

KIC 004242315

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})
004242315-01	OBS	No	1.058093	131.692802	11.8	3.130	8.7	8.5	1.82	7216	0.72	14647.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004242315-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

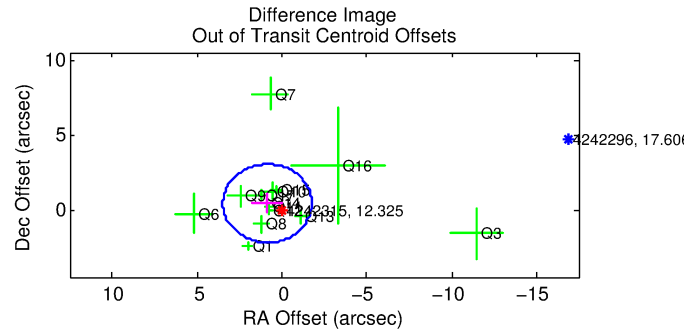
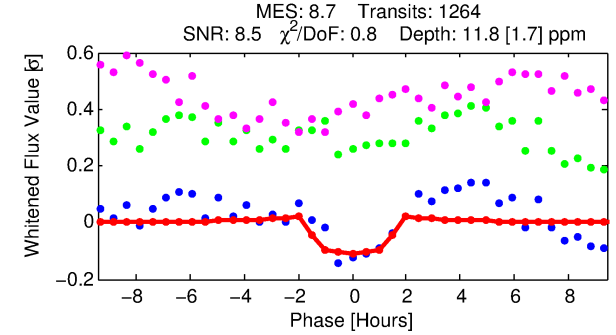
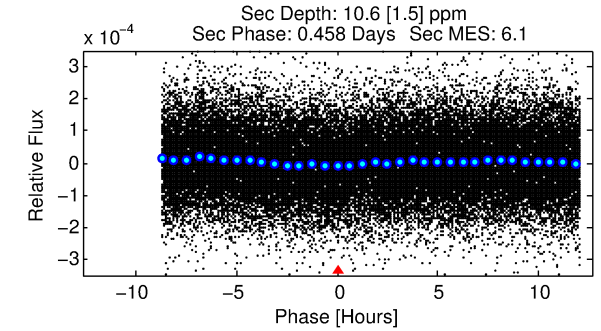
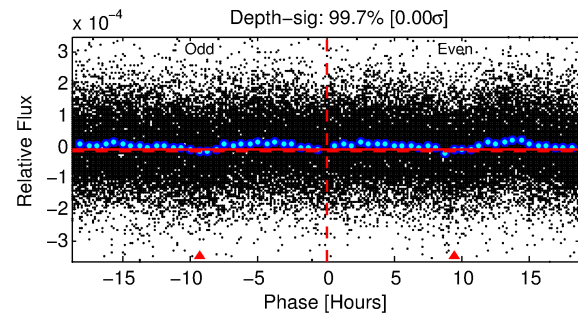
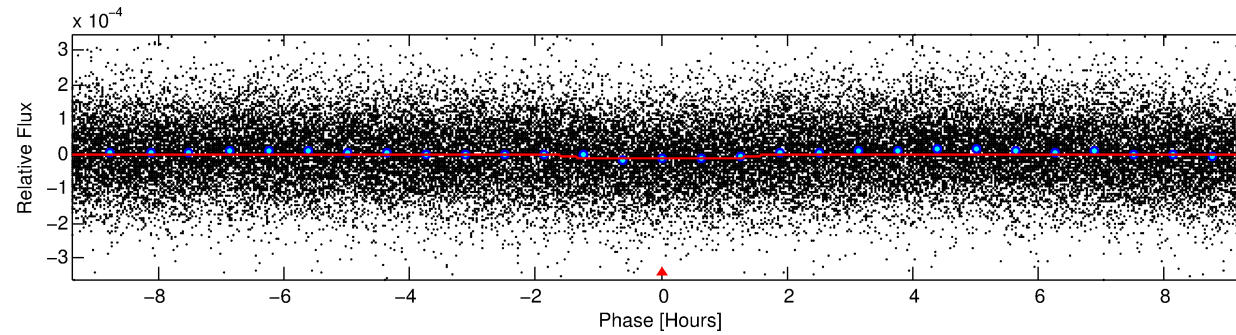
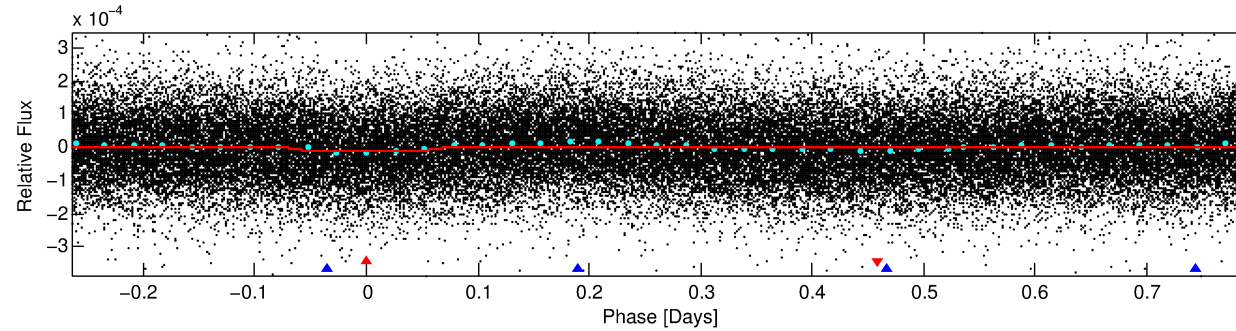
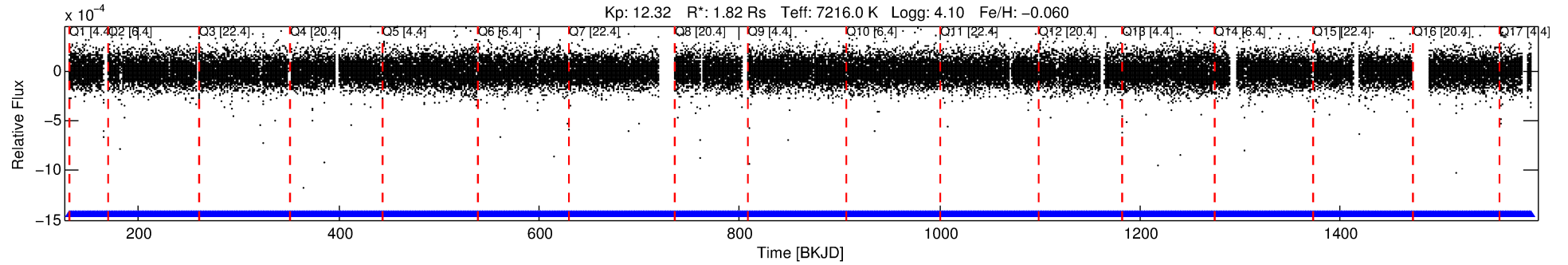
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004242315-01

No Significant Match Found

DV One-Page Summary

KIC: 4242315 Candidate: 1 of 2 Period: 1.058 d



DV Fit Results:

Period = 1.05809 [0.00001] d
Epoch = 131.6928 [0.0040] BKJD
Rp/R* = 0.0037 [0.0010]
a/R* = 1.47 [1.35]
b = 0.90 [0.36]
Seff = 14647.99 [5563.41]
Teq = 2805 [266] K
Rp = 0.72 [0.30] Re
a = 0.0234 [0.0058] AU
Ag = 6.09 [4.04] [1.26 σ]
Teffp = 6814 [996] K [3.89 σ]

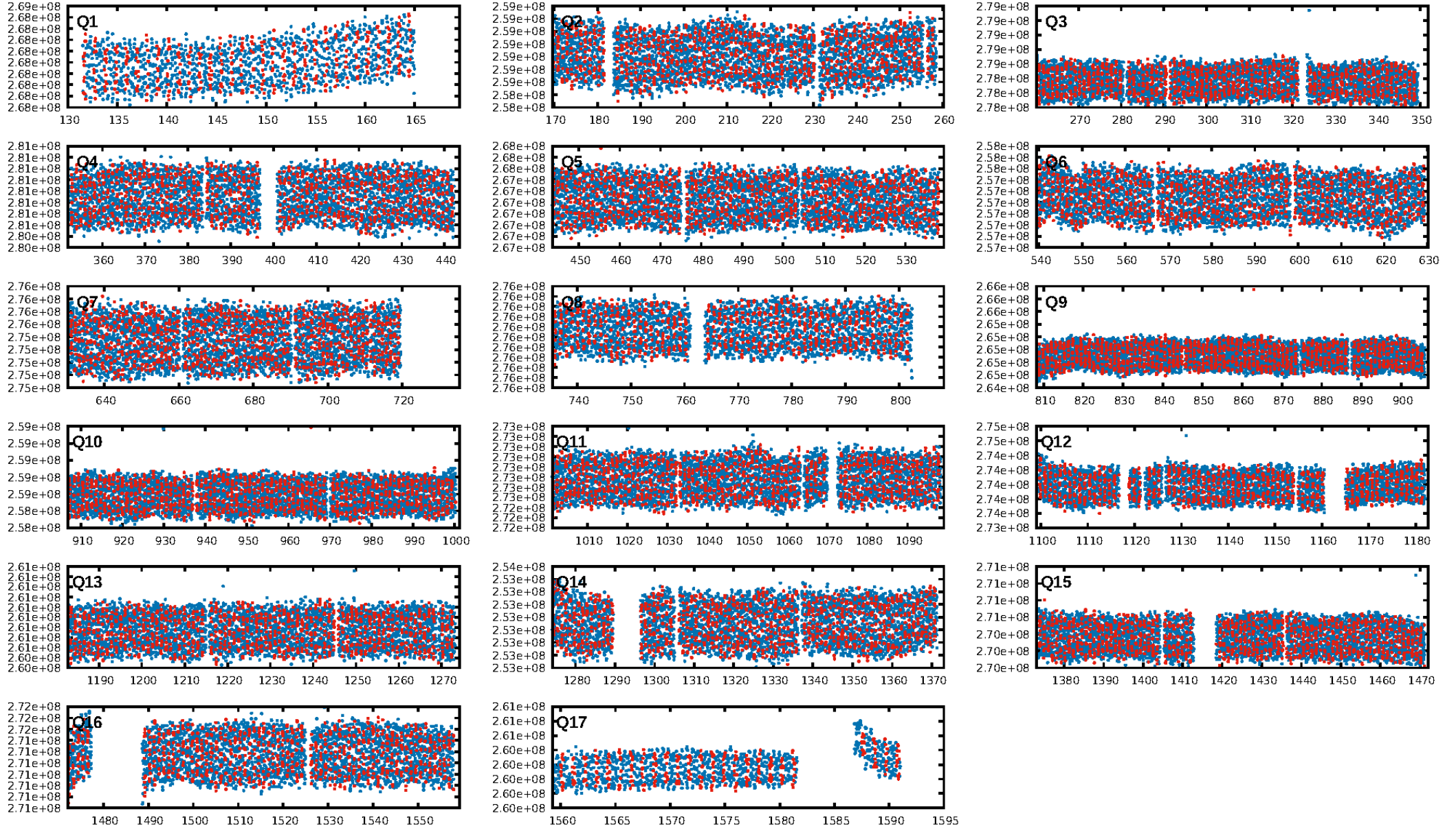
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [2287.94 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.50e-17
RollingBand-fgt: 1.00 [1207/1207]
GhostDiagnostic-chr: -297.9
Centroid-sig: 3.9%
Centroid-so: 2.127 arcsec [1.44 σ]
OotOffset-rm: 0.952 arcsec [1.09 σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-rm: 1.089 arcsec [1.15 σ]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.71 [10/14]
DiffImageOverlap-fno: 1.00 [17/17]

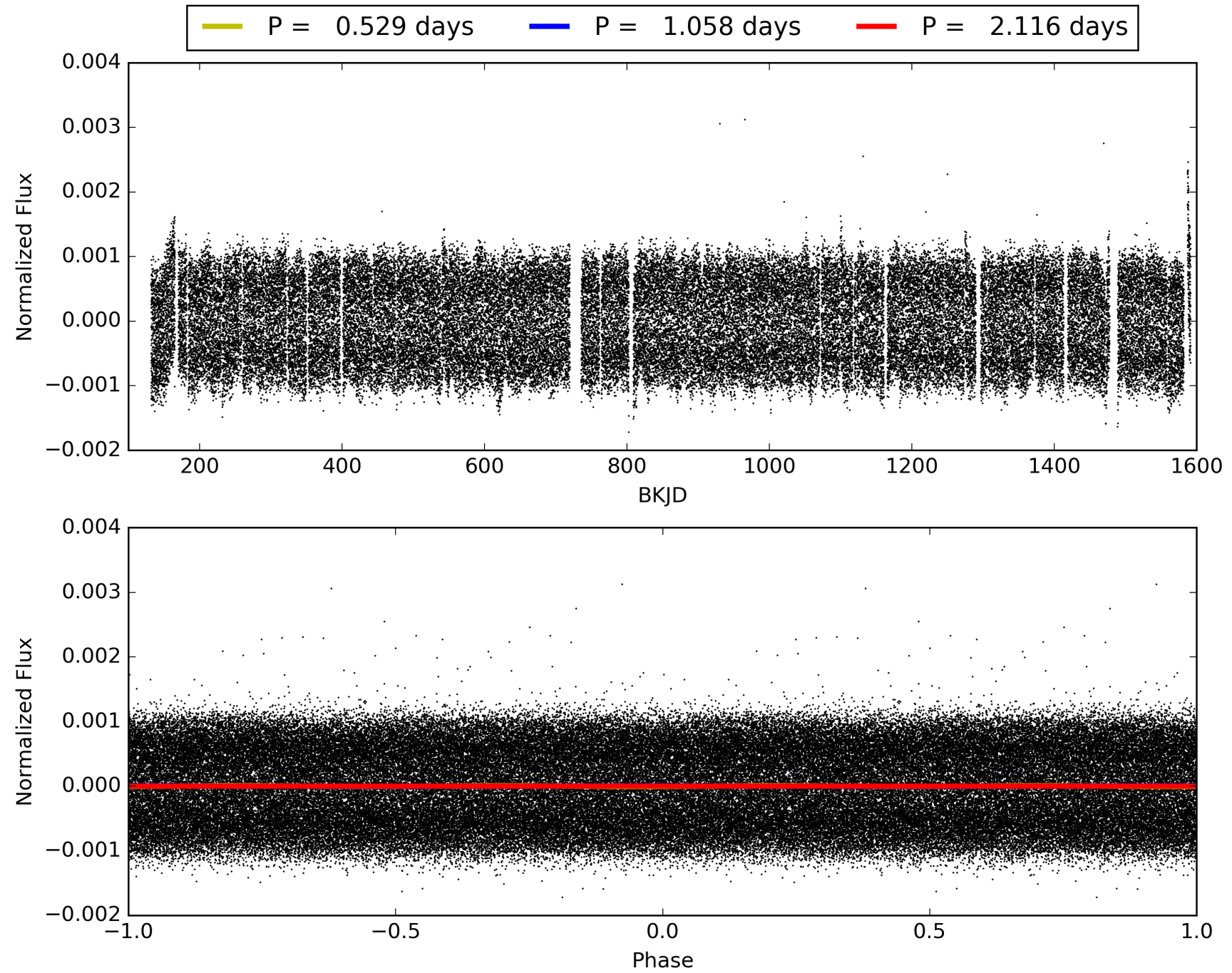
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 07:13:54 Z

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

TCE 004242315-01, PDC Light Curves

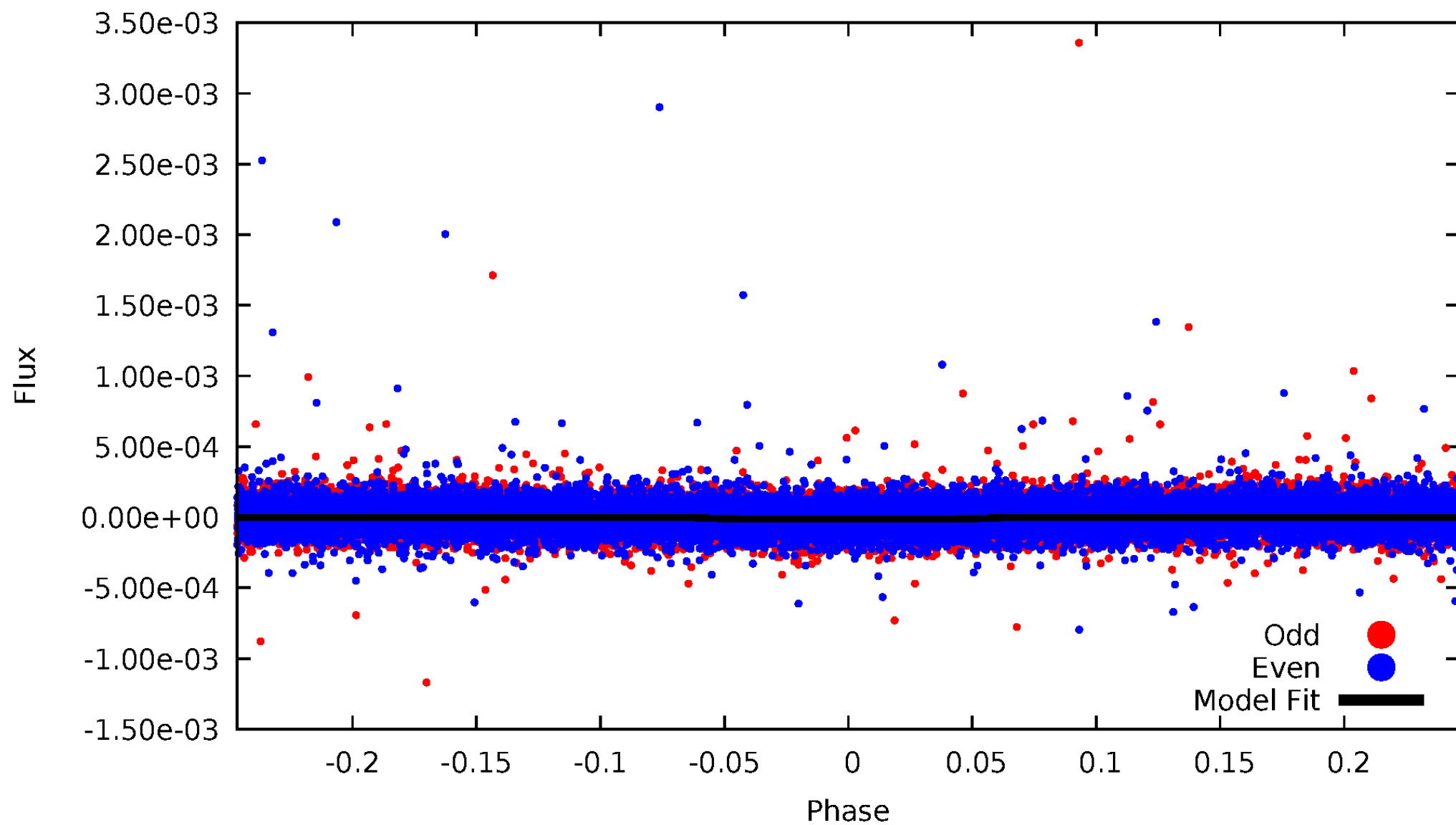


TCE 004242315-01



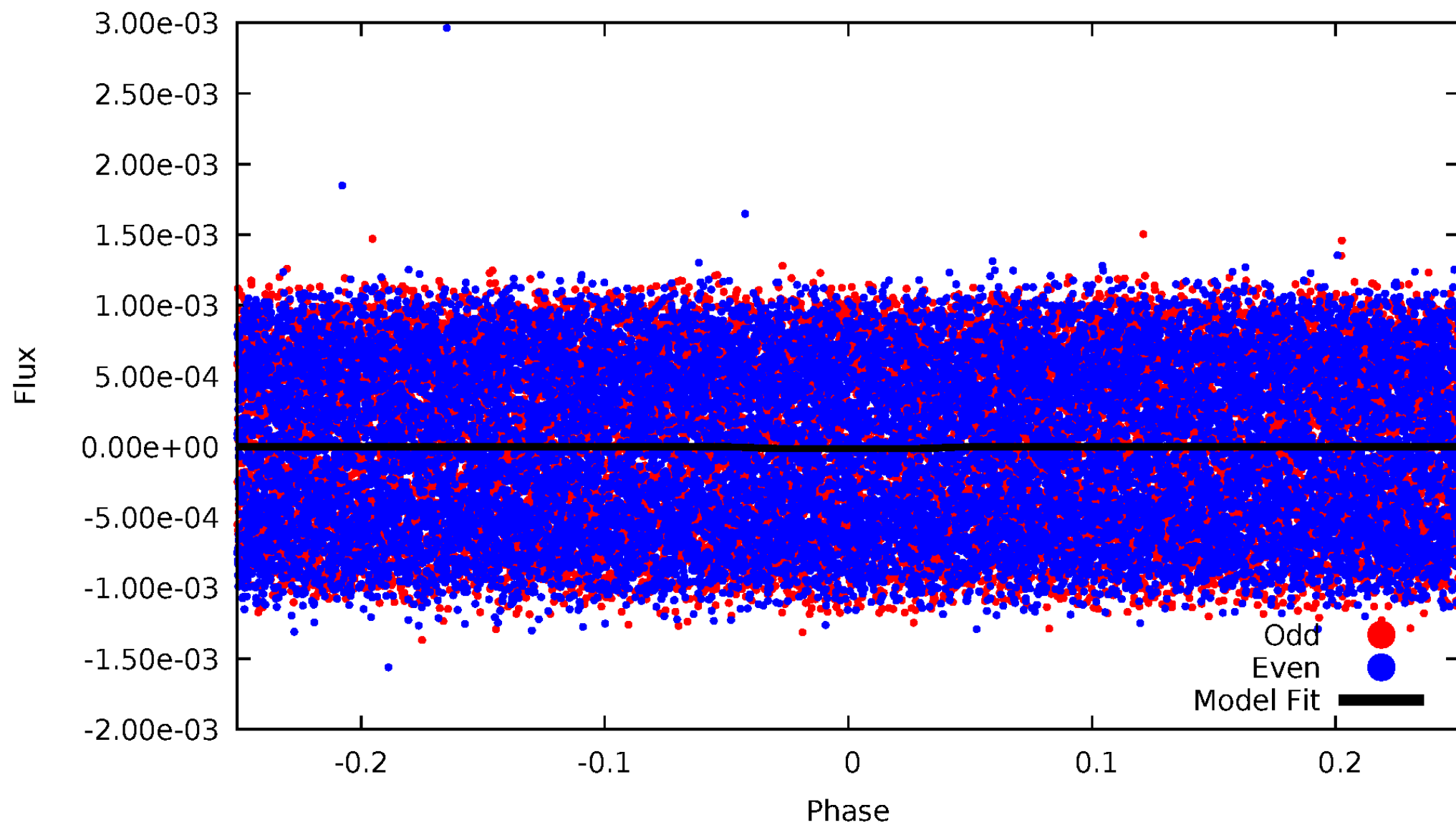
DV Odd/Even

TCE 004242315-01



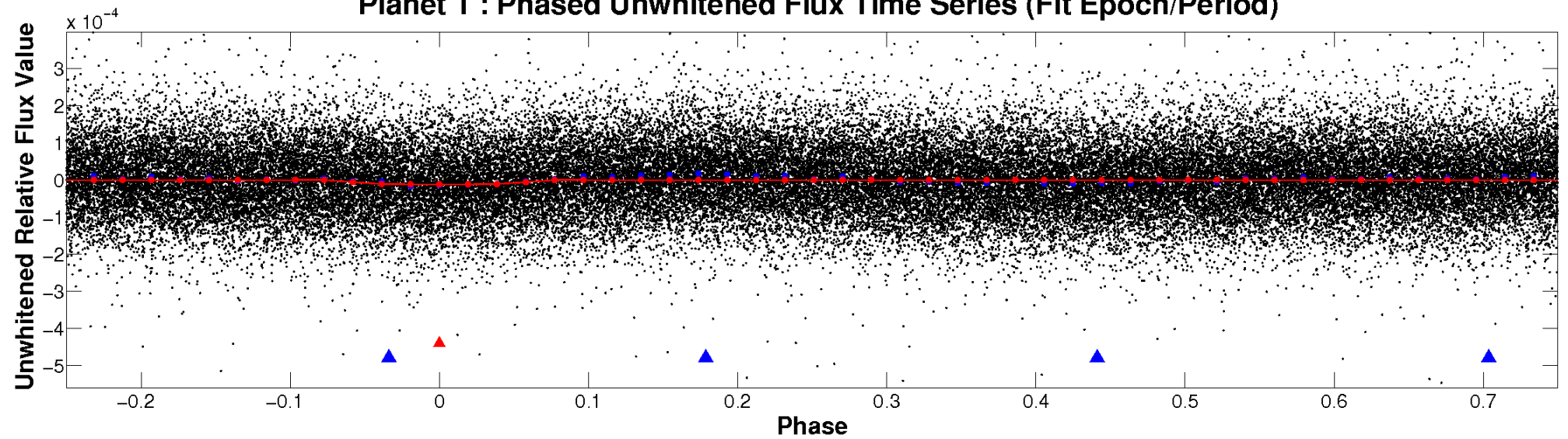
ALT Odd/Even

TCE 004242315-01

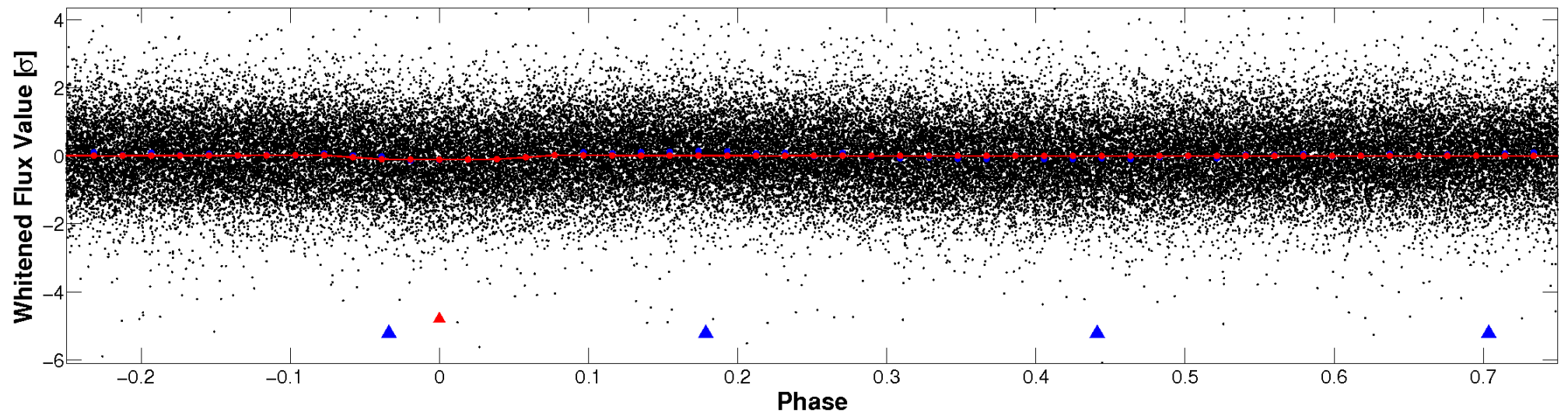


Non-Whitened Vs. Whitened Light Curve

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

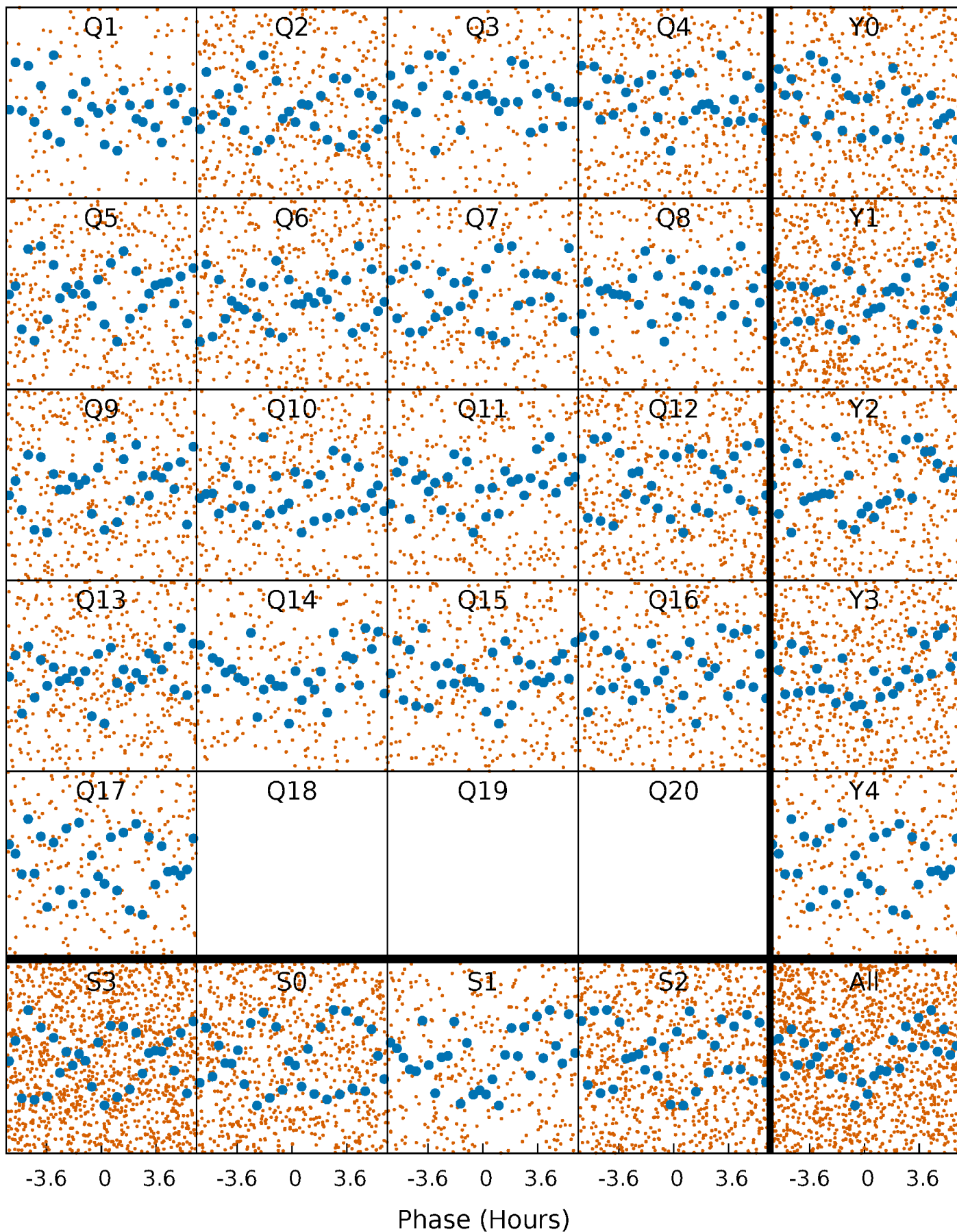


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



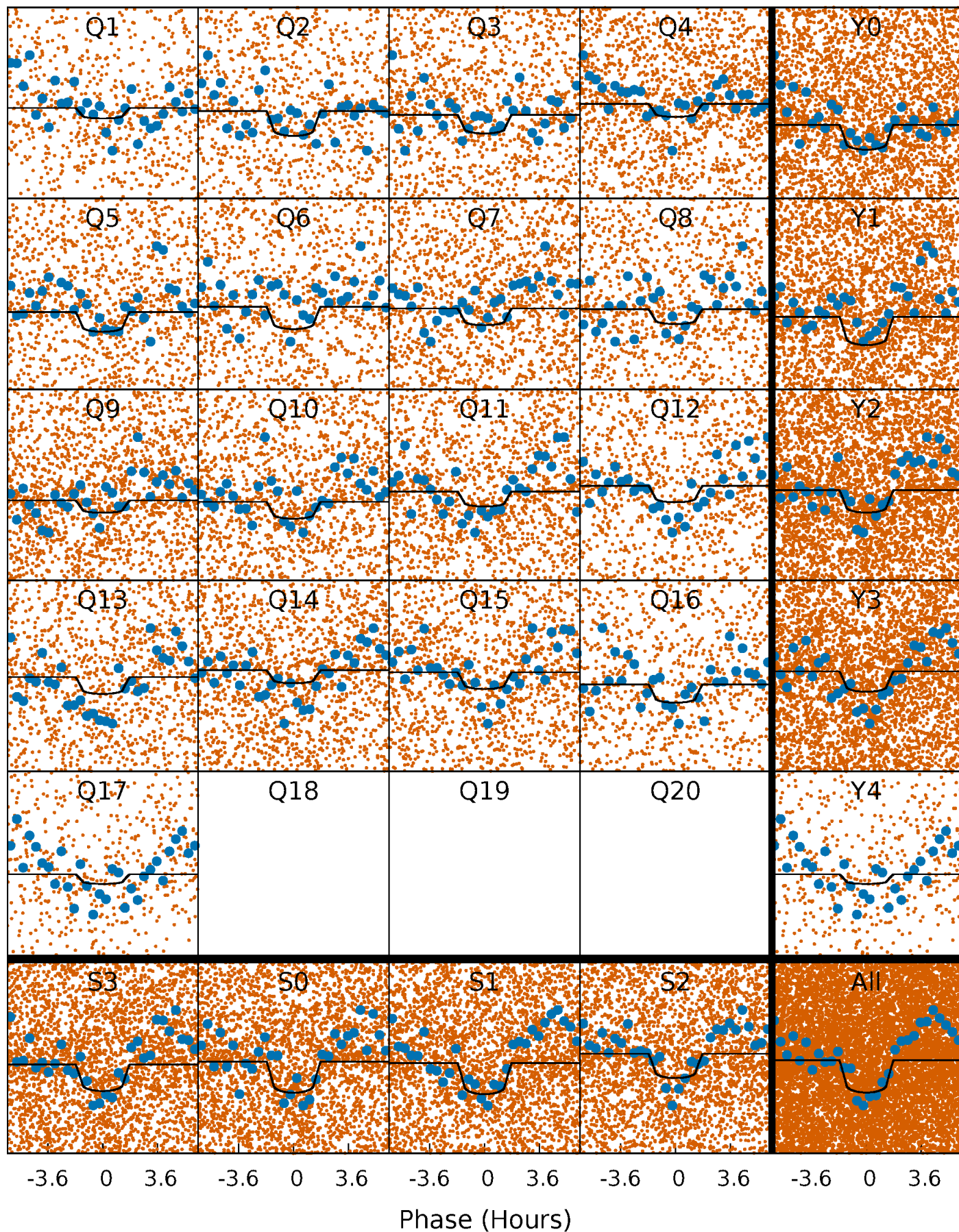
PDC Quarter-Phased Transit Curves

TCE 004242315-01 P= 1.058093 Days $T_0=131.692802$ (BKJD)



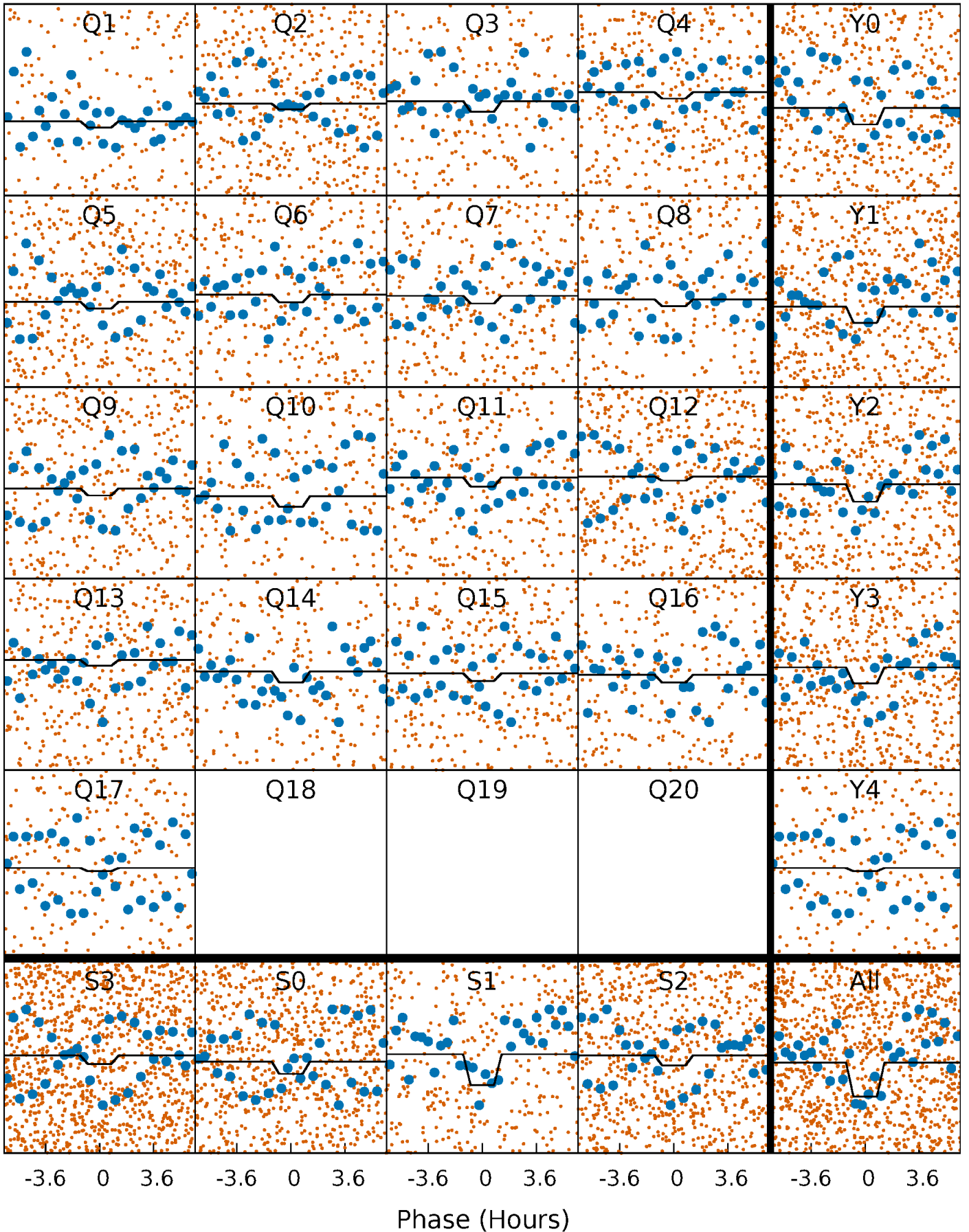
DV Quarter-Phased Transit Curves

TCE 004242315-01 P= 1.058093 Days $T_0=131.692802$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

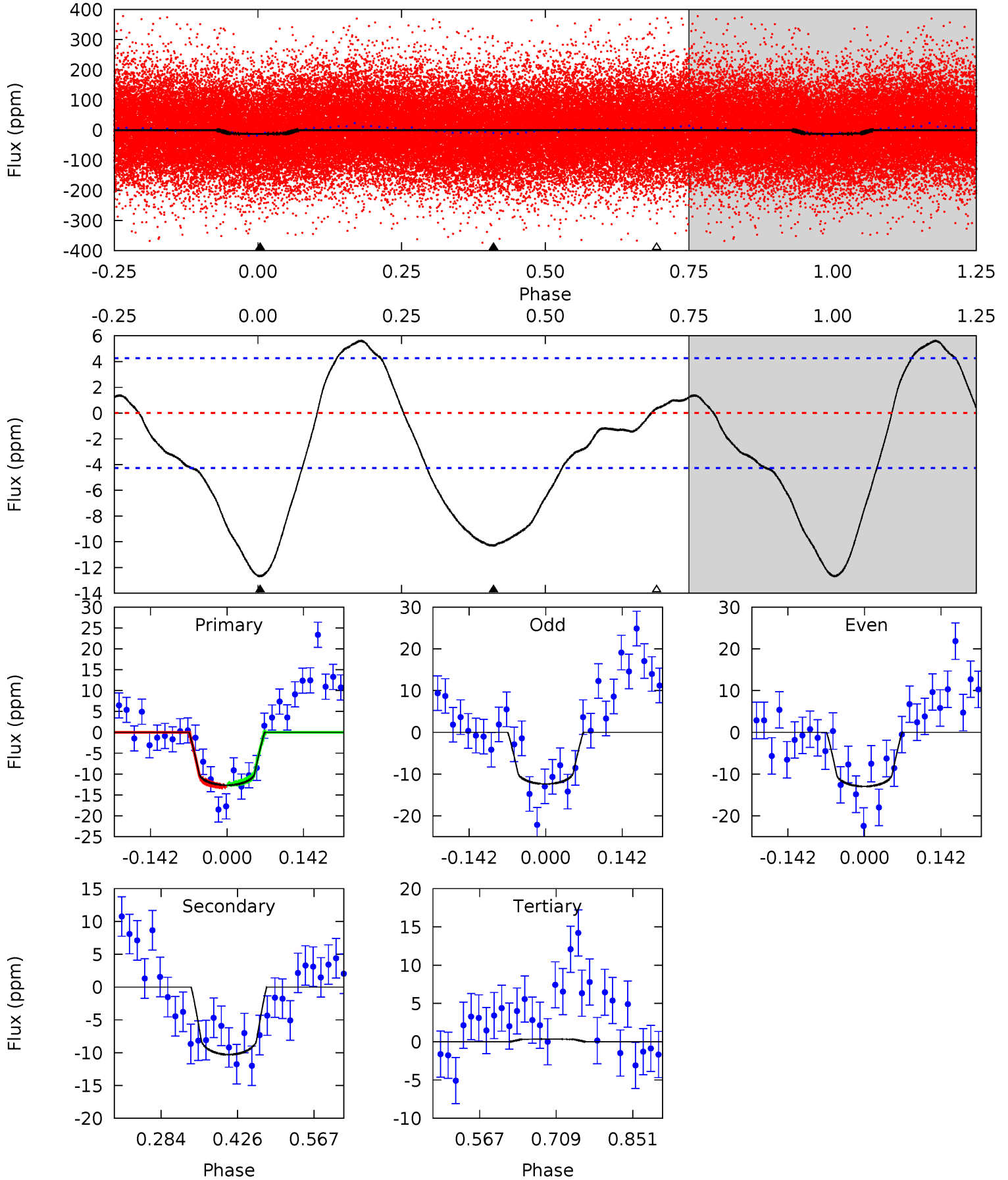
TCE 004242315-01 P= 1.058095 Days $T_0=131.692010$ (BKJD)



DV Model-Shift Uniqueness Test

004242315-01, P = 1.058093 Days, E = 130.634709 Days

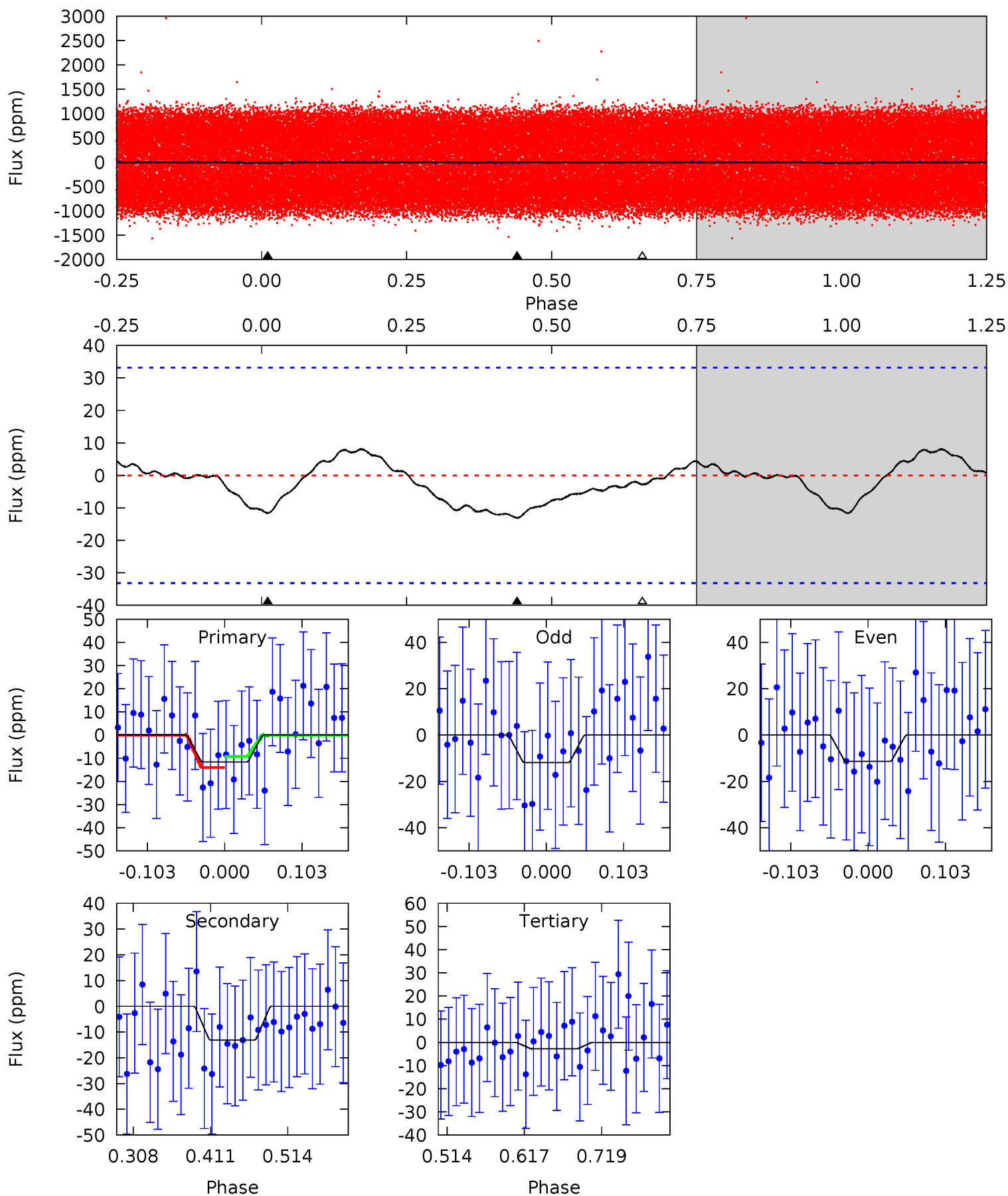
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	10.8	-0.37	0	4.49	1.47	2.72	13.7	13.3	11.2	10.8	0.31	0.95	0.31	0.29



Alt Model-Shift Uniqueness Test

004242315-01, P = 1.058095 Days, E = 130.633915 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.60	1.80	0.39	0	4.56	1.63	0.59	1.21	1.60	1.41	1.80	0.03	0.98	0.38	0.33



Stellar Parameters For KIC 004242315

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7216^{+201}_{-277}	$4.103^{+0.149}_{-0.182}$	$-0.060^{+0.250}_{-0.350}$	$1.818^{+0.563}_{-0.422}$	$1.525^{+0.212}_{-0.236}$	$0.358^{+0.279}_{-0.182}$
	+3%/-4%	+4%/-4%	+417%/-583%	+31%/-23%	+14%/-15%	+78%/-51%
Source	PHO1	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 004242315-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10 ± 1	$0.73^{+0.24}_{-0.20}$	3934^{+343}_{-264}	6607^{+1357}_{-829}	$5.772^{+5.208}_{-2.521}$
Alt.	-13 ± 7	$0.72^{+0.25}_{-0.22}$	3939^{+305}_{-270}	7112^{+2050}_{-1646}	$7.278^{+10.082}_{-4.563}$

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

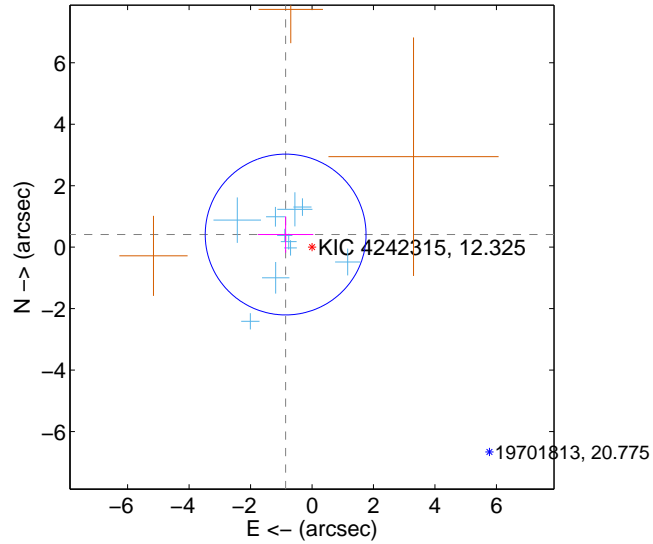
Supplemental centroid analysis for 004242315-01. Kepler magnitude: 12.32. Transit SNR 8.50

There are 10 quarters with good PRF difference image offsets

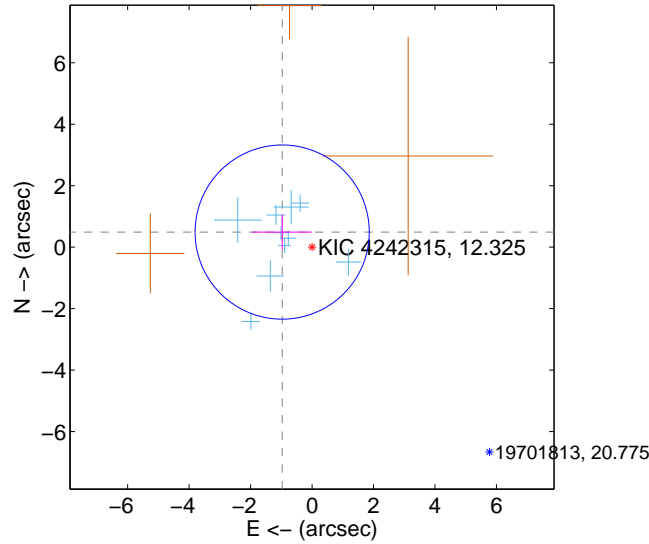
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.952 ± 0.872	1.09	0.858 ± 0.901	0.411 ± 0.593
PRF-fit source offset from KIC position	1.089 ± 0.945	1.15	0.972 ± 0.975	0.491 ± 0.576
photometric centroid source offset	2.13 ± 1.48	1.44	-0.51 ± 1.36	2.06 ± 1.48

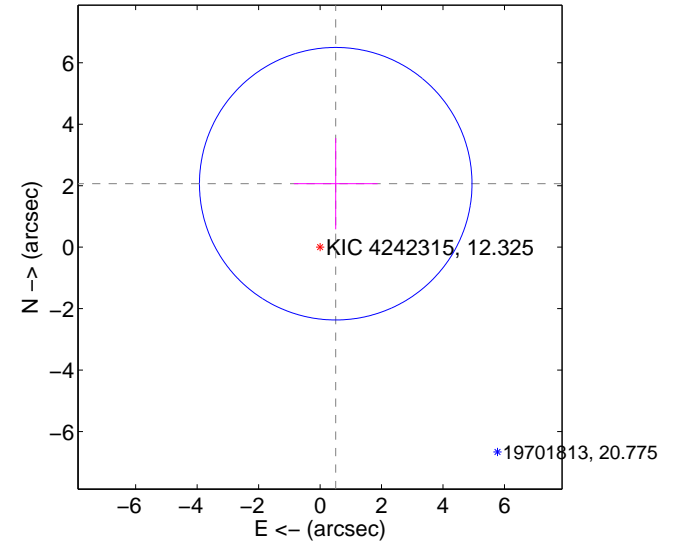
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

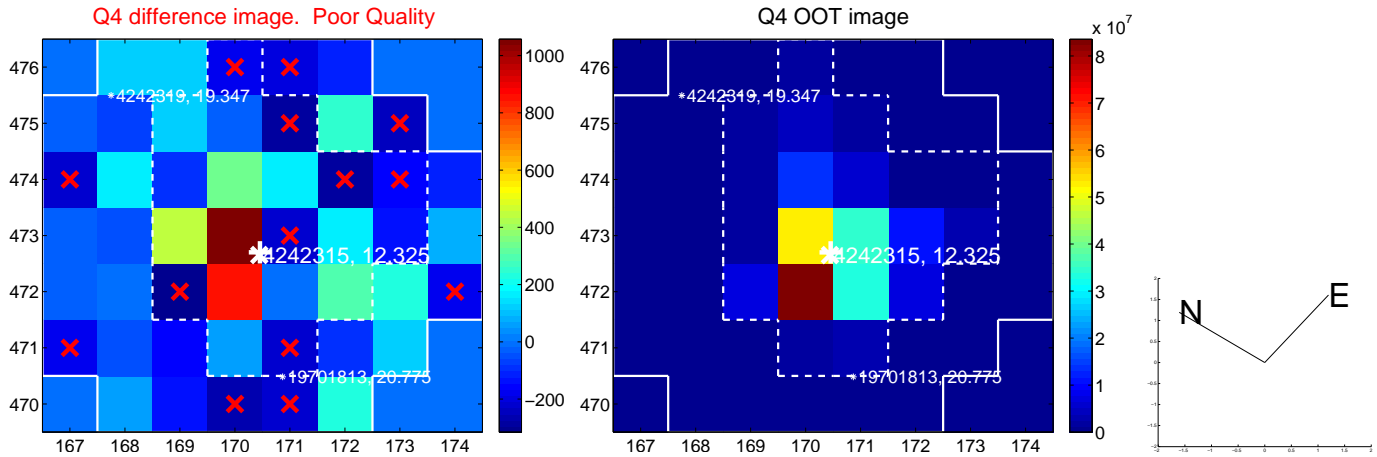
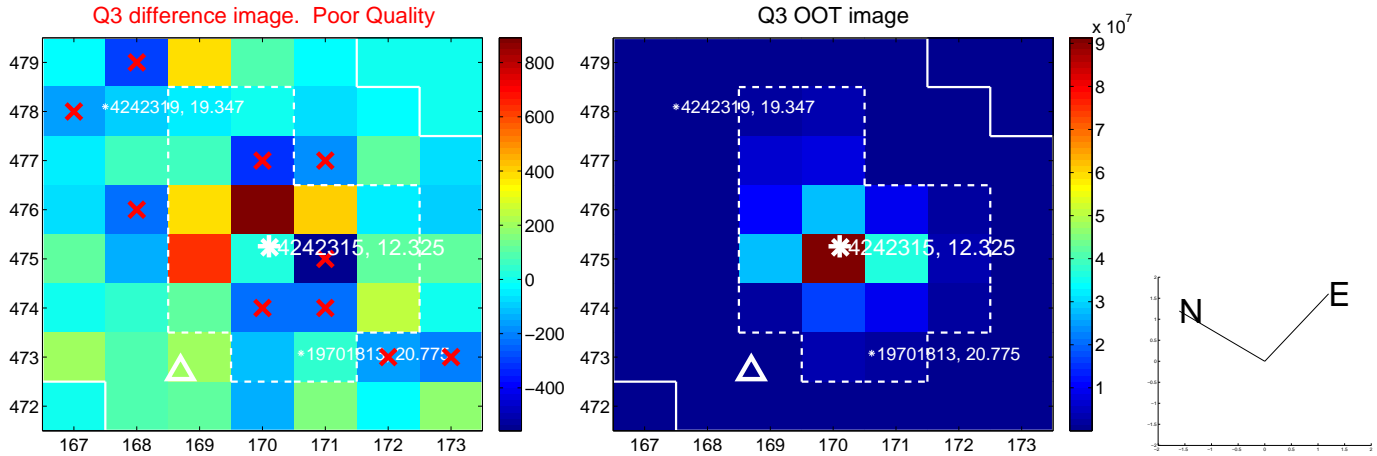
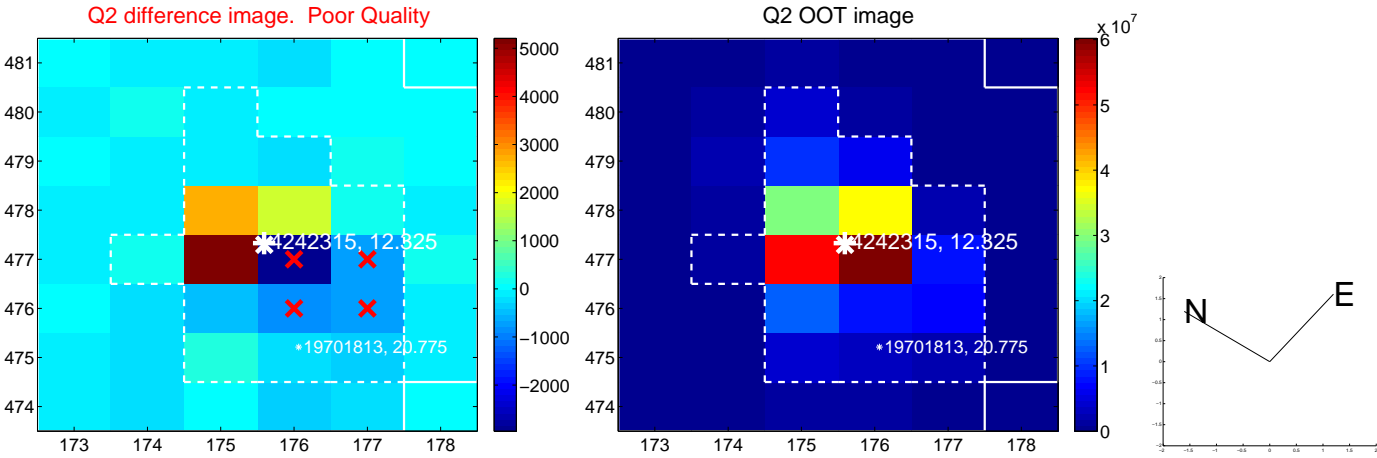
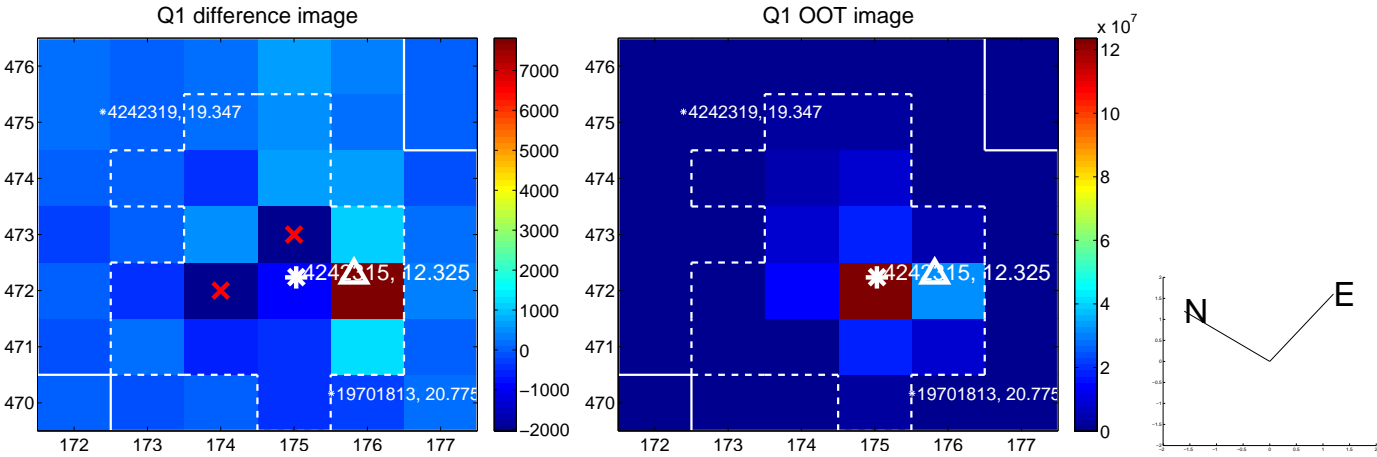


offset from photometric centroids

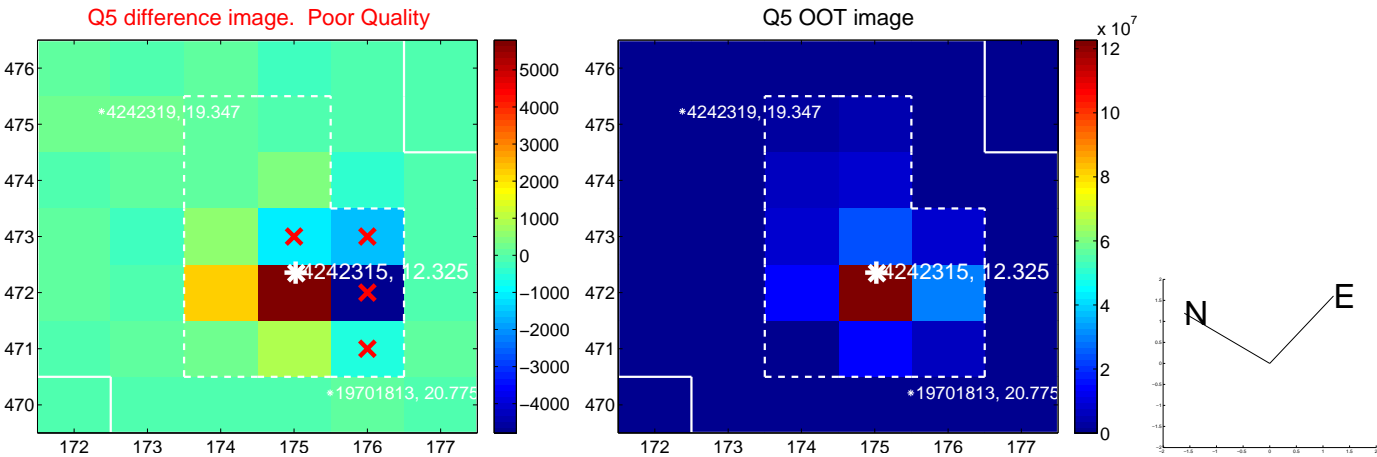


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

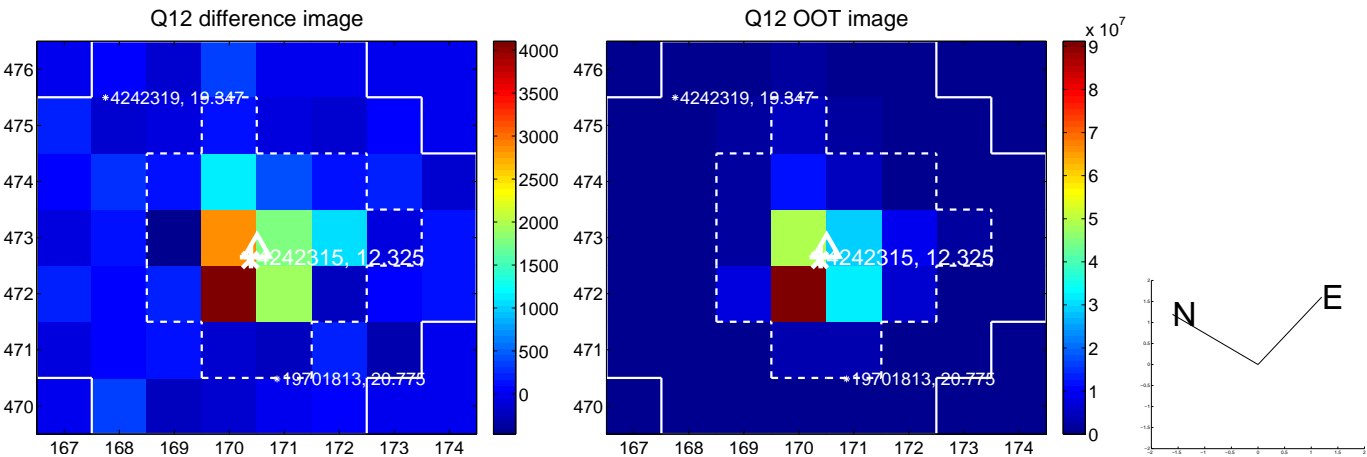
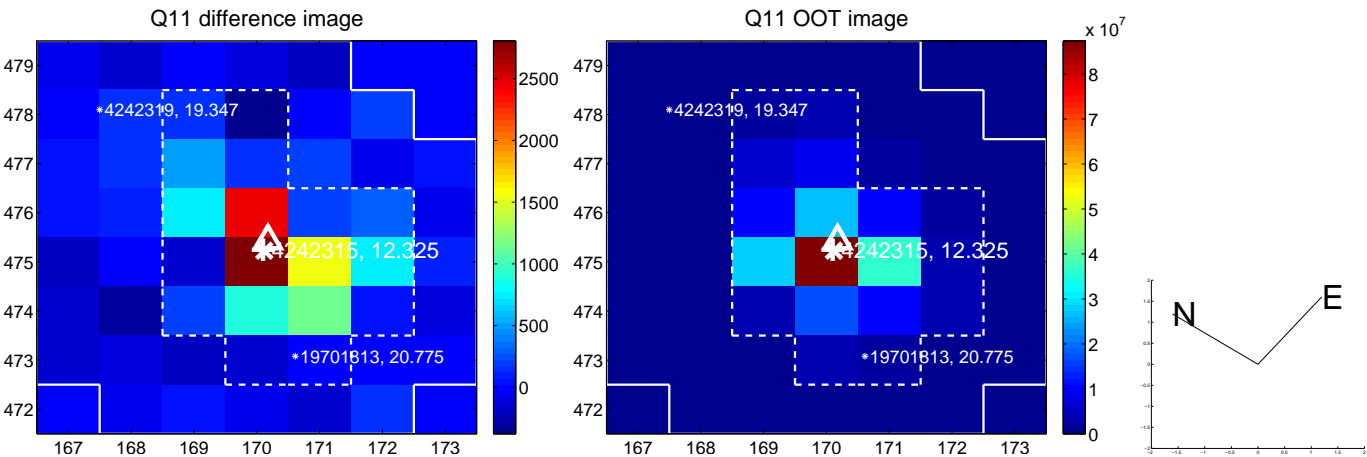
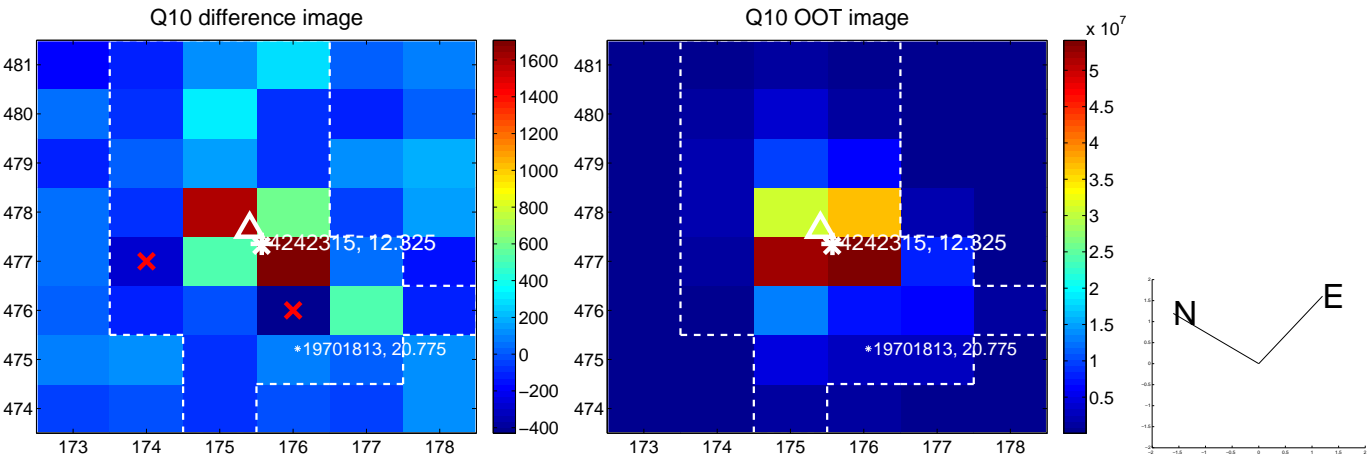
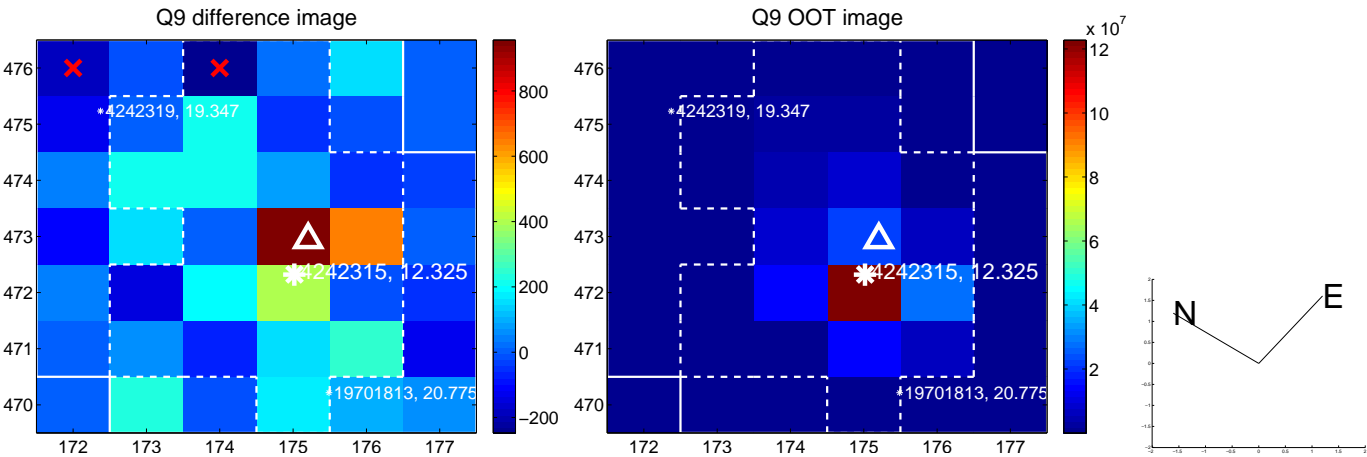
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



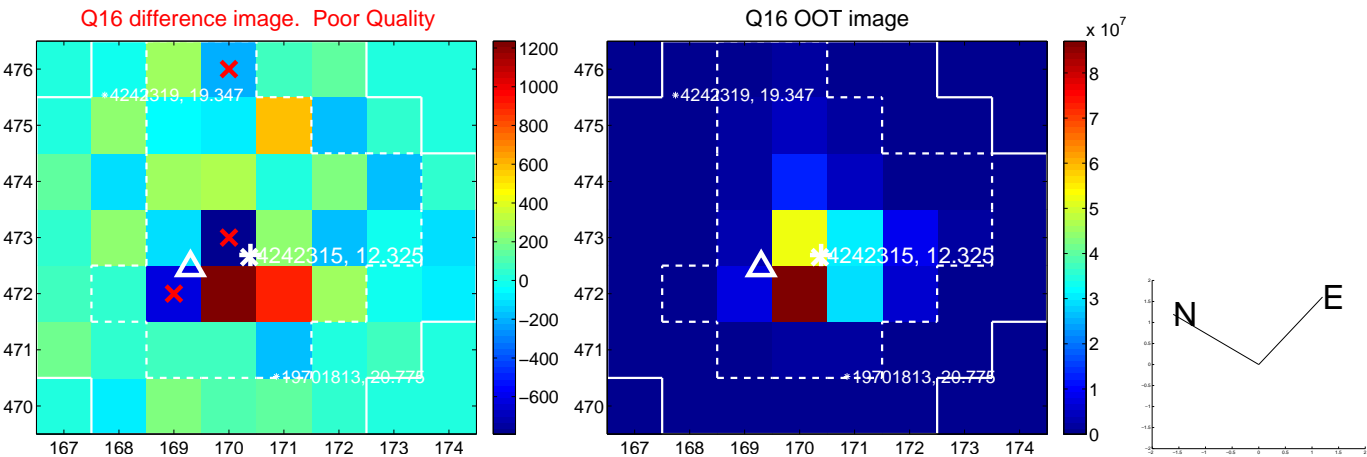
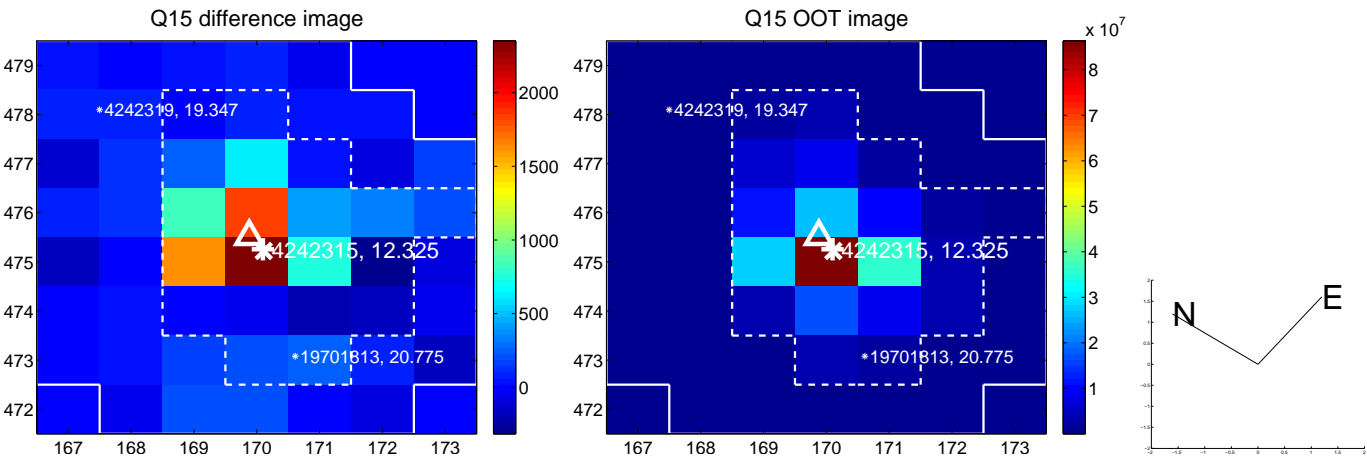
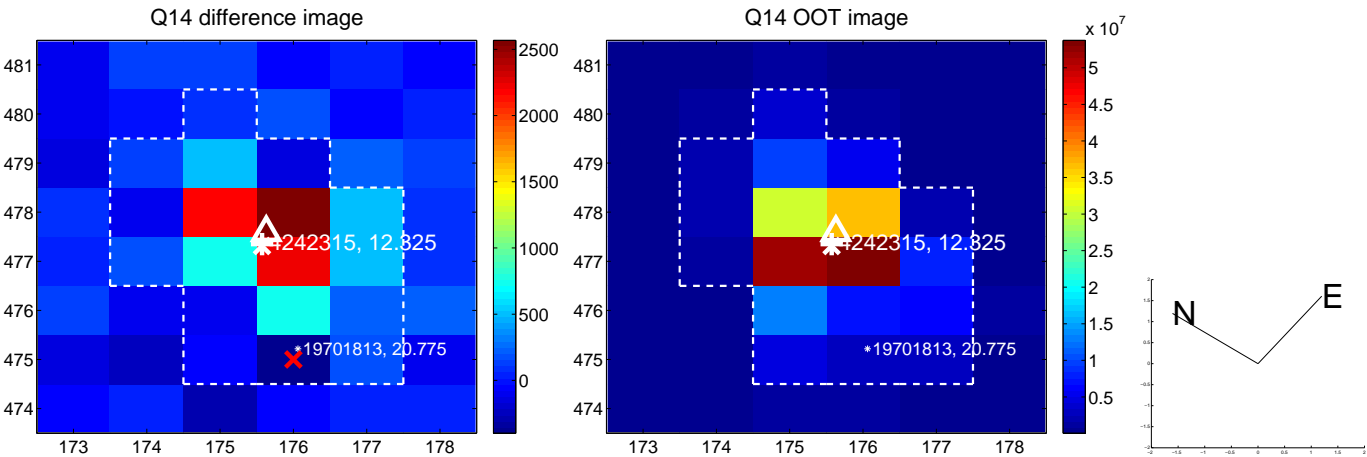
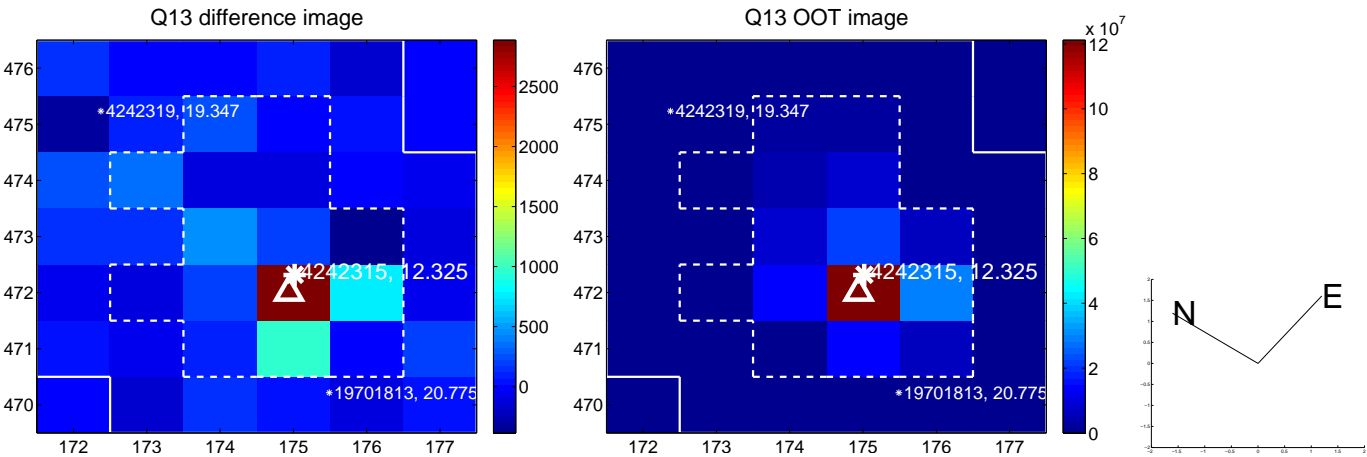
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



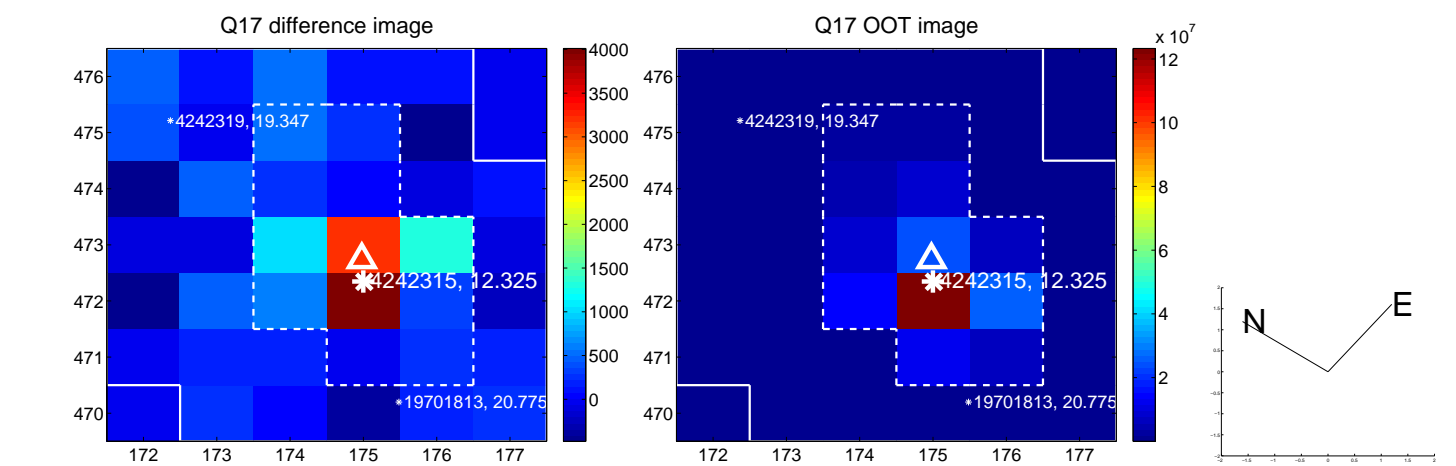
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



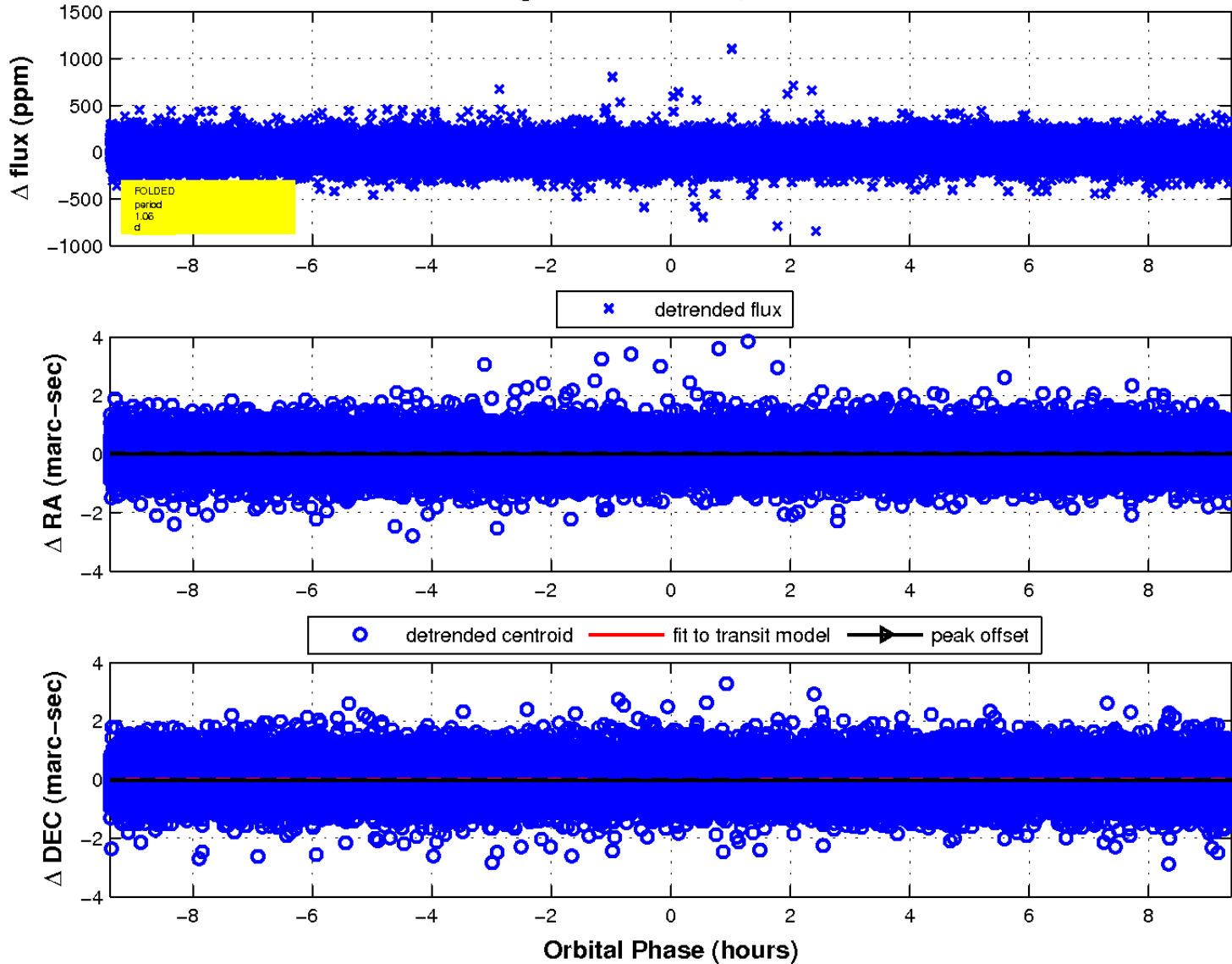
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

