

KIC 009009953

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
009009953-01	OBS	4014.01	234.239258	210.813333	459.5	12.527	19.1	19.5	1.25	5814	3.32	2.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009009953-01	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.

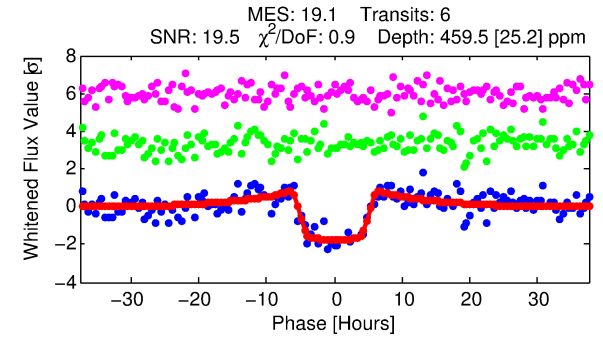
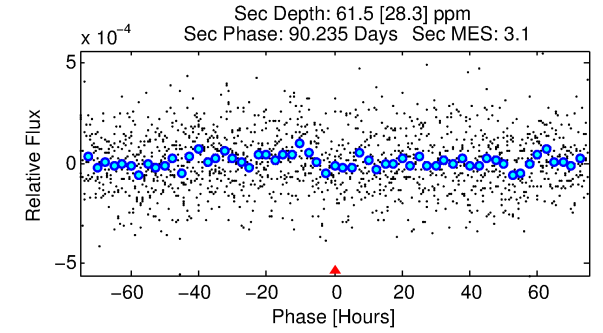
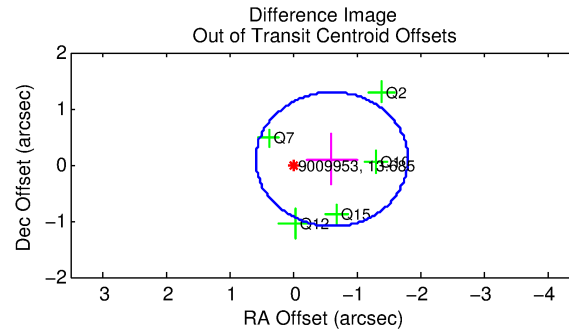
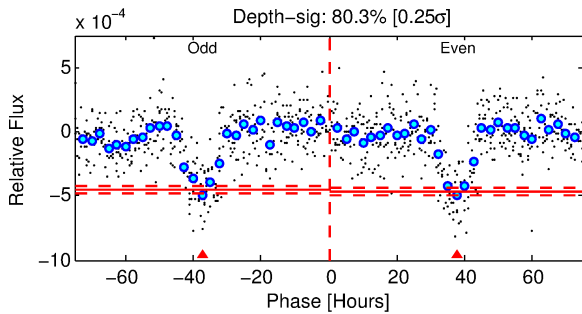
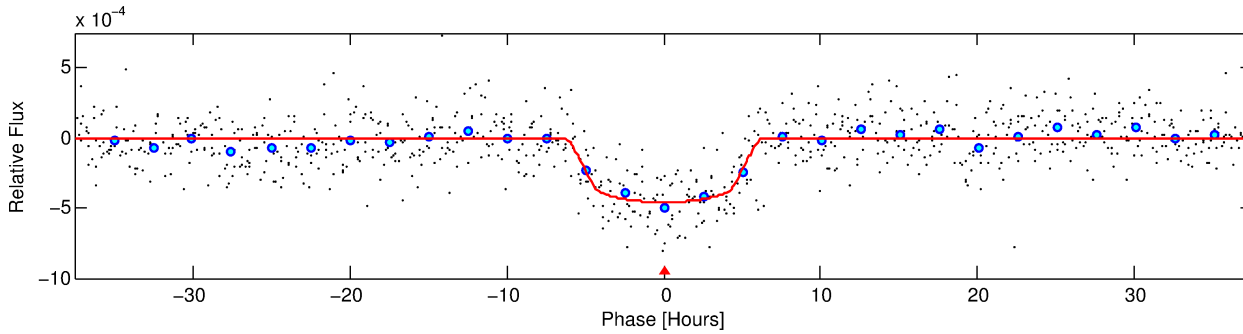
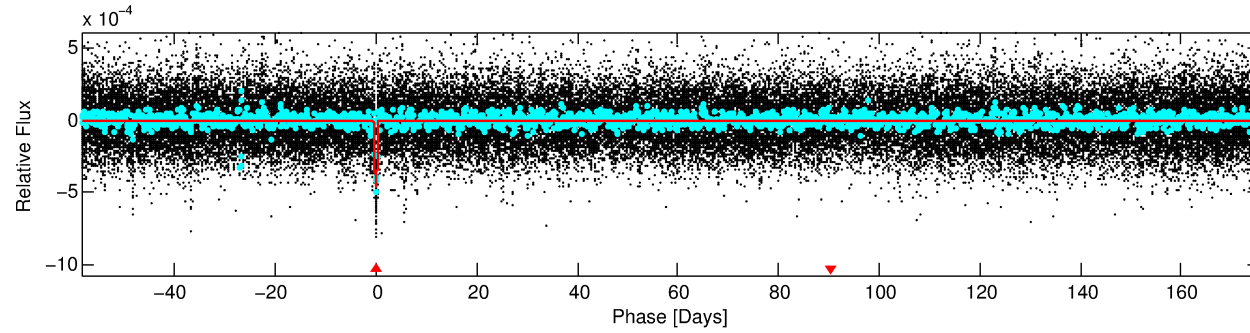
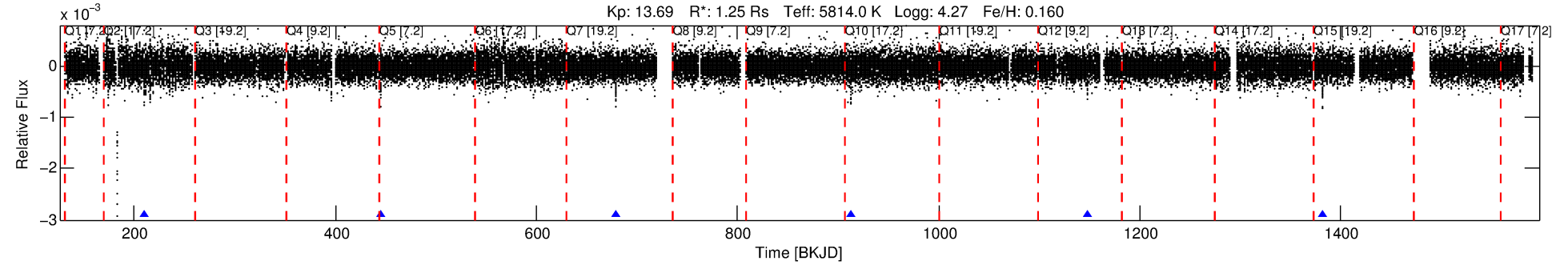
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009009953-01

No Significant Match Found

DV One-Page Summary

KIC: 9009953 Candidate: 1 of 1 Period: 234.239 d
KOI: K04014.01 Corr: 0.976



DV Fit Results:

Period = 234.23926 [0.00315] d
Epoch = 210.8133 [0.0094] BKJD
Rp/R* = 0.0244 [0.0011]
a/R* = 59.96 [8.85]
b = 0.93 [0.02]
Seff = 2.78 [0.68]
Teq = 329 [20] K
Rp = 3.32 [0.57] Re
a = 0.7573 [0.1161] AU
Ag = 1763.12 [926.62] [1.90σ]
Teffp = 3299 [389] K [7.63σ]

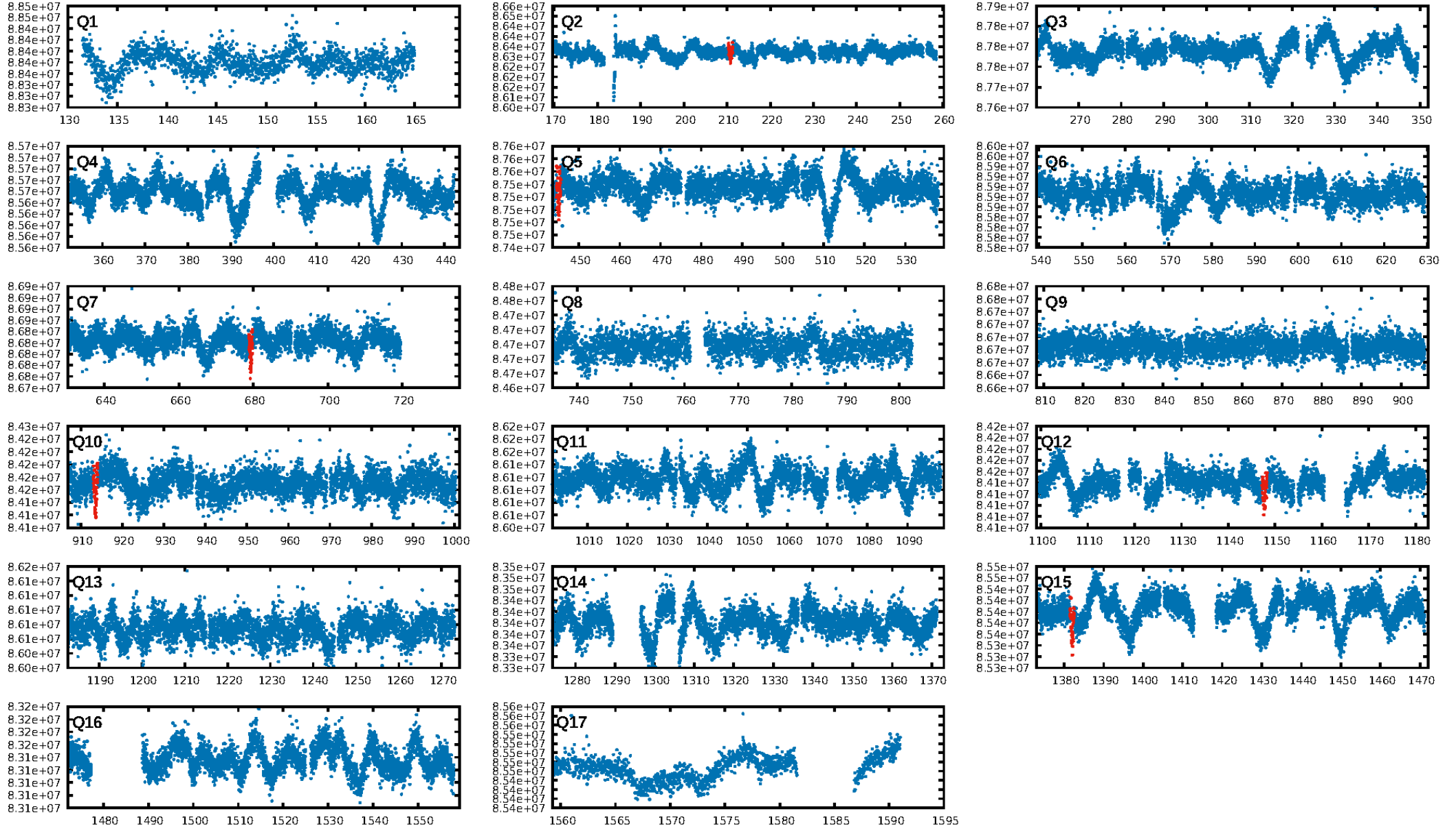
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 88.8%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.93e-62
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 5.214
Centroid-sig: 0.3%
Centroid-so: 1.222 arcsec [2.13σ]
OotOffset-rm: 0.621 arcsec [1.56σ]
OotOffset-st: 2/2/1/0 [5]
KicOffset-rm: 0.594 arcsec [1.44σ]
KicOffset-st: 2/2/1/0 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [5/5]

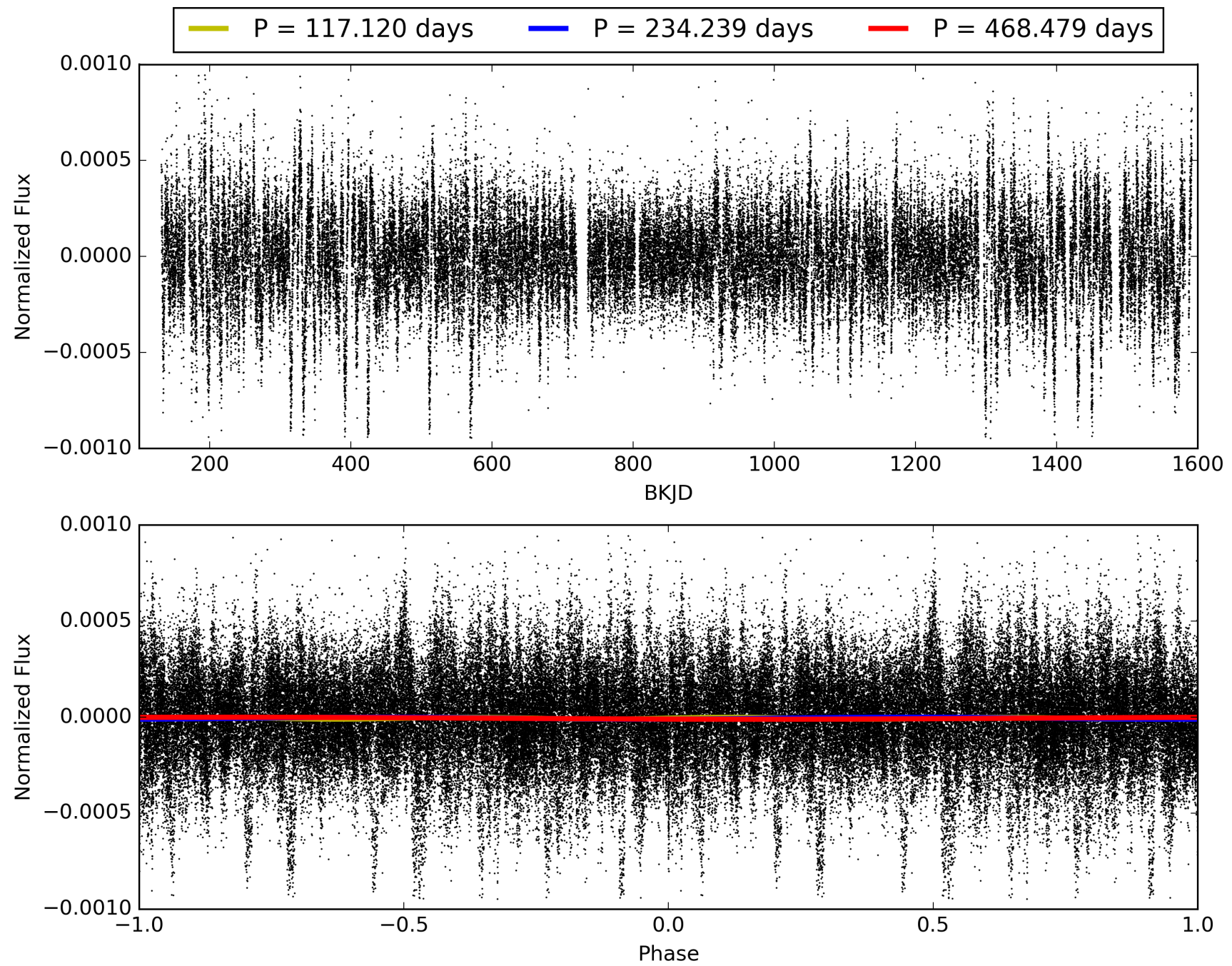
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:51:18 Z

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

TCE 009009953-01, PDC Light Curves

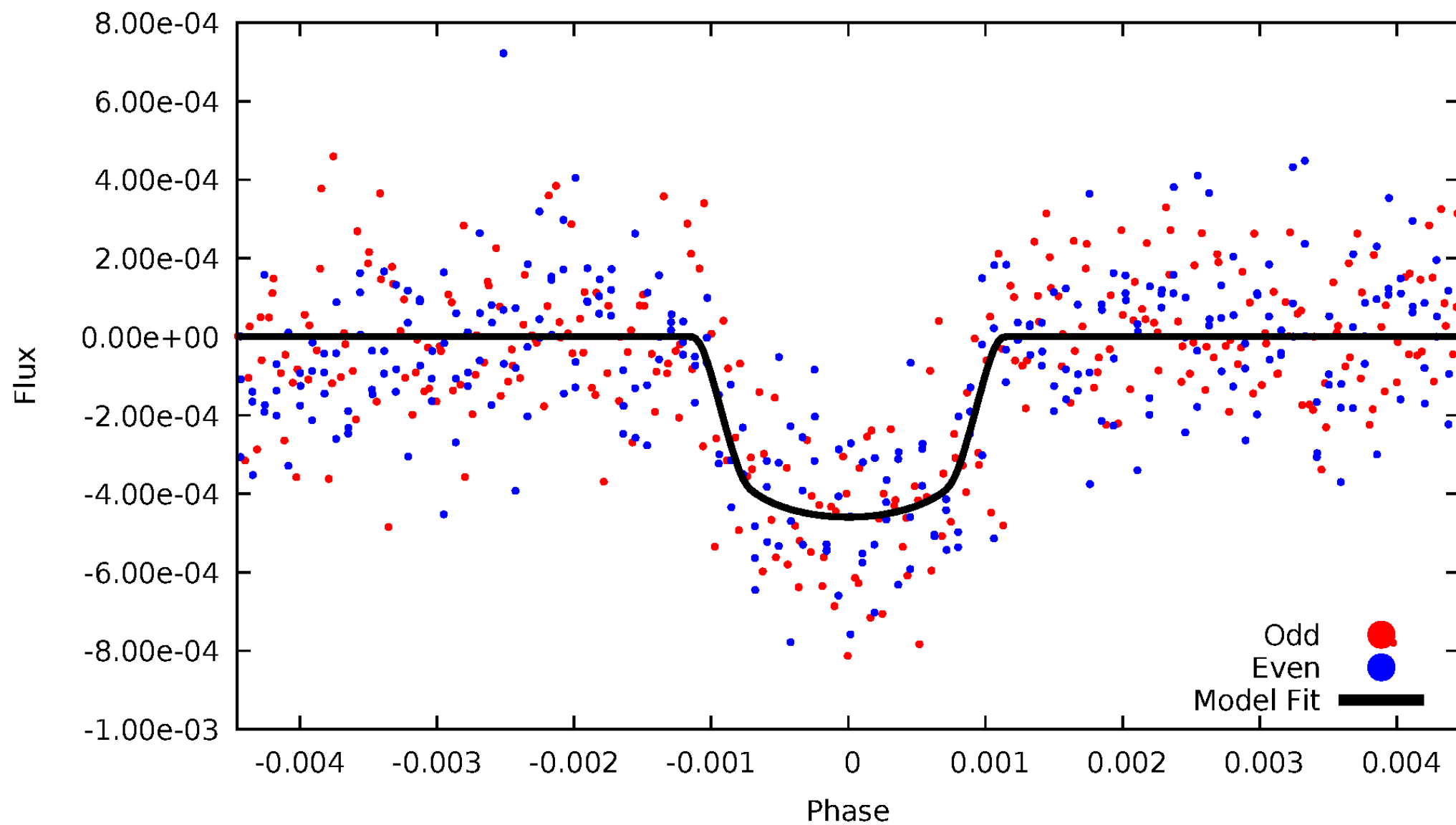


TCE 009009953-01



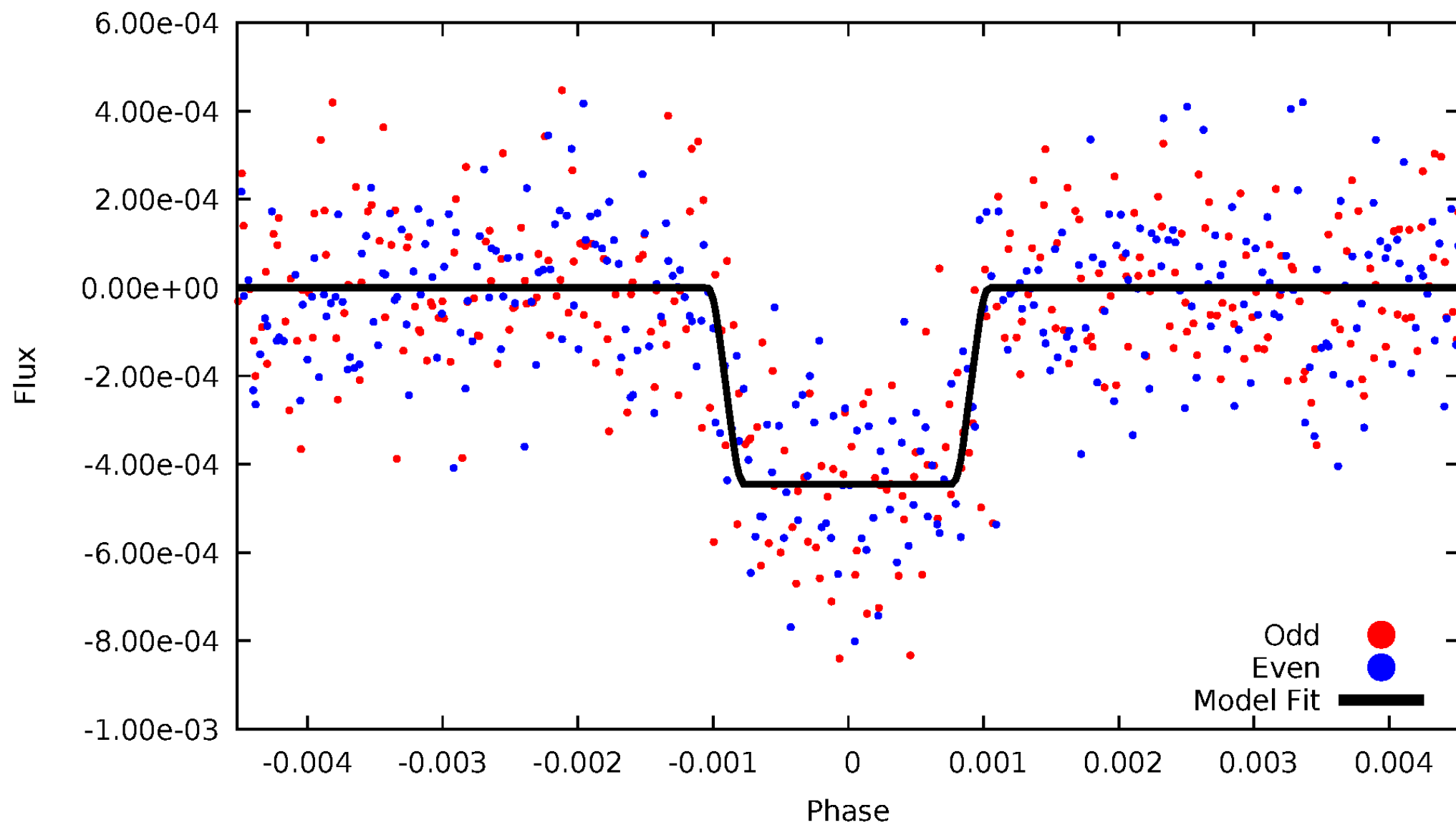
DV Odd/Even

TCE 009009953-01

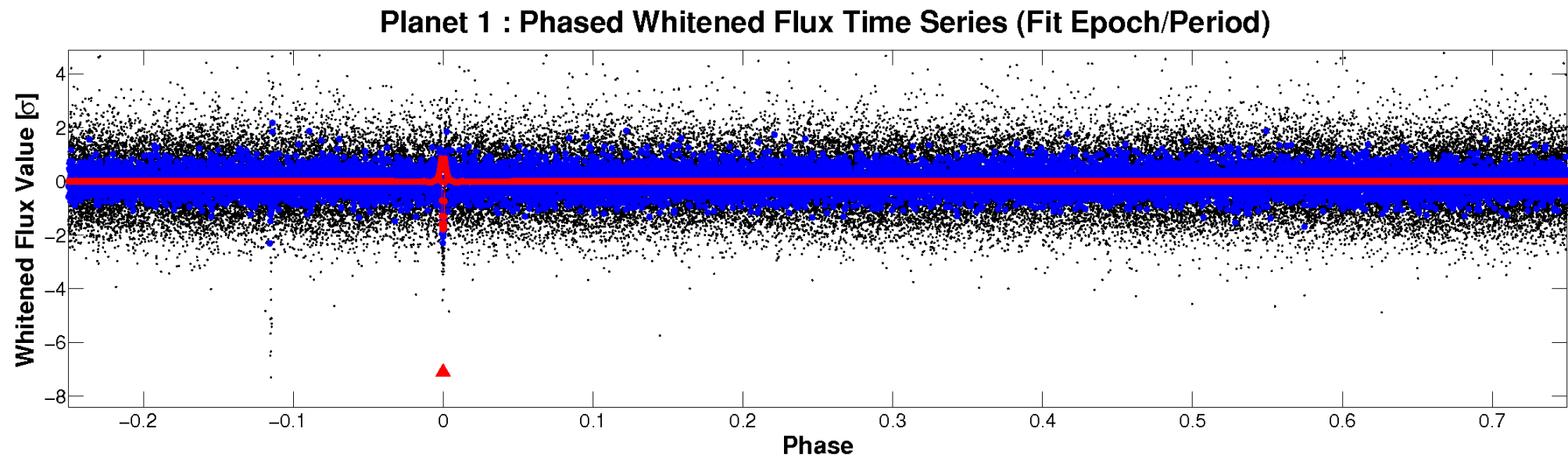
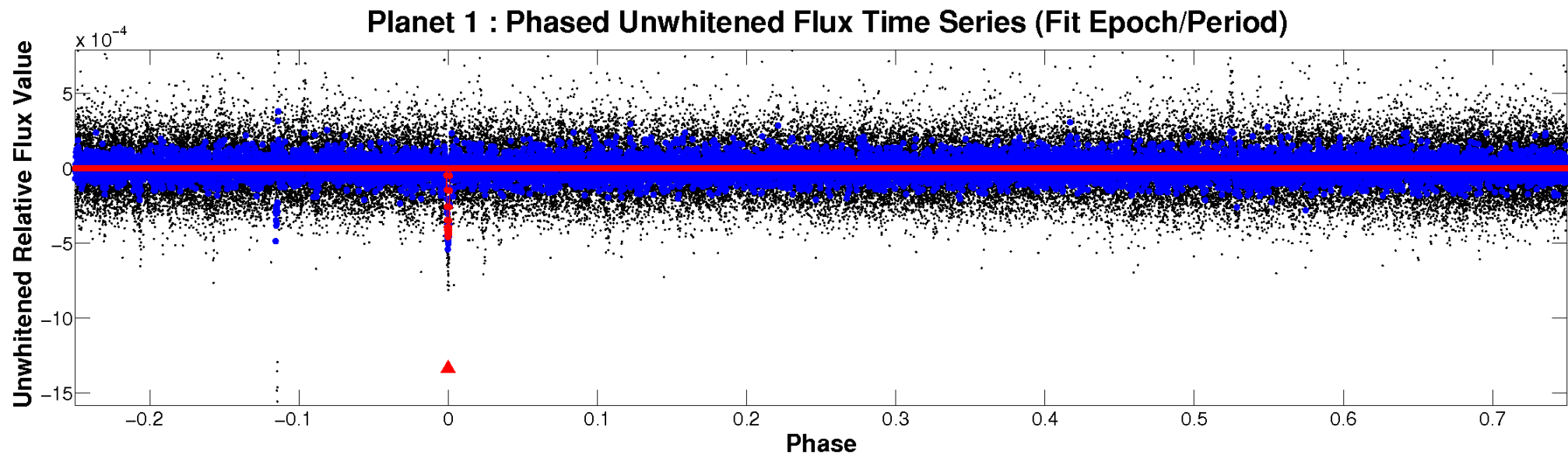


ALT Odd/Even

TCE 009009953-01

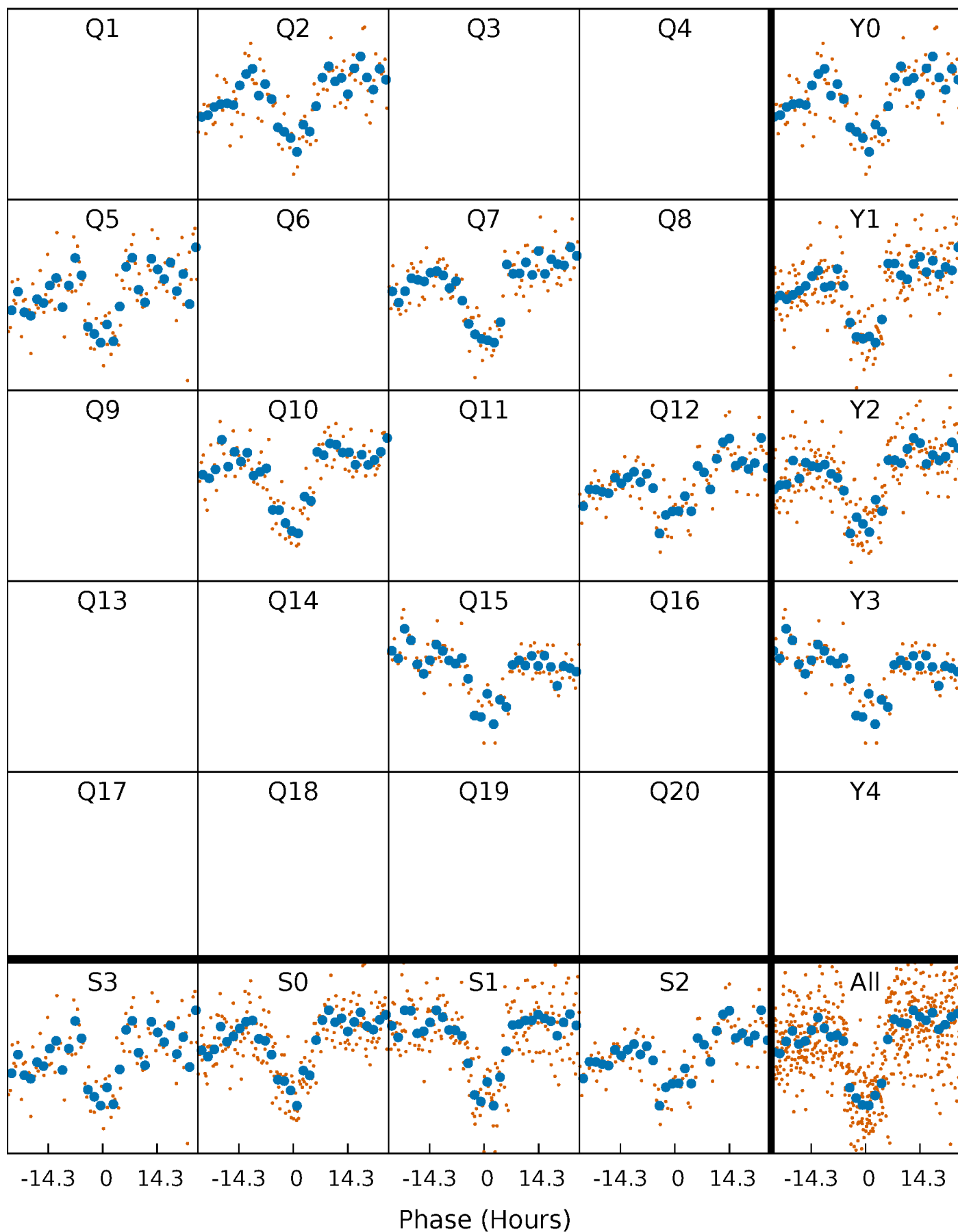


Non-Whitened Vs. Whitened Light Curve



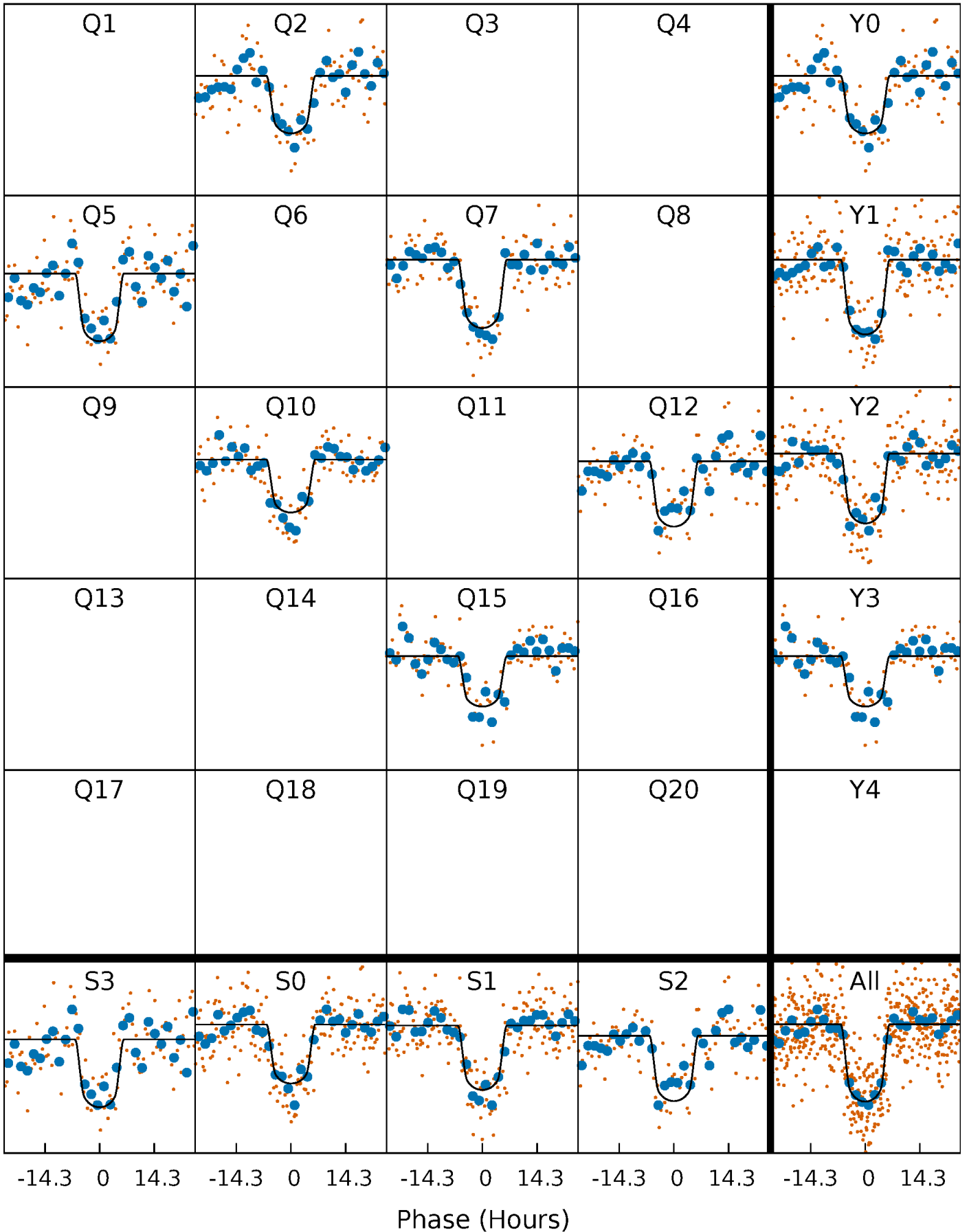
PDC Quarter-Phased Transit Curves

TCE 009009953-01 P=234.239258 Days $T_0=210.813333$ (BKJD)



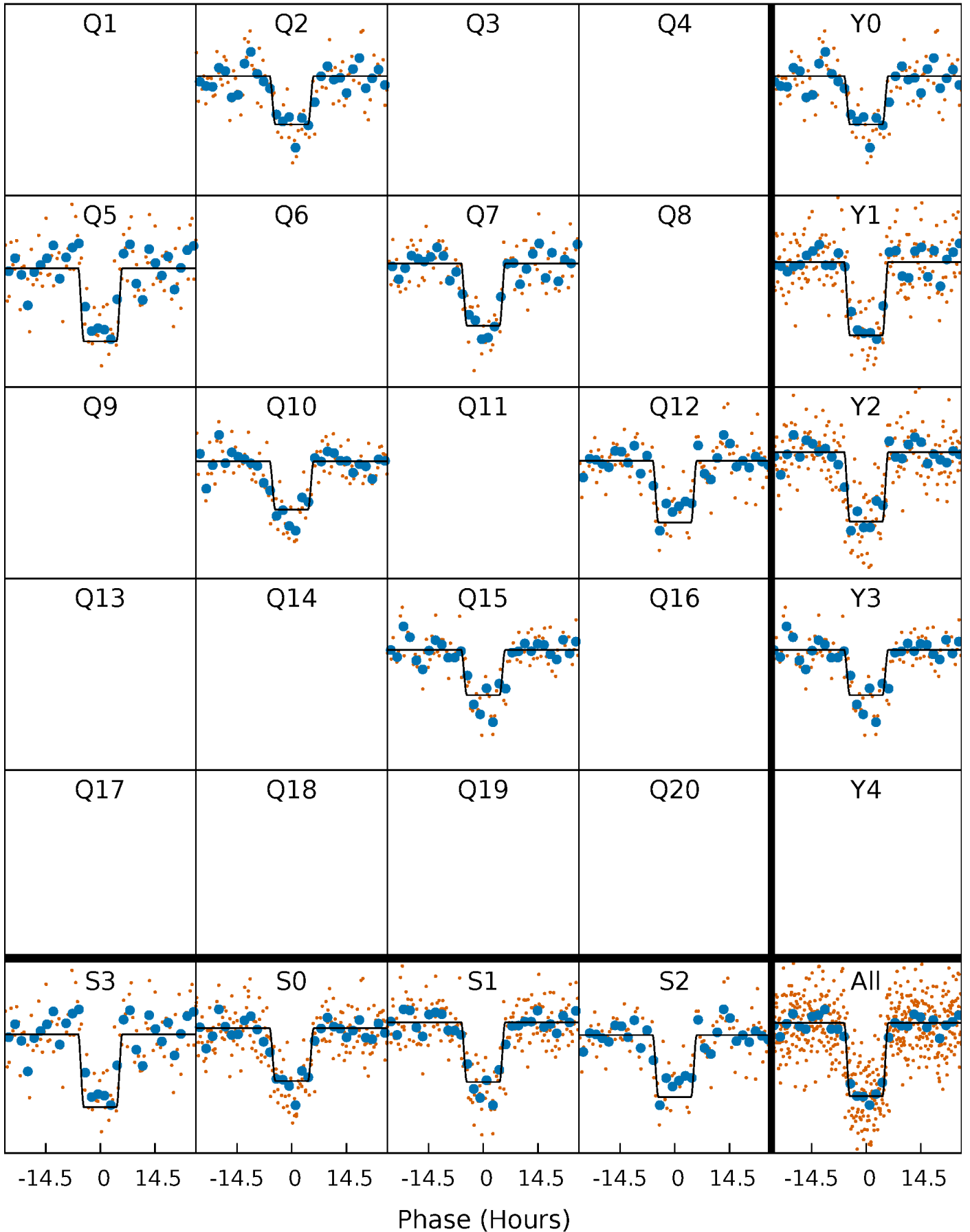
DV Quarter-Phased Transit Curves

TCE 009009953-01 $P=234.239258$ Days $T_0=210.813333$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

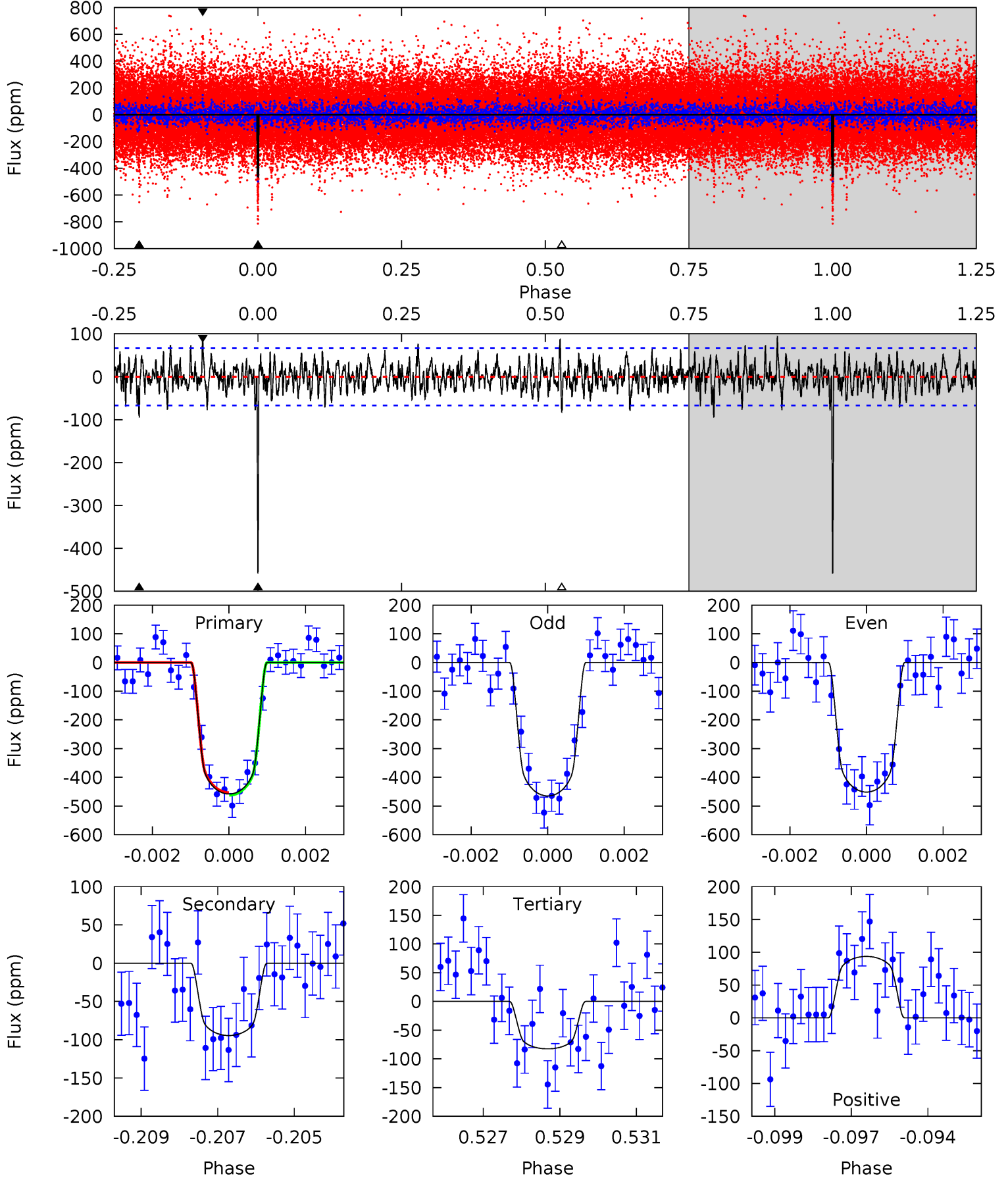
TCE 009009953-01 P=234.243521 Days $T_0=210.805930$ (BKJD)



DV Model-Shift Uniqueness Test

009009953-01, P = 234.239258 Days, E = 210.813333 Days

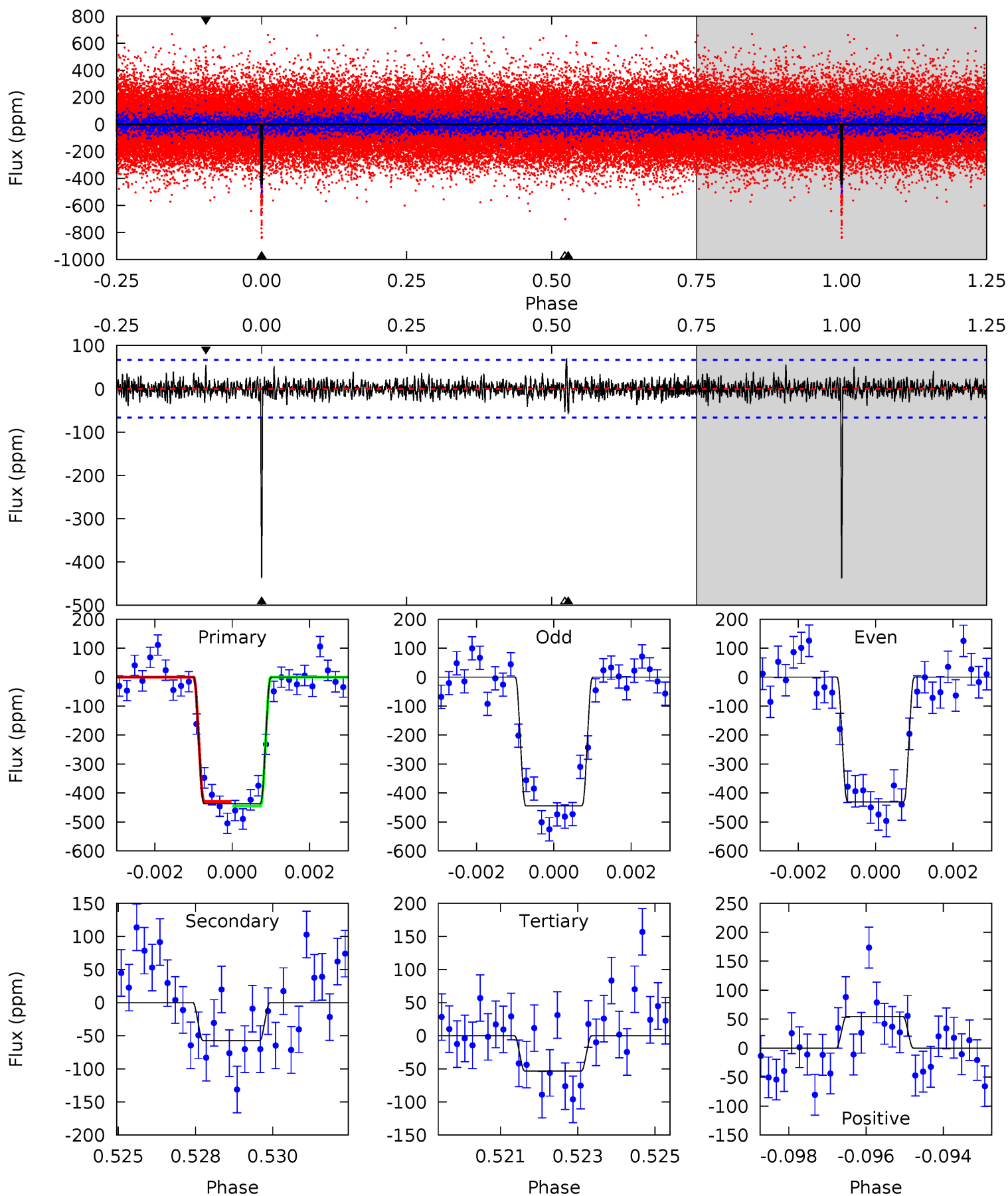
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.3	7.48	6.53	7.41	5.30	3.05	1.97	29.7	28.9	0.95	0.08	0.54	0.96	0.17	0.36



Alt Model-Shift Uniqueness Test

009009953-01, P = 234.243521 Days, E = 210.805930 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.9	4.60	4.25	4.36	5.32	3.08	0.99	30.7	30.6	0.35	0.24	0.55	0.94	0.14	0.60



Stellar Parameters For KIC 009009953

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5814^{+78}_{-78}	$4.269^{+0.137}_{-0.112}$	$0.160^{+0.150}_{-0.150}$	$1.248^{+0.209}_{-0.209}$	$1.055^{+0.081}_{-0.067}$	$0.765^{+0.497}_{-0.259}$
	+1%/-1%	+3%/-3%	+94%/-94%	+17%/-17%	+8%/-6%	+65%/-34%
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 009009953-01 / KOI 4014.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-95 ± 13	$3.32^{+0.32}_{-0.35}$	460^{+20}_{-21}	3991^{+121}_{-121}	2713^{+754}_{-559}
Alt.	-58 ± 13	$2.87^{+0.29}_{-0.31}$	458^{+21}_{-20}	3861^{+152}_{-172}	2267^{+715}_{-629}

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 $A_{obs} \gg 1.0$

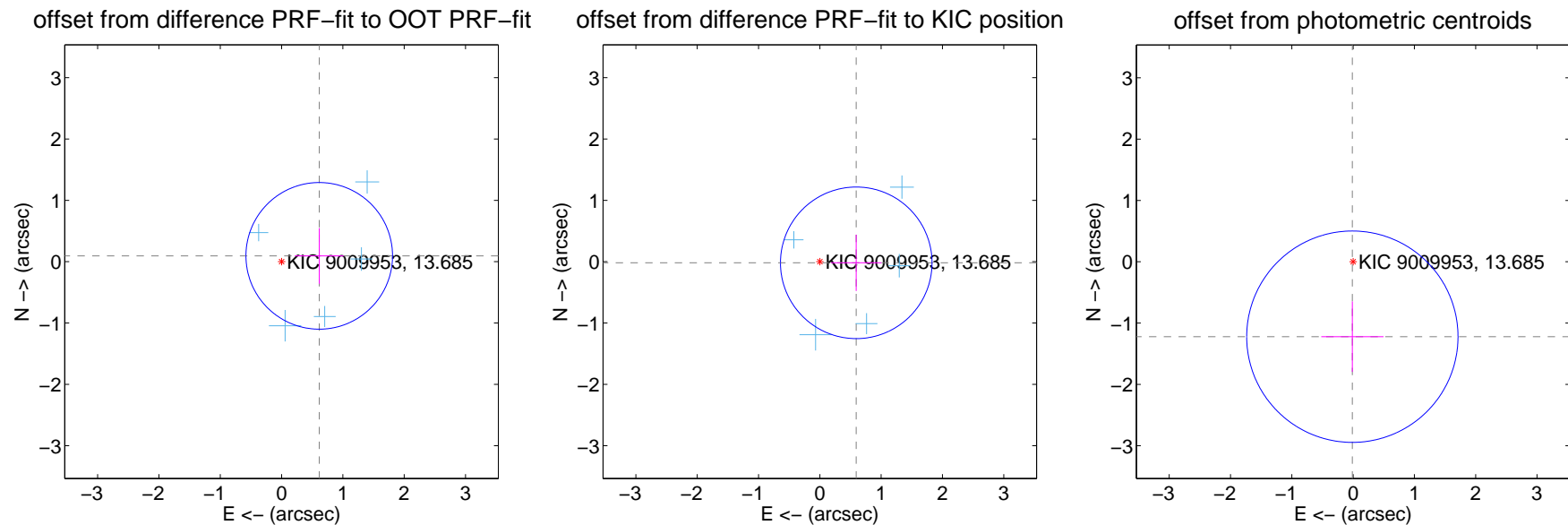
DV Centroid Data

Supplemental centroid analysis for 009009953-01. Kepler magnitude: 13.69. Transit SNR 19.49

There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.621 ± 0.398	1.56	-0.614 ± 0.397	0.095 ± 0.453
PRF-fit source offset from KIC position	0.594 ± 0.412	1.44	-0.594 ± 0.412	-0.018 ± 0.458
photometric centroid source offset	1.22 ± 0.57	2.13	0.01 ± 0.51	-1.22 ± 0.57



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.

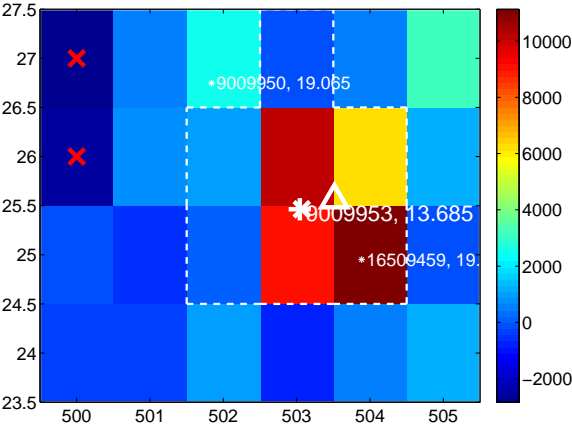
Q1 no difference image



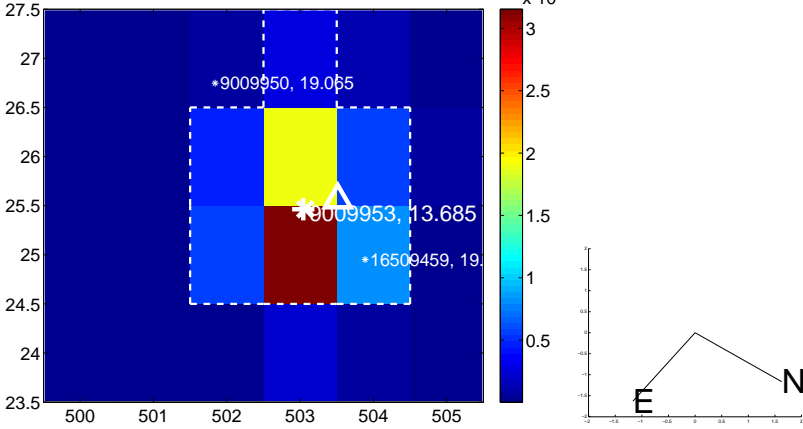
Q1 no OOT image



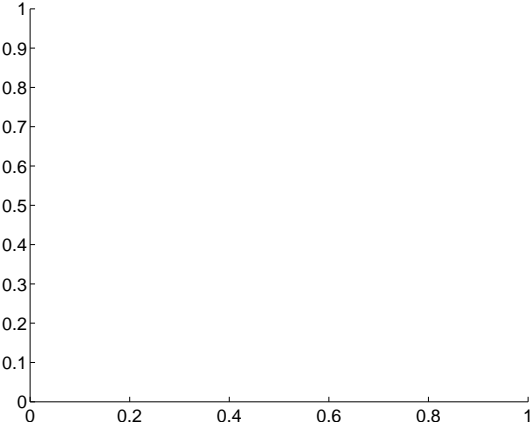
Q2 difference image



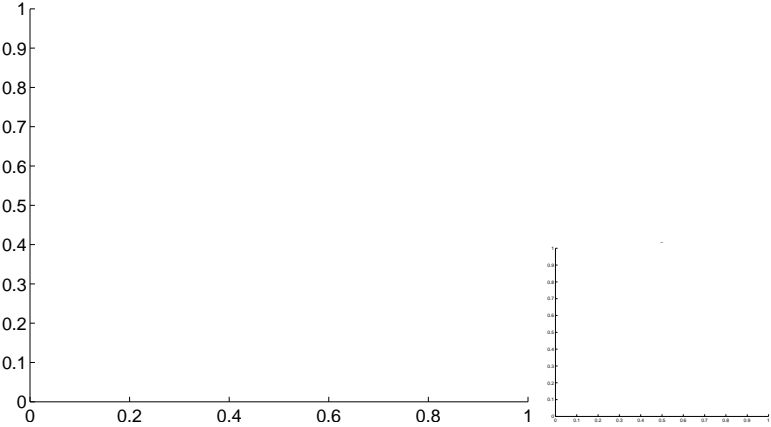
Q2 OOT image



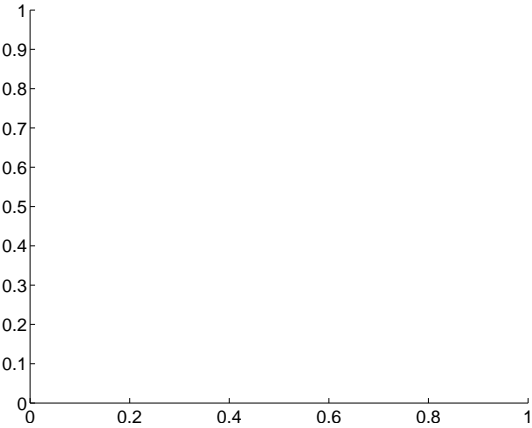
Q3 no difference image



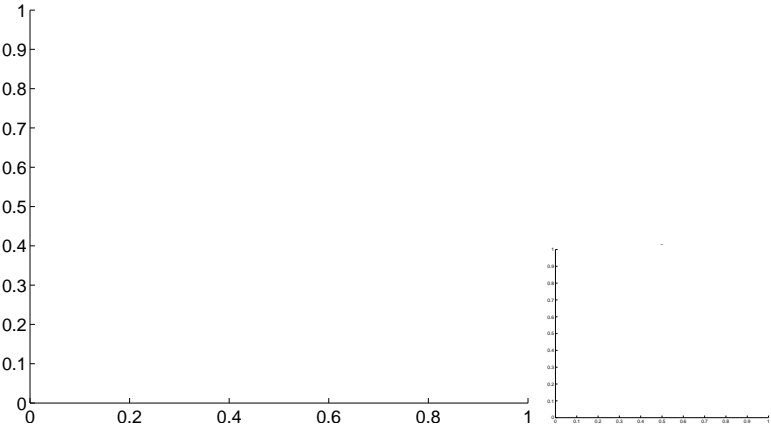
Q3 no OOT image



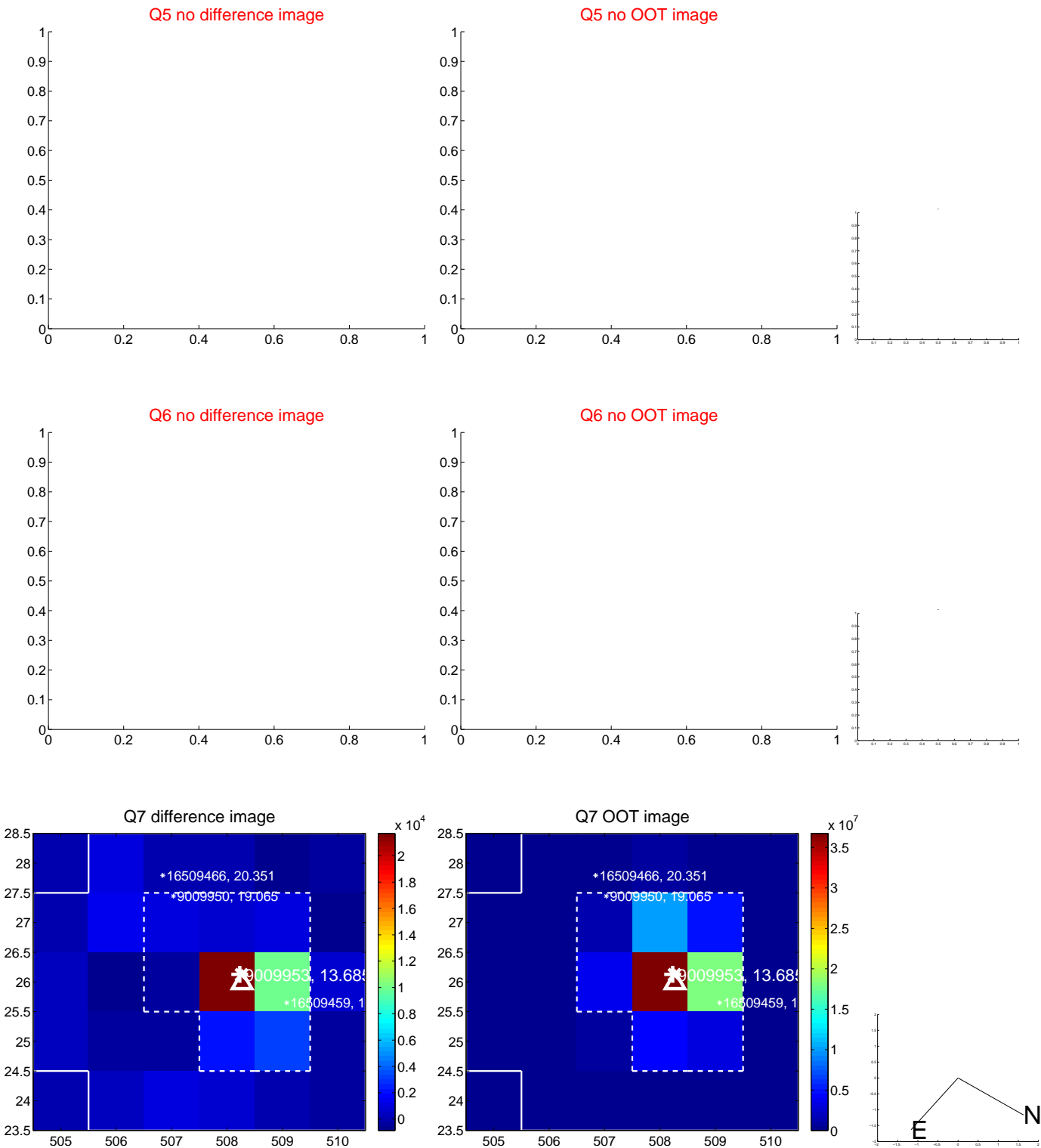
Q4 no difference image



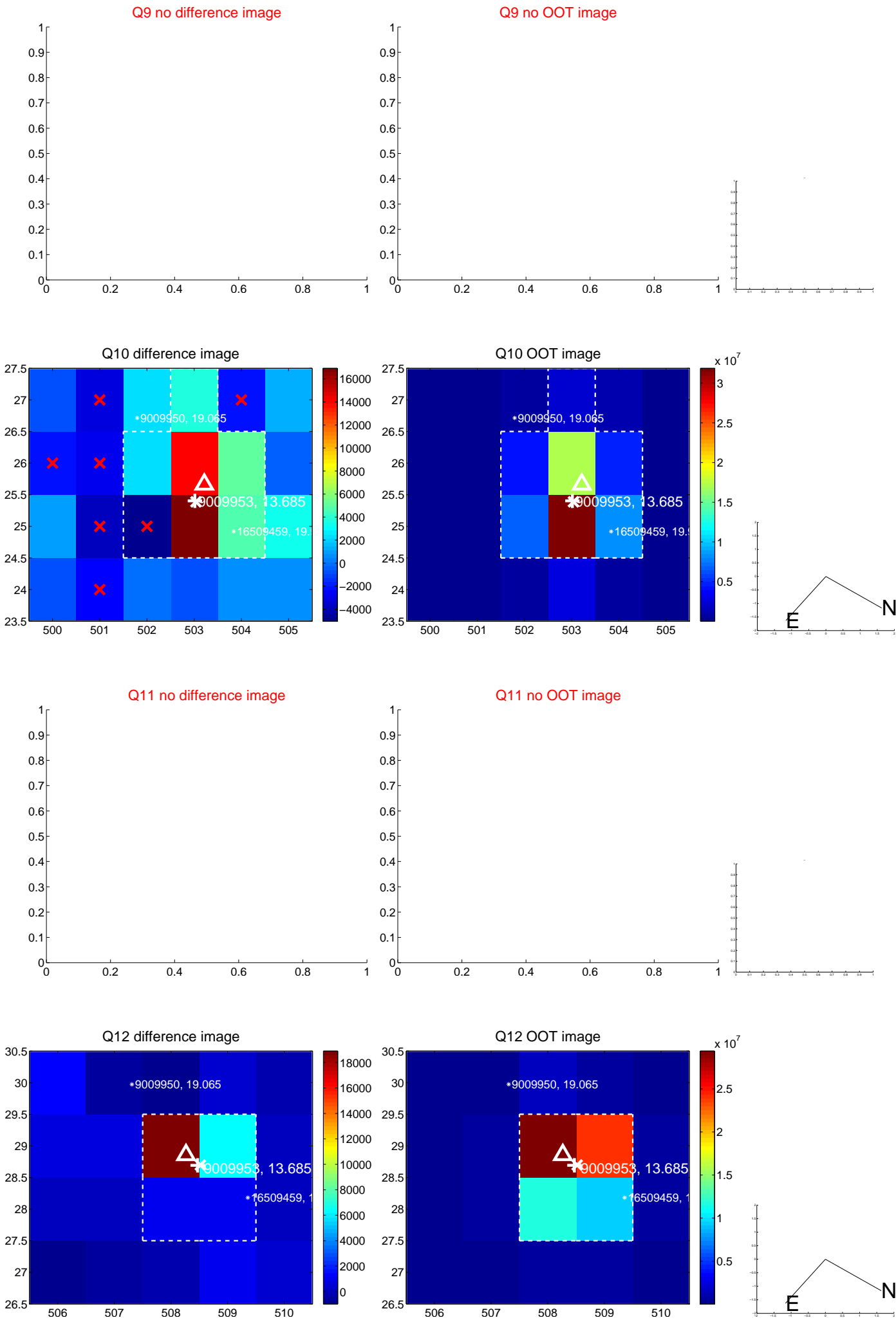
Q4 no OOT image



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

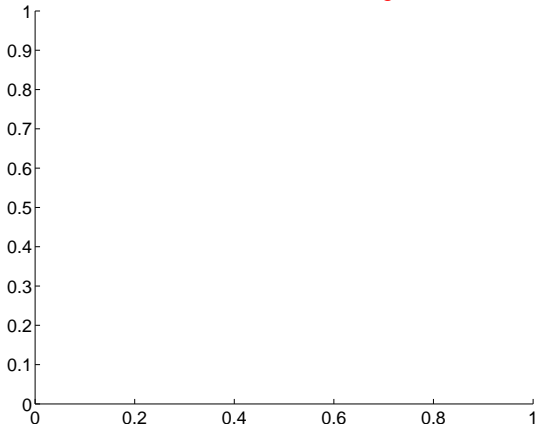


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

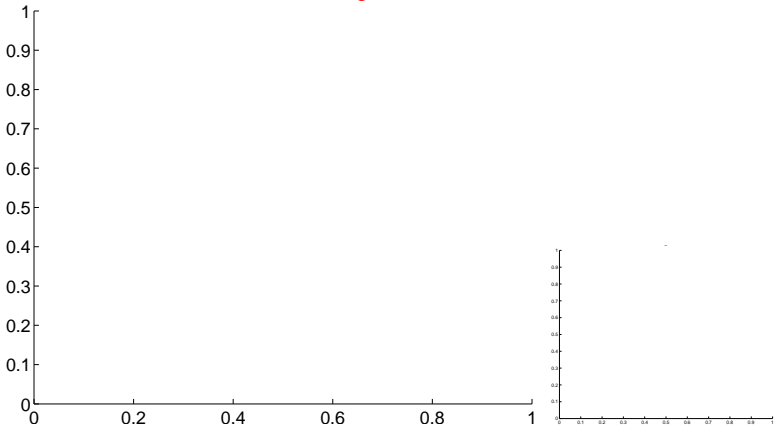


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

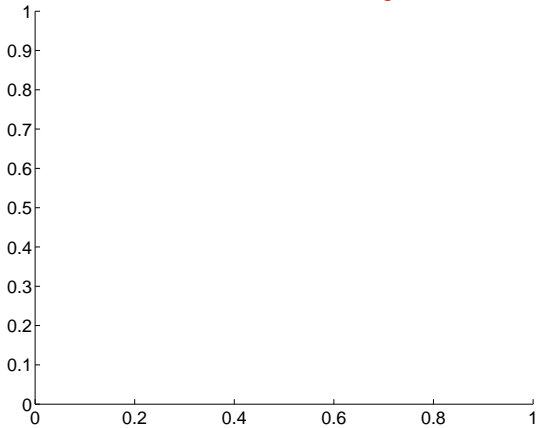
Q13 no difference image



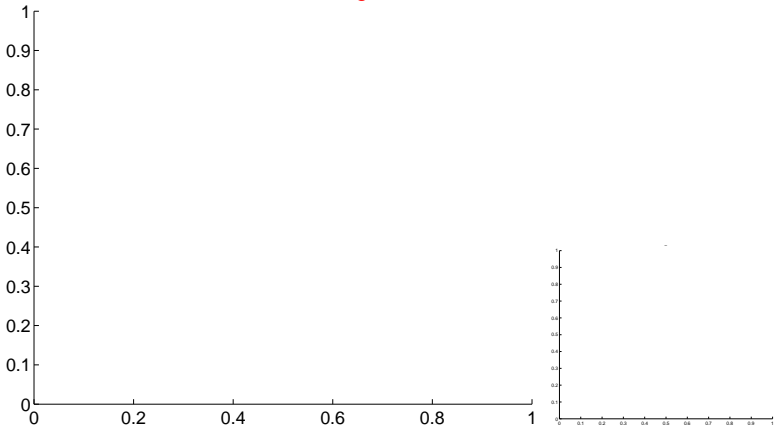
Q13 no OOT image



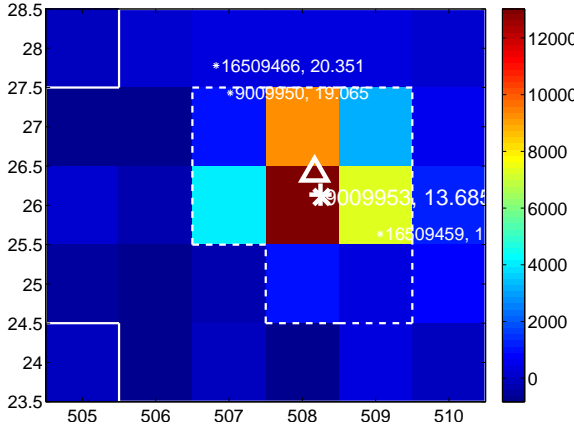
Q14 no difference image



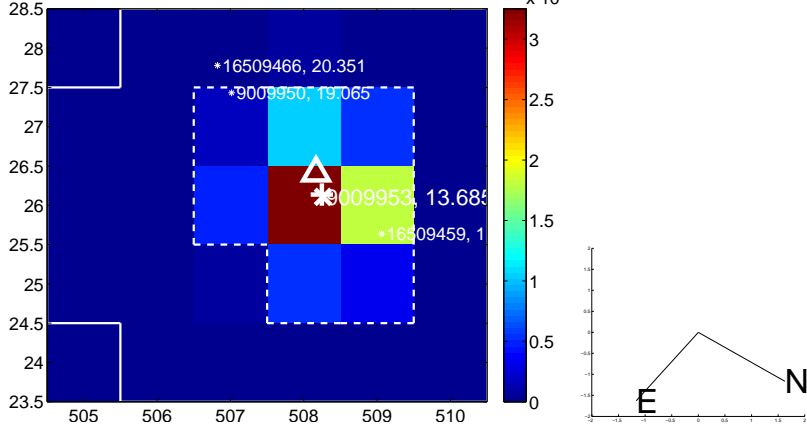
Q14 no OOT image



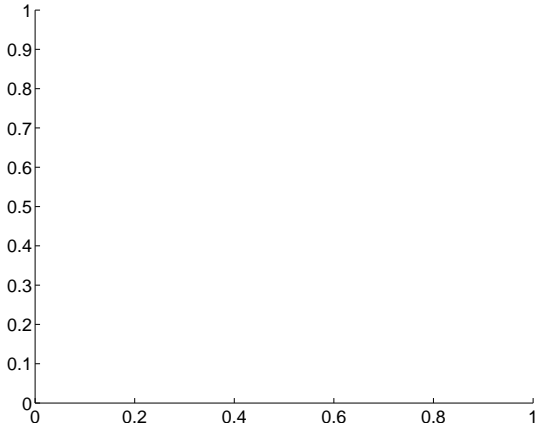
Q15 difference image



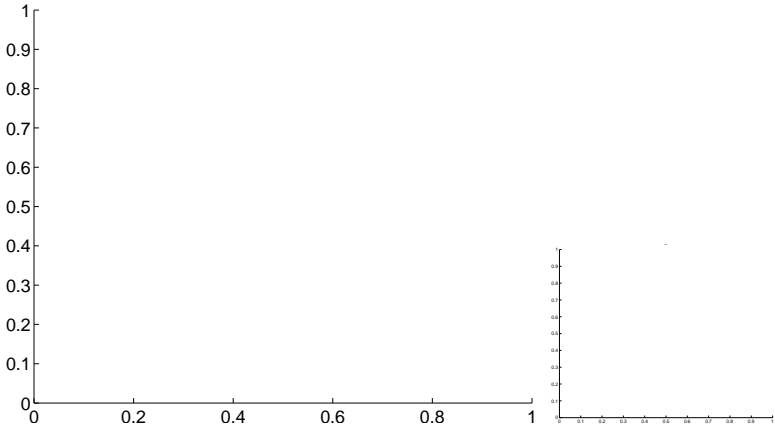
Q15 OOT image



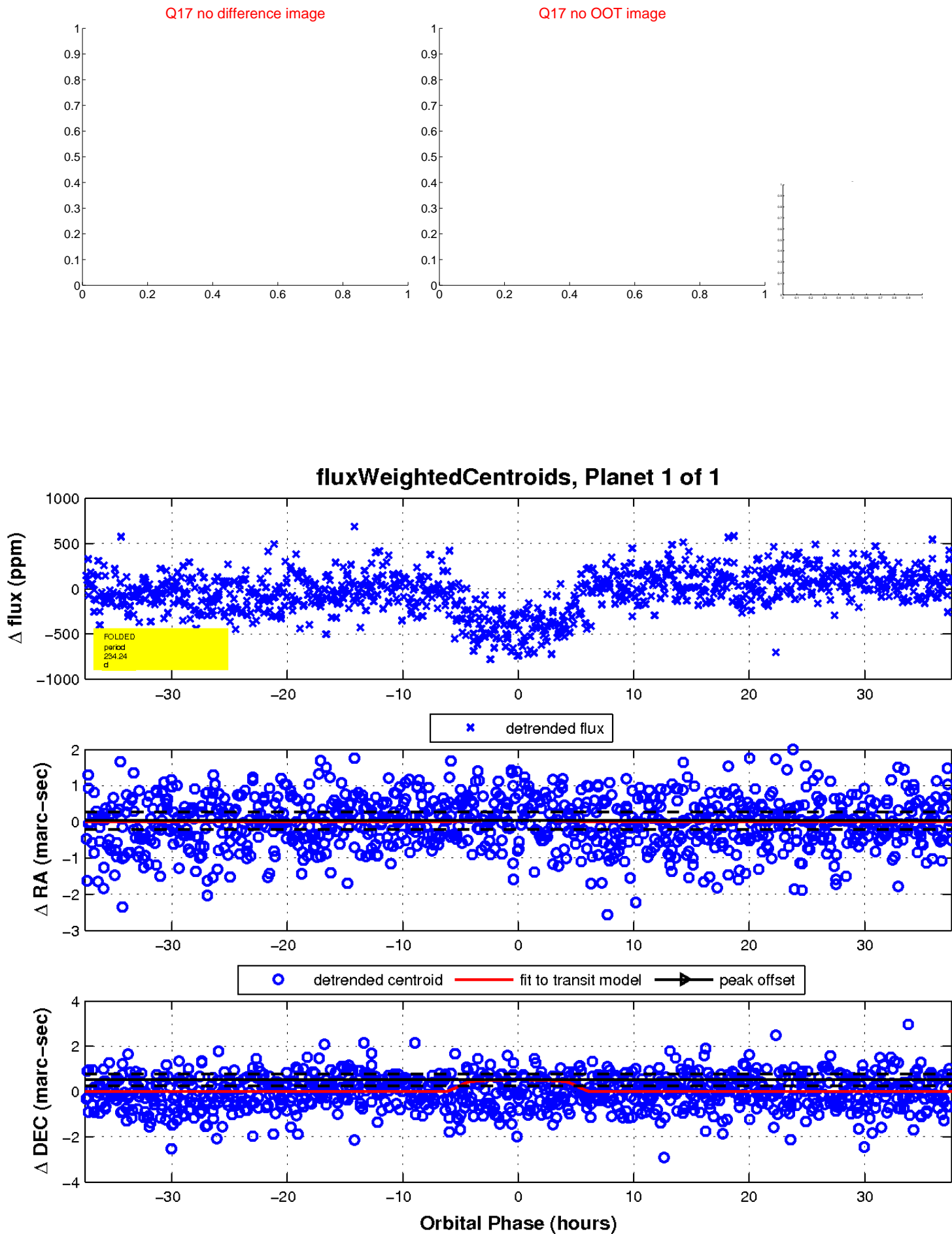
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

