

KIC 009076971

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})
009076971-01	OBS	2981.01	9.066879	134.752495	380.0	3.357	13.2	13.9	0.79	5142	1.86	65.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009076971-01	OBS	FP	0.25	0	0	1	0	CENT_UNRESOLVED_OFFSET

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

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

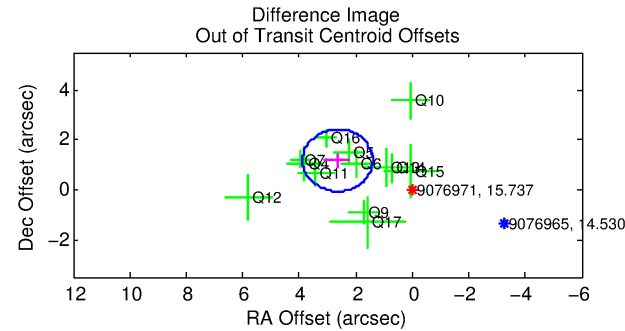
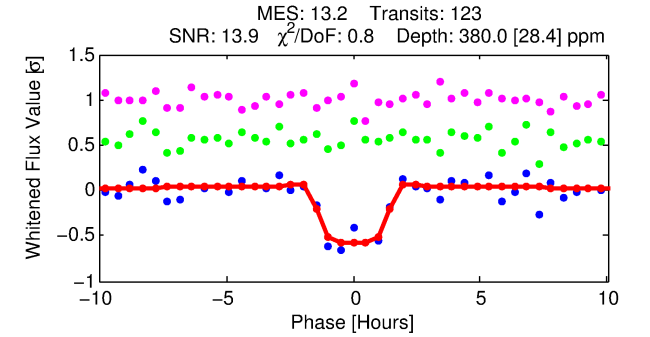
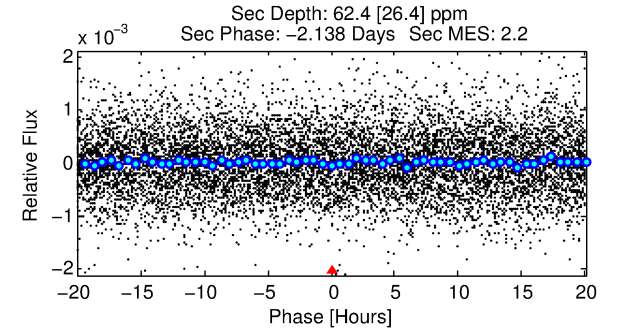
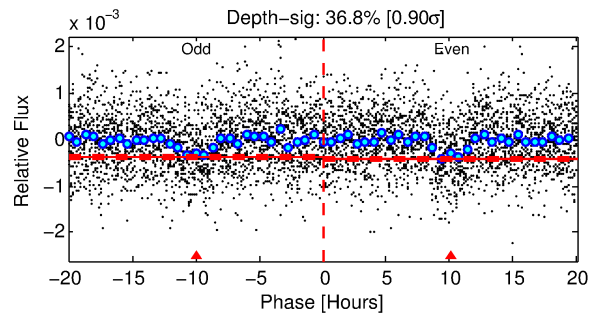
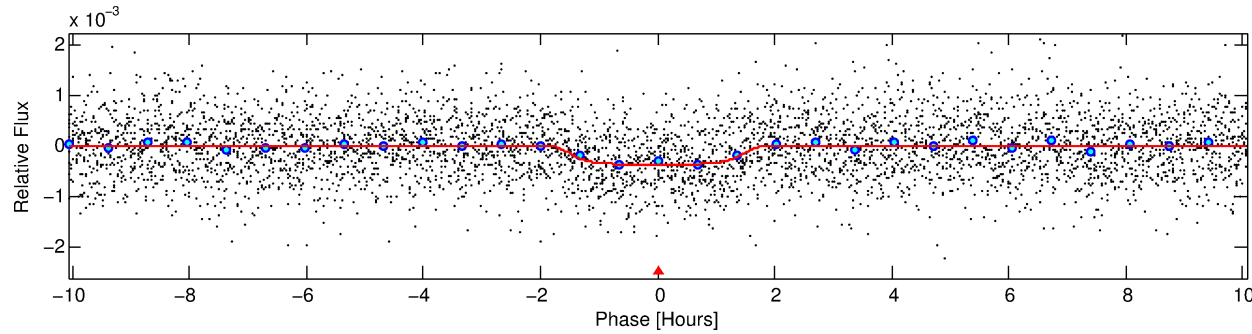
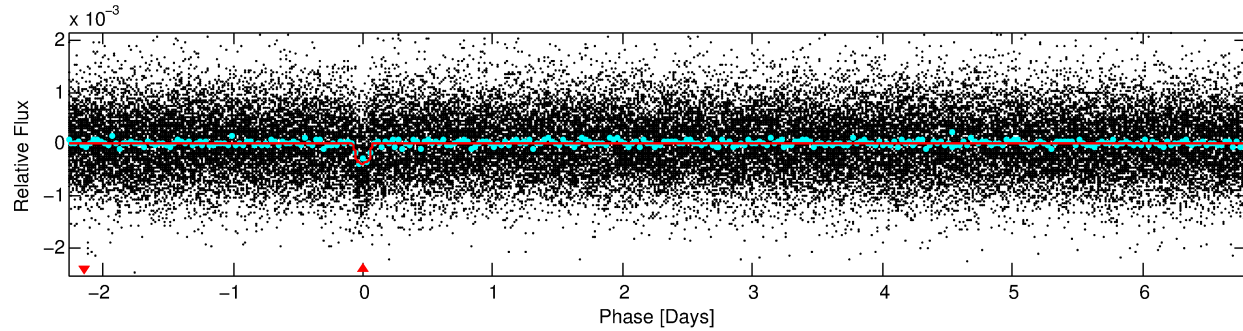
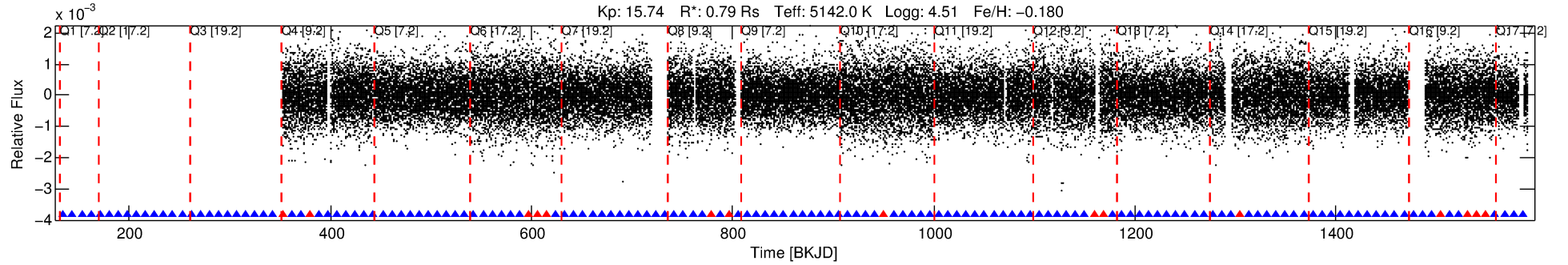
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009076971-01

No Significant Match Found

DV One-Page Summary

KIC: 9076971 Candidate: 1 of 1 Period: 9.067 d
KOI: K02981.01 Corr: 0.938



DV Fit Results:

Period = 9.06688 [0.00006] d
Epoch = 134.7525 [0.0060] BKJD
Rp/R* = 0.0216 [0.0063]
a/R* = 10.02 [11.88]
b = 0.90 [0.26]
Seff = 65.59 [13.79]
Teq = 726 [38] K
Rp = 1.86 [0.59] Re
a = 0.0771 [0.0081] AU
Ag = 58.91 [43.57] [1.33 σ]
Teffp = 3108 [572] K [4.16 σ]

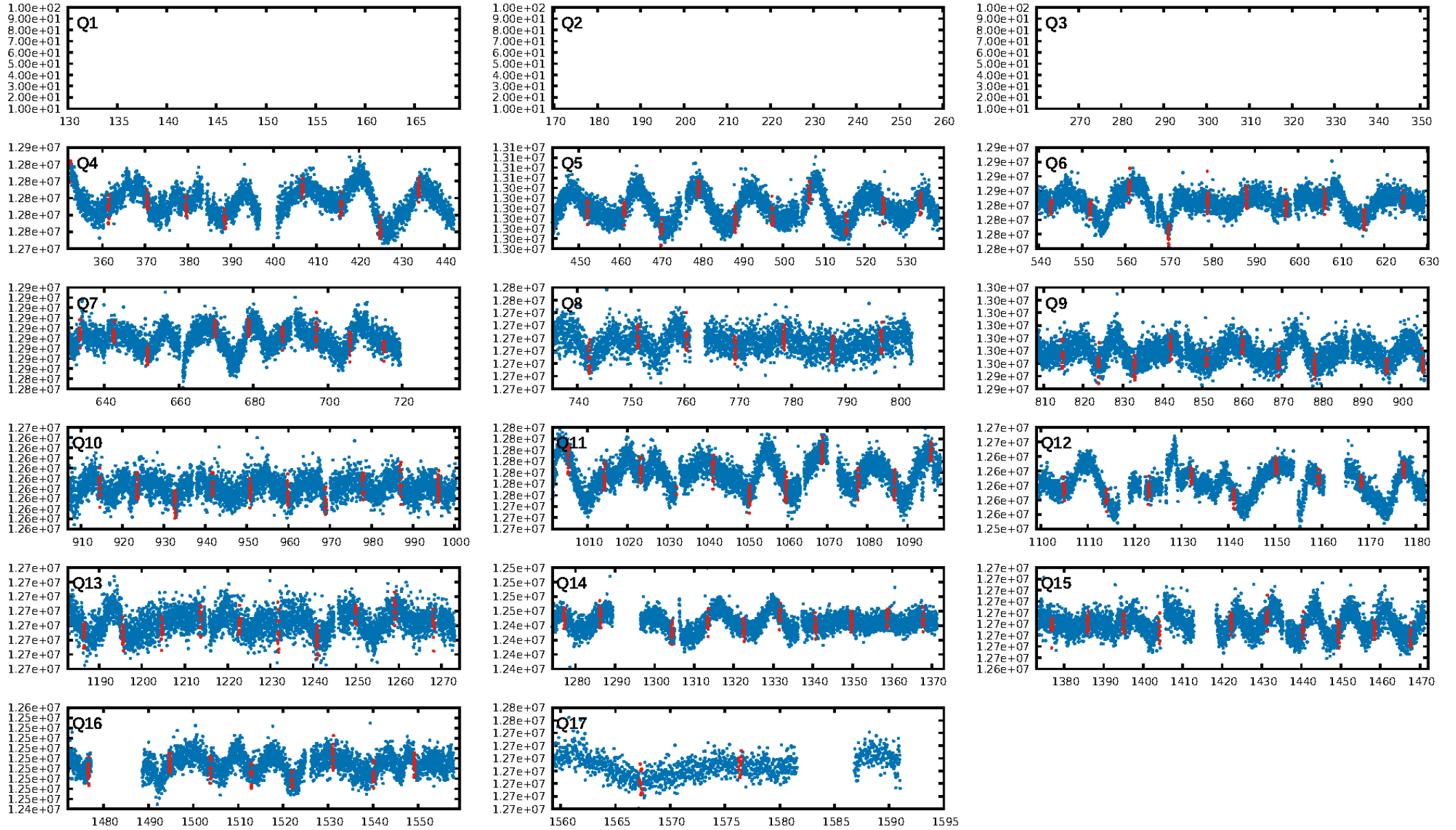
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.42e-39
RollingBand-fgt: 0.88 [106/121]
GhostDiagnostic-chr: 8.984
Centroid-sig: 0.2%
Centroid-so: 0.846 arcsec [0.91 σ]
OotOffset-rm: 2.894 arcsec [6.98 σ]
KicOffset-rm: 0.509 arcsec [1.31 σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 1.00 [14/14]

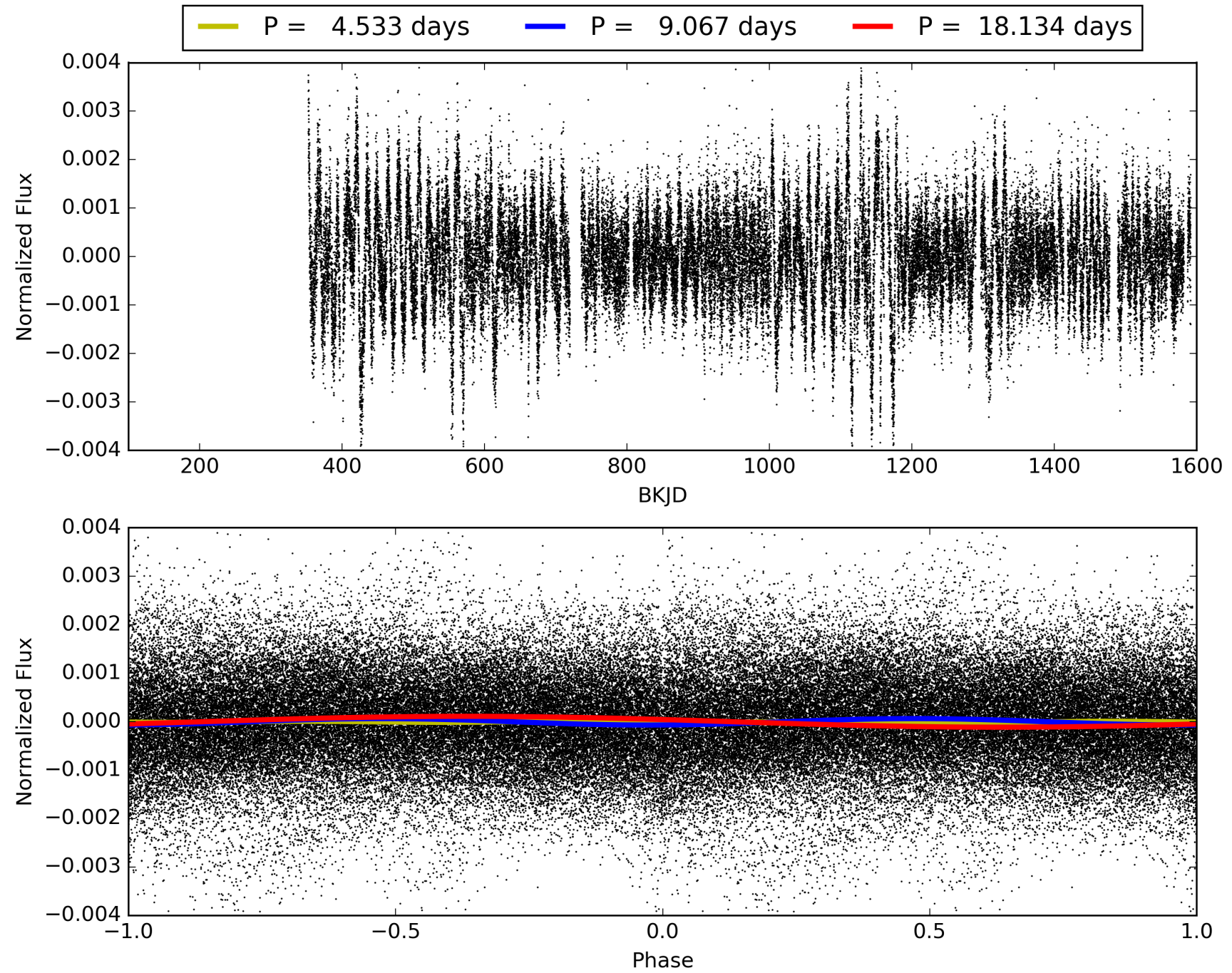
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:42:22 Z

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

TCE 009076971-01, PDC Light Curves

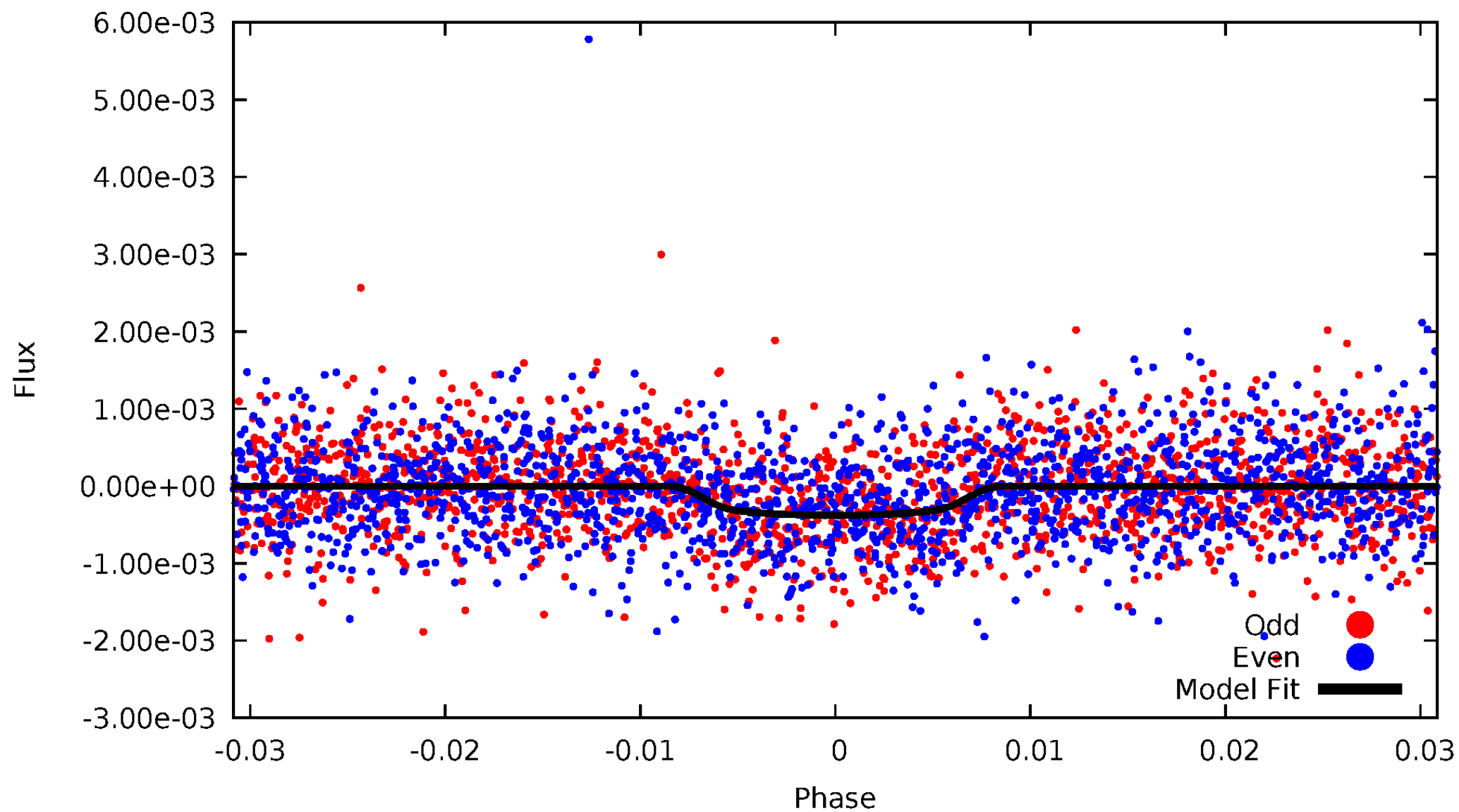


TCE 009076971-01



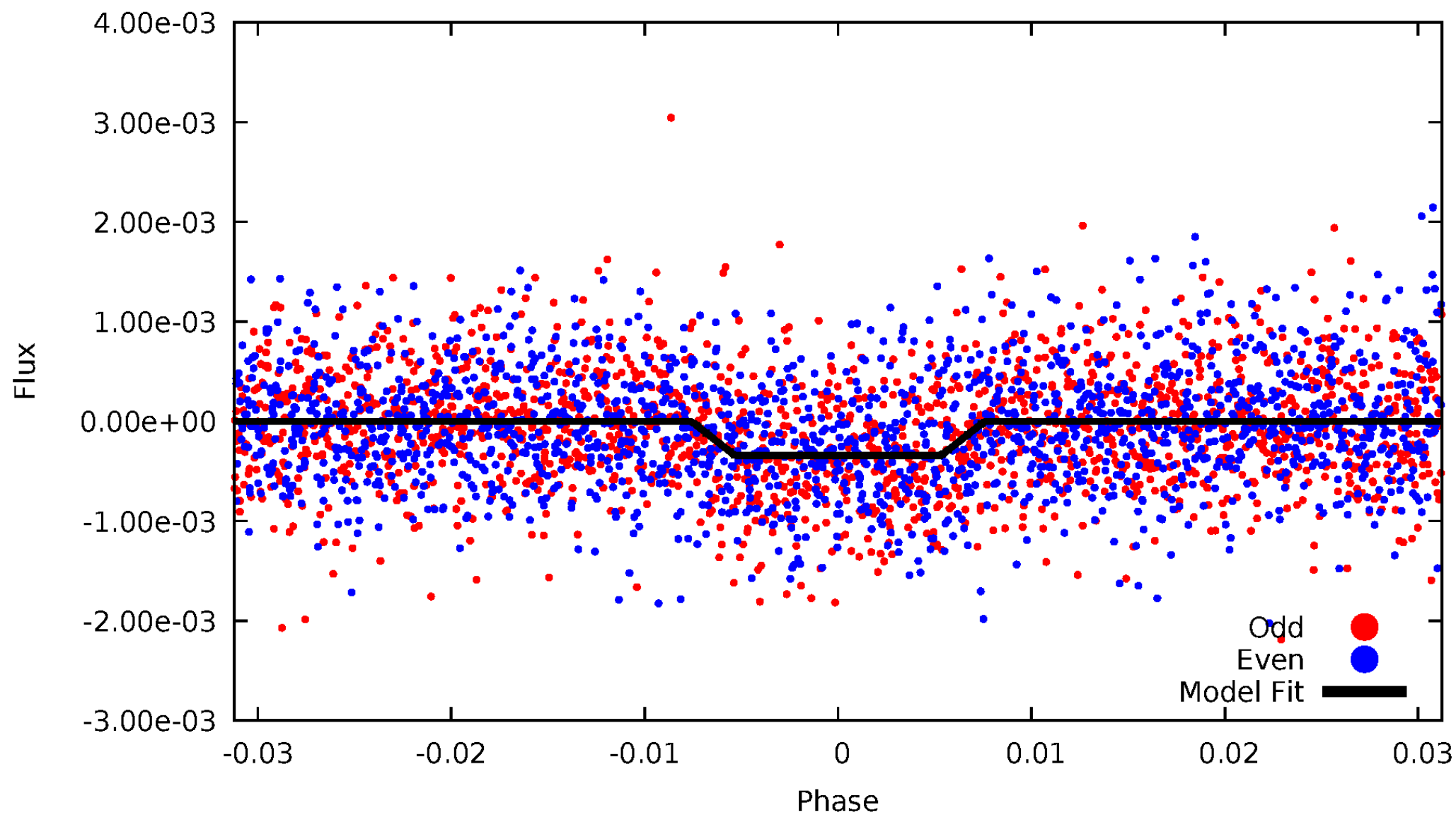
DV Odd/Even

TCE 009076971-01

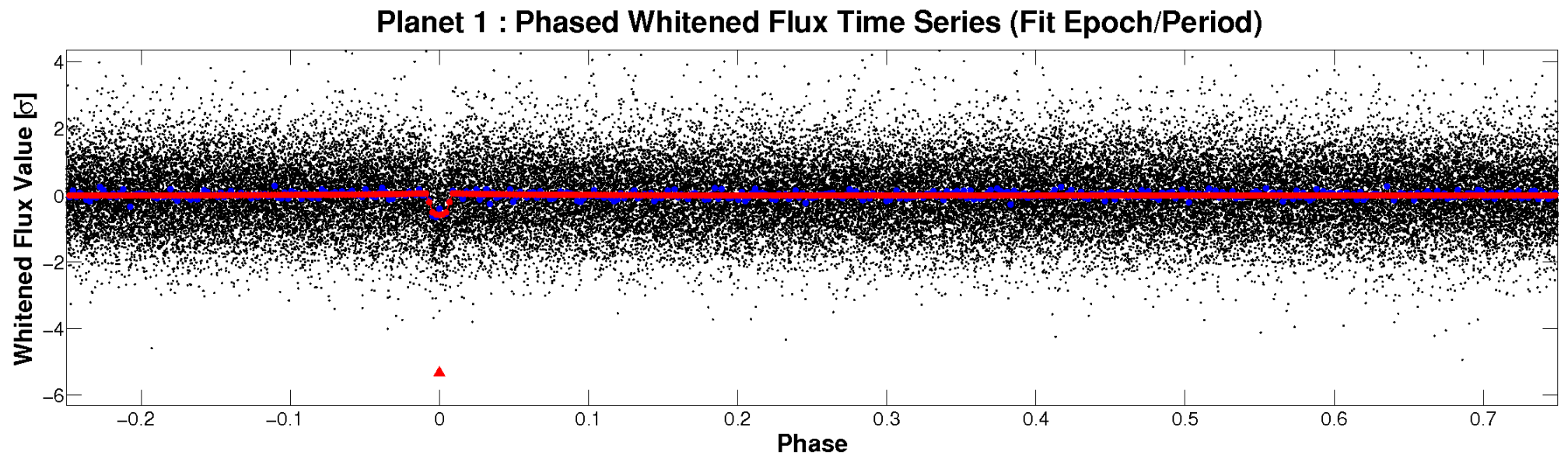
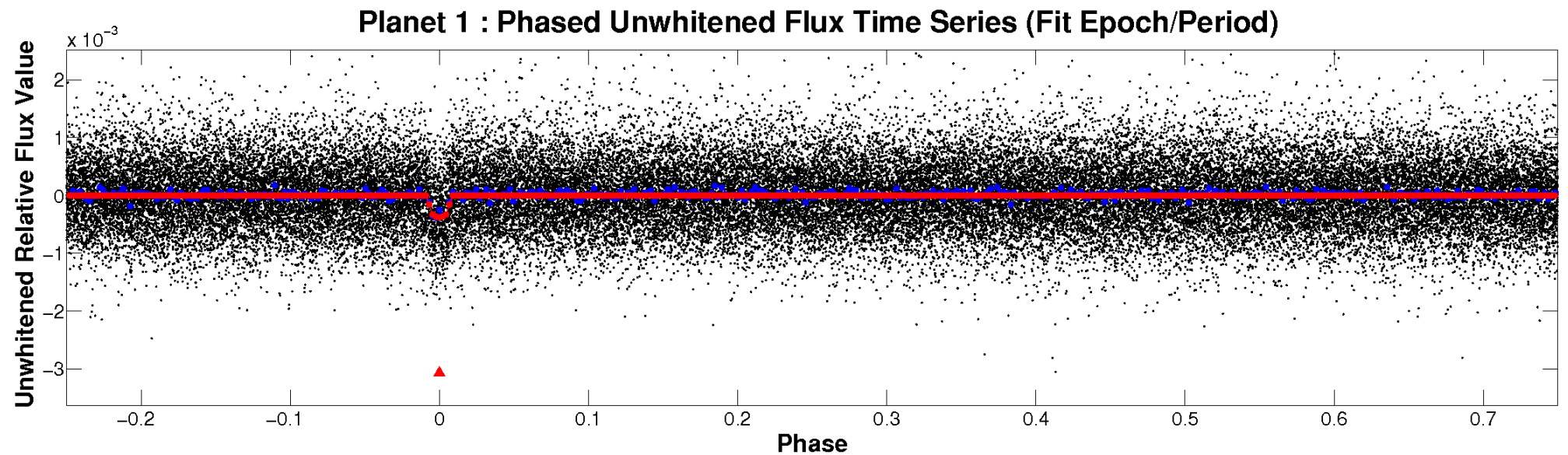


ALT Odd/Even

TCE 009076971-01

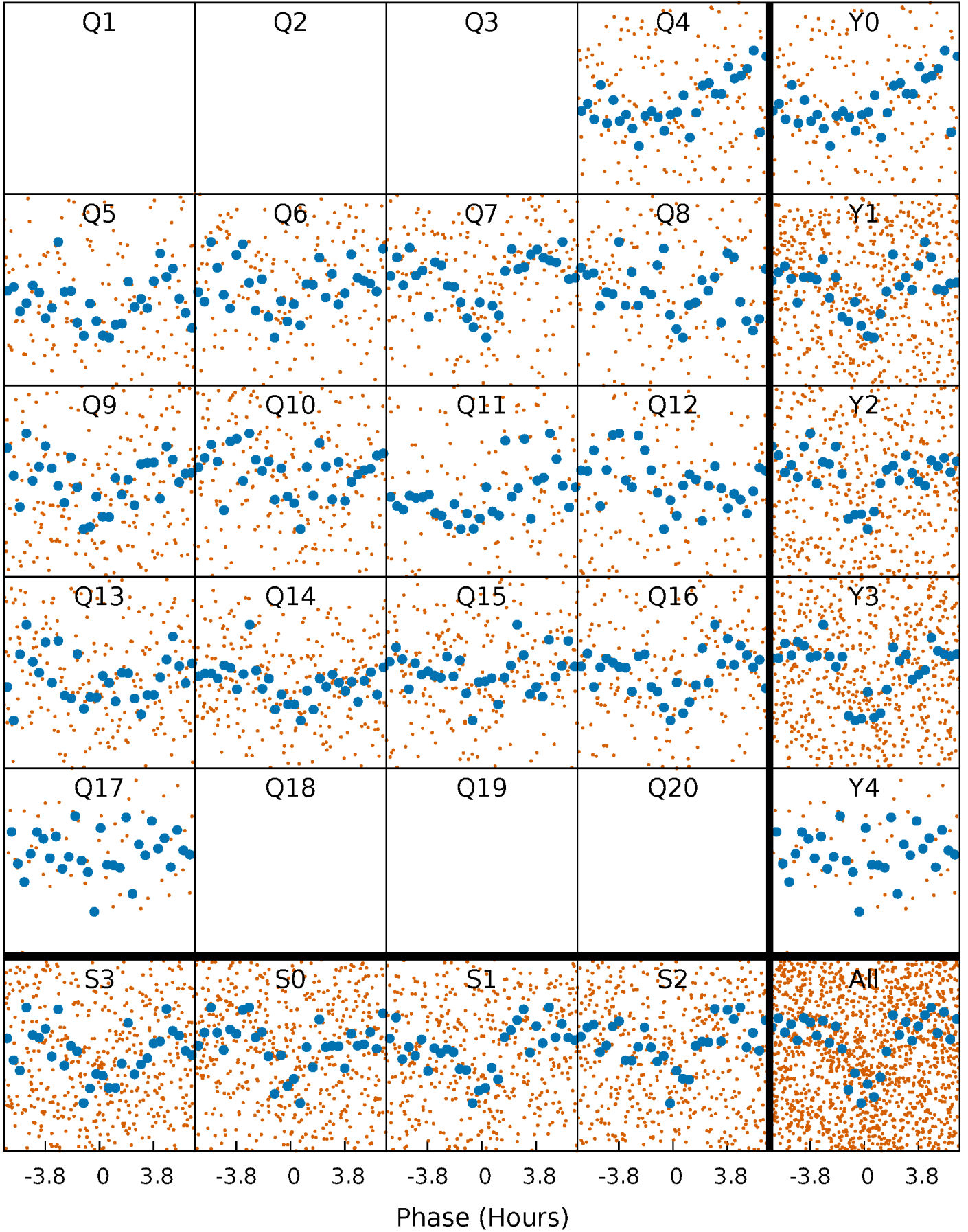


Non-Whitened Vs. Whitened Light Curve



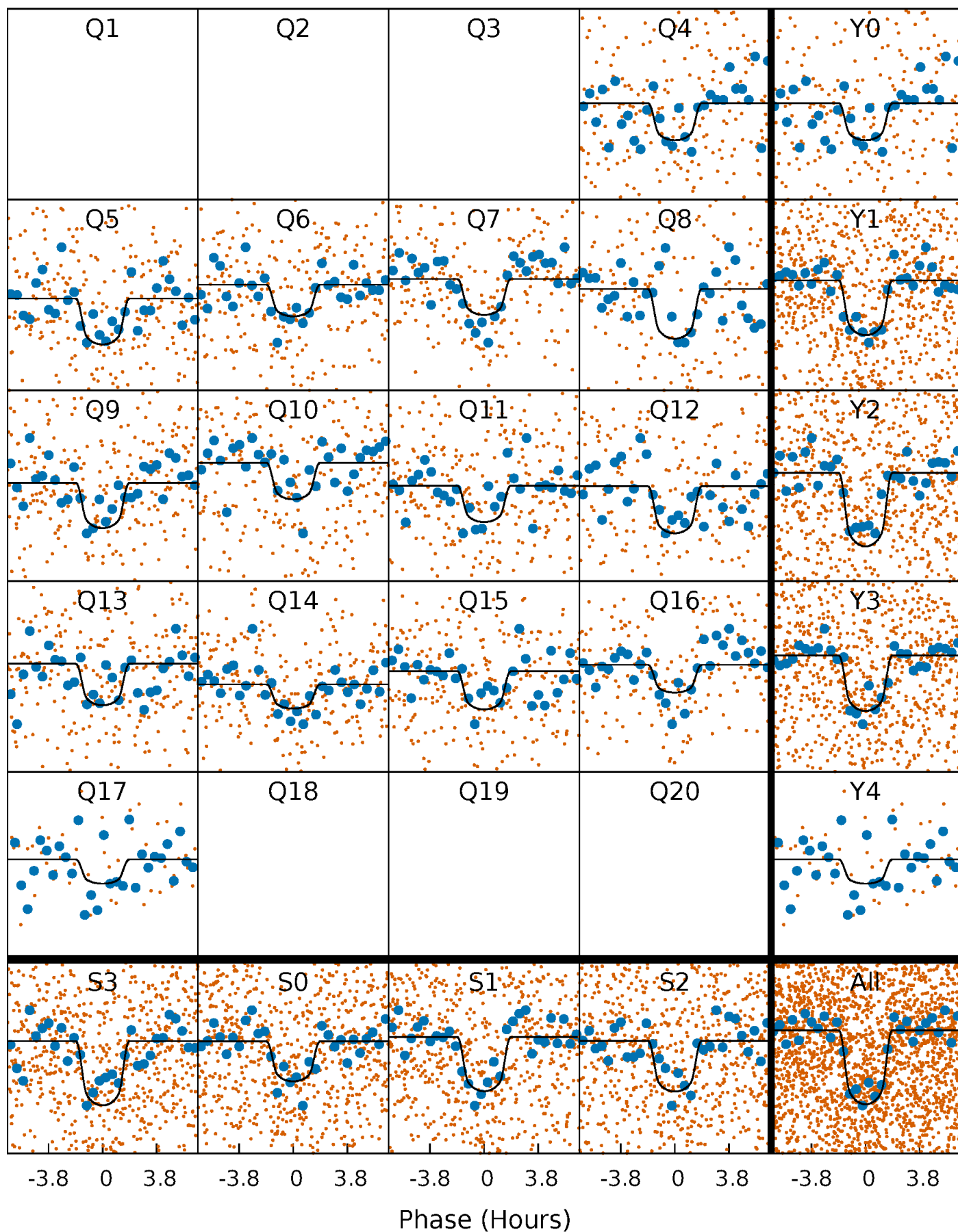
PDC Quarter-Phased Transit Curves

TCE 009076971-01 P= 9.066879 Days $T_0=134.752495$ (BKJD)



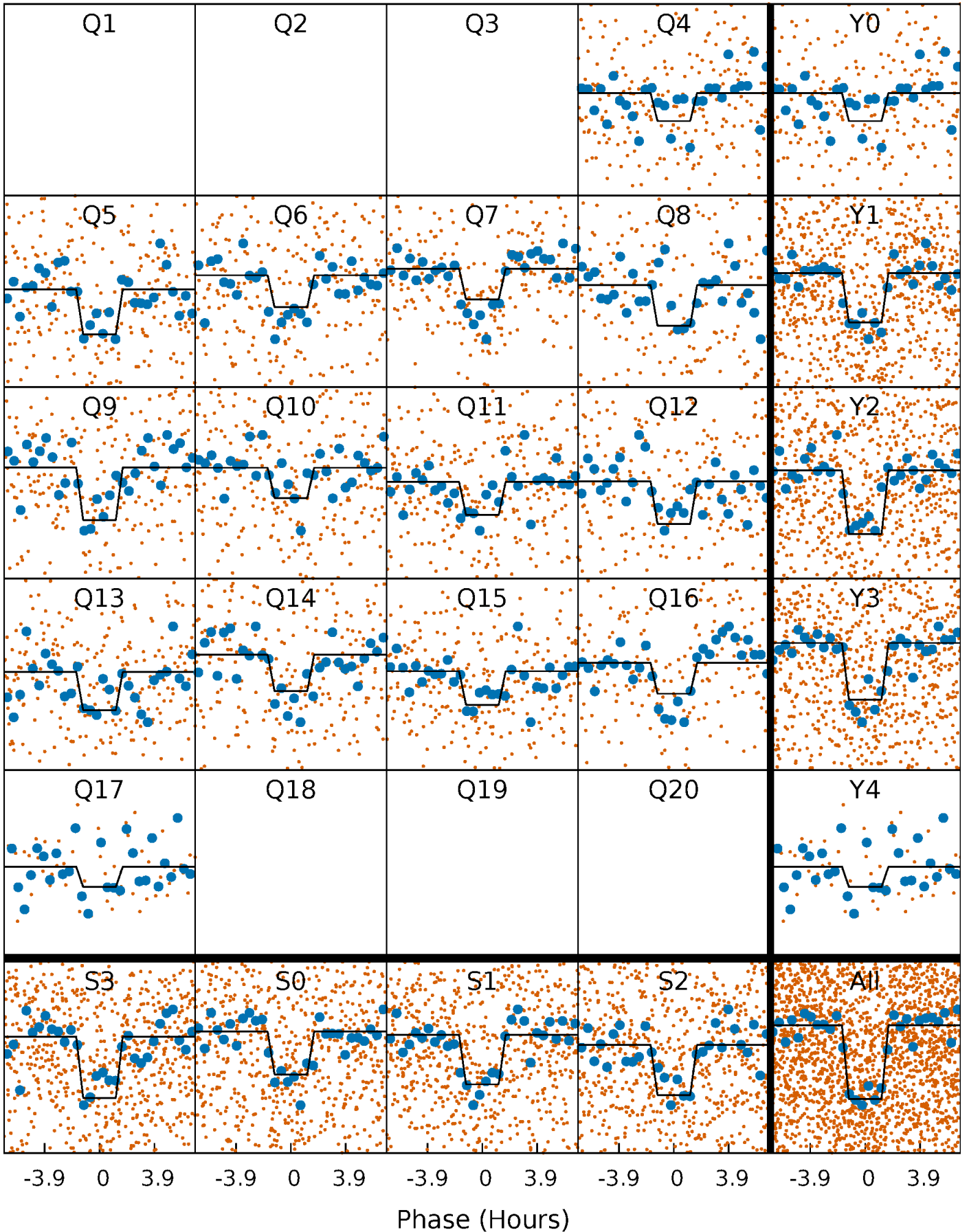
DV Quarter-Phased Transit Curves

TCE 009076971-01 P= 9.066879 Days $T_0=134.752495$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

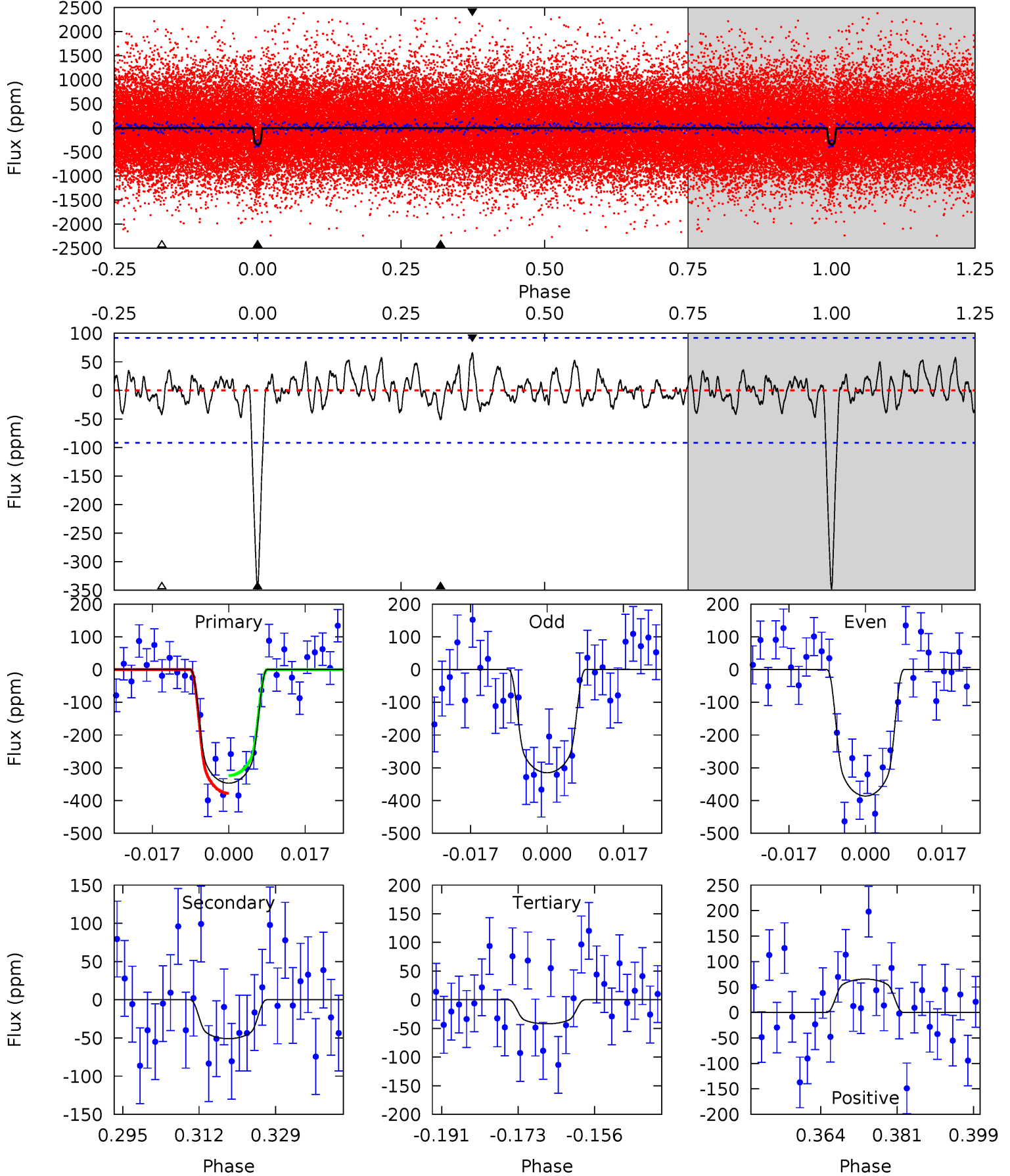
TCE 009076971-01 P= 9.066925 Days $T_0=134.747619$ (BKJD)



DV Model-Shift Uniqueness Test

009076971-01, P = 9.066879 Days, E = 134.752495 Days

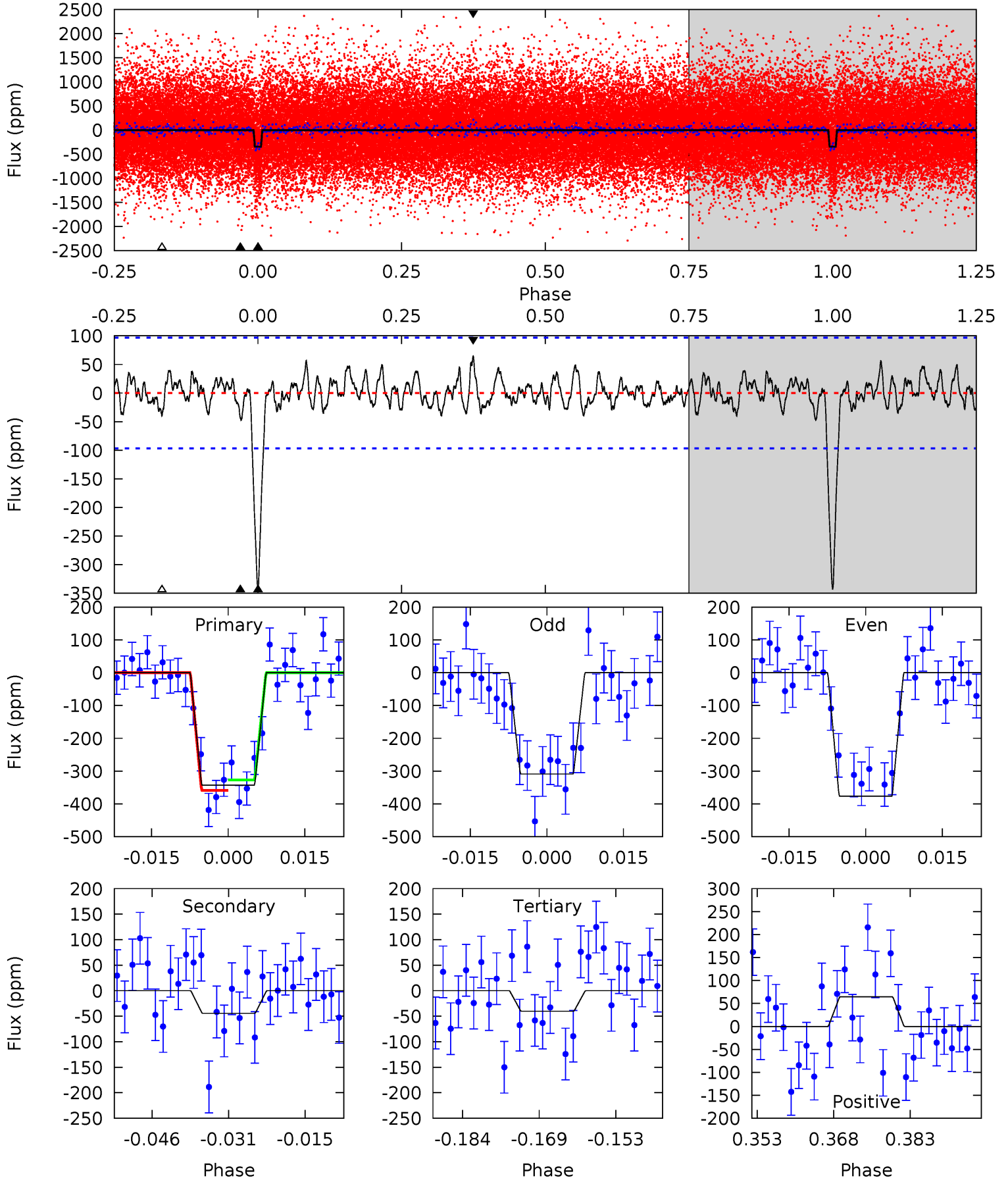
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	2.73	2.25	3.51	4.92	2.38	1.10	16.3	15.1	0.48	-0.78	1.91	1.00	0.16	1.46



Alt Model-Shift Uniqueness Test

009076971-01, P = 9.066925 Days, E = 134.747619 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	2.26	2.05	3.29	4.94	2.42	1.00	15.4	14.2	0.21	-1.03	1.73	1.02	0.16	0.82



Stellar Parameters For KIC 009076971

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5142^{+179}_{-179}	$4.515^{+0.088}_{-0.072}$	$-0.180^{+0.300}_{-0.300}$	$0.789^{+0.086}_{-0.096}$	$0.745^{+0.106}_{-0.057}$	$2.133^{+0.840}_{-0.509}$
	+3%/-3%	+2%/-2%	+167%/-167%	+11%/-12%	+14%/-8%	+39%/-24%
Source	KIC0	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 009076971-01 / KOI 2981.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-51 ± 19	$1.82^{+0.61}_{-0.56}$	1013^{+45}_{-44}	3448^{+451}_{-374}	50^{+59}_{-26}
Alt.	-44 ± 20	$1.60^{+0.55}_{-0.52}$	1012^{+50}_{-47}	3494^{+549}_{-428}	56^{+78}_{-33}

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

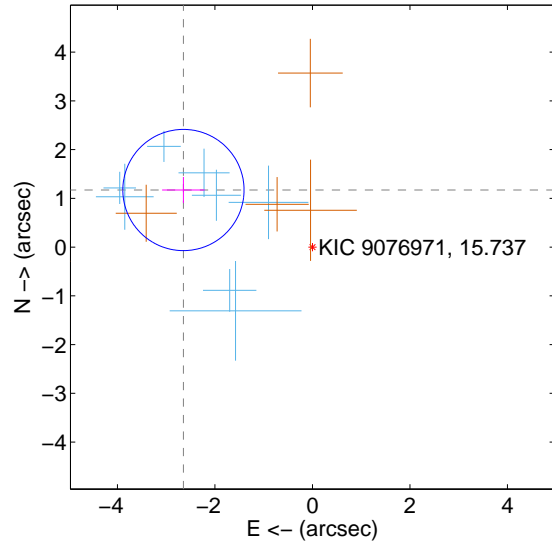
Supplemental centroid analysis for 009076971-01. Kepler magnitude: 15.74. Transit SNR 13.92

There are 8 quarters with good PRF difference image offsets

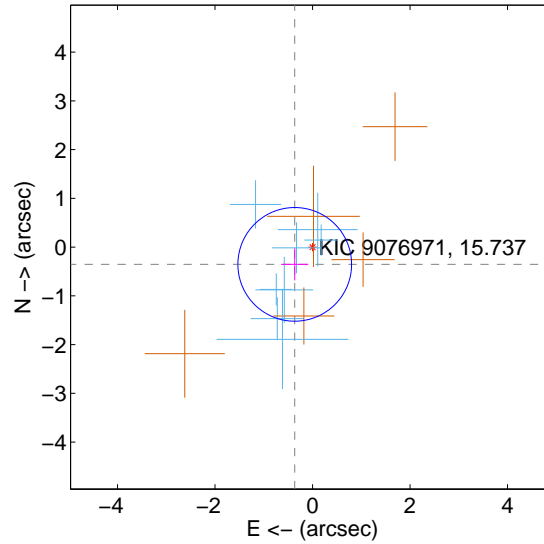
The direct PRF centroid is offset from the target star catalog position by about 1.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.894 ± 0.415	6.98	2.647 ± 0.437	1.171 ± 0.268
PRF-fit source offset from KIC position	0.509 ± 0.389	1.31	0.365 ± 0.280	-0.354 ± 0.329
photometric centroid source offset	0.85 ± 0.93	0.91	0.84 ± 0.93	0.07 ± 0.90

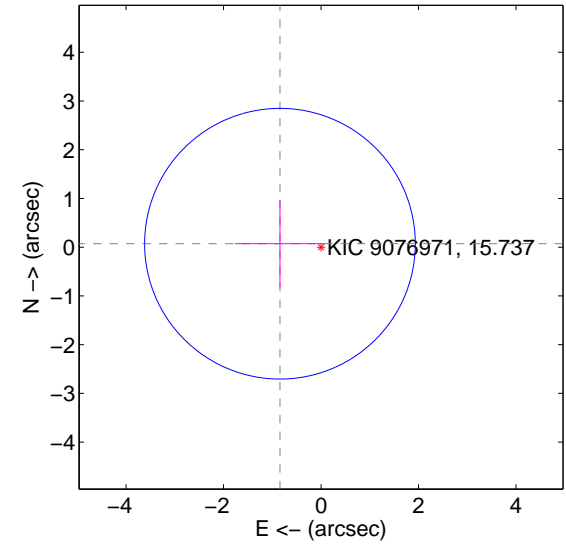
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

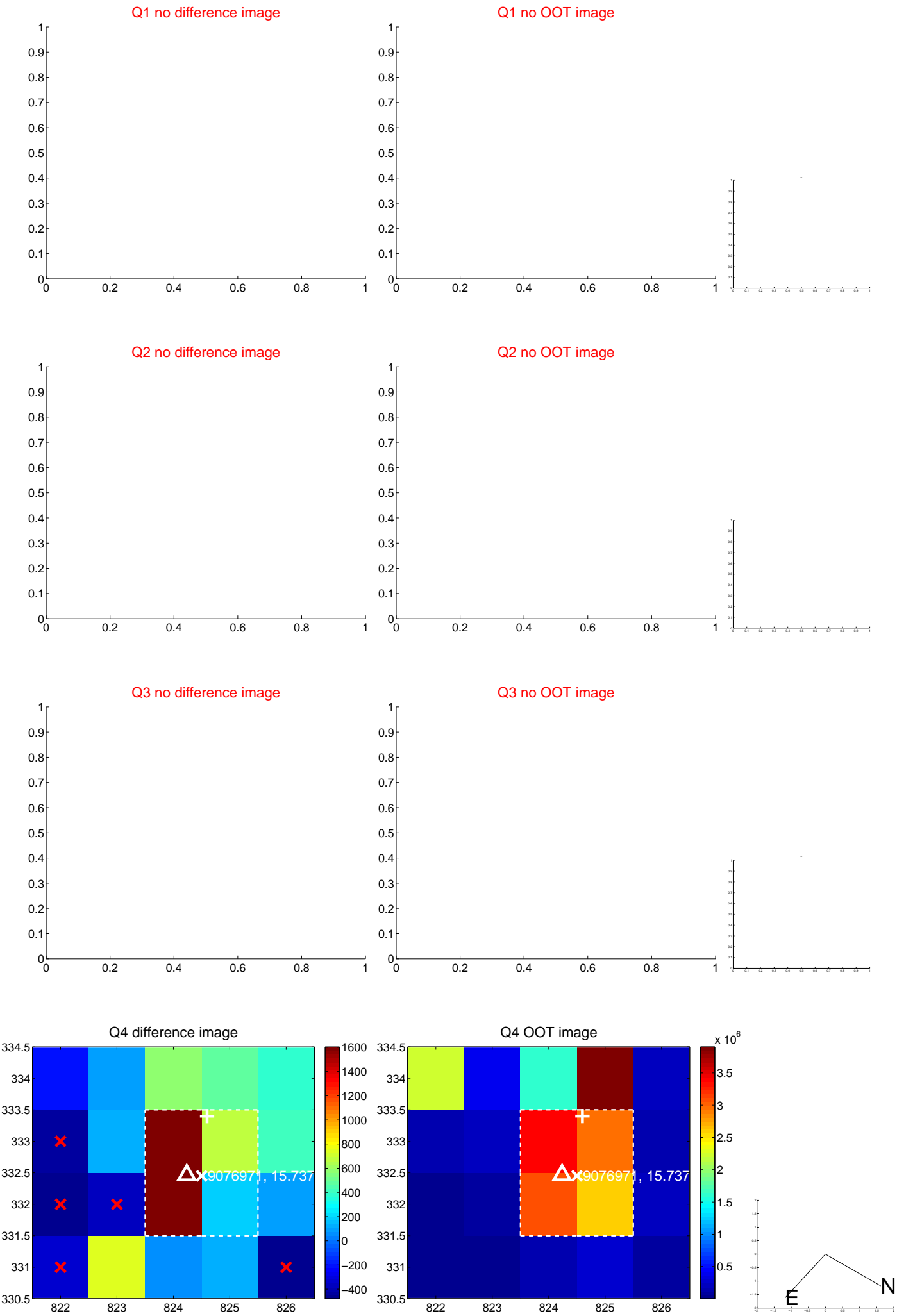


offset from photometric centroids

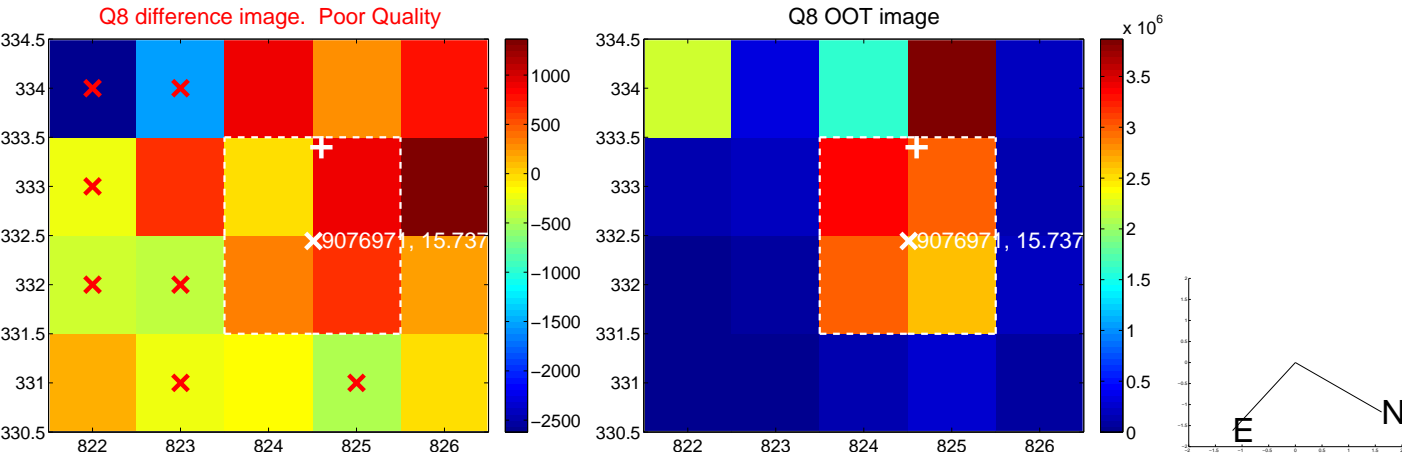
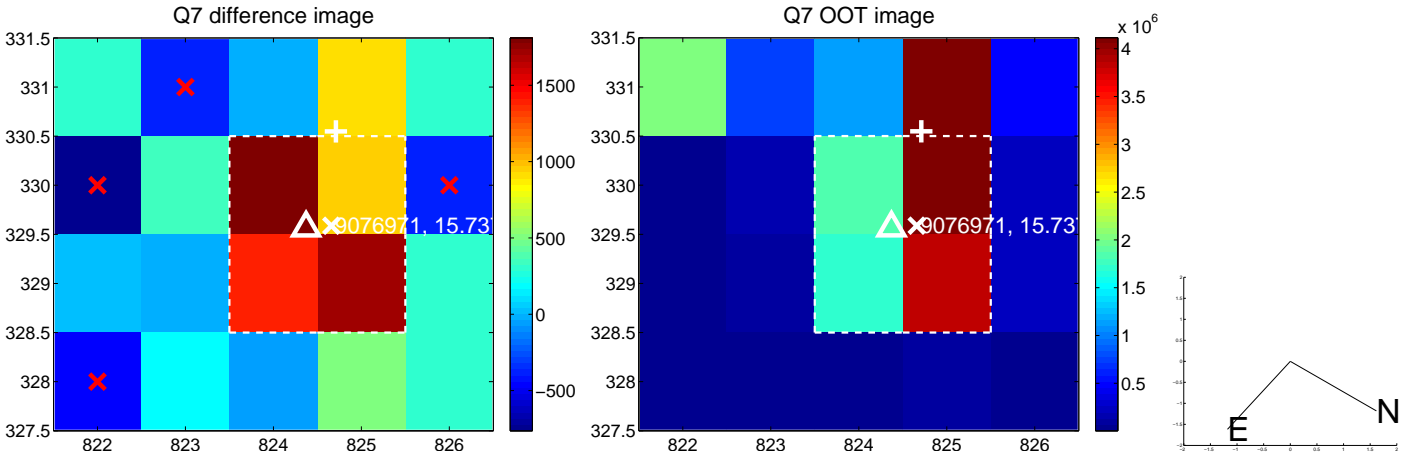
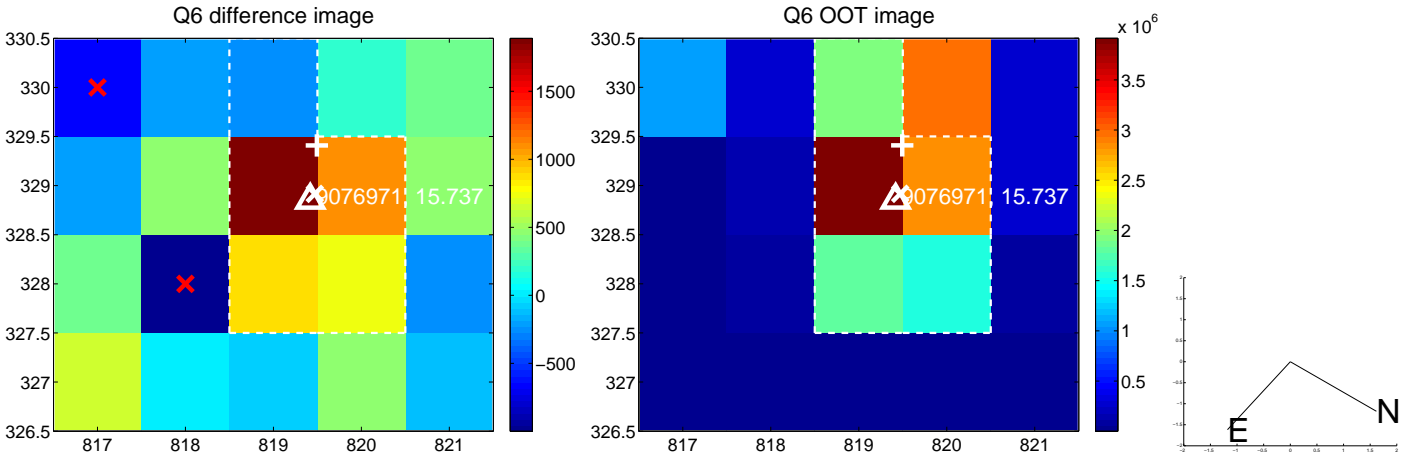
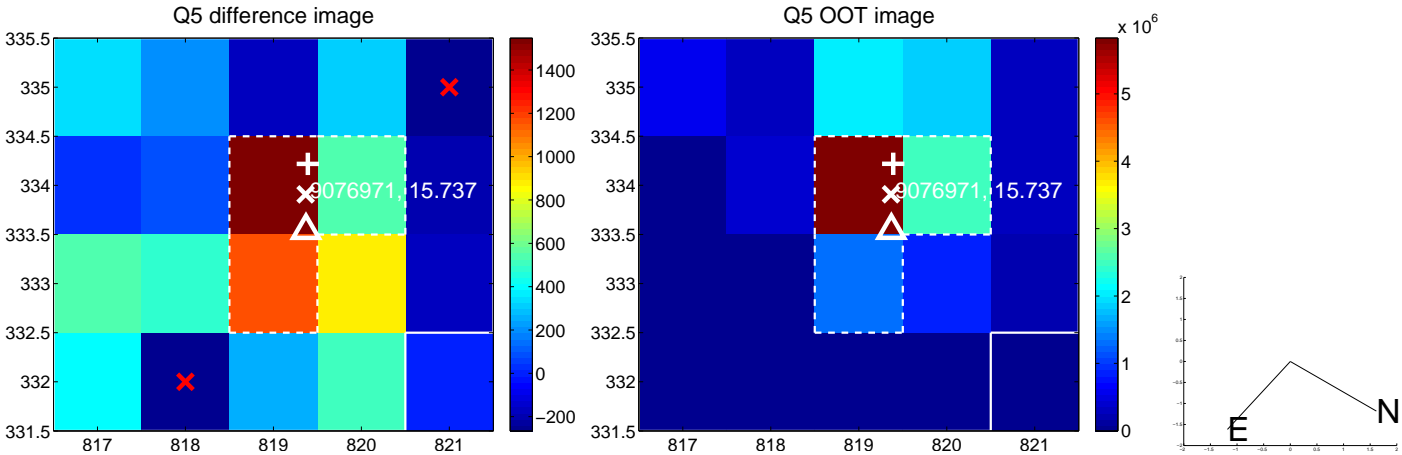


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

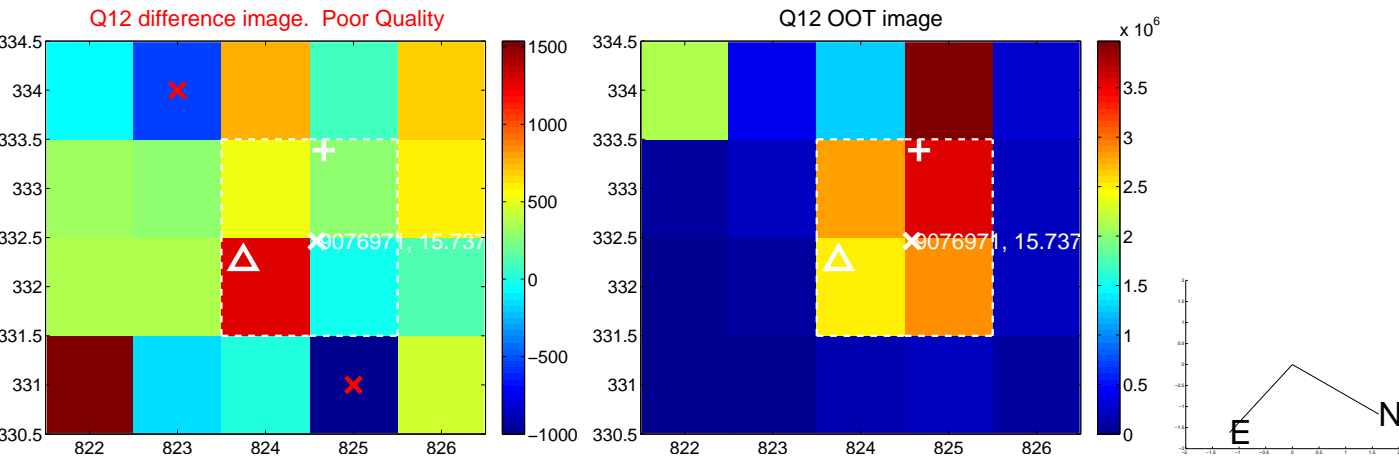
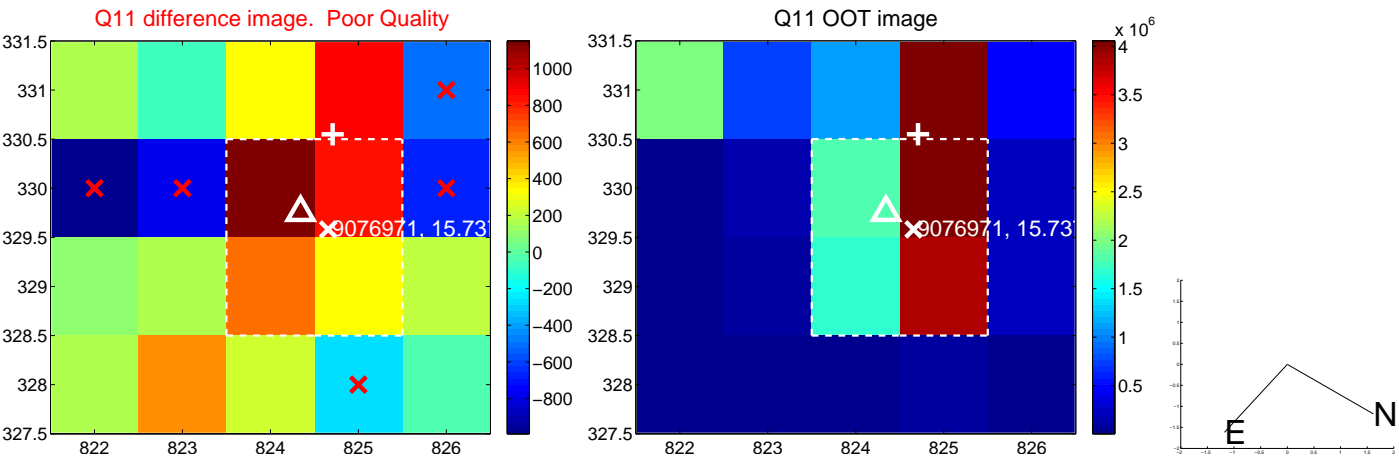
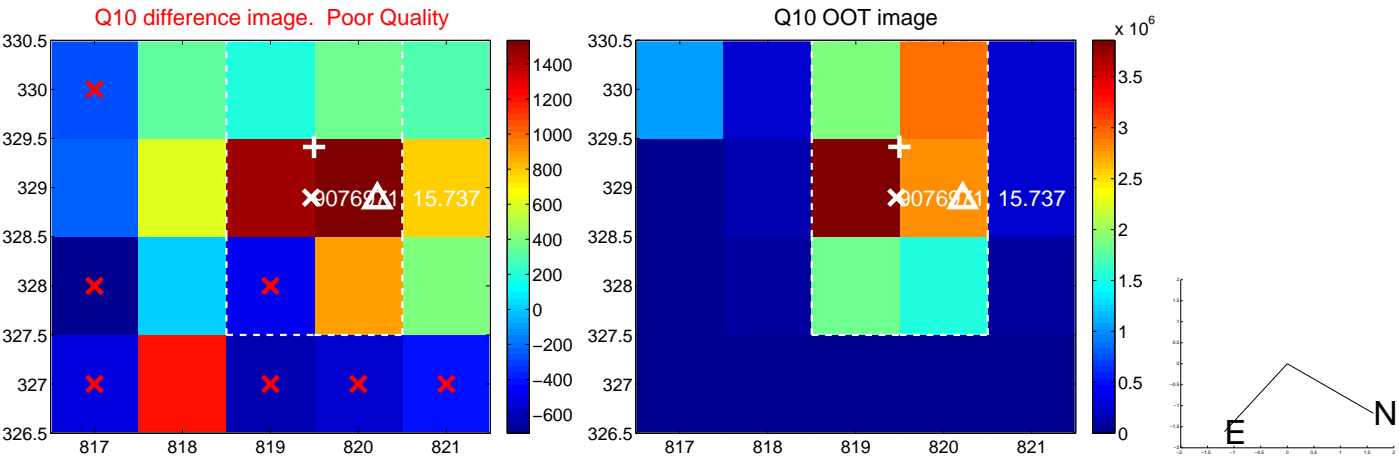
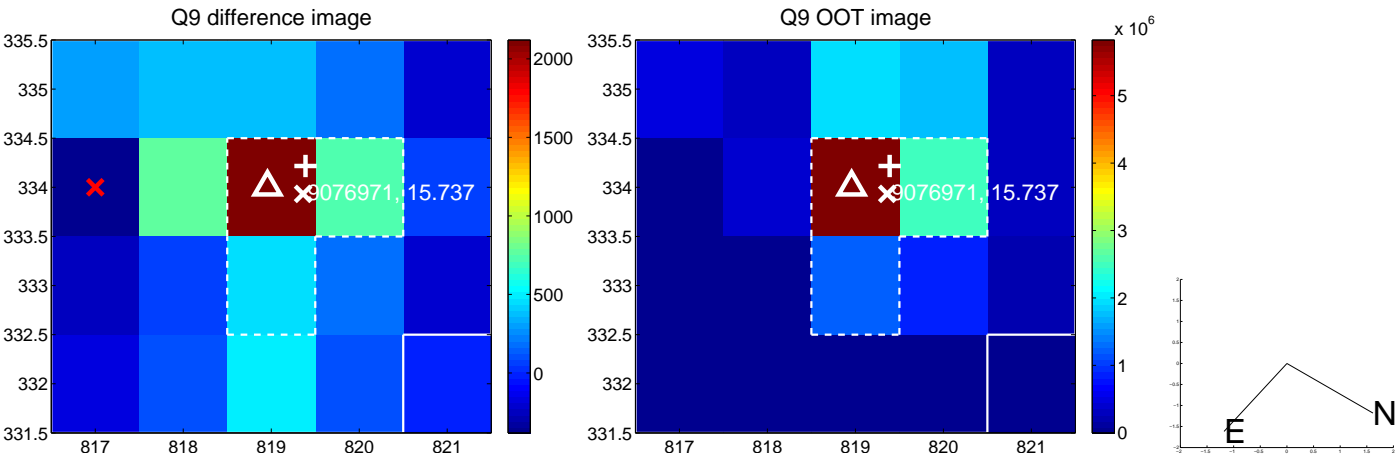
white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



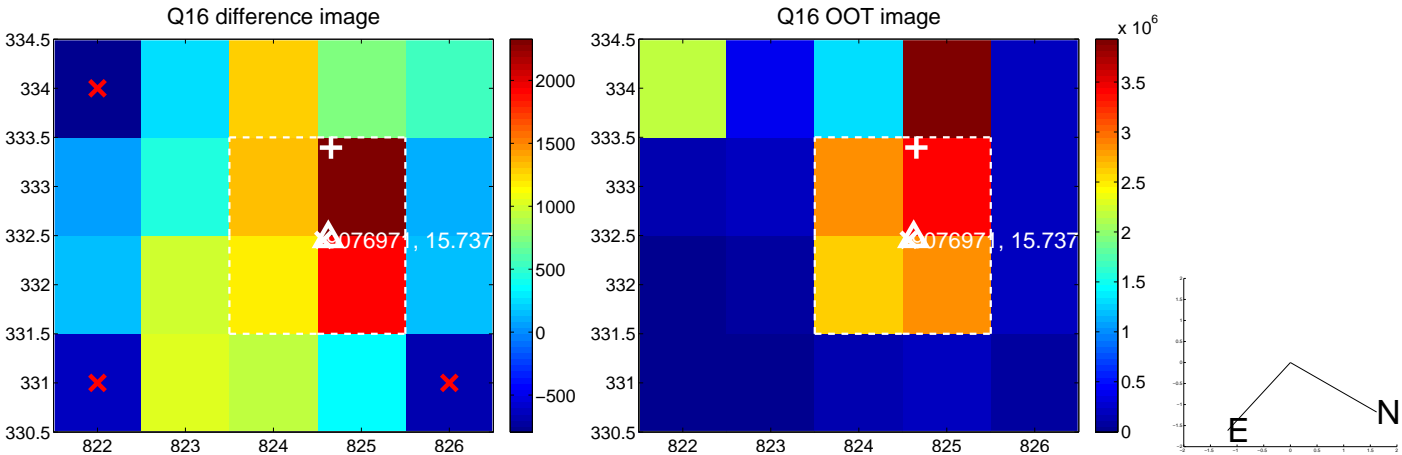
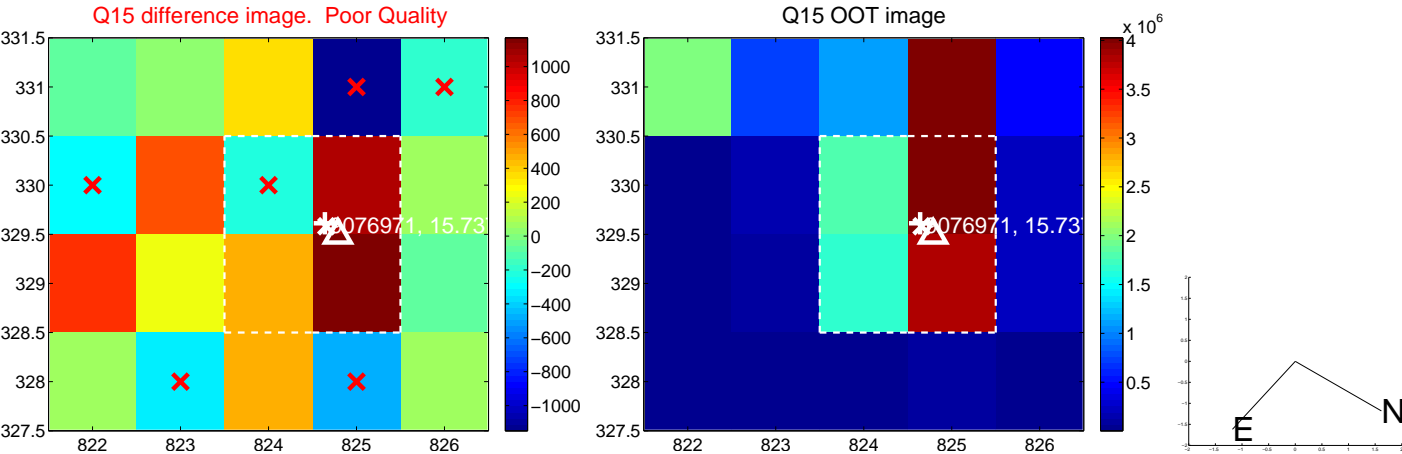
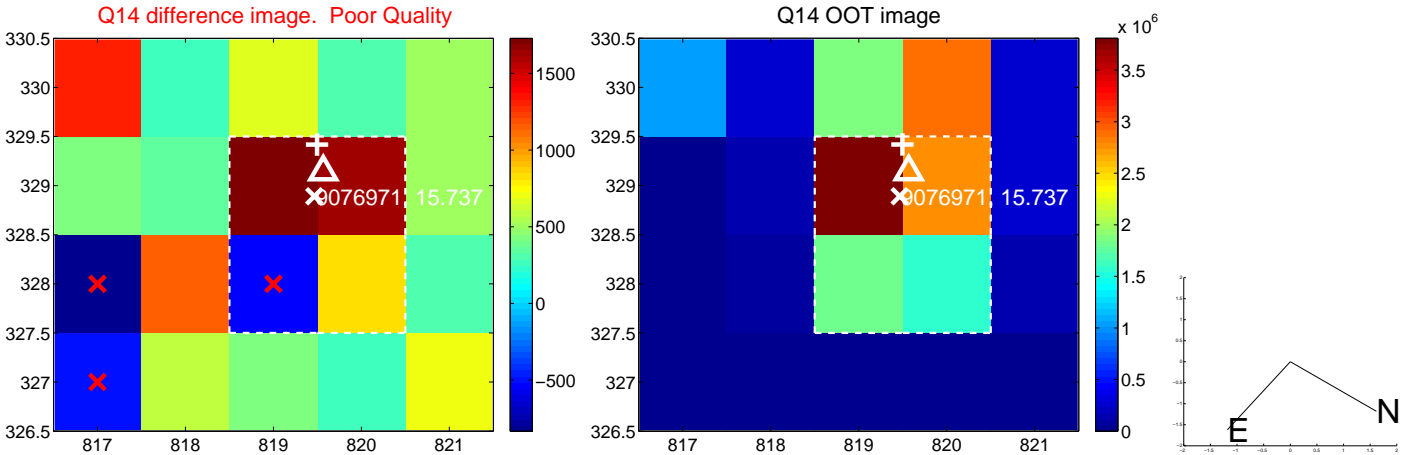
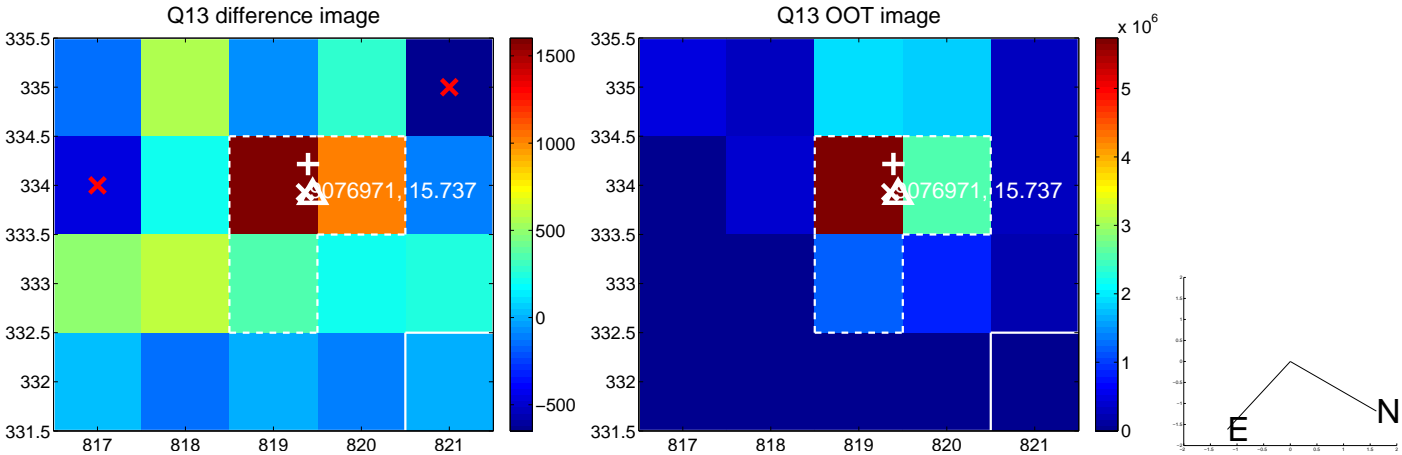
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



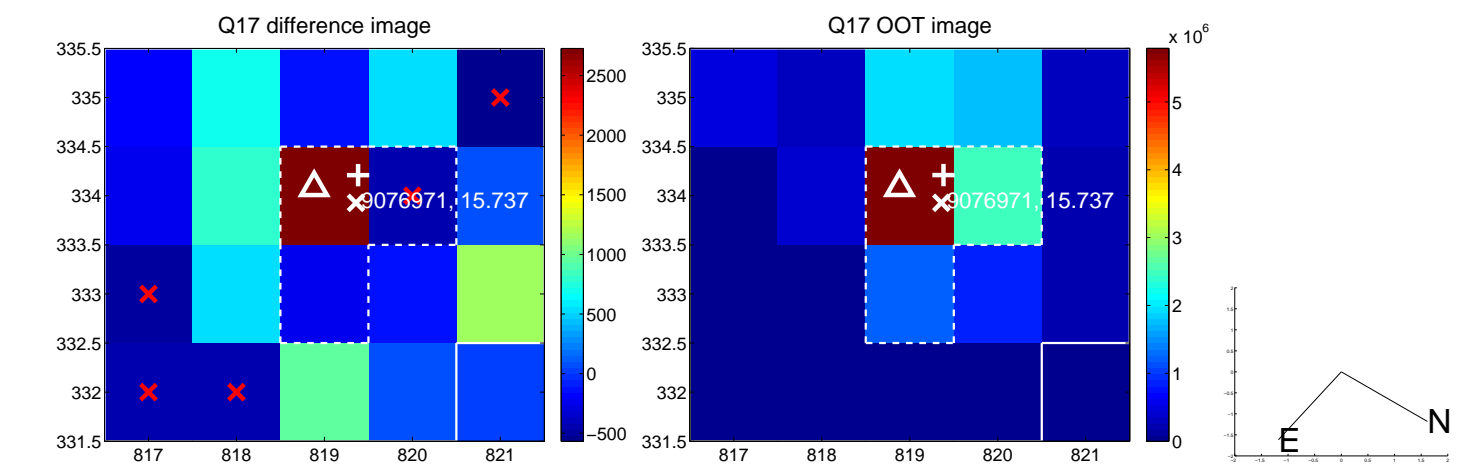
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



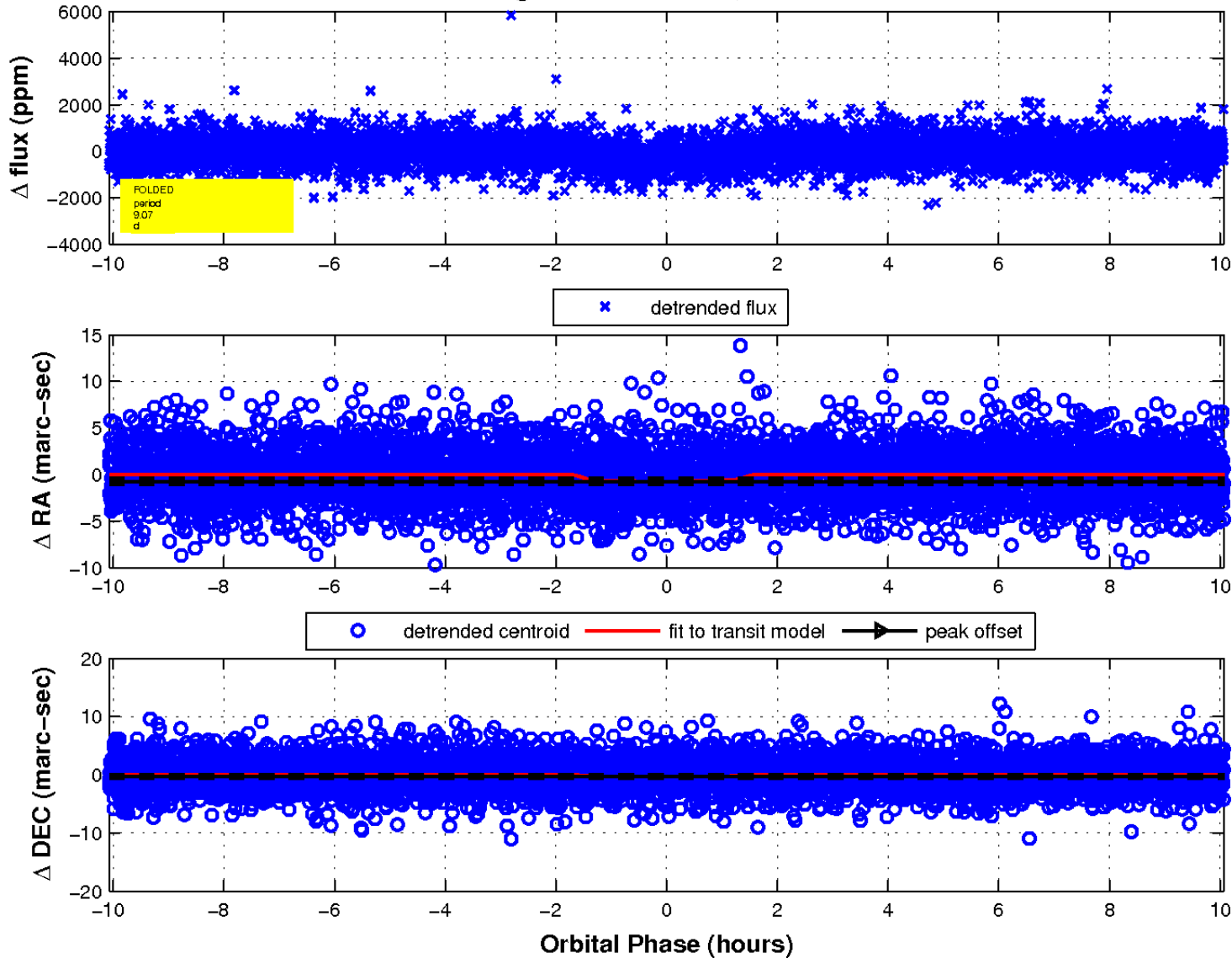
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

