

KIC 002304604

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})
002304604-01	OBS	No	0.845263	131.672811	90.4	2.335	7.2	7.4	1.50	5525	1.72	6452.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002304604-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

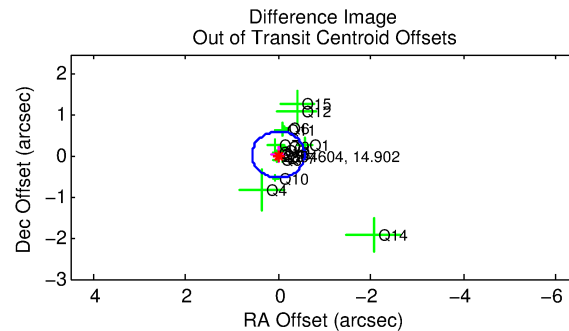
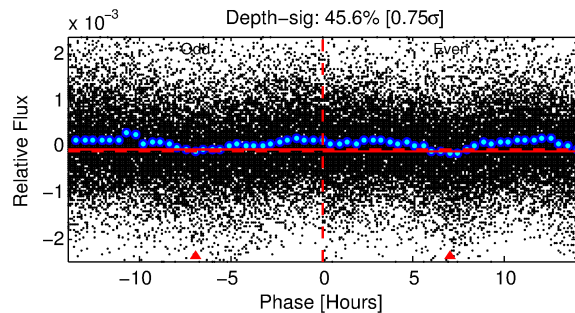
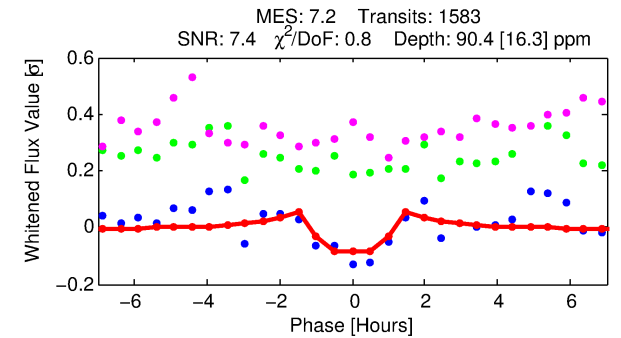
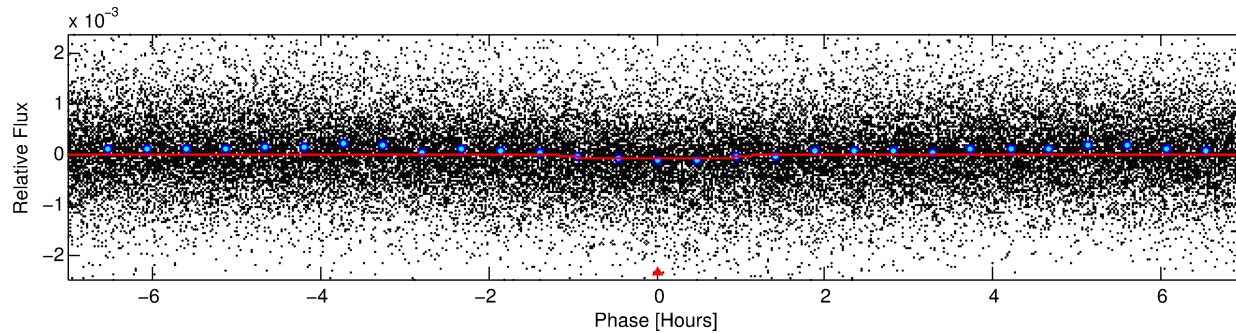
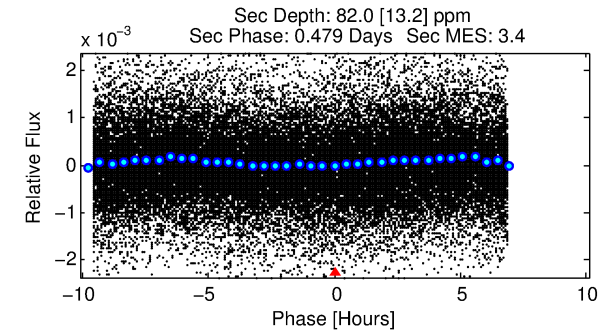
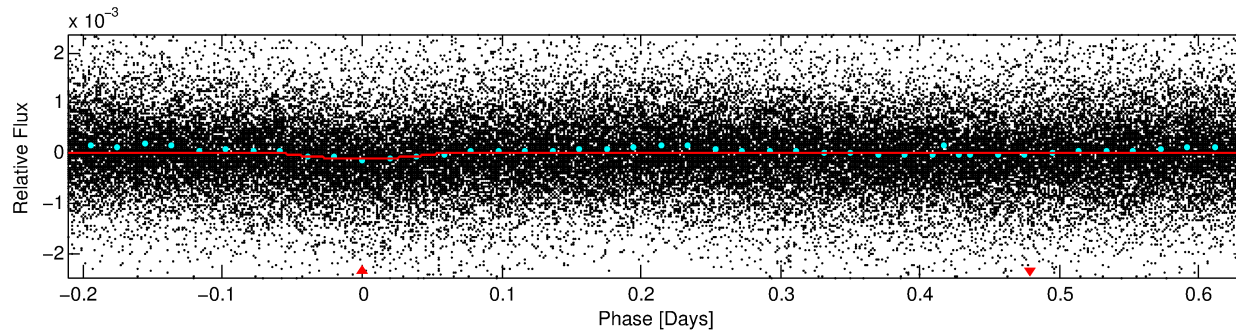
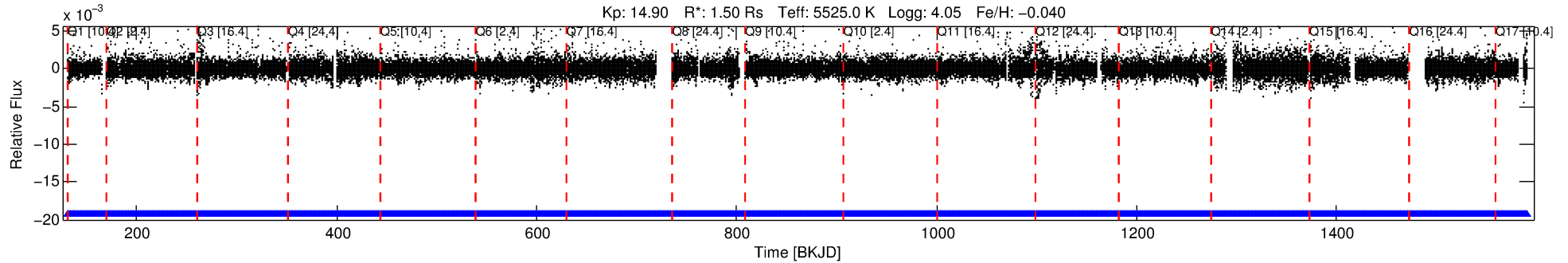
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002304604-01

No Significant Match Found

DV One-Page Summary

KIC: 2304604 Candidate: 1 of 1 Period: 0.845 d



DV Fit Results:

Period = 0.84526 [0.00001] d
Epoch = 131.6728 [0.0025] BKJD
Rp/R* = 0.0105 [0.0061]
a/R* = 1.57 [2.46]
b = 0.90 [0.56]
Seff = 6452.57 [2650.68]
Teq = 2285 [235] K
Rp = 1.72 [1.10] Re
a = 0.0171 [0.0044] AU
Ag = 4.49 [5.57] [0.63σ]
Teffp = 5142 [1510] K [1.87σ]

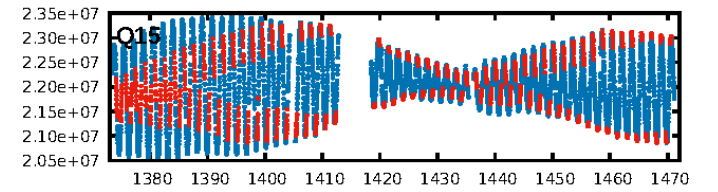
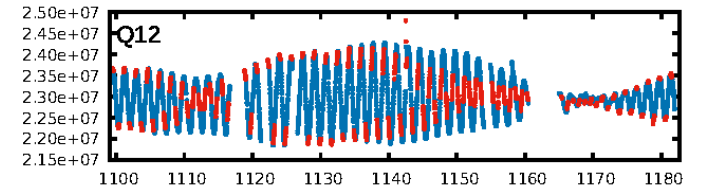
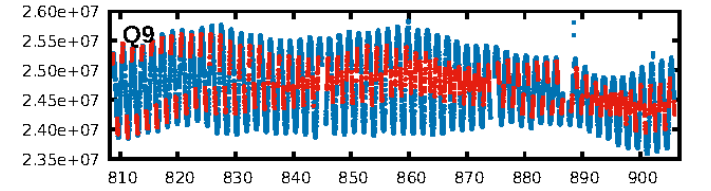
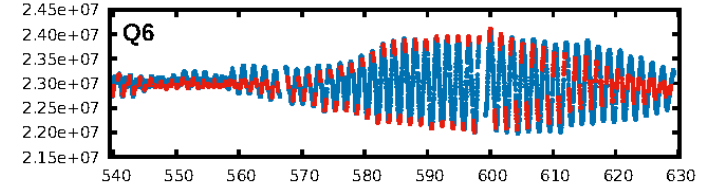
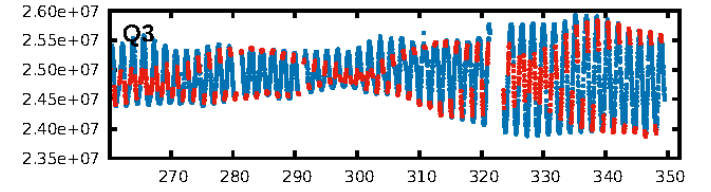
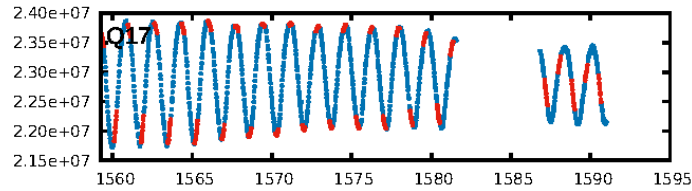
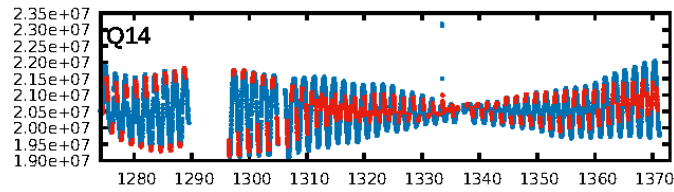
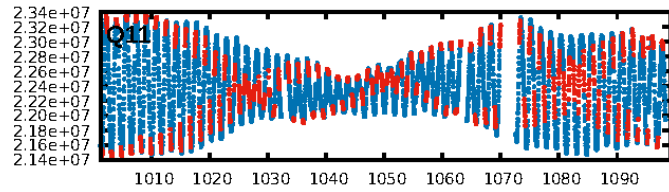
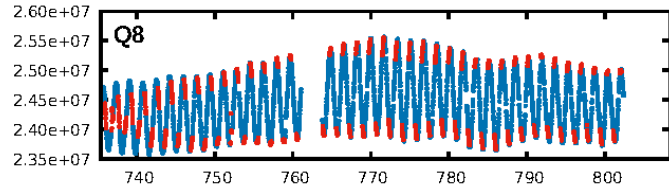
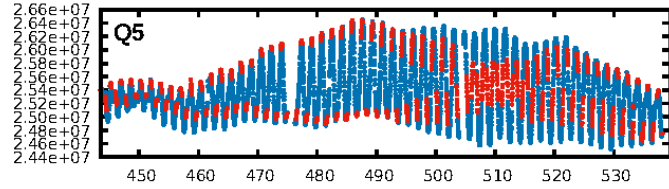
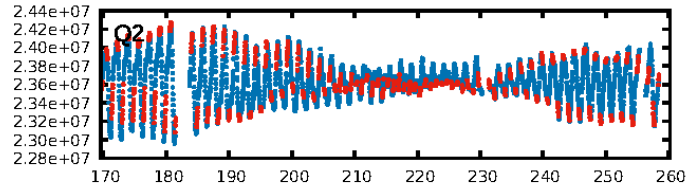
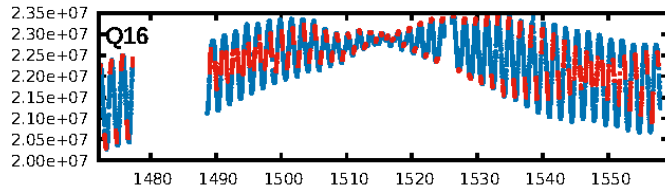
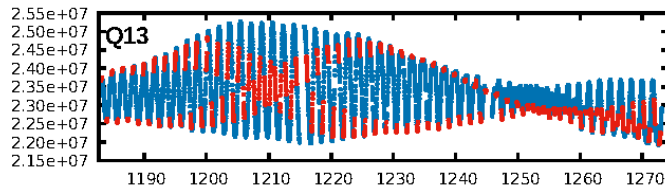
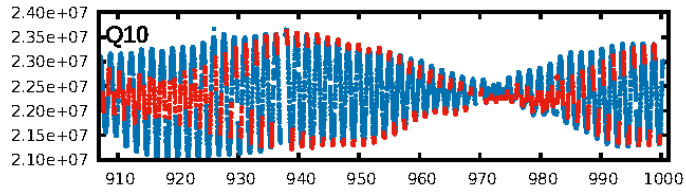
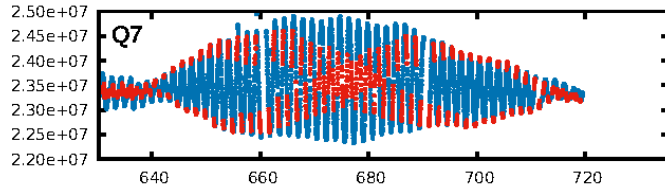
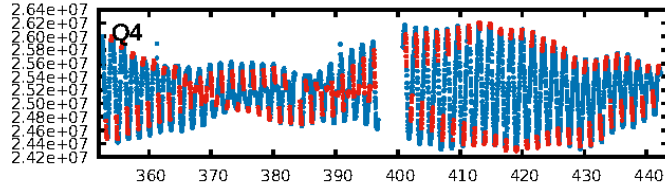
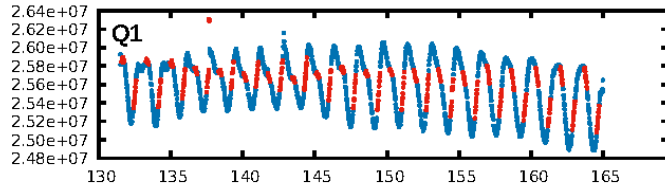
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.53e-14
RollingBand-fgt: 1.00 [1511/1511]
GhostDiagnostic-chr: -0.3638
Centroid-sig: 0.0%
Centroid-so: 1.158 arcsec [1.15σ]
OotOffset-rm: 0.045 arcsec [0.24σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-rm: 0.129 arcsec [0.72σ]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 1.00 [17/17]

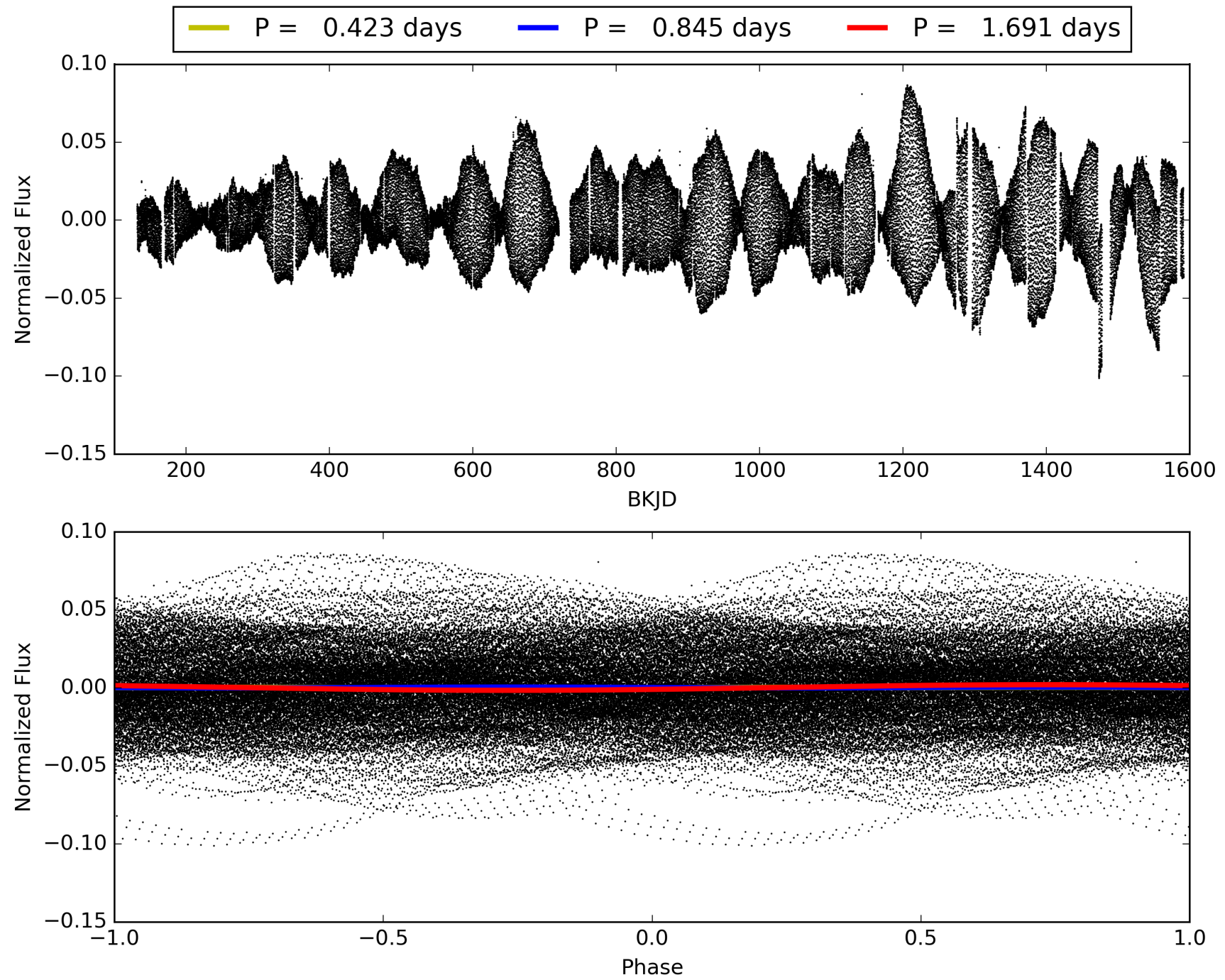
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:00:40 Z

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

TCE 002304604-01, PDC Light Curves

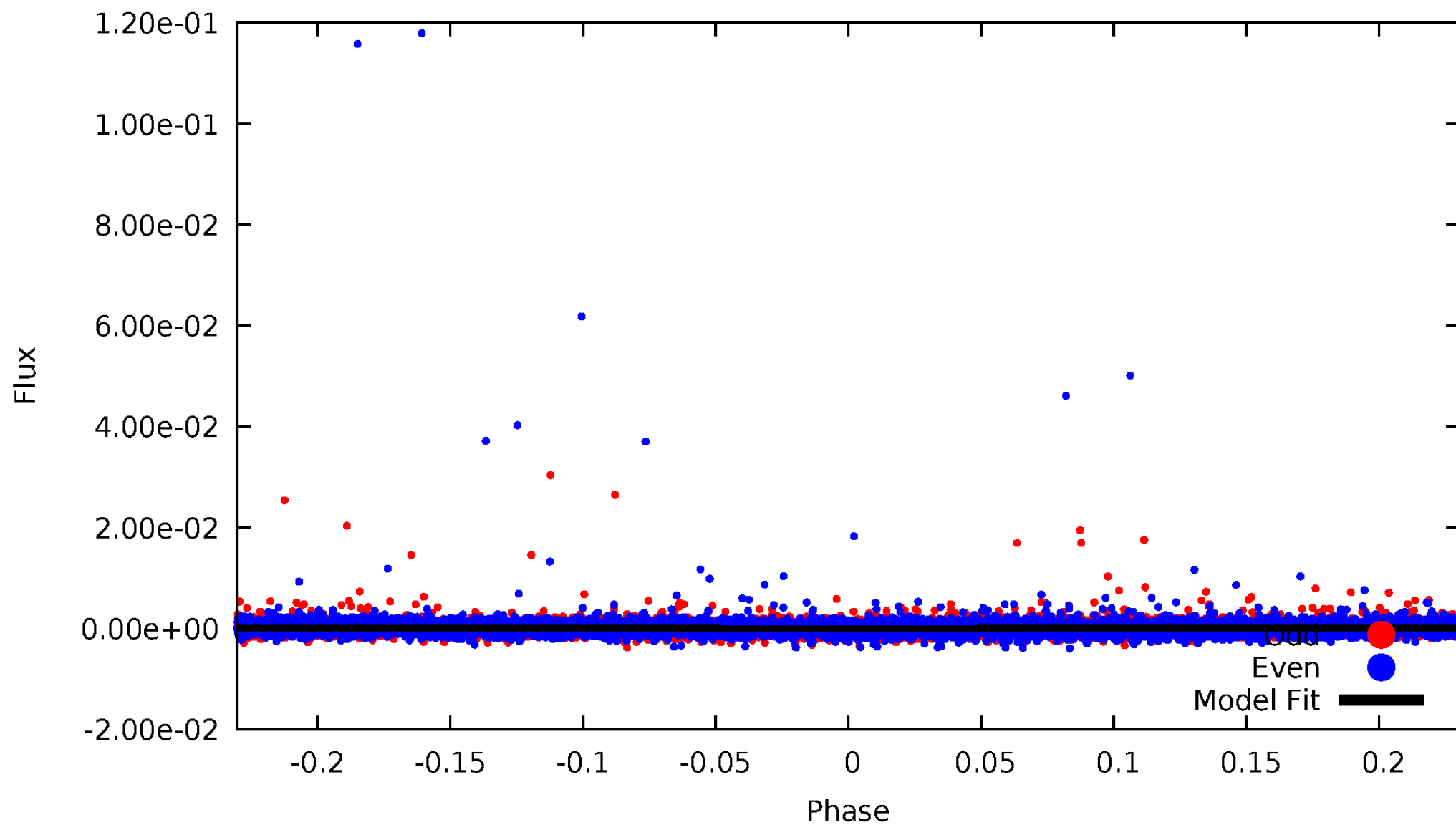


TCE 002304604-01



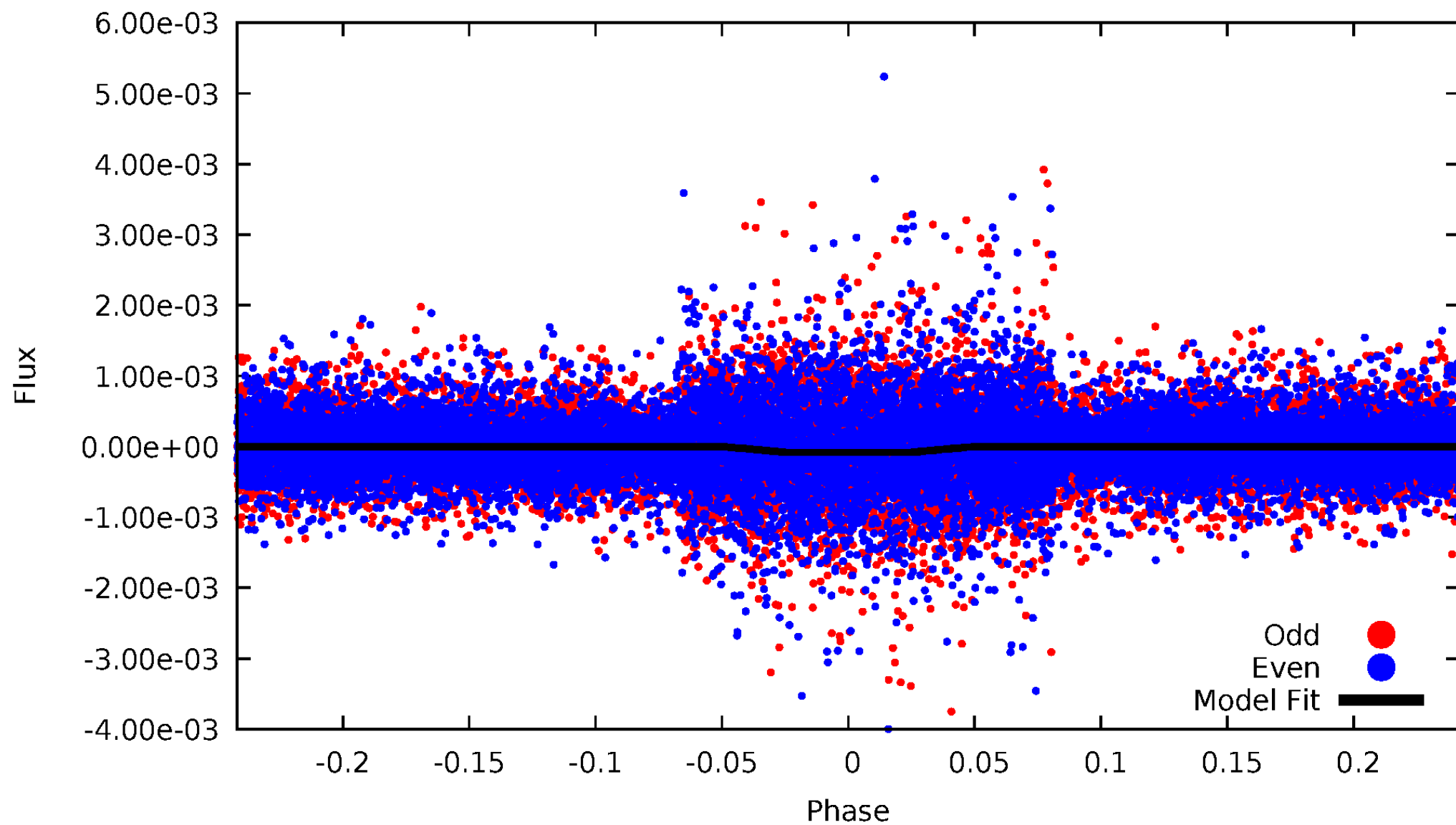
DV Odd/Even

TCE 002304604-01



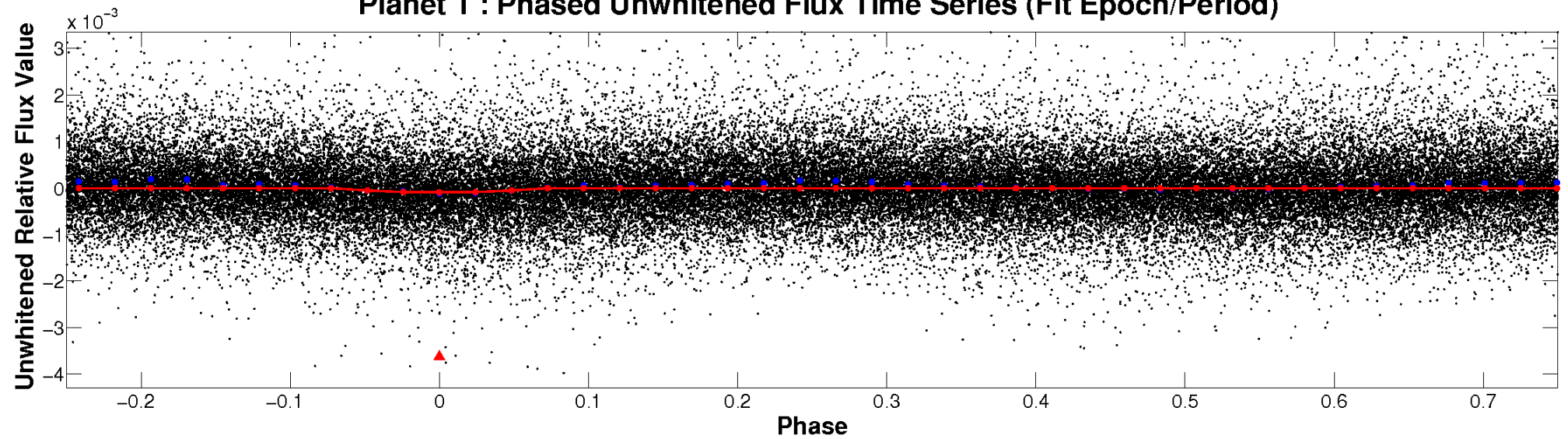
ALT Odd/Even

TCE 002304604-01

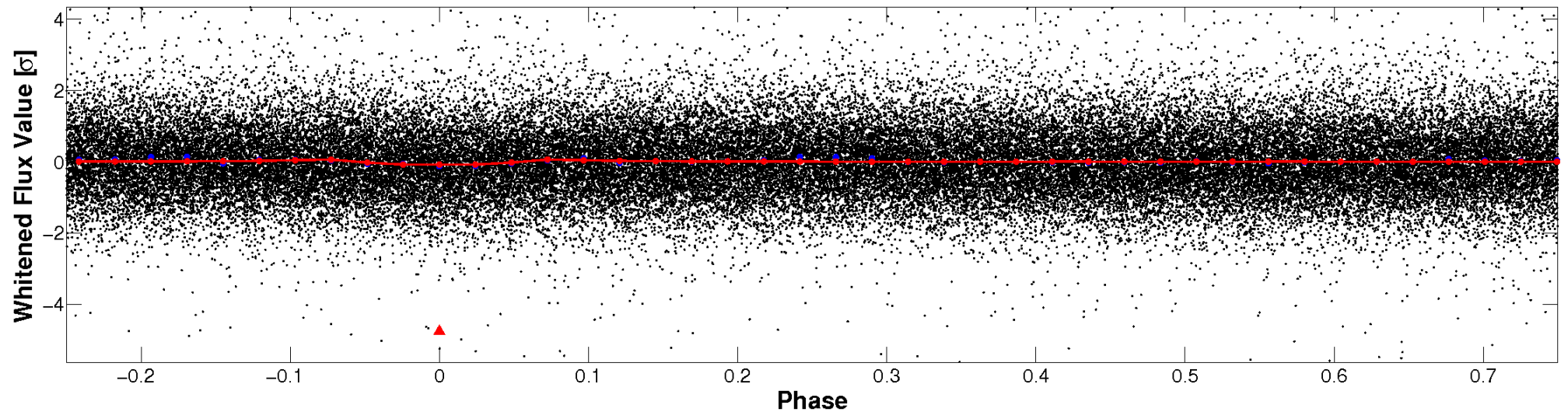


Non-Whitened Vs. Whitened Light Curve

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

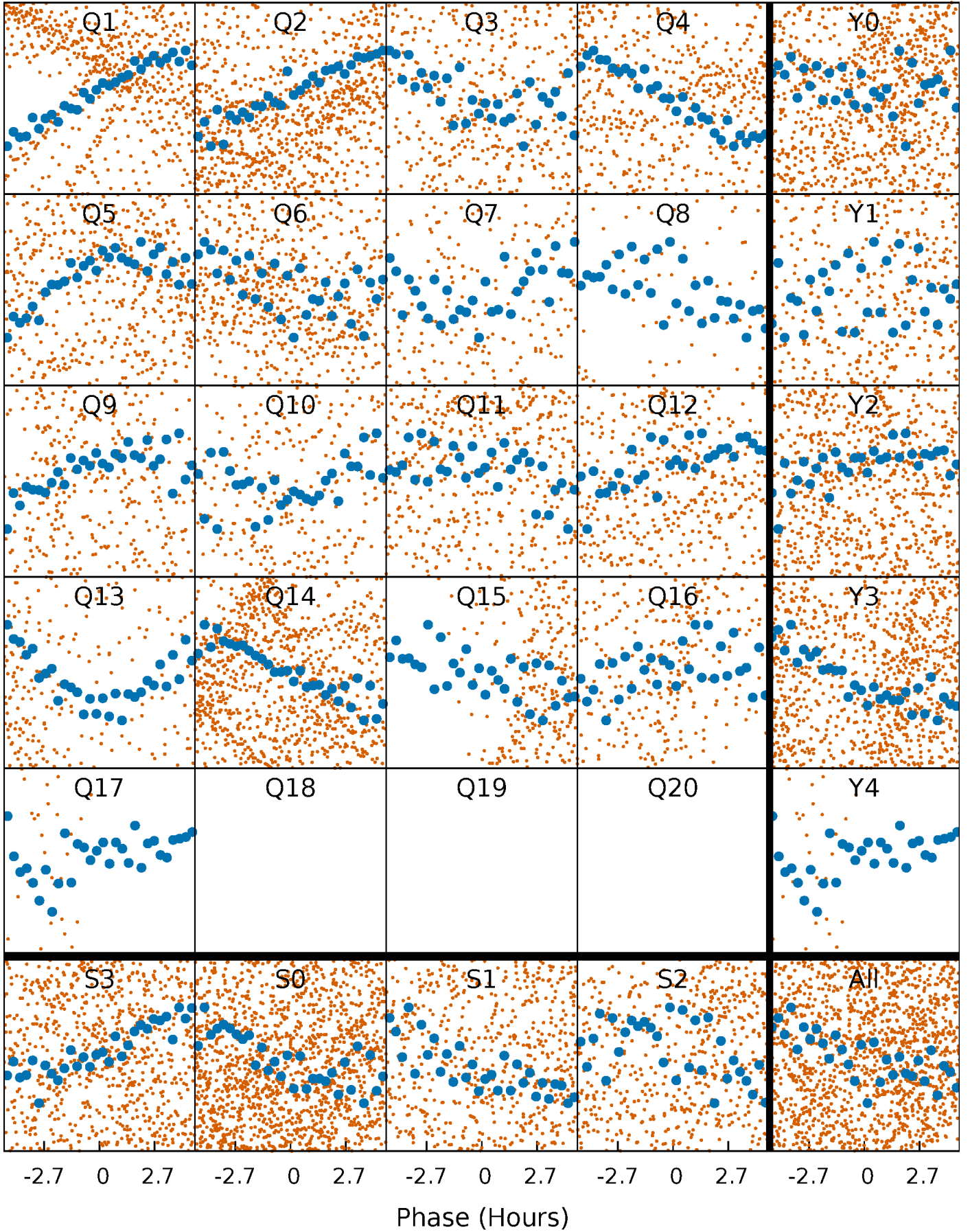


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



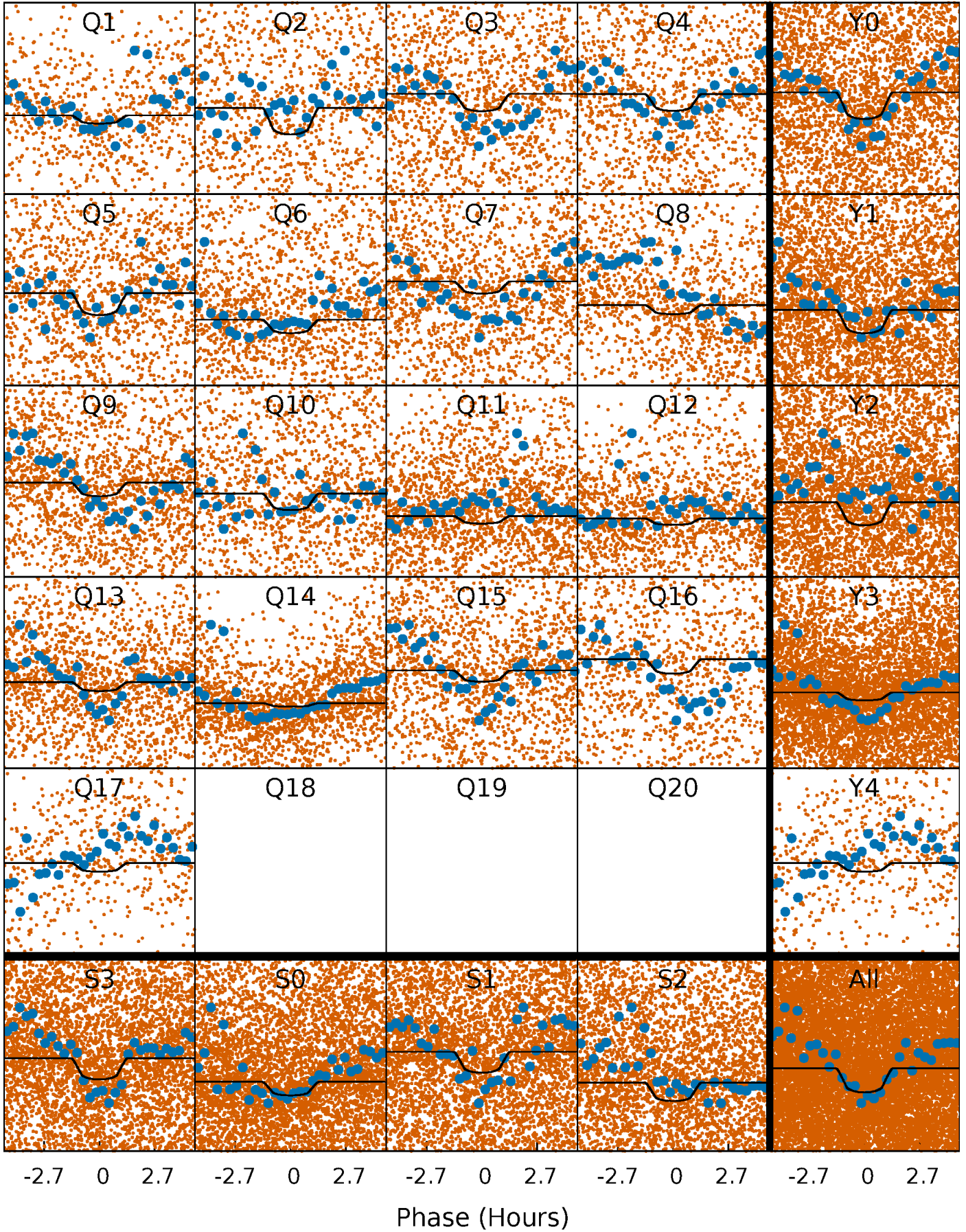
PDC Quarter-Phased Transit Curves

TCE 002304604-01 P= 0.845263 Days $T_0=131.672811$ (BKJD)



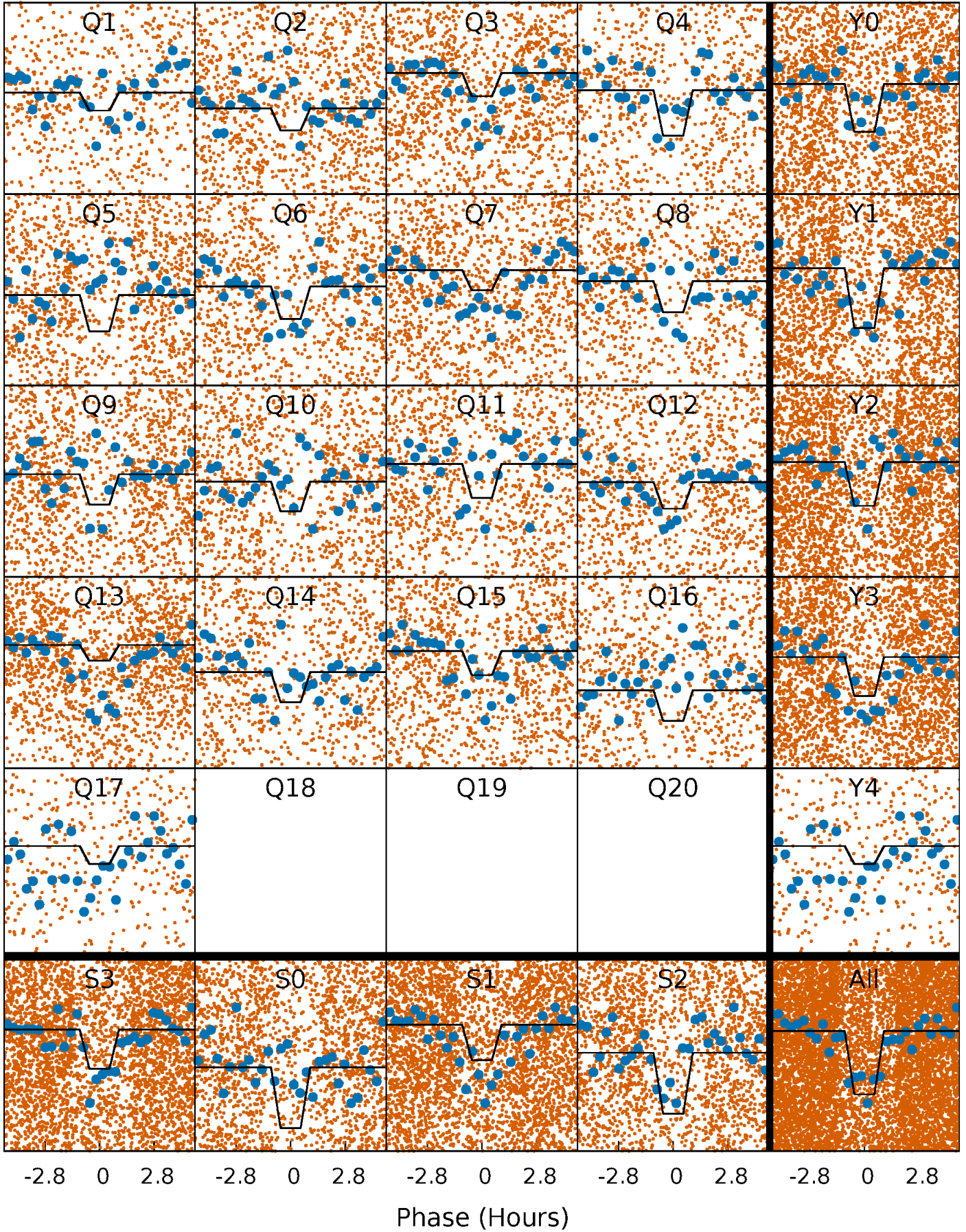
DV Quarter-Phased Transit Curves

TCE 002304604-01 P= 0.845263 Days $T_0=131.672811$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

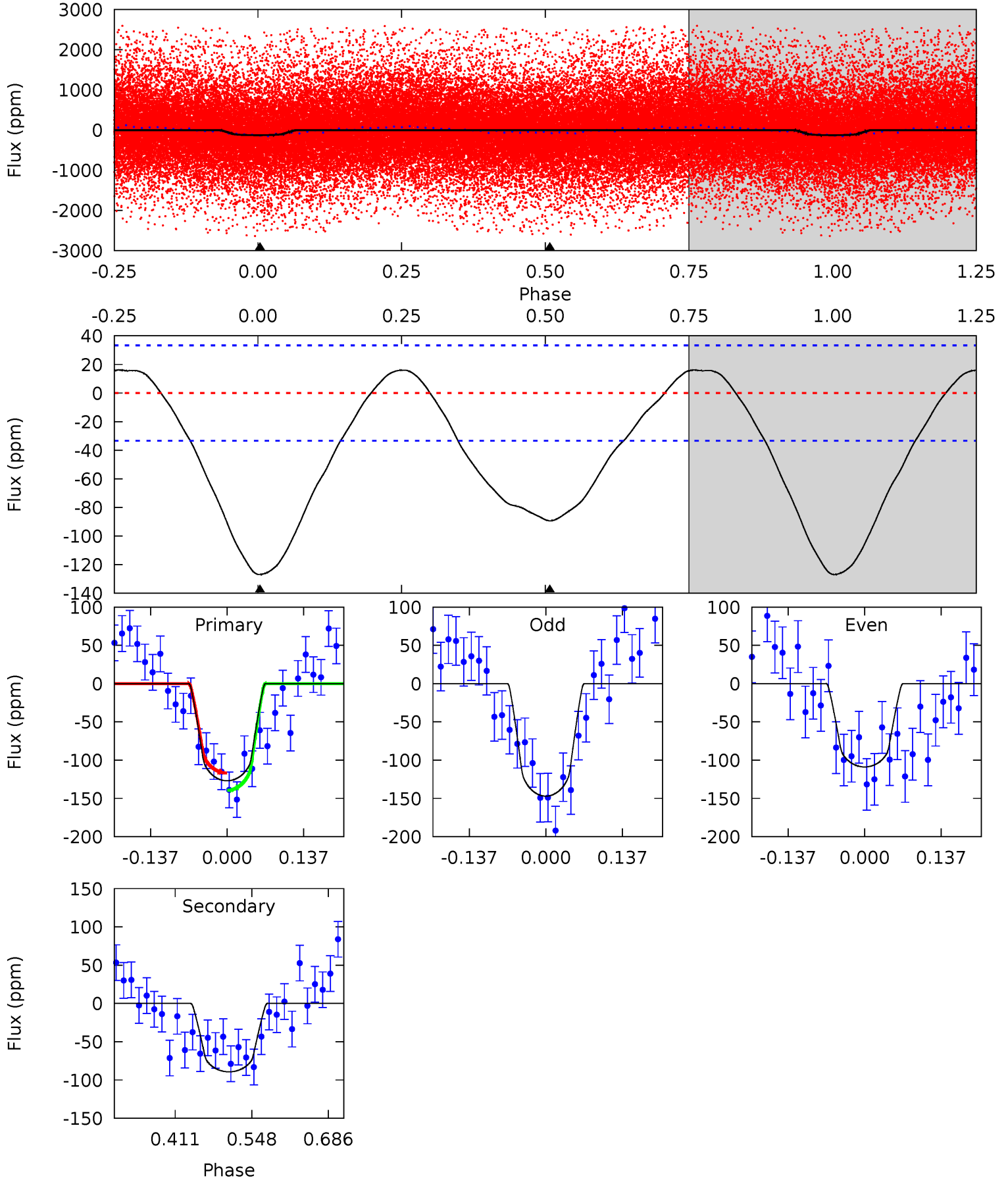
TCE 002304604-01 P= 0.845262 Days $T_0=131.669774$ (BKJD)



DV Model-Shift Uniqueness Test

002304604-01, P = 0.845263 Days, E = 130.827548 Days

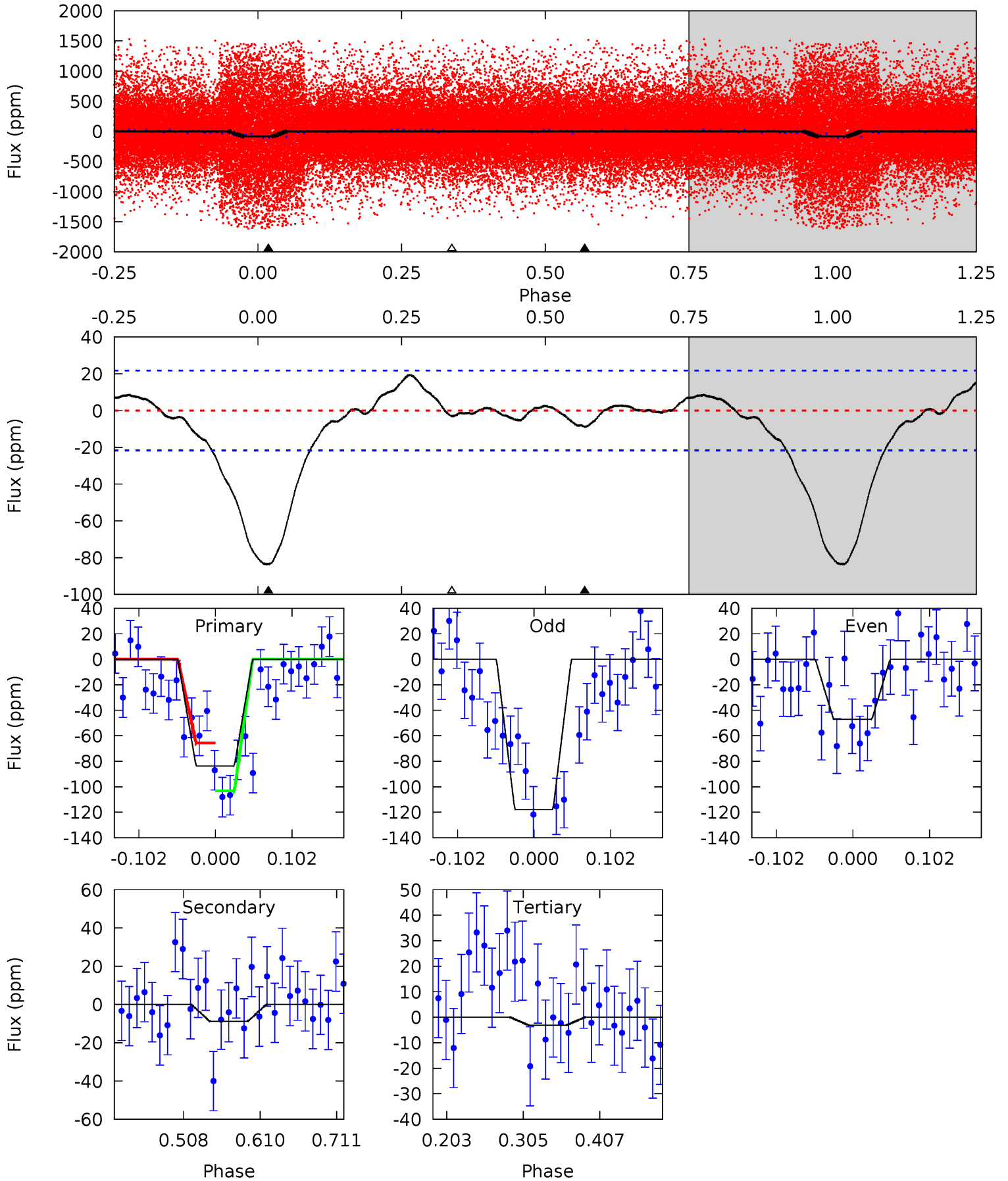
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	12.0	0	0	4.50	1.49	2.27	17.1	17.1	12.0	12.0	2.57	0.94	0.11	1.52



Alt Model-Shift Uniqueness Test

002304604-01, P = 0.845262 Days, E = 130.824512 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.6	1.85	0.65	0	4.56	1.64	1.53	16.9	17.6	1.20	1.85	7.44	1.12	0.19	3.95



Stellar Parameters For KIC 002304604

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5525^{+82}_{-66}	$4.054^{+0.238}_{-0.102}$	$-0.040^{+0.150}_{-0.100}$	$1.504^{+0.247}_{-0.402}$	$0.935^{+0.079}_{-0.049}$	$0.387^{+0.546}_{-0.123}$
	+1%/-1%	+6%/-3%	+375%/-250%	+16%/-27%	+8%/-5%	+141%/-32%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 002304604-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-89 ± 7	$1.68^{+1.04}_{-0.85}$	3184^{+155}_{-216}	5166^{+2315}_{-937}	$5.078^{+16.544}_{-3.107}$
Alt.	-9 ± 5	$1.53^{+0.98}_{-0.90}$	3176^{+145}_{-214}	3121^{+1608}_{-6008}	$0.570^{+2.984}_{-0.419}$

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

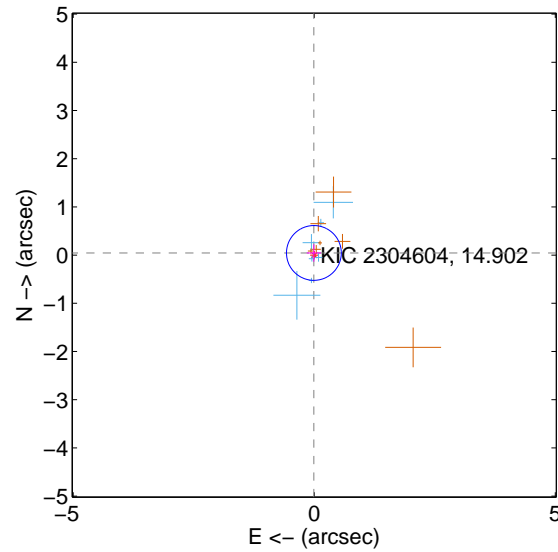
Supplemental centroid analysis for 002304604-01. Kepler magnitude: 14.90. Transit SNR 7.44

There are 8 quarters with good PRF difference image offsets

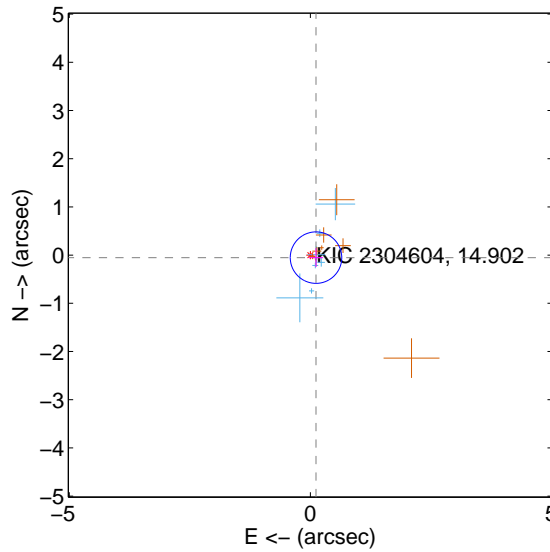
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.045 ± 0.189	0.24	0.007 ± 0.148	0.045 ± 0.181
PRF-fit source offset from KIC position	0.129 ± 0.178	0.72	-0.118 ± 0.146	-0.052 ± 0.193
photometric centroid source offset	1.16 ± 1.01	1.15	-0.02 ± 0.89	1.16 ± 1.01

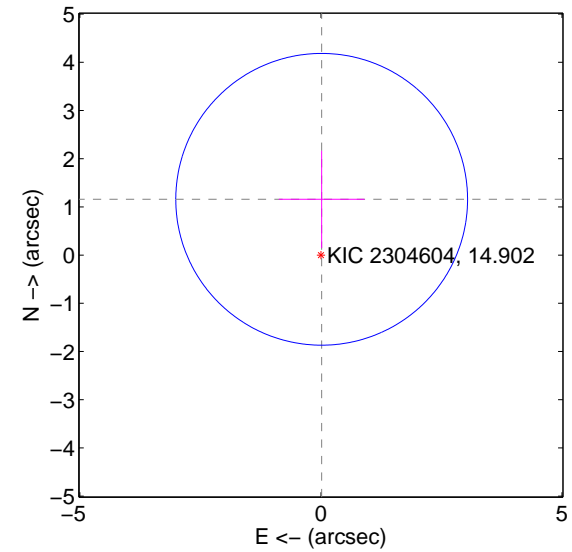
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

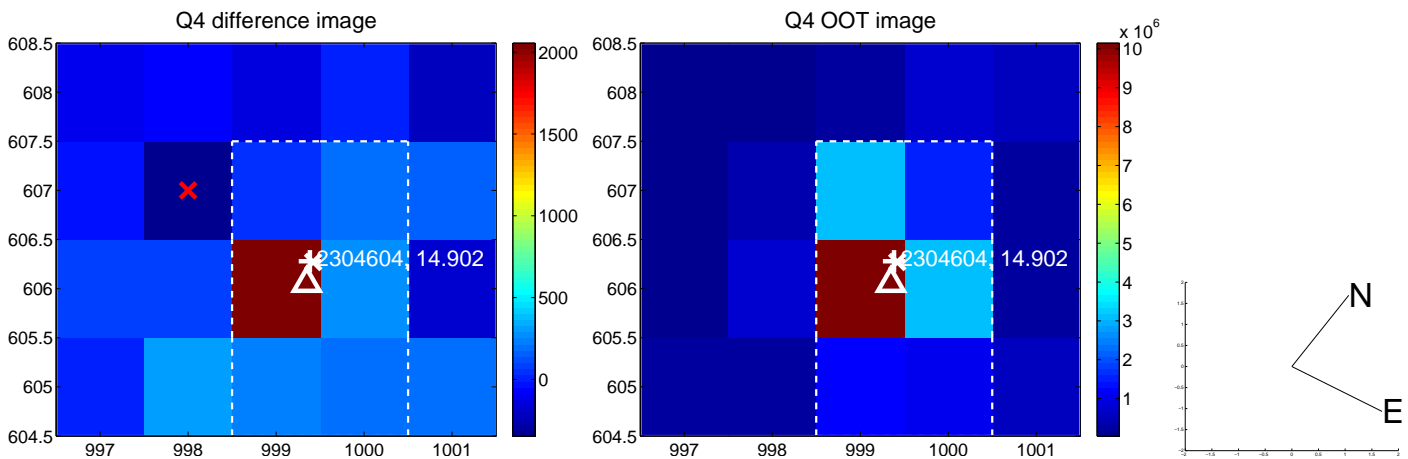
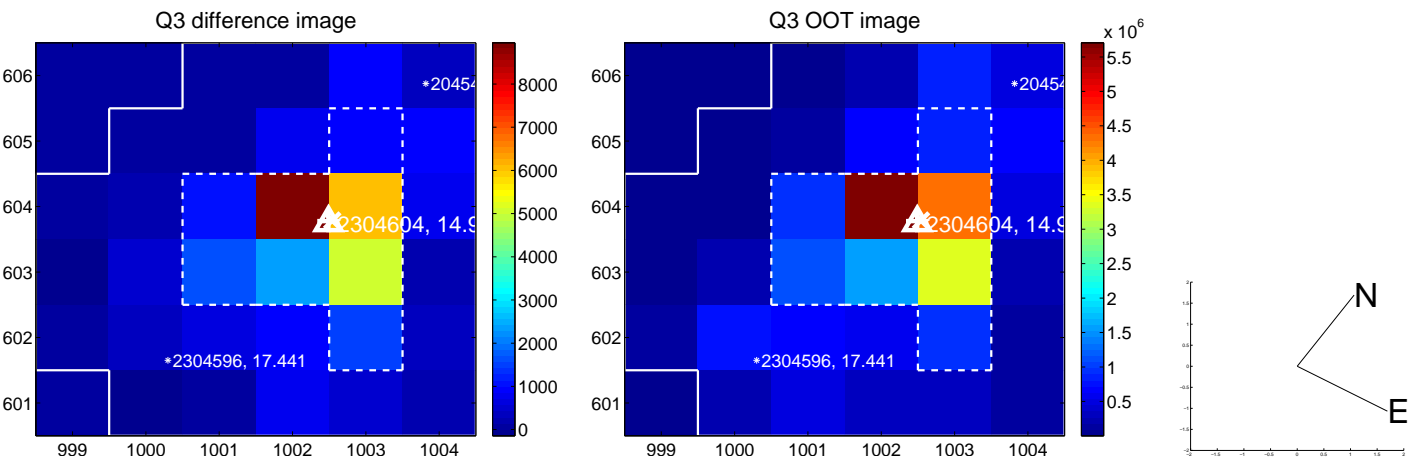
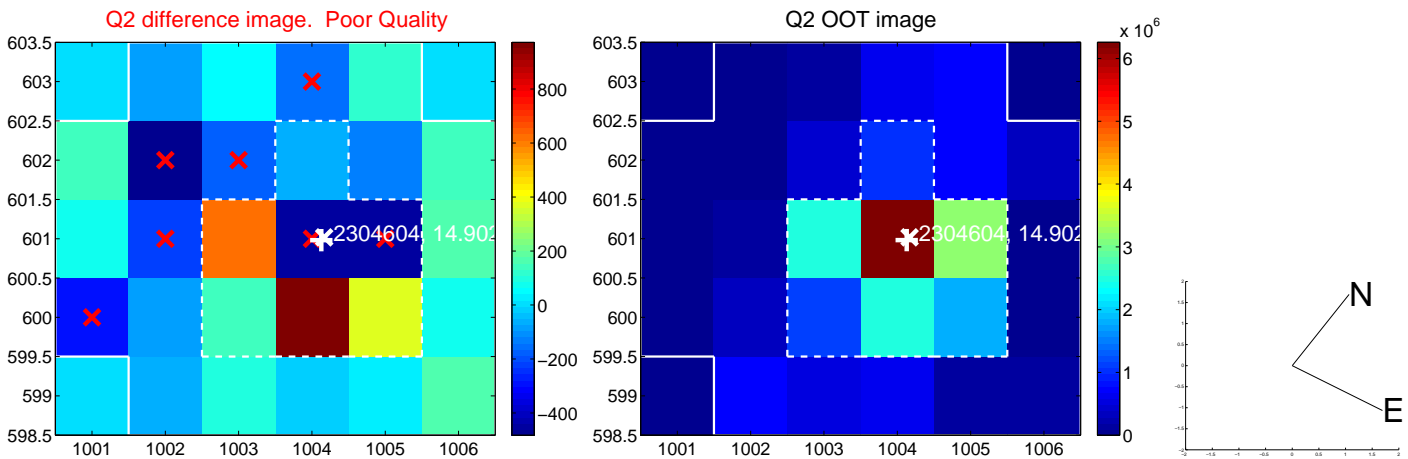
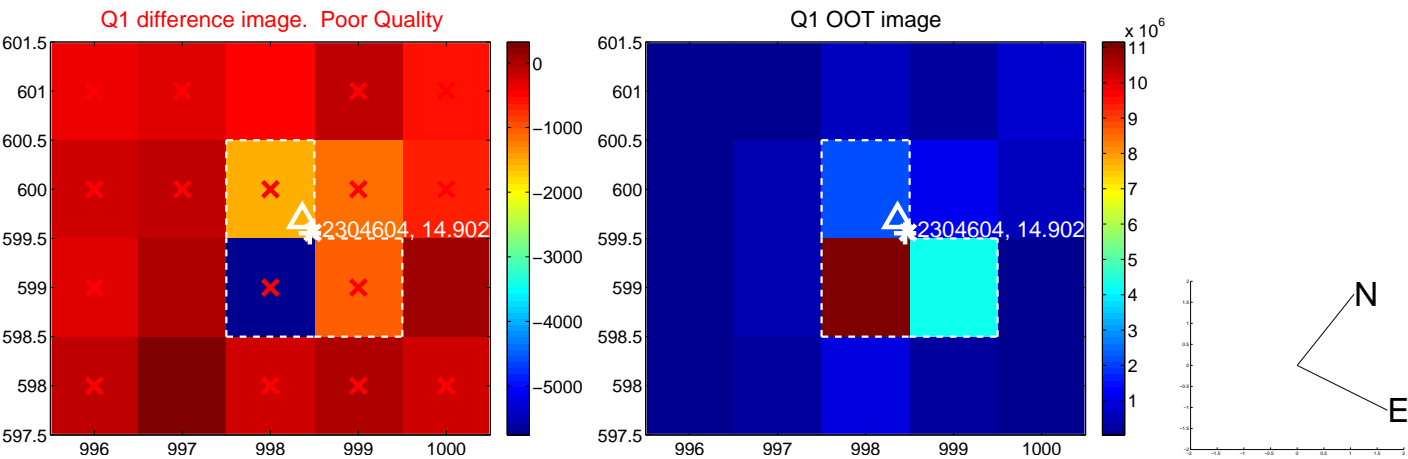


offset from photometric centroids

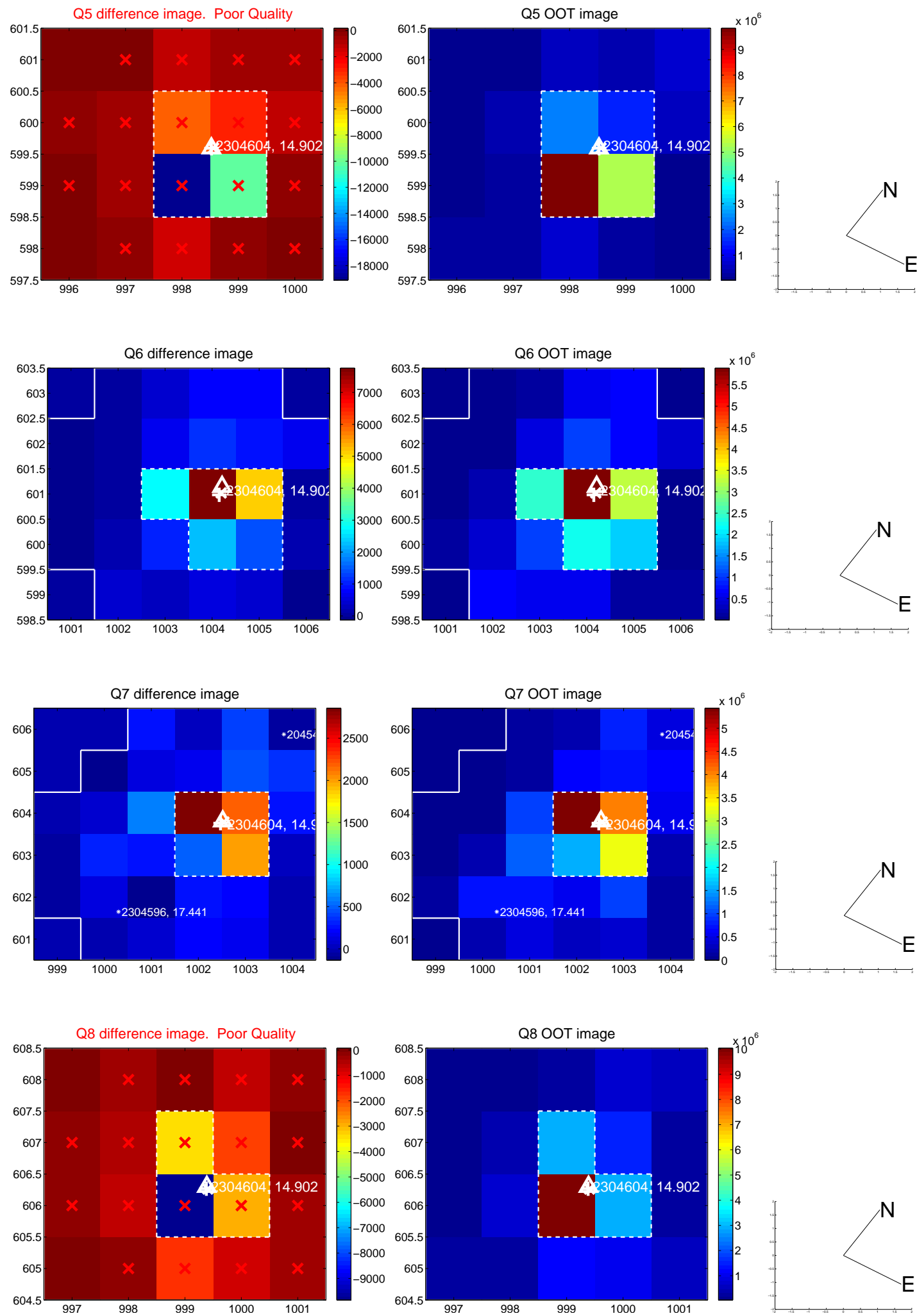


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

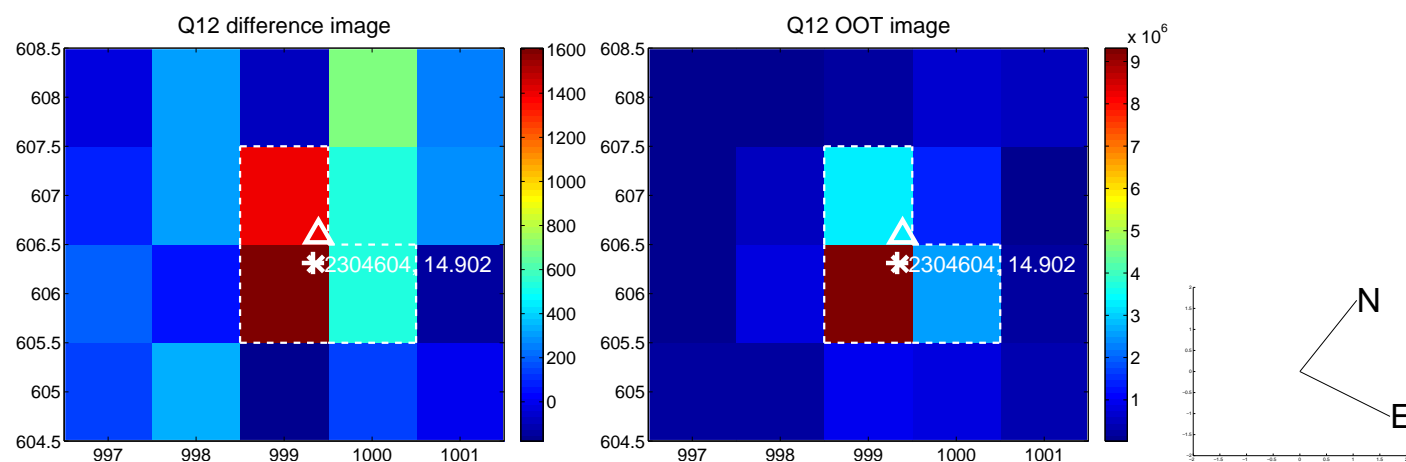
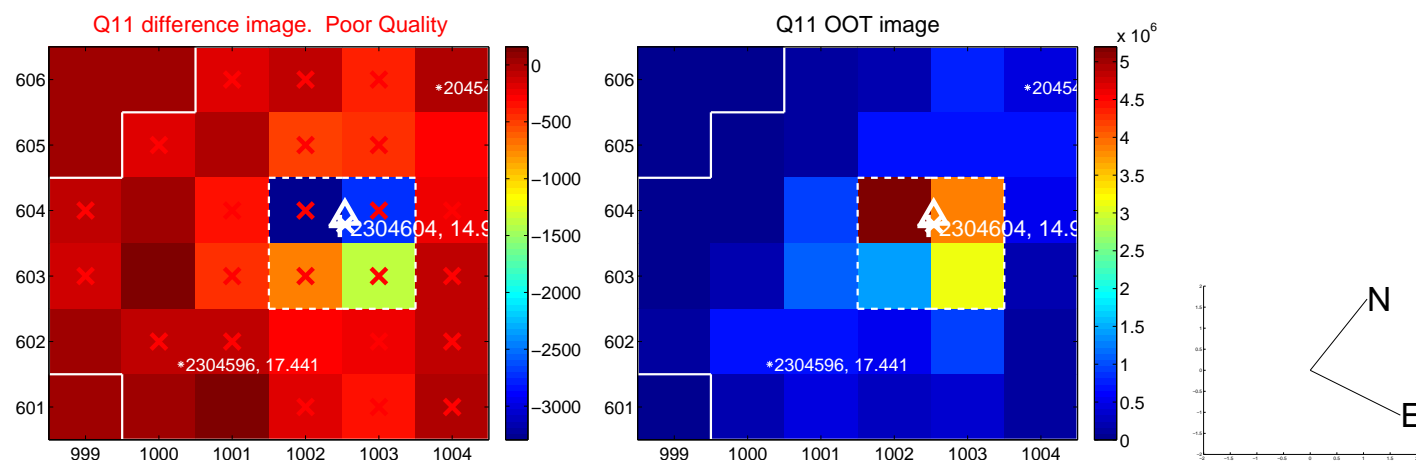
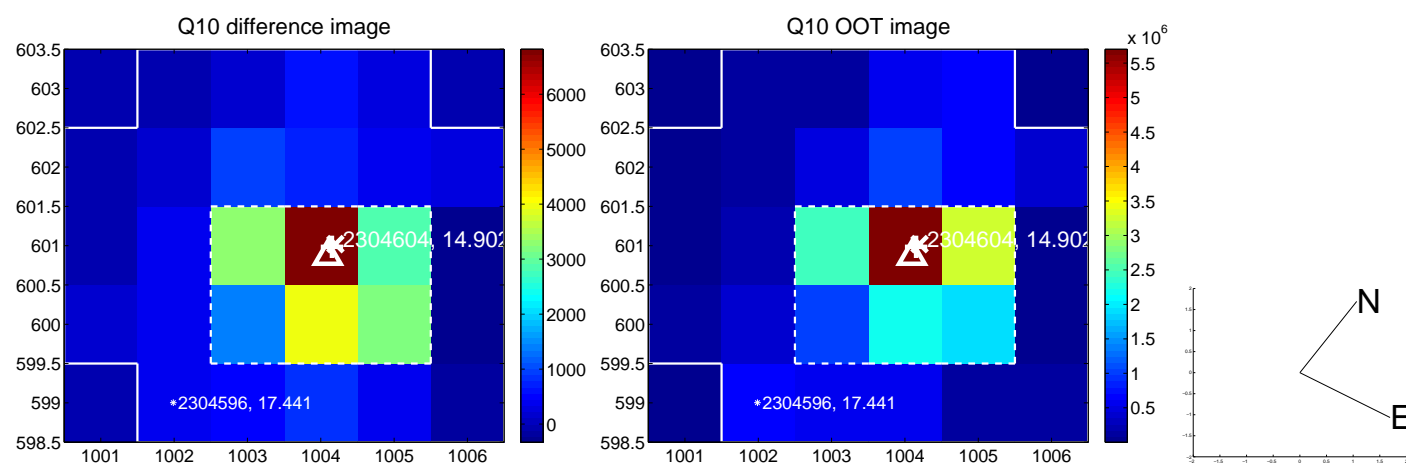
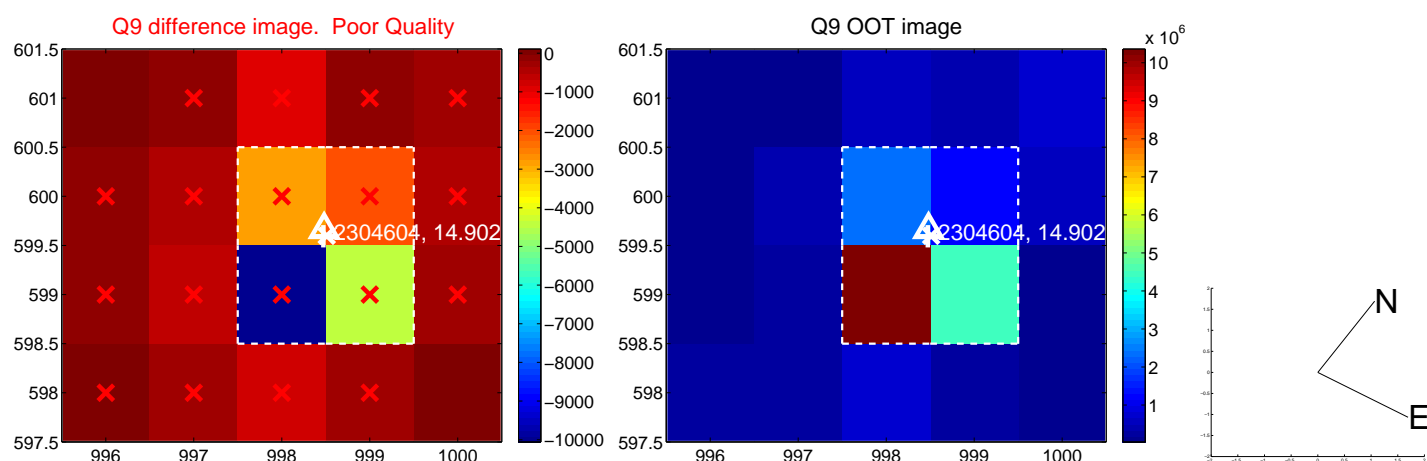
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



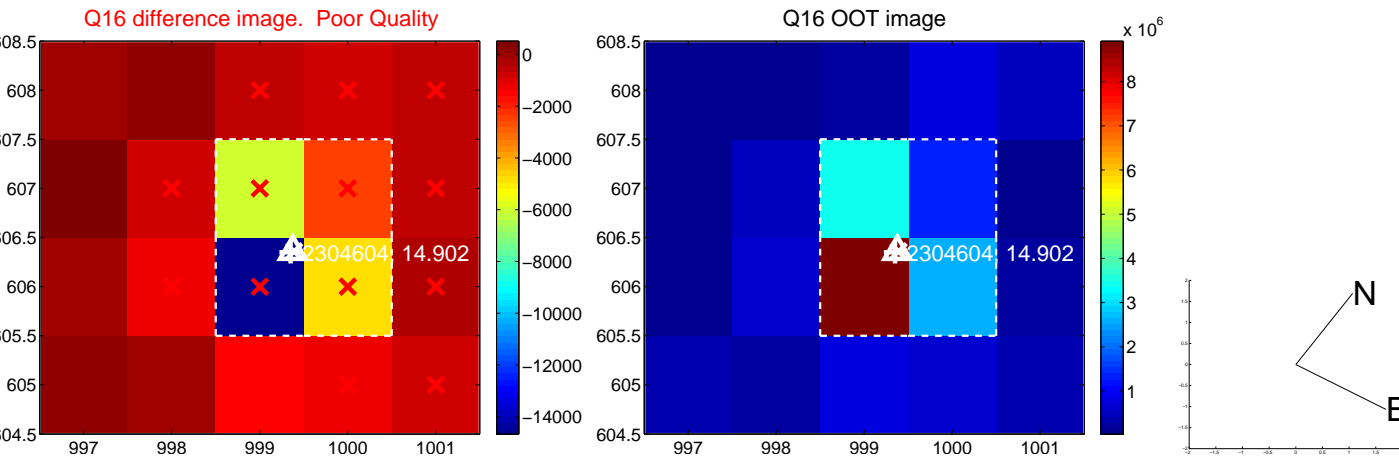
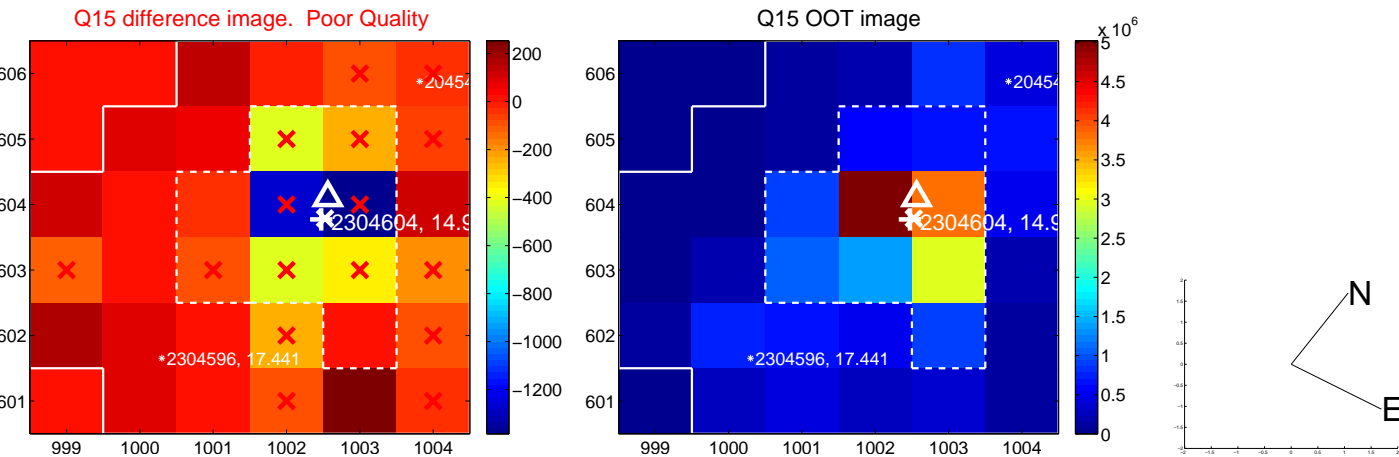
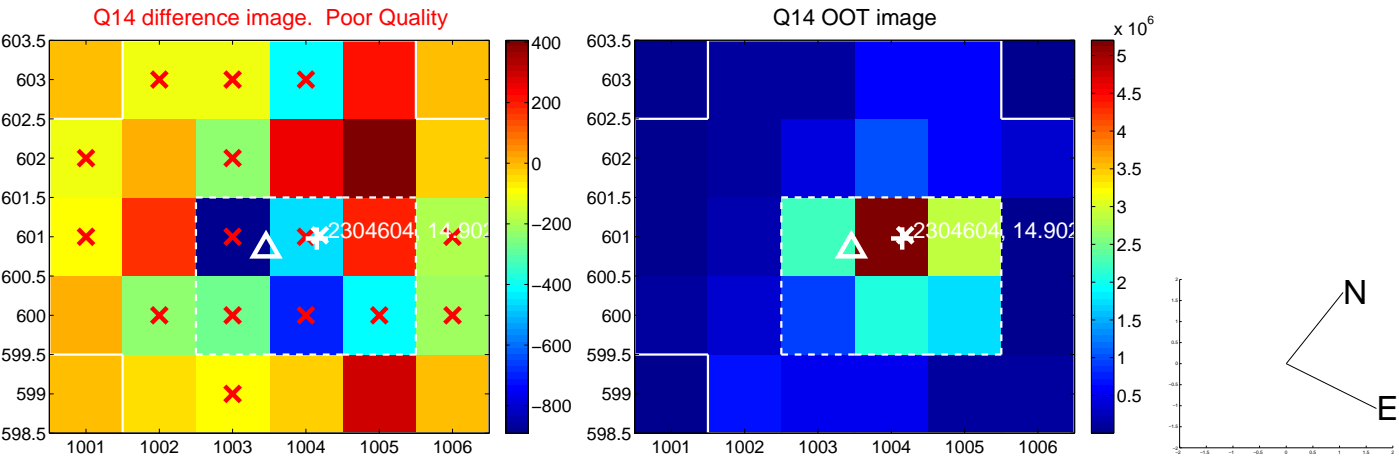
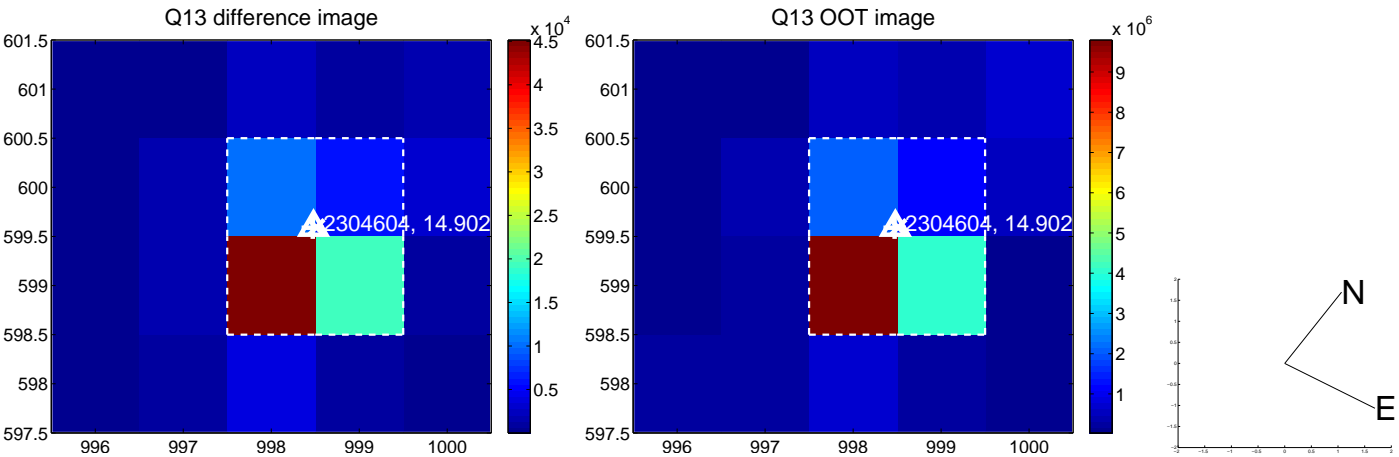
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



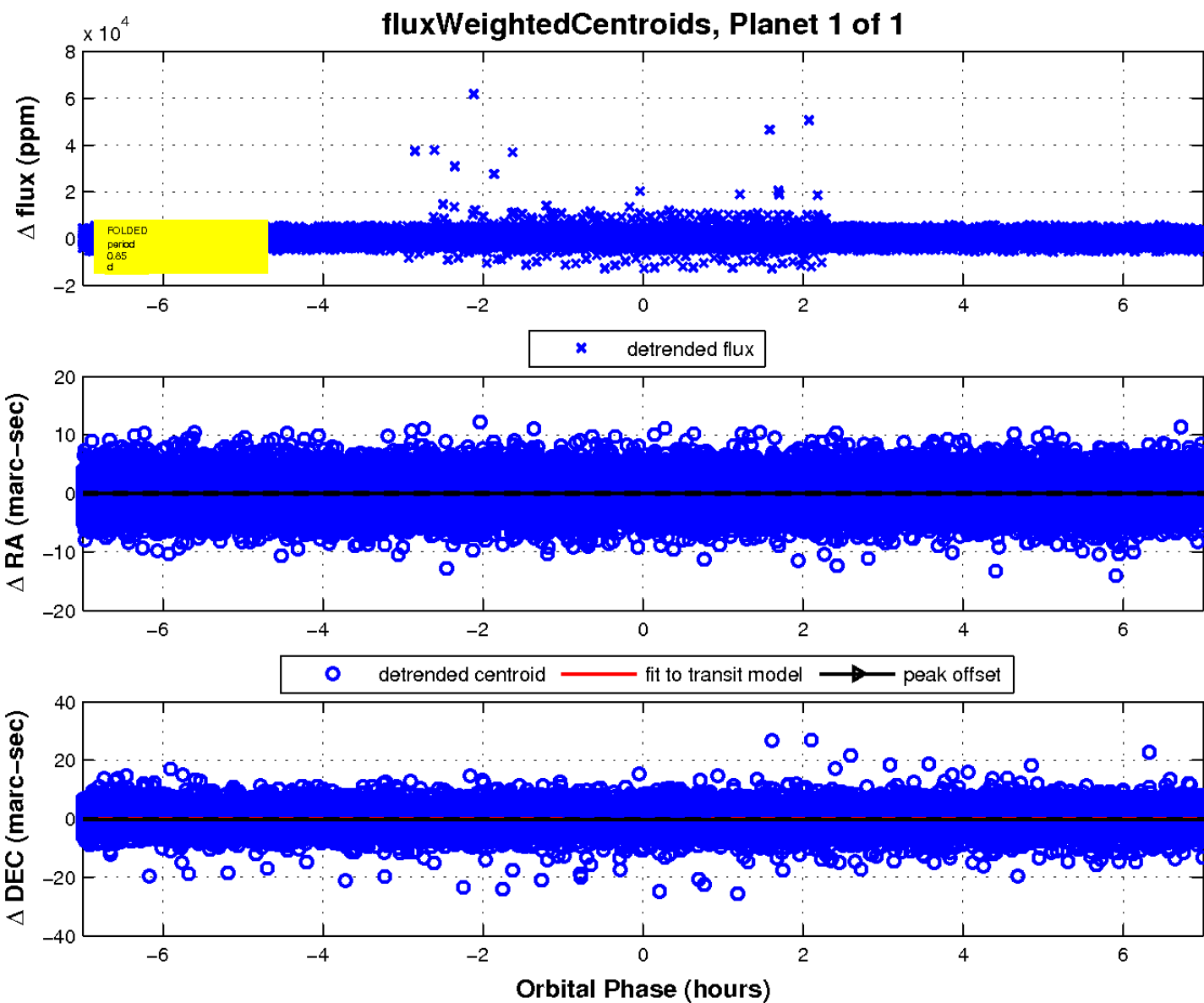
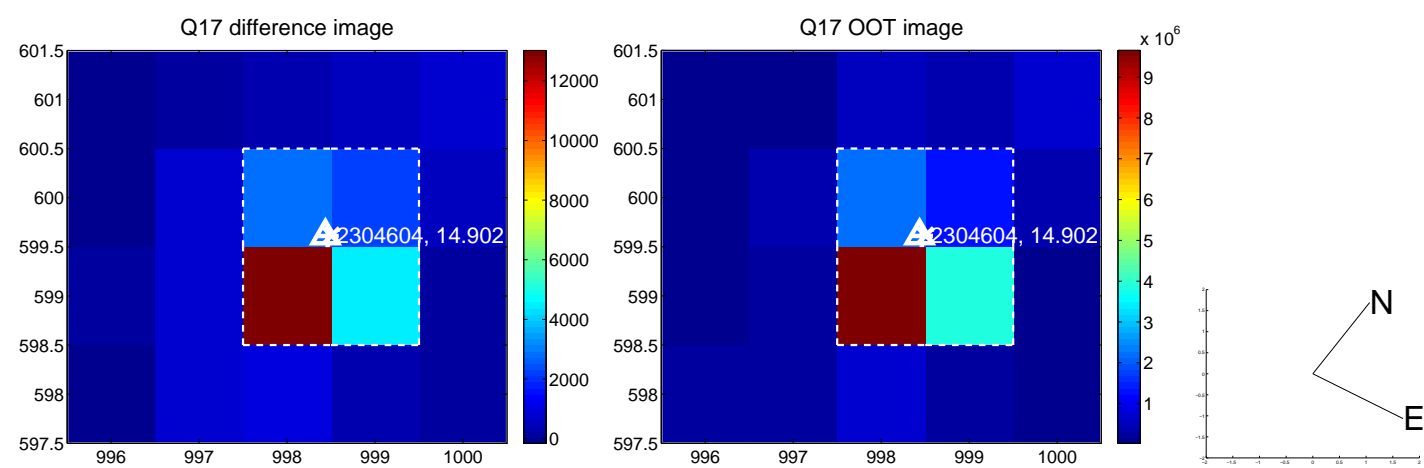
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

