

KIC 008415200

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})
008415200-01	OBS	2730.01	4.521581	133.218677	99.8	3.553	22.6	23.9	1.29	5576	1.48	515.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008415200-01	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.

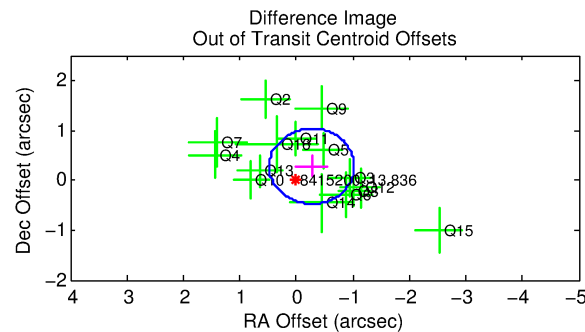
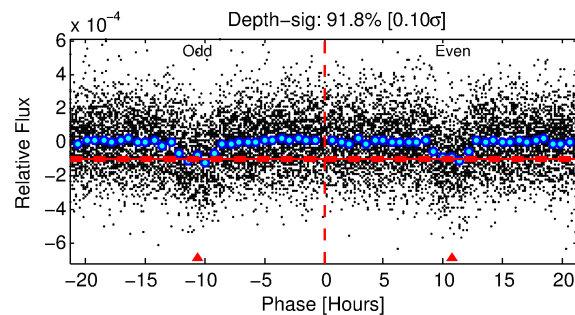
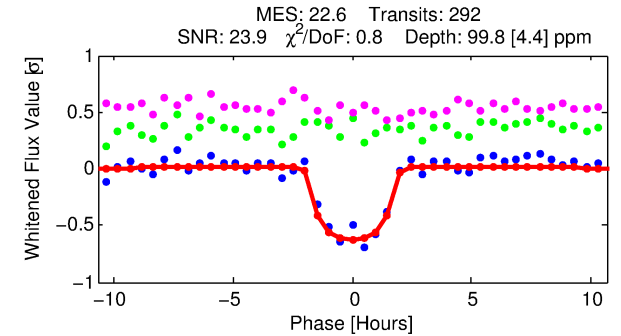
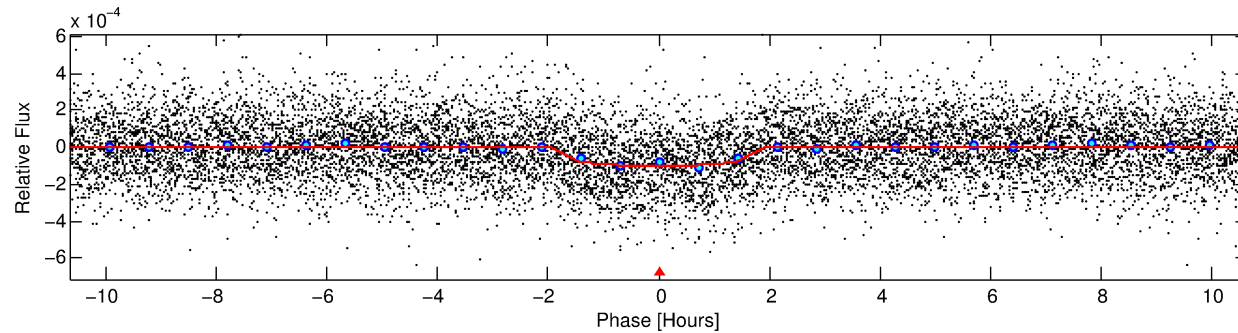
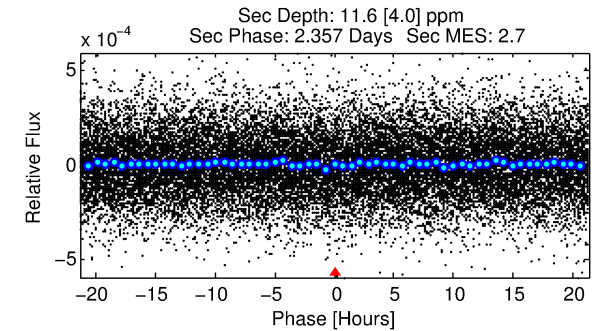
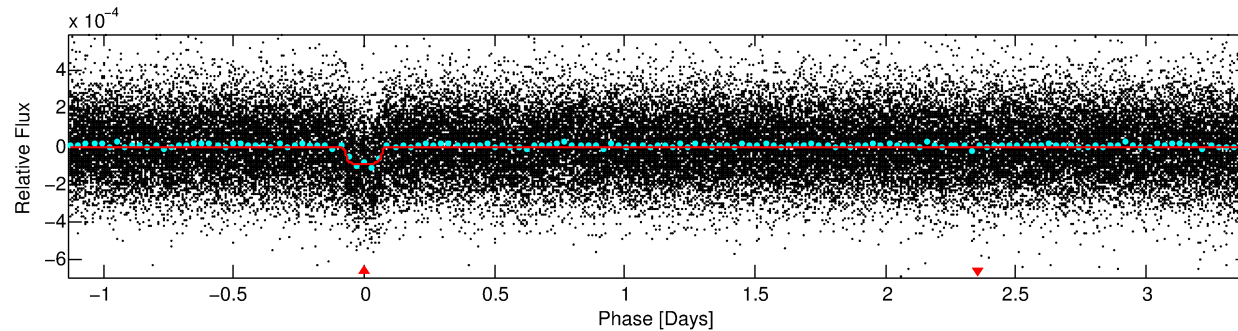
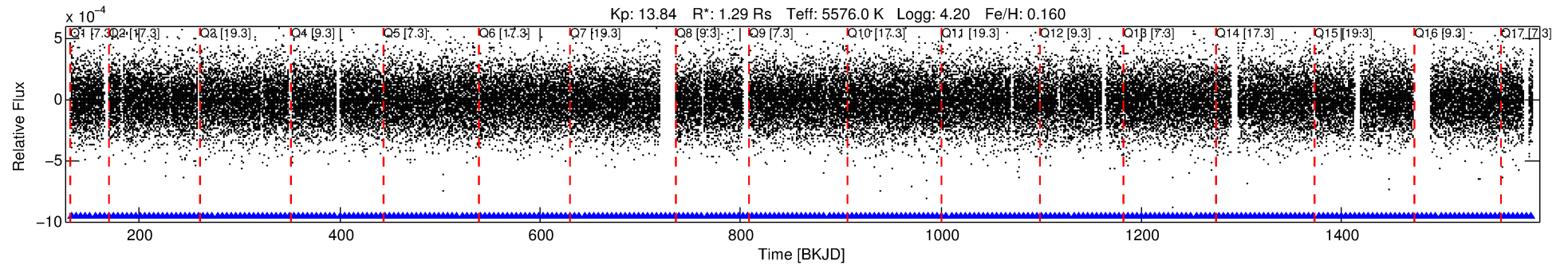
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008415200-01

No Significant Match Found

DV One-Page Summary

KIC: 8415200 Candidate: 1 of 1 Period: 4.522 d
KOI: K02730.01 Corr: 0.990



DV Fit Results:

Period = 4.52158 [0.00002] d
Epoch = 133.2187 [0.0026] BKJD
Rp/R* = 0.0105 [0.0035]
a/R* = 5.43 [7.52]
b = 0.85 [0.49]
Seff = 515.19 [160.67]
Teq = 1215 [95] K
Rp = 1.47 [0.56] Re
a = 0.0529 [0.0099] AU
Ag = 8.17 [6.61] [1.08σ]
Teffp = 3176 [596] K [3.25σ]

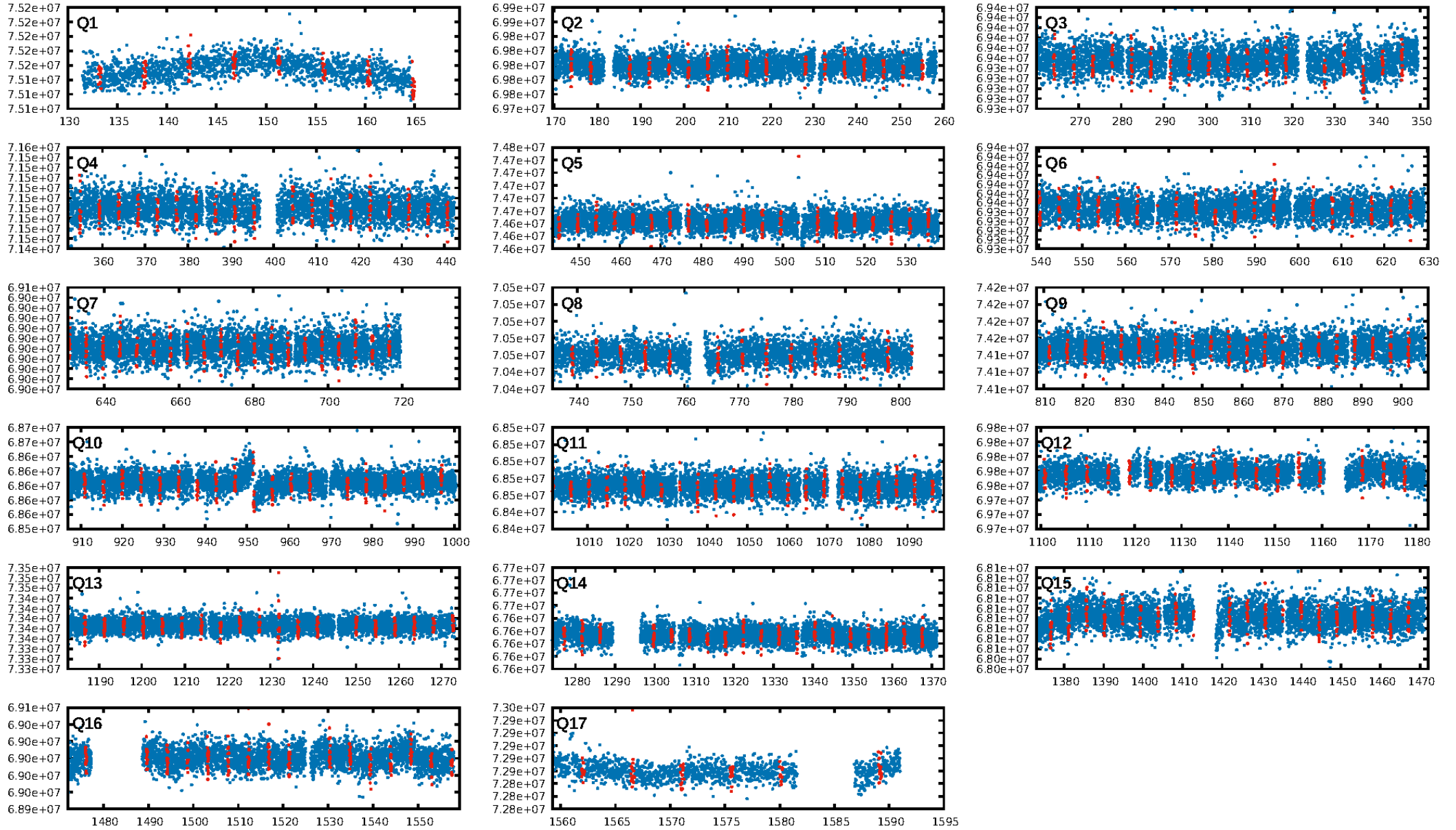
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.50e-109
RollingBand-fgt: 1.00 [278/278]
GhostDiagnostic-chr: 2.973
Centroid-sig: 59.2%
Centroid-so: 0.389 arcsec [0.71σ]
OotOffset-rm: 0.386 arcsec [1.54σ]
KicOffset-rm: 0.397 arcsec [1.65σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [17/17]

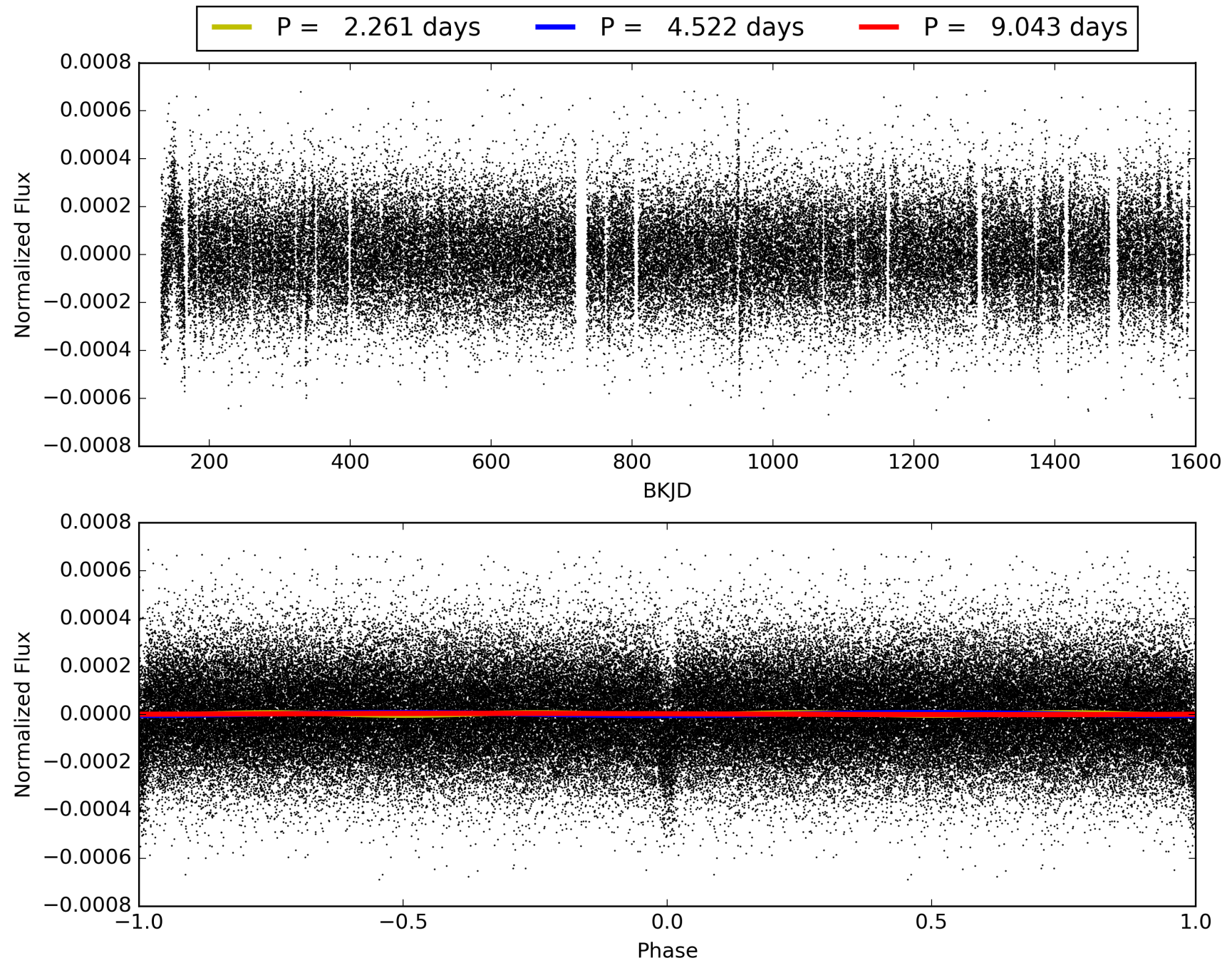
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:24:46 Z

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

TCE 008415200-01, PDC Light Curves

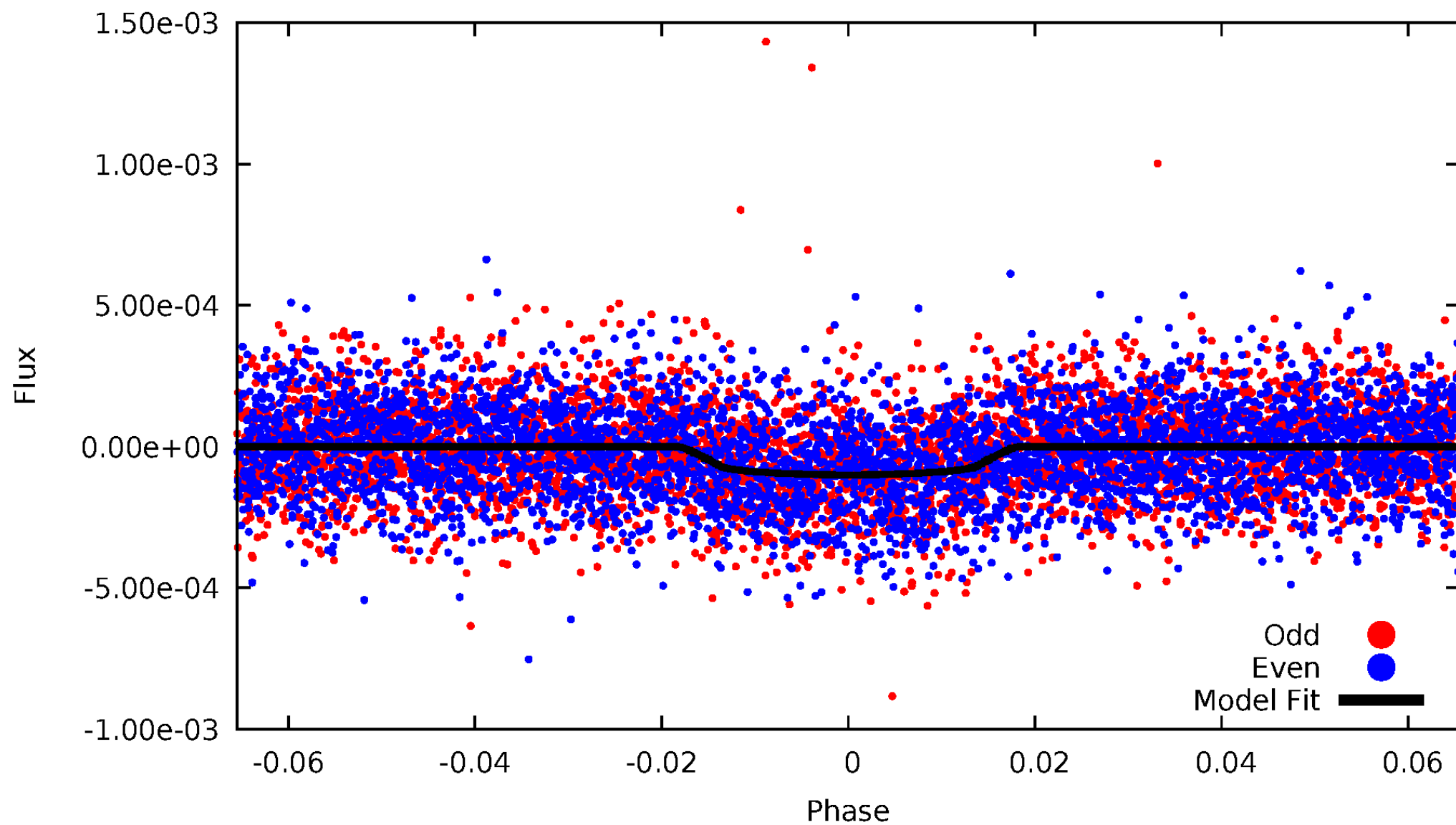


TCE 008415200-01



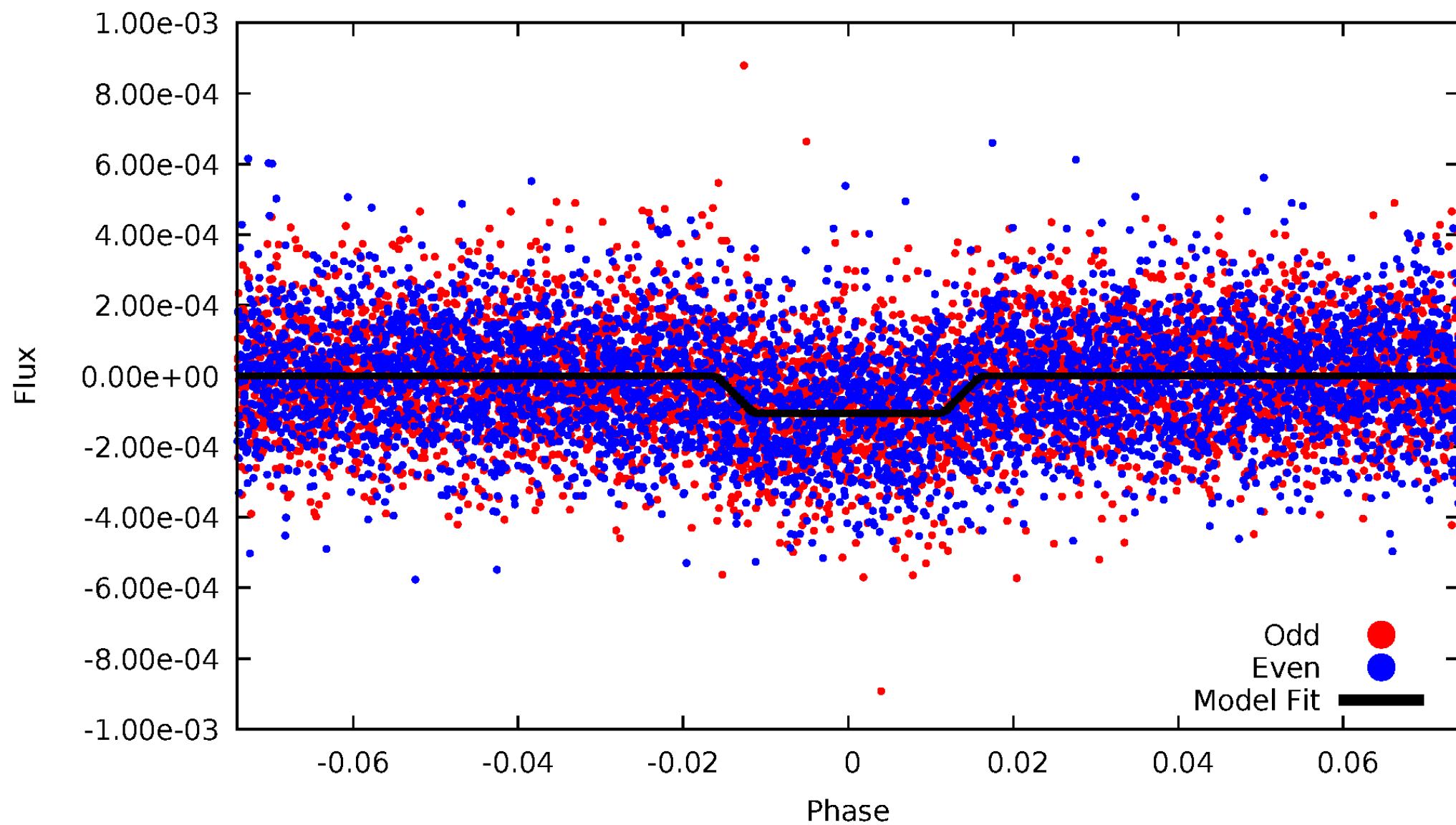
DV Odd/Even

TCE 008415200-01



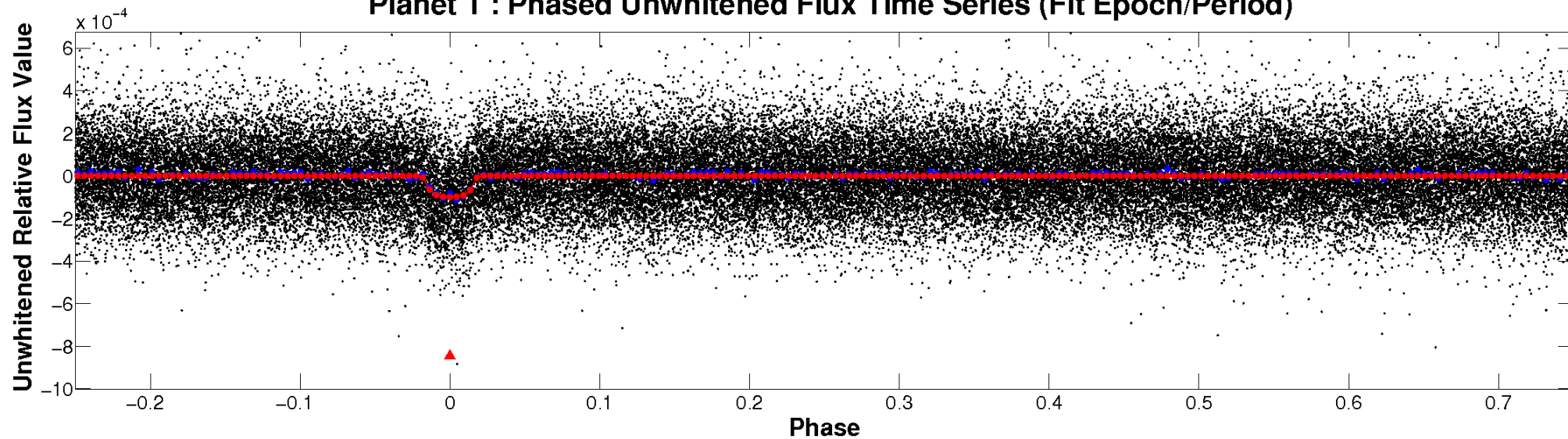
ALT Odd/Even

TCE 008415200-01

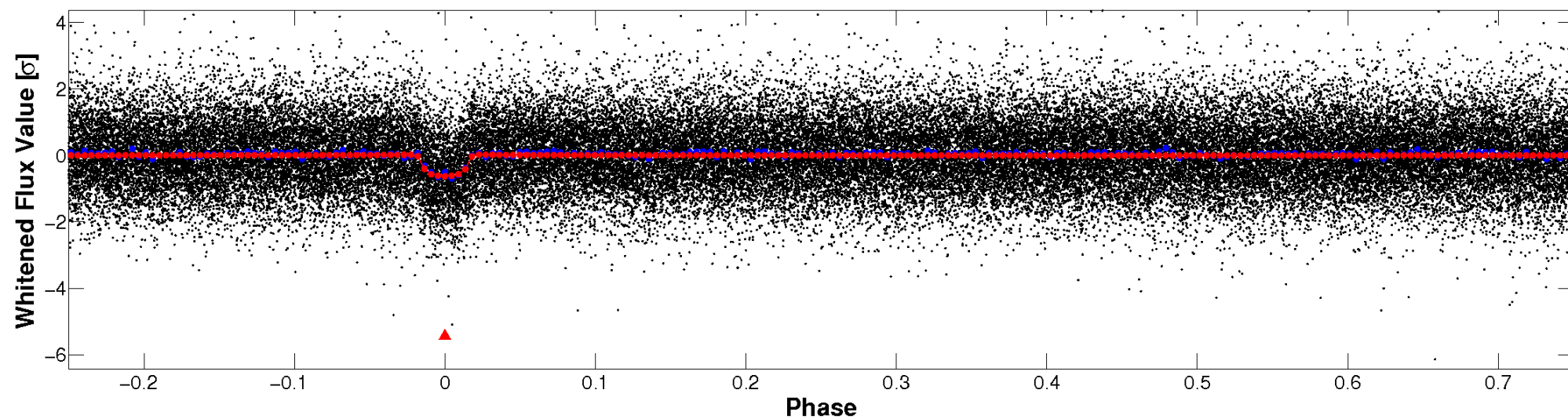


Non-Whitened Vs. Whitened Light Curve

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

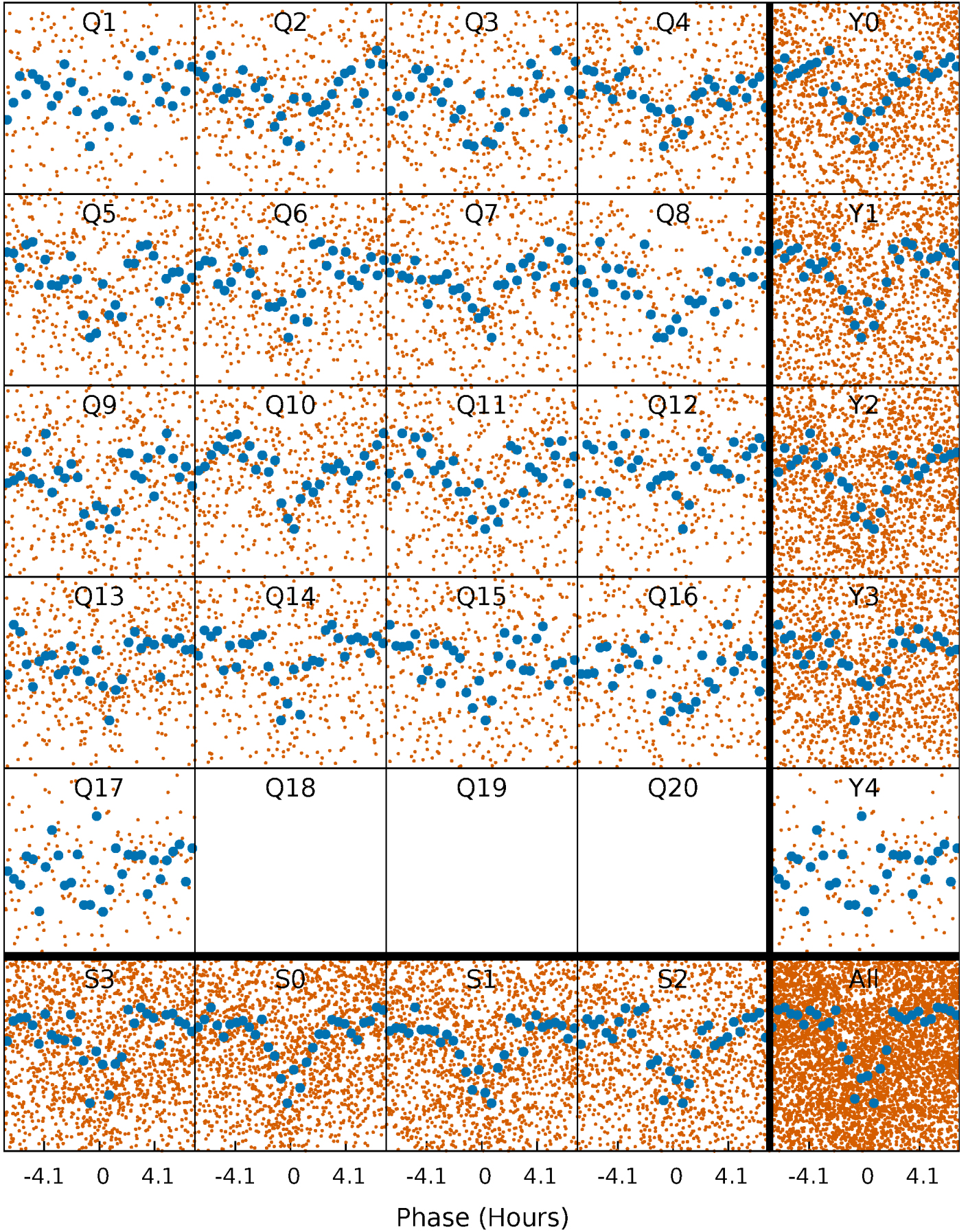


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



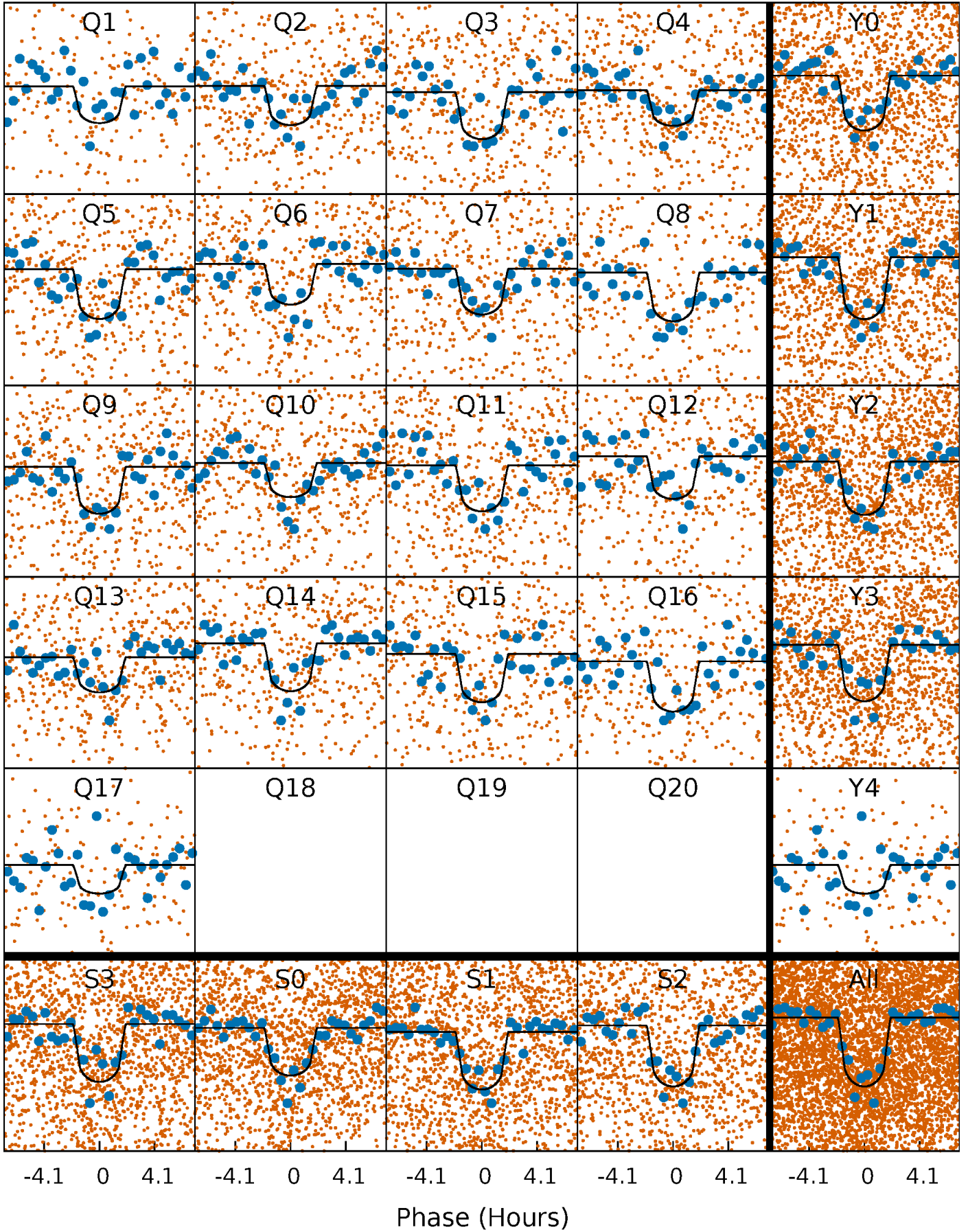
PDC Quarter-Phased Transit Curves

TCE 008415200-01 P= 4.521581 Days $T_0=133.218677$ (BKJD)



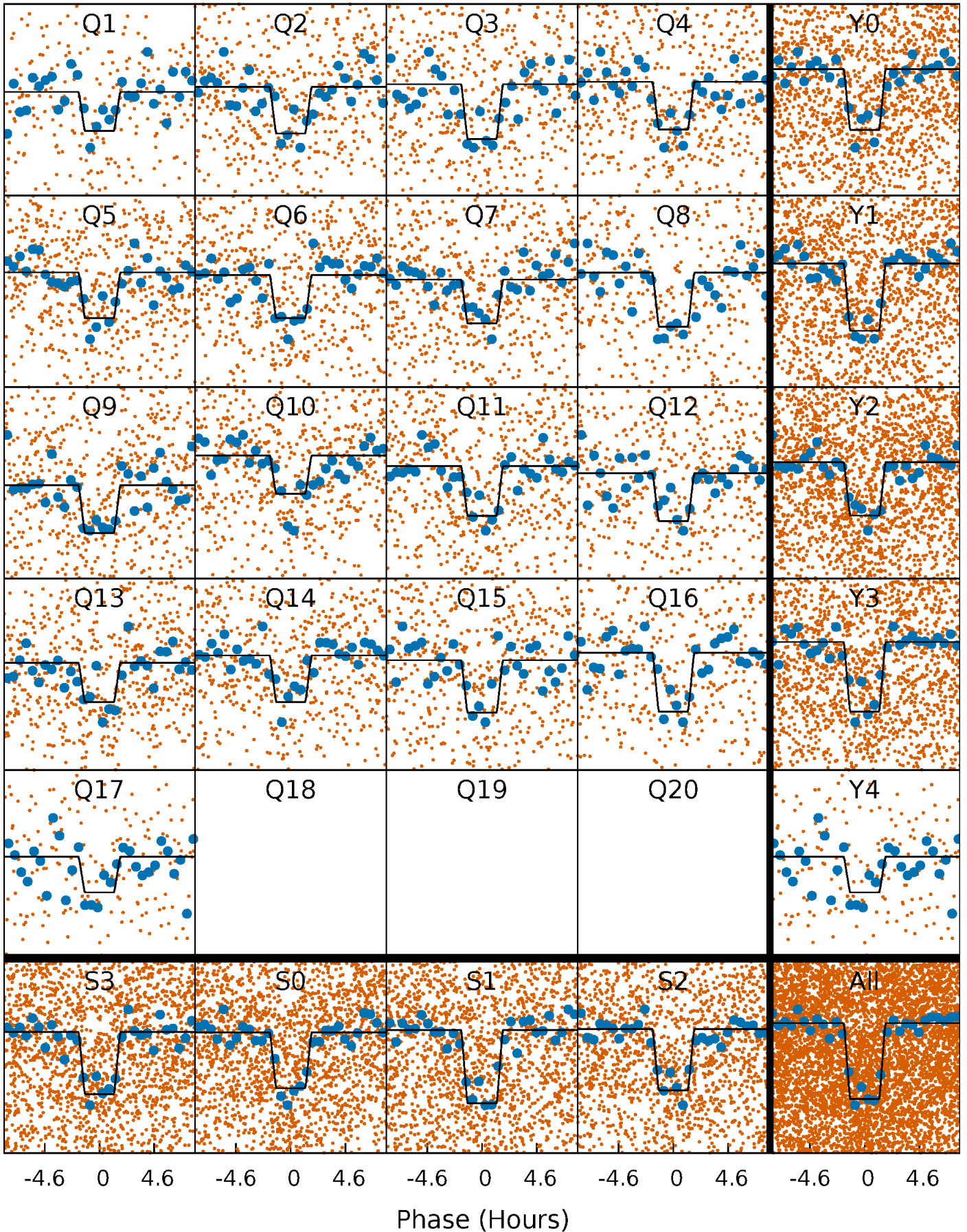
DV Quarter-Phased Transit Curves

TCE 008415200-01 P= 4.521581 Days $T_0=133.218677$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

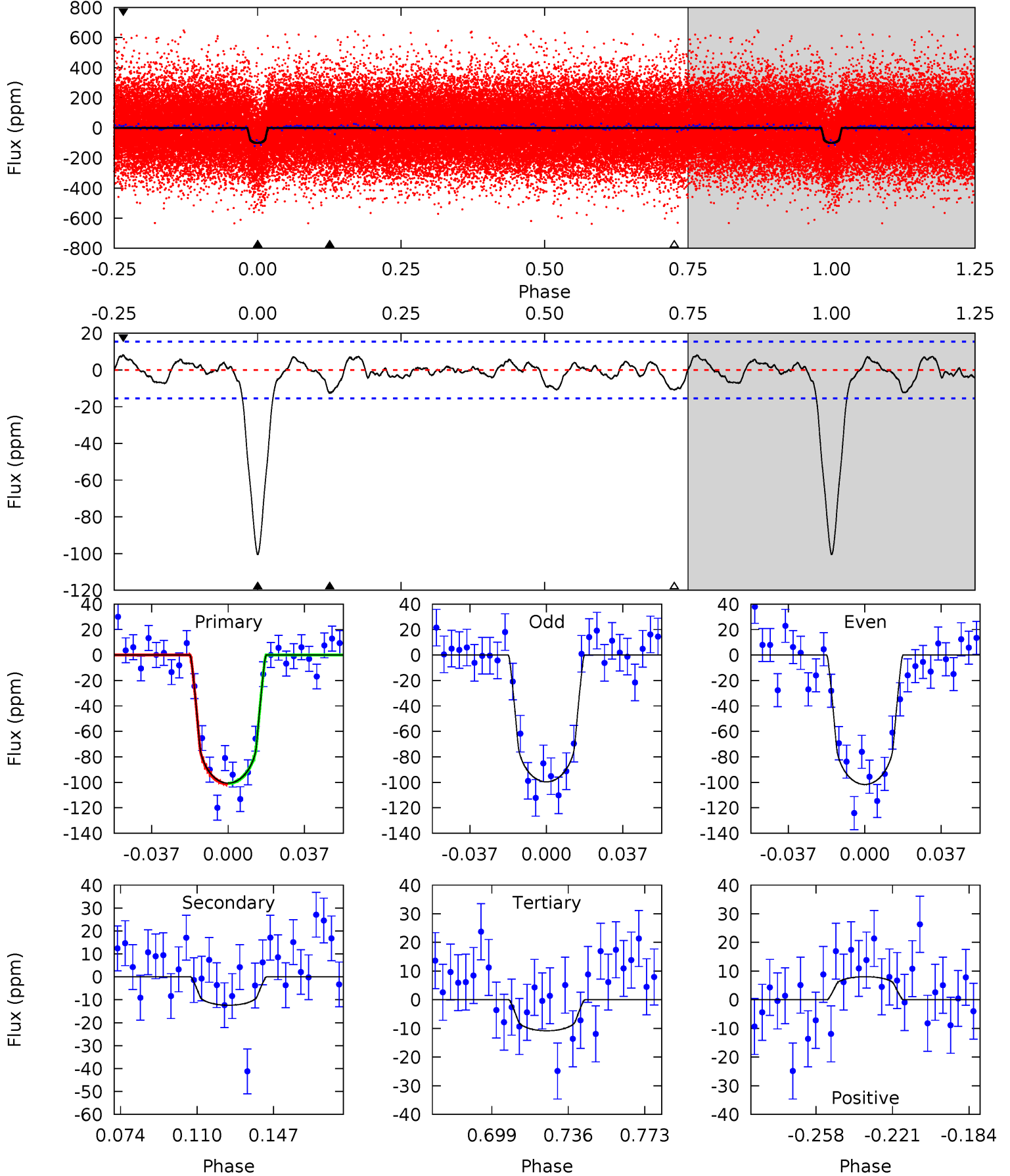
TCE 008415200-01 P= 4.521607 Days $T_0=133.215723$ (BKJD)



DV Model-Shift Uniqueness Test

008415200-01, P = 4.521581 Days, E = 128.697096 Days

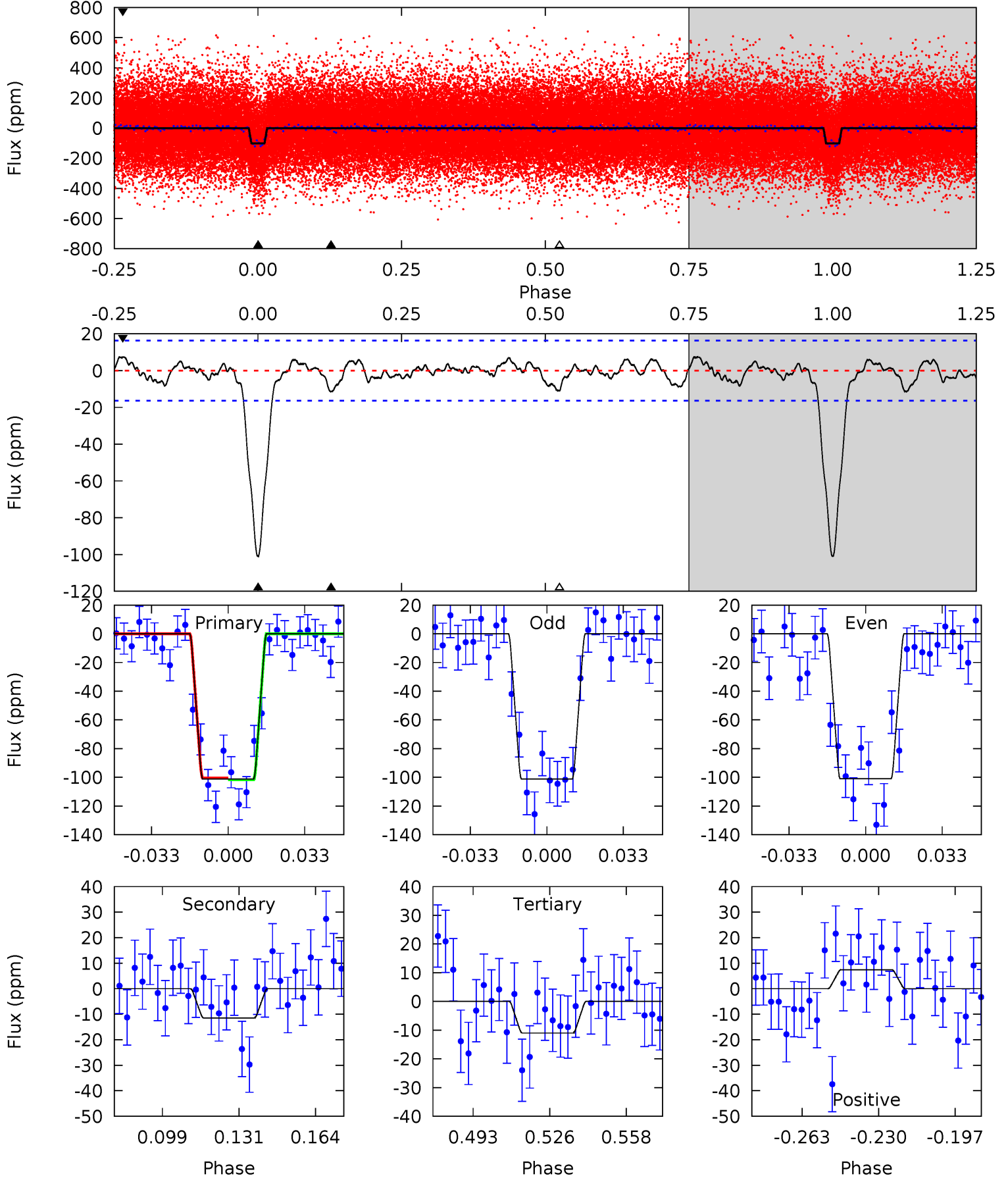
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.1	3.84	3.35	2.49	4.77	2.09	1.24	27.8	28.6	0.49	1.35	0.32	1.01	0.07	0.06



Alt Model-Shift Uniqueness Test

008415200-01, P = 4.521607 Days, E = 128.694116 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.7	3.35	3.23	2.18	4.79	2.13	1.11	26.4	27.5	0.13	1.17	0.00	0.95	0.07	0.18



Stellar Parameters For KIC 008415200

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5576^{+83}_{-75}	$4.201^{+0.182}_{-0.112}$	$0.160^{+0.150}_{-0.150}$	$1.289^{+0.198}_{-0.242}$	$0.963^{+0.073}_{-0.053}$	$0.633^{+0.601}_{-0.190}$
	+1%/-1%	+4%/-3%	+94%/-94%	+15%/-19%	+8%/-6%	+95%/-30%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 008415200-01 / KOI 2730.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-12 ± 3	$1.42^{+0.54}_{-0.47}$	1688^{+82}_{-96}	3631^{+580}_{-399}	$9.223^{+11.747}_{-4.924}$
Alt.	-11 ± 3	$1.43^{+0.52}_{-0.45}$	1692^{+76}_{-98}	3603^{+508}_{-386}	$8.714^{+10.183}_{-4.472}$

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 $A_{obs} \gg 1.0$

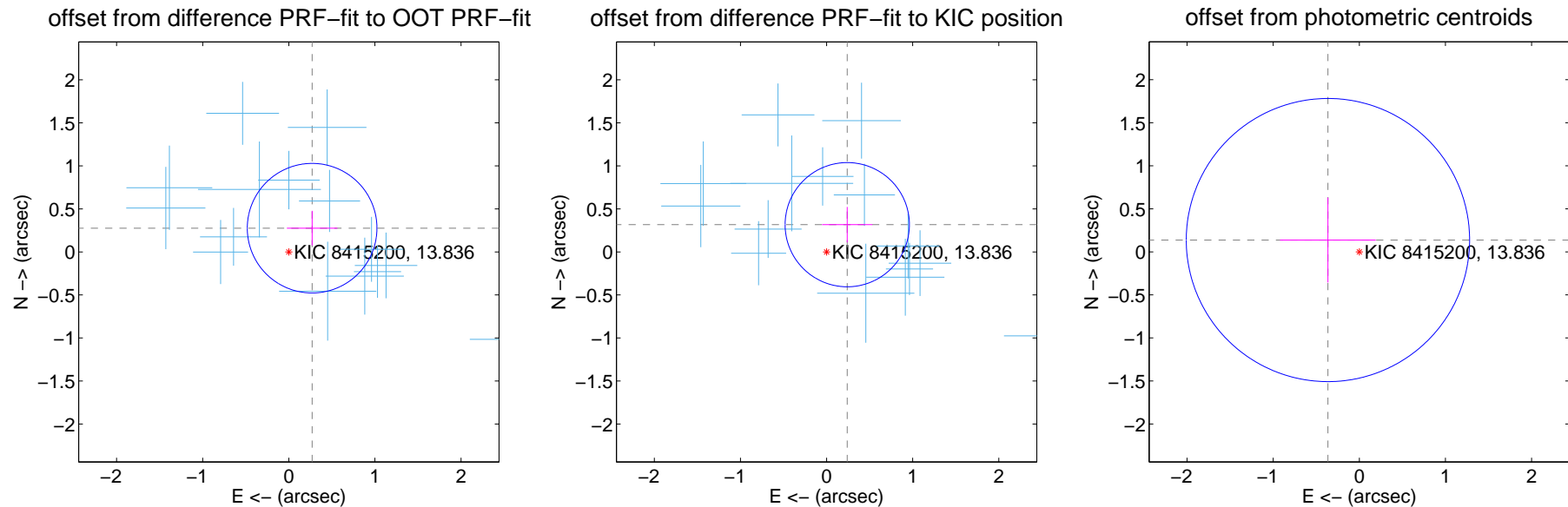
DV Centroid Data

Supplemental centroid analysis for 008415200-01. Kepler magnitude: 13.84. Transit SNR 23.92

There are 15 quarters with good PRF difference image offsets

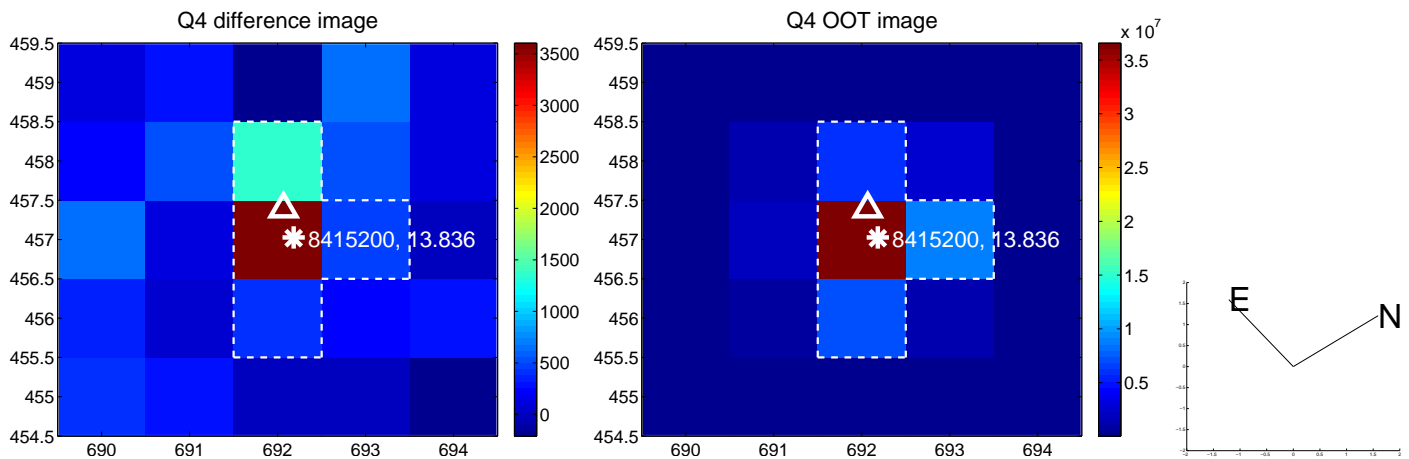
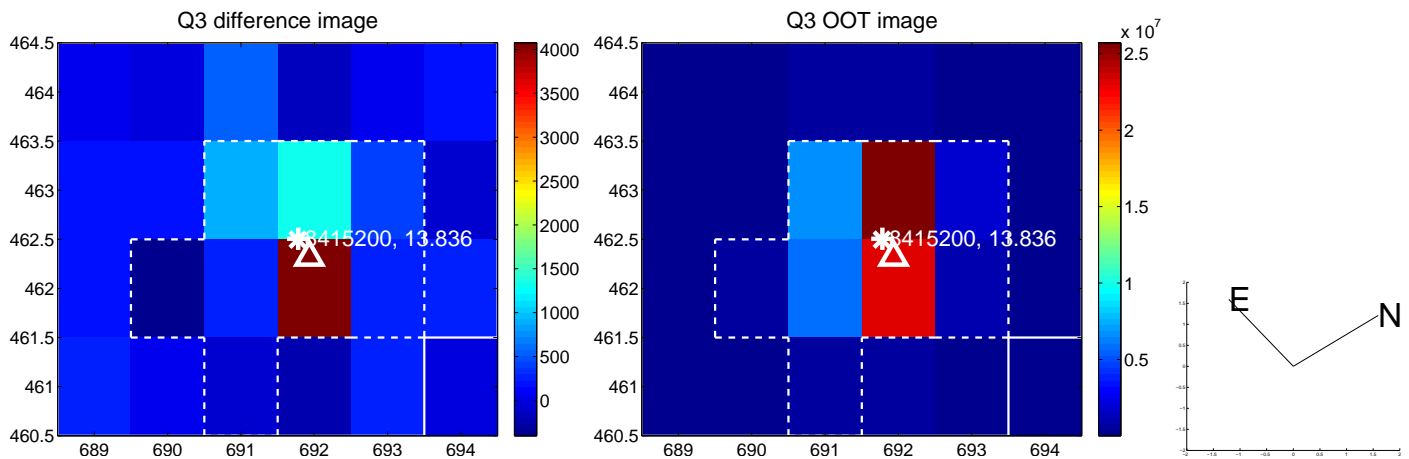
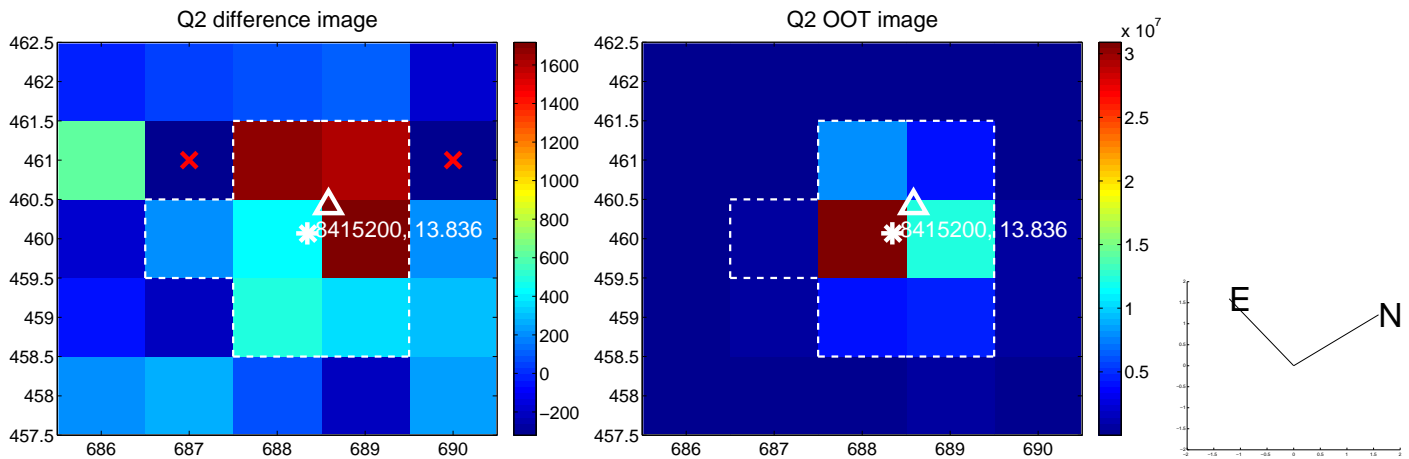
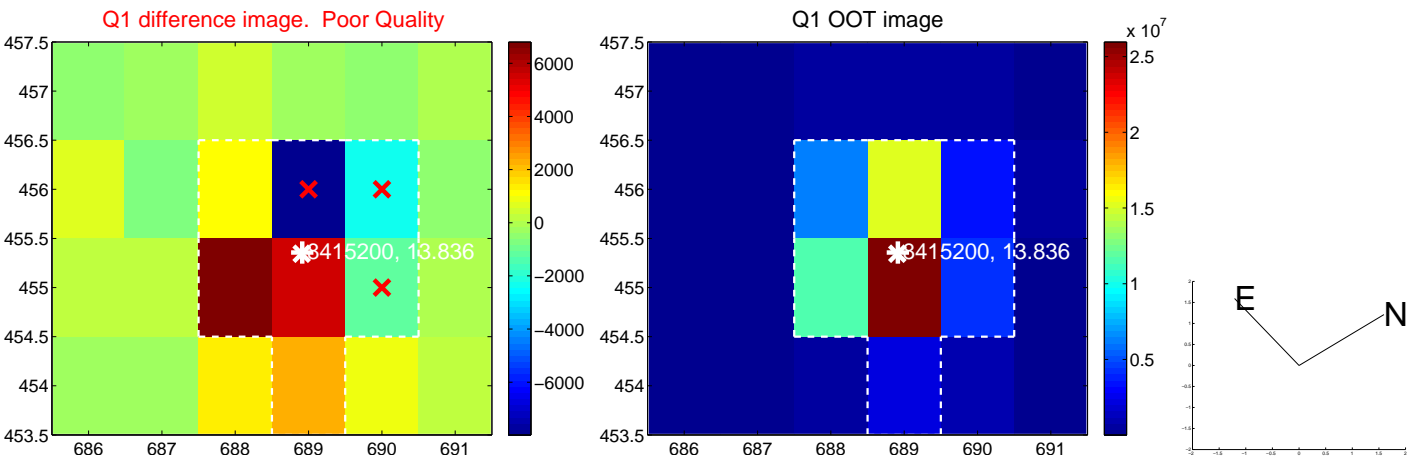
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.386 ± 0.251	1.54	-0.271 ± 0.293	0.276 ± 0.202
PRF-fit source offset from KIC position	0.397 ± 0.241	1.65	-0.240 ± 0.291	0.316 ± 0.206
photometric centroid source offset	0.39 ± 0.55	0.71	0.36 ± 0.56	0.14 ± 0.49

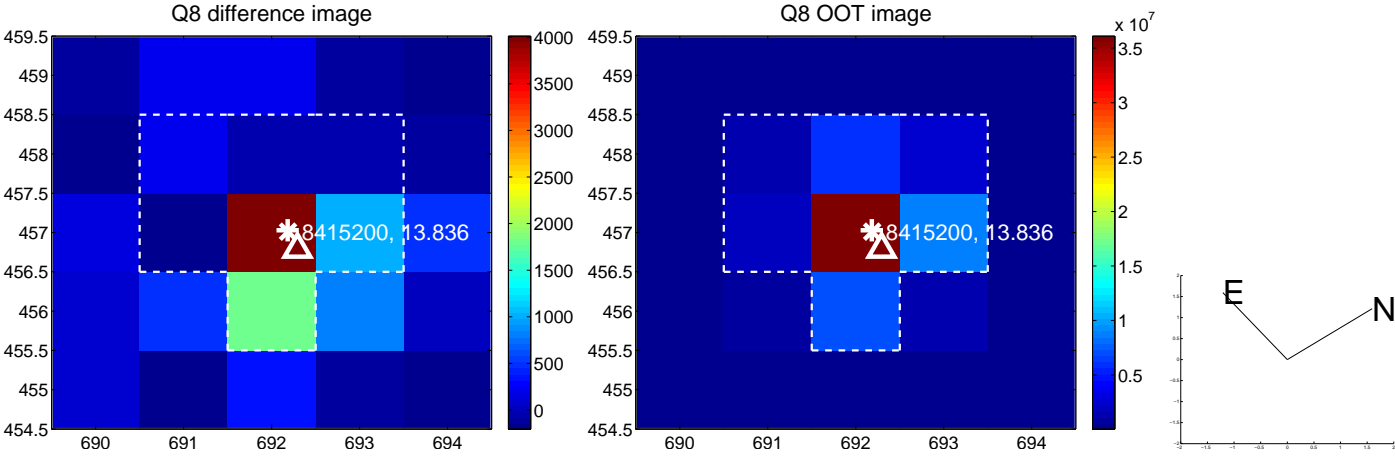
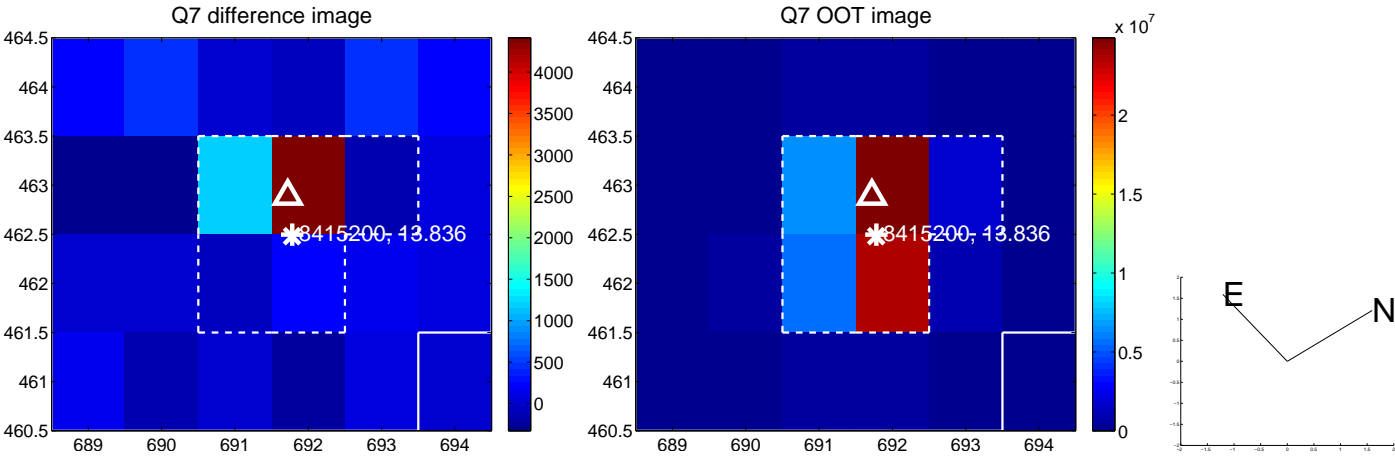
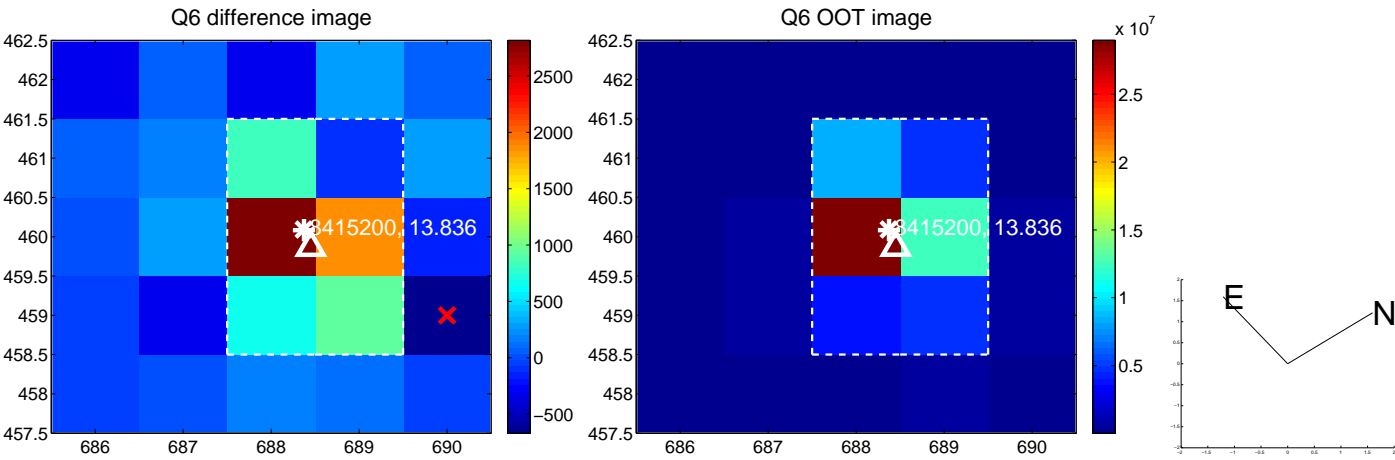
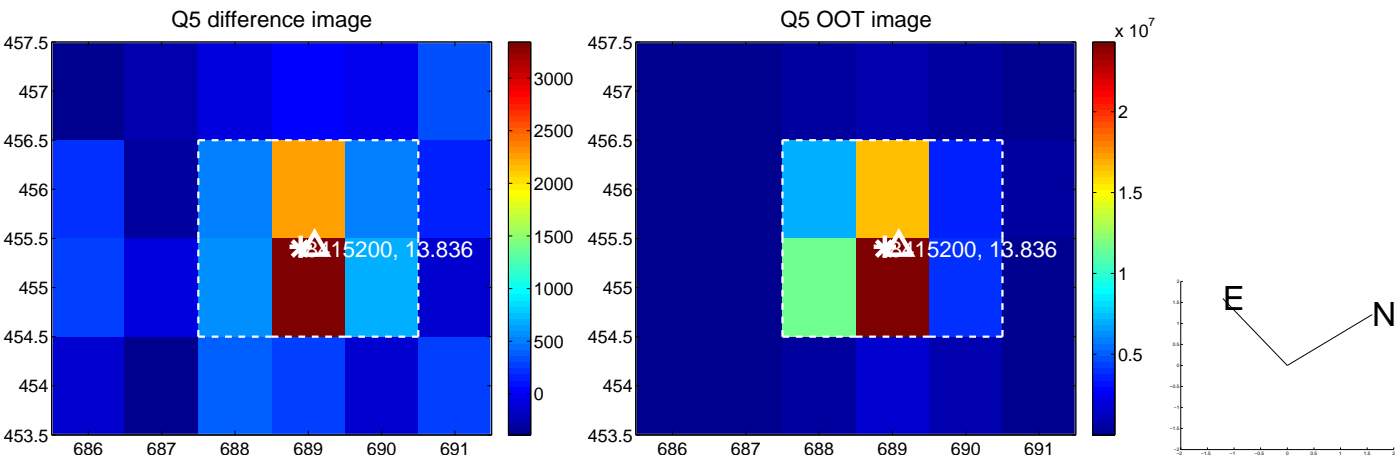


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

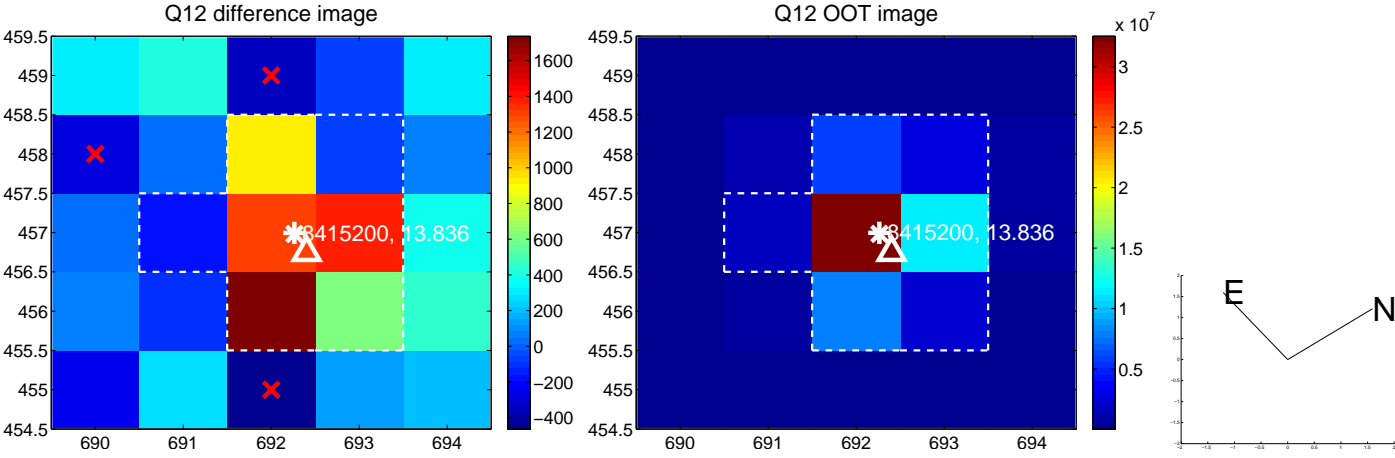
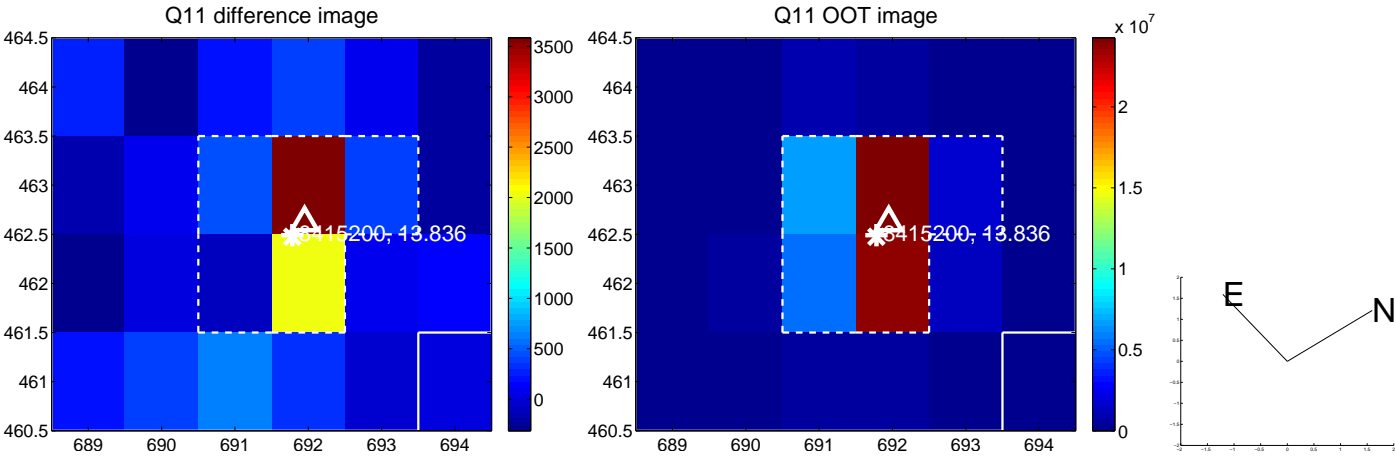
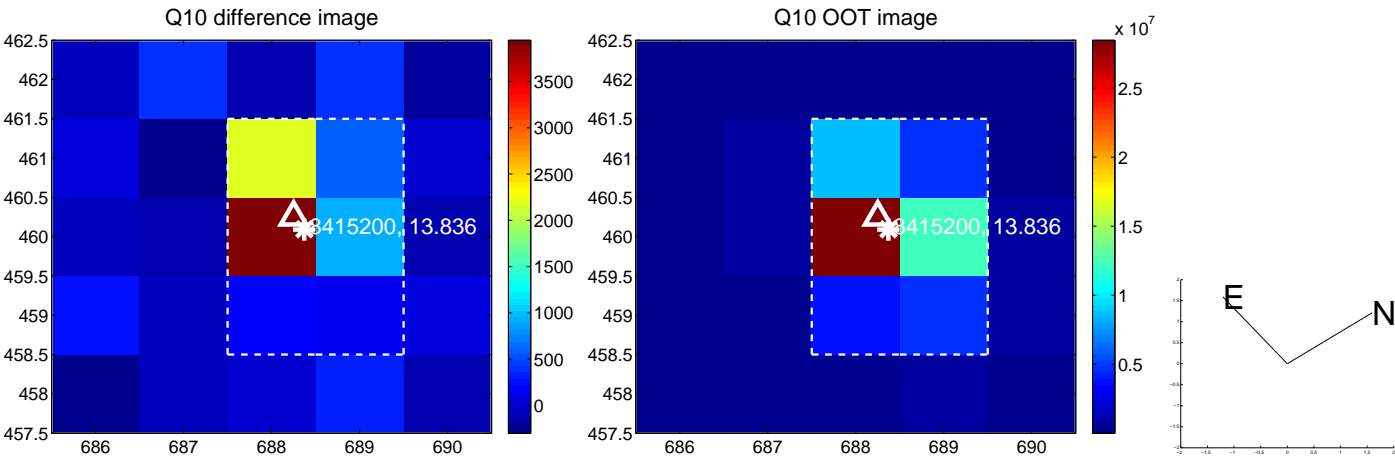
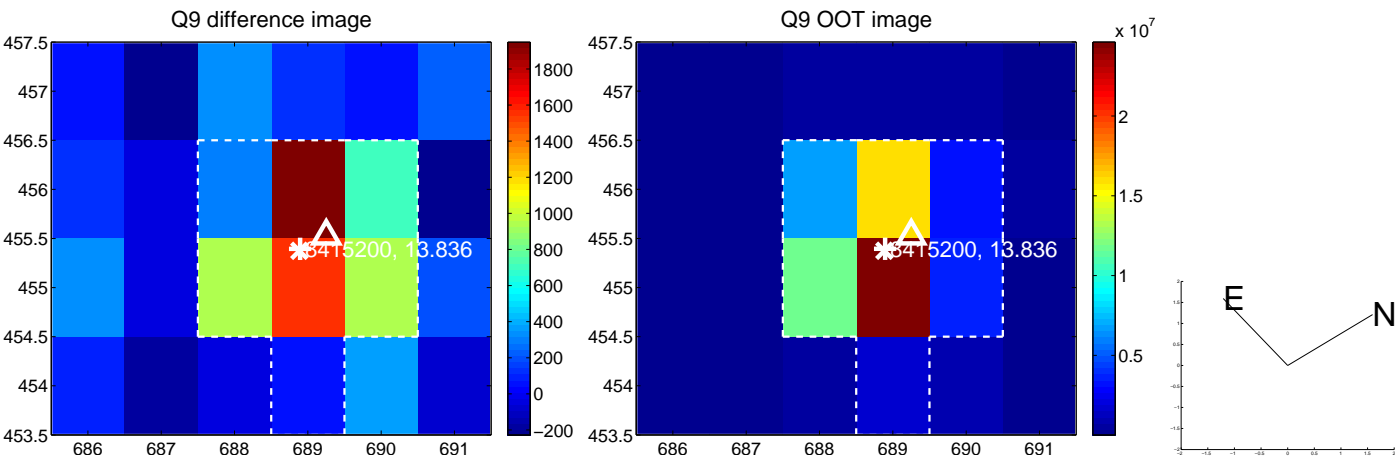
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



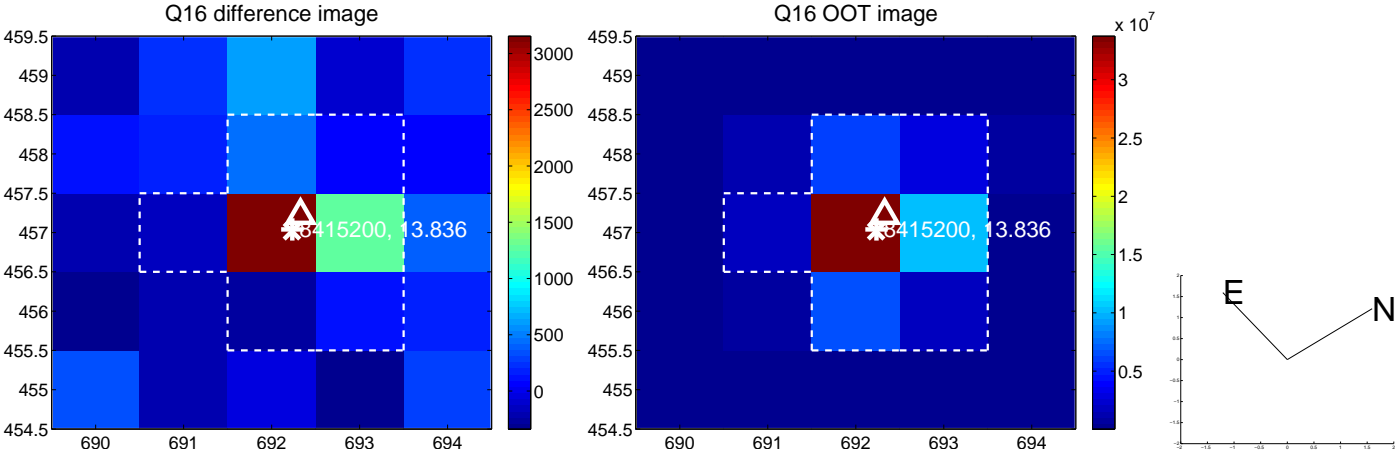
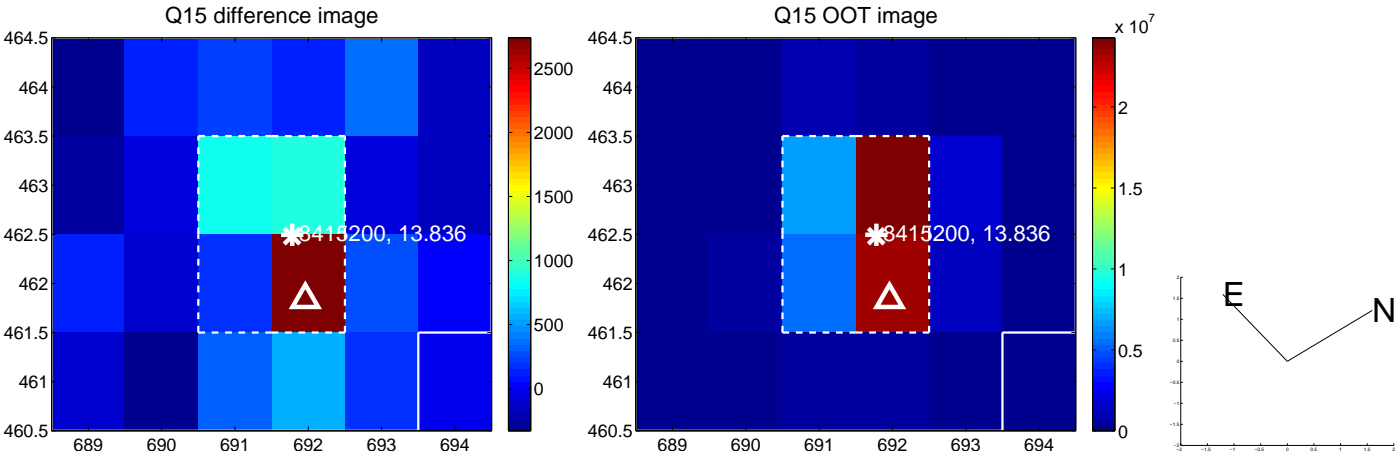
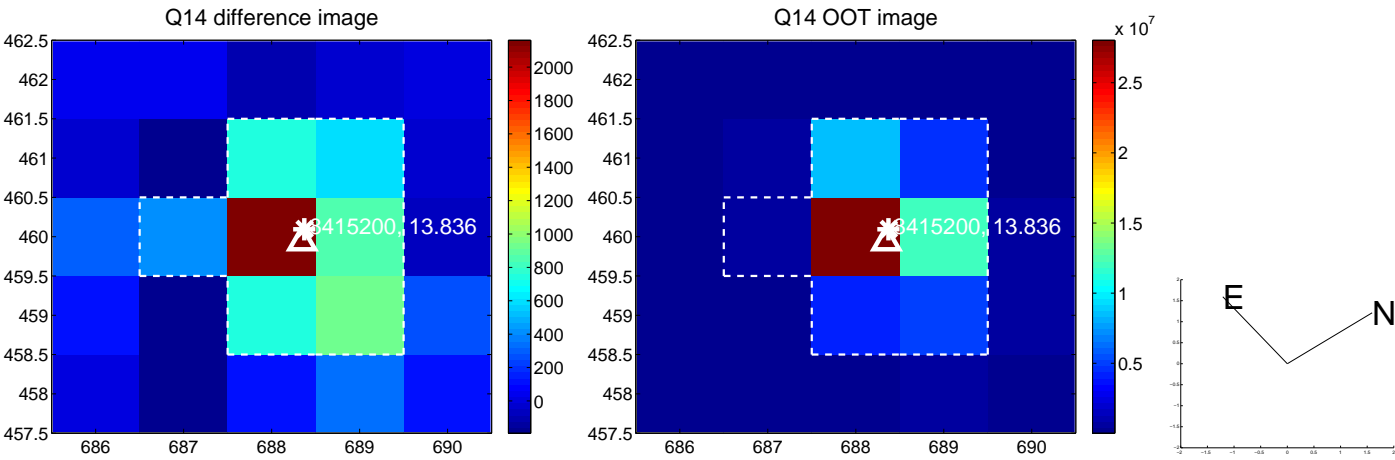
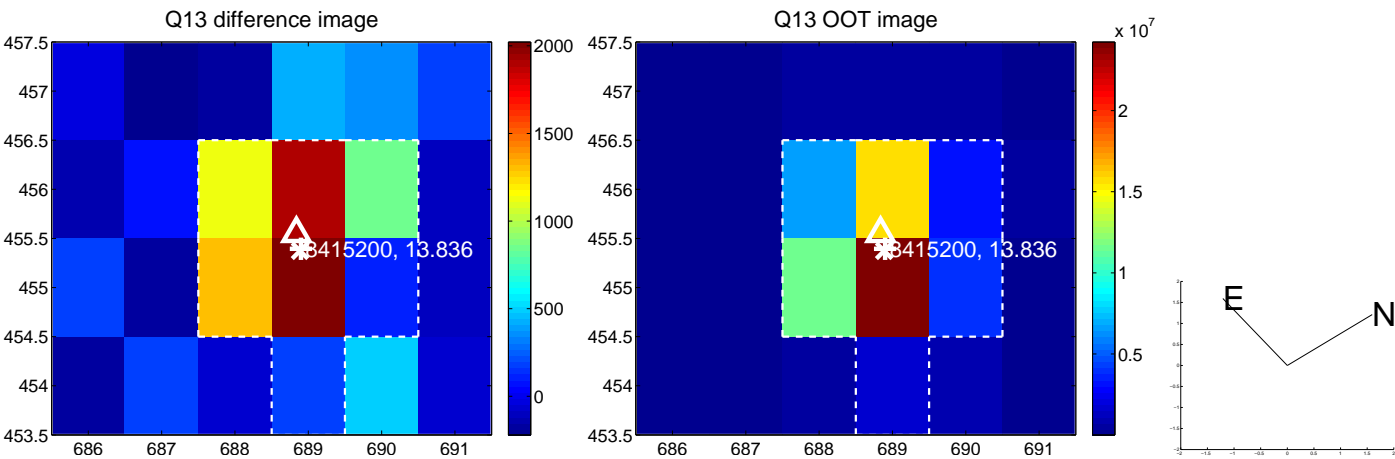
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



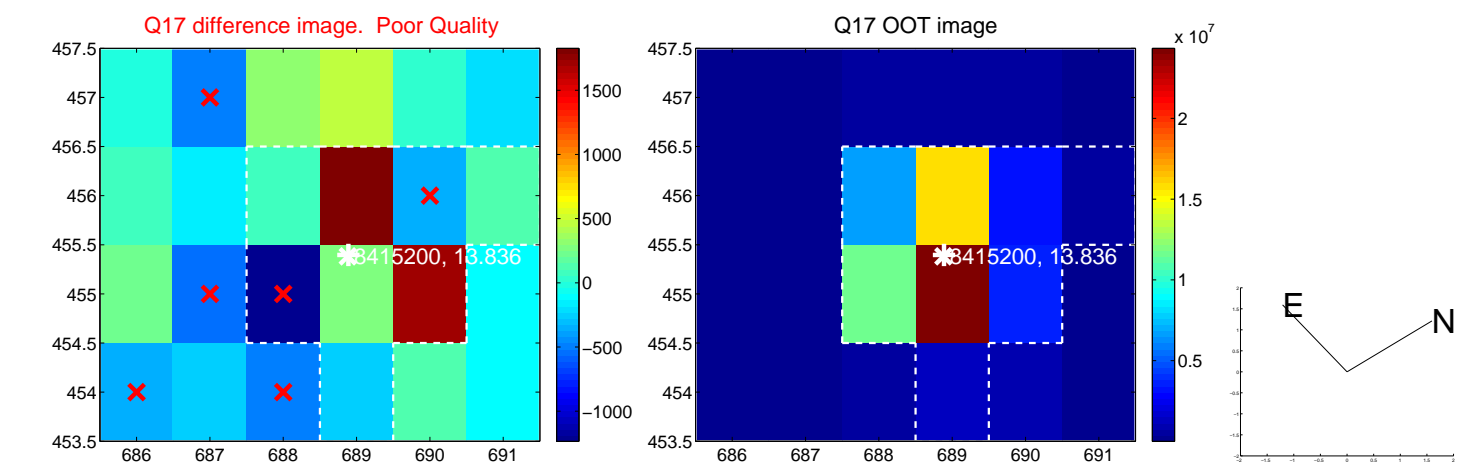
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



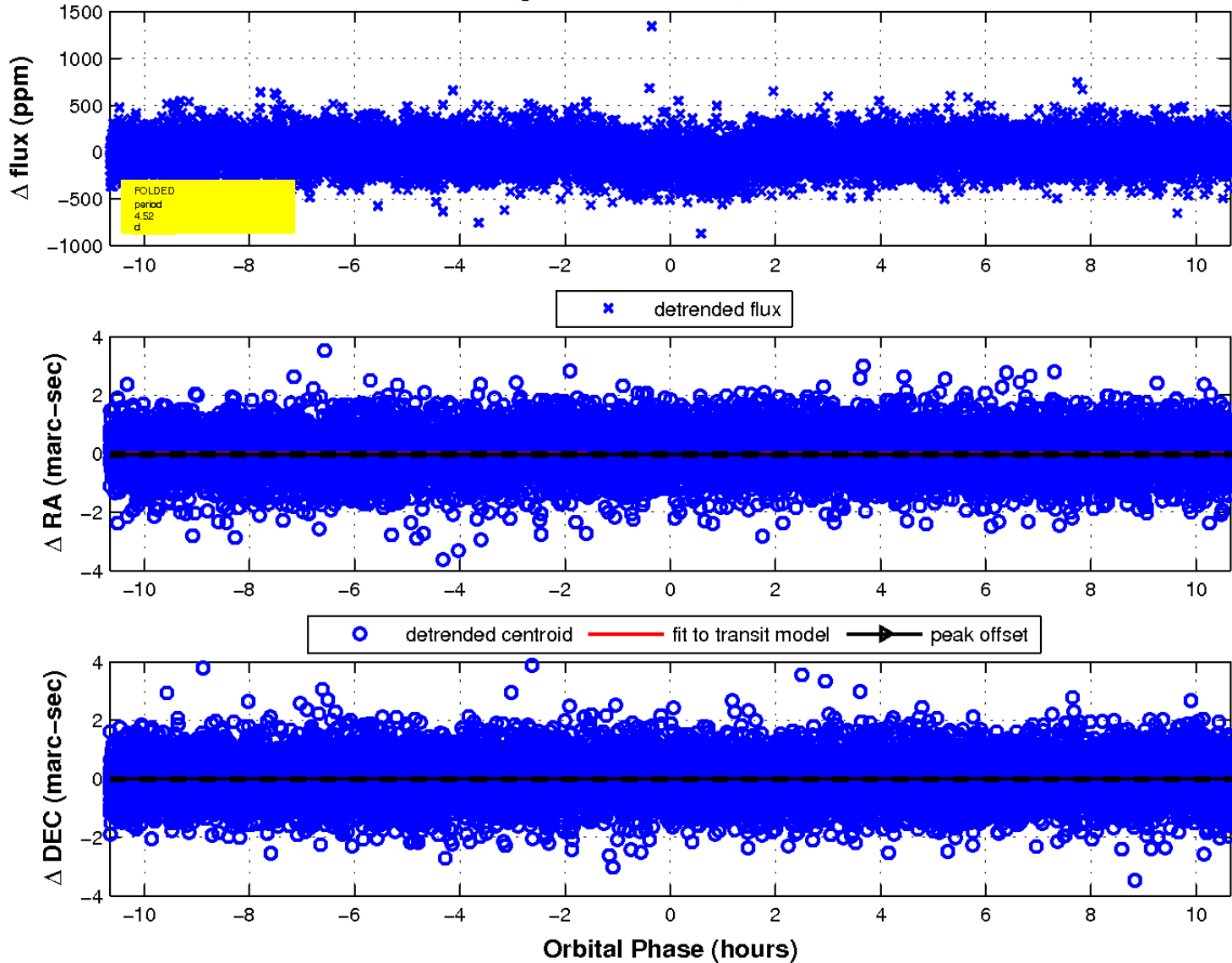
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

