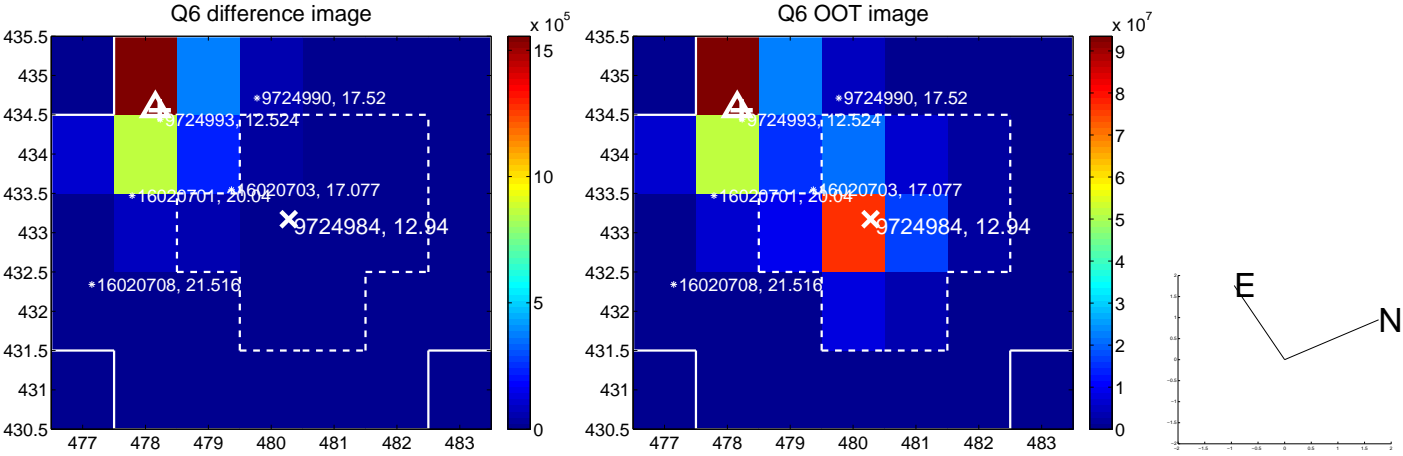
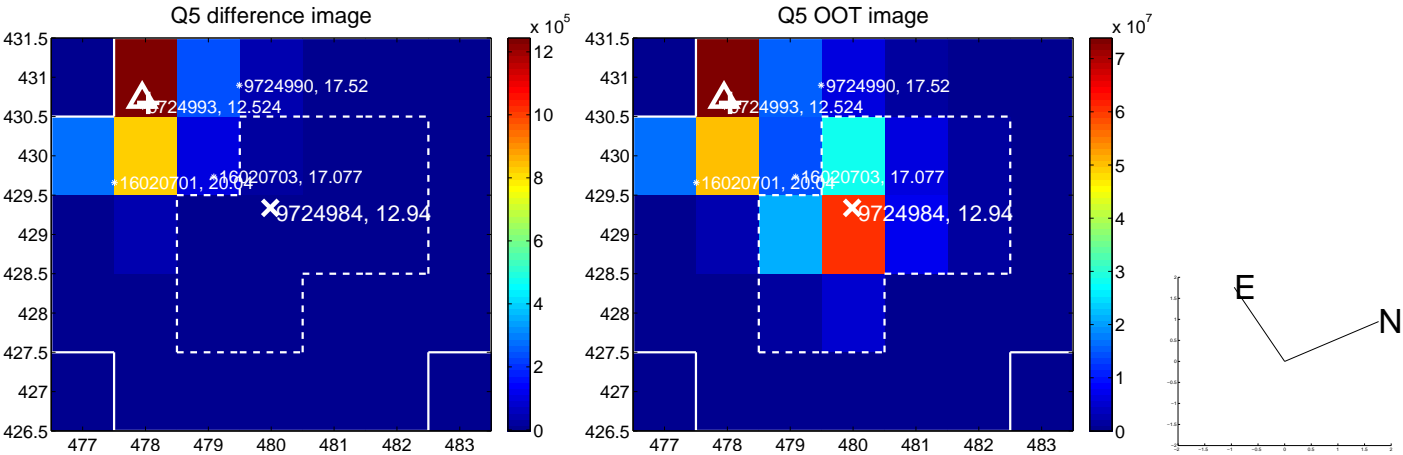


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

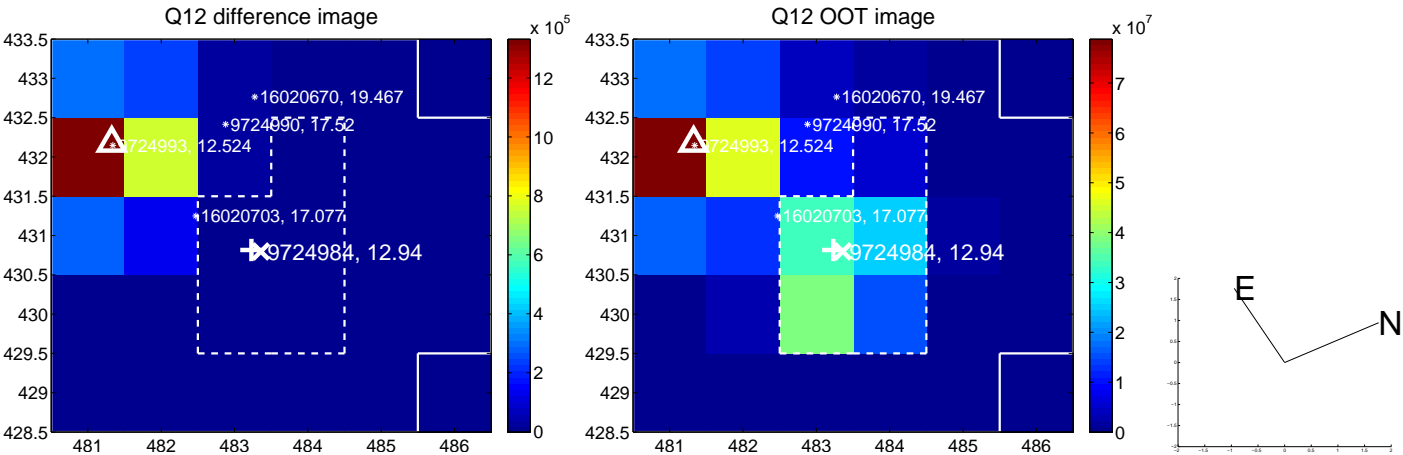
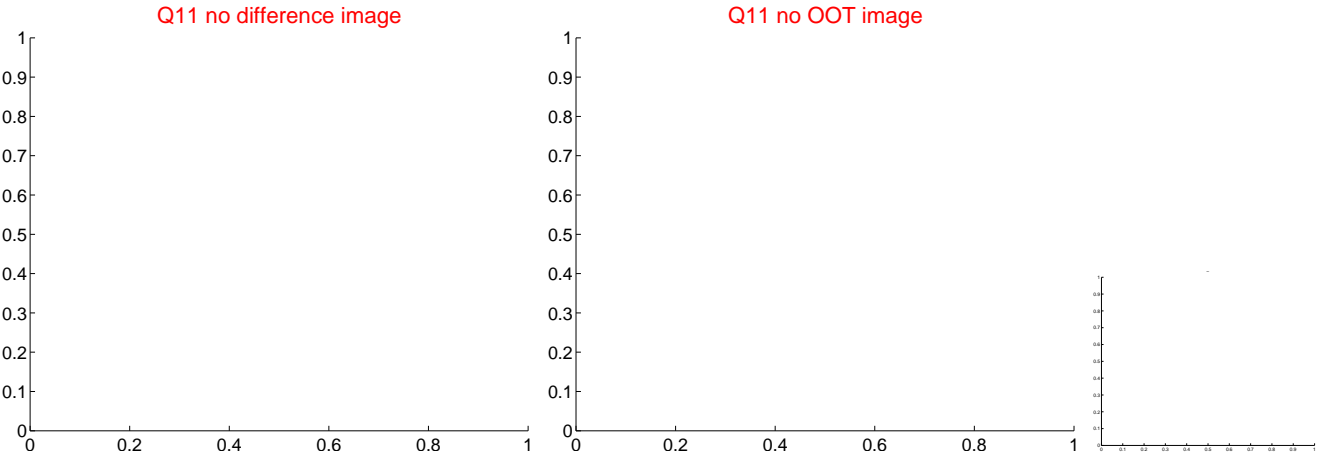
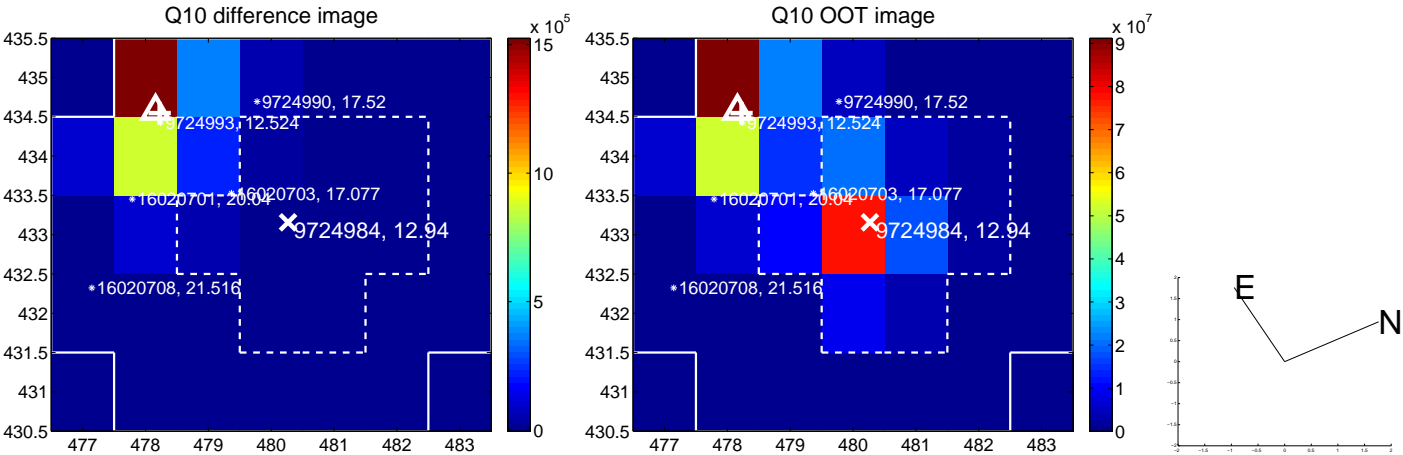
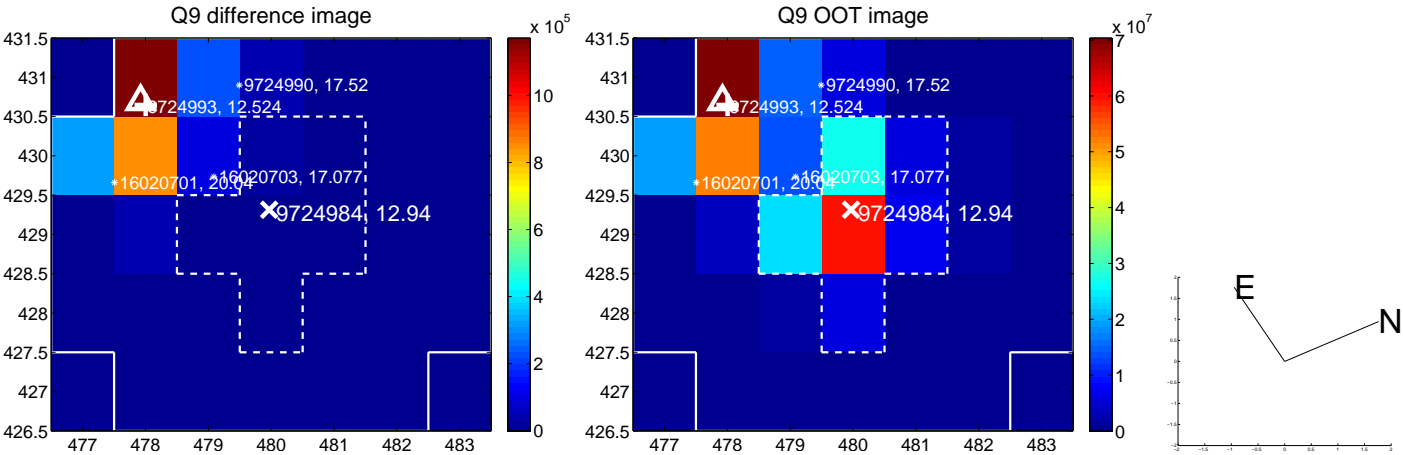
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



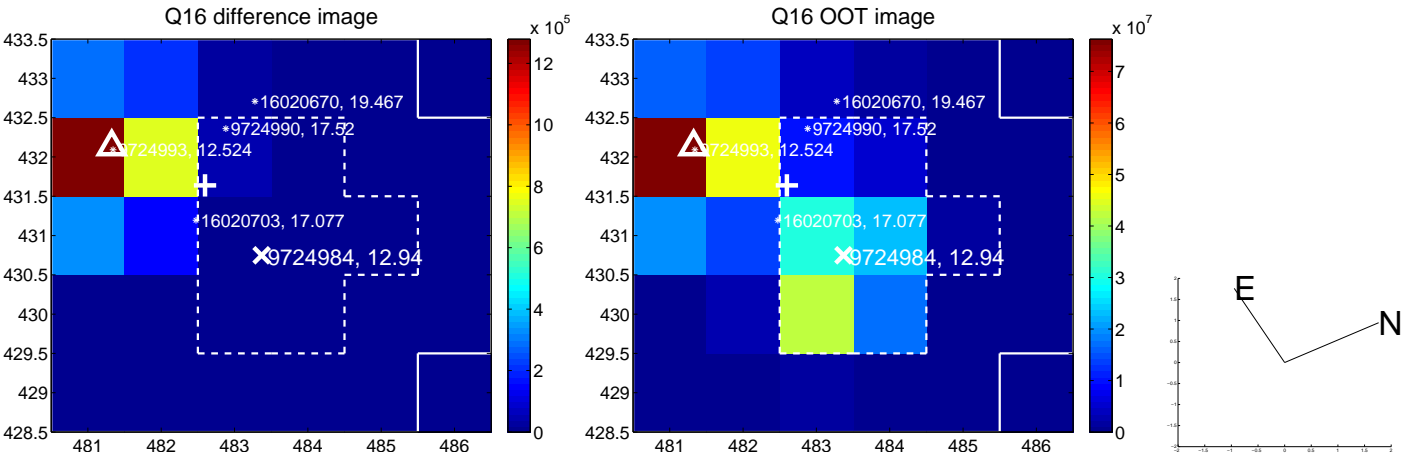
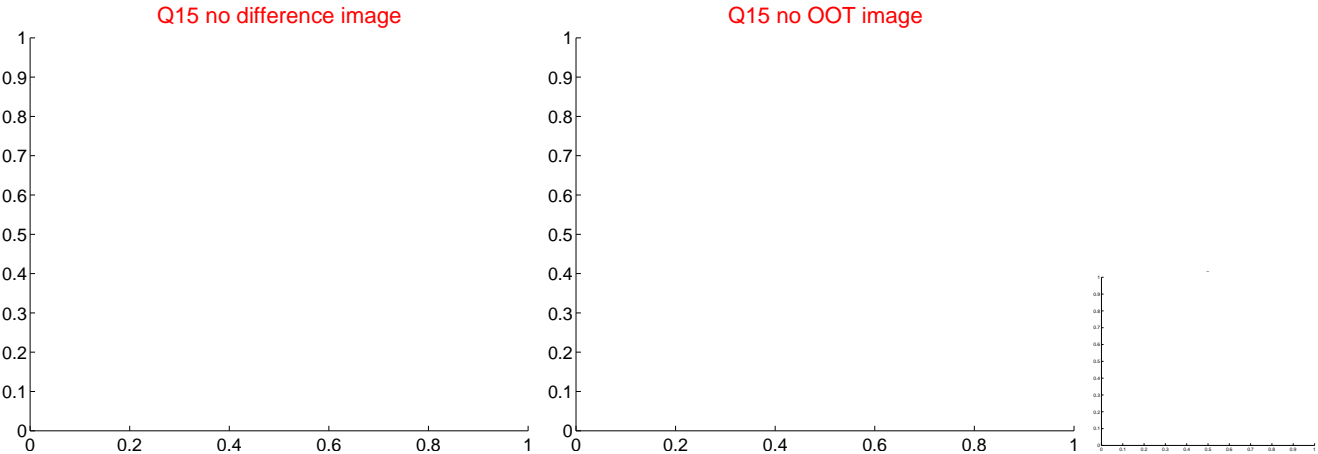
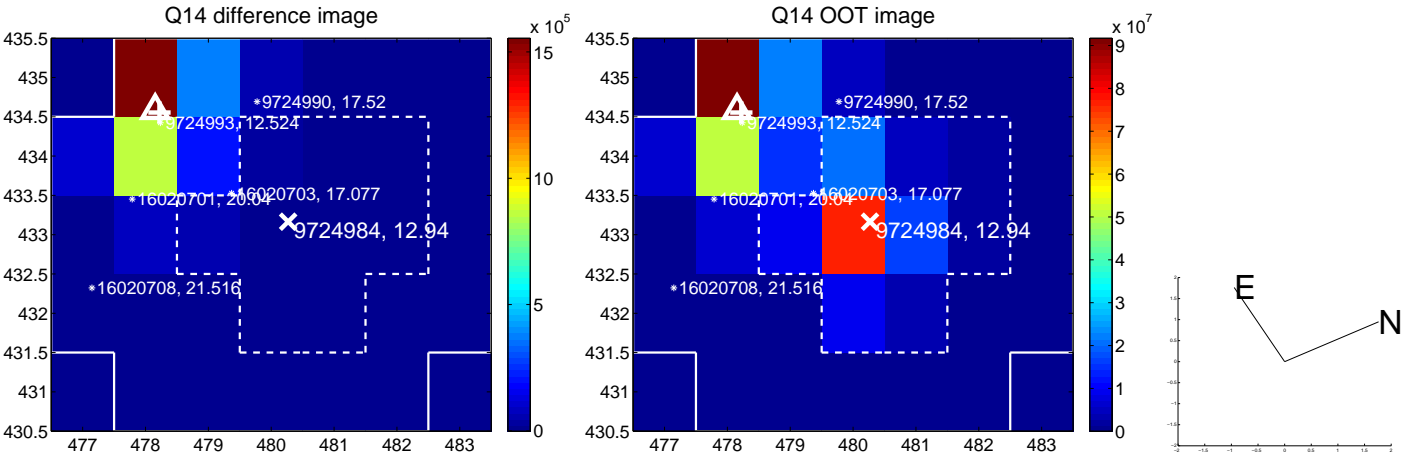
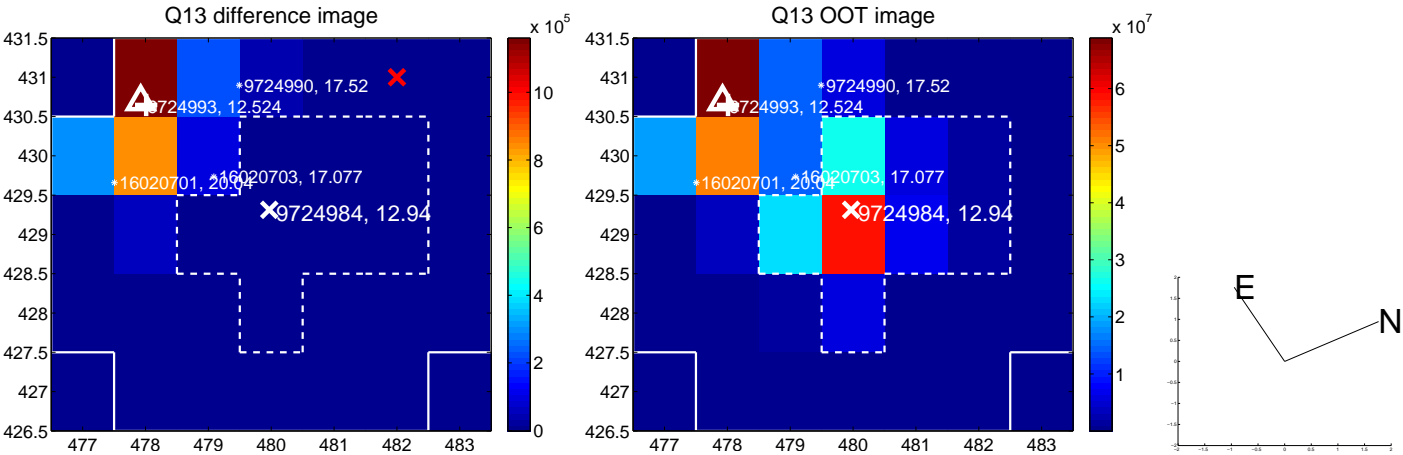
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



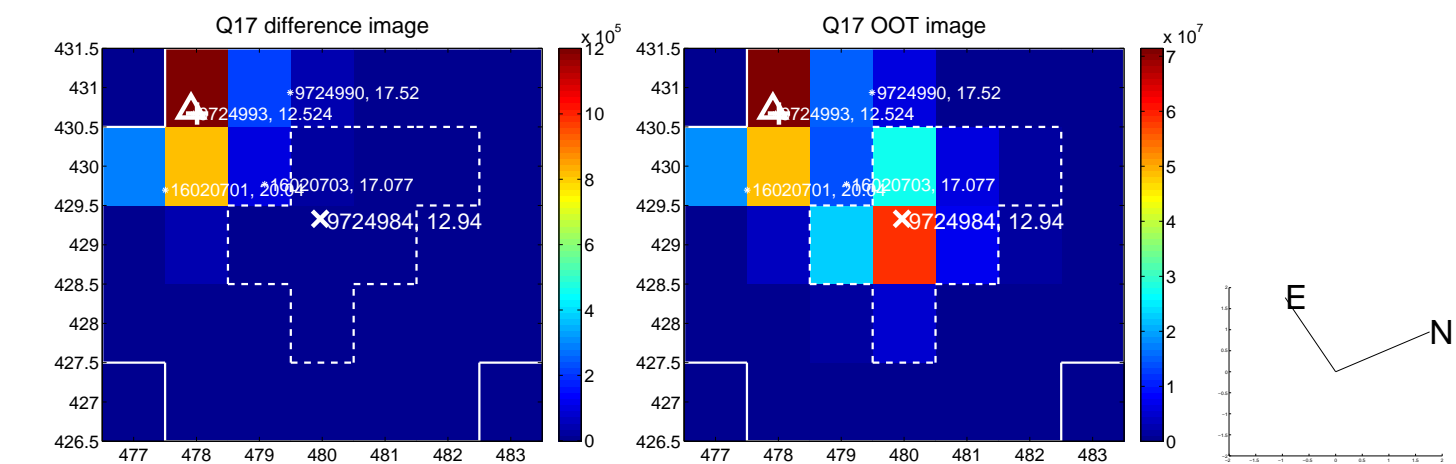
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



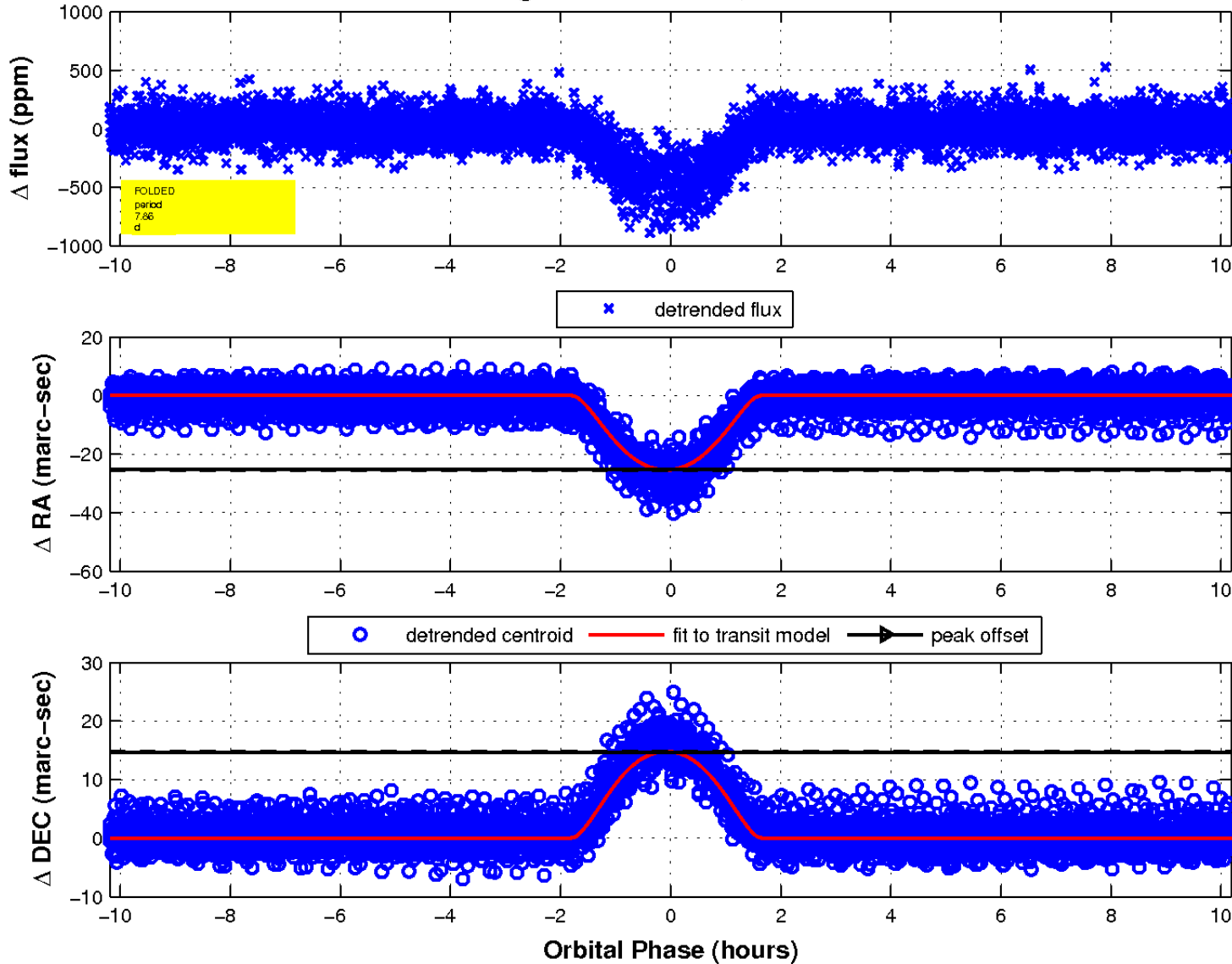
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

