

KIC 009643874

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})
009643874-01	OBS	1457.01	8.027680	135.396495	8751.6	3.199	459.3	454.8	0.89	5569	8.76	109.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009643874-01	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.

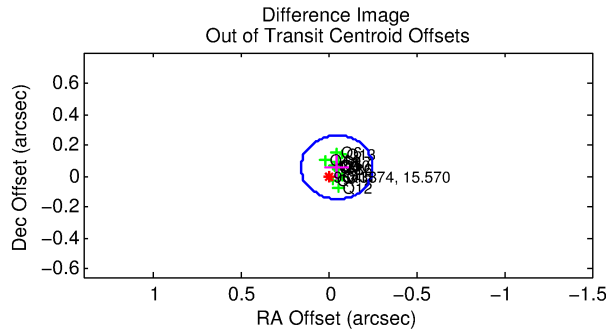
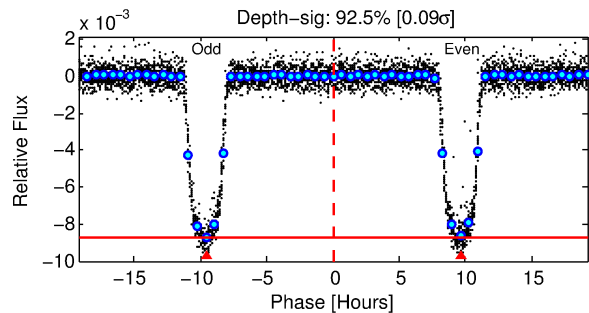
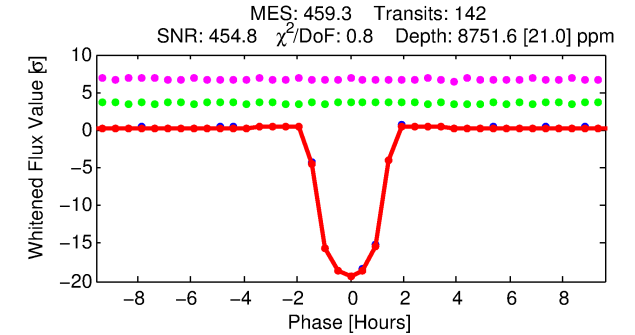
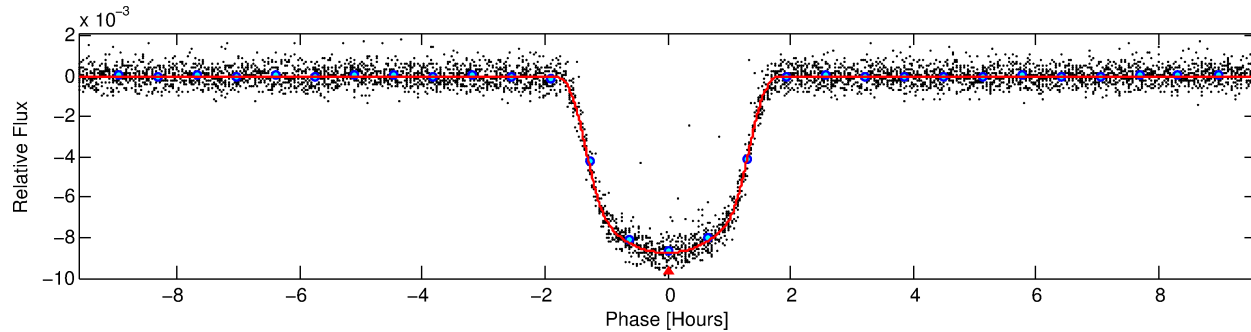
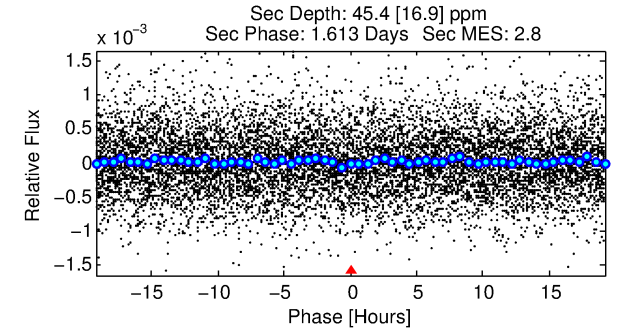
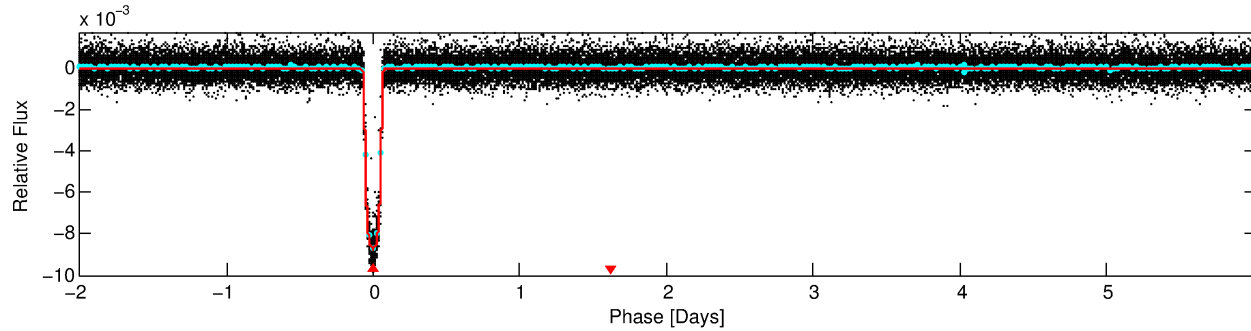
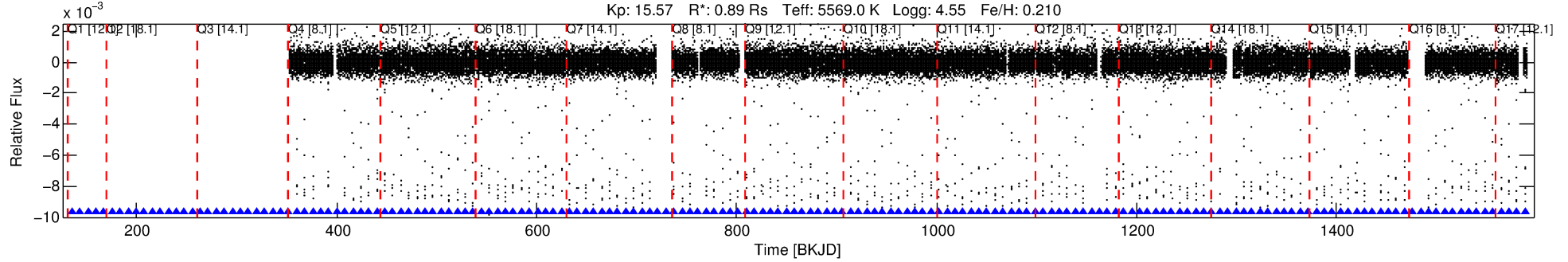
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009643874-01

No Significant Match Found

DV One-Page Summary

KIC: 9643874 Candidate: 1 of 1 Period: 8.028 d
KOI: K01457.01 Corr: 0.991



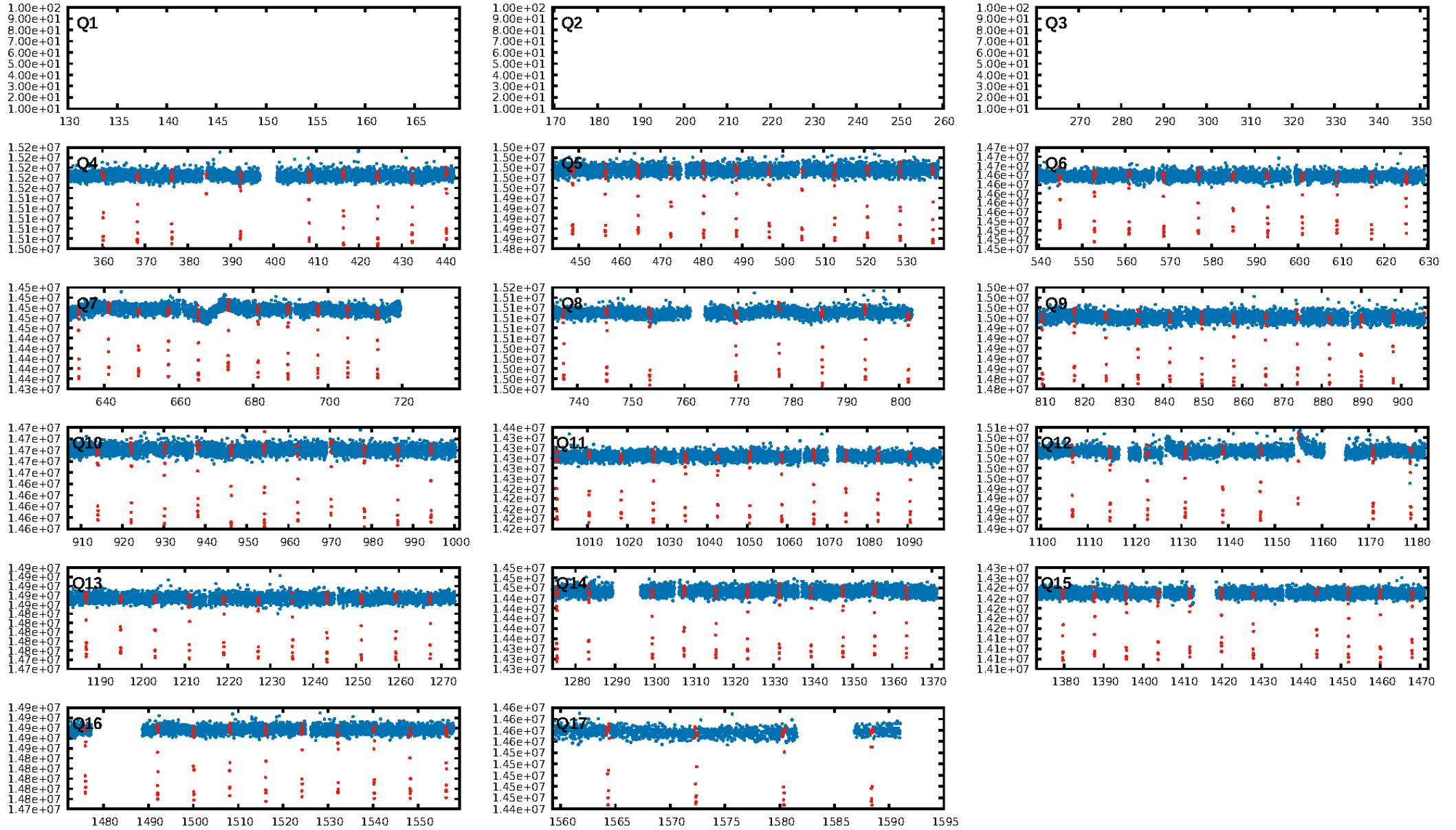
DV Fit Results:

Period = 8.02768 [0.00000] d
Epoch = 135.3965 [0.0002] BKJD
Rp/R* = 0.0905 [0.0007]
a/R* = 16.68 [0.45]
b = 0.66 [0.02]
Seff = 109.44 [39.67]
Teq = 825 [75] K
Rp = 8.76 [2.34] Re
a = 0.0787 [0.0180] AU
Ag = 2.02 [1.01] [1.00 σ]
Teffp = 1520 [150] K [4.15 σ]

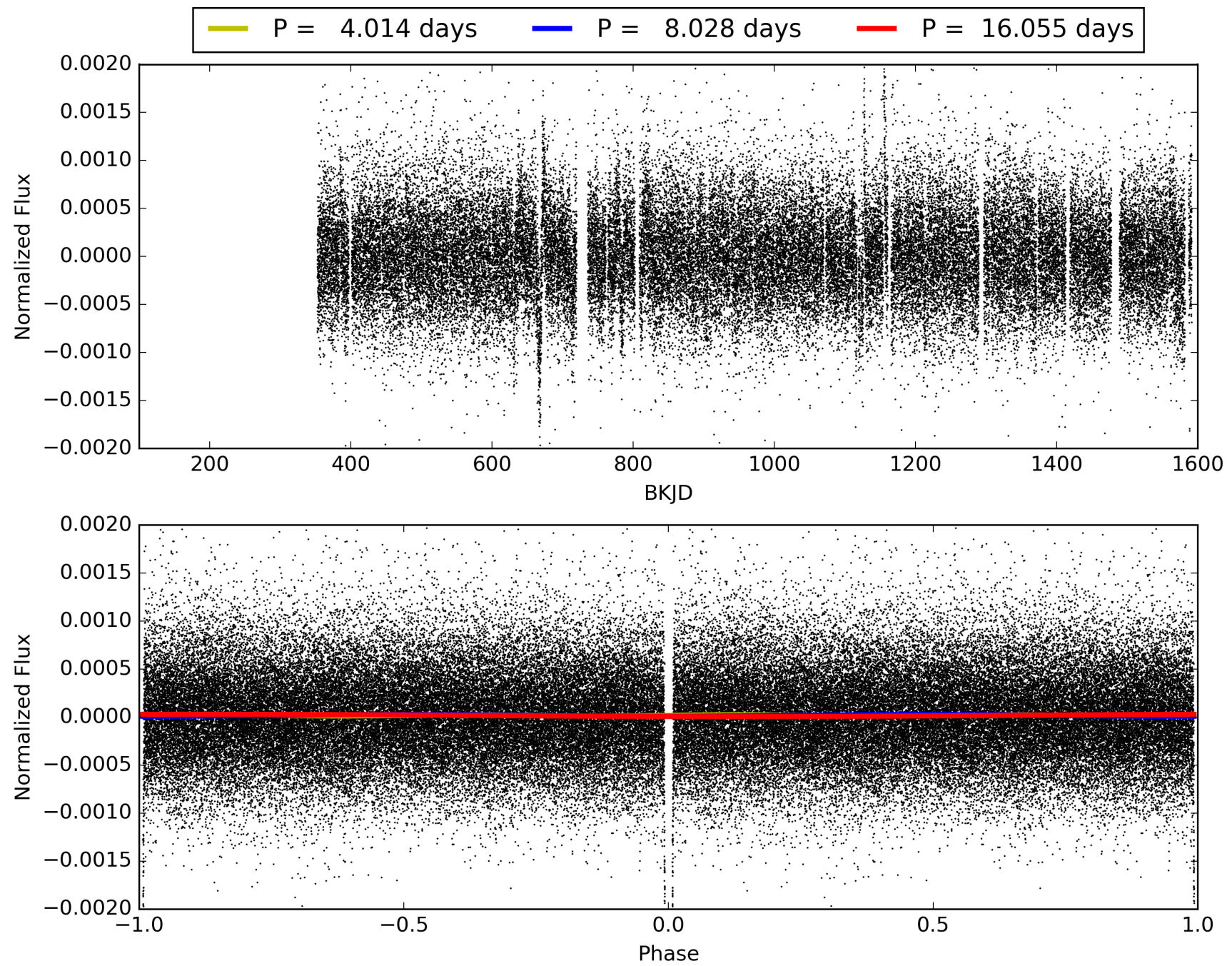
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 69.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [138/138]
GhostDiagnostic-chr: 6.352
Centroid-sig: 0.0%
Centroid-so: 0.377 arcsec [13.61 σ]
OotOffset-rm: 0.074 arcsec [1.08 σ]
KicOffset-rm: 0.031 arcsec [0.46 σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009643874-01, PDC Light Curves

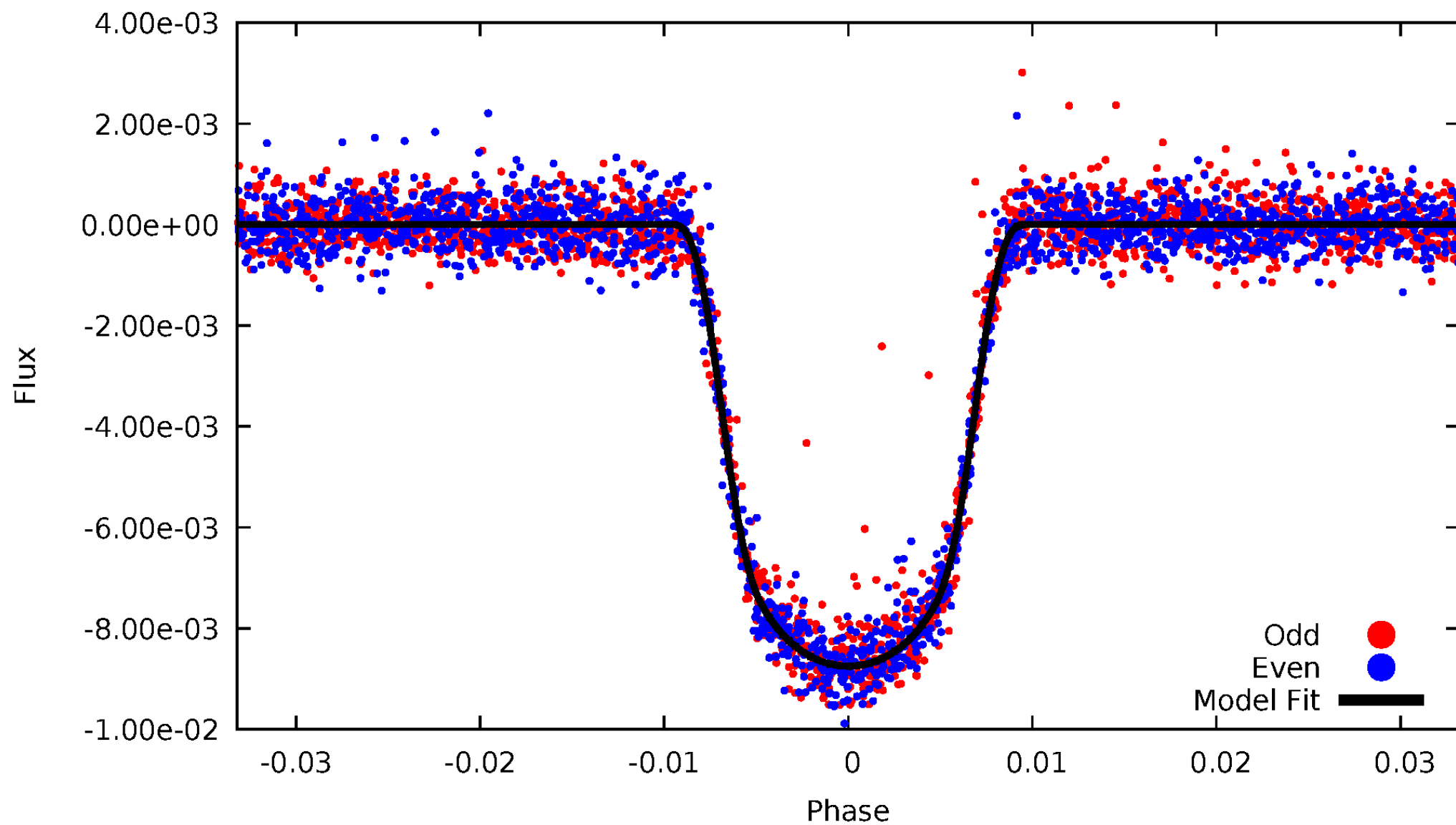


TCE 009643874-01



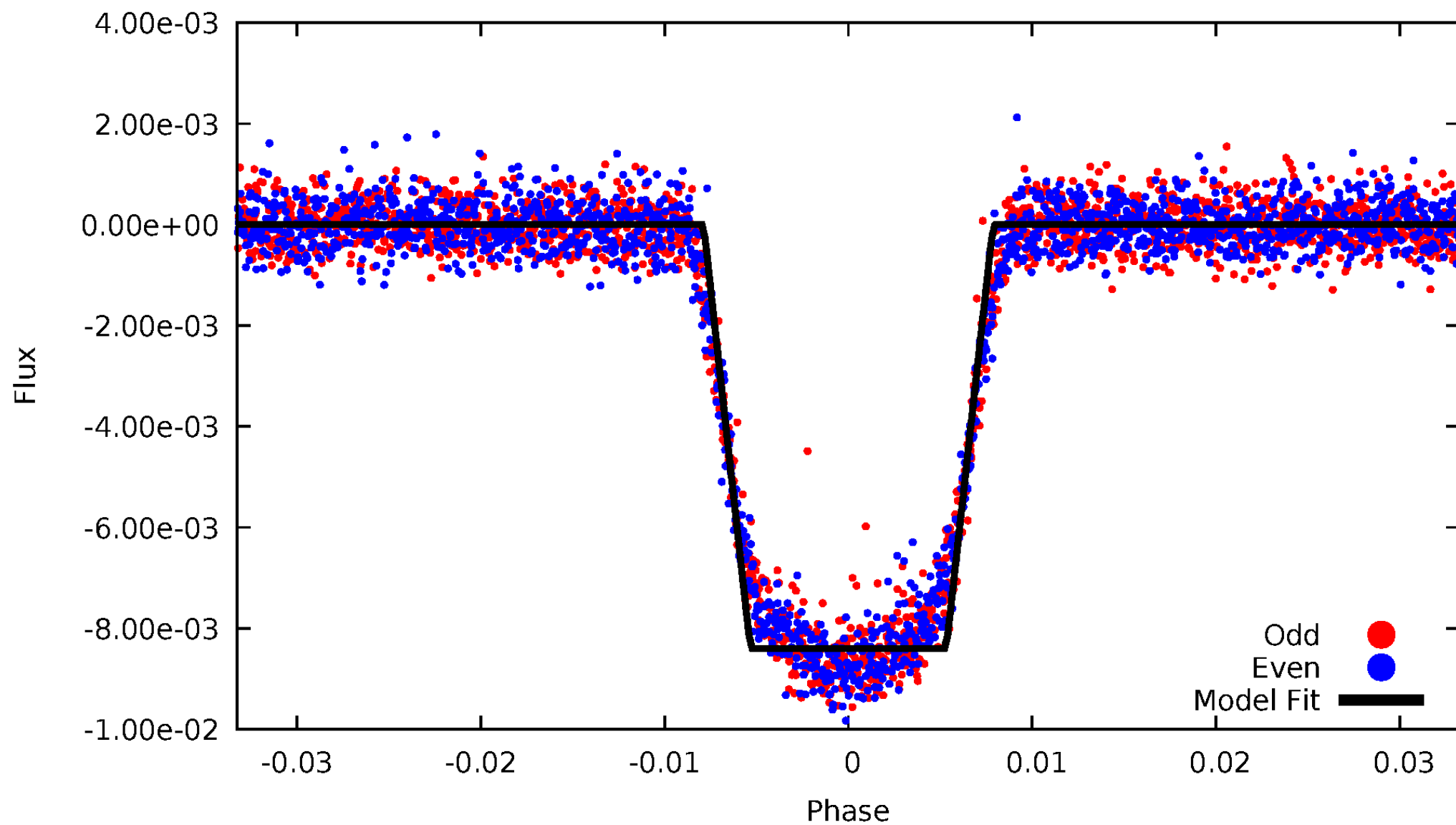
DV Odd/Even

TCE 009643874-01



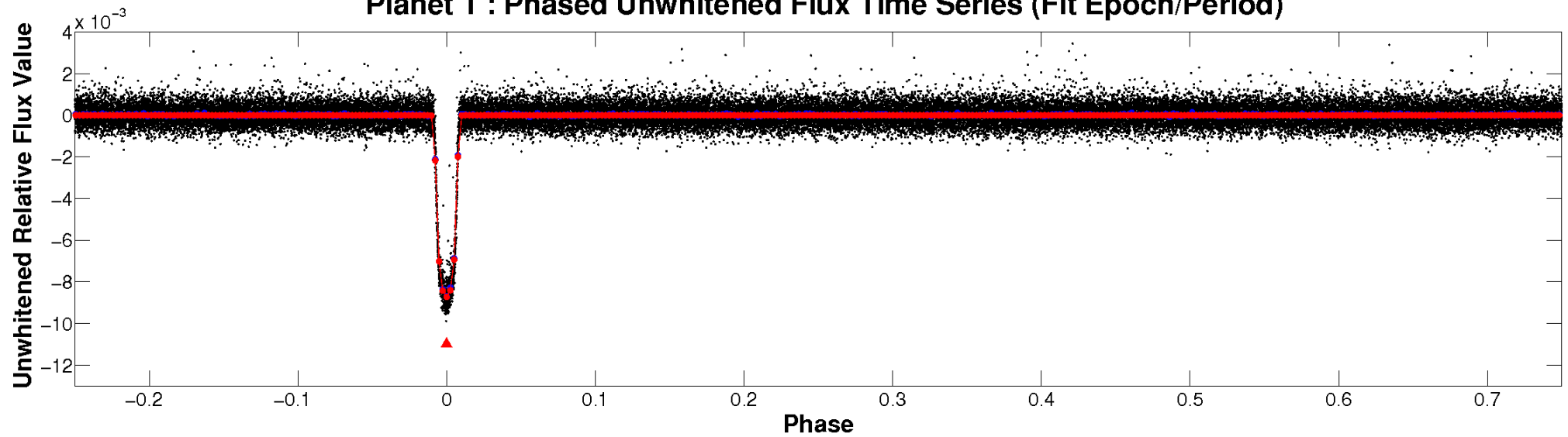
ALT Odd/Even

TCE 009643874-01

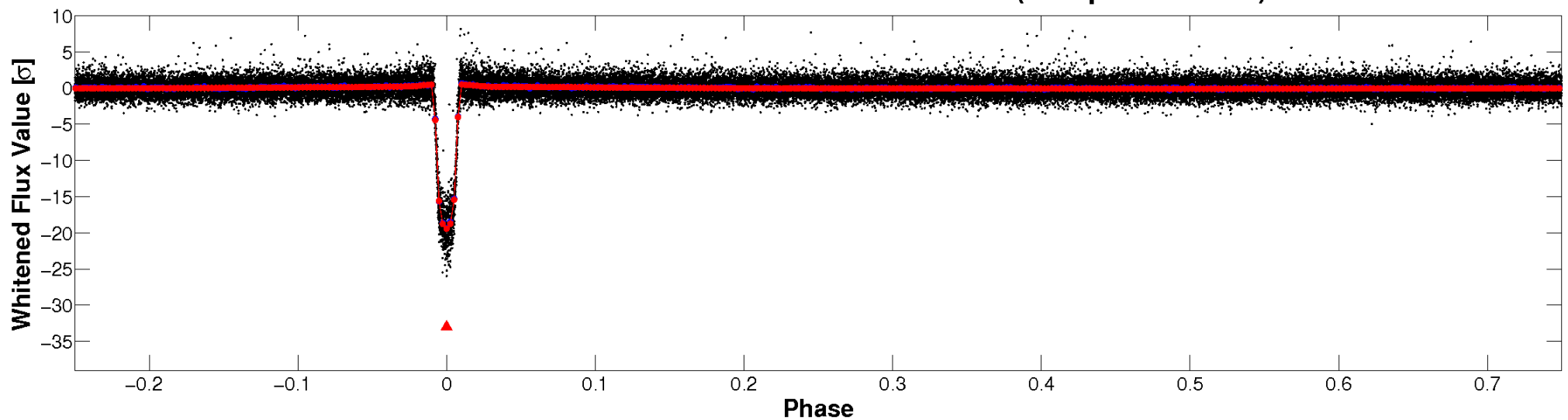


Non-Whitened Vs. Whitened Light Curve

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

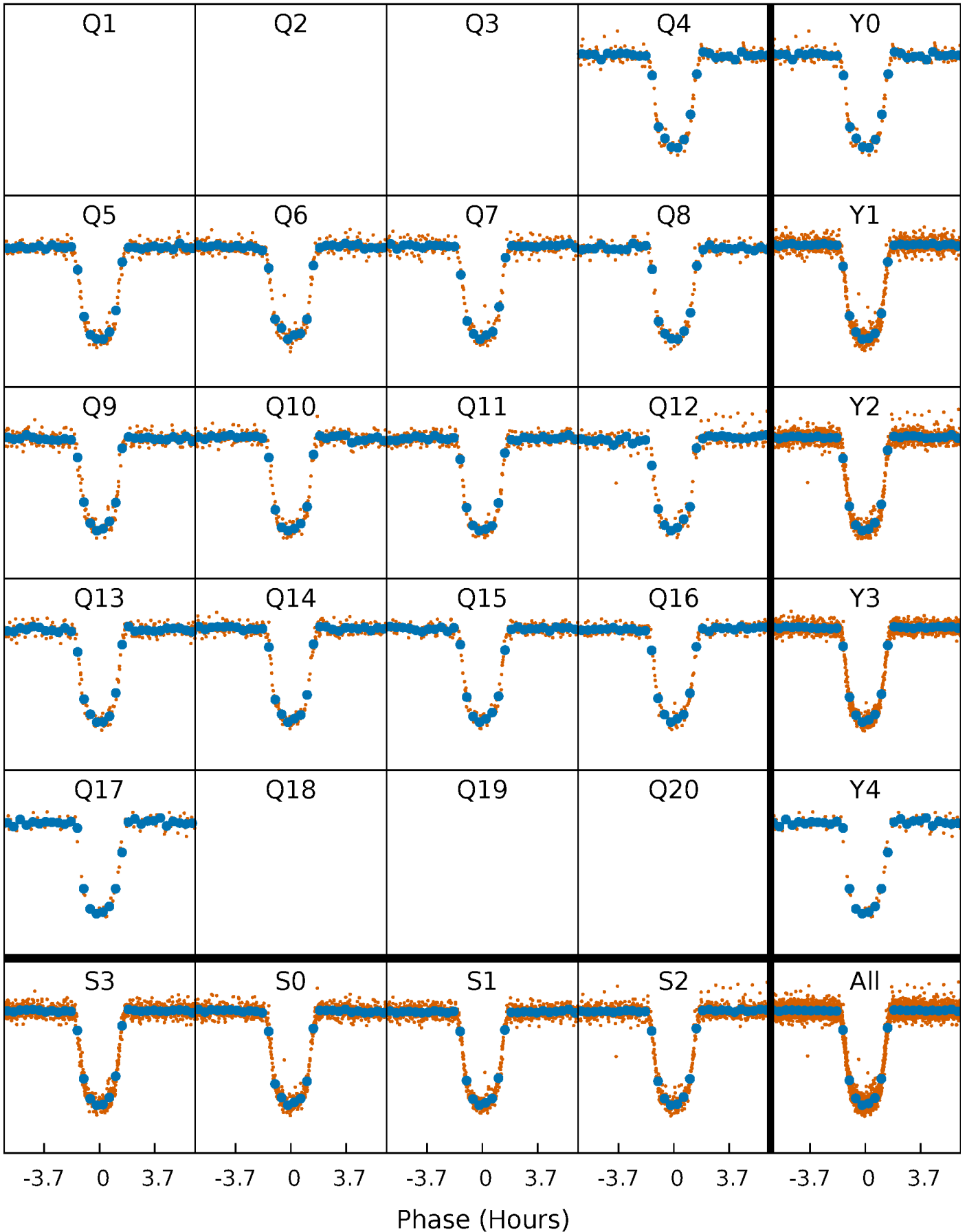


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



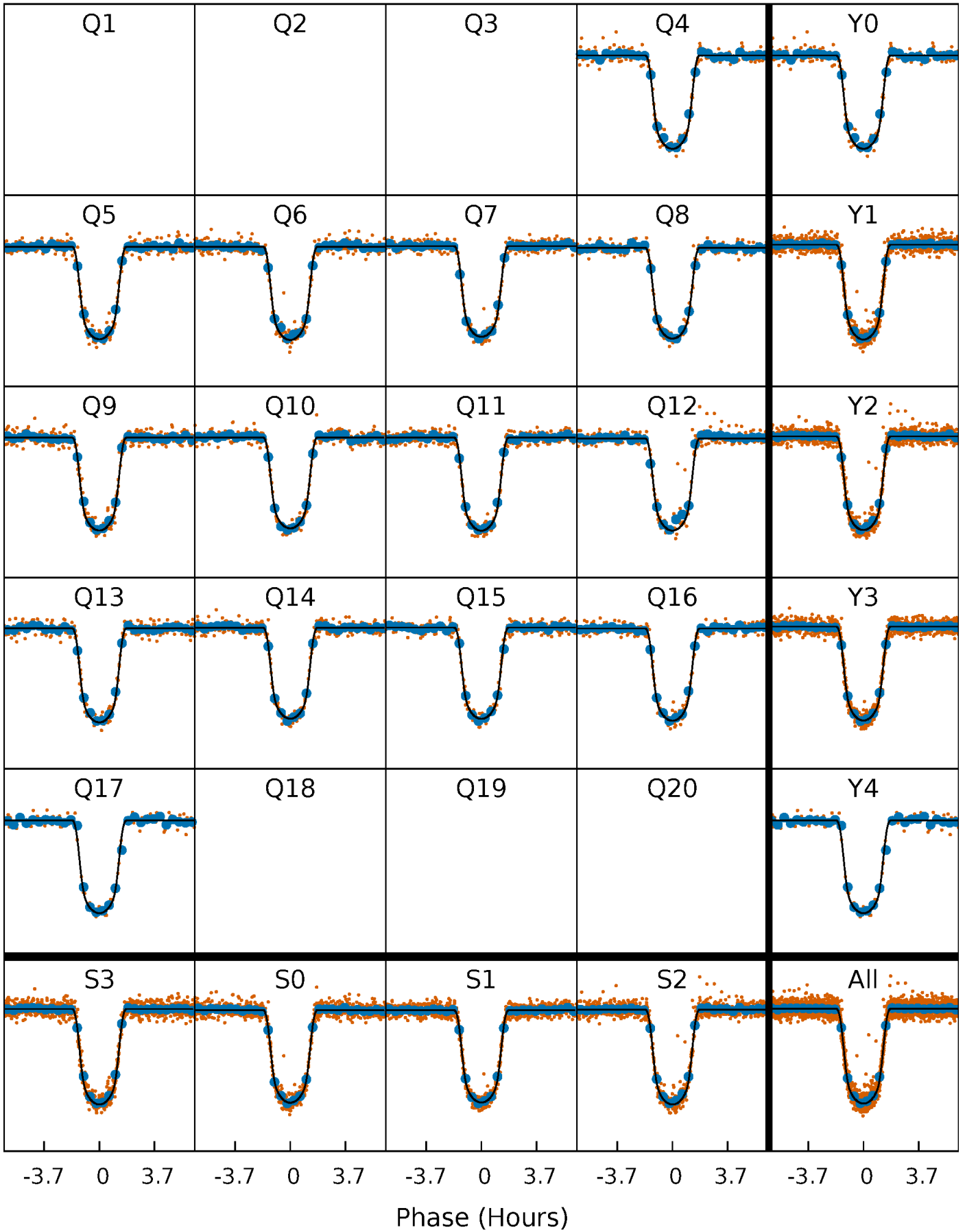
PDC Quarter-Phased Transit Curves

TCE 009643874-01 P= 8.027680 Days $T_0=135.396495$ (BKJD)



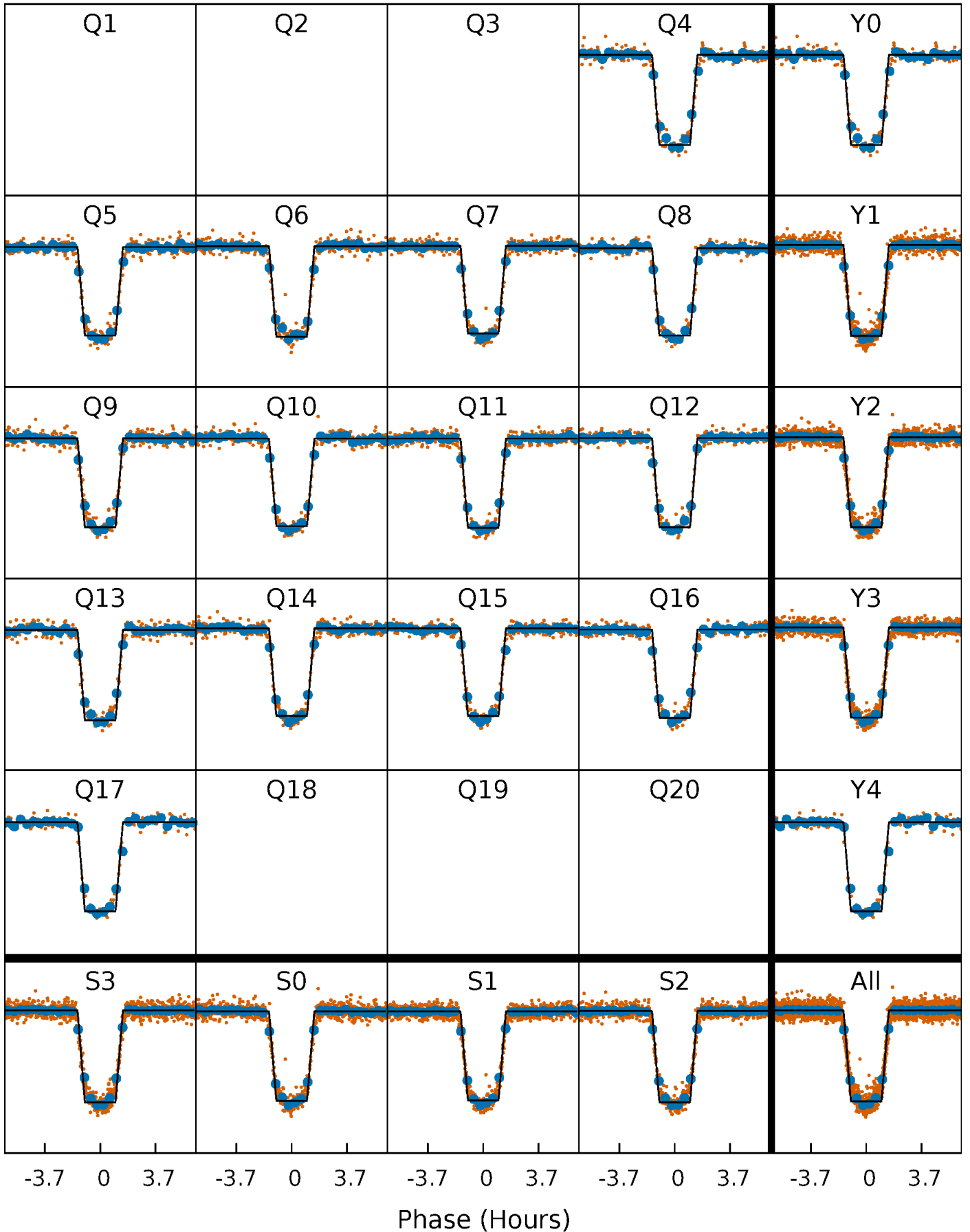
DV Quarter-Phased Transit Curves

TCE 009643874-01 P= 8.027680 Days $T_0=135.396495$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

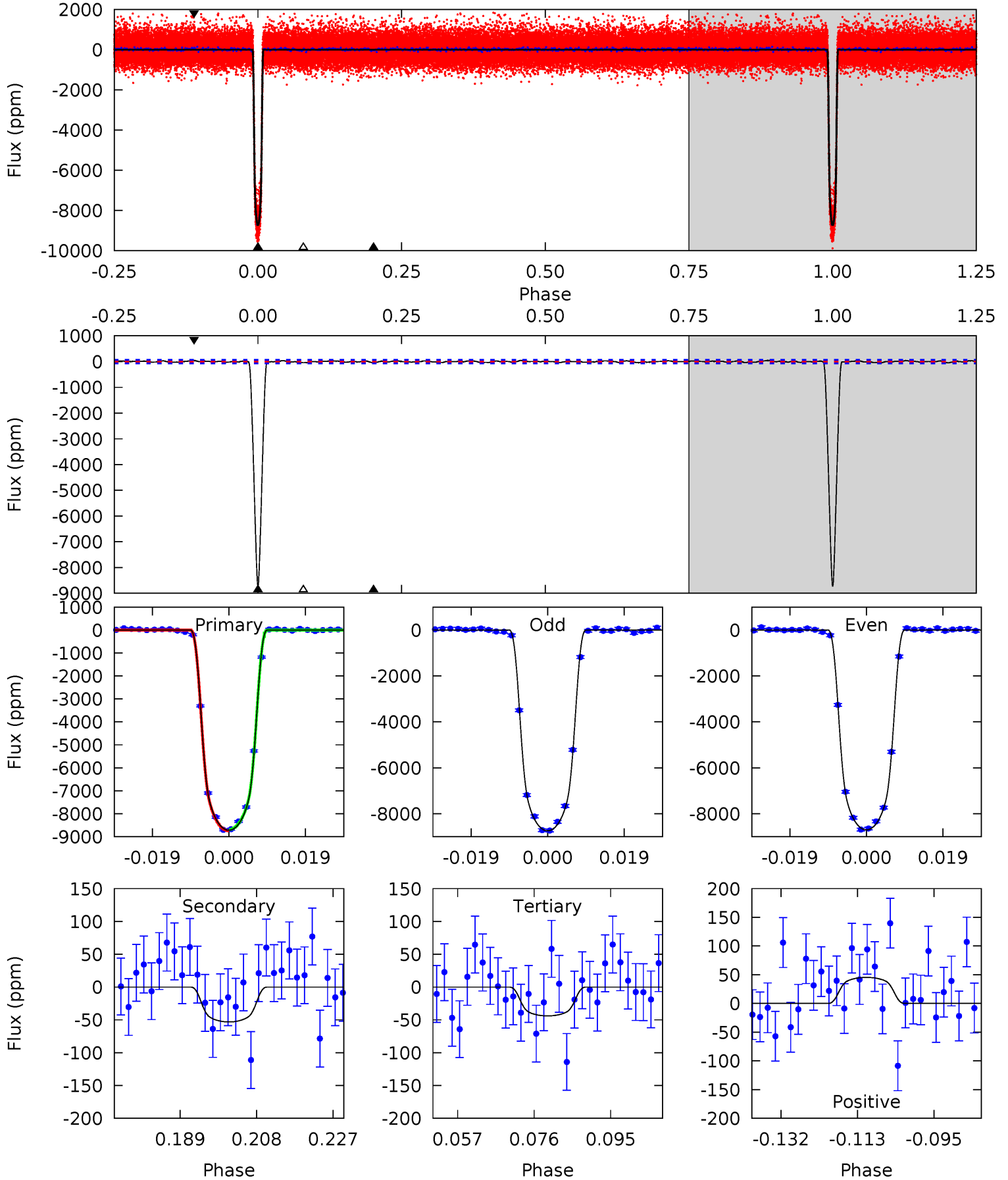
TCE 009643874-01 P= 8.027690 Days $T_0=135.395402$ (BKJD)



DV Model-Shift Uniqueness Test

009643874-01, P = 8.027680 Days, E = 135.396495 Days

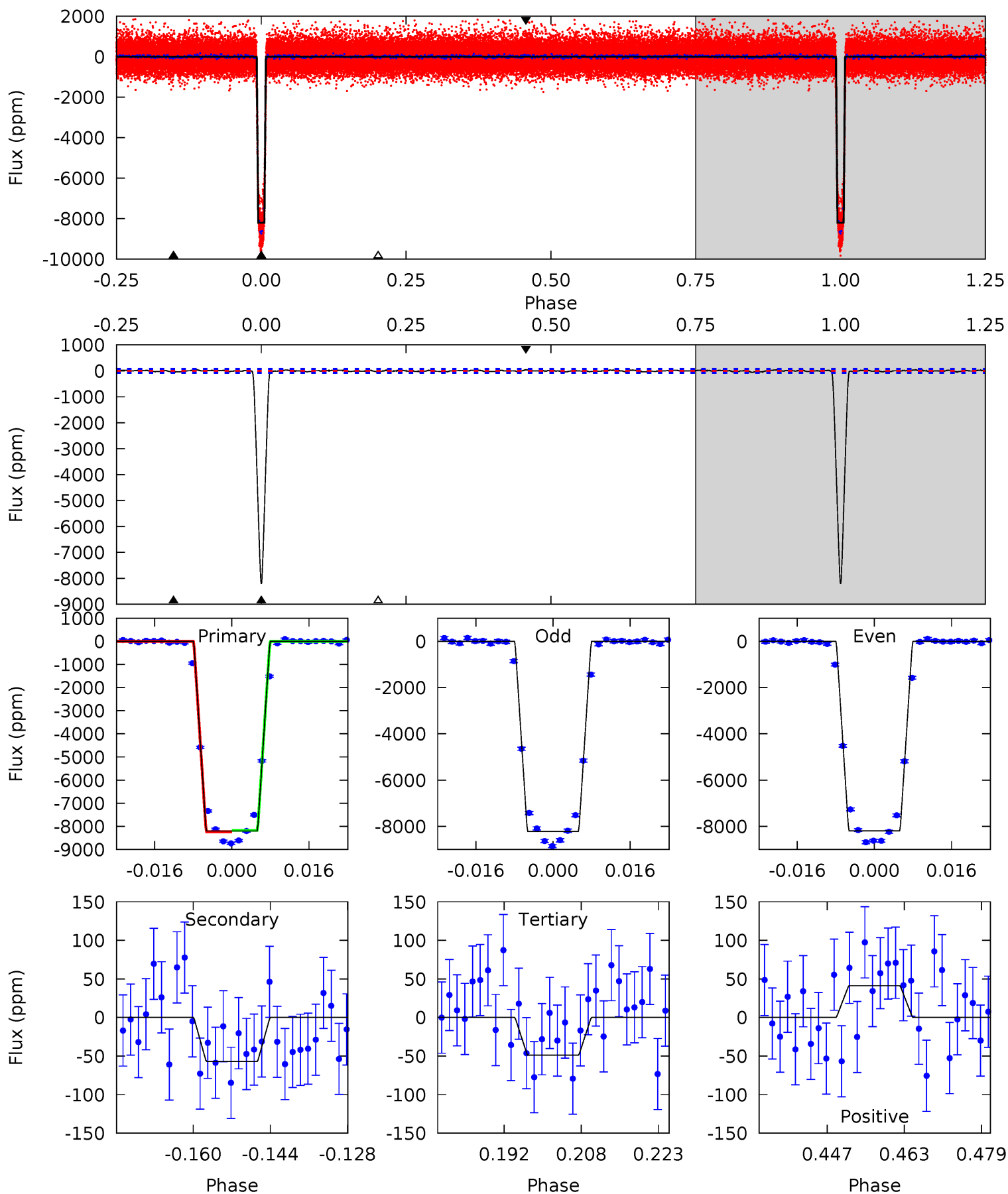
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
624.6	3.81	3.15	3.25	4.90	2.35	1.33	621.4	621.3	0.66	0.56	1.41	0.99	0.01	1.96



Alt Model-Shift Uniqueness Test

009643874-01, P = 8.027690 Days, E = 135.395402 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
540.4	3.76	3.22	2.71	4.94	2.41	1.15	537.2	537.7	0.53	1.04	0.82	0.99	0.00	1.89



Stellar Parameters For KIC 009643874

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5569^{+183}_{-183}	$4.546^{+0.033}_{-0.187}$	$0.210^{+0.200}_{-0.300}$	$0.887^{+0.237}_{-0.079}$	$1.009^{+0.084}_{-0.126}$	$2.037^{+0.374}_{-1.007}$
	+3%/-3%	+1%/-4%	+95%/-143%	+27%/-9%	+8%/-12%	+18%/-49%
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 009643874-01 / KOI 1457.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-53 ± 14	$9.07^{+1.35}_{-0.66}$	1183^{+78}_{-54}	2394^{+95}_{-92}	$2.047^{+0.713}_{-0.609}$
Alt.	-57 ± 15	$9.13^{+1.38}_{-0.68}$	1185^{+77}_{-56}	2412^{+92}_{-112}	$2.149^{+0.718}_{-0.741}$

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 $A_{obs} \gg 1.0$

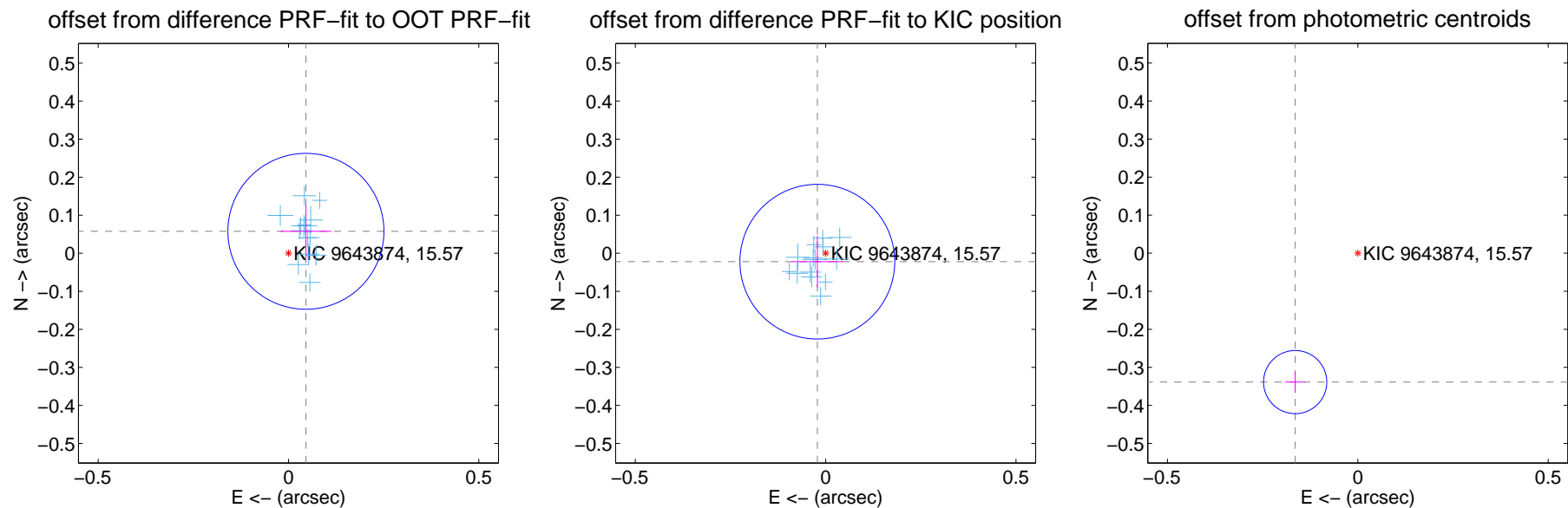
DV Centroid Data

Supplemental centroid analysis for 009643874-01. Kepler magnitude: 15.57. Transit SNR 454.80

There are 14 quarters with good PRF difference image offsets

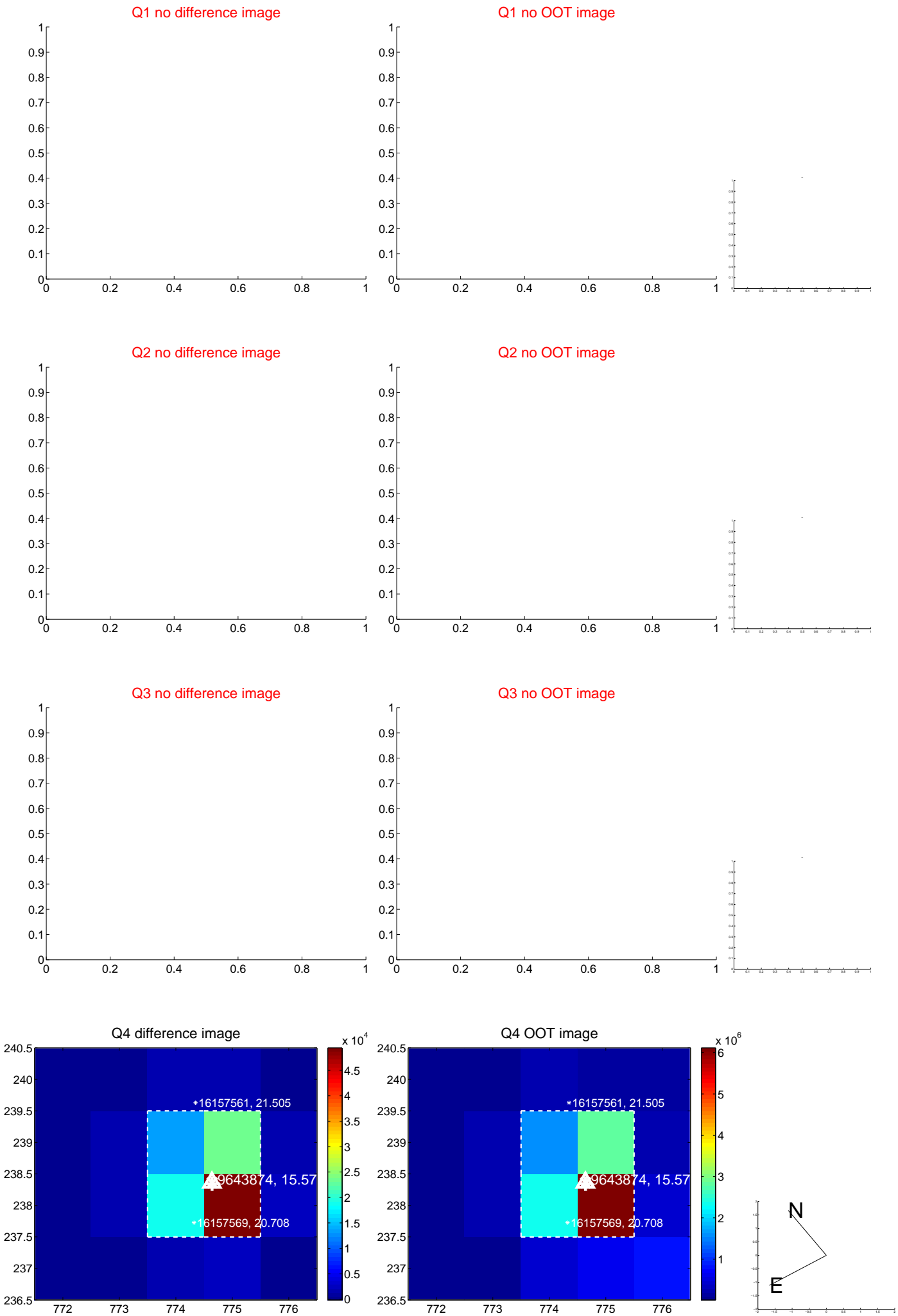
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.074 ± 0.068	1.08	-0.046 ± 0.067	0.058 ± 0.069
PRF-fit source offset from KIC position	0.031 ± 0.068	0.46	0.022 ± 0.067	-0.022 ± 0.068
photometric centroid source offset	0.38 ± 0.03	13.61	0.16 ± 0.03	-0.34 ± 0.03

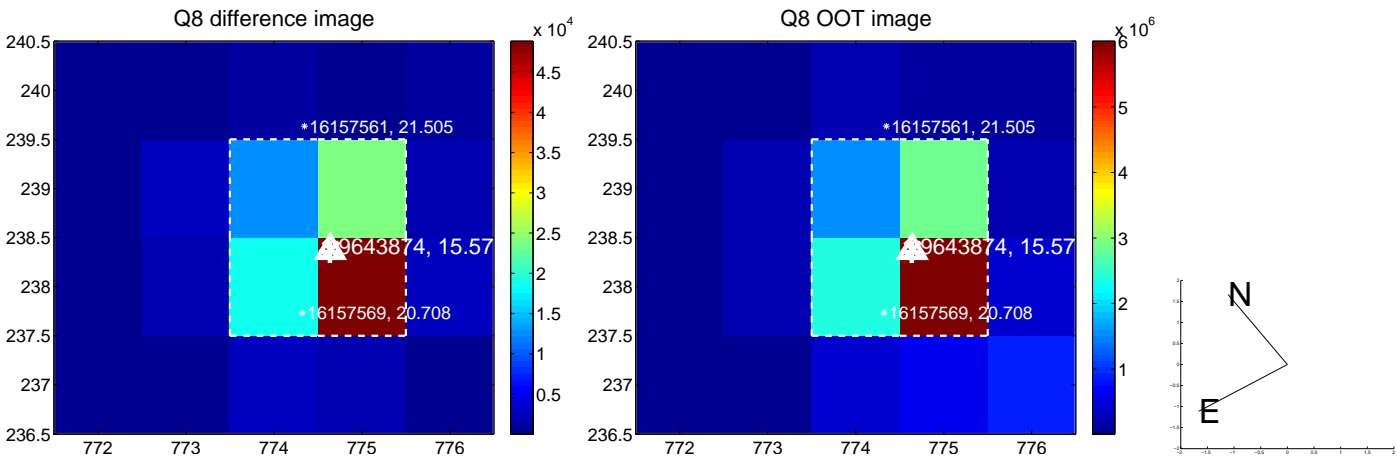
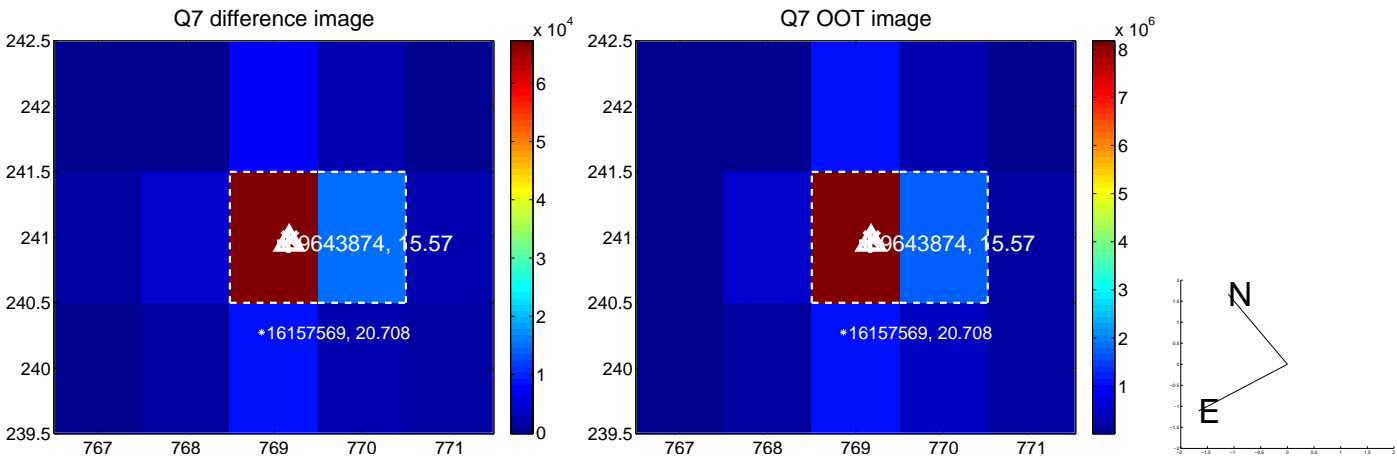
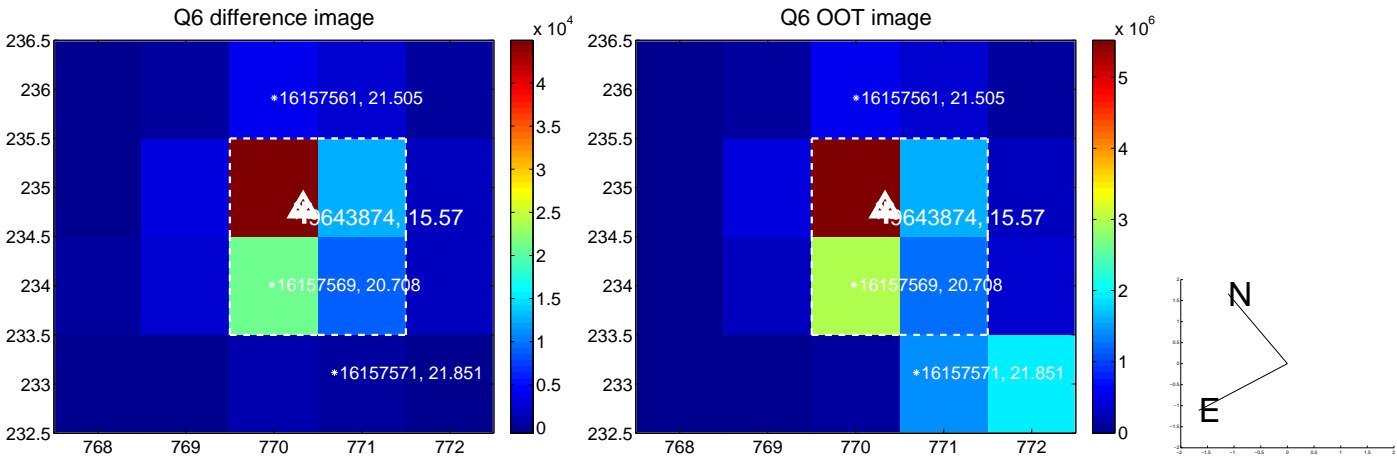
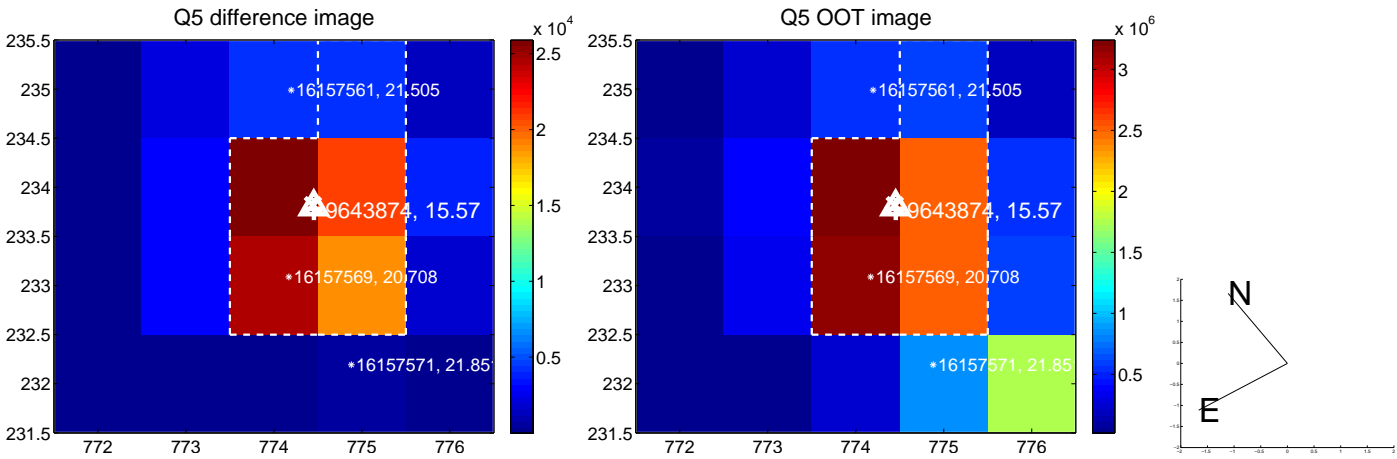


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

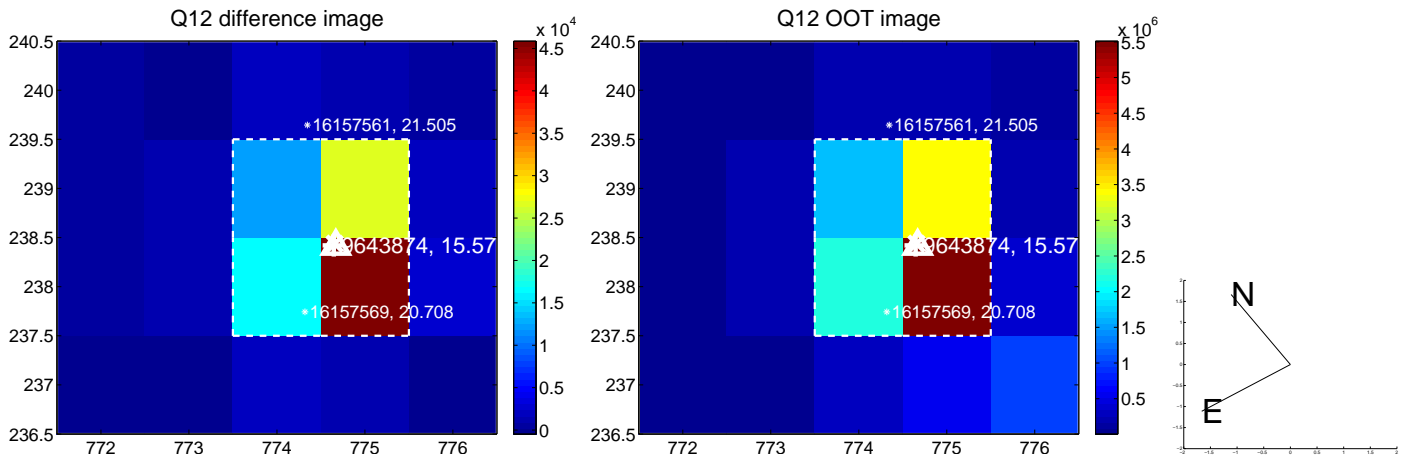
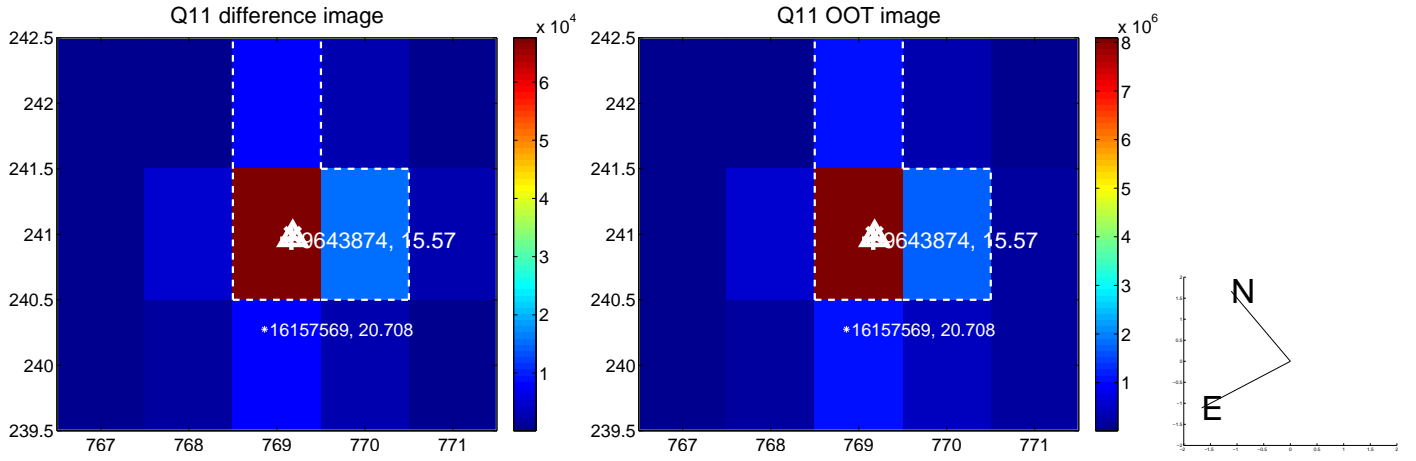
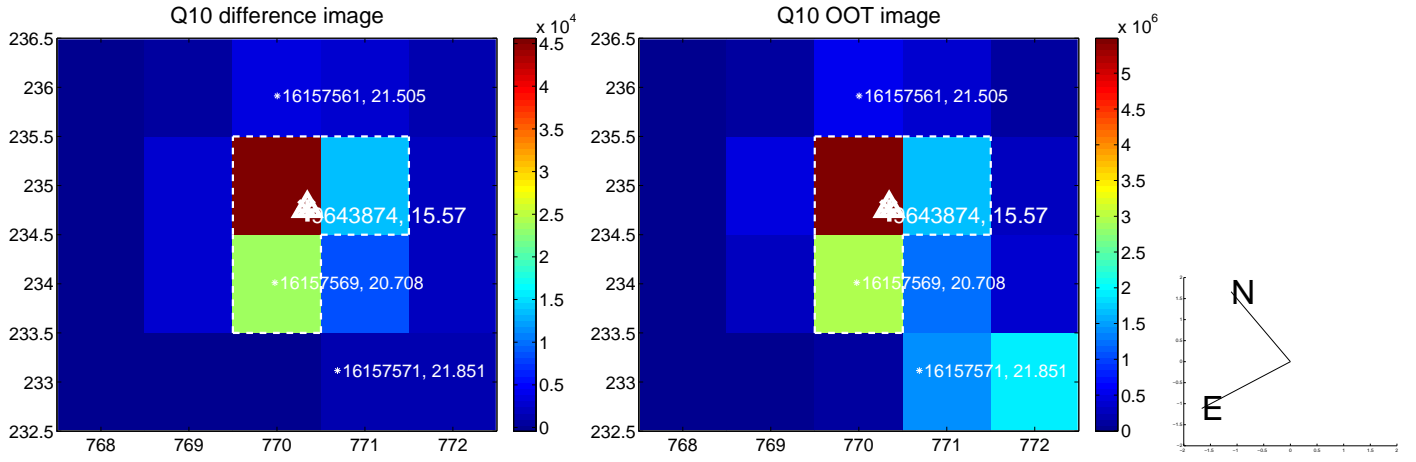
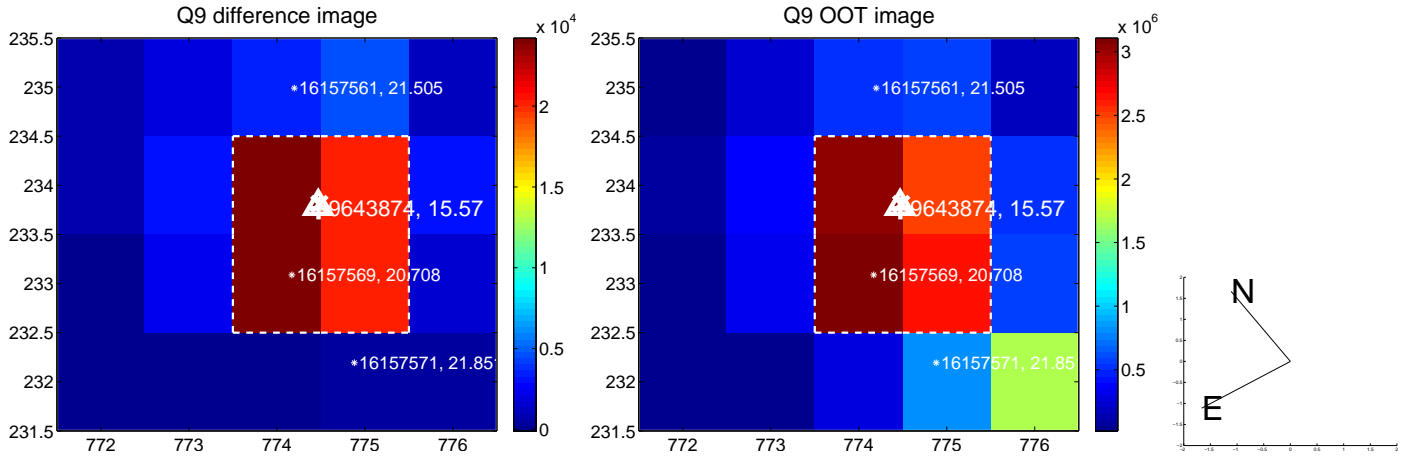
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



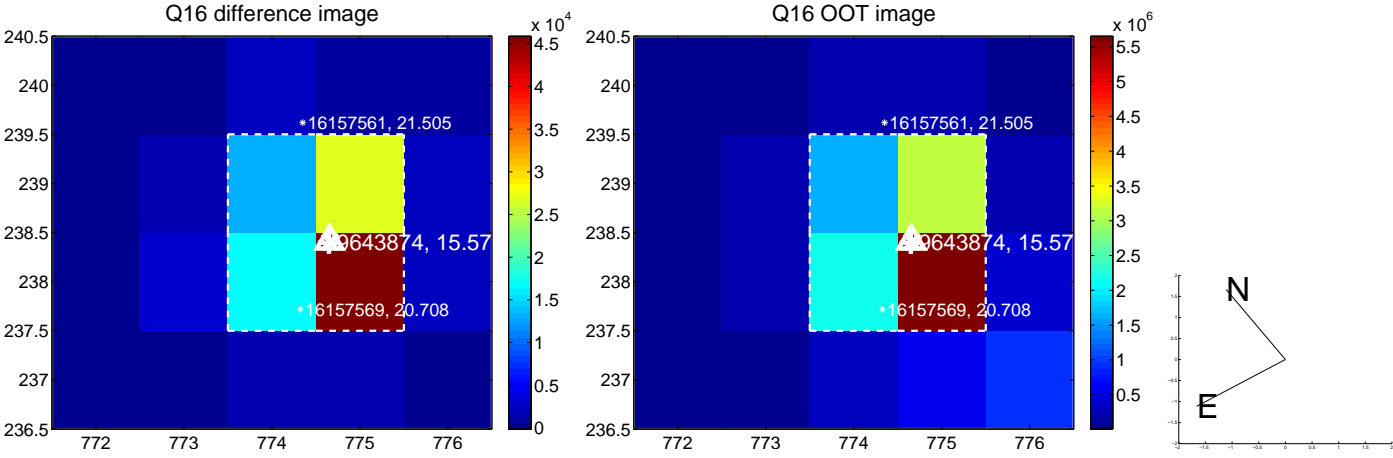
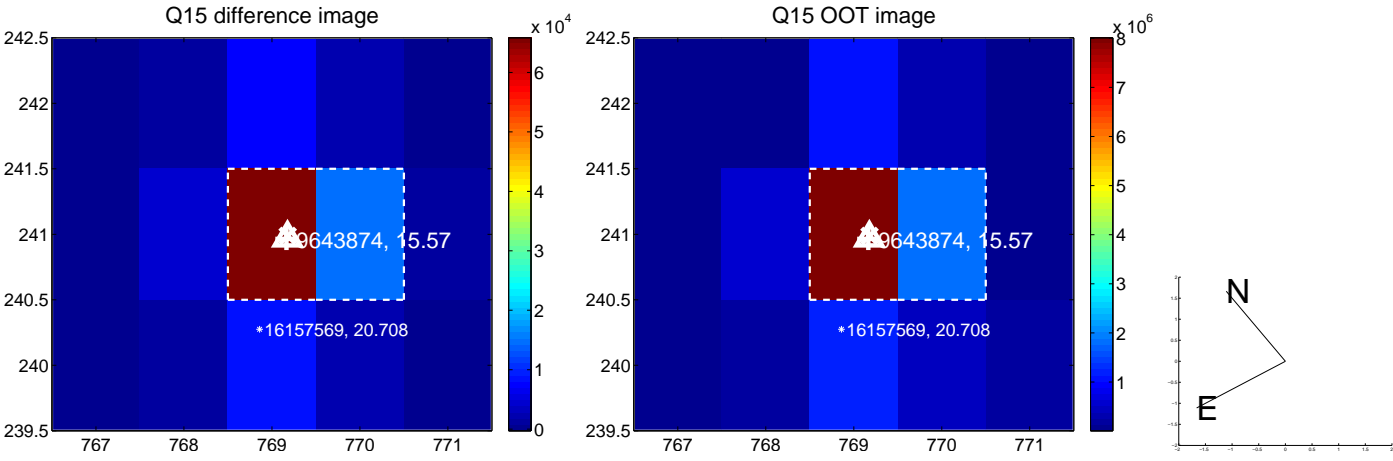
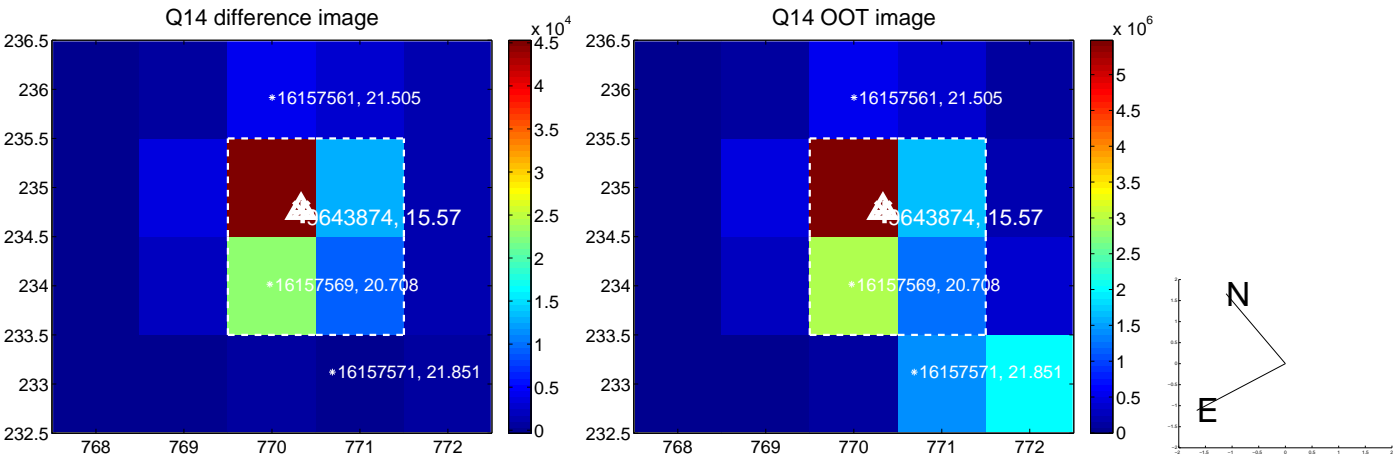
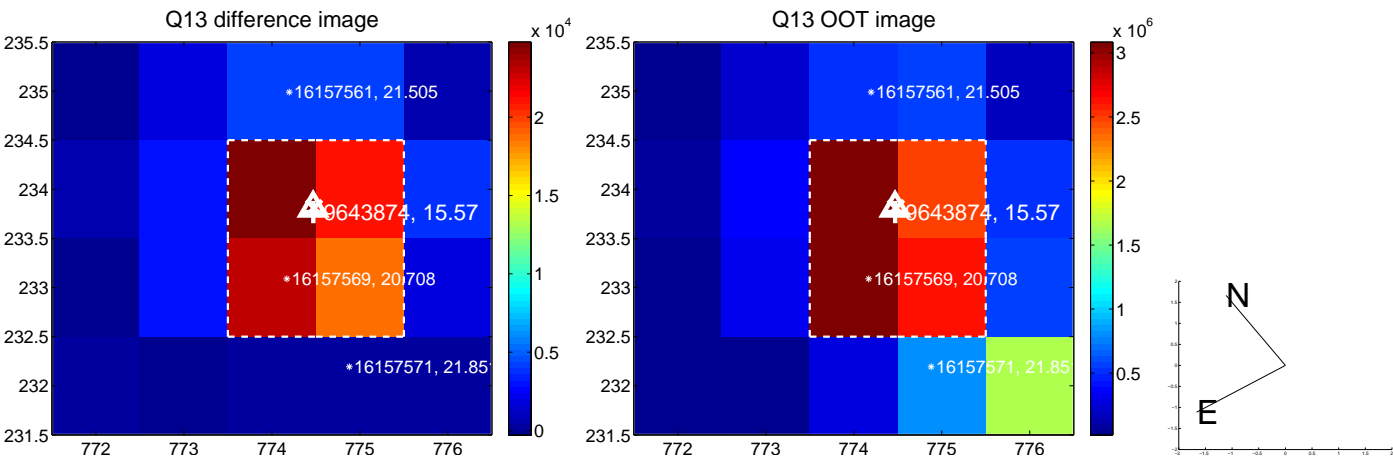
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



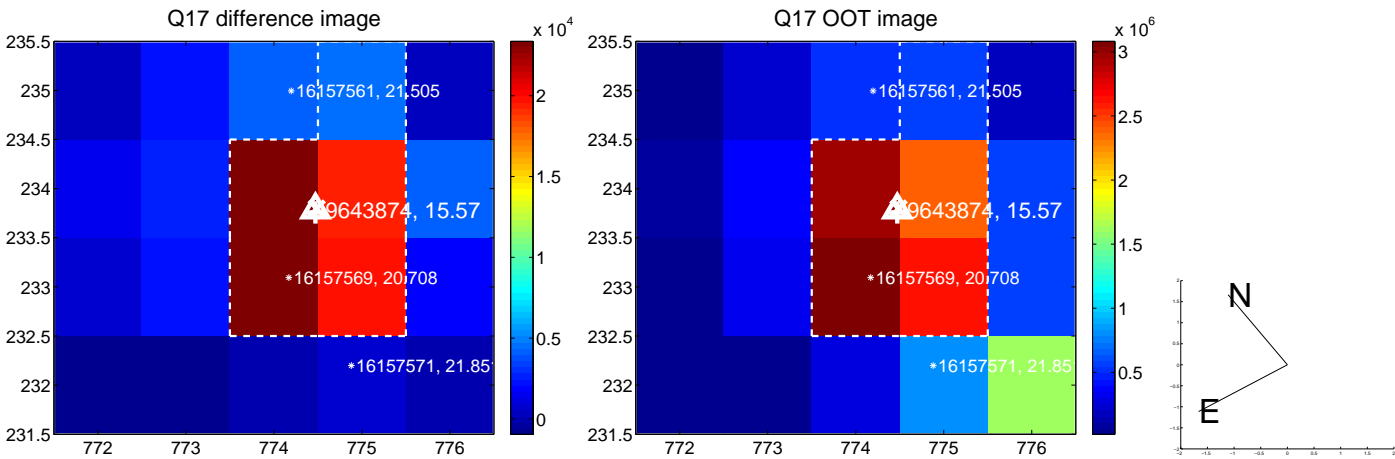
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



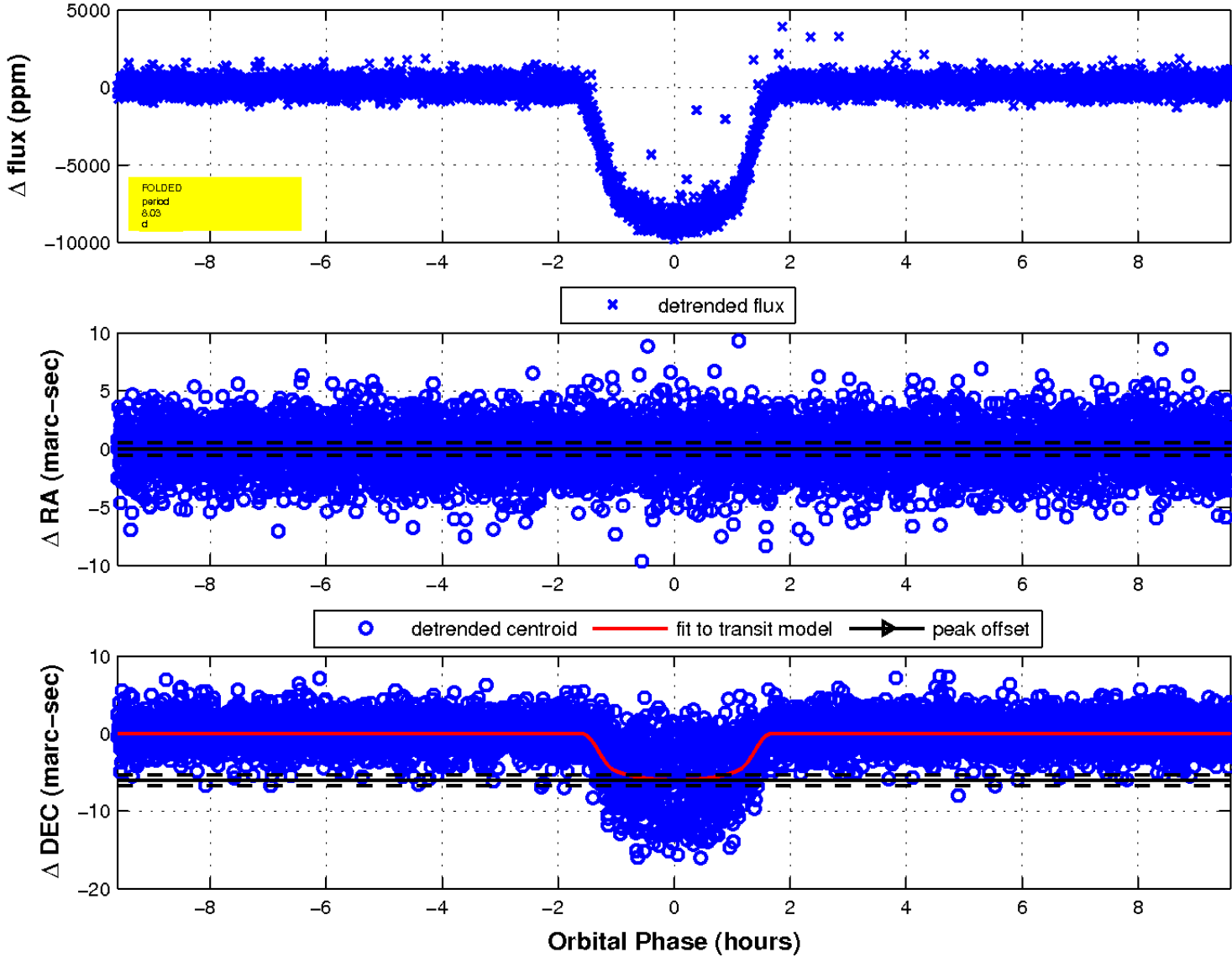
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

