

KIC 002721030

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})
002721030-01	OBS	1094.01	6.100246	135.589993	729.5	4.828	37.2	40.9	0.94	5957	2.73	227.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002721030-01	OBS	PC	0.99	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.

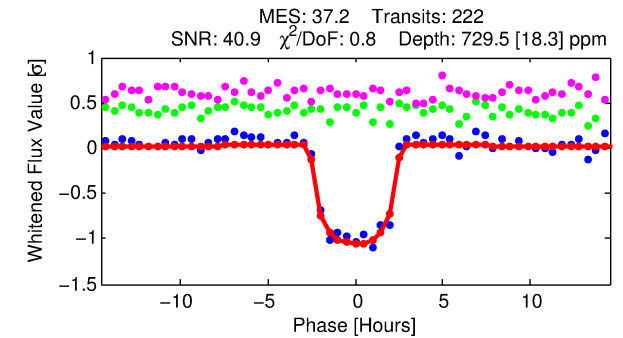
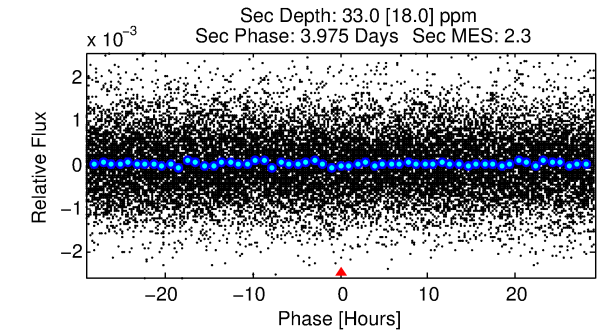
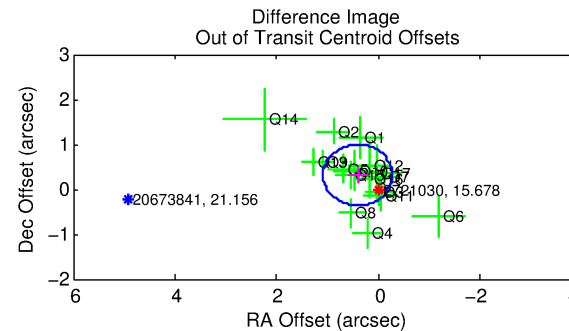
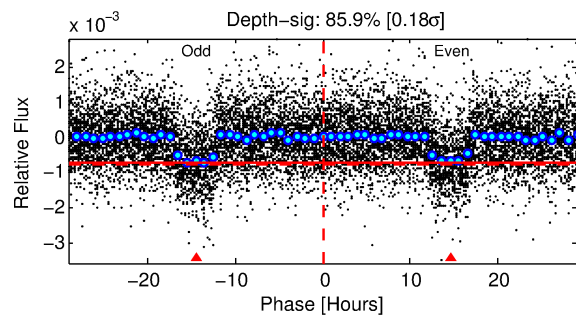
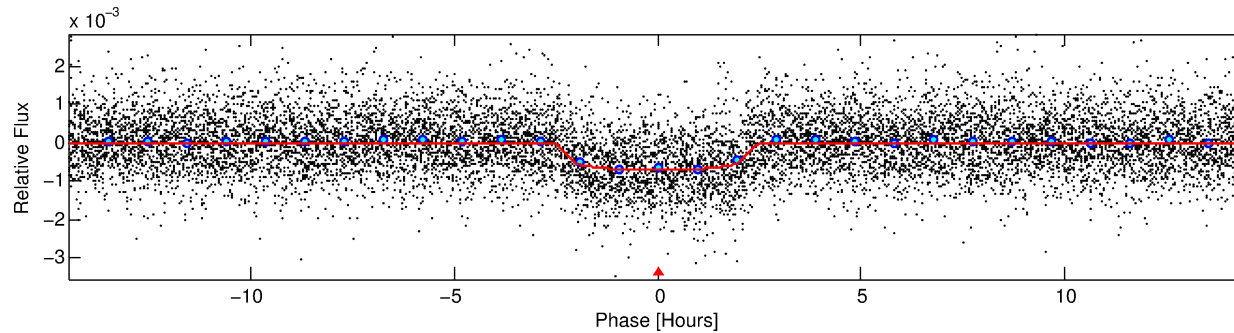
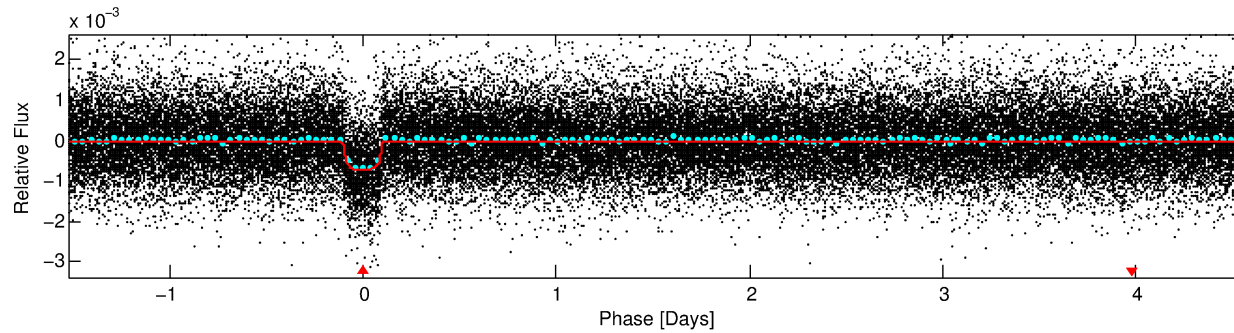
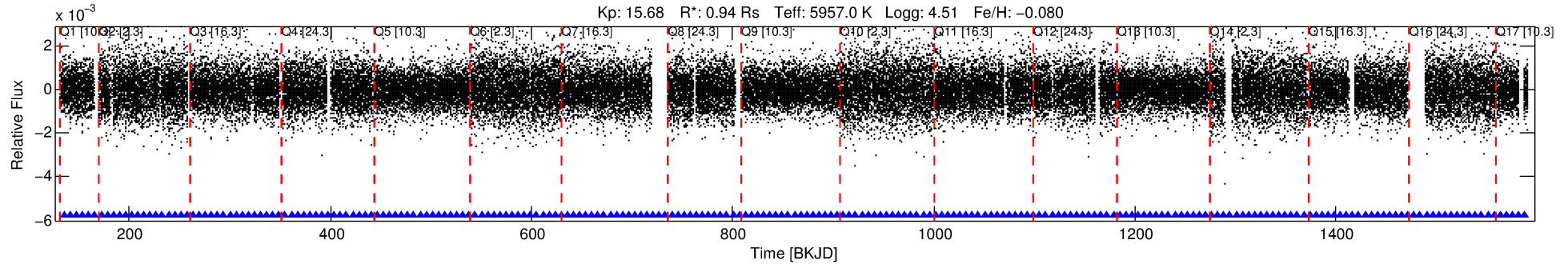
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002721030-01

No Significant Match Found

DV One-Page Summary

KIC: 2721030 Candidate: 1 of 1 Period: 6.100 d
KOI: K01094.01 Corr: 0.988



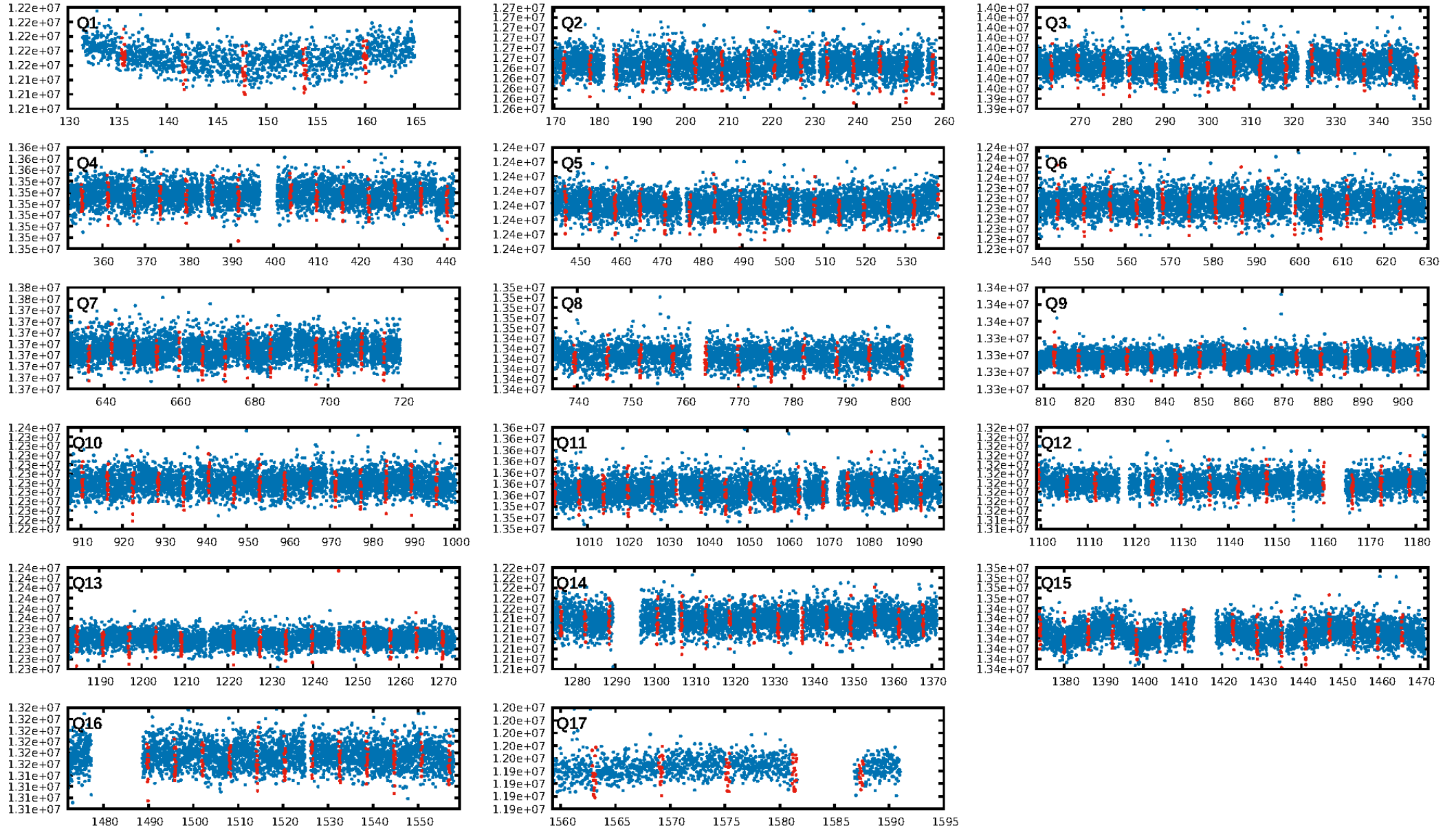
DV Fit Results:

Period = 6.10025 [0.00002] d
Epoch = 135.5900 [0.0021] BKJD
Rp/R* = 0.0267 [0.0048]
a/R* = 7.06 [5.81]
b = 0.73 [0.55]
Seff = 227.88 [92.38]
Teq = 991 [100] K
Rp = 2.73 [1.00] Re
a = 0.0659 [0.0175] AU
Ag = 10.61 [8.04] [1.20 σ]
Teffp = 2765 [460] K [3.76 σ]

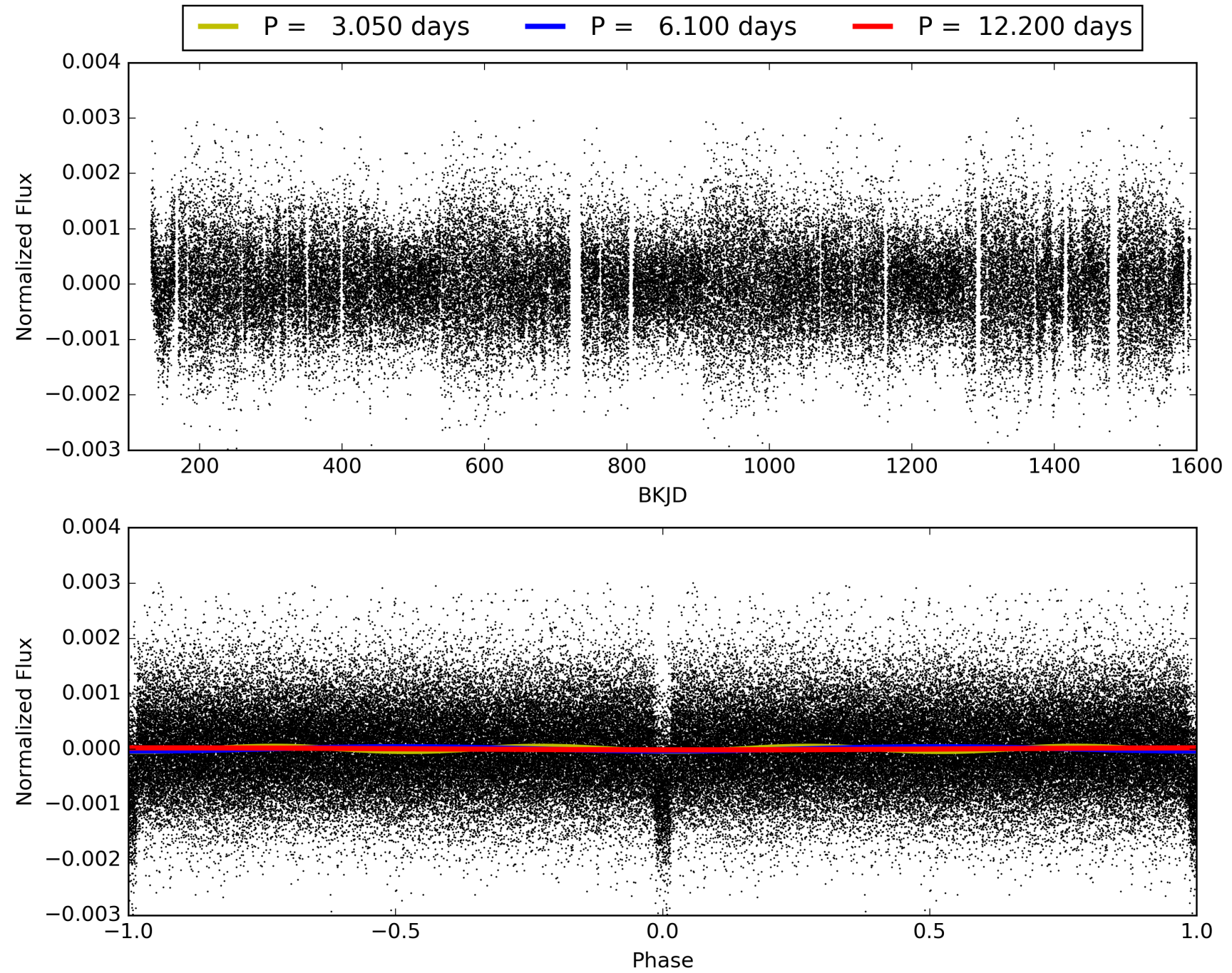
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.40e-295
RollingBand-fgt: 1.00 [212/212]
GhostDiagnostic-chr: 3.533
Centroid-sig: 0.1%
Centroid-so: 0.894 arcsec [3.24 σ]
OotOffset-rm: 0.515 arcsec [2.28 σ]
KicOffset-rm: 0.118 arcsec [0.63 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 002721030-01, PDC Light Curves

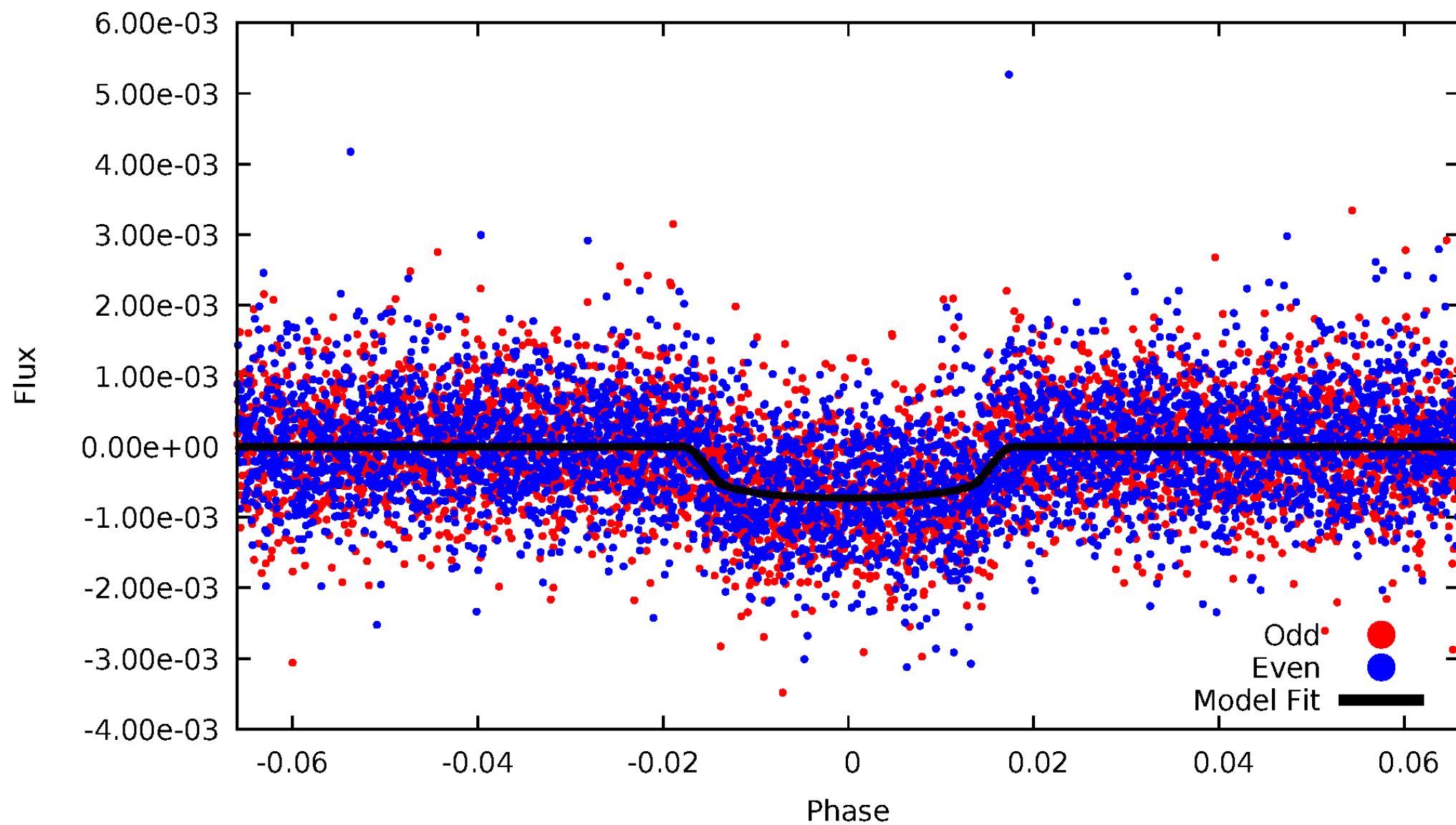


TCE 002721030-01



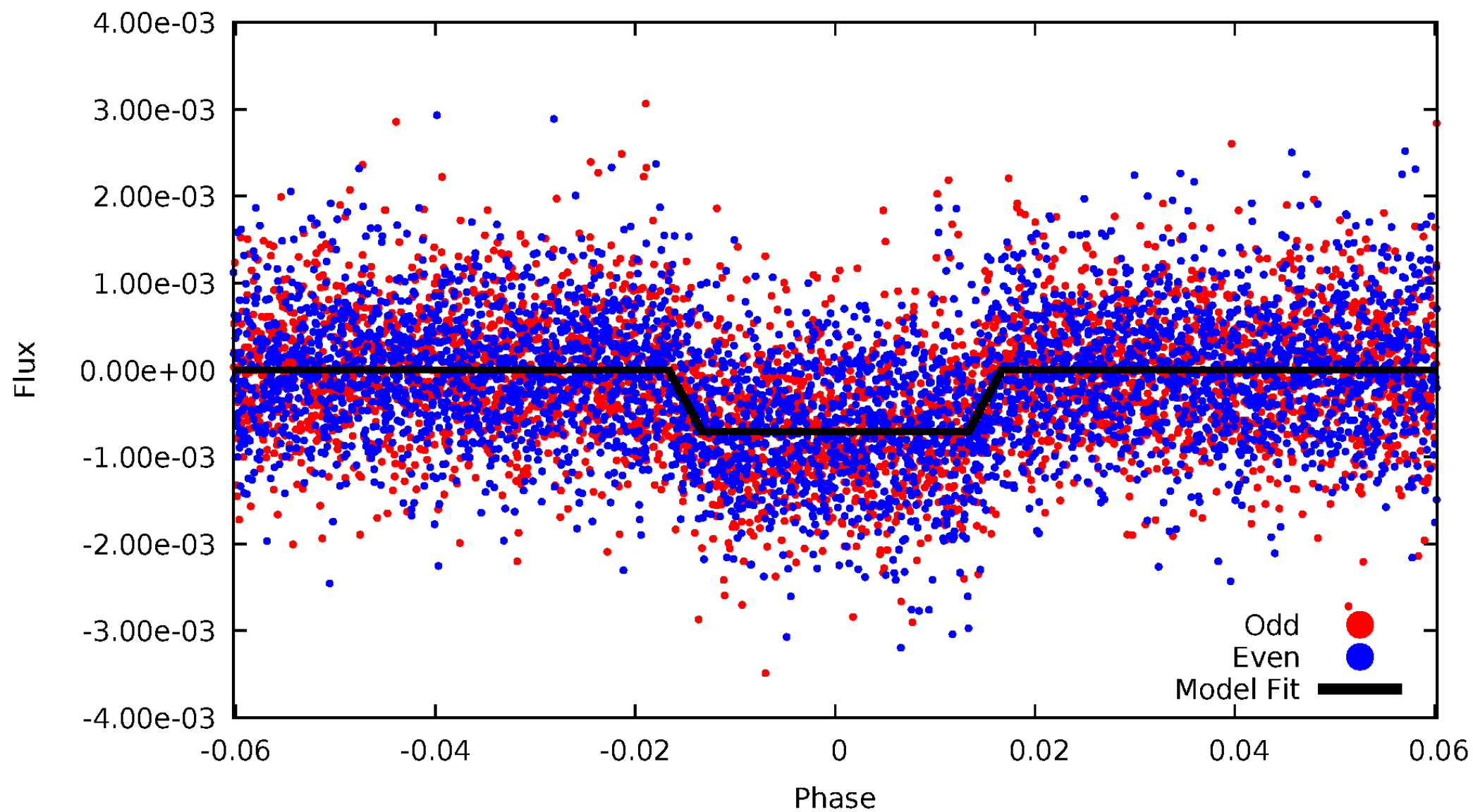
DV Odd/Even

TCE 002721030-01



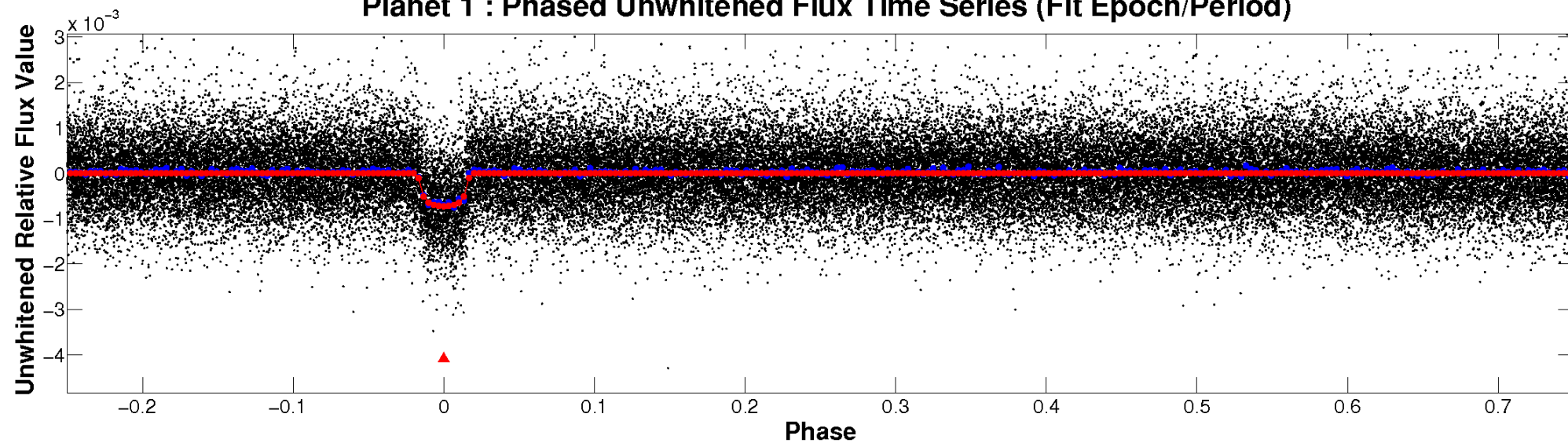
ALT Odd/Even

TCE 002721030-01

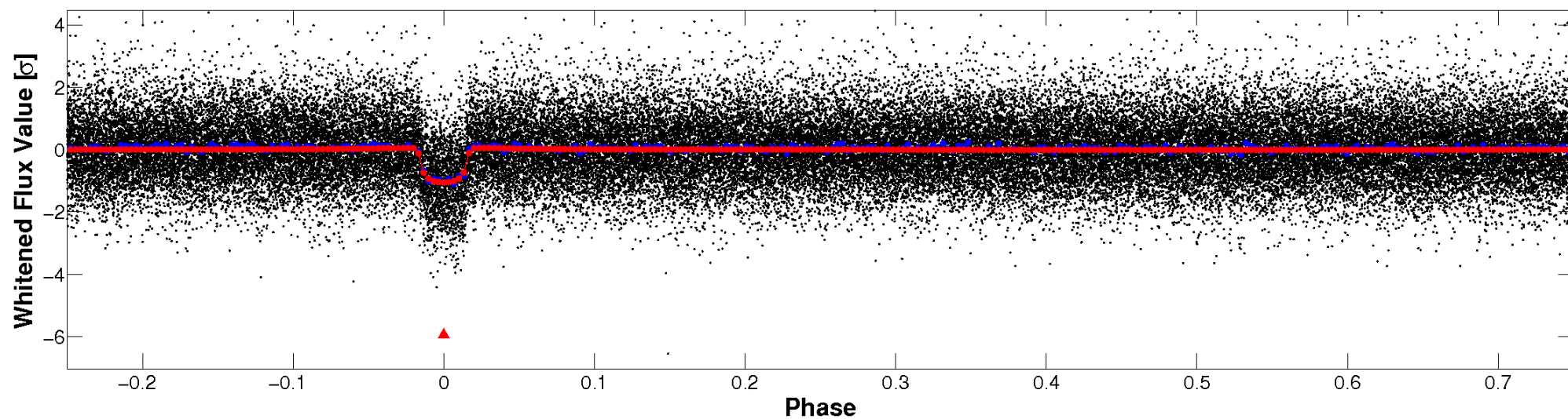


Non-Whitened Vs. Whitened Light Curve

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

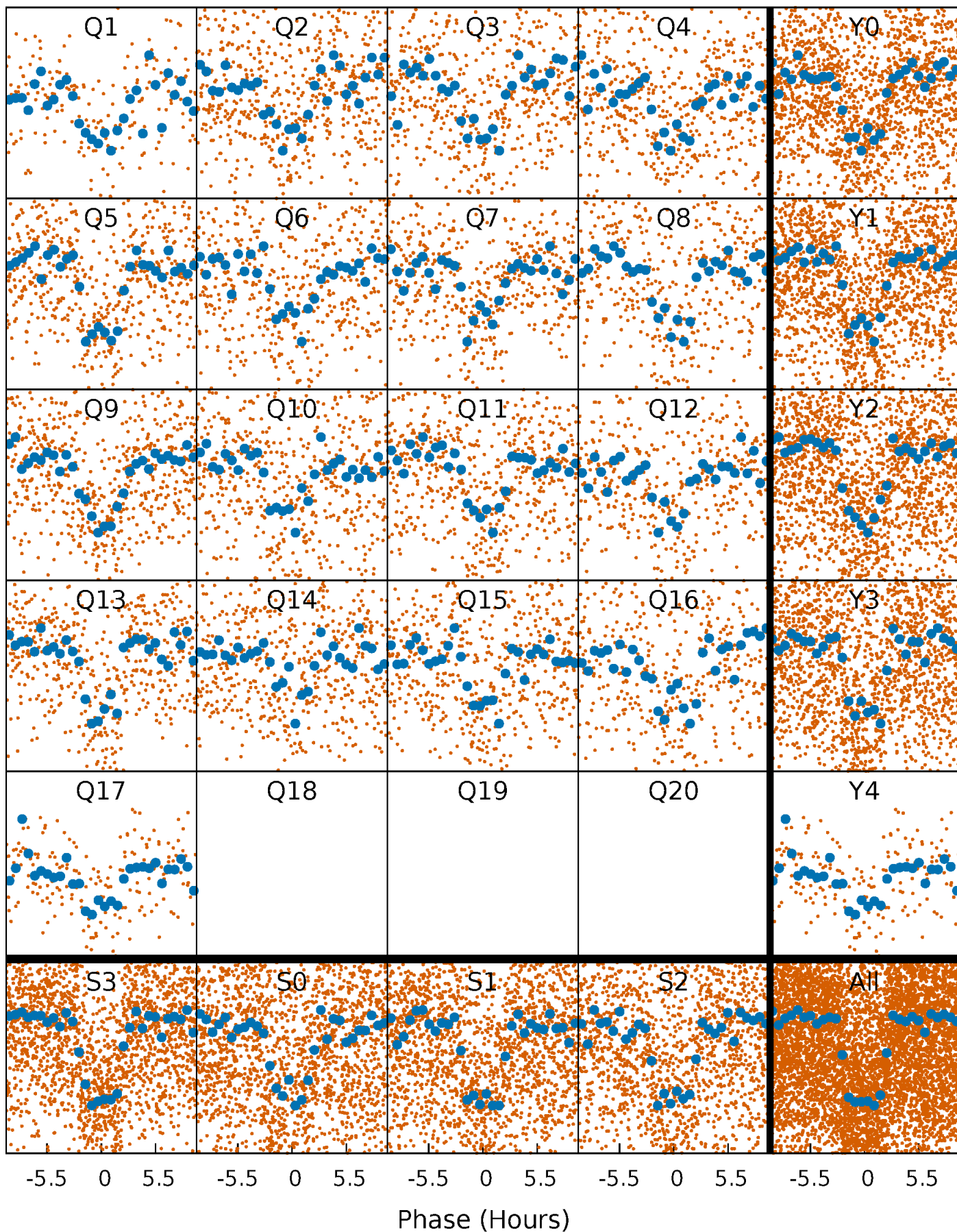


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



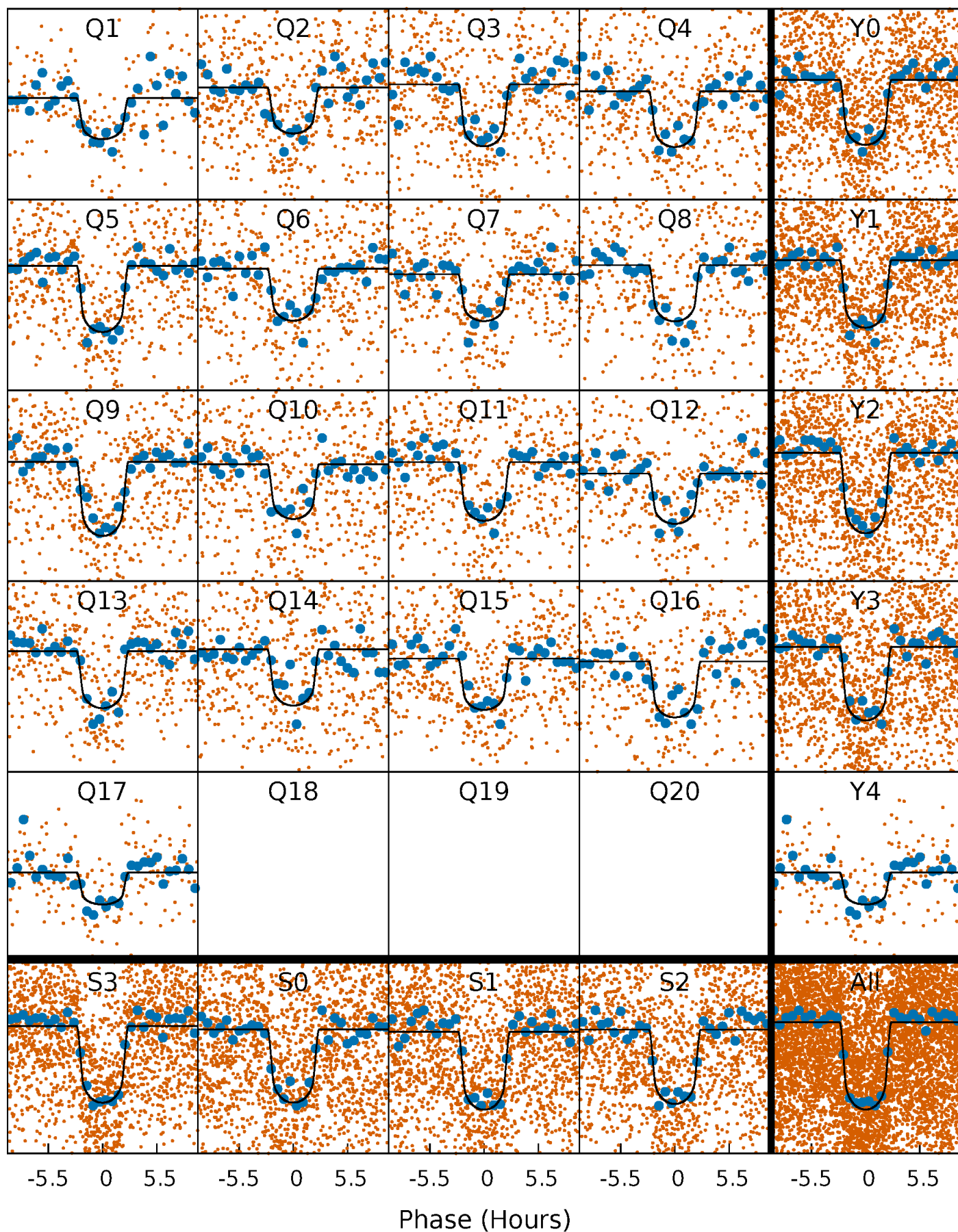
PDC Quarter-Phased Transit Curves

TCE 002721030-01 P= 6.100246 Days $T_0=135.589993$ (BKJD)



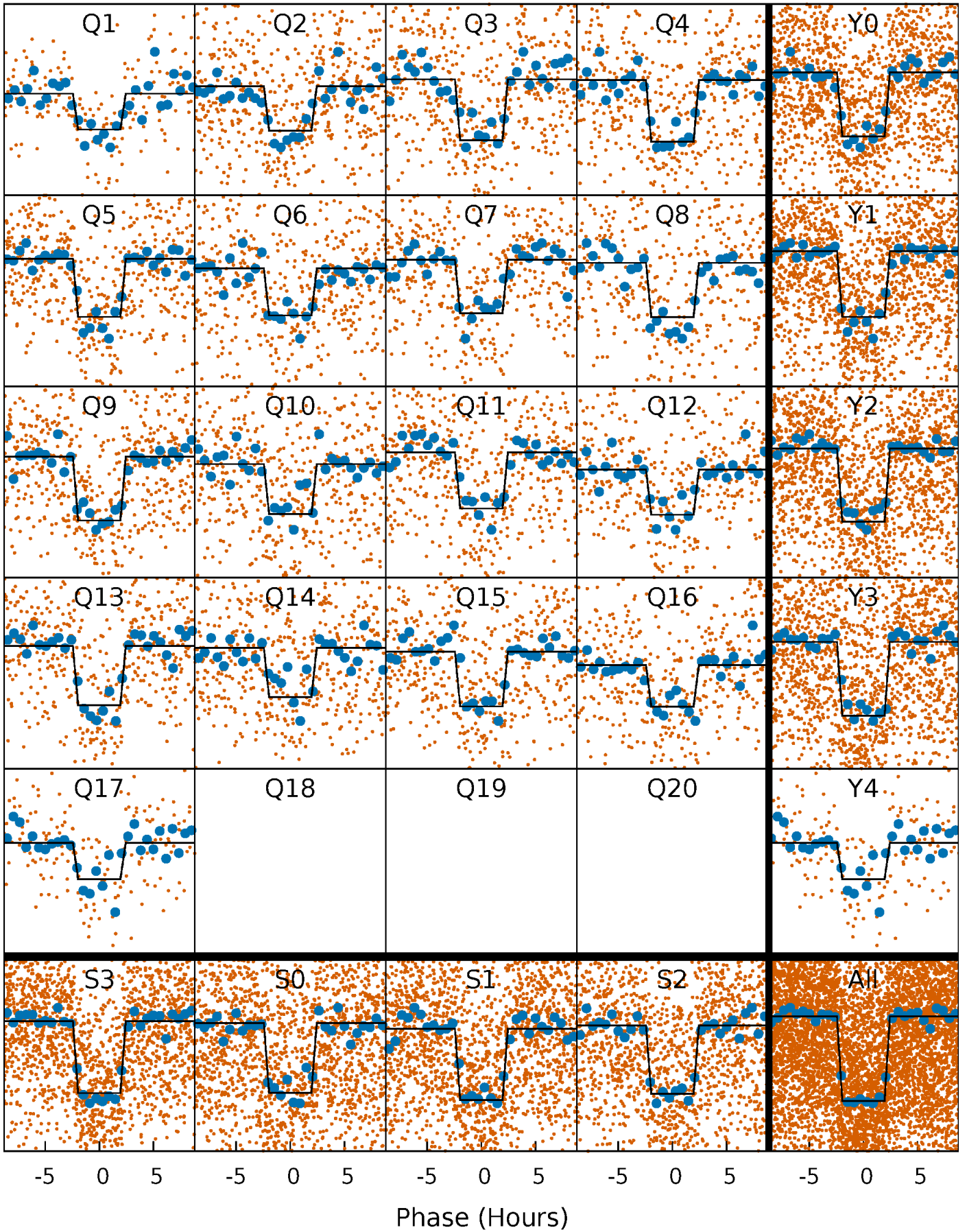
DV Quarter-Phased Transit Curves

TCE 002721030-01 P= 6.100246 Days $T_0=135.589993$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

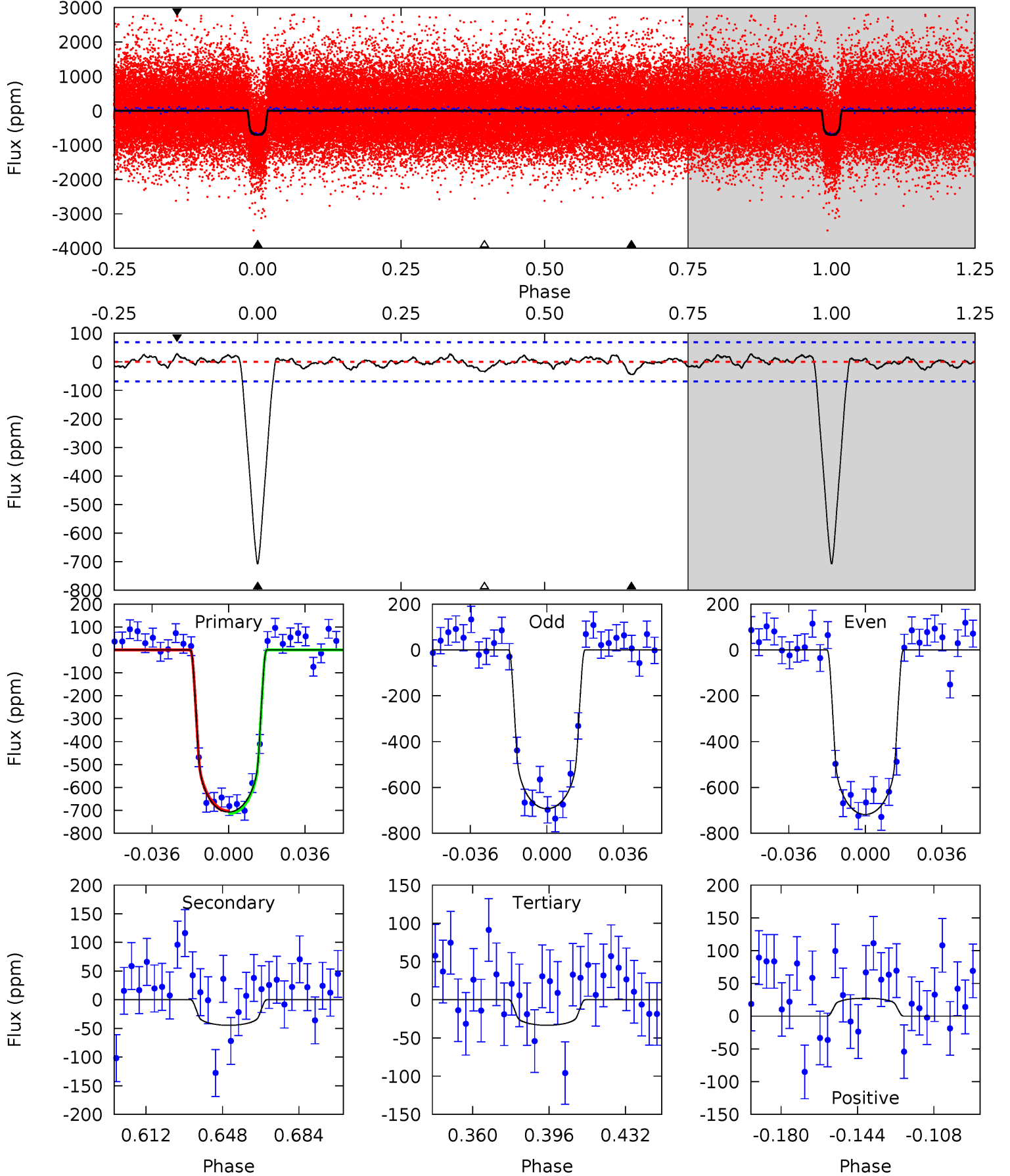
TCE 002721030-01 P= 6.100230 Days $T_0=135.591544$ (BKJD)



DV Model-Shift Uniqueness Test

002721030-01, P = 6.100246 Days, E = 129.489747 Days

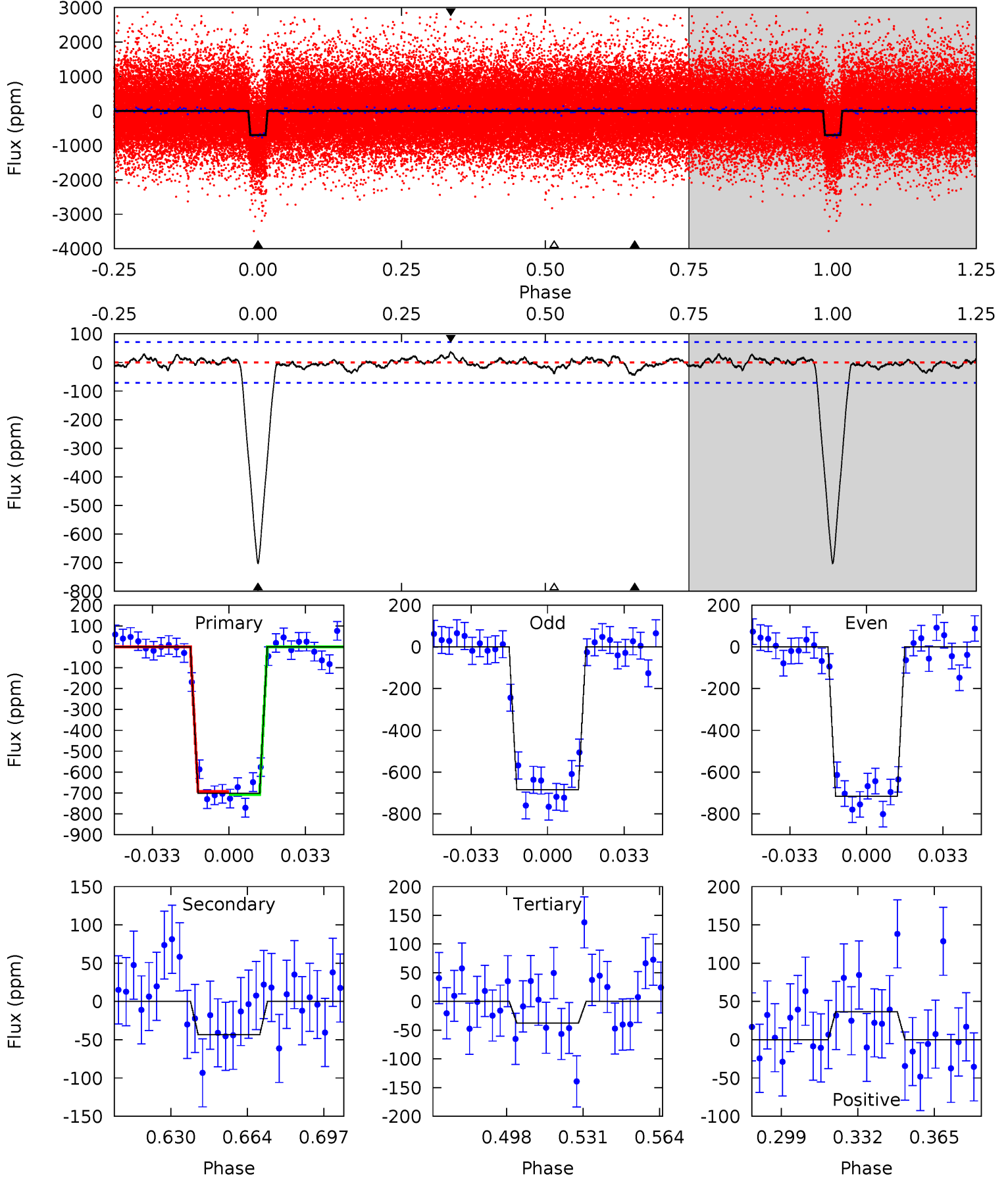
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.3	3.10	2.33	1.91	4.77	2.10	0.85	46.9	47.3	0.78	1.20	0.88	0.99	0.04	0.39



Alt Model-Shift Uniqueness Test

002721030-01, P = 6.100230 Days, E = 129.491314 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.2	2.92	2.54	2.46	4.79	2.13	0.85	44.6	44.7	0.39	0.47	1.07	0.97	0.05	0.53



Stellar Parameters For KIC 002721030

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5957^{+195}_{-195}	$4.506^{+0.039}_{-0.208}$	$-0.080^{+0.300}_{-0.300}$	$0.937^{+0.299}_{-0.100}$	$1.026^{+0.129}_{-0.129}$	$1.759^{+0.363}_{-0.927}$
	+3%/-3%	+1%/-5%	+375%/-375%	+32%/-11%	+13%/-13%	+21%/-53%
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 002721030-01 / KOI 1094.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-45 ± 14	$2.88^{+0.66}_{-0.56}$	1425^{+109}_{-71}	3455^{+300}_{-282}	12^{+9}_{-5}
Alt.	-44 ± 15	$2.89^{+0.62}_{-0.57}$	1423^{+105}_{-75}	3425^{+318}_{-273}	12^{+9}_{-5}

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

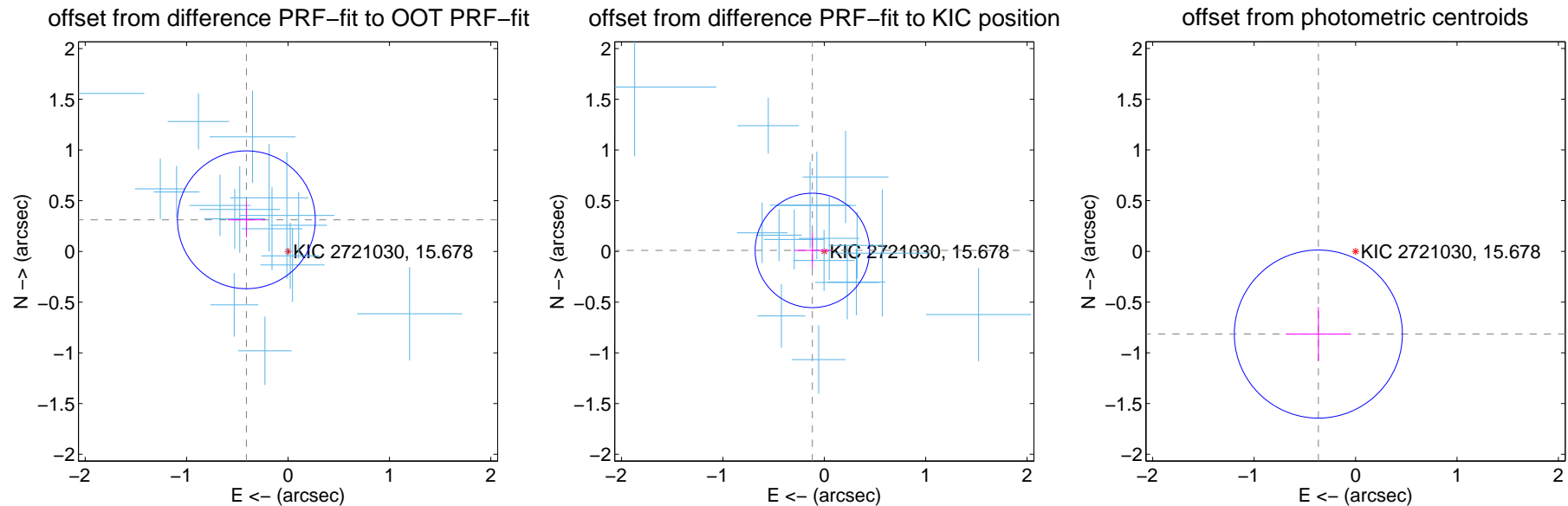
DV Centroid Data

Supplemental centroid analysis for 002721030-01. Kepler magnitude: 15.68. Transit SNR 40.90

There are 17 quarters with good PRF difference image offsets

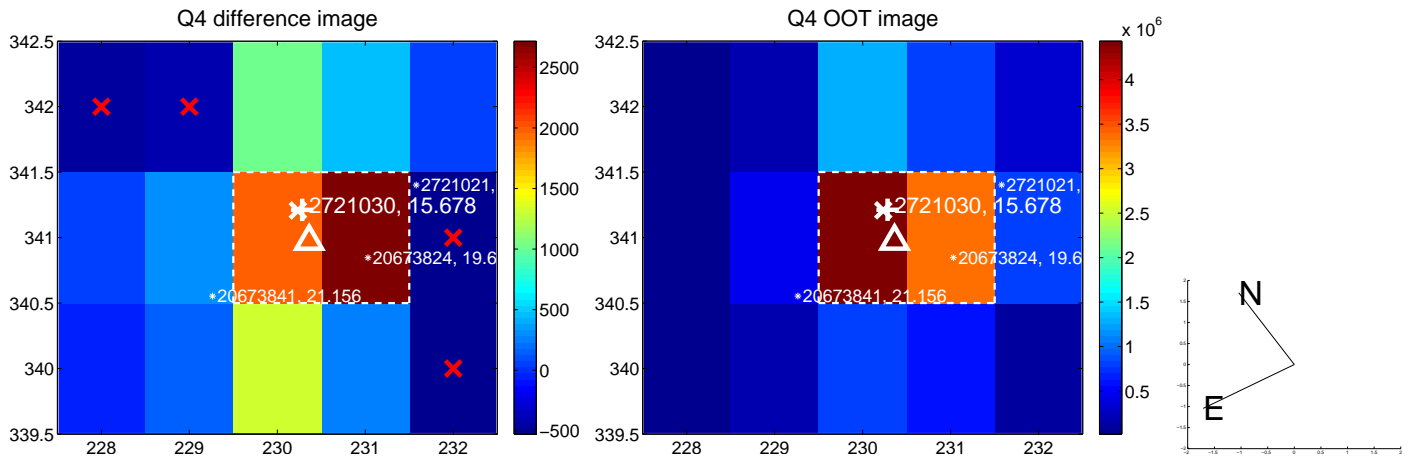
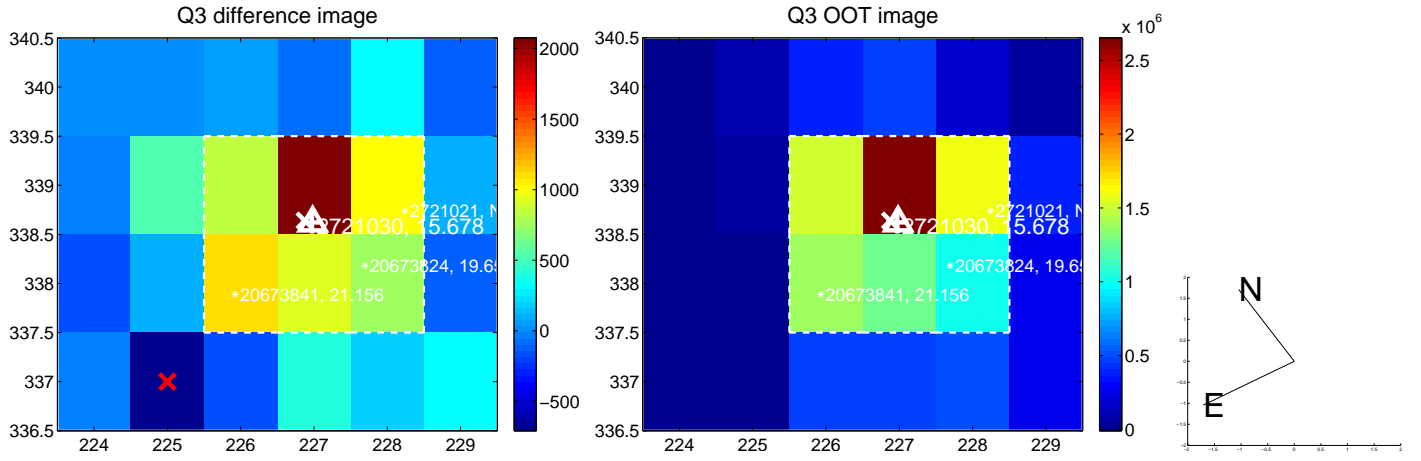
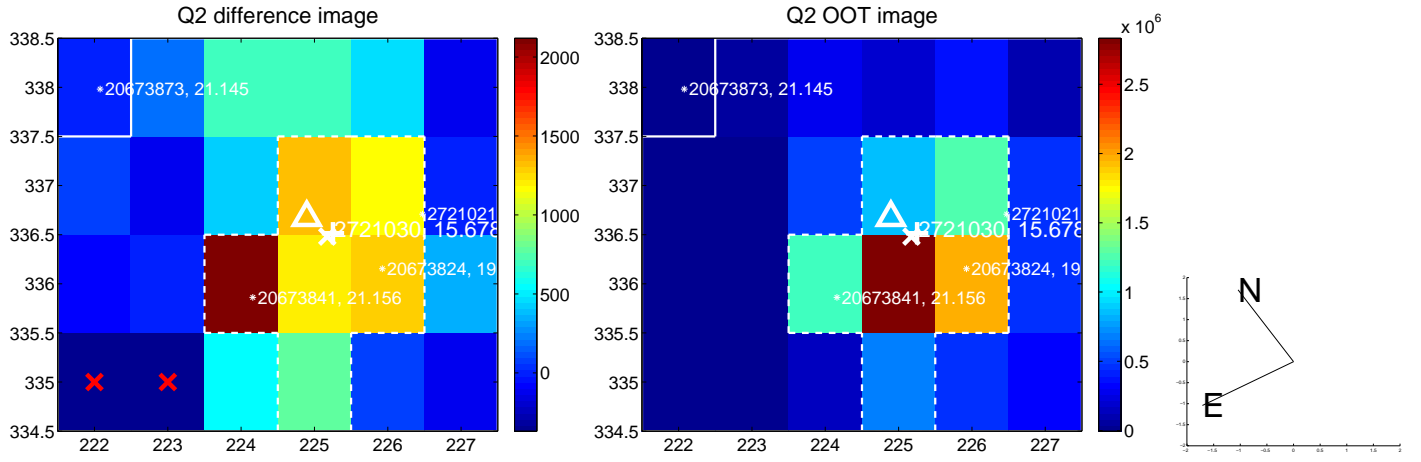
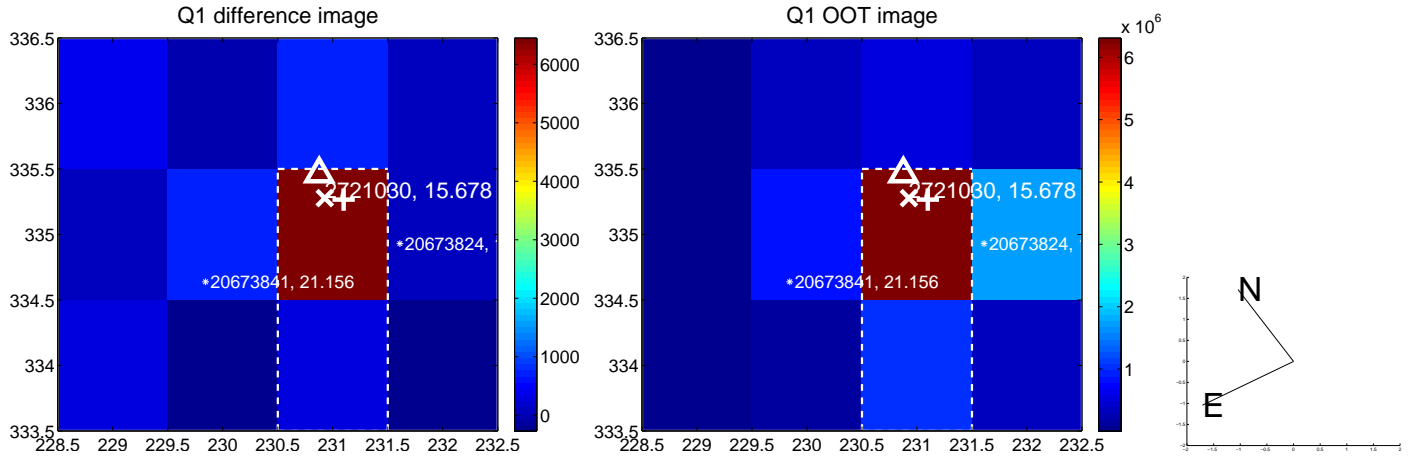
The direct PRF centroid is offset from the target star catalog position by about 0.69 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.515 ± 0.226	2.28	0.410 ± 0.185	0.312 ± 0.172
PRF-fit source offset from KIC position	0.118 ± 0.188	0.63	0.118 ± 0.180	0.010 ± 0.175
photometric centroid source offset	0.89 ± 0.28	3.24	0.37 ± 0.32	-0.82 ± 0.27

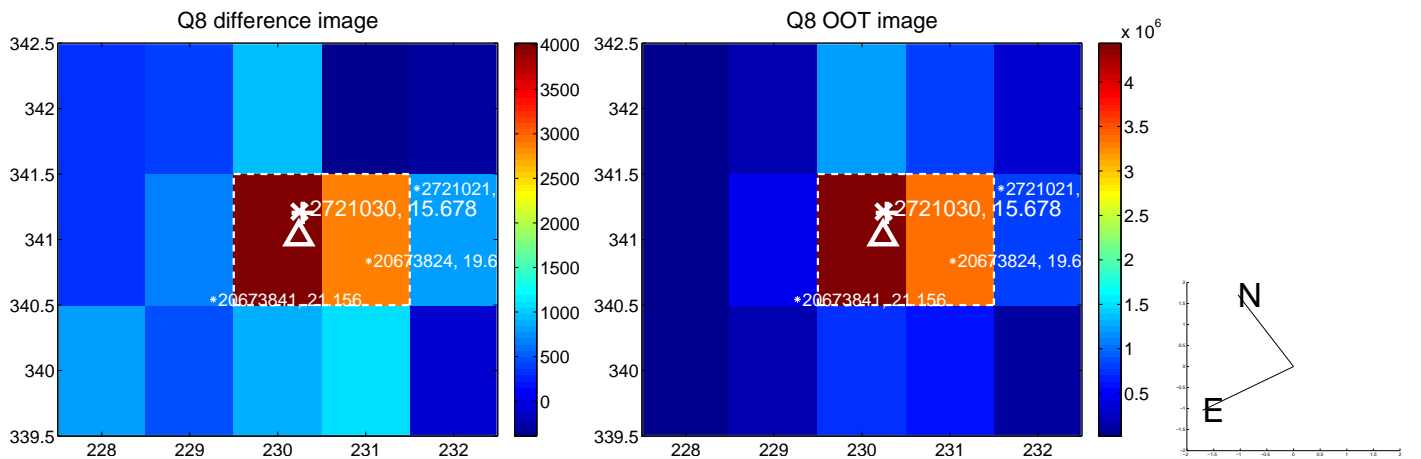
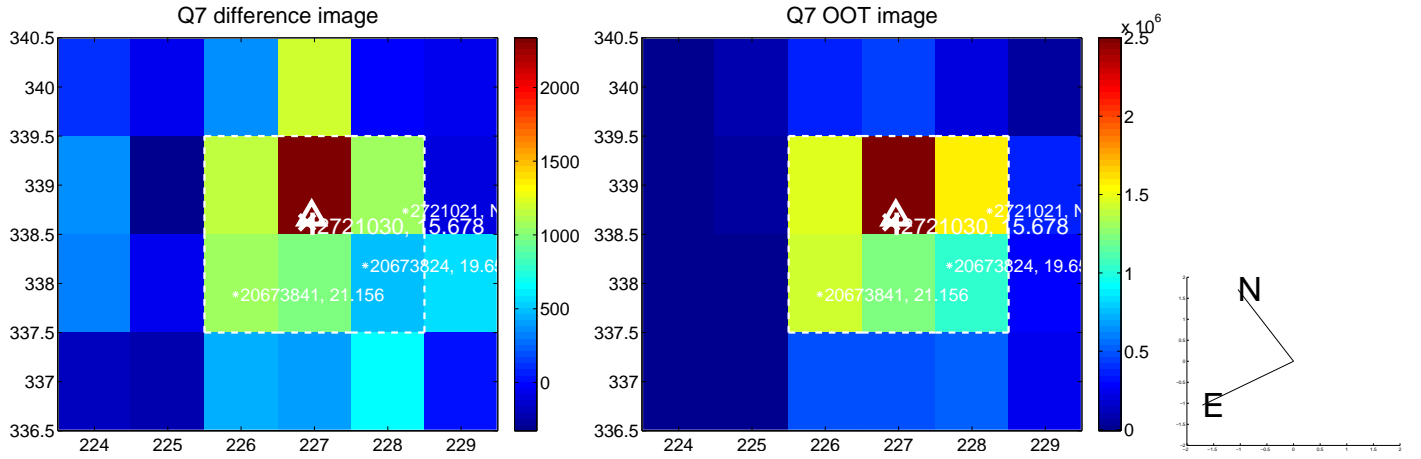
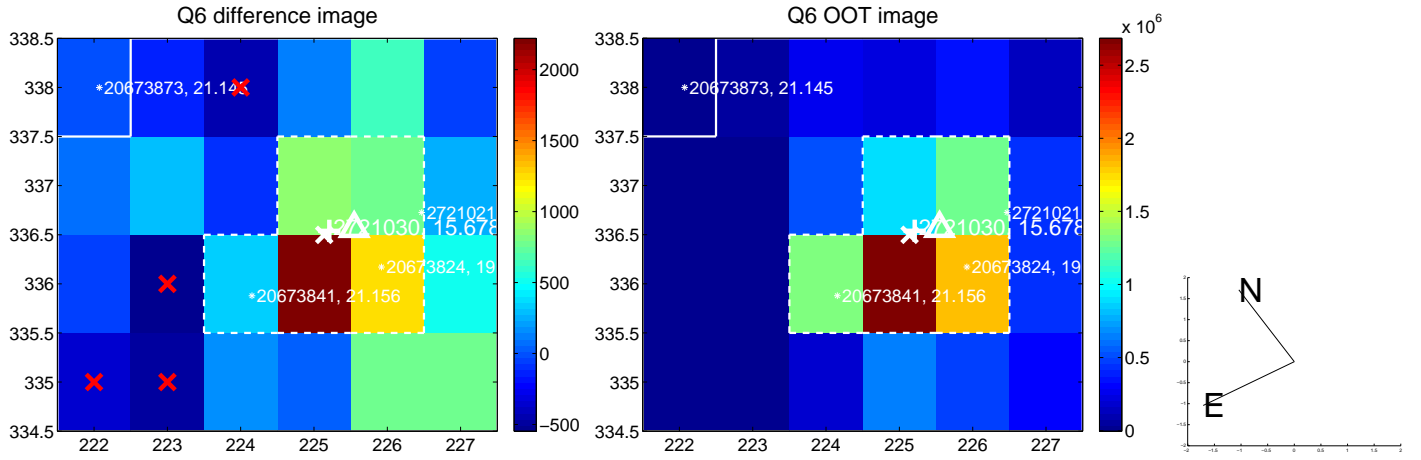
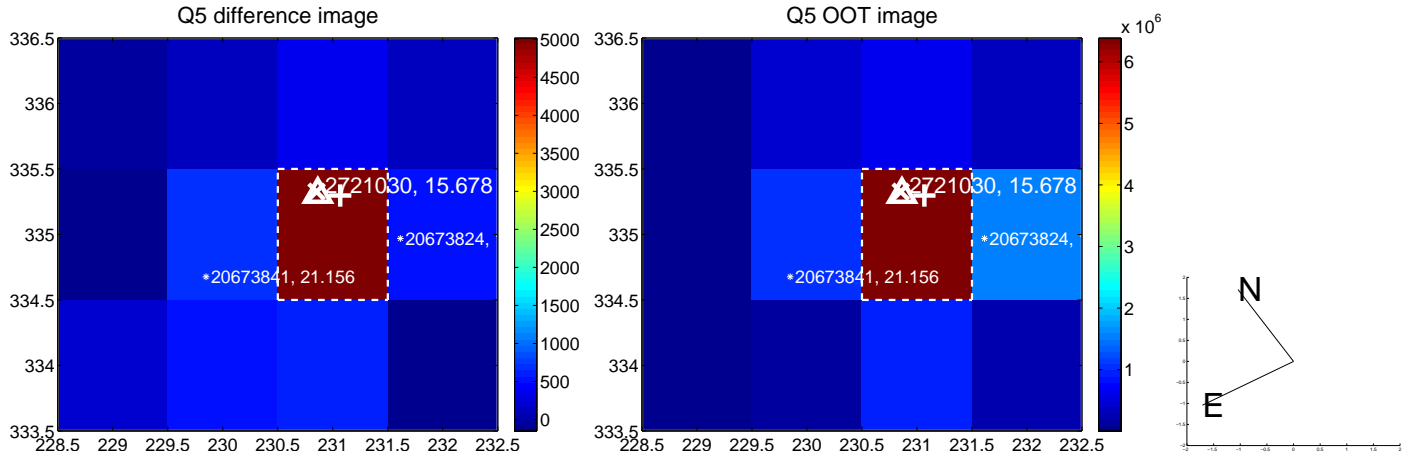


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

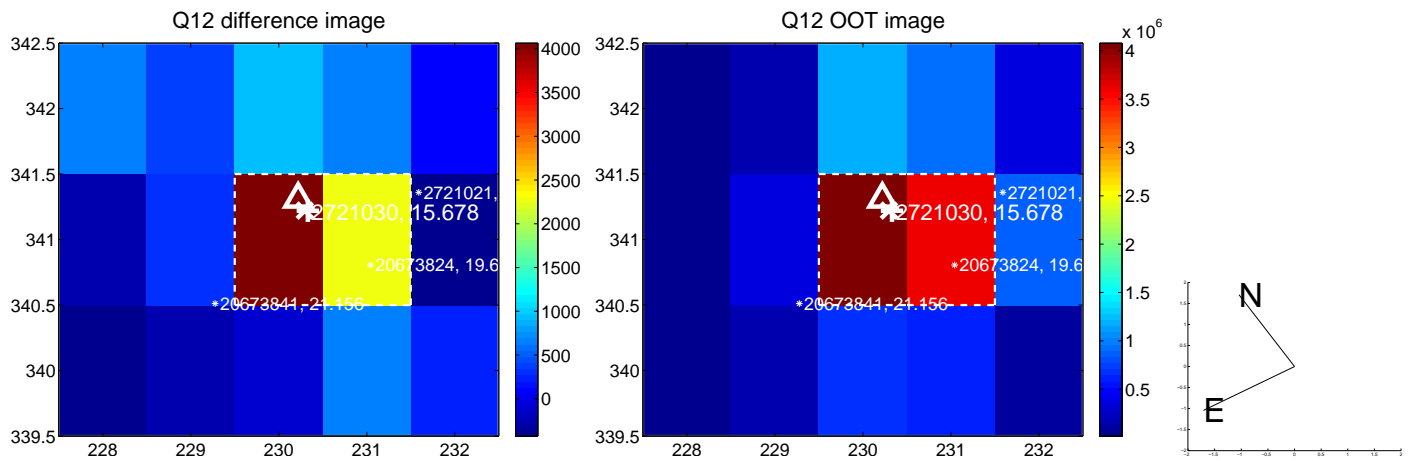
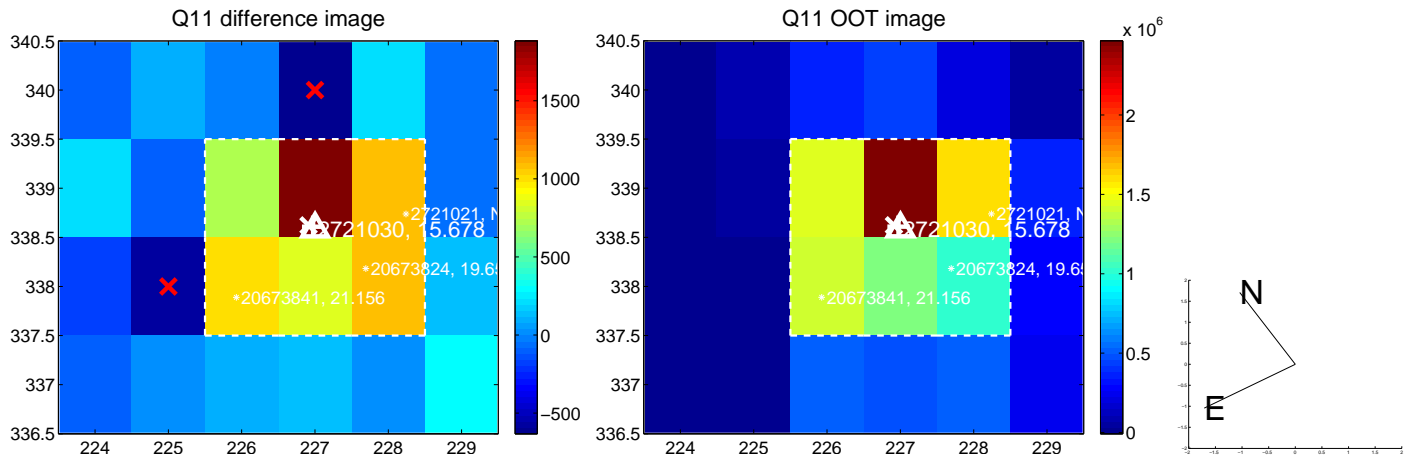
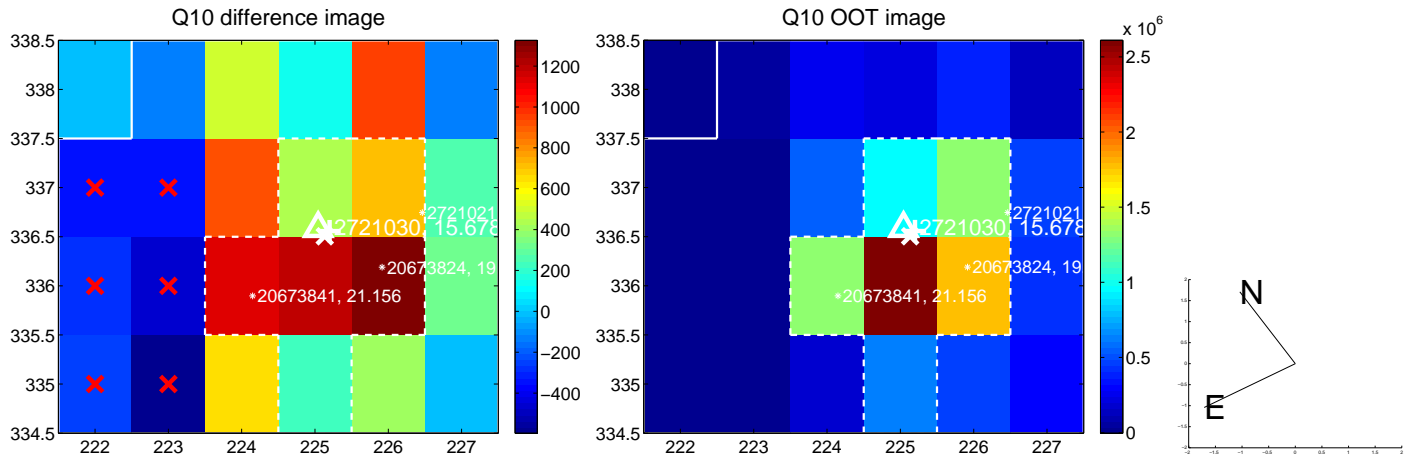
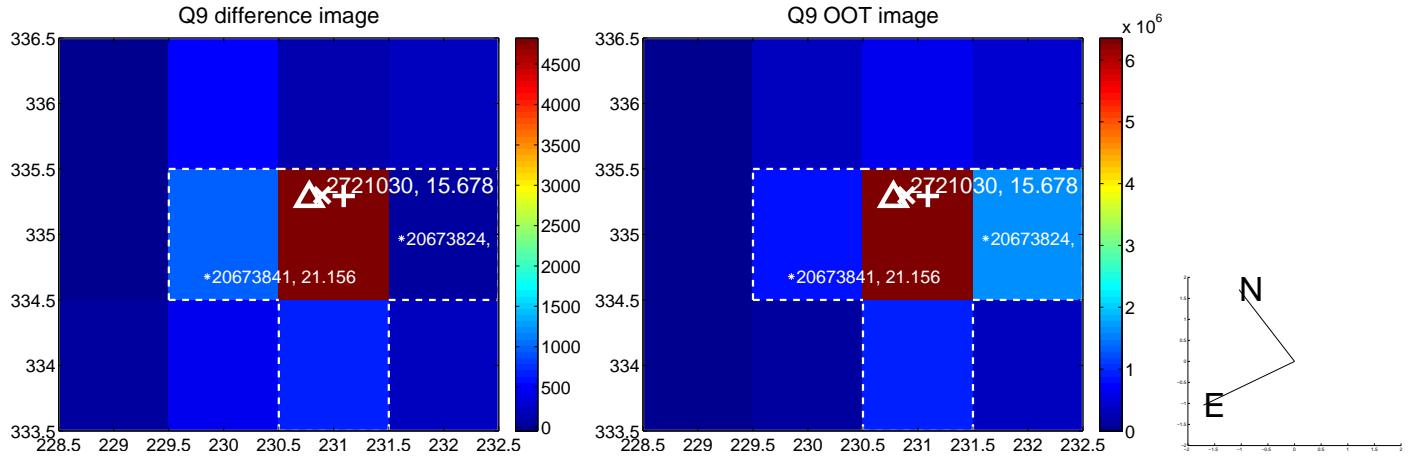
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



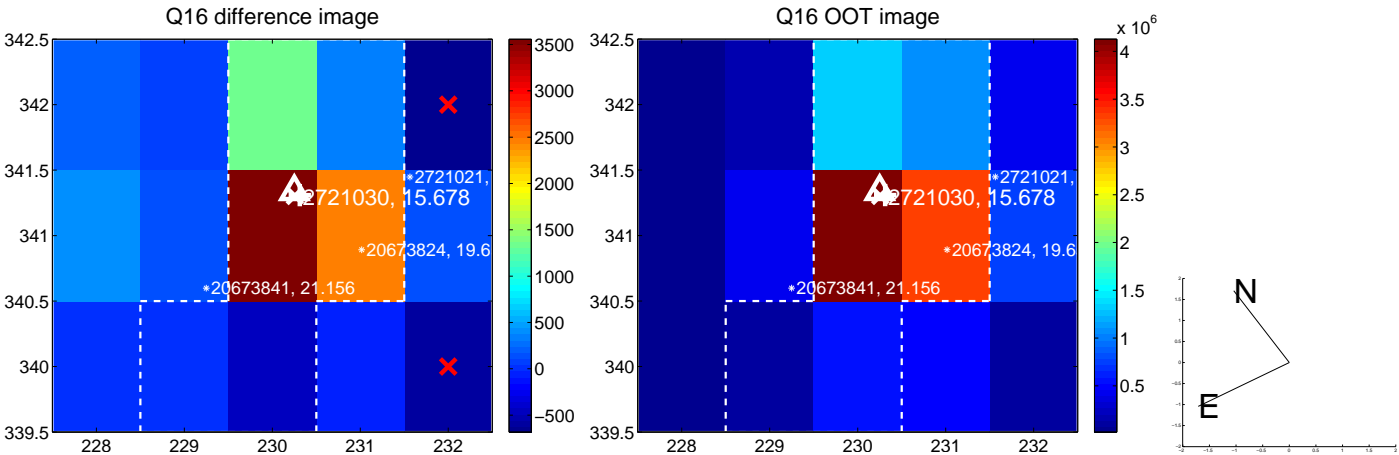
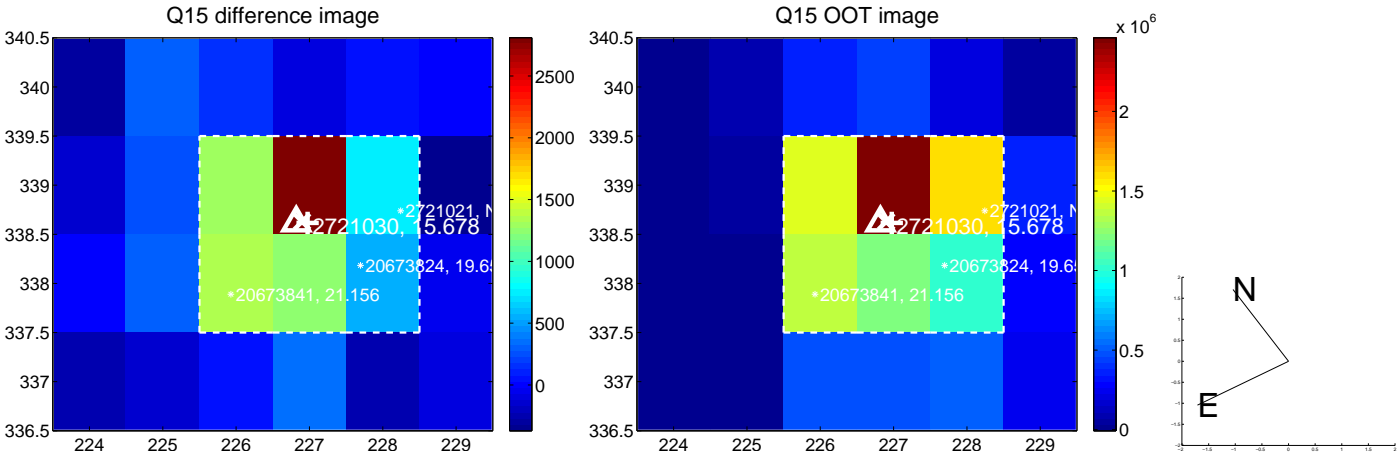
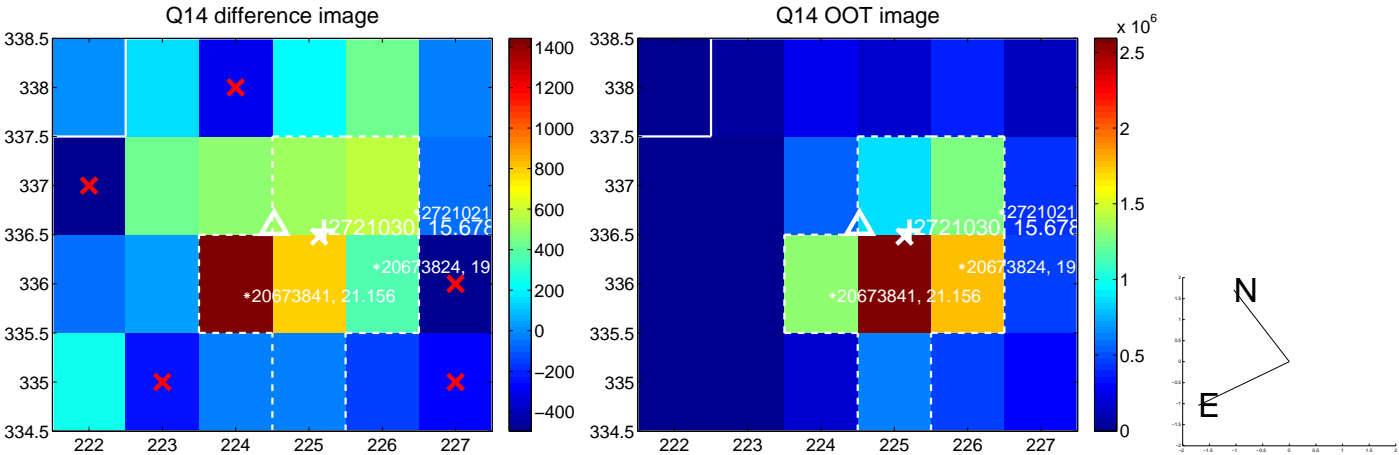
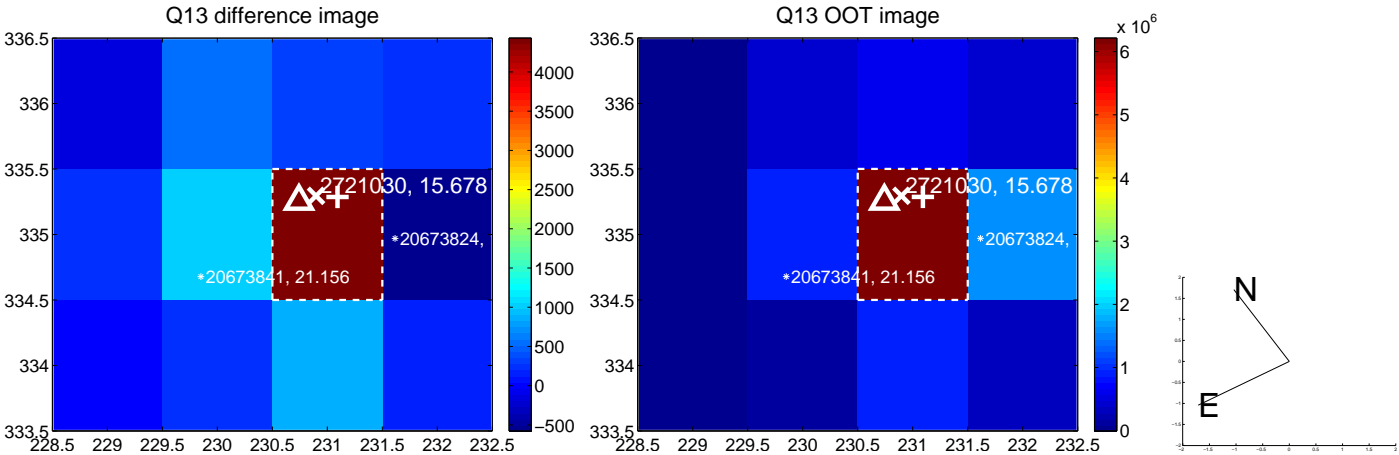
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



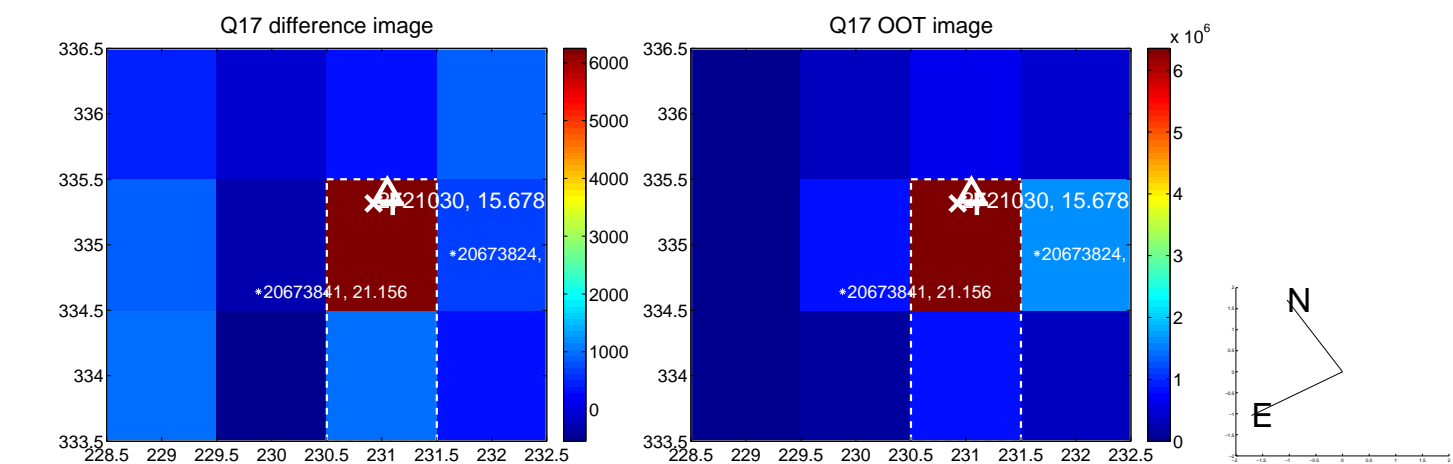
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



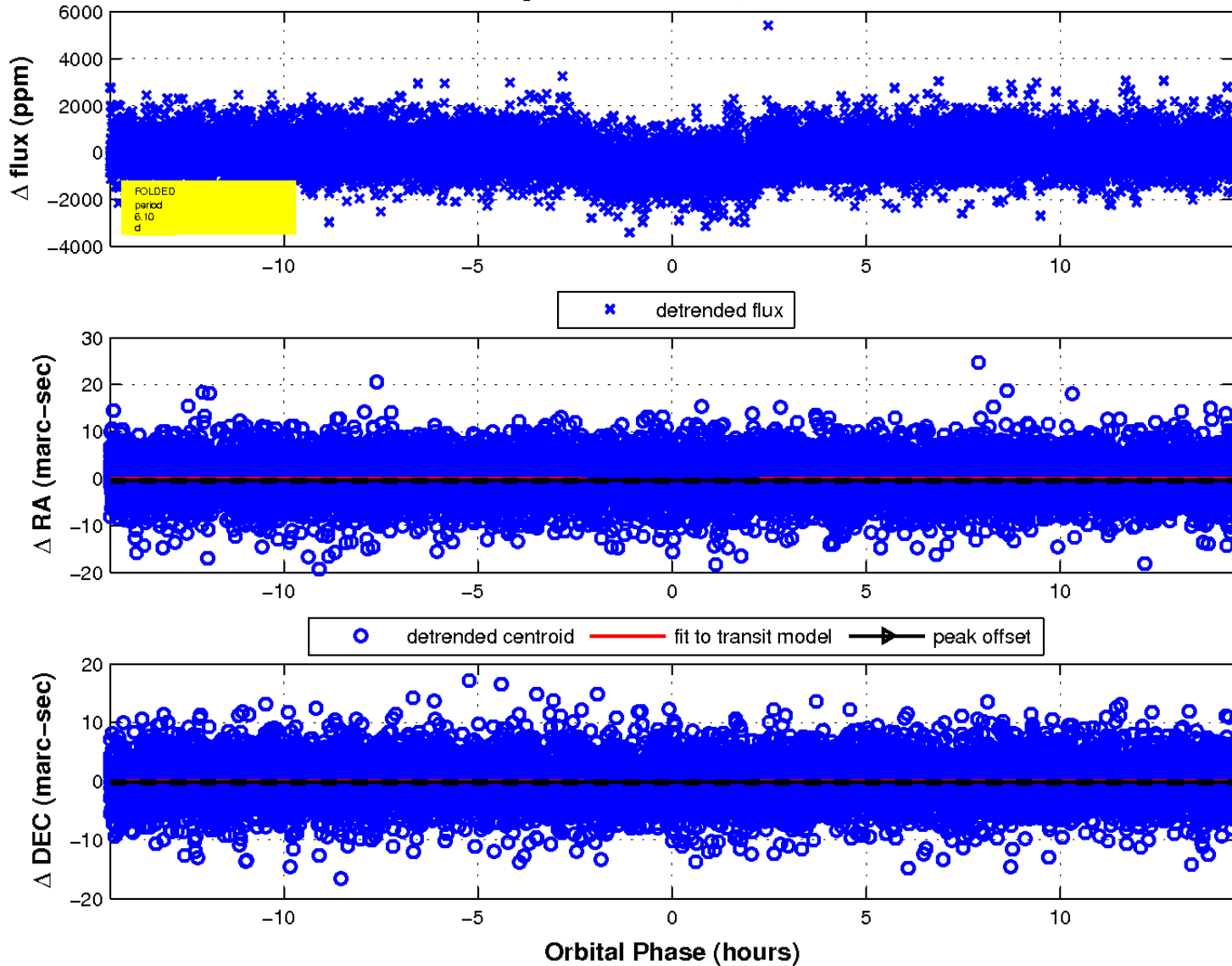
white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

