

KIC 012602314

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})
012602314-01	OBS	2853.01	1.407009	131.610209	149.5	1.295	15.1	15.4	0.85	5022	1.27	786.94

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012602314-01	OBS	PC	0.99	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.

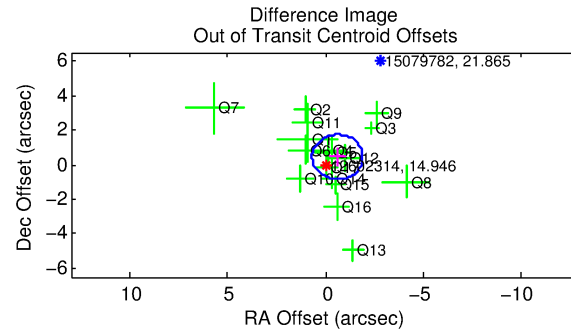
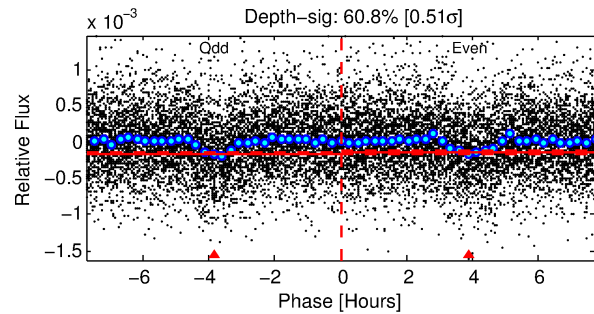
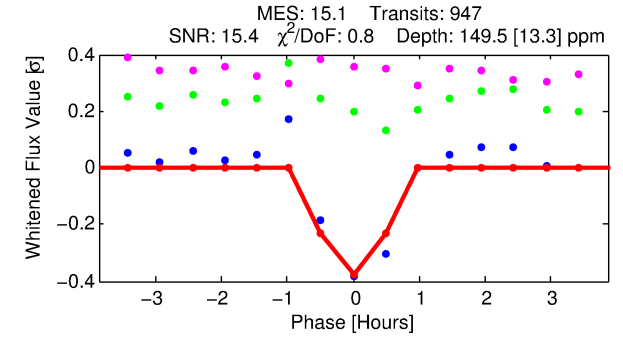
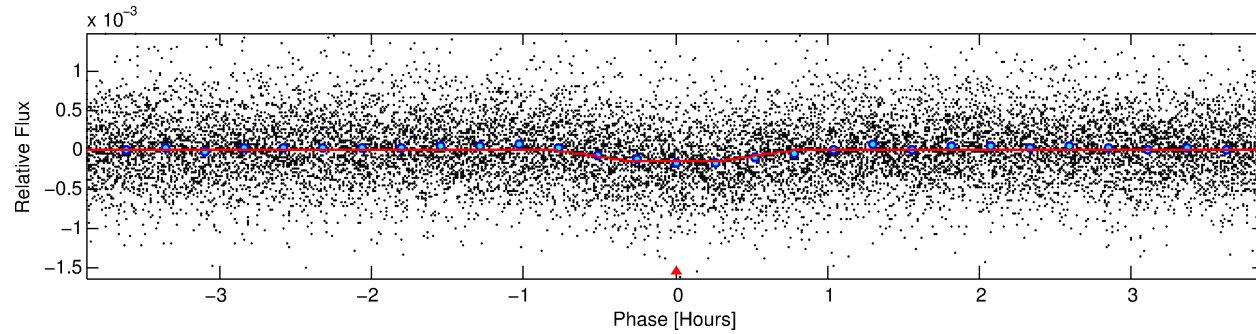
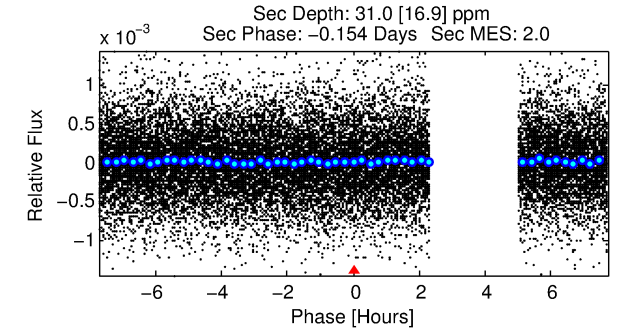
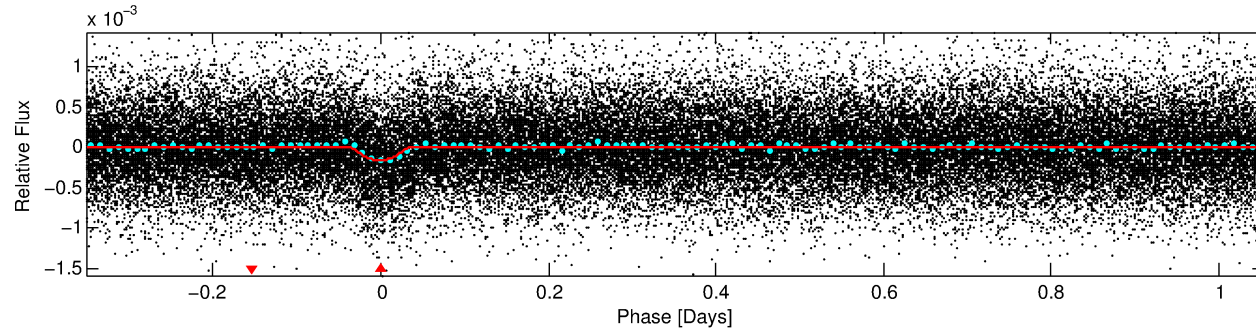
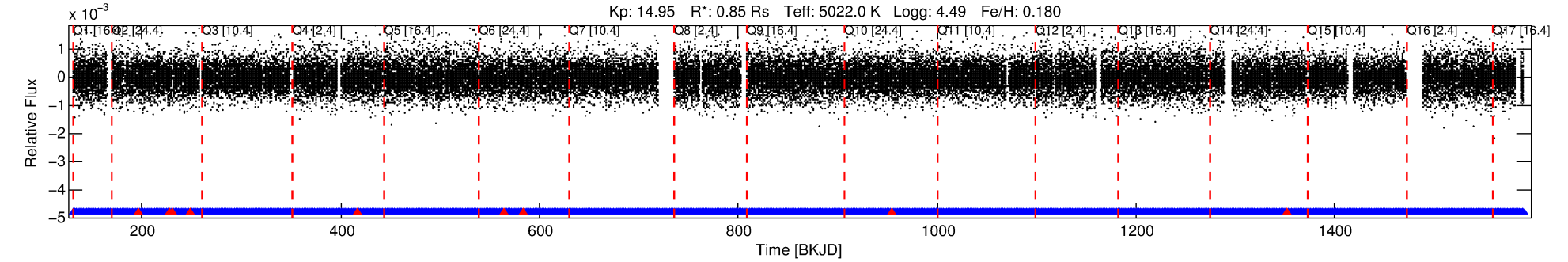
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012602314-01

No Significant Match Found

DV One-Page Summary

KIC: 12602314 Candidate: 1 of 1 Period: 1.407 d
KOI: K02853.01 Corr: 0.910



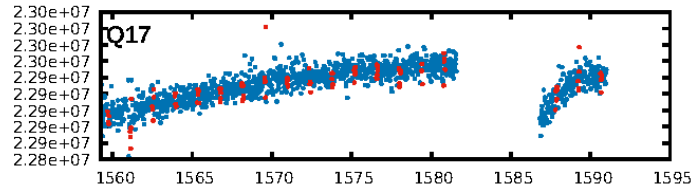
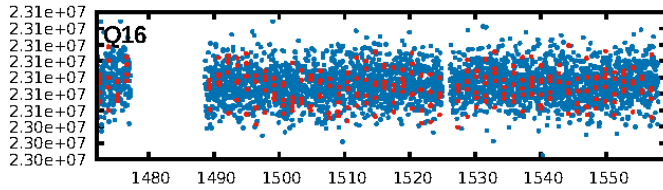
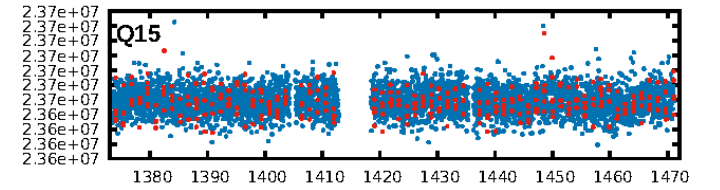
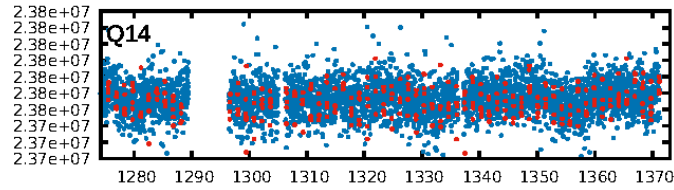
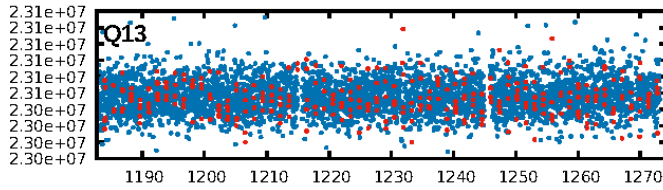
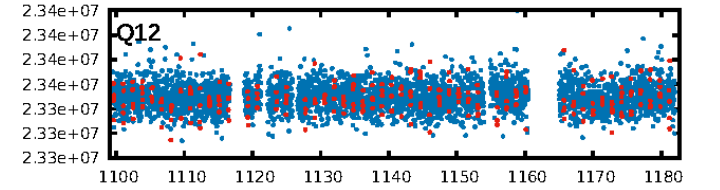
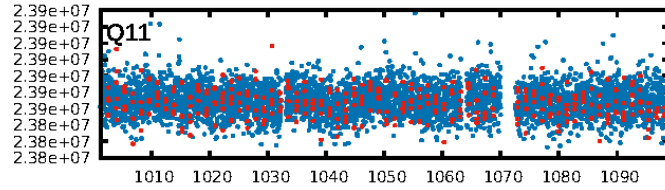
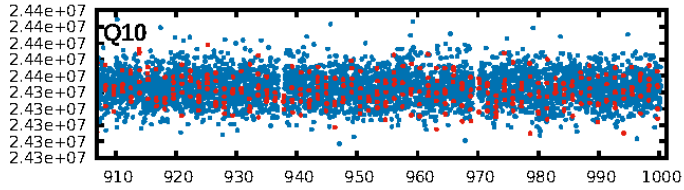
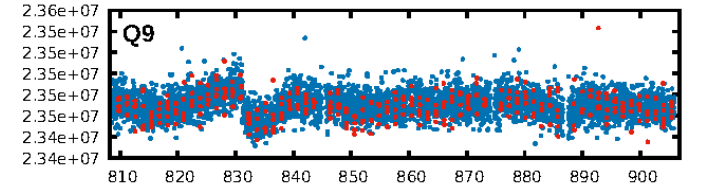
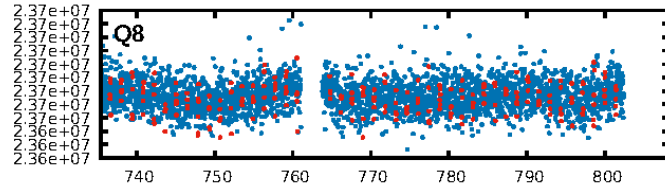
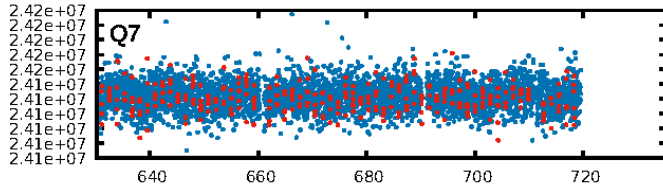
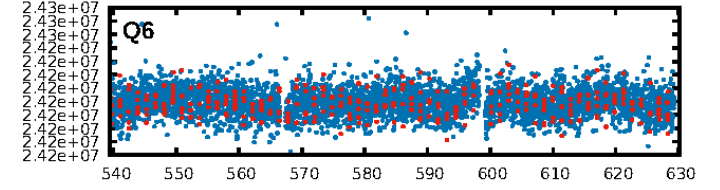
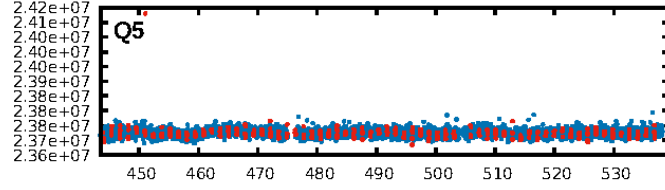
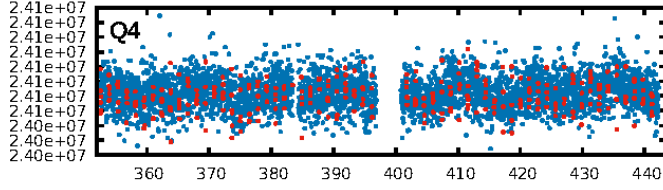
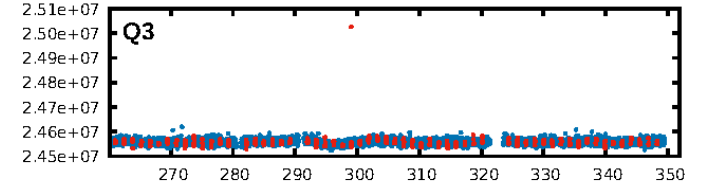
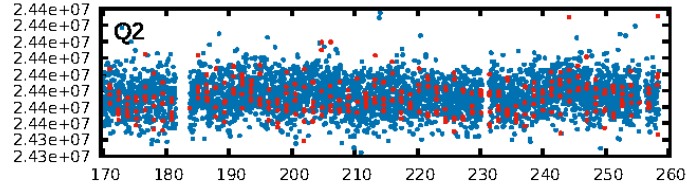
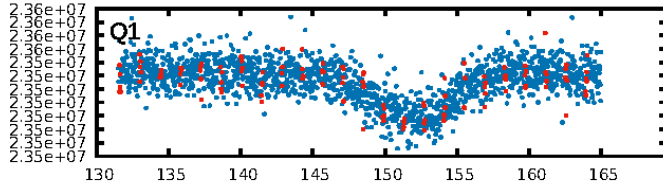
DV Fit Results:

Period = 1.40701 [0.00001] d
Epoch = 131.6102 [0.0014] BKJD
Rp/R* = 0.0137 [0.0084]
a/R* = 4.07 [9.21]
b = 0.89 [0.56]
Seff = 786.94 [120.04]
Teff = 1351 [52] K
Rp = 1.27 [0.78] Re
a = 0.0228 [0.0019] AU
Ag = 5.56 [7.51] [0.61σ]
Teffp = 3206 [1078] K [1.72σ]

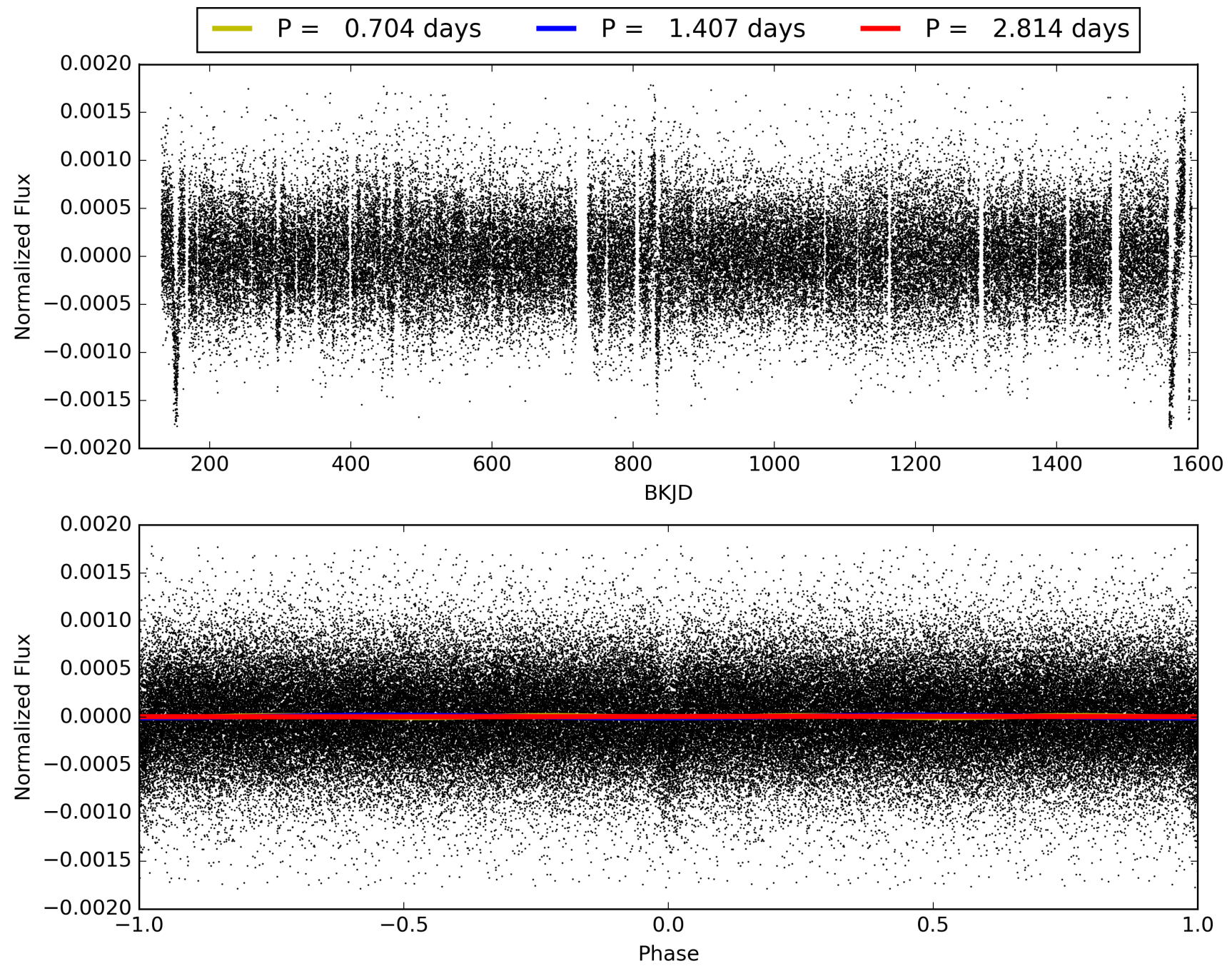
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.34e-50
RollingBand-fgt: 0.99 [895/904]
GhostDiagnostic-chr: 2.371
Centroid-sig: 4.8%
Centroid-so: 2.514 arcsec [2.68σ]
OotOffset-rm: 0.755 arcsec [1.75σ]
KicOffset-rm: 0.926 arcsec [2.05σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.65 [11/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012602314-01, PDC Light Curves

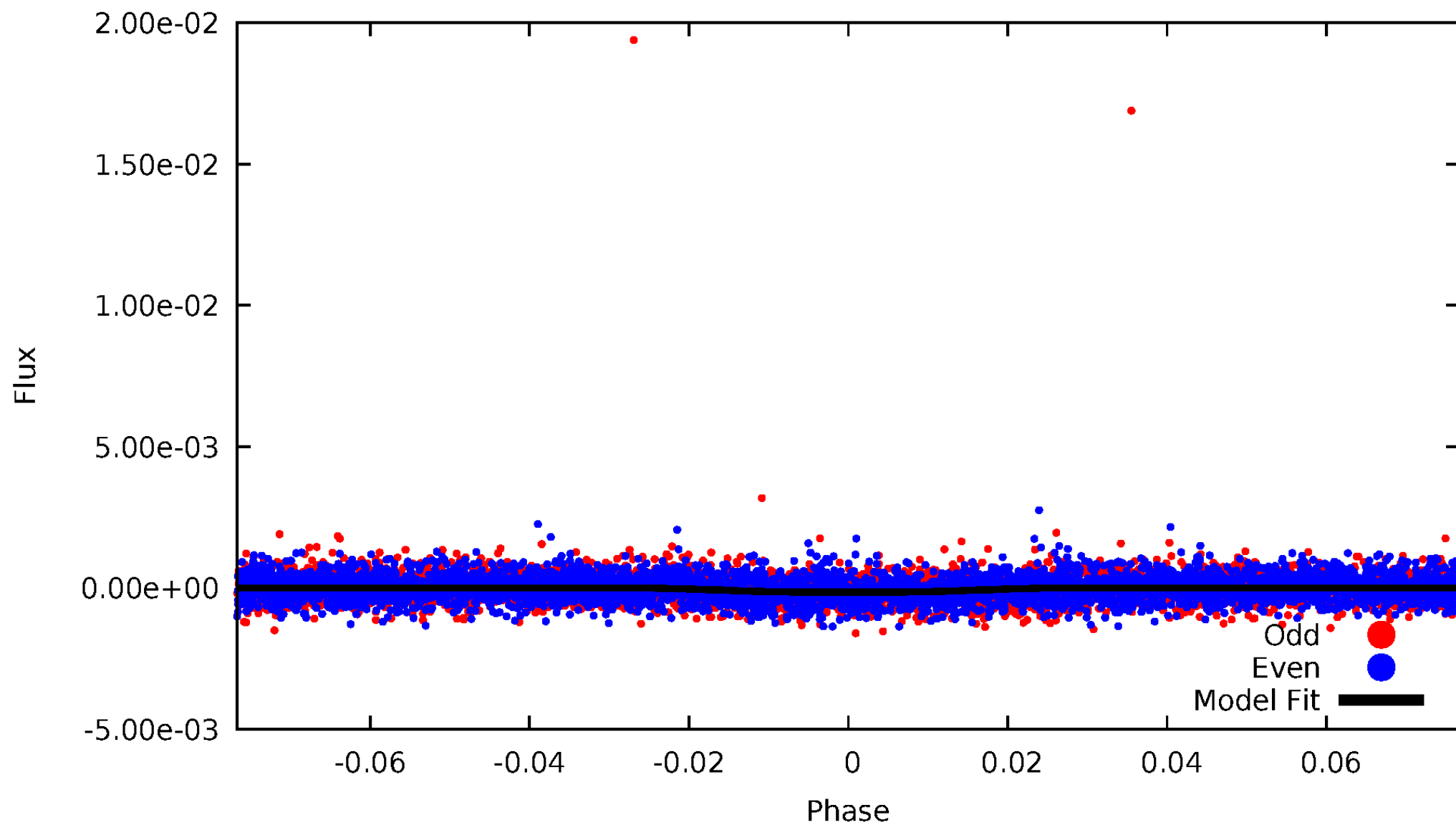


TCE 012602314-01



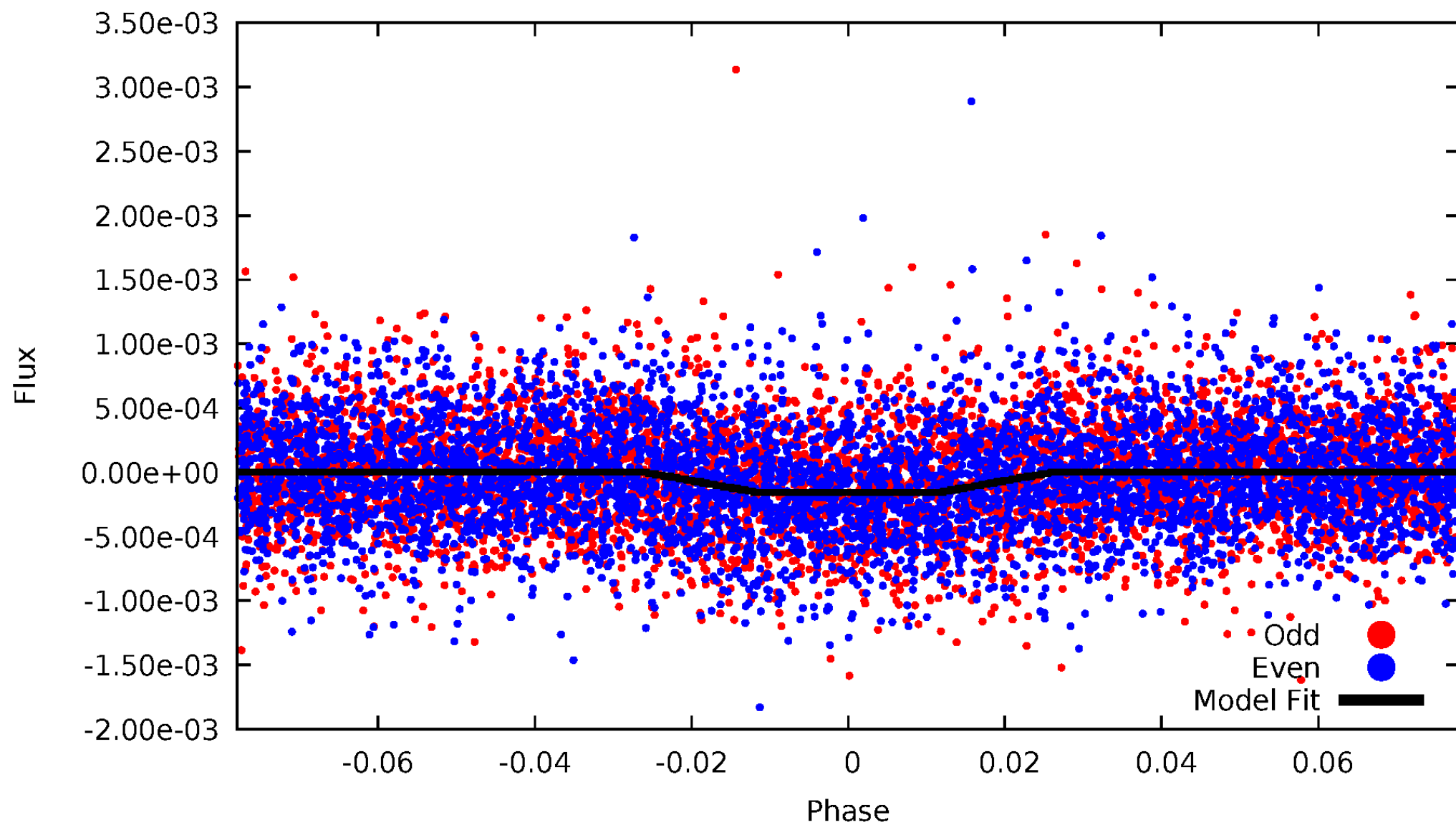
DV Odd/Even

TCE 012602314-01



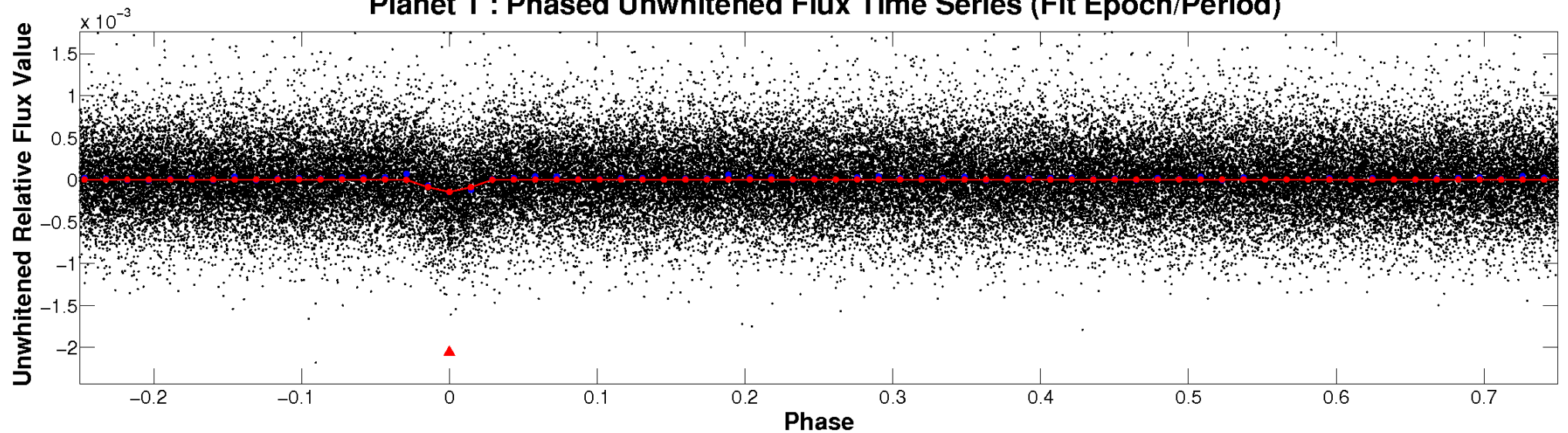
ALT Odd/Even

TCE 012602314-01

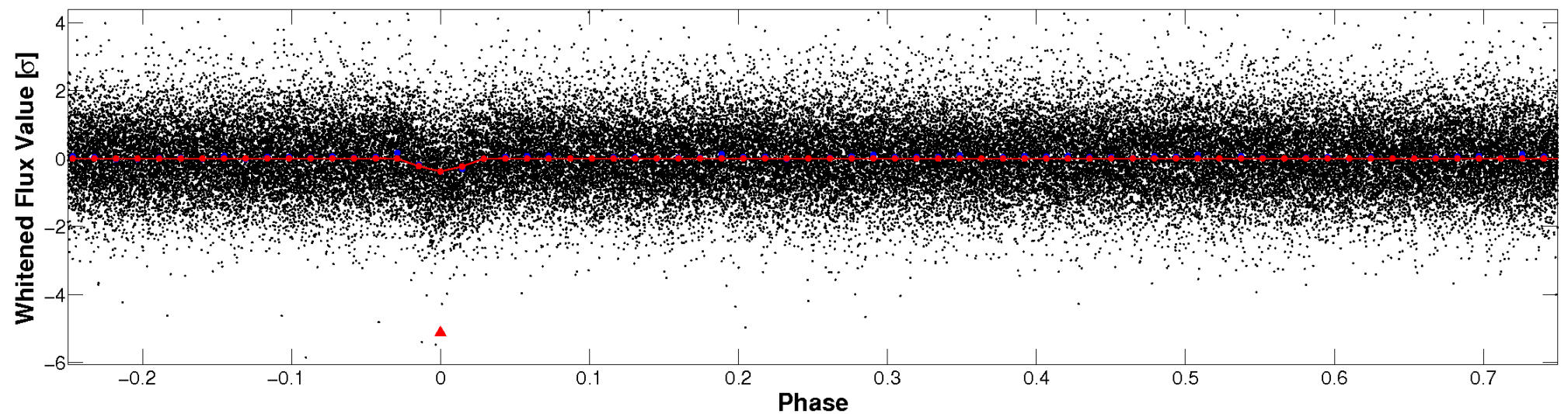


Non-Whitened Vs. Whitened Light Curve

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

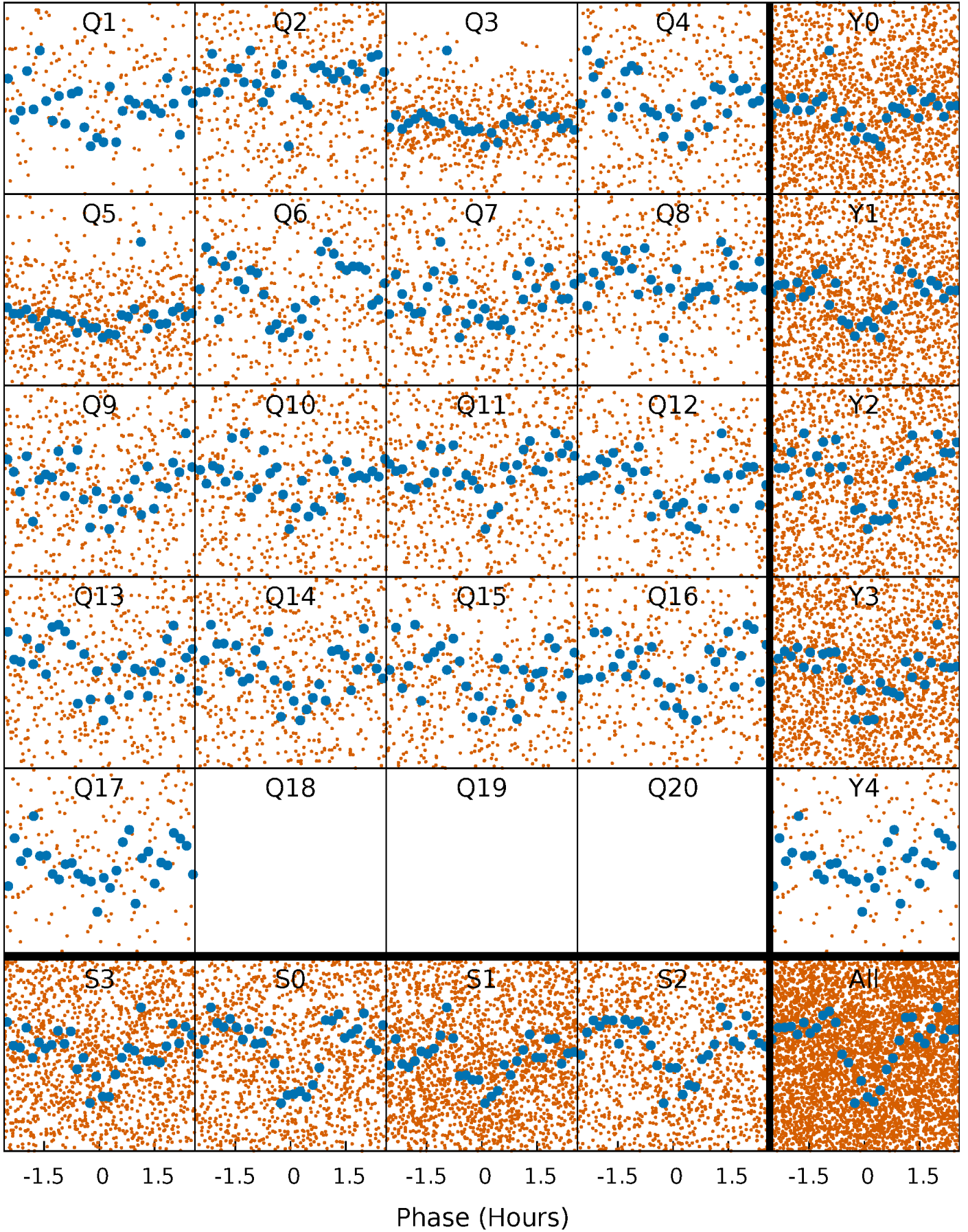


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



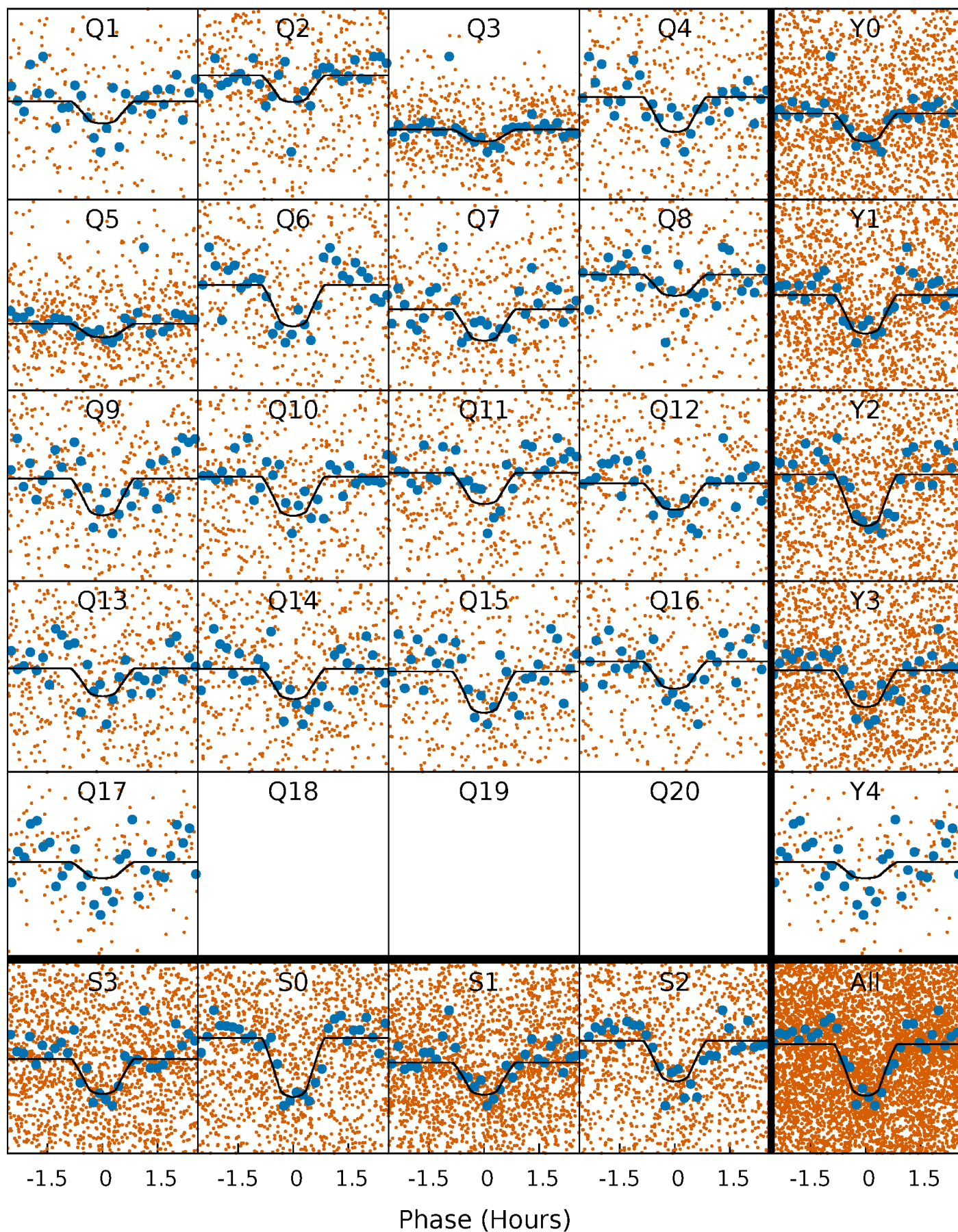
PDC Quarter-Phased Transit Curves

TCE 012602314-01 P= 1.407009 Days $T_0=131.610209$ (BKJD)



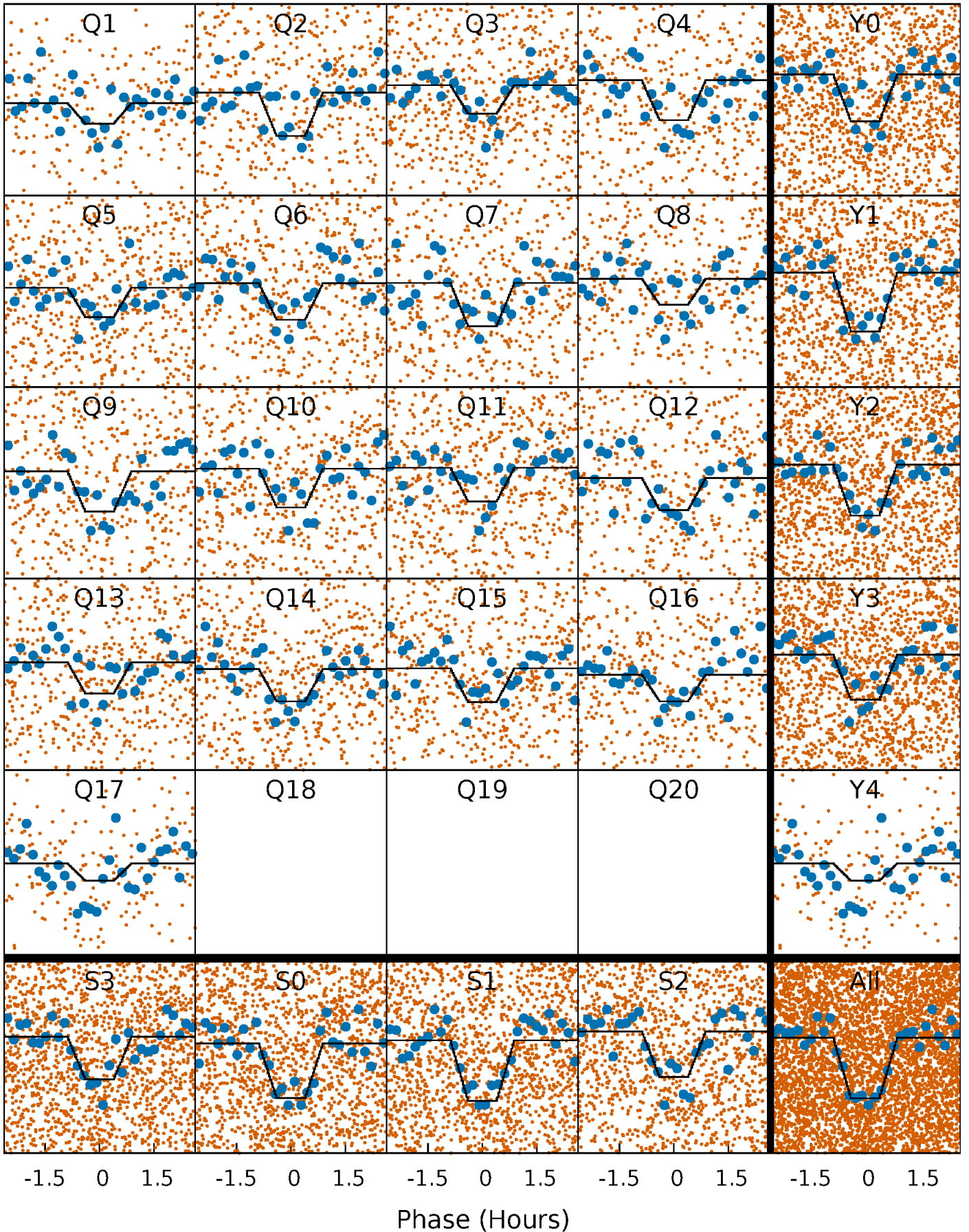
DV Quarter-Phased Transit Curves

TCE 012602314-01 P= 1.407009 Days $T_0=131.610209$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

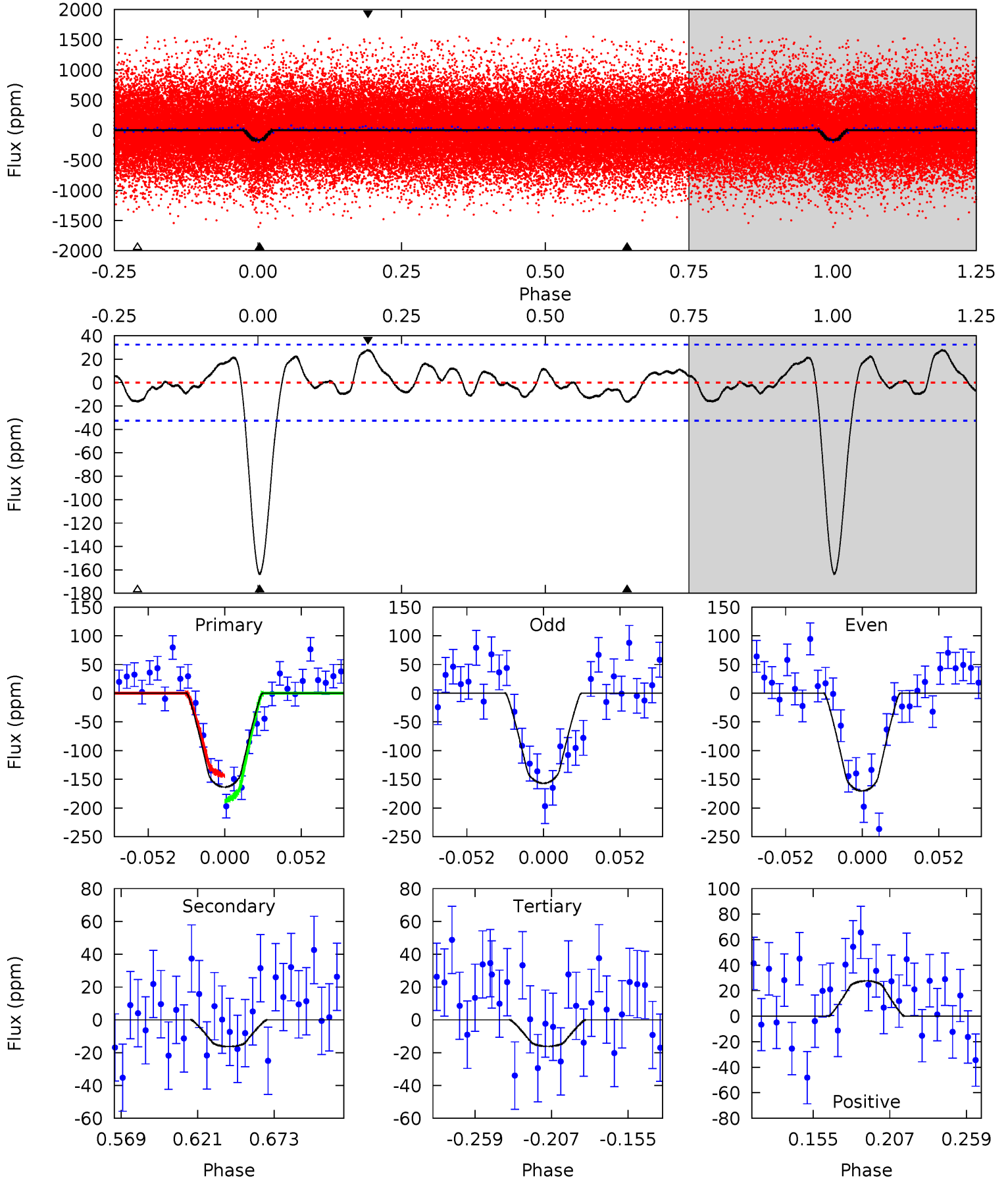
TCE 012602314-01 P= 1.407023 Days $T_0=131.607727$ (BKJD)



DV Model-Shift Uniqueness Test

012602314-01, P = 1.407009 Days, E = 130.203200 Days

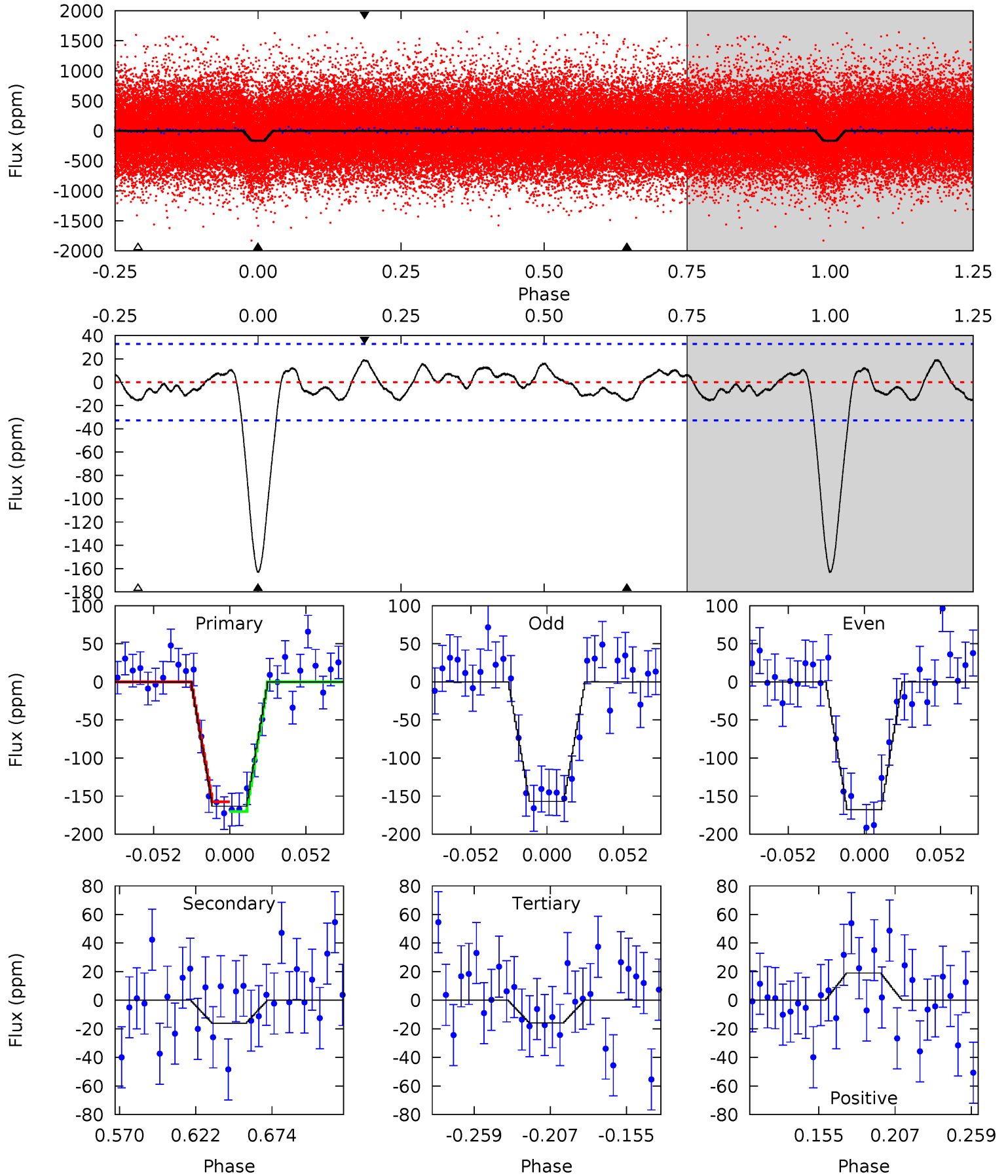
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.7	2.36	2.34	4.01	4.70	1.95	1.42	21.3	19.7	0.02	-1.65	0.96	1.04	0.14	3.21



Alt Model-Shift Uniqueness Test

012602314-01, P = 1.407023 Days, E = 130.200704 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.4	2.30	2.27	2.73	4.70	1.94	1.23	21.1	20.6	0.03	-0.43	0.76	1.01	0.10	0.92



Stellar Parameters For KIC 012602314

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5022^{+82}_{-82}	$4.485^{+0.083}_{-0.028}$	$0.180^{+0.150}_{-0.150}$	$0.849^{+0.034}_{-0.067}$	$0.804^{+0.050}_{-0.029}$	$1.846^{+0.550}_{-0.183}$
	+2%/-2%	+2%/-1%	+83%/-83%	+4%/-8%	+6%/-4%	+30%/-10%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 012602314-01 / KOI 2853.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-16 ± 7	$1.33^{+0.73}_{-0.74}$	1875^{+45}_{-51}	3108^{+1005}_{-505}	$2.468^{+9.761}_{-1.579}$
Alt.	-16 ± 7	$1.19^{+0.78}_{-0.69}$	1872^{+45}_{-47}	3223^{+1146}_{-587}	$3.110^{+15.673}_{-2.172}$

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

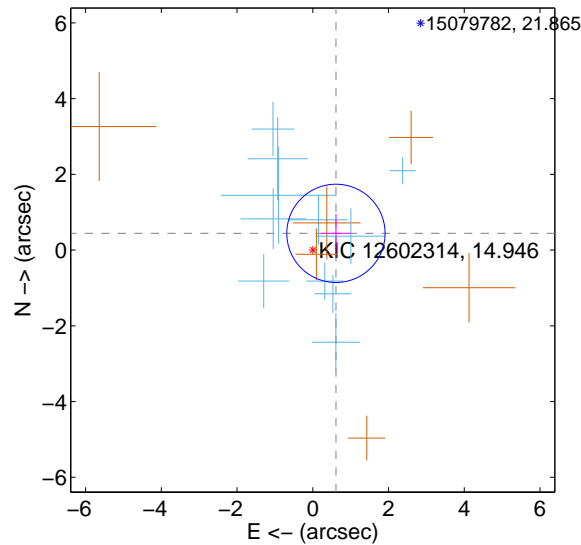
Supplemental centroid analysis for 012602314-01. Kepler magnitude: 14.95. Transit SNR 15.45

There are 11 quarters with good PRF difference image offsets

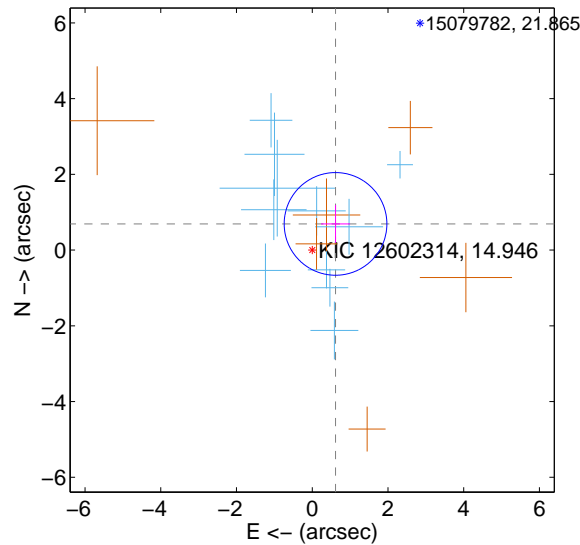
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.755 ± 0.433	1.75	-0.612 ± 0.387	0.443 ± 0.508
PRF-fit source offset from KIC position	0.926 ± 0.452	2.05	-0.615 ± 0.385	0.692 ± 0.499
photometric centroid source offset	2.51 ± 0.94	2.68	-0.87 ± 1.02	2.36 ± 0.93

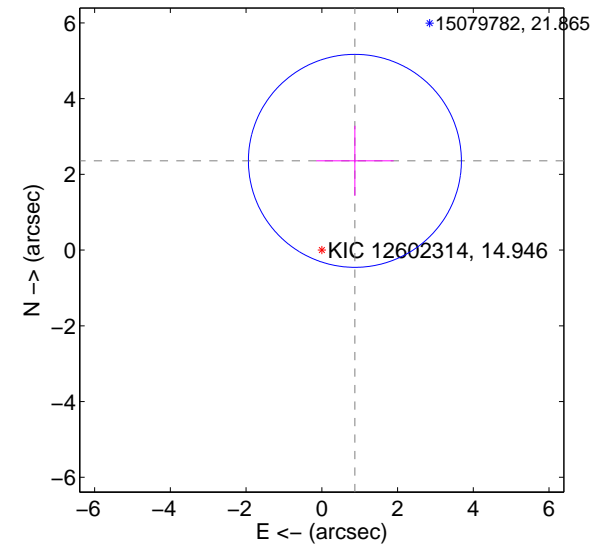
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

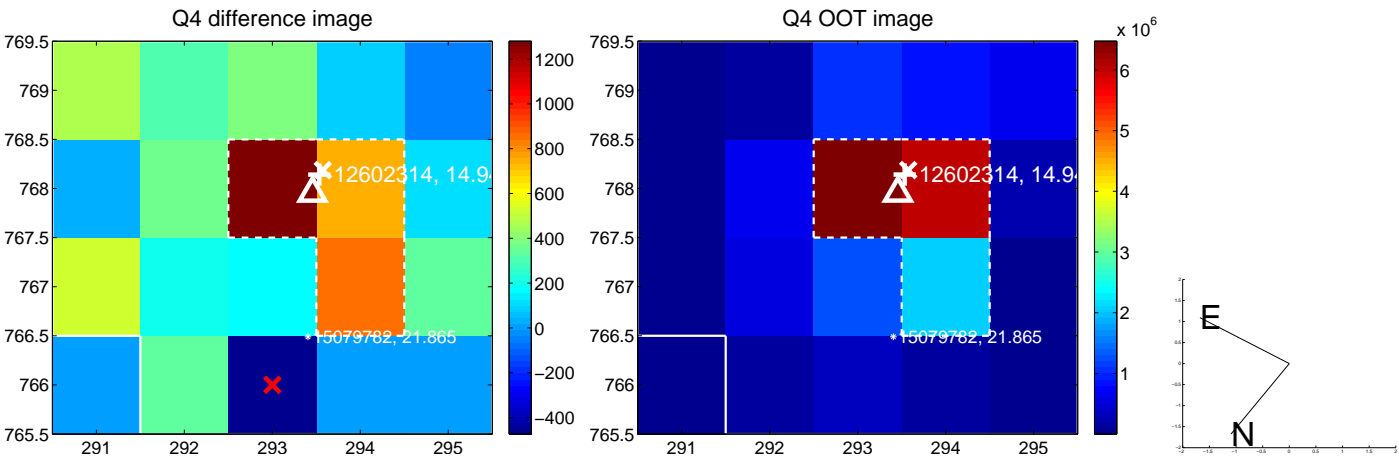
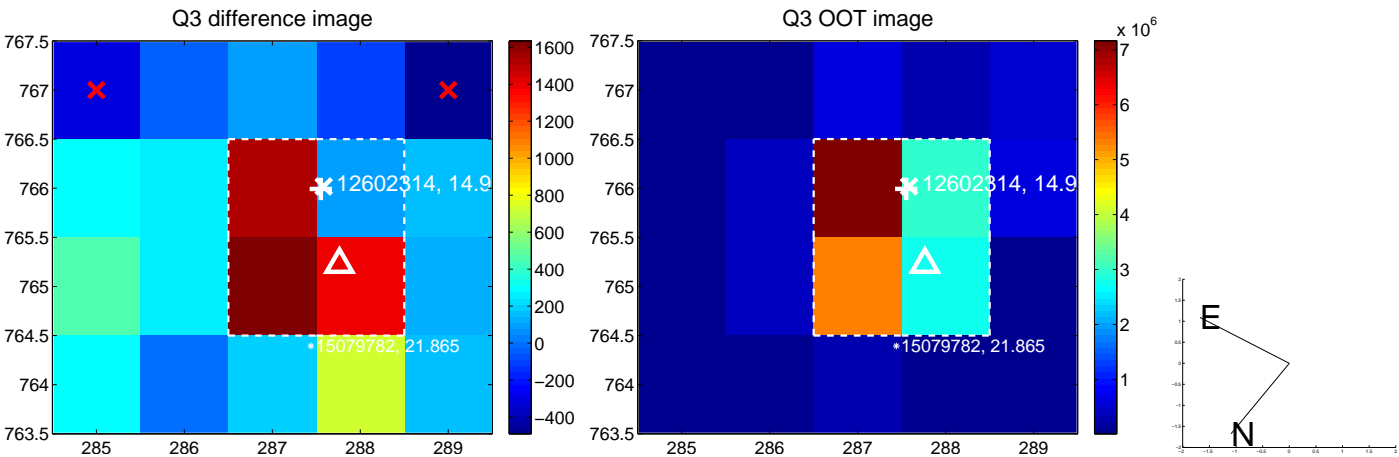
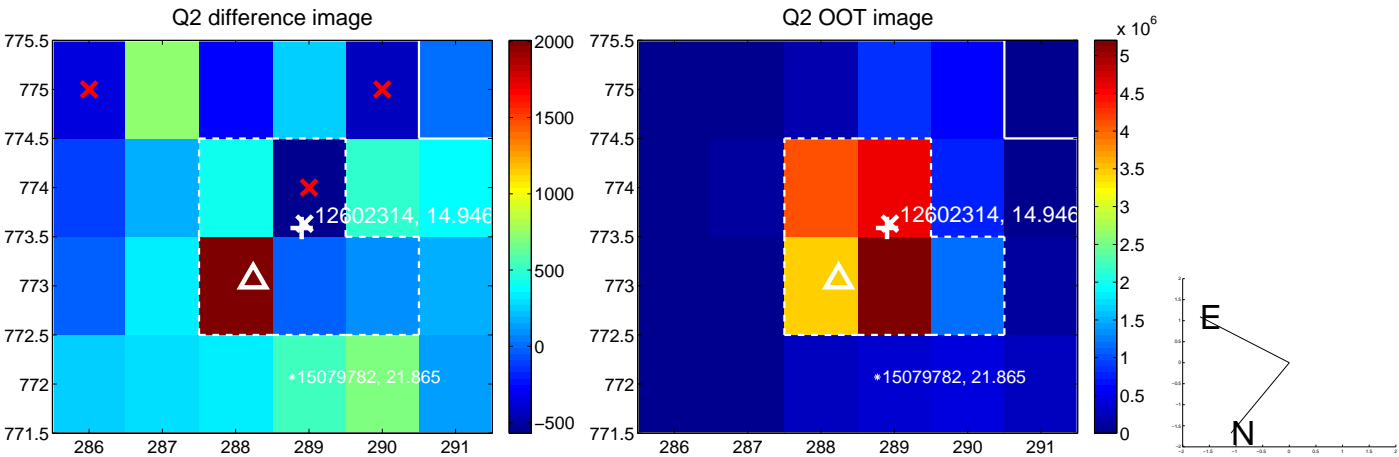
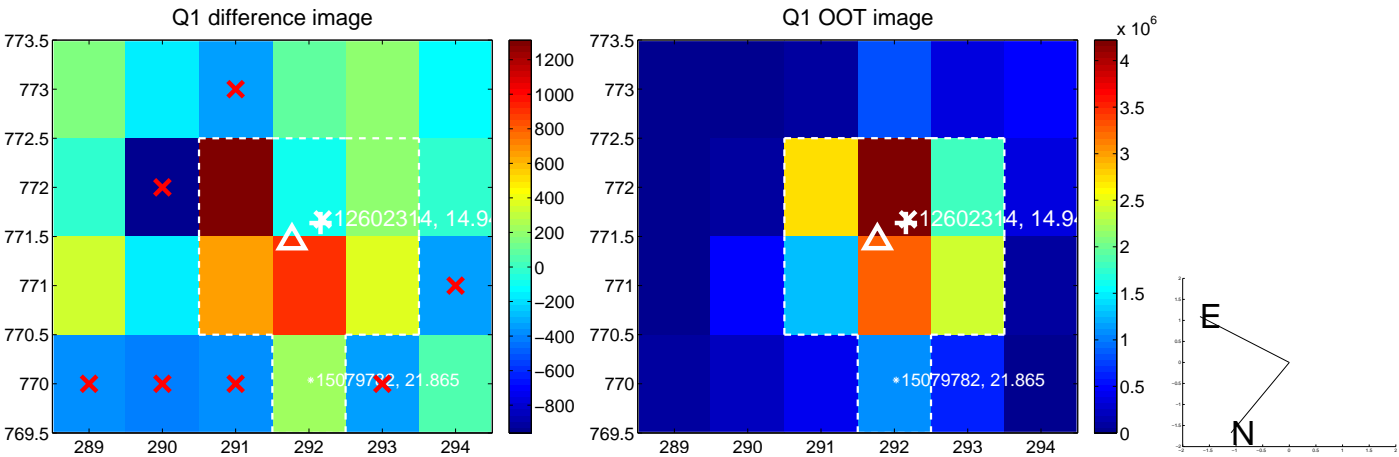


offset from photometric centroids

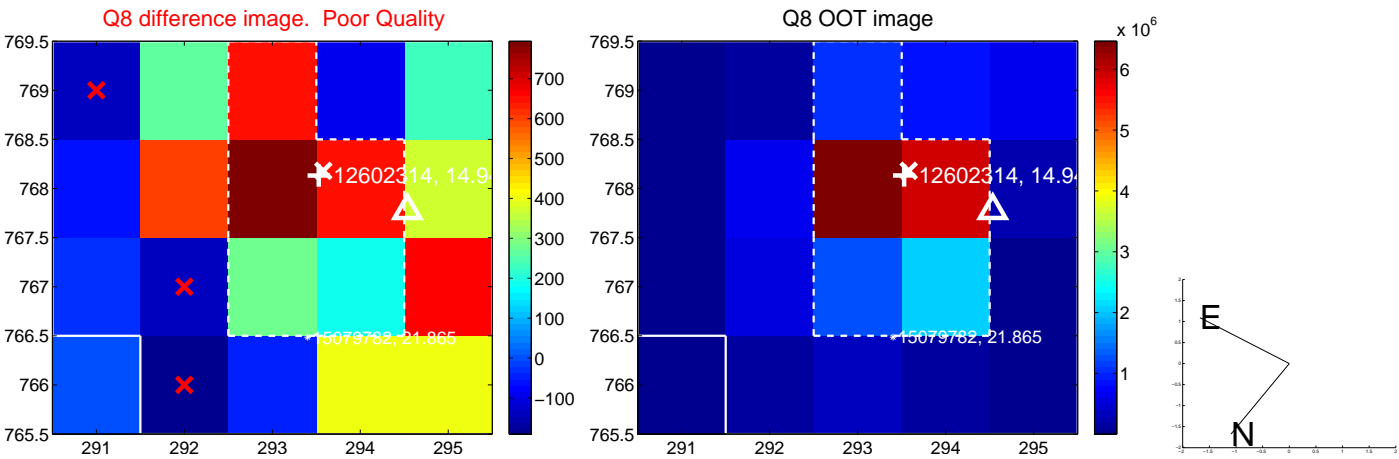
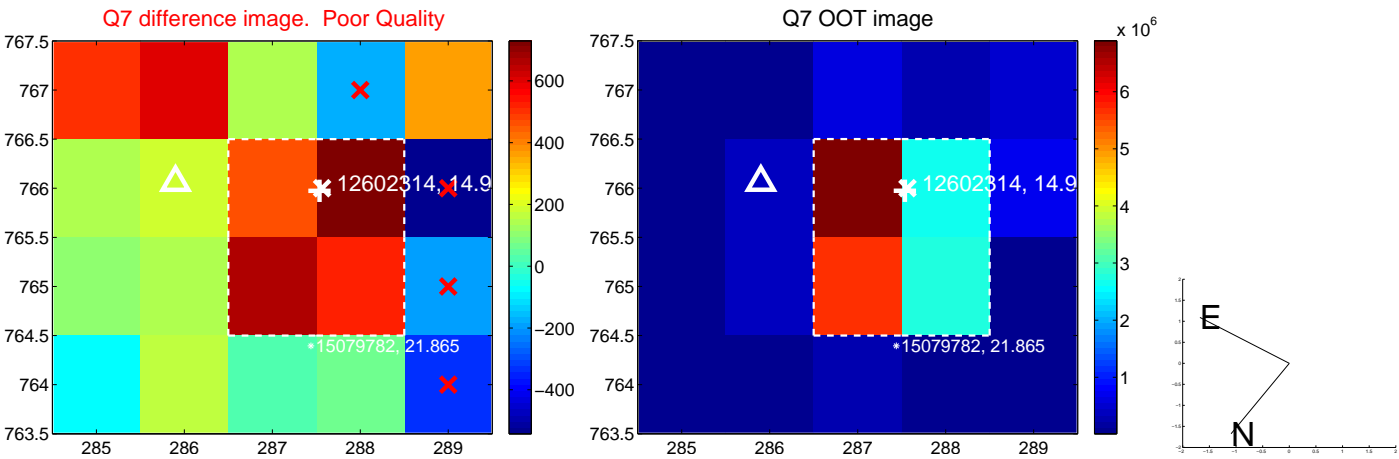
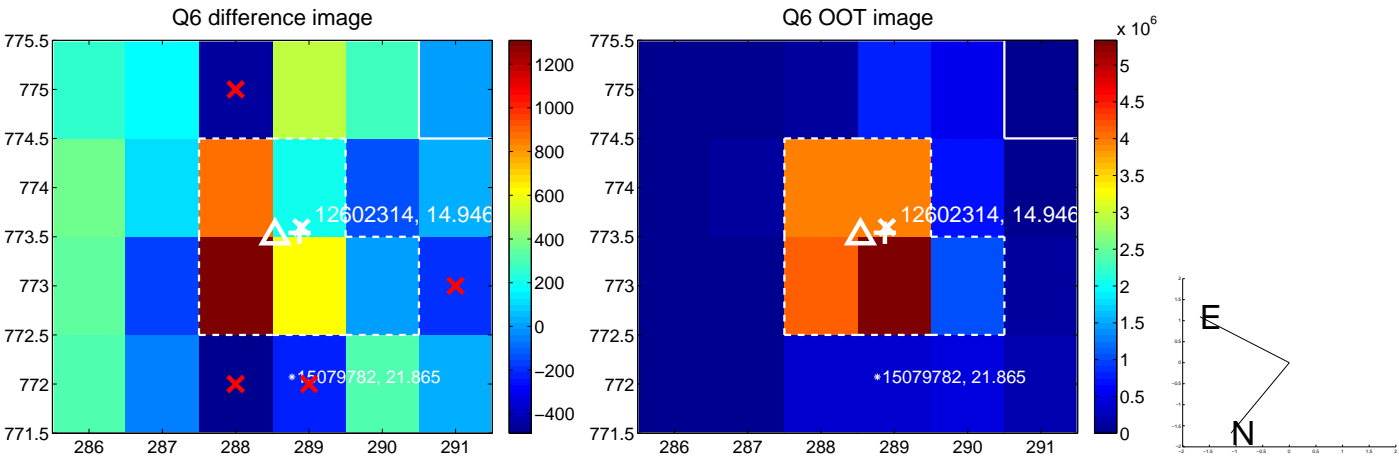
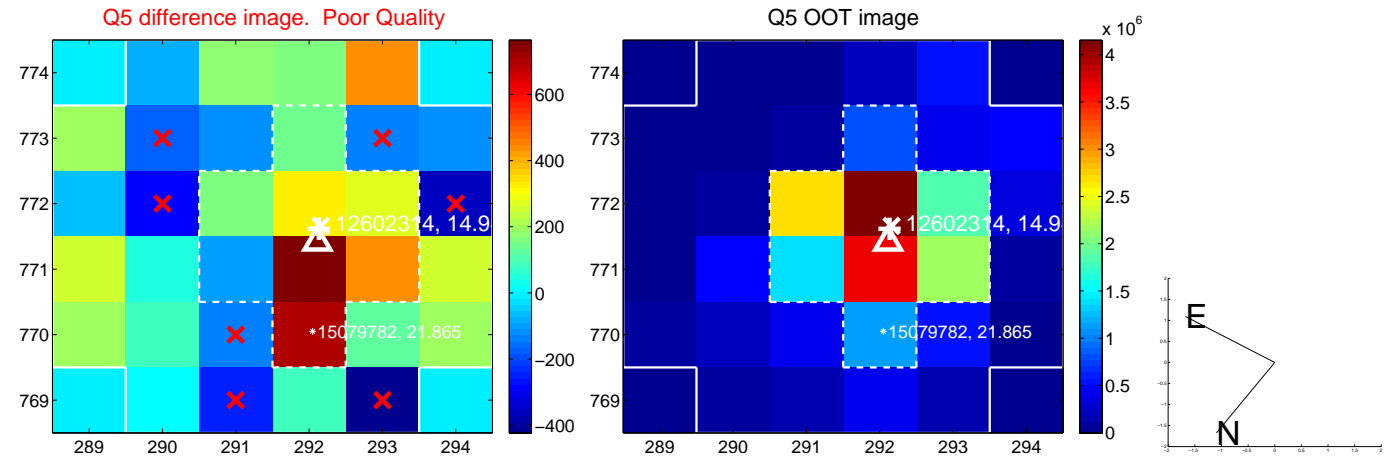


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

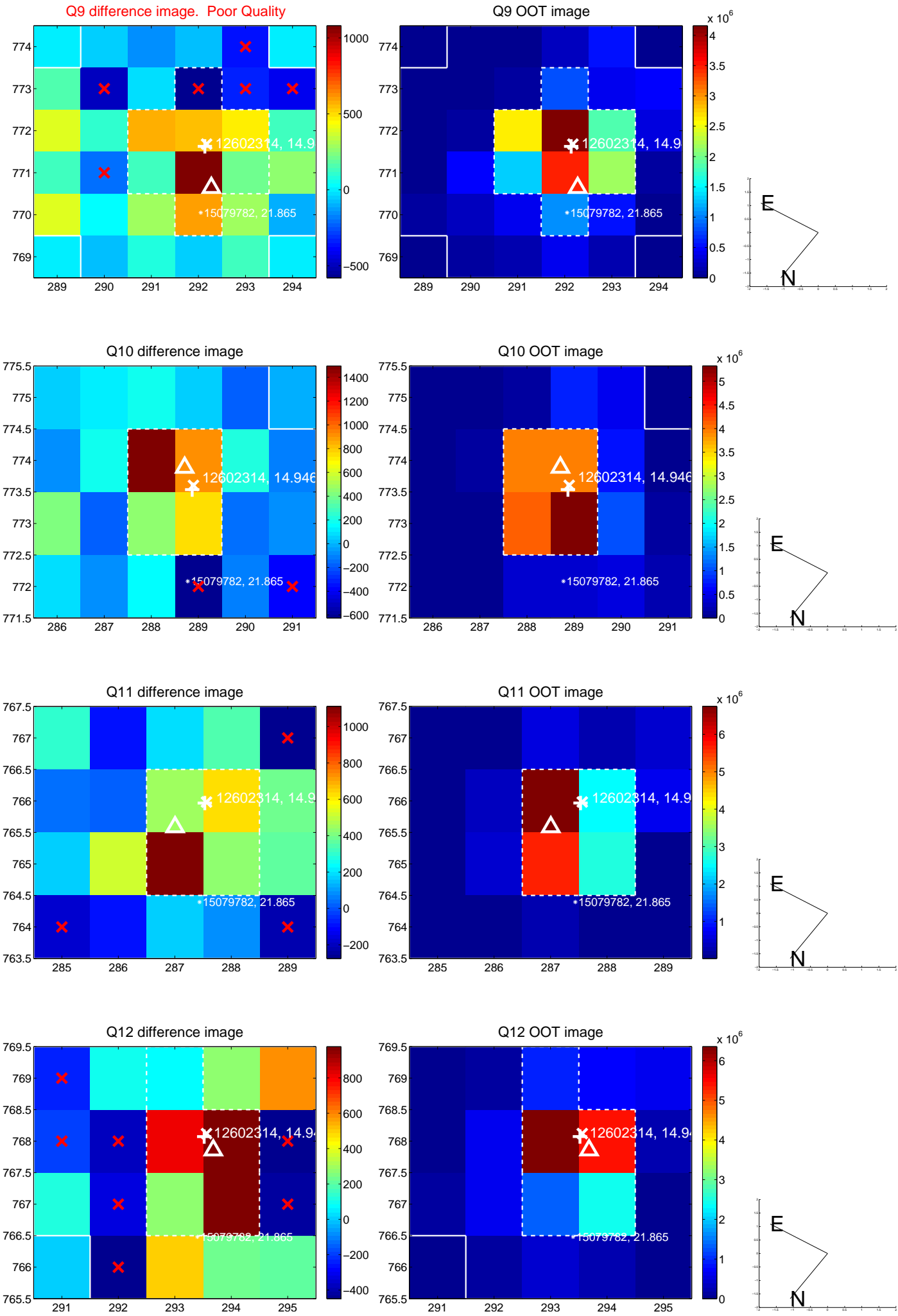
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



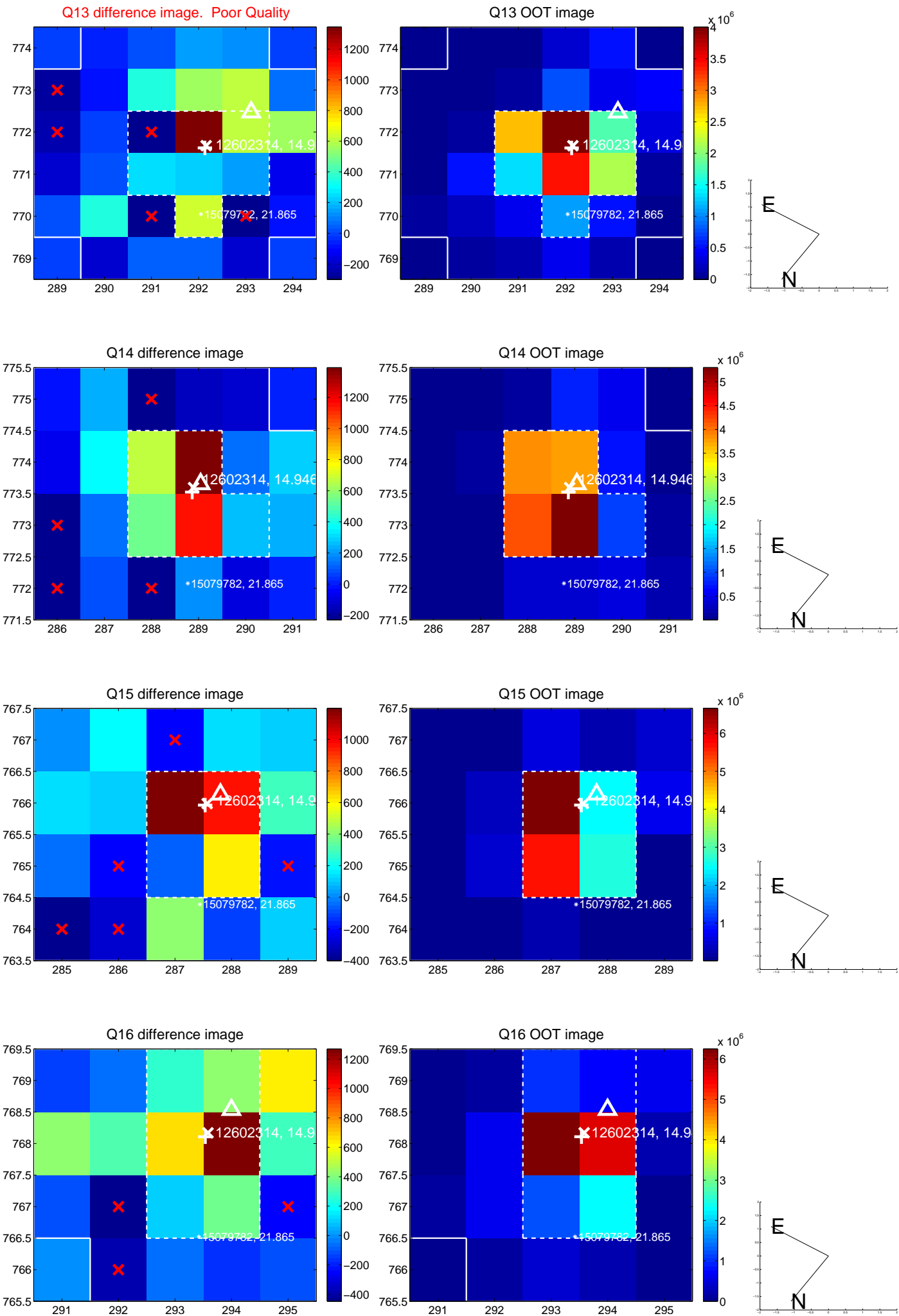
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



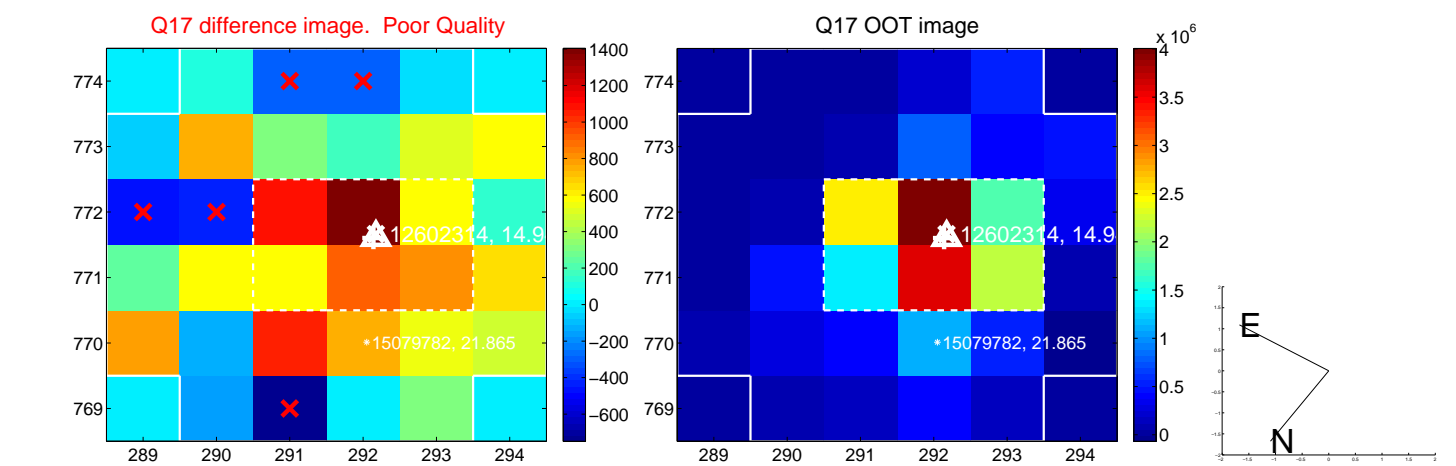
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



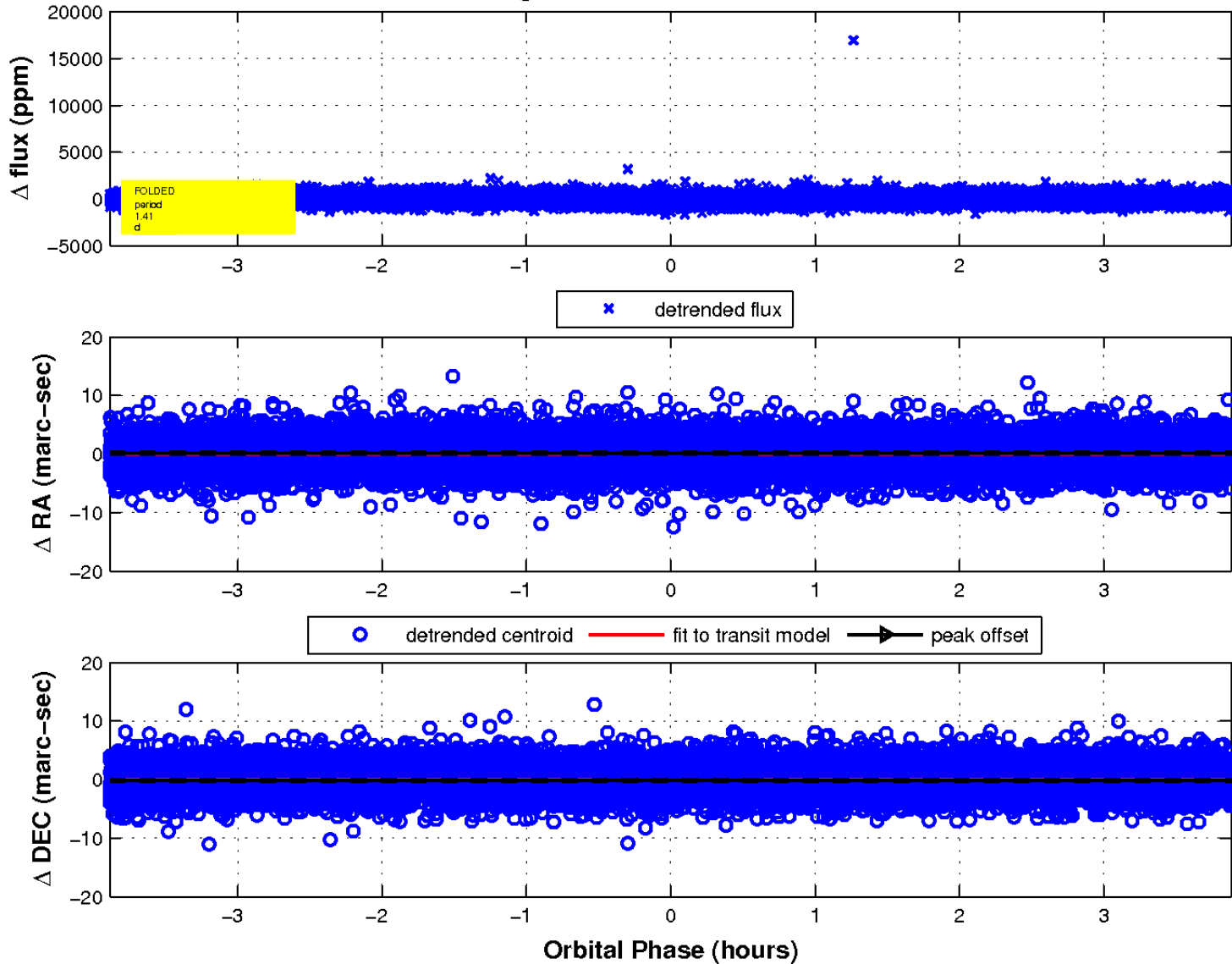
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

