

KIC 005124254

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})
005124254-01	OBS	3099.01	14.049793	140.505291	510.8	2.947	12.2	13.8	0.65	4228	1.62	12.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005124254-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

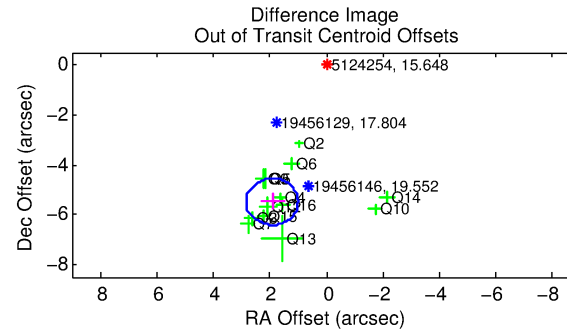
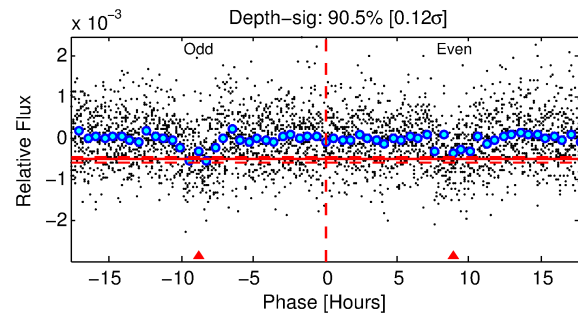
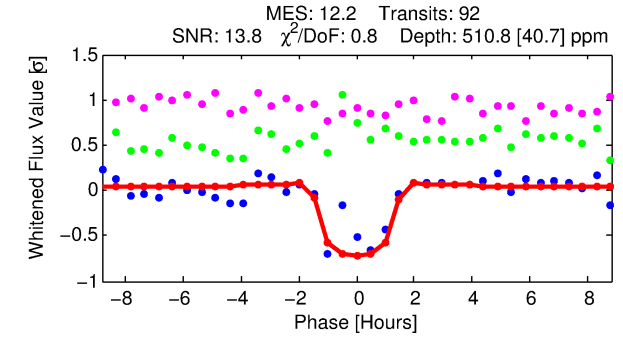
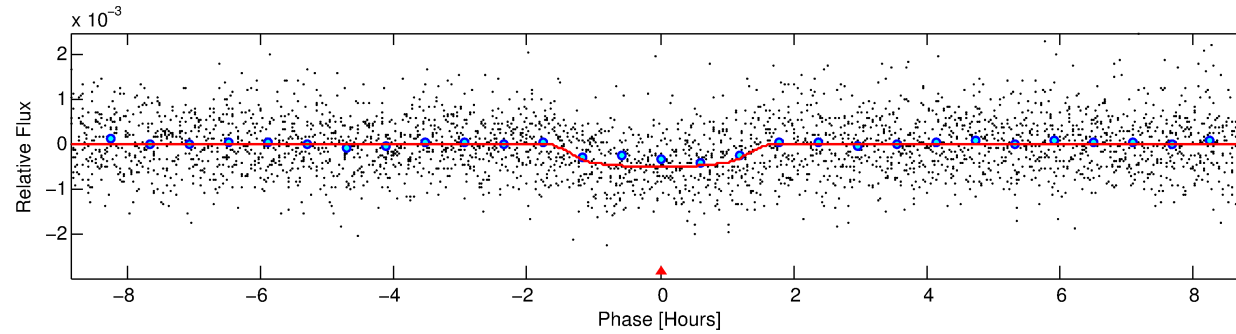
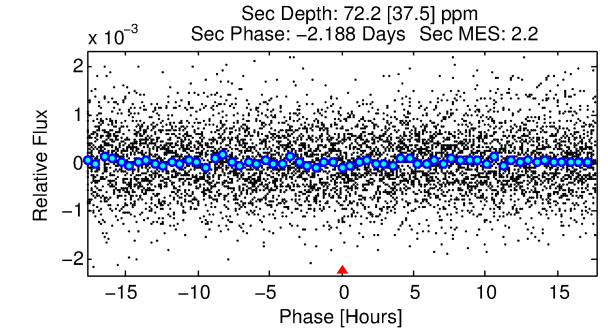
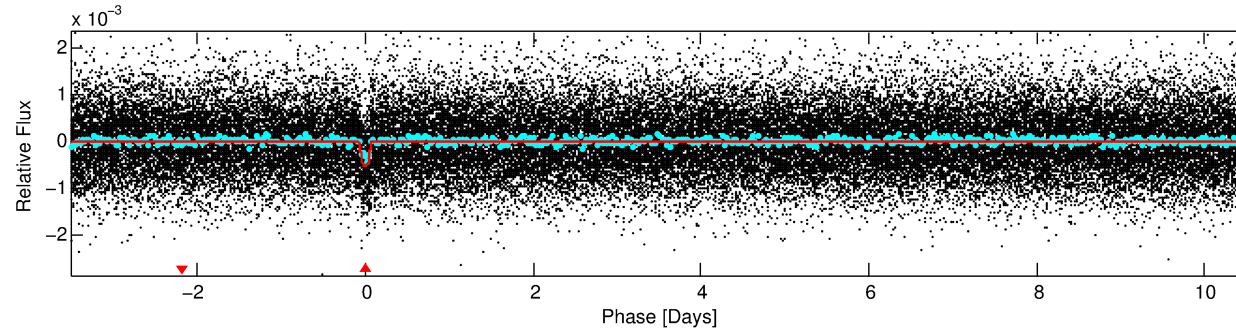
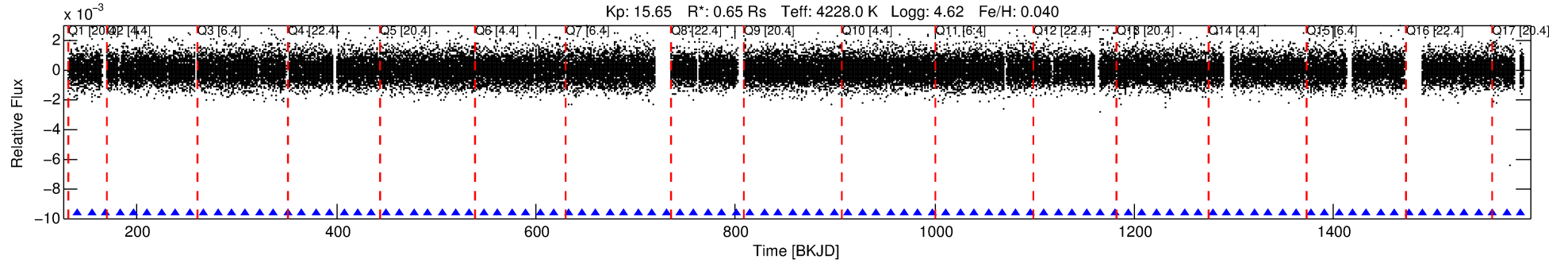
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005124254-01

No Significant Match Found

DV One-Page Summary

KIC: 5124254 Candidate: 1 of 1 Period: 14.050 d
KOI: K03099.01 Corr: 0.979



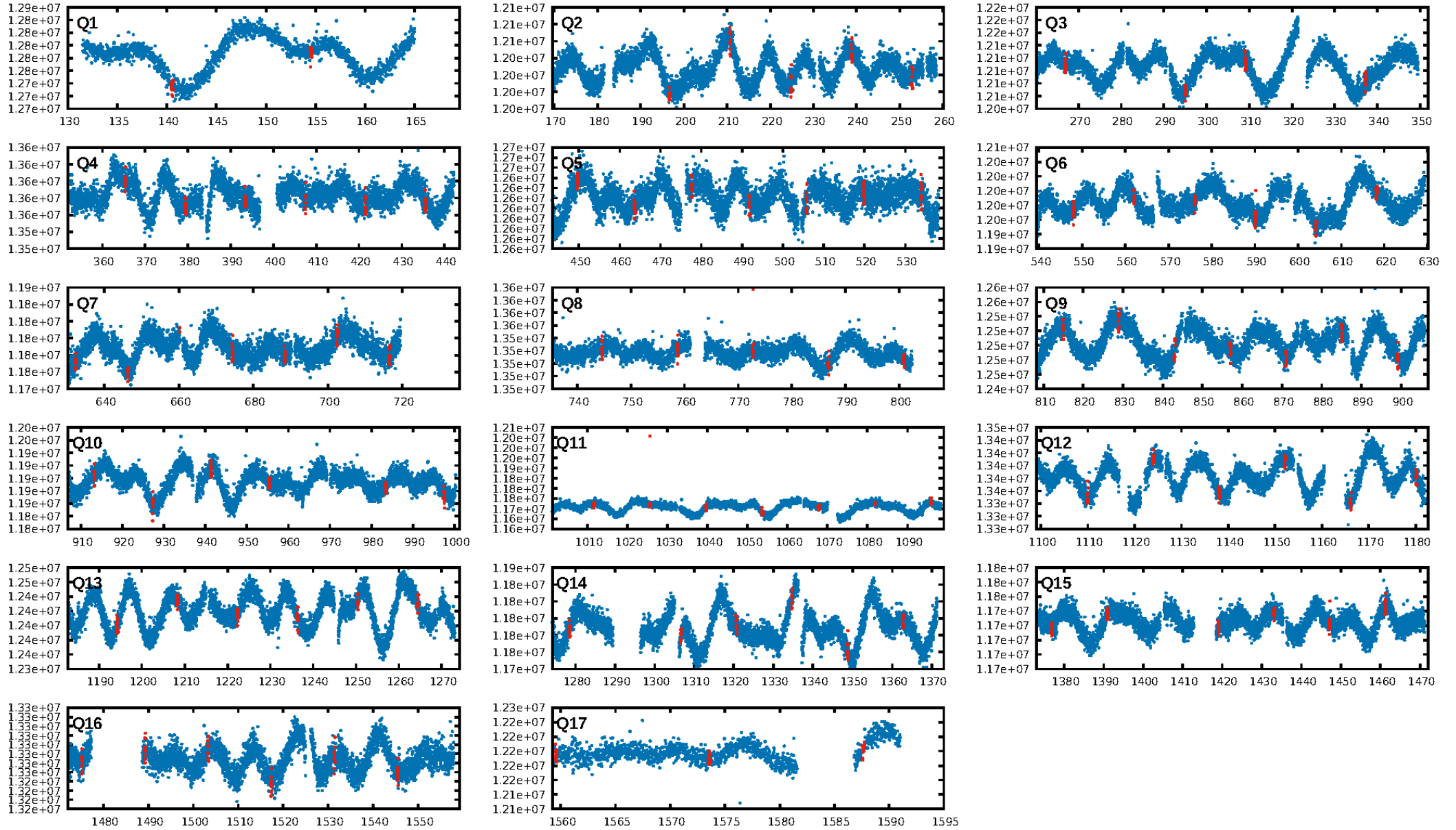
DV Fit Results:

Period = 14.04979 [0.00008] d
Epoch = 140.5053 [0.0049] BKJD
Rp/R* = 0.0228 [0.0187]
a/R* = 24.75 [66.73]
b = 0.76 [1.51]
Seff = 12.57 [2.08]
Teq = 480 [20] K
Rp = 1.62 [1.34] Re
a = 0.0984 [0.0069] AU
Ag = 145.68 [250.42] [0.58σ]
Teffp = 2579 [1110] K [1.89σ]

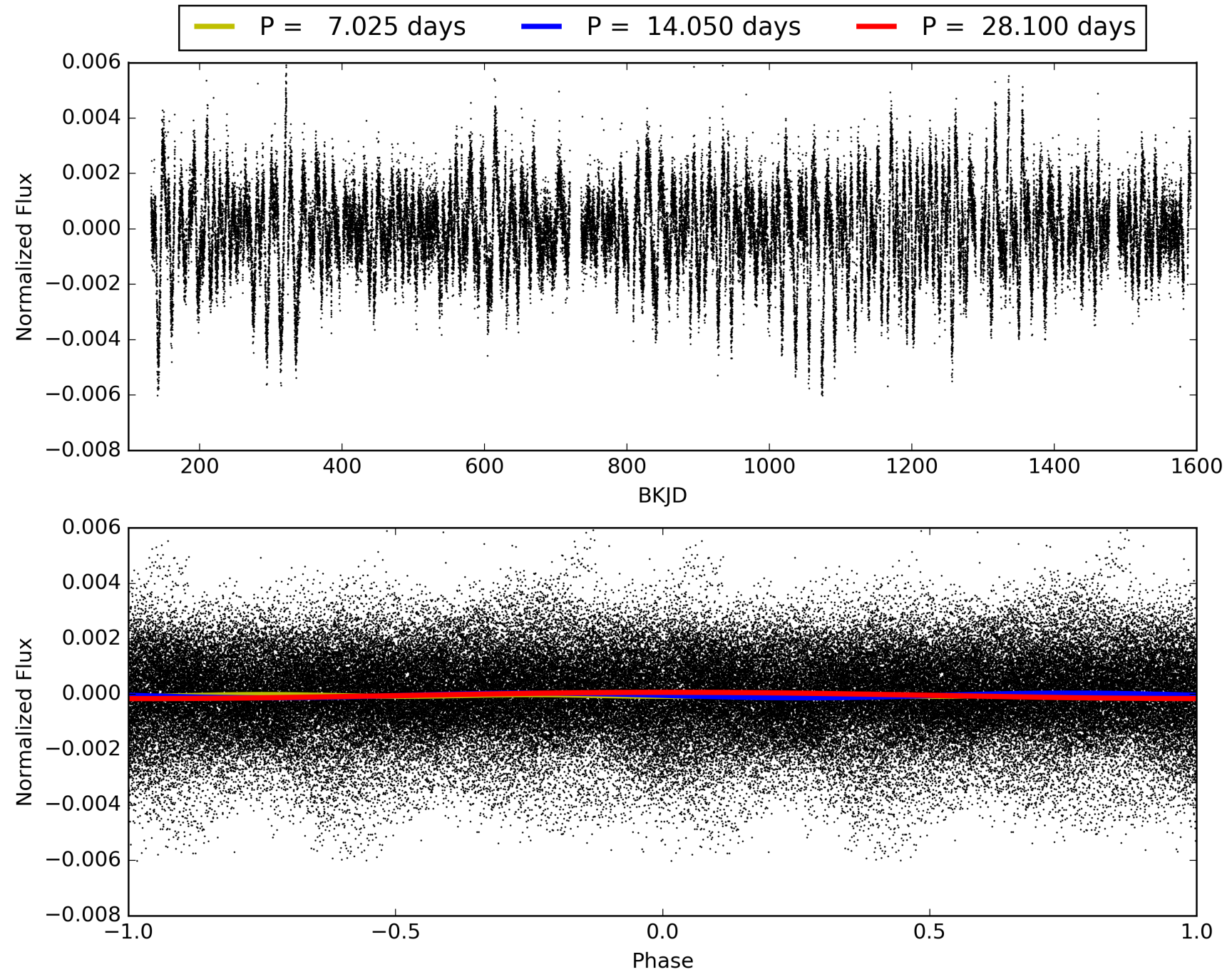
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.27e-33
RollingBand-fgt: 1.00 [87/87]
GhostDiagnostic-chr: -0.03742
Centroid-sig: 0.0%
Centroid-so: 12.603 arcsec [14.20σ]
OotOffset-rm: 5.811 arcsec [18.83σ]
KicOffset-rm: 6.060 arcsec [16.40σ]
OotOffset-st: 4/3/3/3 [13]
KicOffset-st: 4/3/3/3 [13]
DiffImageQuality-fgm: 0.92 [12/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005124254-01, PDC Light Curves

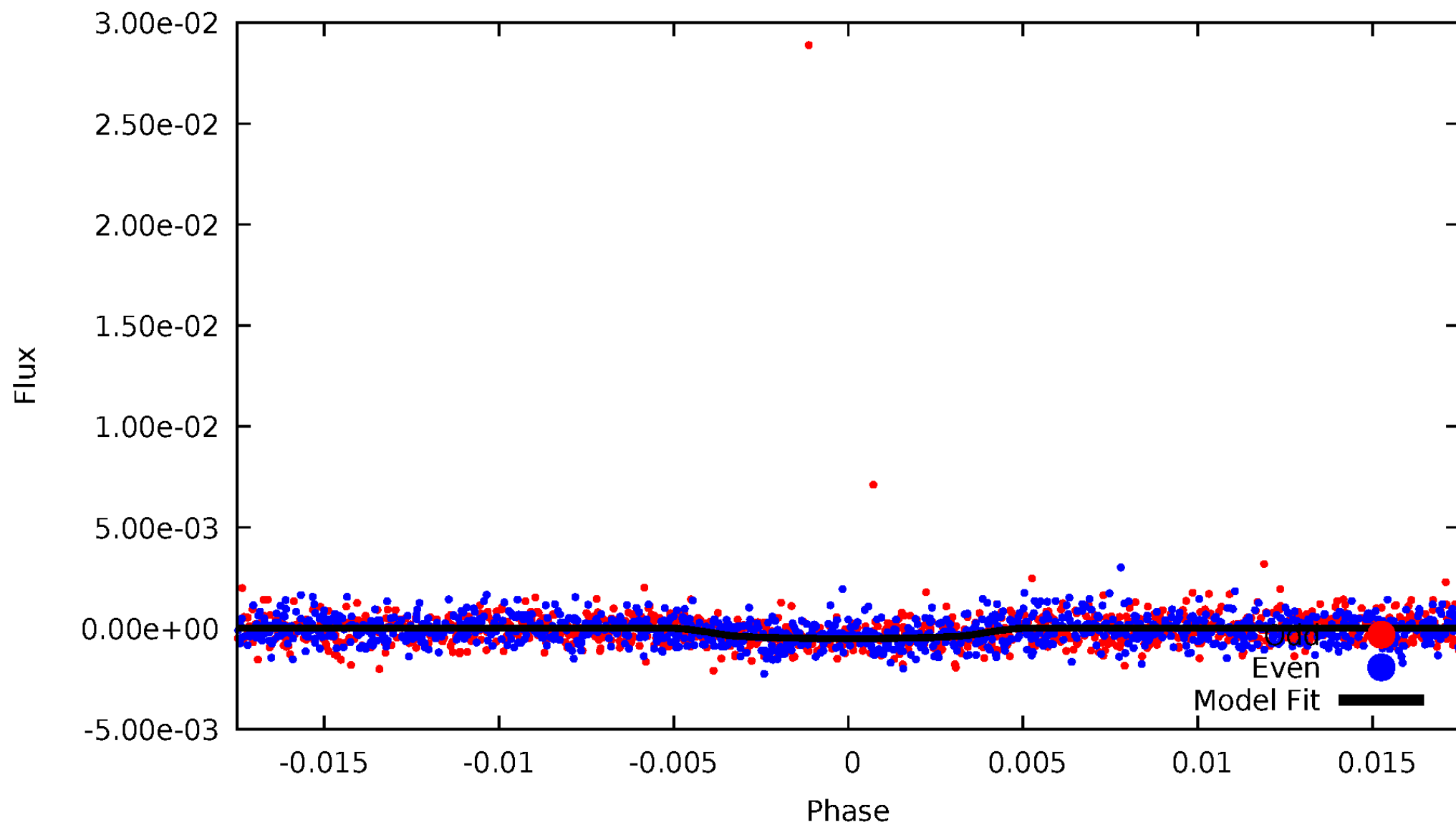


TCE 005124254-01



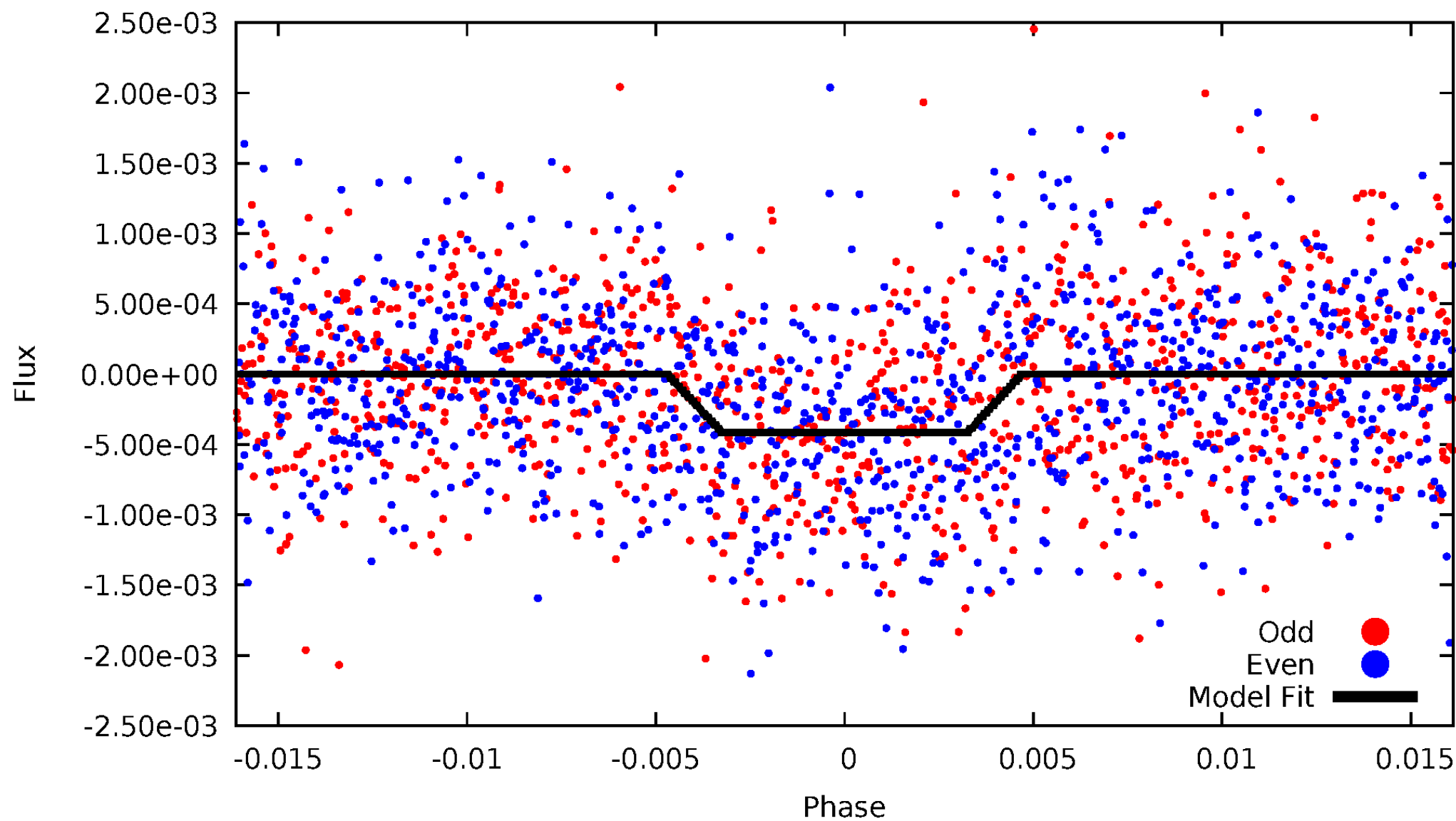
DV Odd/Even

TCE 005124254-01

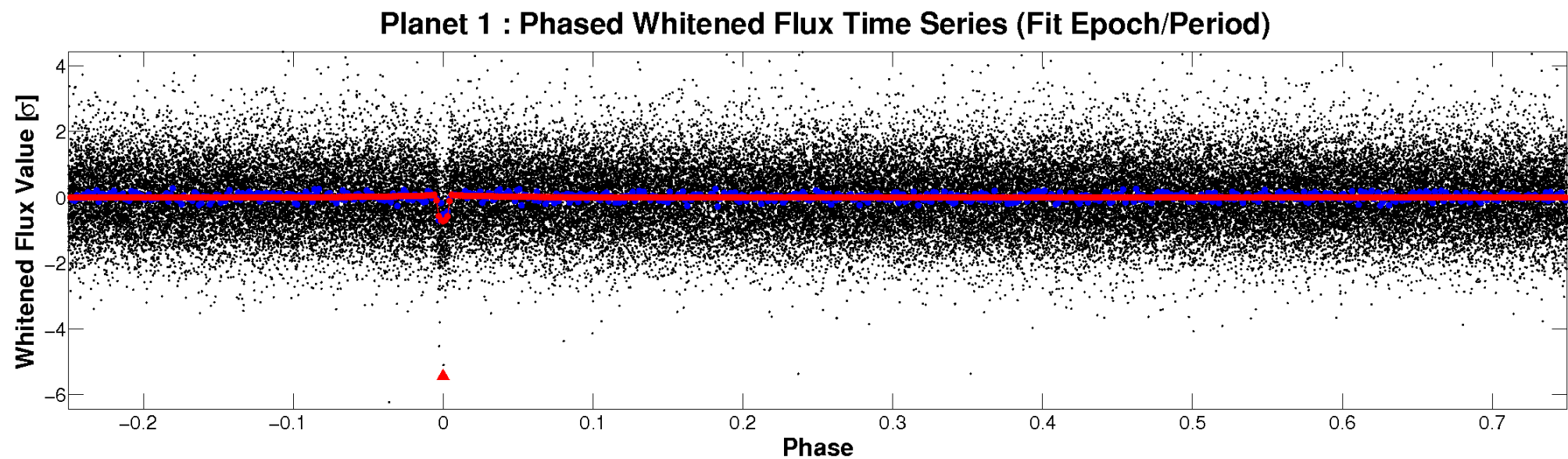
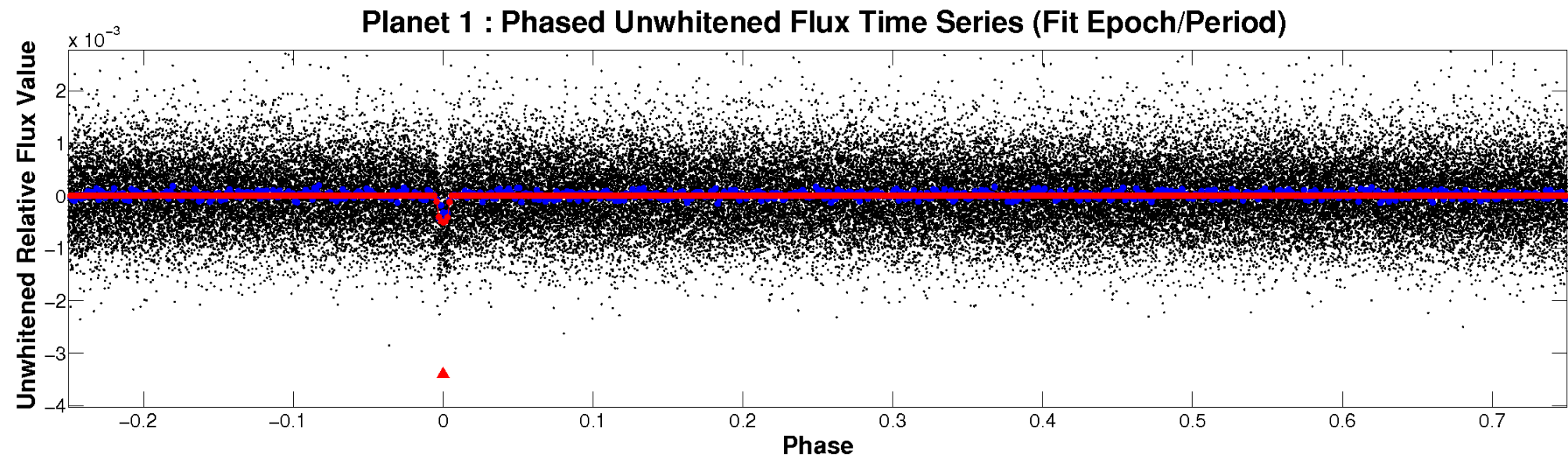


ALT Odd/Even

TCE 005124254-01

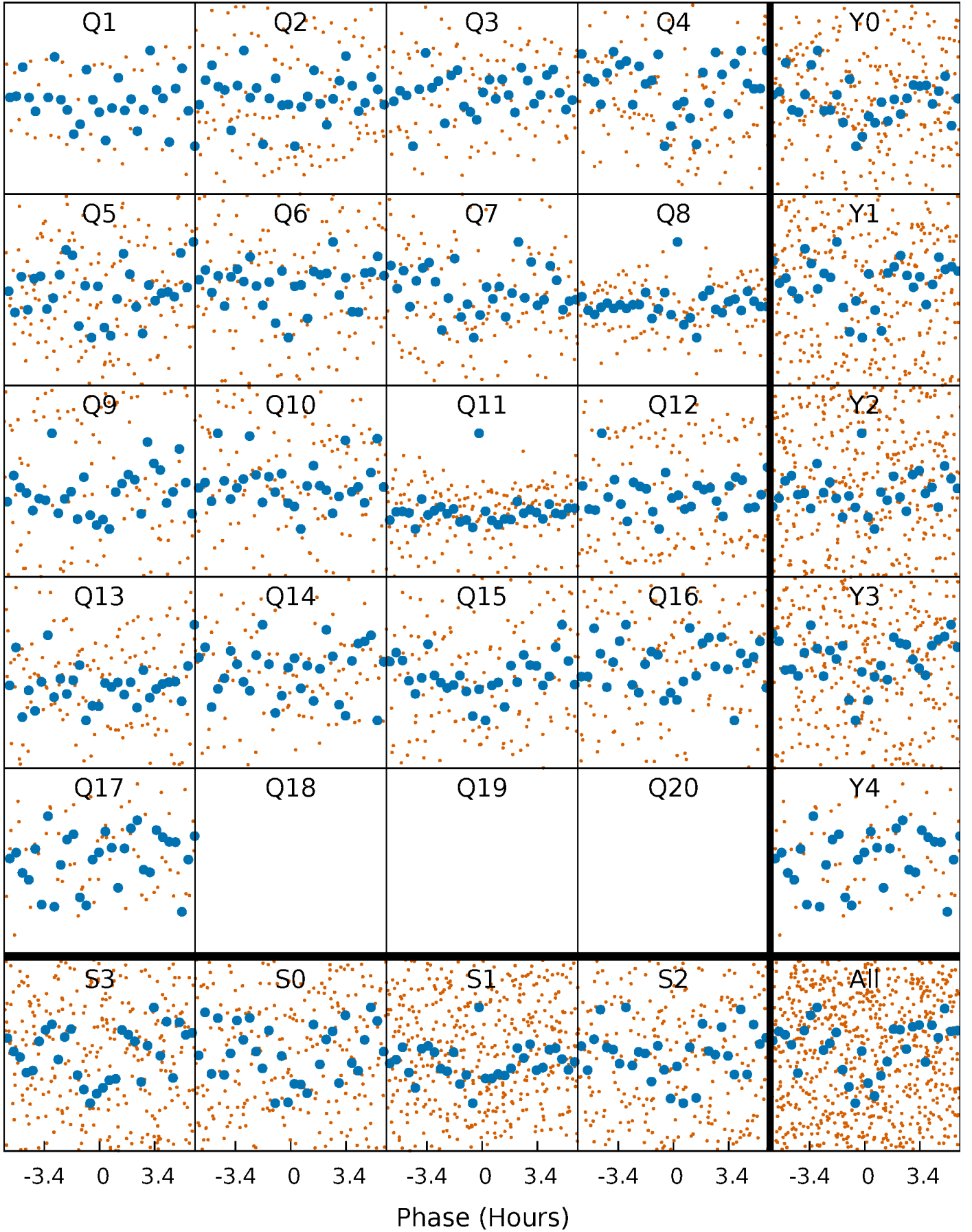


Non-Whitened Vs. Whitened Light Curve



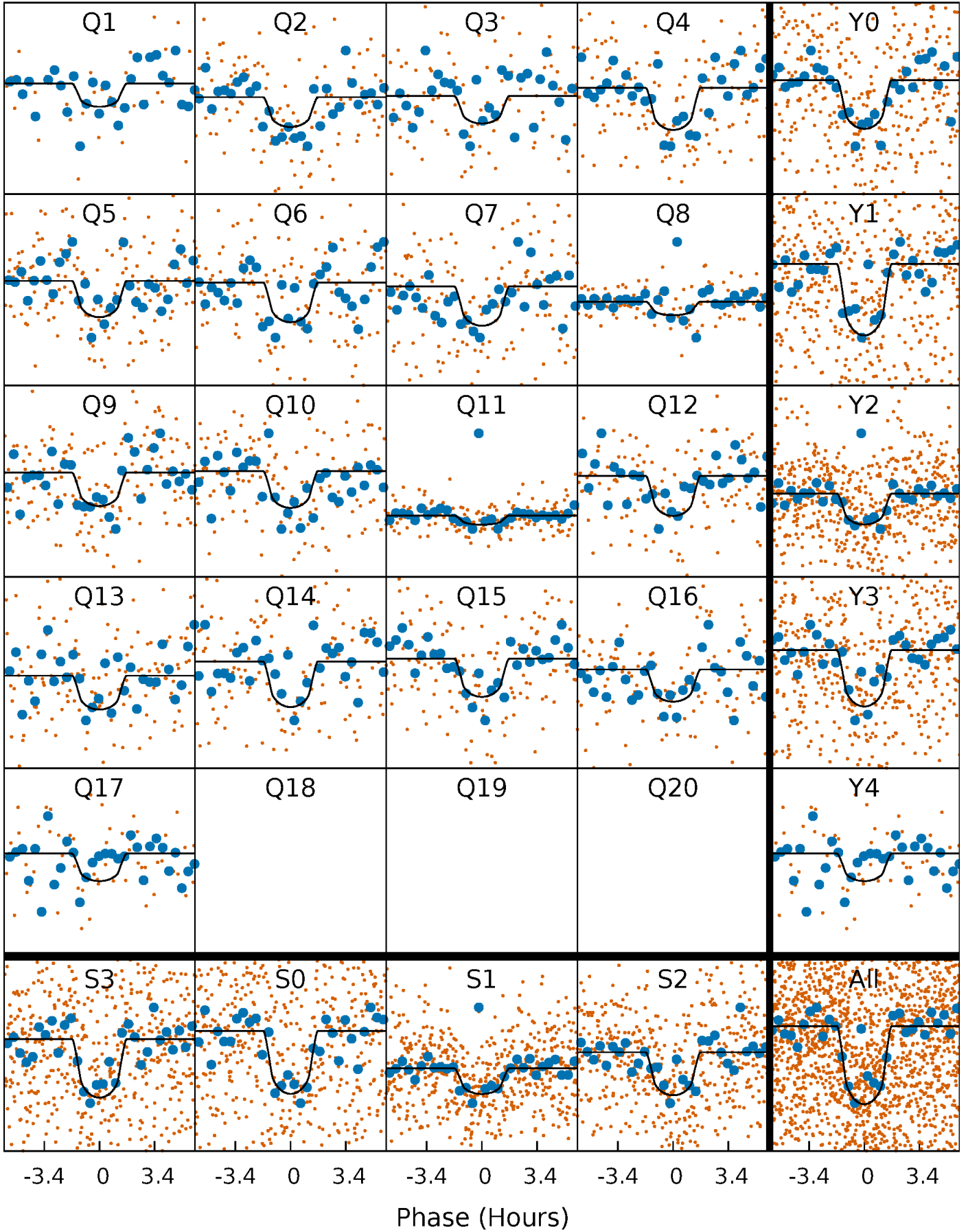
PDC Quarter-Phased Transit Curves

TCE 005124254-01 P= 14.049793 Days $T_0=140.505291$ (BKJD)



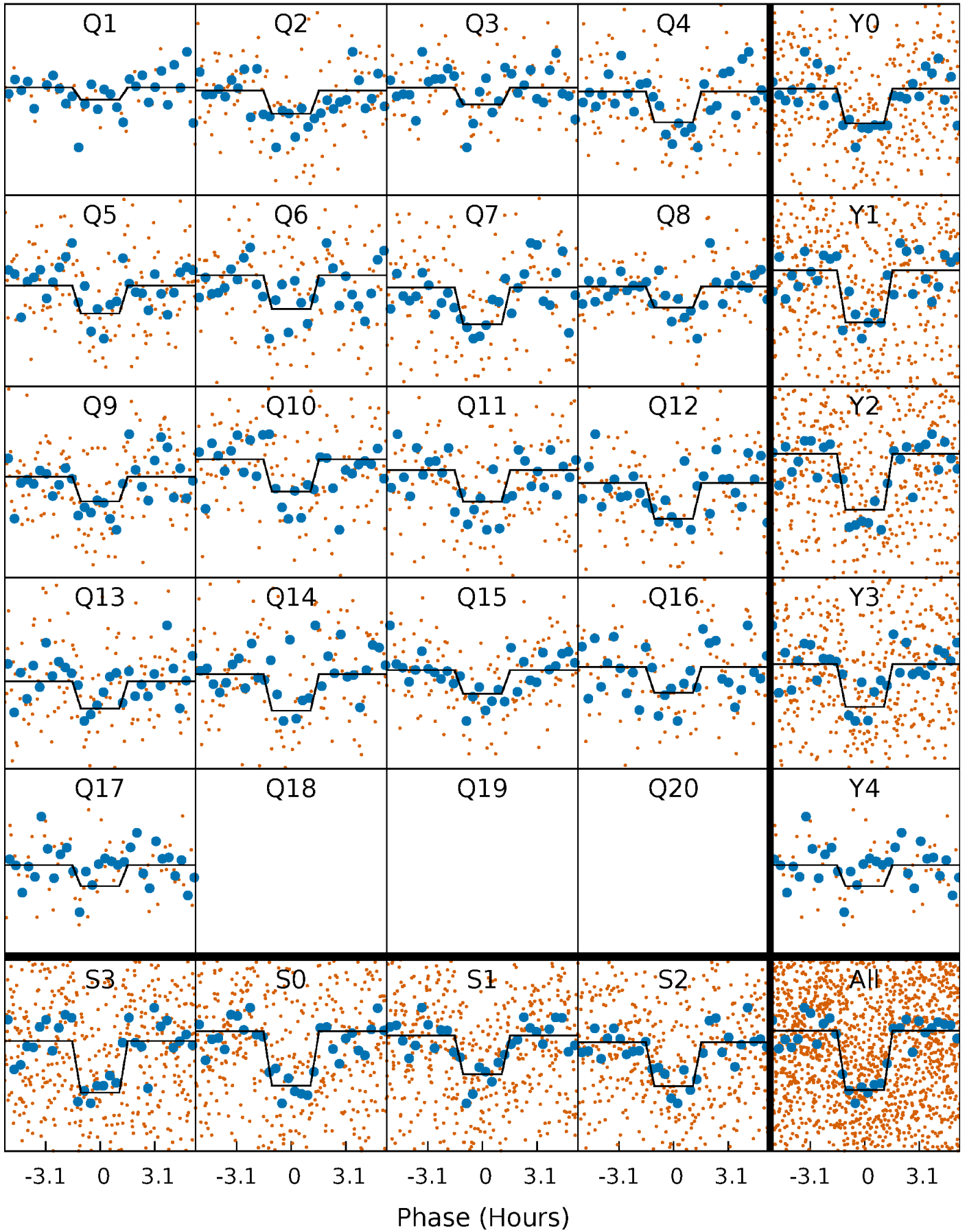
DV Quarter-Phased Transit Curves

TCE 005124254-01 P= 14.049793 Days $T_0=140.505291$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

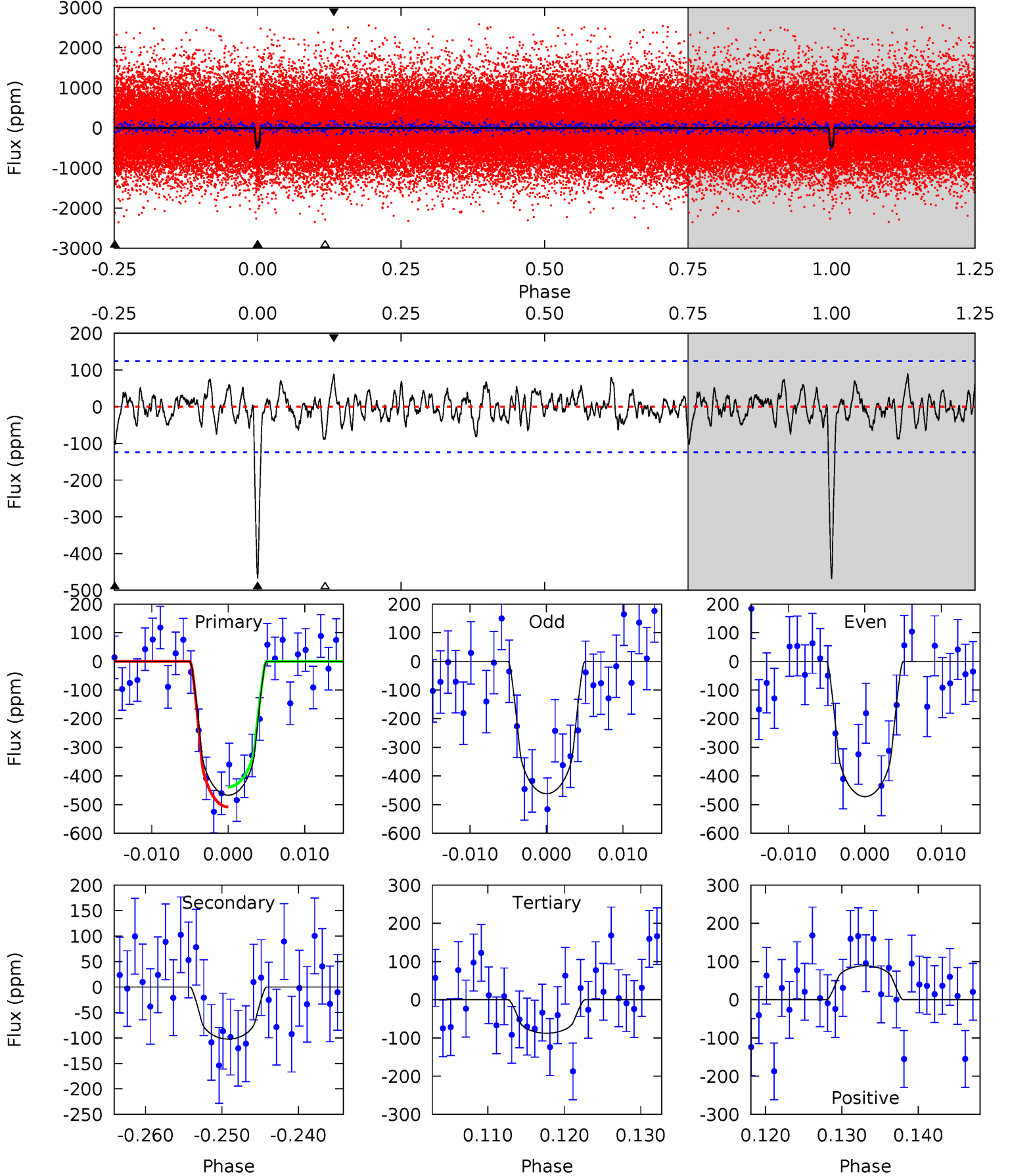
TCE 005124254-01 P= 14.049856 Days $T_0=140.502825$ (BKJD)



DV Model-Shift Uniqueness Test

005124254-01, P = 14.049793 Days, E = 126.455498 Days

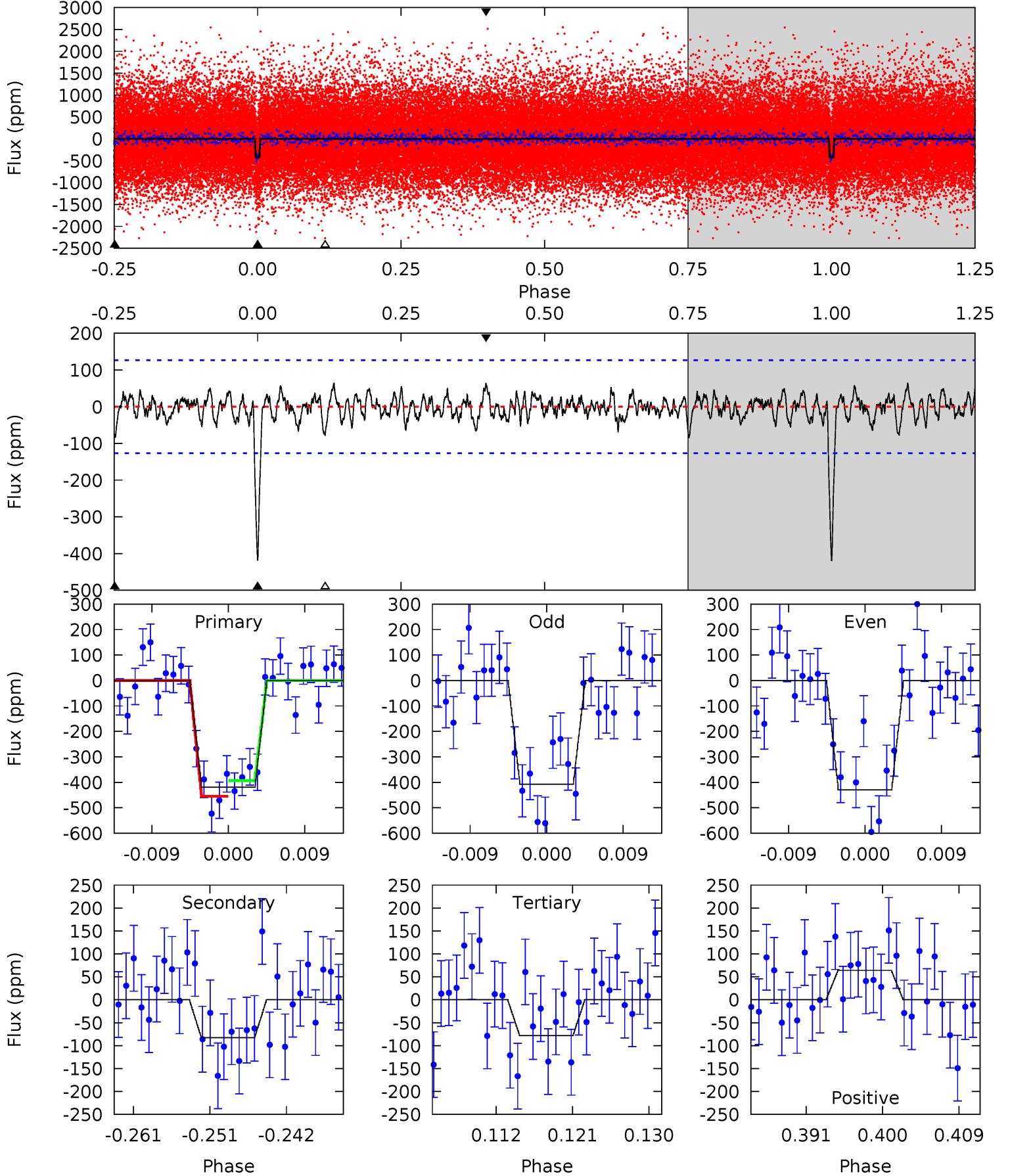
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	4.14	3.55	3.60	5.03	2.58	1.20	15.4	15.3	0.59	0.54	0.21	0.75	0.16	1.41



Alt Model-Shift Uniqueness Test

005124254-01, $P = 14.049856$ Days, $E = 126.452969$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	3.29	3.12	2.55	5.04	2.60	0.98	13.6	14.1	0.17	0.74	0.45	1.01	0.13	1.23



Stellar Parameters For KIC 005124254

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4228^{+128}_{-141}	$4.618^{+0.052}_{-0.017}$	$0.040^{+0.250}_{-0.300}$	$0.652^{+0.031}_{-0.056}$	$0.642^{+0.056}_{-0.056}$	$3.268^{+0.756}_{-0.279}$
	+3%/-3%	+1%/-0%	+625%/-750%	+5%/-9%	+9%/-9%	+23%/-9%
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 005124254-01 / KOI 3099.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-102 ± 25	$1.79^{+1.24}_{-1.09}$	664^{+23}_{-23}	3106^{+1136}_{-426}	169^{+989}_{-110}
Alt.	-83 ± 25	$1.61^{+1.20}_{-0.97}$	665^{+22}_{-26}	3092^{+1179}_{-443}	160^{+1017}_{-109}

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 $A_{\text{obs}} \gg 1.0$

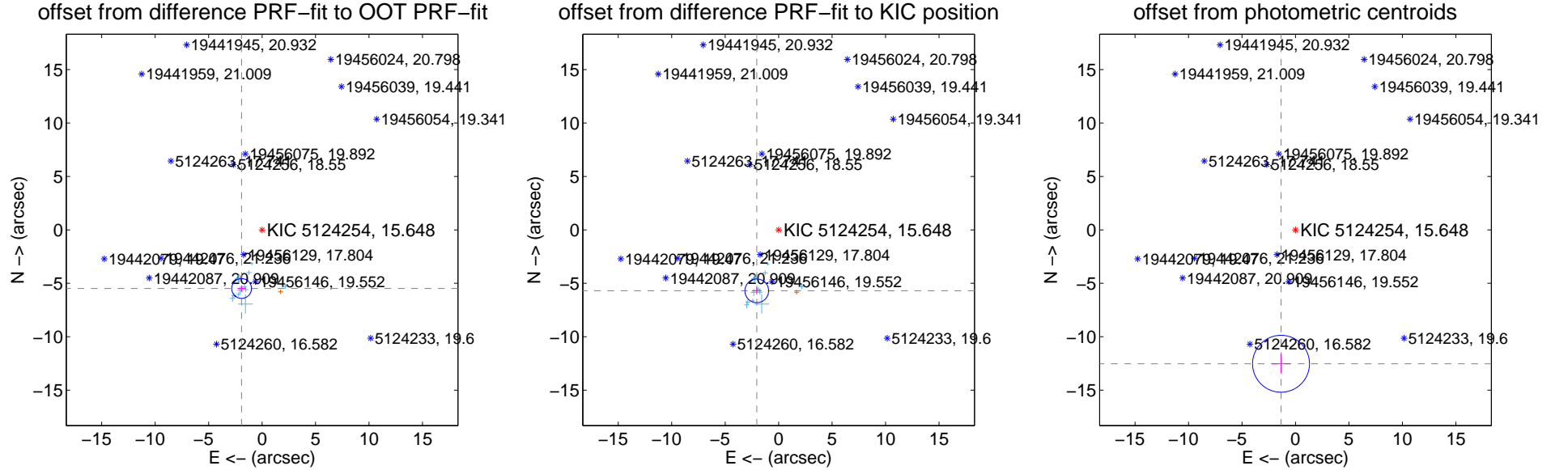
DV Centroid Data

Supplemental centroid analysis for 005124254-01. Kepler magnitude: 15.65. Transit SNR 13.81

There are 12 quarters with good PRF difference image offsets

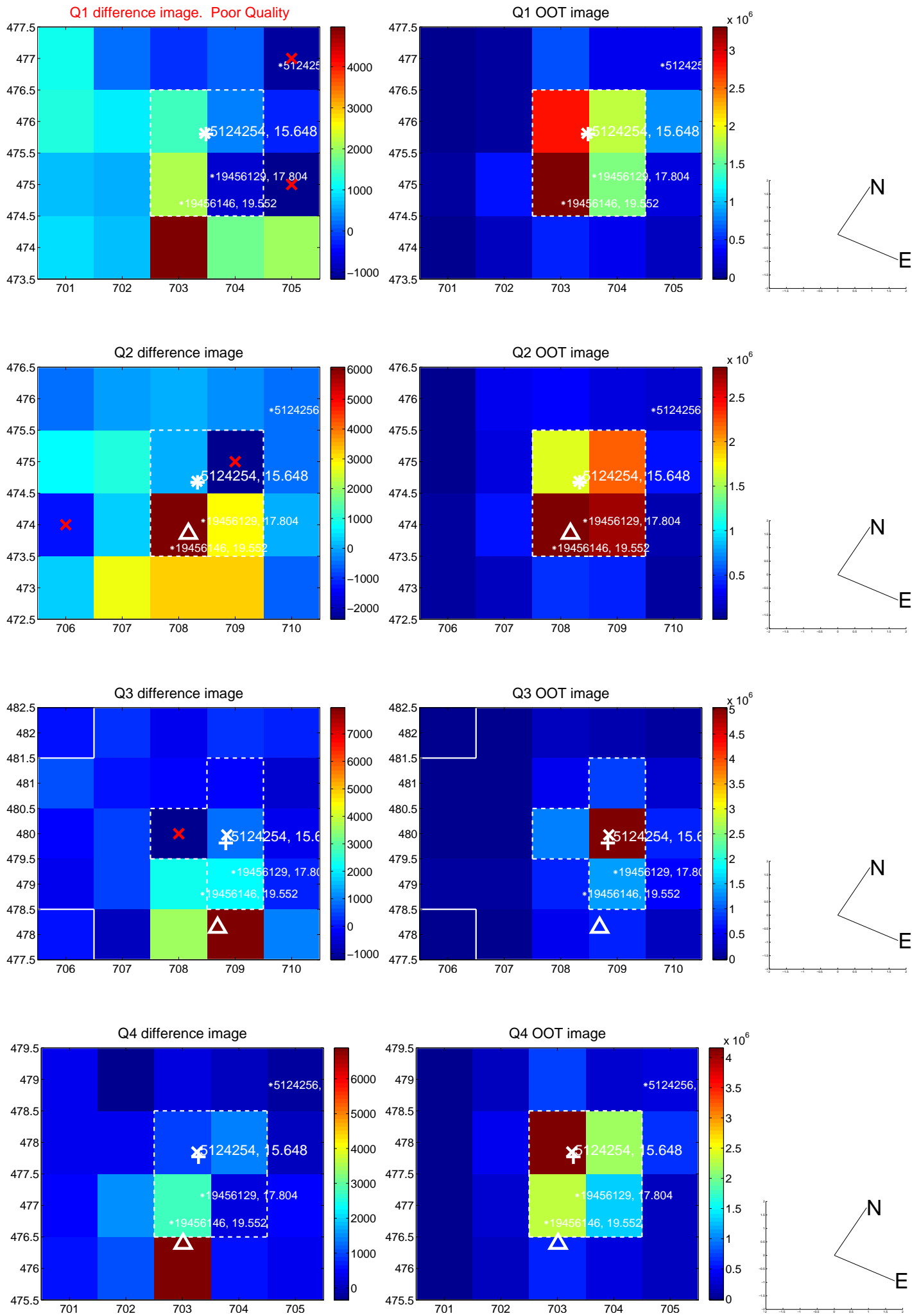
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.811 \pm 0.309	18.83	1.916 \pm 0.399	-5.486 \pm 0.288
PRF-fit source offset from KIC position	6.060 \pm 0.369	16.40	2.046 \pm 0.452	-5.704 \pm 0.335
photometric centroid source offset	12.60 \pm 0.89	14.20	1.35 \pm 0.88	-12.53 \pm 0.89

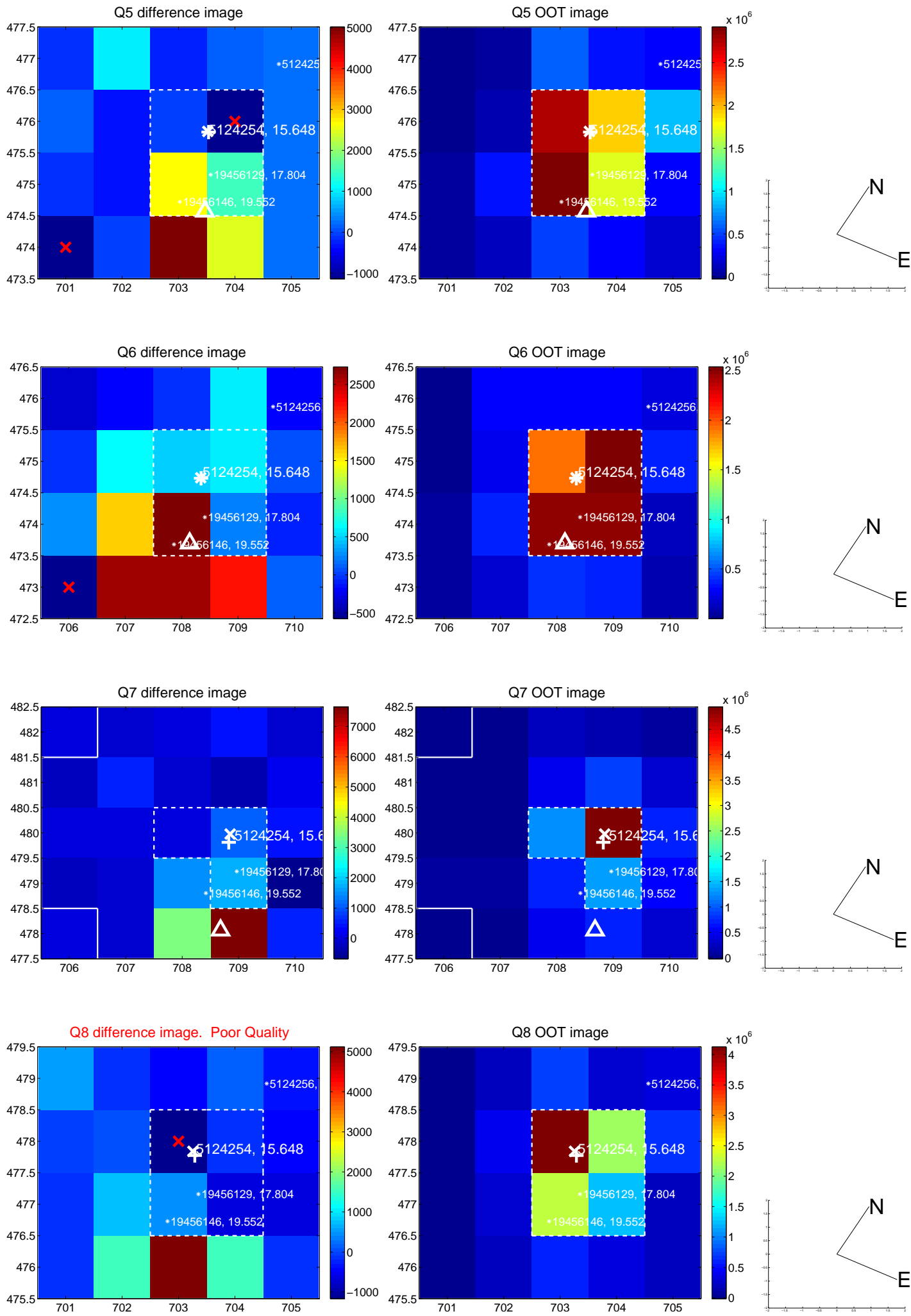


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

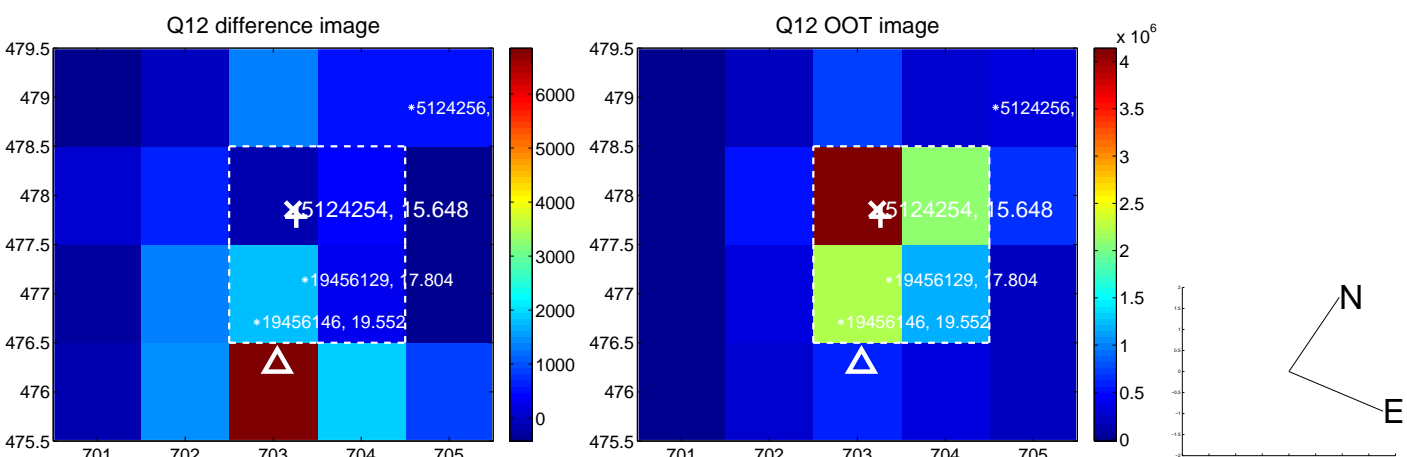
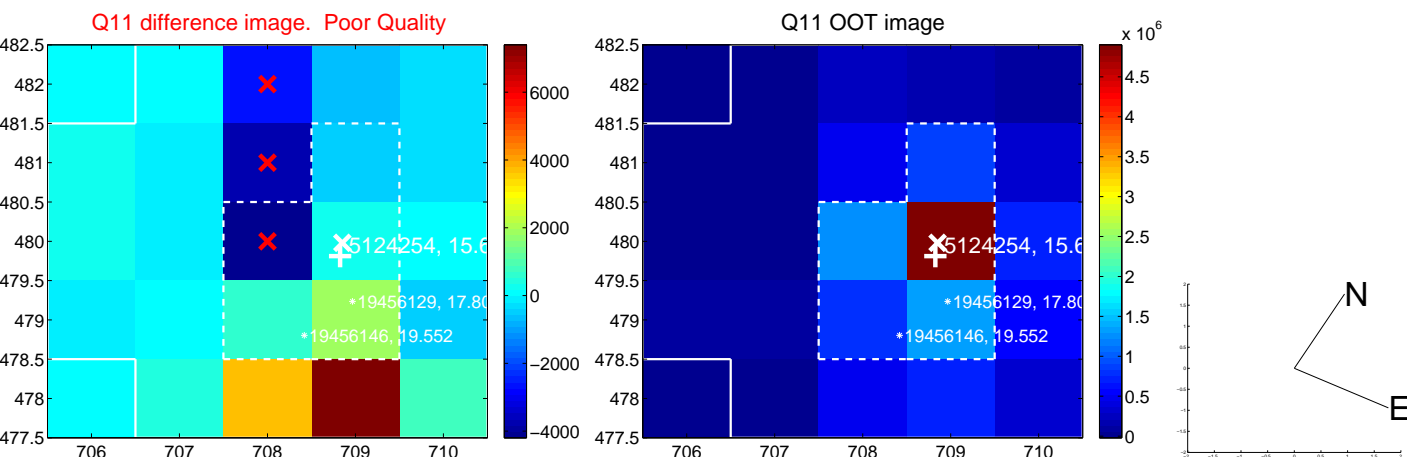
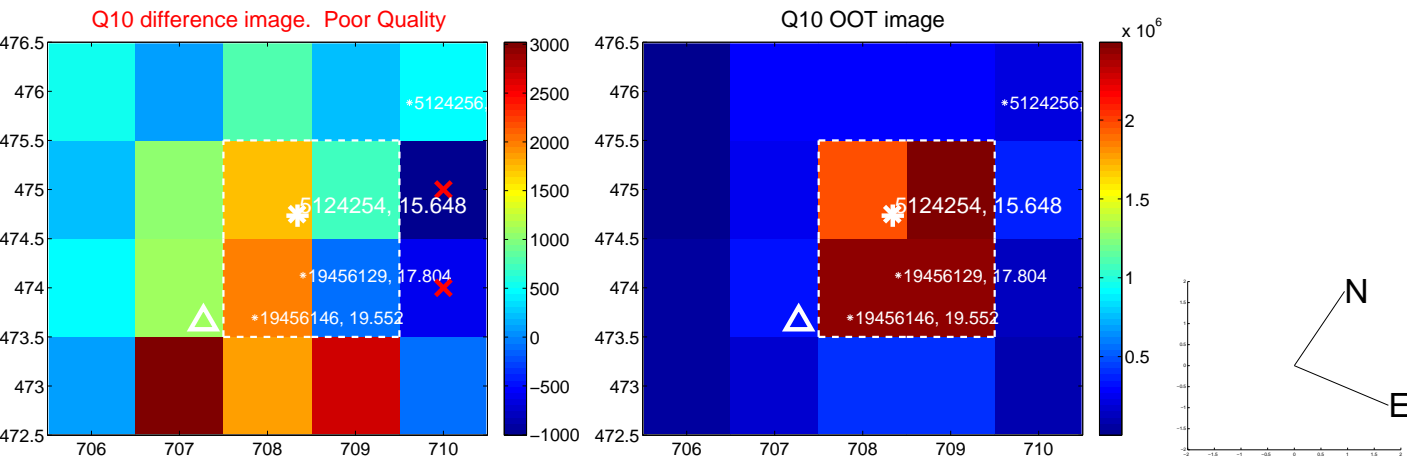
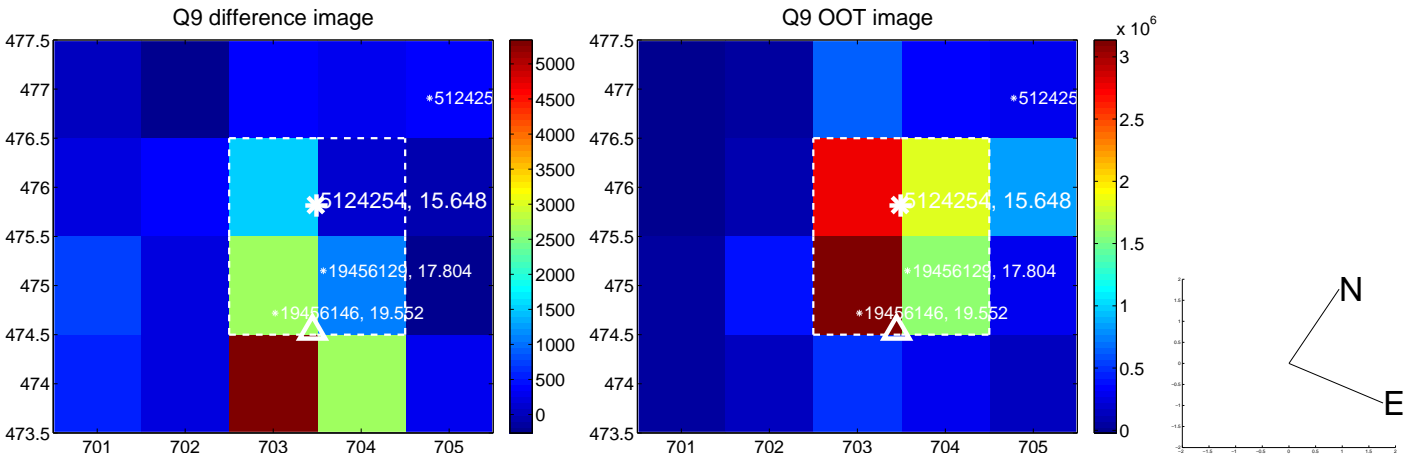
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



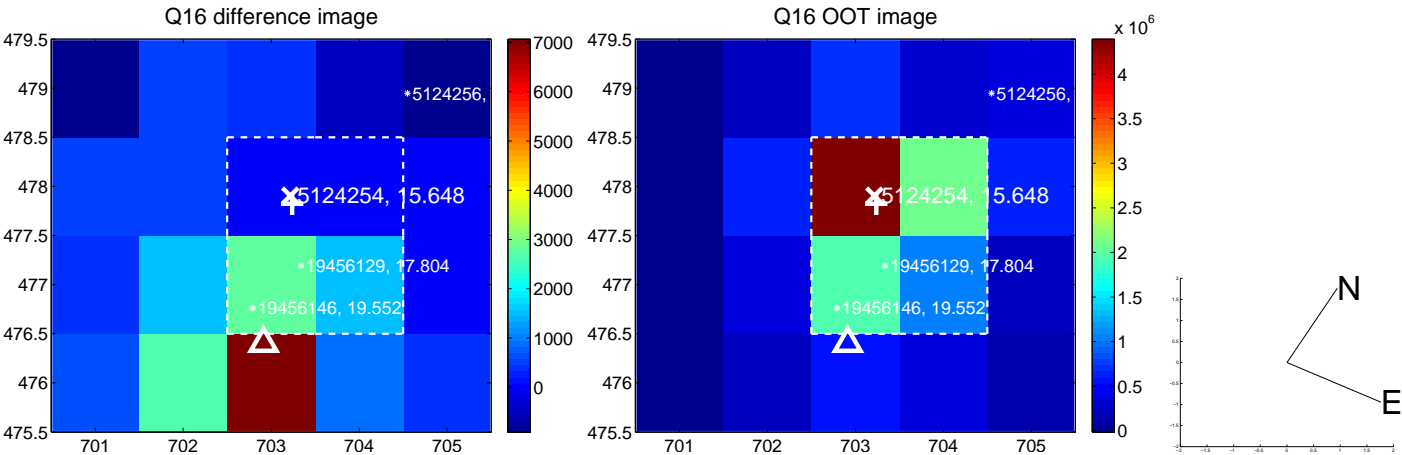
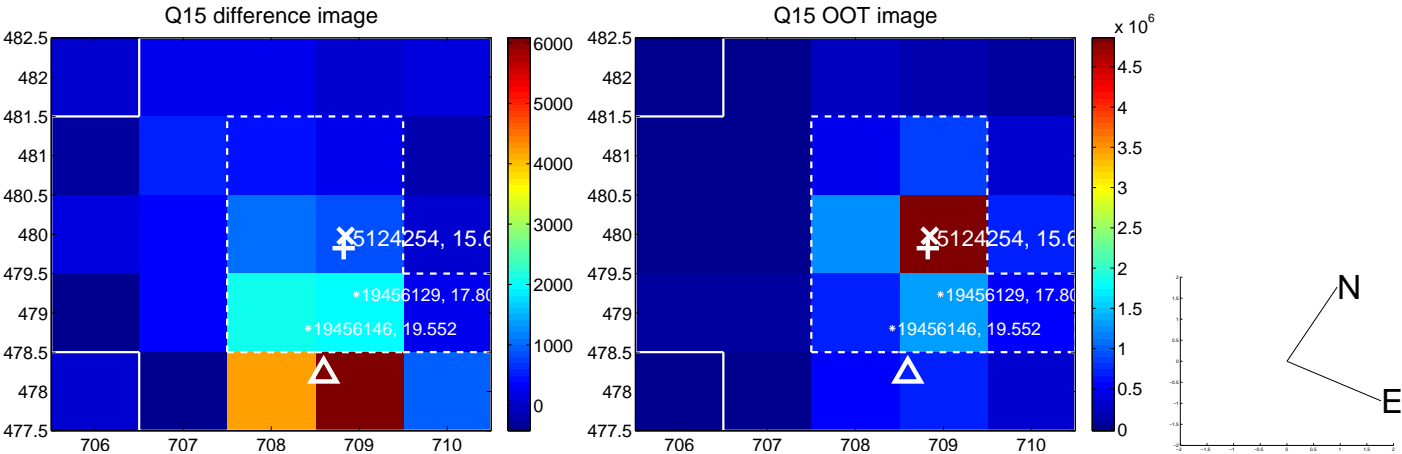
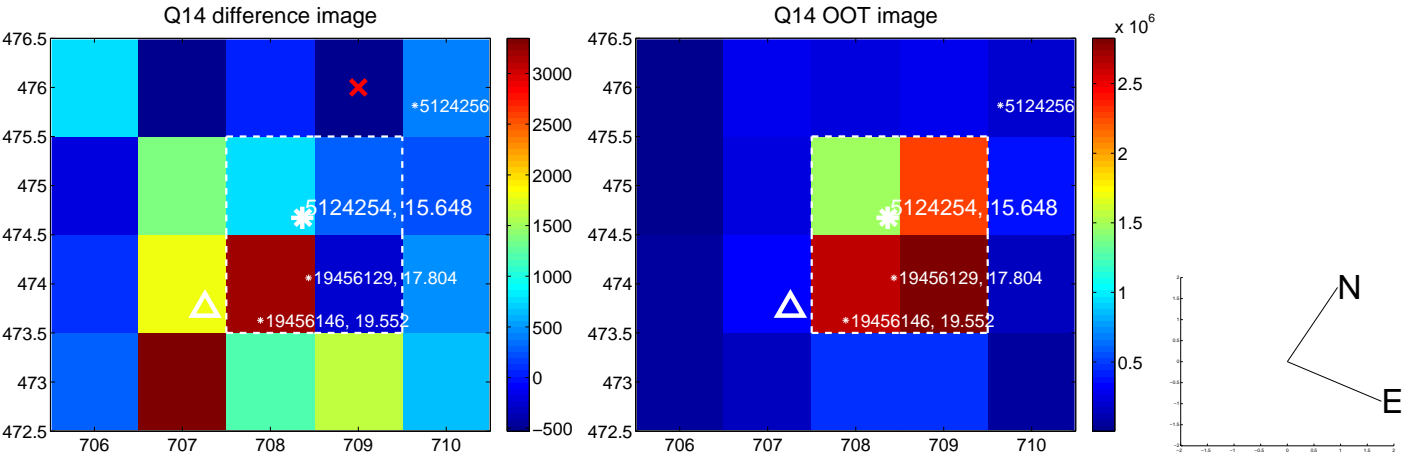
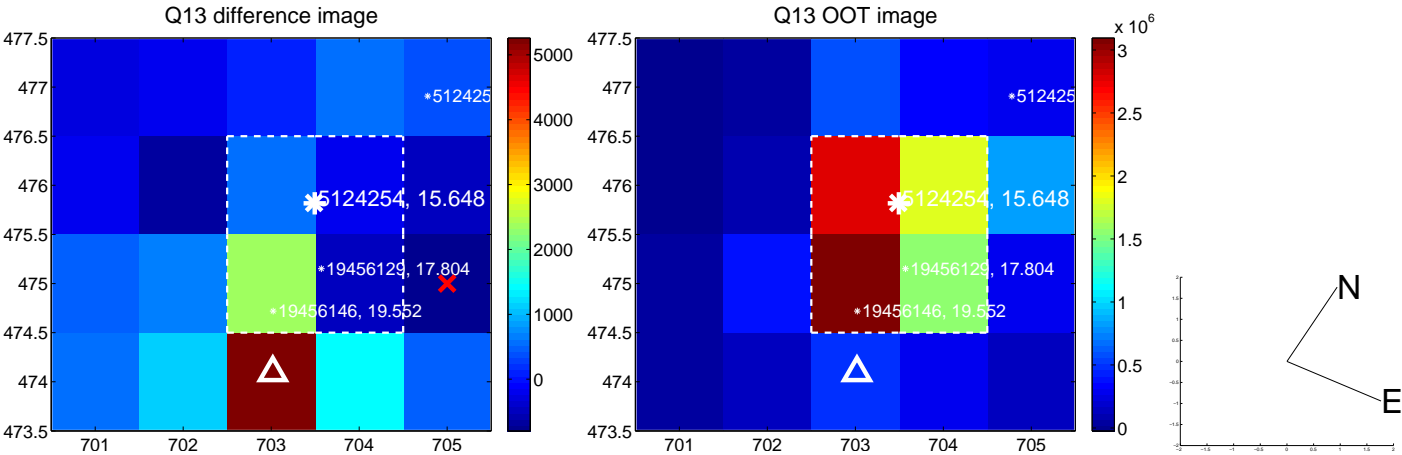
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



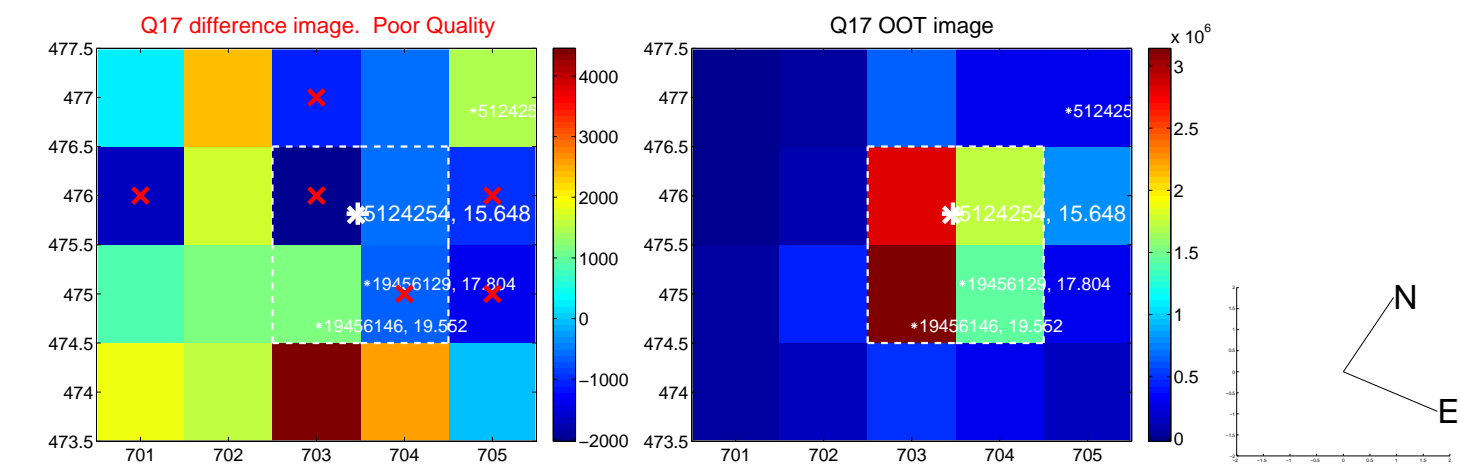
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



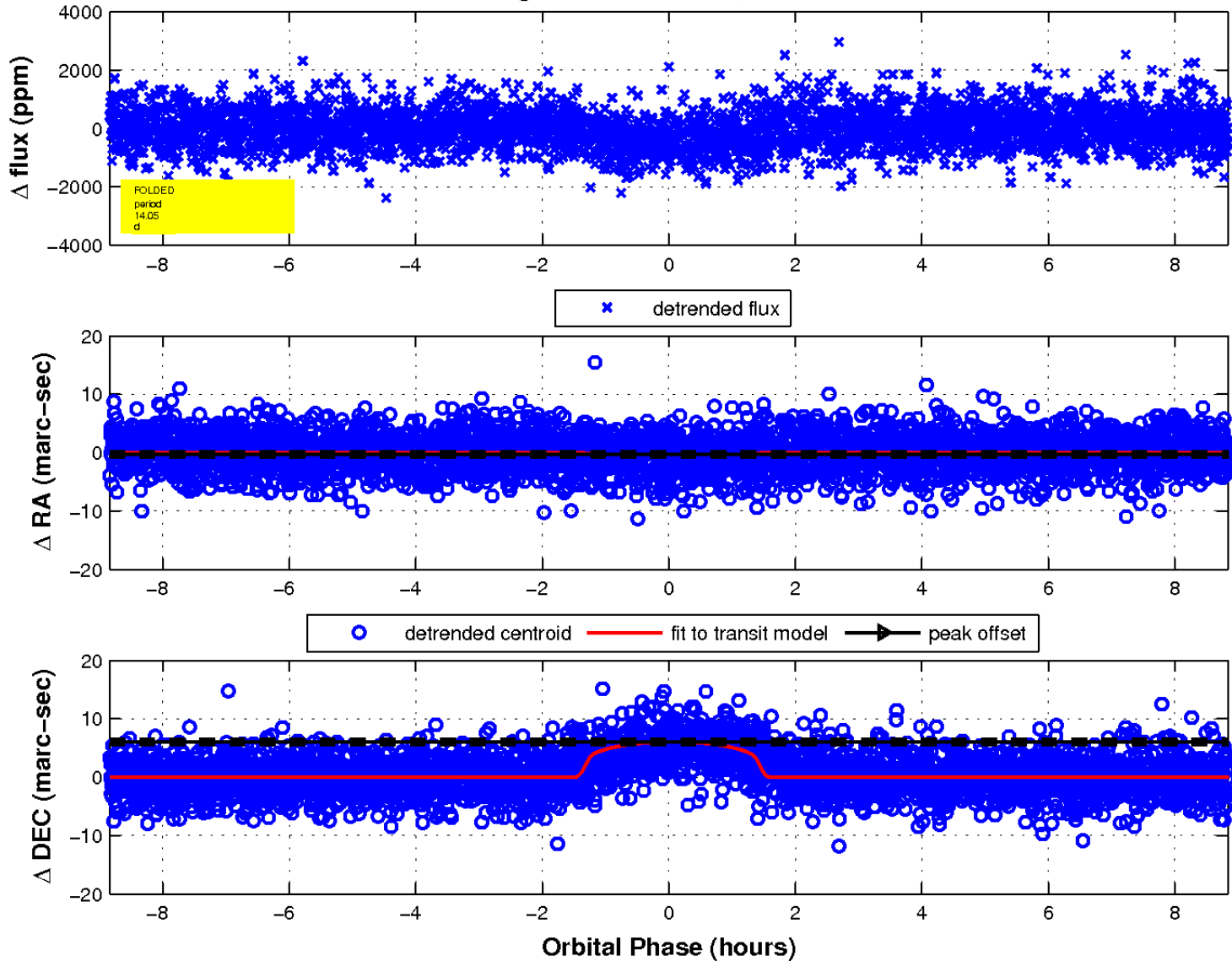
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

