

KIC 009943818

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})
009943818-01	OBS	No	190.020460	154.204702	506.5	2.507	7.4	7.0	0.90	6038	2.27	2.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009943818-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

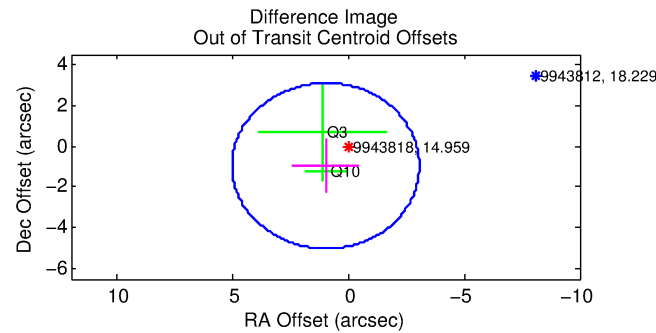
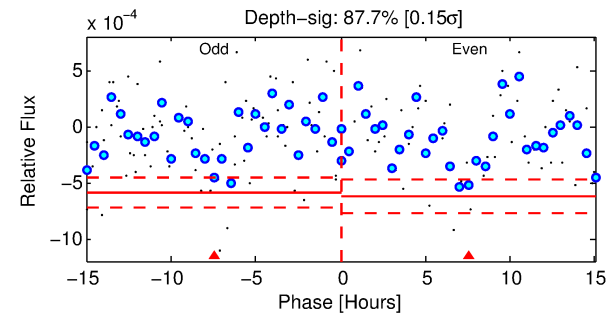
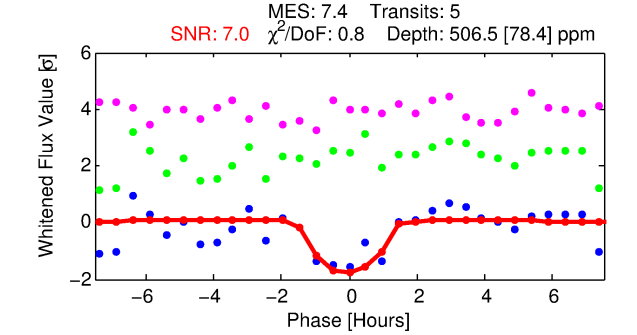
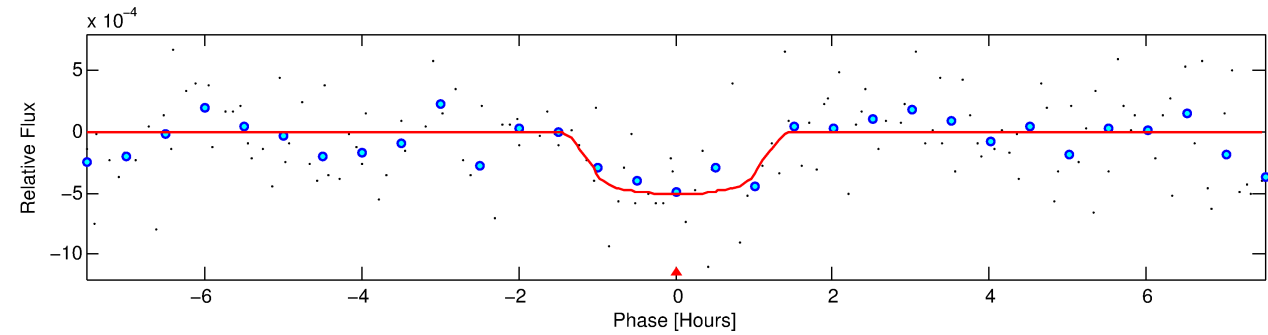
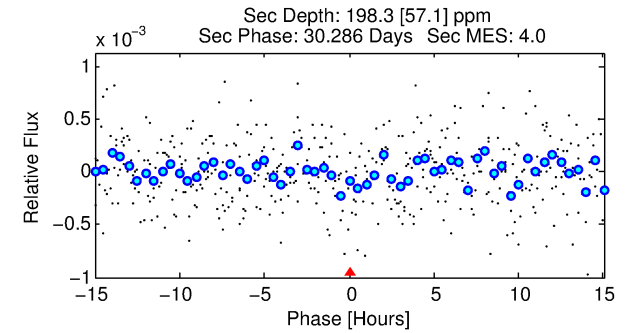
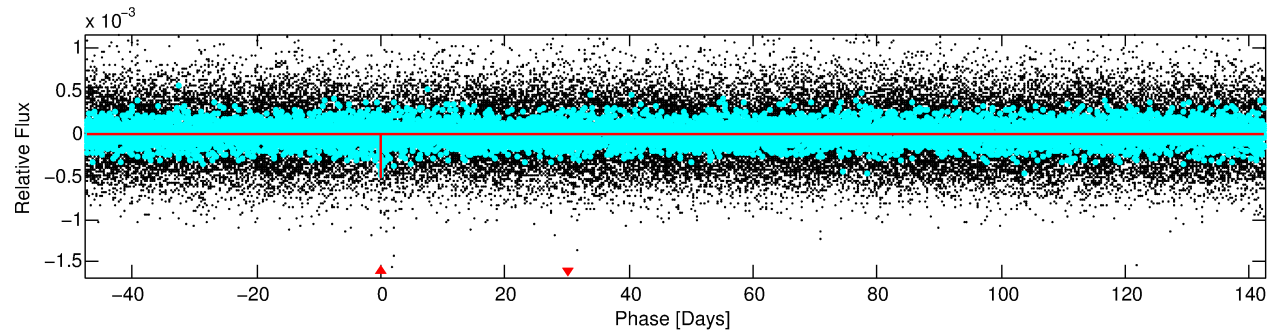
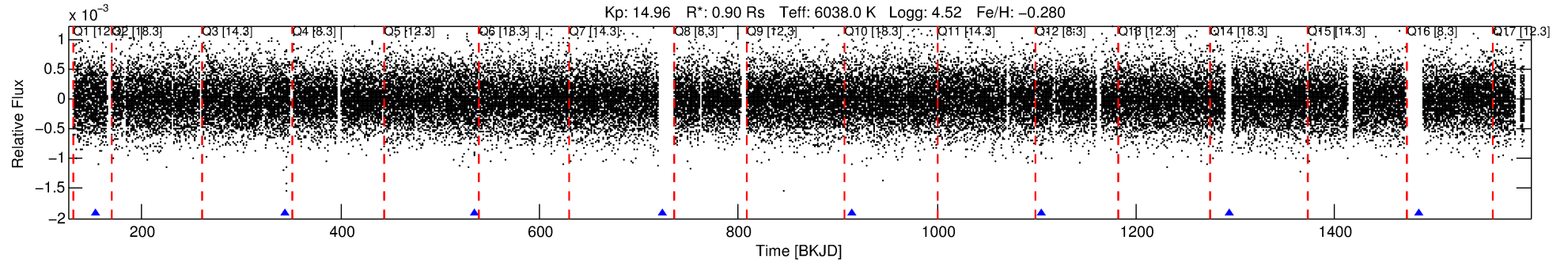
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009943818-01

No Significant Match Found

DV One-Page Summary

KIC: 9943818 Candidate: 1 of 1 Period: 190.020 d



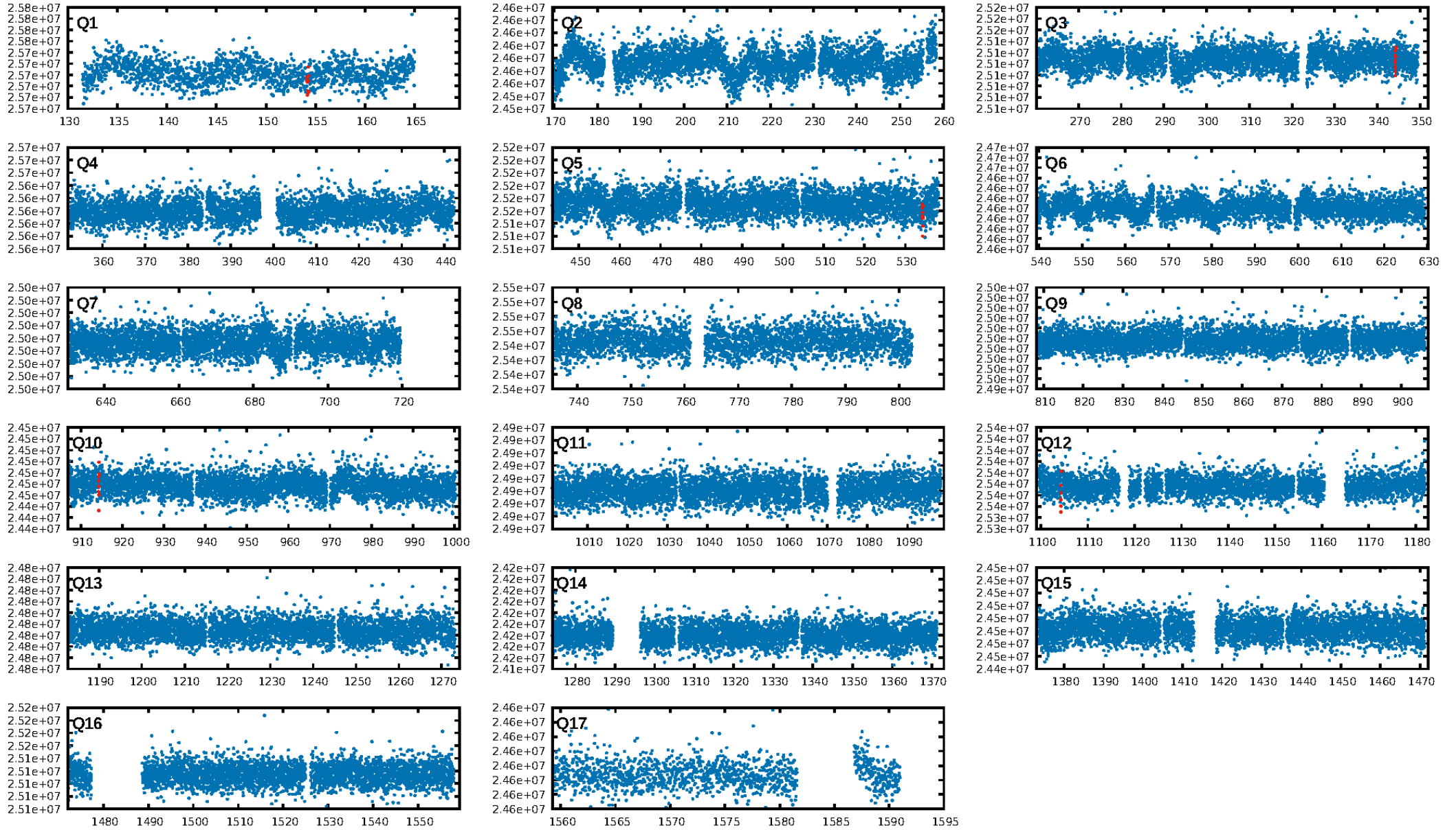
DV Fit Results:

Period = 190.02046 [0.00263] d
Epoch = 154.2047 [0.0078] BKJD
Rp/R* = 0.0232 [0.0303]
a/R* = 347.16 [2311.91]
b = 0.83 [2.54]
Seff = 2.32 [0.95]
Teff = 315 [32] K
Rp = 2.27 [3.05] Re
a = 0.6433 [0.1686] AU
Ag = 8758.20 [23267.96] [0.38 σ]
Teffp = 4707 [3097] K [1.42 σ]

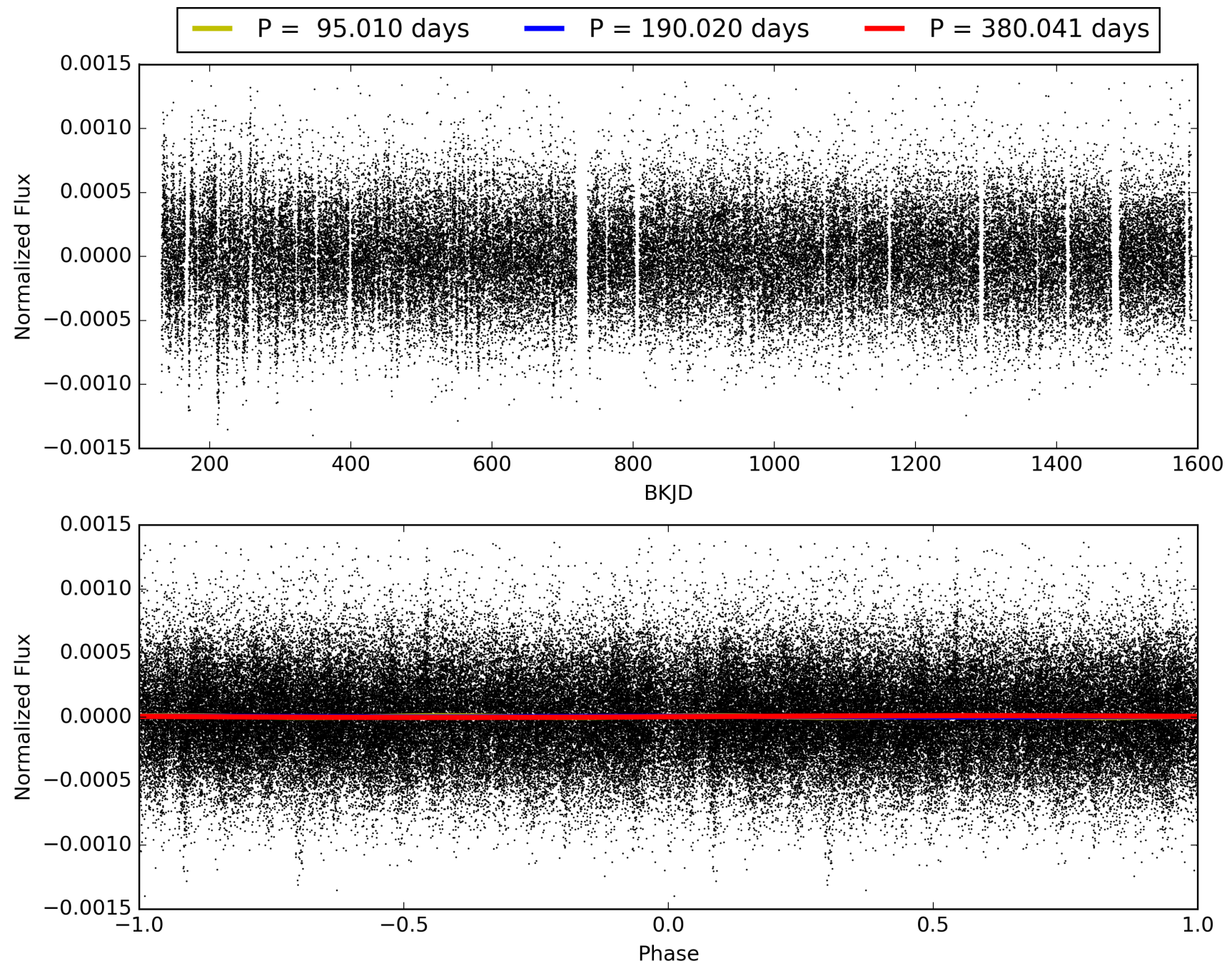
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 85.4%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 4.73e-14
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 5.99
Centroid-sig: 12.9%
Centroid-so: 3.814 arcsec [1.82 σ]
OotOffset-rm: 1.379 arcsec [1.02 σ]
KicOffset-rm: 1.367 arcsec [1.01 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 009943818-01, PDC Light Curves

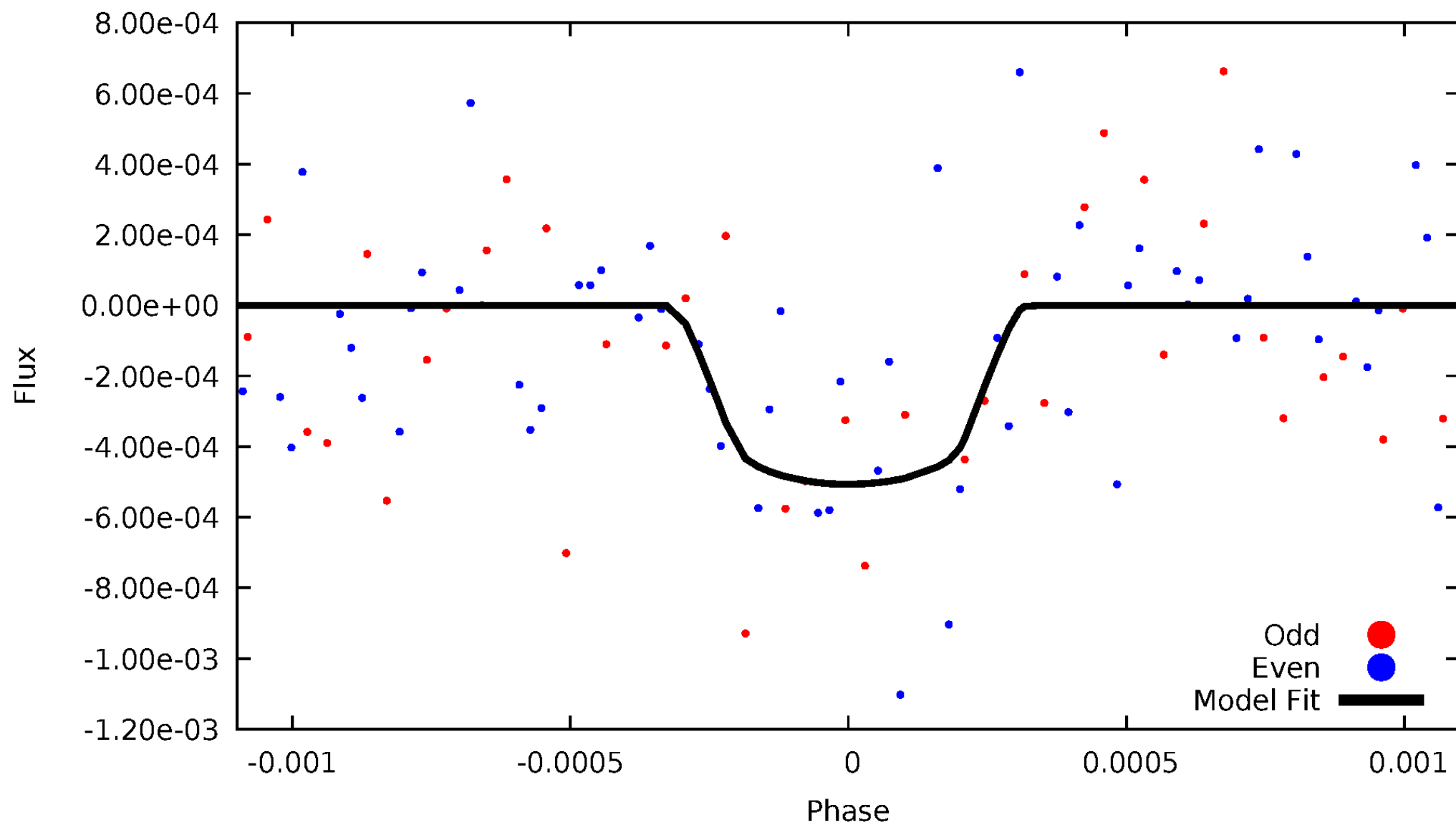


TCE 009943818-01



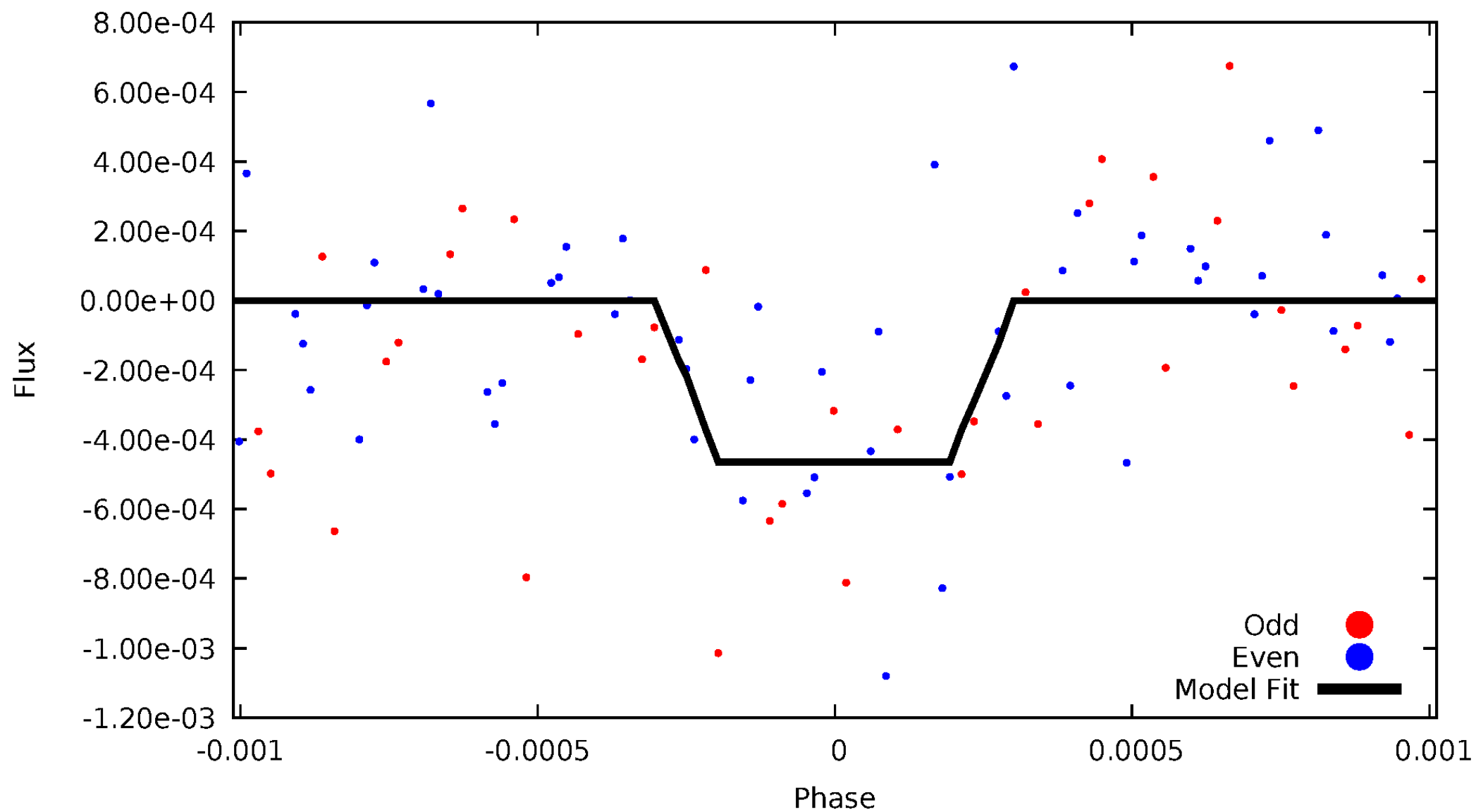
DV Odd/Even

TCE 009943818-01



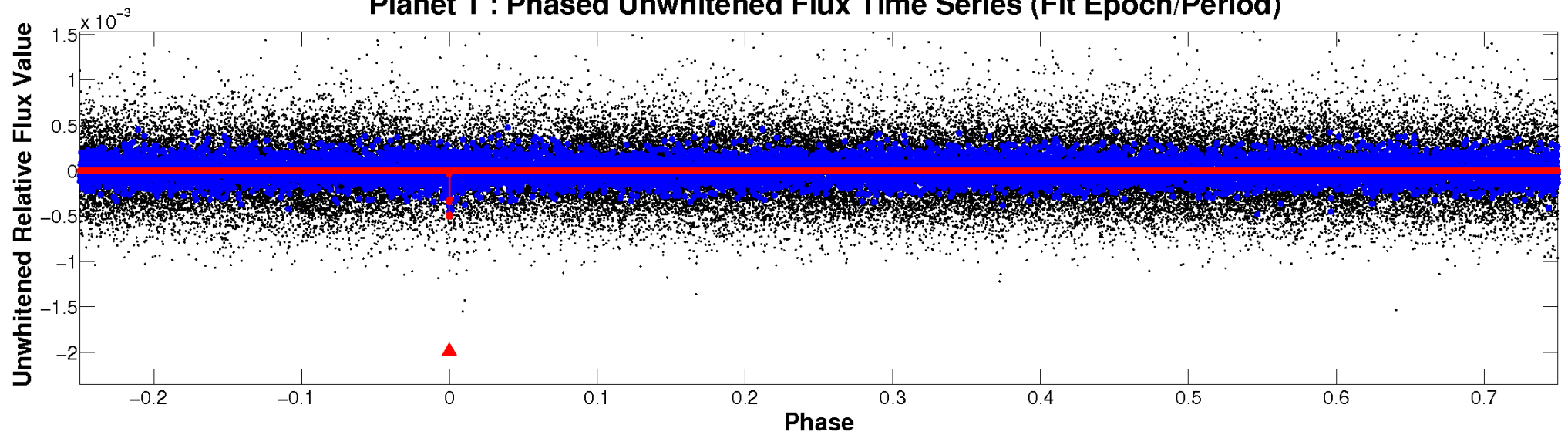
ALT Odd/Even

TCE 009943818-01

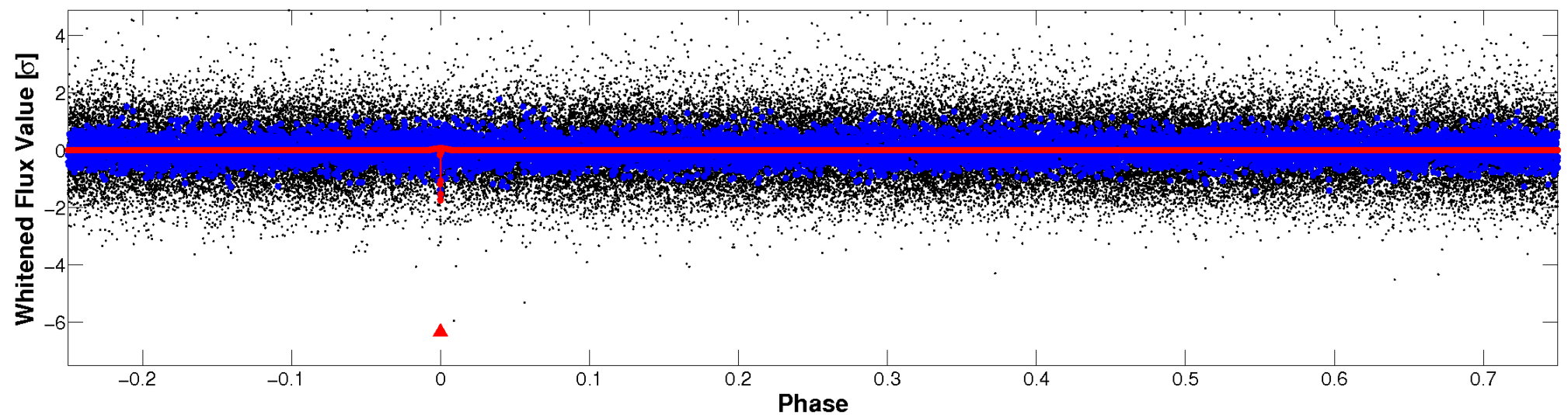


Non-Whitened Vs. Whitened Light Curve

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

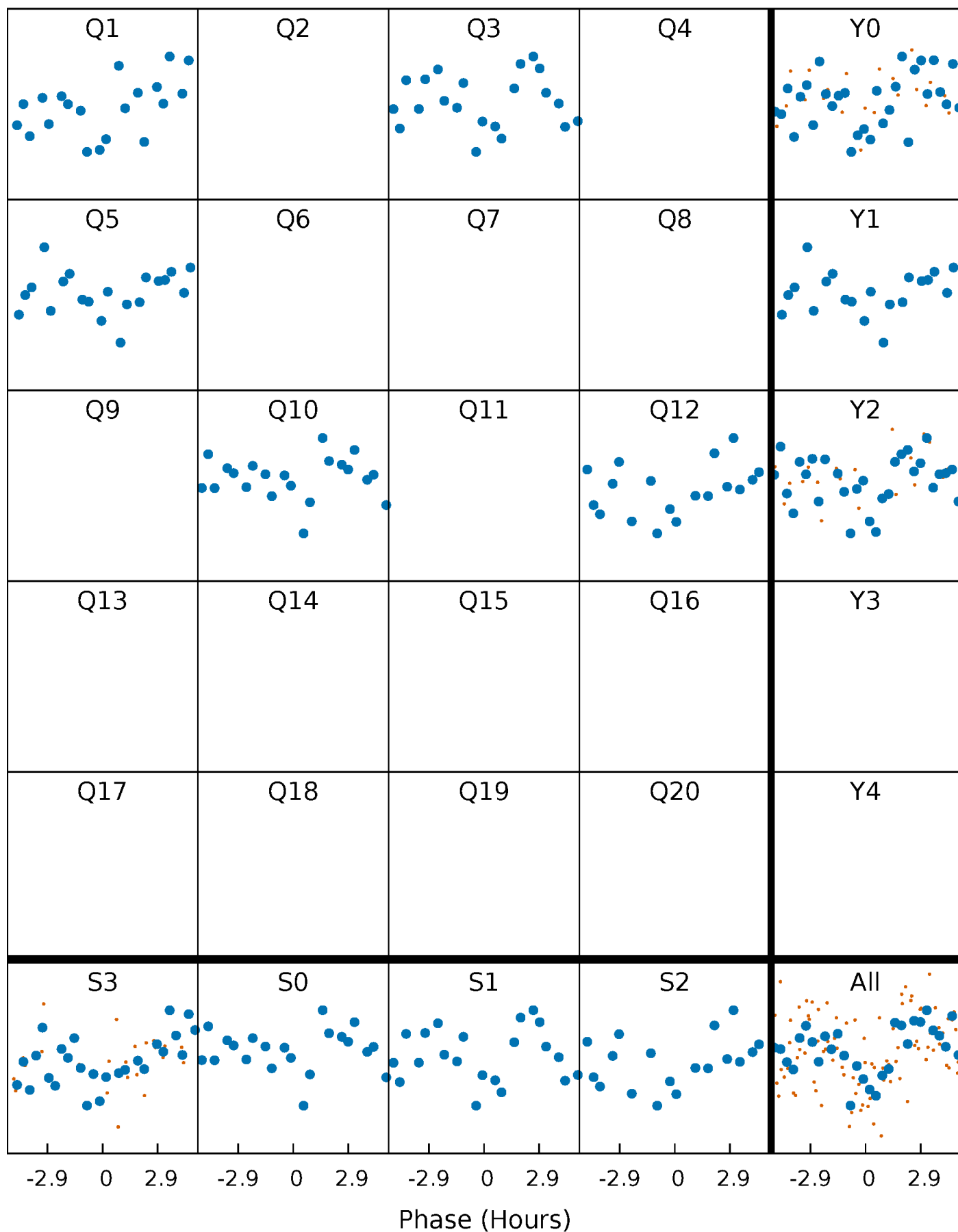


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



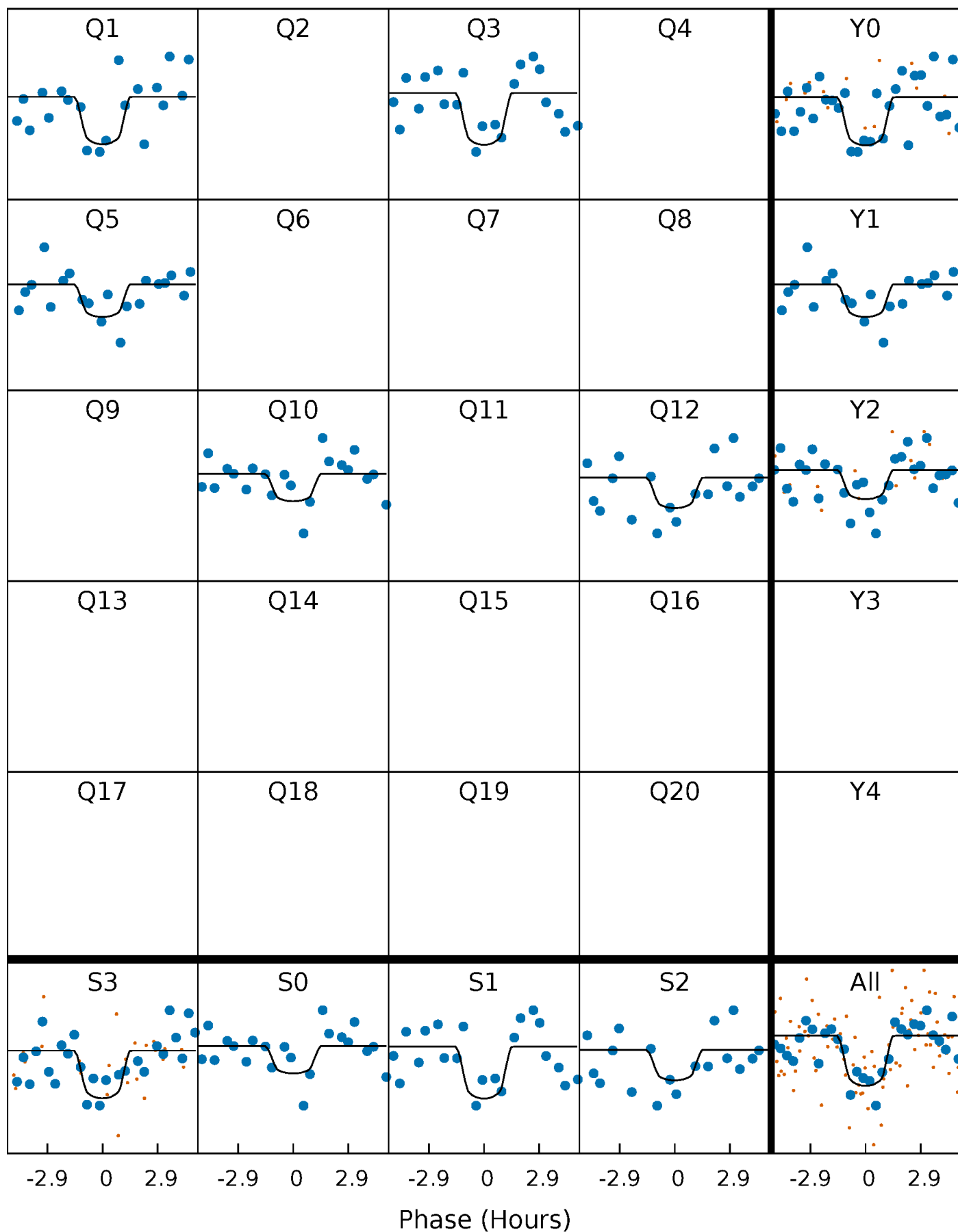
PDC Quarter-Phased Transit Curves

TCE 009943818-01 P=190.020459 Days $T_0=154.204702$ (BKJD)



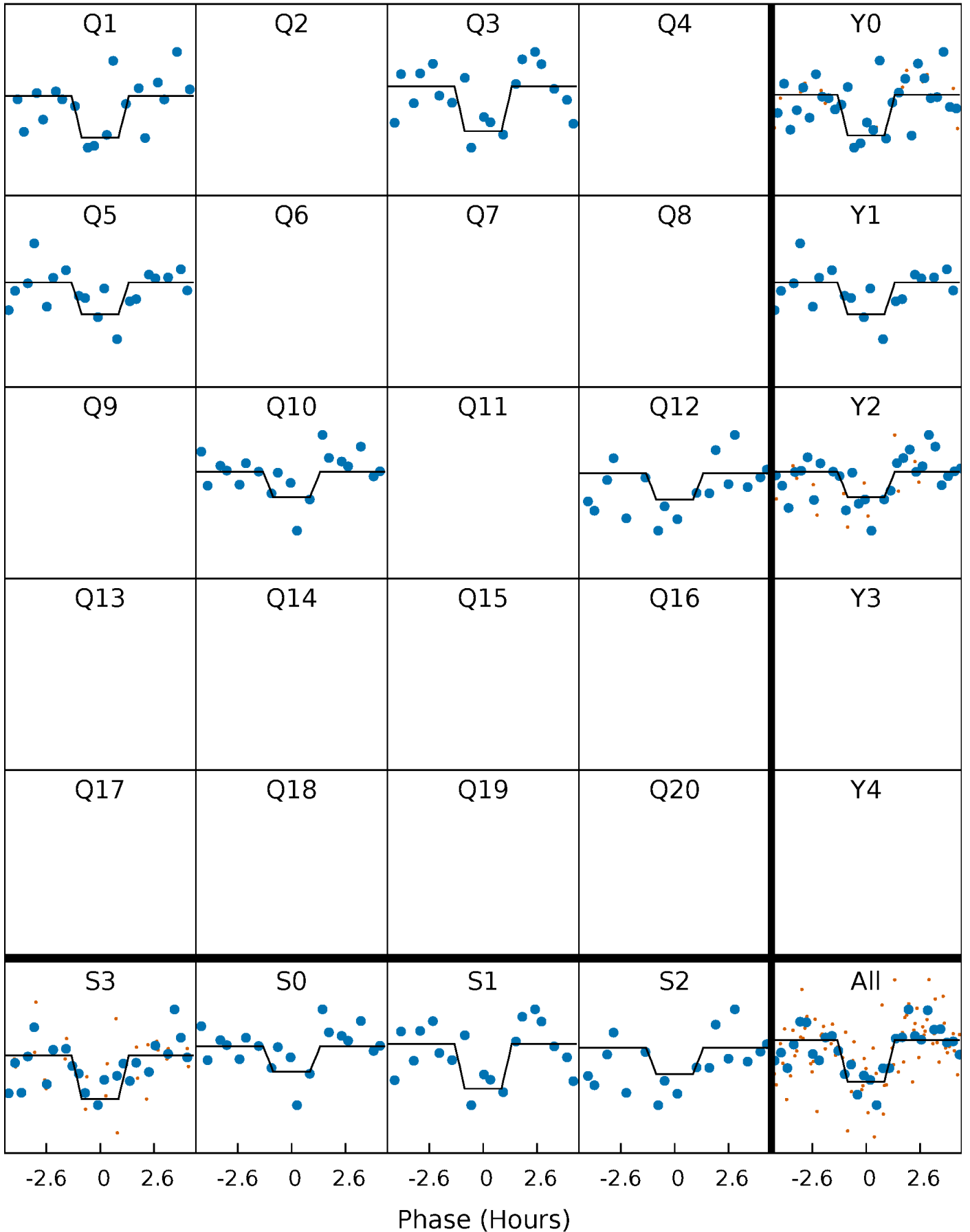
DV Quarter-Phased Transit Curves

TCE 009943818-01 P=190.020459 Days $T_0=154.204702$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

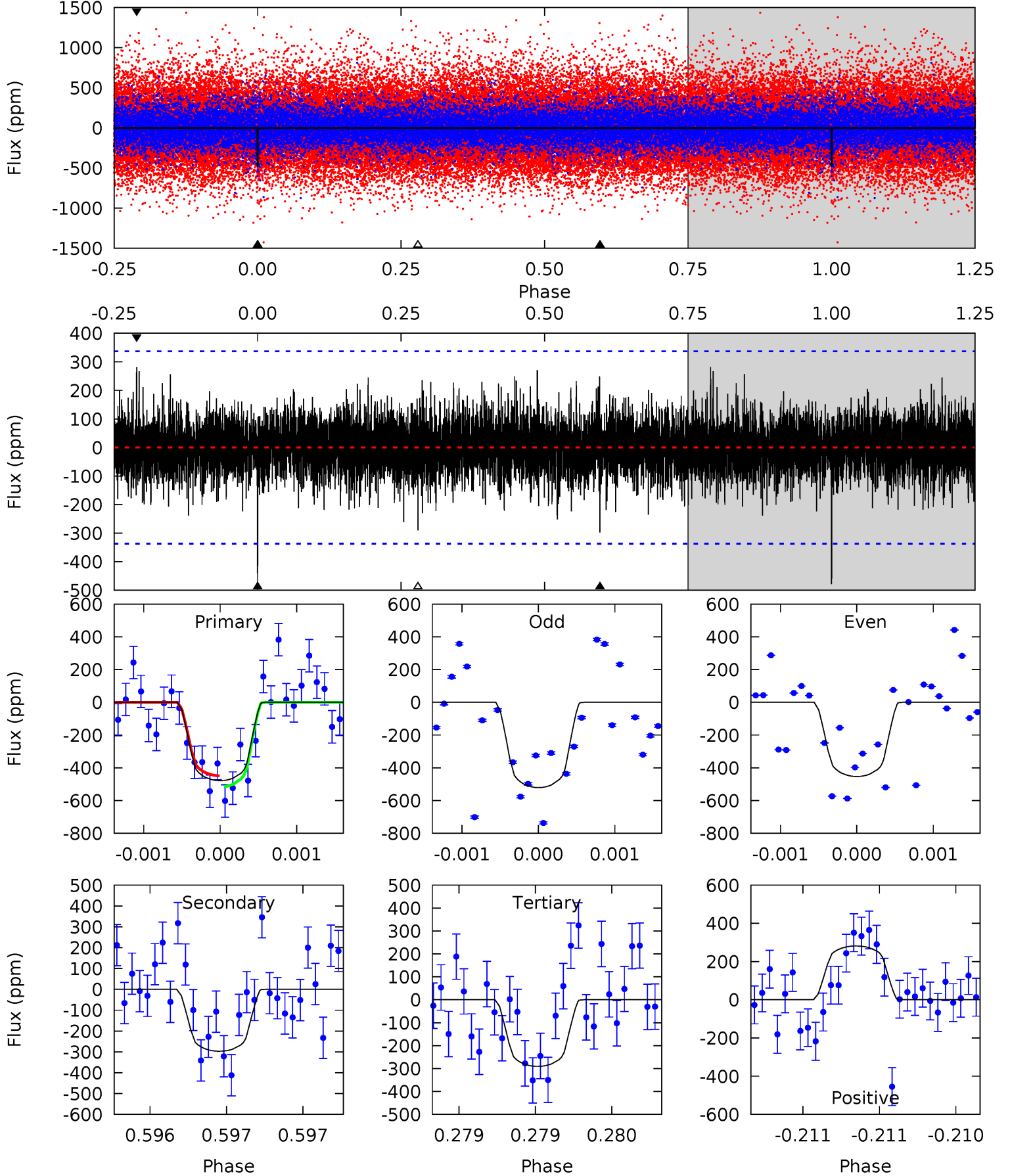
TCE 009943818-01 P=190.021156 Days $T_0=154.203346$ (BKJD)



DV Model-Shift Uniqueness Test

009943818-01, P = 190.020459 Days, E = 154.204702 Days

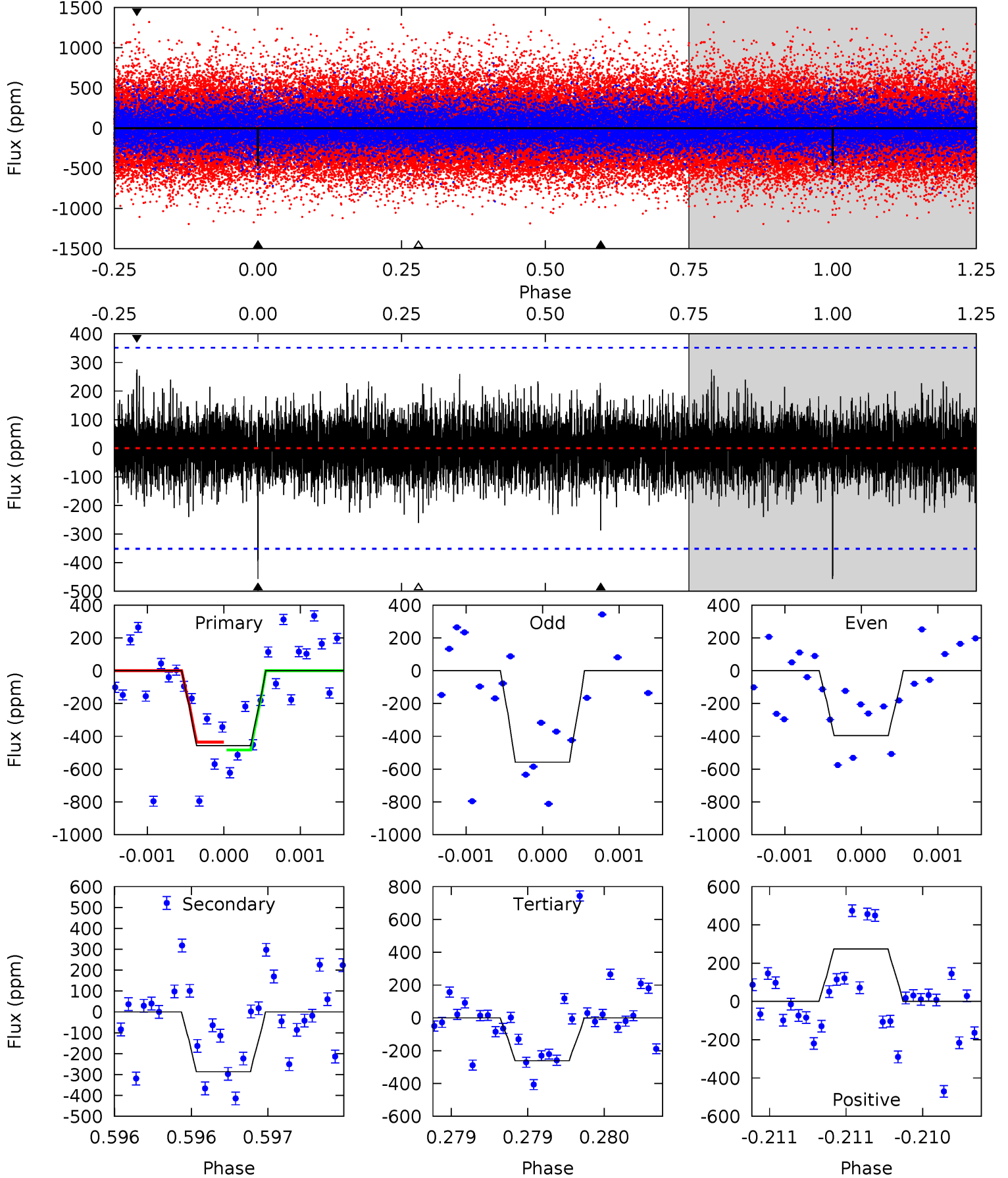
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.89	4.89	4.79	4.64	5.55	3.44	1.15	3.10	3.25	0.11	0.26	0.54	0.97	0.37	0.55



Alt Model-Shift Uniqueness Test

009943818-01, P = 190.021156 Days, E = 154.203346 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.22	4.53	4.13	4.34	5.56	3.45	1.05	3.09	2.88	0.40	0.19	1.26	1.12	0.38	0.38



Stellar Parameters For KIC 009943818

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6038^{+163}_{-199}	$4.524^{+0.050}_{-0.213}$	$-0.280^{+0.300}_{-0.300}$	$0.898^{+0.276}_{-0.092}$	$0.982^{+0.120}_{-0.120}$	$1.912^{+0.389}_{-0.992}$
	+3%/-3%	+1%/-5%	+107%/-107%	+31%/-10%	+12%/-12%	+20%/-52%
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 009943818-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-297 ± 61	$3.20^{+2.94}_{-2.11}$	450^{+31}_{-22}	4647^{+2980}_{-1012}	6179^{+48327}_{-4486}
Alt.	-287 ± 63	$3.21^{+2.83}_{-2.07}$	449^{+33}_{-21}	4567^{+2850}_{-907}	6018^{+40680}_{-4333}

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

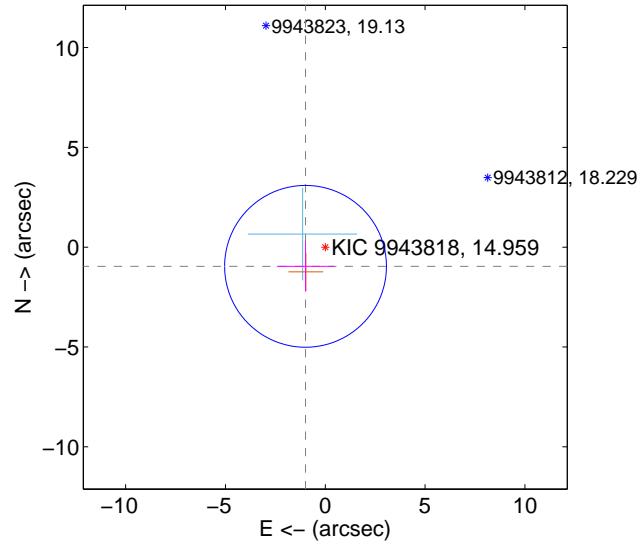
Supplemental centroid analysis for 009943818-01. Kepler magnitude: 14.96. Transit SNR 6.99

There are 1 quarters with good PRF difference image offsets

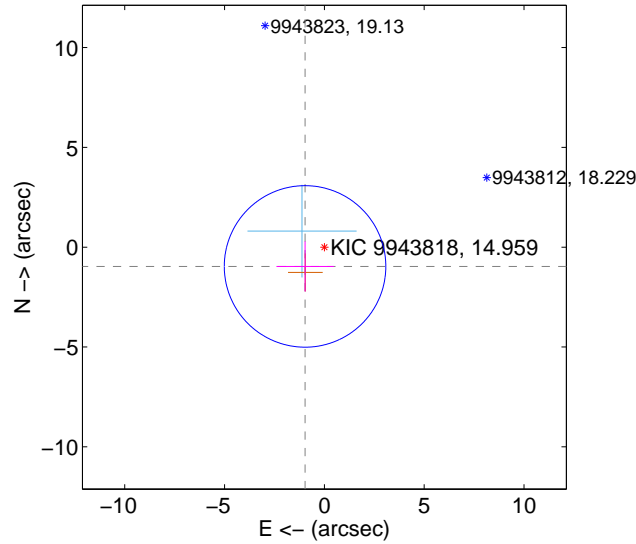
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.379 ± 1.351	1.02	0.989 ± 1.435	-0.961 ± 1.256
PRF-fit source offset from KIC position	1.367 ± 1.349	1.01	0.968 ± 1.435	-0.965 ± 1.256
photometric centroid source offset	3.81 ± 2.10	1.82	3.74 ± 2.09	-0.75 ± 2.27

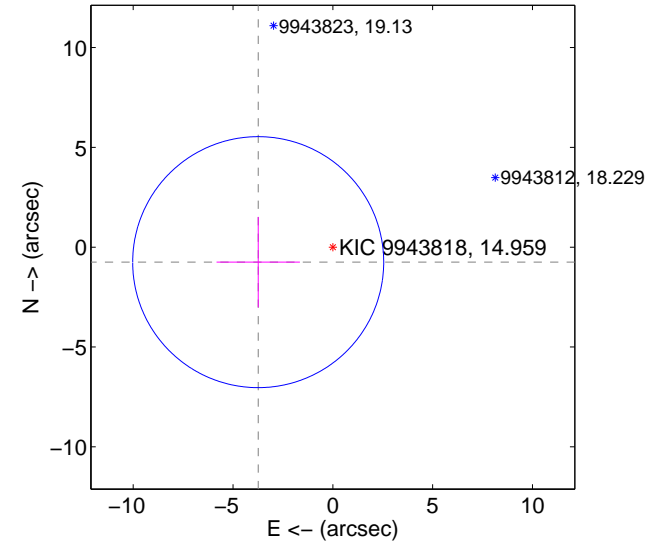
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

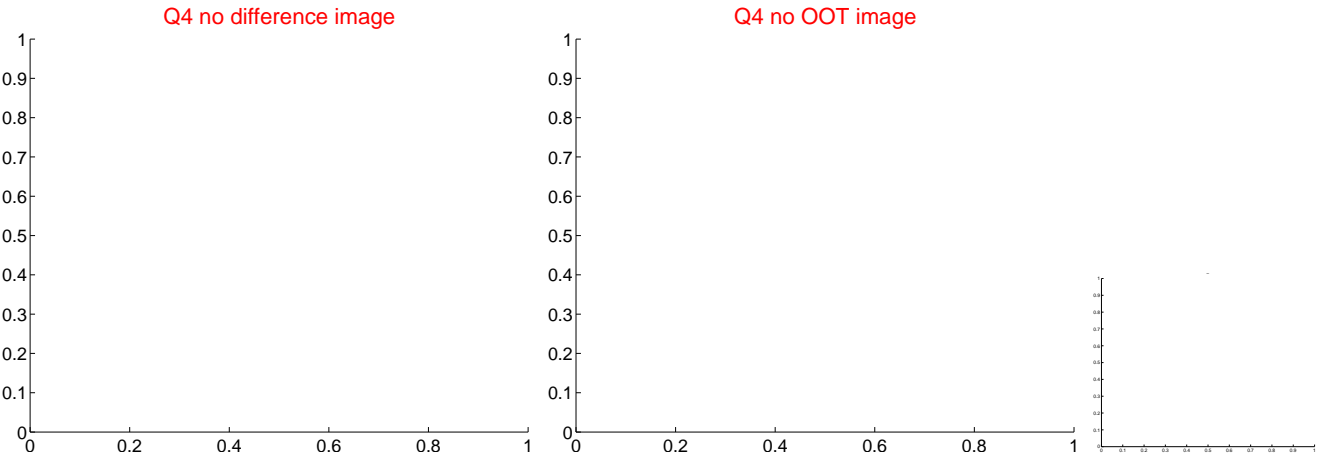
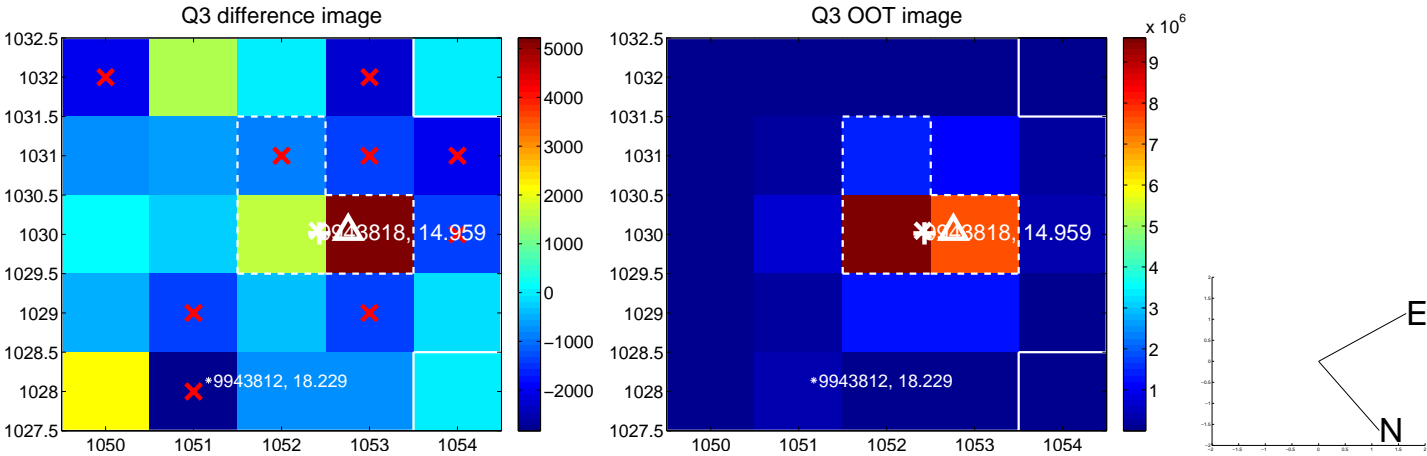
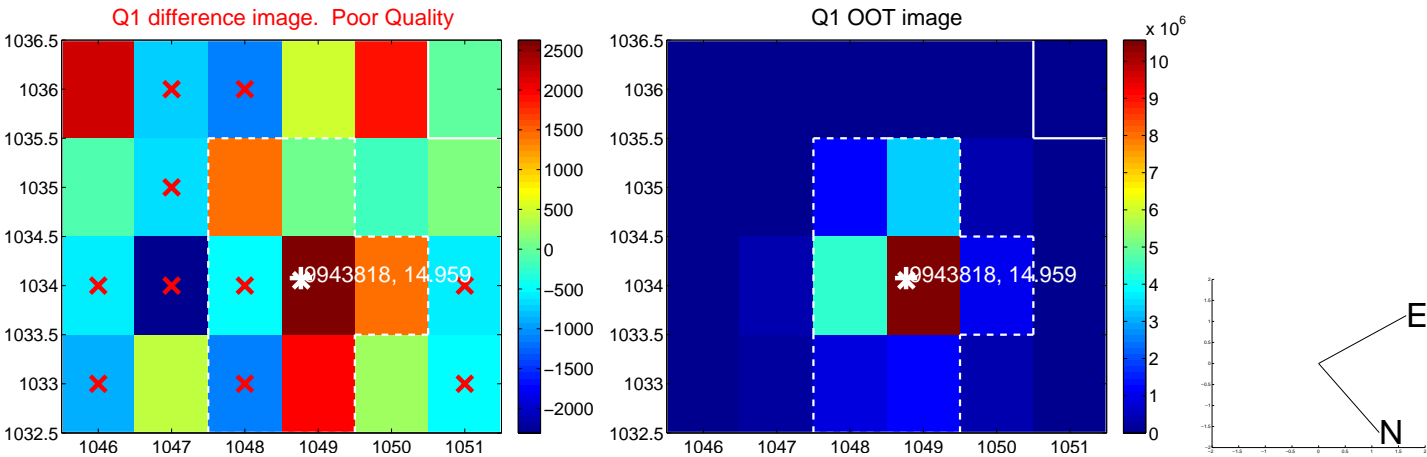


offset from photometric centroids

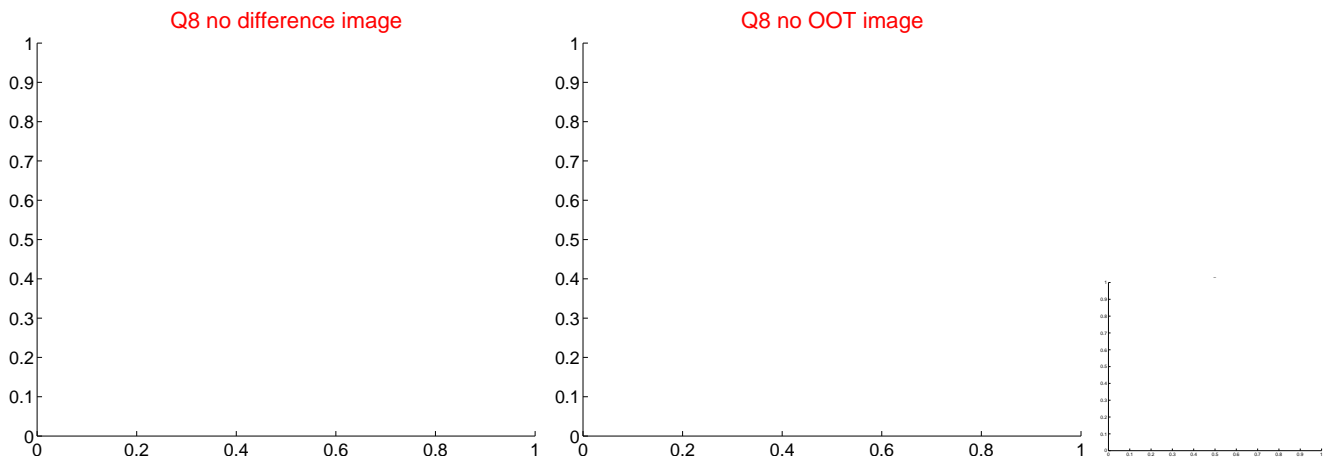
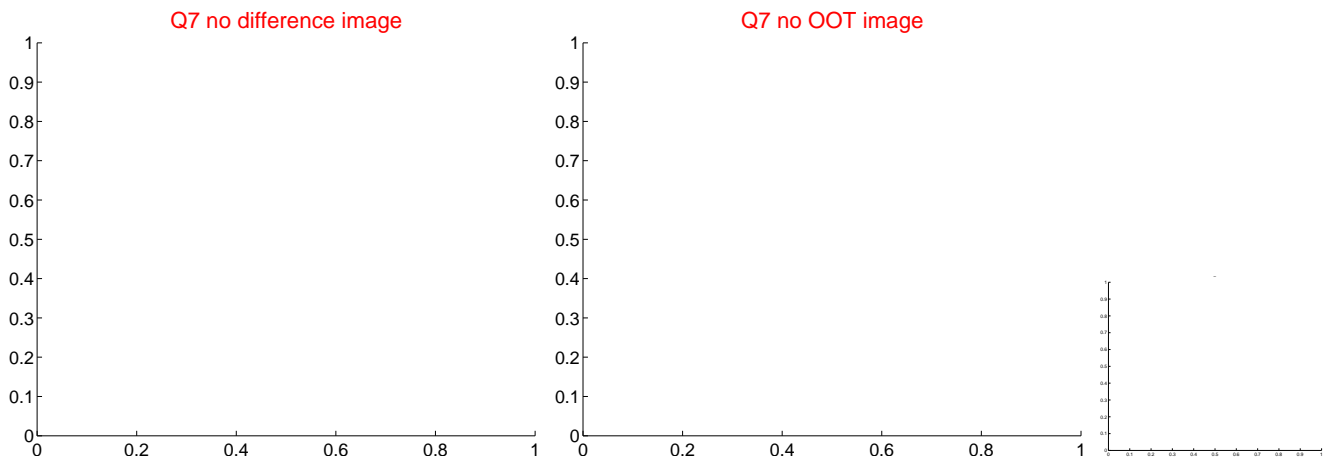
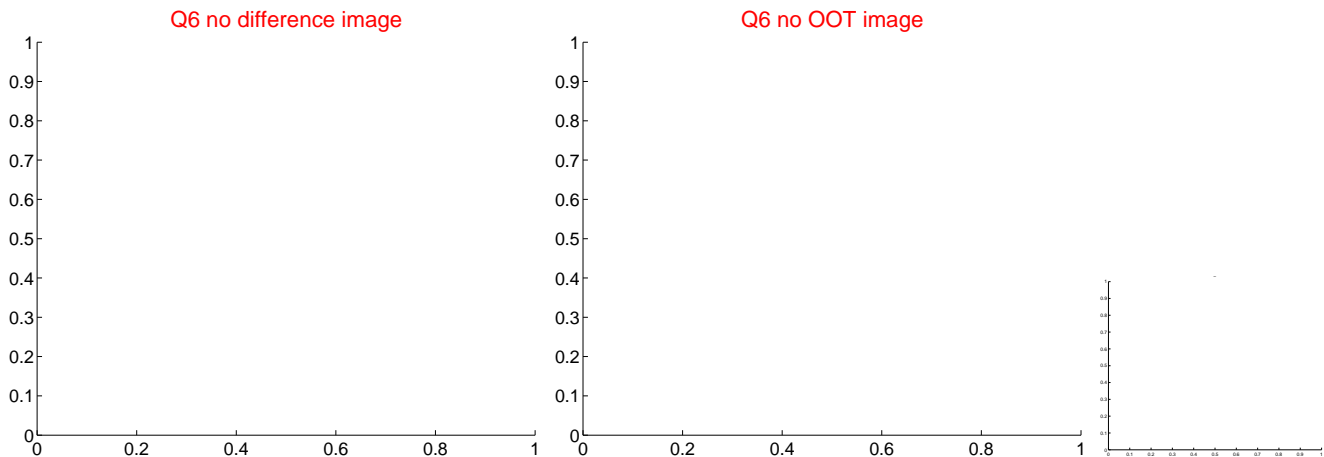
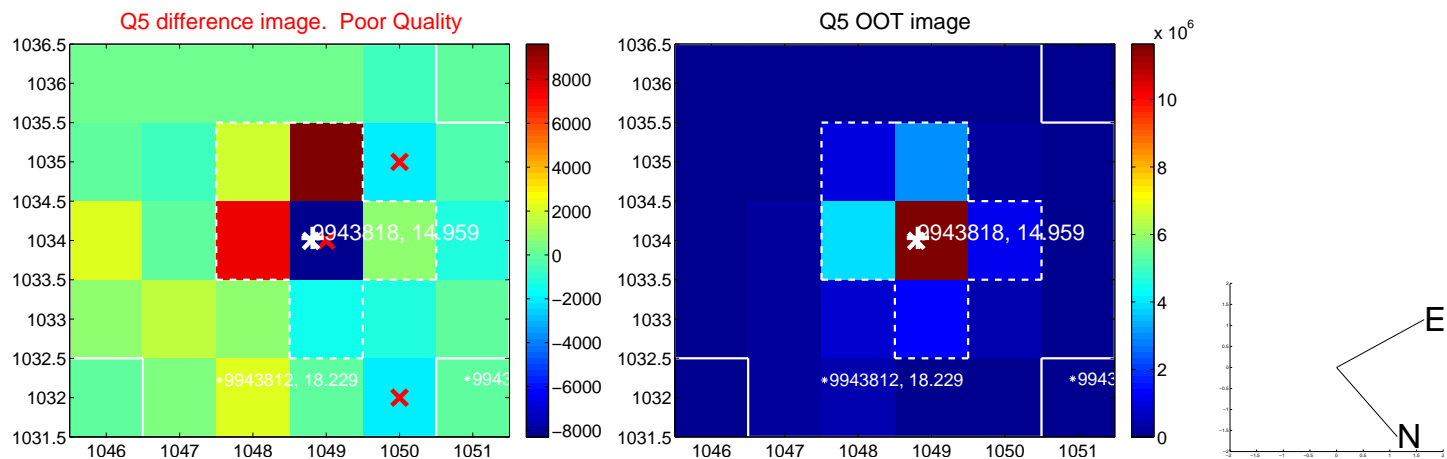


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

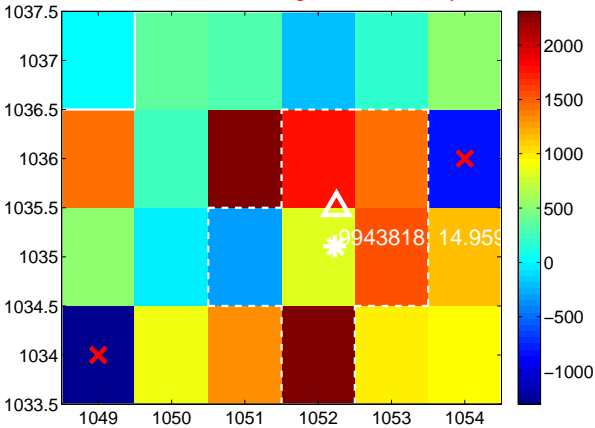
Q9 no difference image



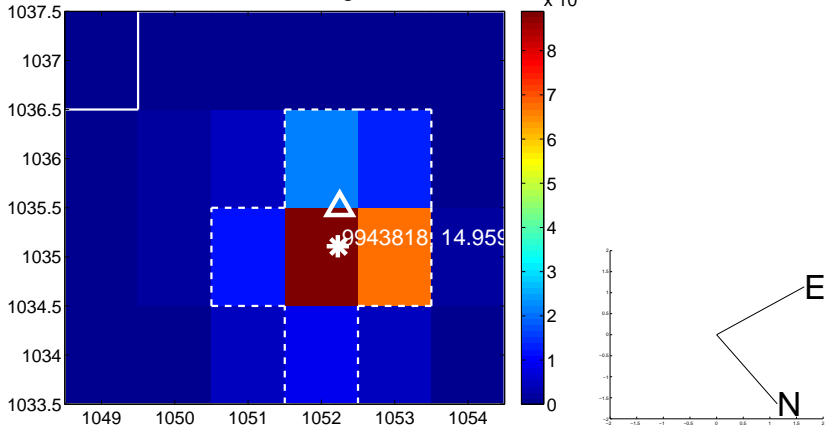
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



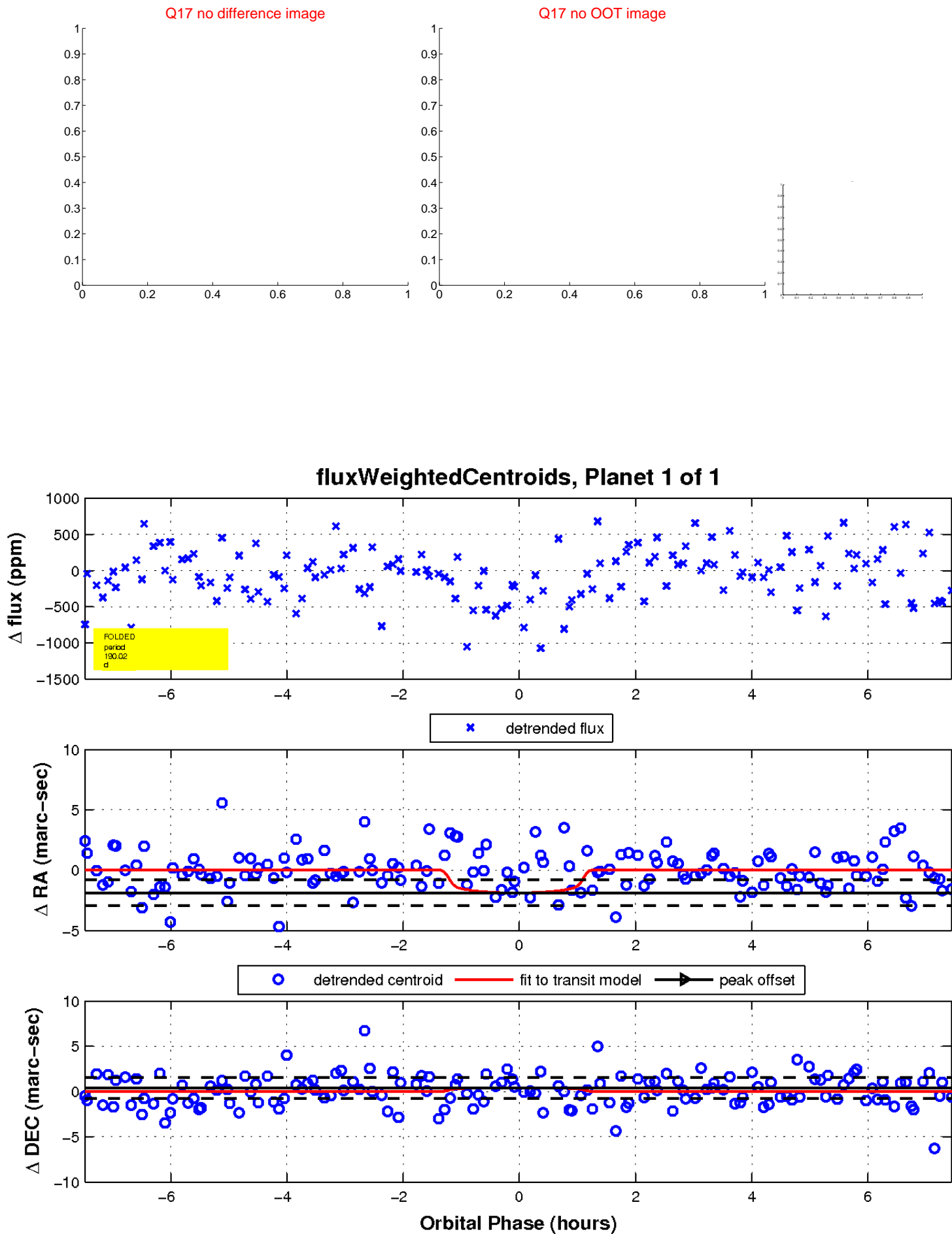
Q12 no OOT image



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



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



UKIRT Image

Declination

