

KIC 003103227

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})
003103227-01	OBS	4091.01	225.584751	272.796169	743.0	11.200	16.4	16.7	1.36	5929	3.96	3.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003103227-01	OBS	PC	0.96	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.

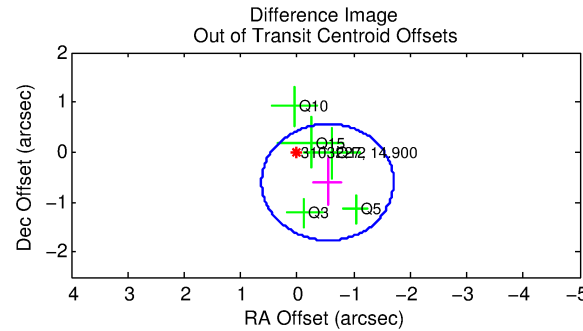
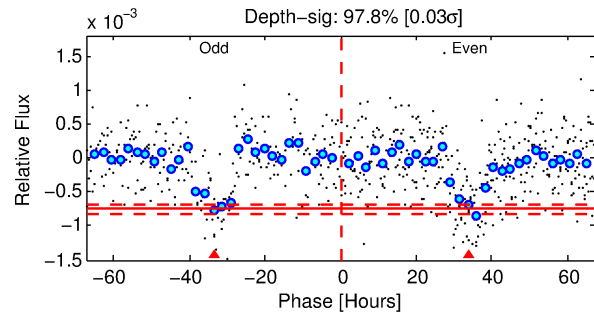
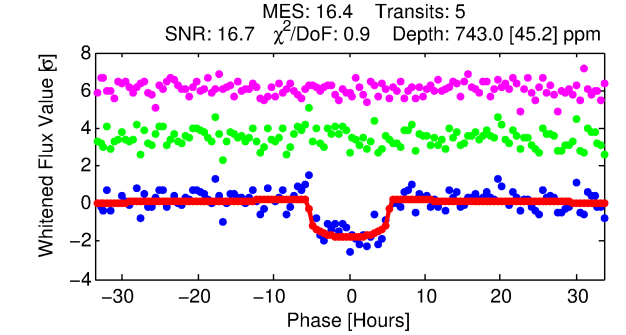
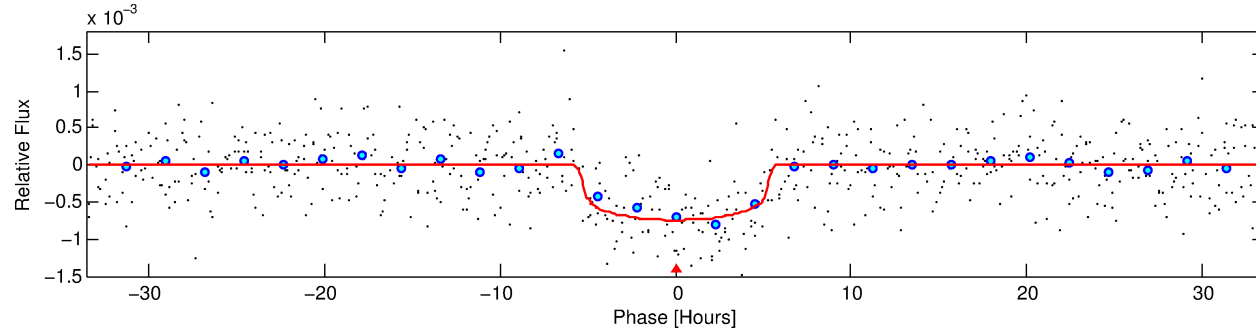
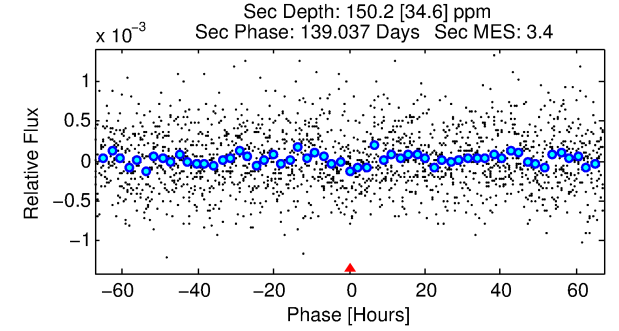
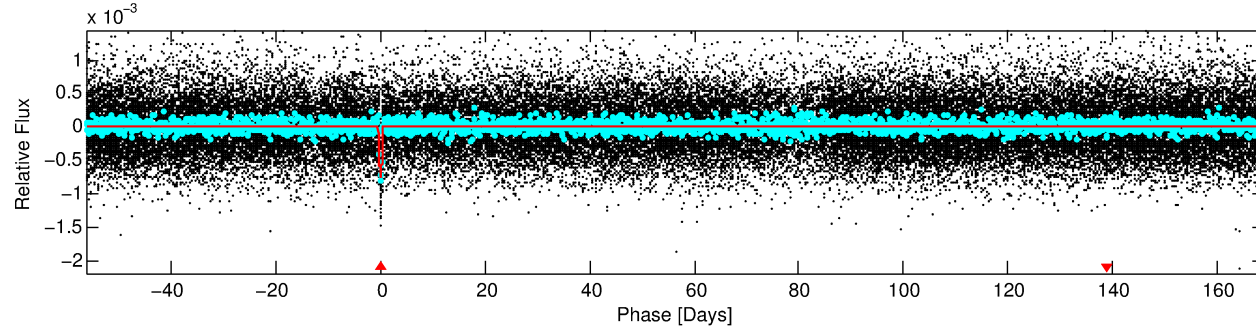
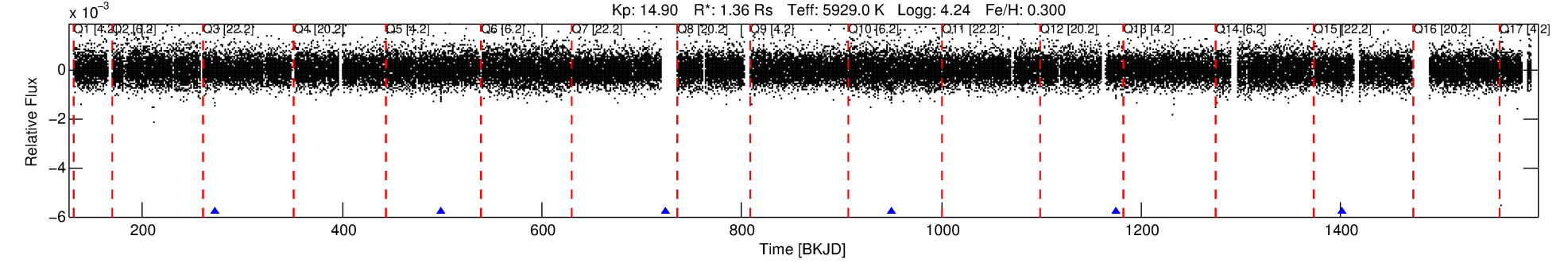
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003103227-01

No Significant Match Found

DV One-Page Summary

KIC: 3103227 Candidate: 1 of 1 Period: 225.585 d
KOI: K04091.01 Corr: 0.993



DV Fit Results:

Period = 225.58475 [0.00323] d
Epoch = 272.7962 [0.0100] BKJD
Rp/R* = 0.0266 [0.0077]
a/R* = 116.77 [148.23]
b = 0.69 [0.97]
Seff = 3.49 [0.86]
Teq = 349 [22] K
Rp = 3.96 [1.34] Re
a = 0.7678 [0.1203] AU
Ag = 3114.05 [2086.80] [1.49 σ]
Teffp = 4025 [631] K [5.82 σ]

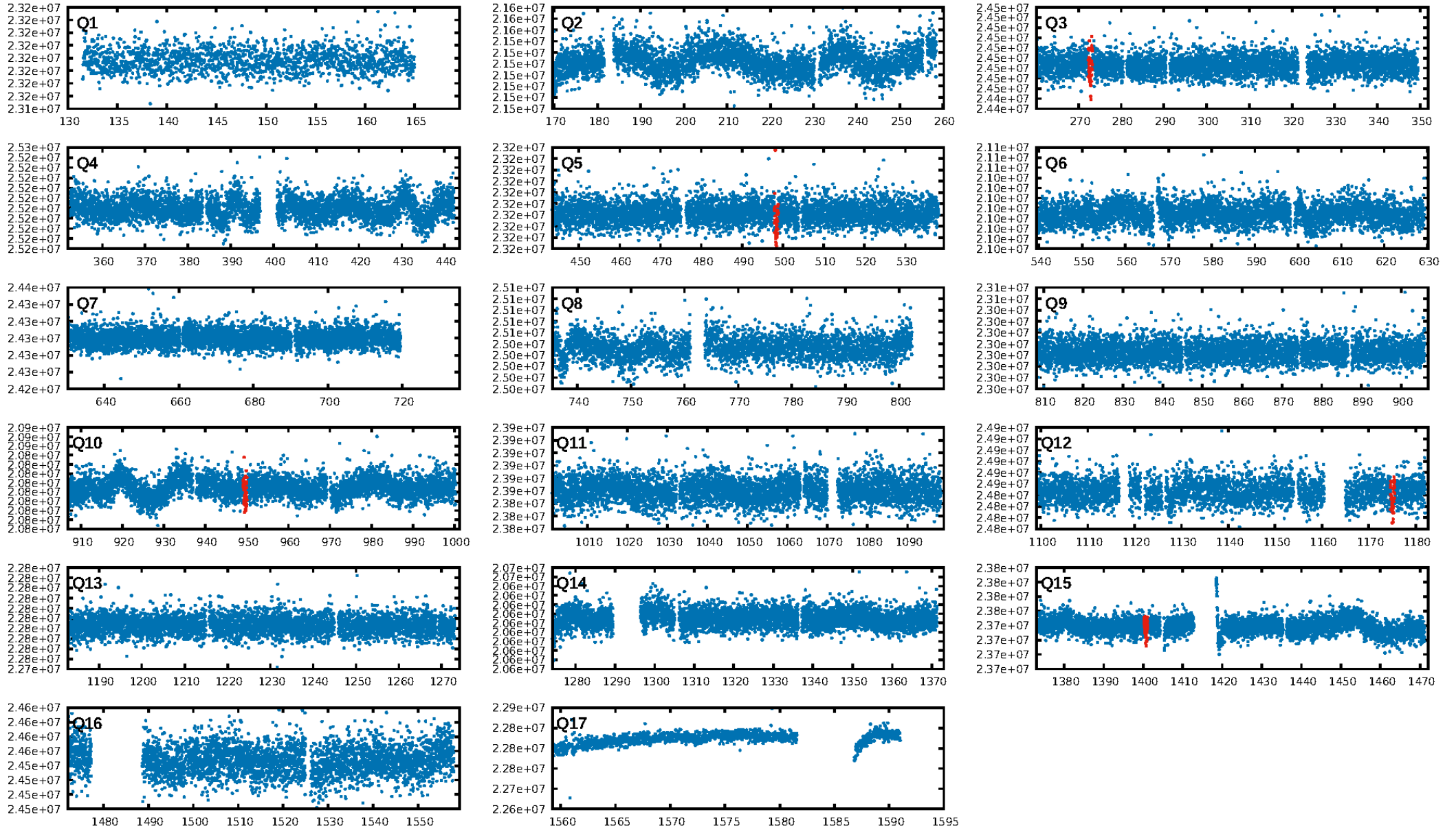
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 44.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.04e-34
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -7.93
Centroid-sig: 15.9%
Centroid-so: 0.915 arcsec [1.14 σ]
OotOffset-rm: 0.806 arcsec [2.07 σ]
KicOffset-rm: 0.734 arcsec [1.71 σ]
OotOffset-st: 1/2/1/1 [5]
KicOffset-st: 1/2/1/1 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [5/5]

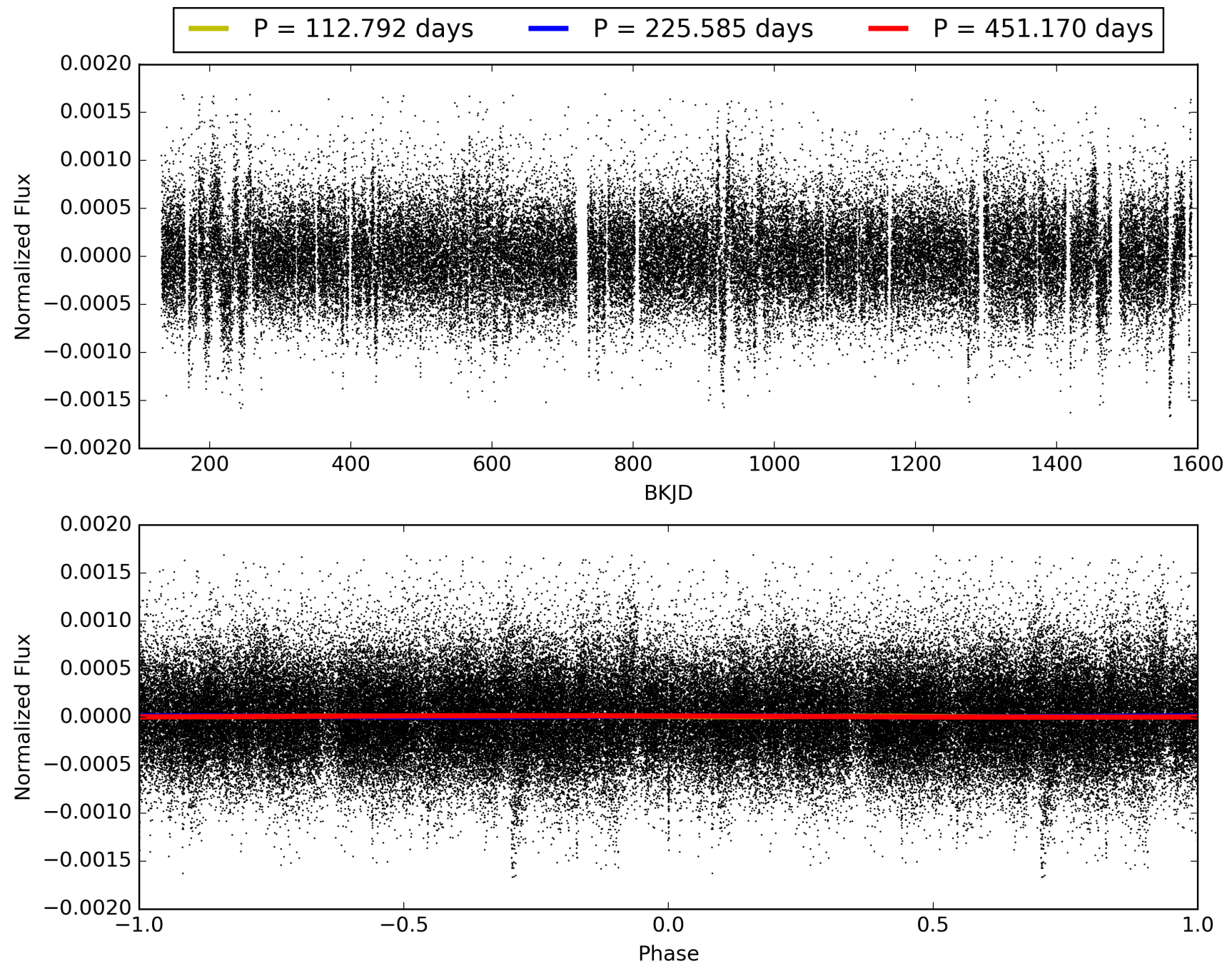
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:44:24 Z

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

TCE 003103227-01, PDC Light Curves

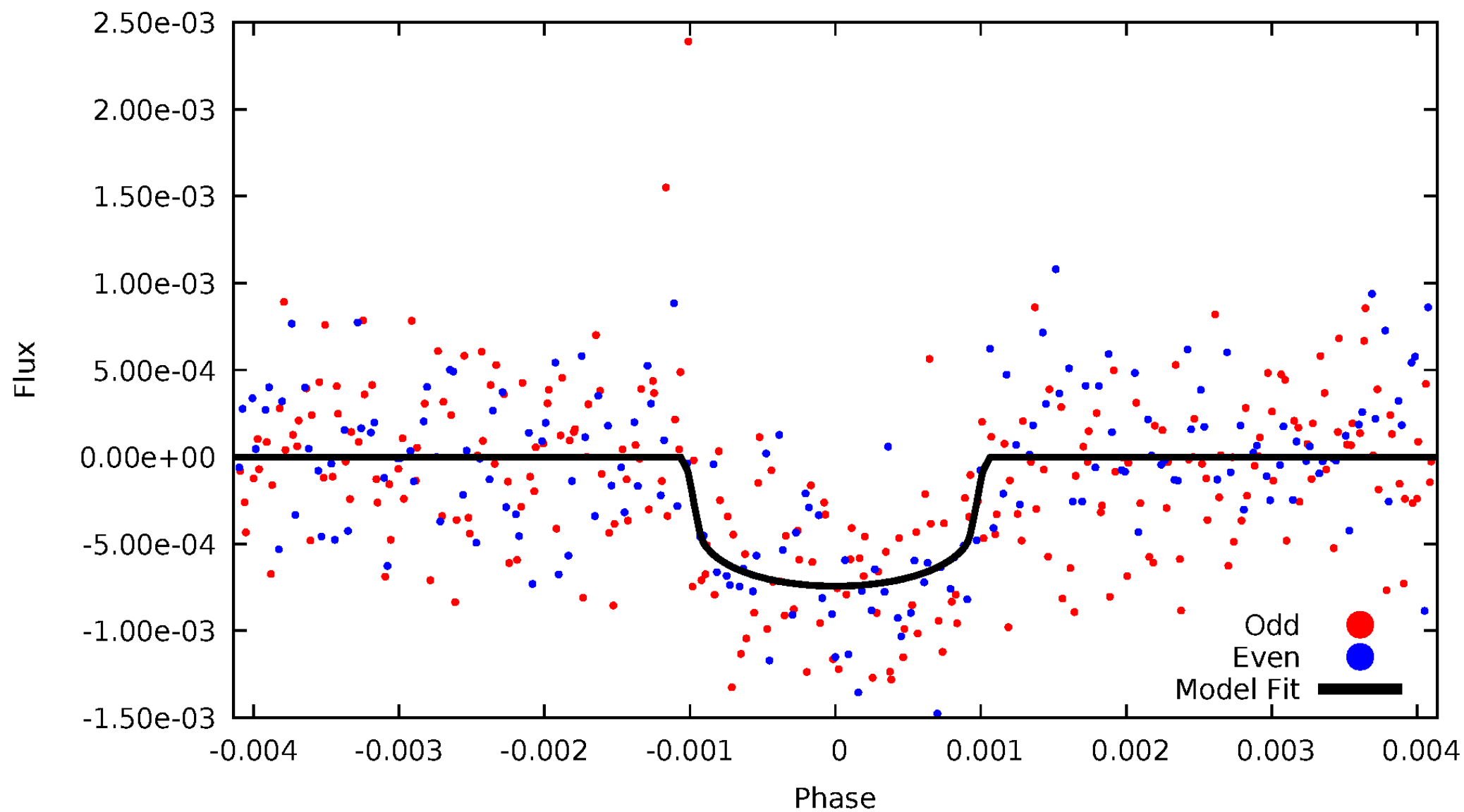


TCE 003103227-01



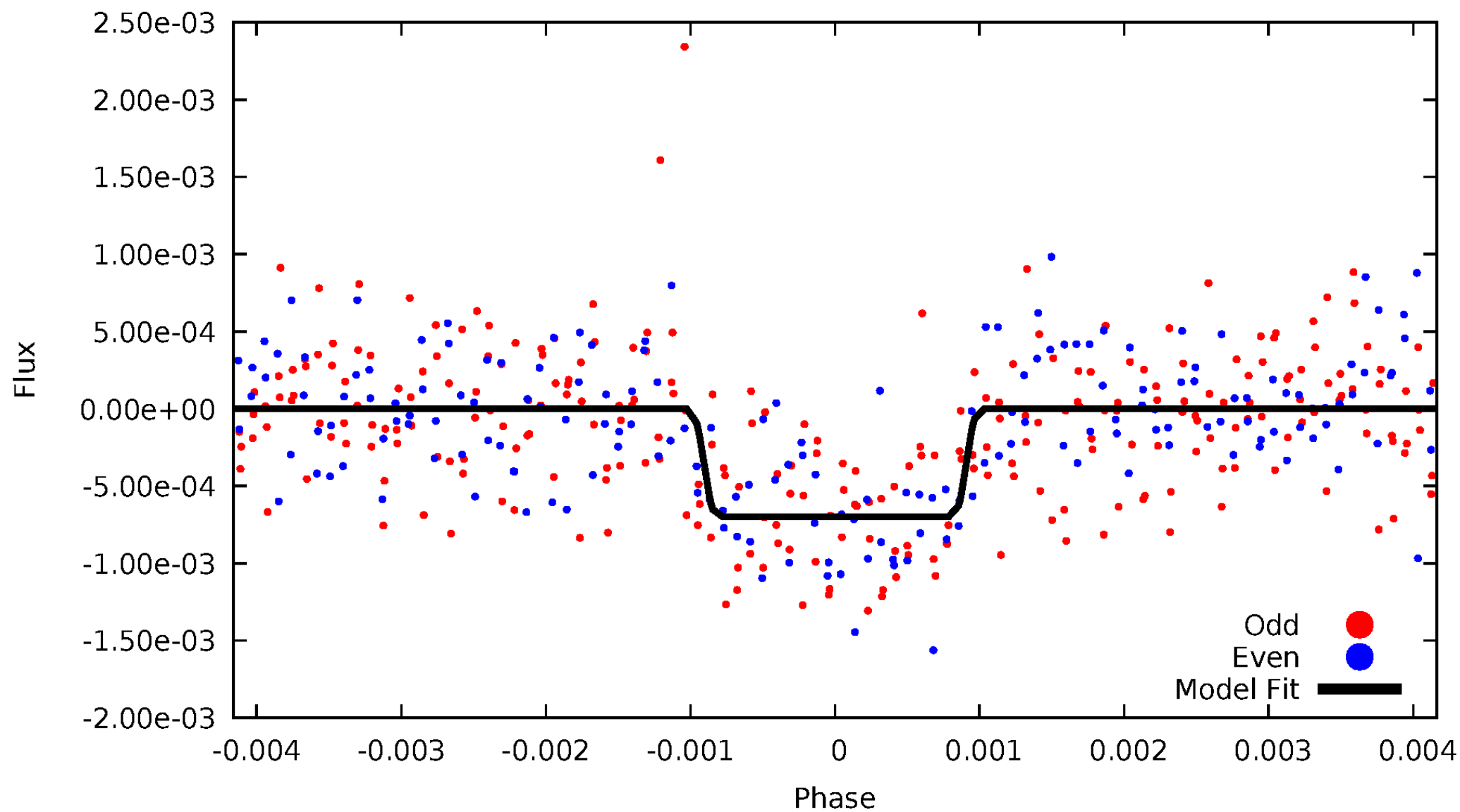
DV Odd/Even

TCE 003103227-01



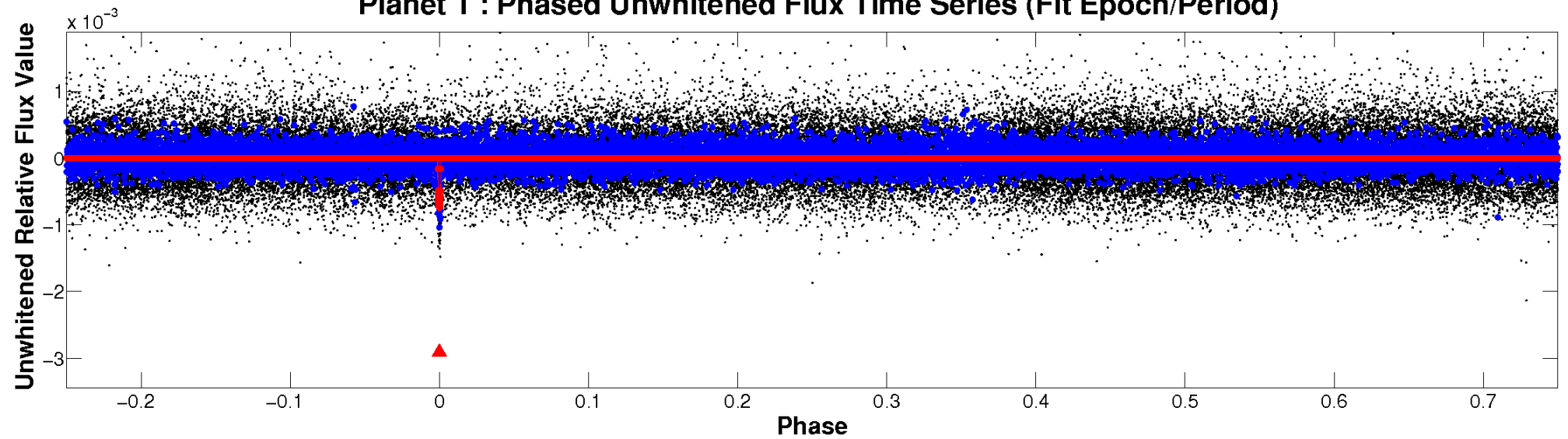
ALT Odd/Even

TCE 003103227-01

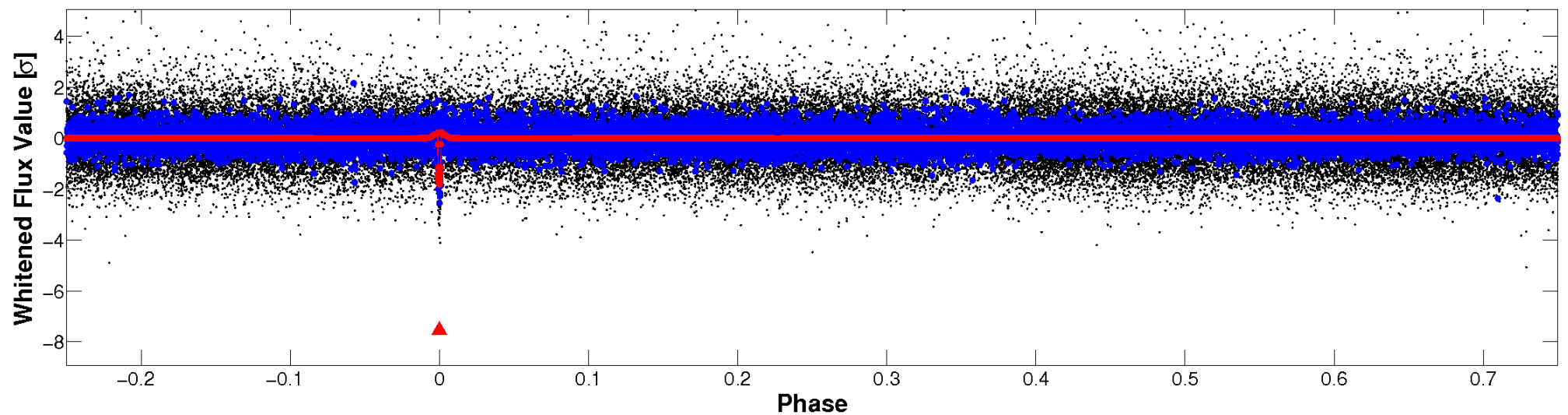


Non-Whitened Vs. Whitened Light Curve

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

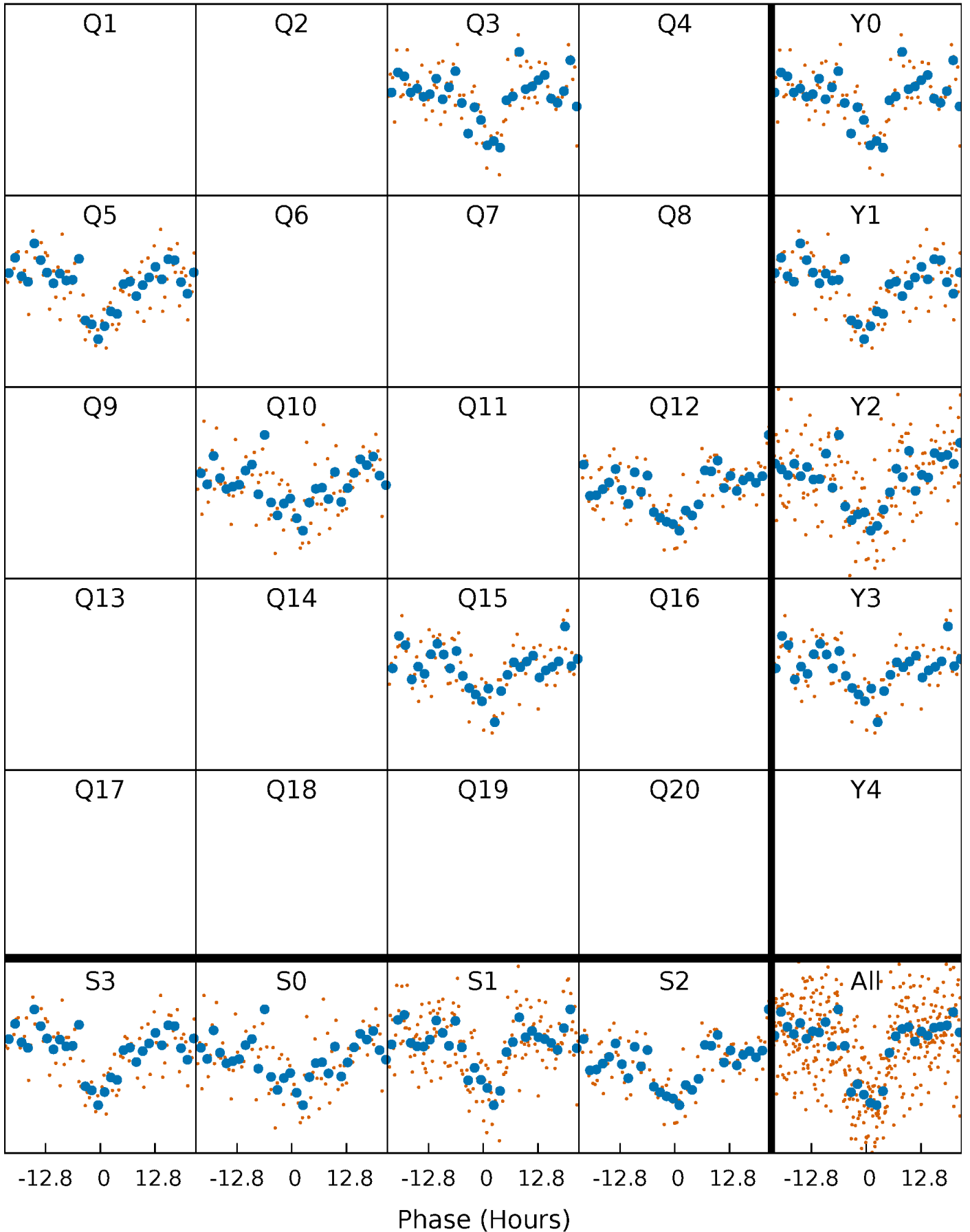


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 003103227-01 P=225.584751 Days $T_0=272.796169$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 003103227-01 P=225.584751 Days $T_0=272.796169$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

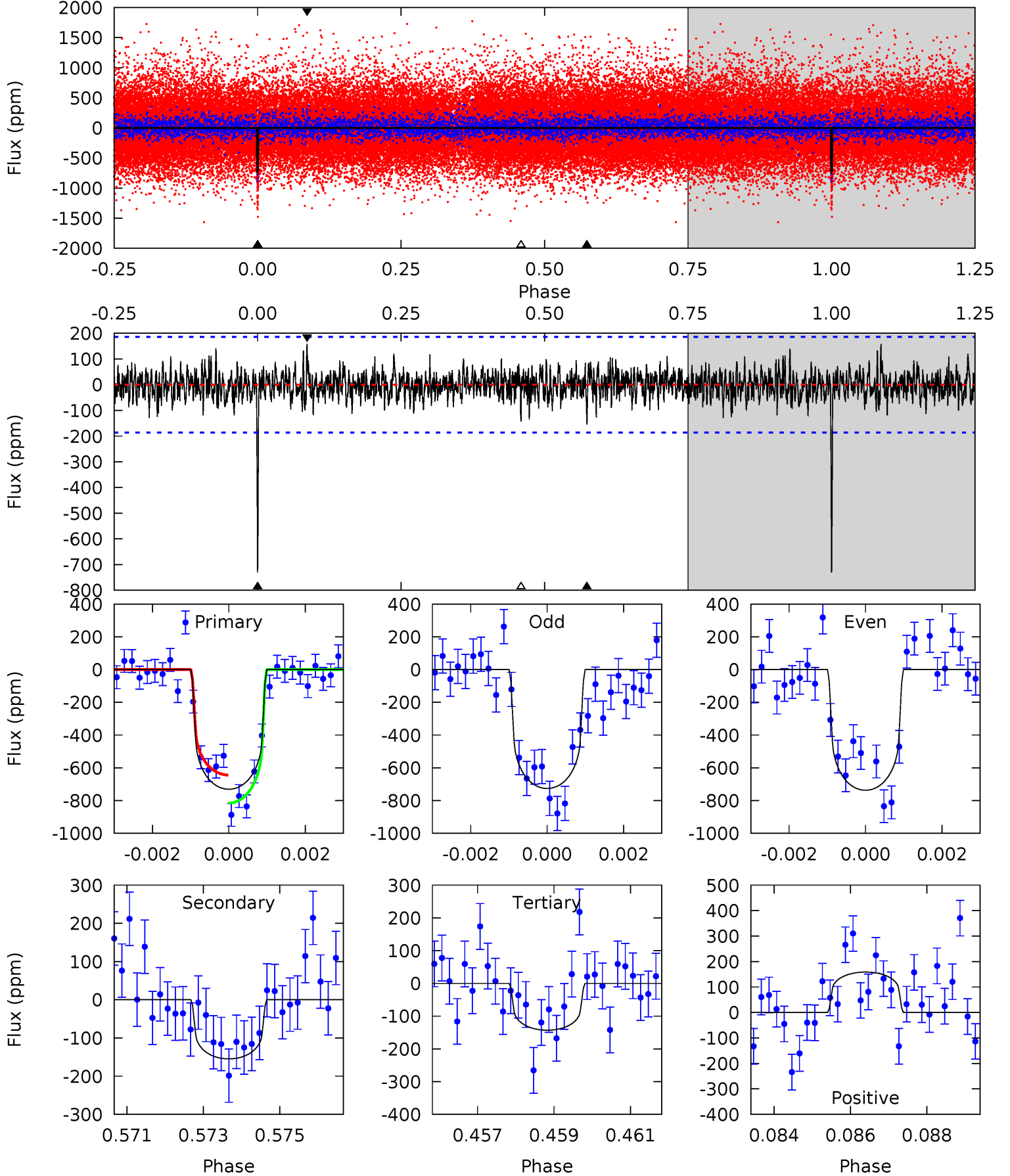
TCE 003103227-01 P=225.586502 Days $T_0=272.800887$ (BKJD)



DV Model-Shift Uniqueness Test

003103227-01, $P = 225.584751$ Days, $E = 47.211418$ Days

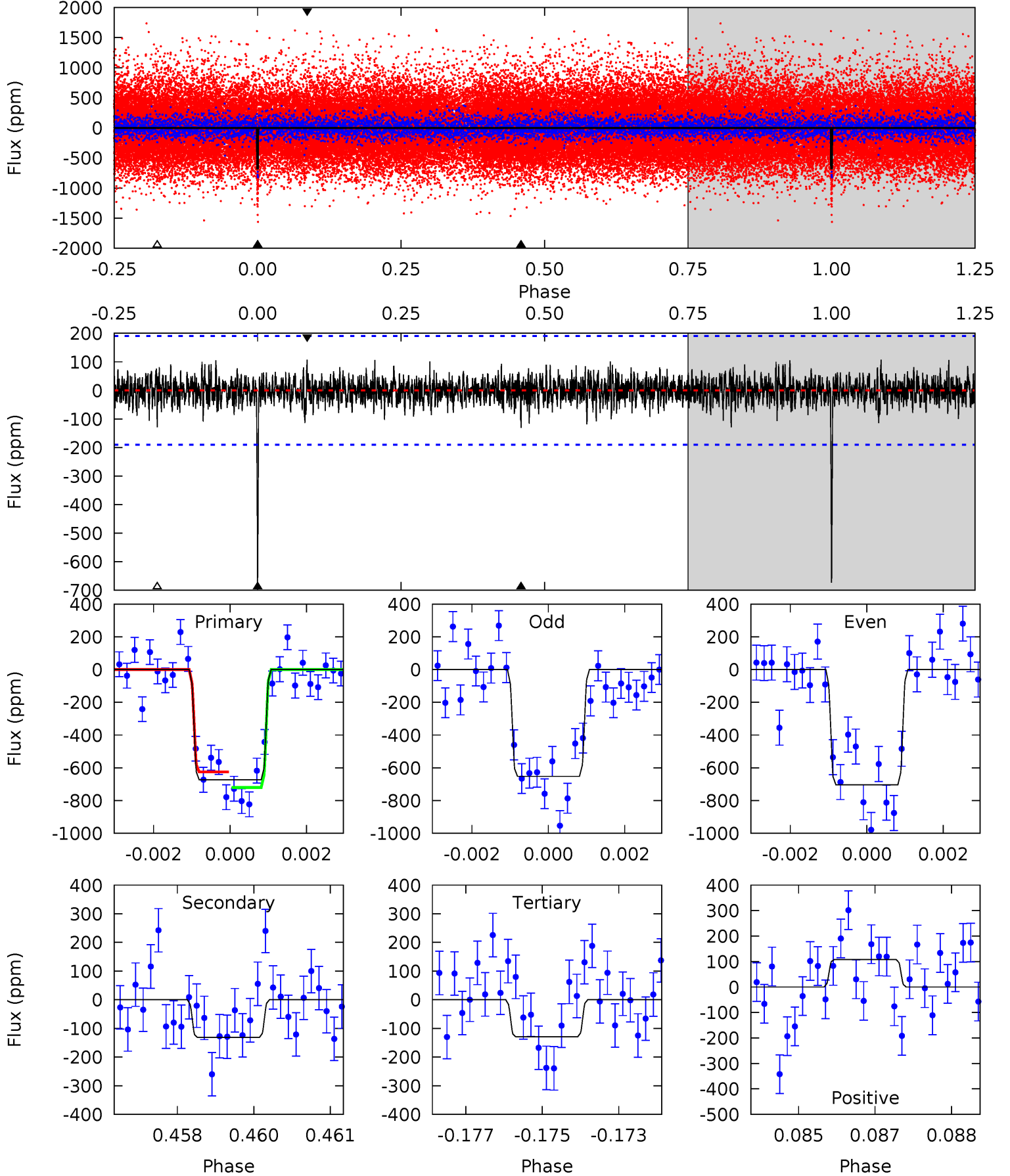
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	4.41	4.08	4.53	5.31	3.07	1.14	16.8	16.3	0.34	-0.11	0.15	0.99	0.18	2.44



Alt Model-Shift Uniqueness Test

003103227-01, P = 225.586502 Days, E = 47.214385 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	3.68	3.62	3.01	5.33	3.10	0.88	15.2	15.8	0.07	0.67	0.72	1.07	0.14	1.33



Stellar Parameters For KIC 003103227

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5929^{+77}_{-77}	$4.243^{+0.138}_{-0.112}$	$0.300^{+0.100}_{-0.150}$	$1.363^{+0.236}_{-0.212}$	$1.185^{+0.074}_{-0.081}$	$0.660^{+0.425}_{-0.219}$
	+1%/-1%	+3%/-3%	+33%/-50%	+17%/-16%	+6%/-7%	+64%/-33%
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 003103227-01 / KOI 4091.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-155 ± 35	$3.96^{+1.23}_{-1.07}$	485^{+22}_{-22}	4246^{+629}_{-395}	3156^{+3088}_{-1380}
Alt.	-131 ± 36	$3.84^{+1.29}_{-1.20}$	486^{+20}_{-24}	4167^{+709}_{-431}	2893^{+3661}_{-1422}

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

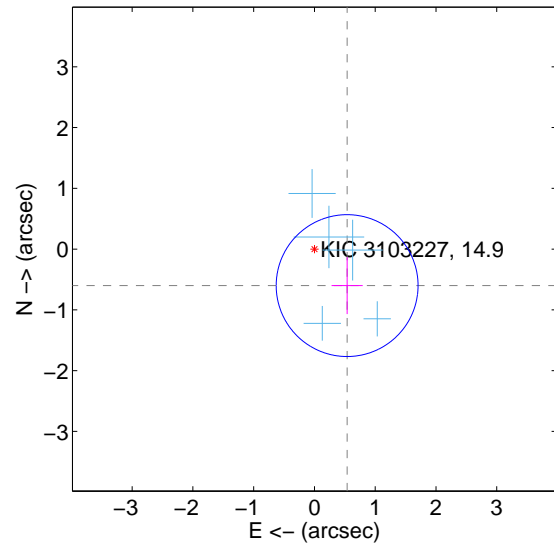
Supplemental centroid analysis for 003103227-01. Kepler magnitude: 14.90. Transit SNR 16.70

There are 5 quarters with good PRF difference image offsets

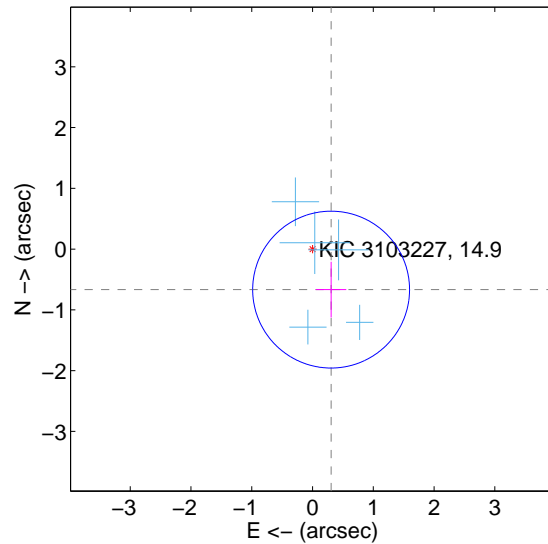
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.806 ± 0.389	2.07	-0.538 ± 0.256	-0.601 ± 0.469
PRF-fit source offset from KIC position	0.734 ± 0.430	1.71	-0.306 ± 0.250	-0.667 ± 0.459
photometric centroid source offset	0.91 ± 0.80	1.14	0.60 ± 0.78	0.69 ± 0.82

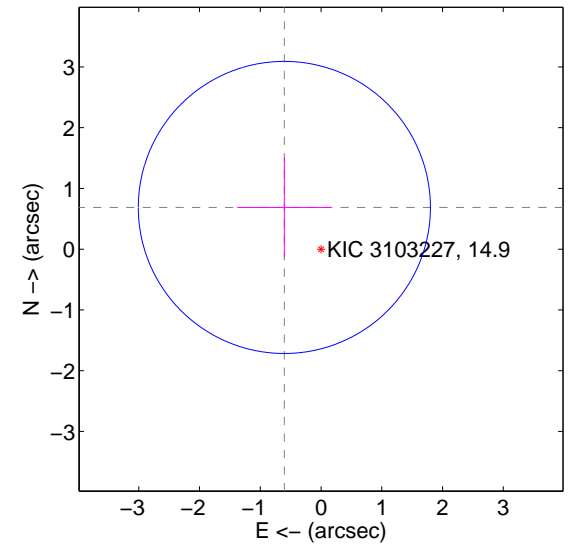
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

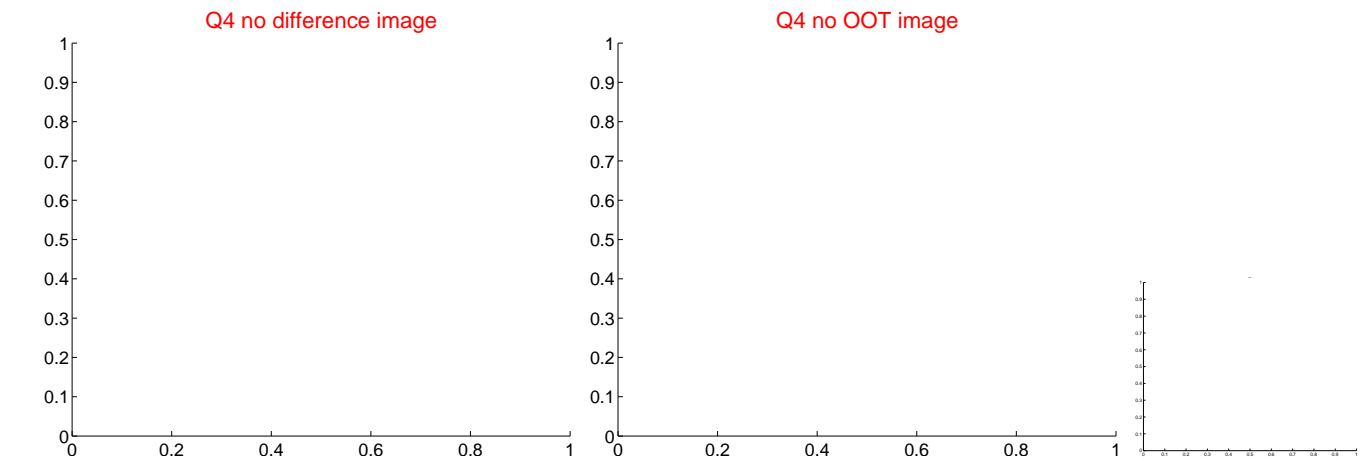
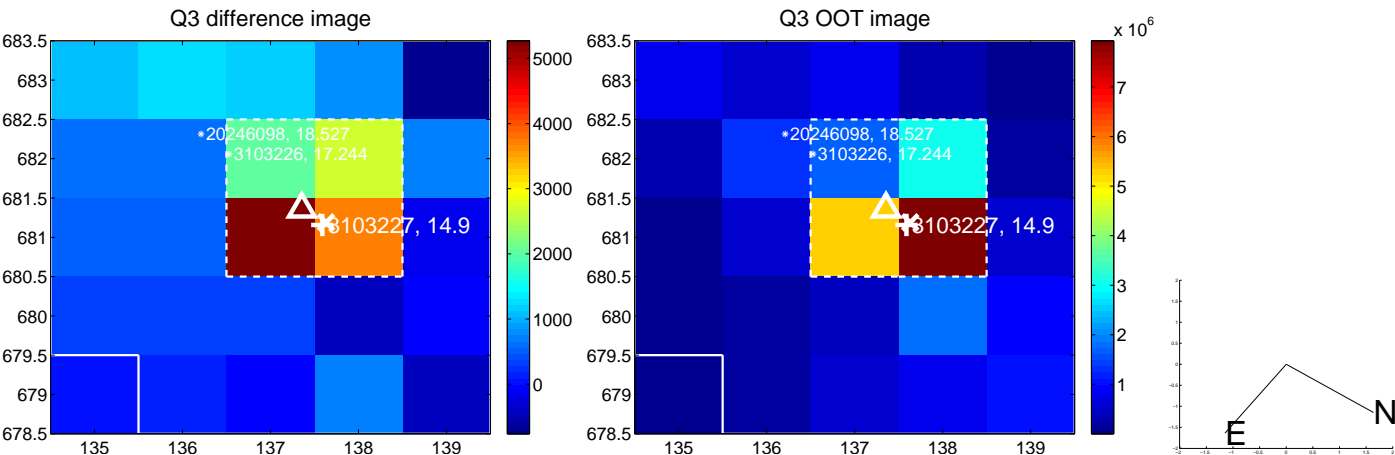
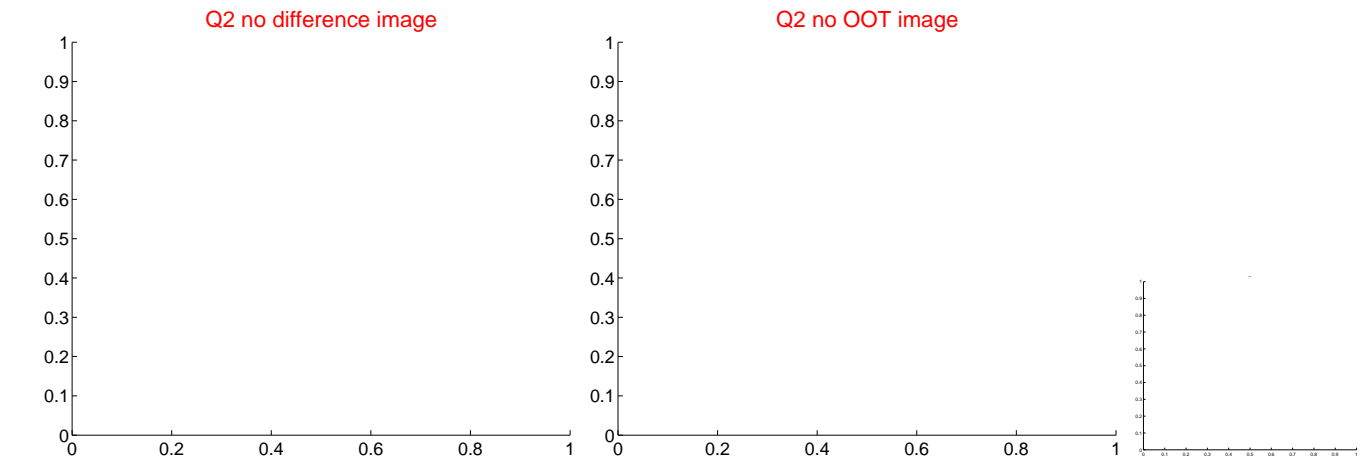
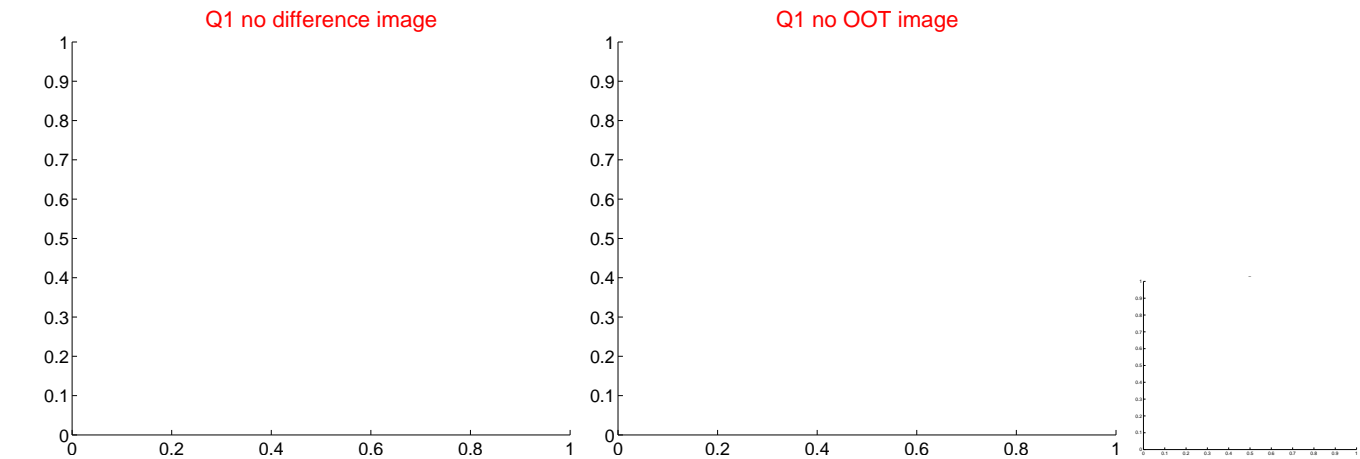


offset from photometric centroids

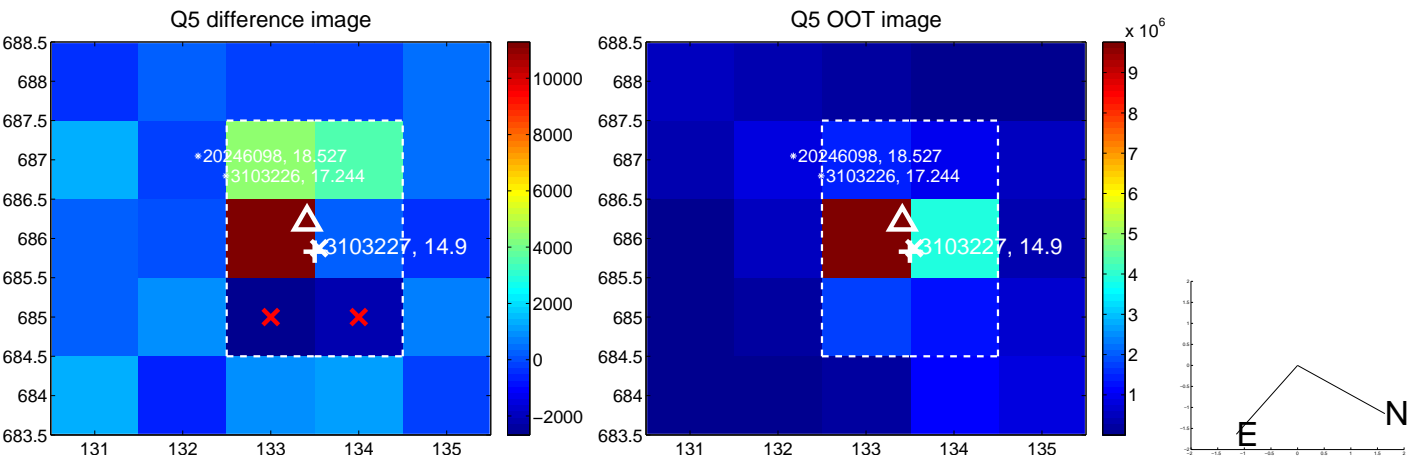


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

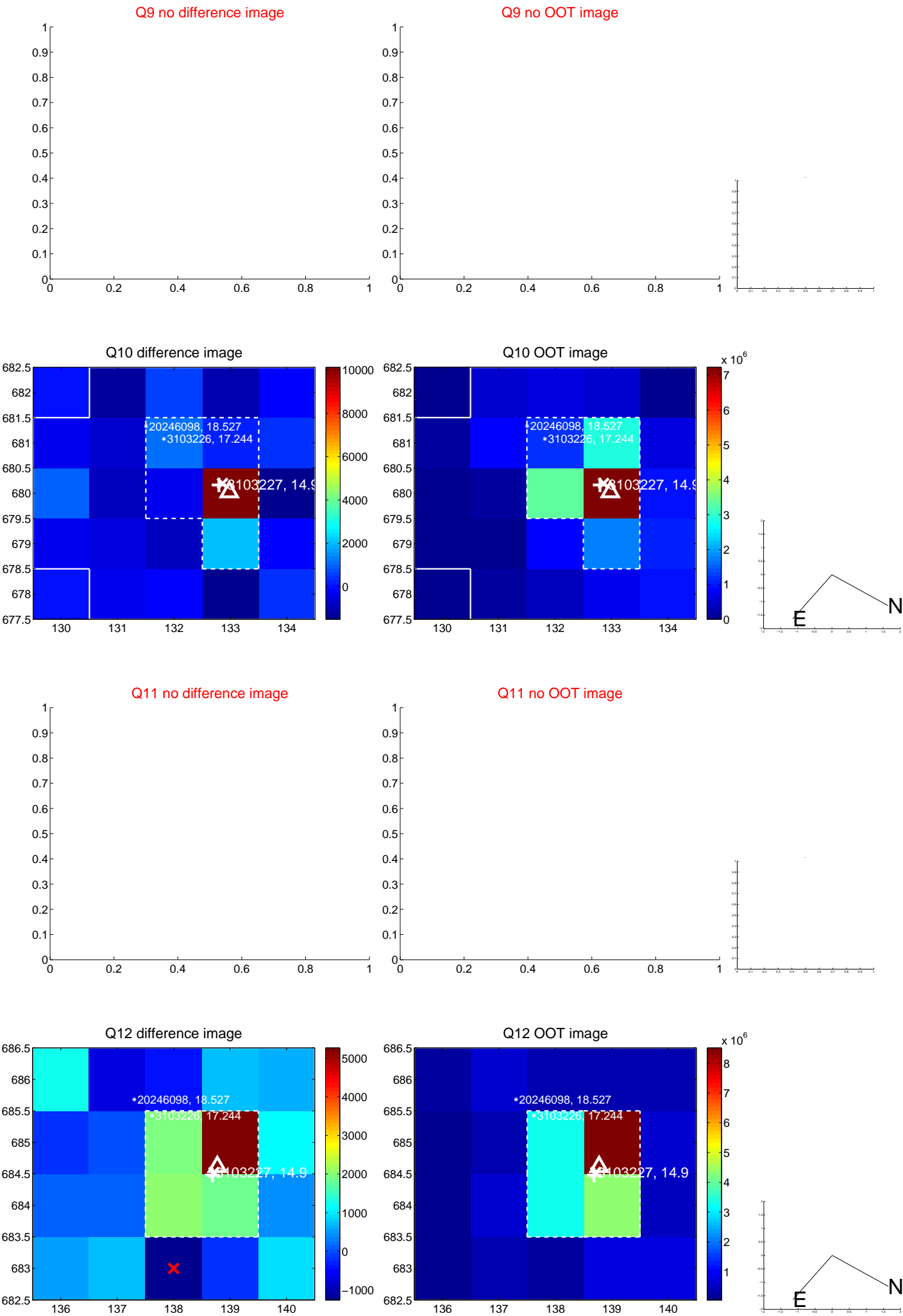
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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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



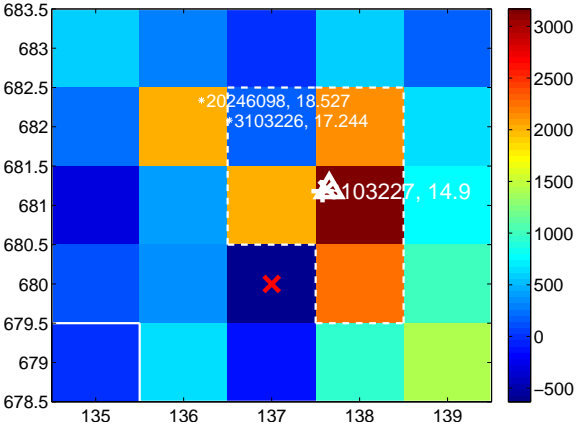
Q14 no difference image



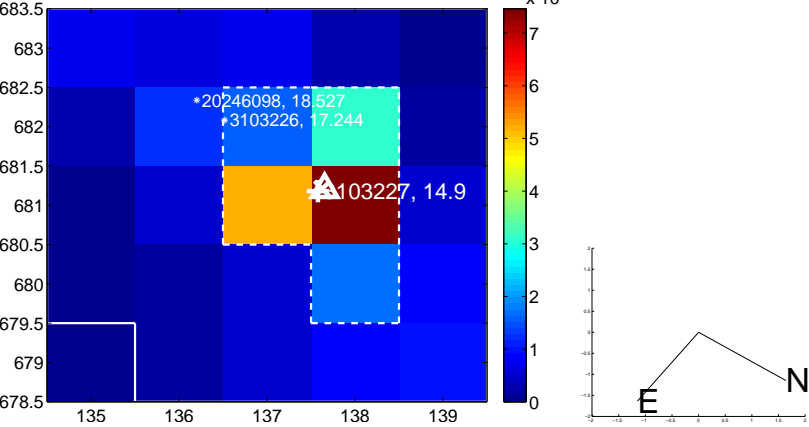
Q14 no OOT image



Q15 difference image



Q15 OOT image



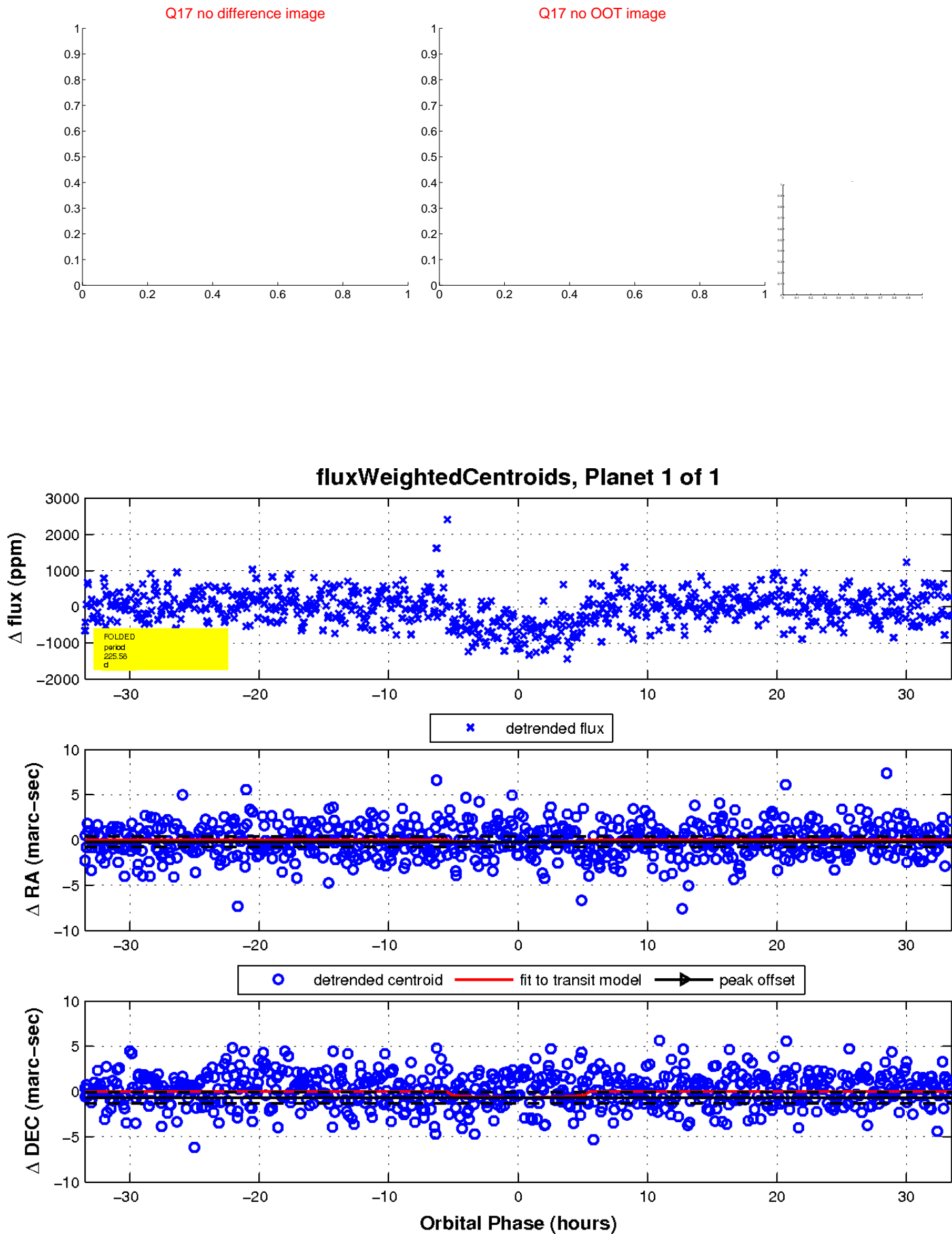
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

