

KIC 010057494

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})
010057494-01	OBS	3234.01	2.418105	132.386242	45.8	2.311	16.2	17.4	1.24	6258	0.99	1558.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010057494-01	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.

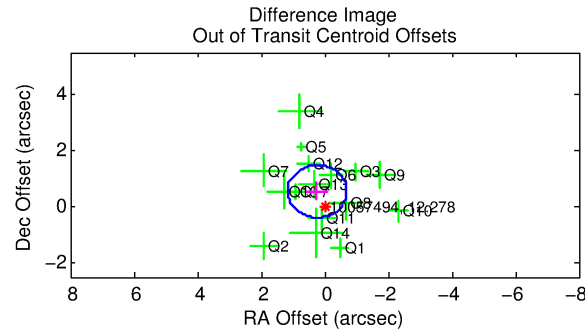
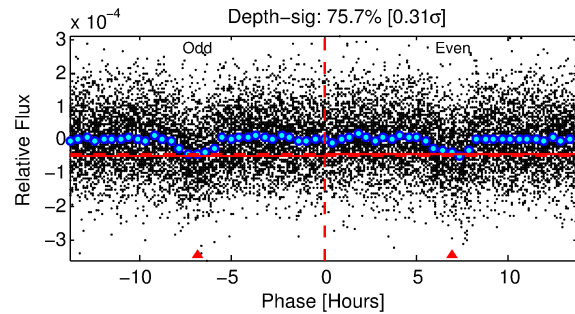
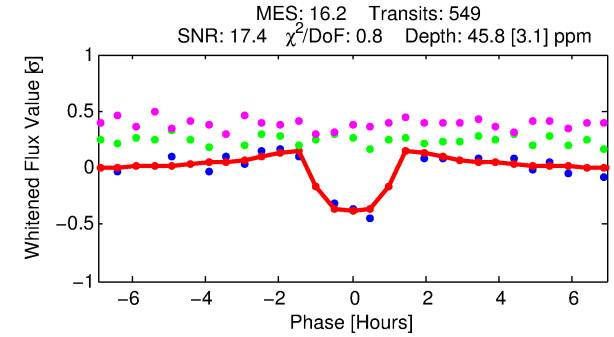
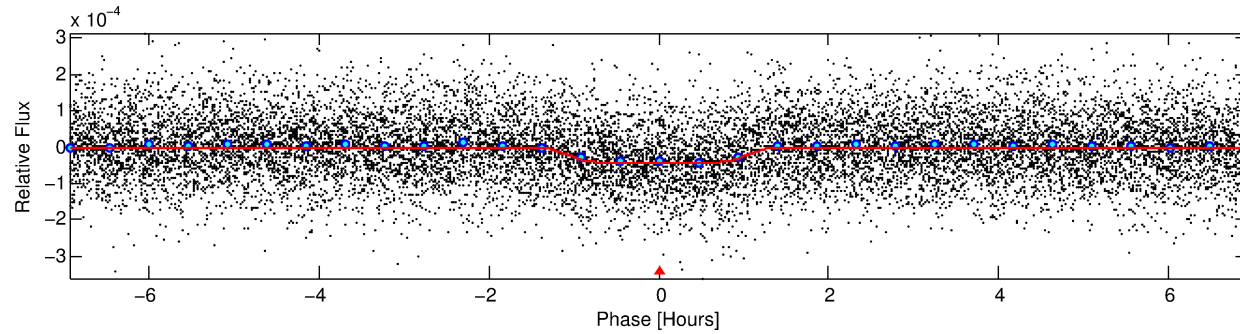
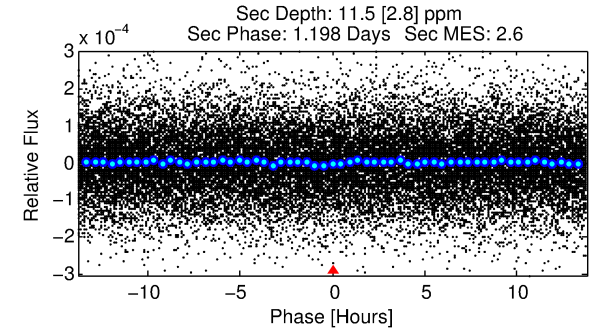
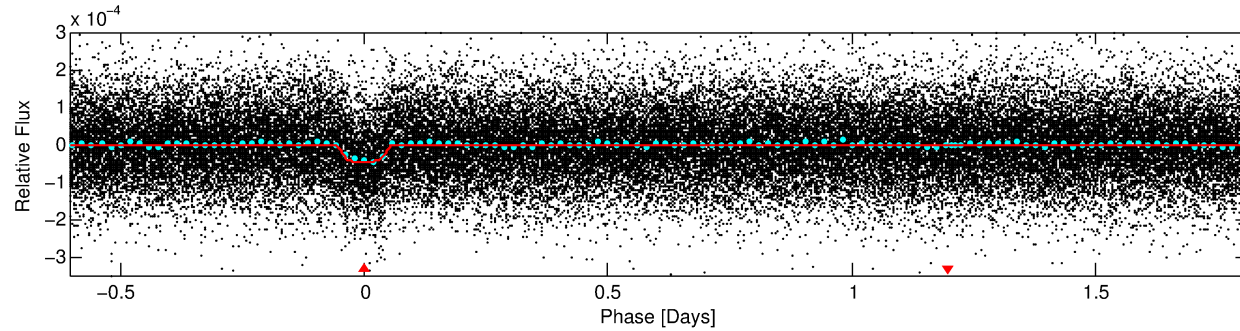
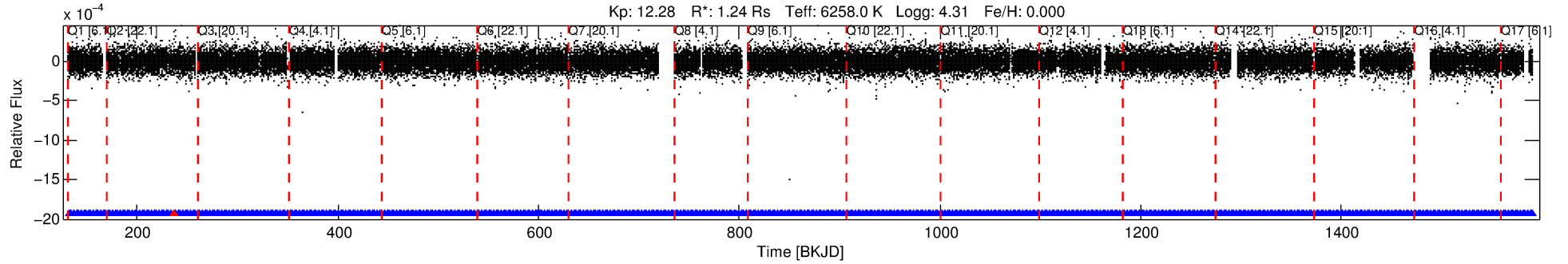
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010057494-01

No Significant Match Found

DV One-Page Summary

KIC: 10057494 Candidate: 1 of 1 Period: 2.418 d
KOI: K03234.01 Corr: 0.973



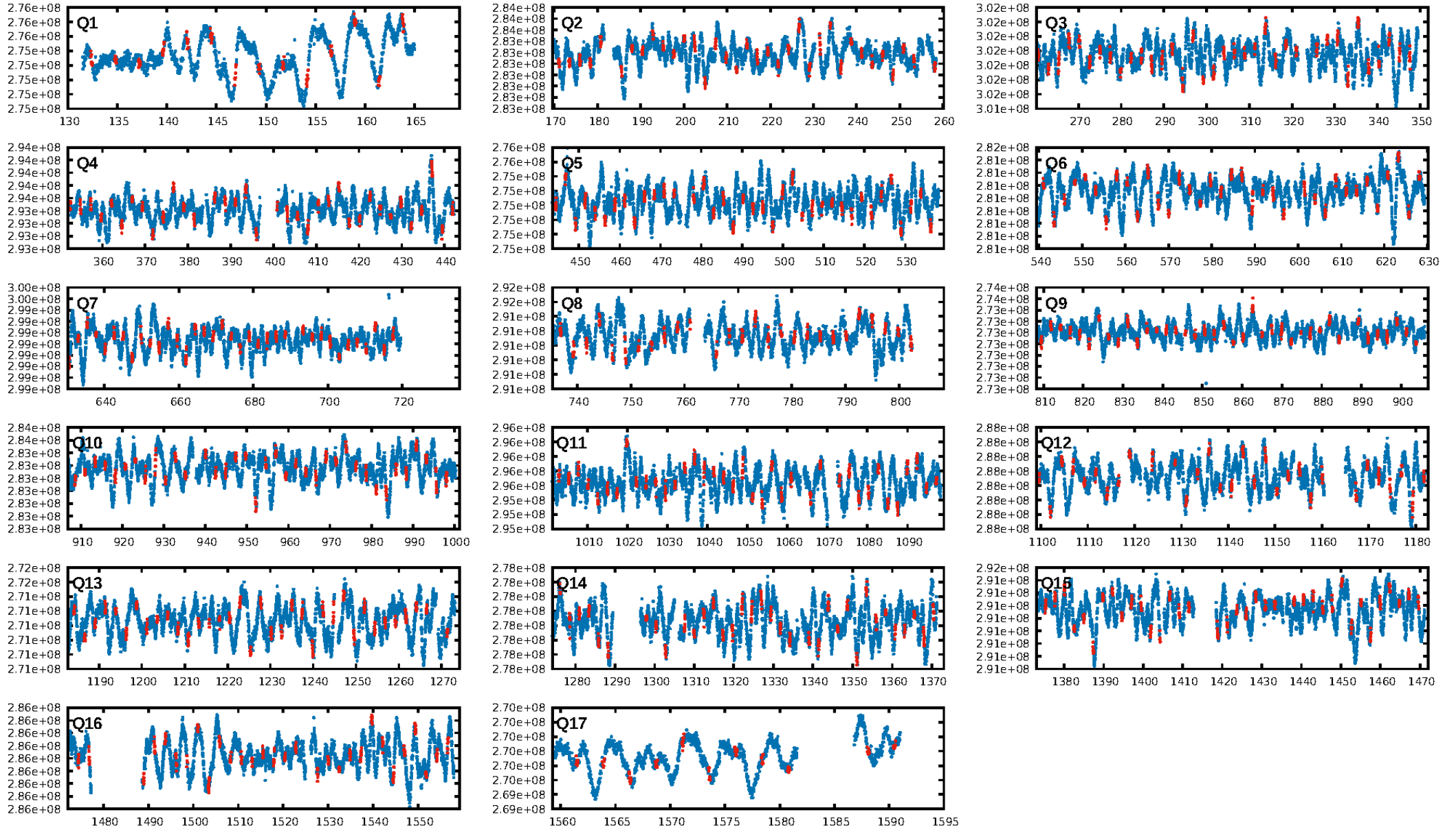
DV Fit Results:

Period = 2.41811 [0.00001] d
Epoch = 132.3862 [0.0015] BKJD
Rp/R* = 0.0073 [0.0016]
a/R* = 3.62 [4.06]
b = 0.91 [0.24]
Seff = 1558.54 [362.51]
Teq = 1602 [93] K
Rp = 0.99 [0.28] Re
a = 0.0368 [0.0055] AU
Ag = 8.68 [4.84] [1.59σ]
Teffp = 4252 [552] K [4.73σ]

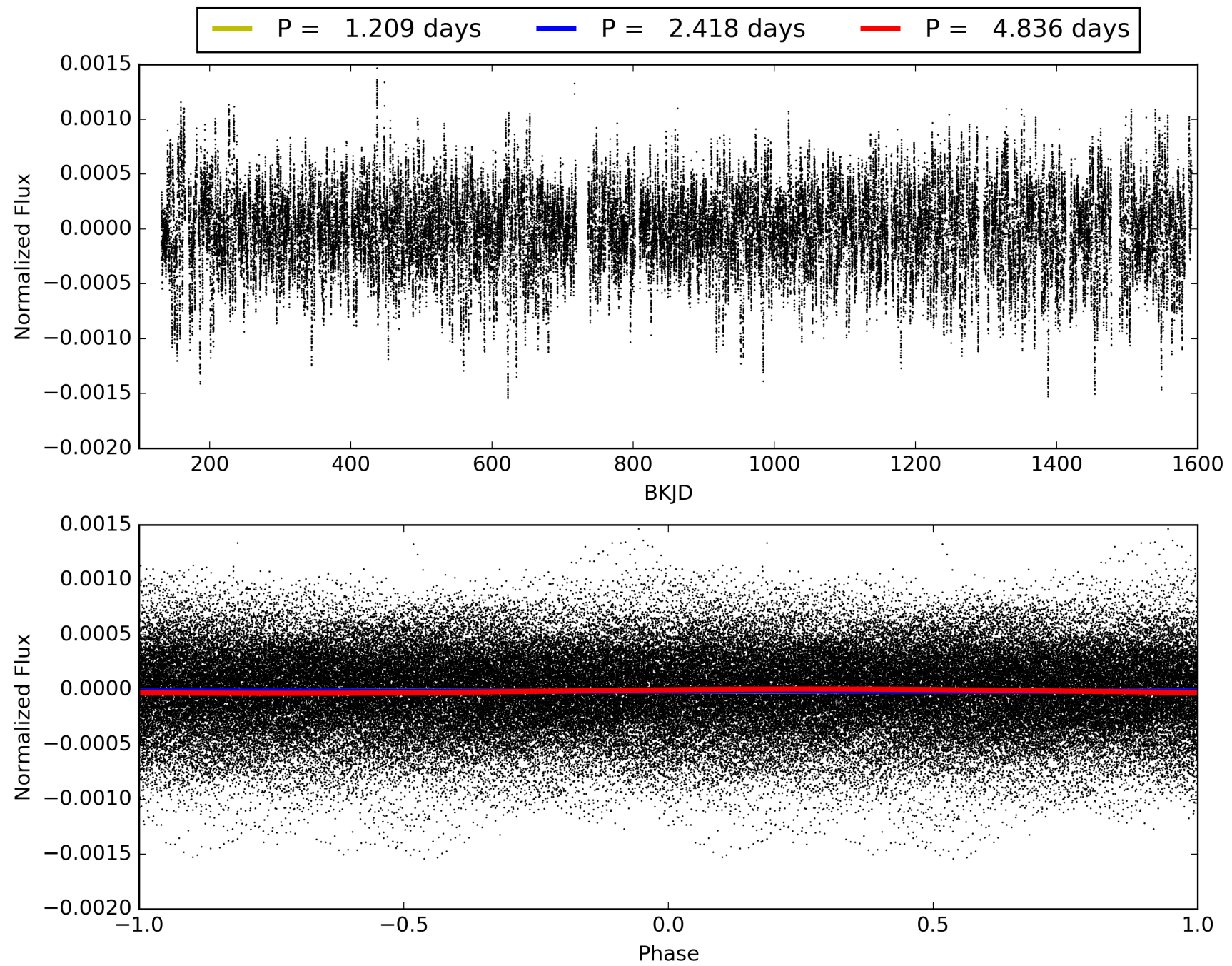
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.28e-58
RollingBand-fgt: 1.00 [523/524]
GhostDiagnostic-chr: 3.366
Centroid-sig: 20.1%
Centroid-so: 0.712 arcsec [1.38σ]
OotOffset-rm: 0.597 arcsec [1.92σ]
KicOffset-rm: 0.433 arcsec [1.40σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010057494-01, PDC Light Curves

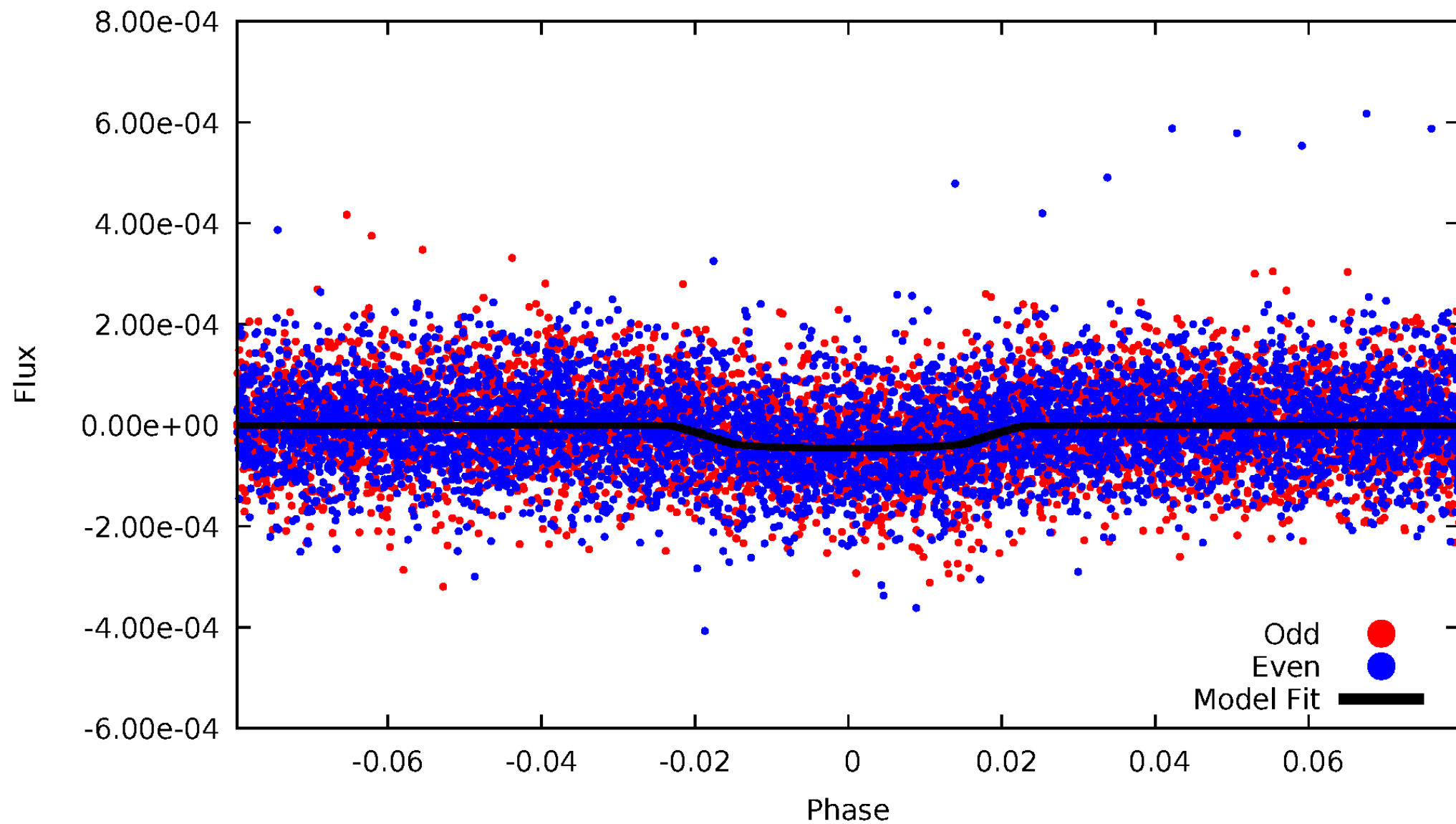


TCE 010057494-01



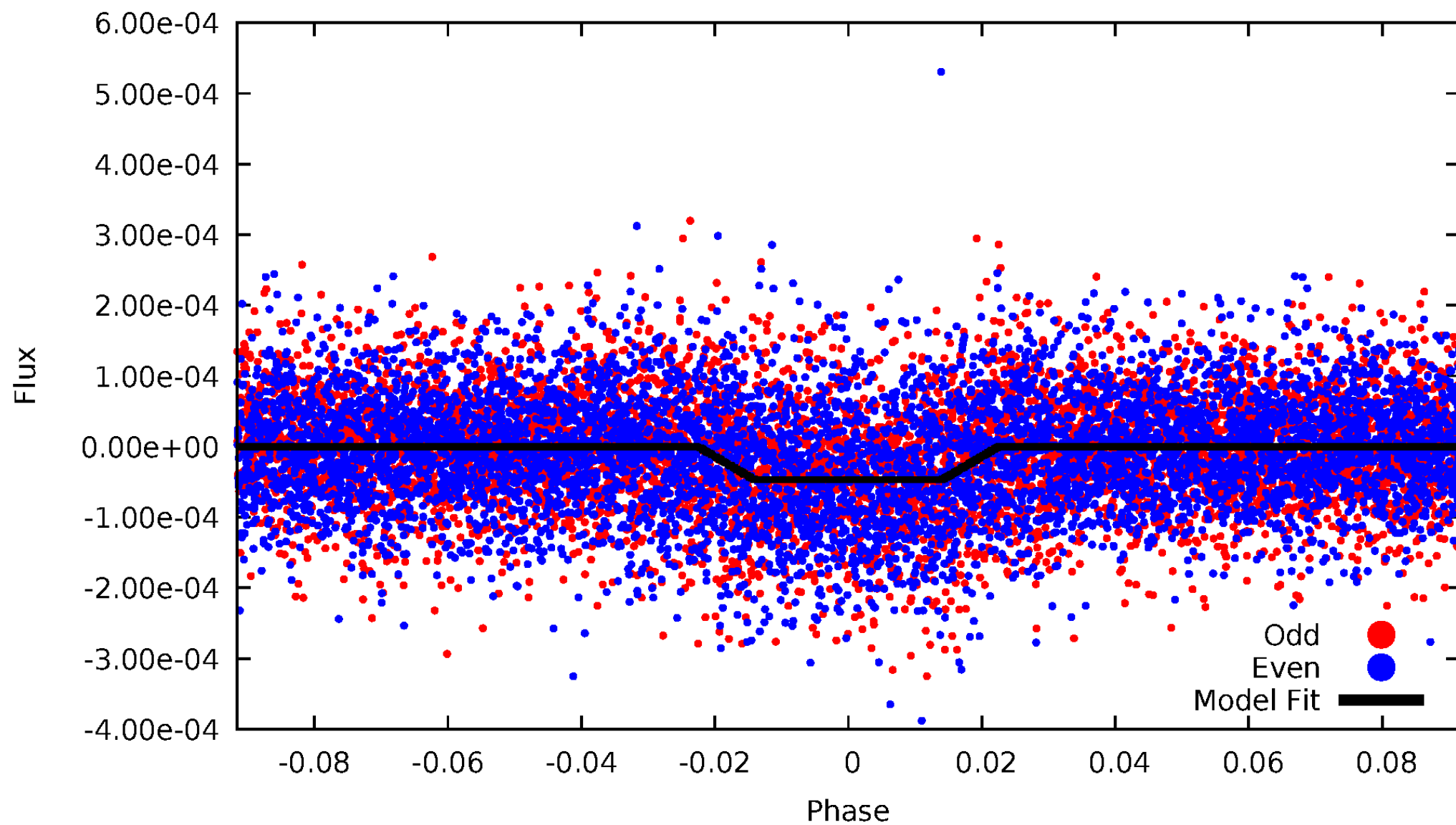
DV Odd/Even

TCE 010057494-01



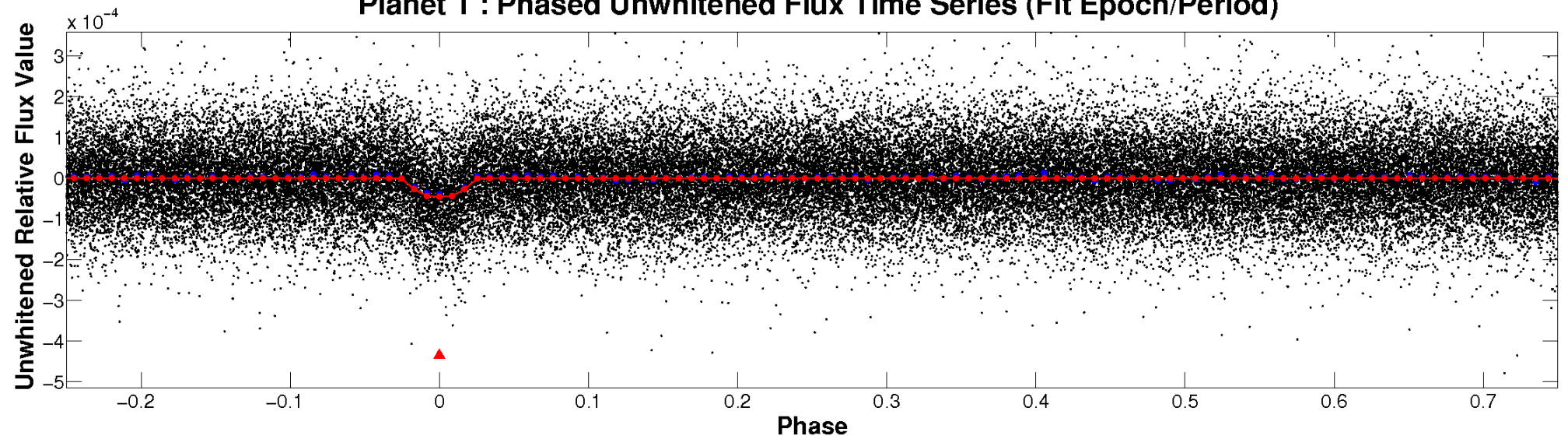
ALT Odd/Even

TCE 010057494-01

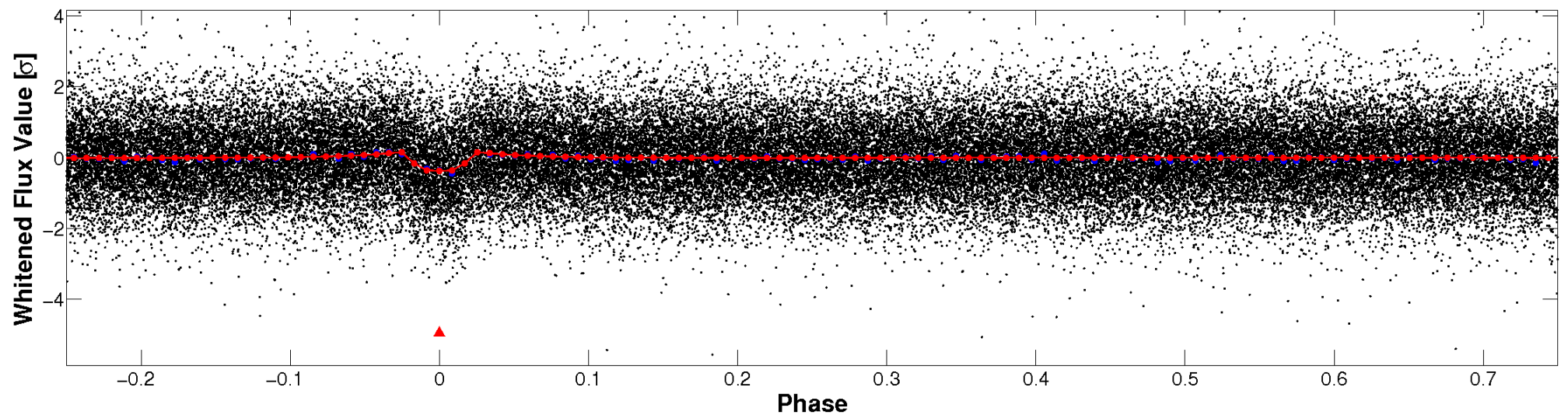


Non-Whitened Vs. Whitened Light Curve

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

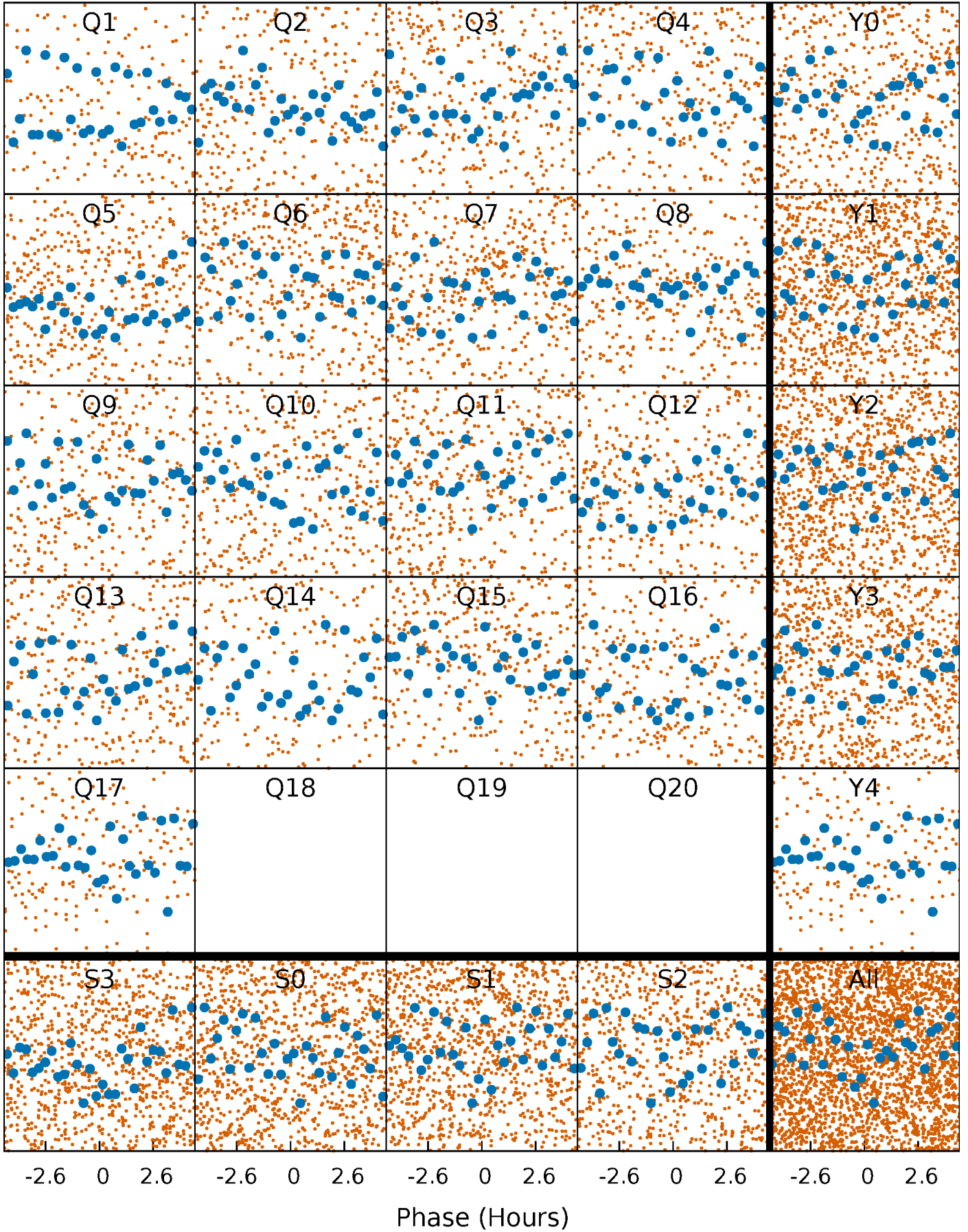


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



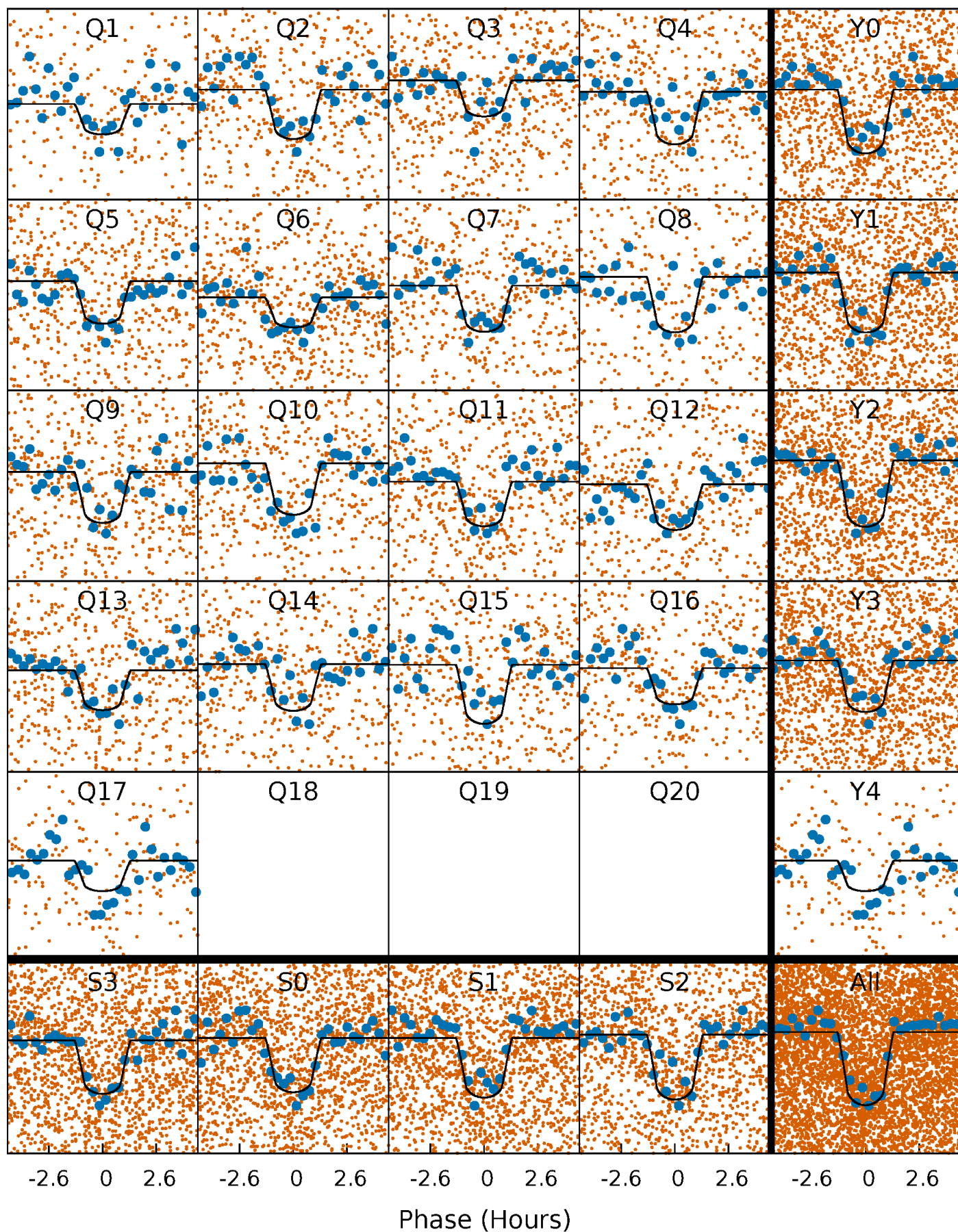
PDC Quarter-Phased Transit Curves

TCE 010057494-01 P= 2.418105 Days $T_0=132.386242$ (BKJD)



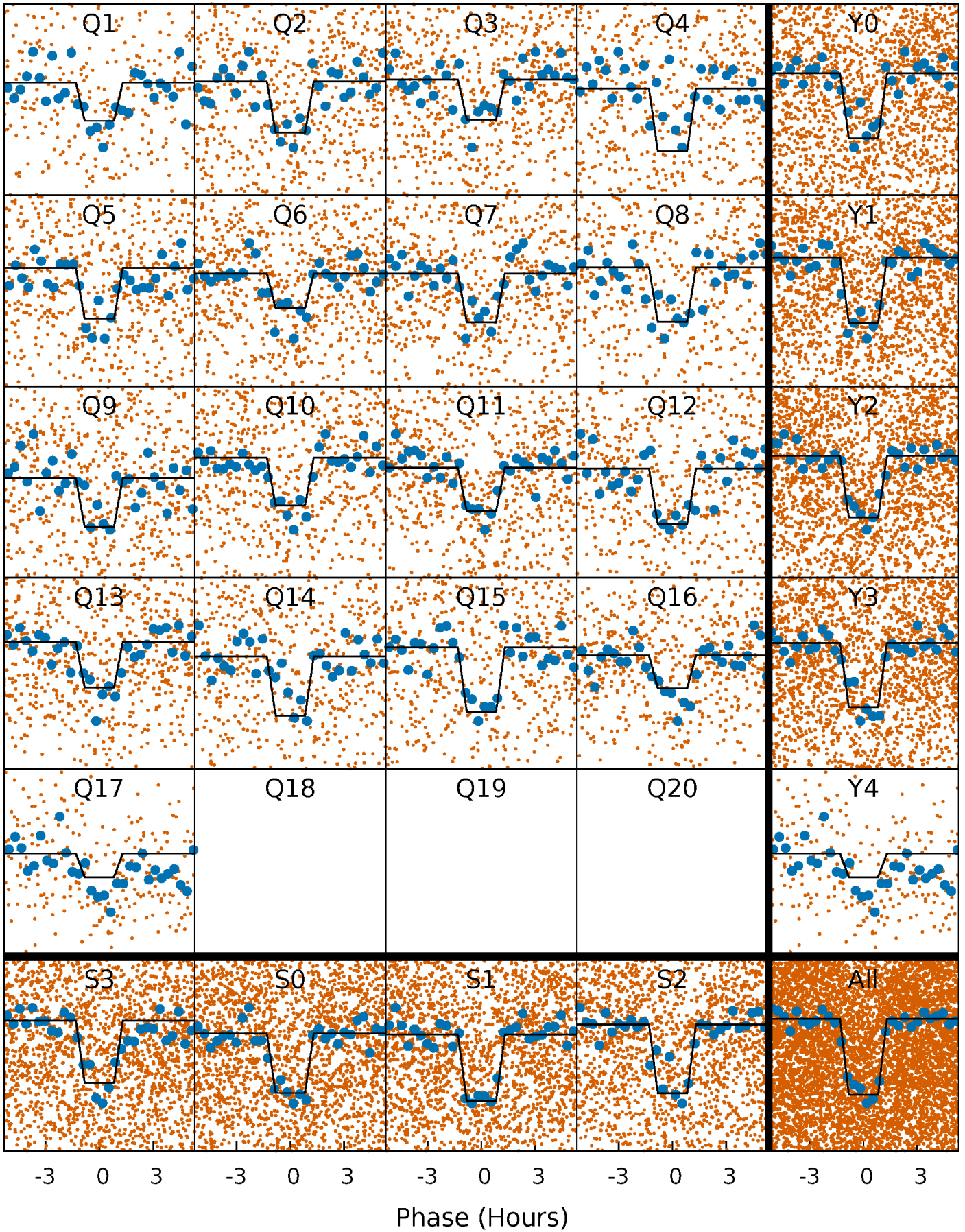
DV Quarter-Phased Transit Curves

TCE 010057494-01 P= 2.418105 Days $T_0=132.386242$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

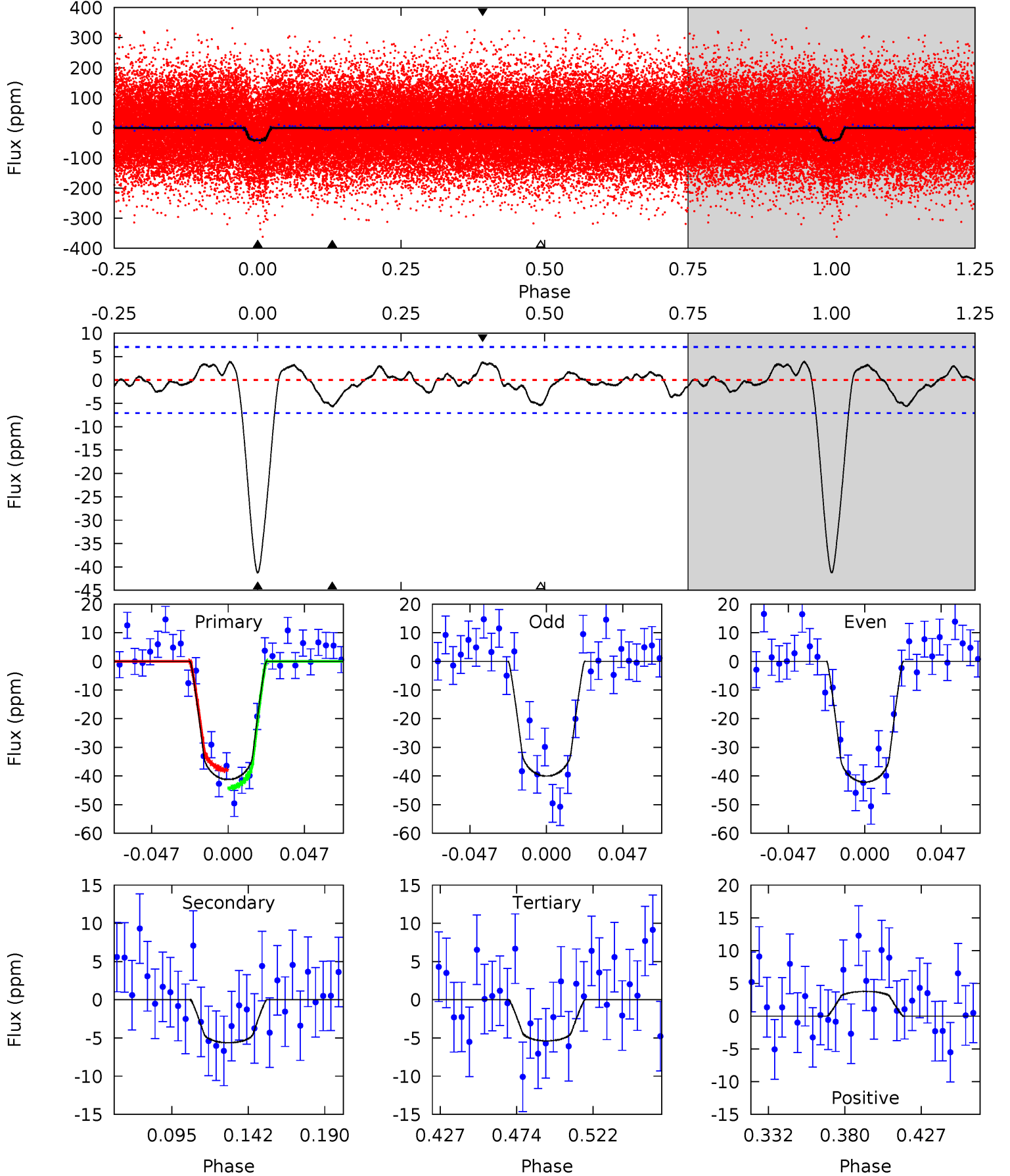
TCE 010057494-01 P= 2.418084 Days $T_0=132.392832$ (BKJD)



DV Model-Shift Uniqueness Test

010057494-01, P = 2.418105 Days, E = 129.968137 Days

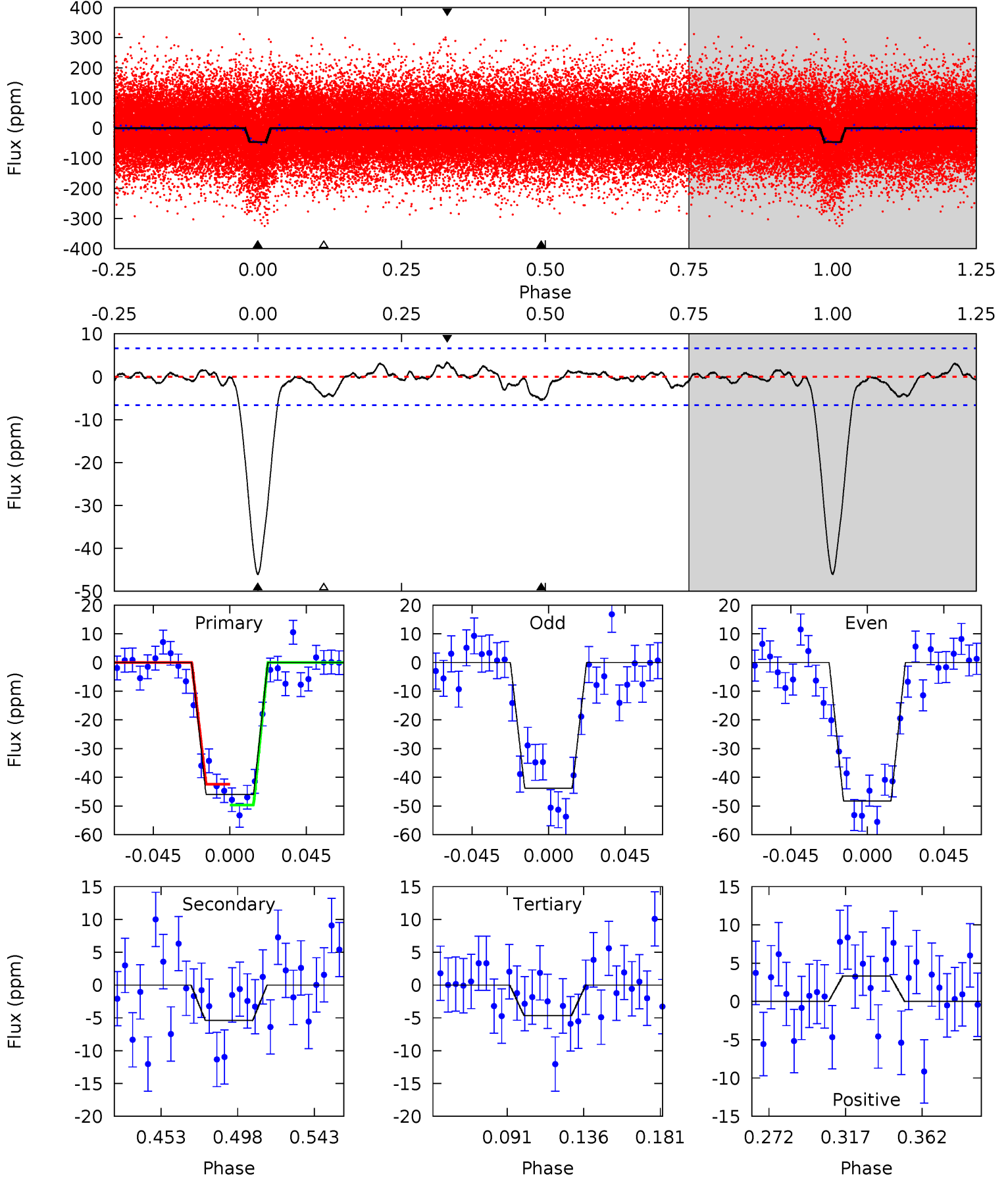
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.5	3.75	3.59	2.51	4.72	1.98	1.26	23.9	25.0	0.16	1.24	0.70	1.00	0.09	2.08



Alt Model-Shift Uniqueness Test

010057494-01, P = 2.418084 Days, E = 129.974748 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.9	3.85	3.33	2.38	4.73	2.00	1.03	29.6	30.5	0.52	1.46	1.60	0.98	0.07	2.59



Stellar Parameters For KIC 010057494

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6258^{+112}_{-124}	$4.307^{+0.080}_{-0.120}$	$0.000^{+0.150}_{-0.150}$	$1.239^{+0.219}_{-0.135}$	$1.135^{+0.096}_{-0.077}$	$0.840^{+0.328}_{-0.298}$
	+2%/-2%	+2%/-3%	+inf%/-inf%	+18%/-11%	+8%/-7%	+39%/-35%
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 010057494-01 / KOI 3234.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-6 ± 1	$1.01^{+0.24}_{-0.23}$	2250^{+102}_{-85}	3842^{+429}_{-356}	$4.072^{+3.282}_{-1.771}$
Alt.	-5 ± 1	$0.95^{+0.24}_{-0.25}$	2249^{+88}_{-87}	3888^{+512}_{-328}	$4.345^{+3.871}_{-1.749}$

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

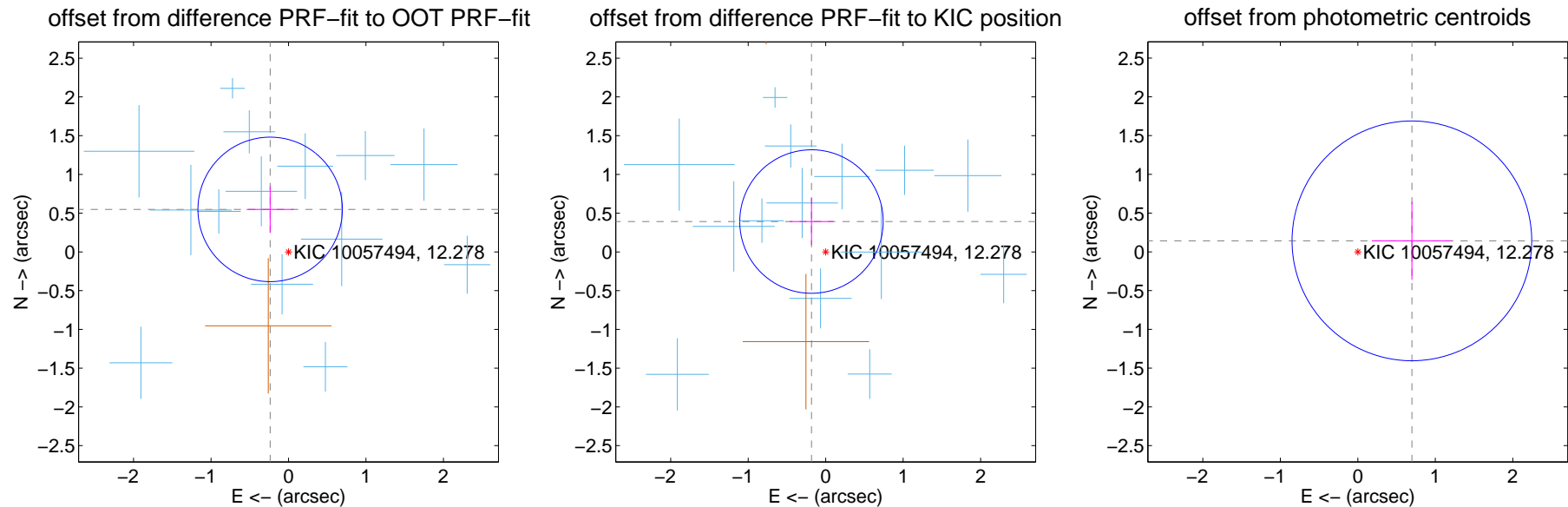
DV Centroid Data

Supplemental centroid analysis for 010057494-01. Kepler magnitude: 12.28. Transit SNR 17.40

There are 14 quarters with good PRF difference image offsets

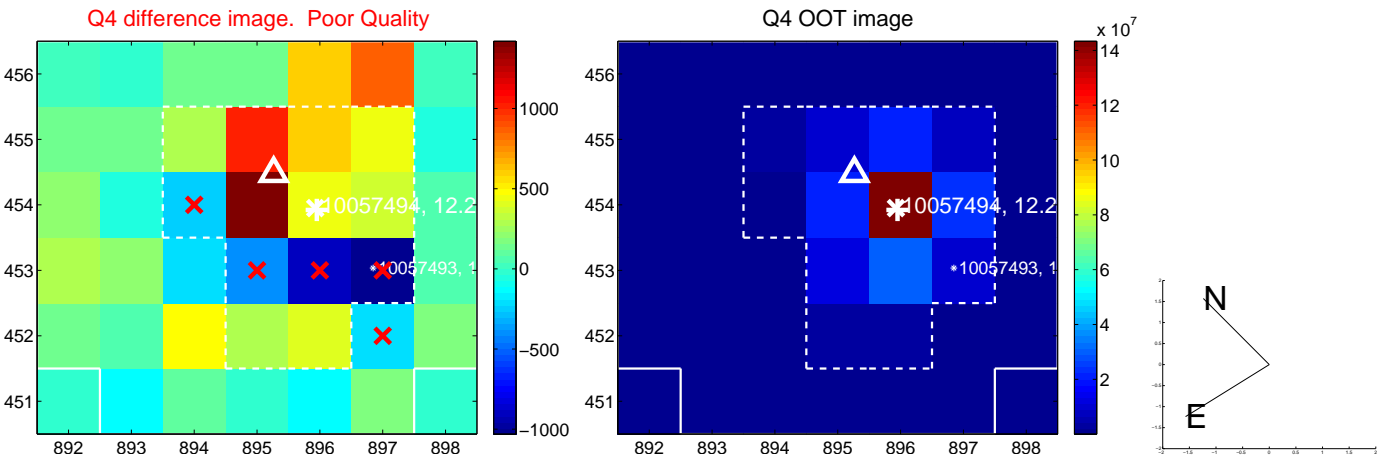
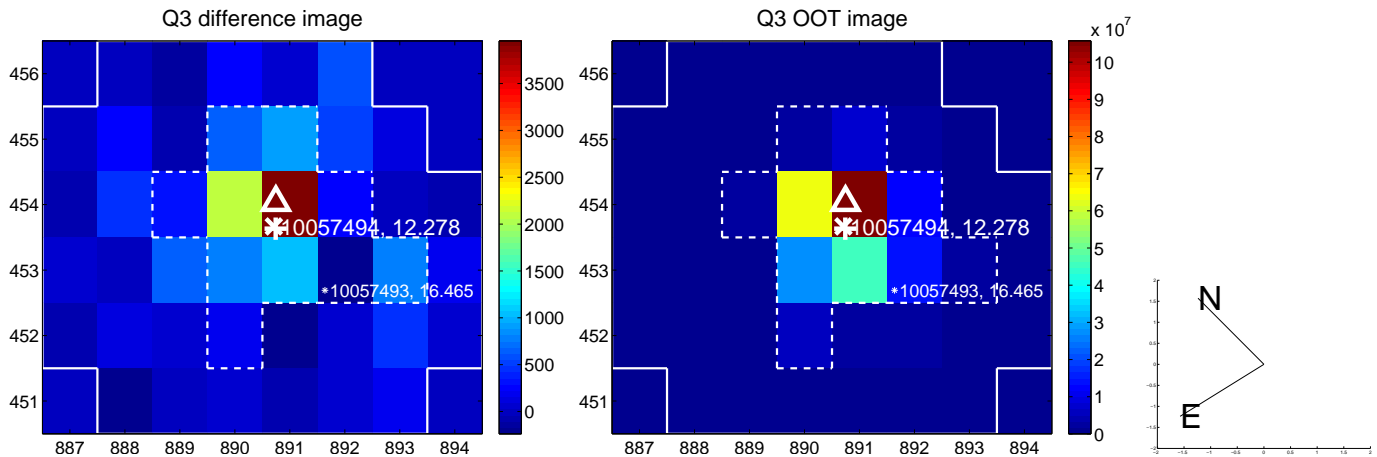
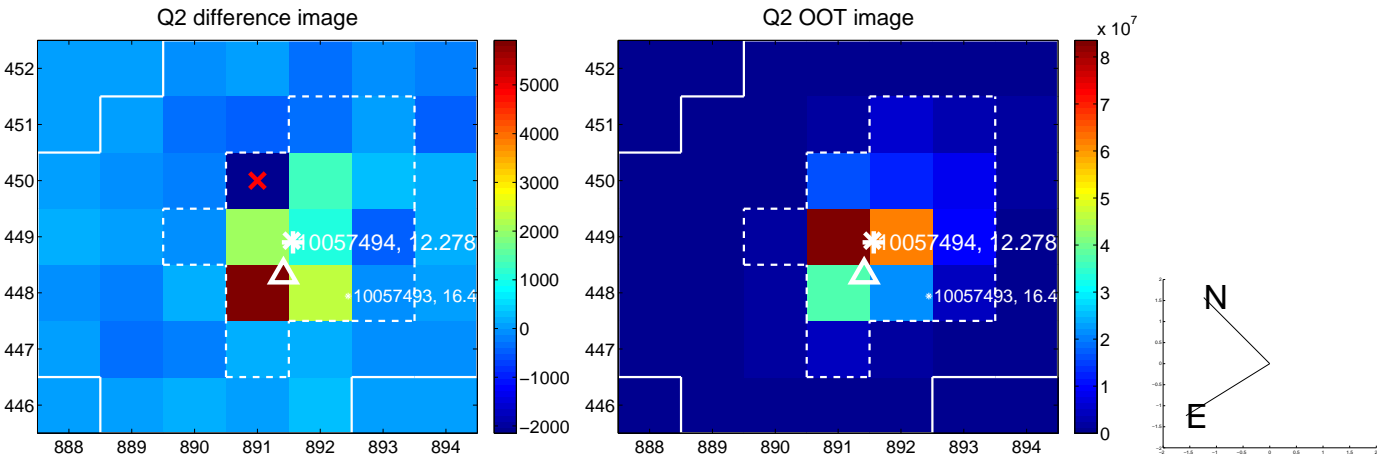
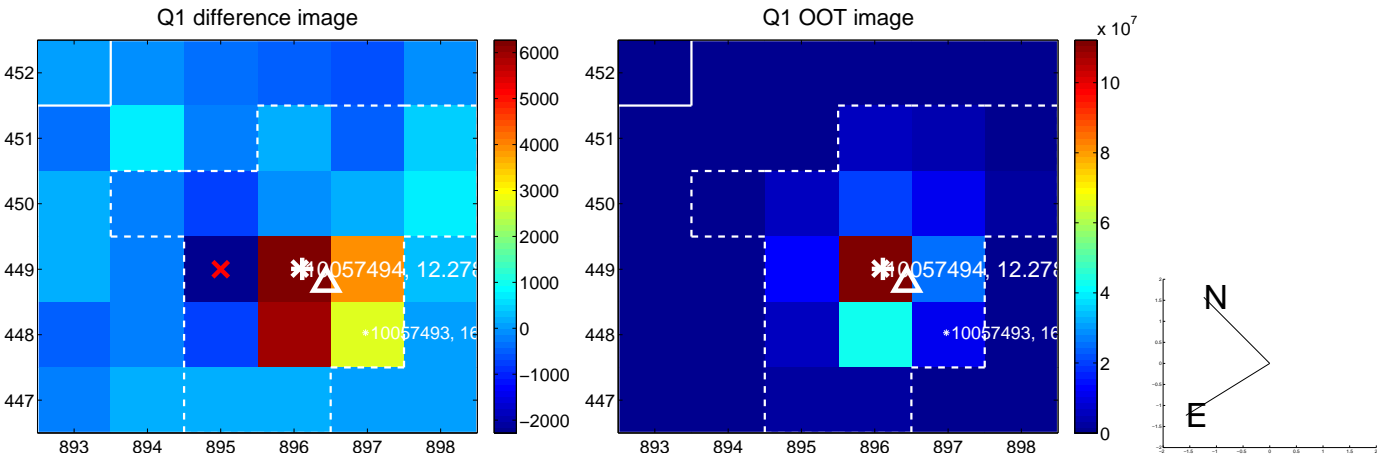
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.597 ± 0.311	1.92	0.237 ± 0.305	0.549 ± 0.297
PRF-fit source offset from KIC position	0.433 ± 0.309	1.40	0.183 ± 0.282	0.392 ± 0.303
photometric centroid source offset	0.71 ± 0.52	1.38	-0.70 ± 0.52	0.14 ± 0.50

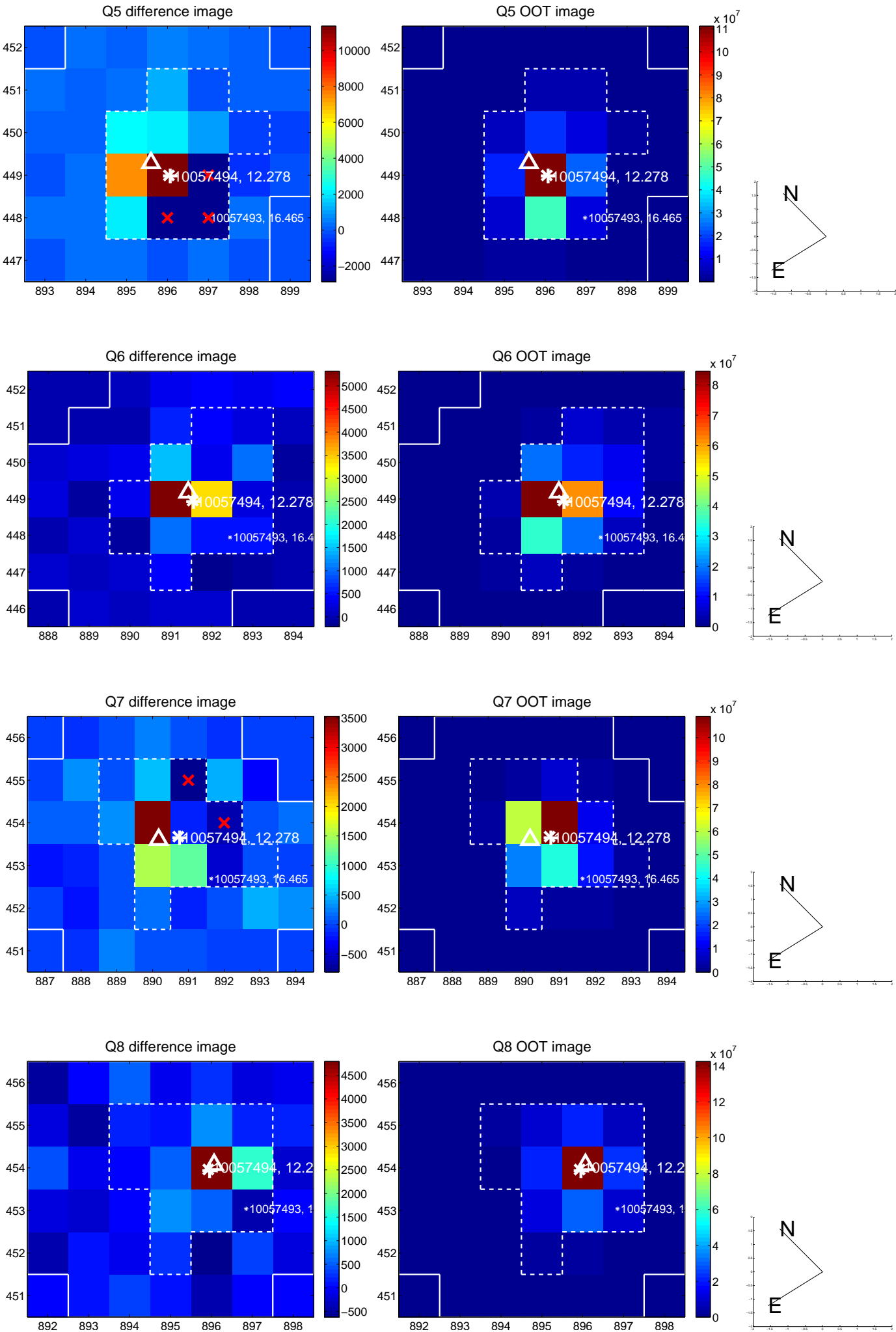


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

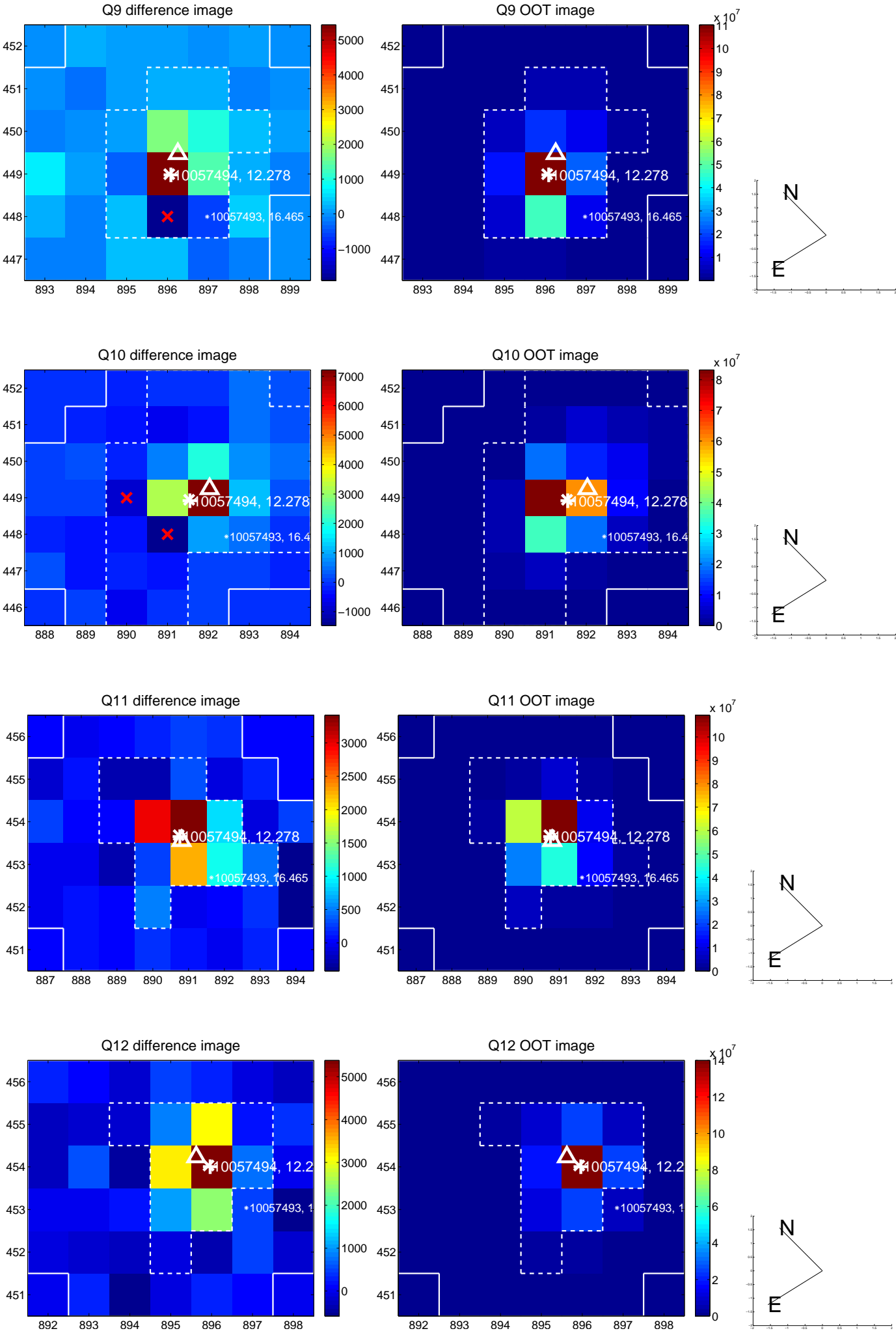
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



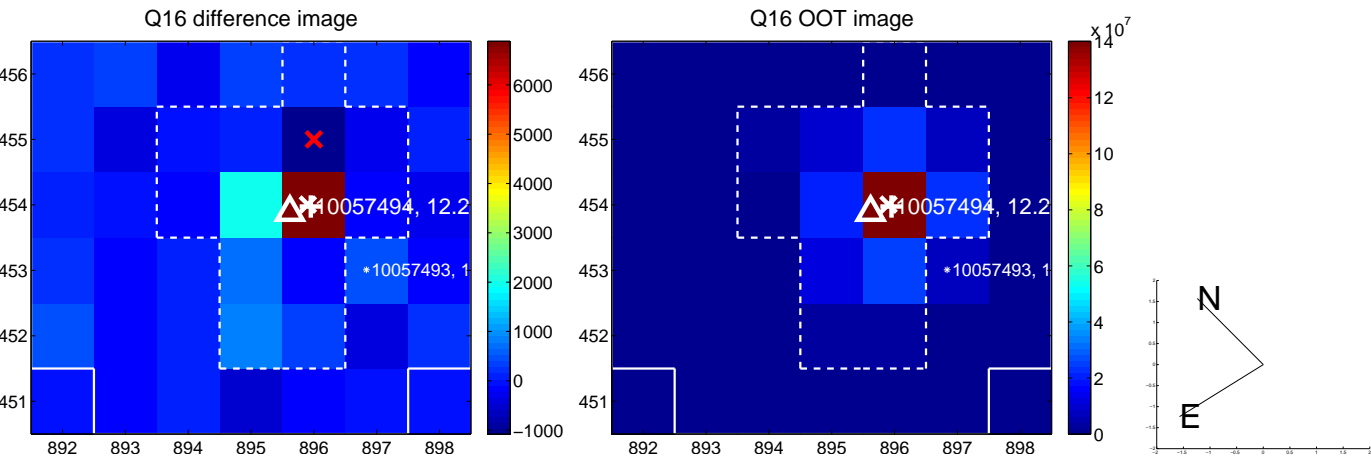
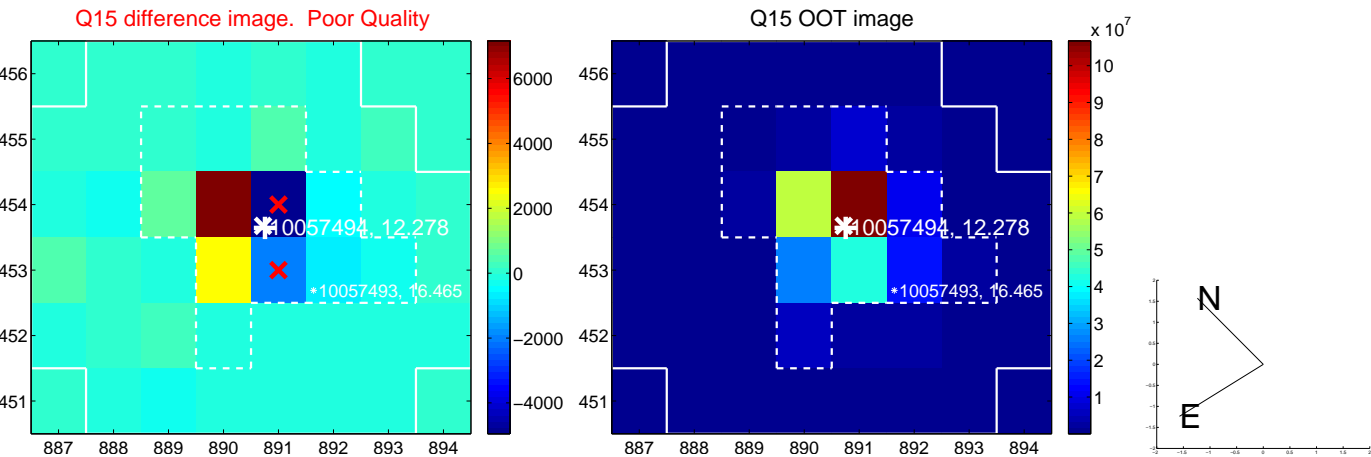
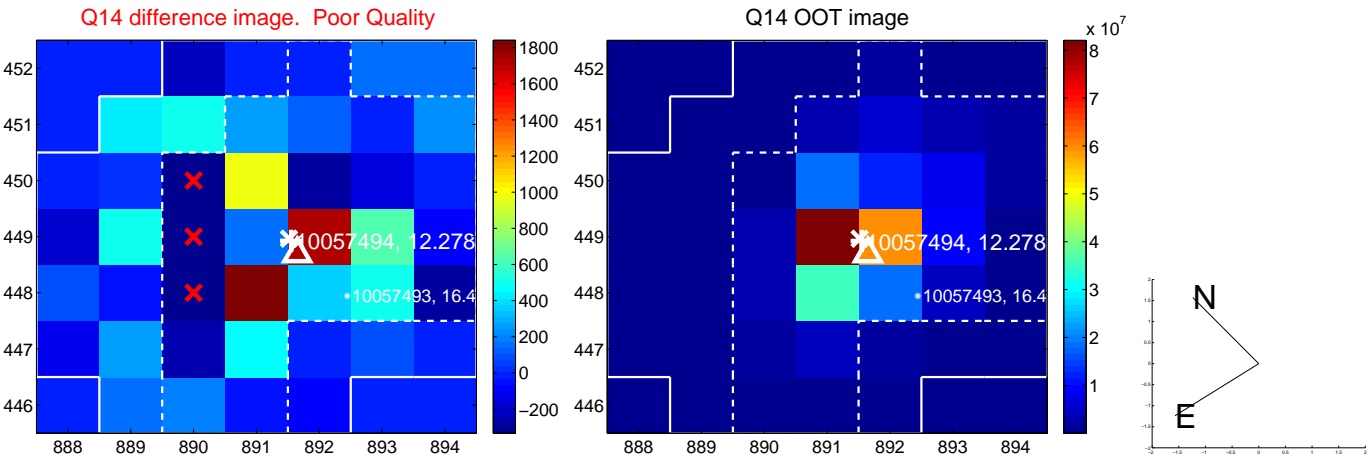
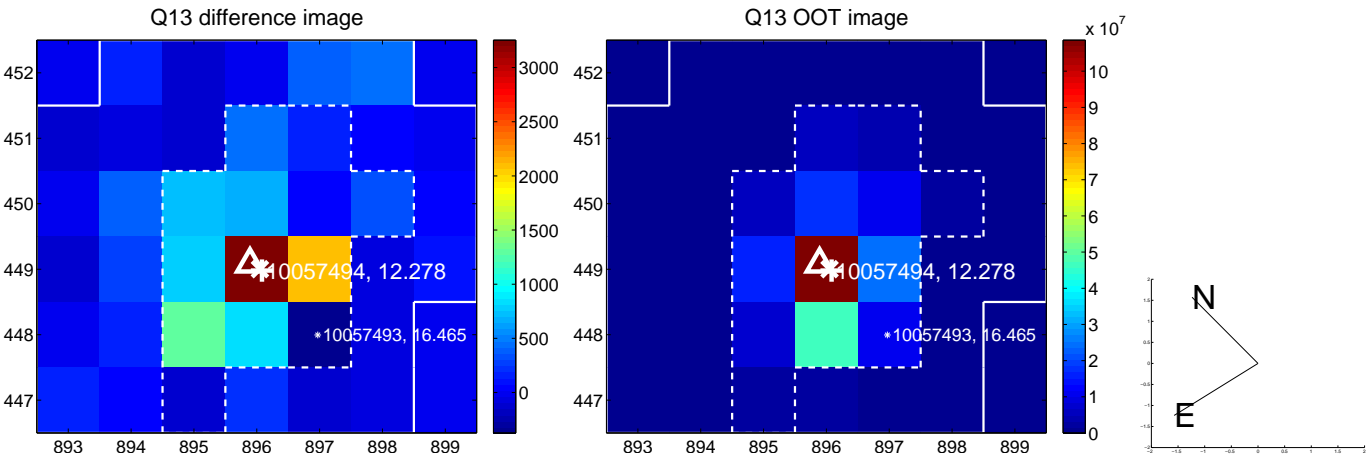
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

