

KIC 003109930

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})
003109930-01	OBS	1112.01	37.810337	158.356513	554.4	8.864	28.4	29.5	0.97	6085	2.45	24.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003109930-01	OBS	PC	0.93	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.

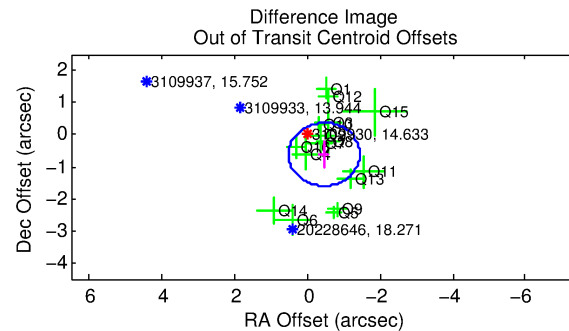
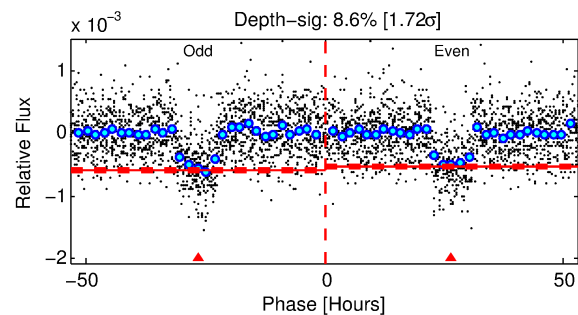
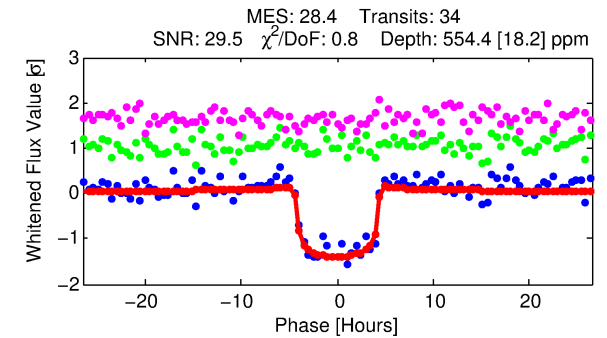
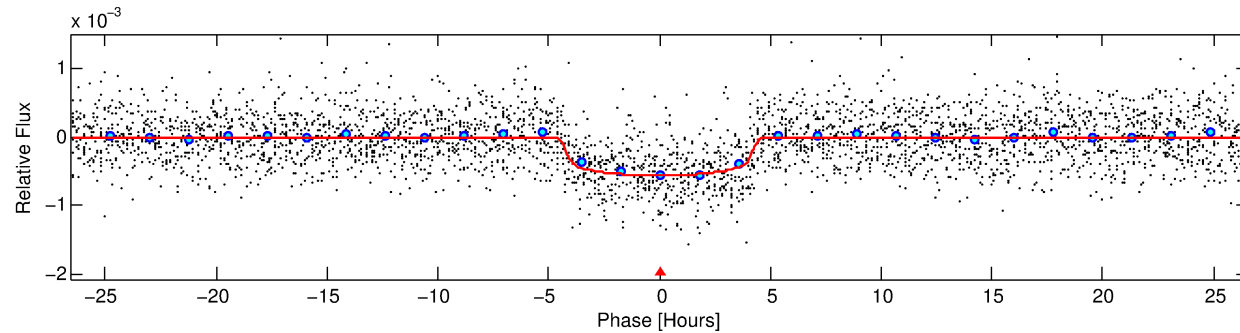
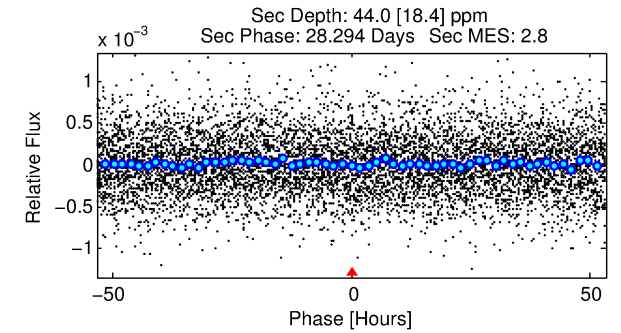
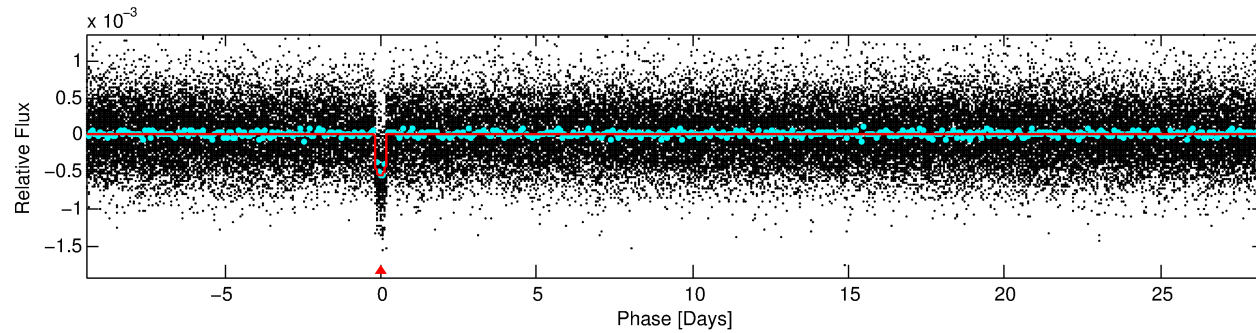
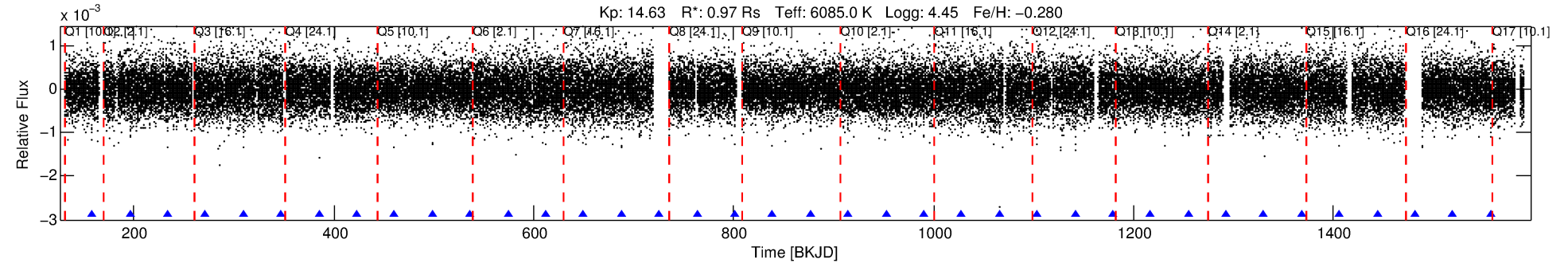
Ephemeris Match Information For 003109930-01

No Significant Match Found

DV One-Page Summary

KIC: 3109930 Candidate: 1 of 1 Period: 37.810 d

KOI: K01112.01 Corr: 0.990



DV Fit Results:

Period = 37.81034 [0.00022] d
Epoch = 158.3565 [0.0046] BKJD
Rp/R* = 0.0231 [0.0032]
a/R* = 24.29 [16.81]
b = 0.70 [0.51]
Seff = 24.31 [9.61]
Teq = 566 [56] K
Rp = 2.45 [0.83] Re
a = 0.2187 [0.0565] AU
Ag = 192.99 [120.58] [1.59σ]
Teffp = 3263 [423] K [6.32σ]

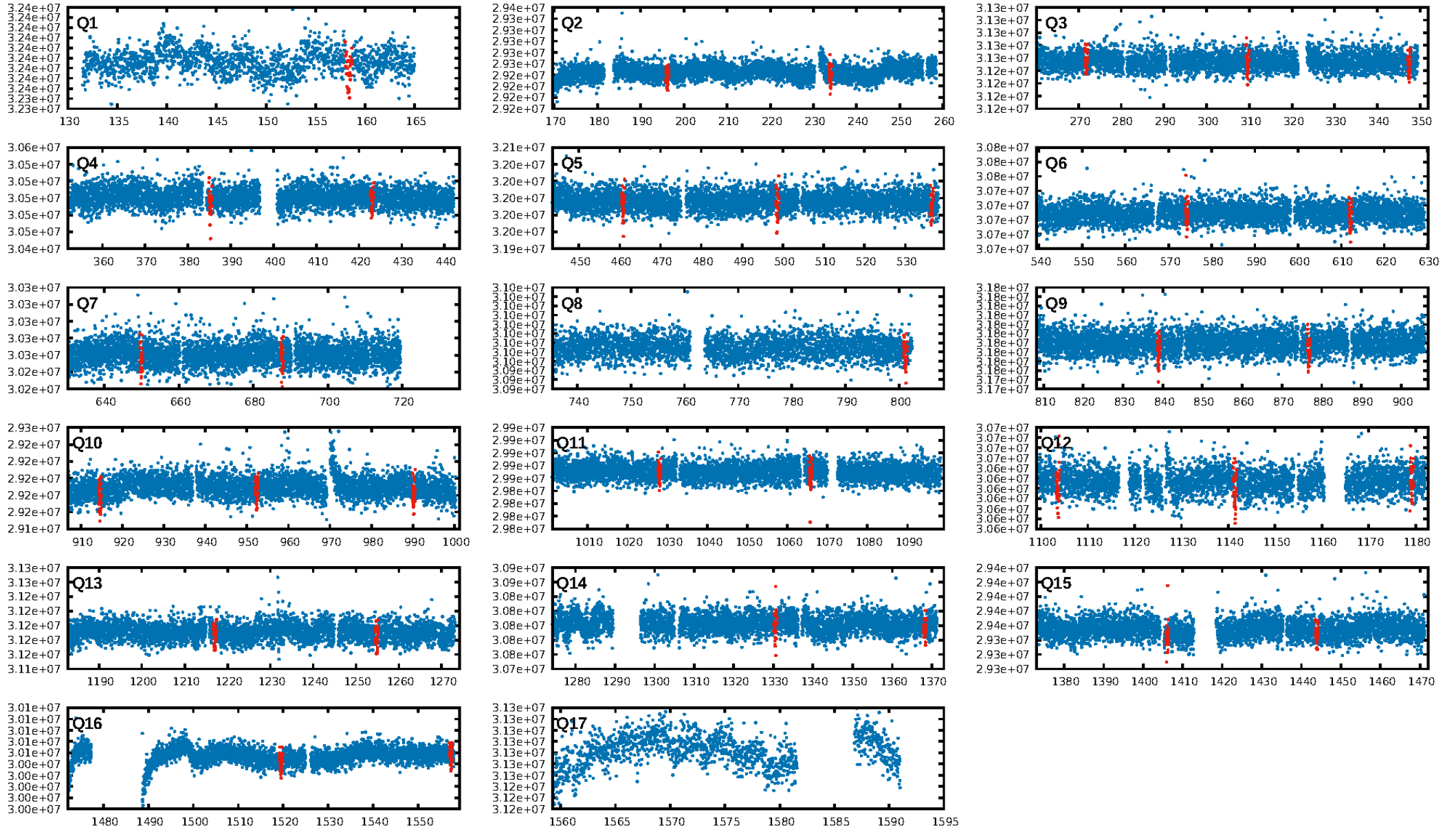
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 81.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.01e-163
RollingBand-fgt: 1.00 [33/33]
GhostDiagnostic-chr: 6.128
Centroid-sig: 3.4%
Centroid-so: 0.906 arcsec [2.59σ]
OotOffset-rm: 0.772 arcsec [2.35σ]
KicOffset-rm: 0.214 arcsec [0.72σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 1.00 [16/16]

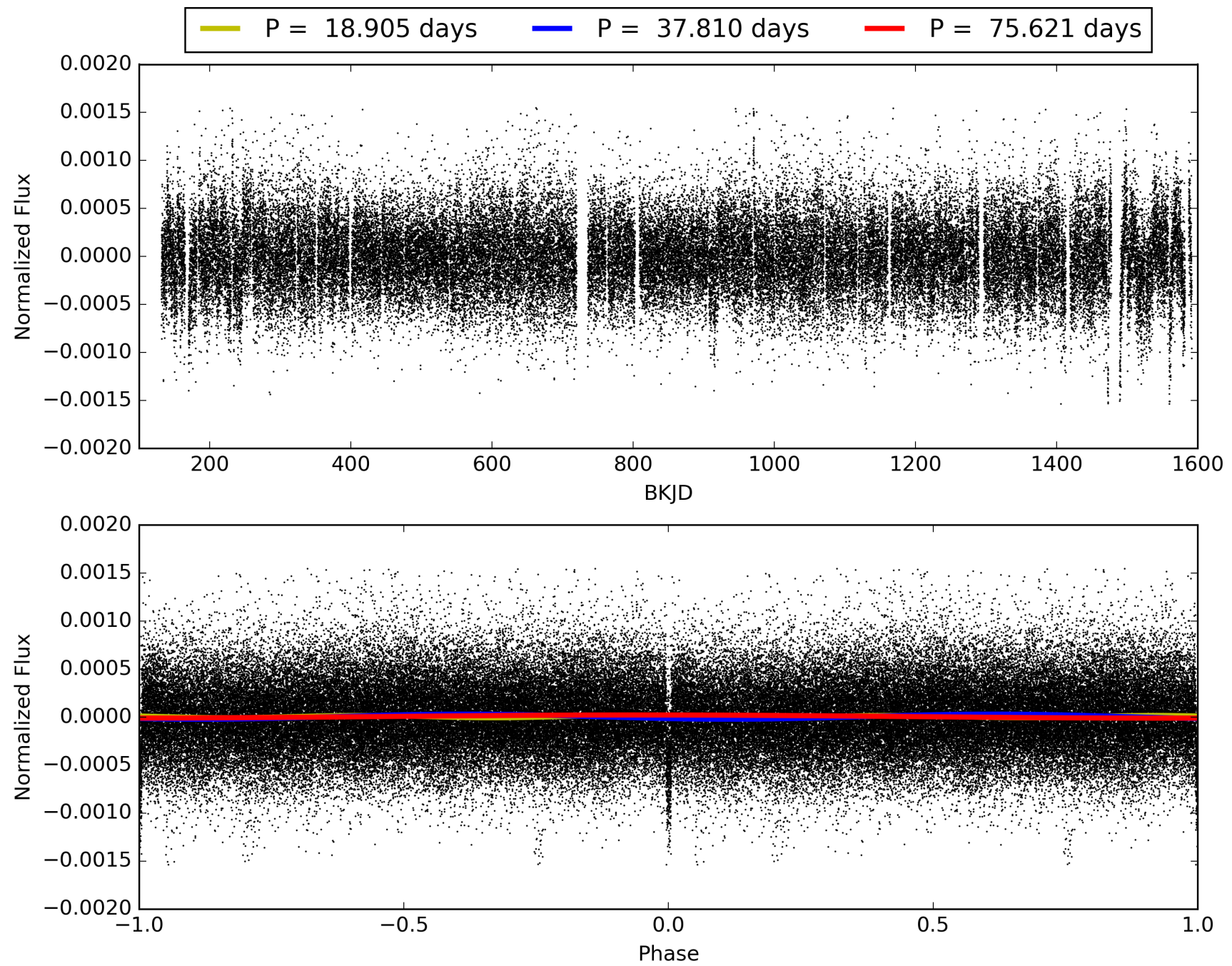
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:33:09 Z

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

TCE 003109930-01, PDC Light Curves

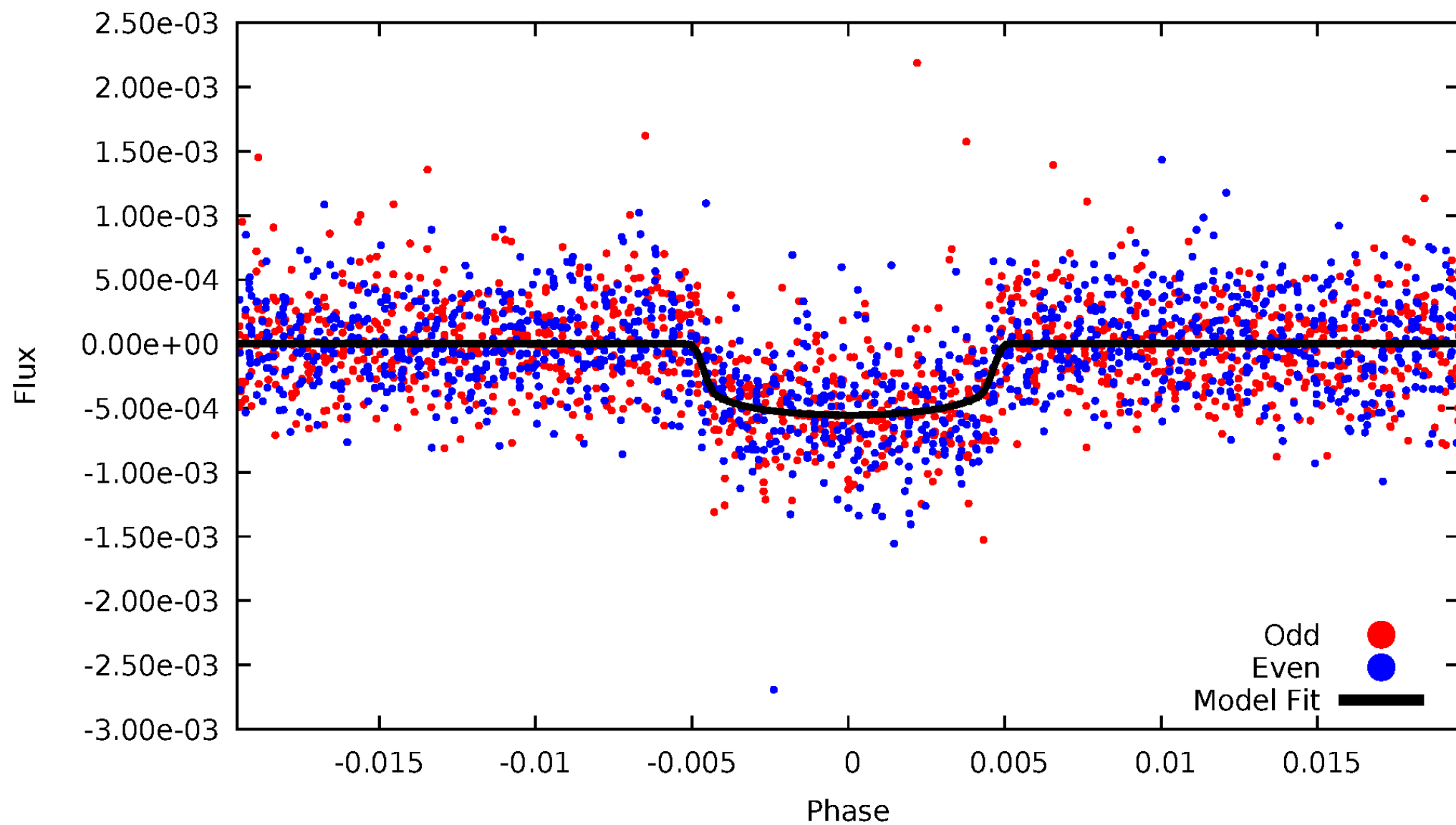


TCE 003109930-01



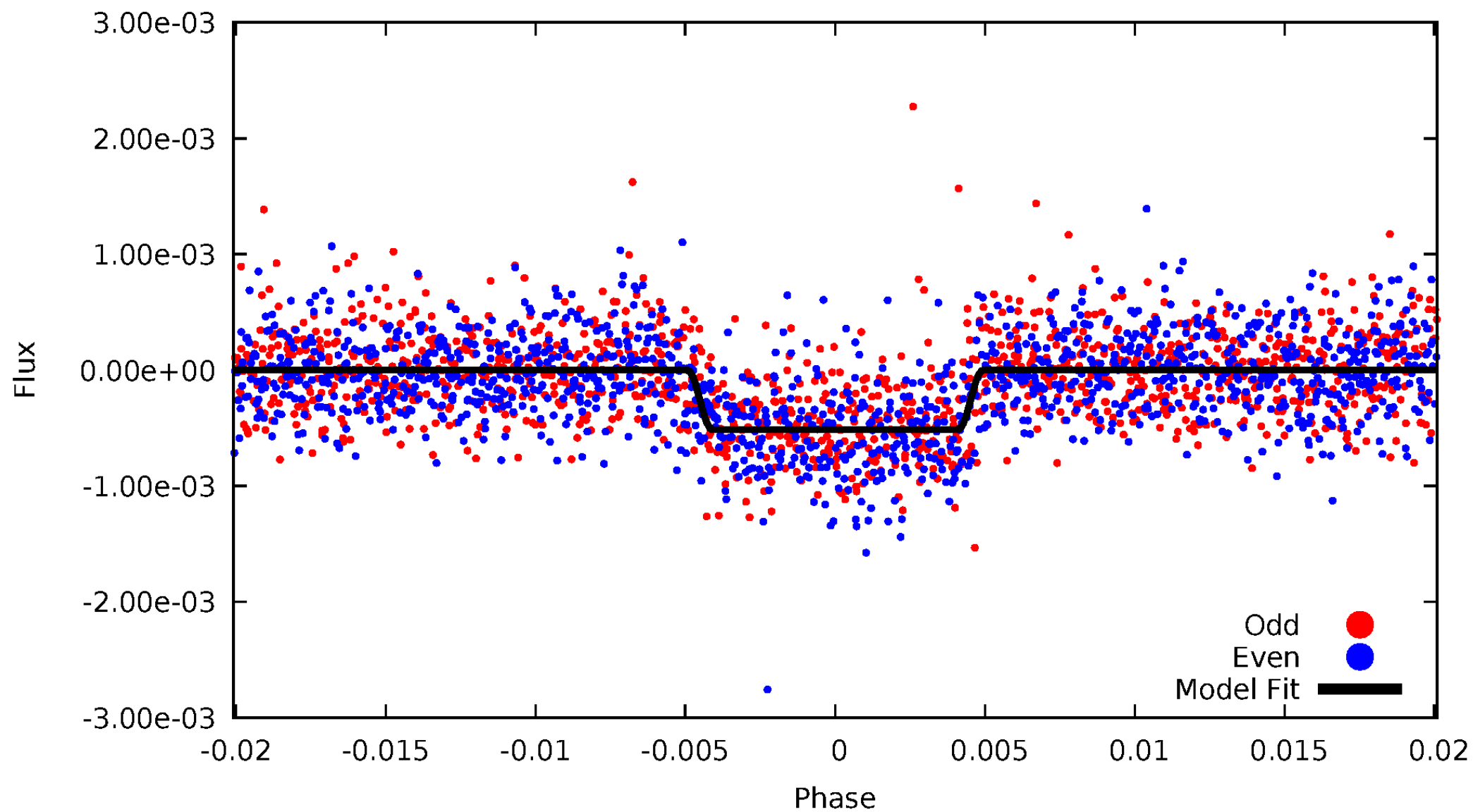
DV Odd/Even

TCE 003109930-01



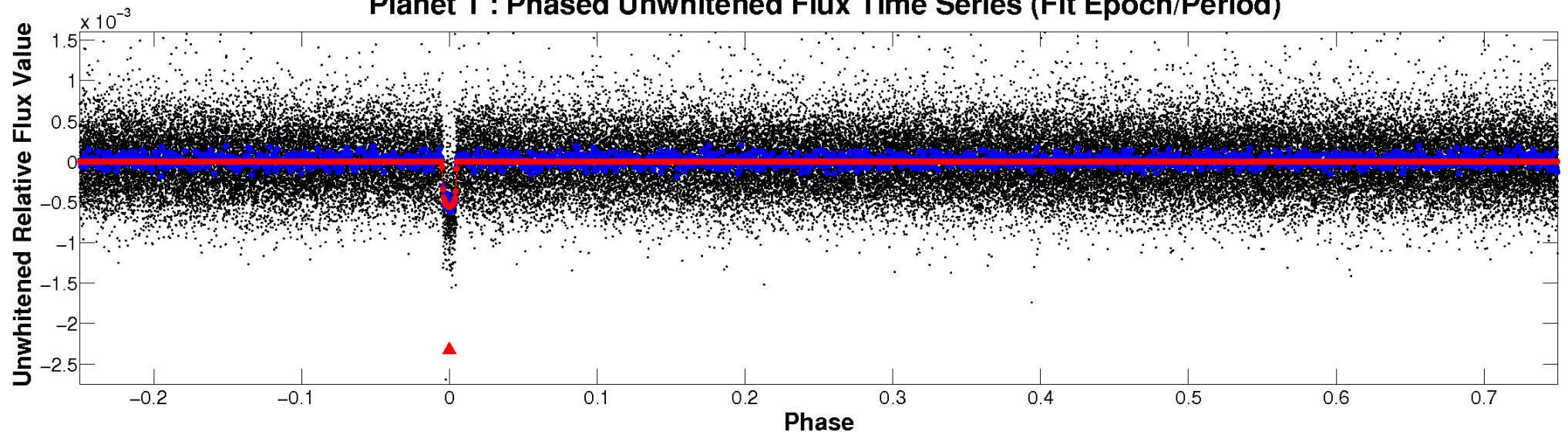
ALT Odd/Even

TCE 003109930-01

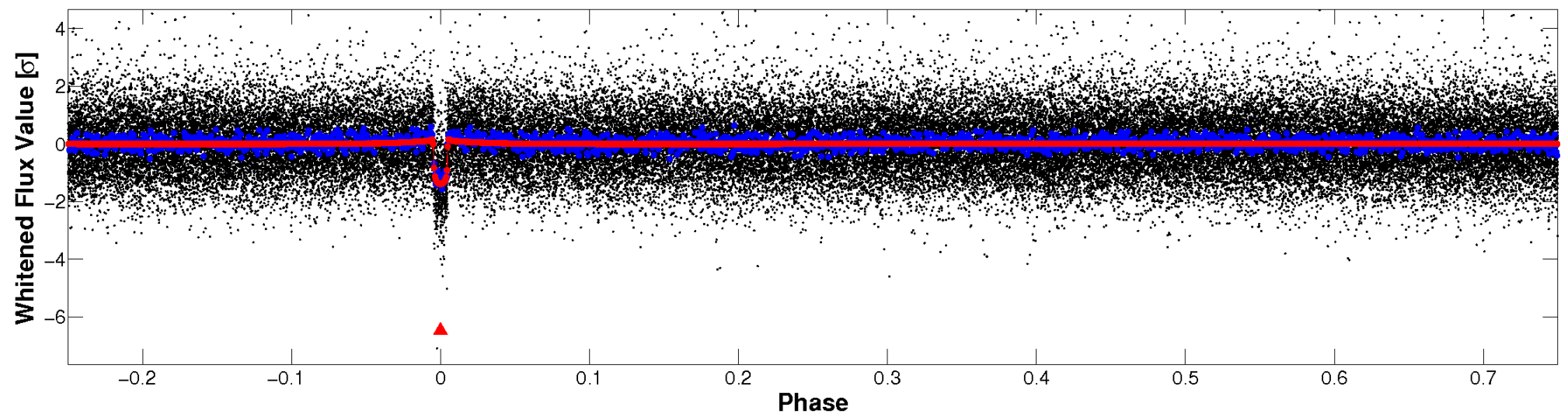


Non-Whitened Vs. Whitened Light Curve

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

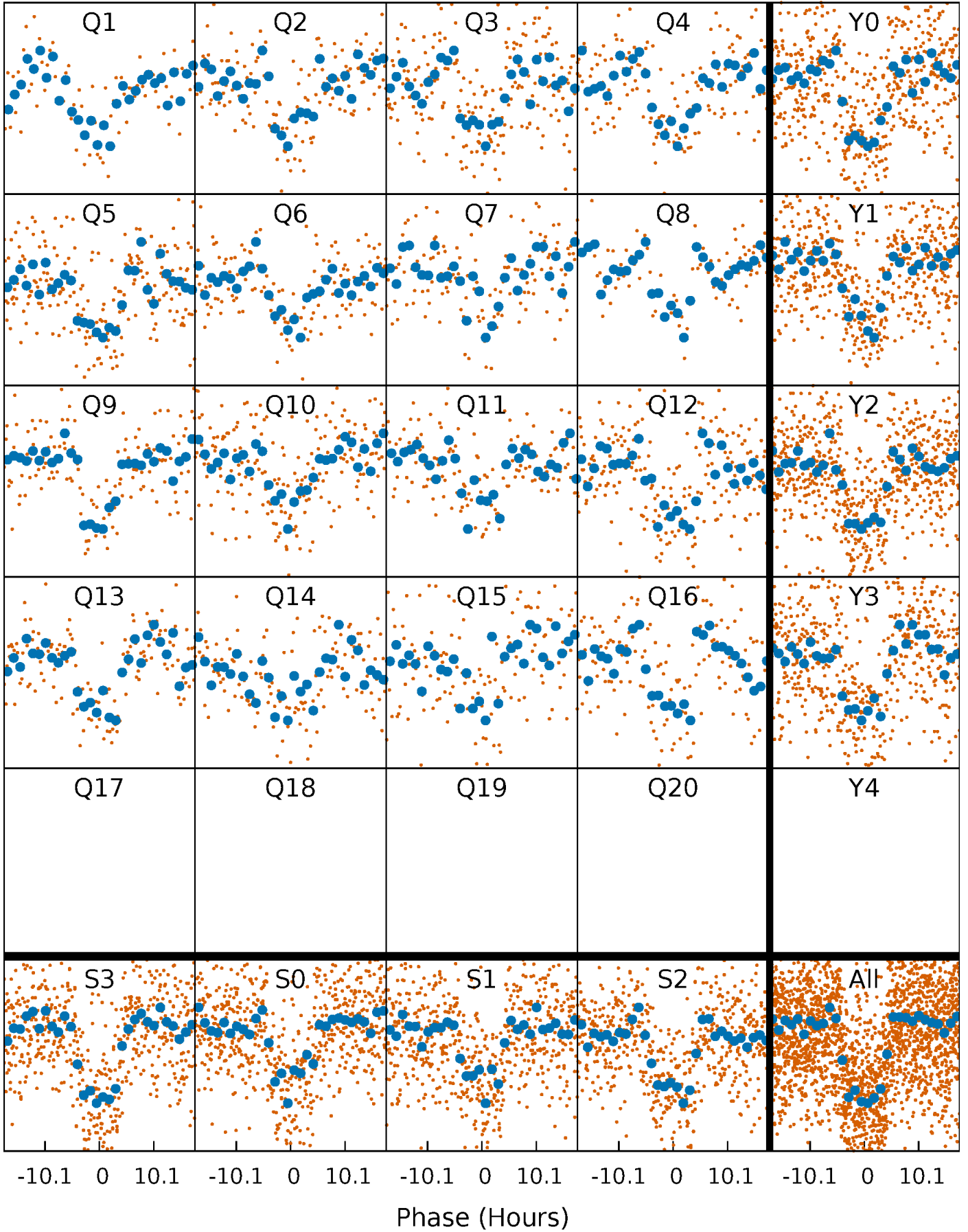


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



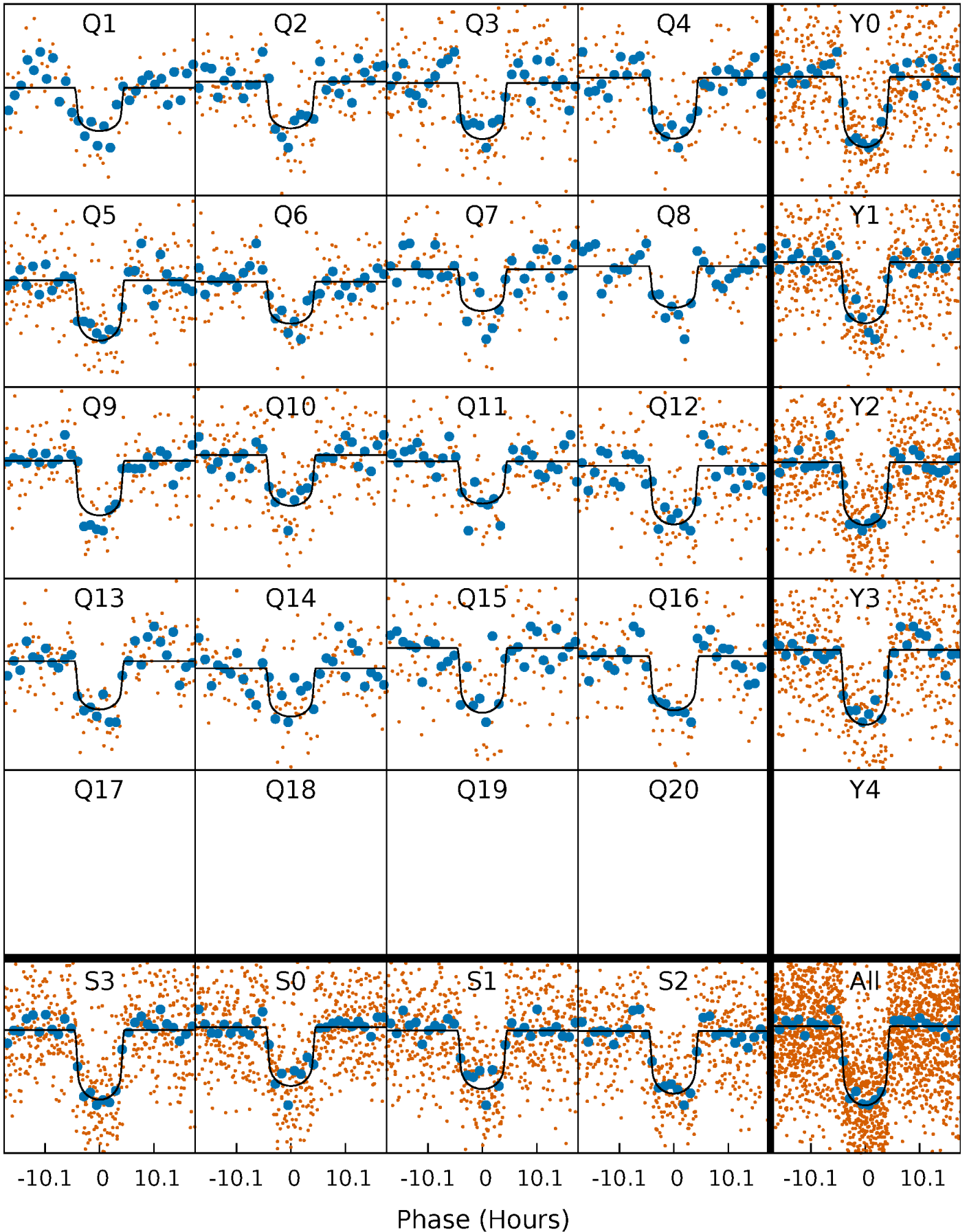
PDC Quarter-Phased Transit Curves

TCE 003109930-01 P= 37.810337 Days $T_0=158.356513$ (BKJD)



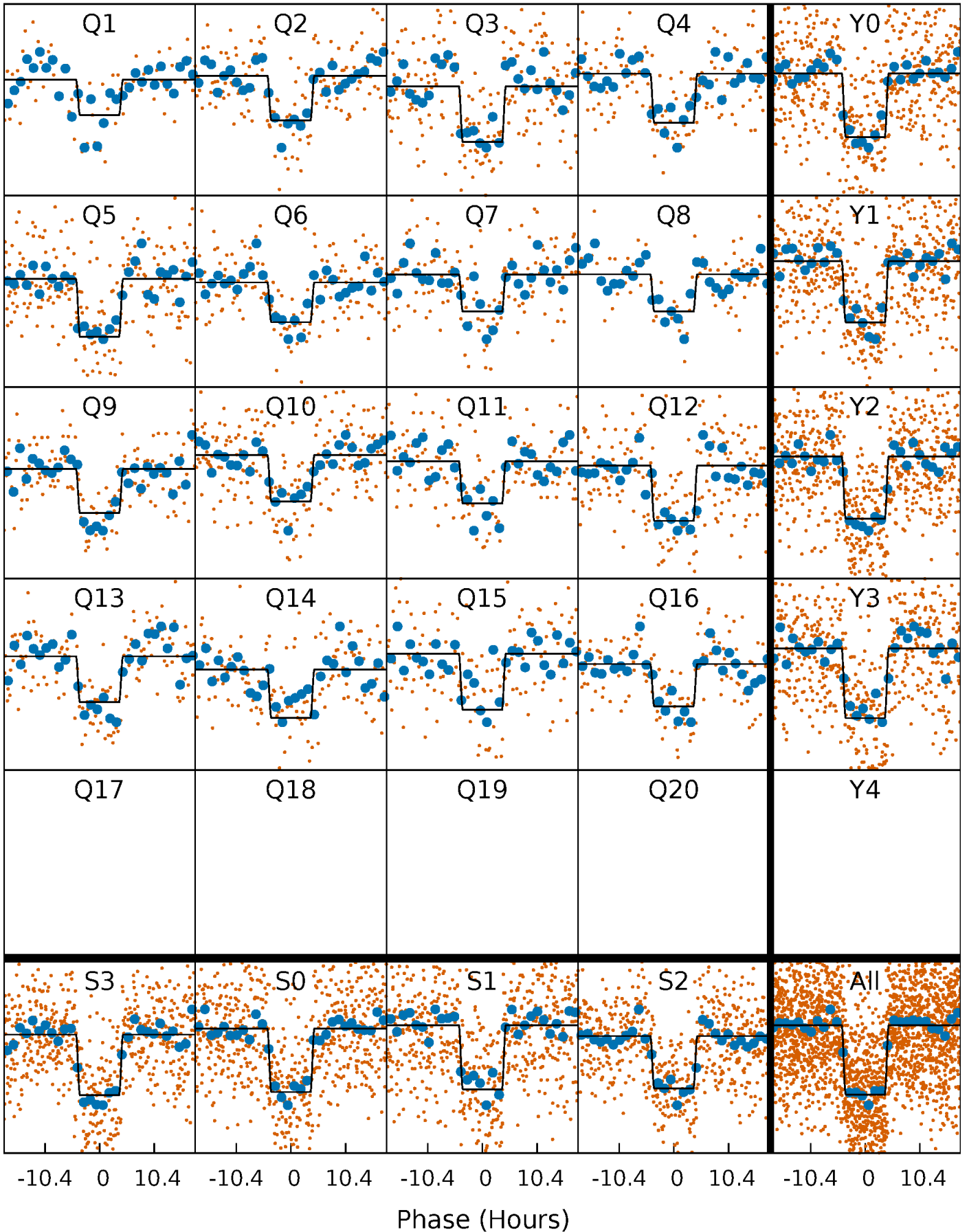
DV Quarter-Phased Transit Curves

TCE 003109930-01 P= 37.810337 Days $T_0=158.356513$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

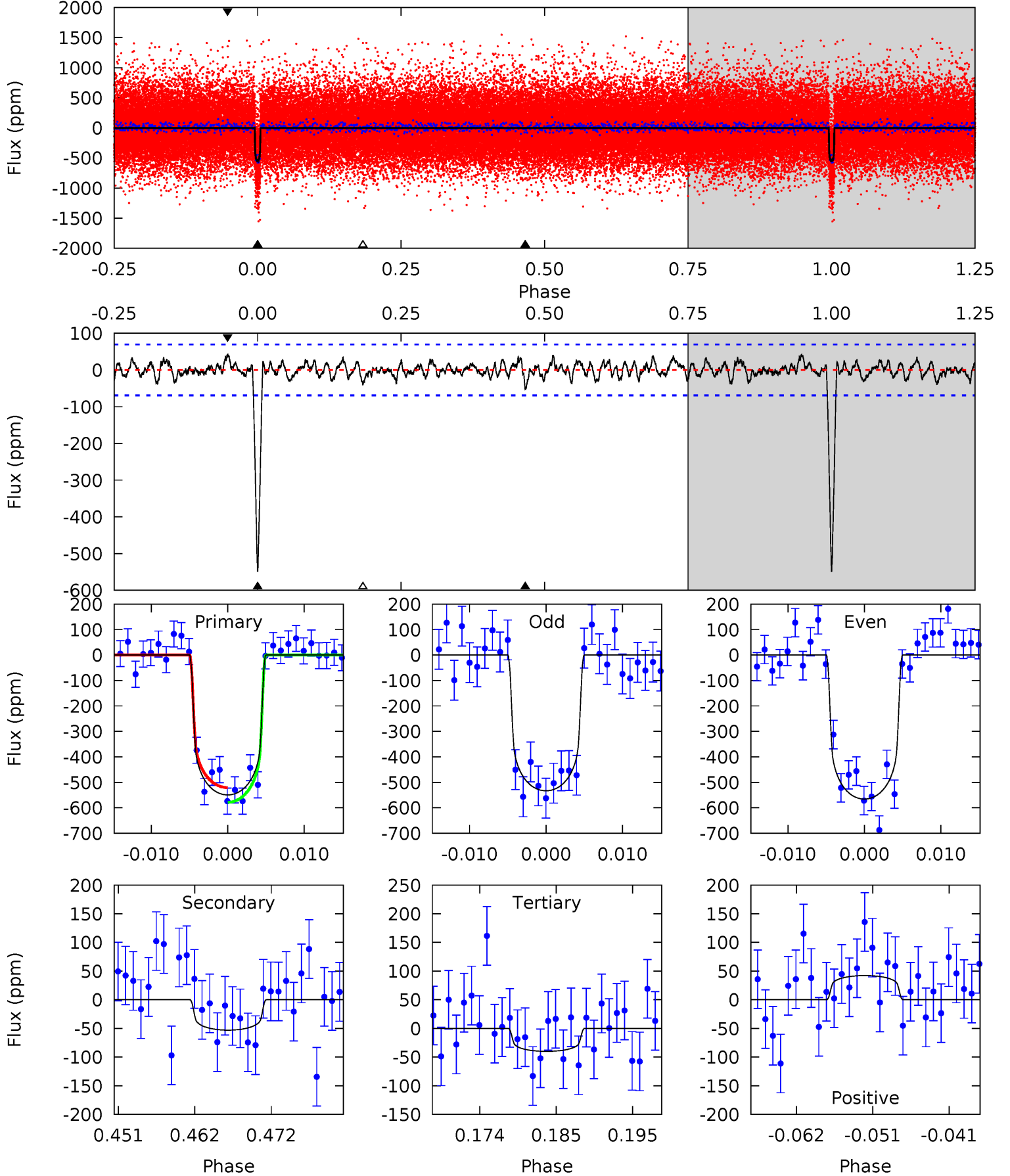
TCE 003109930-01 P= 37.809175 Days $T_0=158.379585$ (BKJD)



DV Model-Shift Uniqueness Test

003109930-01, $P = 37.810337$ Days, $E = 120.546176$ Days

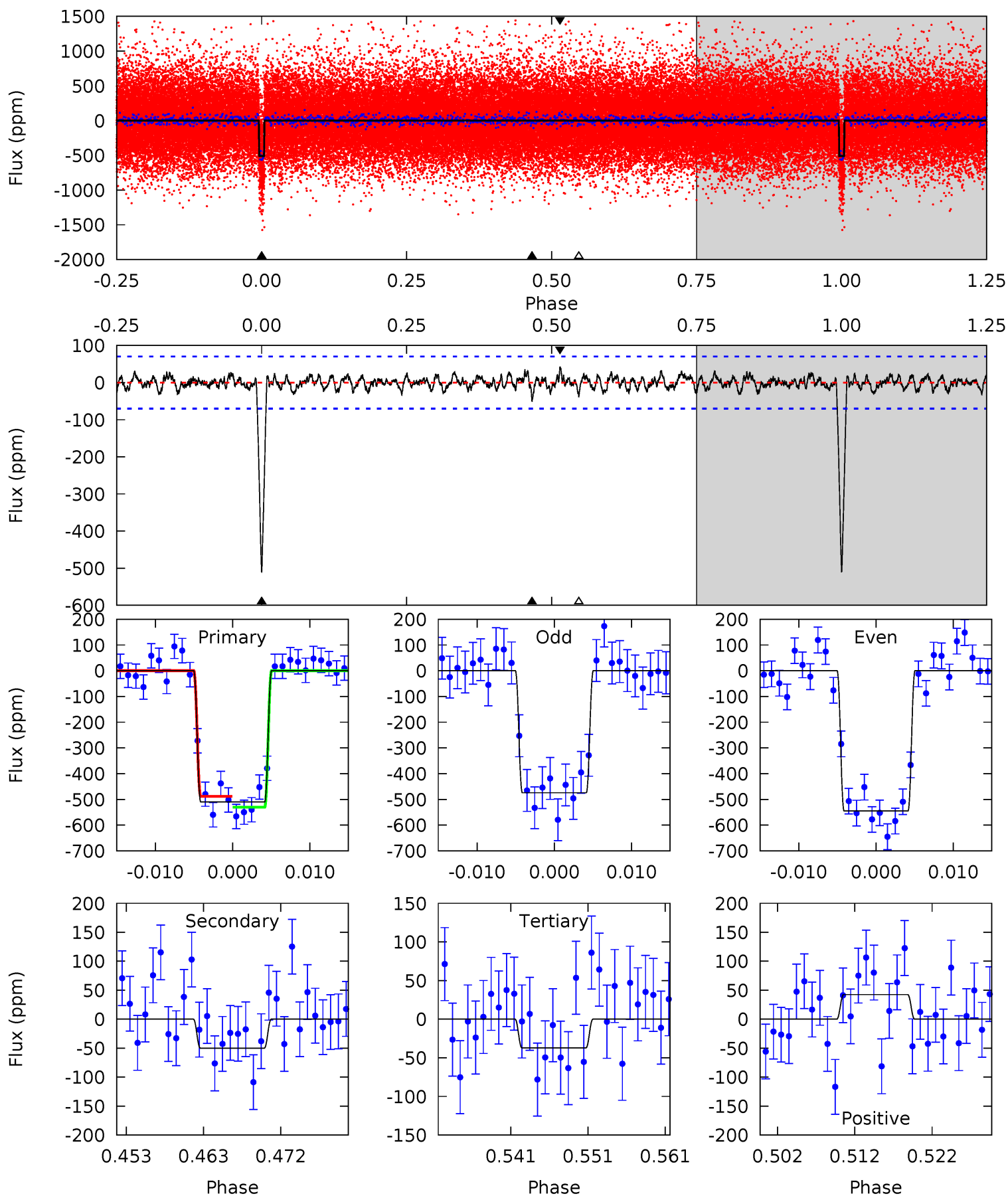
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.8	3.84	2.90	3.06	5.02	2.57	1.08	36.9	36.7	0.94	0.78	1.18	0.97	0.07	2.10



Alt Model-Shift Uniqueness Test

003109930-01, $P = 37.809175$ Days, $E = 120.570410$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.5	3.57	2.66	3.04	5.03	2.58	0.93	33.9	33.5	0.91	0.53	2.54	0.97	0.08	1.51



Stellar Parameters For KIC 003109930

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6085^{+182}_{-200}	$4.451^{+0.081}_{-0.202}$	$-0.280^{+0.300}_{-0.300}$	$0.973^{+0.302}_{-0.121}$	$0.976^{+0.129}_{-0.116}$	$1.491^{+0.553}_{-0.782}$
	+3%/-3%	+2%/-5%	+107%/-107%	+31%/-12%	+13%/-12%	+37%/-52%
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 003109930-01 / KOI 1112.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-53 ± 14	$2.50^{+0.51}_{-0.42}$	801^{+54}_{-40}	3791^{+269}_{-244}	212^{+113}_{-75}
Alt.	-50 ± 14	$2.48^{+0.55}_{-0.43}$	803^{+59}_{-44}	3763^{+295}_{-247}	204^{+117}_{-76}

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 $A_{obs} \gg 1.0$

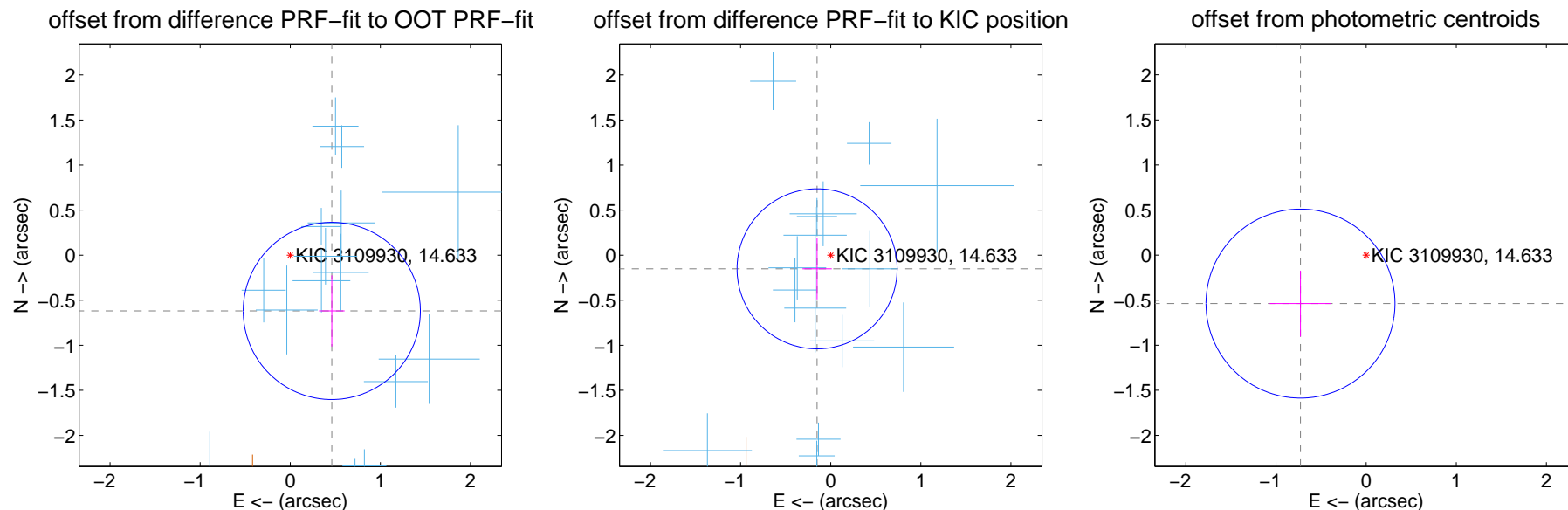
DV Centroid Data

Supplemental centroid analysis for 003109930-01. Kepler magnitude: 14.63. Transit SNR 29.55

There are 15 quarters with good PRF difference image offsets

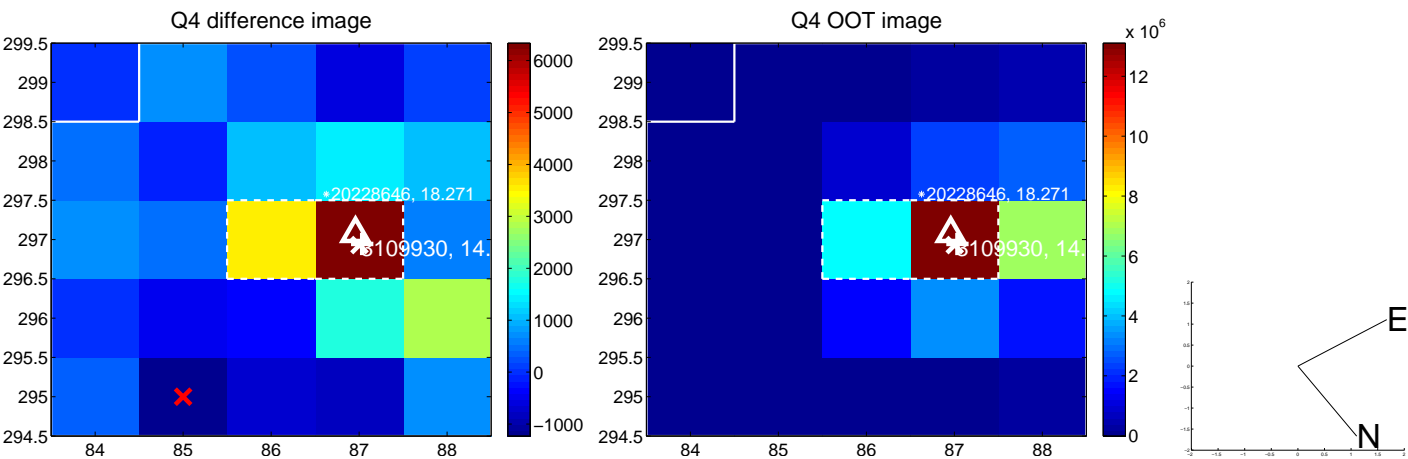
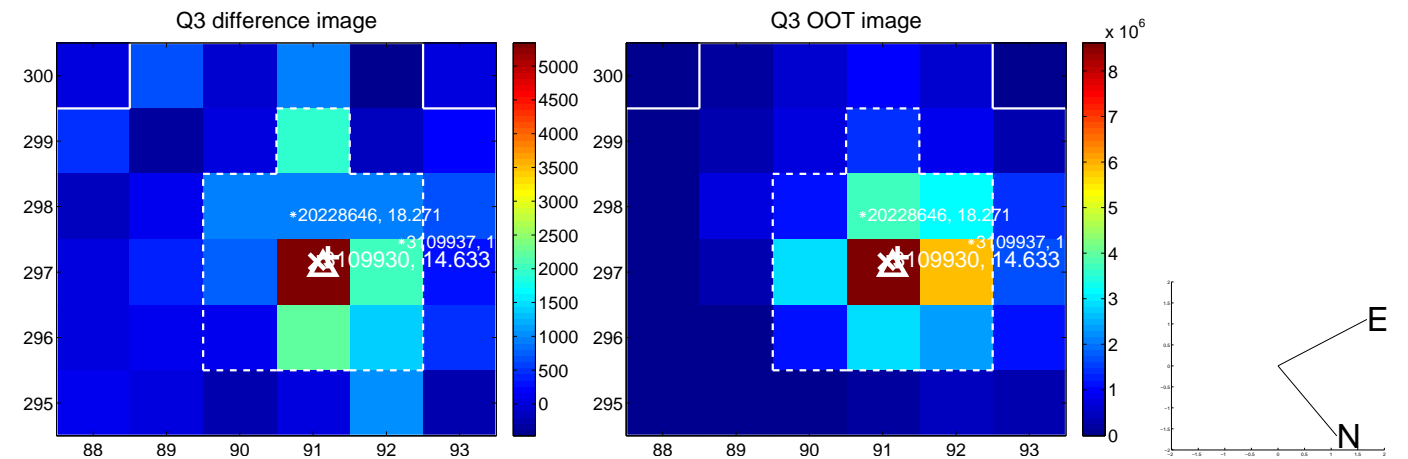
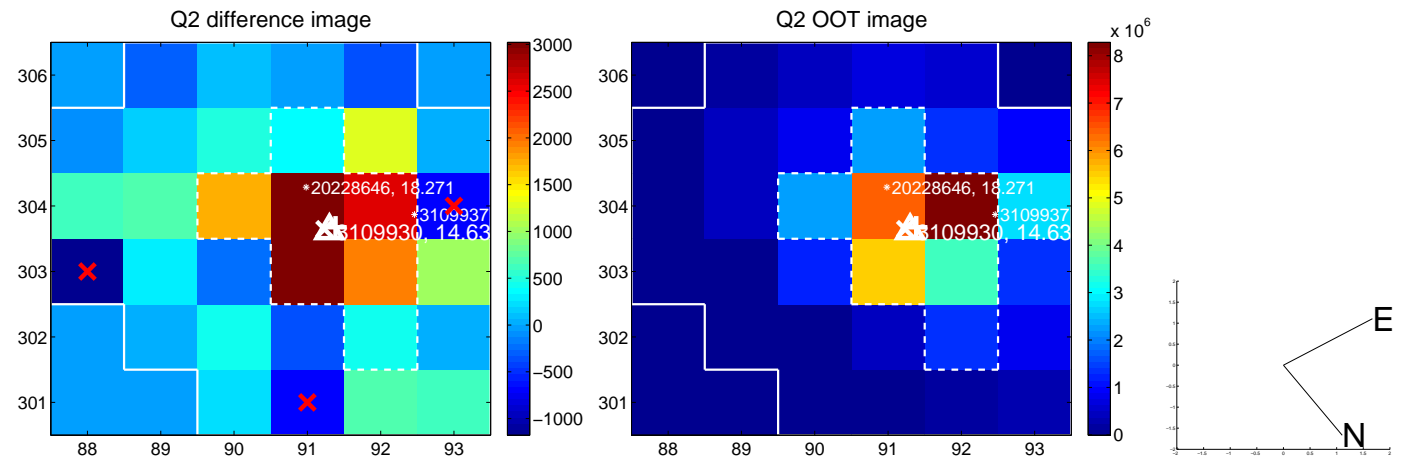
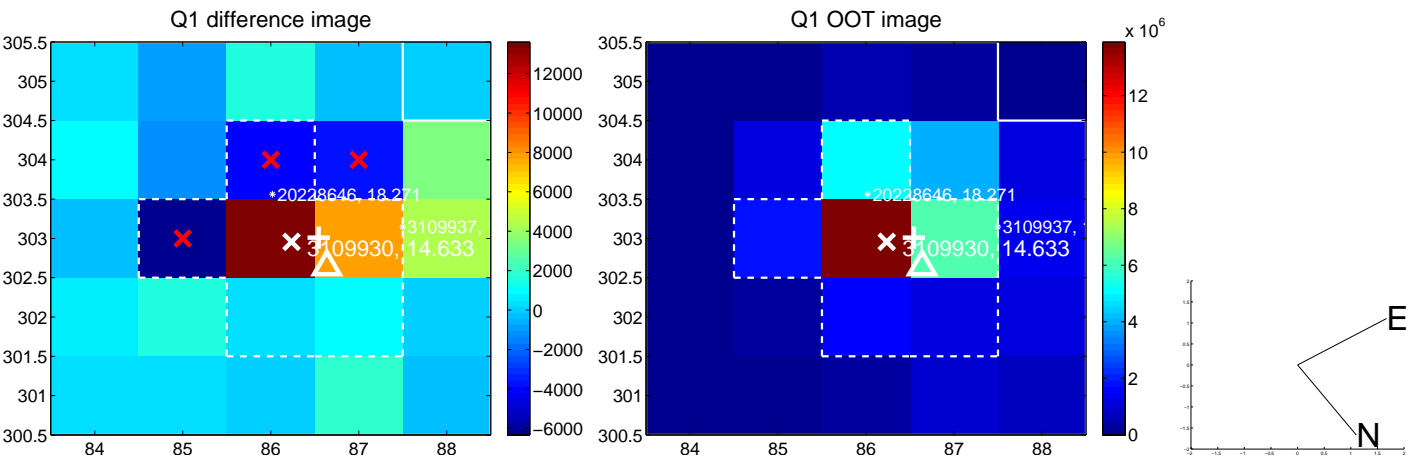
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.772 ± 0.328	2.35	-0.461 ± 0.142	-0.619 ± 0.395
PRF-fit source offset from KIC position	0.214 ± 0.296	0.72	0.151 ± 0.163	-0.152 ± 0.340
photometric centroid source offset	0.91 ± 0.35	2.59	0.73 ± 0.34	-0.54 ± 0.37

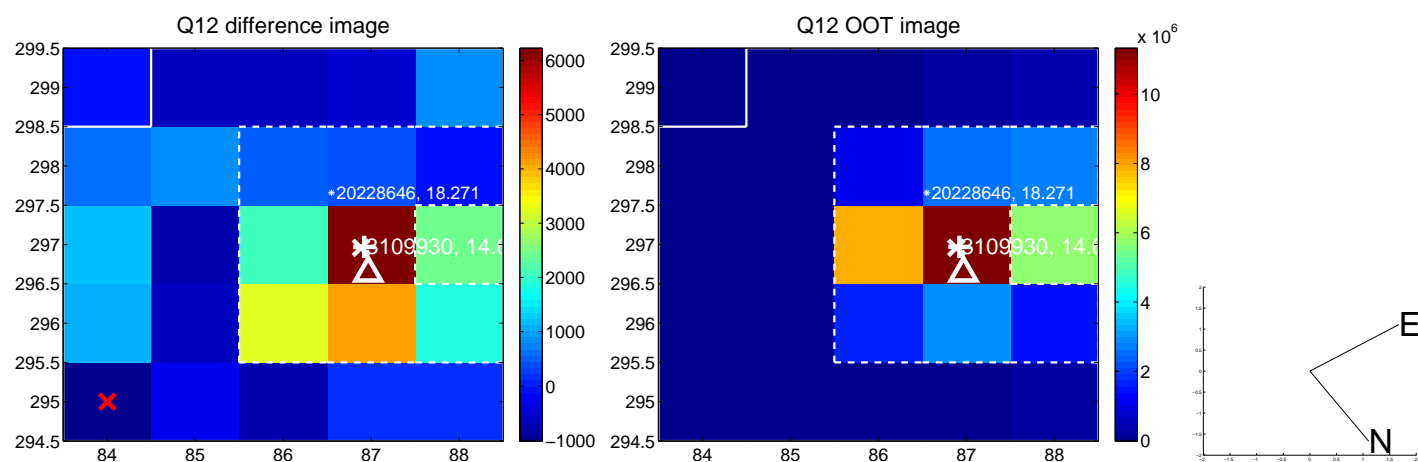
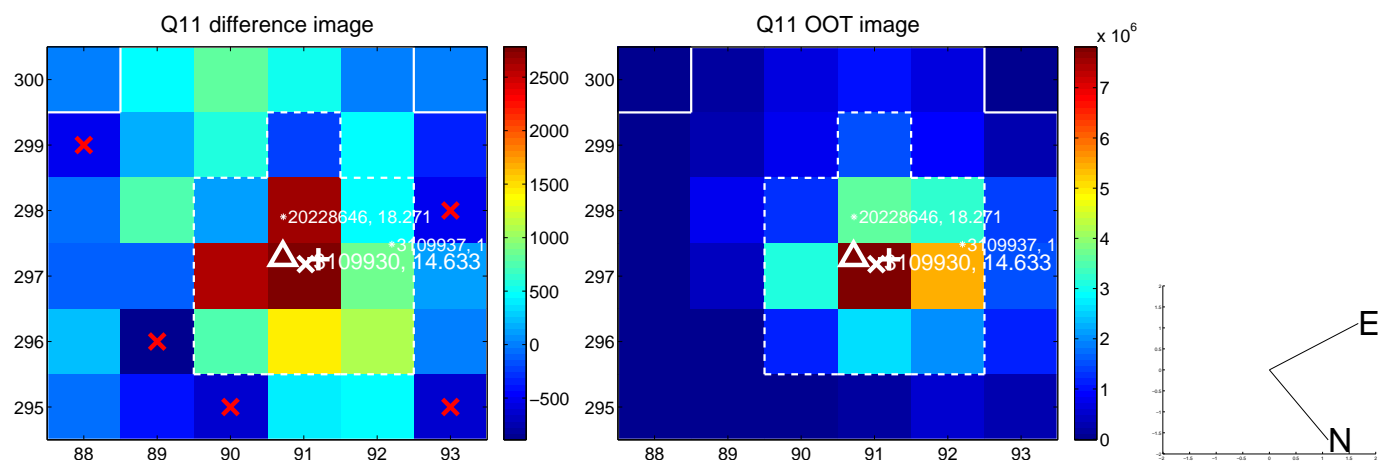
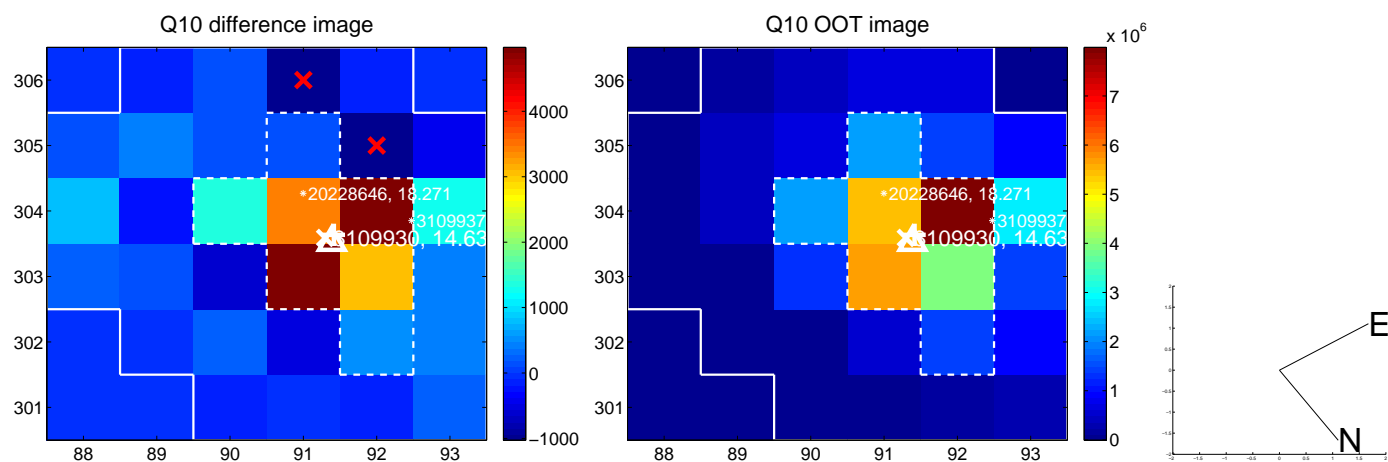
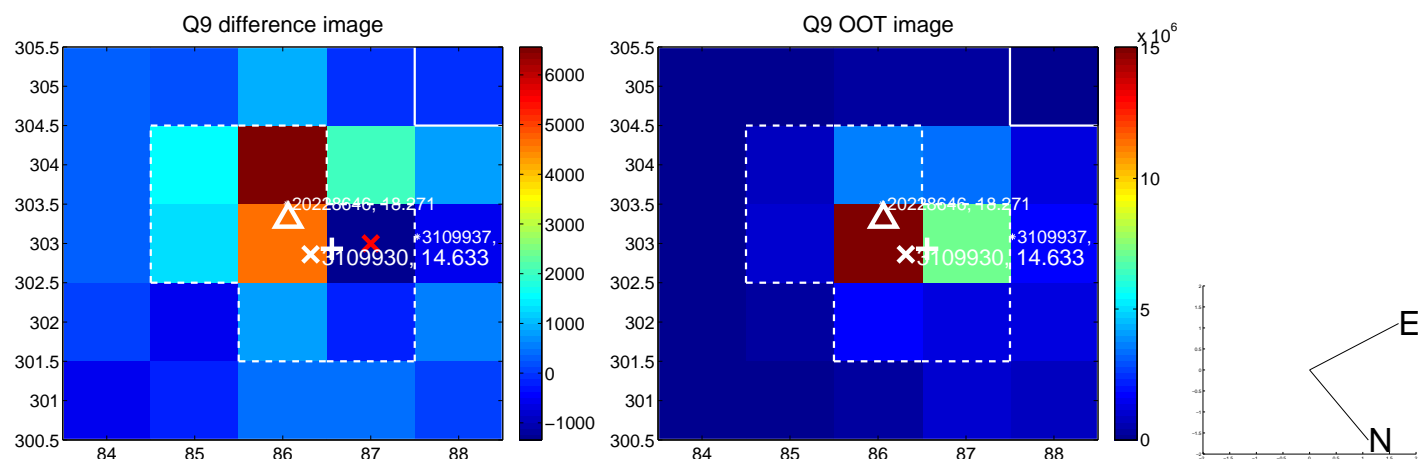


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

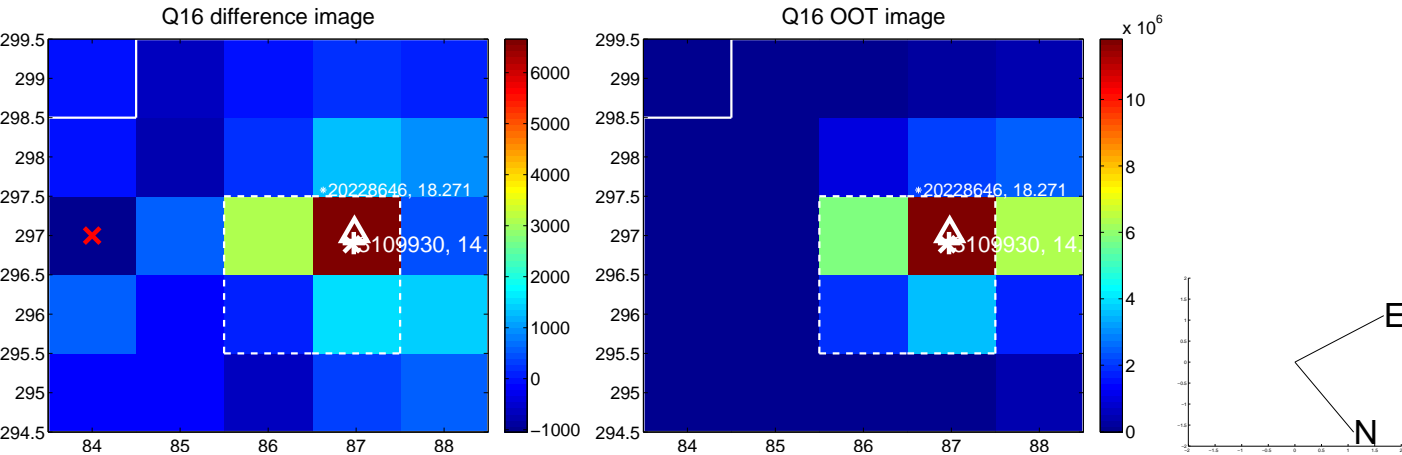
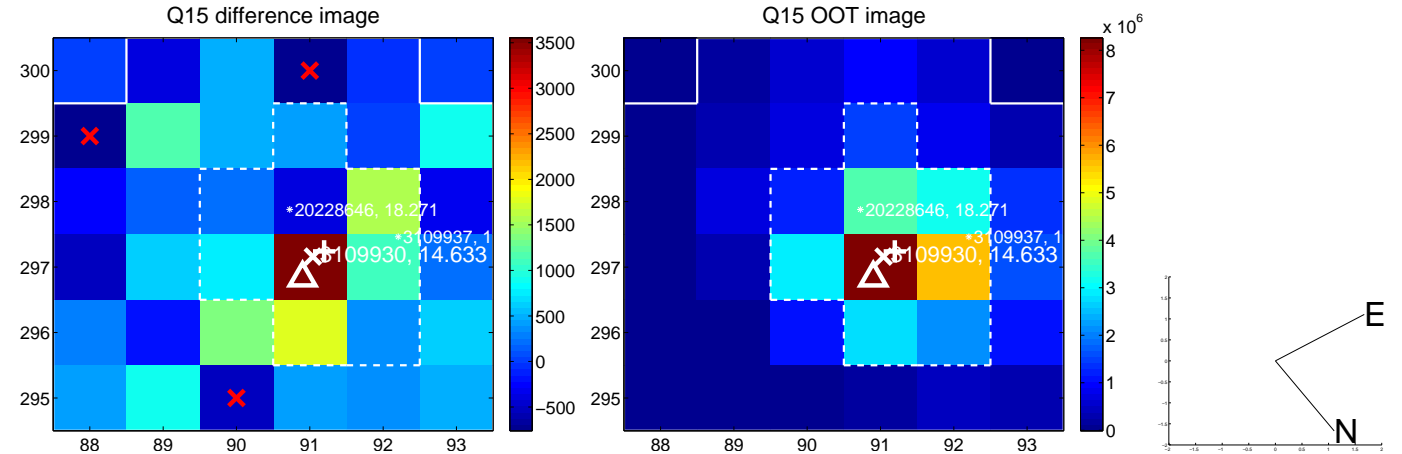
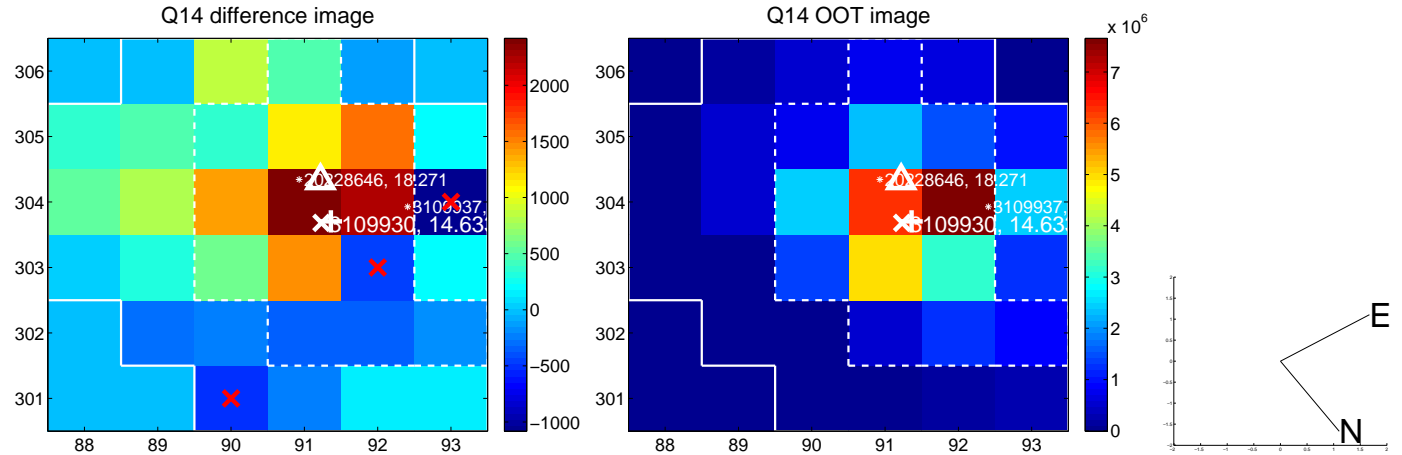
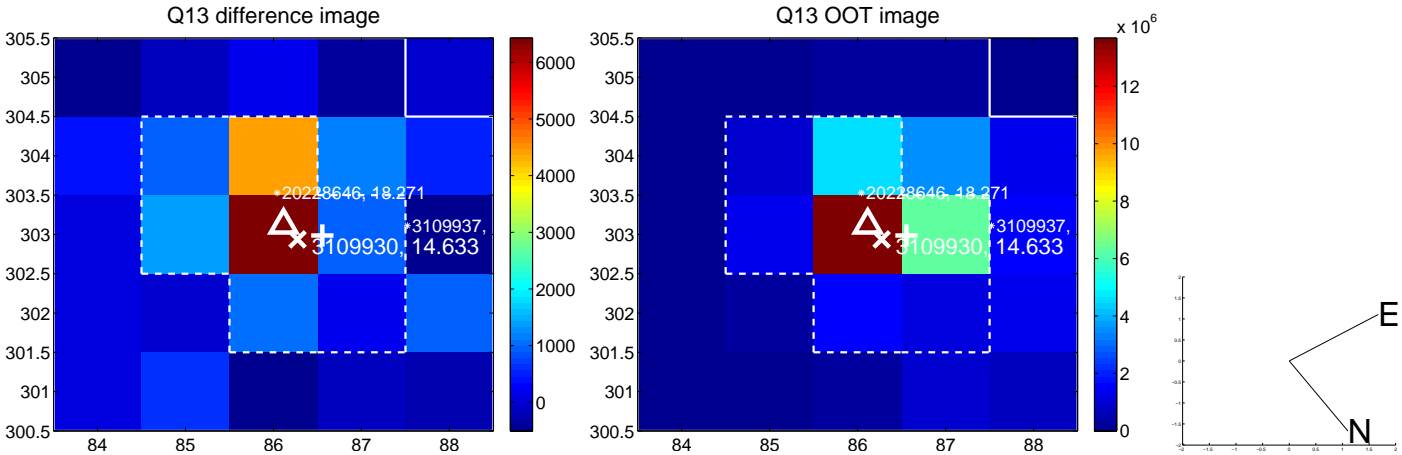
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



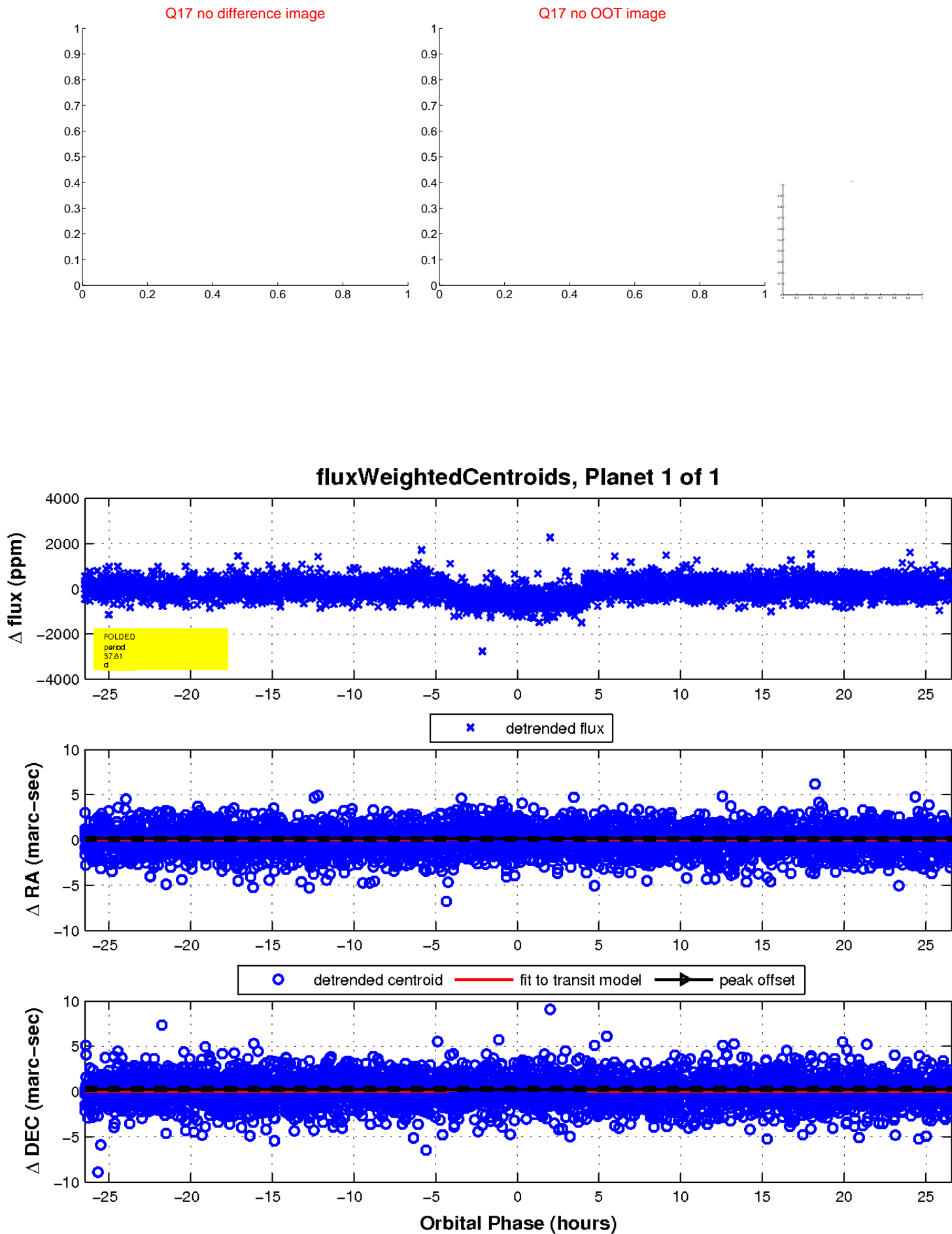
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

