

KIC 003964109

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})
003964109-01	OBS	0393.01	21.416227	133.416312	302.3	7.196	33.6	35.9	1.18	6156	2.23	74.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003964109-01	OBS	PC	1.00	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.

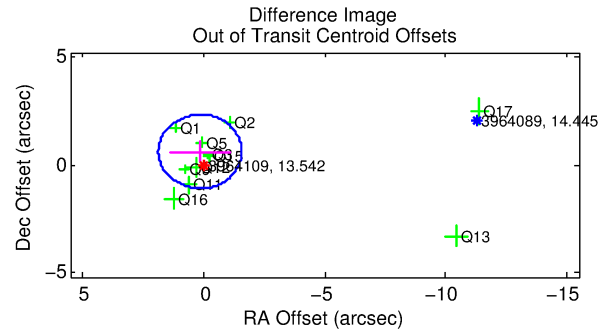
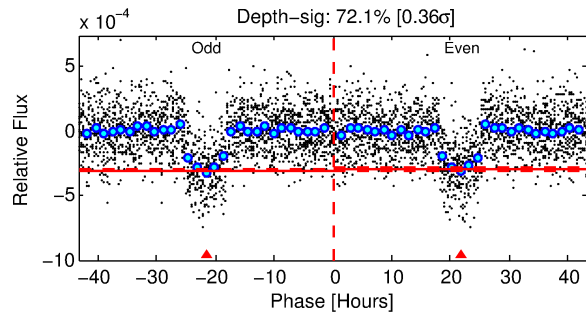
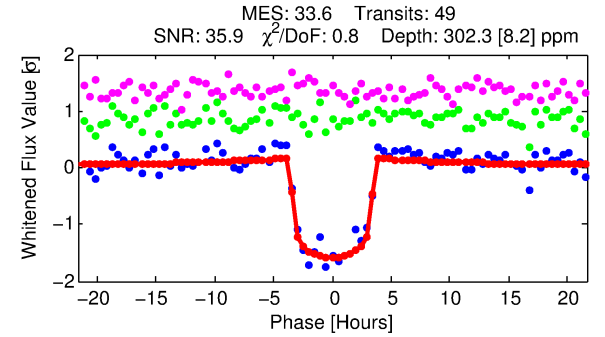
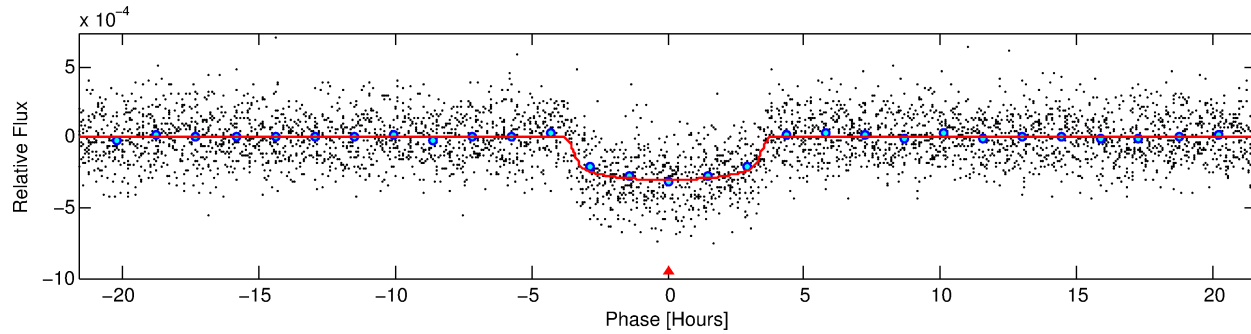
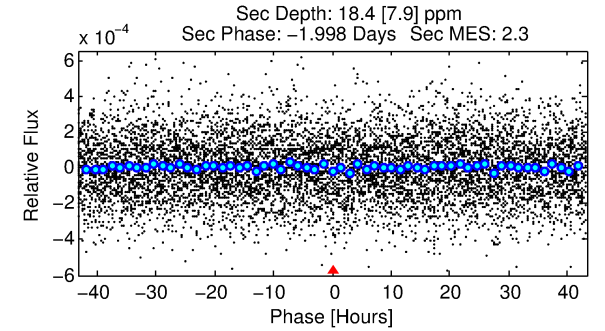
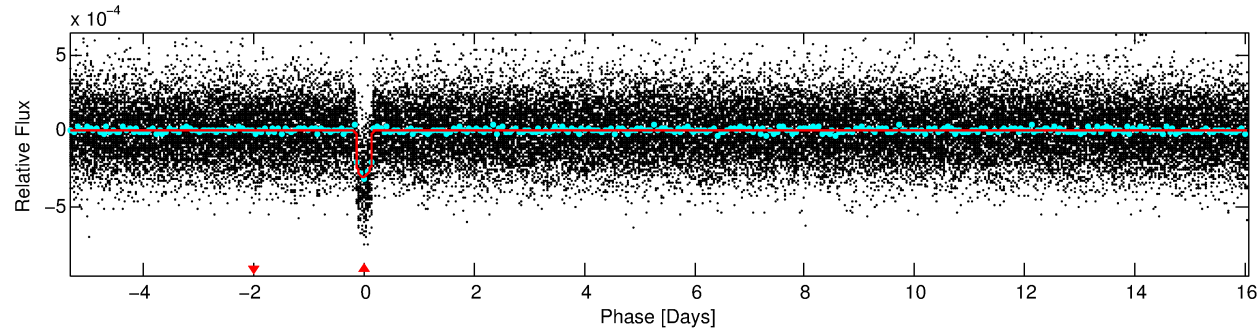
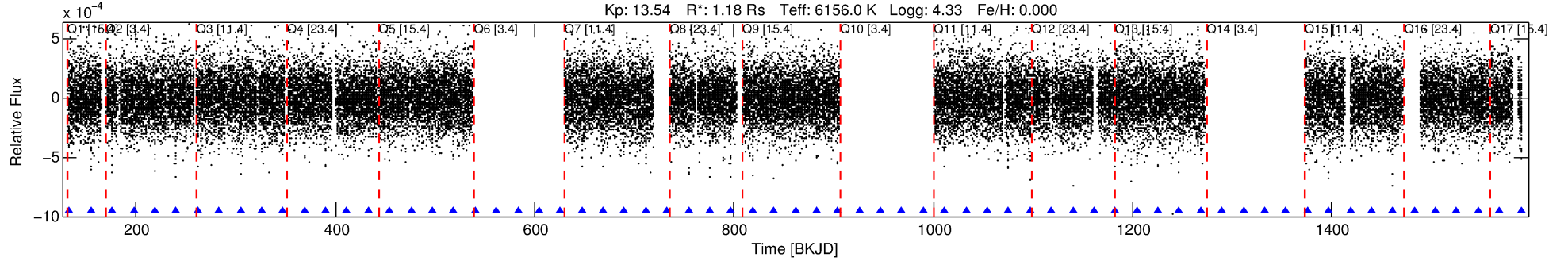
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003964109-01

No Significant Match Found

DV One-Page Summary

KIC: 3964109 Candidate: 1 of 1 Period: 21.416 d
KOI: K00393.01 Corr: 0.993



DV Fit Results:

Period = 21.41623 [0.00009] d
Epoch = 133.4163 [0.0033] BKJD
Rp/R* = 0.0173 [0.0027]
a/R* = 15.63 [12.28]
b = 0.75 [0.46]
Seff = 74.31 [18.12]
Teq = 749 [46] K
Rp = 2.23 [0.53] Re
a = 0.1553 [0.0239] AU
Ag = 49.24 [28.54] [1.69σ]
Teffp = 3066 [414] K [5.56σ]

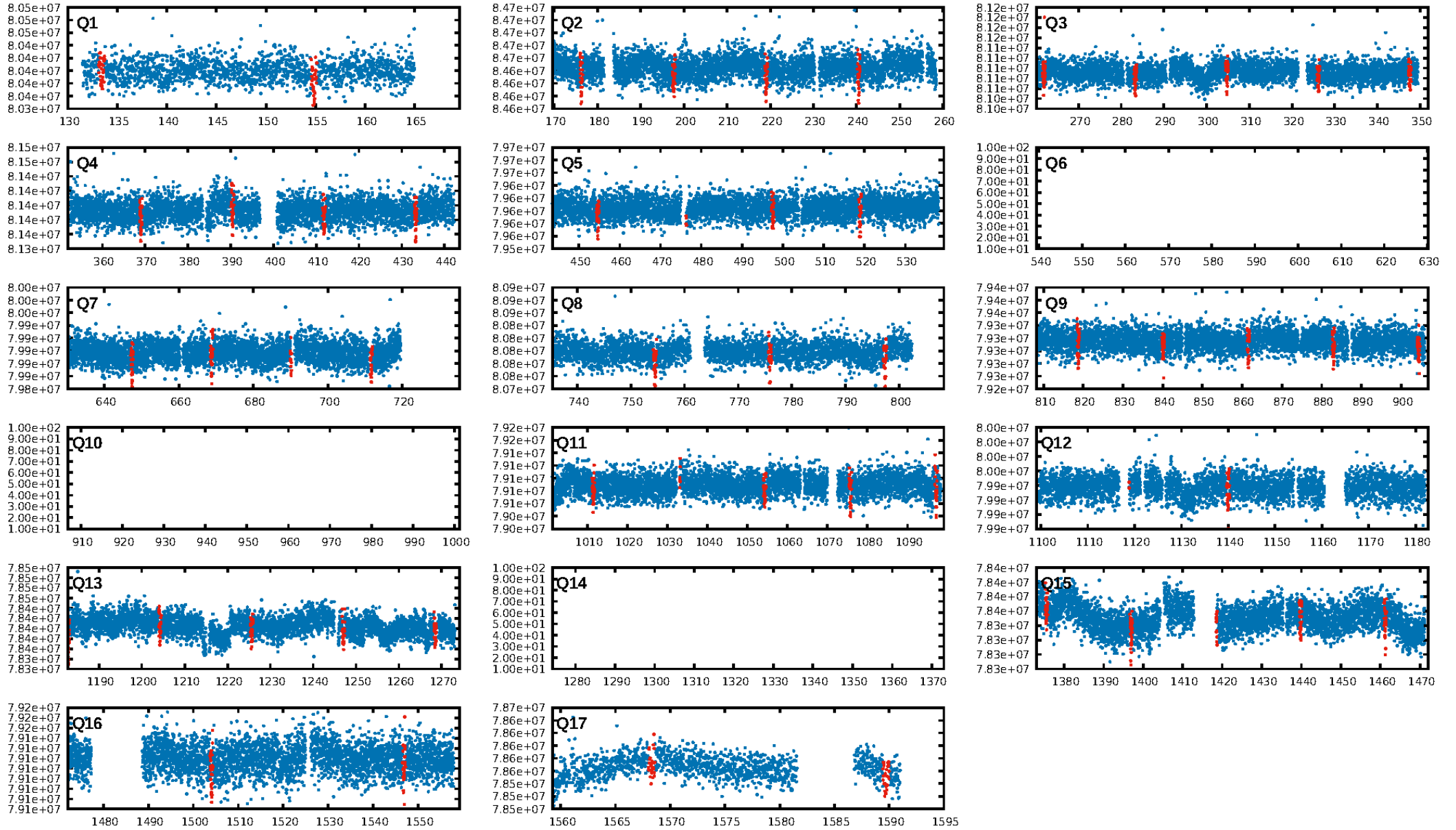
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 89.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.74e-233
RollingBand-fgt: 1.00 [45/45]
GhostDiagnostic-chr: -39.81
Centroid-sig: 67.0%
Centroid-so: 0.375 arcsec [0.69σ]
OotOffset-rm: 0.630 arcsec [1.10σ]
KicOffset-rm: 0.500 arcsec [0.95σ]
OotOffset-st: 1/3/2/5 [11]
KicOffset-st: 1/3/2/5 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 1.00 [14/14]

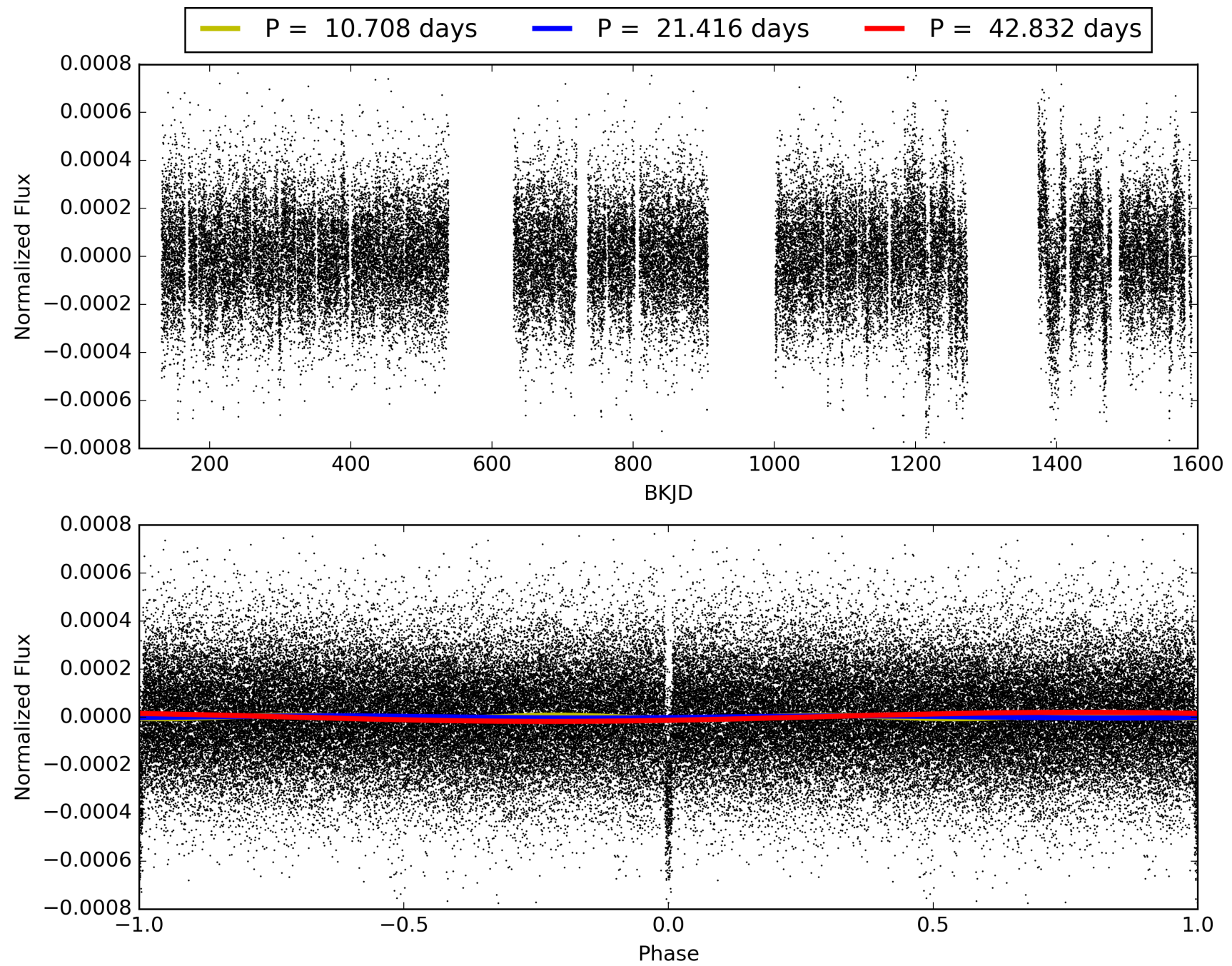
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:41:00 Z

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

TCE 003964109-01, PDC Light Curves

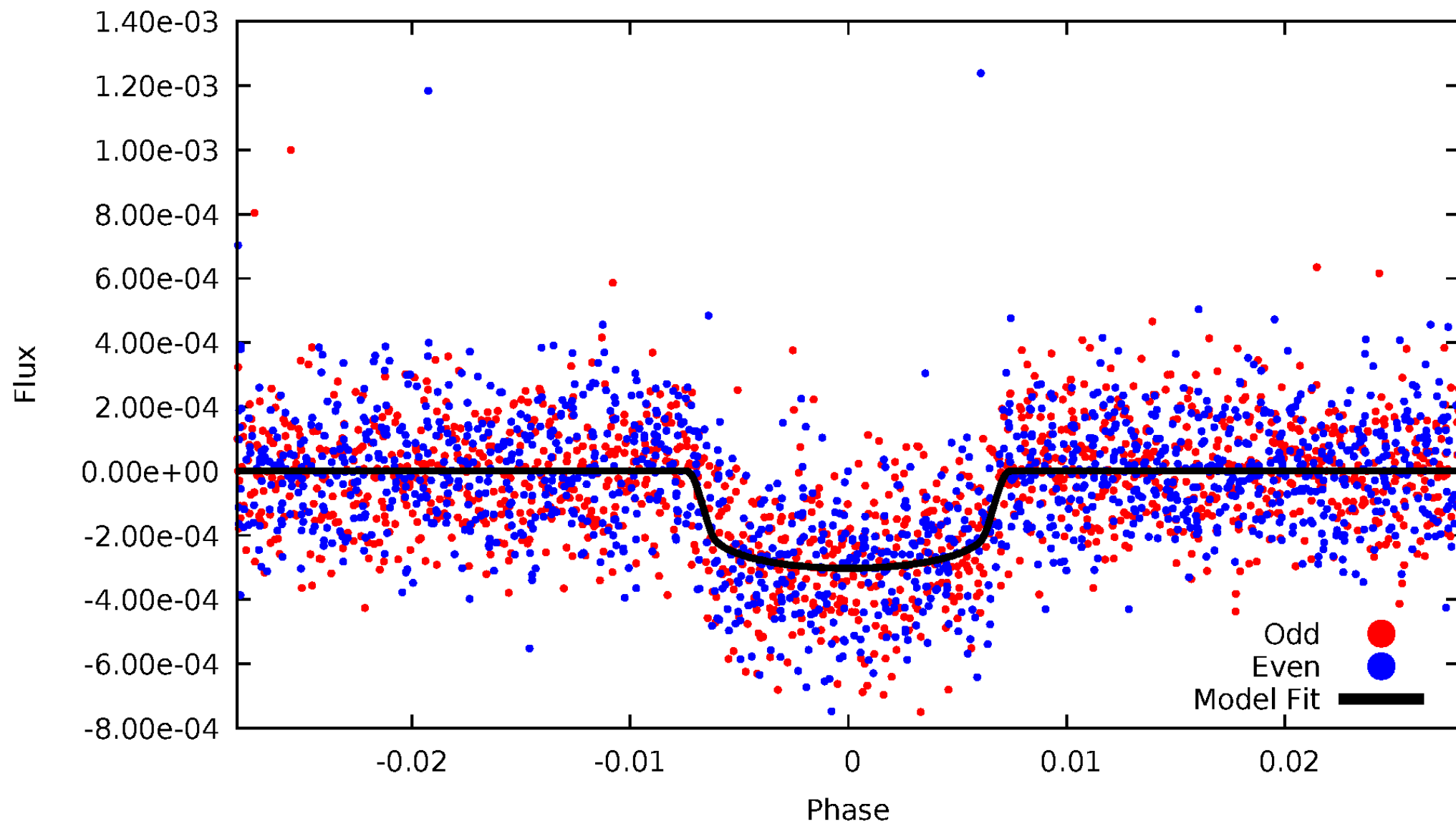


TCE 003964109-01



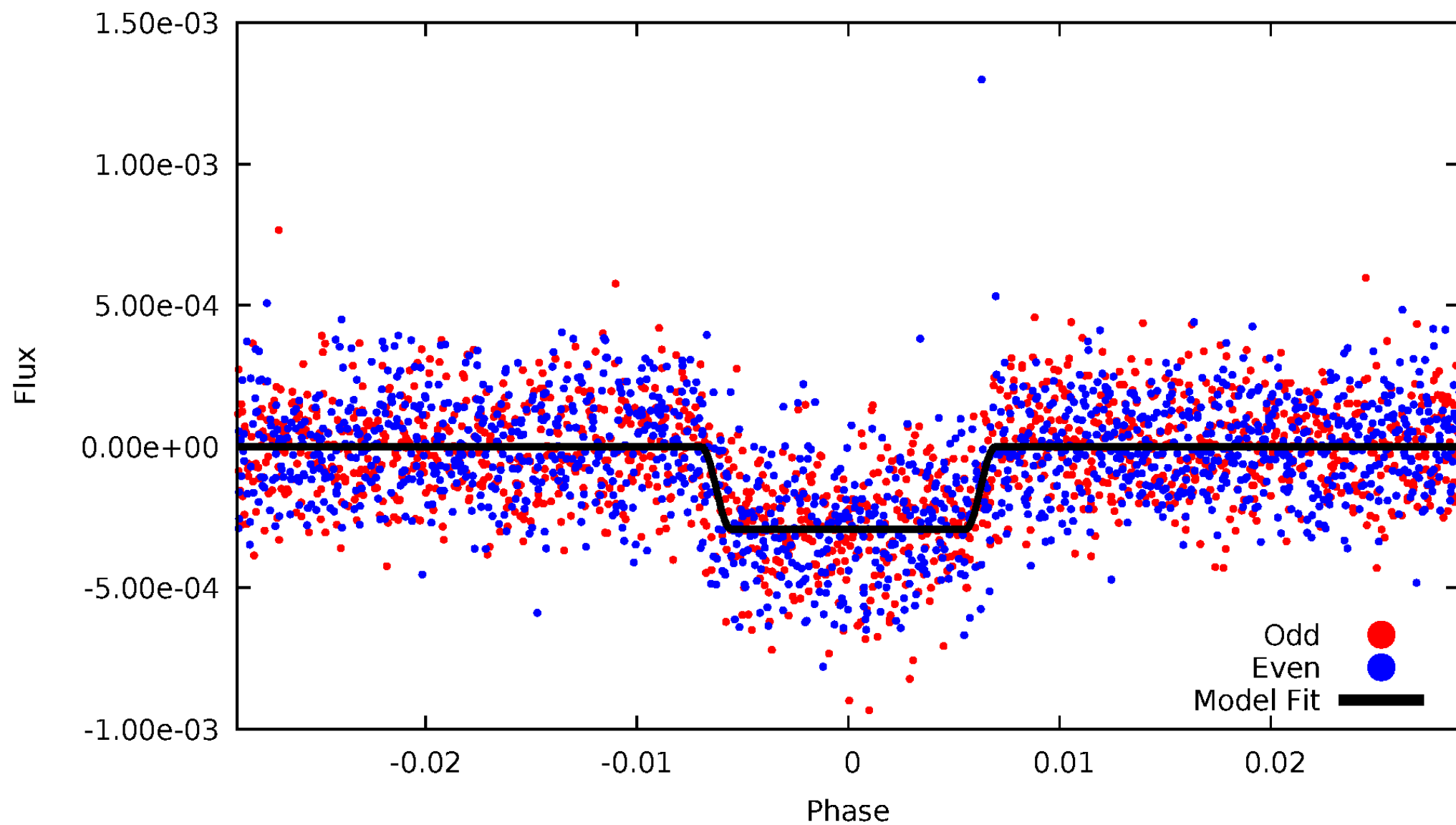
DV Odd/Even

TCE 003964109-01



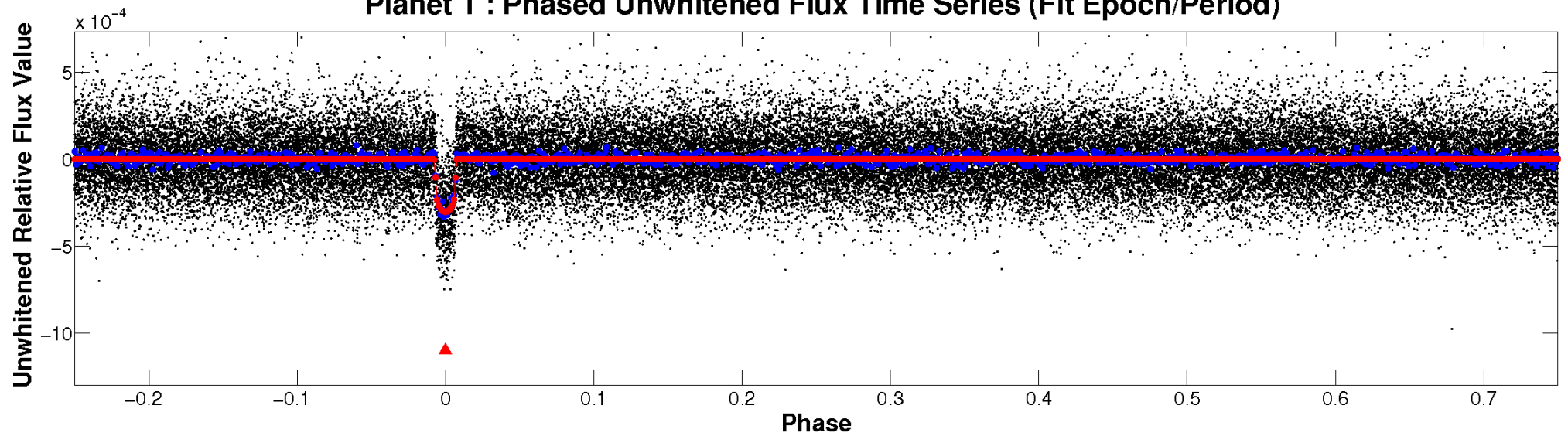
ALT Odd/Even

TCE 003964109-01

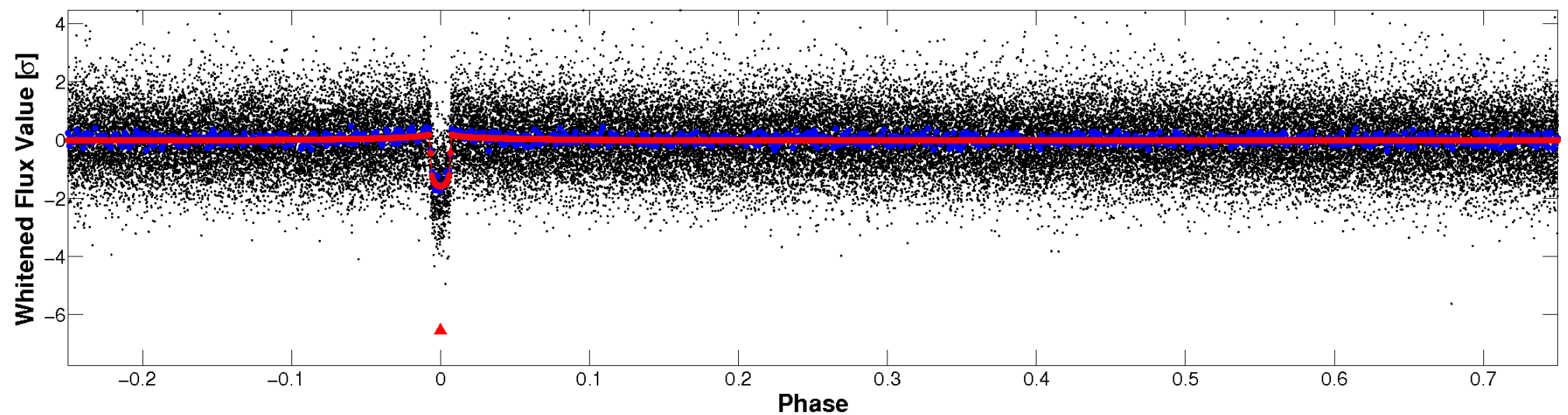


Non-Whitened Vs. Whitened Light Curve

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

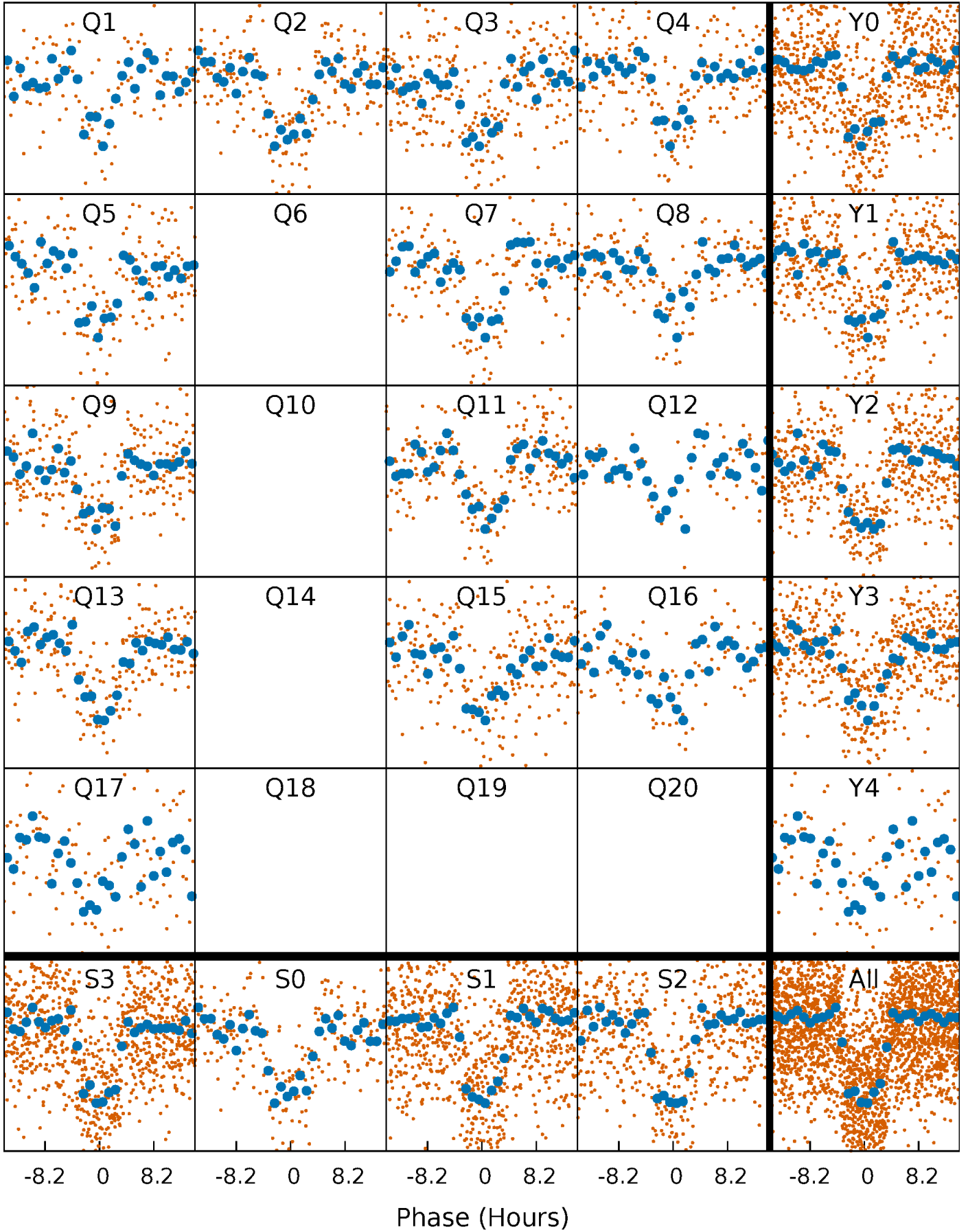


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



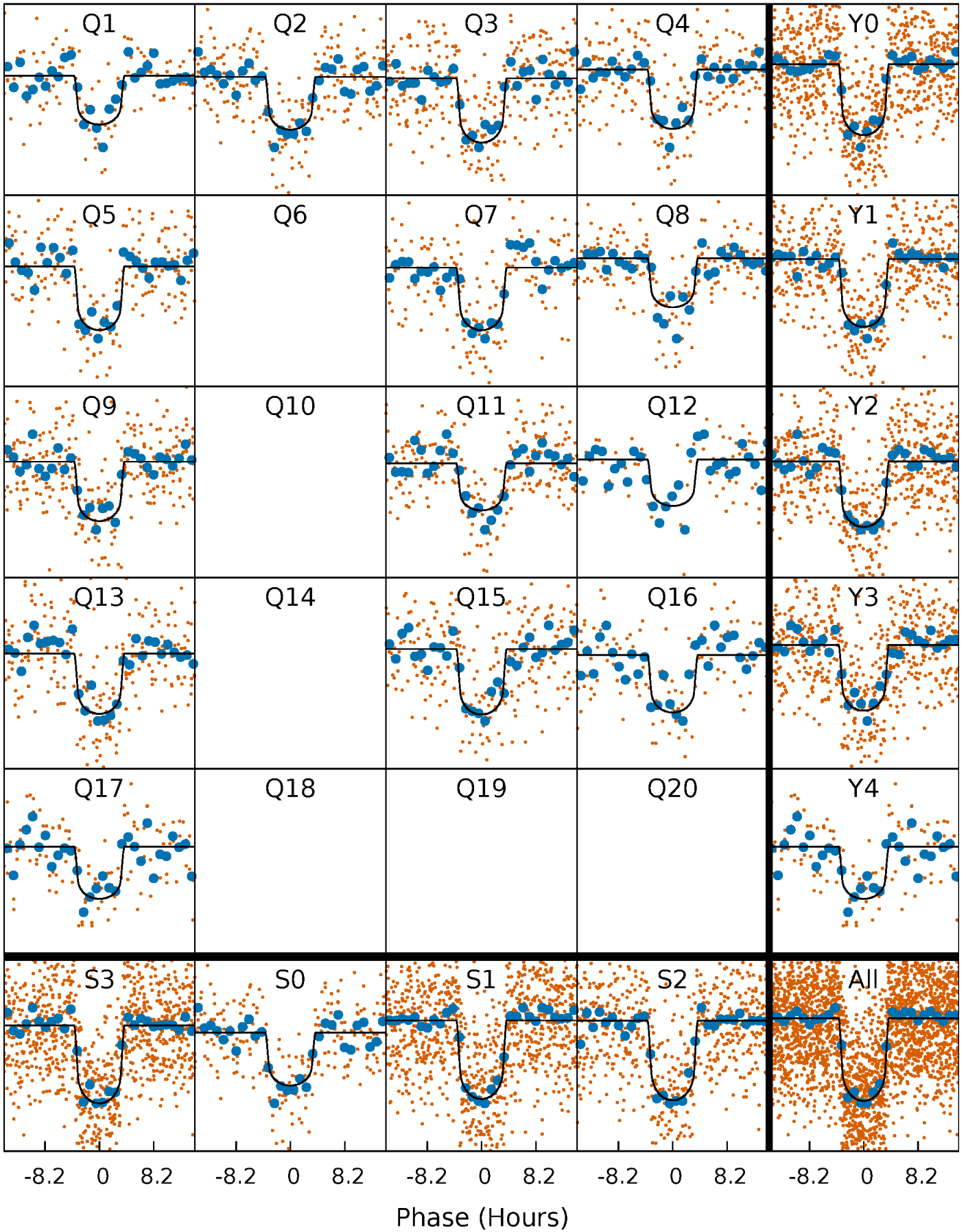
PDC Quarter-Phased Transit Curves

TCE 003964109-01 P= 21.416227 Days $T_0=133.416312$ (BKJD)



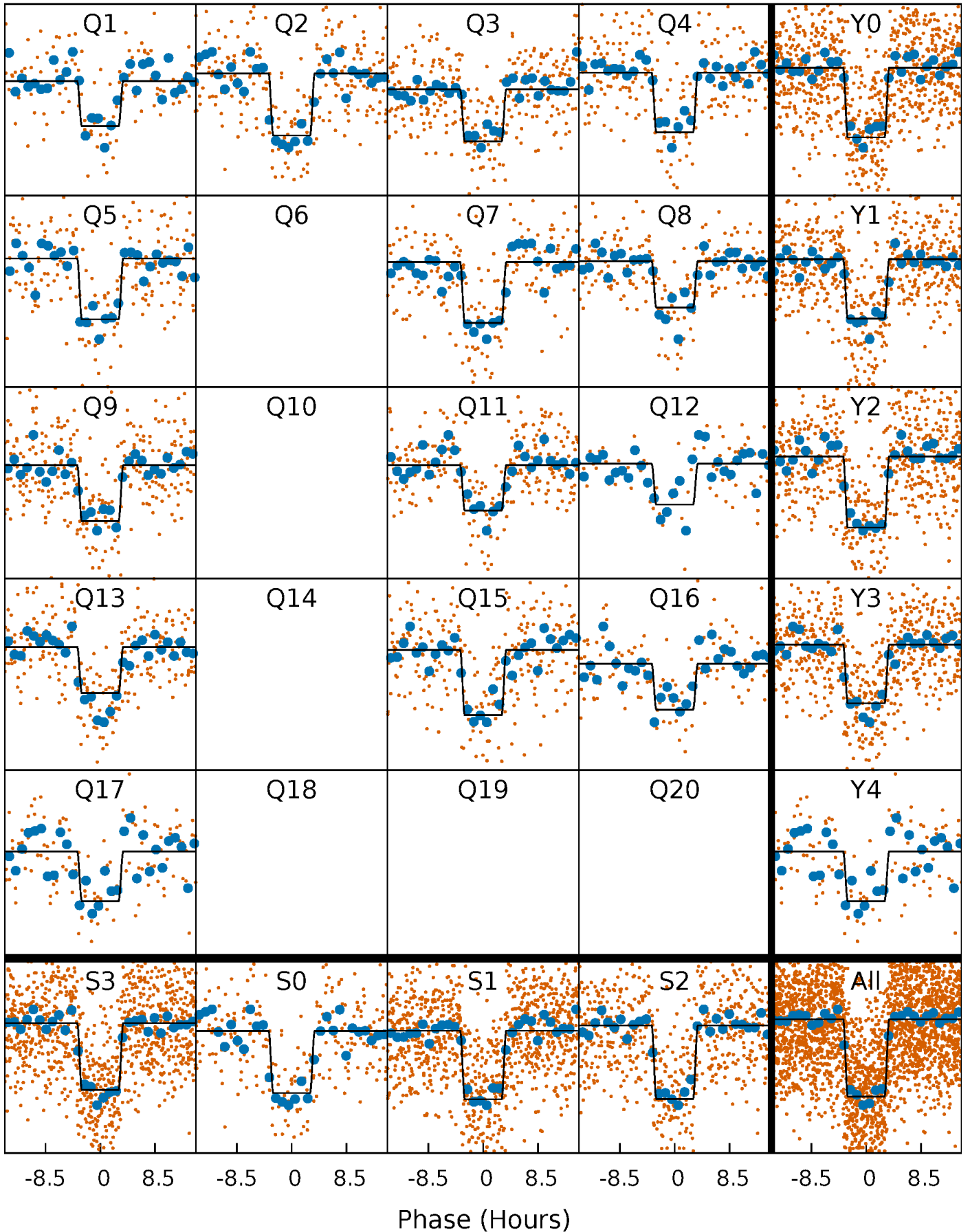
DV Quarter-Phased Transit Curves

TCE 003964109-01 P= 21.416227 Days $T_0=133.416312$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

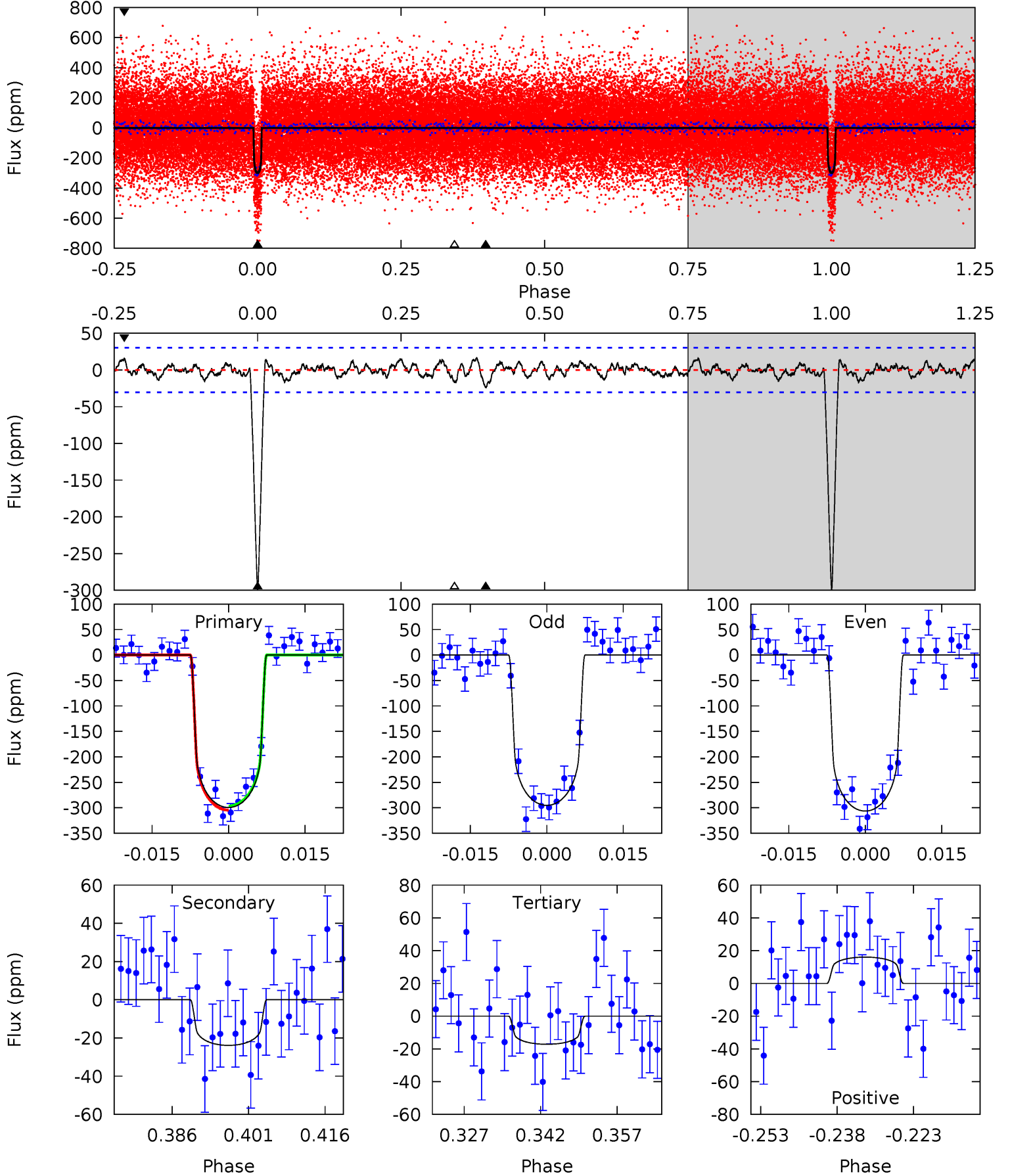
TCE 003964109-01 P= 21.416482 Days $T_0=133.409674$ (BKJD)



DV Model-Shift Uniqueness Test

003964109-01, P = 21.416227 Days, E = 112.000085 Days

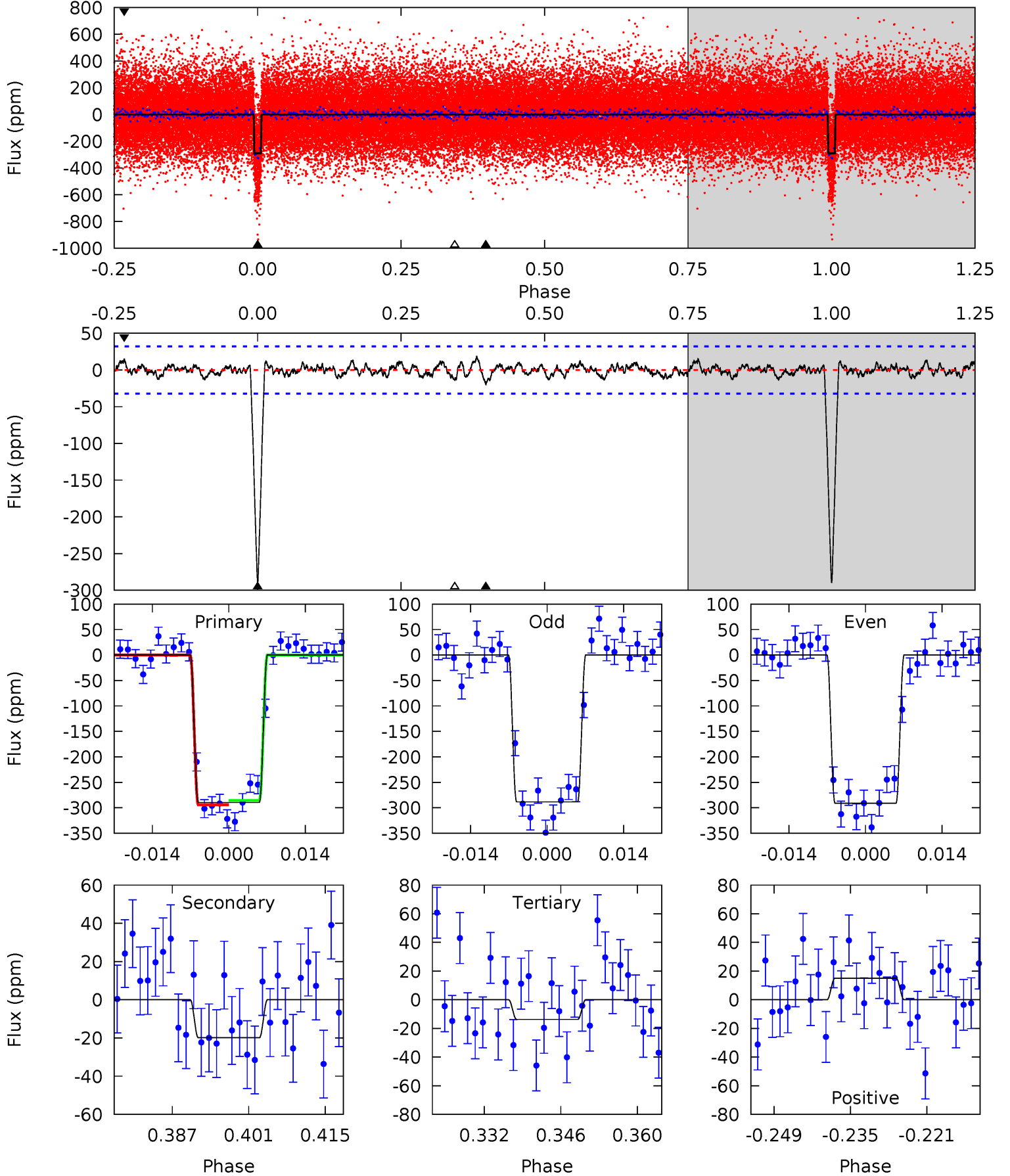
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.8	3.90	2.80	2.61	4.95	2.44	1.05	46.0	46.2	1.09	1.28	0.91	0.99	0.05	0.65



Alt Model-Shift Uniqueness Test

003964109-01, P = 21.416482 Days, E = 111.993192 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.7	3.07	2.12	2.33	4.96	2.46	0.88	42.6	42.4	0.95	0.74	0.20	1.02	0.06	0.67



Stellar Parameters For KIC 003964109

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6156^{+123}_{-135}	$4.331^{+0.084}_{-0.126}$	$0.000^{+0.150}_{-0.150}$	$1.180^{+0.212}_{-0.130}$	$1.085^{+0.099}_{-0.074}$	$0.931^{+0.330}_{-0.341}$
	+2%/-2%	+2%/-3%	+inf%/-inf%	+18%/-11%	+9%/-7%	+35%/-37%
Source	SPE59	SPE59	SPE59	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 003964109-01 / KOI 0393.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-24 ± 6	$2.25^{+0.44}_{-0.37}$	1051^{+50}_{-40}	3689^{+295}_{-236}	63^{+33}_{-23}
Alt.	-20 ± 6	$2.23^{+0.45}_{-0.40}$	1049^{+50}_{-42}	3579^{+273}_{-258}	52^{+31}_{-21}

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 $A_{obs} \gg 1.0$

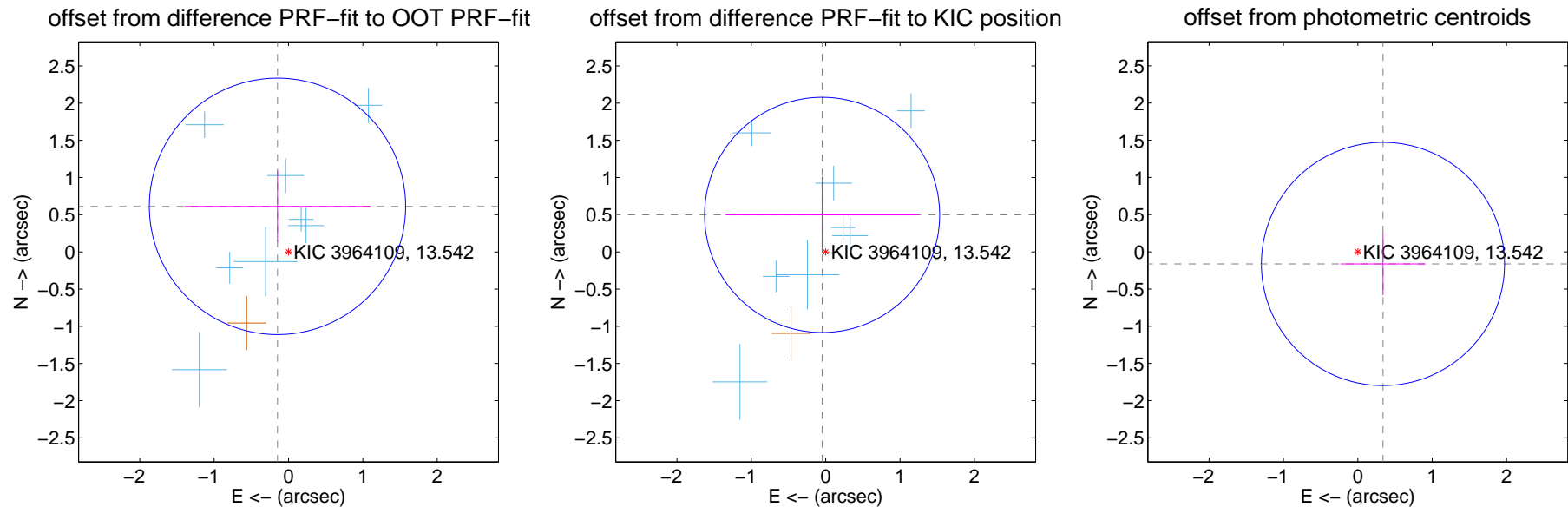
DV Centroid Data

Supplemental centroid analysis for 003964109-01. Kepler magnitude: 13.54. Transit SNR 35.85

There are 8 quarters with good PRF difference image offsets

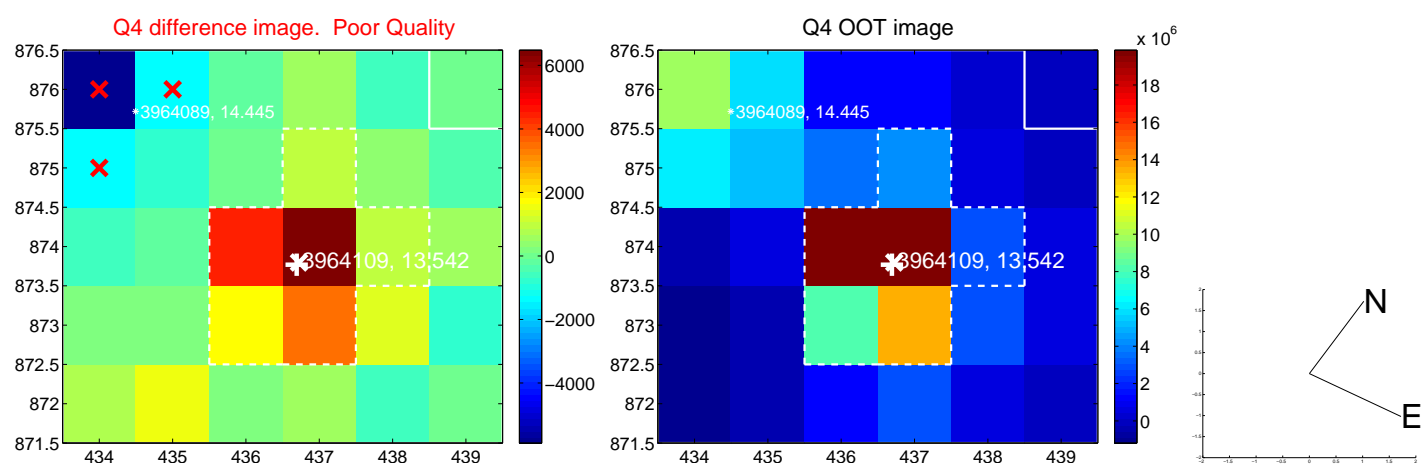
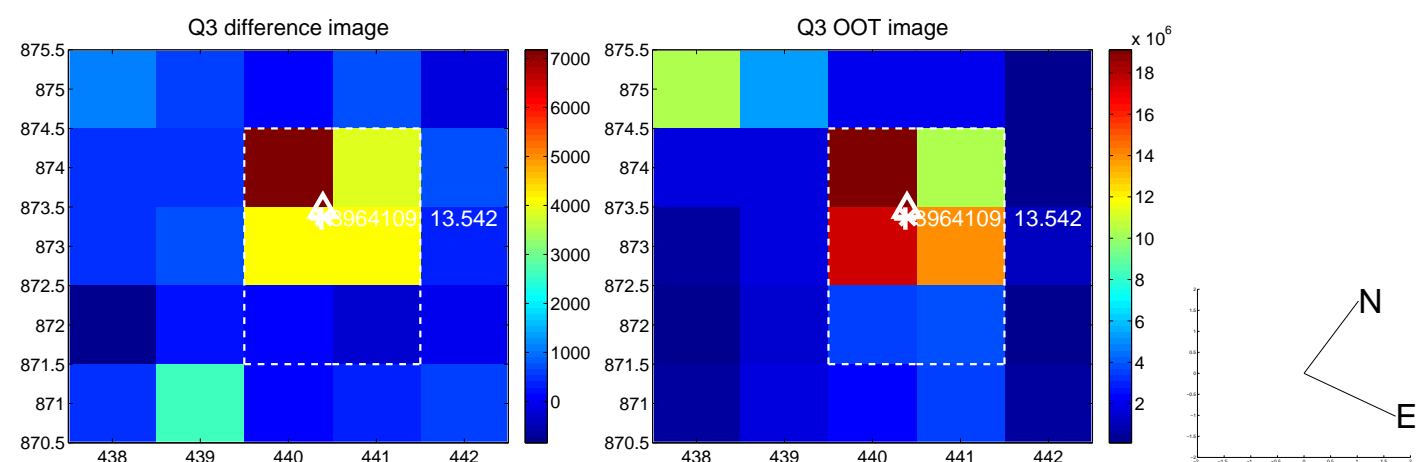
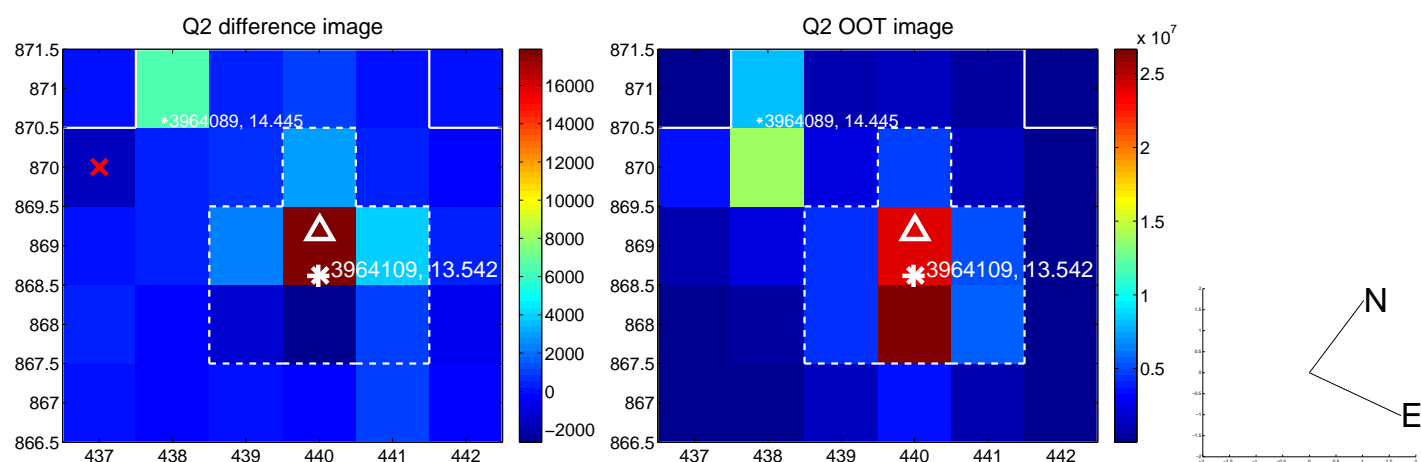
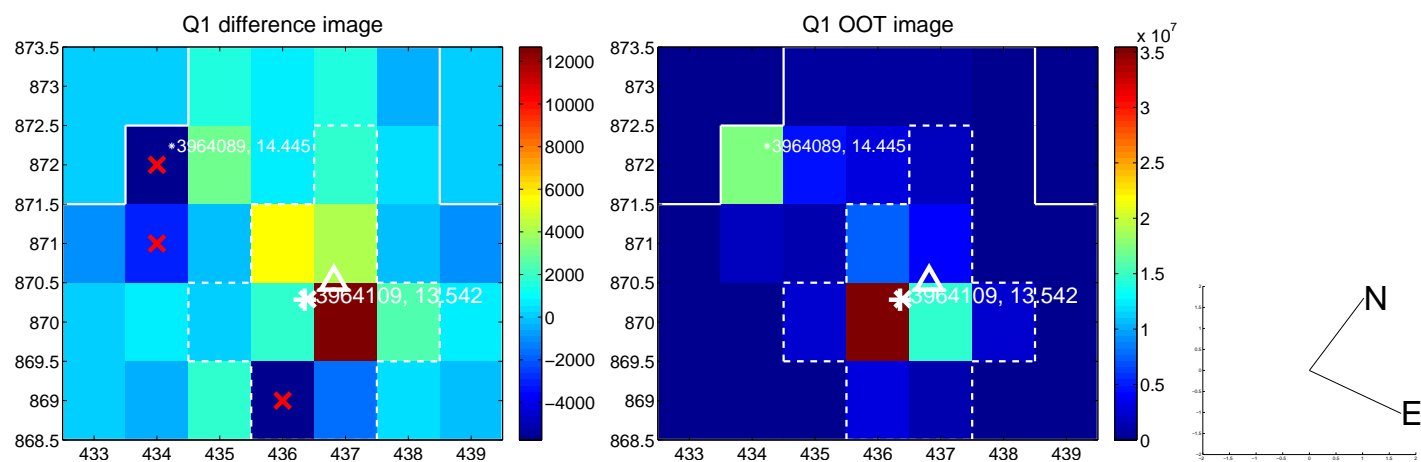
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.630 ± 0.574	1.10	0.148 ± 1.251	0.612 ± 0.478
PRF-fit source offset from KIC position	0.500 ± 0.527	0.95	0.048 ± 1.299	0.497 ± 0.514
photometric centroid source offset	0.38 ± 0.54	0.69	-0.34 ± 0.57	-0.16 ± 0.42

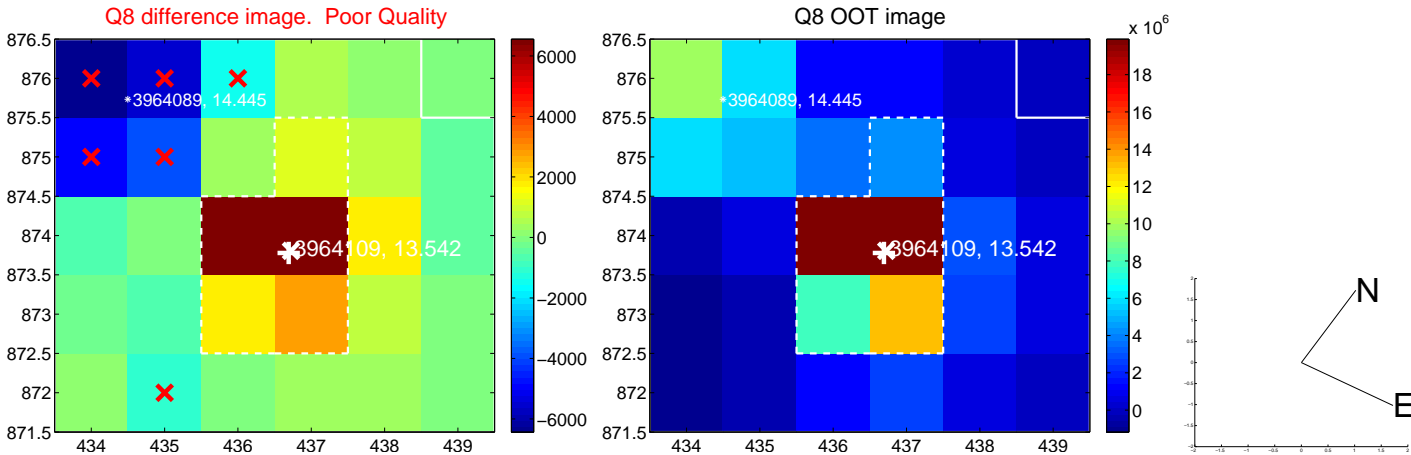
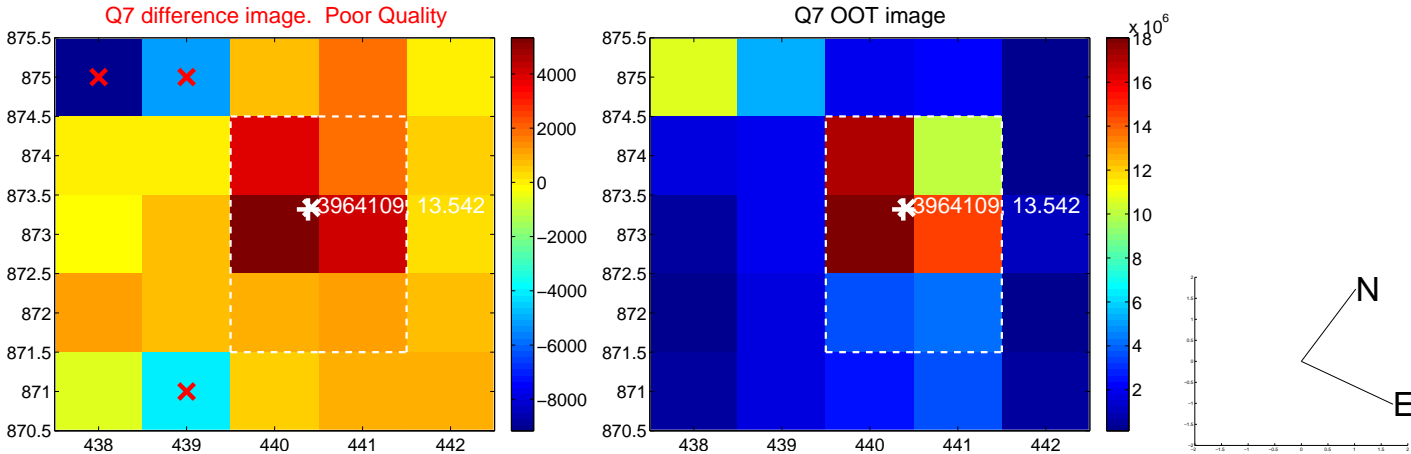
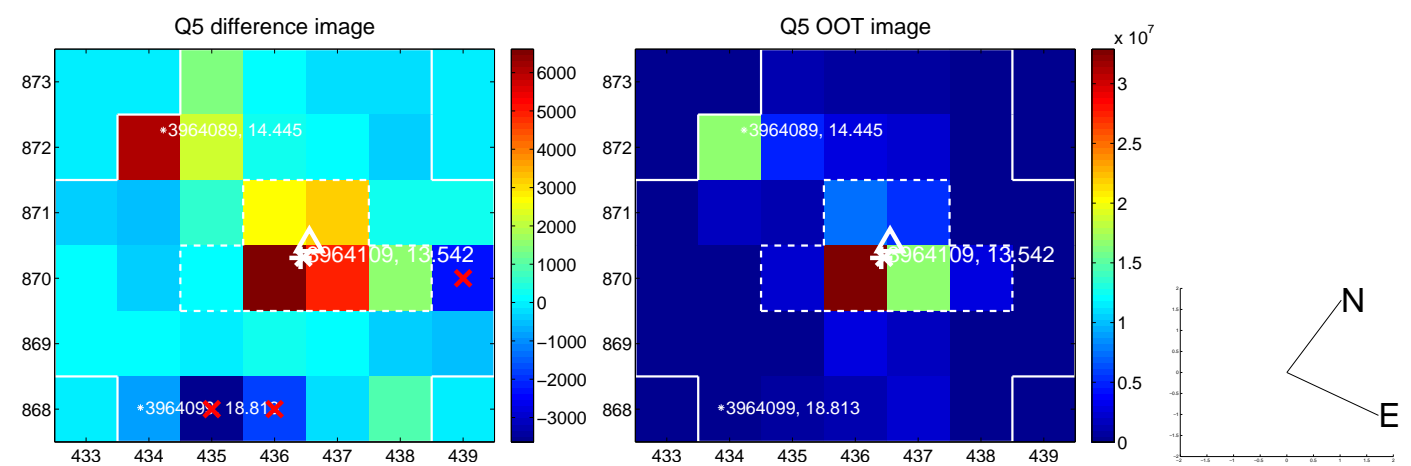


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

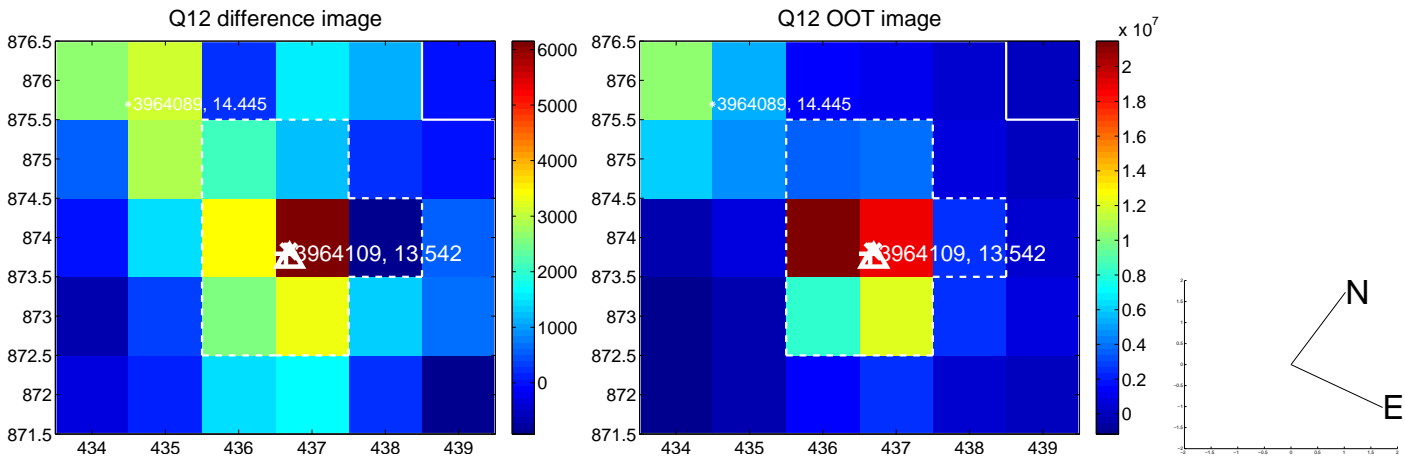
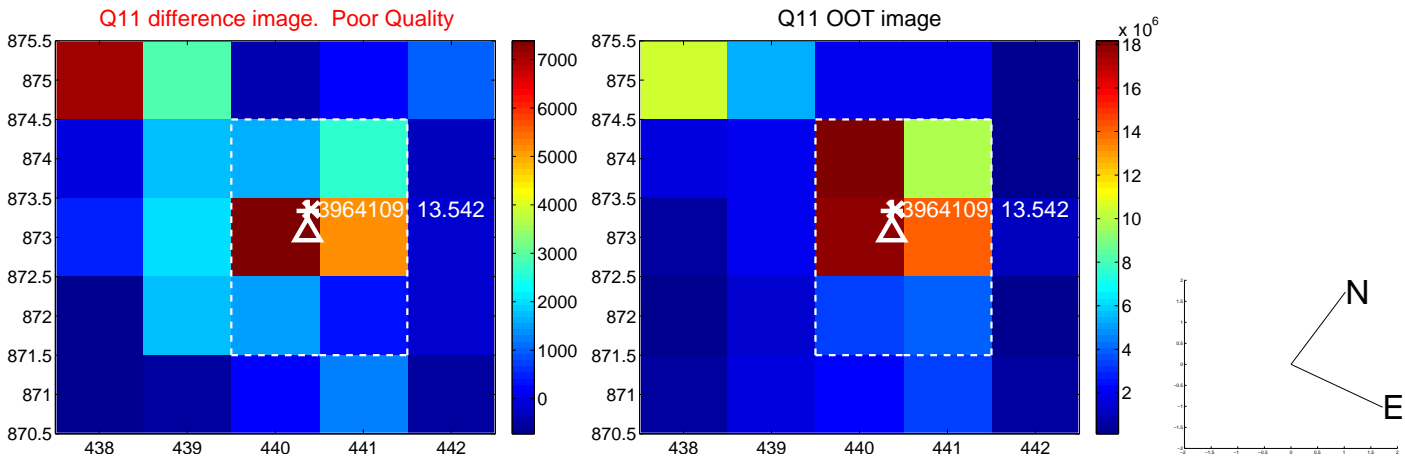
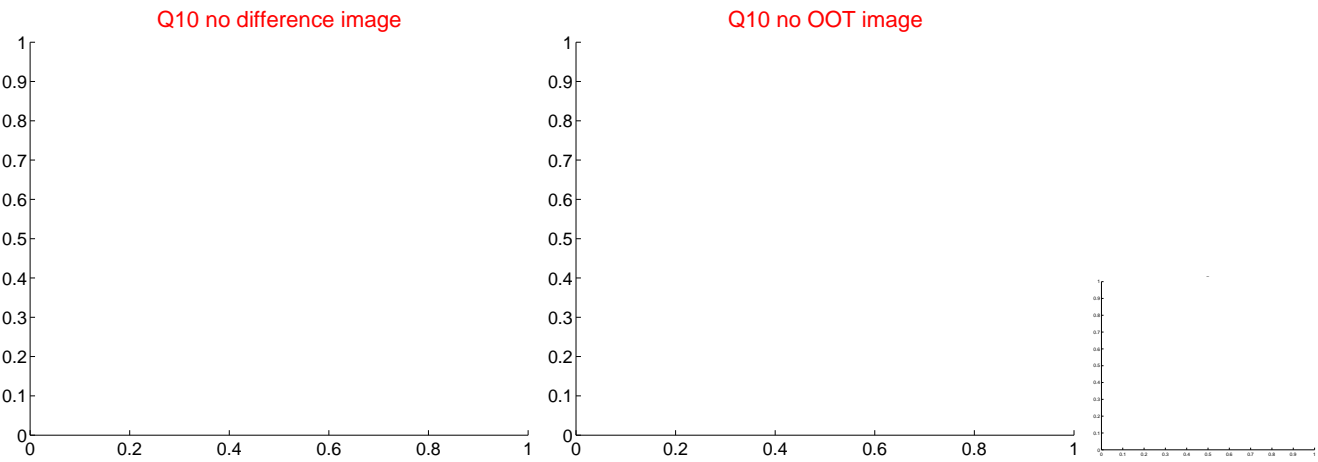
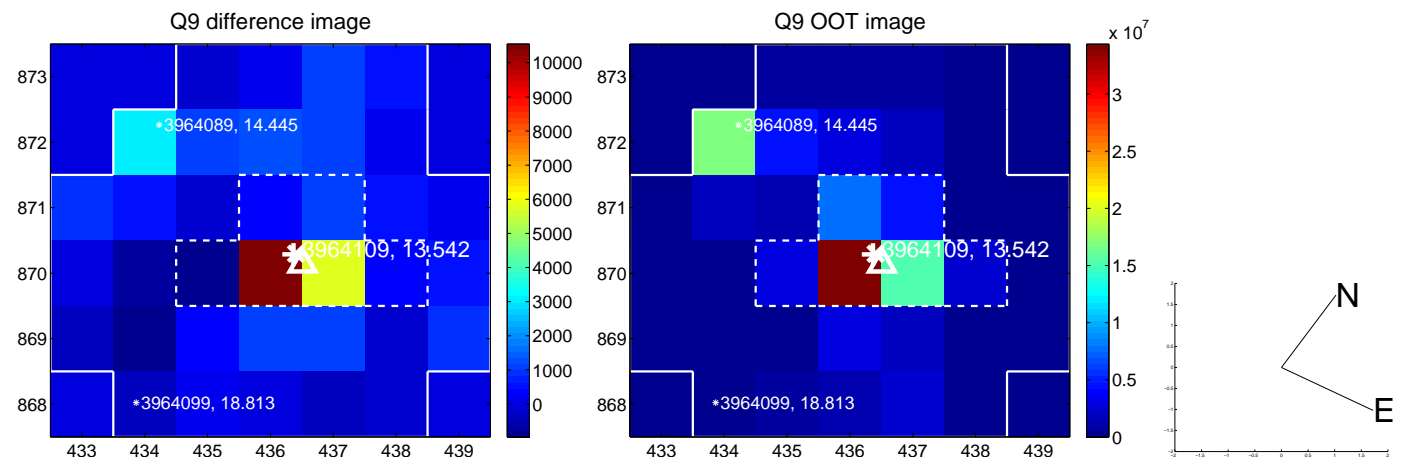
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



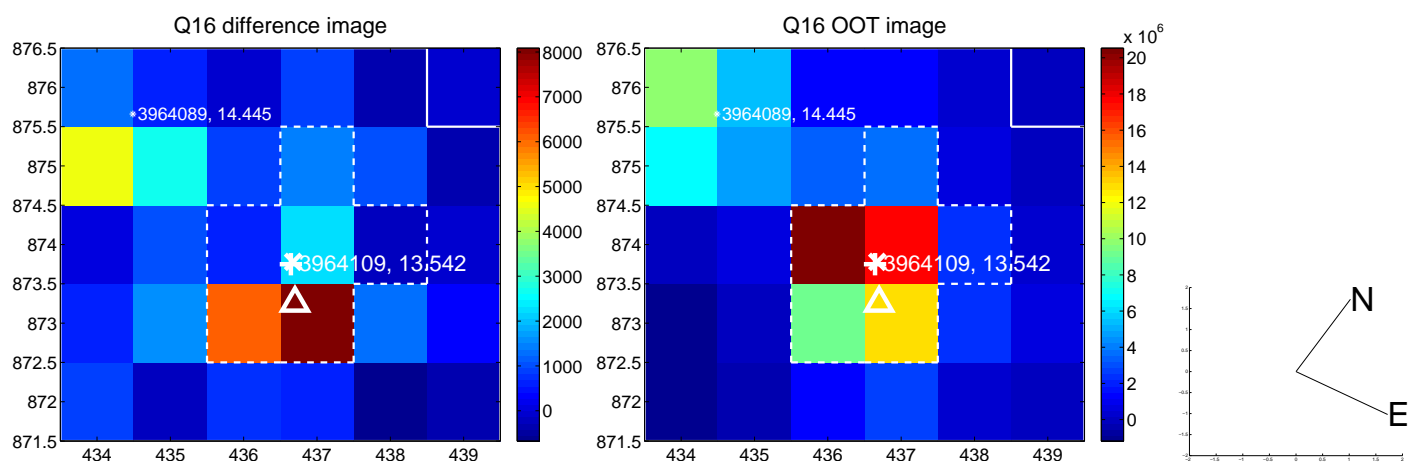
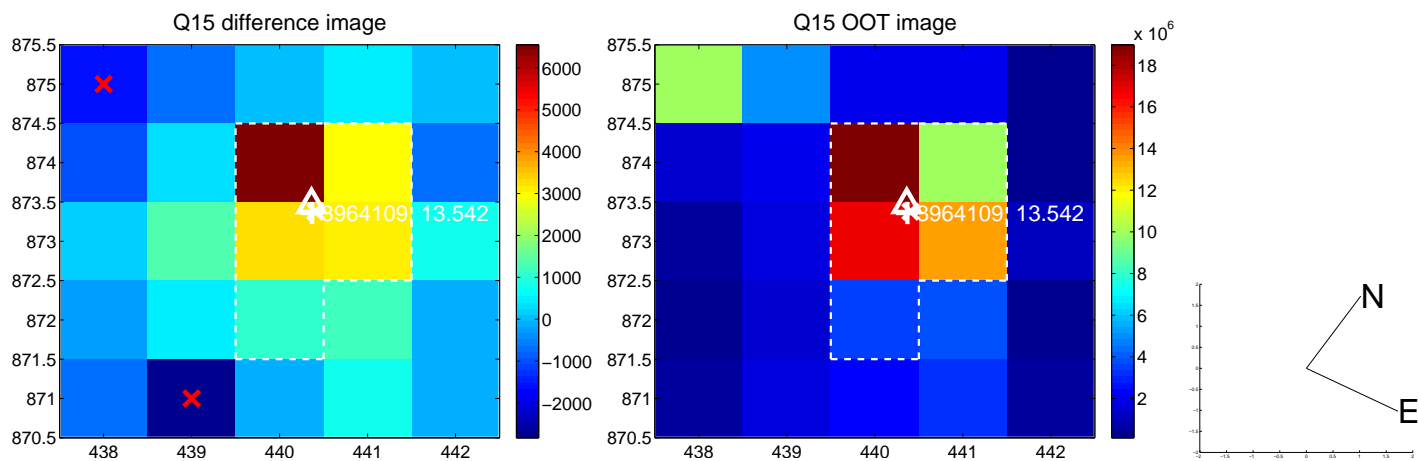
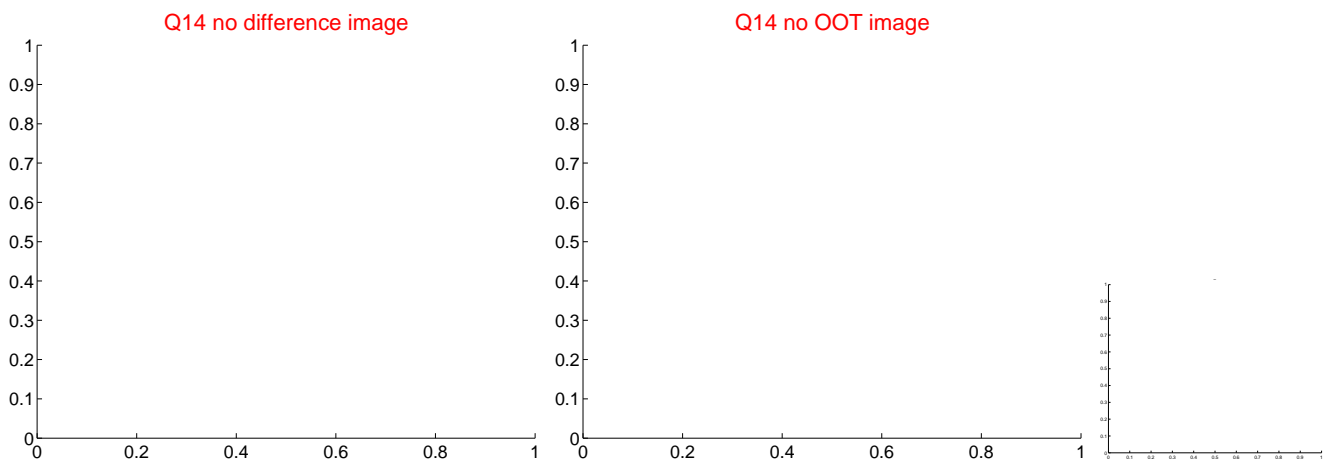
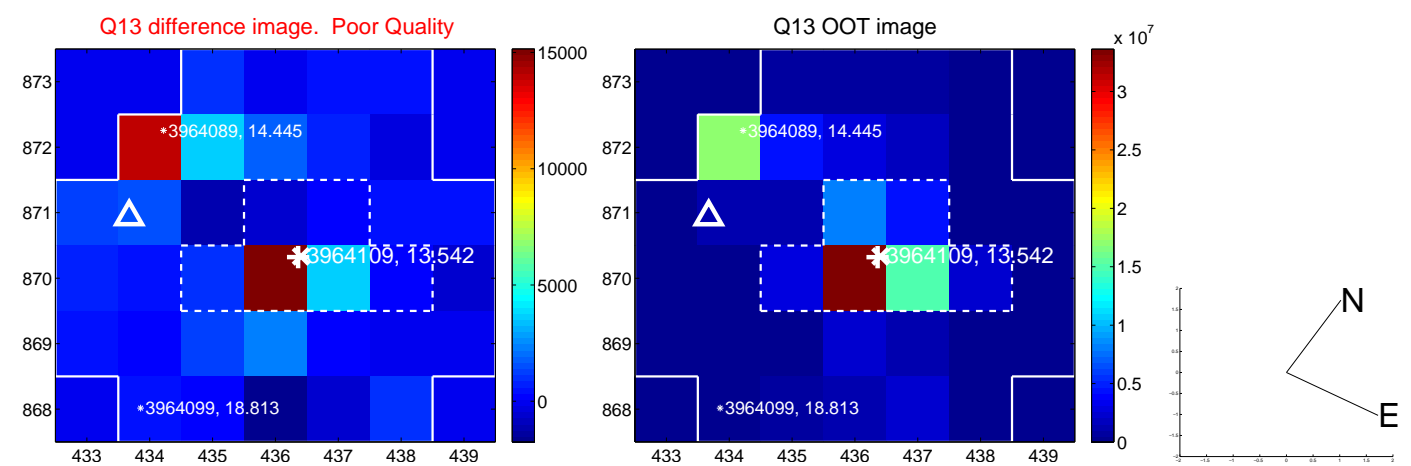
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



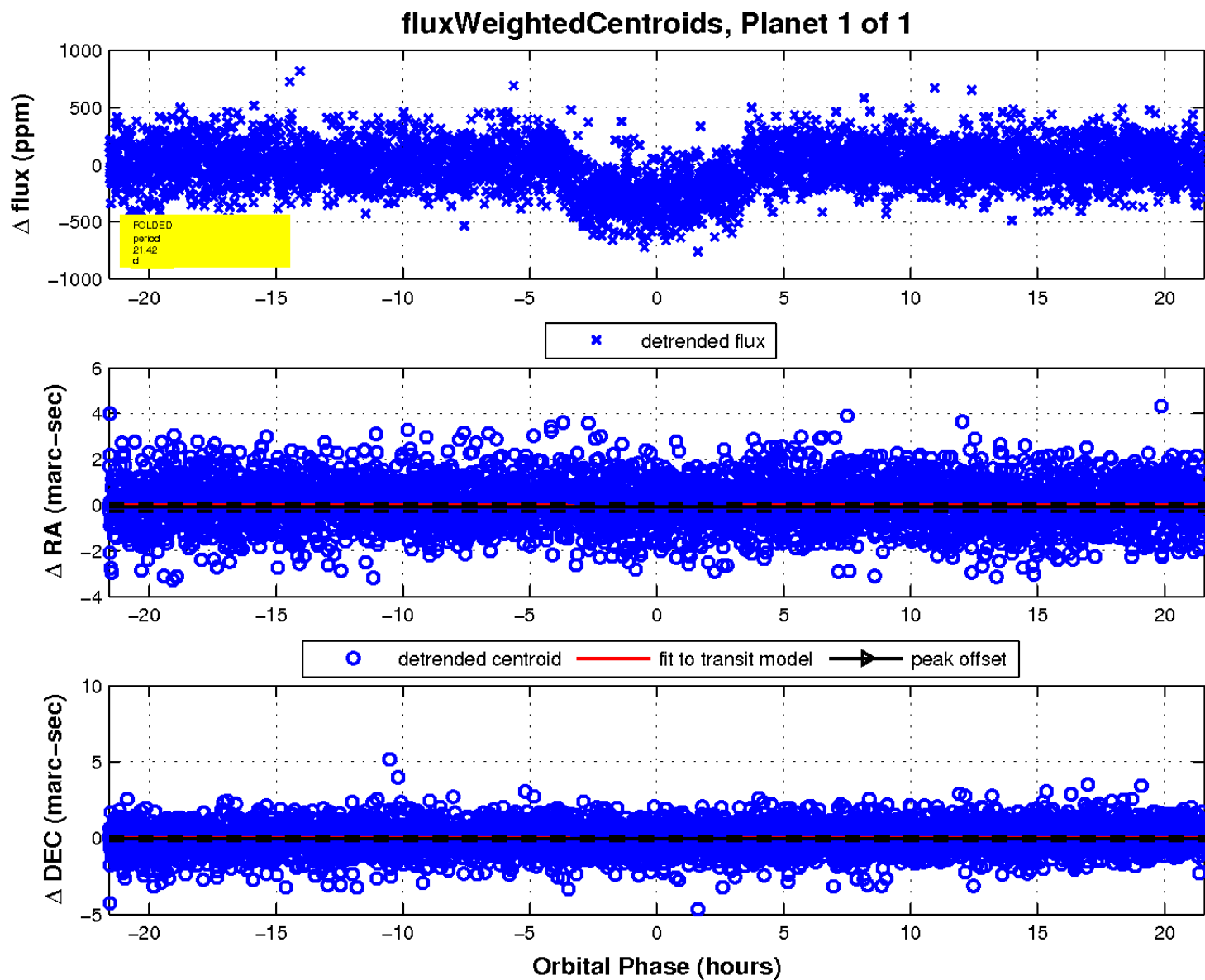
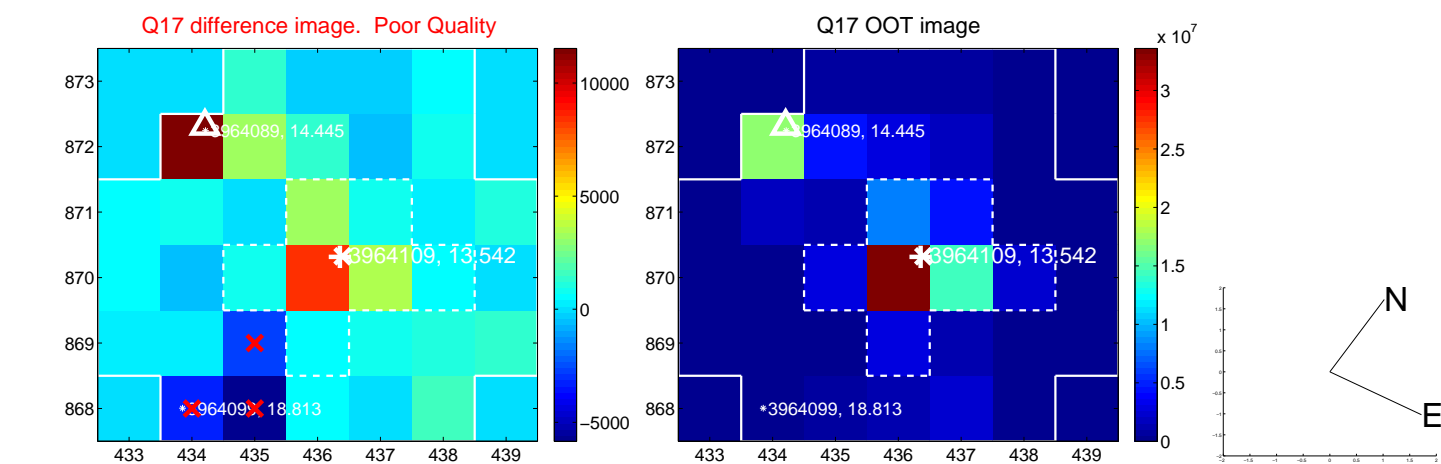
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

