

KIC 009290731

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})
009290731-01	OBS	No	280.703515	317.812914	414.8	4.578	7.6	8.1	2.59	5215	5.62	5.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009290731-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

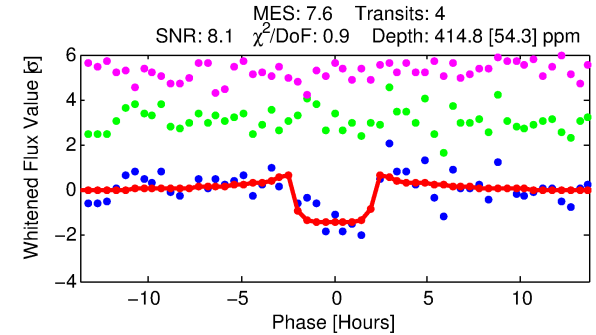
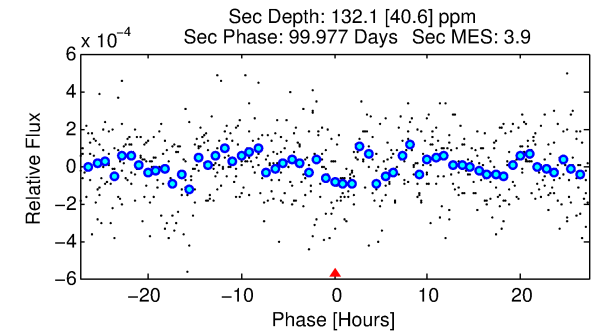
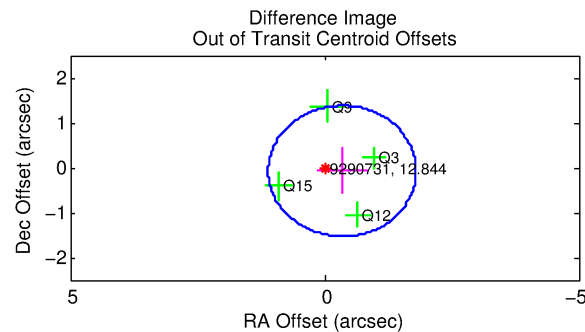
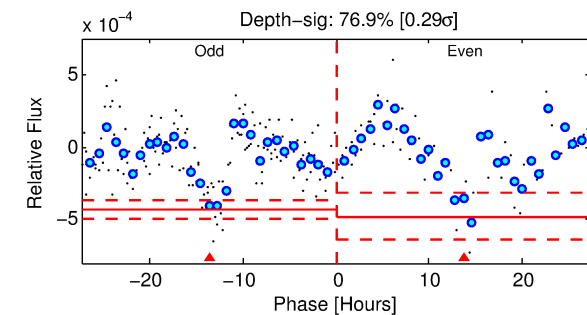
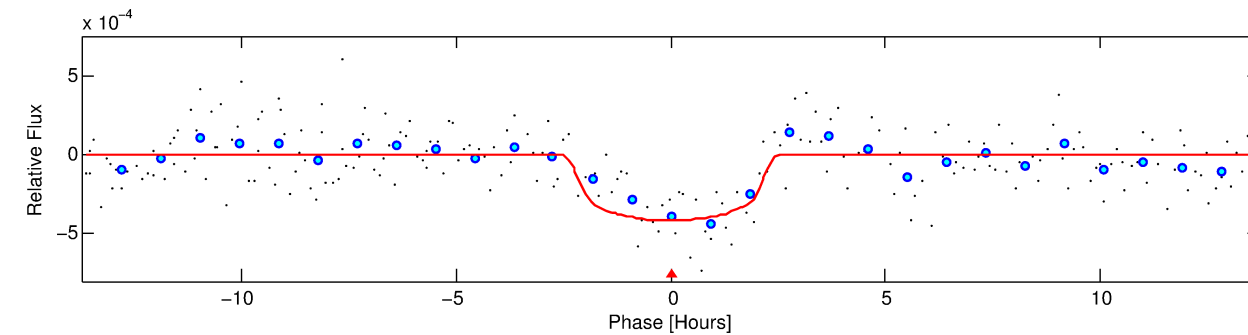
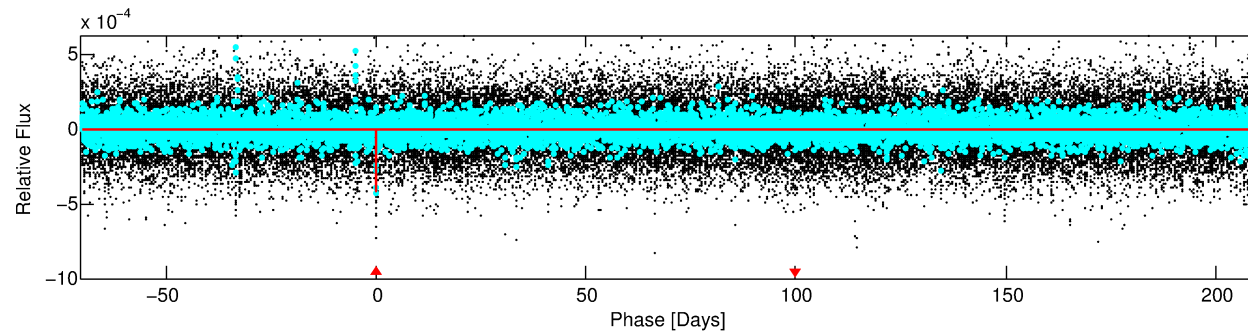
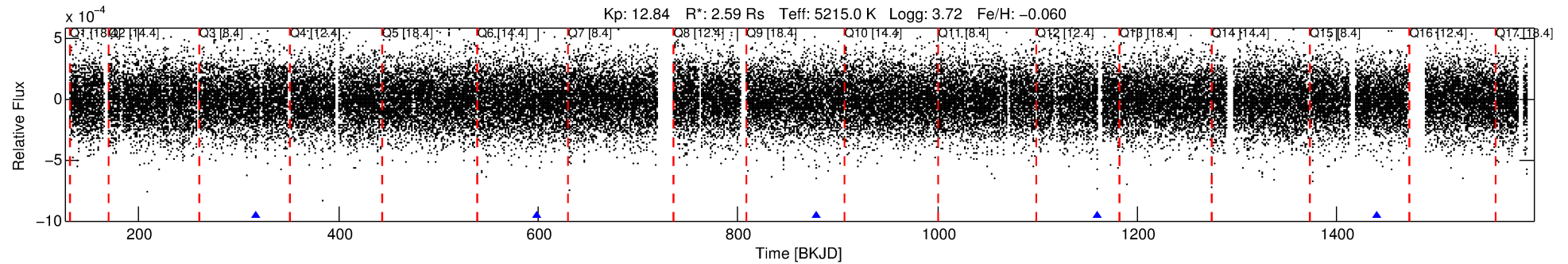
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009290731-01

No Significant Match Found

DV One-Page Summary

KIC: 9290731 Candidate: 1 of 1 Period: 280.704 d



DV Fit Results:

Period = 280.70352 [0.00216] d
Epoch = 317.8129 [0.0062] BKJD
Rp/R* = 0.0199 [0.0178]
a/R* = 349.23 [1178.89]
b = 0.70 [2.54]
Seff = 5.38 [7.21]
Teq = 388 [130] K
Rp = 5.62 [6.47] Re
a = 0.9093 [0.7167] AU
Ag = 1903.29 [4285.26] [0.44 σ]
Teffp = 3965 [1802] K [1.98 σ]

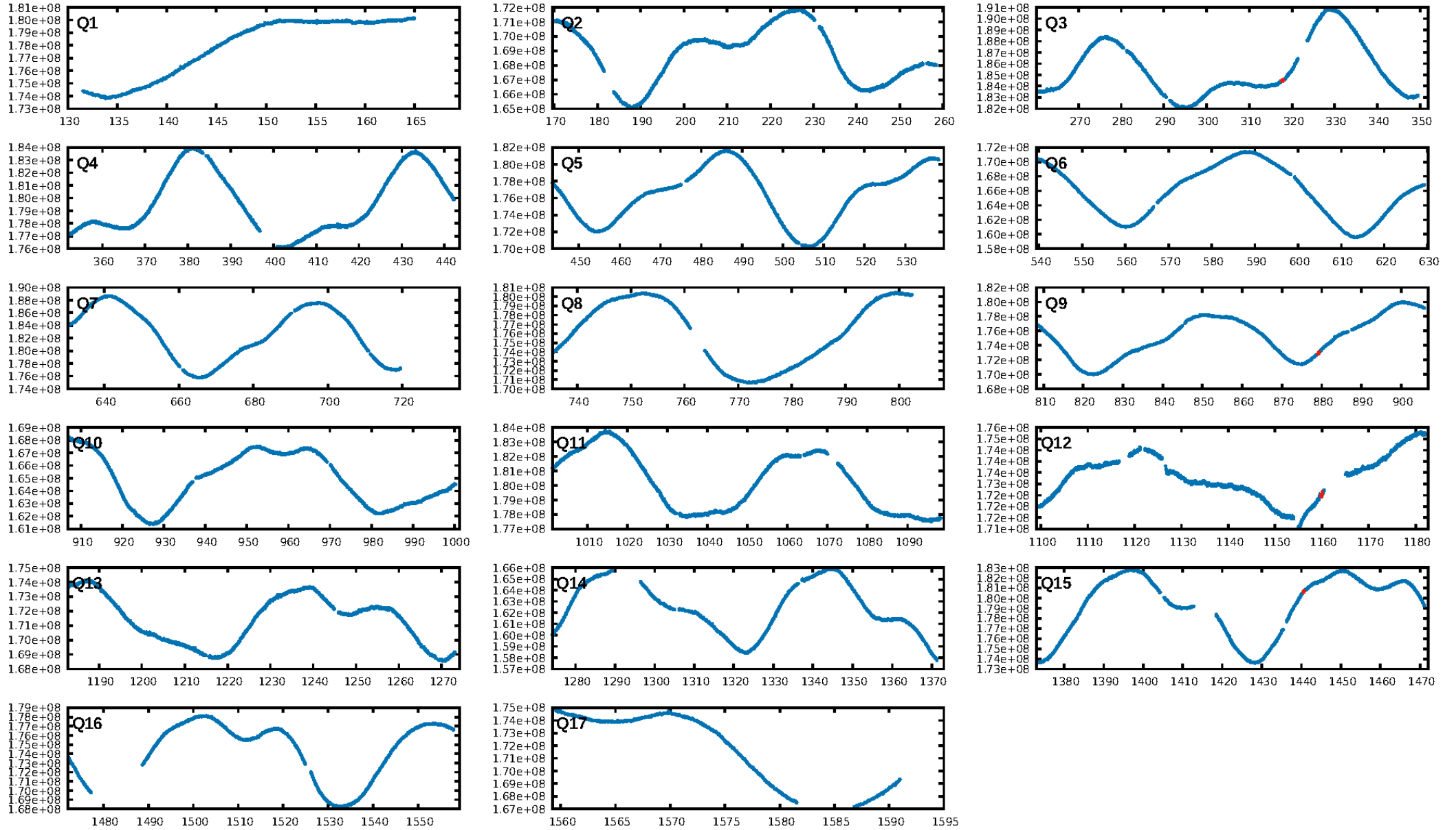
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 63.2%
ModelChiSquareGof-sig: 88.7%
Bootstrap-pfa: 5.47e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 3.964
Centroid-sig: 6.5%
Centroid-so: 0.961 arcsec [1.68 σ]
OotOffset-rm: 0.353 arcsec [0.73 σ]
OotOffset-st: 0.2/1/1 [4]
KicOffset-rm: 0.310 arcsec [0.63 σ]
KicOffset-st: 0.2/1/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

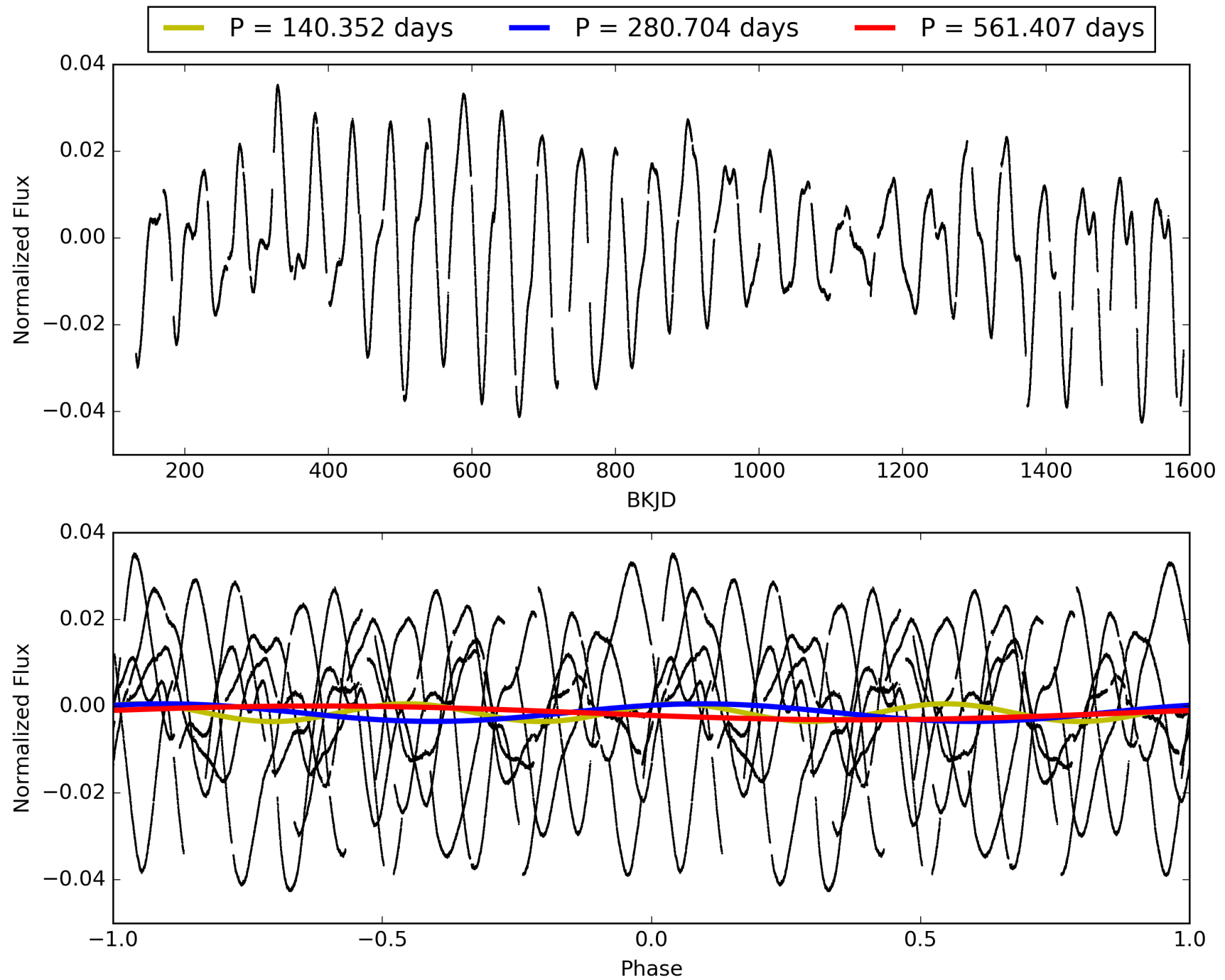
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:49:57 Z

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

TCE 009290731-01, PDC Light Curves

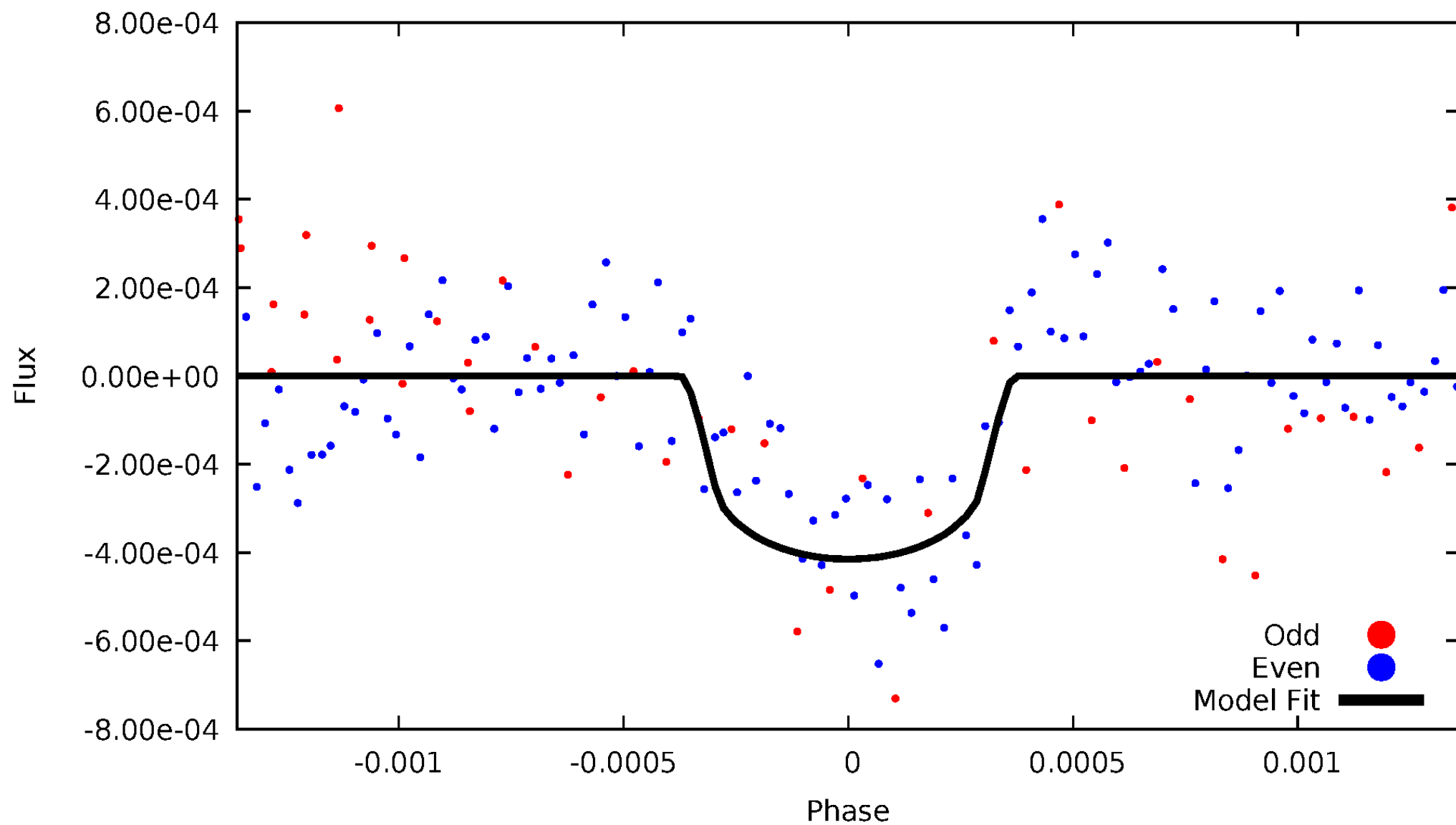


TCE 009290731-01



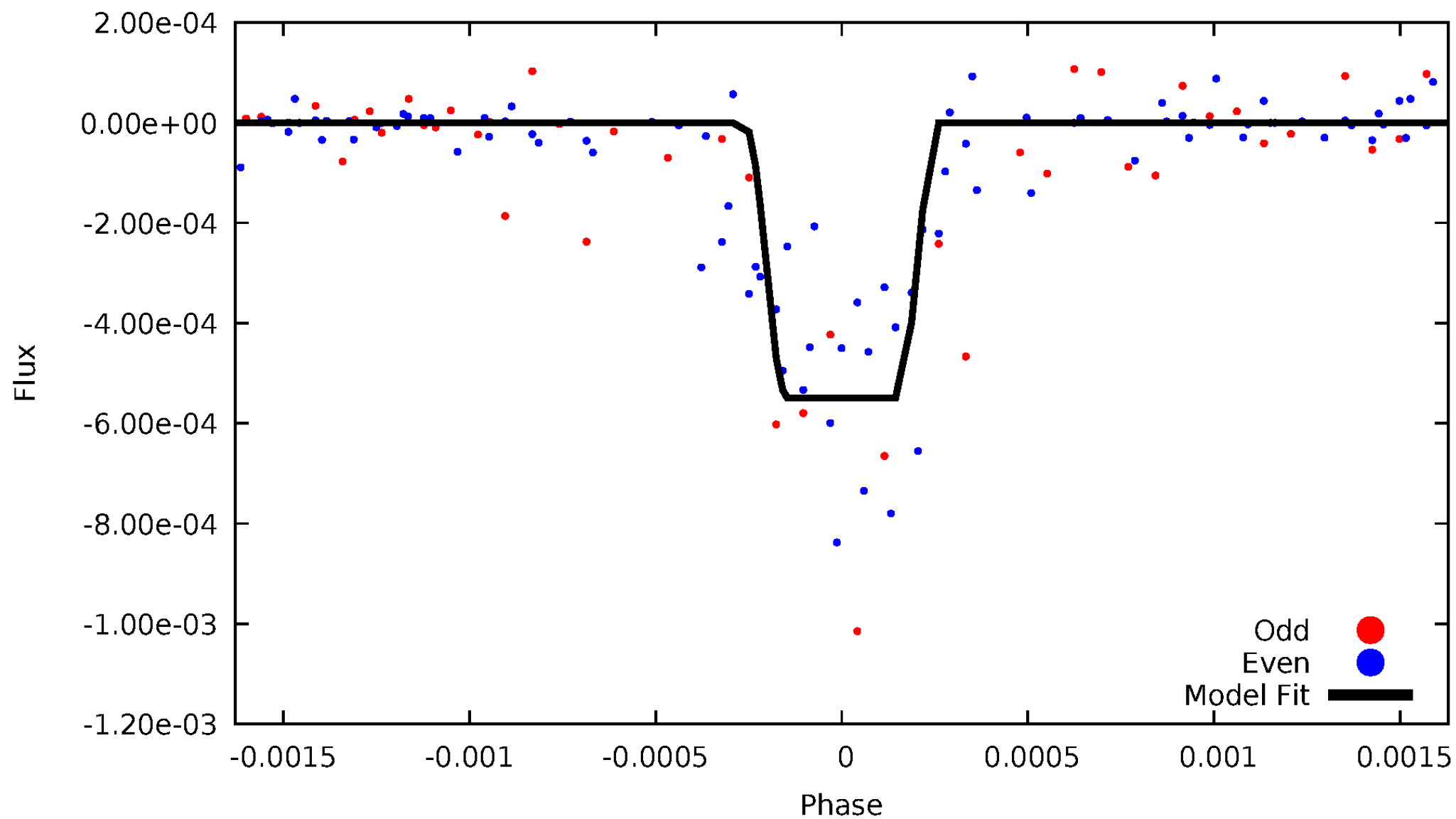
DV Odd/Even

TCE 009290731-01

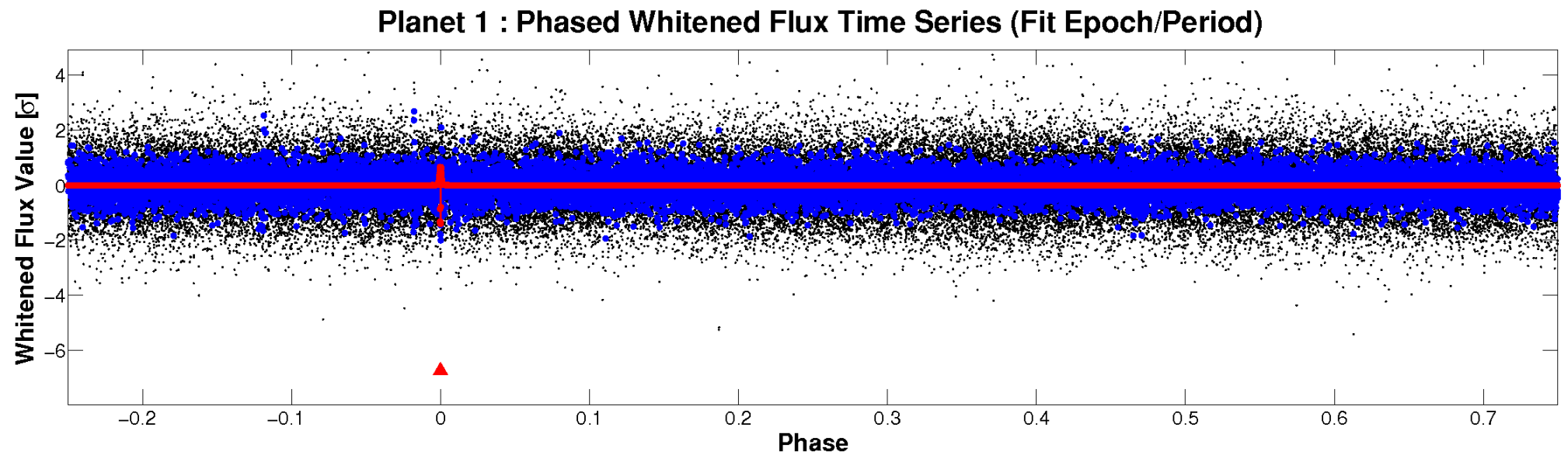
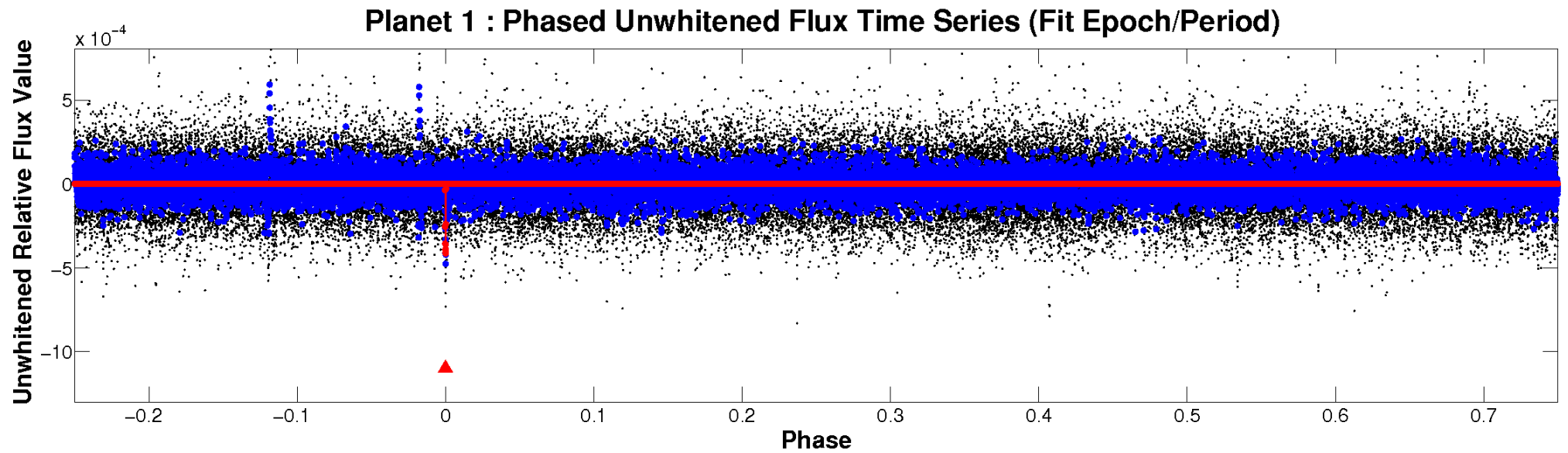


ALT Odd/Even

TCE 009290731-01

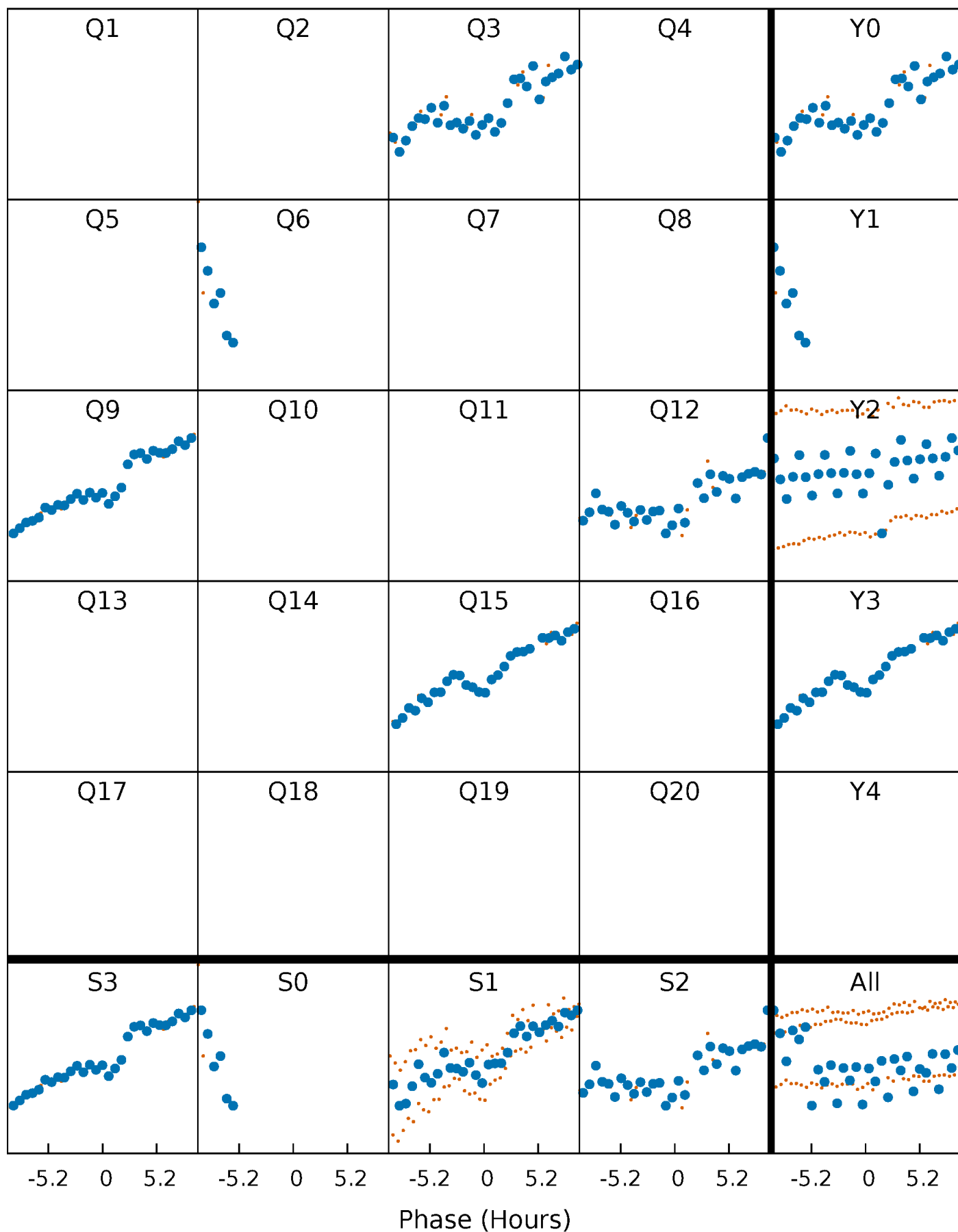


Non-Whitened Vs. Whitened Light Curve



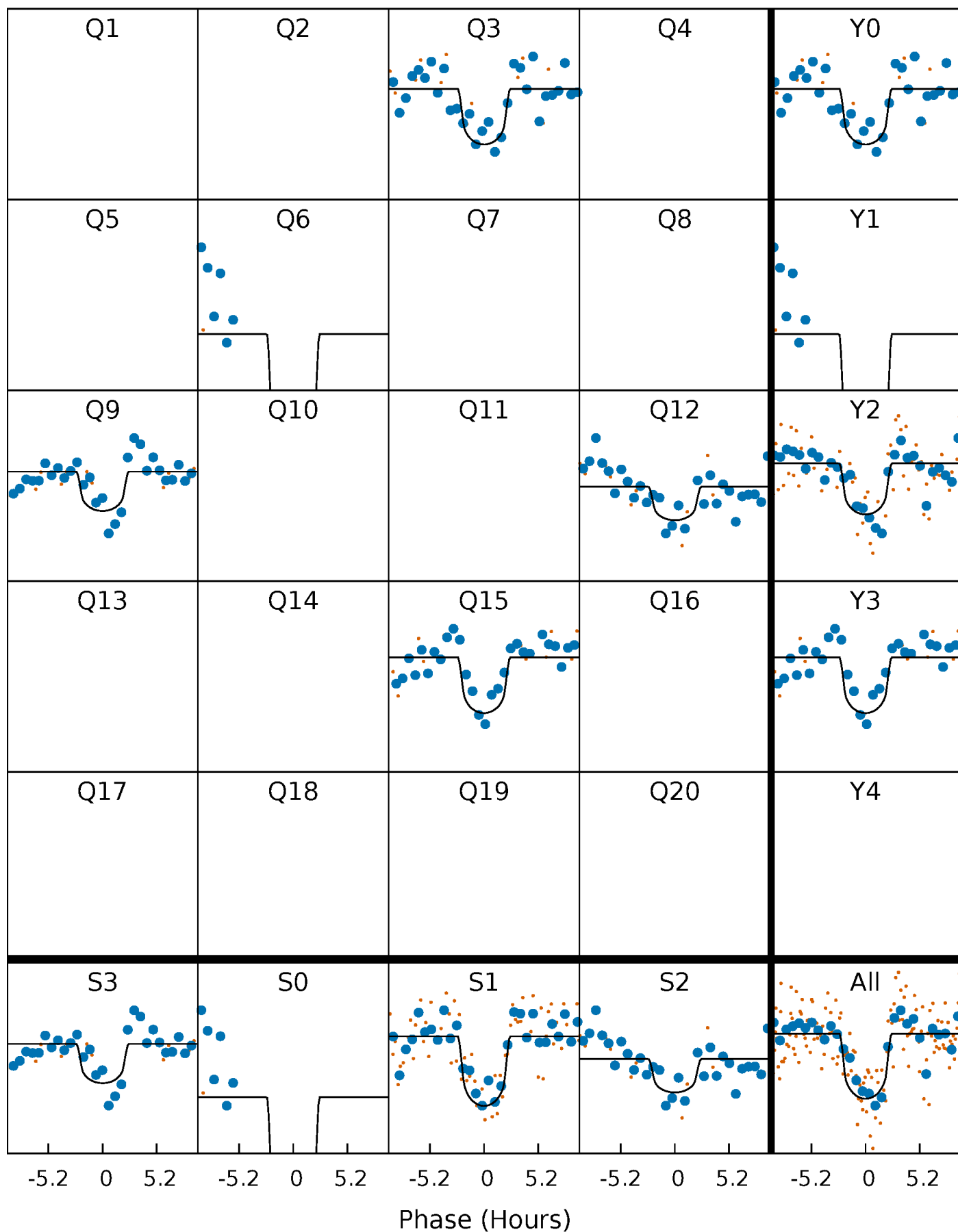
PDC Quarter-Phased Transit Curves

TCE 009290731-01 P=280.703515 Days $T_0=317.812914$ (BKJD)



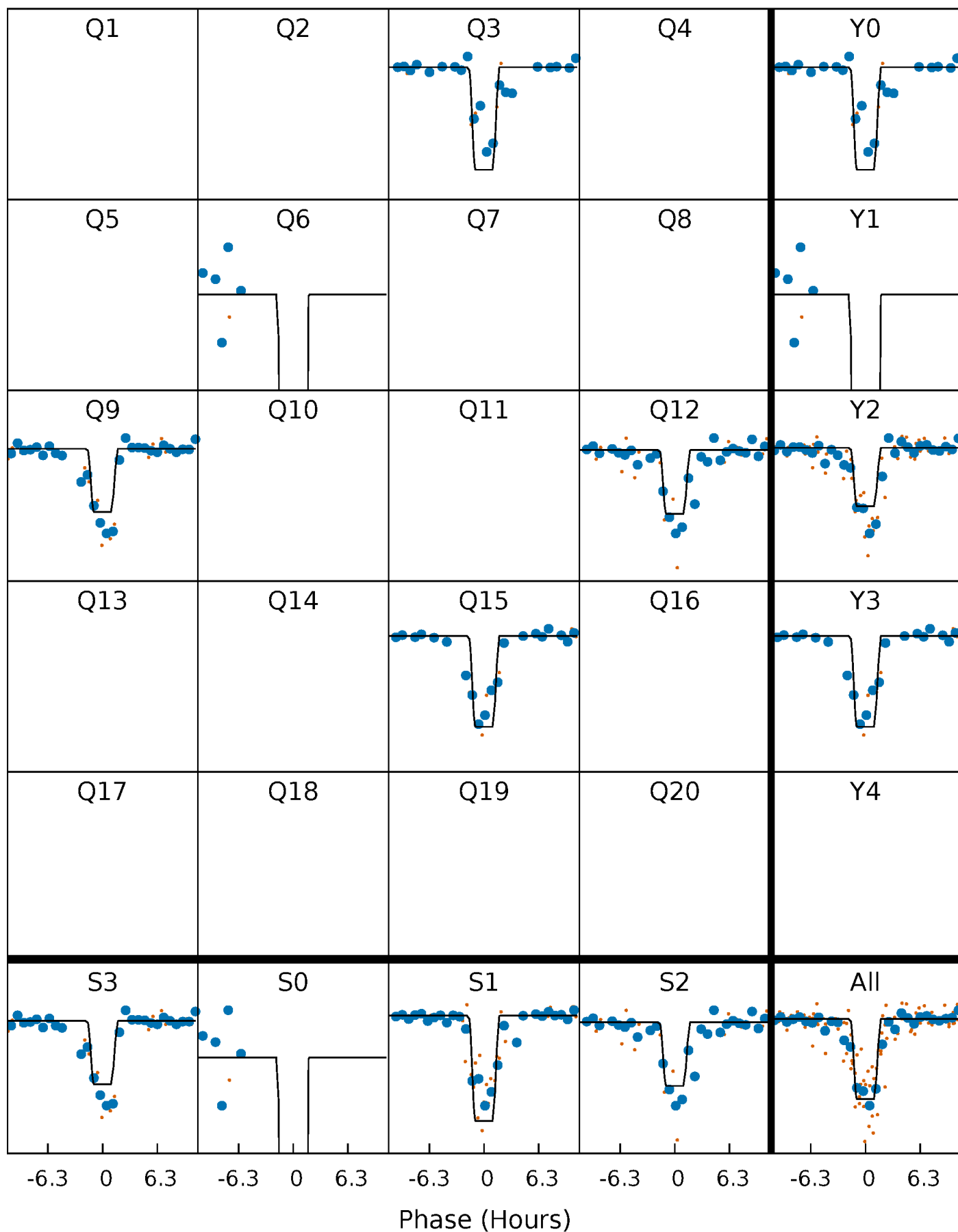
DV Quarter-Phased Transit Curves

TCE 009290731-01 P=280.703515 Days $T_0=317.812914$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

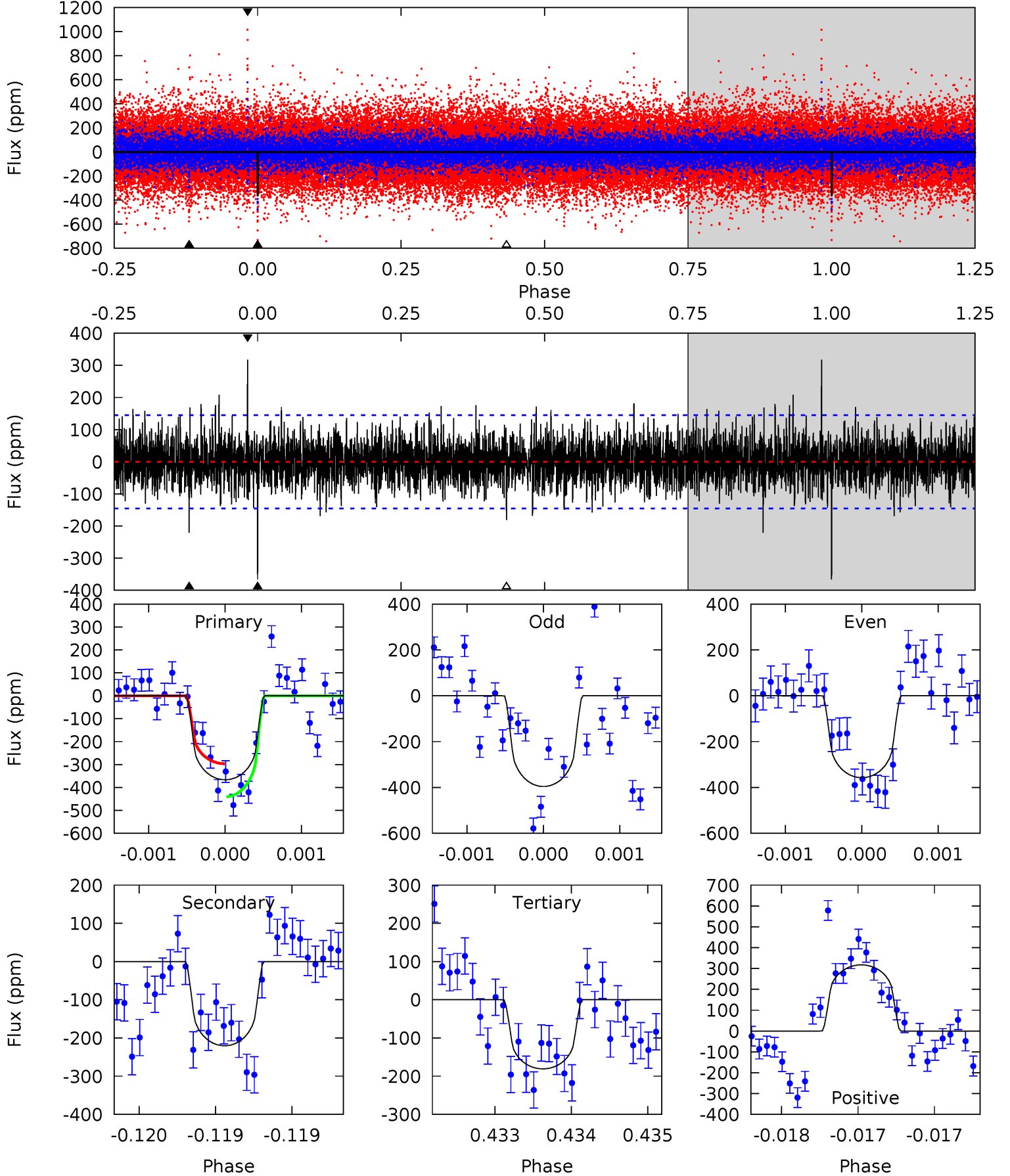
TCE 009290731-01 P=280.698366 Days $T_0=317.845831$ (BKJD)



DV Model-Shift Uniqueness Test

009290731-01, $P = 280.703515$ Days, $E = 37.109399$ Days

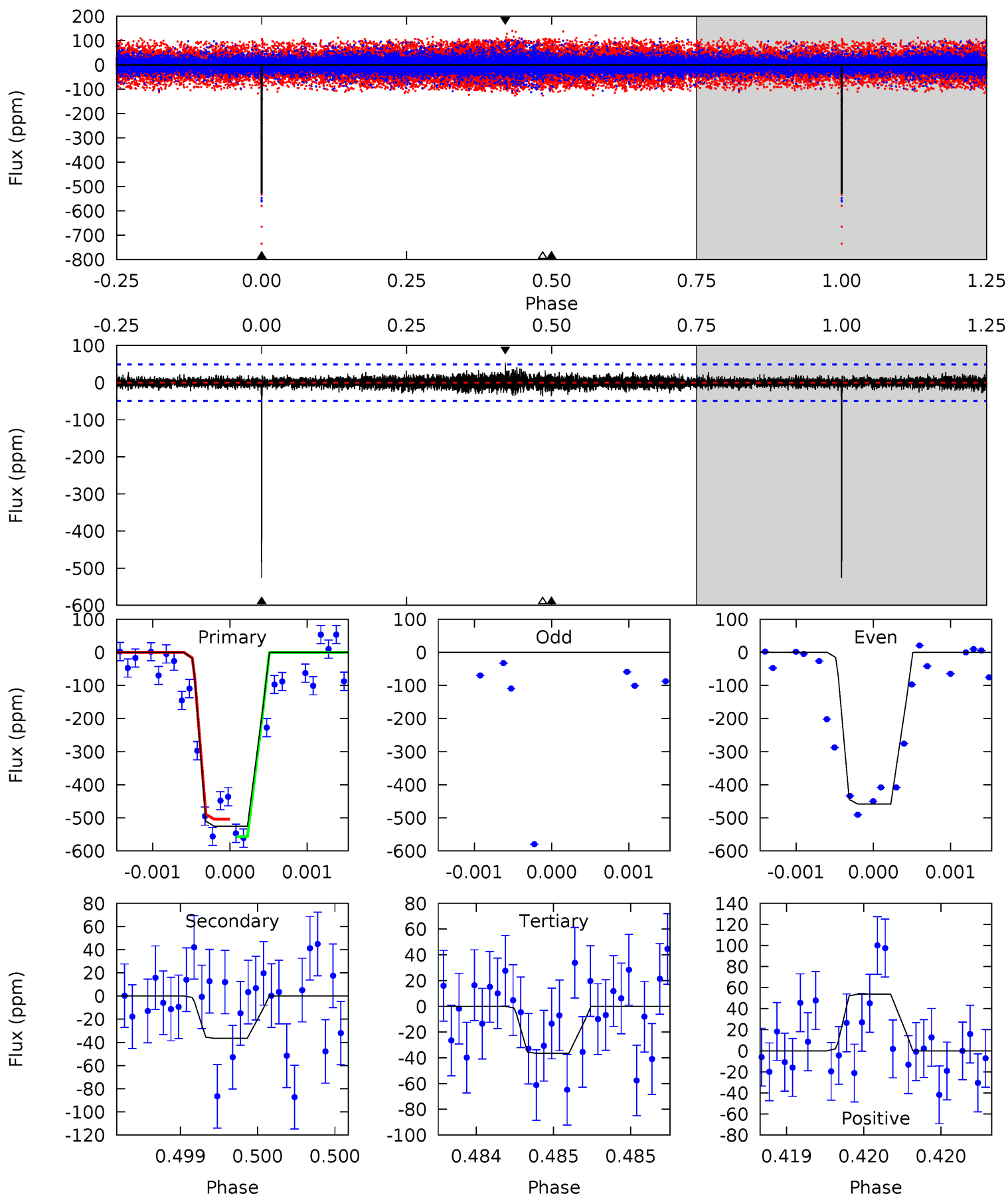
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	8.36	6.86	12.0	5.51	3.38	1.91	7.04	1.86	1.50	-3.68	0.61	0.97	0.46	2.73



Alt Model-Shift Uniqueness Test

009290731-01, P = 280.698366 Days, E = 37.147465 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
59.9	4.16	4.16	6.13	5.57	3.48	0.90	55.7	53.8	0.00	-1.96	0	0.97	0.09	2.85



Stellar Parameters For KIC 009290731

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5215^{+171}_{-156}	$3.716^{+0.810}_{-0.270}$	$-0.060^{+0.300}_{-0.300}$	$2.590^{+0.941}_{-1.882}$	$1.271^{+0.176}_{-0.410}$	$0.103^{+1.905}_{-0.066}$
	+3%/-3%	+22%/-7%	+500%/-500%	+36%/-73%	+14%/-32%	+1850%/-64%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009290731-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-220 ± 26	$5.63^{+5.46}_{-3.66}$	538^{+59}_{-103}	4284^{+2198}_{-678}	3012^{+20242}_{-2193}
Alt.	-37 ± 9	$6.22^{+5.68}_{-3.95}$	540^{+64}_{-107}	3160^{+1076}_{-454}	397^{+2709}_{-286}

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 $A_{obs} \gg 1.0$

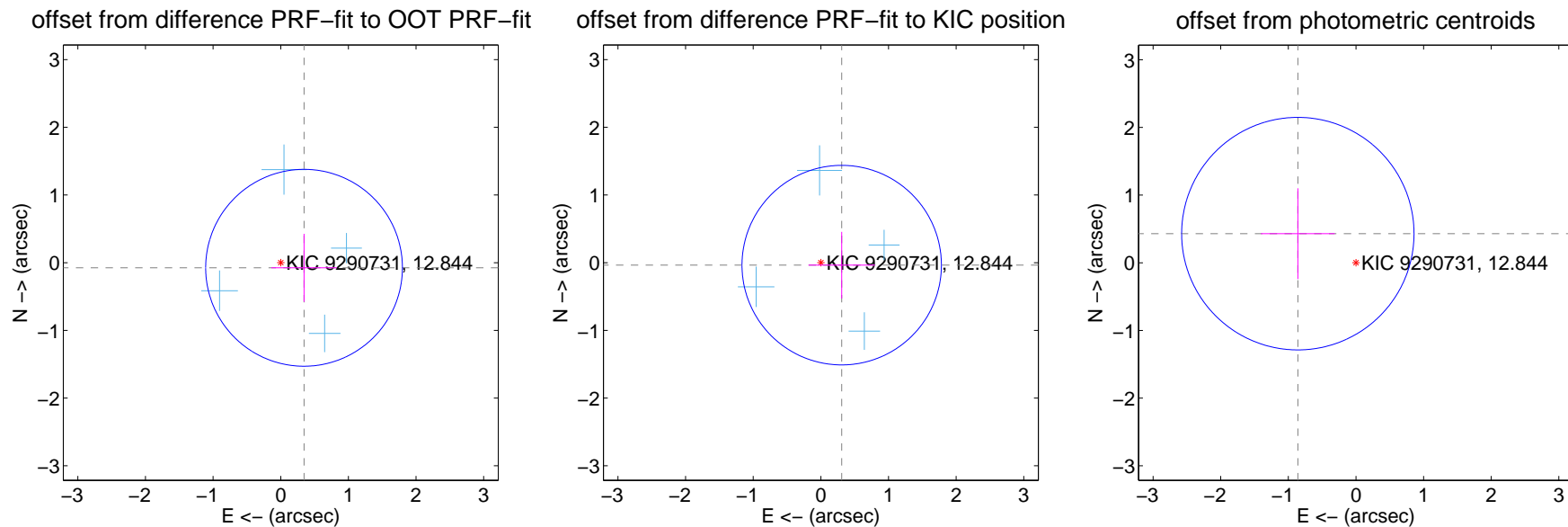
DV Centroid Data

Supplemental centroid analysis for 009290731-01. Kepler magnitude: 12.84. Transit SNR 8.06

There are 4 quarters with good PRF difference image offsets

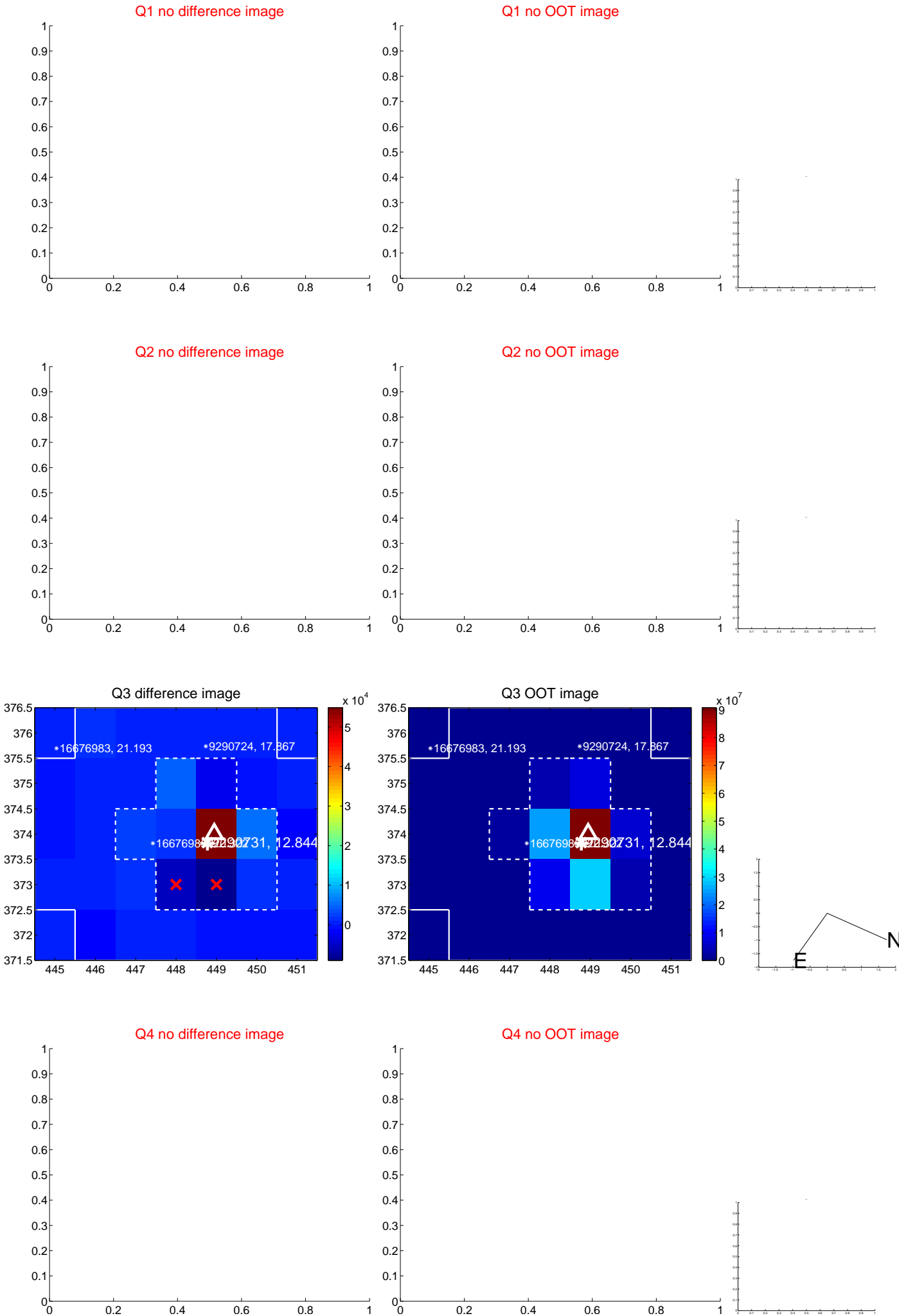
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.353 ± 0.485	0.73	-0.344 ± 0.484	-0.075 ± 0.502
PRF-fit source offset from KIC position	0.310 ± 0.491	0.63	-0.308 ± 0.491	-0.036 ± 0.492
photometric centroid source offset	0.96 ± 0.57	1.68	0.86 ± 0.55	0.43 ± 0.67



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.

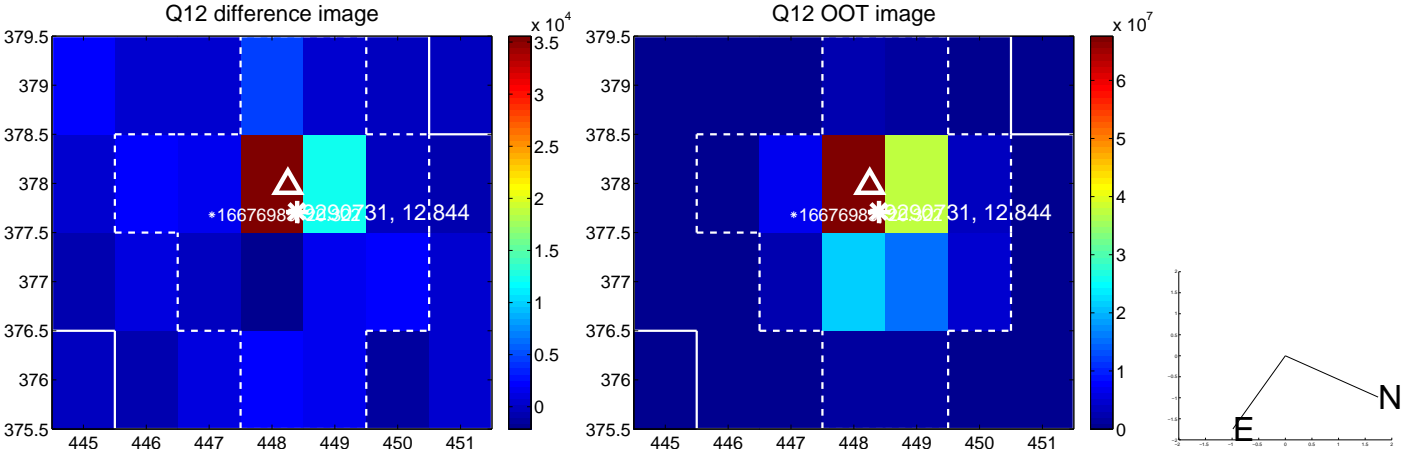
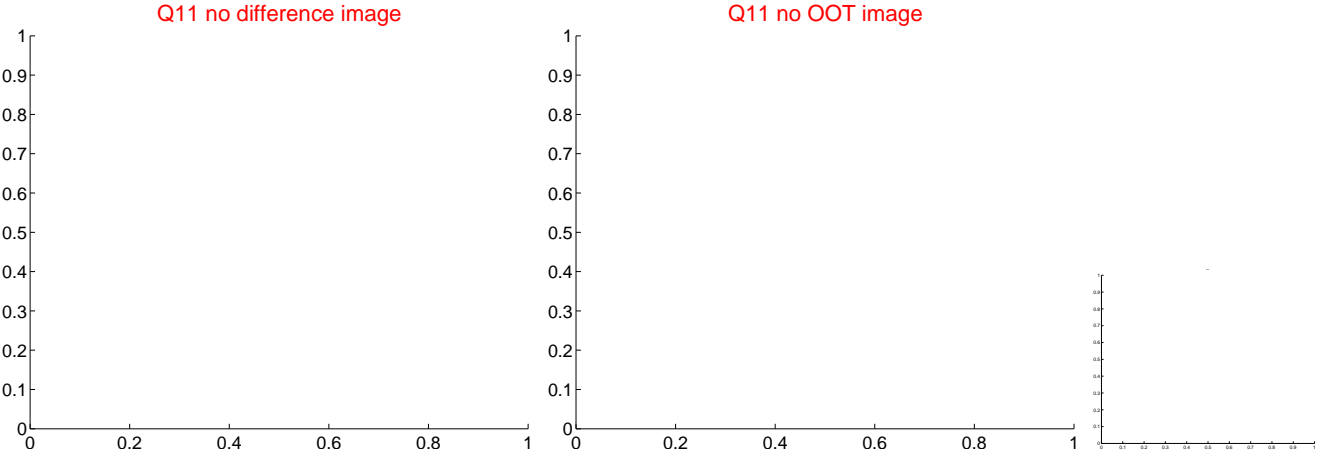
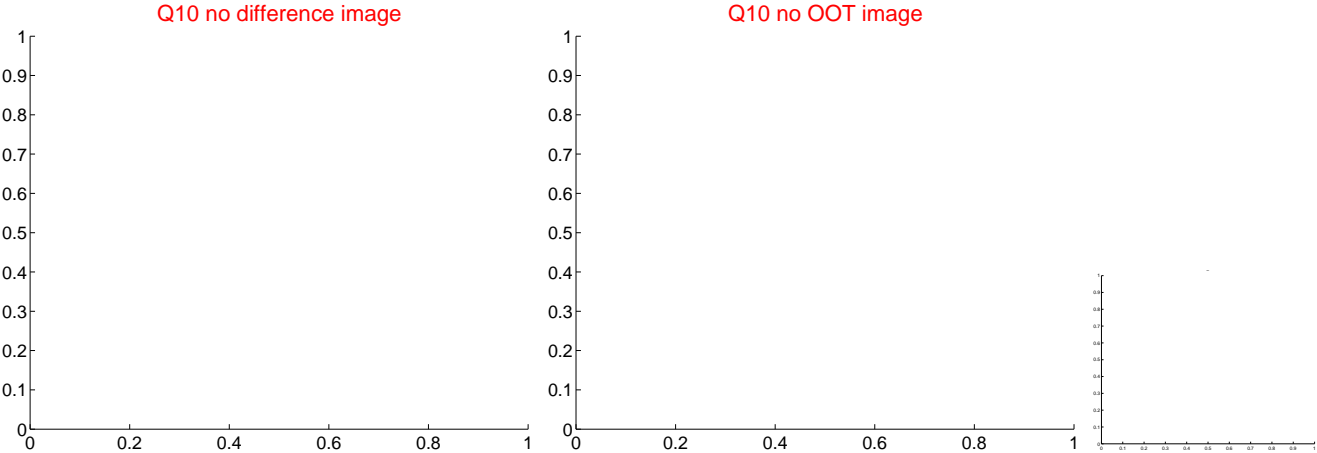
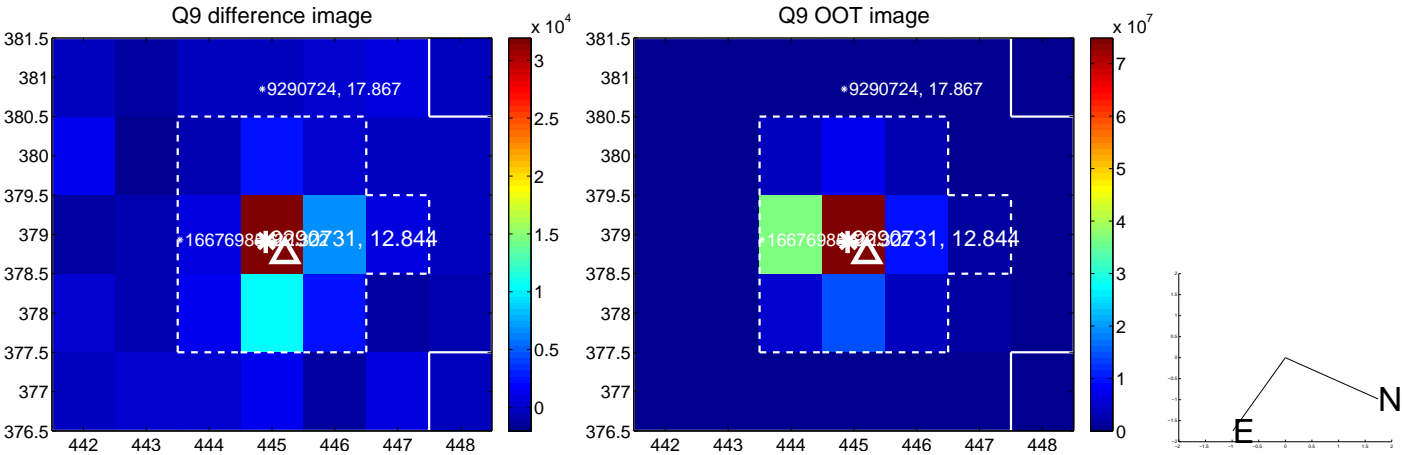
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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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



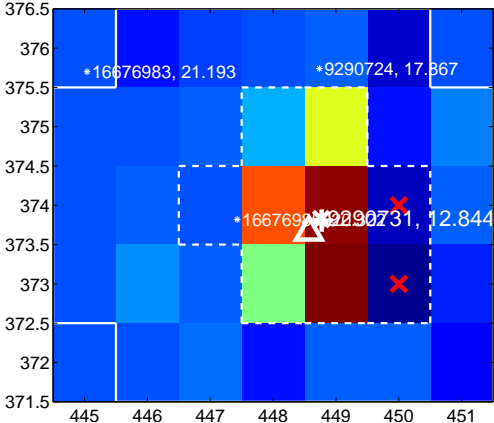
Q14 no difference image



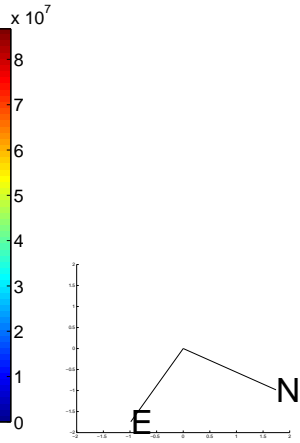
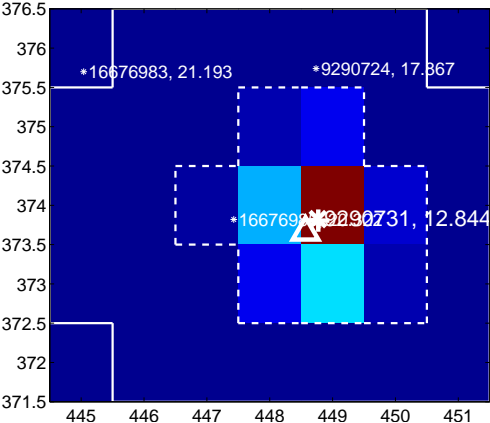
Q14 no OOT image



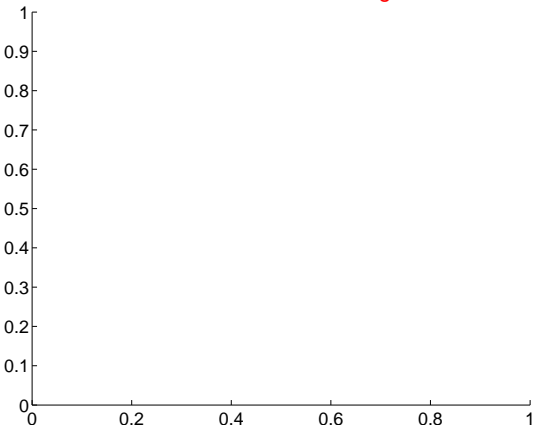
Q15 difference image



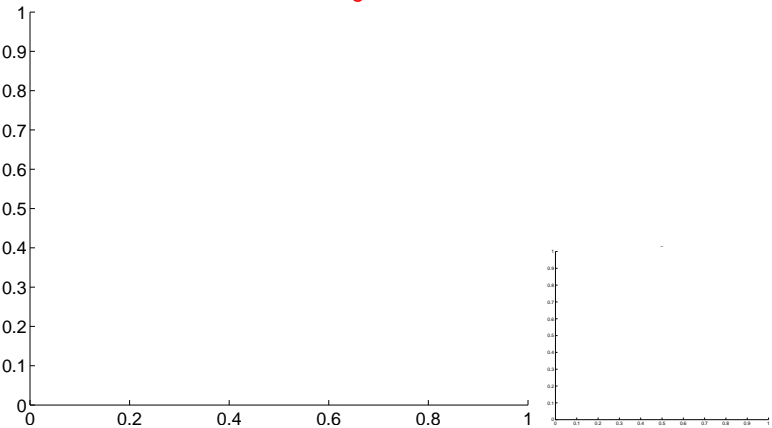
Q15 OOT image



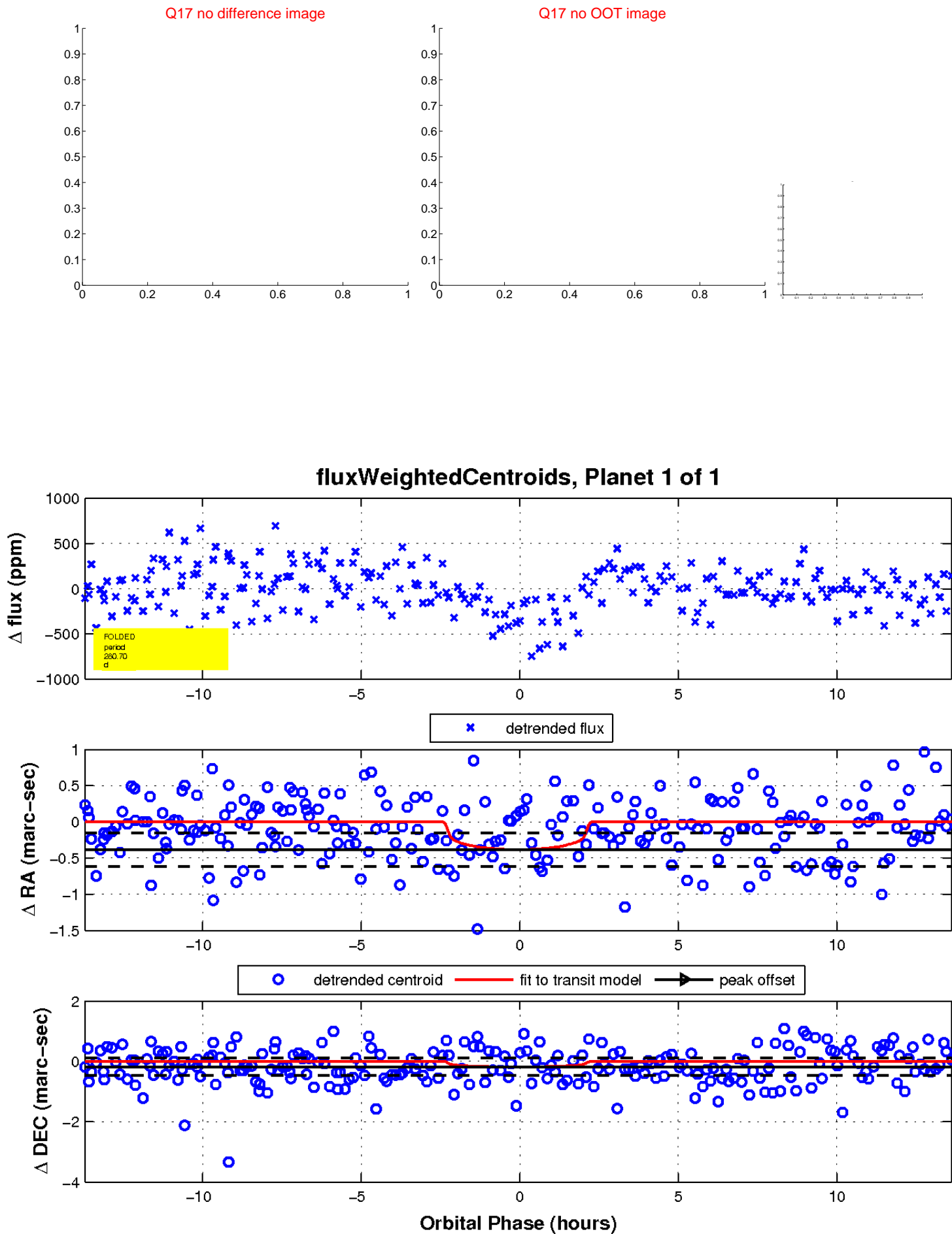
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

