

KIC 004078311

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})
004078311-01	OBS	4166.01	9.842577	134.024343	617.4	1.561	14.5	16.6	0.97	5585	2.59	97.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004078311-01	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.

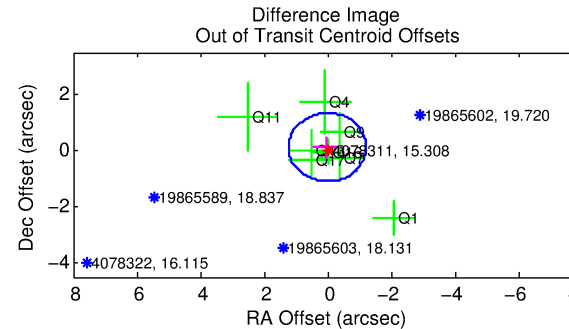
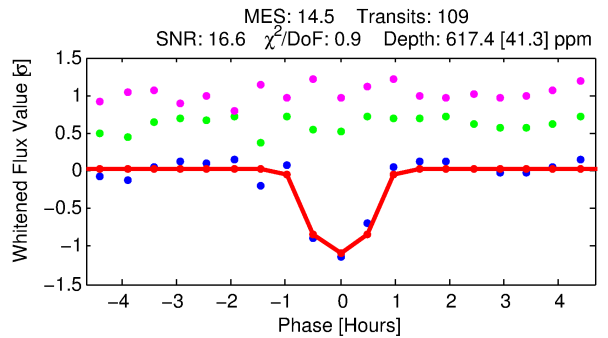
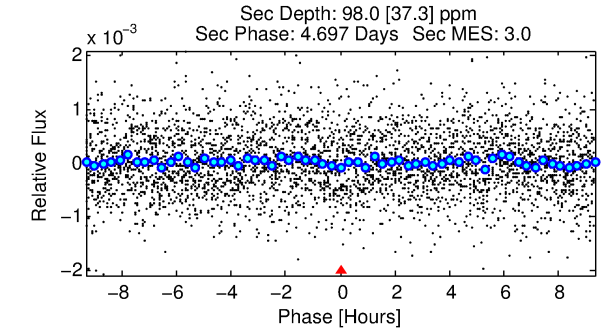
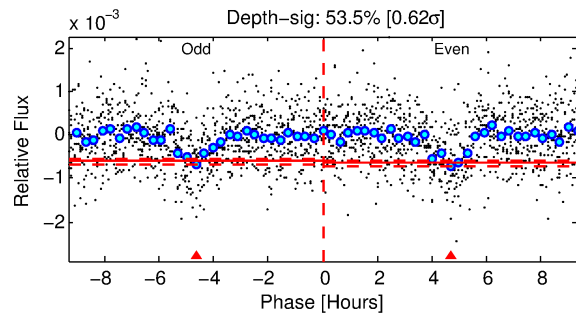
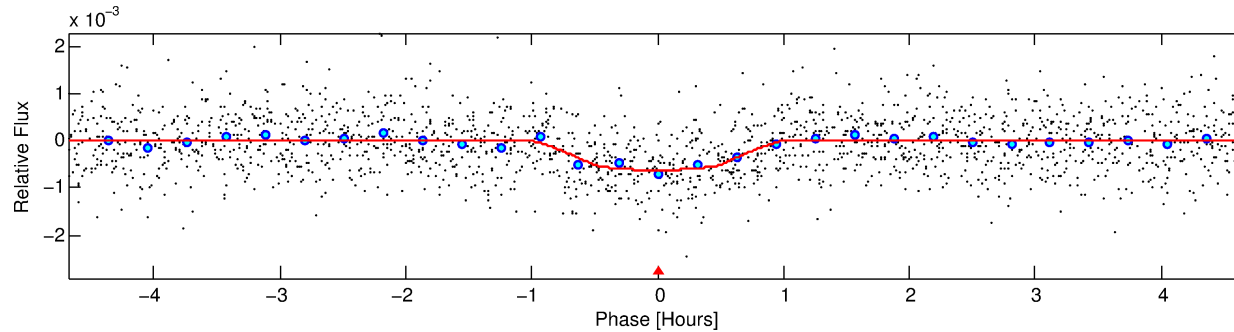
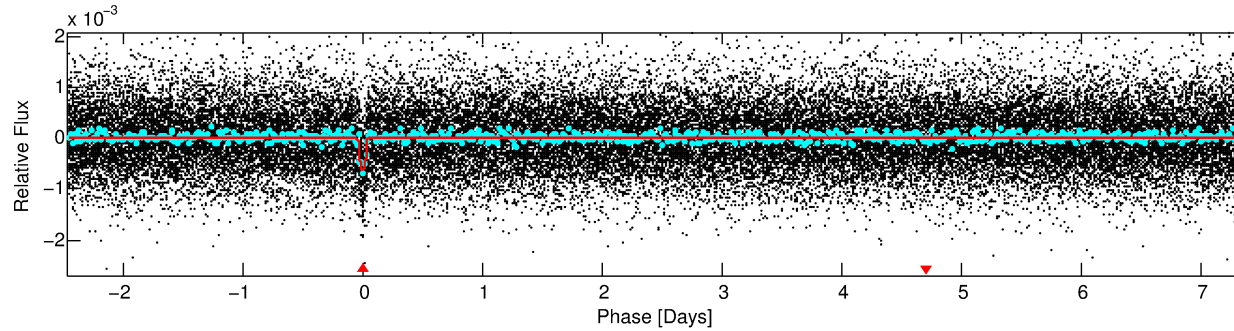
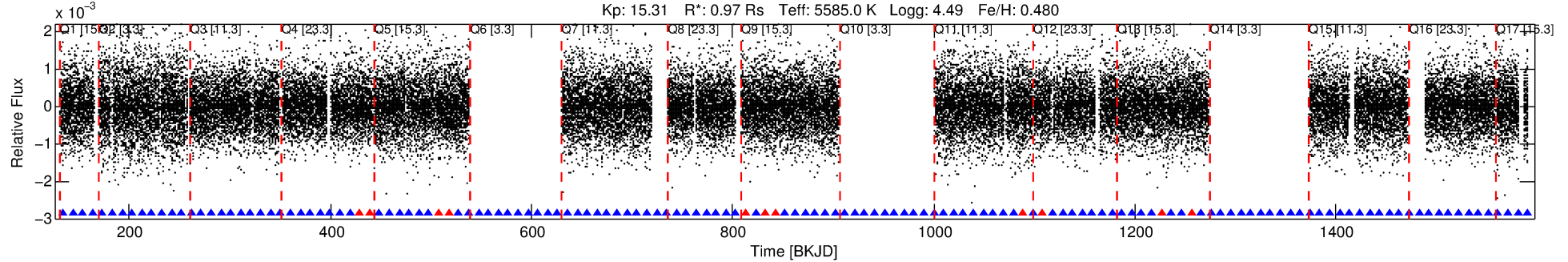
Ephemeris Match Information For 004078311-01

No Significant Match Found

DV One-Page Summary

KIC: 4078311 Candidate: 1 of 1 Period: 9.843 d
KOI: K04166.01 Corr: 0.979

Kp: 15.31 R*: 0.97 Rs Teff: 5585.0 K Logg: 4.49 Fe/H: 0.480



DV Fit Results:

Period = 9.84258 [0.00003] d
Epoch = 134.0243 [0.0024] BKJD
Rp/R* = 0.0244 [0.0259]
a/R* = 36.13 [146.63]
b = 0.70 [3.06]
Seff = 97.71 [33.60]
Teq = 802 [69] K
Rp = 2.59 [2.81] Re
a = 0.0918 [0.0193] AU
Ag = 67.95 [147.99] [0.45σ]
Teffp = 3559 [1921] K [1.43σ]

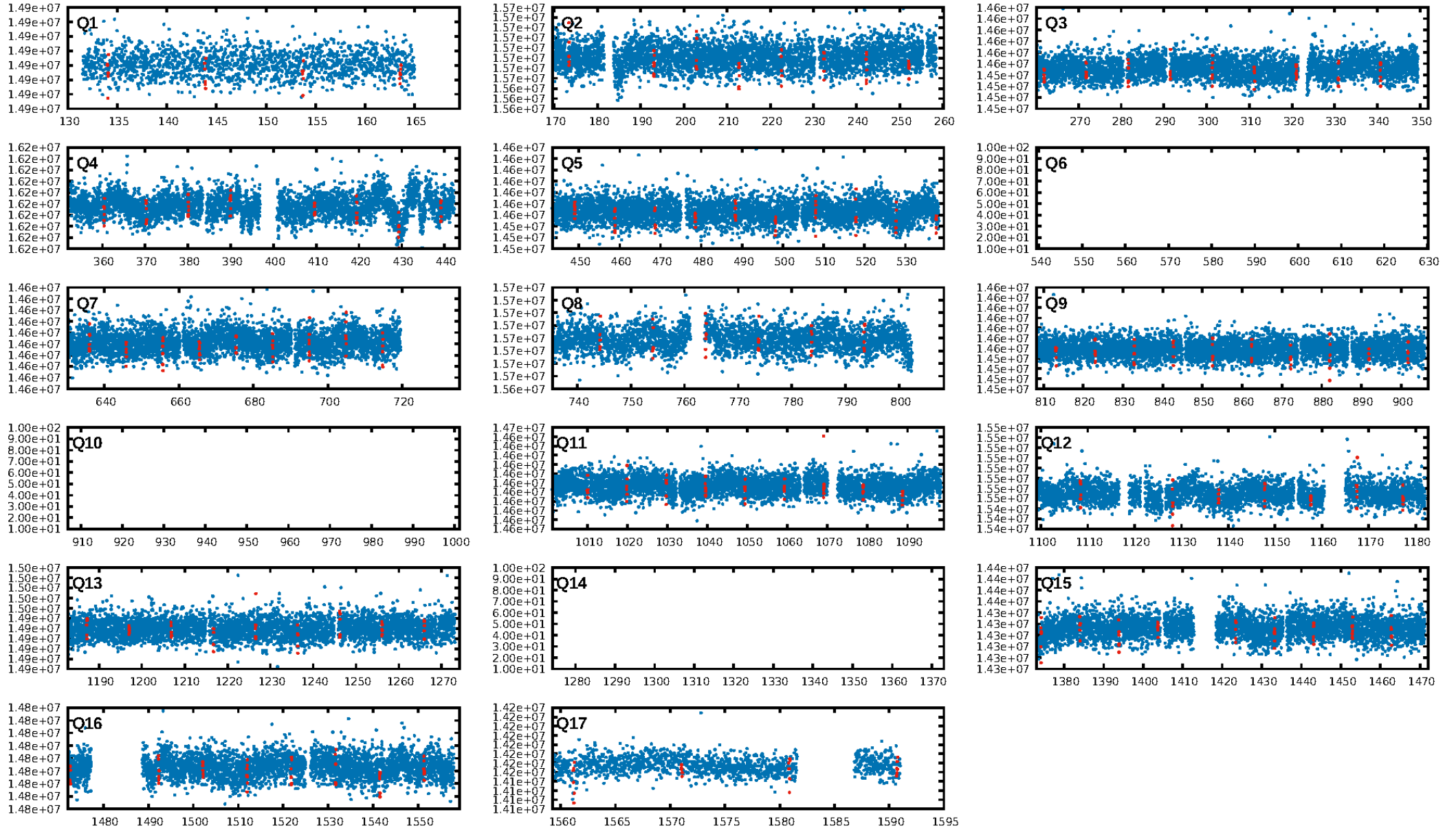
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.52e-46
RollingBand-fgt: 0.89 [90/101]
GhostDiagnostic-chr: -6.51
Centroid-sig: 58.1%
Centroid-so: 1.431 arcsec [1.94σ]
OotOffset-rm: 0.121 arcsec [0.30σ]
KicOffset-rm: 0.385 arcsec [1.11σ]
OotOffset-st: 0/2/2/4 [8]
KicOffset-st: 0/2/2/4 [8]
DiffImageQuality-fgm: 0.75 [6/8]
DiffImageOverlap-fno: 1.00 [14/14]

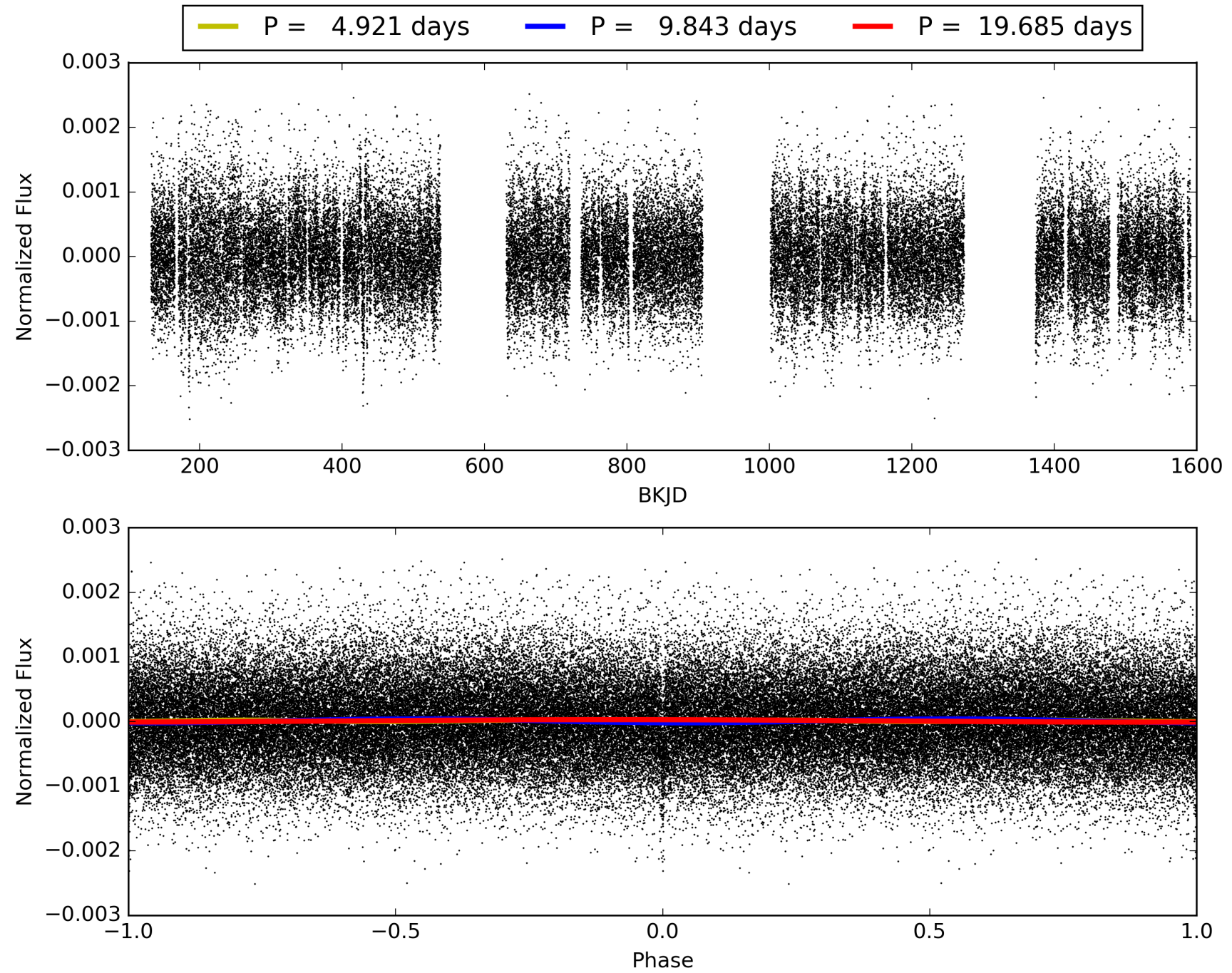
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:40:05 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004078311-01, PDC Light Curves

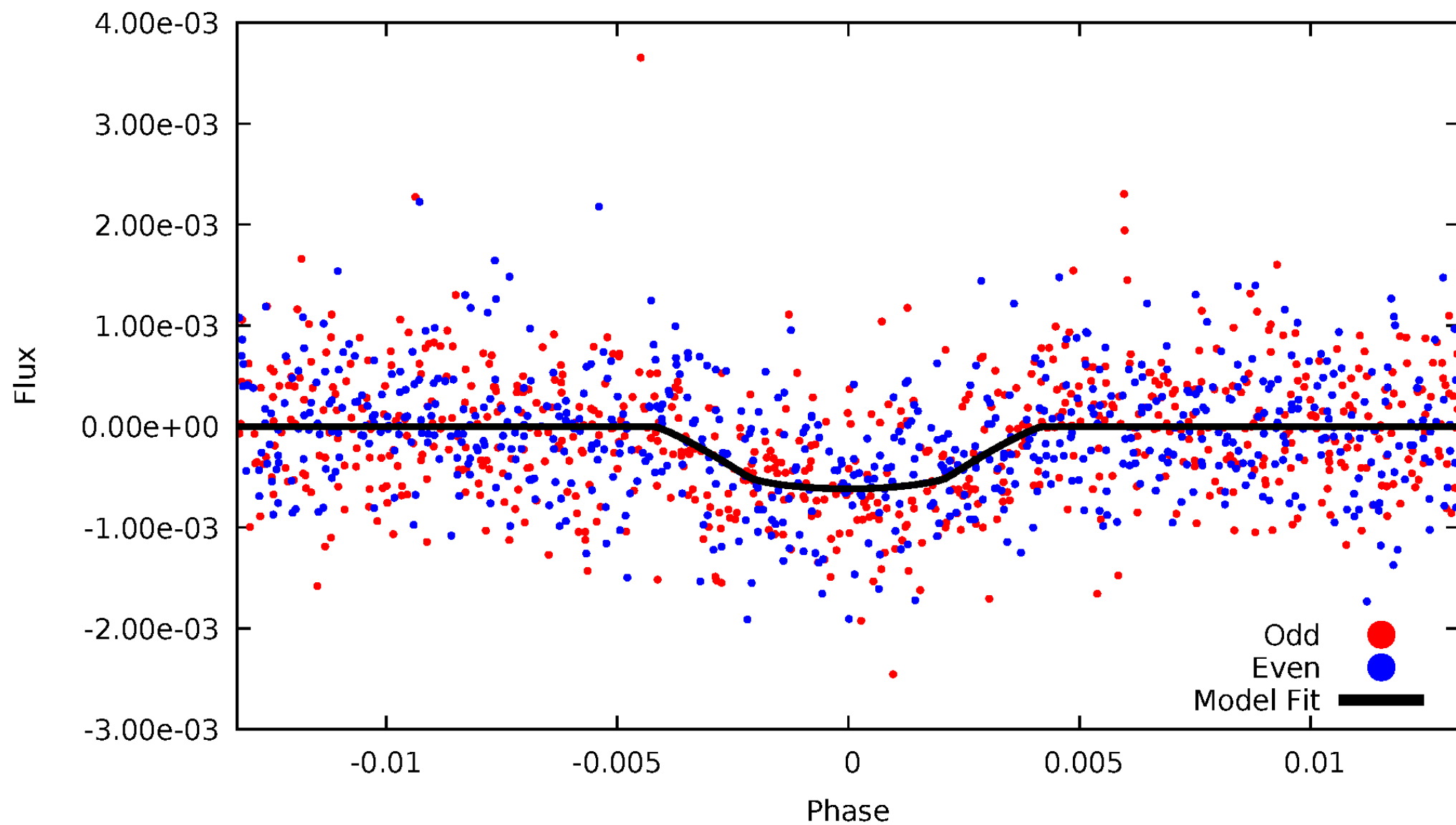


TCE 004078311-01



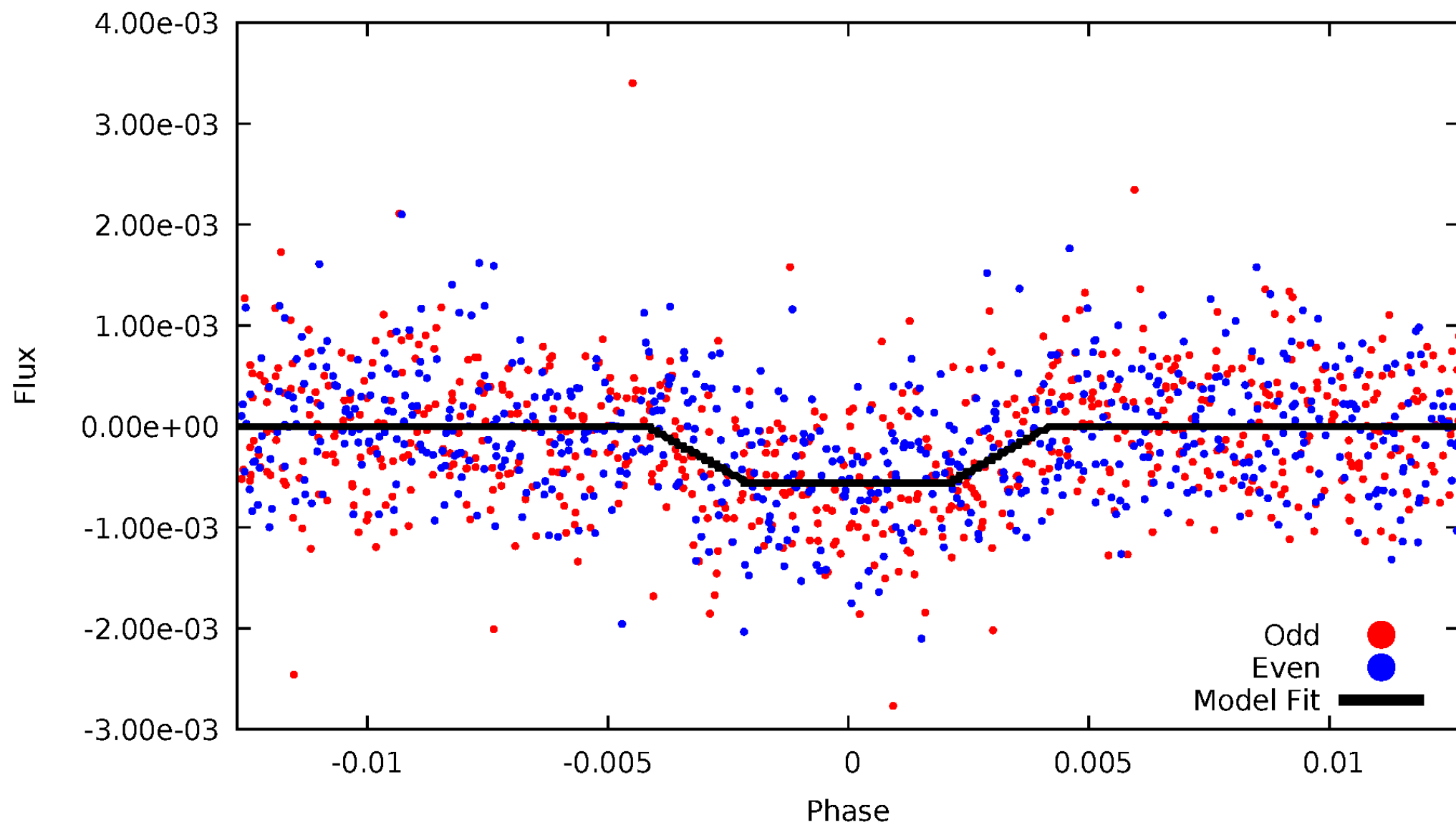
DV Odd/Even

TCE 004078311-01



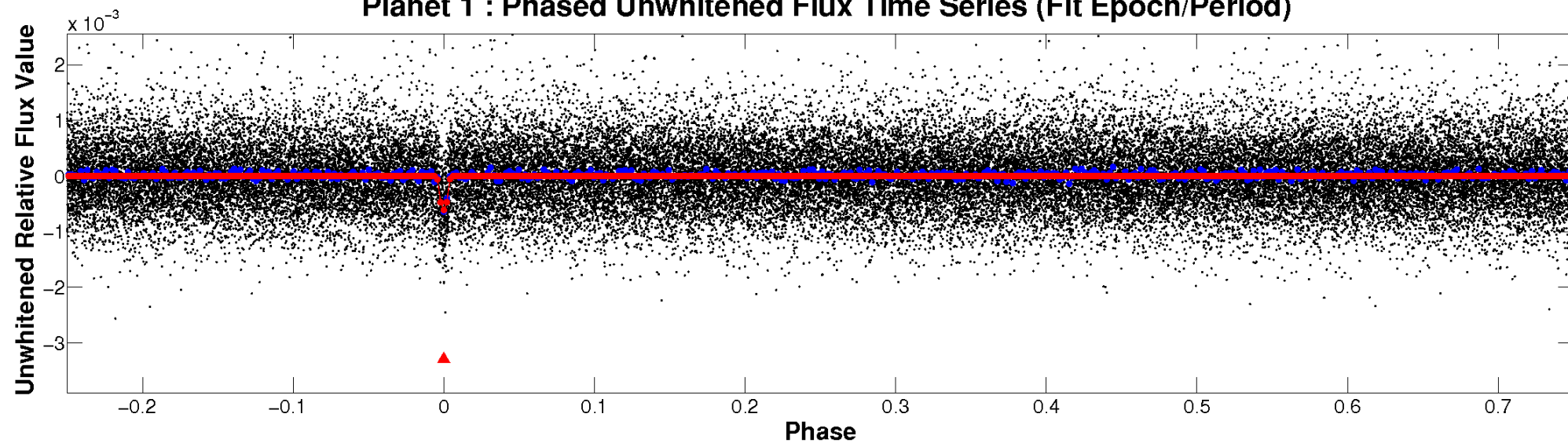
ALT Odd/Even

TCE 004078311-01

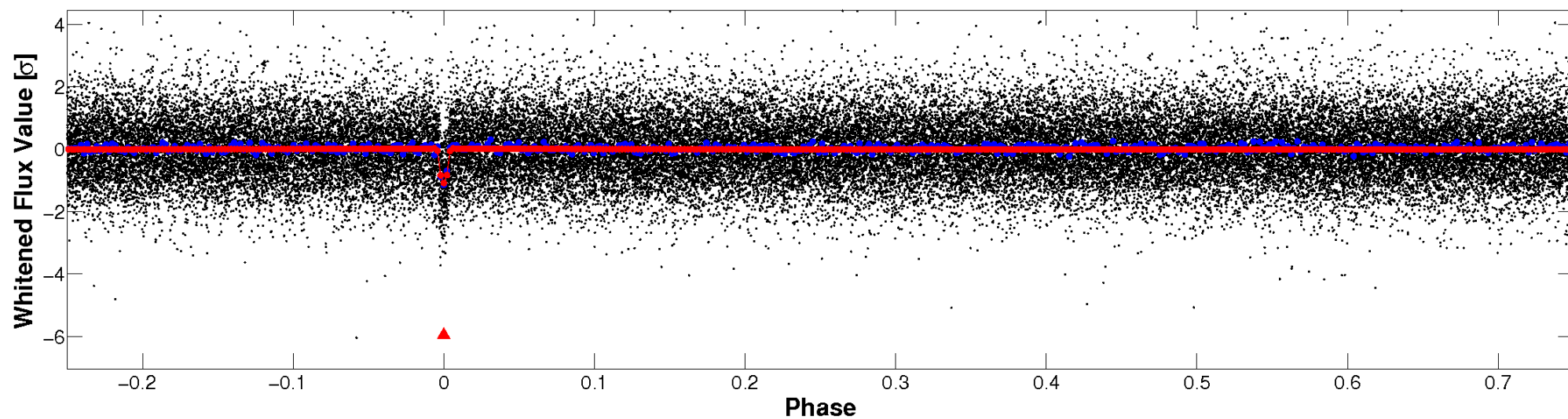


Non-Whitened Vs. Whitened Light Curve

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

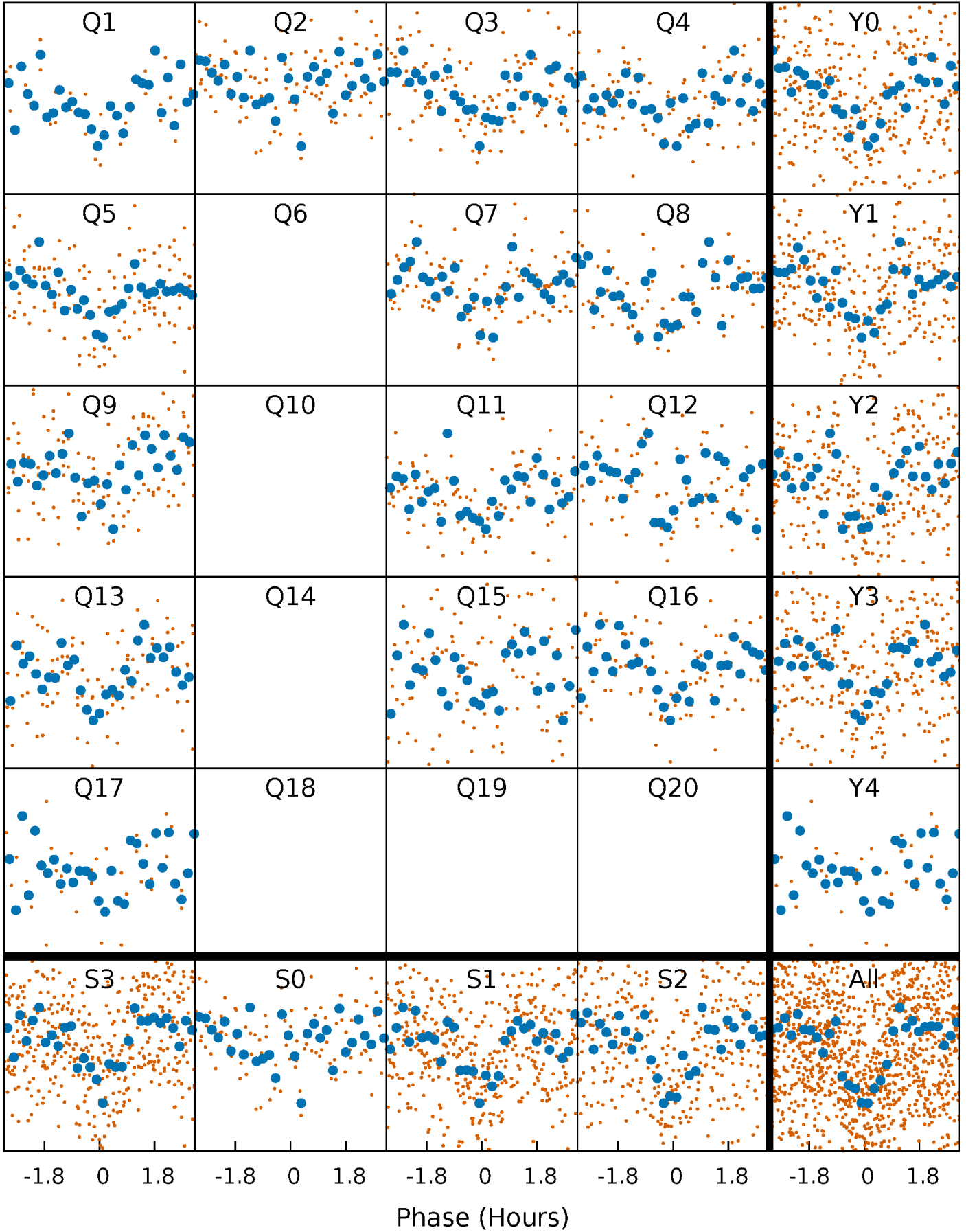


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



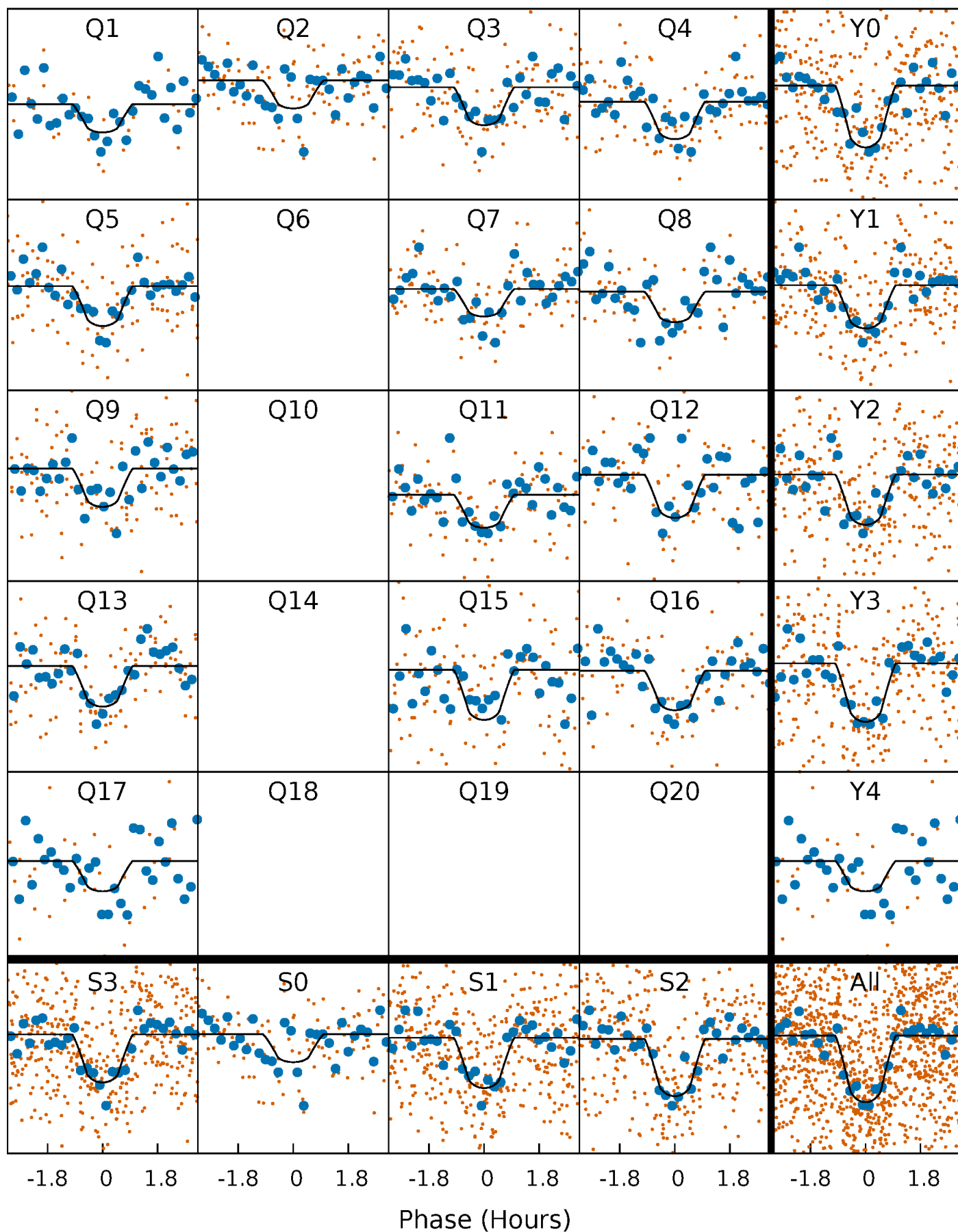
PDC Quarter-Phased Transit Curves

TCE 004078311-01 P= 9.842577 Days $T_0=134.024343$ (BKJD)



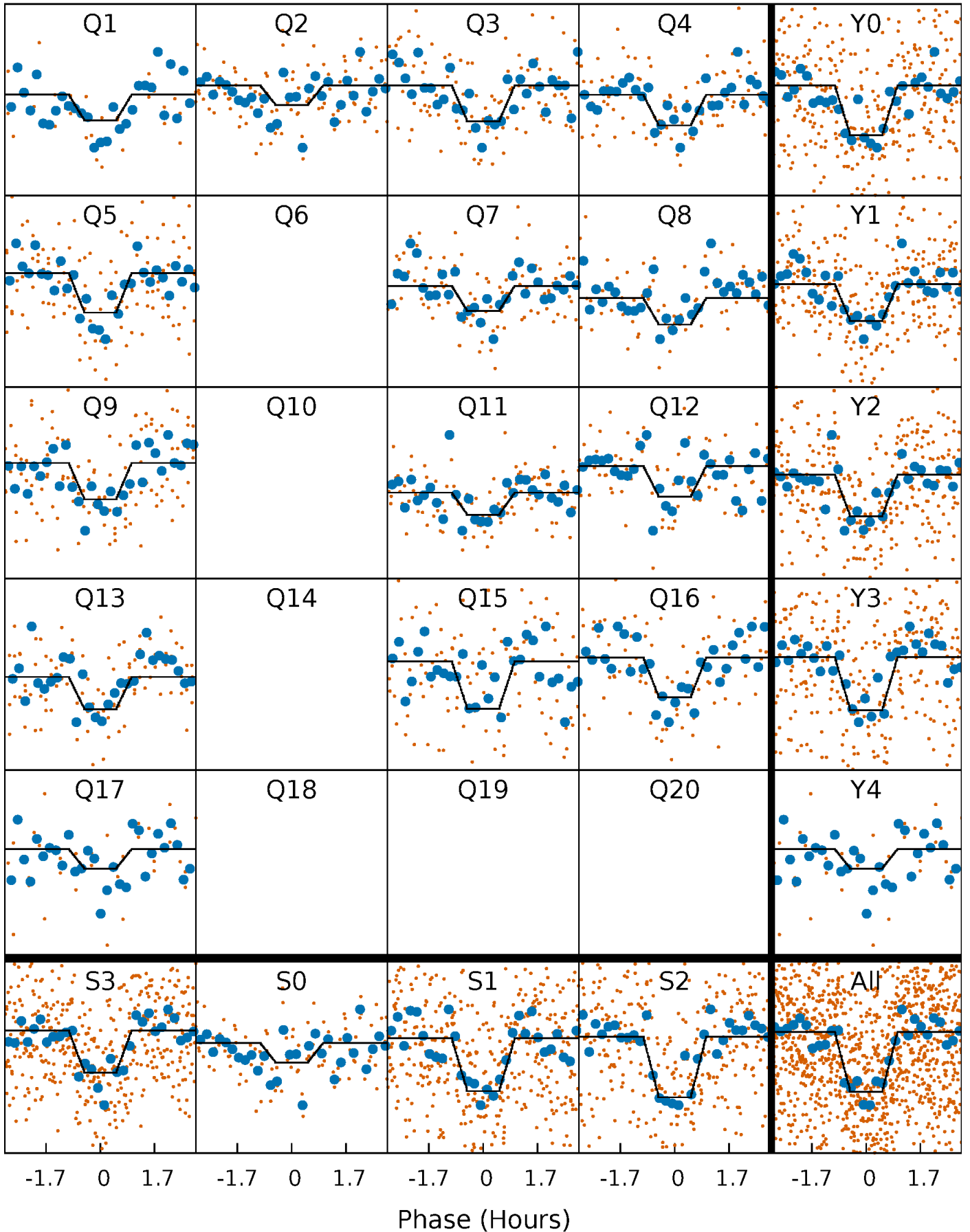
DV Quarter-Phased Transit Curves

TCE 004078311-01 P= 9.842577 Days $T_0=134.024343$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

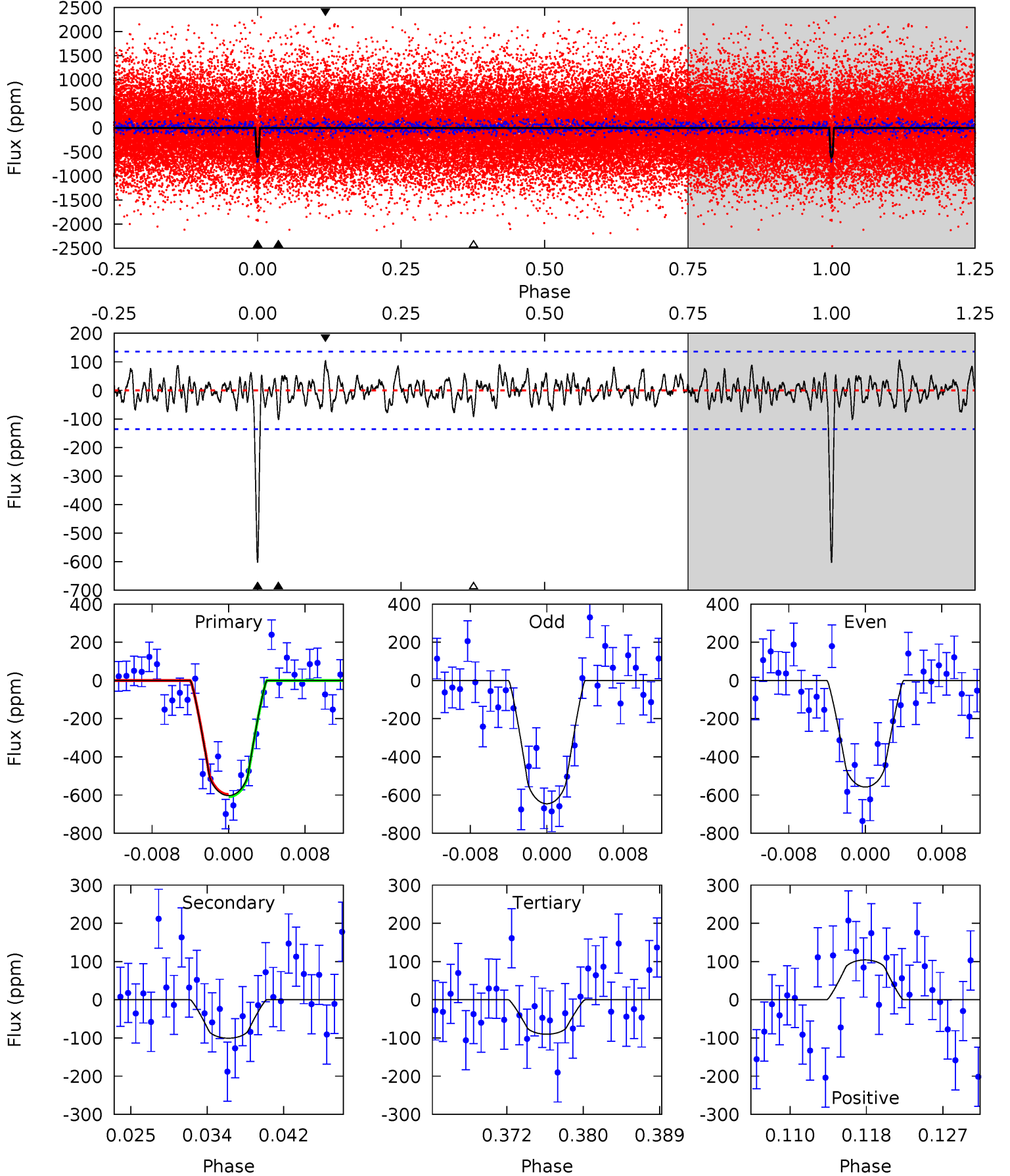
TCE 004078311-01 P= 9.842586 Days $T_0=134.023536$ (BKJD)



DV Model-Shift Uniqueness Test

004078311-01, P = 9.842577 Days, E = 124.181766 Days

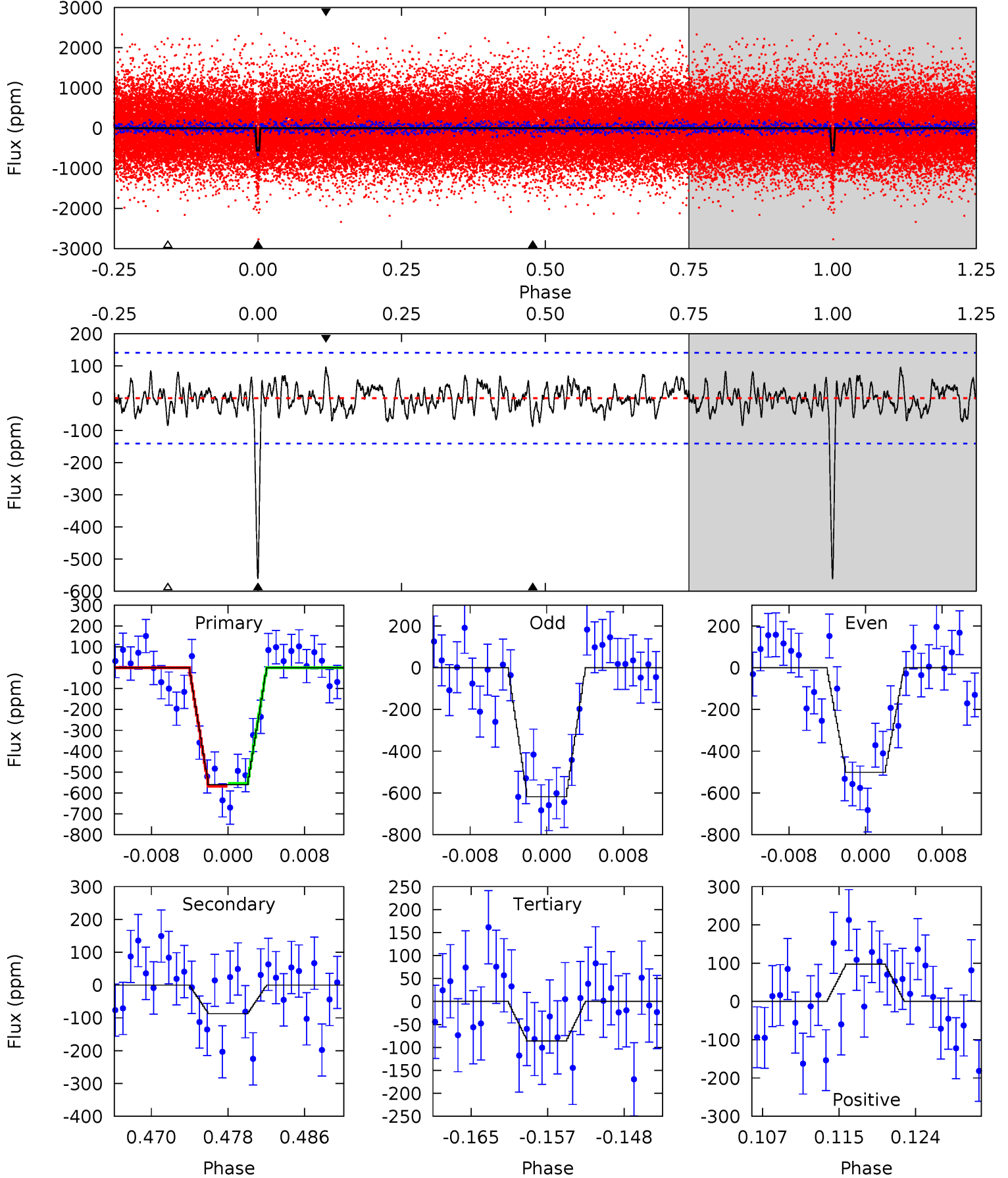
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.5	3.75	3.36	3.88	5.06	2.63	1.21	19.1	18.6	0.39	-0.13	1.64	0.94	0.15	0.22



Alt Model-Shift Uniqueness Test

004078311-01, P = 9.842586 Days, E = 124.180950 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	3.14	3.08	3.49	5.06	2.64	1.16	17.1	16.7	0.05	-0.35	2.11	1.06	0.15	0.24



Stellar Parameters For KIC 004078311

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5585^{+175}_{-194}	$4.490^{+0.044}_{-0.176}$	$0.480^{+0.050}_{-0.300}$	$0.972^{+0.235}_{-0.084}$	$1.064^{+0.084}_{-0.126}$	$1.633^{+0.368}_{-0.784}$
	+3%/-3%	+1%/-4%	+10%/-62%	+24%/-9%	+8%/-12%	+23%/-48%
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 004078311-01 / KOI 4166.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-101±27	$3.30^{+2.48}_{-2.07}$	1138^{+70}_{-48}	3623^{+1744}_{-614}	39^{+270}_{-27}
Alt.	-87±28	$3.30^{+2.47}_{-2.04}$	1139^{+73}_{-53}	3533^{+1535}_{-590}	36^{+231}_{-25}

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 $A_{obs} \gg 1.0$

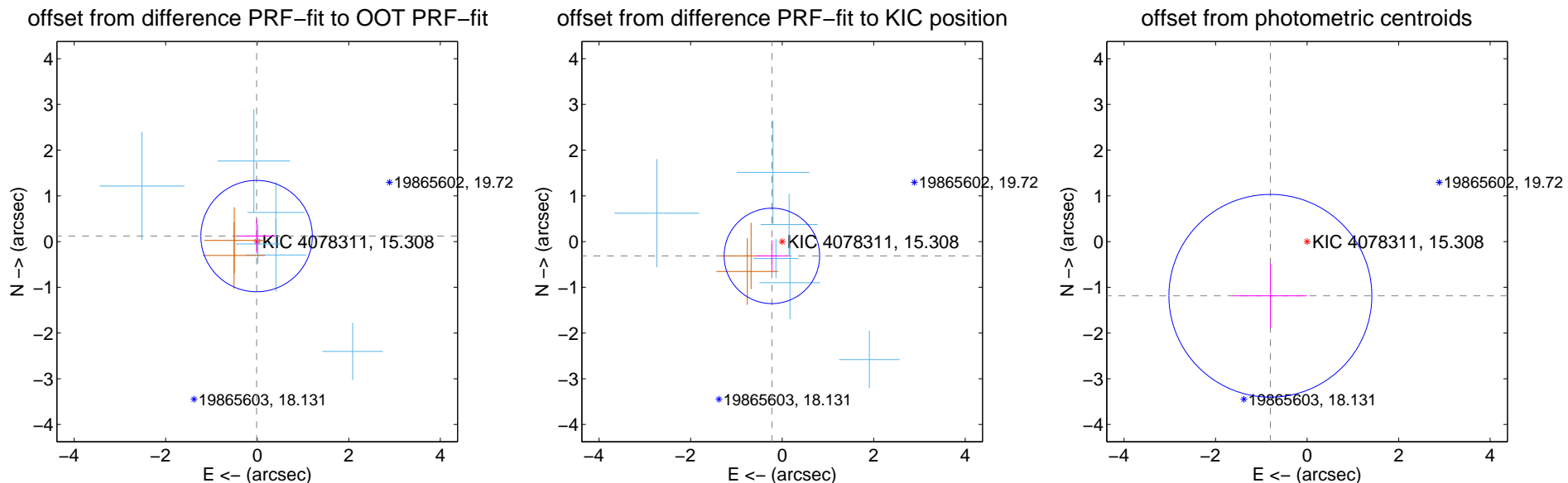
DV Centroid Data

Supplemental centroid analysis for 004078311-01. Kepler magnitude: 15.31. Transit SNR 16.61

There are 6 quarters with good PRF difference image offsets

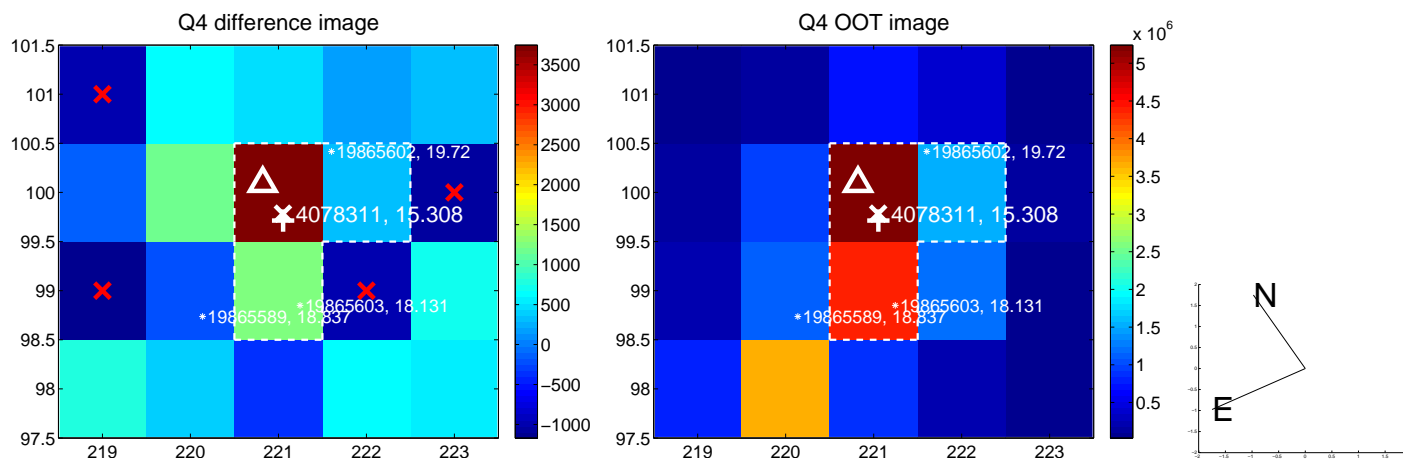
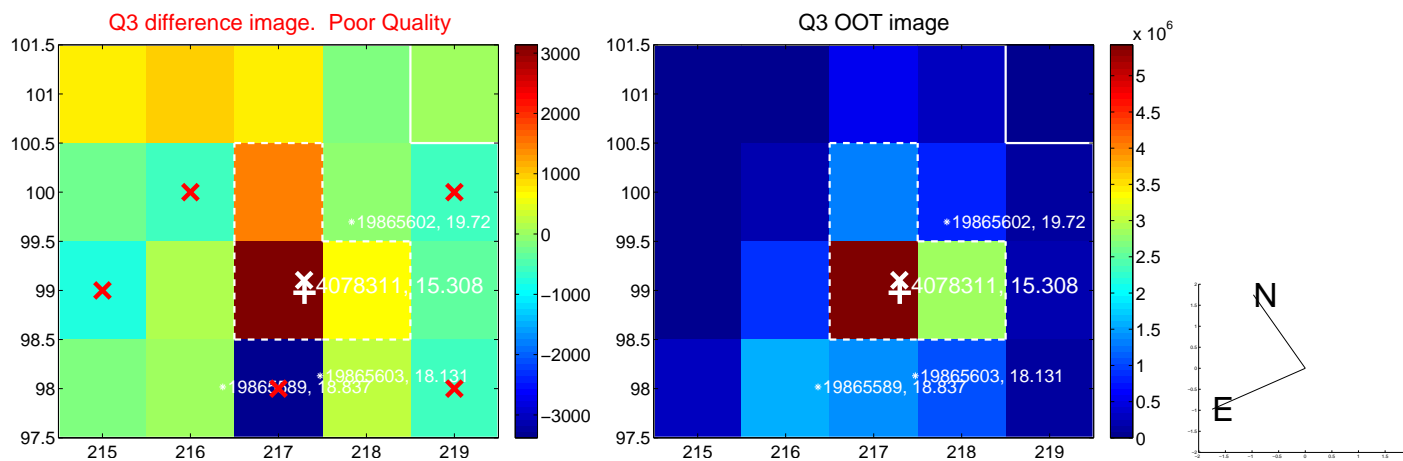
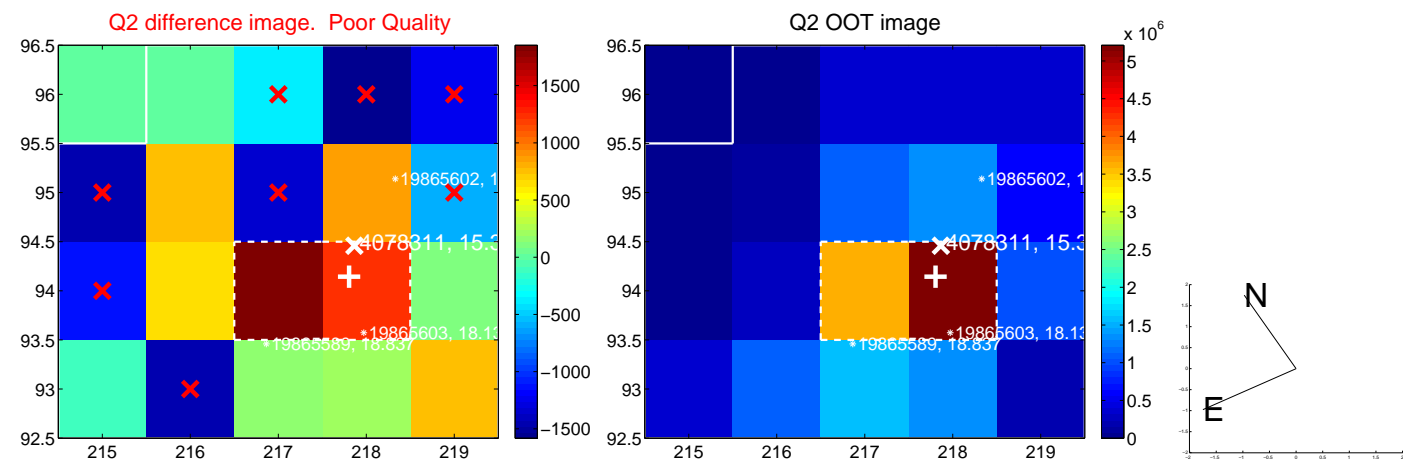
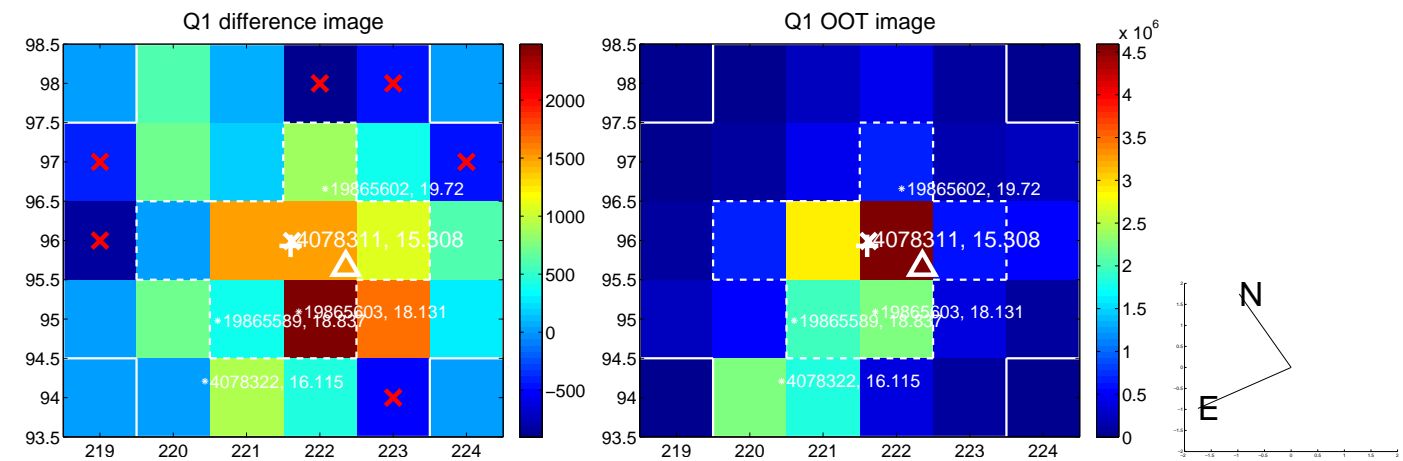
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.121 ± 0.406	0.30	0.014 ± 0.411	0.120 ± 0.376
PRF-fit source offset from KIC position	0.385 ± 0.348	1.11	0.225 ± 0.363	-0.313 ± 0.340
photometric centroid source offset	1.43 ± 0.74	1.94	0.80 ± 0.80	-1.19 ± 0.71

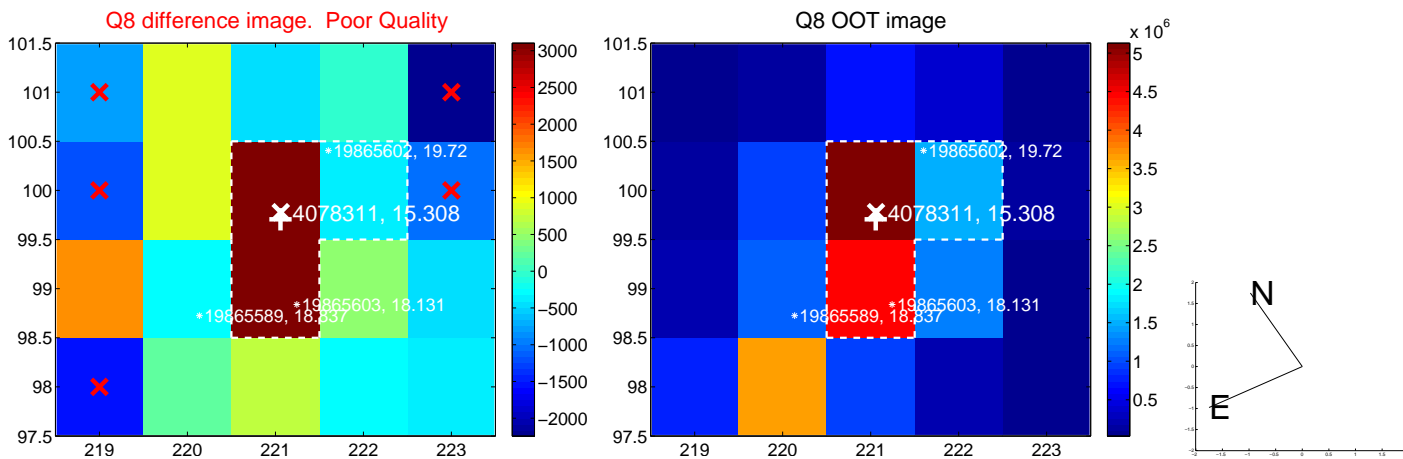
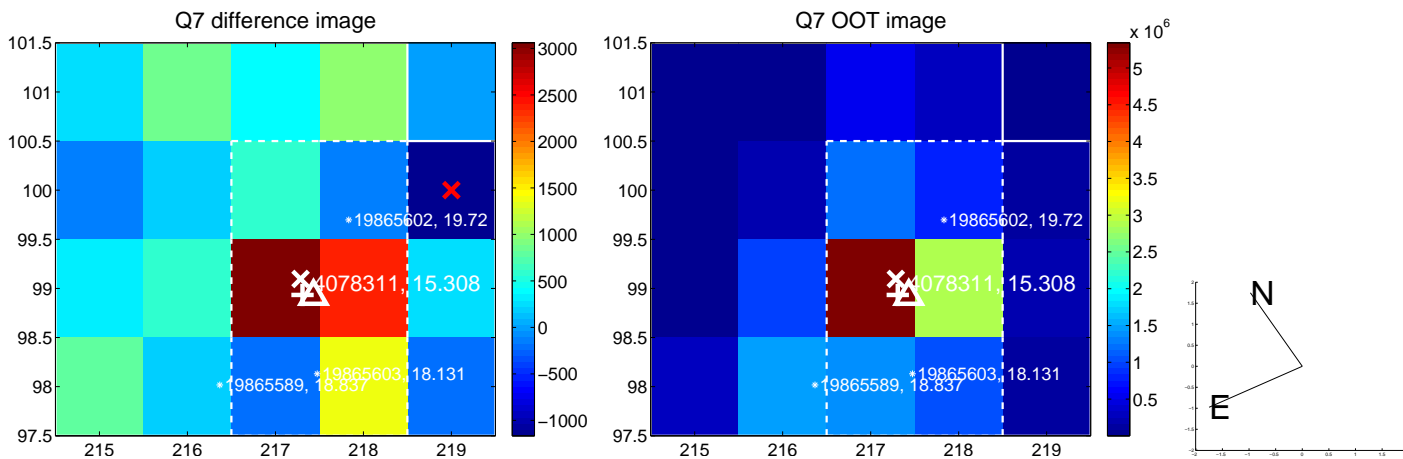
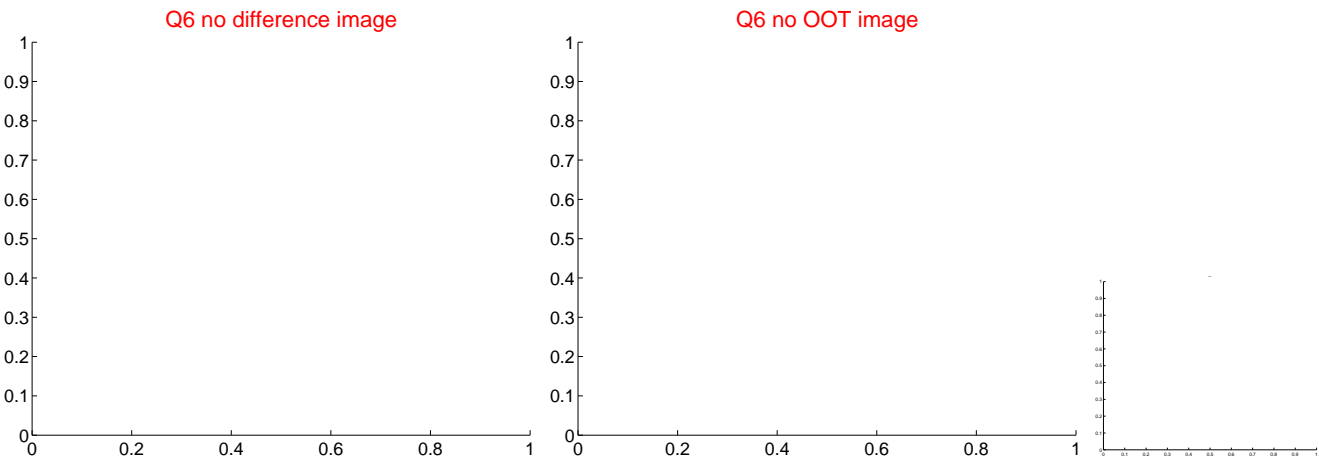
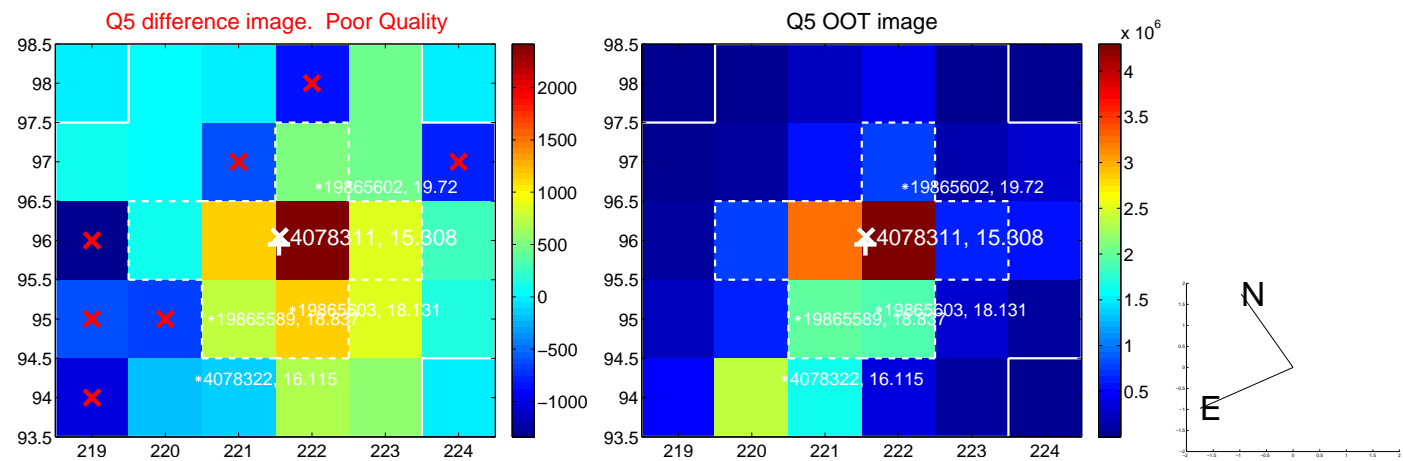


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

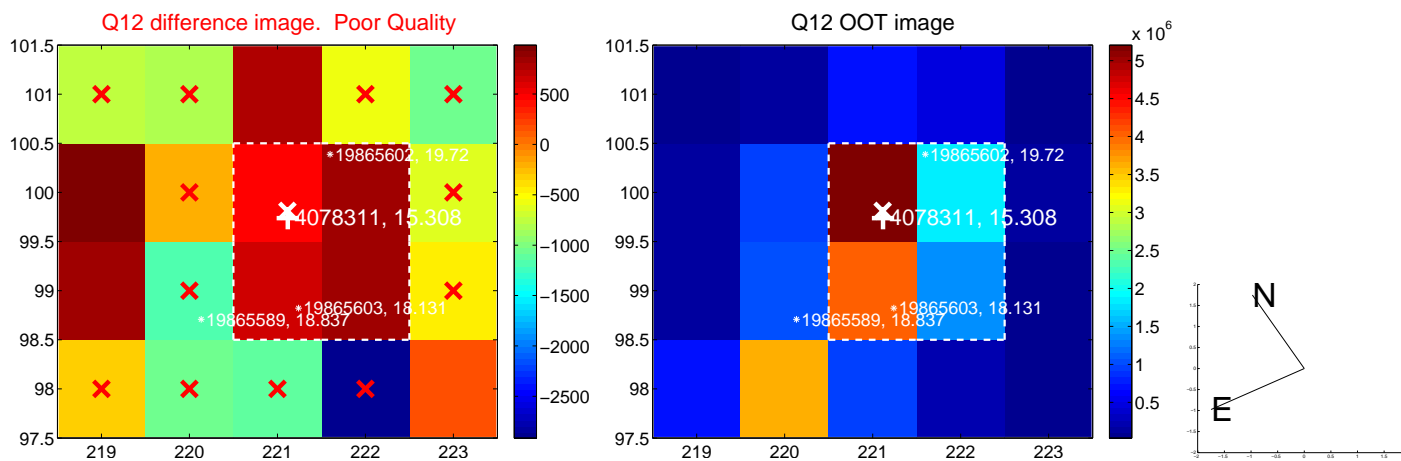
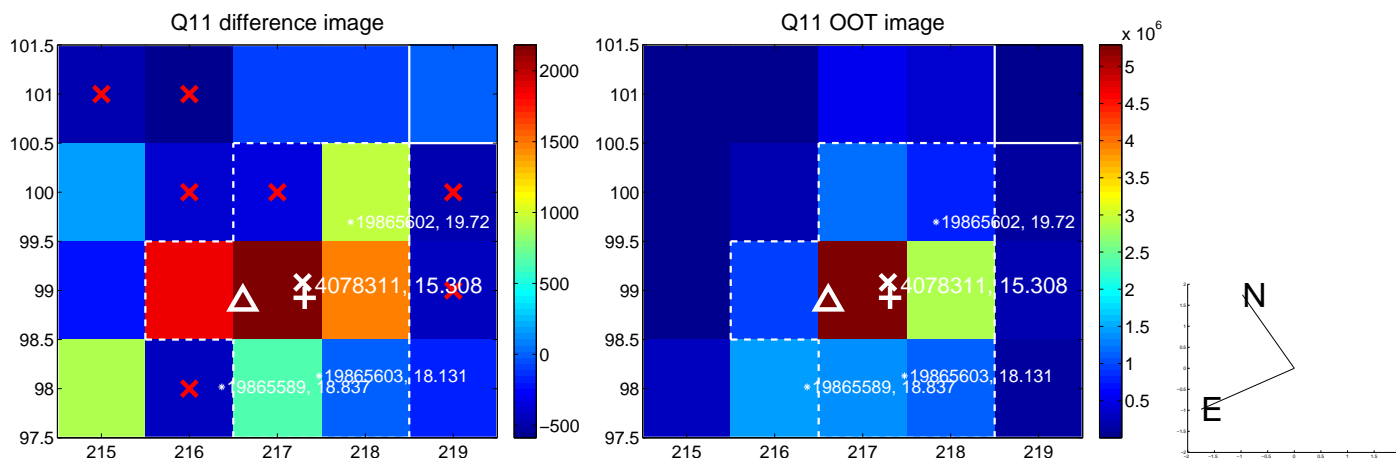
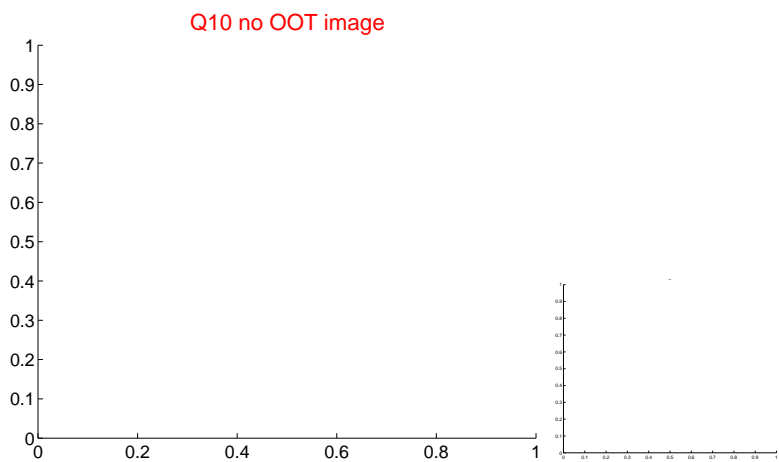
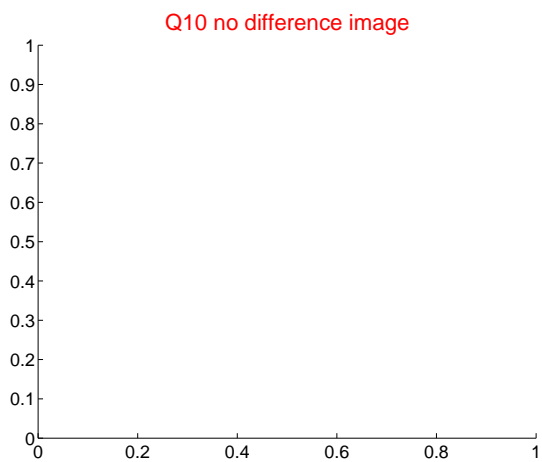
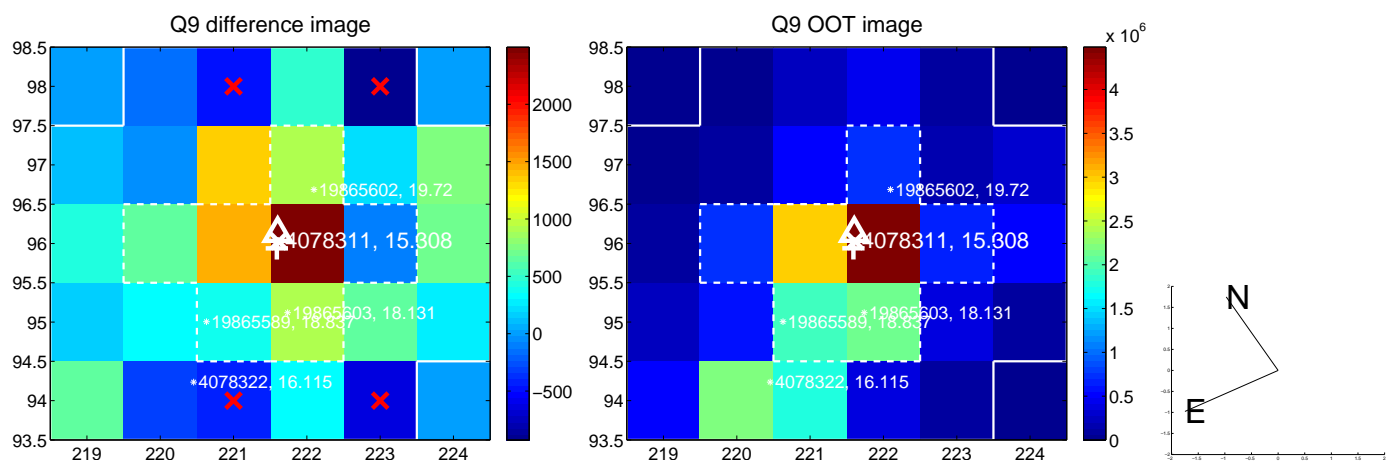
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



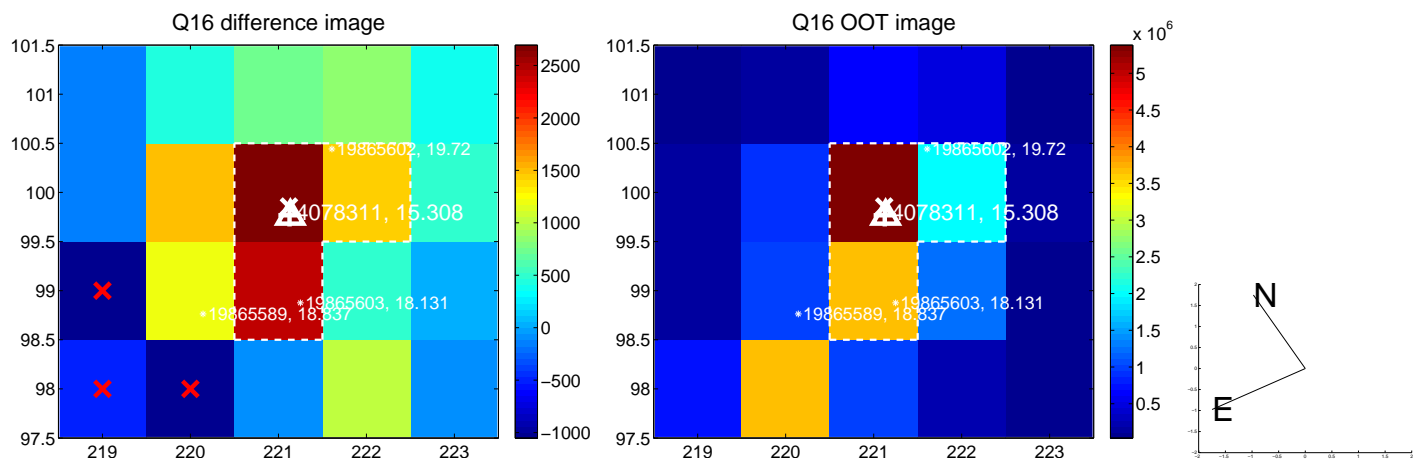
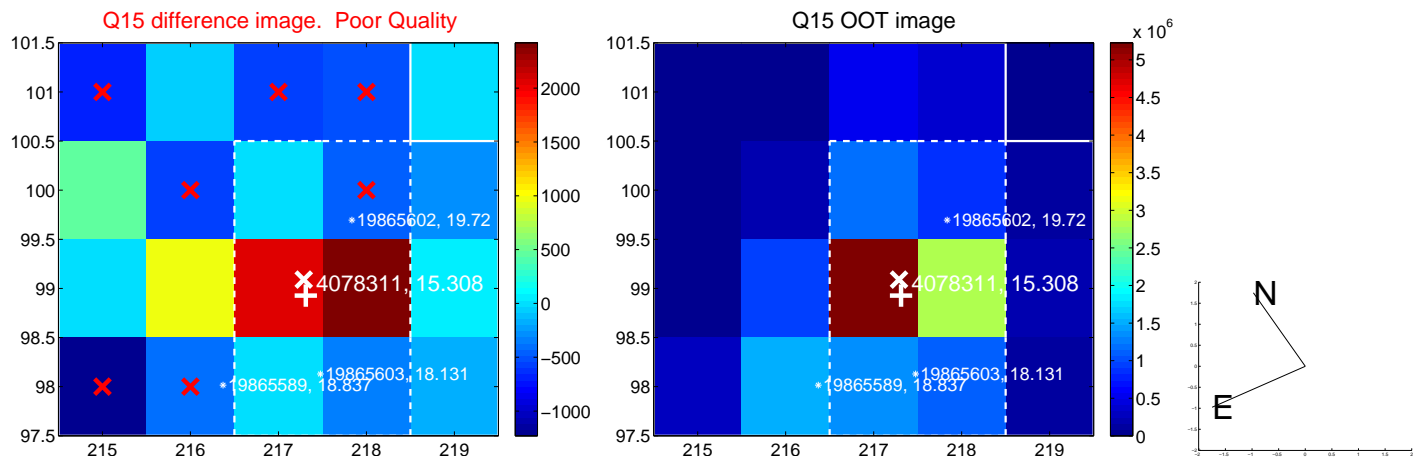
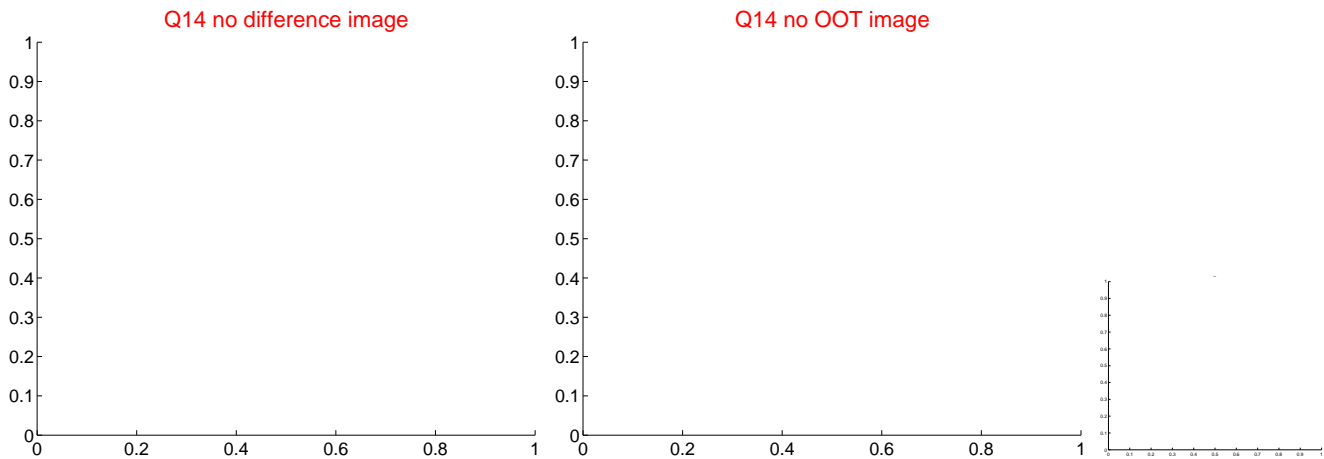
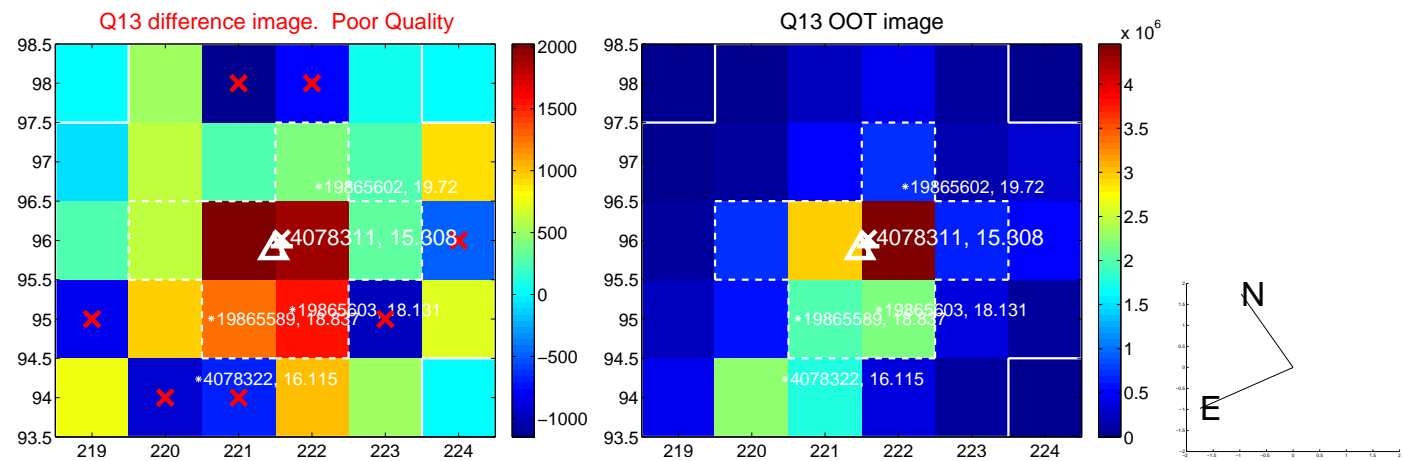
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



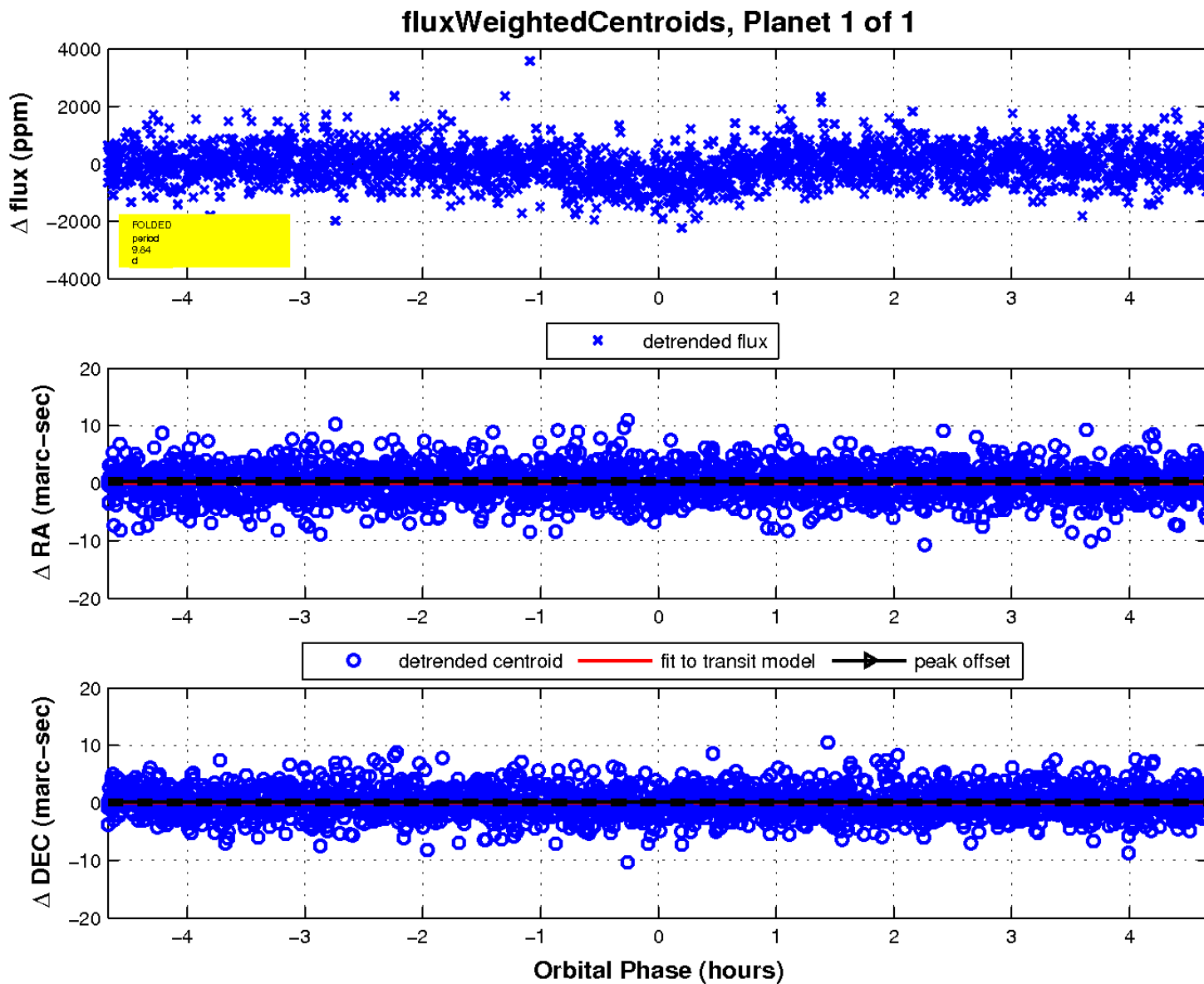
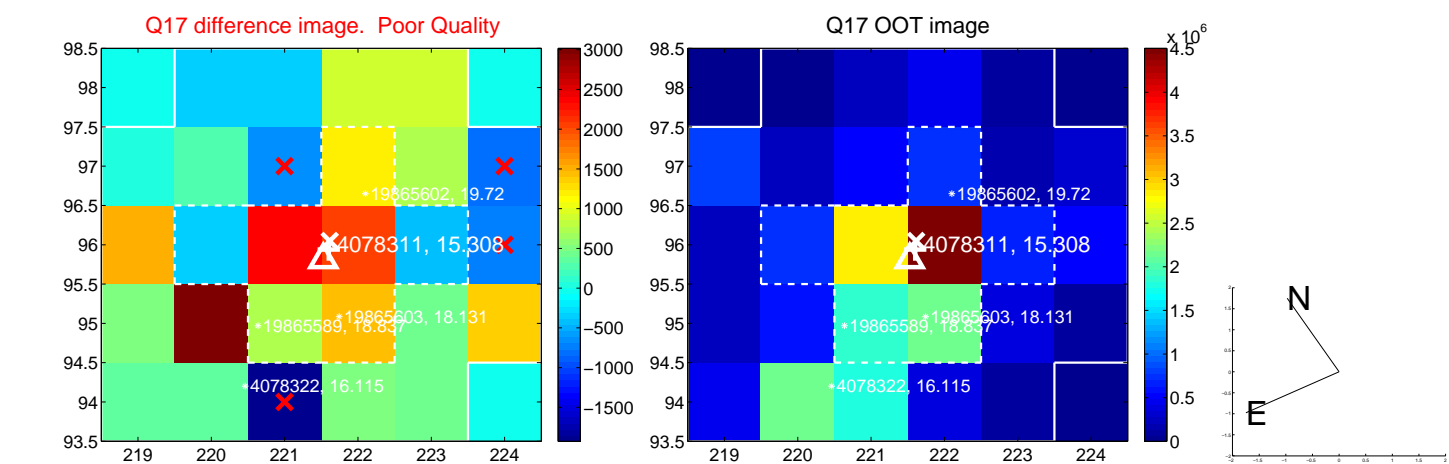
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UKIRT Image

Declination

