

KIC 002973386

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})
002973386-01	OBS	3034.01	31.021039	138.011606	900.6	1.813	11.9	15.0	0.48	3720	1.55	1.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002973386-01	OBS	PC	1.00	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 002973386-01

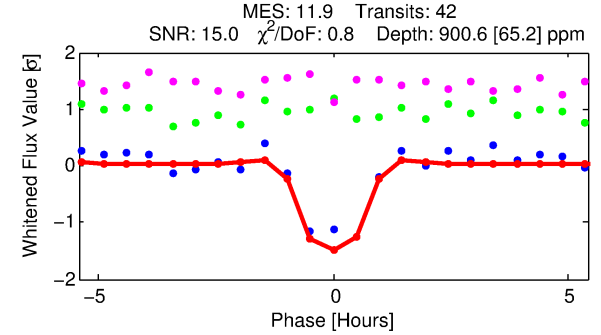
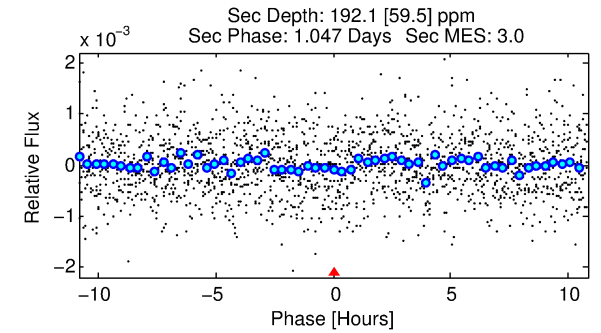
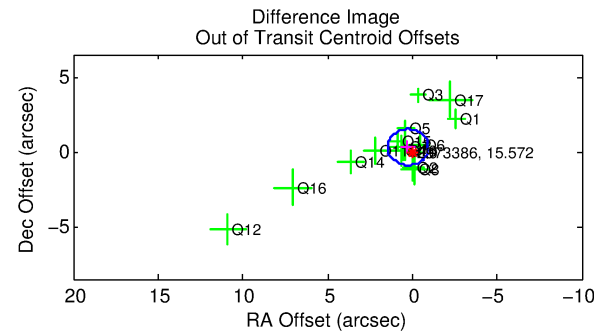
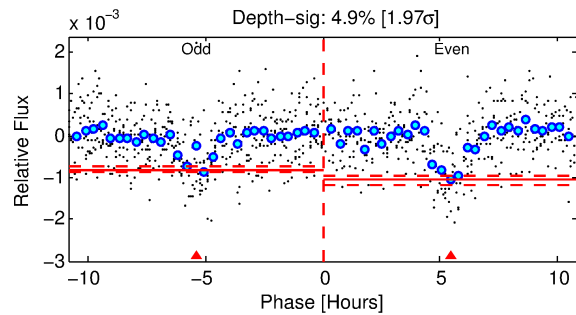
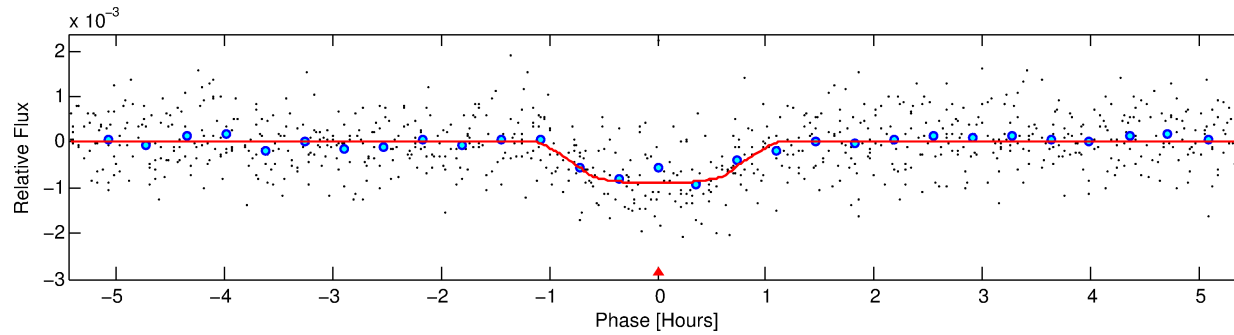
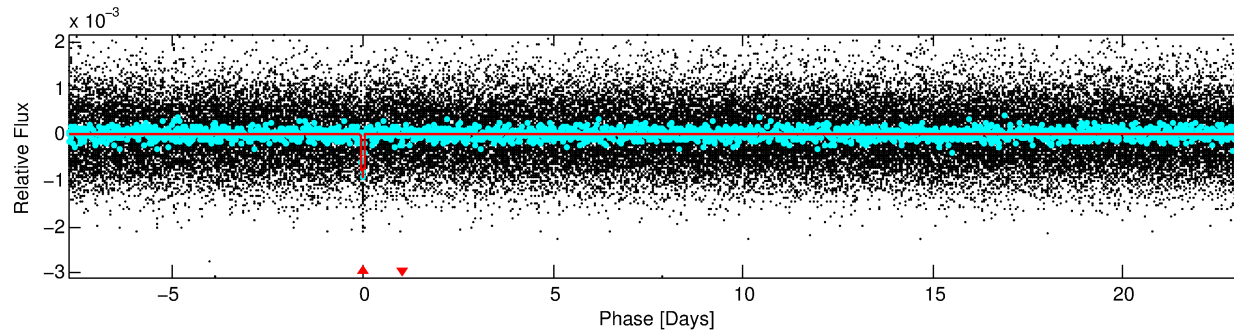
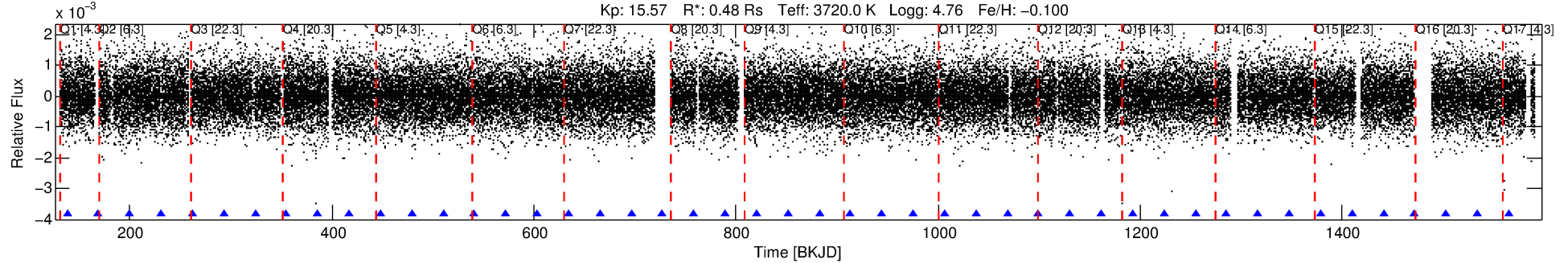
No Significant Match Found

DV One-Page Summary

KIC: 2973386 Candidate: 1 of 1 Period: 31.021 d

KOI: K03034.01 Corr: 0.931

Kp: 15.57 R*: 0.48 Rs Teff: 3720.0 K Logg: 4.76 Fe/H: -0.100



DV Fit Results:

Period = 31.02104 [0.00012] d
Epoch = 138.0116 [0.0032] BKJD
Rp/R* = 0.0295 [0.0273]
a/R* = 97.04 [400.14]
b = 0.71 [2.87]
Seff = 1.71 [0.24]
Teq = 291 [10] K
Rp = 1.55 [1.44] Re
a = 0.1522 [0.0123] AU
Ag = 1023.67 [1920.39] [0.53σ]
Teffp = 2549 [1195] K [1.89σ]

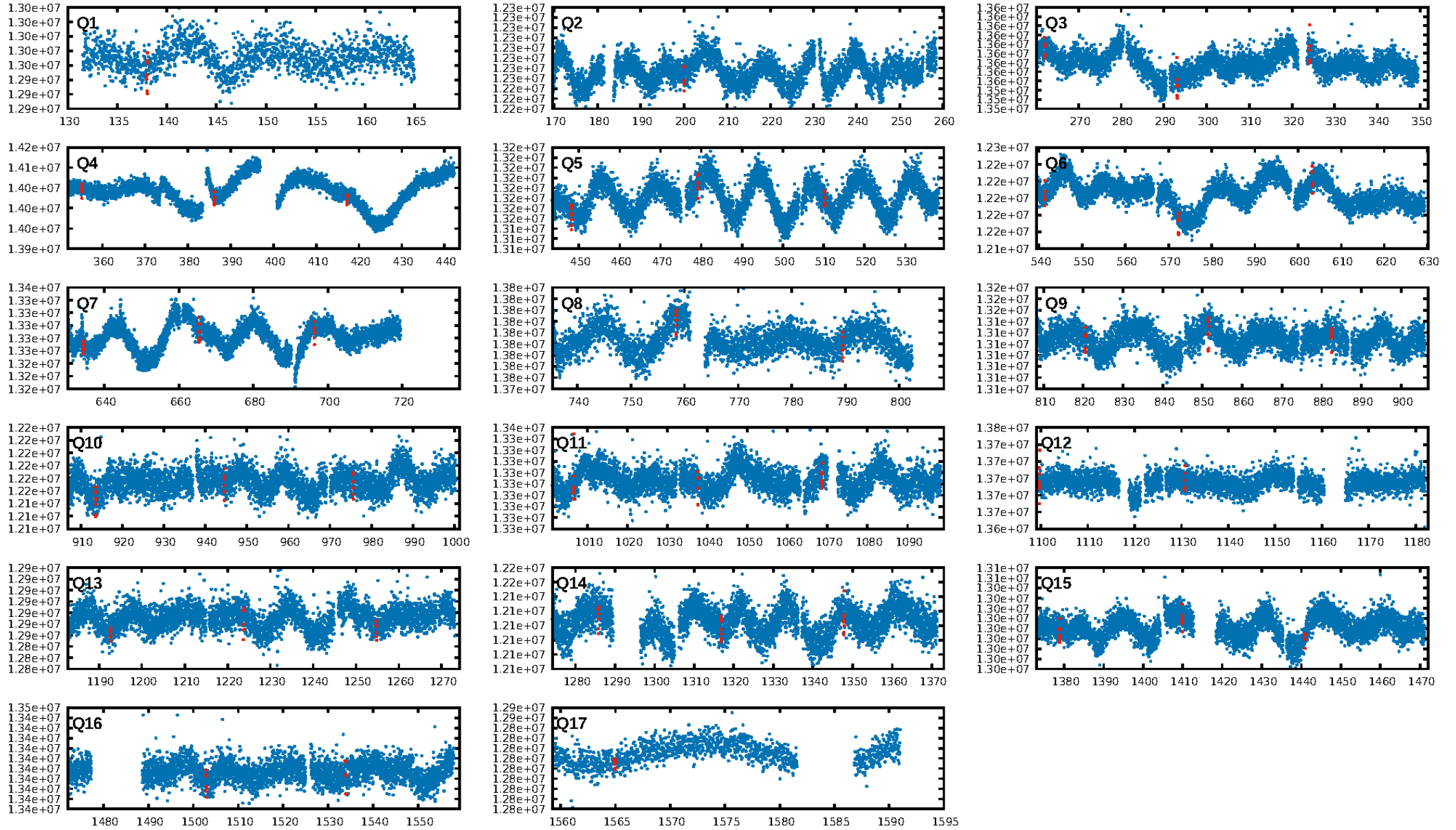
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 96.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.25e-32
RollingBand-fgt: 1.00 [40/40]
GhostDiagnostic-chr: 2.011
Centroid-sig: 0.0%
Centroid-so: 1.787 arcsec [1.85σ]
OotOffset-rm: 0.403 arcsec [1.01σ]
KicOffset-rm: 0.622 arcsec [1.55σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.62 [10/16]
DiffImageOverlap-fno: 1.00 [17/17]

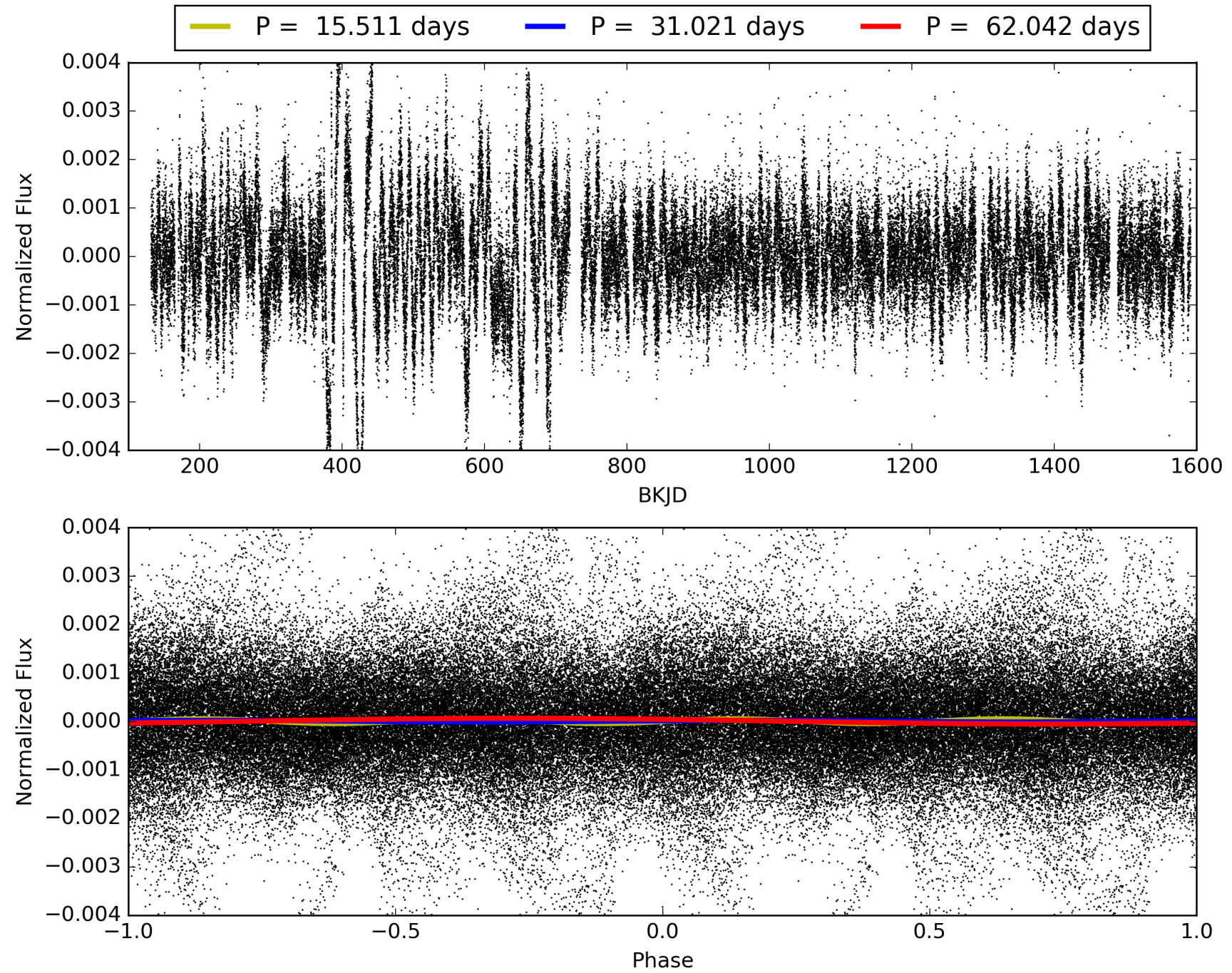
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:39:06 Z

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

TCE 002973386-01, PDC Light Curves

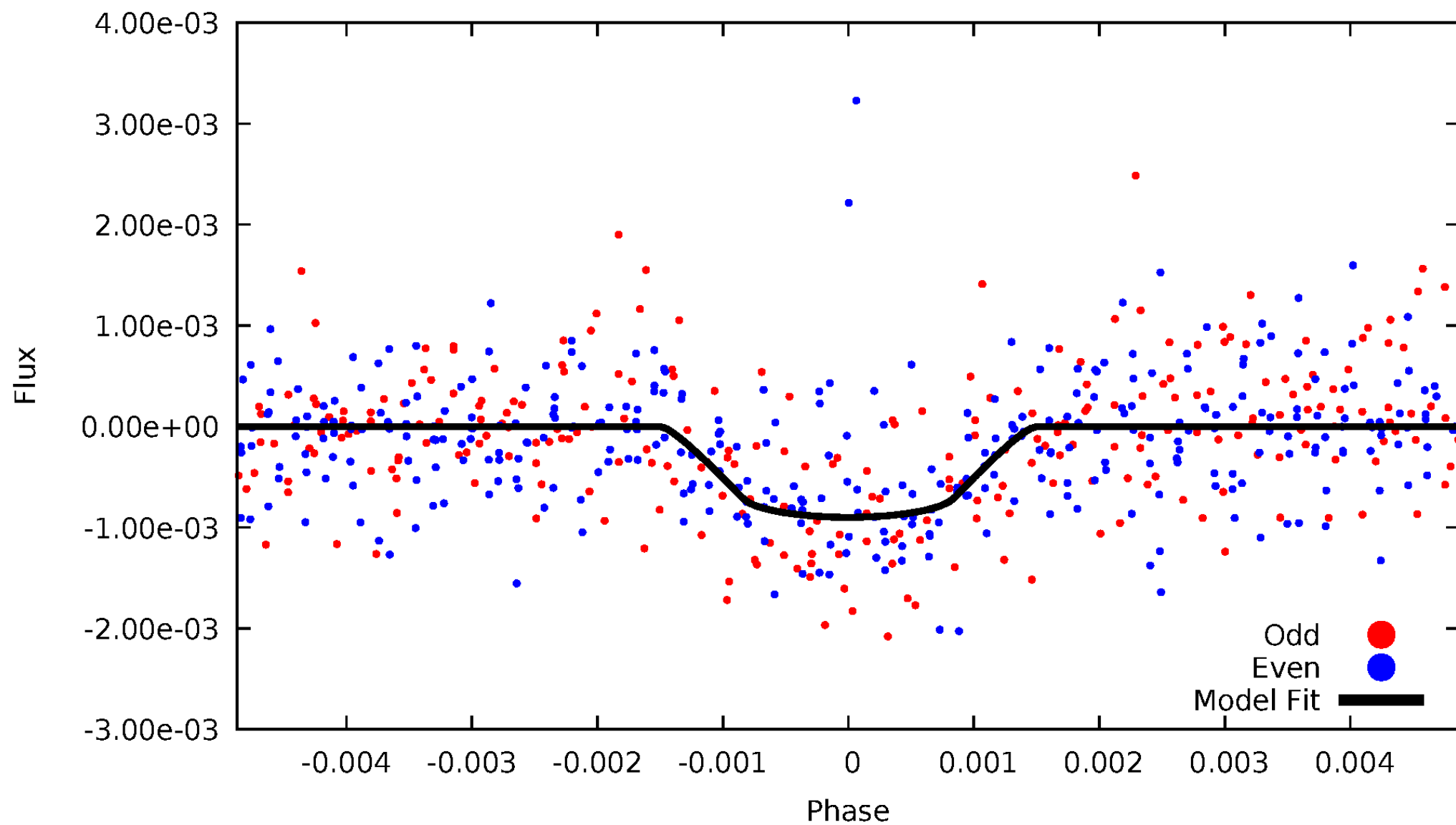


TCE 002973386-01



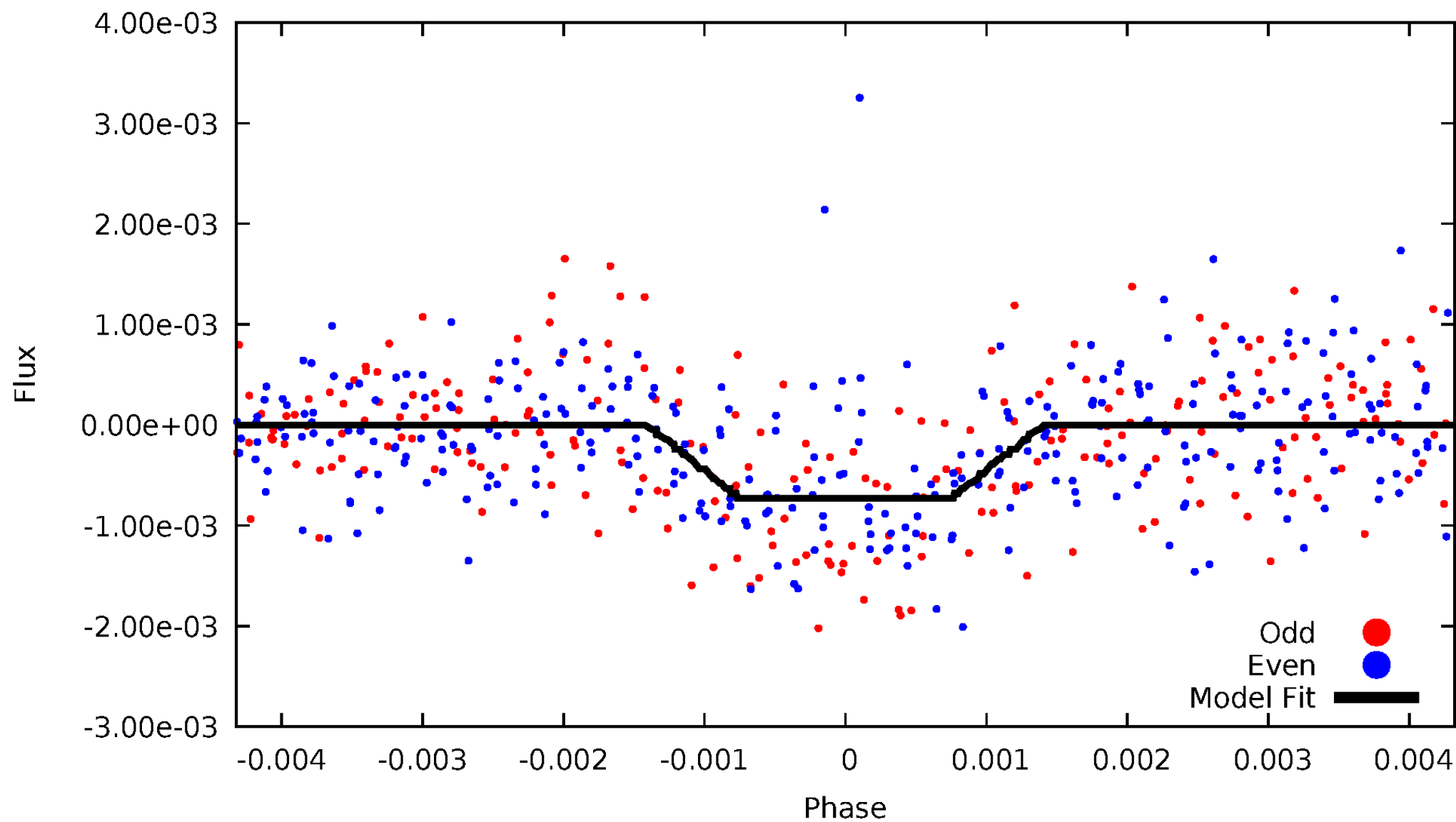
DV Odd/Even

TCE 002973386-01



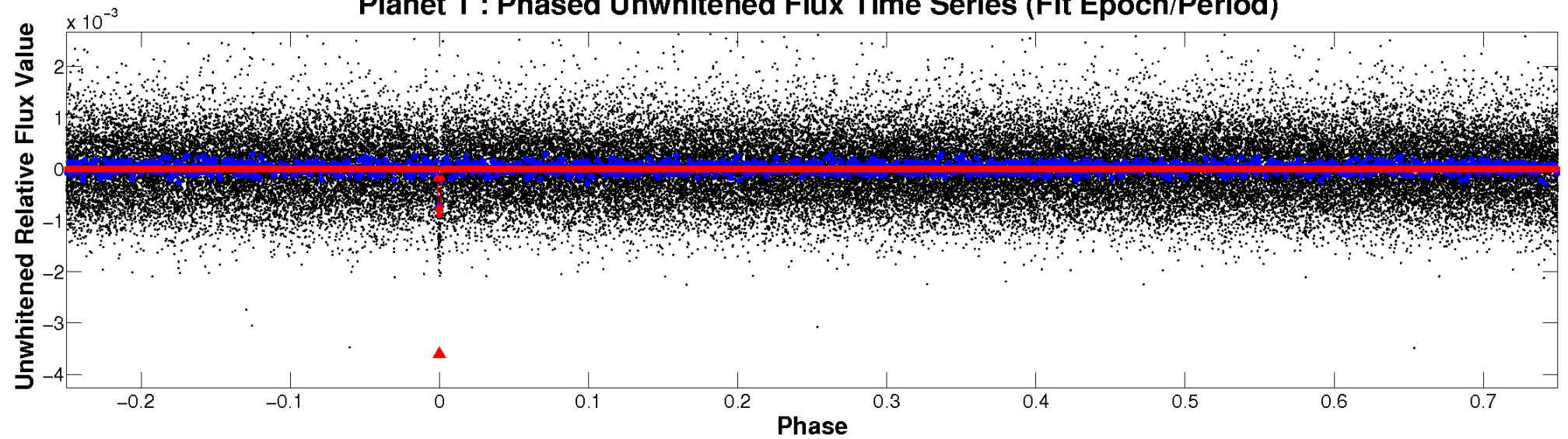
ALT Odd/Even

TCE 002973386-01

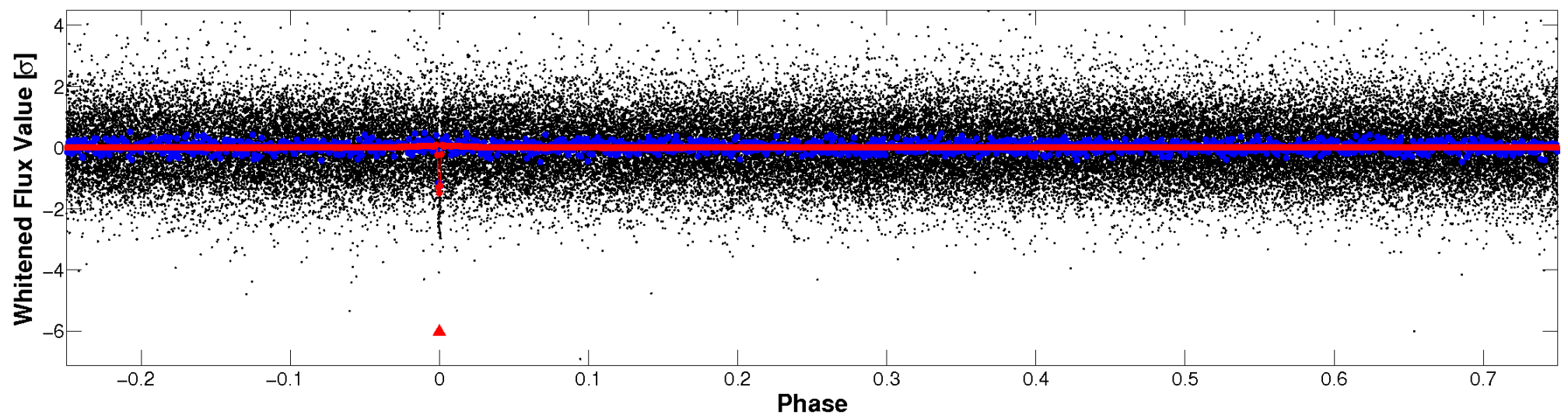


Non-Whitened Vs. Whitened Light Curve

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

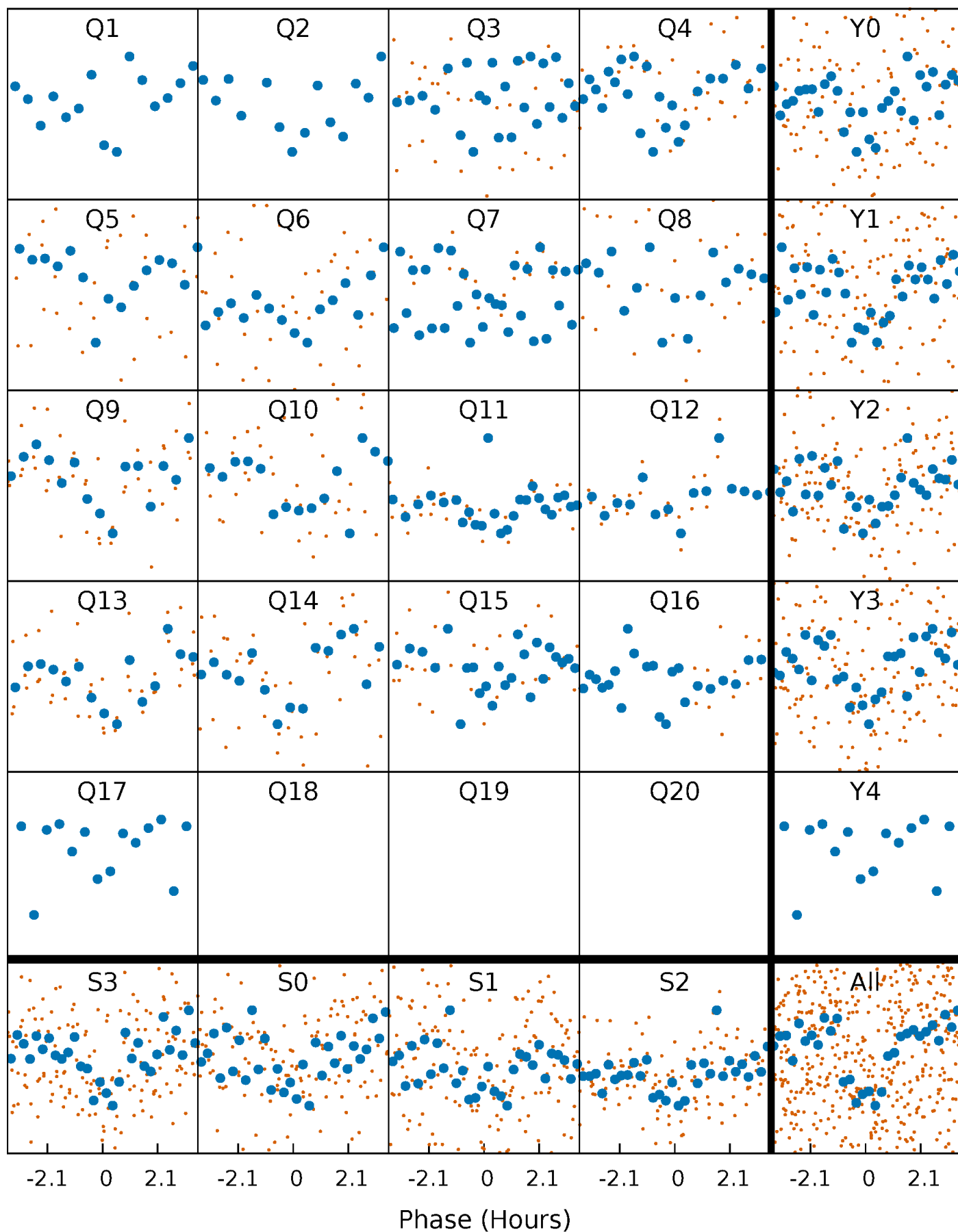


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



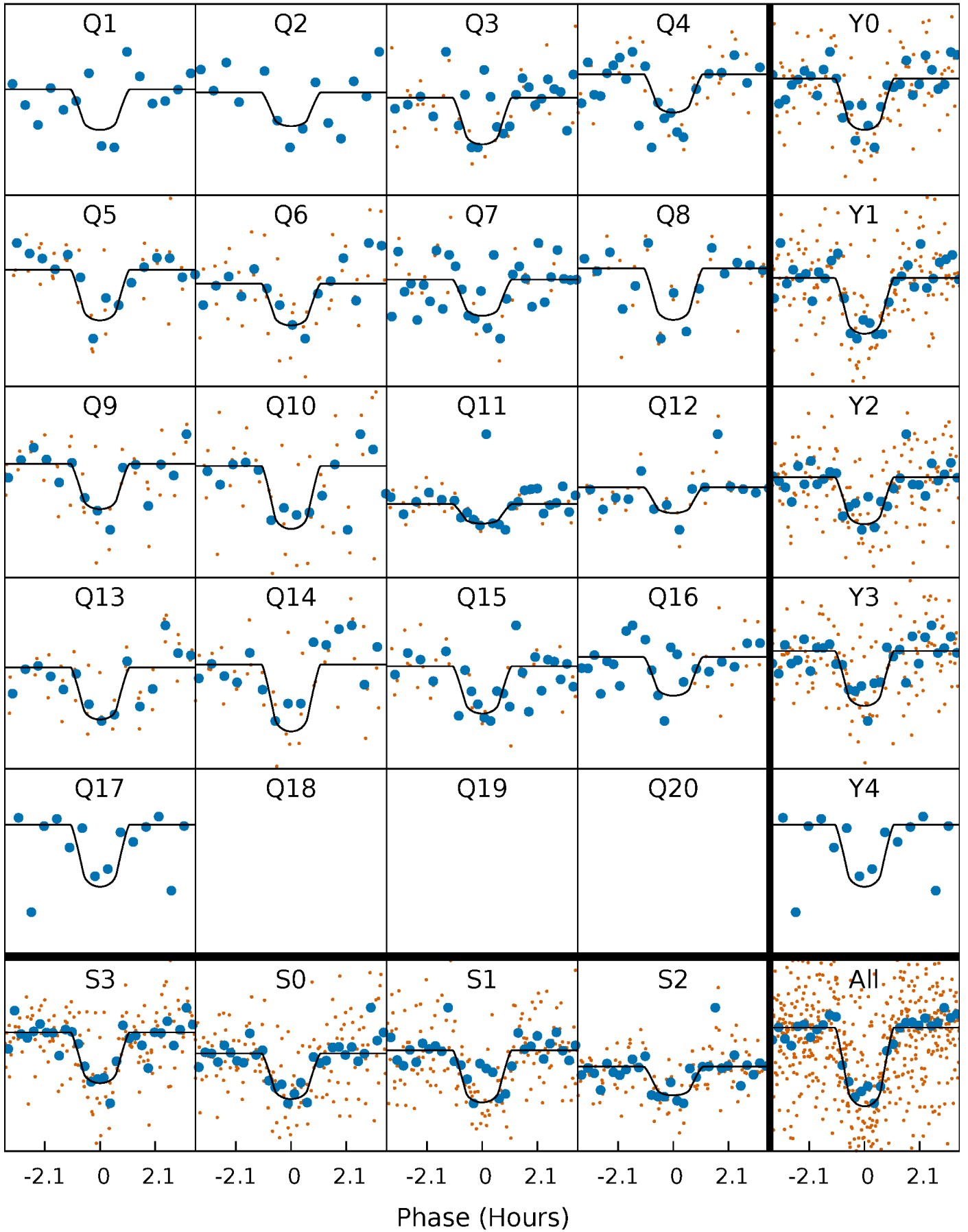
PDC Quarter-Phased Transit Curves

TCE 002973386-01 P= 31.021039 Days $T_0=138.011606$ (BKJD)



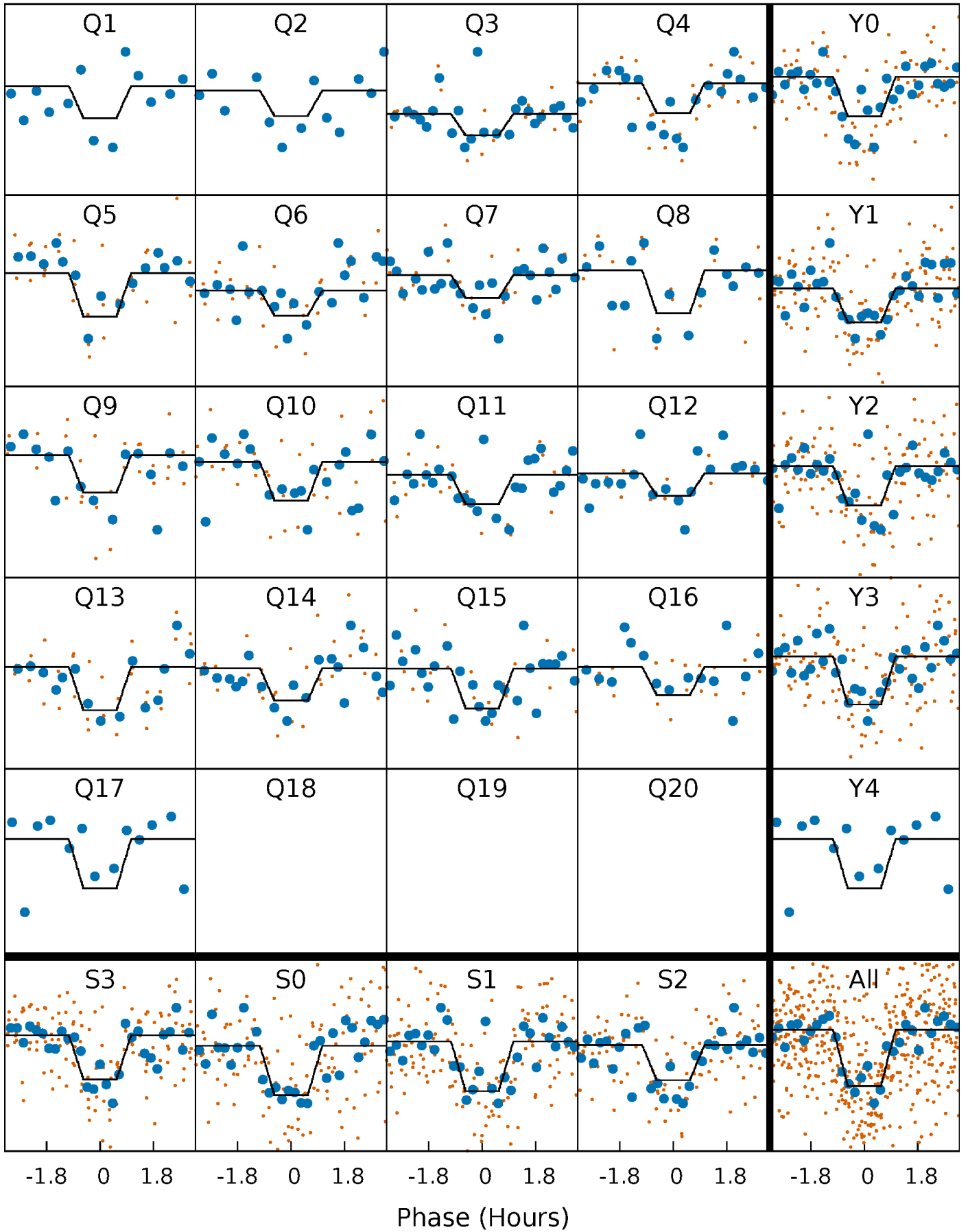
DV Quarter-Phased Transit Curves

TCE 002973386-01 P= 31.021039 Days $T_0=138.011606$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

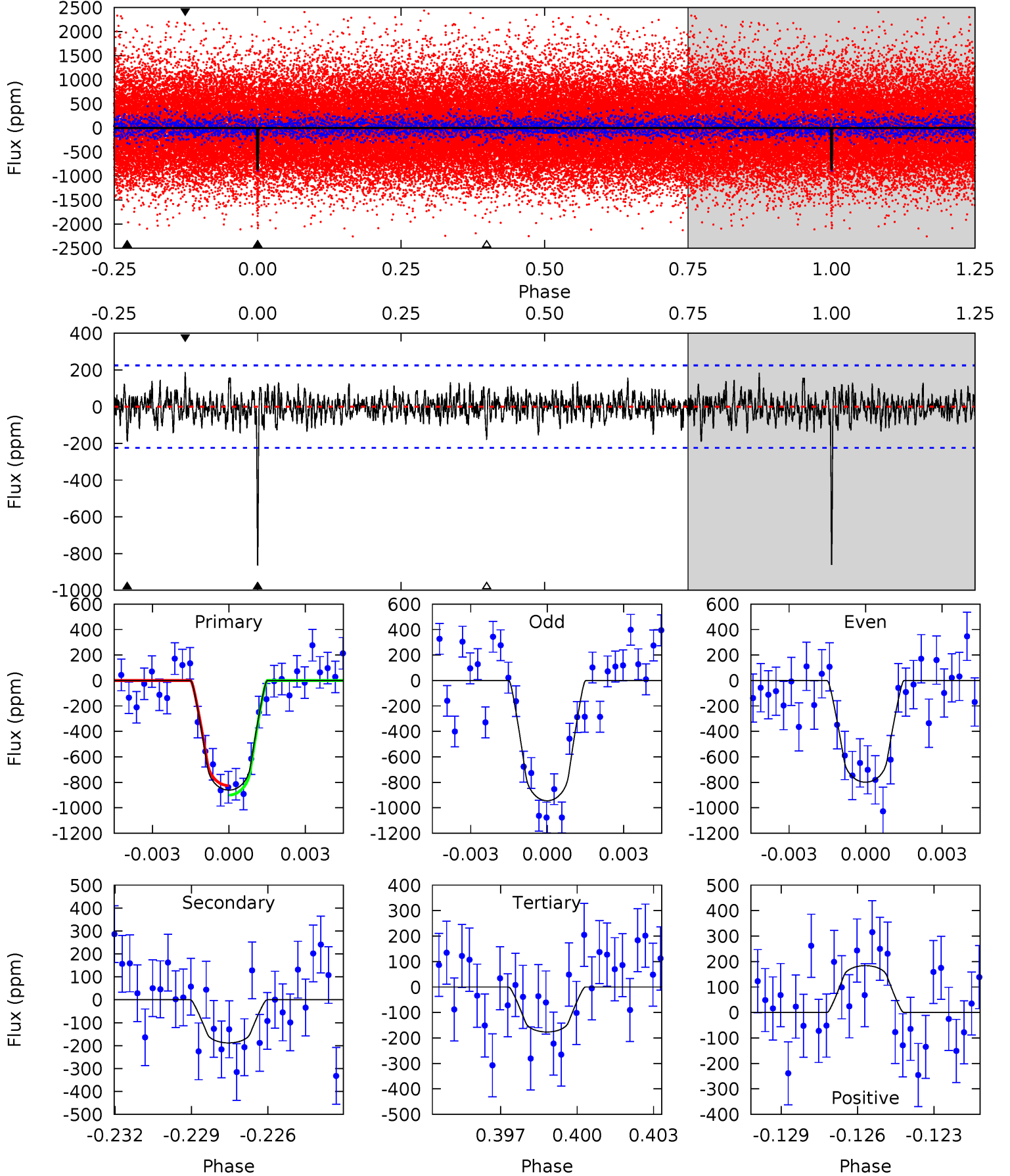
TCE 002973386-01 P= 31.020772 Days $T_0=138.017904$ (BKJD)



DV Model-Shift Uniqueness Test

002973386-01, $P = 31.021039$ Days, $E = 106.990567$ Days

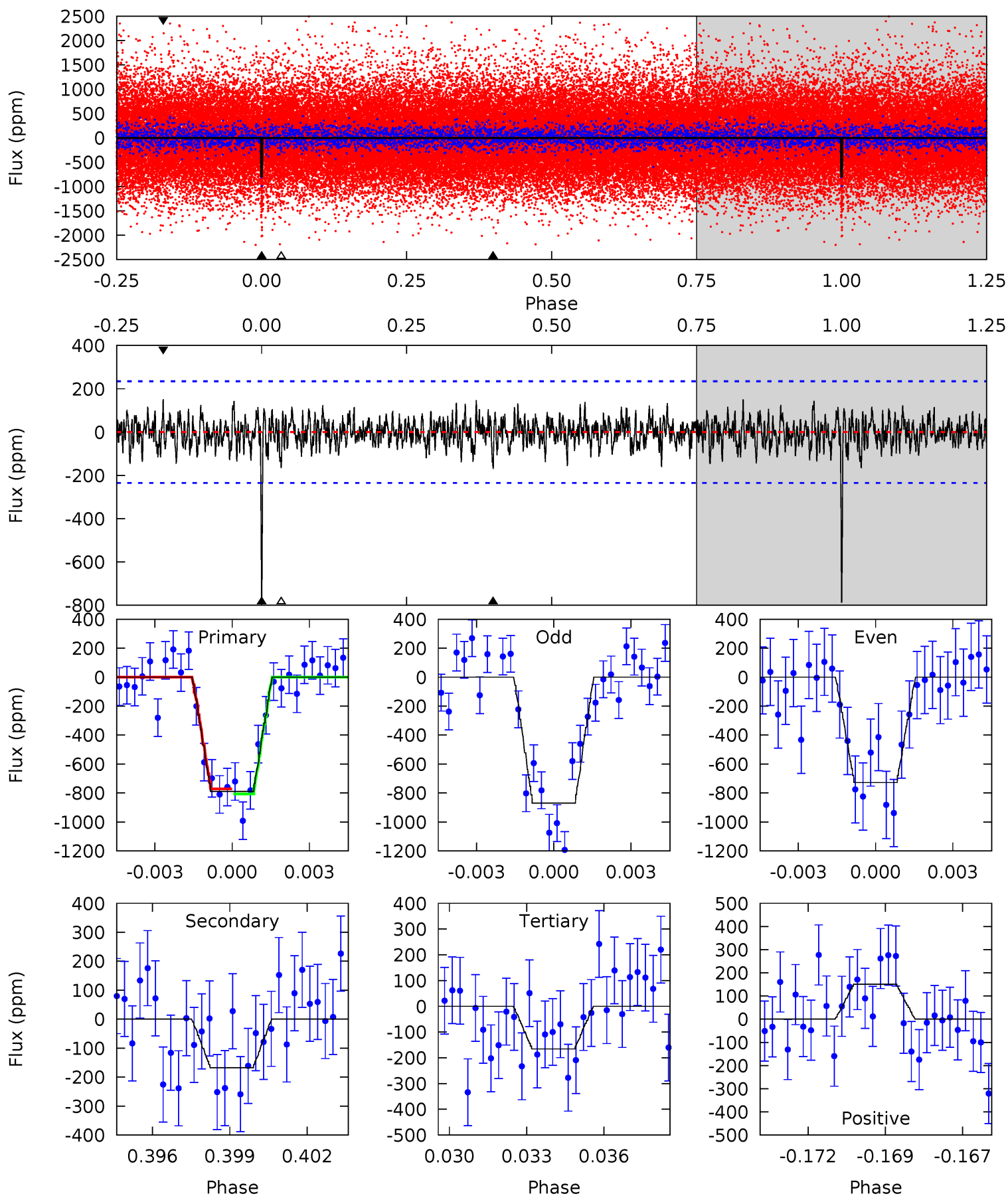
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	4.40	4.13	4.30	5.25	2.97	1.20	16.0	15.8	0.27	0.10	1.68	0.94	0.18	0.87



Alt Model-Shift Uniqueness Test

002973386-01, $P = 31.020772$ Days, $E = 106.997132$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	3.76	3.71	3.39	5.27	3.00	1.15	14.0	14.3	0.05	0.37	1.58	1.05	0.16	0.40



Stellar Parameters For KIC 002973386

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	3720^{+73}_{-81}	$4.764^{+0.054}_{-0.031}$	$-0.100^{+0.150}_{-0.150}$	$0.480^{+0.033}_{-0.050}$	$0.488^{+0.039}_{-0.044}$	$6.213^{+1.666}_{-0.745}$
	+2%/-2%	+1%/-1%	+150%/-150%	+7%/-10%	+8%/-9%	+27%/-12%
Source	SPE70	PHO2	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 002973386-01 / KOI 3034.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-188 ± 43	$1.78^{+1.27}_{-1.02}$	406^{+10}_{-12}	2839^{+839}_{-375}	782^{+3731}_{-526}
Alt.	-168 ± 45	$1.75^{+1.27}_{-1.13}$	406^{+11}_{-11}	2806^{+1094}_{-395}	722^{+5355}_{-509}

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 $A_{obs} \gg 1.0$

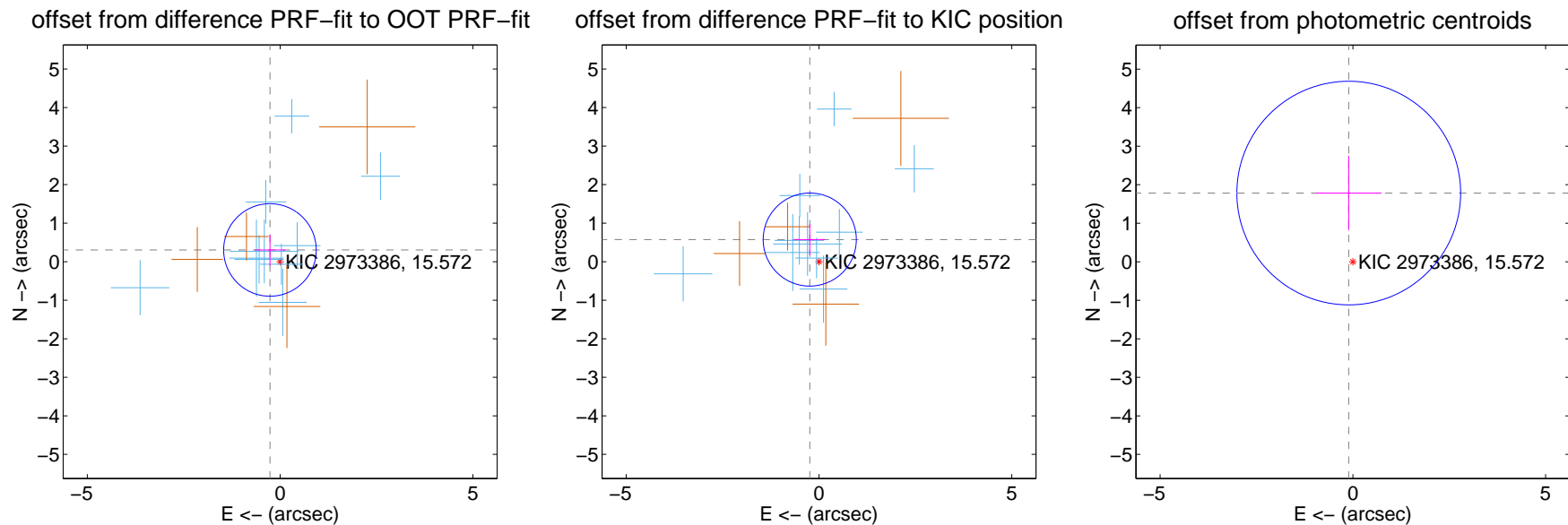
DV Centroid Data

Supplemental centroid analysis for 002973386-01. Kepler magnitude: 15.57. Transit SNR 15.00

There are 10 quarters with good PRF difference image offsets

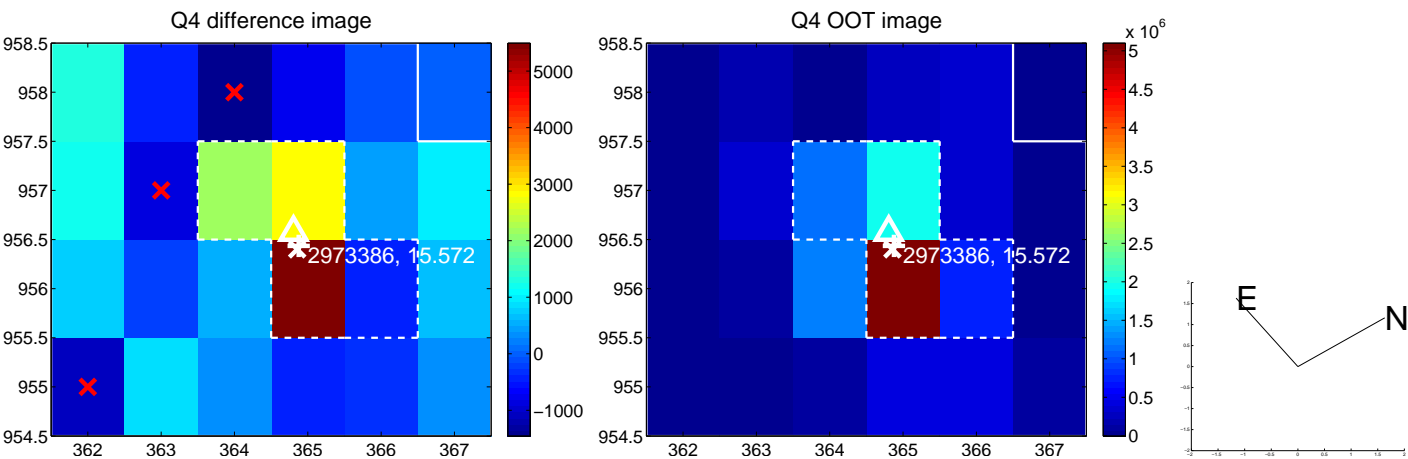
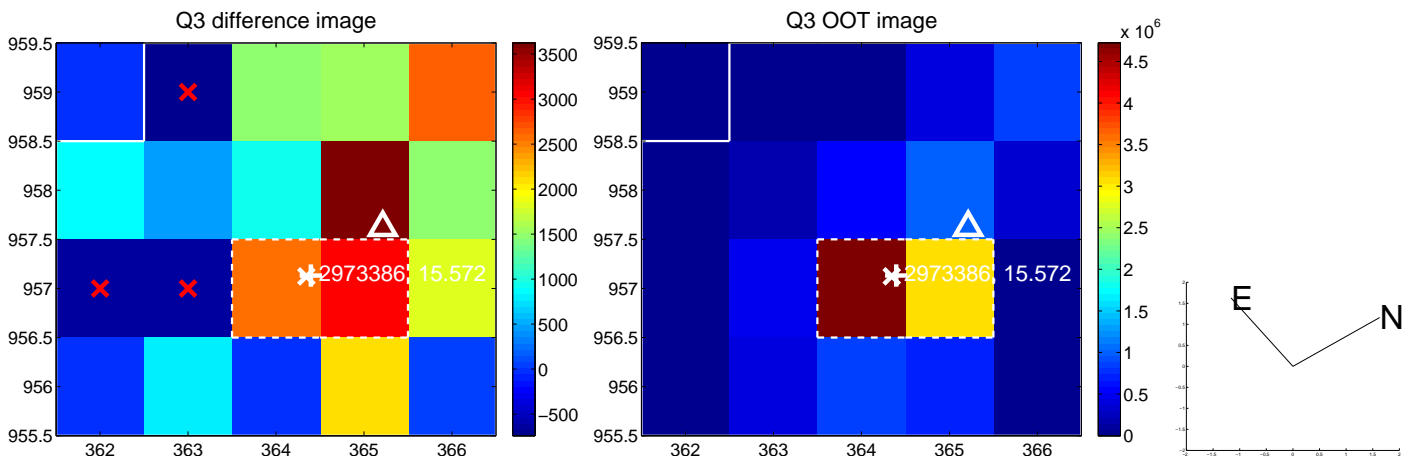
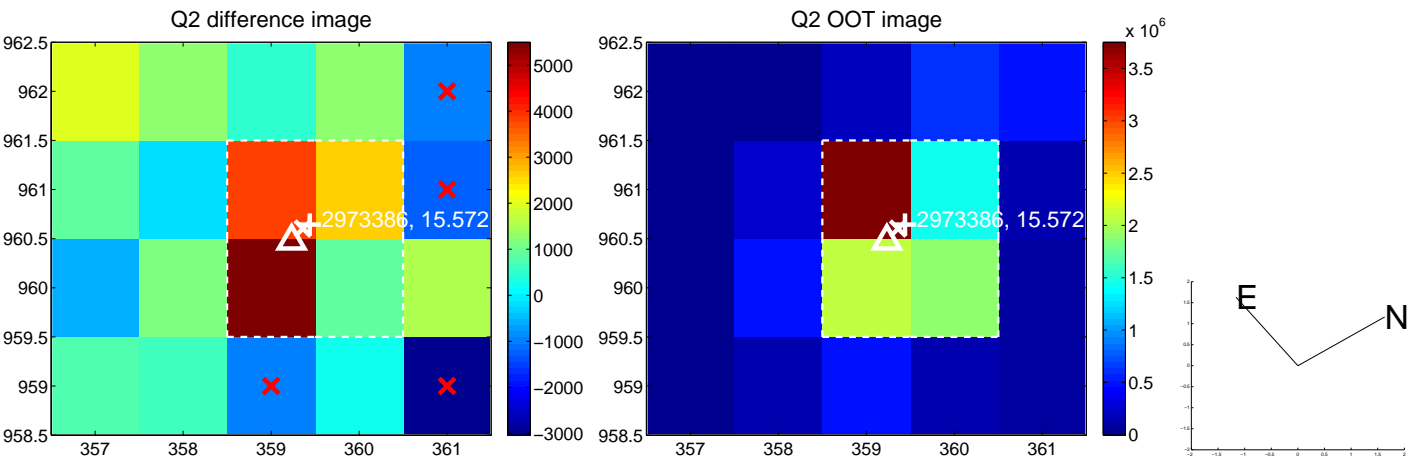
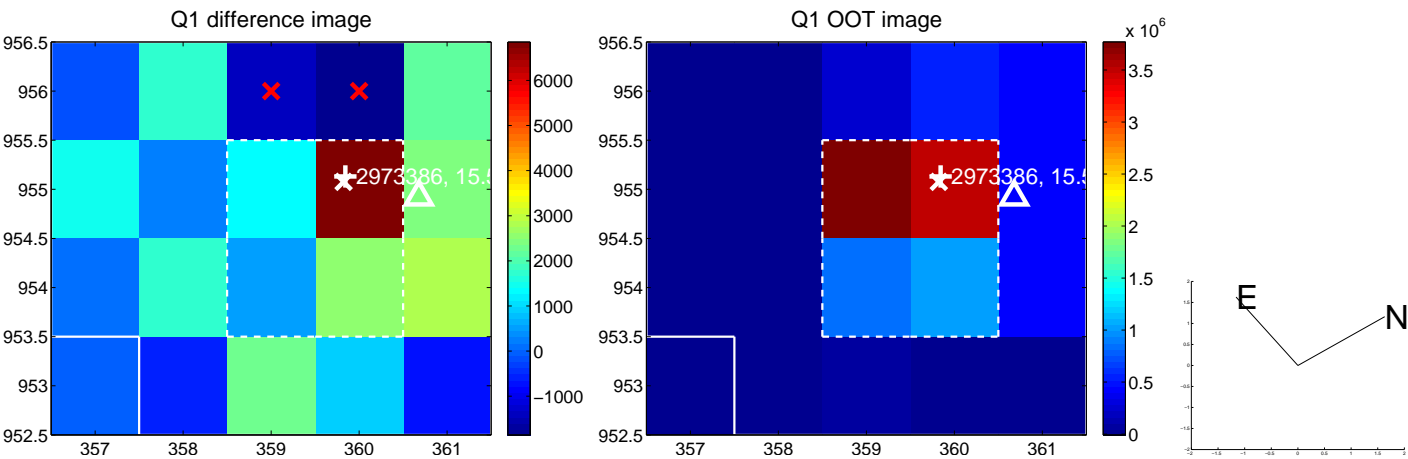
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.403 ± 0.400	1.01	0.263 ± 0.396	0.305 ± 0.403
PRF-fit source offset from KIC position	0.622 ± 0.403	1.55	0.239 ± 0.400	0.574 ± 0.403
photometric centroid source offset	1.79 ± 0.97	1.85	0.11 ± 0.85	1.78 ± 0.97

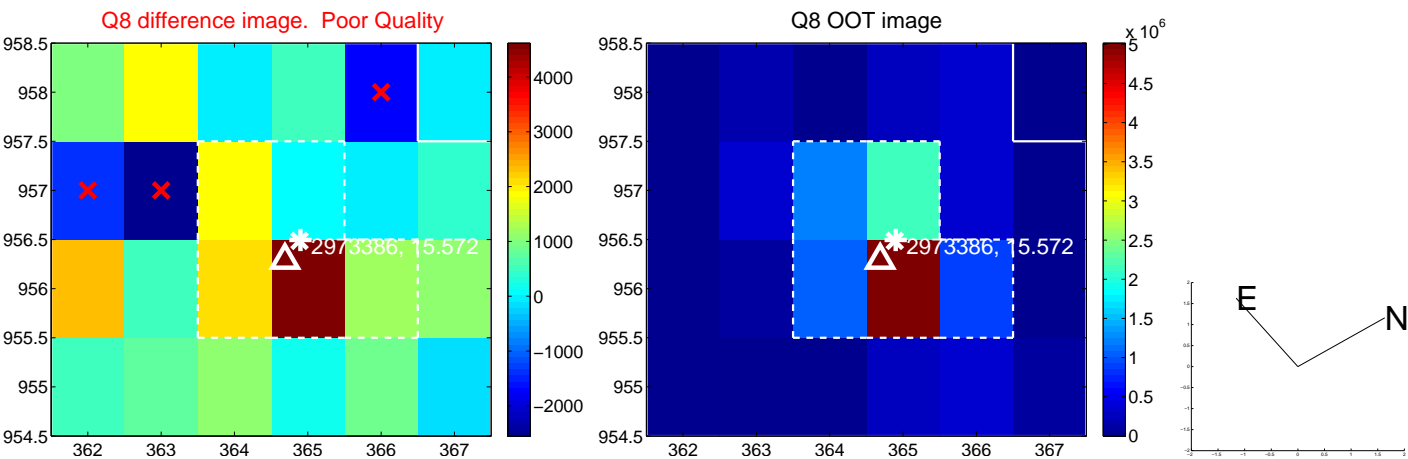
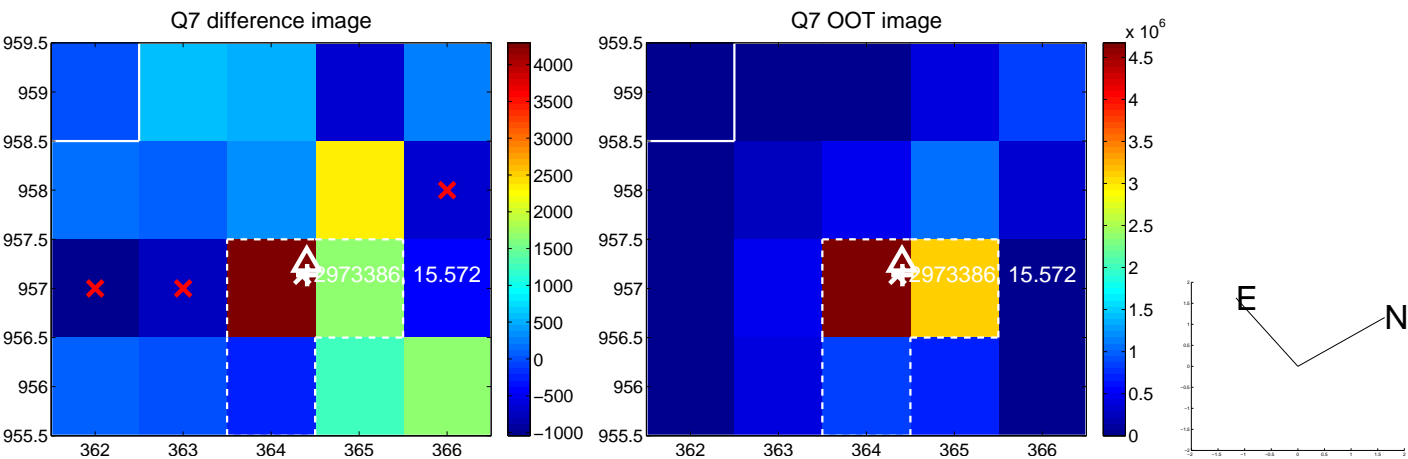
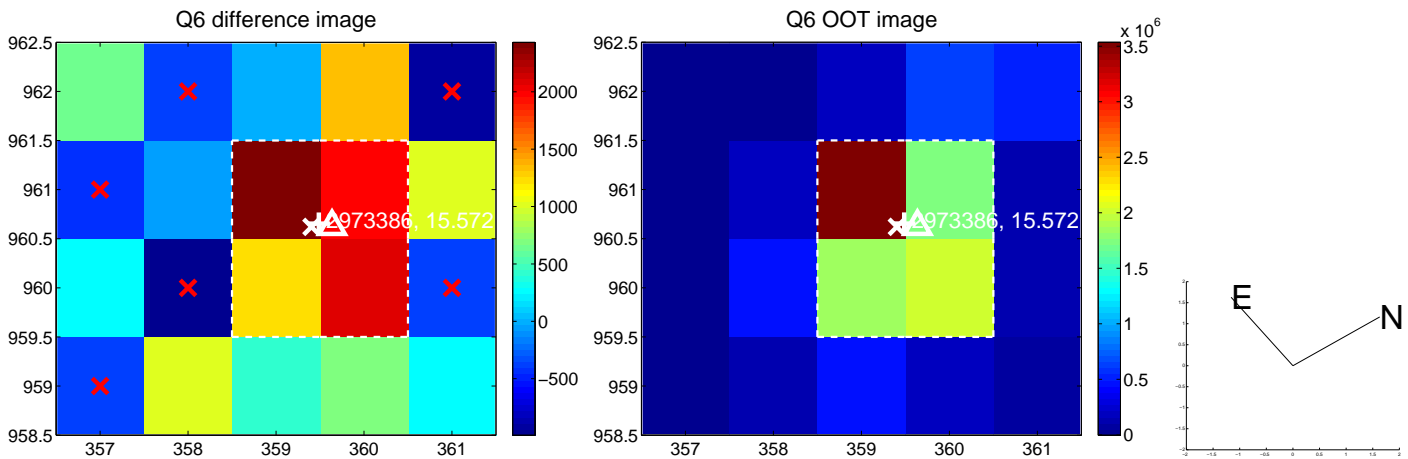
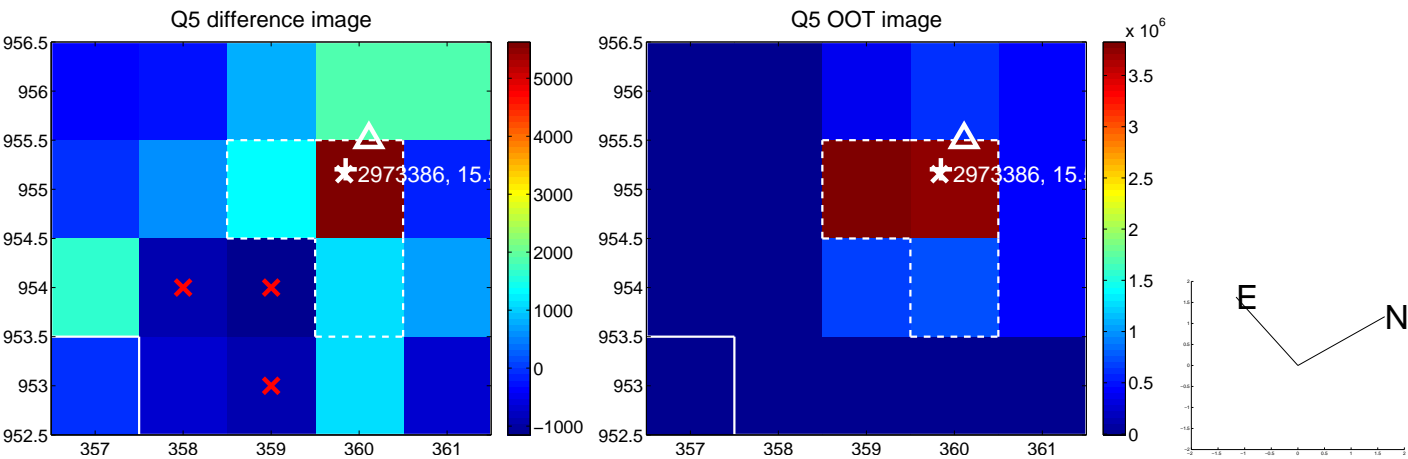


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

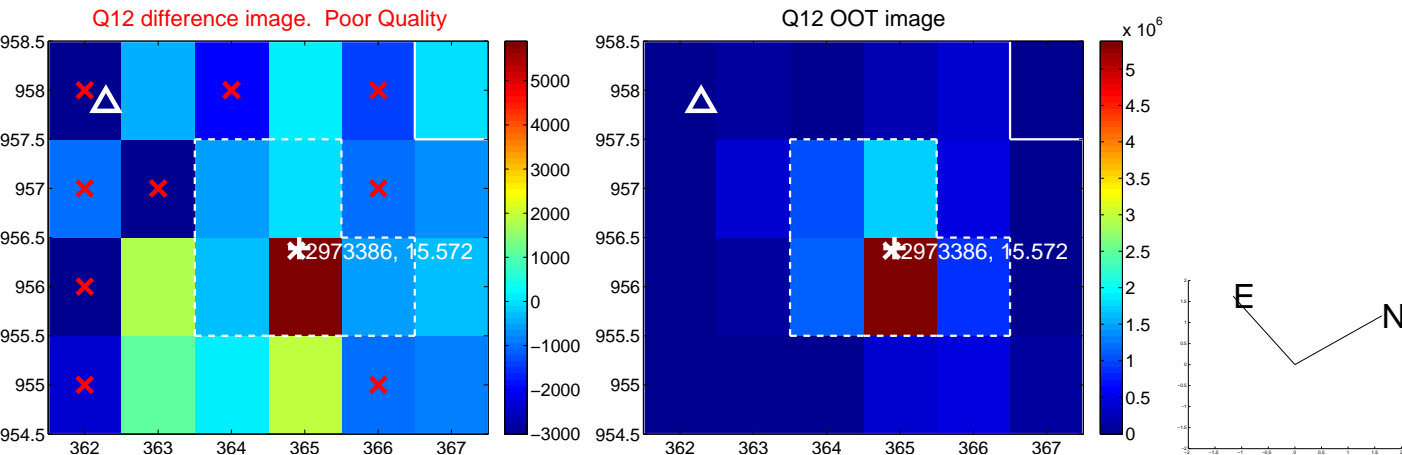
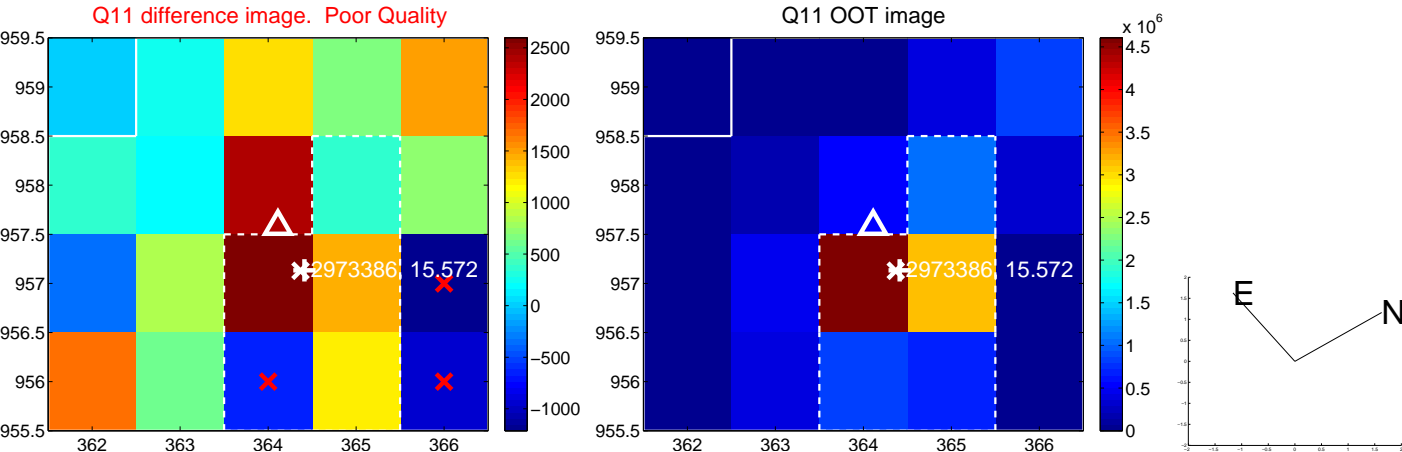
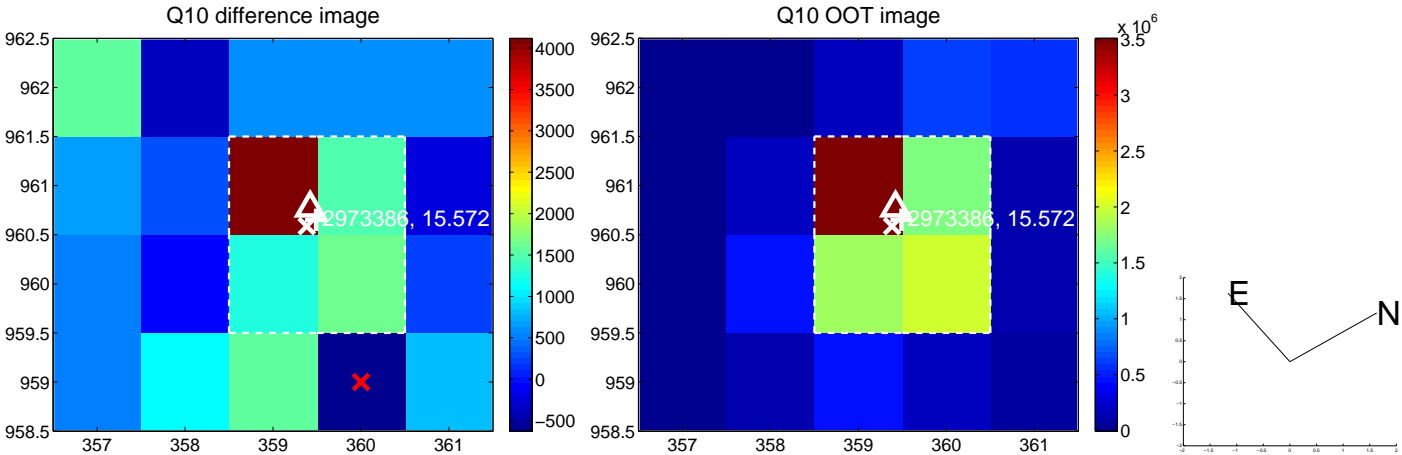
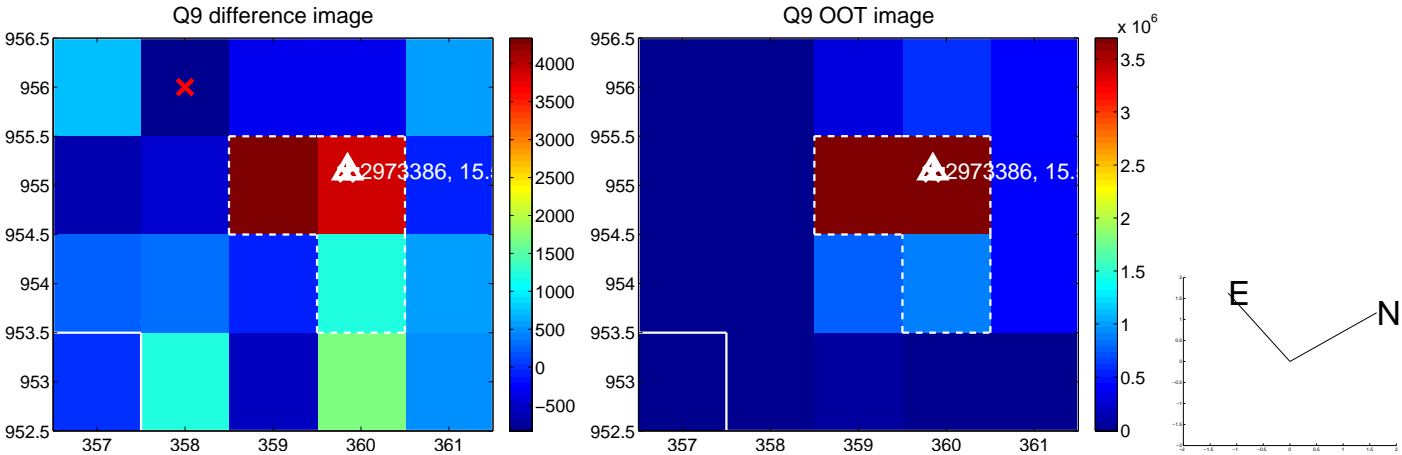
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



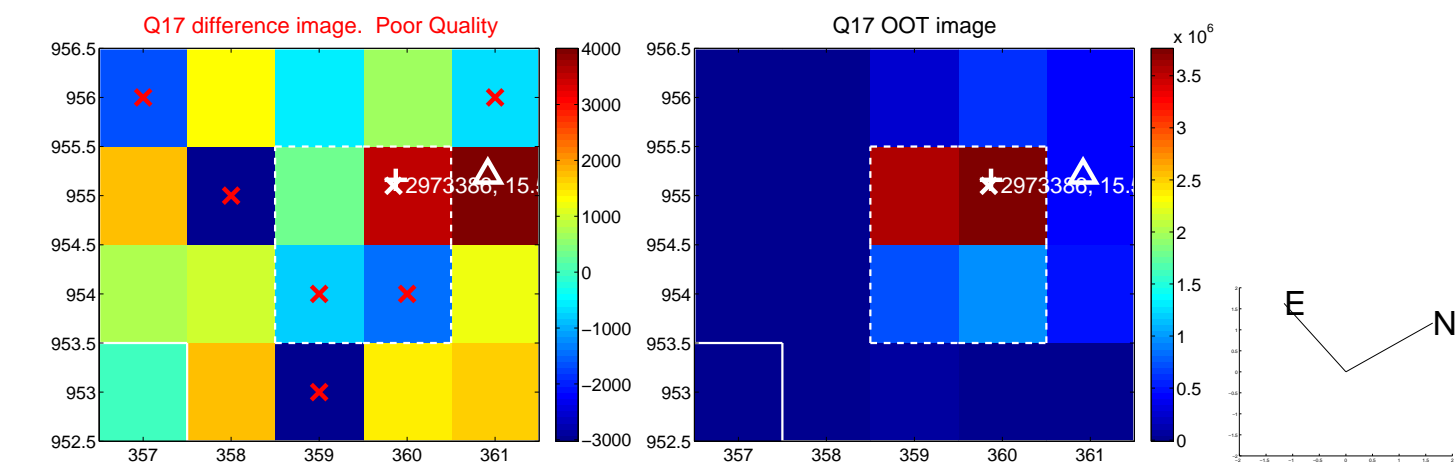
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



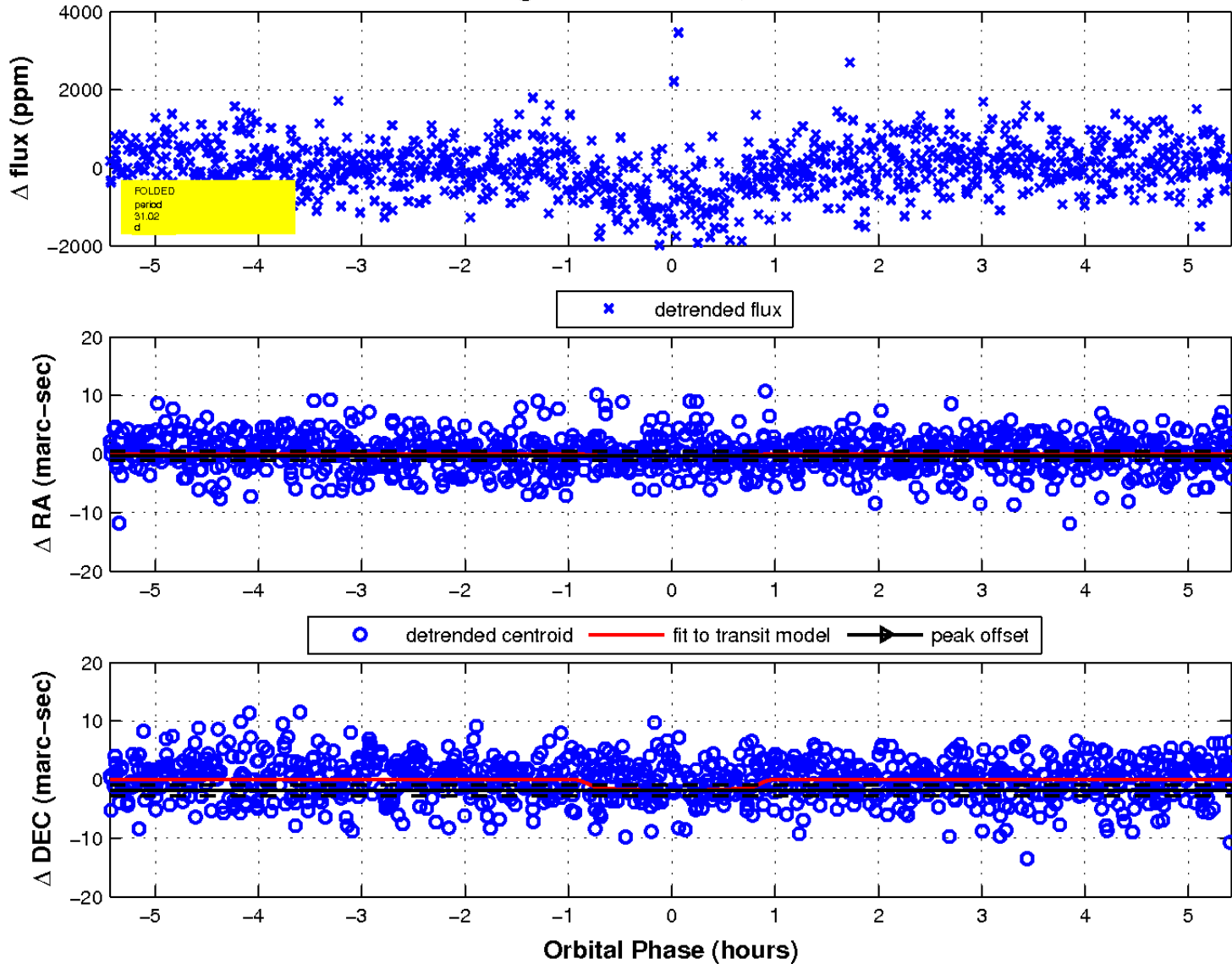
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

