

KIC 004047631

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})
004047631-01	OBS	2519.01	4.790920	132.012691	321.8	0.520	11.9	17.7	0.68	4359	1.24	62.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004047631-01	OBS	PC	1.00	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.

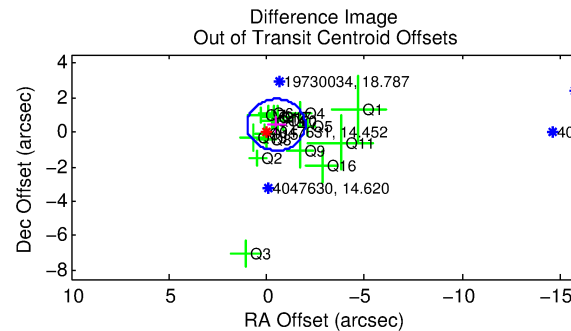
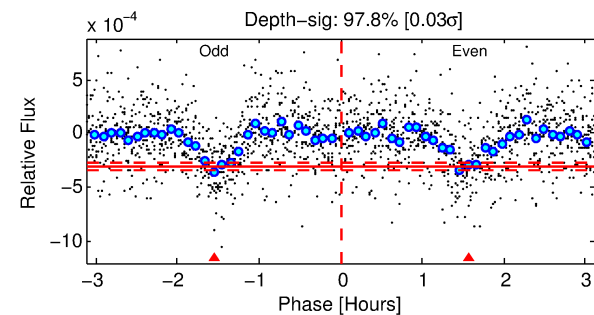
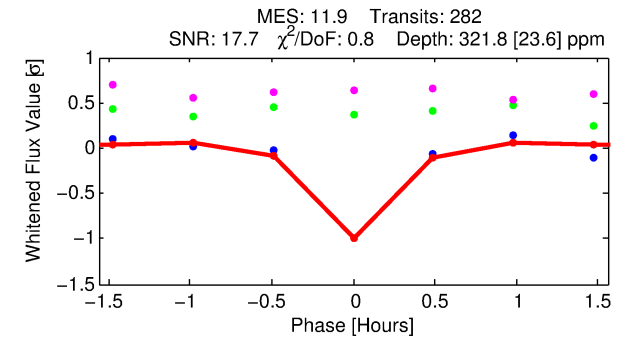
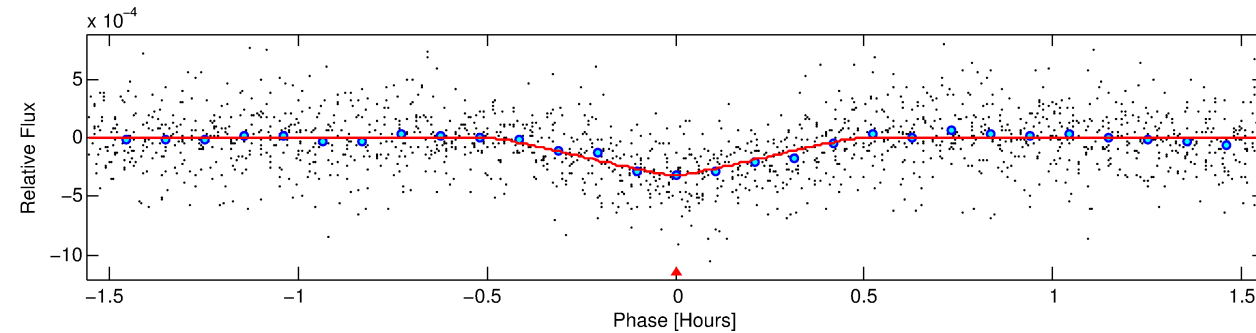
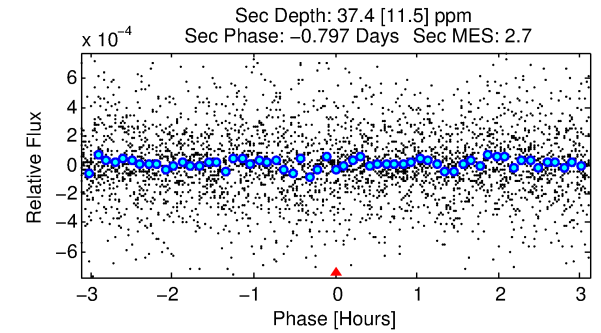
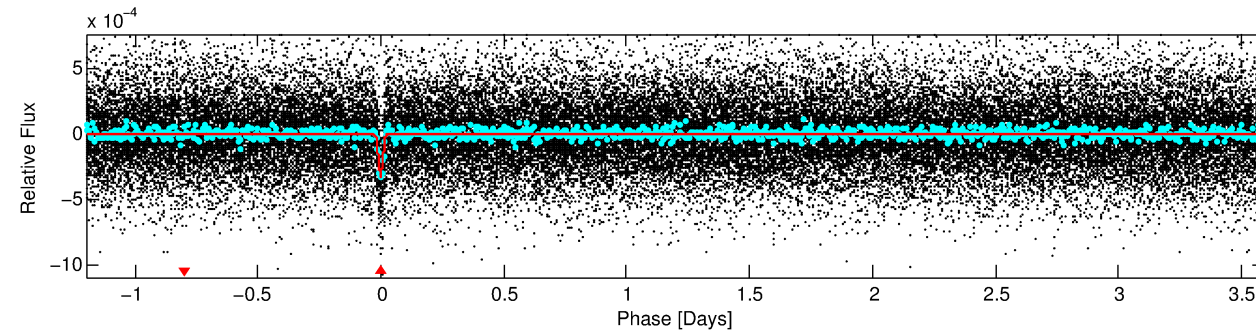
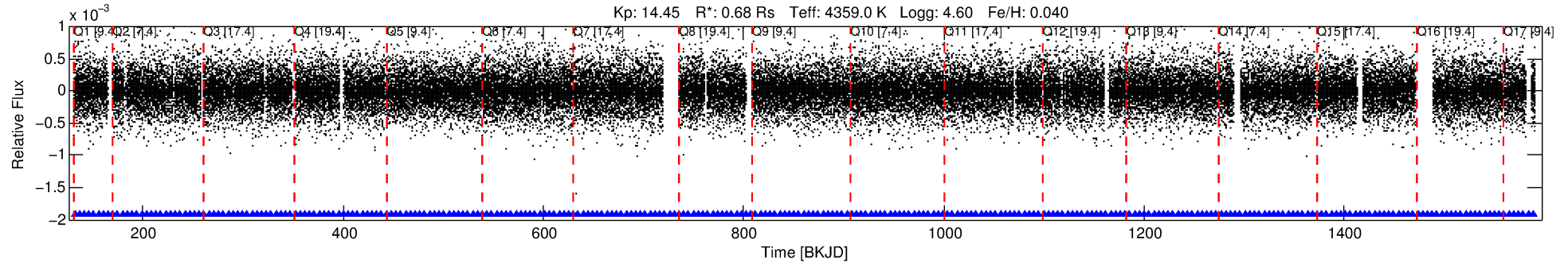
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004047631-01

No Significant Match Found

DV One-Page Summary

KIC: 4047631 Candidate: 1 of 1 Period: 4.791 d
KOI: K02519.01 Corr: 0.925



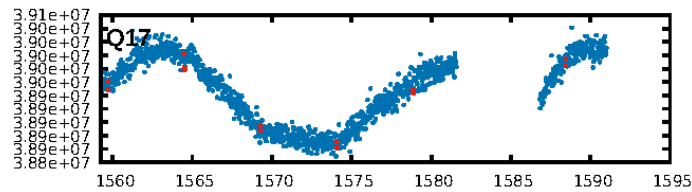
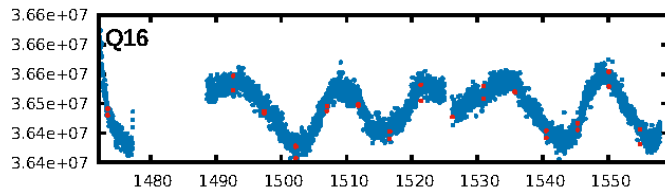
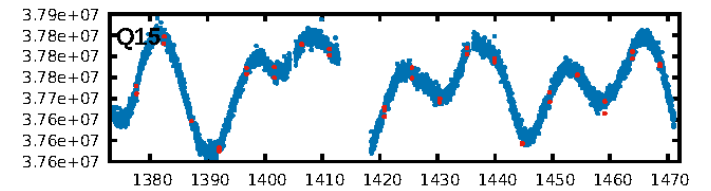
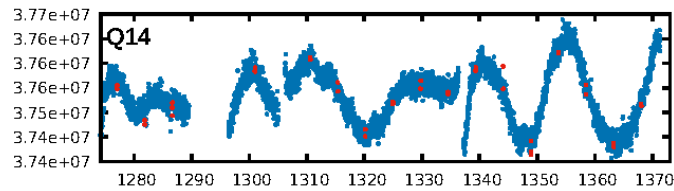
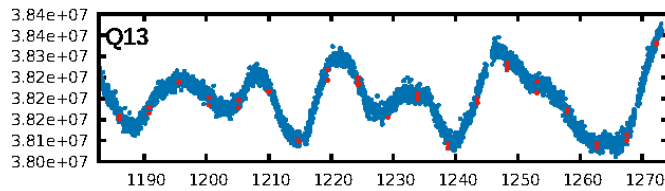
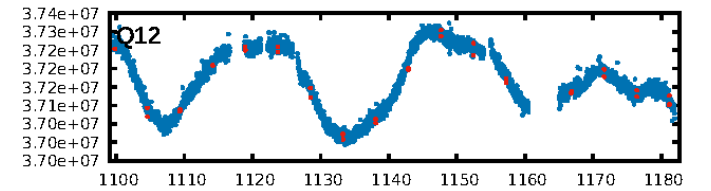
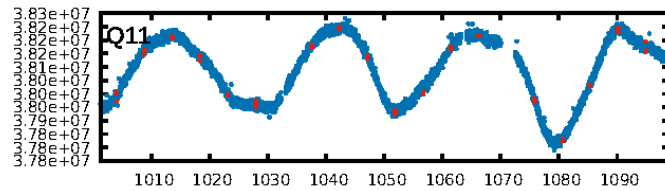
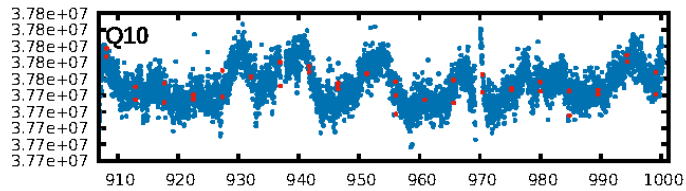
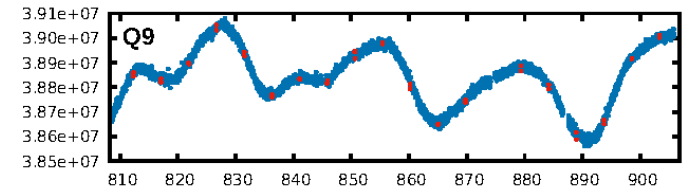
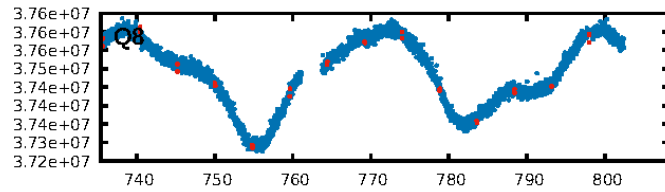
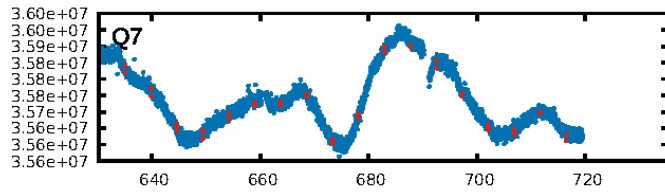
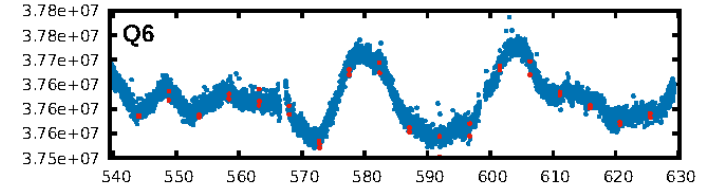
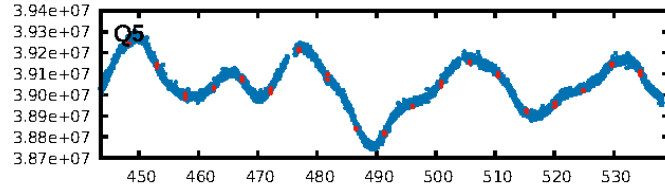
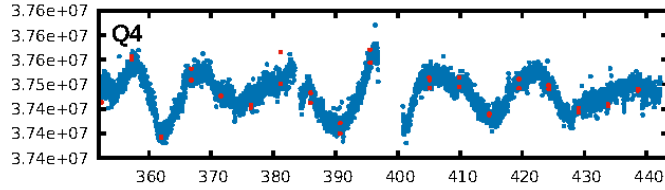
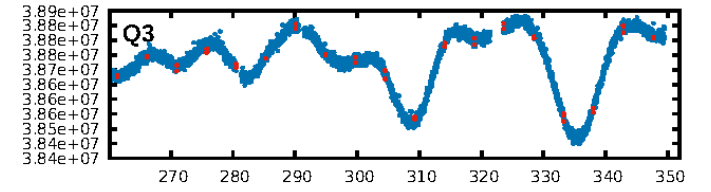
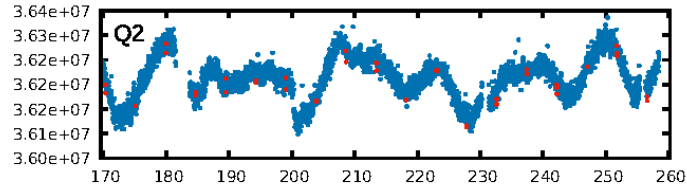
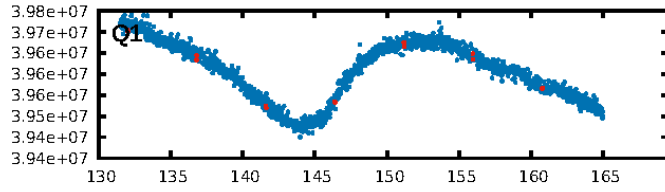
DV Fit Results:

Period = 4.79092 [0.00001] d
Epoch = 132.0127 [0.0008] BKJD
Rp/R* = 0.0169 [0.0175]
a/R* = 70.70 [217.36]
b = 0.15 [19.60]
Seff = 62.69 [7.00]
Teff = 717 [20] K
Rp = 1.24 [1.29] Re
a = 0.0486 [0.0024] AU
Ag = 31.35 [65.78] [0.46σ]
Teffp = 2625 [1377] K [1.39σ]

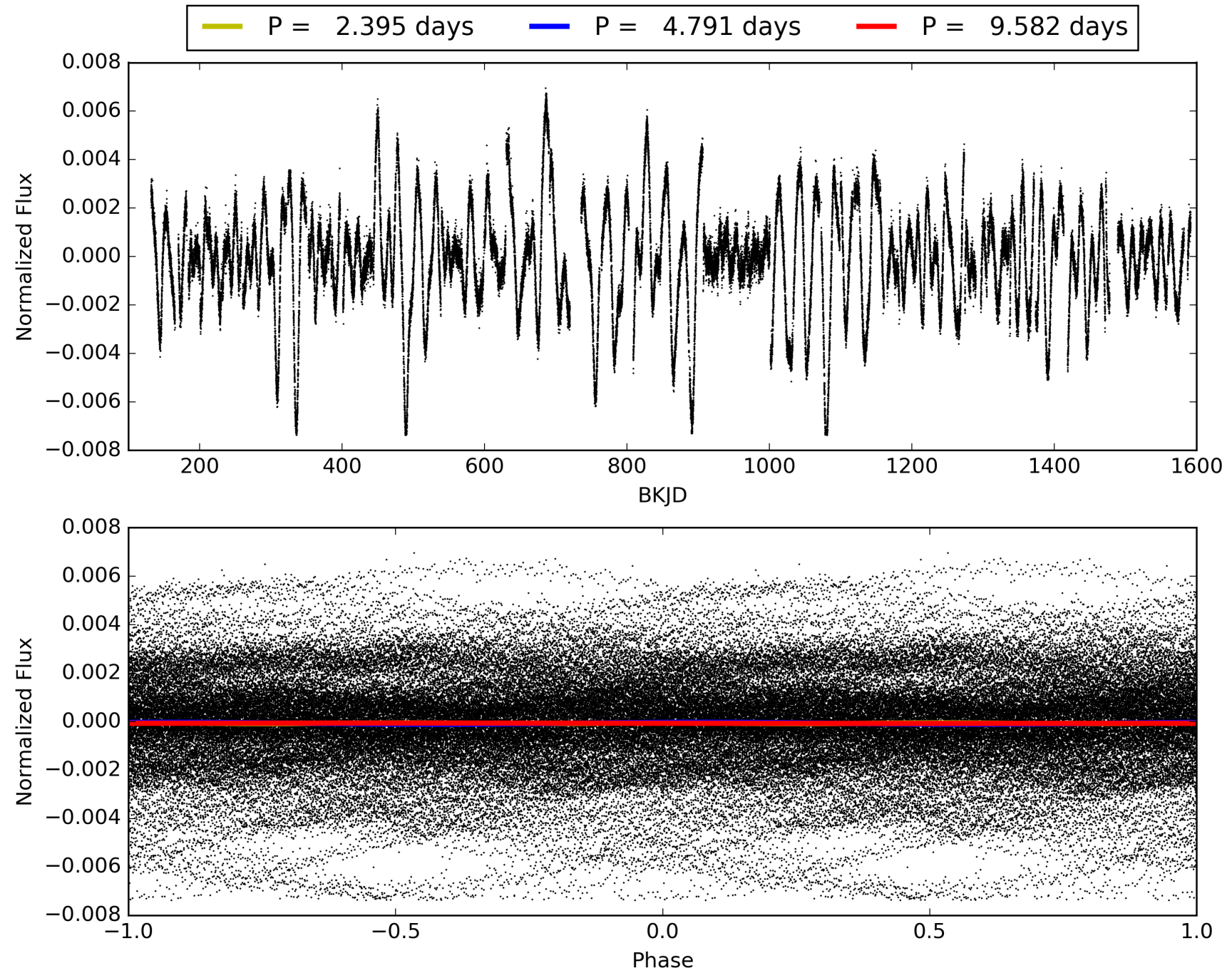
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.24e-32
RollingBand-fgt: 1.00 [269/269]
GhostDiagnostic-chr: 4.255
Centroid-sig: 2.8%
Centroid-so: 1.247 arcsec [2.19σ]
OotOffset-rm: 0.640 arcsec [1.29σ]
KicOffset-rm: 0.811 arcsec [1.73σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 004047631-01, PDC Light Curves

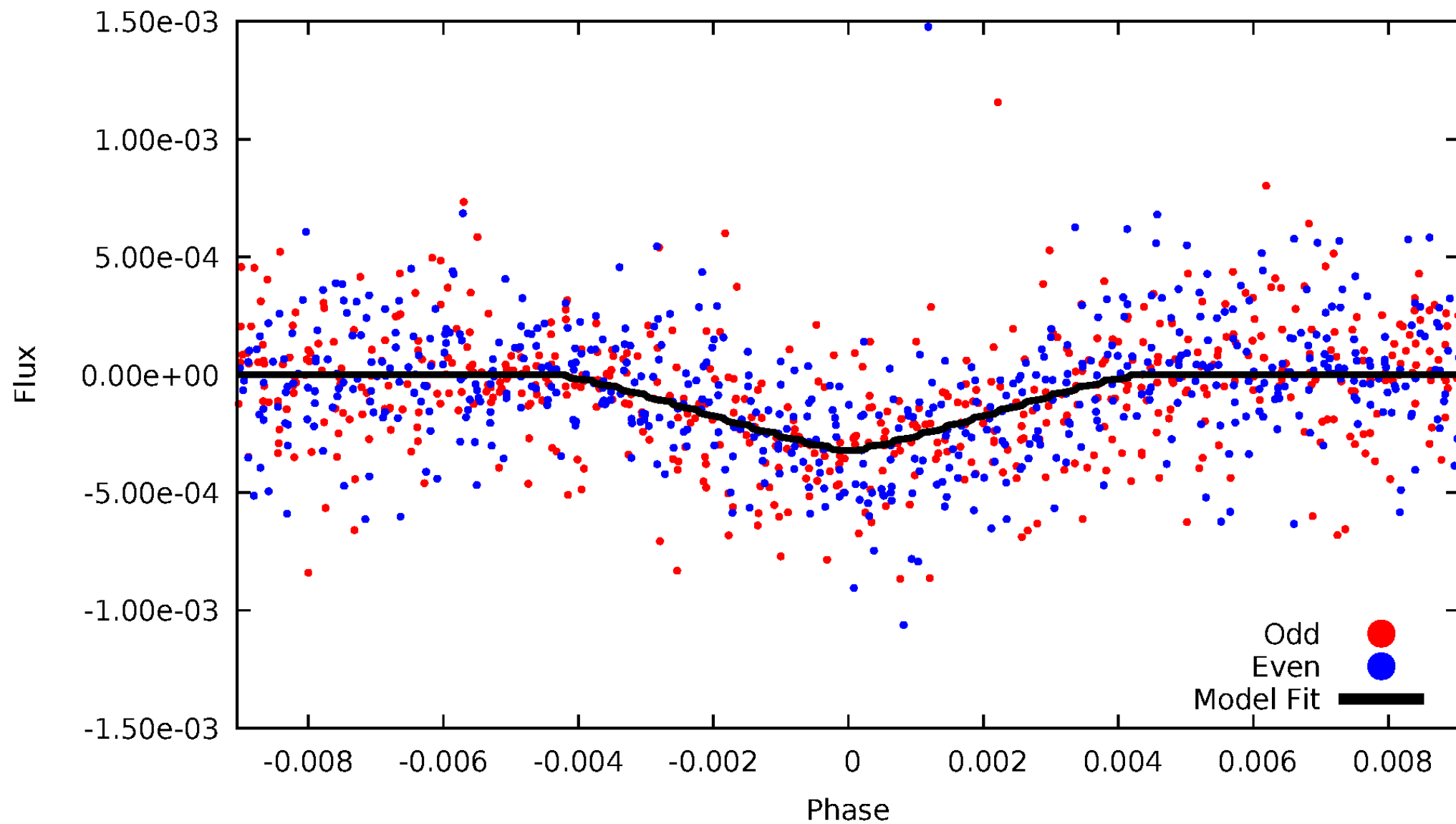


TCE 004047631-01



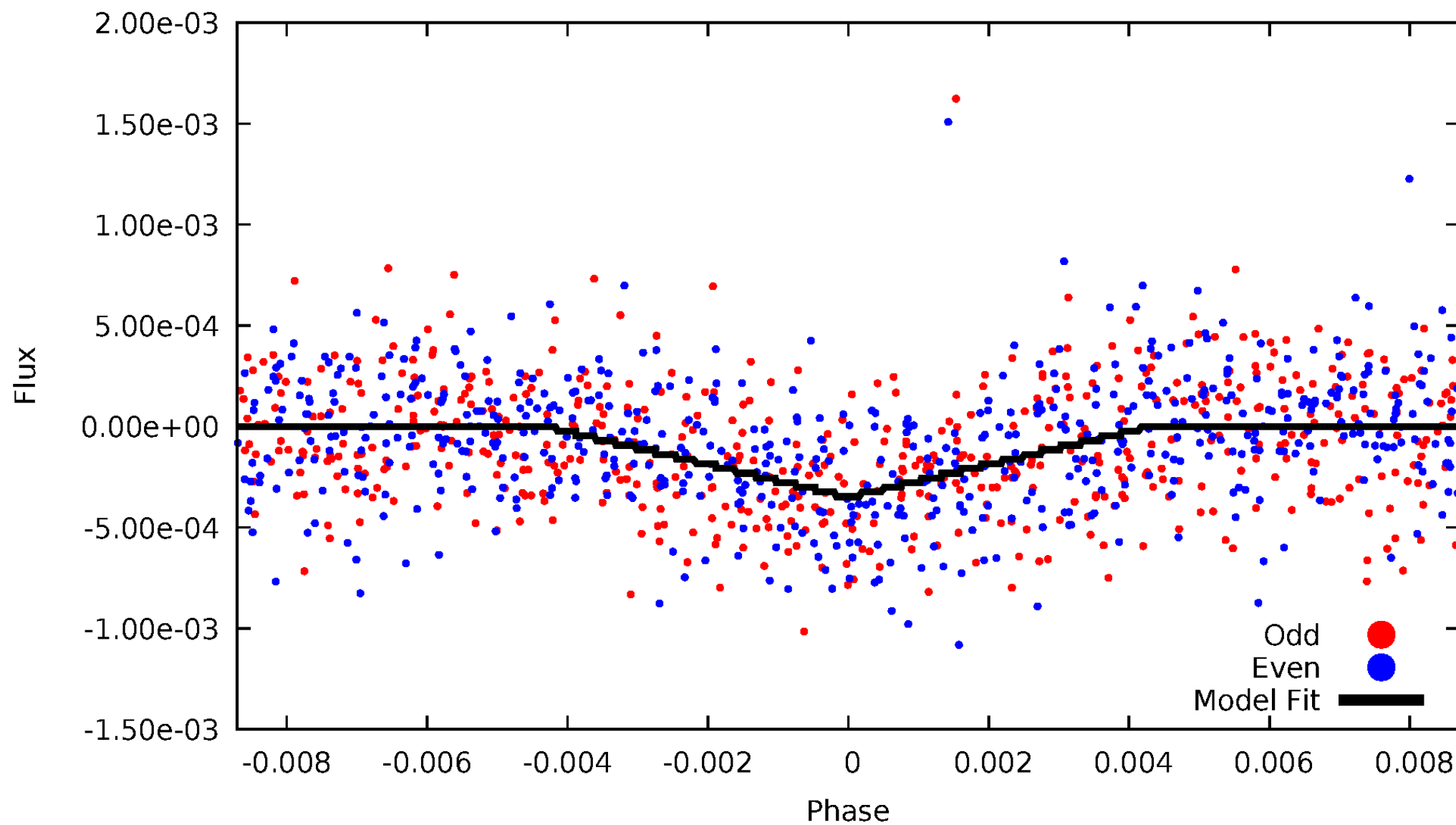
DV Odd/Even

TCE 004047631-01



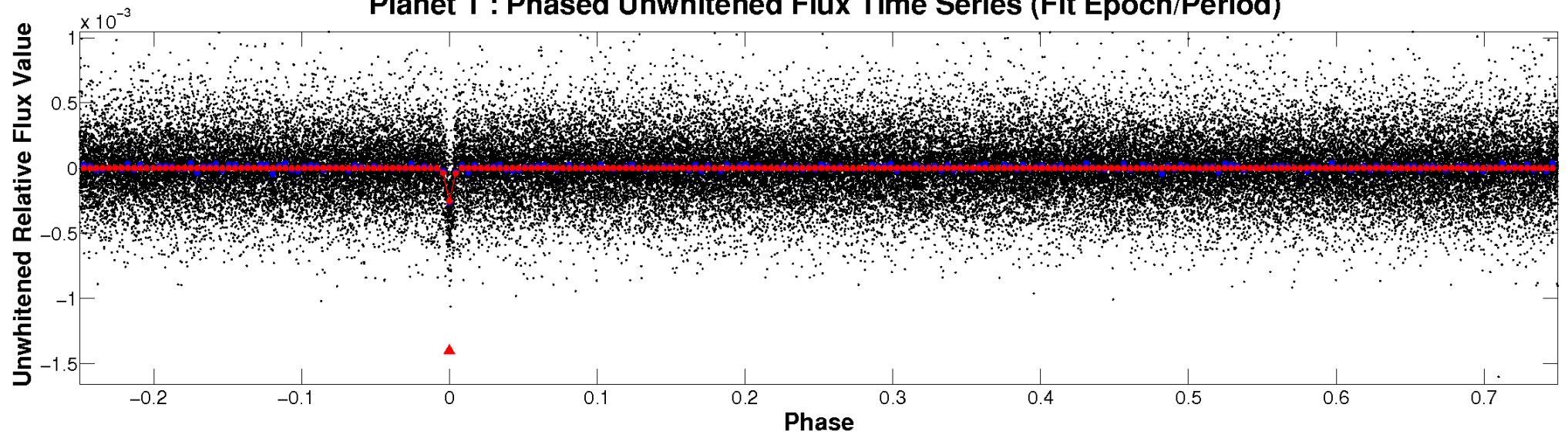
ALT Odd/Even

TCE 004047631-01

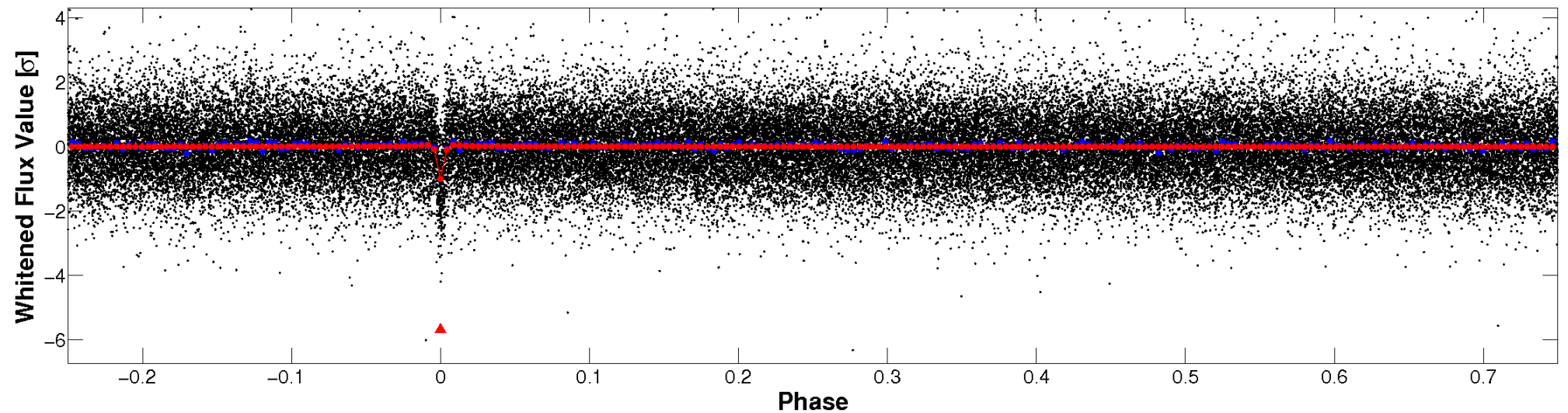


Non-Whitened Vs. Whitened Light Curve

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

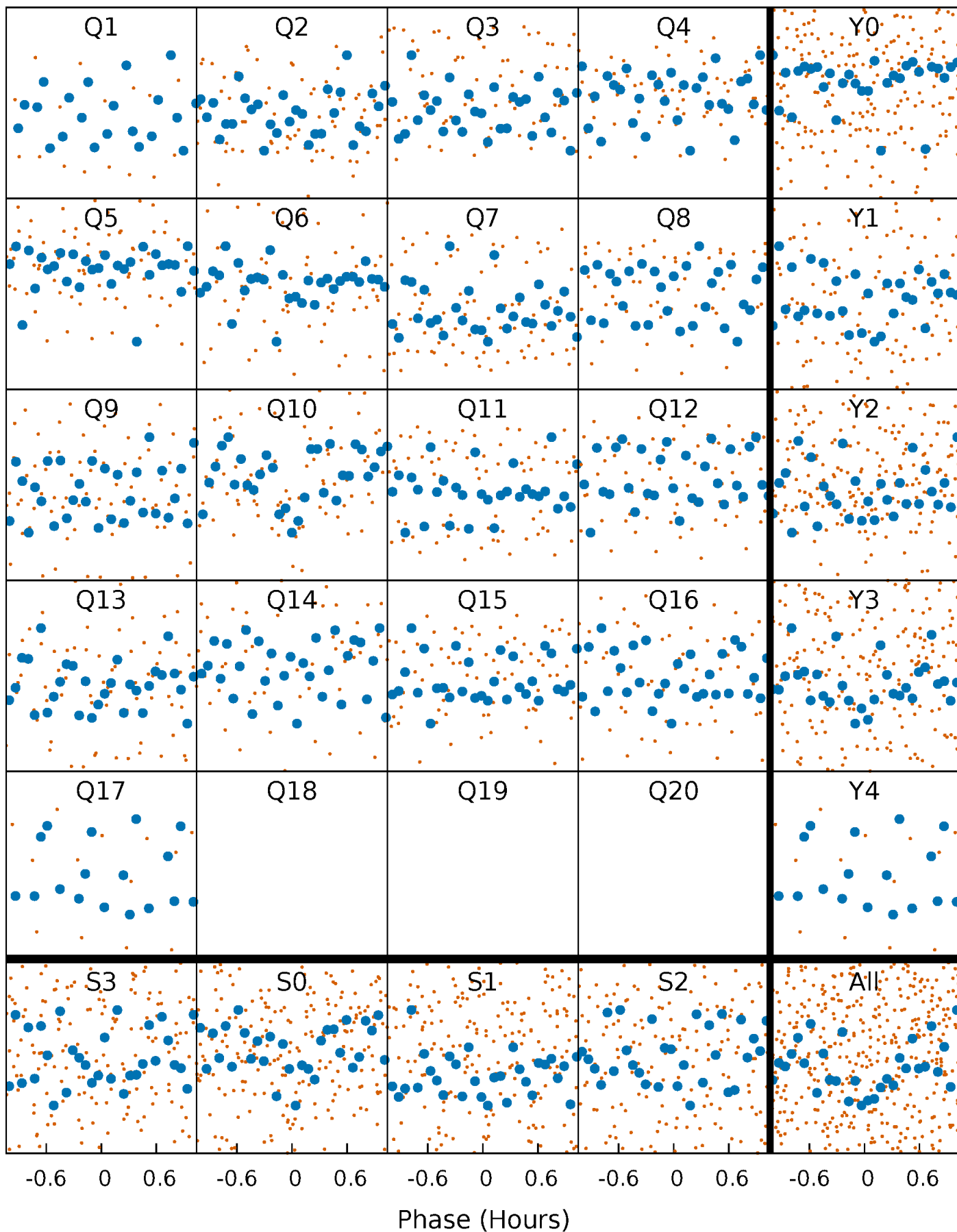


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



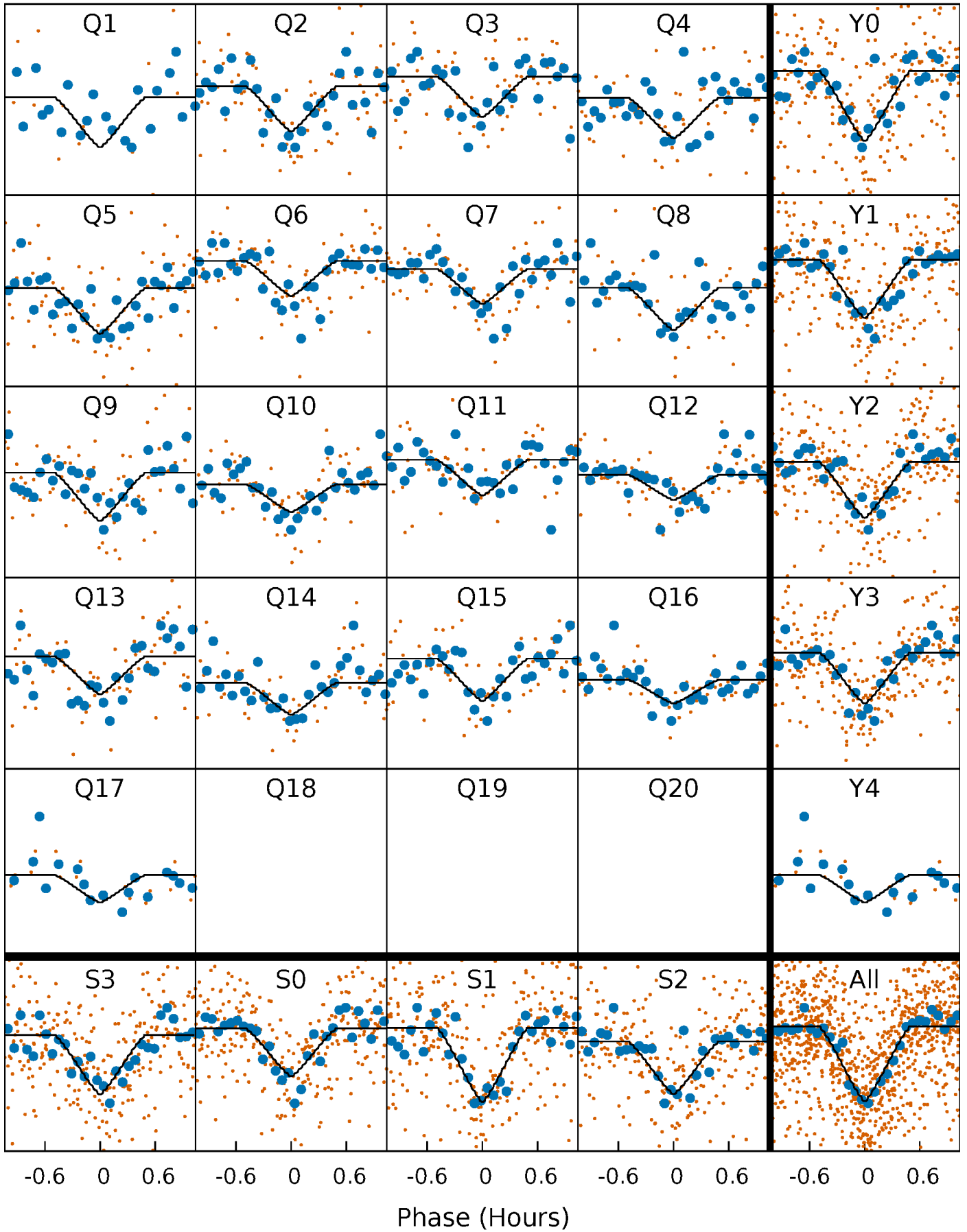
PDC Quarter-Phased Transit Curves

TCE 004047631-01 P= 4.790920 Days $T_0=132.012690$ (BKJD)



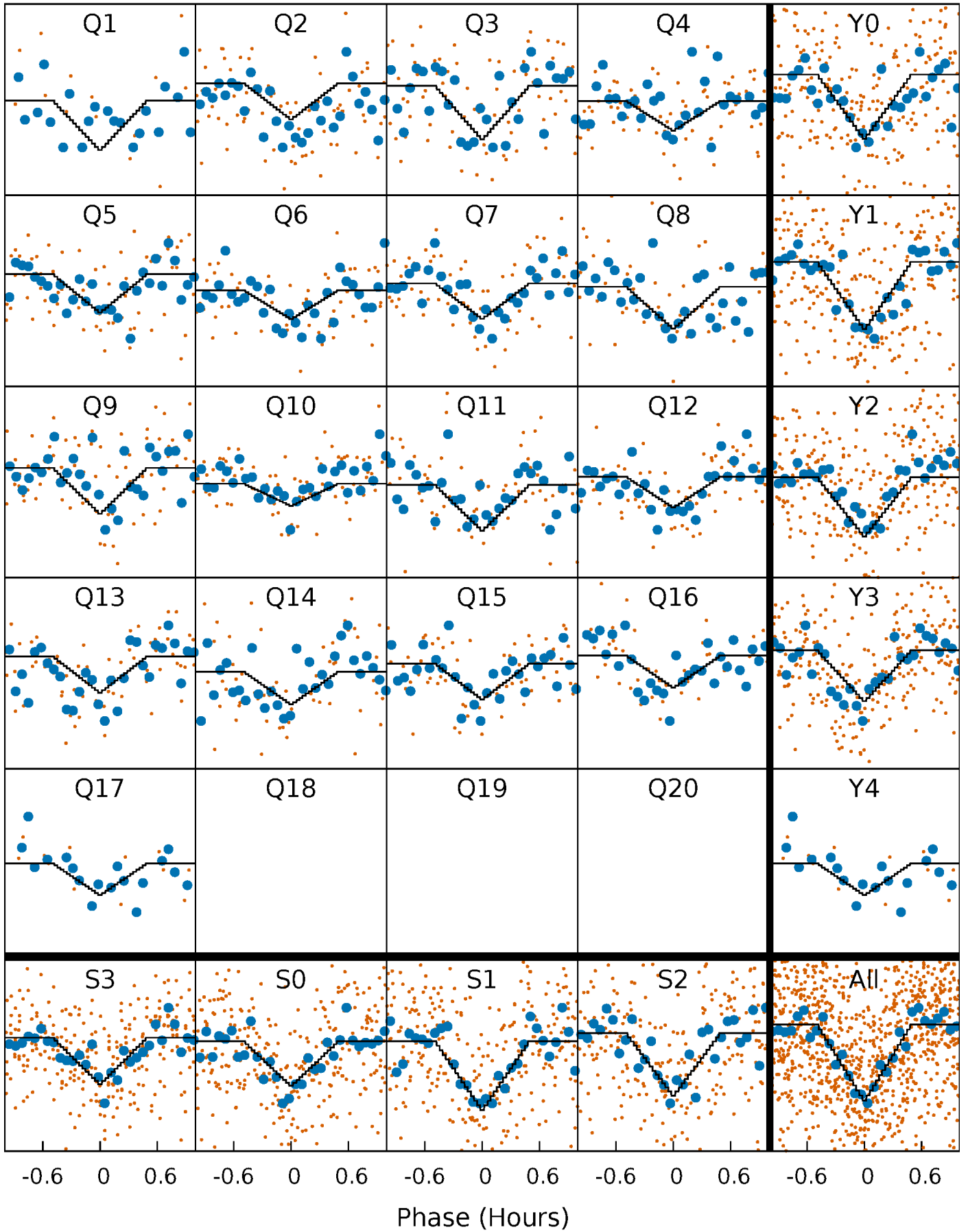
DV Quarter-Phased Transit Curves

TCE 004047631-01 P= 4.790920 Days $T_0=132.012690$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

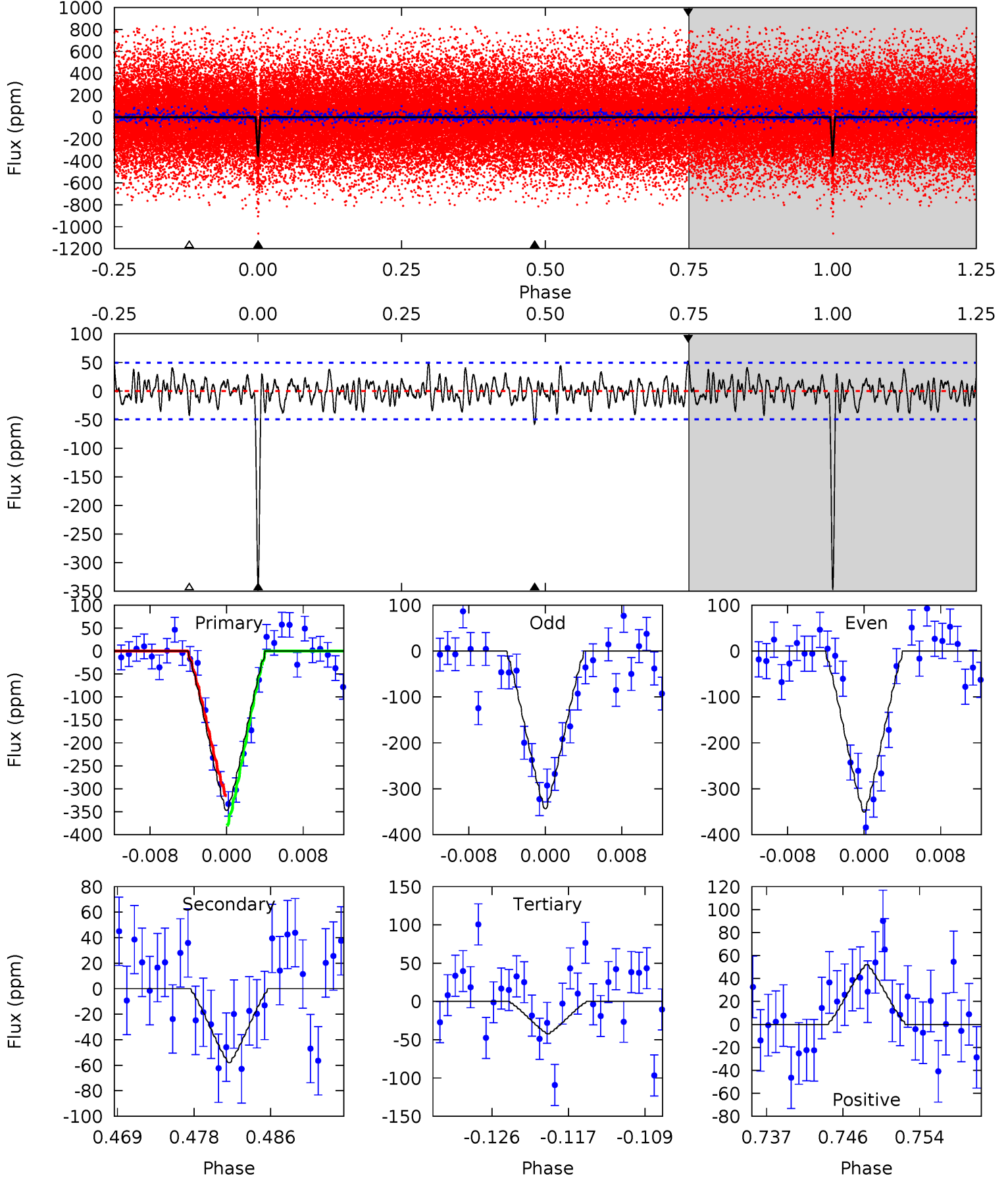
TCE 004047631-01 P= 4.790942 Days $T_0=132.010408$ (BKJD)



DV Model-Shift Uniqueness Test

004047631-01, P = 4.790920 Days, E = 127.221770 Days

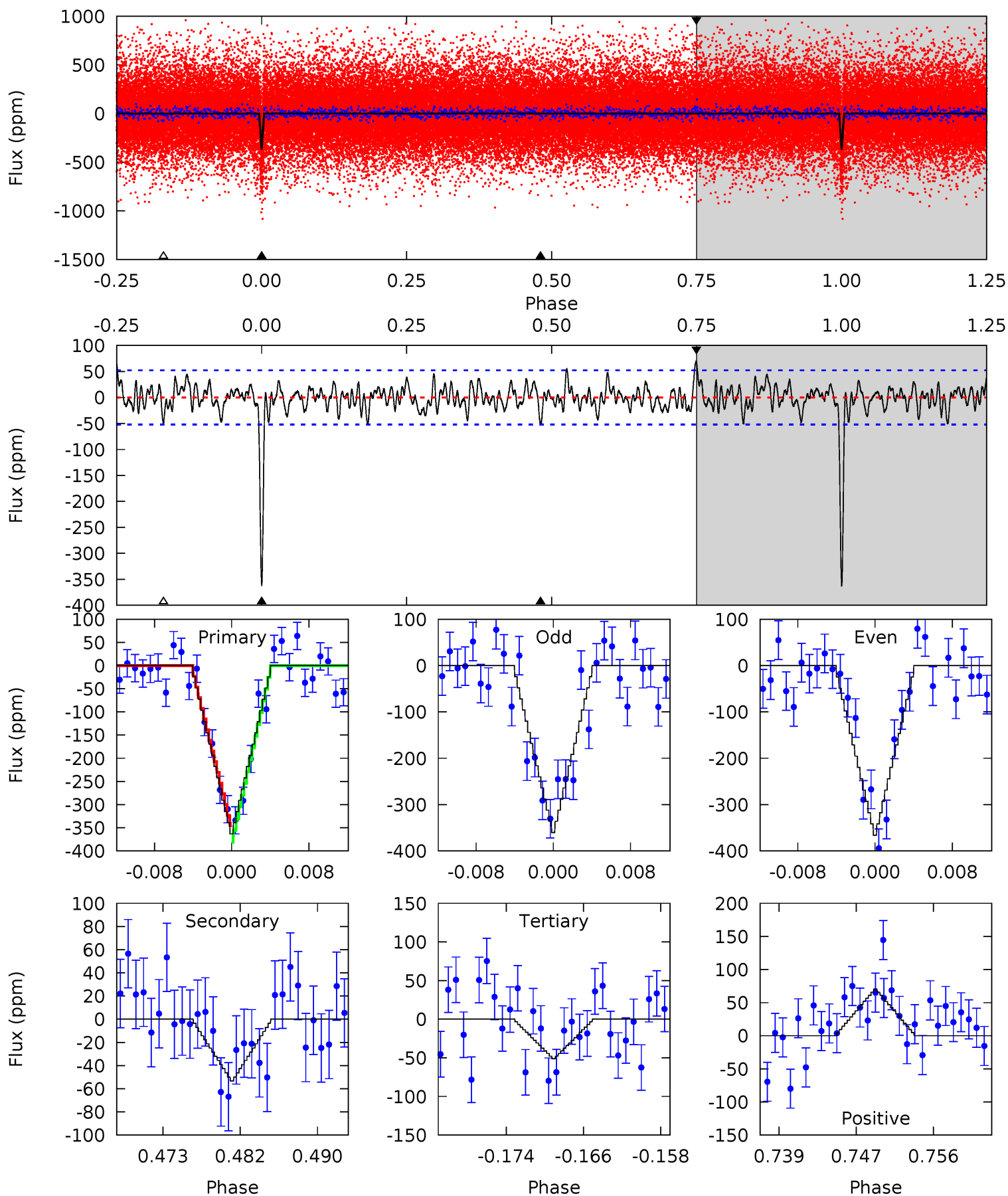
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.6	5.94	4.32	5.34	5.06	2.64	1.64	31.2	30.2	1.62	0.60	0.38	0.99	0.13	3.30



Alt Model-Shift Uniqueness Test

004047631-01, P = 4.790942 Days, E = 127.219466 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.2	5.16	4.96	6.83	5.06	2.64	1.79	30.2	28.3	0.21	-1.66	0.30	1.03	0.16	1.72



Stellar Parameters For KIC 004047631

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4359^{+78}_{-87}	$4.601^{+0.045}_{-0.010}$	$0.040^{+0.150}_{-0.150}$	$0.676^{+0.021}_{-0.037}$	$0.665^{+0.040}_{-0.025}$	$3.034^{+0.509}_{-0.153}$
	+2%/-2%	+1%/-0%	+375%/-375%	+3%/-5%	+6%/-4%	+17%/-5%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004047631-01 / KOI 2519.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-58 ± 10	$1.49^{+1.09}_{-0.96}$	995^{+22}_{-22}	3137^{+1343}_{-458}	34^{+242}_{-23}
Alt.	-53 ± 10	$1.54^{+1.18}_{-1.00}$	995^{+20}_{-22}	3066^{+1311}_{-437}	29^{+229}_{-20}

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

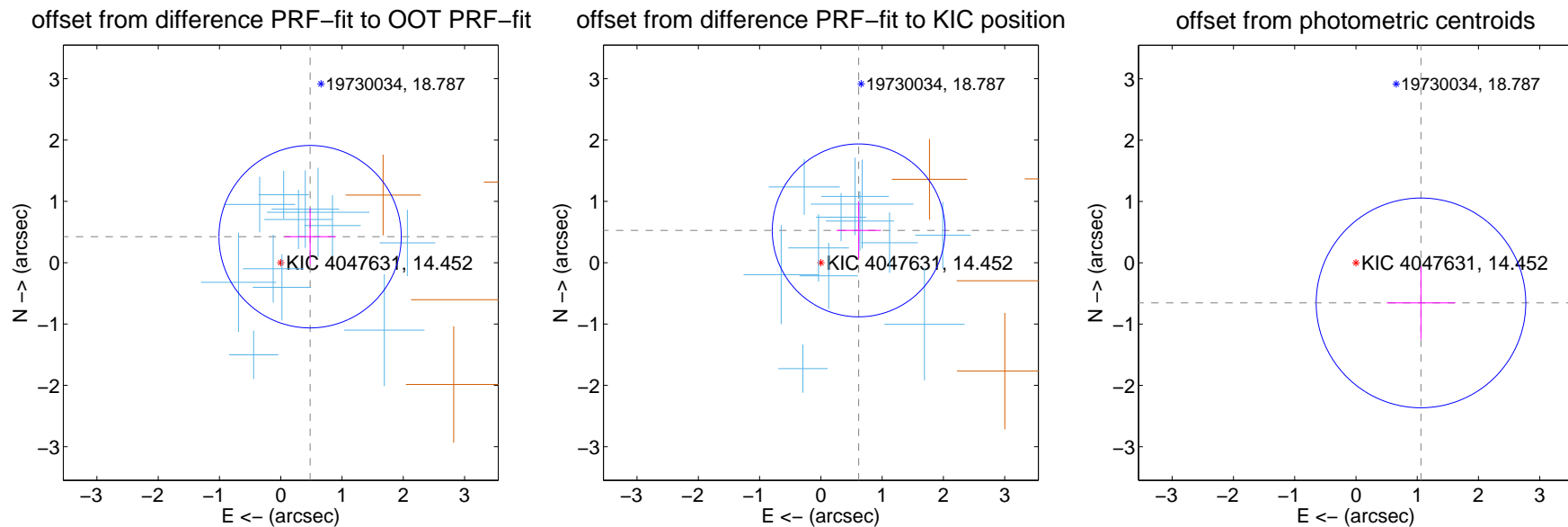
DV Centroid Data

Supplemental centroid analysis for 004047631-01. Kepler magnitude: 14.45. Transit SNR 17.65

There are 12 quarters with good PRF difference image offsets

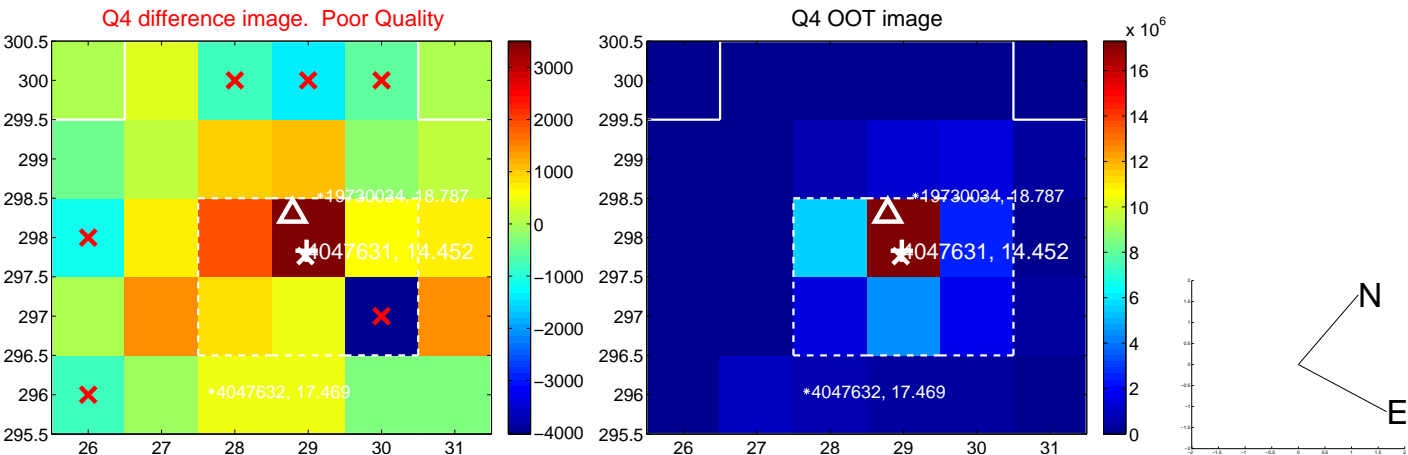
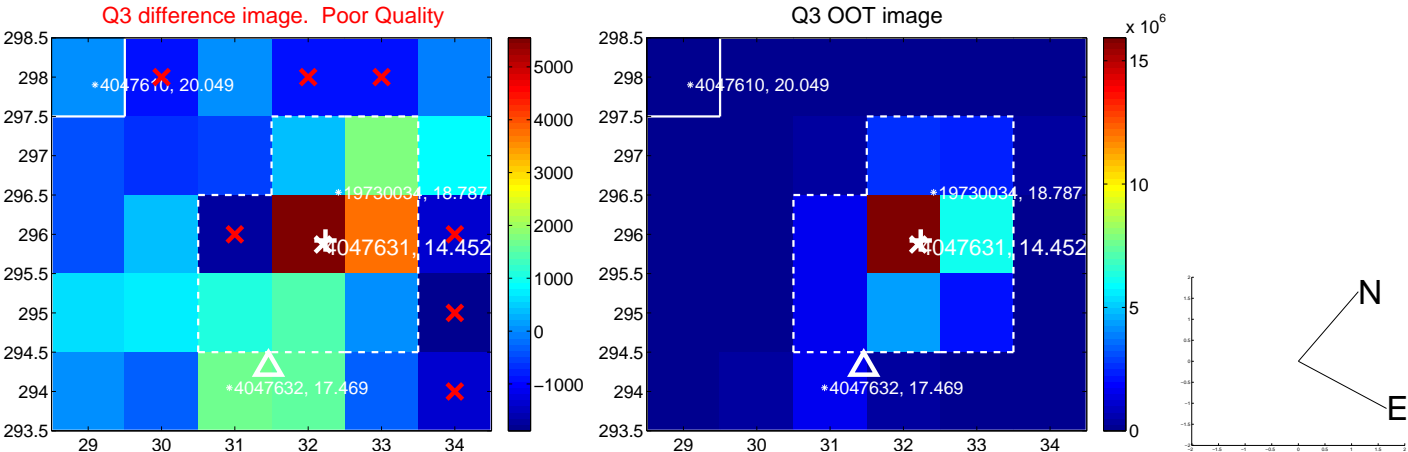
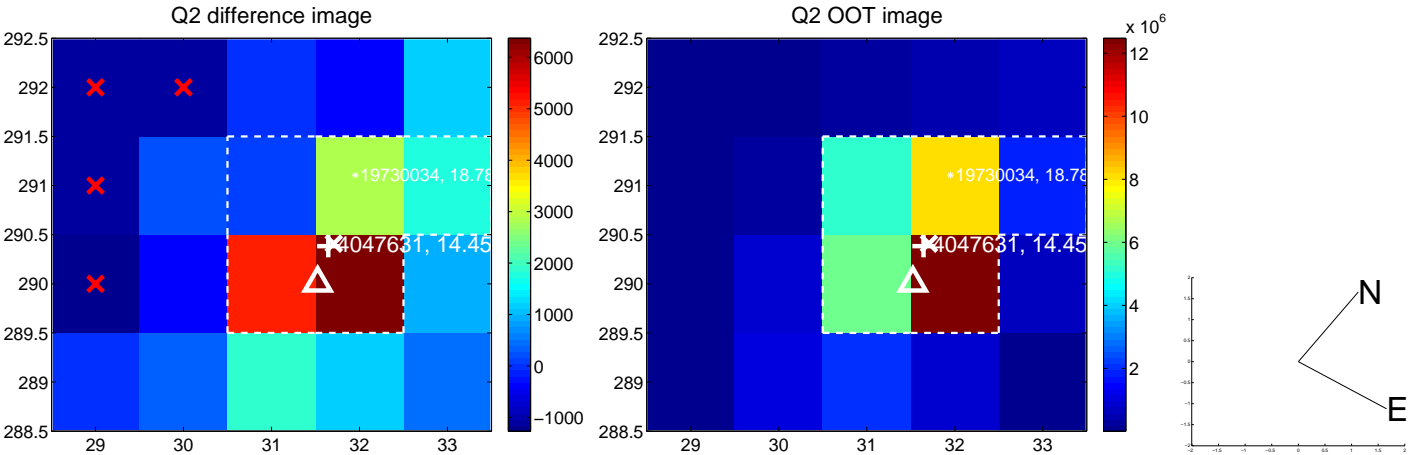
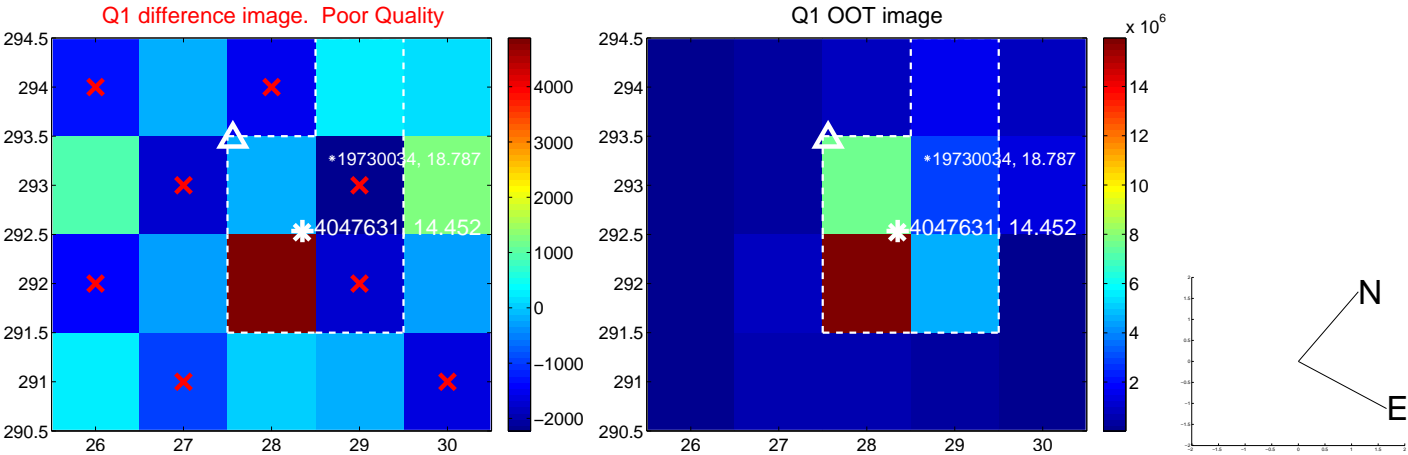
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.640 ± 0.496	1.29	-0.479 ± 0.419	0.424 ± 0.464
PRF-fit source offset from KIC position	0.811 ± 0.470	1.73	-0.617 ± 0.362	0.527 ± 0.474
photometric centroid source offset	1.25 ± 0.57	2.19	-1.06 ± 0.56	-0.65 ± 0.60

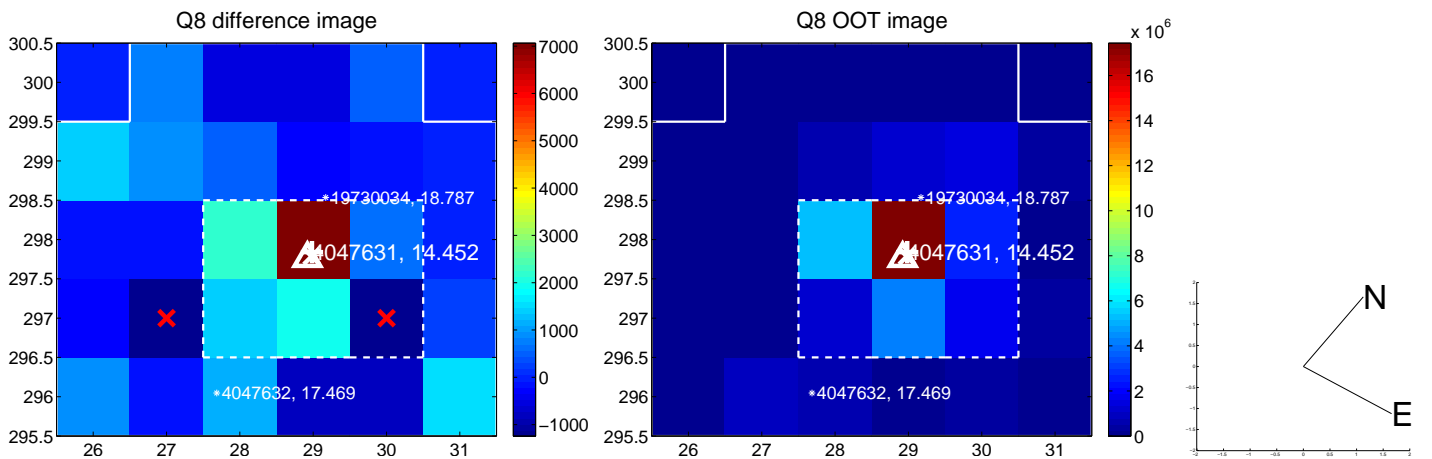
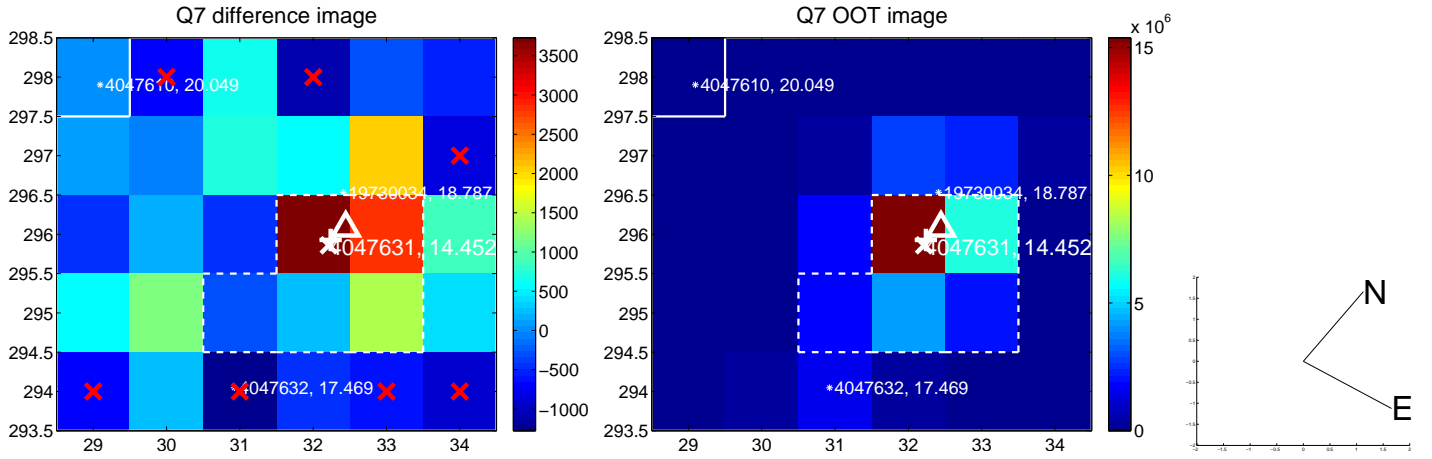
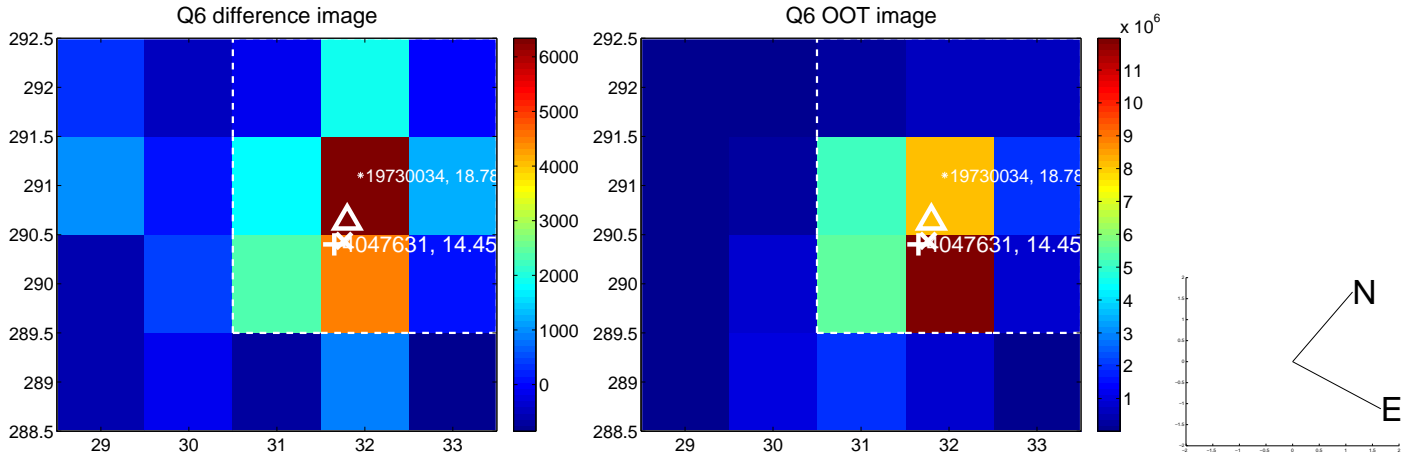
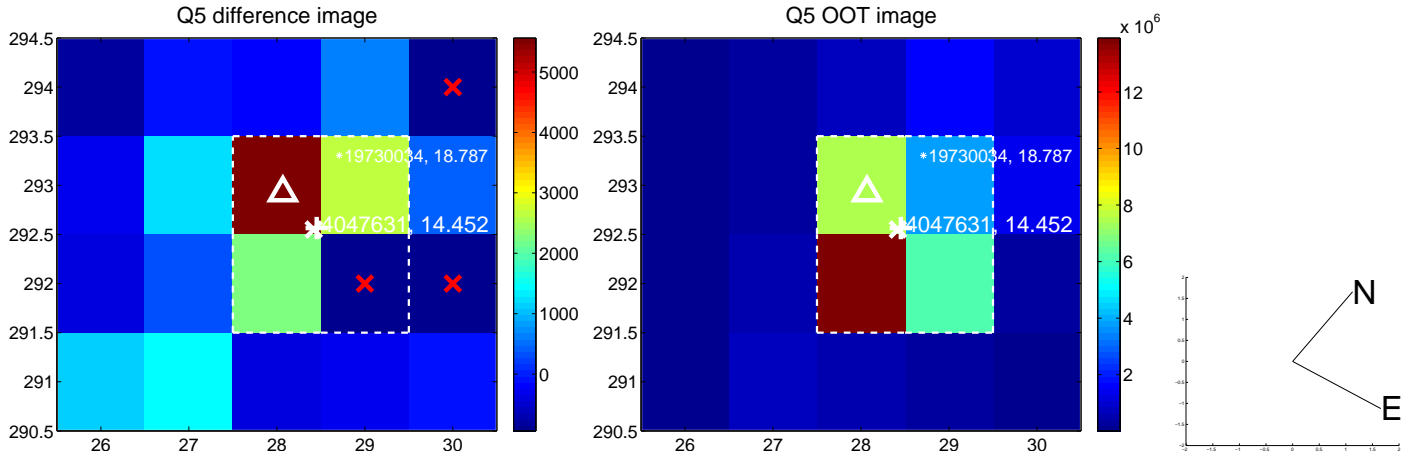


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

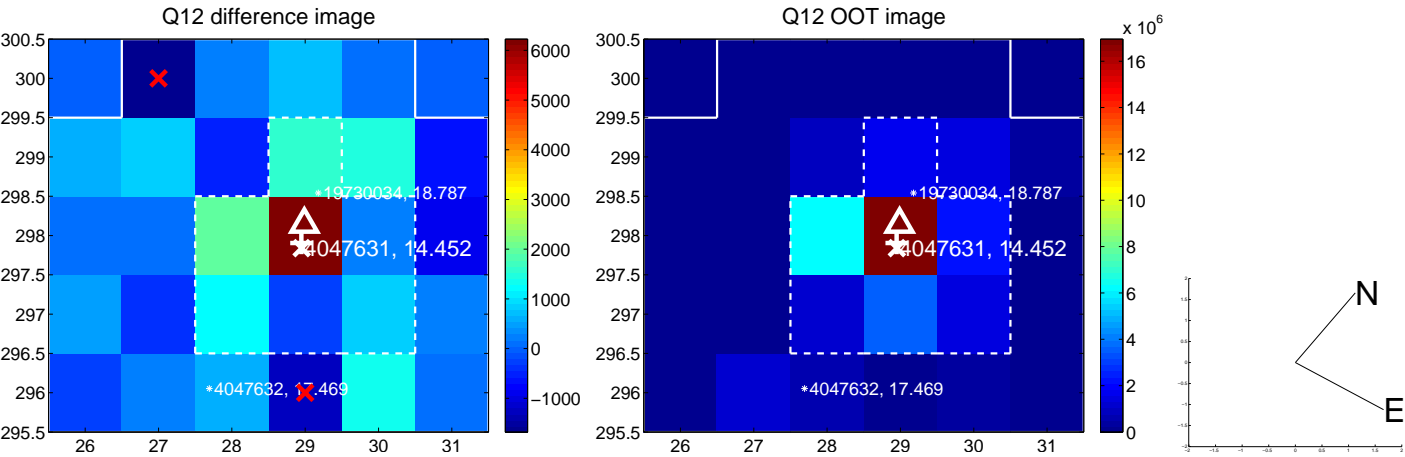
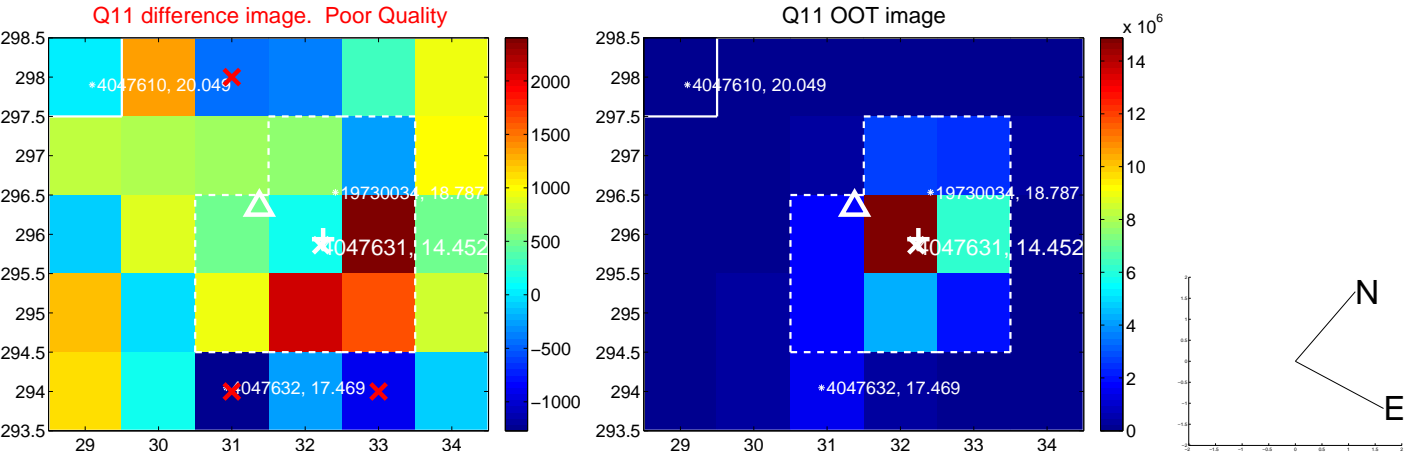
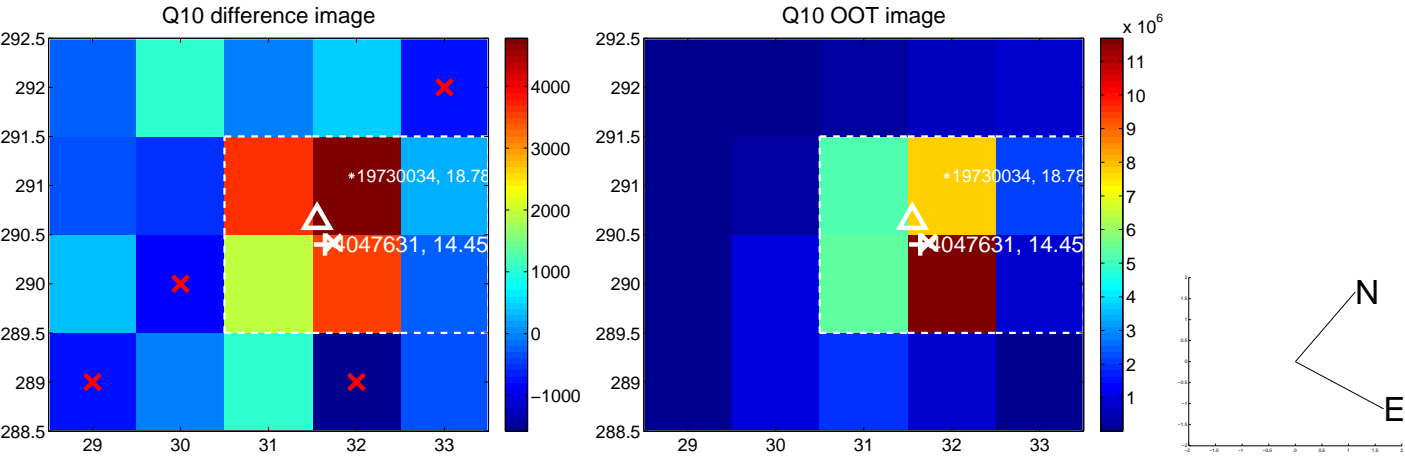
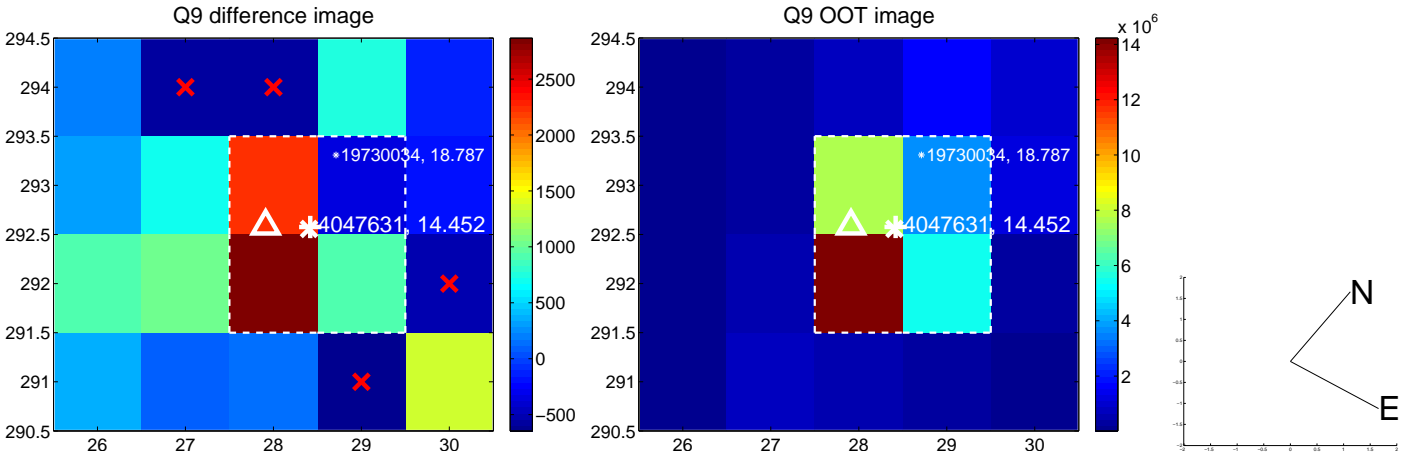
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



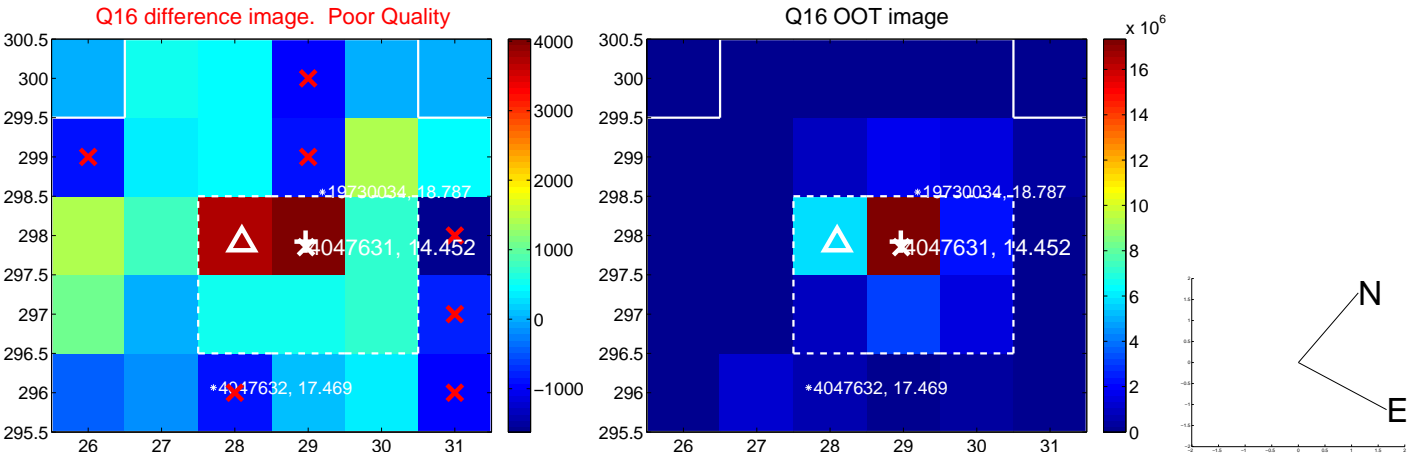
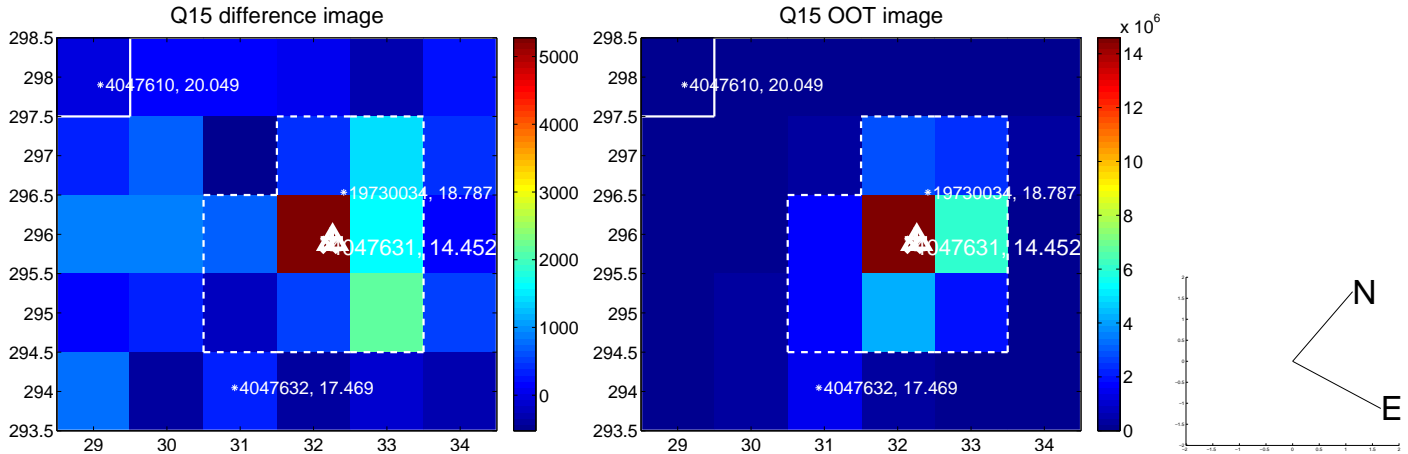
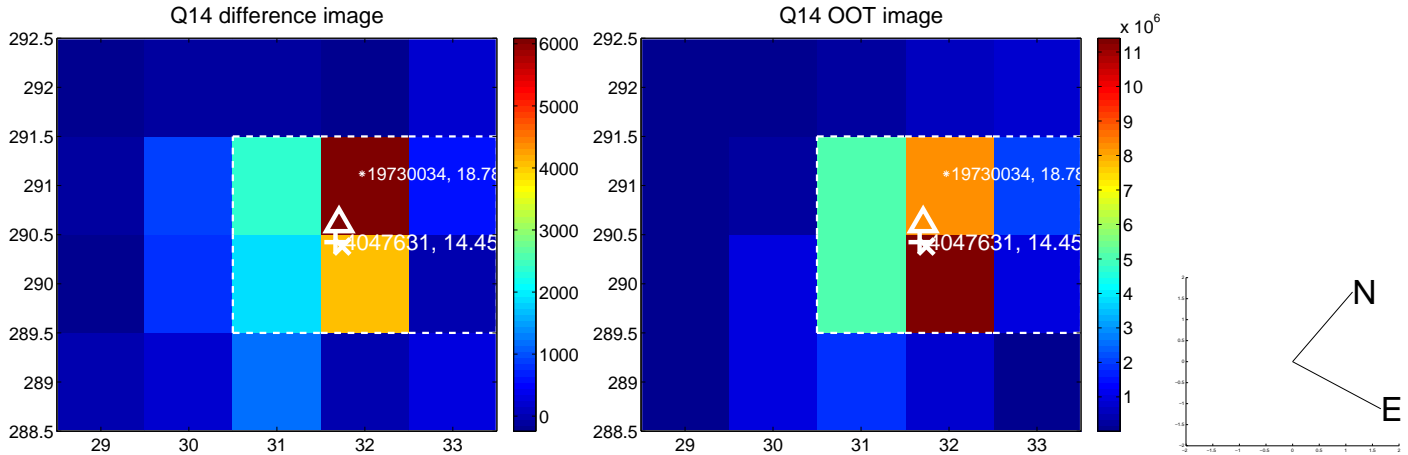
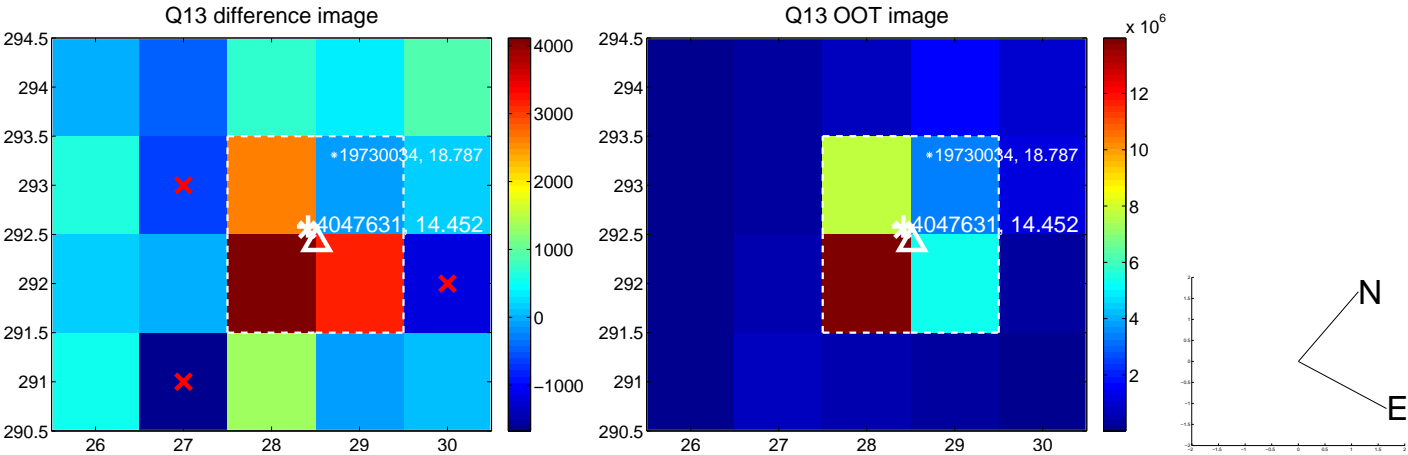
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



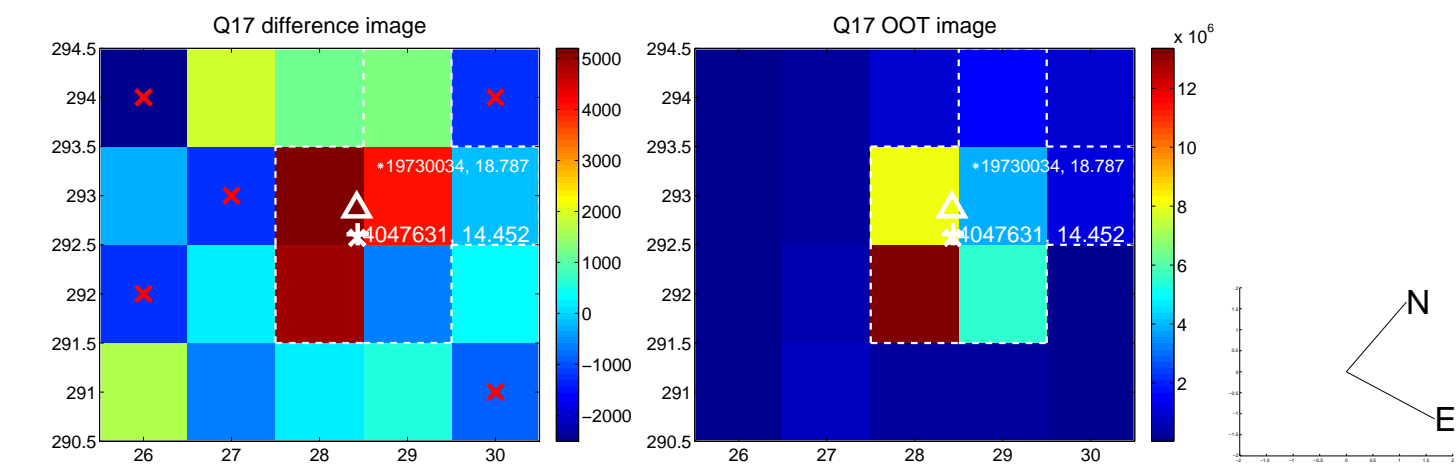
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



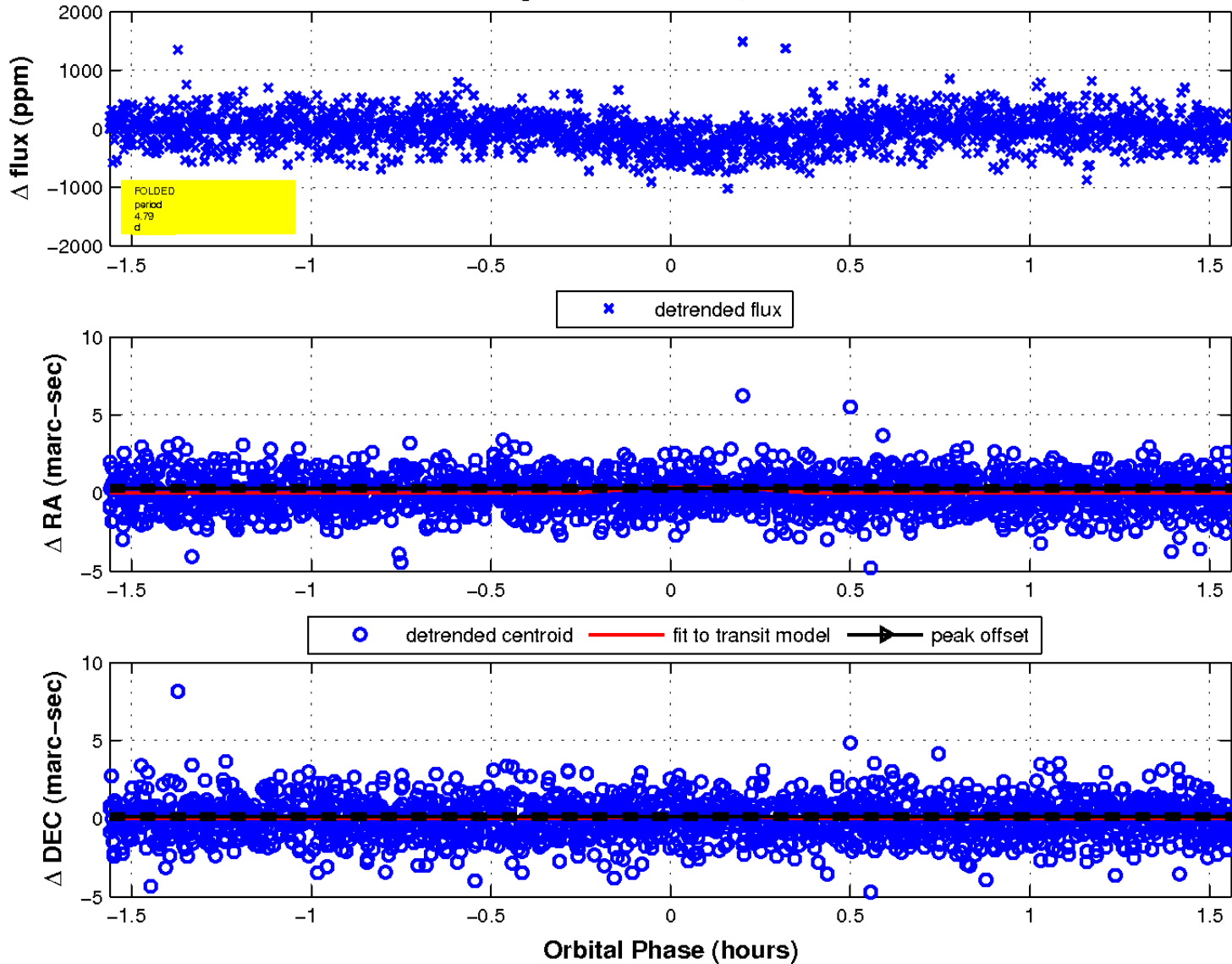
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

