

KIC 012204137

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})
012204137-01	OBS	4590.01	9.540562	131.916951	461.2	1.769	9.9	10.8	0.83	5271	2.04	69.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012204137-01	OBS	PC	0.82	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.

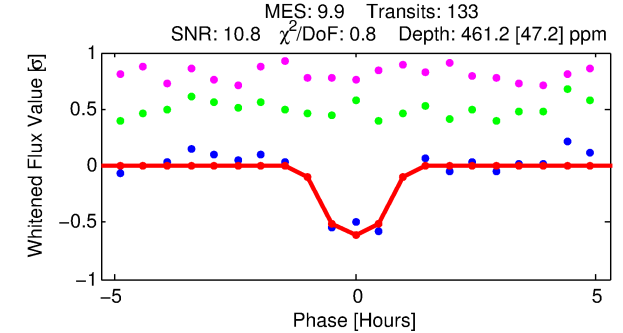
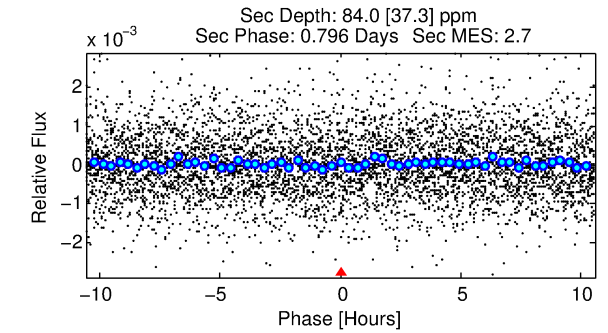
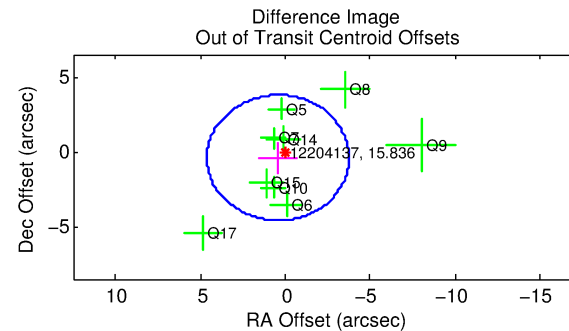
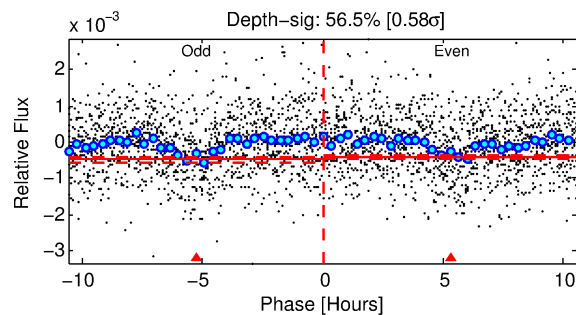
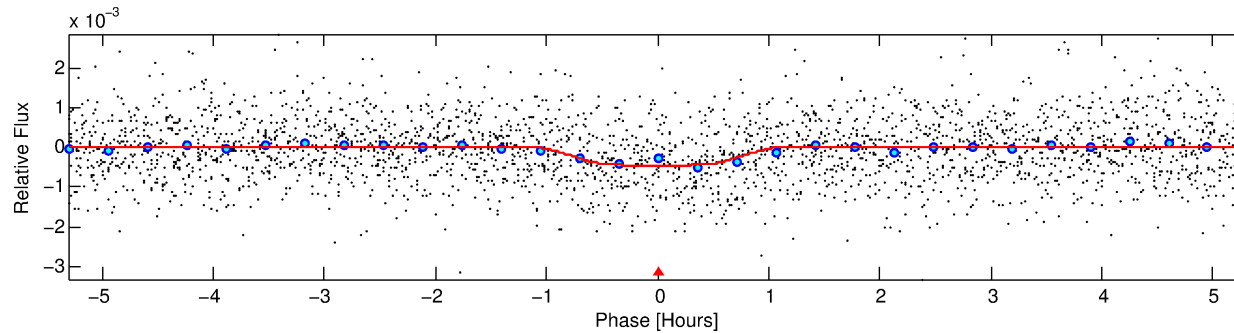
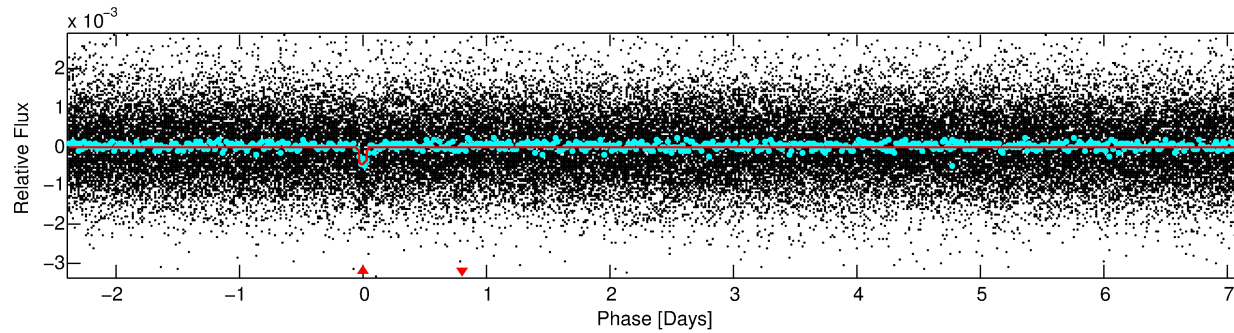
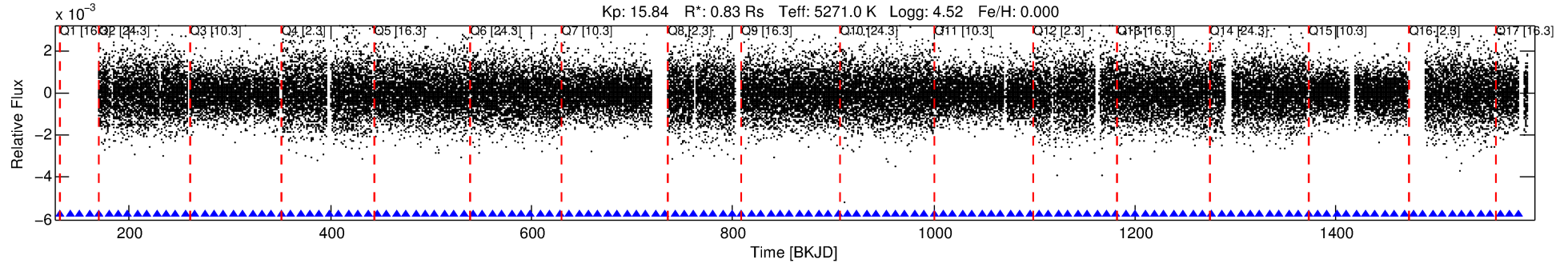
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012204137-01

No Significant Match Found

DV One-Page Summary

KIC: 12204137 Candidate: 1 of 1 Period: 9.541 d
KOI: K04590.01 Corr: 0.976



DV Fit Results:

Period = 9.54056 [0.00005] d
Epoch = 131.9170 [0.0045] BKJD
Rp/R* = 0.0225 [0.0269]
a/R* = 24.43 [114.28]
b = 0.83 [1.77]
Seff = 69.31 [14.81]
Teq = 736 [39] K
Rp = 2.04 [2.46] Re
a = 0.0830 [0.0102] AU
Ag = 76.51 [186.87] [0.40 σ]
Teffp = 3364 [2051] K [1.28 σ]

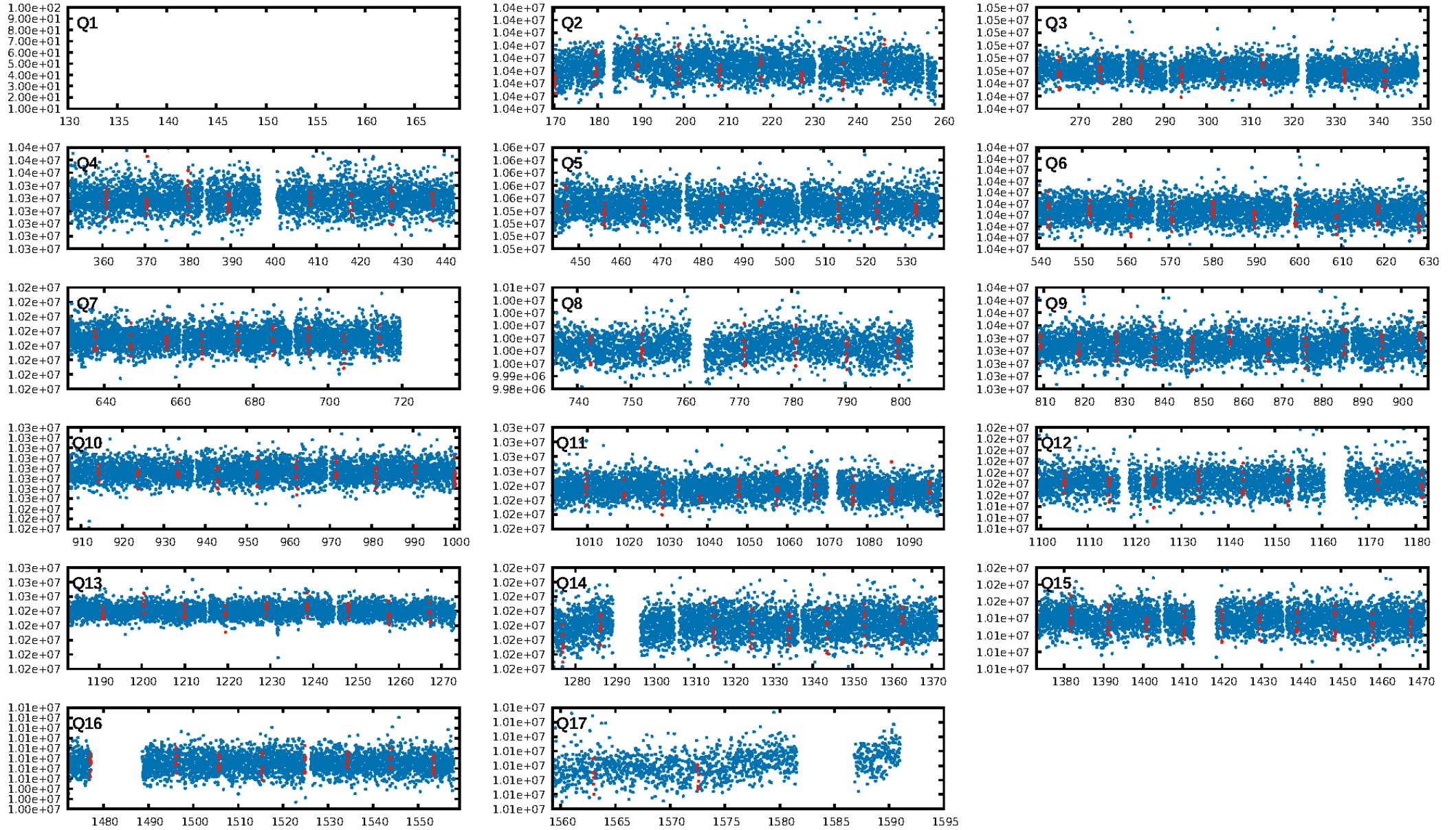
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.00e-23
RollingBand-fgt: 1.00 [131/131]
GhostDiagnostic-chr: -3.379
Centroid-sig: 31.9%
Centroid-so: 1.893 arcsec [1.28 σ]
OotOffset-rm: 0.586 arcsec [0.42 σ]
KicOffset-rm: 0.493 arcsec [0.39 σ]
OotOffset-st: 3/2/1/3 [9]
KicOffset-st: 3/2/1/3 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 1.00 [16/16]

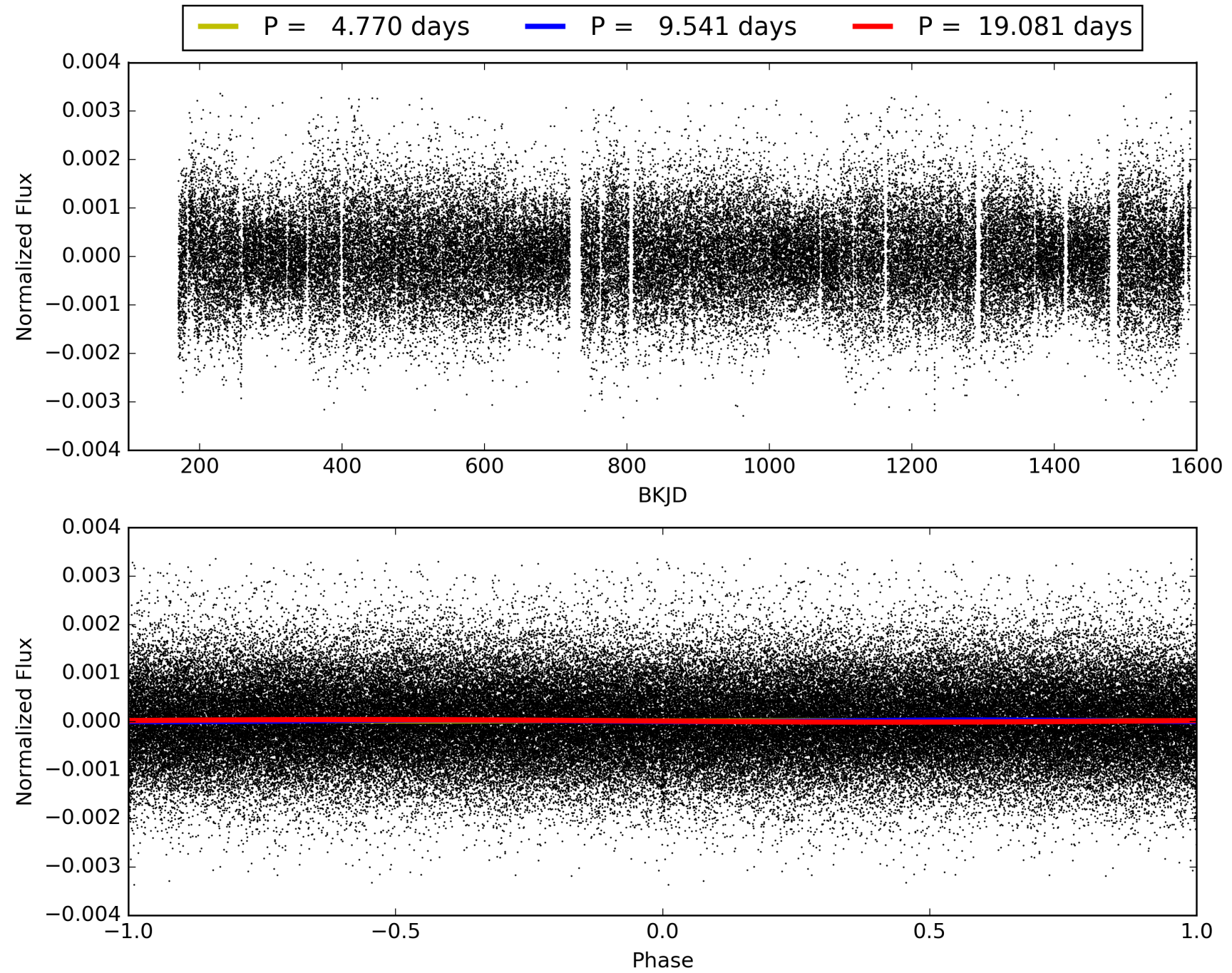
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:35:35 Z

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

TCE 012204137-01, PDC Light Curves

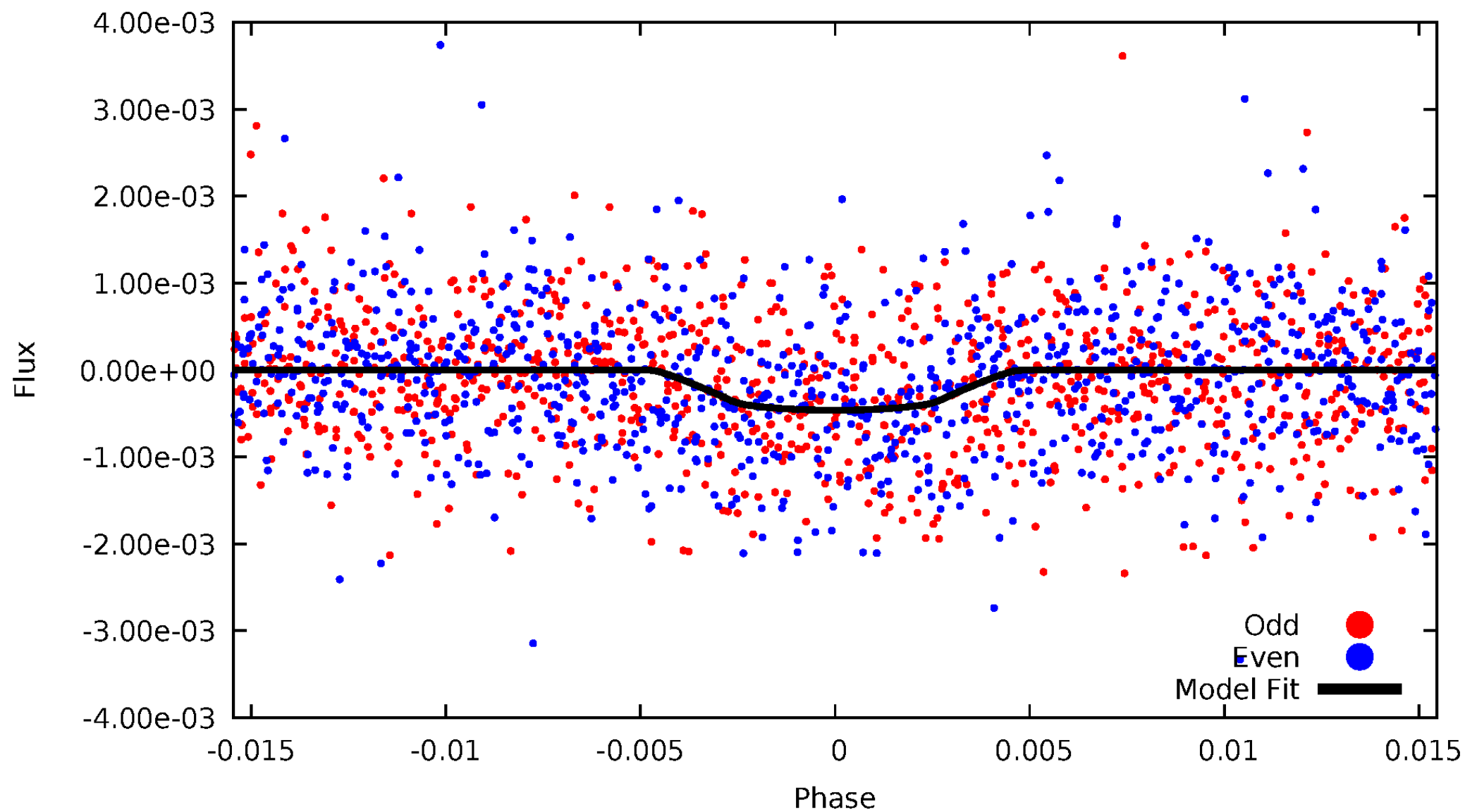


TCE 012204137-01



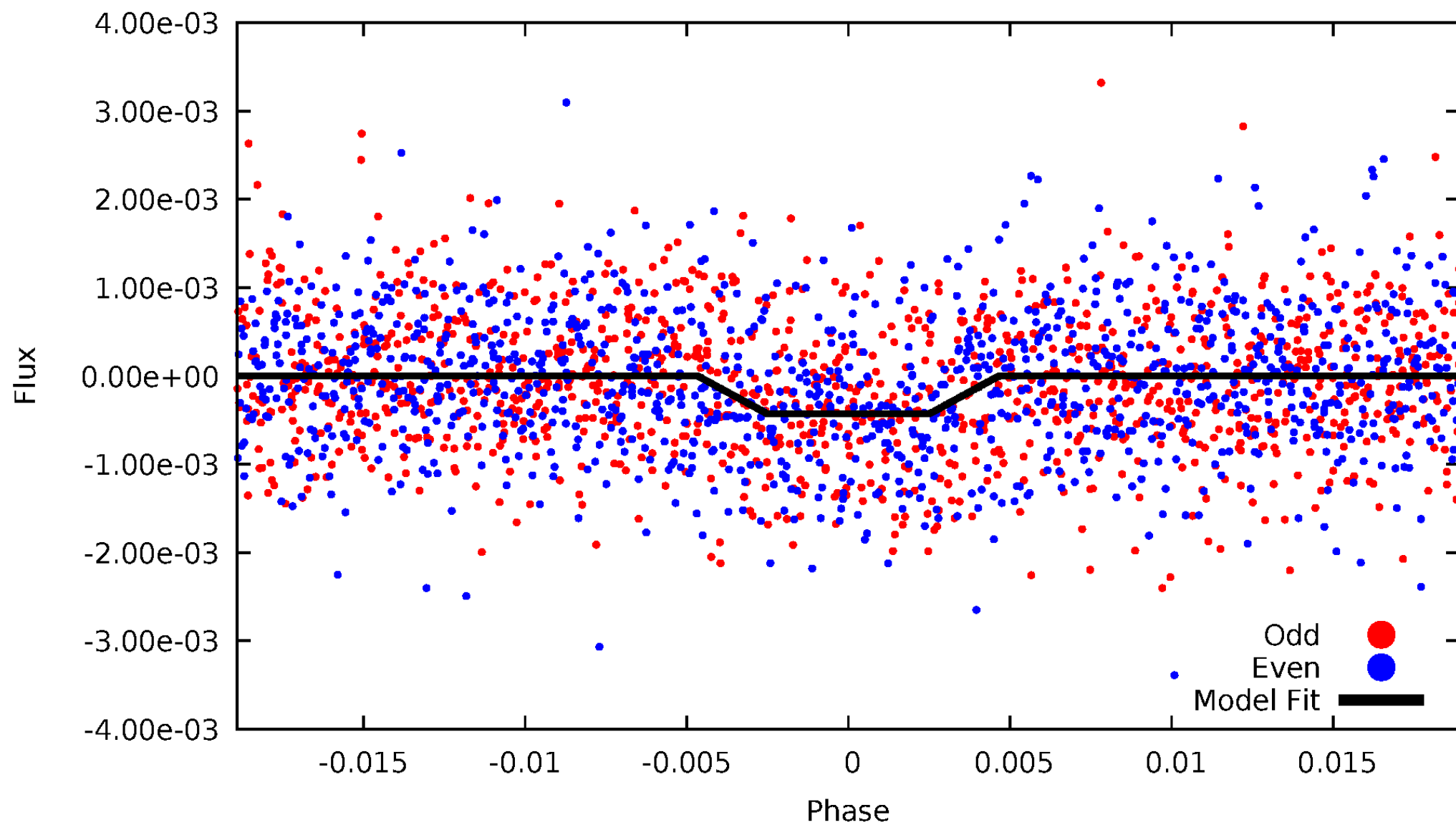
DV Odd/Even

TCE 012204137-01

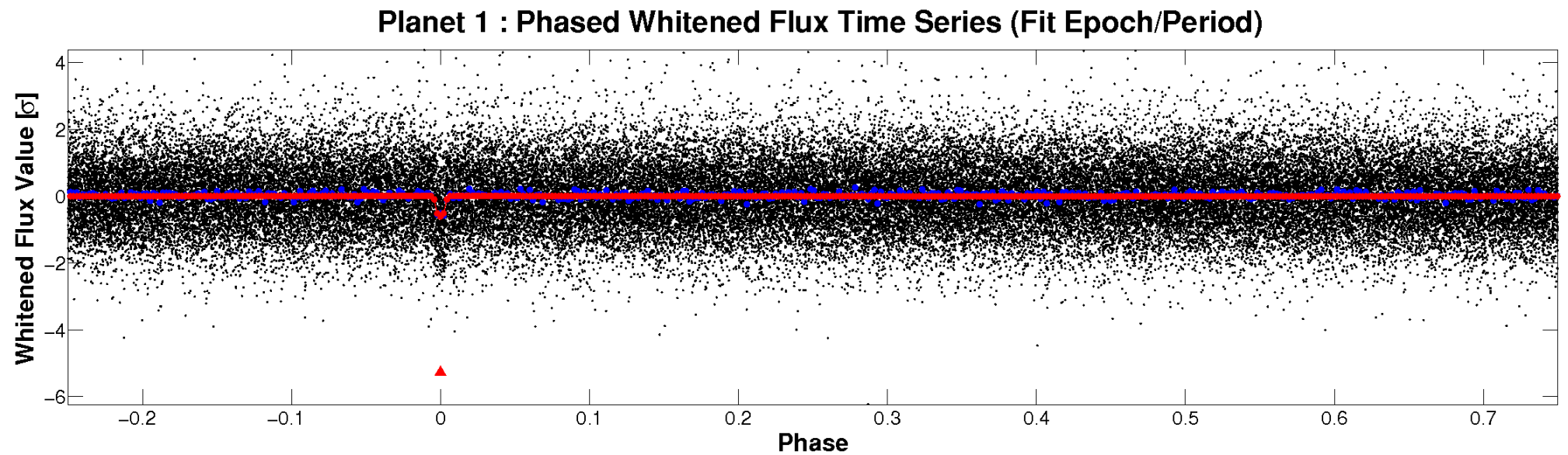
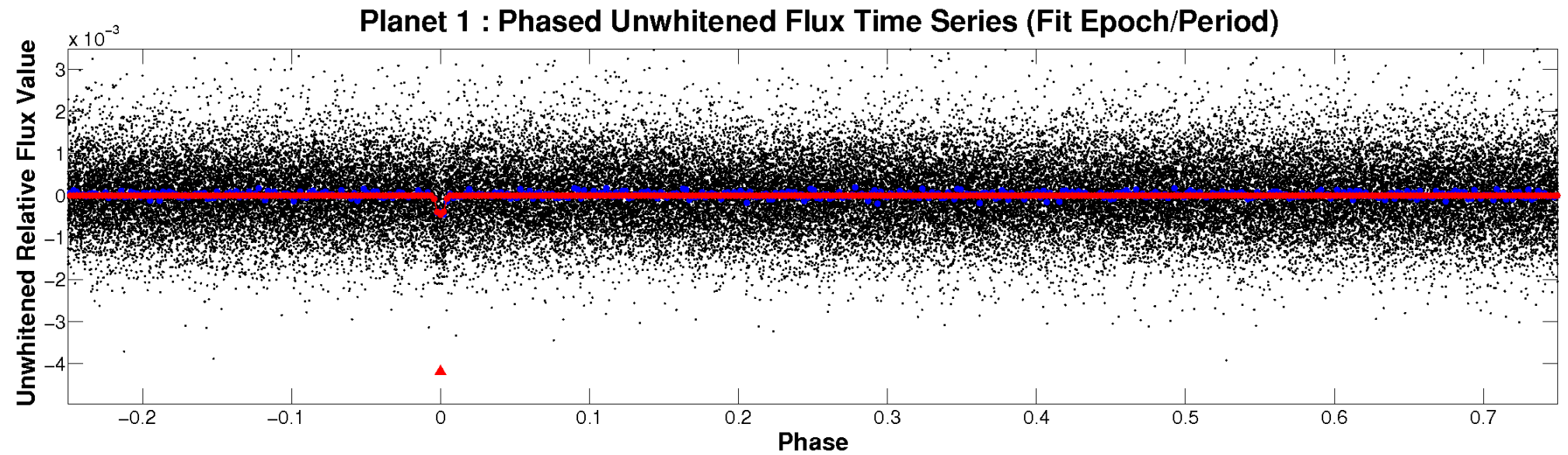


ALT Odd/Even

TCE 012204137-01

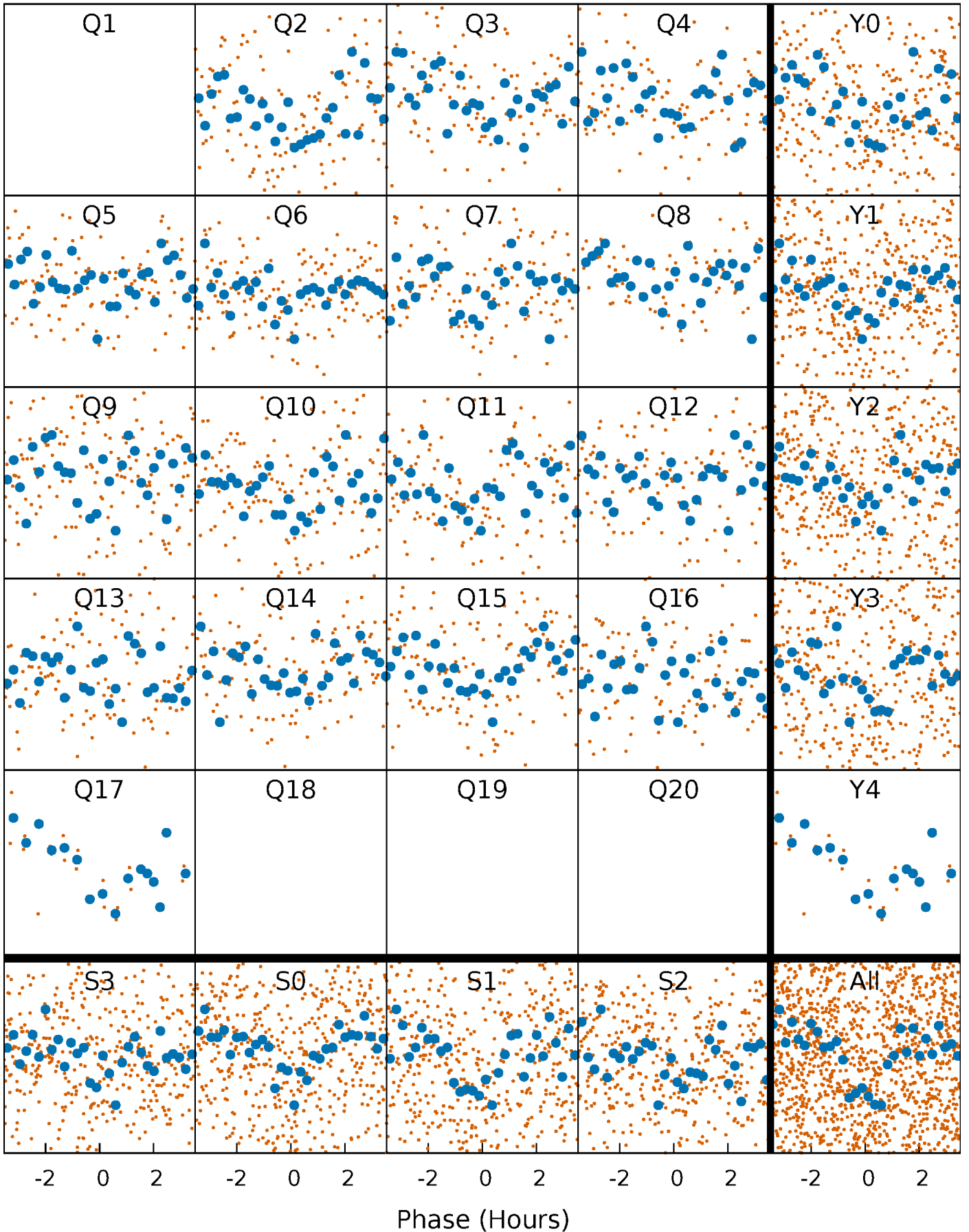


Non-Whitened Vs. Whitened Light Curve



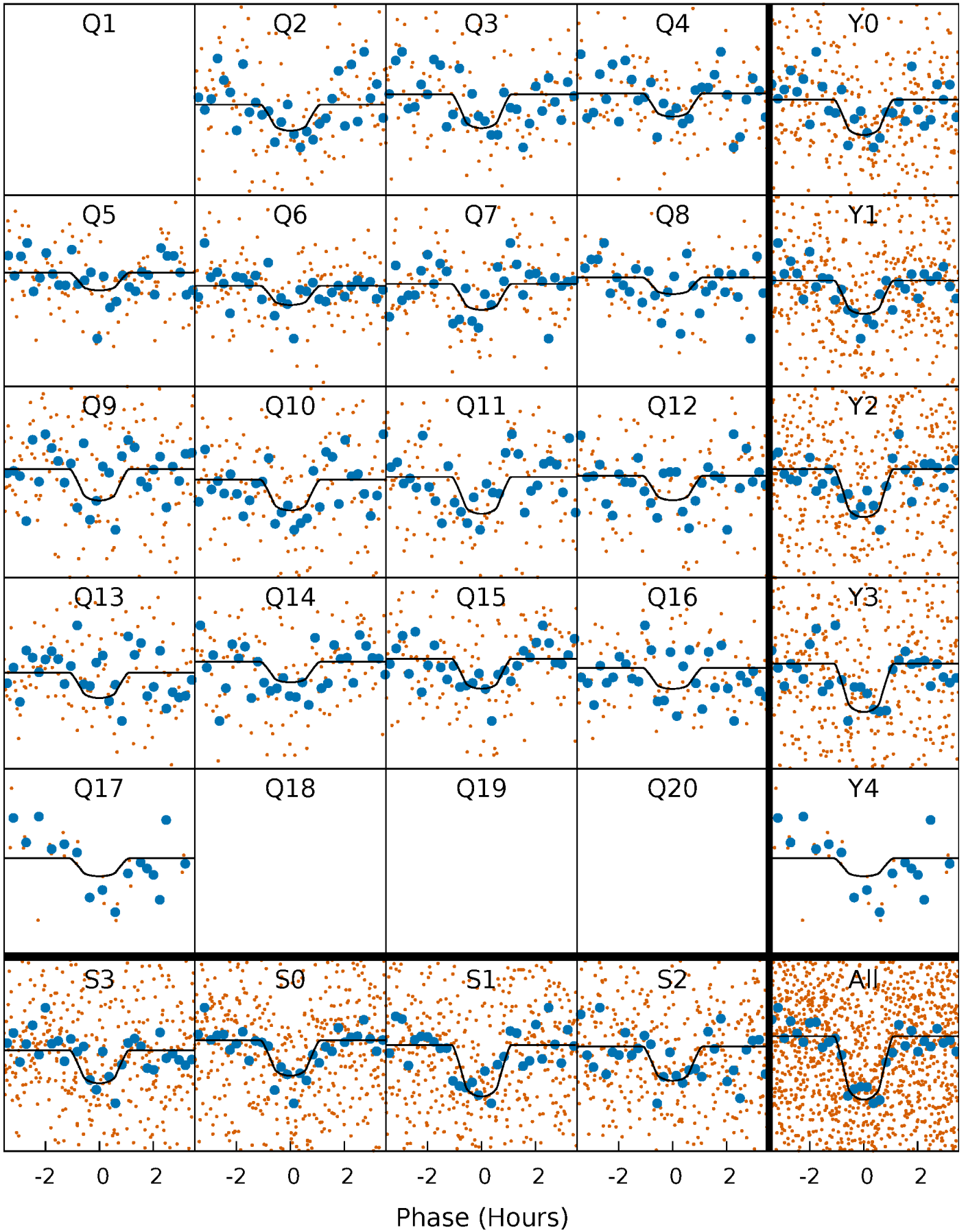
PDC Quarter-Phased Transit Curves

TCE 012204137-01 P= 9.540562 Days $T_0=131.916951$ (BKJD)



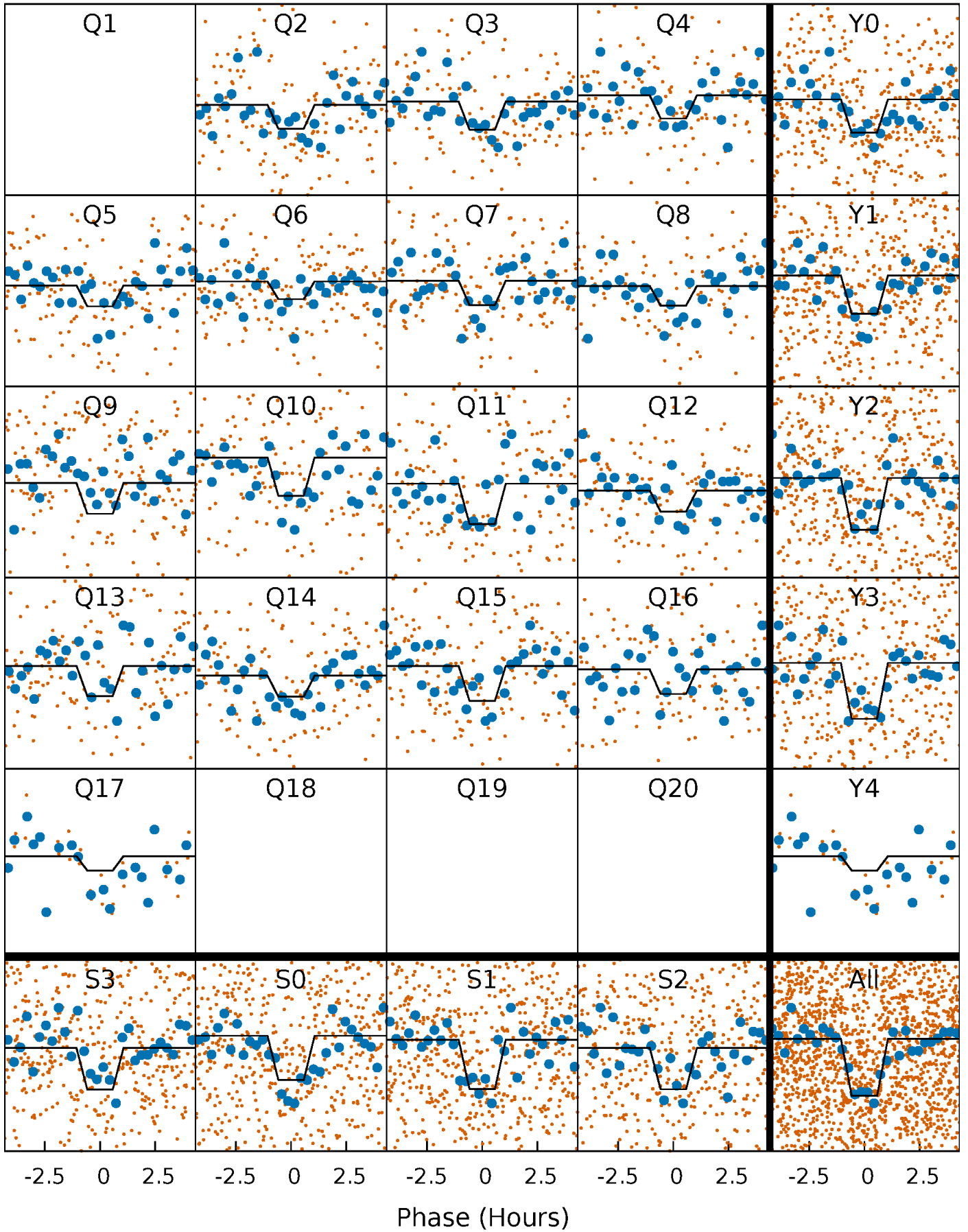
DV Quarter-Phased Transit Curves

TCE 012204137-01 P= 9.540562 Days $T_0=131.916951$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

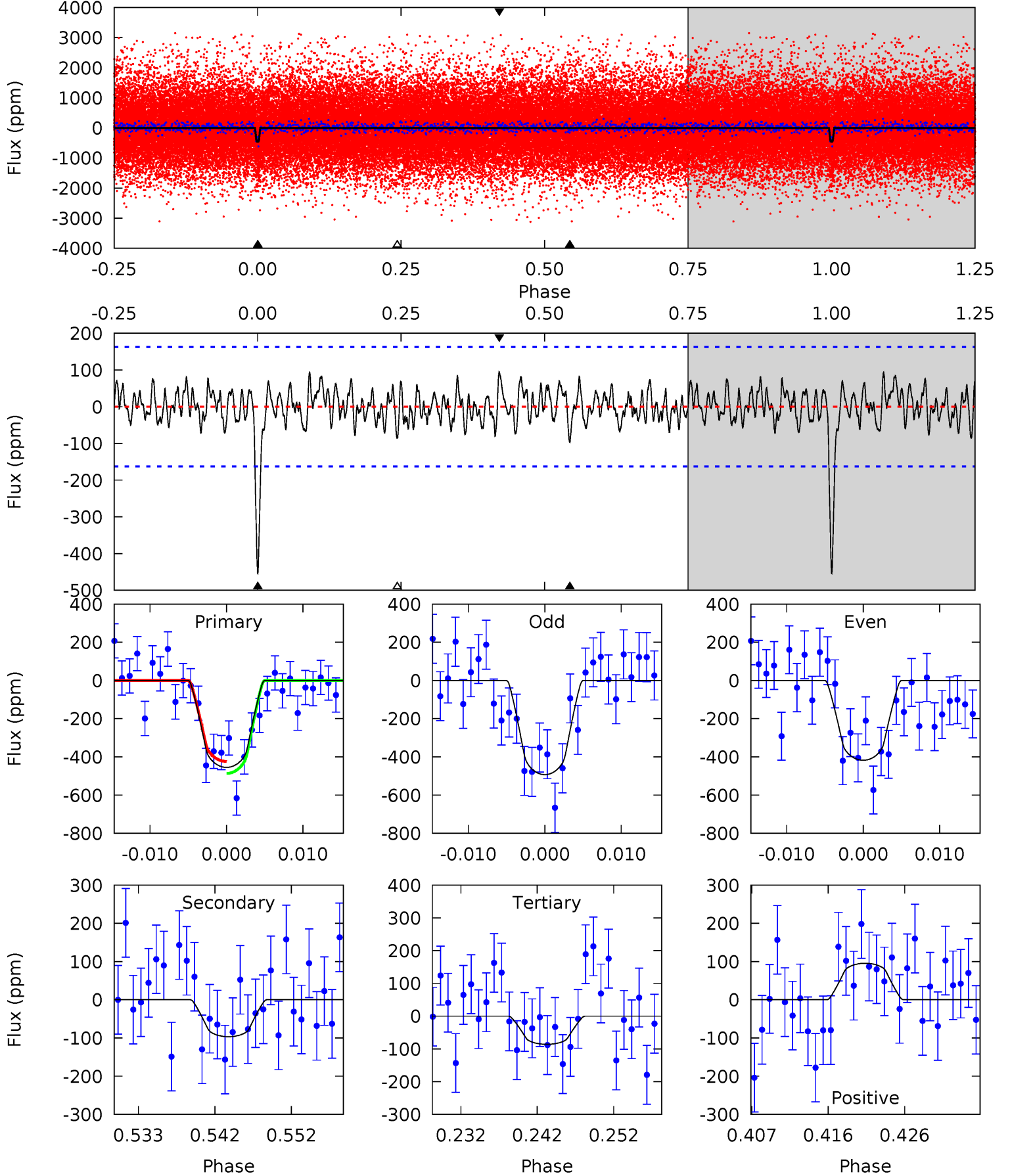
TCE 012204137-01 P= 9.540621 Days $T_0=131.911386$ (BKJD)



DV Model-Shift Uniqueness Test

012204137-01, P = 9.540562 Days, E = 131.916951 Days

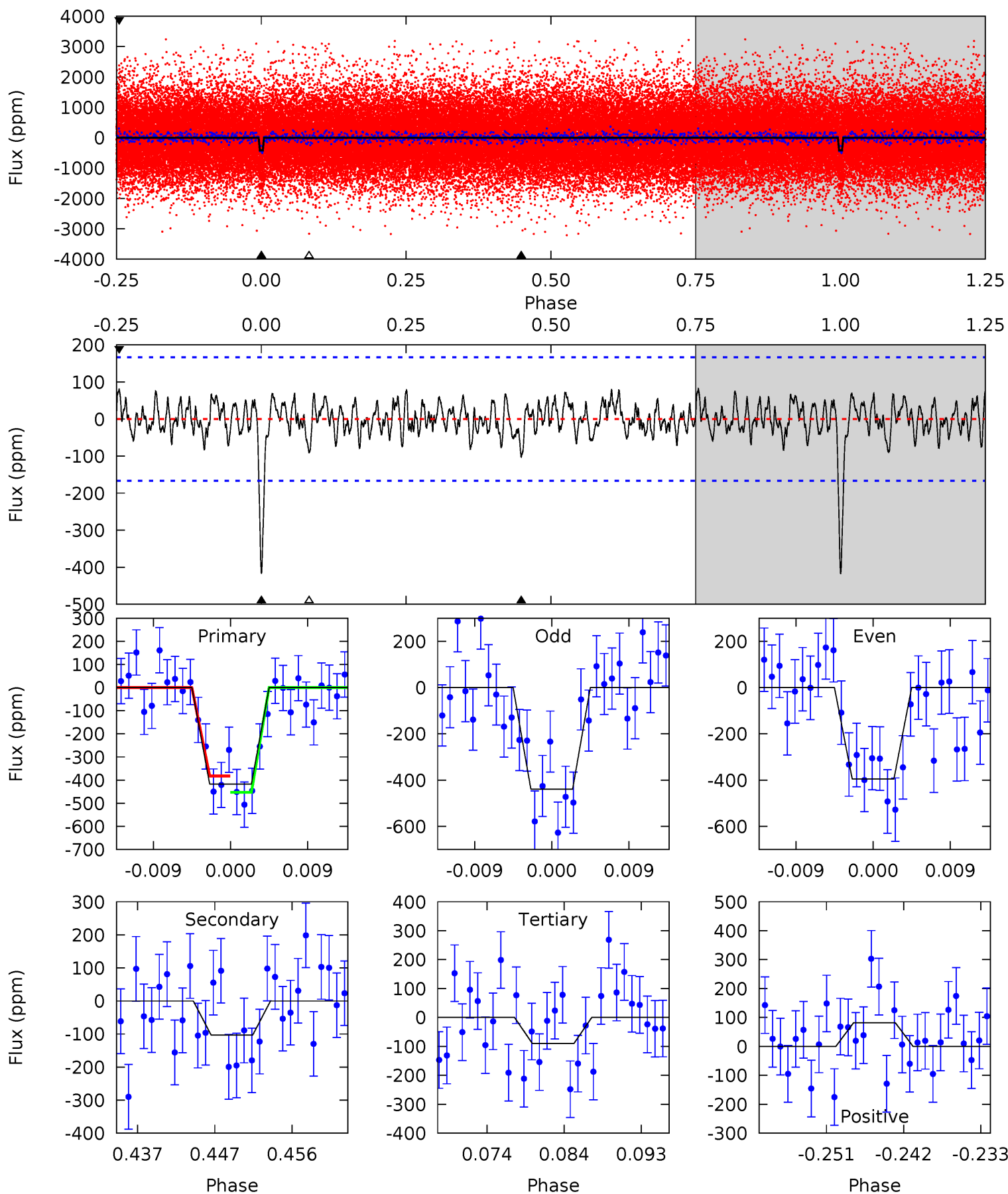
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	3.00	2.66	2.96	5.03	2.59	1.11	11.4	11.1	0.33	0.04	1.17	0.96	0.17	0.98



Alt Model-Shift Uniqueness Test

012204137-01, P = 9.540621 Days, E = 131.911386 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	3.11	2.71	2.47	5.04	2.60	1.03	9.90	10.1	0.40	0.64	0.67	0.91	0.16	1.06



Stellar Parameters For KIC 012204137

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5271^{+158}_{-158}	$4.522^{+0.056}_{-0.096}$	$0.000^{+0.300}_{-0.300}$	$0.831^{+0.122}_{-0.081}$	$0.839^{+0.085}_{-0.078}$	$2.055^{+0.559}_{-0.624}$
	+3%/-3%	+1%/-2%	+inf%/-inf%	+15%/-10%	+10%/-9%	+27%/-30%
Source	PHO1	KIC0	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 012204137-01 / KOI 4590.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-97 ± 32	$2.77^{+2.27}_{-1.77}$	1034^{+46}_{-40}	3457^{+1537}_{-576}	46^{+296}_{-33}
Alt.	-103 ± 33	$2.56^{+2.05}_{-1.70}$	1038^{+47}_{-45}	3586^{+1878}_{-657}	57^{+445}_{-42}

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 $A_{obs} \gg 1.0$

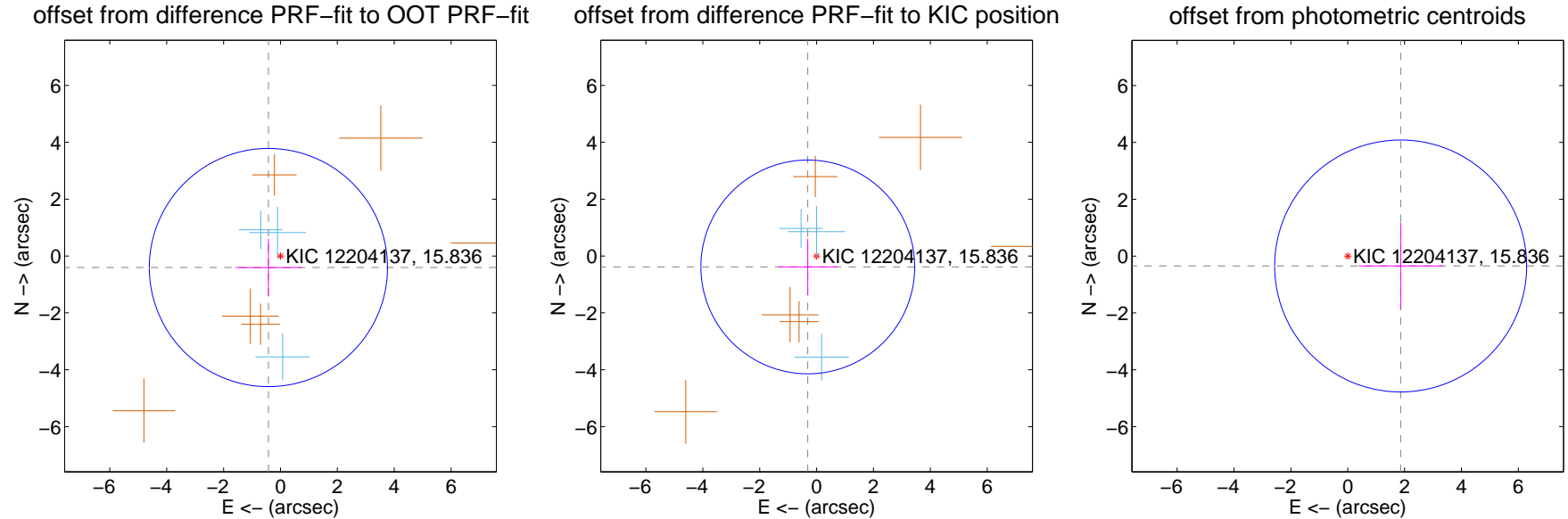
DV Centroid Data

Supplemental centroid analysis for 012204137-01. Kepler magnitude: 15.84. Transit SNR 10.85

There are 3 quarters with good PRF difference image offsets

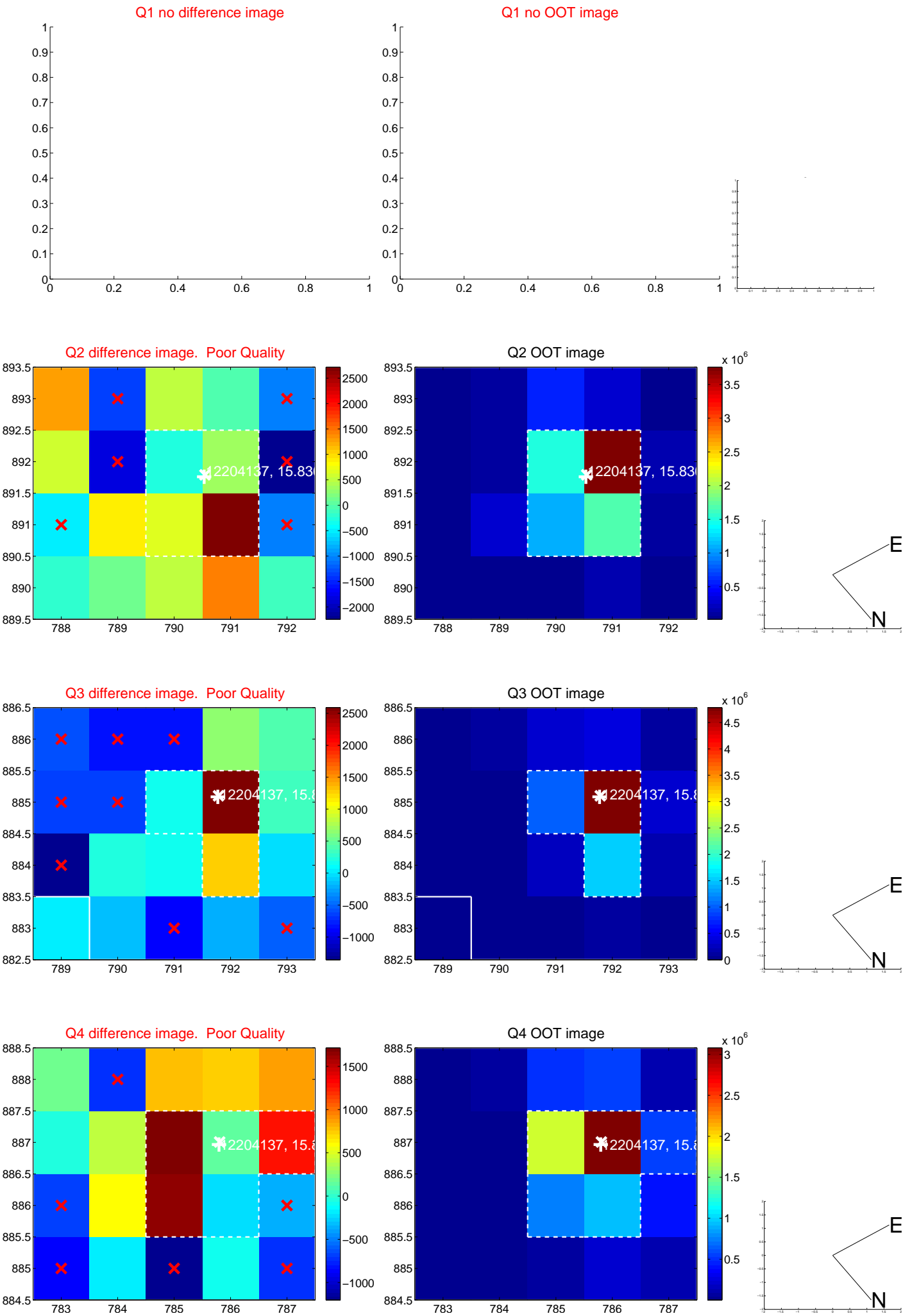
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.586 ± 1.396	0.42	0.424 ± 1.156	-0.405 ± 1.012
PRF-fit source offset from KIC position	0.493 ± 1.253	0.39	0.309 ± 1.029	-0.384 ± 0.992
photometric centroid source offset	1.89 ± 1.48	1.28	-1.86 ± 1.48	-0.35 ± 1.53

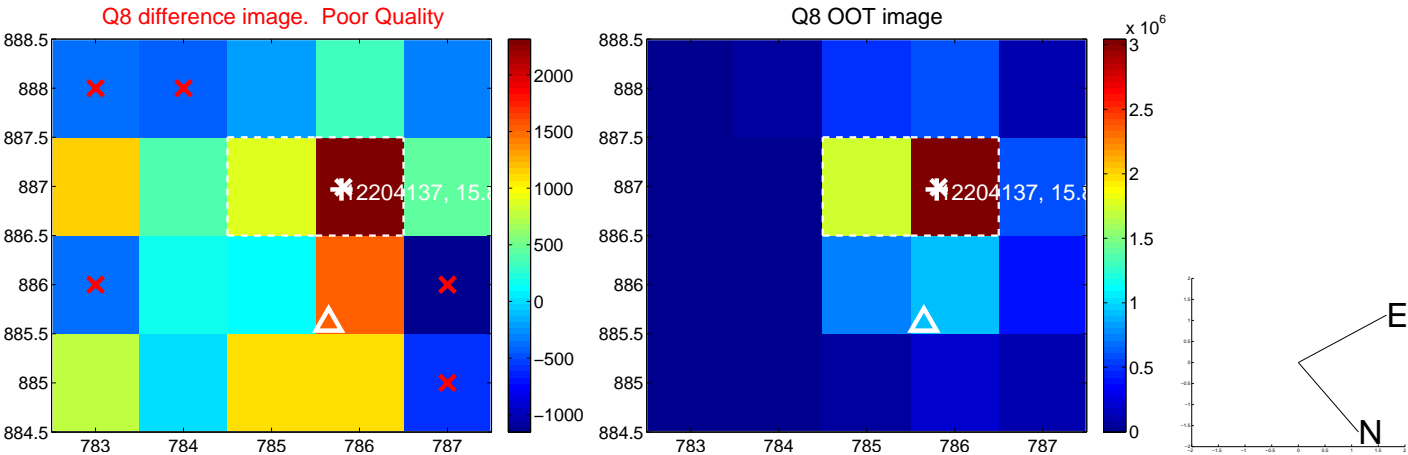
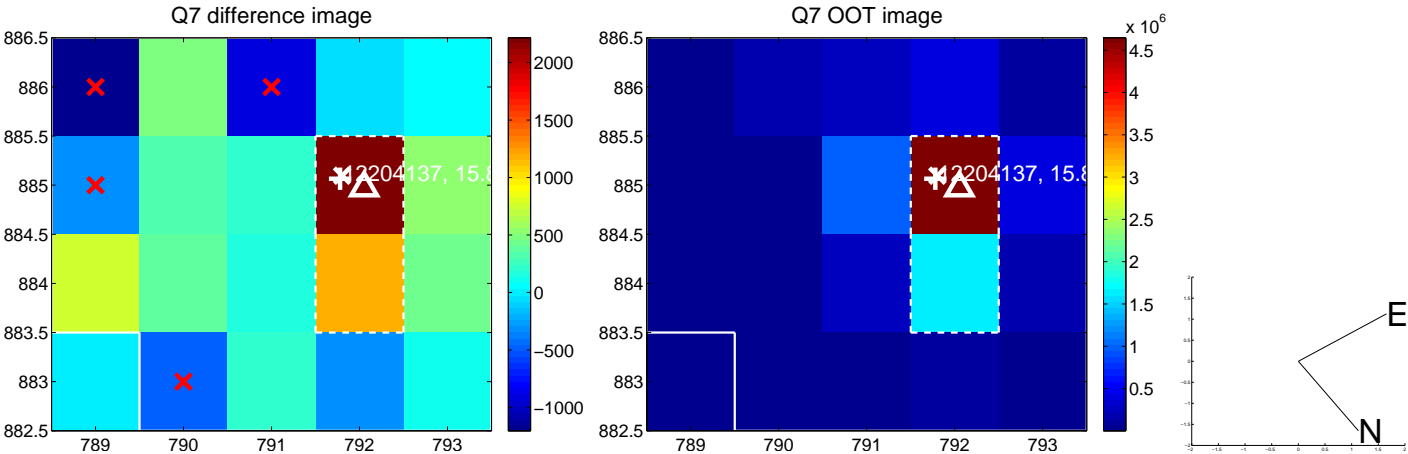
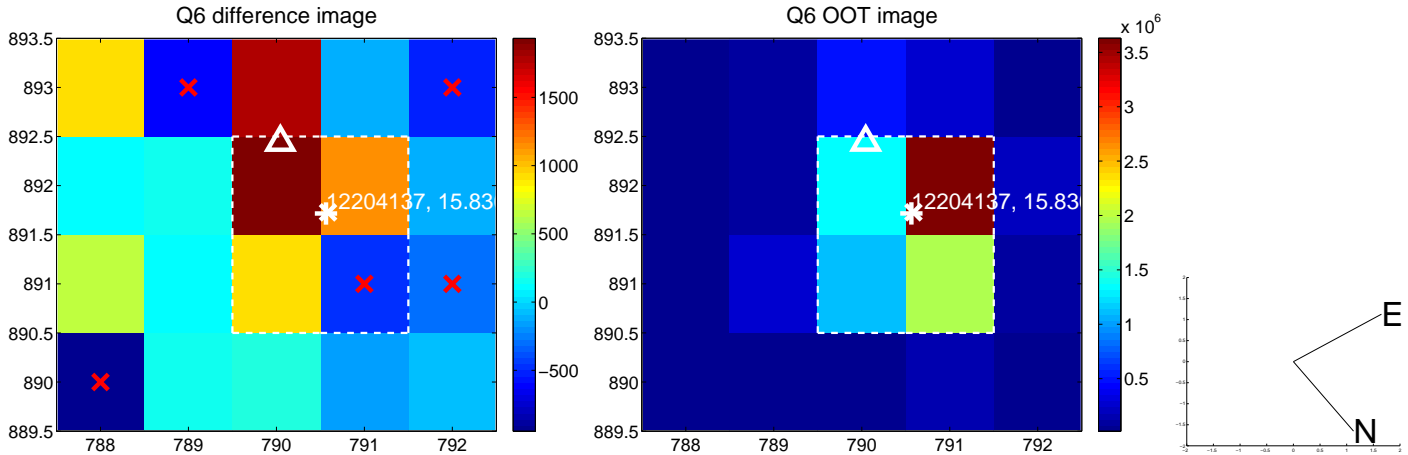
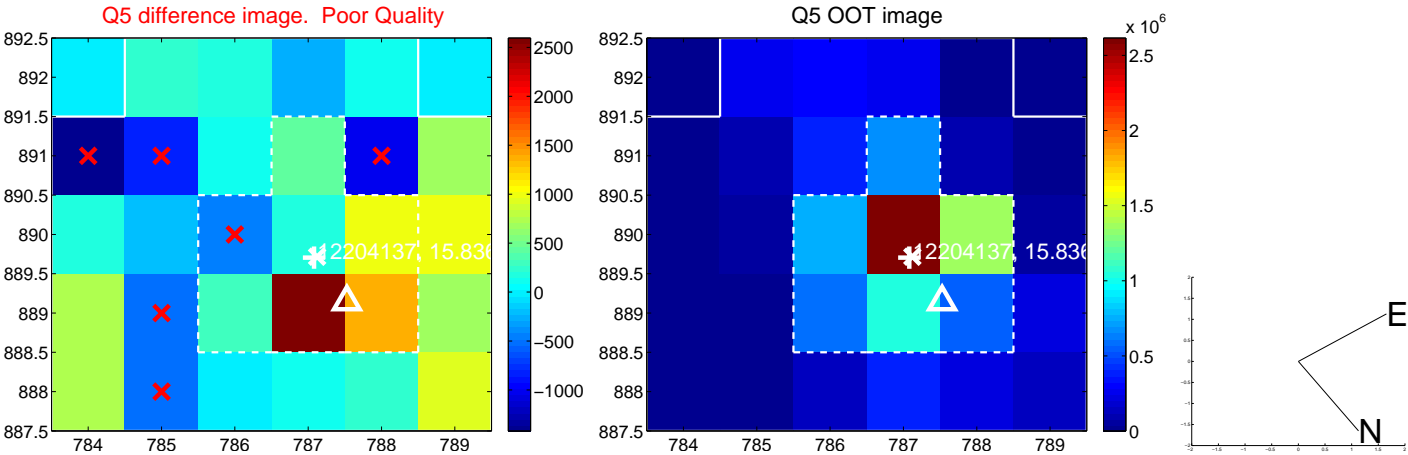


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

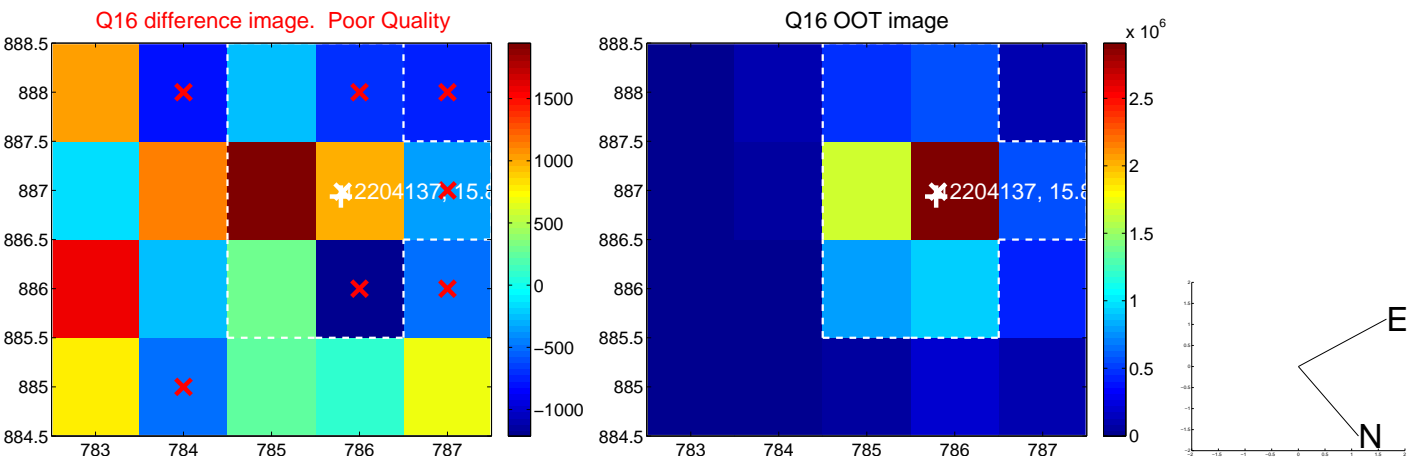
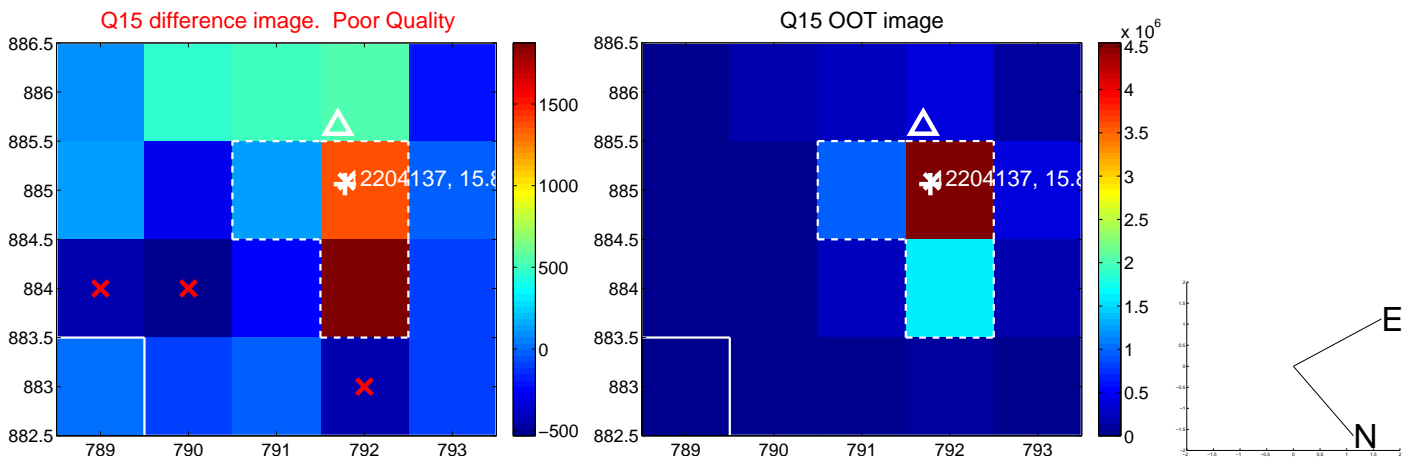
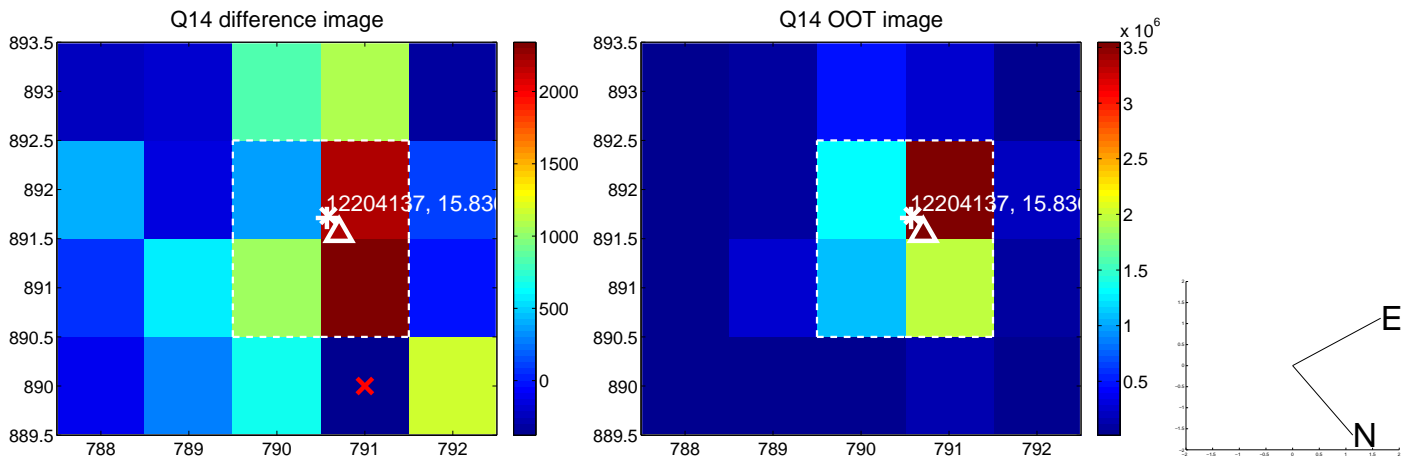
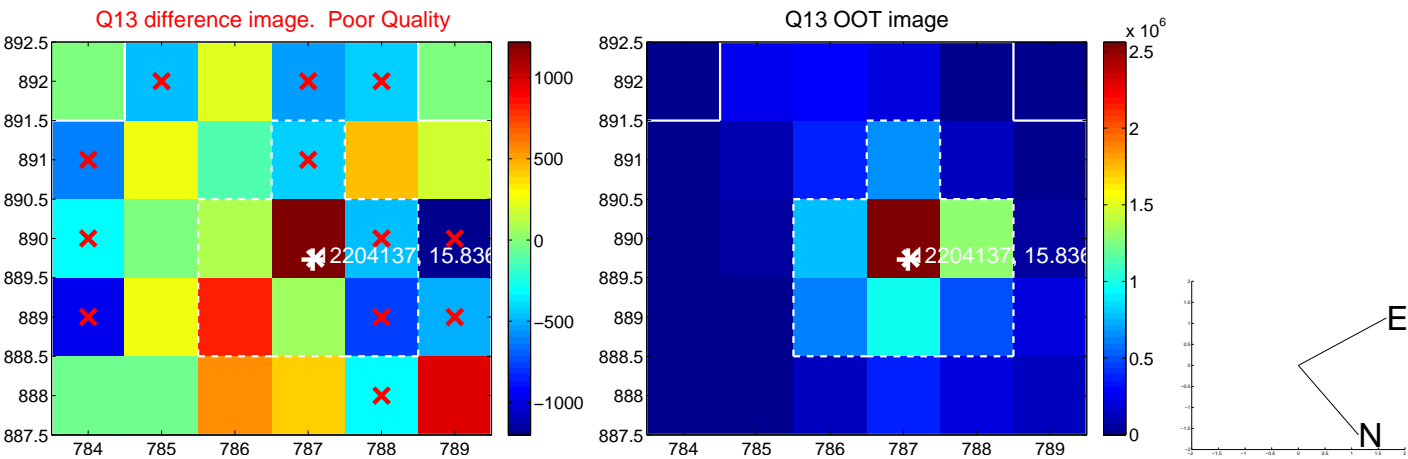
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



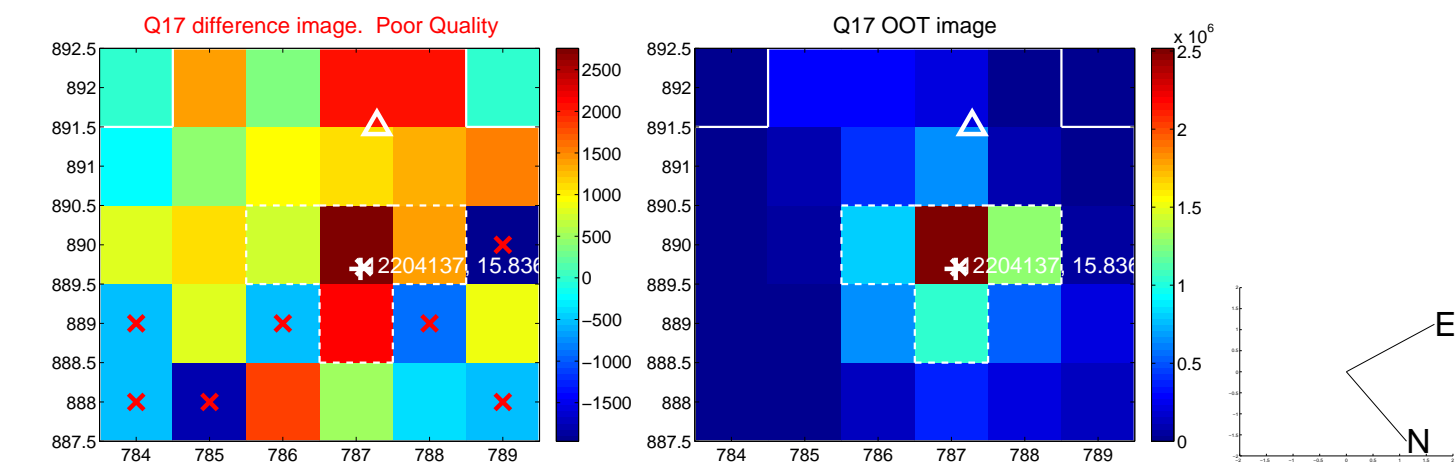
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



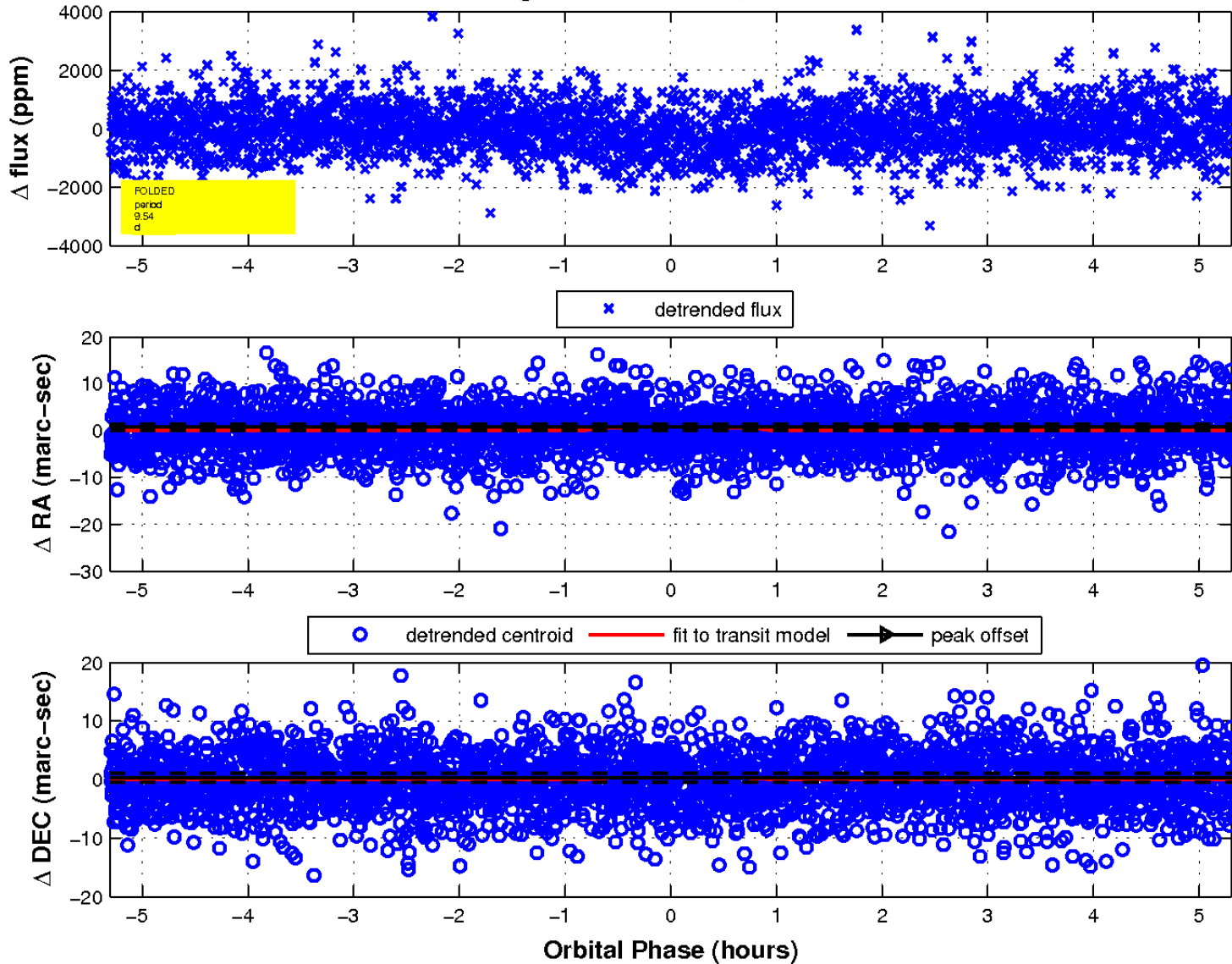
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

