

KIC 009654468

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})
009654468-01	OBS	2417.01	47.705491	146.314299	1172.2	5.855	17.3	18.1	0.67	4551	2.84	3.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009654468-01	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 009654468-01

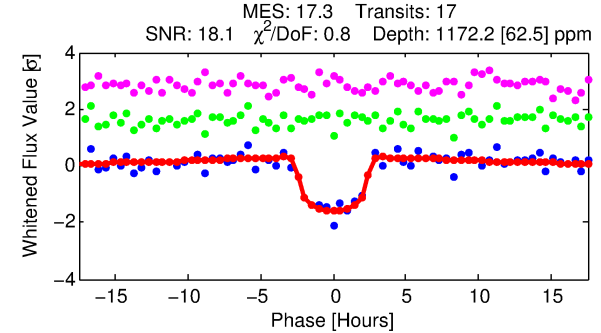
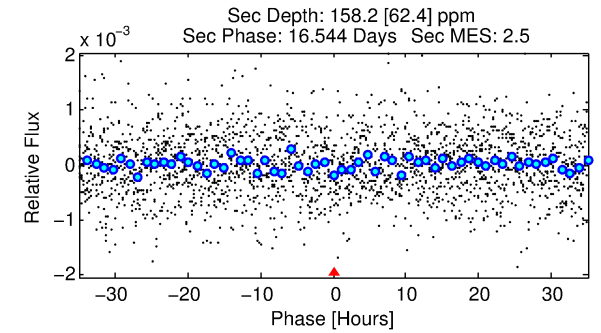
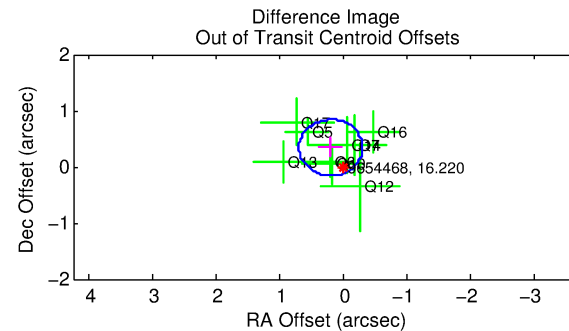
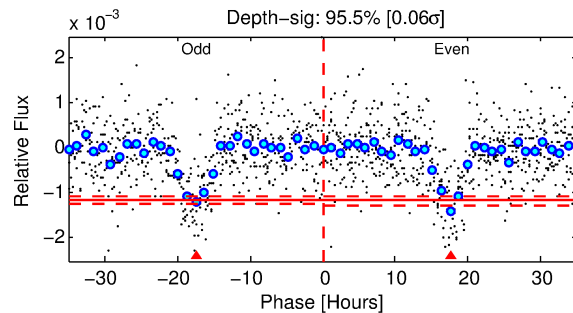
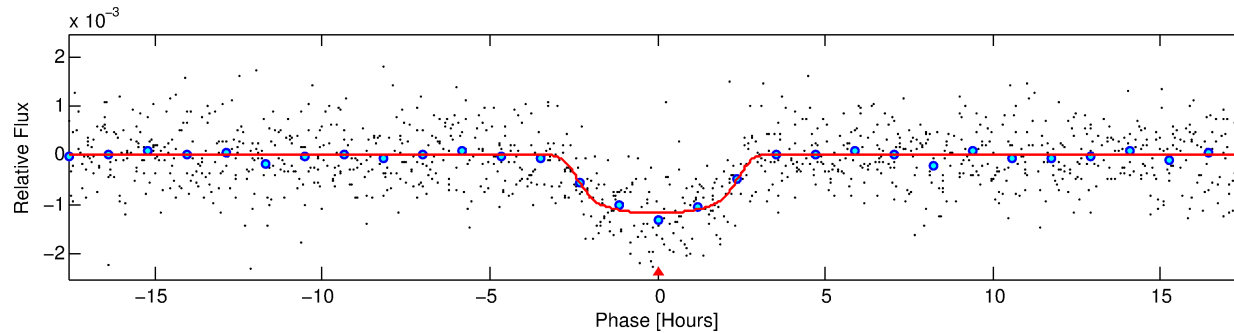
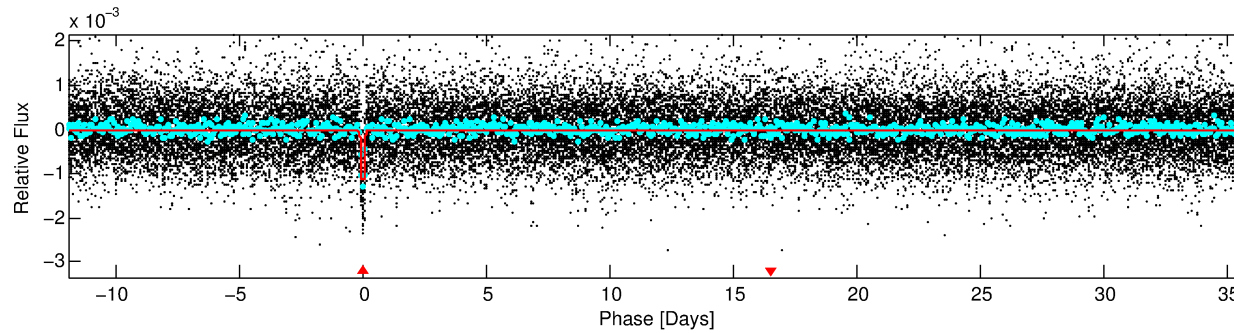
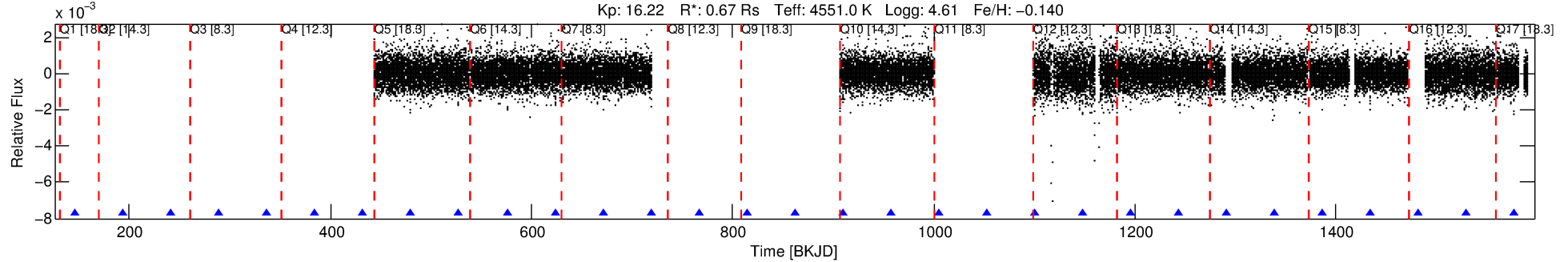
No Significant Match Found

DV One-Page Summary

KIC: 9654468 Candidate: 1 of 1 Period: 47.705 d

KOI: K02417.01 Corr: 0.947

Kp: 16.22 R*: 0.67 Rs Teff: 4551.0 K Logg: 4.61 Fe/H: -0.140



DV Fit Results:

Period = 47.70549 [0.00038] d
Epoch = 146.3143 [0.0077] BKJD
Rp/R* = 0.0387 [0.0027]
a/R* = 32.34 [6.82]
b = 0.90 [0.05]
Seff = 3.42 [0.35]
Teq = 347 [9] K
Rp = 2.84 [0.24] Re
a = 0.2252 [0.0096] AU
Ag = 548.46 [231.88] [2.36σ]
Teffp = 2595 [276] K [8.14σ]

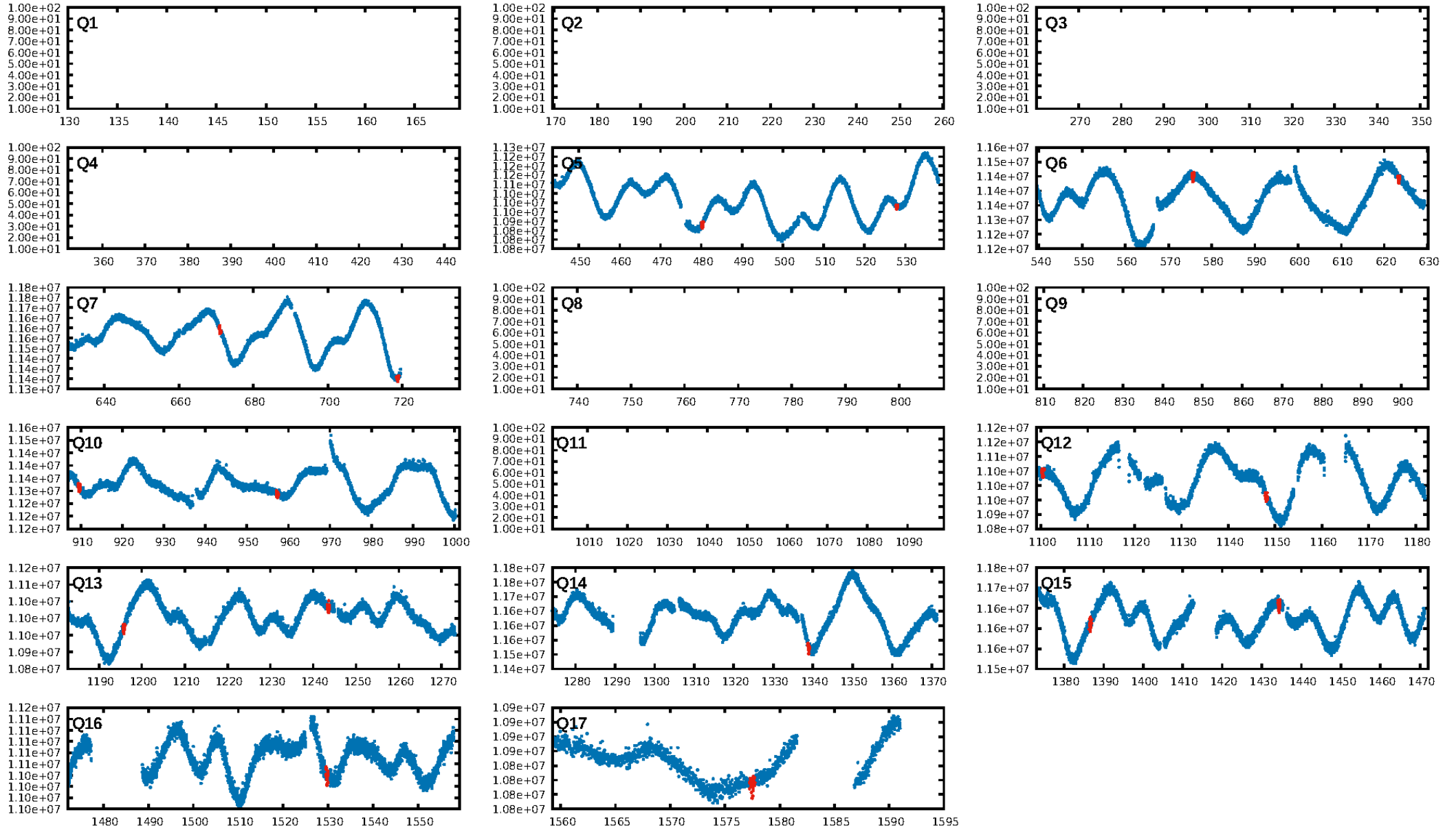
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 82.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.40e-52
RollingBand-fgt: 1.00 [16/16]
GhostDiagnostic-chr: 1.29
Centroid-sig: 38.5%
Centroid-so: 0.356 arcsec [0.61σ]
OotOffset-rm: 0.393 arcsec [2.36σ]
KicOffset-rm: 0.308 arcsec [1.79σ]
OotOffset-st: 3/1/2/3 [9]
KicOffset-st: 3/1/2/3 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [10/10]

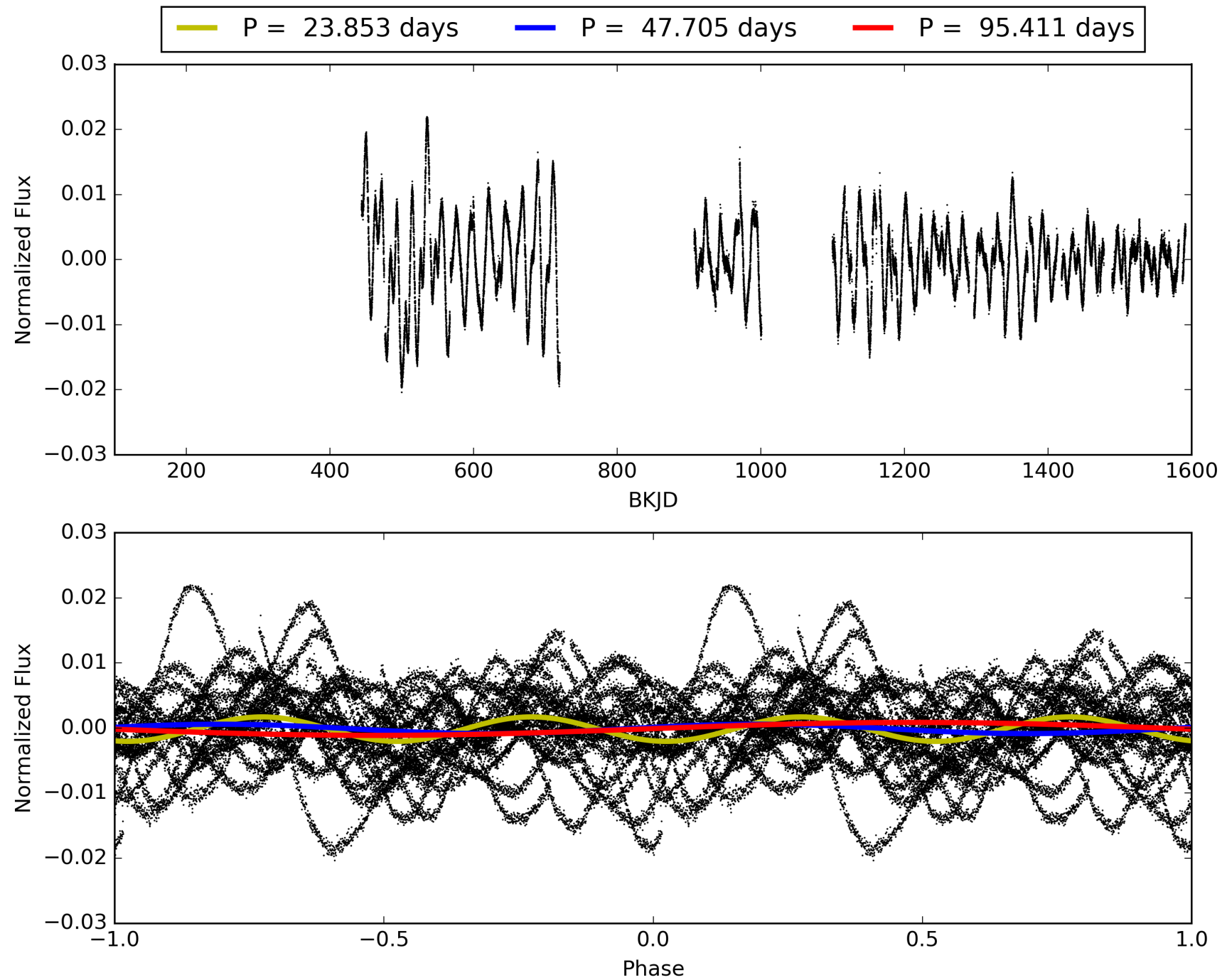
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:35:25 Z

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

TCE 009654468-01, PDC Light Curves

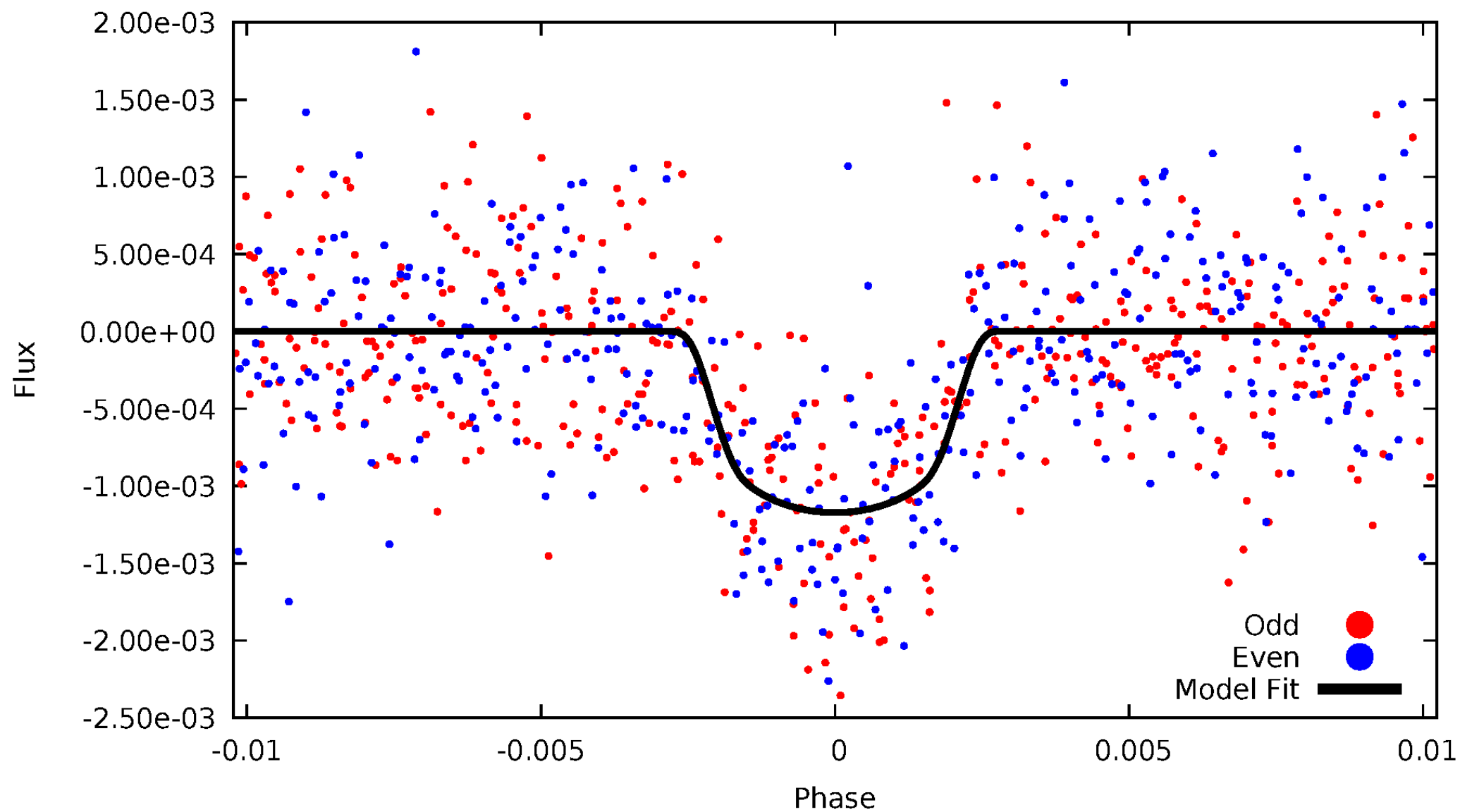


TCE 009654468-01



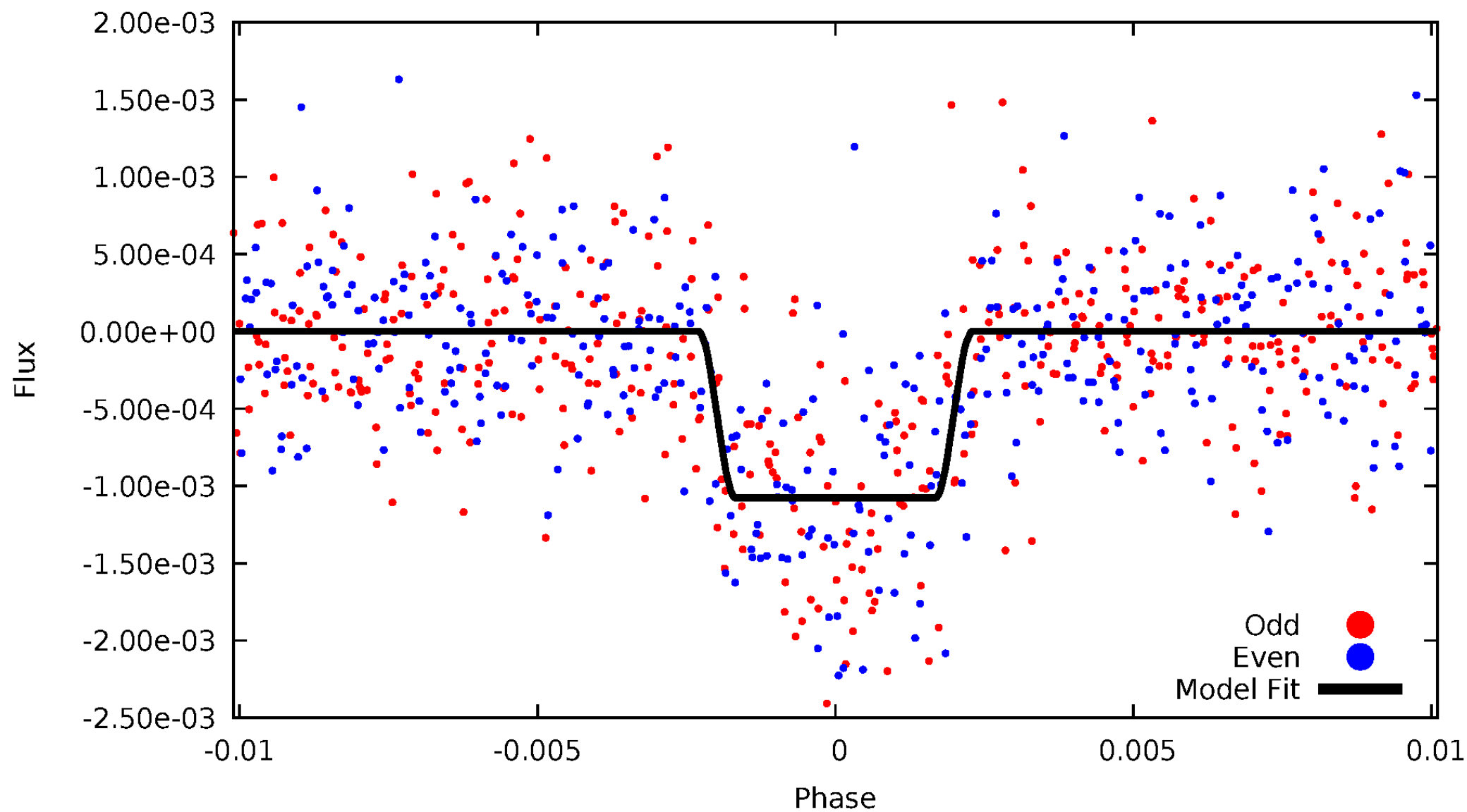
DV Odd/Even

TCE 009654468-01



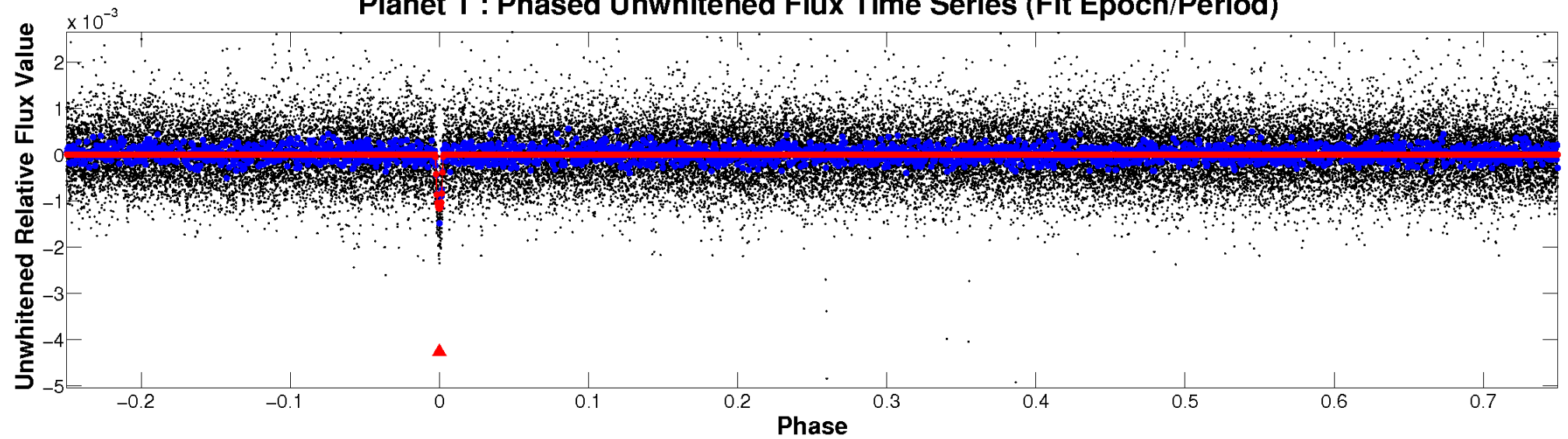
ALT Odd/Even

TCE 009654468-01

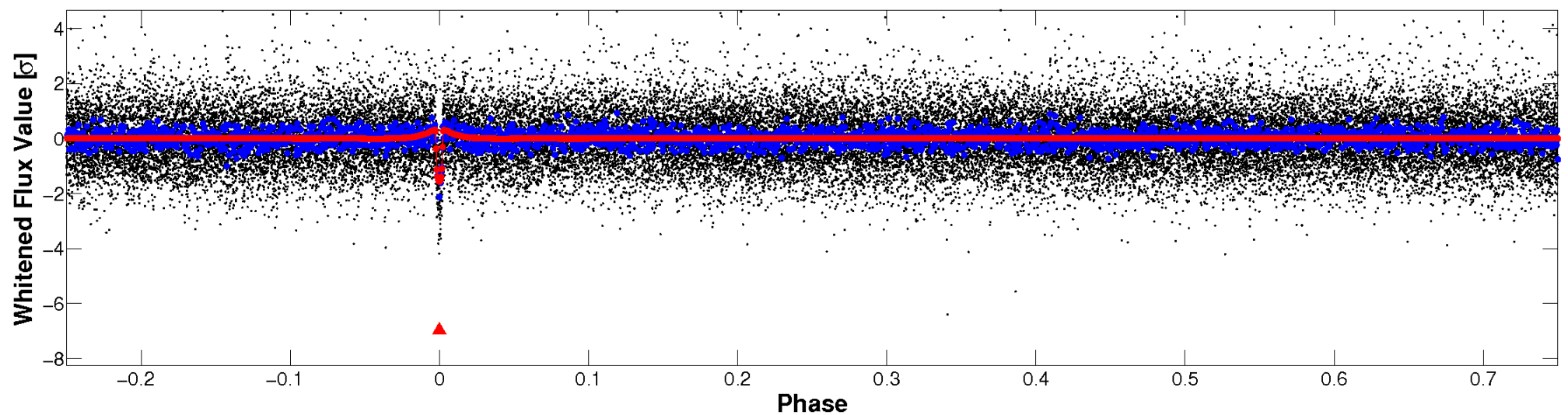


Non-Whitened Vs. Whitened Light Curve

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

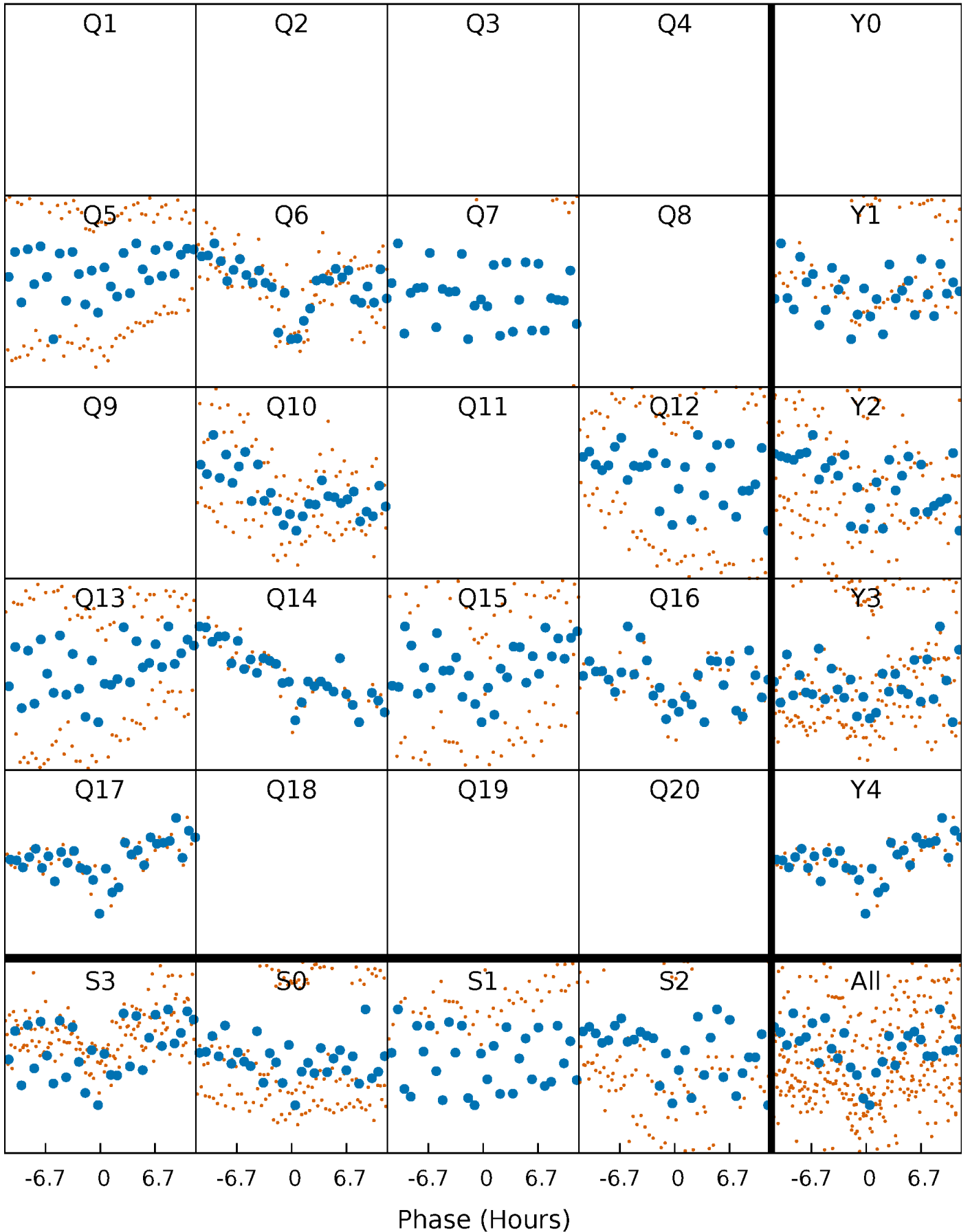


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



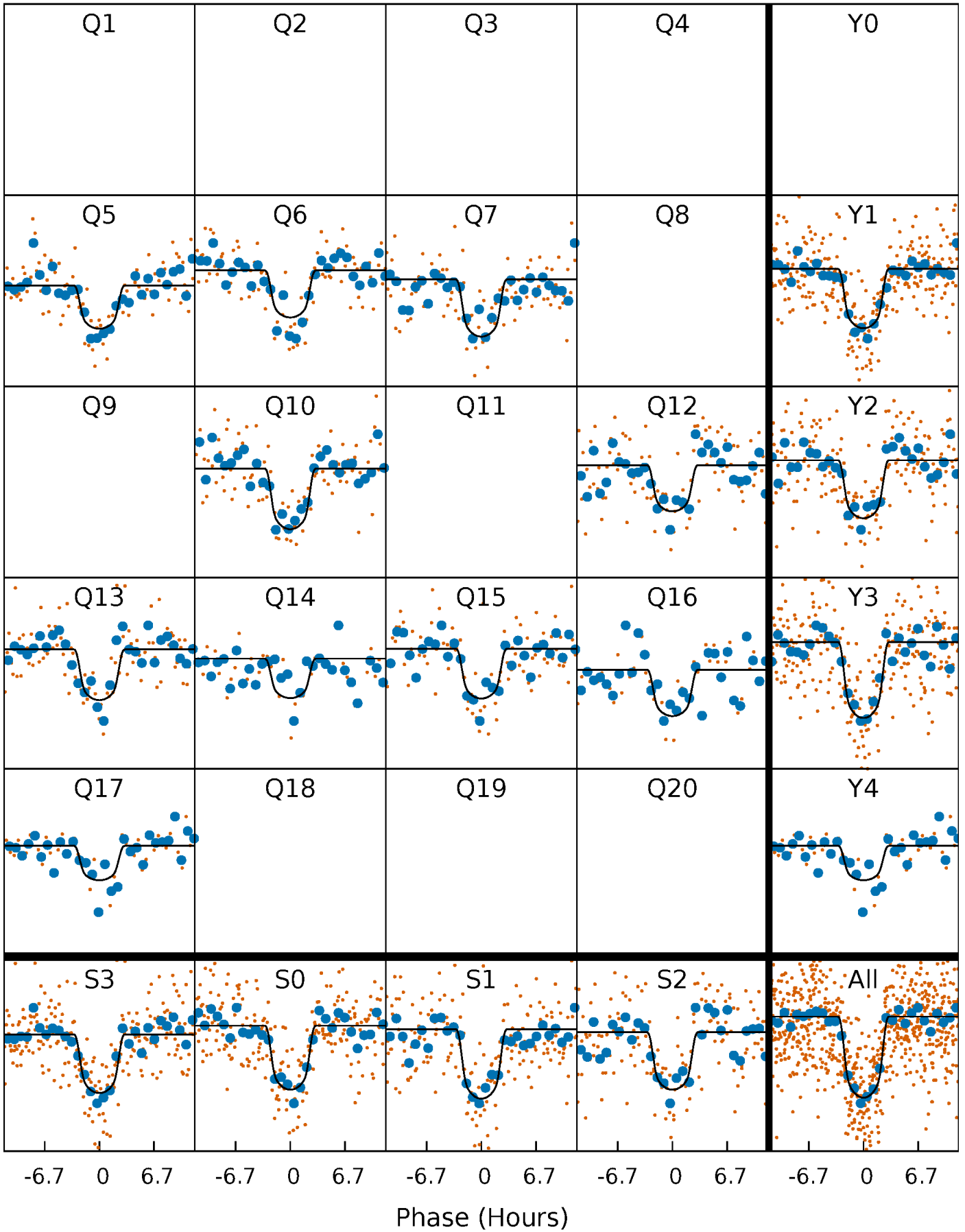
PDC Quarter-Phased Transit Curves

TCE 009654468-01 P= 47.705491 Days $T_0=146.314299$ (BKJD)



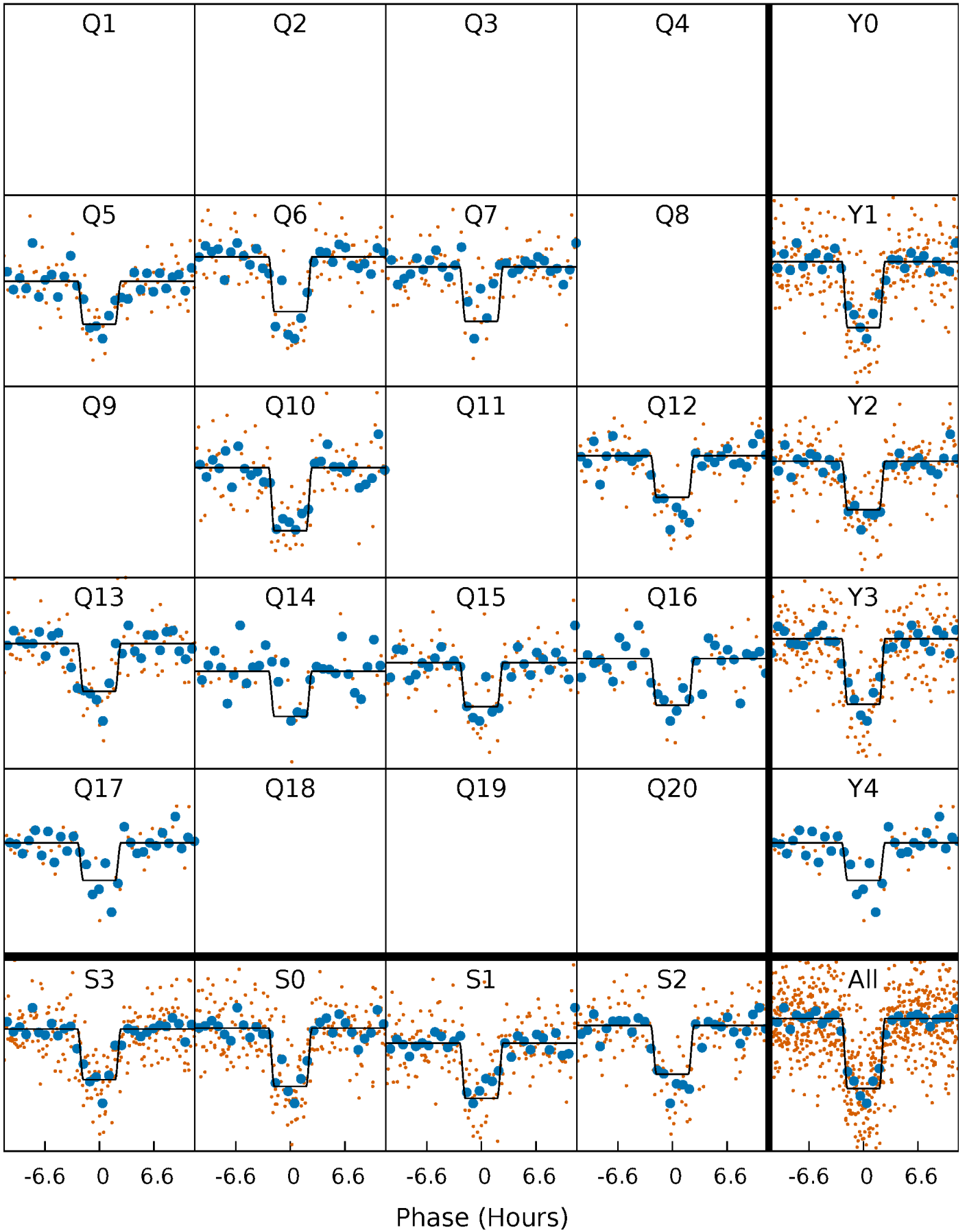
DV Quarter-Phased Transit Curves

TCE 009654468-01 $P = 47.705491$ Days $T_0 = 146.314299$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

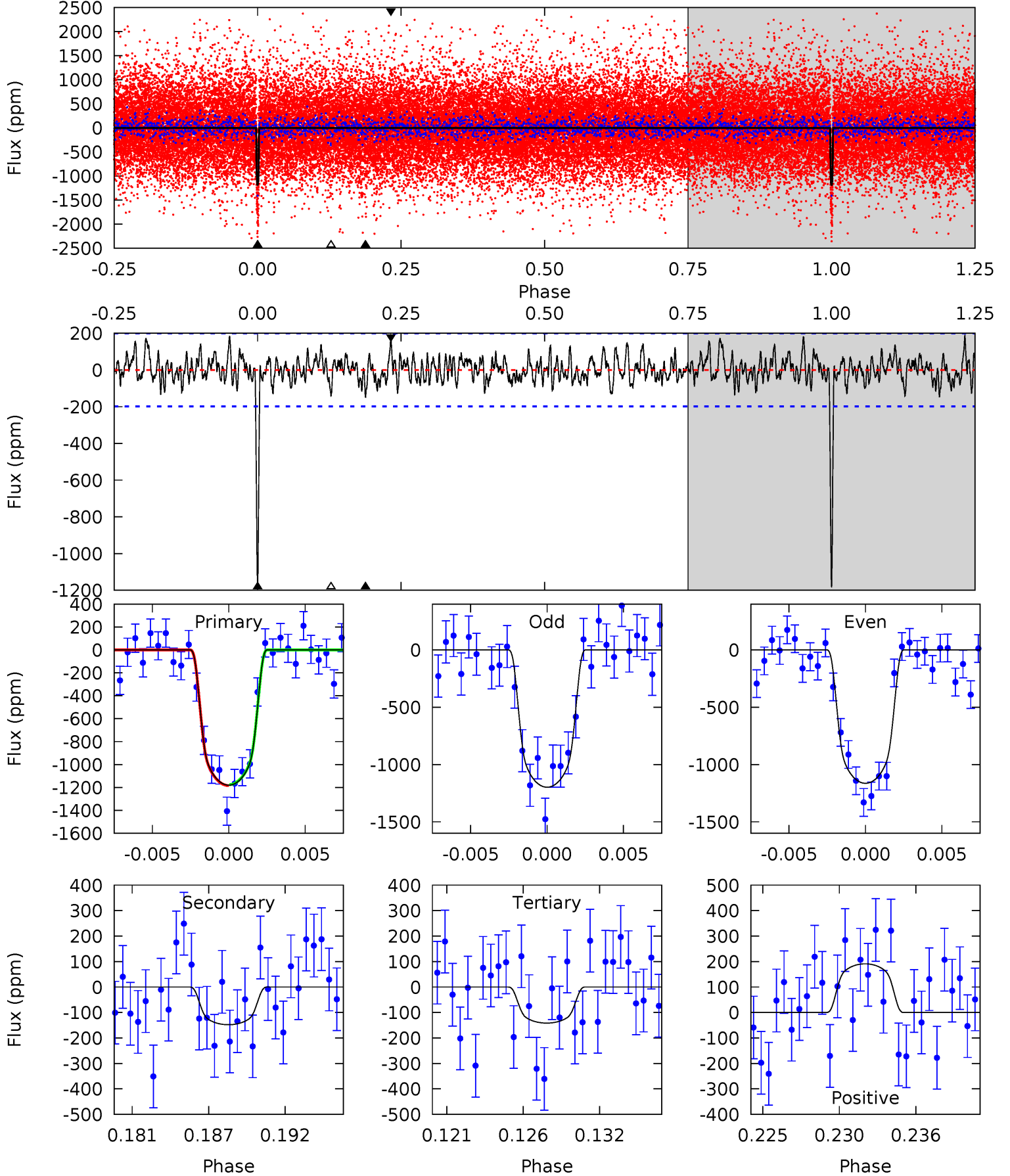
TCE 009654468-01 P= 47.704705 Days $T_0=146.329972$ (BKJD)



DV Model-Shift Uniqueness Test

009654468-01, $P = 47.705491$ Days, $E = 146.314299$ Days

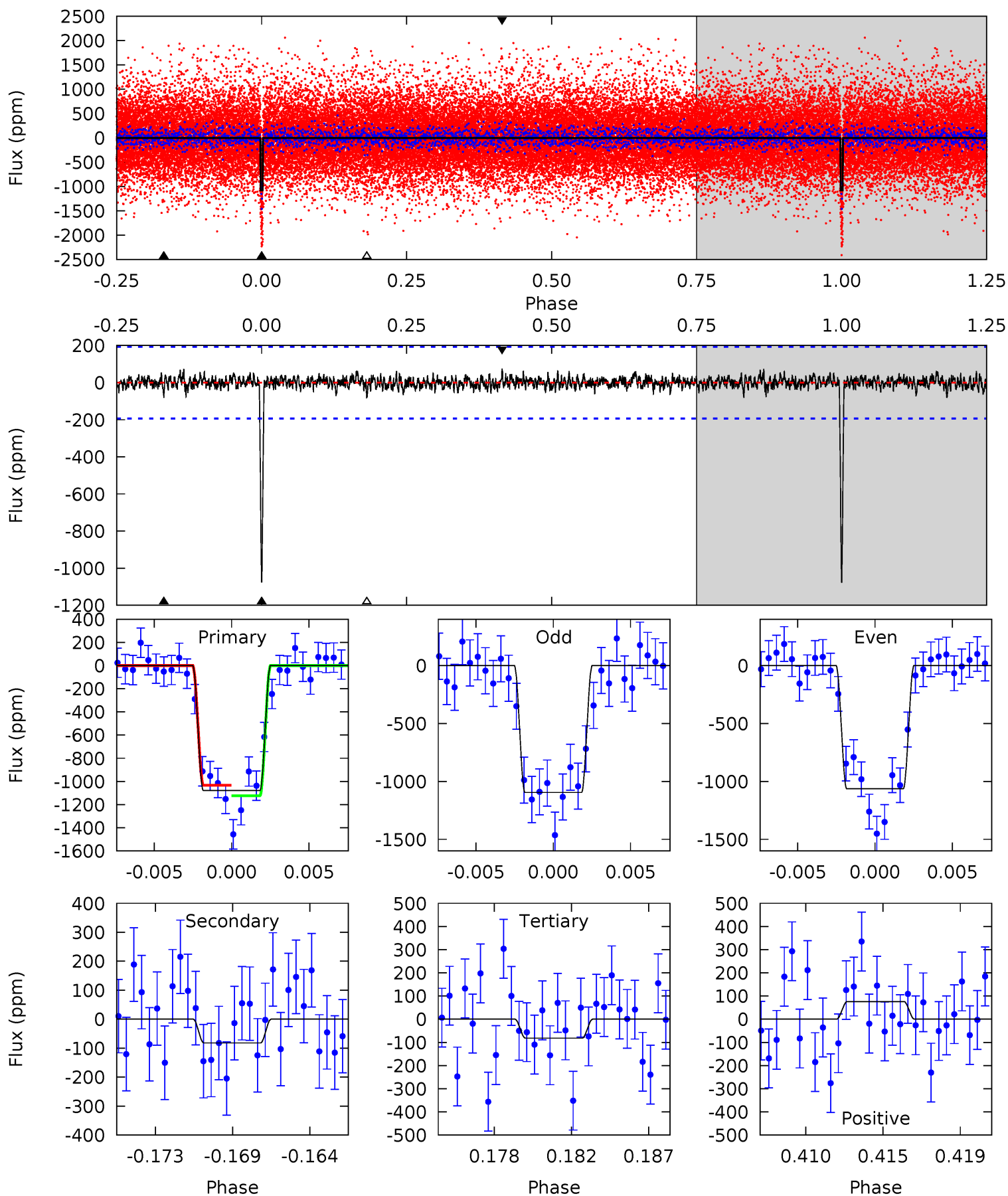
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.5	3.83	3.66	4.94	5.14	2.78	1.45	26.9	25.6	0.17	-1.11	0.44	1.01	0.14	0.11



Alt Model-Shift Uniqueness Test

009654468-01, $P = 47.704705$ Days, $E = 146.329972$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.8	2.19	2.19	2.03	5.17	2.84	0.58	26.6	26.8	0.00	0.16	0.43	1.00	0.07	1.22



Stellar Parameters For KIC 009654468

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4551^{+90}_{-90}	$4.609^{+0.036}_{-0.018}$	$-0.140^{+0.150}_{-0.150}$	$0.672^{+0.027}_{-0.033}$	$0.669^{+0.041}_{-0.027}$	$3.109^{+0.450}_{-0.248}$
	+2%/-2%	+1%/-0%	+107%/-107%	+4%/-5%	+6%/-4%	+14%/-8%
Source	SPE60	SPE60	SPE60	DSEP		

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

Secondary Eclipse Parameters for KIC 009654468-01 / KOI 2417.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-148 ± 39	$2.84^{+0.20}_{-0.20}$	483^{+10}_{-11}	3075^{+140}_{-136}	511^{+160}_{-144}
Alt.	-82 ± 37	$2.39^{+0.19}_{-0.20}$	483^{+11}_{-11}	2964^{+206}_{-224}	403^{+211}_{-183}

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 $A_{obs} \gg 1.0$

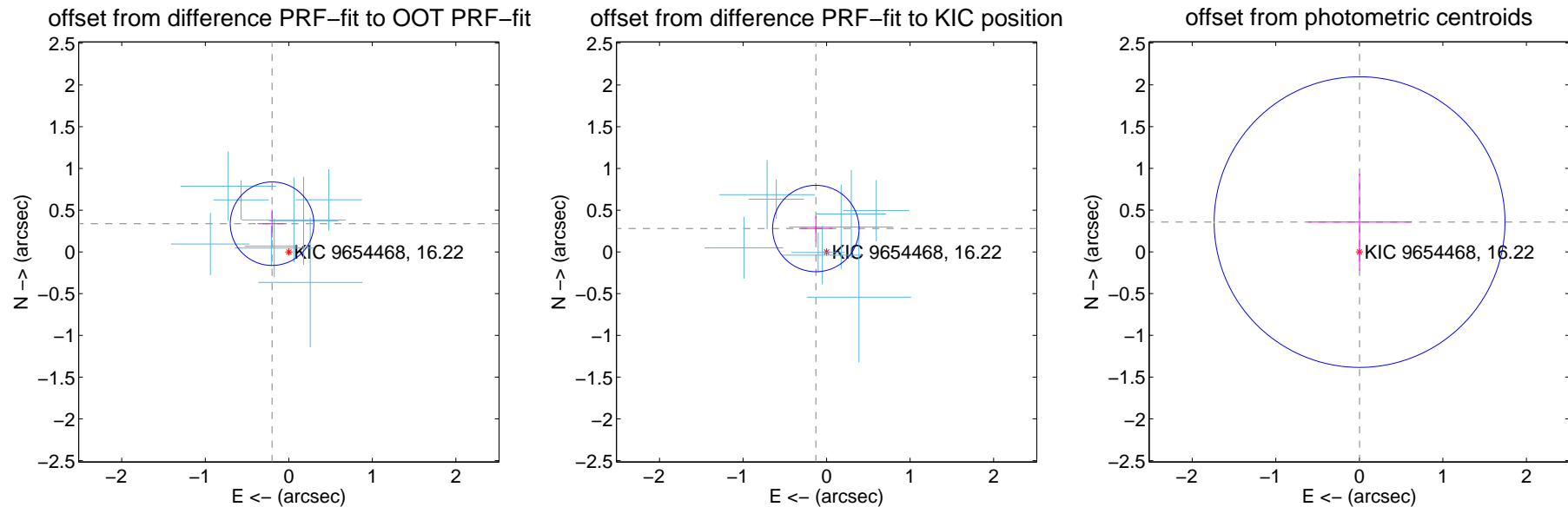
DV Centroid Data

Supplemental centroid analysis for 009654468-01. Kepler magnitude: 16.22. Transit SNR 18.13

There are 9 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	0.393 ± 0.167	2.36	0.200 ± 0.174	0.338 ± 0.164
PRF-fit source offset from KIC position	0.308 ± 0.172	1.79	0.129 ± 0.201	0.280 ± 0.149
photometric centroid source offset	0.36 ± 0.58	0.61	-0.00 ± 0.62	0.36 ± 0.58

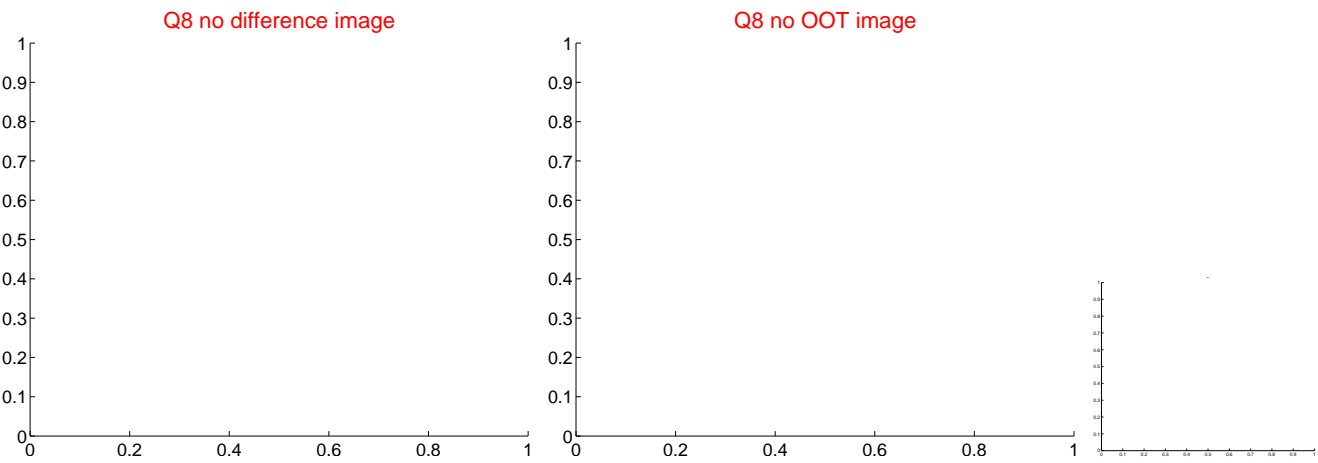
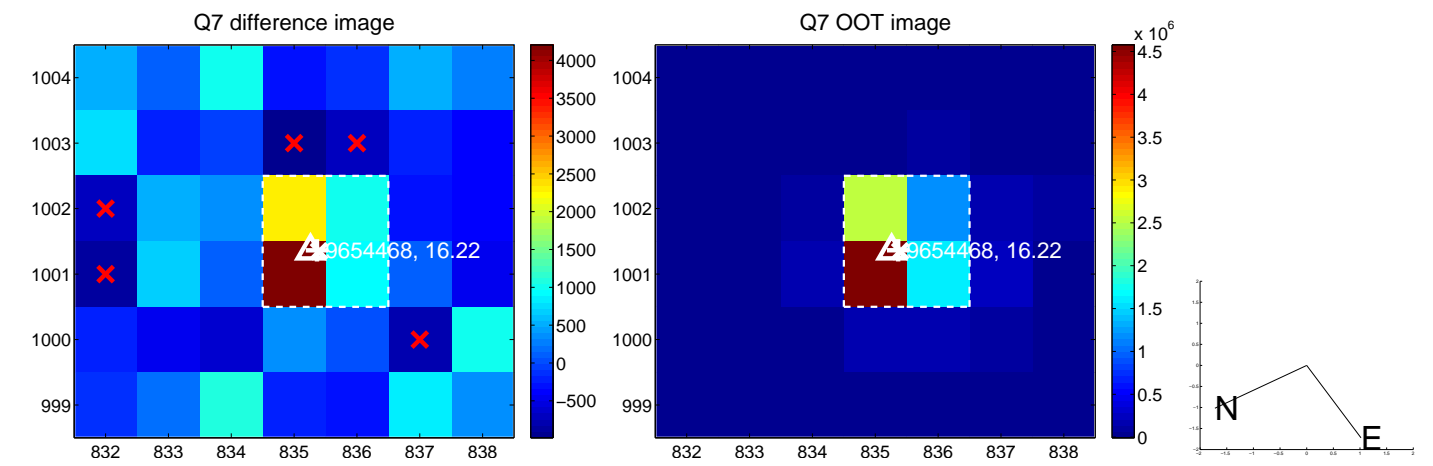
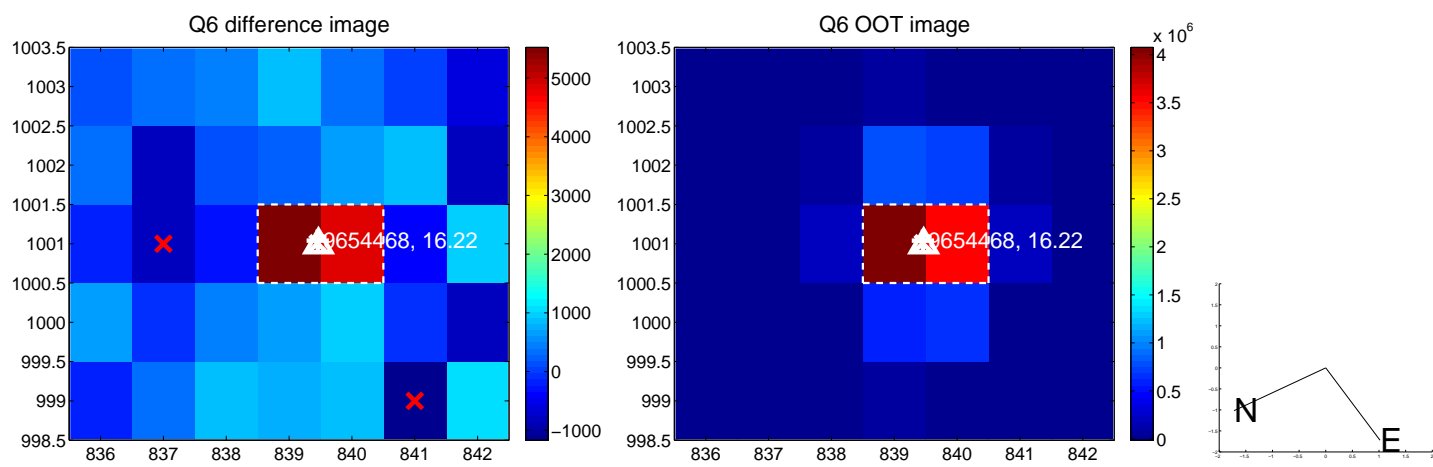
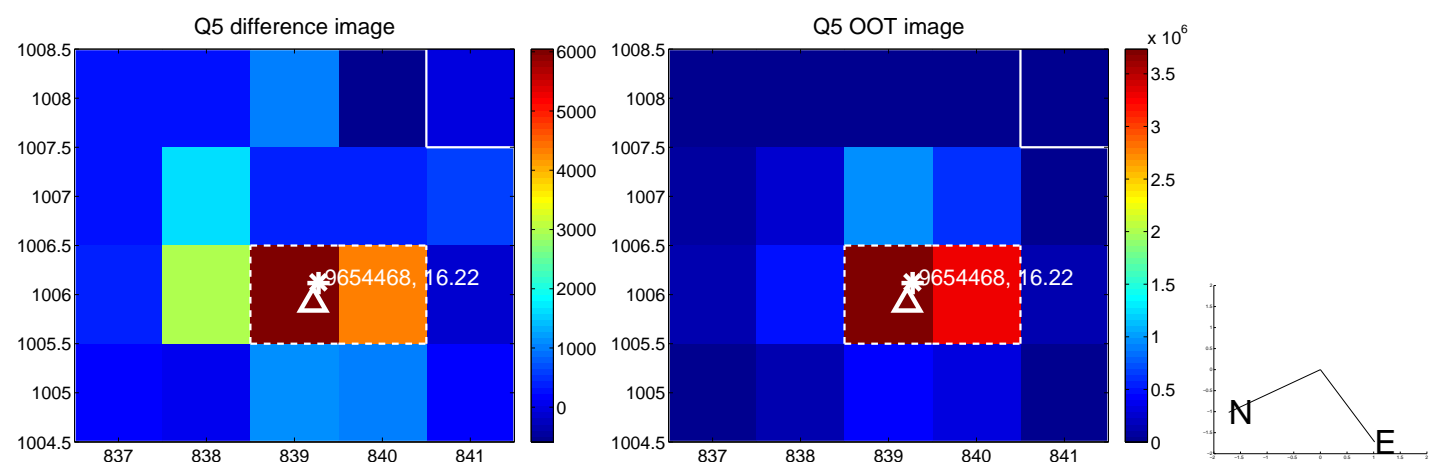


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

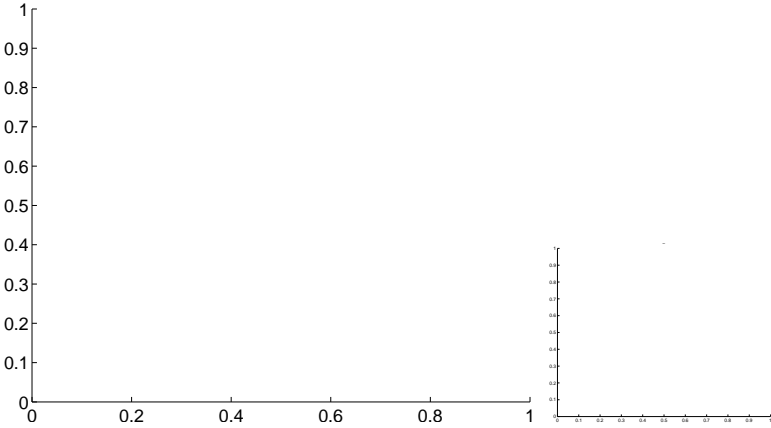


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

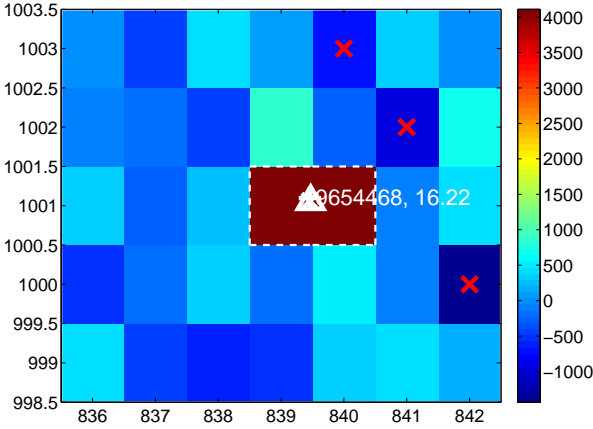
Q9 no difference image



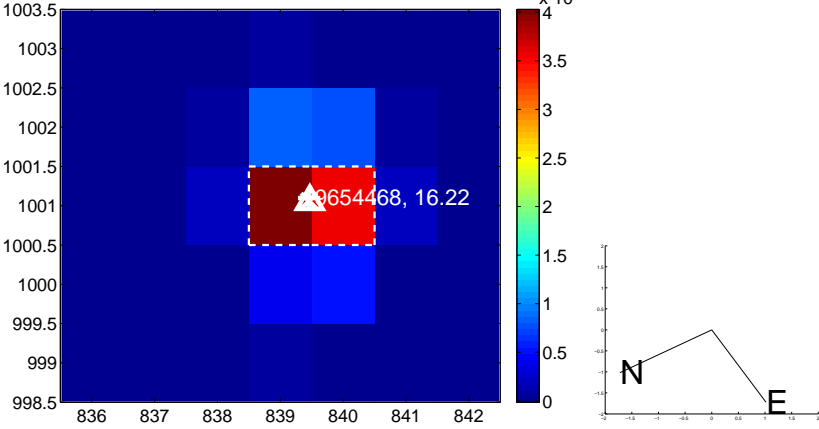
Q9 no OOT image



Q10 difference image



Q10 OOT image



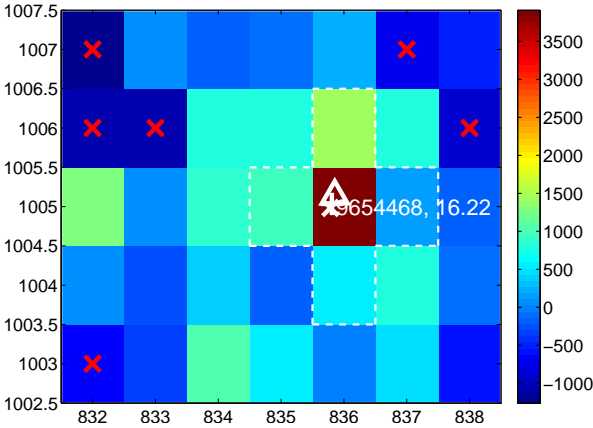
Q11 no difference image



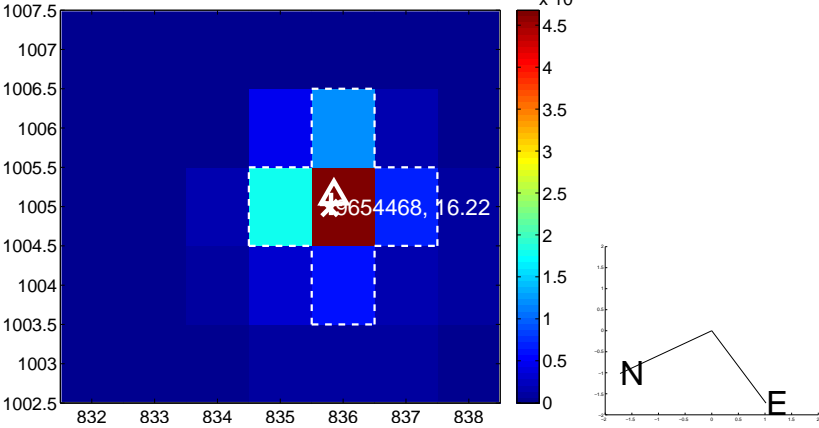
Q11 no OOT image



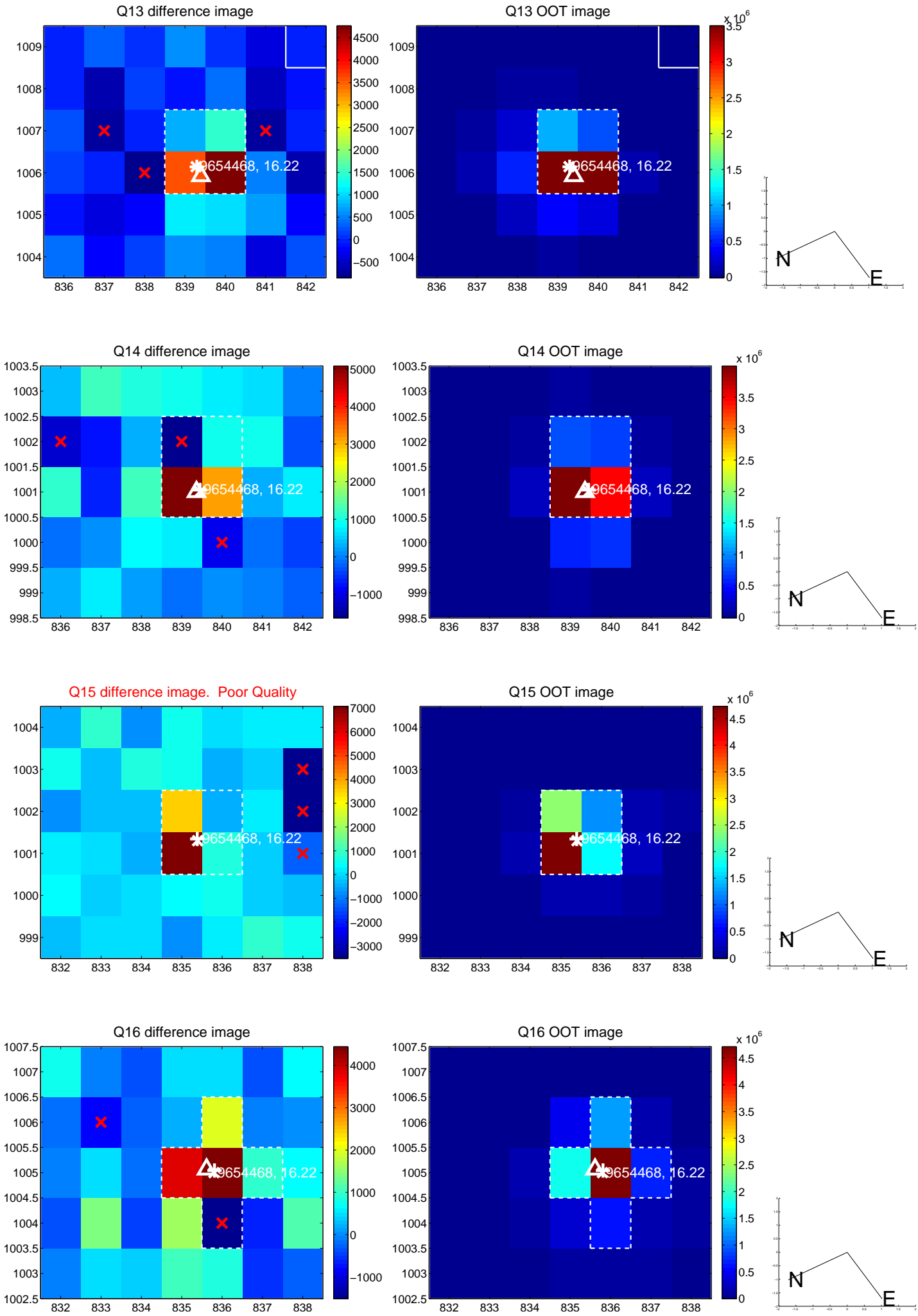
Q12 difference image



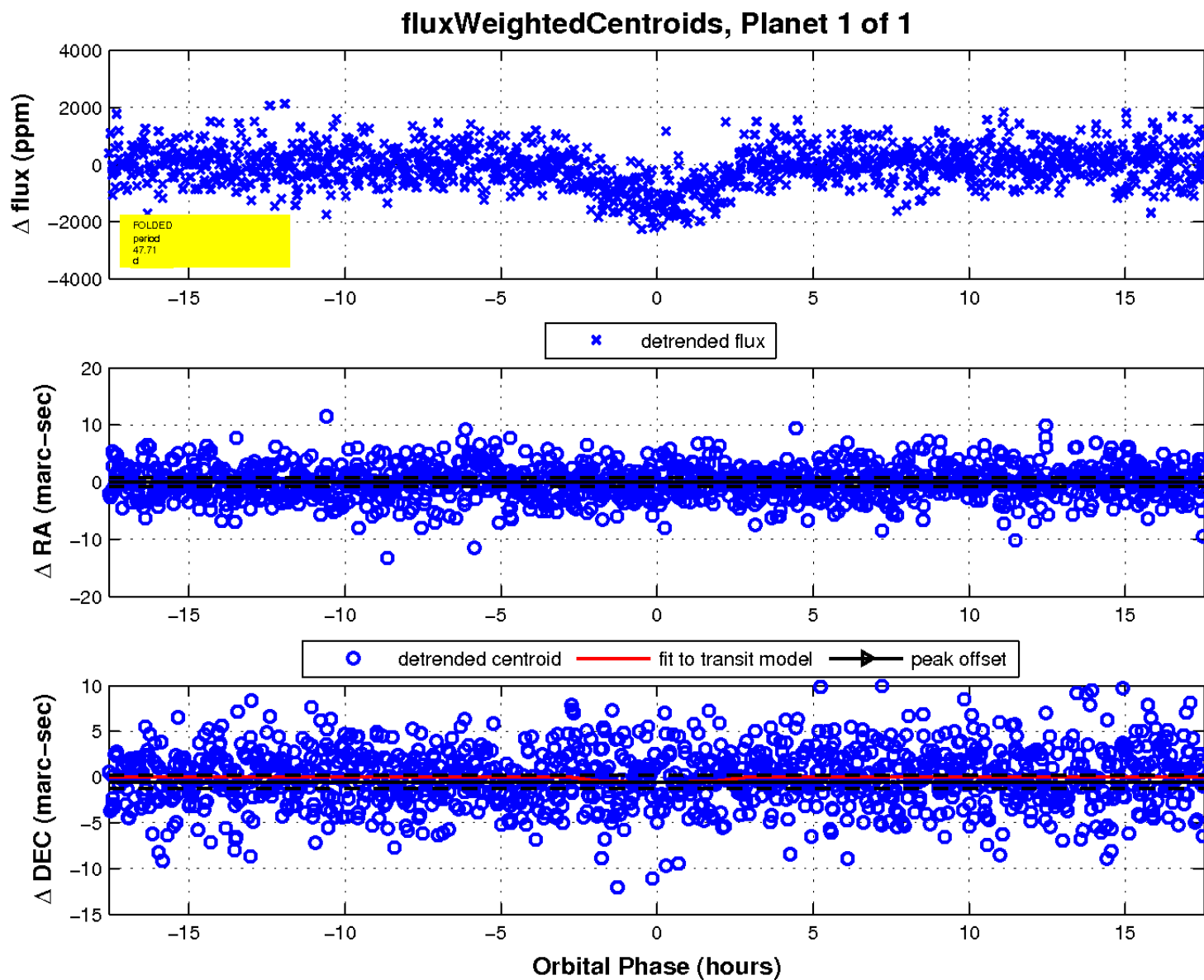
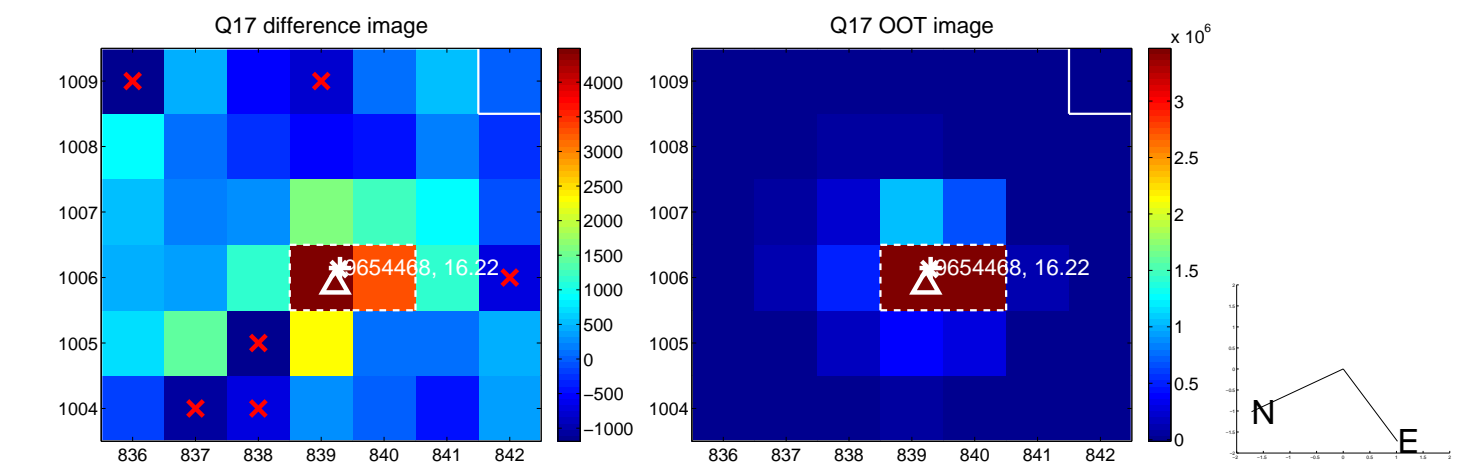
Q12 OOT image



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.



UKIRT Image

Declination

