

KIC 009702072

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})
009702072-01	OBS	0714.01	4.182002	135.151463	855.4	2.317	165.4	162.2	0.86	5328	2.85	213.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009702072-01	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.

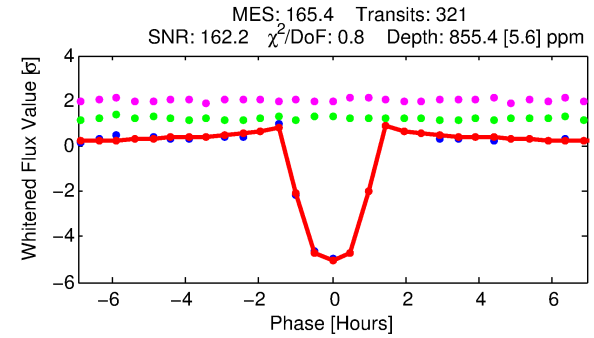
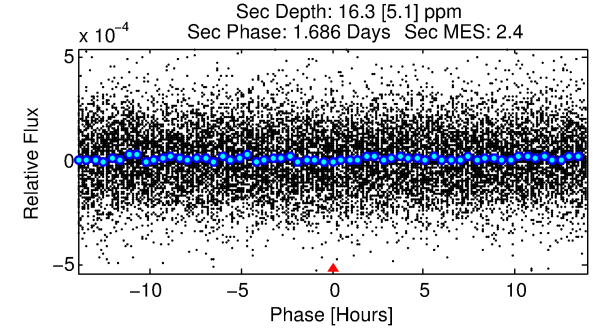
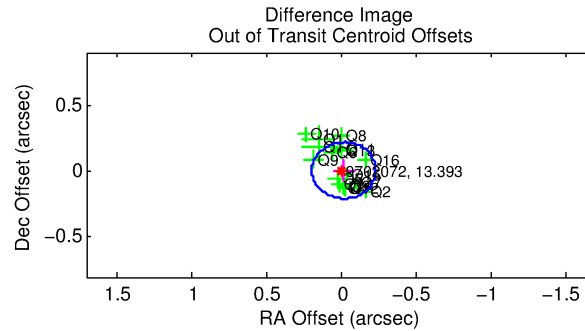
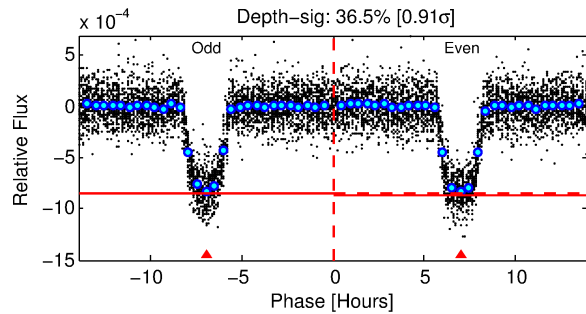
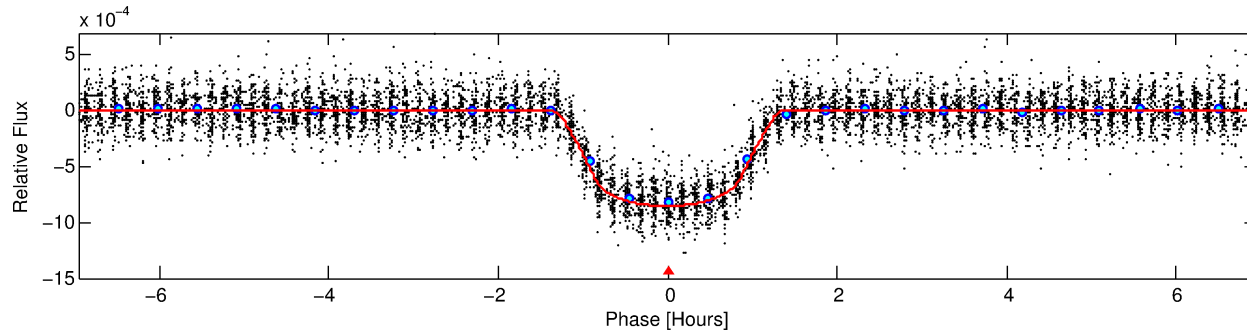
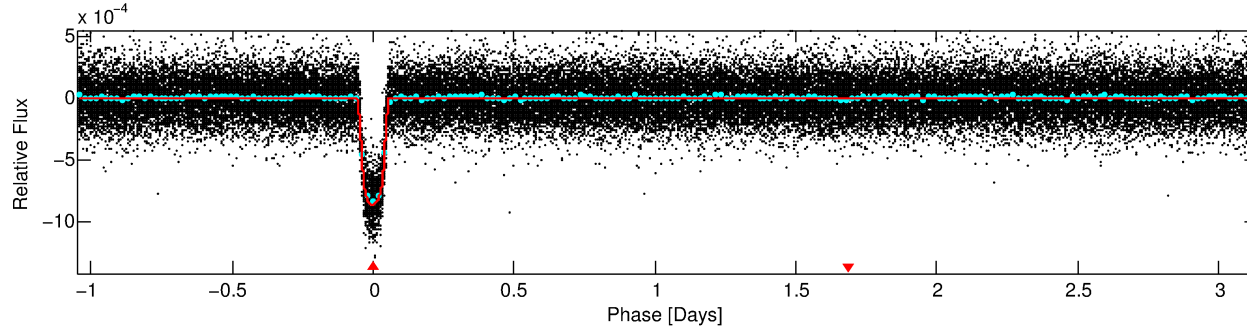
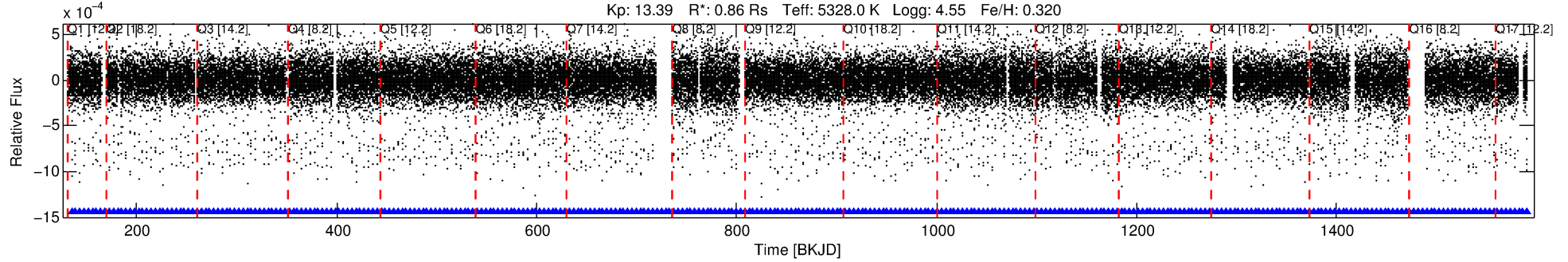
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009702072-01

No Significant Match Found

DV One-Page Summary

KIC: 9702072 Candidate: 1 of 1 Period: 4.182 d
KOI: K00714.01 Corr: 0.978



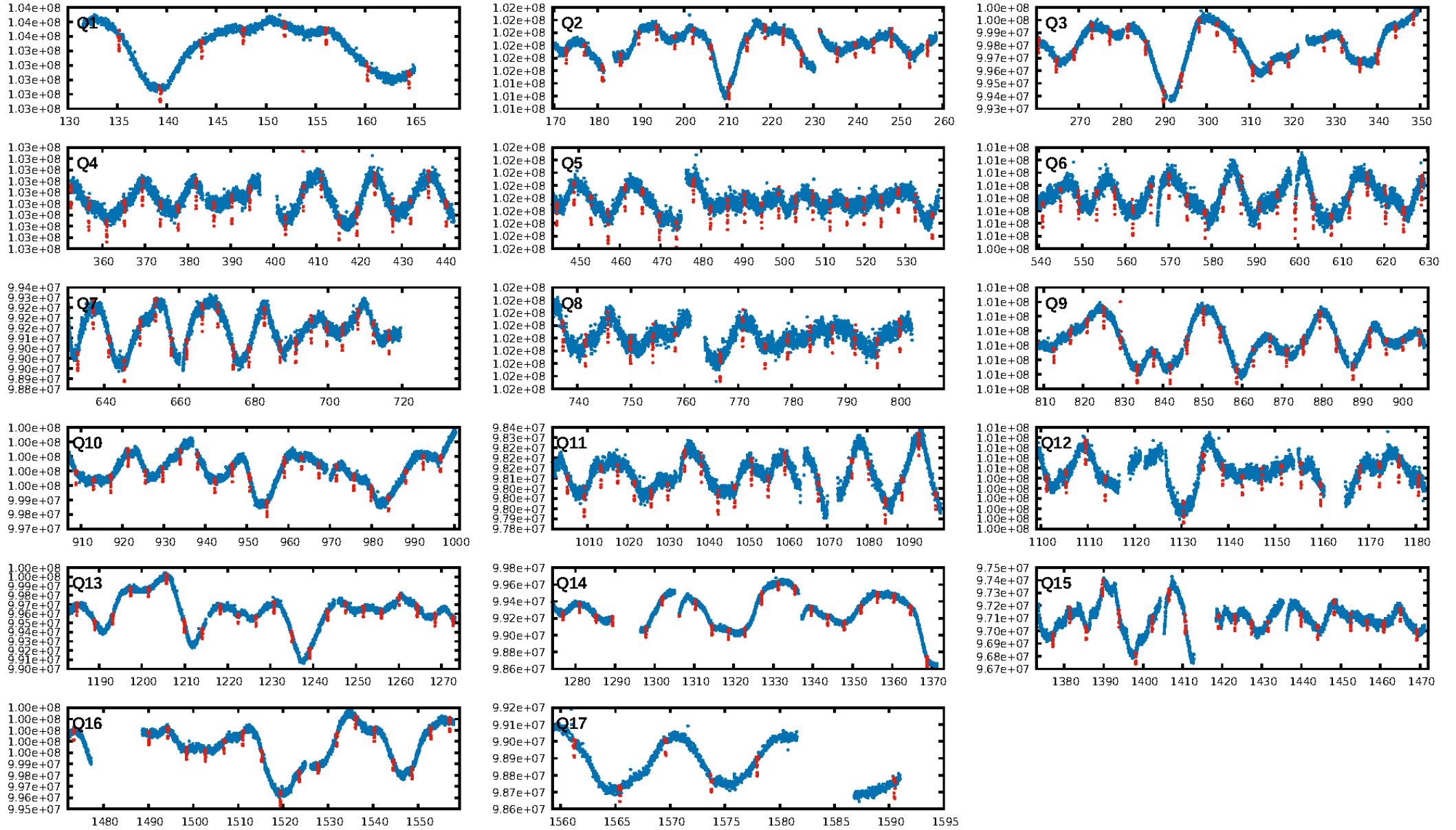
DV Fit Results:

Period = 4.18200 [0.00000] d
Epoch = 135.1515 [0.0002] BKJD
Rp/R* = 0.0302 [0.0013]
a/R* = 8.80 [1.44]
b = 0.81 [0.07]
Seff = 213.46 [40.43]
Teq = 975 [46] K
Rp = 2.85 [0.33] Re
a = 0.0503 [0.0053] AU
Ag = 2.80 [1.02] [1.76 σ]
Teffp = 1949 [161] K [5.80 σ]

DV Diagnostic Results:

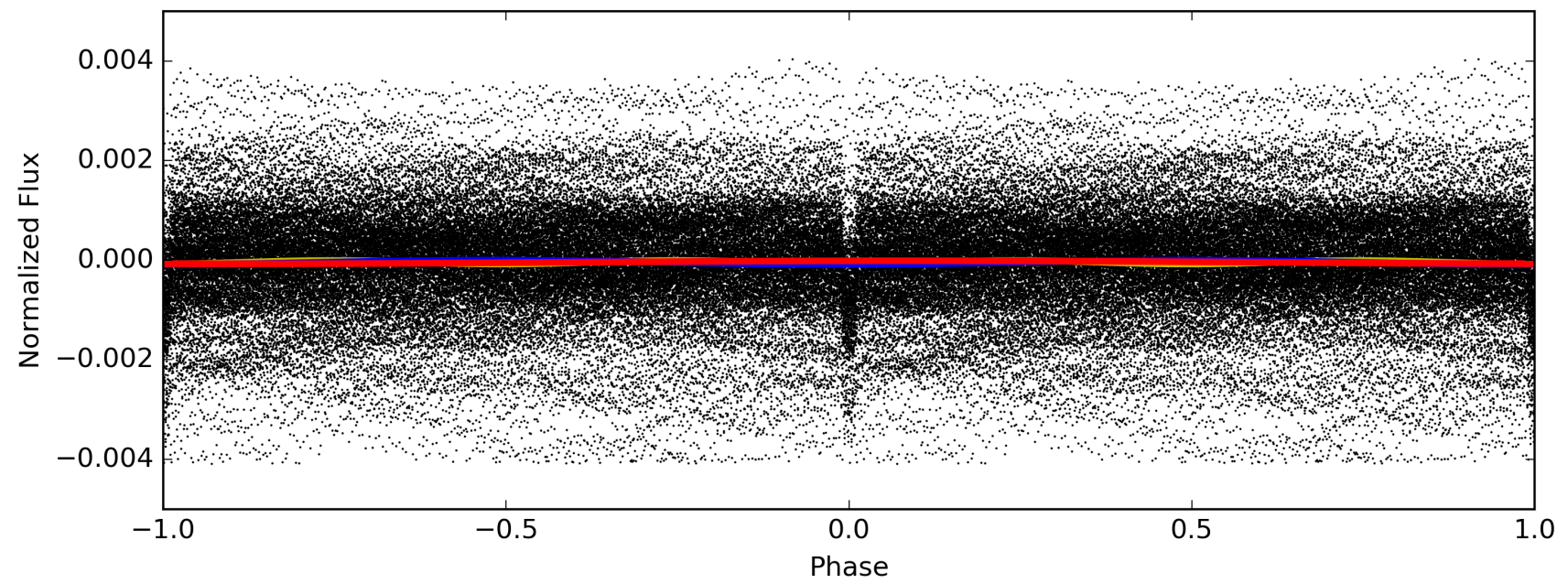
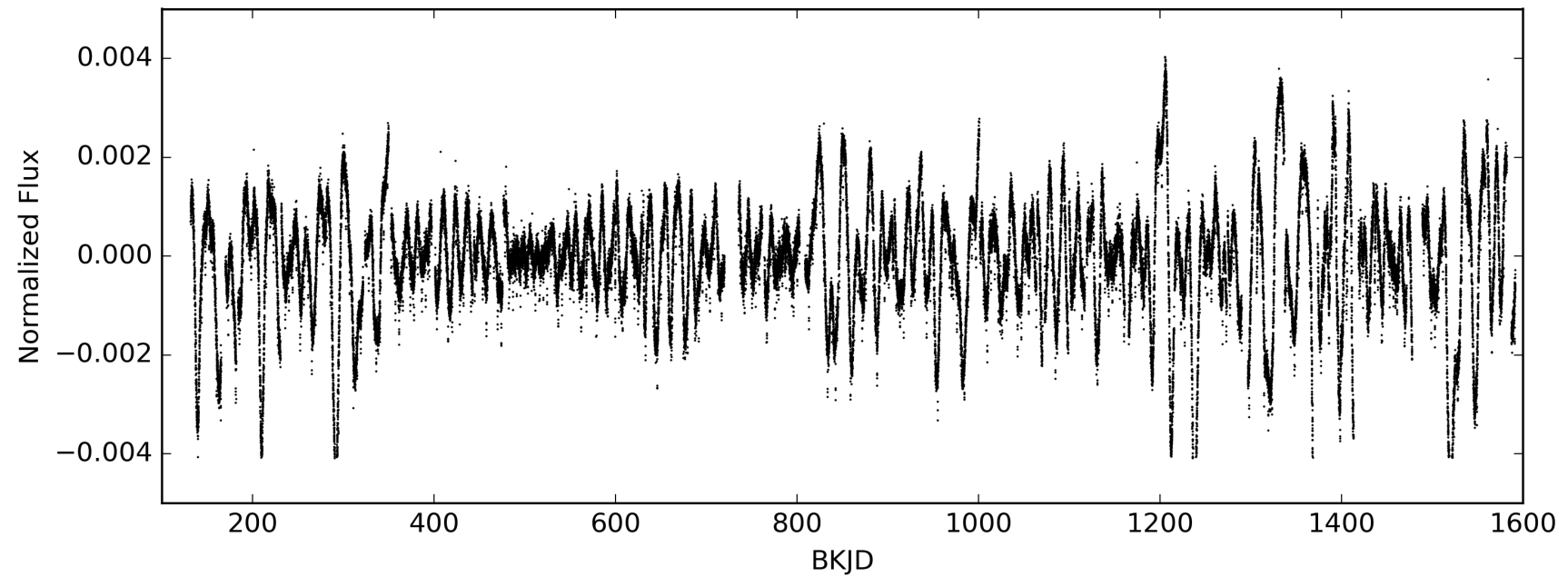
ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [307/307]
GhostDiagnostic-chr: 6.381
Centroid-sig: 0.0%
Centroid-so: 0.290 arcsec [4.69 σ]
OotOffset-rm: 0.022 arcsec [0.31 σ]
KicOffset-rm: 0.247 arcsec [3.15 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009702072-01, PDC Light Curves



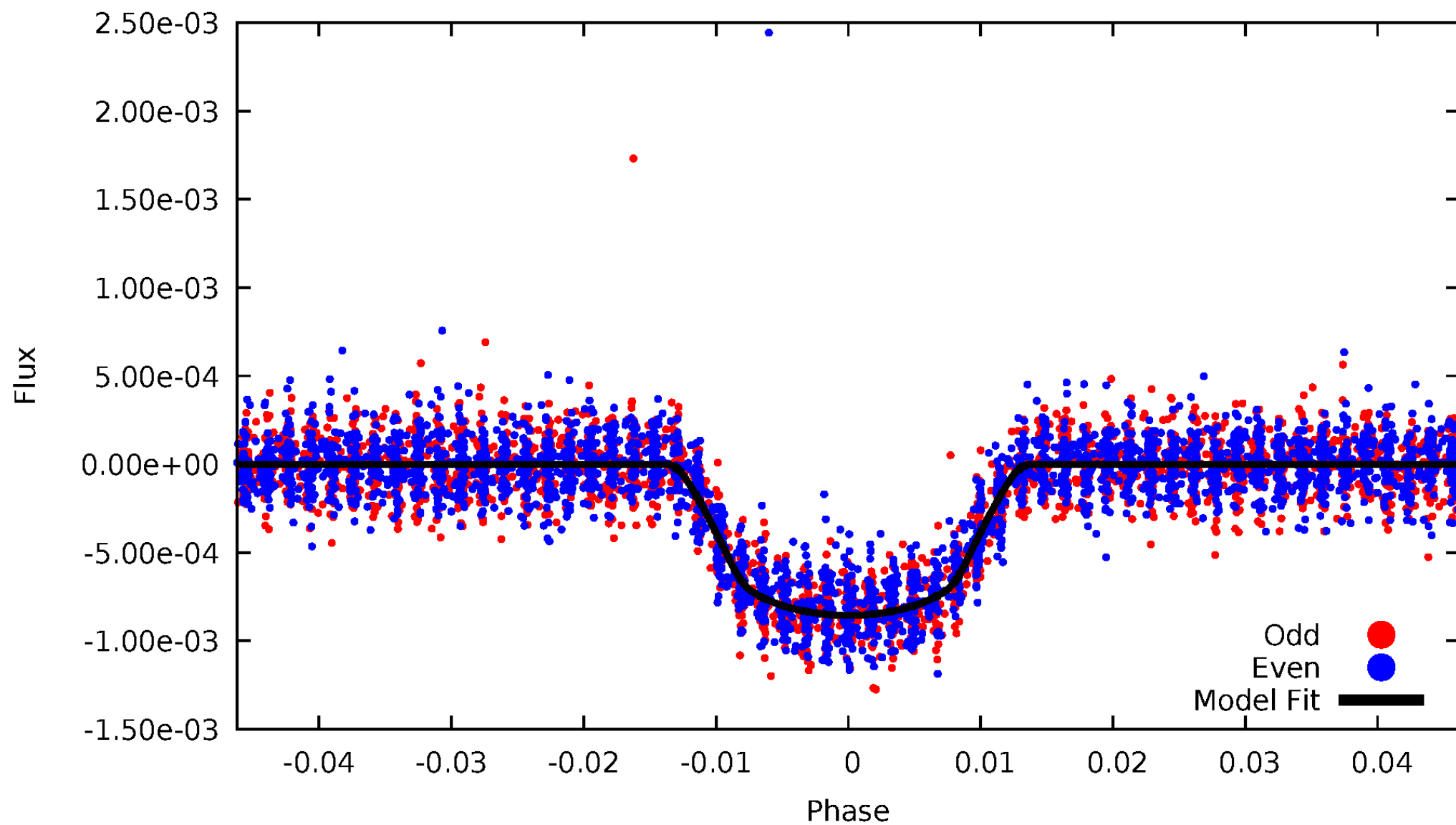
TCE 009702072-01

— P = 2.091 days — P = 4.182 days — P = 8.364 days



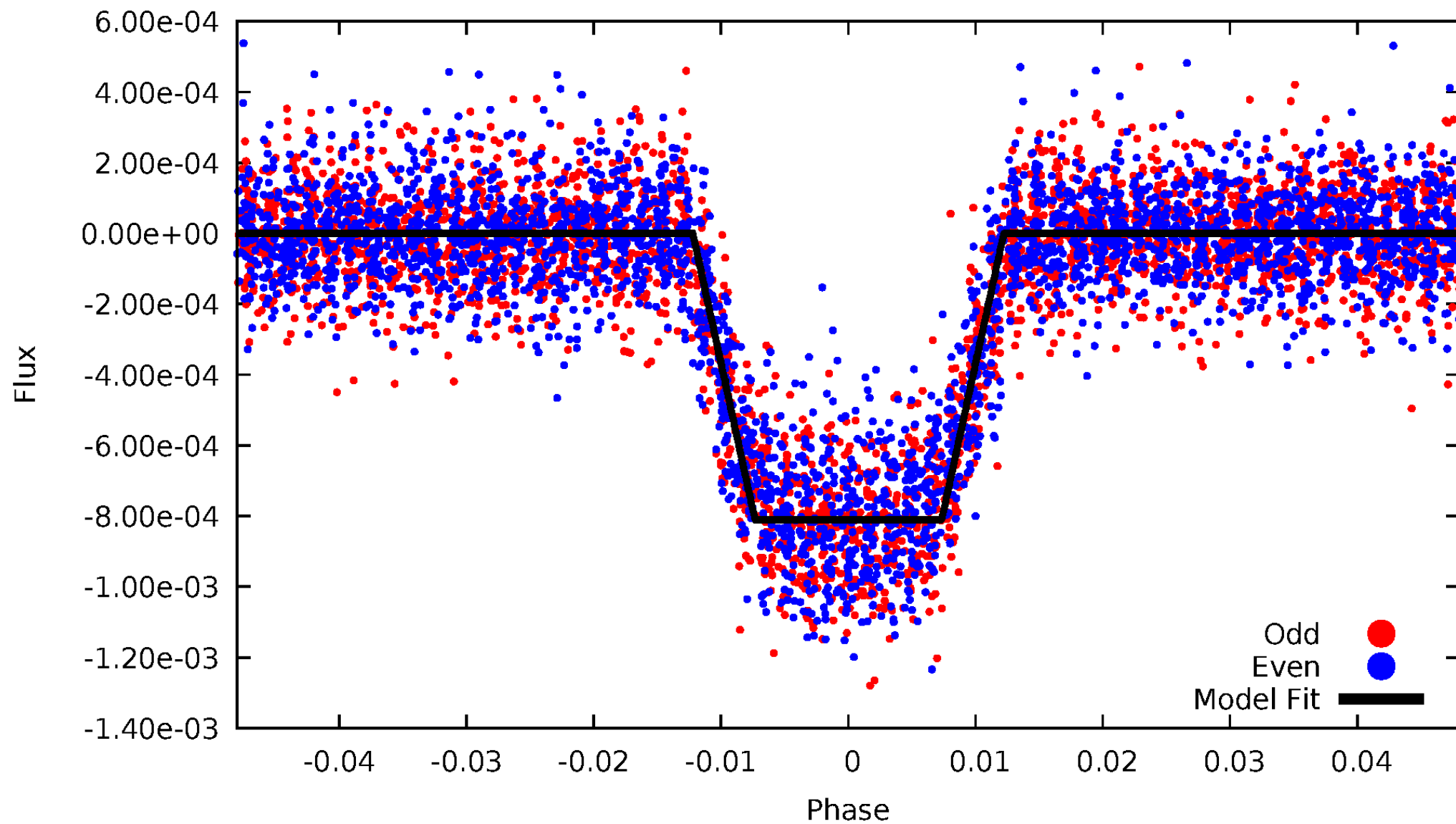
DV Odd/Even

TCE 009702072-01



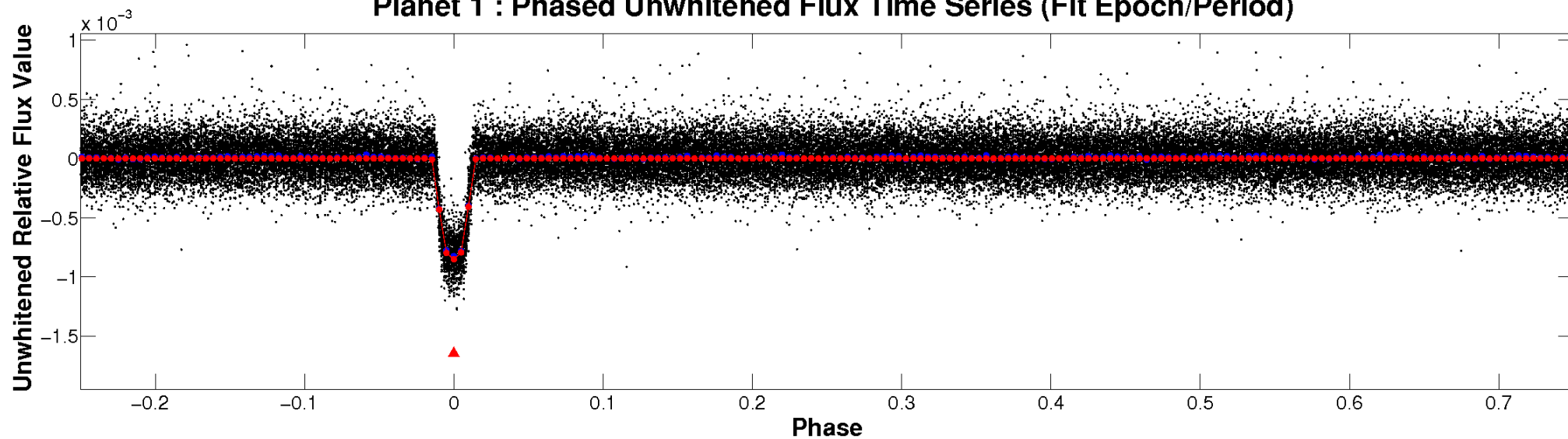
ALT Odd/Even

TCE 009702072-01

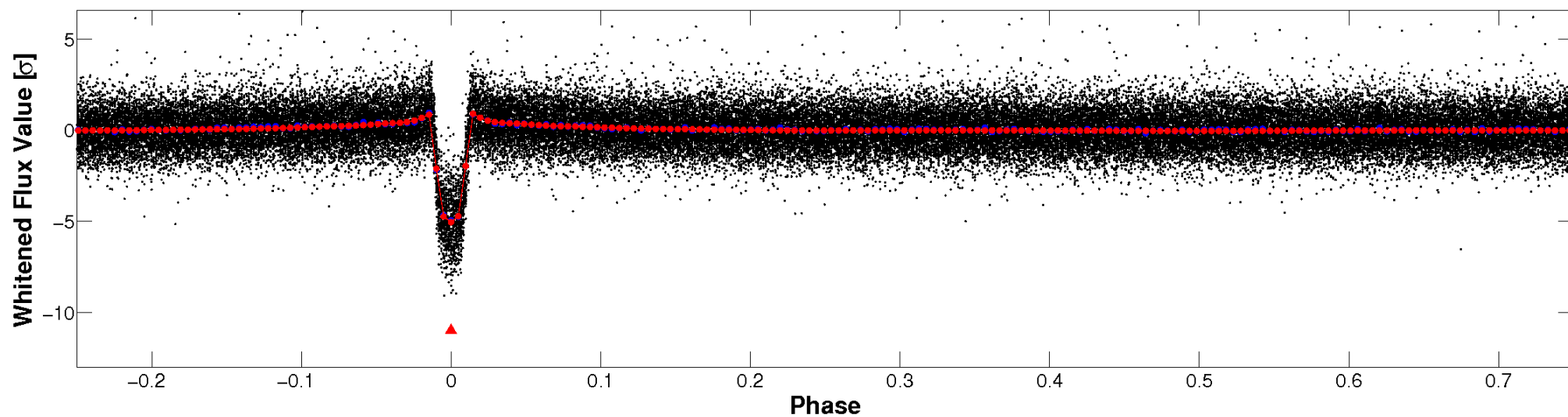


Non-Whitened Vs. Whitened Light Curve

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

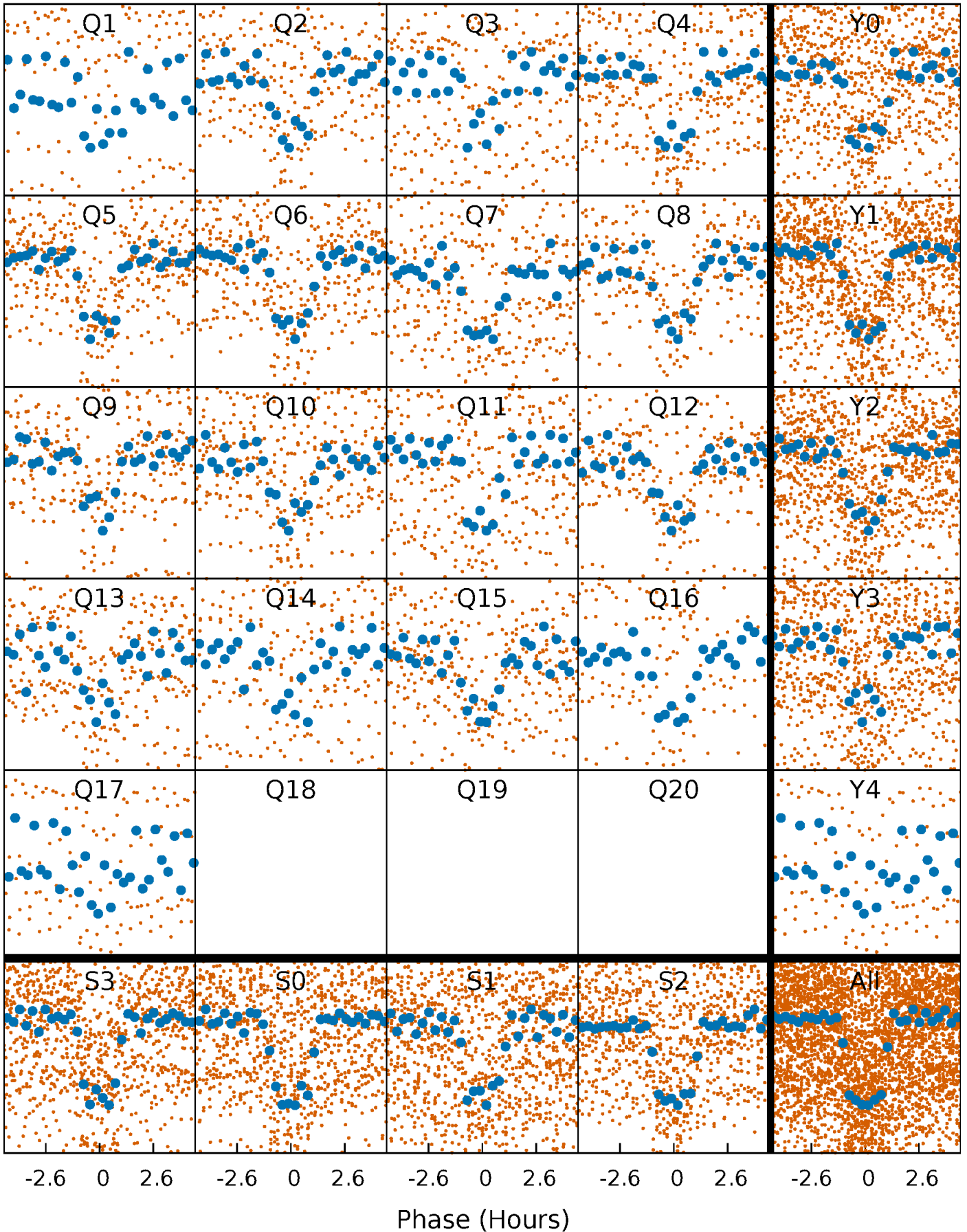


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



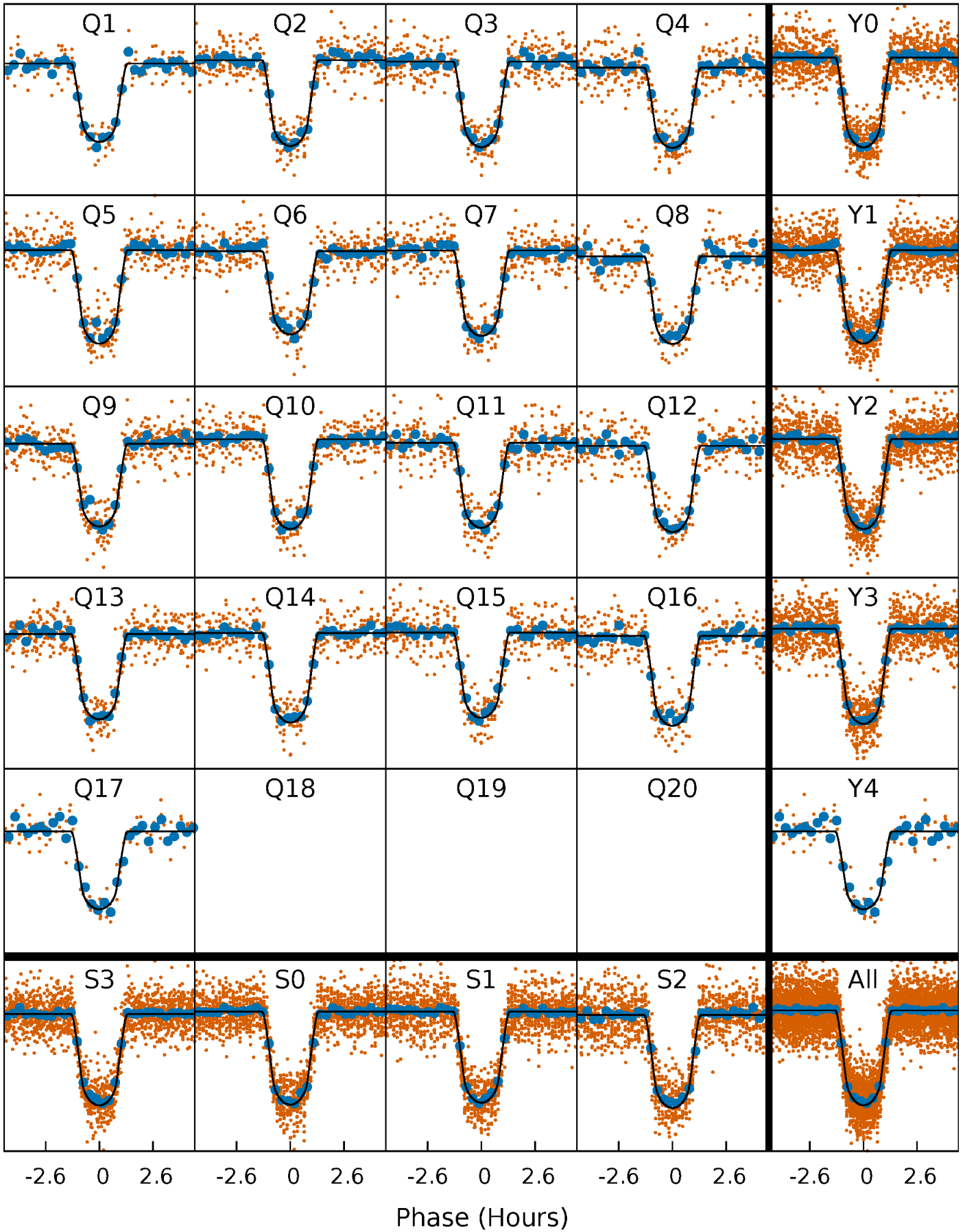
PDC Quarter-Phased Transit Curves

TCE 009702072-01 P= 4.182002 Days $T_0=135.151463$ (BKJD)



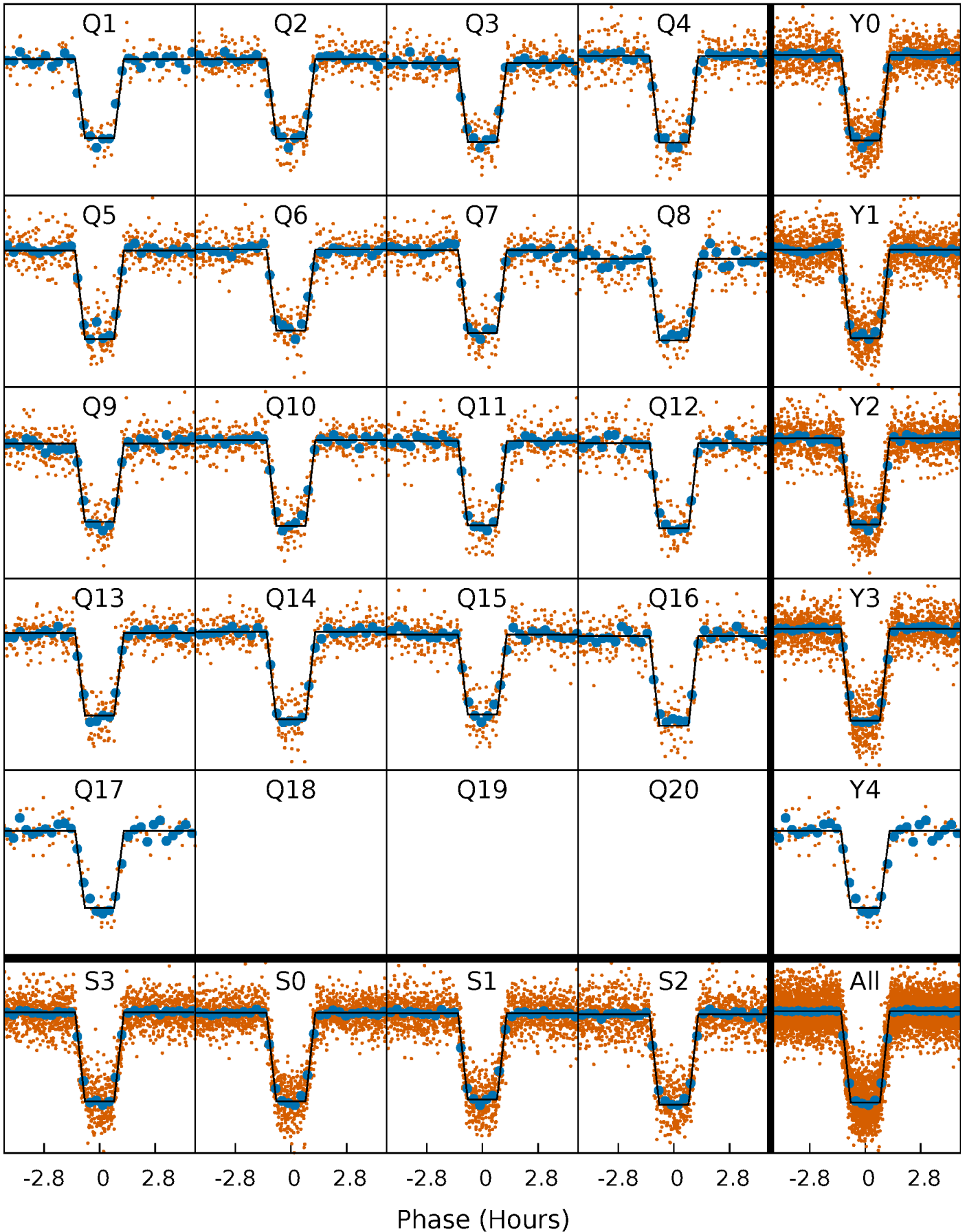
DV Quarter-Phased Transit Curves

TCE 009702072-01 P= 4.182002 Days $T_0=135.151463$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

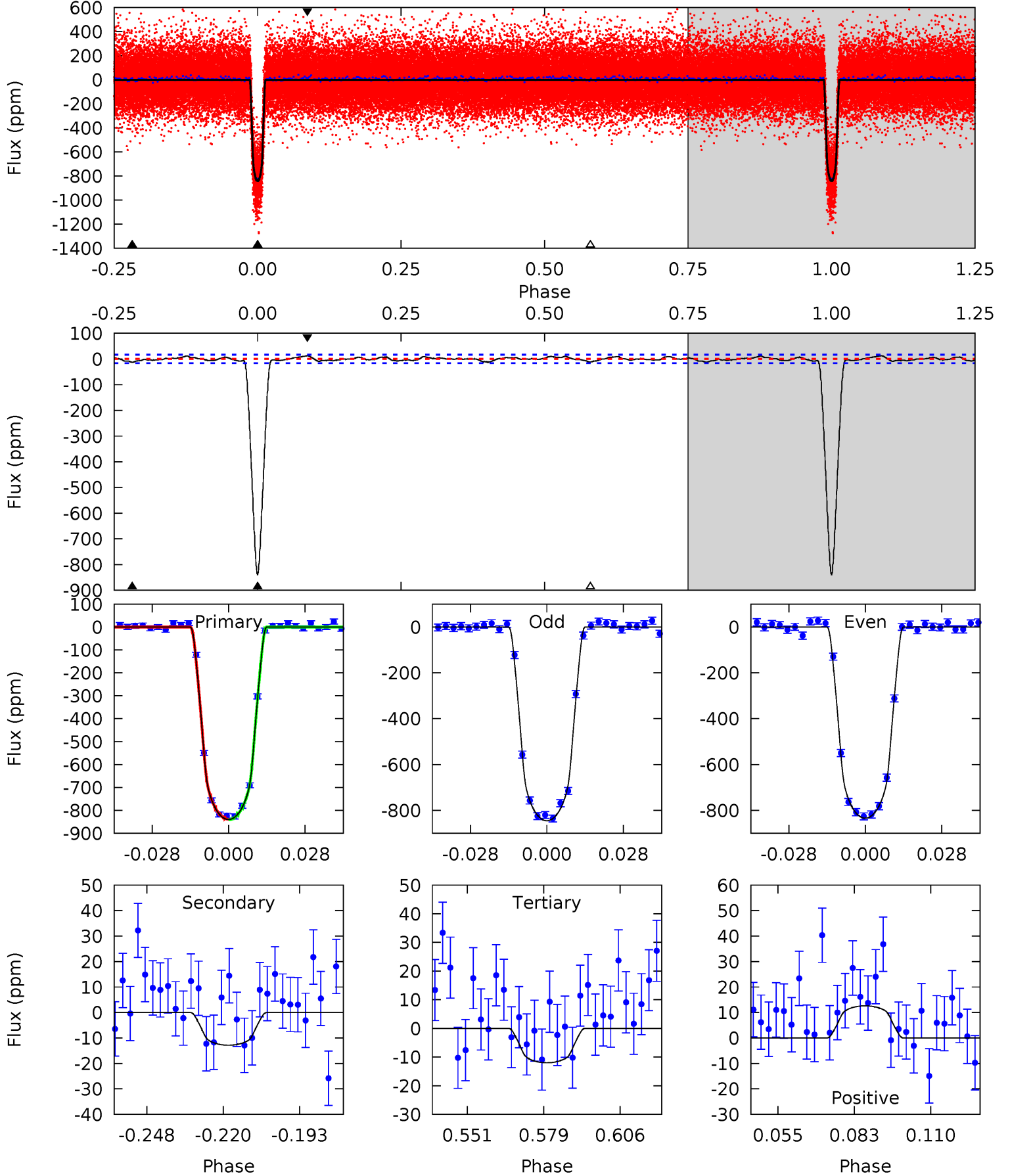
TCE 009702072-01 P= 4.181989 Days $T_0=135.153569$ (BKJD)



DV Model-Shift Uniqueness Test

009702072-01, P = 4.182002 Days, E = 130.969461 Days

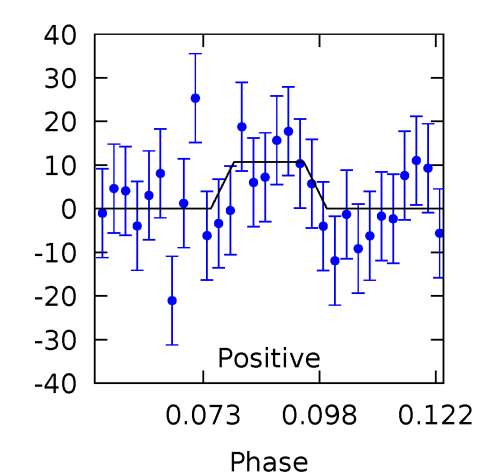
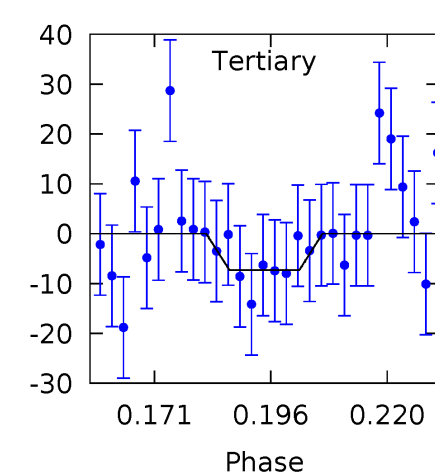
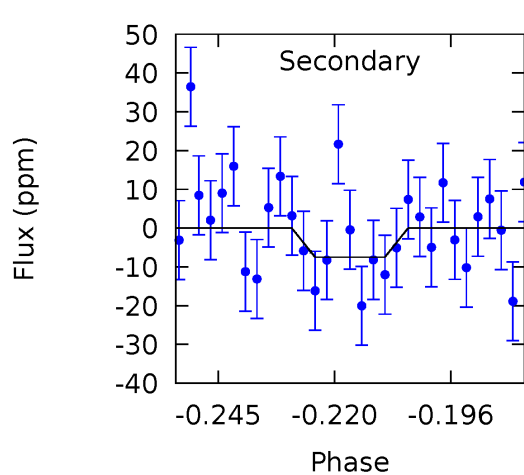
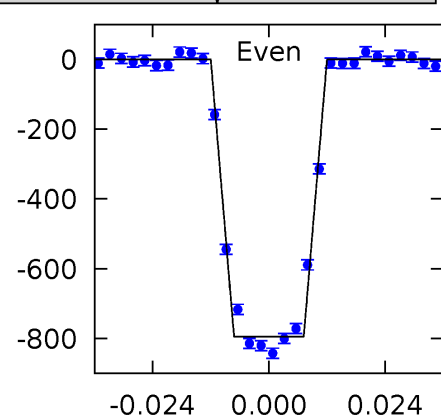
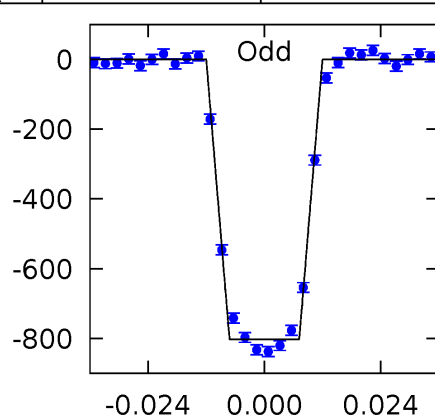
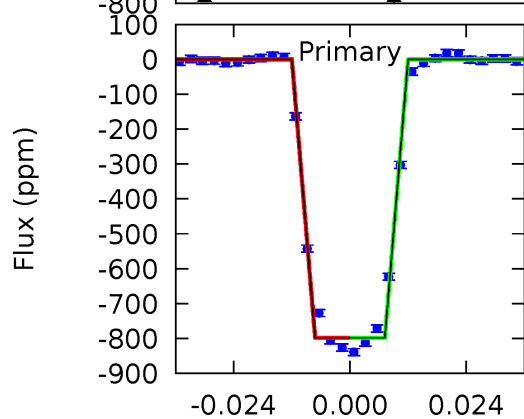
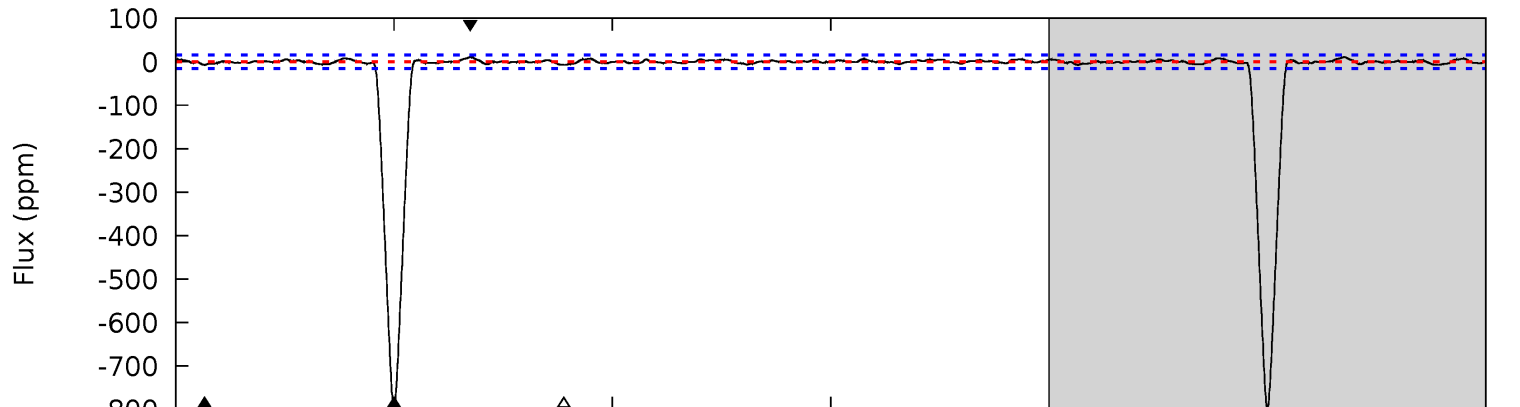
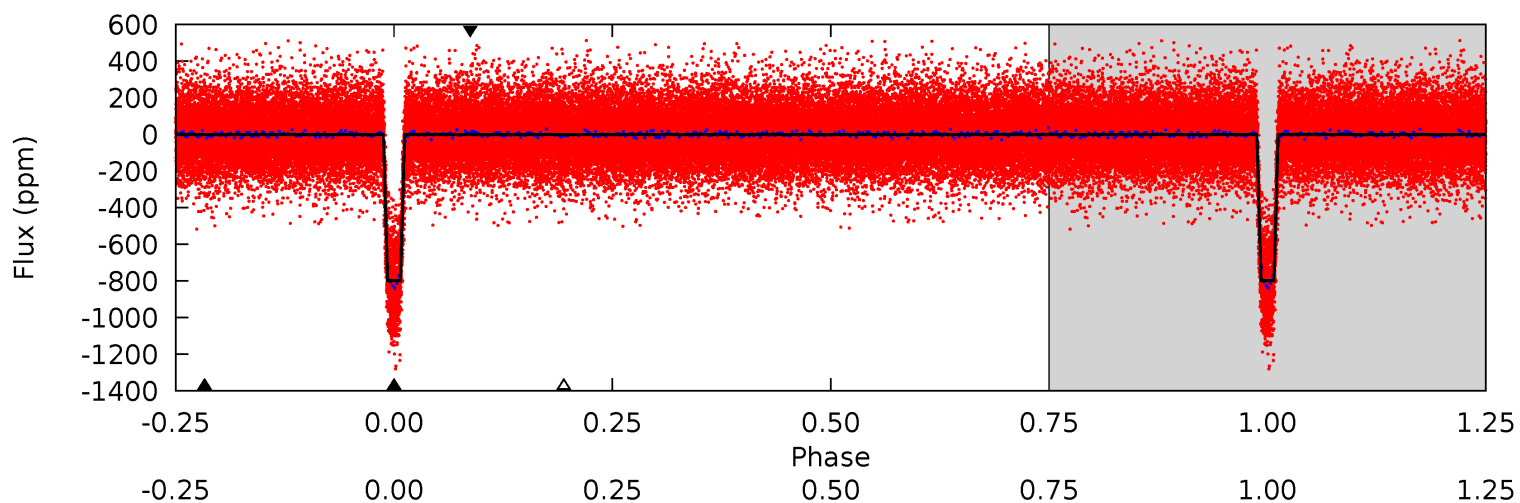
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
247.6	3.79	3.54	3.72	4.83	2.20	1.52	244.0	243.9	0.25	0.07	1.64	0.99	0.01	0.35



Alt Model-Shift Uniqueness Test

009702072-01, P = 4.181989 Days, E = 130.971580 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
250.1	2.35	2.30	3.36	4.85	2.25	0.98	247.8	246.7	0.05	-1.01	1.18	1.00	0.01	0.15



Stellar Parameters For KIC 009702072

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5328^{+106}_{-106}	$4.551^{+0.018}_{-0.102}$	$0.320^{+0.100}_{-0.150}$	$0.865^{+0.092}_{-0.035}$	$0.971^{+0.025}_{-0.074}$	$2.110^{+0.173}_{-0.601}$
	+2%/-2%	+0%/-2%	+31%/-47%	+11%/-4%	+3%/-8%	+8%/-28%
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 009702072-01 / KOI 0714.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-13 ± 3	$2.90^{+0.20}_{-0.16}$	1380^{+41}_{-35}	2586^{+98}_{-116}	$2.113^{+0.628}_{-0.564}$
Alt.	-7 ± 3	$2.73^{+0.22}_{-0.17}$	1379^{+44}_{-39}	2421^{+144}_{-204}	$1.351^{+0.644}_{-0.559}$

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

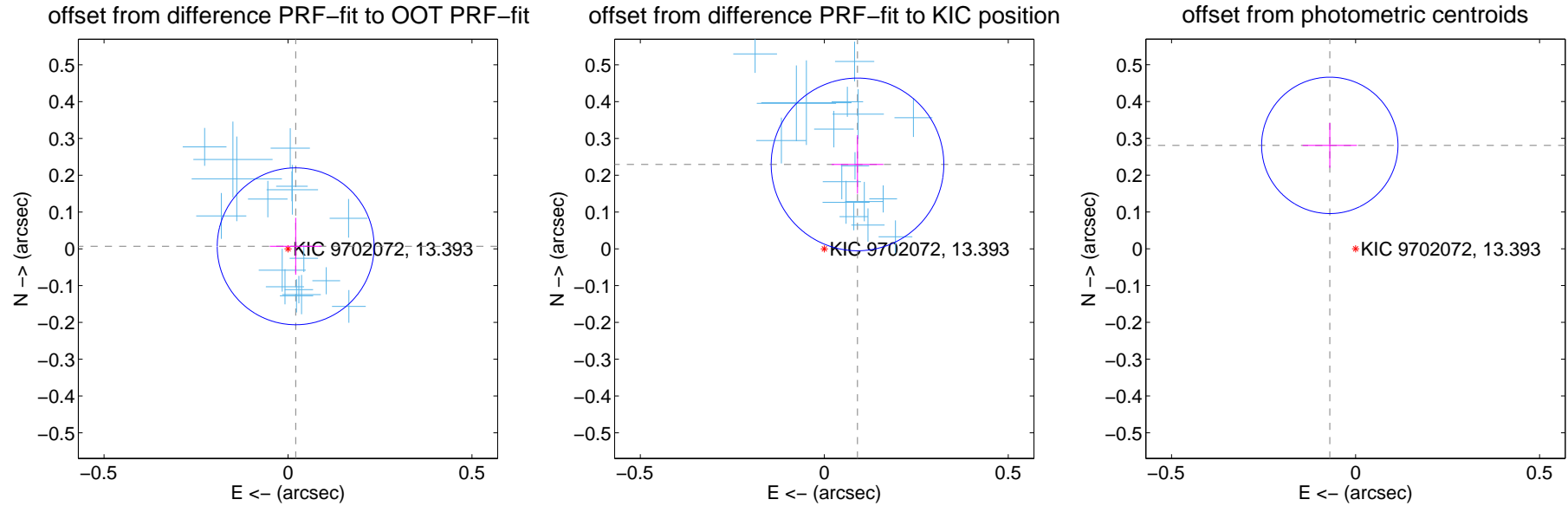
DV Centroid Data

Supplemental centroid analysis for 009702072-01. Kepler magnitude: 13.39. Transit SNR 162.24

There are 17 quarters with good PRF difference image offsets

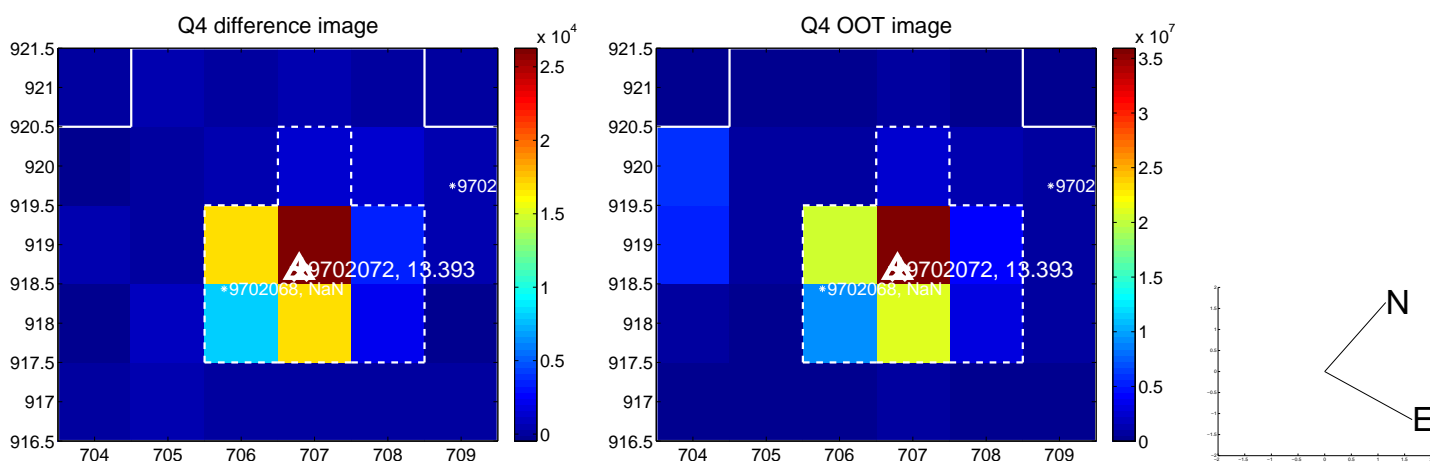
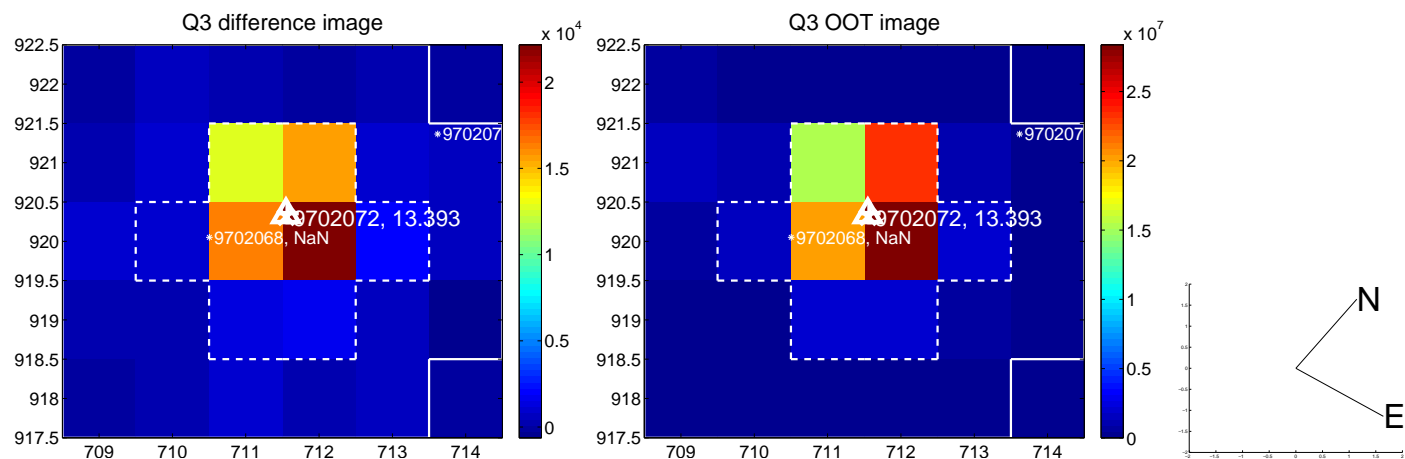
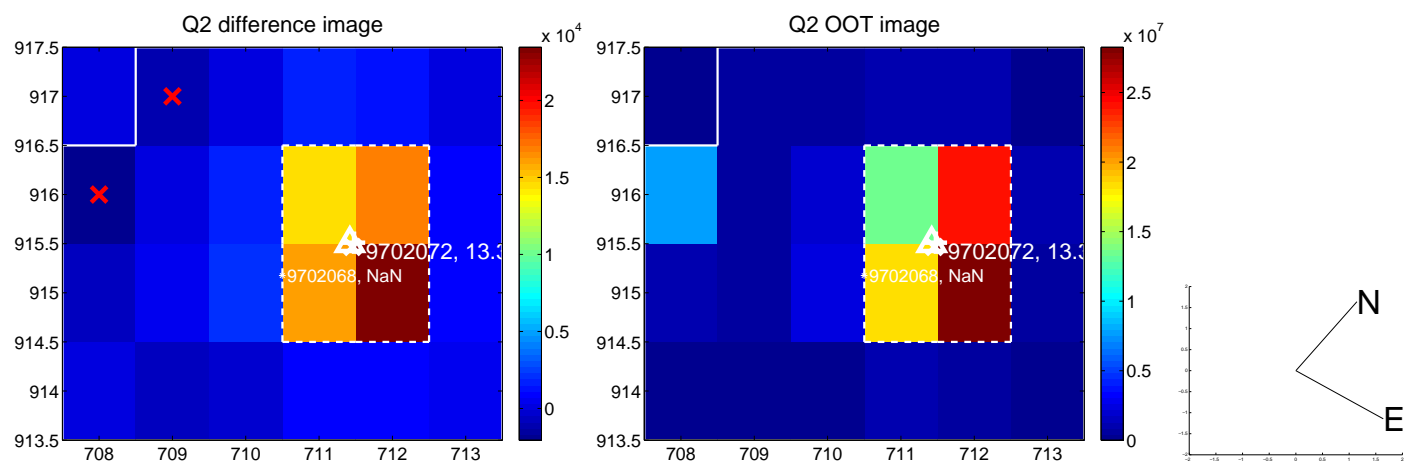
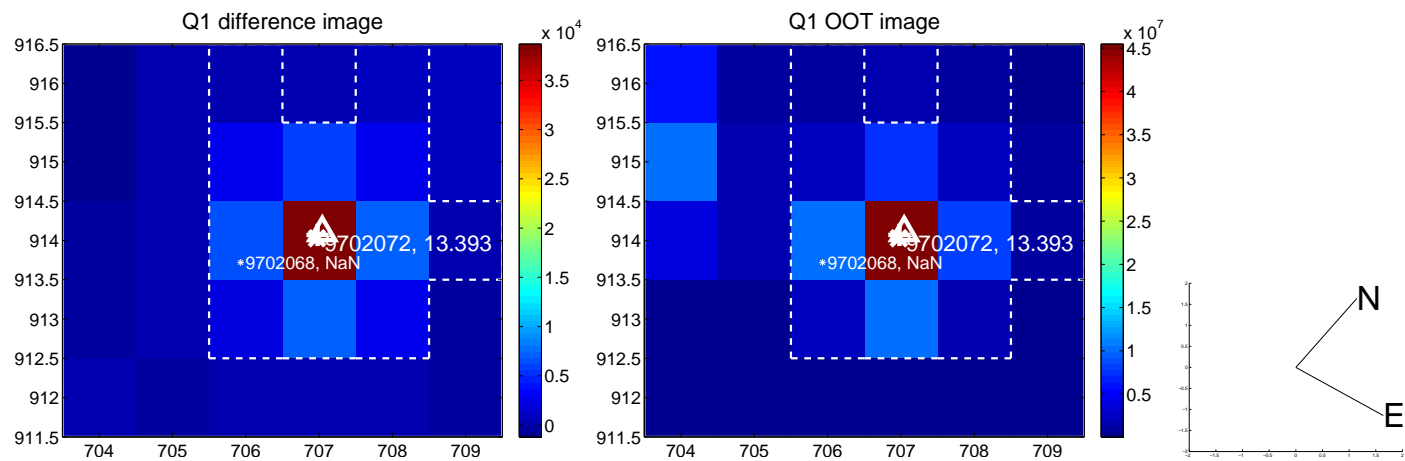
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.022 ± 0.071	0.31	-0.021 ± 0.070	0.007 ± 0.077
PRF-fit source offset from KIC position	0.247 ± 0.078	3.15	-0.090 ± 0.070	0.229 ± 0.079
photometric centroid source offset	0.29 ± 0.06	4.69	0.07 ± 0.07	0.28 ± 0.06

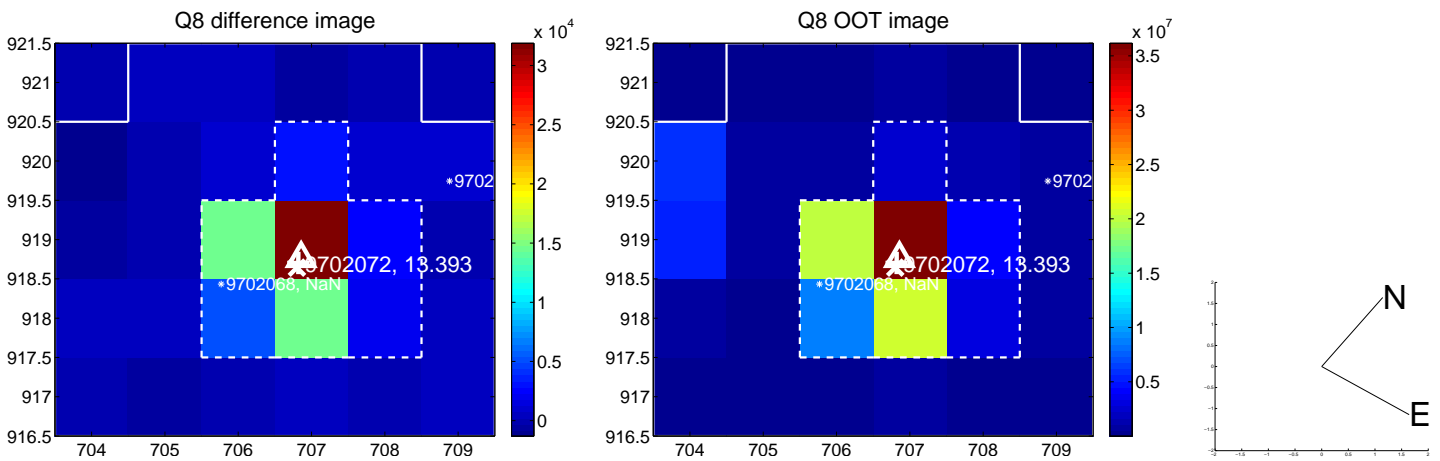
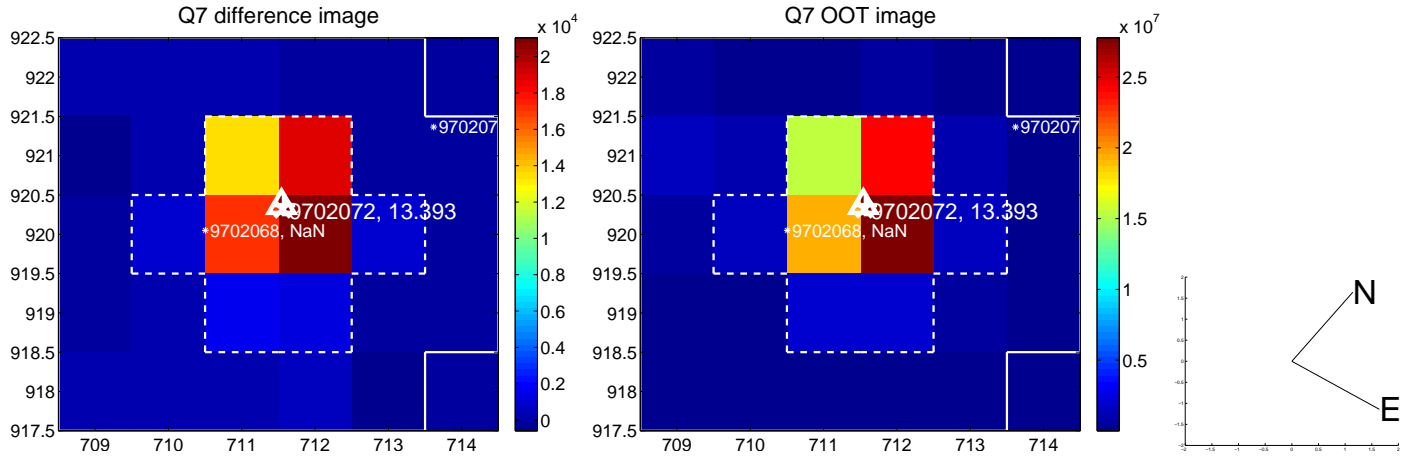
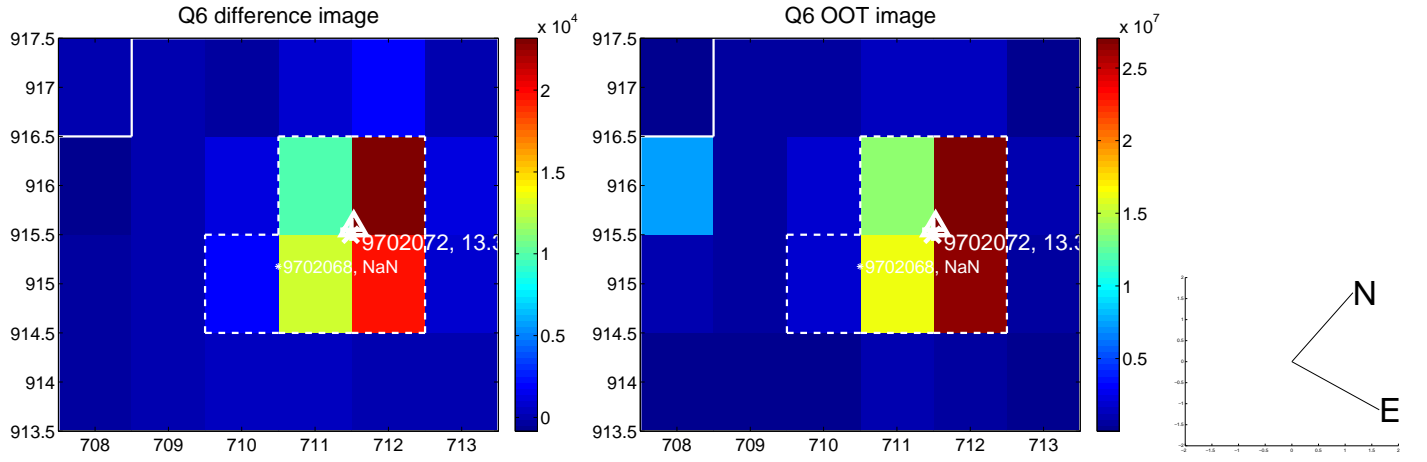
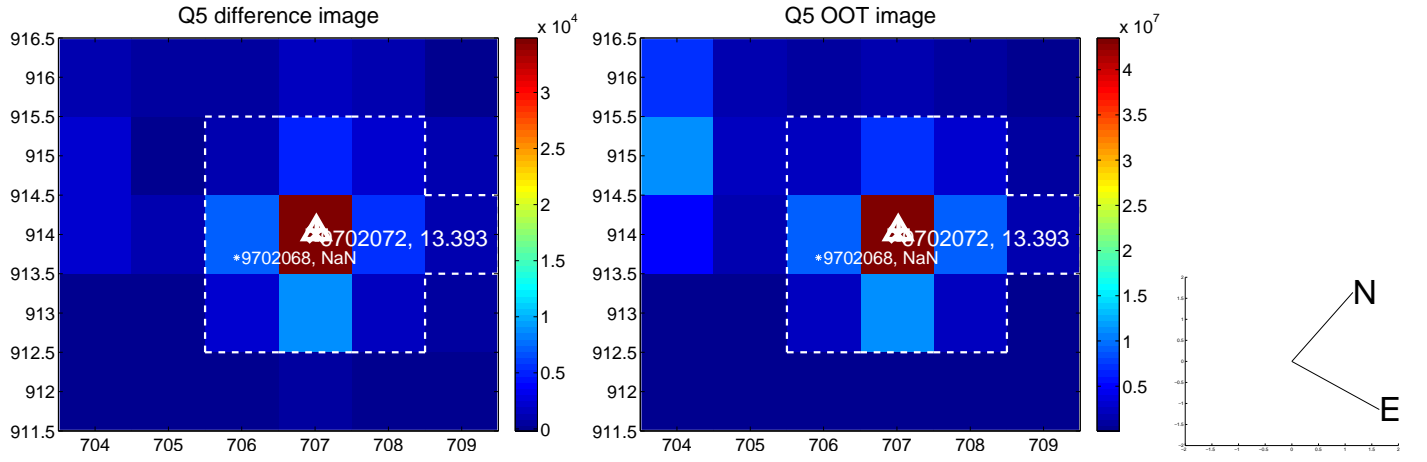


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

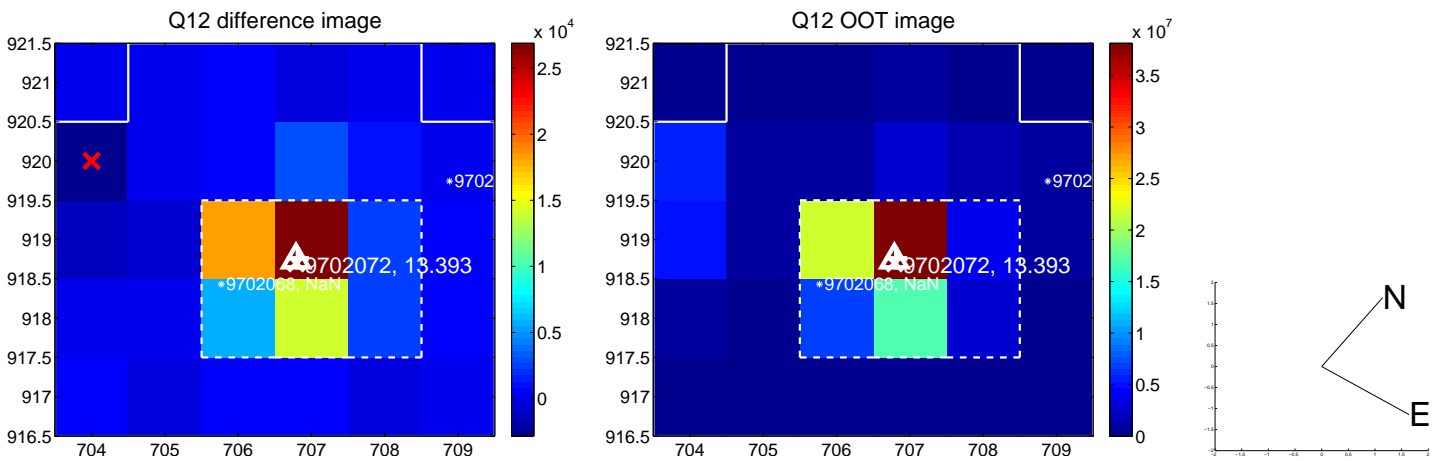
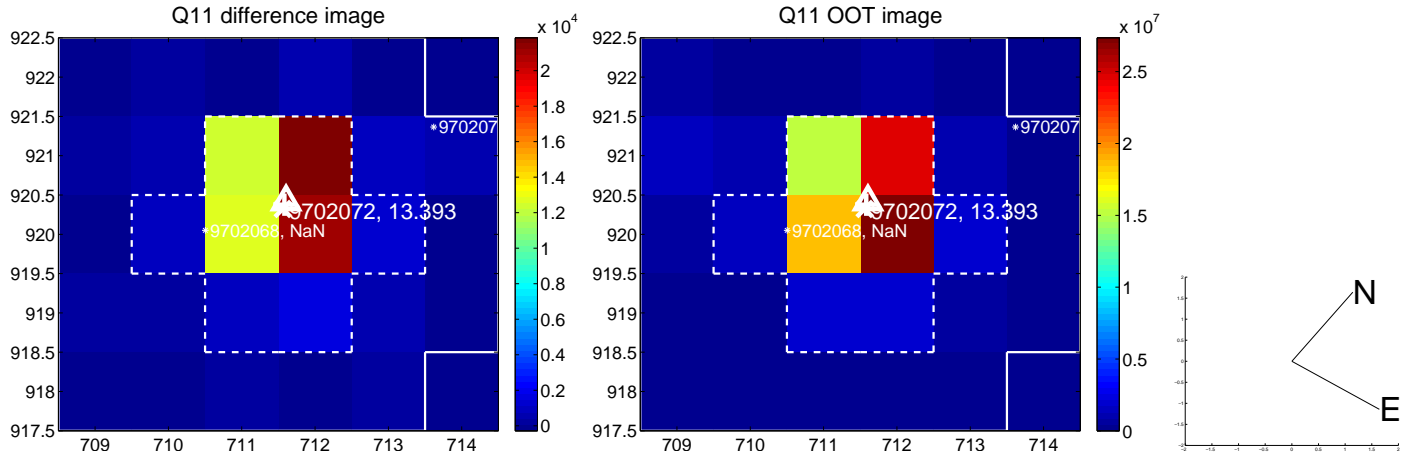
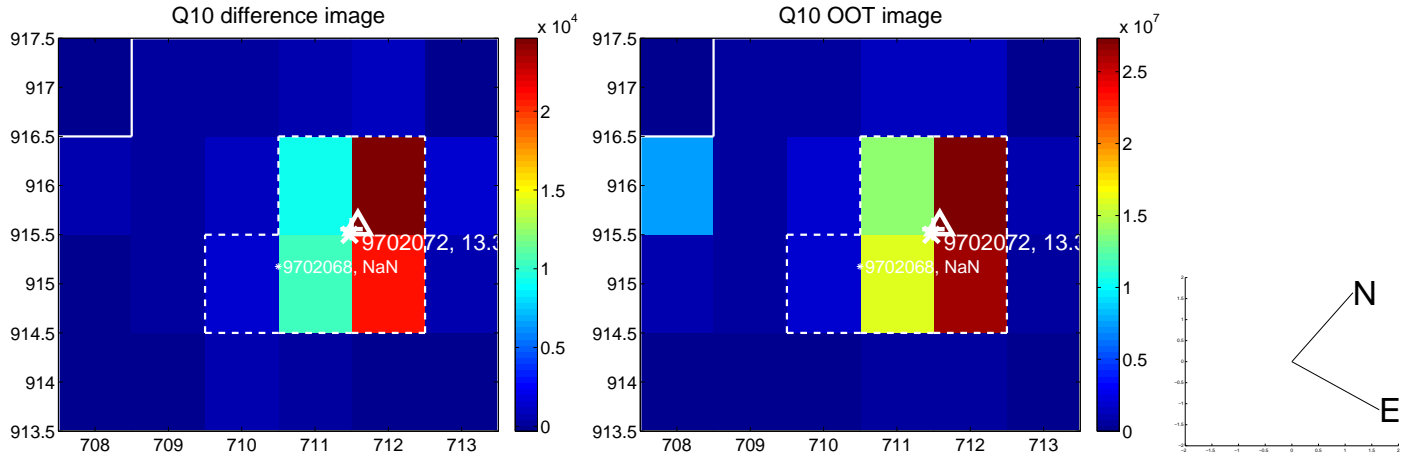
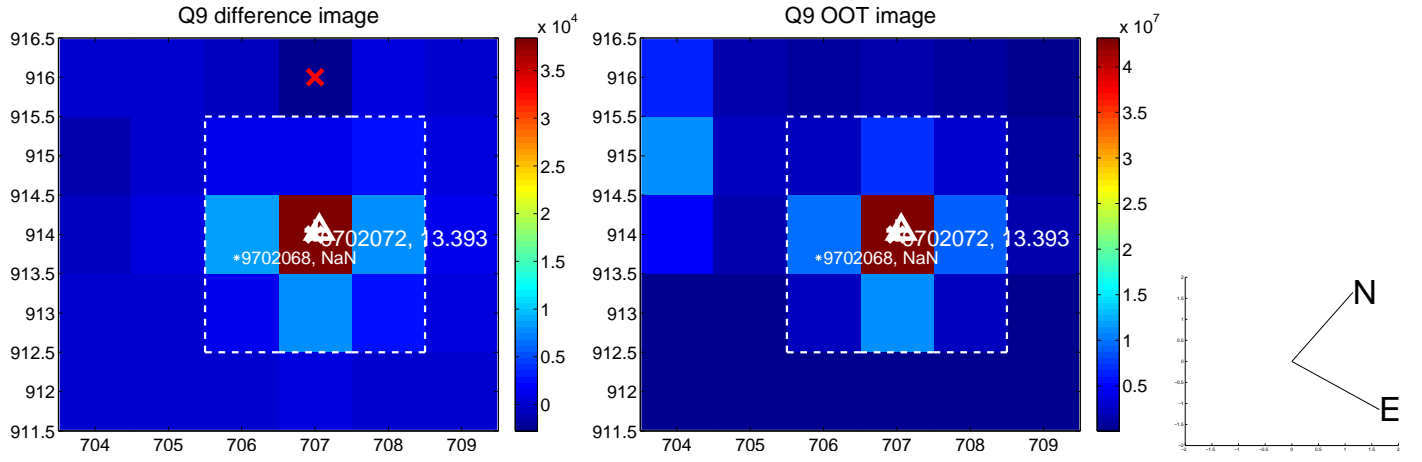
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



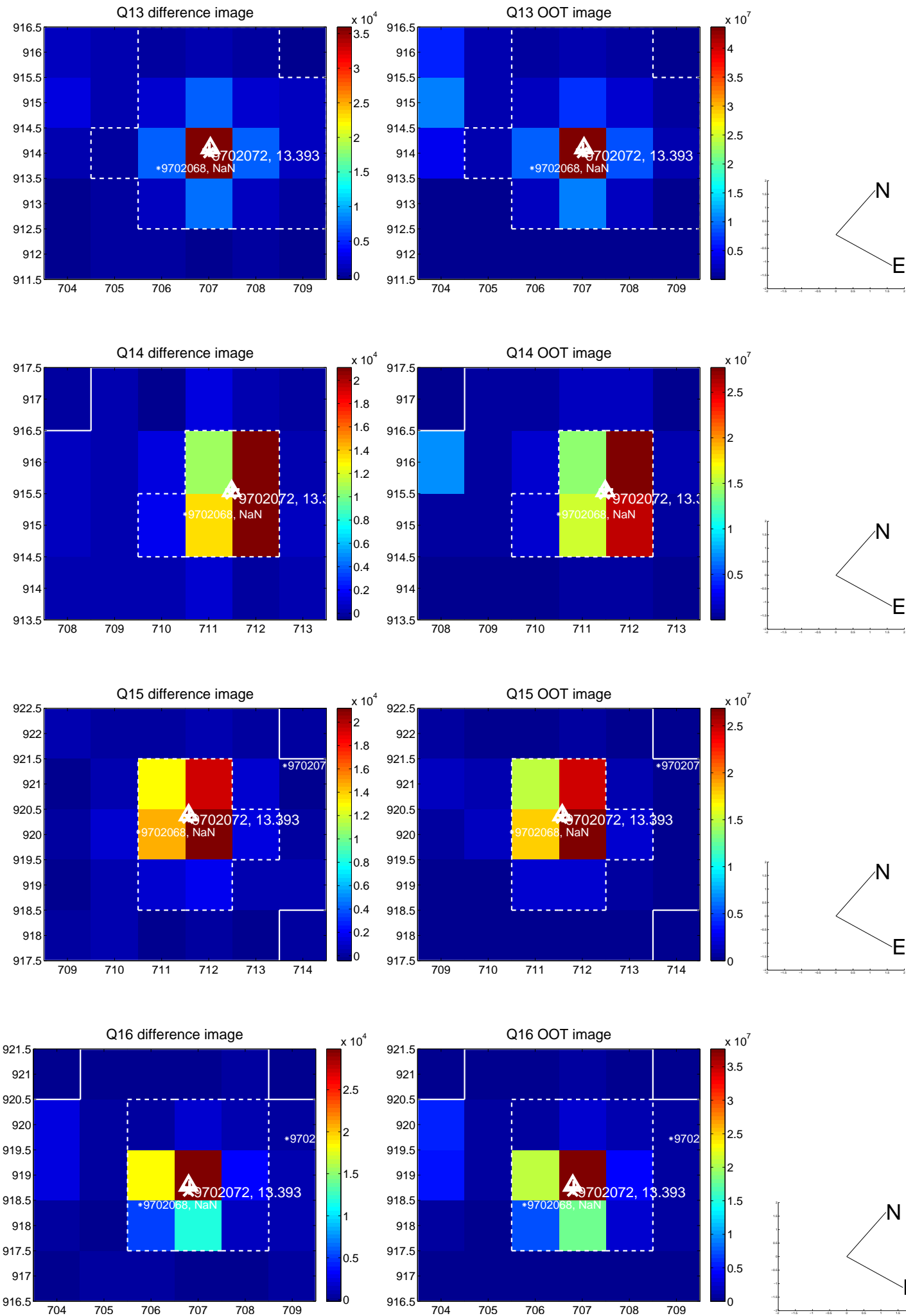
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



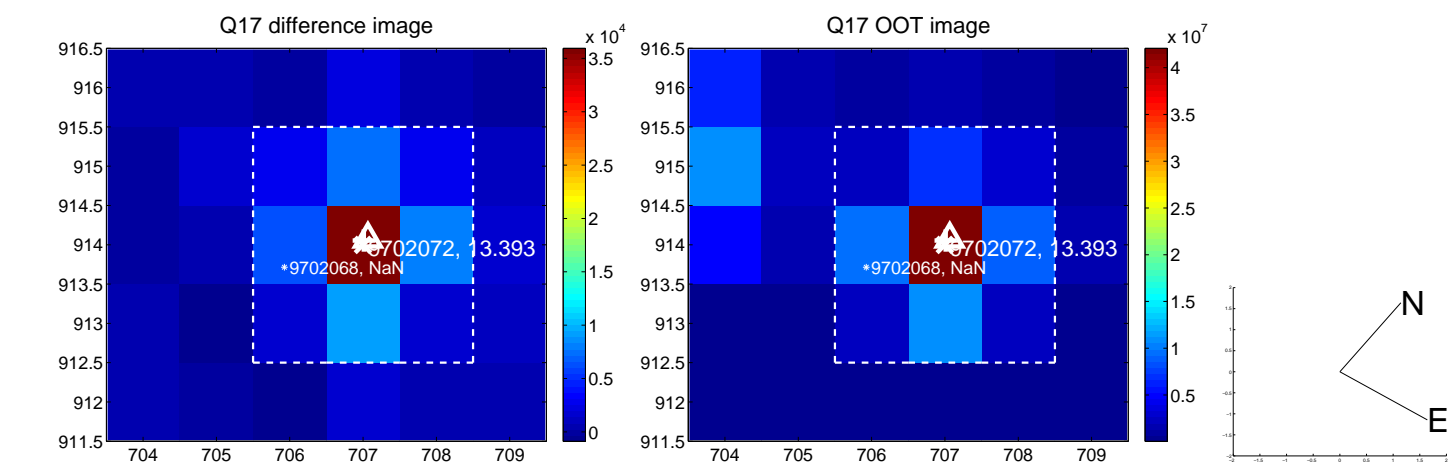
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



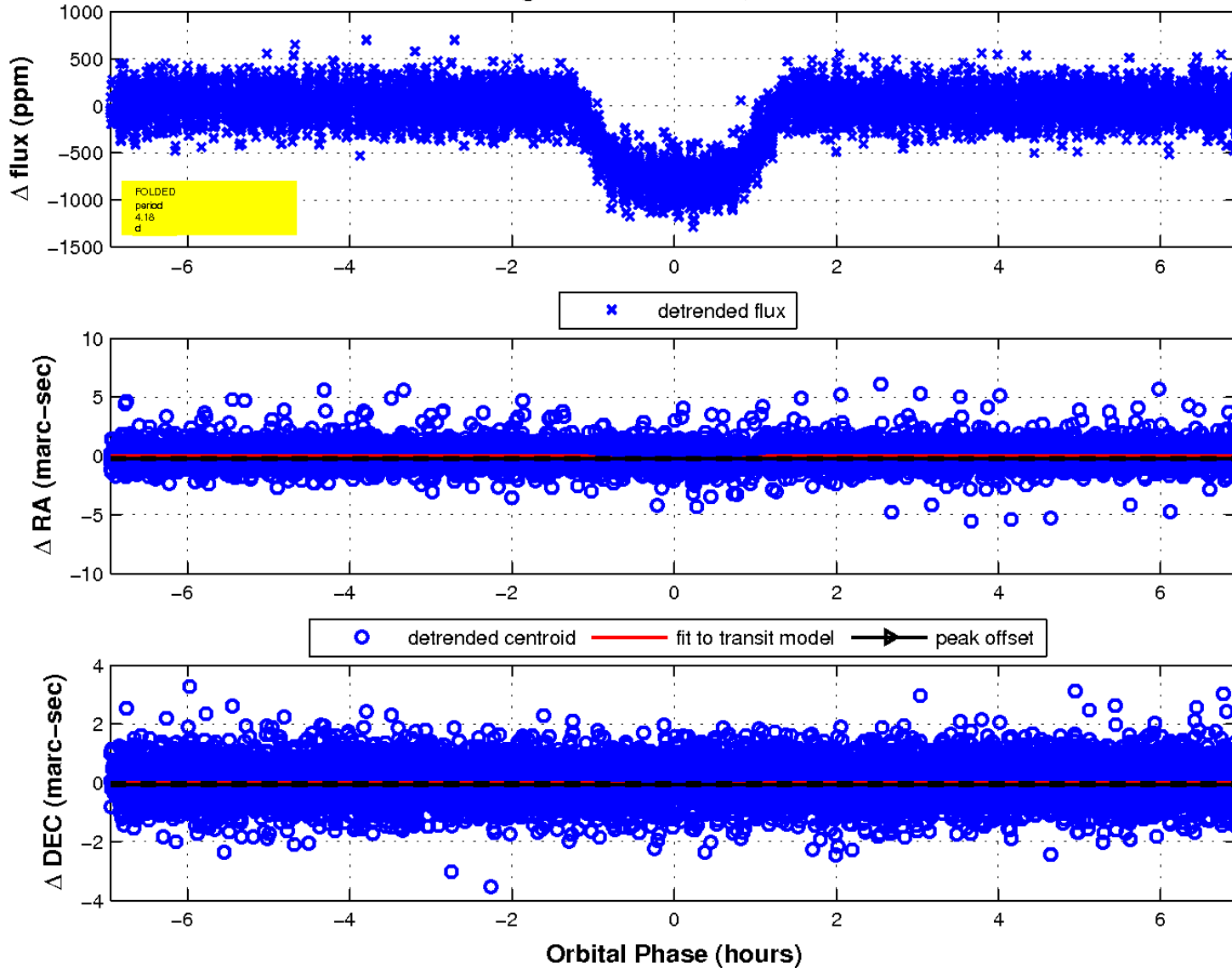
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

