

KIC 010027247

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})
010027247-01	OBS	2418.01	86.828726	189.261178	740.4	7.227	11.7	12.6	0.46	3576	1.64	0.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010027247-01	OBS	PC	0.94	0	0	0	0	CENT_KIC_POS

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 010027247-01

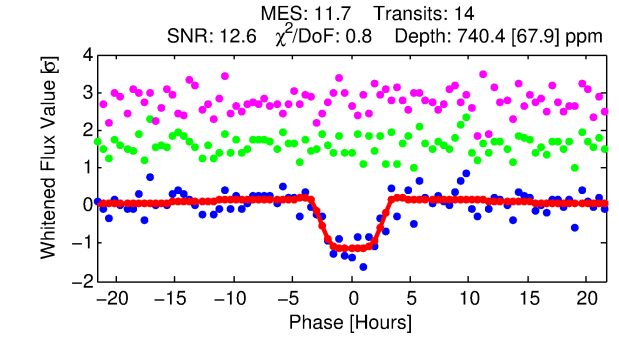
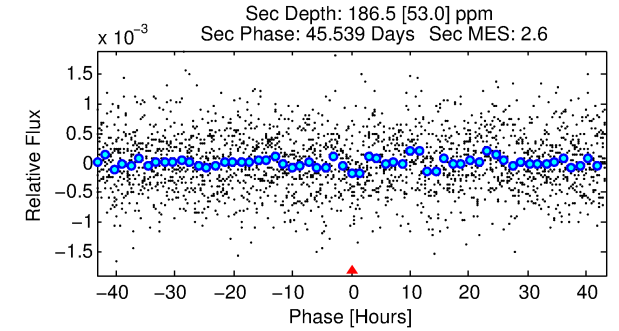
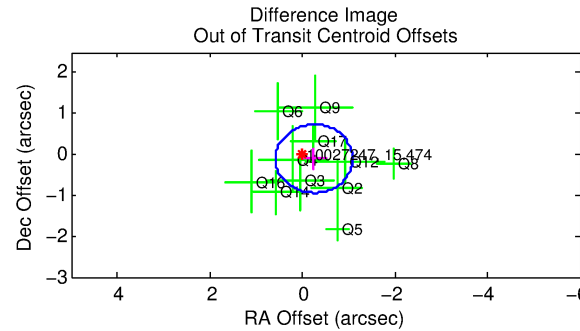
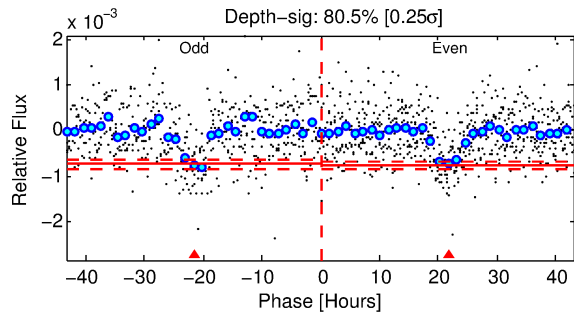
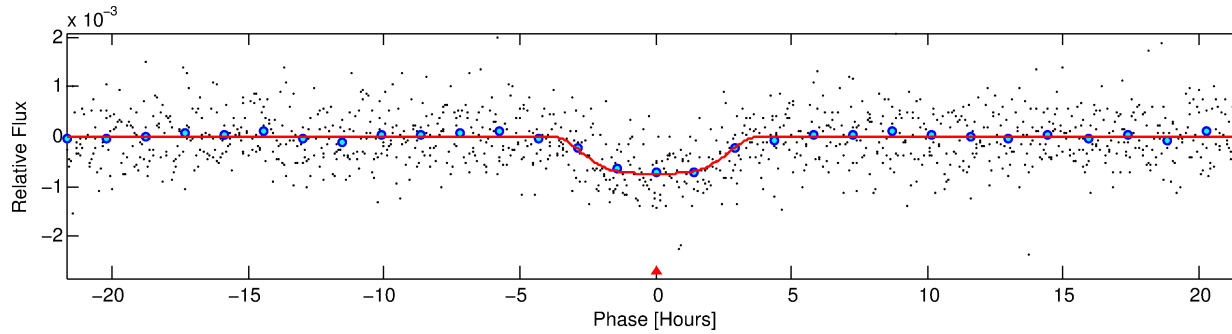
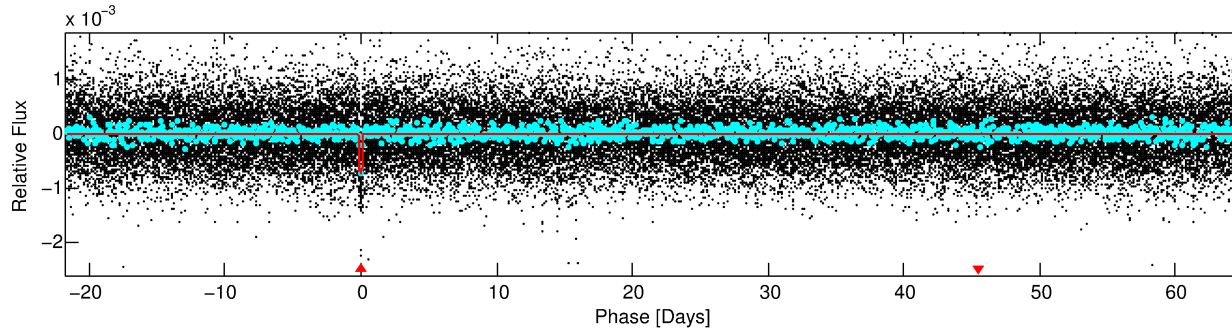
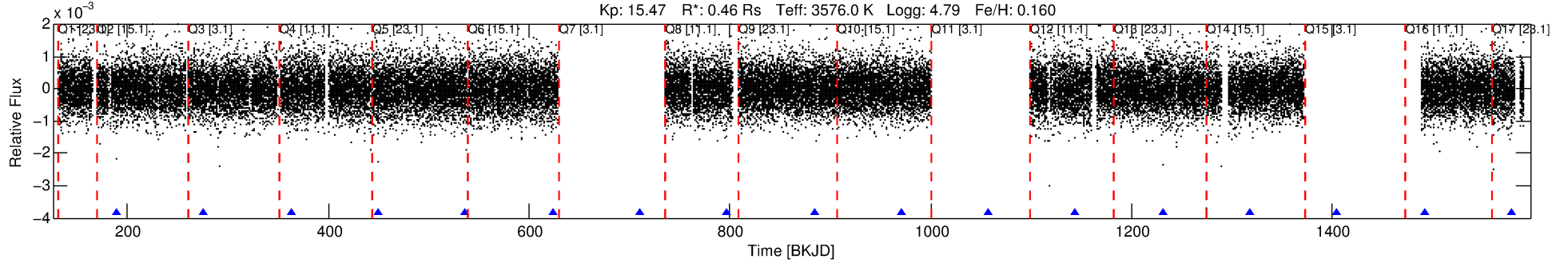
No Significant Match Found

DV One-Page Summary

KIC: 10027247 Candidate: 1 of 1 Period: 86.829 d

KOI: K02418.01 Corr: 0.912

Kp: 15.47 R*: 0.46 Rs Teff: 3576.0 K Logg: 4.79 Fe/H: 0.160



DV Fit Results:

Period = 86.82873 [0.00121] d
Epoch = 189.2612 [0.0108] BKJD
Rp/R* = 0.0324 [0.0026]
a/R* = 36.98 [7.09]
b = 0.95 [0.02]
Seff = 0.35 [0.05]
Teq = 196 [7] K
Rp = 1.64 [0.24] Re
a = 0.3012 [0.0282] AU
Ag = 3464.78 [1198.05] [2.89σ]
Teffp = 2320 [196] K [10.82σ]

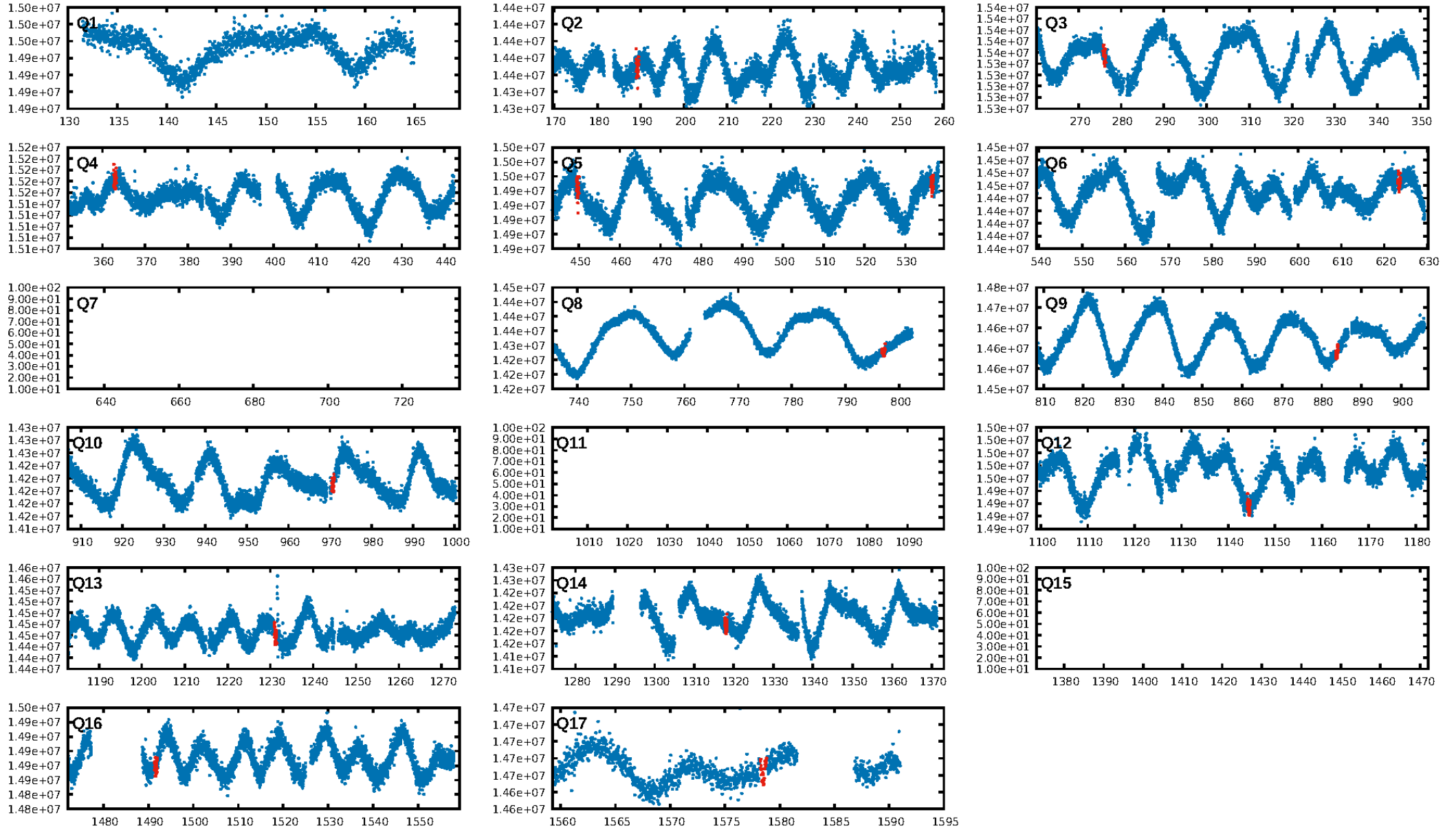
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 93.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.23e-26
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: 4.731
Centroid-sig: 57.0%
Centroid-so: 0.383 arcsec [0.39σ]
OotOffset-rm: 0.270 arcsec [0.97σ]
KicOffset-rm: 0.549 arcsec [2.23σ]
OotOffset-st: 3/1/4/3 [11]
KicOffset-st: 3/1/4/3 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [11/11]

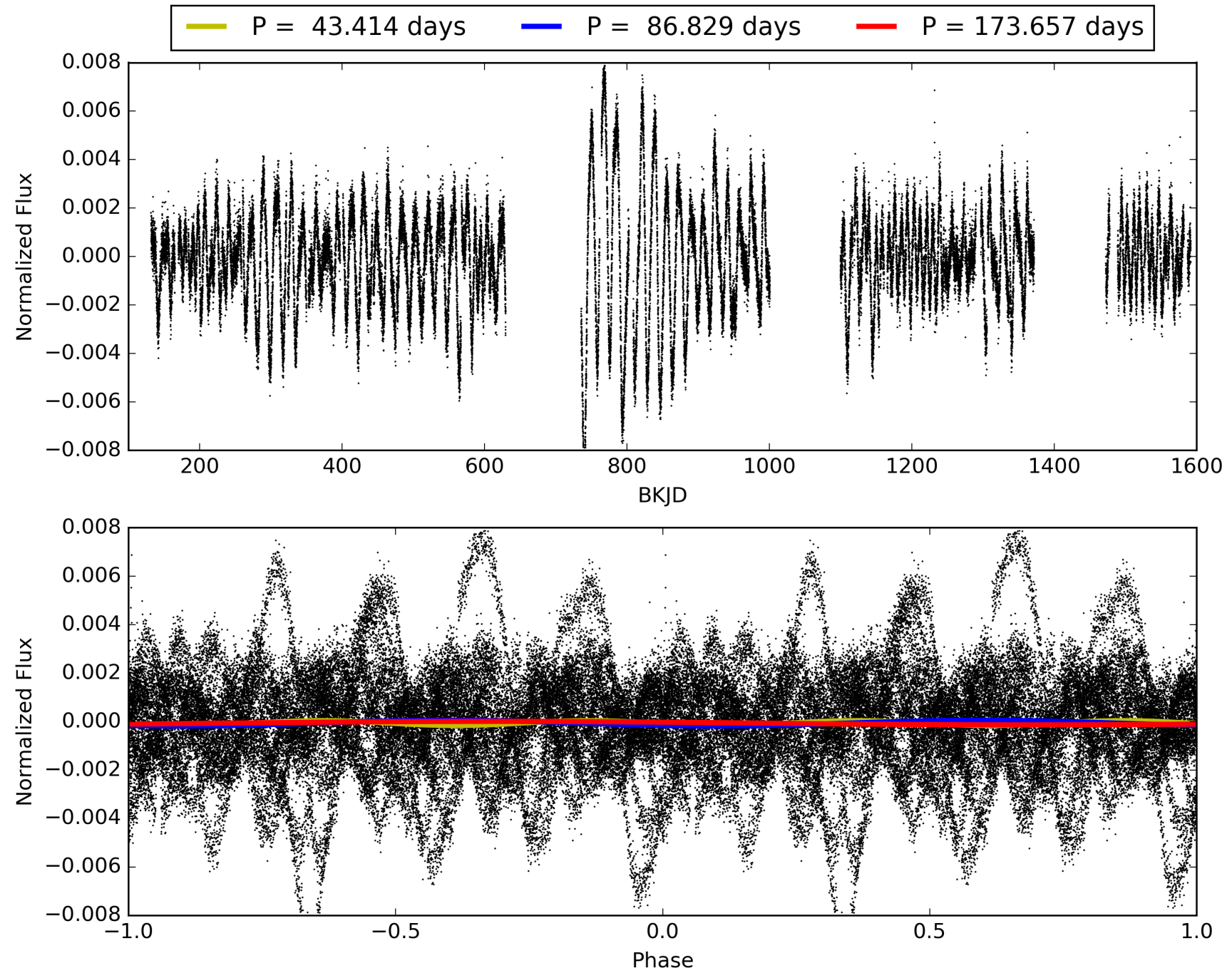
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:41:30 Z

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

TCE 010027247-01, PDC Light Curves

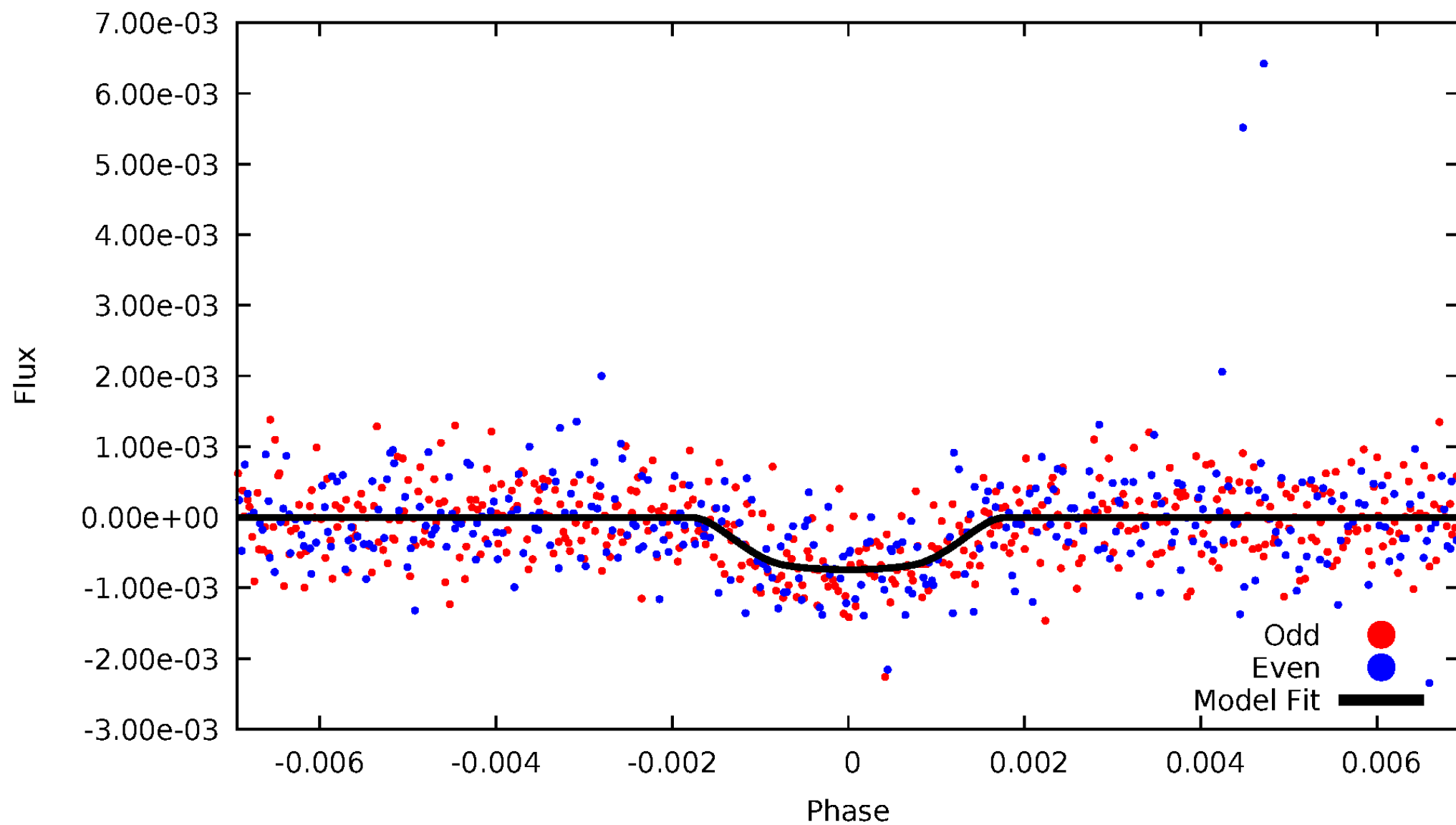


TCE 010027247-01



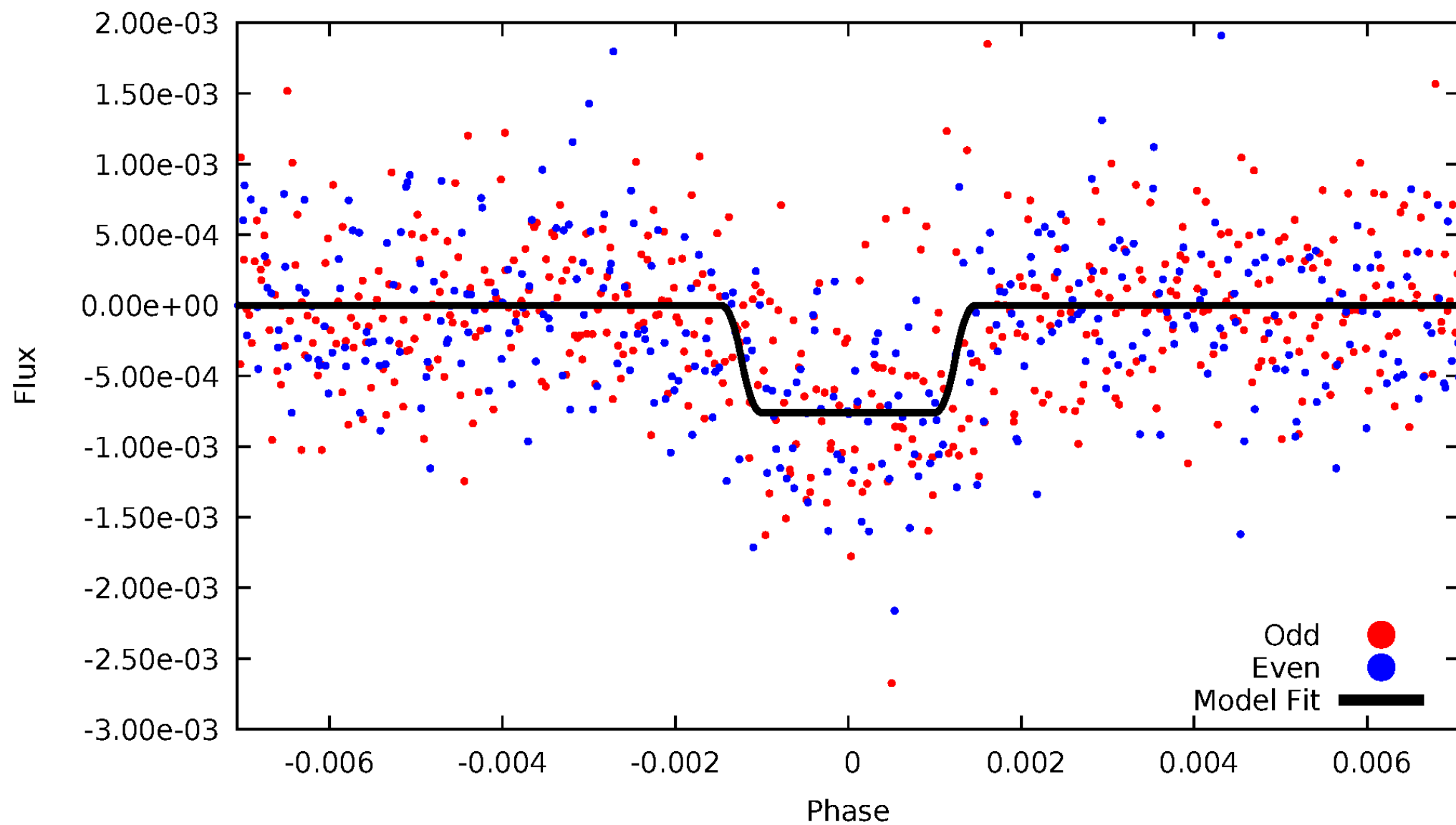
DV Odd/Even

TCE 010027247-01

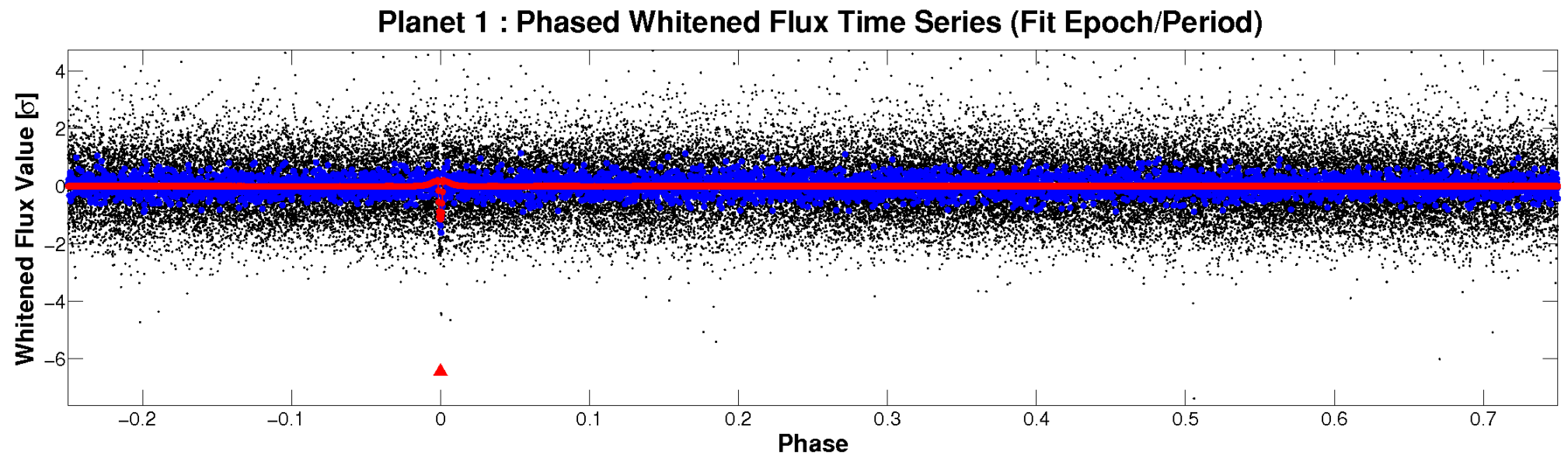
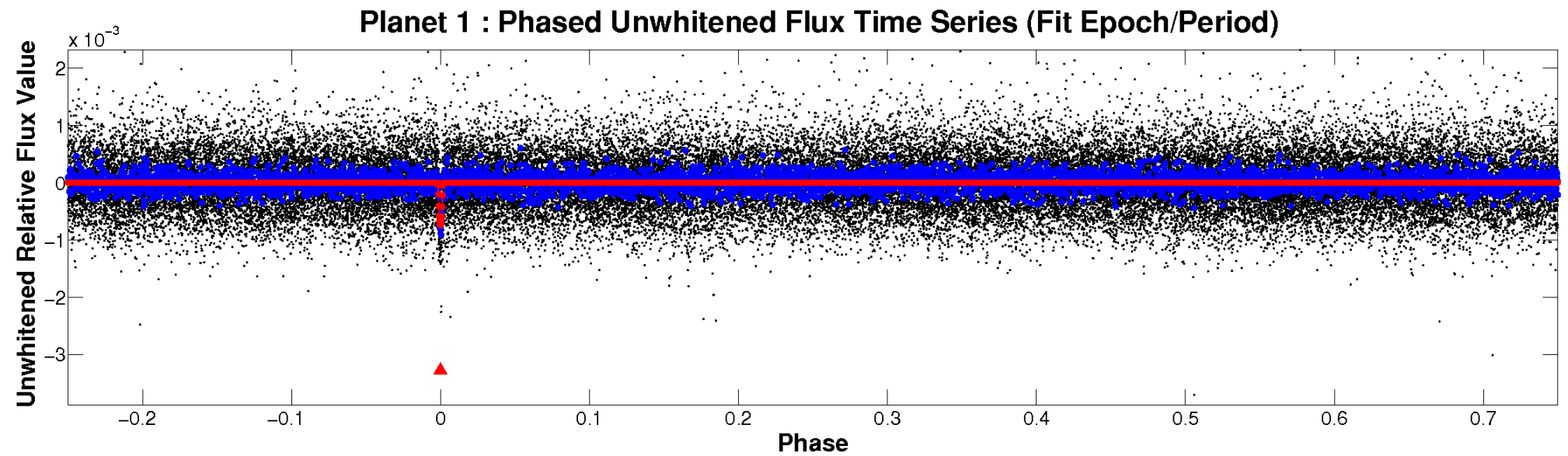


ALT Odd/Even

TCE 010027247-01

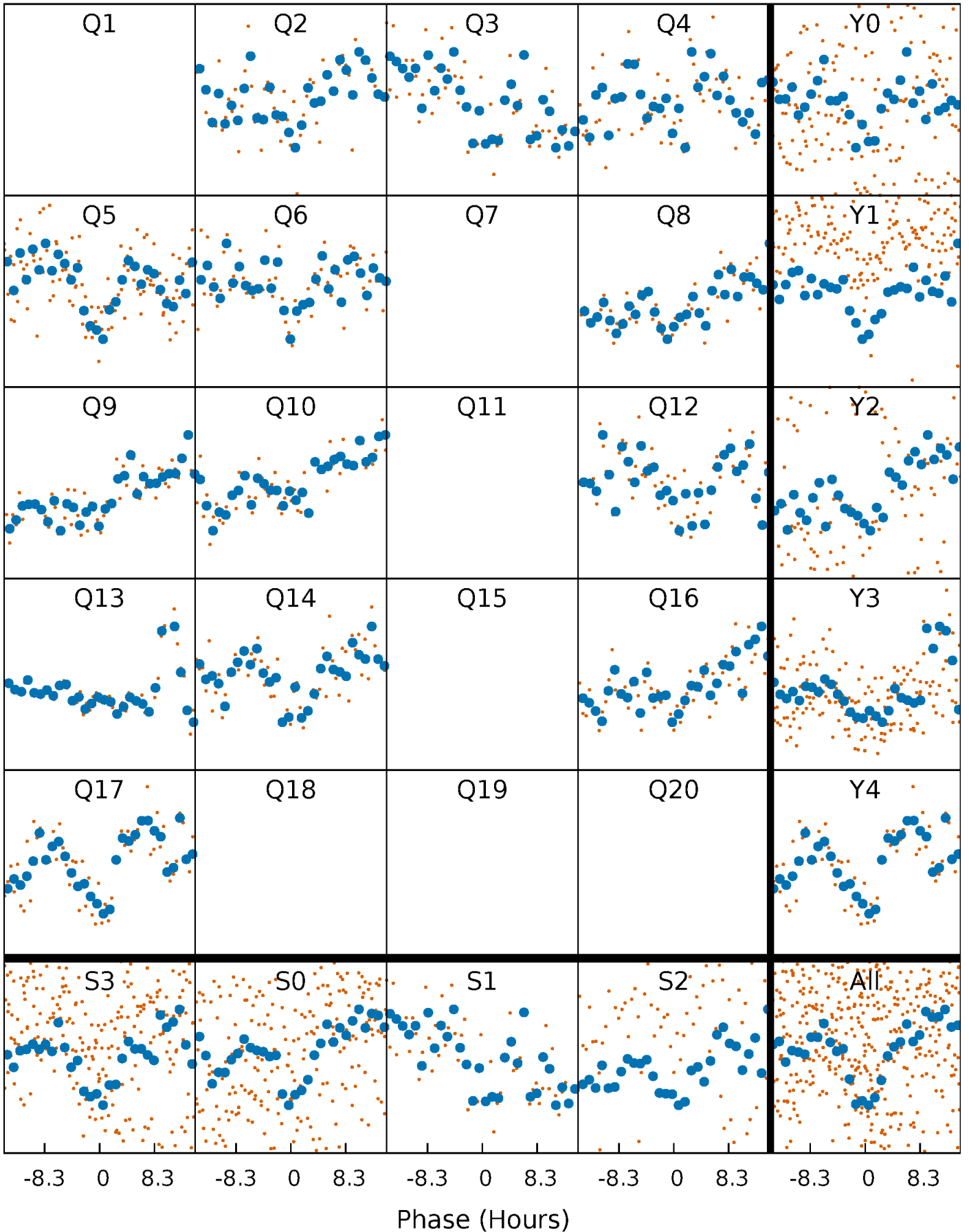


Non-Whitened Vs. Whitened Light Curve



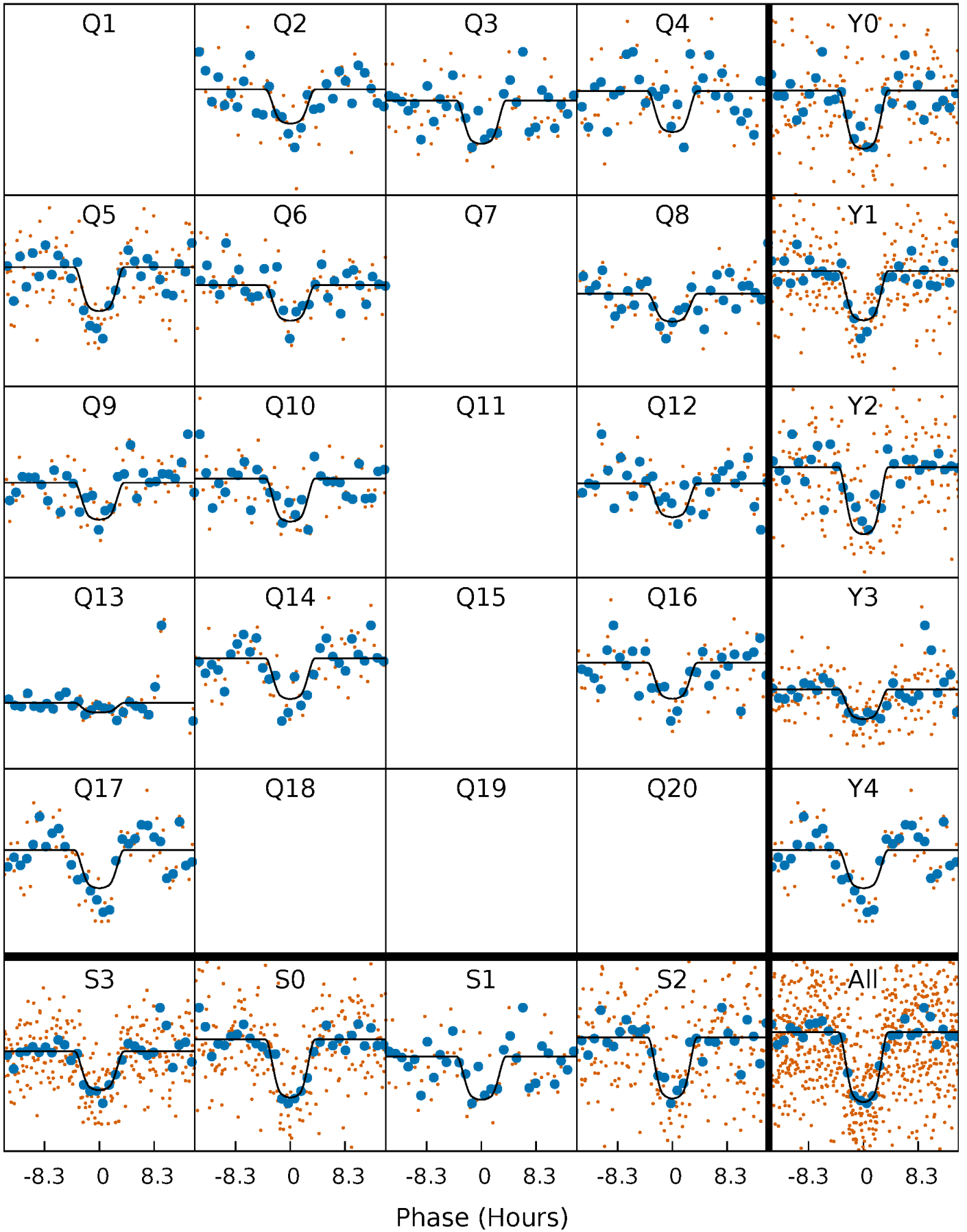
PDC Quarter-Phased Transit Curves

TCE 010027247-01 P= 86.828726 Days $T_0=189.261178$ (BKJD)



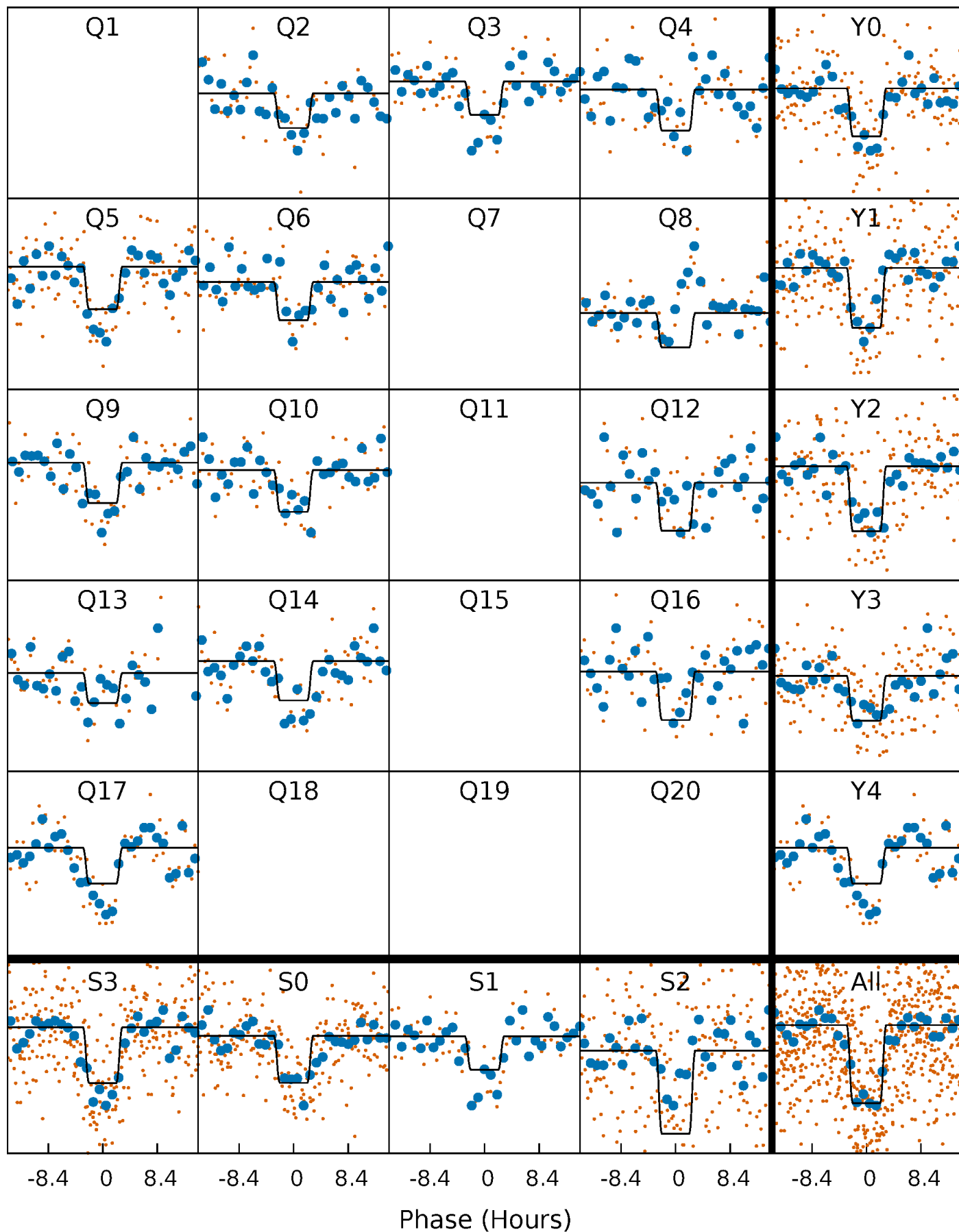
DV Quarter-Phased Transit Curves

TCE 010027247-01 P= 86.828726 Days $T_0=189.261178$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

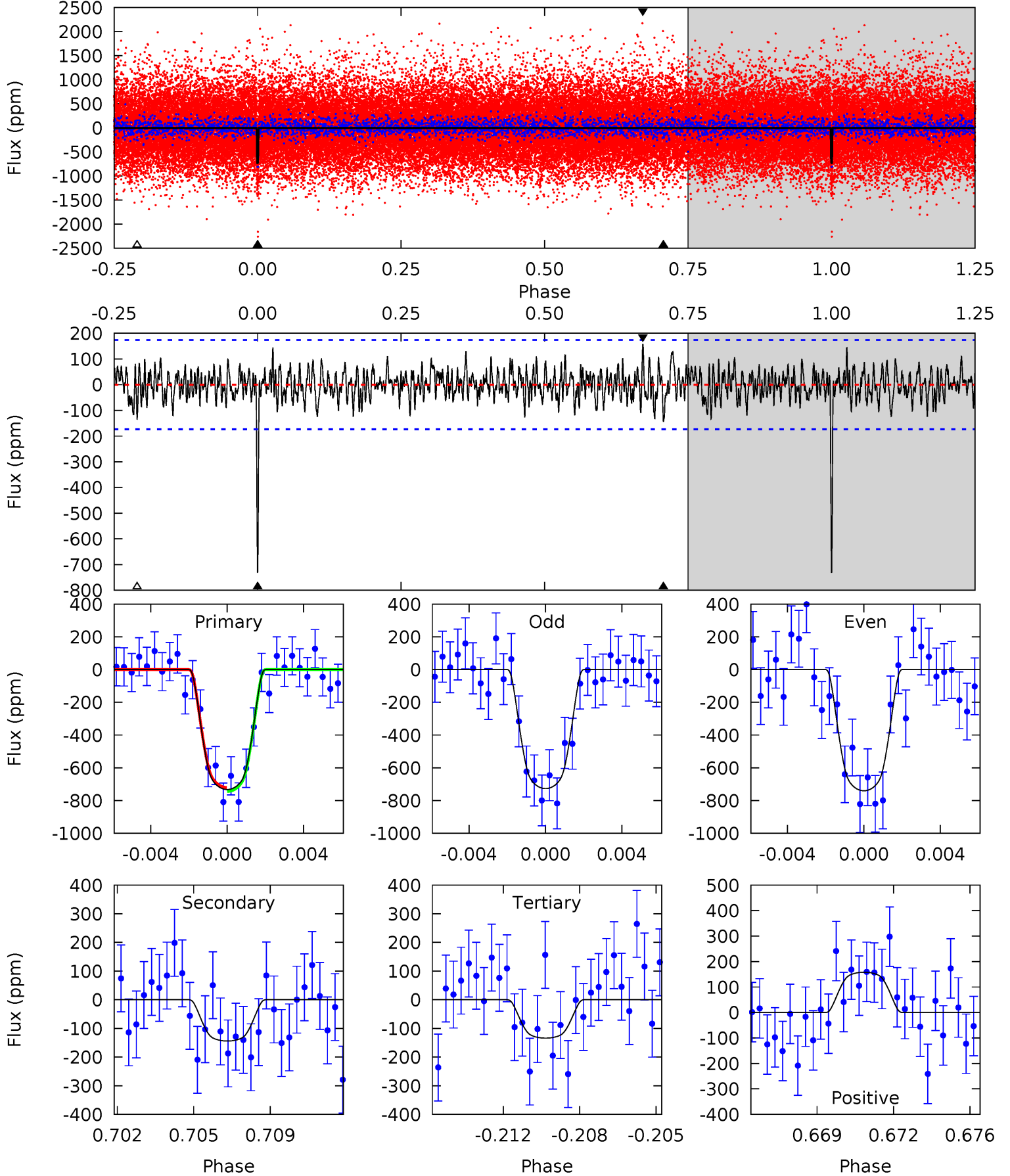
TCE 010027247-01 P= 86.828856 Days $T_0=189.253571$ (BKJD)



DV Model-Shift Uniqueness Test

010027247-01, $P = 86.828726$ Days, $E = 102.432452$ Days

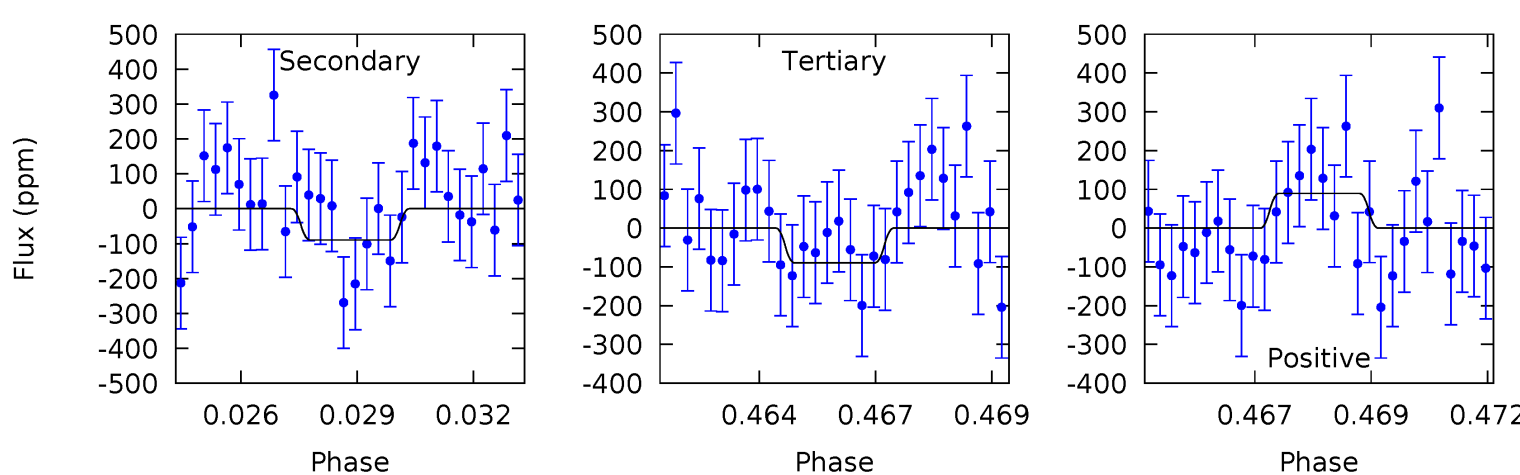
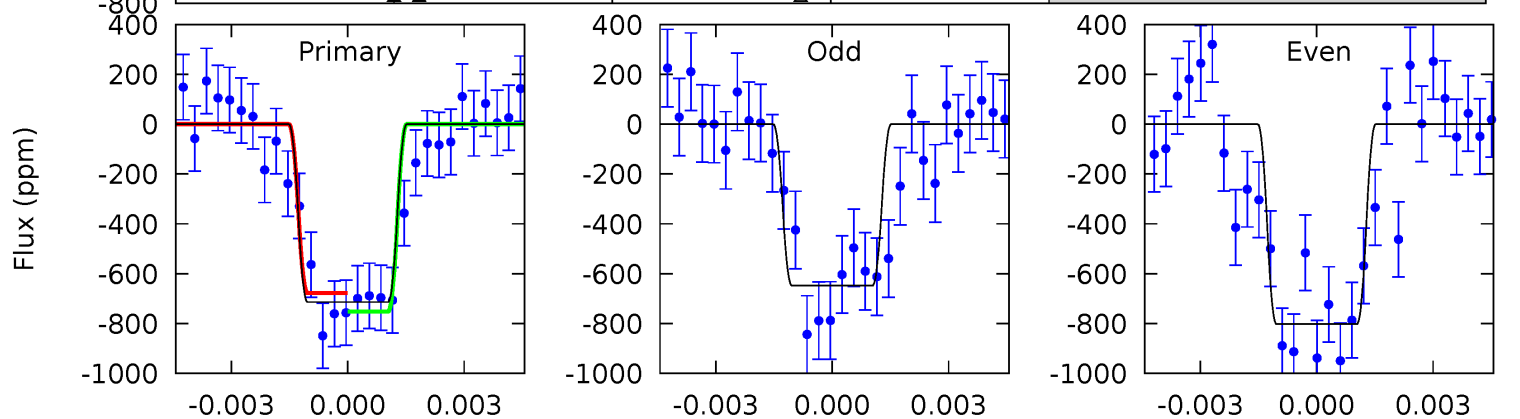
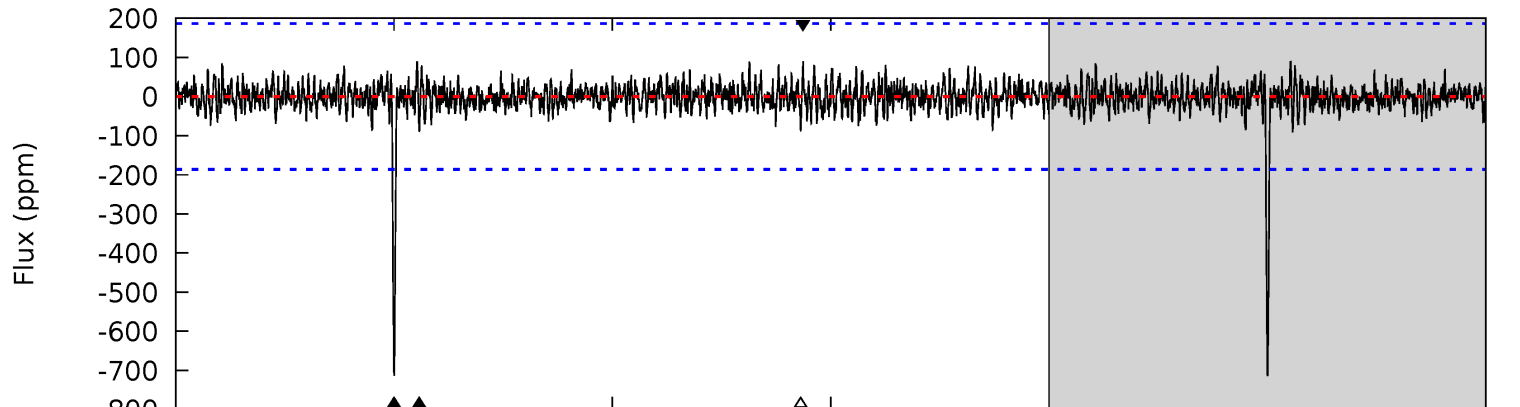
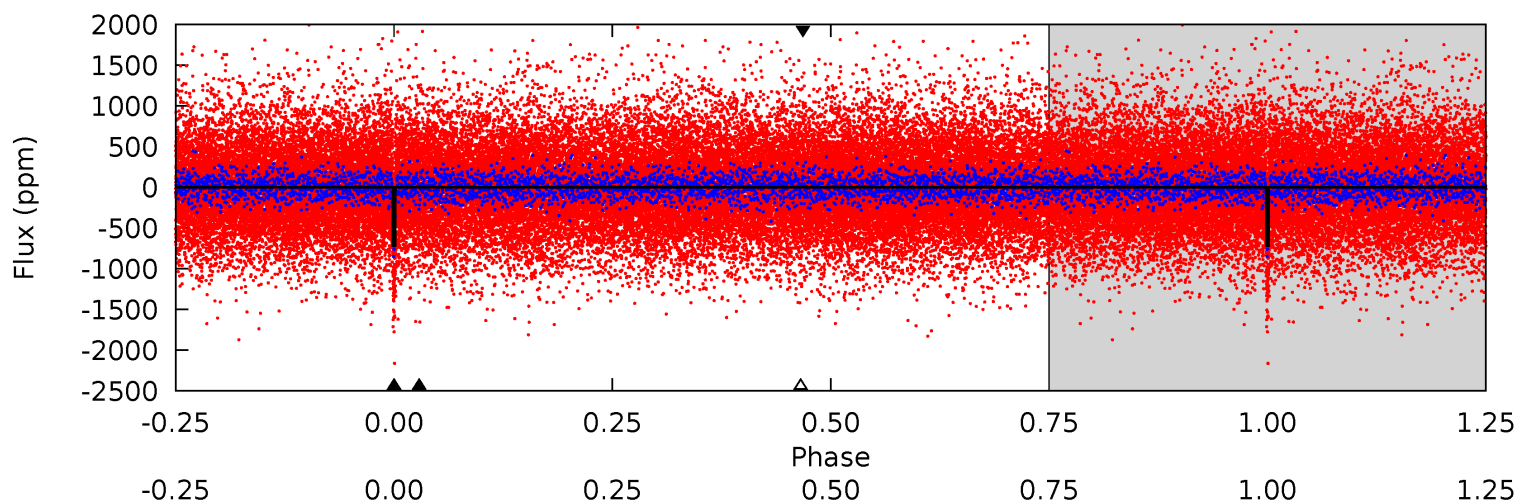
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.0	4.33	4.02	4.75	5.22	2.91	1.41	18.0	17.3	0.30	-0.42	0.20	1.04	0.18	0.37



Alt Model-Shift Uniqueness Test

010027247-01, $P = 86.828856$ Days, $E = 102.424715$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	2.53	2.52	2.52	5.26	2.98	0.76	17.6	17.6	0.01	0.00	2.14	1.06	0.11	1.05



Stellar Parameters For KIC 010027247

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3576^{+71}_{-85}	$4.791^{+0.055}_{-0.035}$	$0.160^{+0.150}_{-0.150}$	$0.463^{+0.034}_{-0.058}$	$0.482^{+0.041}_{-0.062}$	$6.858^{+2.242}_{-0.968}$
	+2%/-2%	+1%/-1%	+94%/-94%	+7%/-13%	+9%/-13%	+33%/-14%
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 010027247-01 / KOI 2418.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-144 ± 33	$1.63^{+0.16}_{-0.15}$	272^{+7}_{-9}	2678^{+104}_{-106}	2702^{+860}_{-753}
Alt.	-90 ± 35	$1.38^{+0.14}_{-0.15}$	272^{+7}_{-8}	2636^{+142}_{-180}	2383^{+1149}_{-990}

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 $A_{obs} \gg 1.0$

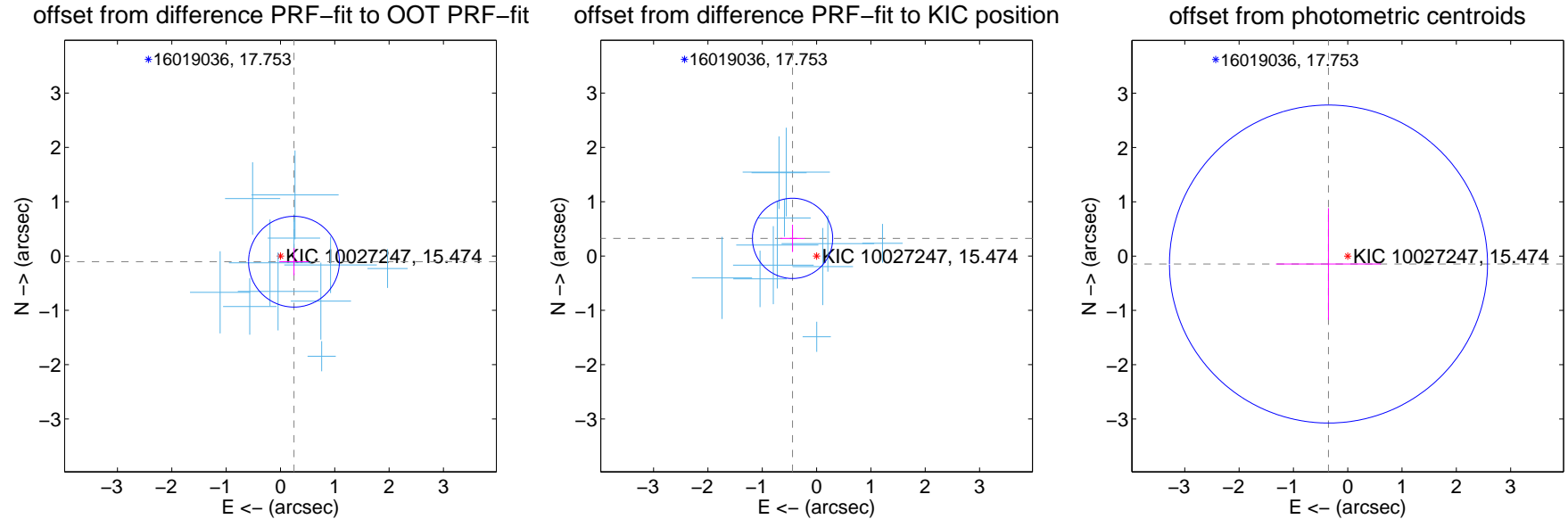
DV Centroid Data

Supplemental centroid analysis for 010027247-01. Kepler magnitude: 15.47. Transit SNR 12.59

There are 11 quarters with good PRF difference image offsets

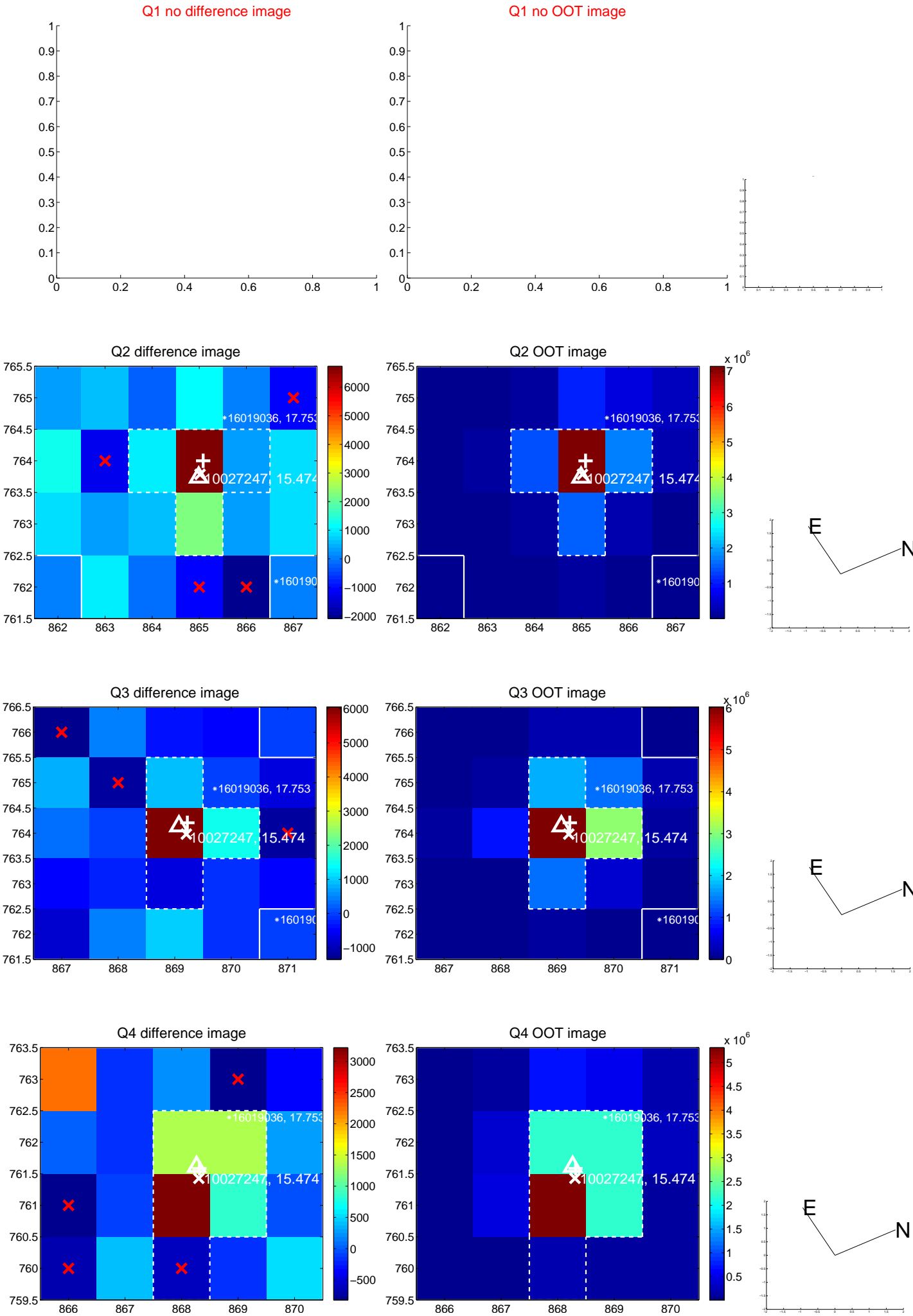
The direct PRF centroid is offset from the target star catalog position by about 0.92 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.270 ± 0.279	0.97	-0.249 ± 0.271	-0.105 ± 0.250
PRF-fit source offset from KIC position	0.549 ± 0.246	2.23	0.442 ± 0.225	0.325 ± 0.251
photometric centroid source offset	0.38 ± 0.98	0.39	0.35 ± 0.97	-0.15 ± 1.03

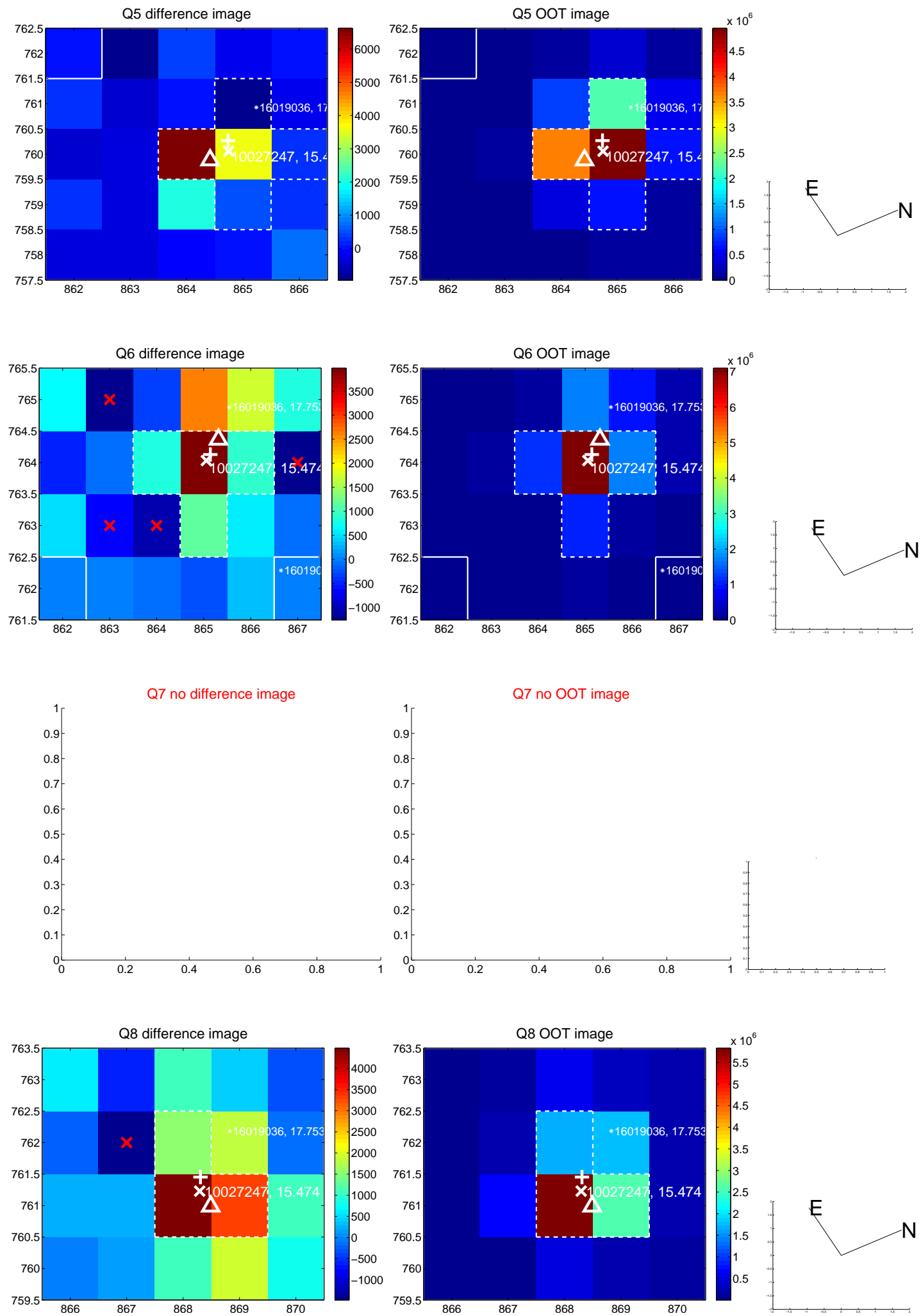


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

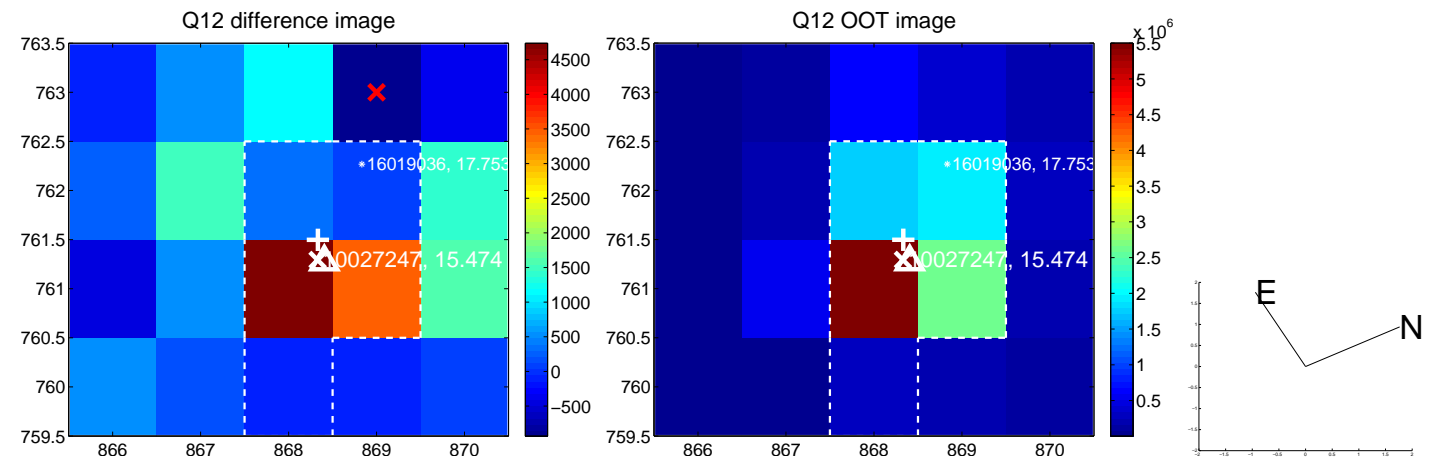
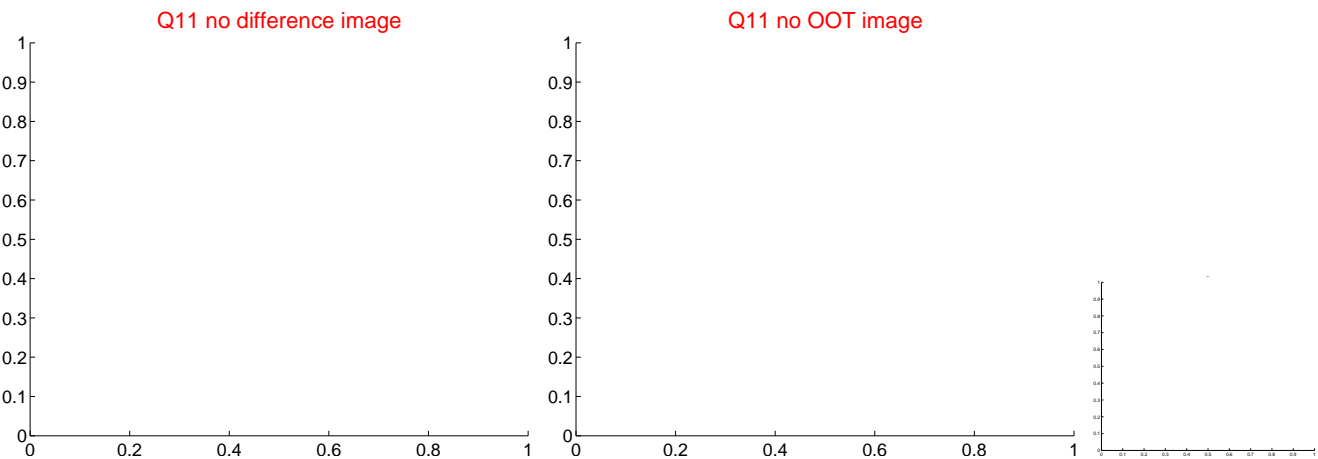
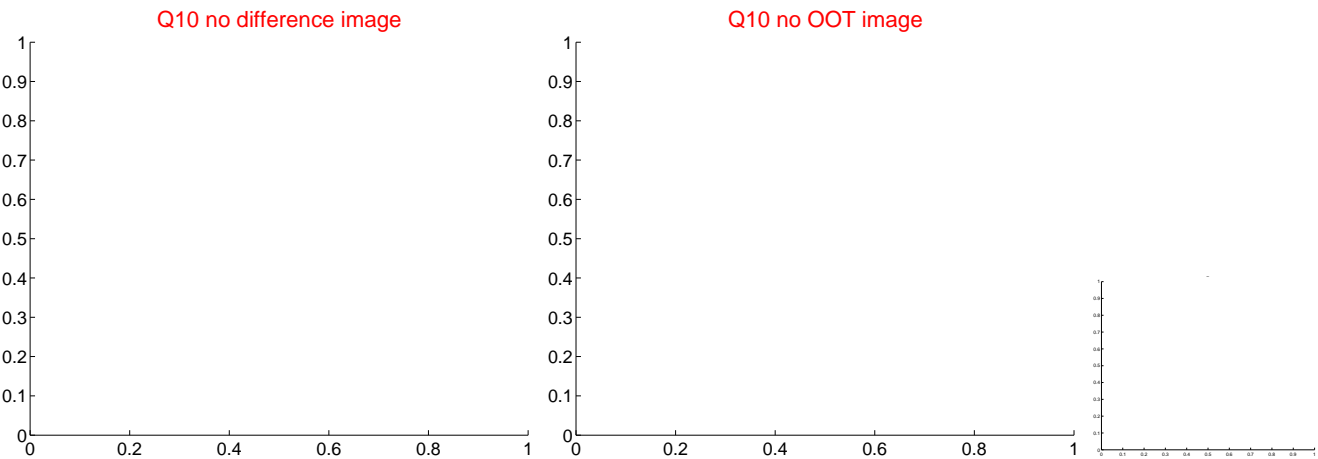
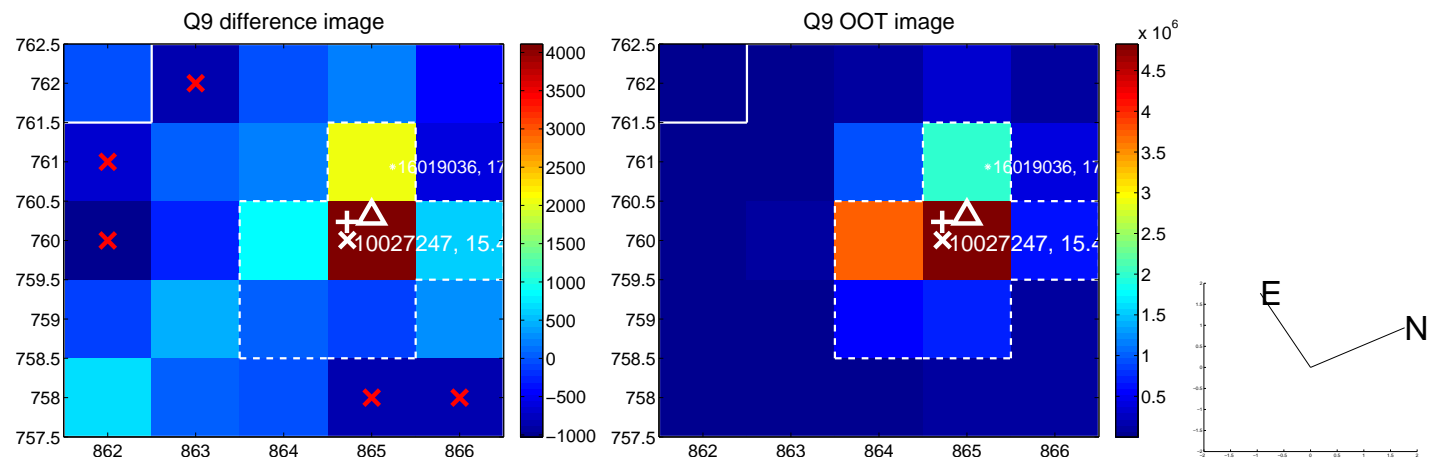
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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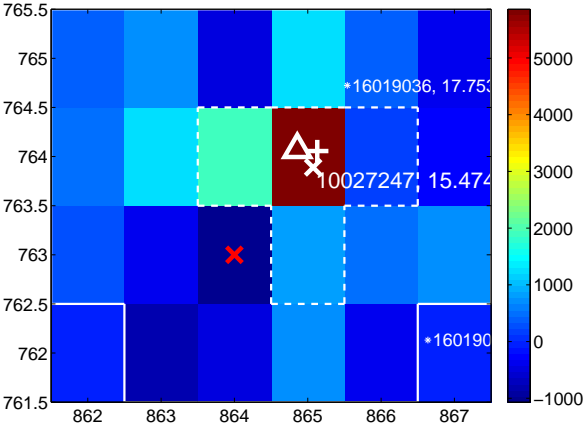
Q13 no difference image



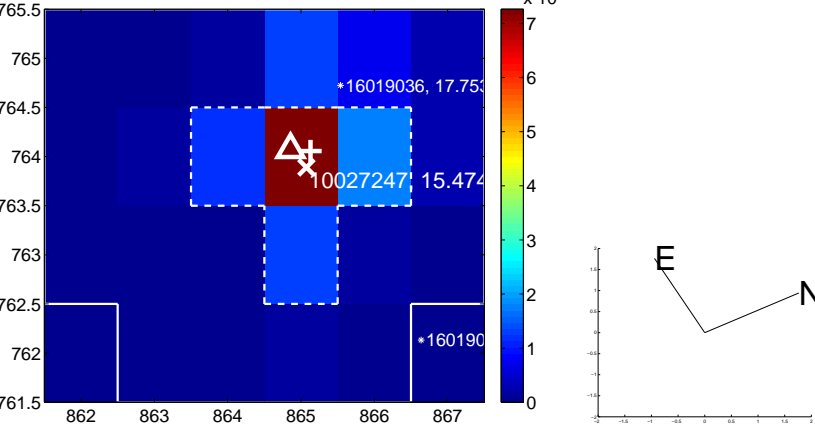
Q13 no OOT image



Q14 difference image



Q14 OOT image



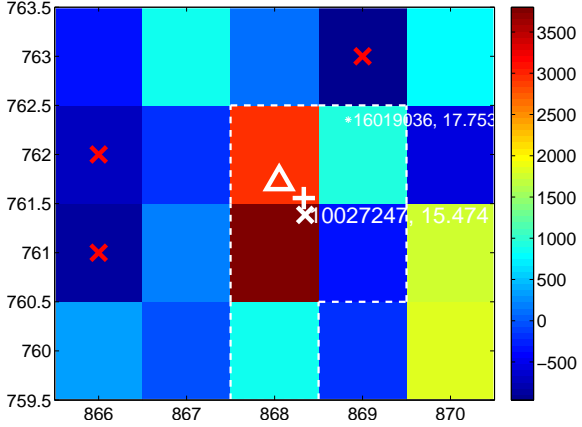
Q15 no difference image



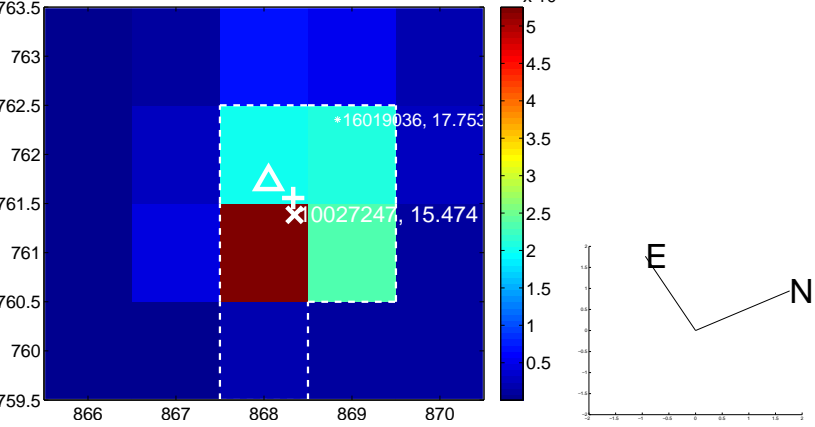
Q15 no OOT image



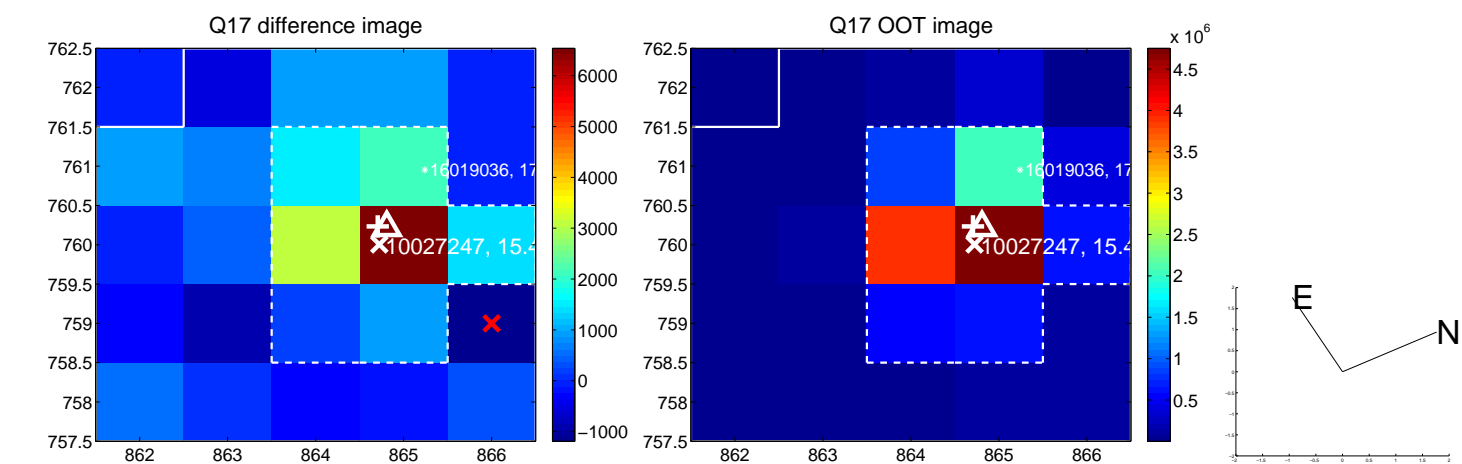
Q16 difference image



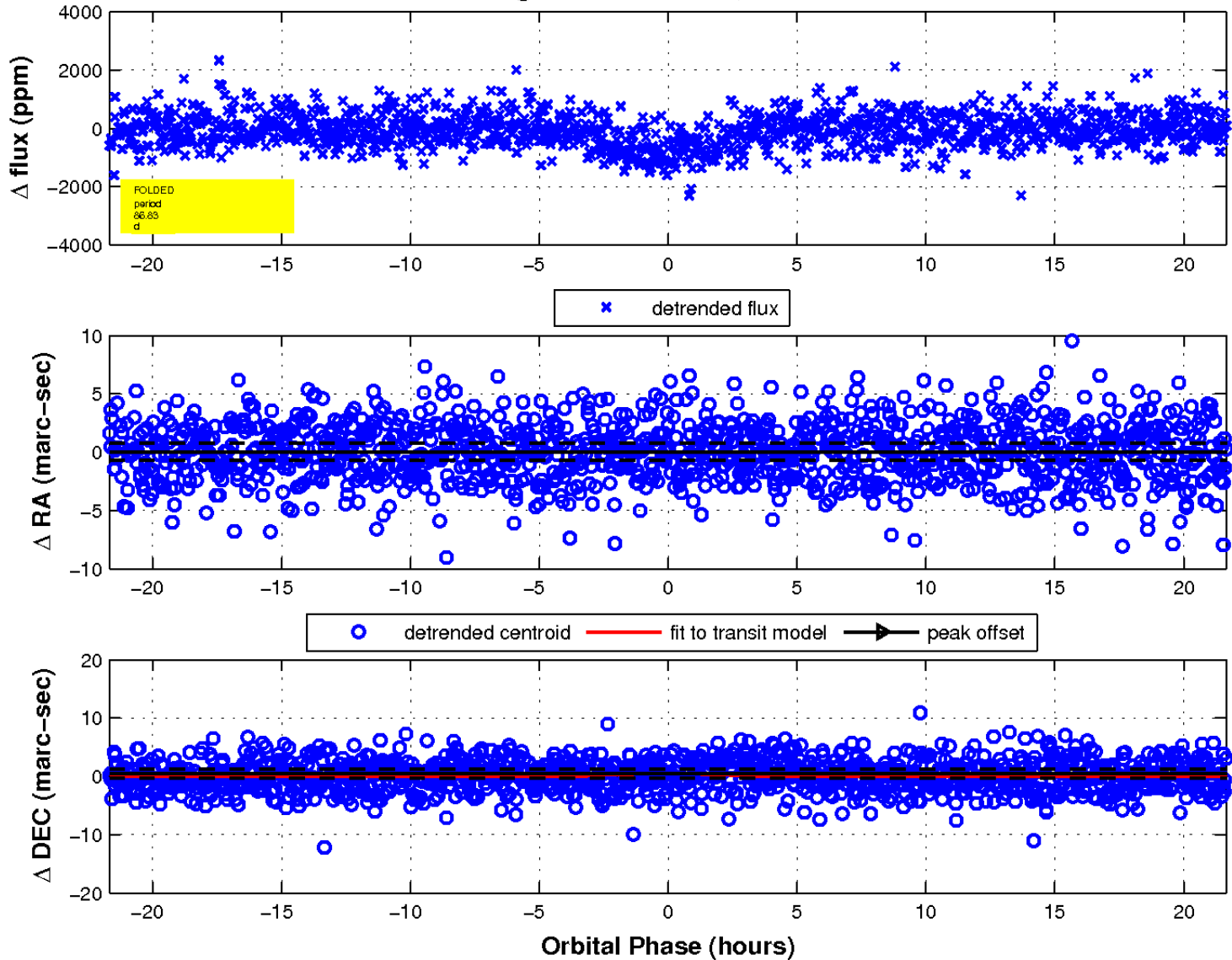
Q16 OOT image



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

