

KIC 001721157

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})
001721157-01	OBS	4644.01	3.449282	133.380926	244.2	1.561	10.0	12.3	0.78	5119	1.52	206.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001721157-01	OBS	PC	0.97	0	0	0	0	NO_COMMENT

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.

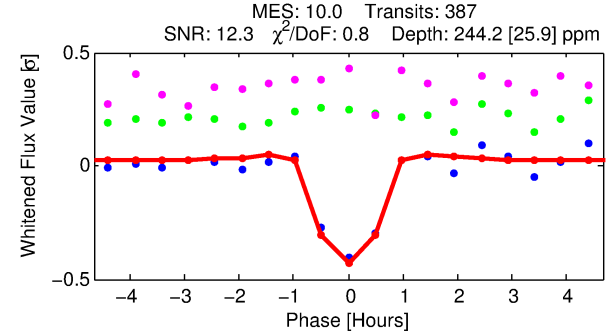
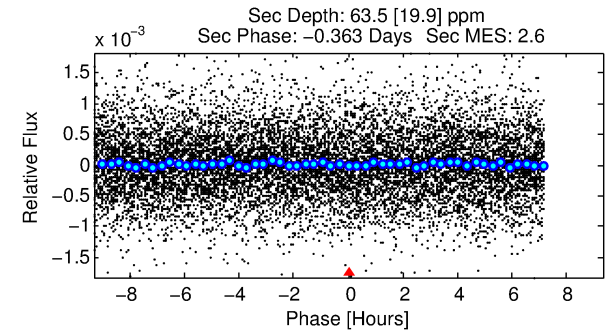
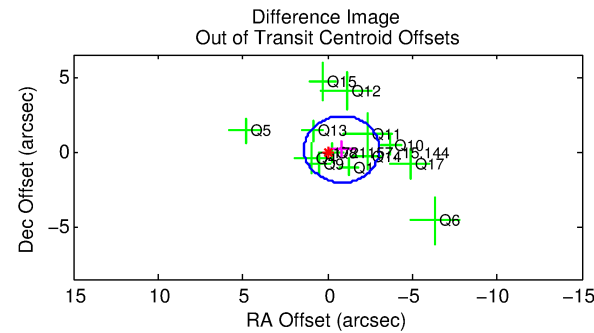
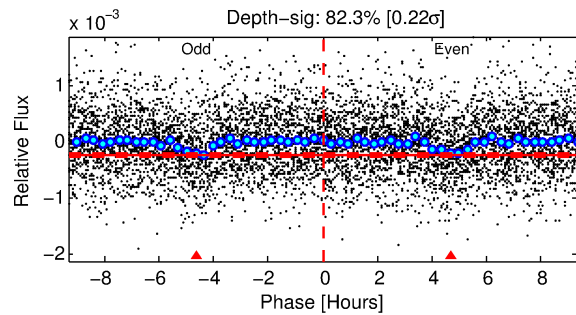
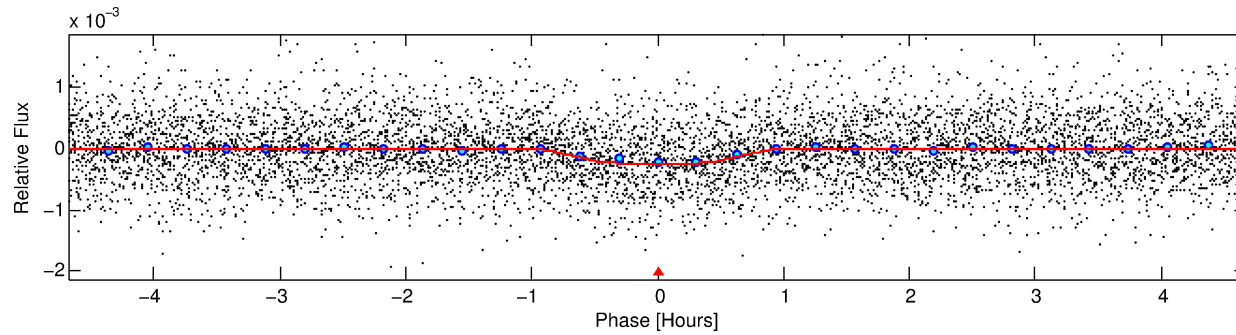
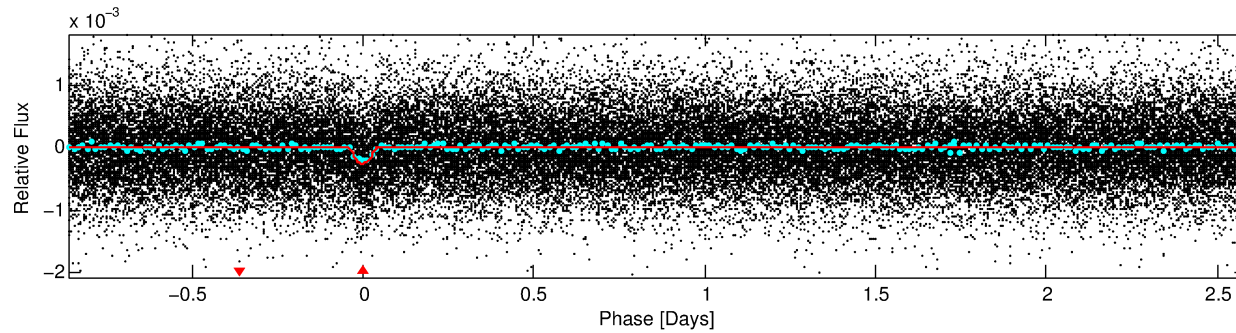
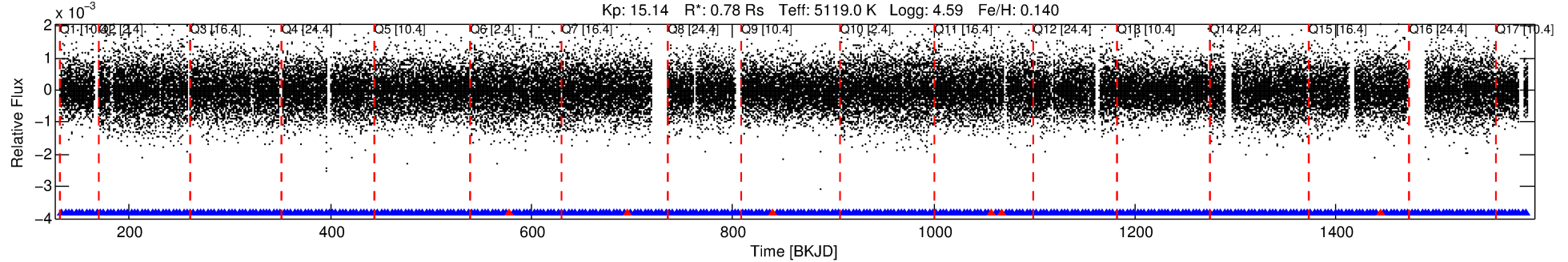
Ephemeris Match Information For 001721157-01

No Significant Match Found

DV One-Page Summary

KIC: 1721157 Candidate: 1 of 1 Period: 3.449 d
KOI: K04644.01 Corr: 0.969

Kp: 15.14 R*: 0.78 Rs Teff: 5119.0 K Logg: 4.59 Fe/H: 0.140



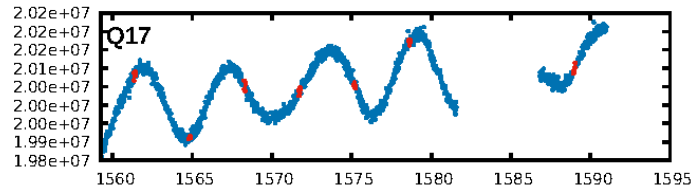
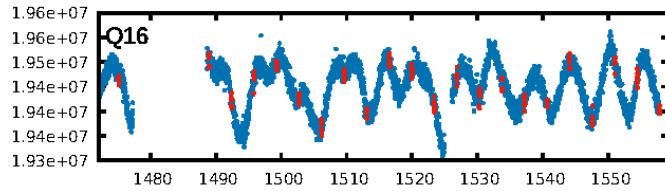
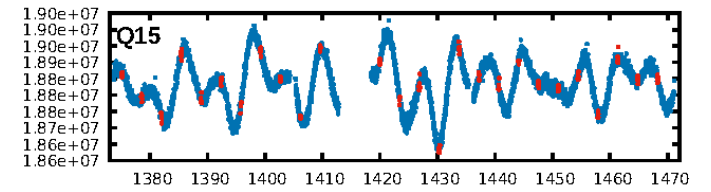
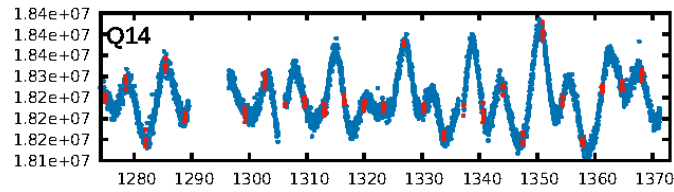
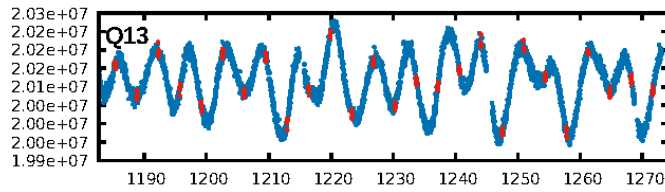
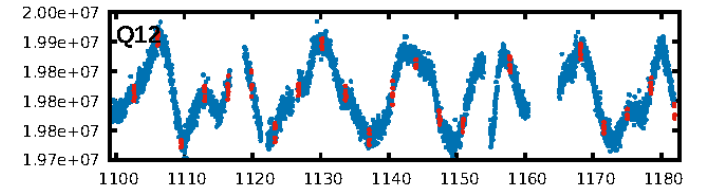
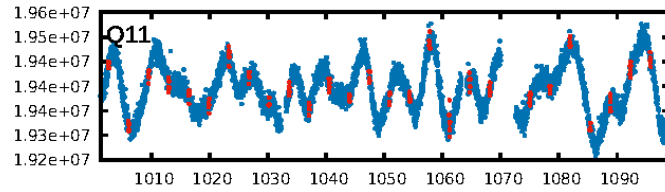
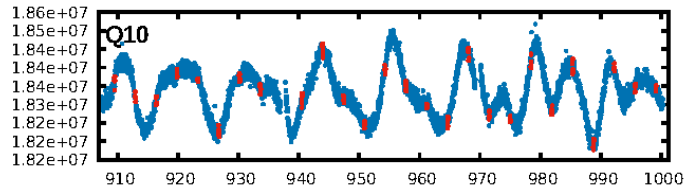
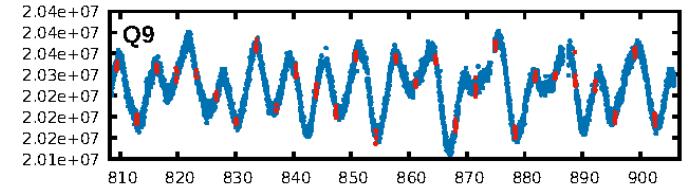
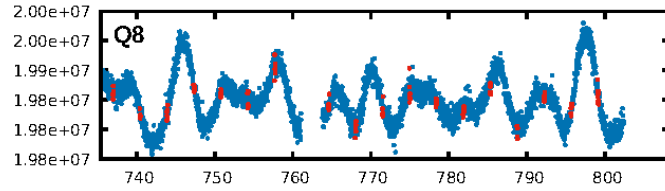
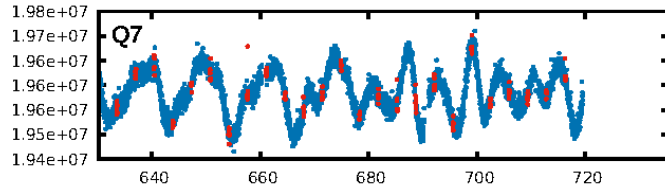
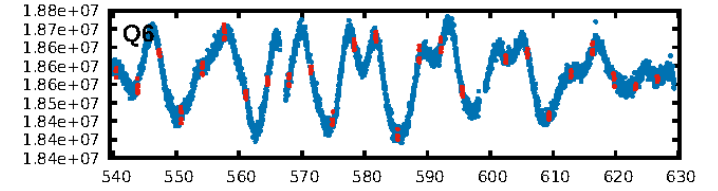
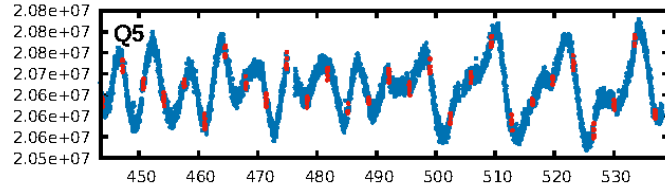
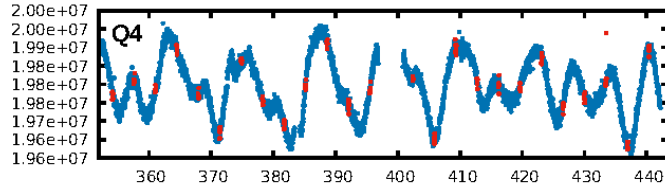
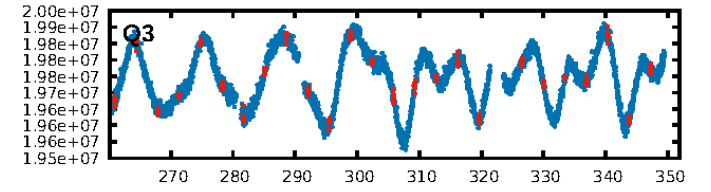
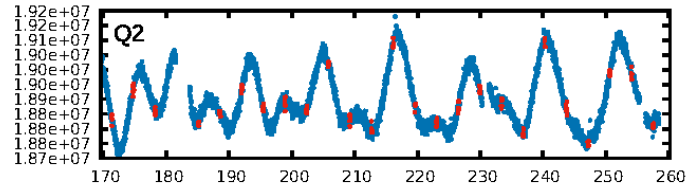
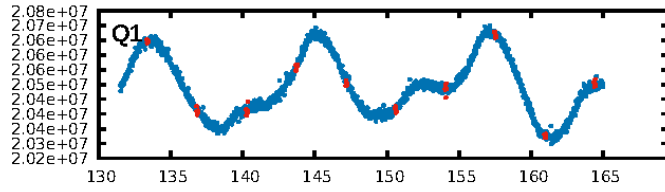
DV Fit Results:

Period = 3.44928 [0.00001] d
Epoch = 133.3809 [0.0022] BKJD
Rp/R* = 0.0179 [0.0114]
a/R* = 7.51 [19.39]
b = 0.92 [0.47]
Seff = 206.58 [41.98]
Teq = 967 [49] K
Rp = 1.52 [0.99] Re
a = 0.0426 [0.0048] AU
Ag = 27.38 [36.32] [0.73σ]
Teffp = 3419 [1130] K [2.17σ]

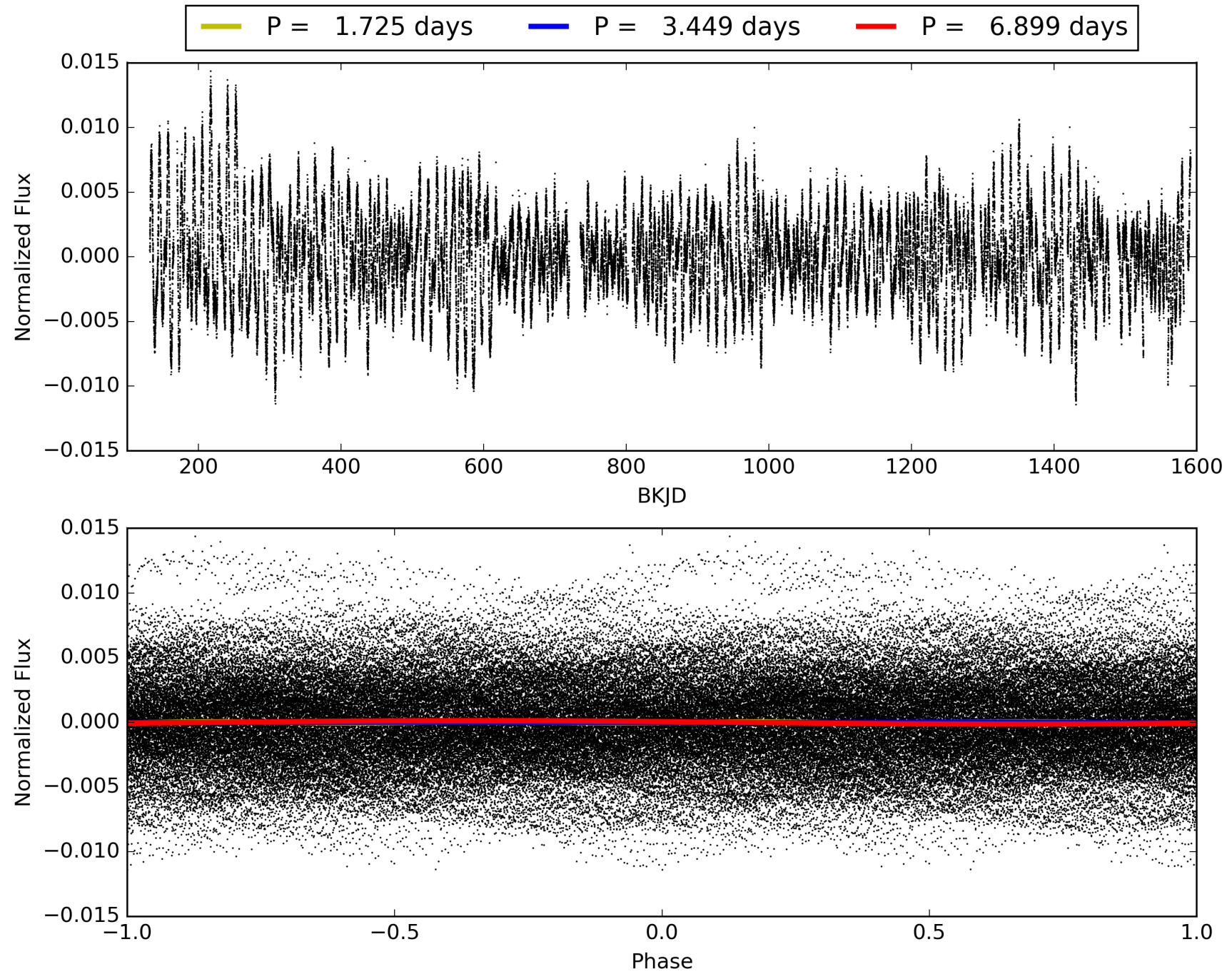
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.77e-23
RollingBand-fgt: 0.98 [364/370]
GhostDiagnostic-chr: 3.267
Centroid-sig: 0.0%
Centroid-so: 0.400 arcsec [0.47σ]
OotOffset-rm: 0.847 arcsec [1.15σ]
KicOffset-rm: 0.970 arcsec [1.30σ]
OotOffset-st: 3/2/3/5 [13]
KicOffset-st: 3/2/3/5 [13]
DiffImageQuality-fgm: 0.38 [5/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 001721157-01, PDC Light Curves

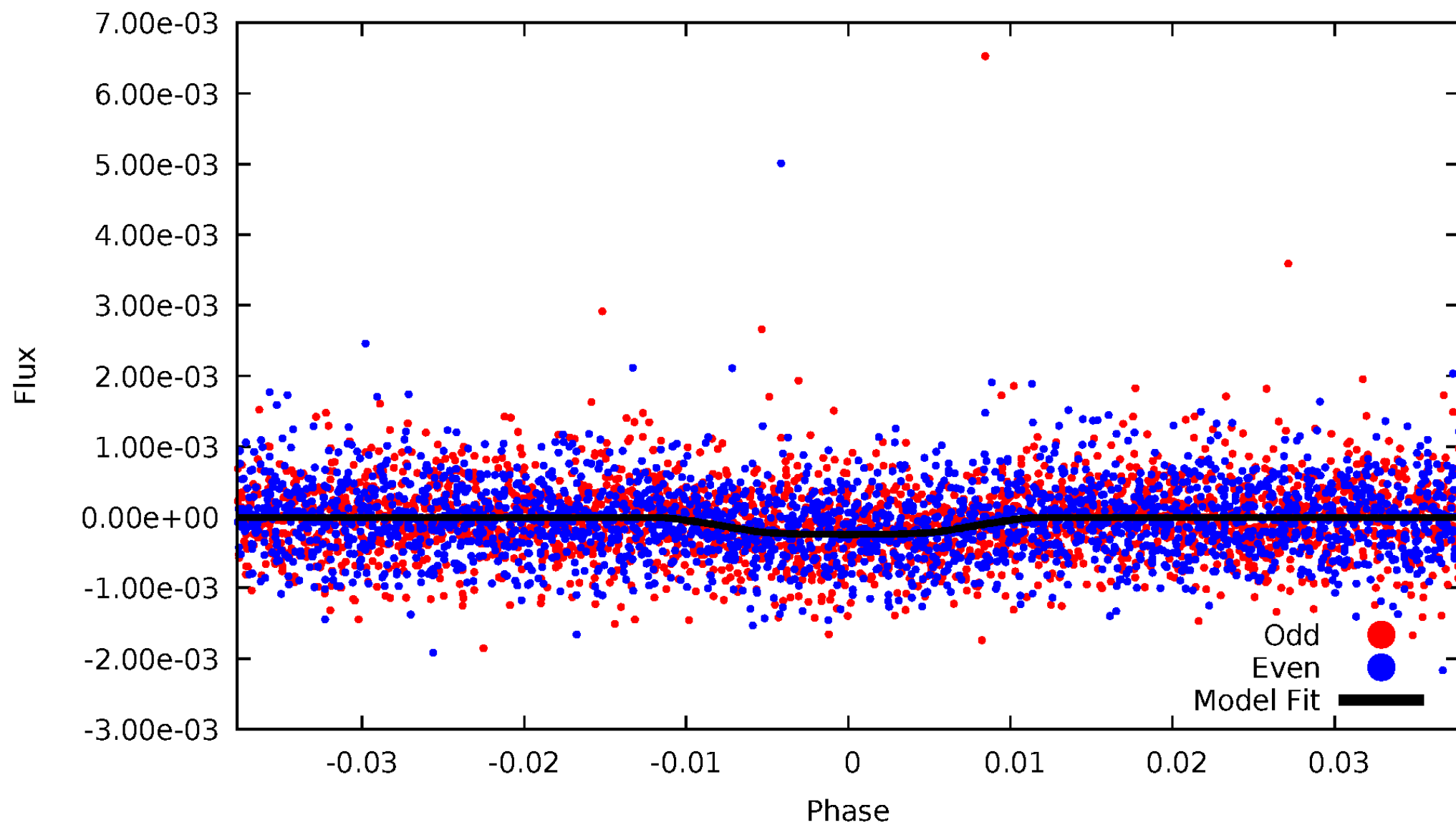


TCE 001721157-01



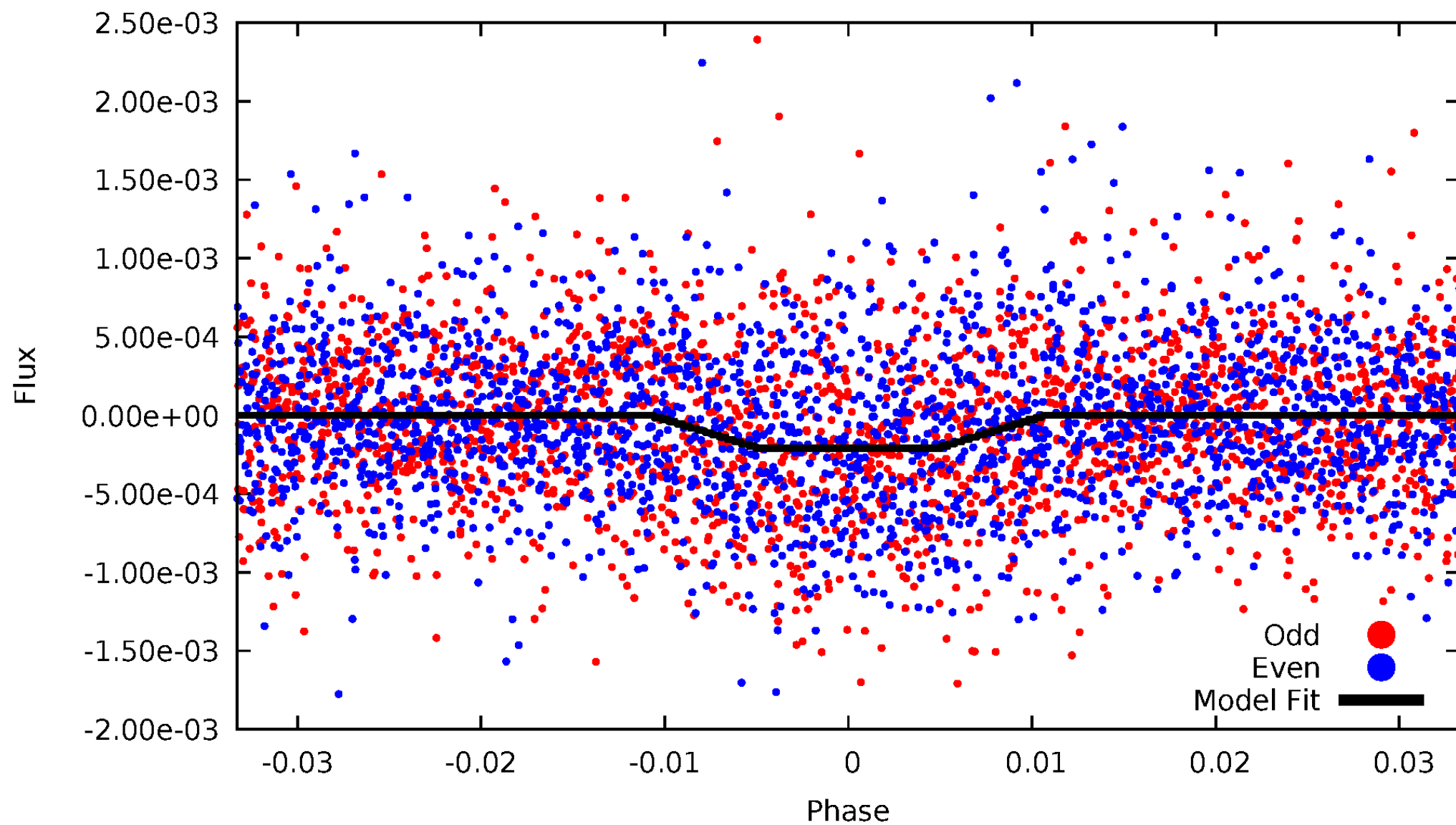
DV Odd/Even

TCE 001721157-01



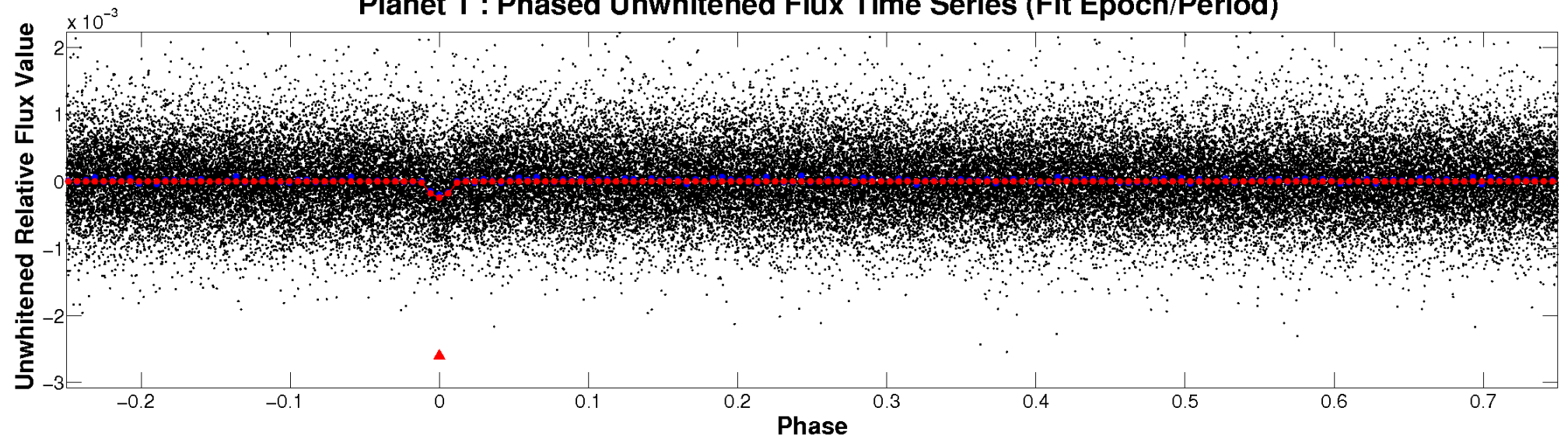
ALT Odd/Even

TCE 001721157-01

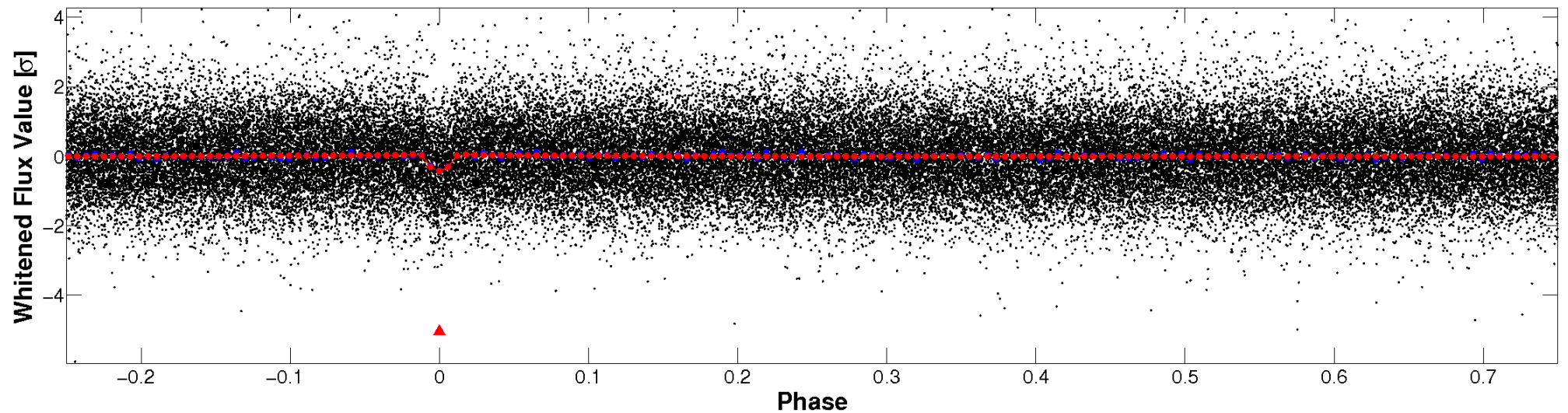


Non-Whitened Vs. Whitened Light Curve

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

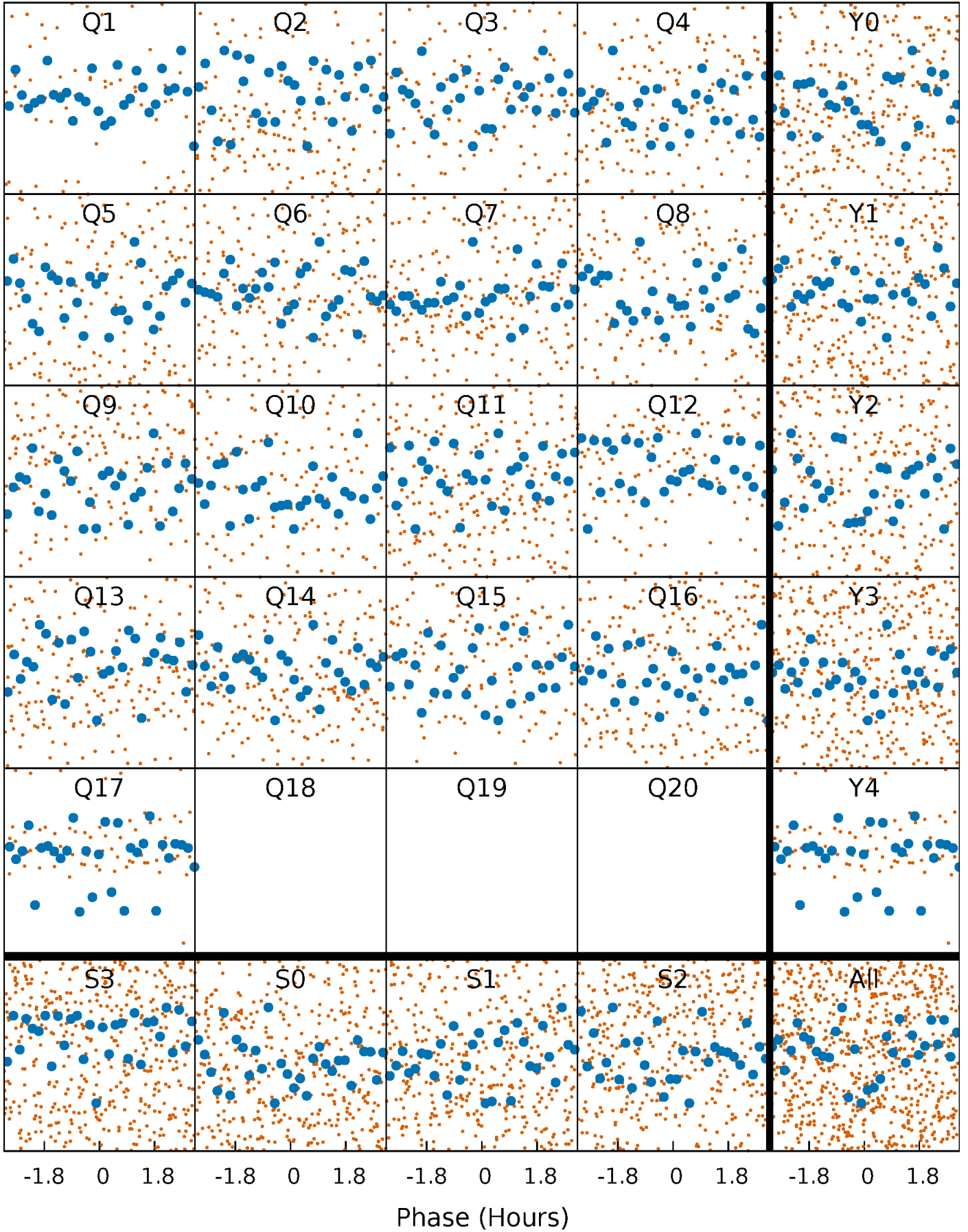


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



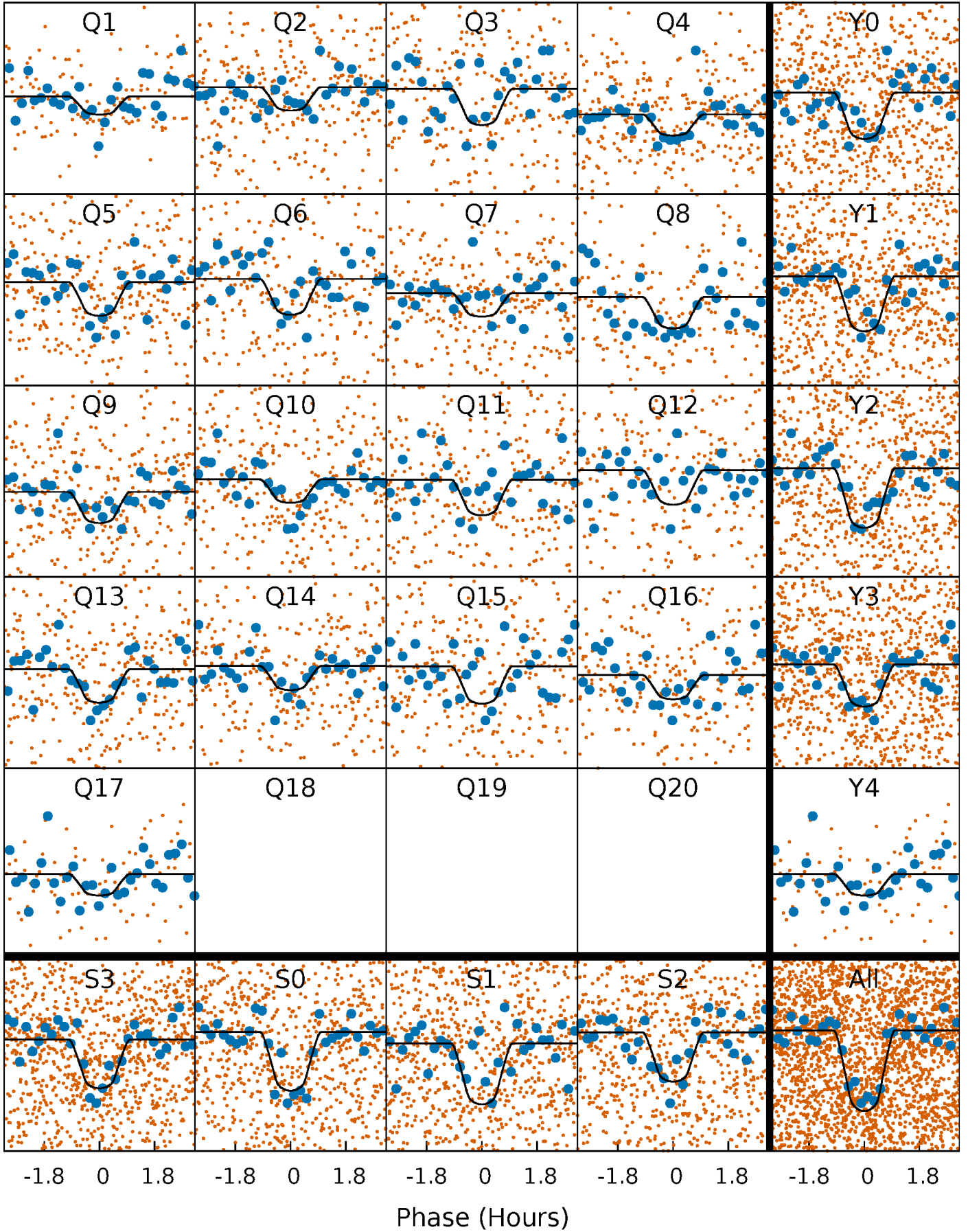
PDC Quarter-Phased Transit Curves

TCE 001721157-01 P= 3.449282 Days $T_0=133.380926$ (BKJD)



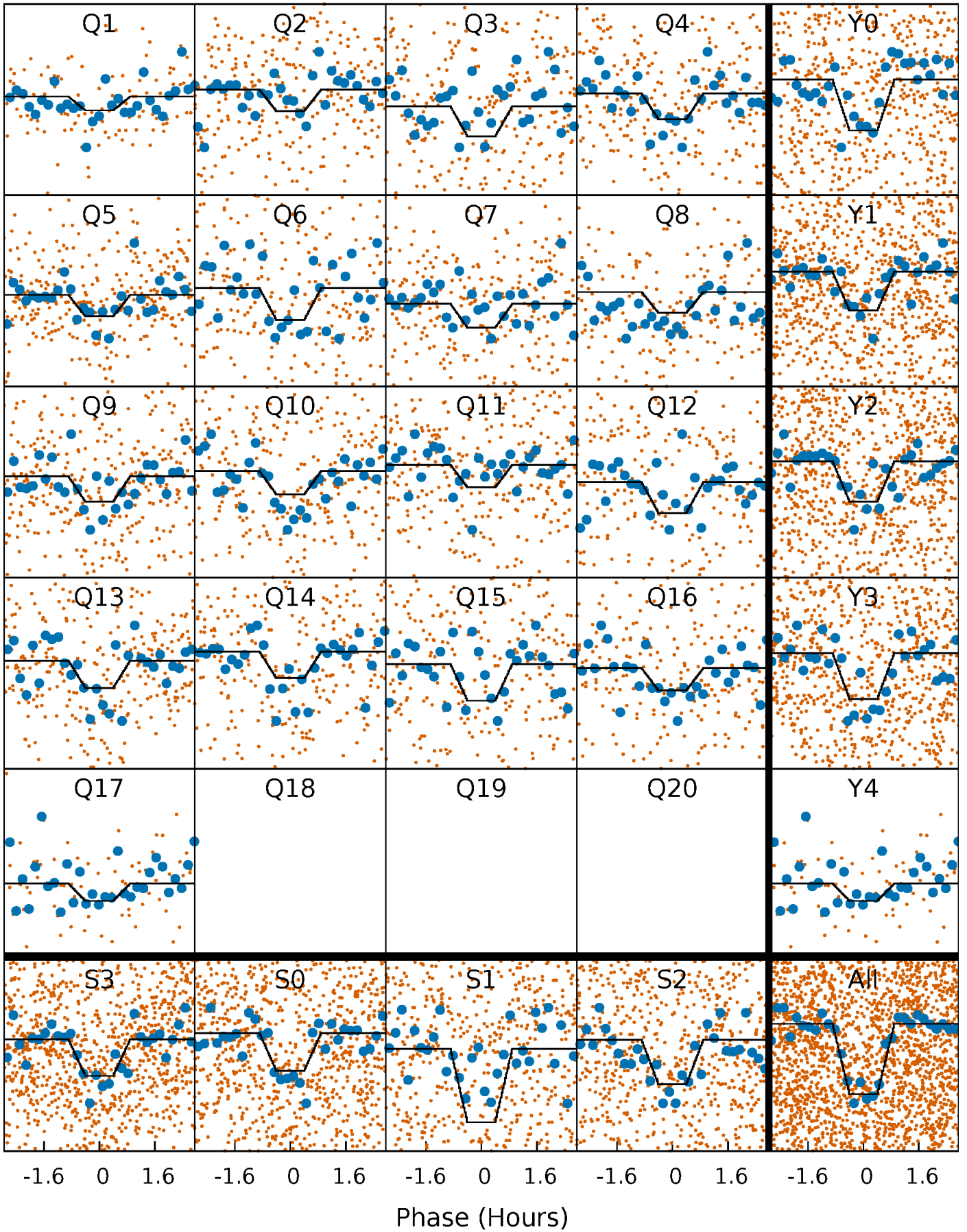
DV Quarter-Phased Transit Curves

TCE 001721157-01 $P = 3.449282$ Days $T_0 = 133.380926$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

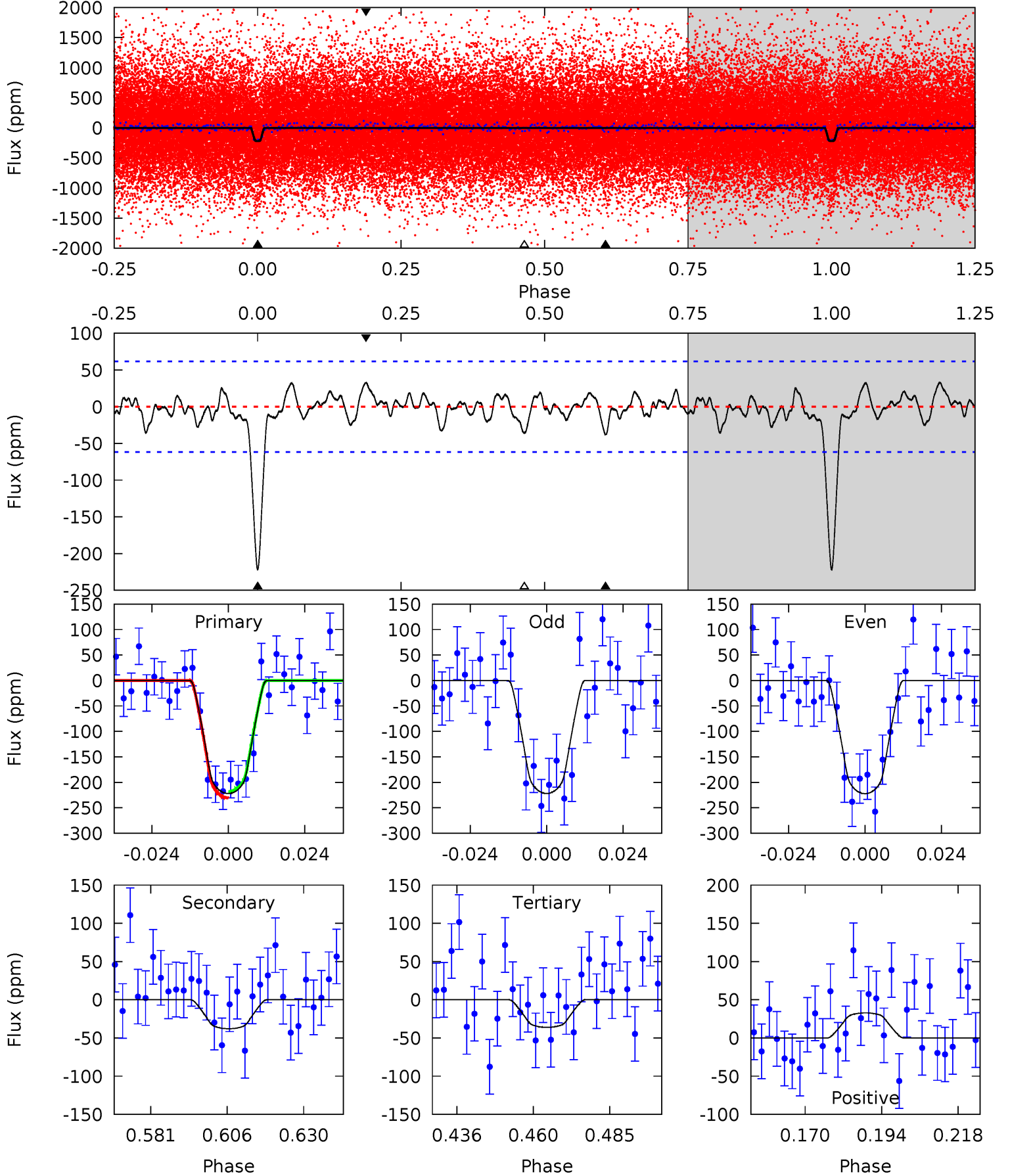
TCE 001721157-01 P= 3.449245 Days $T_0=133.389584$ (BKJD)



DV Model-Shift Uniqueness Test

001721157-01, P = 3.449282 Days, E = 129.931644 Days

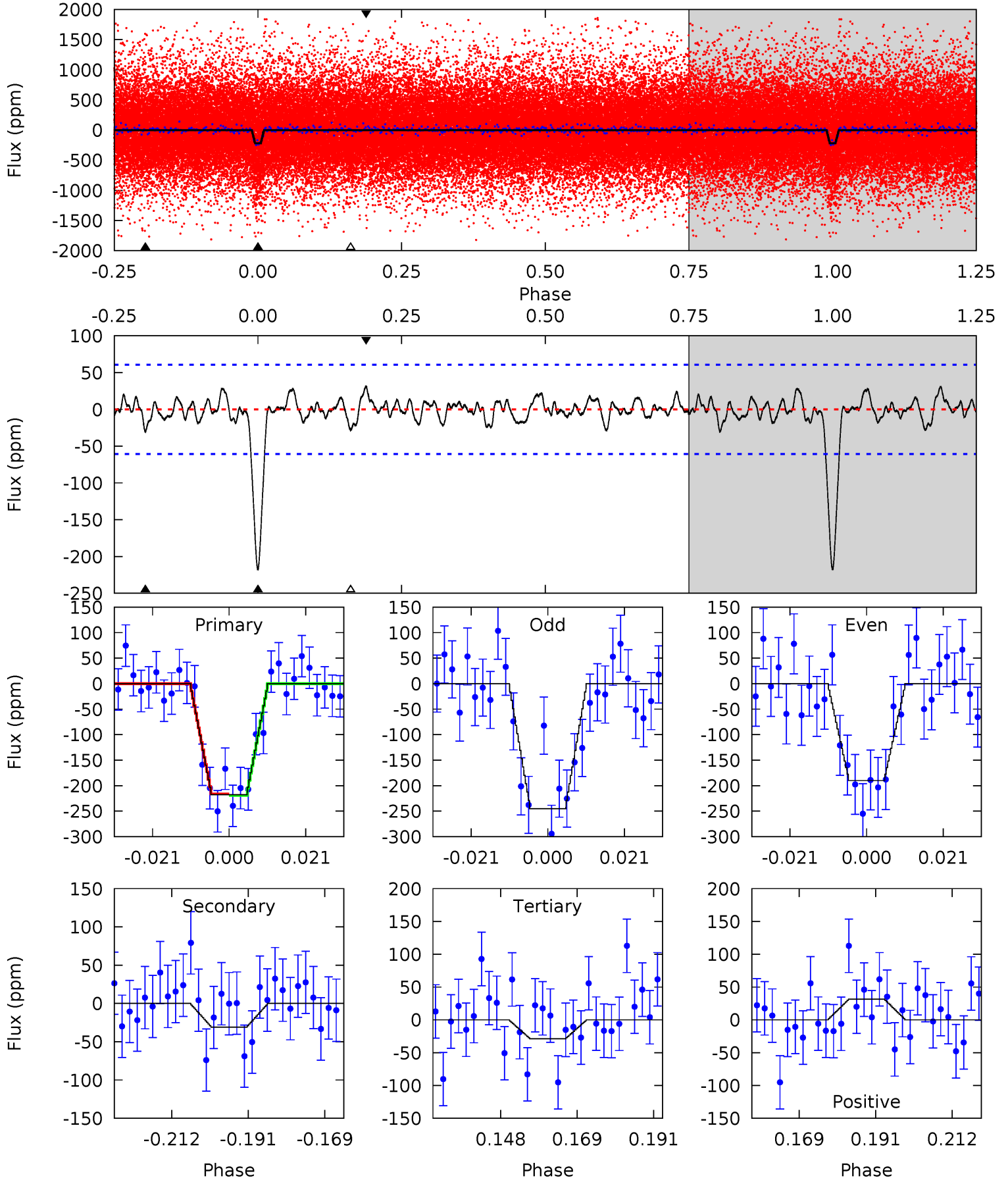
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	2.99	2.84	2.59	4.85	2.25	1.02	14.6	14.9	0.14	0.40	0.02	0.85	0.13	0.50



Alt Model-Shift Uniqueness Test

001721157-01, P = 3.449245 Days, E = 129.940339 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	2.49	2.33	2.55	4.88	2.30	0.89	15.2	15.0	0.16	-0.06	2.21	0.87	0.13	0.10



Stellar Parameters For KIC 001721157

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5119^{+154}_{-139}	$4.591^{+0.024}_{-0.090}$	$0.140^{+0.250}_{-0.300}$	$0.781^{+0.103}_{-0.055}$	$0.879^{+0.050}_{-0.092}$	$2.599^{+0.382}_{-0.710}$
	+3%/-3%	+1%/-2%	+179%/-214%	+13%/-7%	+6%/-10%	+15%/-27%
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 001721157-01 / KOI 4644.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-38 ± 13	$1.66^{+0.97}_{-0.89}$	1368^{+59}_{-44}	3390^{+1056}_{-476}	13^{+52}_{-8}
Alt.	-31 ± 12	$1.33^{+0.99}_{-0.78}$	1368^{+56}_{-47}	3479^{+1404}_{-597}	16^{+84}_{-12}

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

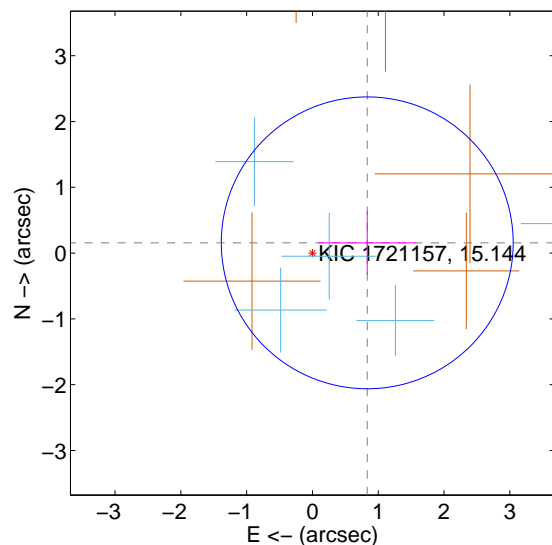
Supplemental centroid analysis for 001721157-01. Kepler magnitude: 15.14. Transit SNR 12.26

There are 5 quarters with good PRF difference image offsets

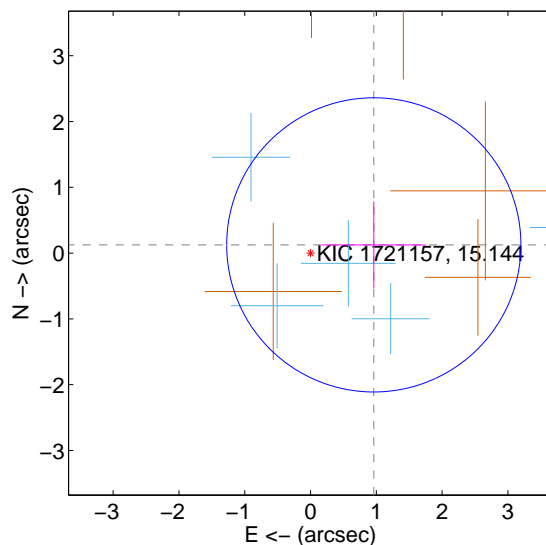
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.847 ± 0.739	1.15	-0.833 ± 0.747	0.156 ± 0.485
PRF-fit source offset from KIC position	0.970 ± 0.745	1.30	-0.962 ± 0.790	0.125 ± 0.662
photometric centroid source offset	0.40 ± 0.85	0.47	0.22 ± 0.90	0.34 ± 0.83

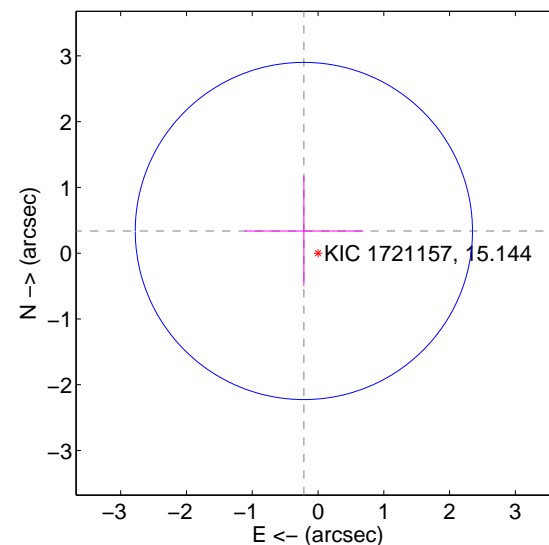
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

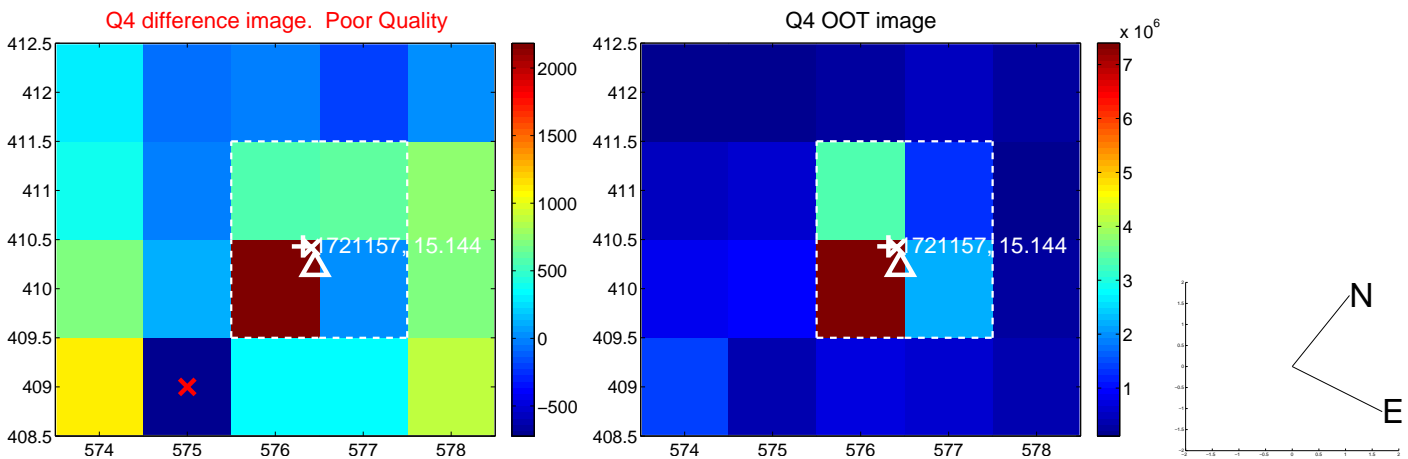
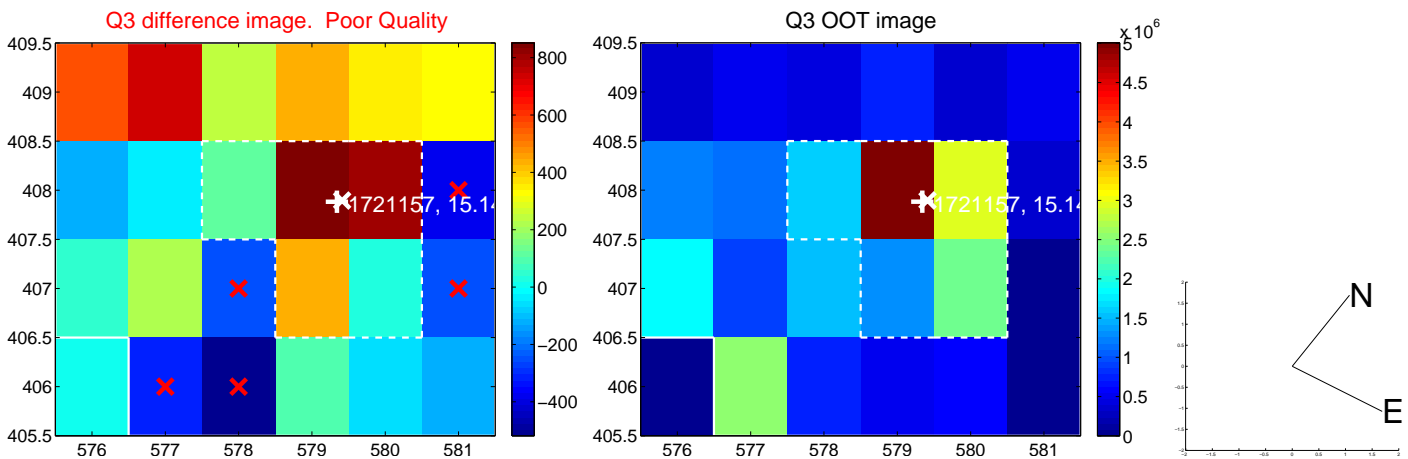
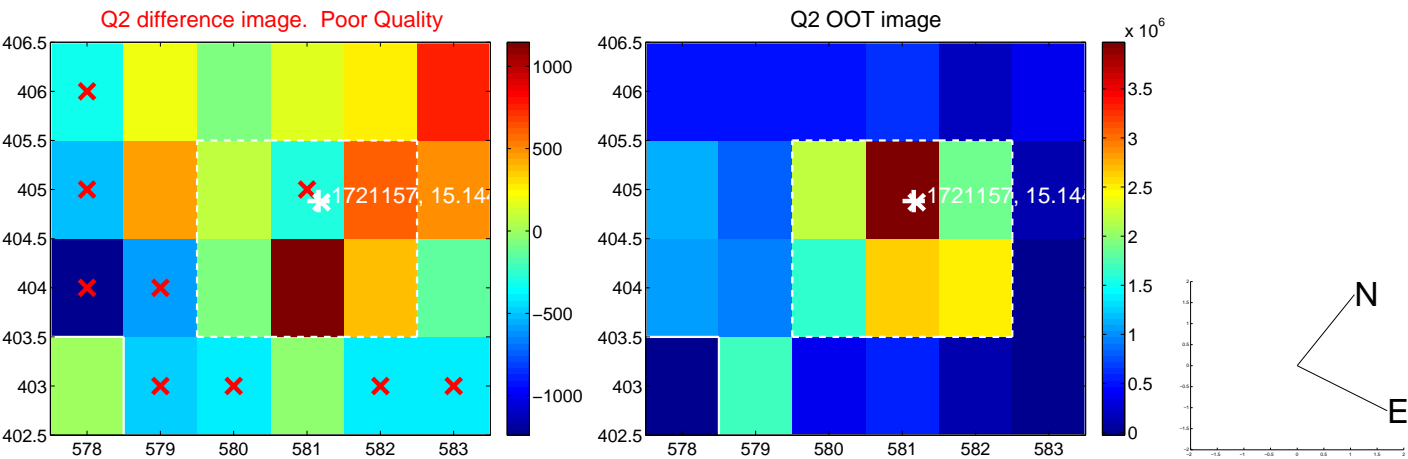
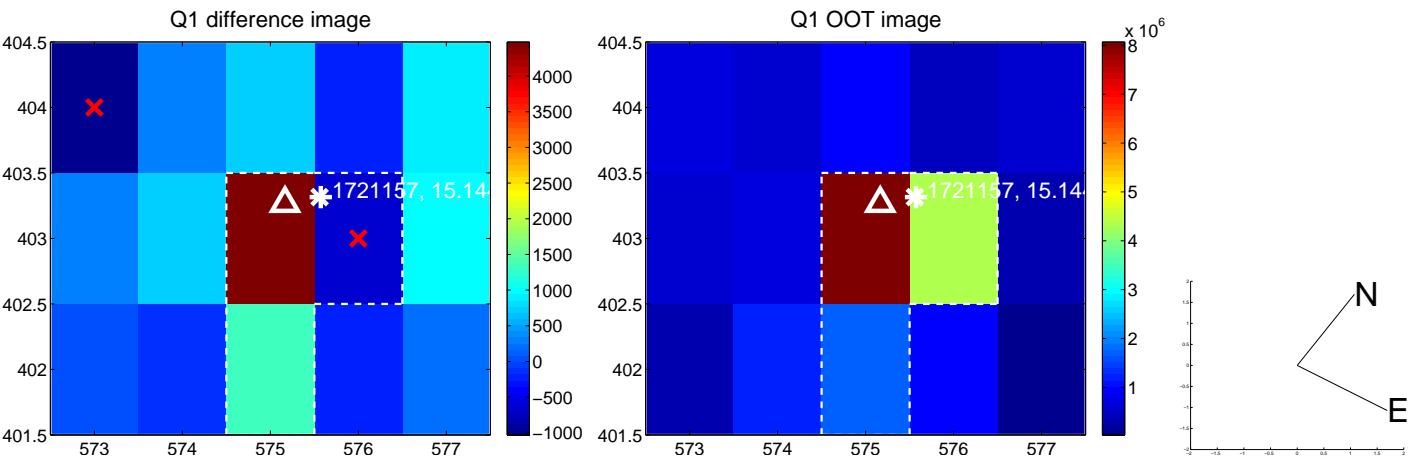


offset from photometric centroids

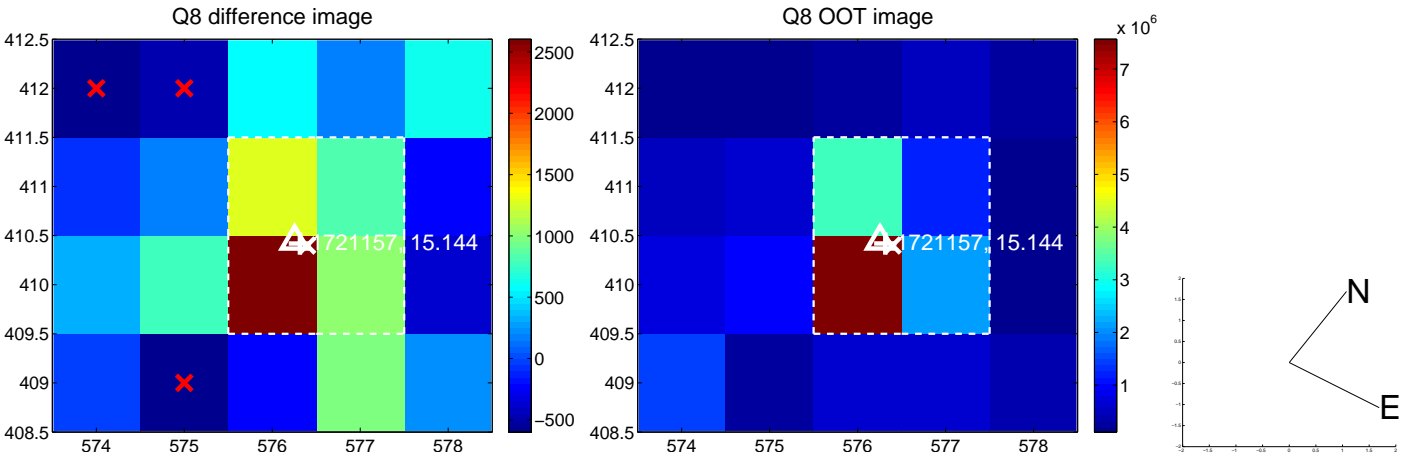
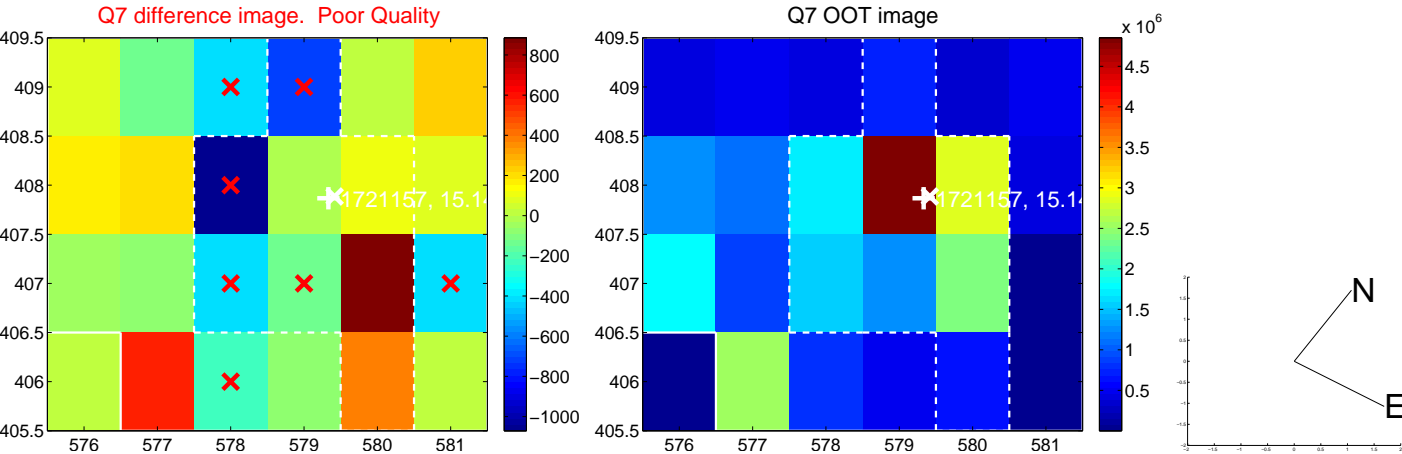
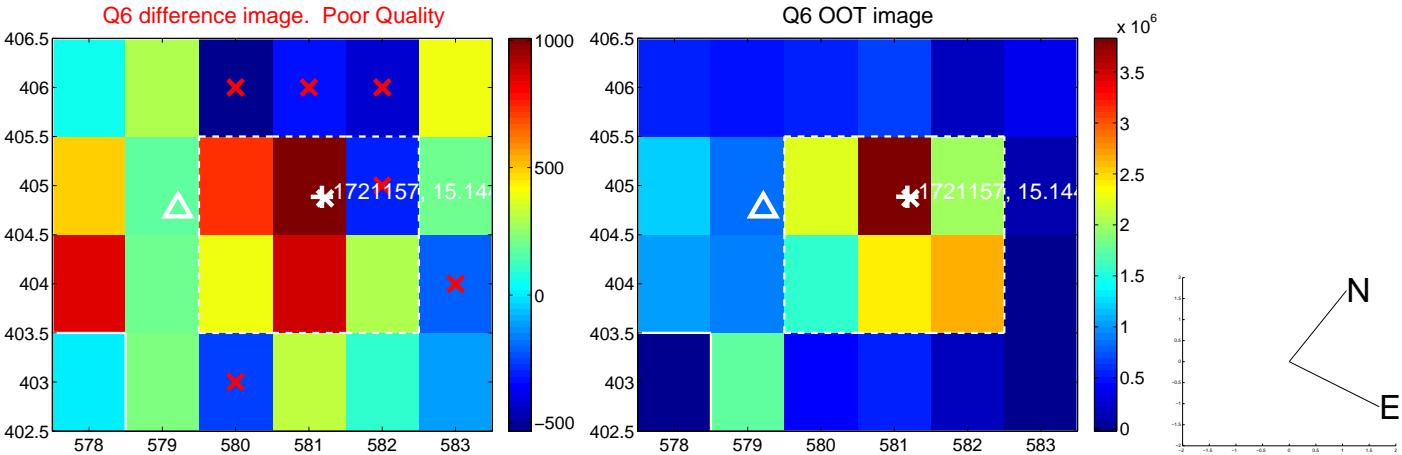
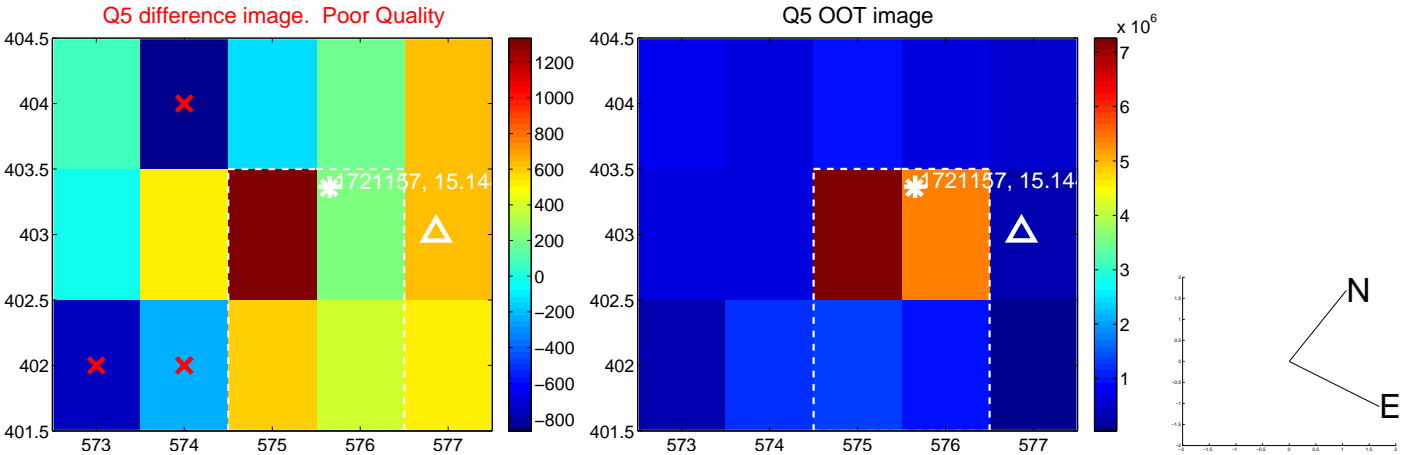


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

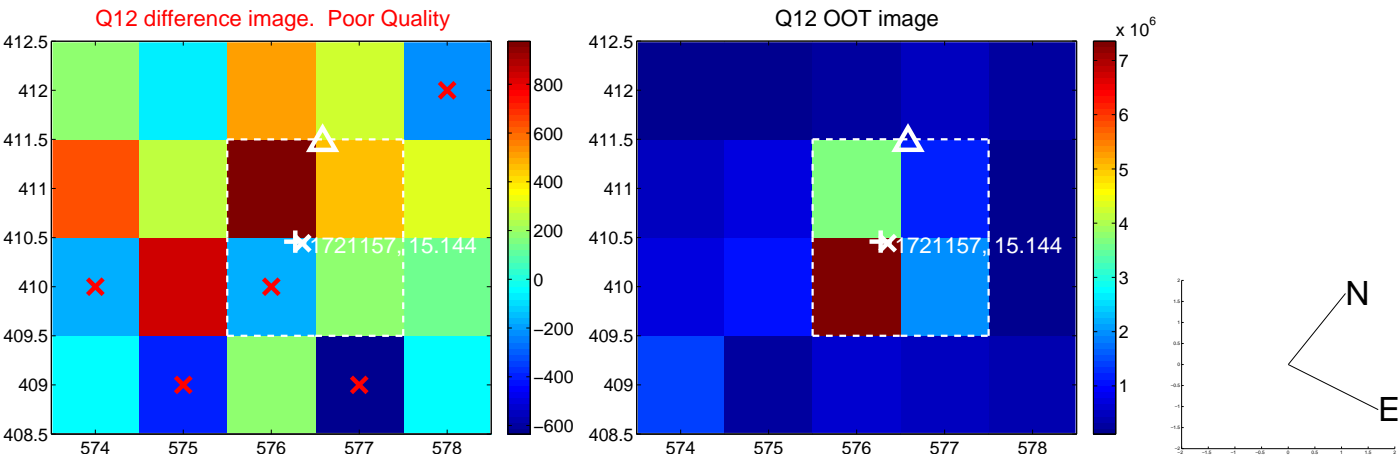
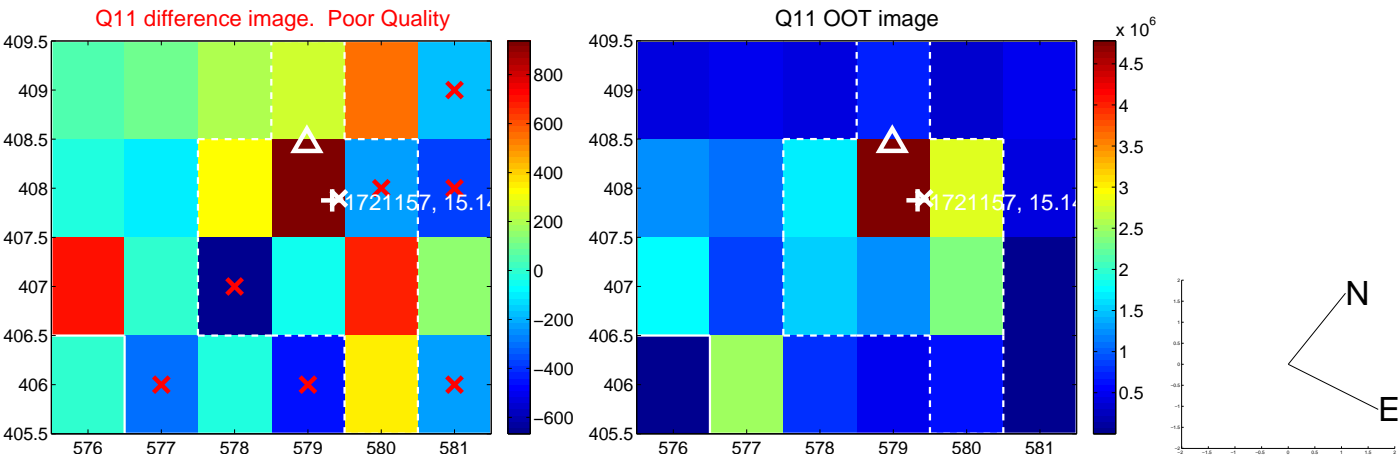
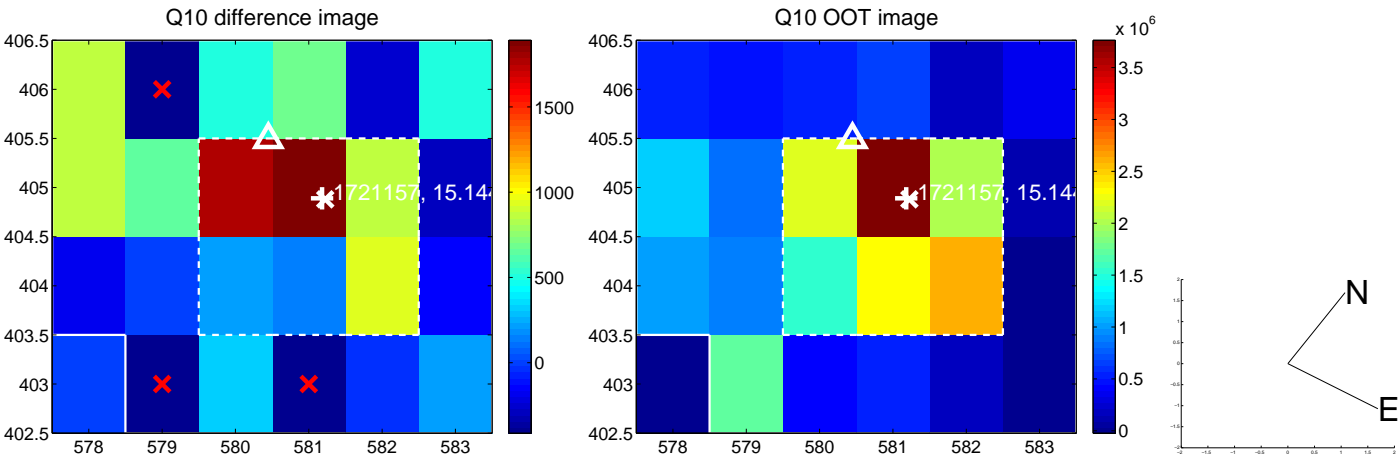
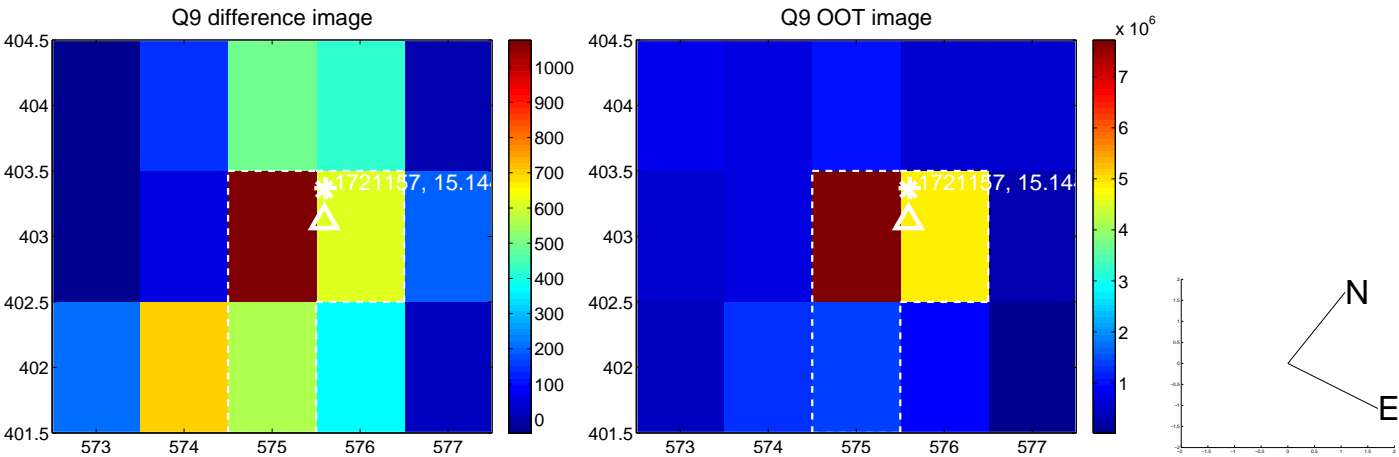
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



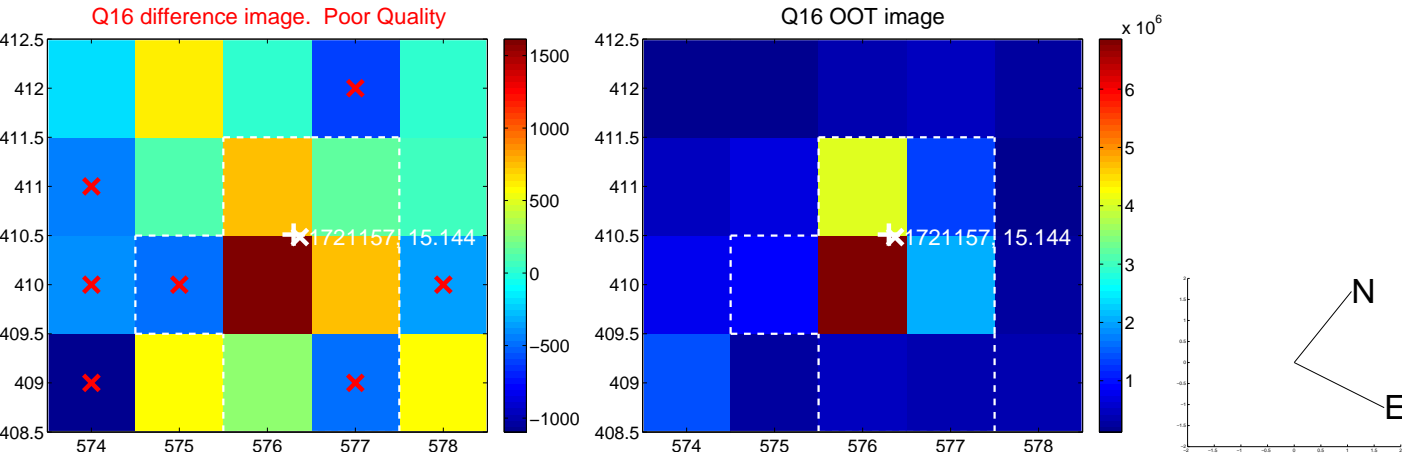
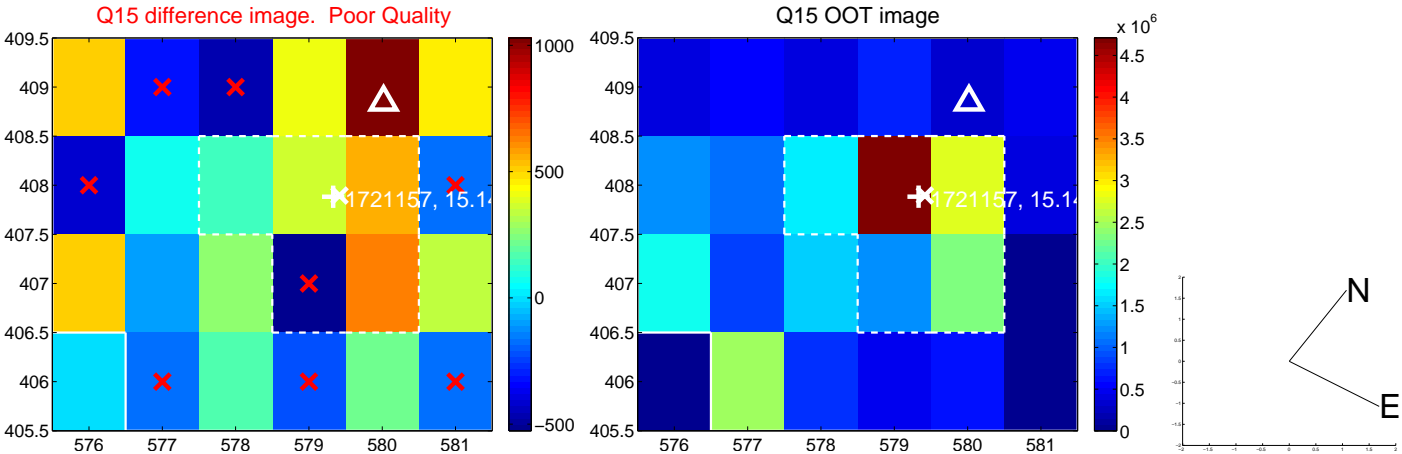
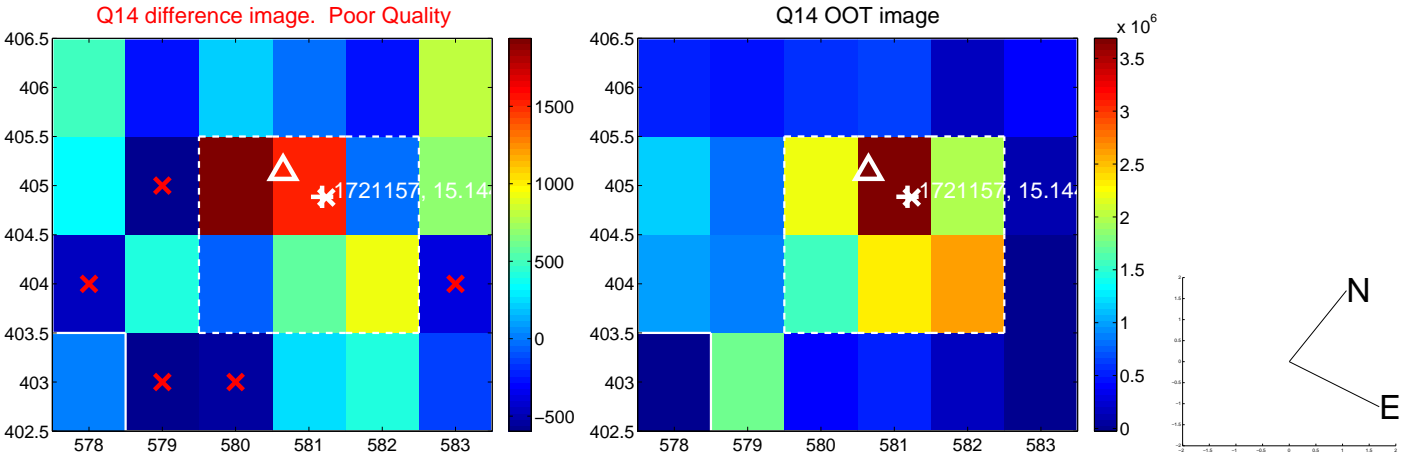
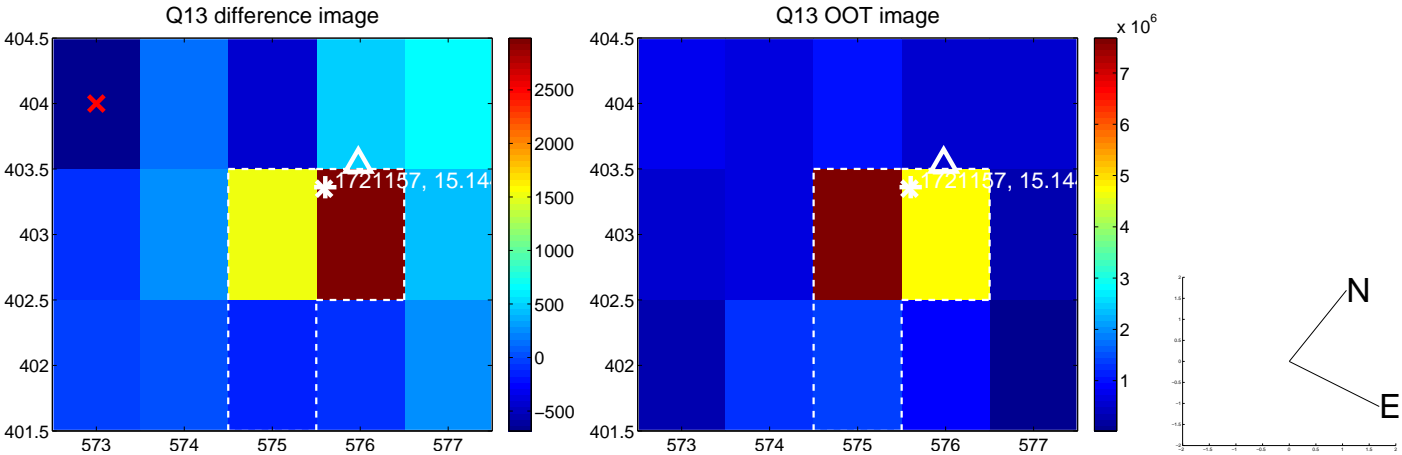
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



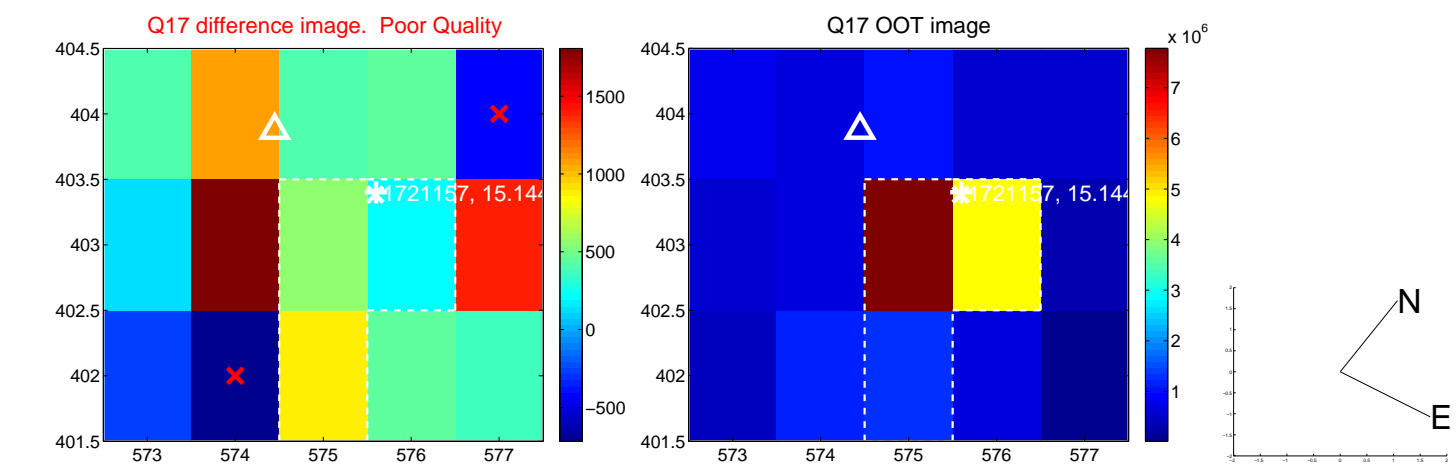
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



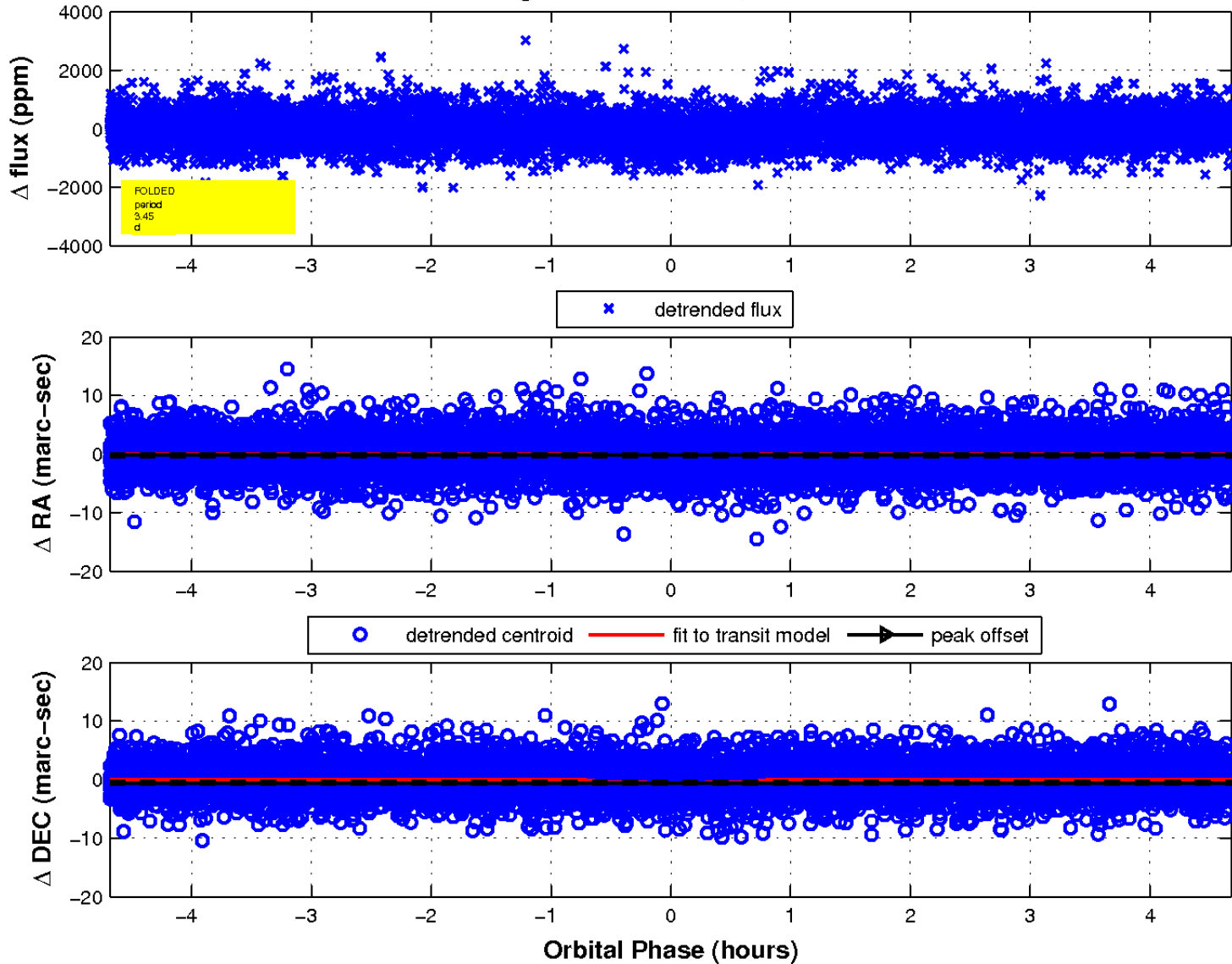
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

