

KIC 009015738

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})
009015738-01	OBS	1616.01	13.932921	139.411261	132.3	2.637	20.9	22.0	1.21	6026	1.64	124.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009015738-01	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 009015738-01

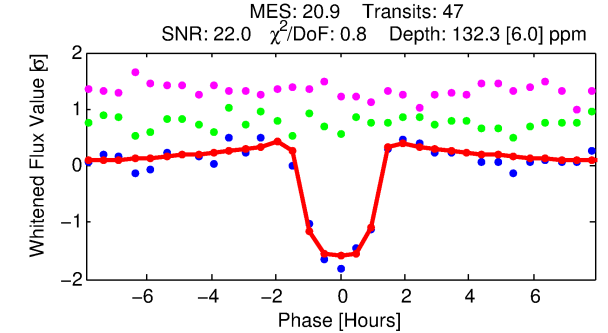
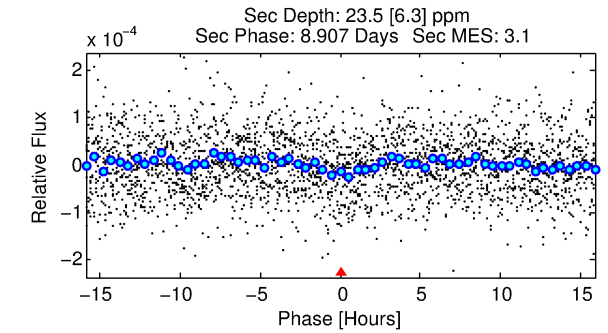
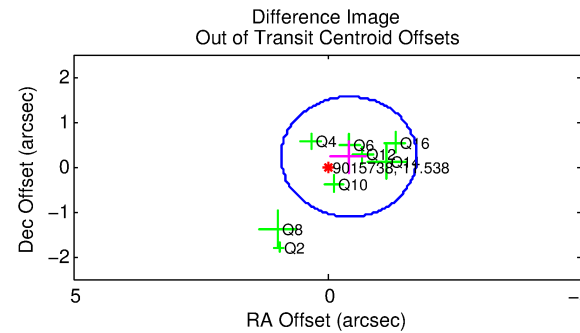
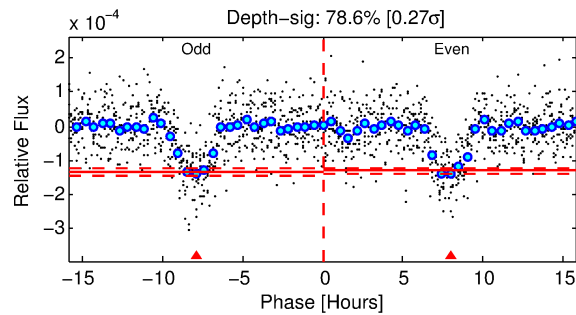
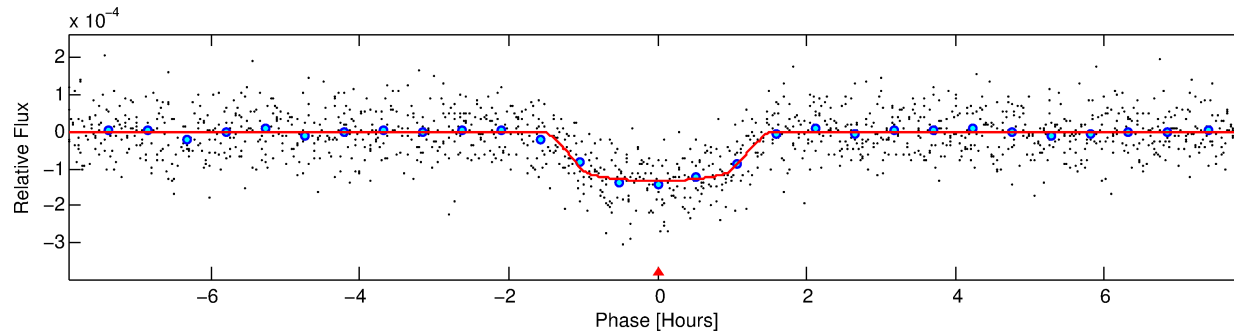
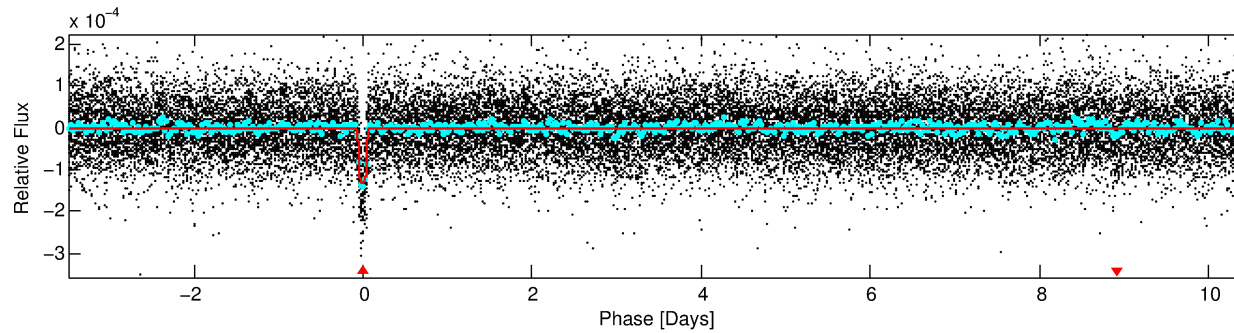
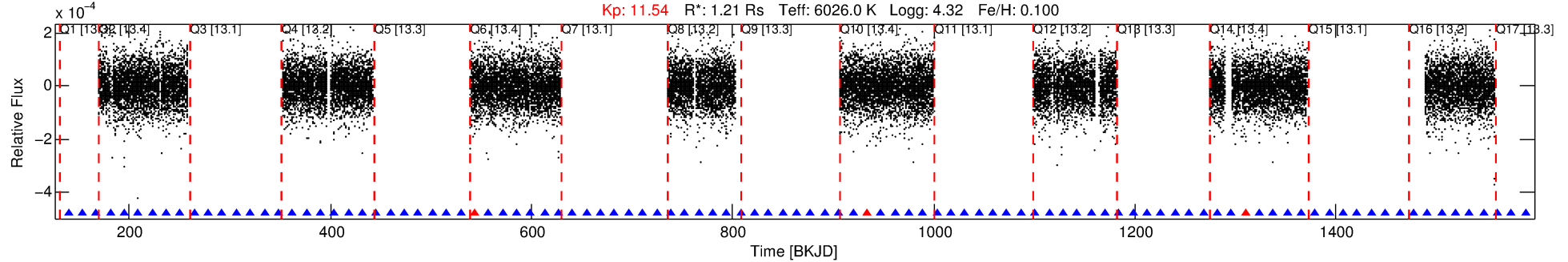
No Significant Match Found

DV One-Page Summary

KIC: 9015738 Candidate: 1 of 1 Period: 13.933 d

KOI: K01616.01 Corr: 0.976

Kp: 11.54 R*: 1.21 Rs Teff: 6026.0 K Logg: 4.32 Fe/H: 0.100



DV Fit Results:

Period = 13.93292 [0.00004] d
Epoch = 139.4113 [0.0021] BKJD
Rp/R* = 0.0124 [0.0030]
a/R* = 18.90 [22.87]
b = 0.90 [0.27]
Seff = 124.77 [29.46]
Teq = 852 [50] K
Rp = 1.64 [0.49] Re
a = 0.1175 [0.0175] AU
Ag = 66.30 [39.35] [1.66σ]
Teffp = 3760 [525] K [5.51σ]

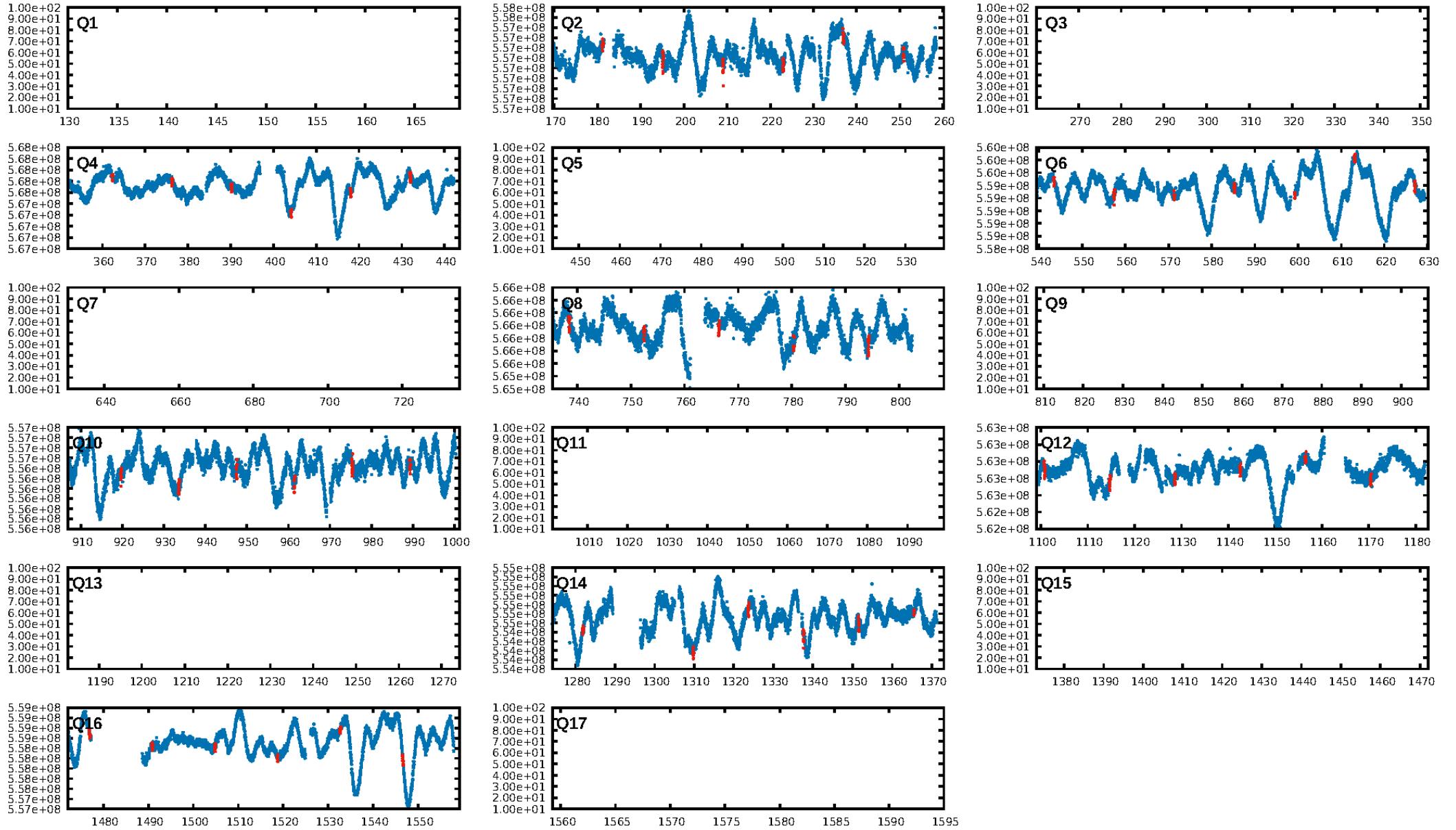
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.74e-90
RollingBand-fgt: 0.94 [44/47]
GhostDiagnostic-chr: 3.584
Centroid-sig: 20.7%
Centroid-so: 0.419 arcsec [0.85σ]
OotOffset-rm: 0.476 arcsec [1.07σ]
KicOffset-rm: 0.384 arcsec [1.17σ]
OotOffset-st: 4/0/4/0 [8]
KicOffset-st: 4/0/4/0 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

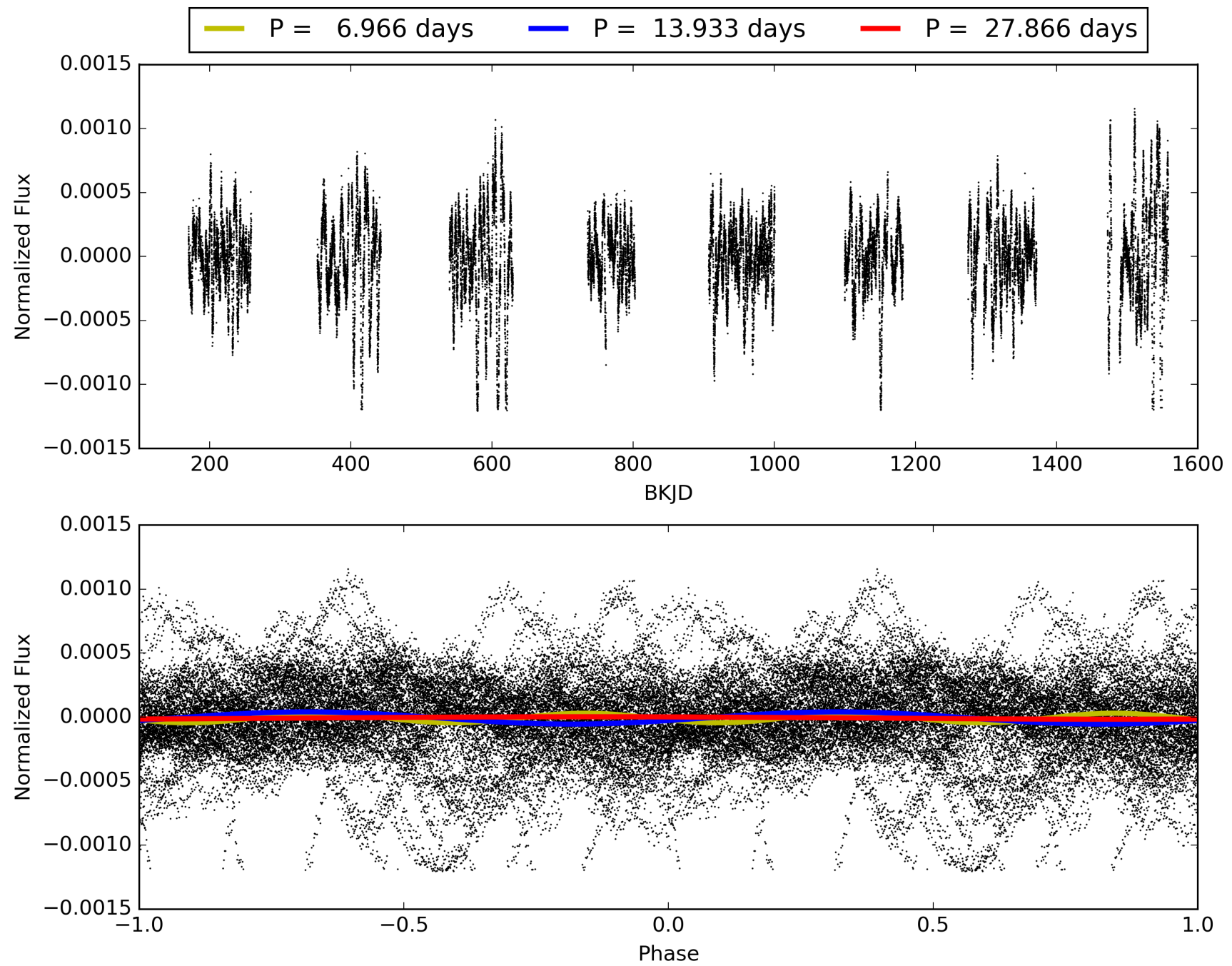
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:30:35 Z

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

TCE 009015738-01, PDC Light Curves

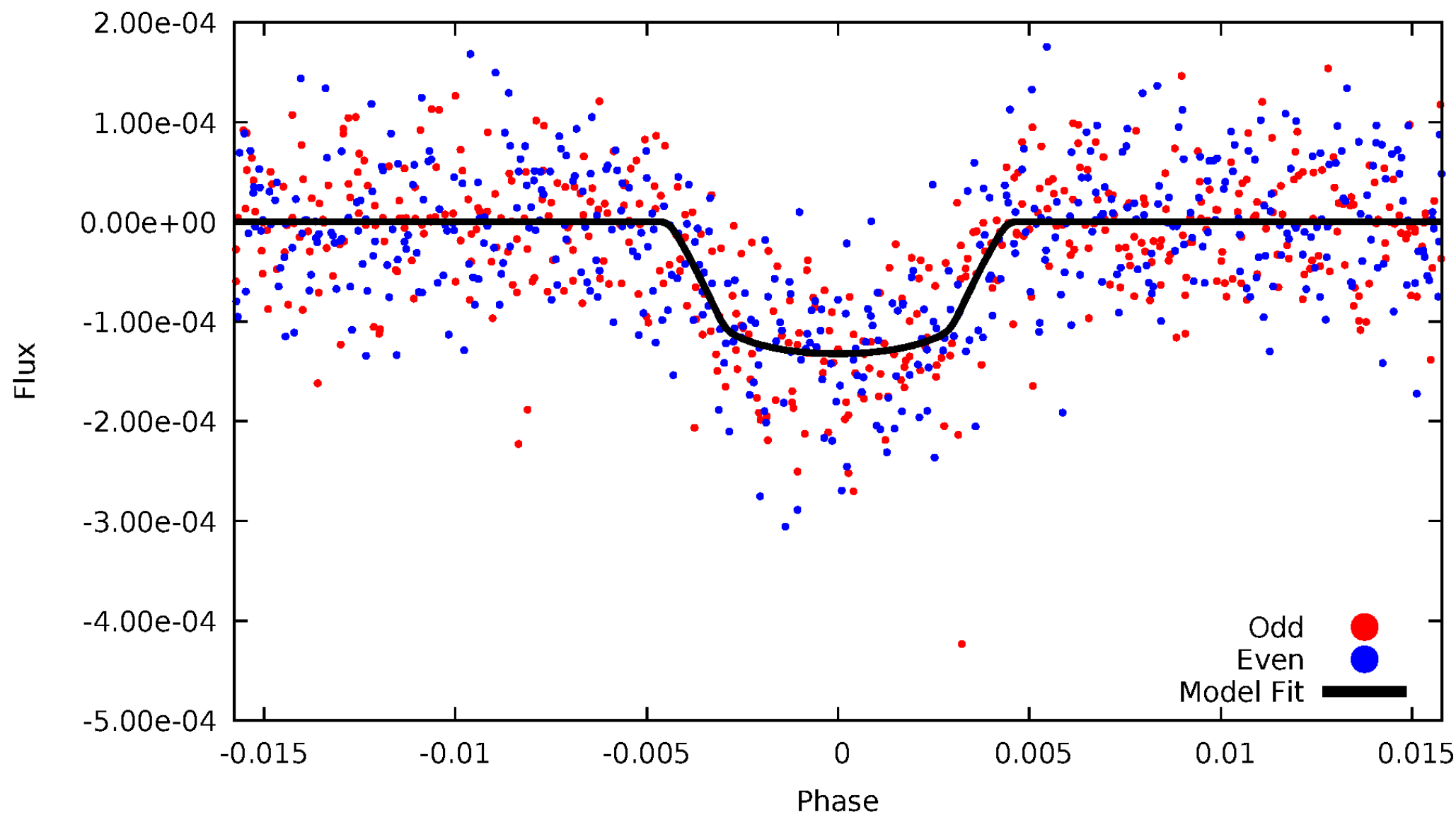


TCE 009015738-01



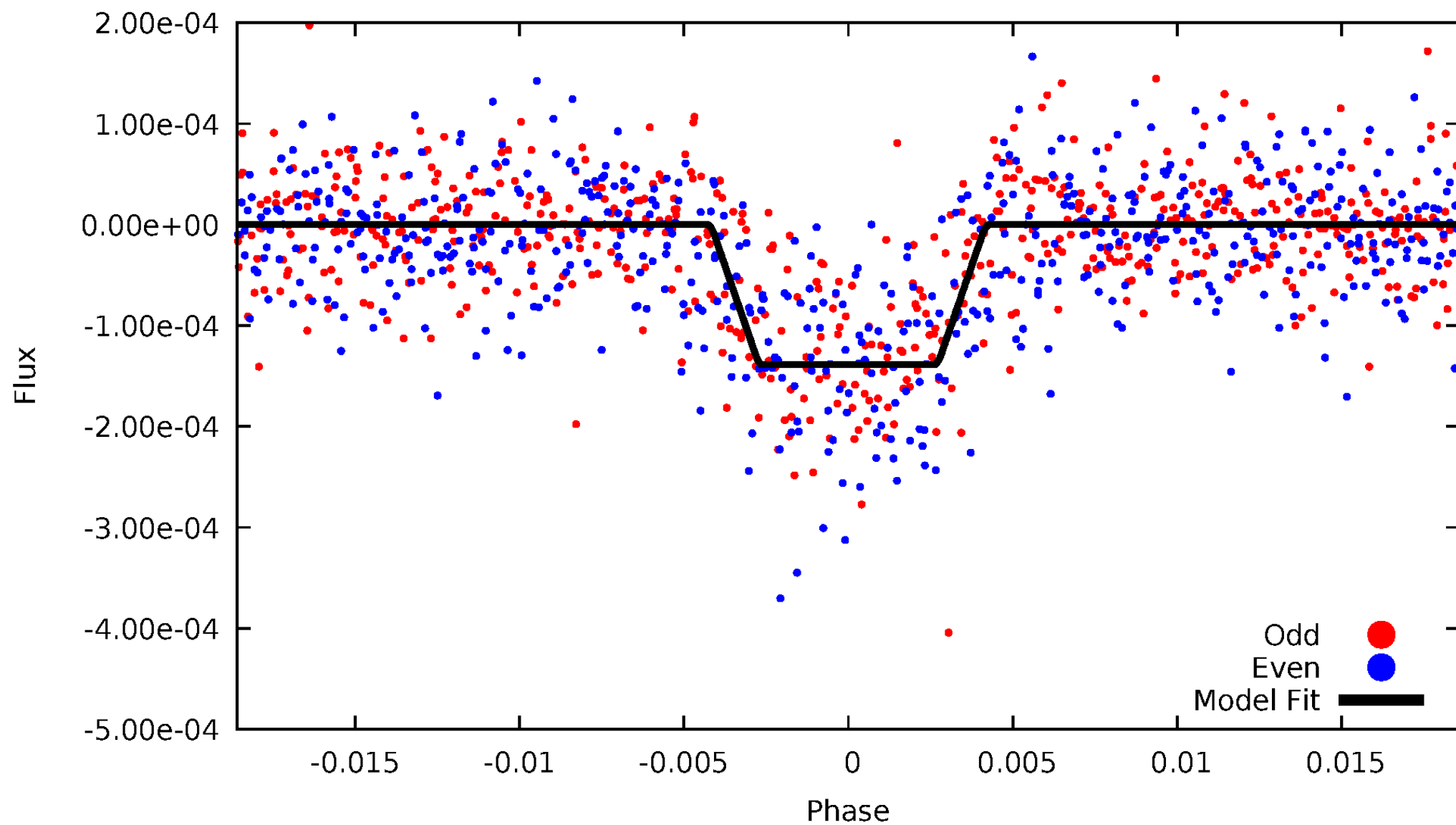
DV Odd/Even

TCE 009015738-01

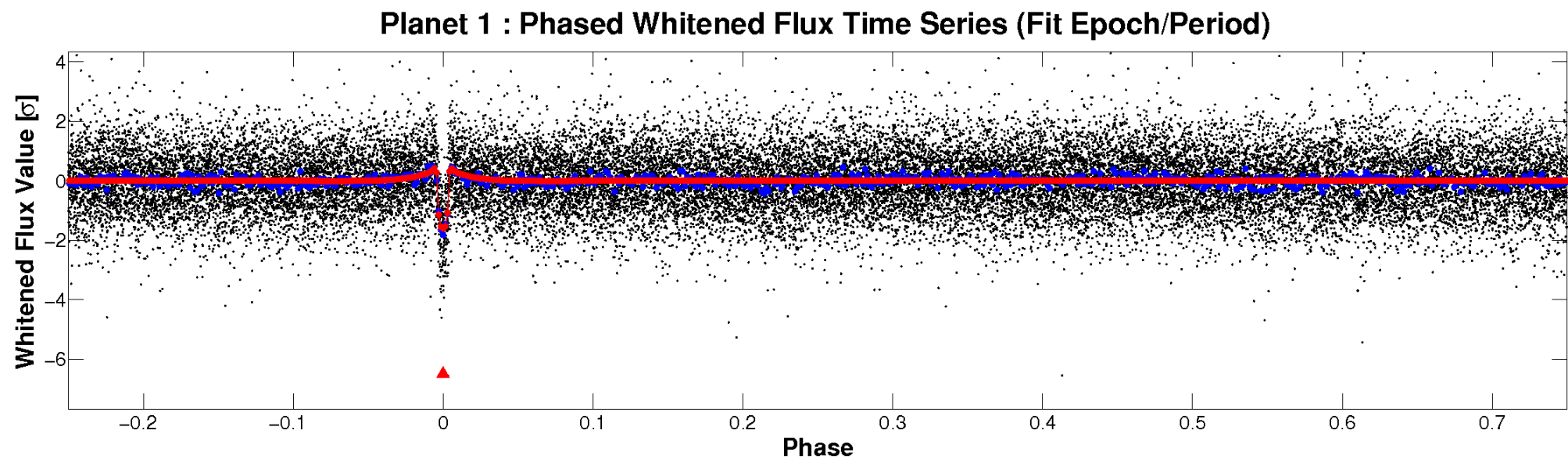
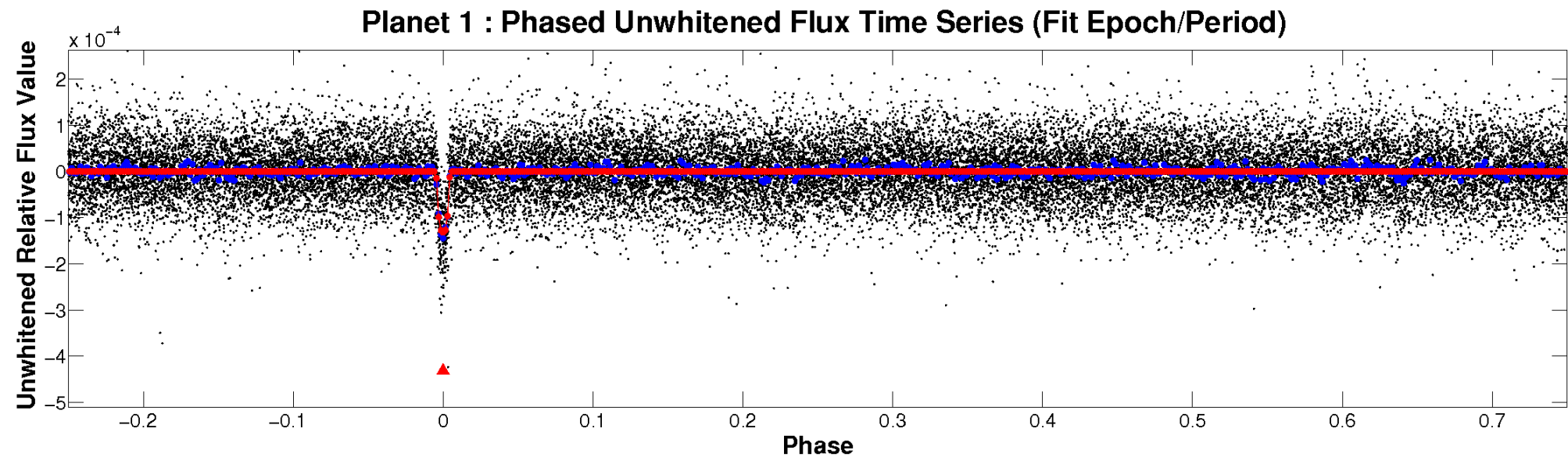


ALT Odd/Even

TCE 009015738-01

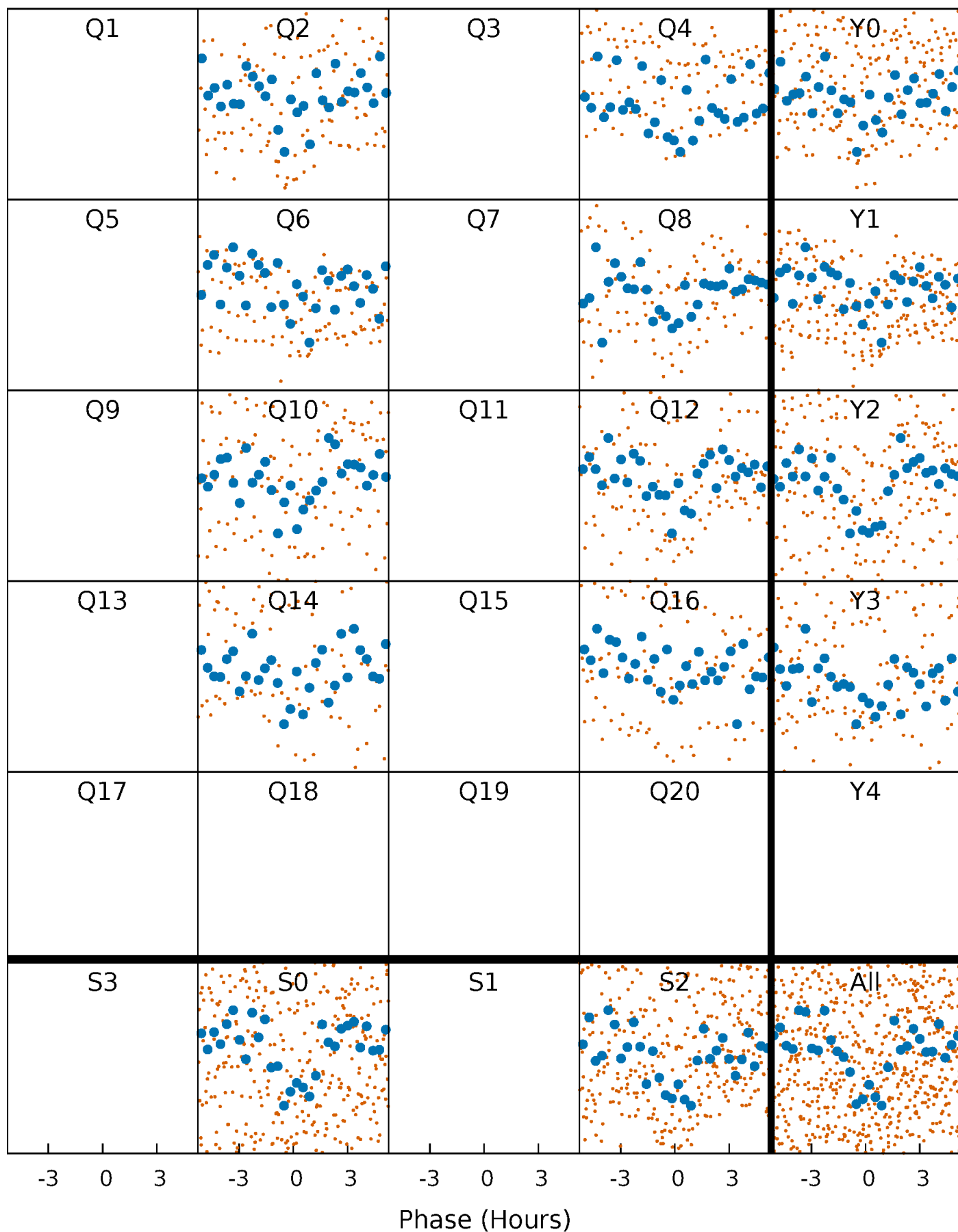


Non-Whitened Vs. Whitened Light Curve



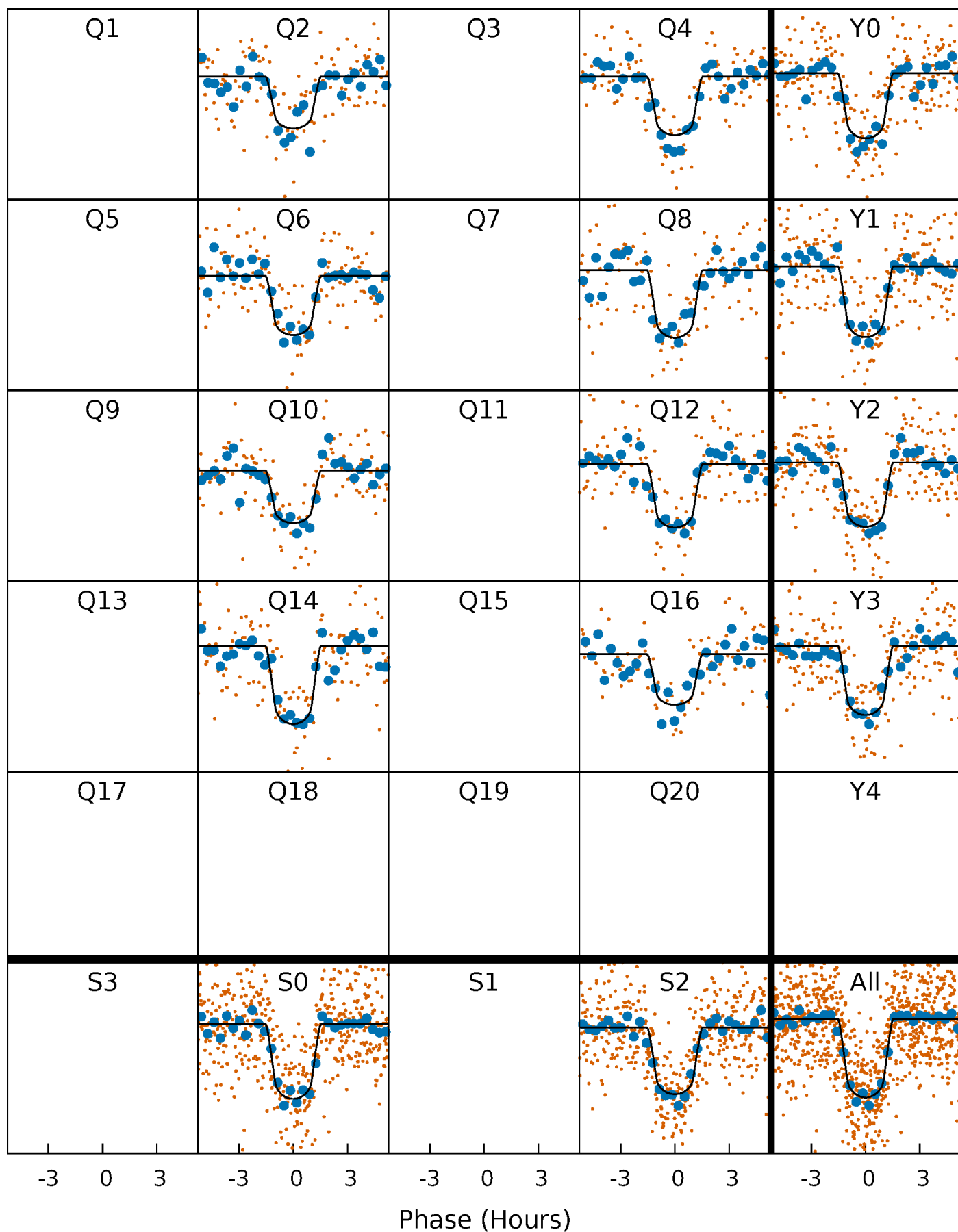
PDC Quarter-Phased Transit Curves

TCE 009015738-01 P= 13.932921 Days $T_0=139.411261$ (BKJD)



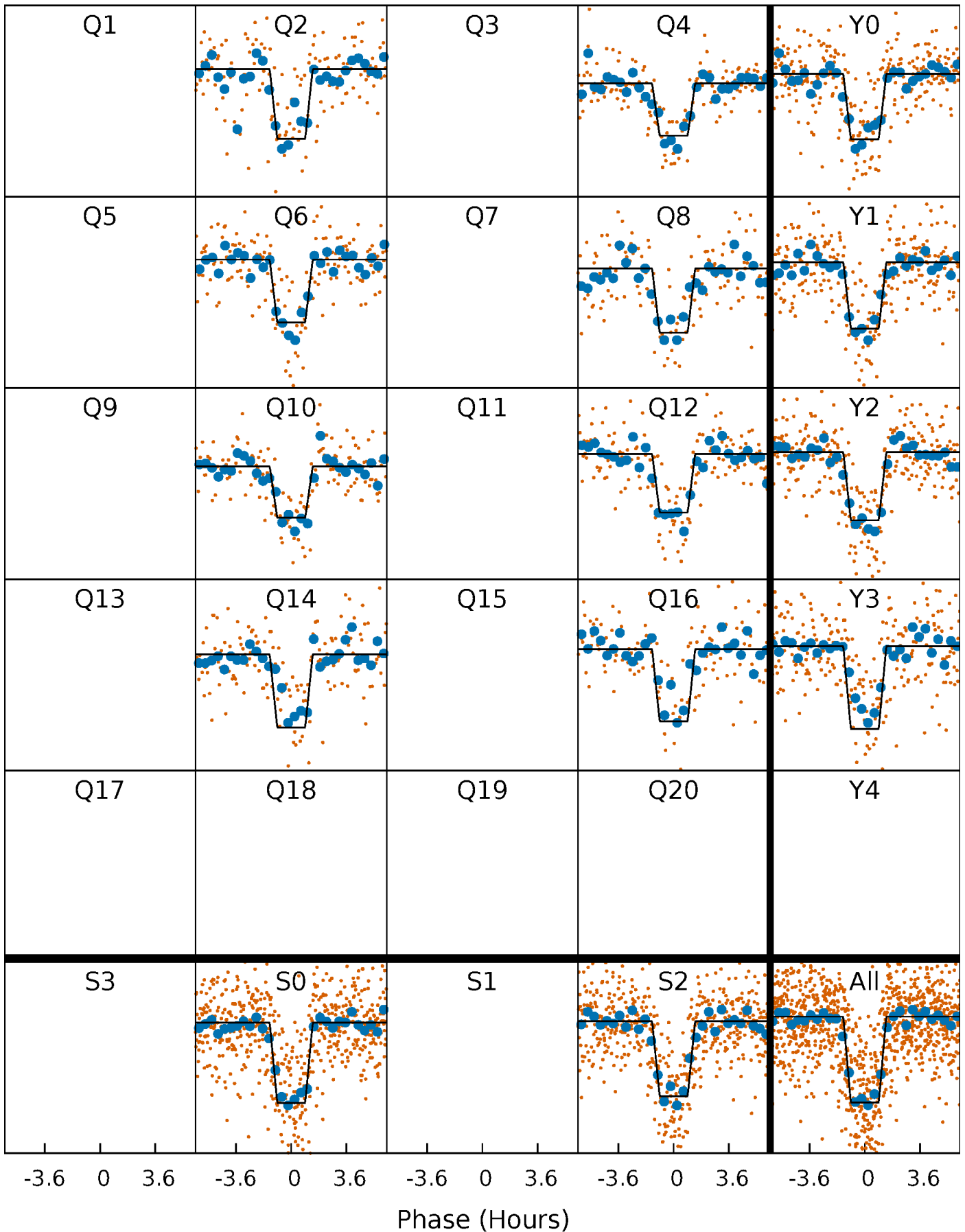
DV Quarter-Phased Transit Curves

TCE 009015738-01 P= 13.932921 Days $T_0=139.411261$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

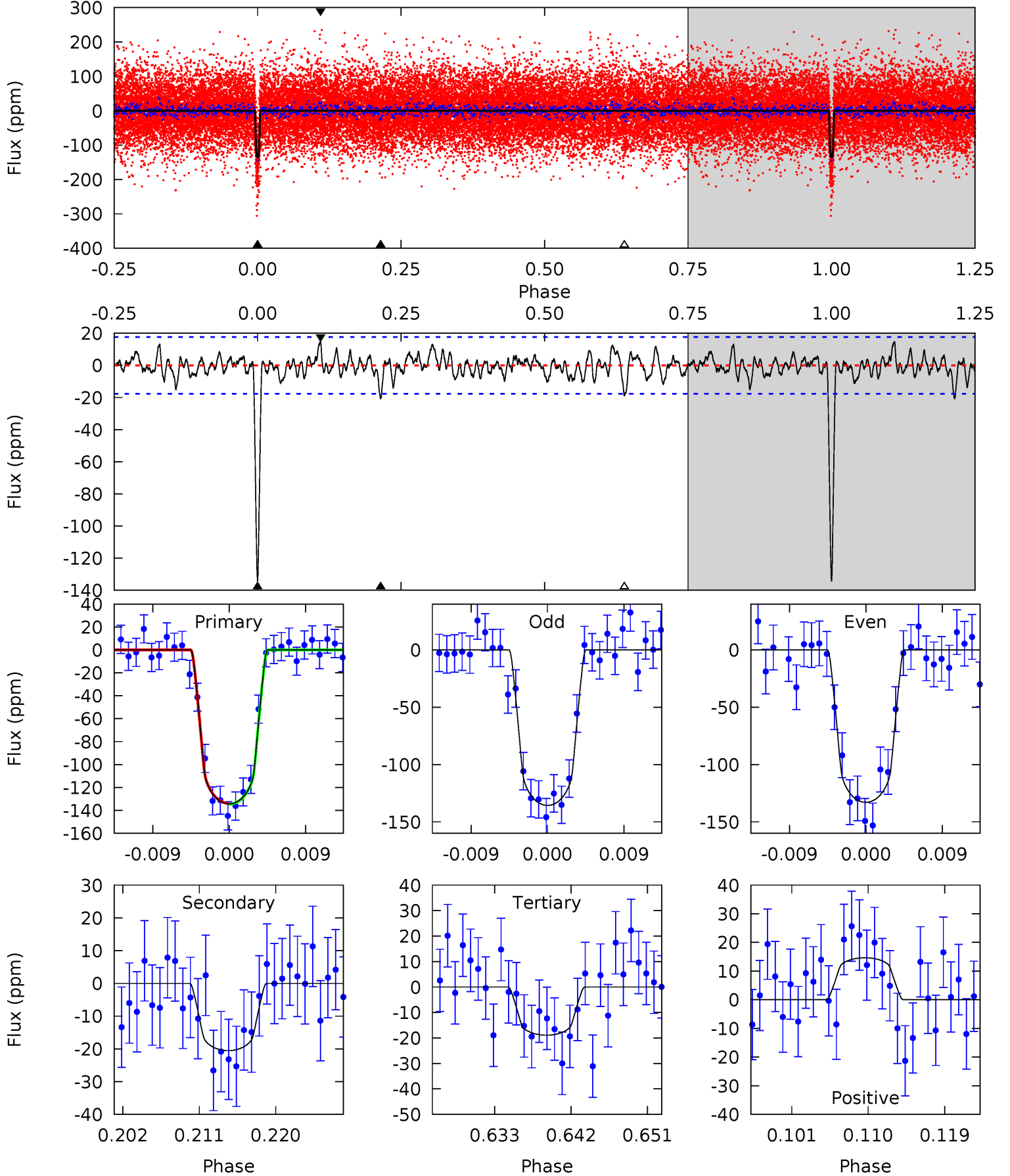
TCE 009015738-01 P= 13.932838 Days $T_0=139.414231$ (BKJD)



DV Model-Shift Uniqueness Test

009015738-01, $P = 13.932921$ Days, $E = 139.411261$ Days

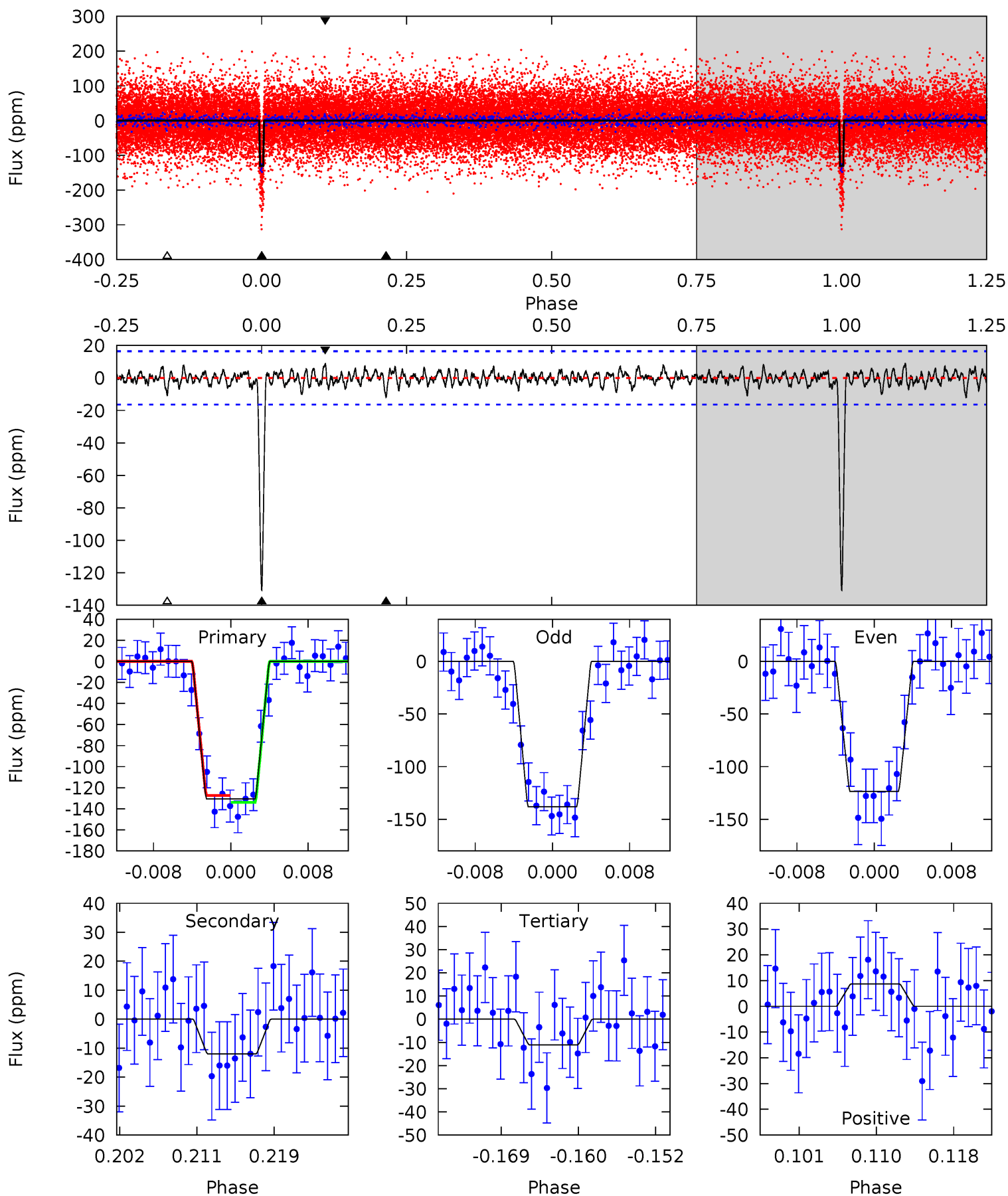
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.4	5.87	5.40	4.18	5.04	2.61	1.45	33.0	34.2	0.46	1.68	0.39	0.99	0.10	0.09



Alt Model-Shift Uniqueness Test

009015738-01, $P = 13.932838$ Days, $E = 139.414231$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.3	3.69	3.40	2.68	5.06	2.63	0.96	36.9	37.6	0.28	1.01	2.25	0.97	0.06	1.01



Stellar Parameters For KIC 009015738

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6026^{+121}_{-133}	$4.321^{+0.088}_{-0.121}$	$0.100^{+0.150}_{-0.150}$	$1.207^{+0.210}_{-0.140}$	$1.113^{+0.081}_{-0.091}$	$0.891^{+0.377}_{-0.312}$
	+2%/-2%	+2%/-3%	+150%/-150%	+17%/-12%	+7%/-8%	+42%/-35%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 009015738-01 / KOI 1616.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-21 ± 4	$1.66^{+0.46}_{-0.42}$	1196^{+56}_{-47}	3948^{+470}_{-318}	55^{+48}_{-22}
Alt.	-12 ± 3	$1.58^{+0.42}_{-0.39}$	1196^{+58}_{-50}	3674^{+403}_{-334}	36^{+31}_{-15}

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 $A_{obs} \gg 1.0$

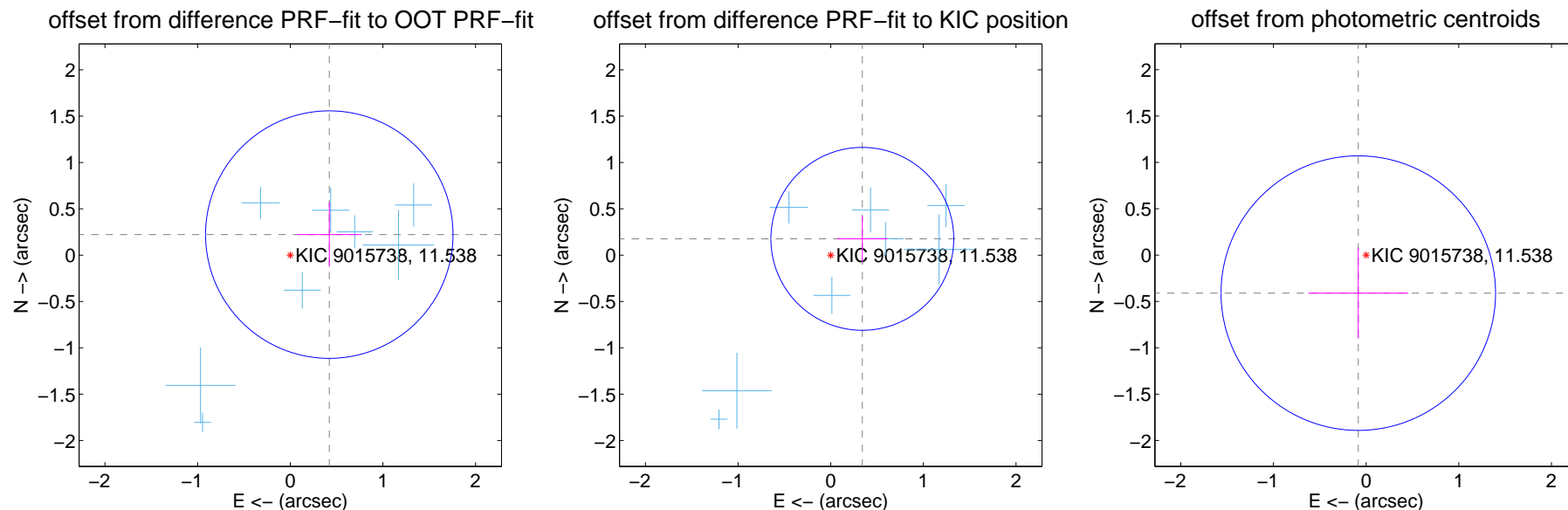
DV Centroid Data

Supplemental centroid analysis for 009015738-01. **Kepler magnitude: 11.54.** Transit SNR 22.05

There are 8 quarters with good PRF difference image offsets

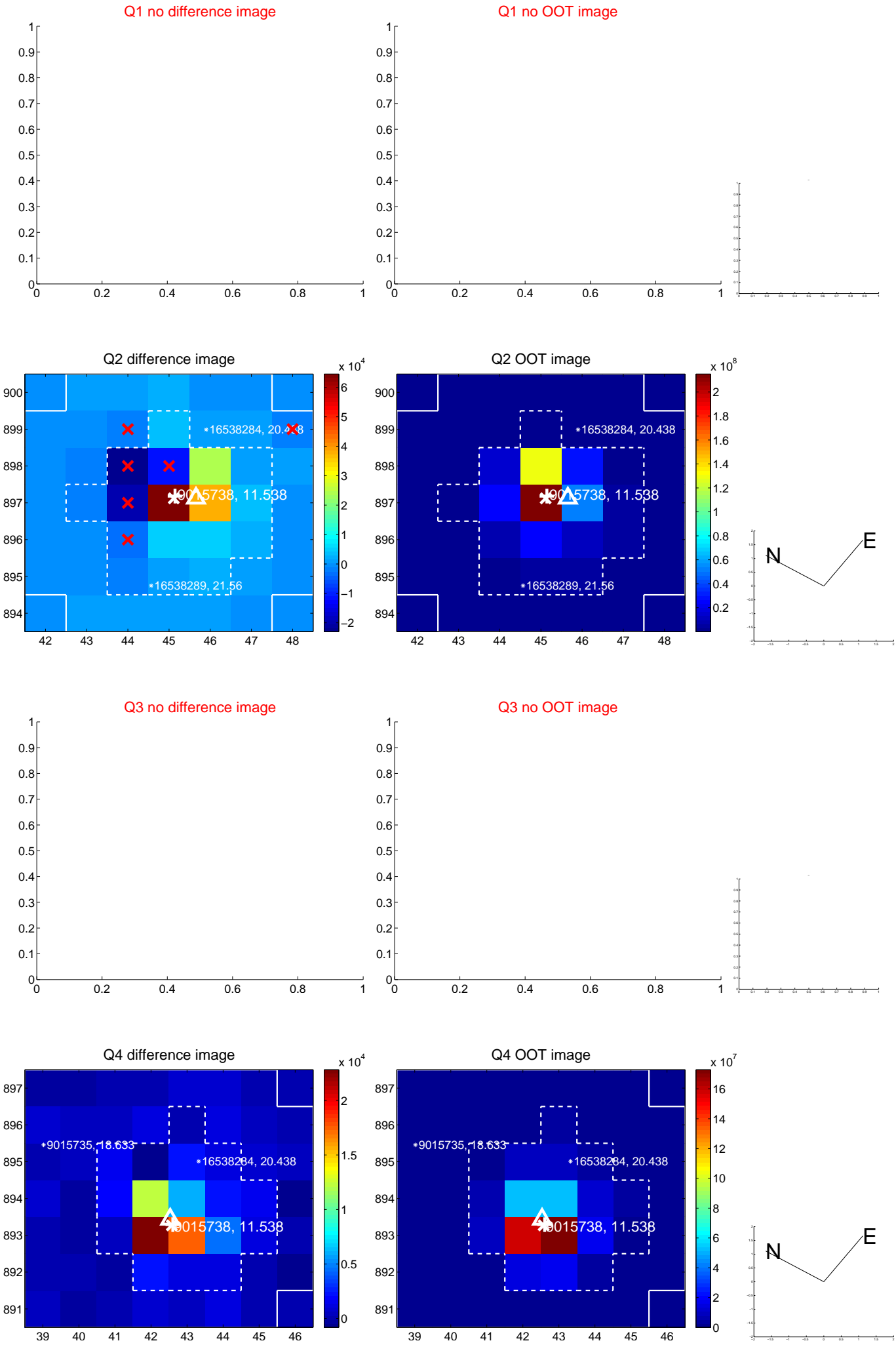
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.476 ± 0.445	1.07	-0.421 ± 0.348	0.222 ± 0.348
PRF-fit source offset from KIC position	0.384 ± 0.329	1.17	-0.341 ± 0.274	0.176 ± 0.246
photometric centroid source offset	0.42 ± 0.49	0.85	0.08 ± 0.54	-0.41 ± 0.49

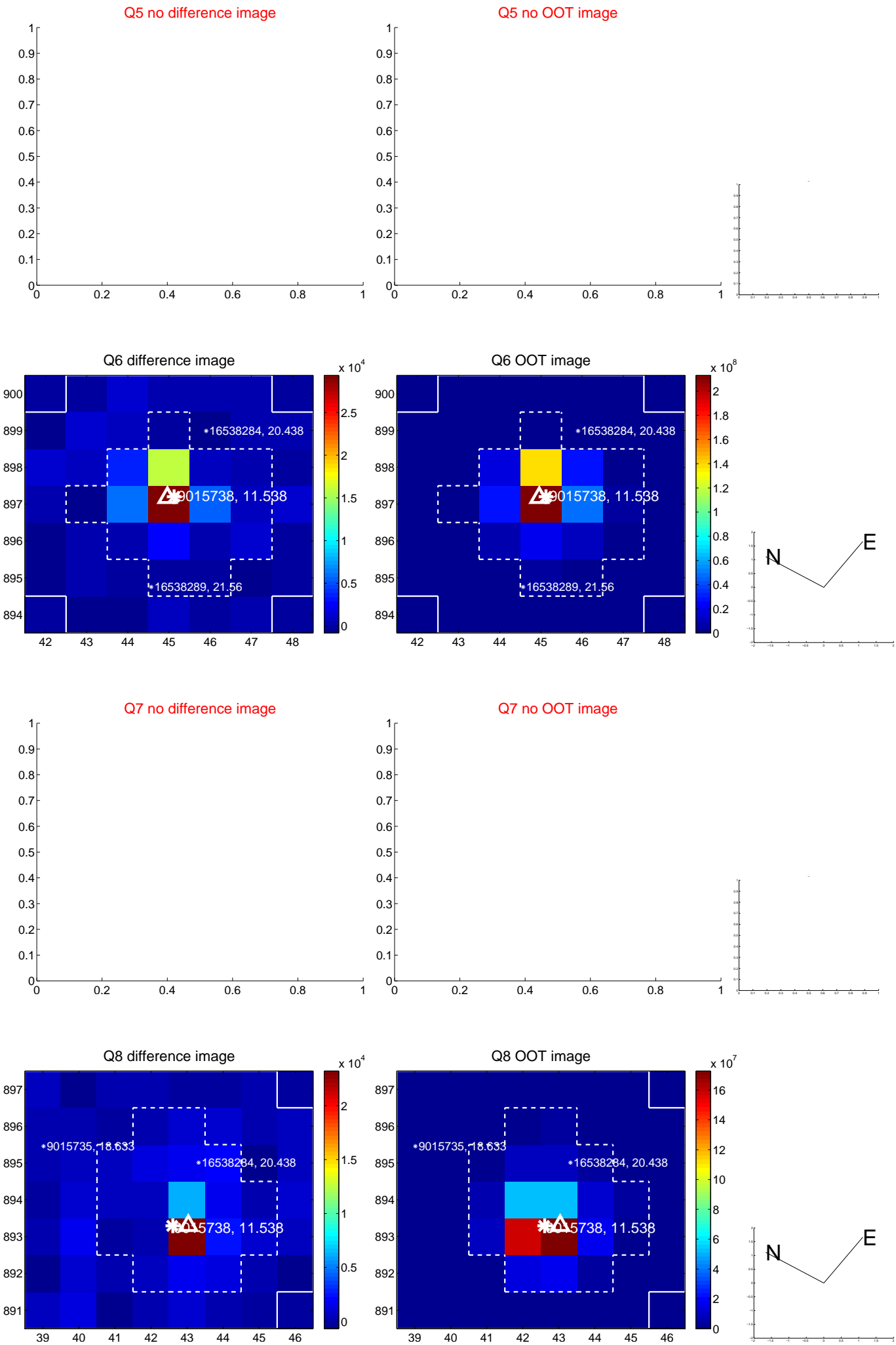


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

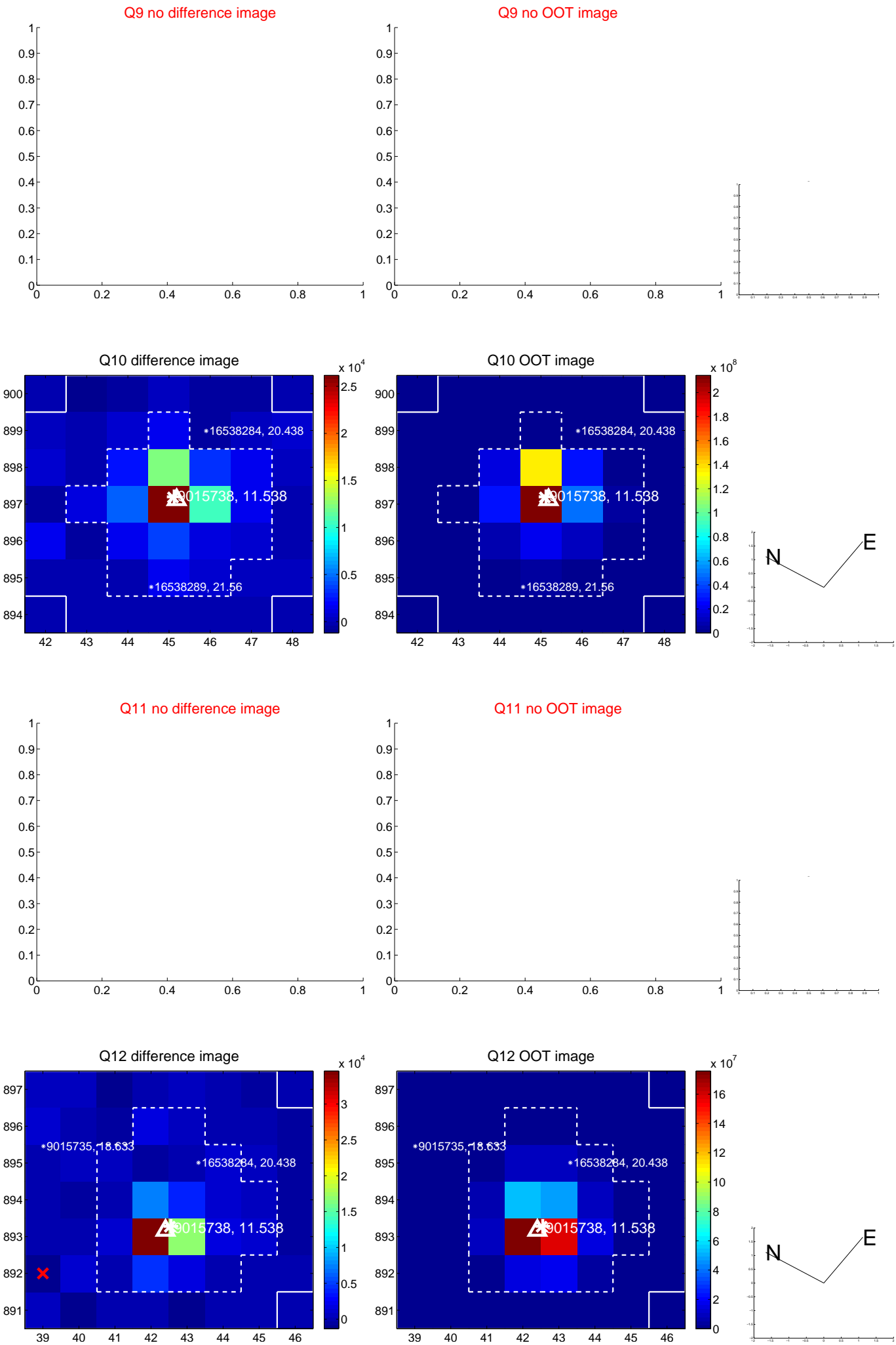
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



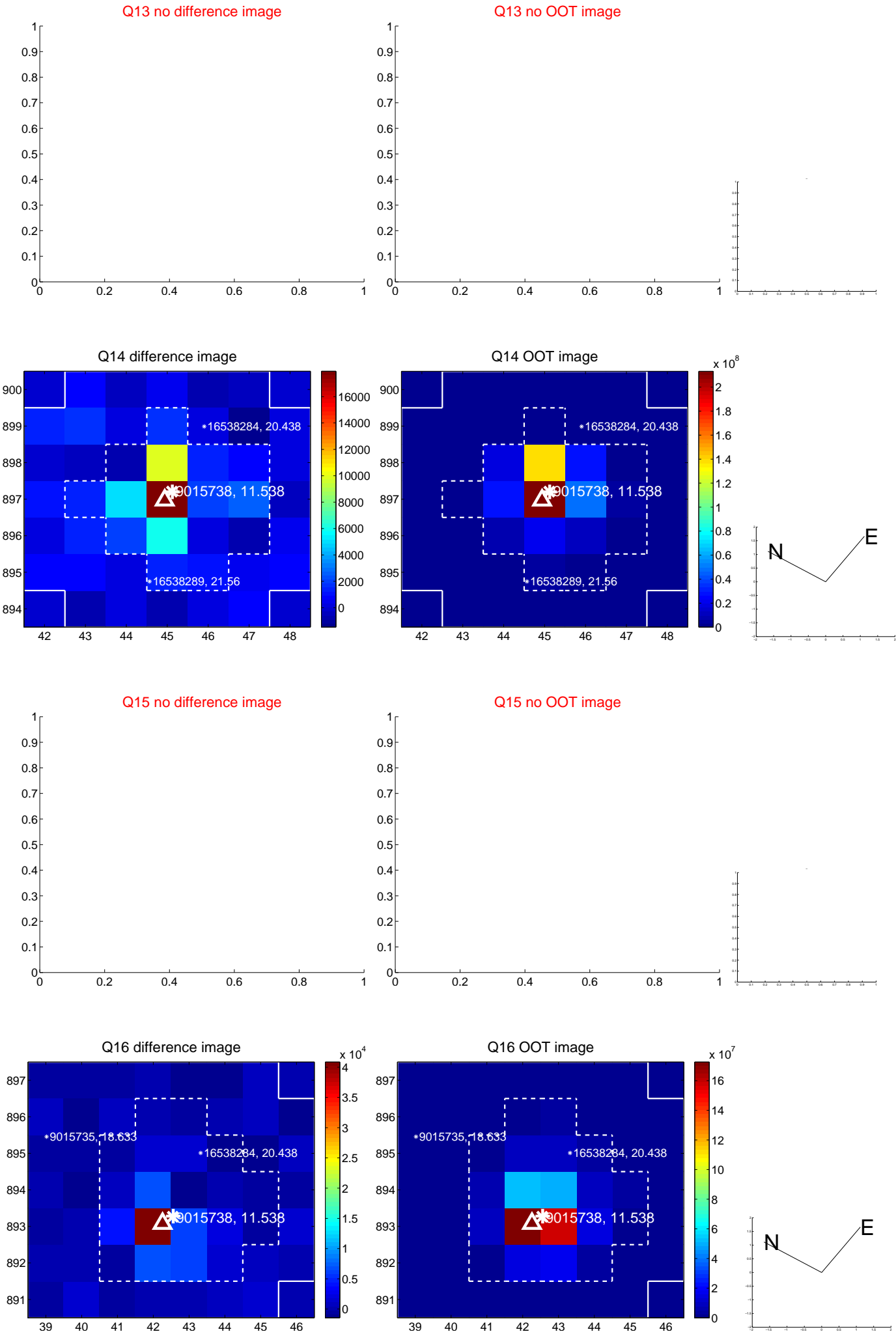
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



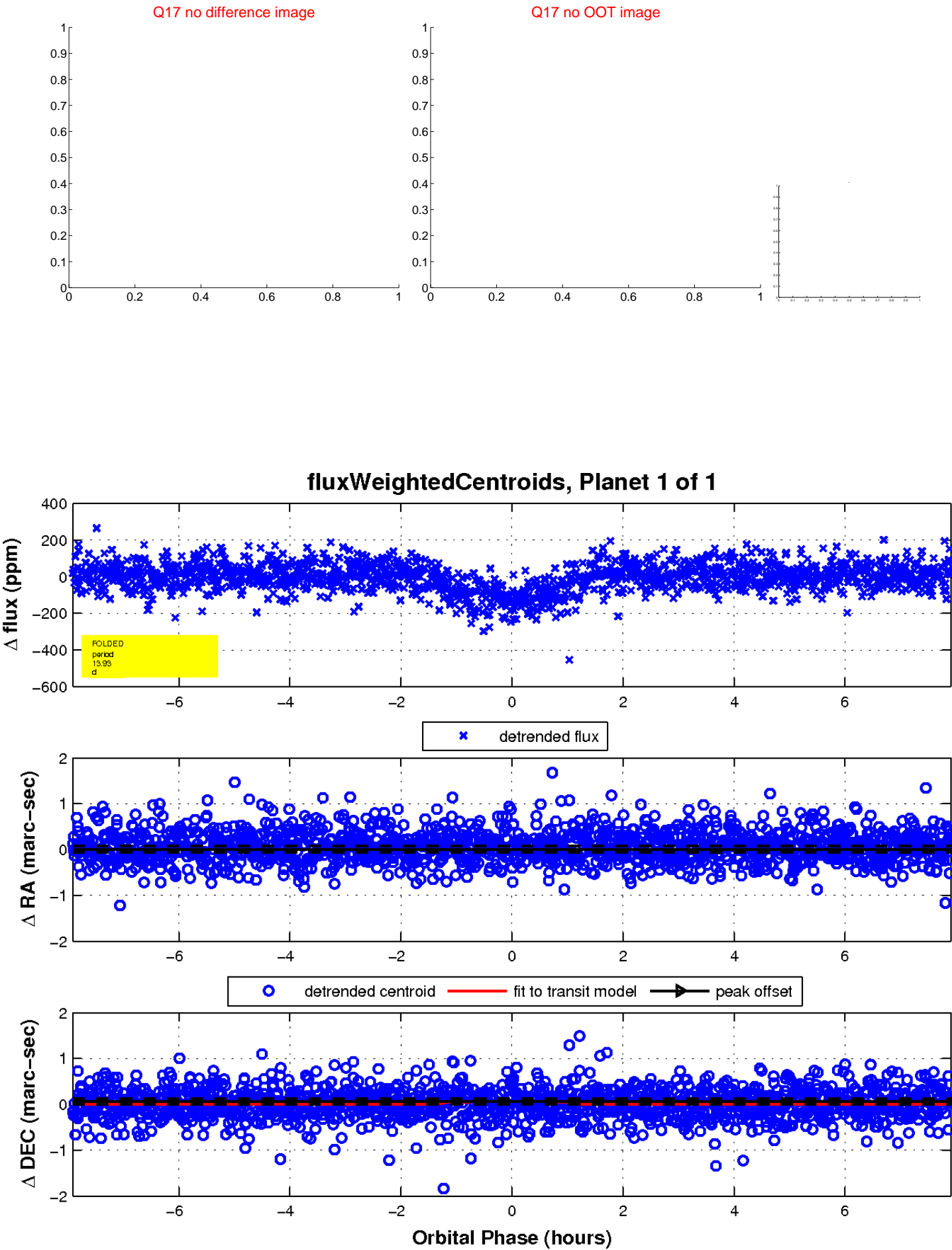
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

