

KIC 002162904

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})
002162904-01	OBS	No	1.539783	132.304753	252.2	5.370	9.2	9.4	3.42	7331	5.51	28245.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002162904-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

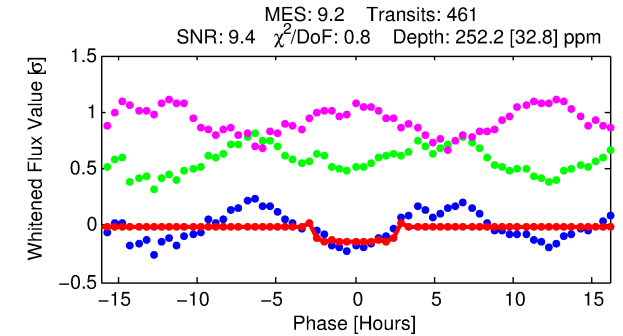
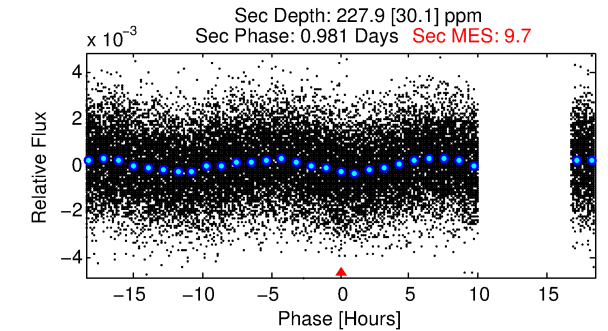
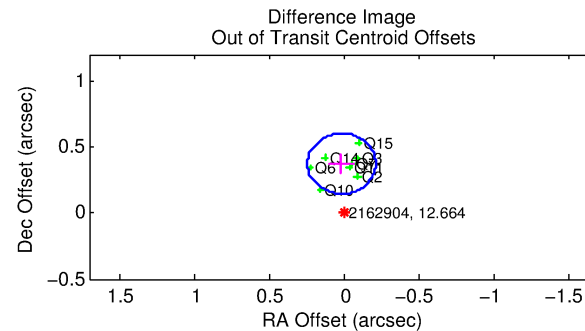
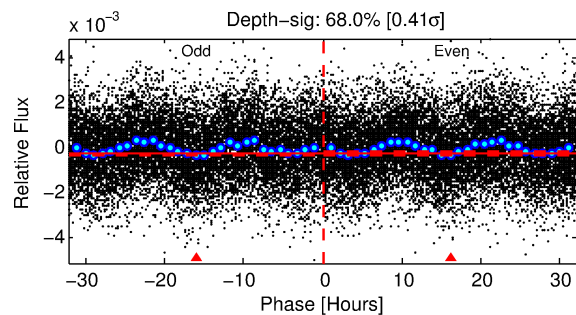
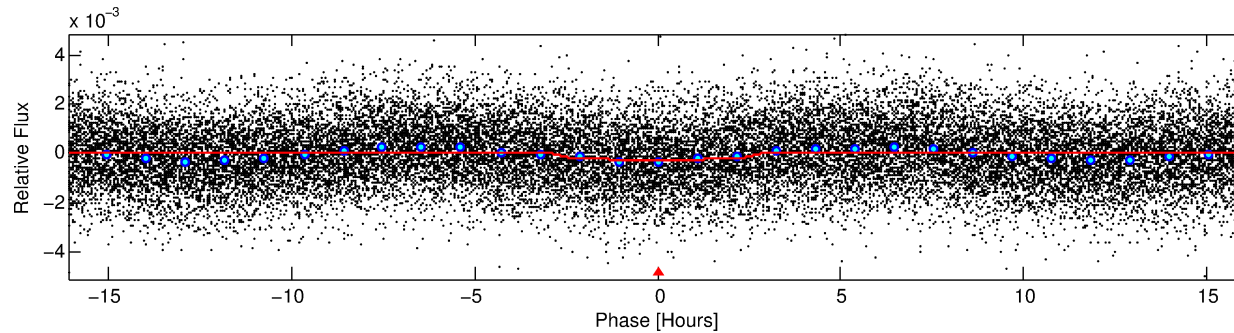
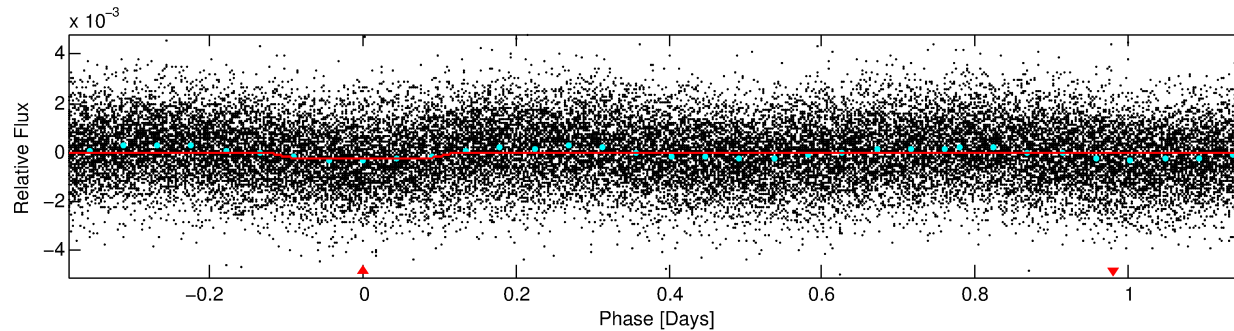
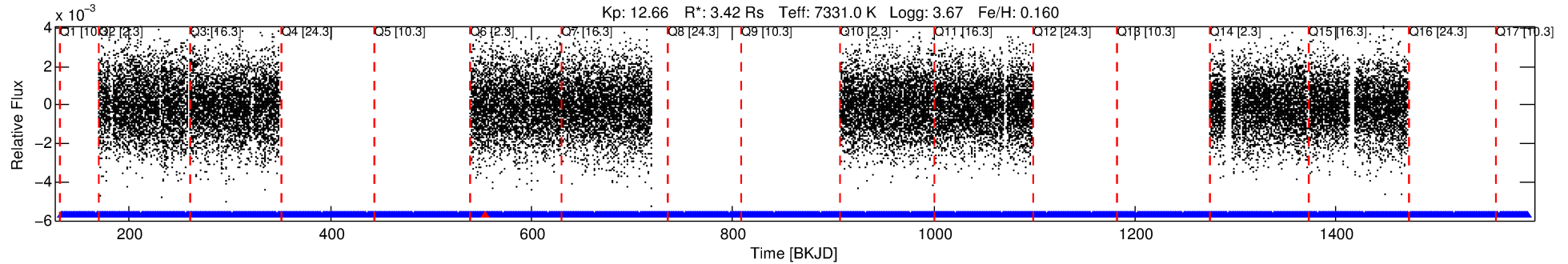
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002162904-01

No Significant Match Found

DV One-Page Summary

KIC: 2162904 Candidate: 1 of 1 Period: 1.540 d



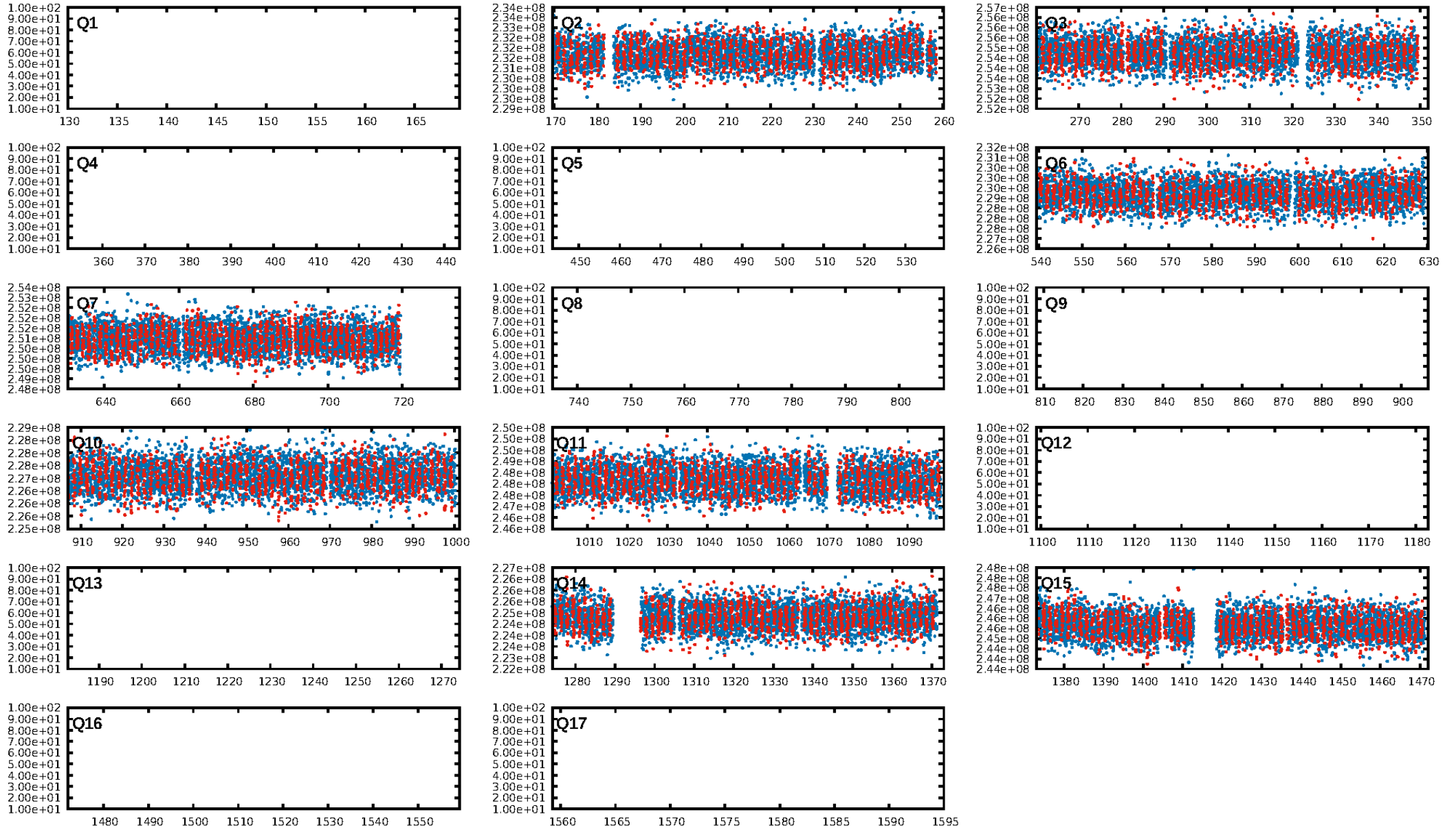
DV Fit Results:

Period = 1.53978 [0.00002] d
Epoch = 132.3048 [0.0039] BKJD
Rp/R* = 0.0148 [0.0129]
a/R* = 2.28 [9.35]
b = 0.16 [31.33]
Seff = 28245.67 [21448.43]
Teq = 3306 [628] K
Rp = 5.51 [5.49] Re
a = 0.0327 [0.0151] AU
Ag = 4.43 [8.42] [0.41 σ]
Teffp = 7413 [3267] K [1.23 σ]

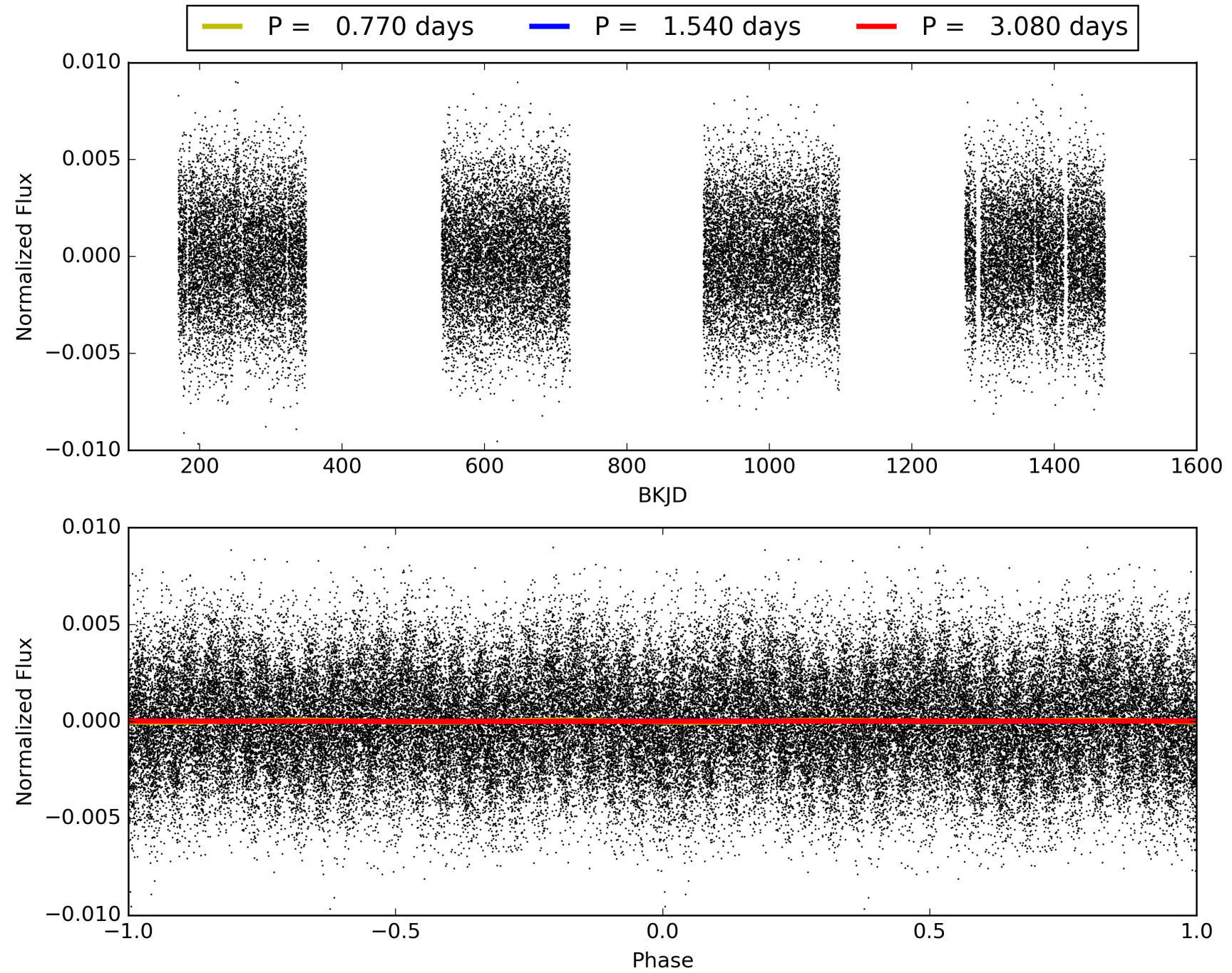
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.61e-13
RollingBand-fgt: 1.00 [460/461]
GhostDiagnostic-chr: 1.344
Centroid-sig: 0.0%
Centroid-so: 1.066 arcsec [0.96 σ]
OotOffset-rm: 0.373 arcsec [4.92 σ]
KicOffset-rm: 0.133 arcsec [1.61 σ]
OotOffset-st: 4/4/0/0 [8]
KicOffset-st: 4/4/0/0 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 002162904-01, PDC Light Curves

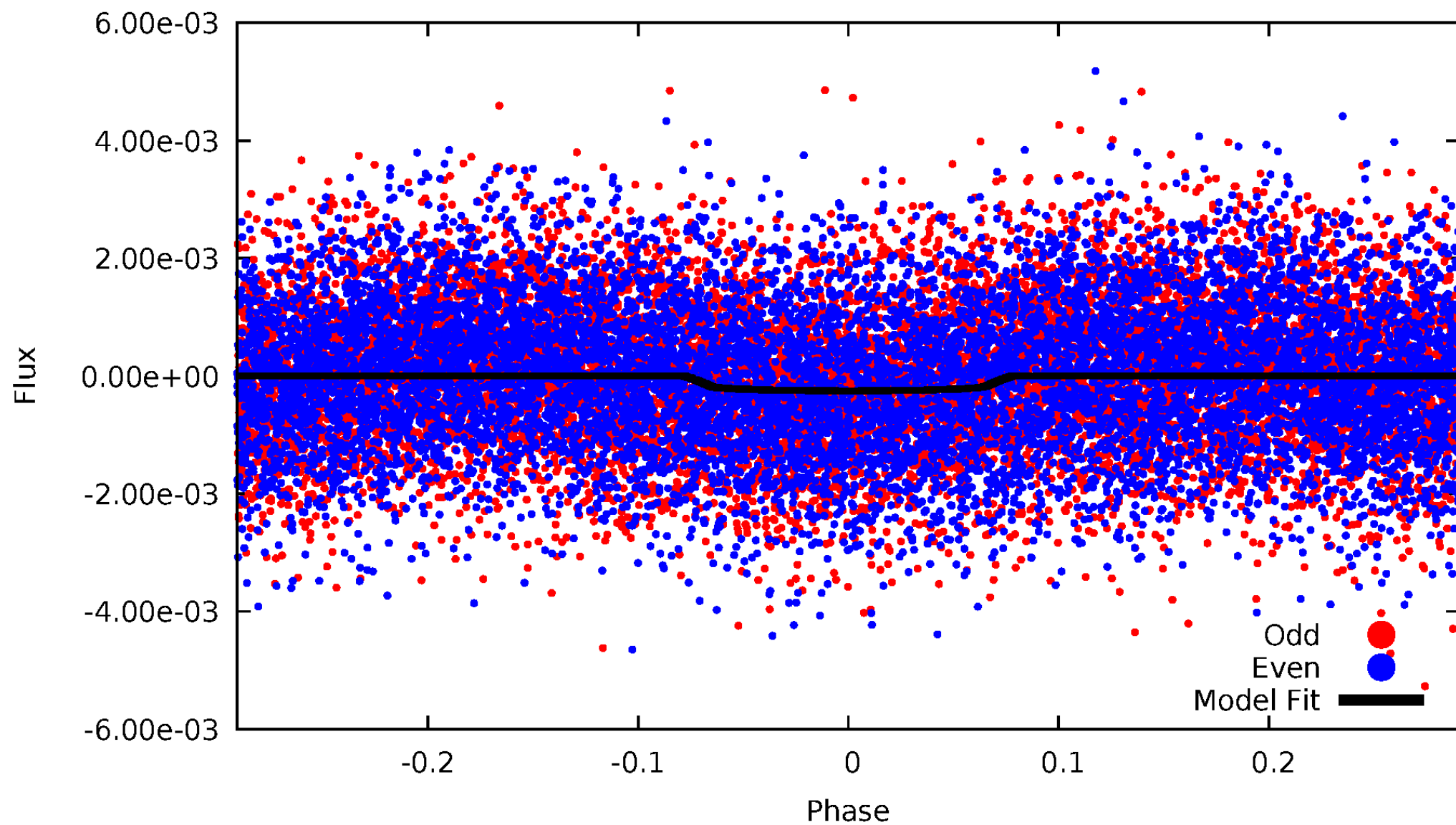


TCE 002162904-01



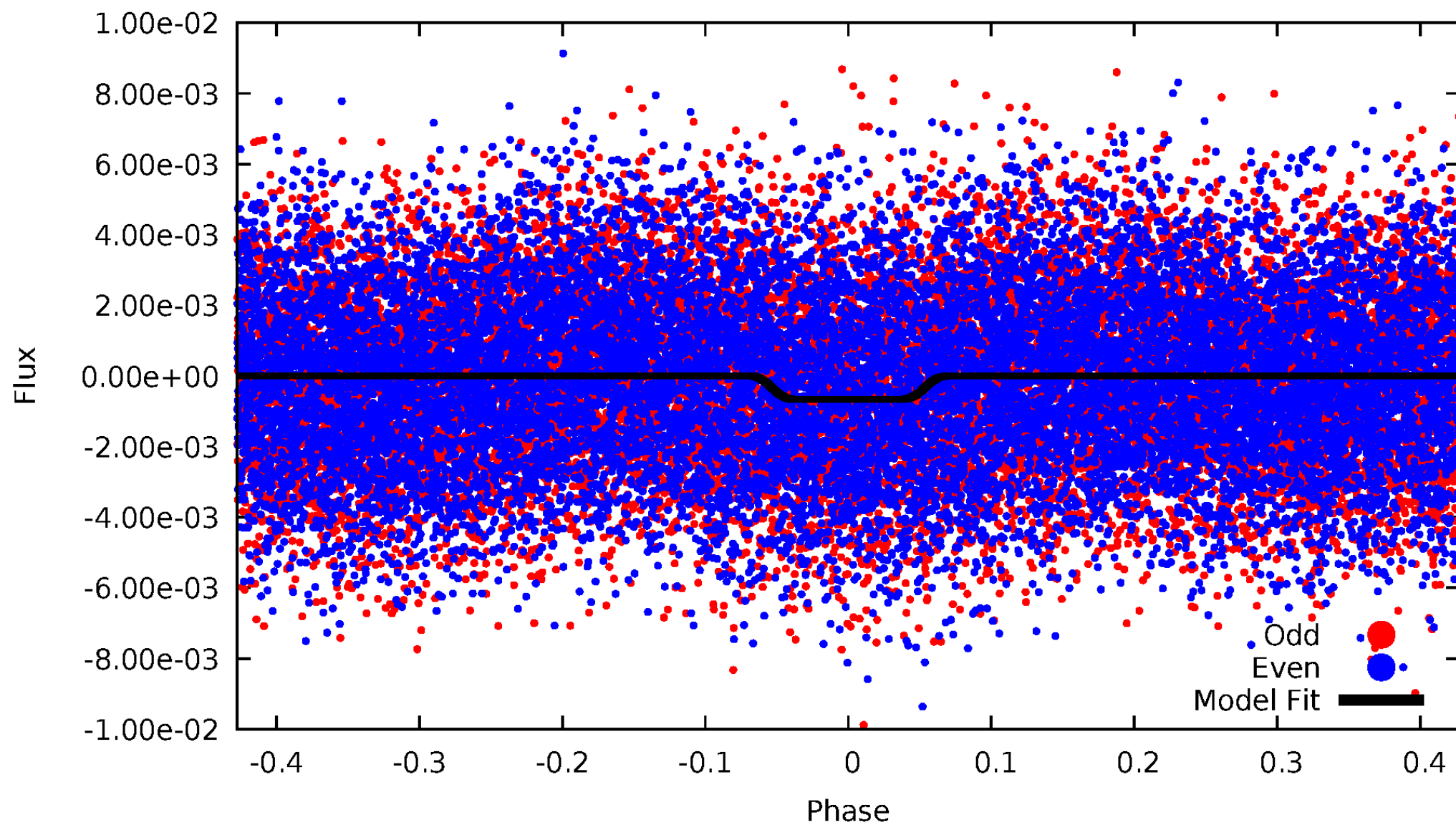
DV Odd/Even

TCE 002162904-01



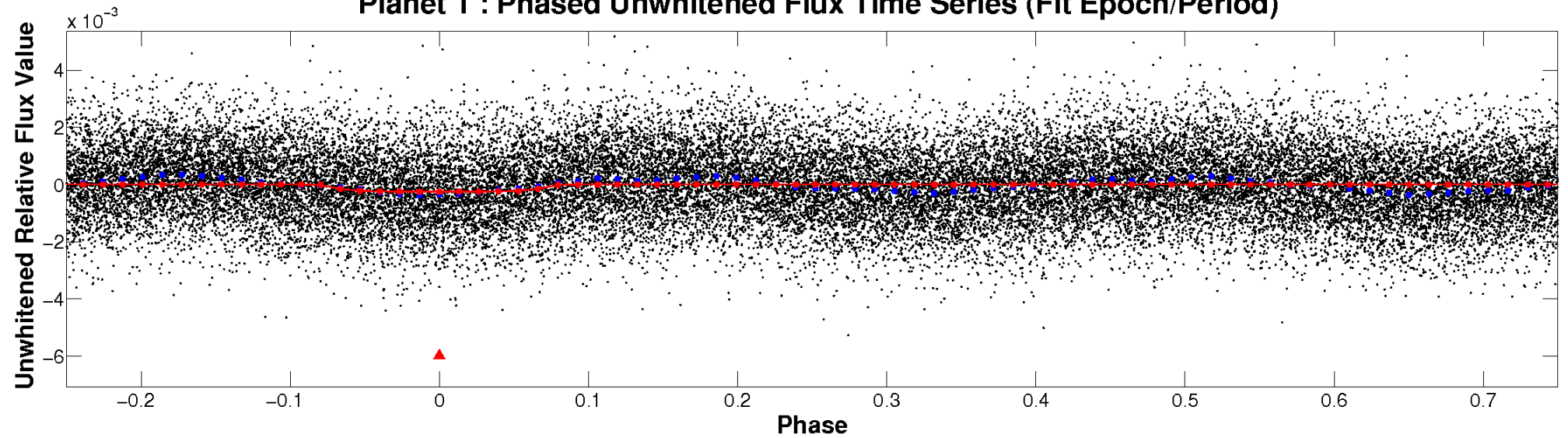
ALT Odd/Even

TCE 002162904-01

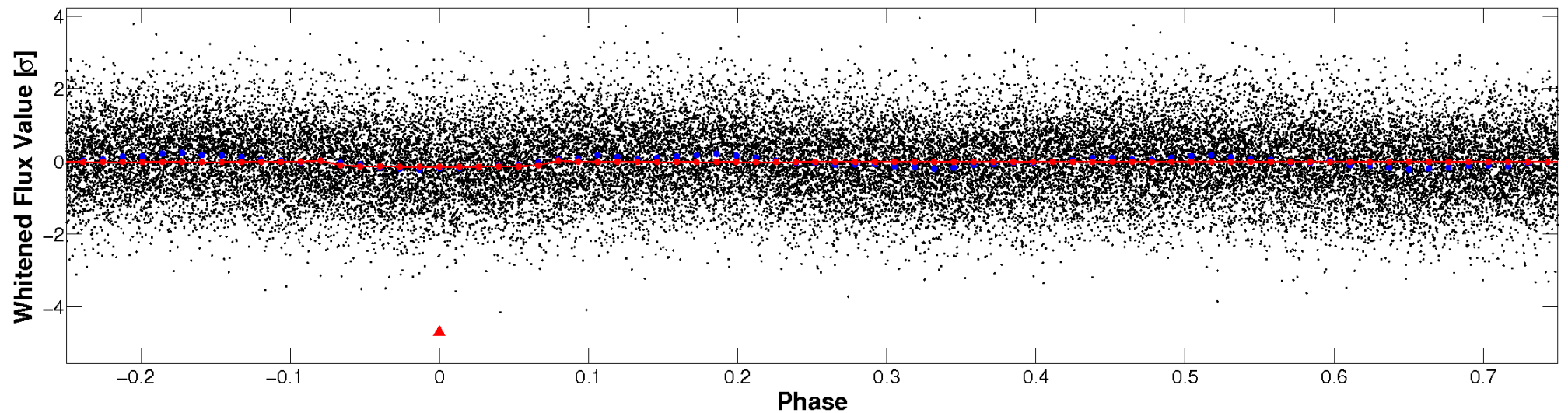


Non-Whitened Vs. Whitened Light Curve

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

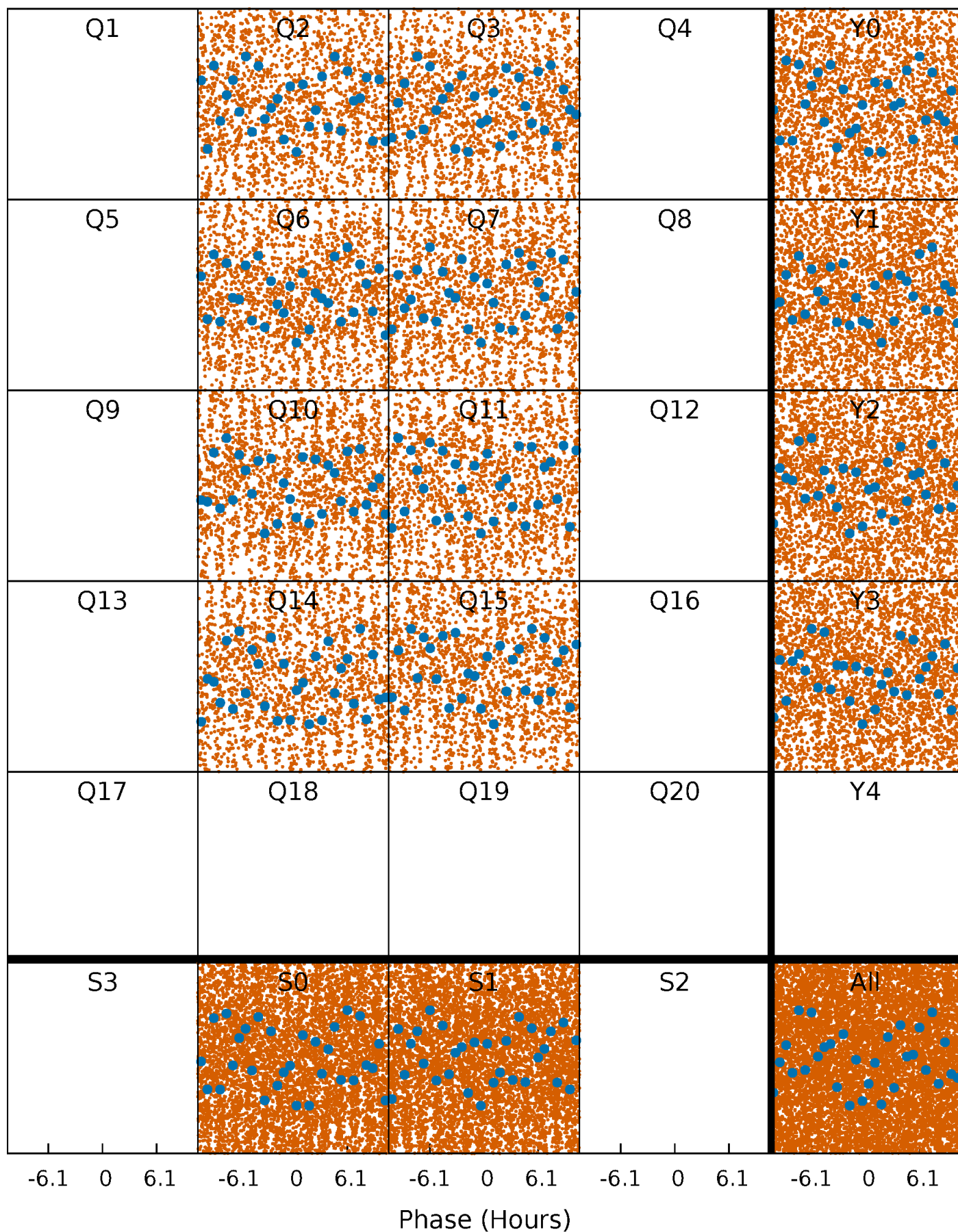


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



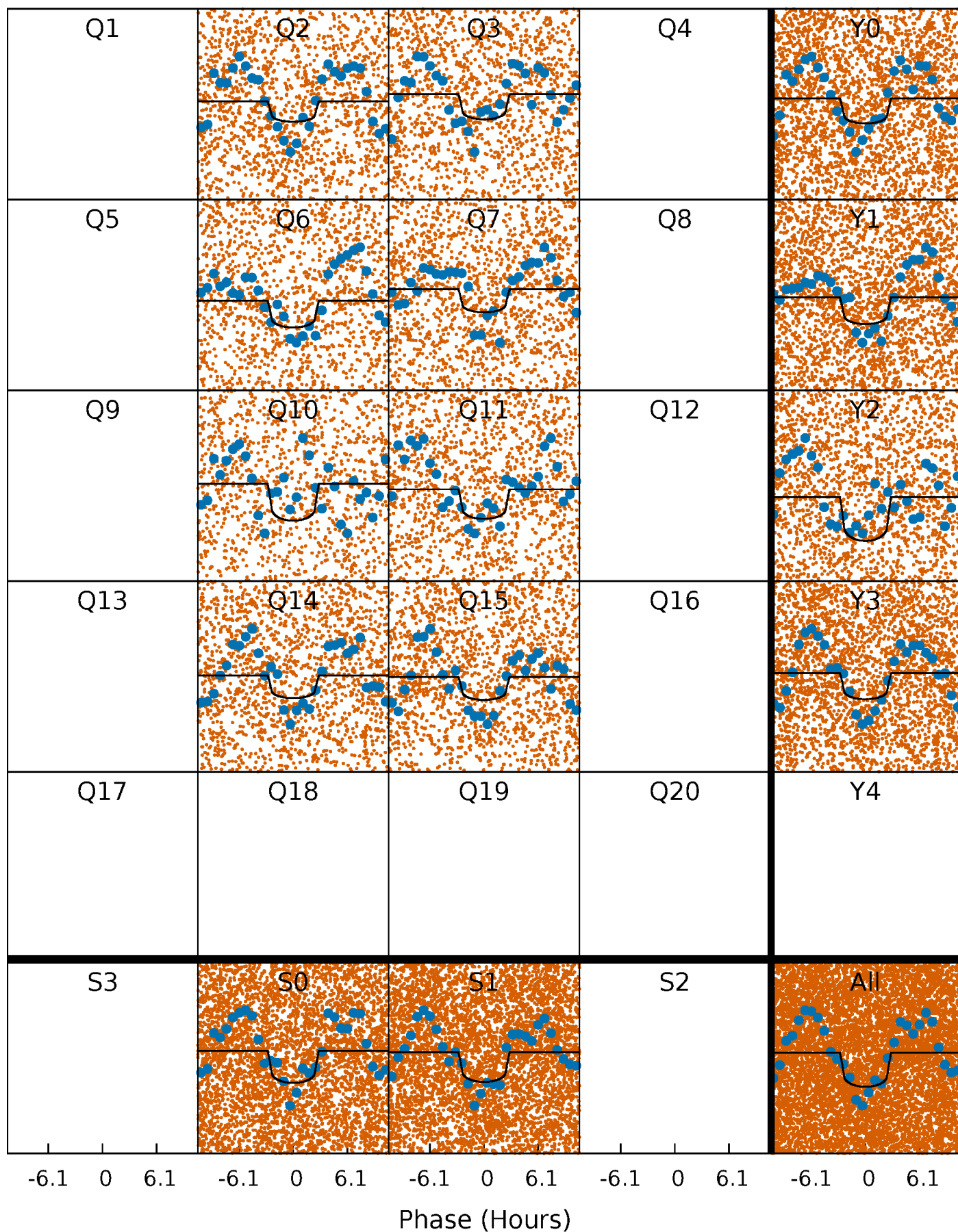
PDC Quarter-Phased Transit Curves

TCE 002162904-01 P= 1.539783 Days $T_0=132.304753$ (BKJD)



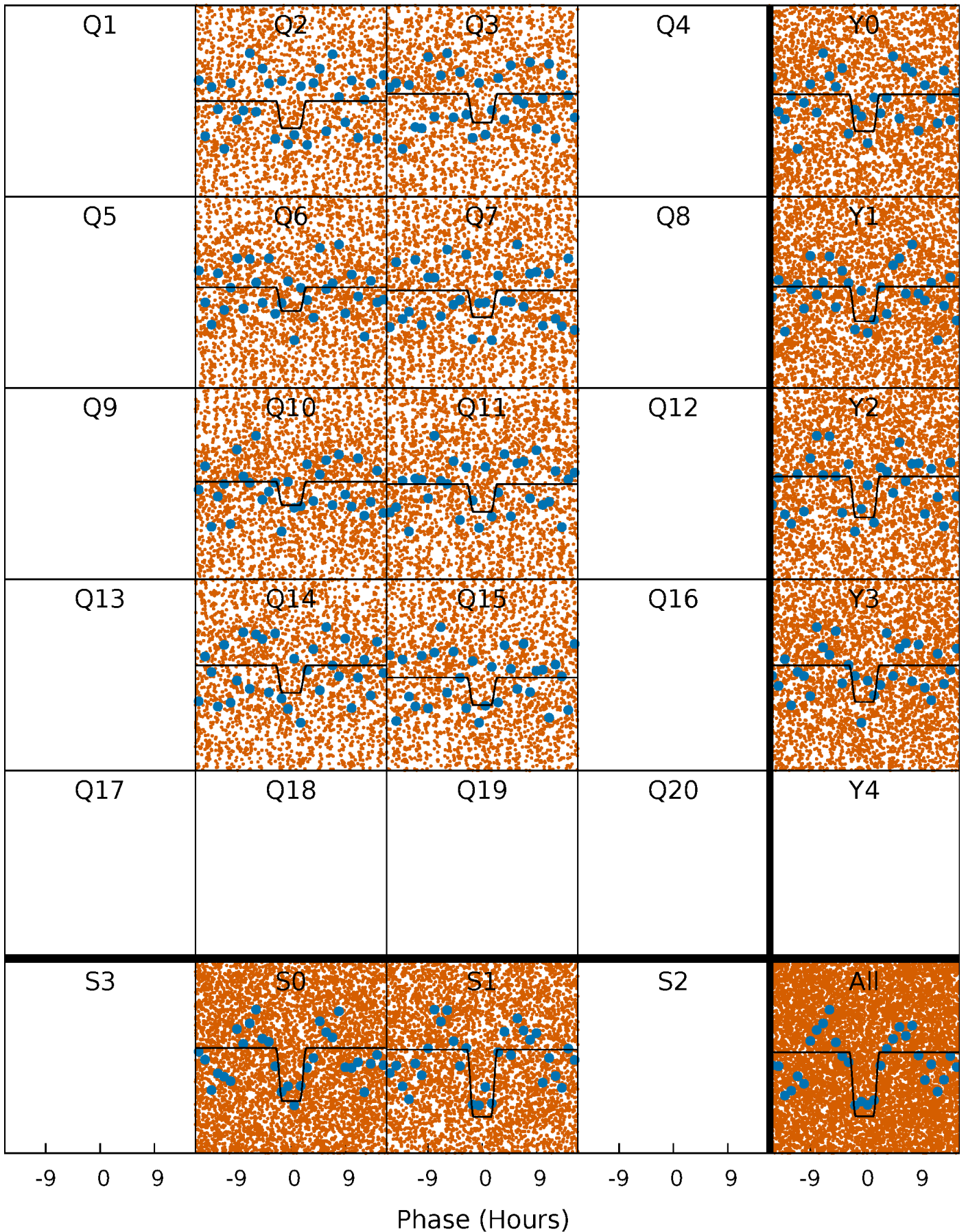
DV Quarter-Phased Transit Curves

TCE 002162904-01 P= 1.539783 Days $T_0=132.304753$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

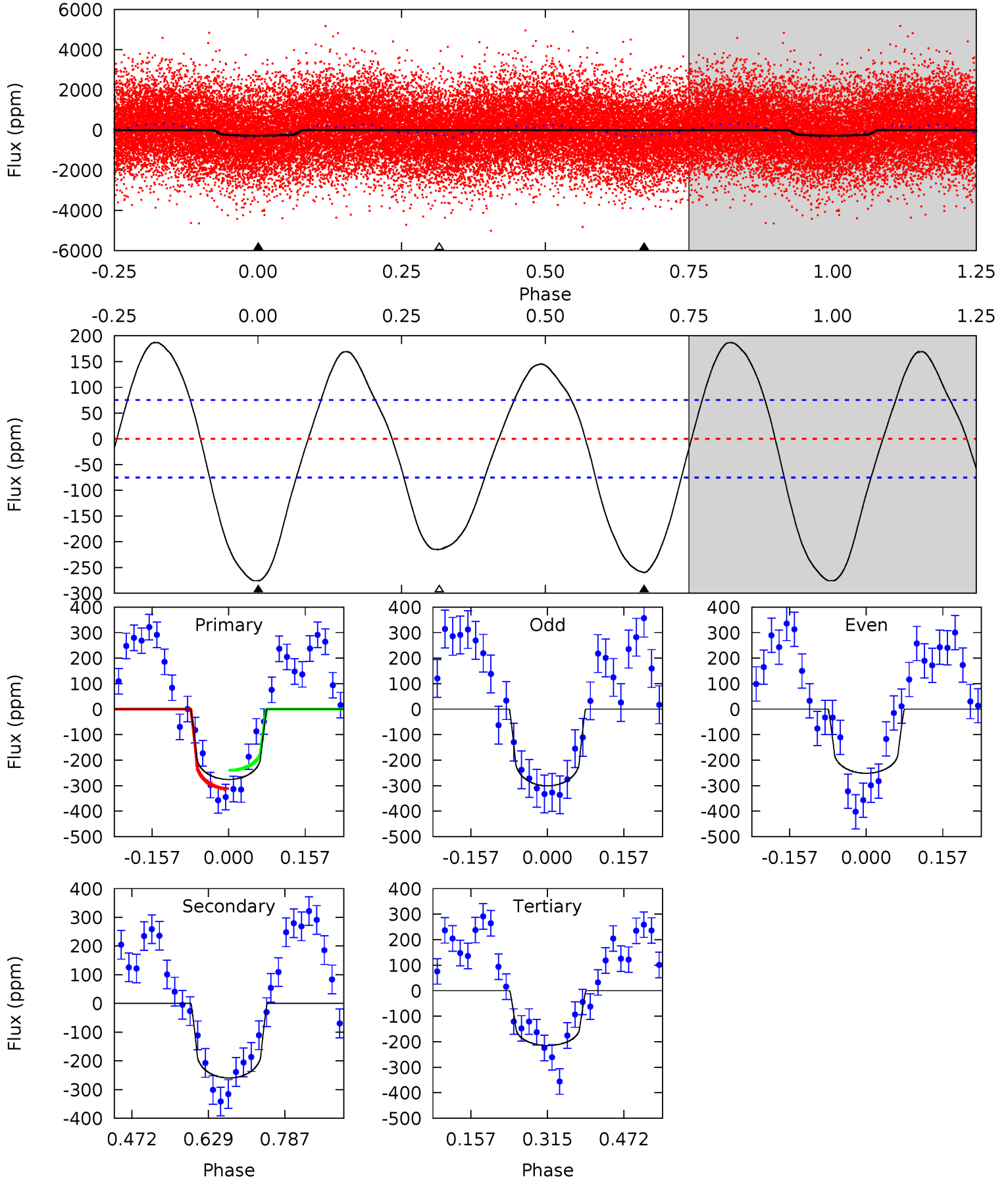
TCE 002162904-01 P= 1.539813 Days $T_0=132.286086$ (BKJD)



DV Model-Shift Uniqueness Test

002162904-01, P = 1.539783 Days, E = 132.304753 Days

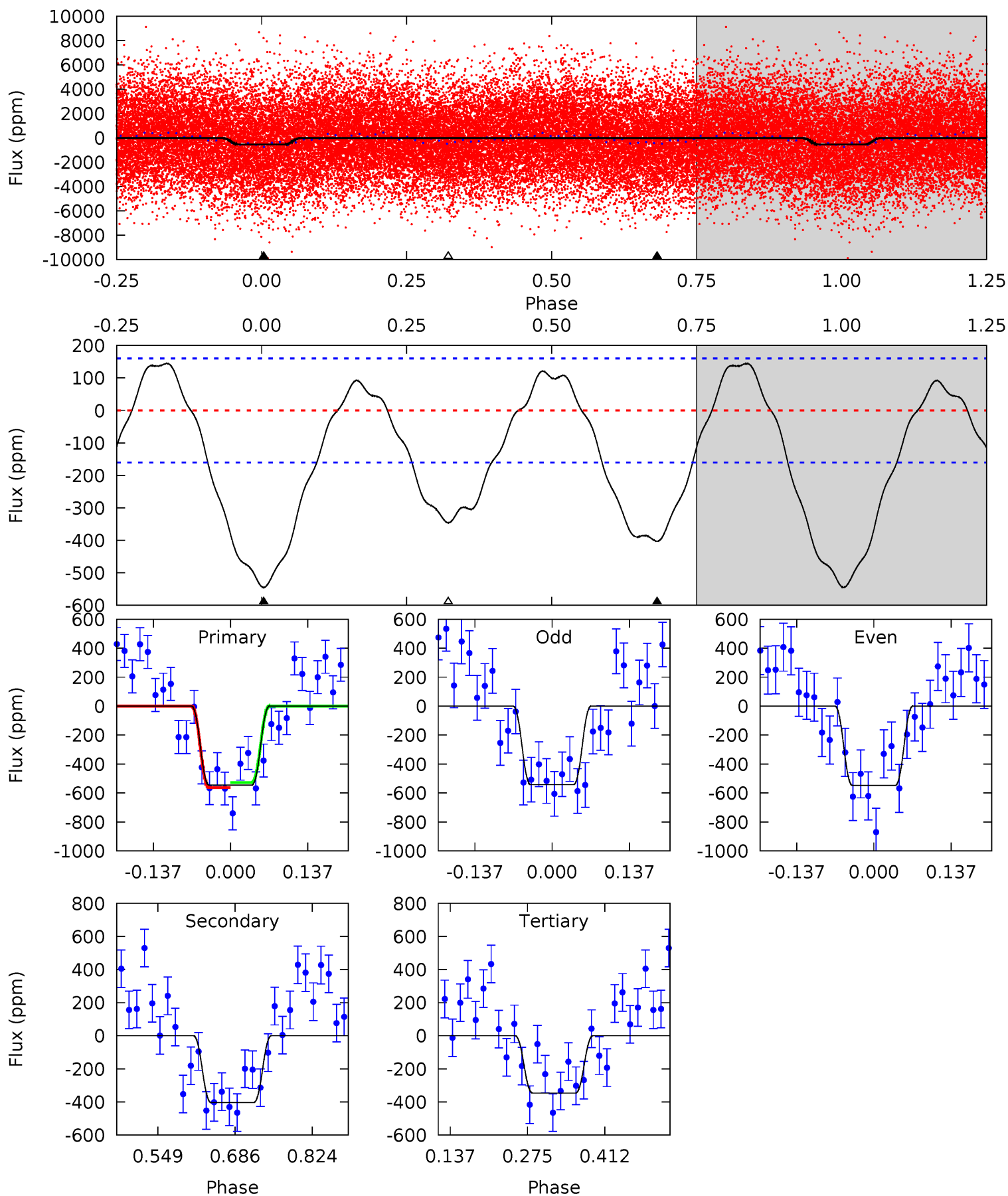
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	15.4	12.7	0	4.47	1.41	8.03	3.62	16.4	2.66	15.4	1.47	1.09	0.40	2.12



Alt Model-Shift Uniqueness Test

002162904-01, P = 1.539813 Days, E = 132.286086 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	11.3	9.72	0	4.50	1.49	4.56	5.58	15.3	1.59	11.3	0.08	0.97	0.21	0.49



Stellar Parameters For KIC 002162904

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7331^{+203}_{-331}	$3.665^{+0.433}_{-0.076}$	$0.160^{+0.200}_{-0.350}$	$3.420^{+0.410}_{-1.640}$	$1.974^{+0.106}_{-0.423}$	$0.070^{+0.280}_{-0.017}$
	+3%/-5%	+12%/-2%	+125%/-219%	+12%/-48%	+5%/-21%	+403%/-25%
Source	KIC0	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 002162904-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-260 ± 17	$5.24^{+4.60}_{-3.00}$	4472^{+328}_{-579}	7184^{+5794}_{-2011}	$5.520^{+23.588}_{-3.963}$
Alt.	-403 ± 36	$9.03^{+4.35}_{-4.62}$	4473^{+322}_{-552}	6084^{+2927}_{-1180}	$2.912^{+8.958}_{-1.618}$

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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

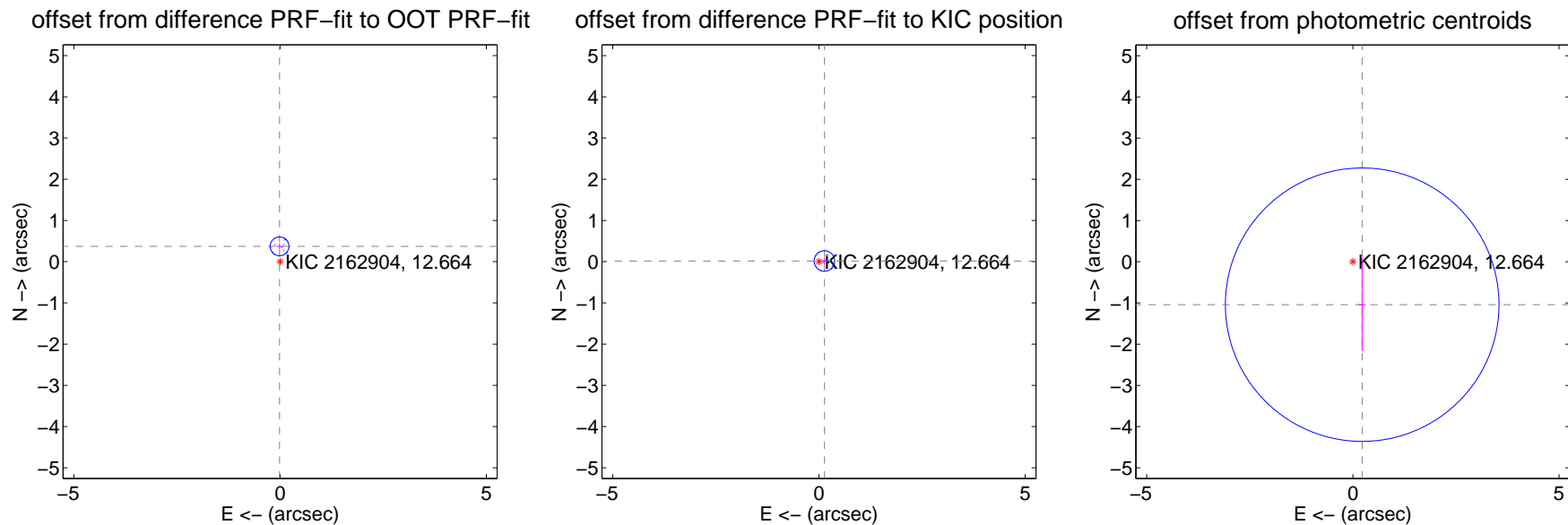
DV Centroid Data

Supplemental centroid analysis for 002162904-01. Kepler magnitude: 12.66. Transit SNR 9.39

There are 8 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.373 ± 0.076	4.92	0.013 ± 0.077	0.373 ± 0.076
PRF-fit source offset from KIC position	0.133 ± 0.083	1.61	-0.132 ± 0.083	0.017 ± 0.083
photometric centroid source offset	1.07 ± 1.11	0.96	-0.23 ± 0.09	-1.04 ± 1.13



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.

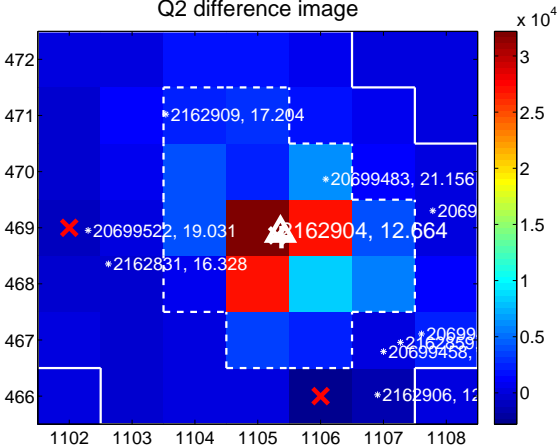
Q1 no difference image



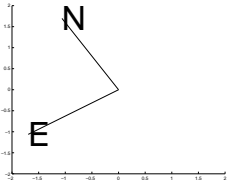
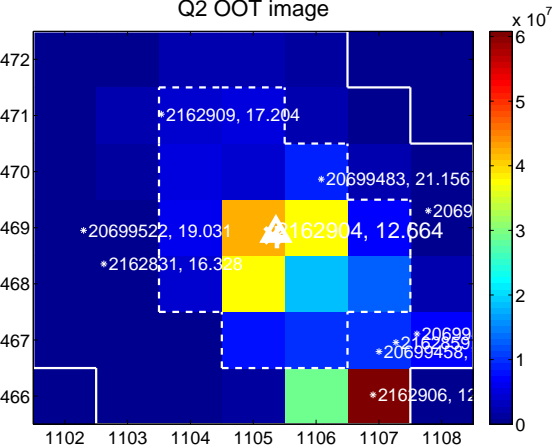
Q1 no OOT image



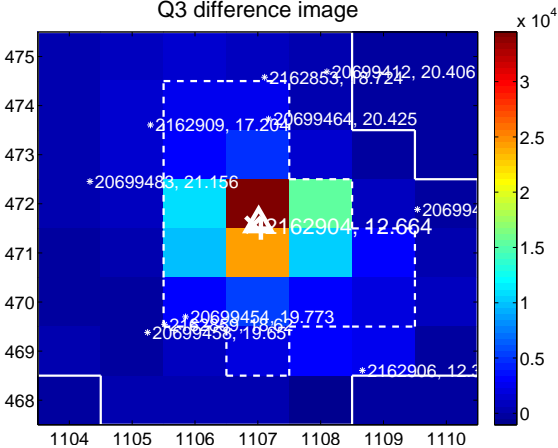
Q2 difference image



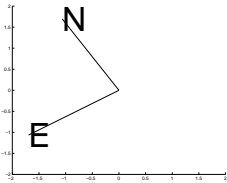
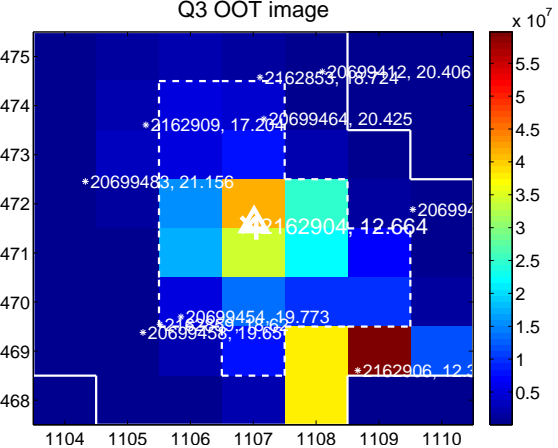
Q2 OOT image



Q3 difference image



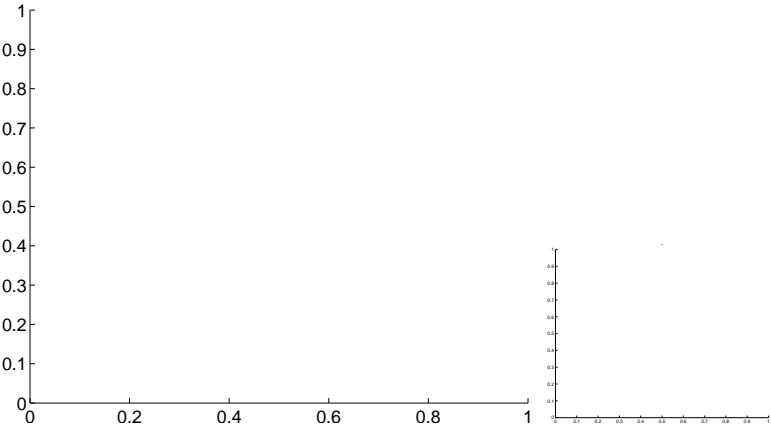
Q3 OOT image



Q4 no difference image



Q4 no OOT image



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

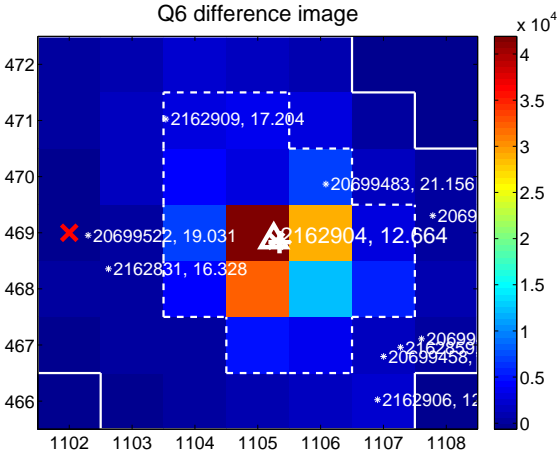
Q5 no difference image



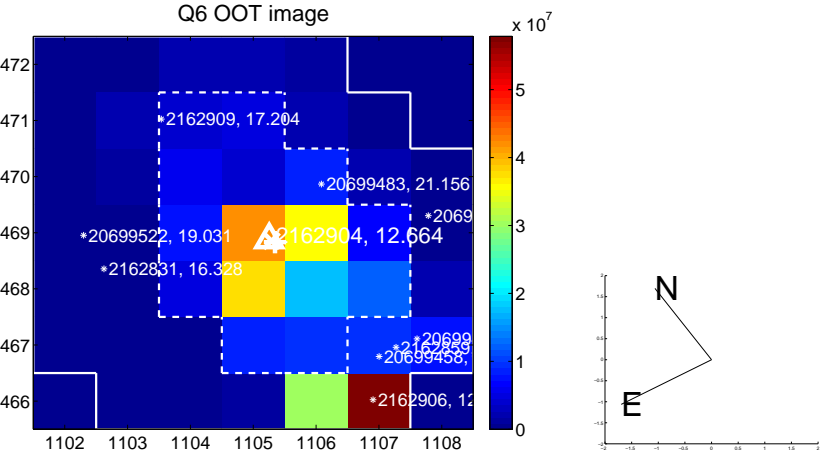
Q5 no OOT image



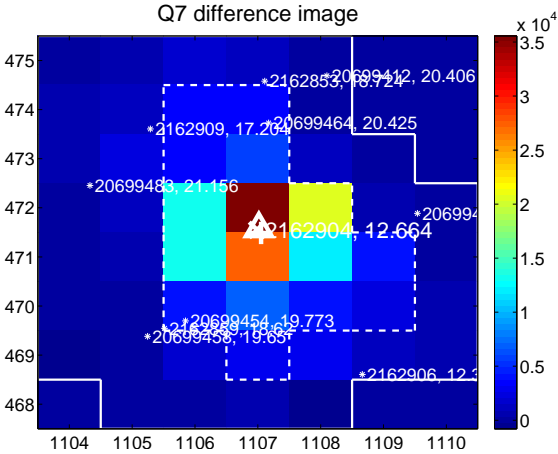
Q6 difference image



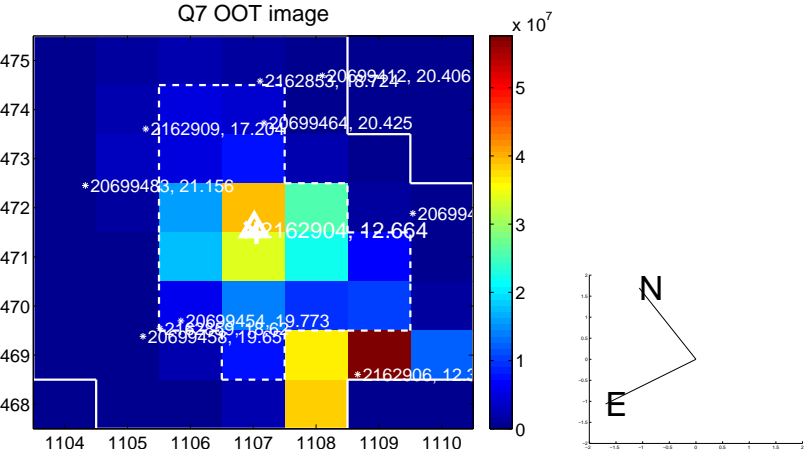
Q6 OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

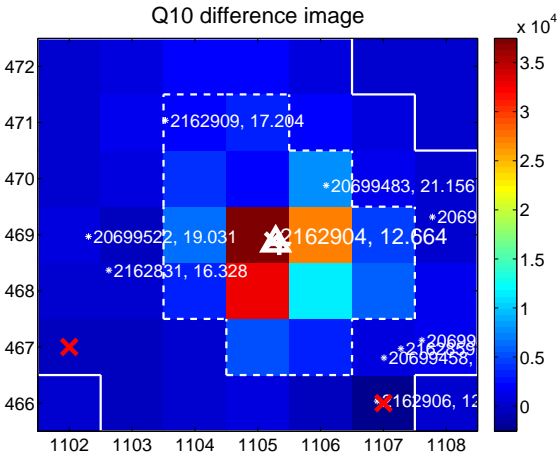
Q9 no difference image



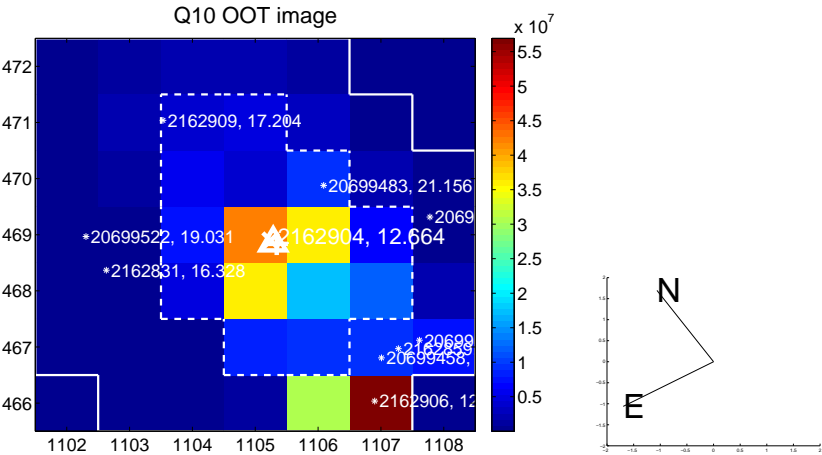
Q9 no OOT image



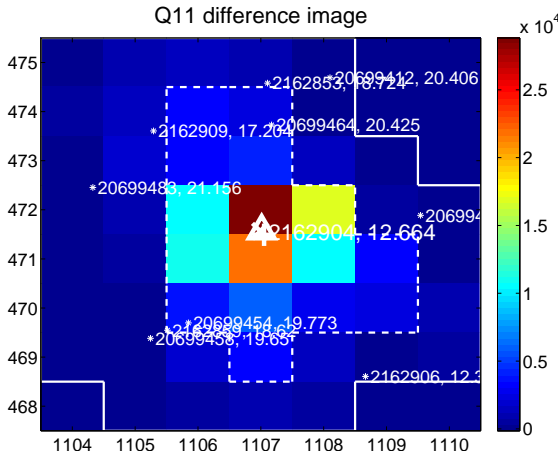
Q10 difference image



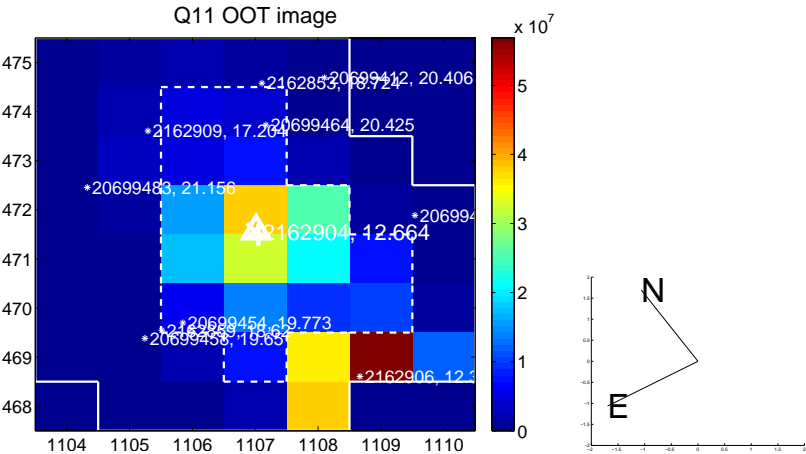
Q10 OOT image



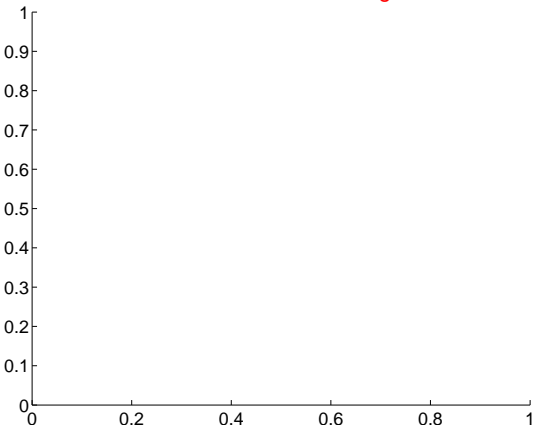
Q11 difference image



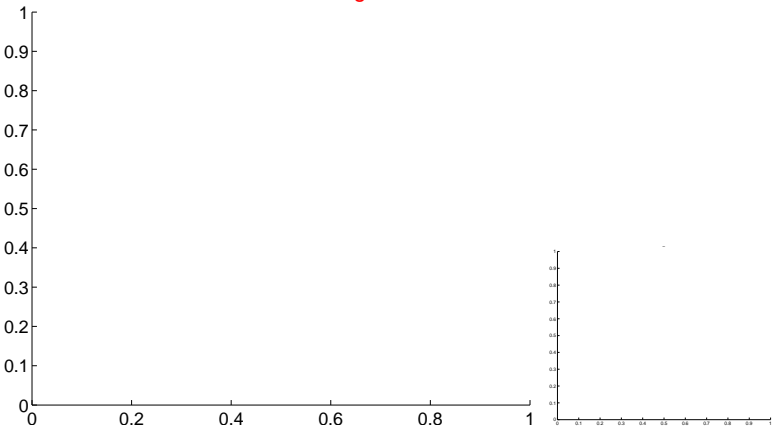
Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

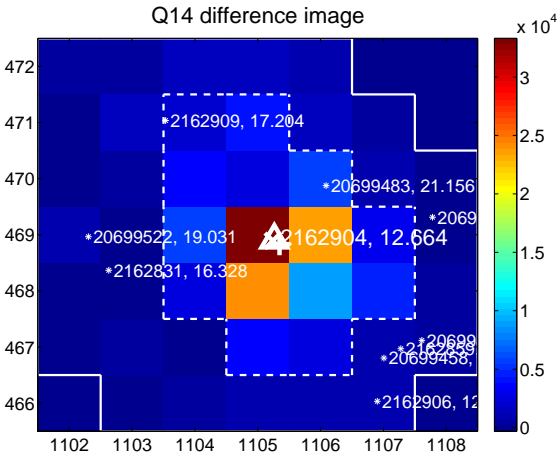
Q13 no difference image



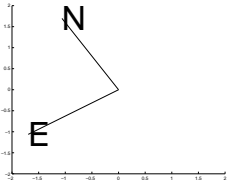
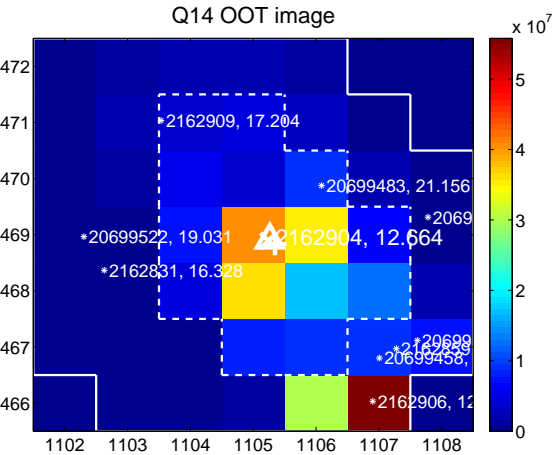
Q13 no OOT image



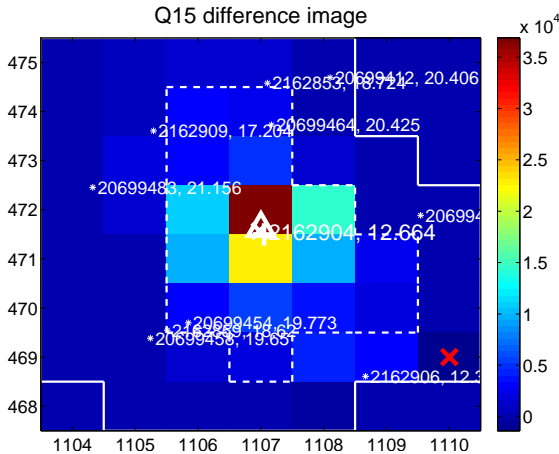
Q14 difference image



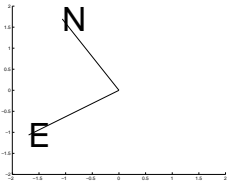
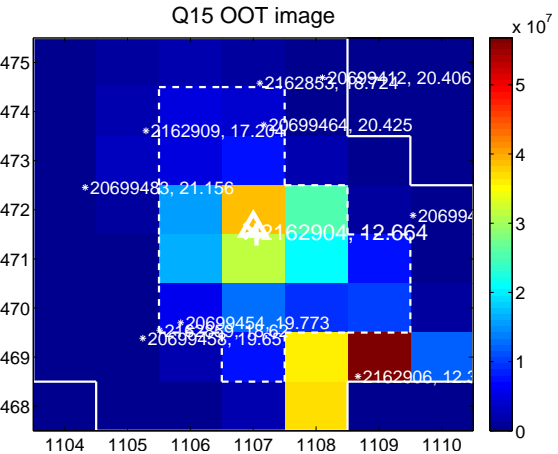
Q14 OOT image



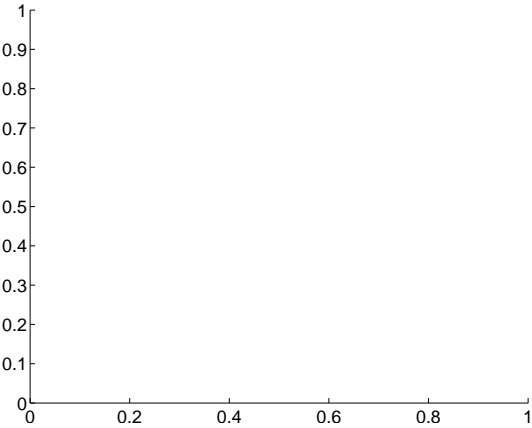
Q15 difference image



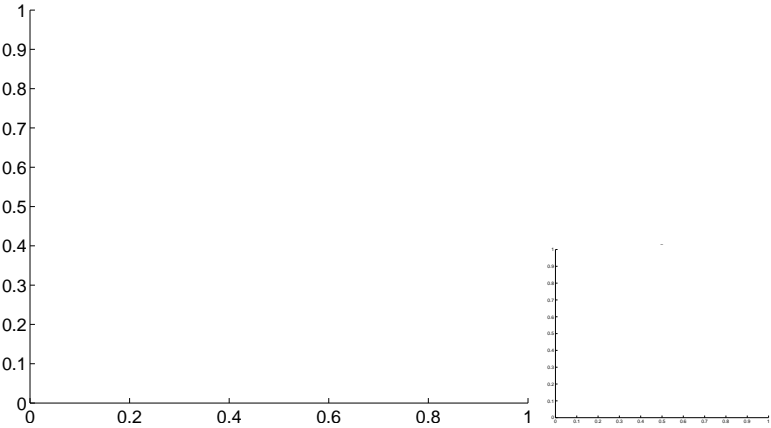
Q15 OOT image



Q16 no difference image



Q16 no OOT image



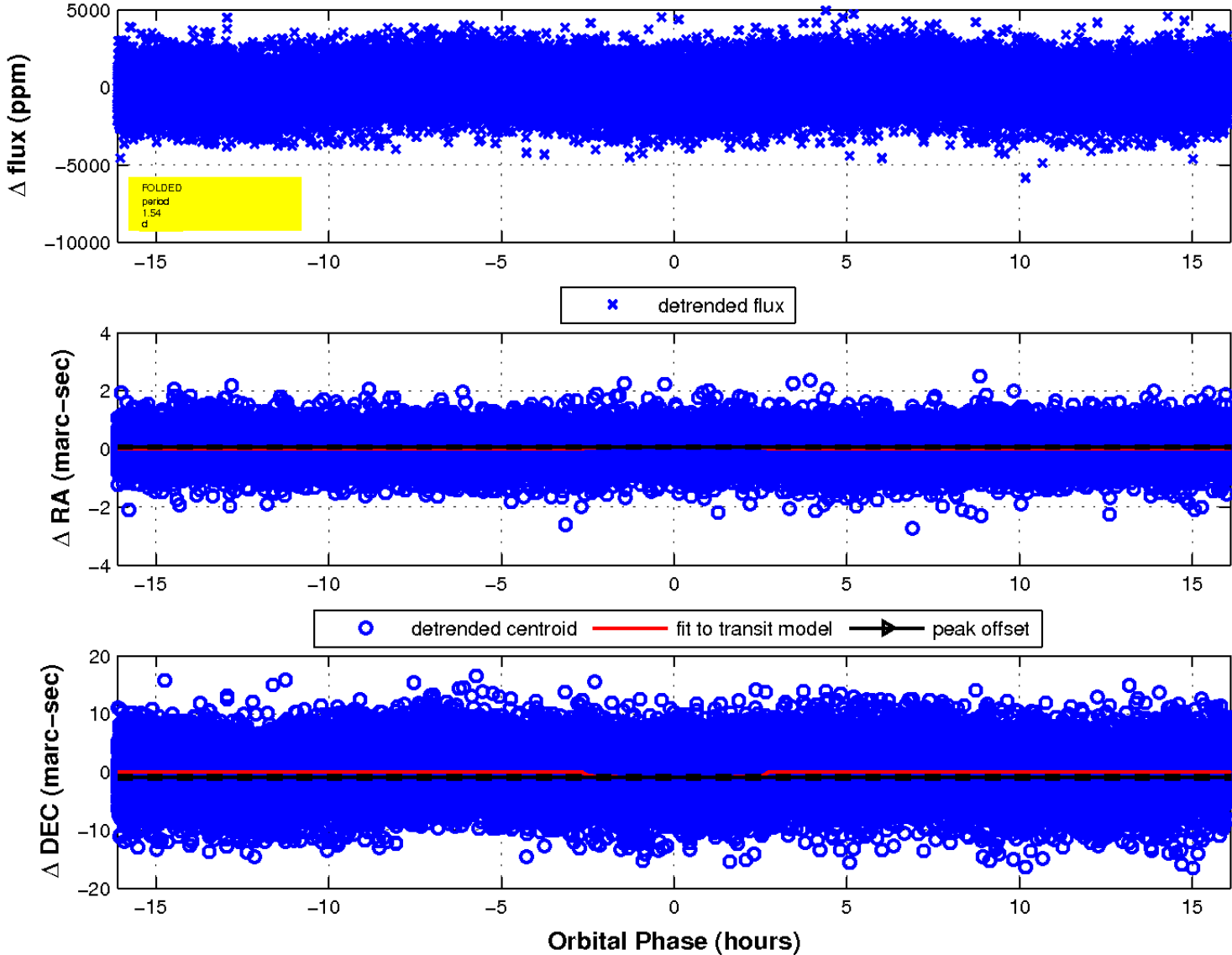
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

