

KIC 004848424

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})
004848424-01	OBS	2991.01	1.501801	131.556177	93.1	3.173	16.6	17.2	0.74	5024	0.69	539.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004848424-01	OBS	FP	0.00	0	0	1	1	HALO_GHOST—EPHEM_MATCH

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 004848424-01

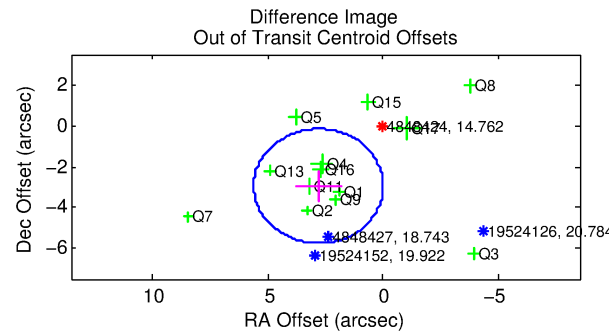
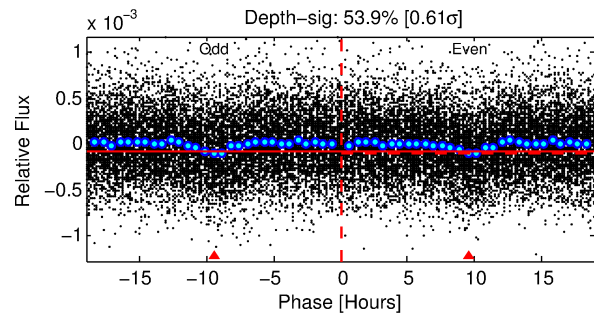
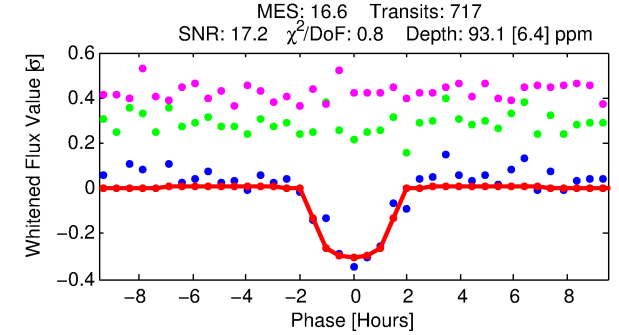
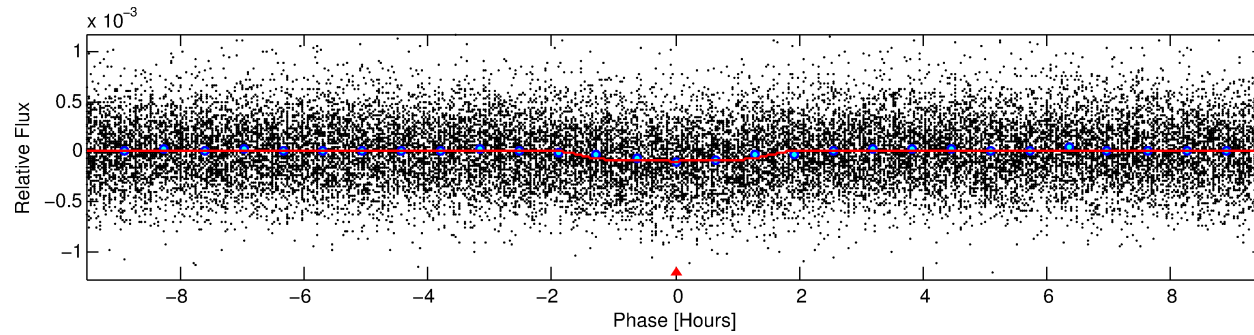
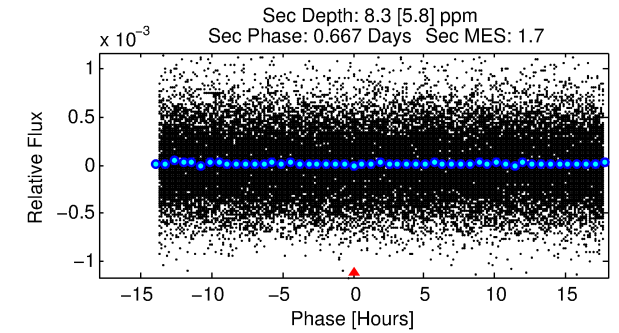
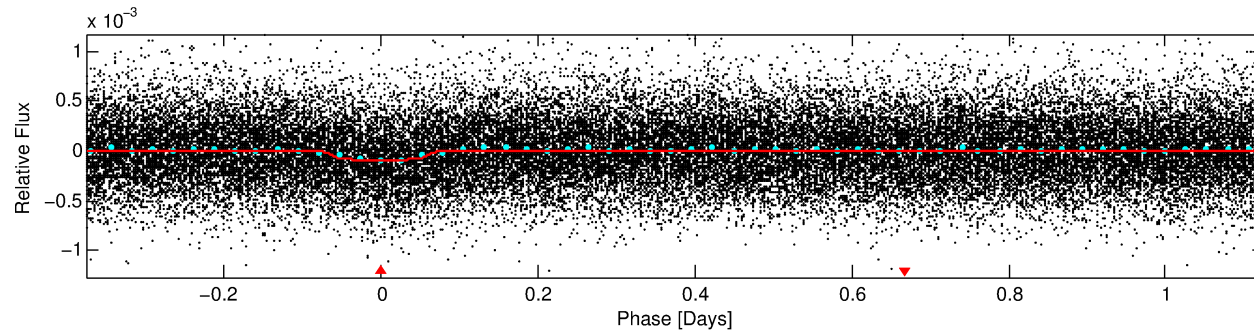
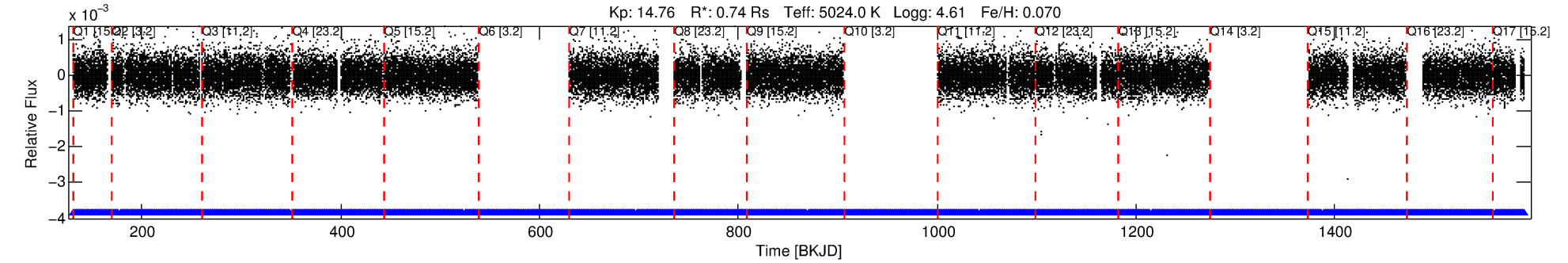
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004848424-01	4848424	004848423-01	4848423	1:1	83.1	-18	-11	11.82	14.76	4365.10	Direct-PRF	0	1.51	1.15

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4848424 Candidate: 1 of 1 Period: 1.502 d

KOI: K02991.01 Corr: 0.973



DV Fit Results:

Period = 1.50180 [0.00001] d
Epoch = 131.5562 [0.0028] BKJD
Rp/R* = 0.0086 [0.0093]
a/R* = 3.67 [12.42]
b = 0.12 [31.78]
Seff = 539.75 [129.54]
Teq = 1229 [74] K
Rp = 0.69 [0.75] Re
a = 0.0239 [0.0027] AU
Ag = 5.49 [12.53] [0.36σ]
Teffp = 2909 [1661] K [1.01σ]

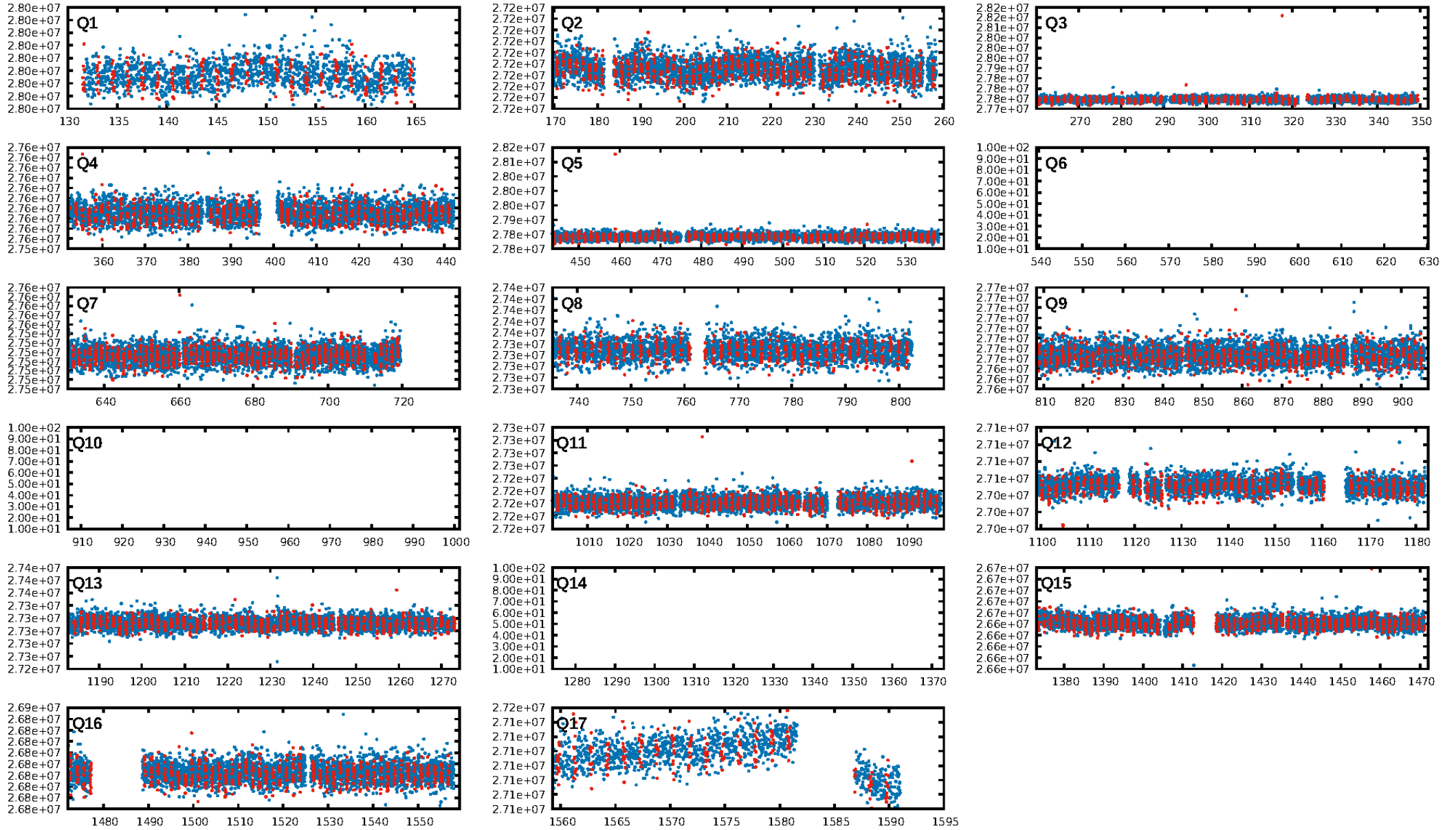
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.39e-60
RollingBand-fgt: 1.00 [676/676]
GhostDiagnostic-chr: 0.0444
Centroid-sig: 0.0%
Centroid-so: 4.324 arcsec [4.92σ]
OotOffset-rm: 4.073 arcsec [4.36σ]
KicOffset-rm: 4.065 arcsec [4.56σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.23 [3/13]
DiffImageOverlap-fno: 1.00 [14/14]

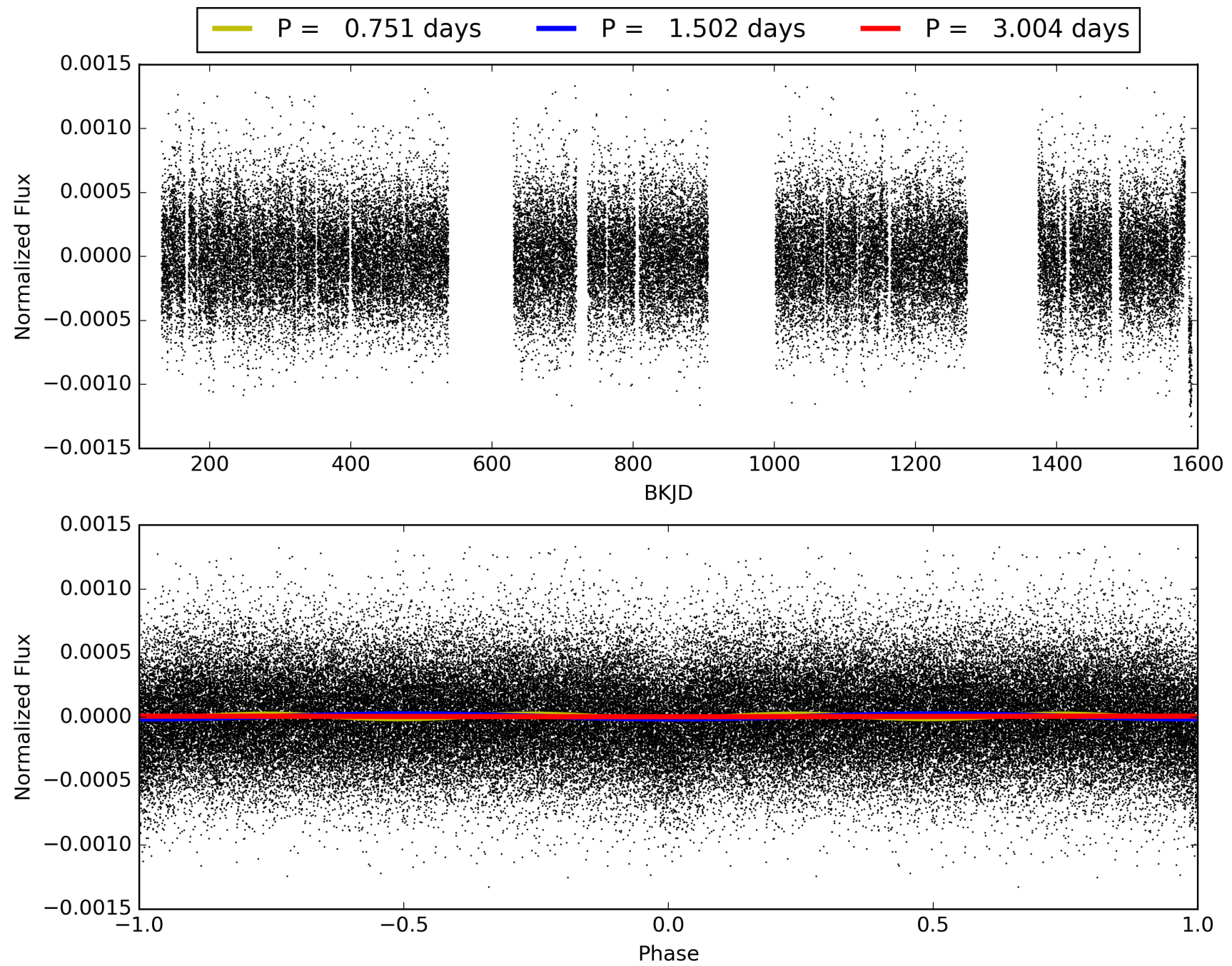
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:11:36 Z

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

TCE 004848424-01, PDC Light Curves

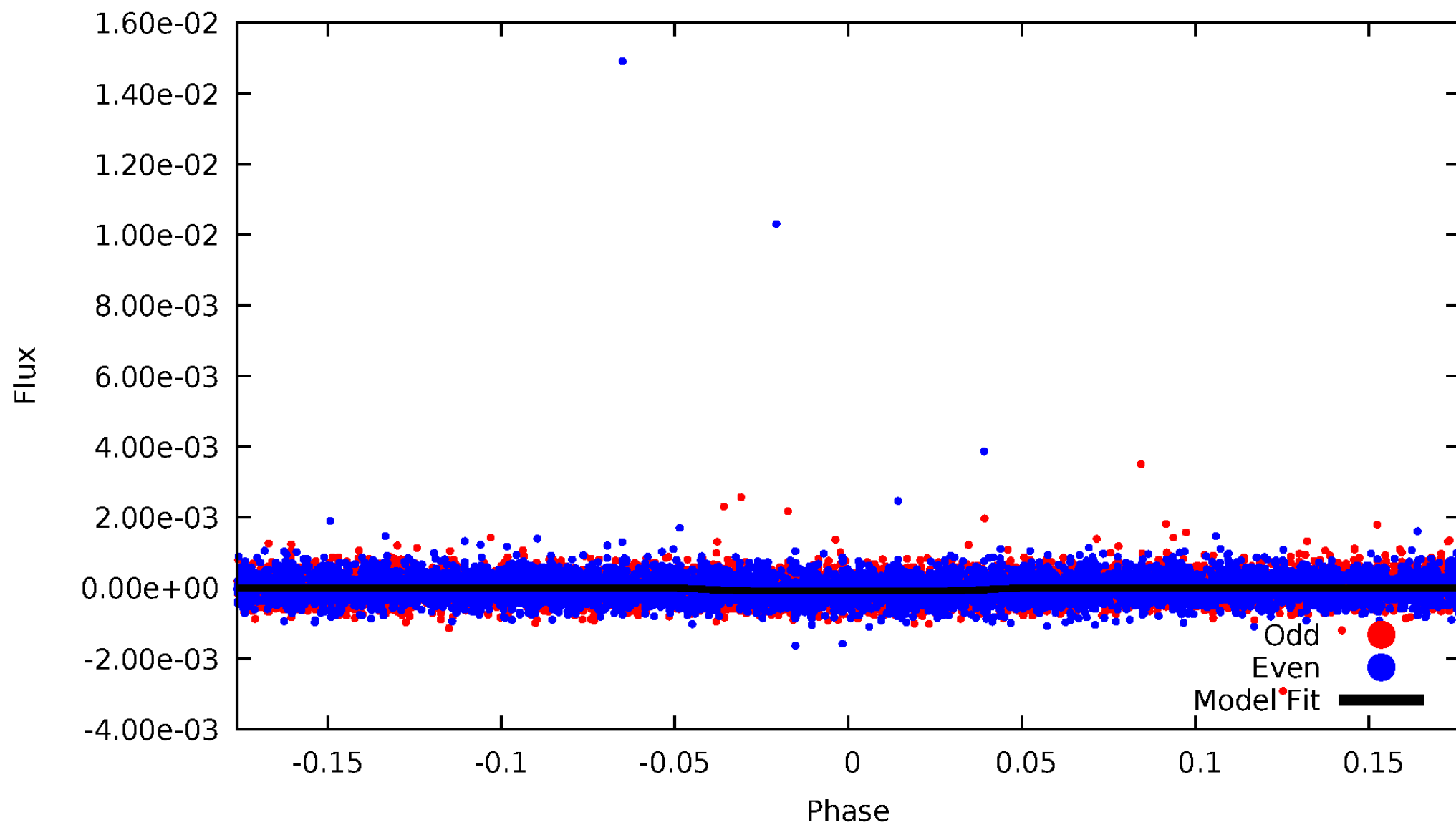


TCE 004848424-01



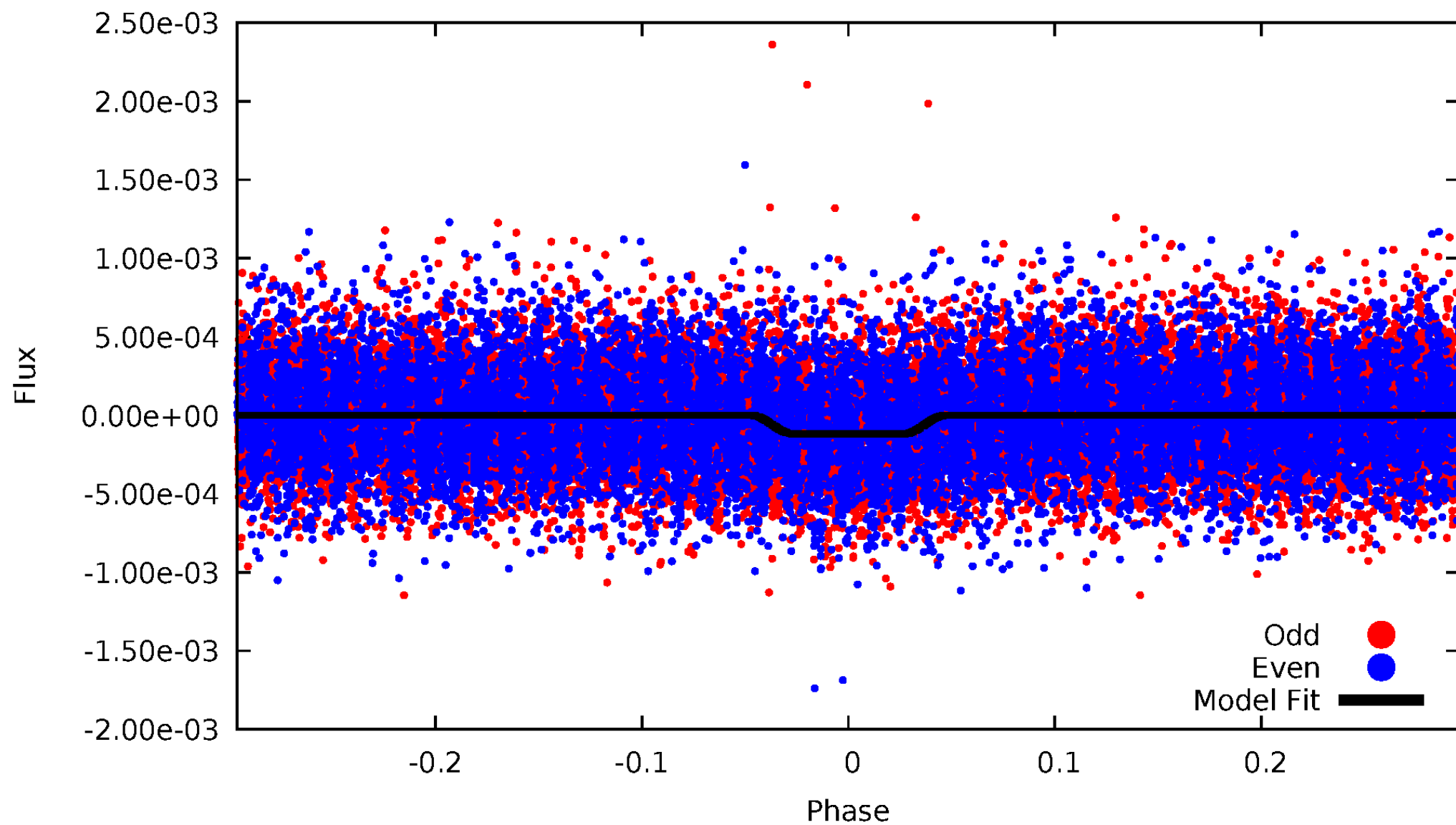
DV Odd/Even

TCE 004848424-01



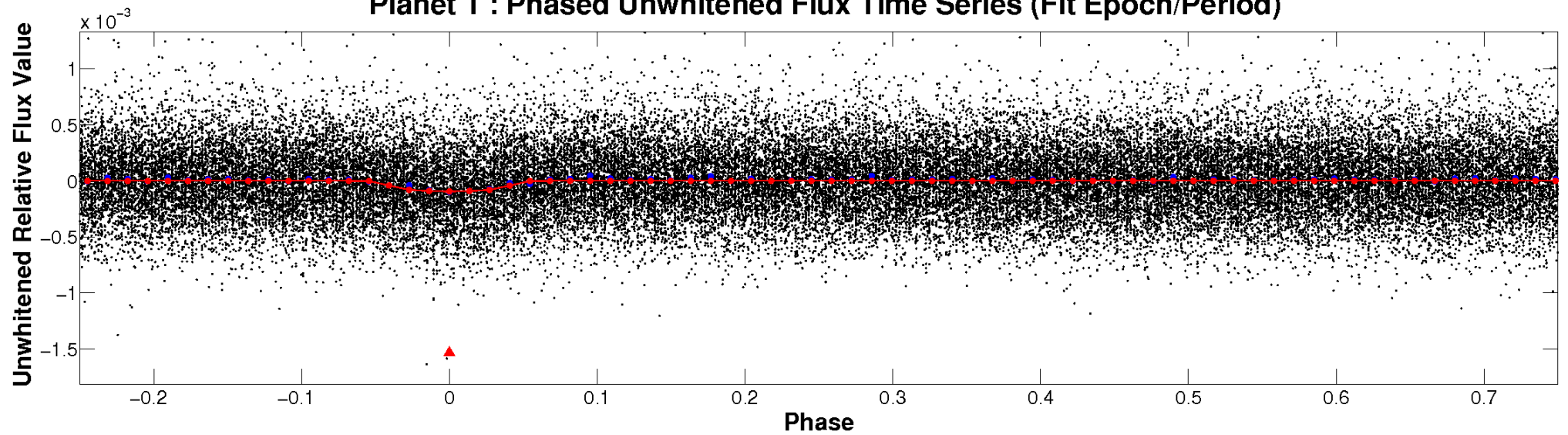
ALT Odd/Even

TCE 004848424-01

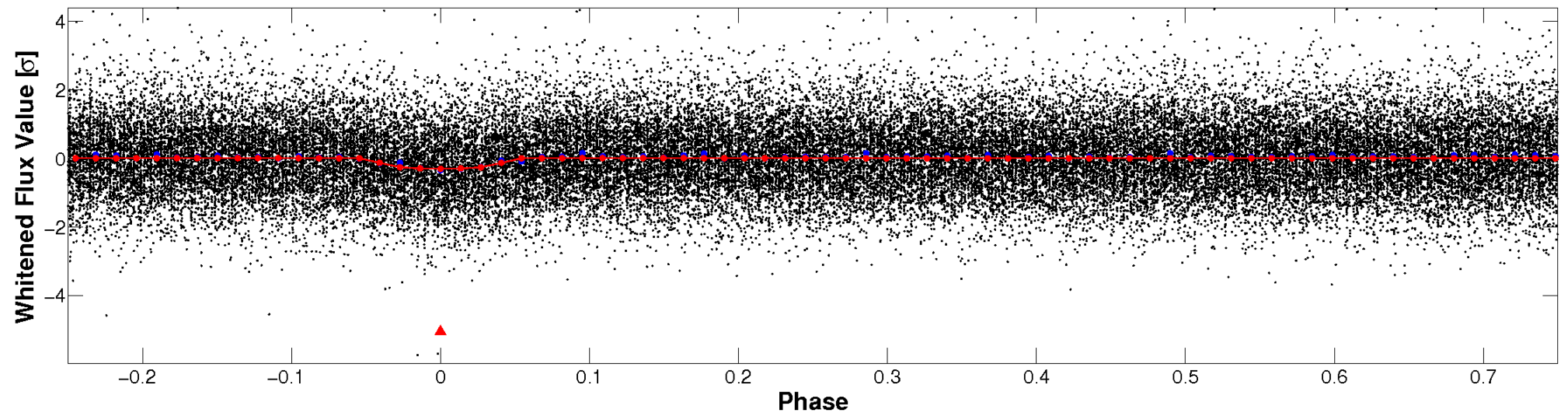


Non-Whitened Vs. Whitened Light Curve

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

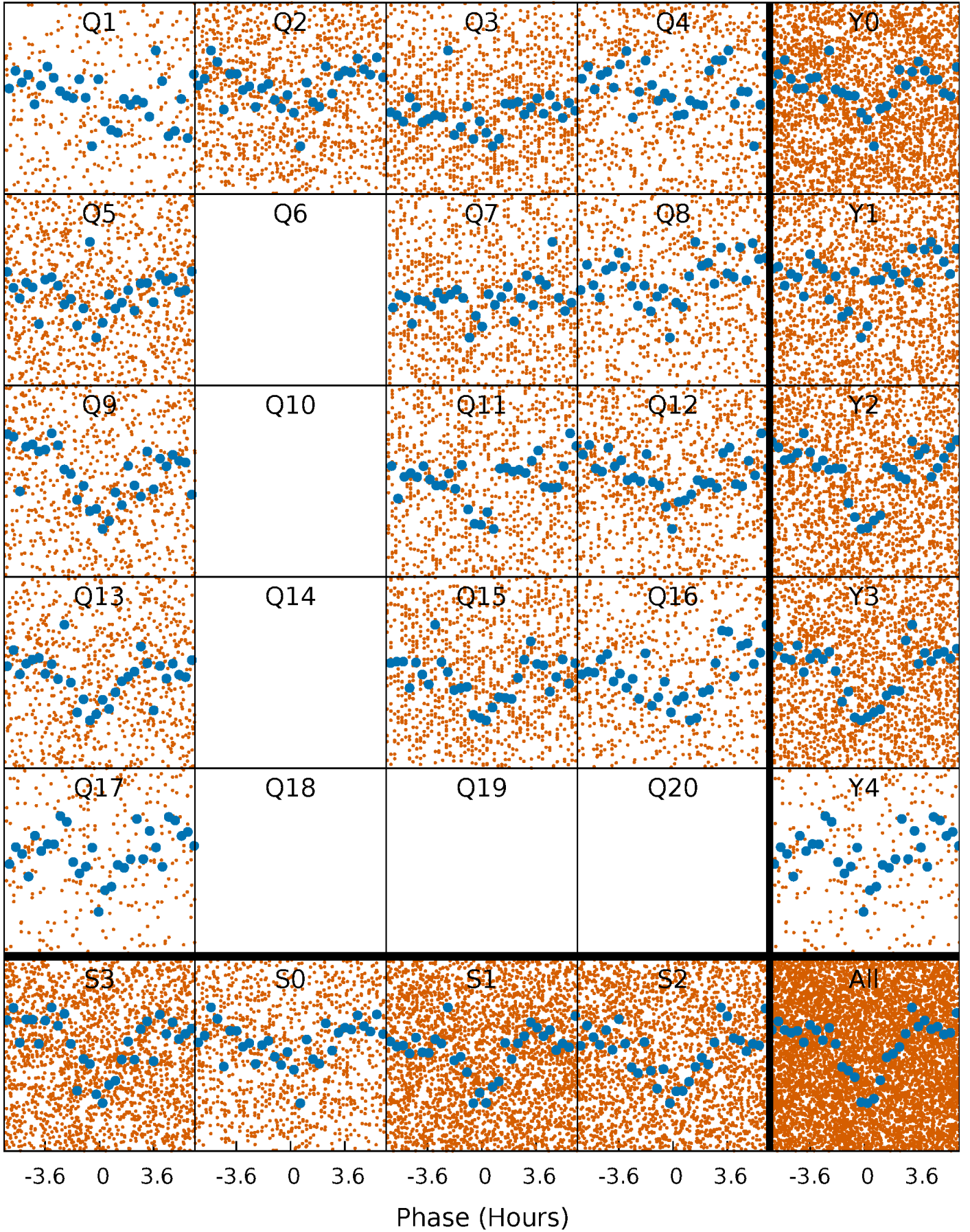


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



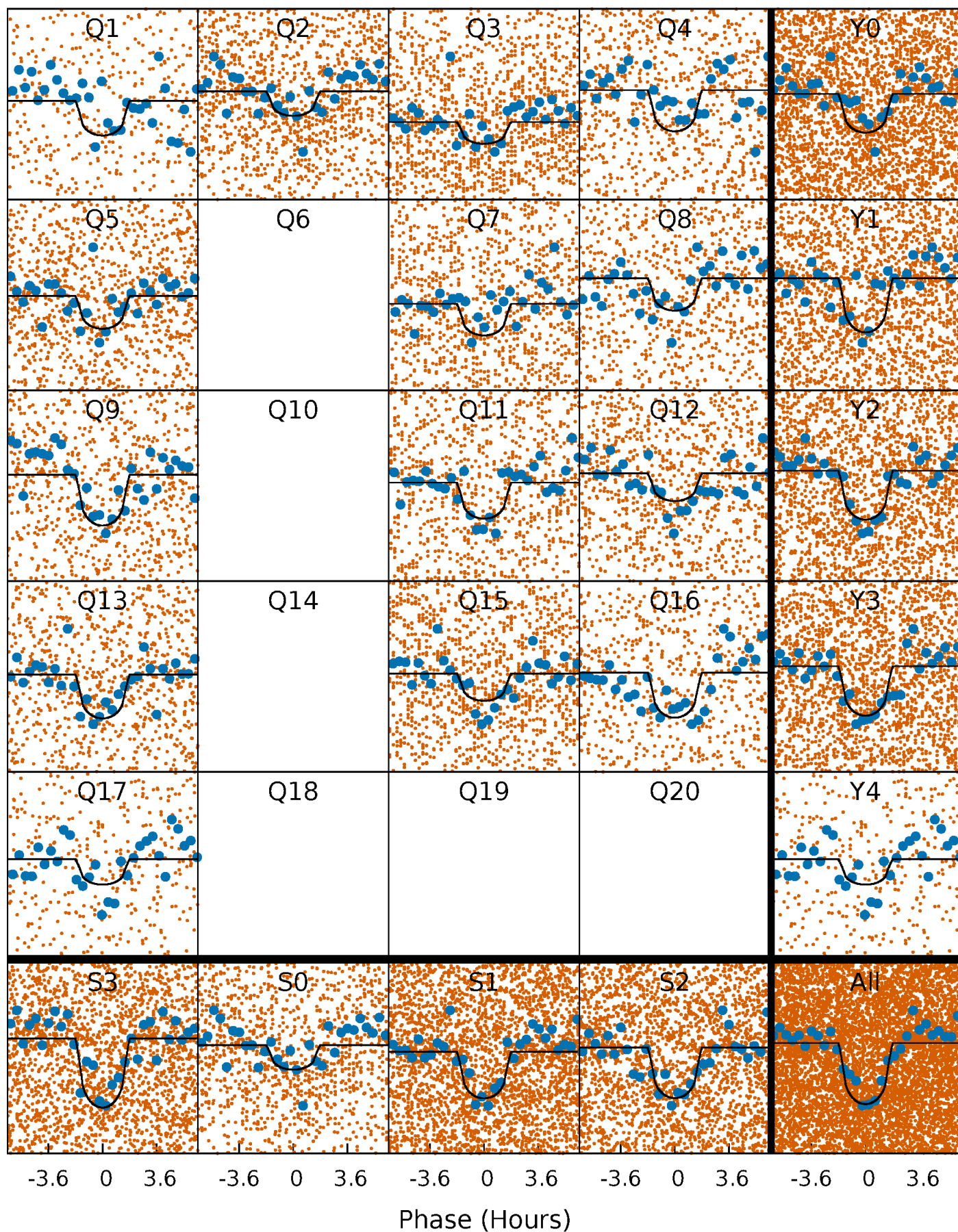
PDC Quarter-Phased Transit Curves

TCE 004848424-01 P= 1.501801 Days $T_0=131.556176$ (BKJD)



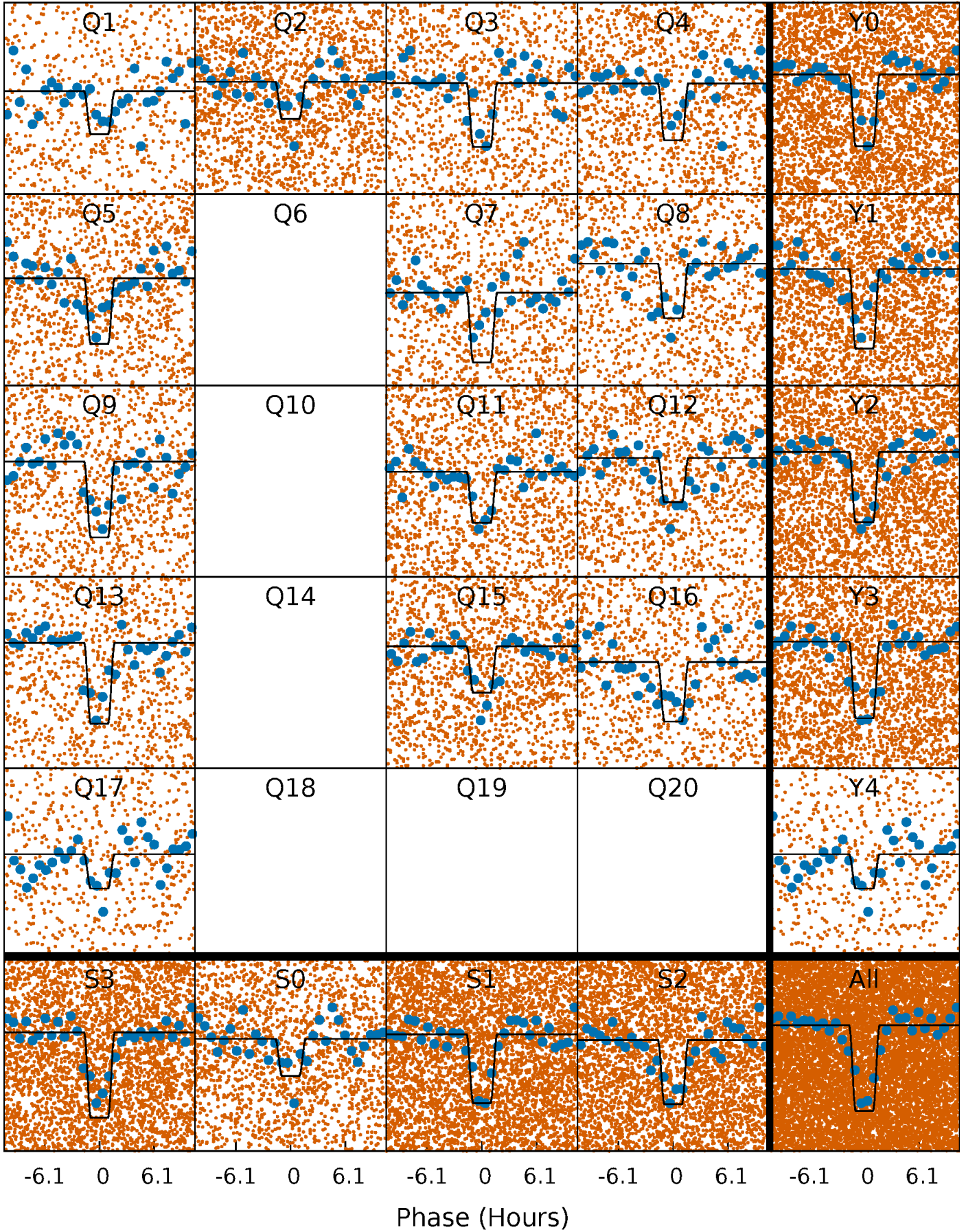
DV Quarter-Phased Transit Curves

TCE 004848424-01 P= 1.501801 Days $T_0=131.556176$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

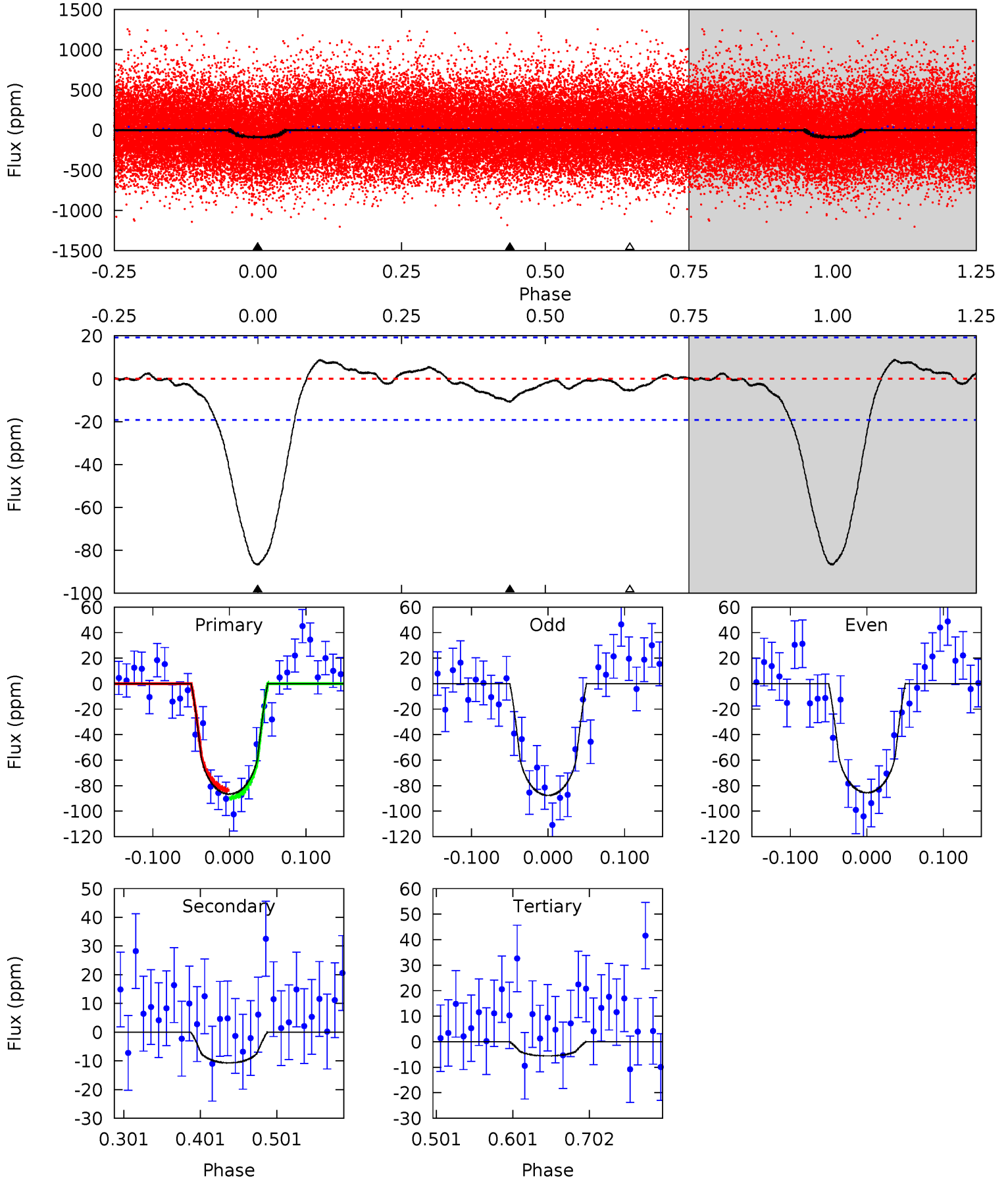
TCE 004848424-01 P= 1.501797 Days $T_0=131.560834$ (BKJD)



DV Model-Shift Uniqueness Test

004848424-01, P = 1.501801 Days, E = 130.054375 Days

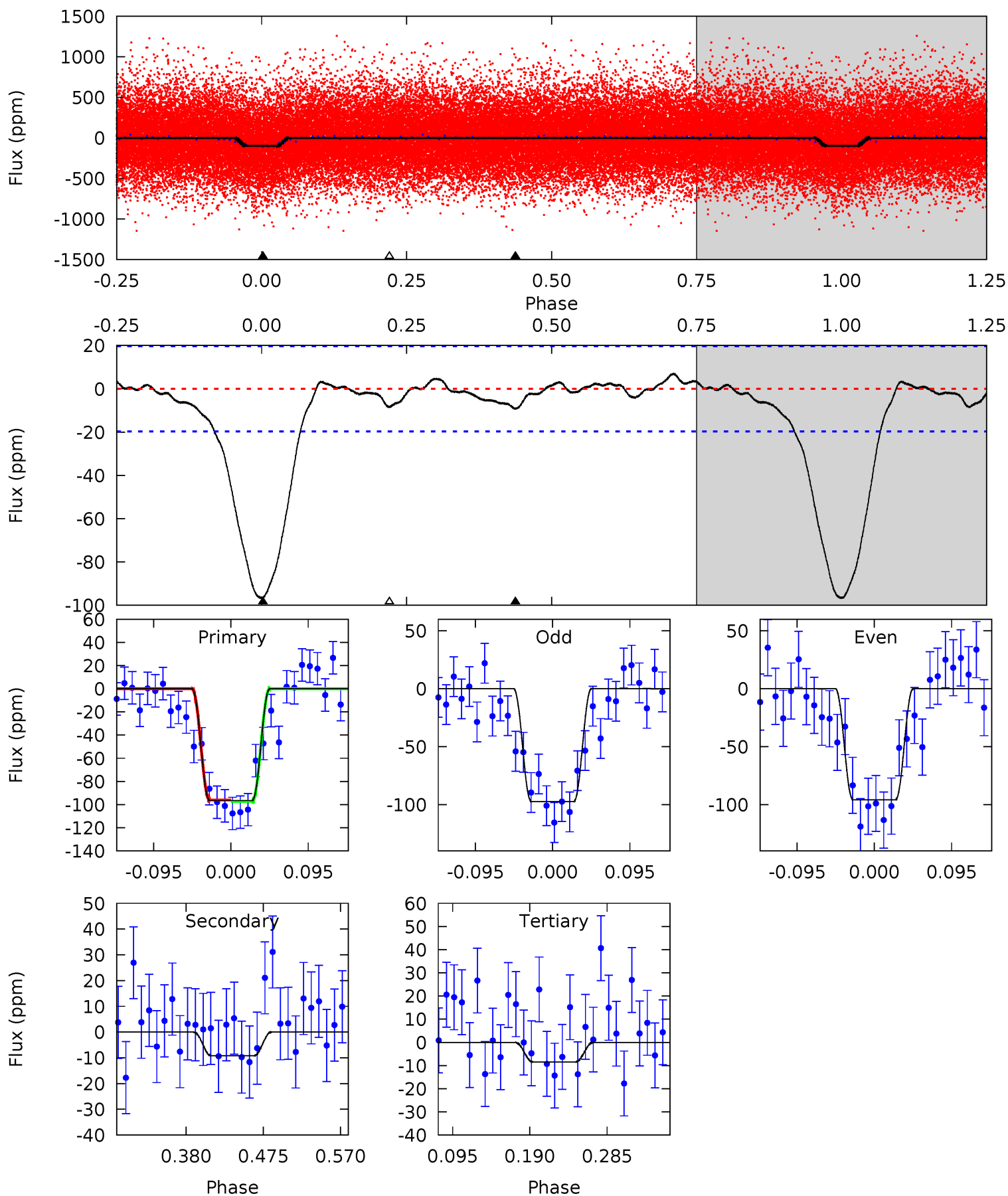
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	2.54	1.32	0	4.56	1.64	0.81	19.2	20.5	1.22	2.54	0.25	0.88	0.09	0.71



Alt Model-Shift Uniqueness Test

004848424-01, P = 1.501797 Days, E = 130.059037 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	2.13	1.96	0	4.58	1.67	0.87	20.5	22.4	0.18	2.13	0.17	0.99	0.07	0.14



Stellar Parameters For KIC 004848424

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5024^{+227}_{-227}	$4.613^{+0.028}_{-0.083}$	$0.070^{+0.250}_{-0.300}$	$0.736^{+0.103}_{-0.055}$	$0.845^{+0.064}_{-0.095}$	$2.981^{+0.365}_{-0.873}$
	+5%/-5%	+1%/-2%	+357%/-429%	+14%/-7%	+8%/-11%	+12%/-29%
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 004848424-01 / KOI 2991.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 4	$0.88^{+0.69}_{-0.60}$	1741^{+88}_{-90}	3267^{+1569}_{-643}	$4.252^{+36.141}_{-3.102}$
Alt.	-9 ± 4	$1.01^{+0.73}_{-0.60}$	1735^{+98}_{-85}	2998^{+1078}_{-596}	$2.635^{+13.653}_{-1.874}$

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

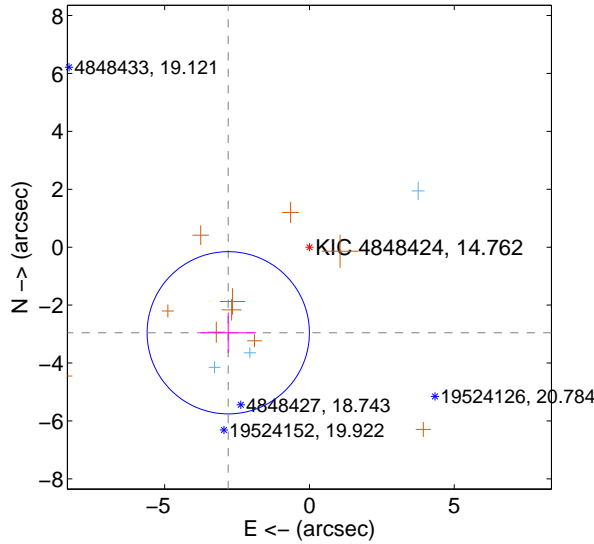
Supplemental centroid analysis for 004848424-01. Kepler magnitude: 14.76. Transit SNR 17.16

There are 3 quarters with good PRF difference image offsets

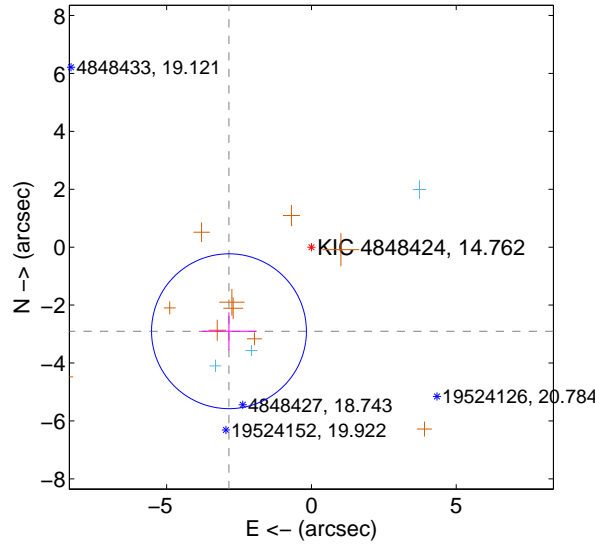
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.073 ± 0.933	4.36	2.803 ± 0.958	-2.955 ± 0.699
PRF-fit source offset from KIC position	4.065 ± 0.891	4.56	2.846 ± 0.941	-2.902 ± 0.652
photometric centroid source offset	4.32 ± 0.88	4.92	3.69 ± 0.87	-2.26 ± 0.91

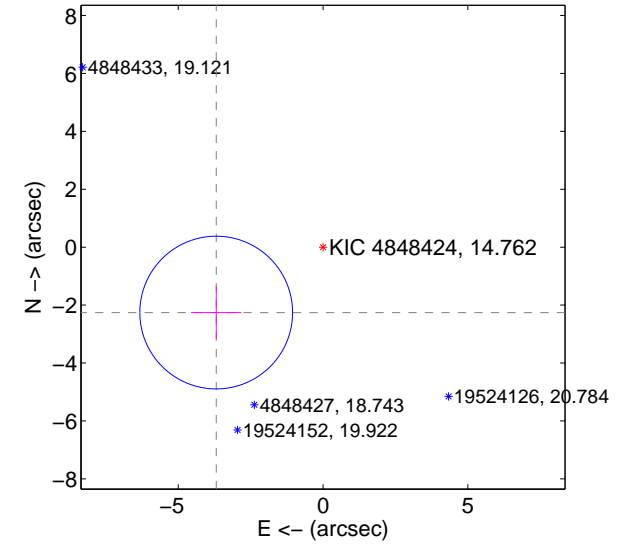
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

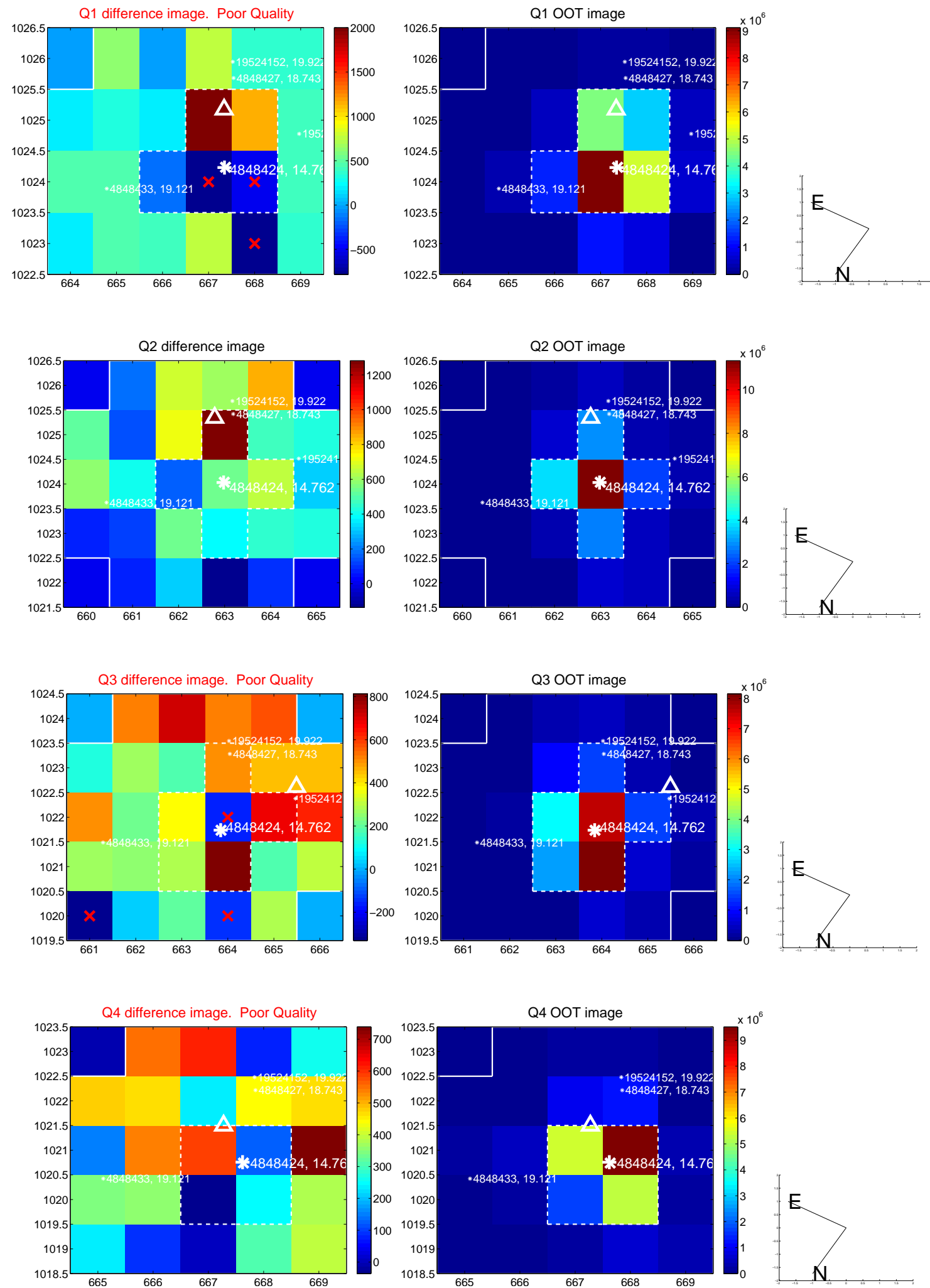


offset from photometric centroids

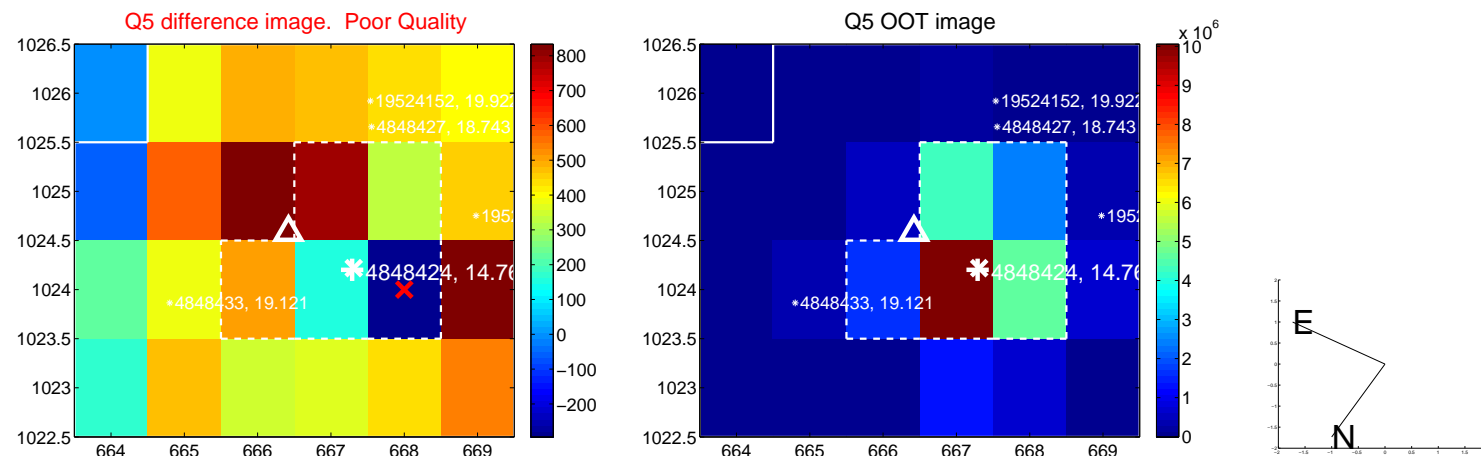


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

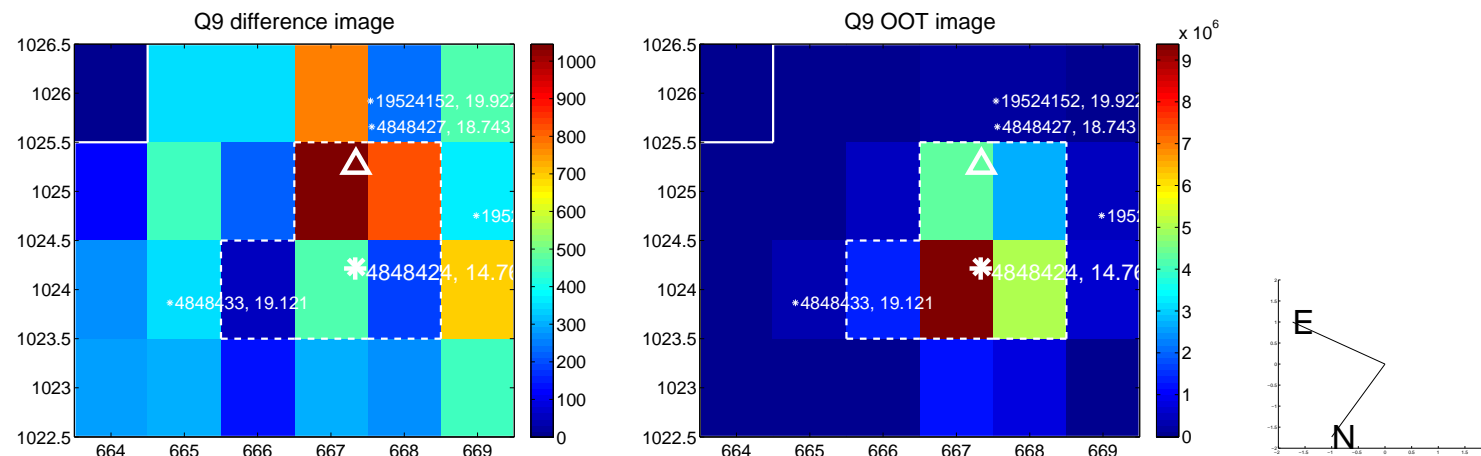
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



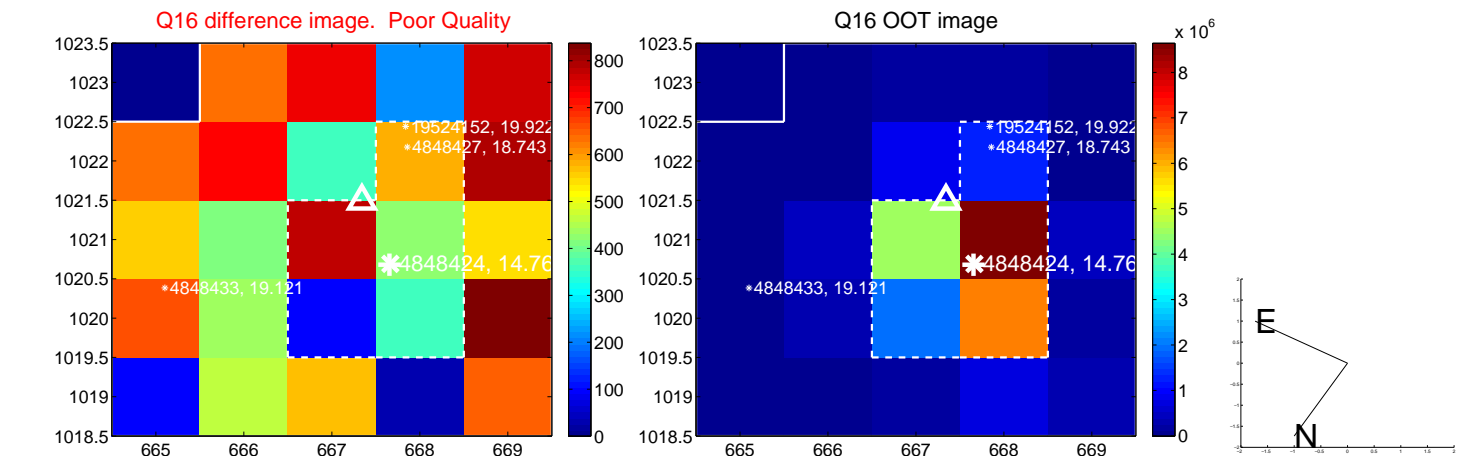
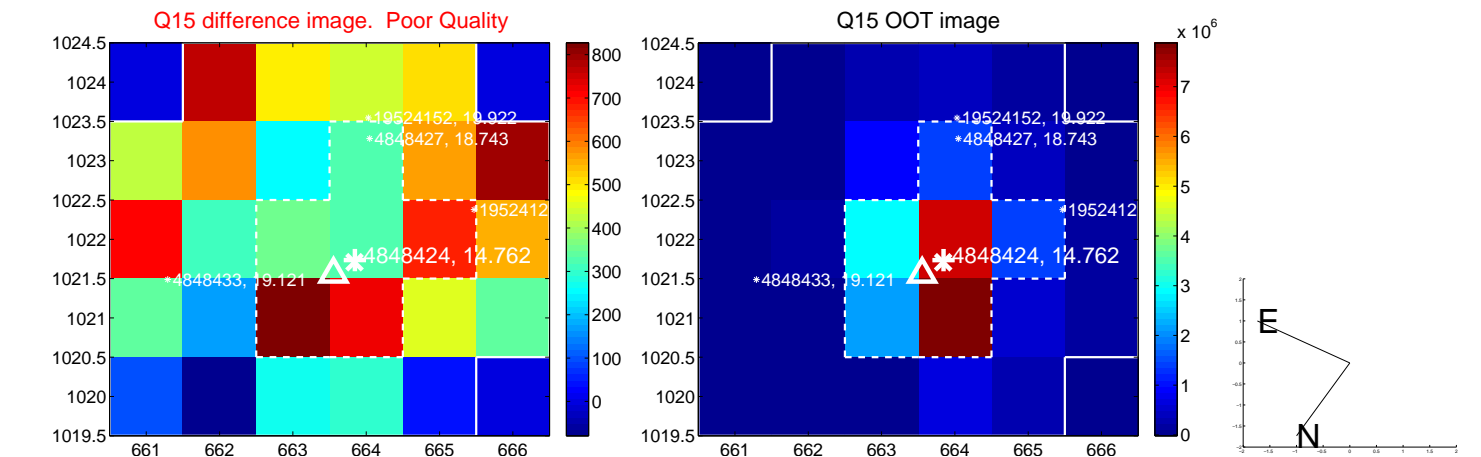
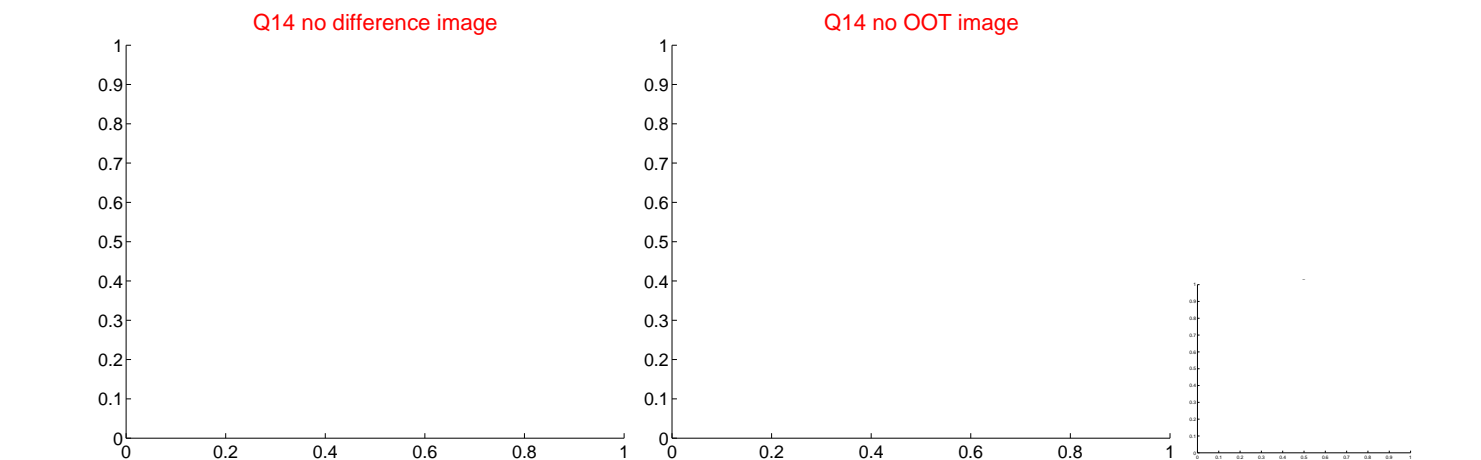
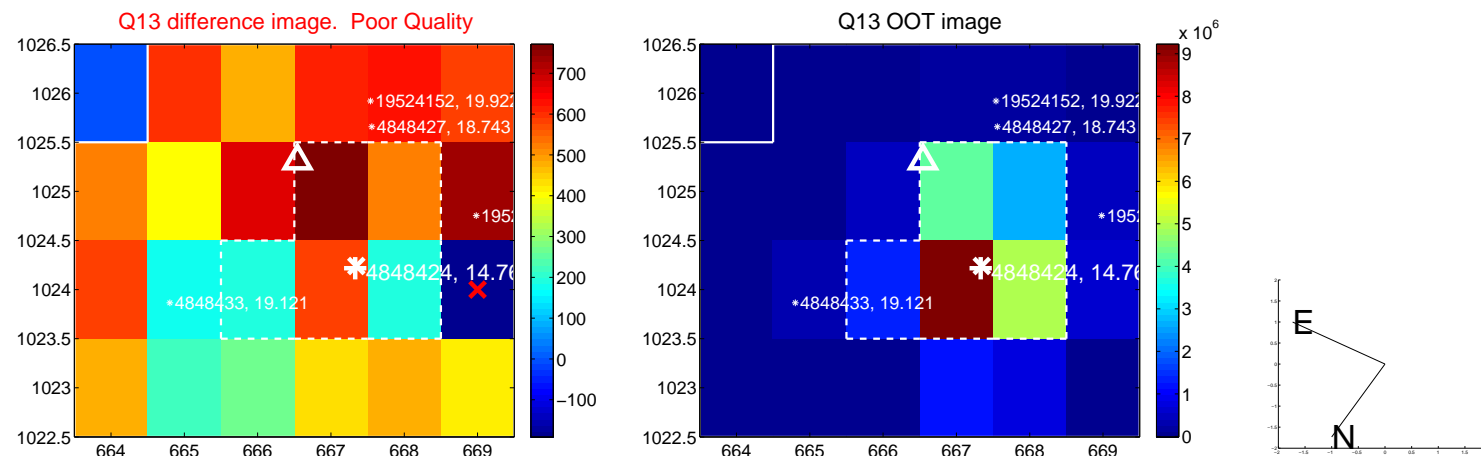
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



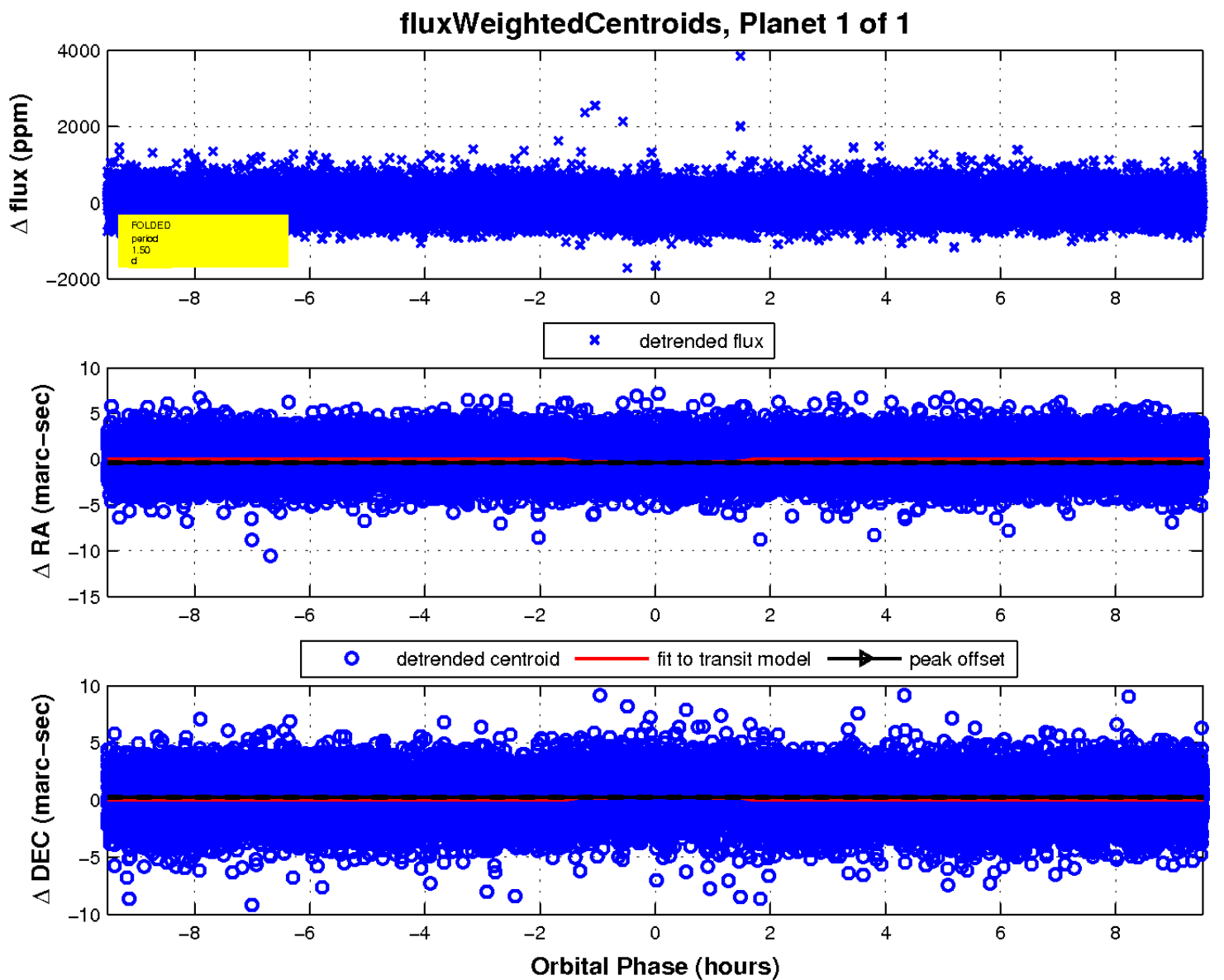
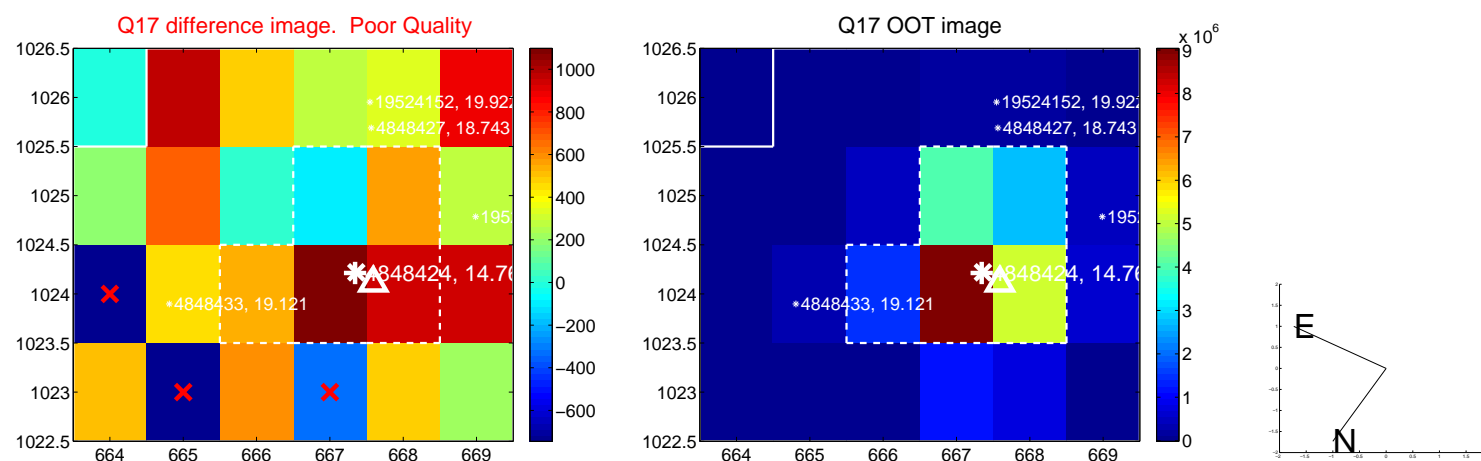
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

