

KIC 009904059

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})
009904059-01	OBS	0145.01	102.962498	158.077939	1911.2	16.096	39.5	42.9	7.12	5047	39.28	95.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009904059-01	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 009904059-01

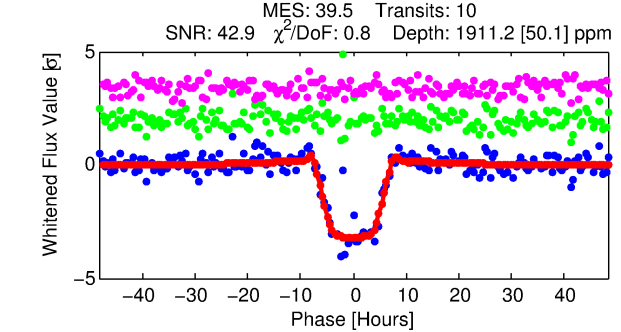
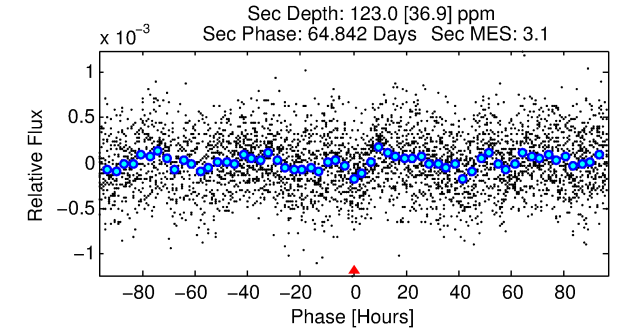
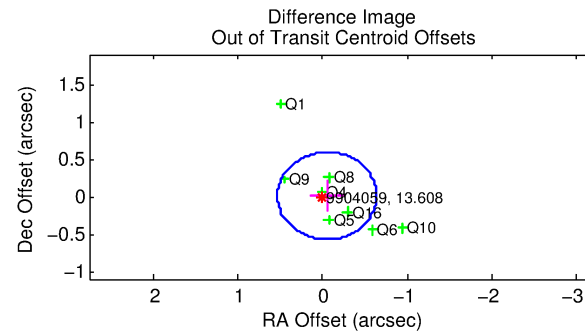
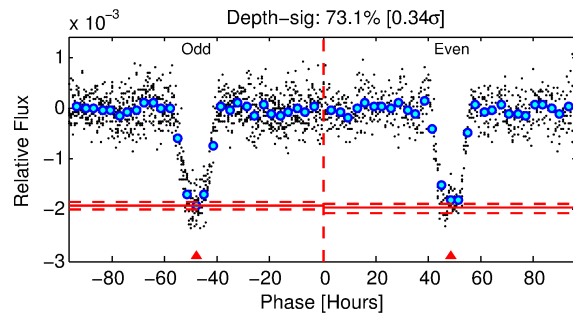
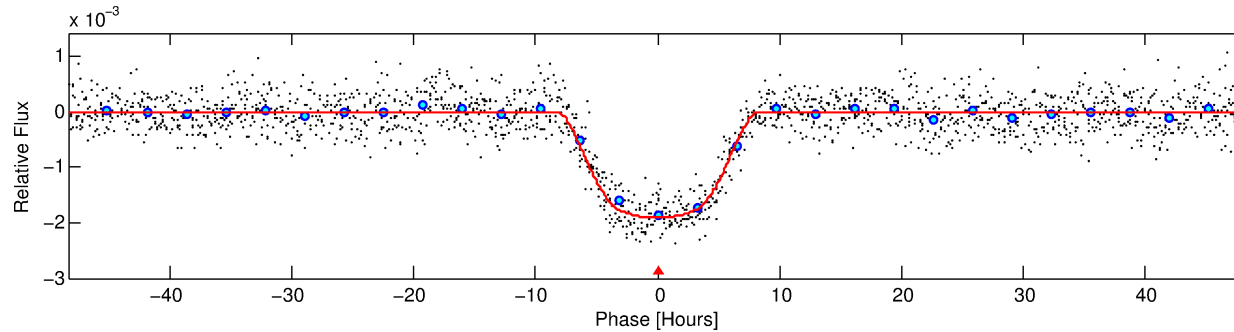
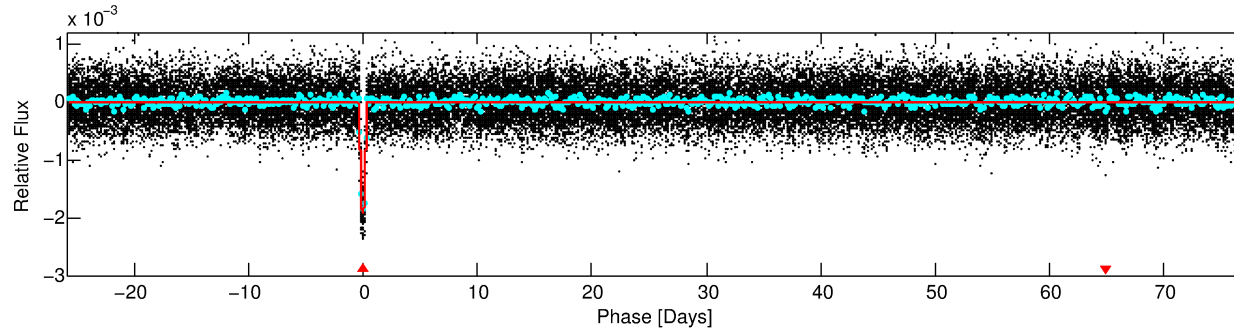
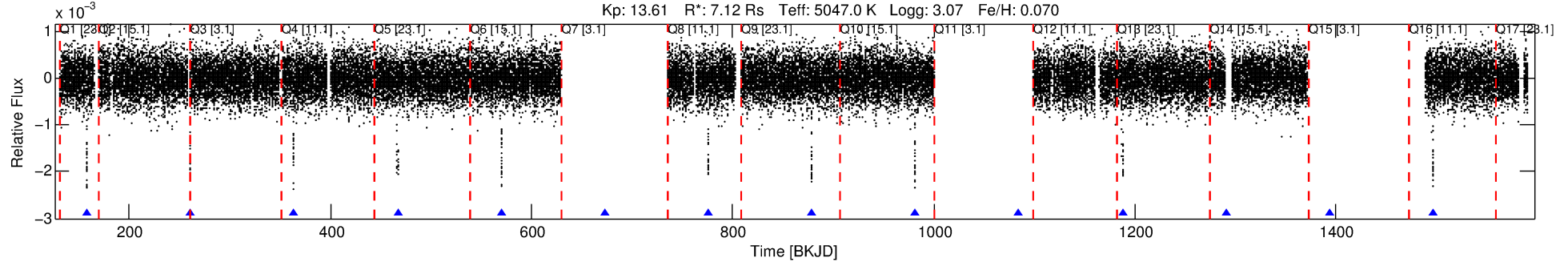
No Significant Match Found

DV One-Page Summary

KIC: 9904059 Candidate: 1 of 1 Period: 102.962 d

KOI: K00145.01 Corr: 0.987

Kp: 13.61 R*: 7.12 Rs Teff: 5047.0 K Logg: 3.07 Fe/H: 0.070



DV Fit Results:

Period = 102.96250 [0.00103] d
Epoch = 158.0779 [0.0067] BKJD
Rp/R* = 0.0506 [0.0010]
a/R* = 24.25 [0.99]
b = 0.93 [0.01]
Seff = 95.59 [20.14]
Teq = 797 [42] K
Rp = 39.28 [9.49] Re
a = 0.5552 [0.0902] AU
Ag = 13.52 [4.68] [2.68σ]
Teffp = 2364 [194] K [7.90σ]

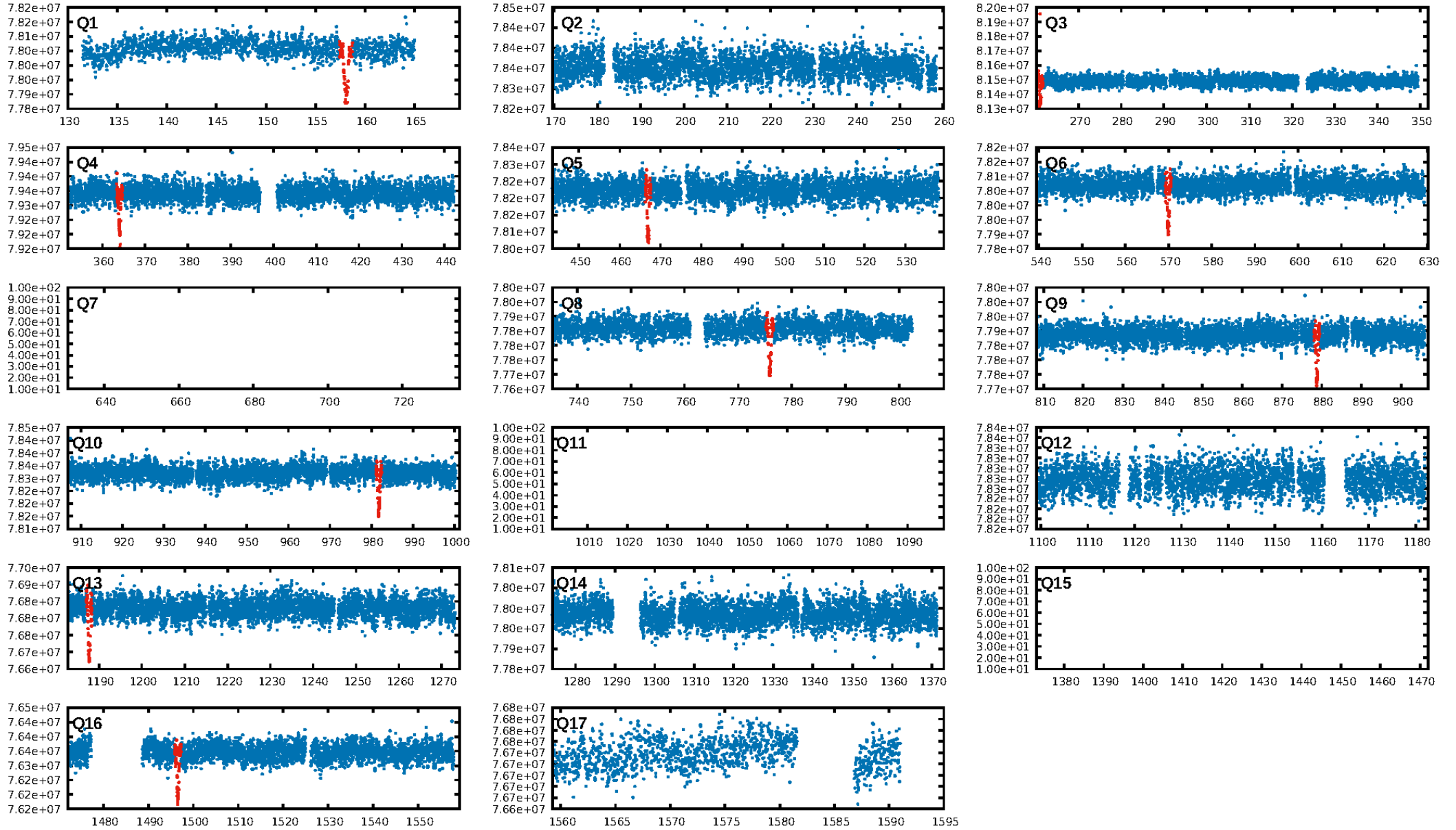
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 96.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 4.079
Centroid-sig: 0.0%
Centroid-so: 0.178 arcsec [2.11σ]
OotOffset-rm: 0.056 arcsec [0.29σ]
KicOffset-rm: 0.072 arcsec [0.37σ]
OotOffset-st: 2/0/3/3 [8]
KicOffset-st: 2/0/3/3 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

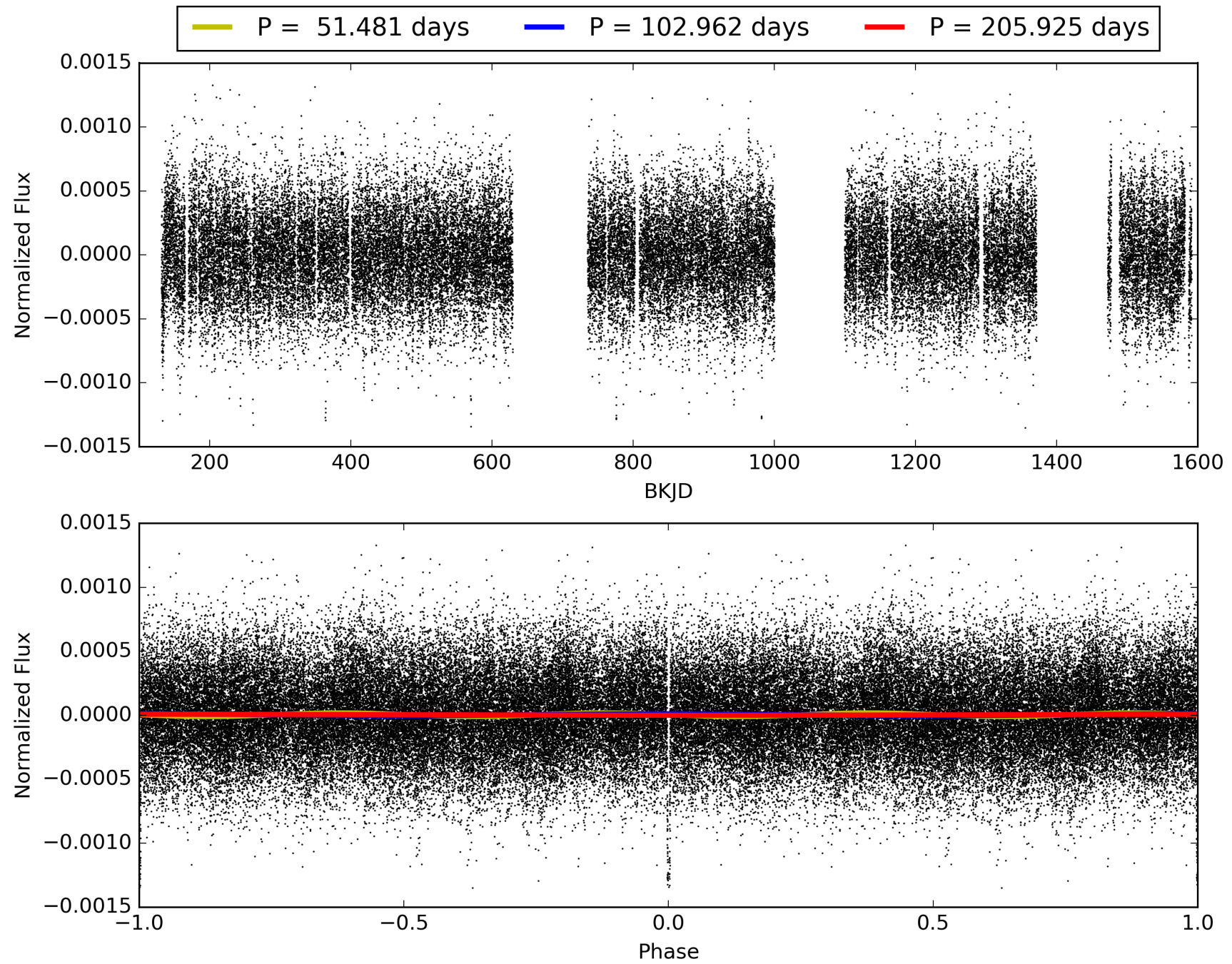
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:37:29 Z

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

TCE 009904059-01, PDC Light Curves

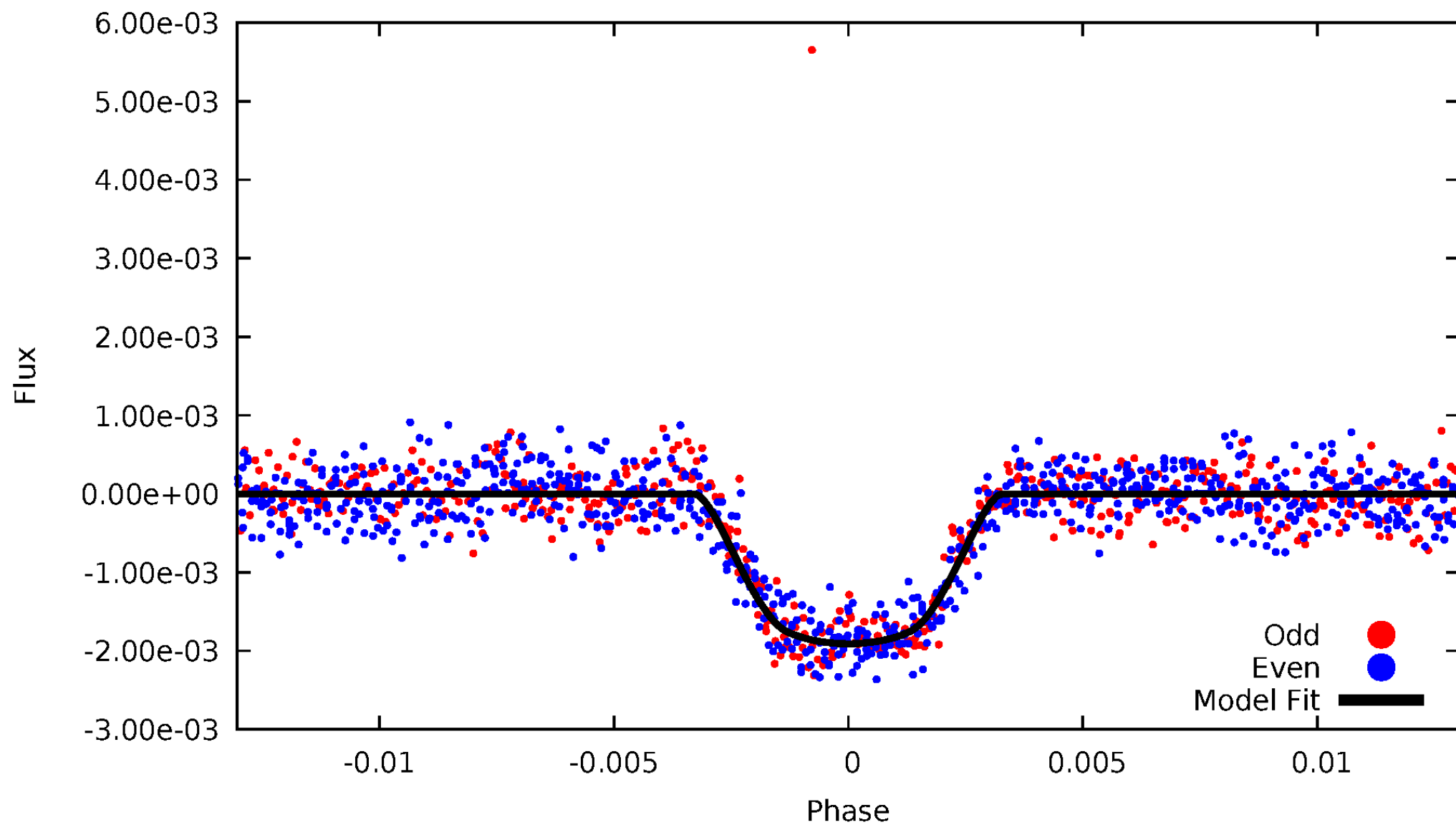


TCE 009904059-01



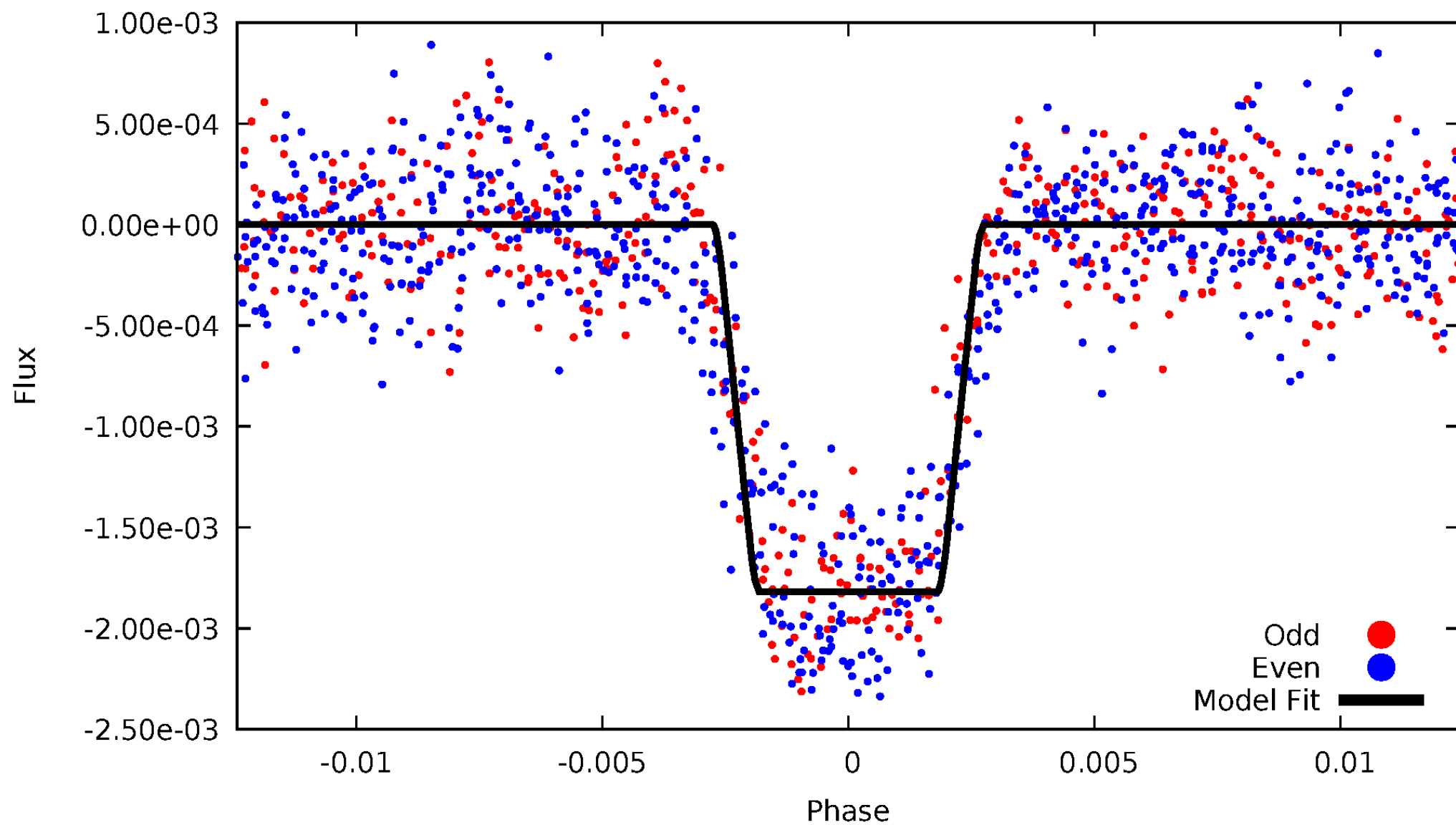
DV Odd/Even

TCE 009904059-01



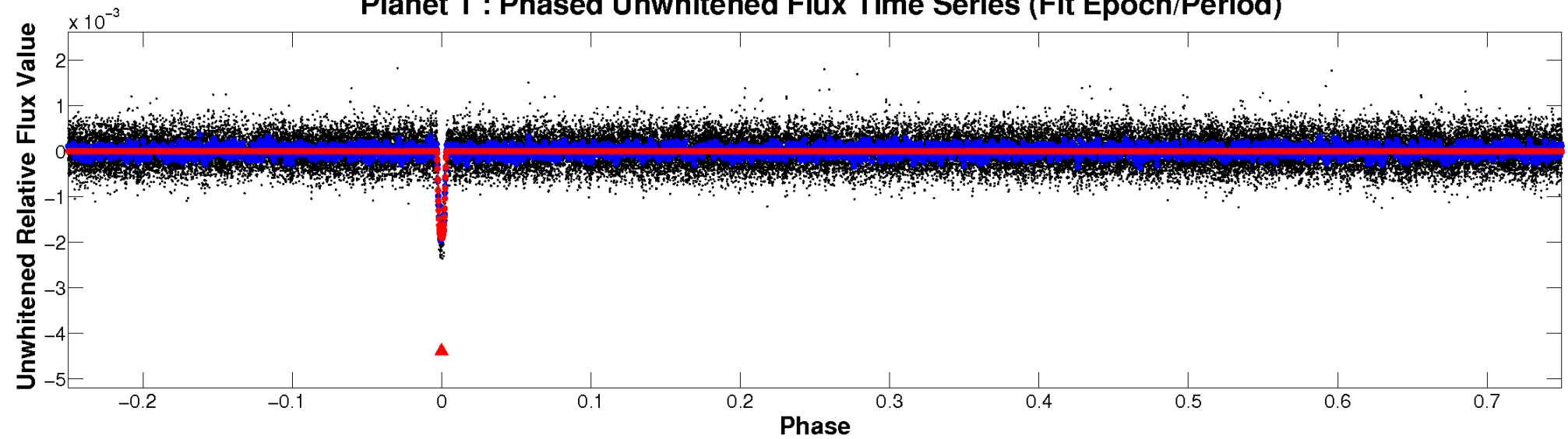
ALT Odd/Even

TCE 009904059-01

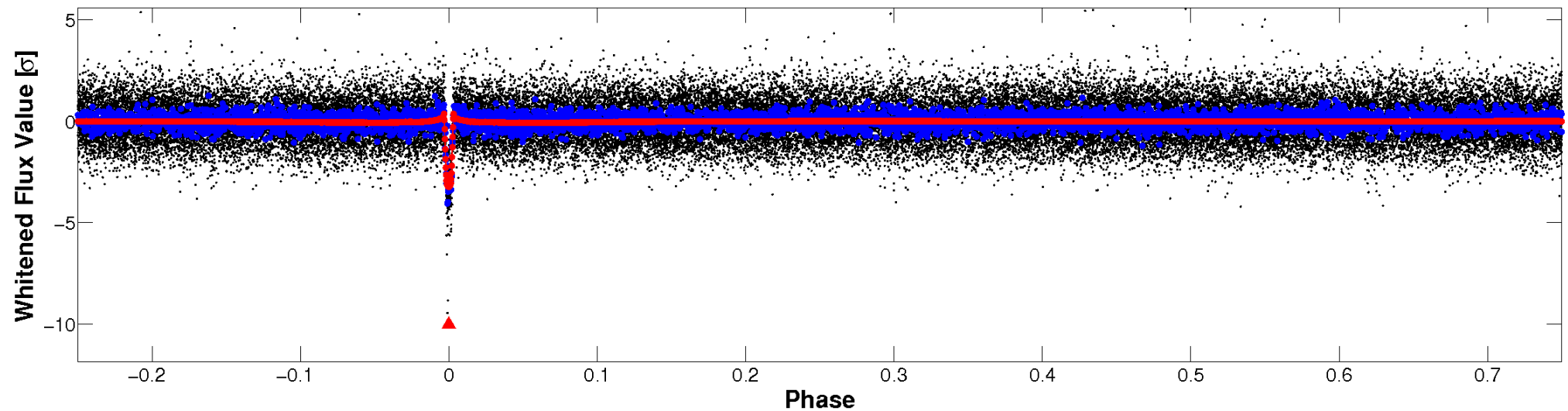


Non-Whitened Vs. Whitened Light Curve

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

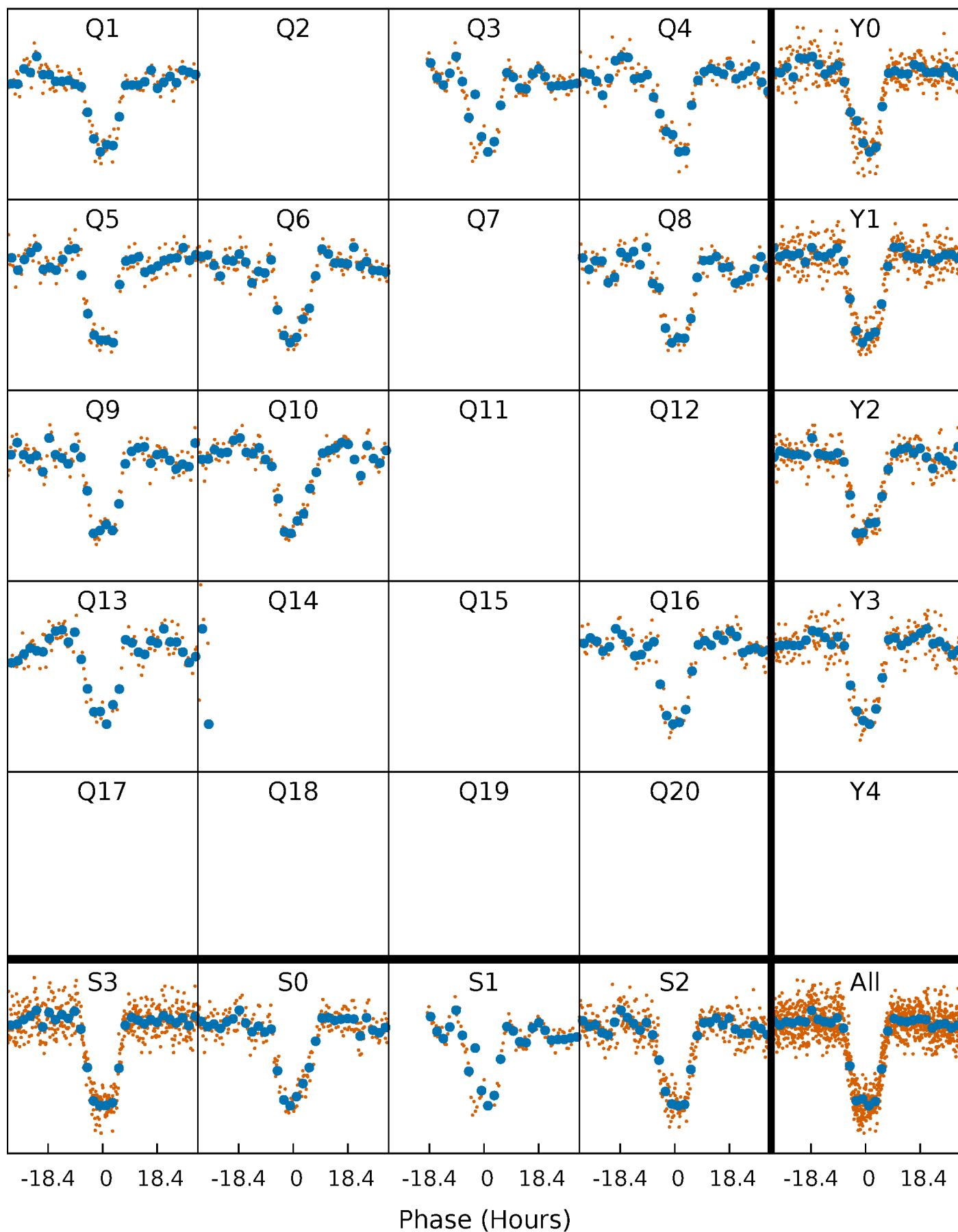


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



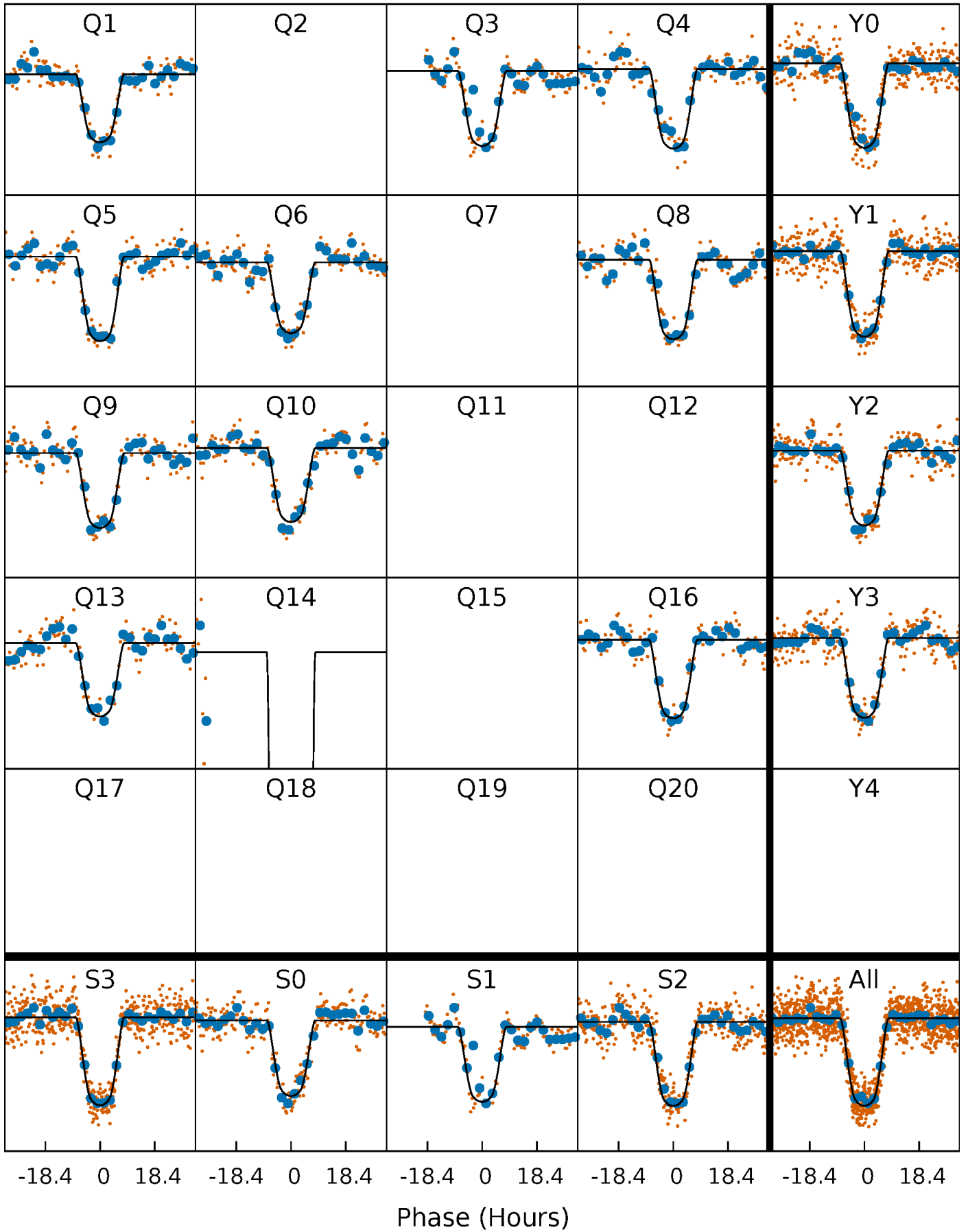
PDC Quarter-Phased Transit Curves

TCE 009904059-01 P=102.962498 Days $T_0=158.077939$ (BKJD)



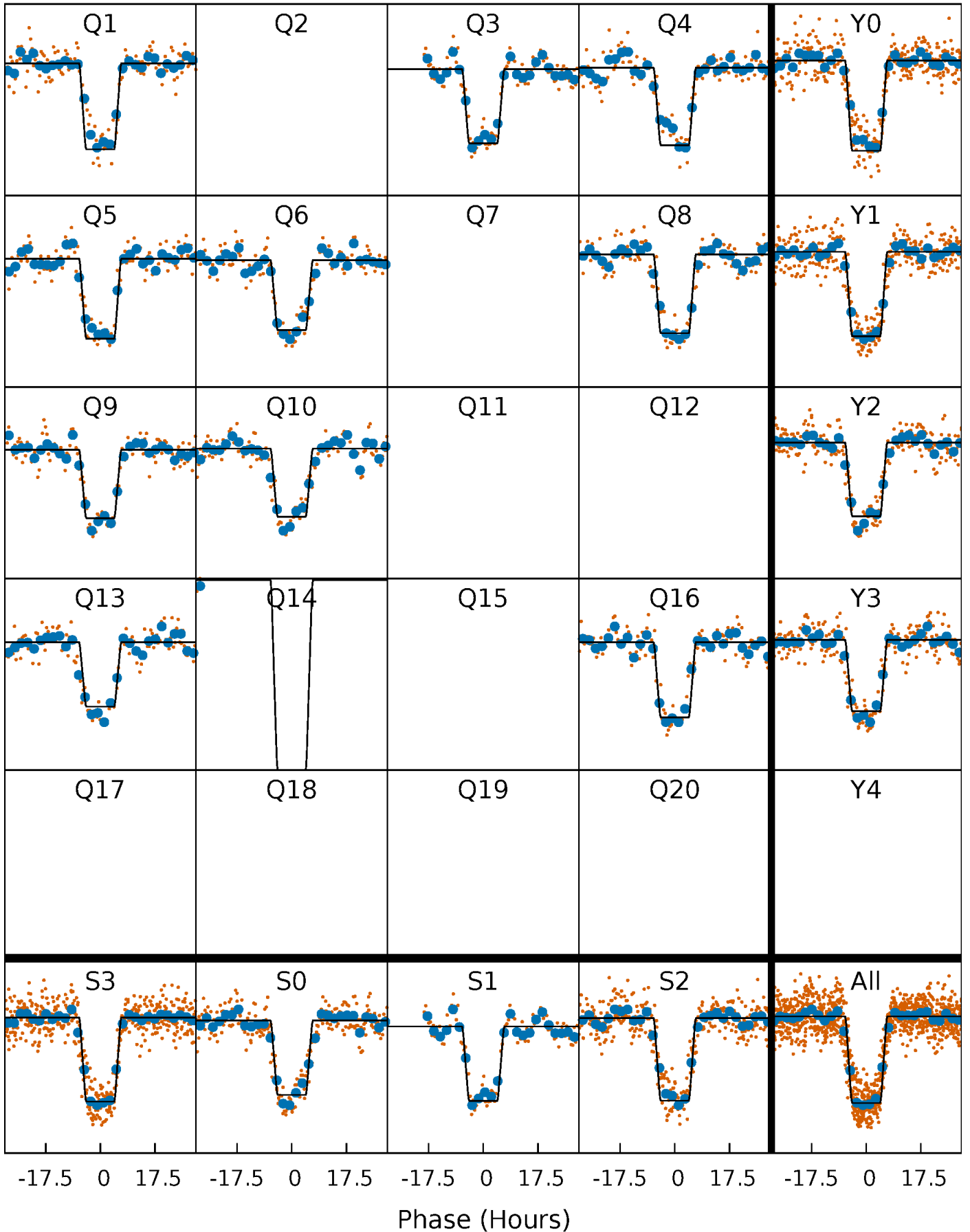
DV Quarter-Phased Transit Curves

TCE 009904059-01 P=102.962498 Days $T_0=158.077939$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

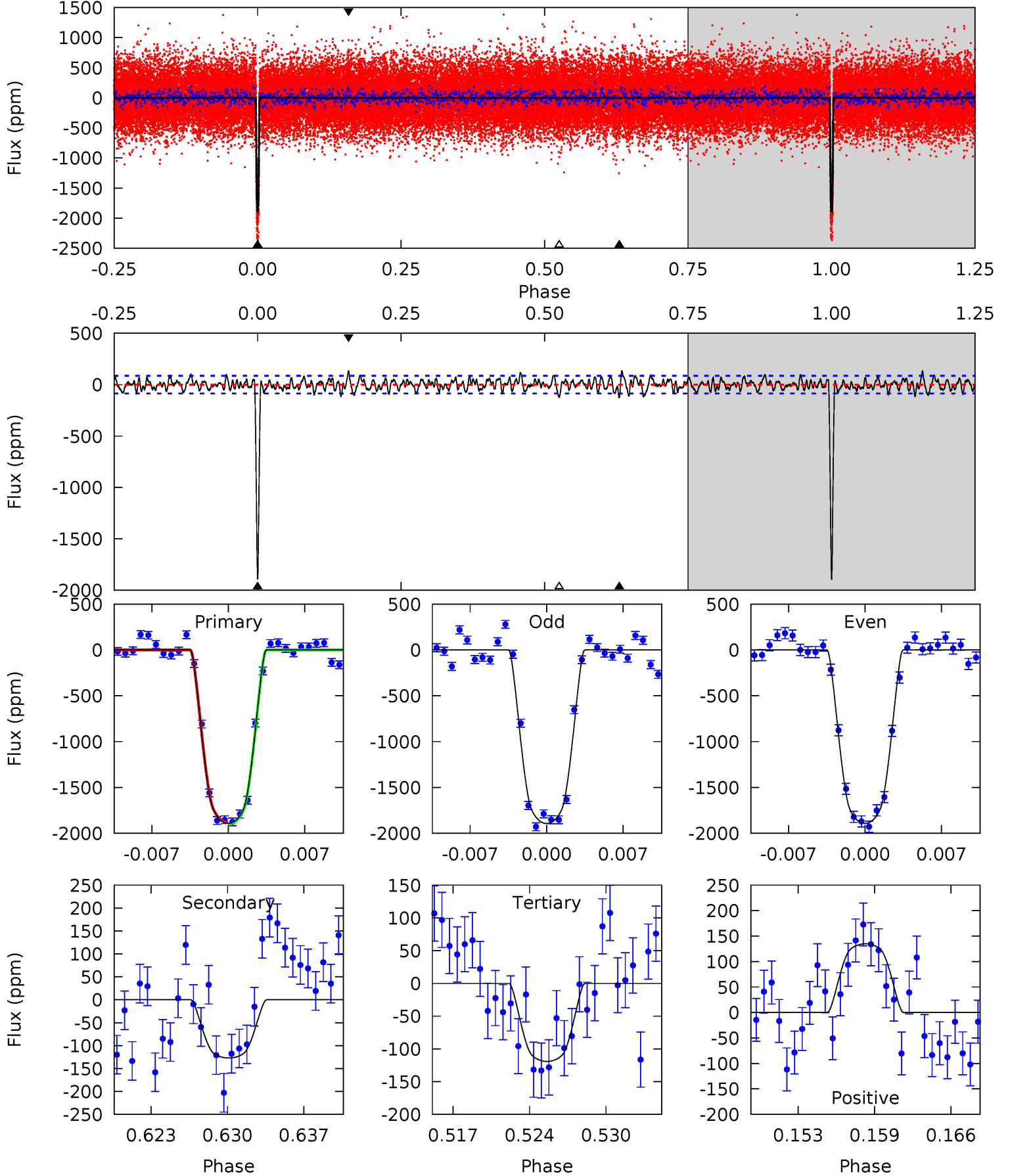
TCE 009904059-01 P=102.965594 Days $T_0=158.066988$ (BKJD)



DV Model-Shift Uniqueness Test

009904059-01, P = 102.962498 Days, E = 55.115441 Days

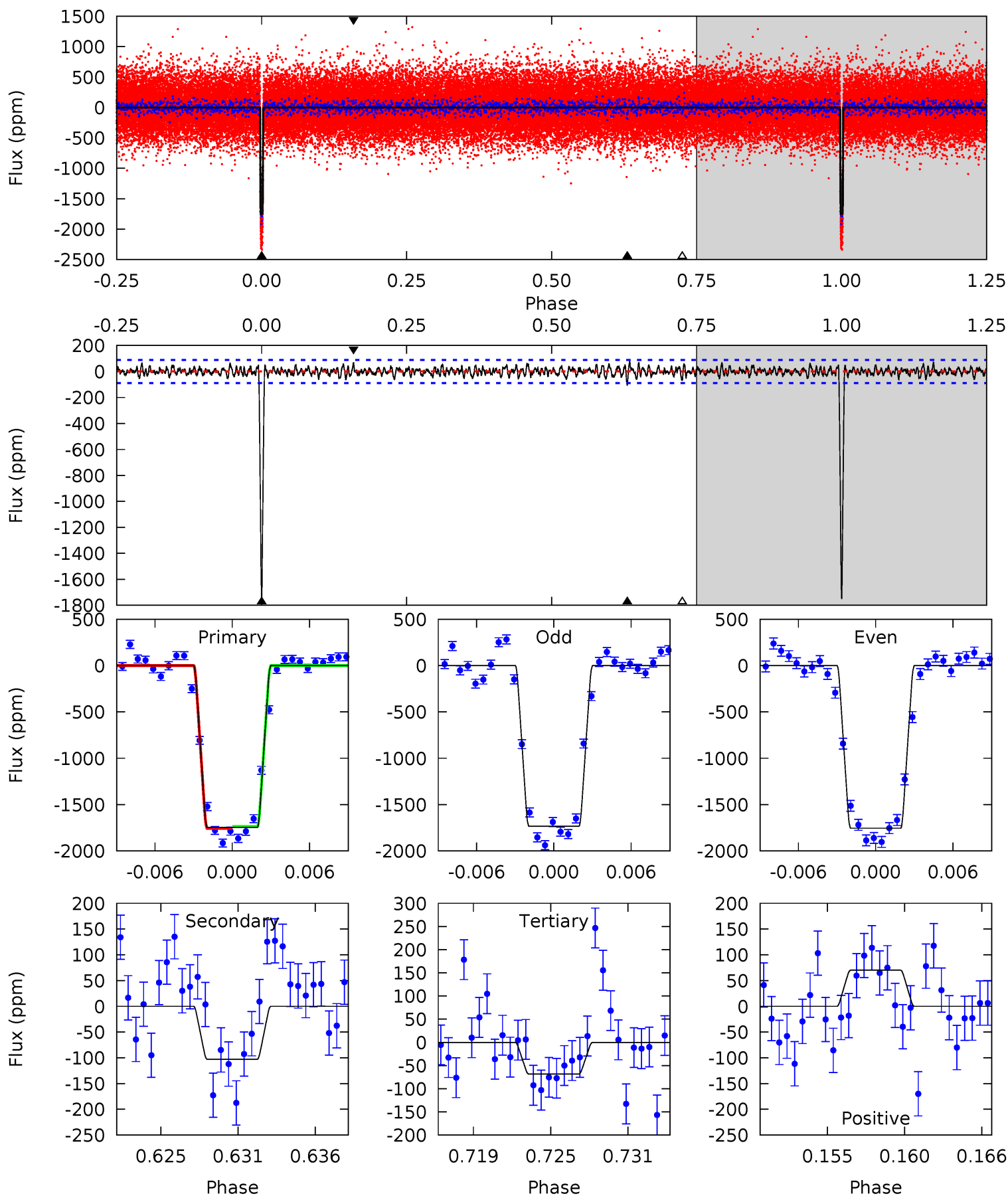
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
112.9	7.57	7.11	8.03	5.10	2.71	2.48	105.8	104.8	0.46	-0.46	0.04	0.99	0.07	0.46



Alt Model-Shift Uniqueness Test

009904059-01, P = 102.965594 Days, E = 55.101394 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
100.6	5.93	3.94	4.03	5.14	2.77	1.33	96.7	96.6	1.98	1.89	0.61	1.01	0.04	0.64



Stellar Parameters For KIC 009904059

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5047^{+40}_{-160}	$3.066^{+0.033}_{-0.027}$	$0.070^{+0.100}_{-0.250}$	$7.119^{+0.201}_{-1.713}$	$2.150^{+0.050}_{-0.858}$	$0.008^{+0.003}_{-0.001}$
	+1%/-3%	+1%/-1%	+143%/-357%	+3%/-24%	+2%/-40%	+37%/-8%
Source	SPE18	AST9	SPE18	DSEP		

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

Secondary Eclipse Parameters for KIC 009904059-01 / KOI 0145.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-127 ± 17	$39.65^{+1.07}_{-1.59}$	1110^{+18}_{-34}	2985^{+70}_{-73}	14^{+2}_{-2}
Alt.	-103 ± 17	$33.39^{+1.07}_{-1.32}$	1110^{+18}_{-32}	3048^{+82}_{-101}	16^{+3}_{-3}

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 $A_{\text{obs}} \gg 1.0$

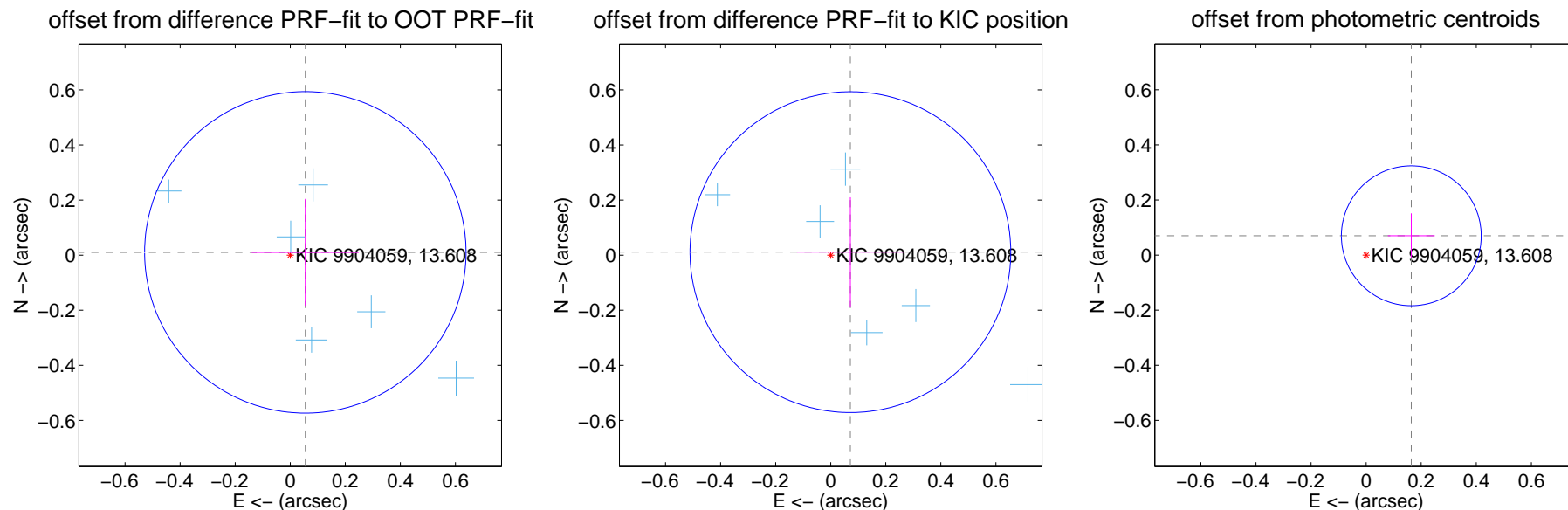
DV Centroid Data

Supplemental centroid analysis for 009904059-01. Kepler magnitude: 13.61. Transit SNR 42.91

There are 8 quarters with good PRF difference image offsets

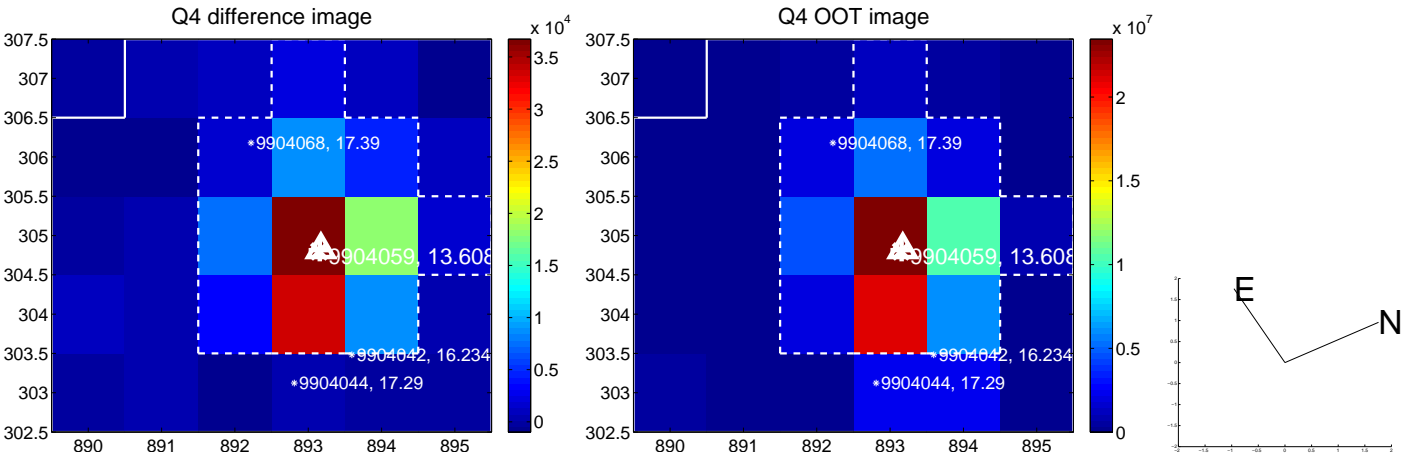
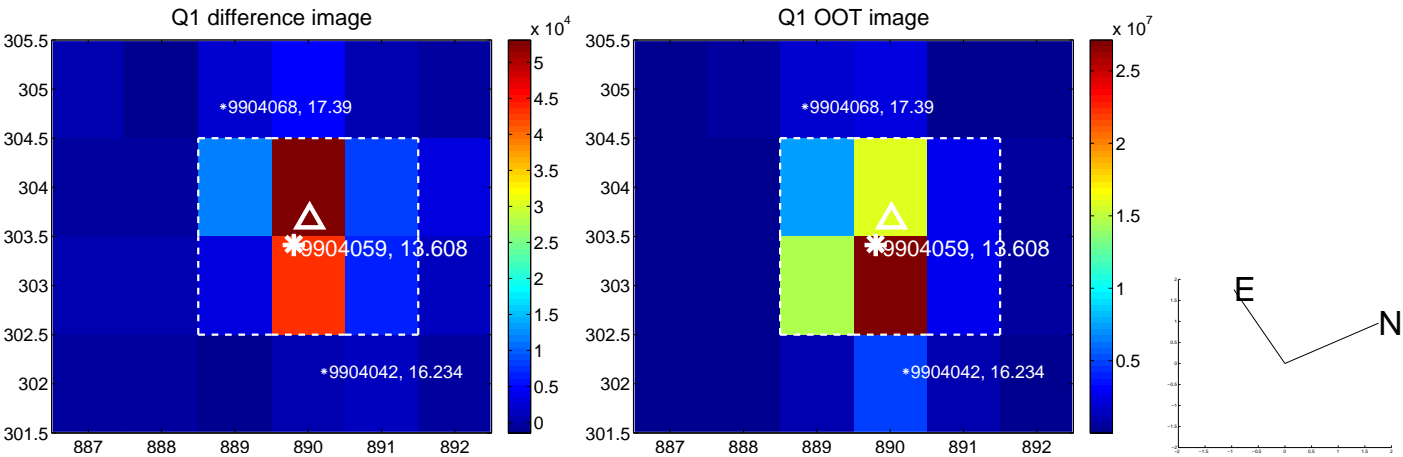
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.056 ± 0.195	0.29	-0.055 ± 0.195	0.010 ± 0.194
PRF-fit source offset from KIC position	0.072 ± 0.194	0.37	-0.071 ± 0.194	0.011 ± 0.199
photometric centroid source offset	0.18 ± 0.08	2.11	-0.16 ± 0.09	0.07 ± 0.08

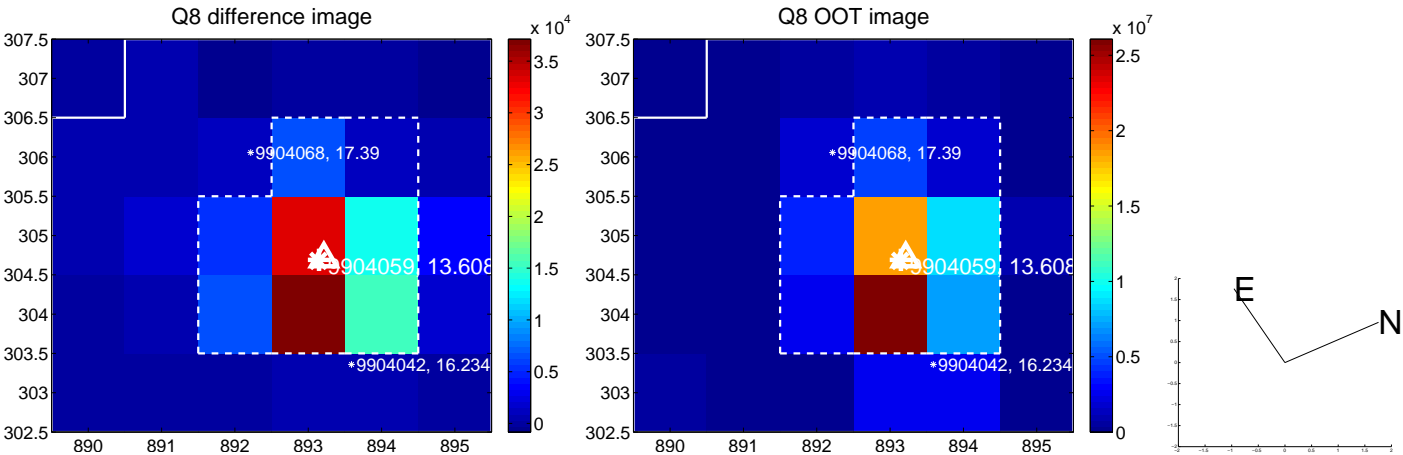
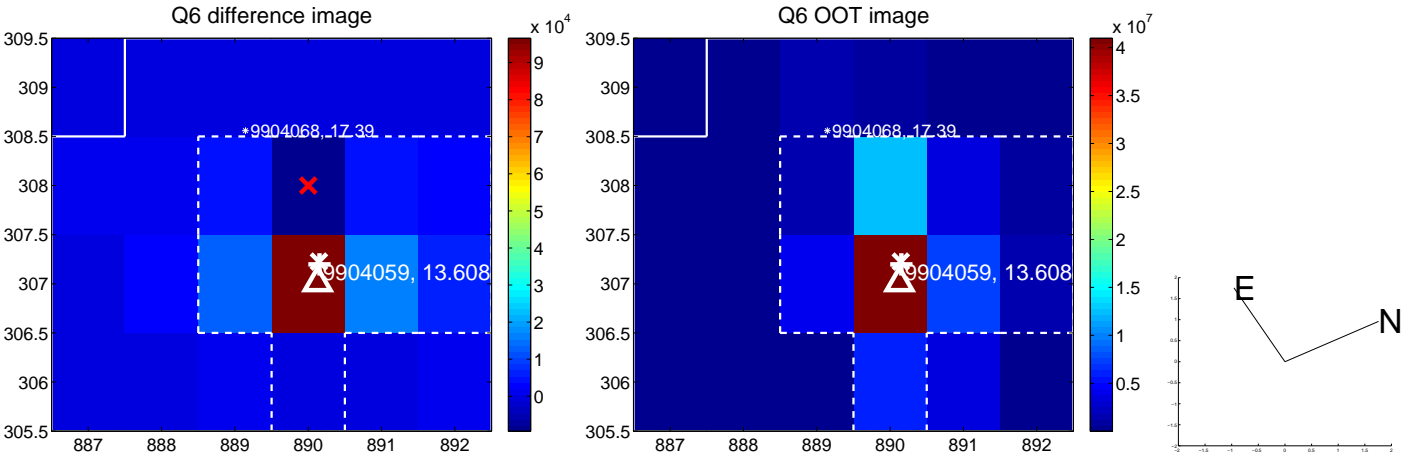
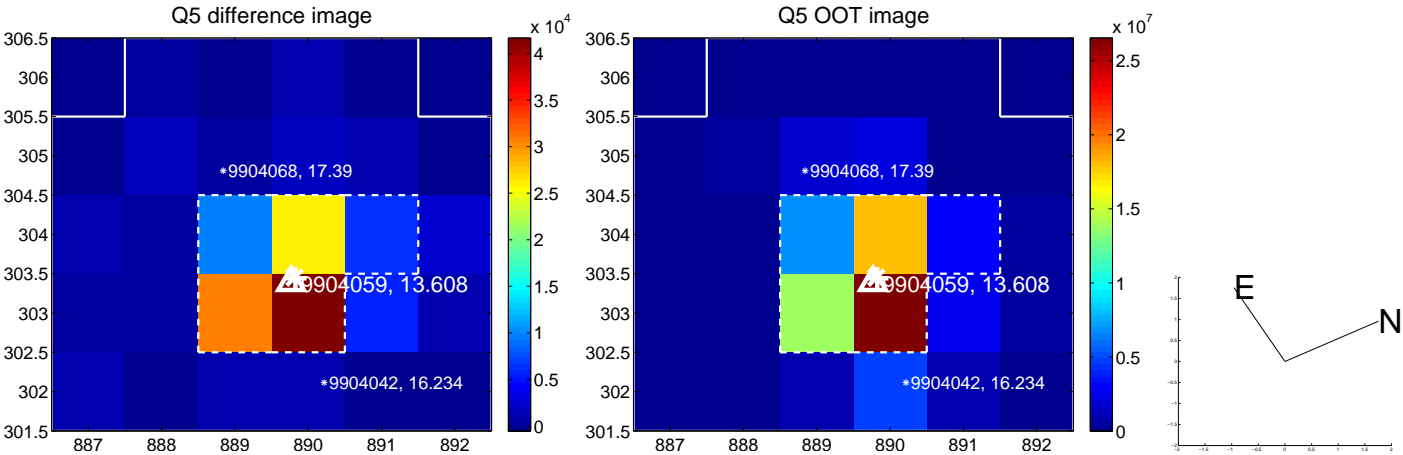


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

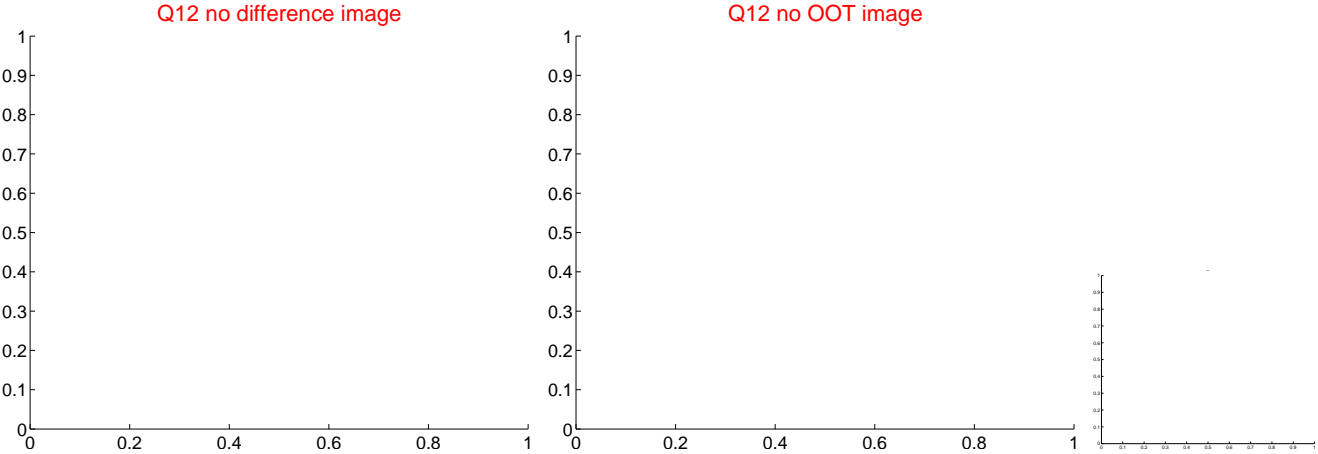
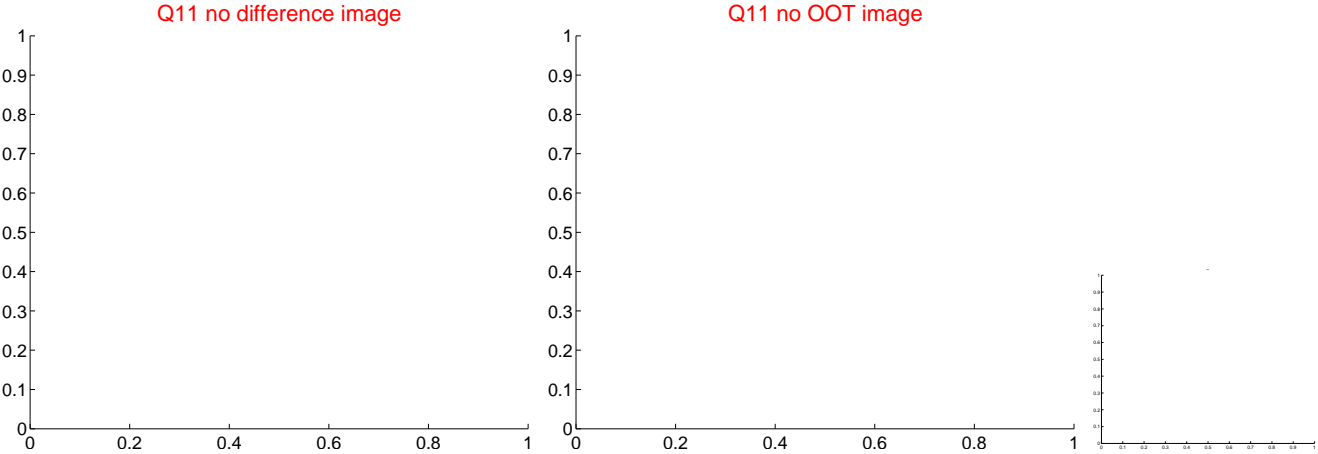
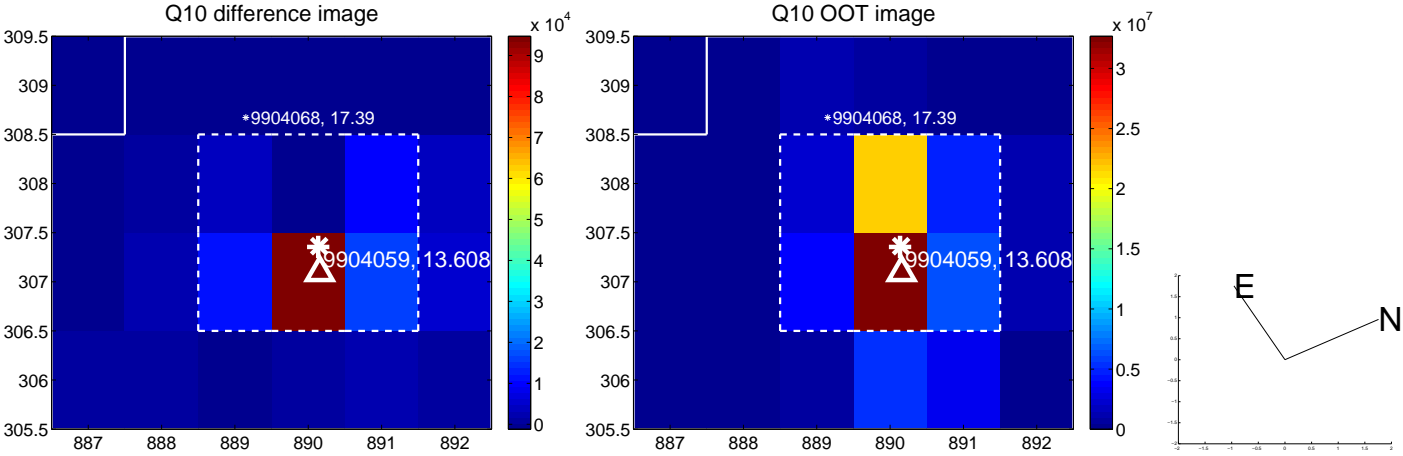
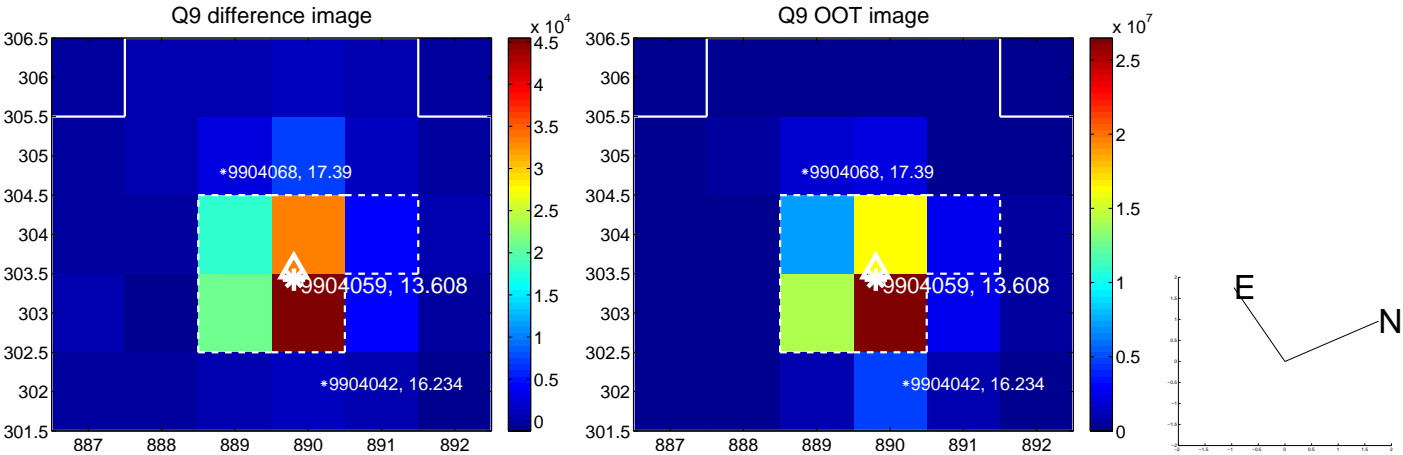
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



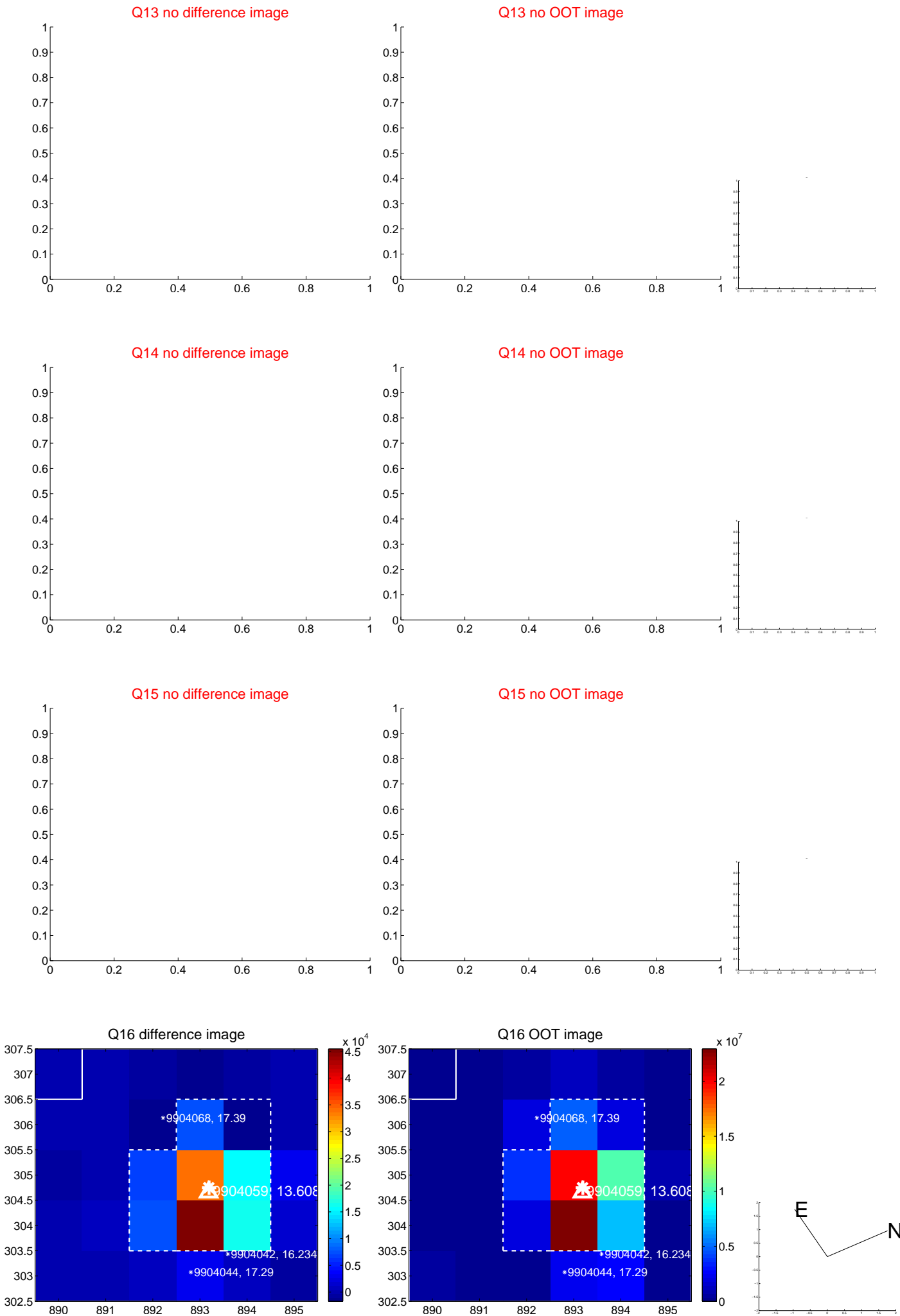
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



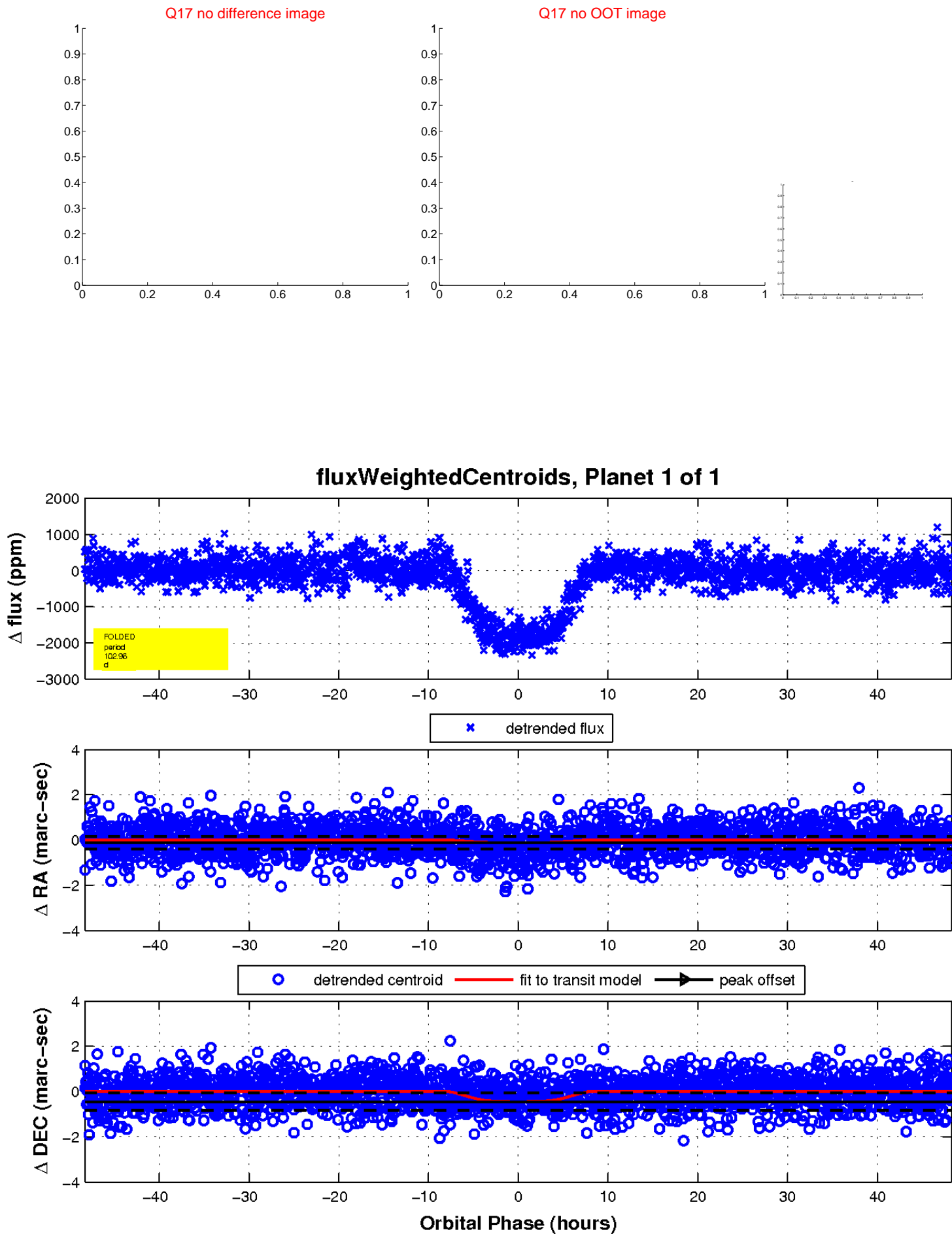
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

