

KIC 008940961

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})
008940961-01	OBS	7110.01	1.583344	132.374387	106149.7	4.530	10897.0	4227.4	0.95	5846	52.93	1360.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008940961-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED

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.

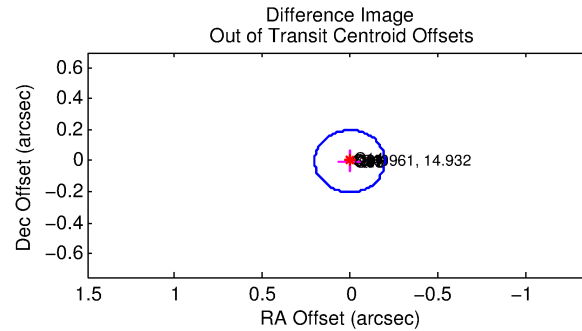
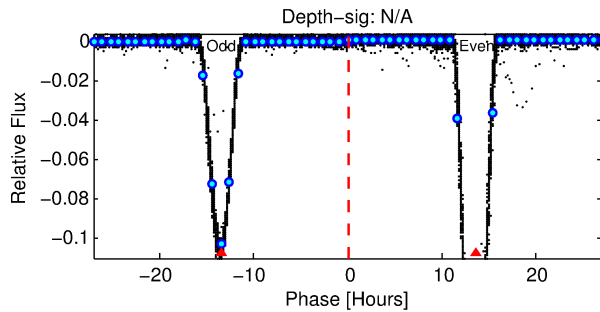
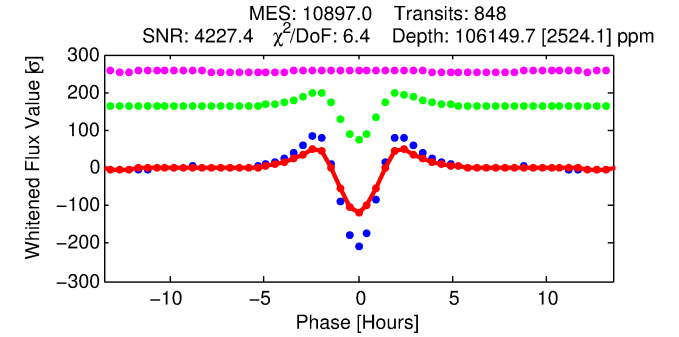
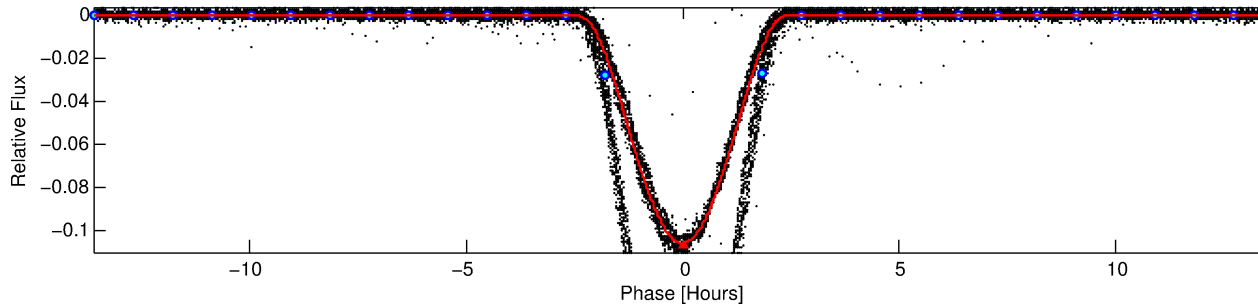
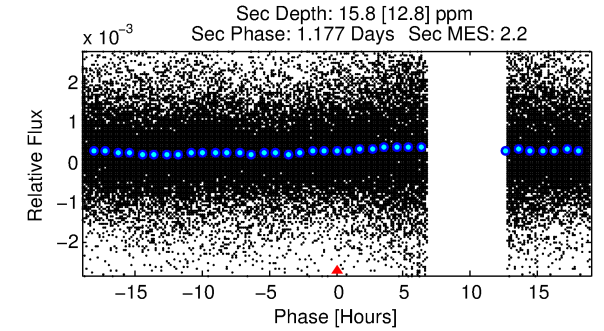
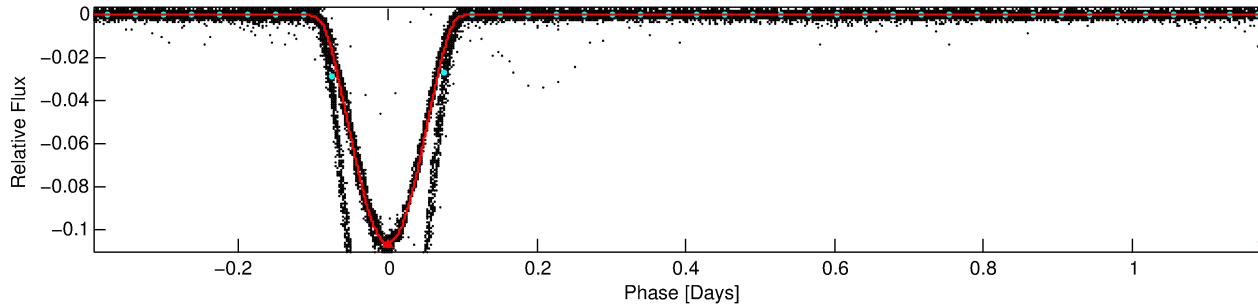
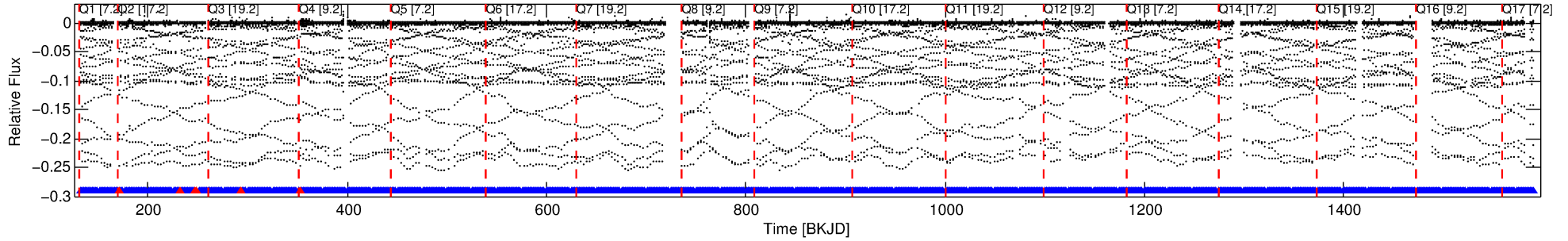
Ephemeris Match Information For 008940961-01

No Significant Match Found

DV One-Page Summary

KIC: 8940961 Candidate: 1 of 1 Period: 1.583 d
KOI: K07110.01 Corr: 0.988

Kp: 14.93 R*: 0.95 Rs Teff: 5846.0 K Logg: 4.47 Fe/H: -0.060



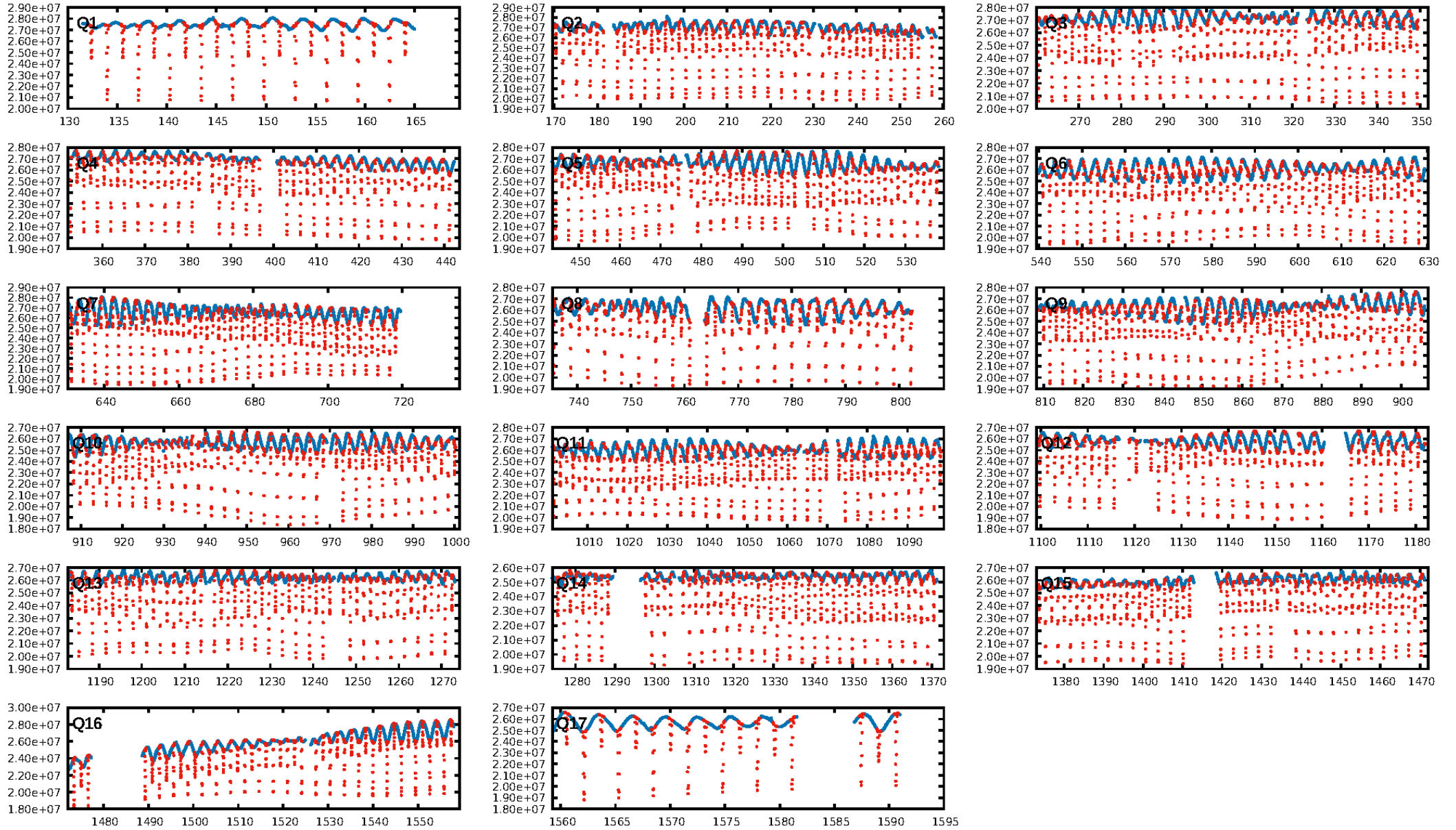
DV Fit Results:

Period = 1.58334 [0.00000] d
Epoch = 132.3744 [0.0000] BKJD
Rp/R* = 0.5090 [0.0881]
a/R* = 3.25 [0.08]
b = 1.00 [0.11]
Seff = 1360.27 [519.85]
Teq = 1549 [148] K
Rp = 52.93 [18.19] Re
a = 0.0264 [0.0066] AU
Ag = 0.00 [0.00] [-485.40σ]
Teffp = 516 [115] K [-5.51σ]

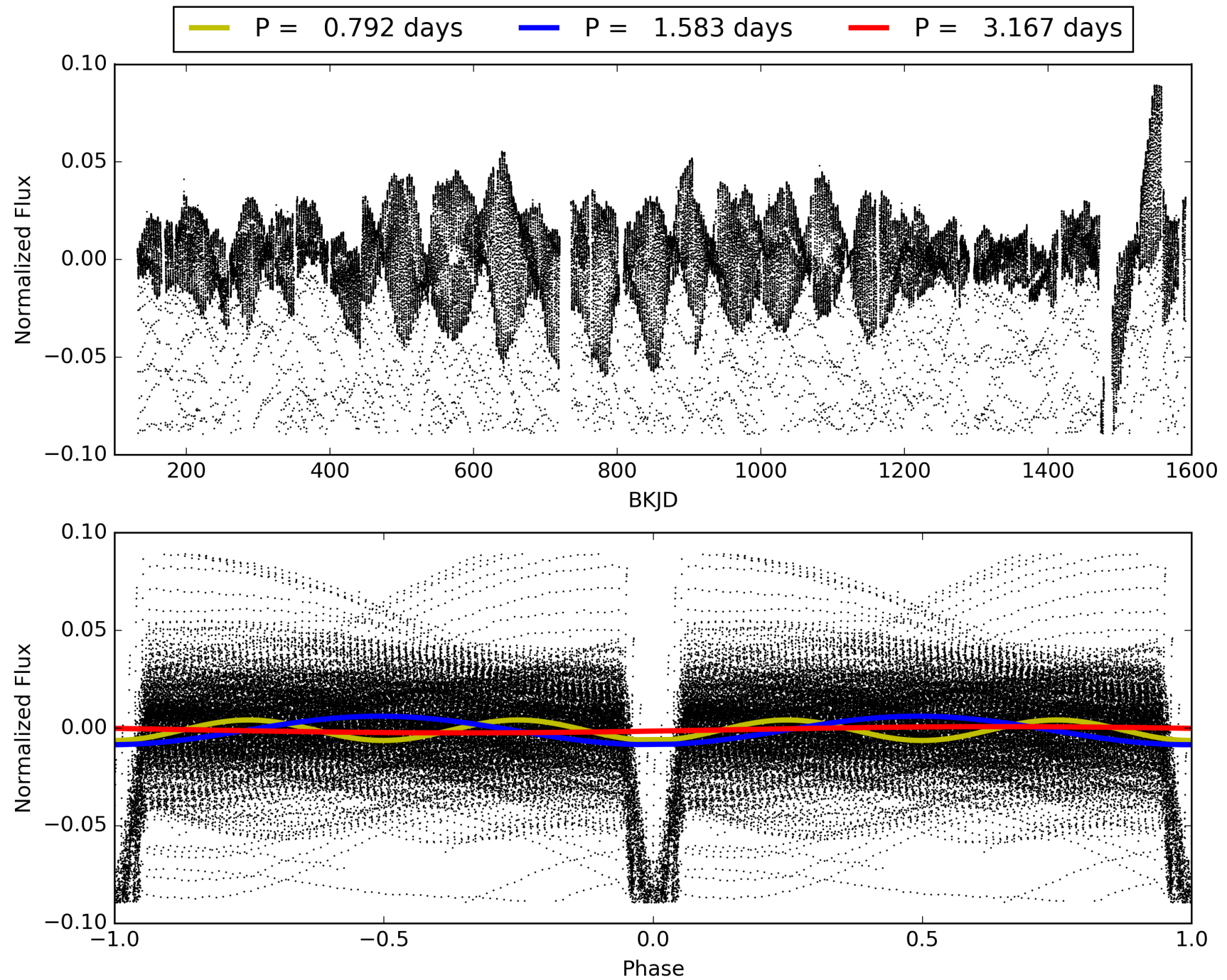
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [804/810]
GhostDiagnostic-chr: 0.6298
Centroid-sig: 0.0%
Centroid-so: 0.070 arcsec [58.28σ]
OotOffset-rm: 0.005 arcsec [0.07σ]
KicOffset-rm: 0.014 arcsec [0.21σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008940961-01, PDC Light Curves

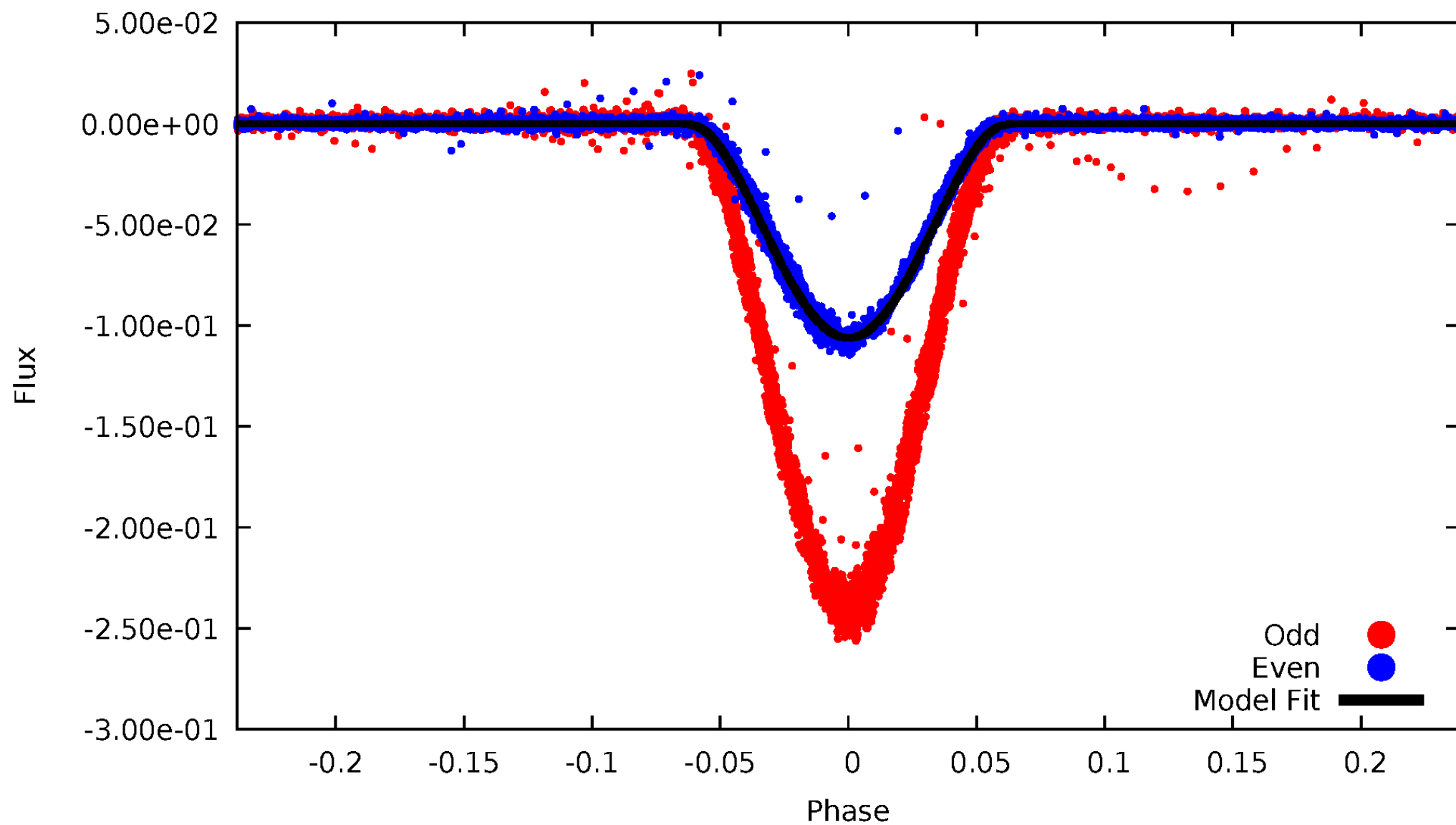


TCE 008940961-01



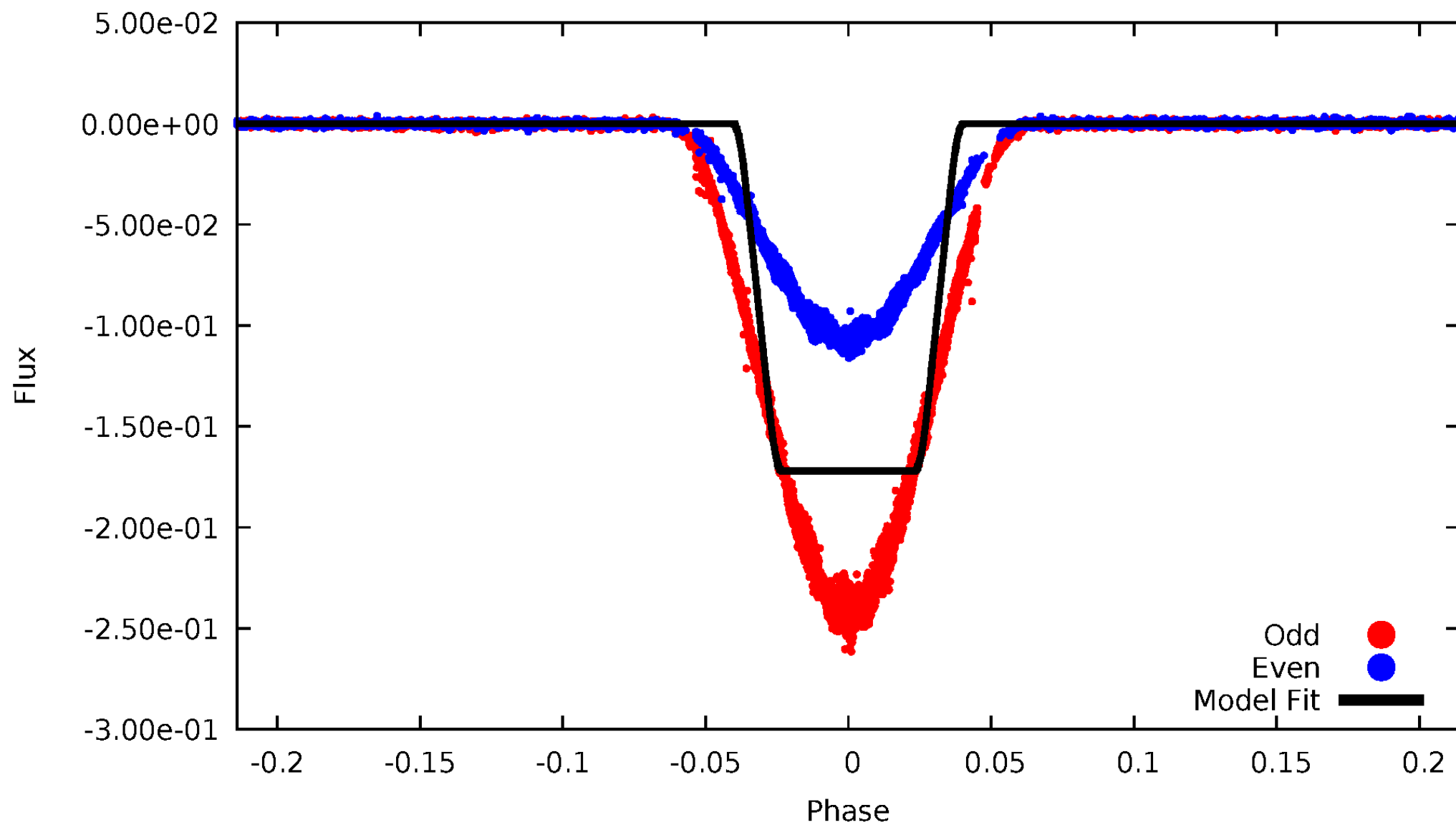
DV Odd/Even

TCE 008940961-01



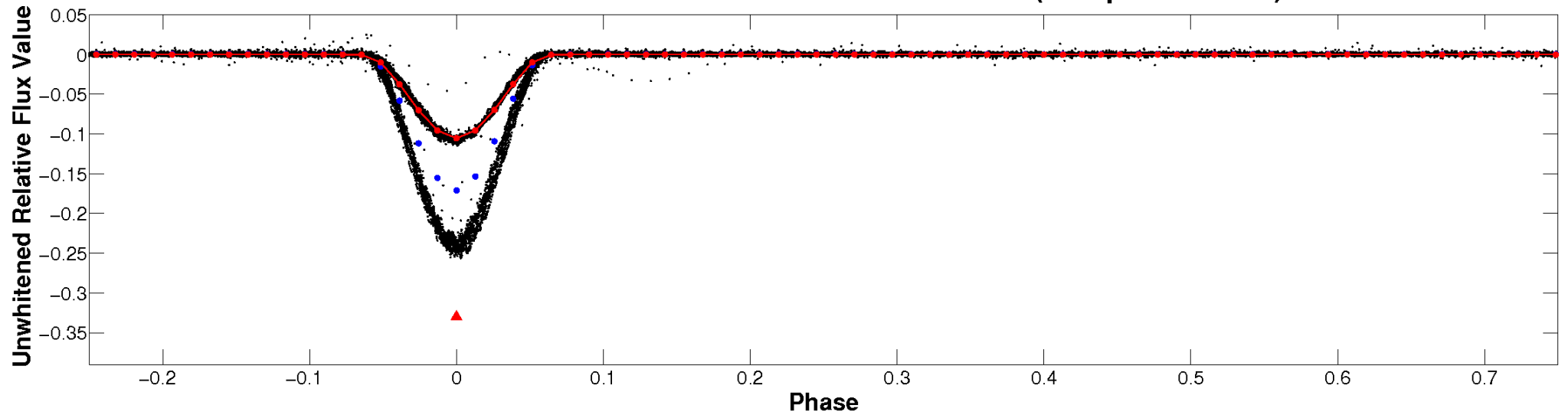
ALT Odd/Even

TCE 008940961-01

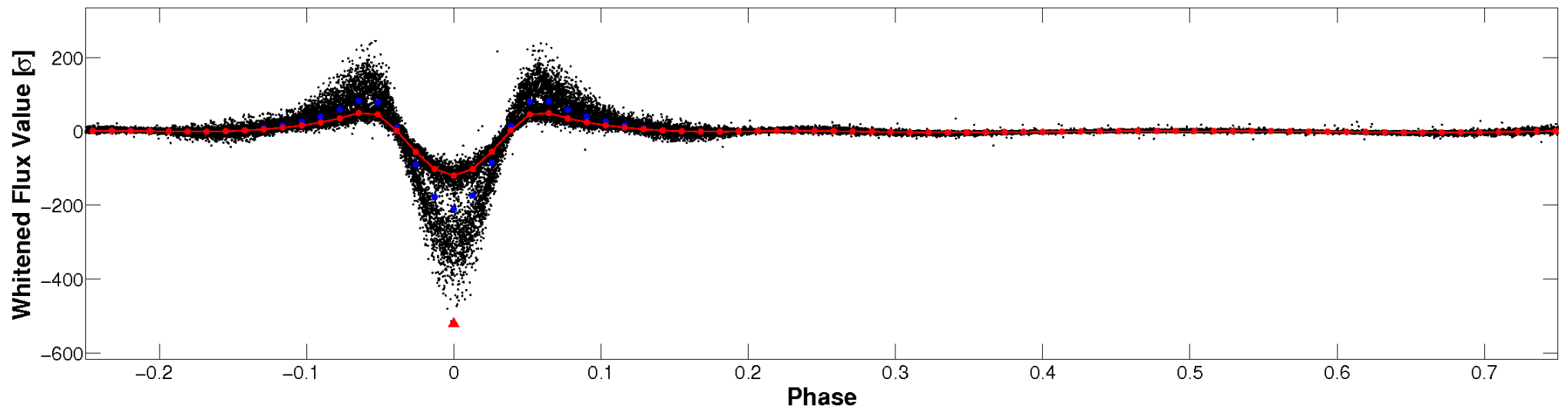


Non-Whitened Vs. Whitened Light Curve

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

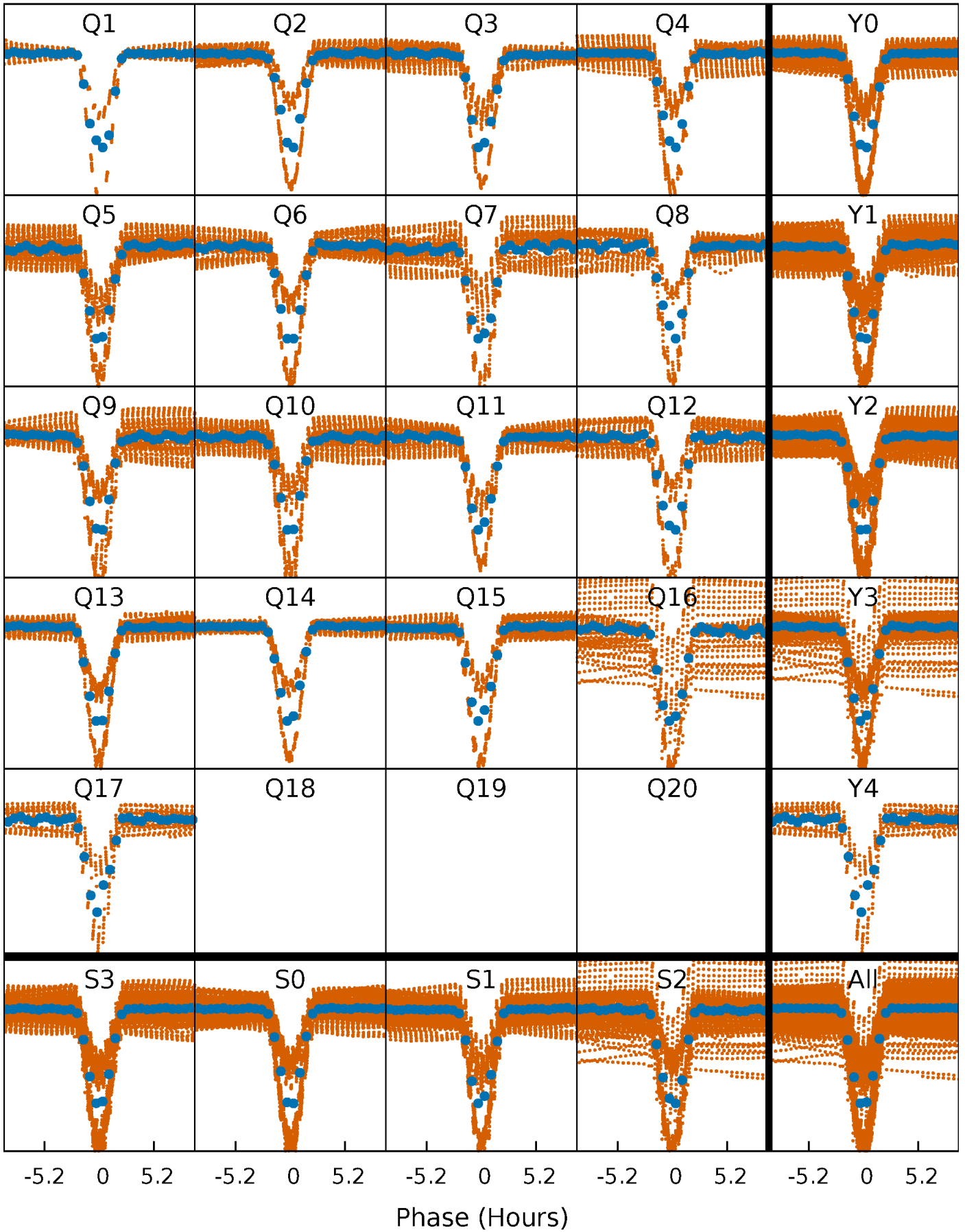


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



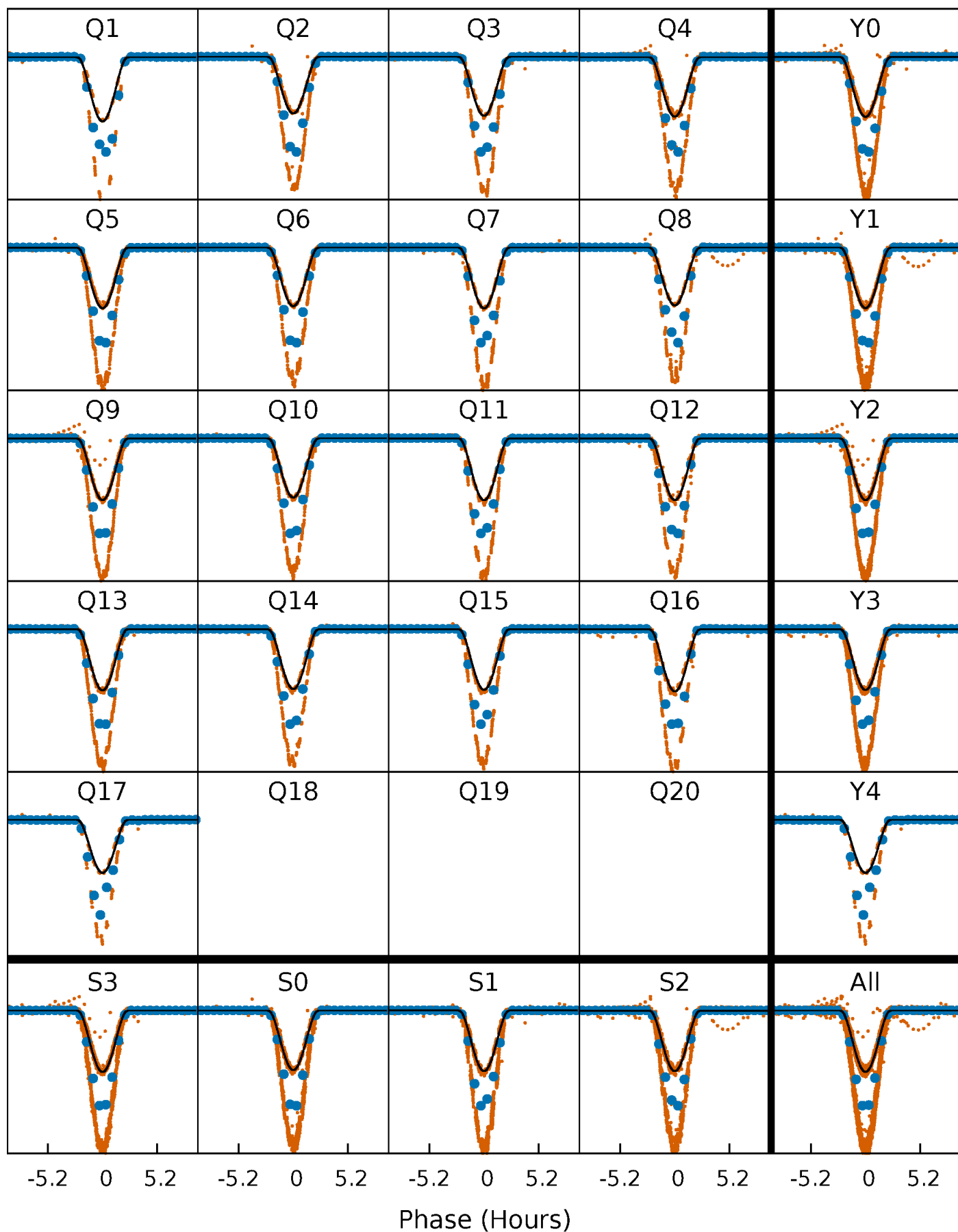
PDC Quarter-Phased Transit Curves

TCE 008940961-01 P= 1.583344 Days $T_0=132.374387$ (BKJD)



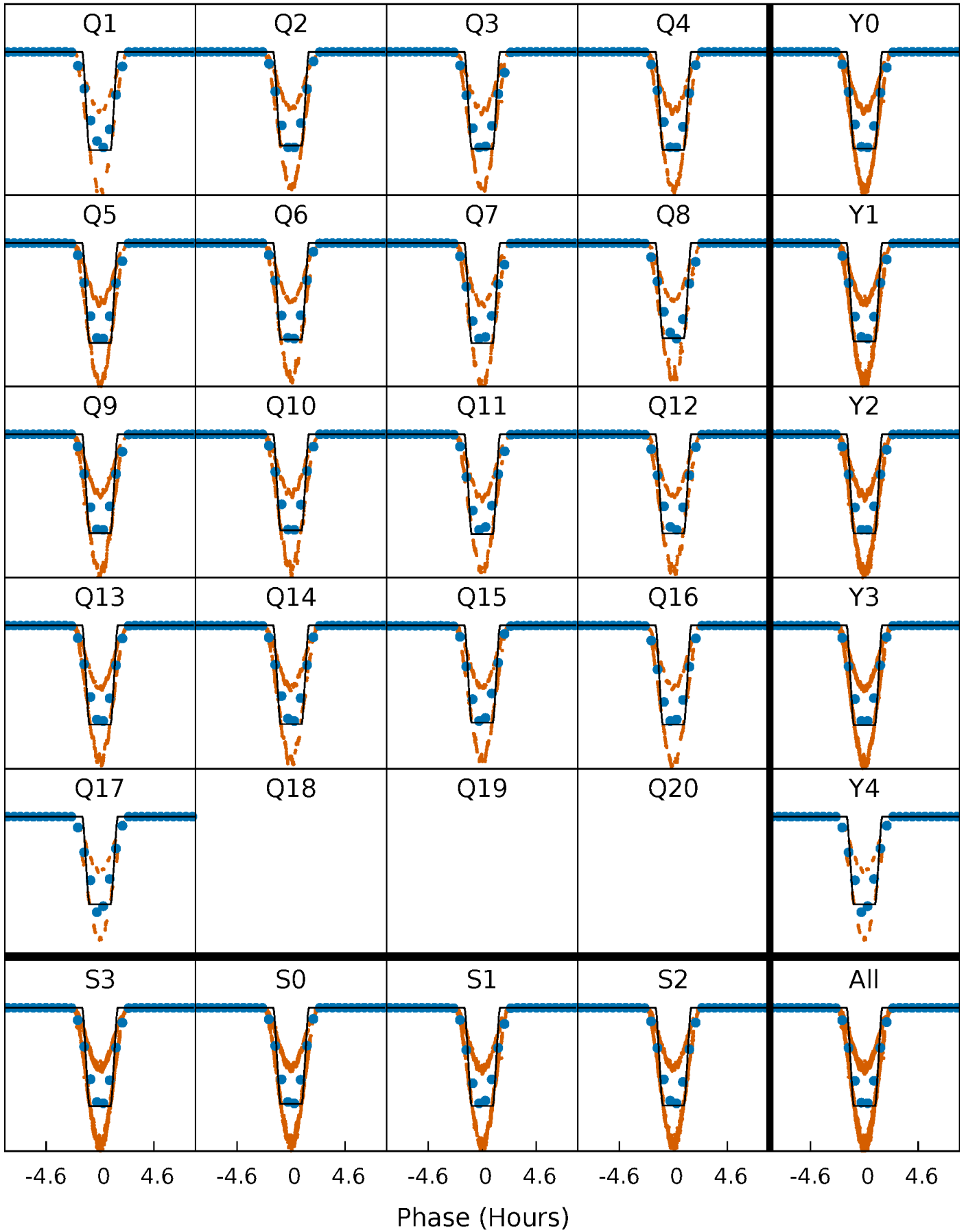
DV Quarter-Phased Transit Curves

TCE 008940961-01 P= 1.583344 Days $T_0=132.374387$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

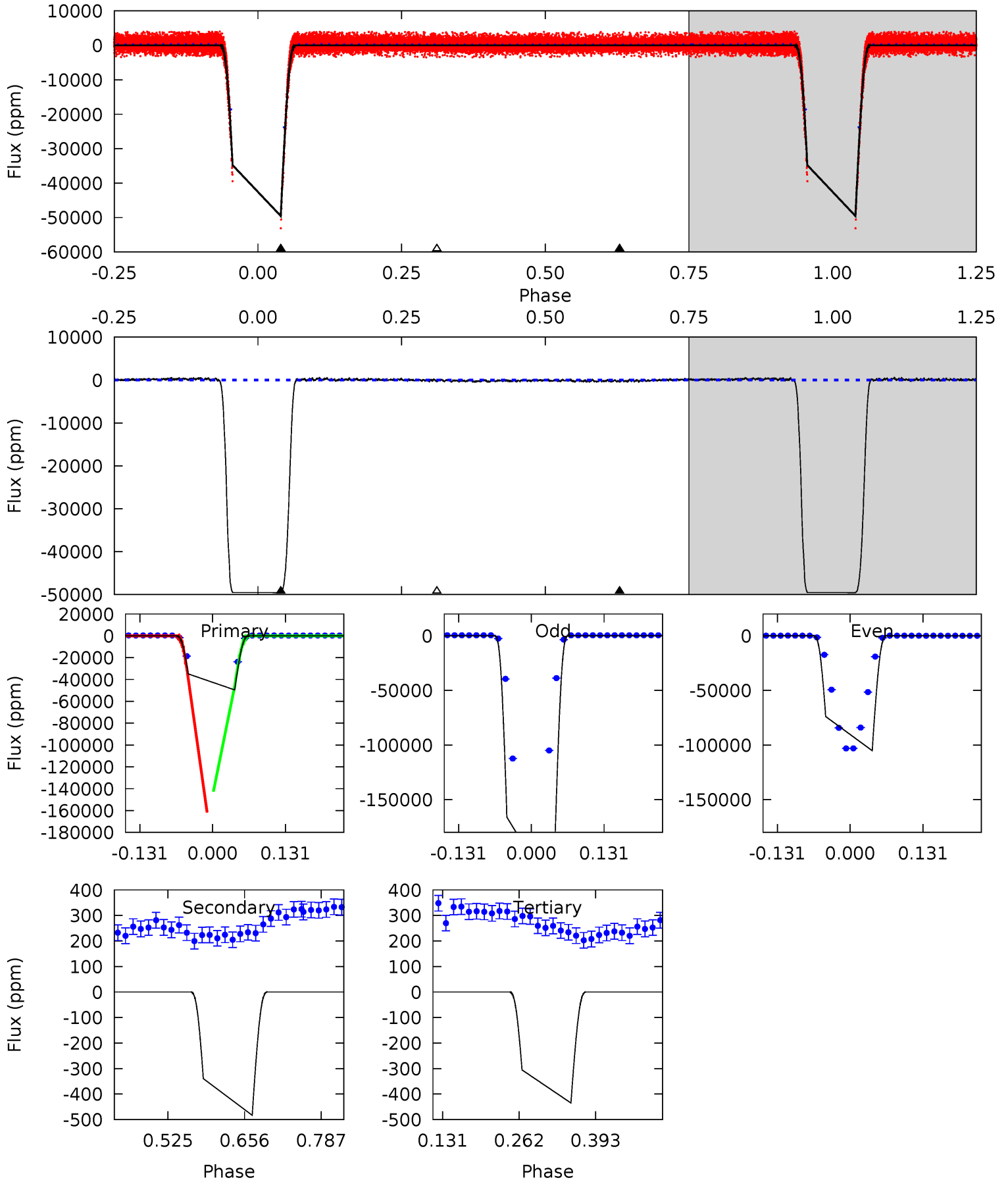
TCE 008940961-01 P= 1.583336 Days $T_0=132.377418$ (BKJD)



DV Model-Shift Uniqueness Test

008940961-01, P = 1.583344 Days, E = 130.791043 Days

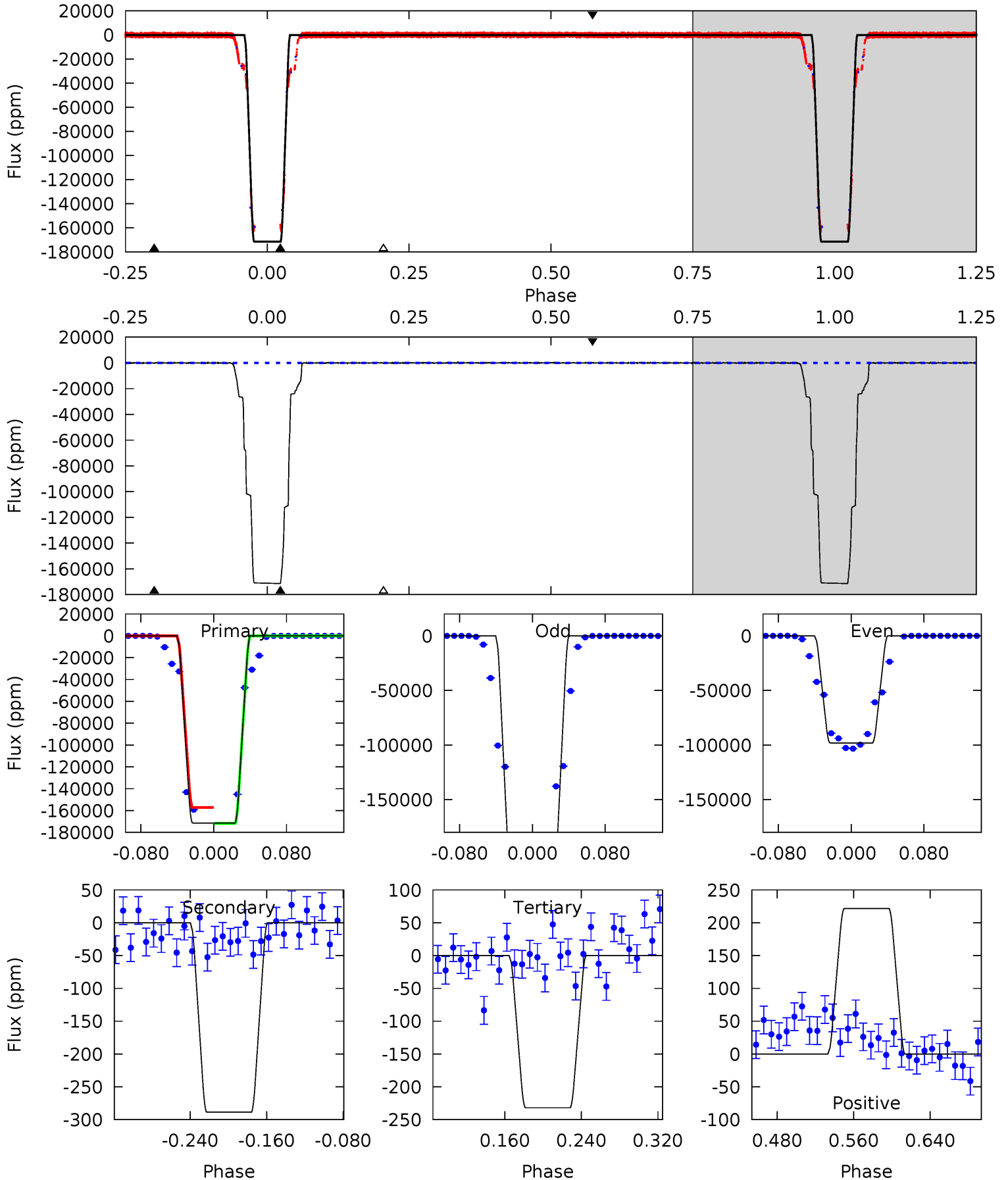
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2092	20.4	18.4	0	4.51	1.51	7.75	2074	2092	2.04	20.4	4463	1.34	0.01	0



Alt Model-Shift Uniqueness Test

008940961-01, P = 1.583336 Days, E = 130.794082 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4352	7.33	5.89	5.63	4.61	1.75	5.02	4347	4347	1.44	1.70	3747	1.49	0.00	0



Stellar Parameters For KIC 008940961

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5846^{+175}_{-192}	$4.472^{+0.065}_{-0.195}$	$-0.060^{+0.250}_{-0.300}$	$0.953^{+0.283}_{-0.121}$	$0.984^{+0.126}_{-0.126}$	$1.600^{+0.537}_{-0.823}$
	+3%/-3%	+1%/-4%	+417%/-500%	+30%/-13%	+13%/-13%	+34%/-51%
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 008940961-01 / KOI 7110.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-483 ± 24	$56.04^{+12.31}_{-11.07}$	2214^{+168}_{-109}	-2546^{+89}_{-110}	$0.059^{+0.030}_{-0.019}$
Alt.	-289 ± 39	$44.64^{+10.98}_{-10.43}$	2201^{+143}_{-115}	-2544^{+89}_{-99}	$0.054^{+0.038}_{-0.020}$

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 $A_{obs} \gg 1.0$

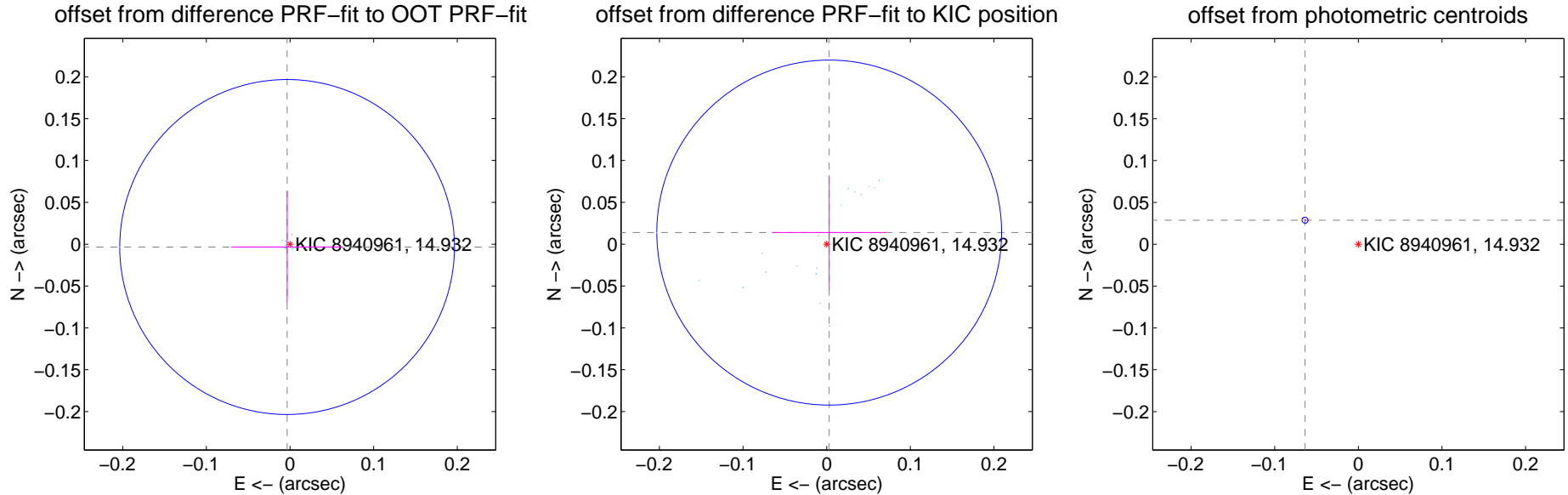
DV Centroid Data

Supplemental centroid analysis for 008940961-01. Kepler magnitude: 14.93. Transit SNR 4227.37

There are 17 quarters with good PRF difference image offsets

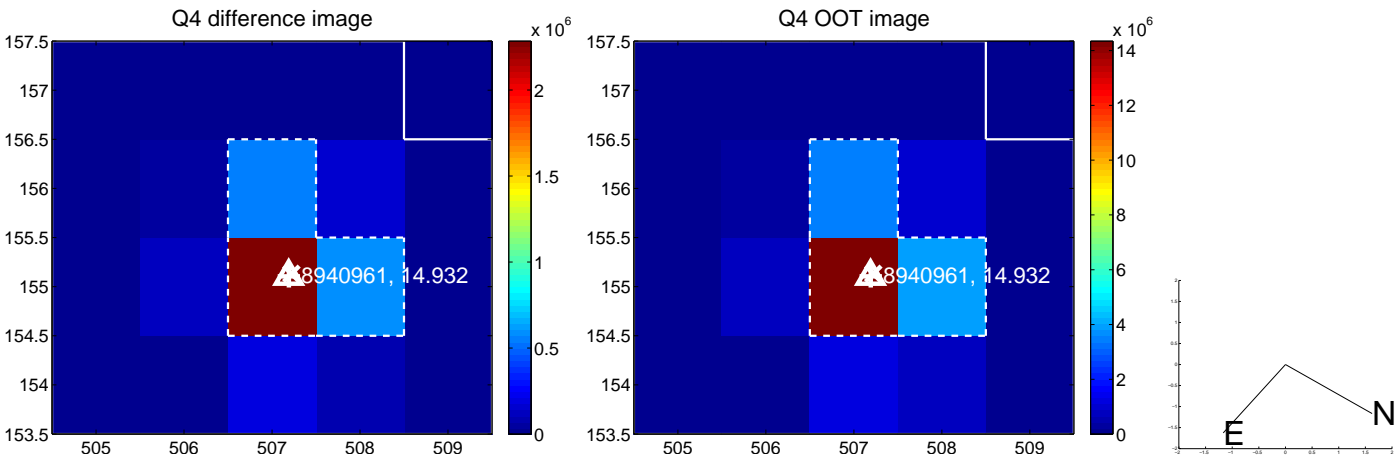
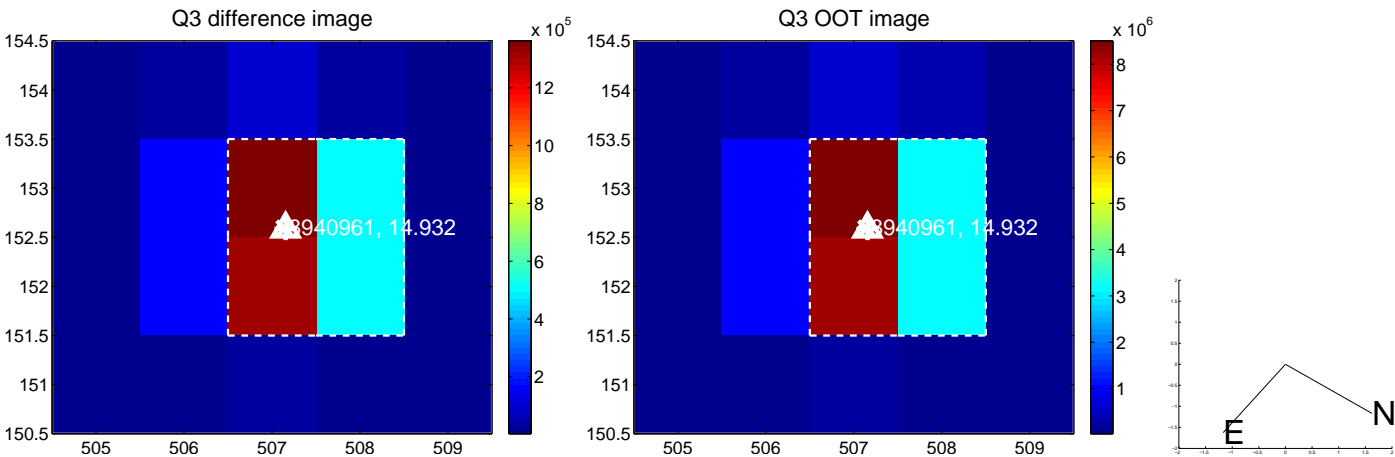
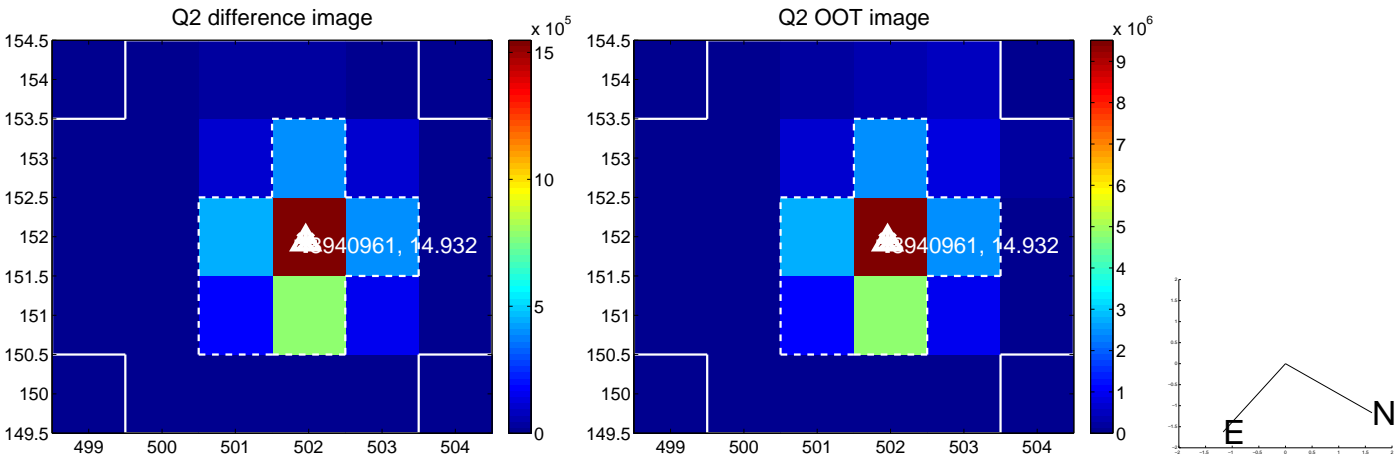
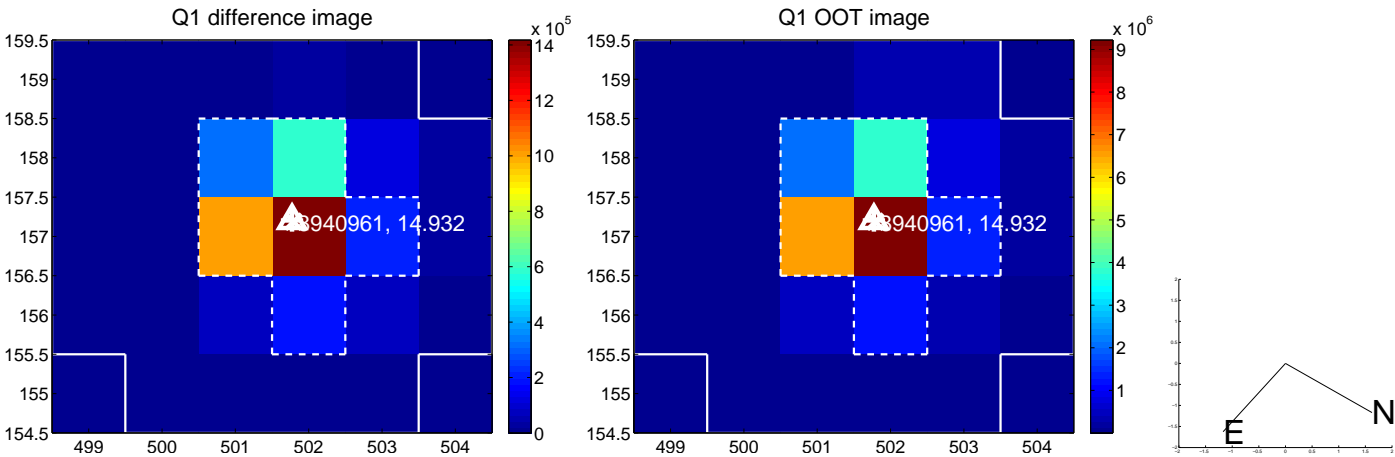
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.005 ± 0.067	0.07	0.003 ± 0.067	-0.003 ± 0.067
PRF-fit source offset from KIC position	0.014 ± 0.069	0.21	-0.003 ± 0.068	0.014 ± 0.068
photometric centroid source offset	0.07 ± 0.00	58.28	0.06 ± 0.00	0.03 ± 0.00

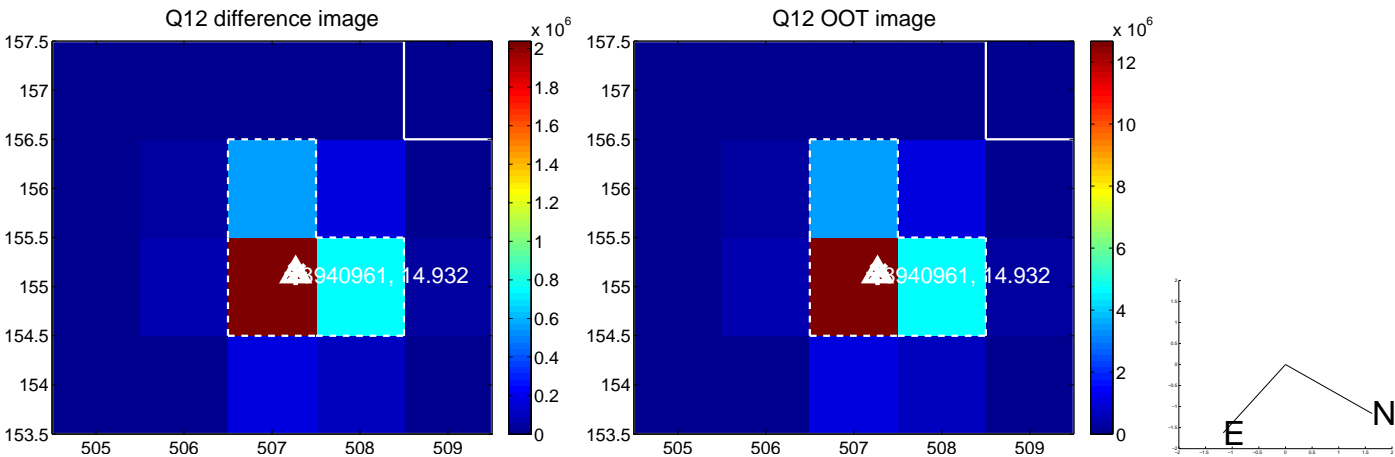
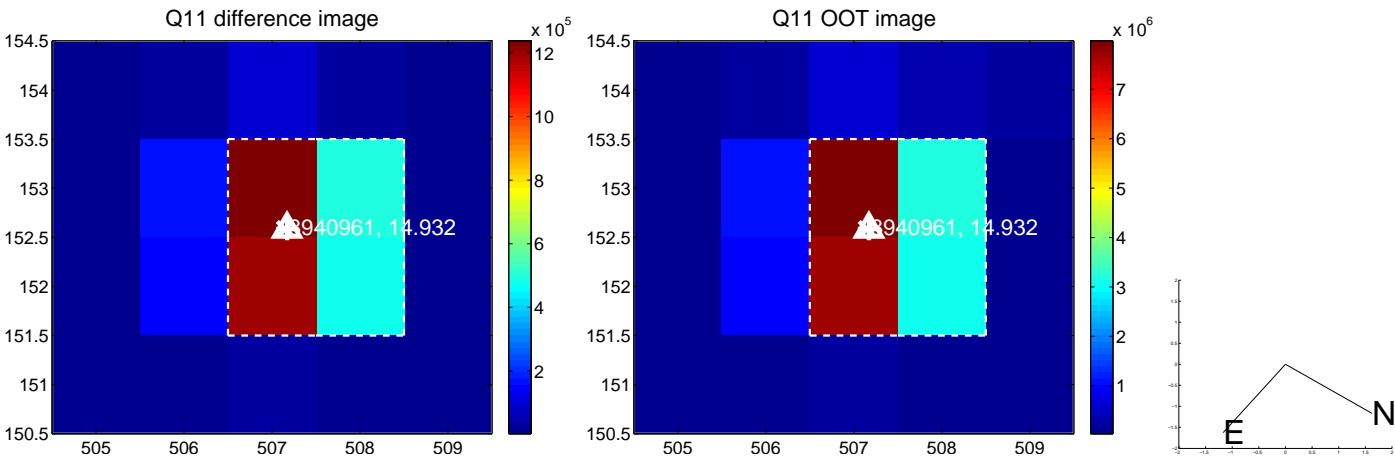
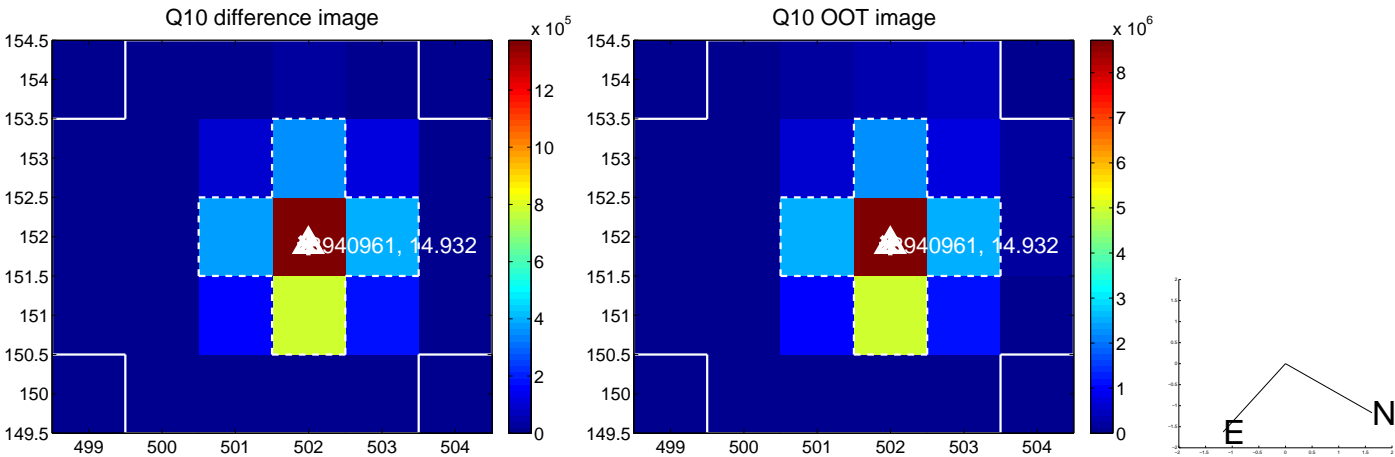
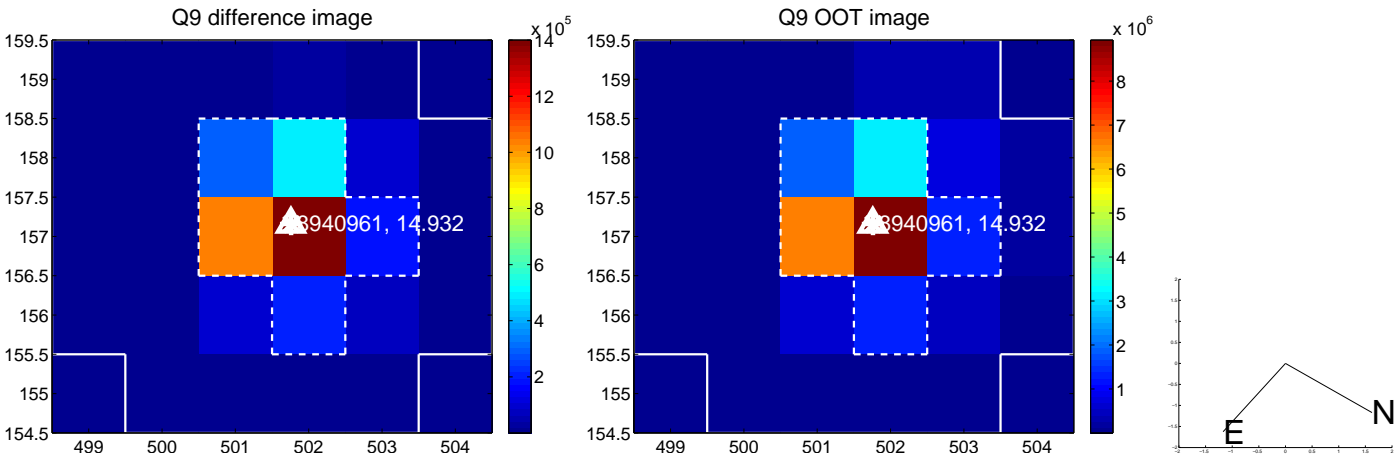


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

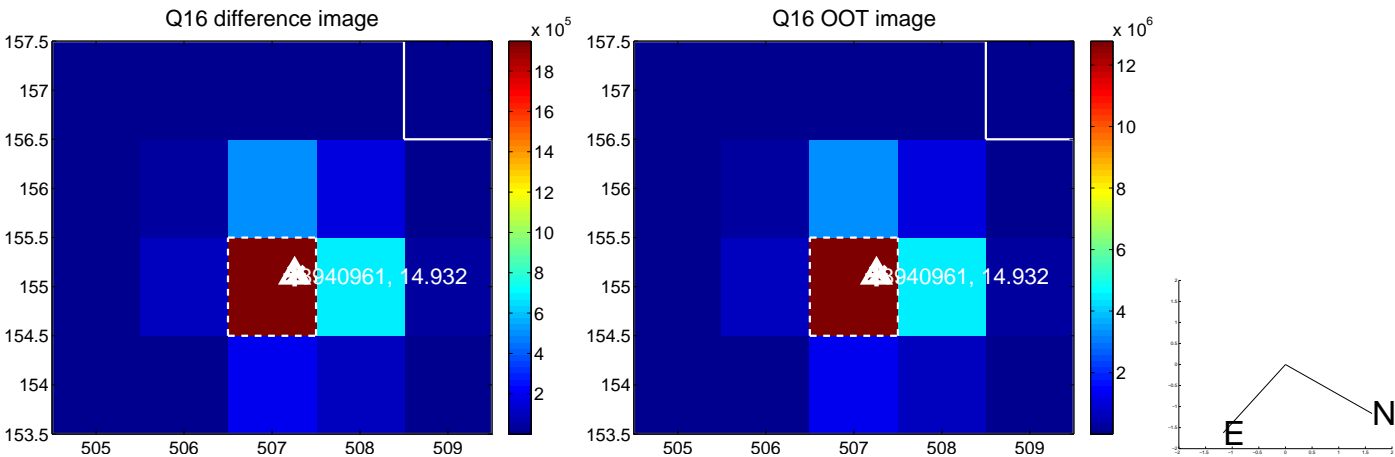
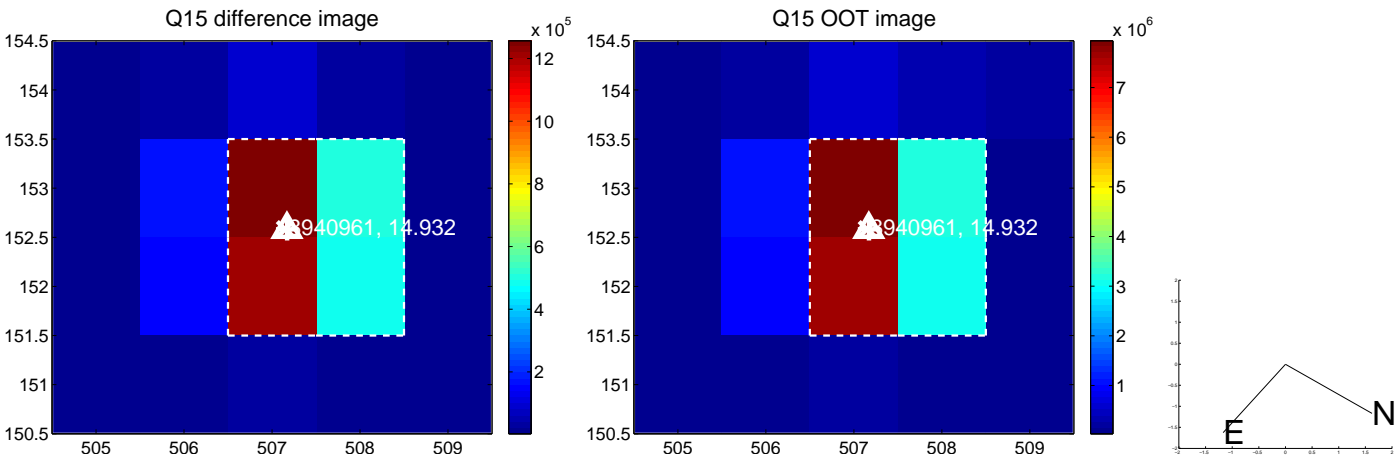
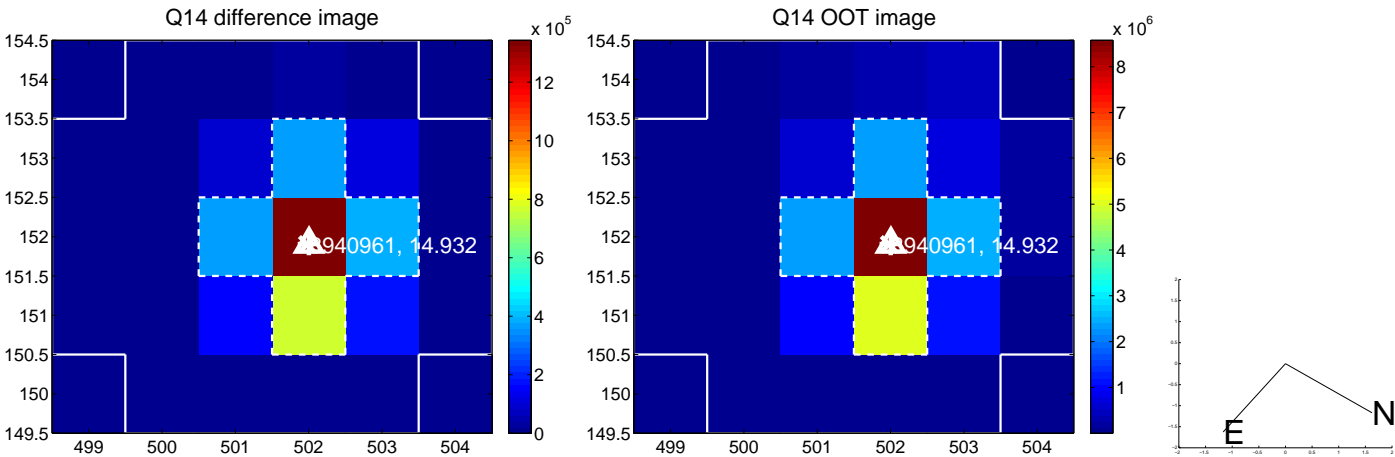
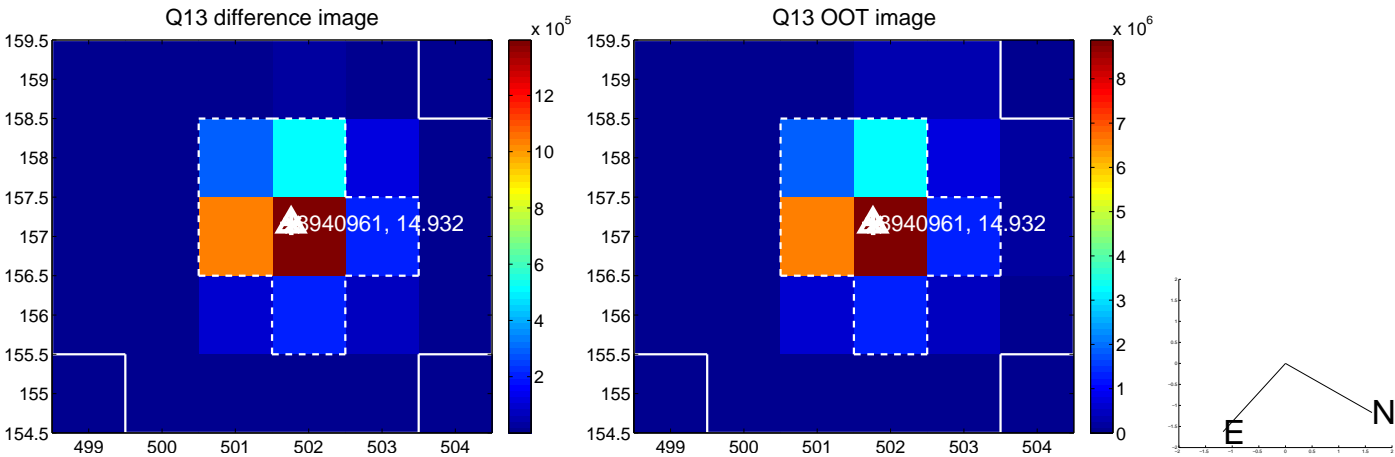
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



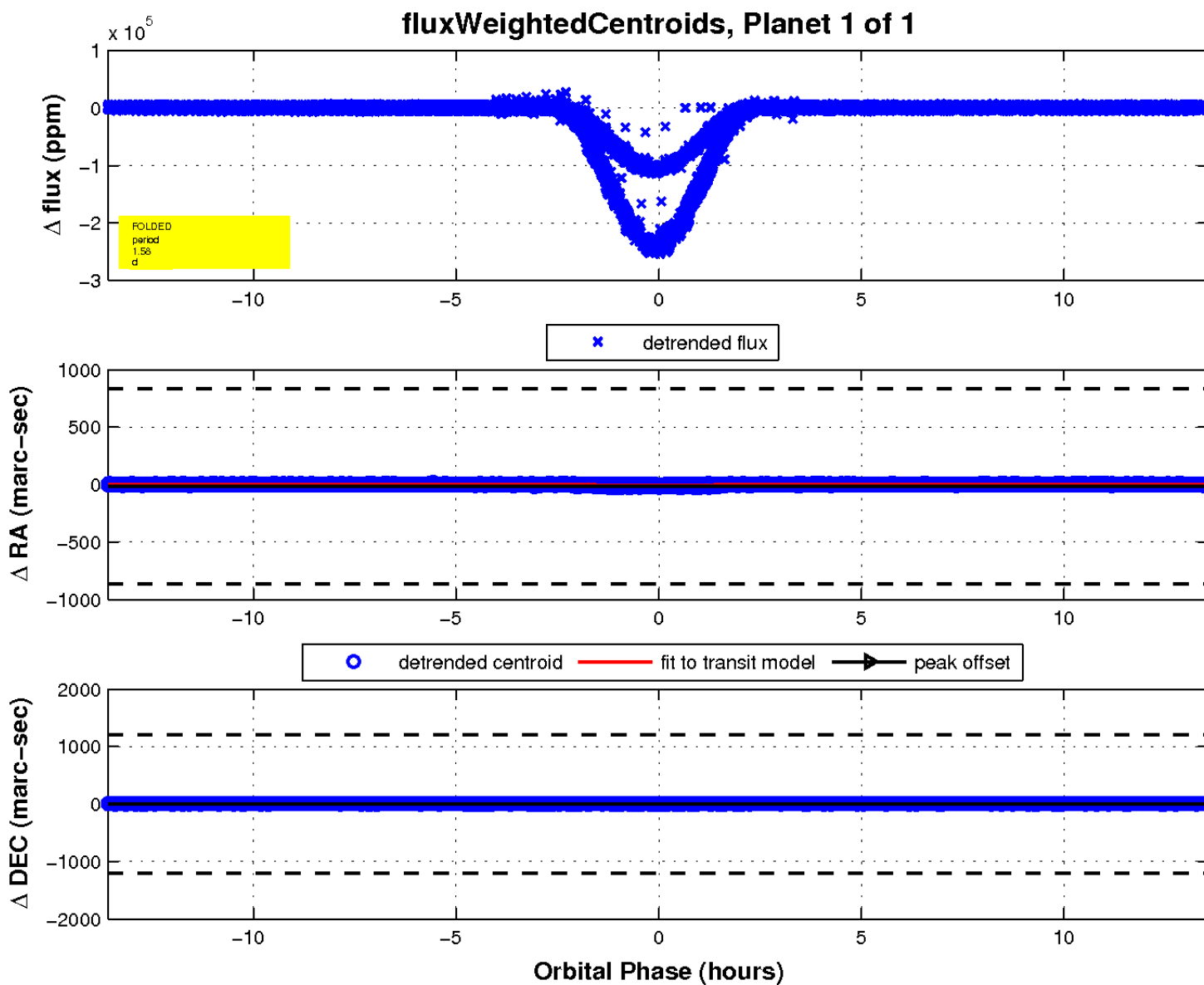
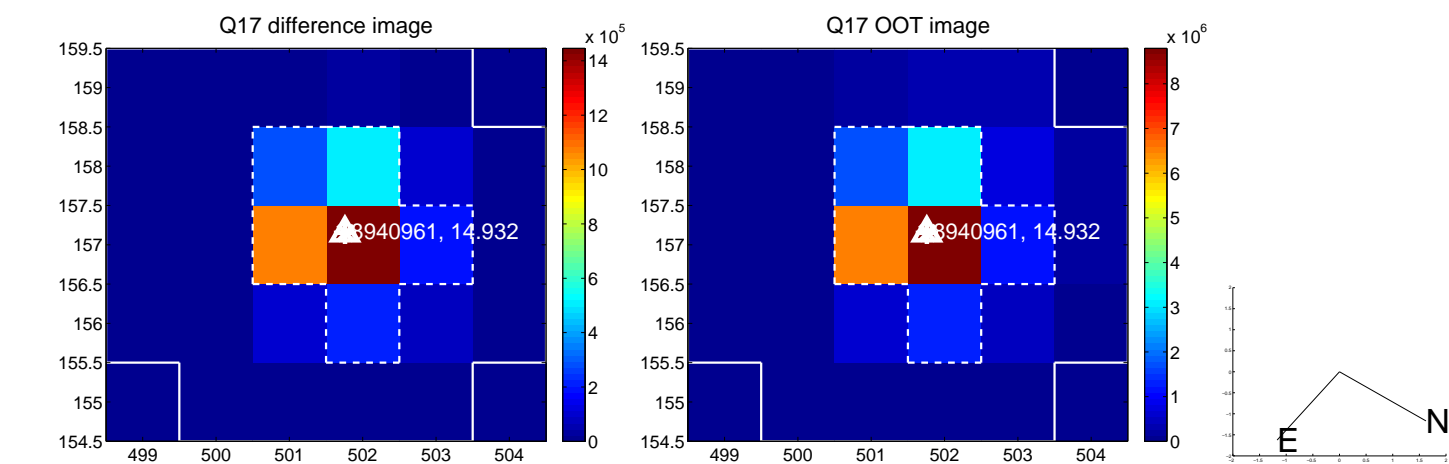
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

