

KIC 004178654

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})
004178654-01	OBS	No	0.731613	132.189633	95.6	4.775	14.9	15.3	2.14	6873	2.20	26016.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004178654-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

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

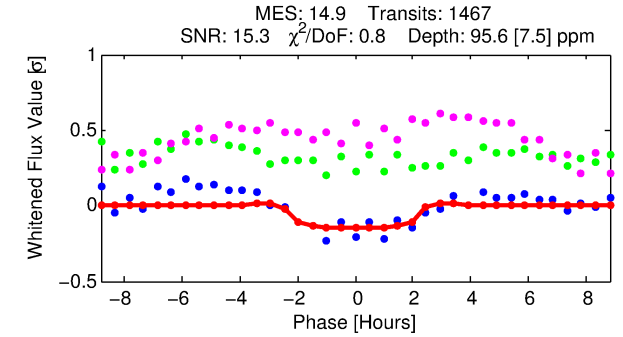
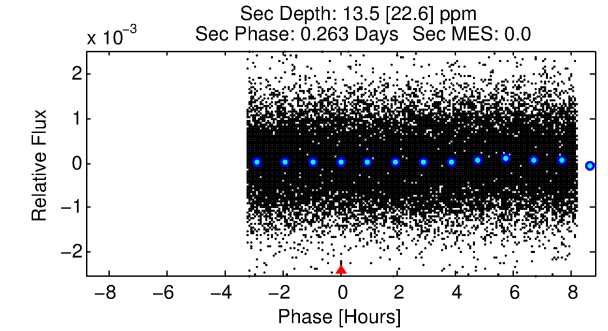
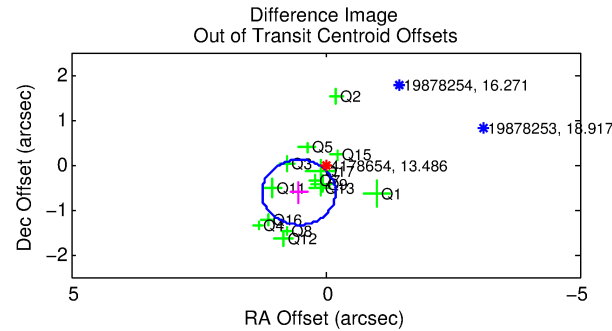
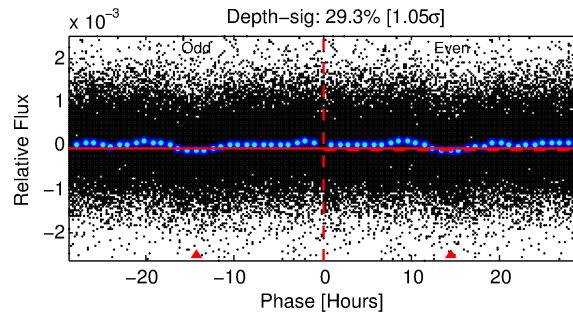
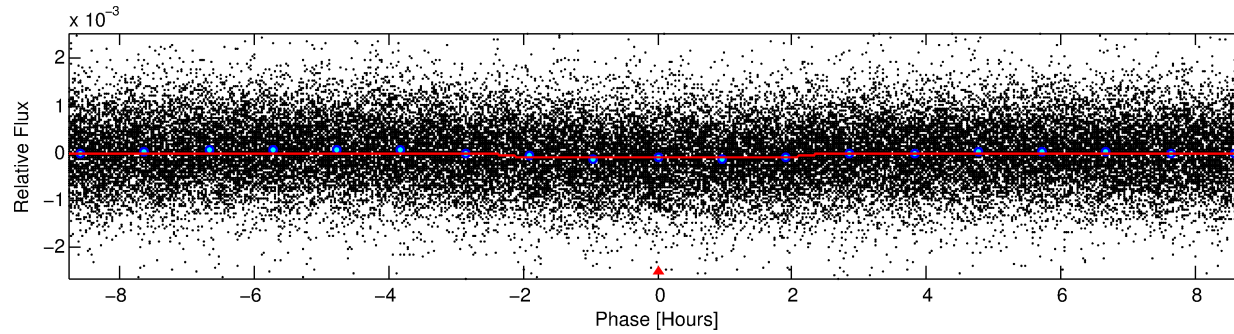
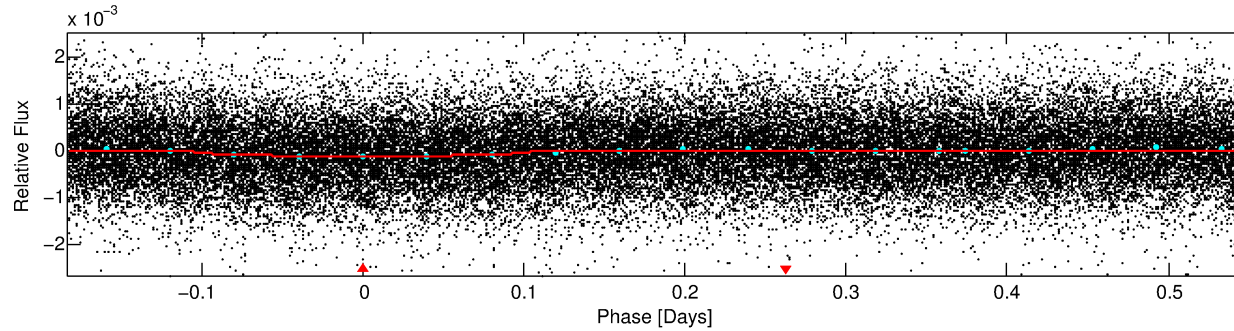
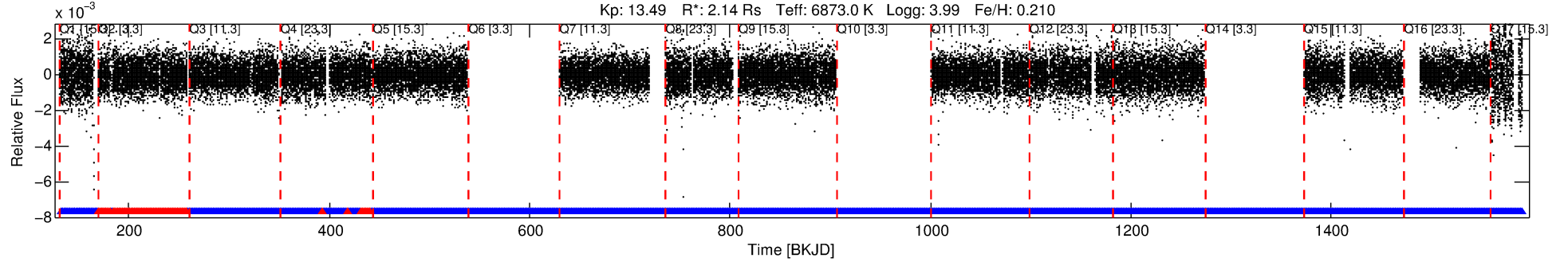
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004178654-01

No Significant Match Found

DV One-Page Summary

KIC: 4178654 Candidate: 1 of 1 Period: 0.732 d



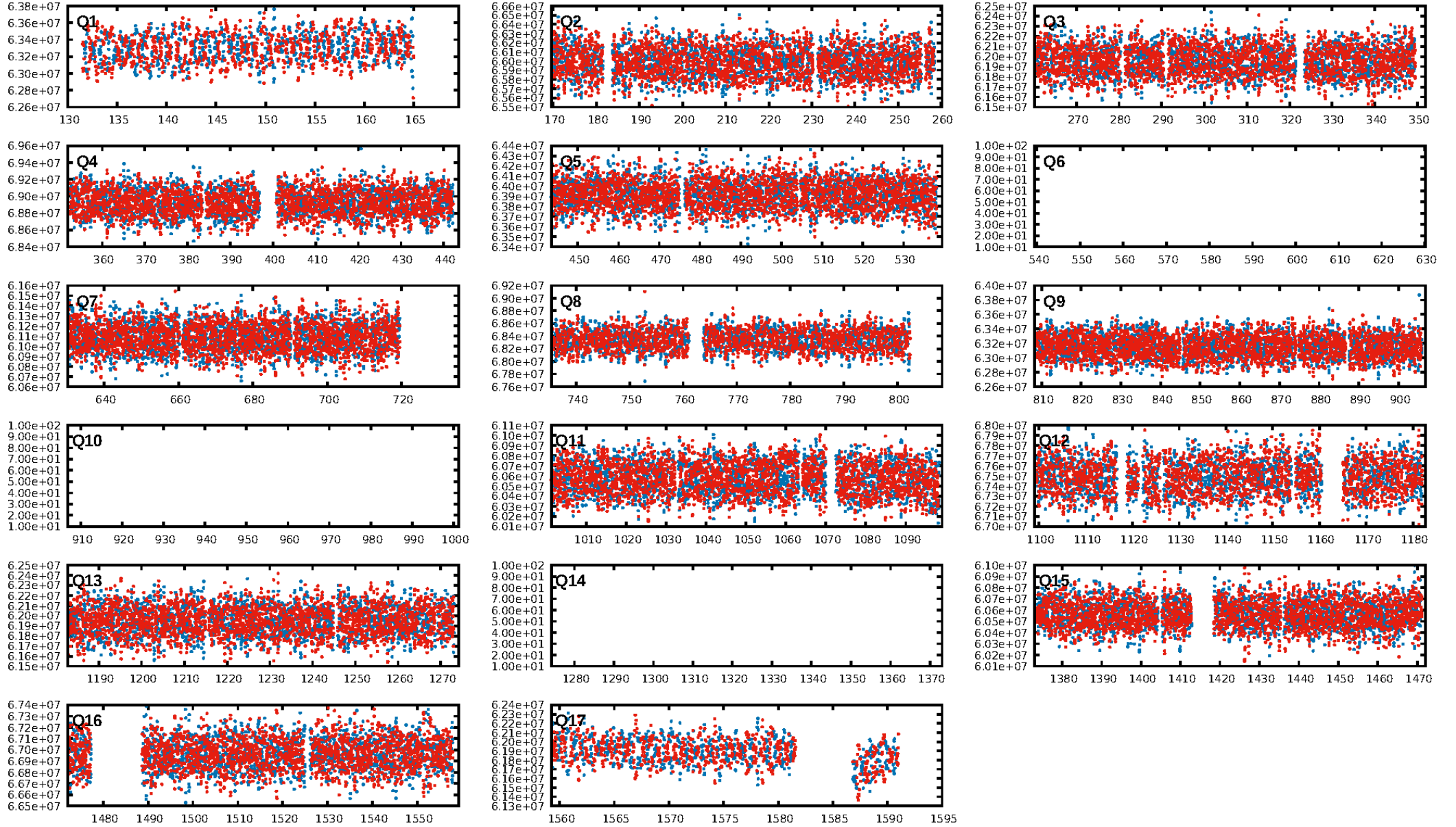
DV Fit Results:

Period = 0.73161 [0.00001] d
Epoch = 132.1896 [0.0033] BKJD
Rp/R* = 0.0094 [0.0062]
a/R* = 1.24 [1.59]
b = 0.59 [4.16]
Seff = 26016.81 [11439.54]
Teff = 3238 [356] K
Rp = 2.20 [1.59] Re
a = 0.0188 [0.0049] AU
Ag = 0.54 [1.18] [-0.39 σ]
Teffp = 4300 [2299] K [0.46 σ]

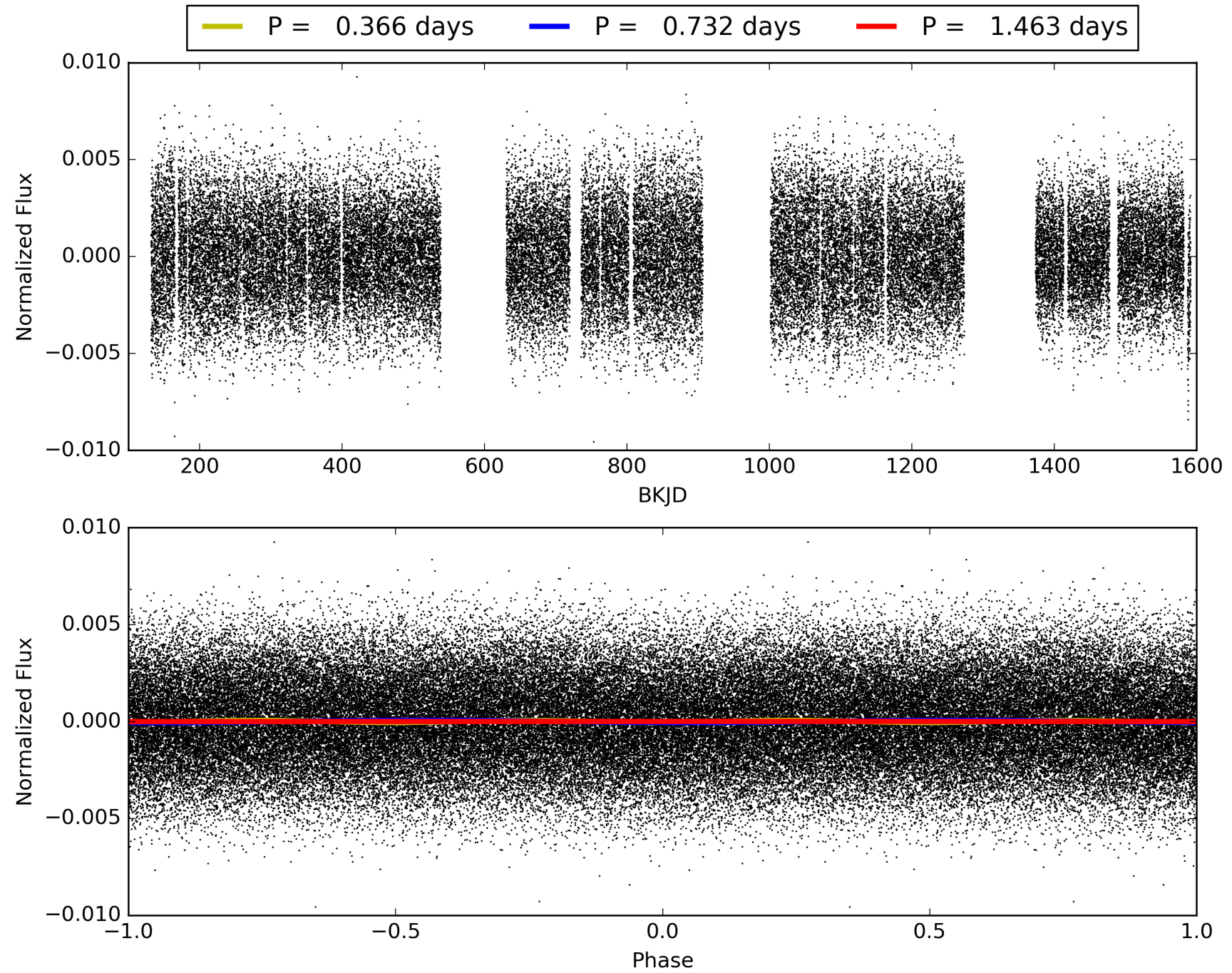
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.93e-33
RollingBand-fgt: 0.91 [1263/1384]
GhostDiagnostic-chr: 4.981
Centroid-sig: 0.0%
Centroid-so: 0.690 arcsec [1.68 σ]
OotOffset-rm: 0.809 arcsec [3.36 σ]
KicOffset-rm: 0.382 arcsec [1.97 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 004178654-01, PDC Light Curves

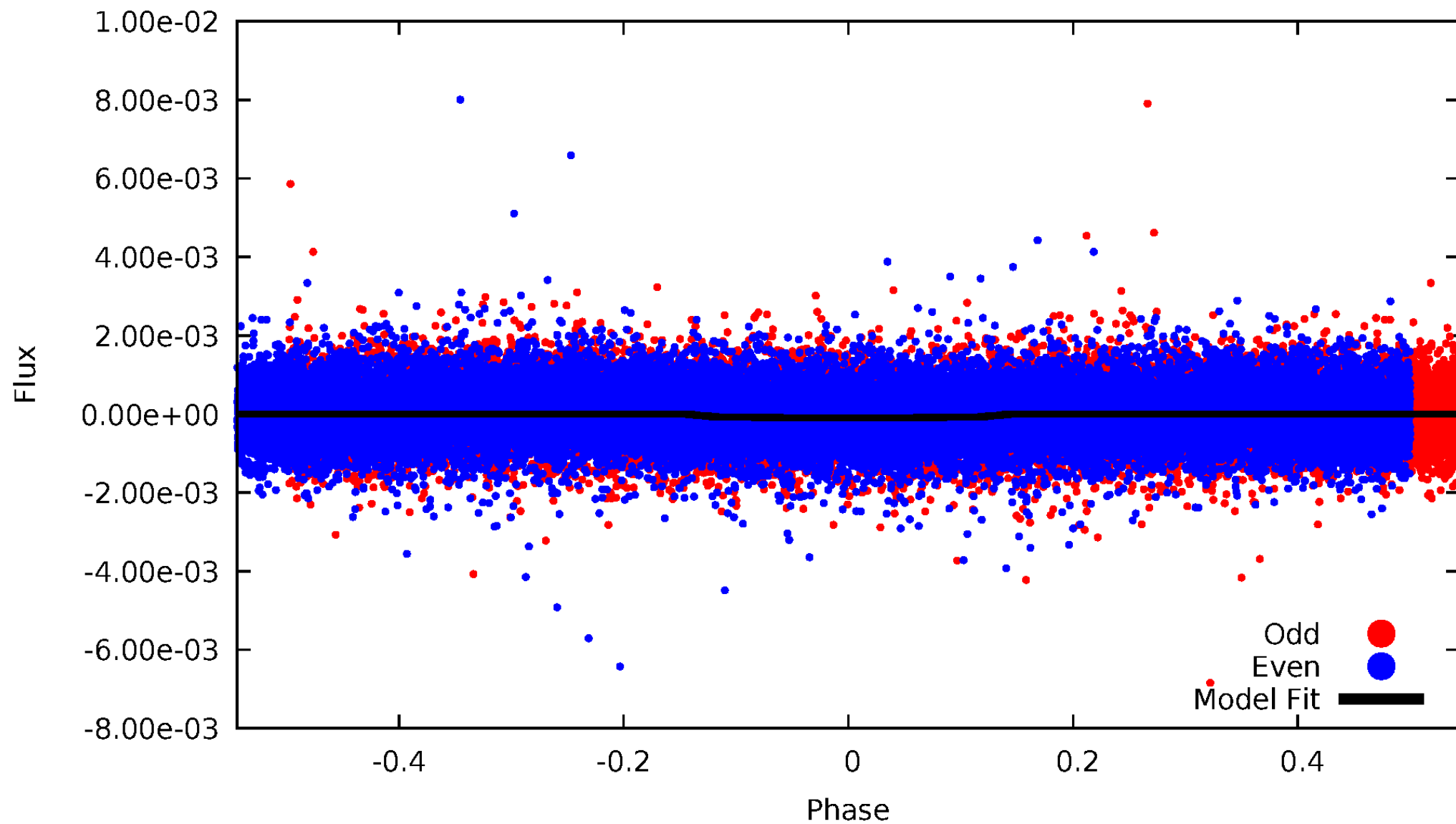


TCE 004178654-01



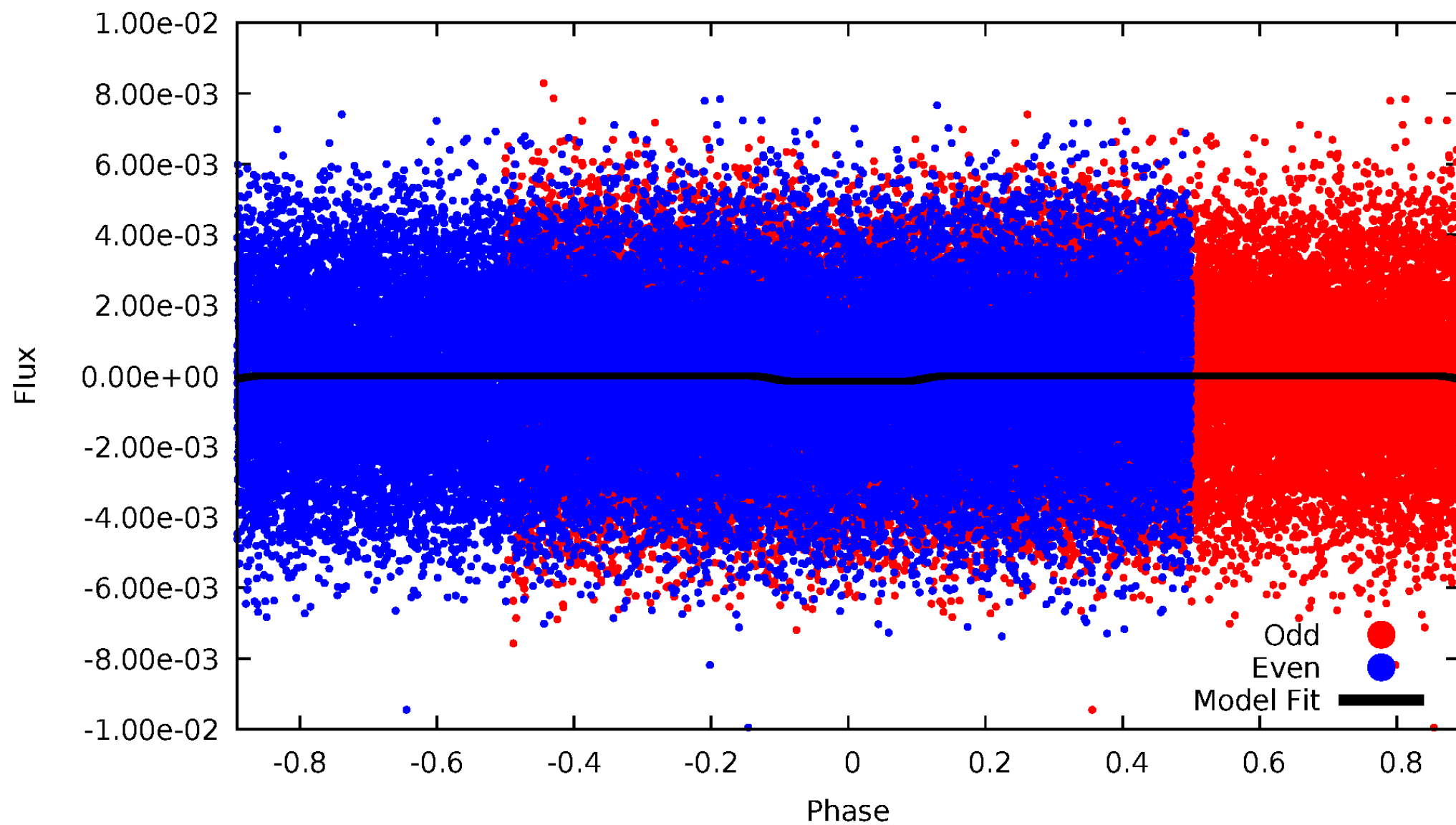
DV Odd/Even

TCE 004178654-01

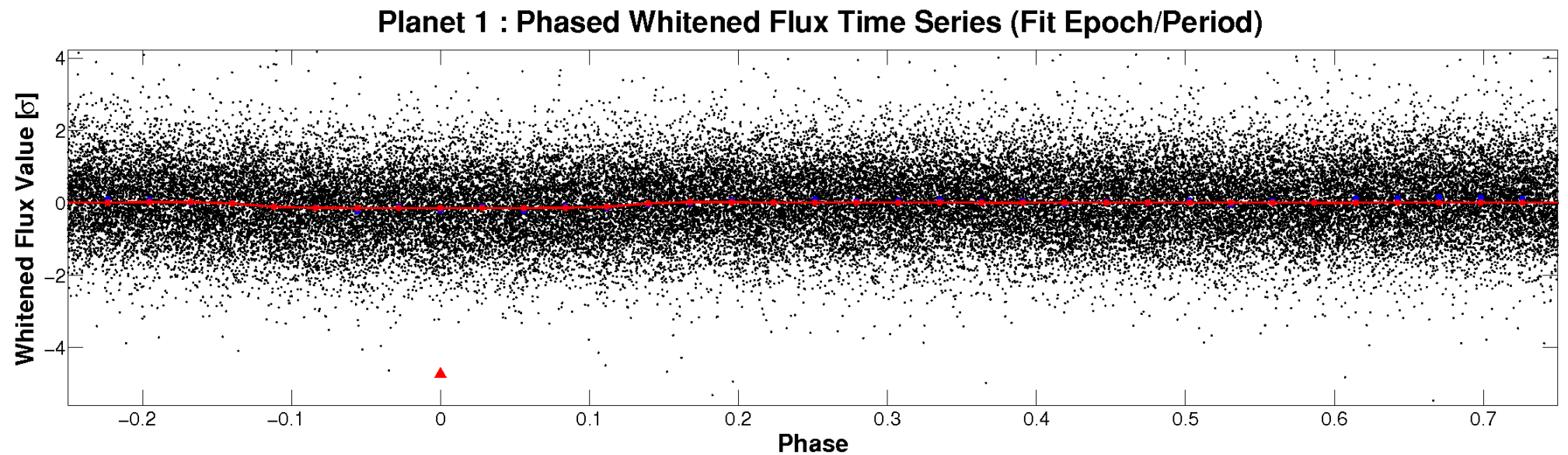
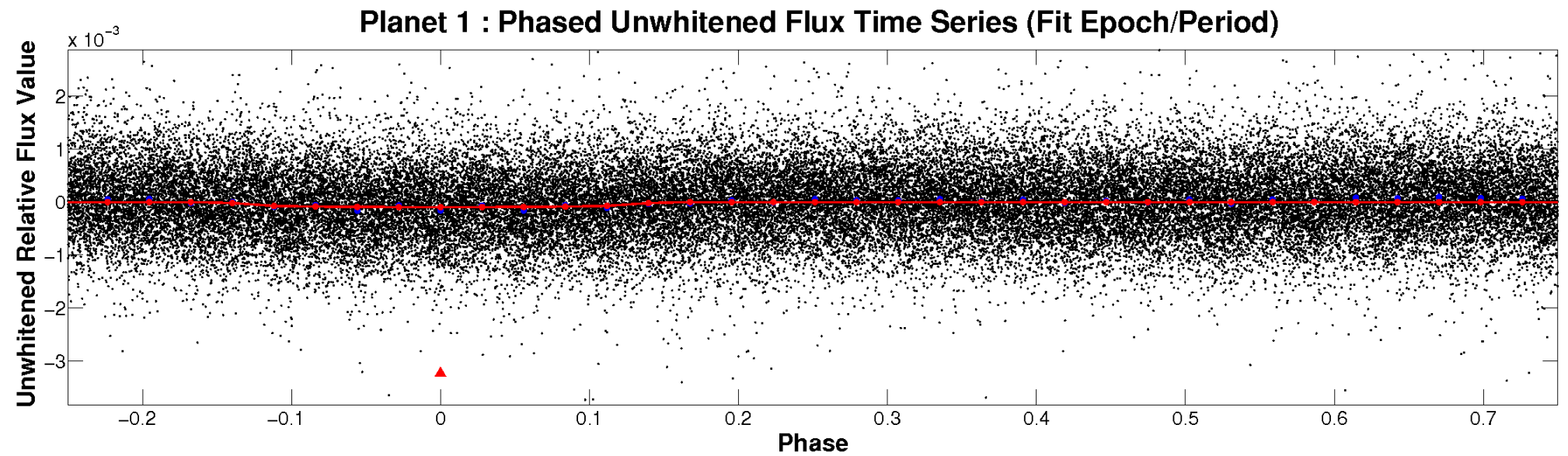


ALT Odd/Even

TCE 004178654-01

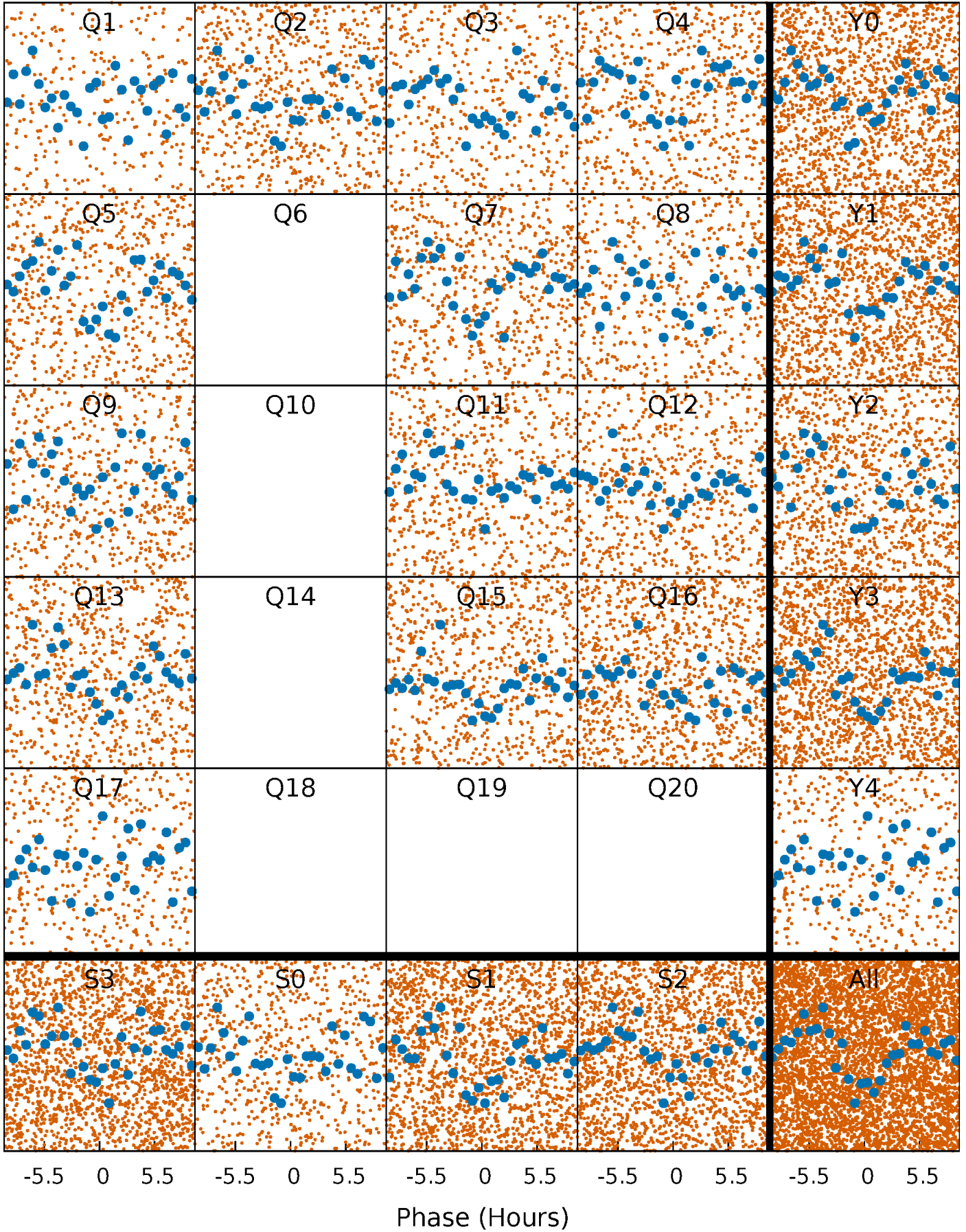


Non-Whitened Vs. Whitened Light Curve



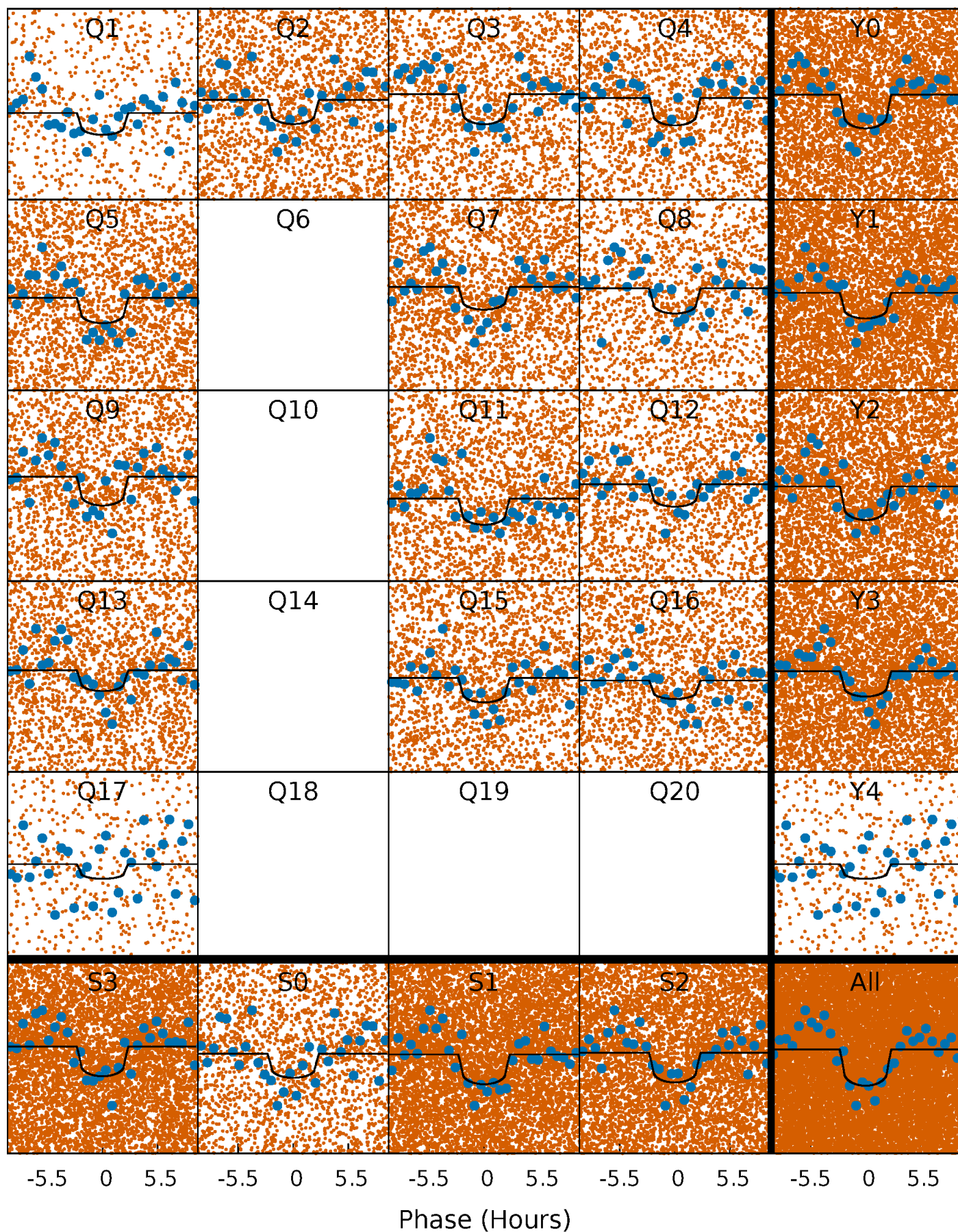
PDC Quarter-Phased Transit Curves

TCE 004178654-01 P= 0.731613 Days $T_0=132.189632$ (BKJD)



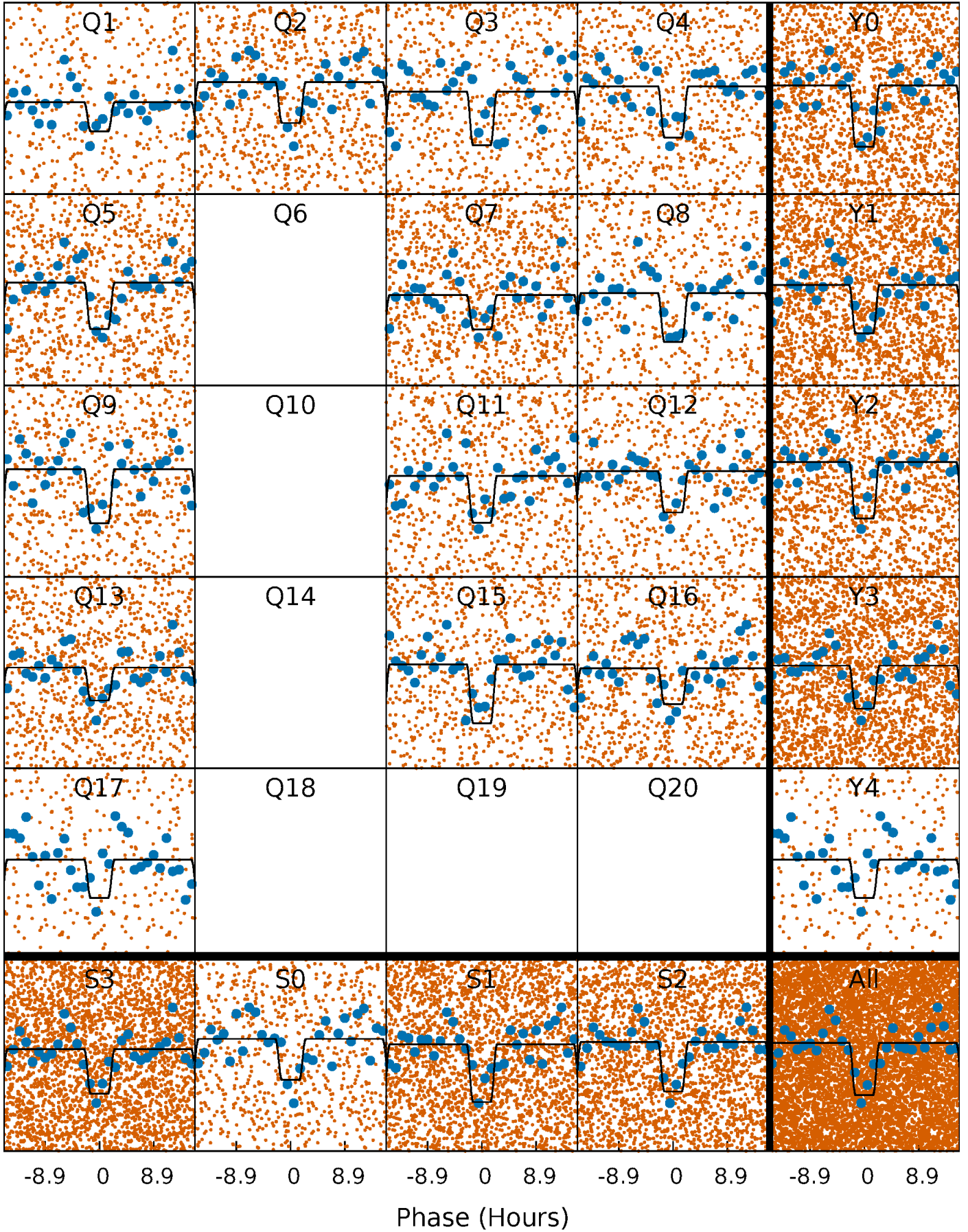
DV Quarter-Phased Transit Curves

TCE 004178654-01 P= 0.731613 Days $T_0=132.189632$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

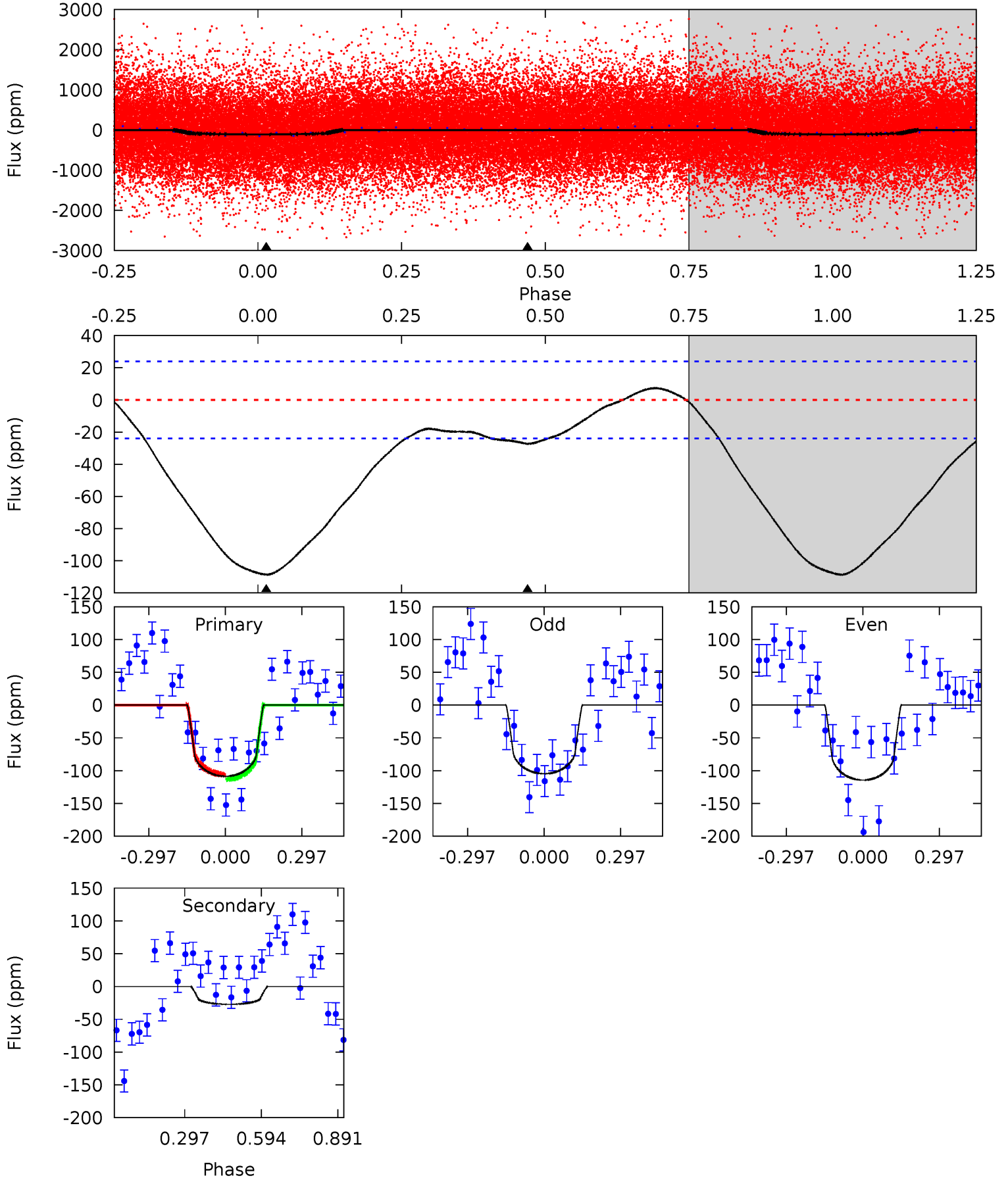
TCE 004178654-01 P= 0.731686 Days $T_0=132.124027$ (BKJD)



DV Model-Shift Uniqueness Test

004178654-01, P = 0.731613 Days, E = 131.458019 Days

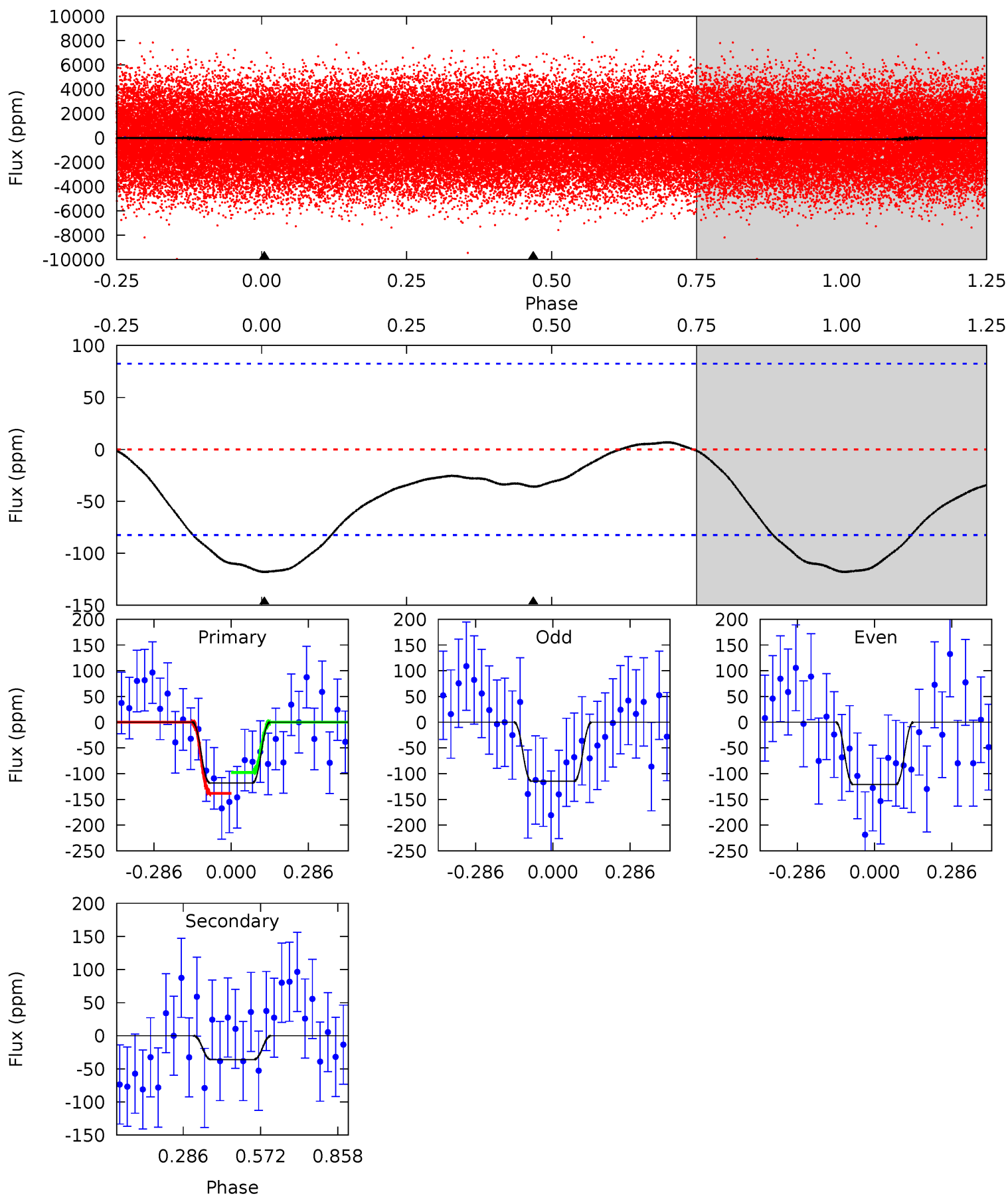
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.6	4.92	0	0	4.33	1.04	1.76	19.6	19.6	4.92	4.92	0.90	1.02	0.06	0.61



Alt Model-Shift Uniqueness Test

004178654-01, P = 0.731686 Days, E = 131.392341 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.21	1.89	0	0	4.34	1.07	0.74	6.21	6.21	1.89	1.89	0.17	0.97	0.06	1.07



Stellar Parameters For KIC 004178654

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6873^{+192}_{-288}	$3.994^{+0.234}_{-0.175}$	$0.210^{+0.150}_{-0.350}$	$2.144^{+0.612}_{-0.612}$	$1.654^{+0.197}_{-0.320}$	$0.236^{+0.315}_{-0.119}$
	+3%/-4%	+6%/-4%	+71%/-167%	+29%/-29%	+12%/-19%	+133%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004178654-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-27 ± 6	$2.28^{+1.47}_{-1.30}$	4496^{+346}_{-375}	4626^{+2801}_{-1547}	$1.039^{+3.905}_{-0.678}$
Alt.	-36 ± 19	$2.82^{+1.68}_{-1.27}$	4483^{+374}_{-400}	4317^{+1911}_{-7426}	$0.802^{+2.123}_{-0.567}$

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 $A_{obs} \gg 1.0$

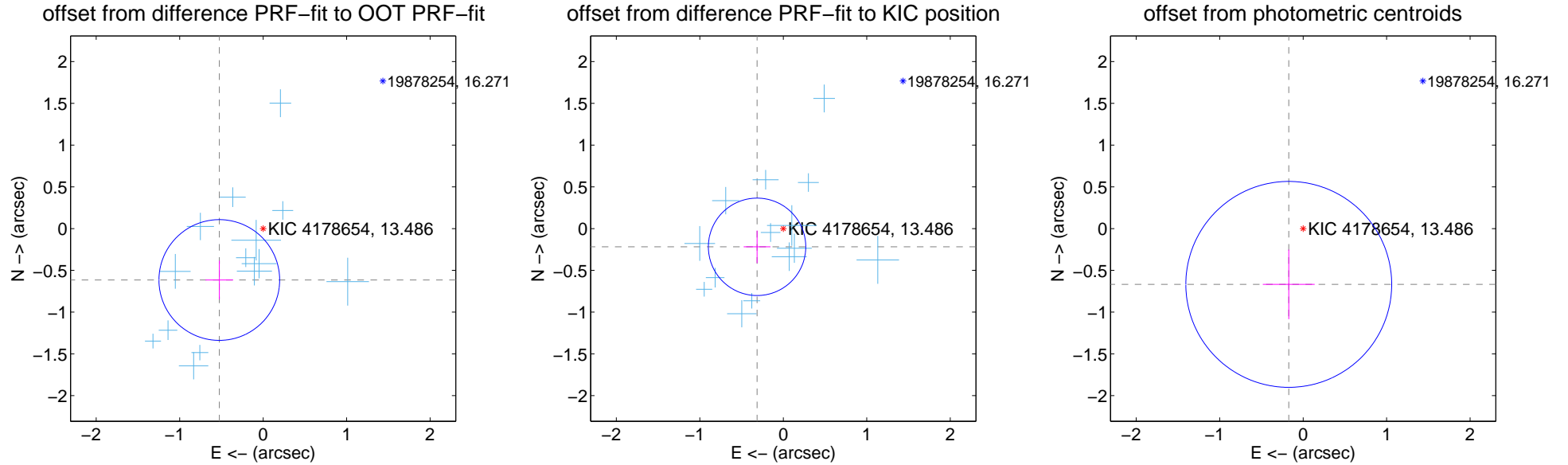
DV Centroid Data

Supplemental centroid analysis for 004178654-01. Kepler magnitude: 13.49. Transit SNR 15.29

There are 14 quarters with good PRF difference image offsets

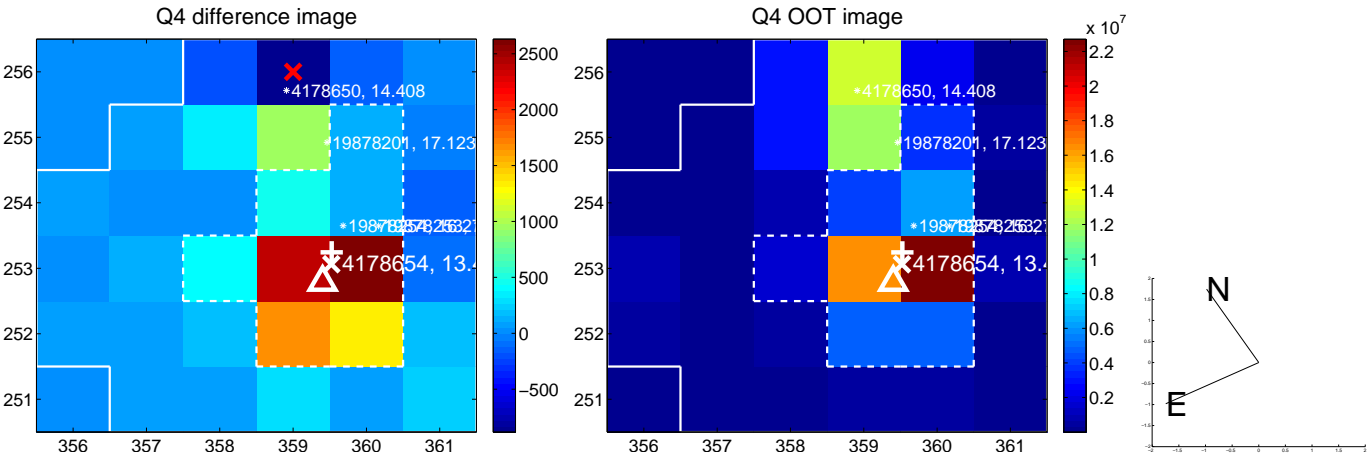
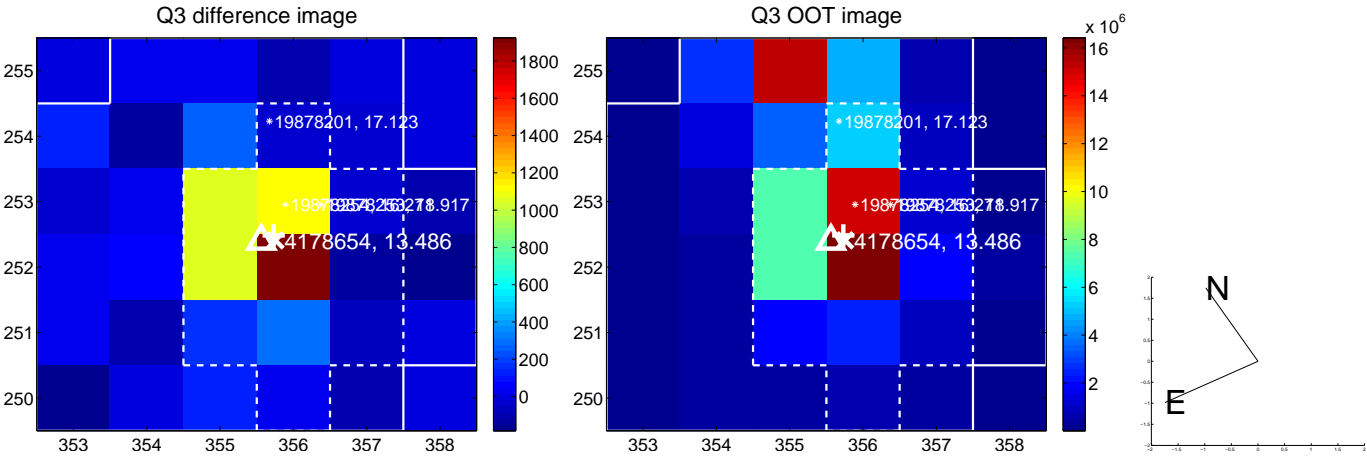
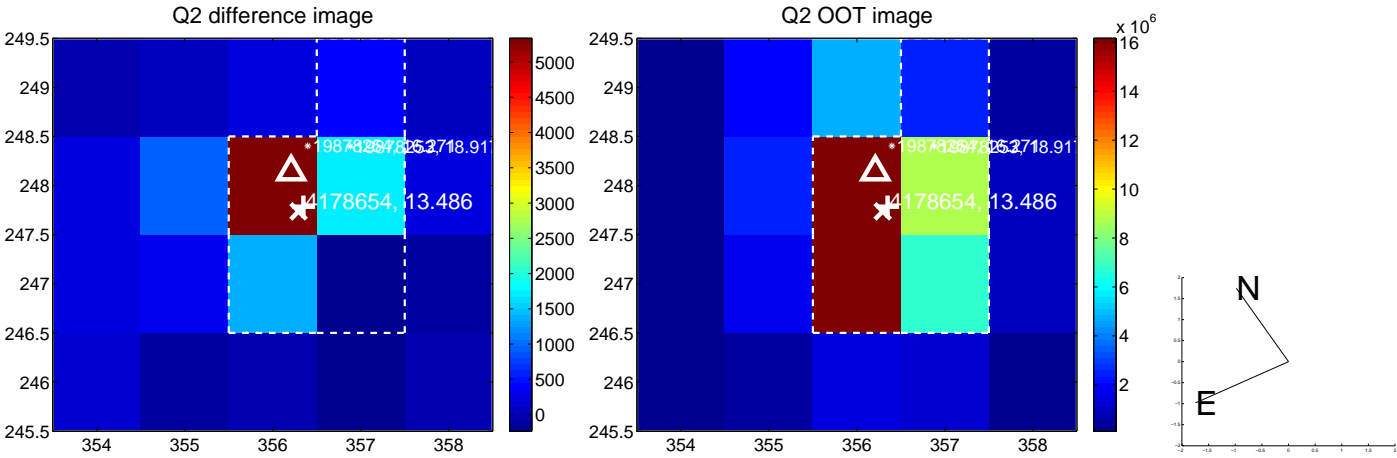
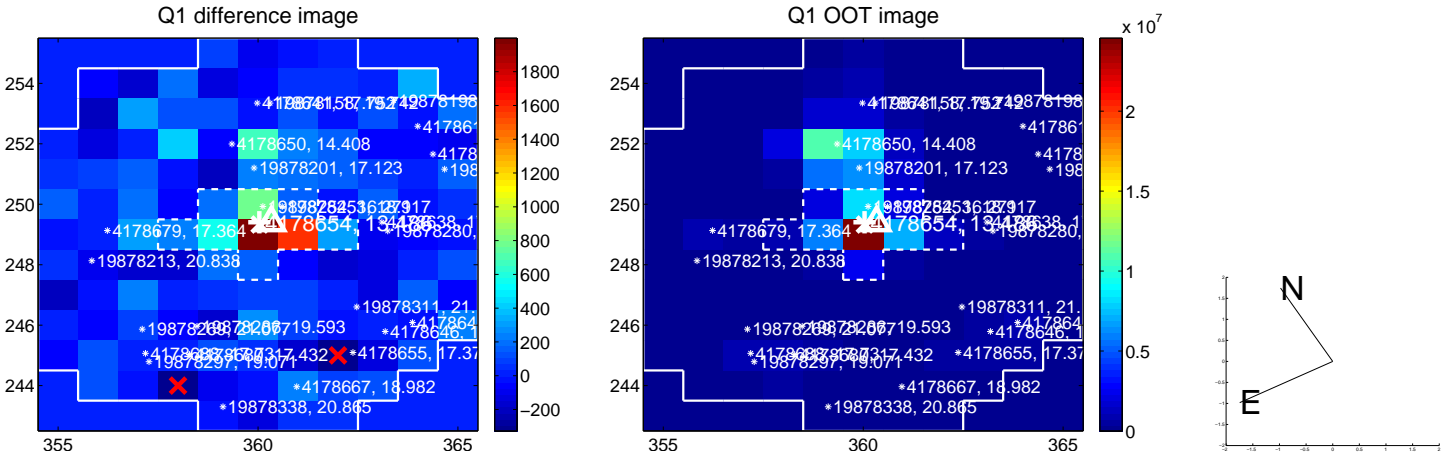
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.809 ± 0.241	3.36	0.525 ± 0.165	-0.616 ± 0.231
PRF-fit source offset from KIC position	0.382 ± 0.194	1.97	0.314 ± 0.160	-0.218 ± 0.195
photometric centroid source offset	0.69 ± 0.41	1.68	0.17 ± 0.31	-0.67 ± 0.42

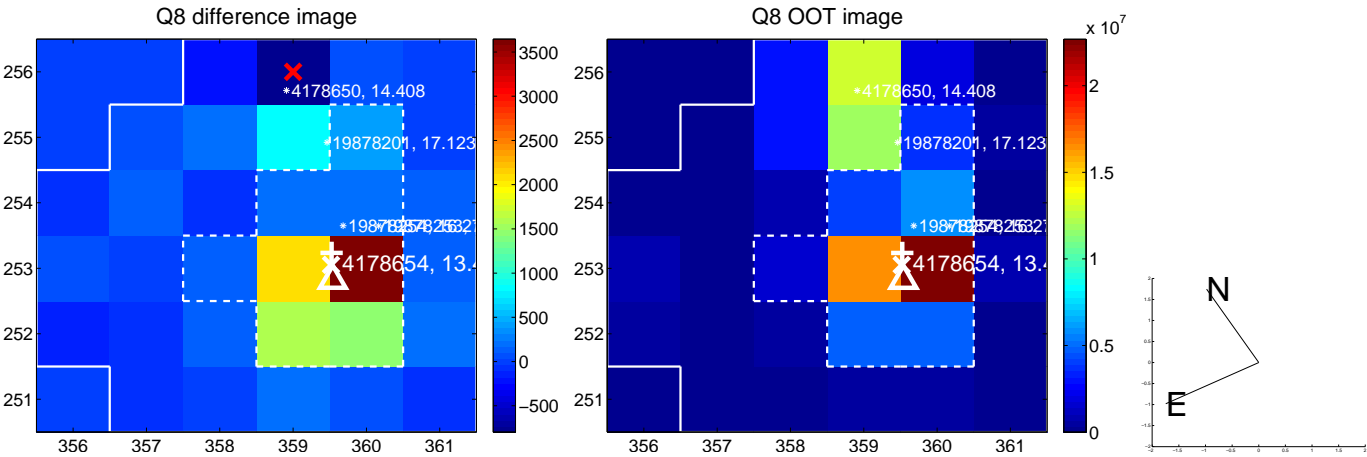
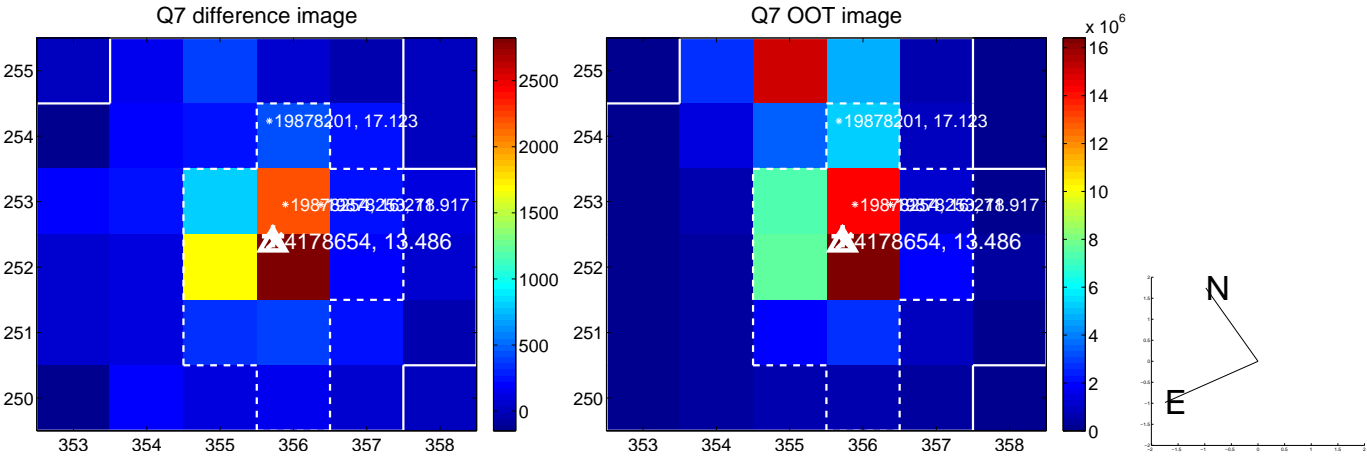
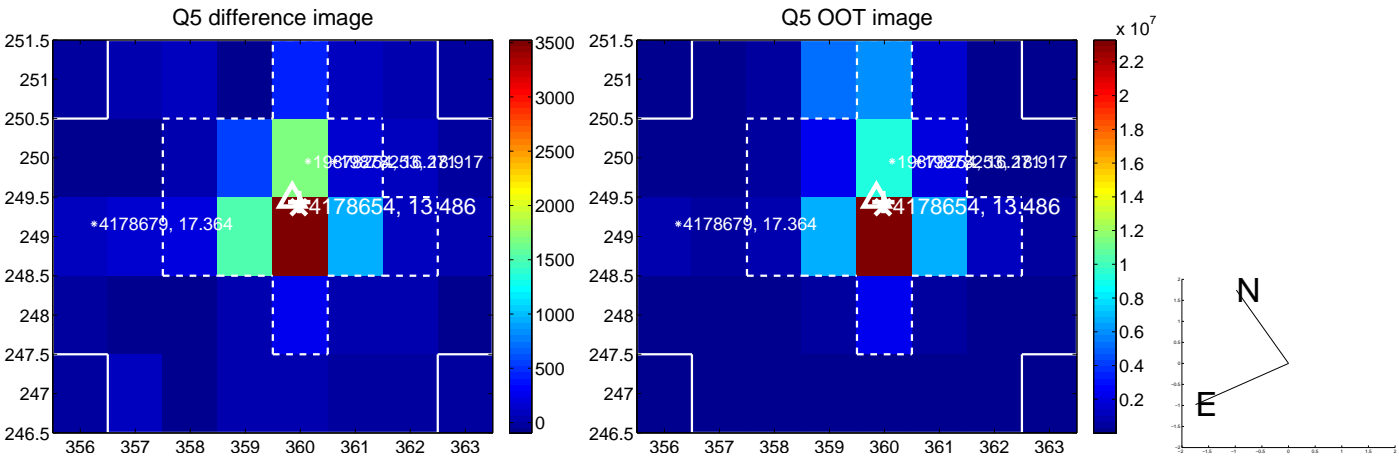


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

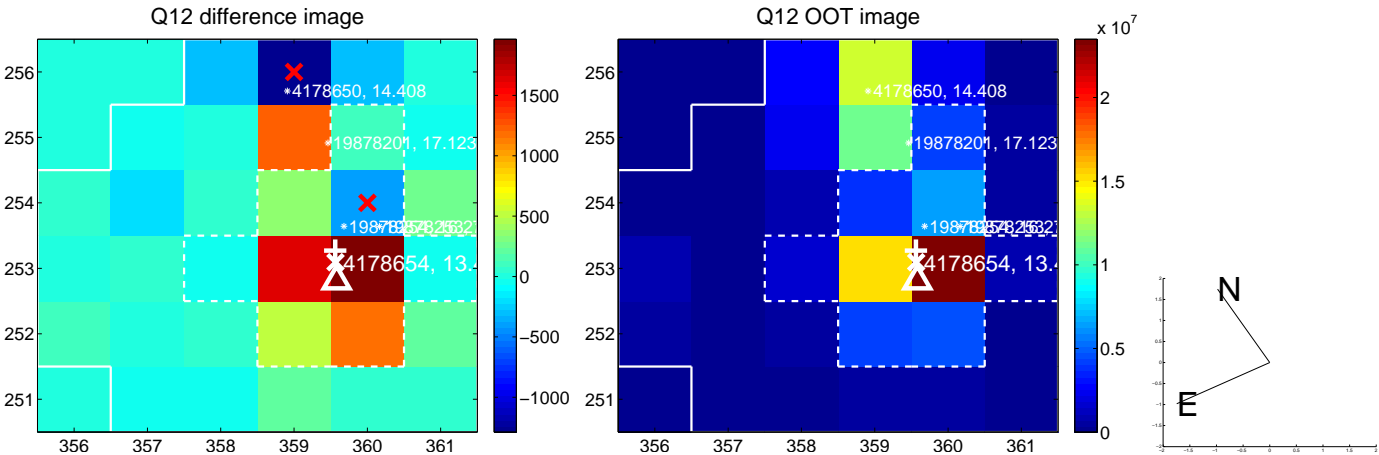
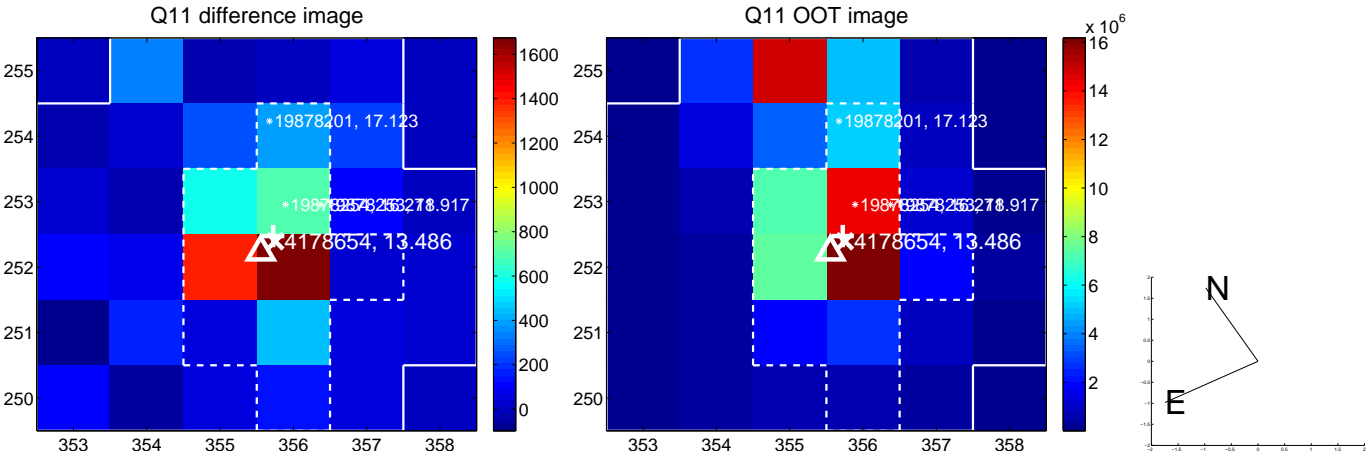
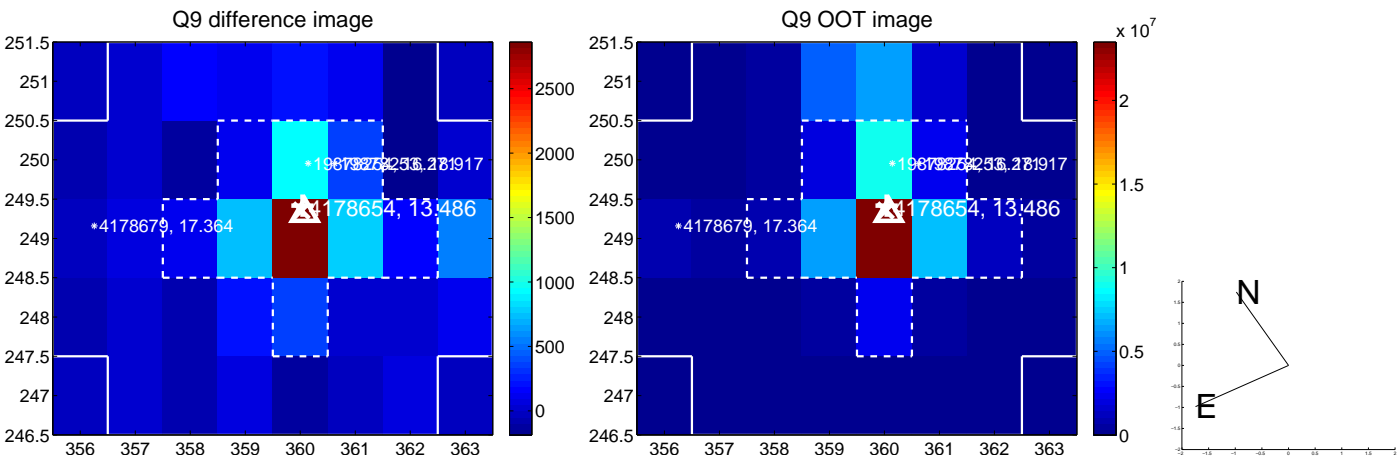
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



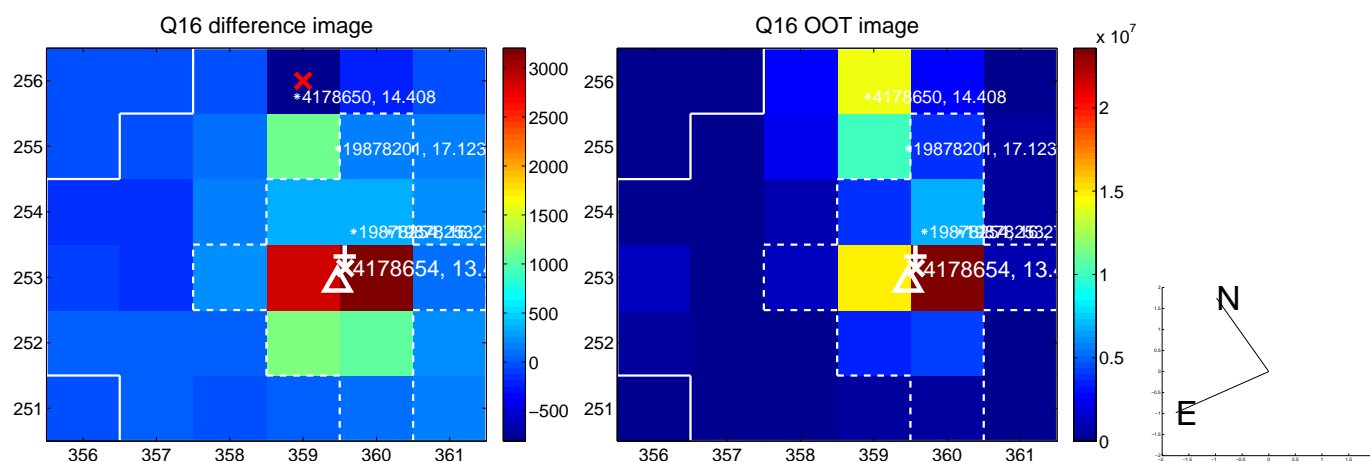
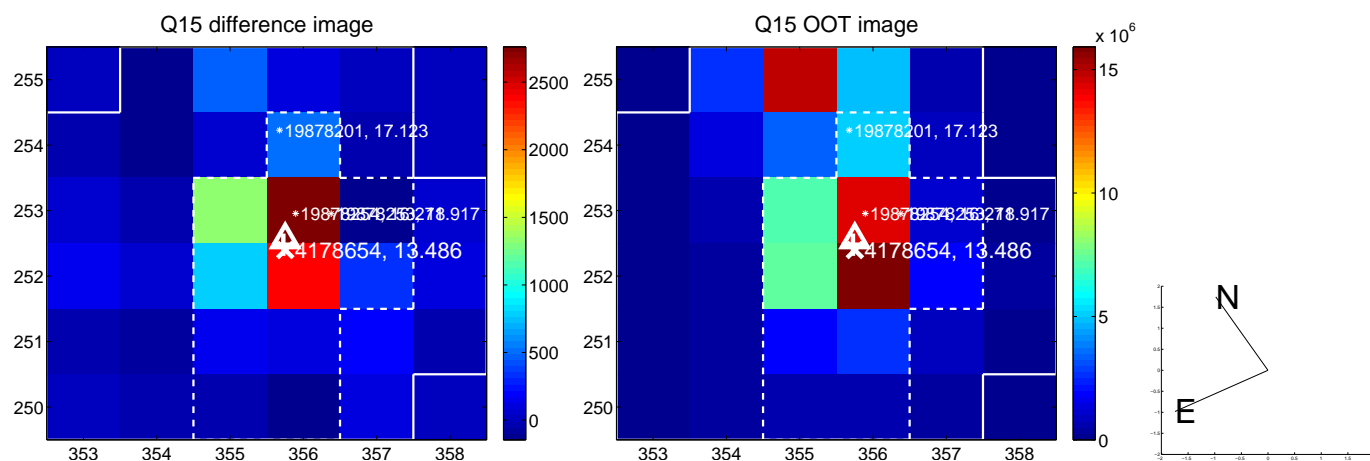
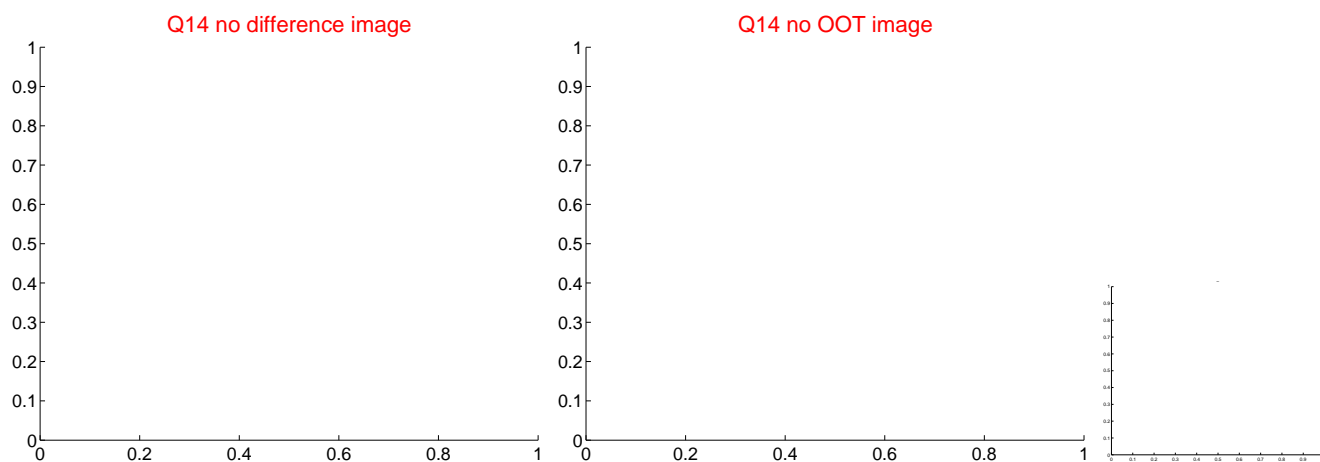
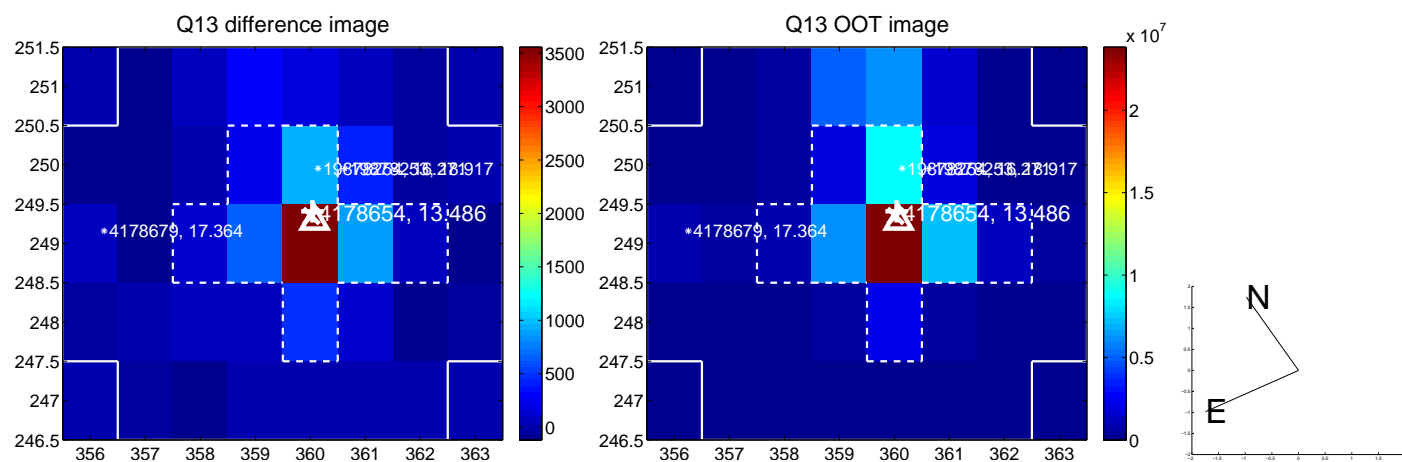
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



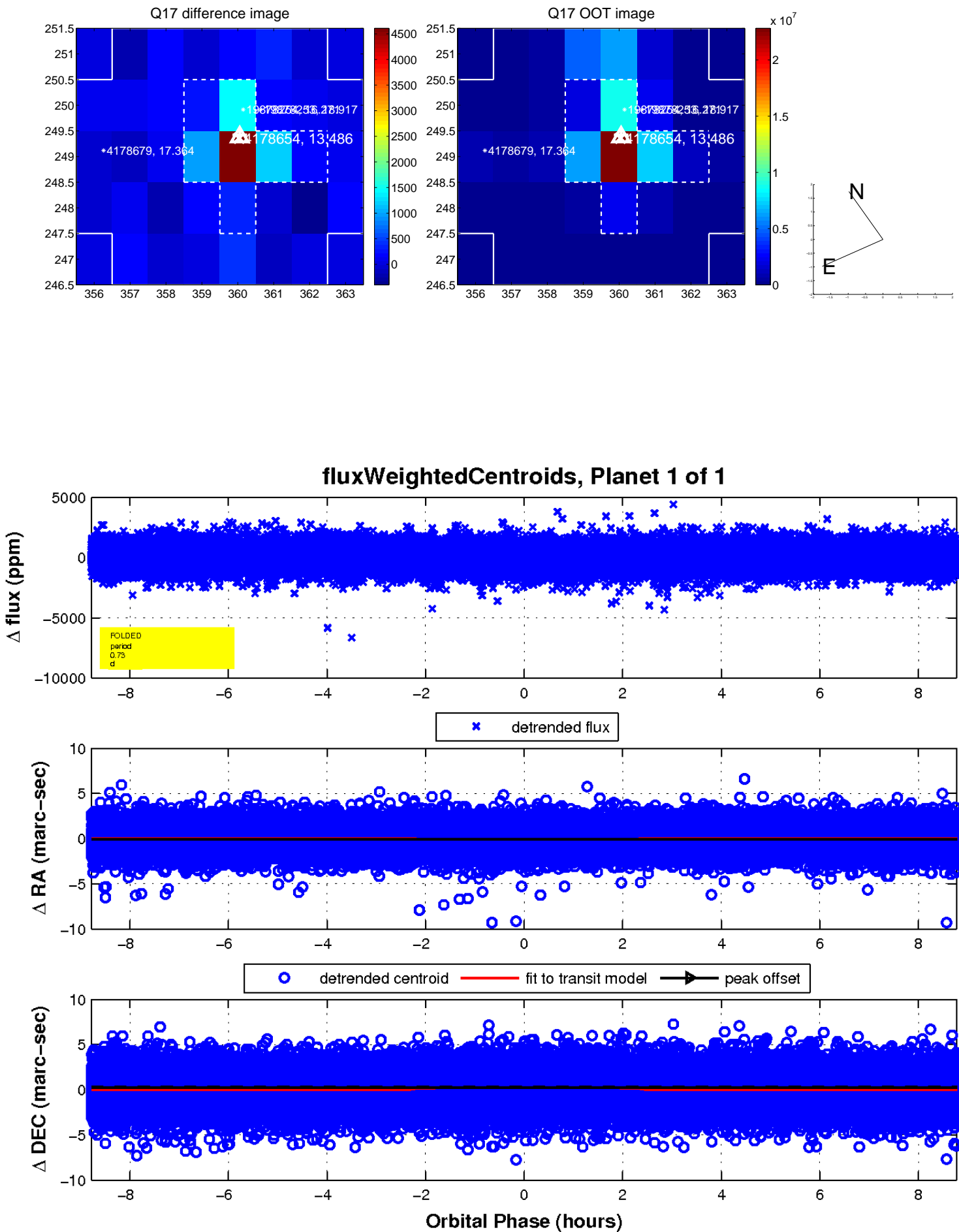
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

