

KIC 009850966

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})
009850966-01	OBS	4879.01	8.480402	135.848347	304.0	5.359	8.9	9.0	0.70	4895	1.48	45.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009850966-01	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 009850966-01

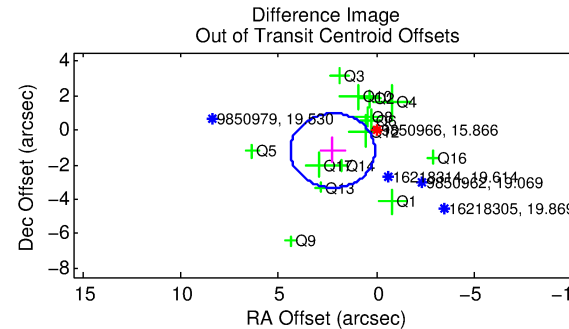
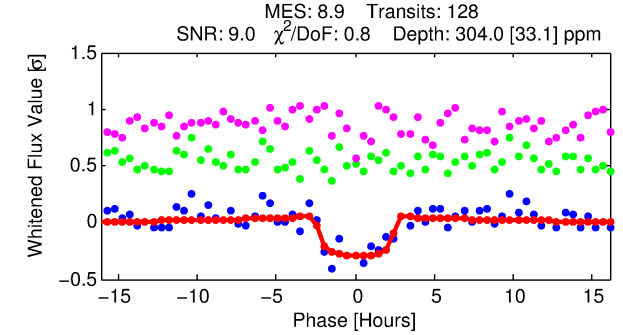
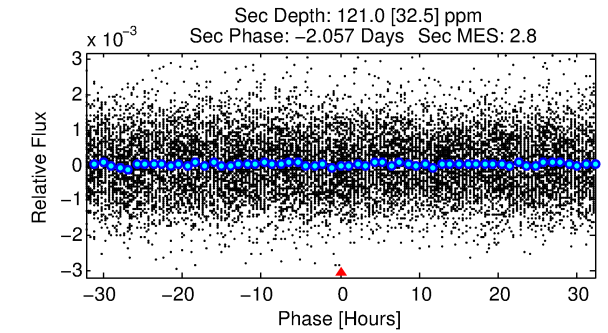
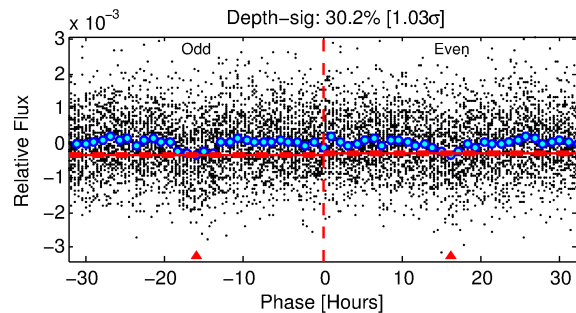
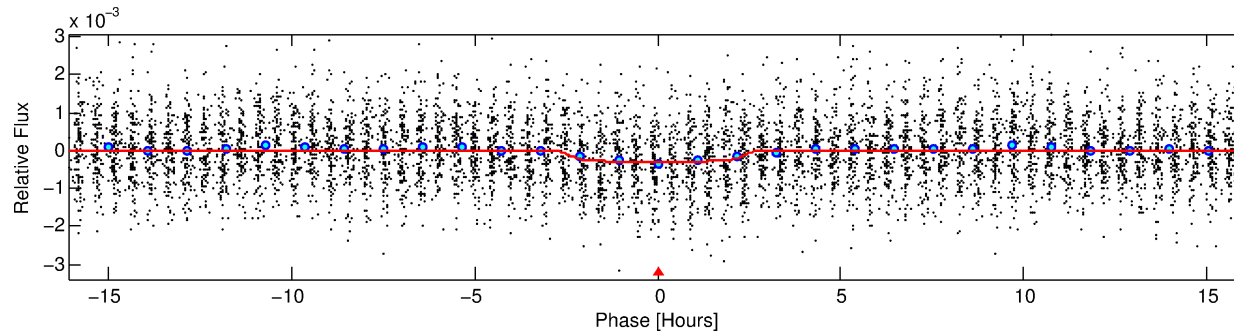
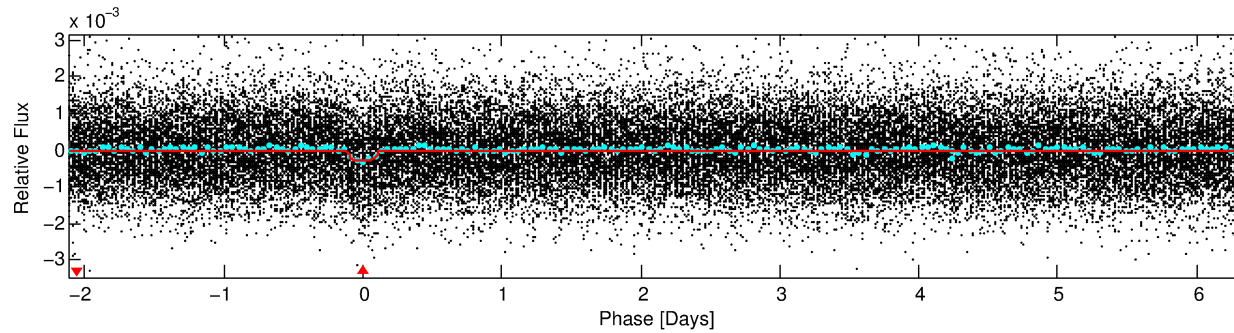
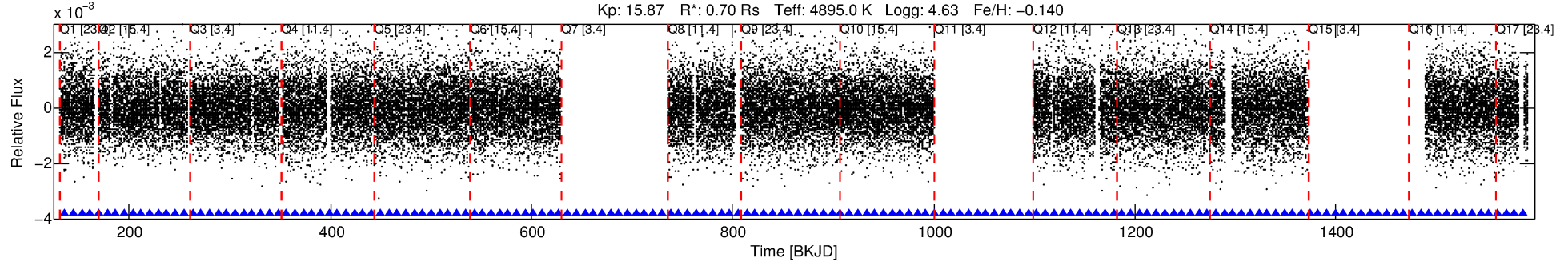
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
009850966-01	9850966	009851142-pri	9851142	1:1	160.5	39	-10	7.63	15.86	299.67	Direct-PRF	0	0.50	0.23

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: 9850966 Candidate: 1 of 1 Period: 8.480 d
KOI: K04879.01 Corr: 0.973

Kp: 15.87 R*: 0.70 Rs Teff: 4895.0 K Logg: 4.63 Fe/H: -0.140



DV Fit Results:

Period = 8.48040 [0.00011] d
Epoch = 135.8483 [0.0095] BKJD
Rp/R* = 0.0194 [0.0069]
a/R* = 5.93 [7.89]
b = 0.90 [0.31]
Seff = 45.33 [7.53]
Teq = 662 [27] K
Rp = 1.47 [0.55] Re
a = 0.0741 [0.0063] AU
Ag = 168.25 [129.15] [1.29σ]
Teffp = 3684 [708] K [4.27σ]

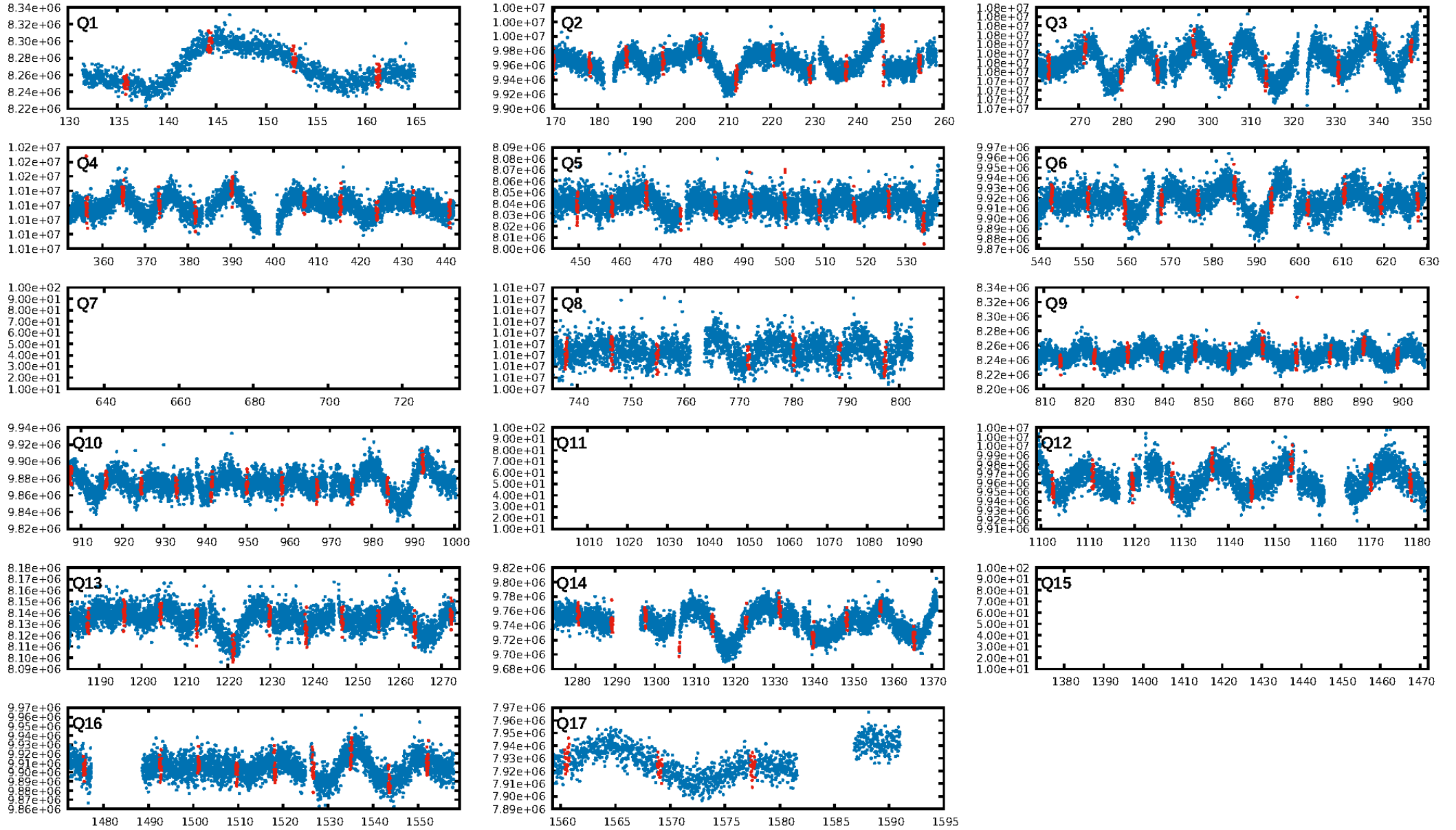
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.70e-19
RollingBand-fgt: 1.00 [121/121]
GhostDiagnostic-chr: -0.001813
Centroid-sig: 0.0%
Centroid-so: 2.920 arcsec [2.32σ]
OotOffset-rm: 2.539 arcsec [3.54σ]
KicOffset-rm: 2.707 arcsec [3.73σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [14/14]

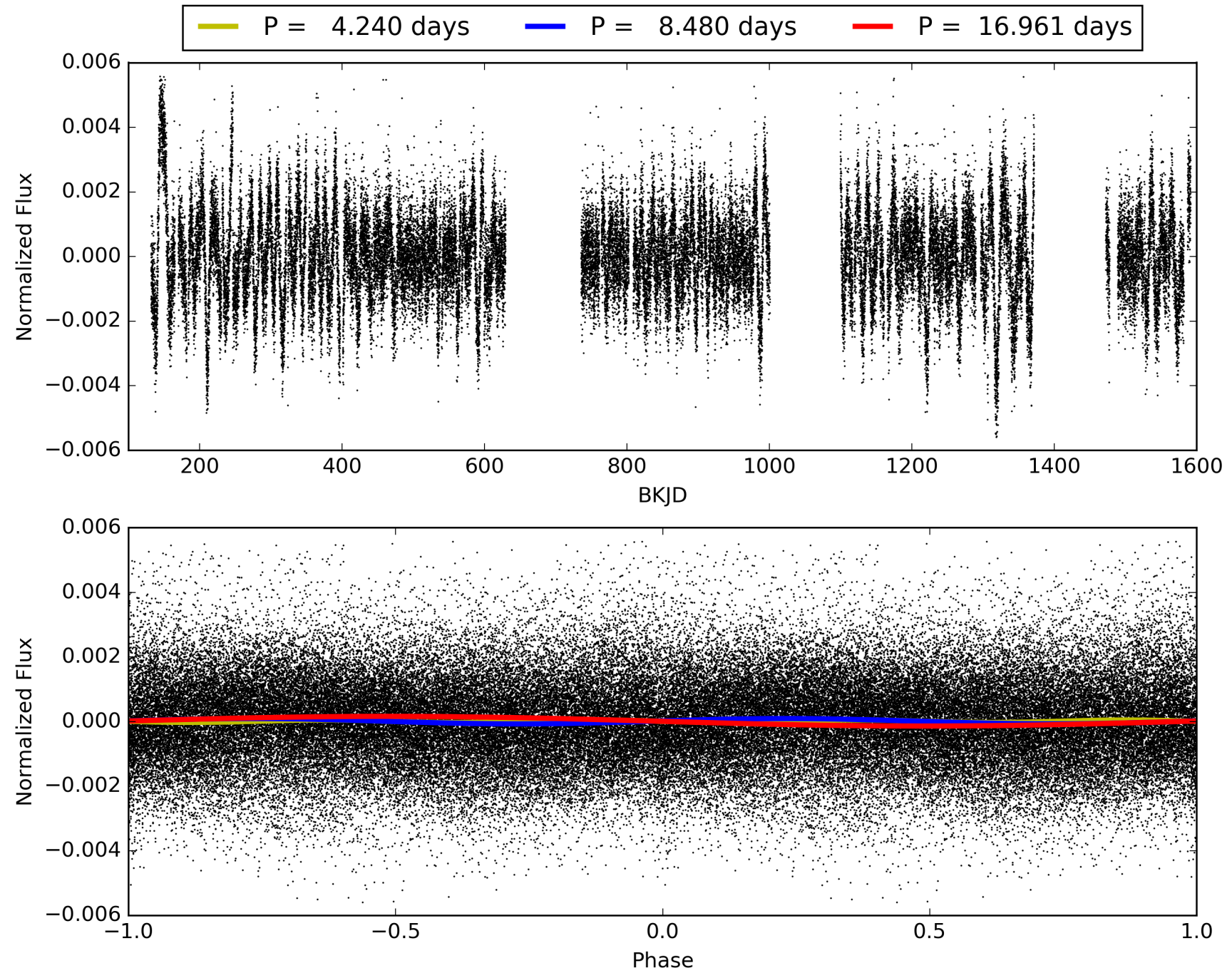
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:12:51 Z

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

TCE 009850966-01, PDC Light Curves

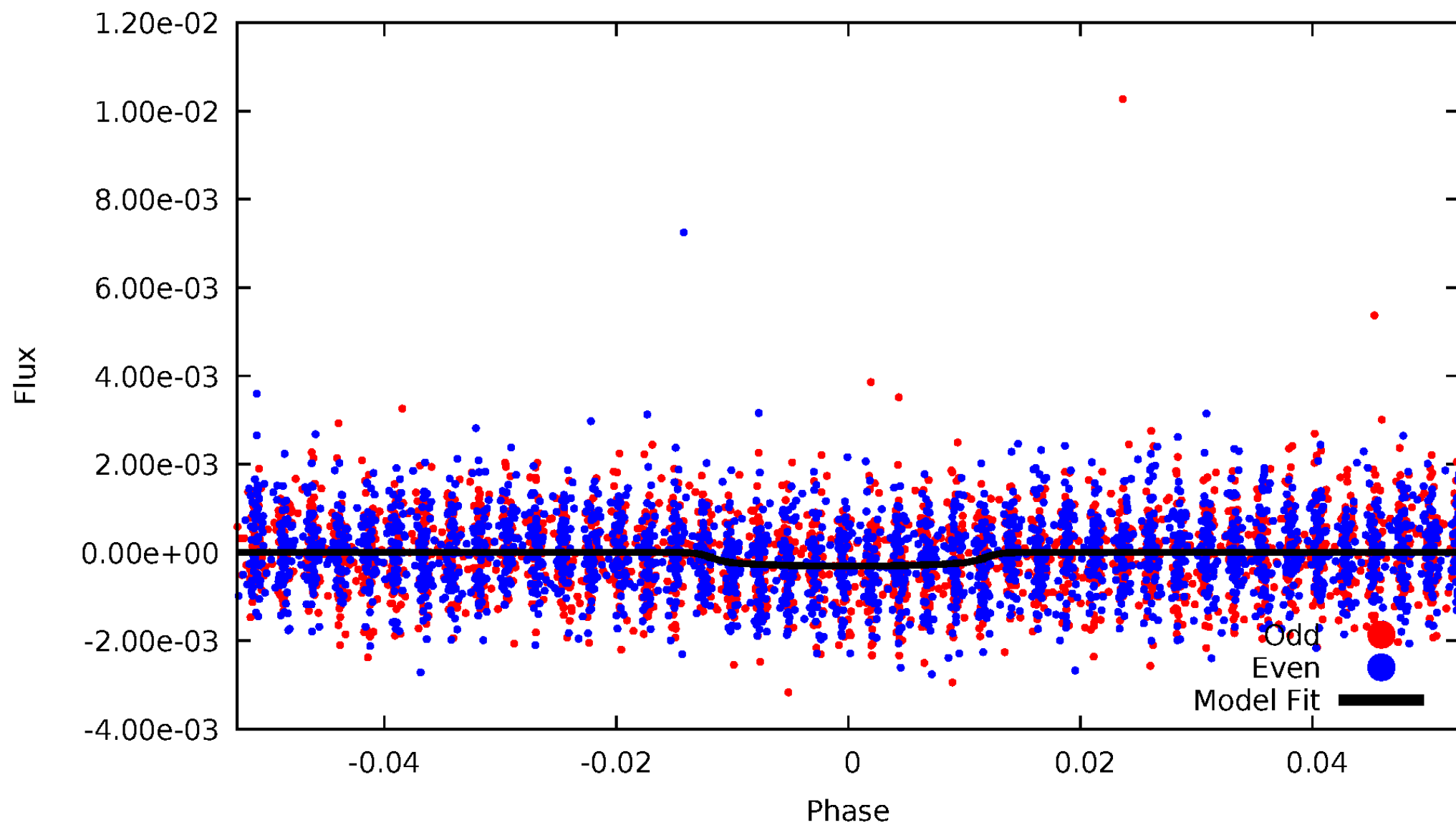


TCE 009850966-01



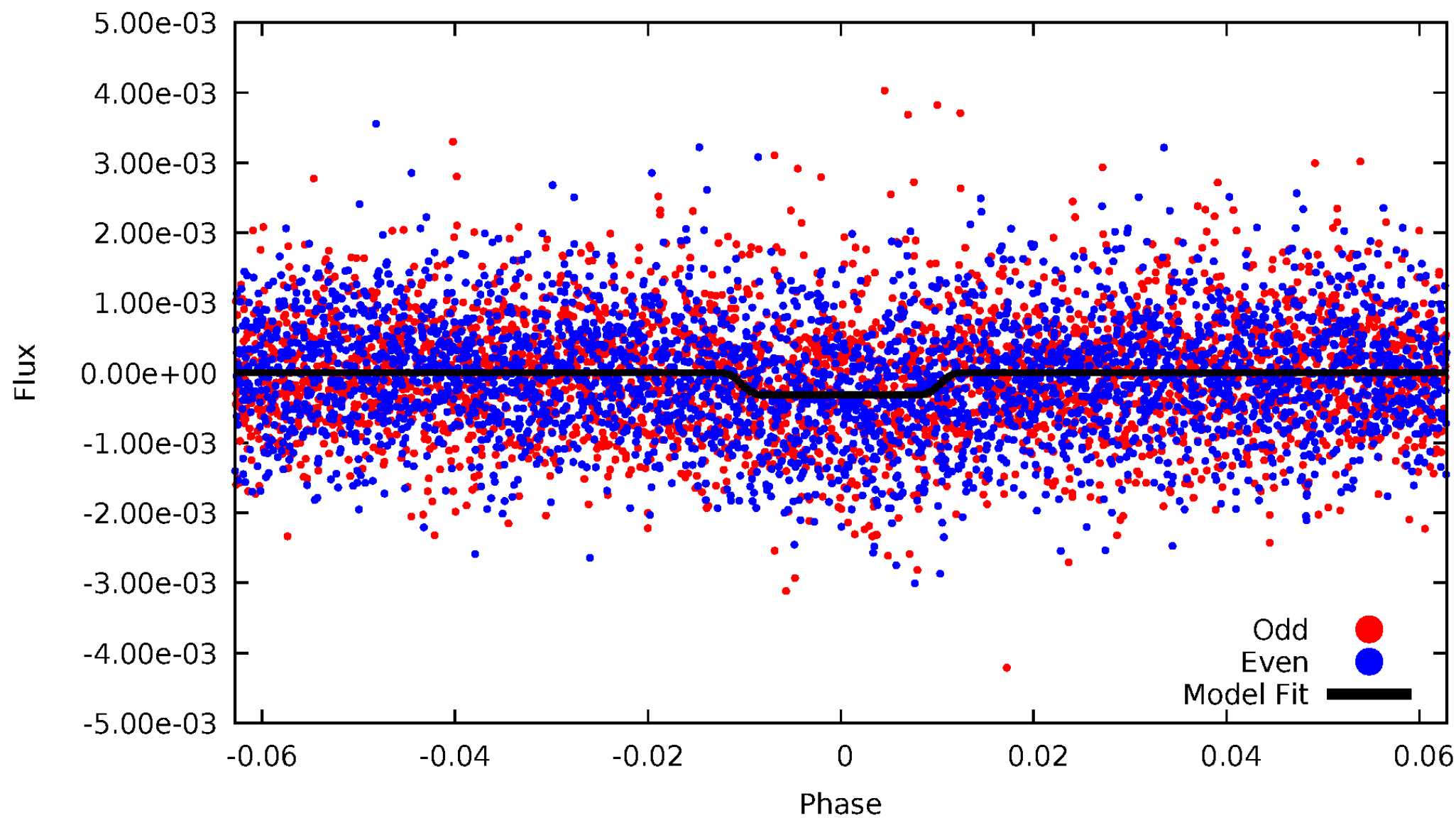
DV Odd/Even

TCE 009850966-01



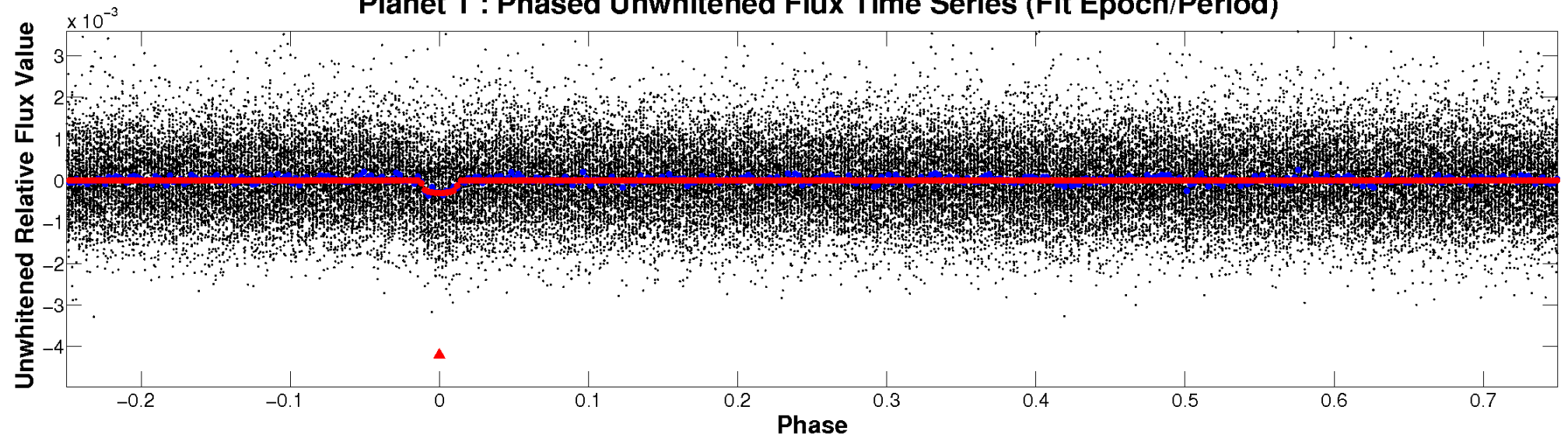
ALT Odd/Even

TCE 009850966-01

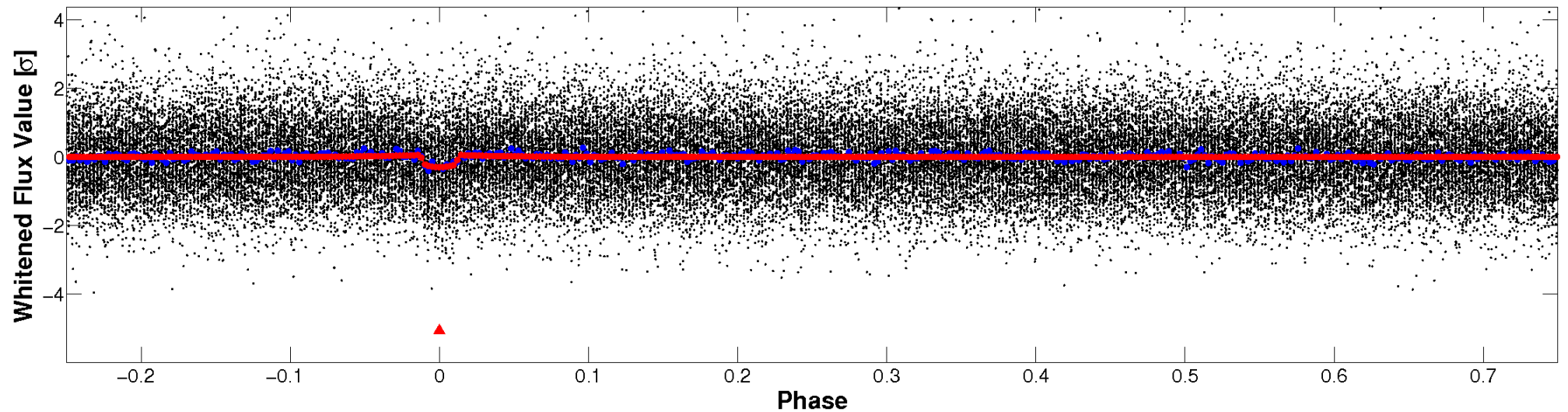


Non-Whitened Vs. Whitened Light Curve

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

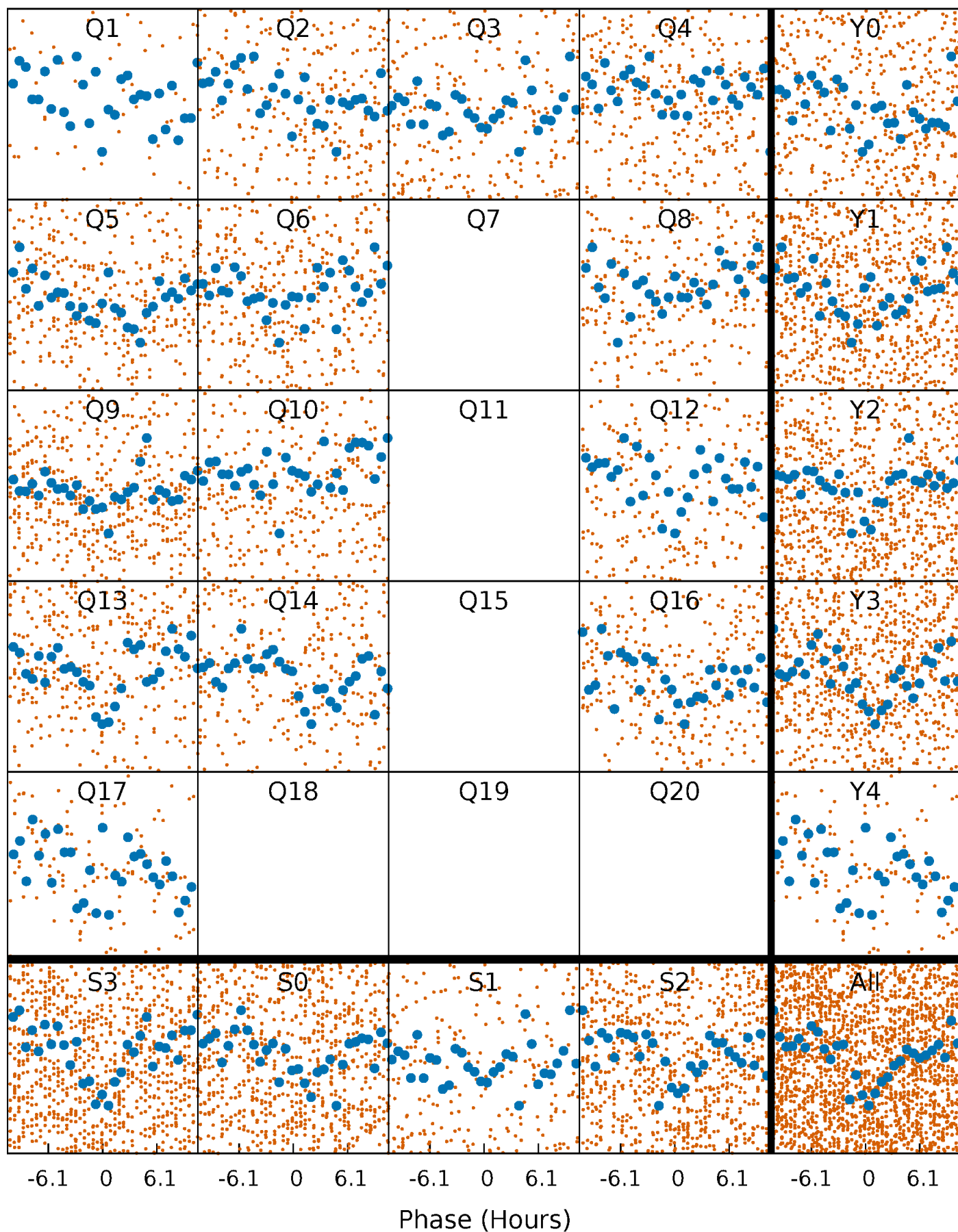


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



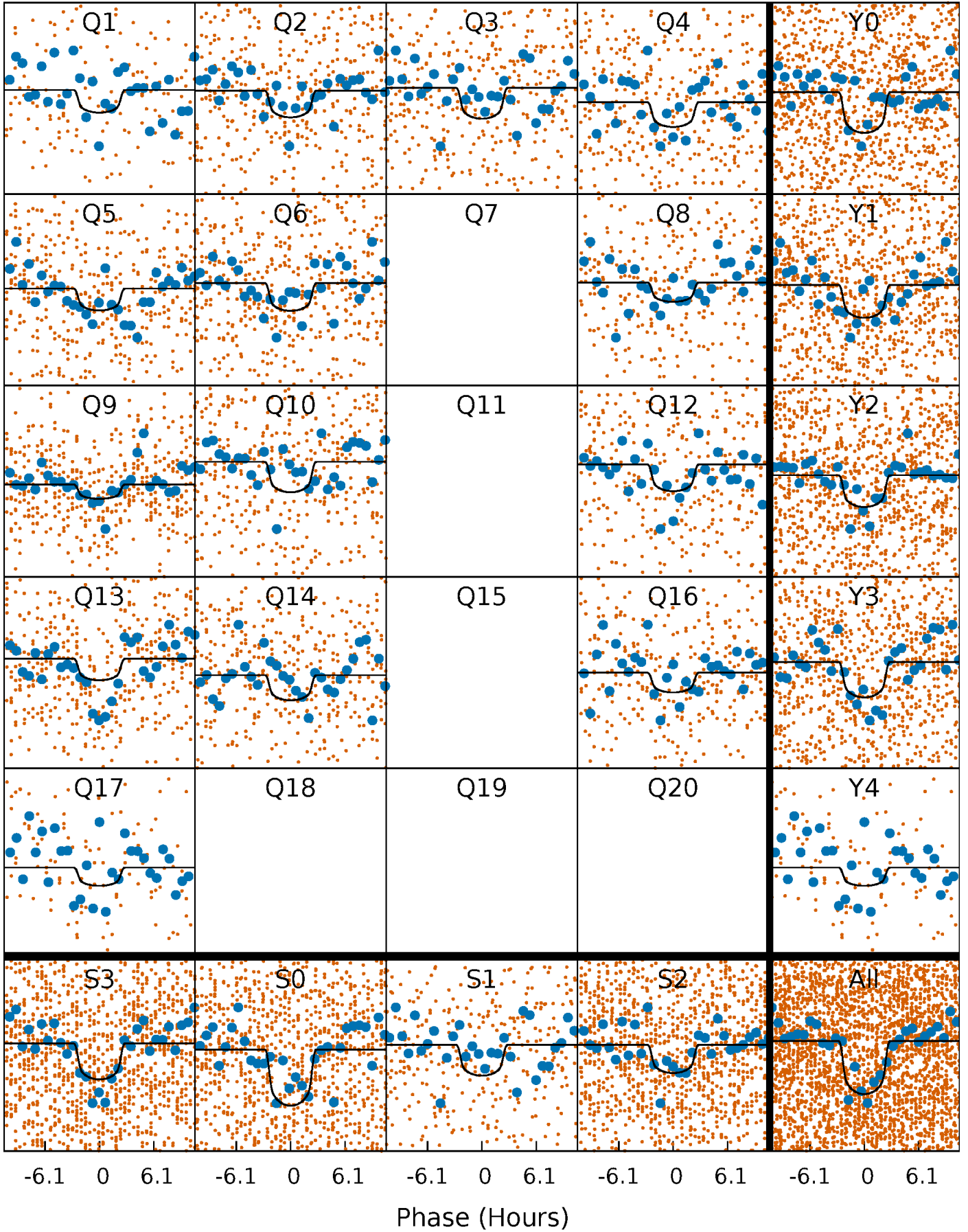
PDC Quarter-Phased Transit Curves

TCE 009850966-01 P= 8.480402 Days $T_0=135.848346$ (BKJD)



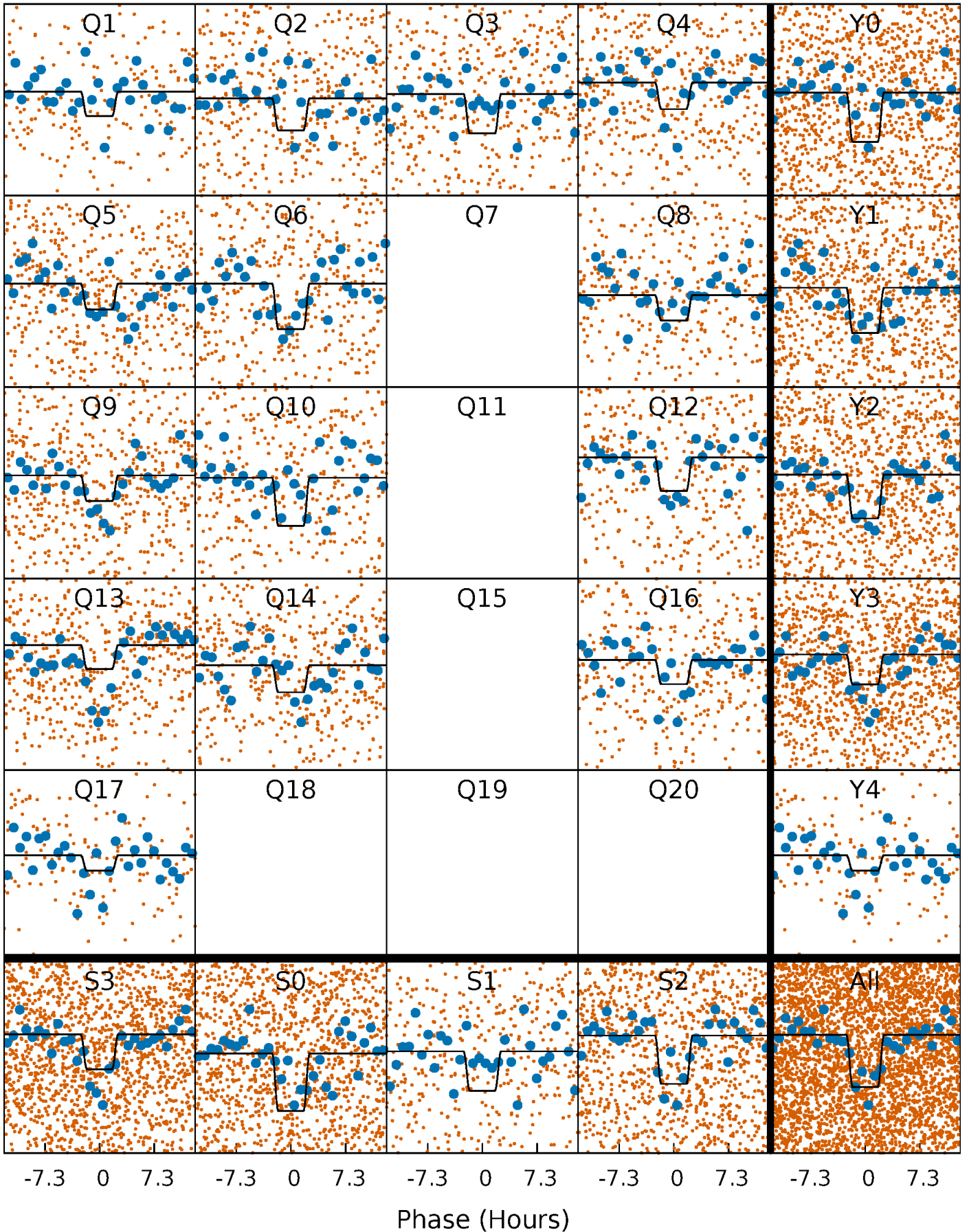
DV Quarter-Phased Transit Curves

TCE 009850966-01 P= 8.480402 Days $T_0=135.848346$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

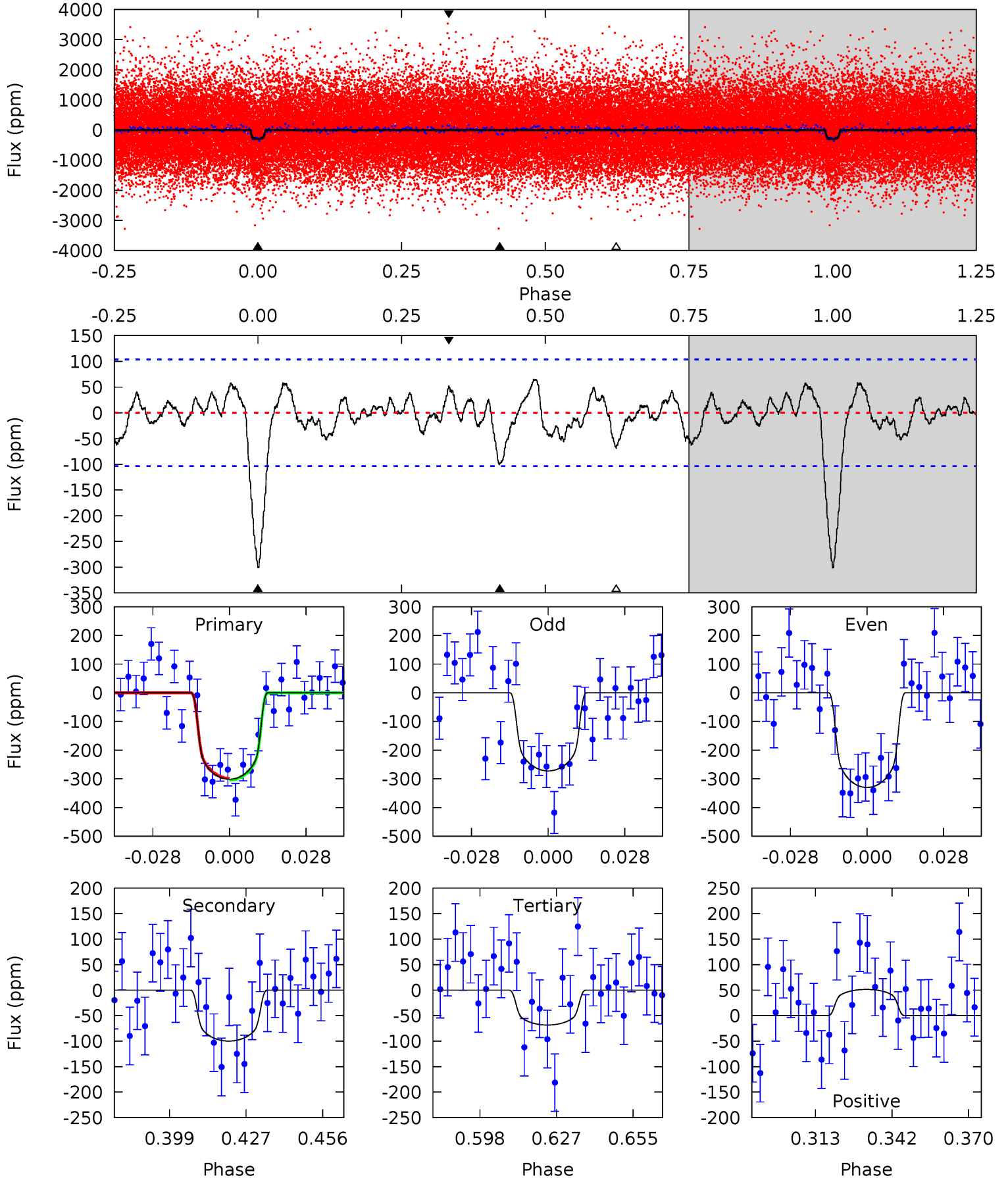
TCE 009850966-01 P= 8.480718 Days $T_0=135.812592$ (BKJD)



DV Model-Shift Uniqueness Test

009850966-01, P = 8.480402 Days, E = 127.367944 Days

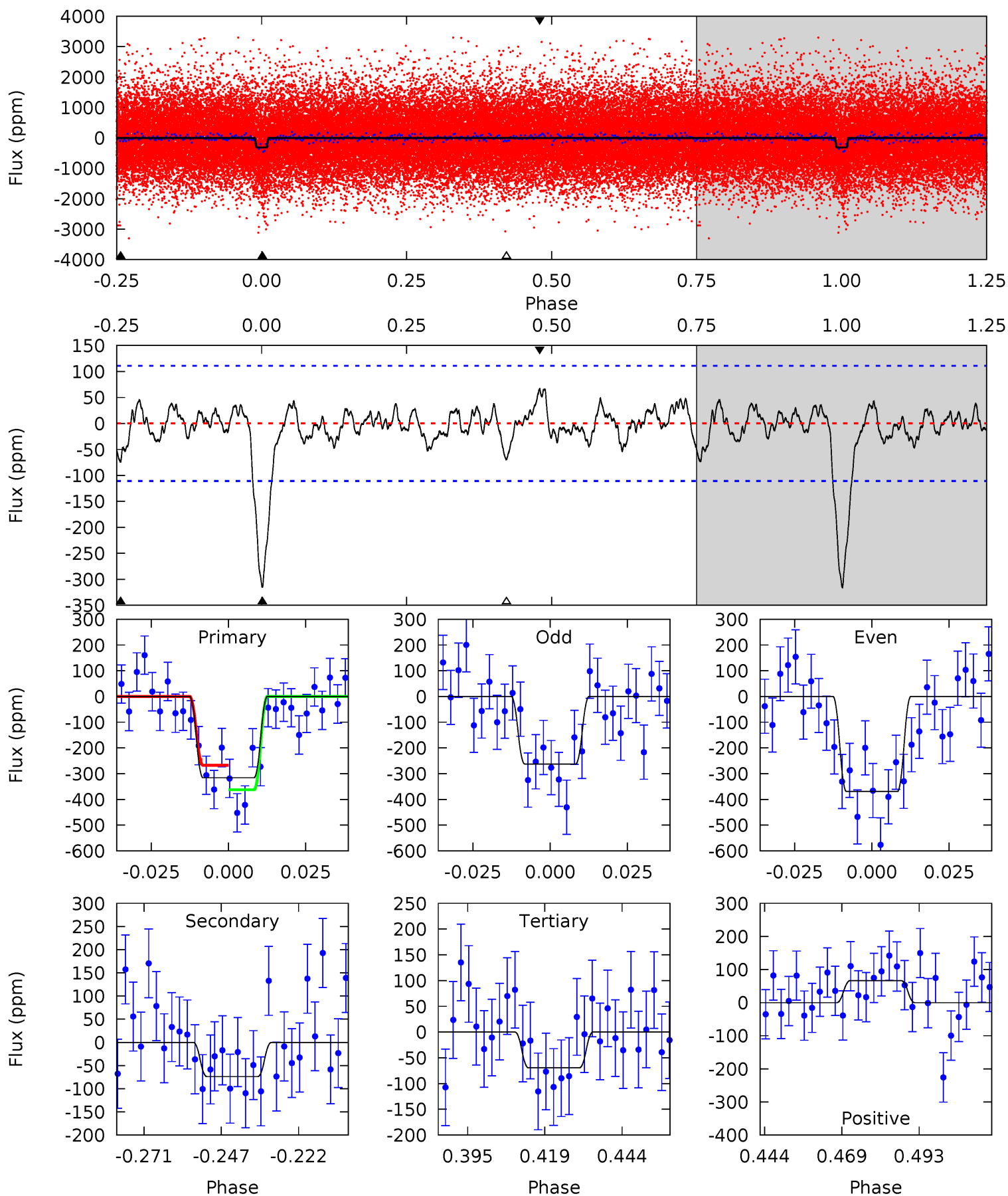
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	4.65	3.19	2.39	4.82	2.19	1.27	10.8	11.6	1.46	2.26	1.35	1.07	0.18	0.13



Alt Model-Shift Uniqueness Test

009850966-01, P = 8.480718 Days, E = 127.331874 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	3.24	3.04	2.91	4.85	2.25	1.05	10.8	10.9	0.19	0.32	2.34	0.98	0.17	2.08



Stellar Parameters For KIC 009850966

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4895^{+146}_{-131}	$4.631^{+0.032}_{-0.059}$	$-0.140^{+0.300}_{-0.300}$	$0.696^{+0.075}_{-0.055}$	$0.775^{+0.054}_{-0.088}$	$3.232^{+0.471}_{-0.721}$
	+3%/-3%	+1%/-1%	+214%/-214%	+11%/-8%	+7%/-11%	+15%/-22%
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 009850966-01 / KOI 4879.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-100 ± 21	$1.49^{+0.58}_{-0.54}$	931^{+36}_{-29}	3824^{+669}_{-437}	135^{+203}_{-69}
Alt.	-74 ± 23	$1.39^{+0.55}_{-0.49}$	933^{+35}_{-33}	3705^{+716}_{-406}	113^{+190}_{-57}

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

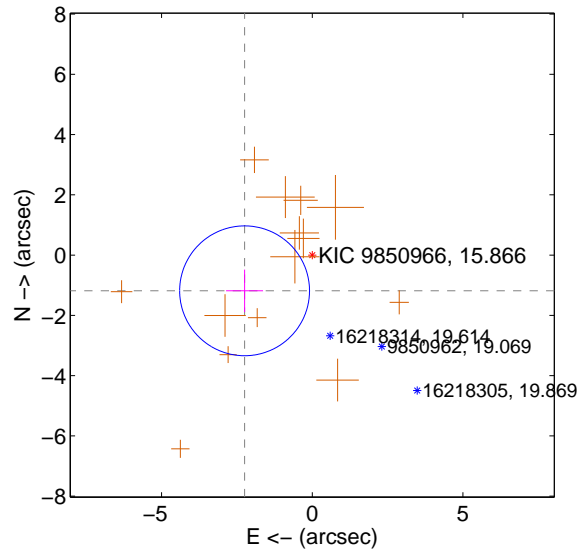
Supplemental centroid analysis for 009850966-01. Kepler magnitude: 15.87. Transit SNR 9.01

There are 0 quarters with good PRF difference image offsets

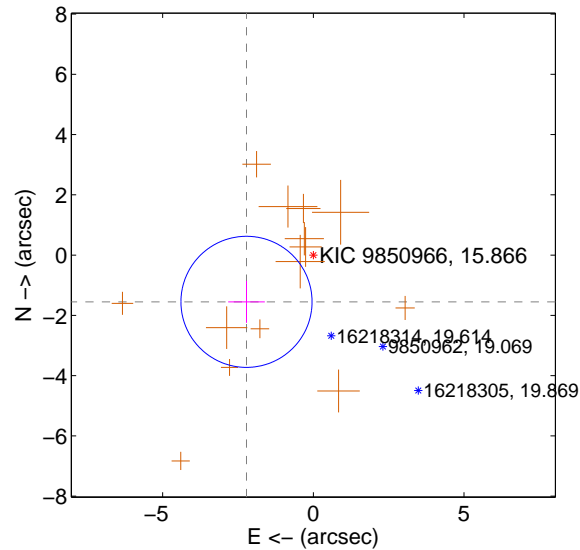
The direct PRF centroid is offset from the target star catalog position by about 0.40 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.539 ± 0.718	3.54	2.246 ± 0.614	-1.185 ± 0.705
PRF-fit source offset from KIC position	2.707 ± 0.725	3.73	2.218 ± 0.607	-1.552 ± 0.697
photometric centroid source offset	2.92 ± 1.26	2.32	1.39 ± 1.14	2.57 ± 1.29

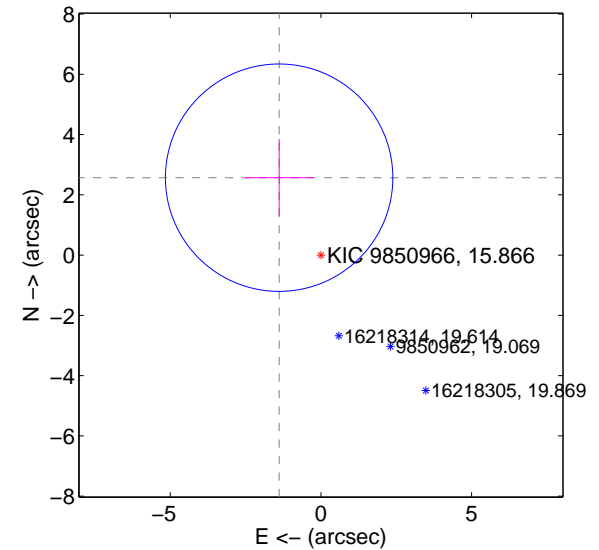
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

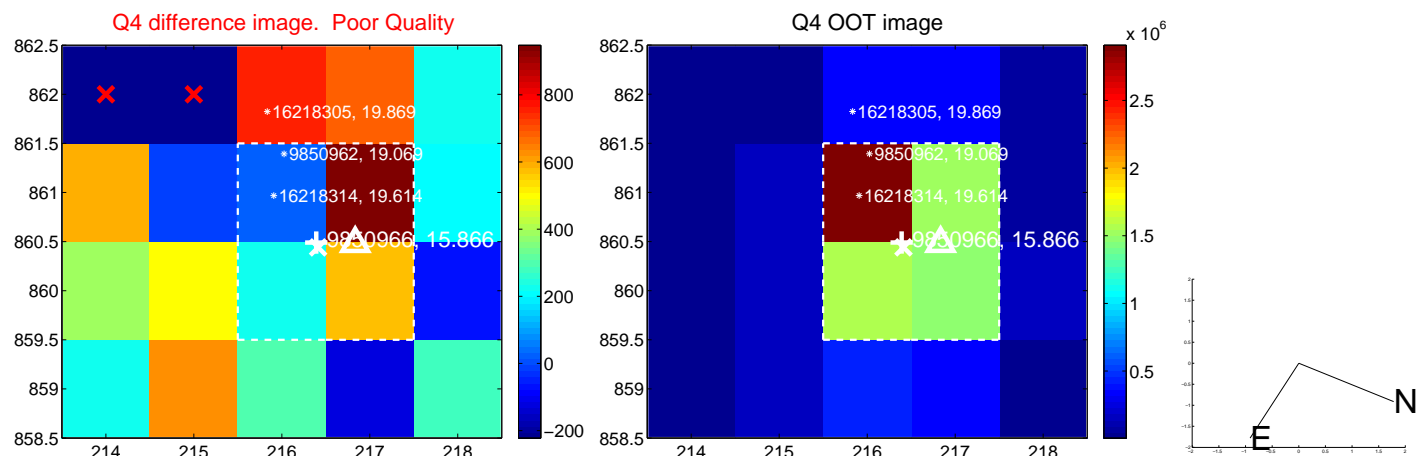
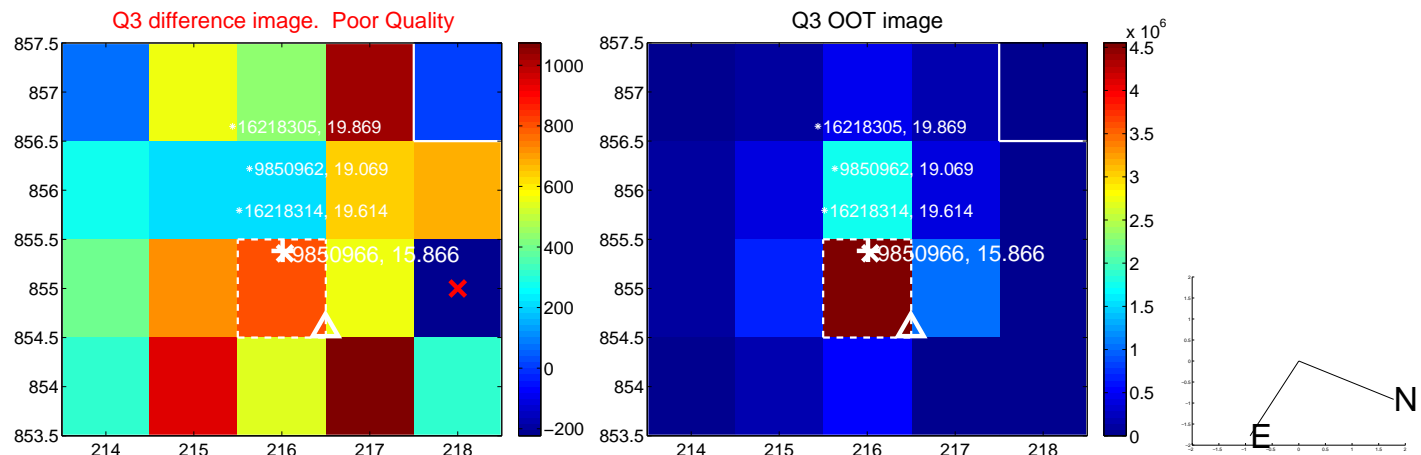
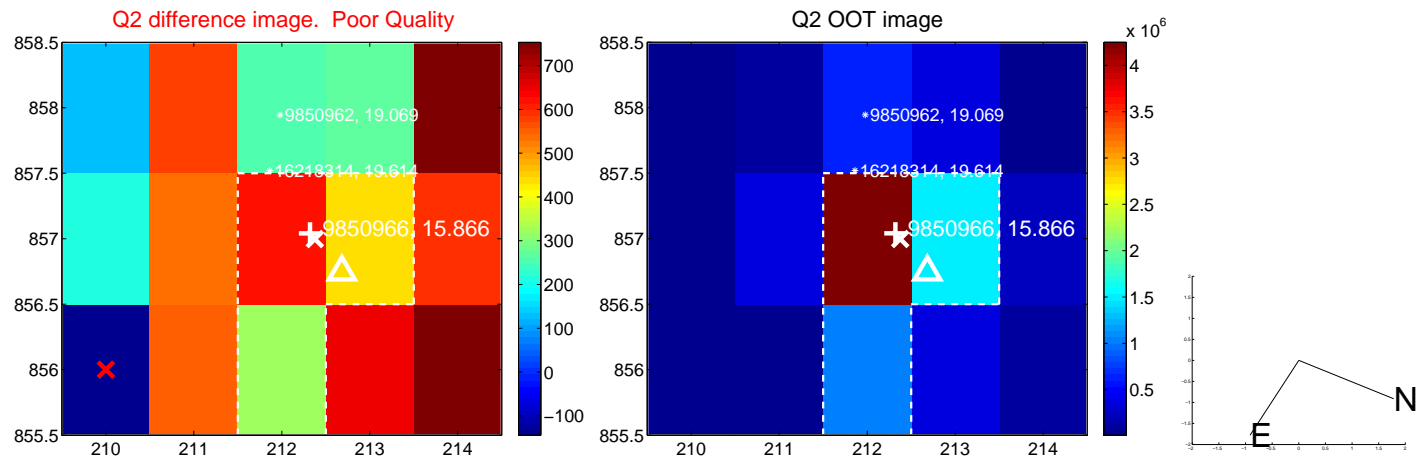
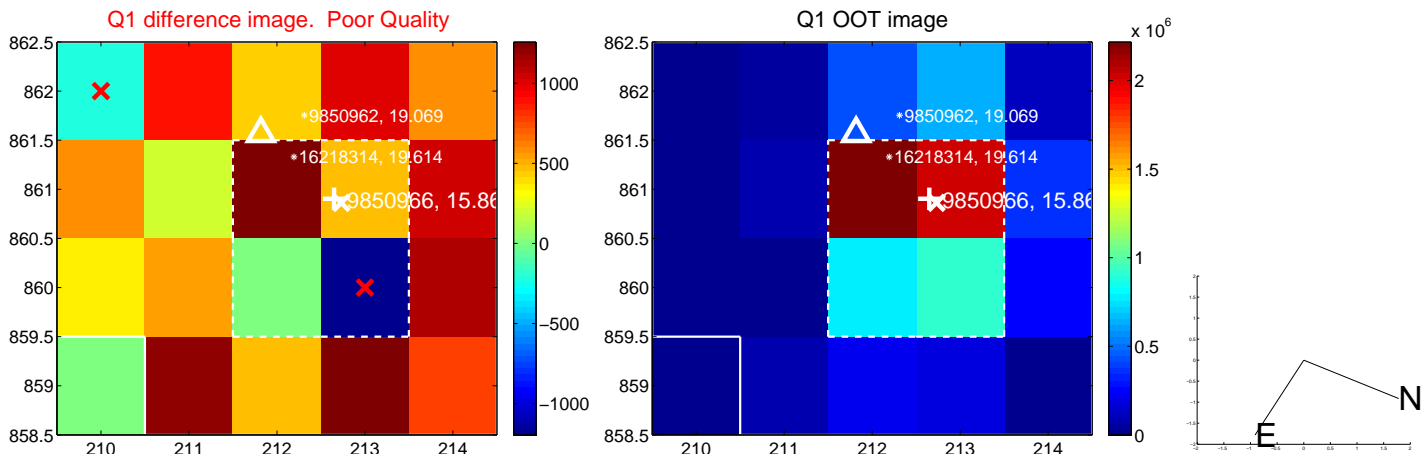


offset from photometric centroids

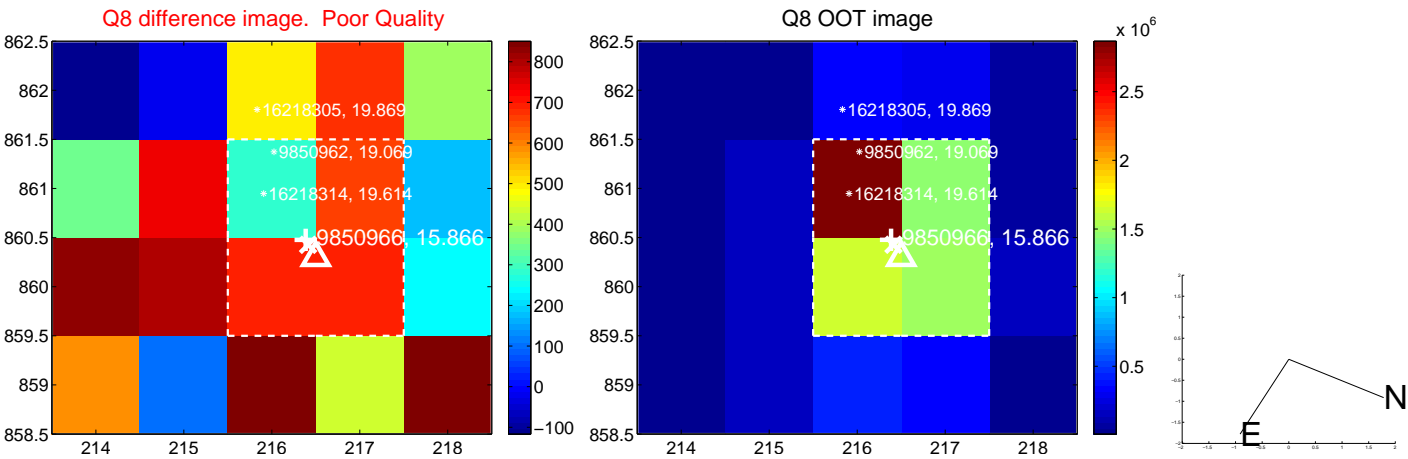
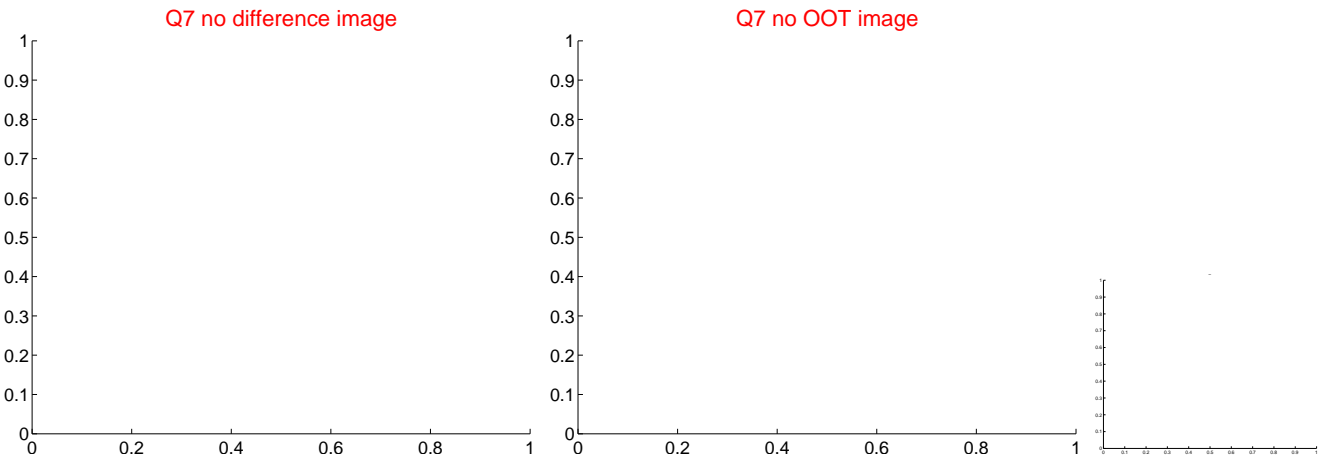
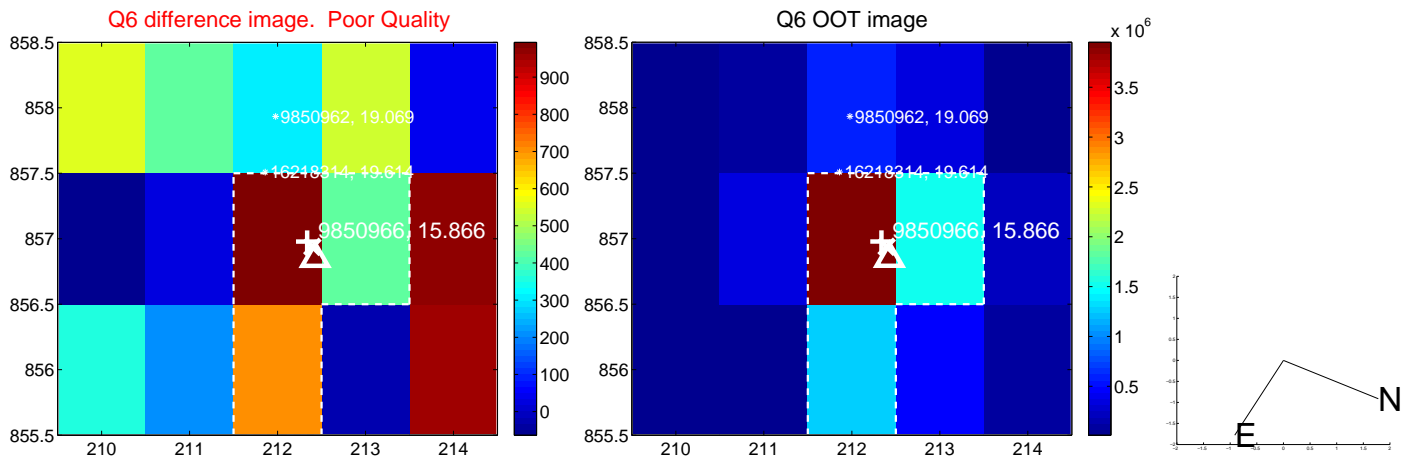
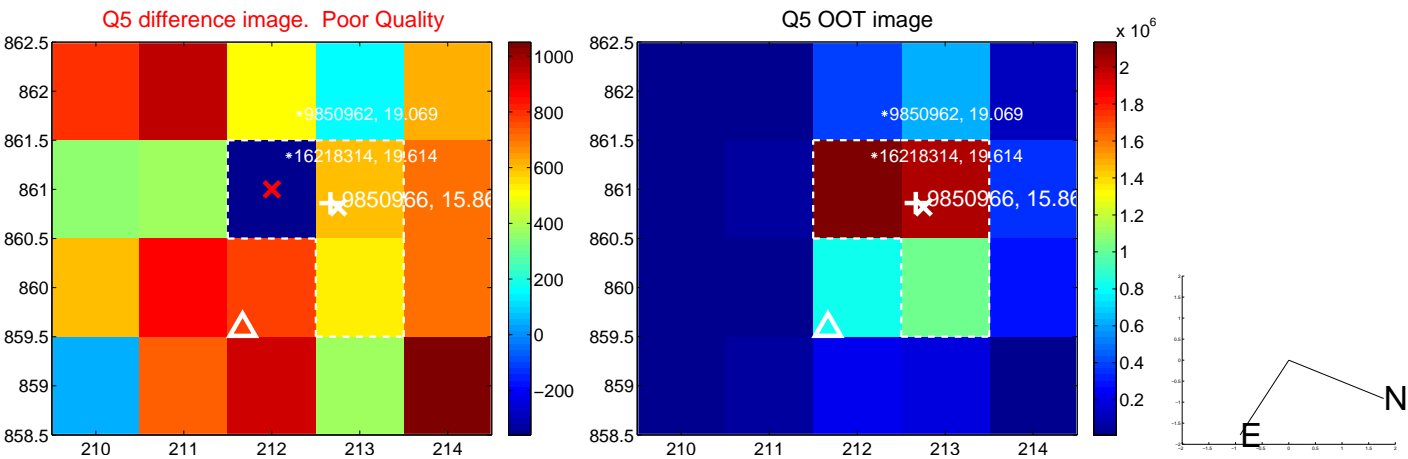


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

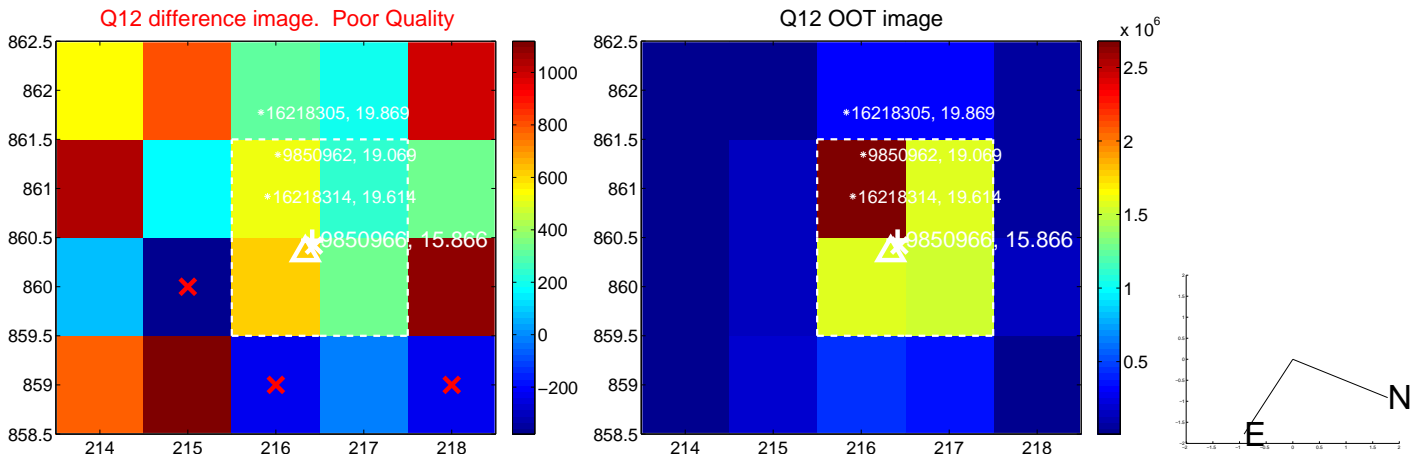
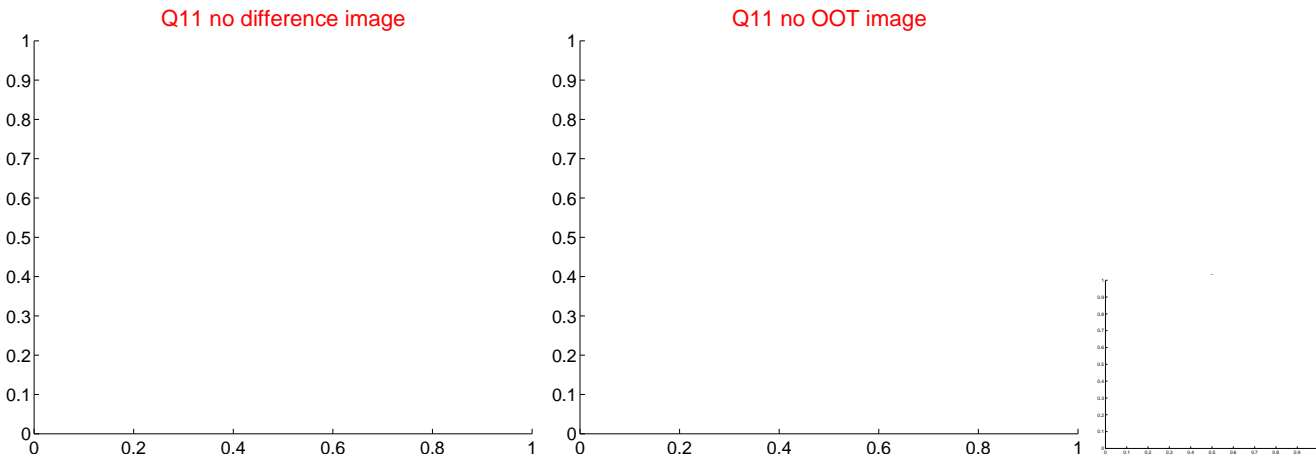
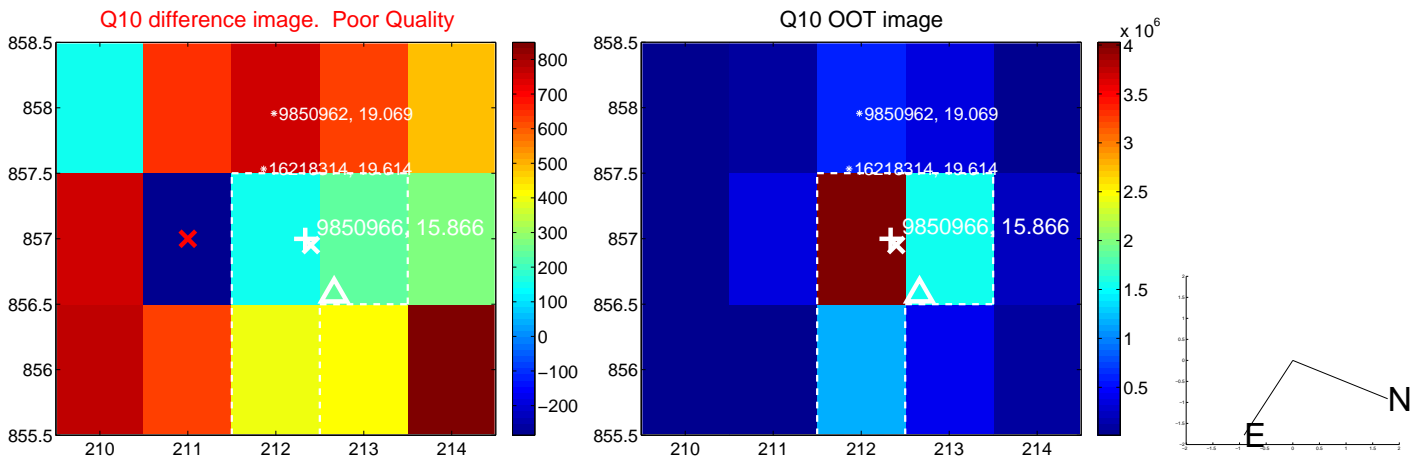
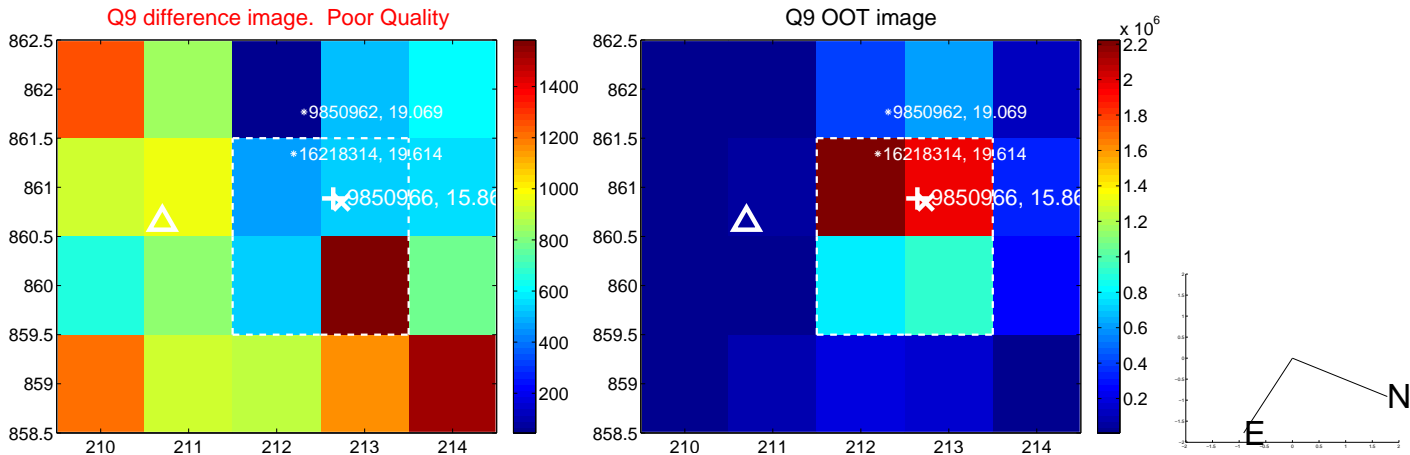
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



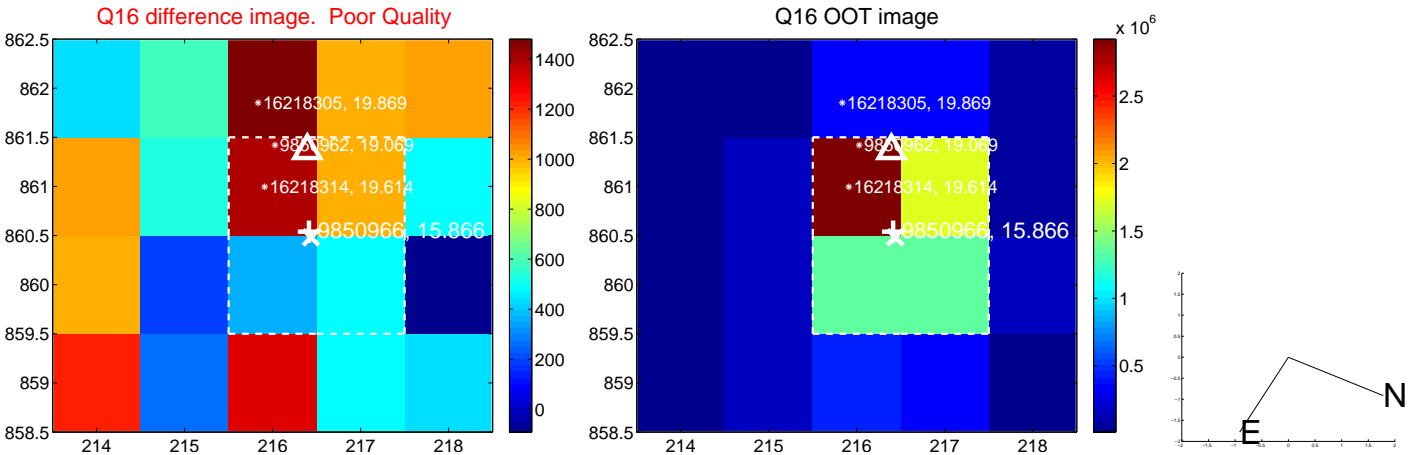
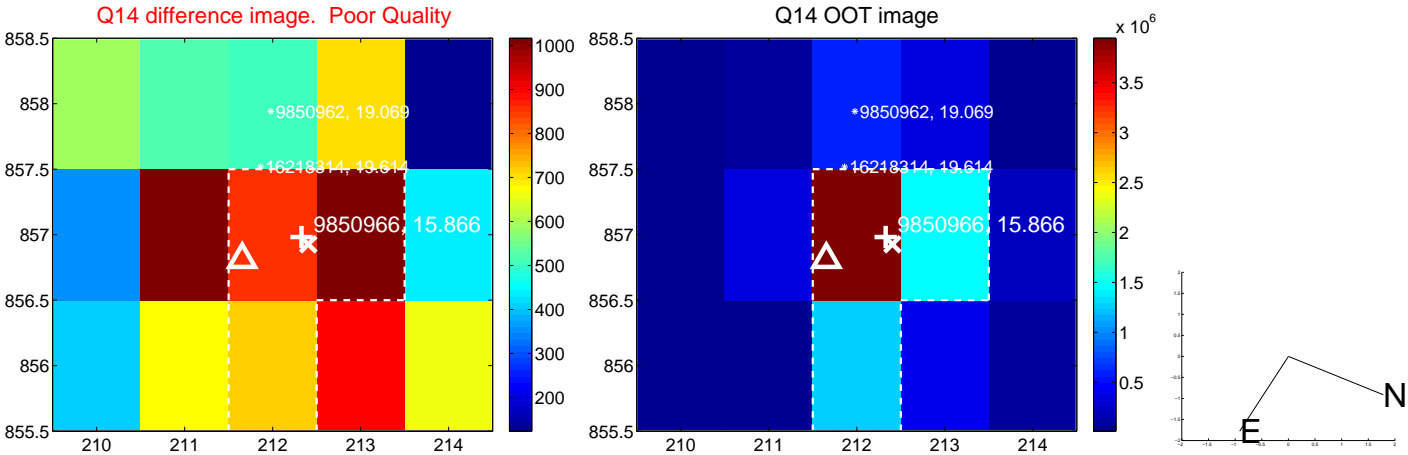
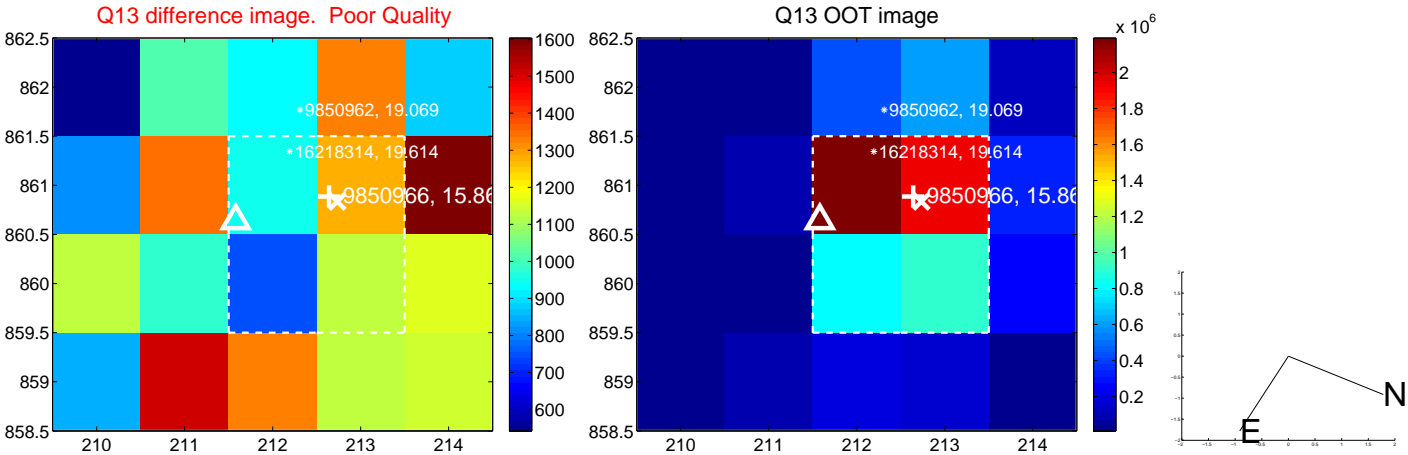
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



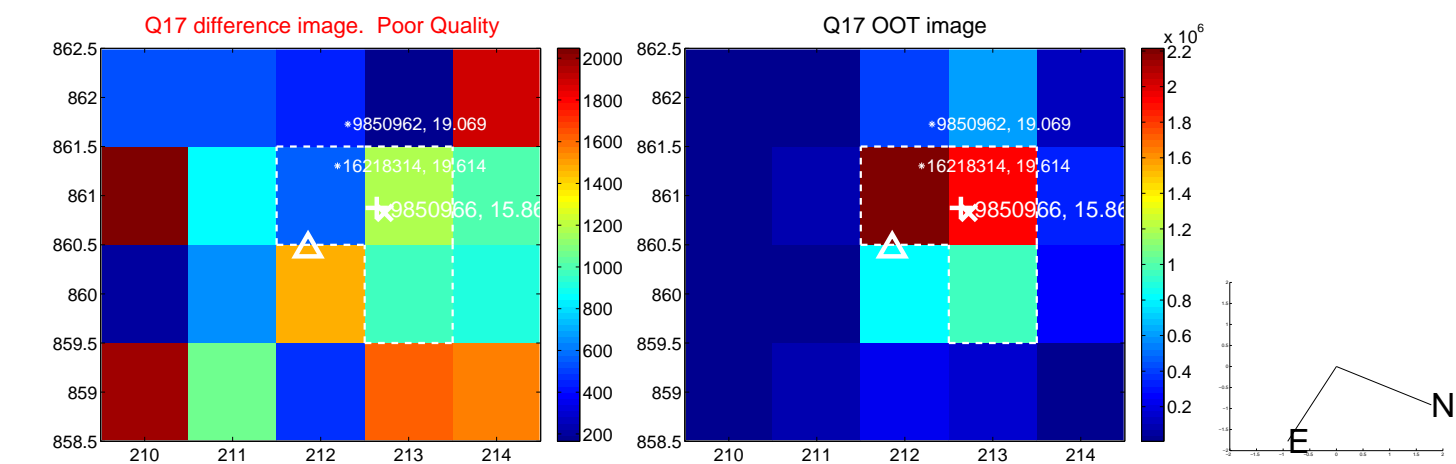
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



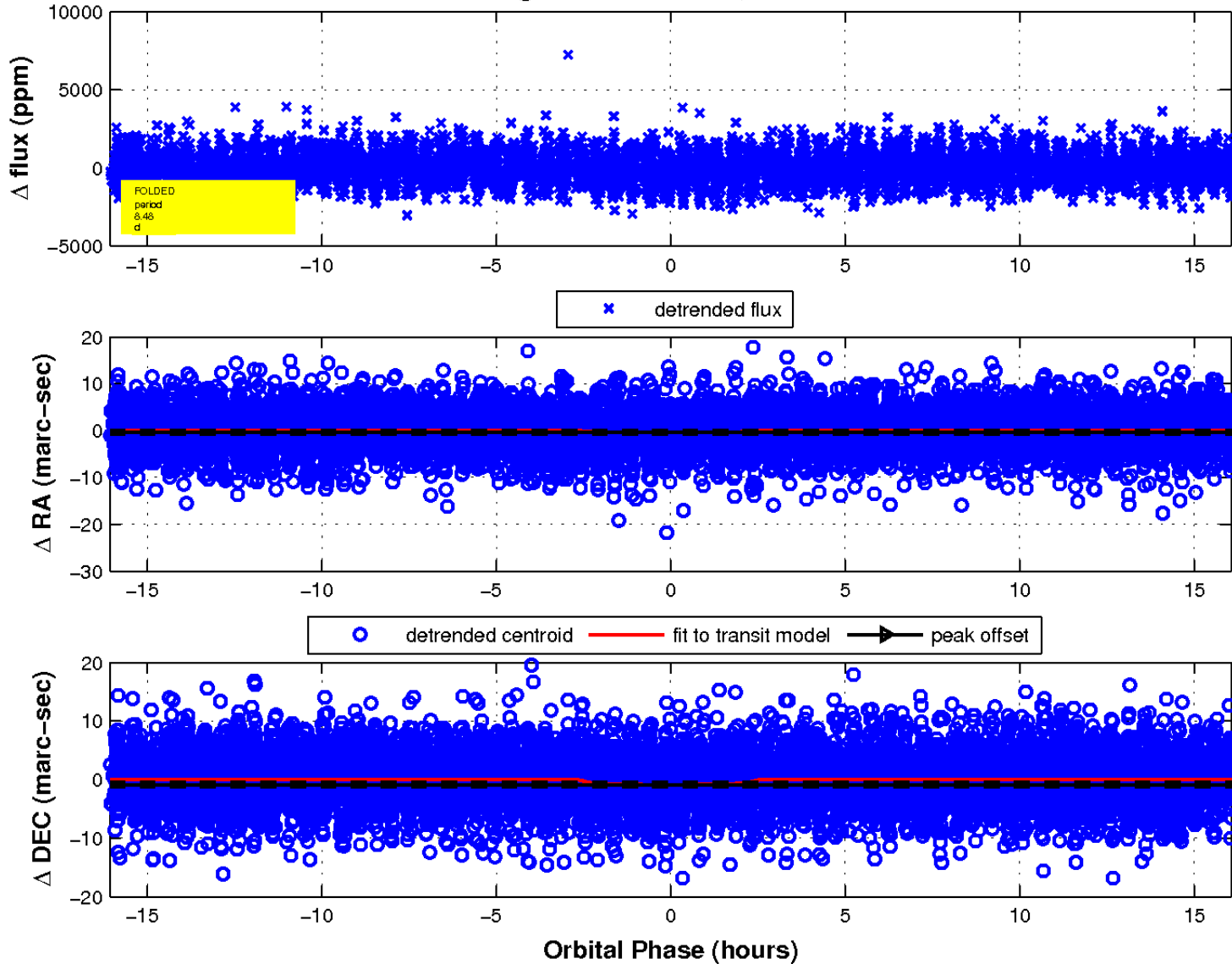
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

