

KIC 009401997

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})
009401997-01	OBS	1633.01	32.296155	138.532467	455.9	5.027	14.0	15.6	0.89	5246	2.26	15.18

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009401997-01	OBS	PC	0.98	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.

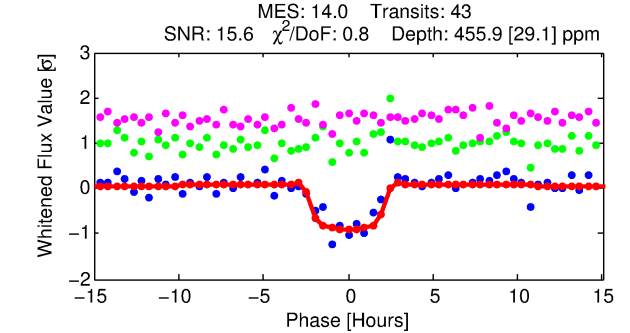
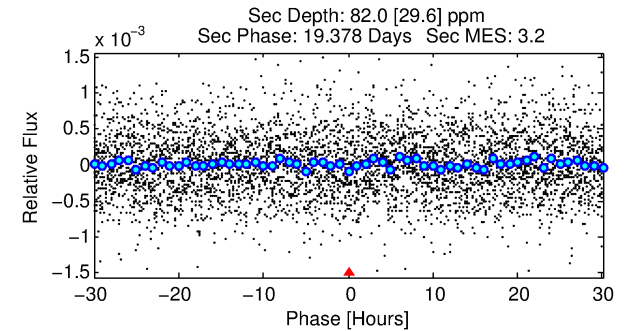
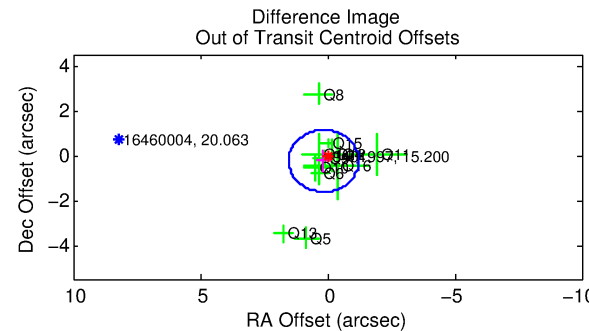
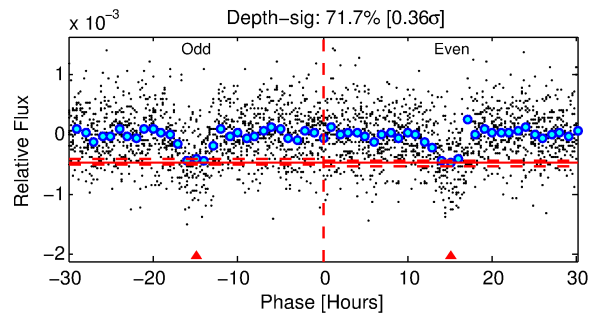
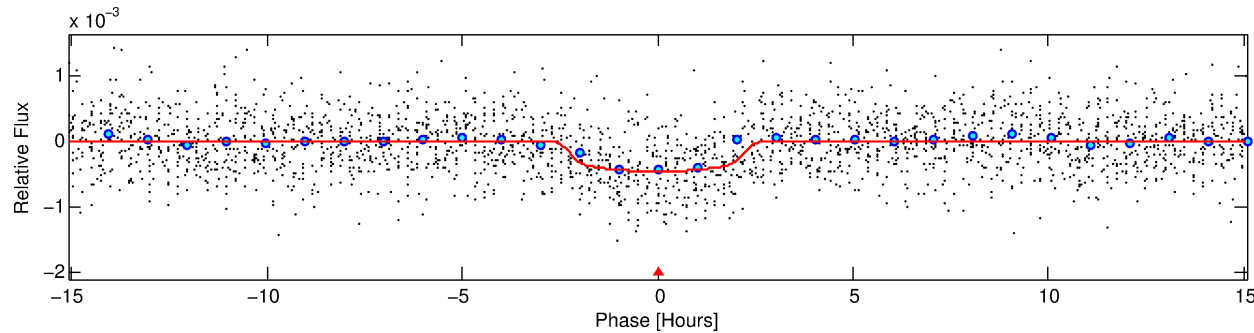
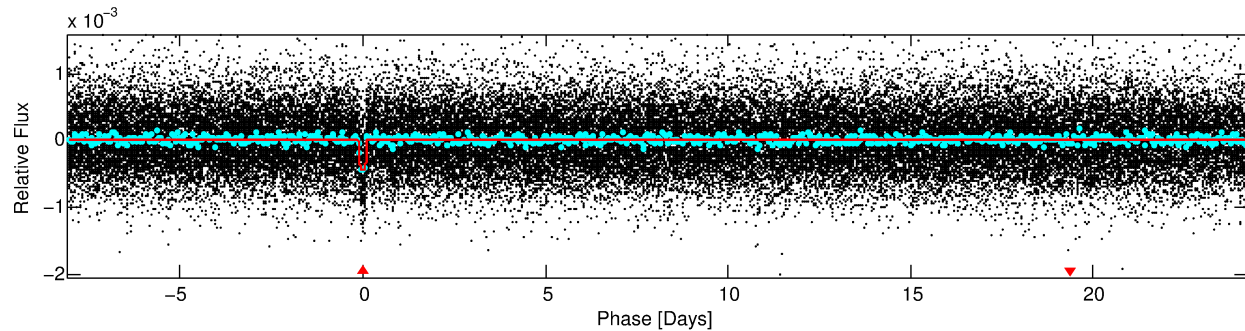
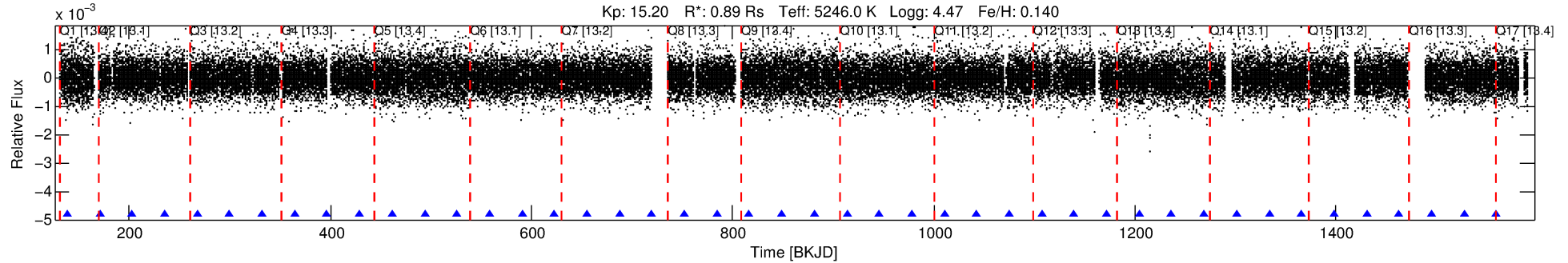
Ephemeris Match Information For 009401997-01

No Significant Match Found

DV One-Page Summary

KIC: 9401997 Candidate: 1 of 1 Period: 32.296 d

KOI: K01633.01 Corr: 0.946



DV Fit Results:

Period = 32.29616 [0.00024] d
Epoch = 138.5325 [0.0060] BKJD
Rp/R* = 0.0232 [0.0043]
a/R* = 25.46 [18.70]
b = 0.88 [0.19]
Seff = 15.18 [2.22]
Teff = 503 [18] K
Rp = 2.26 [0.46] Re
a = 0.1884 [0.0152] AU
Ag = 313.52 [167.97] [1.86 σ]
Teffp = 3275 [428] K [6.46 σ]

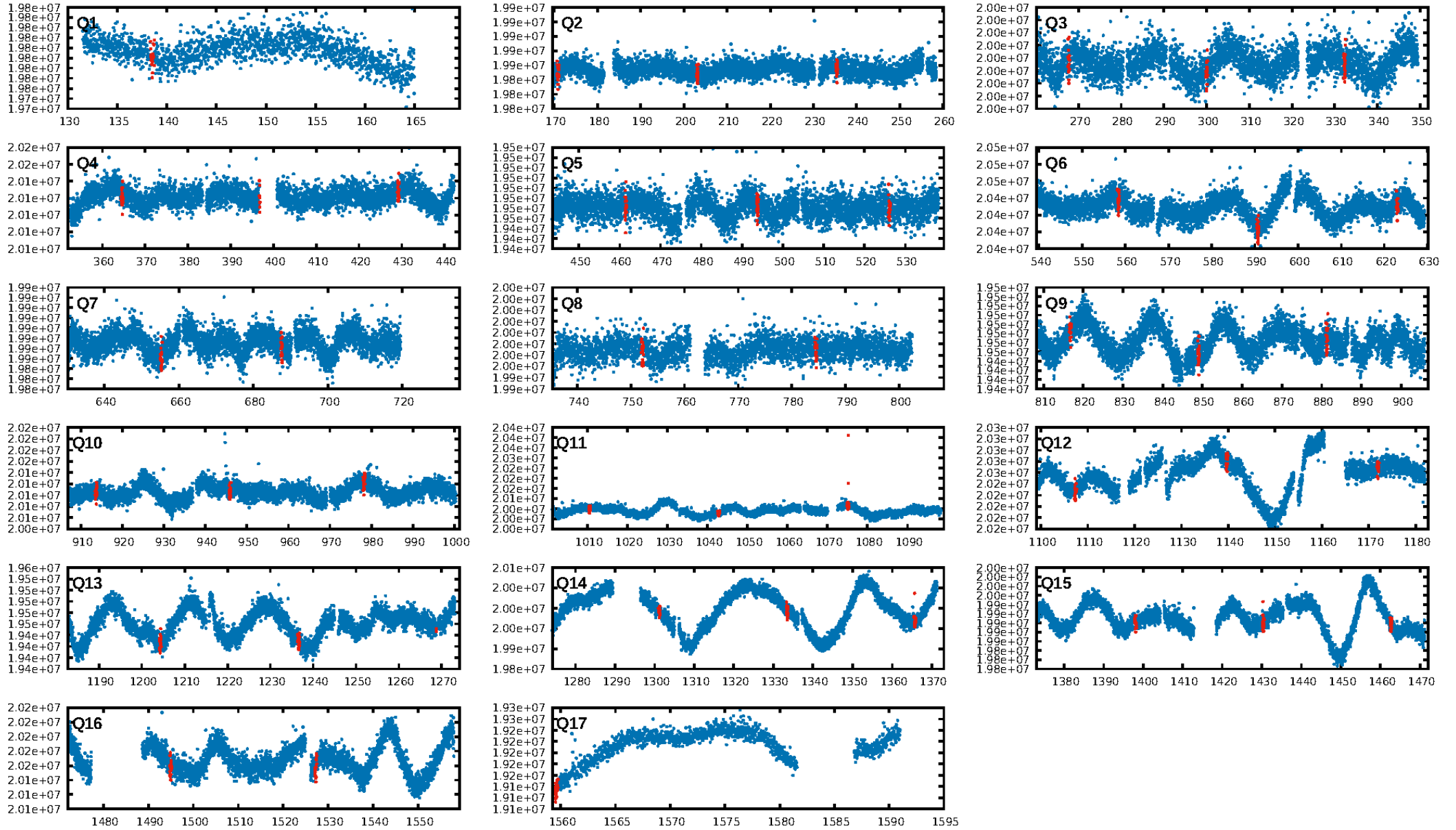
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 86.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.14e-43
RollingBand-fgt: 1.00 [41/41]
GhostDiagnostic-chr: 38.14
Centroid-sig: 17.9%
Centroid-so: 1.393 arcsec [1.72 σ]
OotOffset-rm: 0.290 arcsec [0.63 σ]
KicOffset-rm: 0.334 arcsec [0.91 σ]
OotOffset-st: 3/2/4/3 [12]
KicOffset-st: 3/2/4/3 [12]
DiffImageQuality-fgm: 0.92 [11/12]
DiffImageOverlap-fno: 1.00 [16/16]

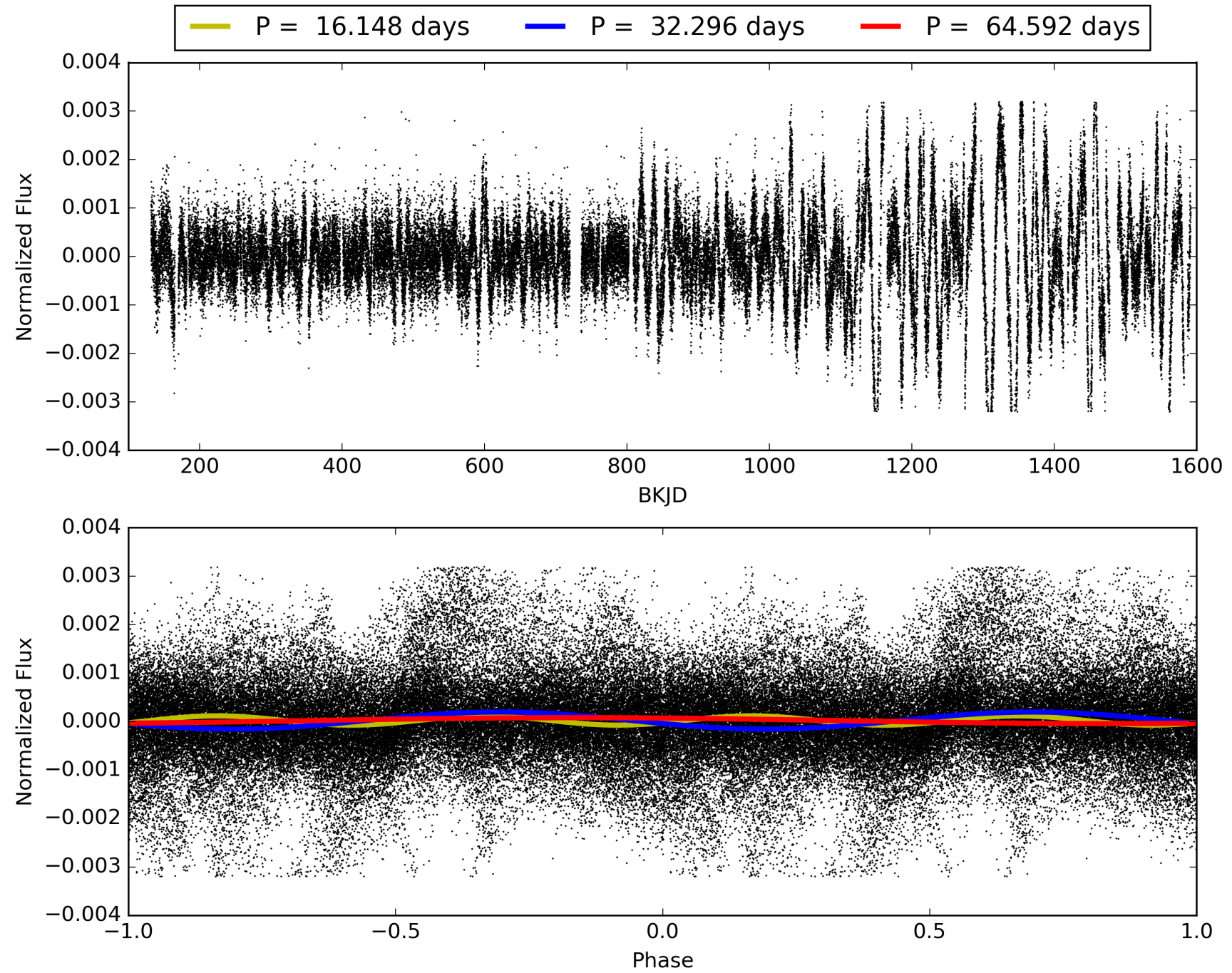
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:42:53 Z

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

TCE 009401997-01, PDC Light Curves

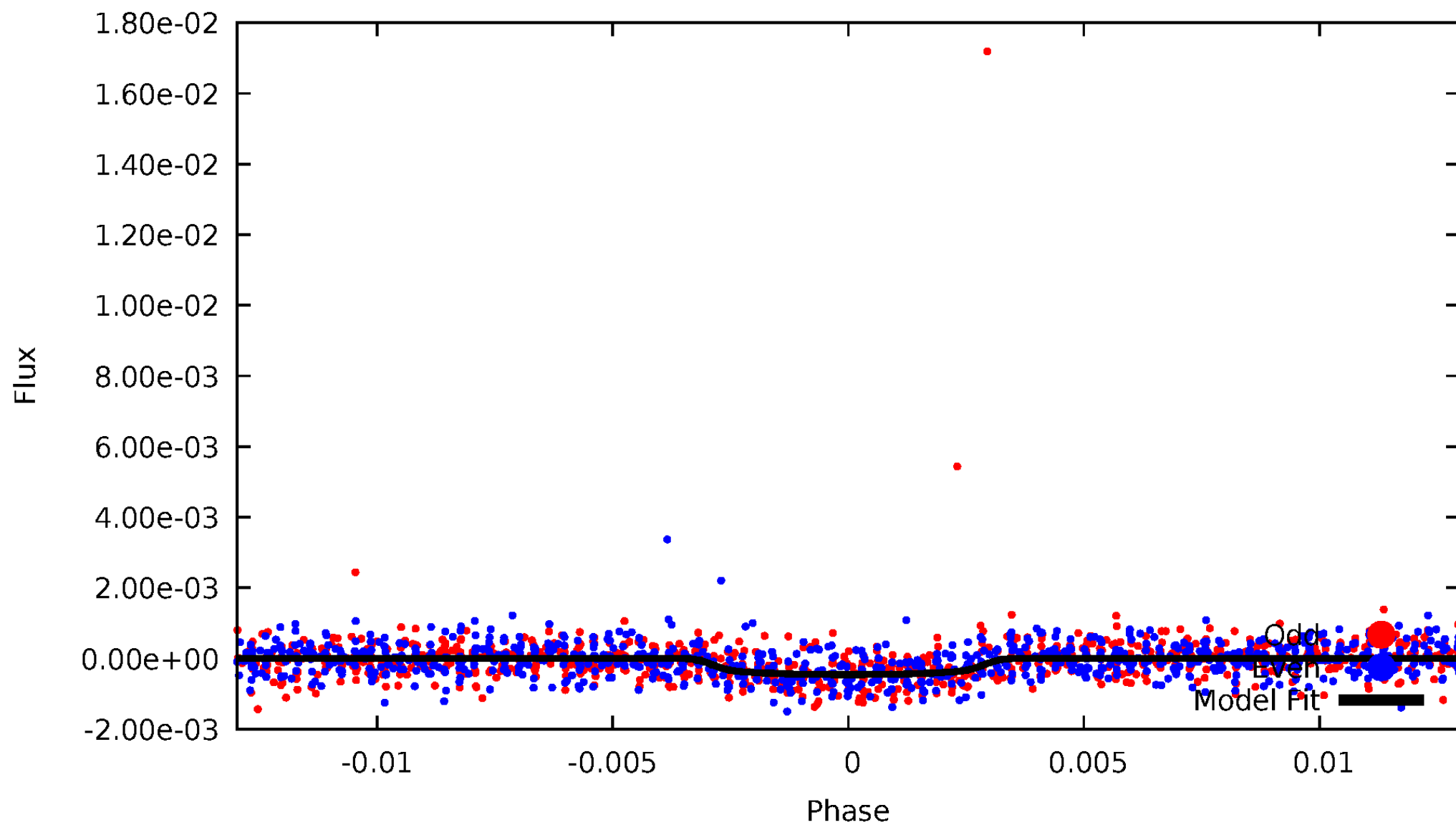


TCE 009401997-01



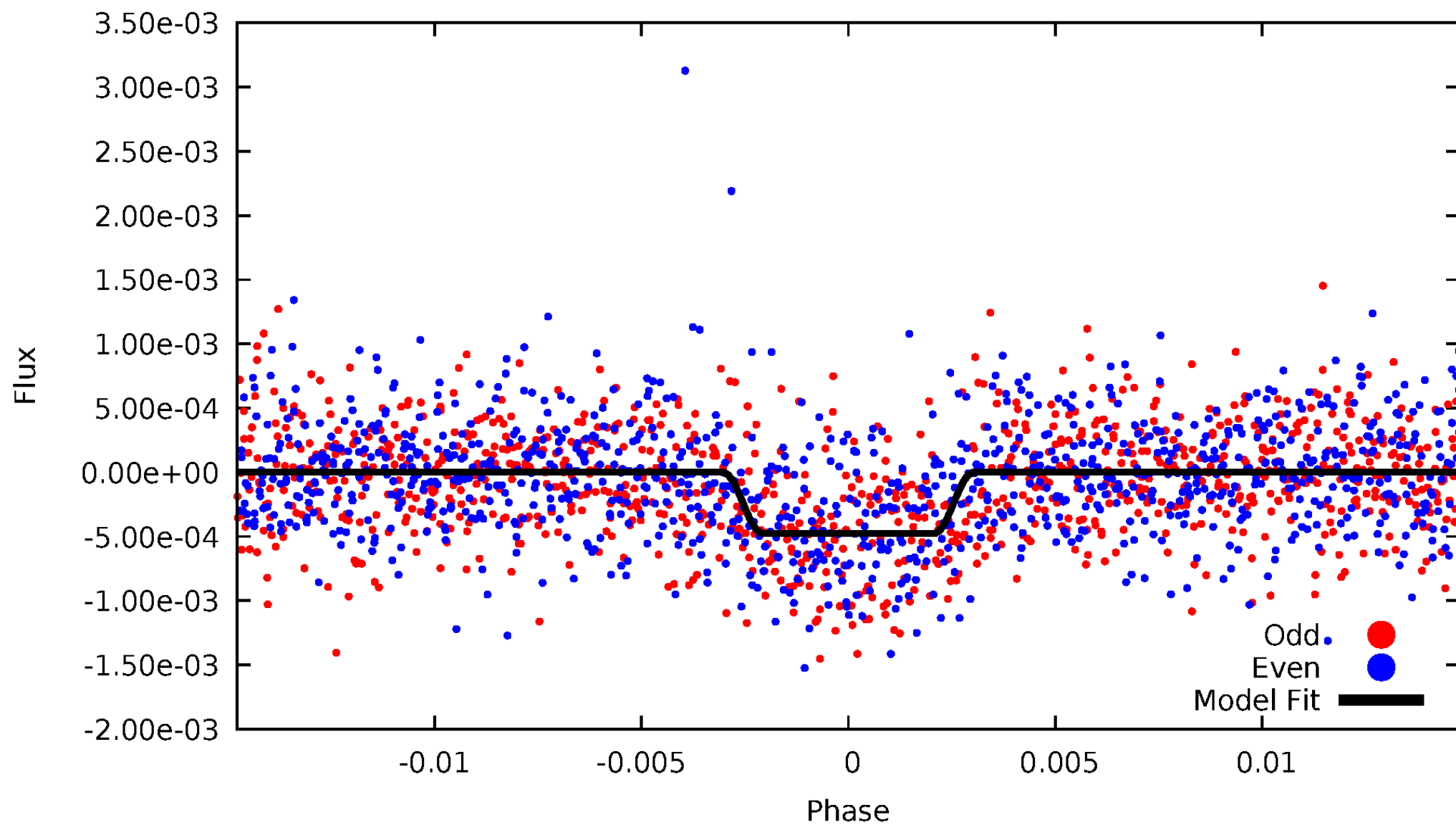
DV Odd/Even

TCE 009401997-01



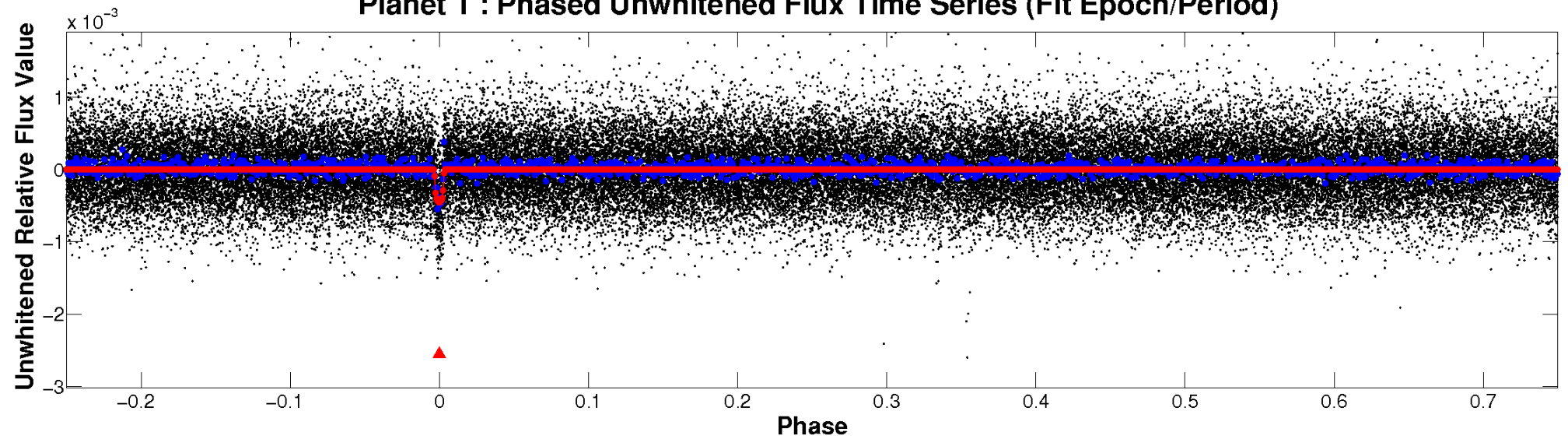
ALT Odd/Even

TCE 009401997-01

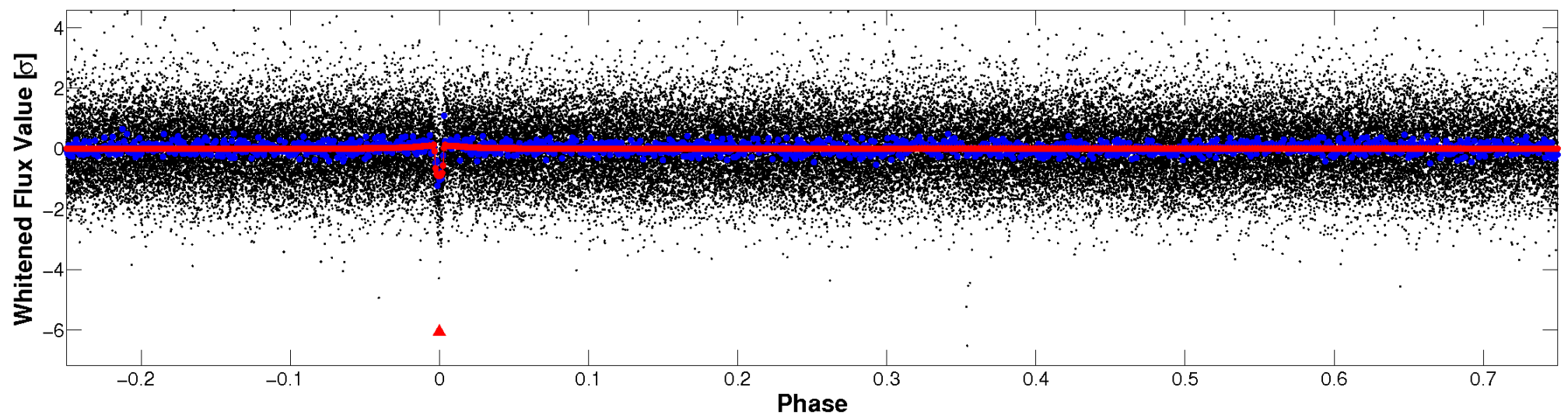


Non-Whitened Vs. Whitened Light Curve

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

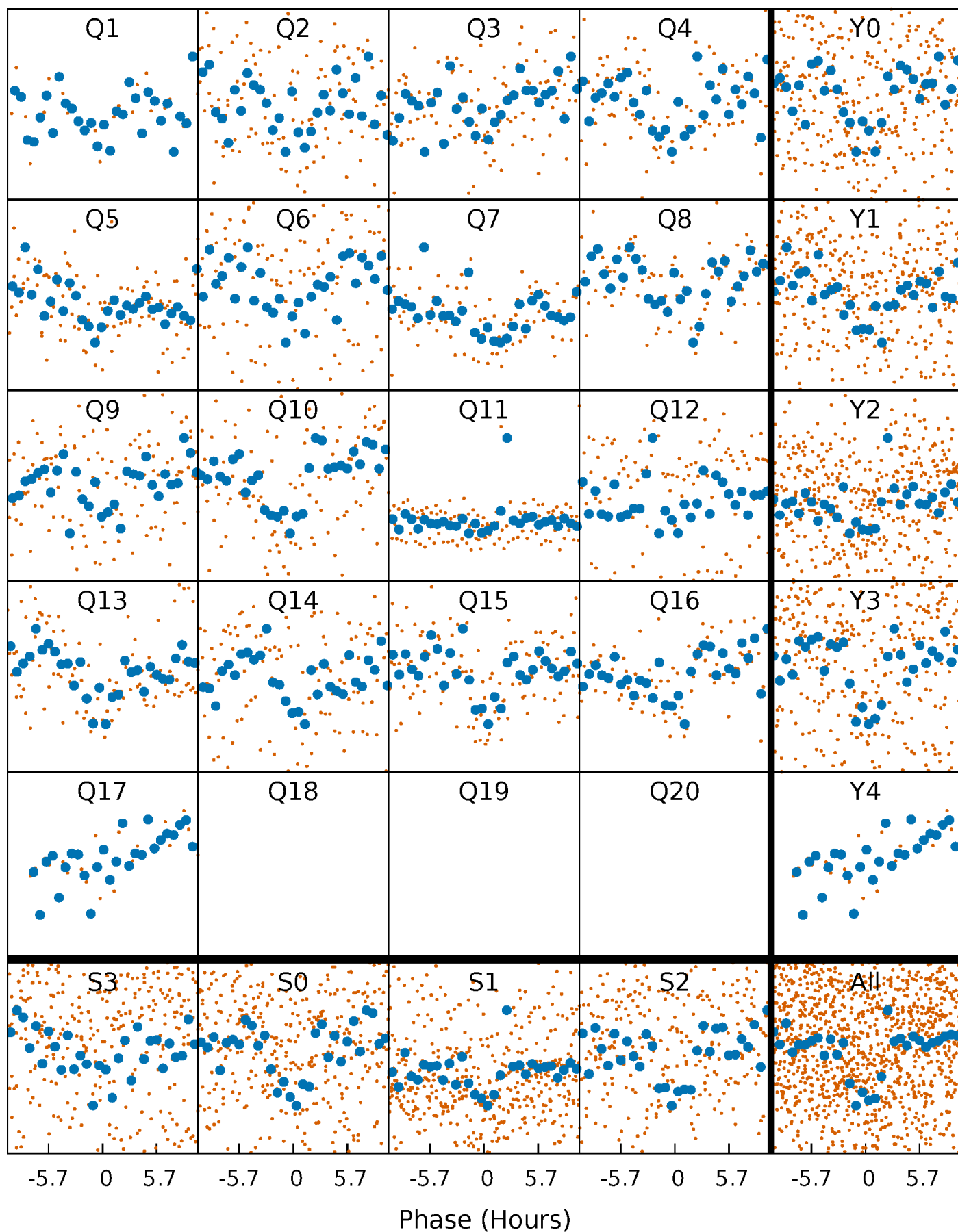


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



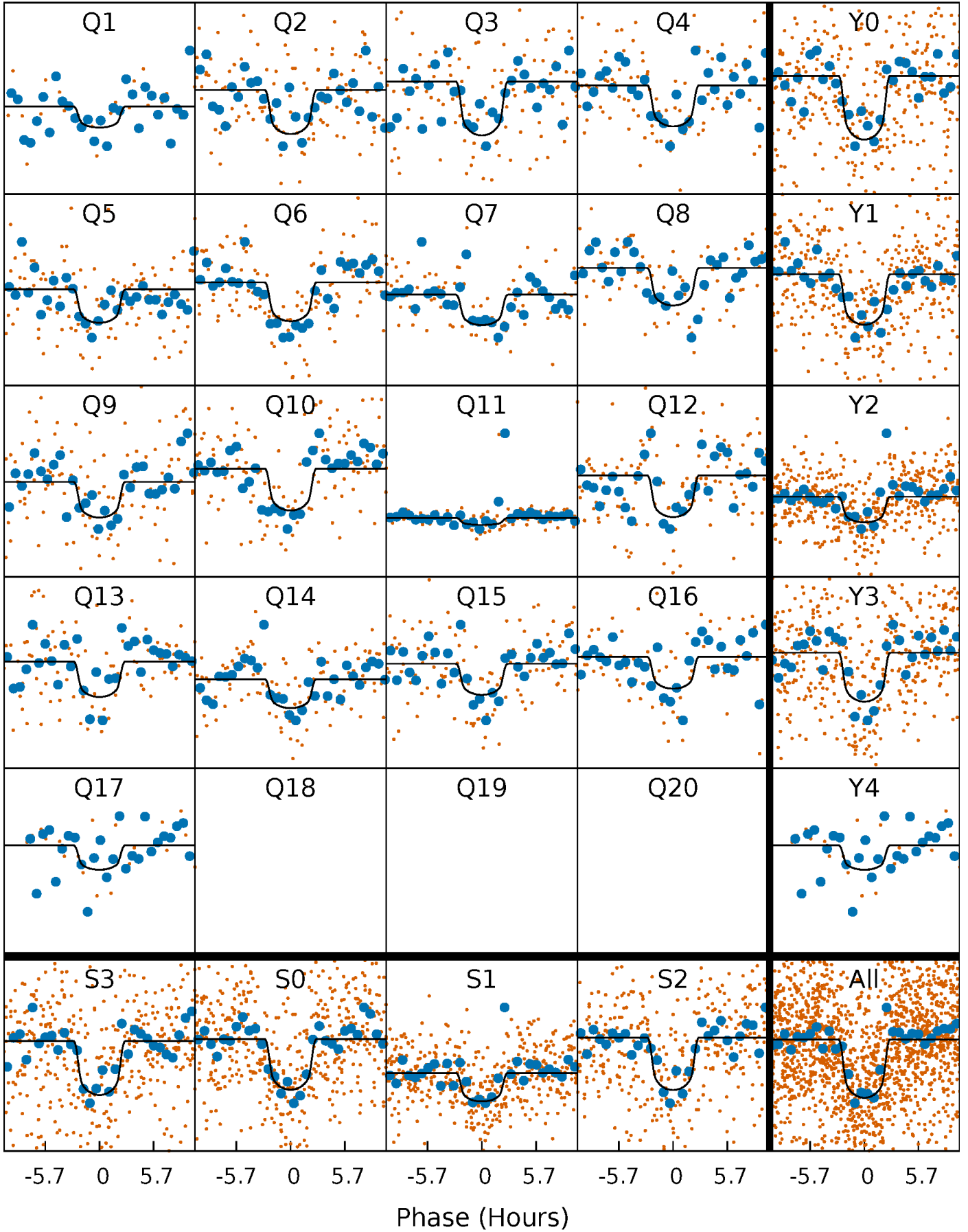
PDC Quarter-Phased Transit Curves

TCE 009401997-01 P= 32.296155 Days $T_0=138.532467$ (BKJD)



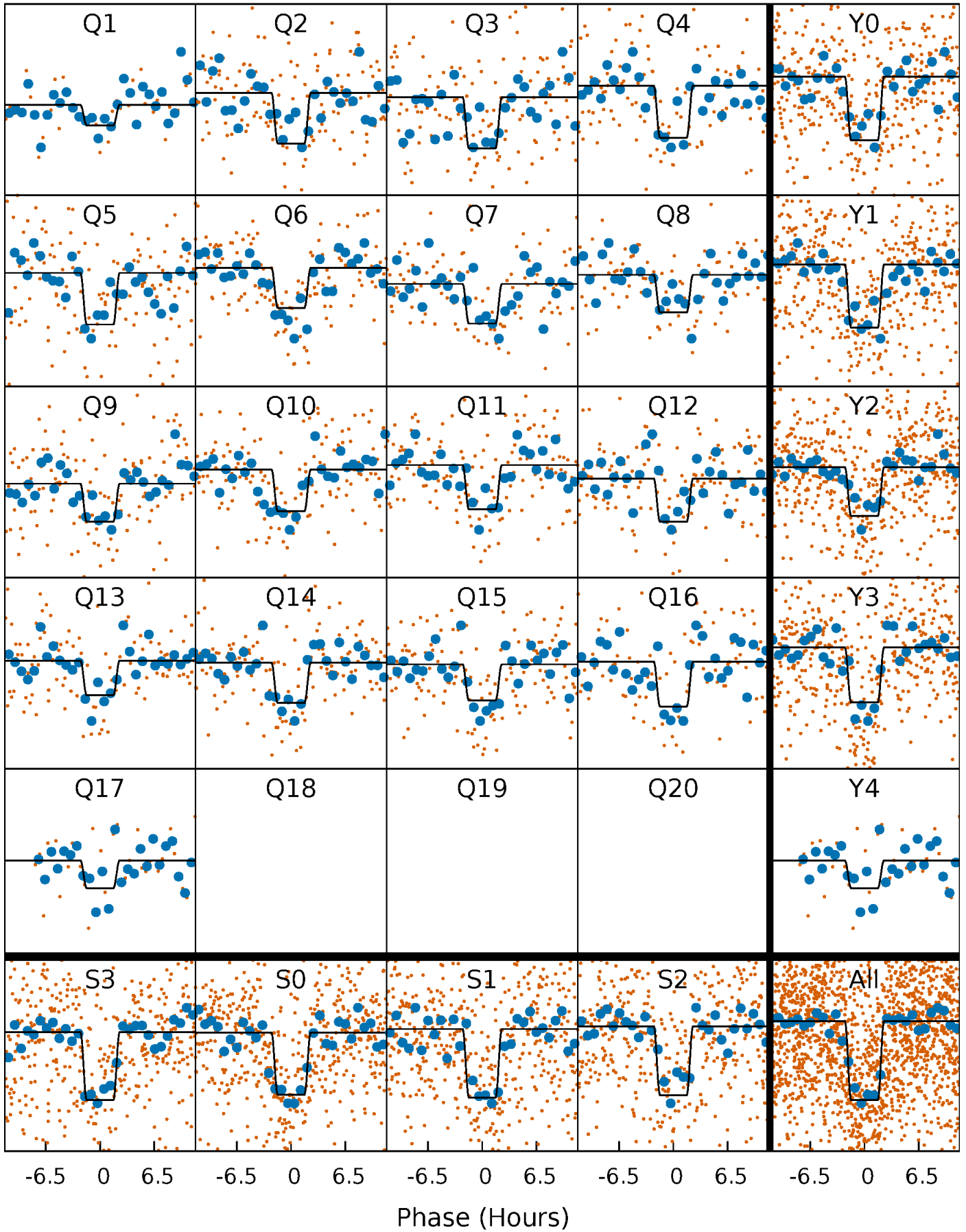
DV Quarter-Phased Transit Curves

TCE 009401997-01 P= 32.296155 Days $T_0=138.532467$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

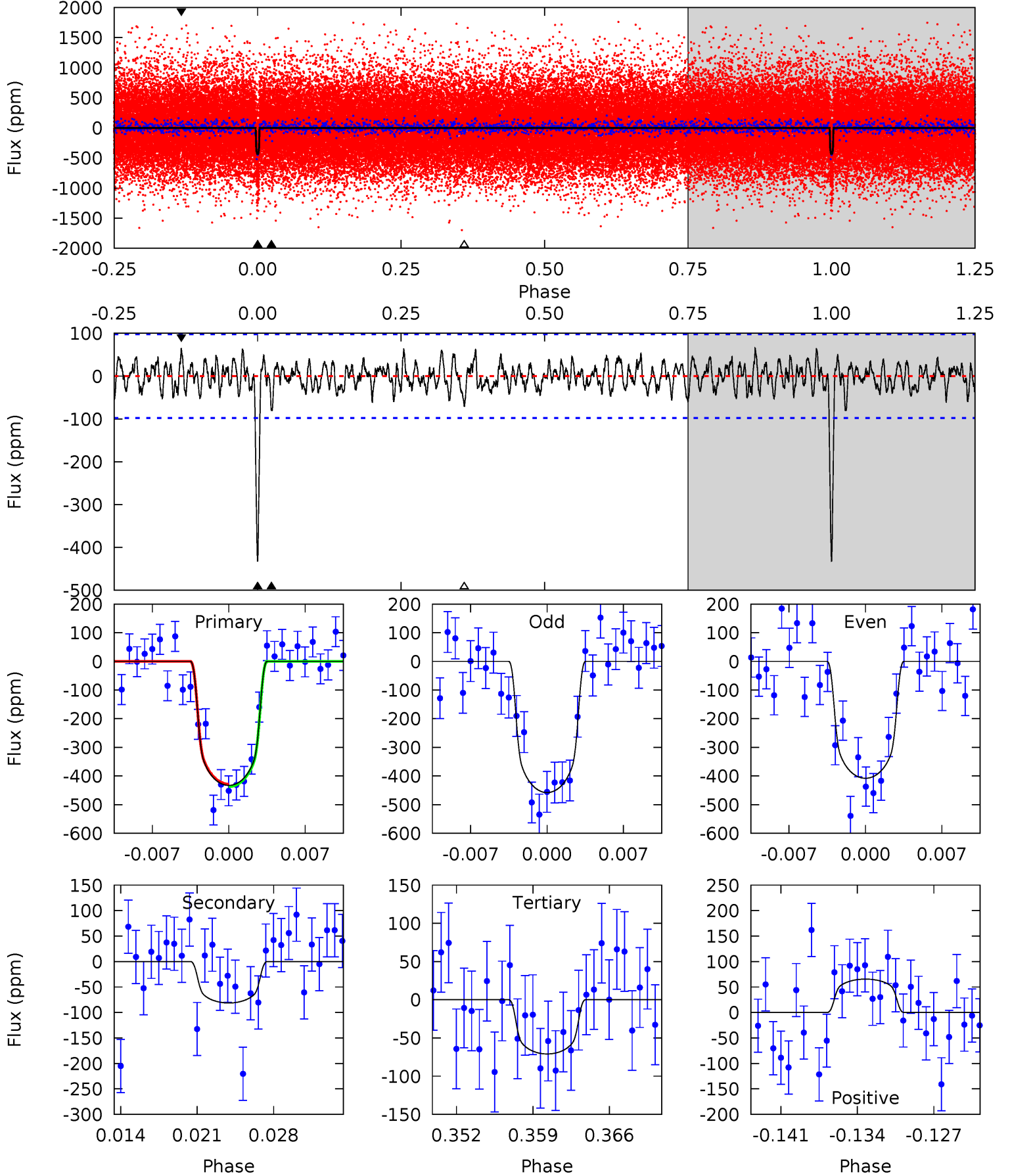
TCE 009401997-01 P= 32.296551 Days $T_0=138.520723$ (BKJD)



DV Model-Shift Uniqueness Test

009401997-01, $P = 32.296155$ Days, $E = 106.236312$ Days

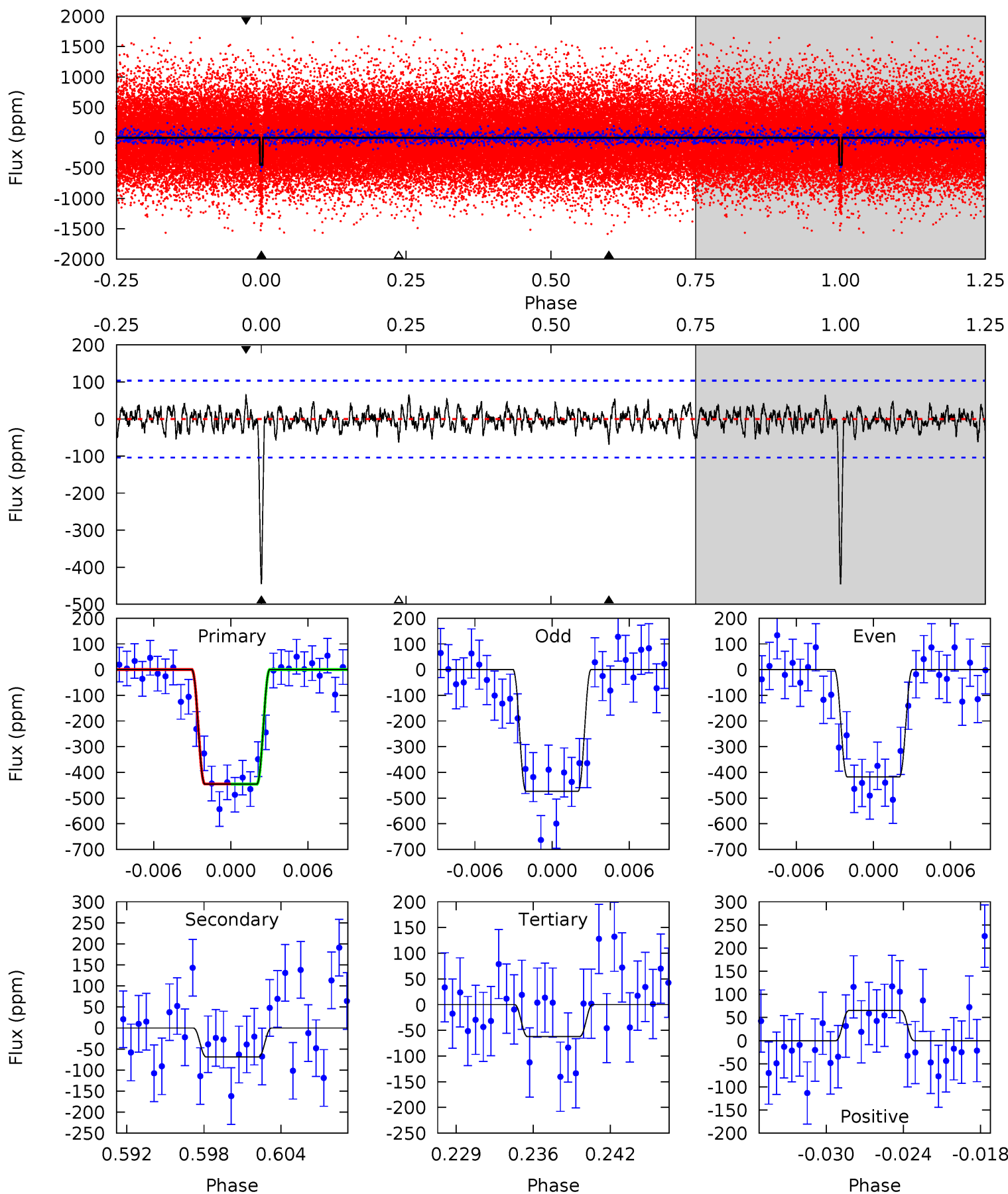
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.5	4.23	3.69	3.41	5.09	2.70	1.28	18.8	19.1	0.54	0.82	1.30	0.93	0.13	0.22



Alt Model-Shift Uniqueness Test

009401997-01, $P = 32.296551$ Days, $E = 106.224172$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.0	3.40	3.07	3.21	5.12	2.75	0.99	18.9	18.7	0.34	0.19	1.38	0.99	0.13	0.03



Stellar Parameters For KIC 009401997

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5246^{+84}_{-73}	$4.470^{+0.078}_{-0.052}$	$0.140^{+0.150}_{-0.150}$	$0.891^{+0.066}_{-0.072}$	$0.854^{+0.055}_{-0.037}$	$1.702^{+0.508}_{-0.303}$
	+2%/-1%	+2%/-1%	+107%/-107%	+7%/-8%	+6%/-4%	+30%/-18%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 009401997-01 / KOI 1633.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-81 ± 19	$2.27^{+0.40}_{-0.44}$	702^{+18}_{-19}	3646^{+297}_{-238}	309^{+181}_{-110}
Alt.	-69 ± 20	$2.09^{+0.46}_{-0.43}$	702^{+18}_{-18}	3645^{+330}_{-288}	304^{+201}_{-121}

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

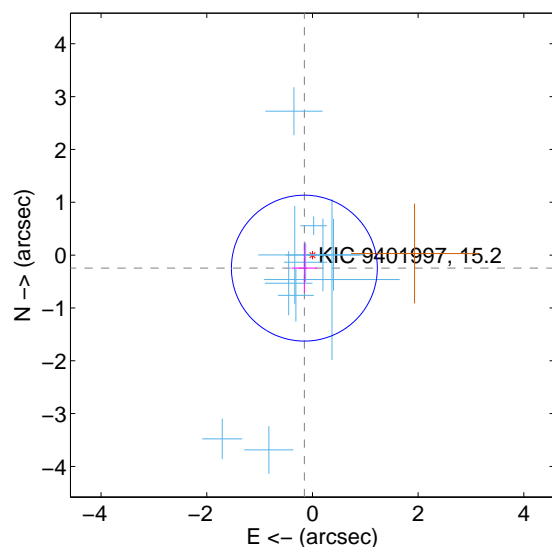
Supplemental centroid analysis for 009401997-01. Kepler magnitude: 15.20. Transit SNR 15.57

There are 11 quarters with good PRF difference image offsets

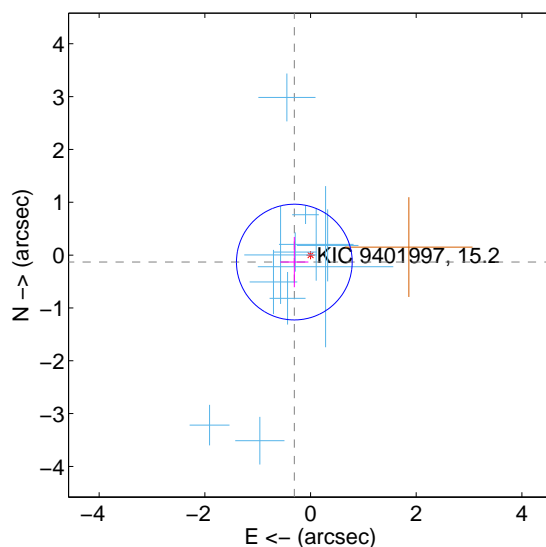
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.290 ± 0.460	0.63	0.153 ± 0.242	-0.247 ± 0.456
PRF-fit source offset from KIC position	0.334 ± 0.365	0.91	0.306 ± 0.267	-0.132 ± 0.475
photometric centroid source offset	1.39 ± 0.81	1.72	1.12 ± 0.75	0.83 ± 0.90

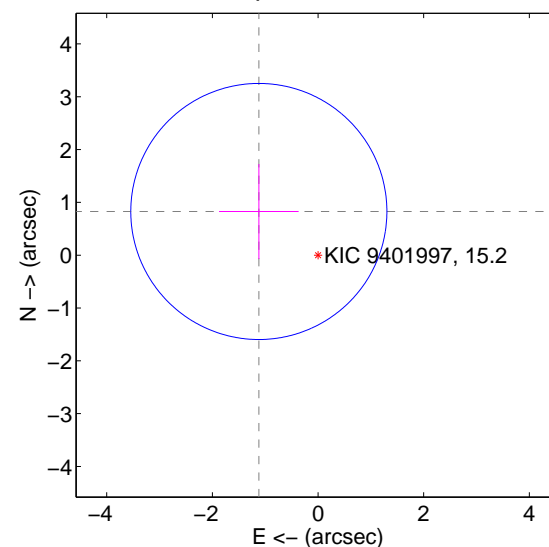
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

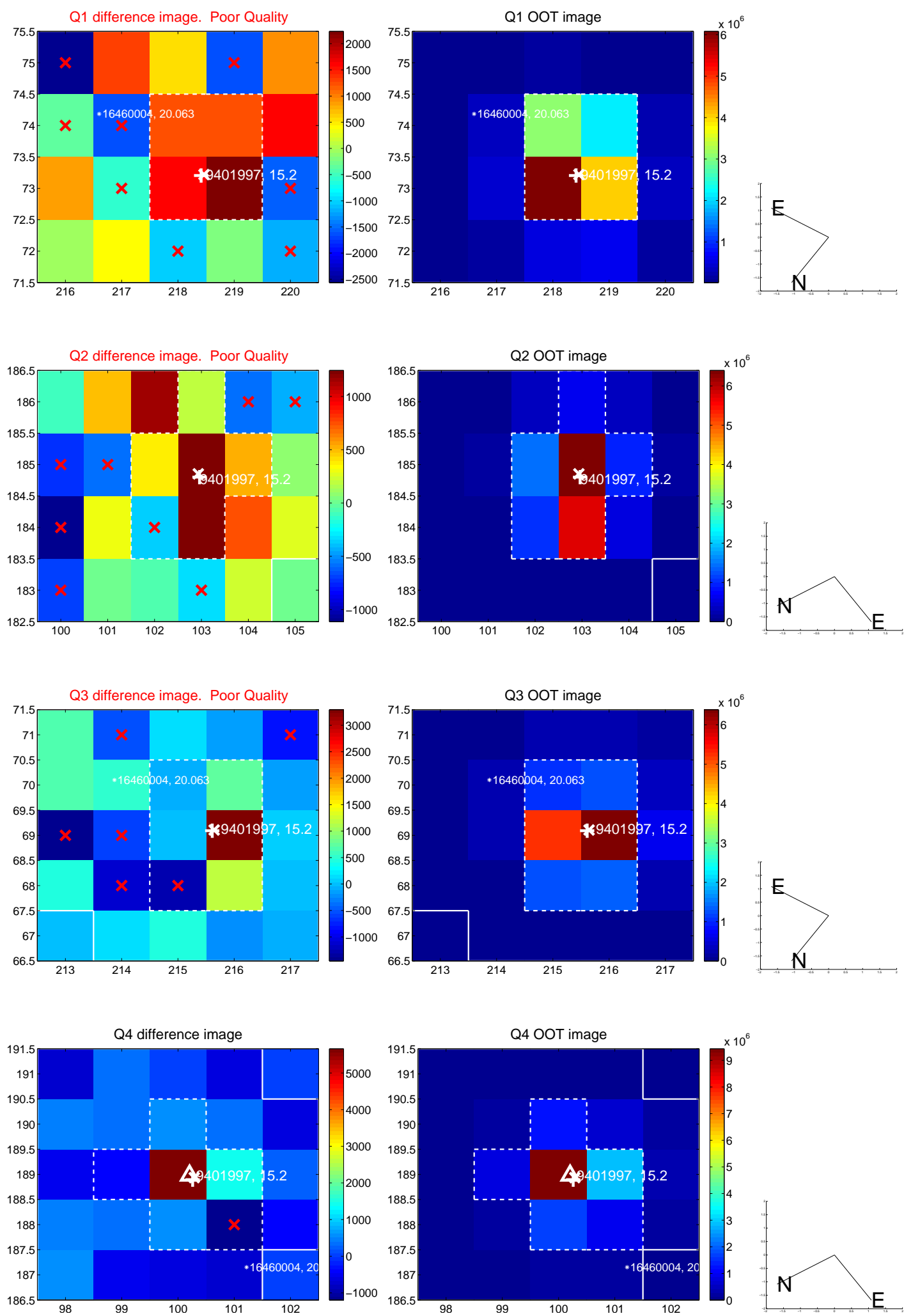


offset from photometric centroids

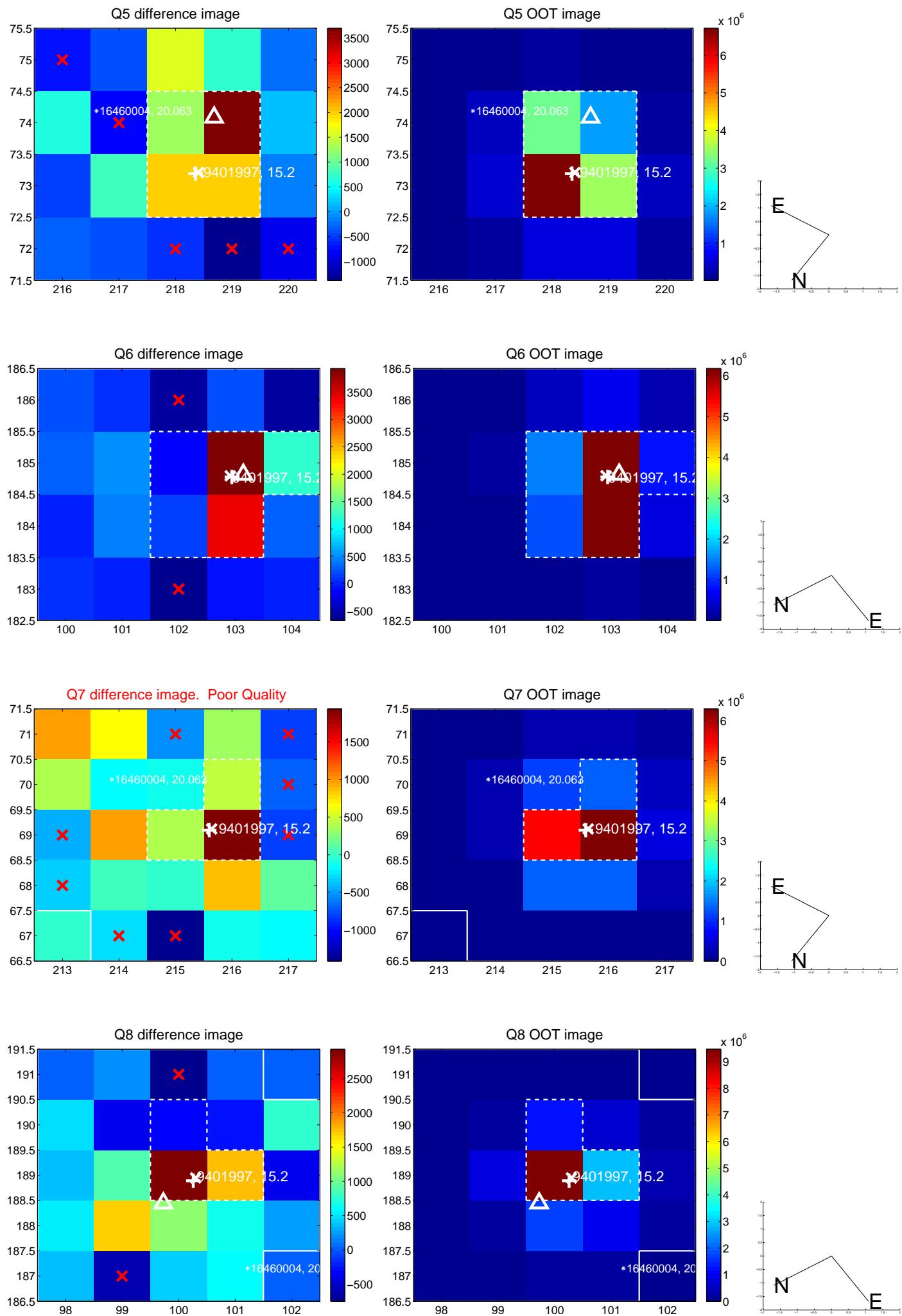


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

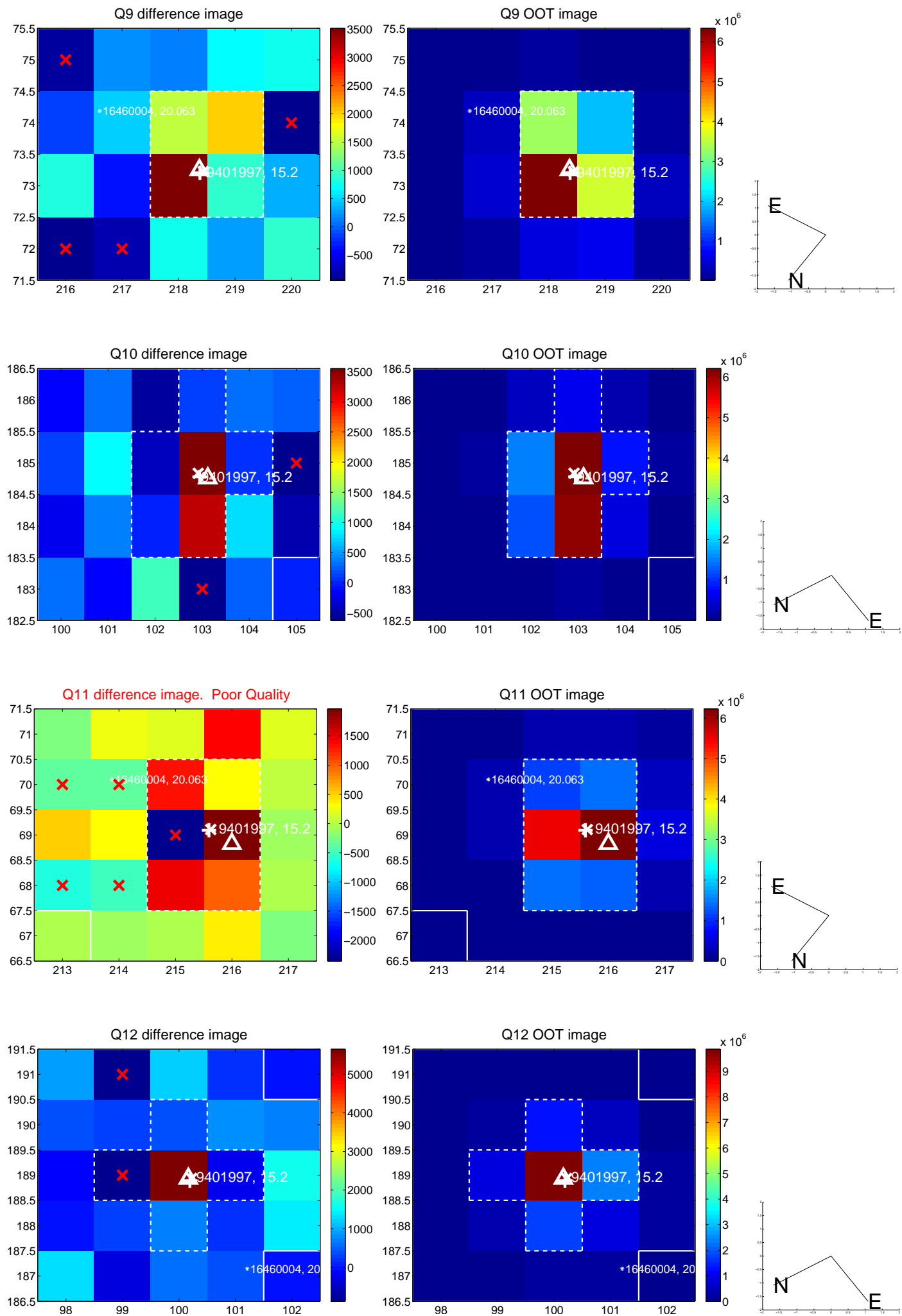
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



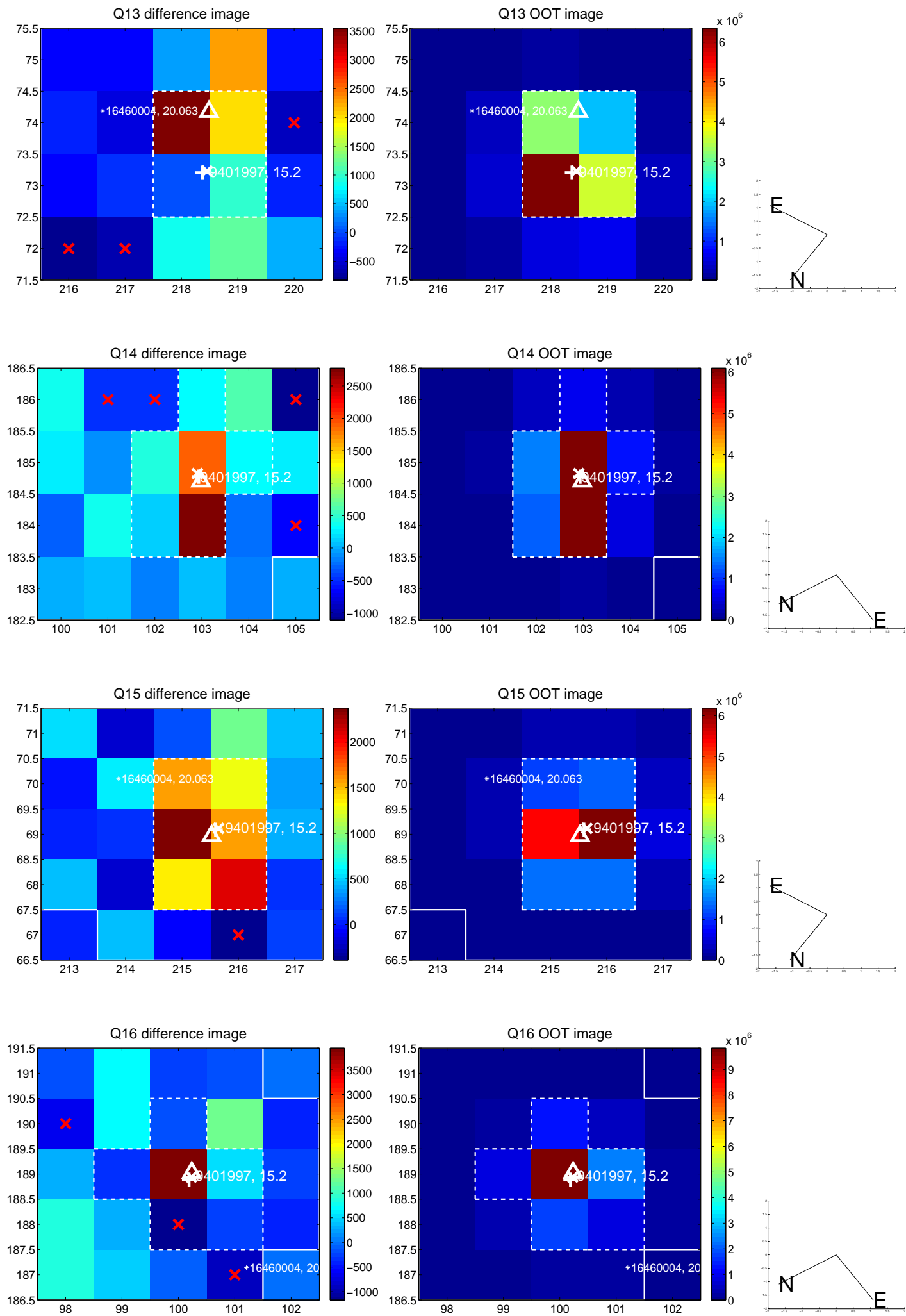
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



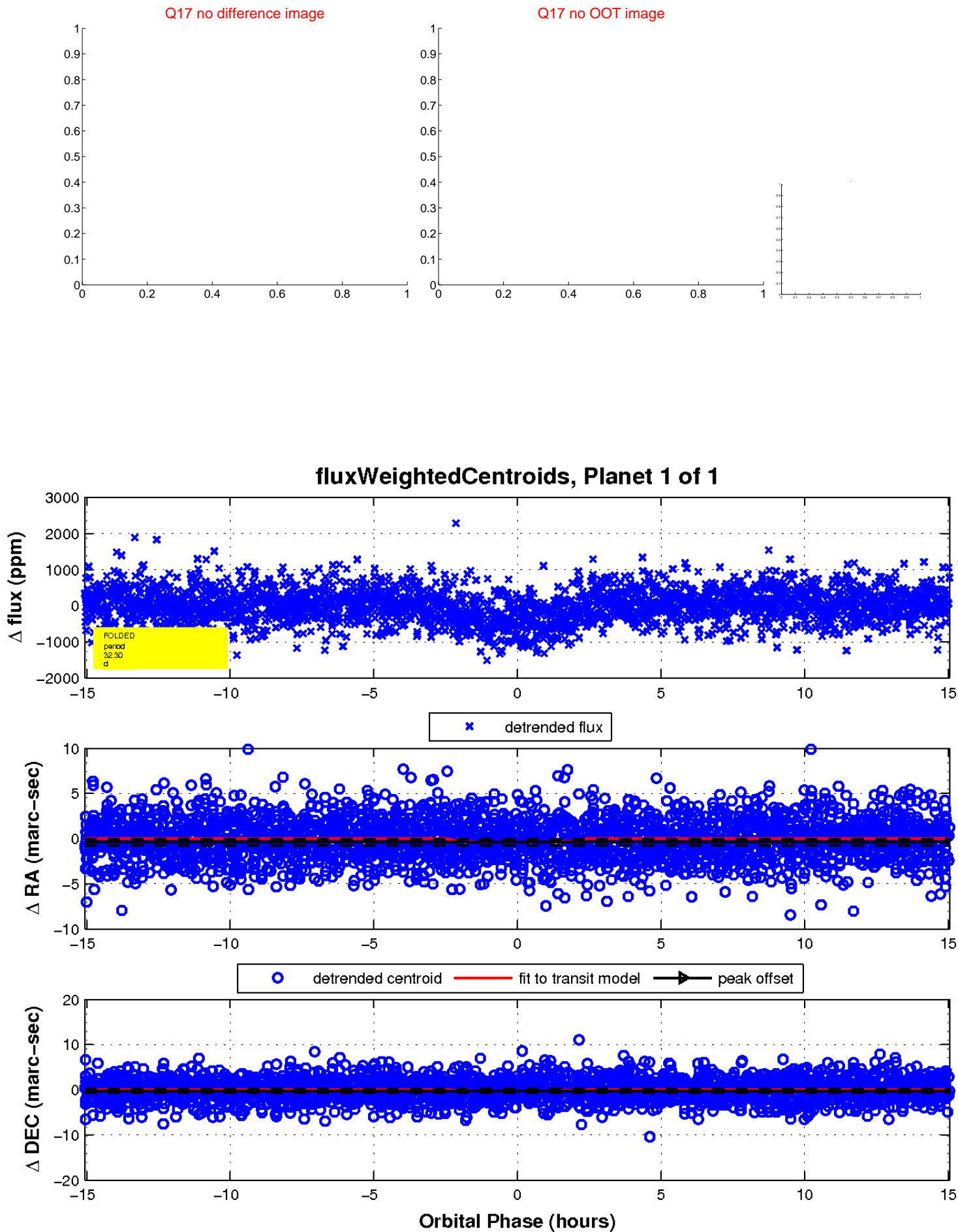
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

