

KIC 012017109

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})
012017109-01	OBS	2106.01	9.753759	134.059393	465.2	2.489	17.3	19.9	0.90	5806	2.27	103.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012017109-01	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 012017109-01

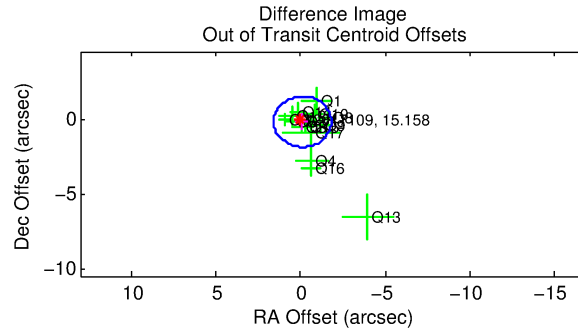
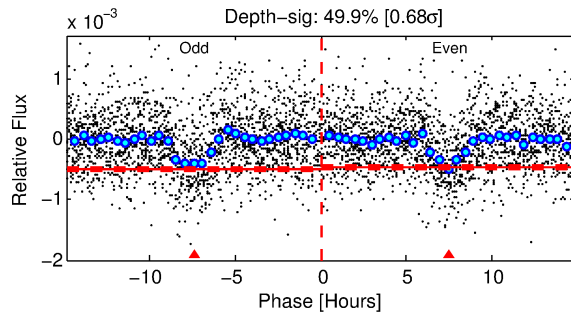
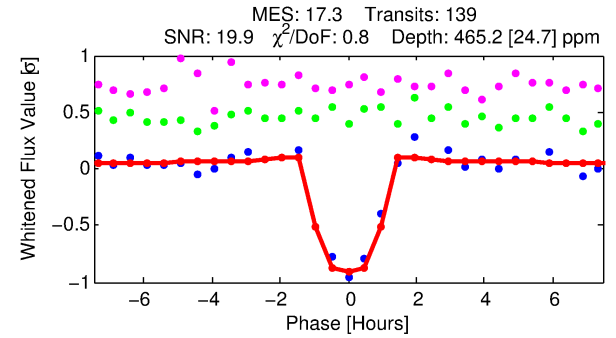
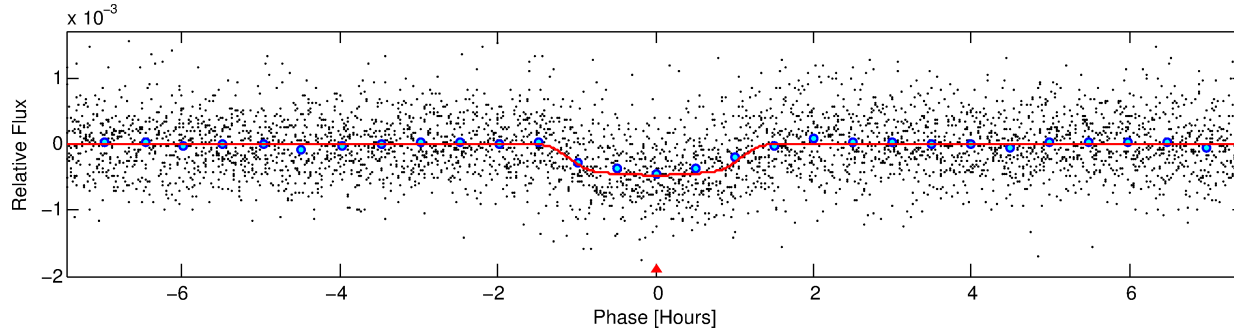
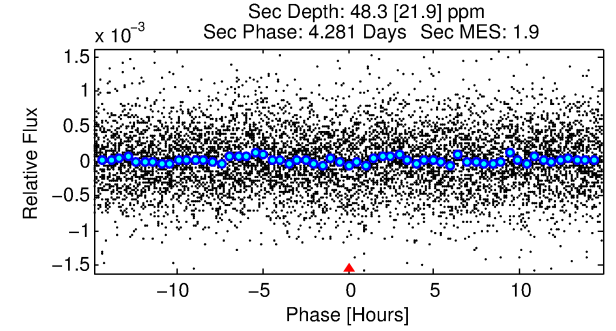
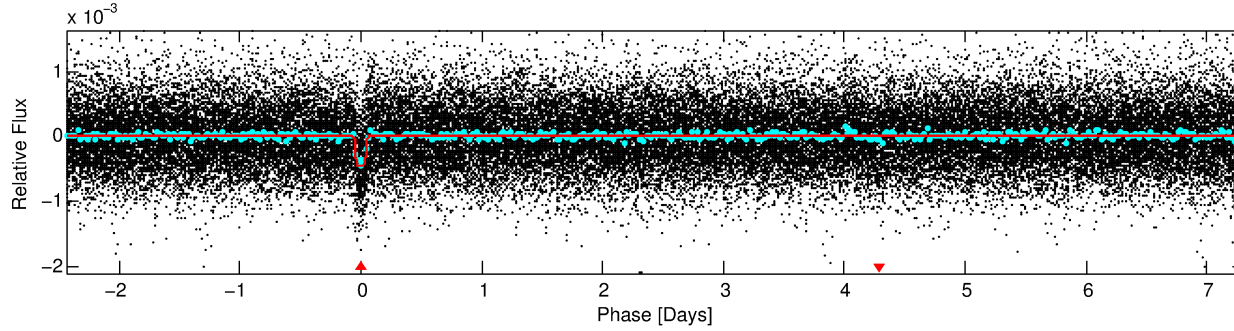
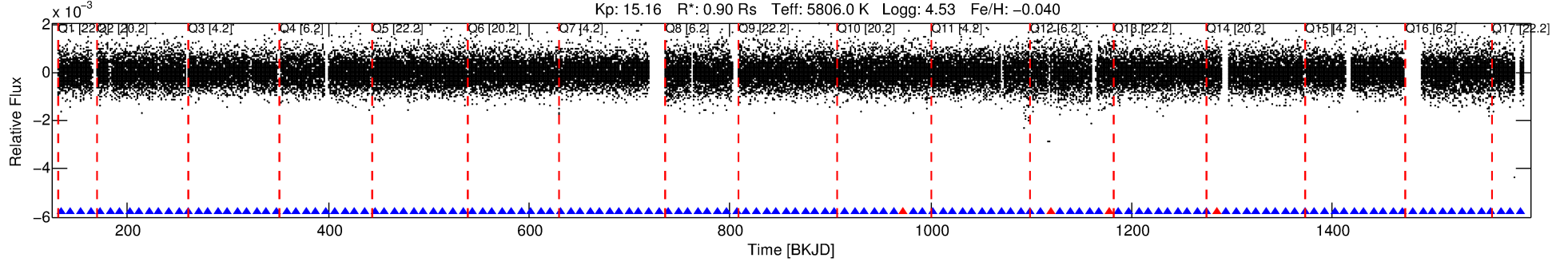
No Significant Match Found

DV One-Page Summary

KIC: 12017109 Candidate: 1 of 1 Period: 9.754 d

KOI: K02106.01 Corr: 0.962

Kp: 15.16 R*: 0.90 Rs Teff: 5806.0 K Logg: 4.53 Fe/H: -0.040



DV Fit Results:

Period = 9.75376 [0.00003] d
Epoch = 134.0594 [0.0025] BKJD
Rp/R* = 0.0232 [0.0053]
a/R* = 15.46 [16.36]
b = 0.88 [0.27]
Seff = 103.44 [36.68]
Teff = 813 [72] K
Rp = 2.27 [0.78] Re
a = 0.0892 [0.0198] AU
Ag = 40.98 [29.78] [1.34σ]
Teffp = 3181 [522] K [4.49σ]

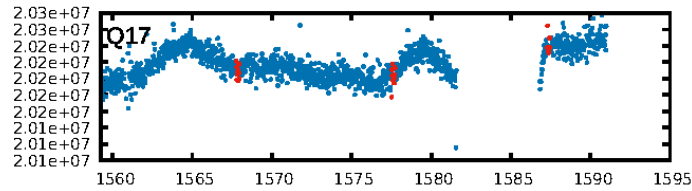
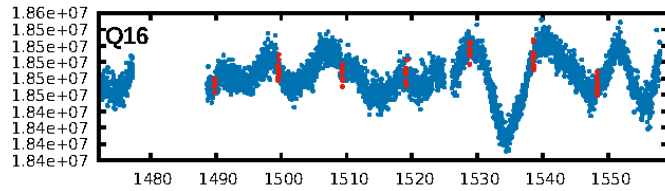
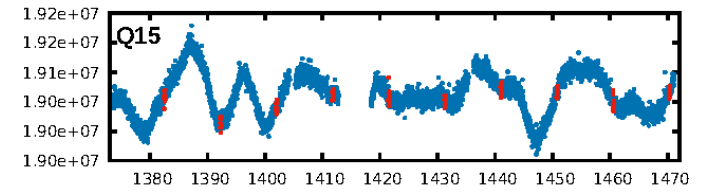
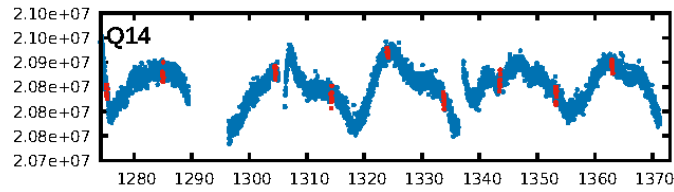
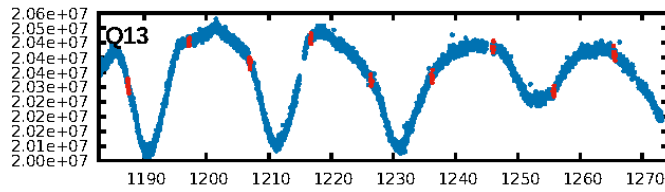
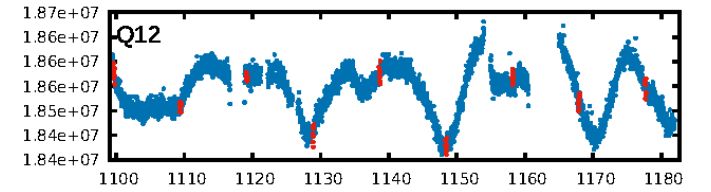
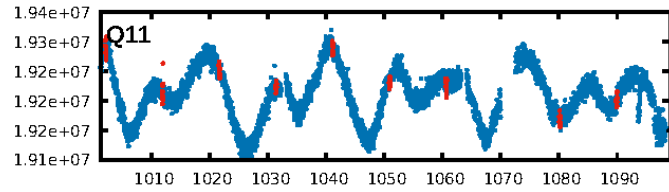
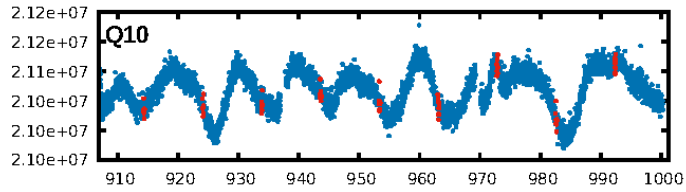
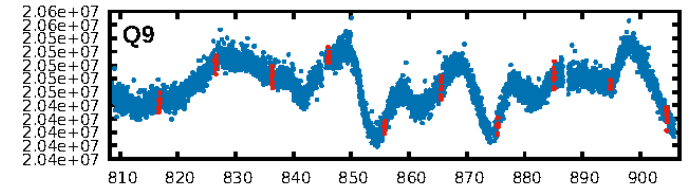
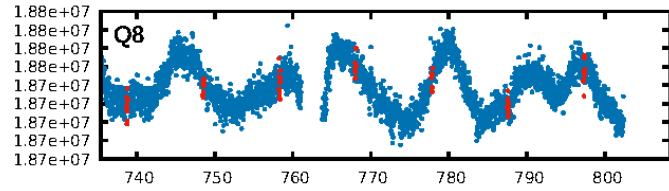
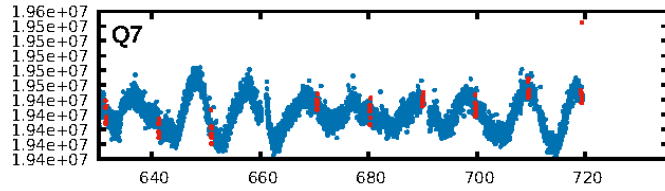
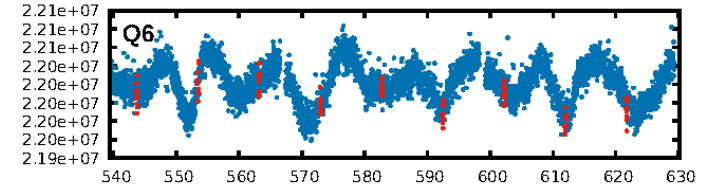
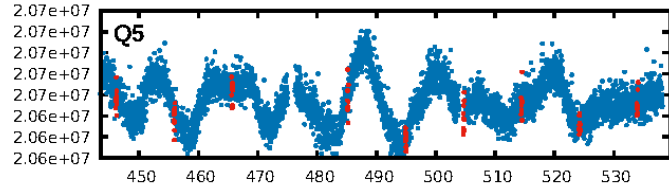
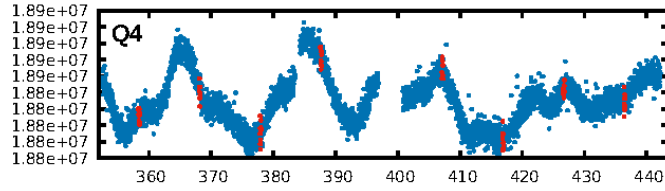
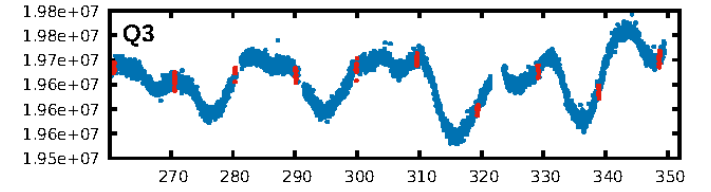
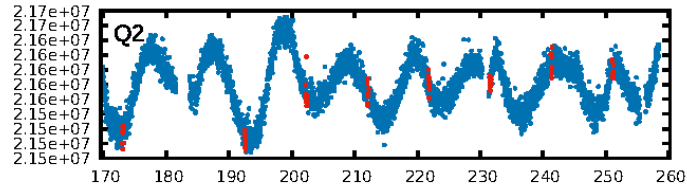
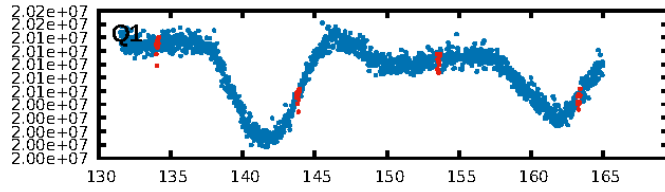
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 68.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.10e-64
RollingBand-fgt: 0.97 [128/132]
GhostDiagnostic-chr: 6.351
Centroid-sig: 0.0%
Centroid-so: 0.758 arcsec [1.40σ]
OotOffset-rm: 0.224 arcsec [0.40σ]
KicOffset-rm: 0.316 arcsec [0.83σ]
OotOffset-st: 3/3/4/5 [15]
KicOffset-st: 3/3/4/5 [15]
DiffImageQuality-fgm: 0.73 [11/15]
DiffImageOverlap-fno: 1.00 [17/17]

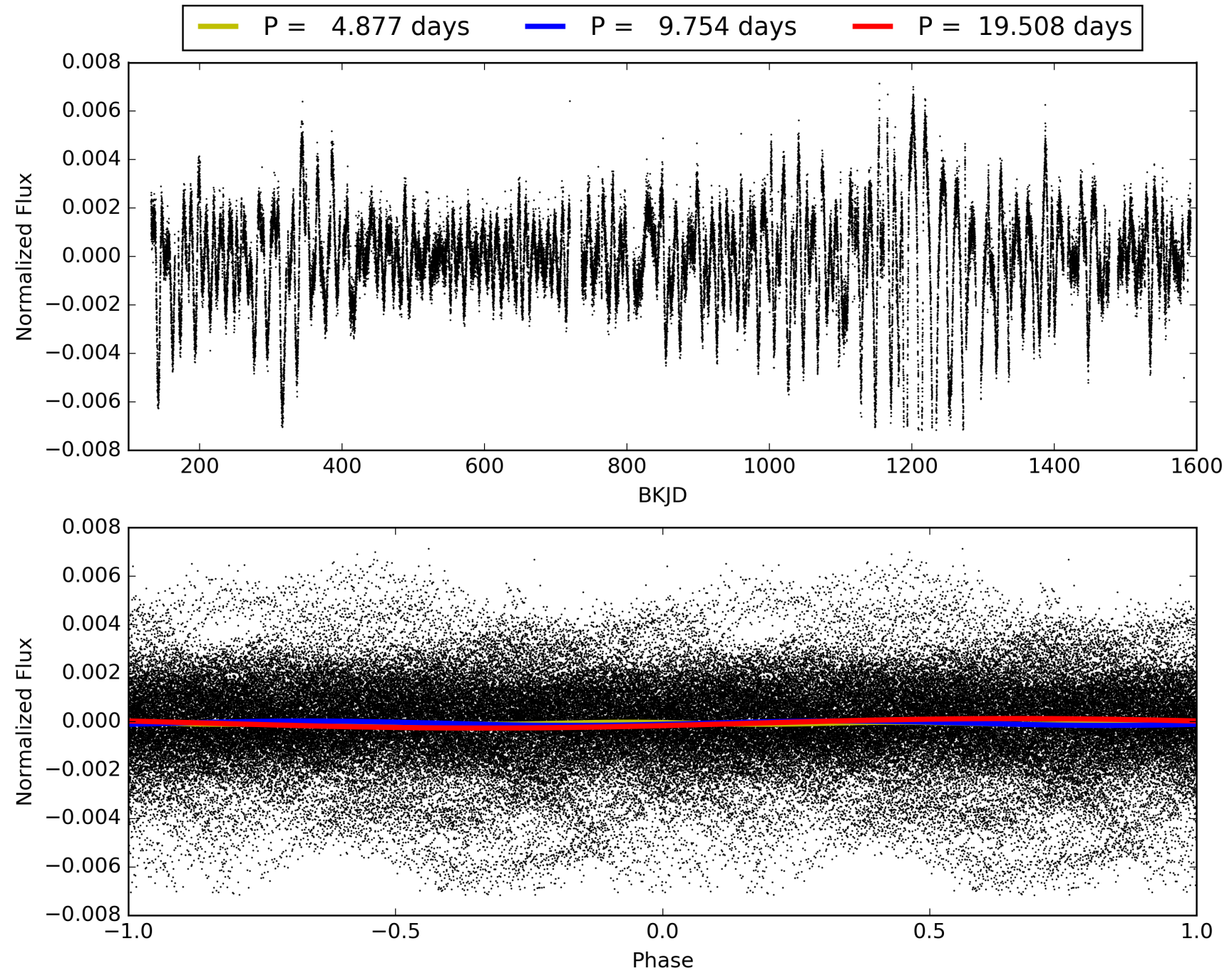
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:28:06 Z

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

TCE 012017109-01, PDC Light Curves

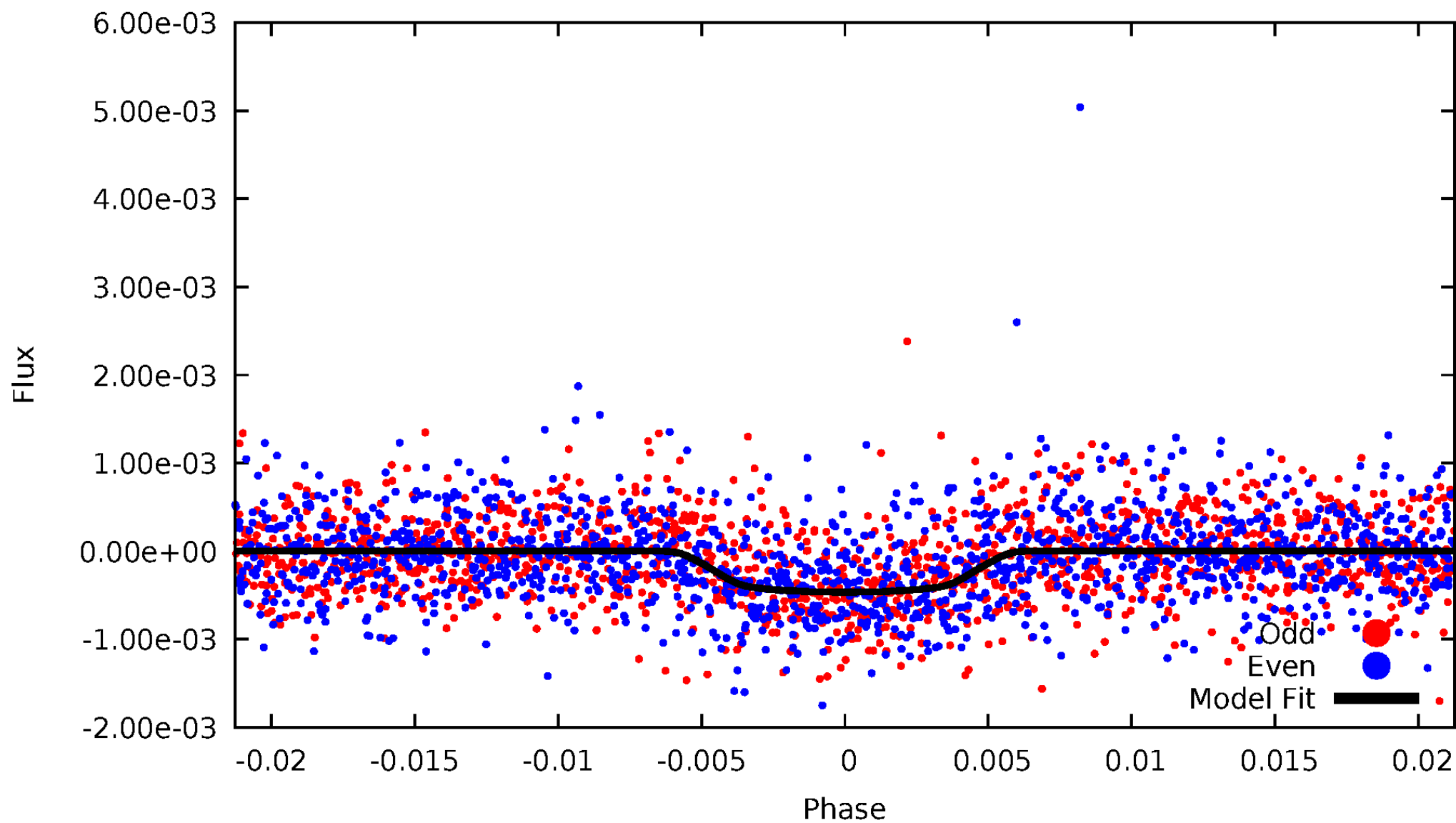


TCE 012017109-01



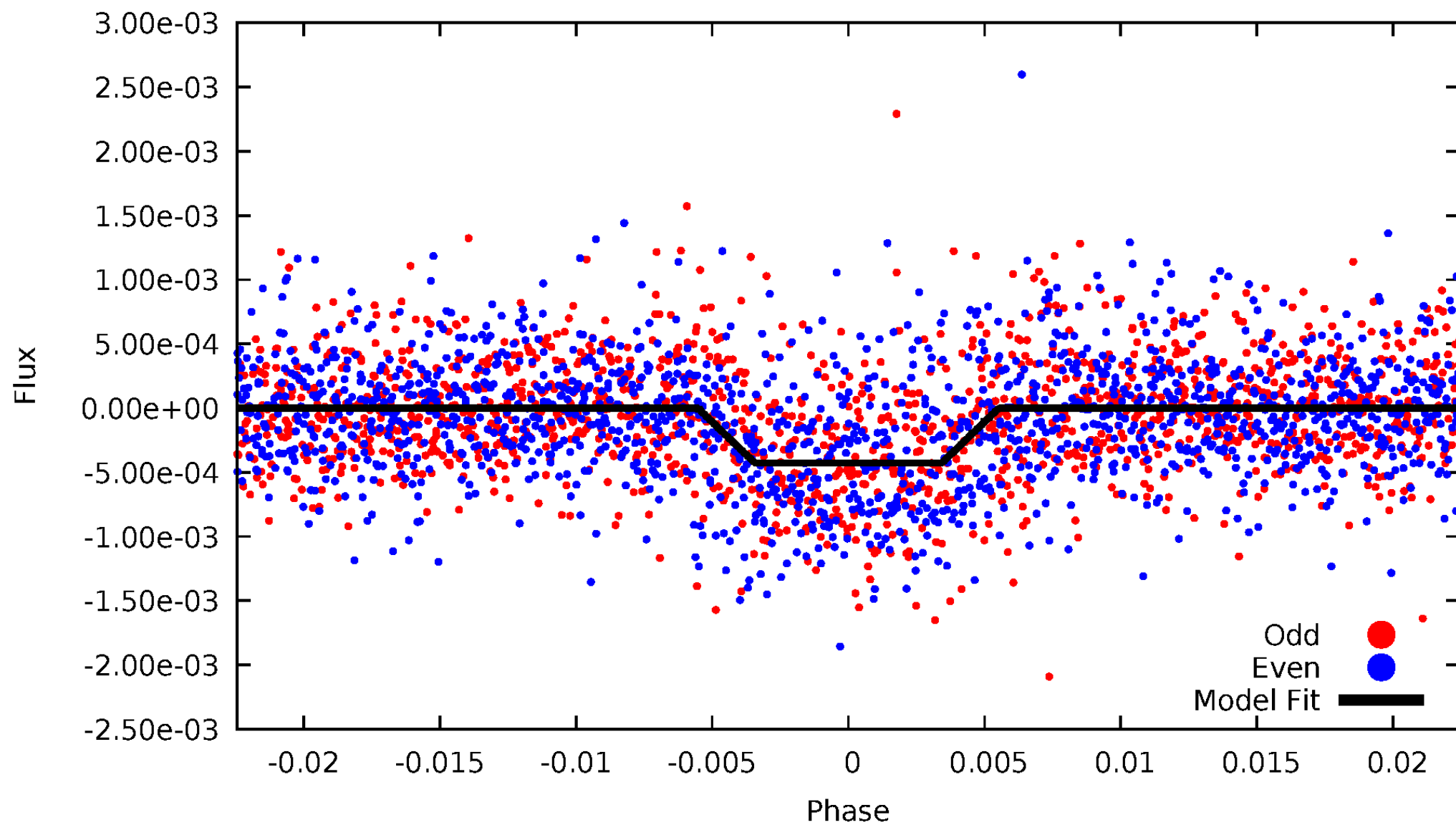
DV Odd/Even

TCE 012017109-01



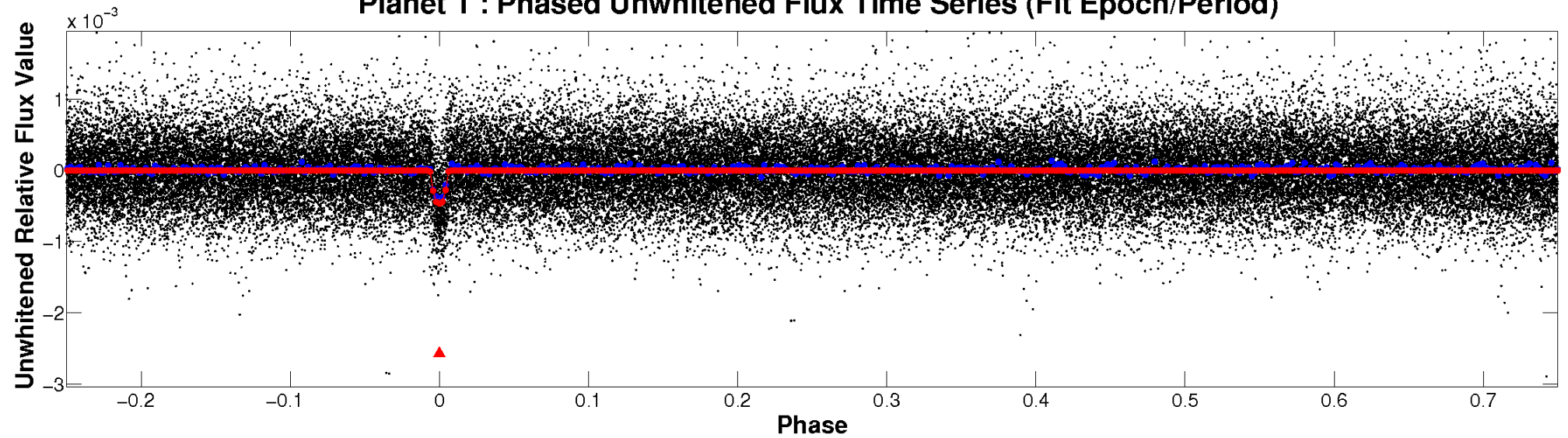
ALT Odd/Even

TCE 012017109-01

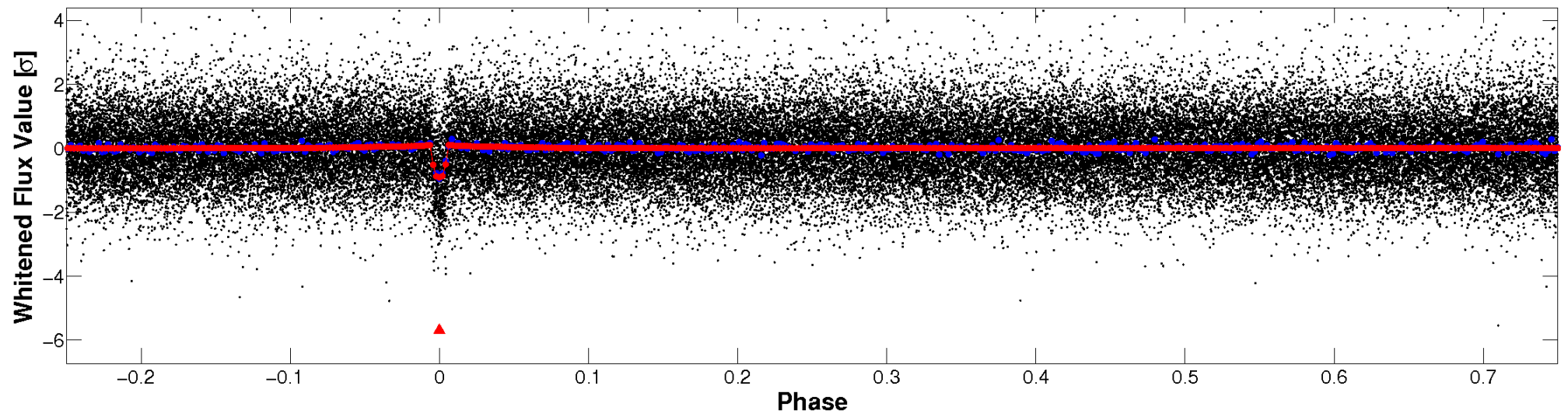


Non-Whitened Vs. Whitened Light Curve

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

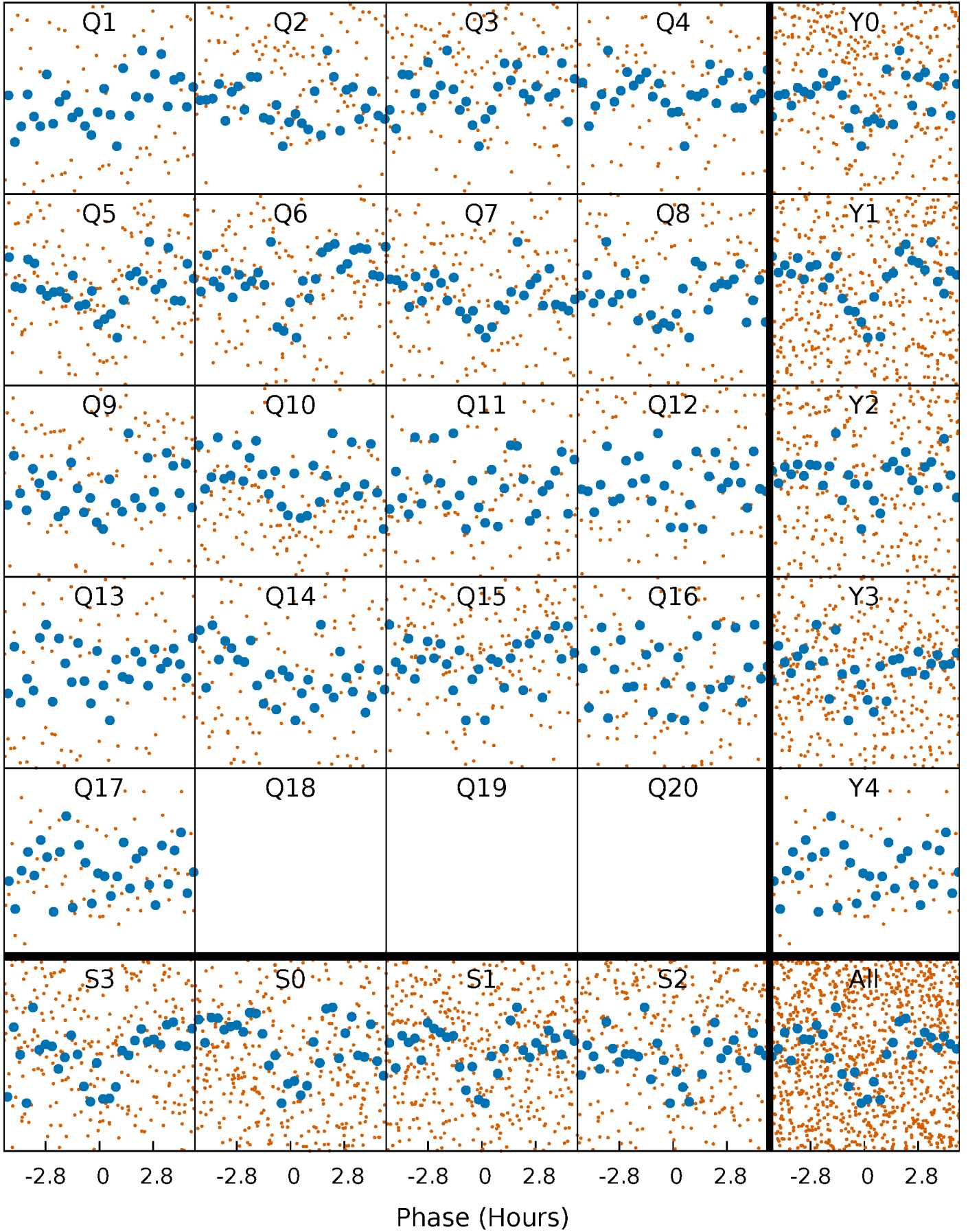


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



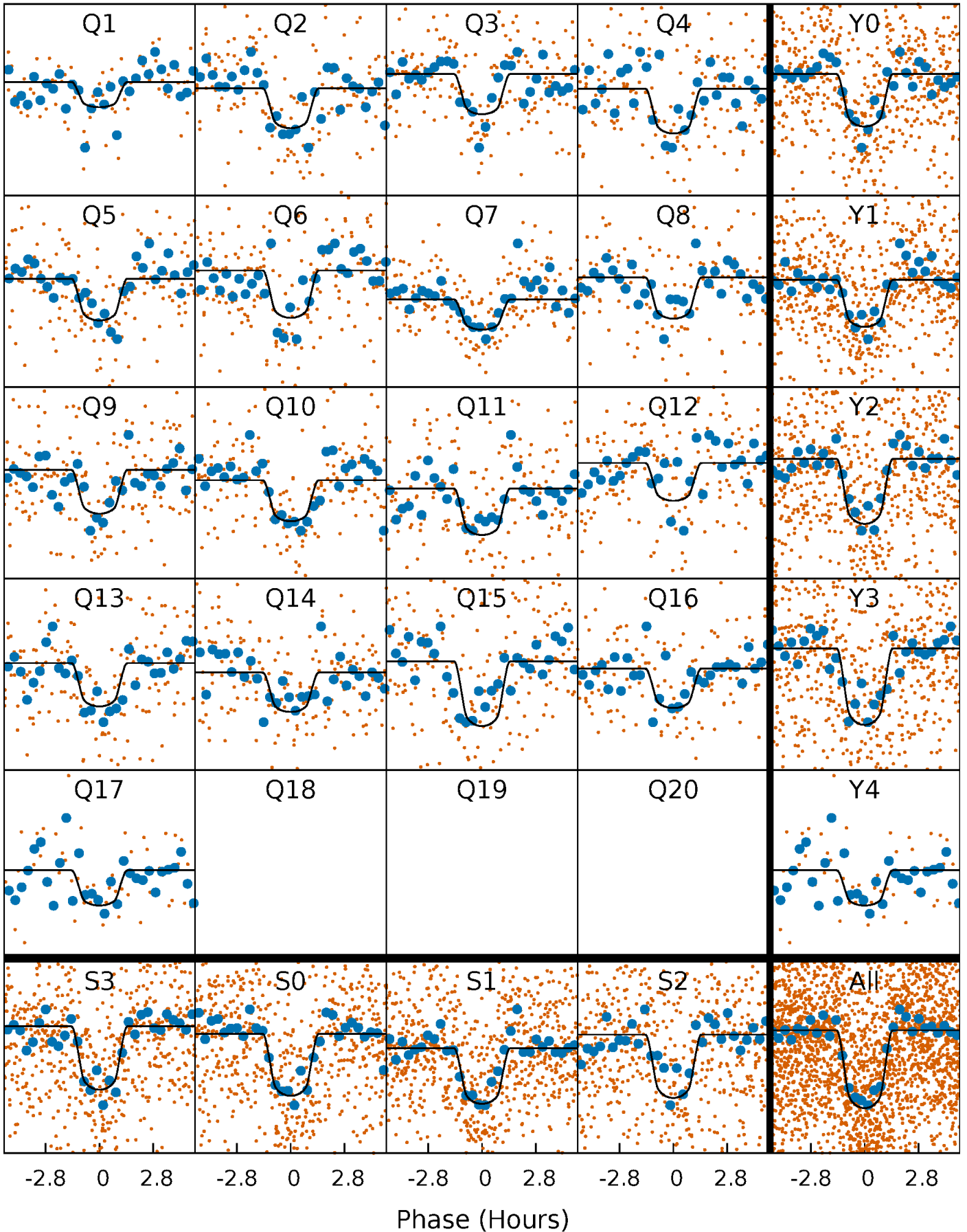
PDC Quarter-Phased Transit Curves

TCE 012017109-01 P= 9.753759 Days $T_0=134.059393$ (BKJD)



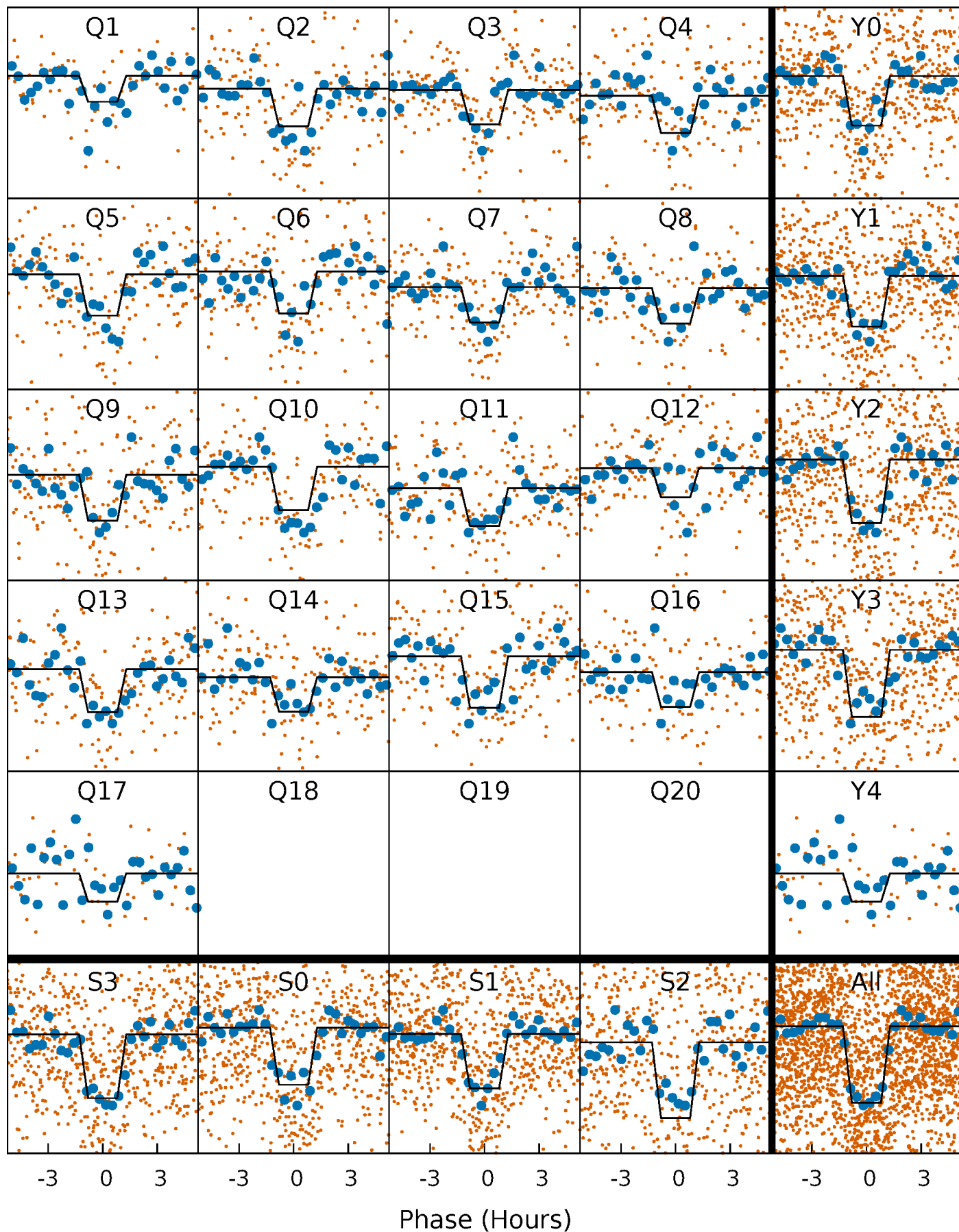
DV Quarter-Phased Transit Curves

TCE 012017109-01 P= 9.753759 Days $T_0=134.059393$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

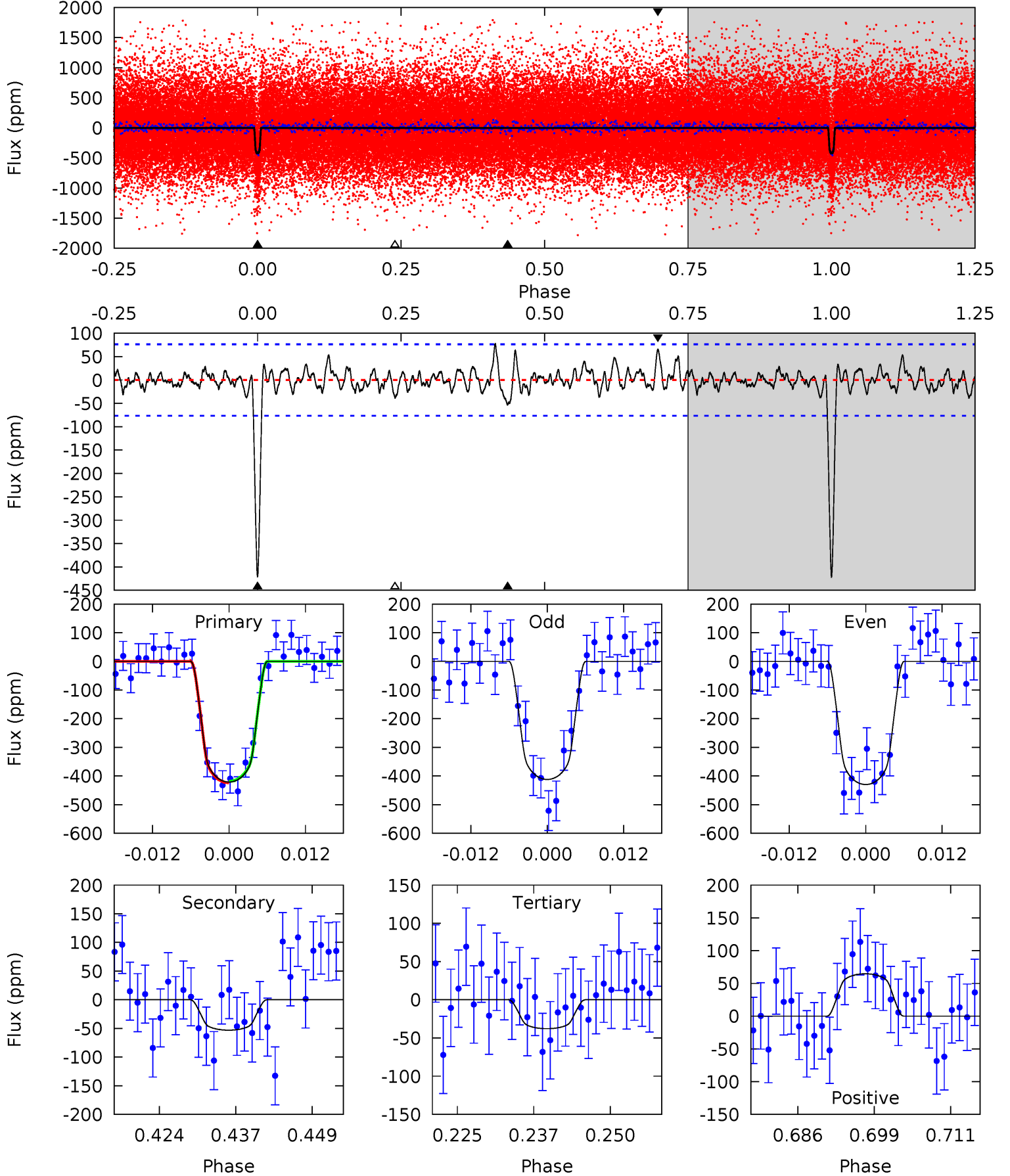
TCE 012017109-01 P= 9.753667 Days $T_0=134.064027$ (BKJD)



DV Model-Shift Uniqueness Test

012017109-01, P = 9.753759 Days, E = 124.305634 Days

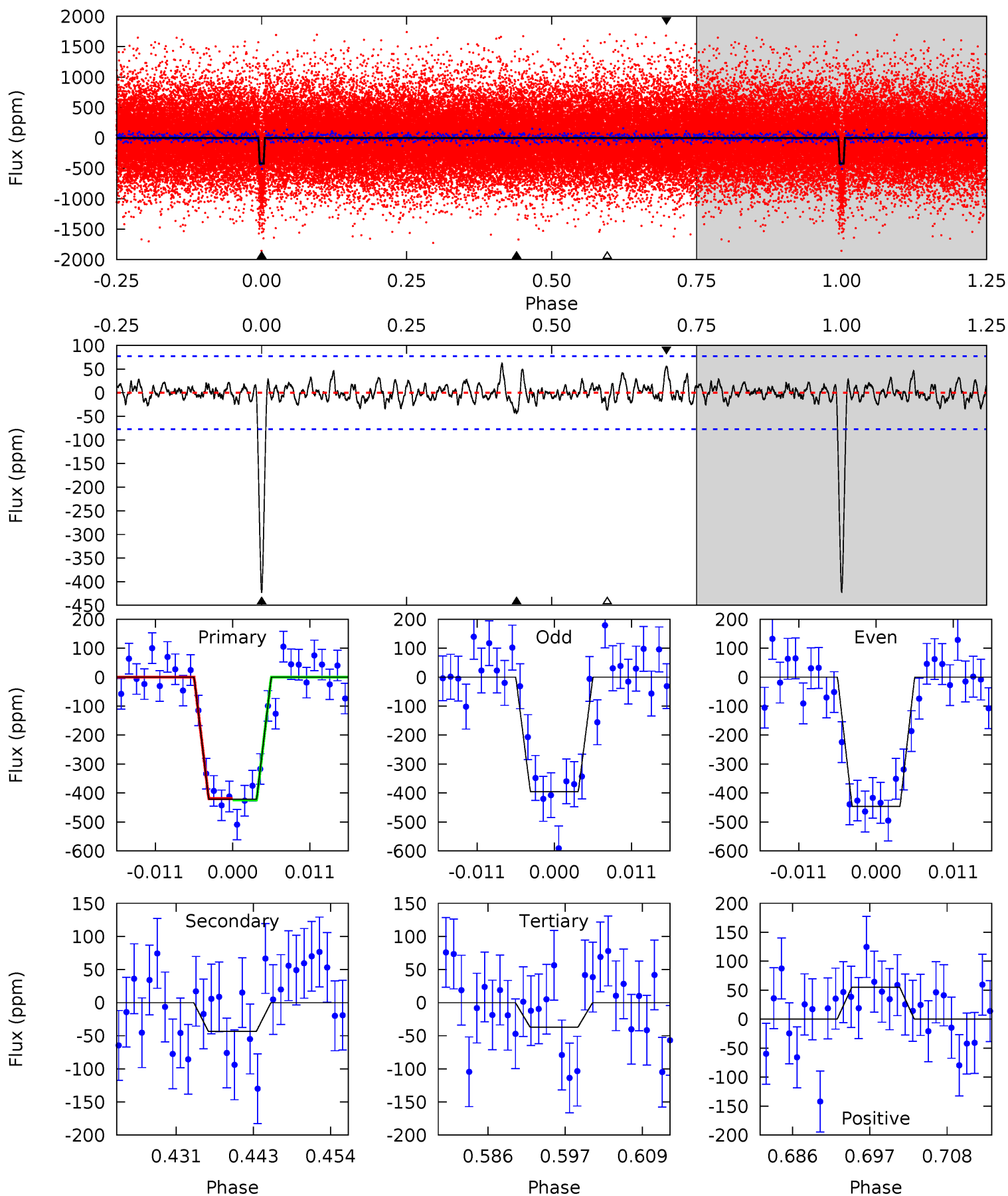
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.4	3.46	2.47	4.21	4.98	2.50	1.16	25.0	23.2	0.99	-0.75	0.58	0.95	0.16	0.17



Alt Model-Shift Uniqueness Test

012017109-01, P = 9.753667 Days, E = 124.310360 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.4	2.83	2.40	3.59	5.01	2.54	0.96	25.0	23.8	0.42	-0.76	1.67	0.94	0.13	0.16



Stellar Parameters For KIC 012017109

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5806^{+157}_{-175}	$4.528^{+0.044}_{-0.187}$	$-0.040^{+0.250}_{-0.300}$	$0.899^{+0.229}_{-0.082}$	$0.996^{+0.104}_{-0.127}$	$1.928^{+0.437}_{-0.920}$
	+3%/-3%	+1%/-4%	+625%/-750%	+25%/-9%	+10%/-13%	+23%/-48%
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 012017109-01 / KOI 2106.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-53 ± 15	$2.34^{+0.61}_{-0.55}$	1153^{+76}_{-46}	3677^{+369}_{-310}	41^{+34}_{-18}
Alt.	-44 ± 15	$2.11^{+0.65}_{-0.54}$	1161^{+73}_{-52}	3653^{+507}_{-353}	40^{+41}_{-19}

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

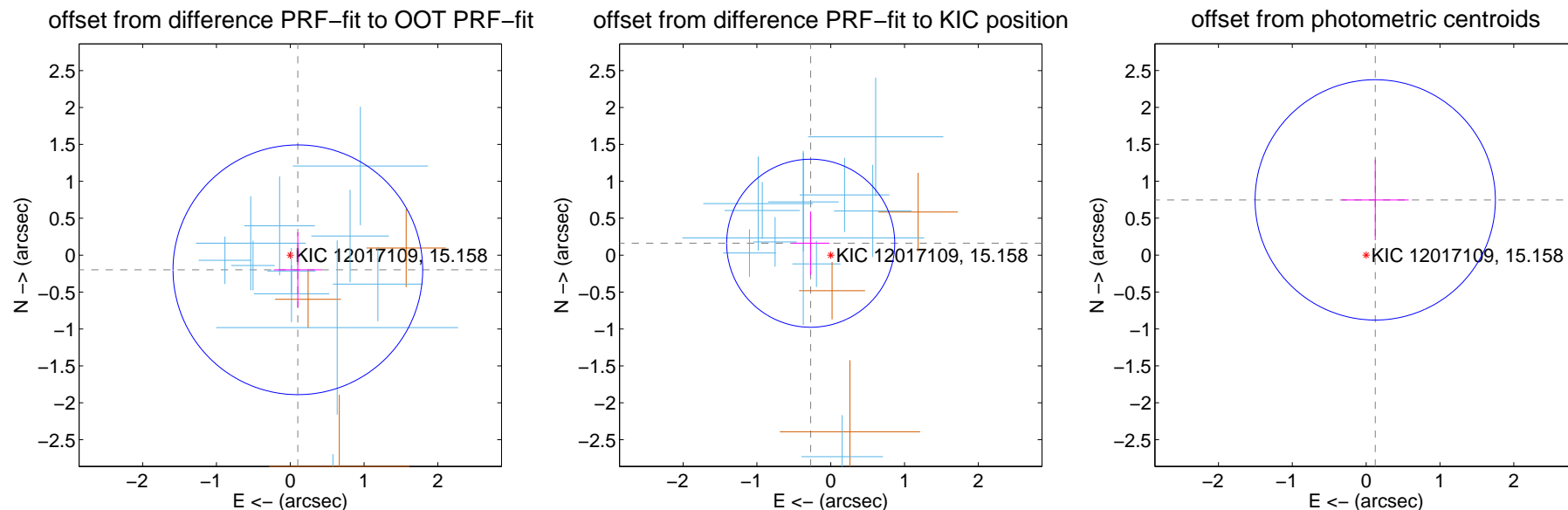
DV Centroid Data

Supplemental centroid analysis for 012017109-01. Kepler magnitude: 15.16. Transit SNR 19.92

There are 11 quarters with good PRF difference image offsets

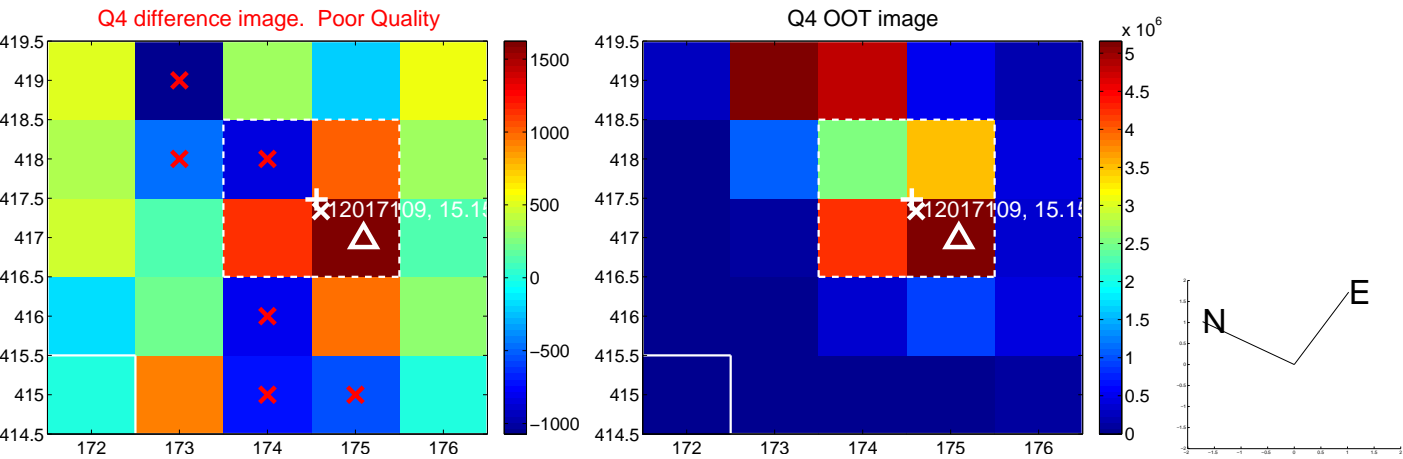
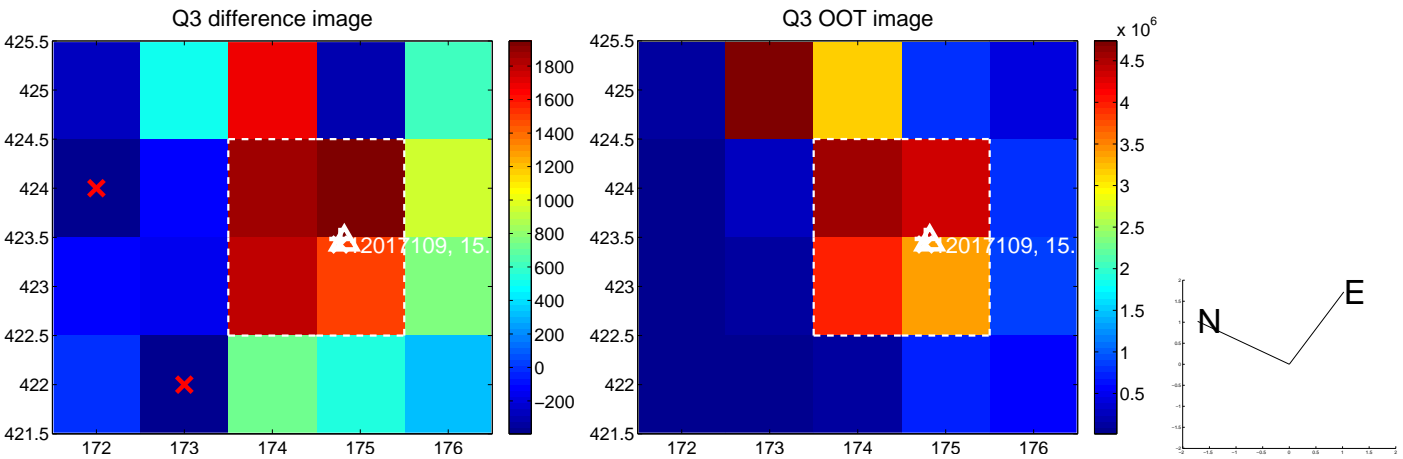
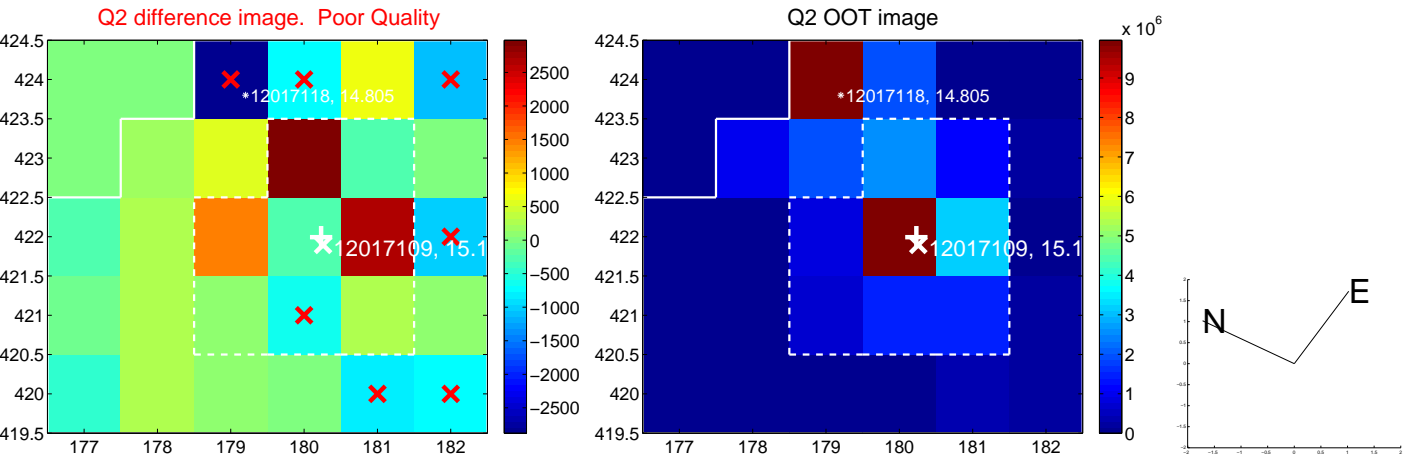
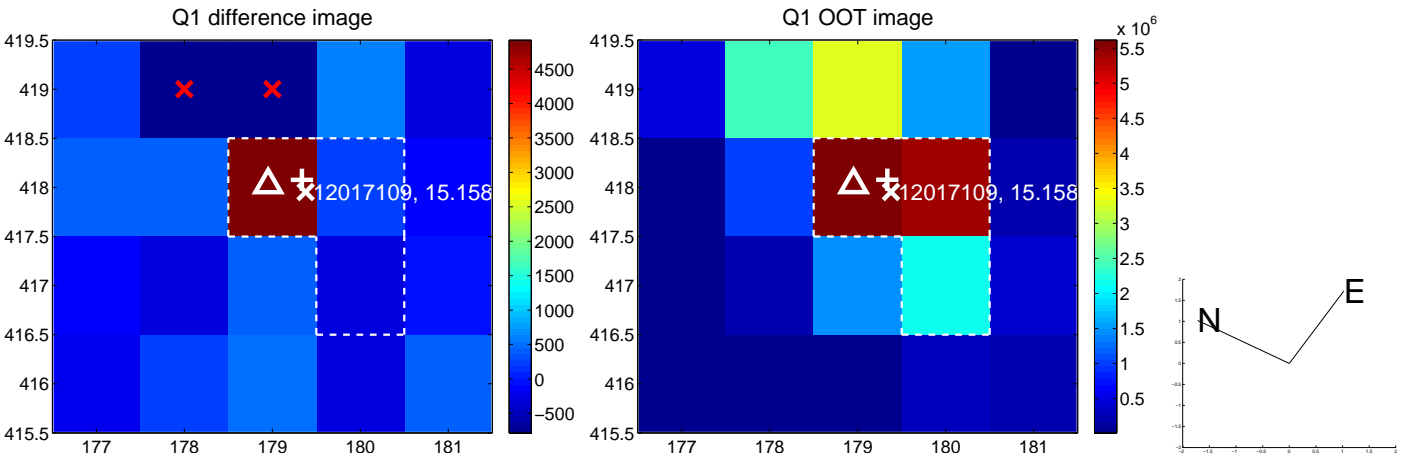
The direct PRF centroid is offset from the target star catalog position by about 1.58 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.224 ± 0.564	0.40	-0.103 ± 0.324	-0.198 ± 0.508
PRF-fit source offset from KIC position	0.316 ± 0.380	0.83	0.271 ± 0.251	0.162 ± 0.430
photometric centroid source offset	0.76 ± 0.54	1.40	-0.12 ± 0.45	0.75 ± 0.54

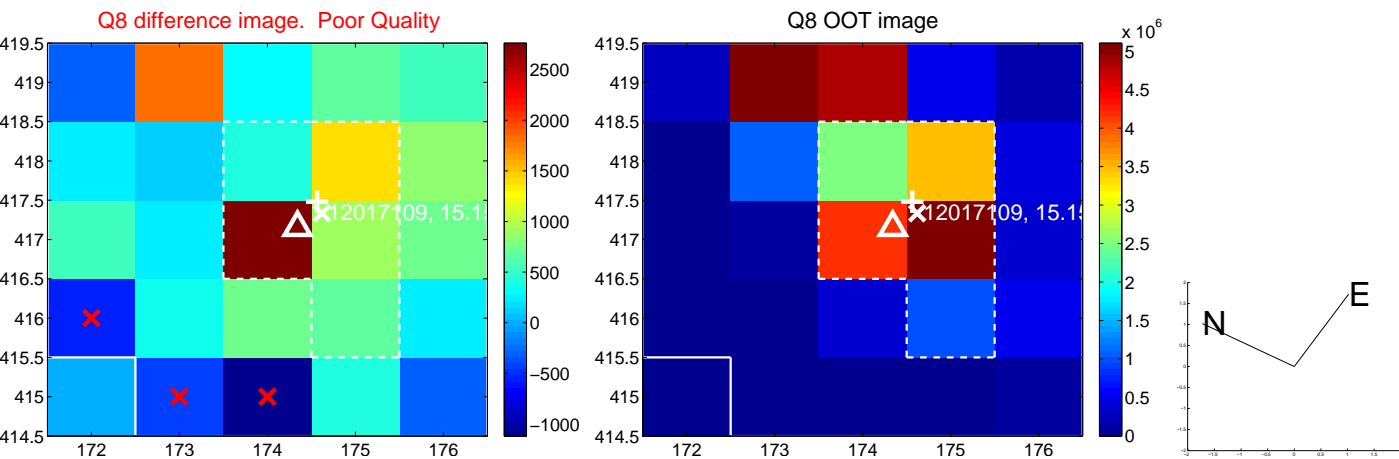
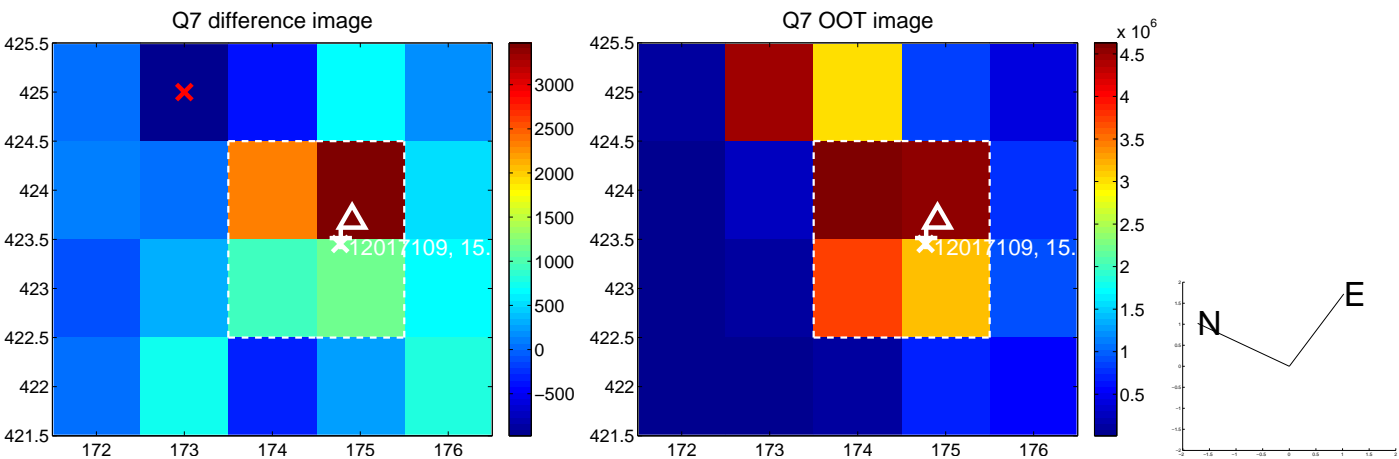
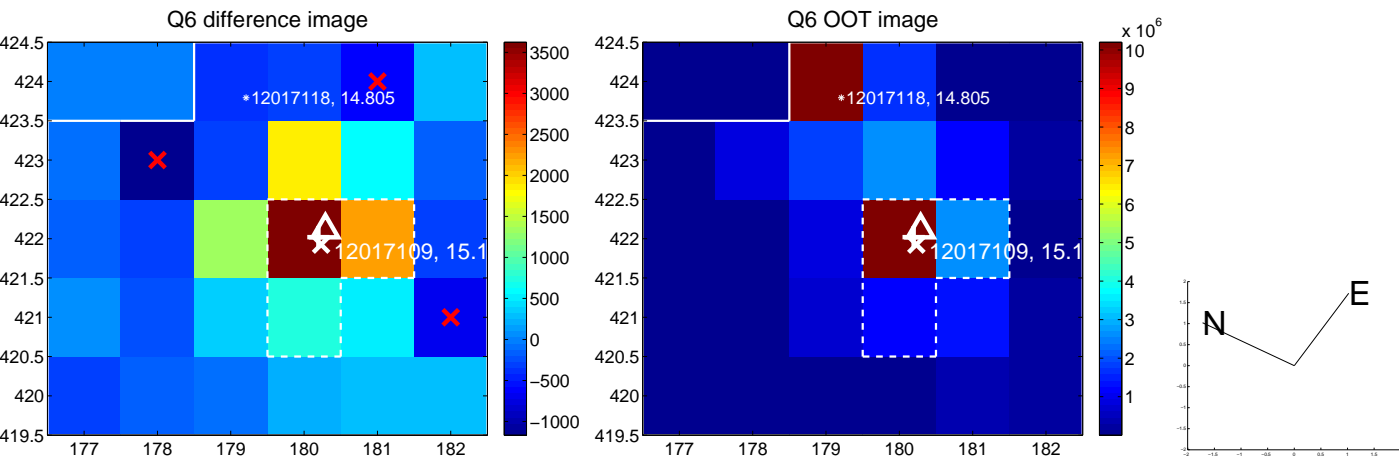
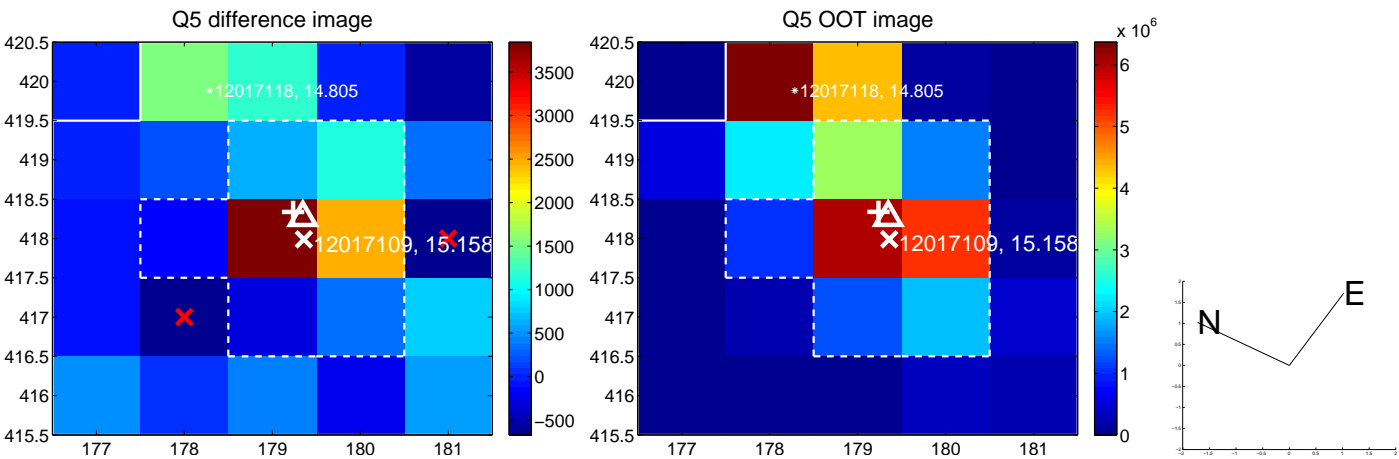


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

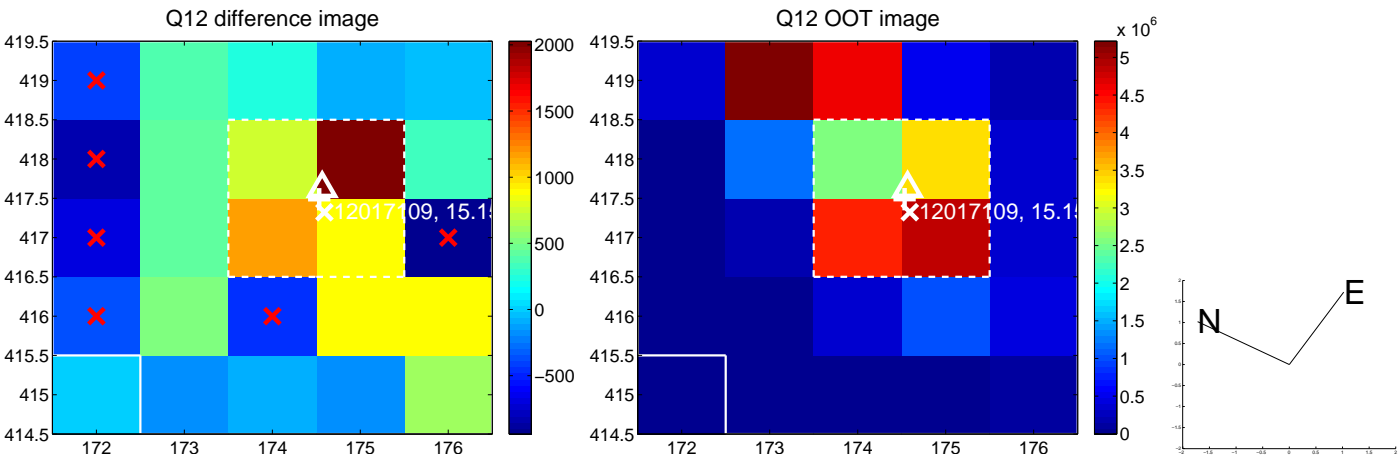
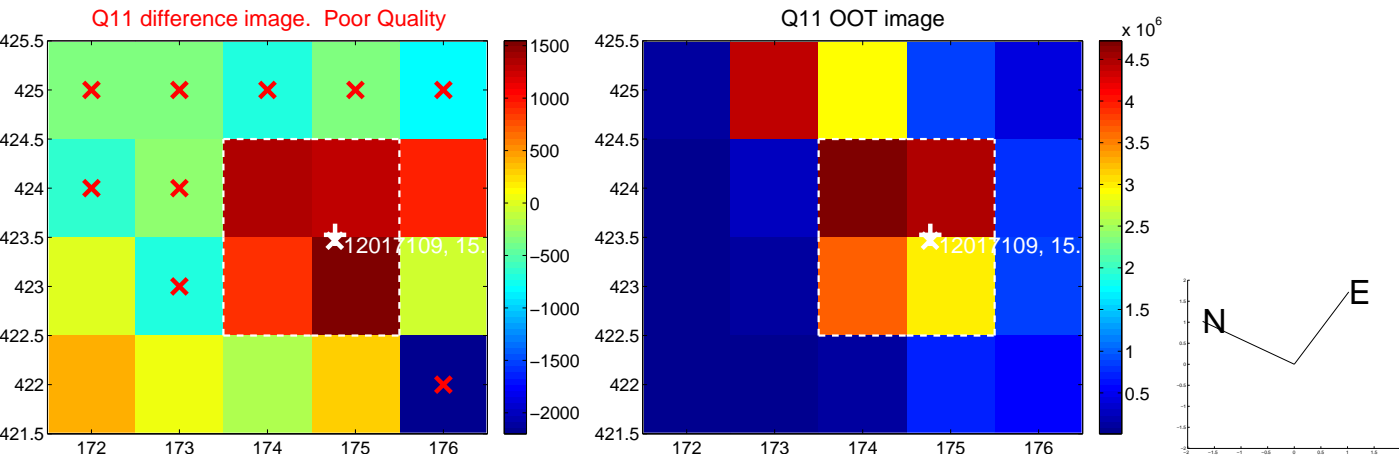
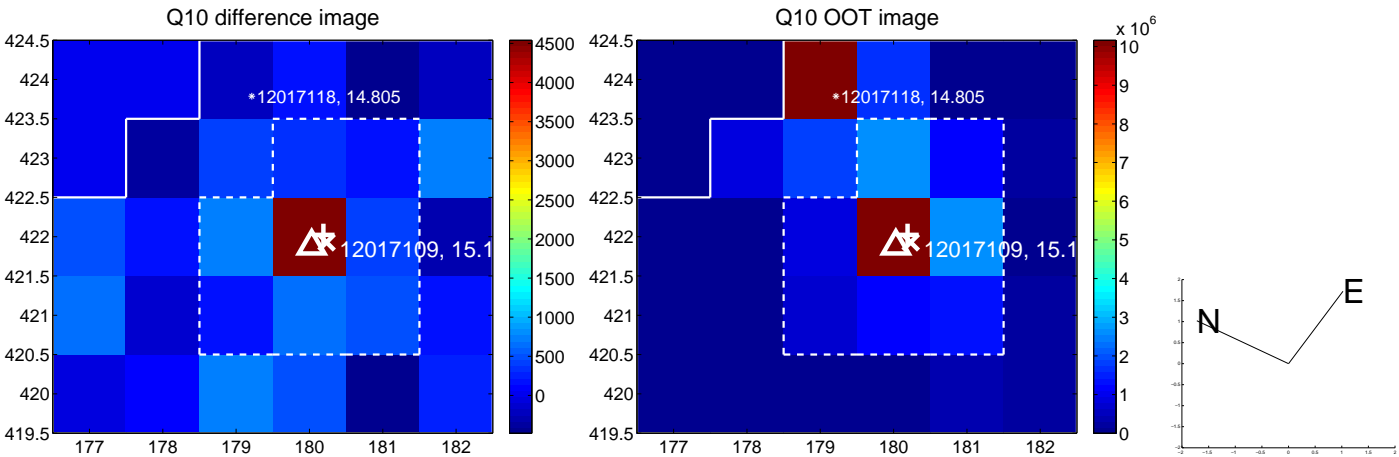
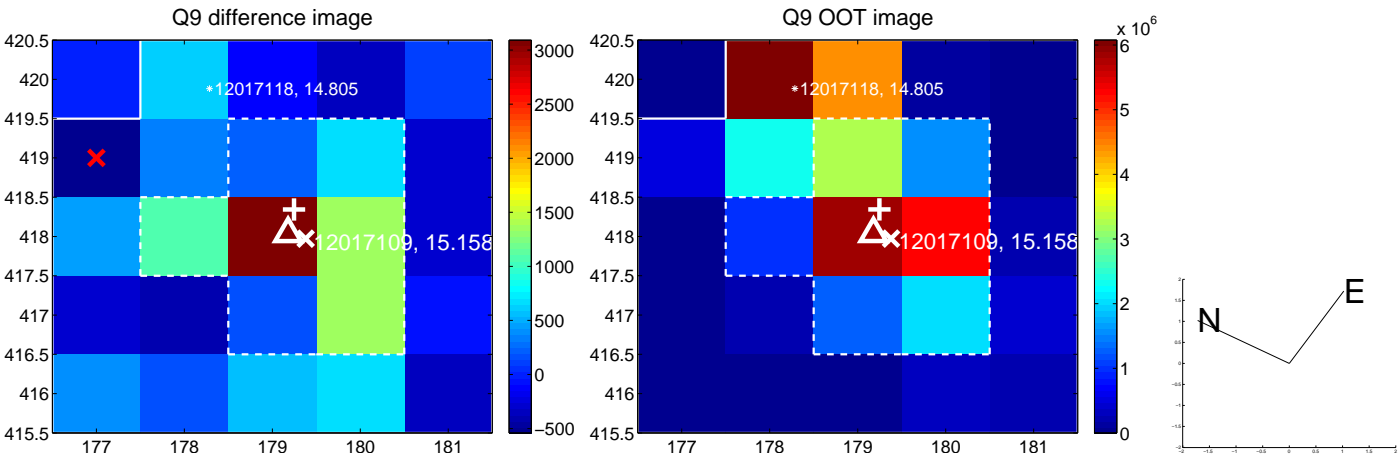
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



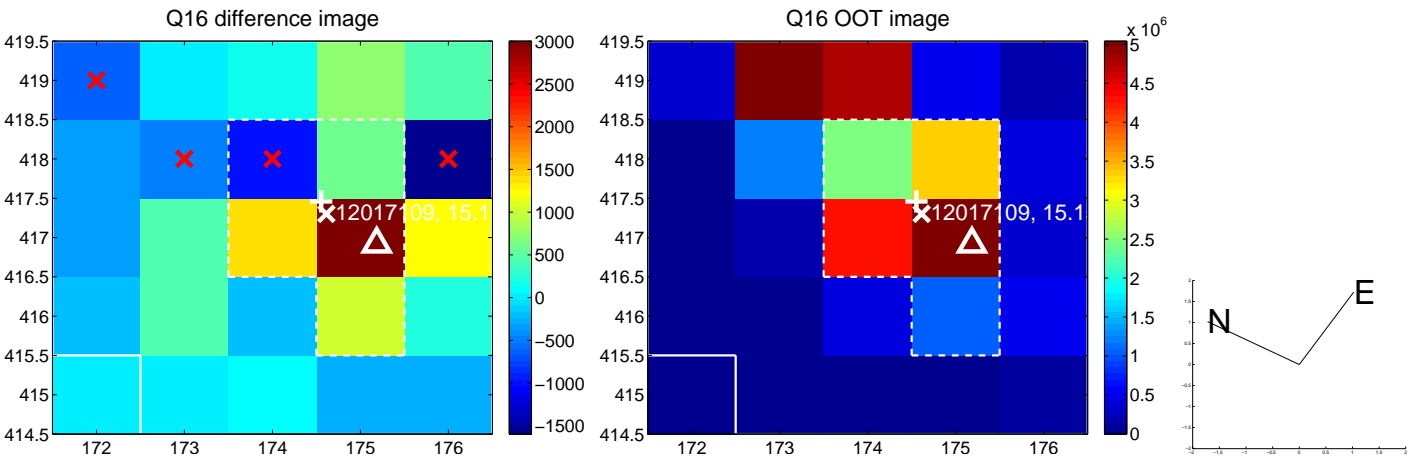
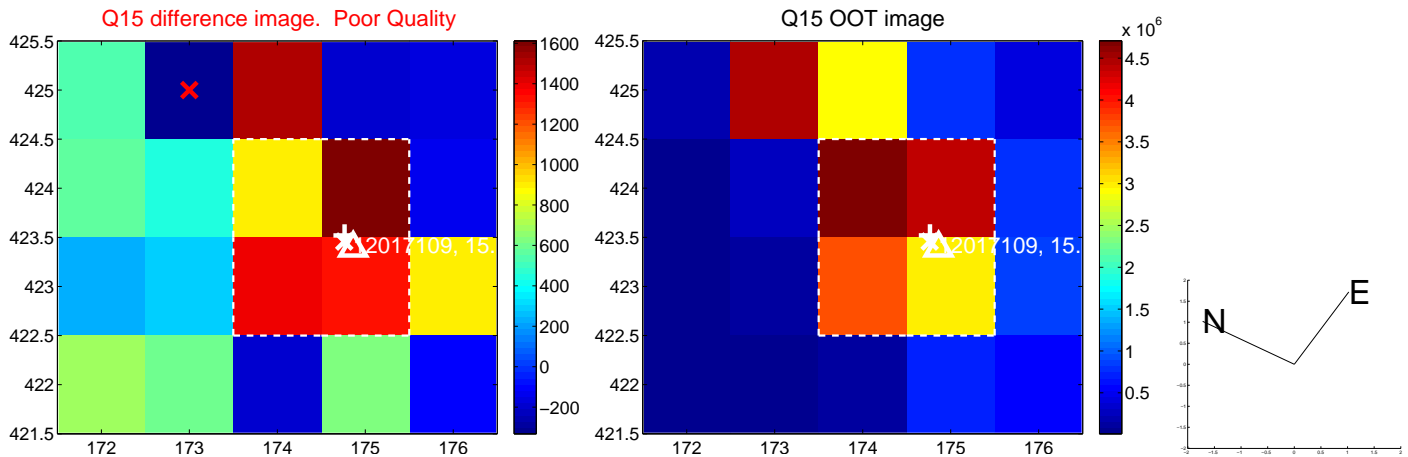
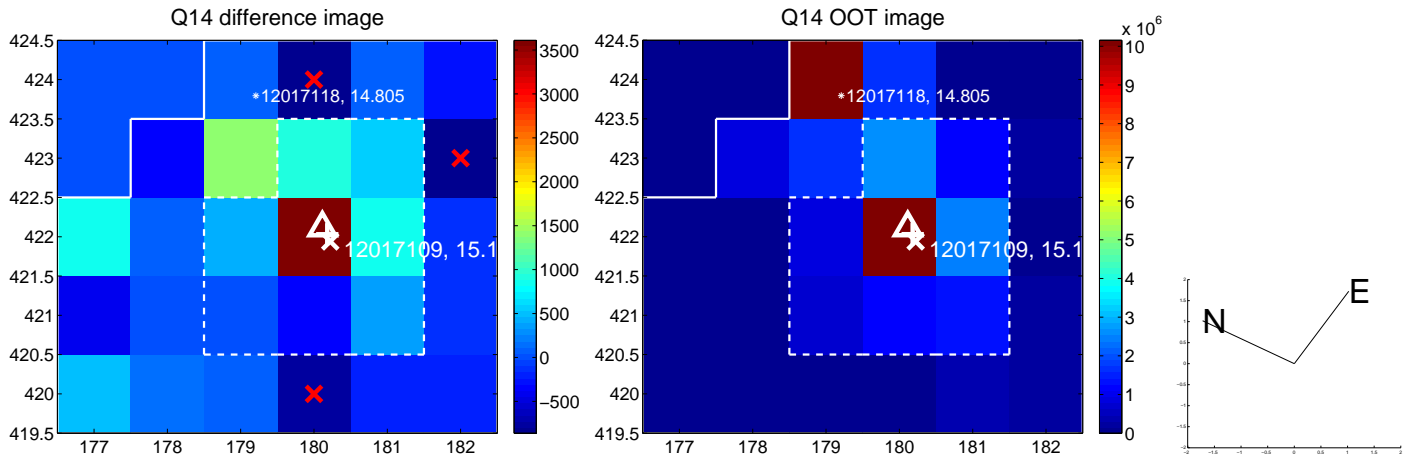
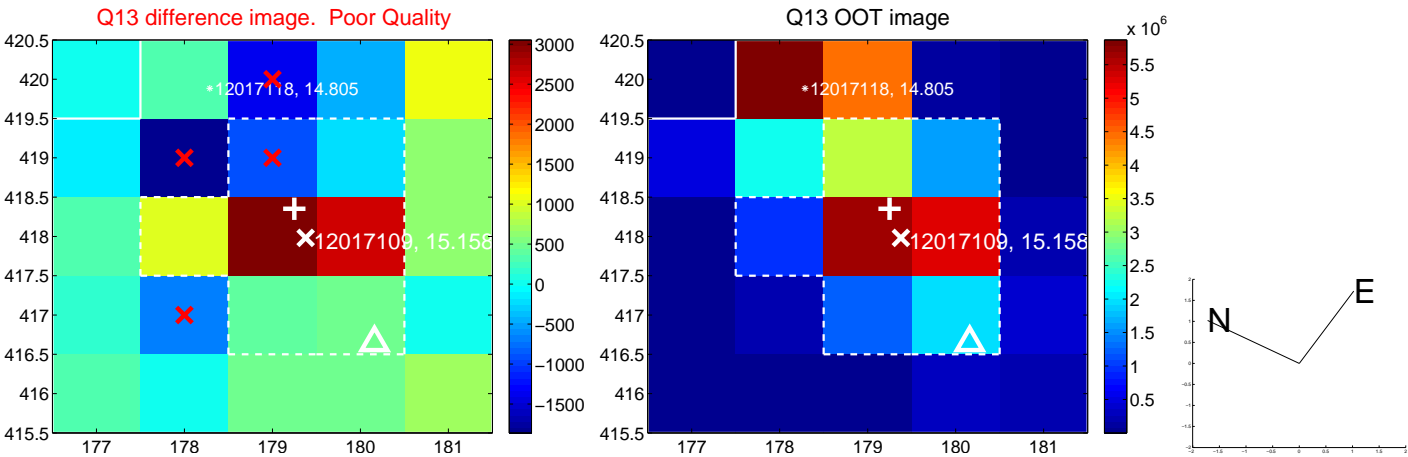
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



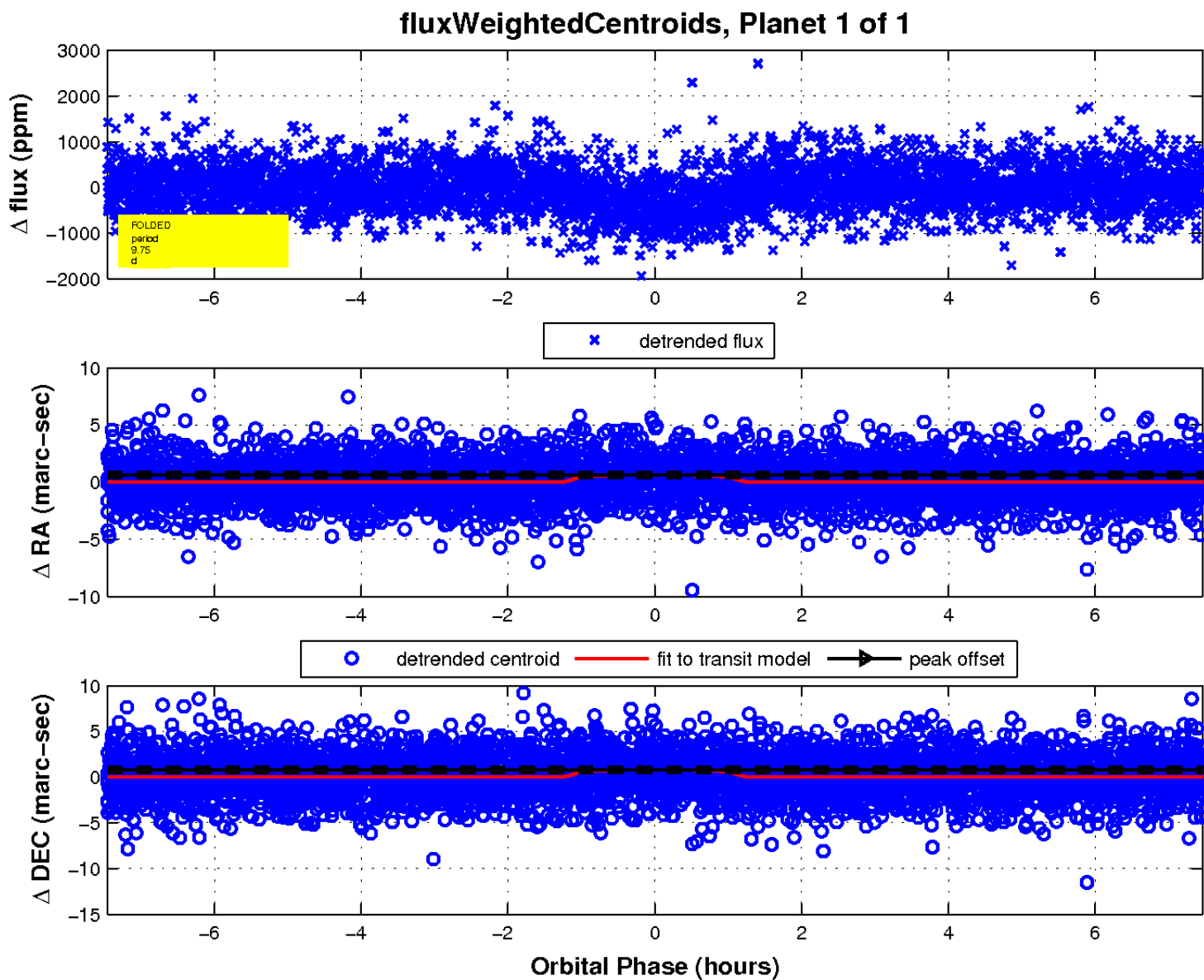
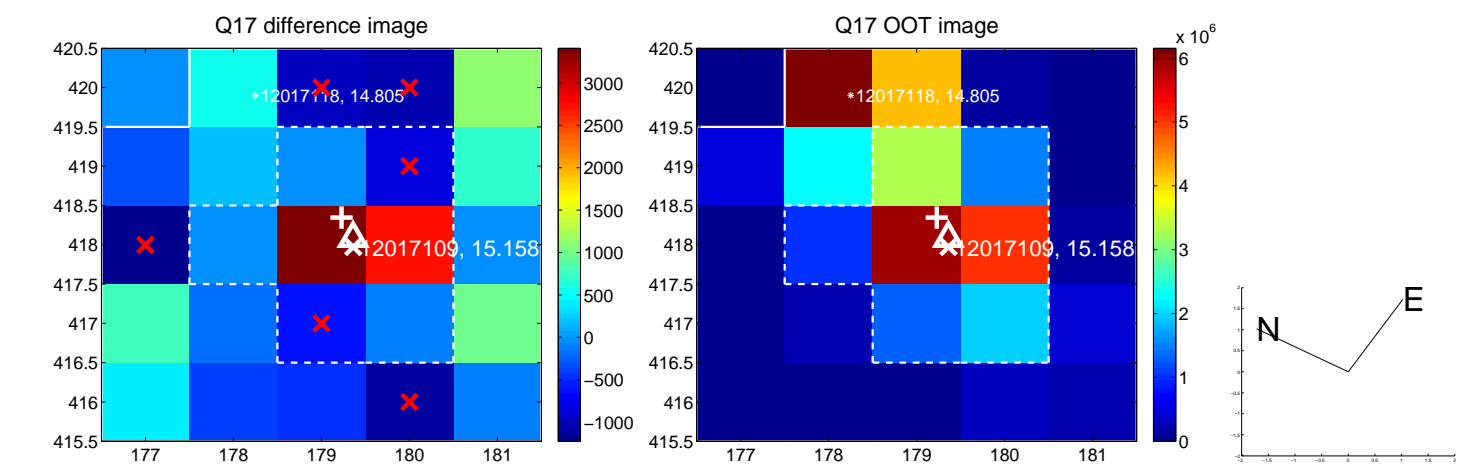
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

