

KIC 007747091

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})
007747091-01	OBS	5418.01	14.268110	133.947202	187.2	5.440	8.0	8.5	0.84	5475	1.33	44.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007747091-01	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 007747091-01

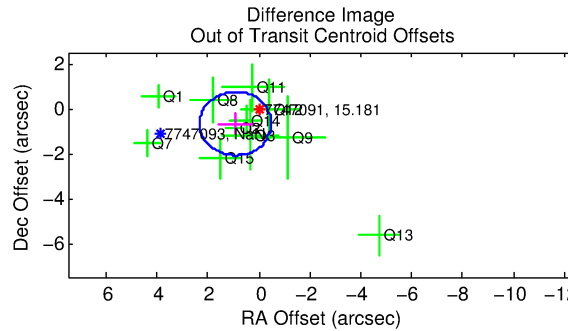
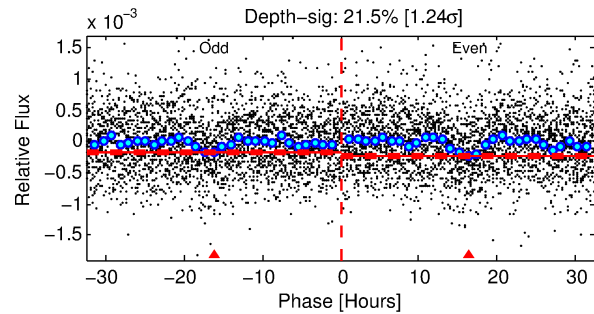
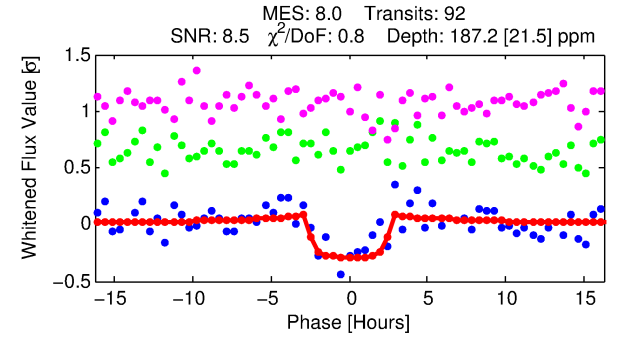
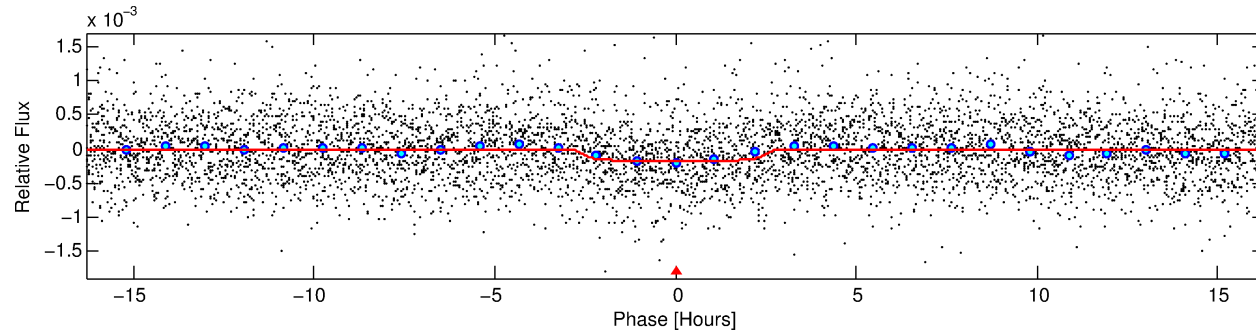
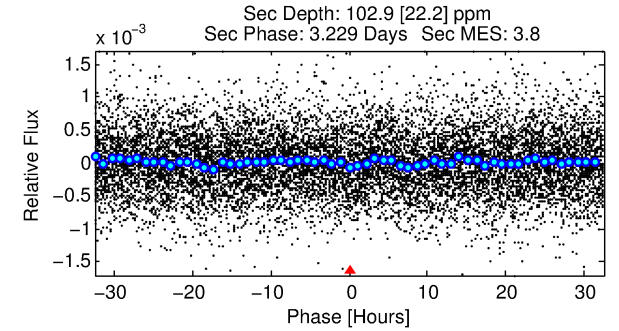
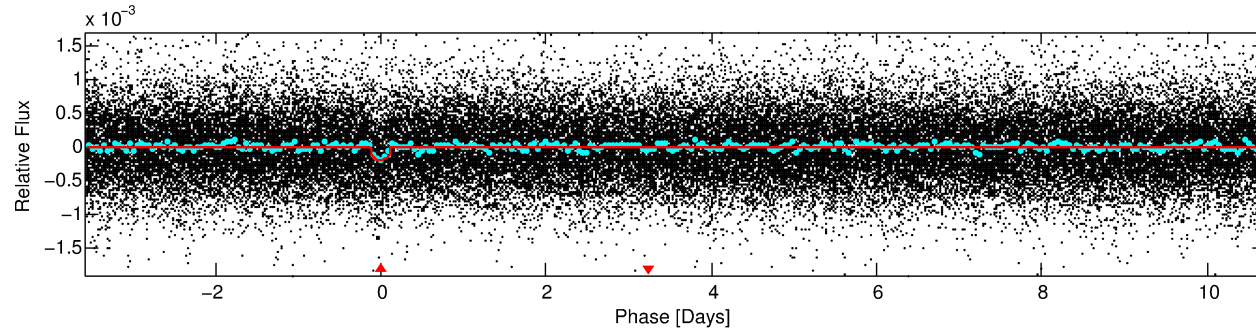
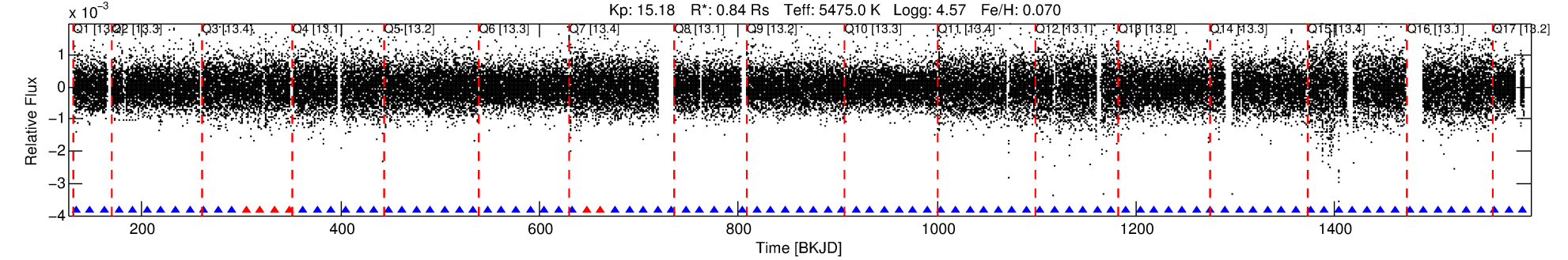
No Significant Match Found

DV One-Page Summary

KIC: 7747091 Candidate: 1 of 1 Period: 14.268 d

KOI: K05418 Corr: No Ephemeris Match

Kp: 15.18 R*: 0.84 Rs Teff: 5475.0 K Logg: 4.57 Fe/H: 0.070



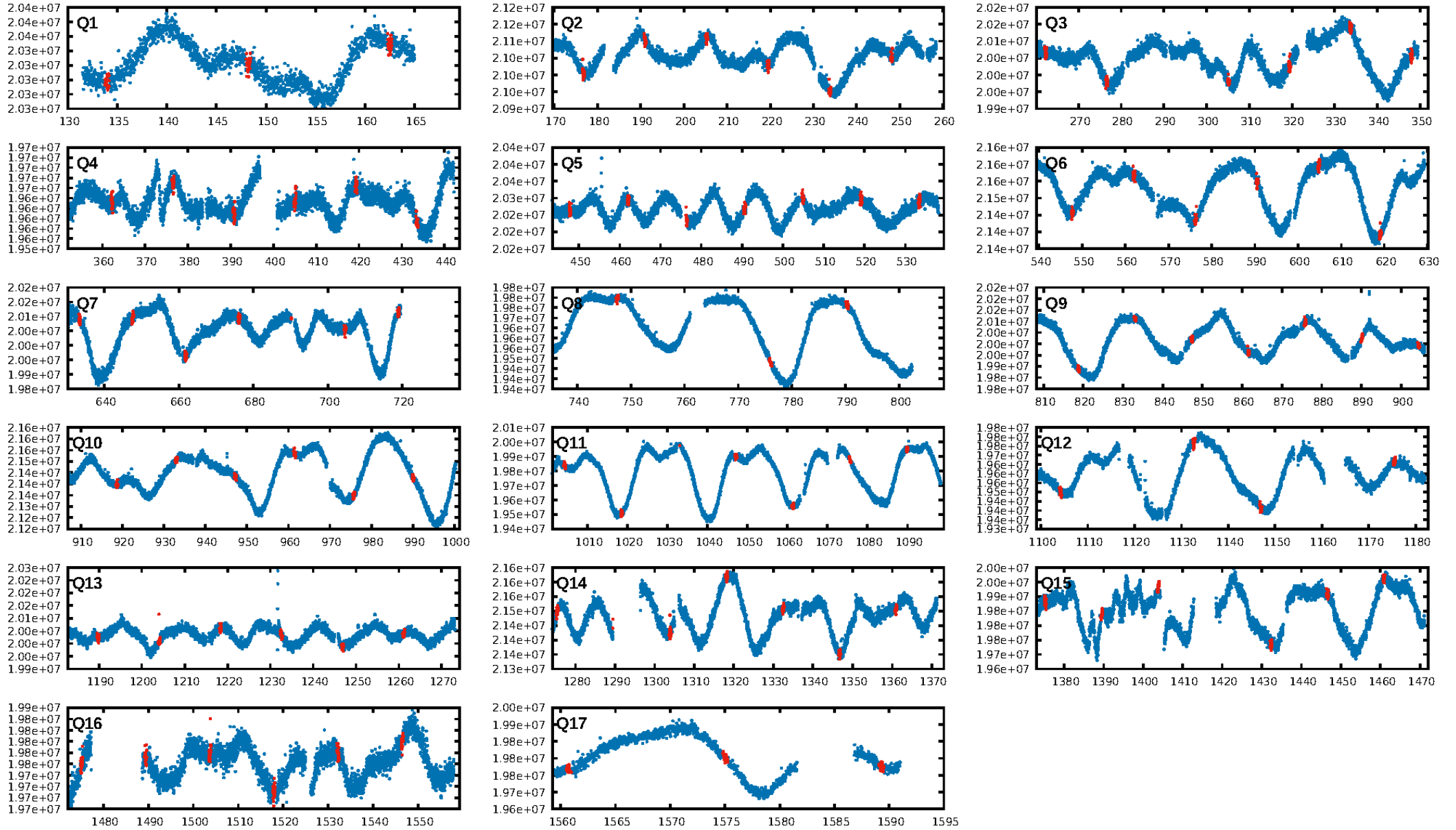
DV Fit Results:

Period = 14.26811 [0.00018] d
Epoch = 133.9472 [0.0098] BKJD
Rp/R* = 0.0145 [0.0070]
a/R* = 10.76 [21.87]
b = 0.86 [0.62]
Seff = 44.23 [14.53]
Teq = 658 [54] K
Rp = 1.33 [0.71] Re
a = 0.1129 [0.0233] AU
Ag = 409.32 [423.54] [0.96σ]
Teffp = 4573 [1138] K [3.44σ]

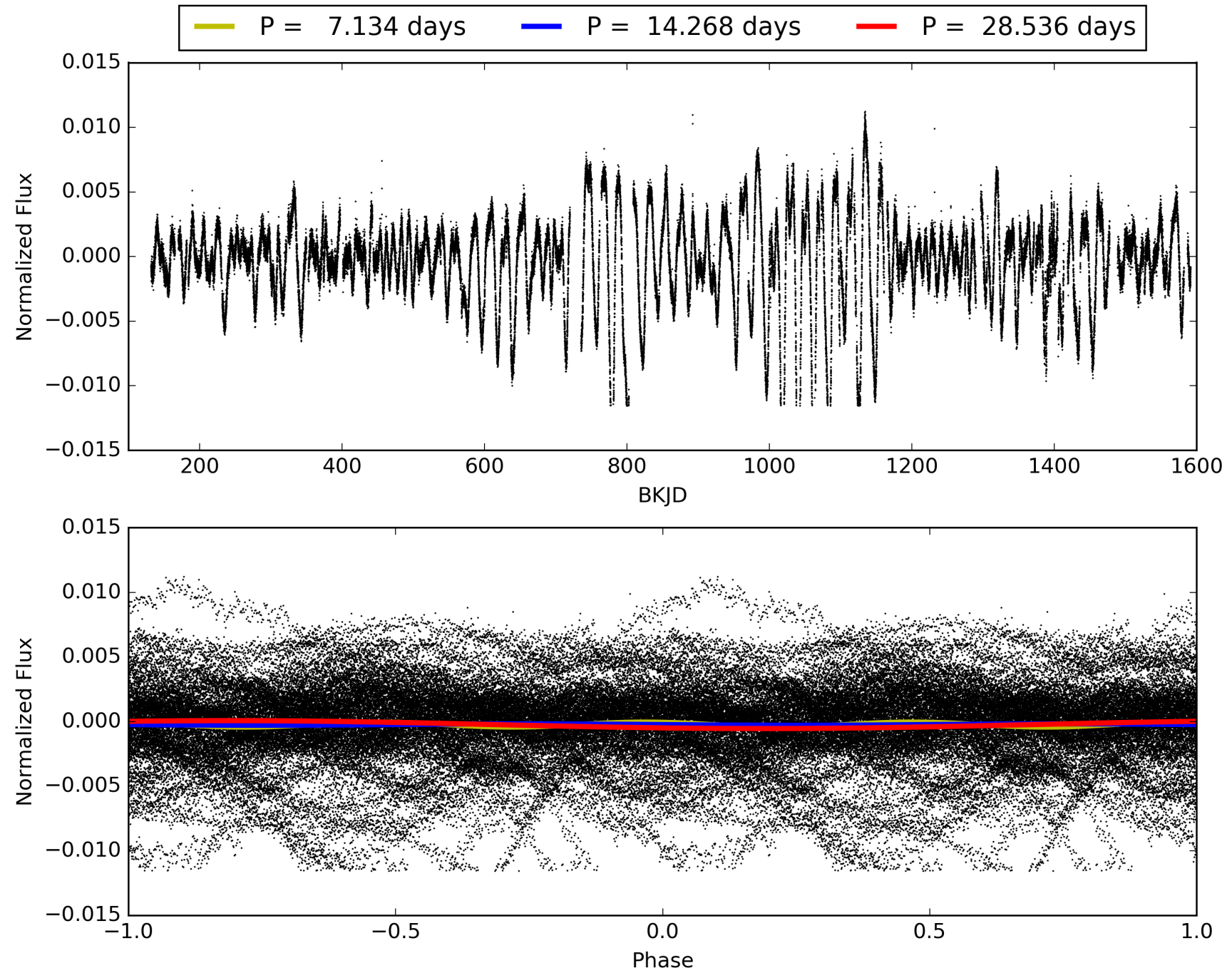
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.06e-15
RollingBand-fgt: 0.93 [80/86]
GhostDiagnostic-chr: -1.309
Centroid-sig: N/A
Centroid-so: 1.205 arcsec [0.99σ]
OotOffset-rm: 1.145 arcsec [2.43σ]
KicOffset-rm: 1.210 arcsec [2.61σ]
OotOffset-st: 2/4/2/3 [11]
KicOffset-st: 2/4/2/3 [11]
DiffImageQuality-fgm: 0.36 [4/11]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 007747091-01, PDC Light Curves

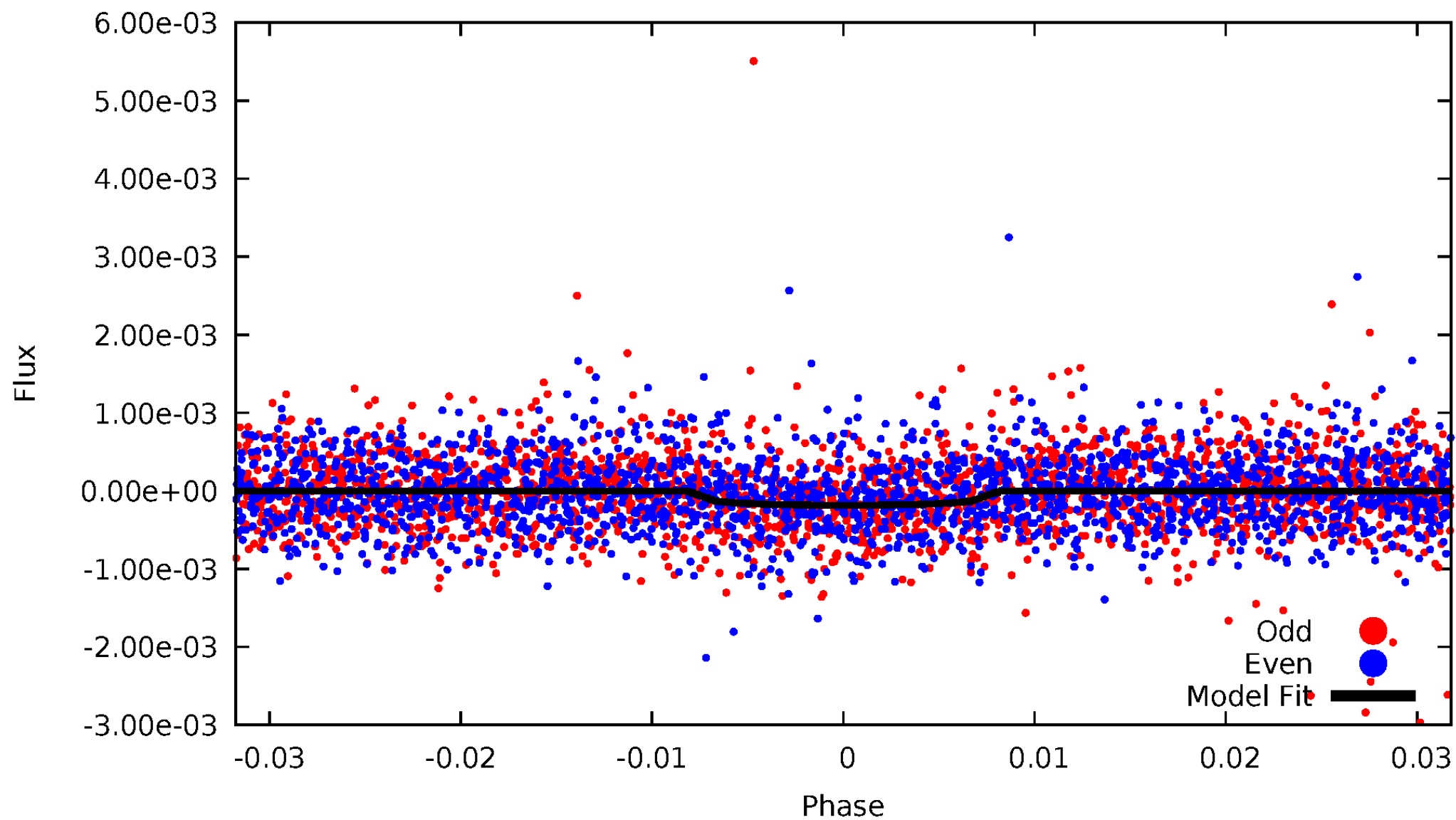


TCE 007747091-01



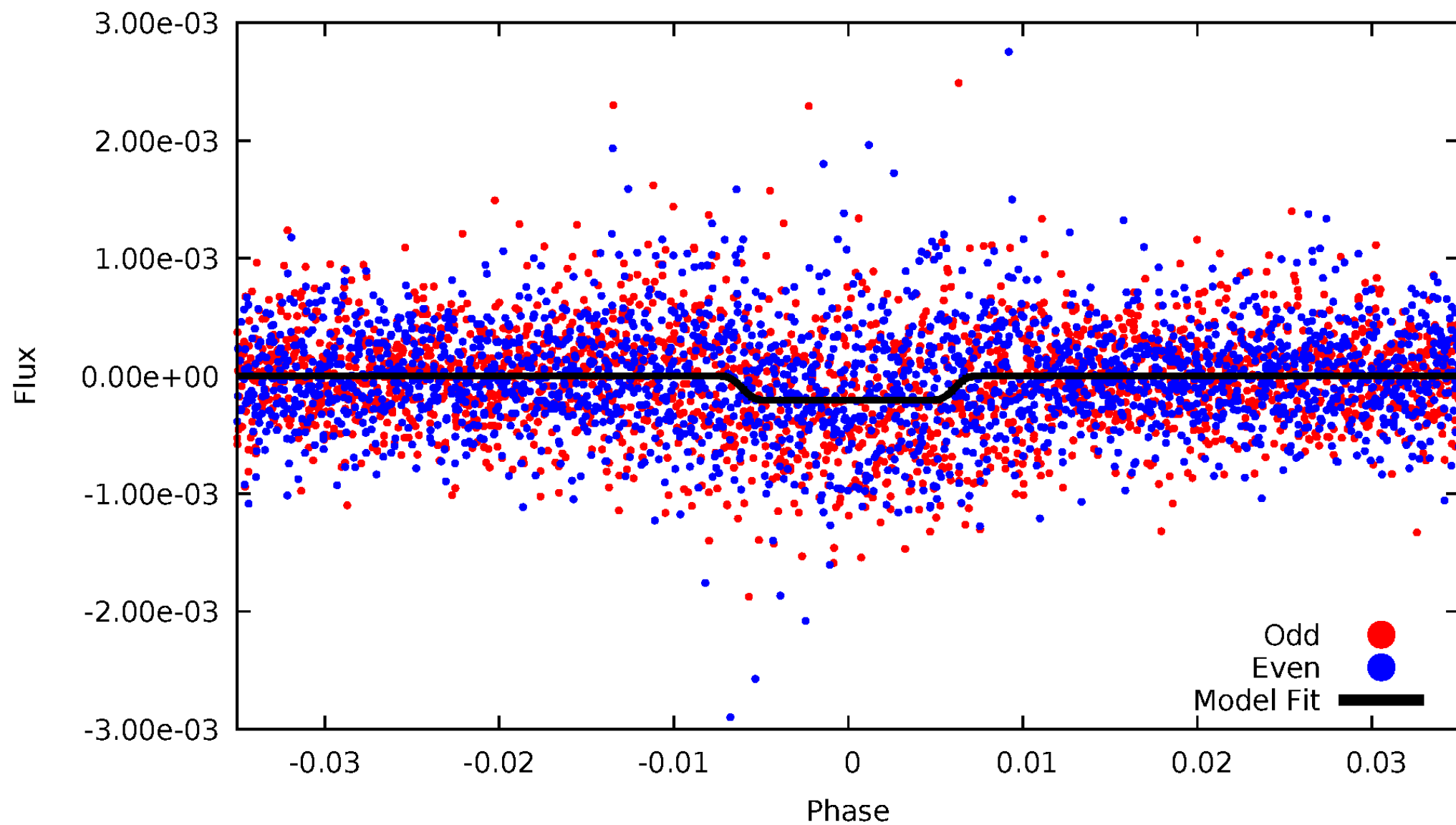
DV Odd/Even

TCE 007747091-01



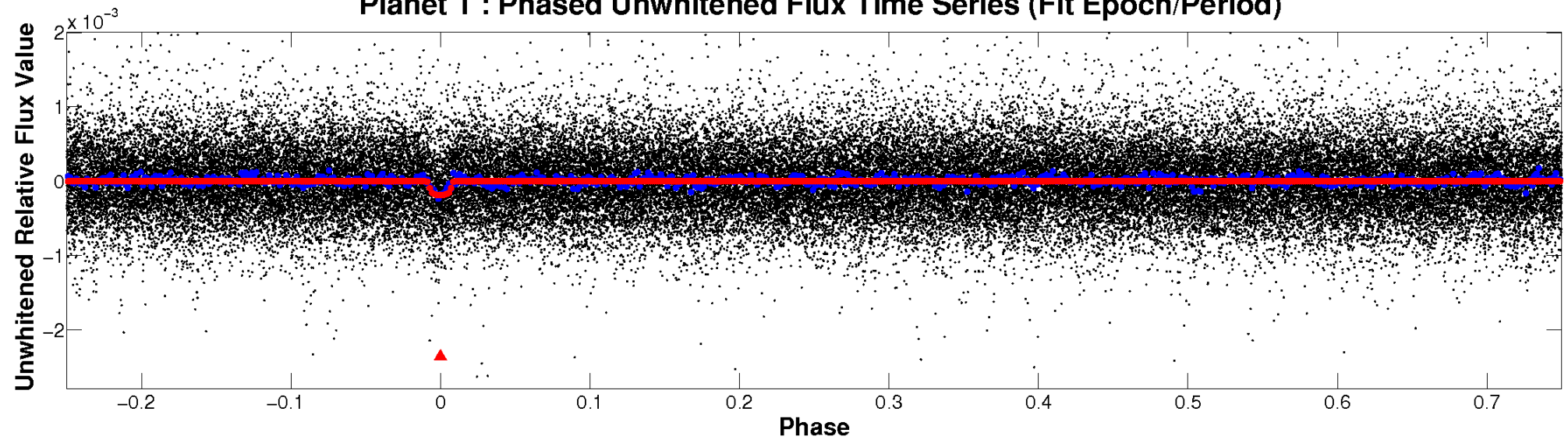
ALT Odd/Even

TCE 007747091-01

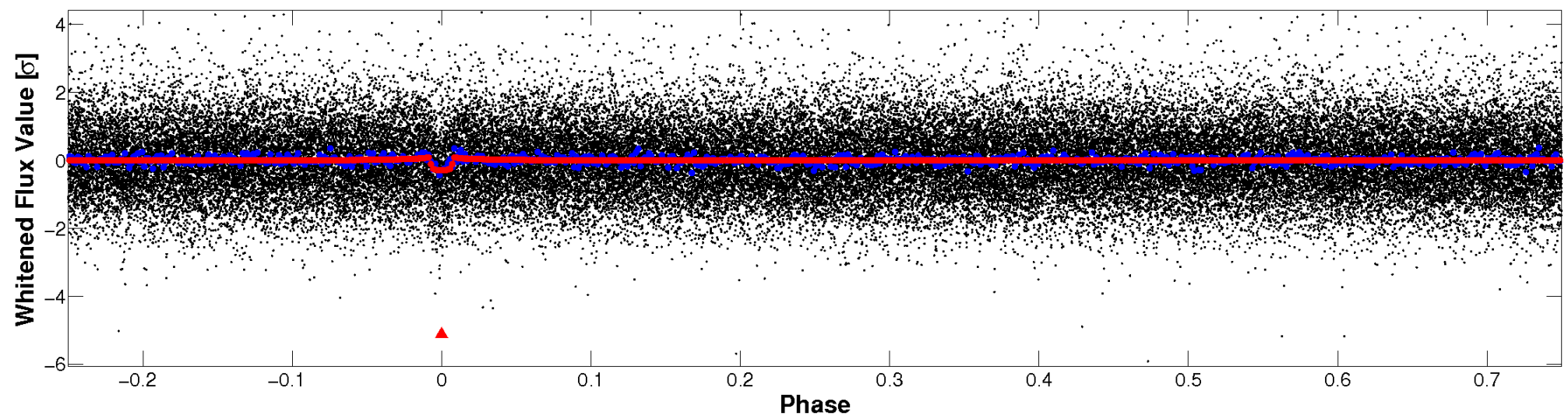


Non-Whitened Vs. Whitened Light Curve

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

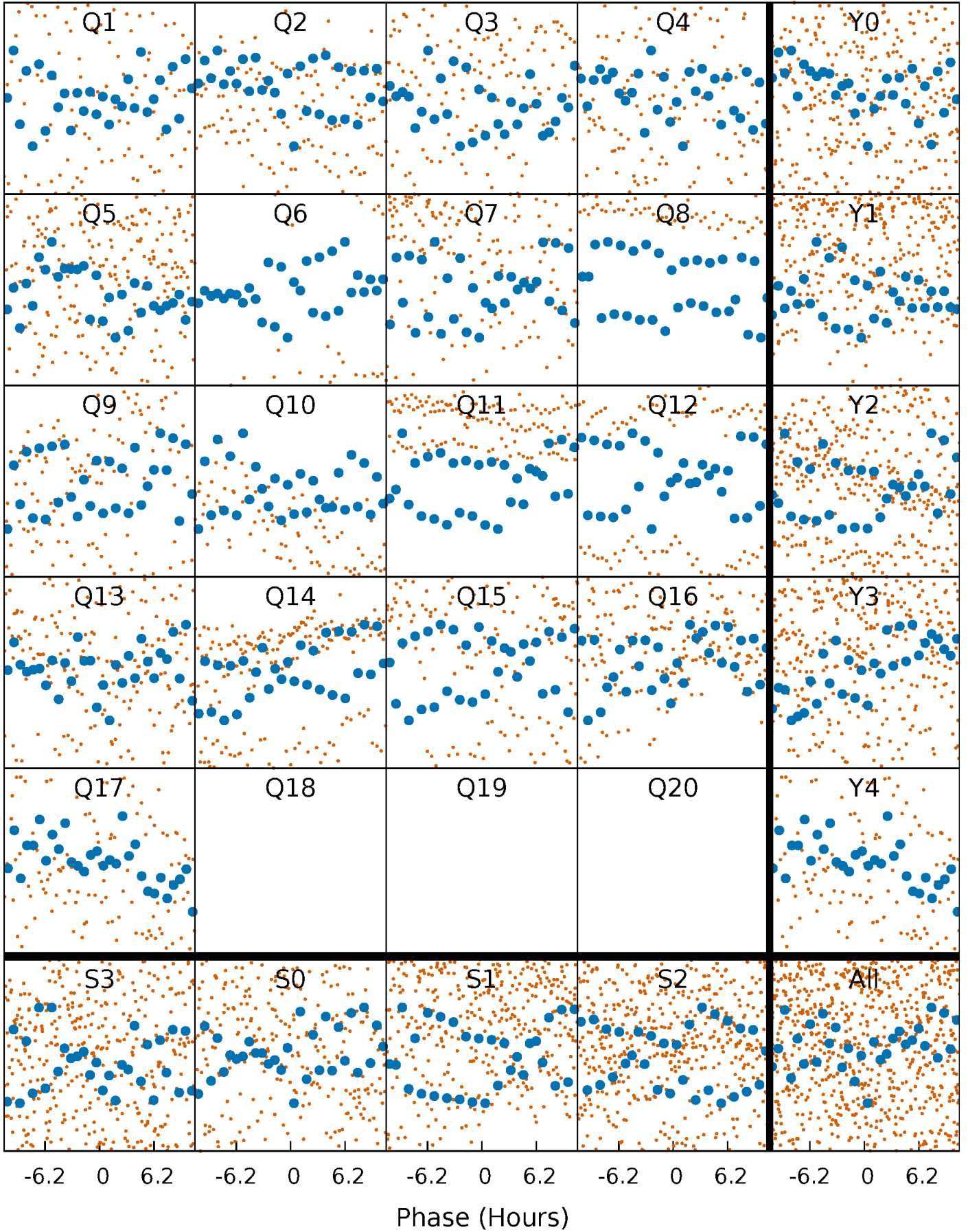


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



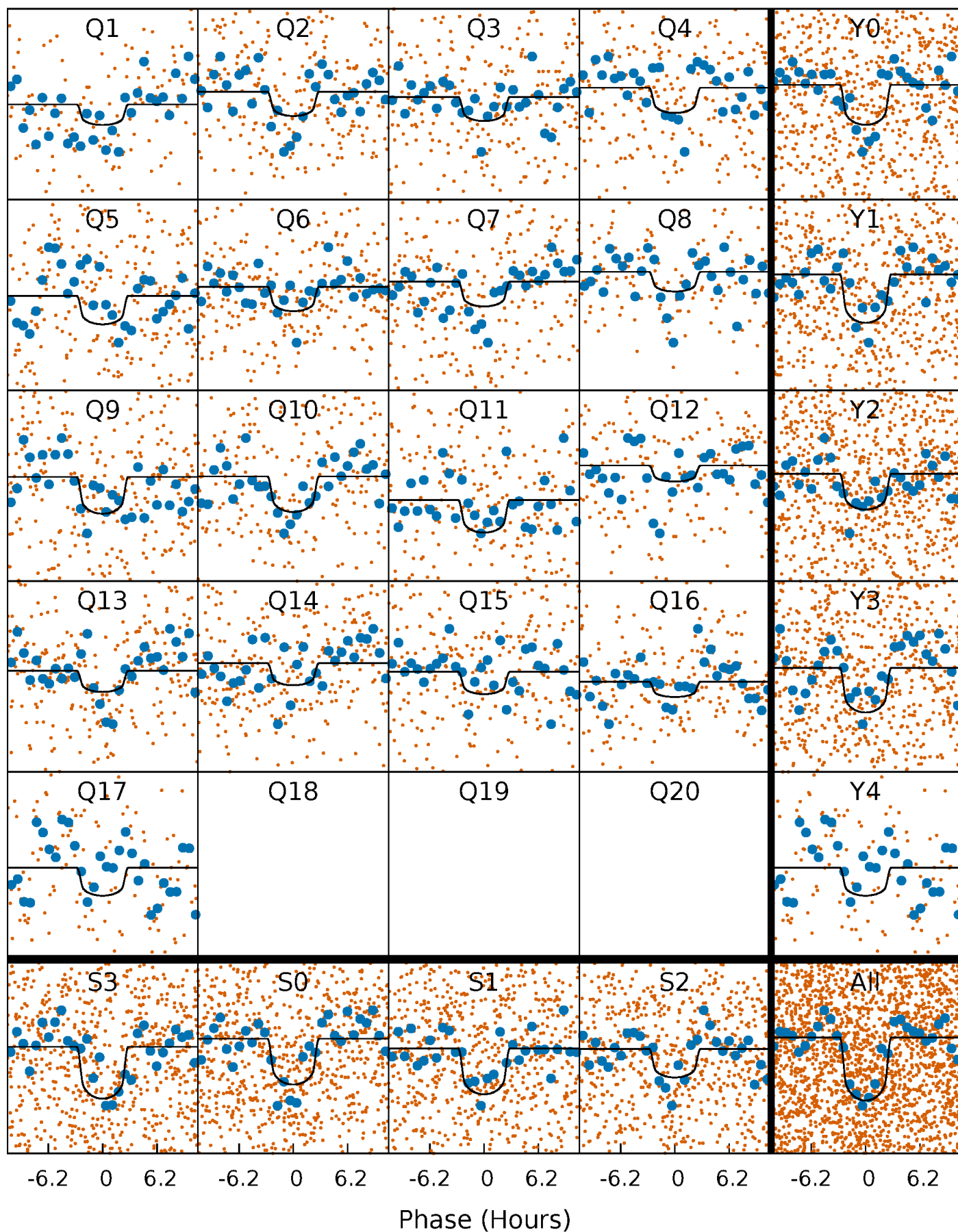
PDC Quarter-Phased Transit Curves

TCE 007747091-01 P= 14.268110 Days $T_0=133.947202$ (BKJD)



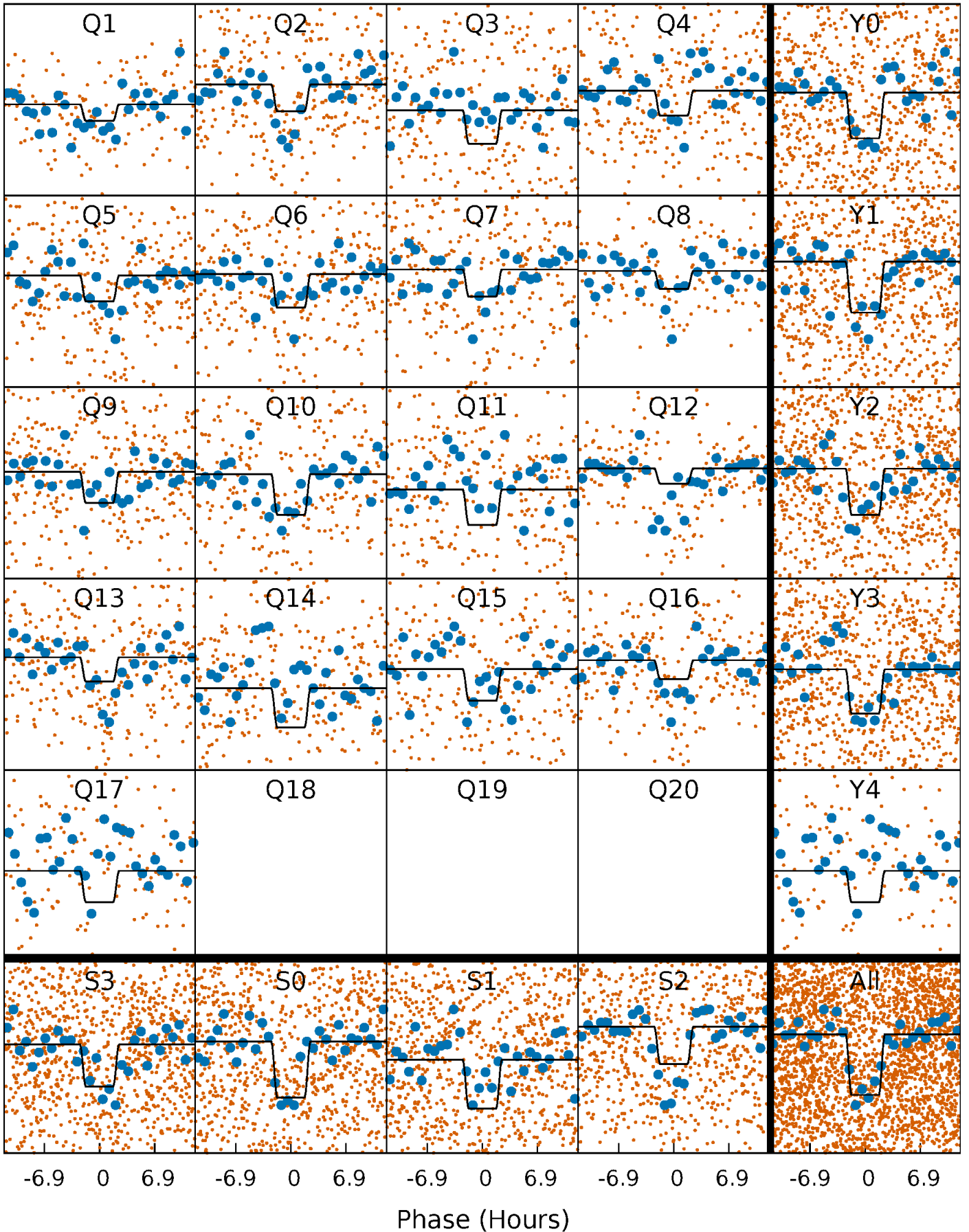
DV Quarter-Phased Transit Curves

TCE 007747091-01 P= 14.268110 Days $T_0=133.947202$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

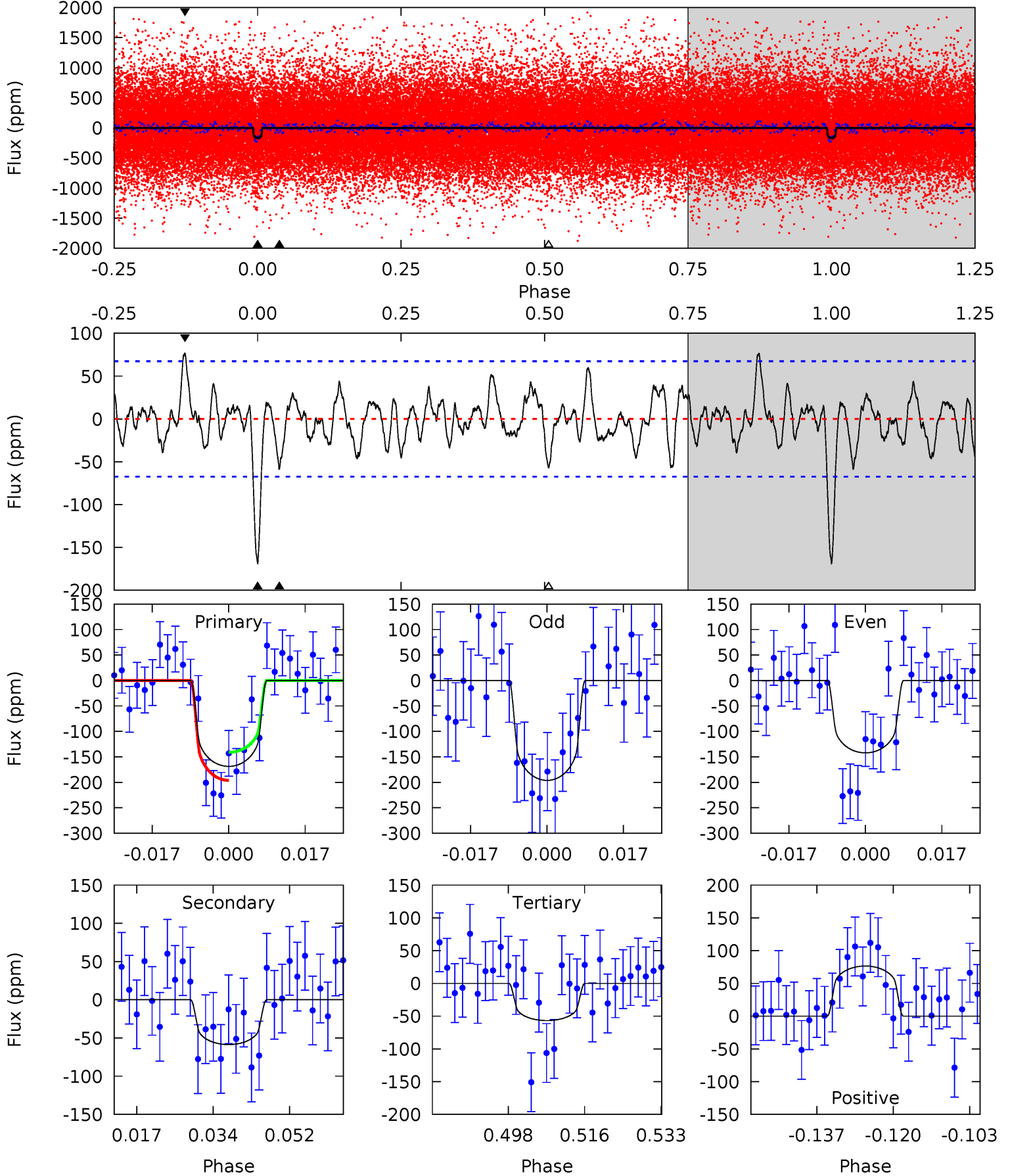
TCE 007747091-01 P= 14.268046 Days $T_0=133.945806$ (BKJD)



DV Model-Shift Uniqueness Test

007747091-01, P = 14.268110 Days, E = 119.679092 Days

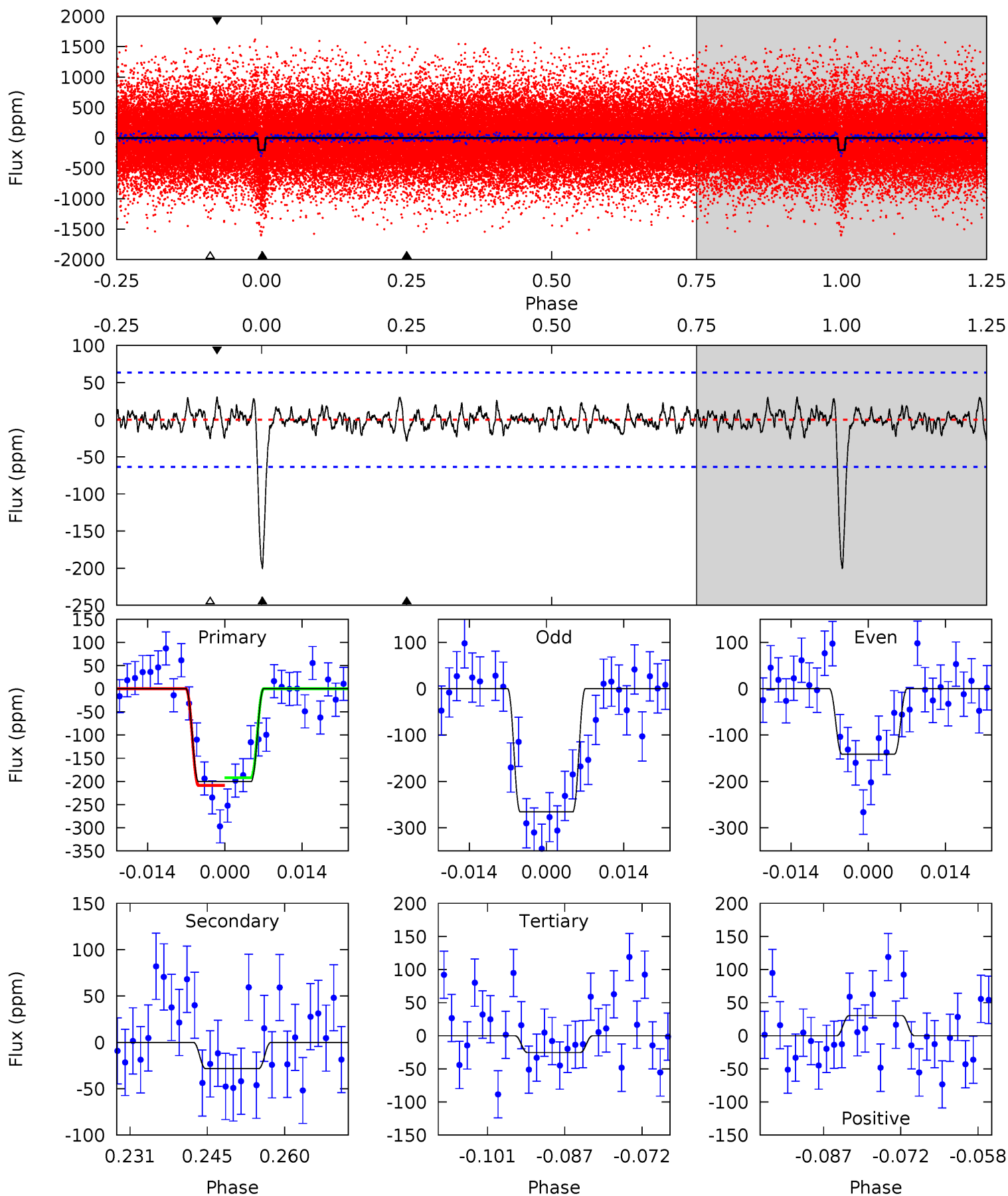
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	4.28	4.15	5.59	4.92	2.38	1.63	8.17	6.73	0.14	-1.30	1.99	1.11	0.31	2.02



Alt Model-Shift Uniqueness Test

007747091-01, P = 14.268046 Days, E = 119.677760 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.6	2.22	1.98	2.38	4.96	2.45	0.73	13.6	13.2	0.24	-0.15	4.87	0.82	0.13	0.65



Stellar Parameters For KIC 007747091

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5475^{+164}_{-164}	$4.567^{+0.030}_{-0.170}$	$0.070^{+0.250}_{-0.300}$	$0.837^{+0.200}_{-0.067}$	$0.944^{+0.074}_{-0.101}$	$2.265^{+0.363}_{-1.018}$
	+3%/-3%	+1%/-4%	+357%/-429%	+24%/-8%	+8%/-11%	+16%/-45%
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 007747091-01 / KOI 5418.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-59 ± 14	$1.40^{+0.75}_{-0.62}$	941^{+53}_{-42}	4177^{+1209}_{-588}	201^{+497}_{-119}
Alt.	-28 ± 13	$1.39^{+0.71}_{-0.64}$	939^{+52}_{-38}	3674^{+1001}_{-521}	95^{+257}_{-60}

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

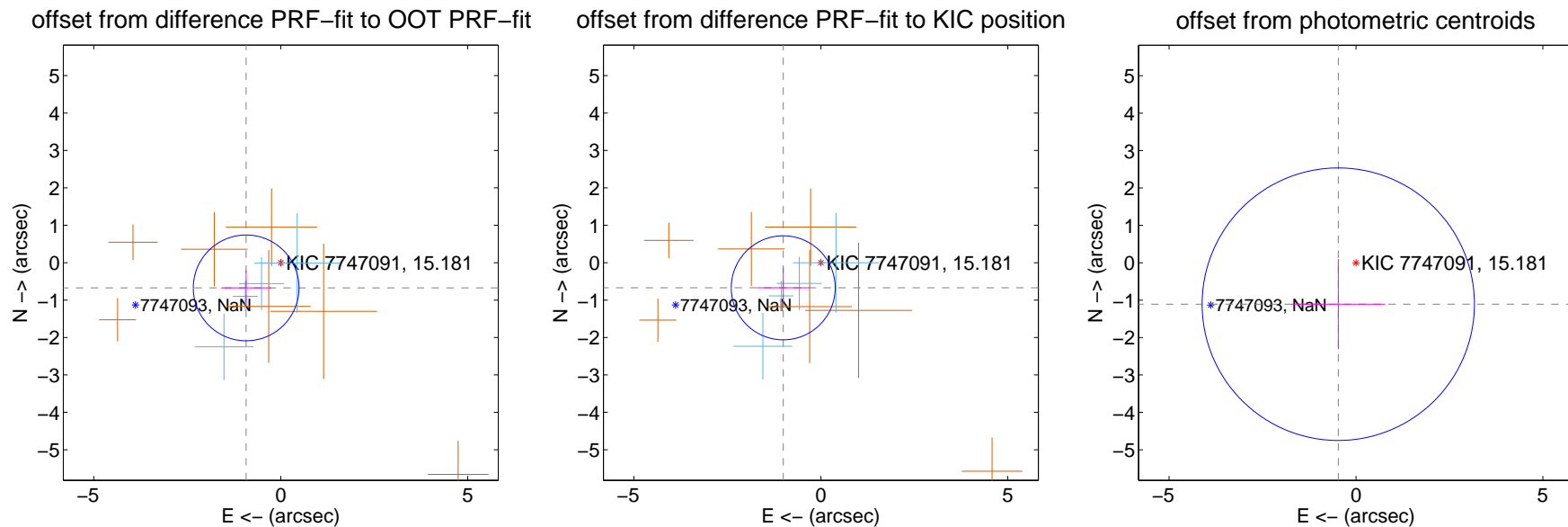
DV Centroid Data

Supplemental centroid analysis for 007747091-01. Kepler magnitude: 15.18. Transit SNR 8.45

There are 4 quarters with good PRF difference image offsets

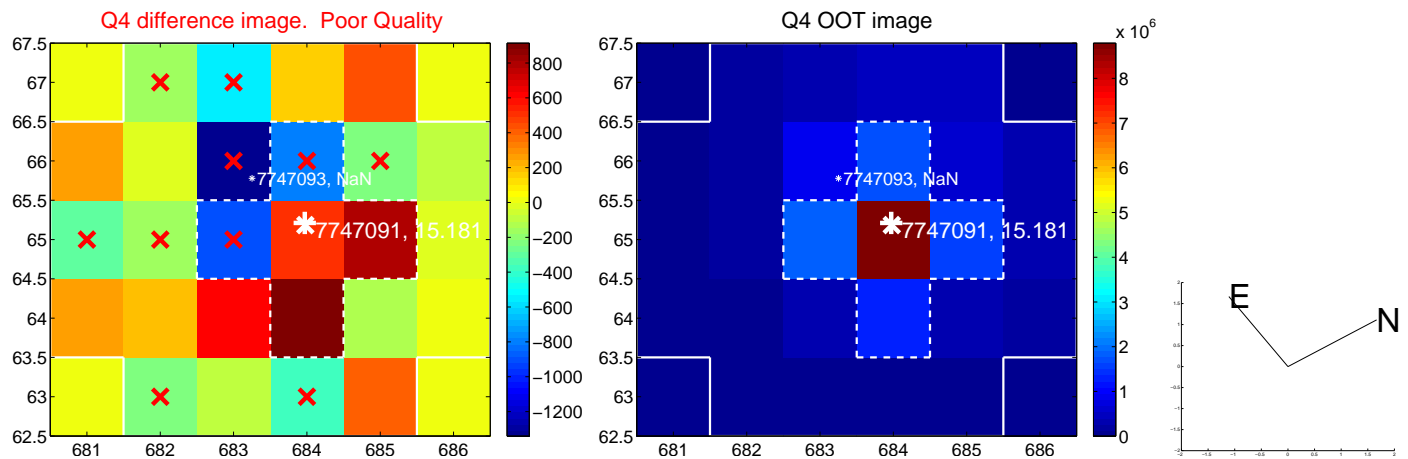
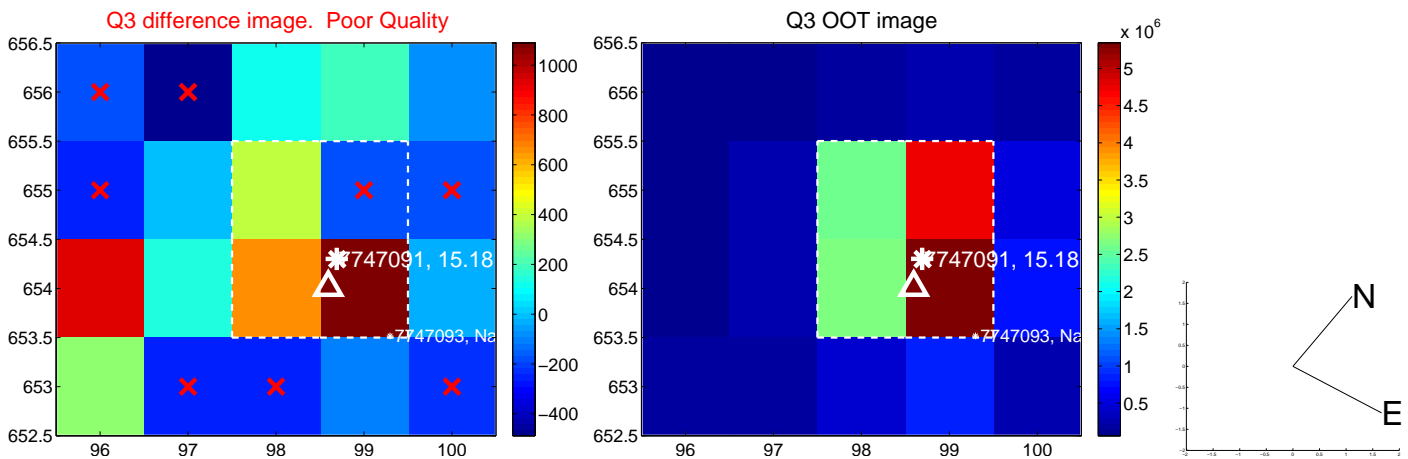
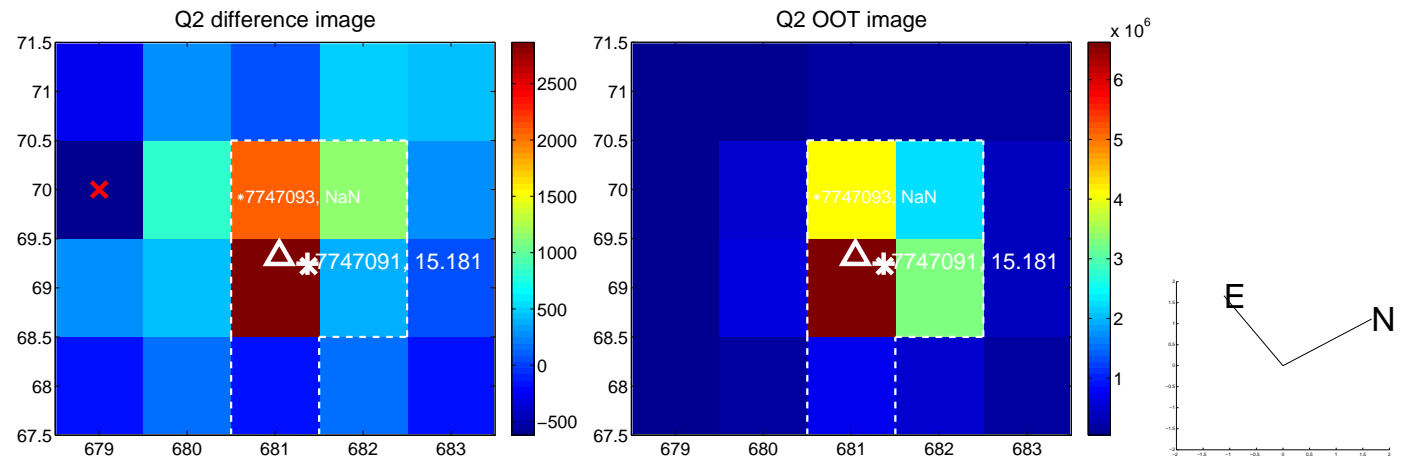
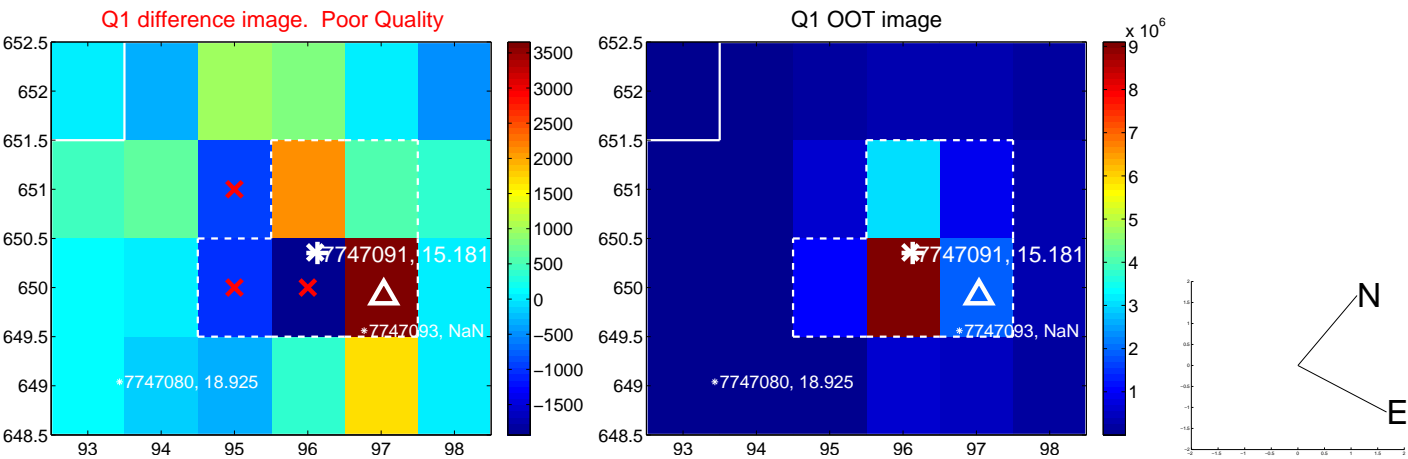
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.145 ± 0.471	2.43	0.926 ± 0.671	-0.674 ± 0.471
PRF-fit source offset from KIC position	1.210 ± 0.463	2.61	1.007 ± 0.700	-0.672 ± 0.543
photometric centroid source offset	1.20 ± 1.21	0.99	0.47 ± 1.26	-1.11 ± 1.21

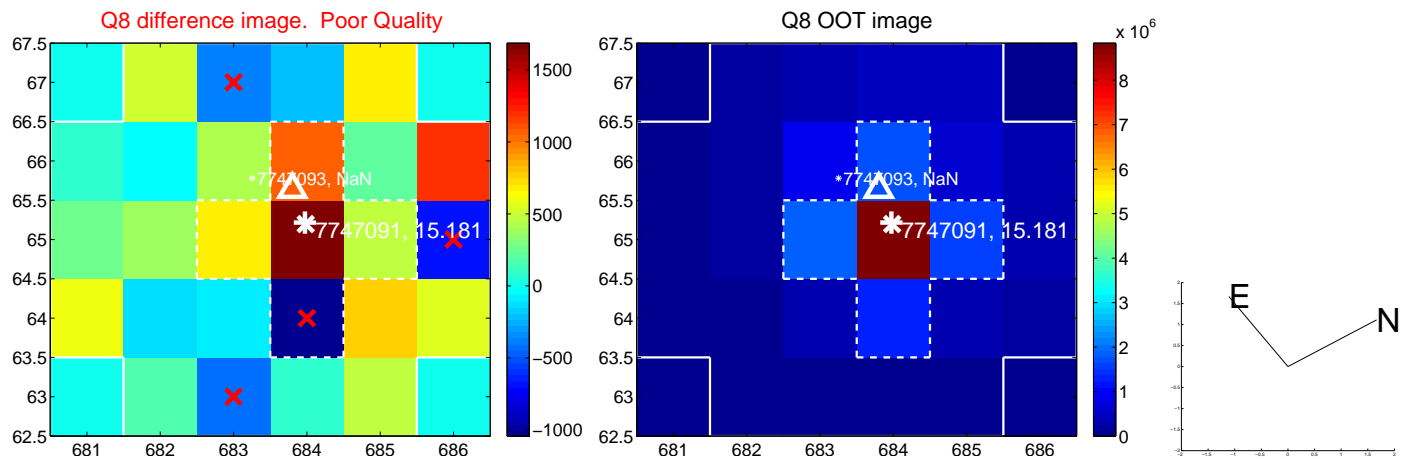
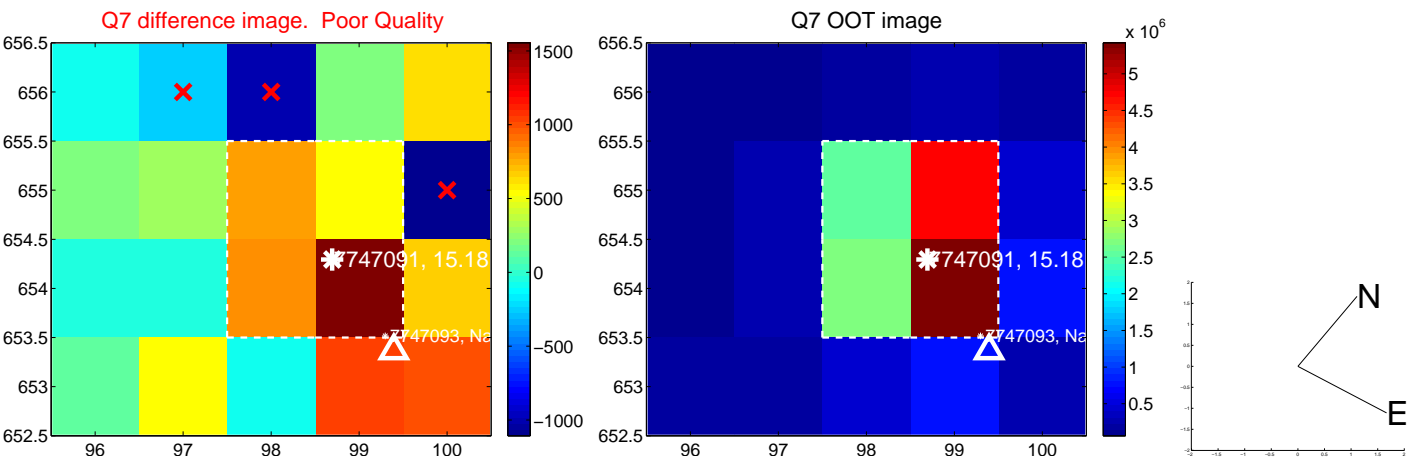
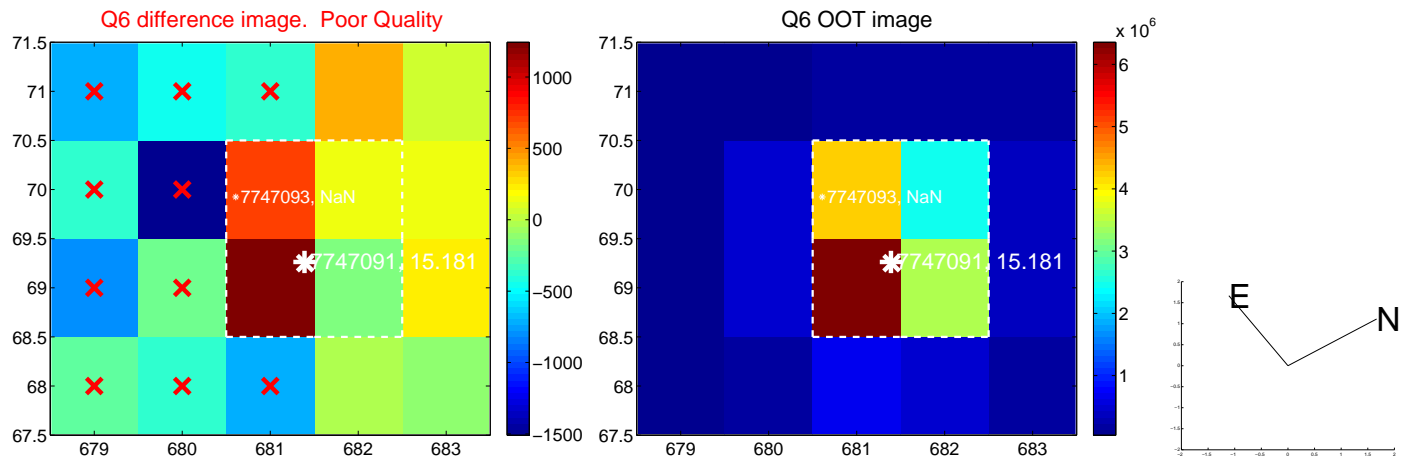
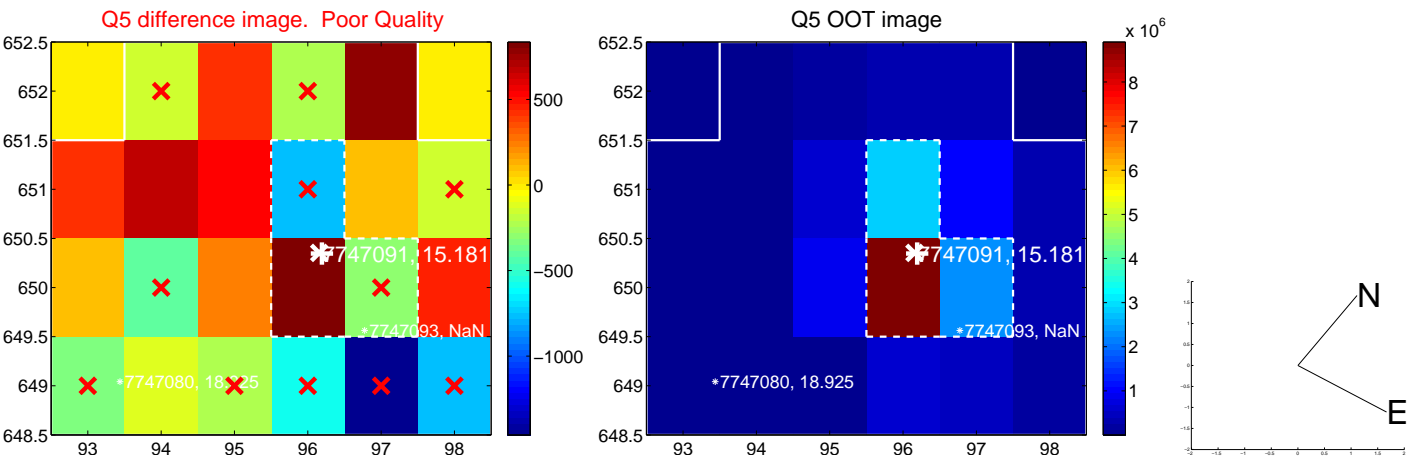


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

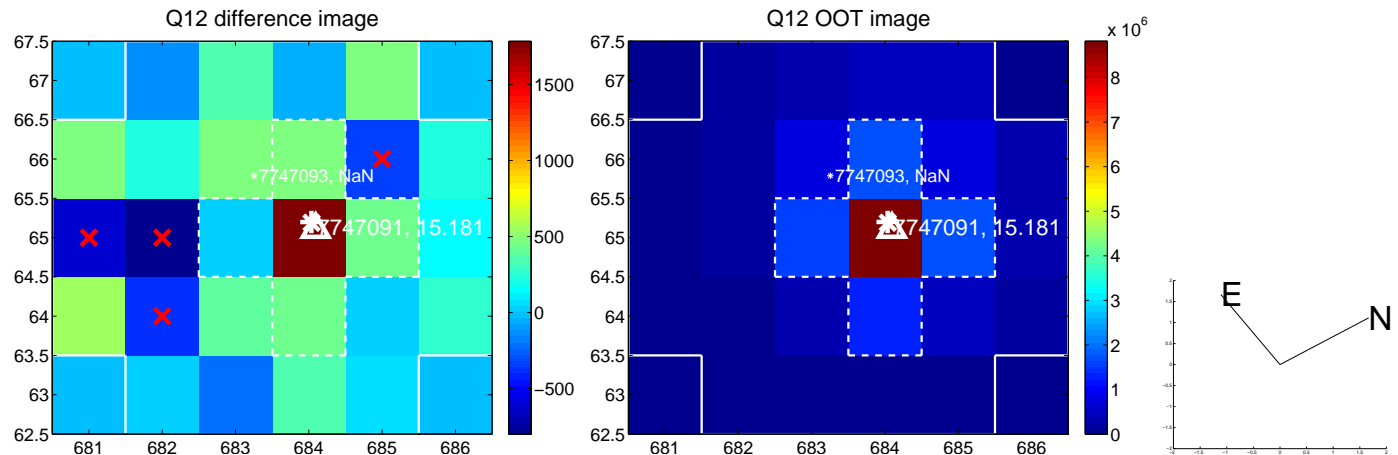
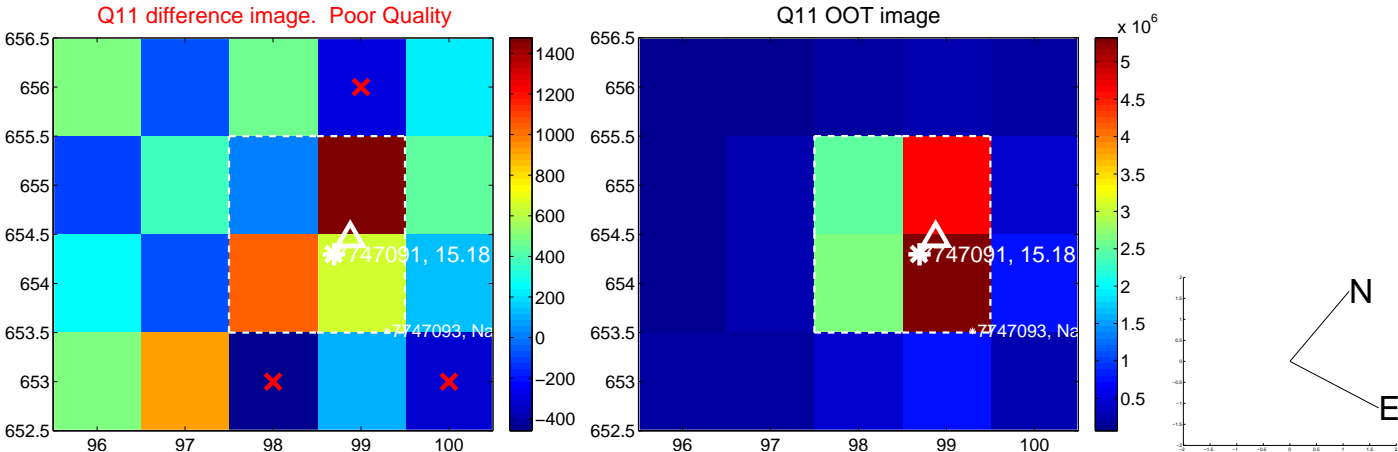
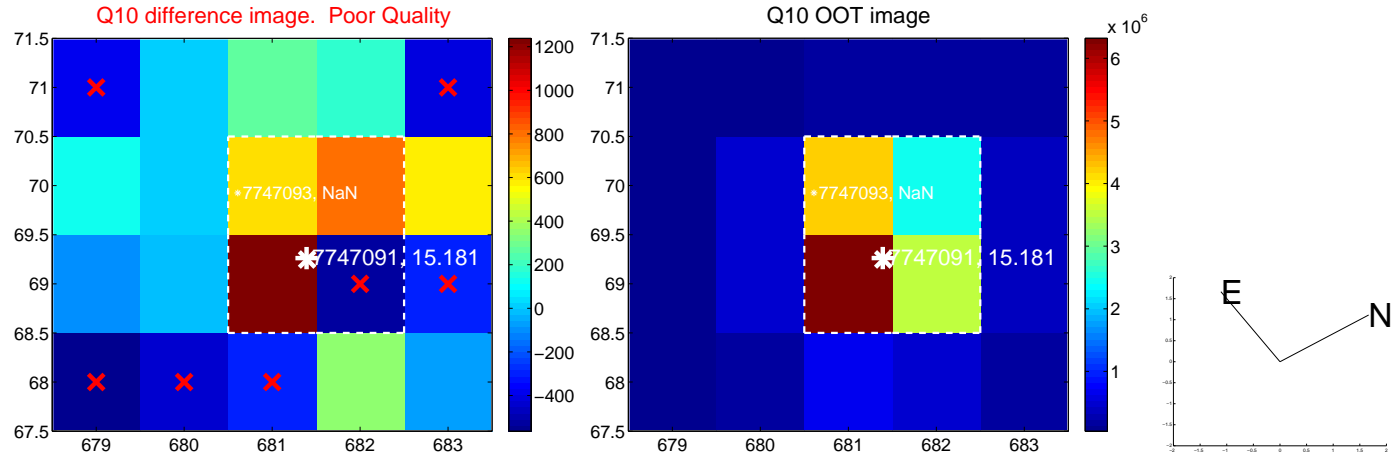
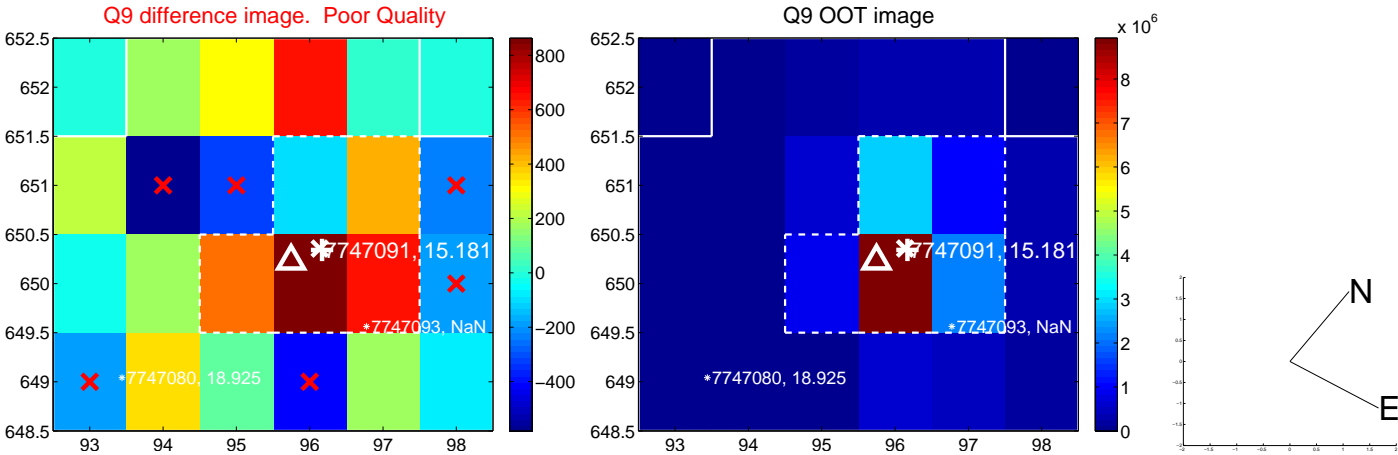
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



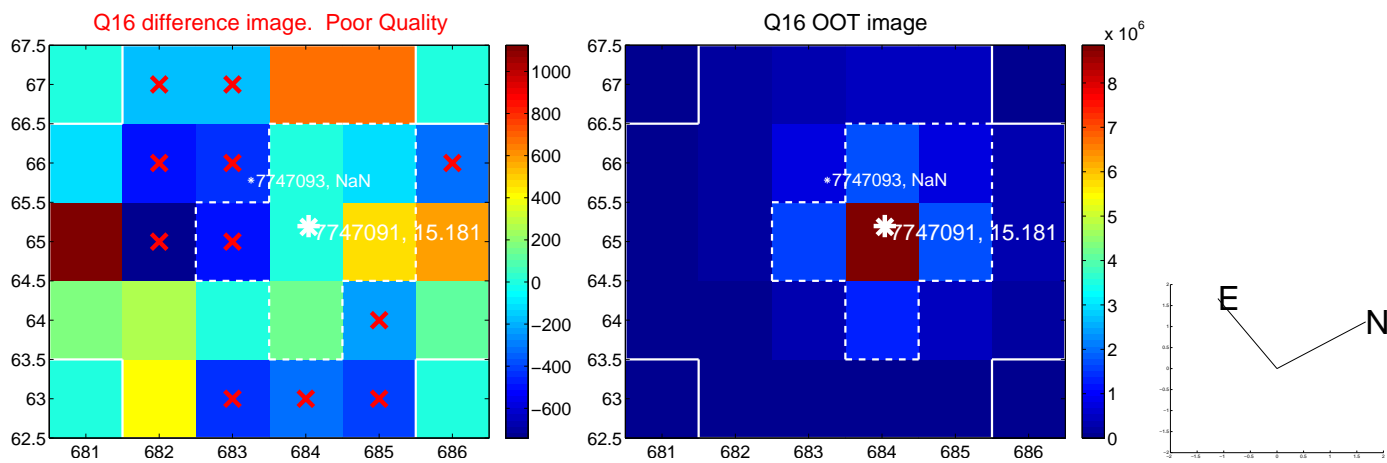
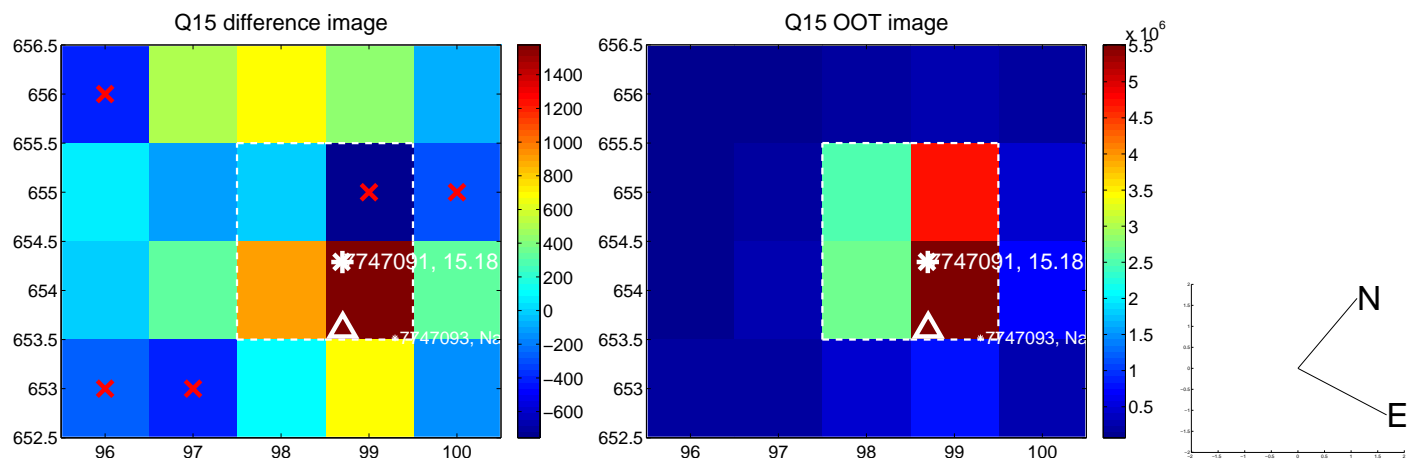
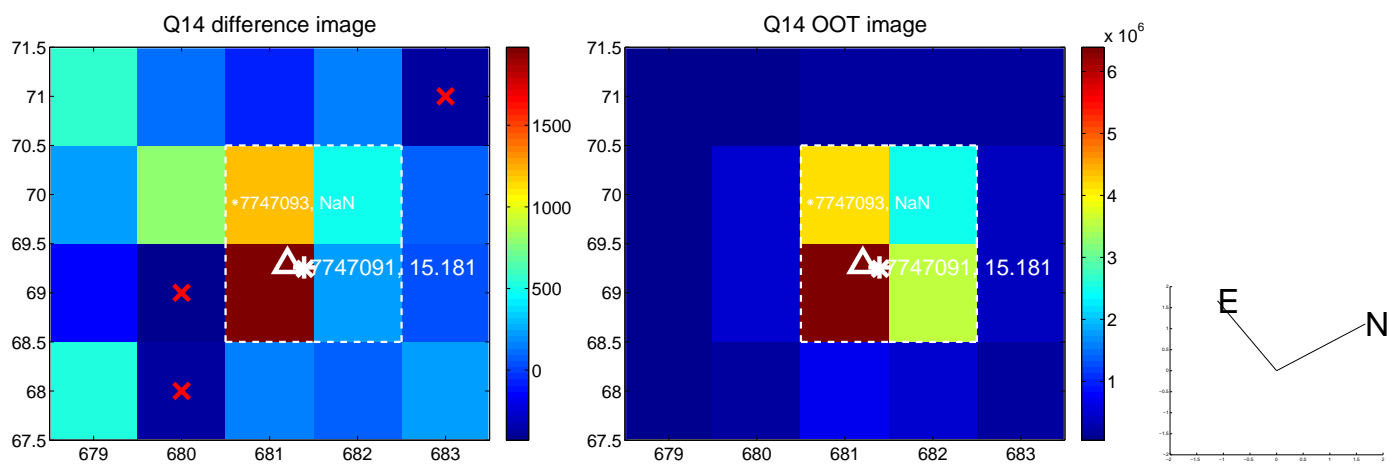
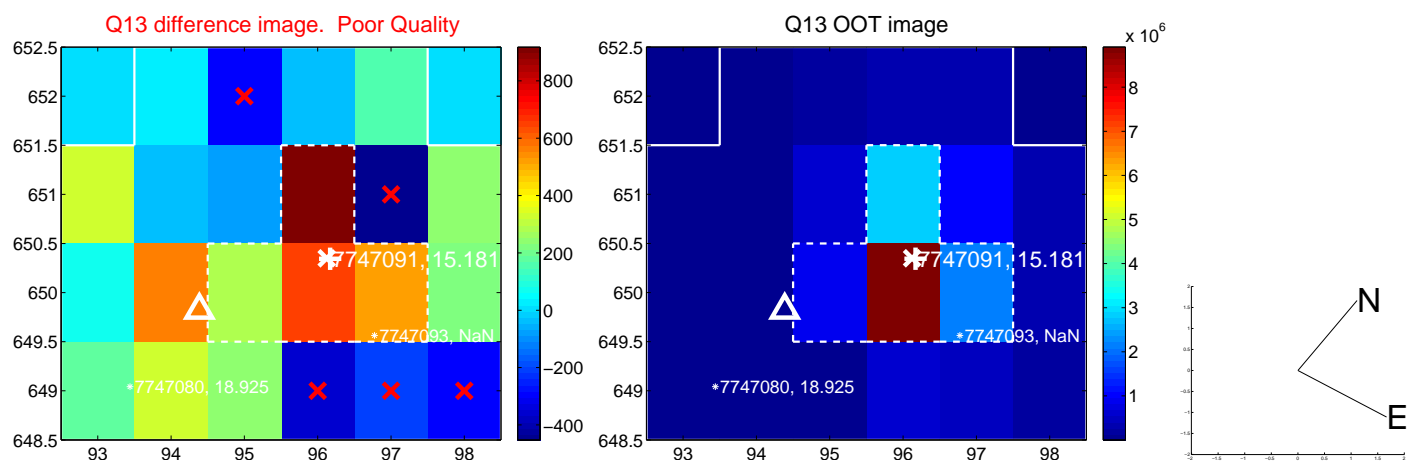
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



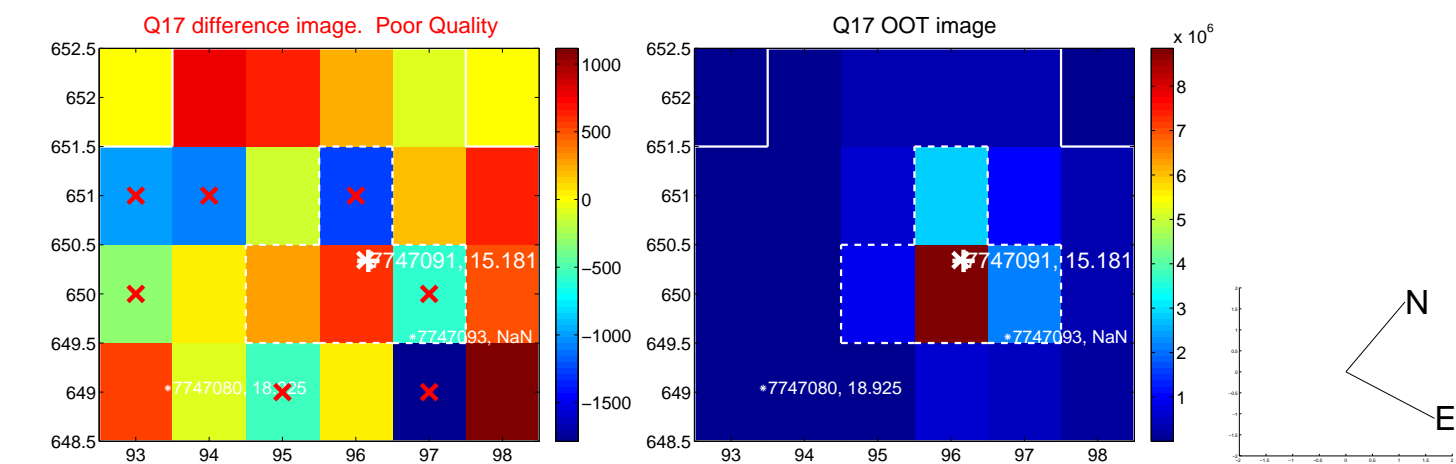
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



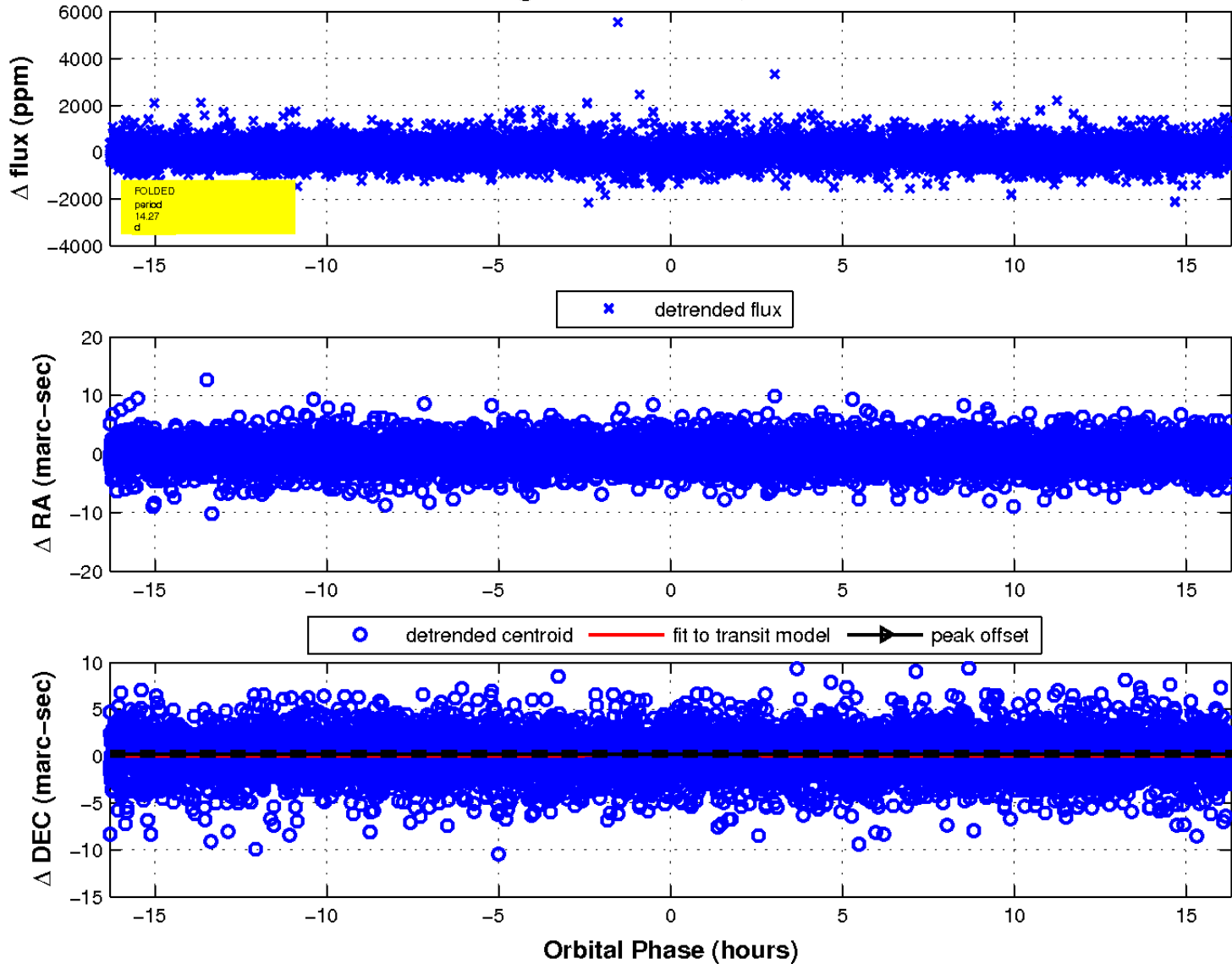
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

