

KIC 005940165

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})
005940165-01	OBS	2031.01	9.304148	140.338619	631.8	1.933	22.2	25.3	0.66	4458	1.66	27.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005940165-01	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.

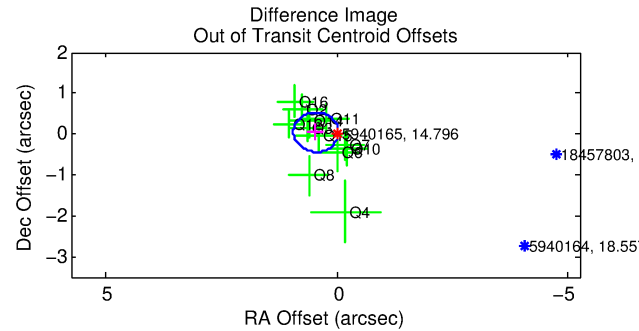
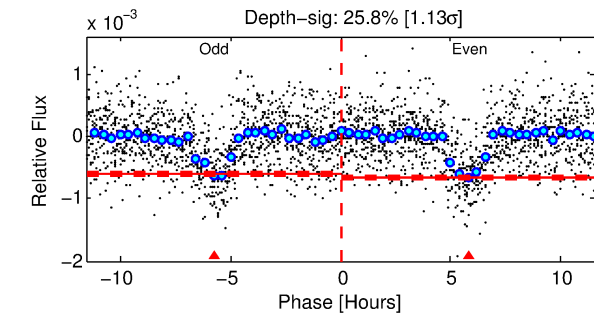
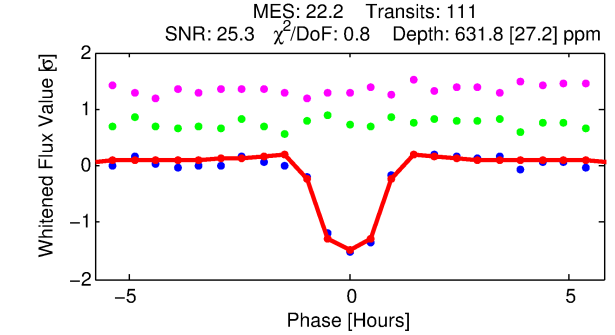
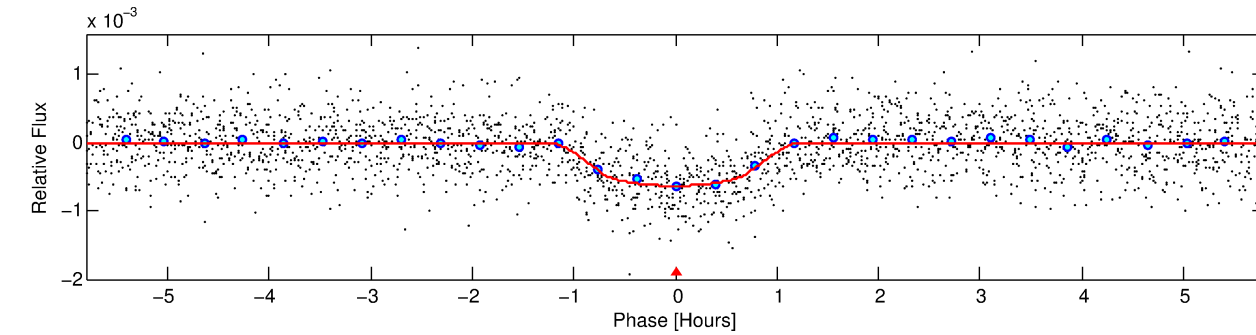
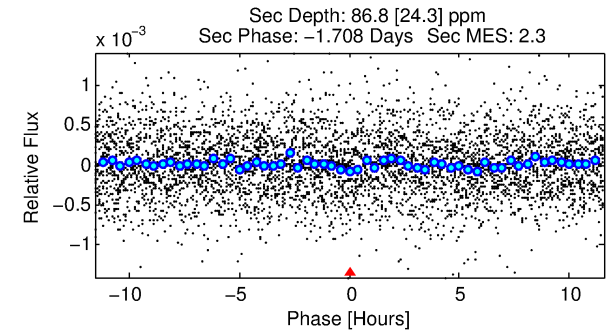
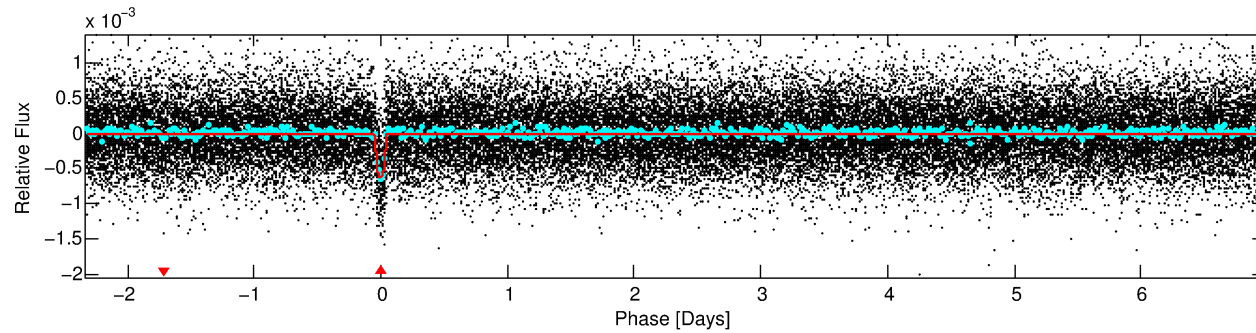
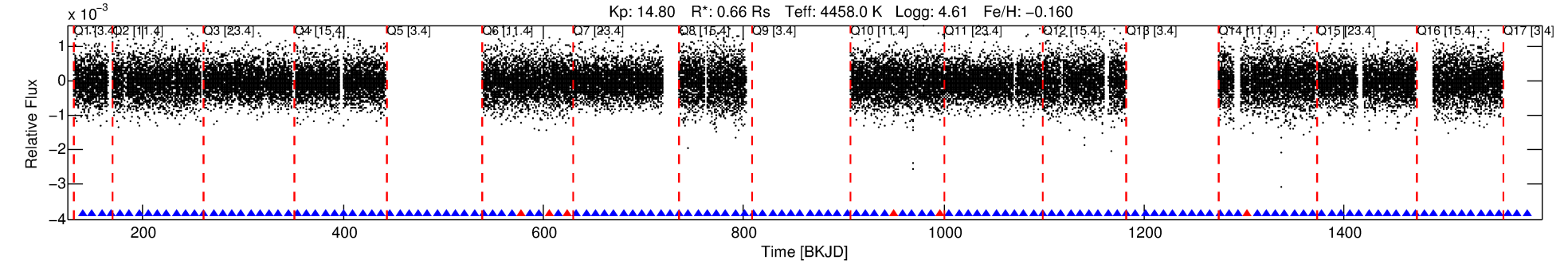
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005940165-01

No Significant Match Found

DV One-Page Summary

KIC: 5940165 Candidate: 1 of 1 Period: 9.304 d
KOI: K02031.01 Corr: 0.983



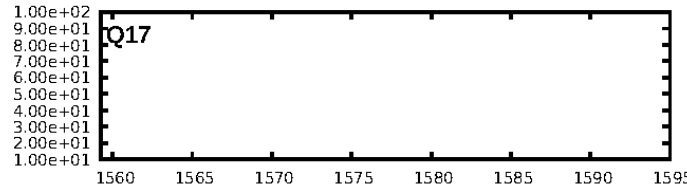
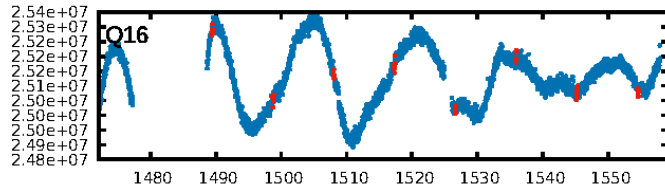
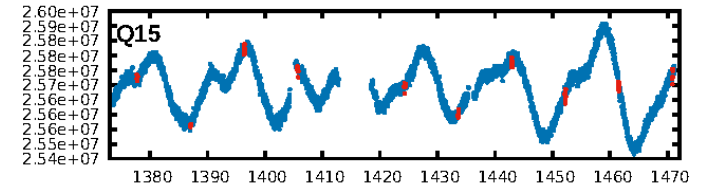
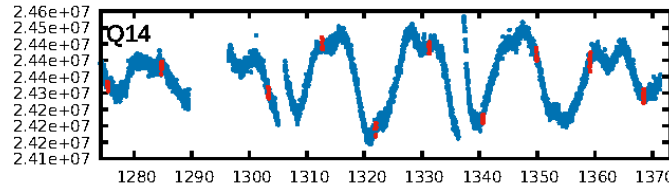
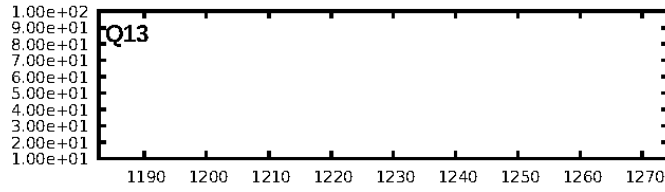
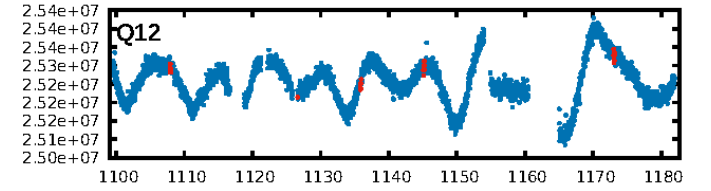
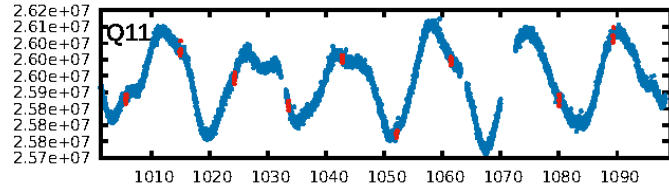
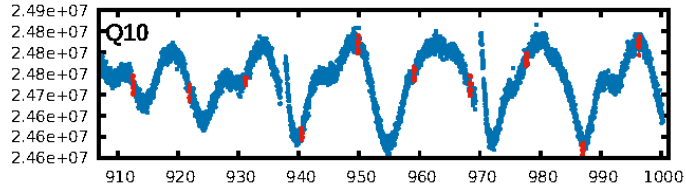
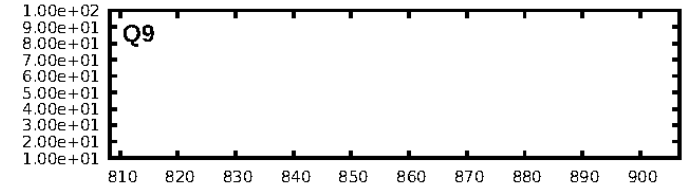
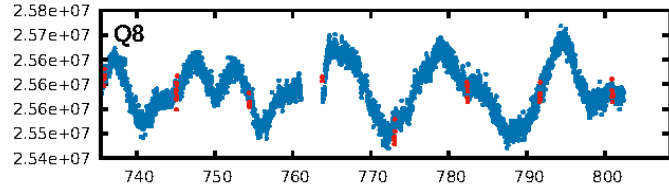
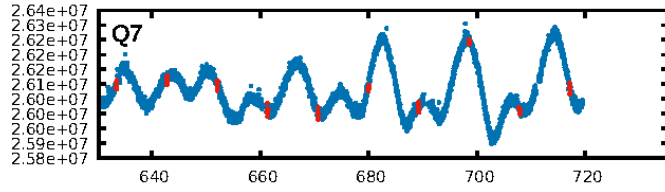
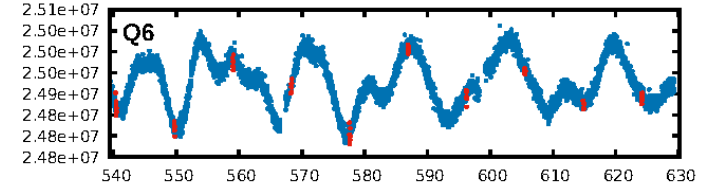
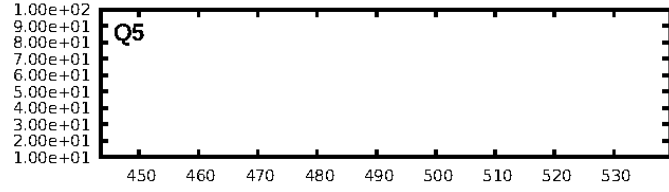
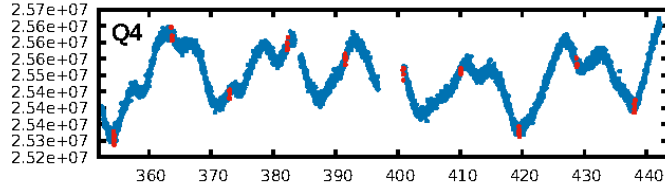
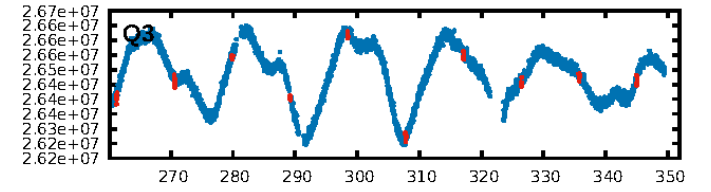
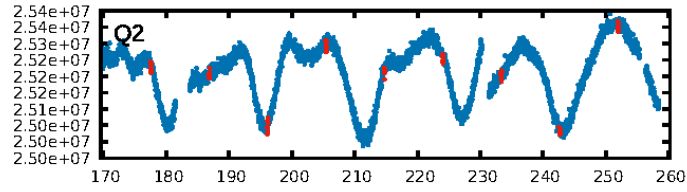
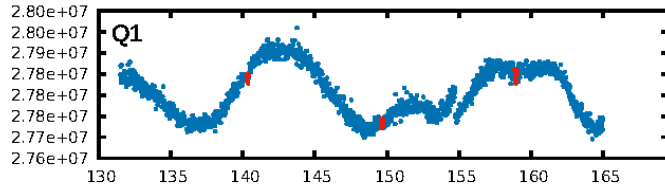
DV Fit Results:

Period = 9.30415 [0.00002] d
Epoch = 140.3386 [0.0017] BKJD
Rp/R* = 0.0231 [0.0137]
a/R* = 32.99 [58.10]
Seff = 27.38 [4.28]
Teff = 583 [23] K
Rp = 1.66 [1.00] Re
a = 0.0748 [0.0055] AU
Ag = 96.84 [118.24] [0.81σ]
Teffp = 2829 [865] K [2.60σ]

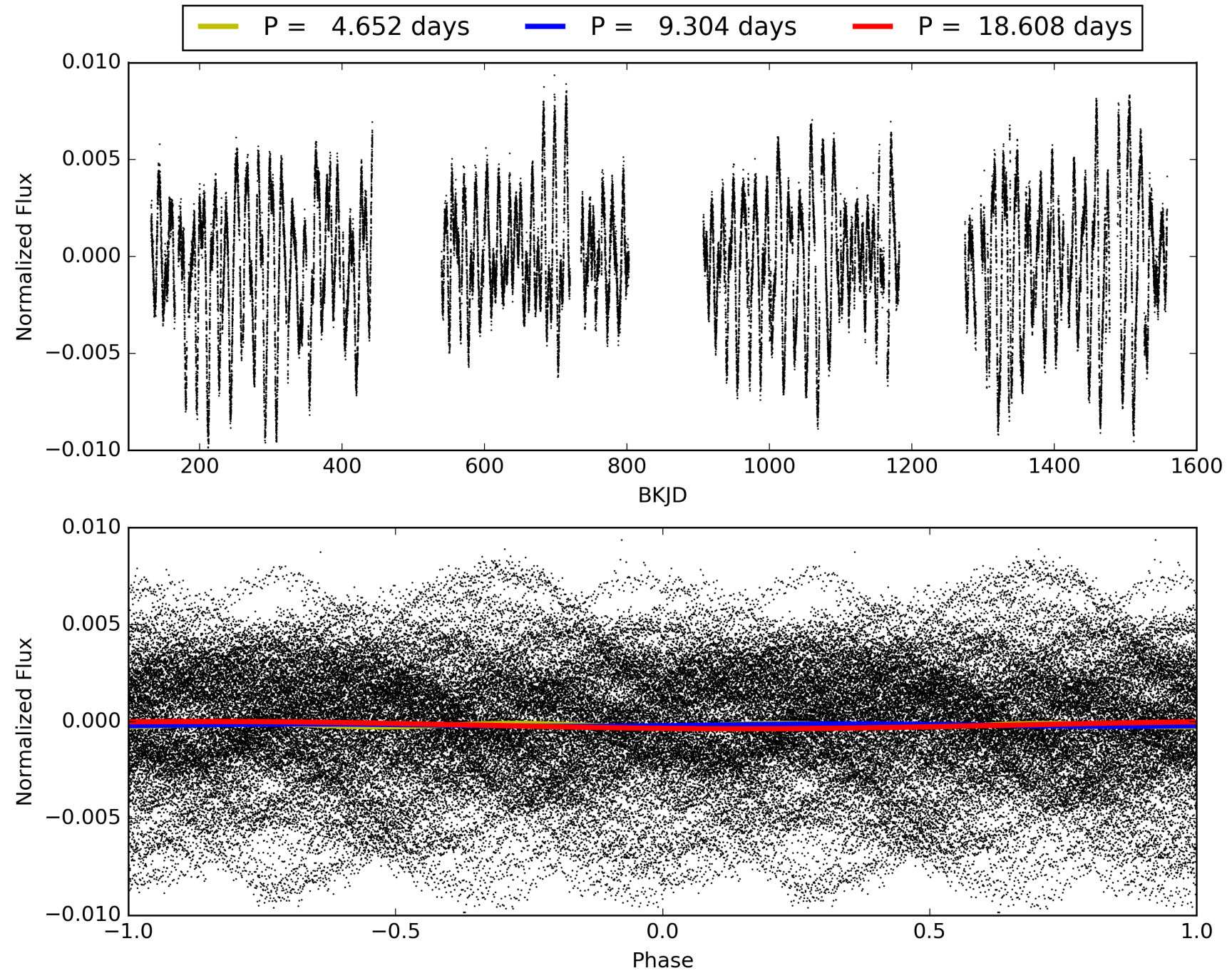
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.45e-108
RollingBand-fgt: 0.94 [102/108]
GhostDiagnostic-chr: -6.778
Centroid-sig: 6.7%
Centroid-so: 0.968 arcsec [1.76σ]
OotOffset-rm: 0.463 arcsec [2.85σ]
KicOffset-rm: 0.294 arcsec [1.57σ]
OotOffset-st: 4/4/4/0 [12]
KicOffset-st: 4/4/4/0 [12]
DiffImageQuality-fgm: 1.00 [12/12]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 005940165-01, PDC Light Curves

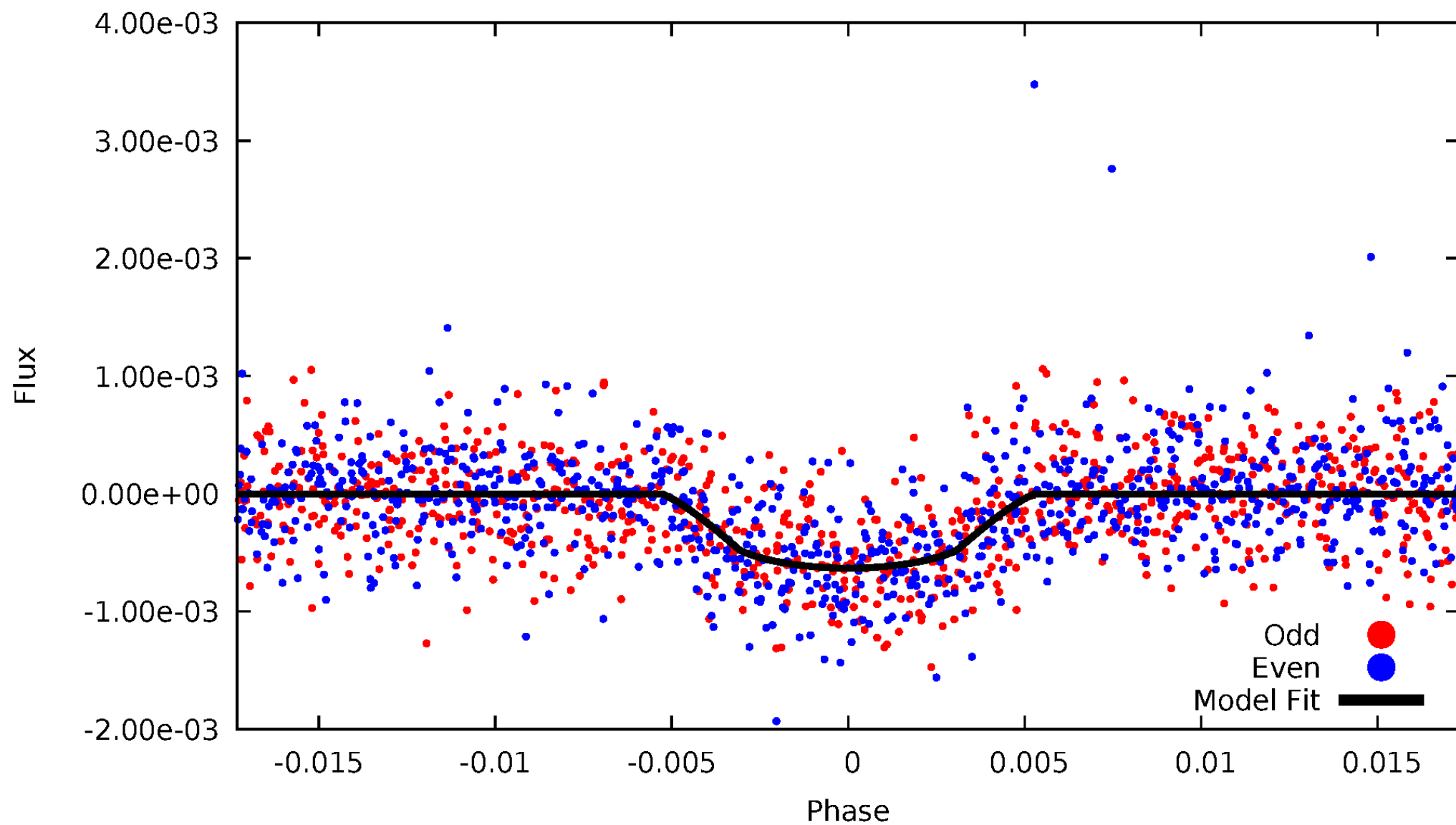


TCE 005940165-01



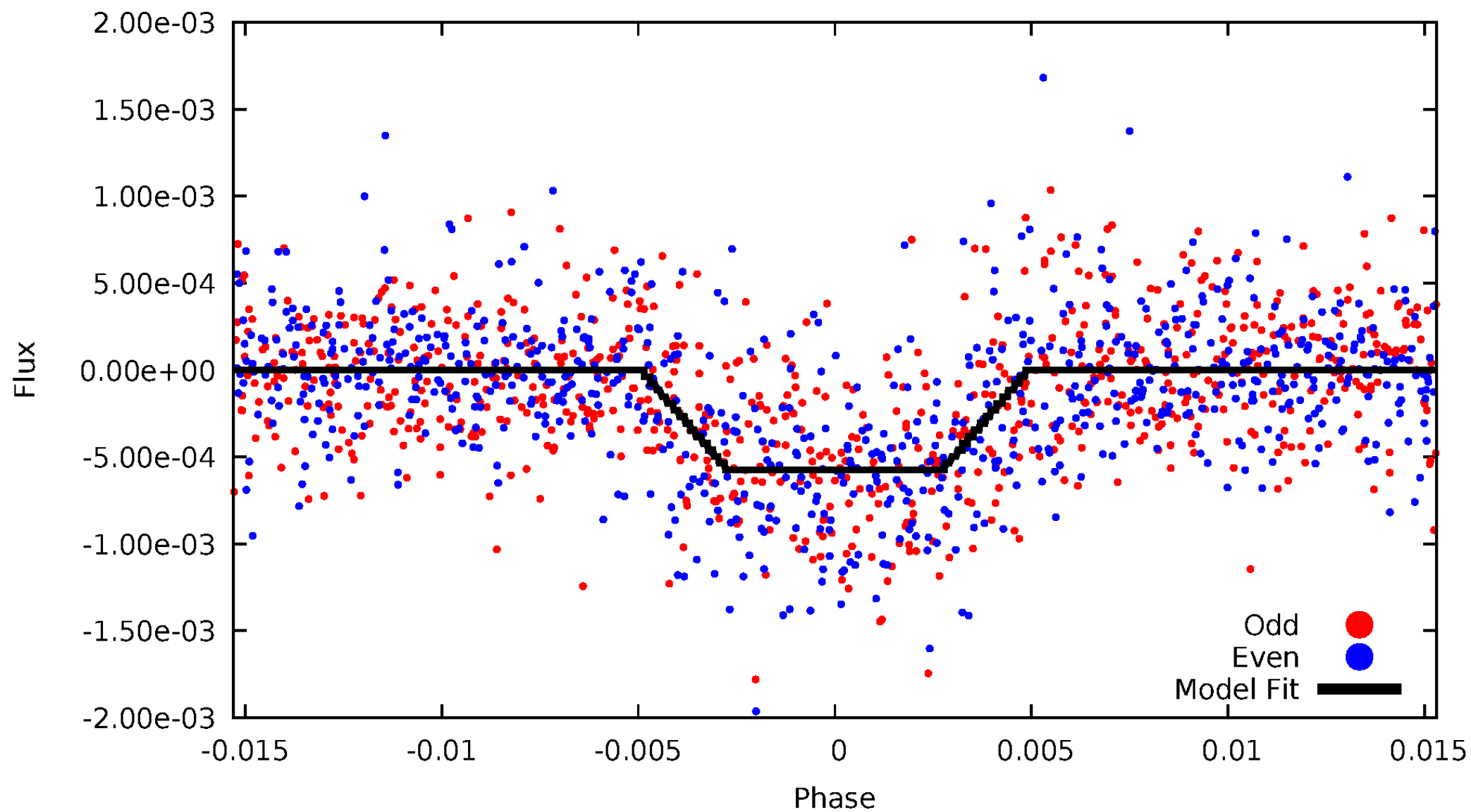
DV Odd/Even

TCE 005940165-01



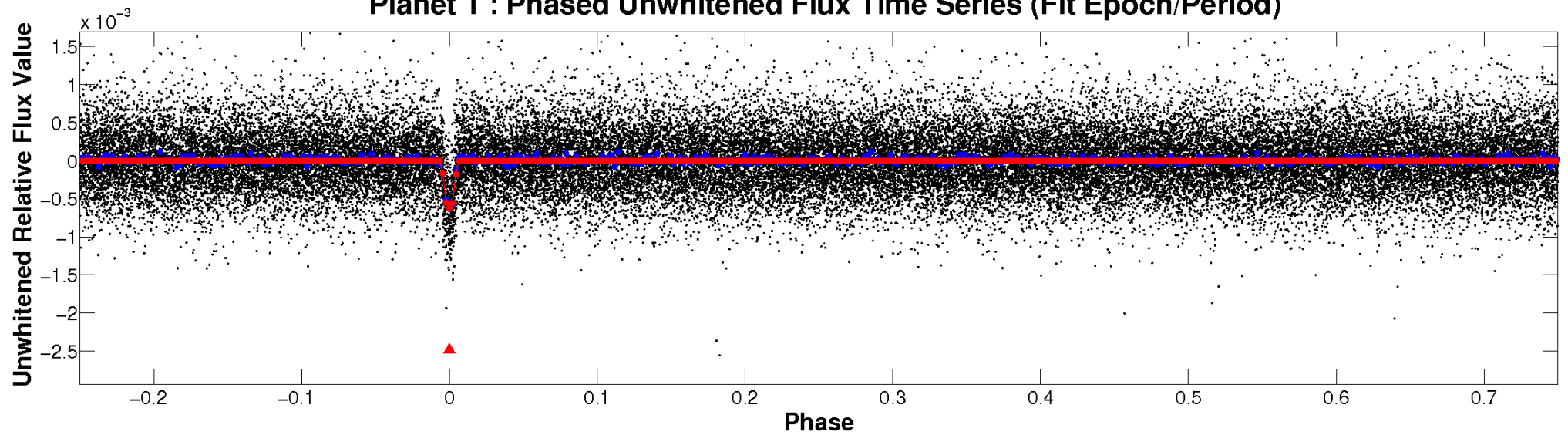
ALT Odd/Even

TCE 005940165-01

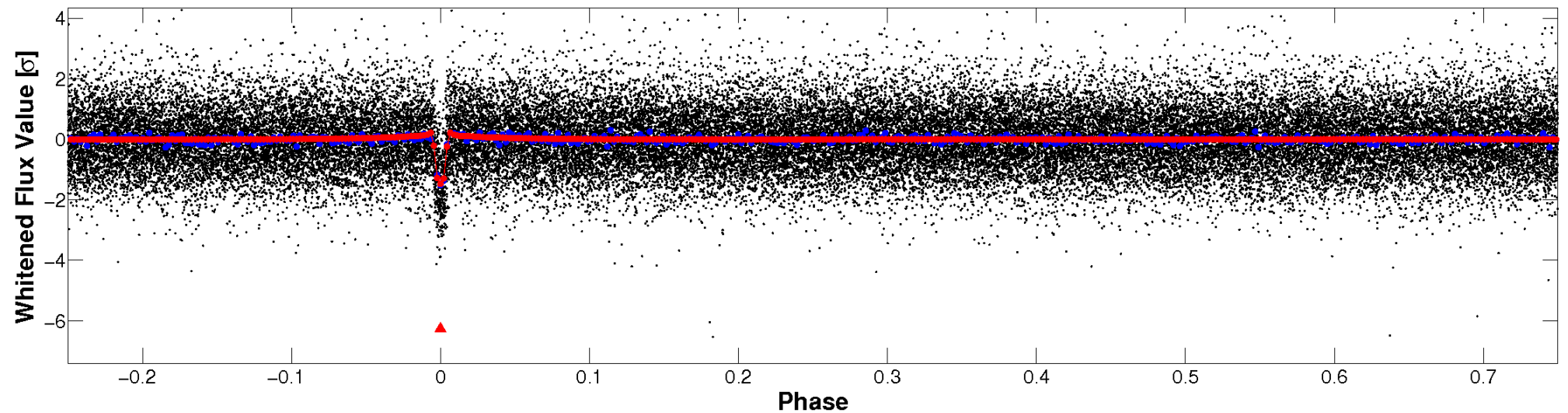


Non-Whitened Vs. Whitened Light Curve

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

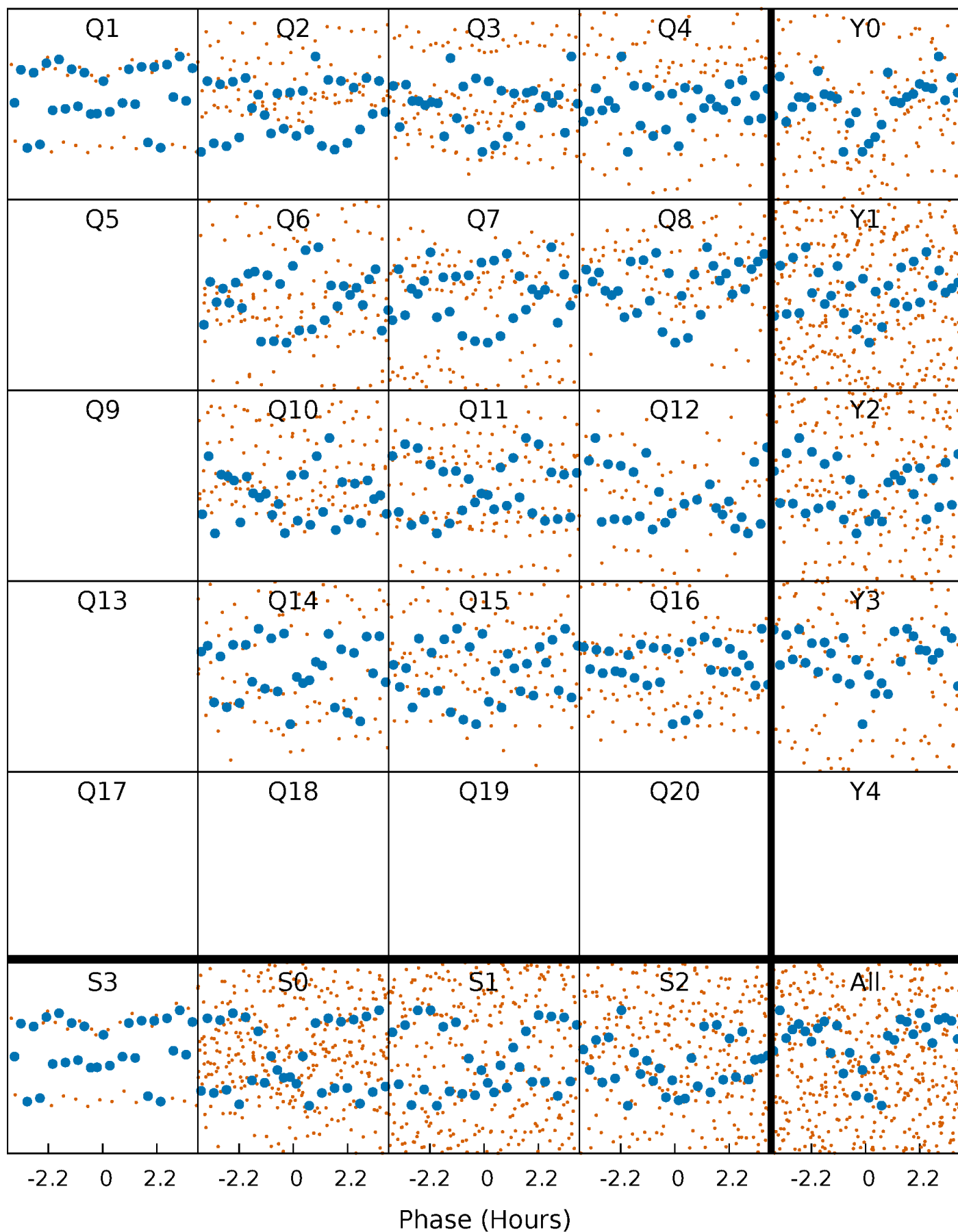


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



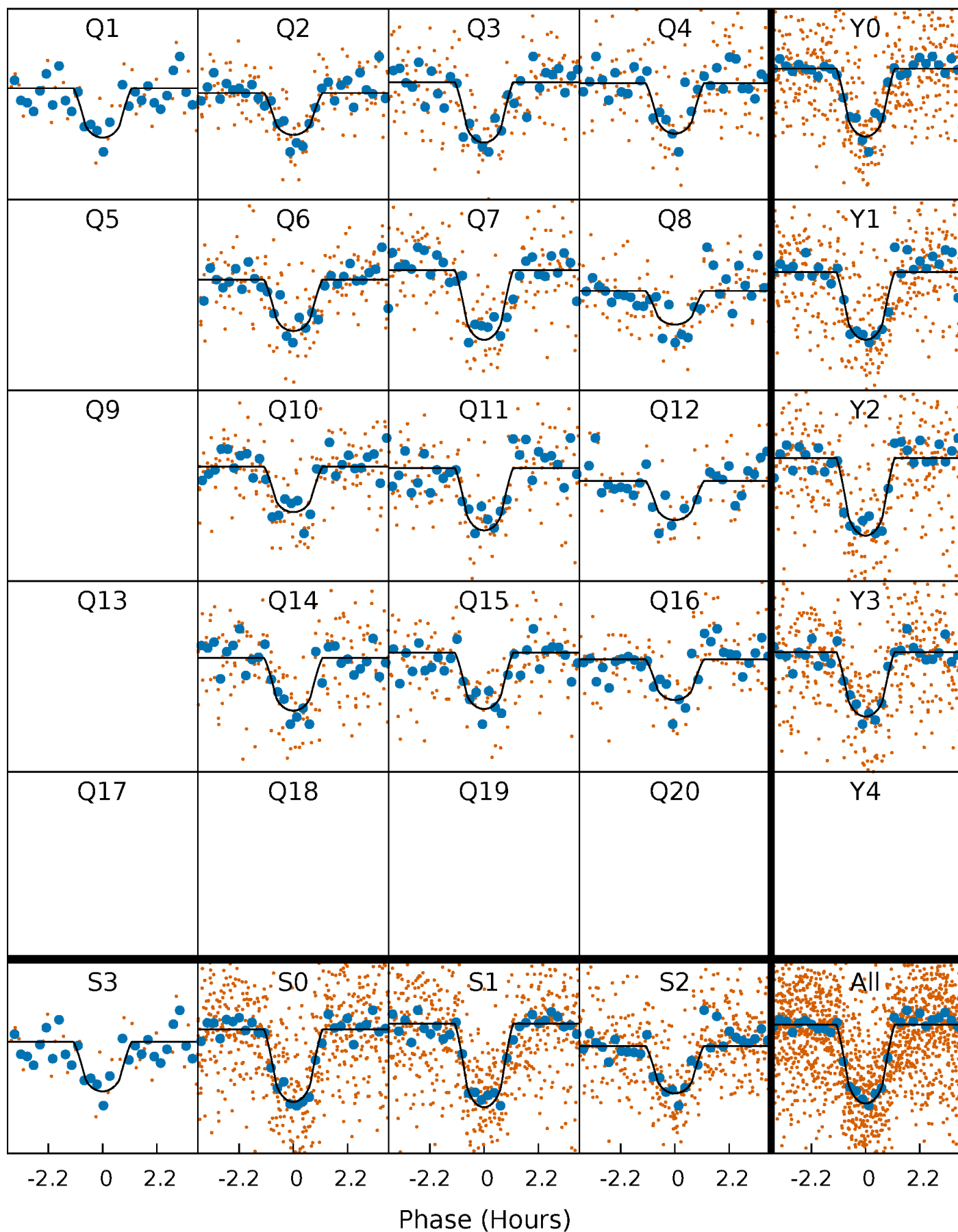
PDC Quarter-Phased Transit Curves

TCE 005940165-01 P= 9.304148 Days $T_0=140.338619$ (BKJD)



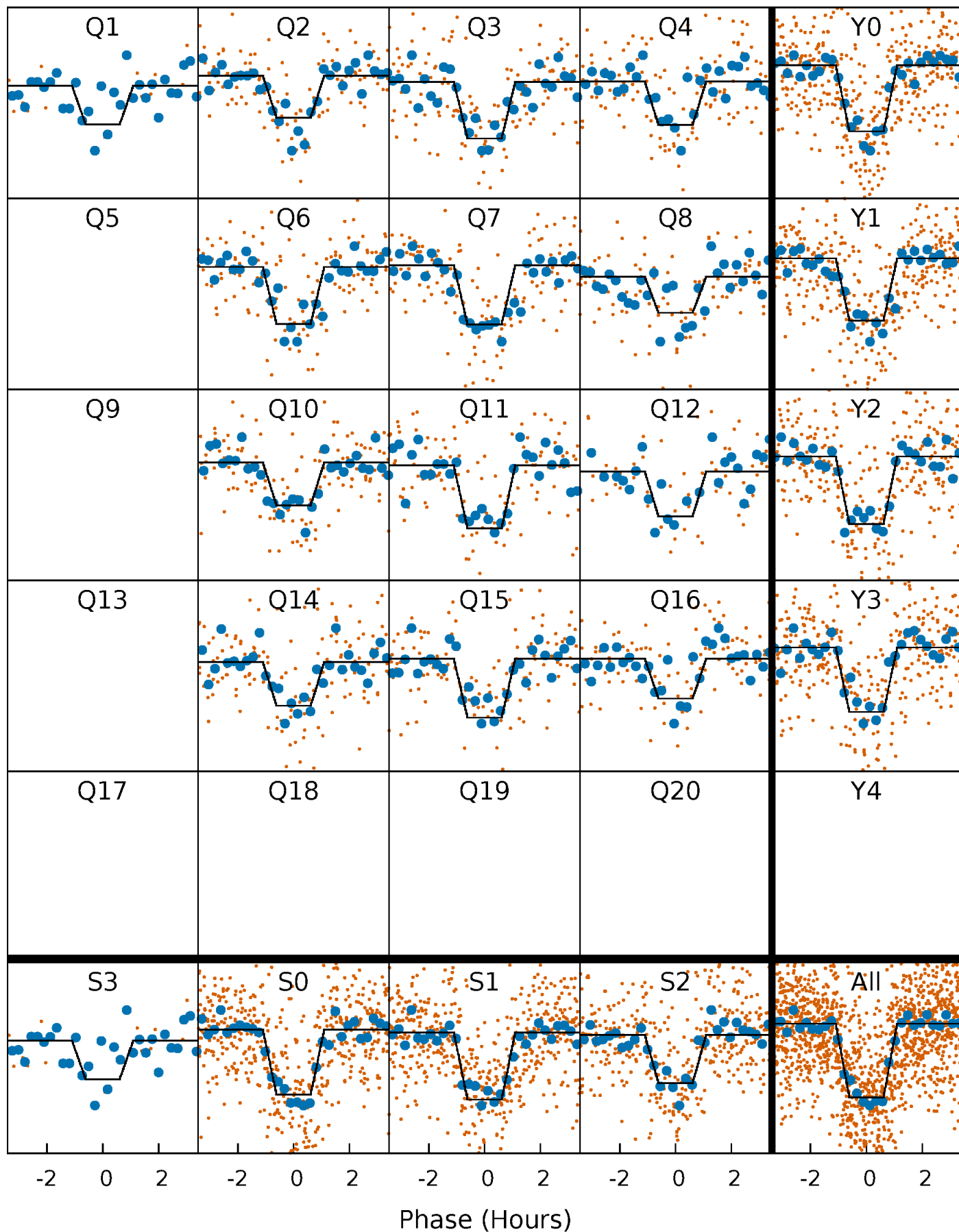
DV Quarter-Phased Transit Curves

TCE 005940165-01 P= 9.304148 Days $T_0=140.338619$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

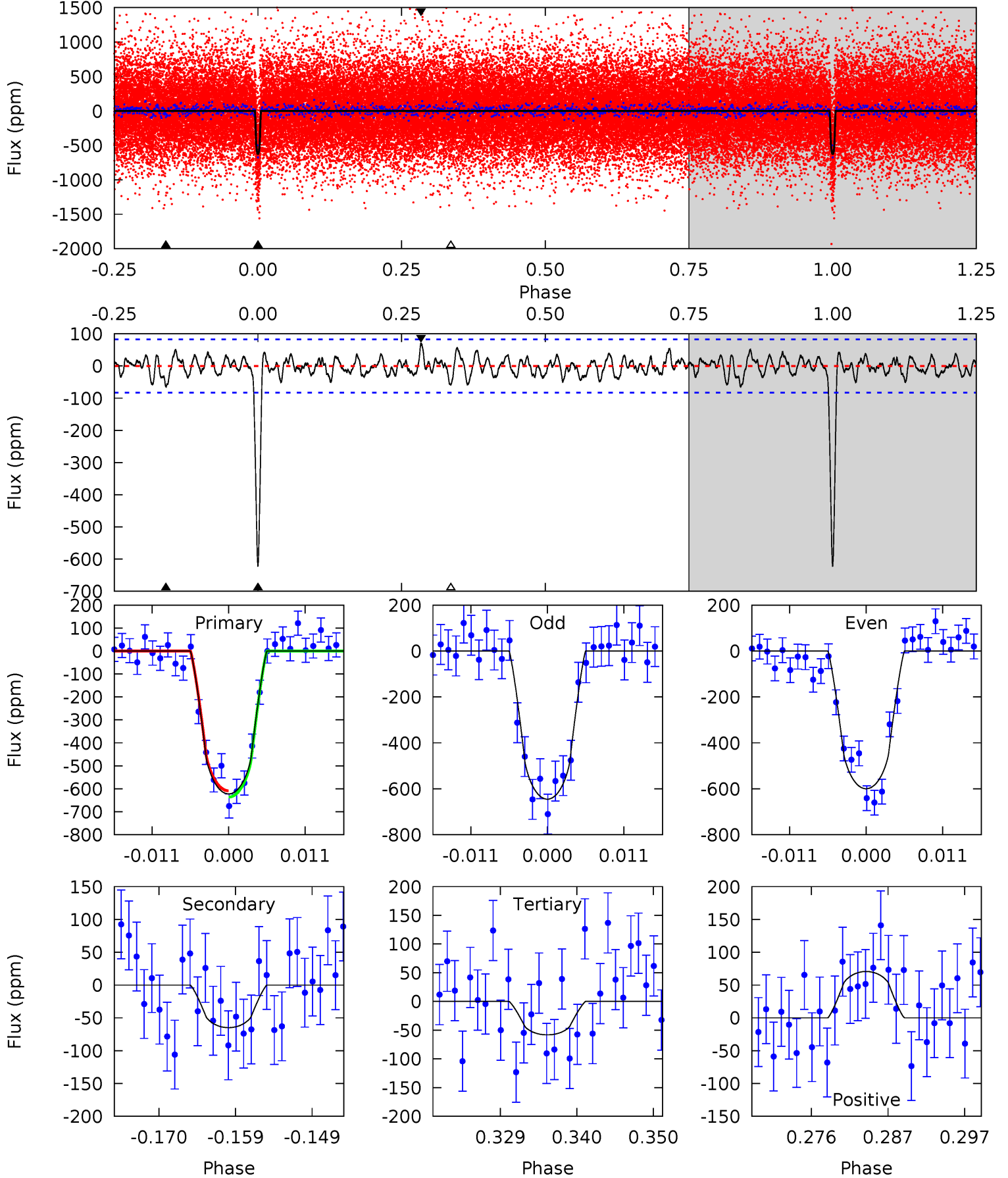
TCE 005940165-01 P= 9.304164 Days $T_0=140.337267$ (BKJD)



DV Model-Shift Uniqueness Test

005940165-01, P = 9.304148 Days, E = 131.034471 Days

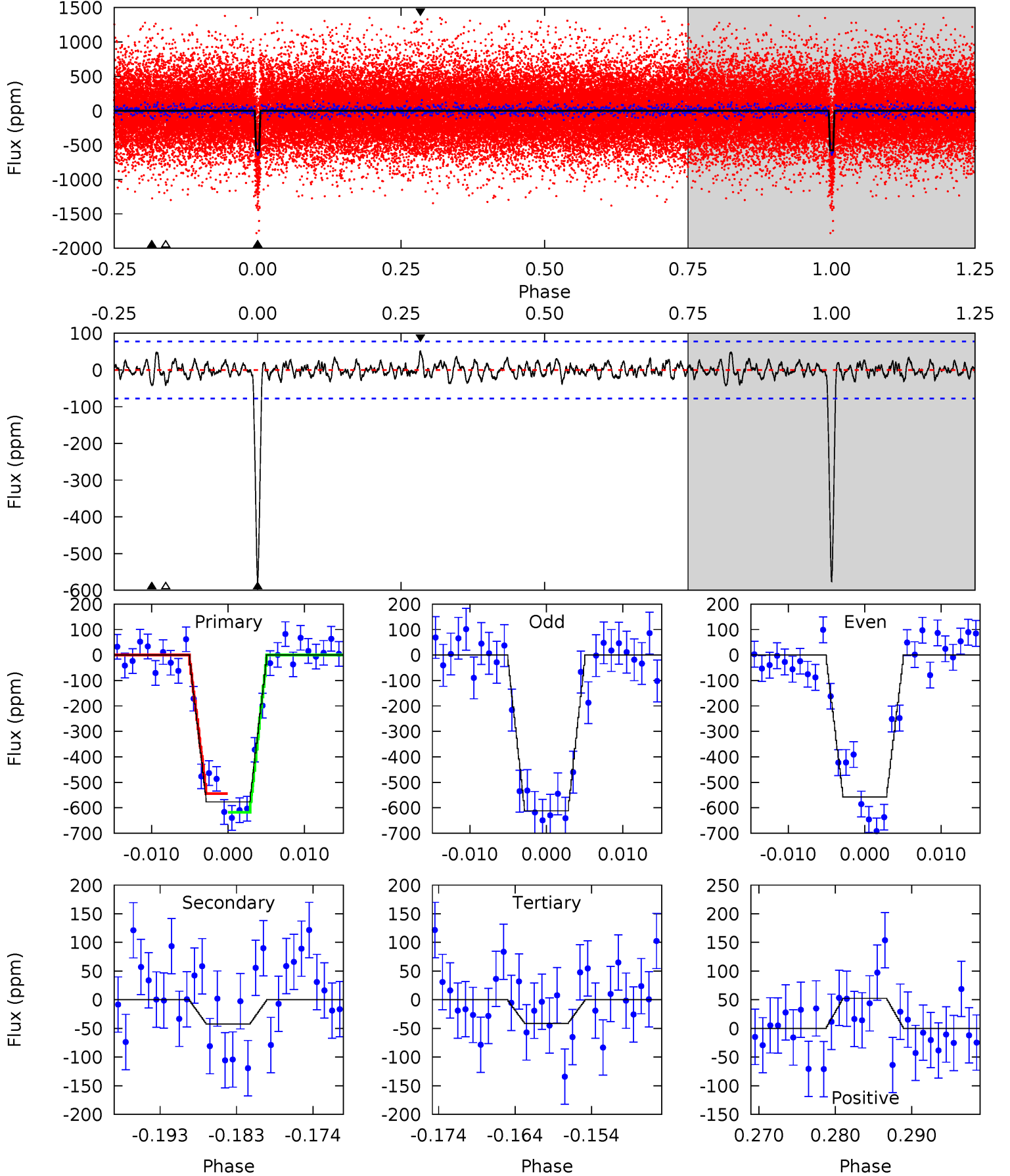
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.7	3.93	3.53	4.28	5.01	2.56	1.36	34.2	33.4	0.41	-0.35	1.38	1.02	0.10	0.83



Alt Model-Shift Uniqueness Test

005940165-01, P = 9.304164 Days, E = 131.033103 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.3	2.75	2.67	3.40	5.03	2.59	0.95	34.7	33.9	0.08	-0.65	1.76	1.01	0.08	2.39



Stellar Parameters For KIC 005940165

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4458^{+133}_{-133}	$4.611^{+0.052}_{-0.024}$	$-0.160^{+0.300}_{-0.300}$	$0.658^{+0.046}_{-0.061}$	$0.645^{+0.070}_{-0.051}$	$3.187^{+0.802}_{-0.338}$
	+3%/-3%	+1%/-1%	+188%/-188%	+7%/-9%	+11%/-8%	+25%/-11%
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 005940165-01 / KOI 2031.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-65 ± 17	$1.72^{+0.95}_{-0.89}$	811^{+27}_{-26}	3090^{+828}_{-390}	68^{+218}_{-41}
Alt.	-43 ± 15	$1.77^{+0.95}_{-0.84}$	810^{+25}_{-27}	2878^{+645}_{-349}	40^{+123}_{-24}

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 $A_{obs} \gg 1.0$

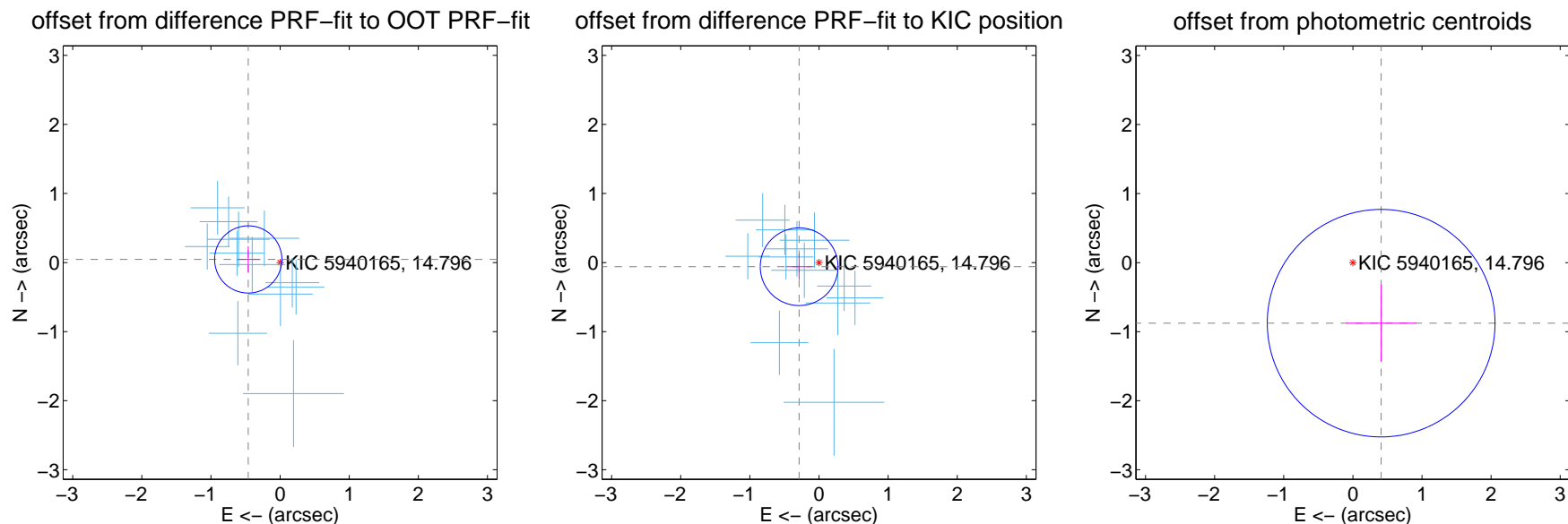
DV Centroid Data

Supplemental centroid analysis for 005940165-01. Kepler magnitude: 14.80. Transit SNR 25.33

There are 12 quarters with good PRF difference image offsets

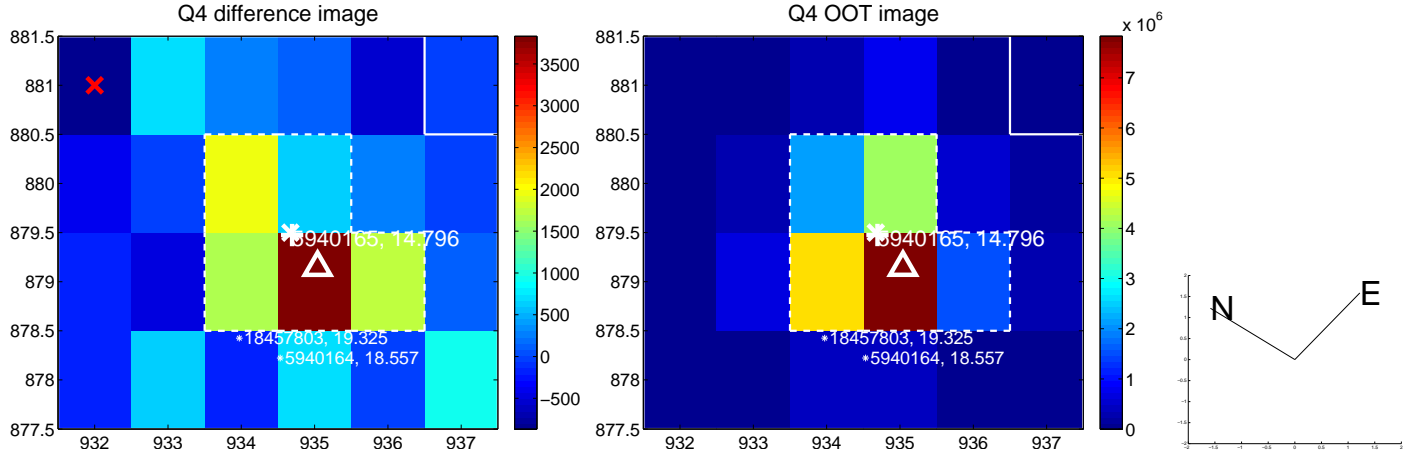
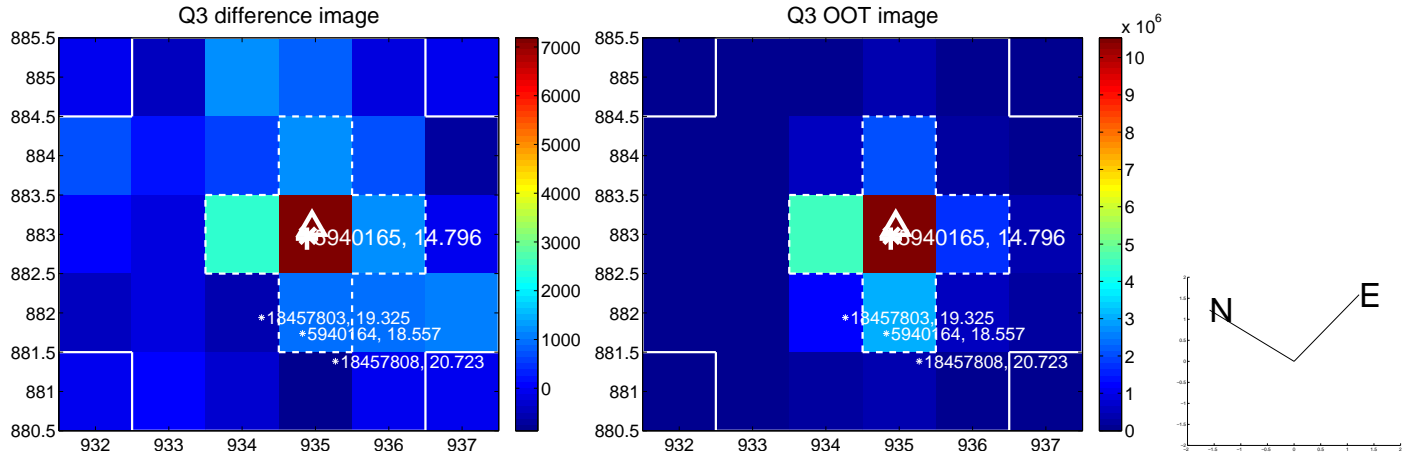
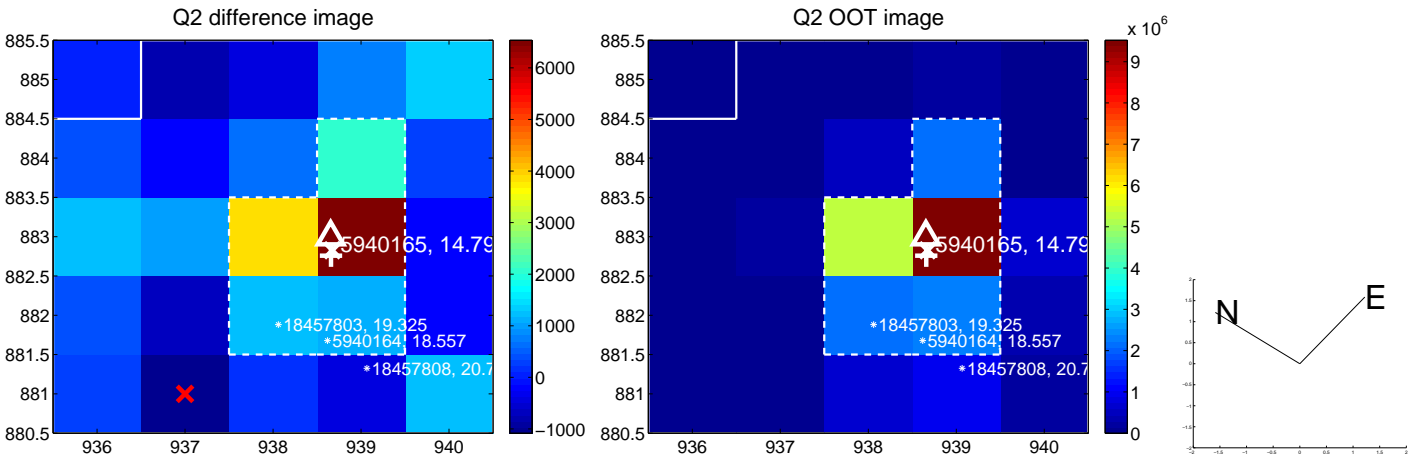
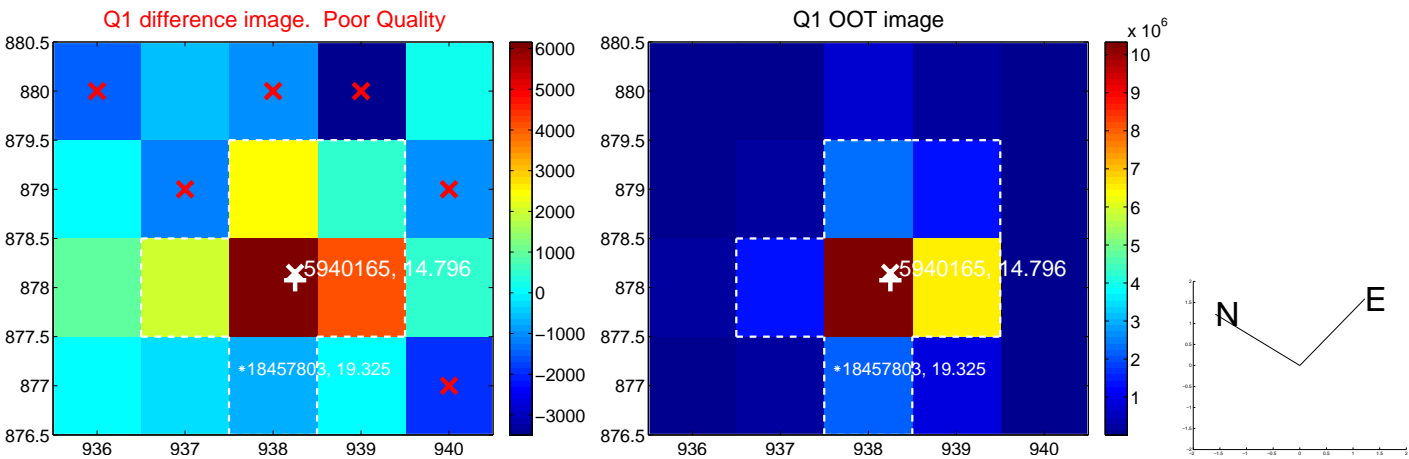
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.463 ± 0.162	2.85	0.461 ± 0.162	0.045 ± 0.191
PRF-fit source offset from KIC position	0.294 ± 0.187	1.57	0.287 ± 0.187	-0.061 ± 0.189
photometric centroid source offset	0.97 ± 0.55	1.76	-0.41 ± 0.51	-0.88 ± 0.56

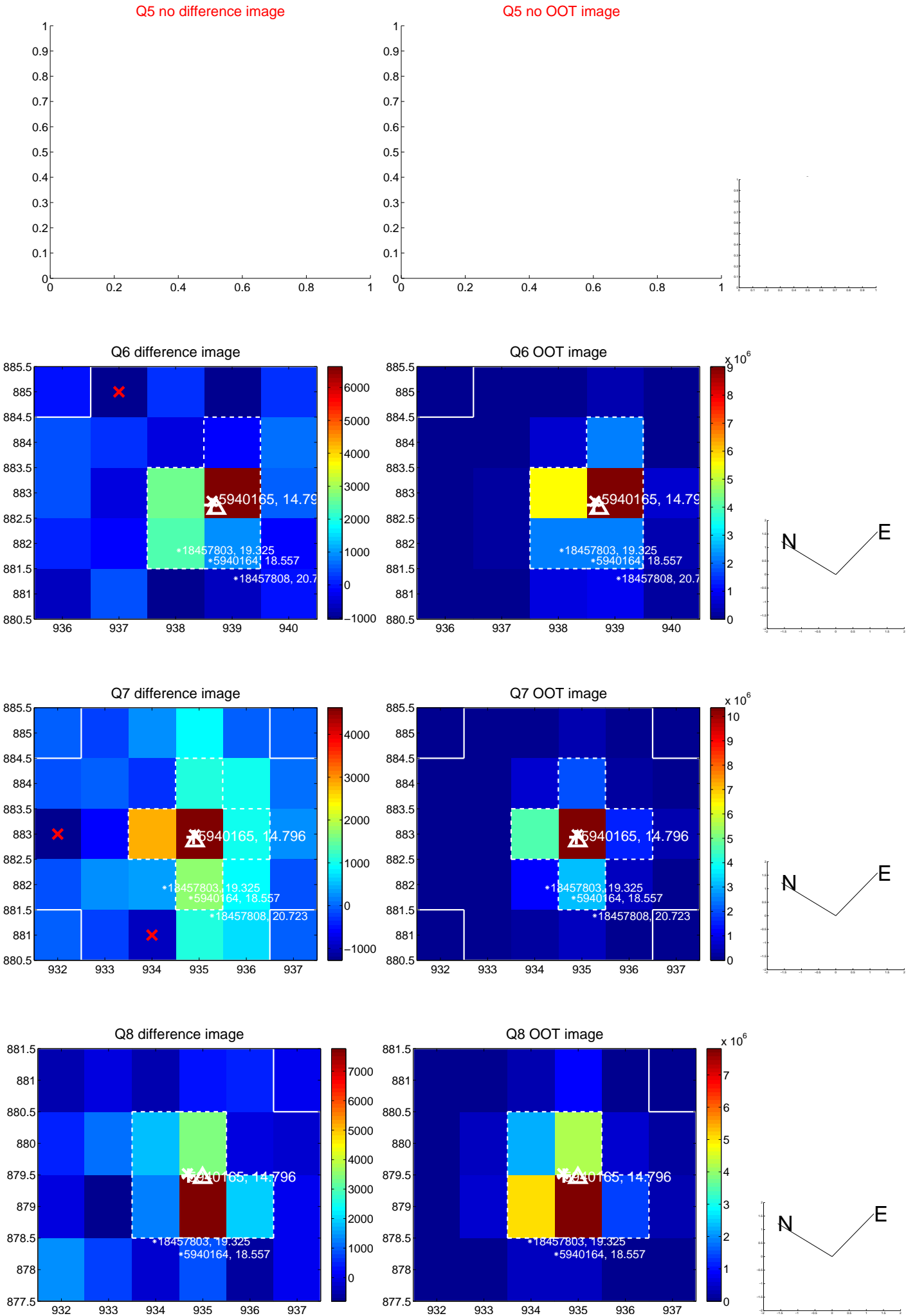


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

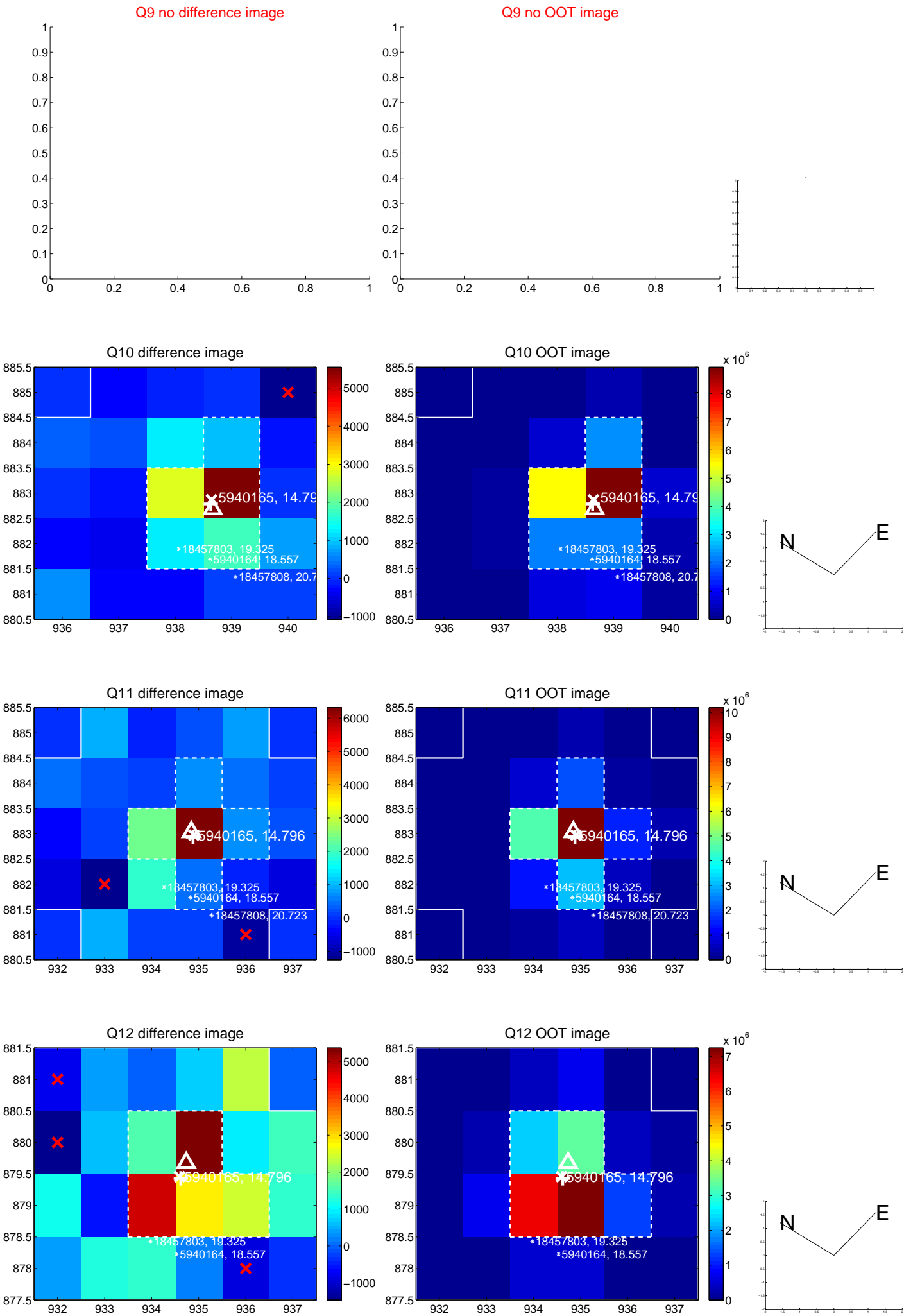
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



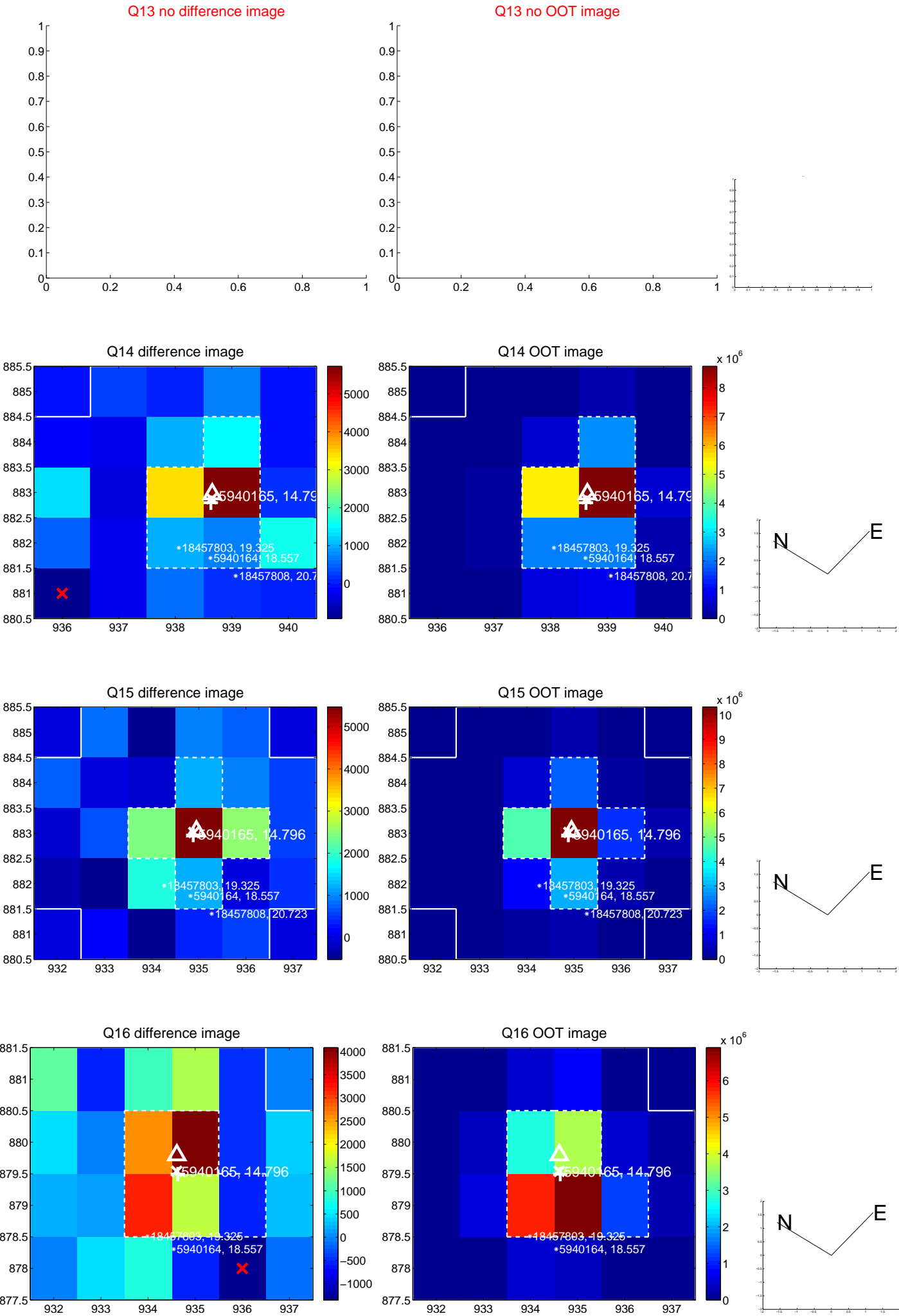
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



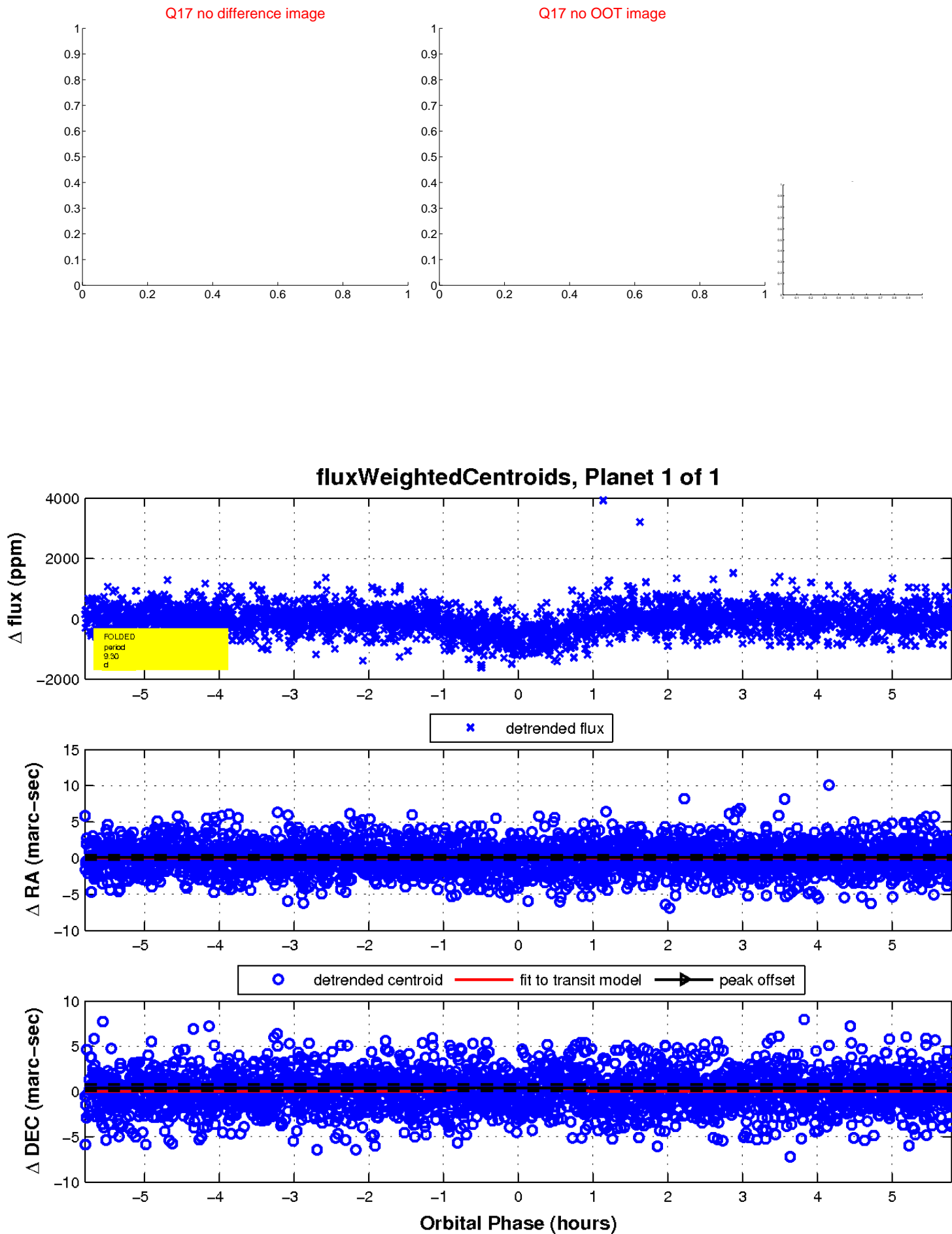
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

