

KIC 009008103

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})
009008103-01	OBS	3283.02	20.571880	142.799684	385.6	3.558	10.4	11.0	0.71	4922	1.54	14.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009008103-01	OBS	PC	0.99	0	0	0	0	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.

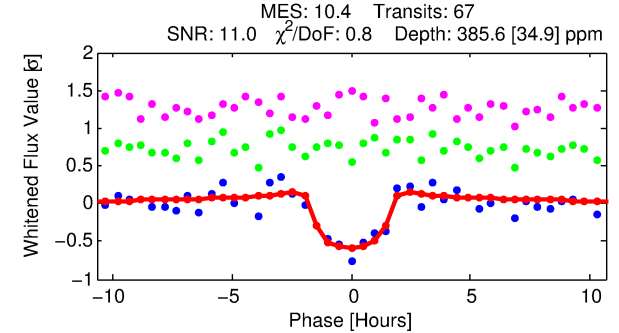
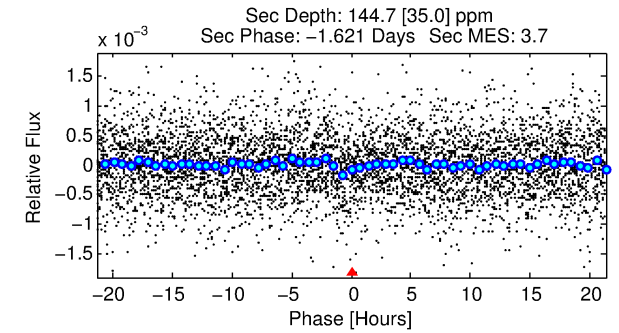
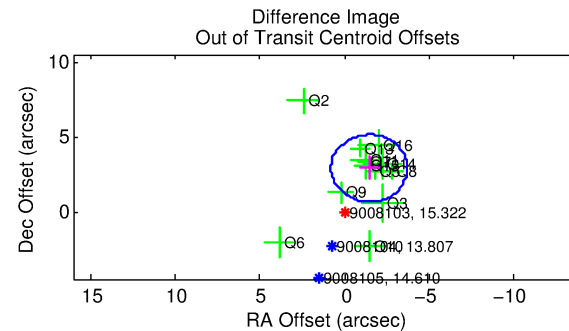
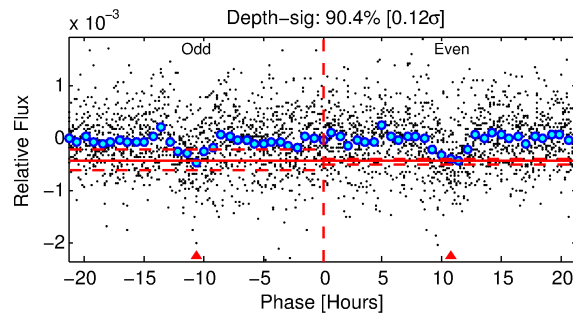
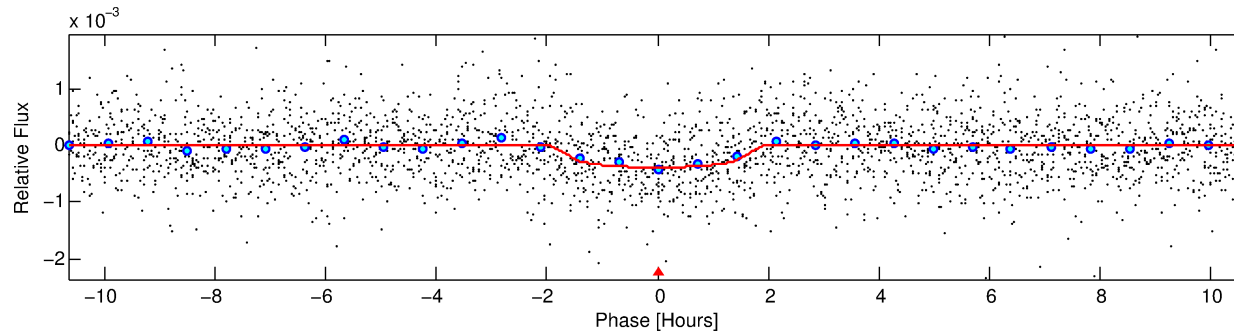
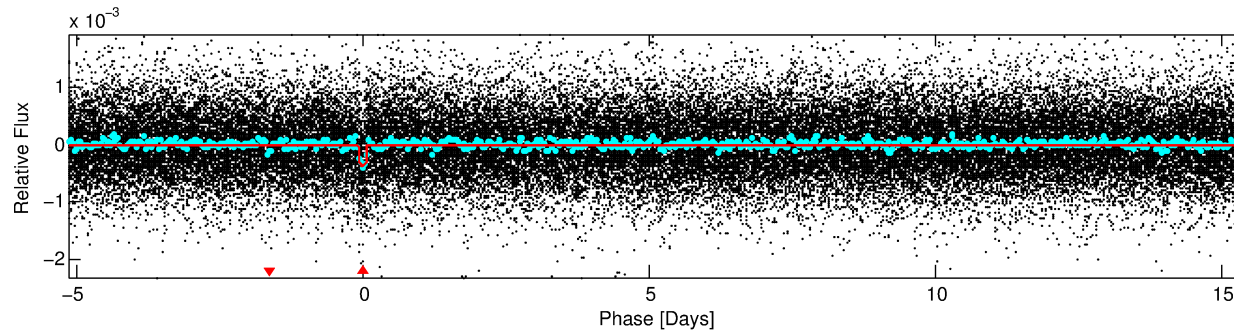
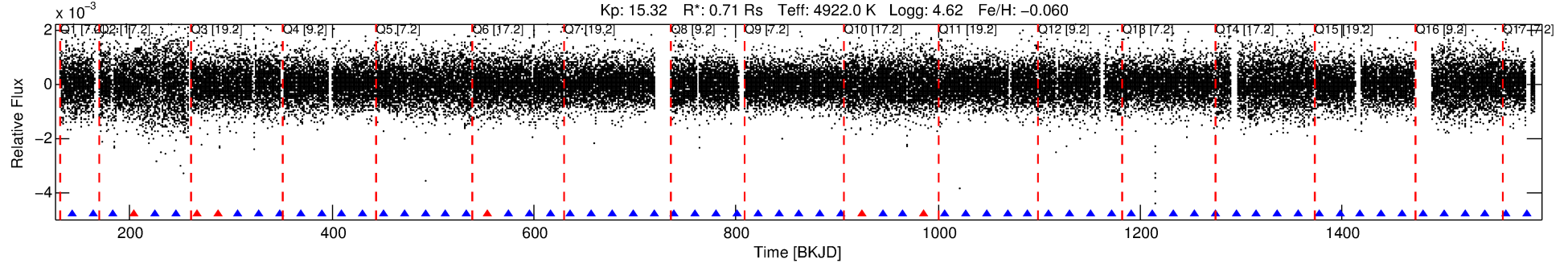
Ephemeris Match Information For 009008103-01

No Significant Match Found

DV One-Page Summary

KIC: 9008103 Candidate: 1 of 1 Period: 20.572 d
KOI: K03283.02 Corr: 0.988

Kp: 15.32 R*: 0.71 Rs Teff: 4922.0 K Logg: 4.62 Fe/H: -0.060



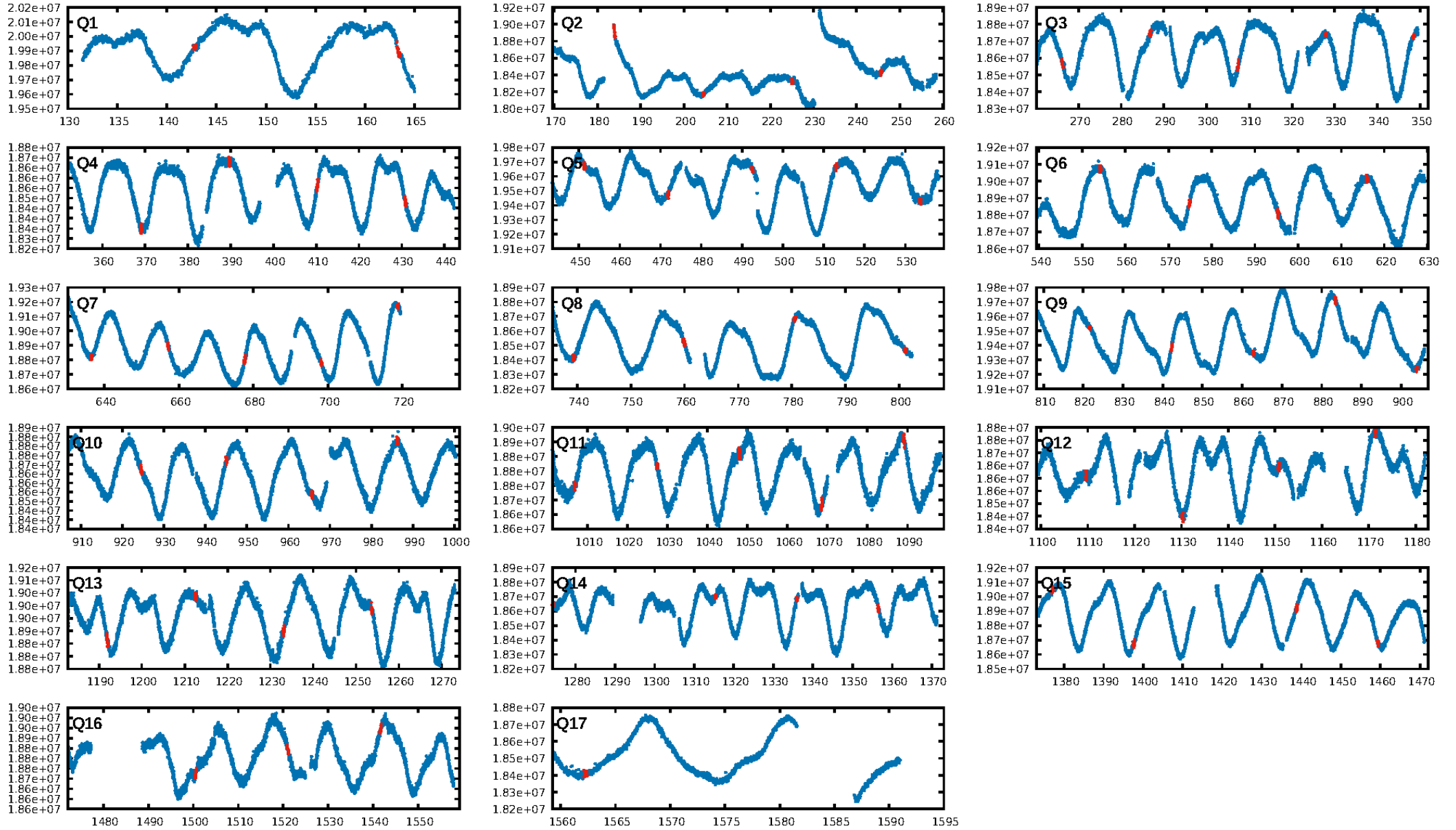
DV Fit Results:

Period = 20.57188 [0.00017] d
Epoch = 142.7997 [0.0067] BKJD
Rp/R* = 0.0199 [0.0161]
a/R* = 29.30 [83.47]
b = 0.77 [1.51]
Seff = 14.54 [2.50]
Teq = 498 [21] K
Rp = 1.54 [1.25] Re
a = 0.1347 [0.0119] AU
Ag = 611.40 [1002.70] [0.61σ]
Teffp = 3828 [1569] K [2.12σ]

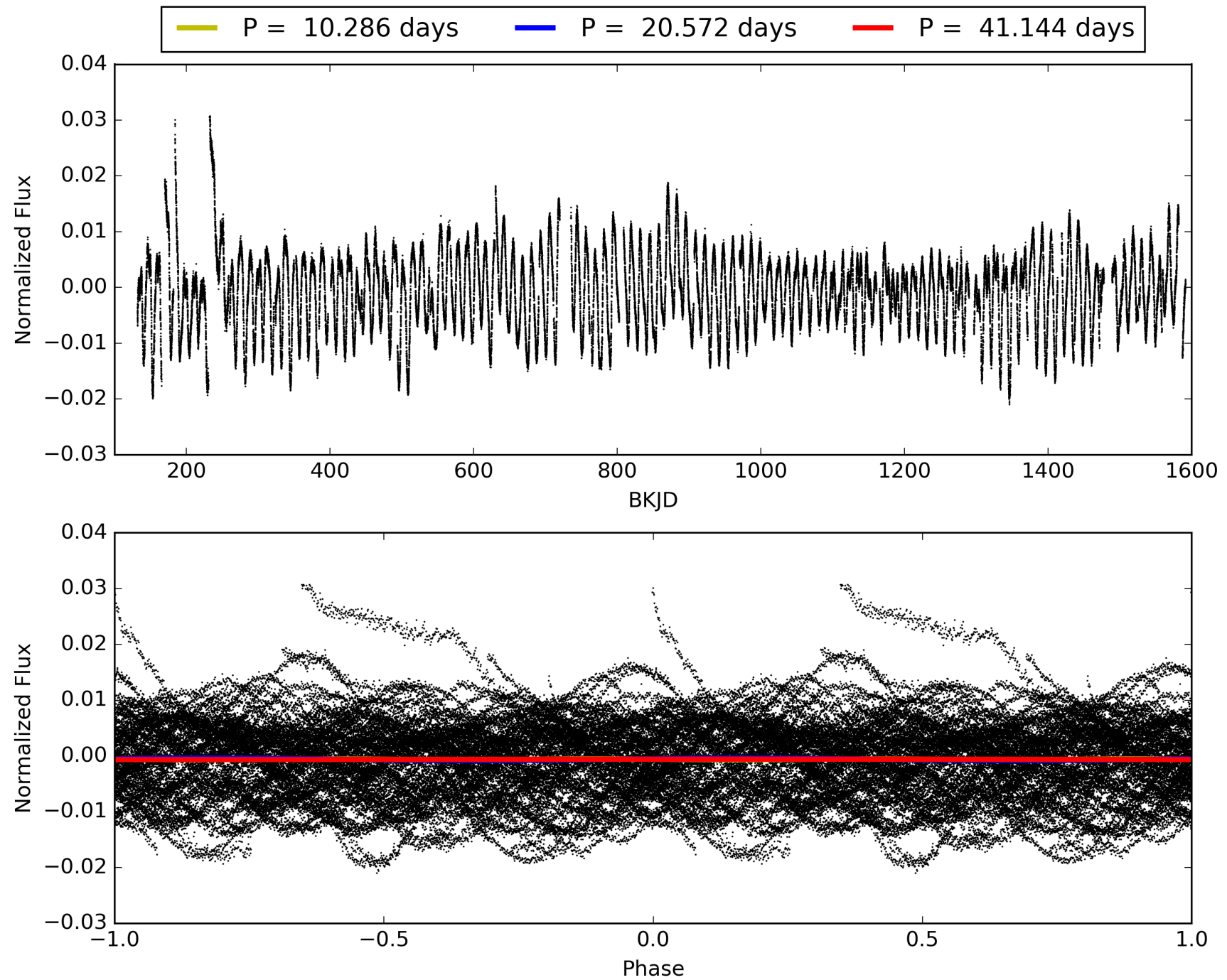
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.73e-23
RollingBand-fgt: 0.91 [58/64]
GhostDiagnostic-chr: -1.346
Centroid-sig: 0.6%
Centroid-so: 1.681 arcsec [2.73σ]
OotOffset-rm: 3.231 arcsec [4.31σ]
KicOffset-rm: 0.662 arcsec [1.28σ]
OotOffset-st: 4/4/2/3 [13]
KicOffset-st: 4/4/2/3 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009008103-01, PDC Light Curves

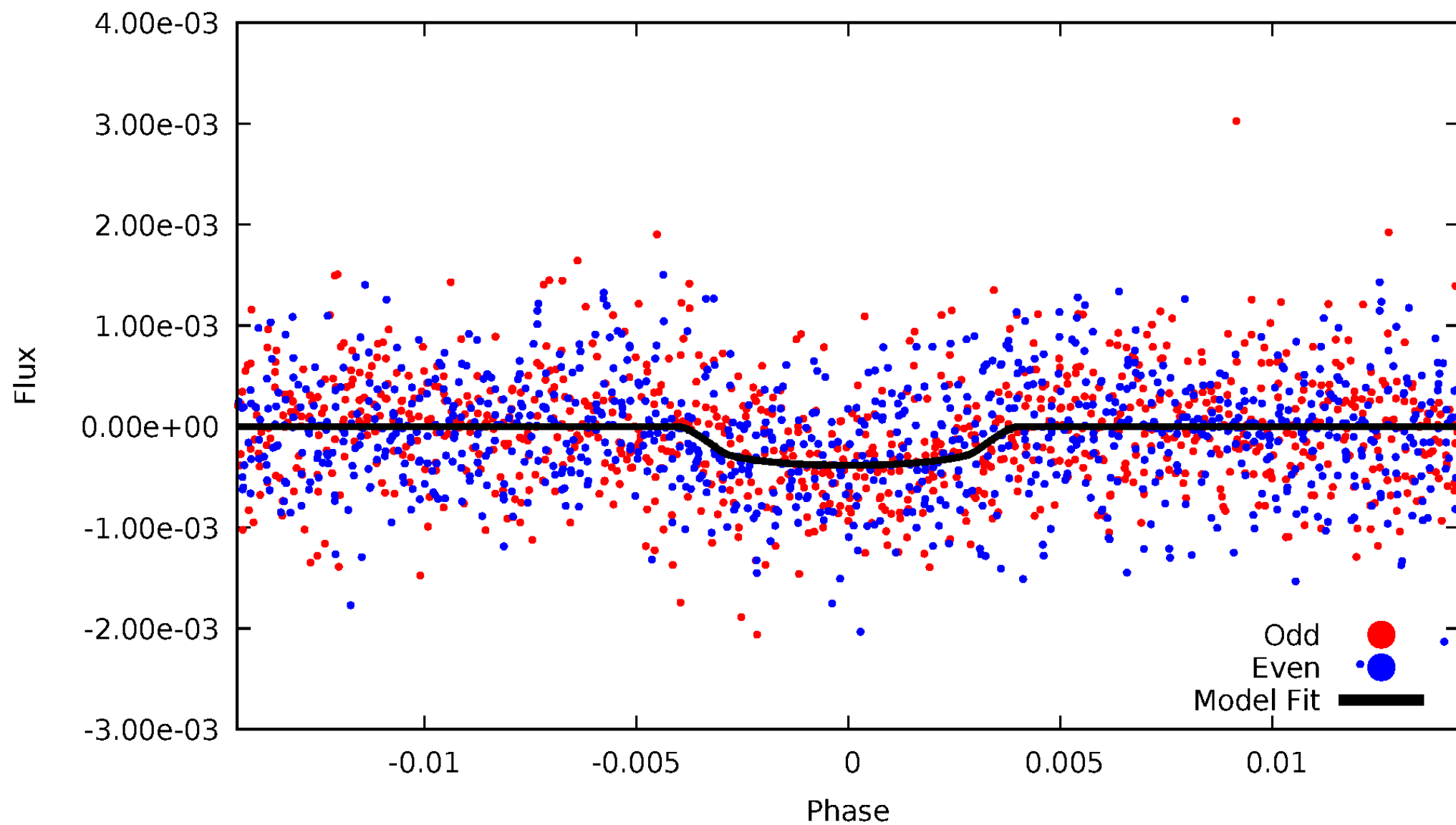


TCE 009008103-01



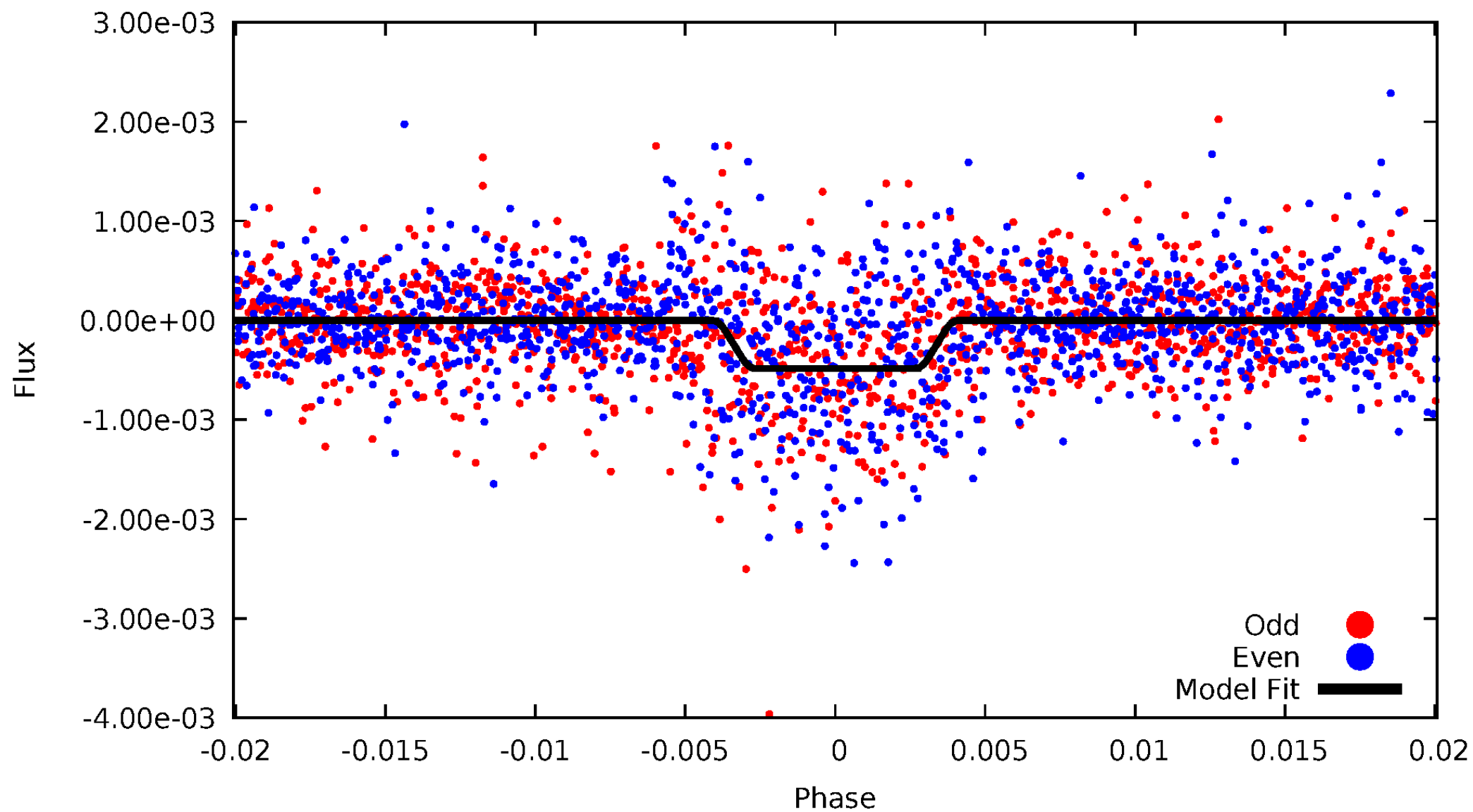
DV Odd/Even

TCE 009008103-01

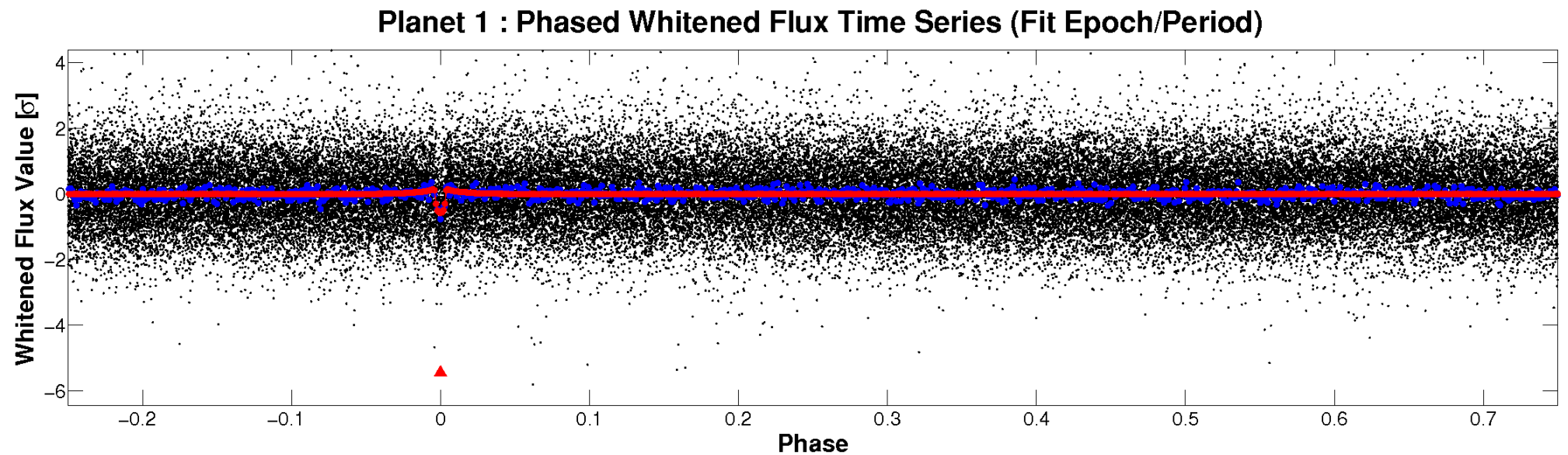
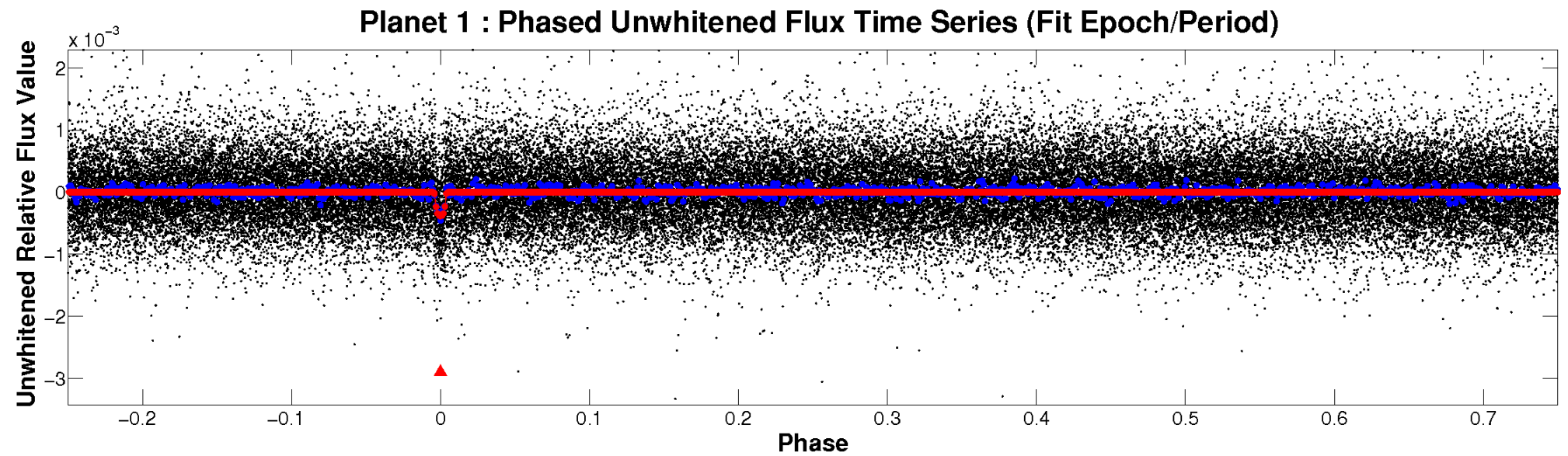


ALT Odd/Even

TCE 009008103-01

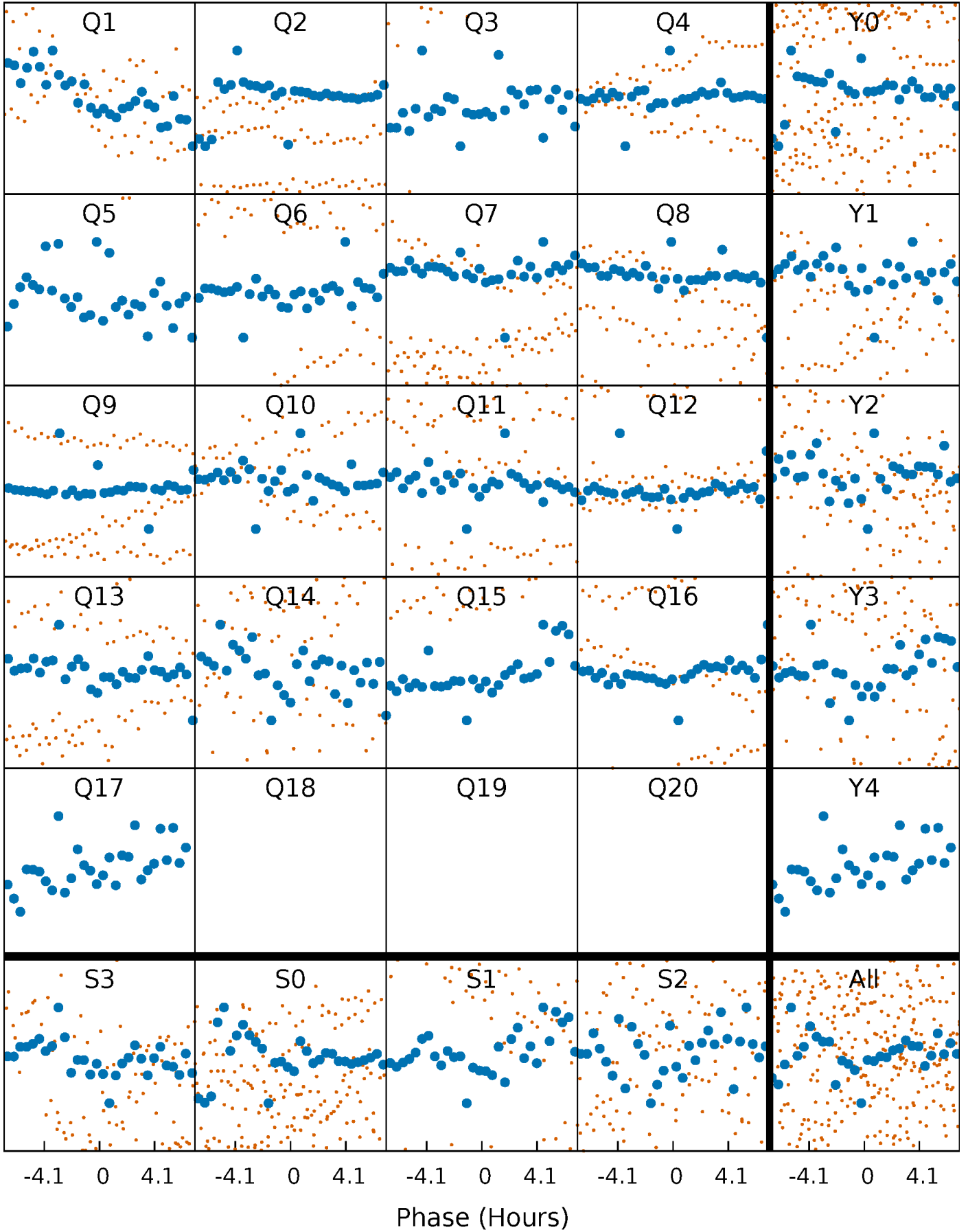


Non-Whitened Vs. Whitened Light Curve



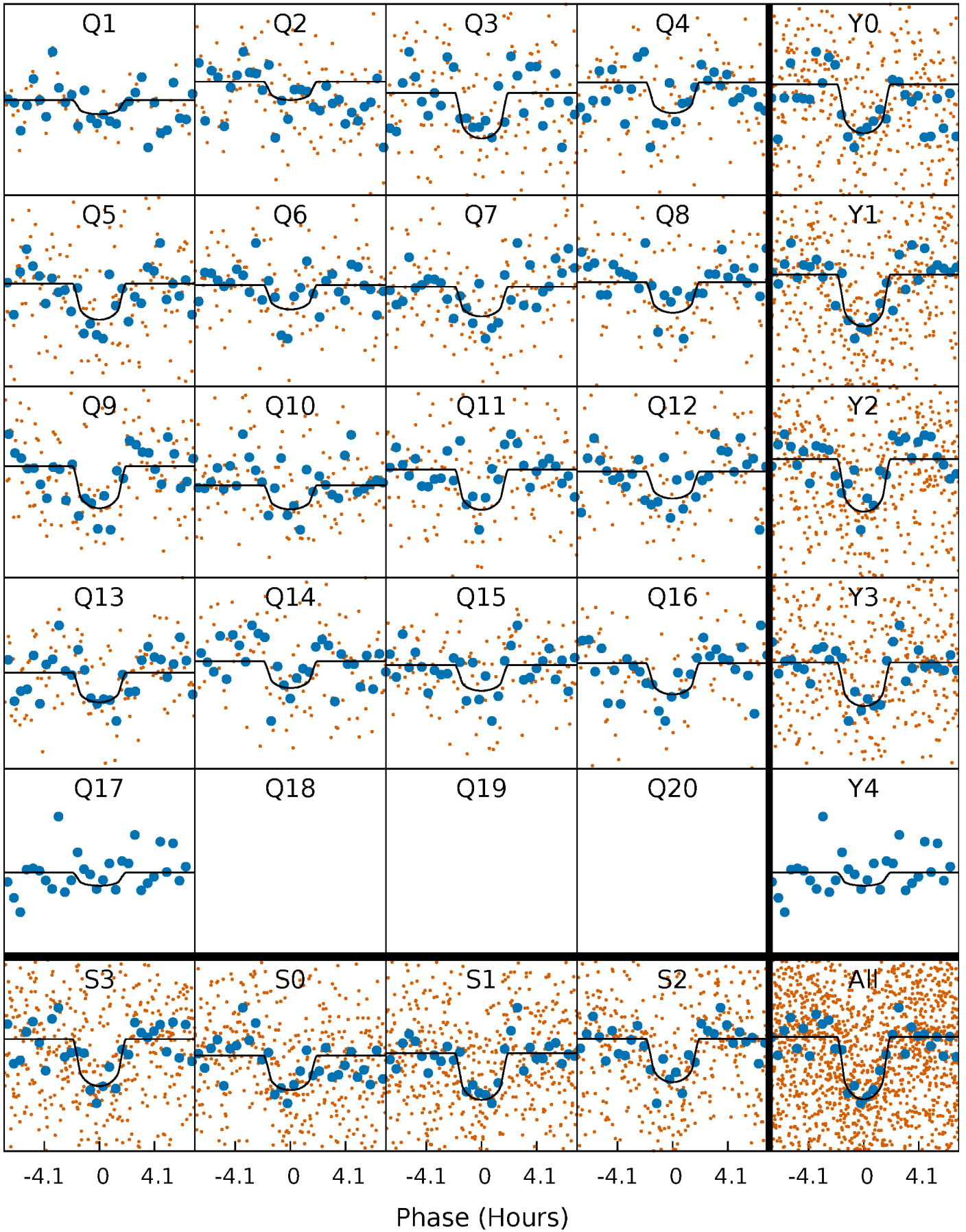
PDC Quarter-Phased Transit Curves

TCE 009008103-01 P= 20.571880 Days $T_0=142.799684$ (BKJD)



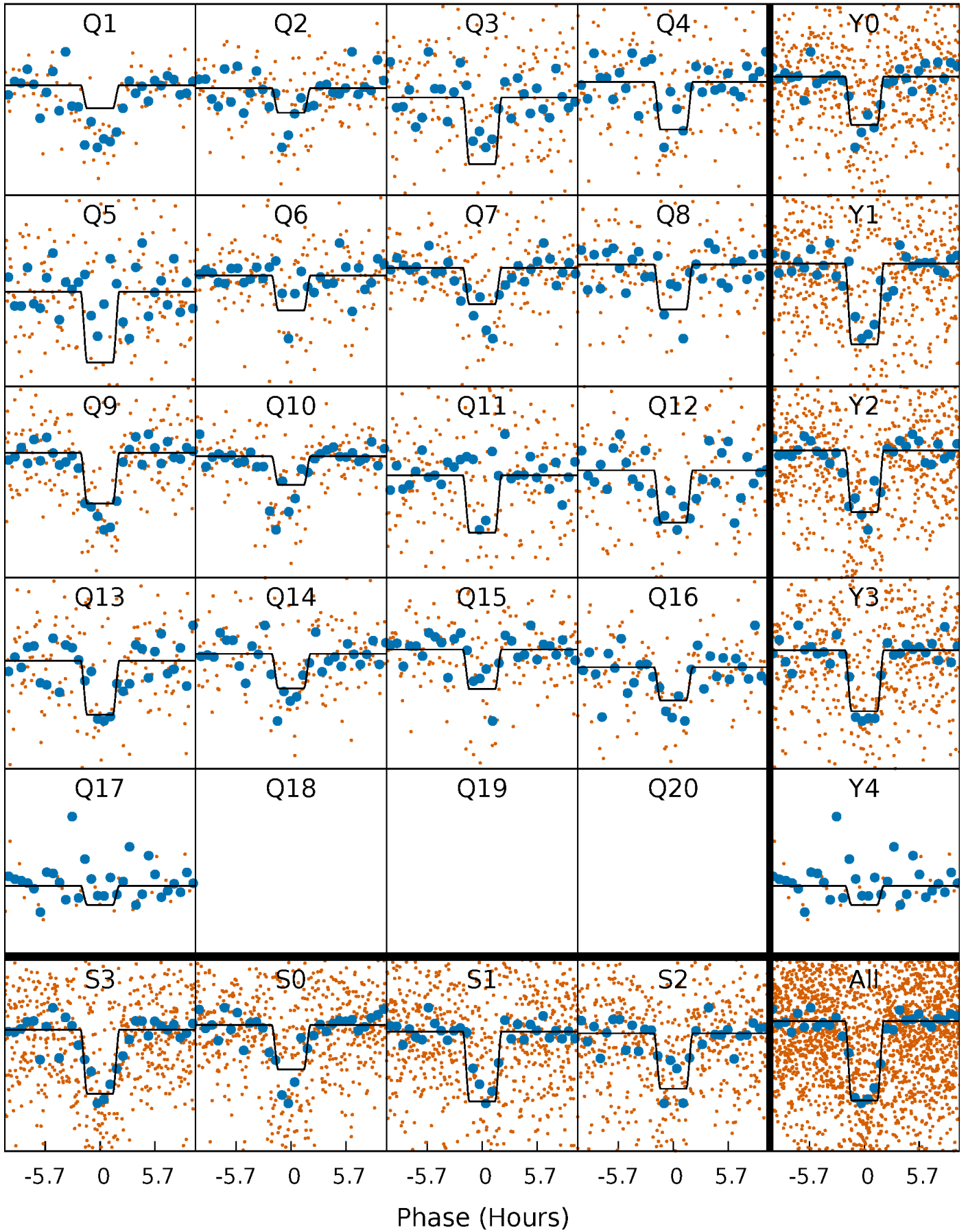
DV Quarter-Phased Transit Curves

TCE 009008103-01 P= 20.571880 Days $T_0=142.799684$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

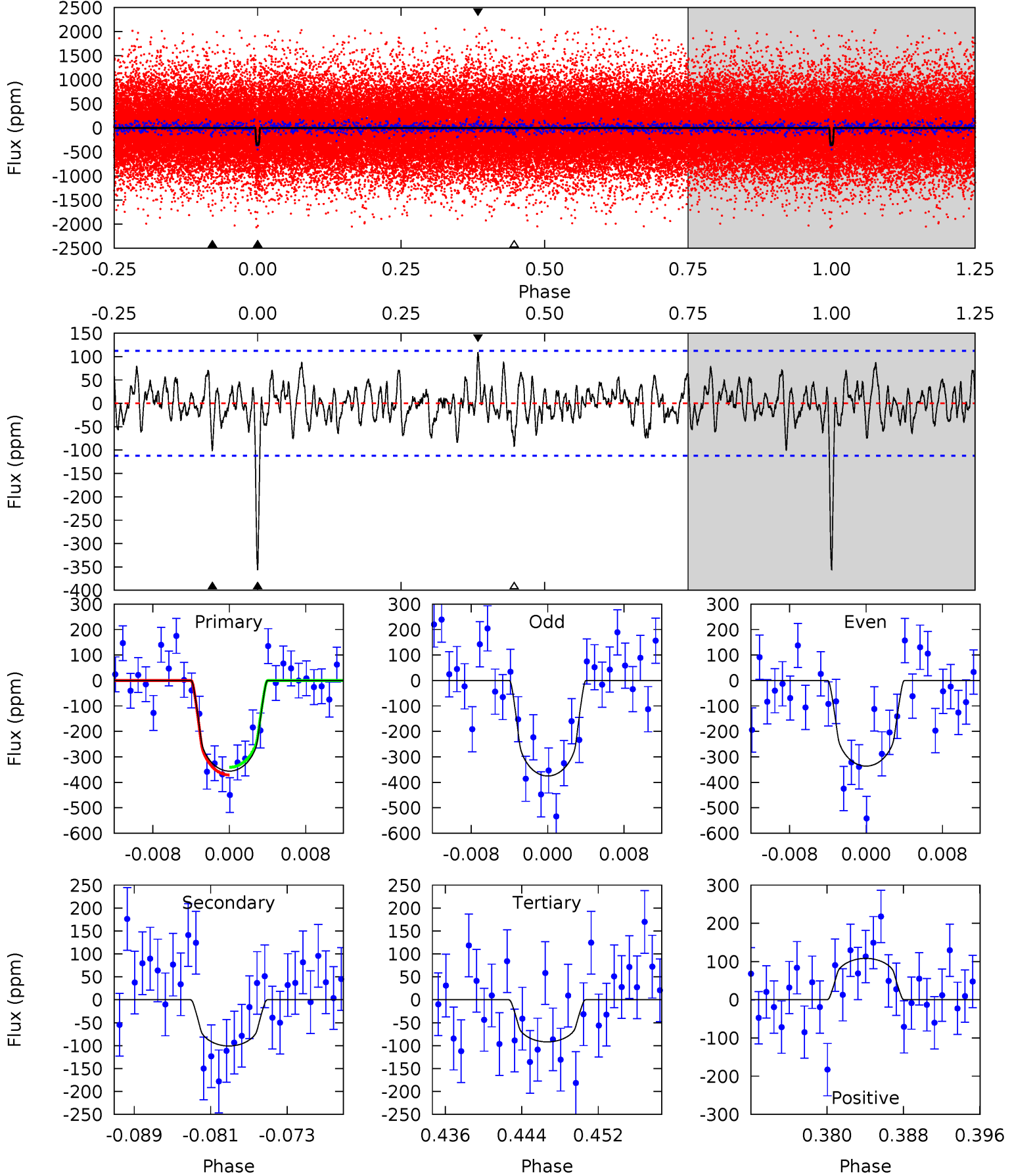
TCE 009008103-01 P= 20.571763 Days $T_0=142.799432$ (BKJD)



DV Model-Shift Uniqueness Test

009008103-01, $P = 20.571880$ Days, $E = 122.227804$ Days

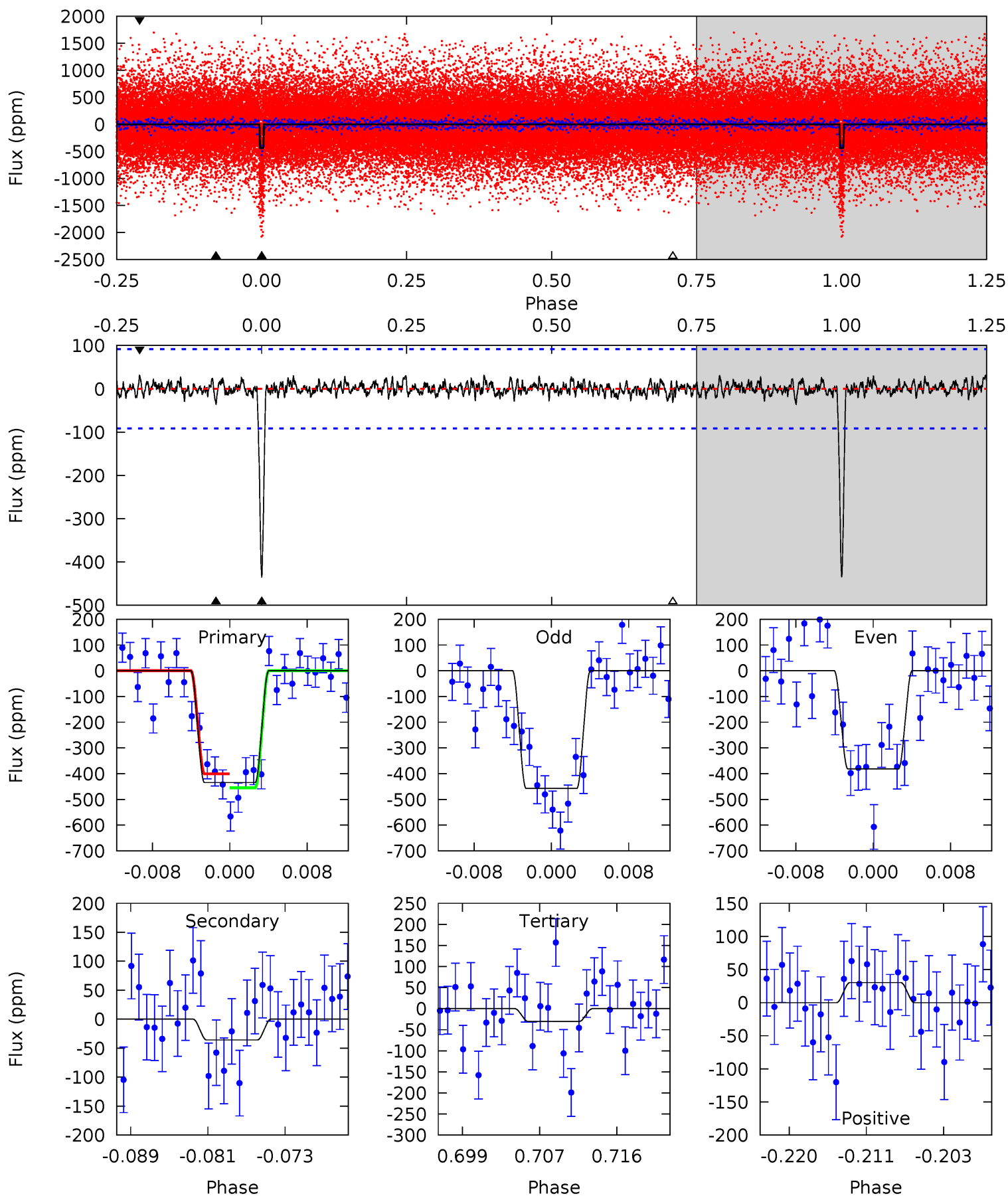
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.1	4.55	4.15	4.89	5.07	2.65	1.42	11.9	11.2	0.40	-0.34	0.88	0.97	0.23	0.68



Alt Model-Shift Uniqueness Test

009008103-01, $P = 20.571763$ Days, $E = 122.227669$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.0	1.98	1.68	1.68	5.07	2.65	0.59	22.3	22.3	0.30	0.31	2.12	1.16	0.07	1.51



Stellar Parameters For KIC 009008103

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4922^{+148}_{-133}	$4.624^{+0.025}_{-0.065}$	$-0.060^{+0.300}_{-0.300}$	$0.708^{+0.077}_{-0.049}$	$0.795^{+0.055}_{-0.083}$	$3.152^{+0.418}_{-0.795}$
	+3%/-3%	+1%/-1%	+500%/-500%	+11%/-7%	+7%/-10%	+13%/-25%
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 009008103-01 / KOI 3283.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-101 ± 22	$1.78^{+1.22}_{-1.01}$	704^{+26}_{-23}	3651^{+1329}_{-557}	313^{+1391}_{-206}
Alt.	-36 ± 18	$1.95^{+1.19}_{-1.05}$	702^{+28}_{-23}	3007^{+850}_{-464}	90^{+334}_{-62}

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

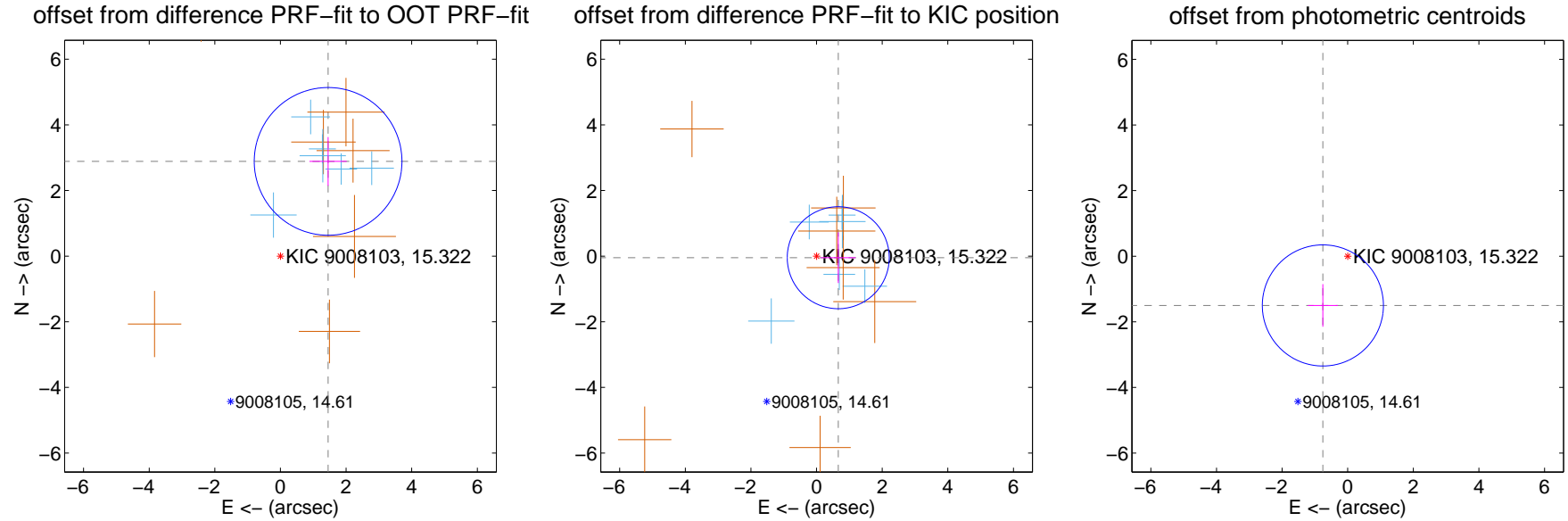
DV Centroid Data

Supplemental centroid analysis for 009008103-01. Kepler magnitude: 15.32. Transit SNR 10.98

There are 6 quarters with good PRF difference image offsets

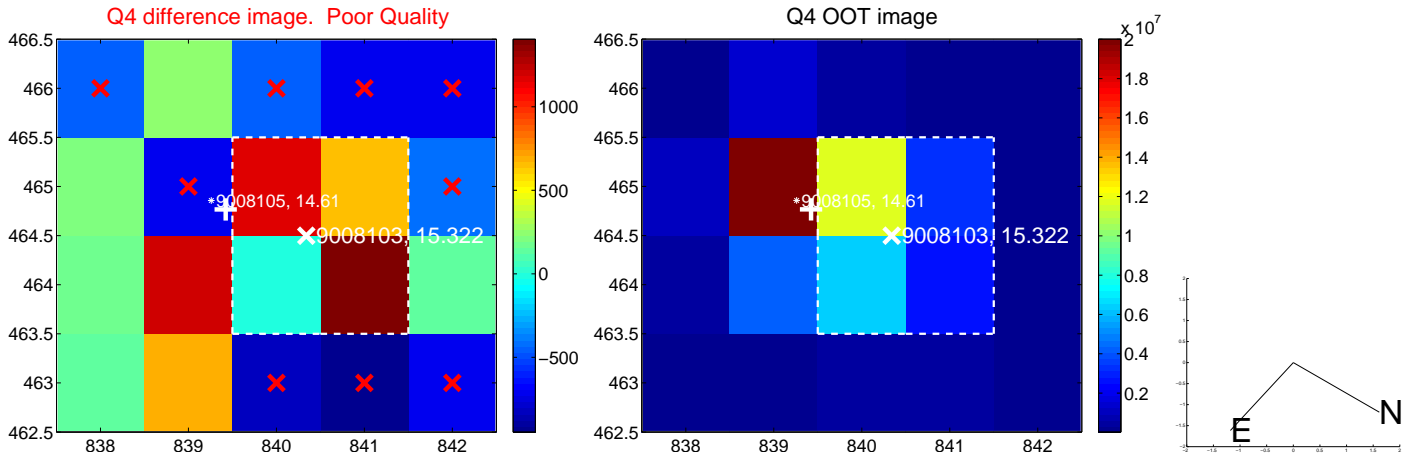
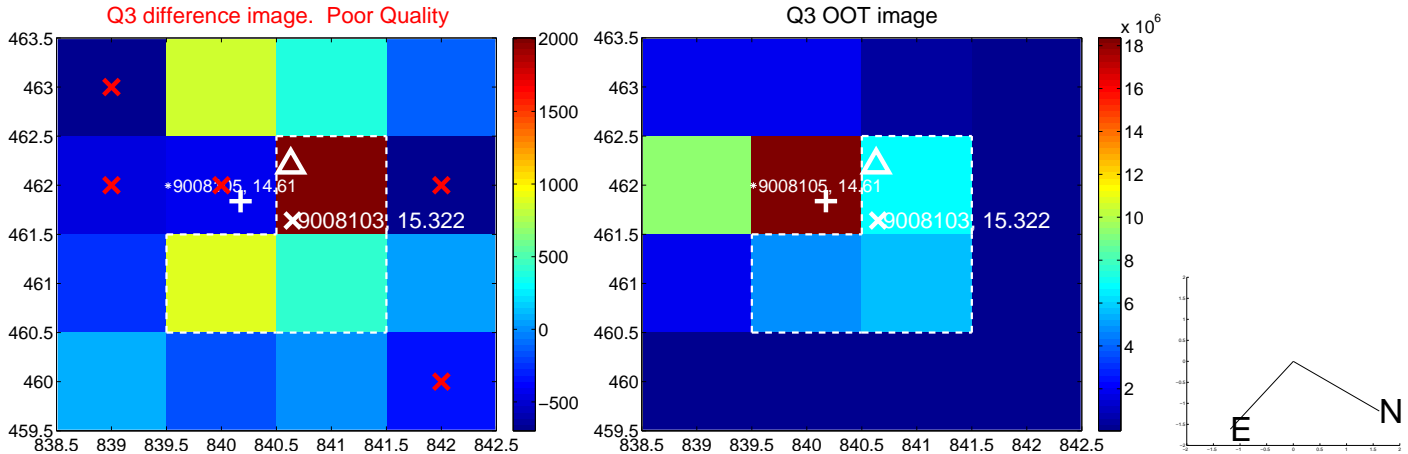
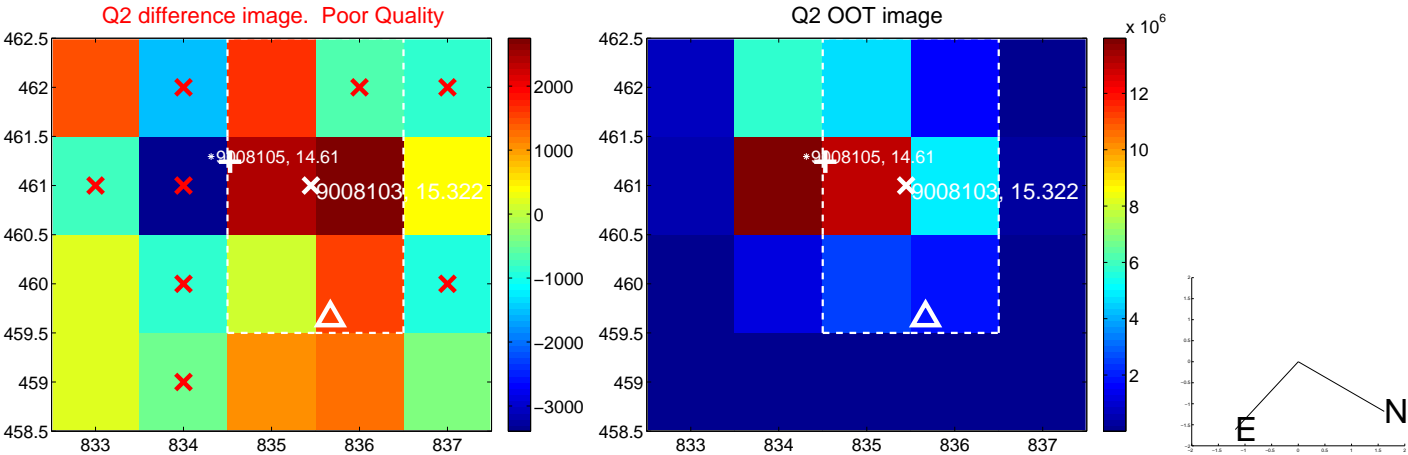
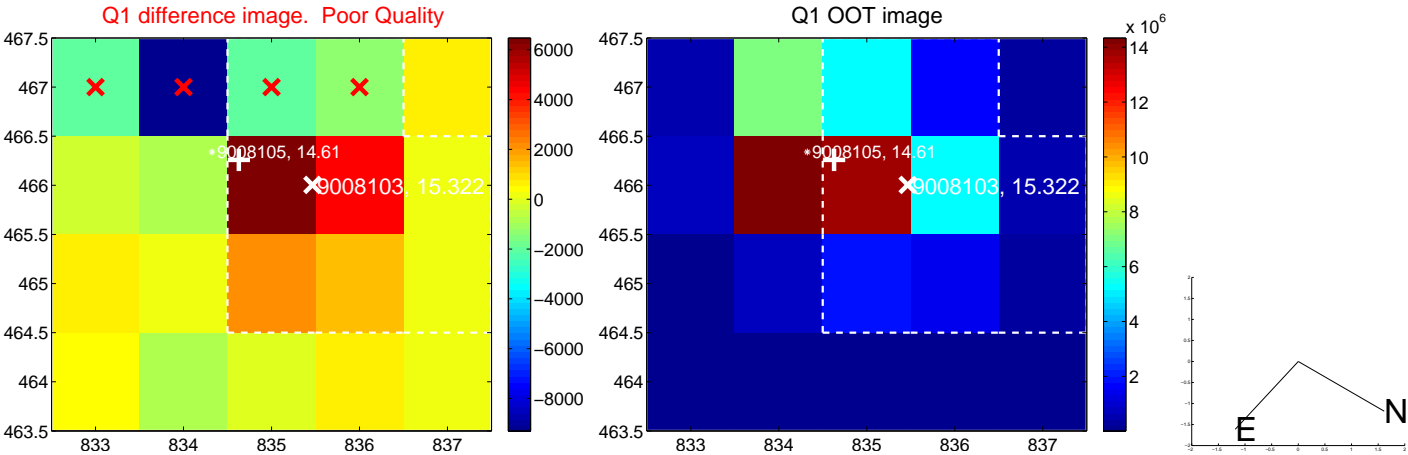
The OOT PRF centroid is offset from the target star catalog position by about 3.88 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.231 ± 0.750	4.31	-1.452 ± 0.568	2.887 ± 0.743
PRF-fit source offset from KIC position	0.662 ± 0.518	1.28	-0.660 ± 0.530	-0.049 ± 0.773
photometric centroid source offset	1.68 ± 0.62	2.73	0.76 ± 0.46	-1.50 ± 0.65

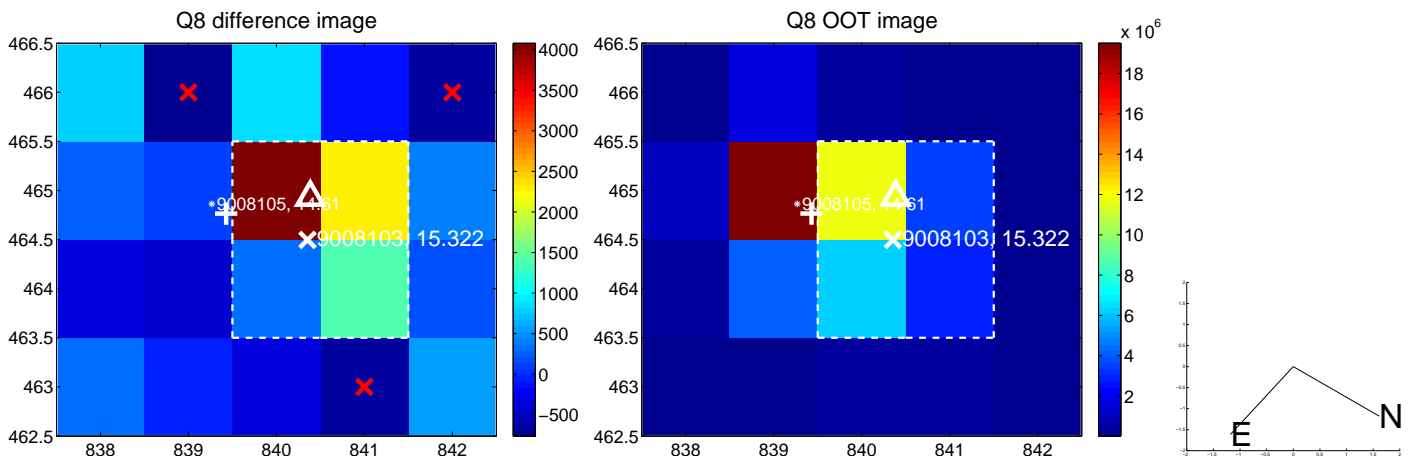
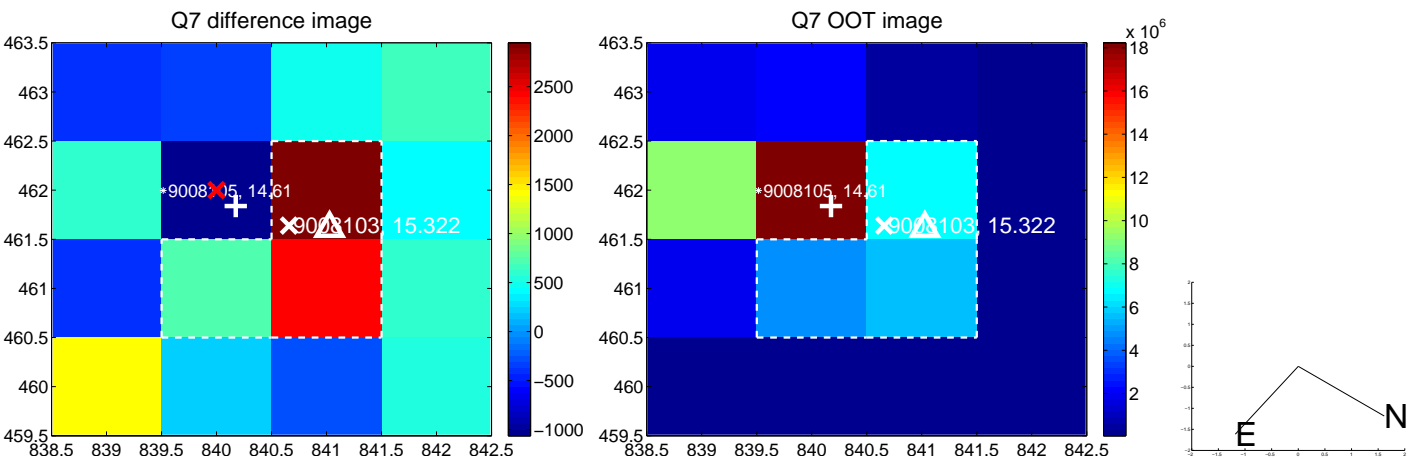
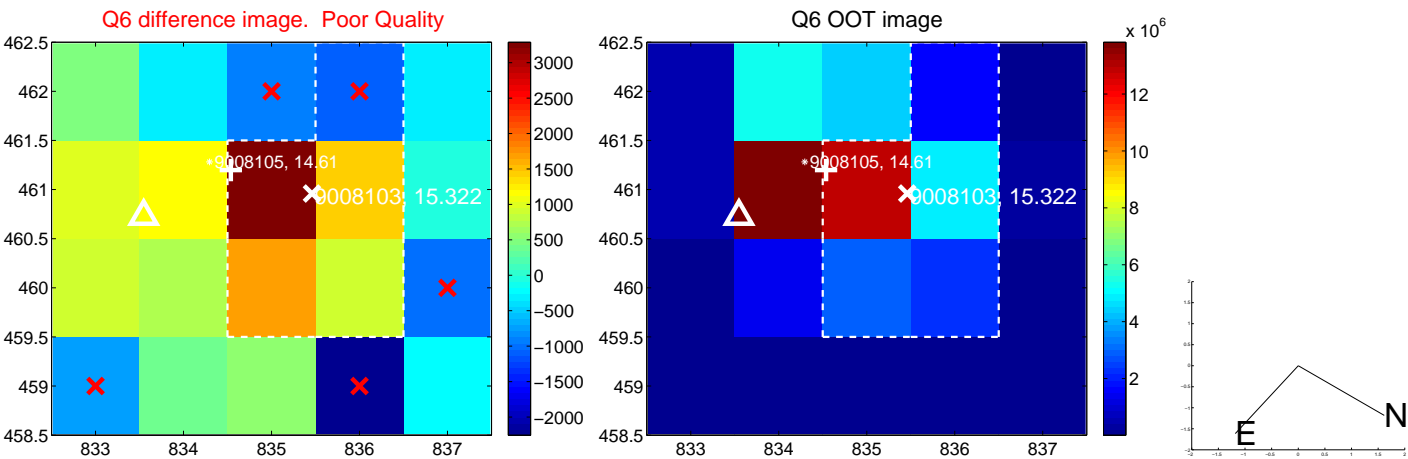
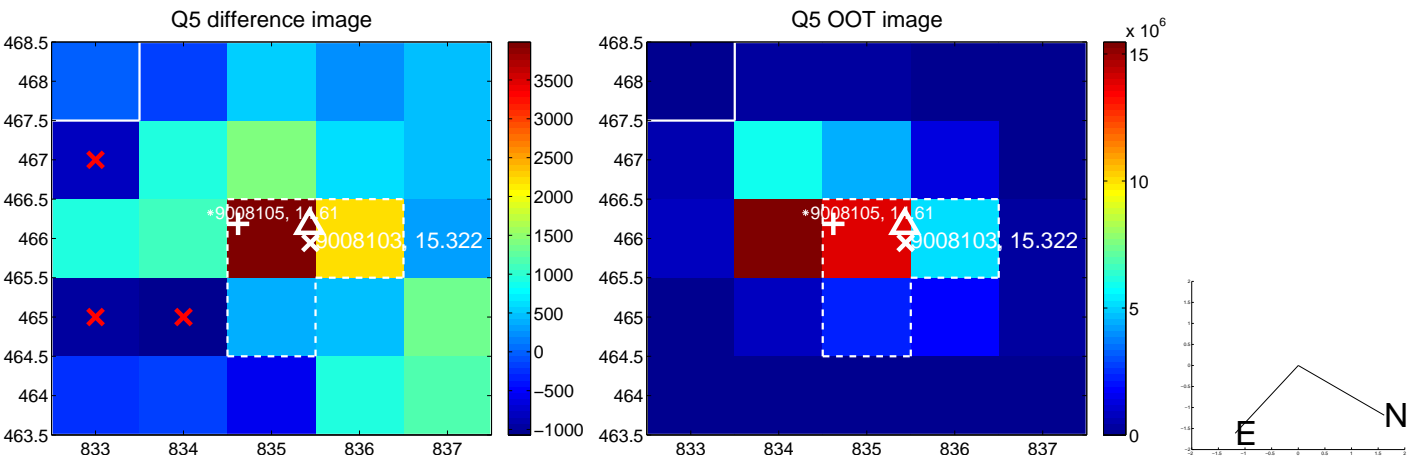


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

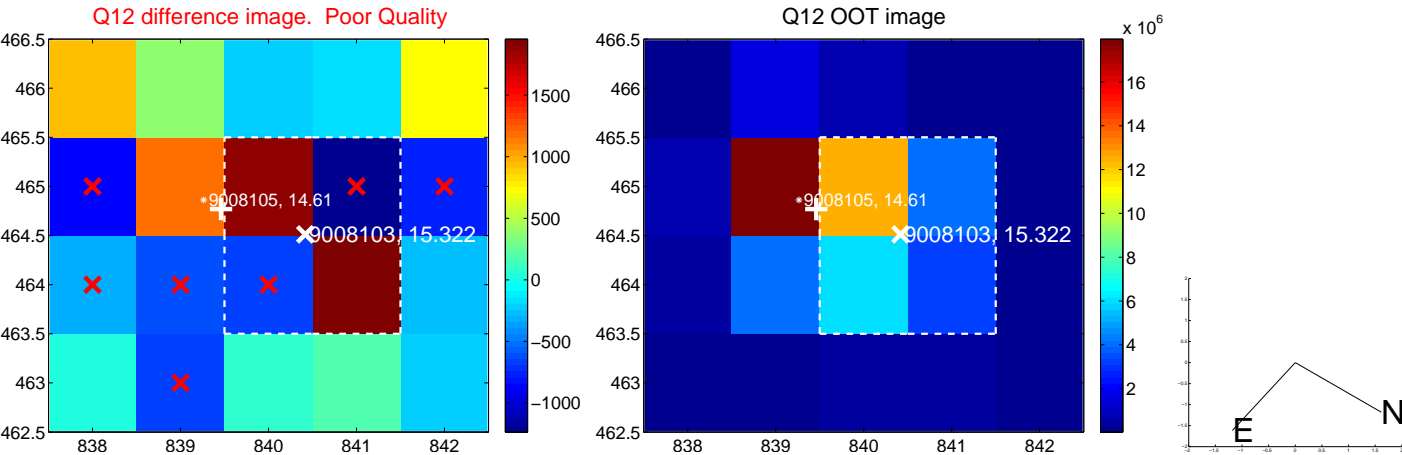
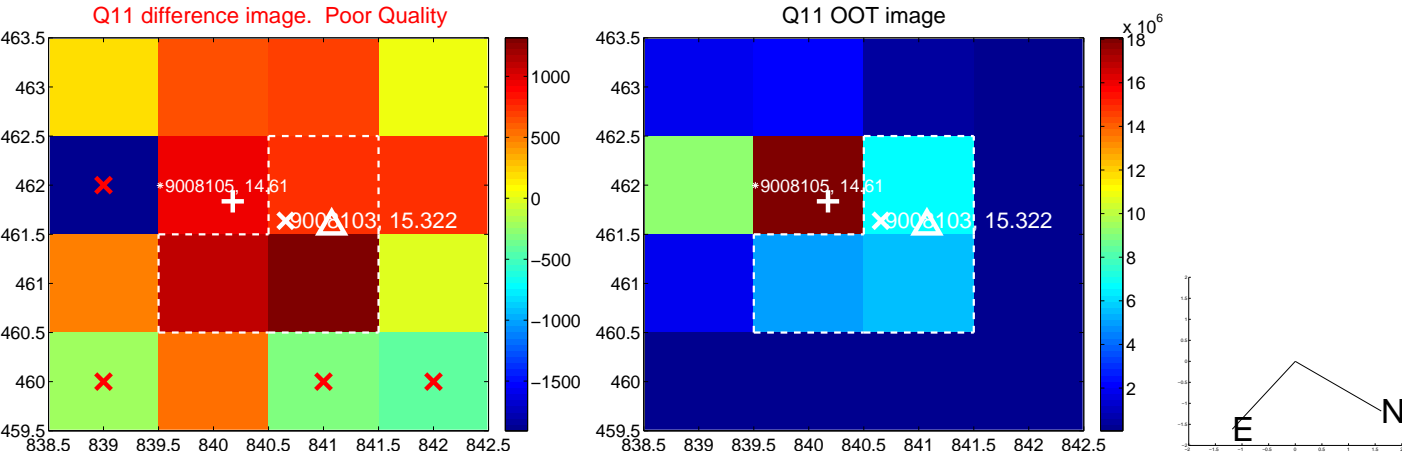
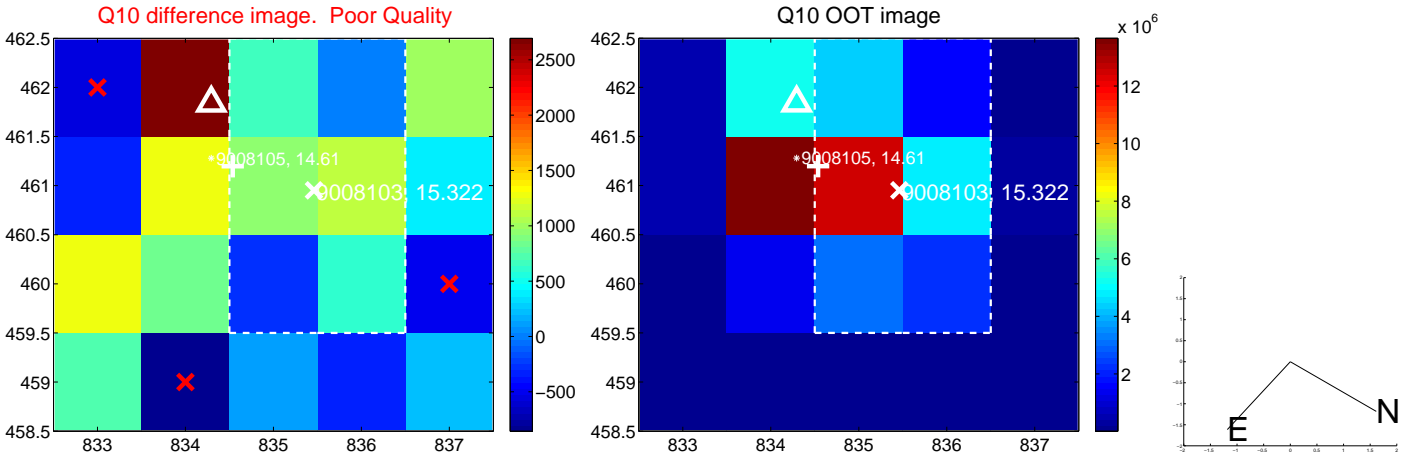
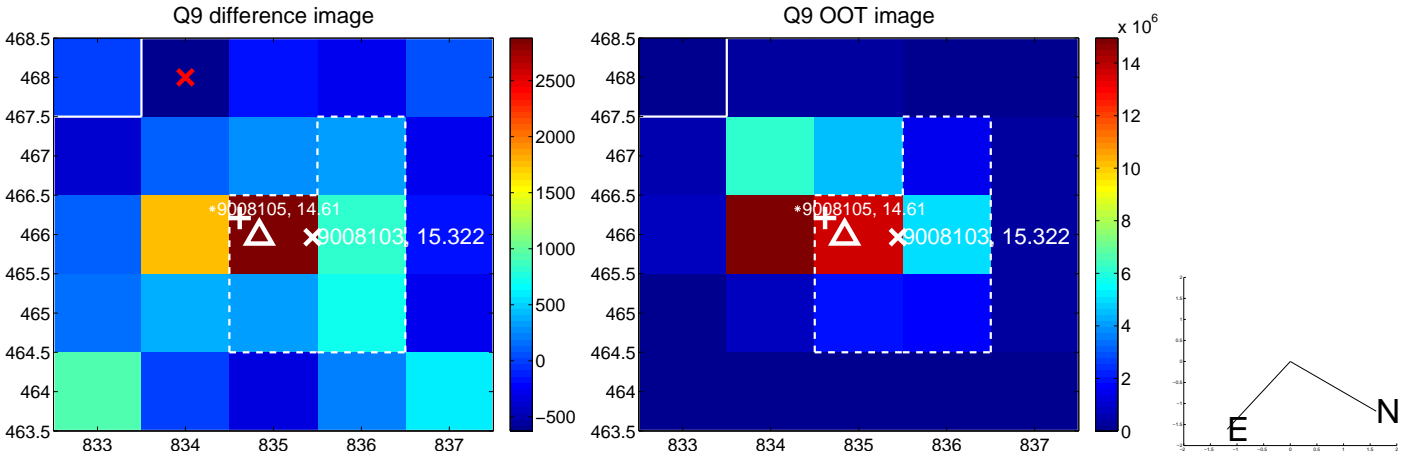
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



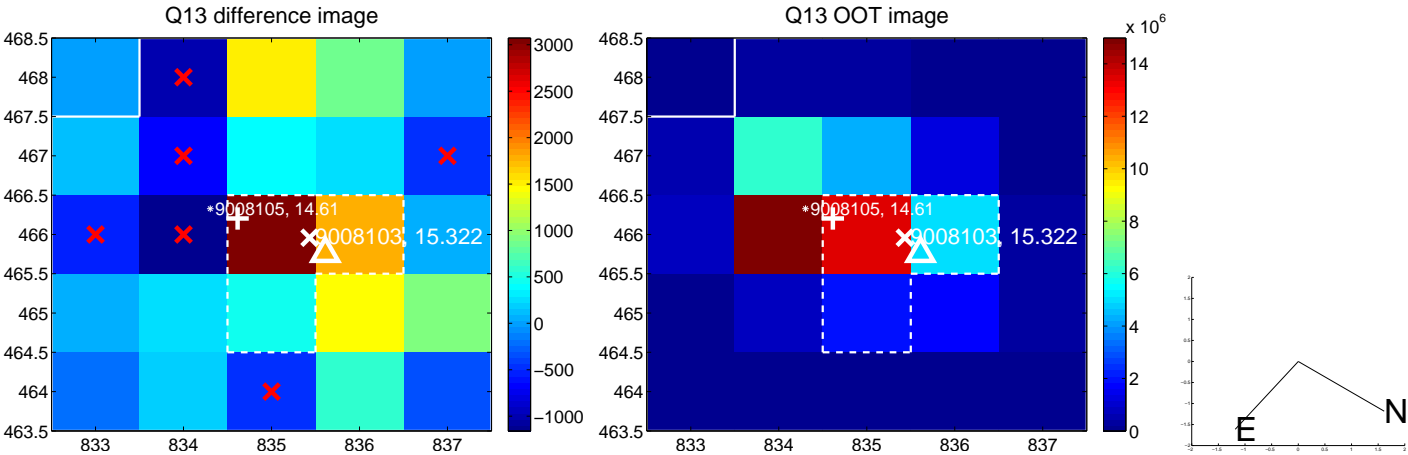
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



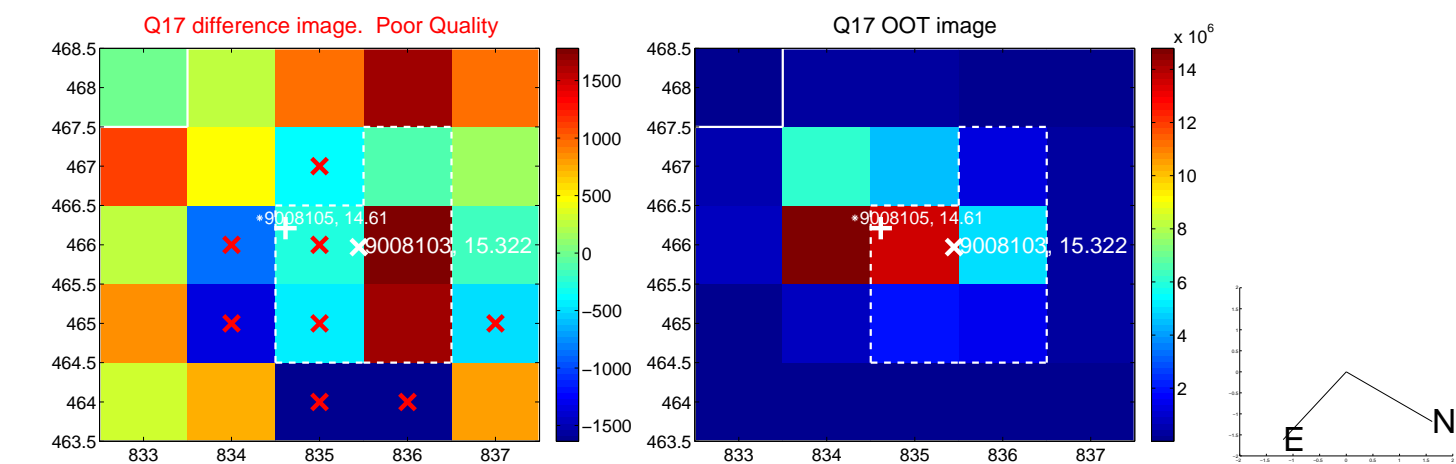
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



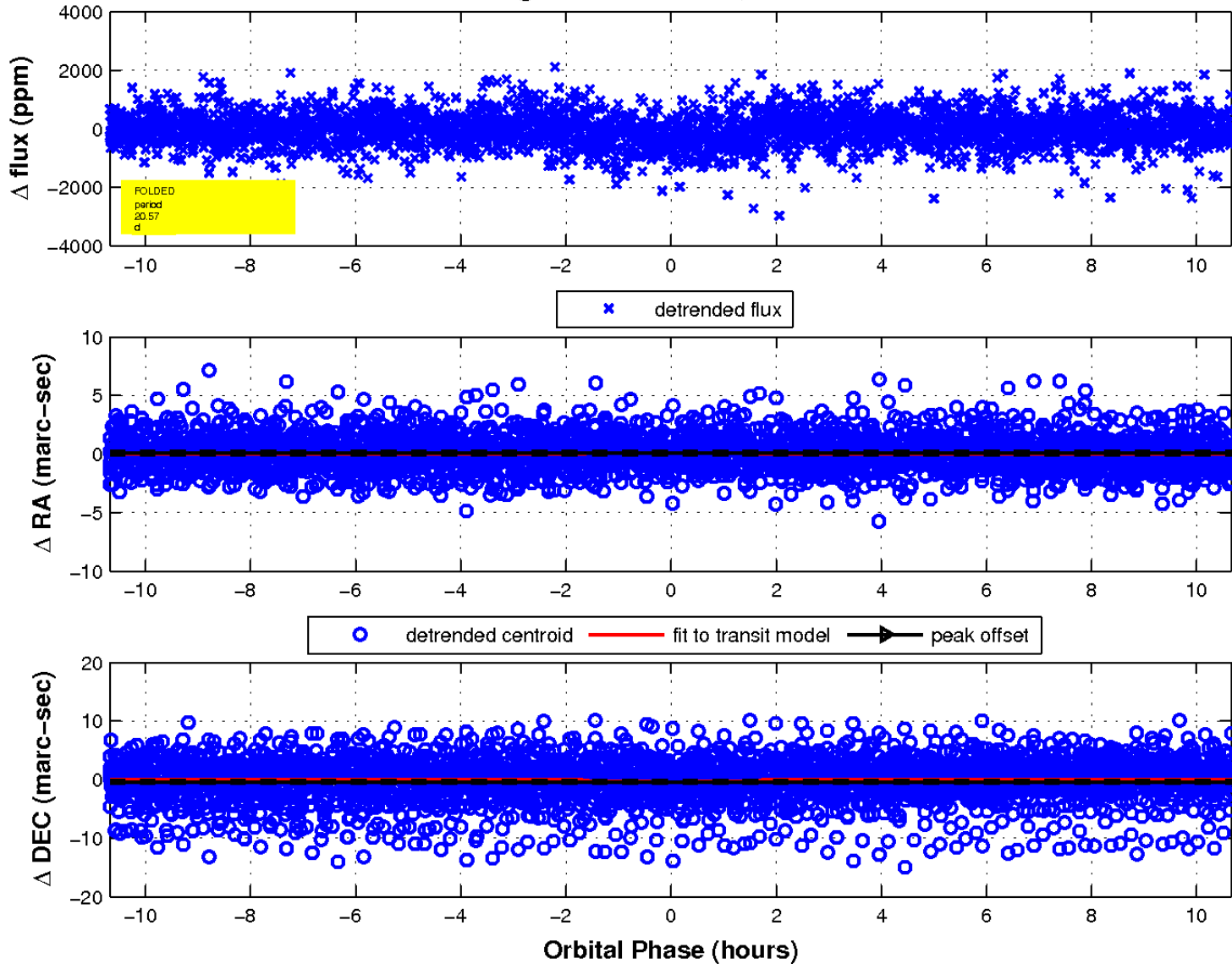
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

