

KIC 009390228

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})
009390228-01	OBS	7934.01	22.643270	153.445646	526.9	0.882	7.3	8.8	0.89	5880	2.35	35.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009390228-01	OBS	PC	0.94	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.

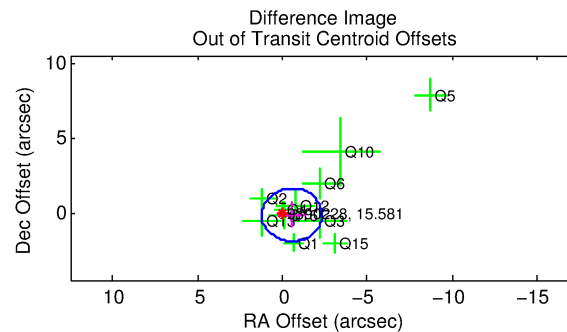
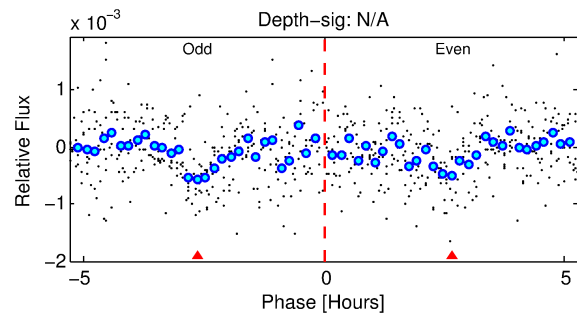
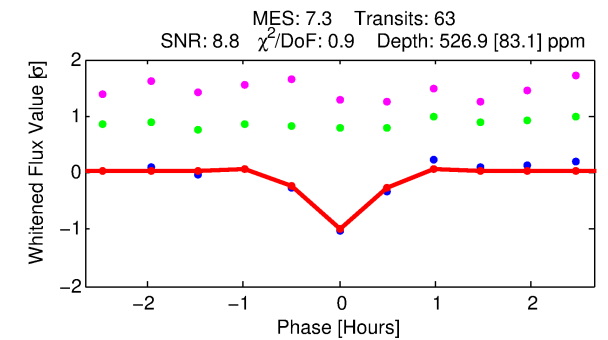
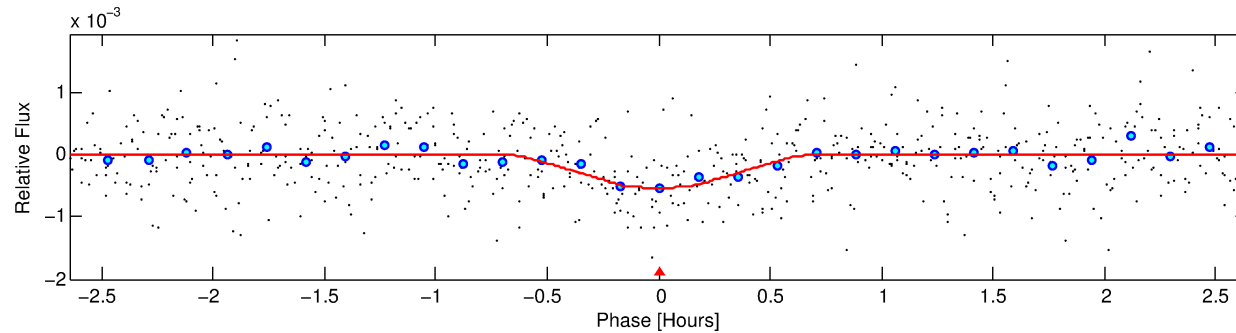
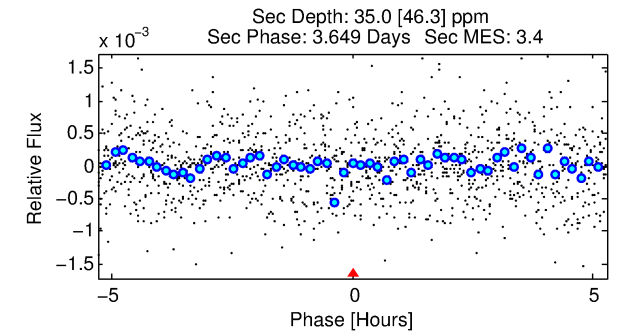
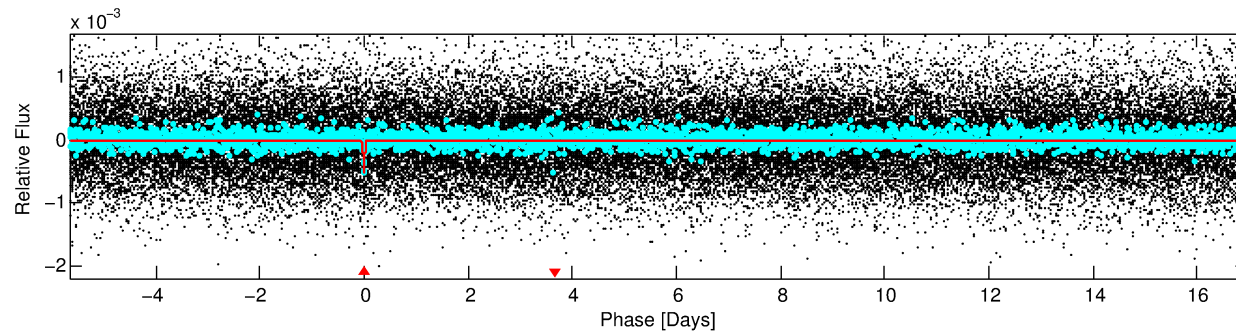
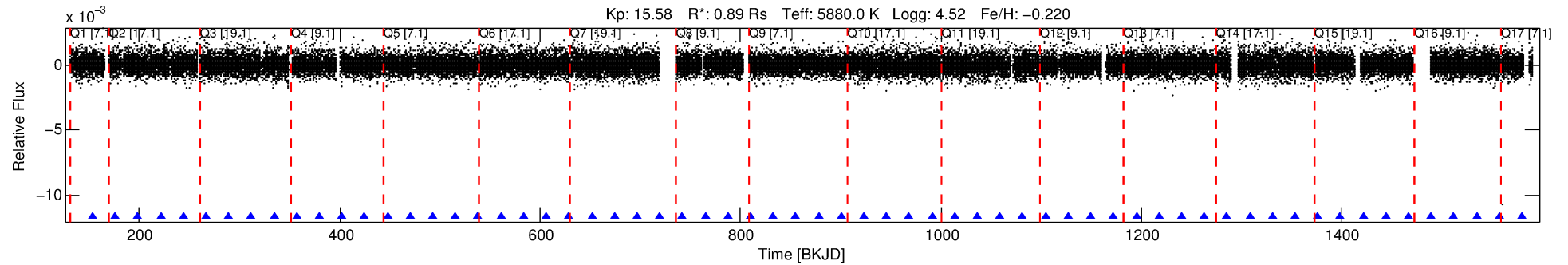
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009390228-01

No Significant Match Found

DV One-Page Summary

KIC: 9390228 Candidate: 1 of 1 Period: 22.643 d



DV Fit Results:

Period = 22.64327 [0.00009] d
Epoch = 153.4456 [0.0033] BKJD
Rp/R* = 0.0242 [0.0391]
a/R* = 113.44 [883.12]
b = 0.85 [2.68]
Seff = 35.84 [13.92]
Teq = 624 [61] K
Rp = 2.35 [3.87] Re
a = 0.1540 [0.0394] AU
Ag = 82.51 [289.66] [0.28σ]
Teffp = 2907 [2539] K [0.90σ]

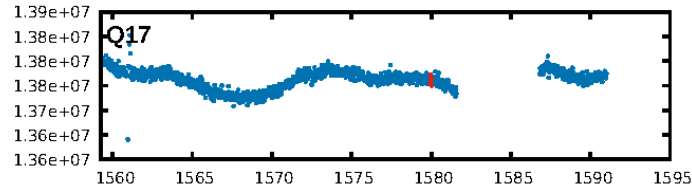
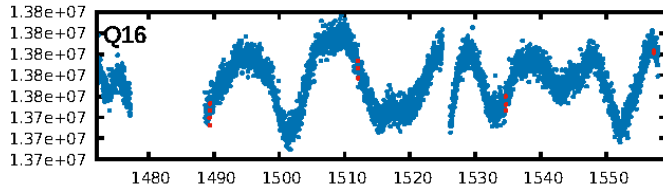
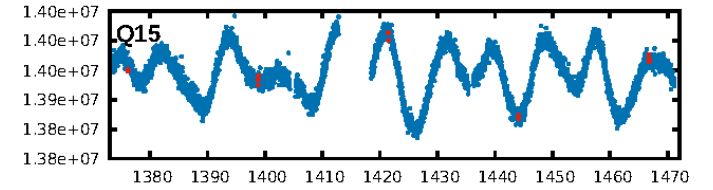
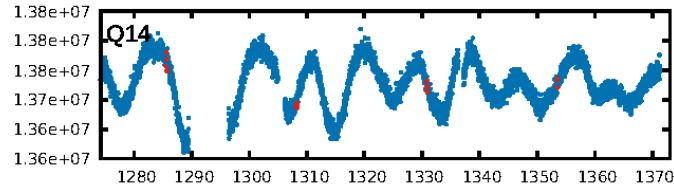
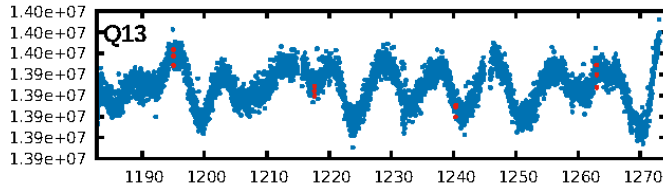
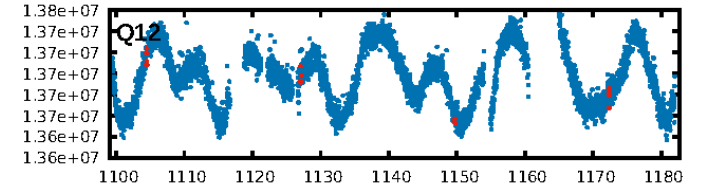
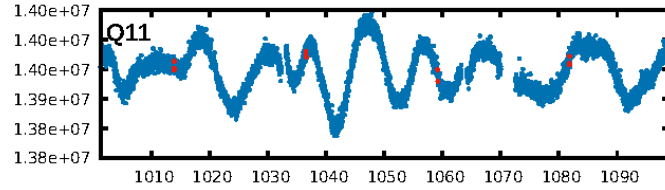
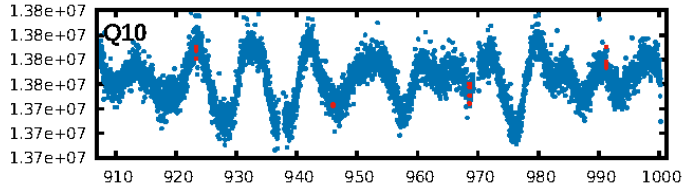
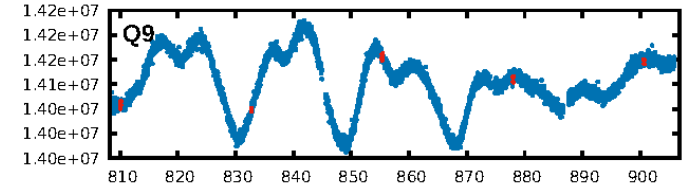
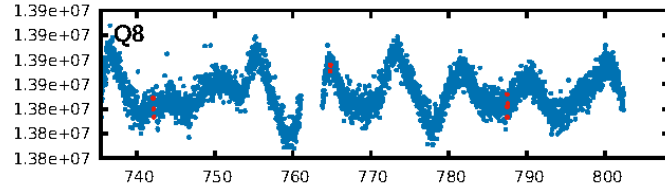
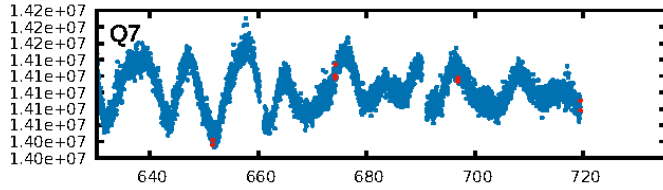
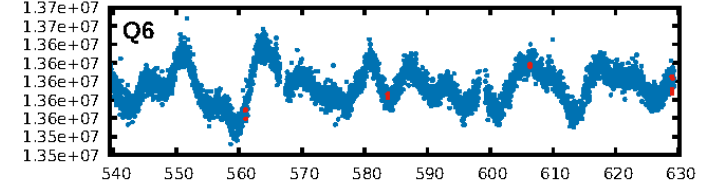
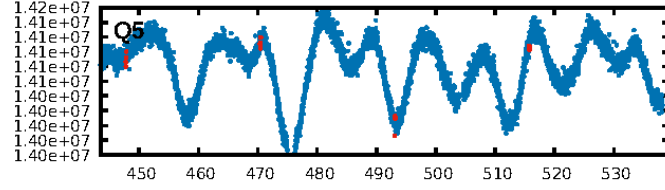
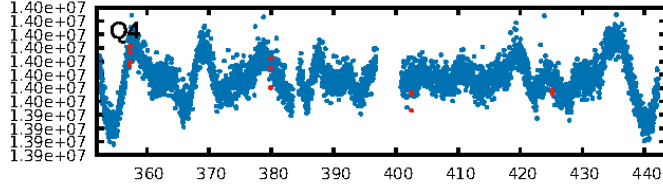
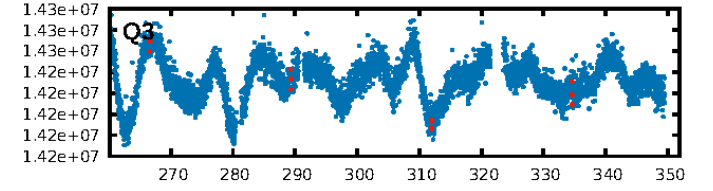
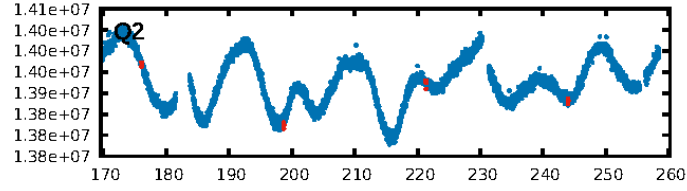
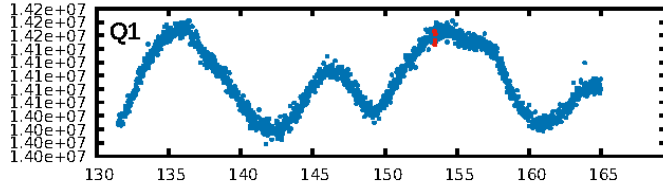
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 75.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.15e-13
RollingBand-fgt: 1.00 [61/61]
GhostDiagnostic-chr: -16.31
Centroid-sig: 0.3%
Centroid-so: 3.228 arcsec [2.00σ]
OotOffset-rm: 0.579 arcsec [0.98σ]
KicOffset-rm: 0.604 arcsec [1.06σ]
OotOffset-st: 3/2/3/3 [11]
KicOffset-st: 3/2/3/3 [11]
DiffImageQuality-fgm: 0.27 [3/11]
DiffImageOverlap-fno: 1.00 [17/17]

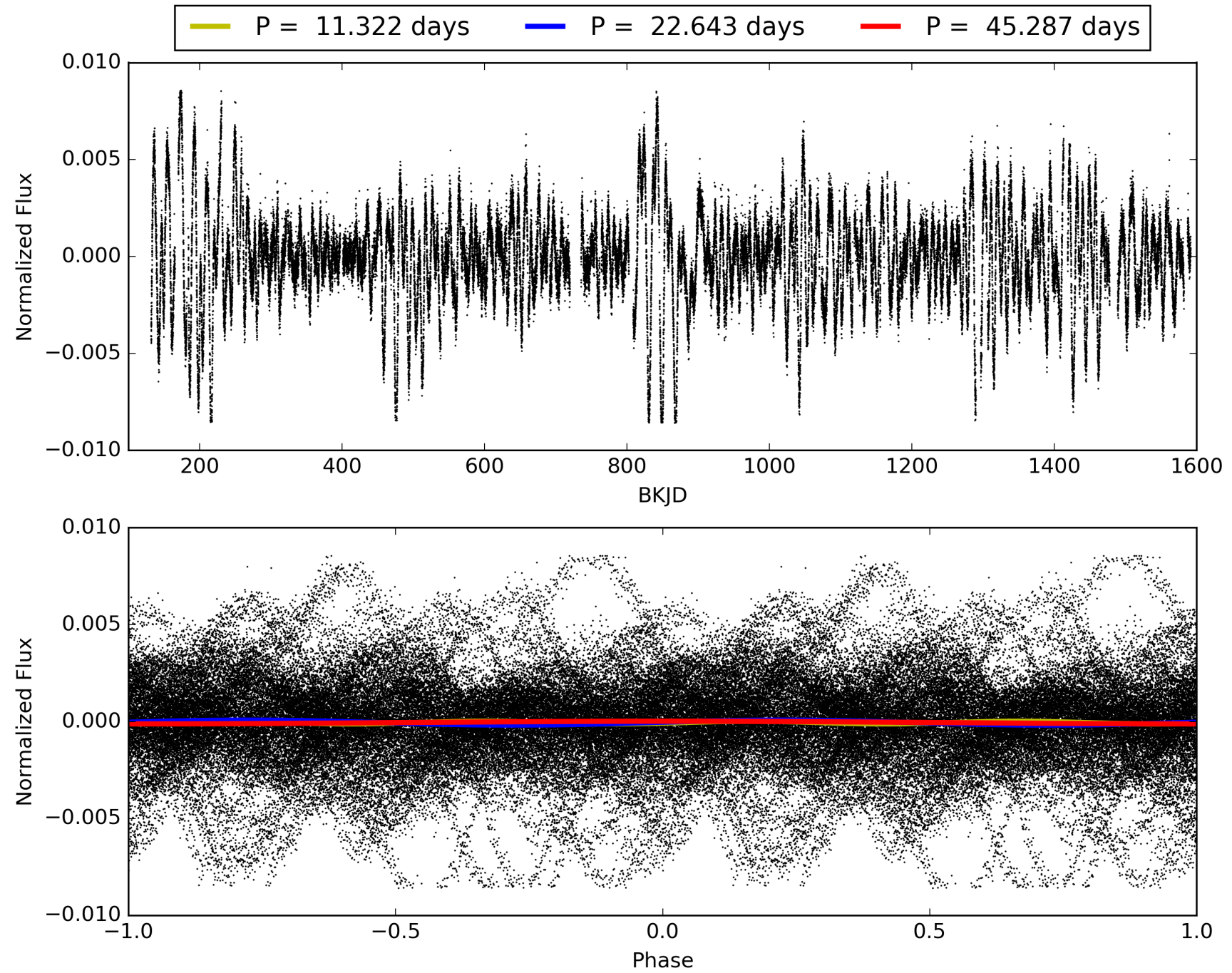
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:50:42 Z

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

TCE 009390228-01, PDC Light Curves

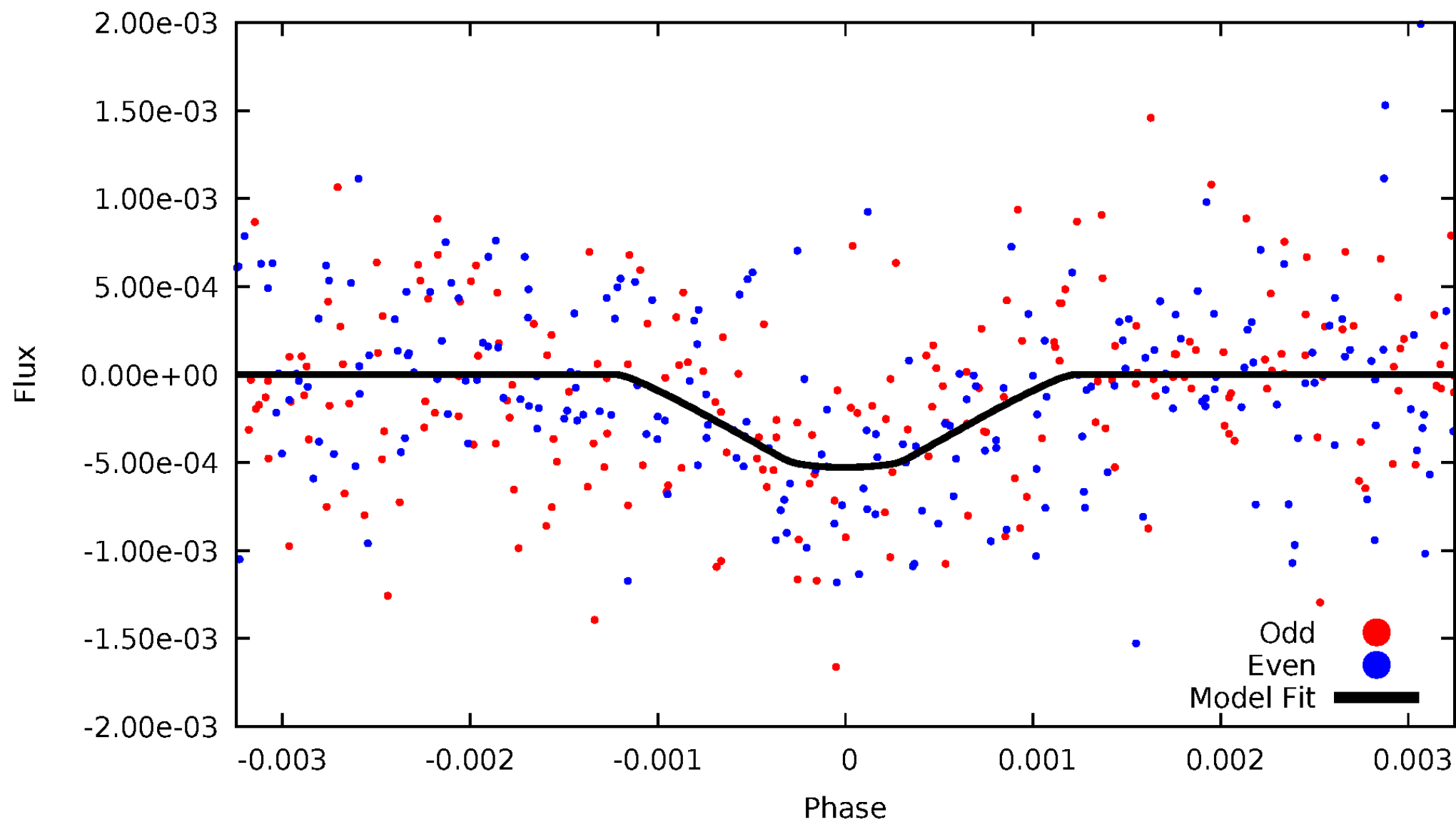


TCE 009390228-01



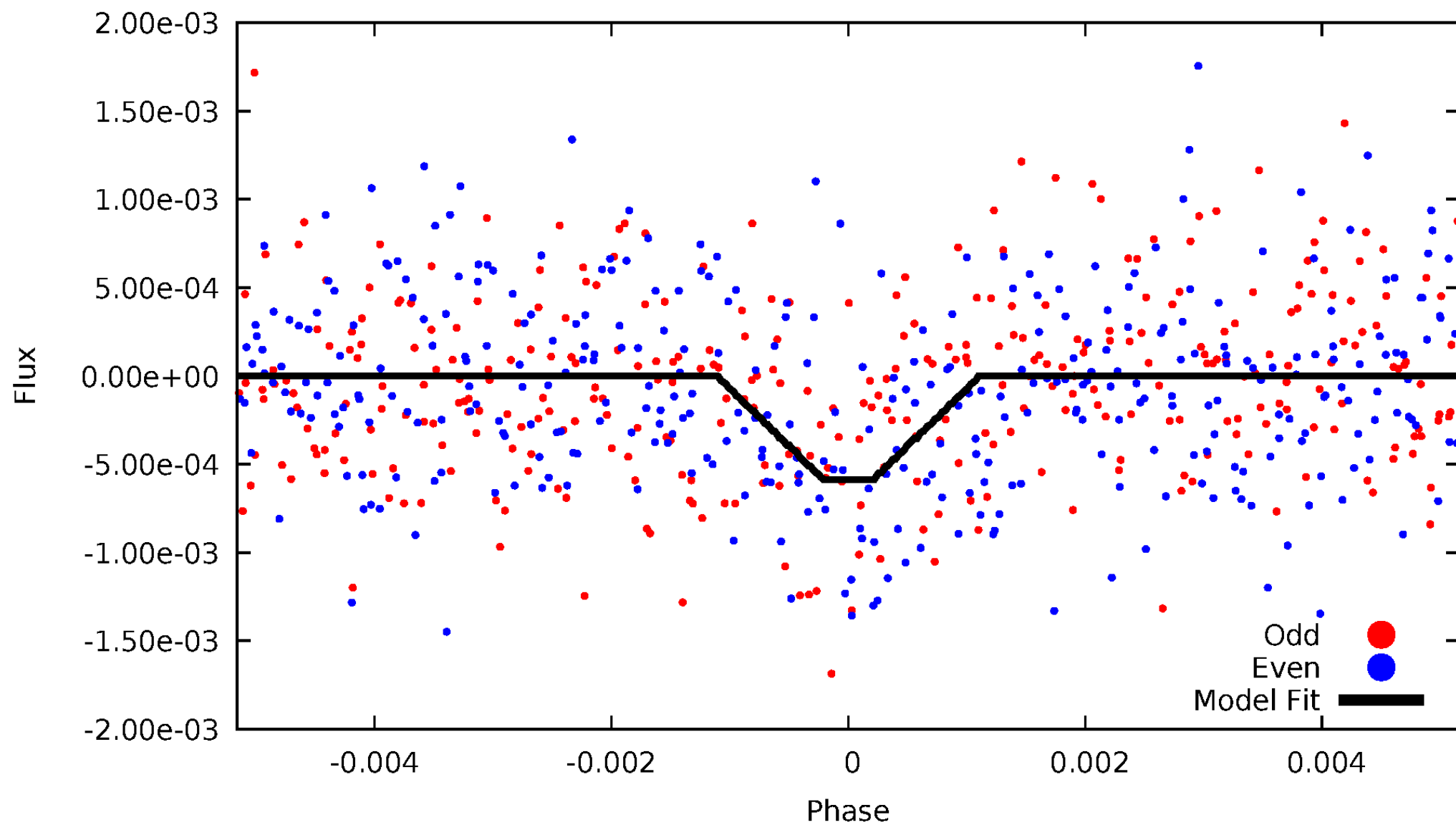
DV Odd/Even

TCE 009390228-01



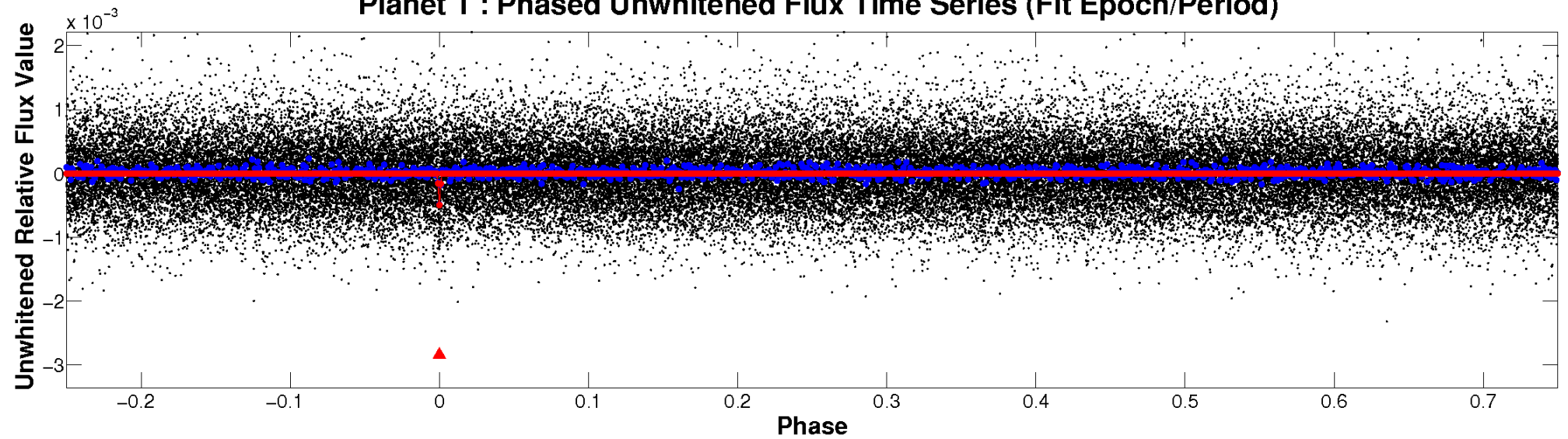
ALT Odd/Even

TCE 009390228-01

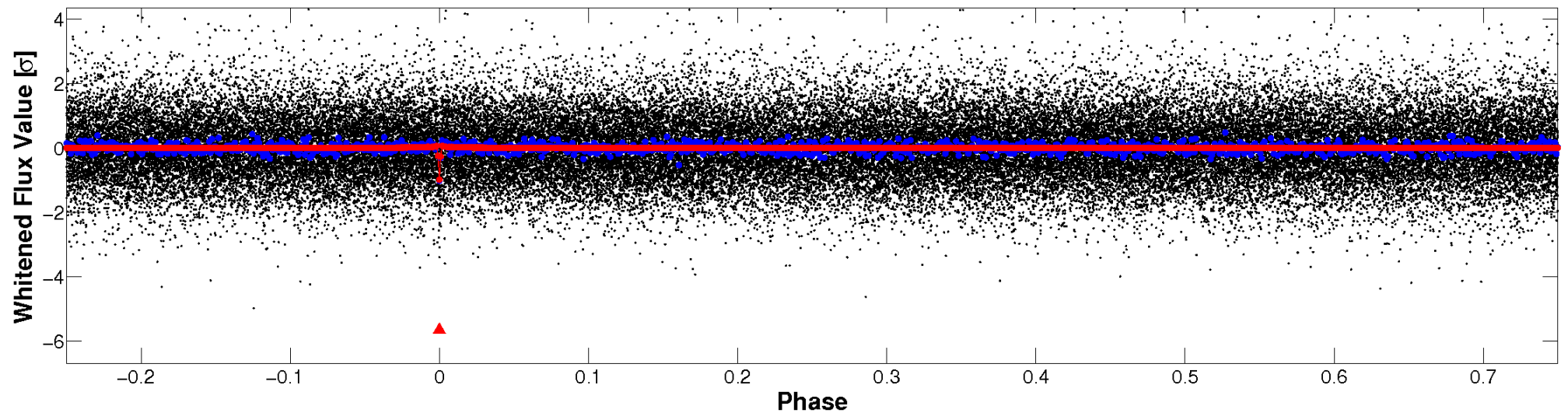


Non-Whitened Vs. Whitened Light Curve

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

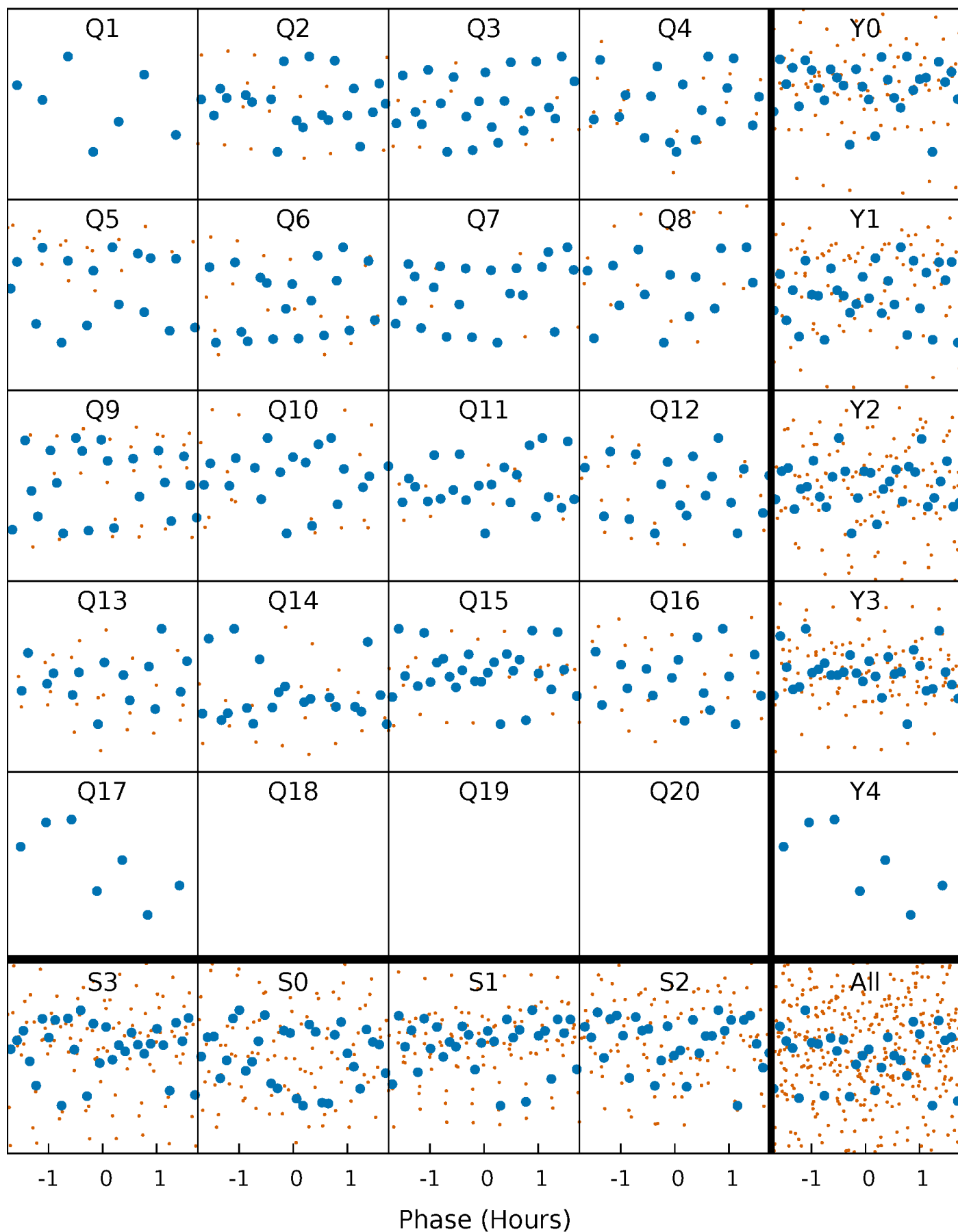


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



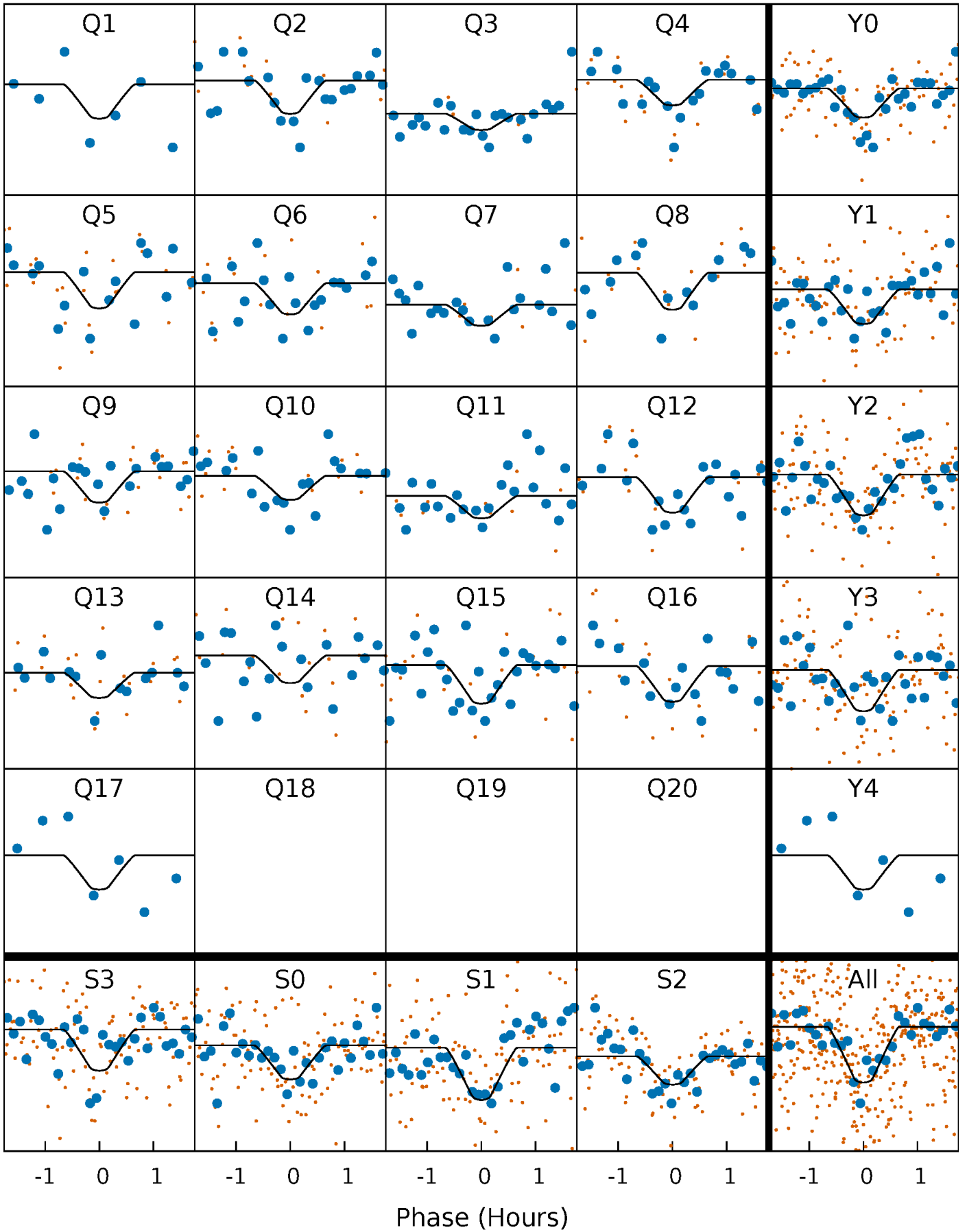
PDC Quarter-Phased Transit Curves

TCE 009390228-01 P= 22.643270 Days $T_0=153.445646$ (BKJD)



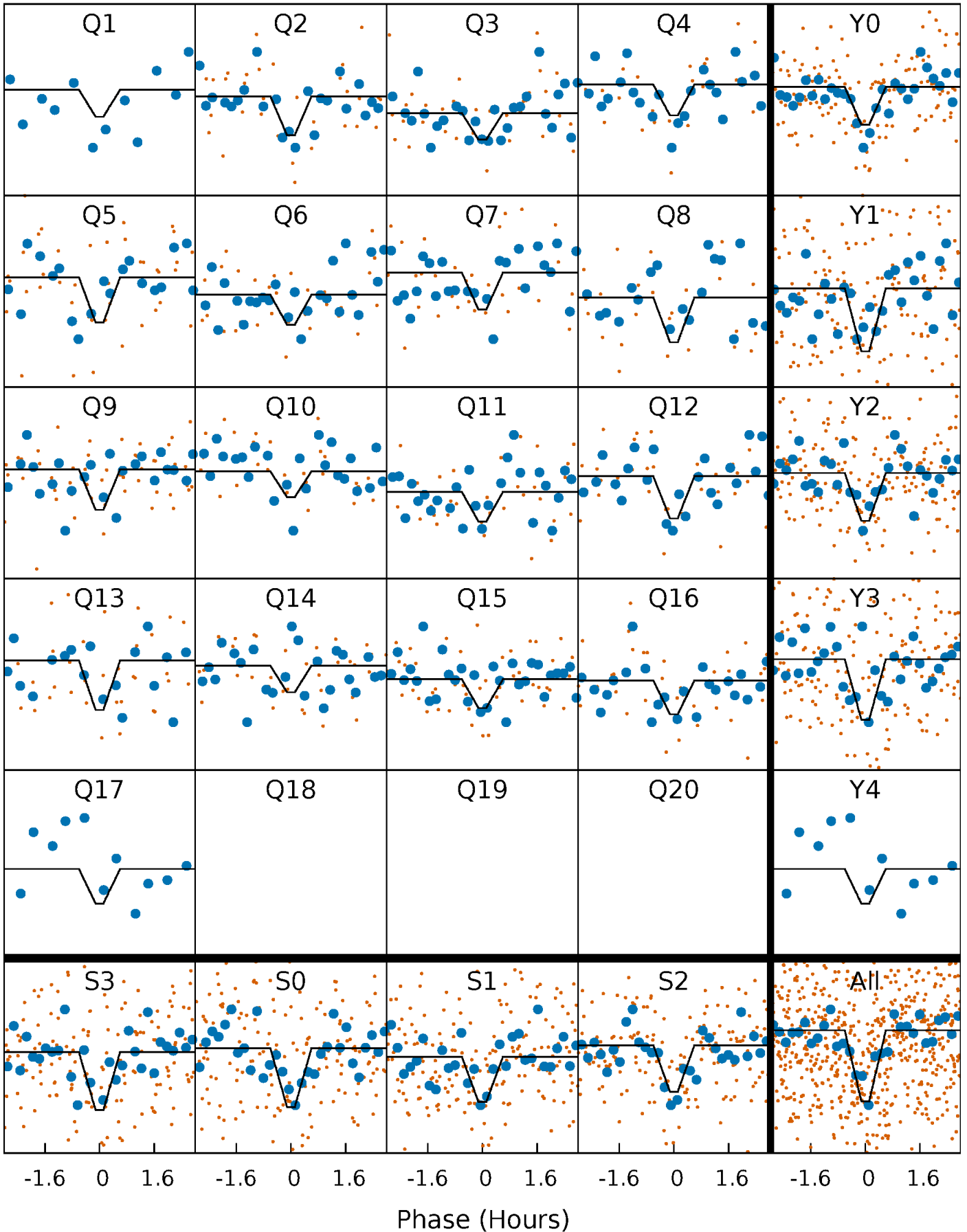
DV Quarter-Phased Transit Curves

TCE 009390228-01 P= 22.643270 Days $T_0=153.445646$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

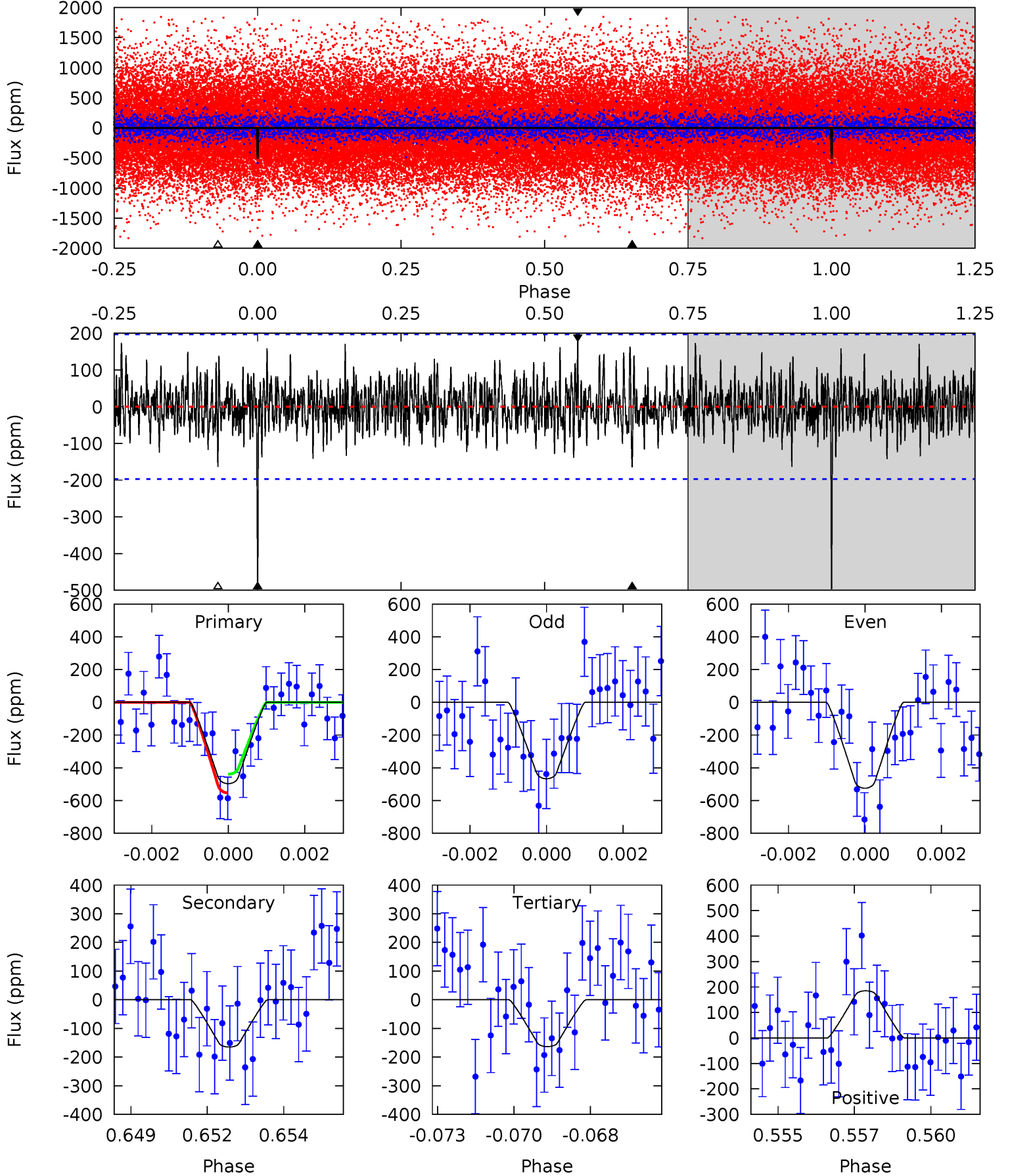
TCE 009390228-01 $P = 22.643107$ Days $T_0 = 153.449501$ (BKJD)



DV Model-Shift Uniqueness Test

009390228-01, $P = 22.643270$ Days, $E = 130.802376$ Days

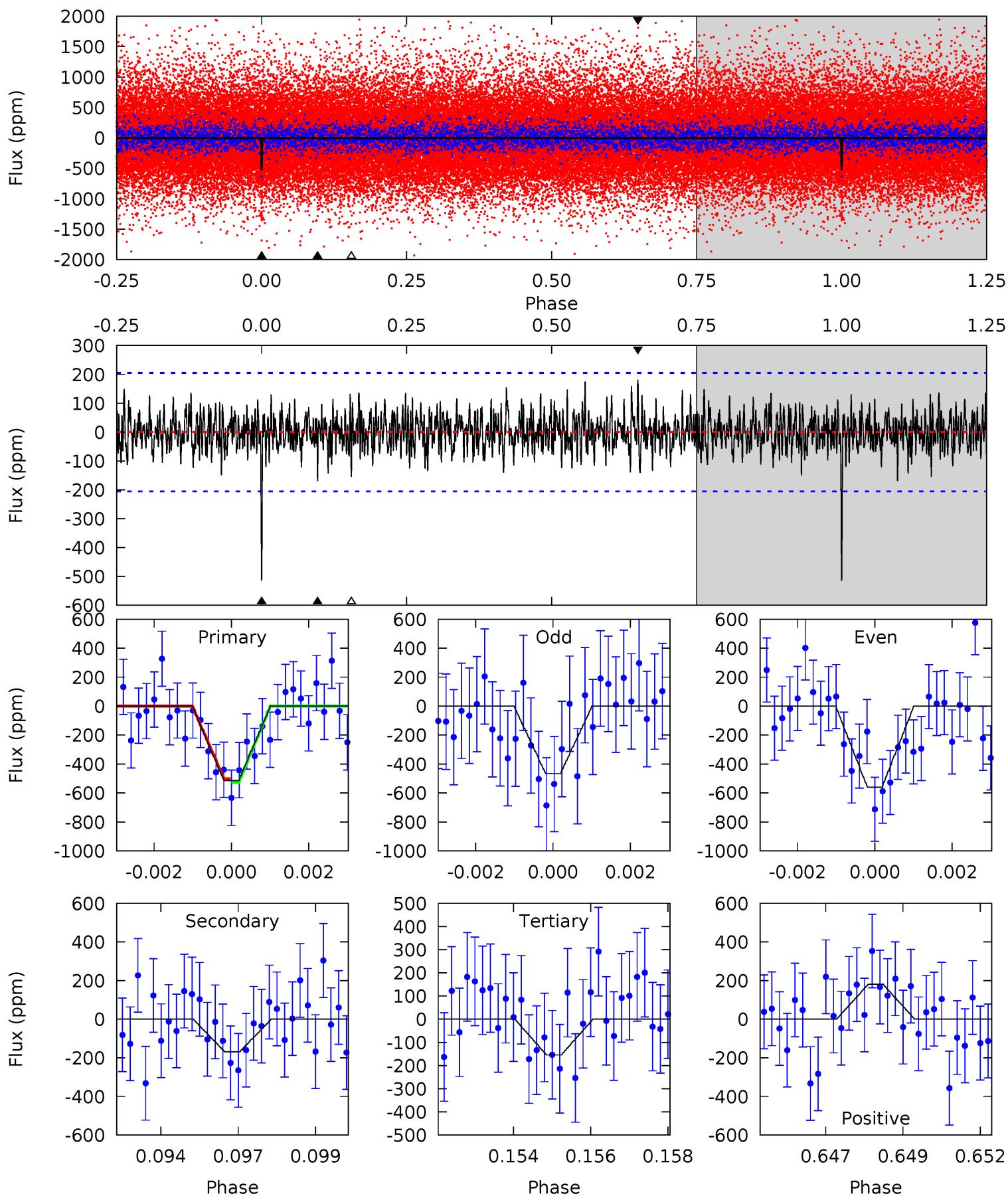
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	4.43	4.39	4.97	5.29	3.03	1.36	8.96	8.37	0.04	-0.54	0.78	0.94	0.27	1.54



Alt Model-Shift Uniqueness Test

009390228-01, $P = 22.643107$ Days, $E = 130.806394$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	4.38	4.00	4.68	5.31	3.06	1.33	9.31	8.63	0.38	-0.30	1.21	1.08	0.26	0.34



Stellar Parameters For KIC 009390228

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5880^{+159}_{-177}	$4.516^{+0.050}_{-0.200}$	$-0.220^{+0.300}_{-0.300}$	$0.891^{+0.274}_{-0.091}$	$0.949^{+0.120}_{-0.108}$	$1.891^{+0.507}_{-0.967}$
	+3%/-3%	+1%/-4%	+136%/-136%	+31%/-10%	+13%/-11%	+27%/-51%
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 009390228-01 / KOI 7934.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-165 ± 37	$3.91^{+3.55}_{-2.57}$	890^{+64}_{-41}	3781^{+1962}_{-690}	135^{+1095}_{-97}
Alt.	-169 ± 39	$3.91^{+3.55}_{-2.61}$	891^{+66}_{-42}	3820^{+2115}_{-685}	143^{+1069}_{-104}

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

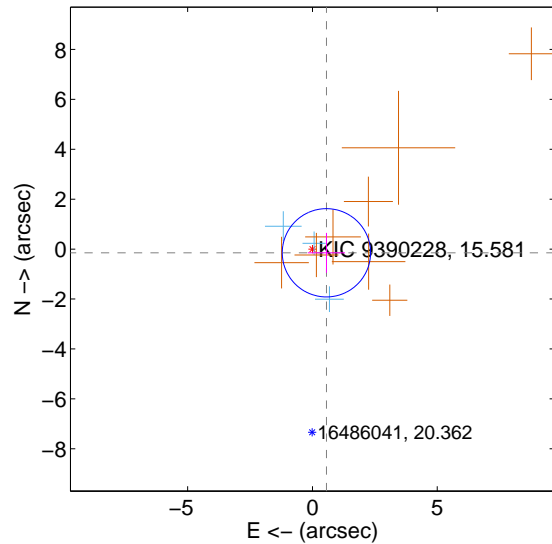
Supplemental centroid analysis for 009390228-01. Kepler magnitude: 15.58. Transit SNR 8.78

There are 3 quarters with good PRF difference image offsets

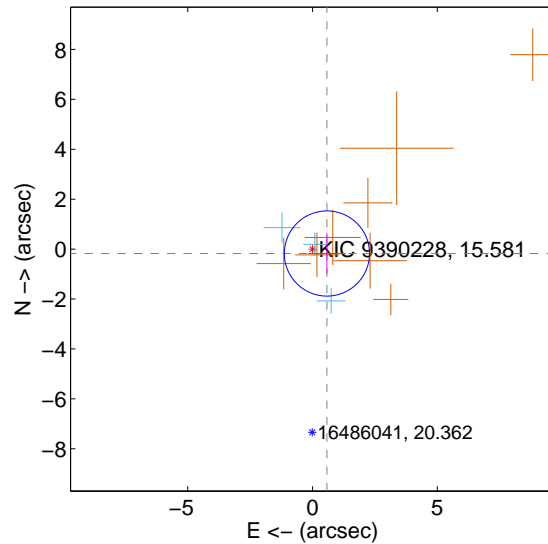
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.579 ± 0.589	0.98	-0.560 ± 0.748	-0.148 ± 0.799
PRF-fit source offset from KIC position	0.604 ± 0.569	1.06	-0.577 ± 0.749	-0.177 ± 0.808
photometric centroid source offset	3.23 ± 1.62	2.00	0.08 ± 1.61	-3.23 ± 1.62

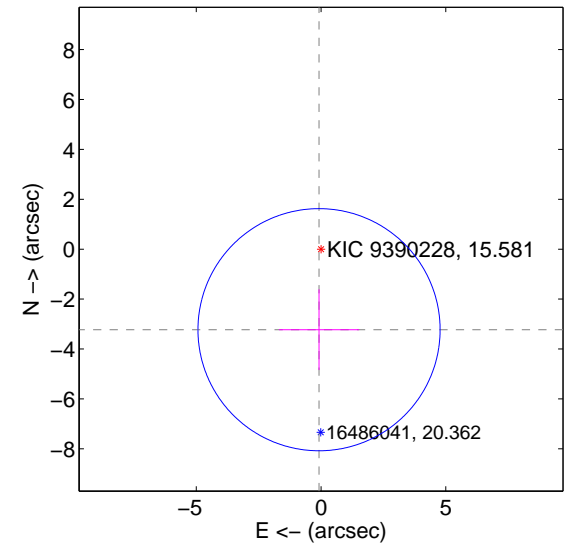
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

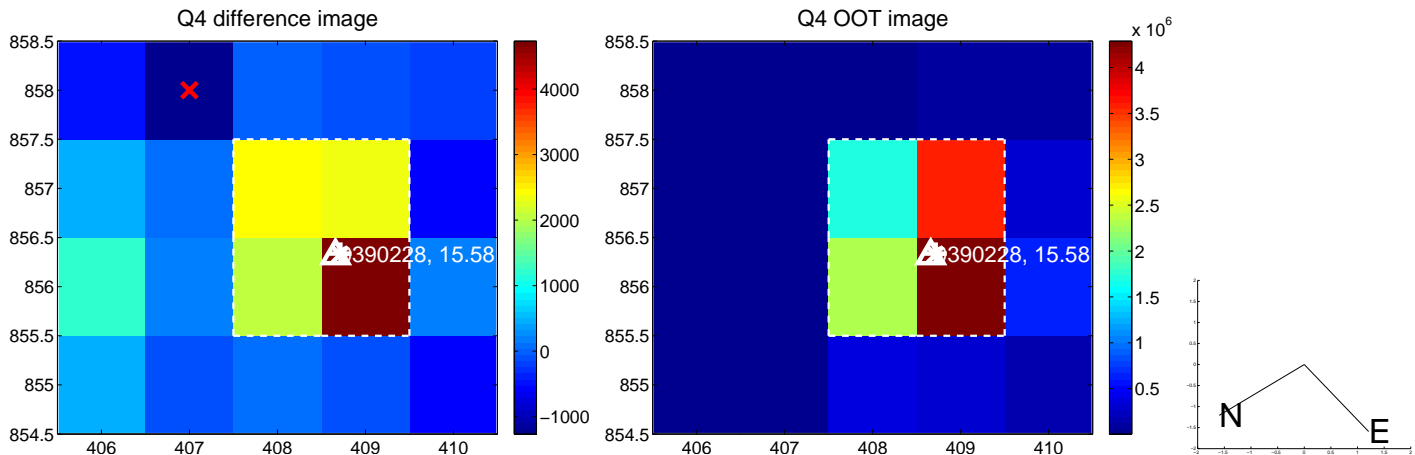
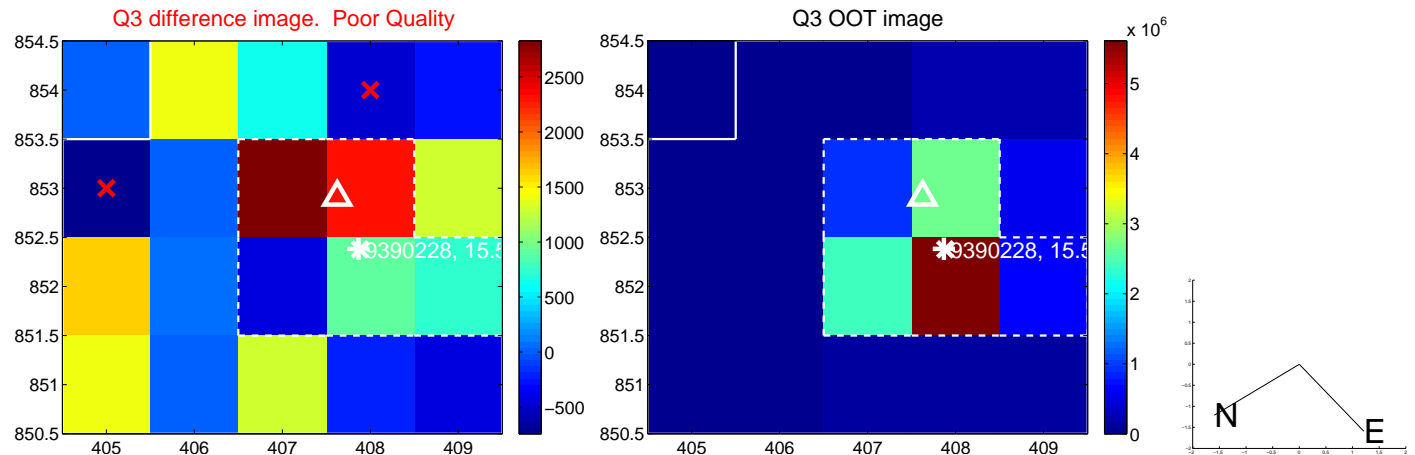
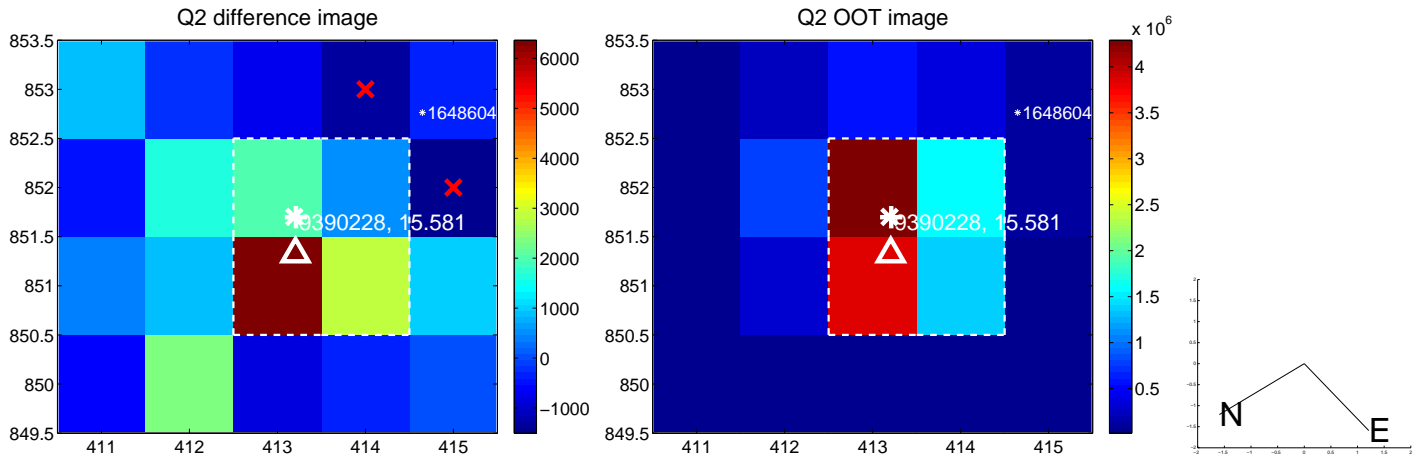
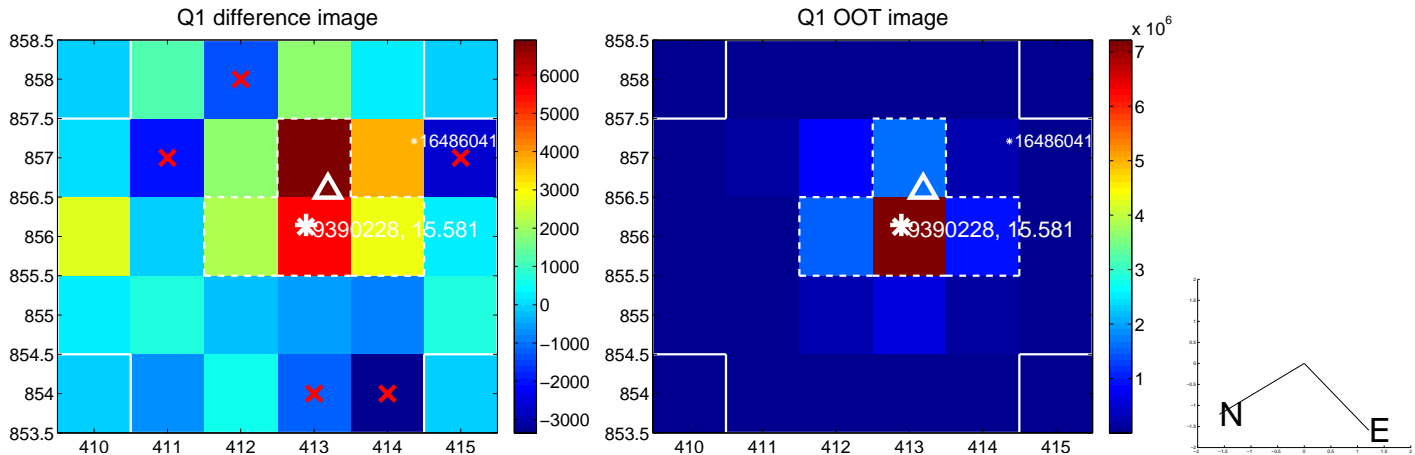


offset from photometric centroids

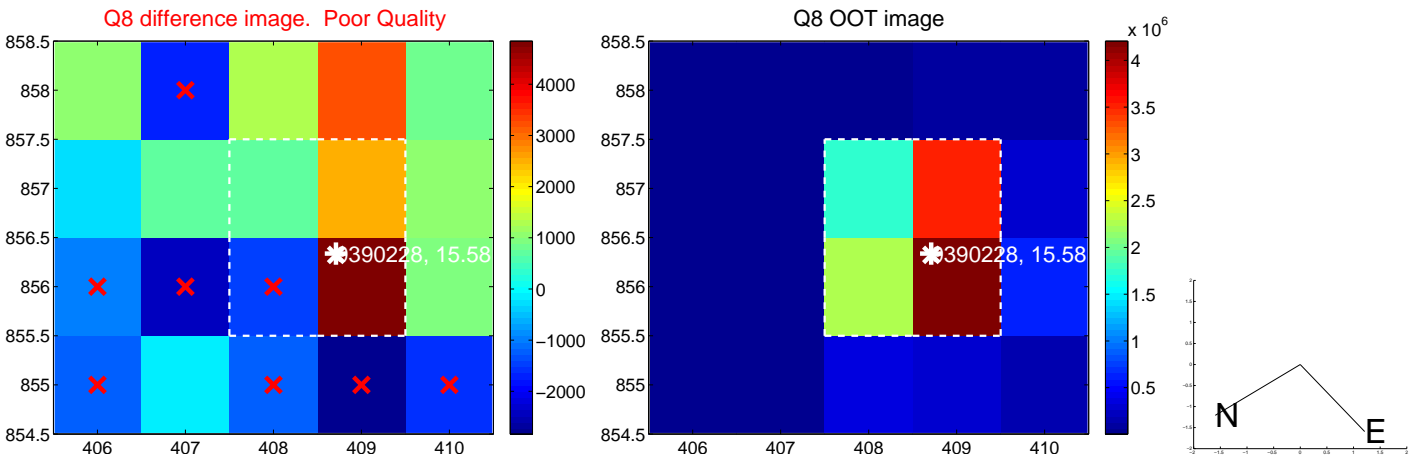
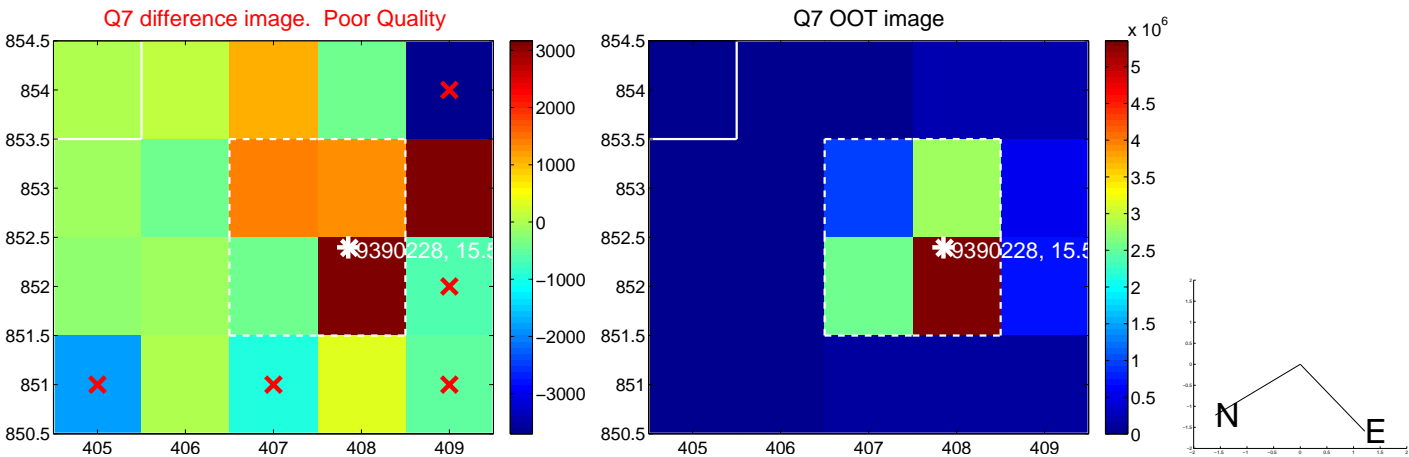
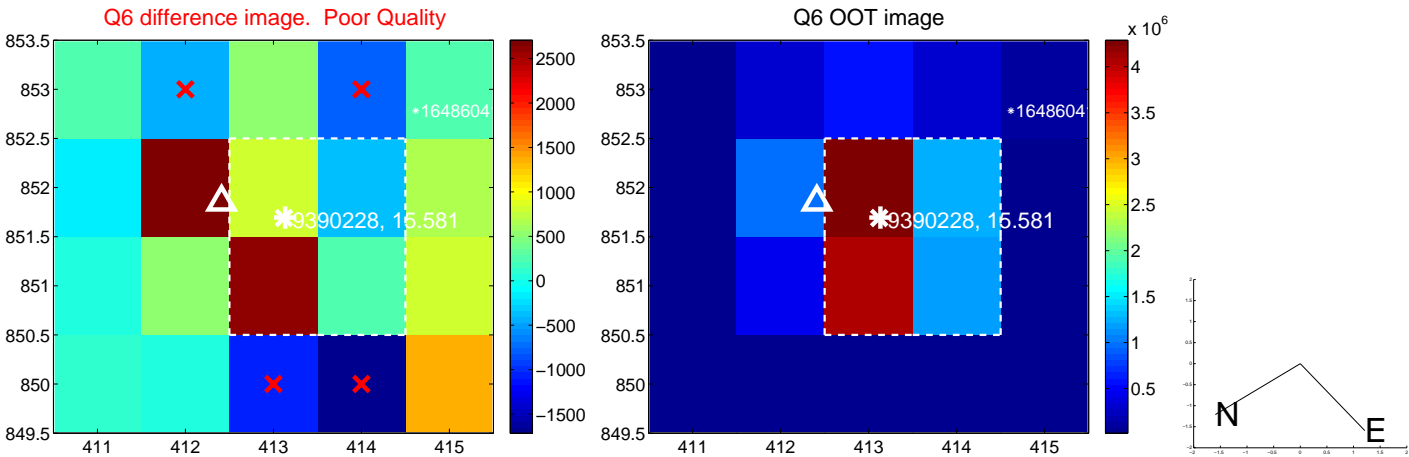
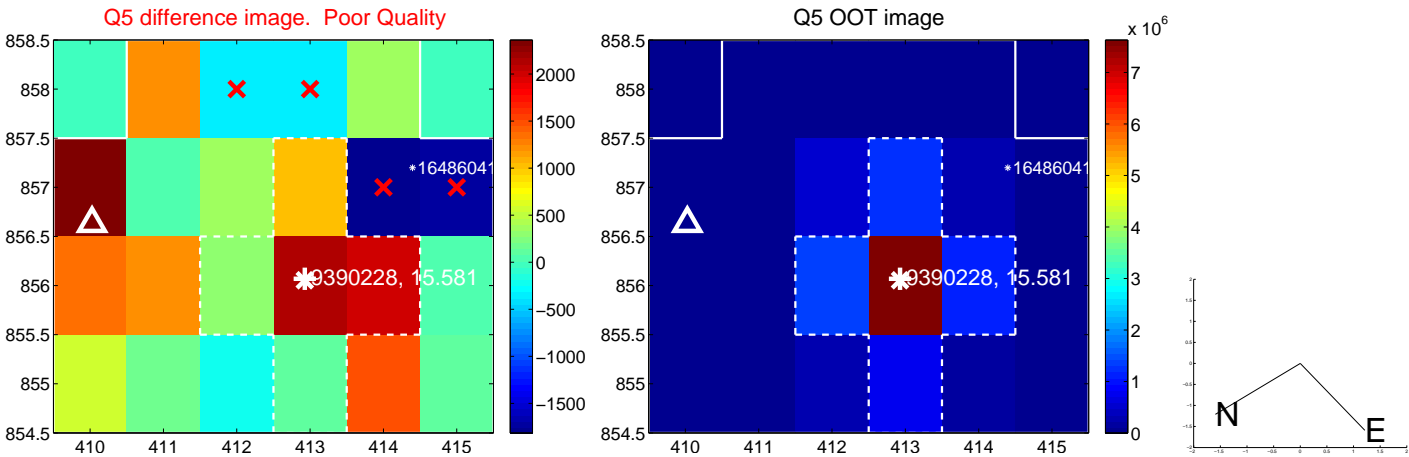


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

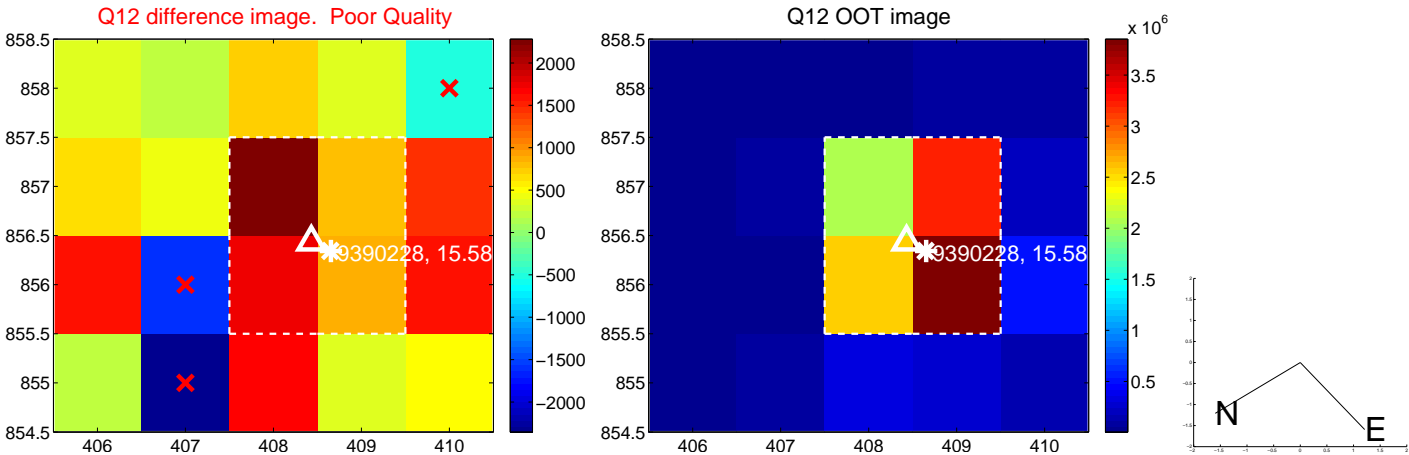
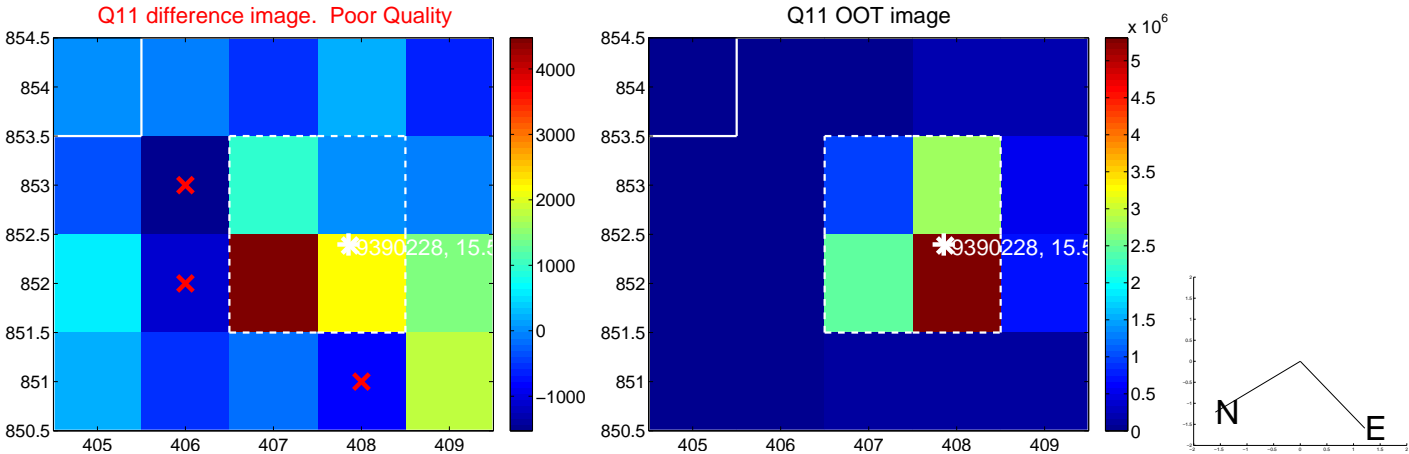
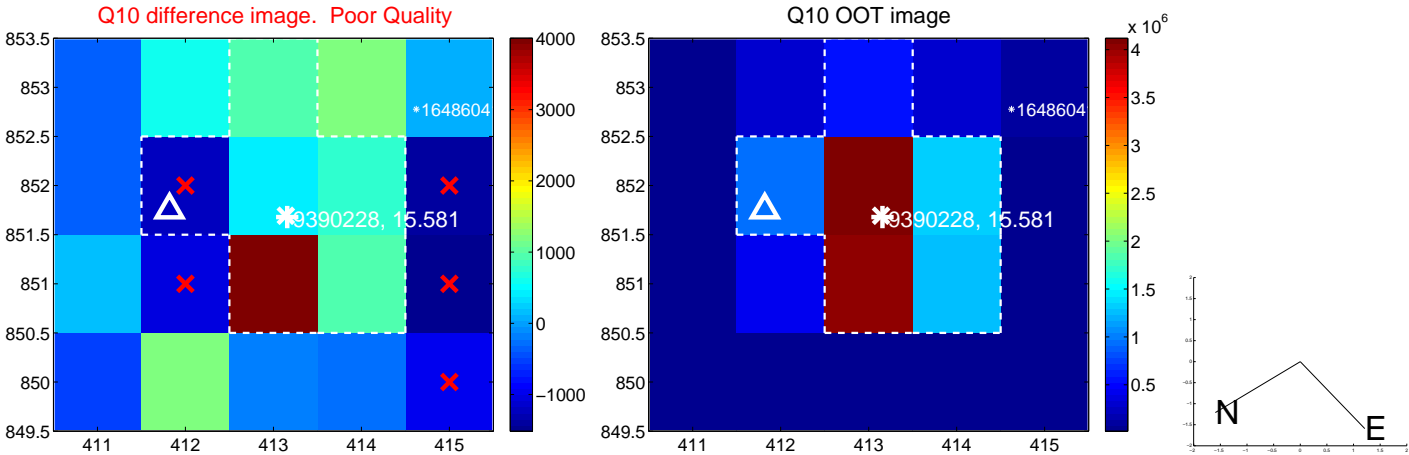
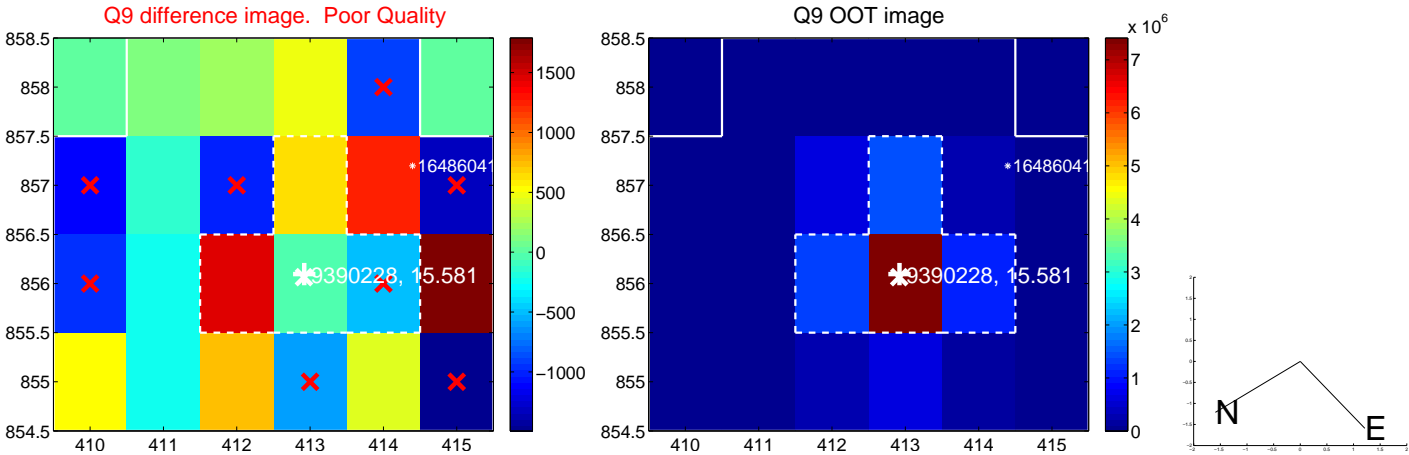
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



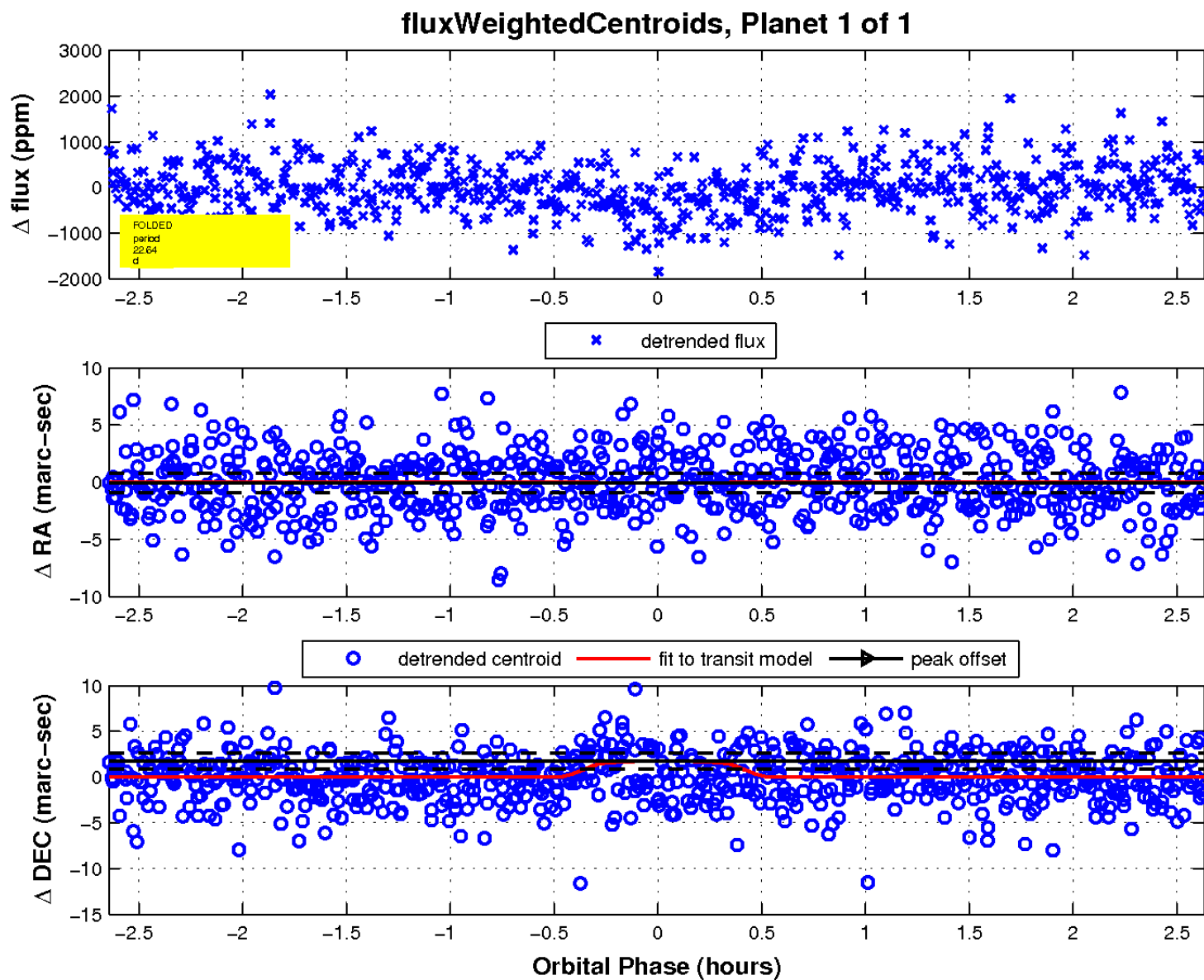
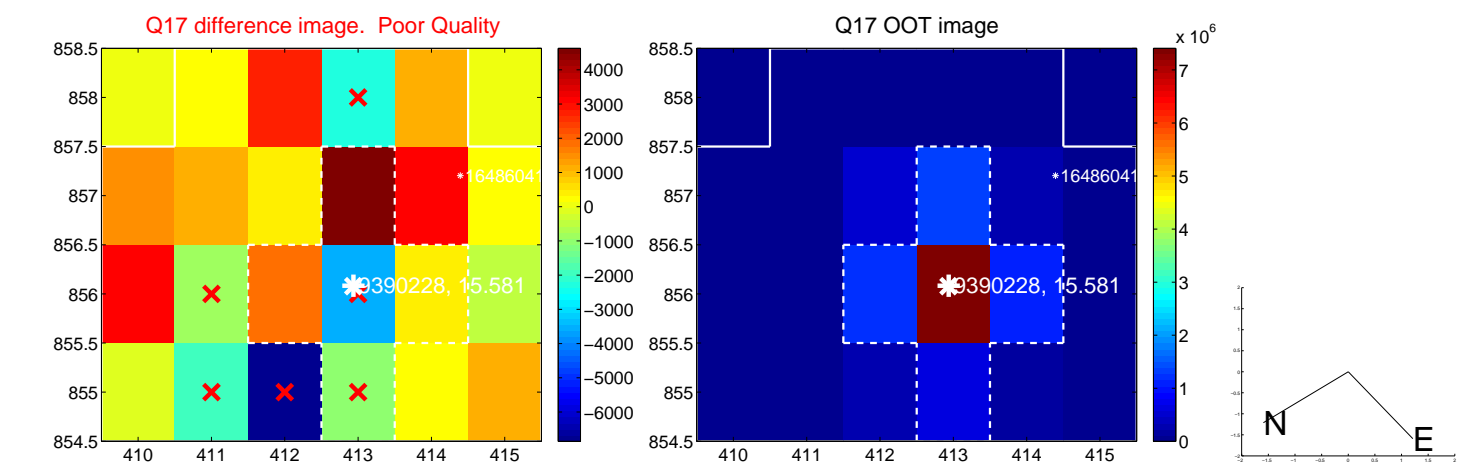
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

