

KIC 005645170

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})
005645170-01	OBS	4837.01	5.386057	133.967939	164.2	2.009	7.8	8.6	0.66	5516	1.01	121.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005645170-01	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.

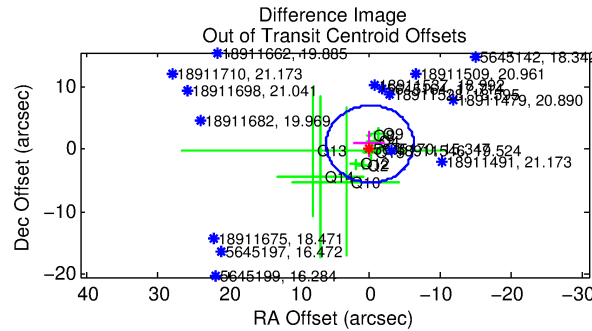
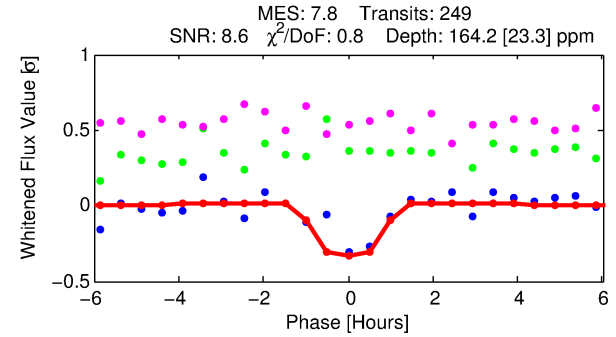
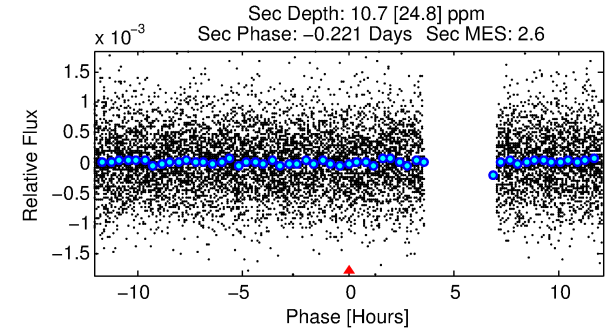
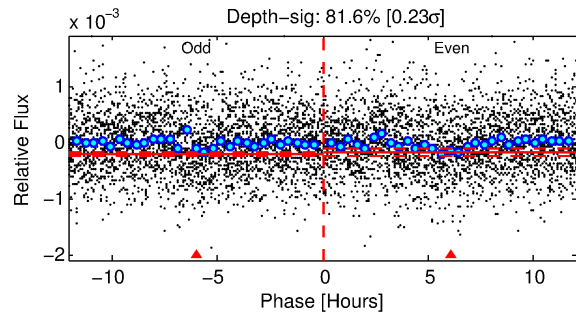
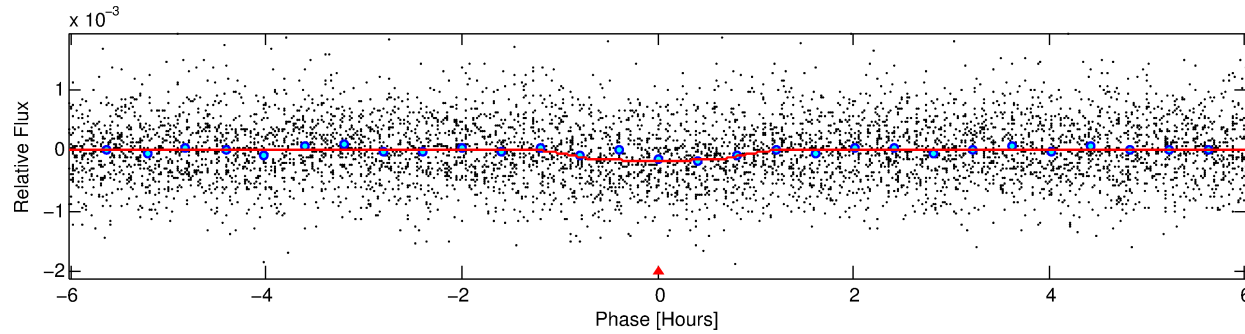
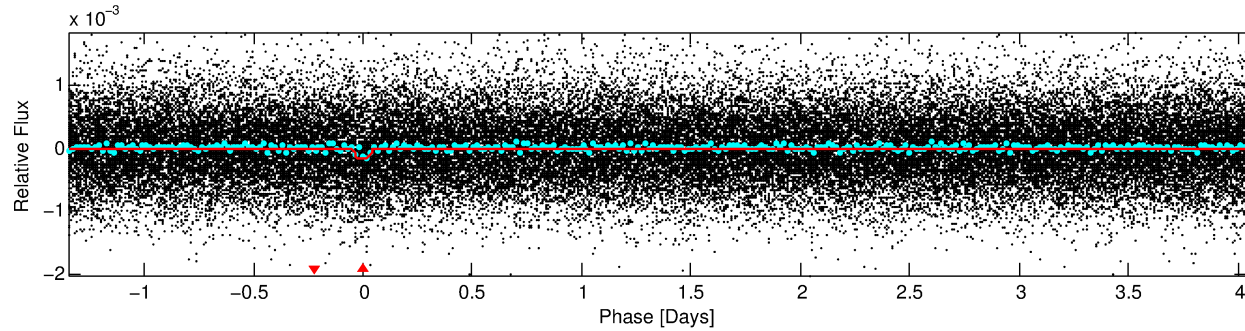
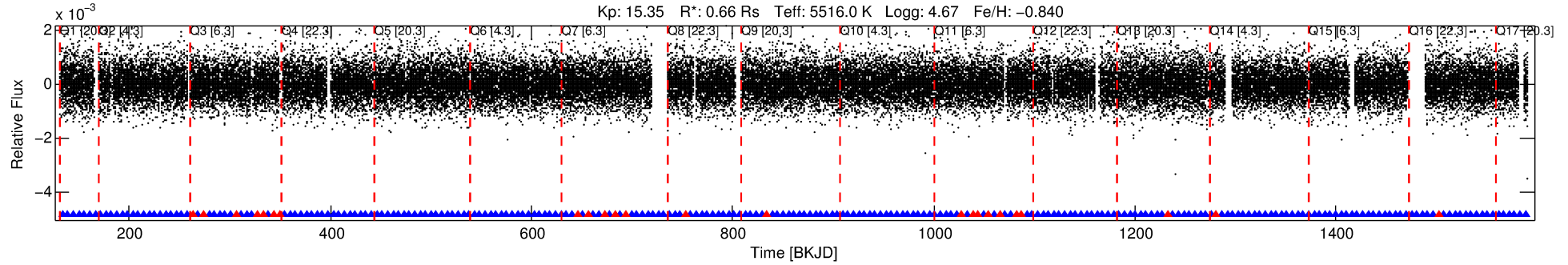
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005645170-01

No Significant Match Found

DV One-Page Summary

KIC: 5645170 Candidate: 1 of 1 Period: 5.386 d
KOI: K04837.01 Corr: 0.968



DV Fit Results:

Period = 5.38606 [0.00004] d
Epoch = 133.9679 [0.0050] BKJD
Rp/R* = 0.0141 [0.0112]
a/R* = 9.12 [36.24]
b = 0.91 [0.75]
Seff = 121.42 [26.04]
Teff = 846 [45] K
Rp = 1.01 [0.81] Re
a = 0.0542 [0.0066] AU
Ag = 17.13 [48.18] [0.33 σ]
Teffp = 2663 [1870] K [0.97 σ]

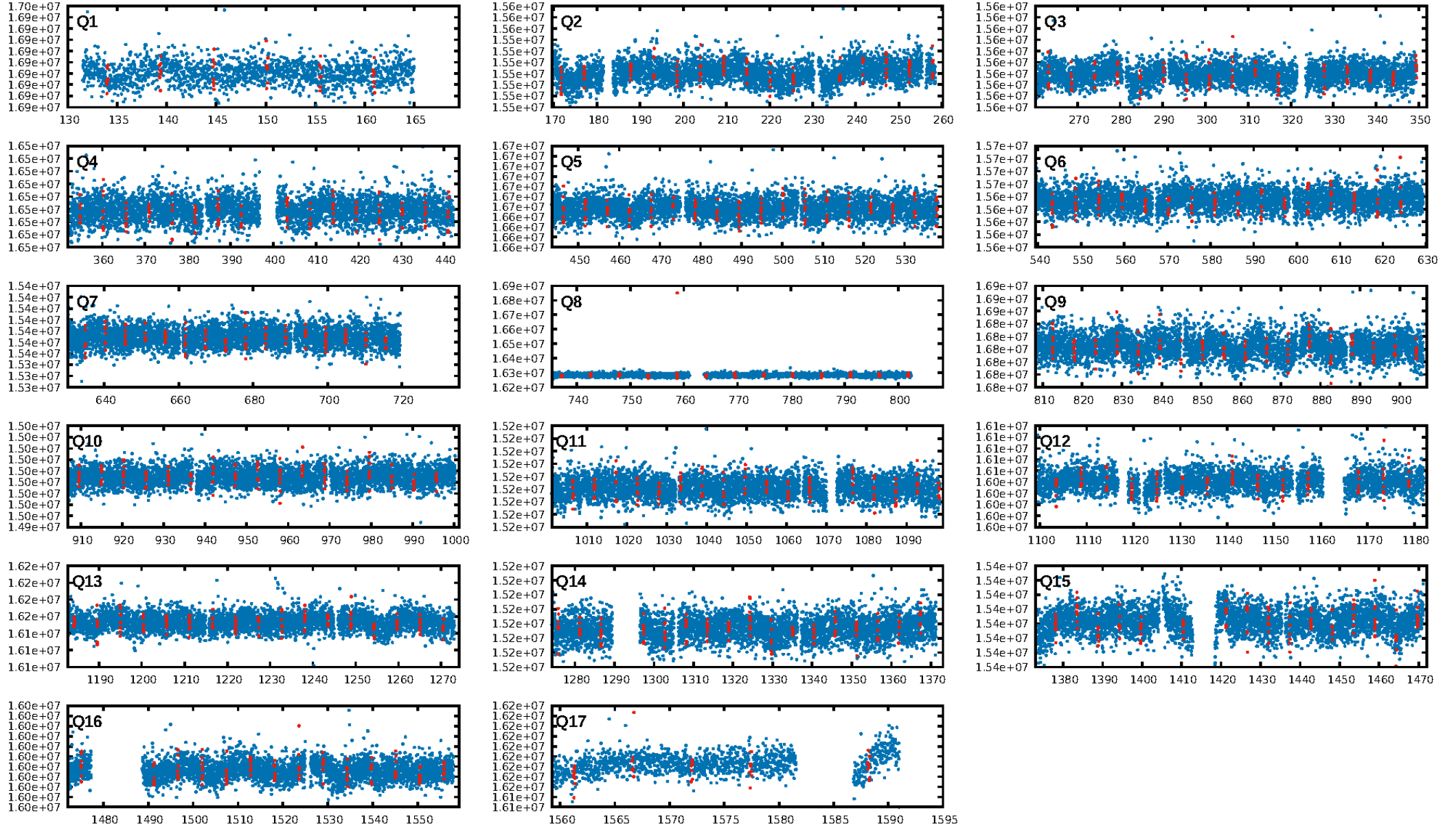
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.67e-15
RollingBand-fgt: 0.90 [214/238]
GhostDiagnostic-chr: 2.327
Centroid-sig: 55.0%
Centroid-so: 1.163 arcsec [0.68 σ]
OotOffset-rm: 0.804 arcsec [0.39 σ]
OotOffset-st: 3/2/3/2 [10]
KicOffset-rm: 0.907 arcsec [0.44 σ]
KicOffset-st: 3/2/3/2 [10]
DiffImageQuality-fgm: 0.30 [3/10]
DiffImageOverlap-fno: 1.00 [17/17]

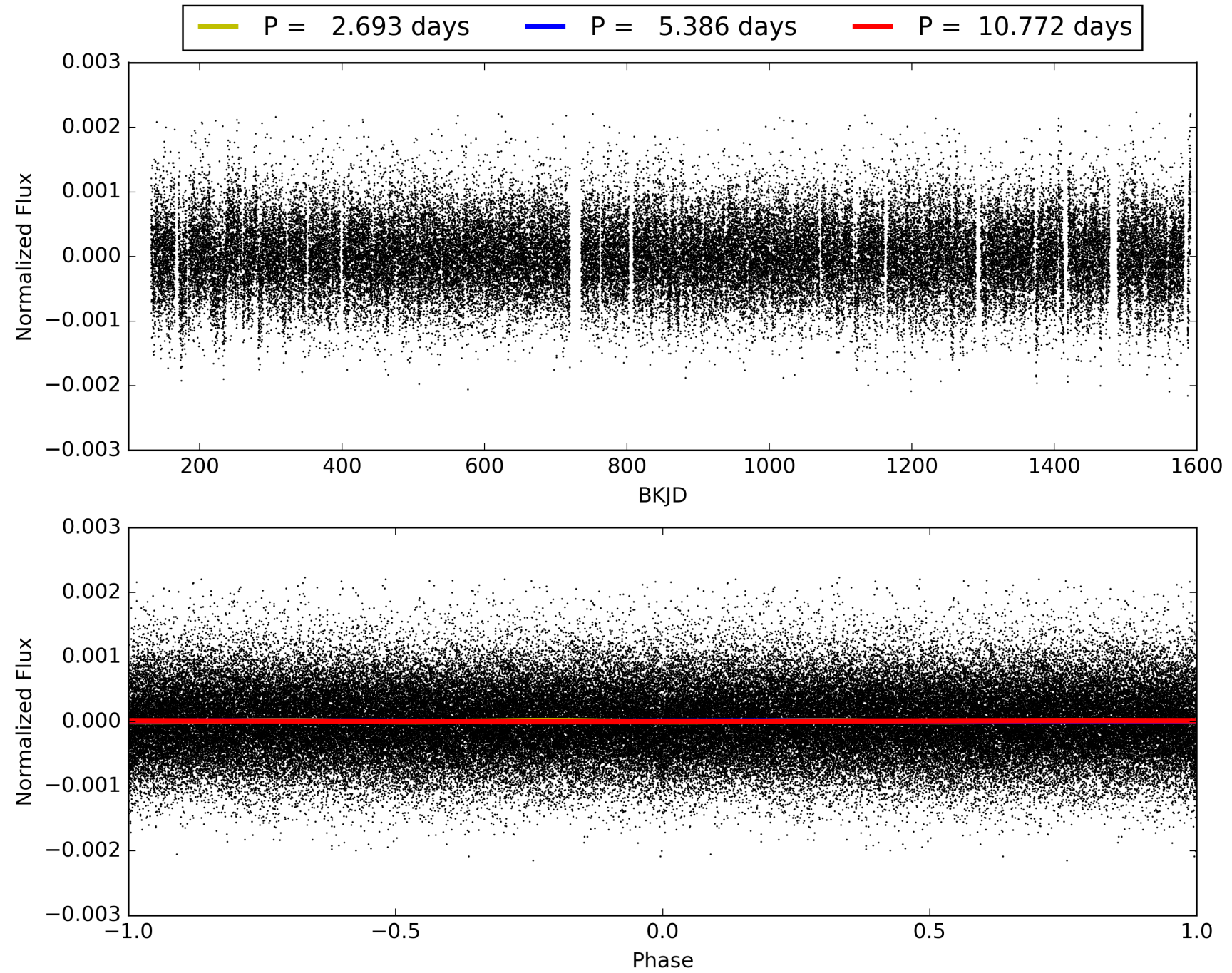
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:19:16 Z

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

TCE 005645170-01, PDC Light Curves

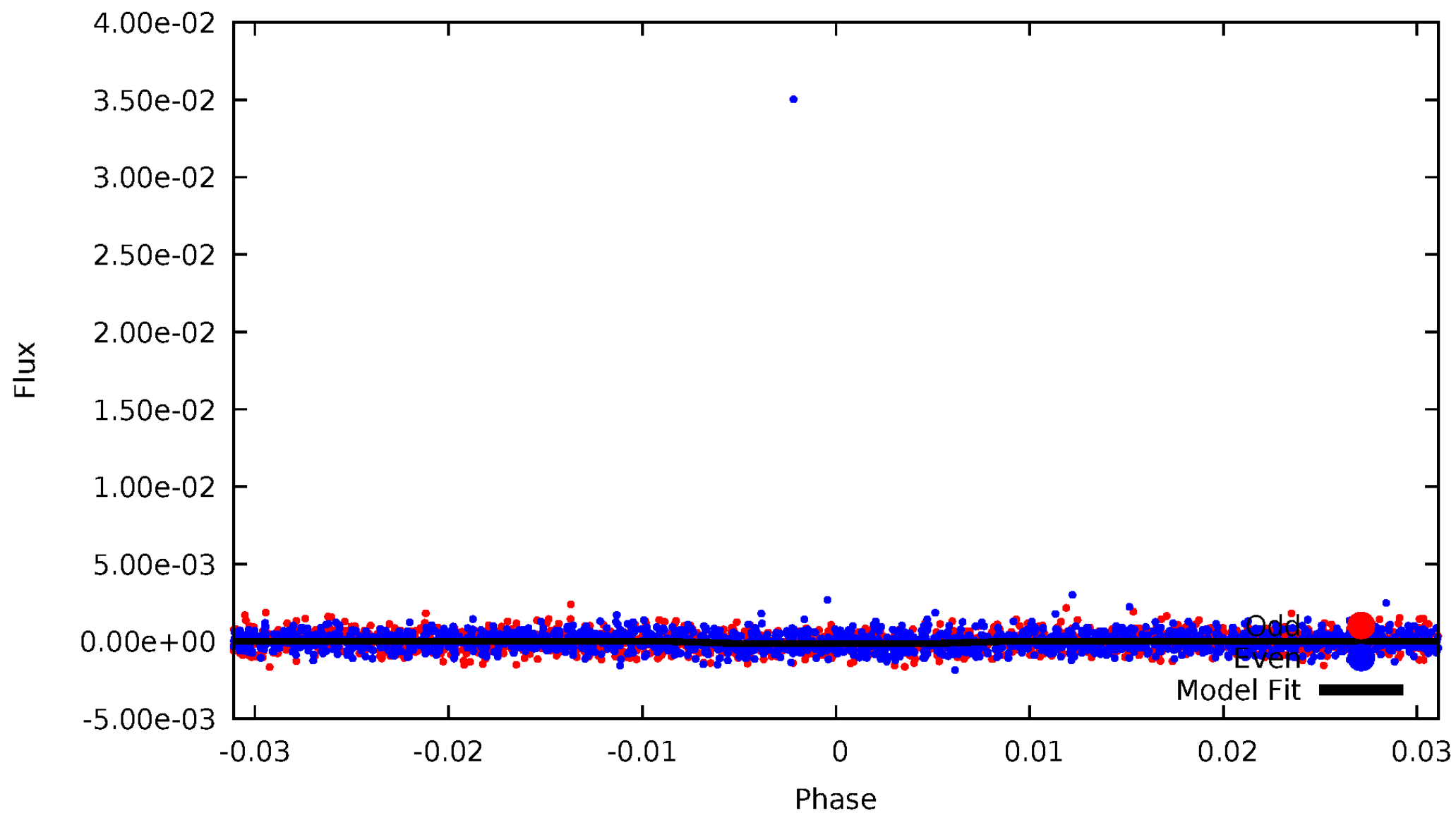


TCE 005645170-01



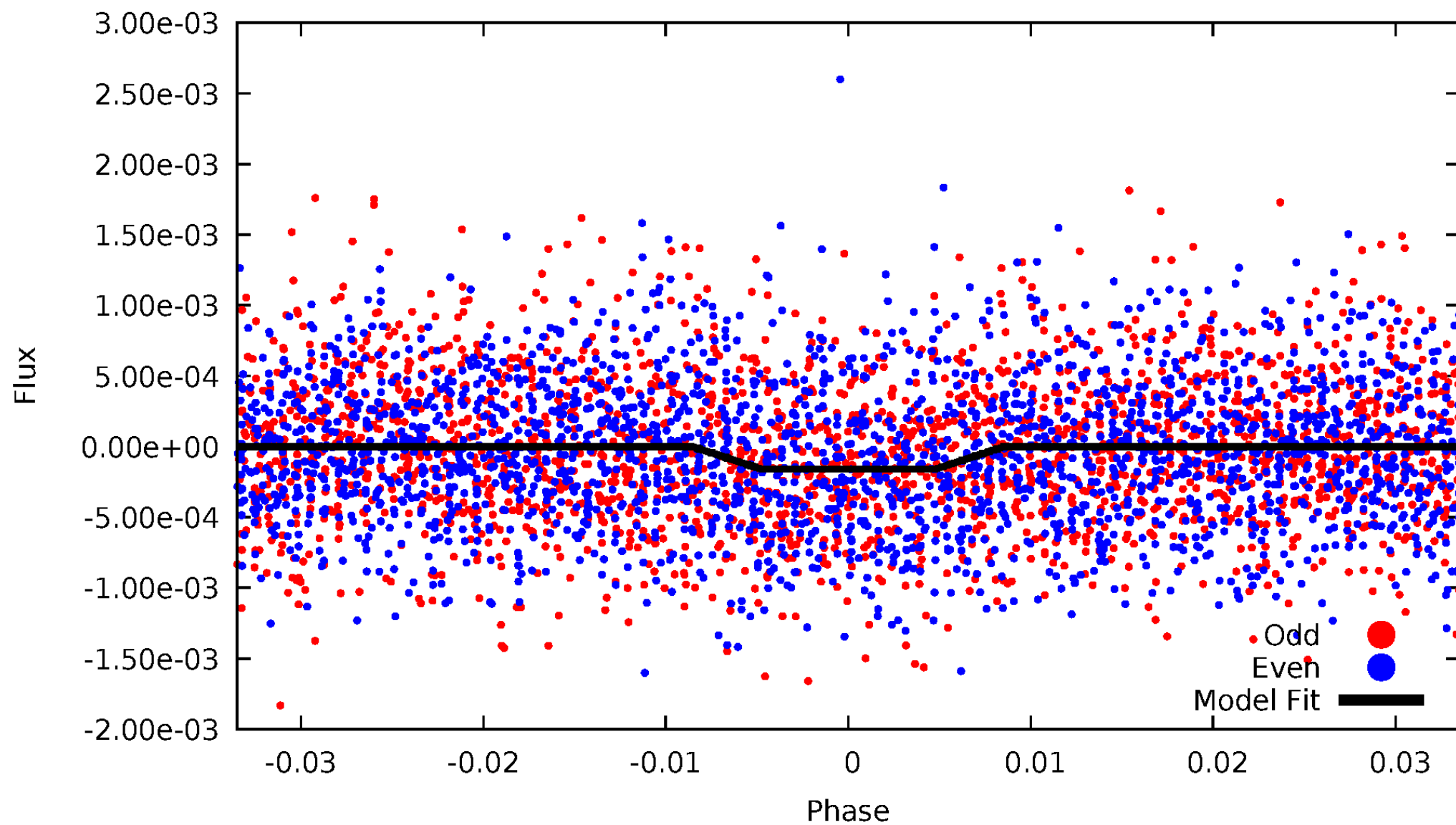
DV Odd/Even

TCE 005645170-01



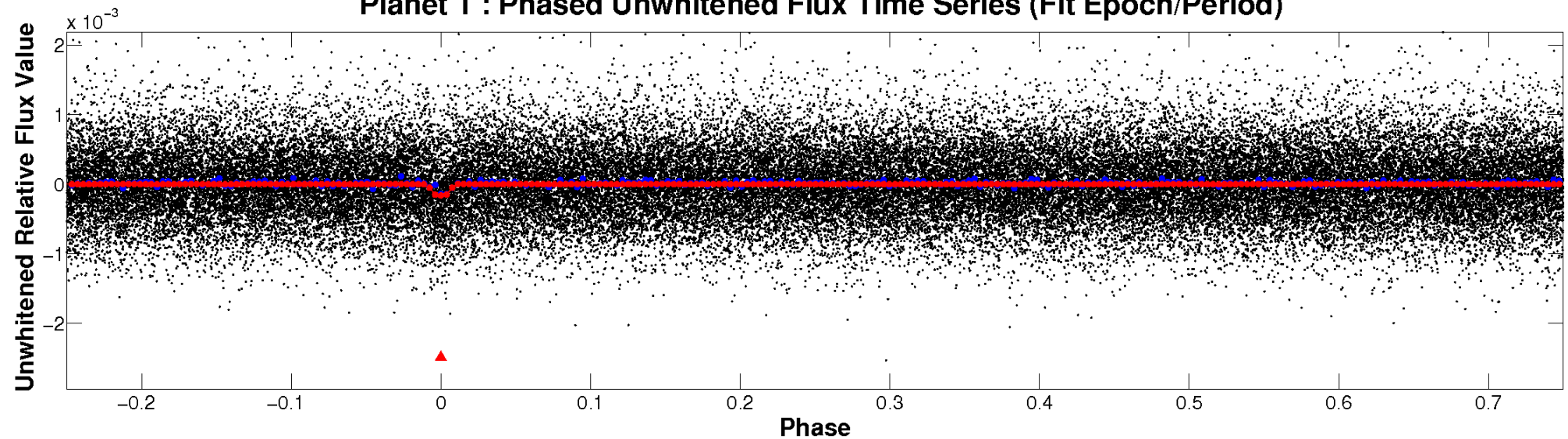
ALT Odd/Even

TCE 005645170-01

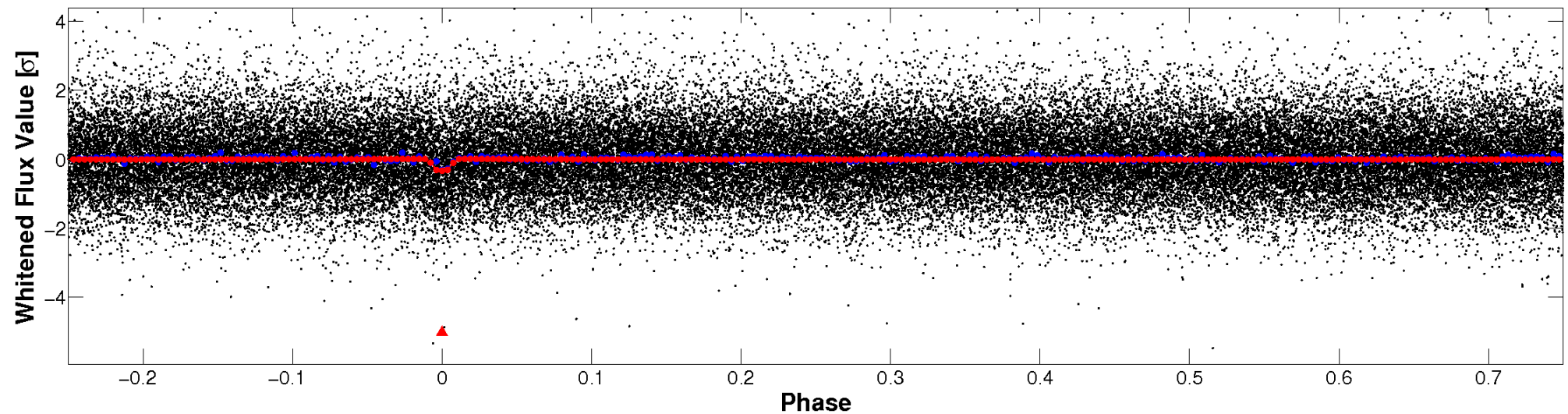


Non-Whitened Vs. Whitened Light Curve

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

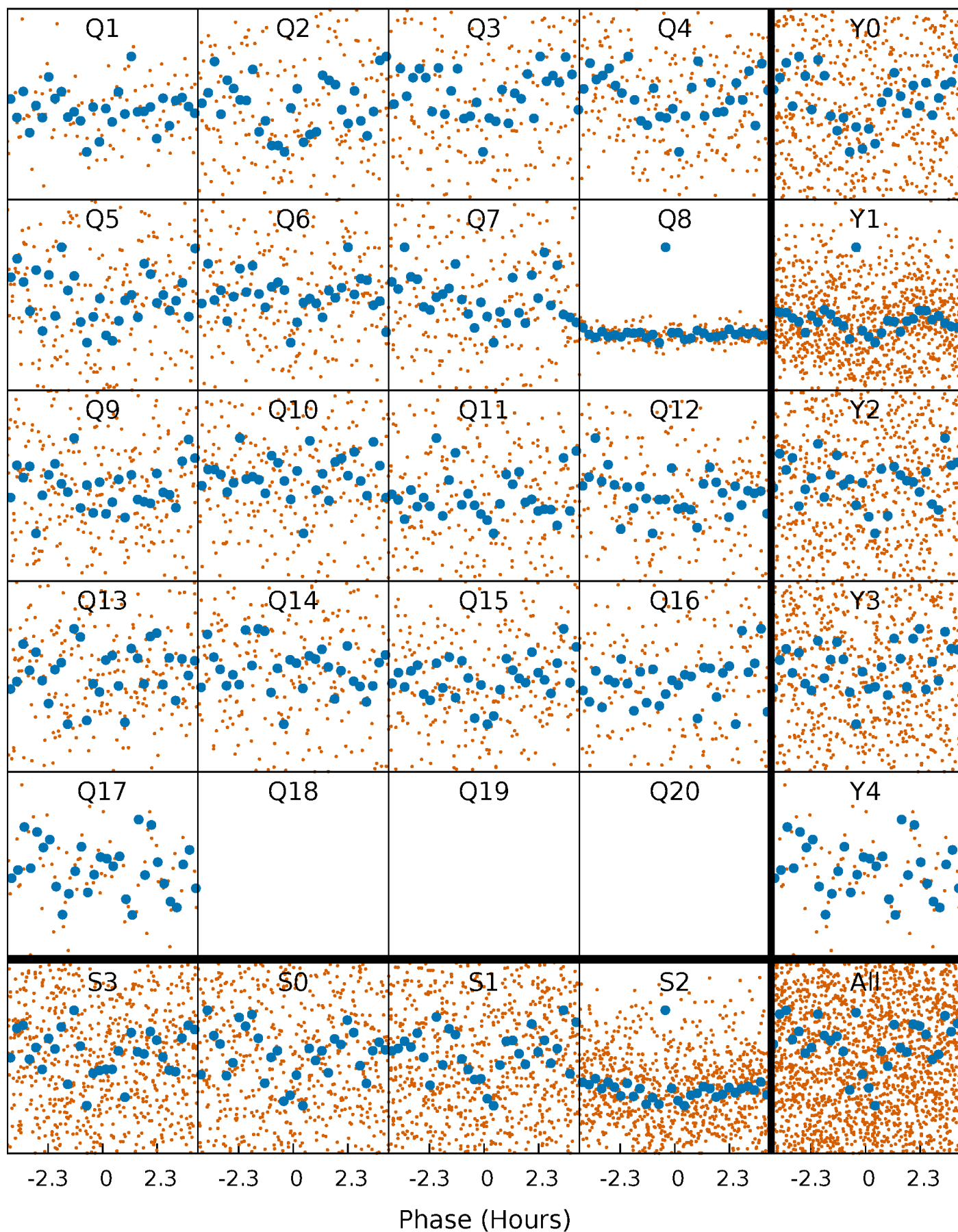


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



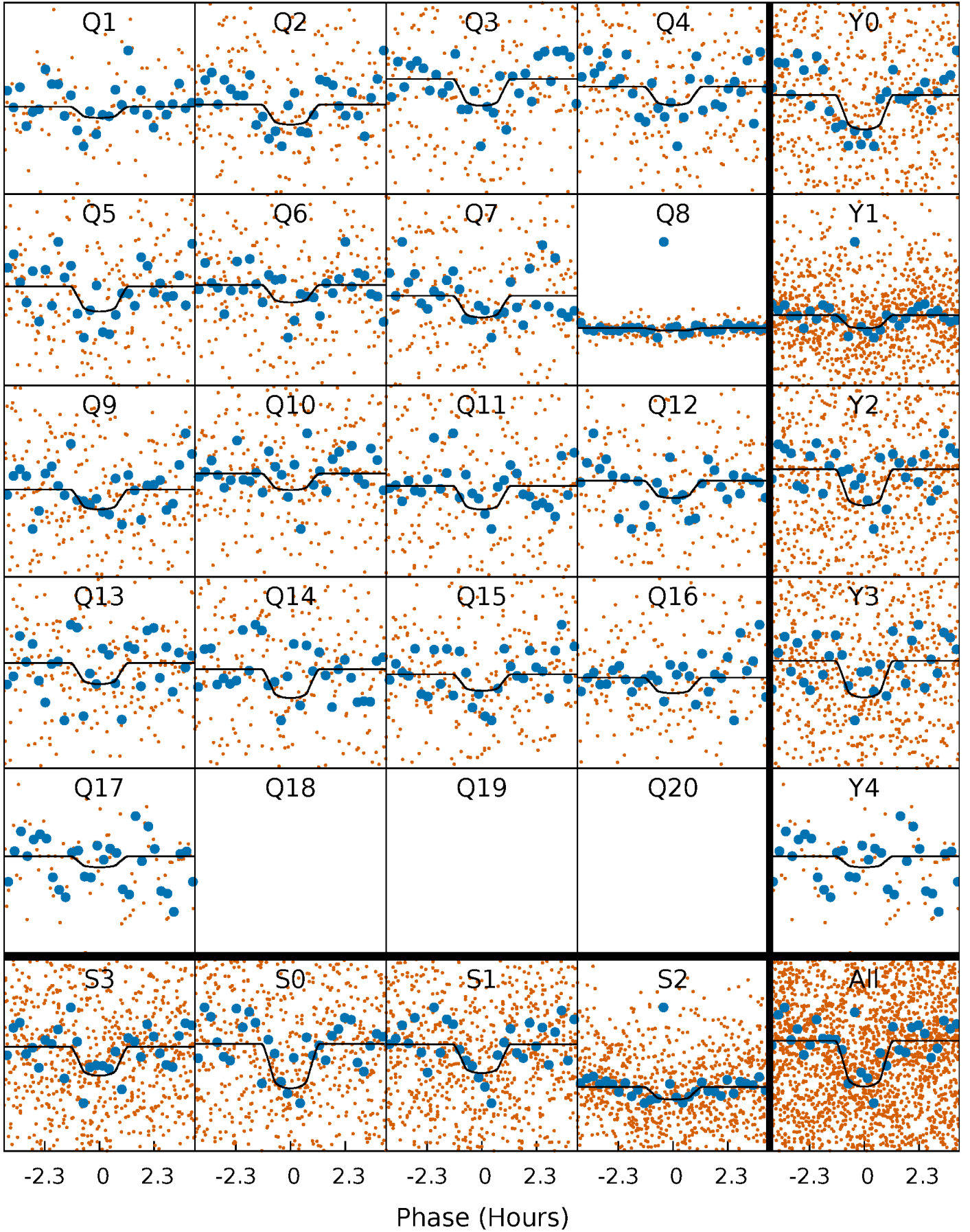
PDC Quarter-Phased Transit Curves

TCE 005645170-01 P= 5.386057 Days $T_0=133.967939$ (BKJD)



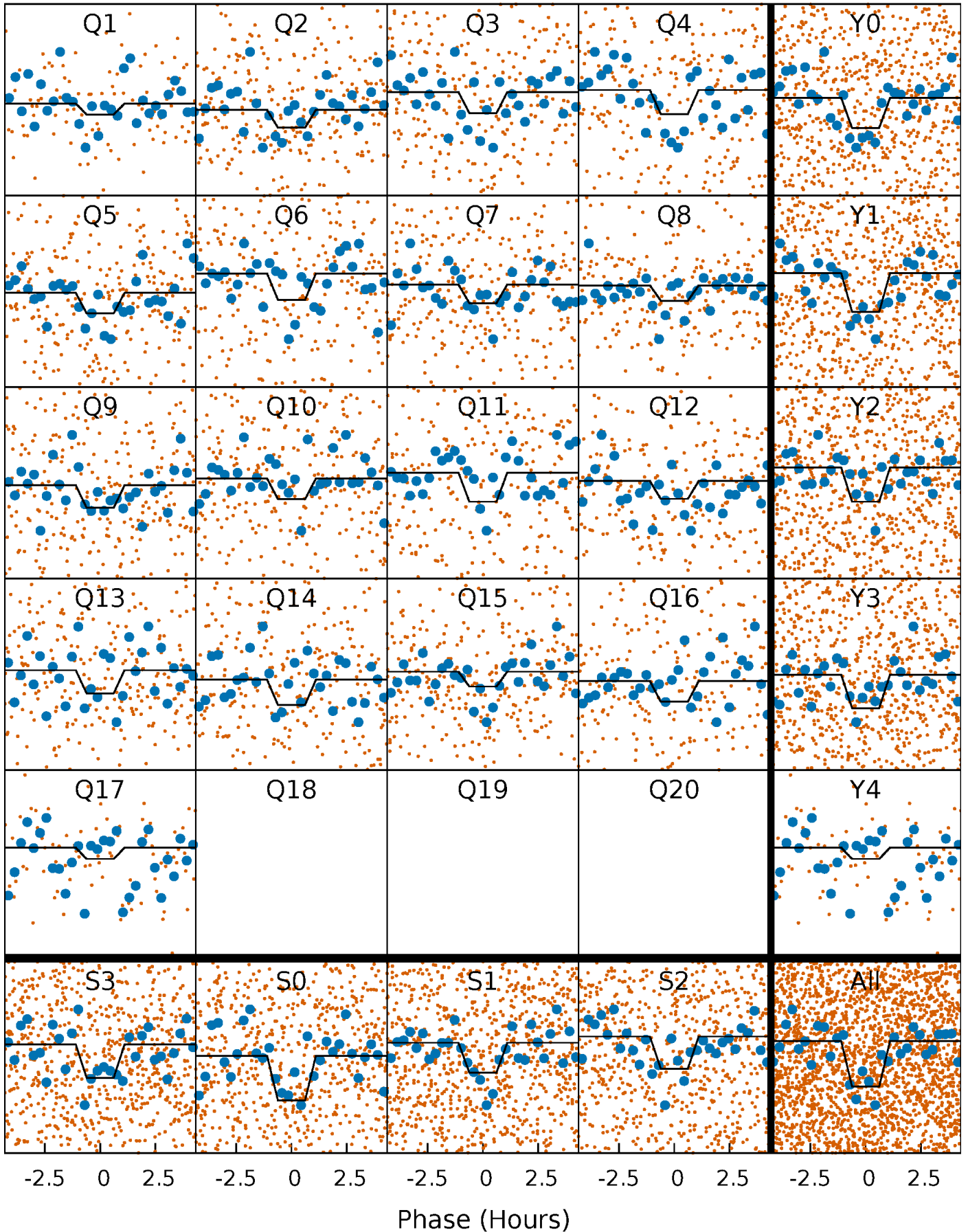
DV Quarter-Phased Transit Curves

TCE 005645170-01 P= 5.386057 Days $T_0=133.967939$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

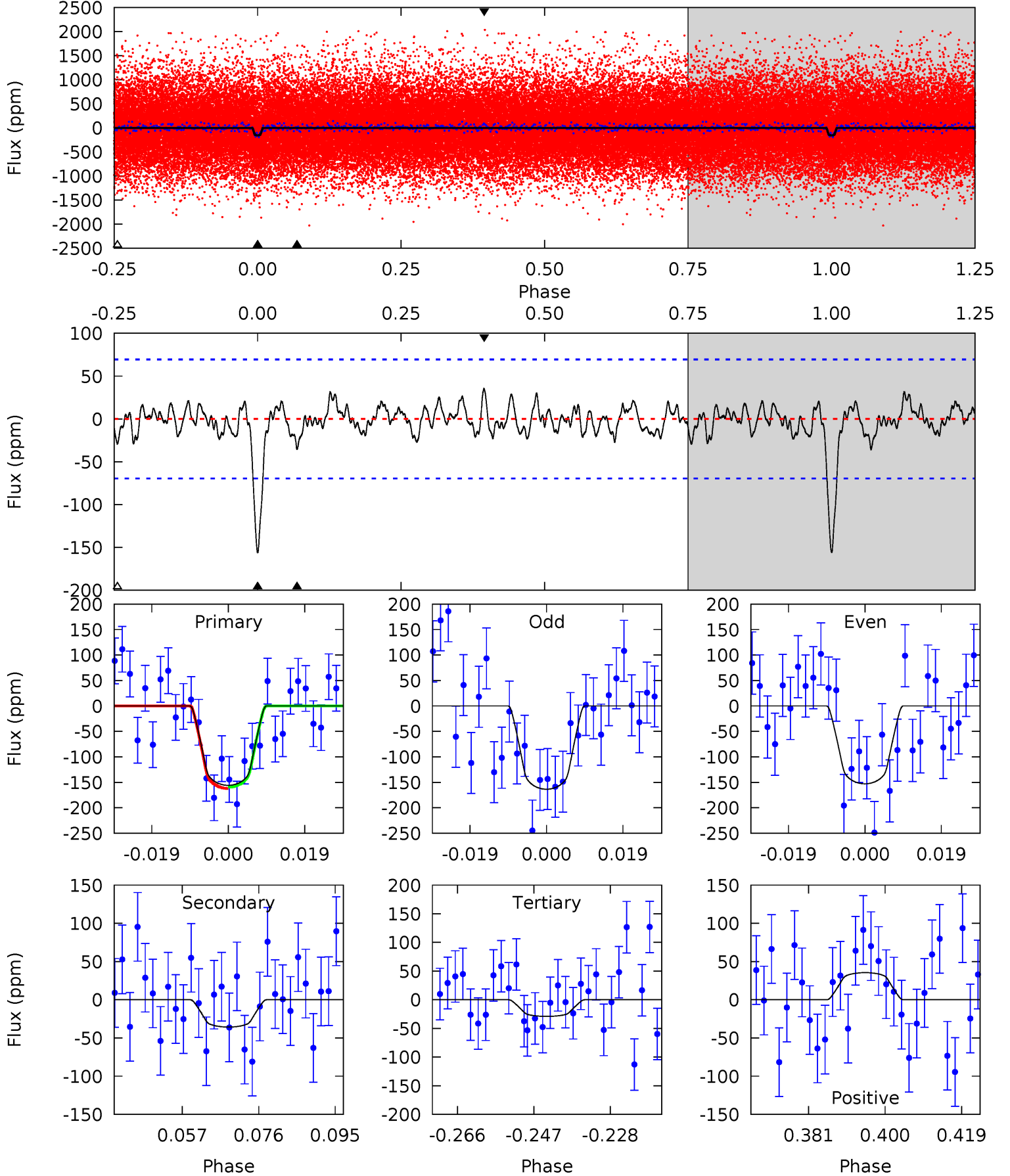
TCE 005645170-01 P= 5.386062 Days $T_0=133.966697$ (BKJD)



DV Model-Shift Uniqueness Test

005645170-01, P = 5.386057 Days, E = 128.581882 Days

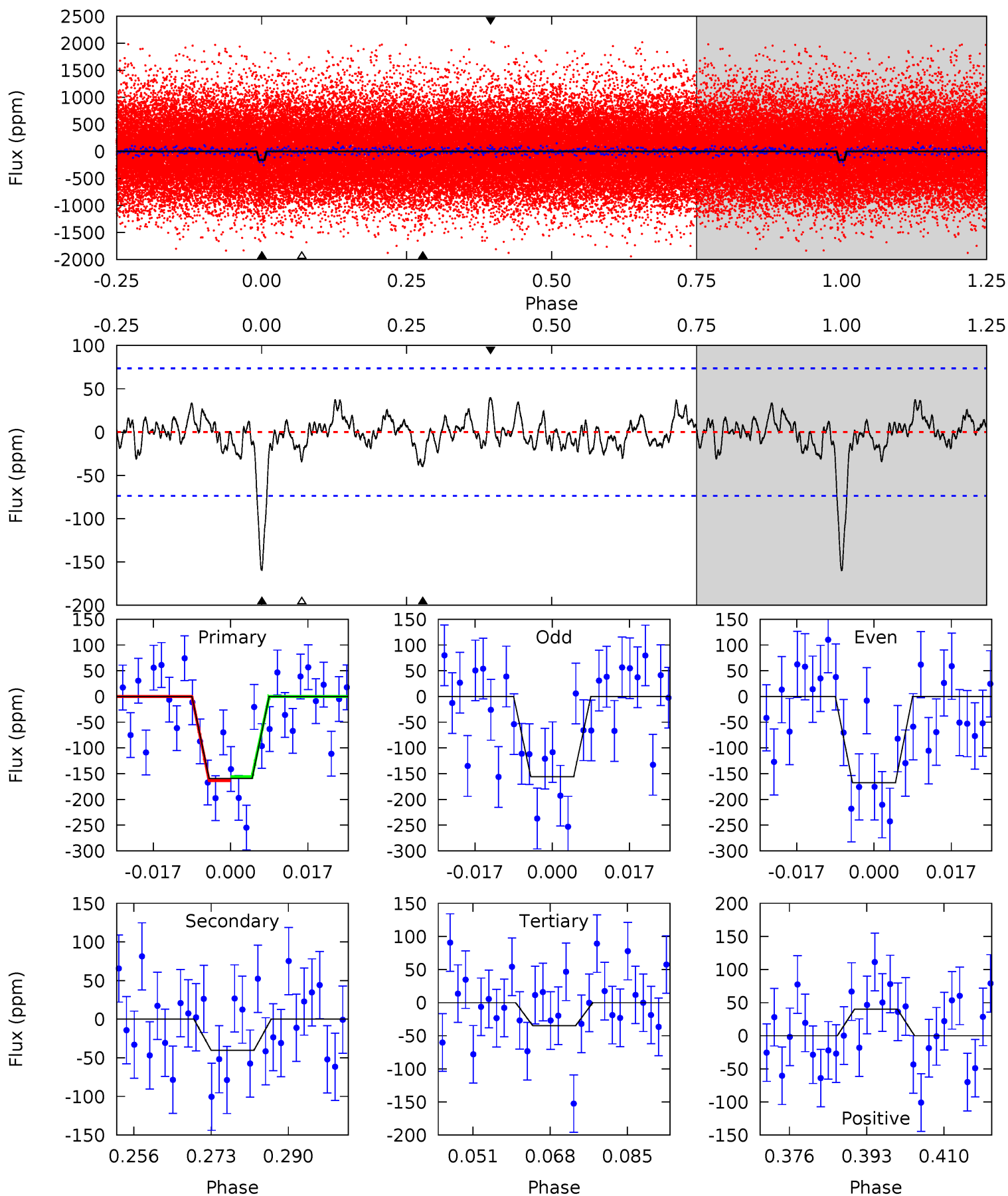
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	2.52	2.04	2.50	4.90	2.34	0.89	8.96	8.50	0.48	0.02	0.38	0.71	0.19	0.10



Alt Model-Shift Uniqueness Test

005645170-01, P = 5.386062 Days, E = 128.580635 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	2.69	2.32	2.67	4.92	2.39	0.93	8.35	8.00	0.37	0.01	0.40	0.94	0.20	0.26



Stellar Parameters For KIC 005645170

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5516^{+166}_{-166}	$4.669^{+0.026}_{-0.097}$	$-0.840^{+0.300}_{-0.300}$	$0.656^{+0.095}_{-0.041}$	$0.740^{+0.058}_{-0.065}$	$3.688^{+0.447}_{-1.069}$
	+3%/-3%	+1%/-2%	+36%/-36%	+14%/-6%	+8%/-9%	+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 005645170-01 / KOI 4837.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-36 ± 14	$1.18^{+0.75}_{-0.72}$	1198^{+50}_{-43}	3753^{+1642}_{-621}	42^{+224}_{-28}
Alt.	-40 ± 15	$1.01^{+0.73}_{-0.62}$	1202^{+46}_{-46}	4027^{+1944}_{-736}	61^{+359}_{-42}

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 $A_{obs} \gg 1.0$

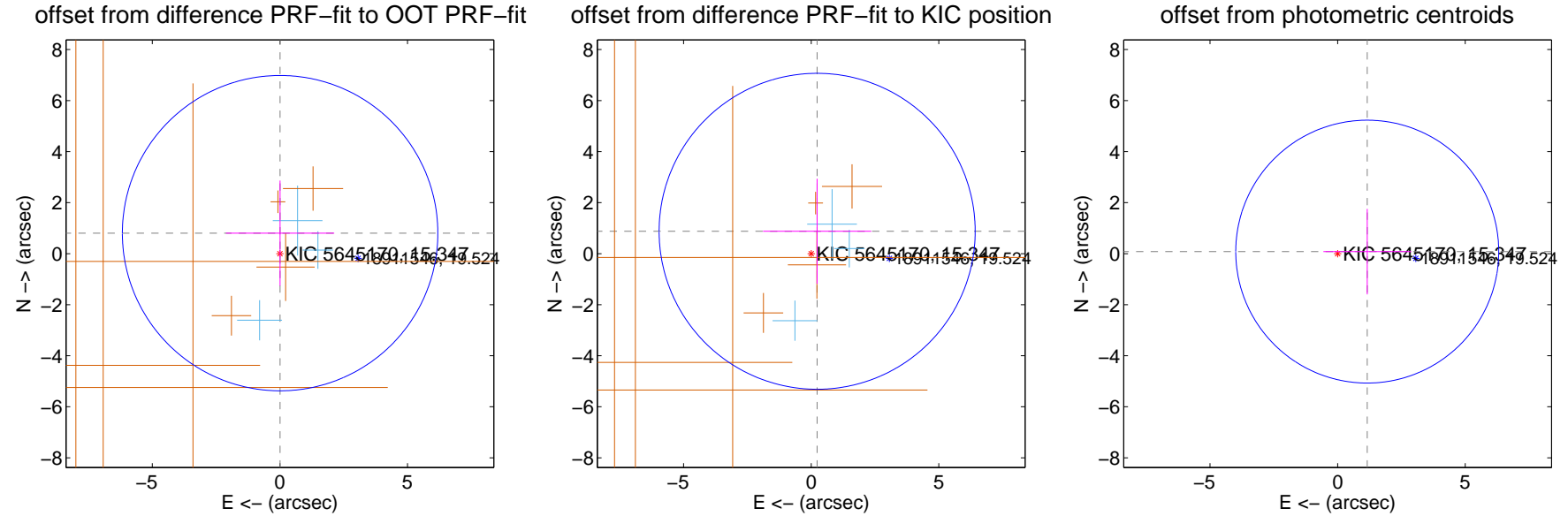
DV Centroid Data

Supplemental centroid analysis for 005645170-01. Kepler magnitude: 15.35. Transit SNR 8.63

There are 3 quarters with good PRF difference image offsets

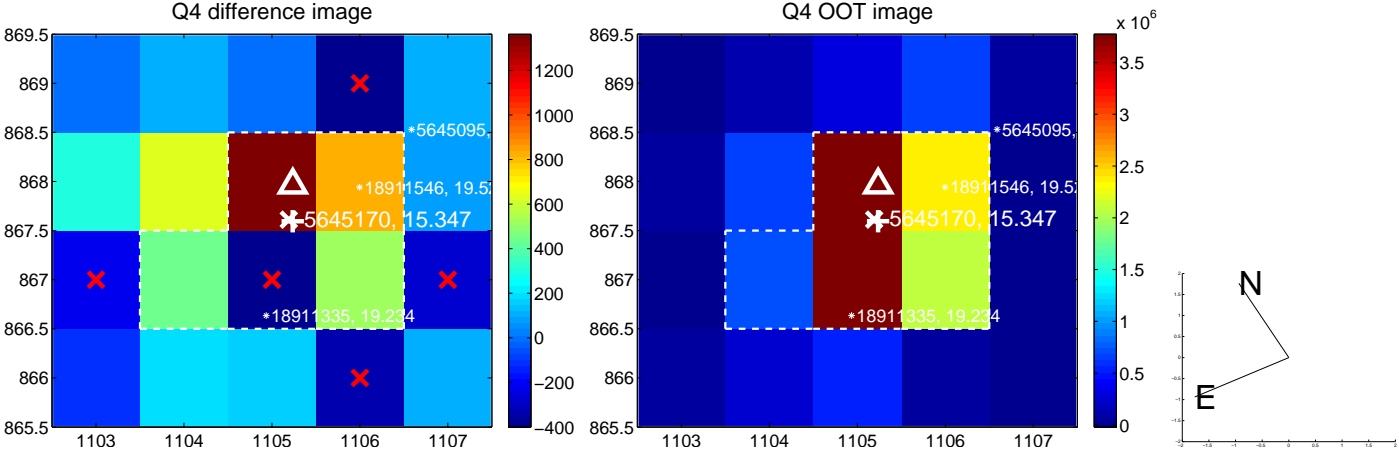
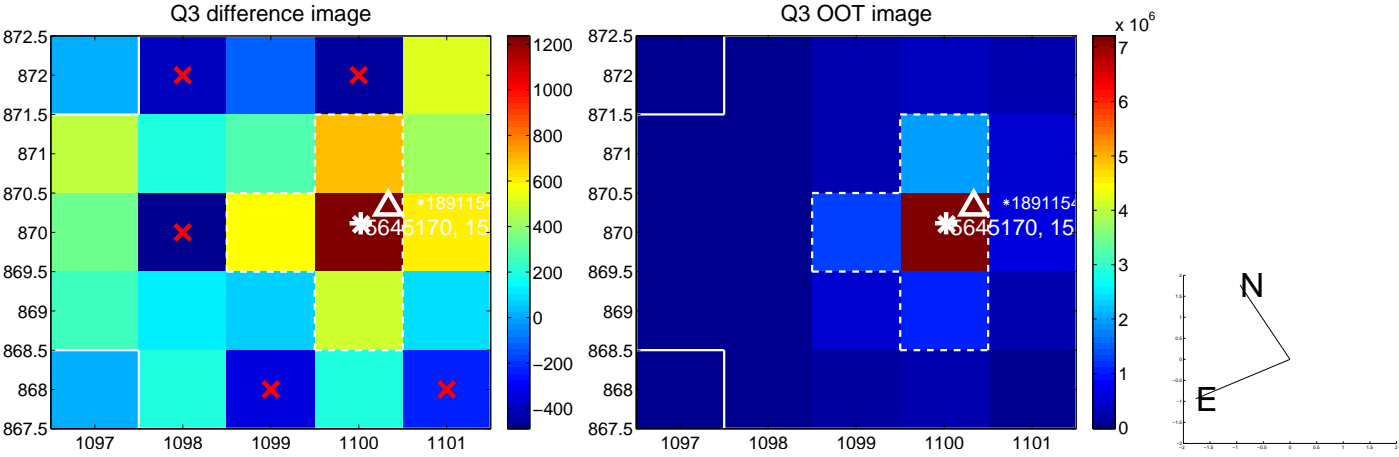
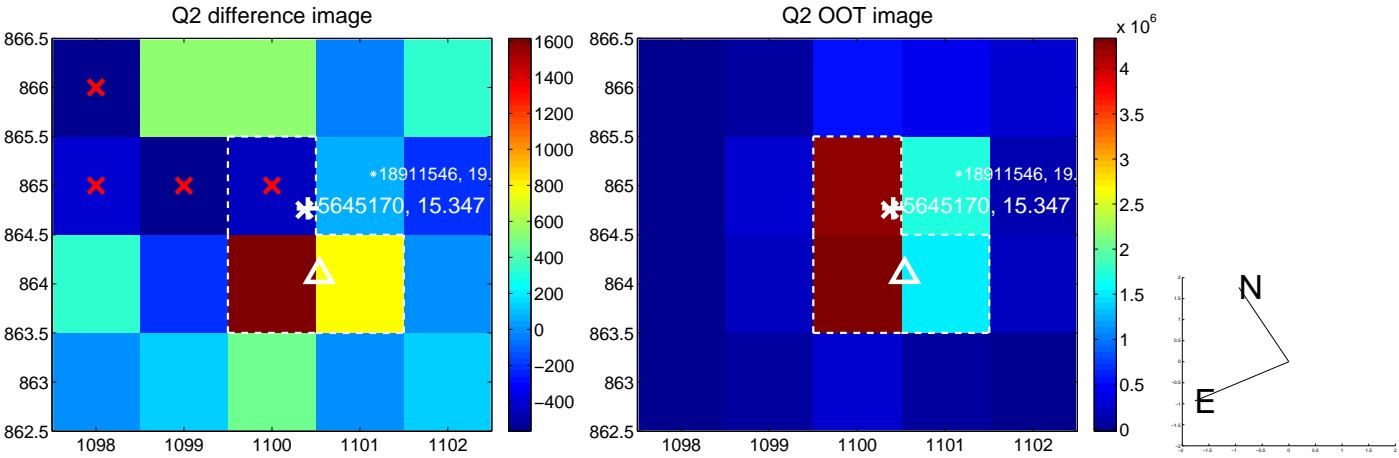
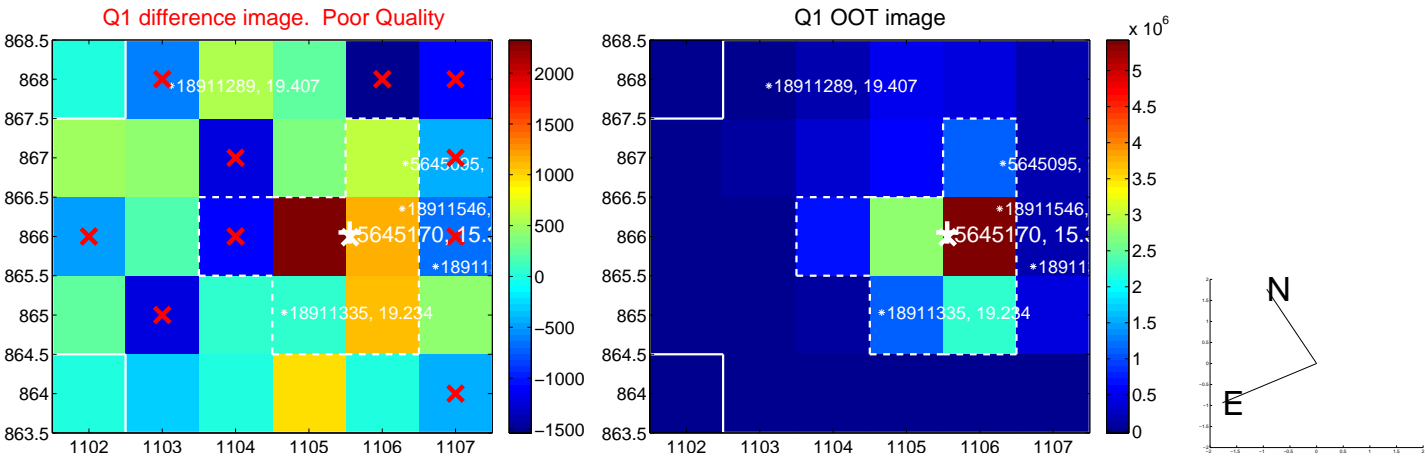
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.804 ± 2.060	0.39	-0.008 ± 2.120	0.804 ± 2.060
PRF-fit source offset from KIC position	0.907 ± 2.064	0.44	-0.234 ± 2.120	0.877 ± 2.060
photometric centroid source offset	1.16 ± 1.72	0.68	-1.16 ± 1.72	0.08 ± 1.67

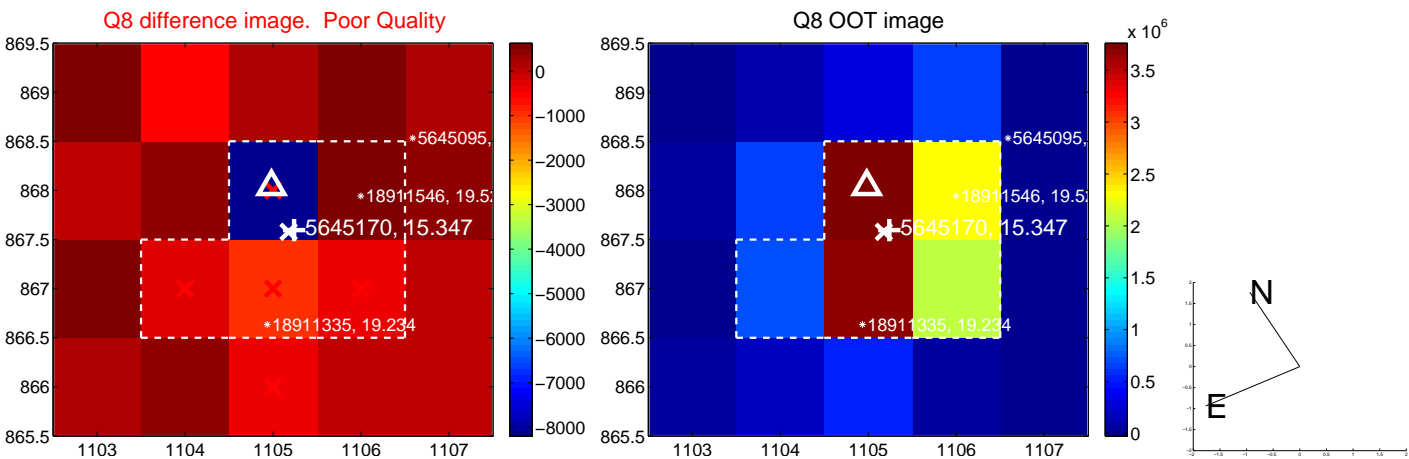
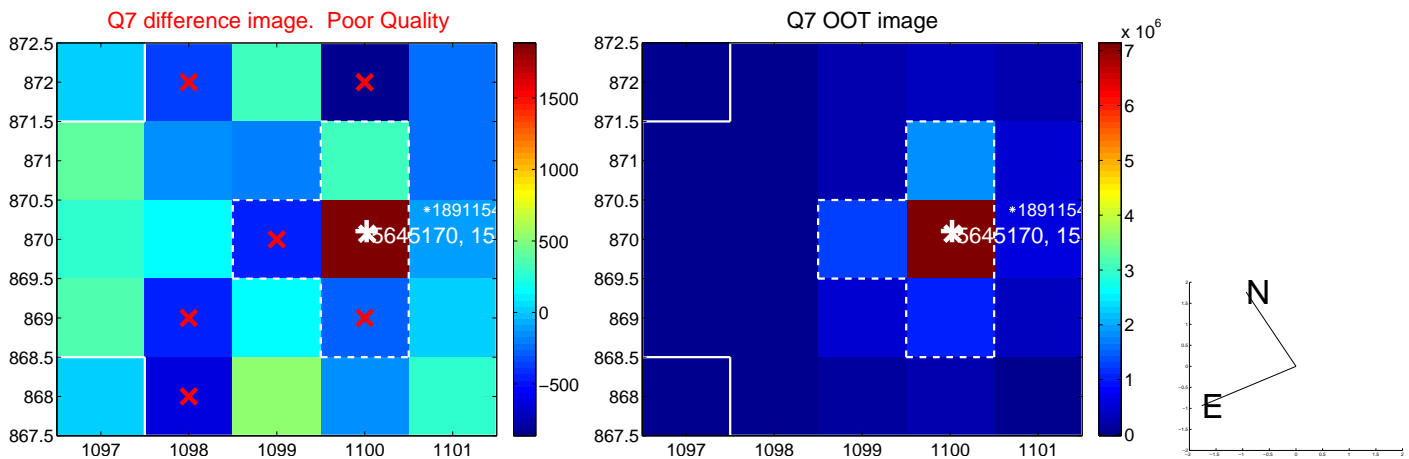
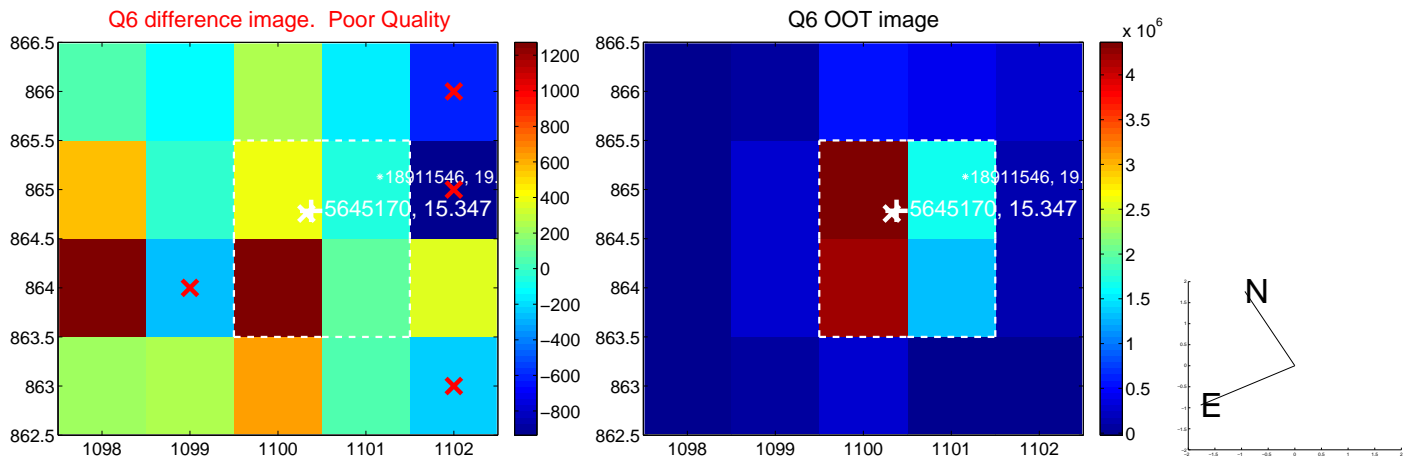
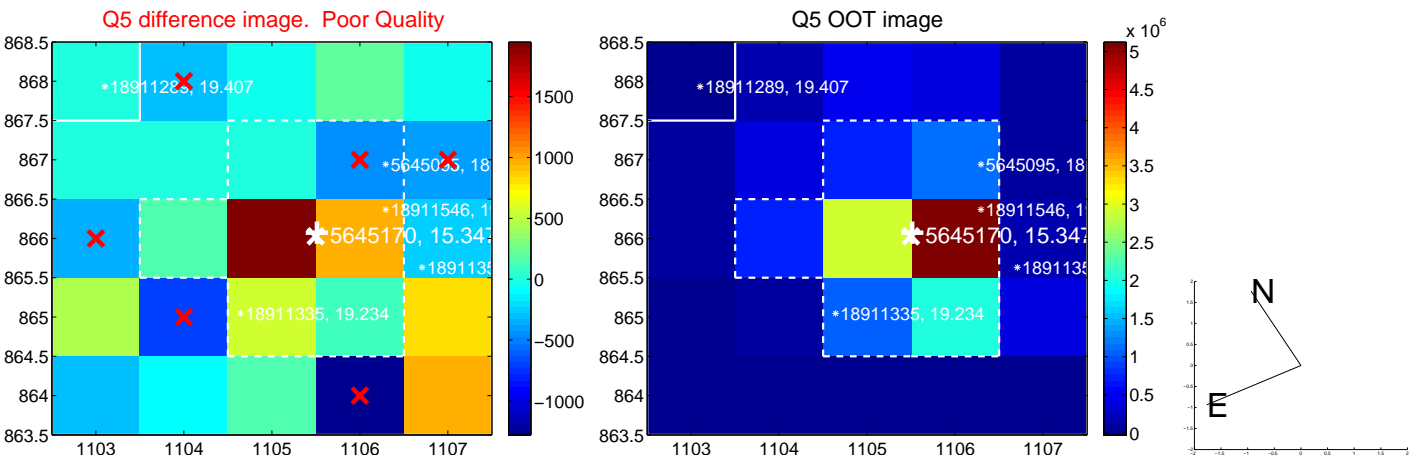


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

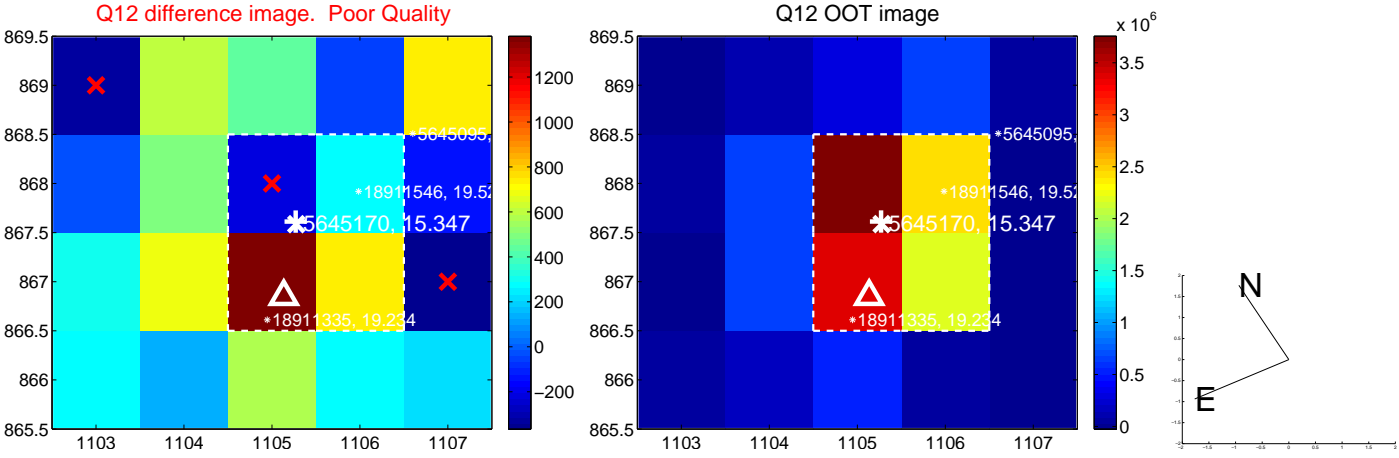
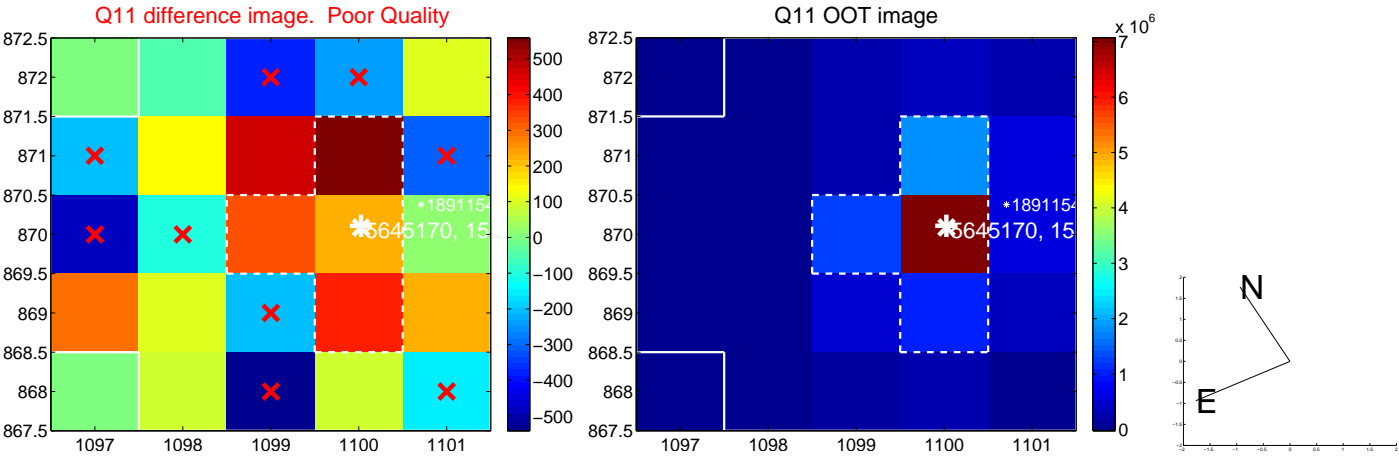
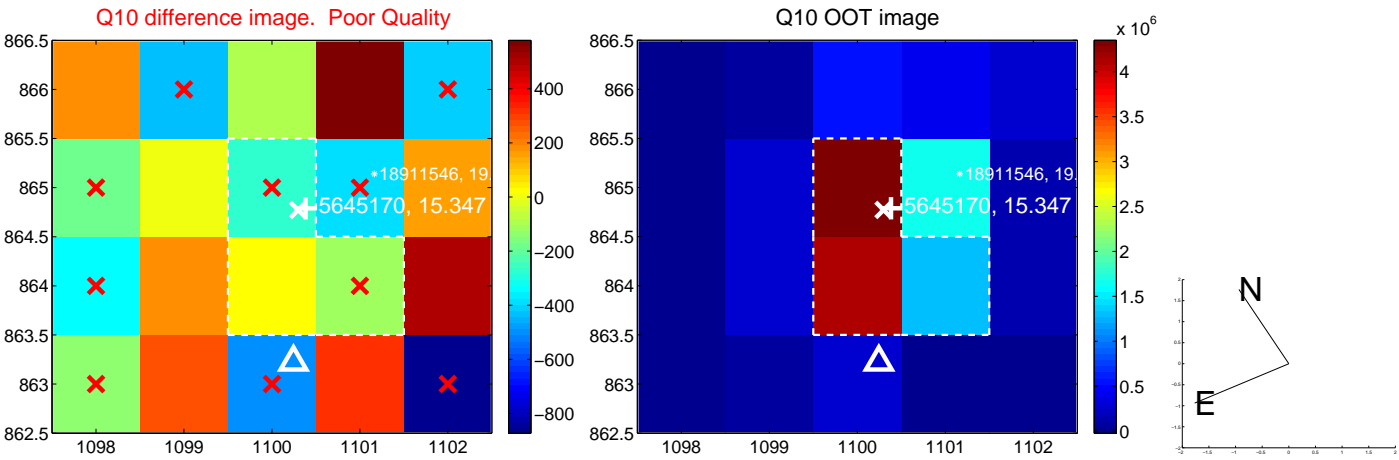
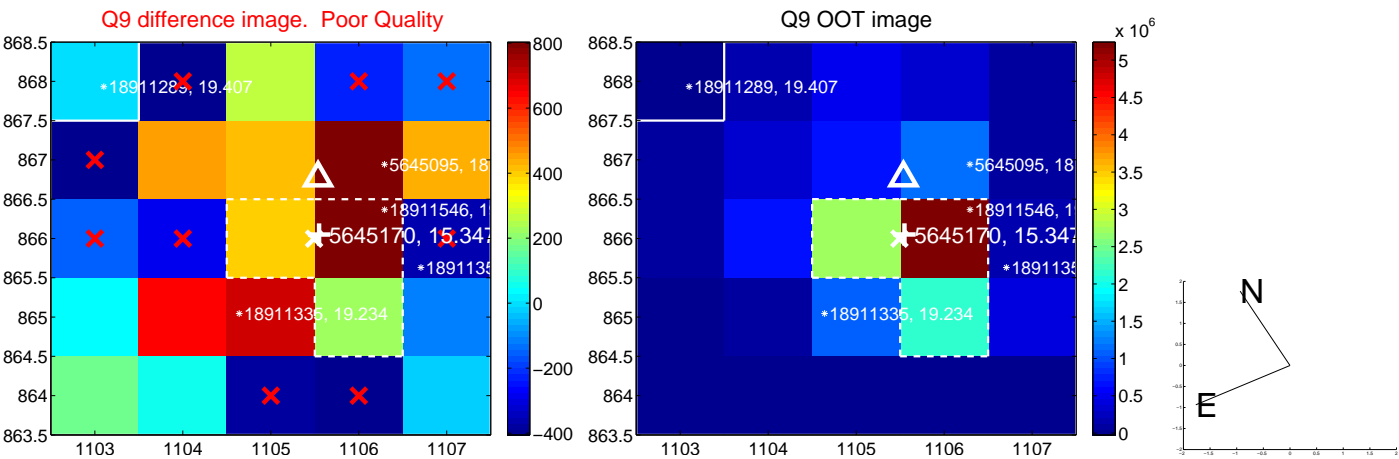
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



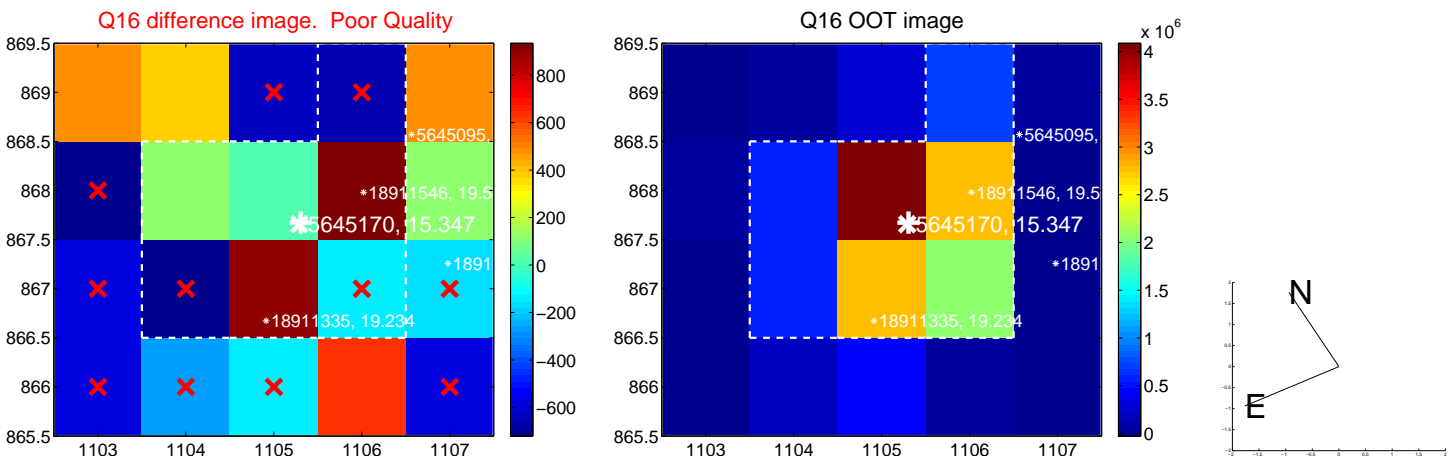
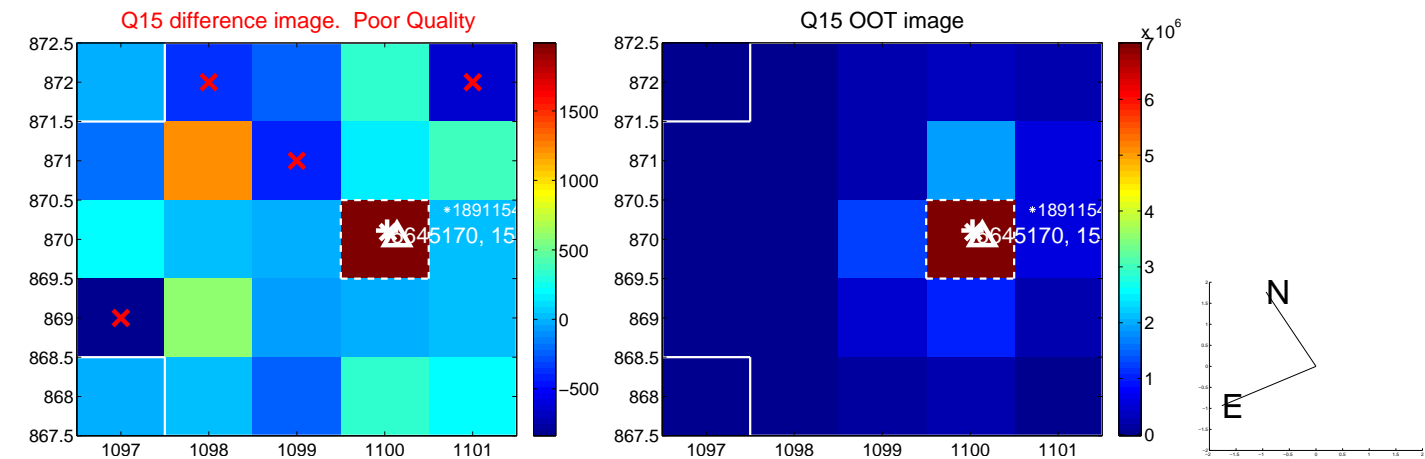
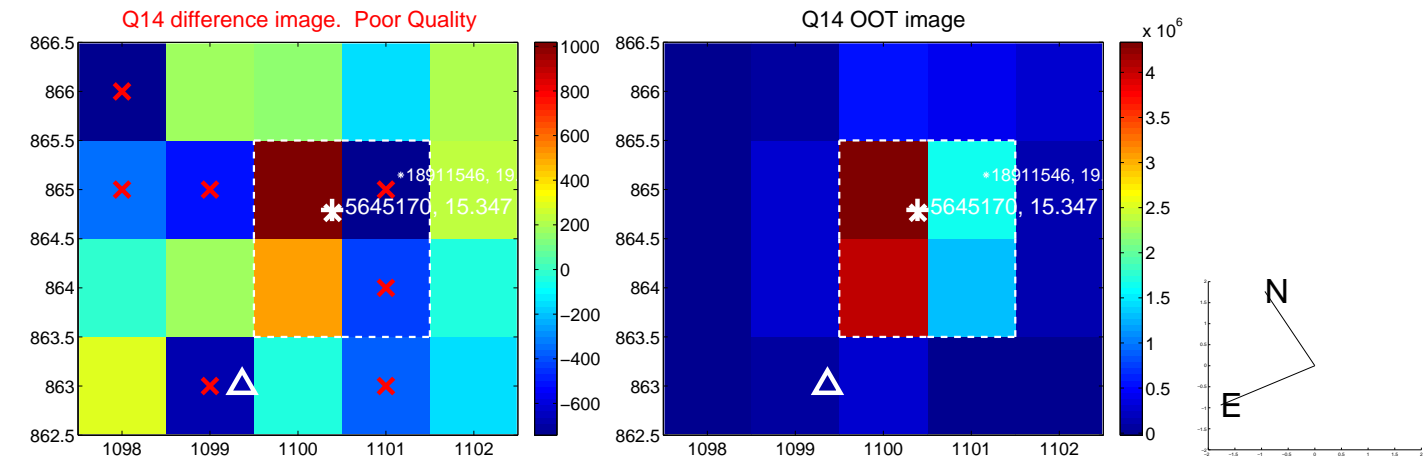
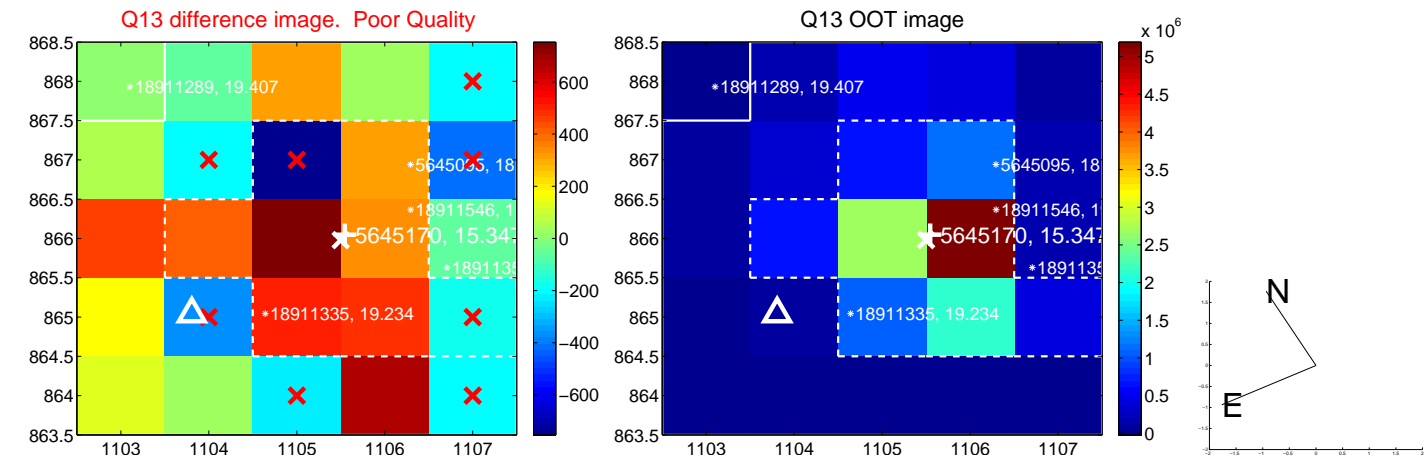
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



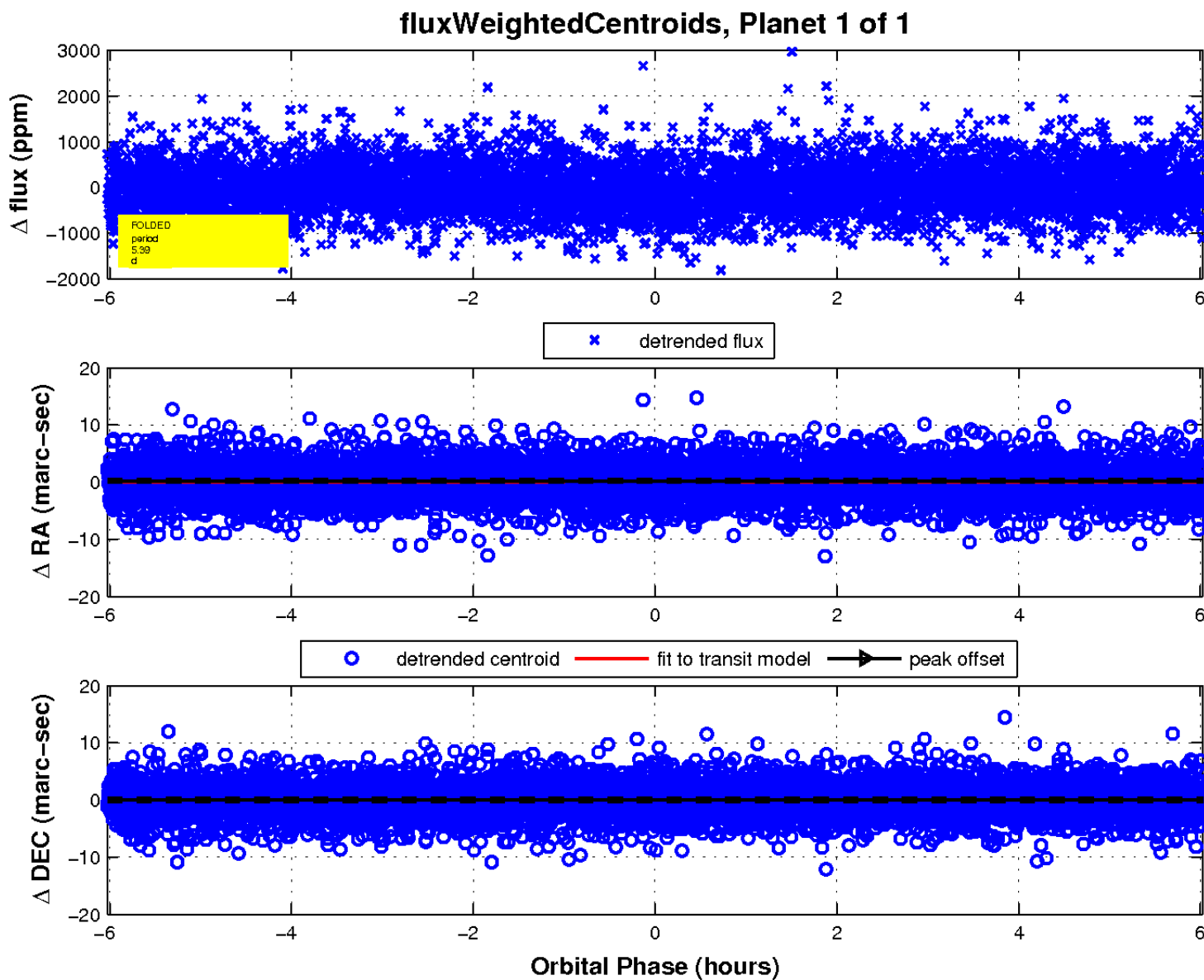
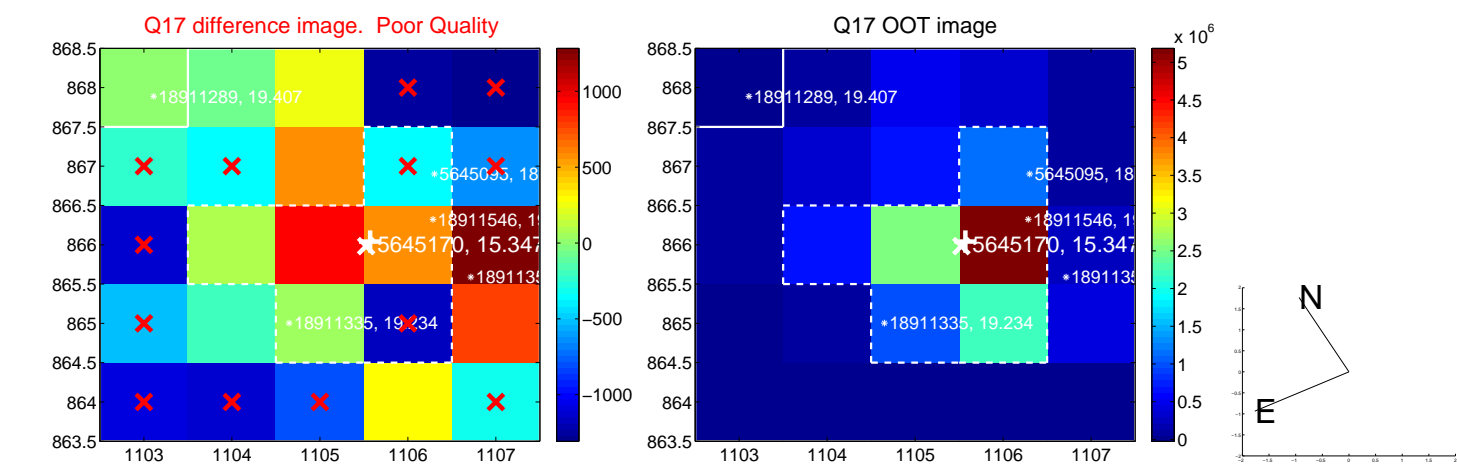
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

