

KIC 004470141

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})
004470141-01	OBS	No	0.654799	132.049505	52.7	5.234	8.4	9.7	1.08	6240	0.78	6680.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004470141-01	OBS	FP	0.00	1	0	0	0	LPP_DV

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

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

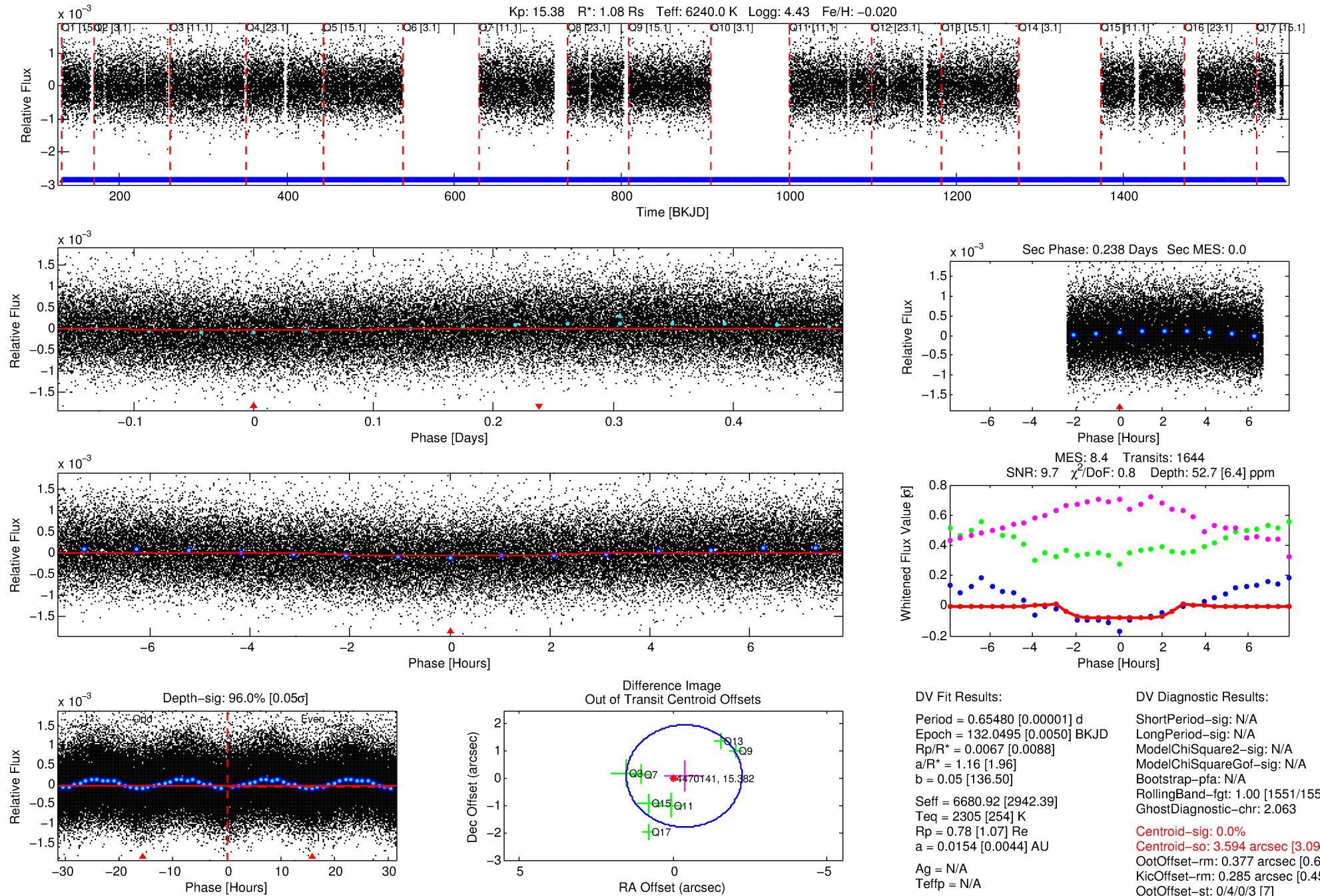
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004470141-01

No Significant Match Found

DV One-Page Summary

KIC: 4470141 Candidate: 1 of 1 Period: 0.655 d



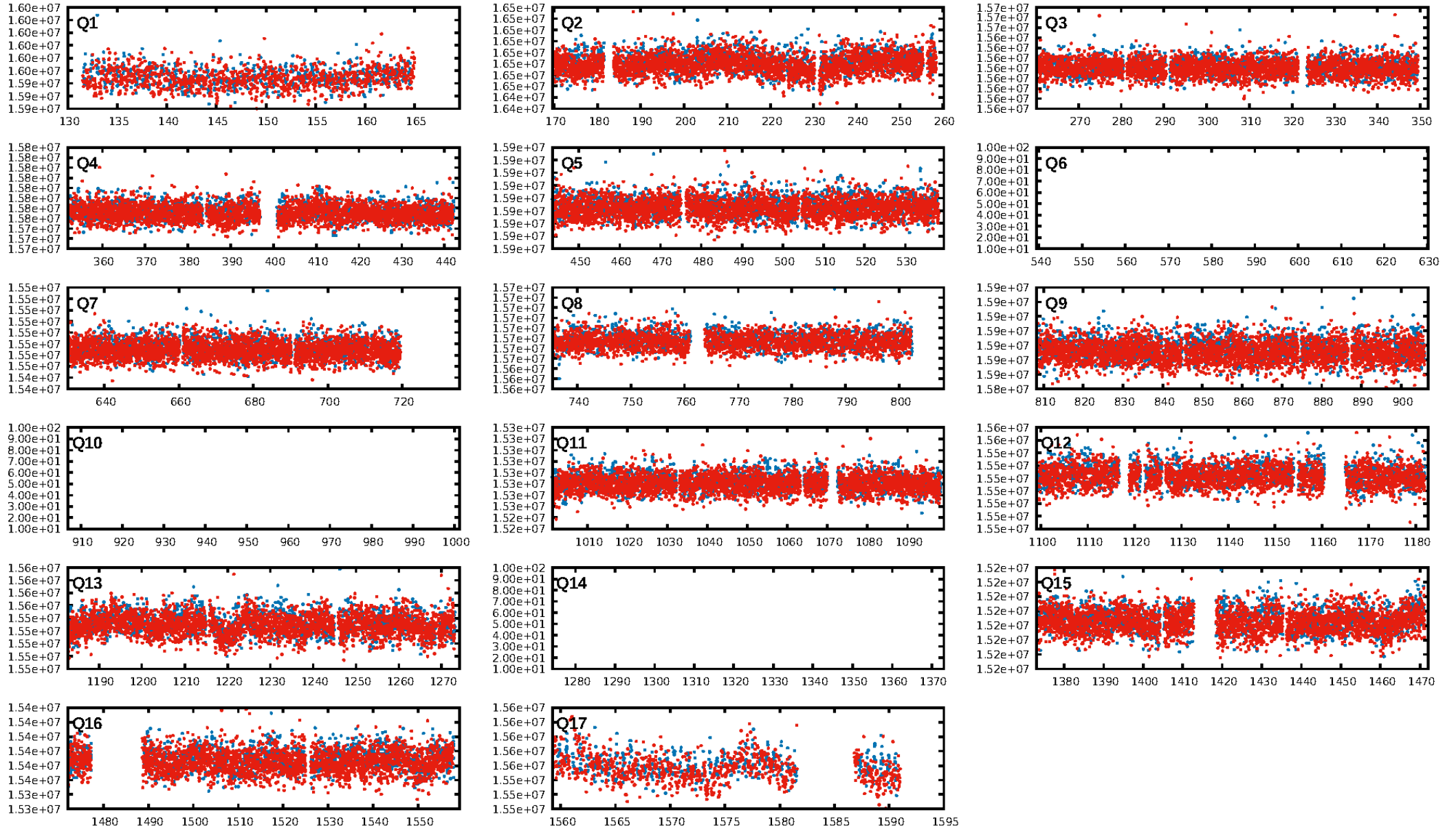
DV Fit Results:

Period = 0.65480 [0.00001] d
Epoch = 132.0495 [0.0050] BKJD
Rp/R* = 0.0067 [0.0088]
a/R* = 1.16 [1.96]
b = 0.05 [136.50]
Seff = 6680.92 [2942.39]
Teff = 2305 [254] K
Rp = 0.78 [1.07] Re
a = 0.0154 [0.0044] AU
Ag = N/A
Teffp = N/A

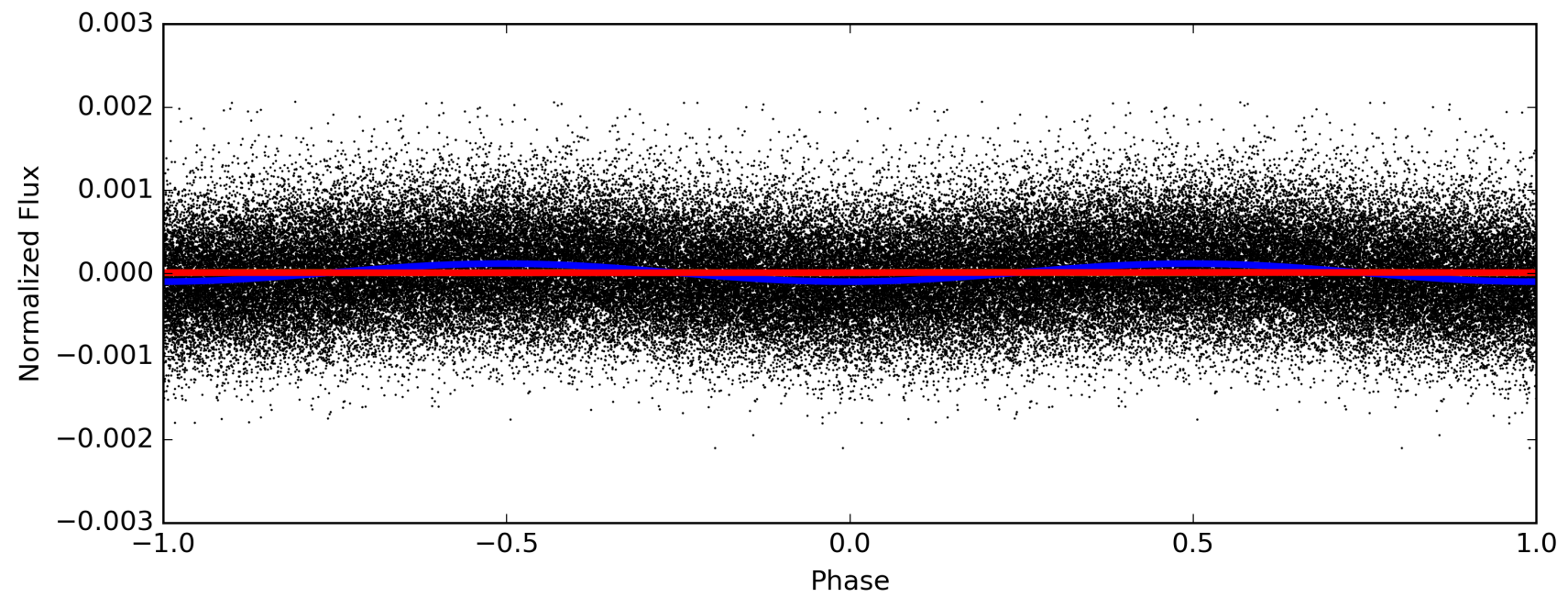
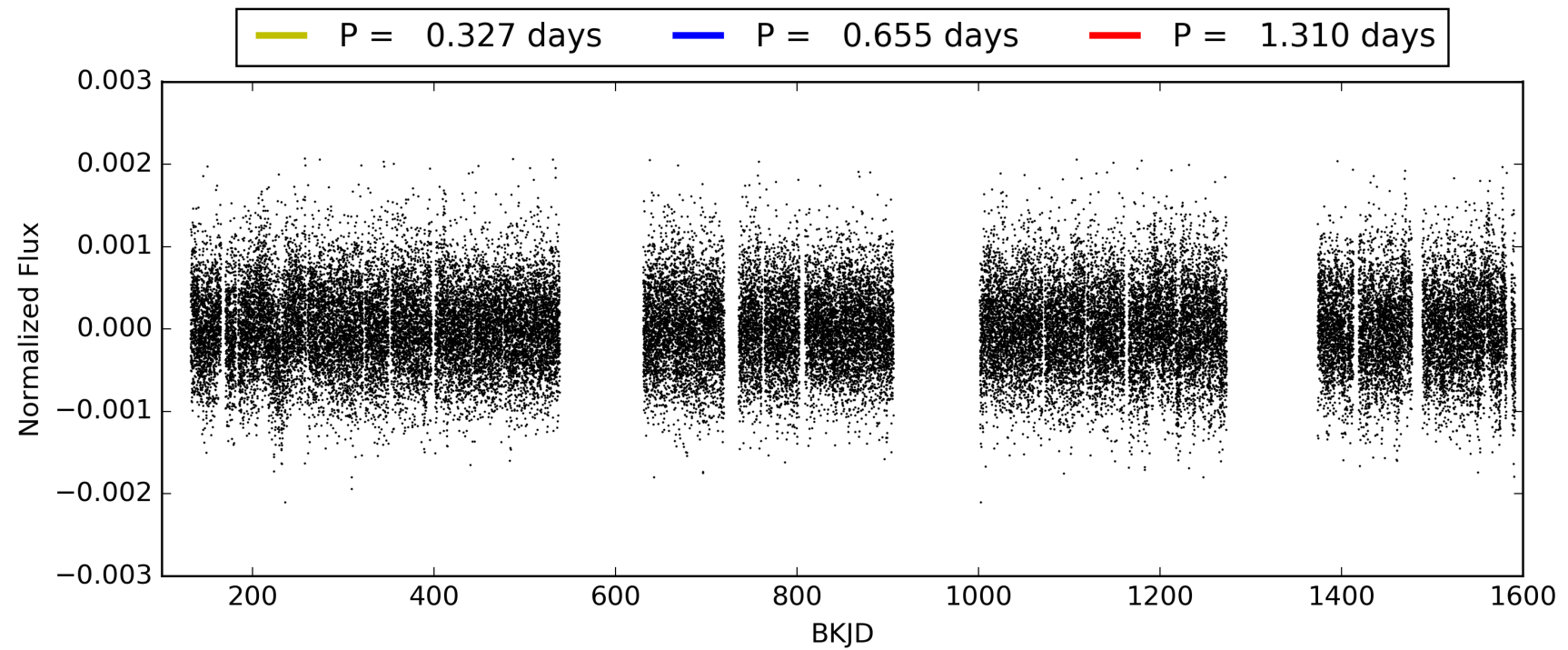
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1551/1551]
GhostDiagnostic-chr: 2.063
Centroid-sig: 0.0%
Centroid-so: 3.594 arcsec [3.09 σ]
OotOffset-rm: 0.377 arcsec [0.60 σ]
KicOffset-rm: 0.285 arcsec [0.45 σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 1.00 [7/7]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 004470141-01, PDC Light Curves

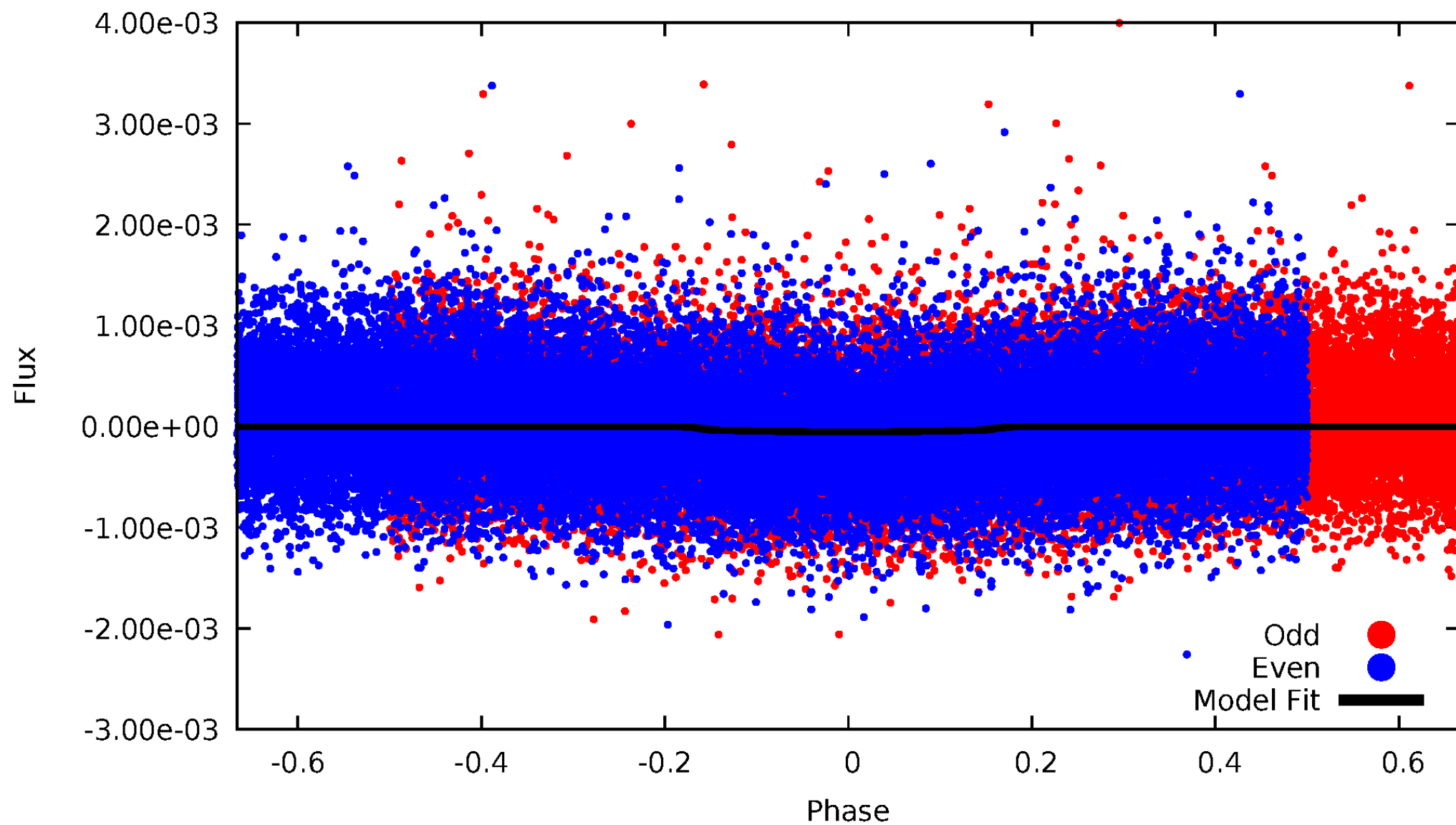


TCE 004470141-01



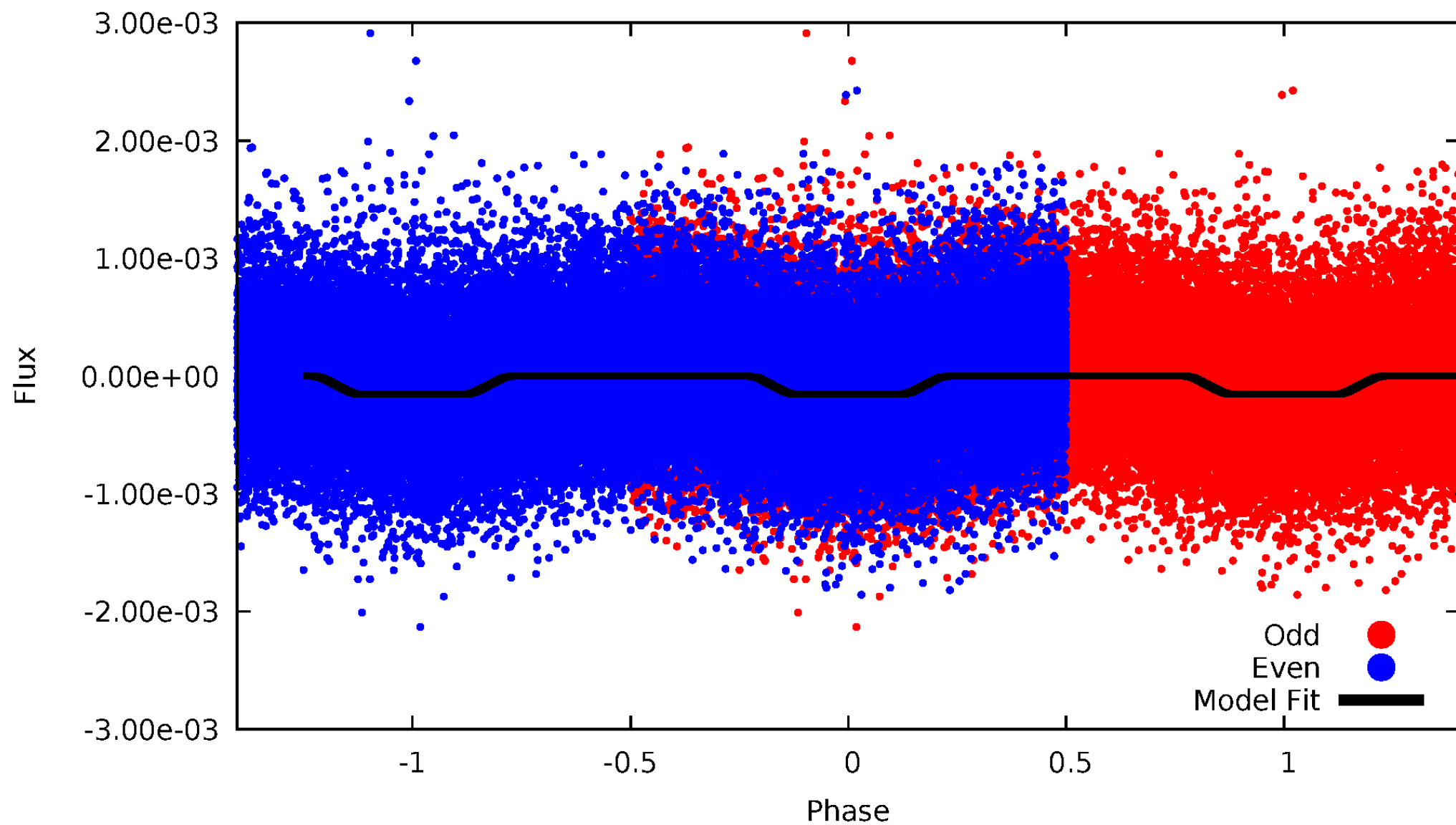
DV Odd/Even

TCE 004470141-01

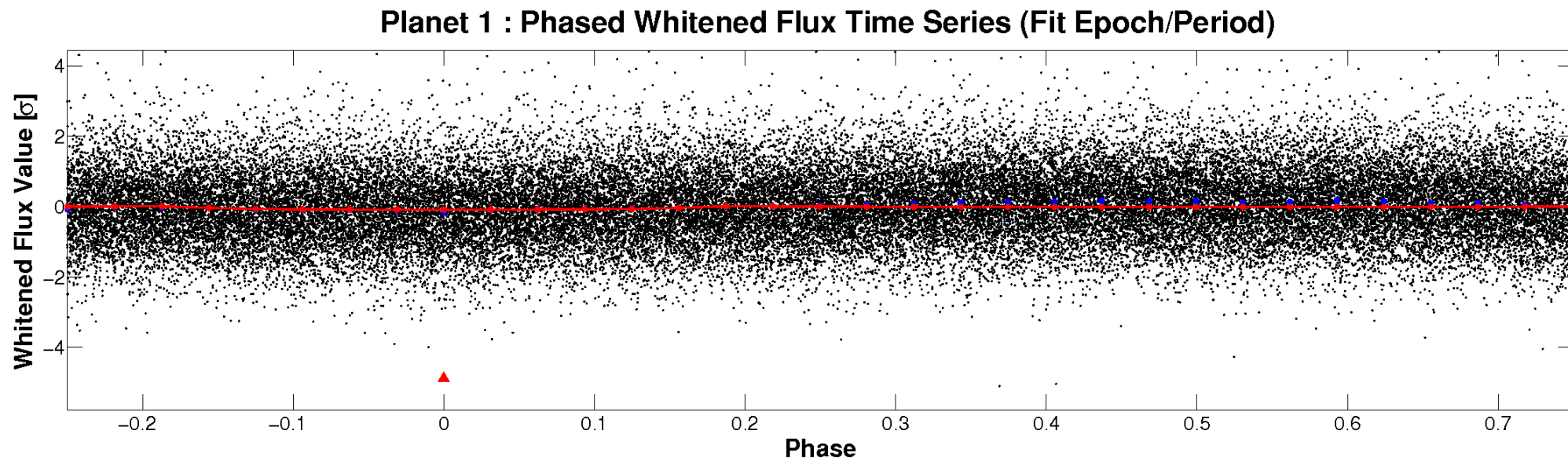
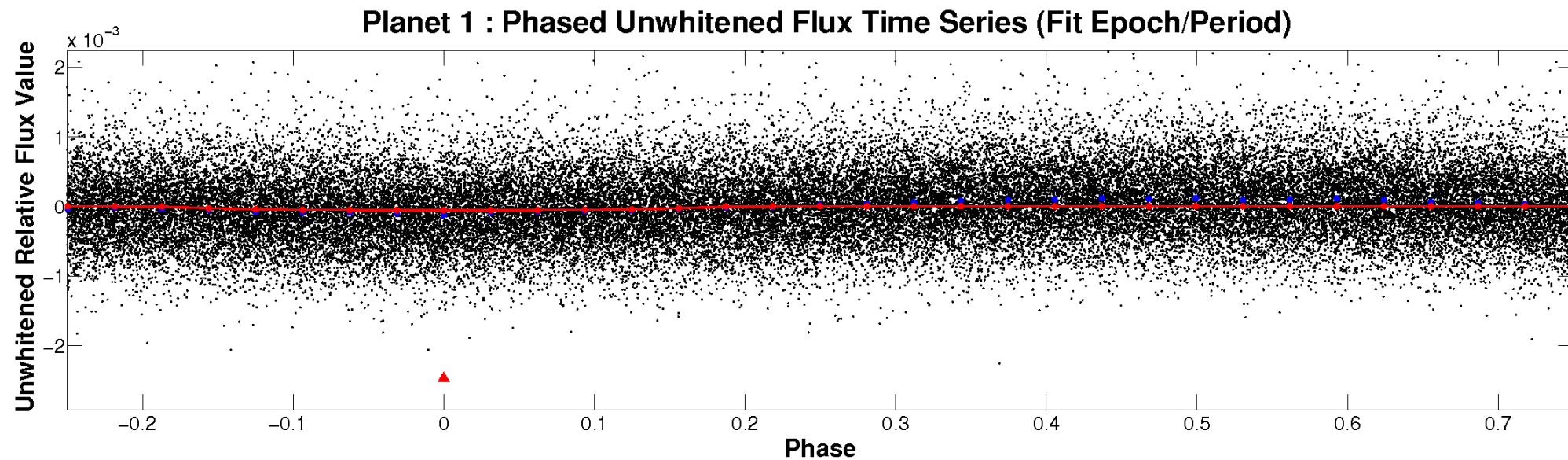


ALT Odd/Even

TCE 004470141-01

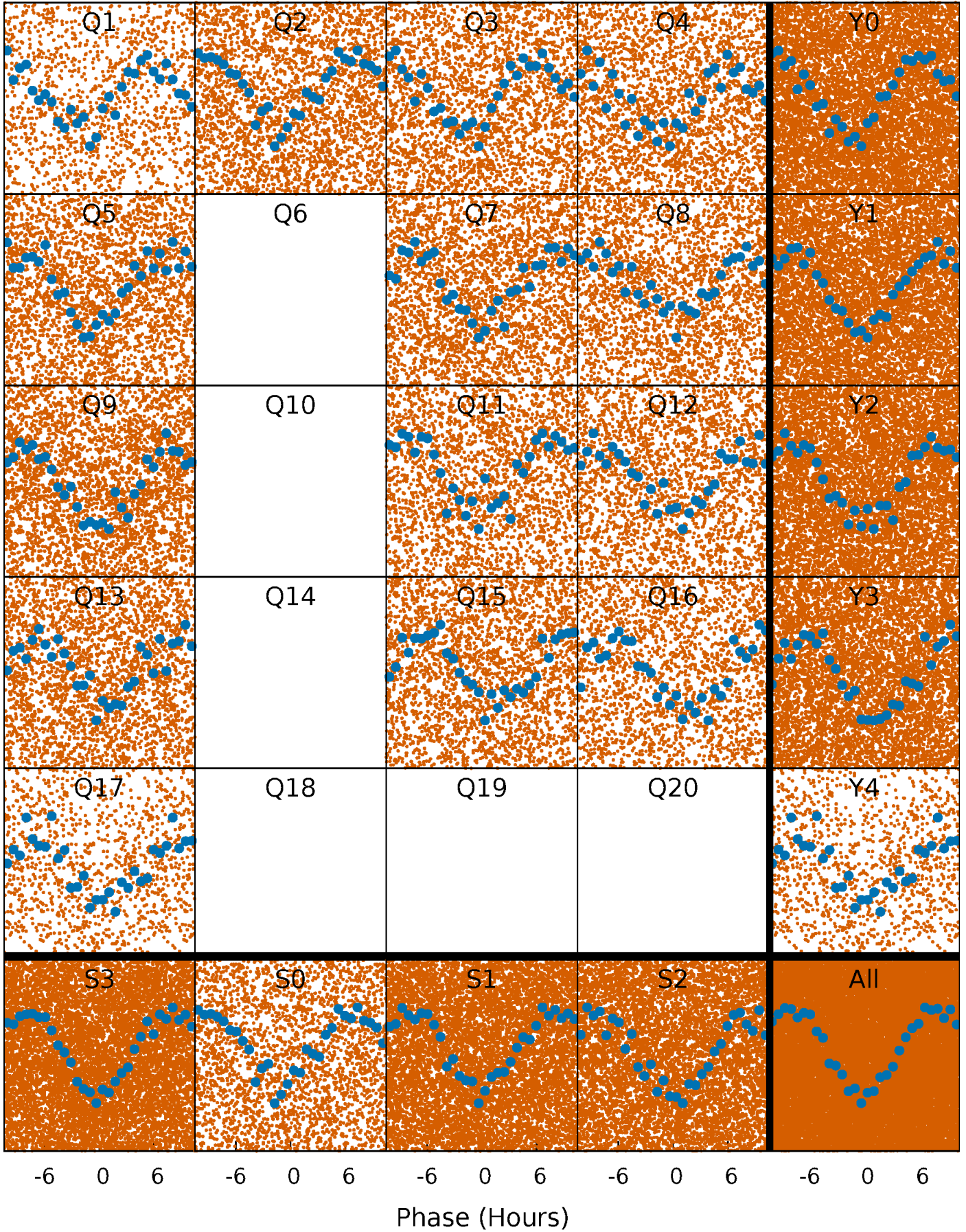


Non-Whitened Vs. Whitened Light Curve



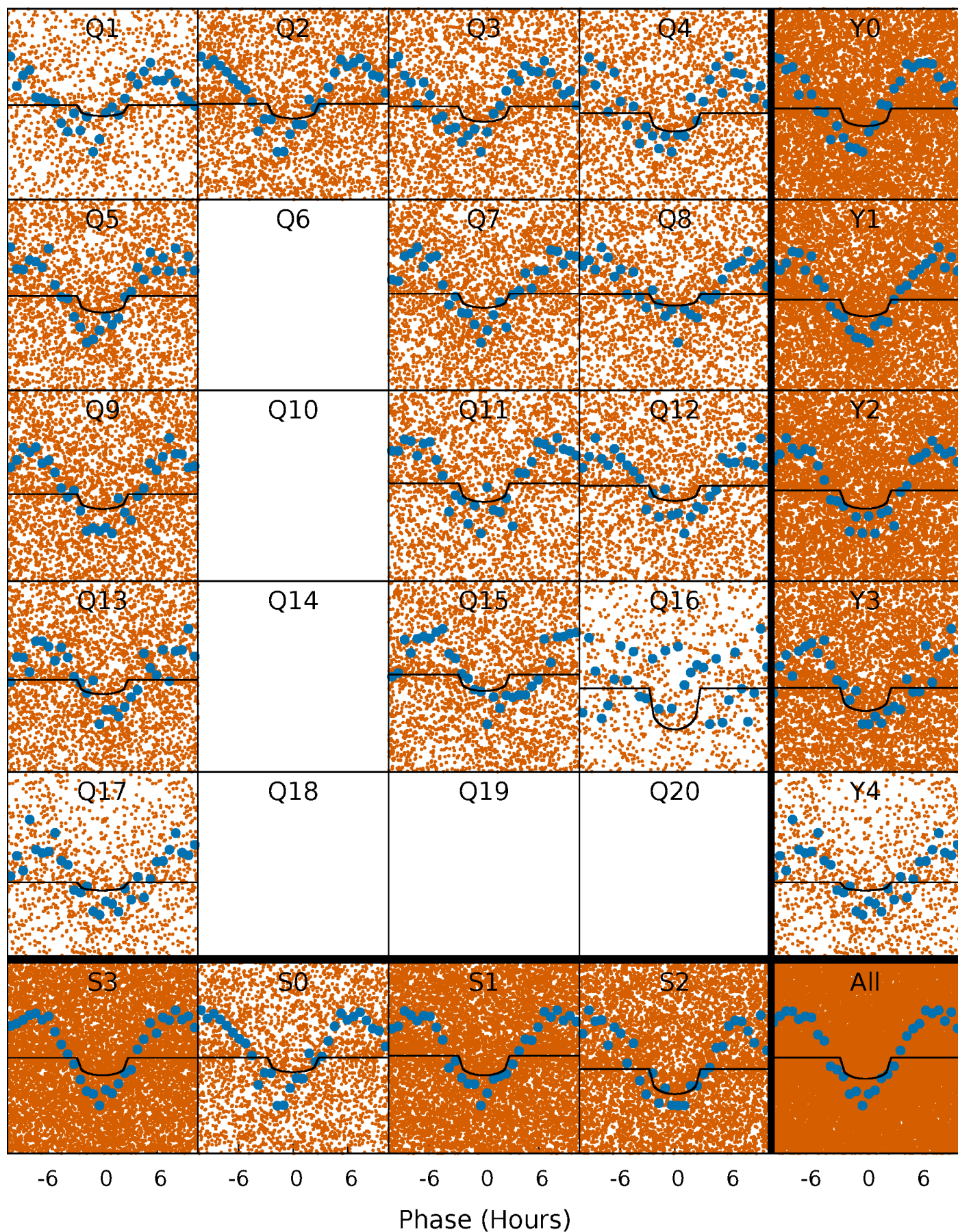
PDC Quarter-Phased Transit Curves

TCE 004470141-01 P= 0.654799 Days $T_0=132.049505$ (BKJD)



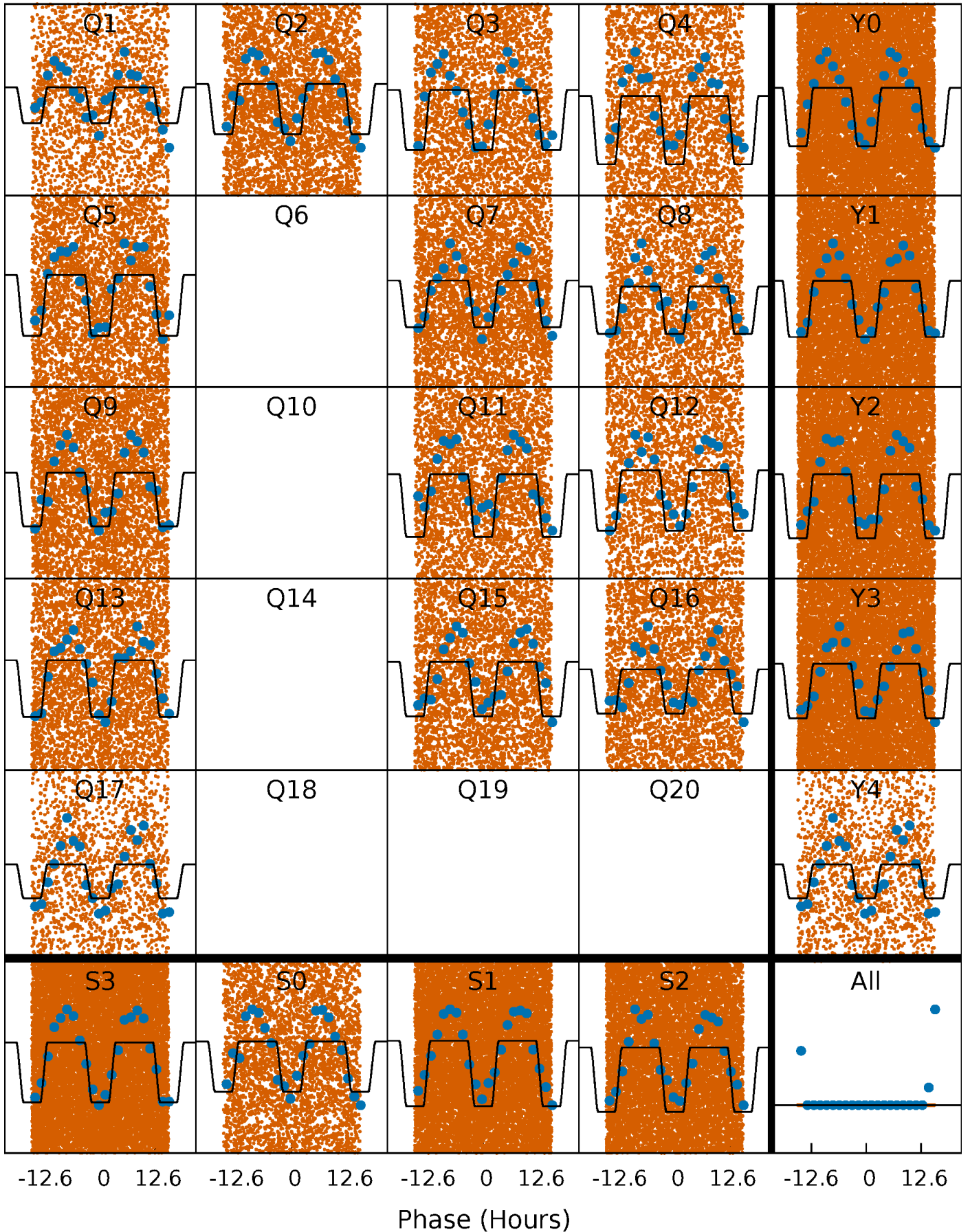
DV Quarter-Phased Transit Curves

TCE 004470141-01 P= 0.654799 Days $T_0=132.049505$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

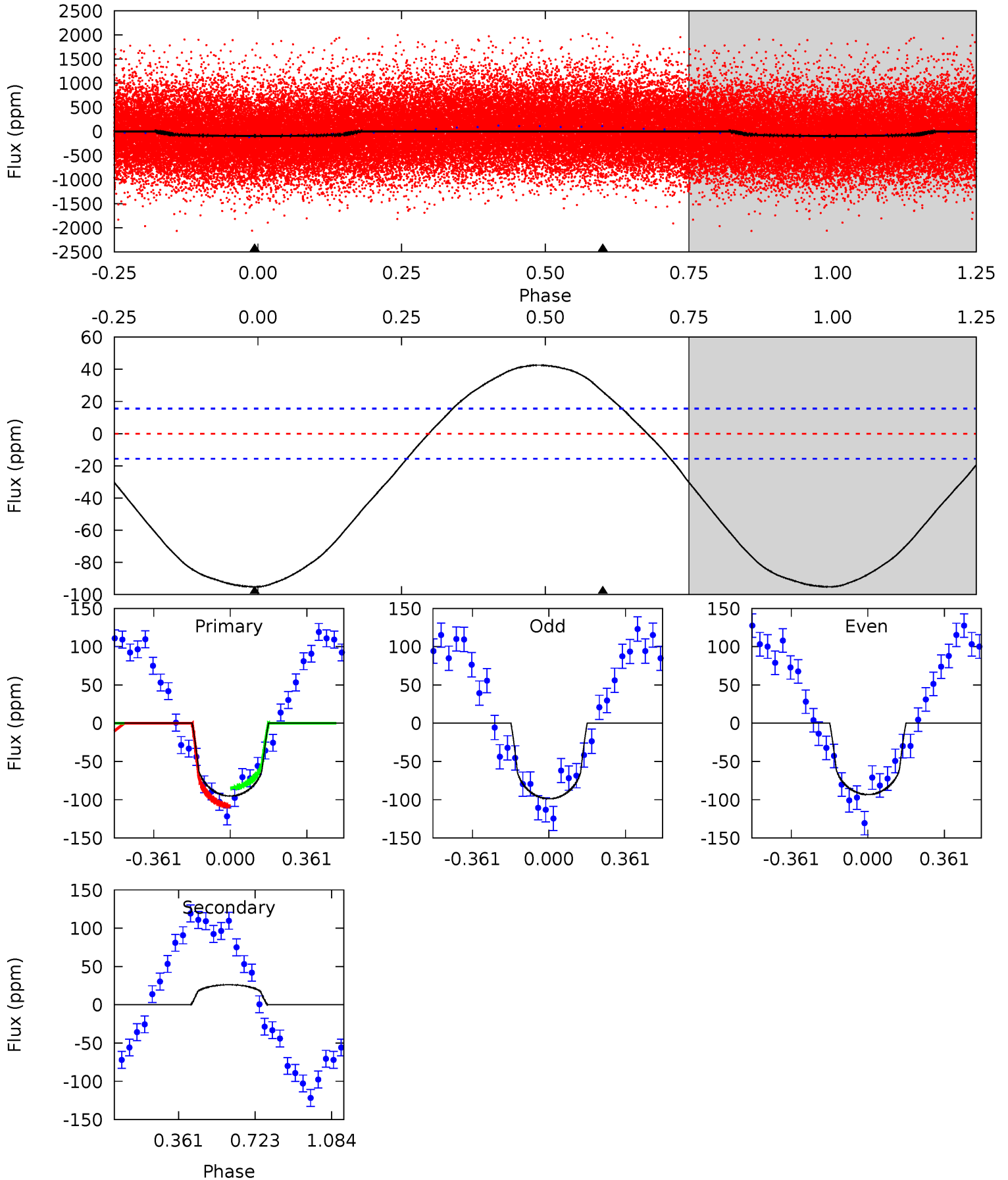
TCE 004470141-01 P= 0.654815 Days $T_0=132.028182$ (BKJD)



DV Model-Shift Uniqueness Test

004470141-01, P = 0.654799 Days, E = 131.394706 Days

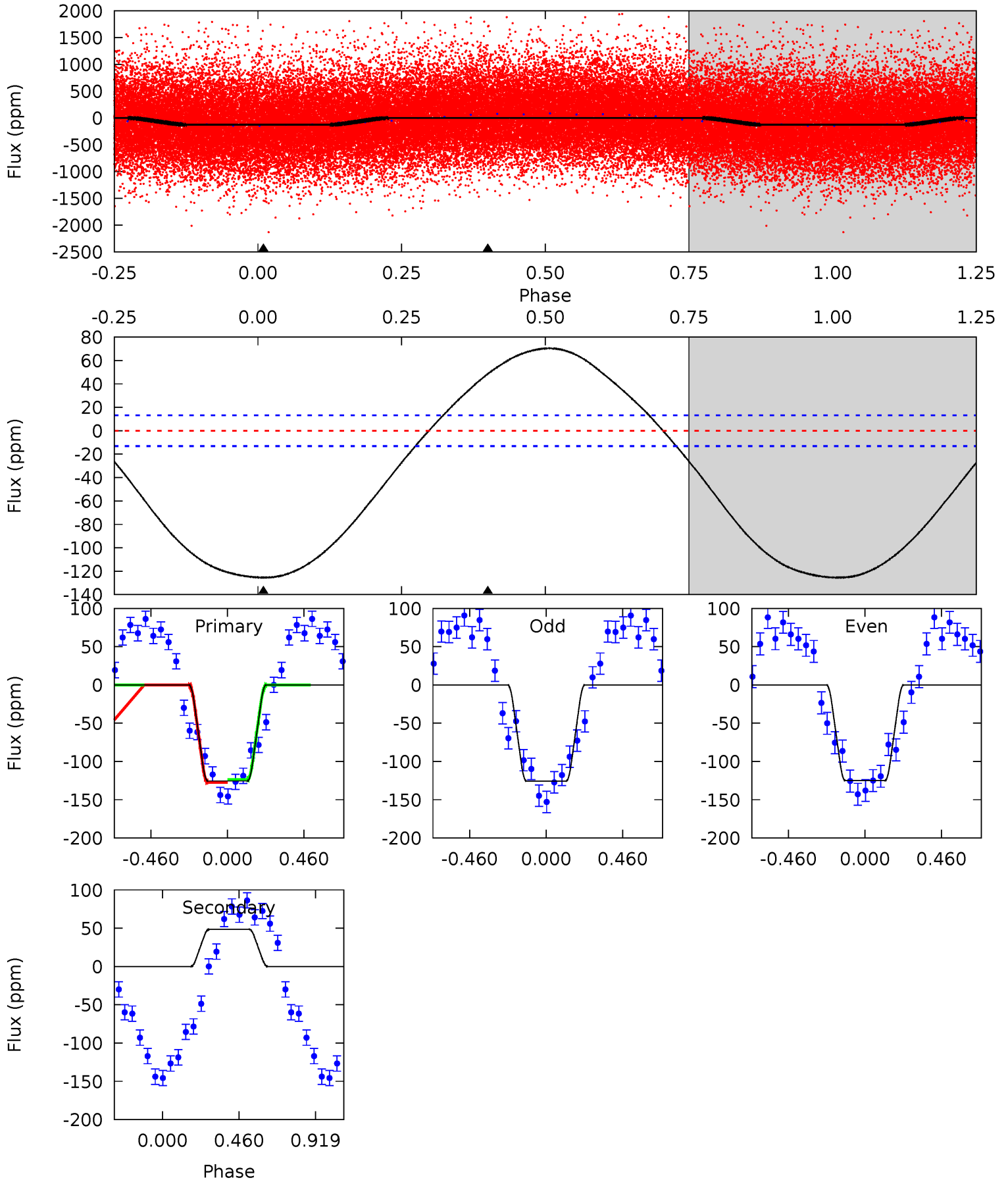
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.2	-7.21	0	0	4.29	0.91	3.20	26.2	26.2	-7.21	-7.21	0.76	1.04	0.31	3.28



Alt Model-Shift Uniqueness Test

004470141-01, P = 0.654815 Days, E = 131.373367 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.4	-15.7	0	0	4.23	0.74	5.34	40.4	40.4	-15.7	-15.7	0.09	1.05	0.36	0.58



Stellar Parameters For KIC 004470141

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6240^{+174}_{-239}	$4.426^{+0.056}_{-0.224}$	$-0.020^{+0.250}_{-0.300}$	$1.079^{+0.370}_{-0.123}$	$1.135^{+0.169}_{-0.152}$	$1.271^{+0.394}_{-0.712}$
	+3%/-4%	+1%/-5%	+1250%/-1500%	+34%/-11%	+15%/-13%	+31%/-56%
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 004470141-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	26 ± 4	$1.16^{+0.92}_{-0.78}$	3293^{+234}_{-183}	-4883^{+834}_{-3399}	$-2.416^{+1.644}_{-19.932}$
Alt.	49 ± 3	$1.63^{+1.09}_{-0.94}$	3304^{+251}_{-178}	-4824^{+724}_{-2199}	$-2.401^{+1.547}_{-10.671}$

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

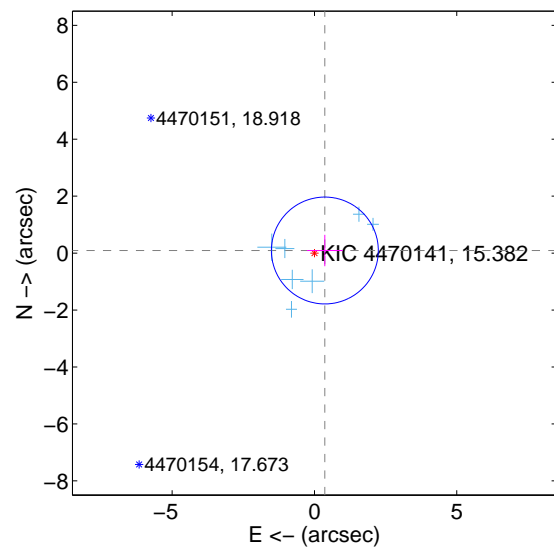
Supplemental centroid analysis for 004470141-01. Kepler magnitude: 15.38. Transit SNR 9.73

There are 7 quarters with good PRF difference image offsets

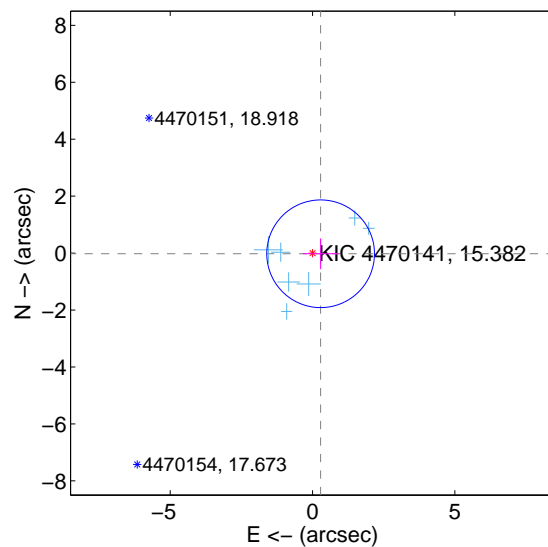
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.377 ± 0.626	0.60	-0.366 ± 0.630	0.091 ± 0.552
PRF-fit source offset from KIC position	0.285 ± 0.630	0.45	-0.284 ± 0.631	-0.023 ± 0.542
photometric centroid source offset	3.59 ± 1.16	3.09	-3.56 ± 1.16	-0.45 ± 1.10

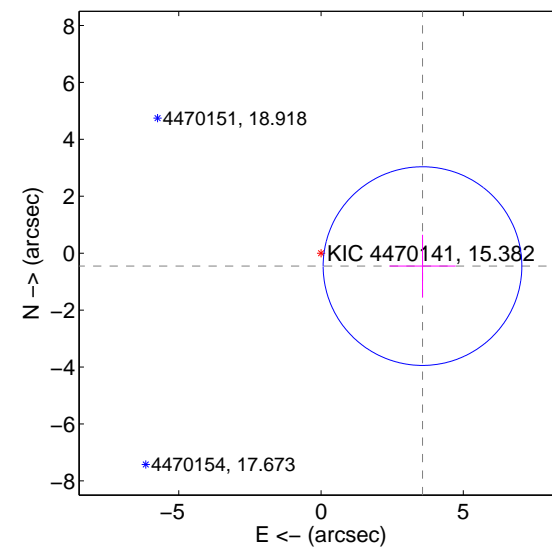
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

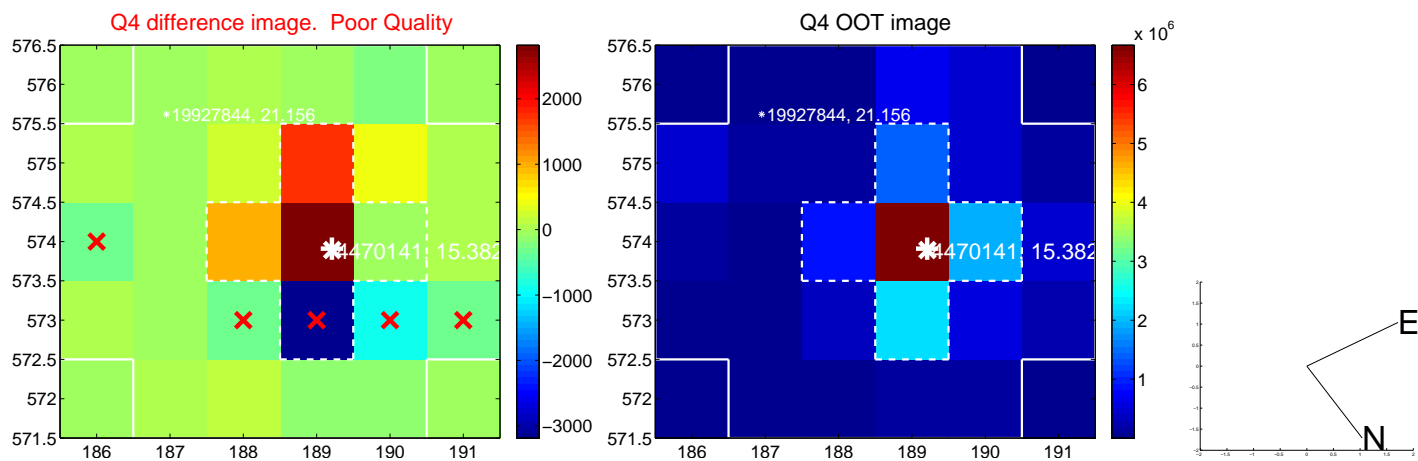
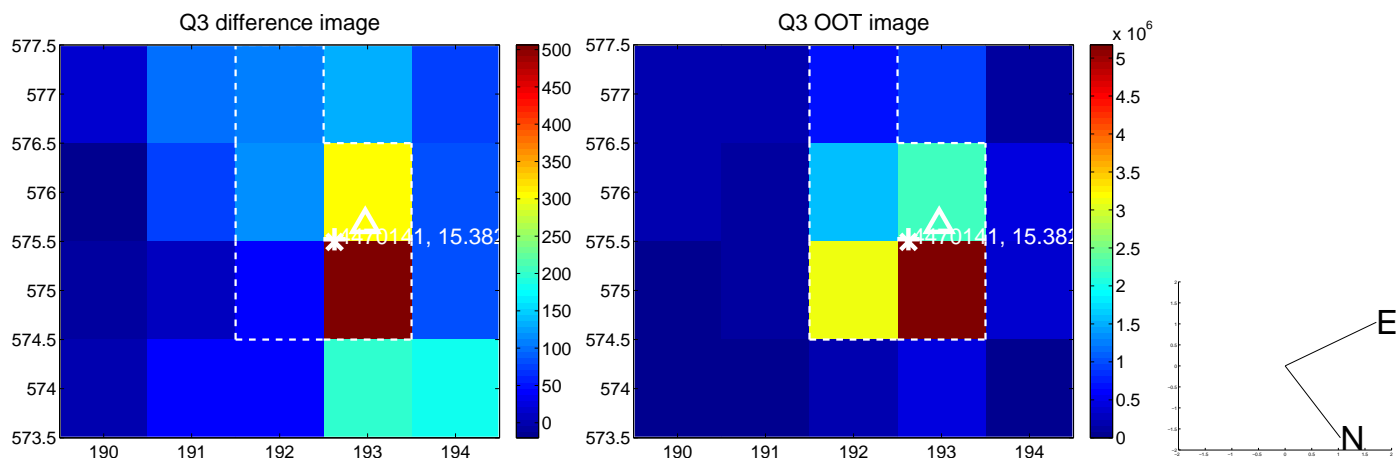
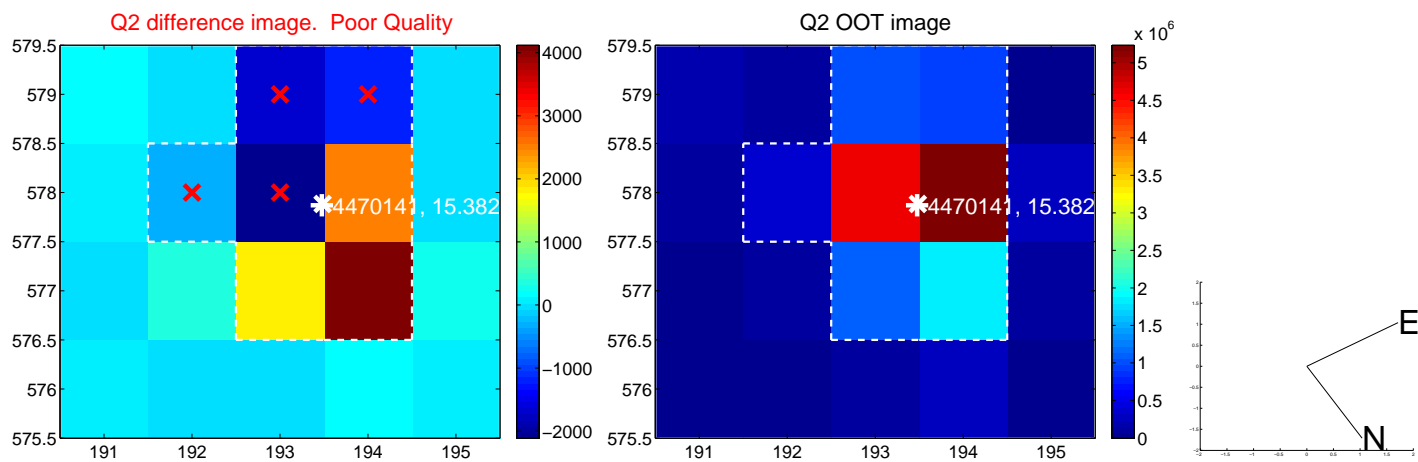
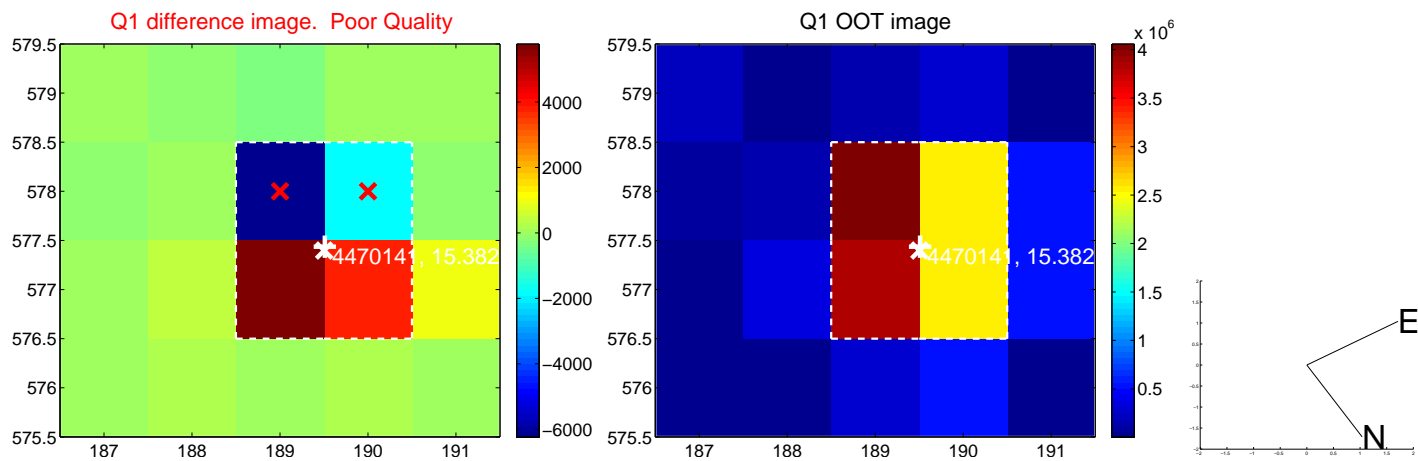


offset from photometric centroids

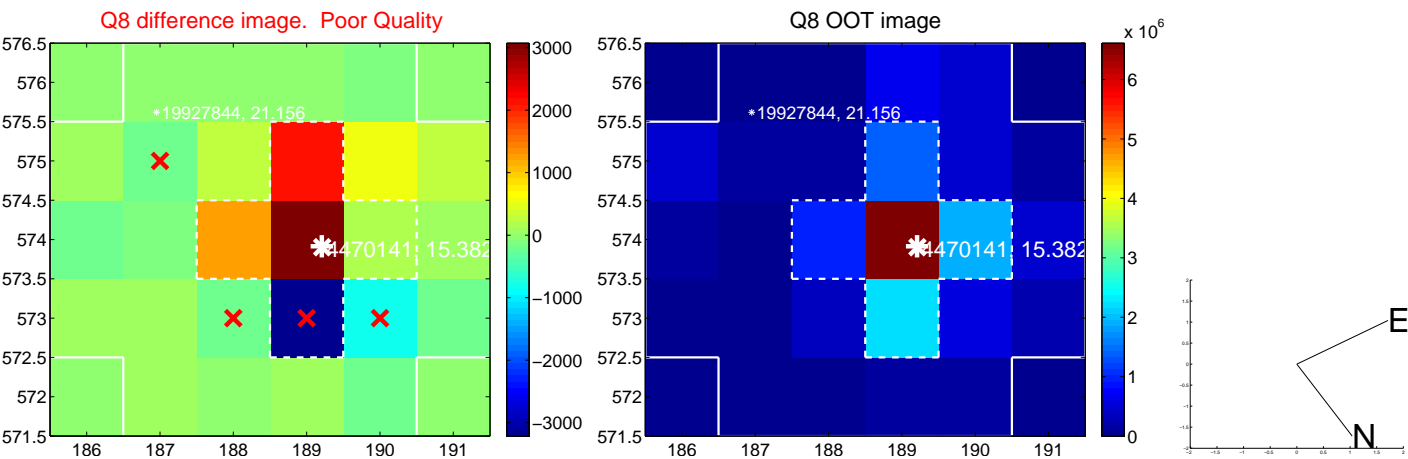
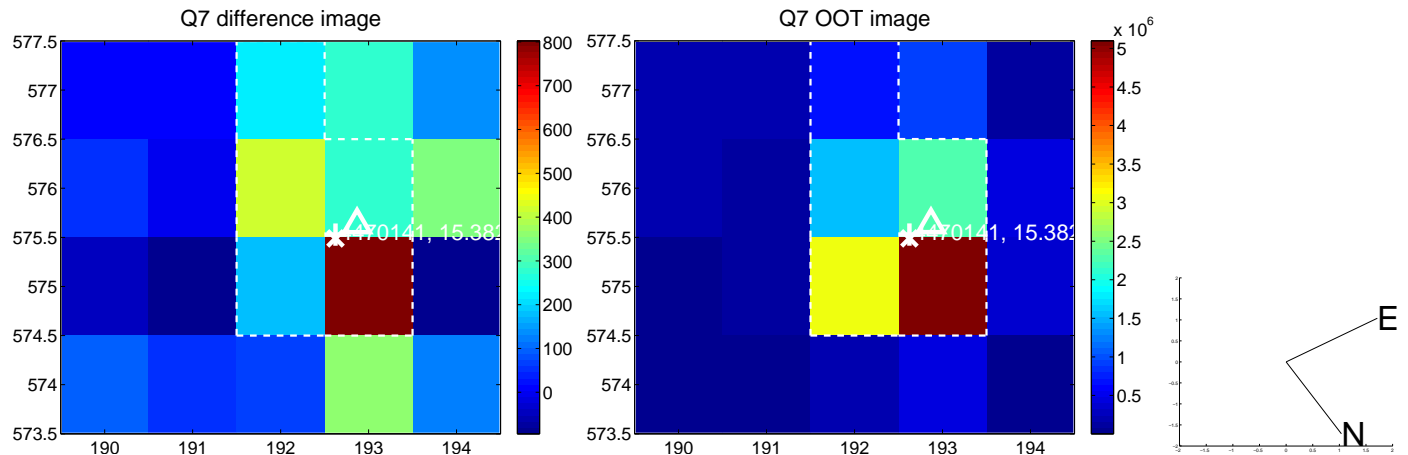
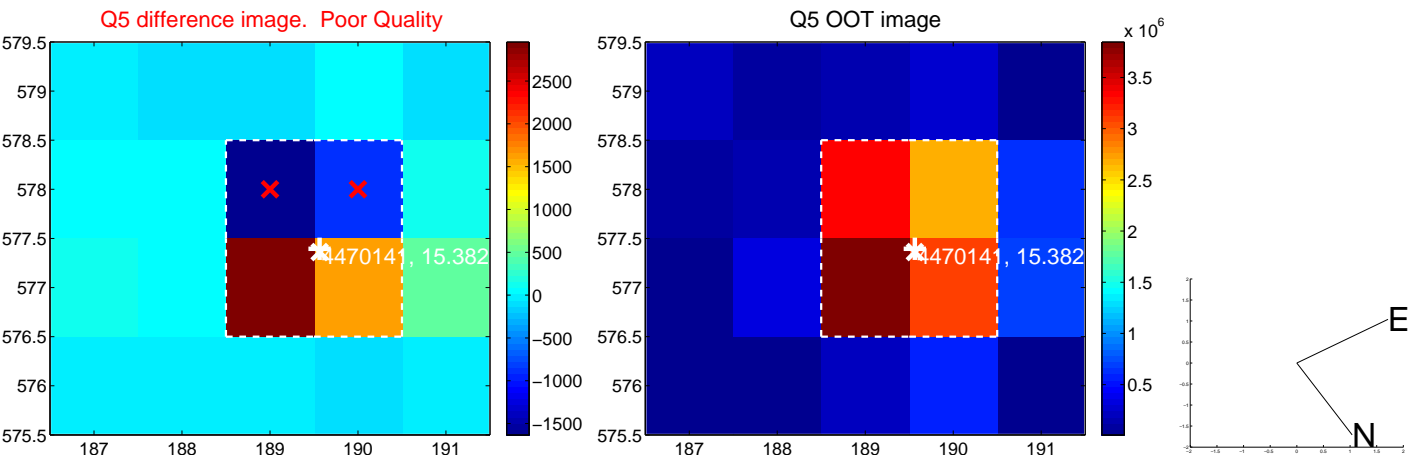


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

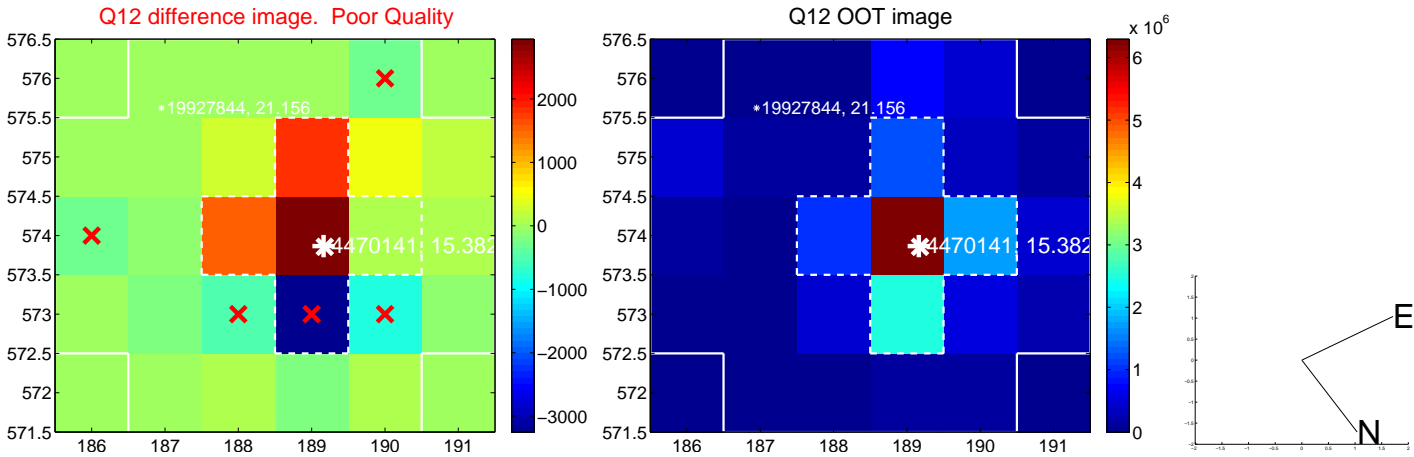
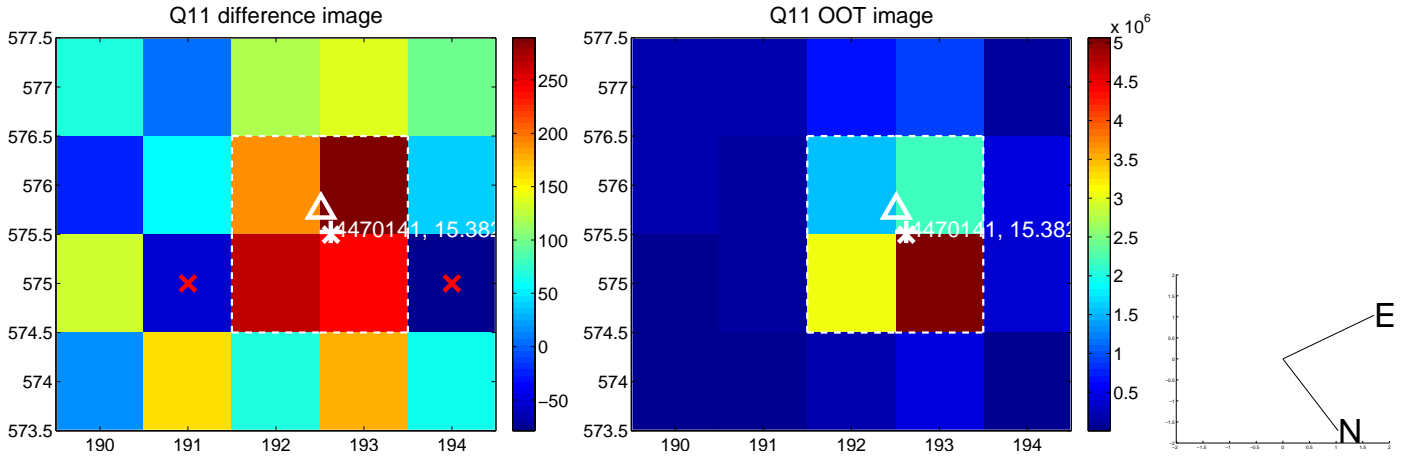
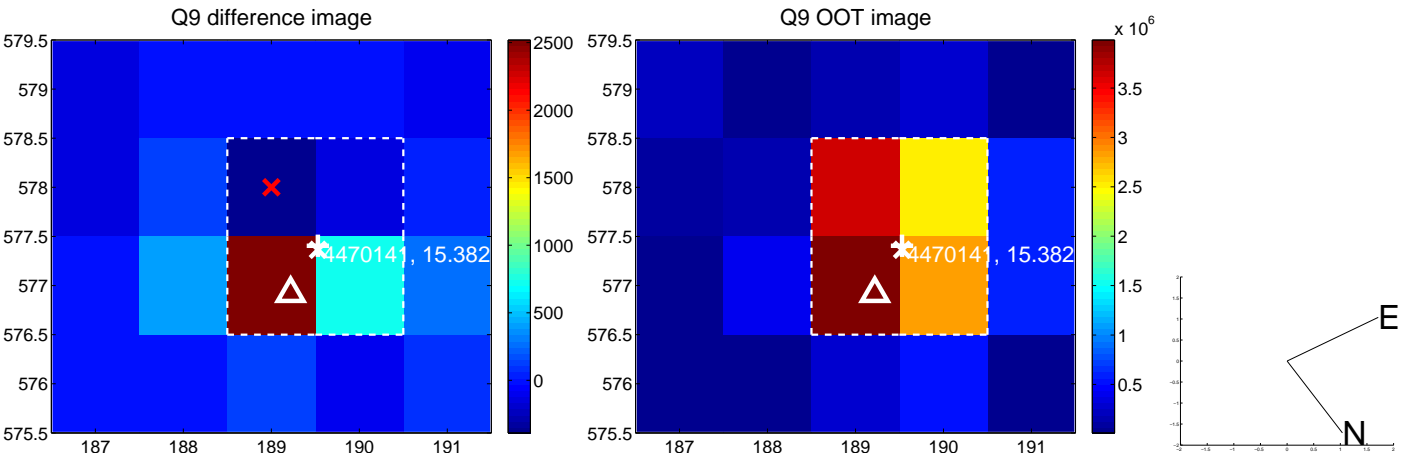
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



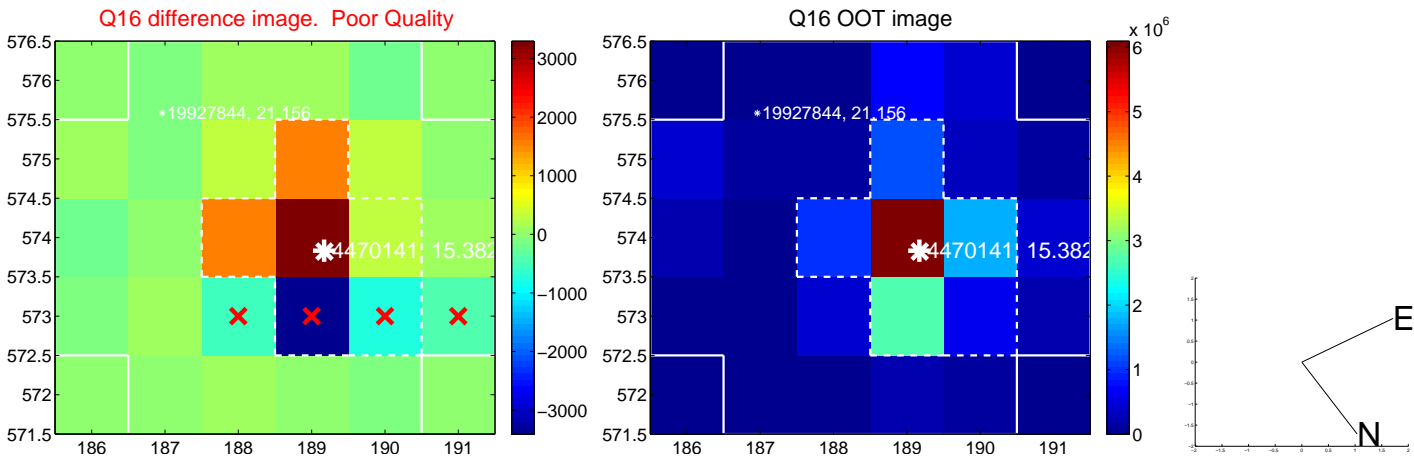
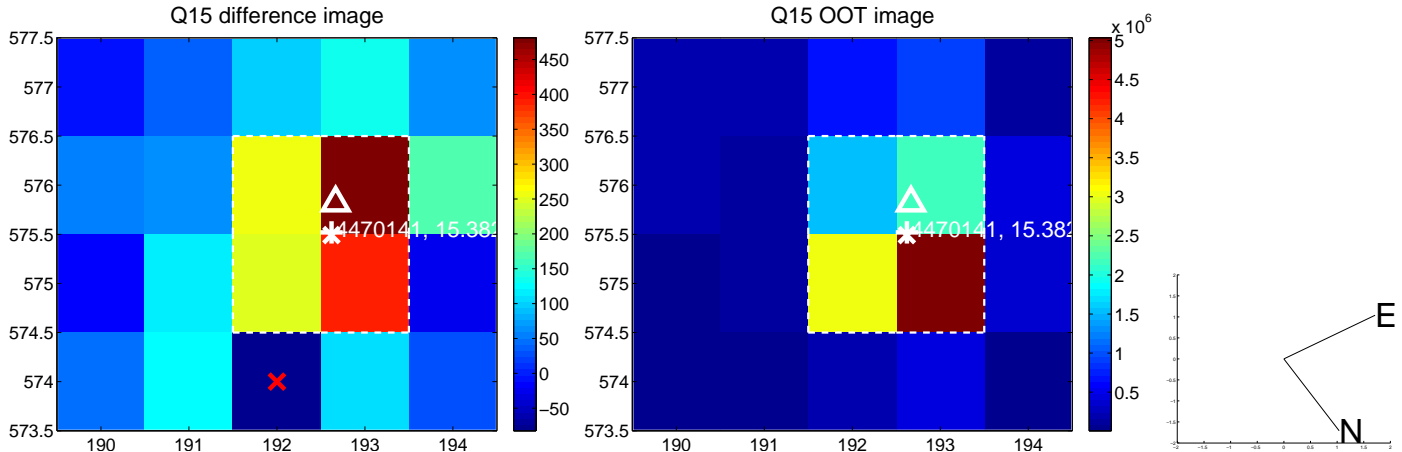
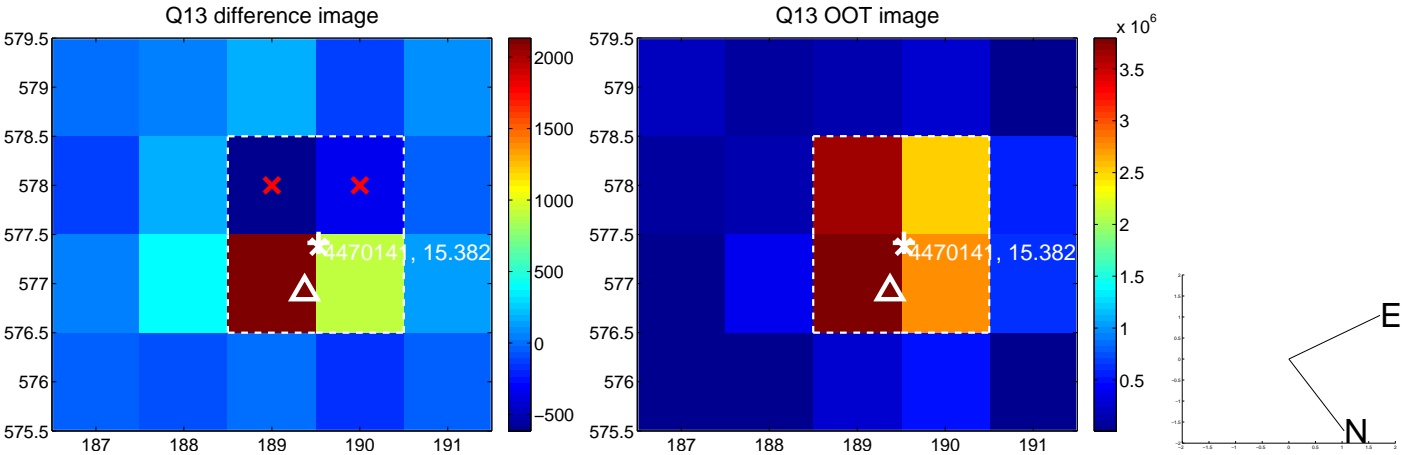
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



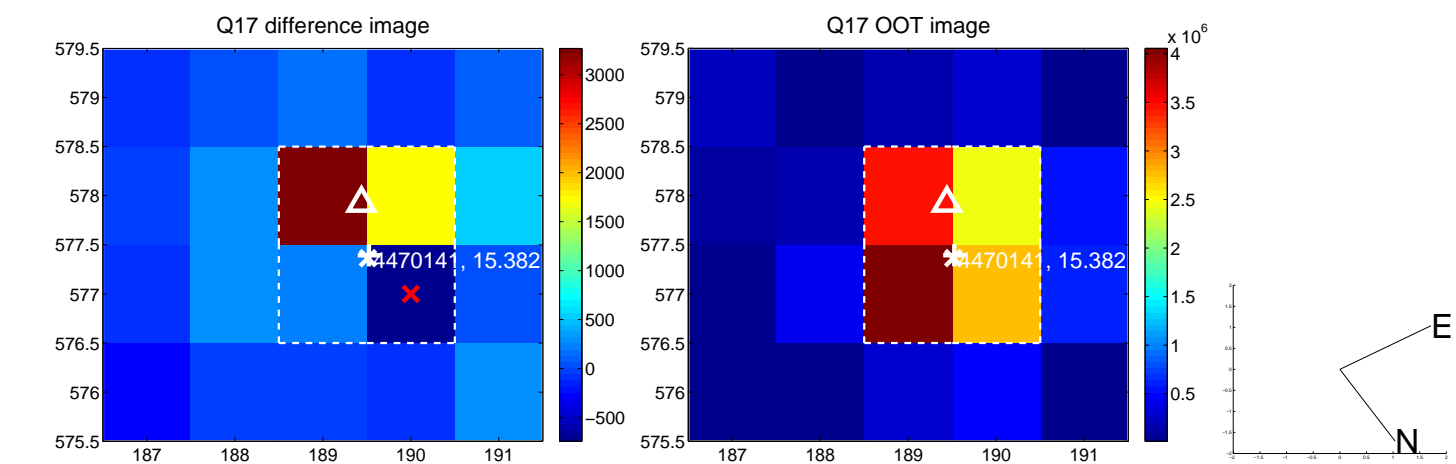
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



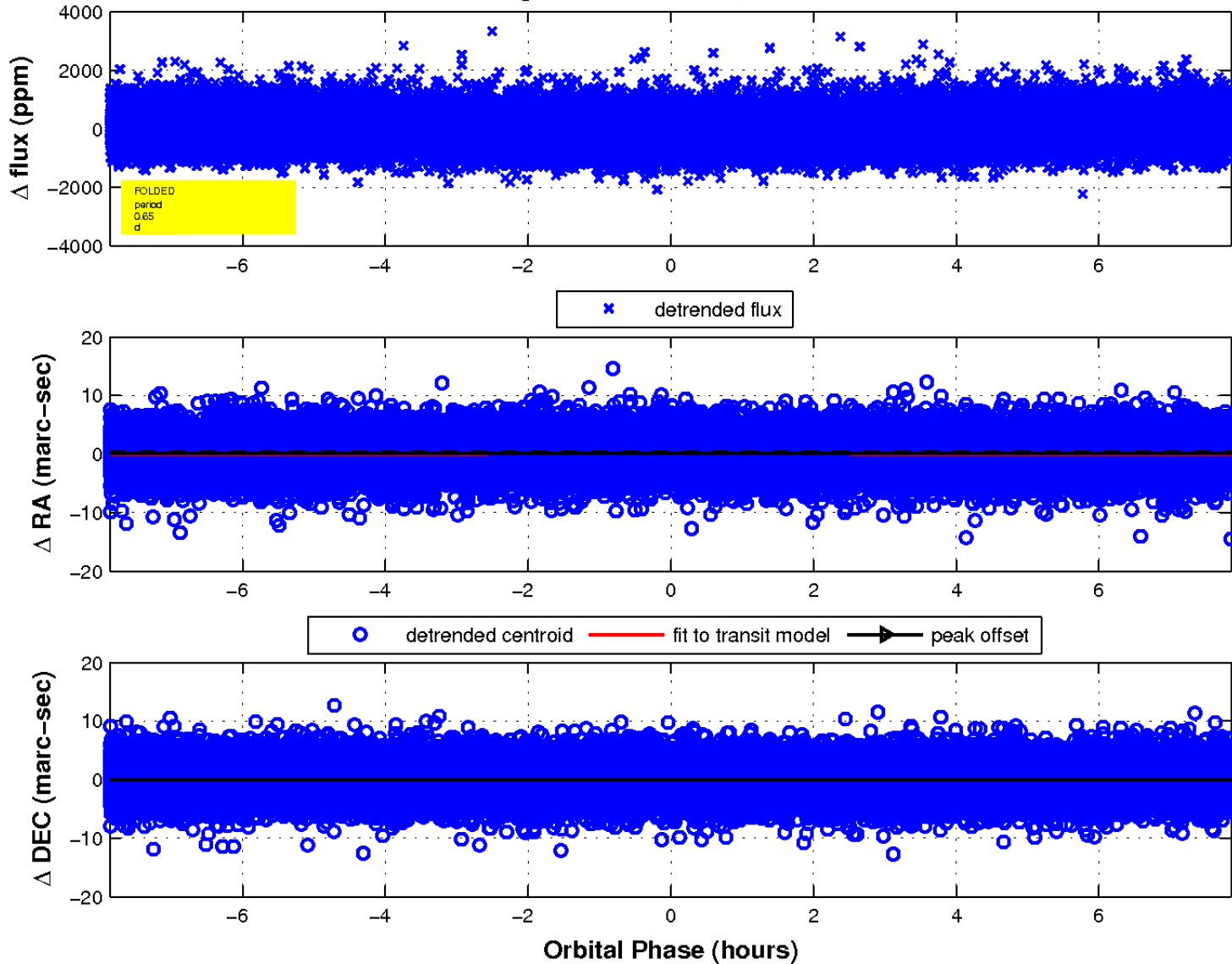
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

