

KIC 012073334

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})
012073334-01	OBS	No	0.606429	131.671091	75.9	3.733	13.8	13.5	2.43	6799	2.50	40317.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012073334-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

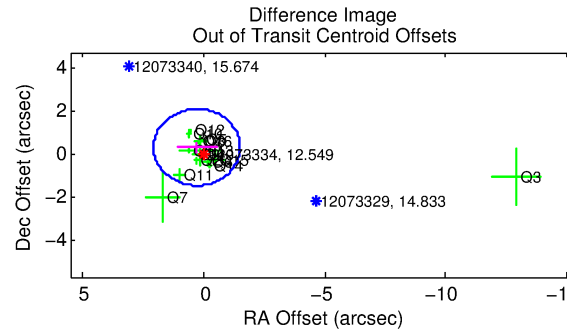
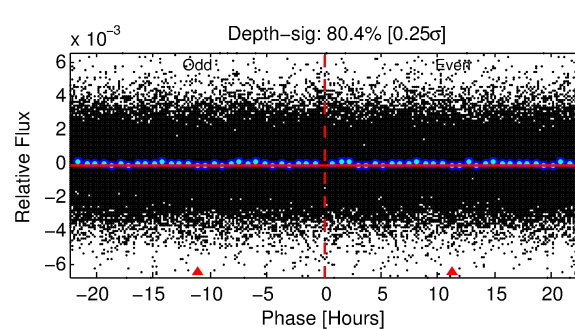
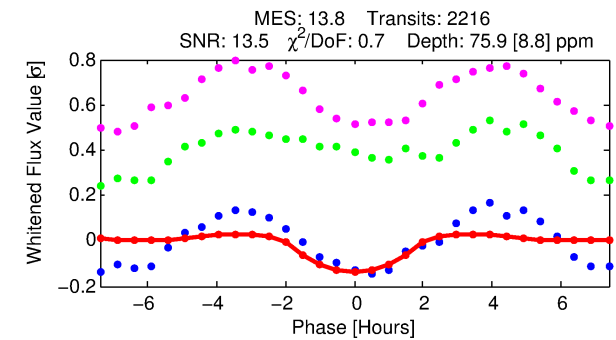
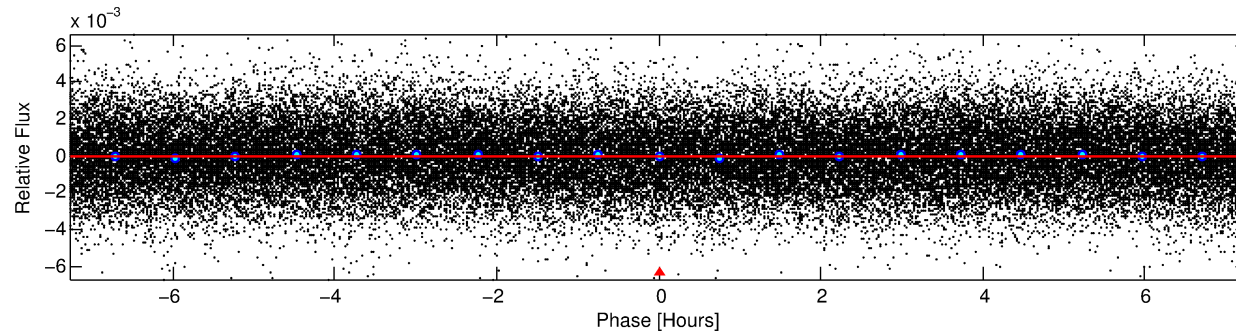
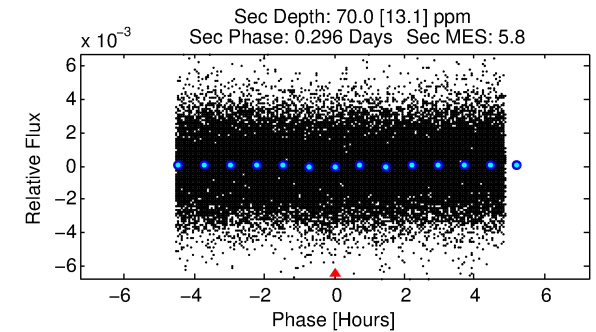
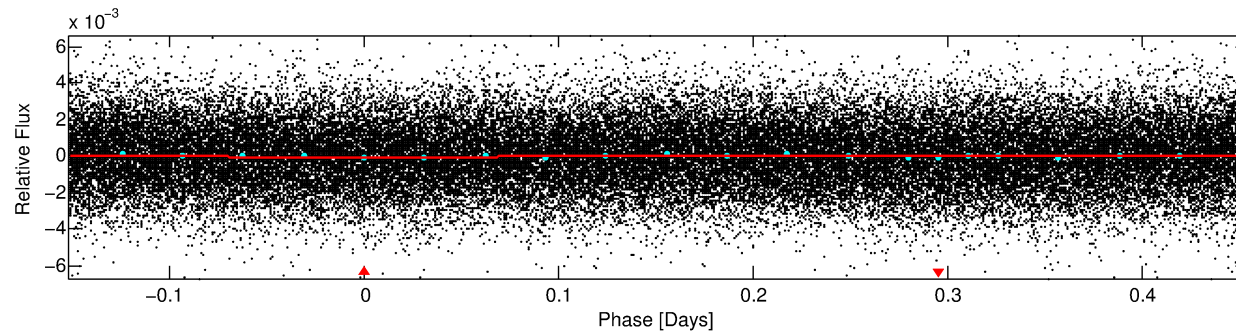
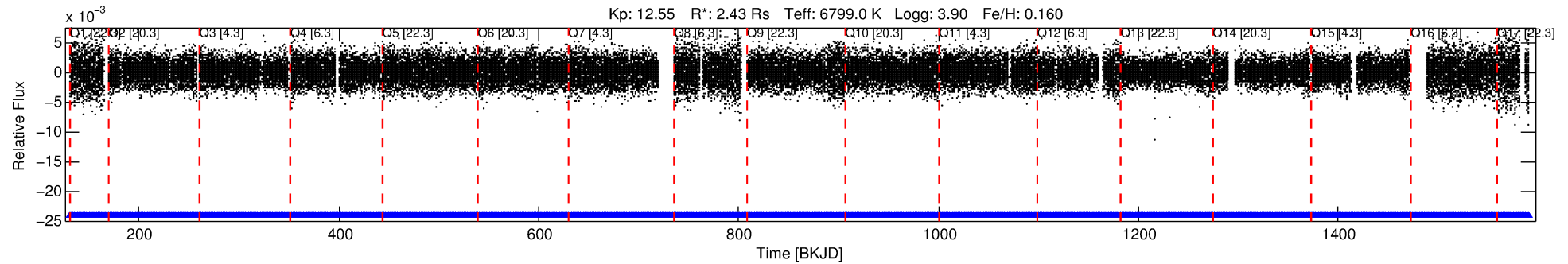
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012073334-01

No Significant Match Found

DV One-Page Summary

KIC: 12073334 Candidate: 1 of 1 Period: 0.606 d



DV Fit Results:

Period = 0.60643 [0.00001] d
Epoch = 131.6711 [0.0037] BKJD
Rp/R* = 0.0094 [0.0081]
a/R* = 1.09 [0.87]
b = 0.91 [0.94]
Seff = 40317.26 [23809.13]
Teq = 3613 [533] K
Rp = 2.50 [2.38] Re
a = 0.0168 [0.0062] AU
Ag = 1.73 [3.14] [0.23σ]
Teffp = 6408 [2778] K [0.99σ]

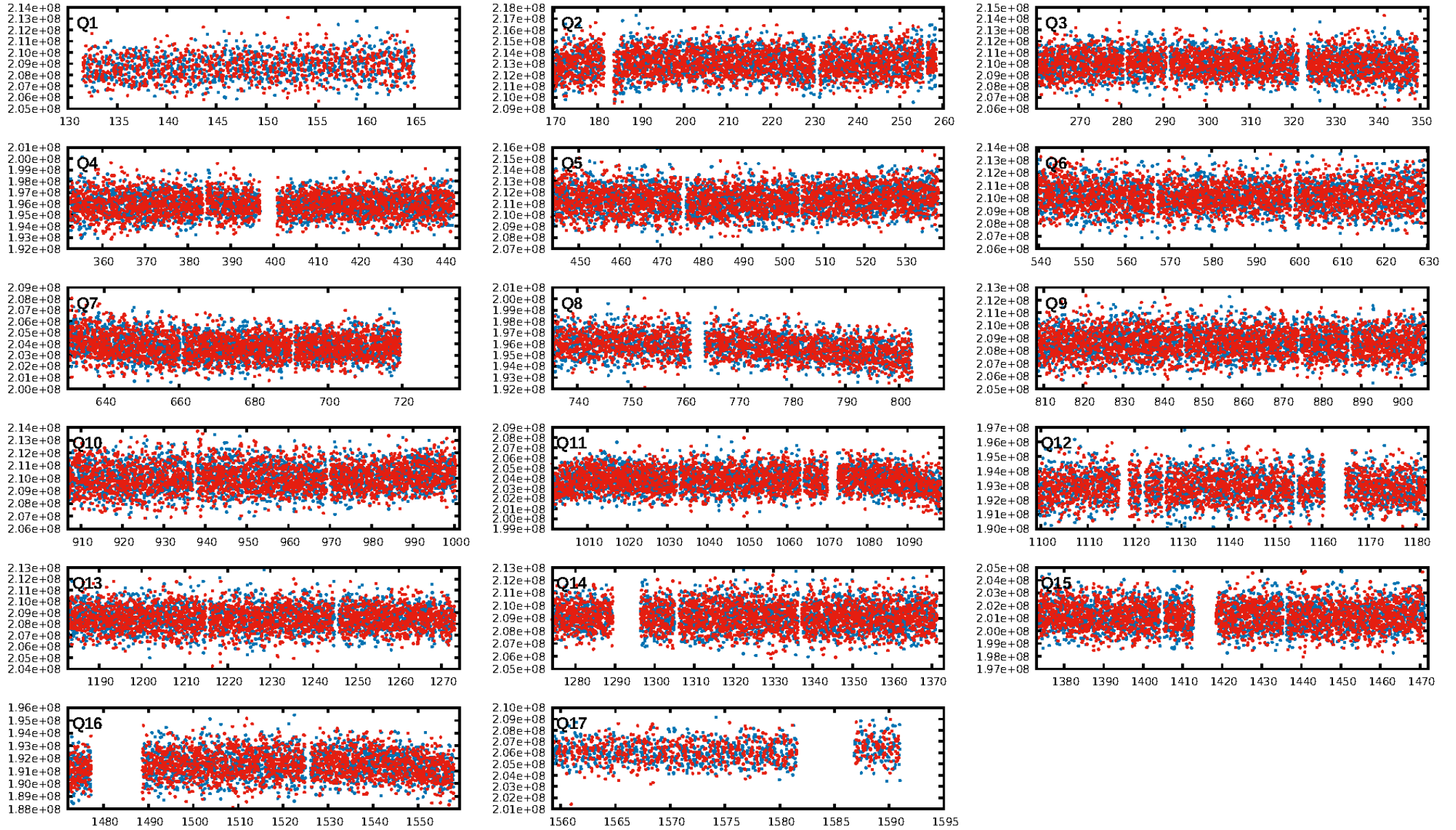
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 4.64e-50
RollingBand-fgt: 1.00 [2115/2115]
GhostDiagnostic-chr: 1.177
Centroid-sig: 22.0%
Centroid-so: 0.322 arcsec [1.68σ]
OotOffset-rm: 0.417 arcsec [0.70σ]
KicOffset-rm: 0.054 arcsec [0.10σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 1.00 [17/17]

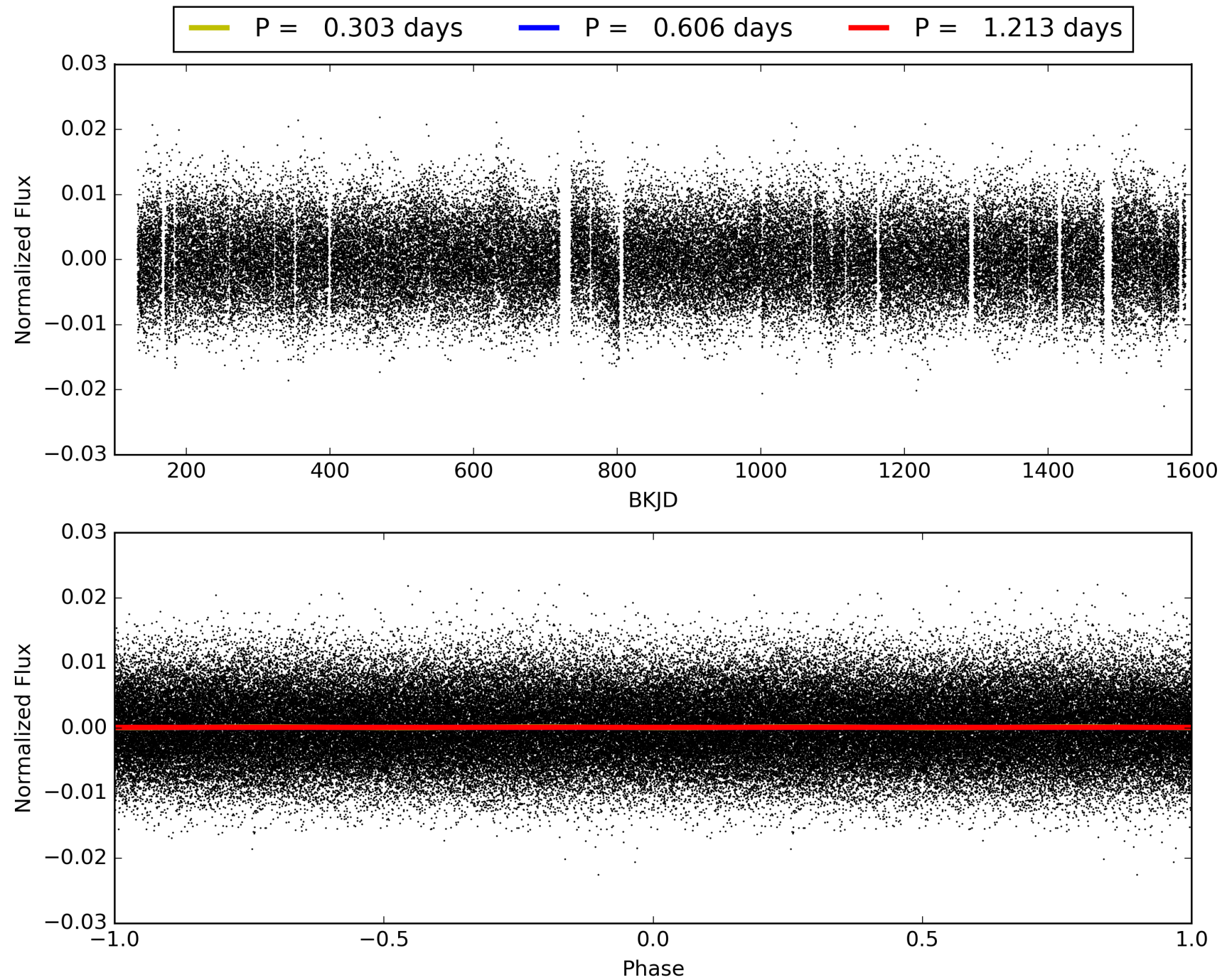
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:23:37 Z

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

TCE 012073334-01, PDC Light Curves

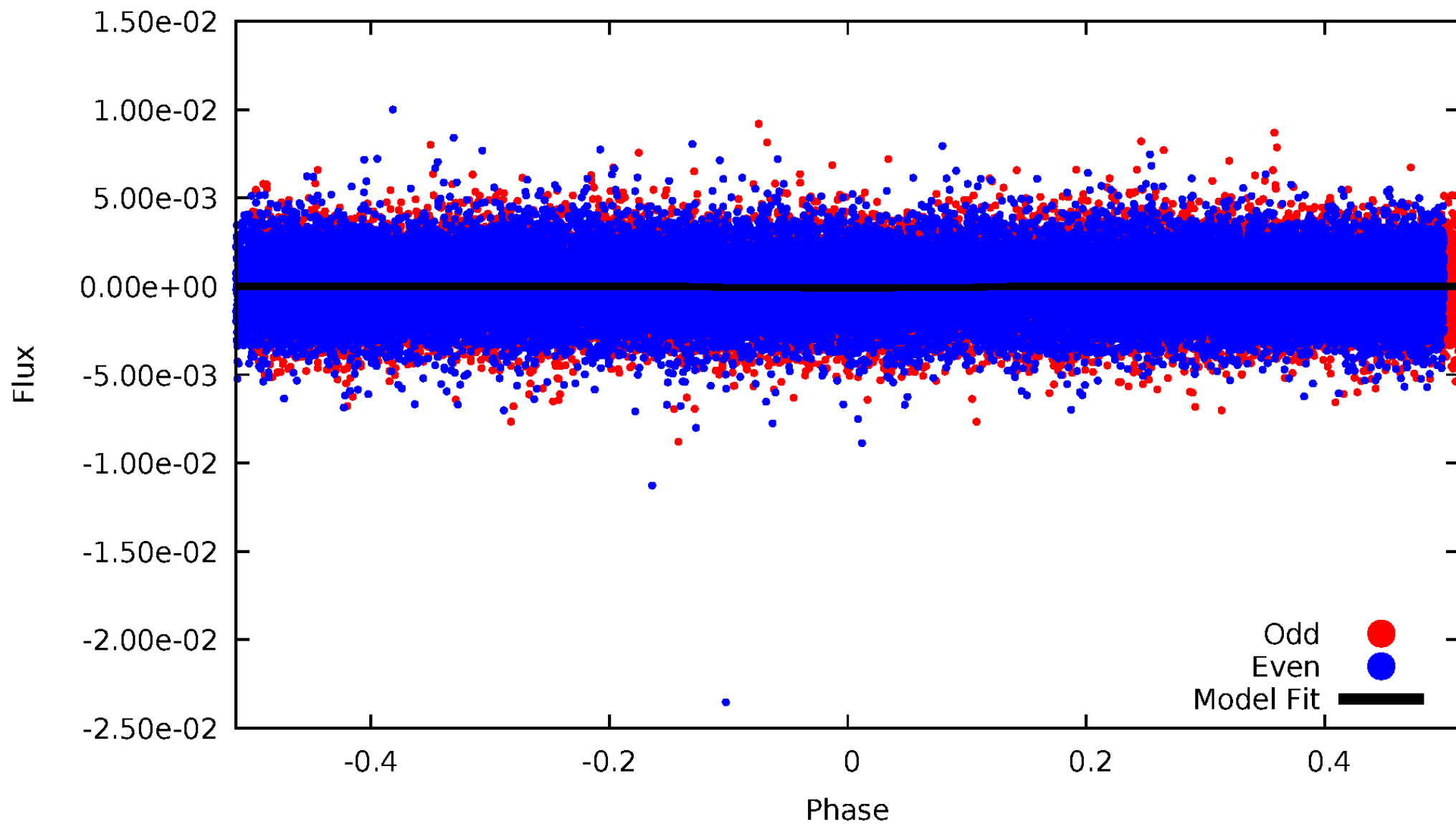


TCE 012073334-01



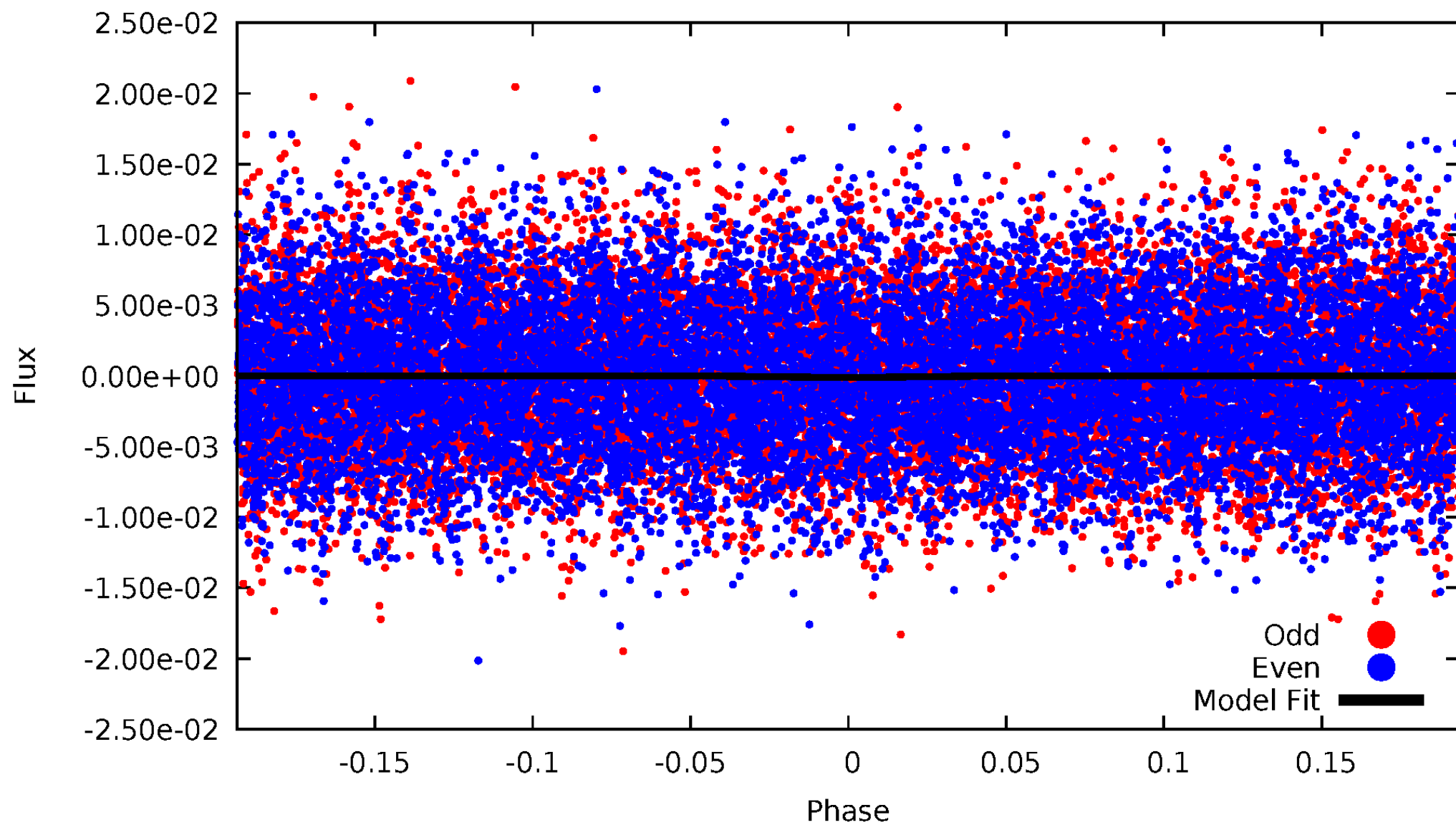
DV Odd/Even

TCE 012073334-01



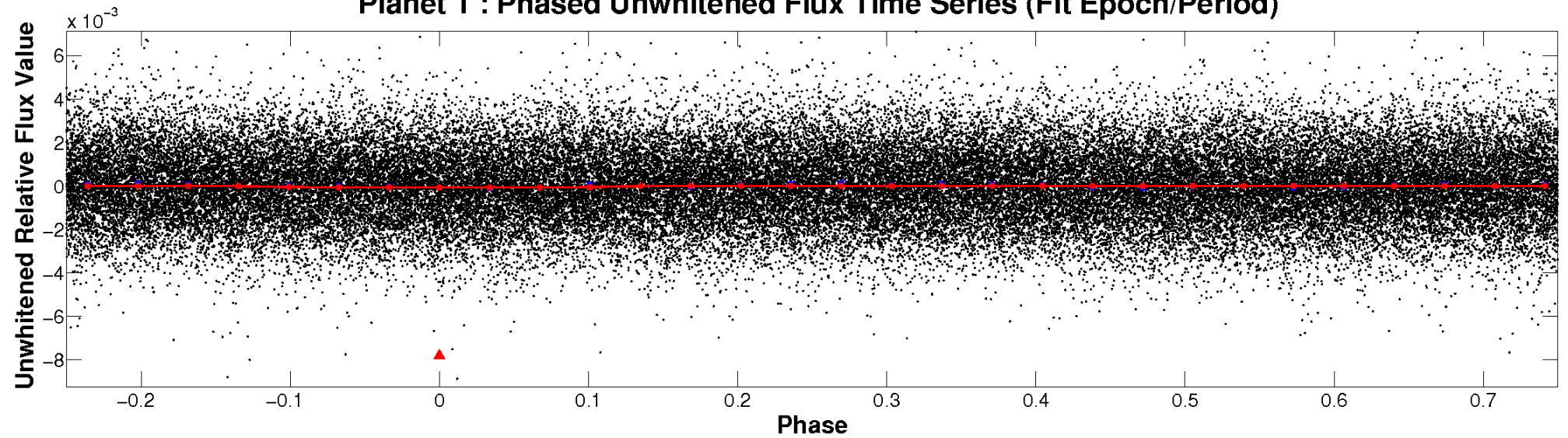
ALT Odd/Even

TCE 012073334-01

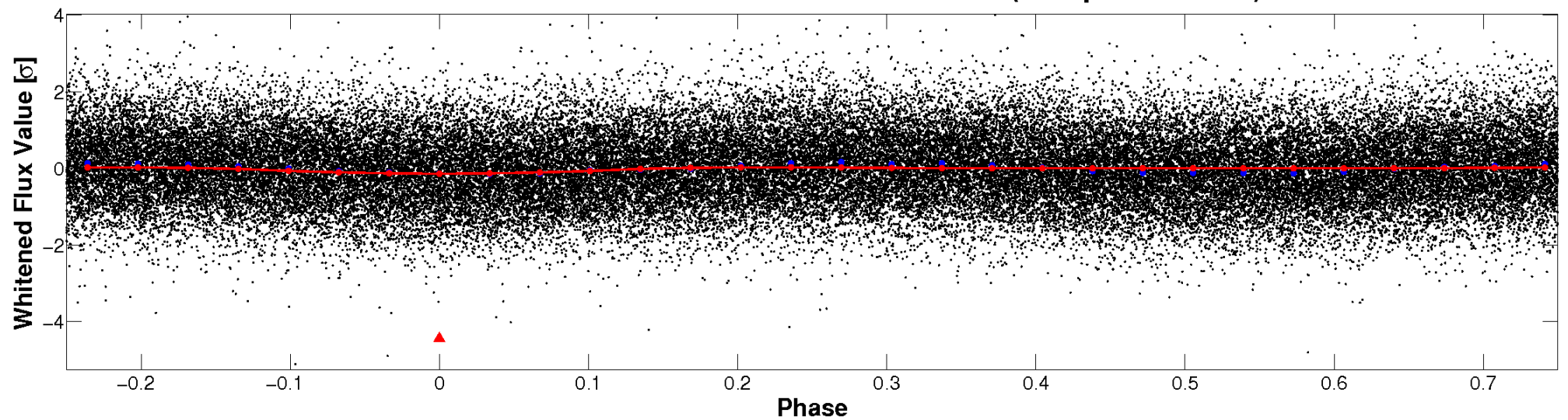


Non-Whitened Vs. Whitened Light Curve

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

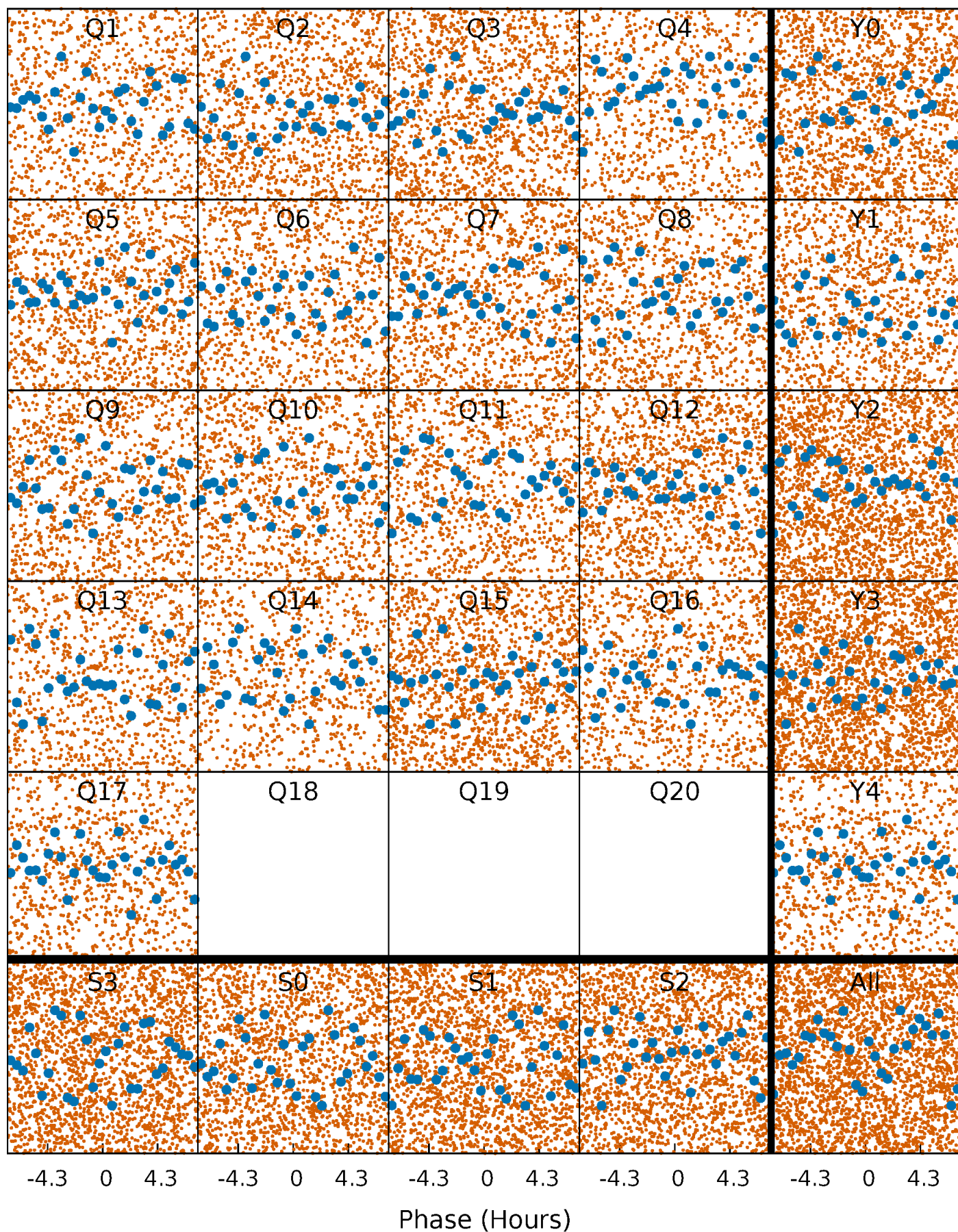


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



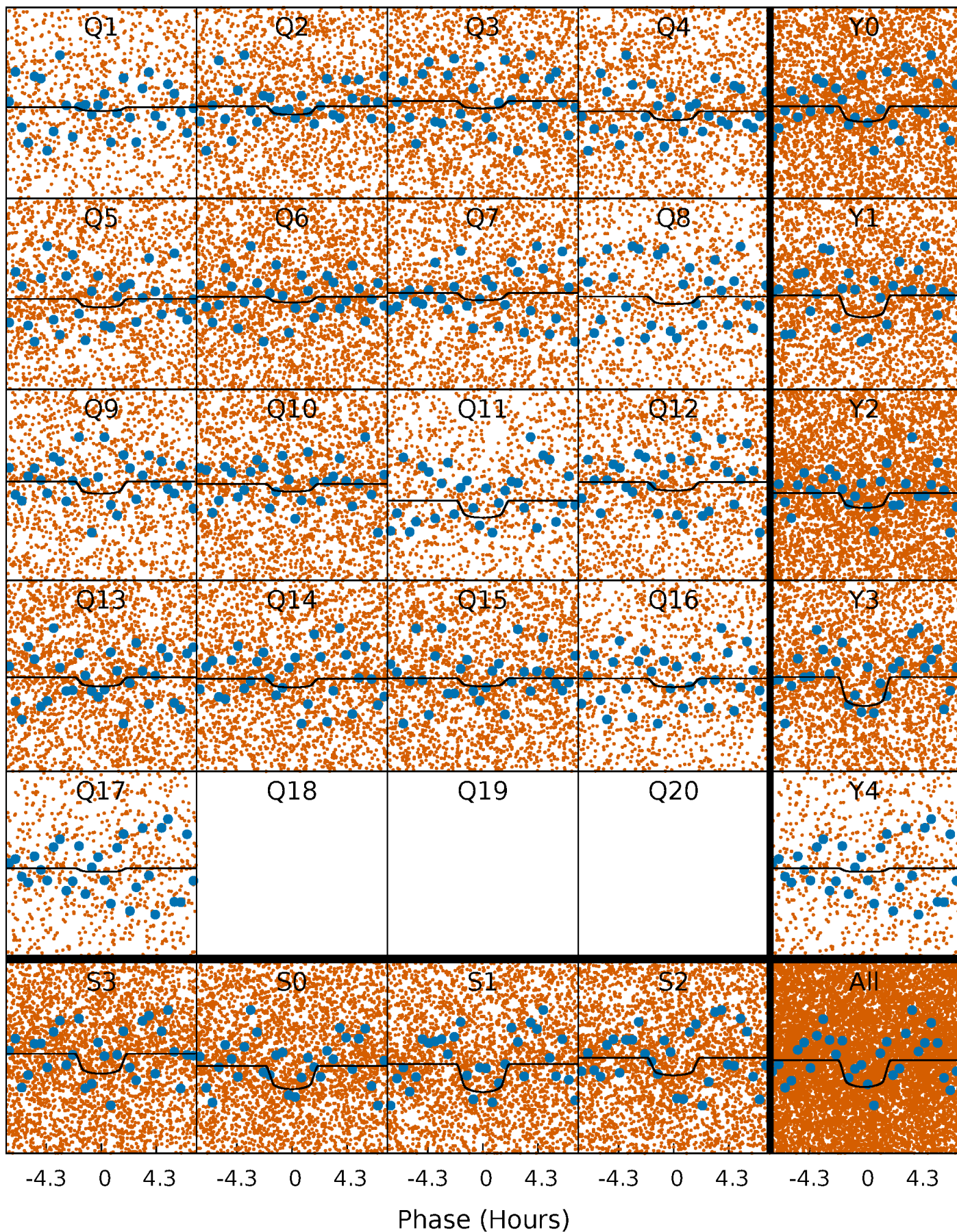
PDC Quarter-Phased Transit Curves

TCE 012073334-01 P= 0.606429 Days $T_0=131.671091$ (BKJD)



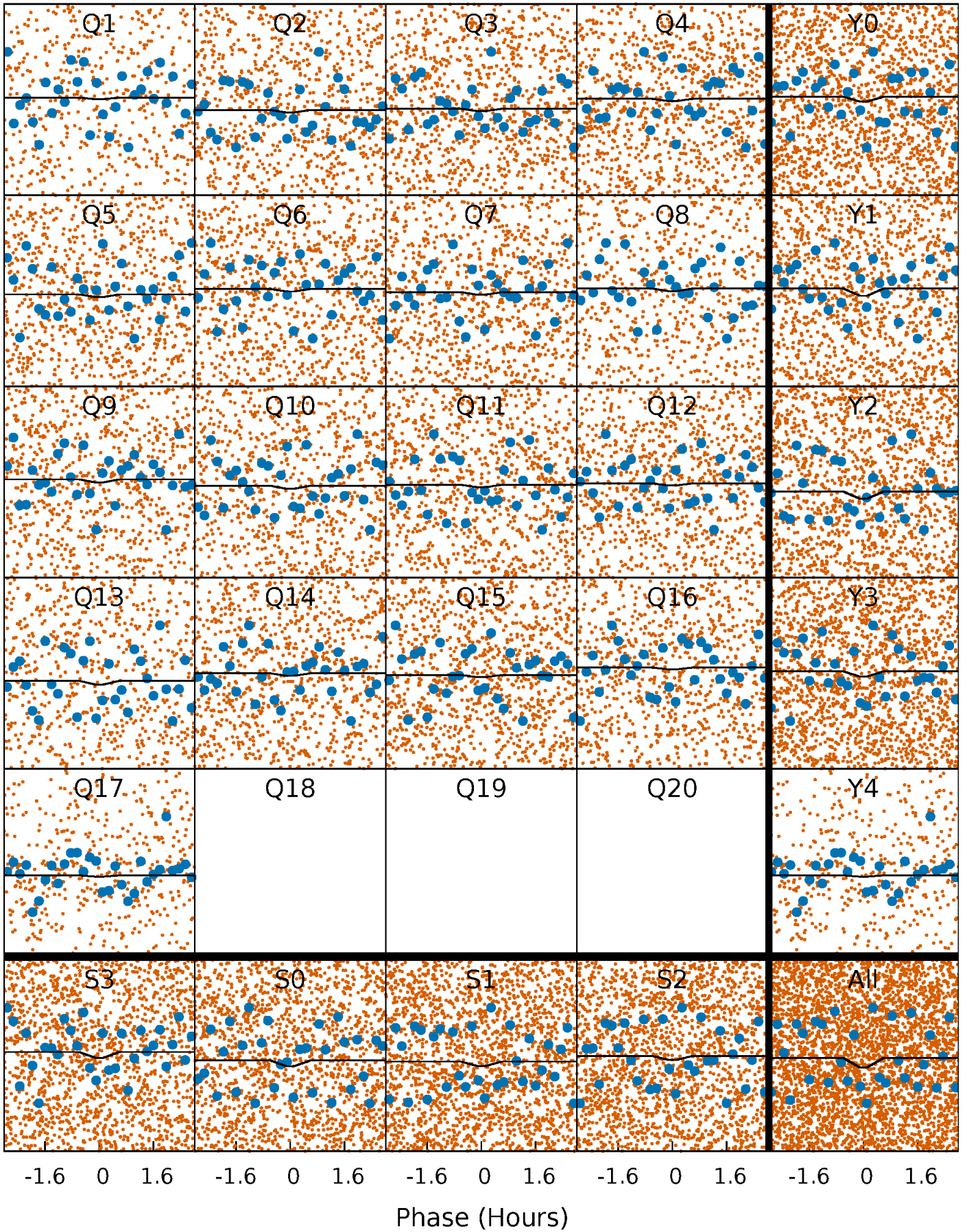
DV Quarter-Phased Transit Curves

TCE 012073334-01 P= 0.606429 Days $T_0=131.671091$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

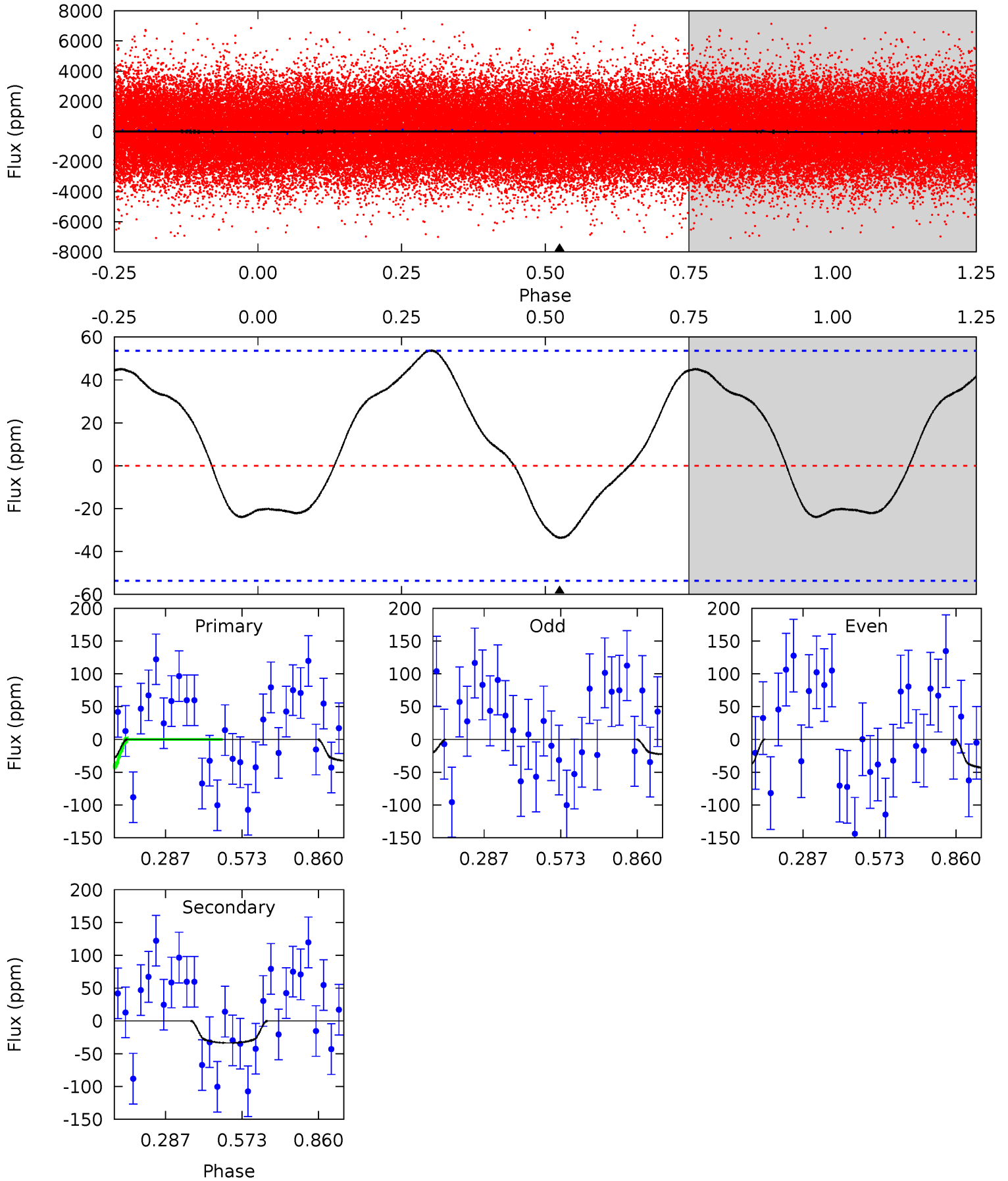
TCE 012073334-01 P= 0.606421 Days $T_0=131.657264$ (BKJD)



DV Model-Shift Uniqueness Test

012073334-01, P = 0.606429 Days, E = 131.064662 Days

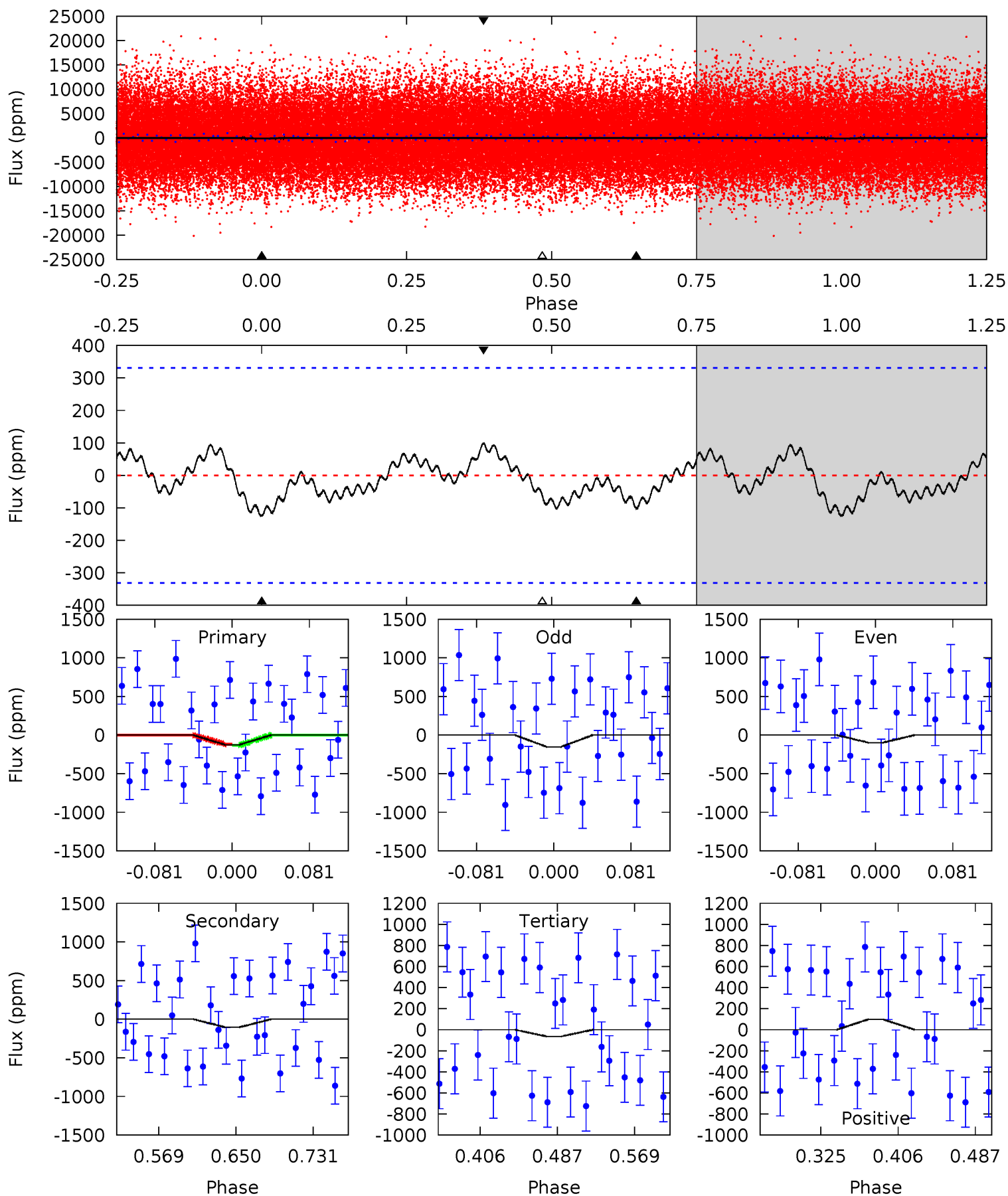
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.72	2.72	0	0	4.34	1.07	1.86	2.72	2.72	2.72	2.72	0.85	1.02	0.62	1.31



Alt Model-Shift Uniqueness Test

012073334-01, P = 0.606421 Days, E = 131.050843 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.75	1.45	0.89	1.38	4.61	1.74	0.69	0.86	0.37	0.56	0.07	0.38	0.50	0.44	0.09



Stellar Parameters For KIC 012073334

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6799^{+190}_{-286}	$3.898^{+0.322}_{-0.161}$	$0.160^{+0.200}_{-0.350}$	$2.431^{+0.619}_{-1.006}$	$1.706^{+0.167}_{-0.389}$	$0.167^{+0.384}_{-0.081}$
	+3%/-4%	+8%/-4%	+125%/-219%	+25%/-41%	+10%/-23%	+230%/-48%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 012073334-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-34 ± 12	$2.74^{+1.92}_{-1.68}$	5012^{+401}_{-489}	4374^{+3424}_{-7851}	$0.678^{+3.412}_{-0.466}$
Alt.	-104 ± 72	$2.78^{+2.15}_{-1.71}$	4992^{+415}_{-514}	5963^{+4836}_{-3037}	$1.734^{+10.377}_{-1.414}$

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

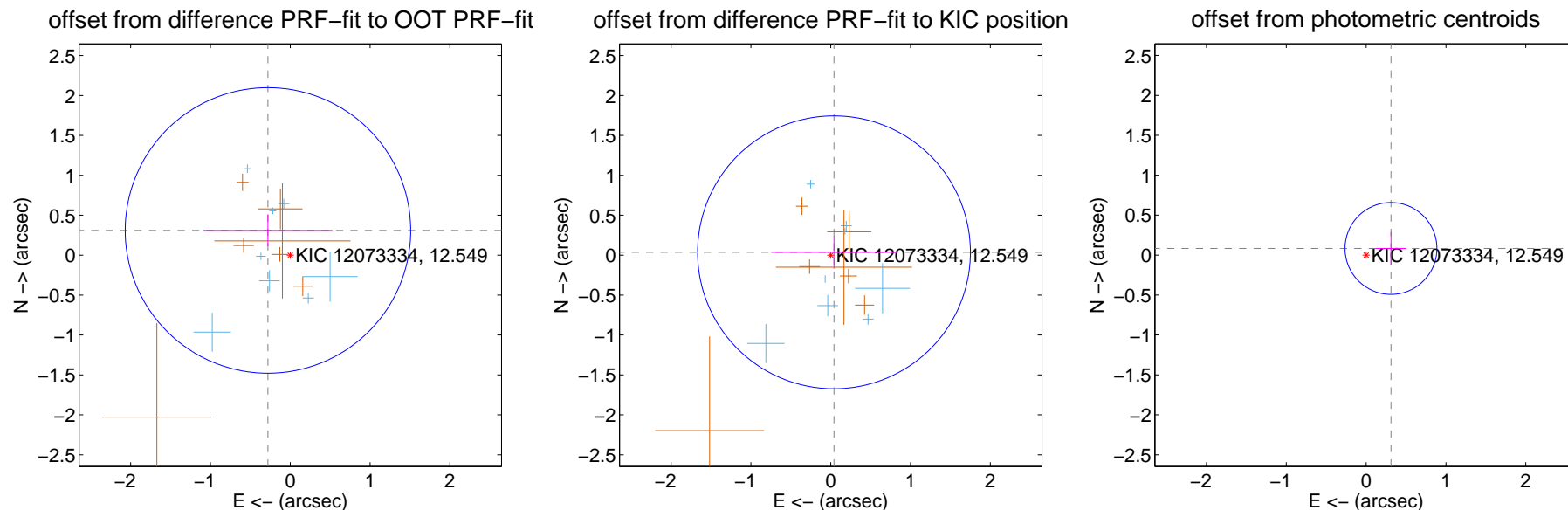
DV Centroid Data

Supplemental centroid analysis for 012073334-01. Kepler magnitude: 12.55. Transit SNR 13.49

There are 8 quarters with good PRF difference image offsets

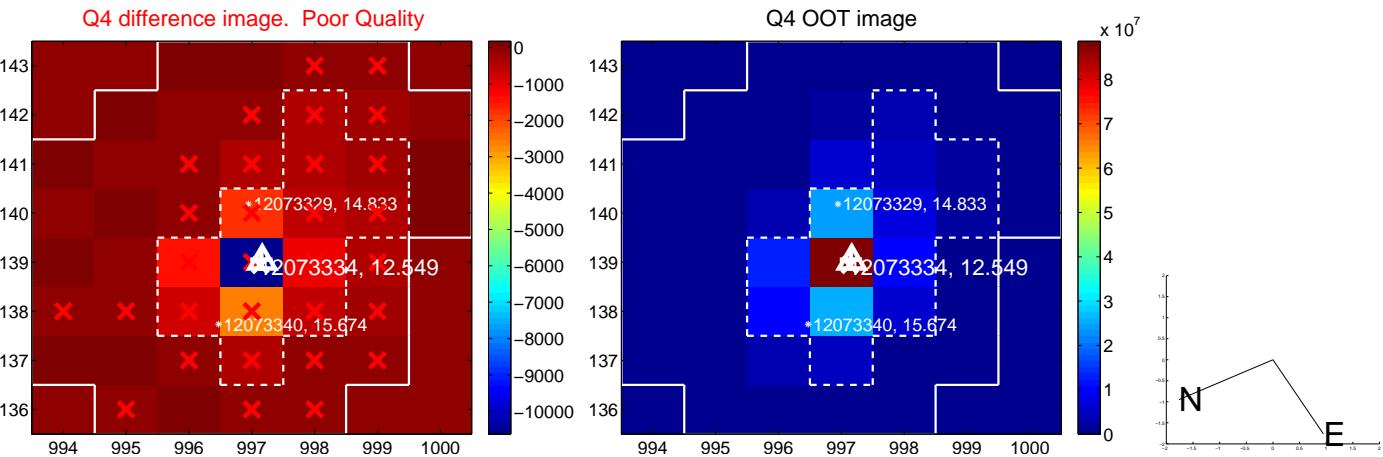
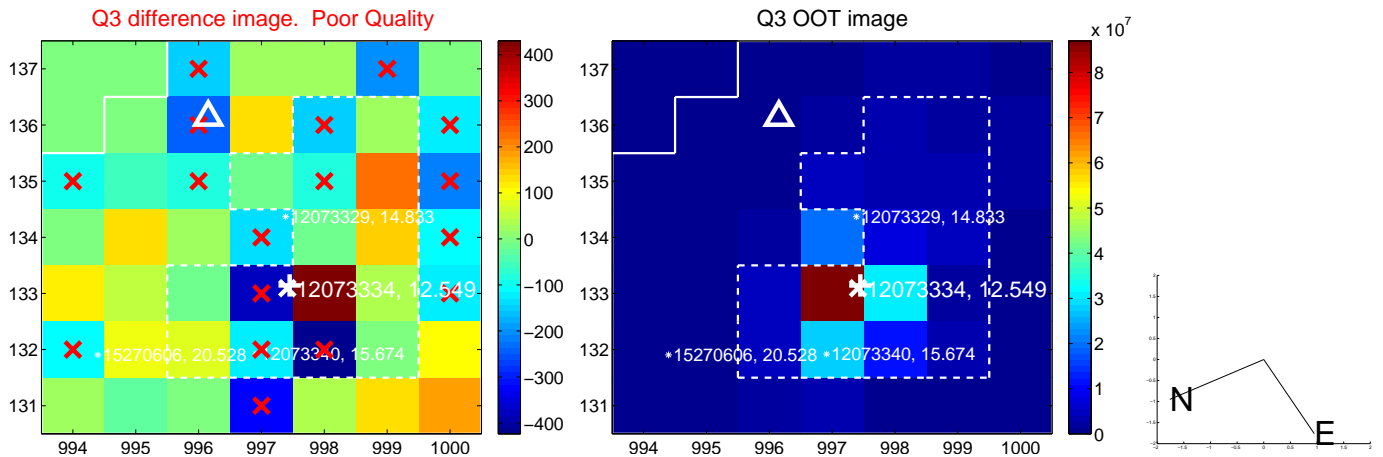
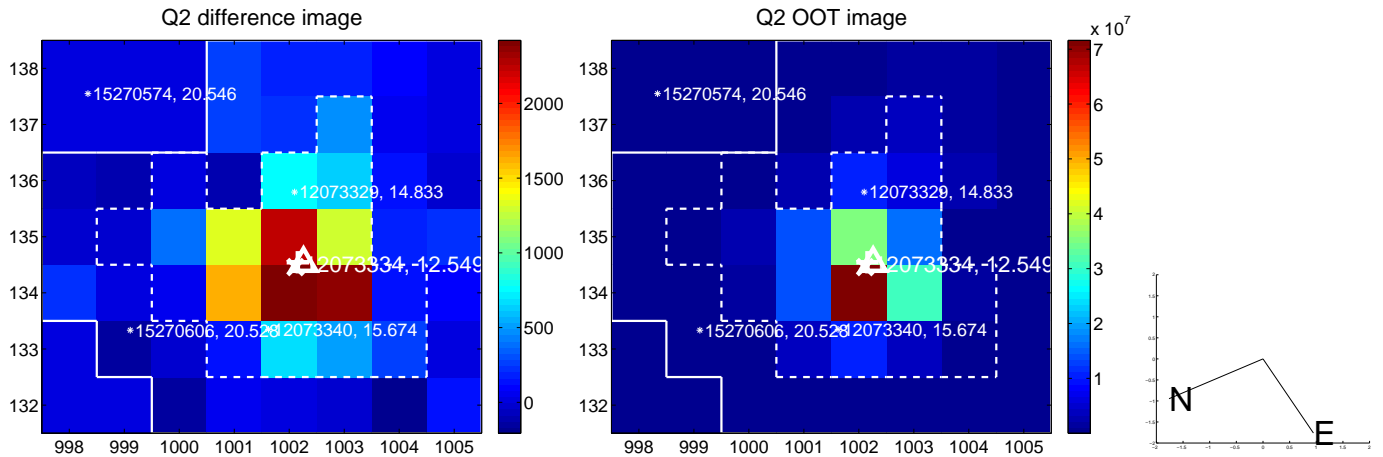
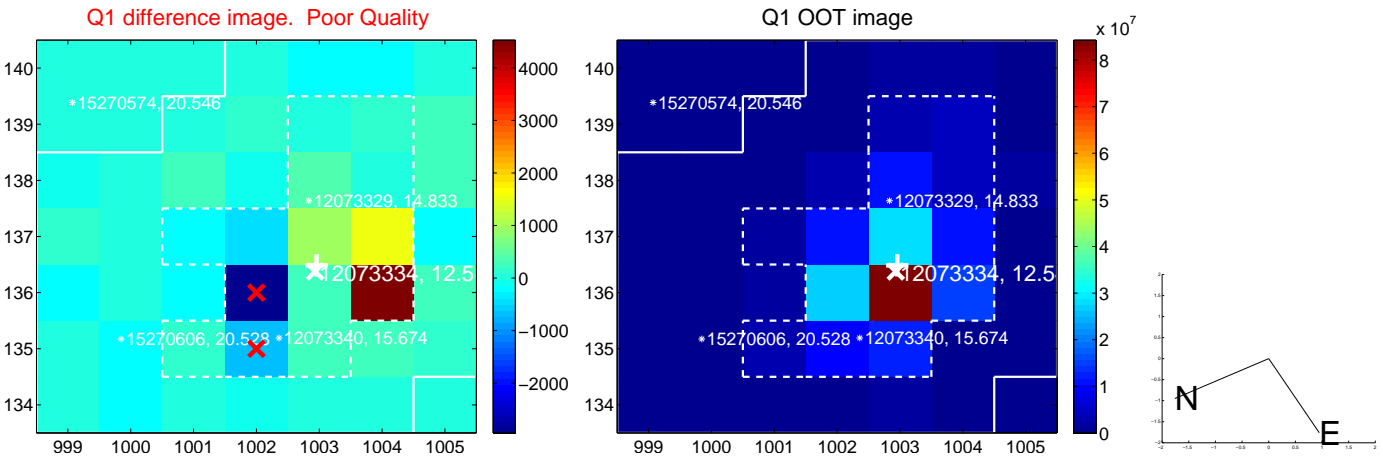
The direct PRF centroid is offset from the target star catalog position by about 0.41 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.417 ± 0.596	0.70	0.279 ± 0.808	0.310 ± 0.198
PRF-fit source offset from KIC position	0.054 ± 0.570	0.10	-0.041 ± 0.789	0.036 ± 0.205
photometric centroid source offset	0.32 ± 0.19	1.68	-0.31 ± 0.19	0.08 ± 0.20

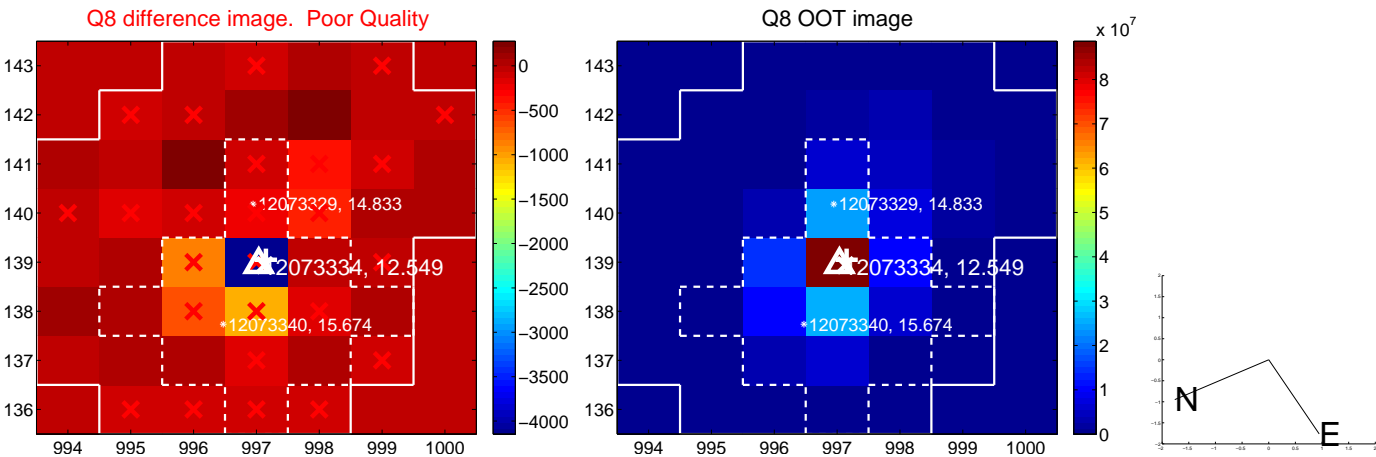
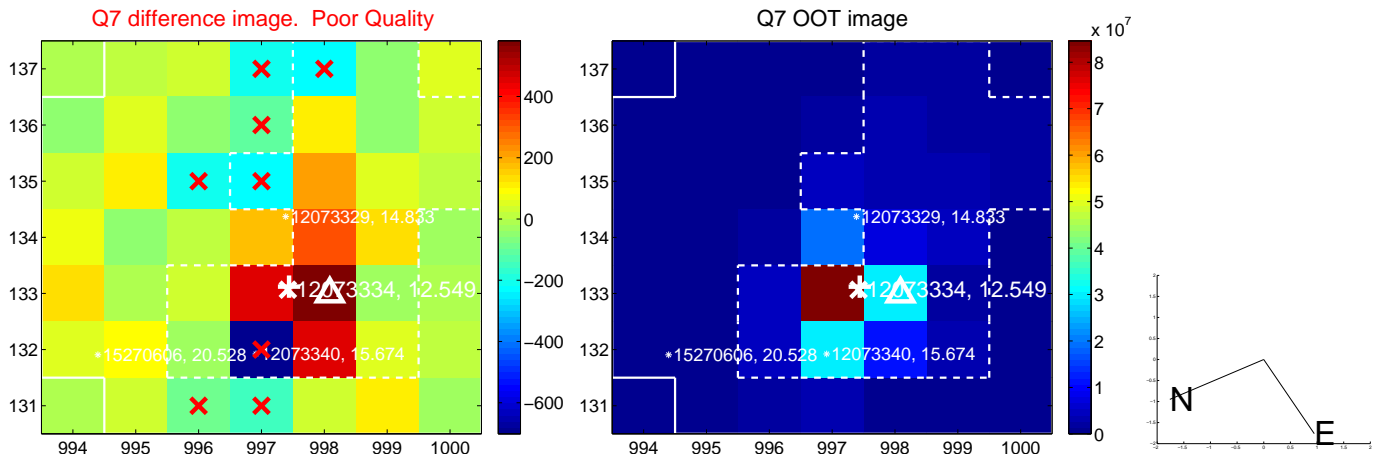
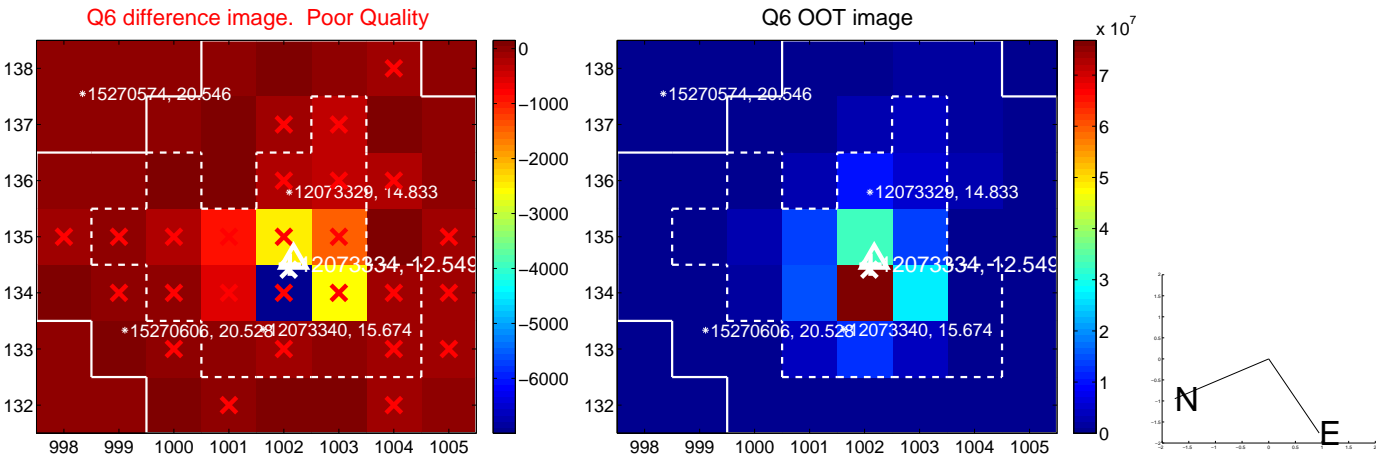
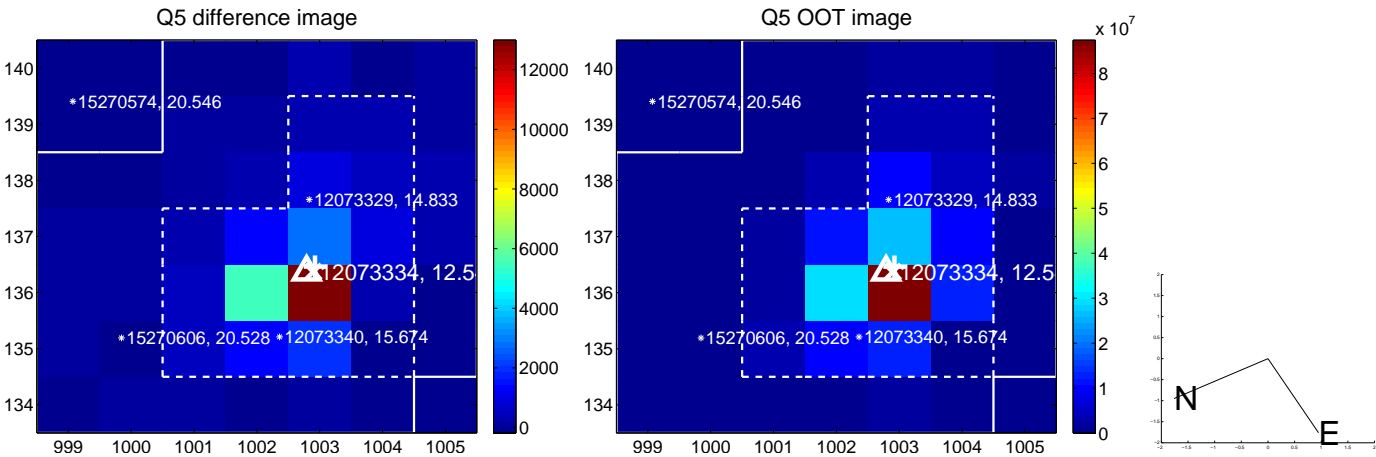


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

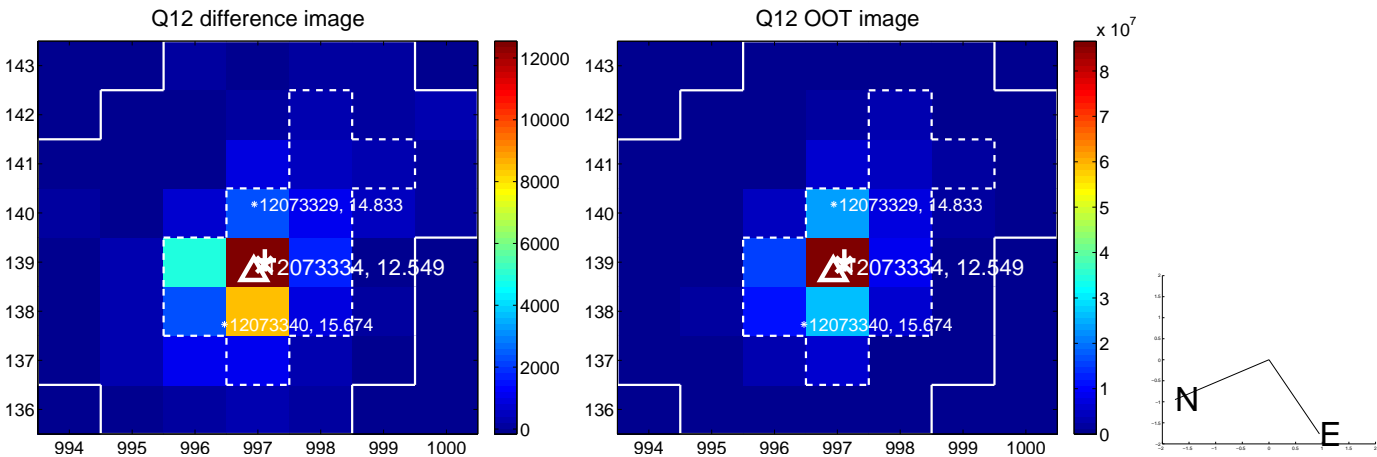
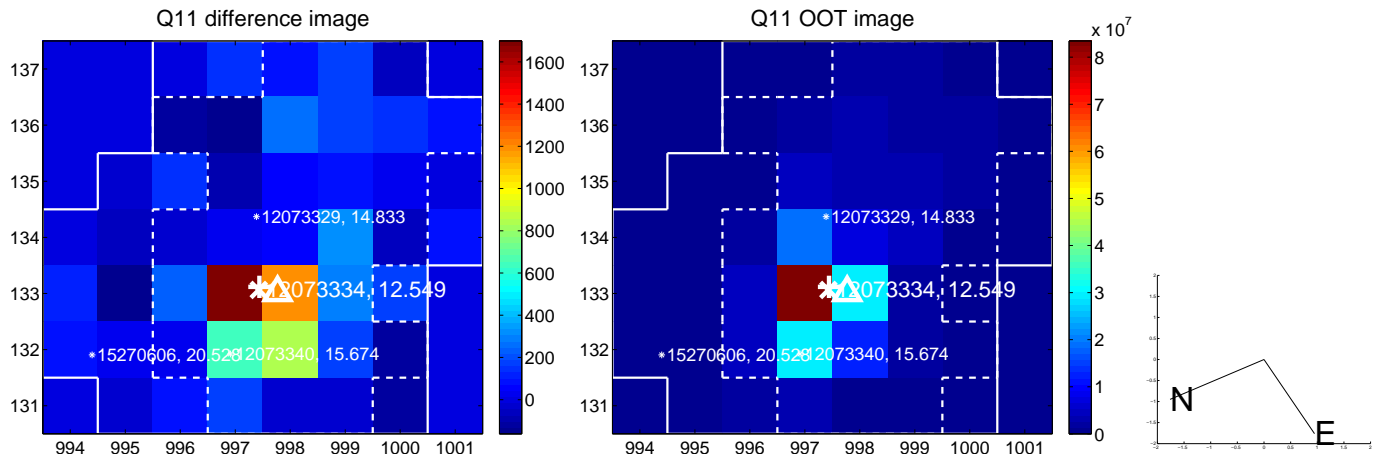
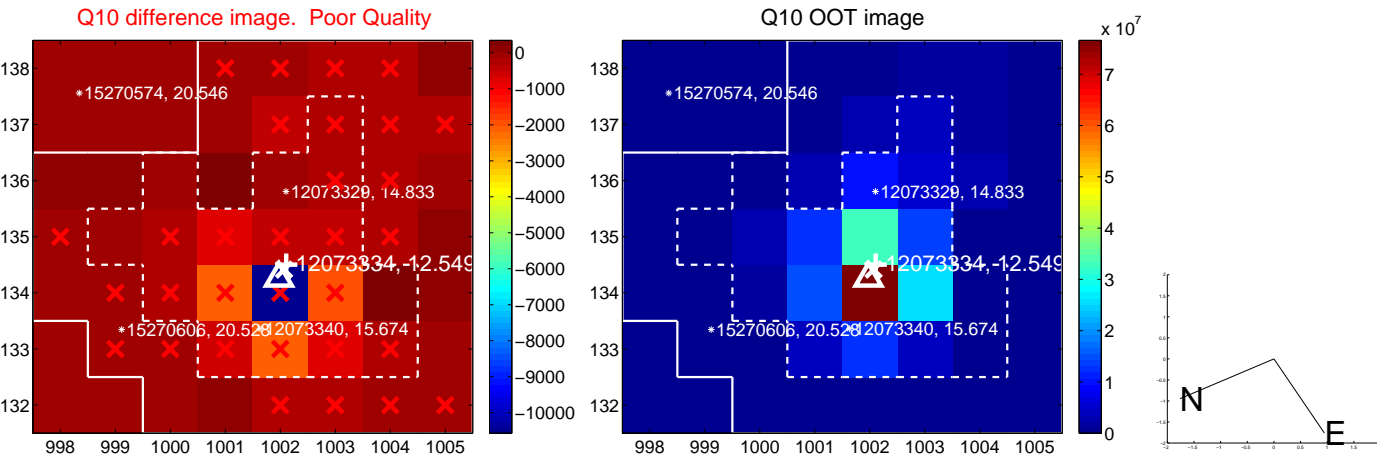
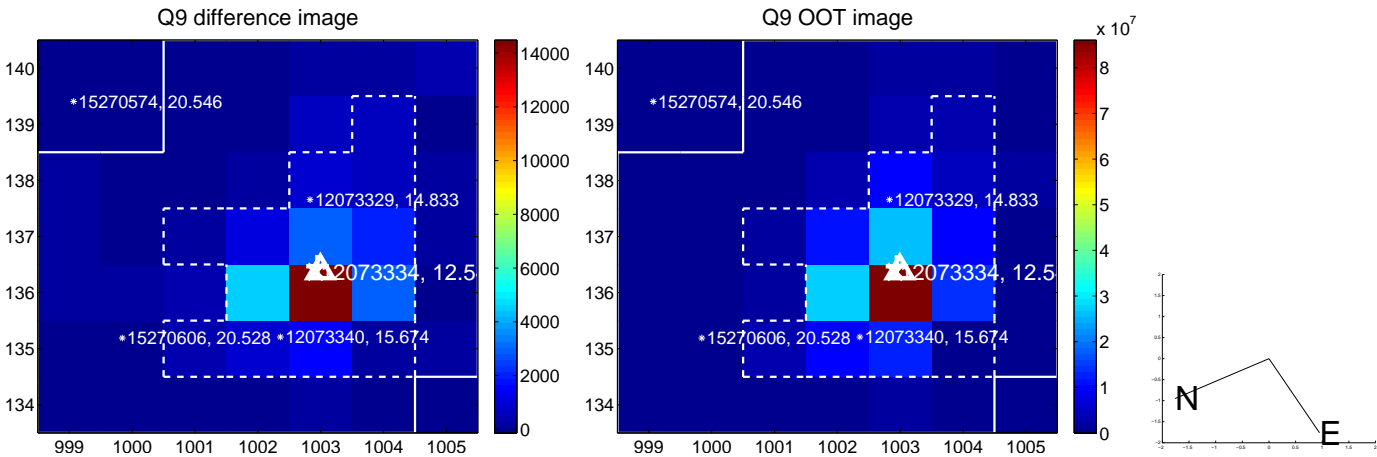
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



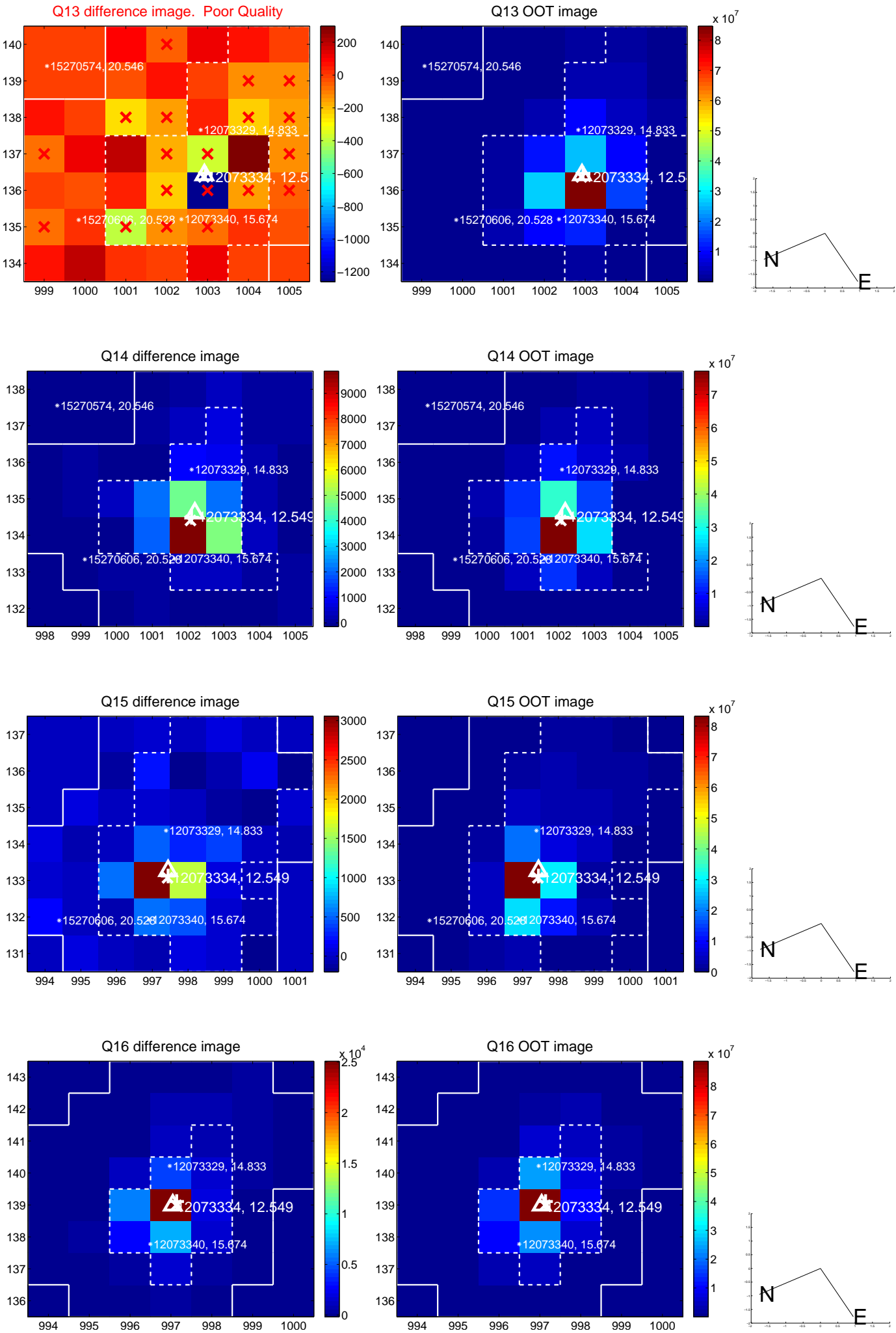
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



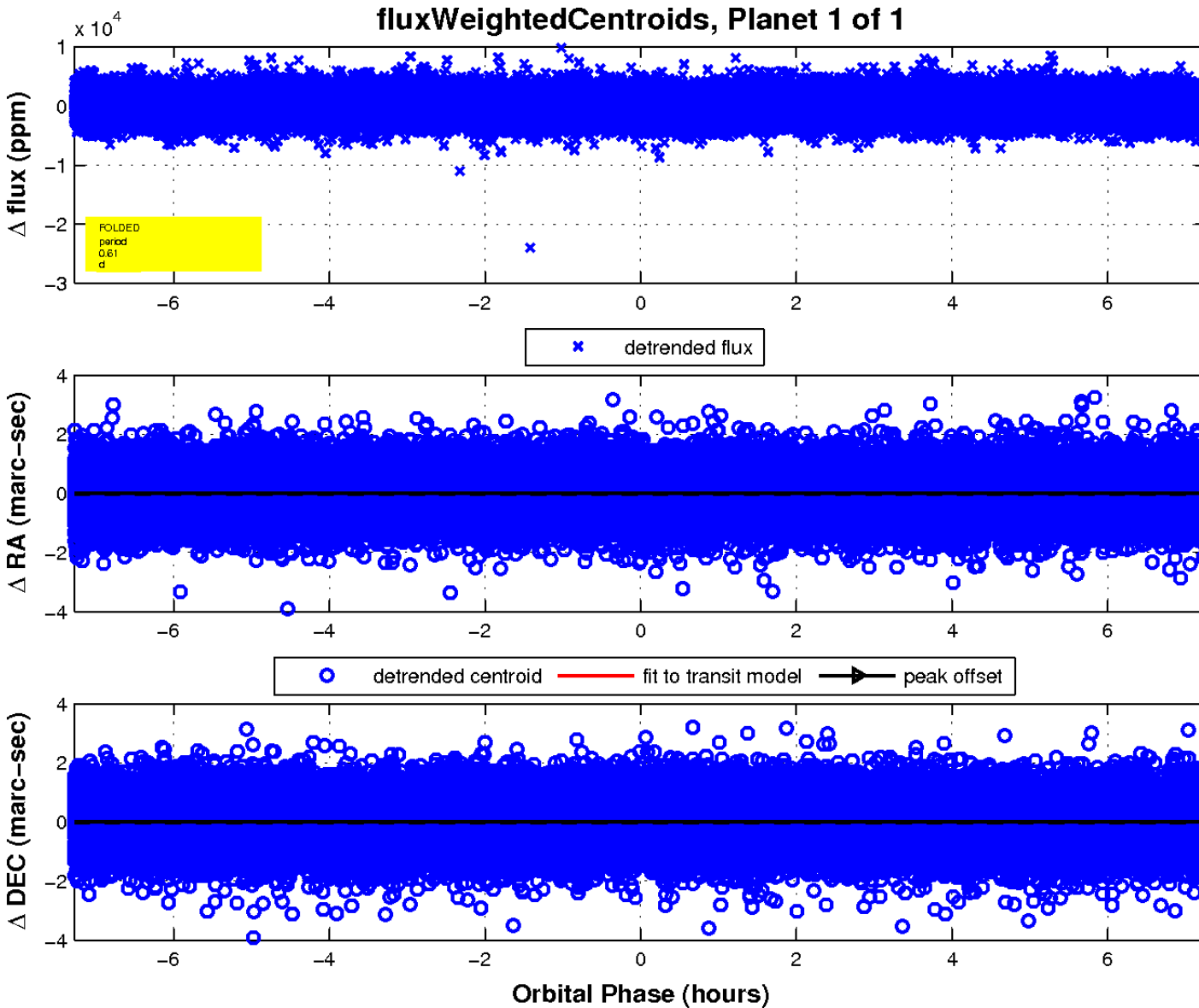
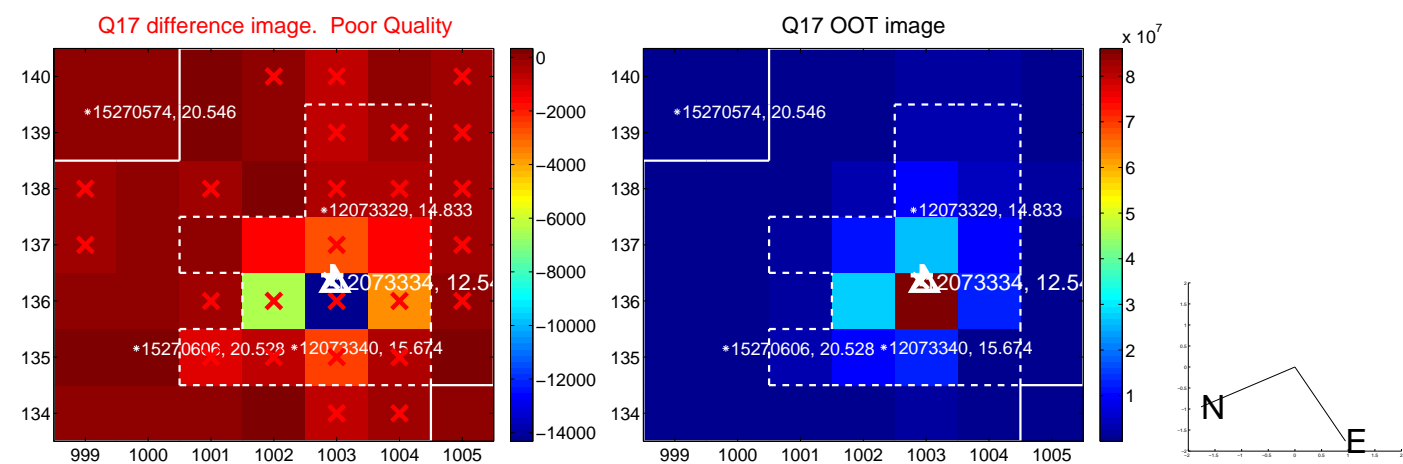
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

