

KIC 009837685

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})
009837685-01	OBS	2461.01	13.712193	135.517086	836.2	2.630	20.9	22.9	0.83	5550	2.86	49.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009837685-01	OBS	PC	1.00	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 009837685-01

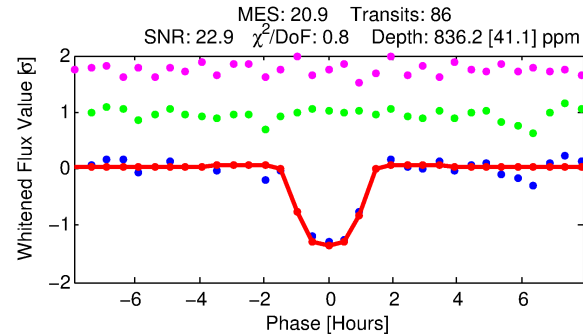
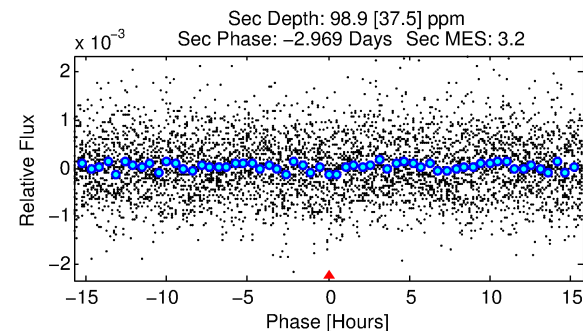
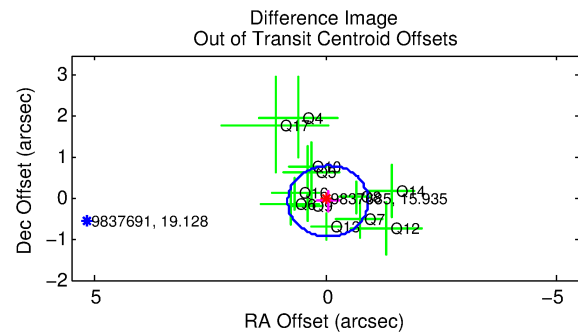
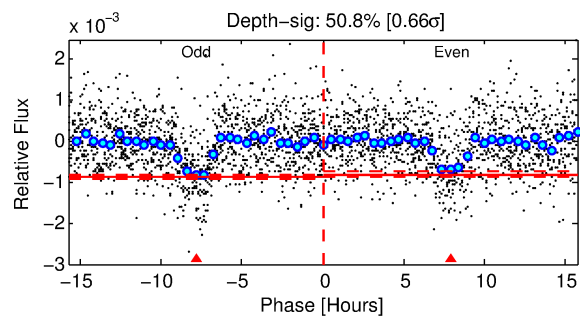
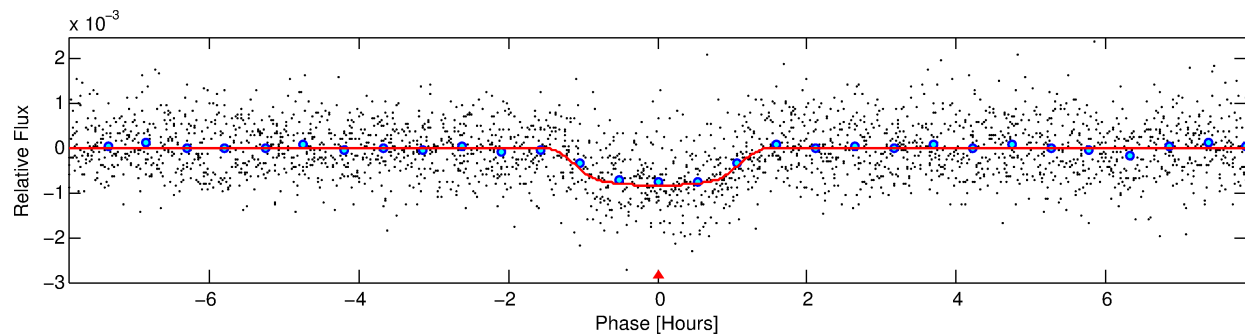
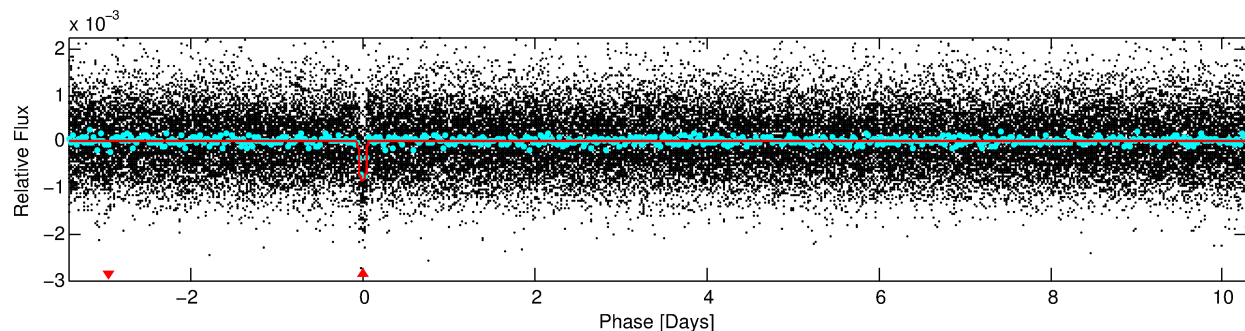
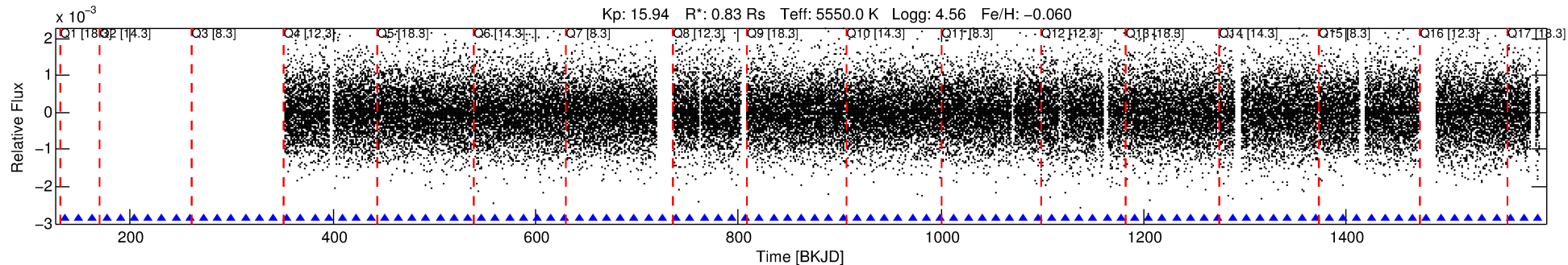
No Significant Match Found

DV One-Page Summary

KIC: 9837685 Candidate: 1 of 1 Period: 13.712 d

KOI: K02461.01 Corr: 0.974

Kp: 15.94 R*: 0.83 Rs Teff: 5550.0 K Logg: 4.56 Fe/H: -0.060



DV Fit Results:

Period = 13.71219 [0.00005] d
Epoch = 135.5171 [0.0034] BKJD
Rp/R* = 0.0315 [0.0046]
a/R* = 20.54 [12.44]
b = 0.89 [0.14]
Seff = 49.39 [16.36]
Teq = 676 [56] K
Rp = 2.86 [0.81] Re
a = 0.1090 [0.0225] AU
Ag = 79.05 [44.77] [1.74σ]
Teffp = 3116 [386] K [6.26σ]

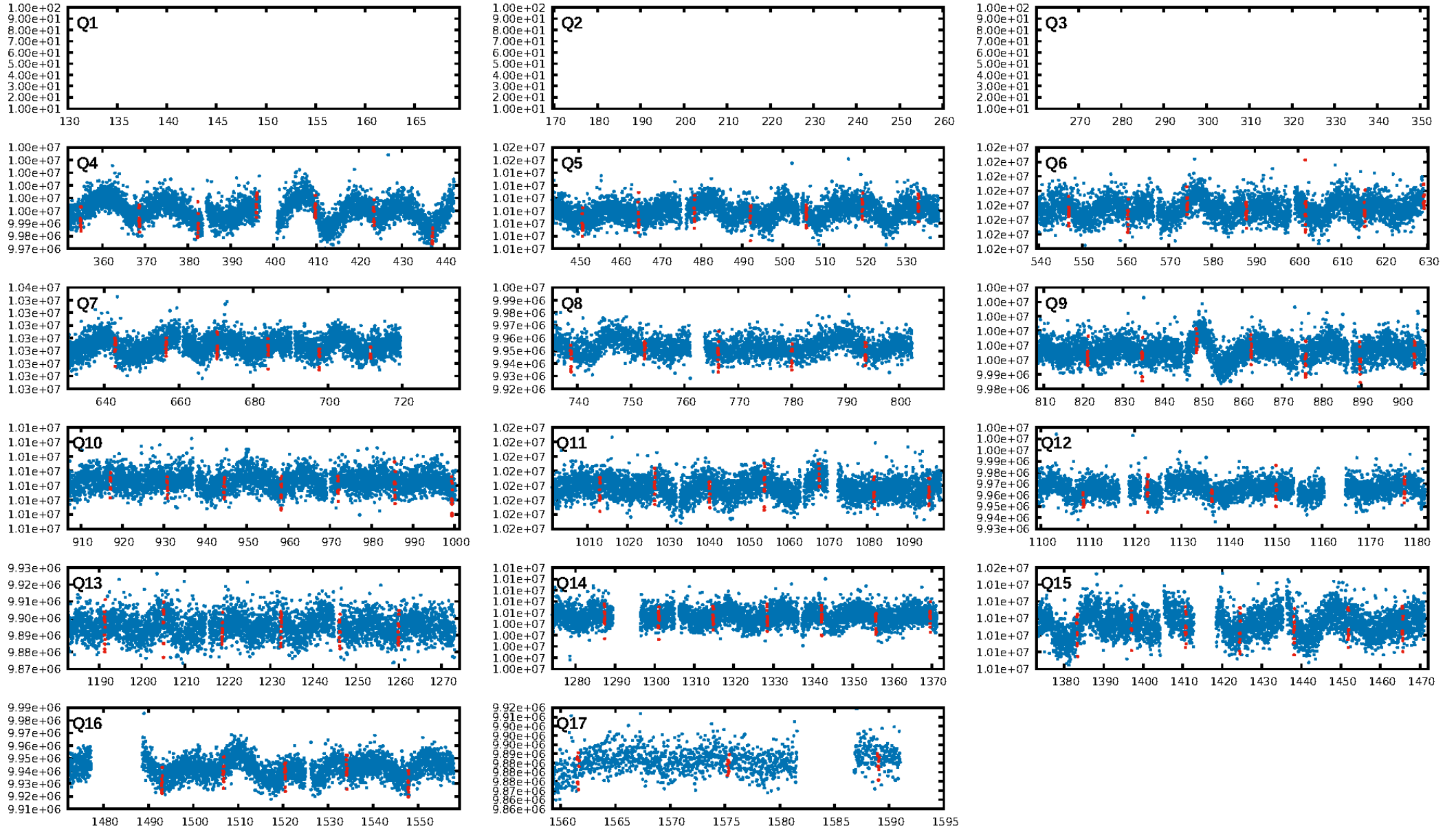
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.13e-94
RollingBand-fgt: 1.00 [83/83]
GhostDiagnostic-chr: 3.009
Centroid-sig: 26.1%
Centroid-so: 0.776 arcsec [1.35σ]
OotOffset-rm: 0.089 arcsec [0.31σ]
OotOffset-st: 3/1/4/4 [12]
KicOffset-rm: 0.114 arcsec [0.55σ]
KicOffset-st: 3/1/4/4 [12]
DiffImageQuality-fgm: 0.92 [11/12]
DiffImageOverlap-fno: 1.00 [14/14]

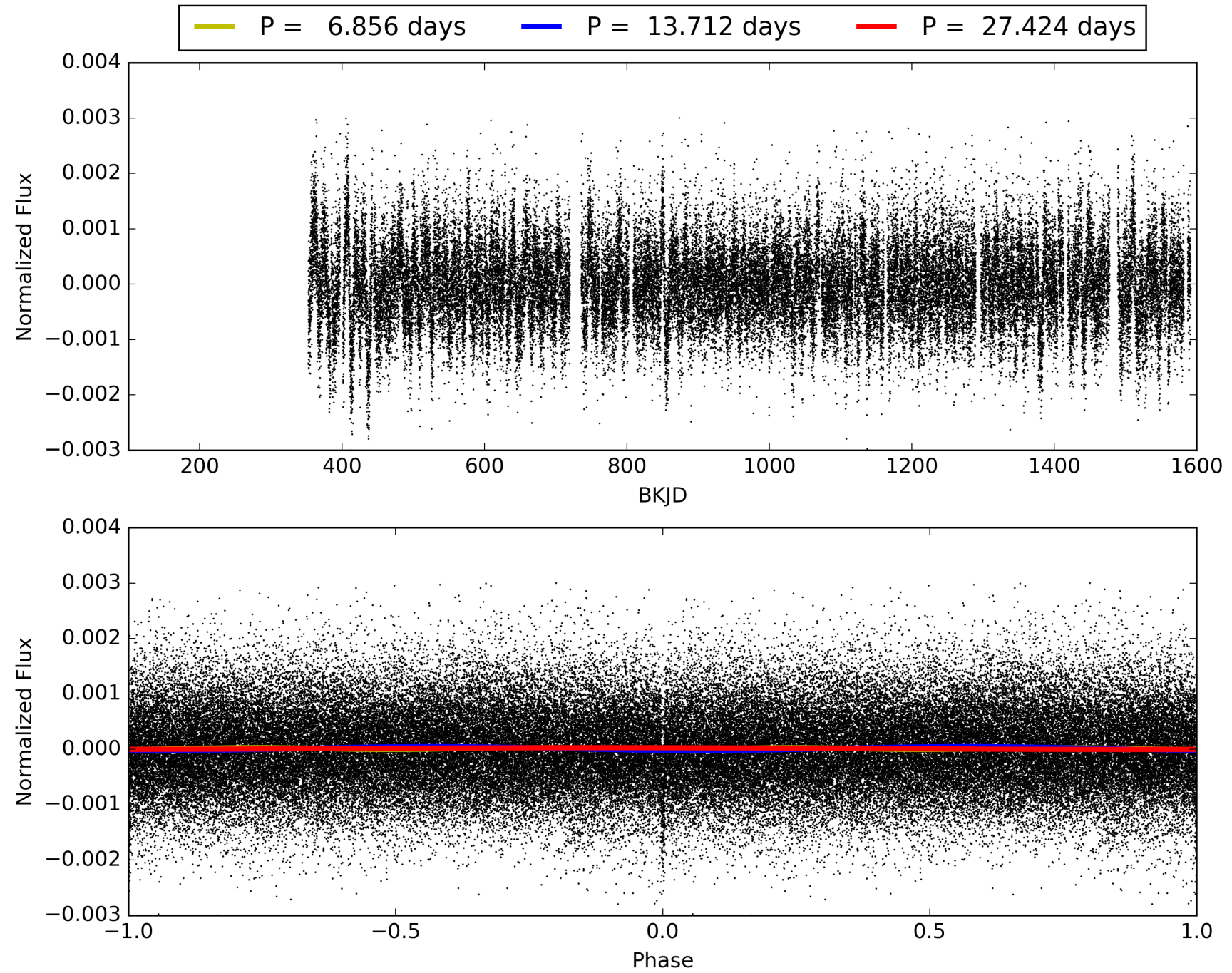
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:03:22 Z

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

TCE 009837685-01, PDC Light Curves

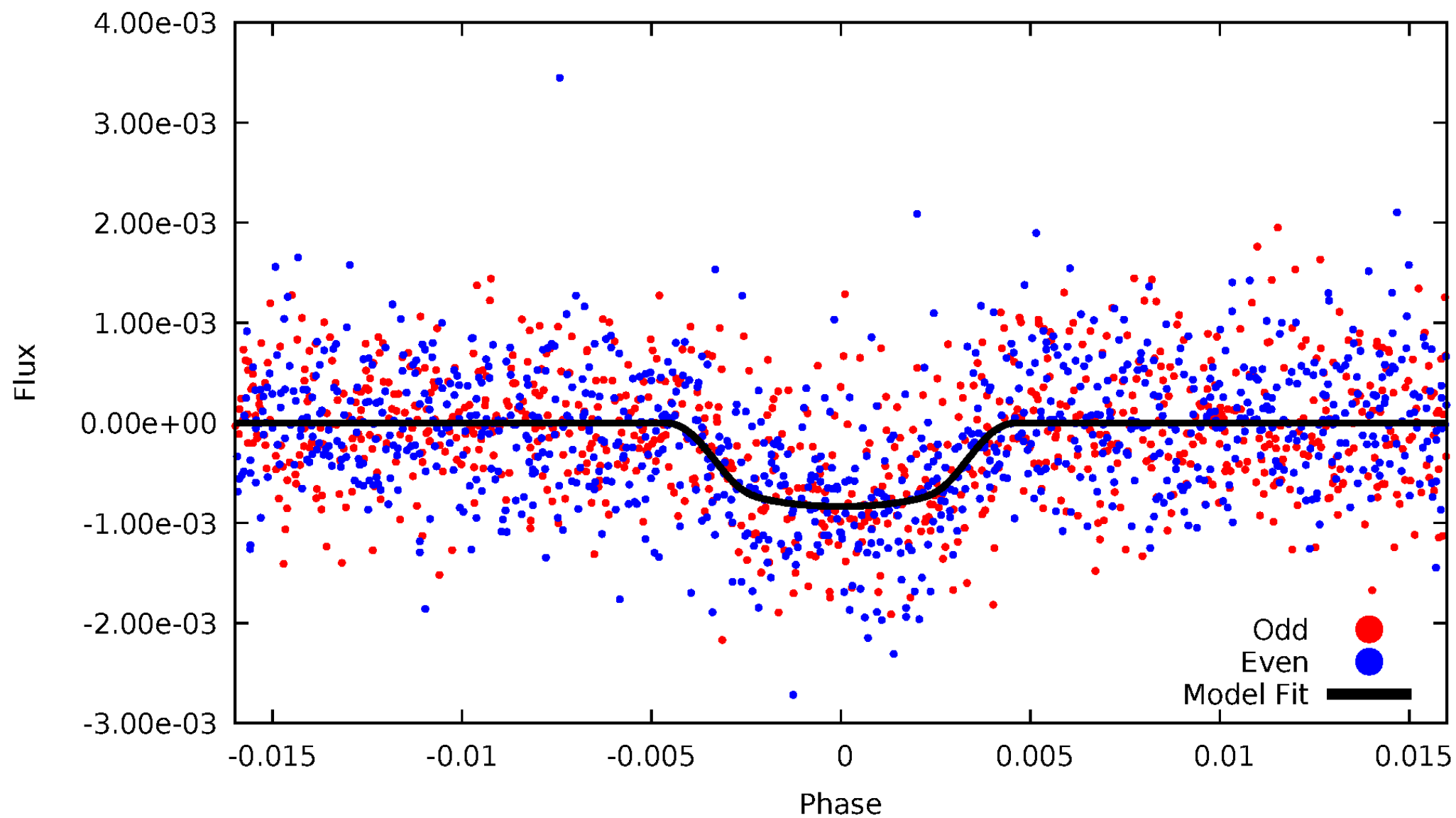


TCE 009837685-01



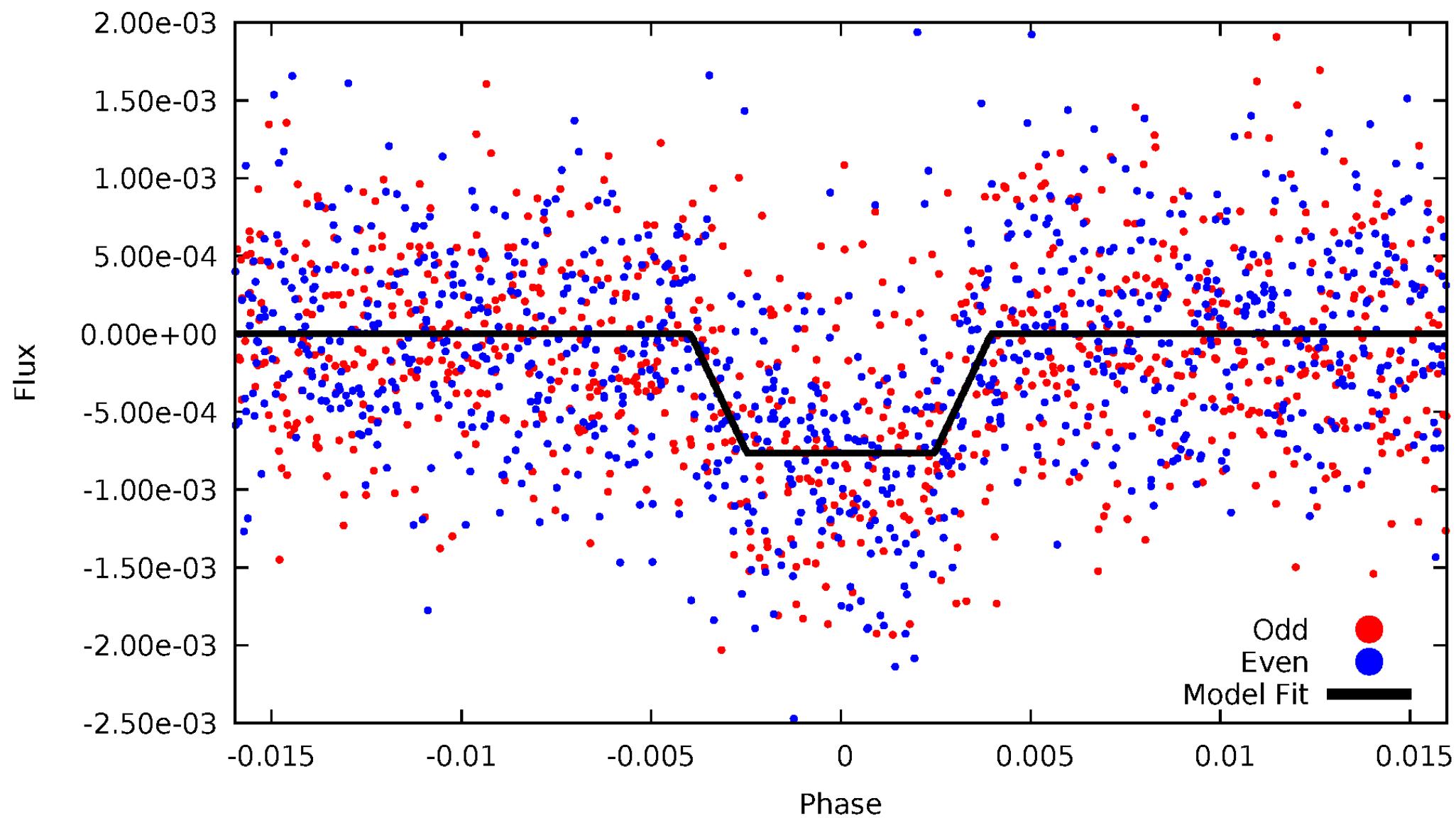
DV Odd/Even

TCE 009837685-01

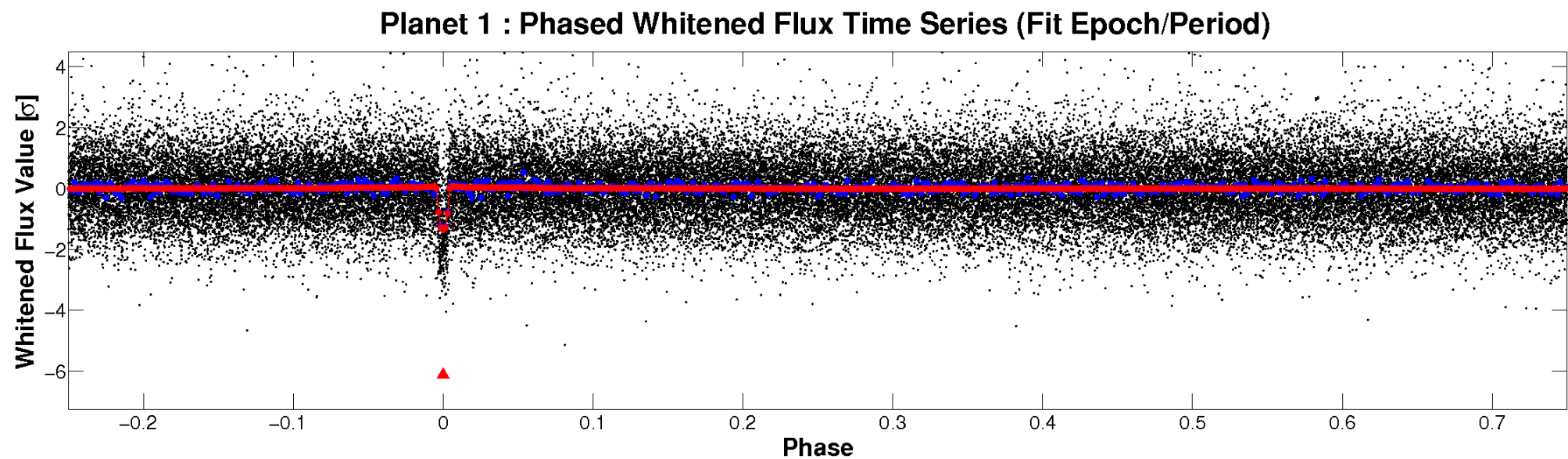
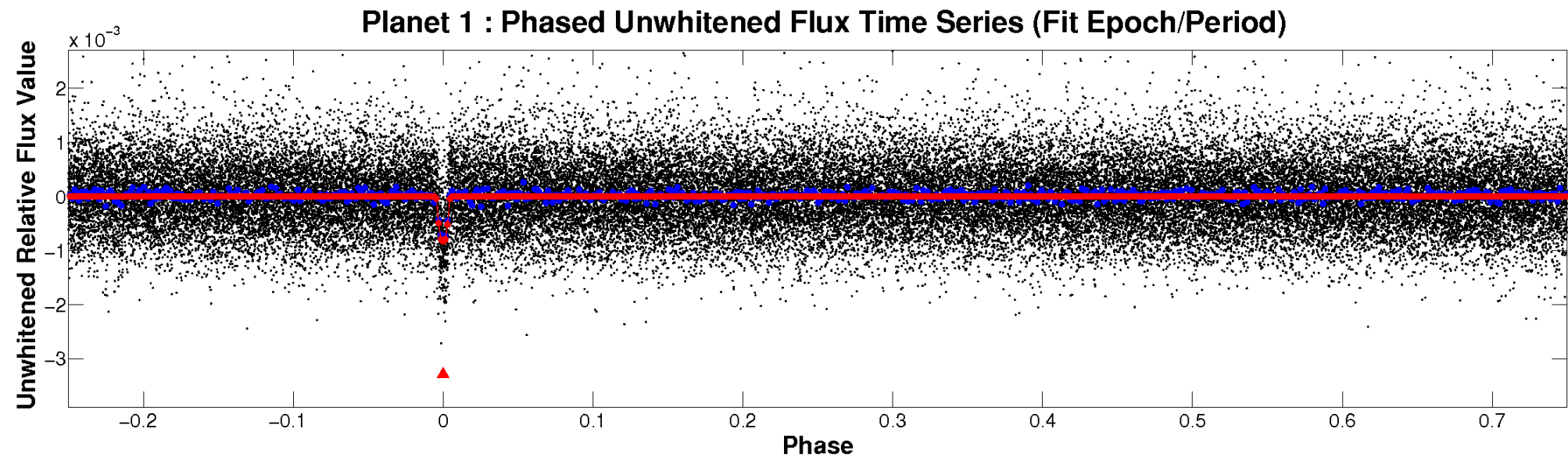


ALT Odd/Even

TCE 009837685-01

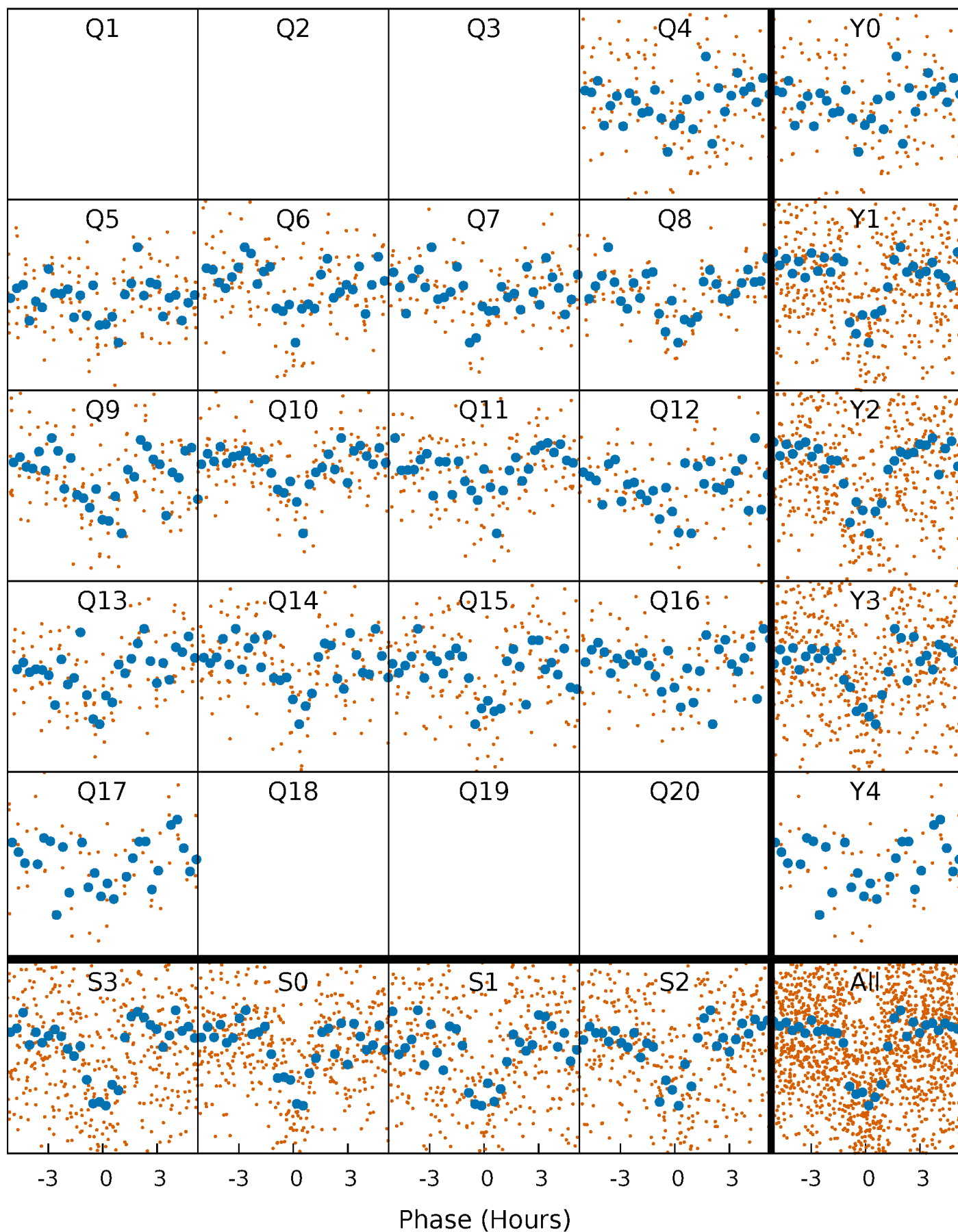


Non-Whitened Vs. Whitened Light Curve



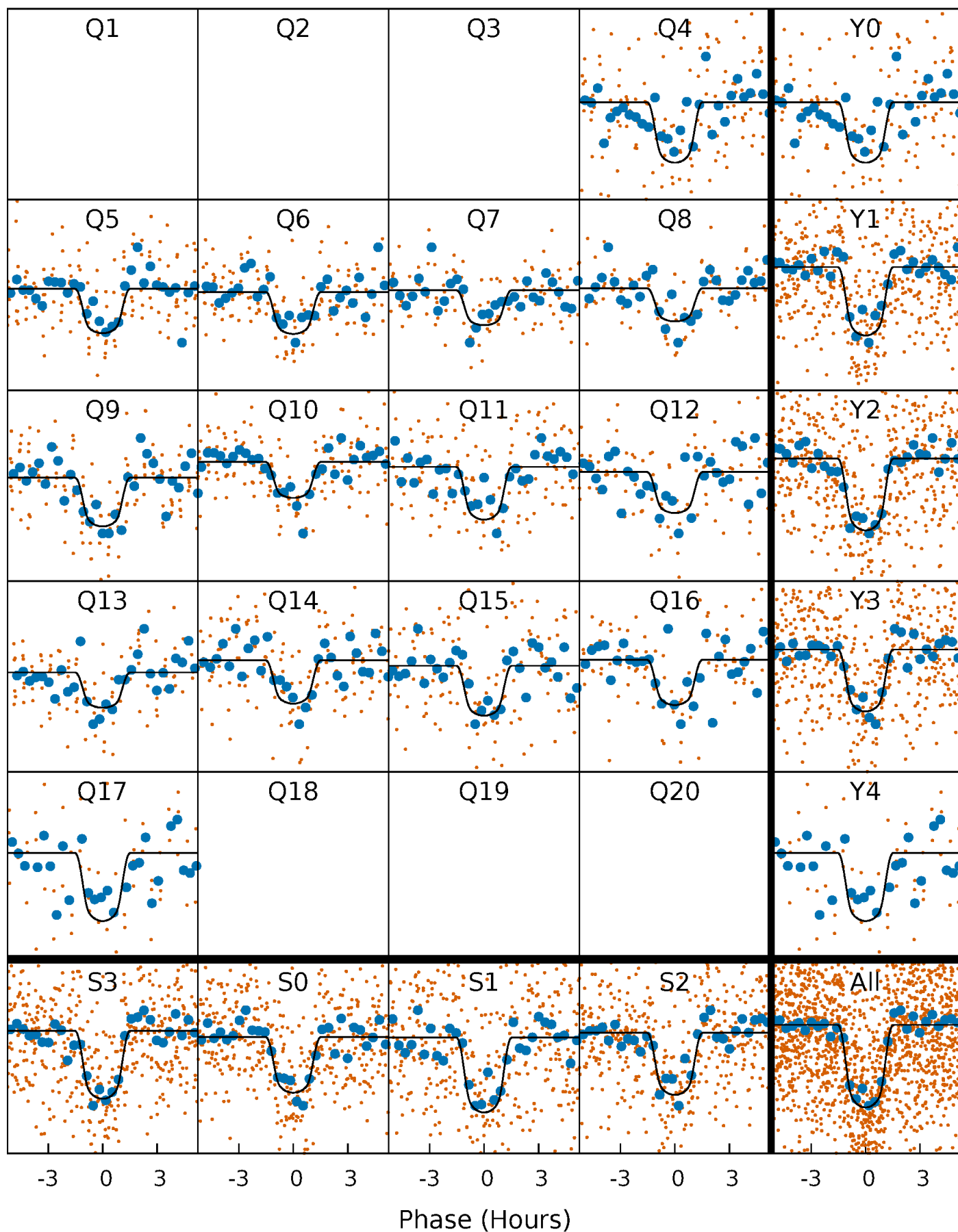
PDC Quarter-Phased Transit Curves

TCE 009837685-01 P= 13.712193 Days $T_0=135.517086$ (BKJD)



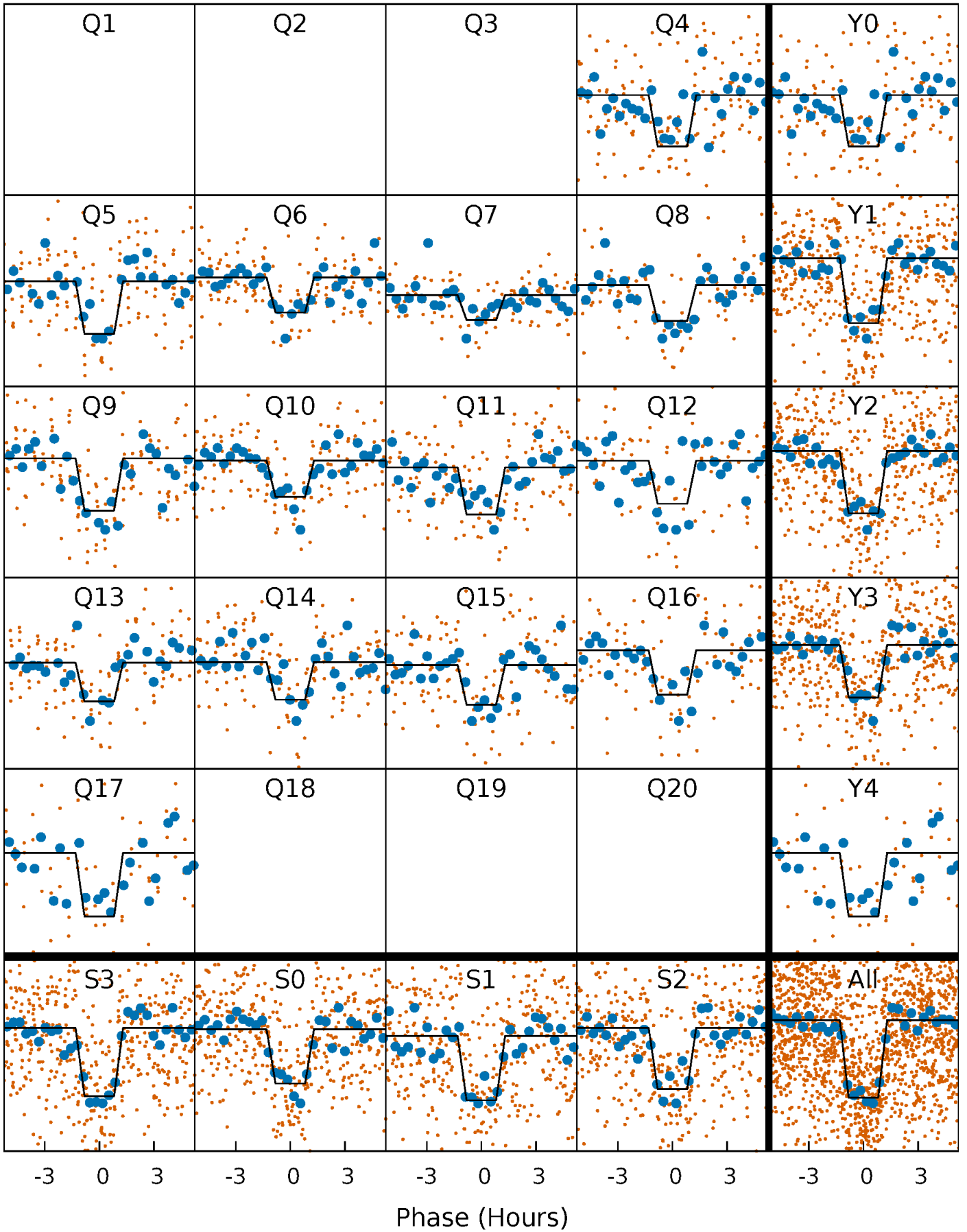
DV Quarter-Phased Transit Curves

TCE 009837685-01 P= 13.712193 Days $T_0=135.517086$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

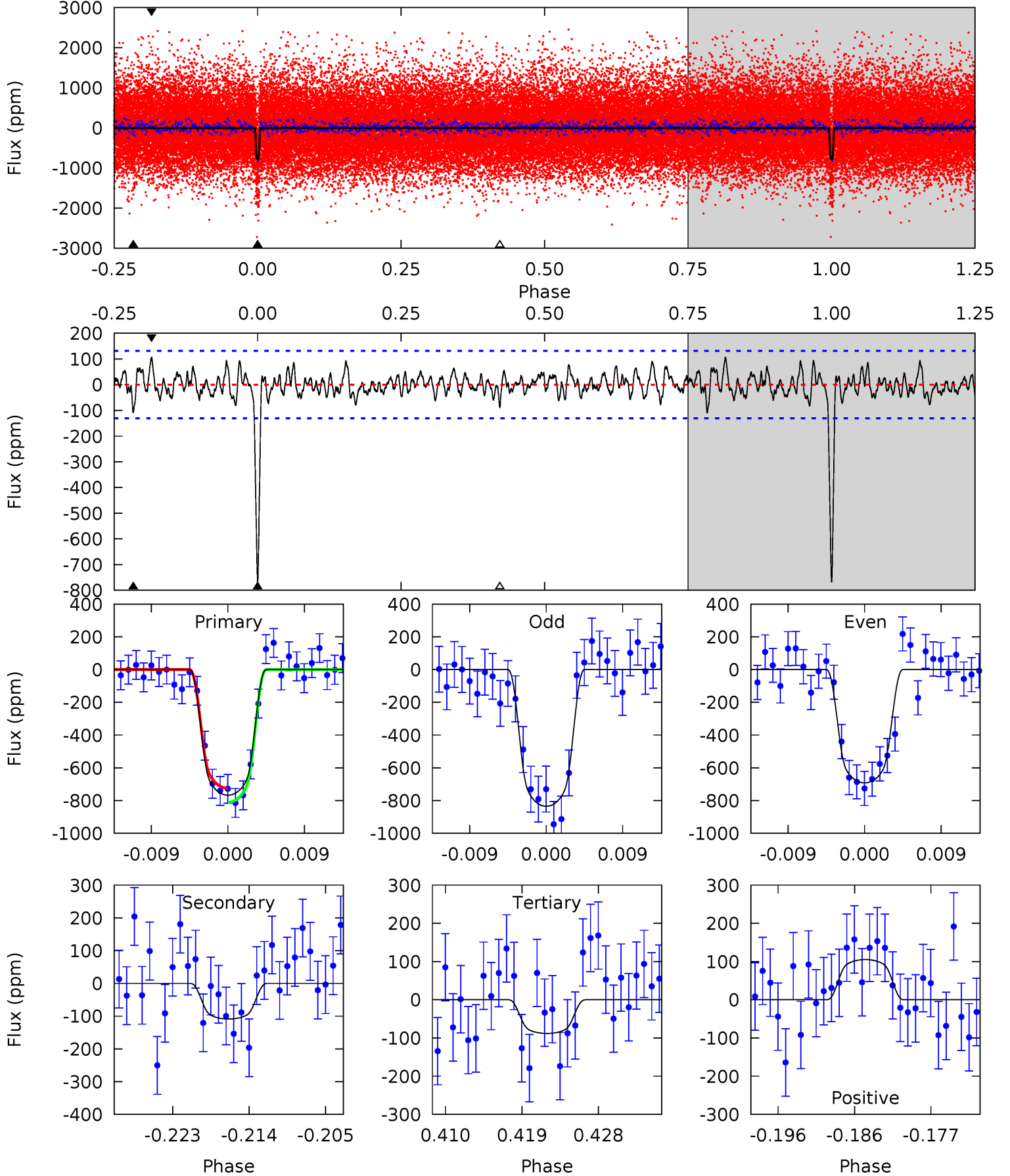
TCE 009837685-01 P= 13.712154 Days $T_0=135.519855$ (BKJD)



DV Model-Shift Uniqueness Test

009837685-01, P = 13.712193 Days, E = 135.517086 Days

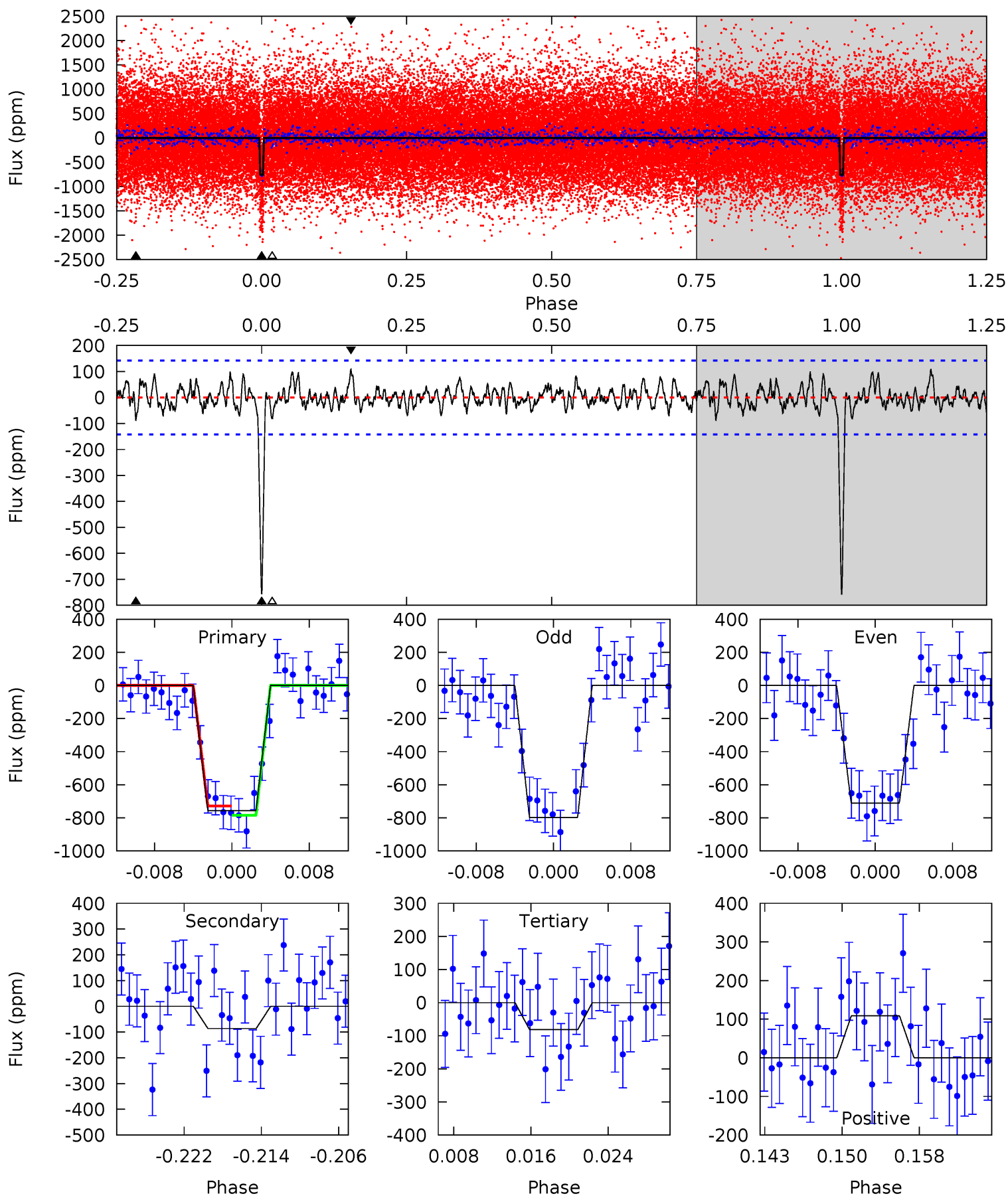
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.5	4.18	3.39	4.04	5.04	2.60	1.27	26.1	25.4	0.80	0.14	2.75	0.99	0.12	1.66



Alt Model-Shift Uniqueness Test

009837685-01, $P = 13.712154$ Days, $E = 135.519855$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.0	3.08	2.90	3.87	5.07	2.66	1.17	24.1	23.1	0.18	-0.79	1.54	0.99	0.13	1.02



Stellar Parameters For KIC 009837685

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5550^{+182}_{-182}	$4.562^{+0.042}_{-0.168}$	$-0.060^{+0.300}_{-0.300}$	$0.831^{+0.201}_{-0.080}$	$0.923^{+0.091}_{-0.112}$	$2.261^{+0.486}_{-0.998}$
	+3%/-3%	+1%/-4%	+500%/-500%	+24%/-10%	+10%/-12%	+21%/-44%
Source	KIC0	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 009837685-01 / KOI 2461.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-109 ± 26	$3.01^{+0.50}_{-0.48}$	963^{+57}_{-45}	3586^{+254}_{-217}	75^{+39}_{-26}
Alt.	-86 ± 28	$2.59^{+0.53}_{-0.45}$	962^{+63}_{-43}	3627^{+304}_{-273}	80^{+49}_{-32}

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 $A_{obs} \gg 1.0$

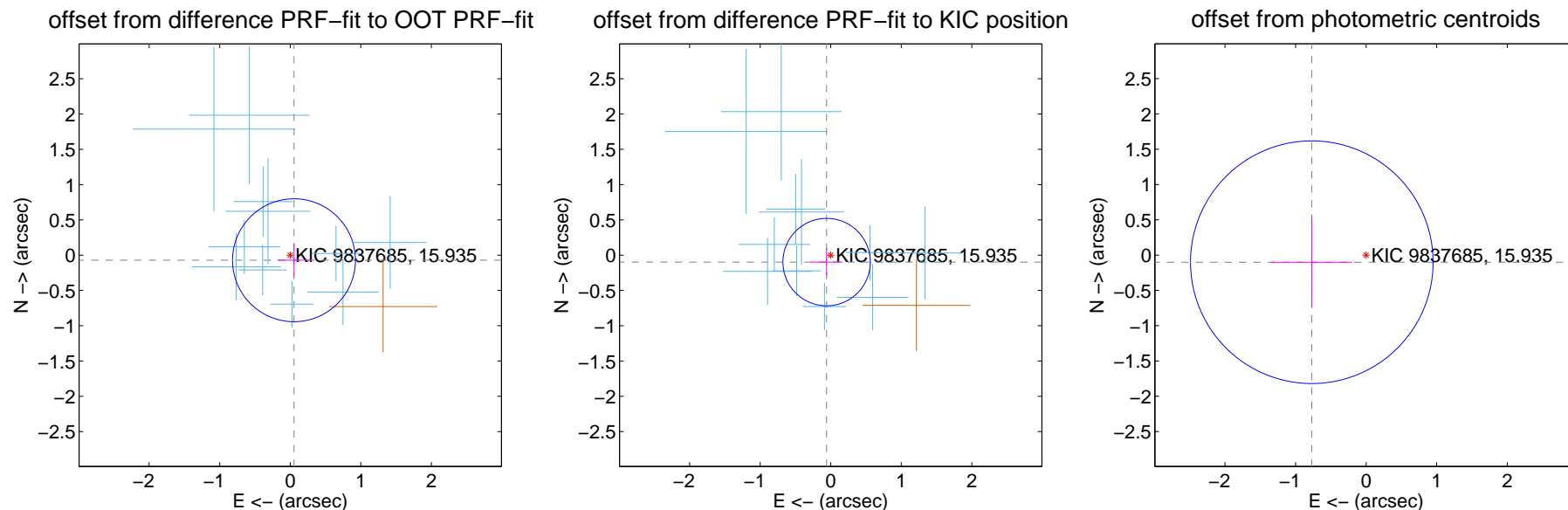
DV Centroid Data

Supplemental centroid analysis for 009837685-01. Kepler magnitude: 15.94. Transit SNR 22.89

There are 11 quarters with good PRF difference image offsets

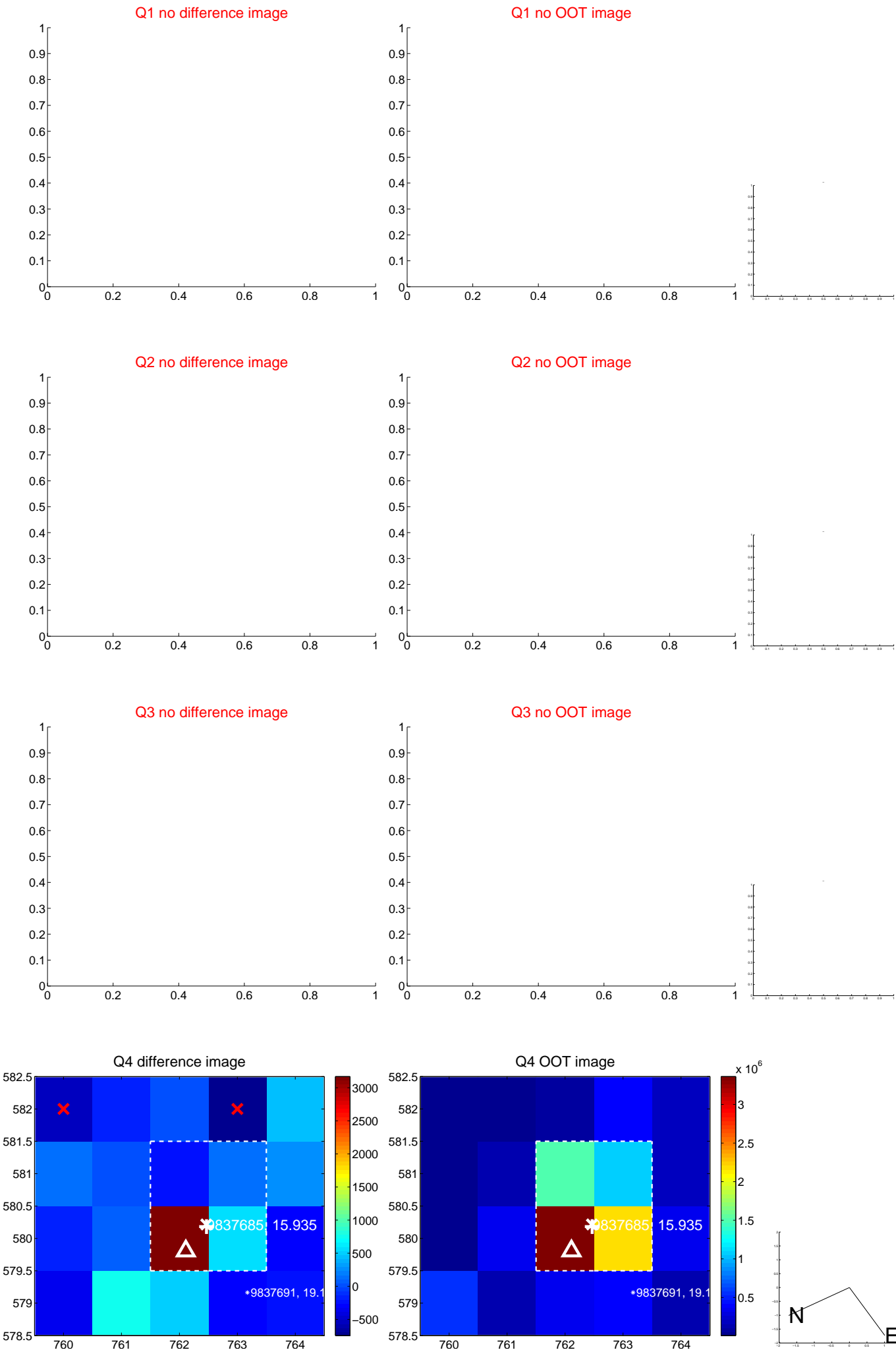
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.089 ± 0.290	0.31	-0.053 ± 0.237	-0.072 ± 0.241
PRF-fit source offset from KIC position	0.114 ± 0.206	0.55	0.058 ± 0.224	-0.098 ± 0.200
photometric centroid source offset	0.78 ± 0.57	1.35	0.77 ± 0.57	-0.10 ± 0.63

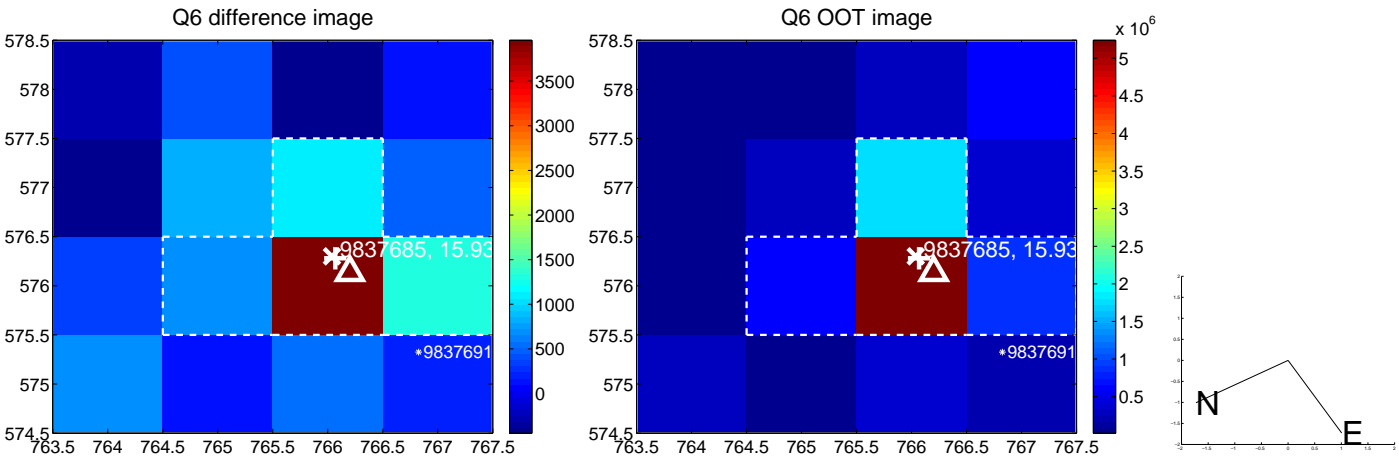
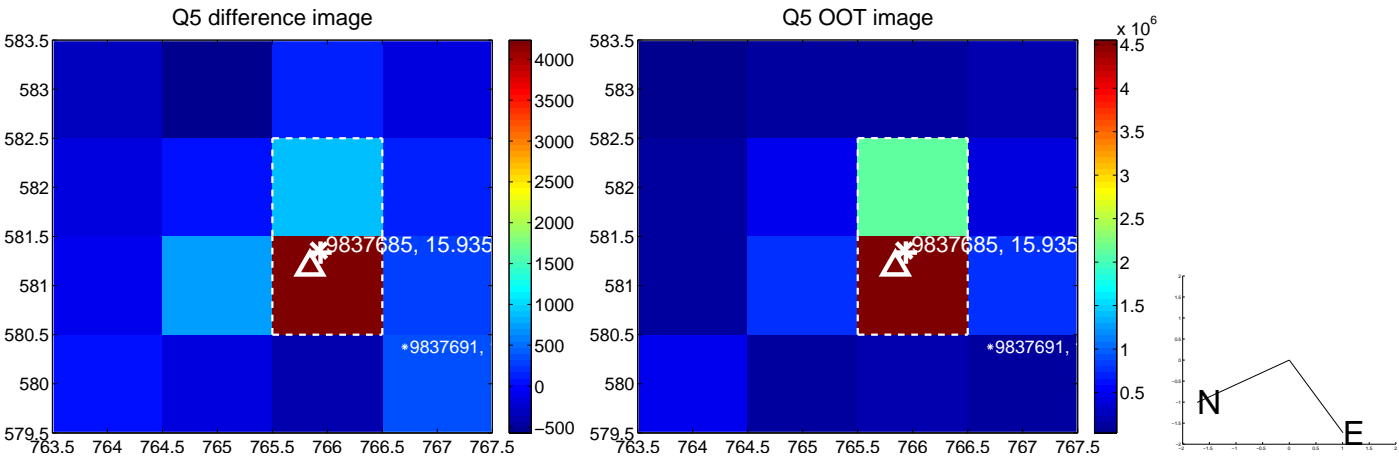


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

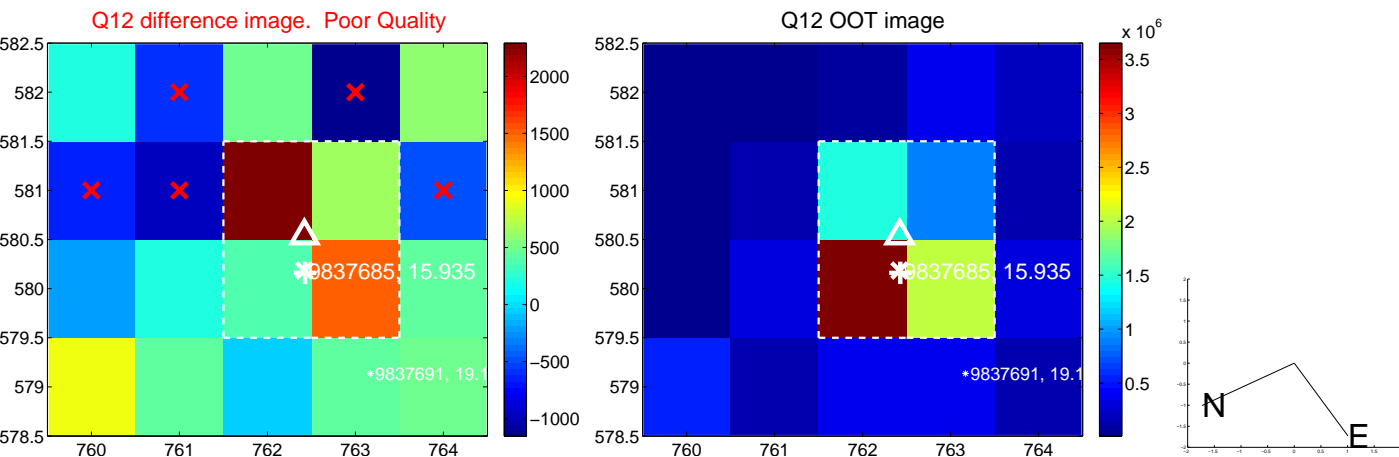
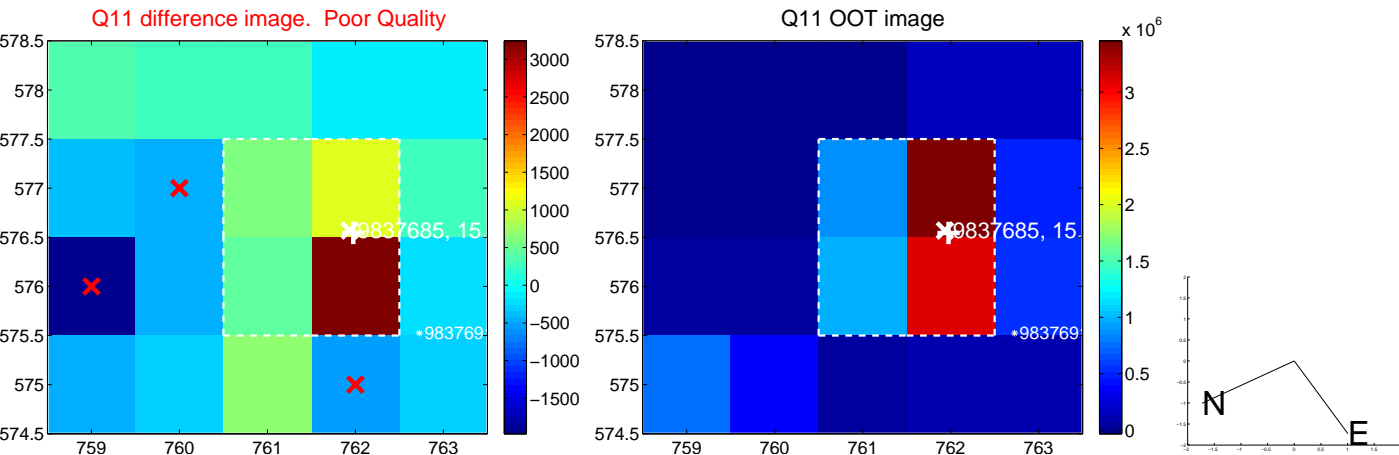
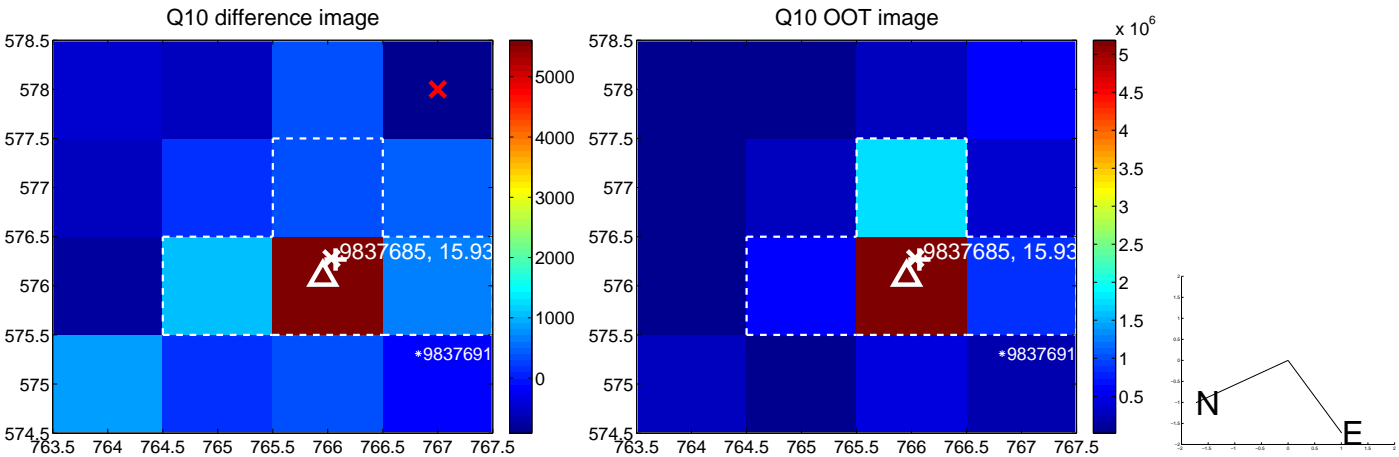
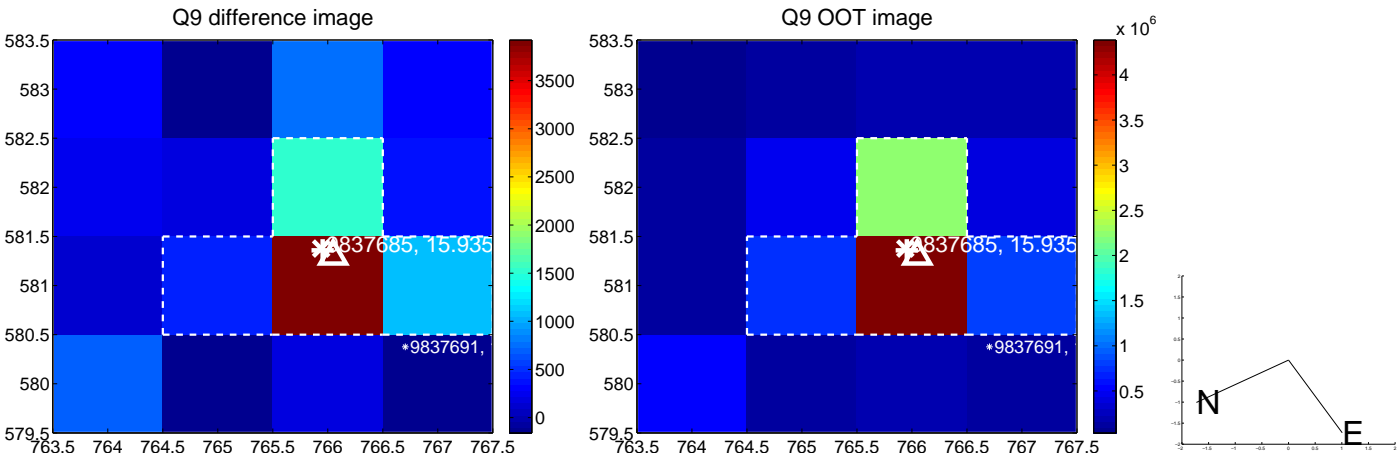
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



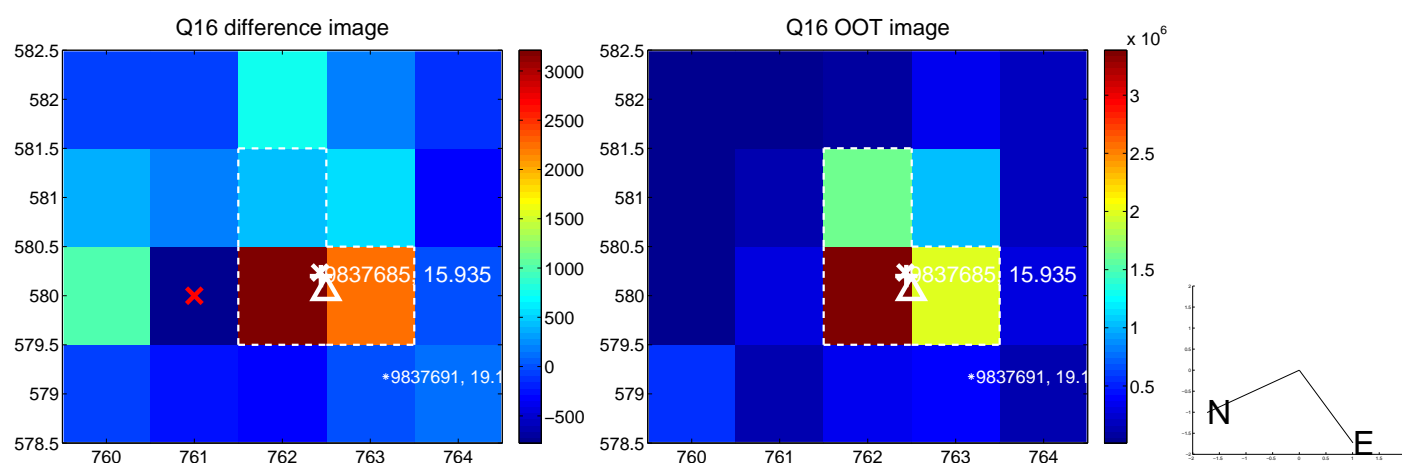
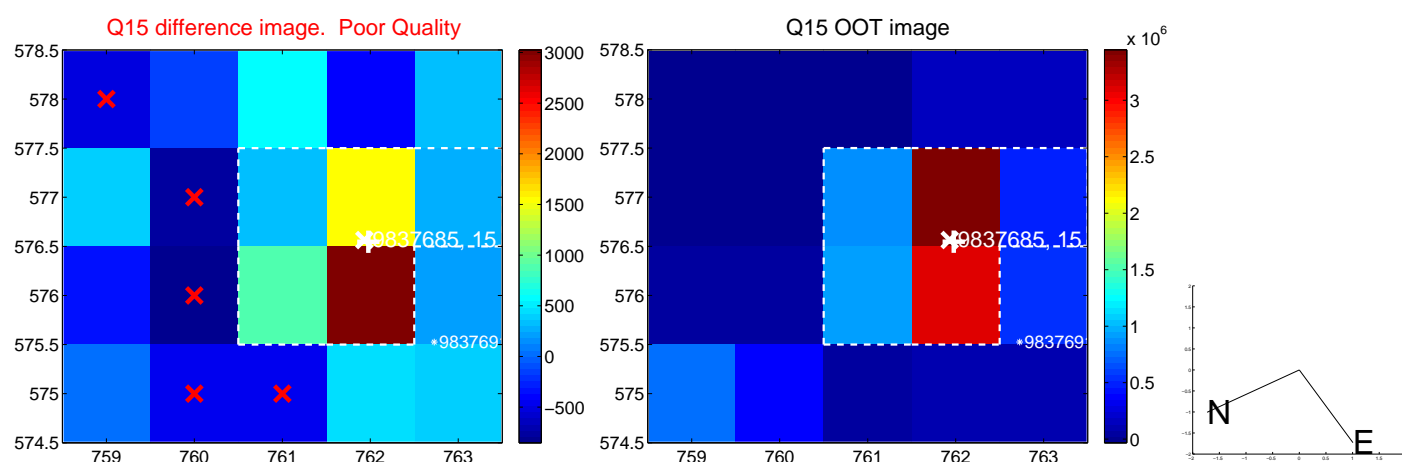
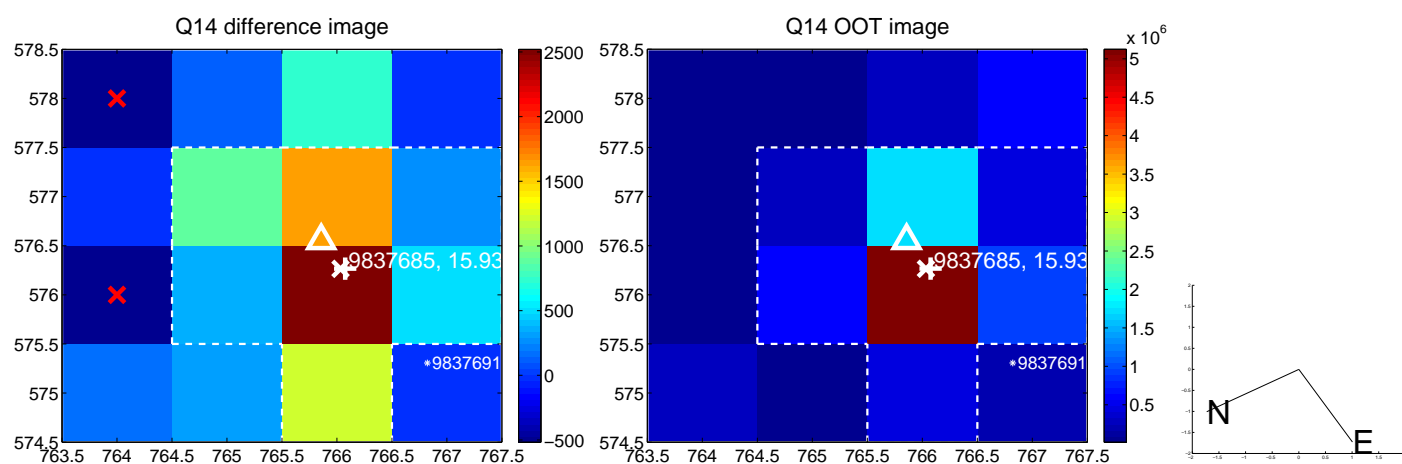
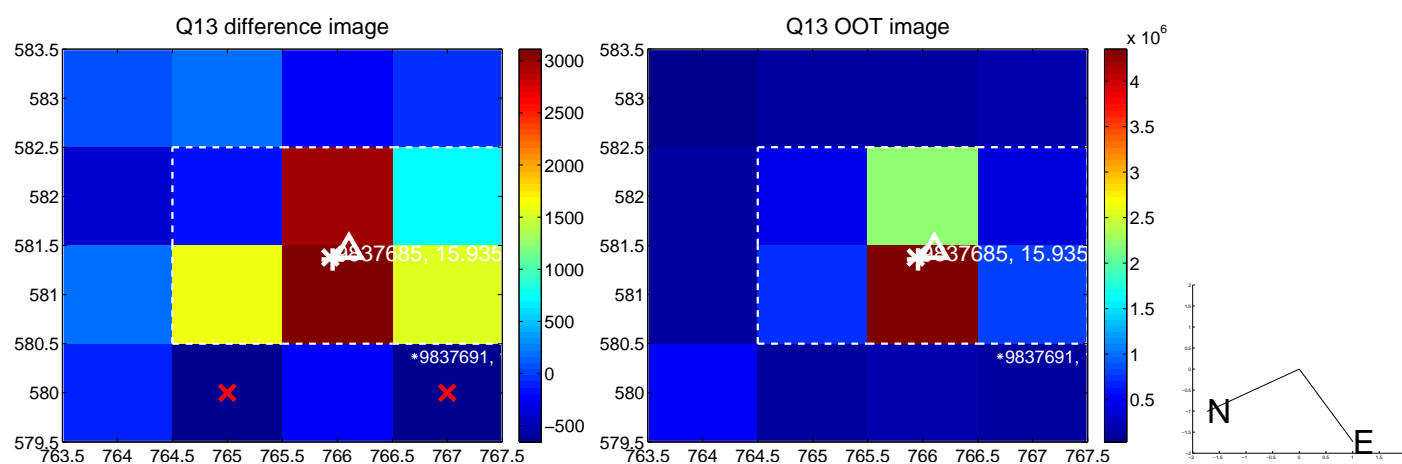
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



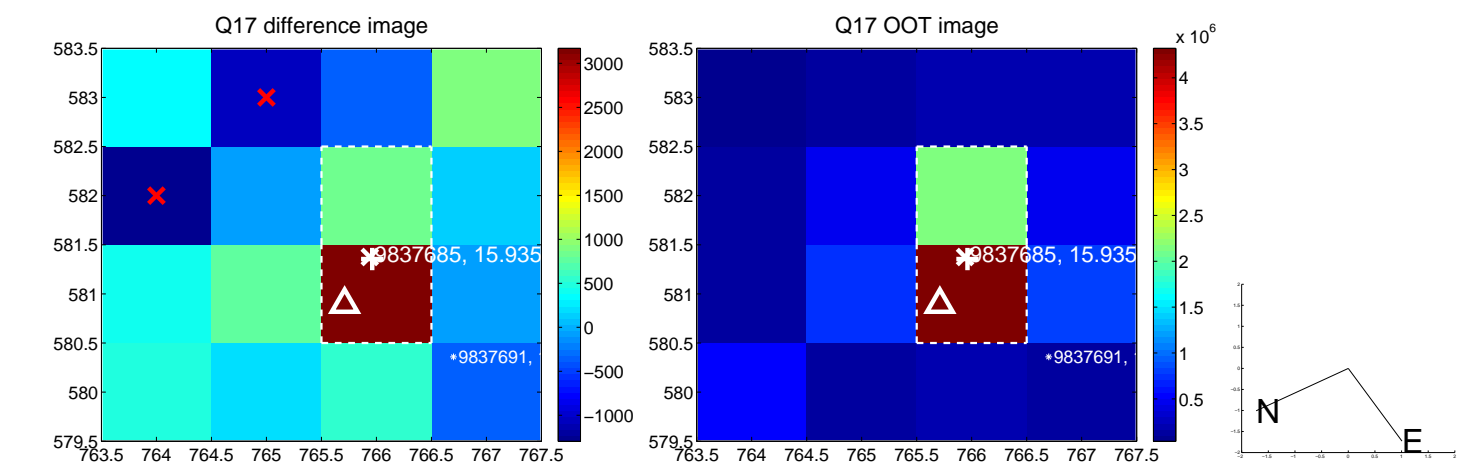
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



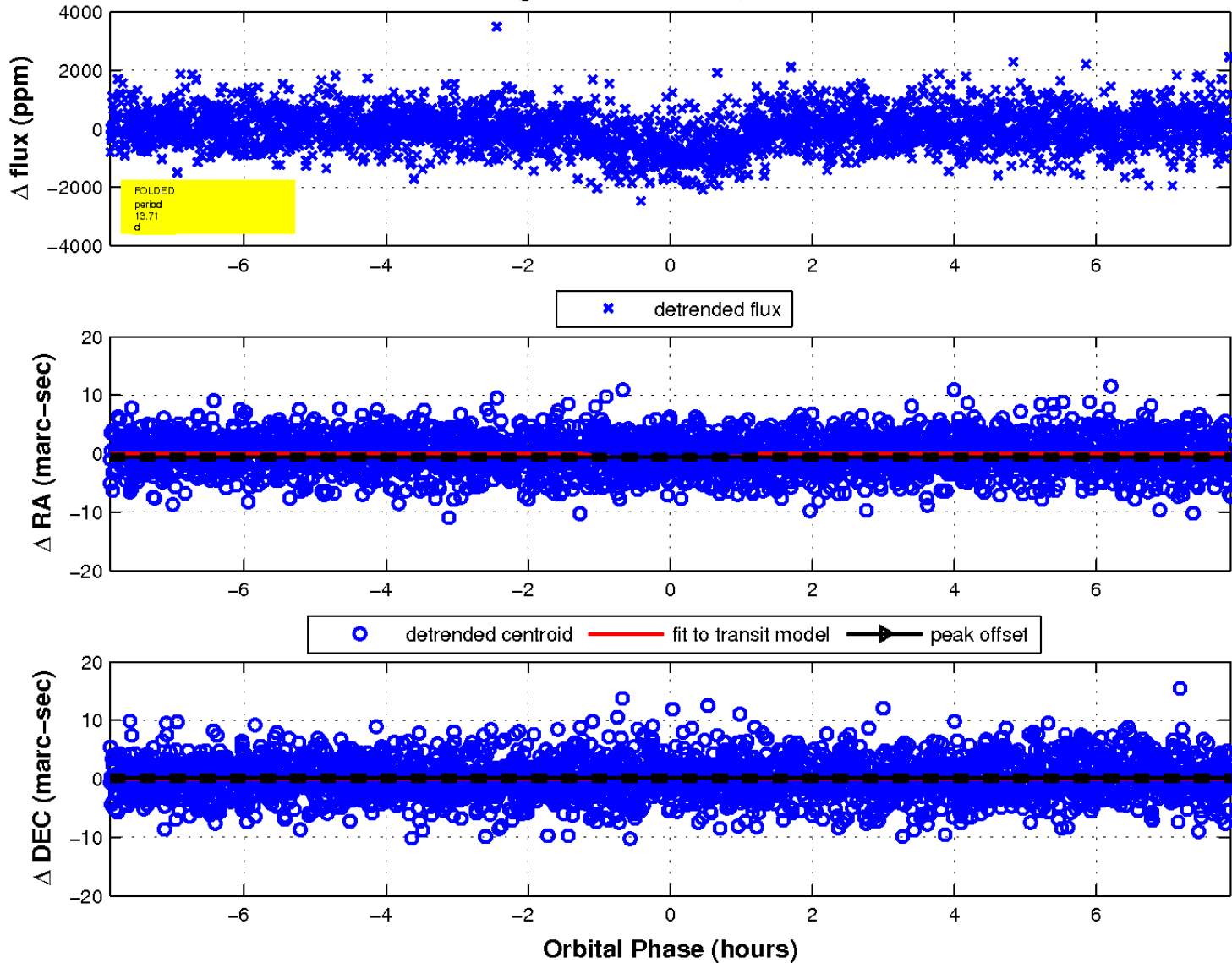
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

