

KIC 012108364

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})
012108364-01	OBS	4592.01	0.705436	131.697083	92.3	1.312	10.6	8.2	0.90	5838	1.01	3498.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012108364-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—CENT_UNRESOLVED_OFFSET—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 012108364-01

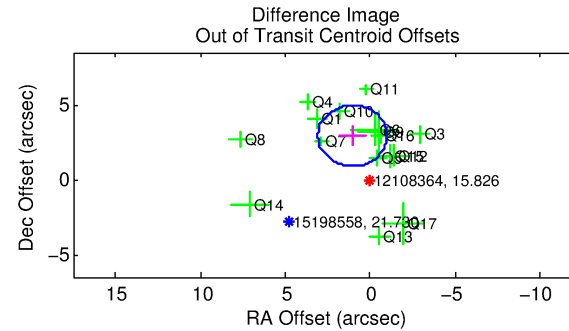
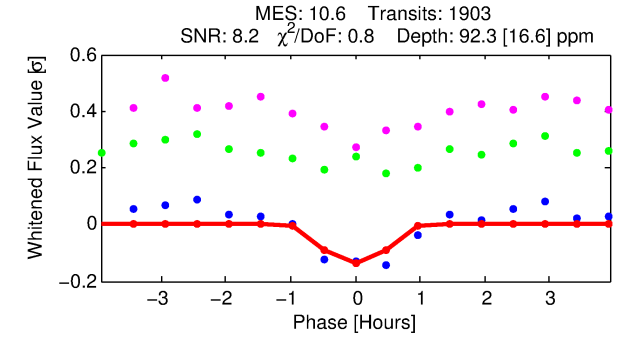
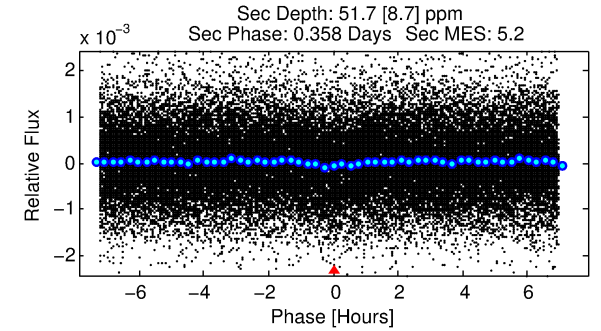
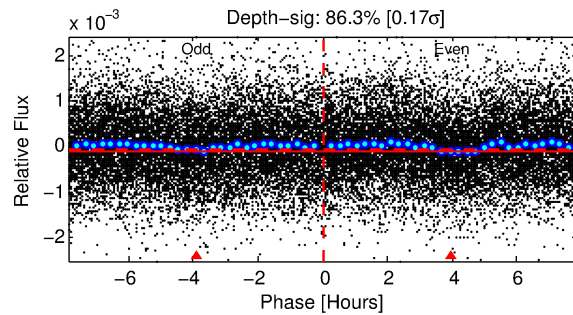
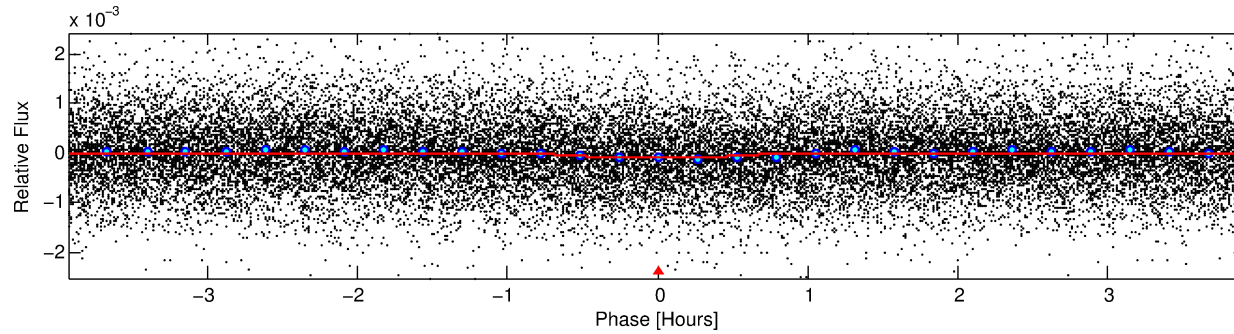
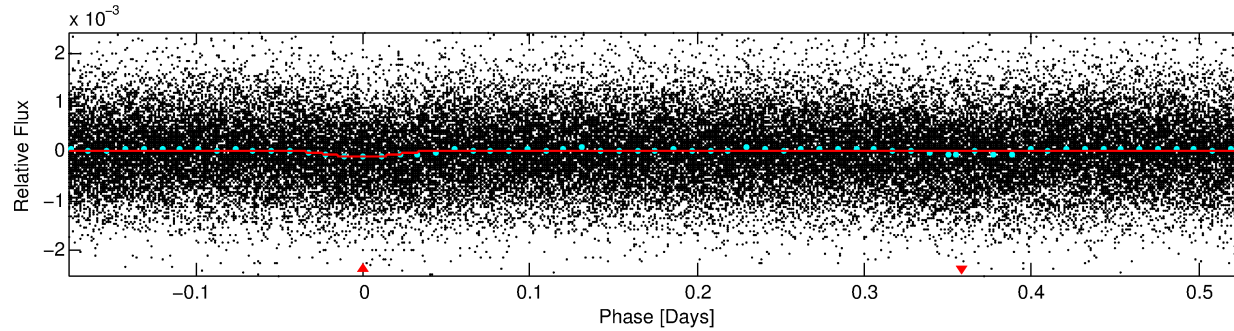
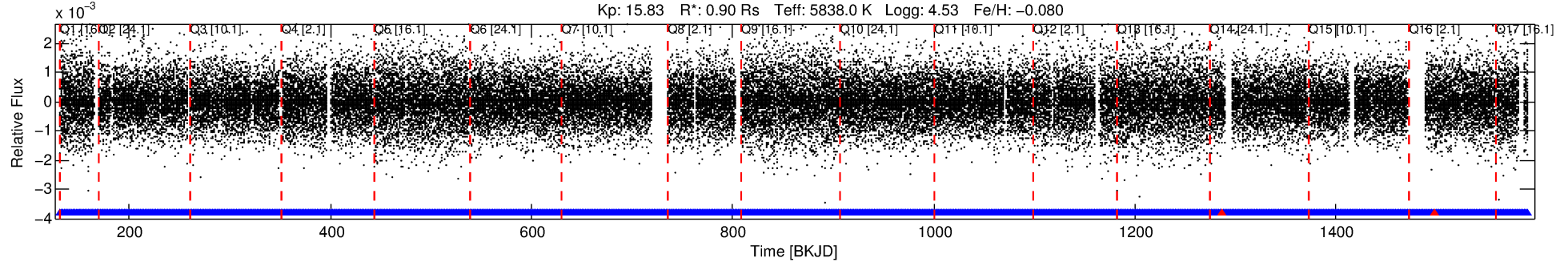
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
012108364-01	12108364	012108333-pri	12108333	1:1	52.4	-1	-13	13.23	15.83	3802.20	Direct-PRF	0	1.87	0.74

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: 12108364 Candidate: 1 of 1 Period: 0.705 d
KOI: K04592.01 Corr: 0.831

Kp: 15.83 R*: 0.90 Rs Teff: 5838.0 K Logg: 4.53 Fe/H: -0.080



DV Fit Results:

Period = 0.70544 [0.00001] d
Epoch = 131.6971 [0.0026] BKJD
Rp/R* = 0.0104 [0.0109]
a/R* = 2.19 [8.83]
b = 0.89 [1.24]
Seff = 3498.40 [1367.11]
Teff = 1961 [192] K
Rp = 1.02 [1.11] Re
a = 0.0155 [0.0038] AU
Ag = 6.61 [14.13] [0.40σ]
Teffp = 4861 [2565] K [1.13σ]

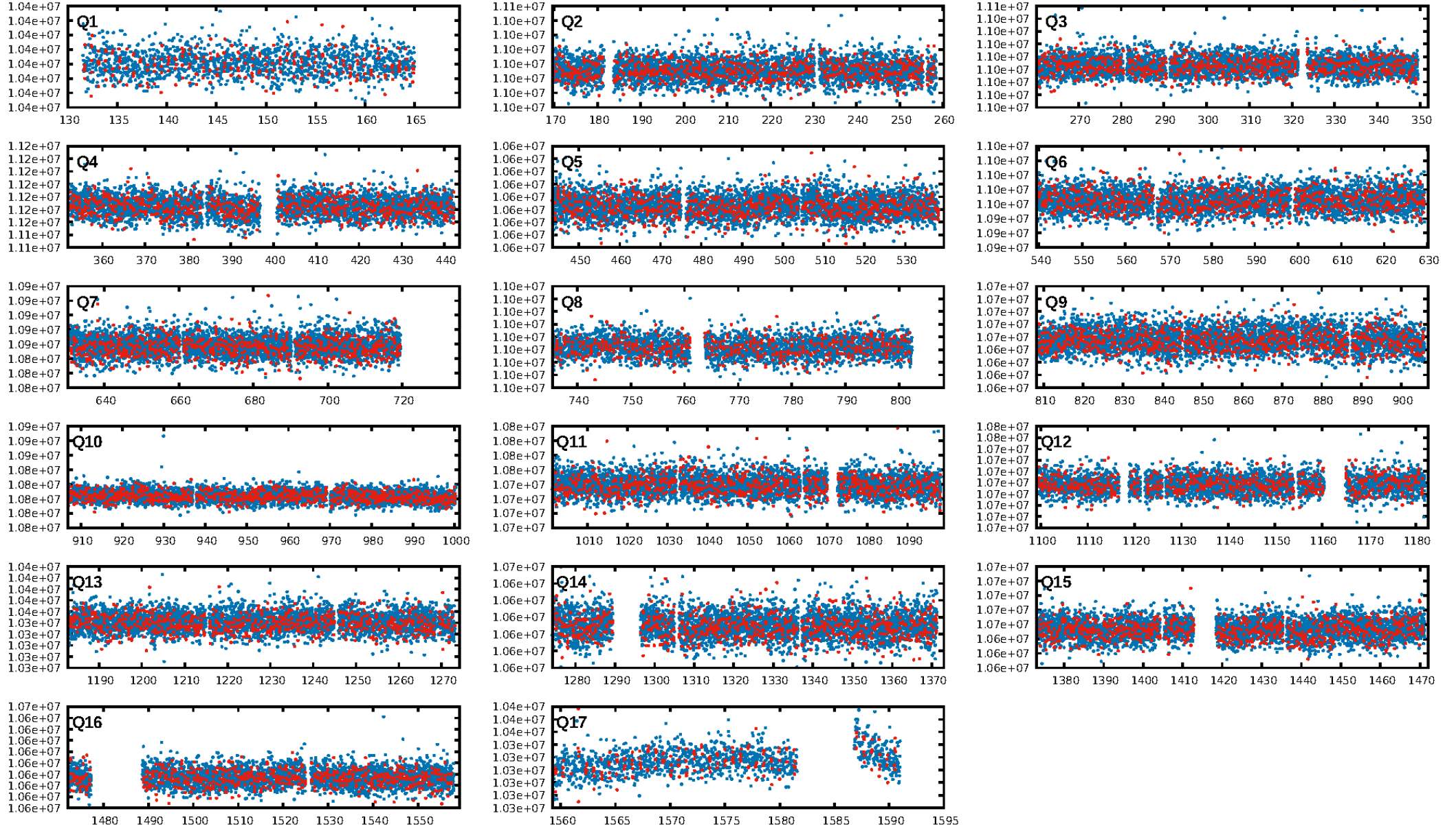
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.11e-25
RollingBand-fgt: 1.00 [1816/1818]
GhostDiagnostic-chr: -0.002587
Centroid-sig: 0.0%
Centroid-so: 7.068 arcsec [3.56σ]
OotOffset-rm: 3.108 arcsec [4.59σ]
KicOffset-rm: 3.113 arcsec [4.73σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 1.00 [17/17]

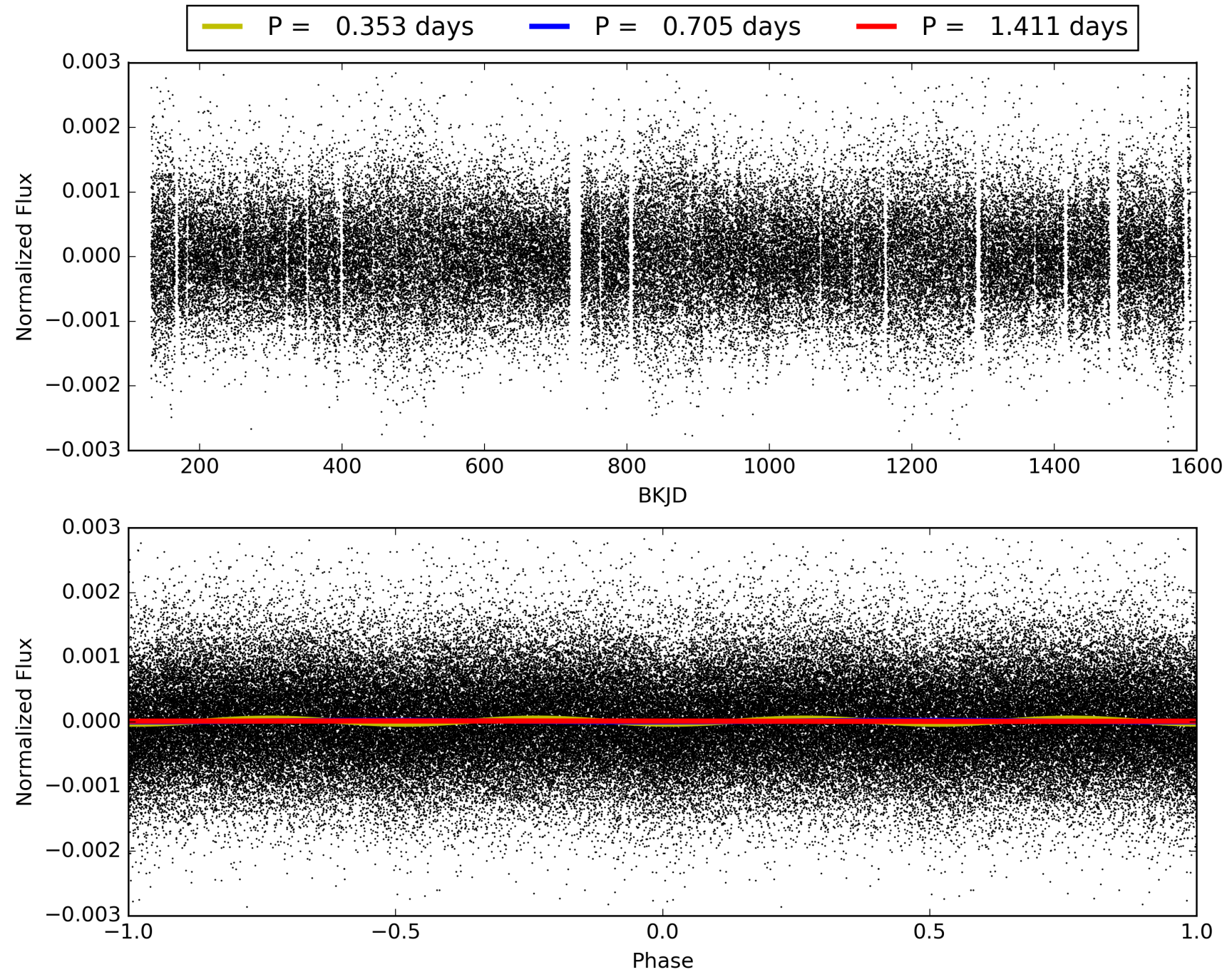
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:33:29 Z

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

TCE 012108364-01, PDC Light Curves

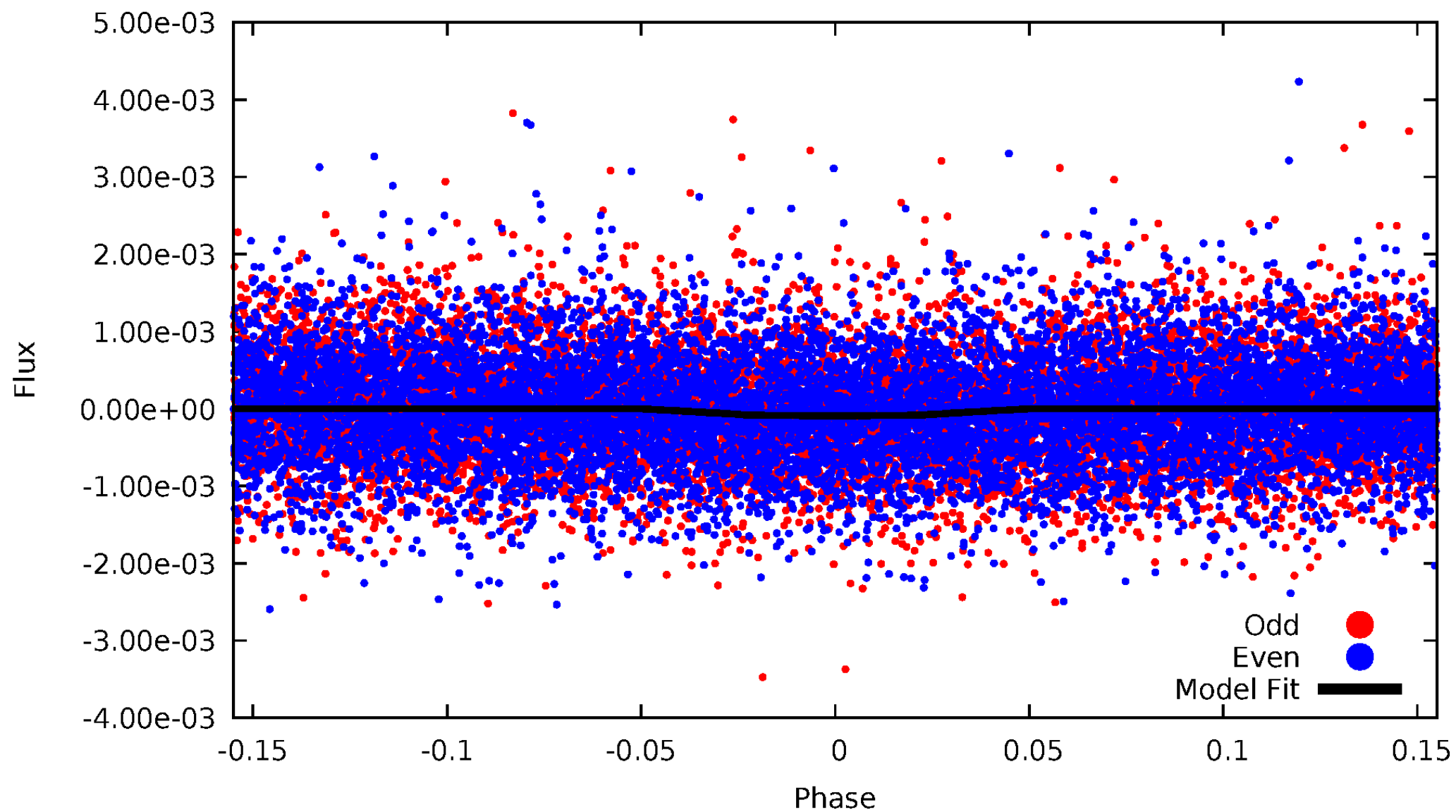


TCE 012108364-01



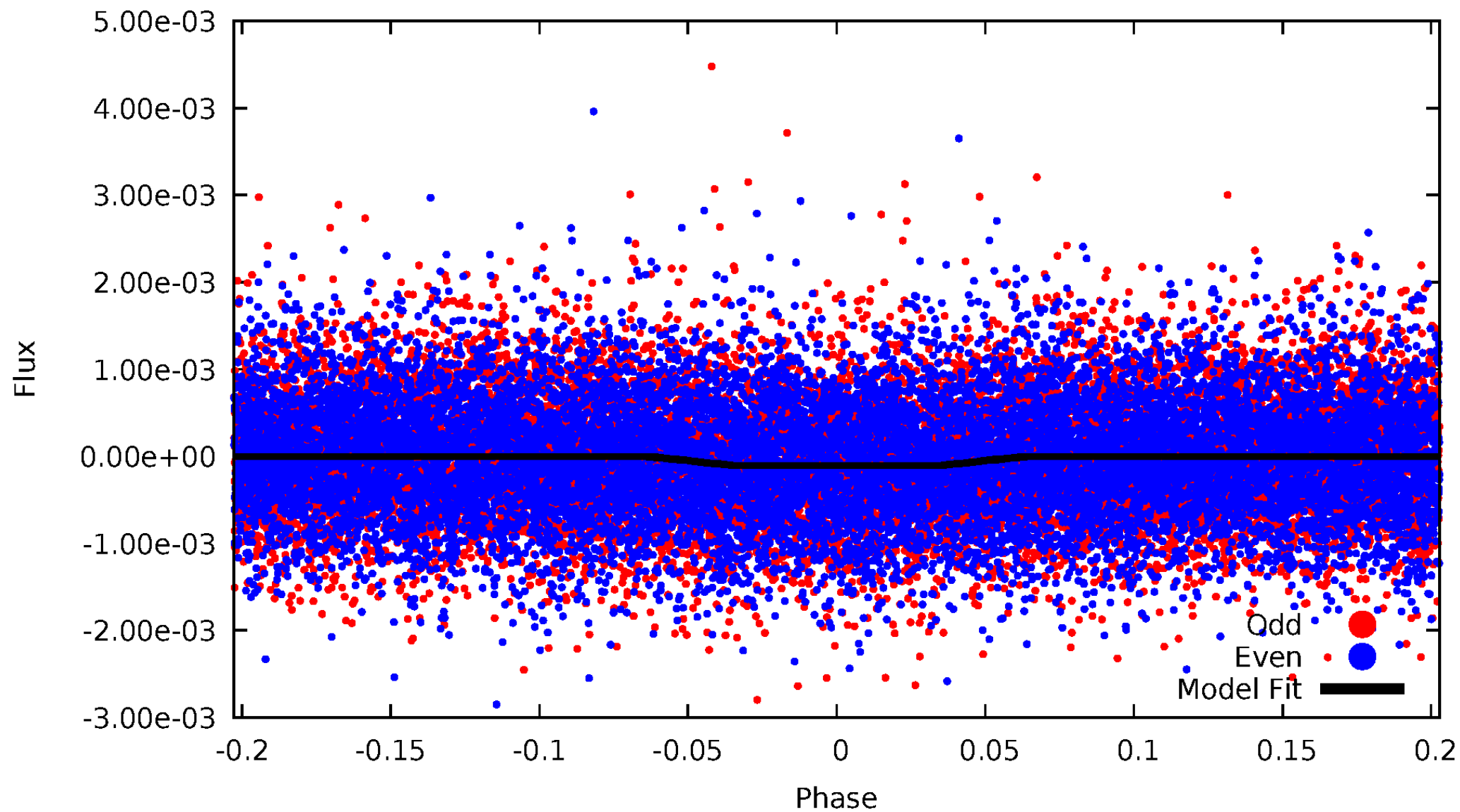
DV Odd/Even

TCE 012108364-01



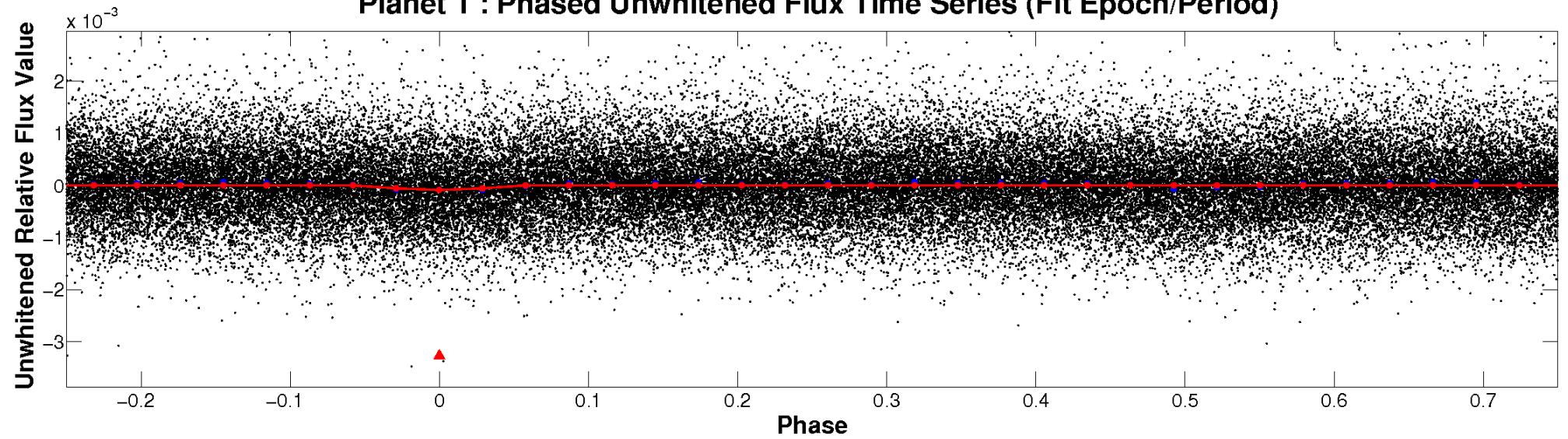
ALT Odd/Even

TCE 012108364-01

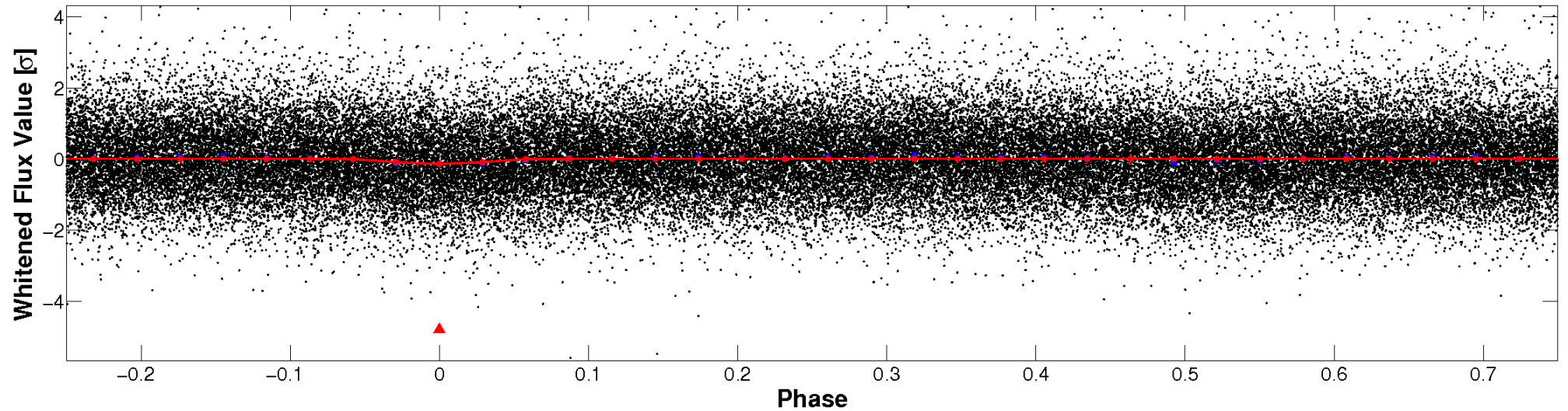


Non-Whitened Vs. Whitened Light Curve

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

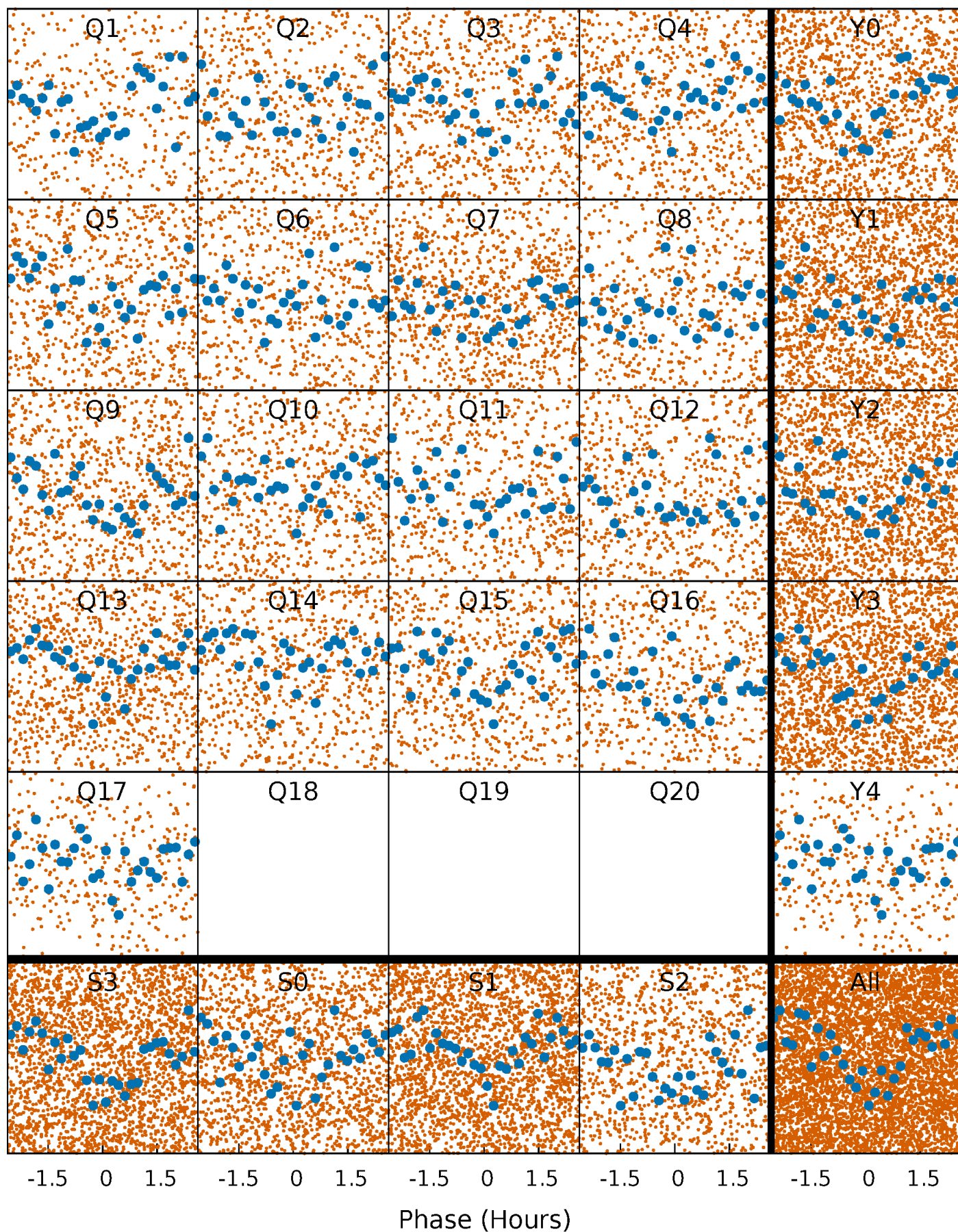


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



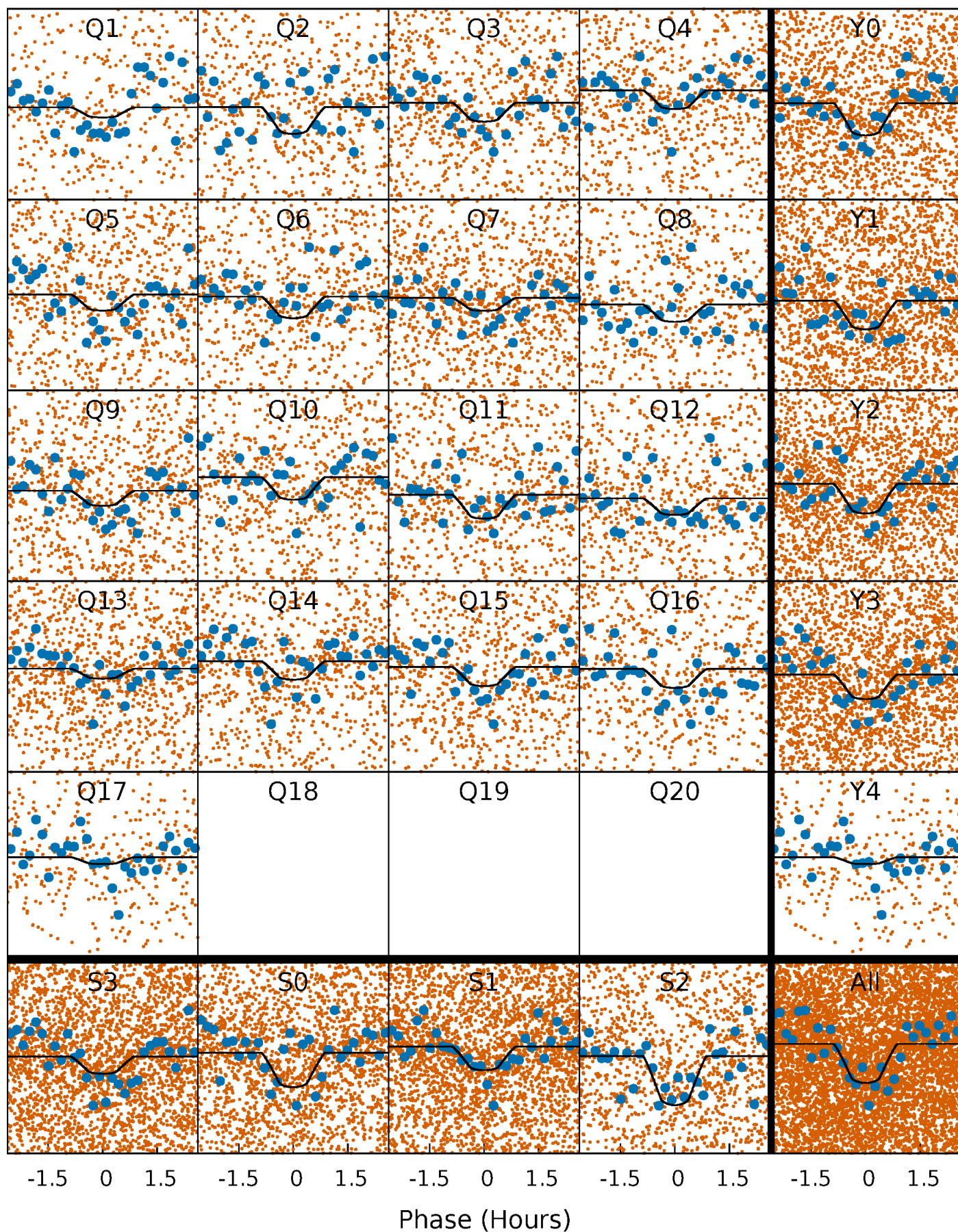
PDC Quarter-Phased Transit Curves

TCE 012108364-01 P= 0.705436 Days $T_0=131.697082$ (BKJD)



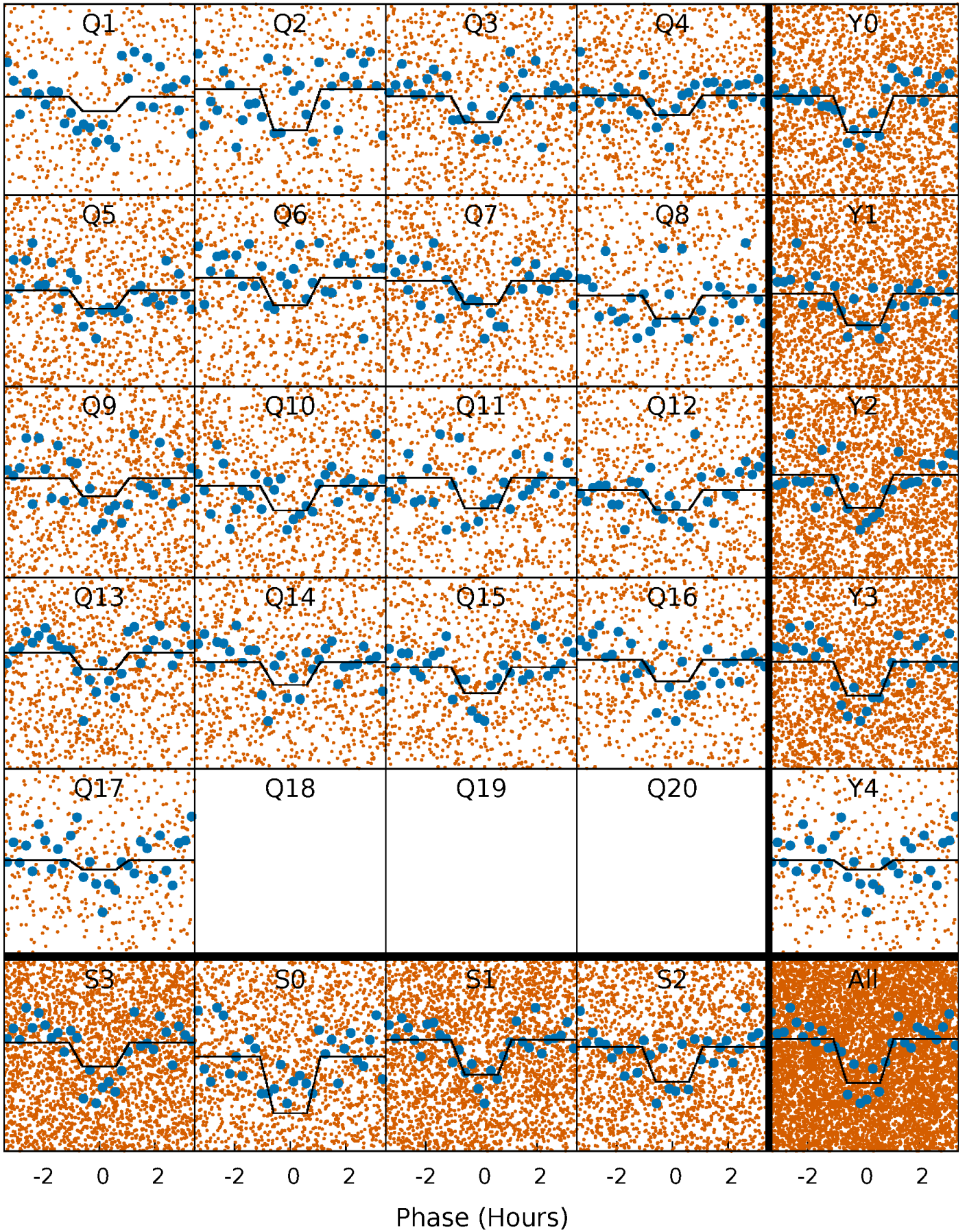
DV Quarter-Phased Transit Curves

TCE 012108364-01 P= 0.705436 Days $T_0=131.697082$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

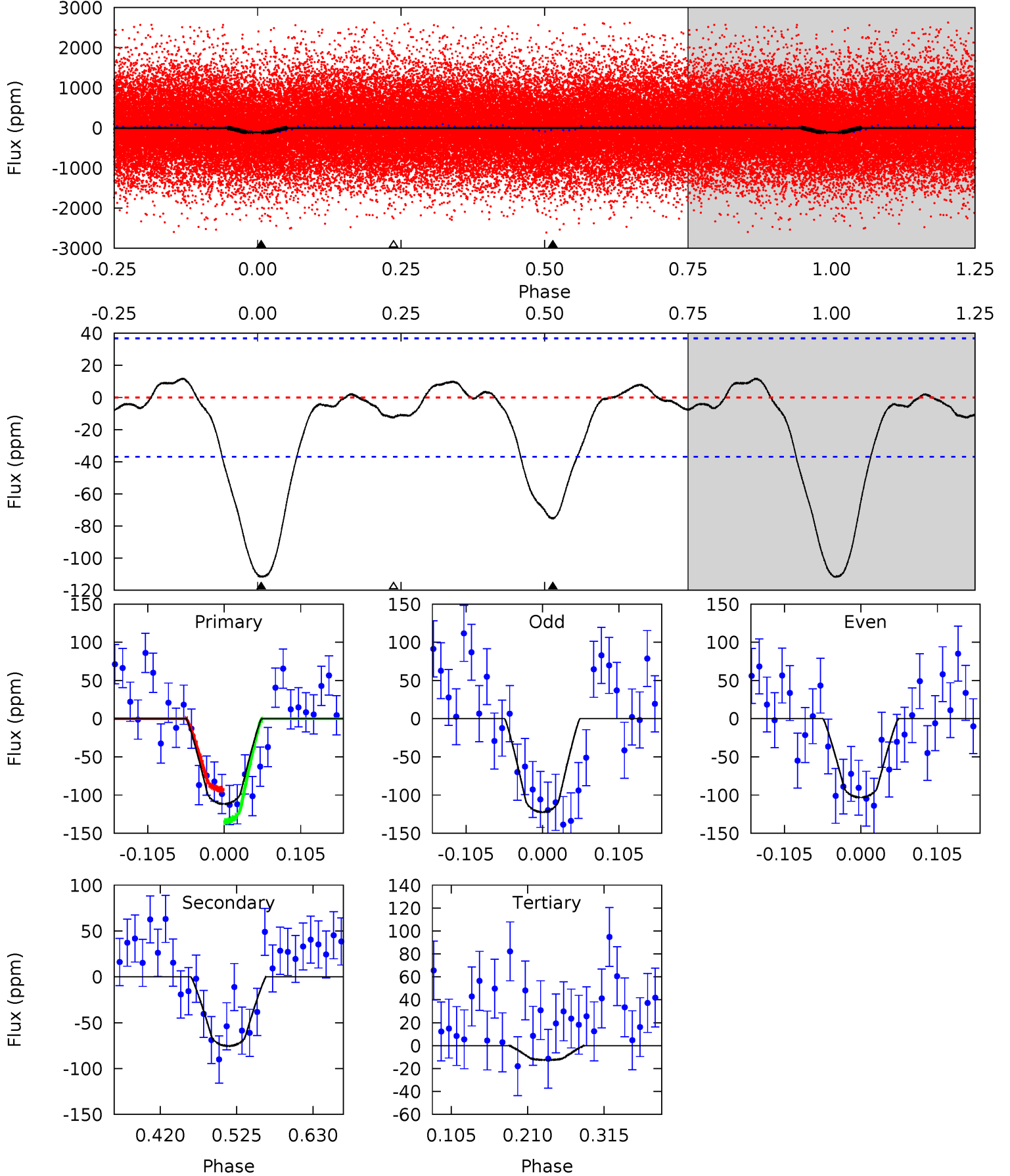
TCE 012108364-01 P= 0.705441 Days $T_0=131.696623$ (BKJD)



DV Model-Shift Uniqueness Test

012108364-01, P = 0.705436 Days, E = 130.991646 Days

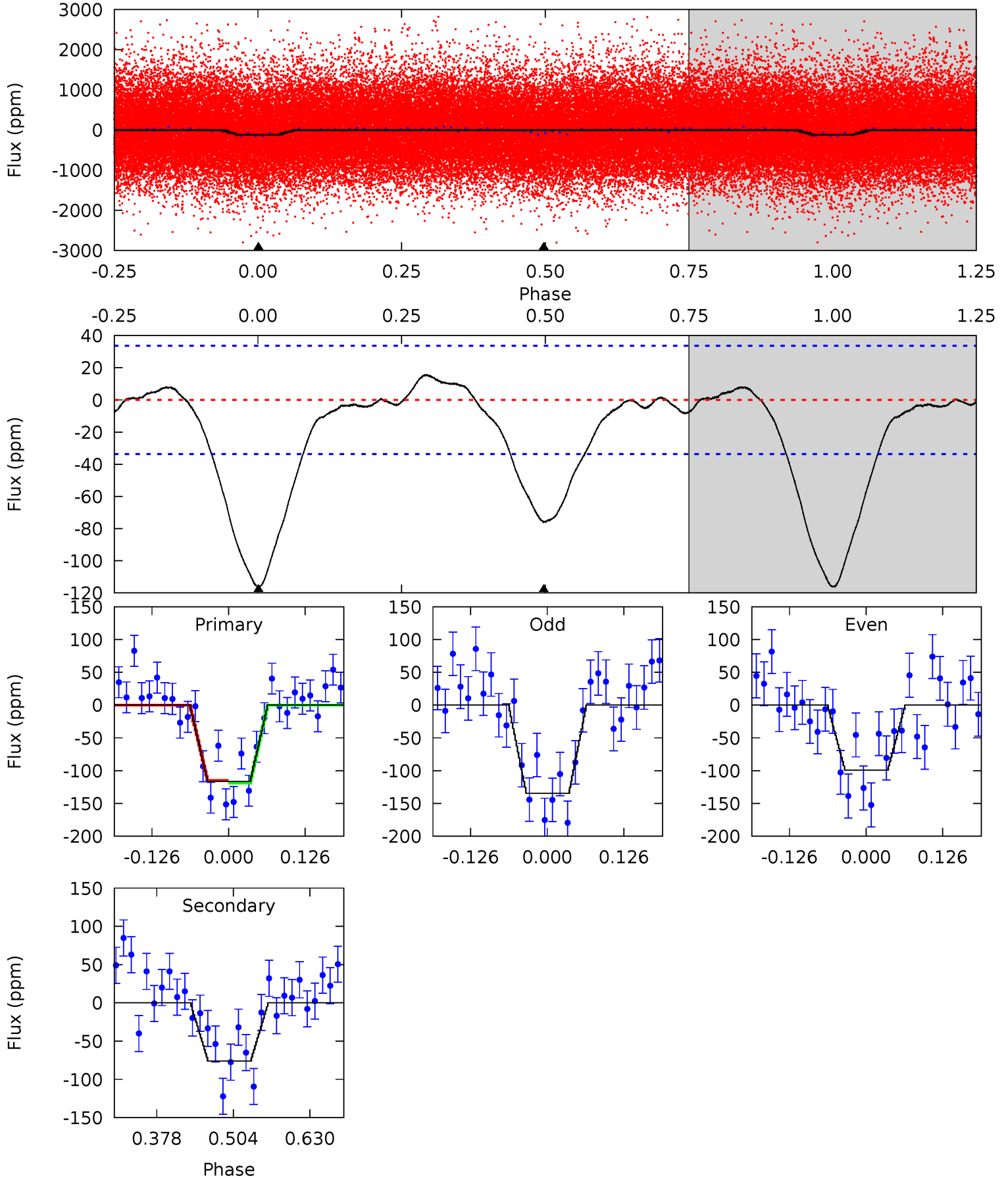
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	9.32	1.55	0	4.55	1.62	0.80	12.2	13.8	7.76	9.32	1.19	0.92	0.10	2.59



Alt Model-Shift Uniqueness Test

012108364-01, P = 0.705441 Days, E = 130.991182 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	10.2	0	0	4.52	1.53	0.82	15.6	15.6	10.2	10.2	2.37	0.91	0.12	0.26



Stellar Parameters For KIC 012108364

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5838^{+175}_{-192}	$4.529^{+0.036}_{-0.204}$	$-0.080^{+0.300}_{-0.300}$	$0.897^{+0.260}_{-0.087}$	$0.992^{+0.113}_{-0.126}$	$1.938^{+0.388}_{-1.010}$
	+3%/-3%	+1%/-5%	+375%/-375%	+29%/-10%	+11%/-13%	+20%/-52%
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 012108364-01 / KOI 4592.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-75 ± 8	$1.29^{+0.98}_{-0.77}$	2812^{+183}_{-141}	4926^{+2979}_{-1086}	$5.720^{+31.914}_{-3.905}$
Alt.	-76 ± 7	$1.30^{+1.00}_{-0.79}$	2819^{+188}_{-140}	4884^{+3243}_{-1026}	$5.742^{+31.449}_{-3.883}$

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 $A_{\text{obs}} \gg 1.0$

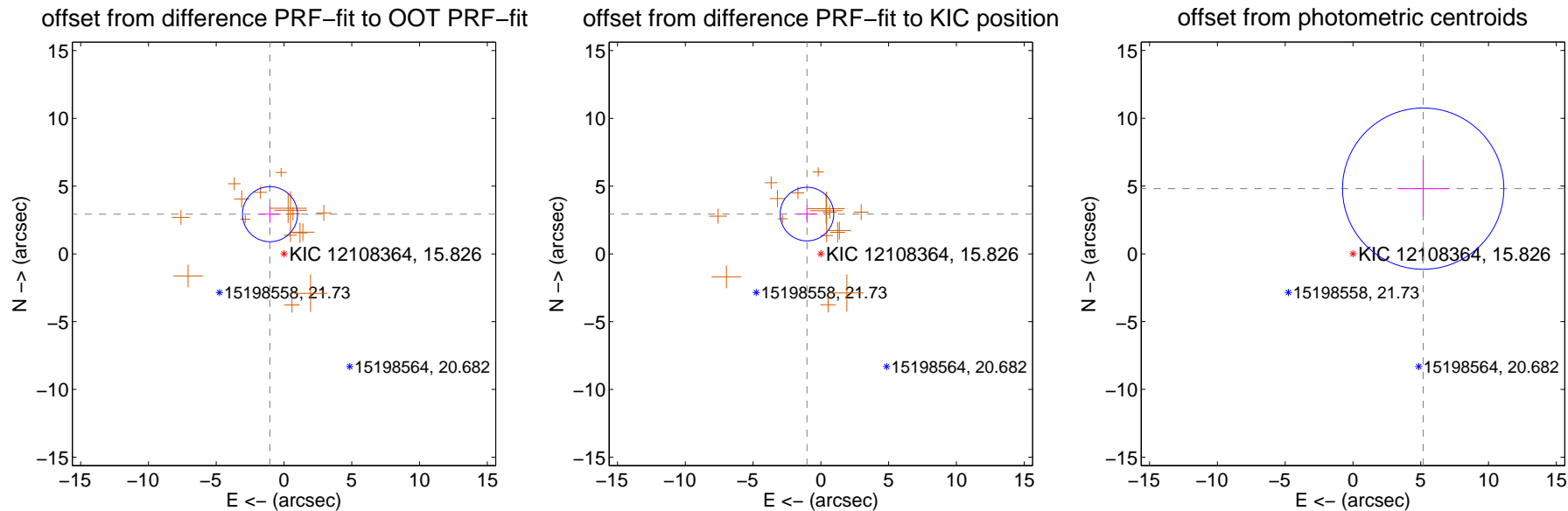
DV Centroid Data

Supplemental centroid analysis for 012108364-01. Kepler magnitude: 15.83. Transit SNR 8.16

There are 0 quarters with good PRF difference image offsets

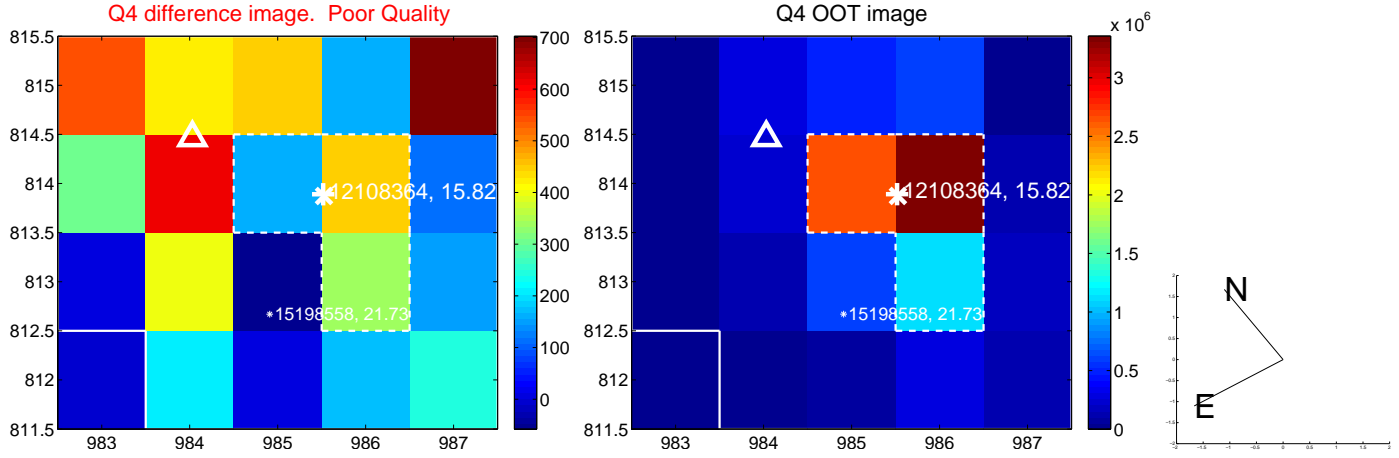
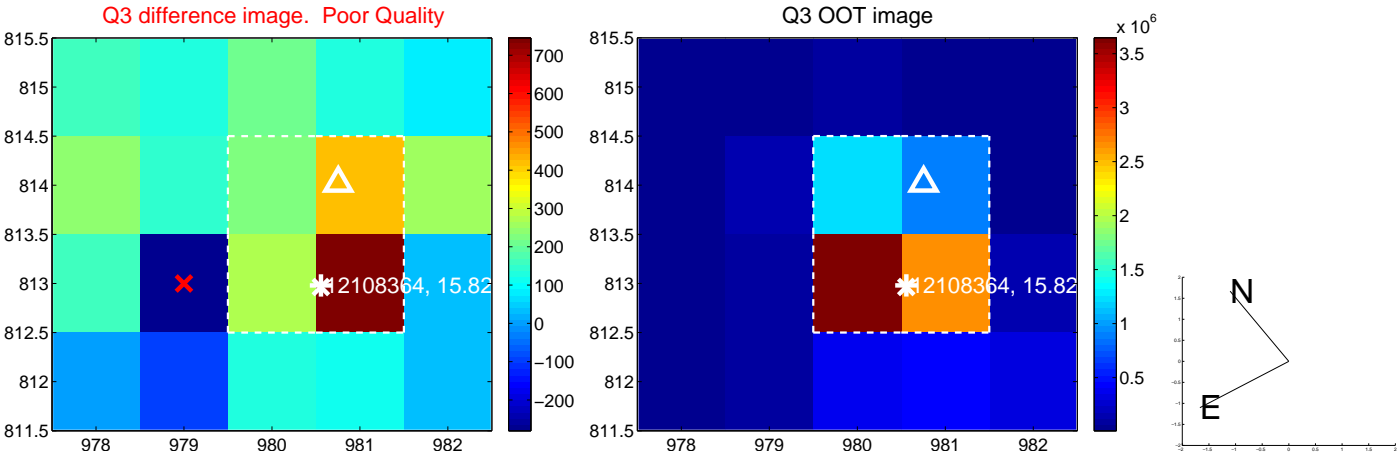
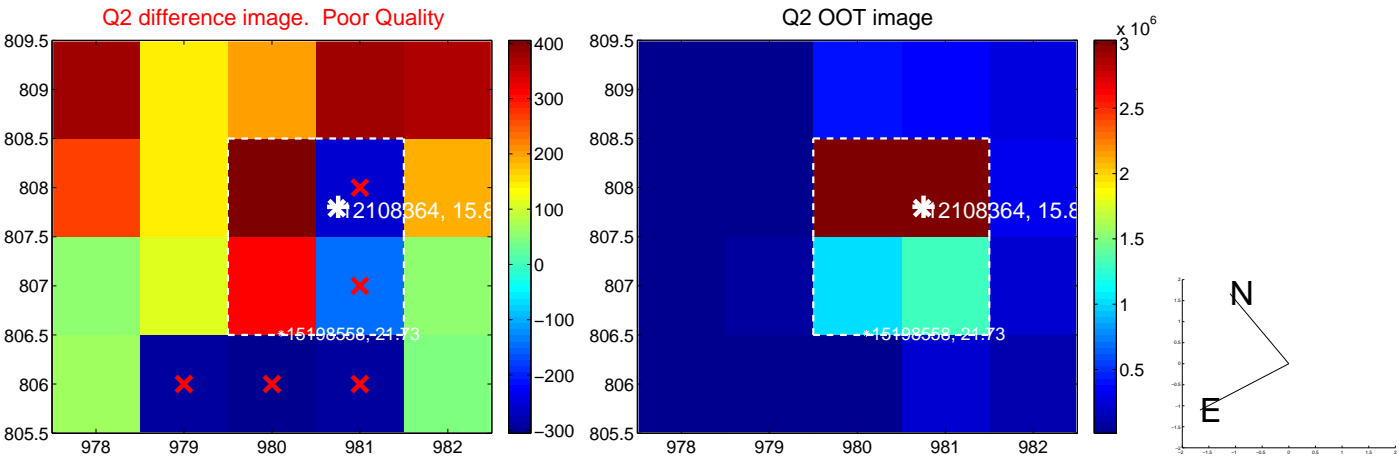
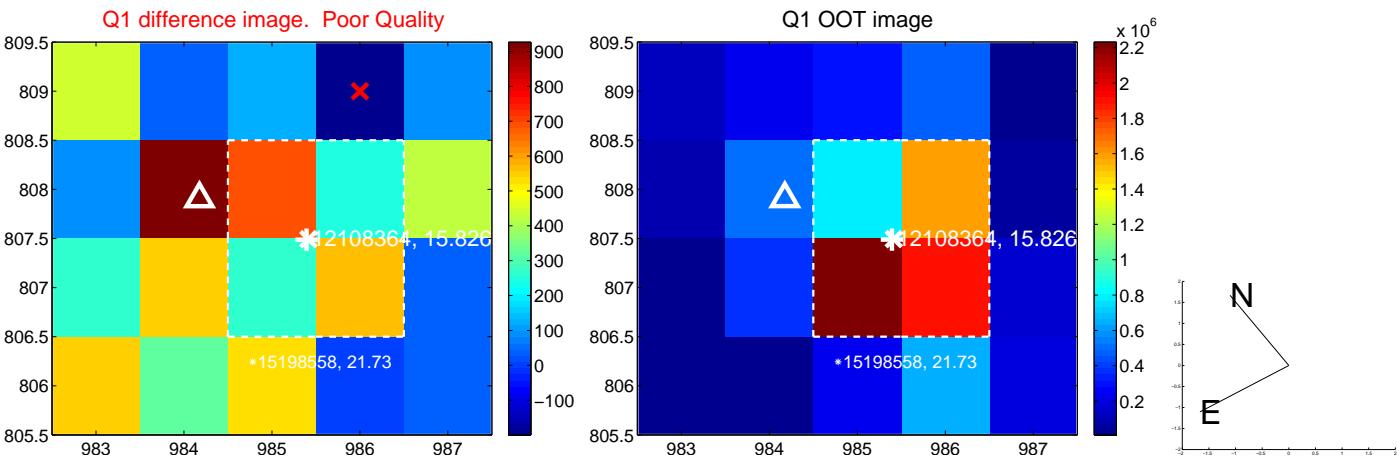
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.108 ± 0.677	4.59	1.035 ± 0.786	2.930 ± 0.644
PRF-fit source offset from KIC position	3.113 ± 0.659	4.73	1.027 ± 0.752	2.939 ± 0.652
photometric centroid source offset	7.07 ± 1.98	3.56	-5.18 ± 1.90	4.81 ± 2.08

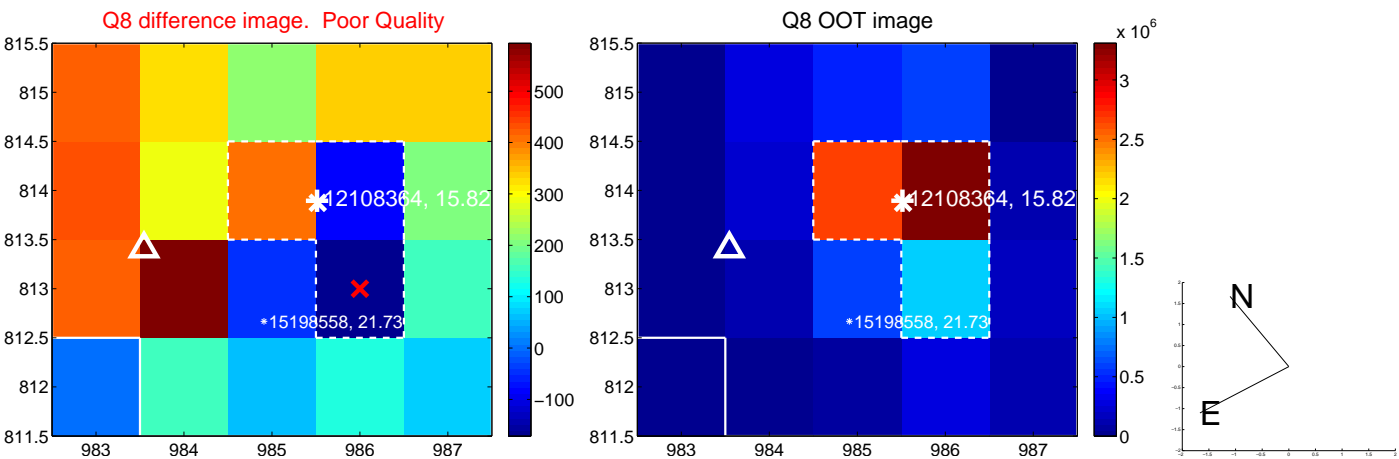
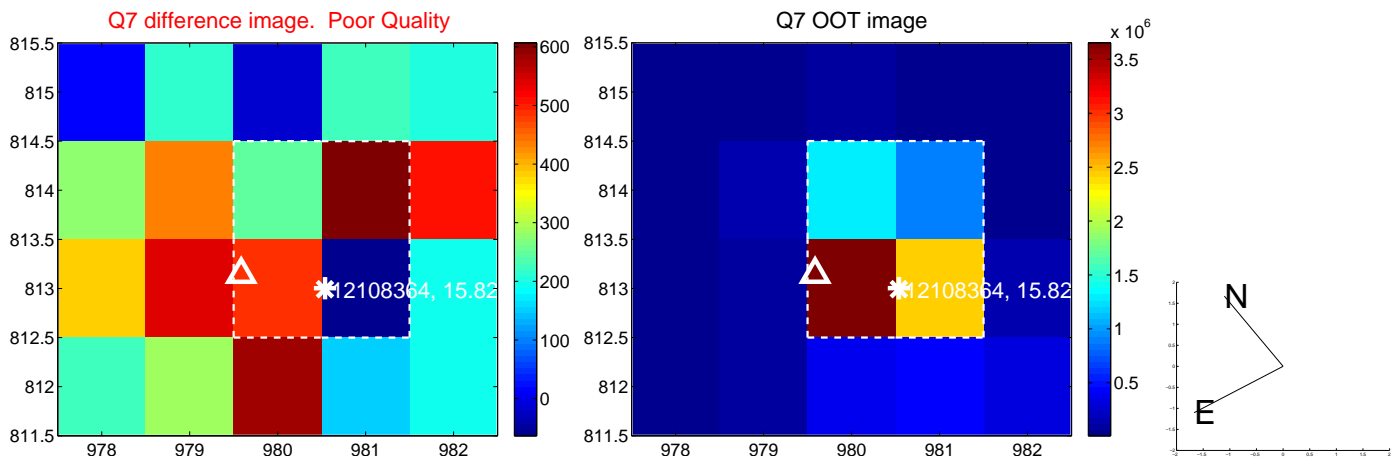
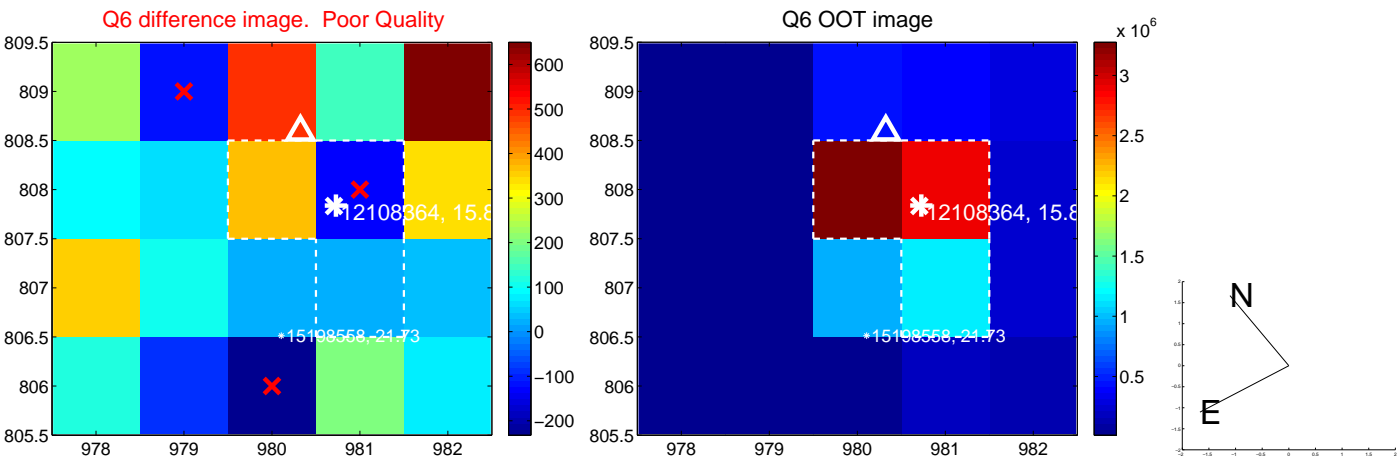
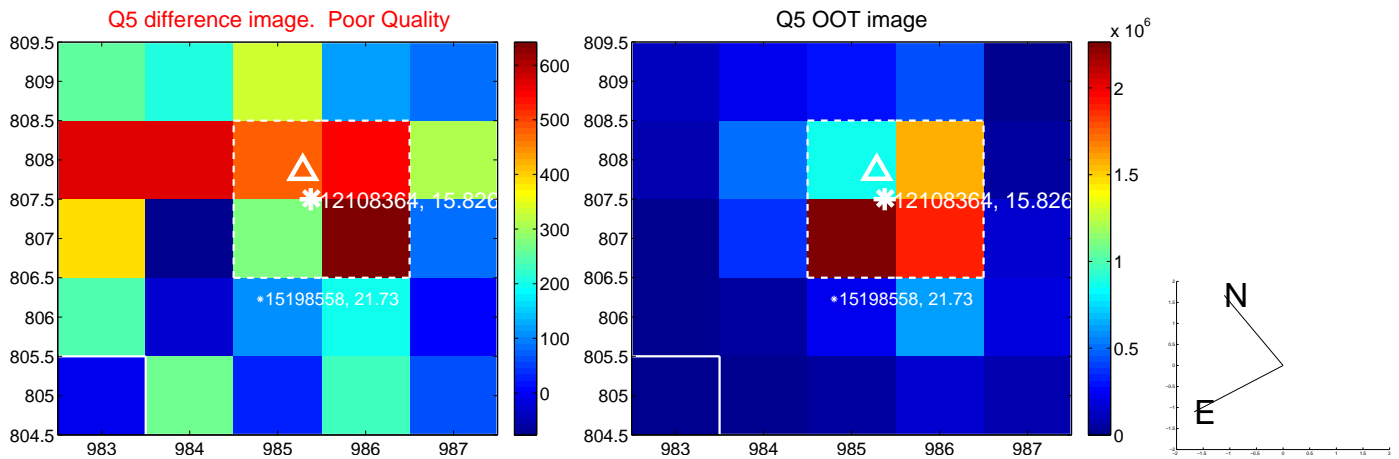


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

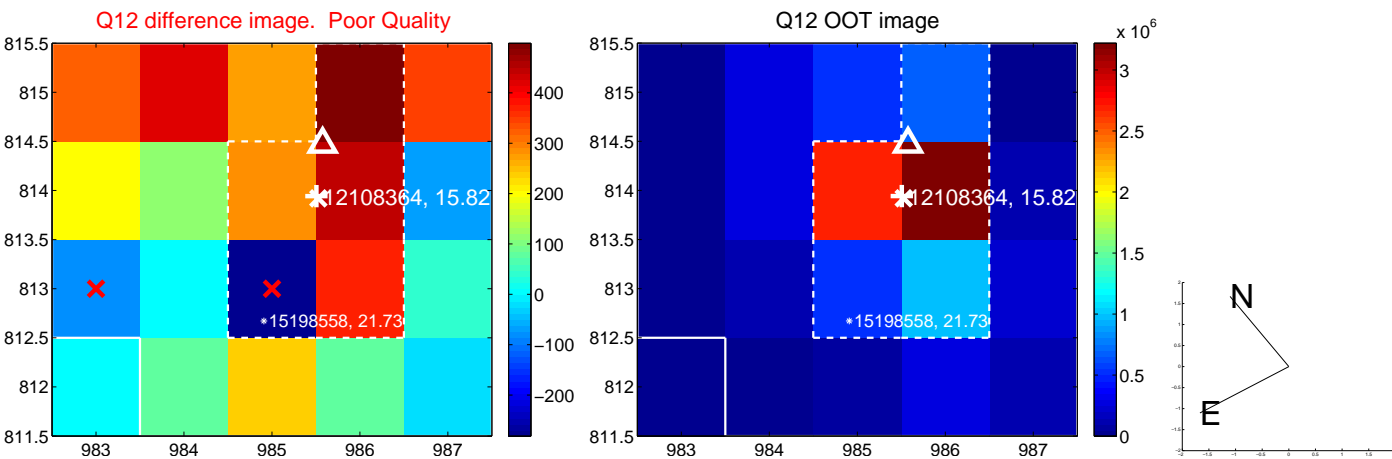
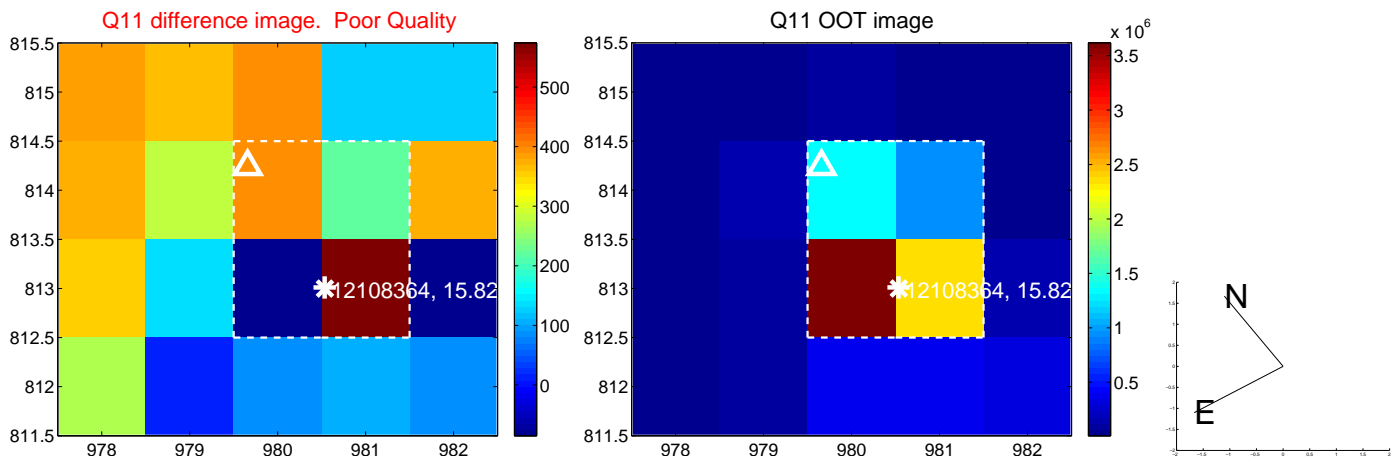
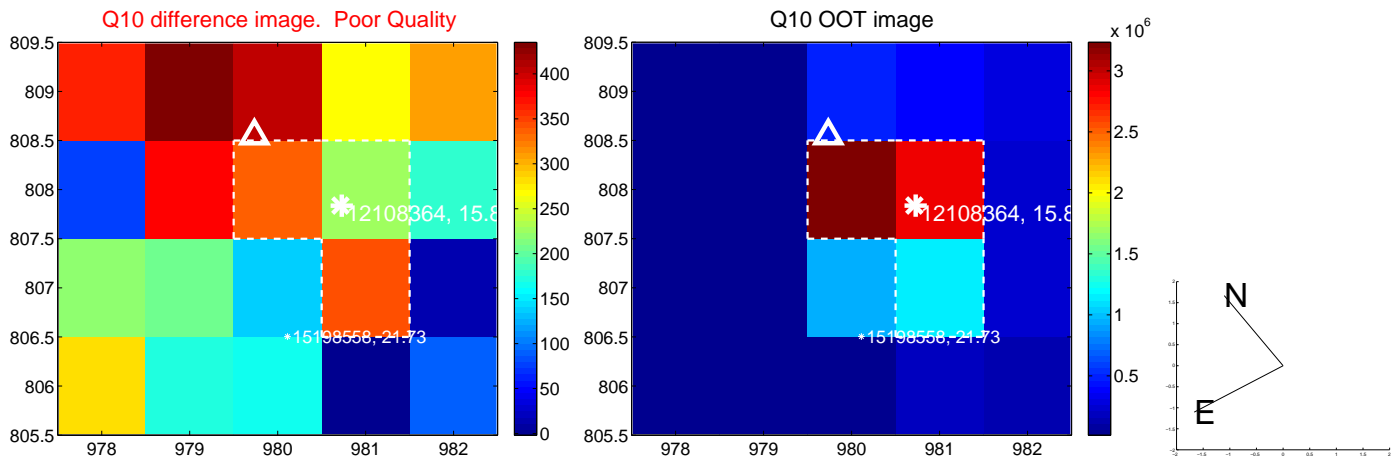
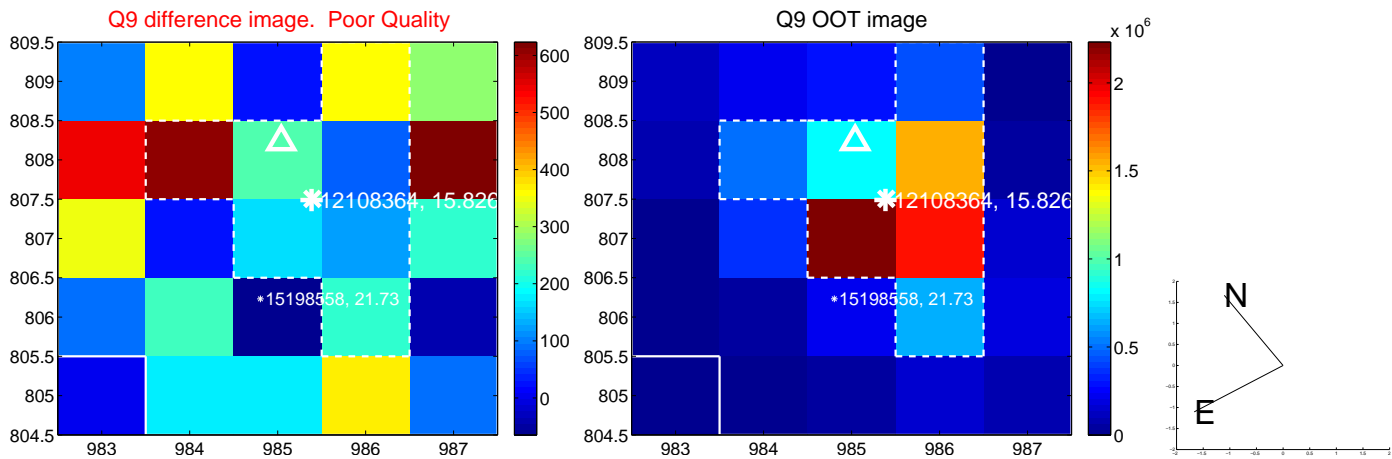
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



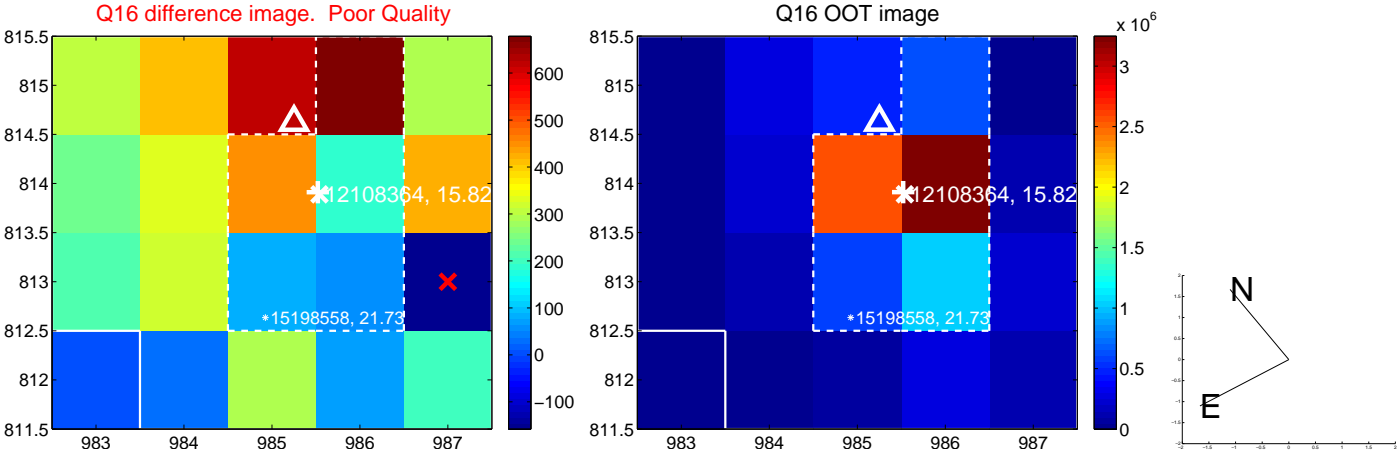
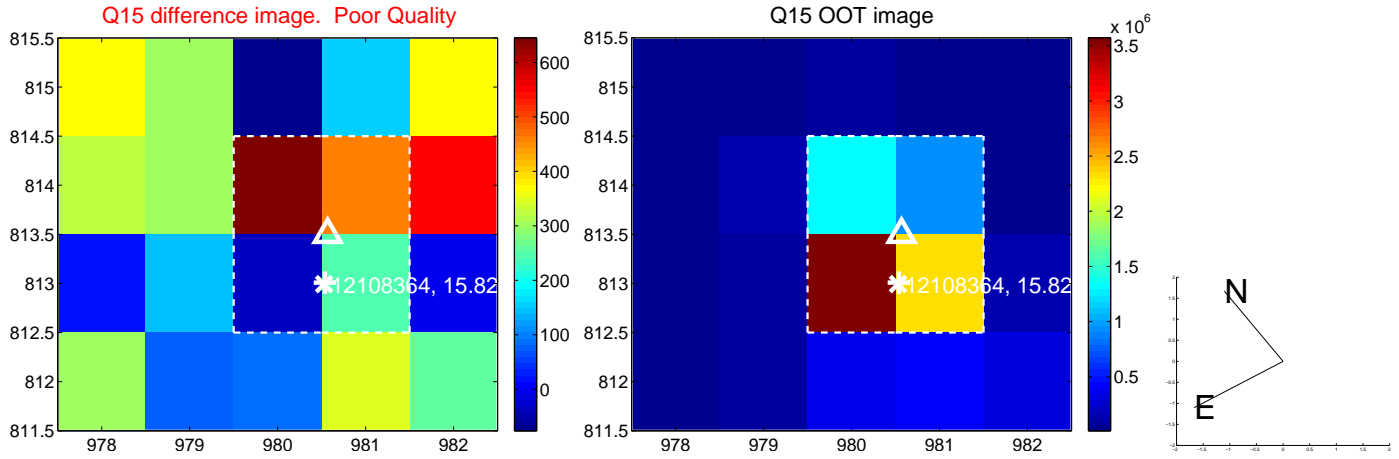
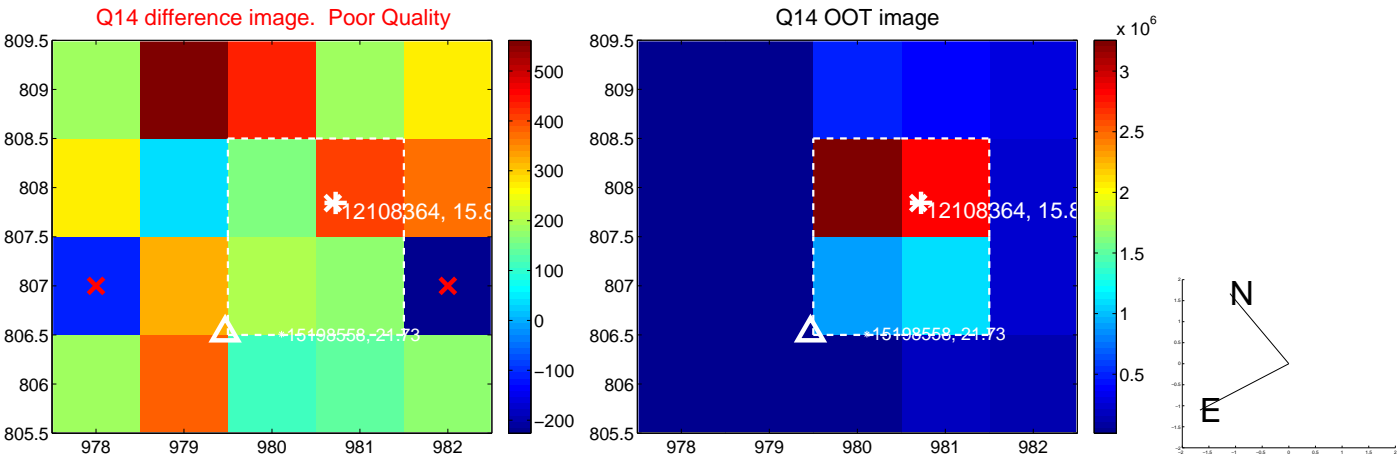
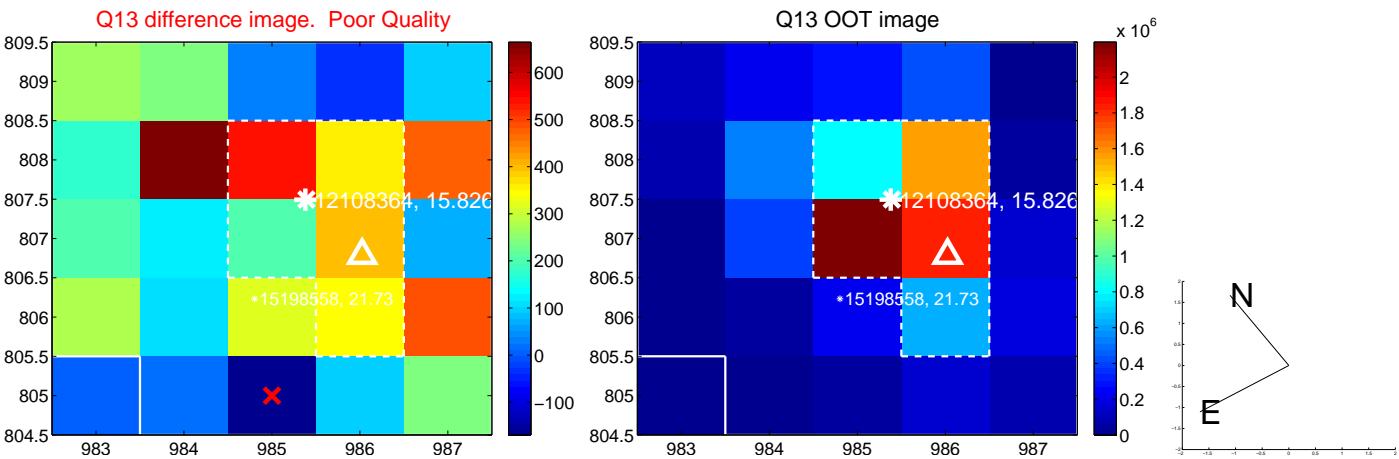
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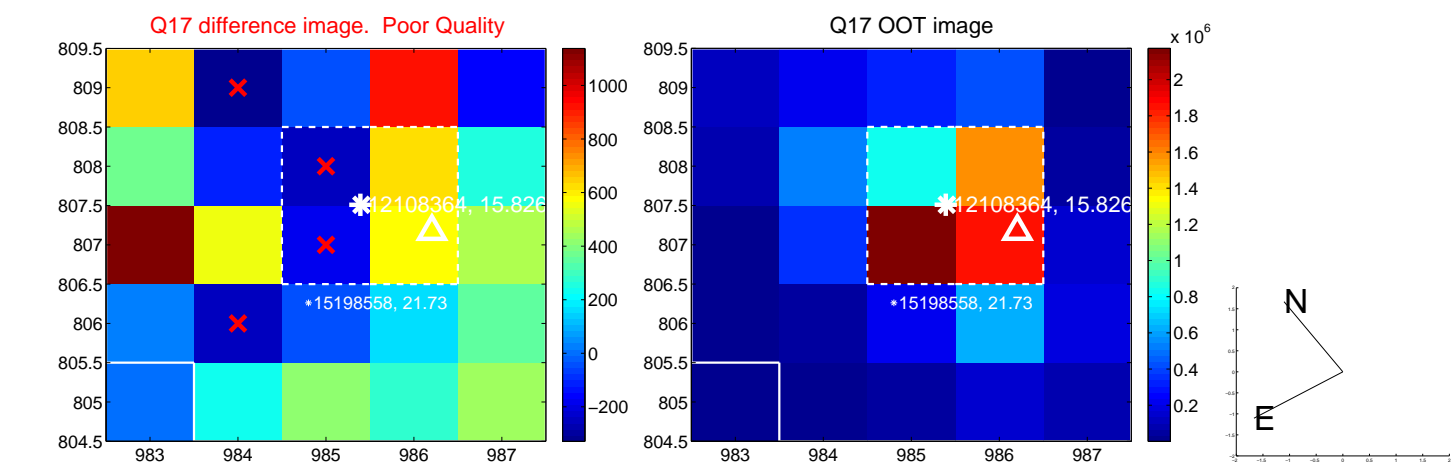
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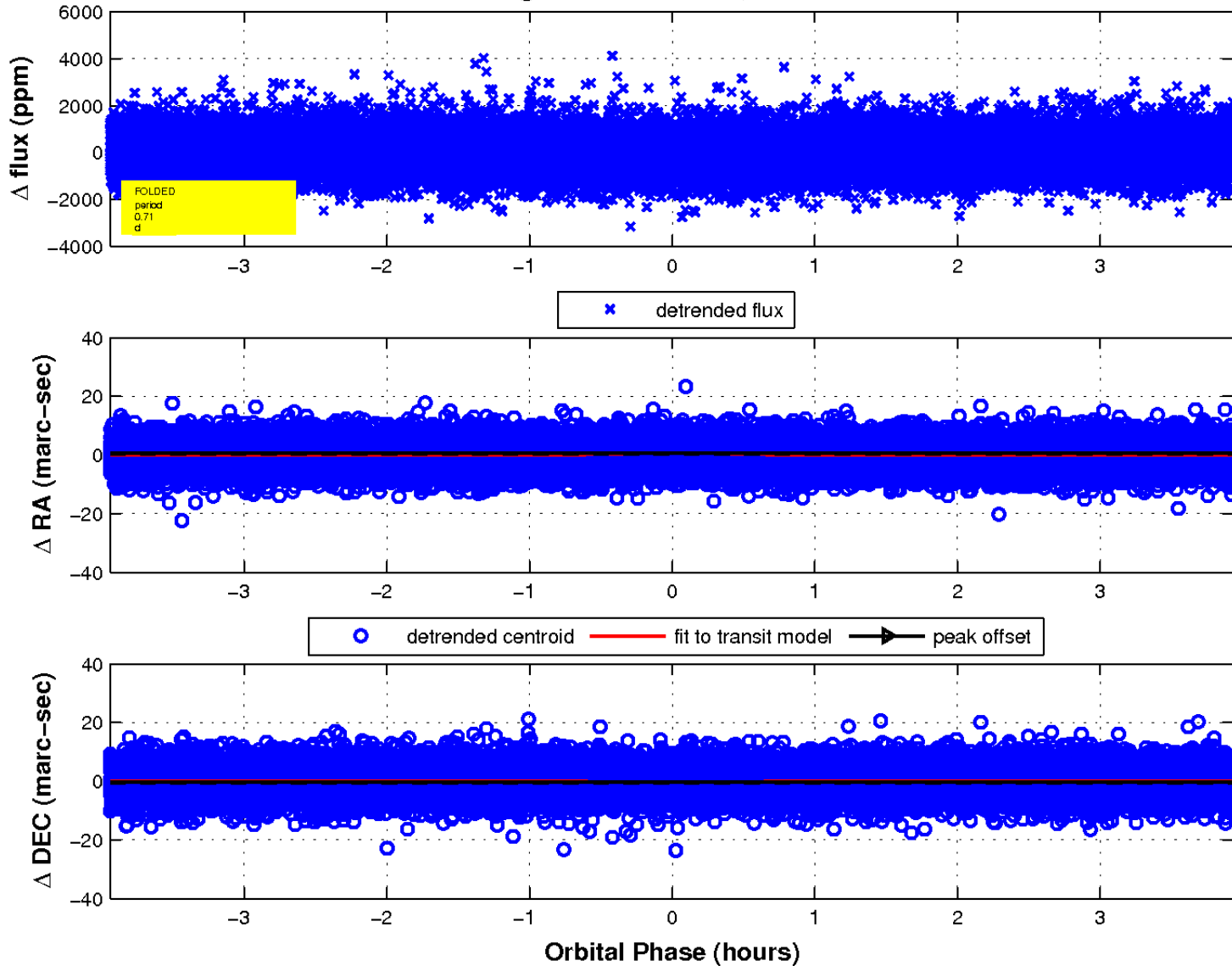
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

