

KIC 010714072

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})
010714072-01	OBS	4024.01	8.406918	133.426891	190.5	1.972	15.0	16.4	1.53	5365	2.55	286.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010714072-01	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.

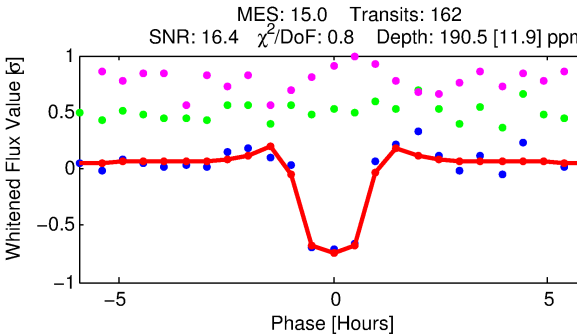
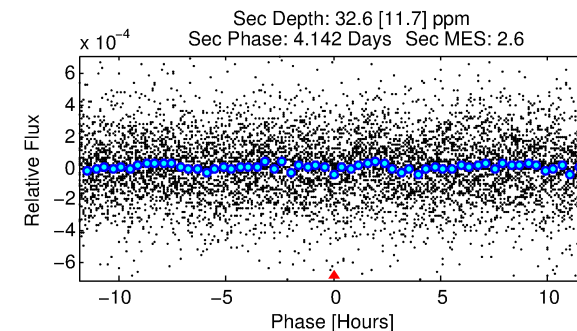
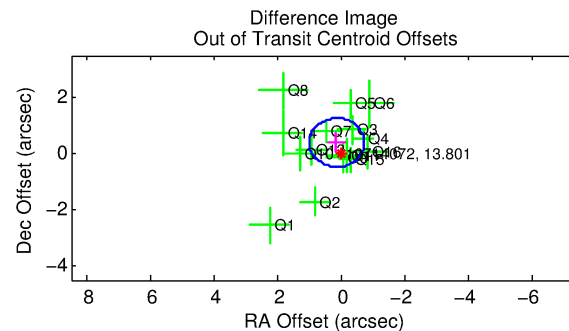
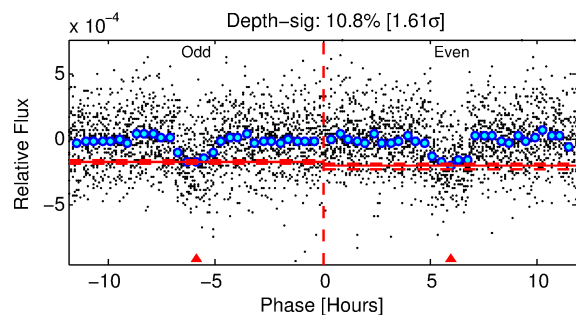
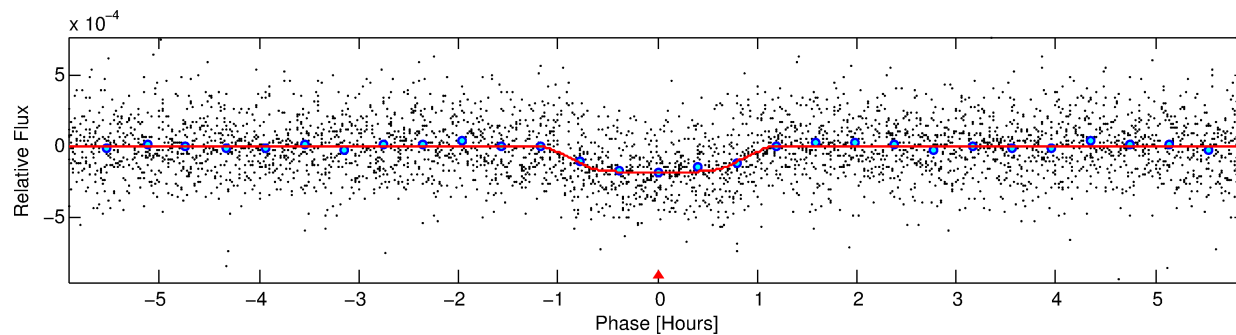
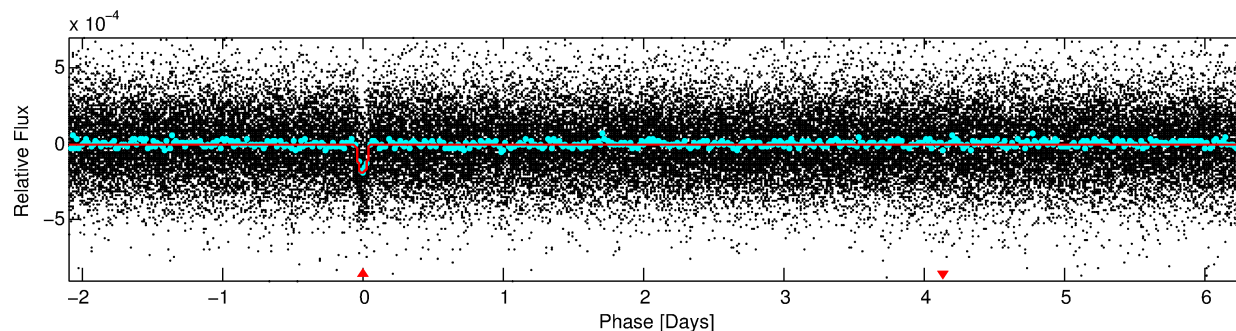
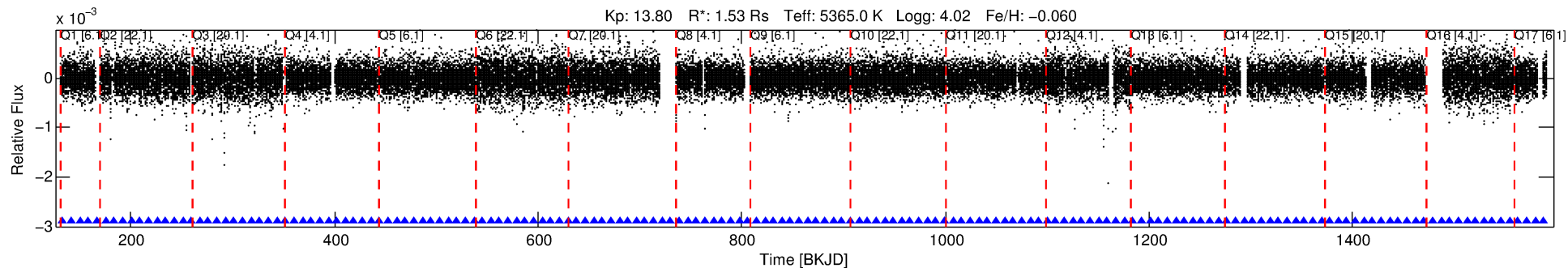
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010714072-01

No Significant Match Found

DV One-Page Summary

KIC: 10714072 Candidate: 1 of 1 Period: 8.407 d
KOI: K04024.01 Corr: 0.975



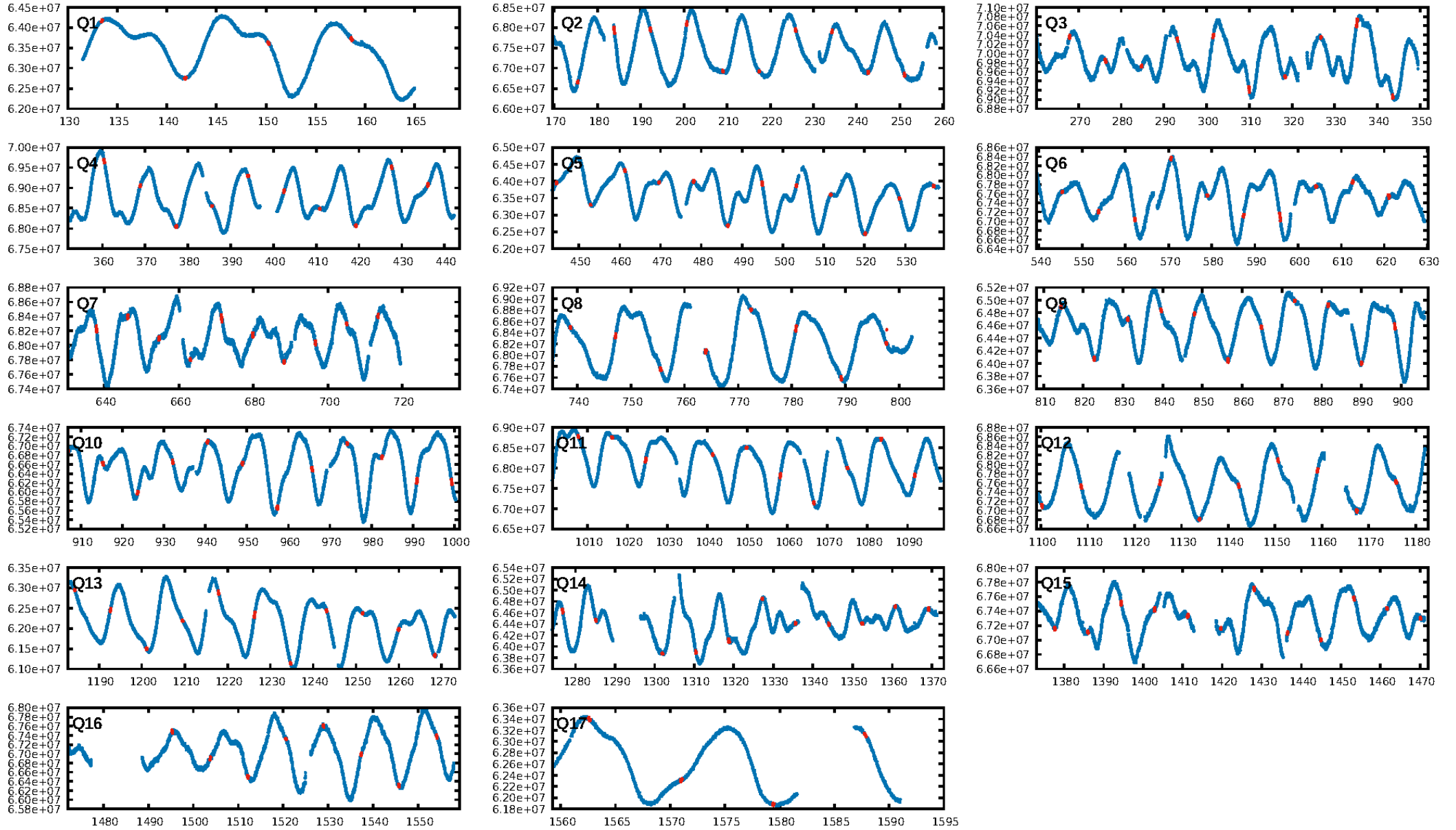
DV Fit Results:

Period = 8.40692 [0.00002] d
Epoch = 133.4269 [0.0023] BKJD
Rp/R* = 0.0152 [0.0059]
a/R* = 15.33 [25.60]
b = 0.90 [0.36]
Seff = 286.21 [243.20]
Teff = 1049 [223] K
Rp = 2.55 [1.52] Re
a = 0.0781 [0.0388] AU
Ag = 16.82 [20.12] [0.79 σ]
Teffp = 3284 [705] K [3.02 σ]

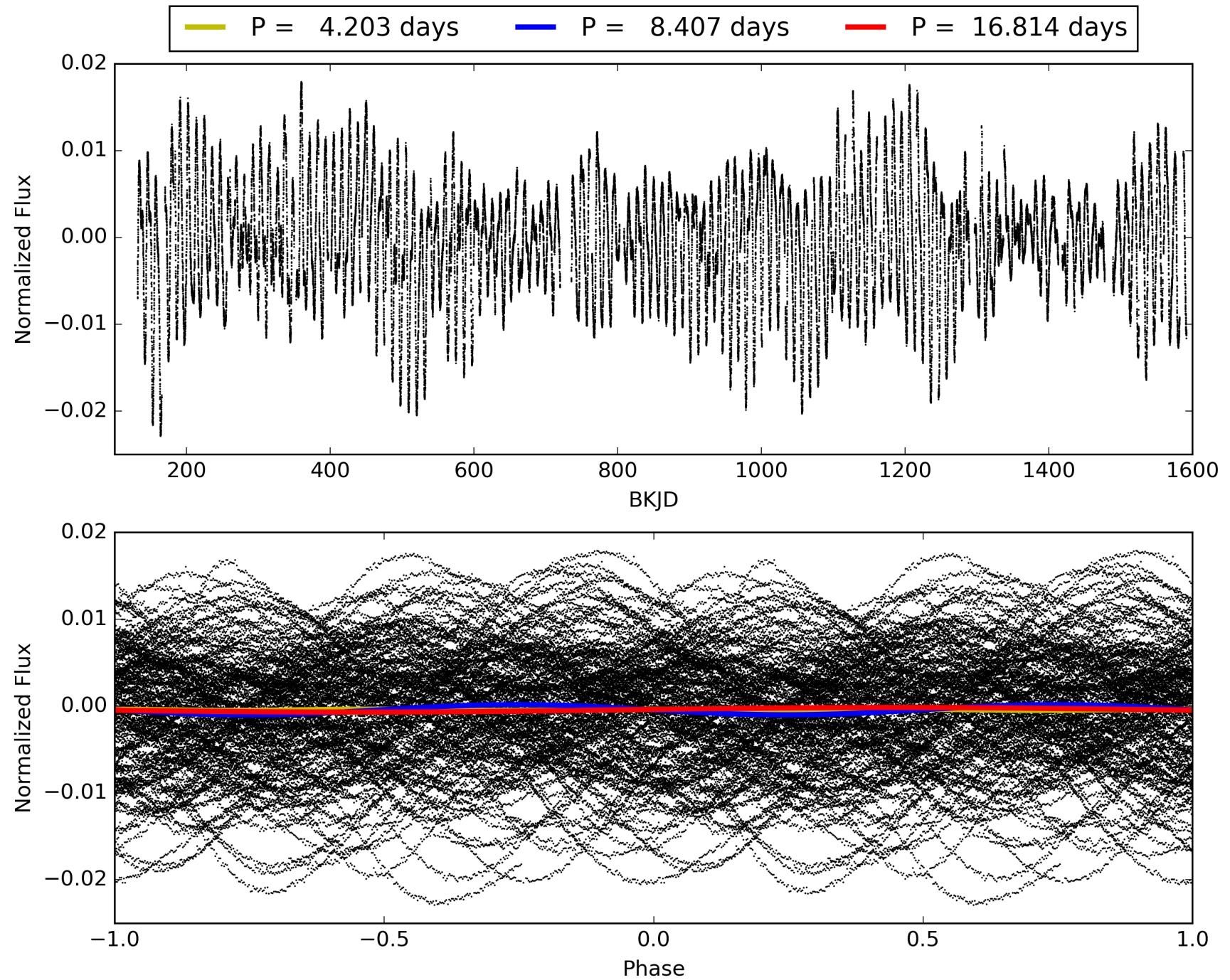
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.64e-48
RollingBand-fgt: 1.00 [154/154]
GhostDiagnostic-chr: -2.758
Centroid-sig: 82.2%
Centroid-so: 0.200 arcsec [0.31 σ]
OotOffset-rm: 0.425 arcsec [1.47 σ]
KicOffset-rm: 0.729 arcsec [2.47 σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.87 [13/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010714072-01, PDC Light Curves

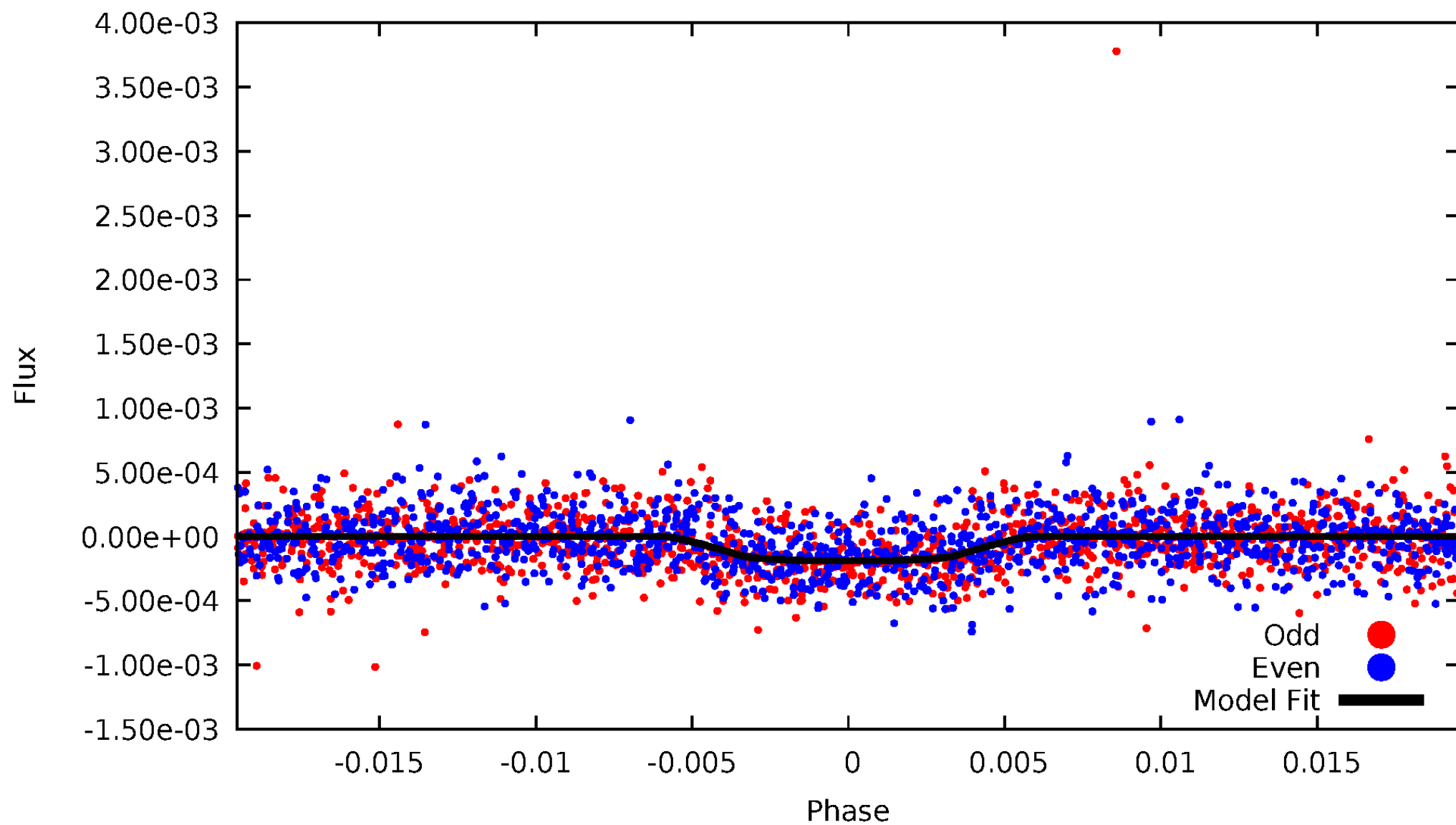


TCE 010714072-01



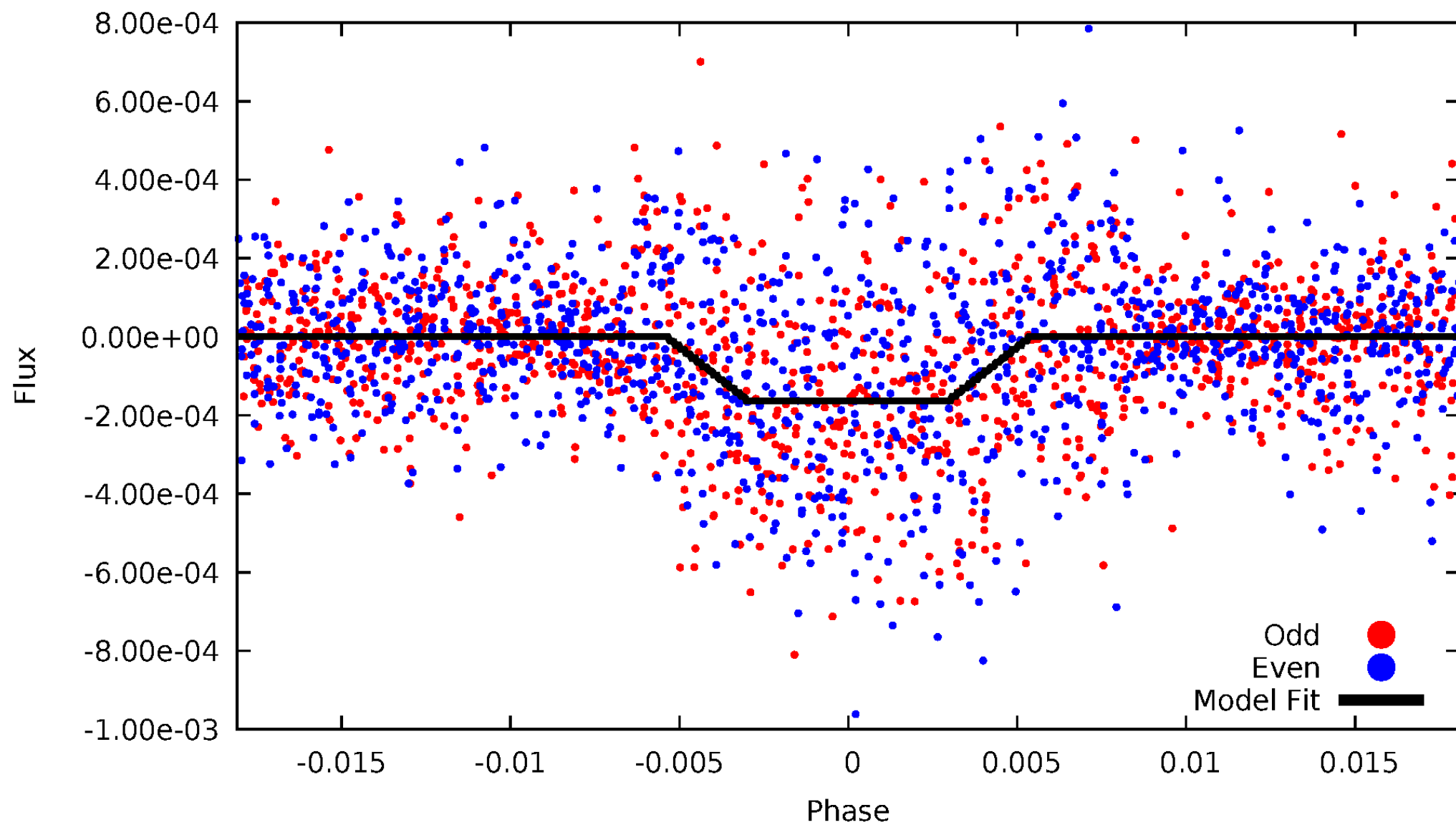
DV Odd/Even

TCE 010714072-01



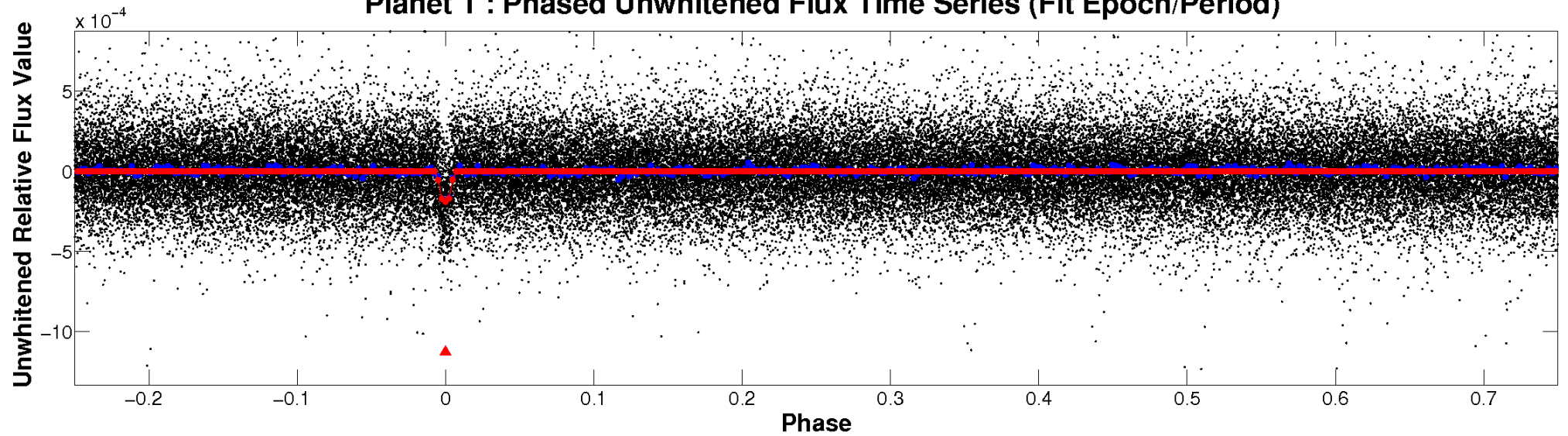
ALT Odd/Even

TCE 010714072-01

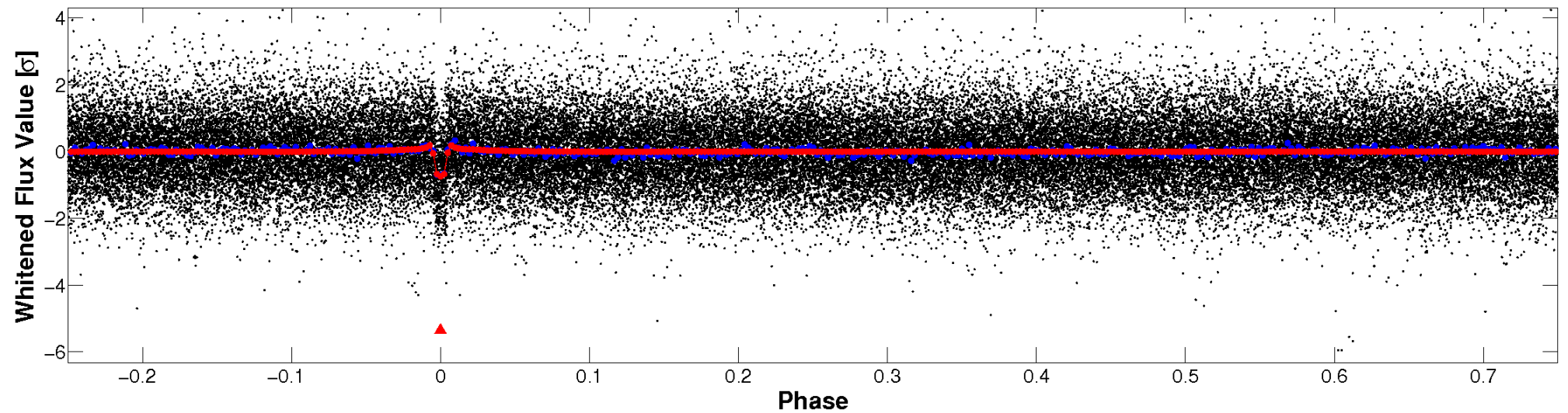


Non-Whitened Vs. Whitened Light Curve

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

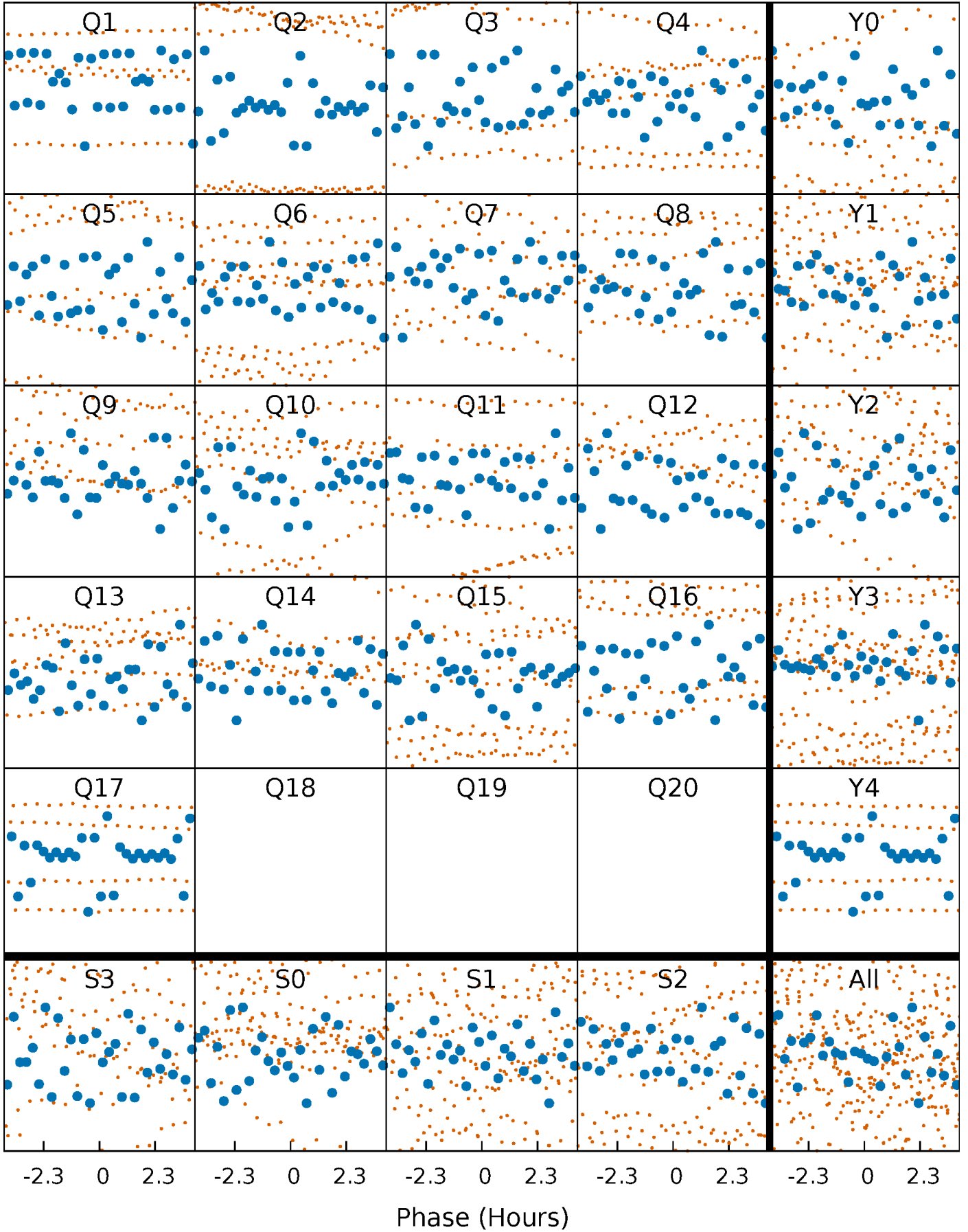


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



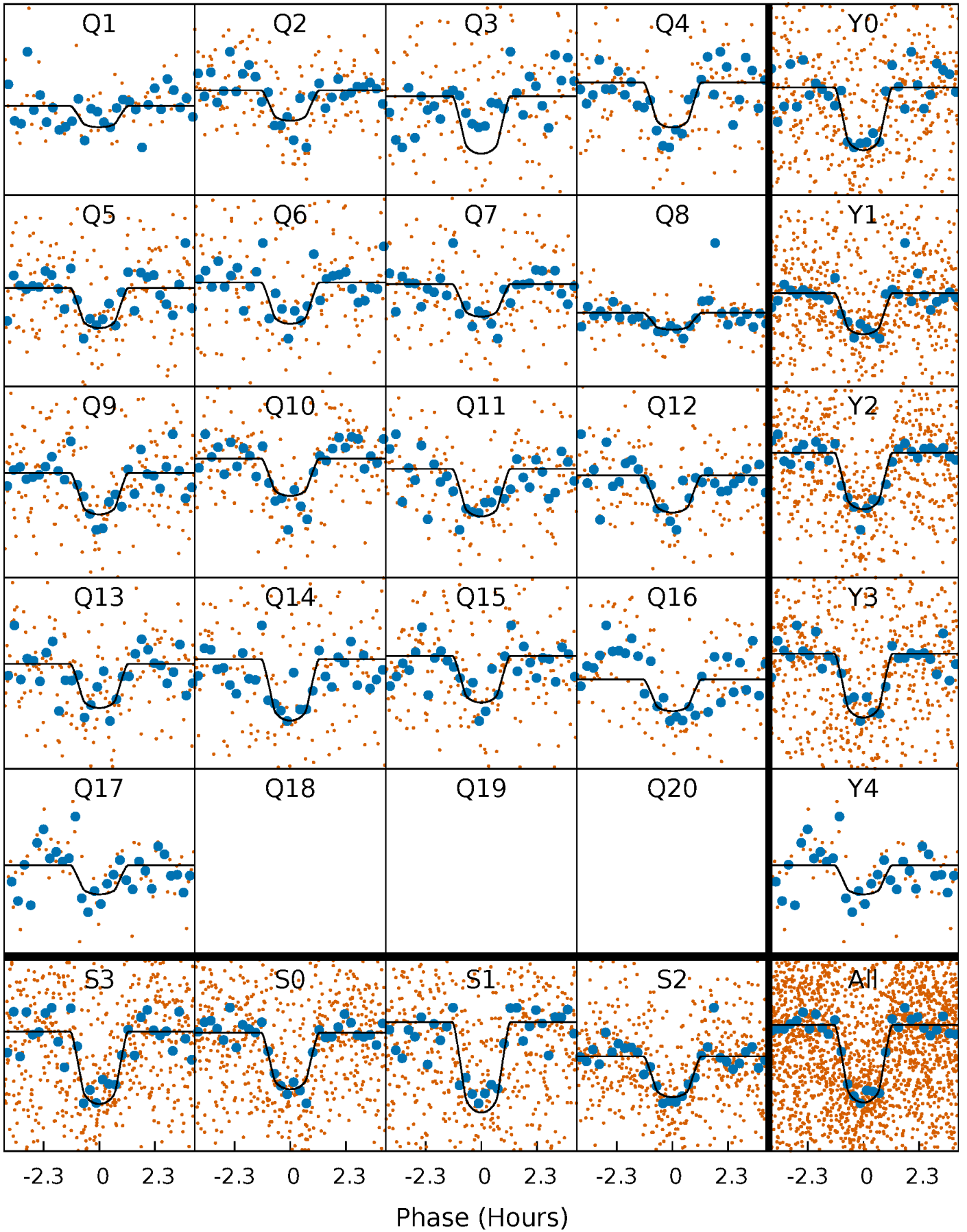
PDC Quarter-Phased Transit Curves

TCE 010714072-01 P= 8.406918 Days $T_0=133.426892$ (BKJD)



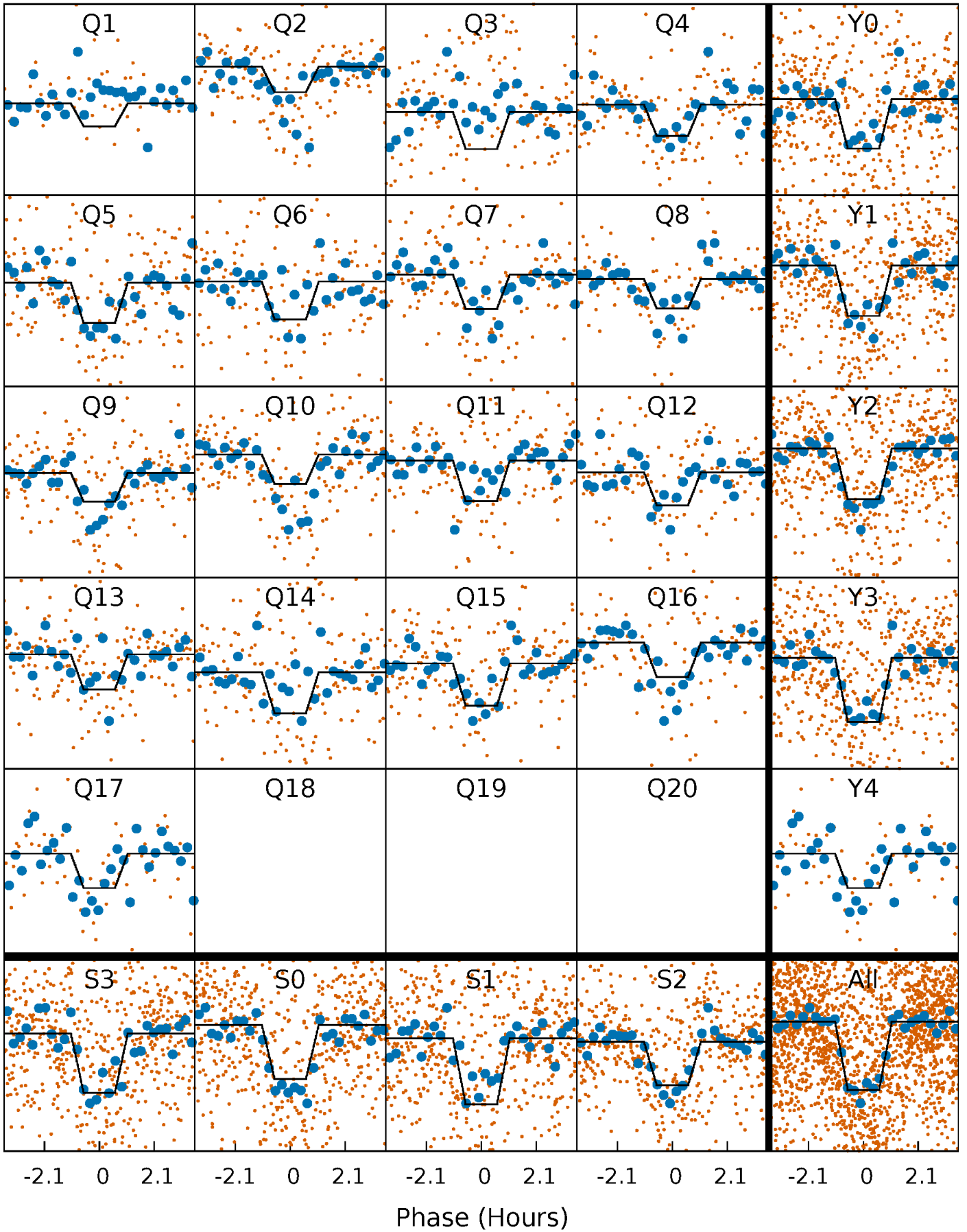
DV Quarter-Phased Transit Curves

TCE 010714072-01 P= 8.406918 Days $T_0=133.426892$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

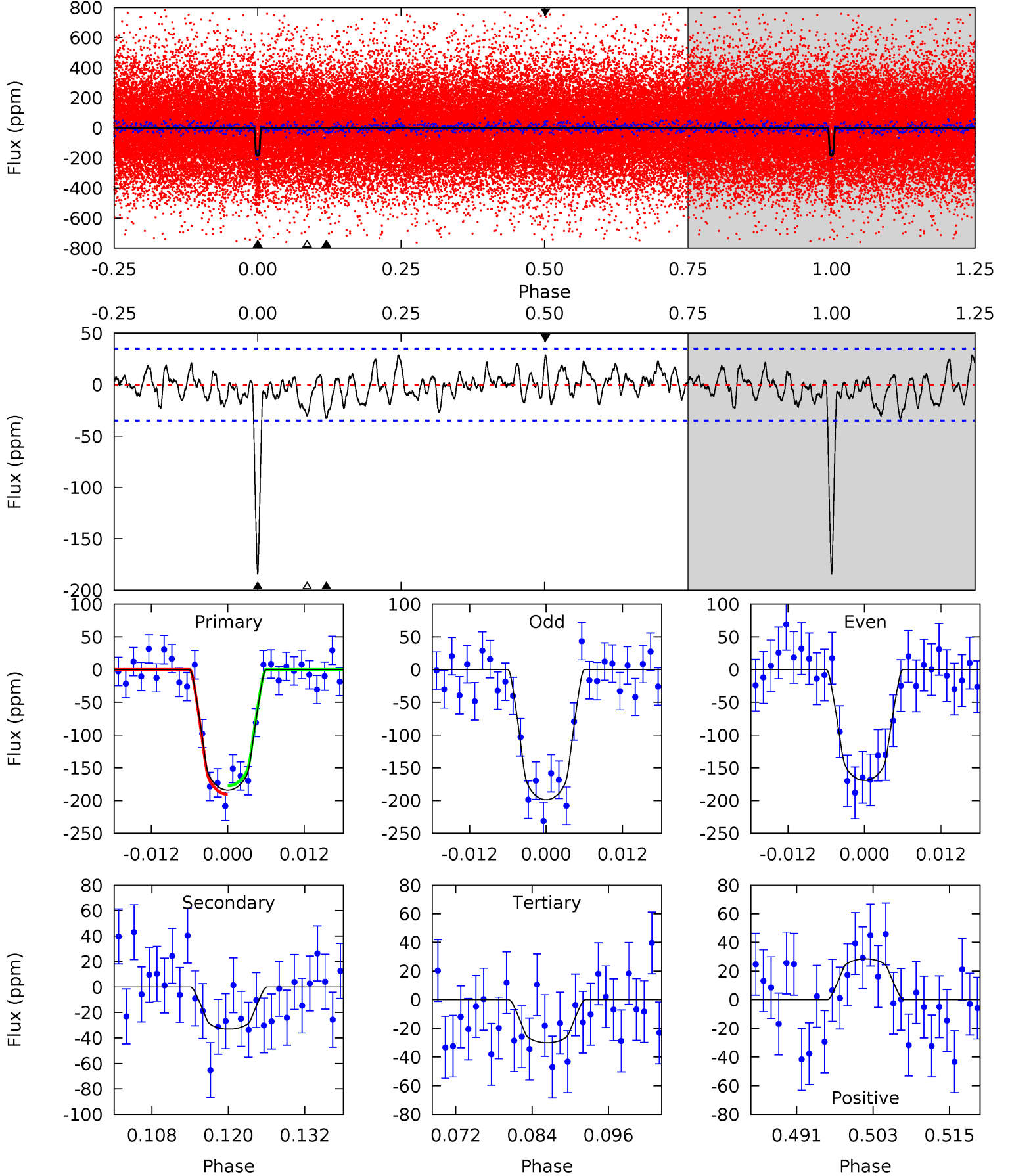
TCE 010714072-01 P= 8.406960 Days $T_0=133.424125$ (BKJD)



DV Model-Shift Uniqueness Test

010714072-01, P = 8.406918 Days, E = 125.019974 Days

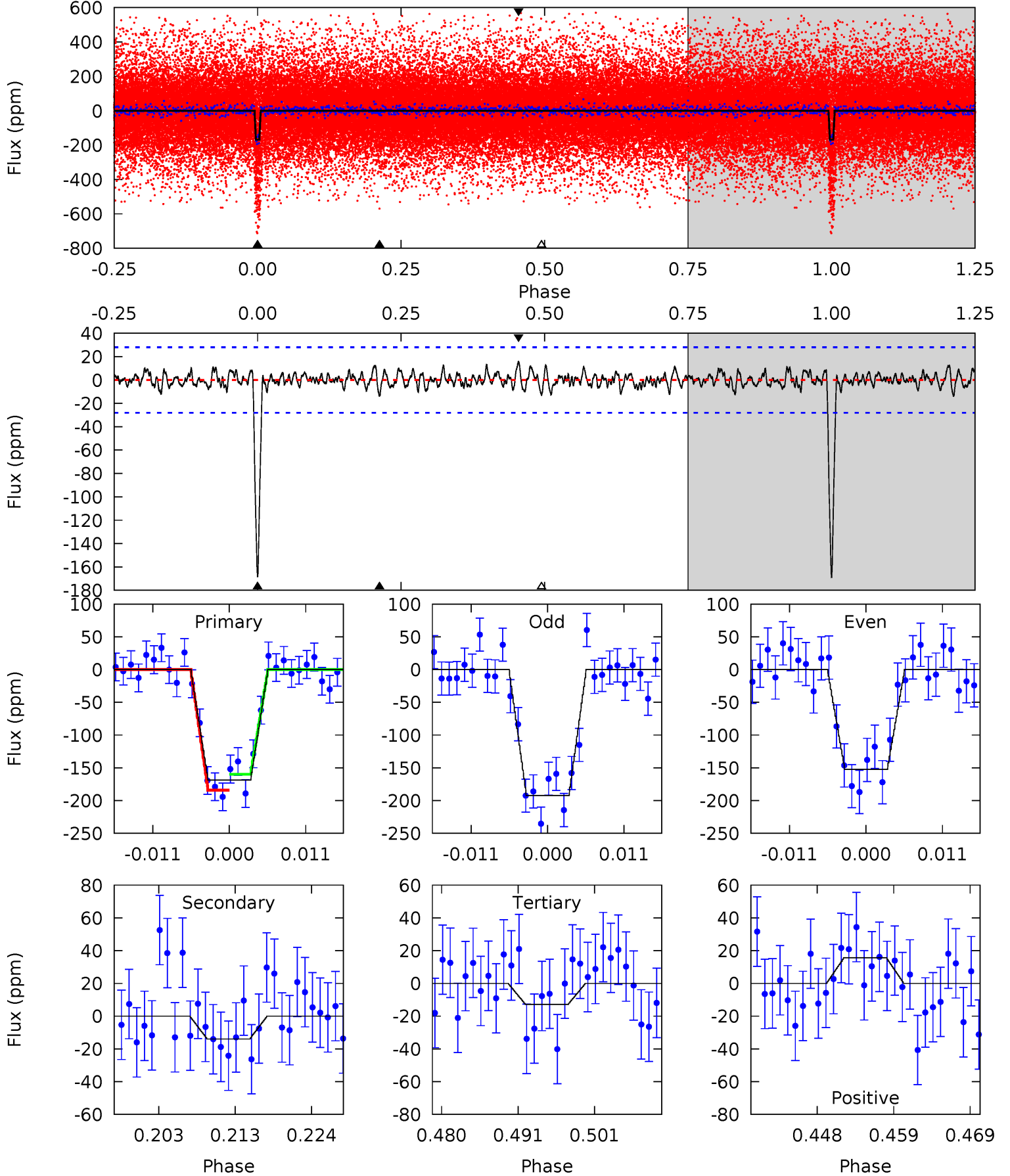
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.2	4.70	4.26	4.05	4.99	2.51	1.52	21.9	22.1	0.44	0.65	2.10	0.98	0.13	0.92



Alt Model-Shift Uniqueness Test

010714072-01, P = 8.406960 Days, E = 125.017165 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.1	2.50	2.30	2.78	5.01	2.55	0.85	27.8	27.3	0.20	-0.29	3.56	1.01	0.08	2.19



Stellar Parameters For KIC 010714072

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5365^{+159}_{-143}	$4.020^{+0.511}_{-0.219}$	$-0.060^{+0.300}_{-0.250}$	$1.533^{+0.572}_{-0.700}$	$0.899^{+0.077}_{-0.105}$	$0.351^{+1.837}_{-0.190}$
	+3%/-3%	+13%/-5%	+500%/-417%	+37%/-46%	+9%/-12%	+523%/-54%
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 010714072-01 / KOI 4024.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-33 ± 7	$2.42^{+1.19}_{-1.07}$	1445^{+152}_{-192}	3659^{+671}_{-373}	19^{+41}_{-11}
Alt.	-14 ± 6	$2.02^{+1.07}_{-0.97}$	1439^{+154}_{-184}	3358^{+747}_{-435}	11^{+32}_{-7}

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

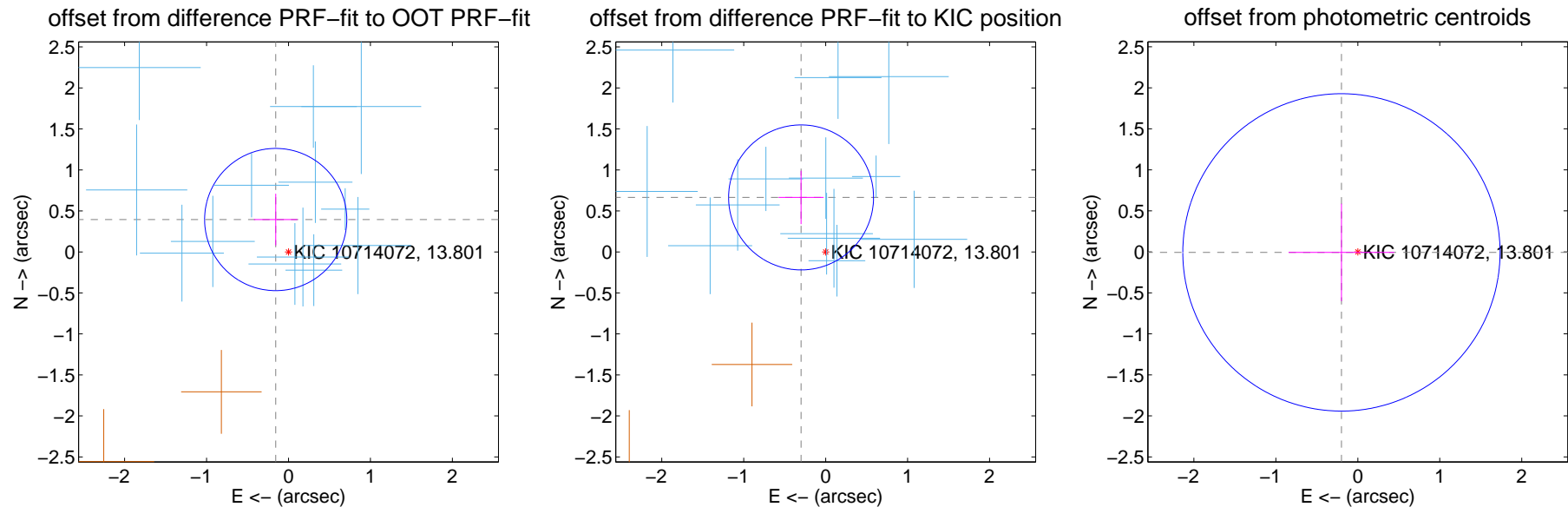
DV Centroid Data

Supplemental centroid analysis for 010714072-01. Kepler magnitude: 13.80. Transit SNR 16.43

There are 13 quarters with good PRF difference image offsets

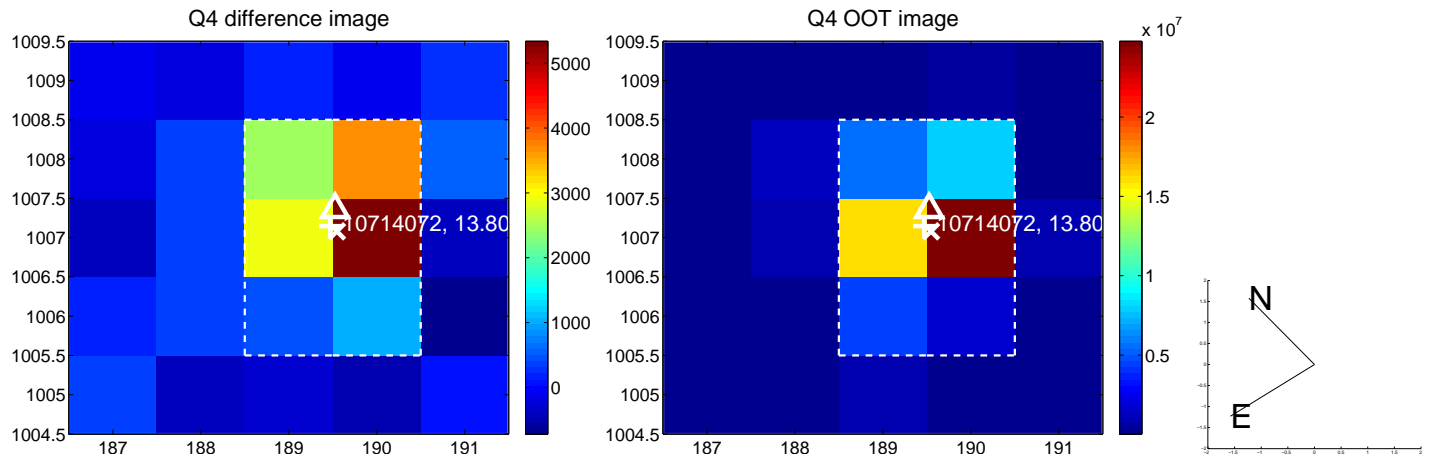
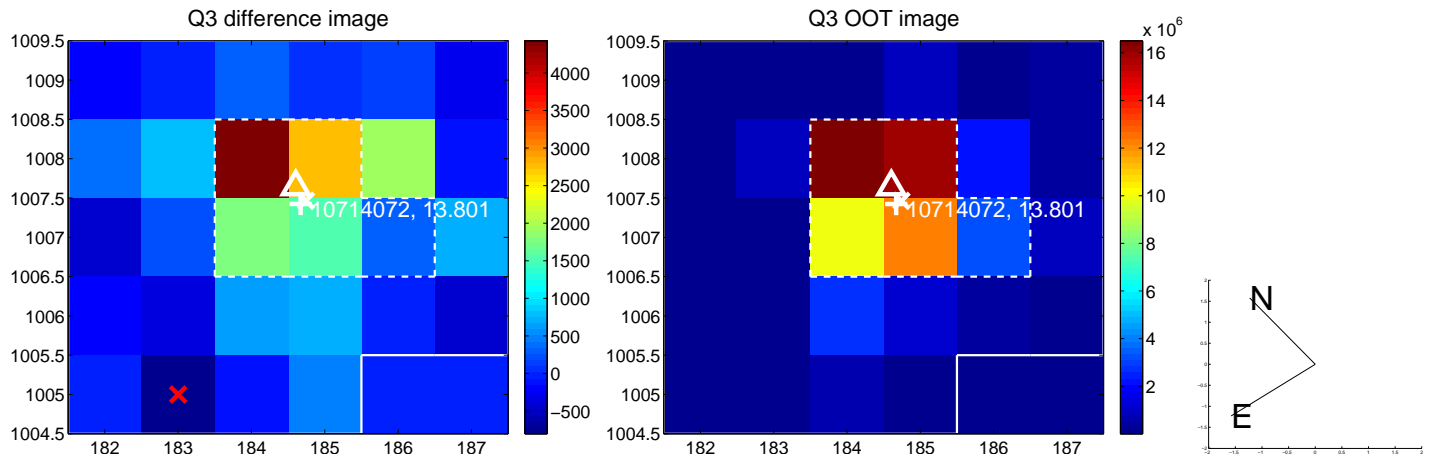
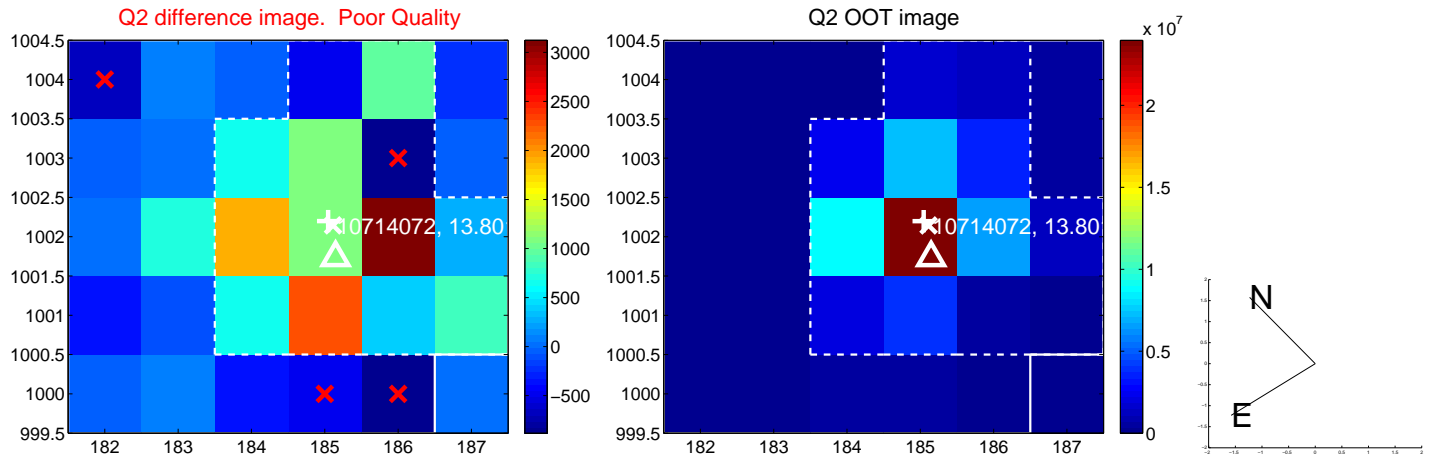
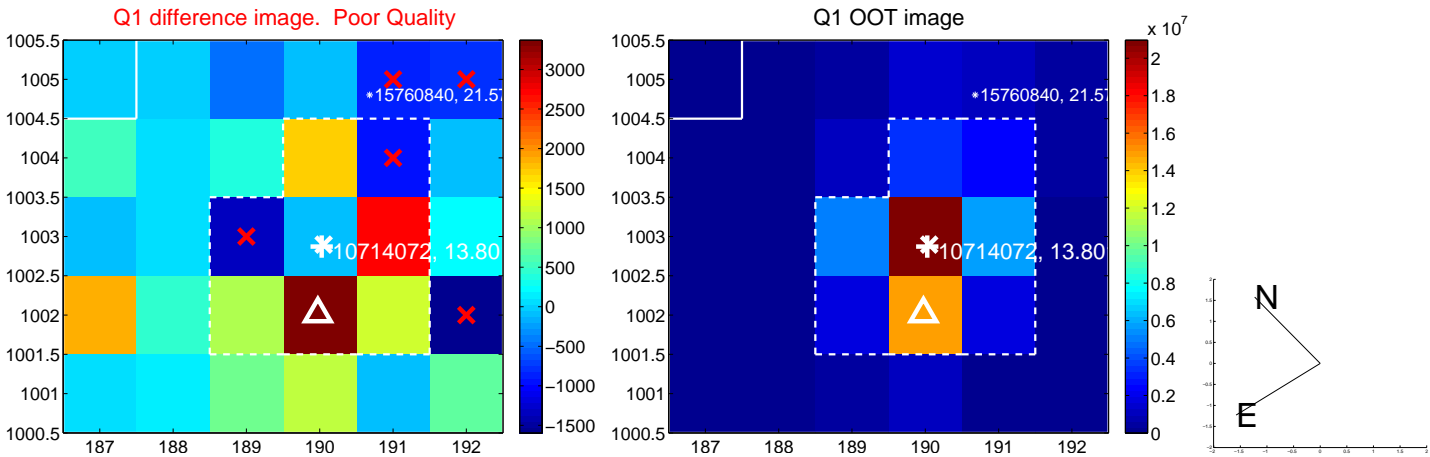
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.425 ± 0.289	1.47	0.156 ± 0.265	0.395 ± 0.315
PRF-fit source offset from KIC position	0.729 ± 0.295	2.47	0.300 ± 0.275	0.665 ± 0.326
photometric centroid source offset	0.20 ± 0.64	0.31	0.20 ± 0.64	-0.01 ± 0.59

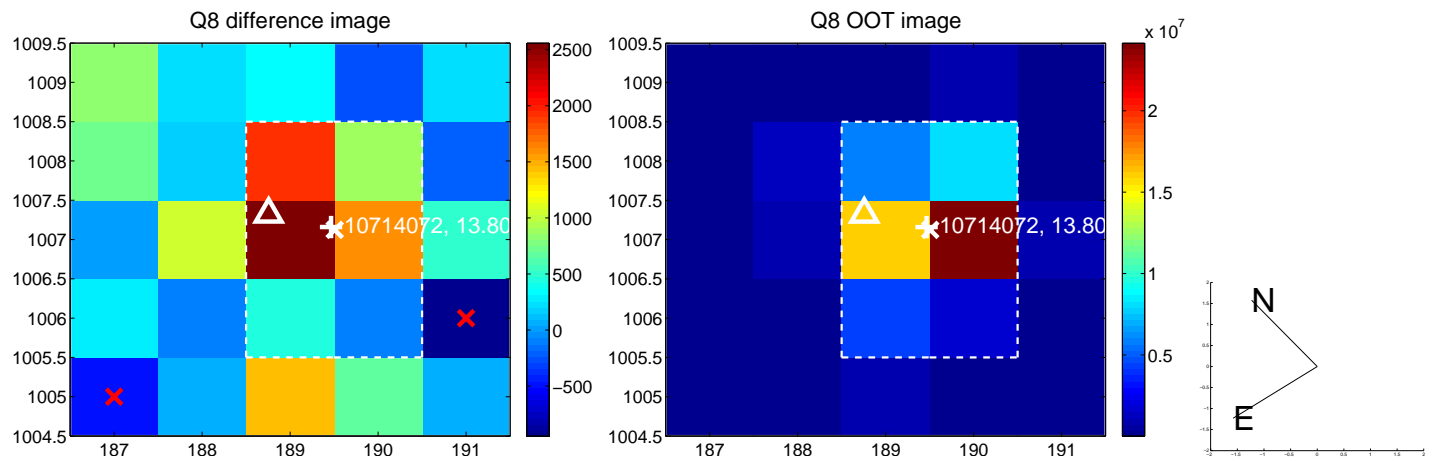
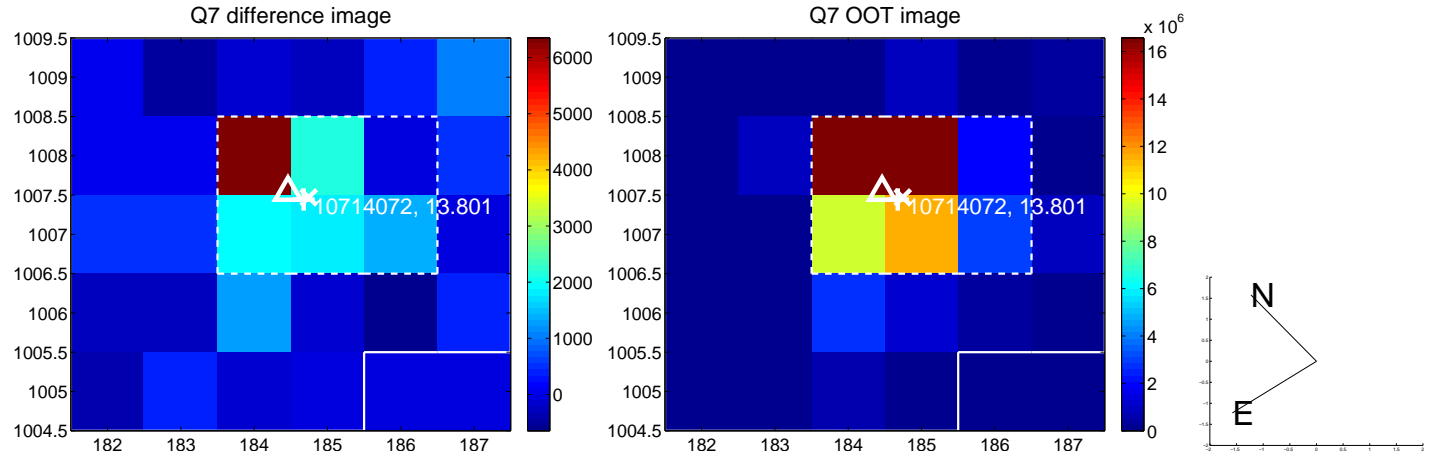
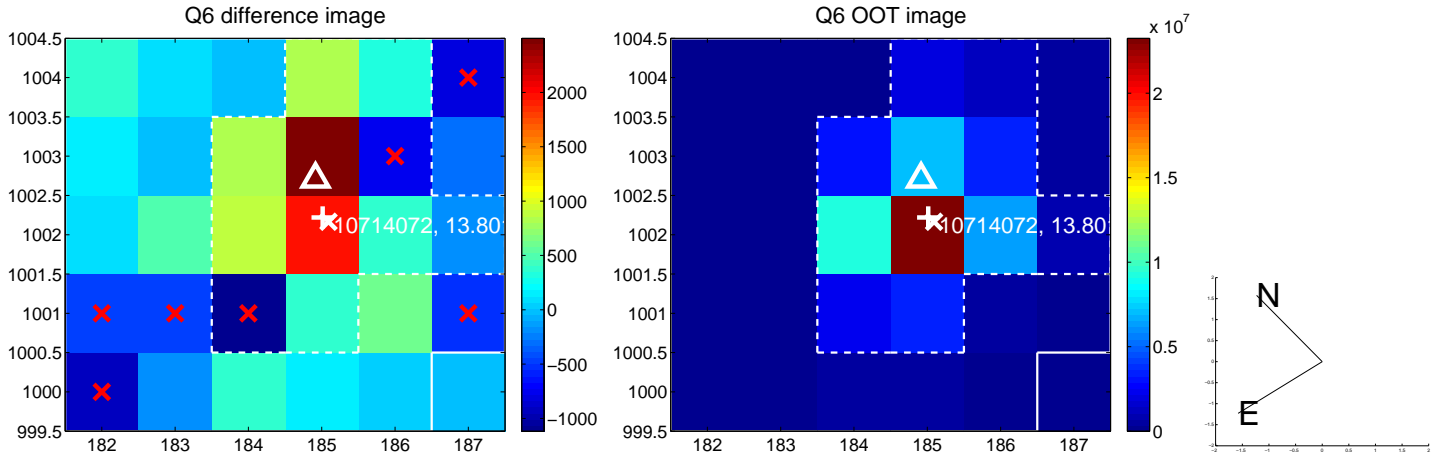
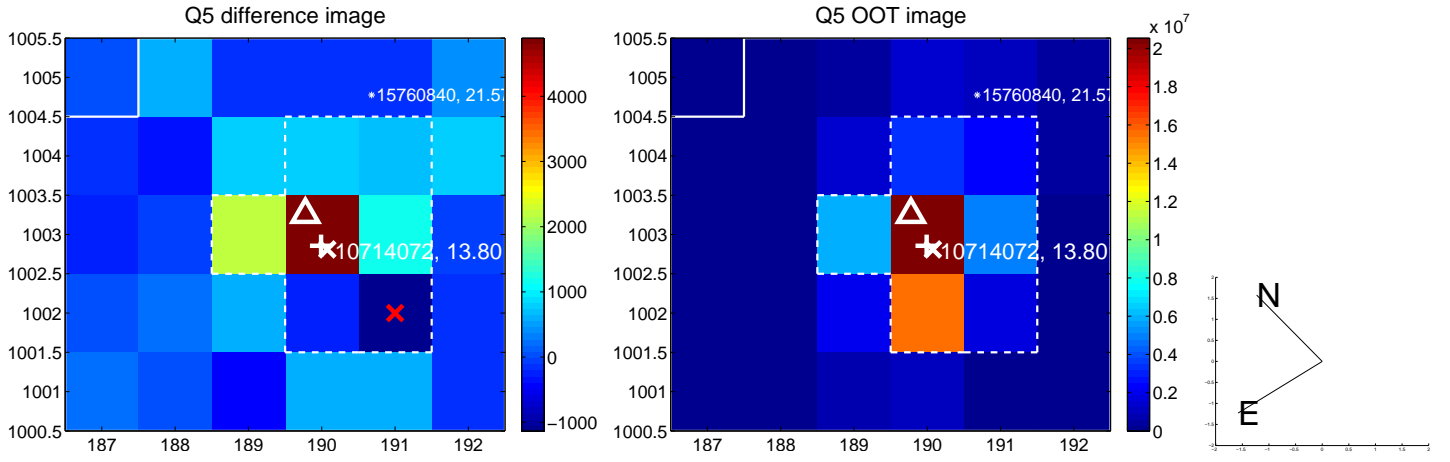


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

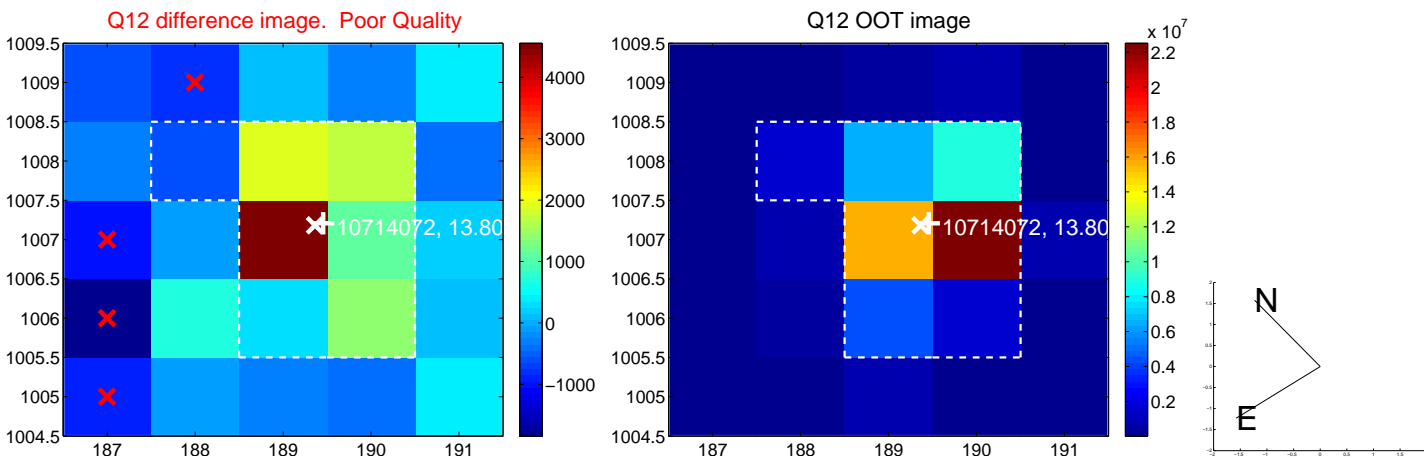
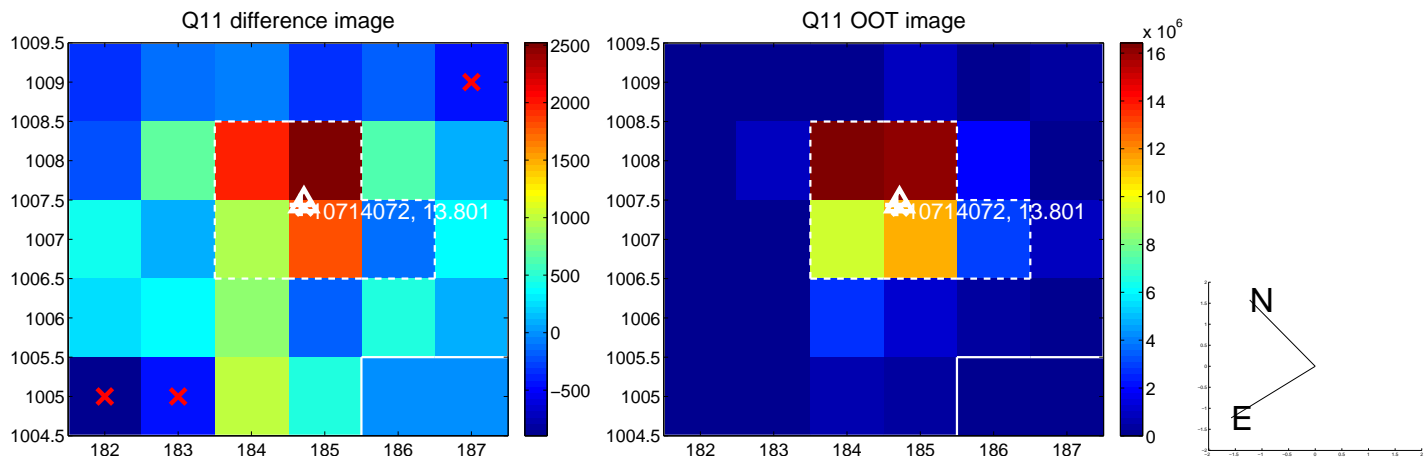
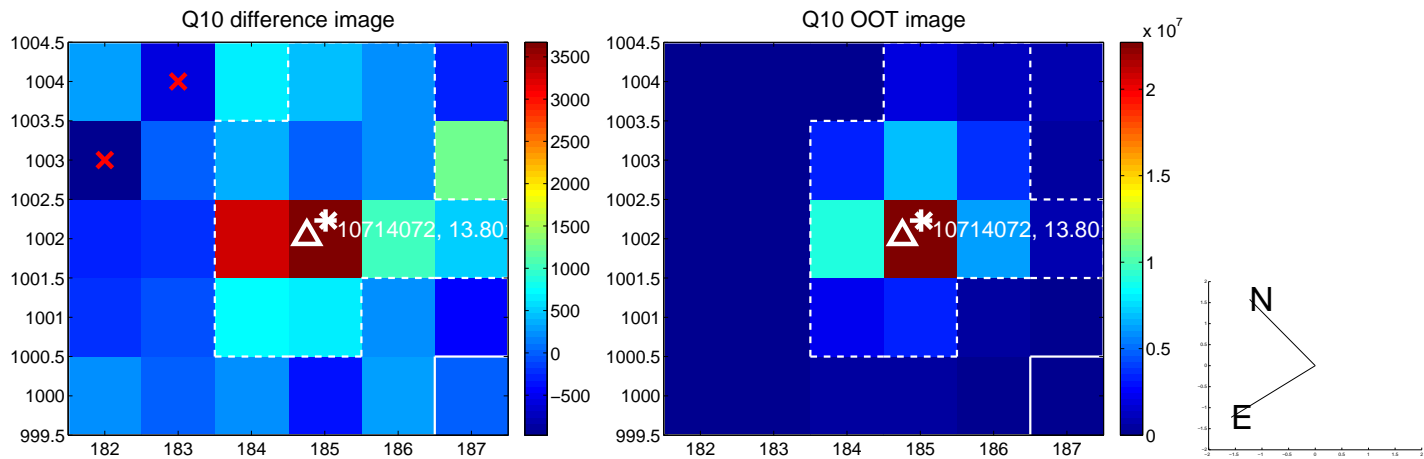
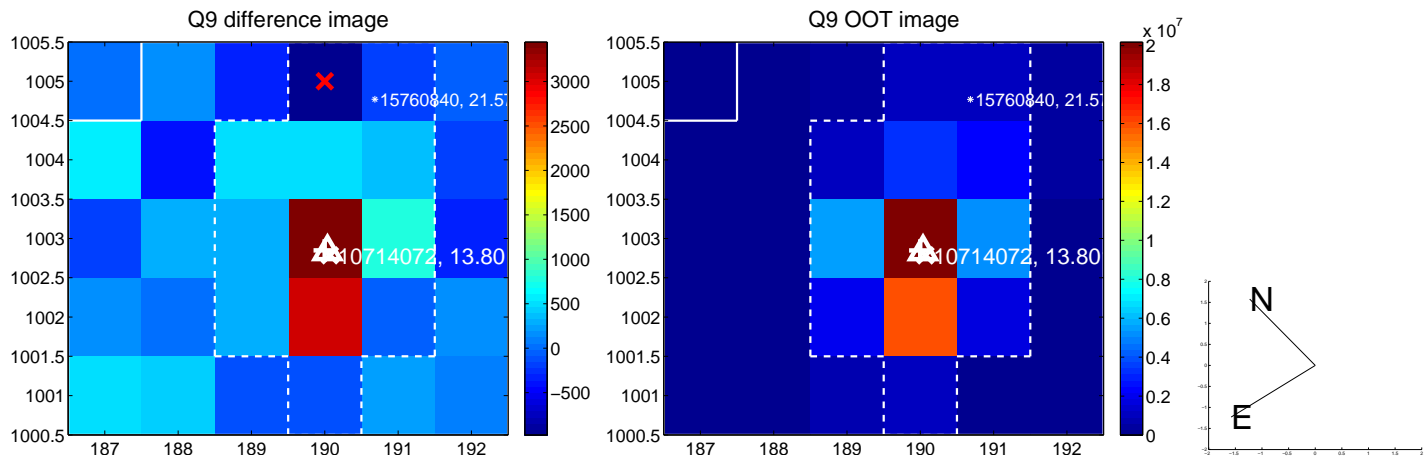
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



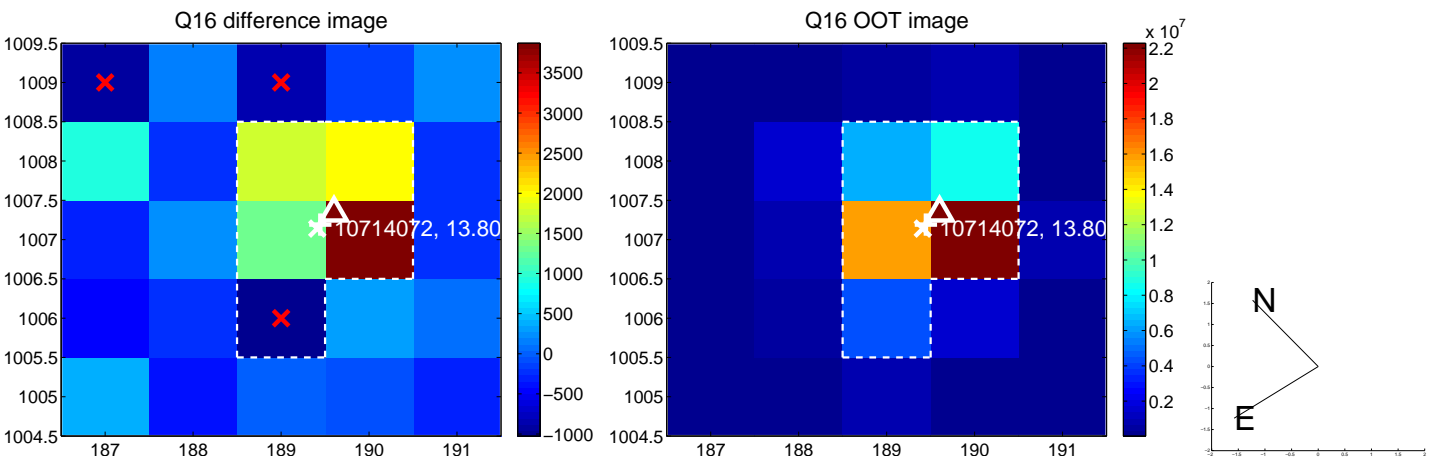
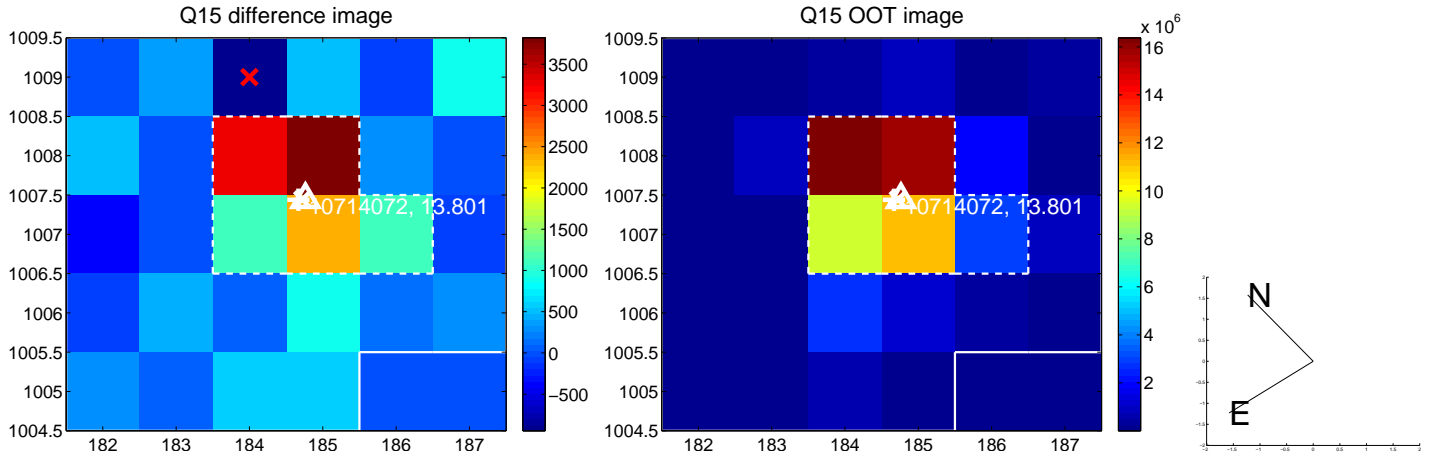
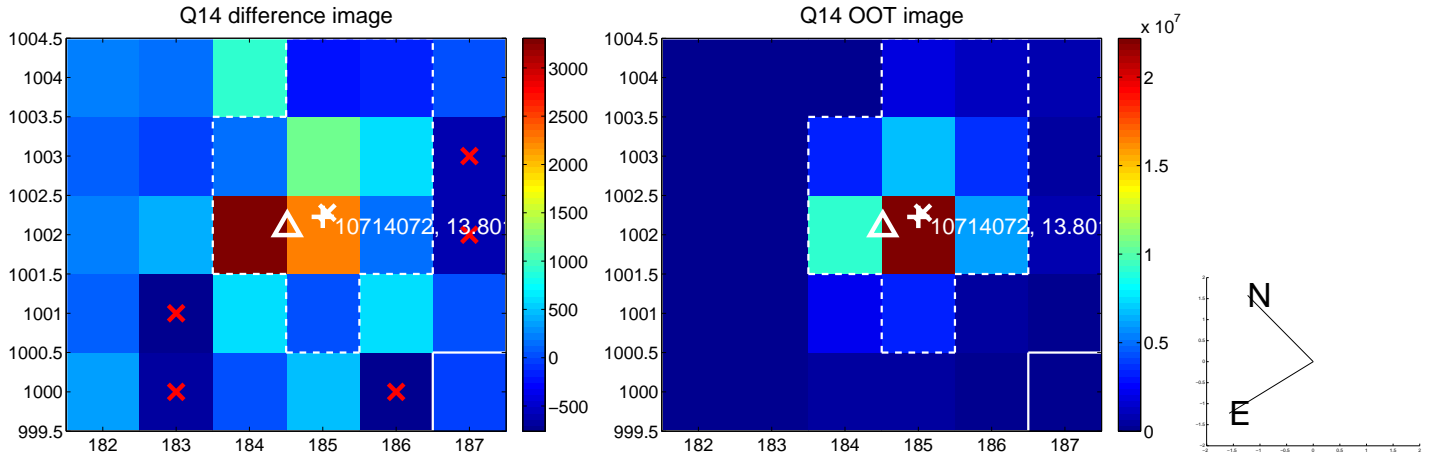
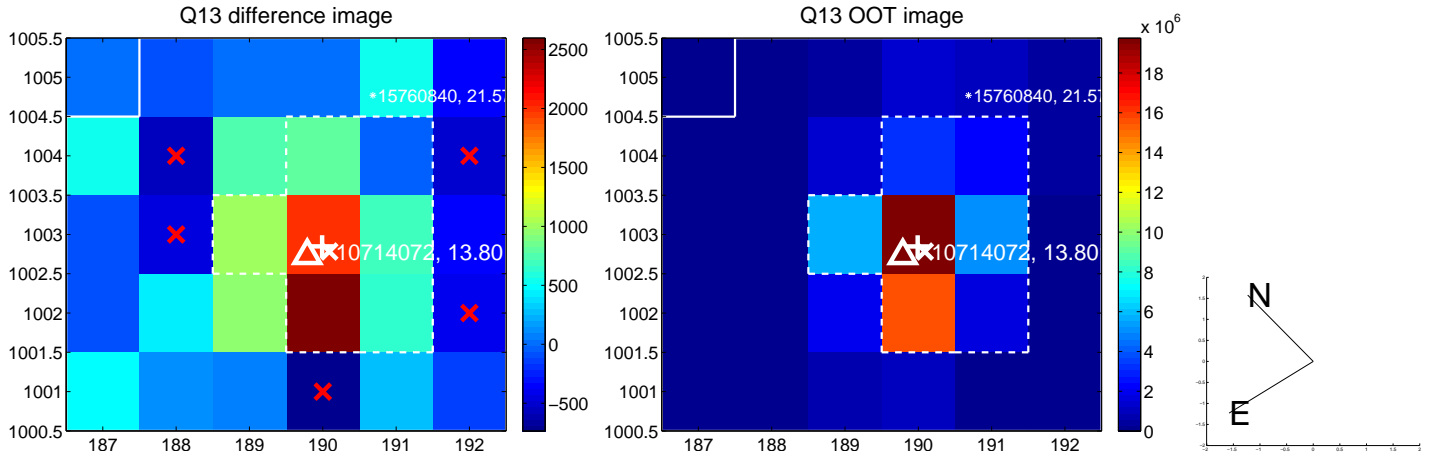
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



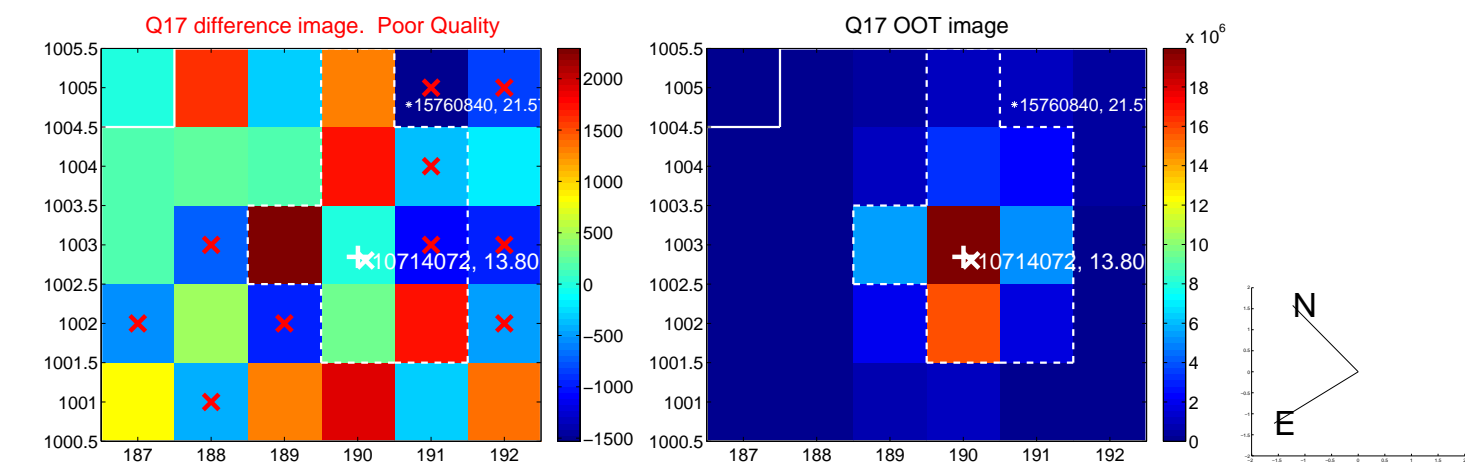
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



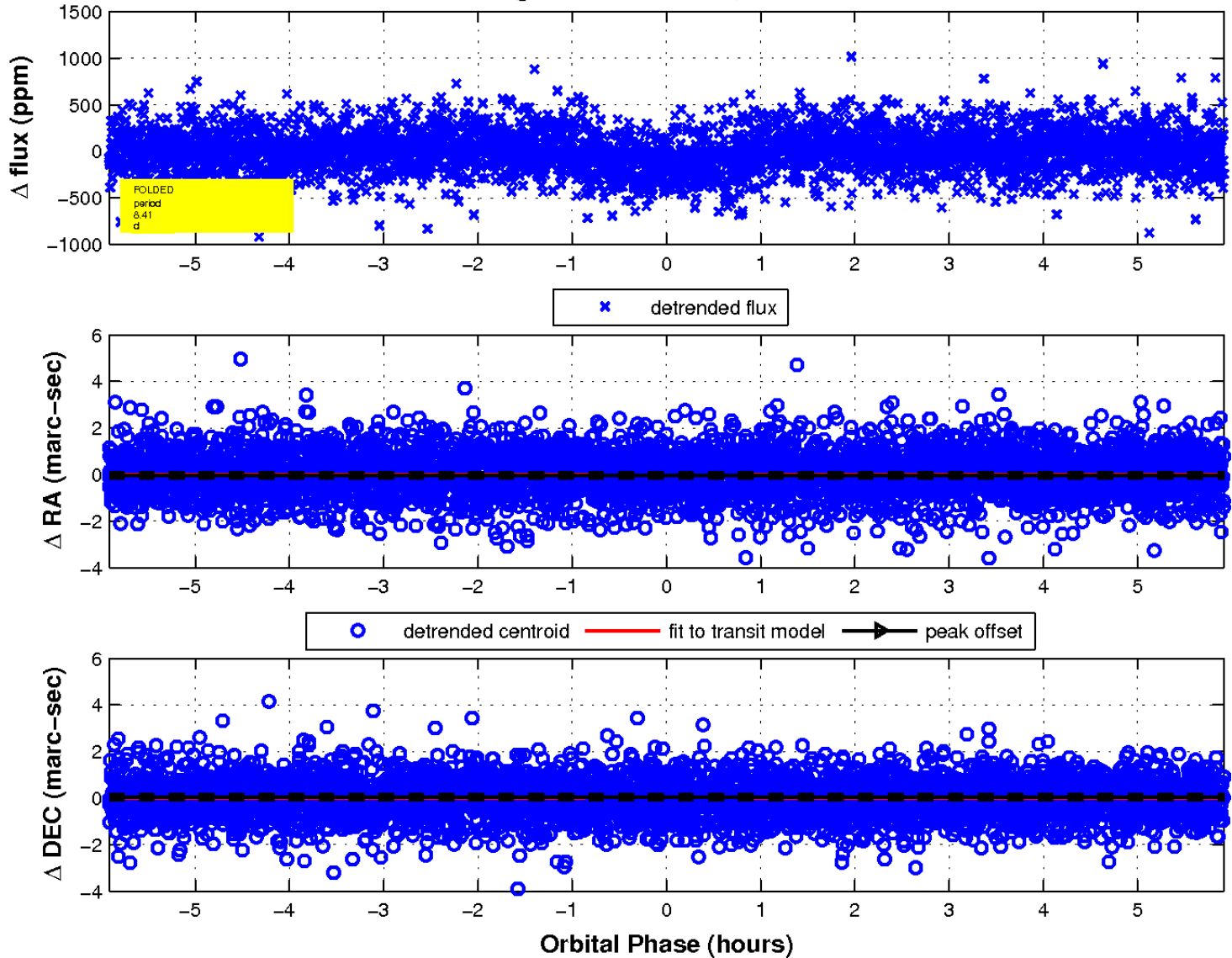
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

