

KIC 008222627

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})
008222627-01	OBS	4098.01	1.121725	131.572623	82.1	1.051	15.0	17.8	2.57	5023	2.81	7649.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008222627-01	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.

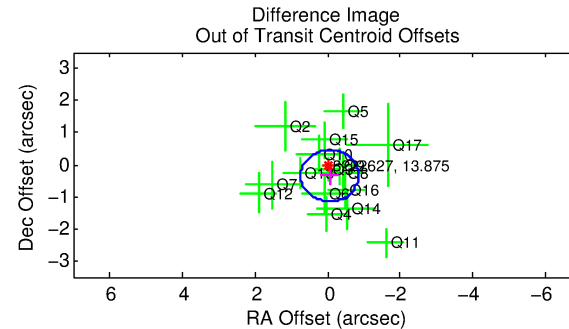
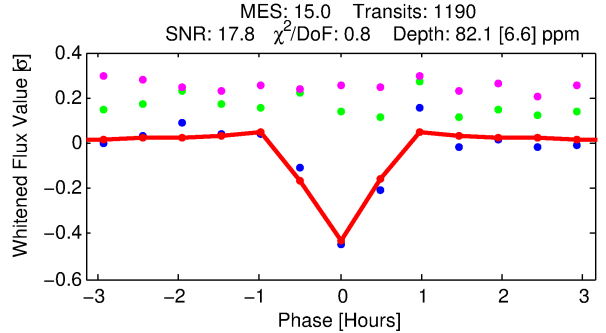
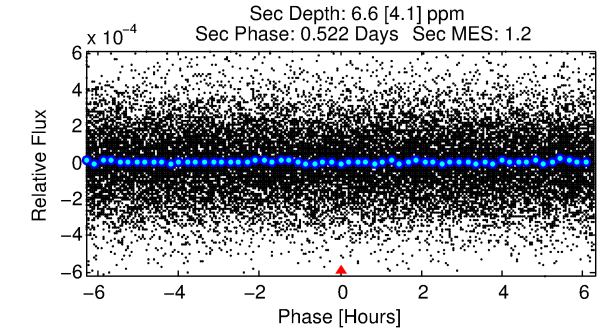
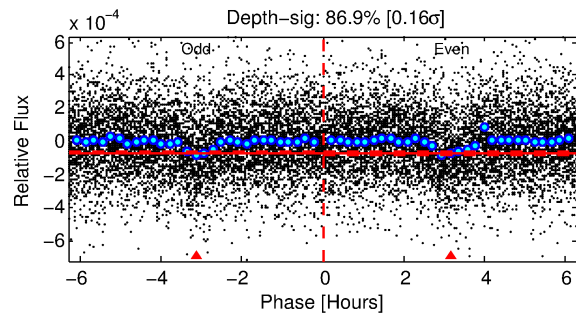
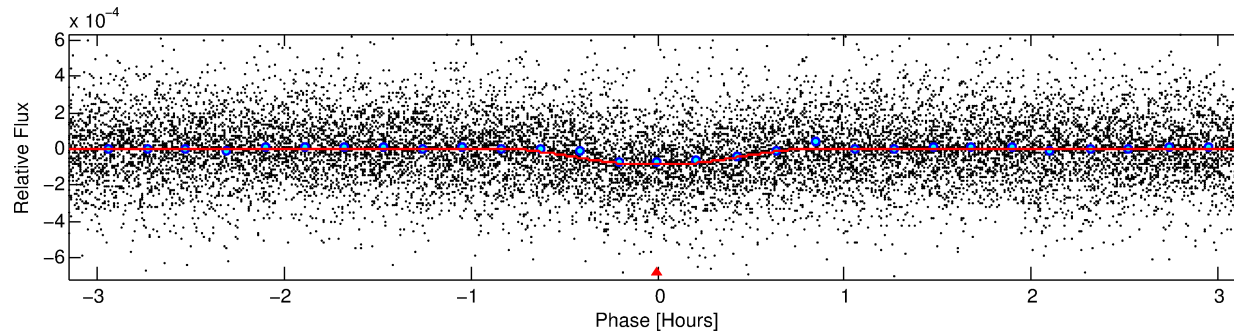
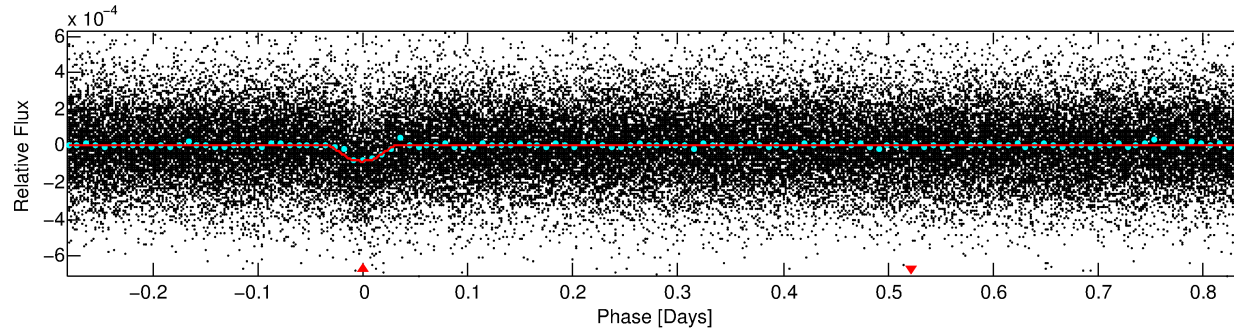
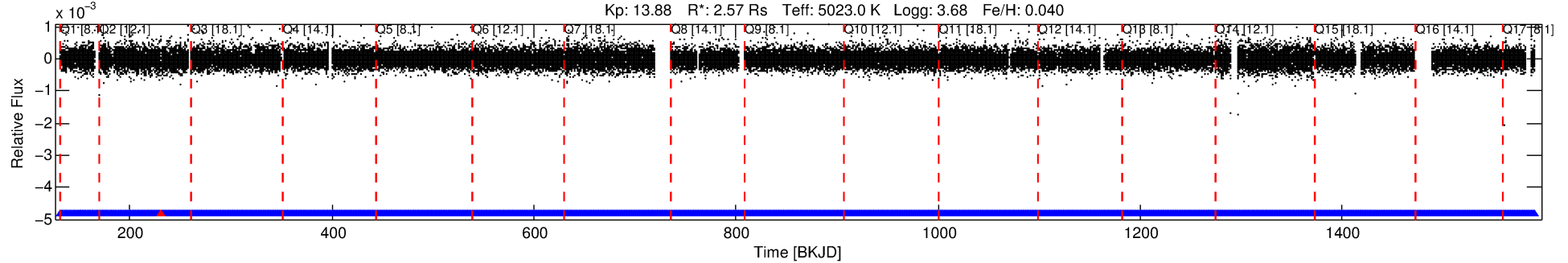
Ephemeris Match Information For 008222627-01

No Significant Match Found

DV One-Page Summary

KIC: 8222627 Candidate: 1 of 1 Period: 1.122 d
KOI: K04098.01 Corr: 0.926

Kp: 13.88 R*: 2.57 Rs Teff: 5023.0 K Logg: 3.68 Fe/H: 0.040



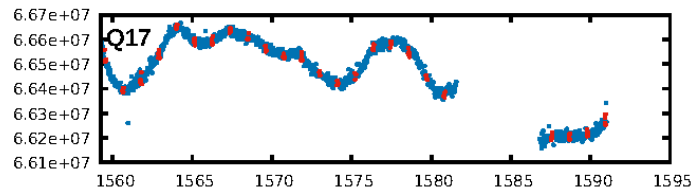
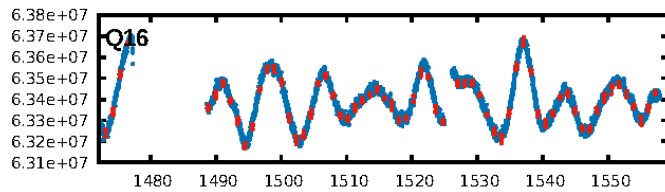
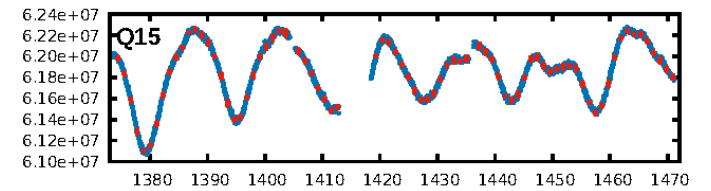
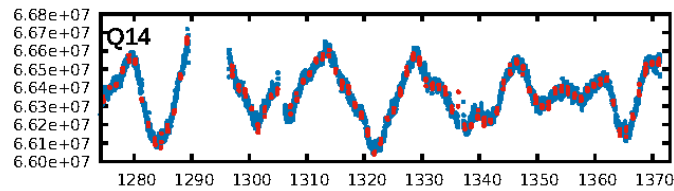
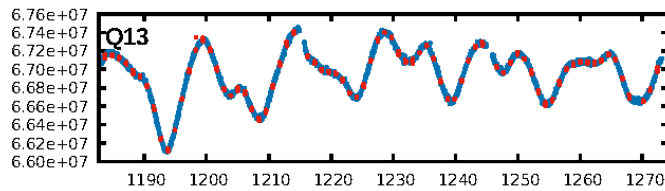
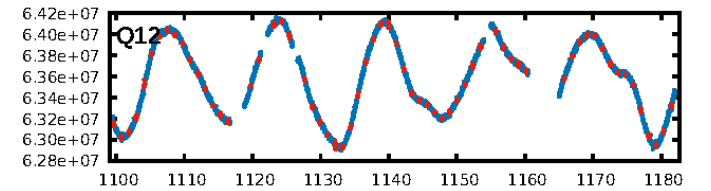
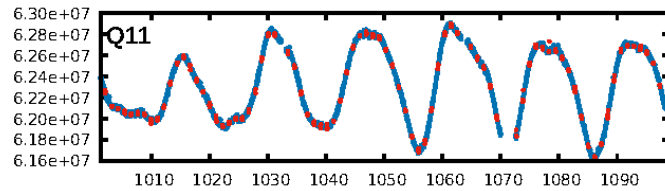
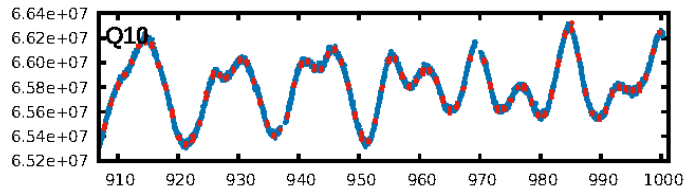
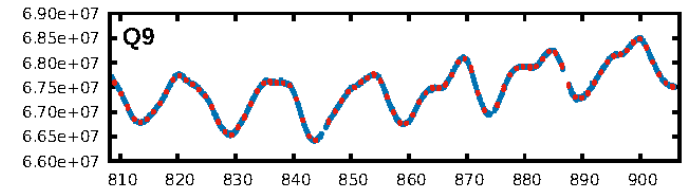
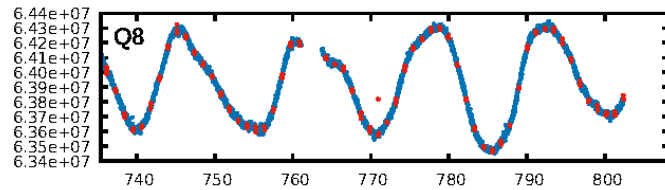
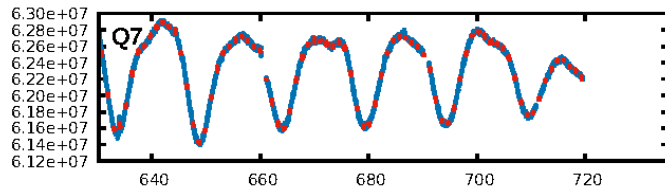
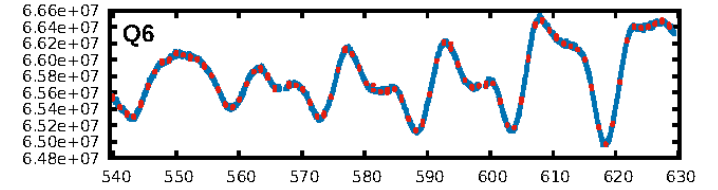
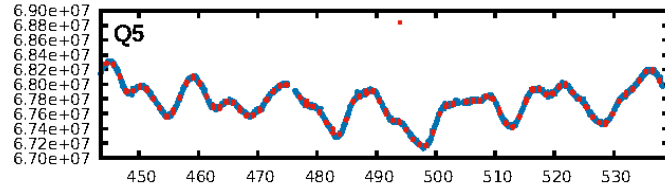
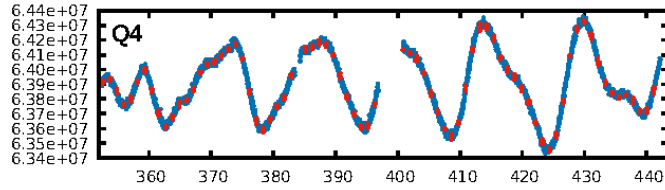
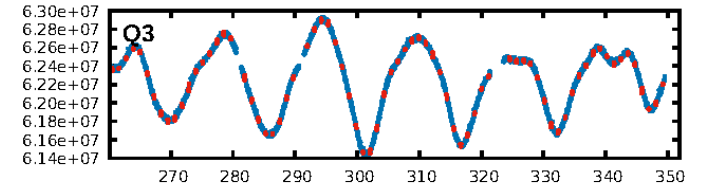
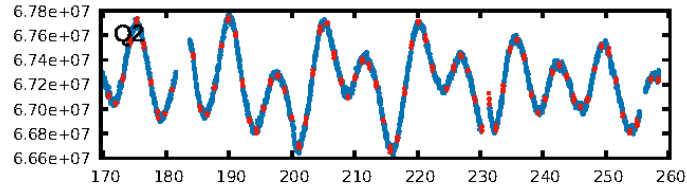
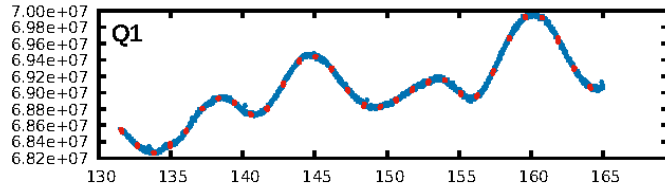
DV Fit Results:

Period = 1.12172 [0.00001] d
Epoch = 131.5726 [0.0009] BKJD
Rp/R* = 0.0100 [0.0033]
a/R* = 4.08 [4.86]
b = 0.88 [0.32]
Seff = 7649.51 [10884.70]
Teq = 2385 [848] K
Rp = 2.81 [2.21] Re
a = 0.0222 [0.0182] AU
Ag = 0.22 [0.38] [-2.06σ]
Teffp = 2537 [578] K [0.15σ]

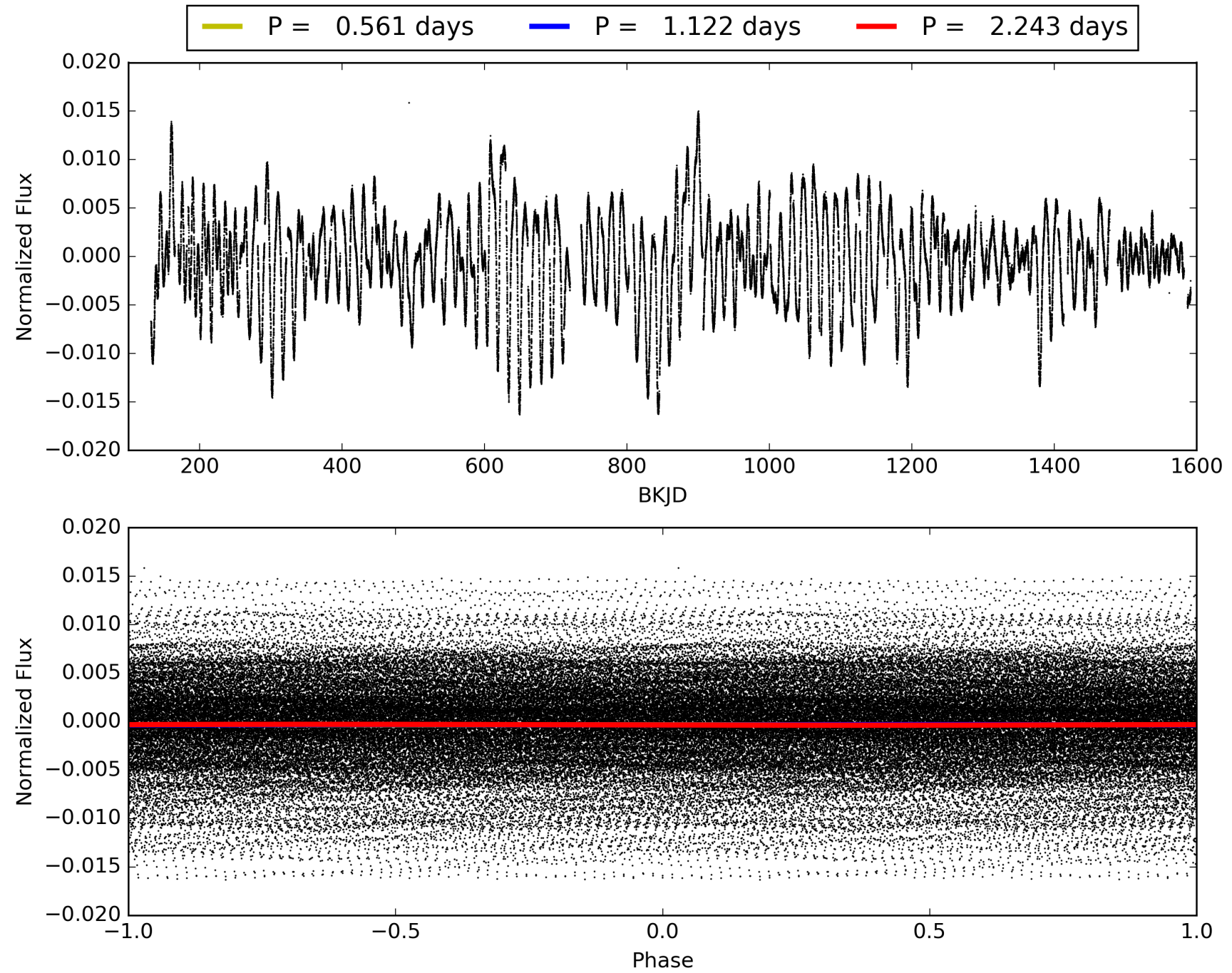
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.34e-48
RollingBand-fgt: 1.00 [1135/1136]
GhostDiagnostic-chr: -2.515
Centroid-sig: N/A
Centroid-so: 0.531 arcsec [0.93σ]
OotOffset-rm: 0.347 arcsec [1.30σ]
KicOffset-rm: 0.349 arcsec [1.30σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008222627-01, PDC Light Curves

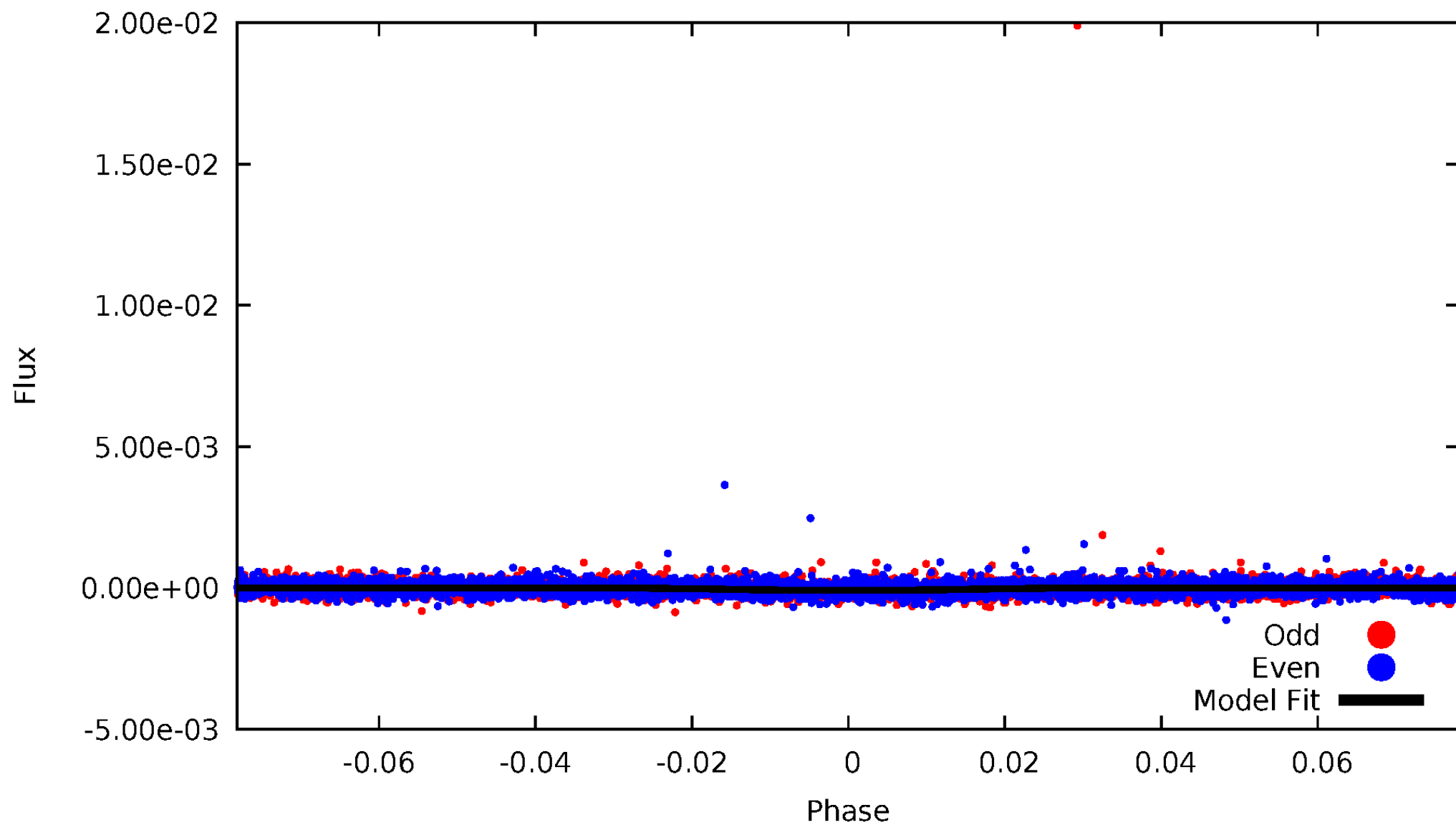


TCE 008222627-01



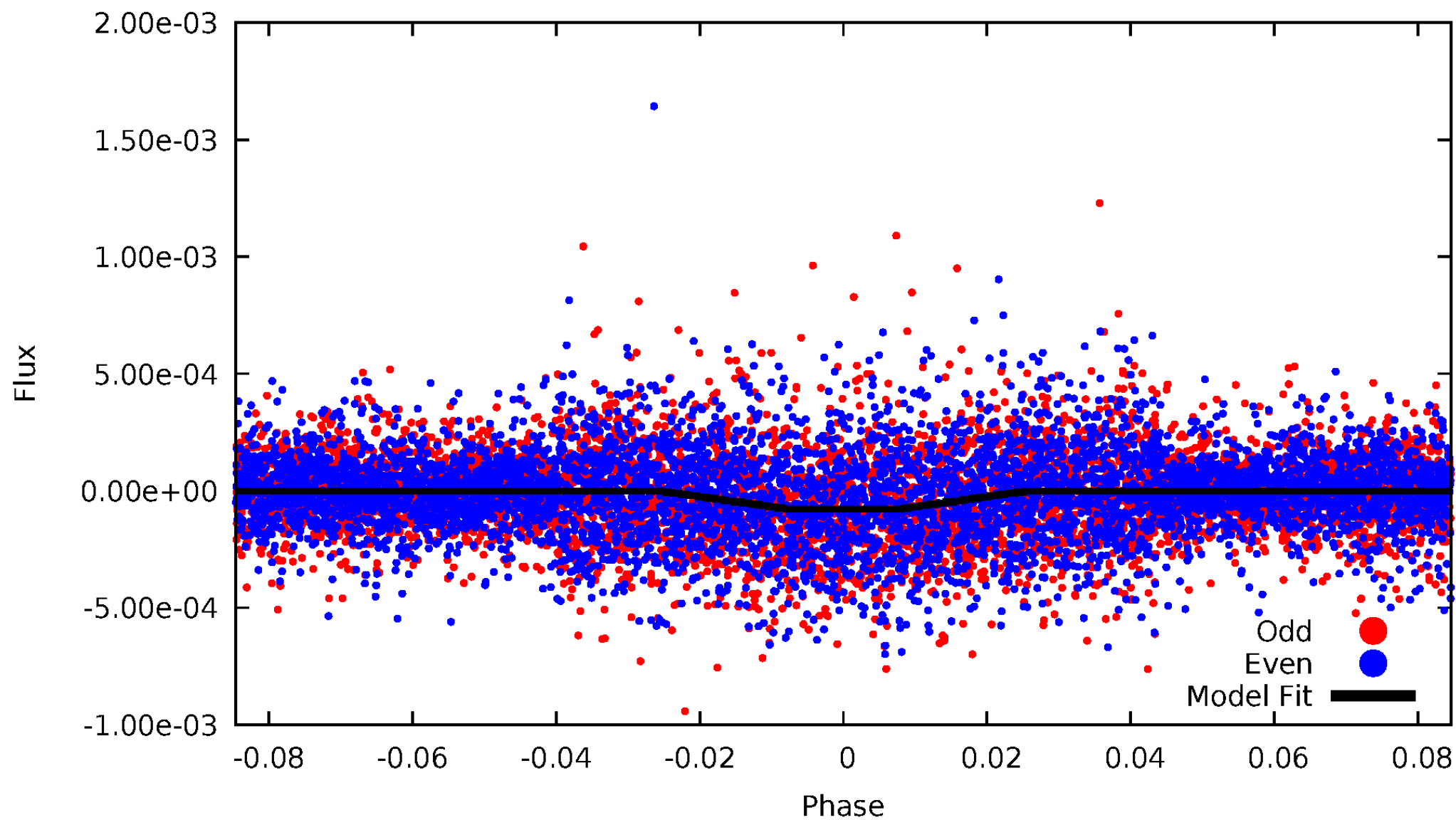
DV Odd/Even

TCE 008222627-01

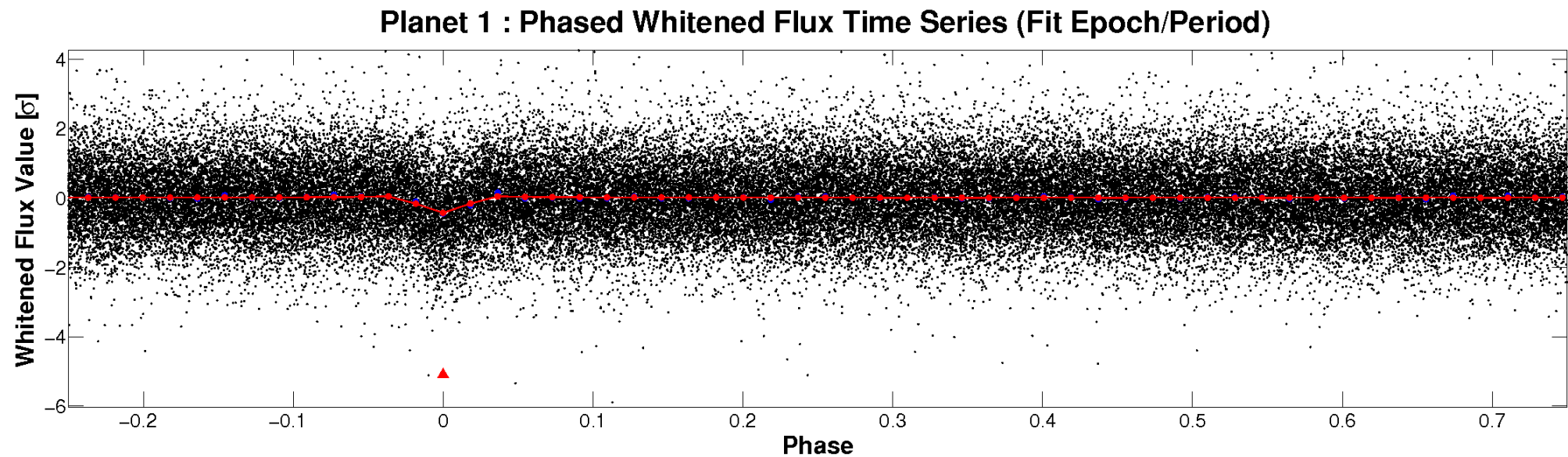
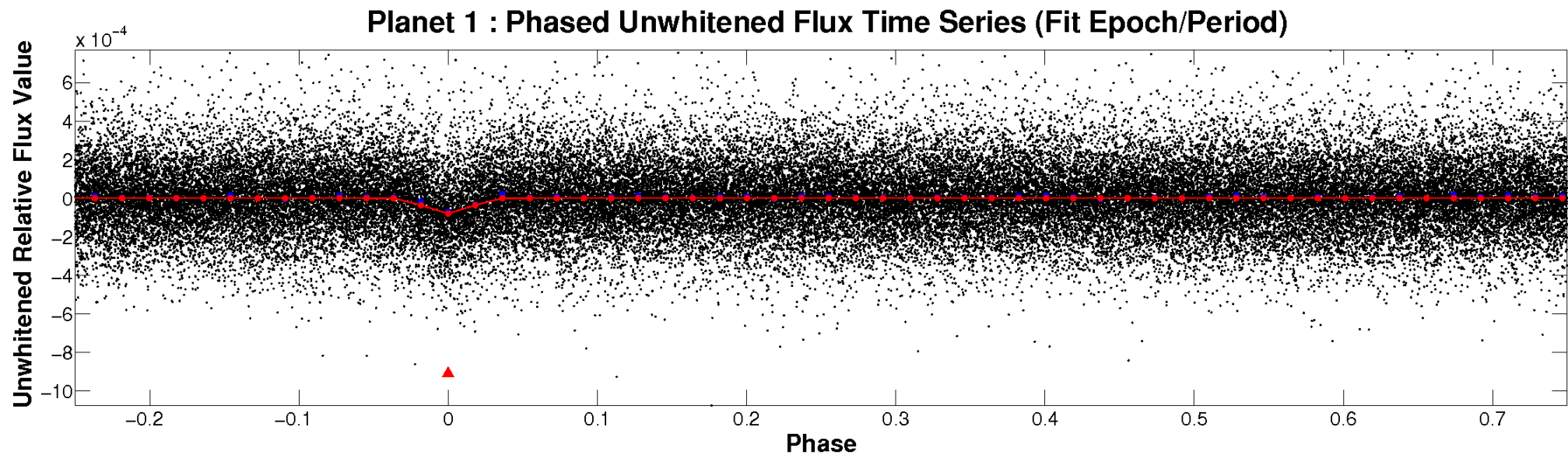


ALT Odd/Even

TCE 008222627-01

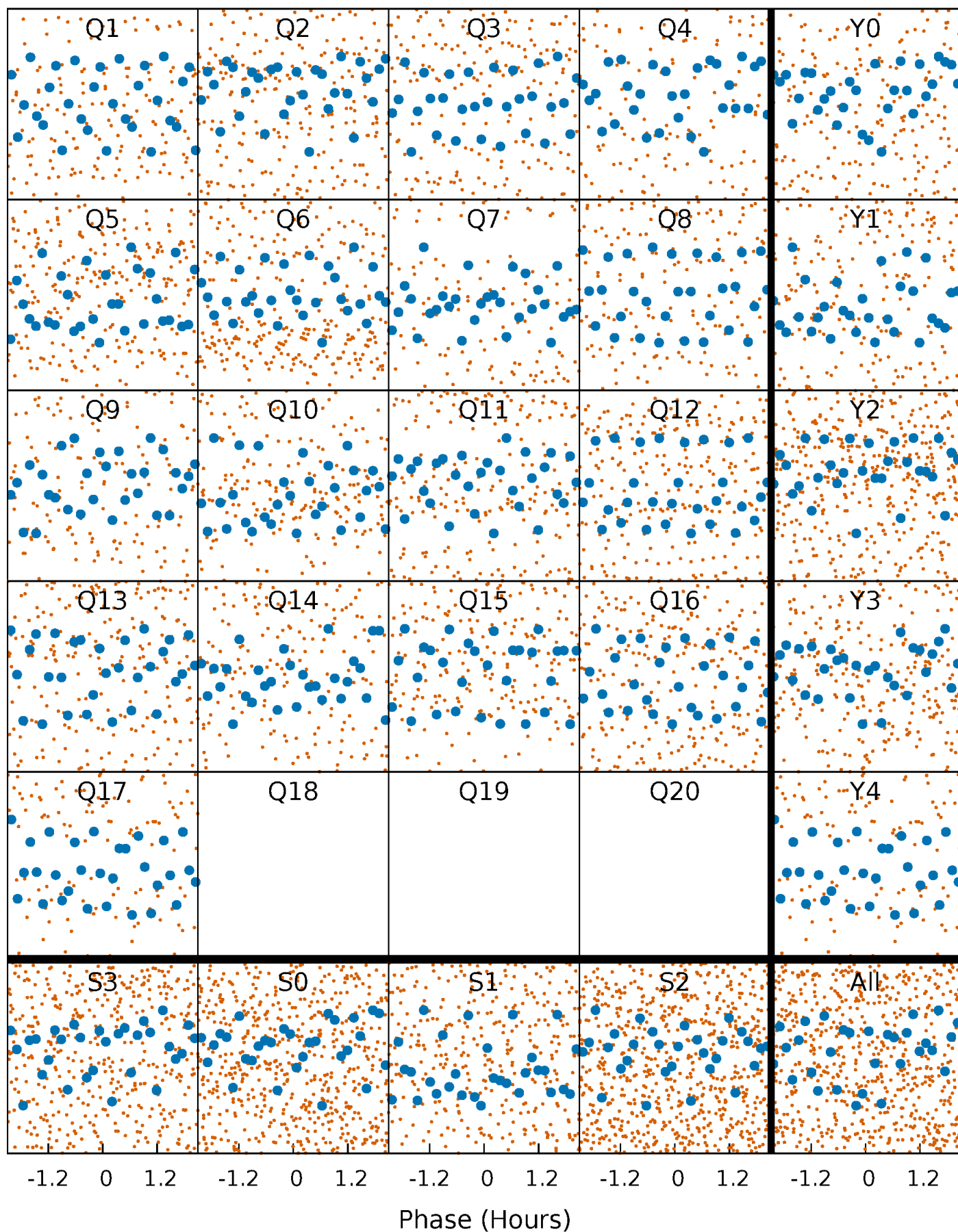


Non-Whitened Vs. Whitened Light Curve



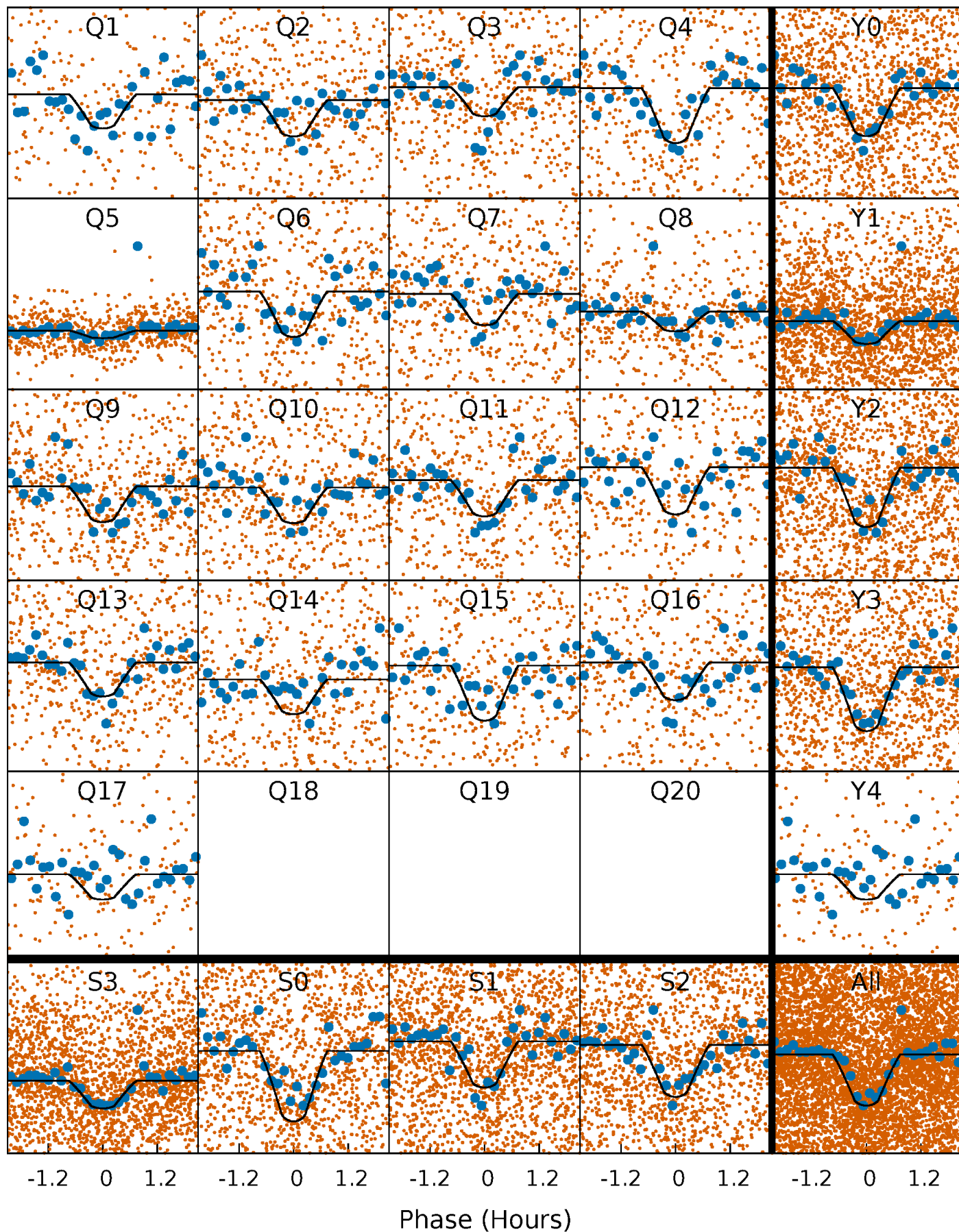
PDC Quarter-Phased Transit Curves

TCE 008222627-01 P= 1.121725 Days $T_0=131.572623$ (BKJD)



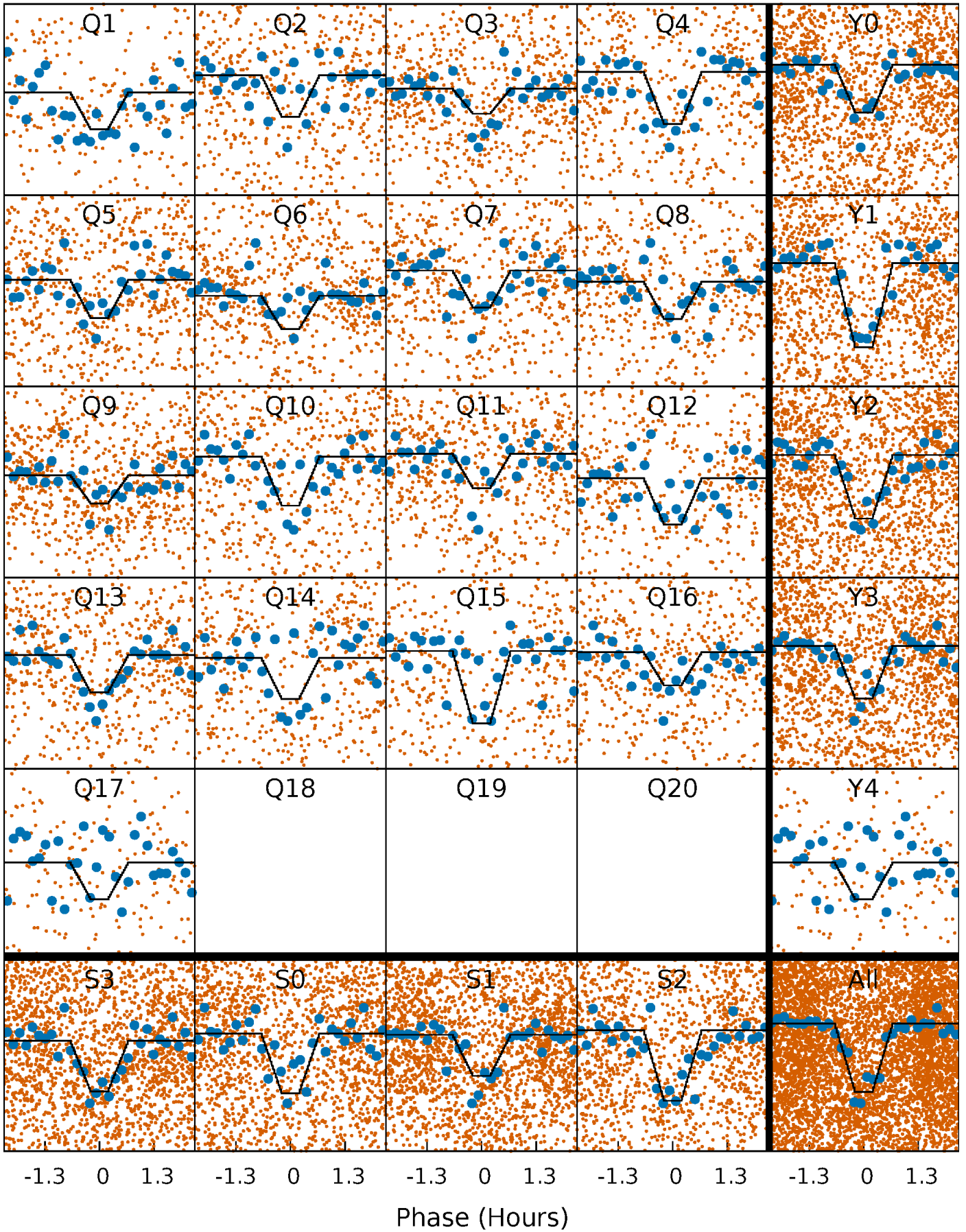
DV Quarter-Phased Transit Curves

TCE 008222627-01 P= 1.121725 Days $T_0=131.572623$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

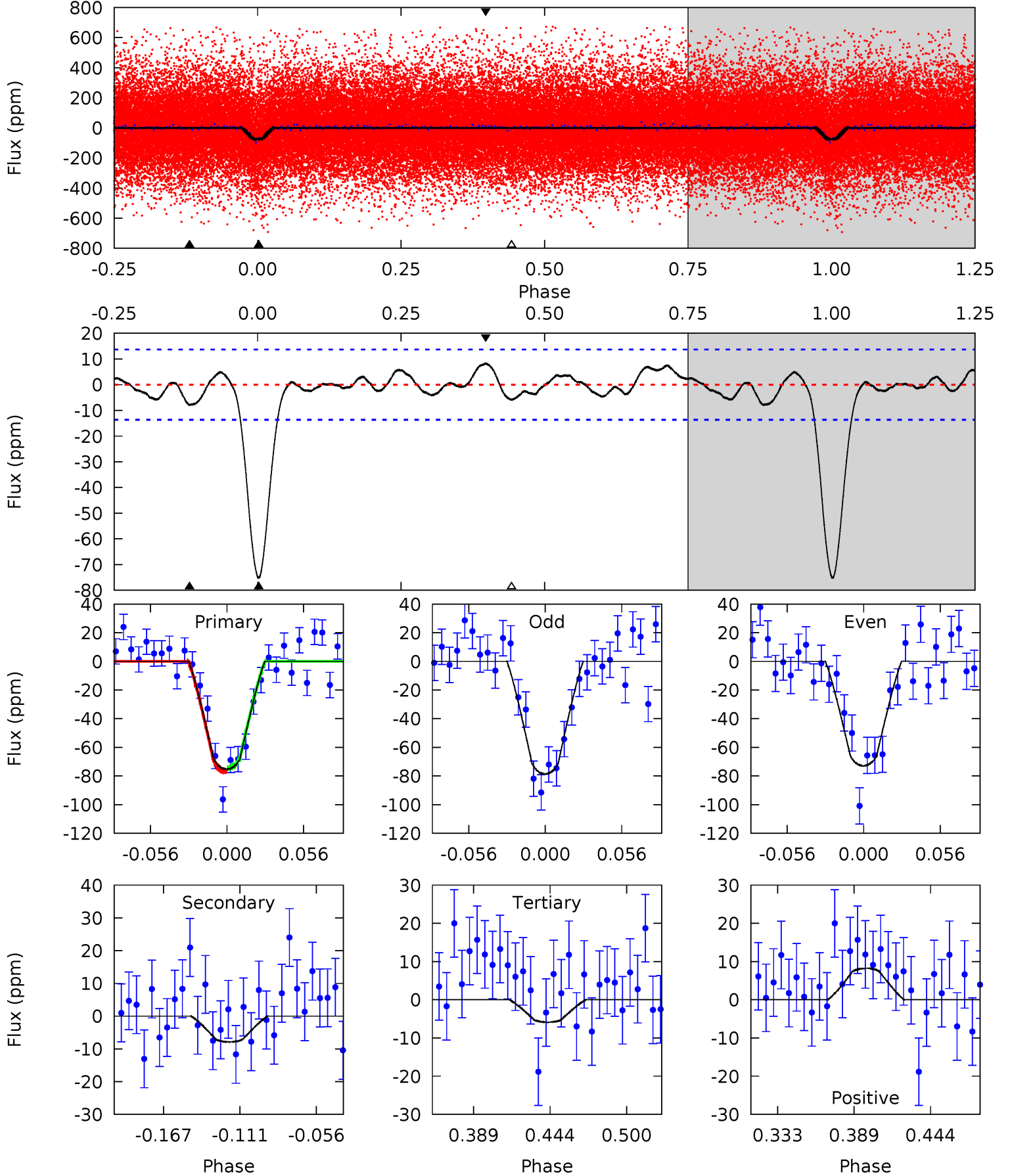
TCE 008222627-01 P= 1.121729 Days $T_0=131.571712$ (BKJD)



DV Model-Shift Uniqueness Test

008222627-01, P = 1.121725 Days, E = 130.450898 Days

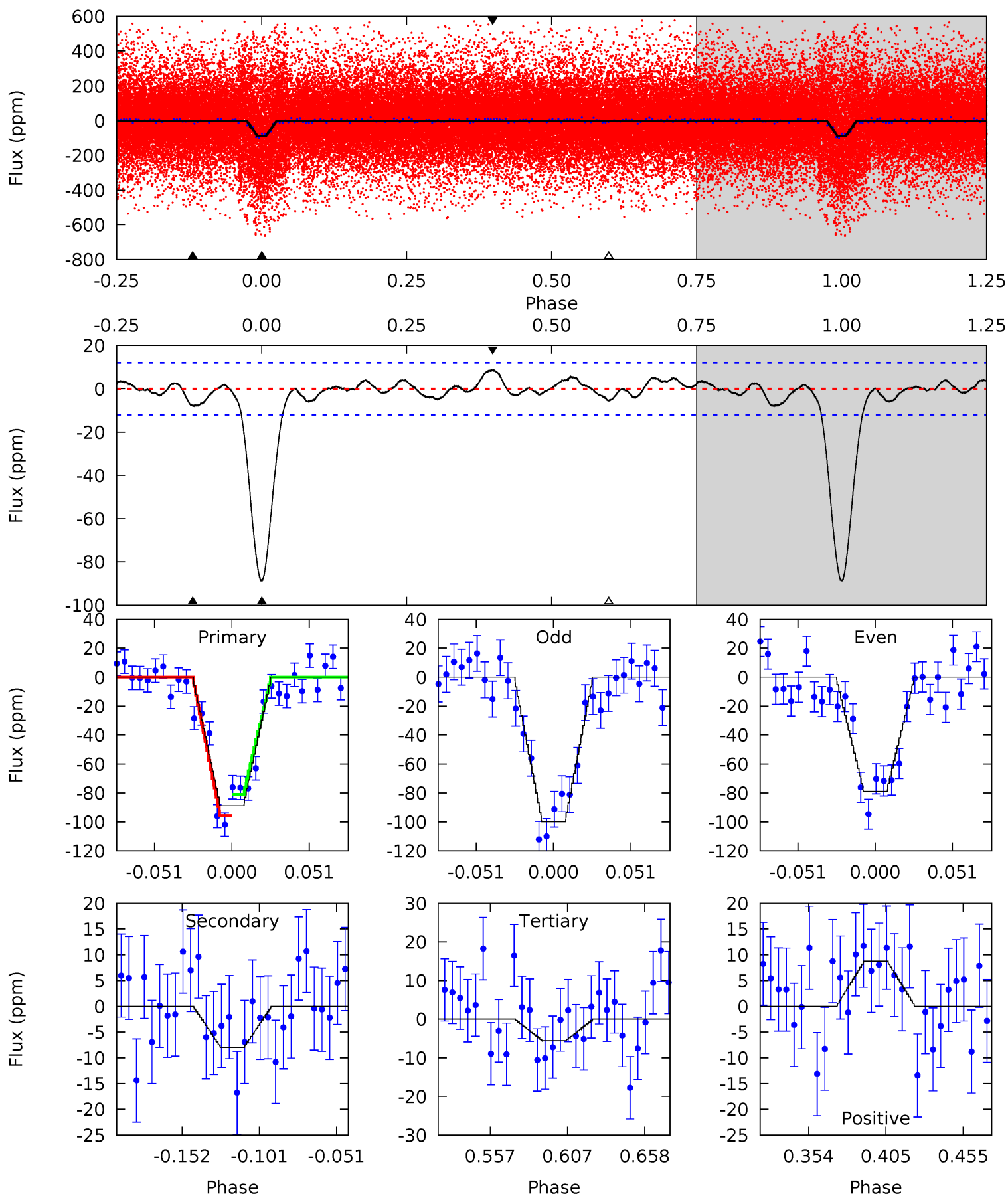
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.7	2.70	2.01	2.82	4.69	1.91	1.17	23.7	22.9	0.69	-0.12	0.99	0.86	0.10	0.38



Alt Model-Shift Uniqueness Test

008222627-01, P = 1.121729 Days, E = 130.449983 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.7	3.12	2.19	3.43	4.71	1.95	1.19	32.5	31.3	0.94	-0.31	4.14	0.94	0.09	2.86



Stellar Parameters For KIC 008222627

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5023^{+150}_{-135}	$3.682^{+0.870}_{-0.290}$	$0.040^{+0.250}_{-0.250}$	$2.571^{+0.989}_{-1.837}$	$1.157^{+0.176}_{-0.326}$	$0.096^{+1.965}_{-0.058}$
	+3%/-3%	+24%/-8%	+625%/-625%	+38%/-71%	+15%/-28%	+2049%/-61%
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 008222627-01 / KOI 4098.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8 ± 3	$2.48^{+1.29}_{-1.15}$	3293^{+429}_{-643}	2328^{+1111}_{-5431}	$0.331^{+0.779}_{-0.212}$
Alt.	-8 ± 3	$2.35^{+1.24}_{-1.07}$	3299^{+432}_{-631}	2651^{+877}_{-5715}	$0.380^{+0.925}_{-0.234}$

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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

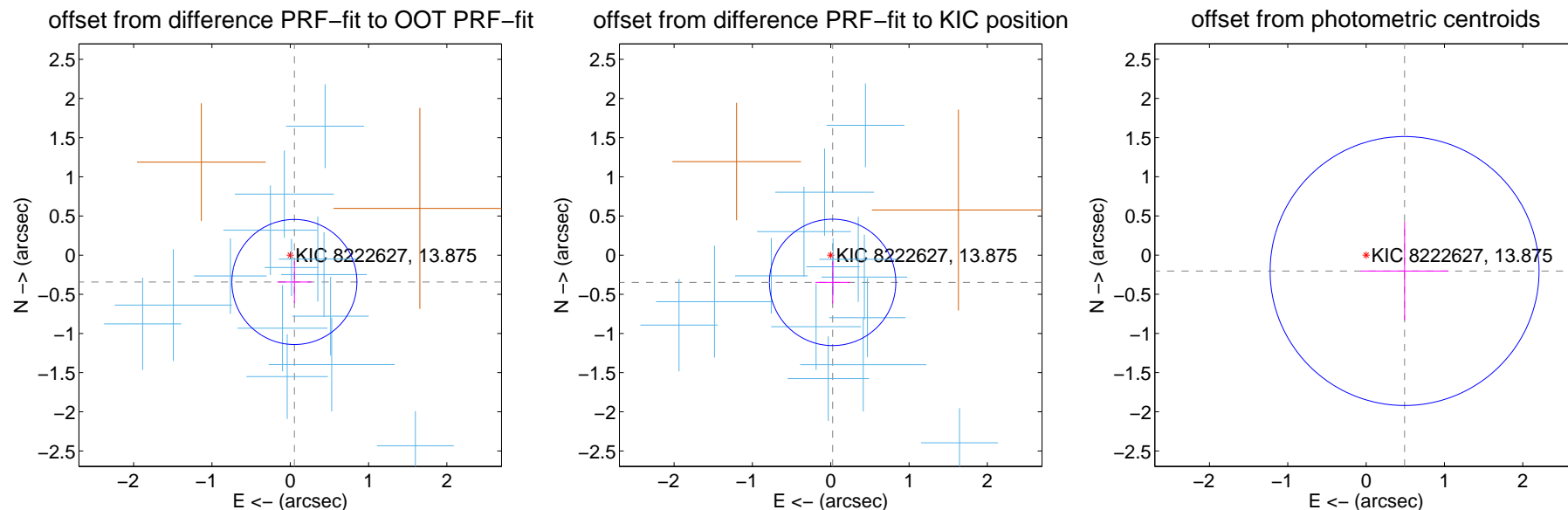
DV Centroid Data

Supplemental centroid analysis for 008222627-01. Kepler magnitude: 13.88. Transit SNR 17.83

There are 14 quarters with good PRF difference image offsets

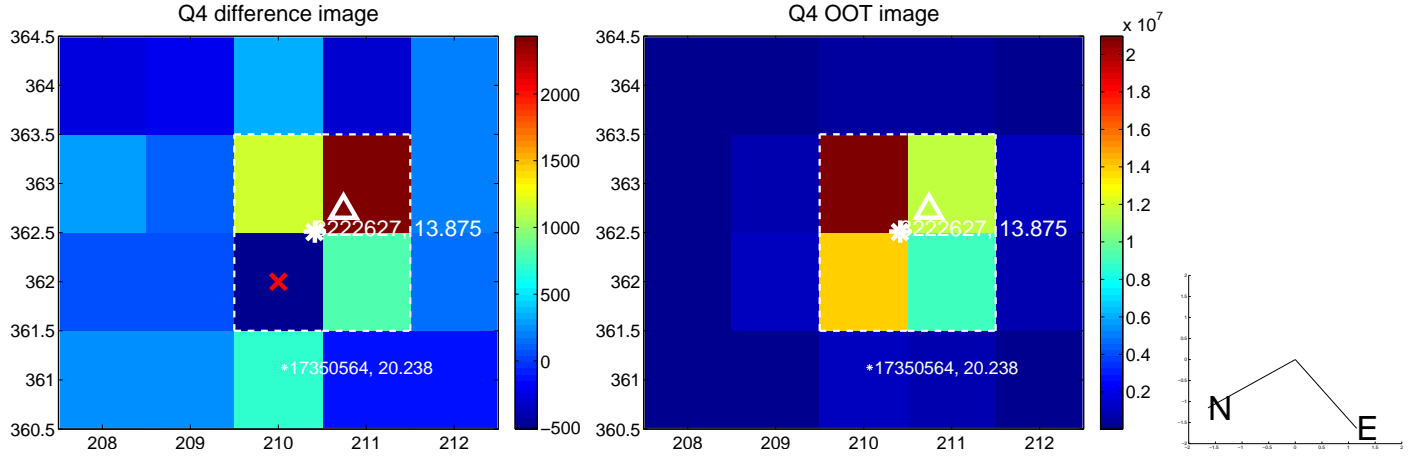
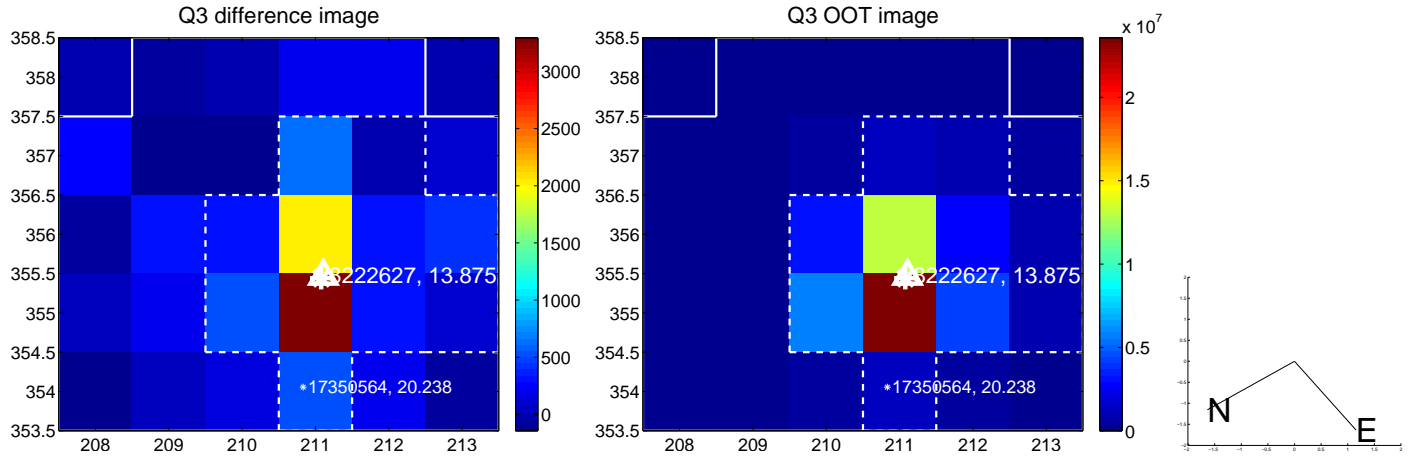
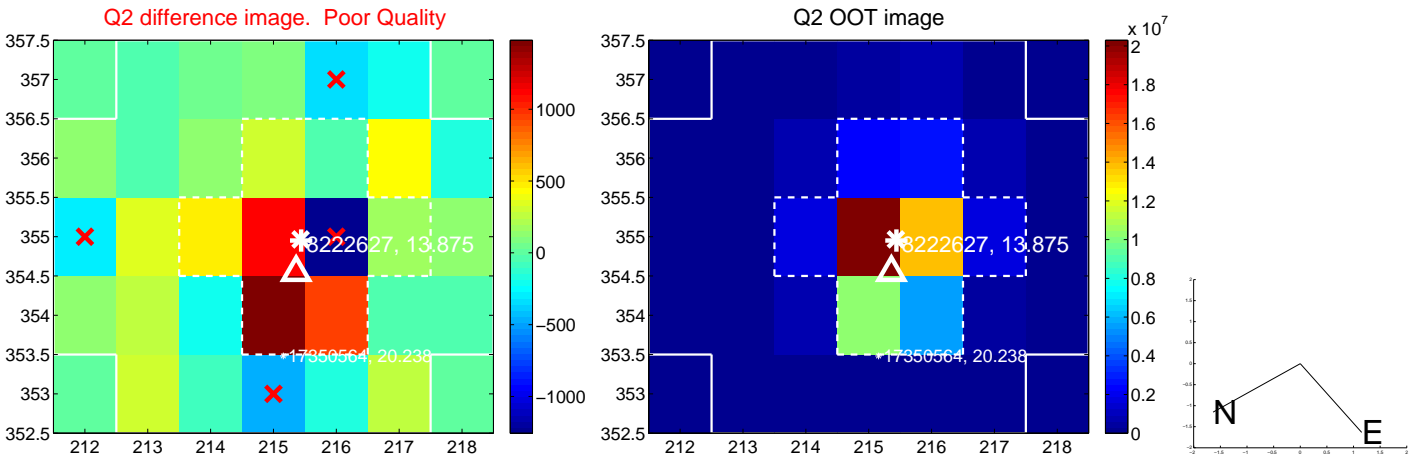
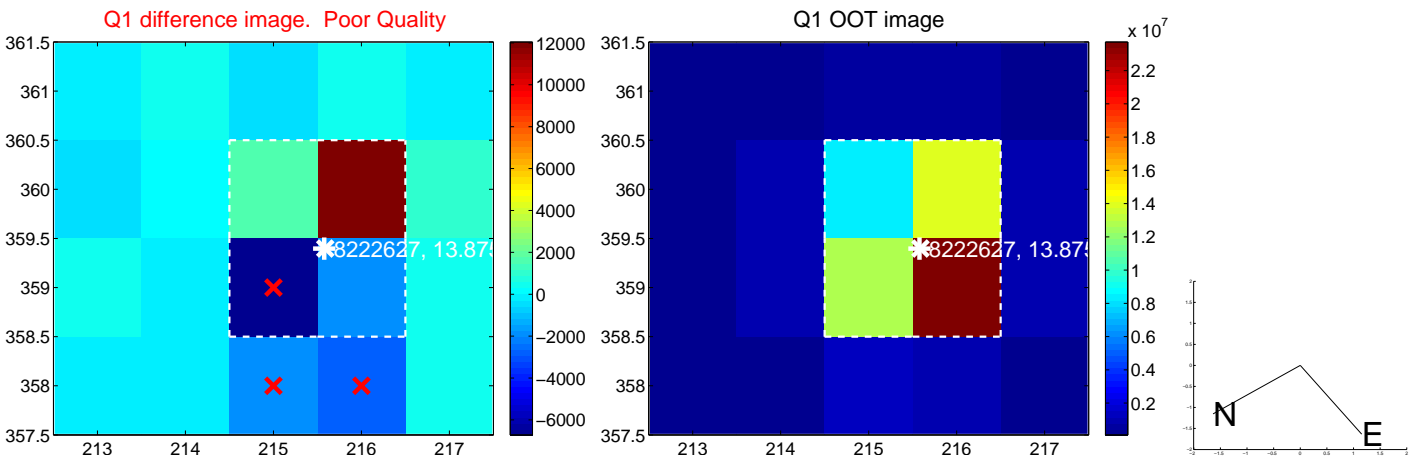
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.347 ± 0.266	1.30	-0.053 ± 0.219	-0.343 ± 0.267
PRF-fit source offset from KIC position	0.349 ± 0.269	1.30	-0.024 ± 0.220	-0.348 ± 0.269
photometric centroid source offset	0.53 ± 0.57	0.93	-0.49 ± 0.56	-0.20 ± 0.63

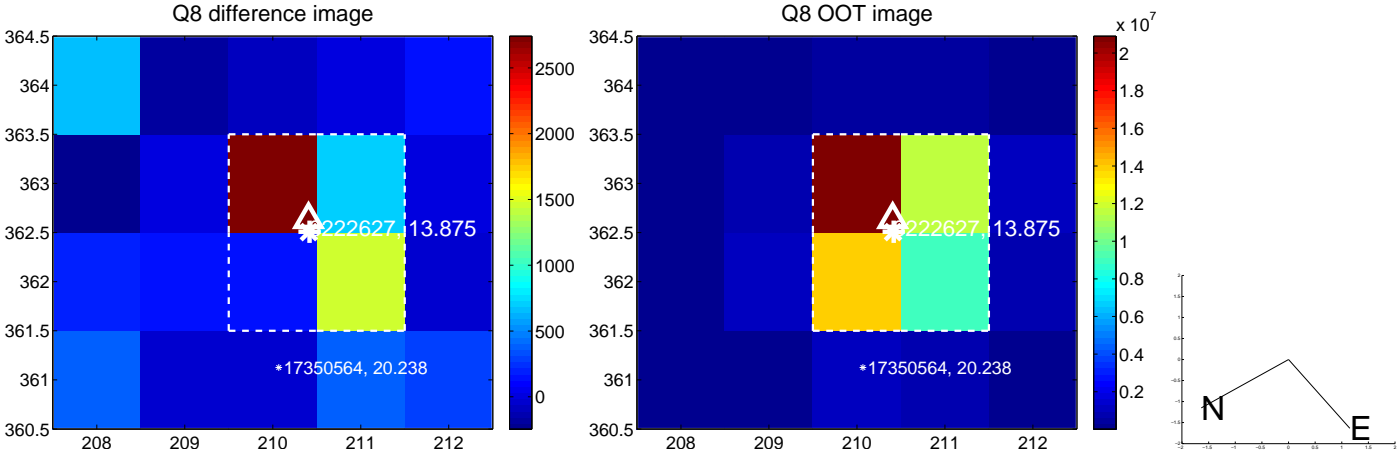
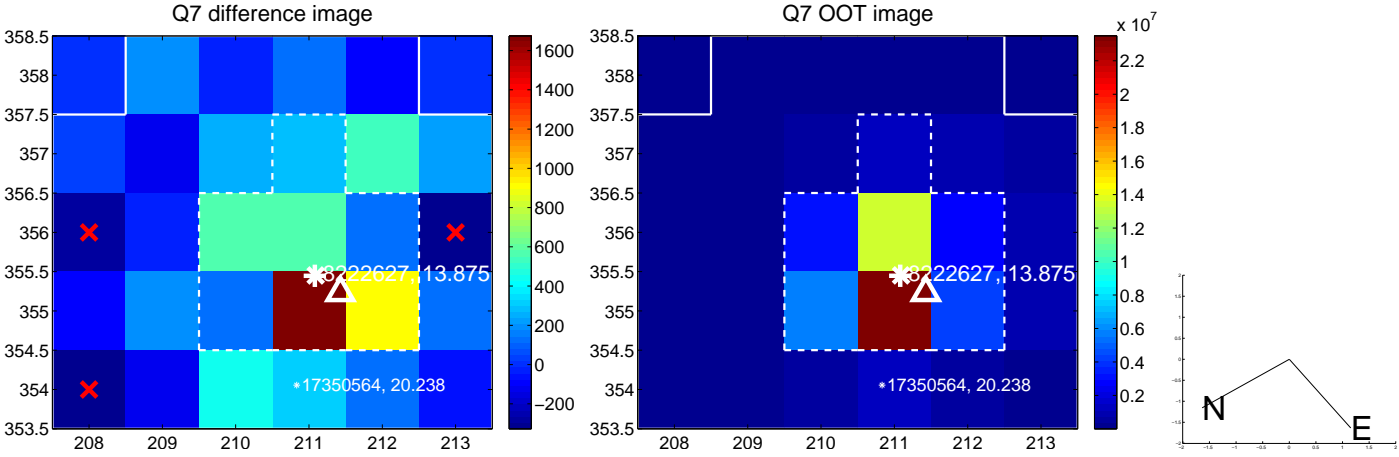
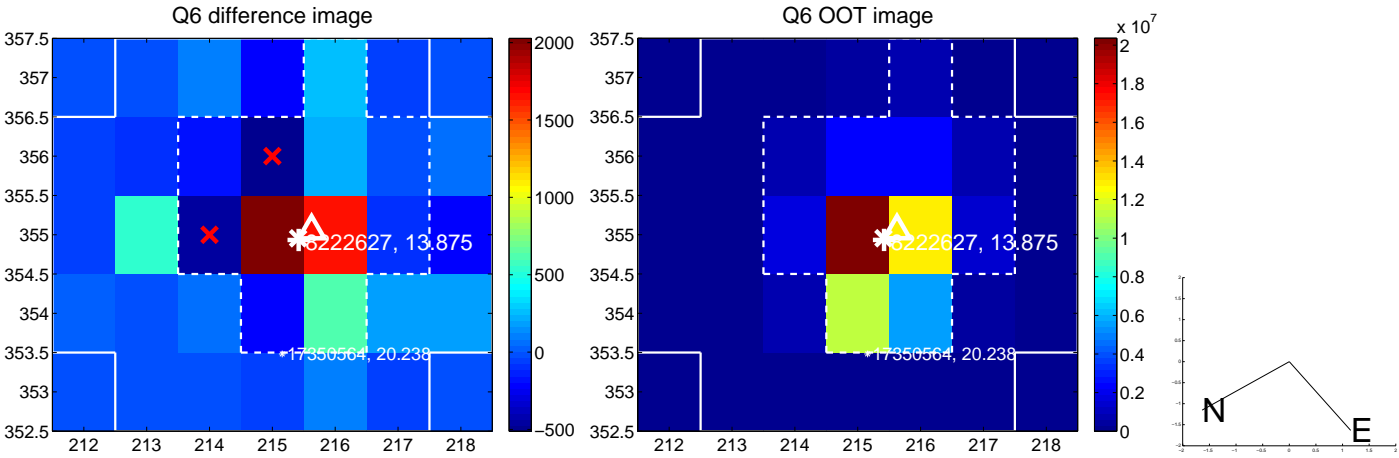
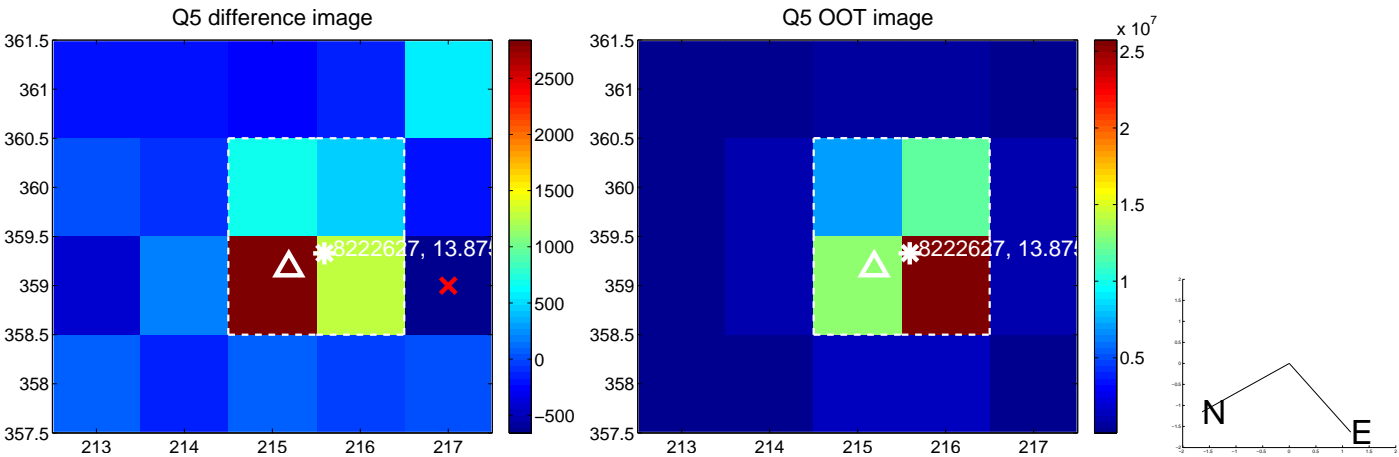


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

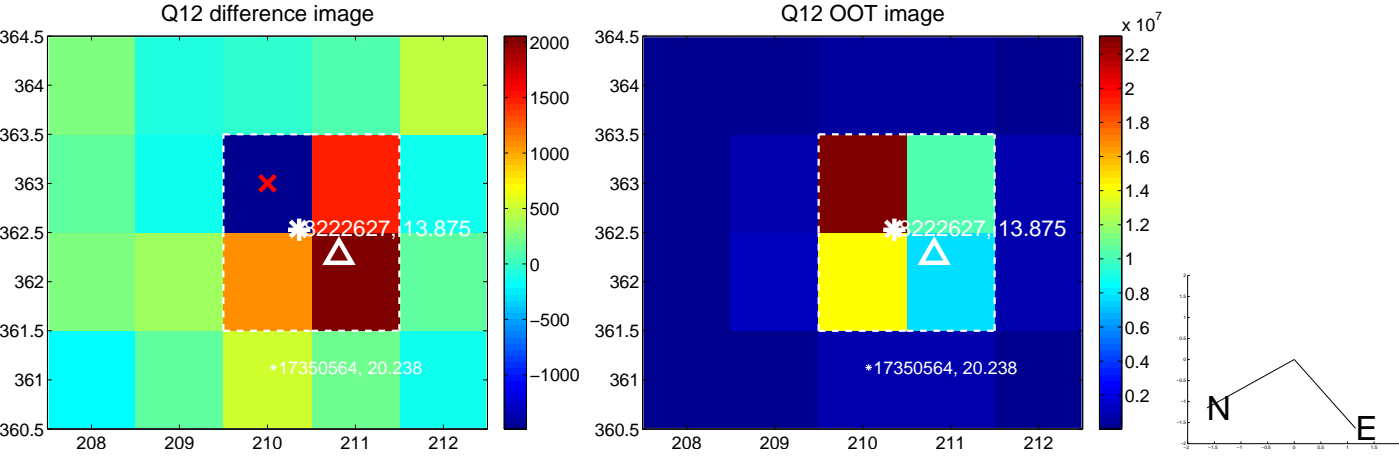
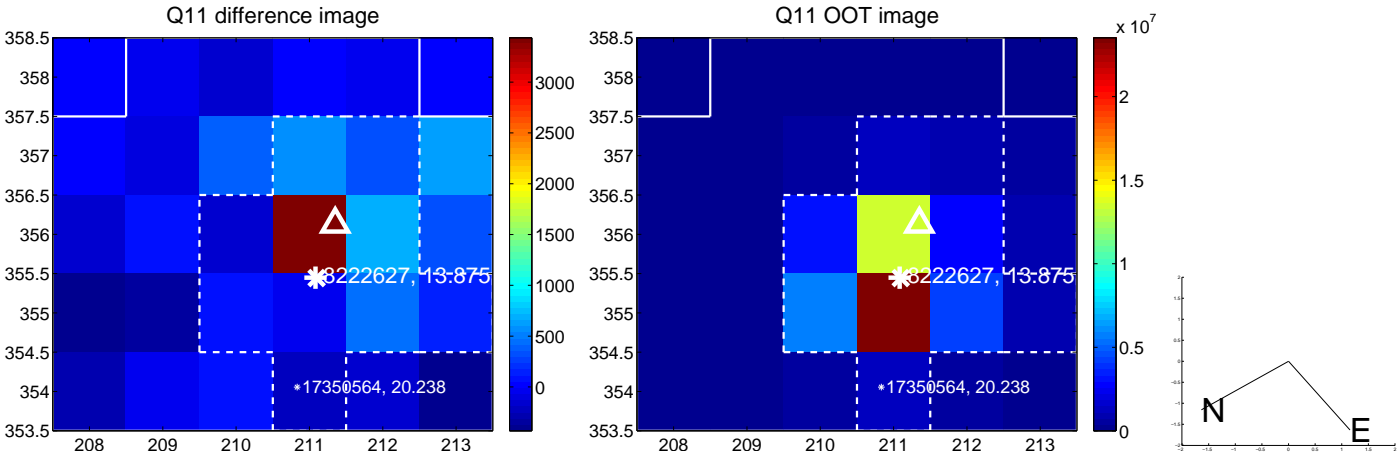
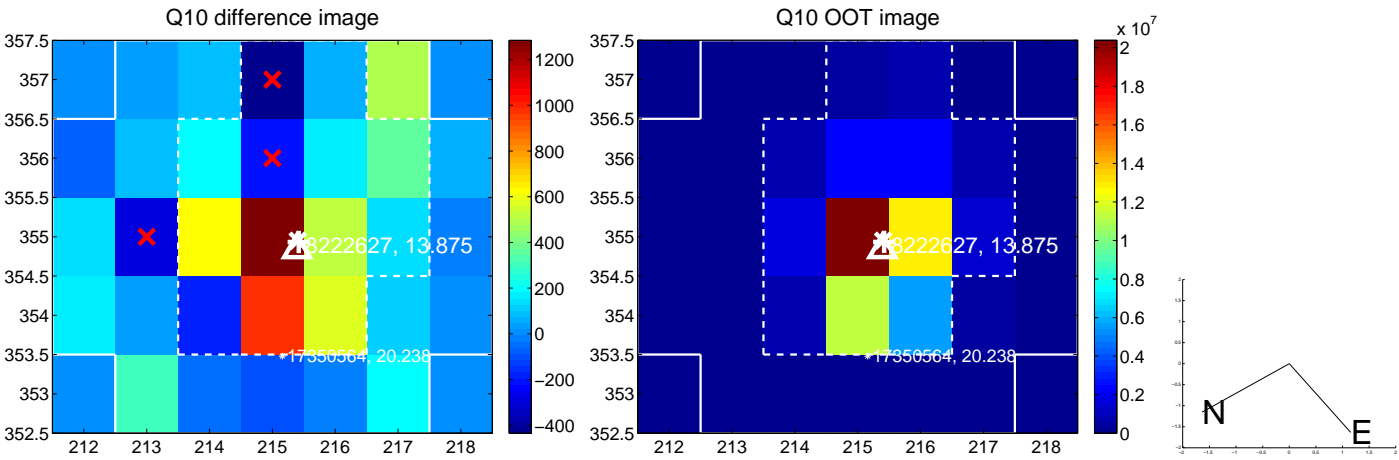
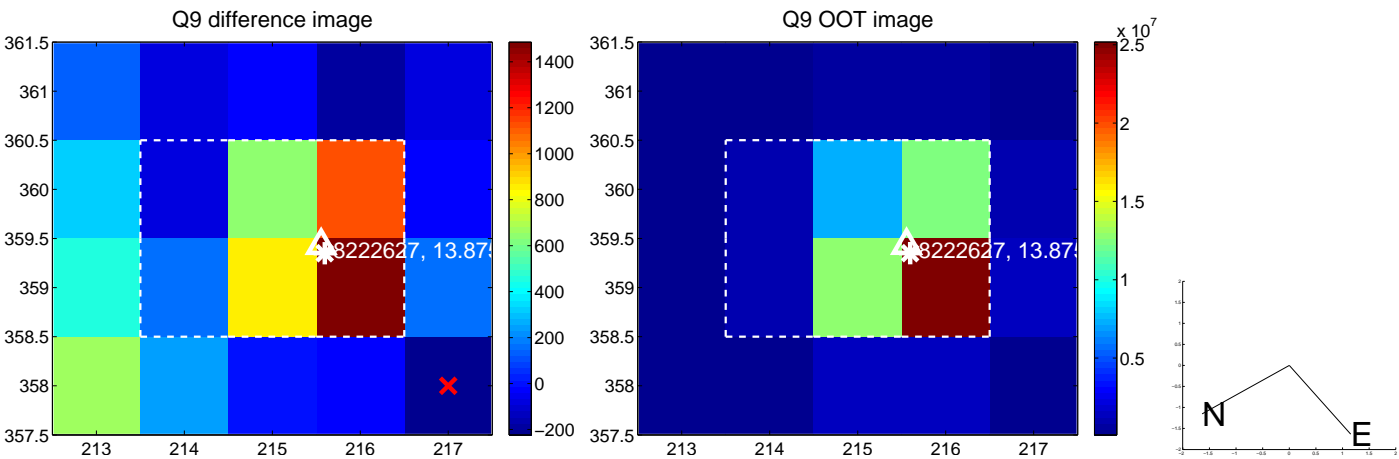
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



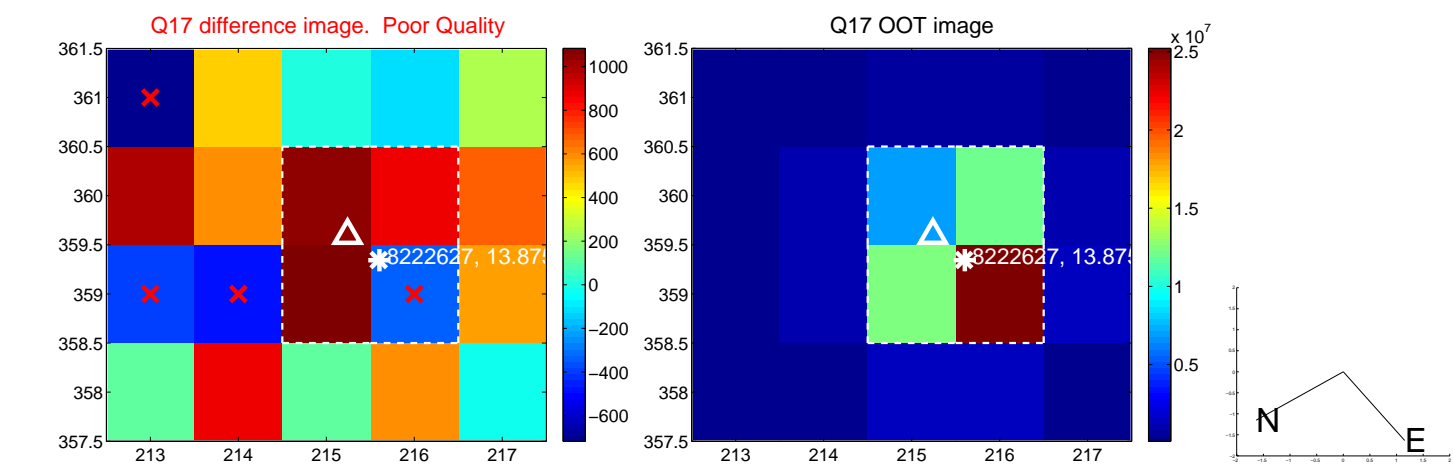
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



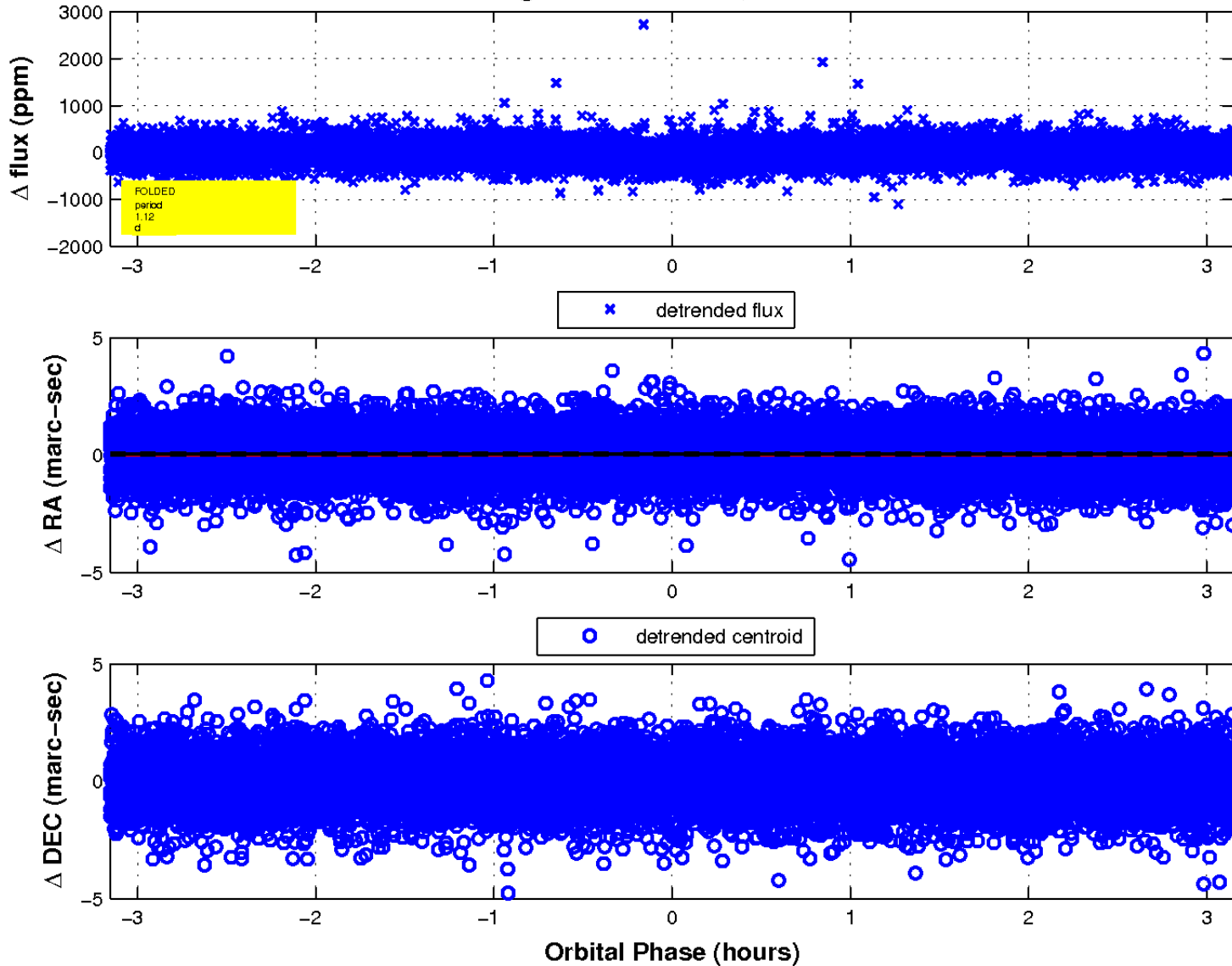
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

