

KIC 001431122

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})
001431122-01	OBS	0994.01	4.298909	132.862639	229.7	2.271	16.0	18.7	0.99	5300	1.68	283.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001431122-01	OBS	PC	0.99	0	0	0	0	CENT_KIC_POS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

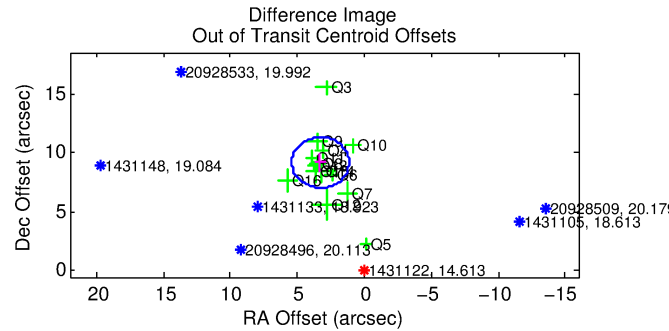
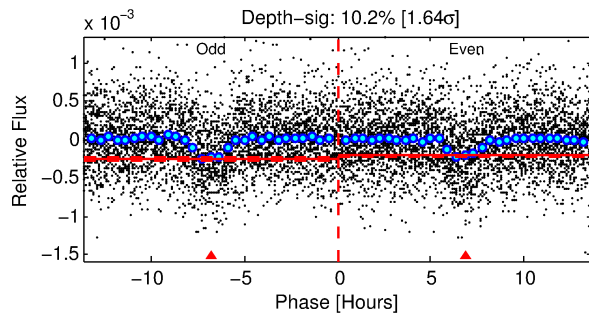
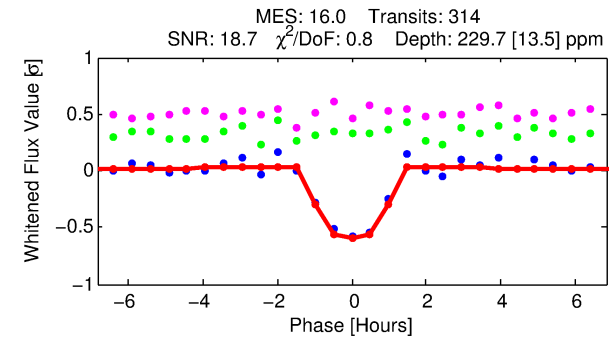
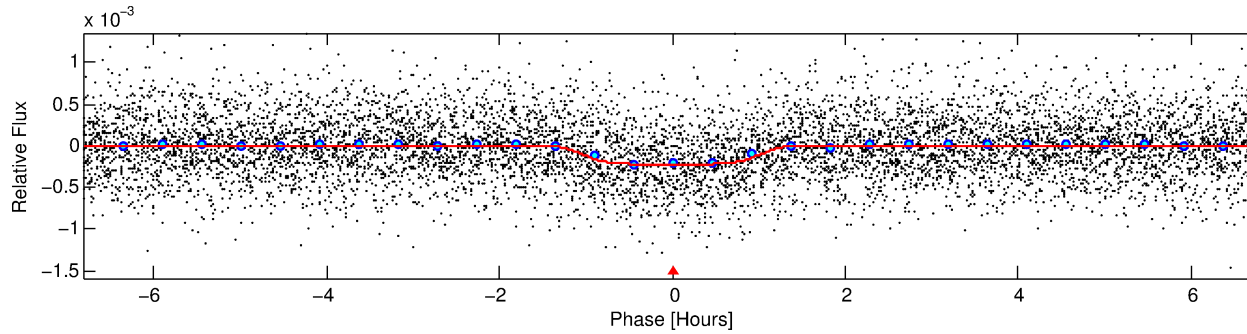
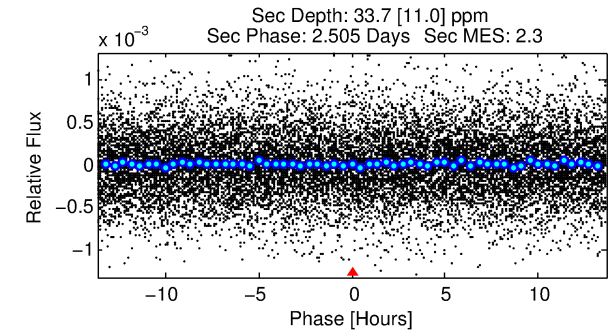
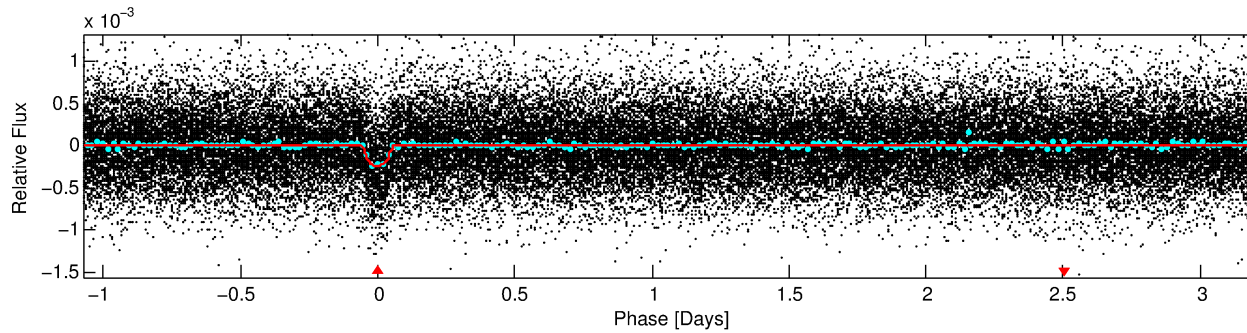
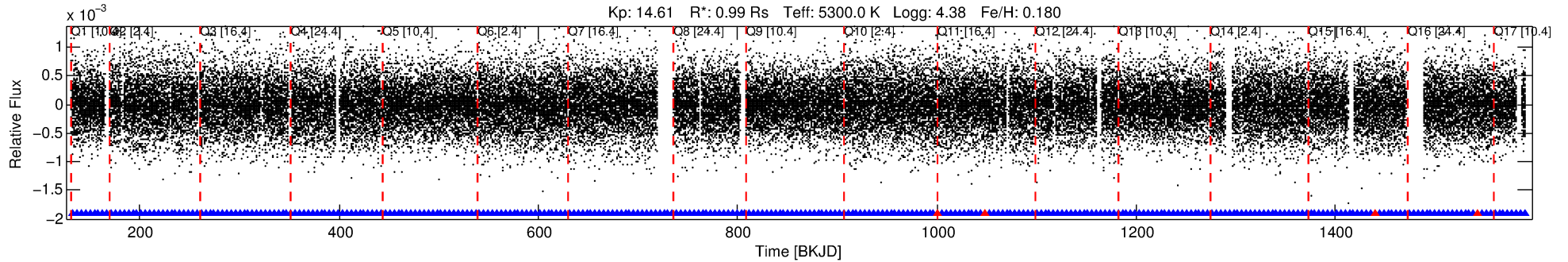
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001431122-01

No Significant Match Found

DV One-Page Summary

KIC: 1431122 Candidate: 1 of 1 Period: 4.299 d
KOI: K00994.01 Corr: 0.953



DV Fit Results:

Period = 4.29891 [0.00001] d
Epoch = 132.8626 [0.0022] BKJD
Rp/R* = 0.0156 [0.0095]
a/R* = 8.87 [20.63]
b = 0.81 [1.02]
Seff = 283.64 [64.93]
Teq = 1046 [60] K
Rp = 1.68 [1.05] Re
a = 0.0492 [0.0065] AU
Ag = 15.86 [20.29] [0.73σ]
Teffp = 3229 [1019] K [2.14σ]

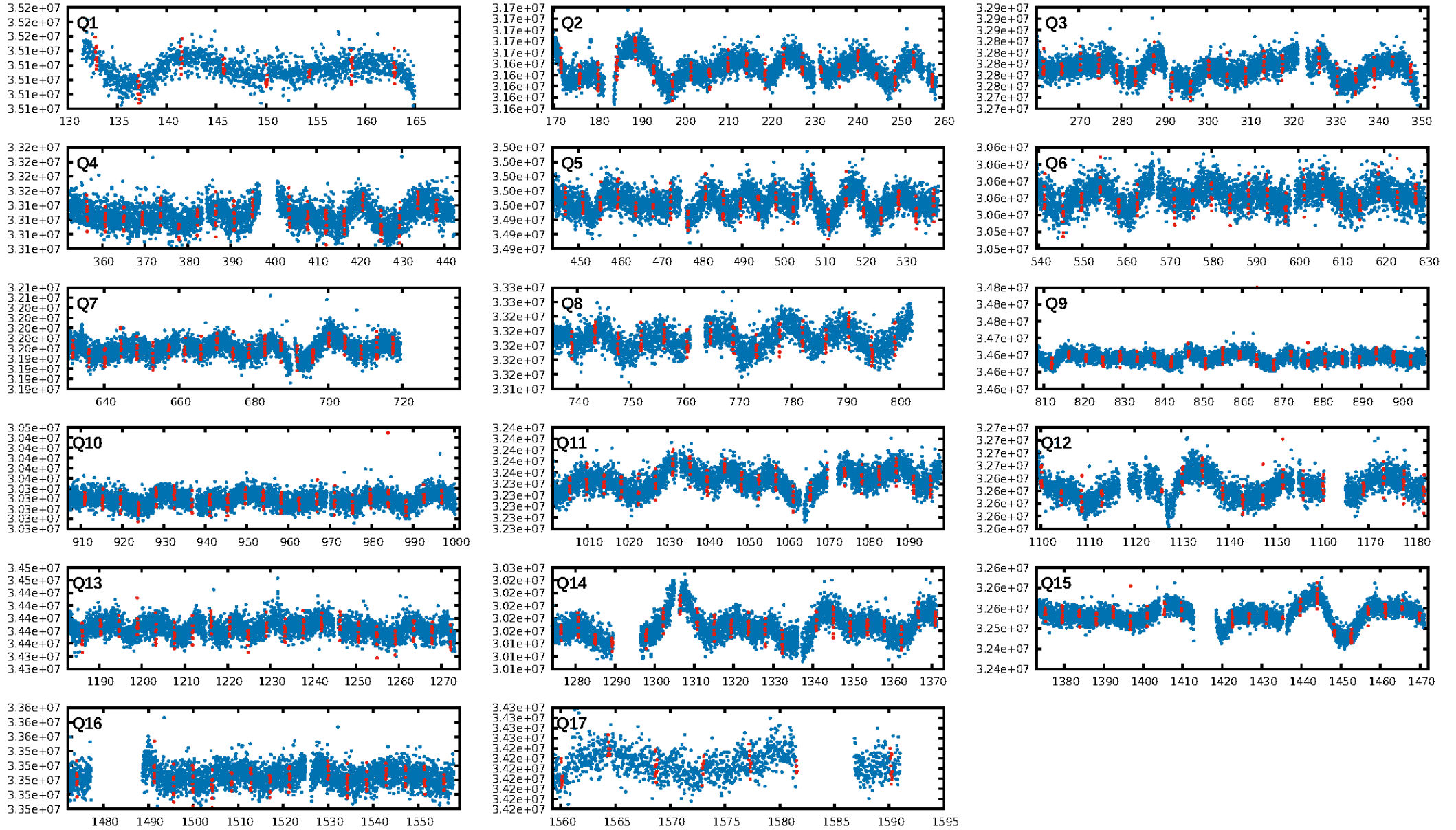
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.02e-56
RollingBand-fgt: 0.99 [295/299]
GhostDiagnostic-chr: 4.009
Centroid-sig: 0.0%
Centroid-so: 2.032 arcsec [4.42σ]
OotOffset-rm: 9.741 arcsec [13.69σ]
KicOffset-rm: 0.686 arcsec [1.86σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.64 [9/14]
DiffImageOverlap-fno: 1.00 [17/17]

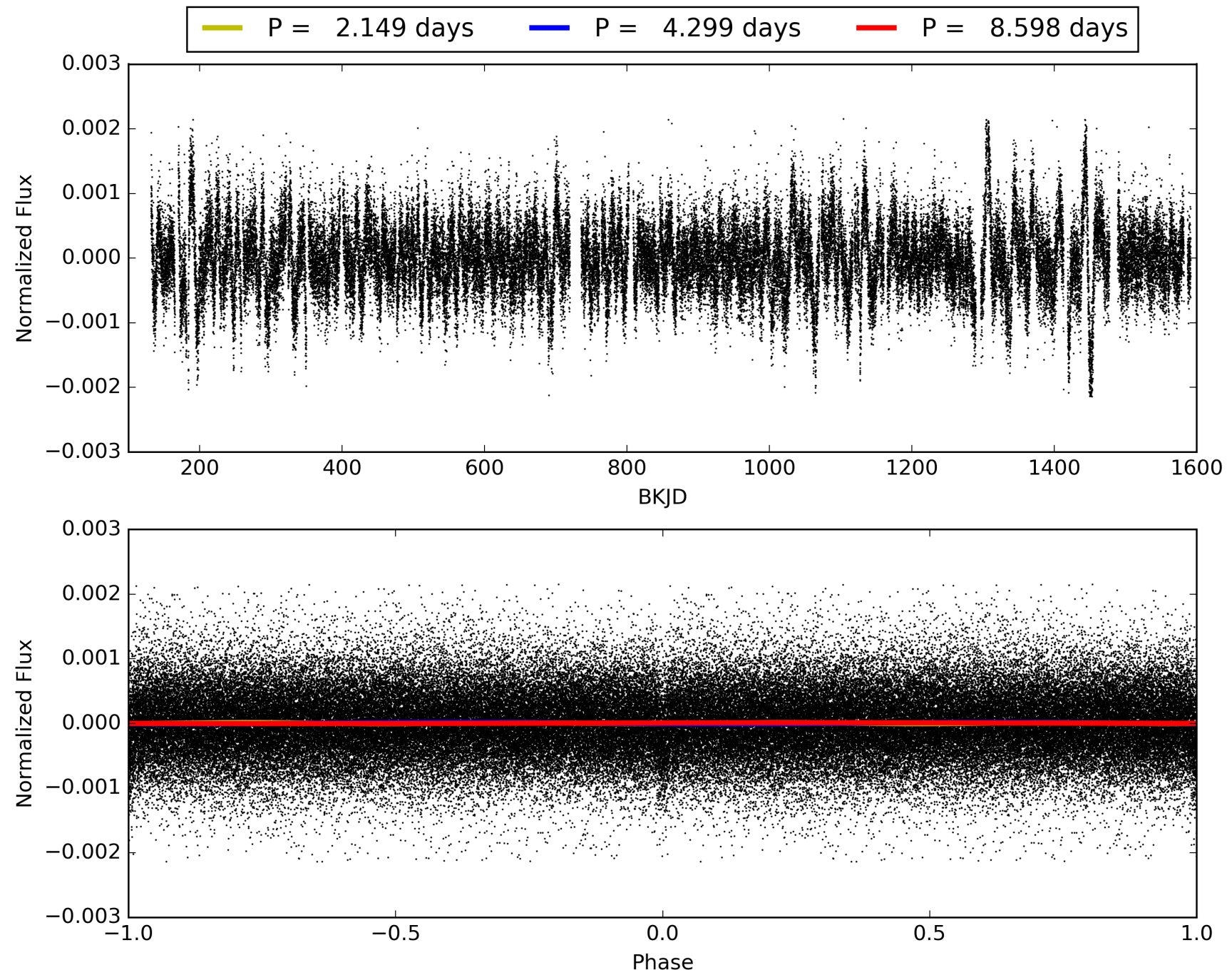
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:42:47 Z

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

TCE 001431122-01, PDC Light Curves

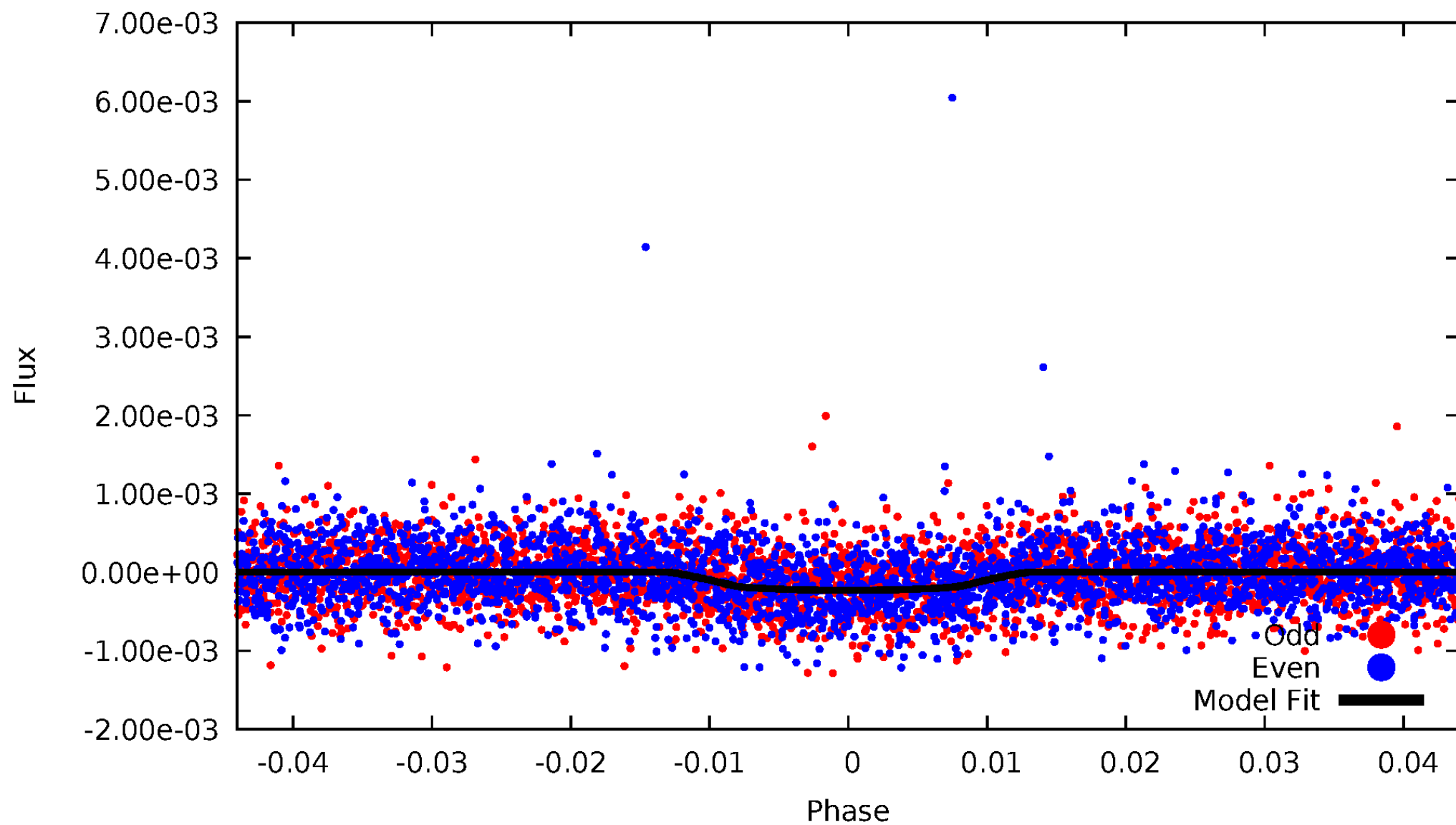


TCE 001431122-01



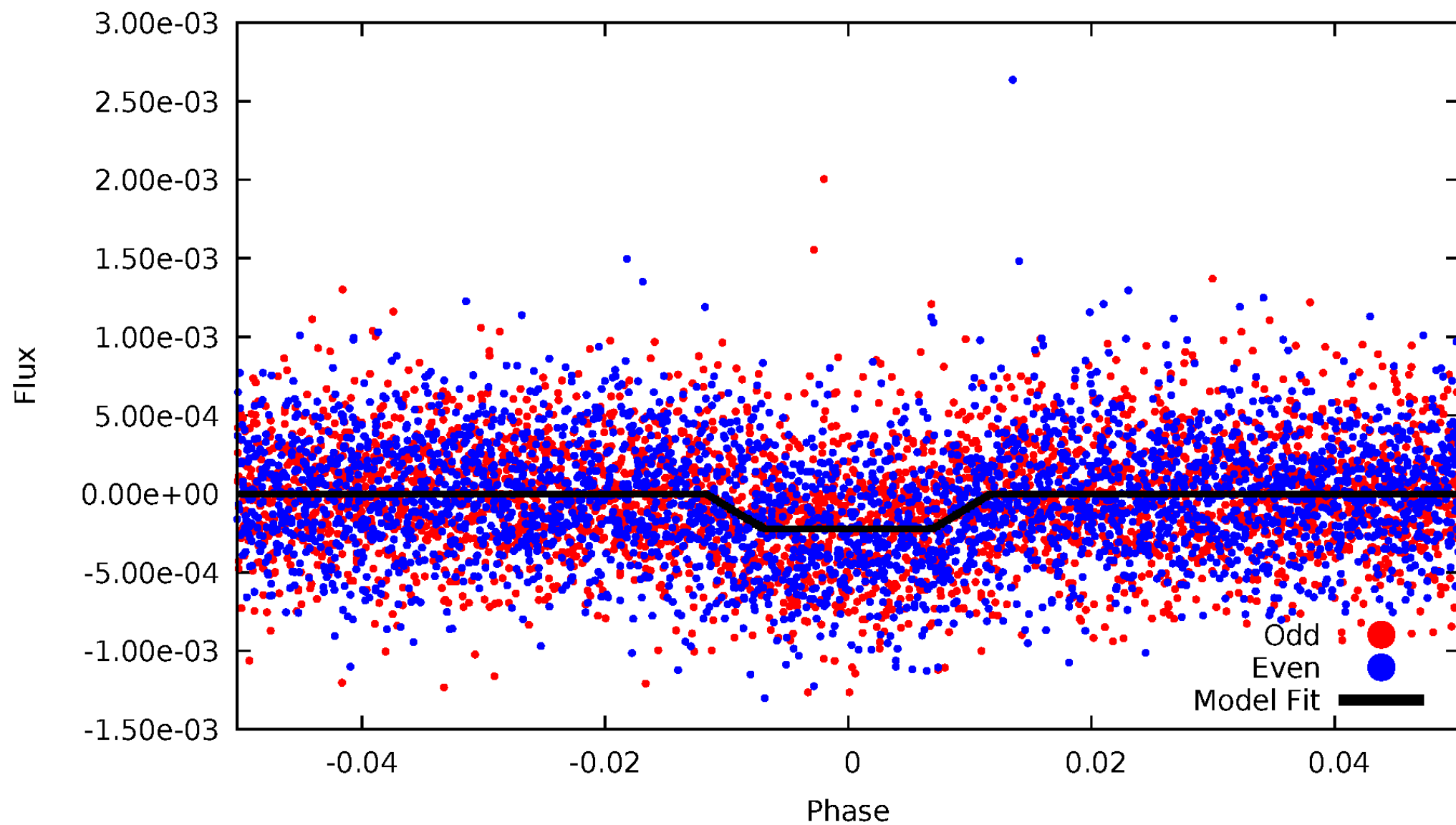
DV Odd/Even

TCE 001431122-01



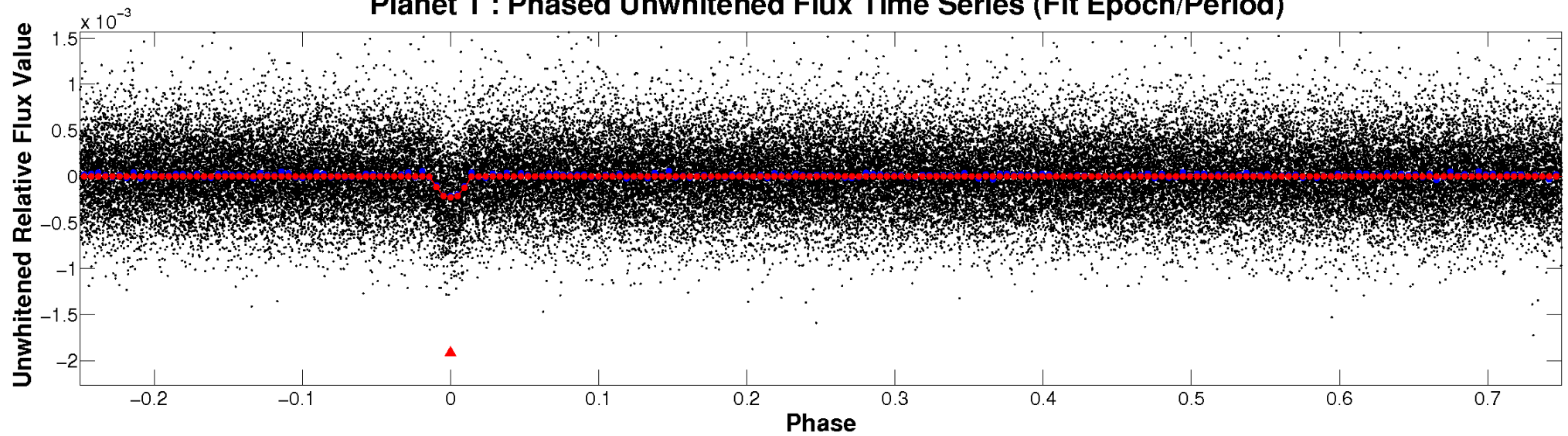
ALT Odd/Even

TCE 001431122-01

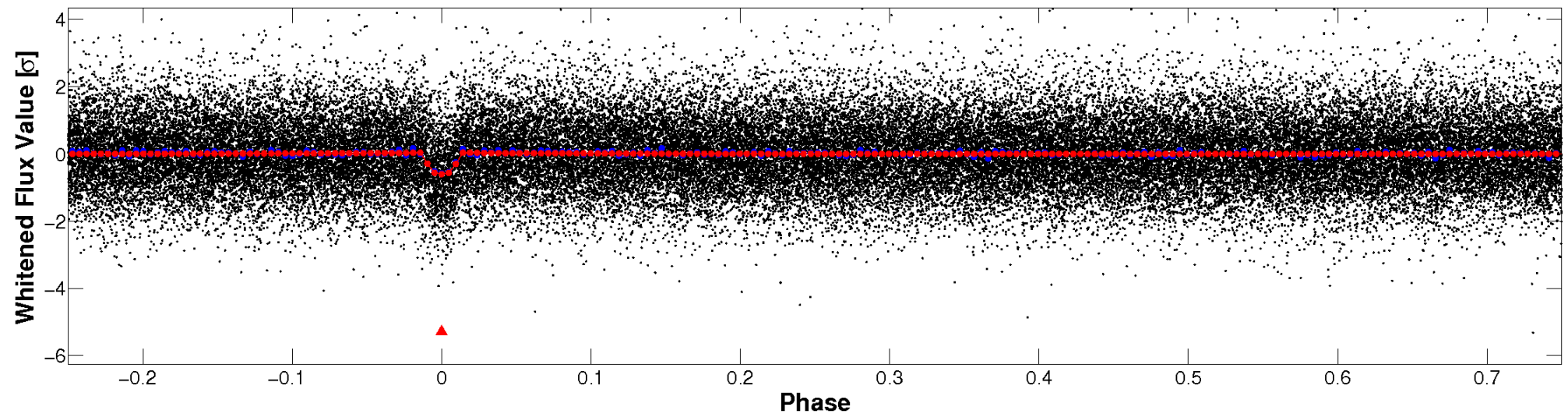


Non-Whitened Vs. Whitened Light Curve

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

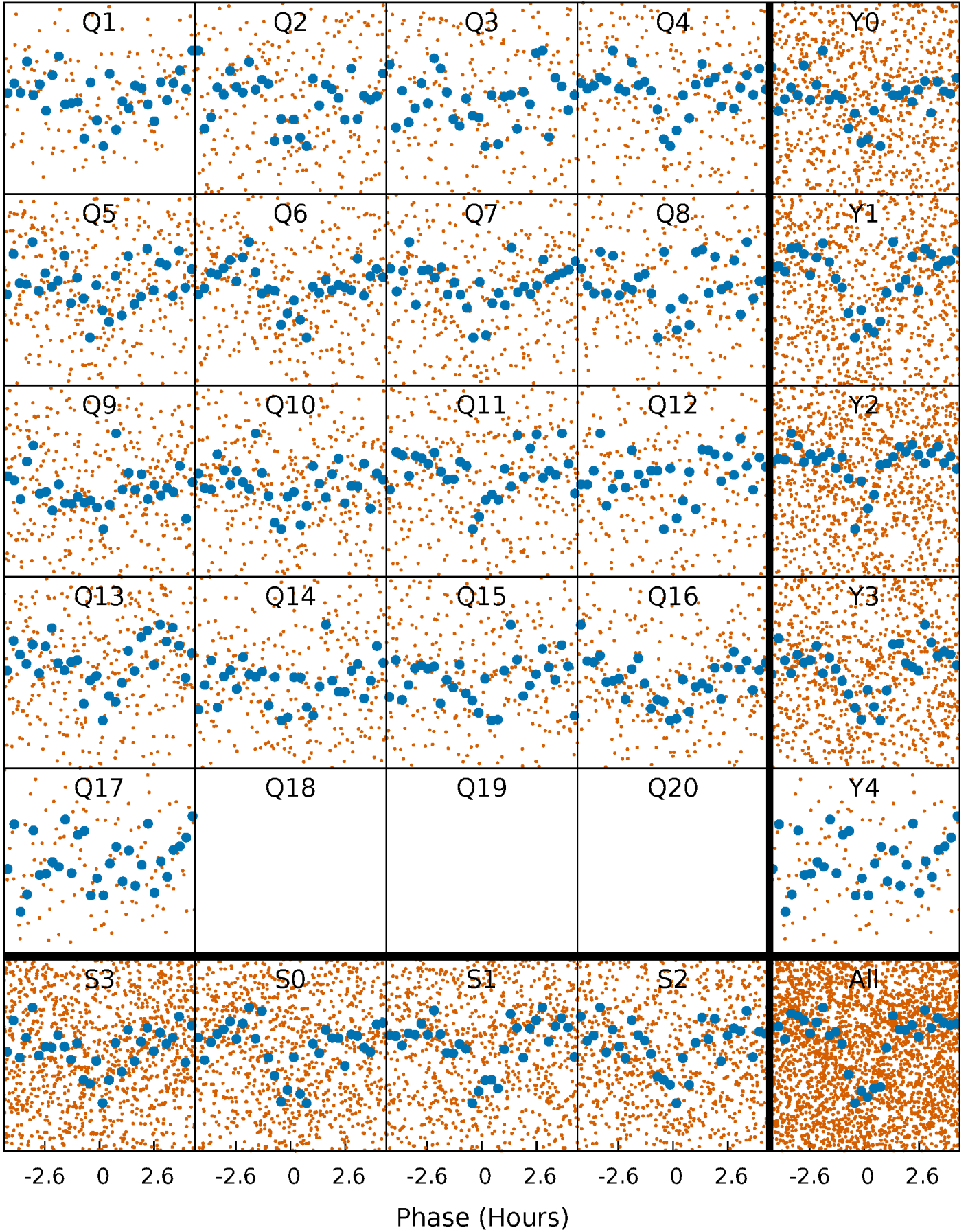


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



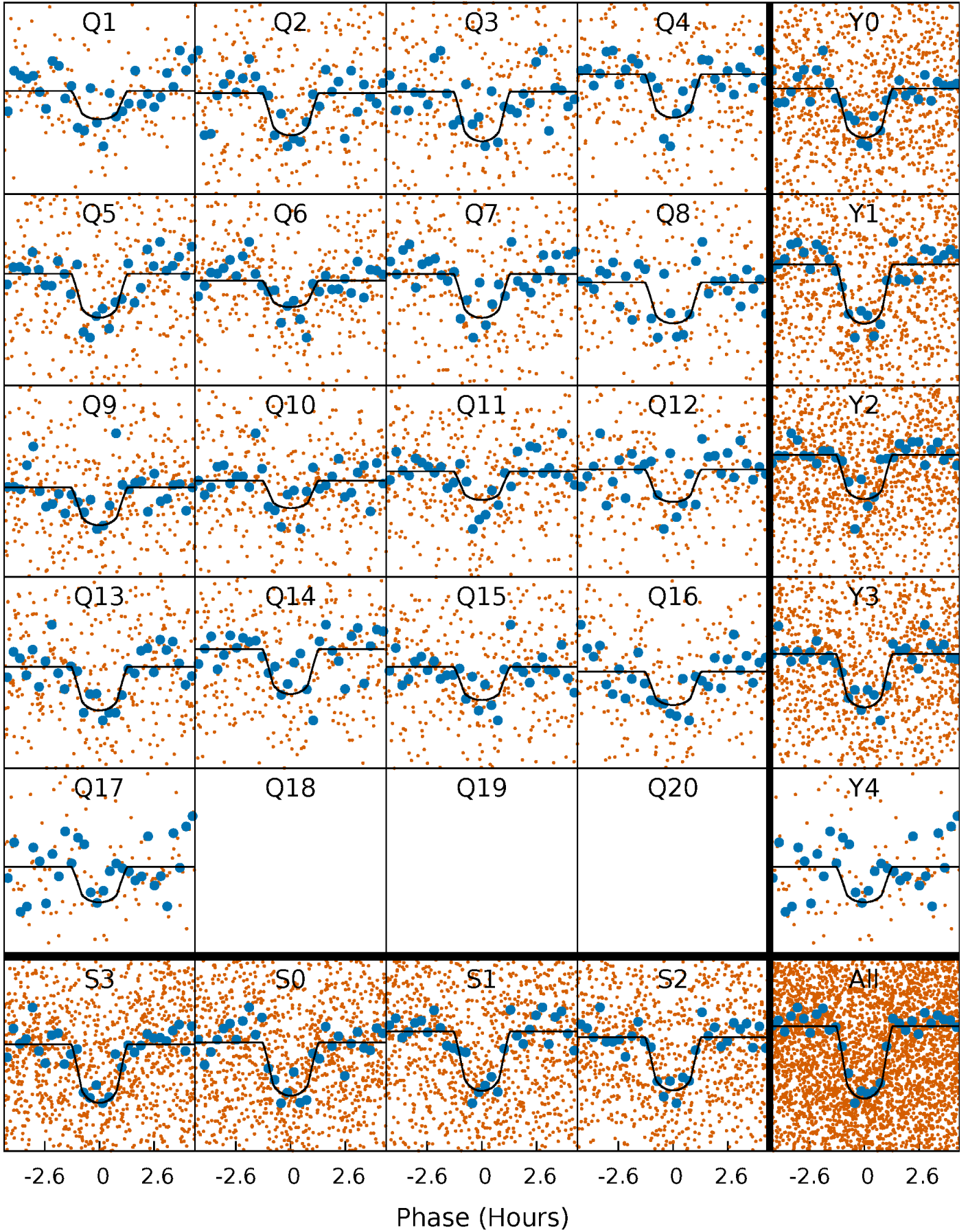
PDC Quarter-Phased Transit Curves

TCE 001431122-01 P= 4.298909 Days $T_0=132.862639$ (BKJD)



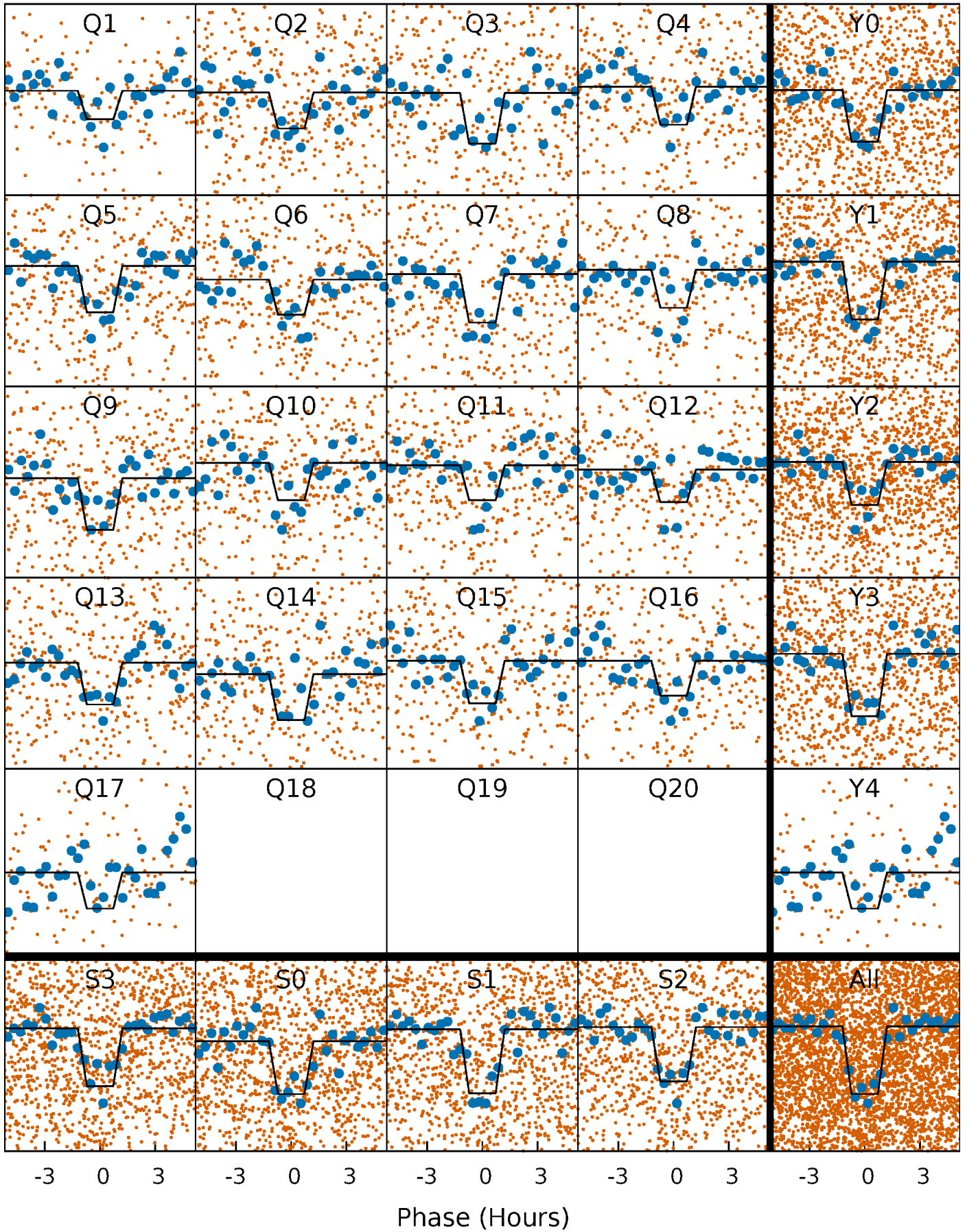
DV Quarter-Phased Transit Curves

TCE 001431122-01 P= 4.298909 Days $T_0=132.862639$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

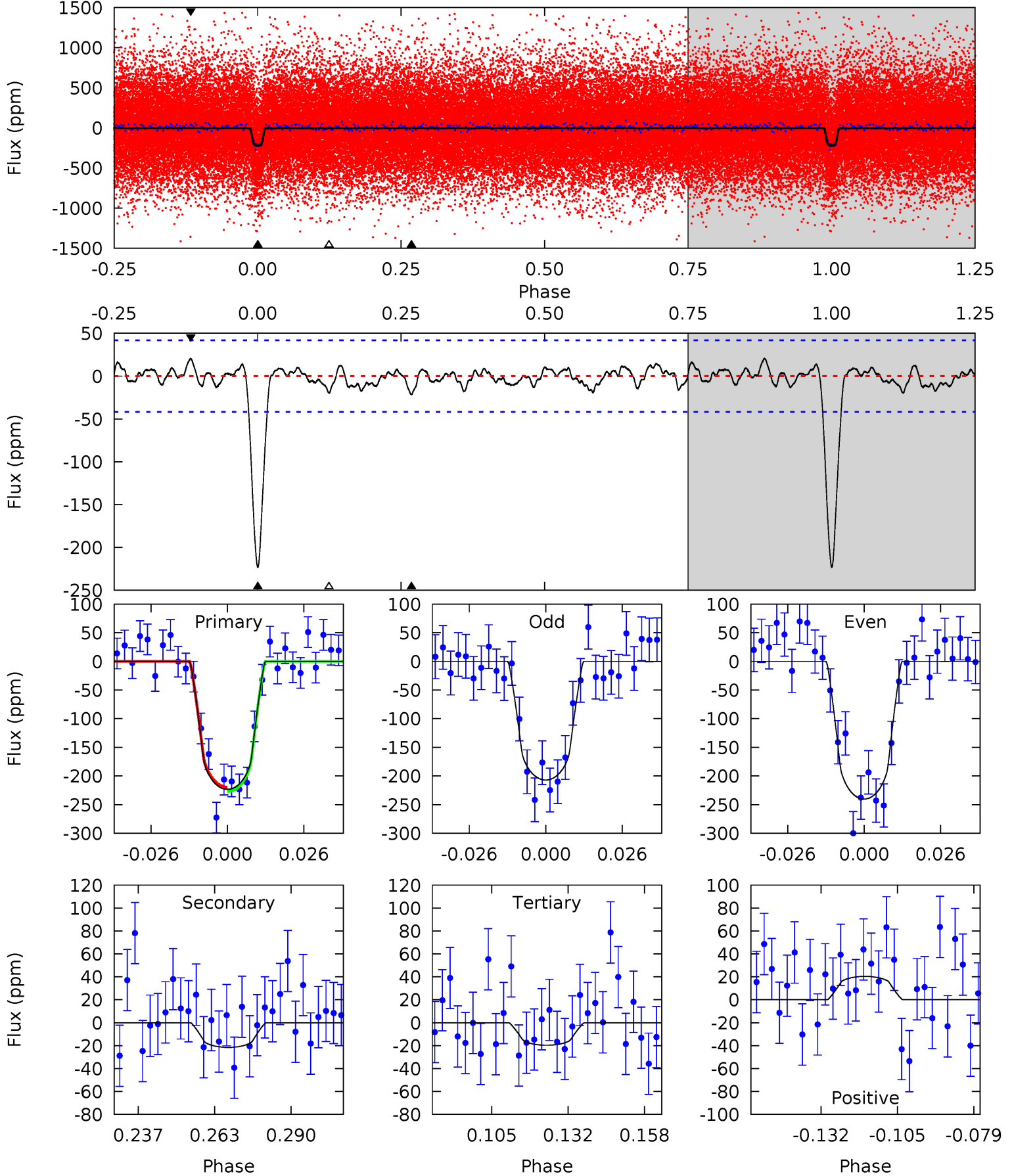
TCE 001431122-01 P= 4.298918 Days $T_0=132.862057$ (BKJD)



DV Model-Shift Uniqueness Test

001431122-01, P = 4.298909 Days, E = 128.563730 Days

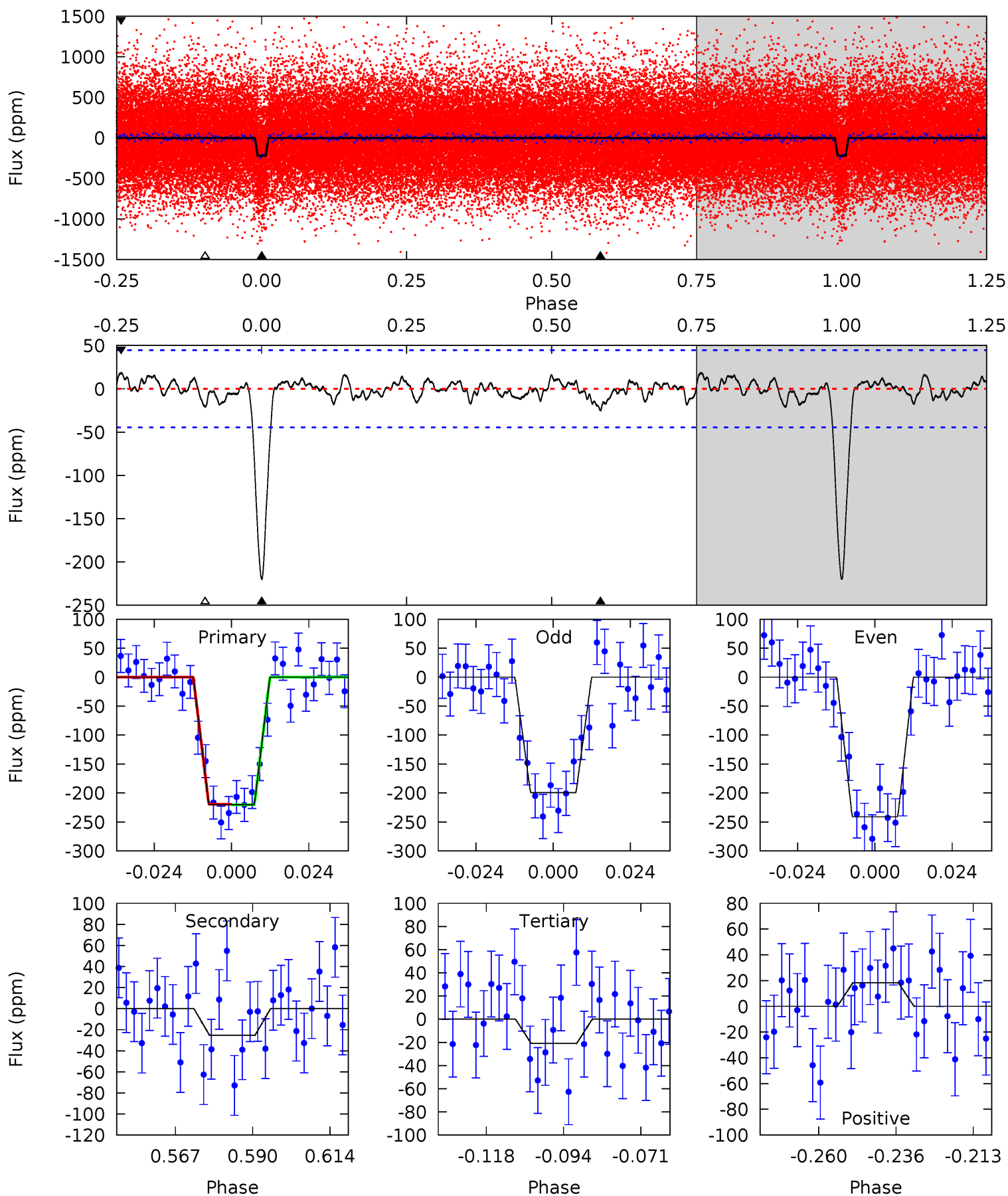
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.8	2.49	2.27	2.35	4.84	2.22	0.91	23.5	23.5	0.22	0.14	1.92	0.97	0.08	0.41



Alt Model-Shift Uniqueness Test

001431122-01, P = 4.298918 Days, E = 128.563139 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.0	2.75	2.28	1.99	4.86	2.26	0.85	21.7	22.0	0.47	0.76	2.27	0.97	0.08	0.05



Stellar Parameters For KIC 001431122

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5300^{+87}_{-71}	$4.385^{+0.132}_{-0.088}$	$0.180^{+0.150}_{-0.150}$	$0.986^{+0.124}_{-0.124}$	$0.861^{+0.061}_{-0.031}$	$1.264^{+0.692}_{-0.351}$
	+2%/-1%	+3%/-2%	+83%/-83%	+13%/-13%	+7%/-4%	+55%/-28%
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 001431122-01 / KOI 0994.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-22 ± 9	$1.72^{+1.08}_{-0.92}$	1456^{+52}_{-62}	3321^{+1054}_{-507}	$9.144^{+36.960}_{-5.965}$
Alt.	-25 ± 9	$1.66^{+1.07}_{-0.87}$	1457^{+52}_{-63}	3446^{+1074}_{-512}	12^{+45}_{-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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

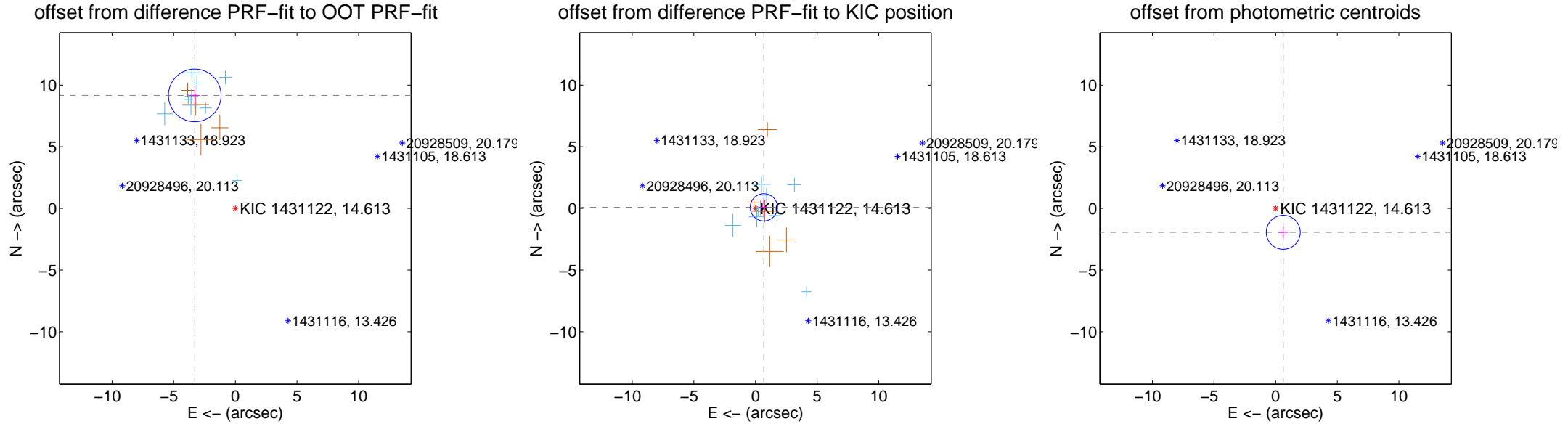
DV Centroid Data

Supplemental centroid analysis for 001431122-01. Kepler magnitude: 14.61. Transit SNR 18.71

There are 9 quarters with good PRF difference image offsets

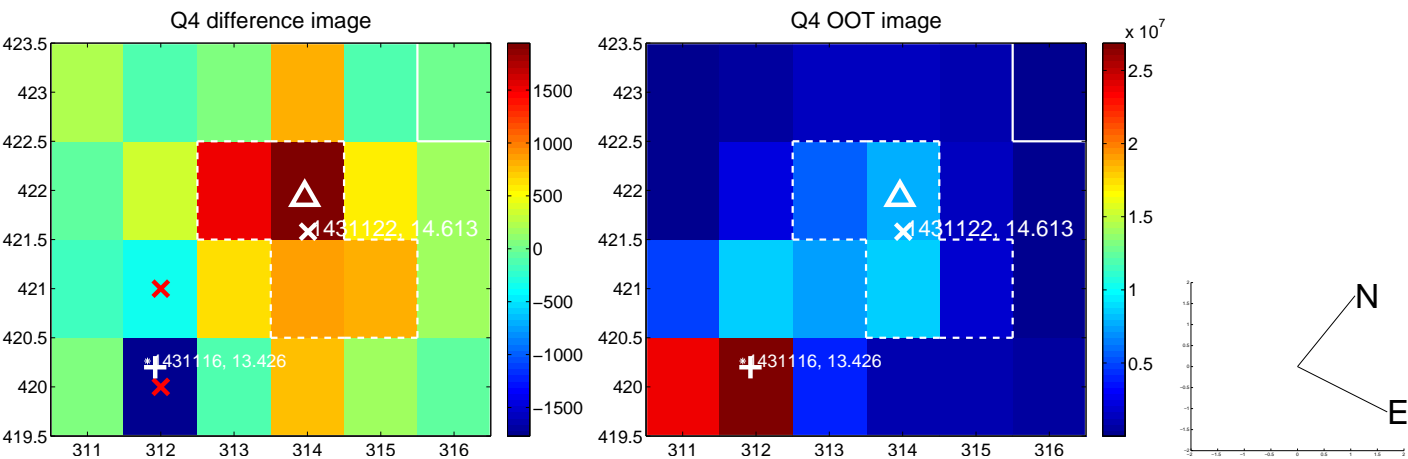
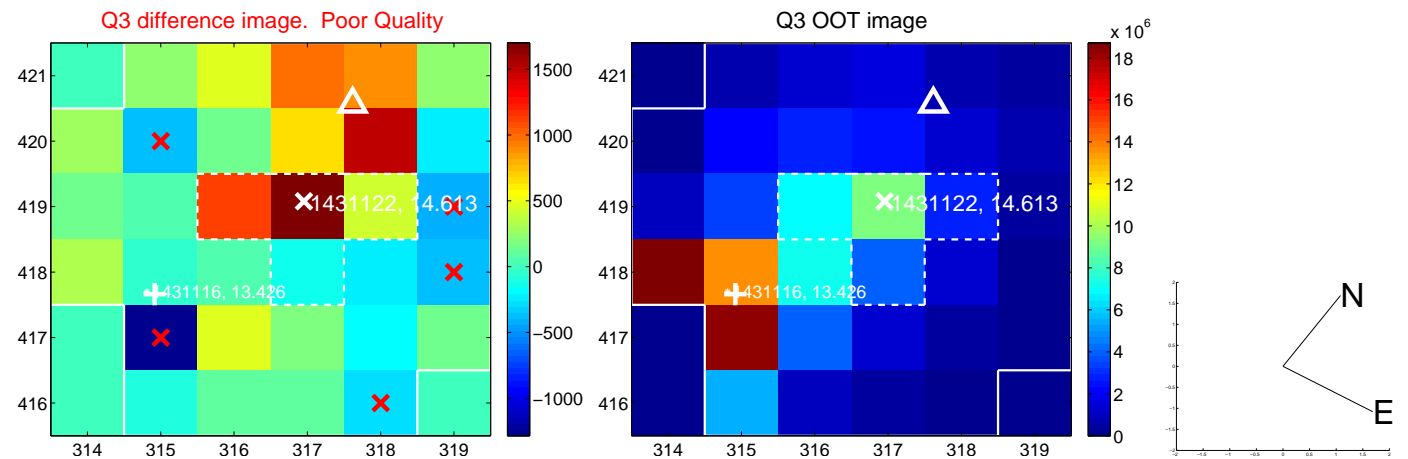
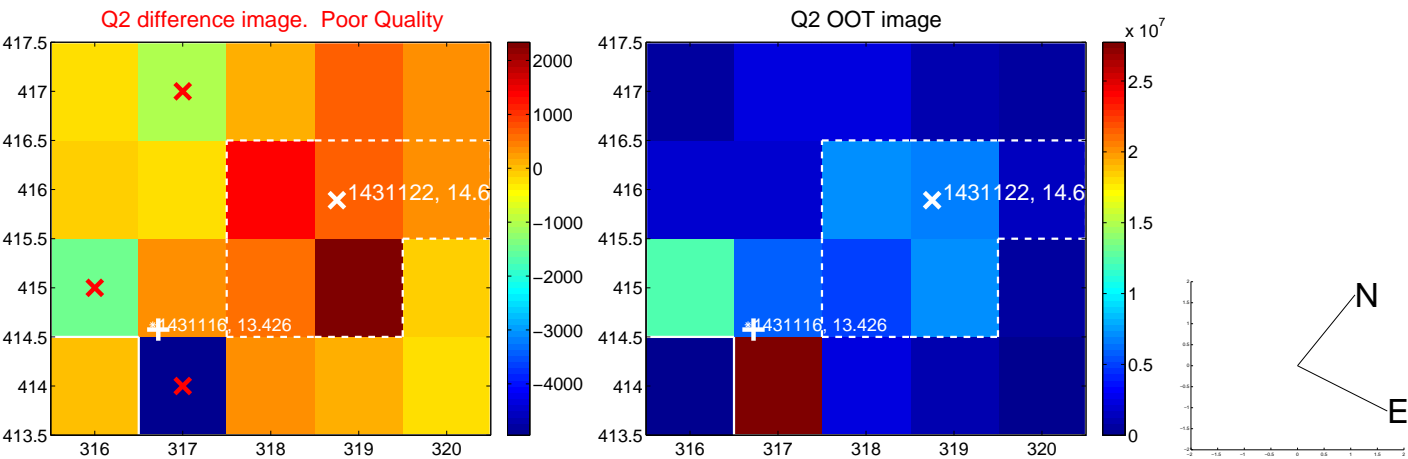
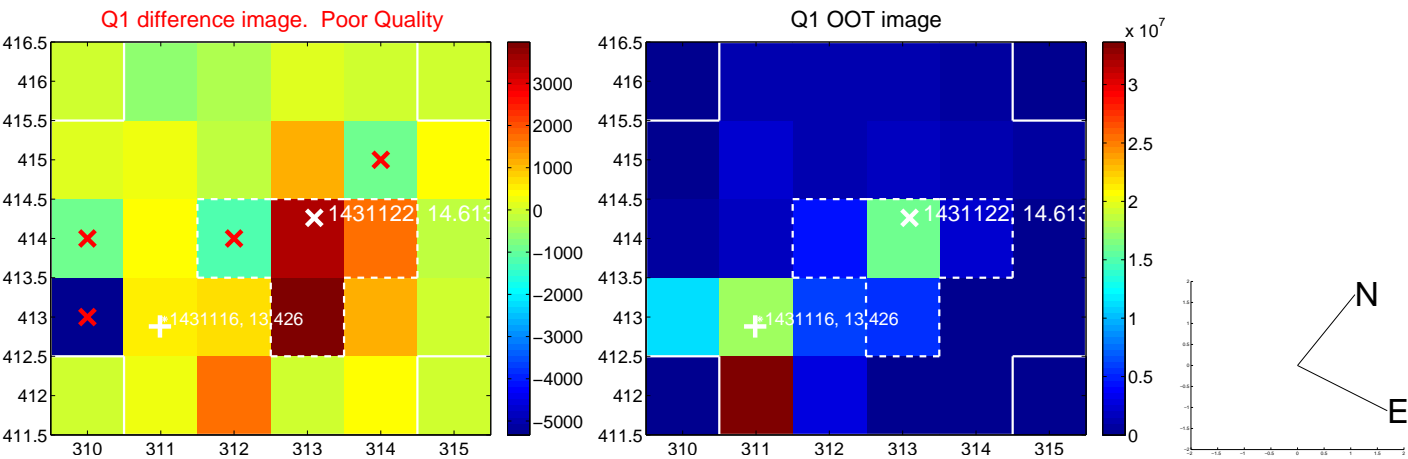
The OOT PRF centroid is offset from the target star catalog position by about 9.86 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.741 ± 0.711	13.69	3.290 ± 0.389	9.168 ± 0.699
PRF-fit source offset from KIC position	0.686 ± 0.368	1.86	-0.680 ± 0.388	0.090 ± 0.769
photometric centroid source offset	2.03 ± 0.46	4.42	-0.62 ± 0.39	-1.94 ± 0.47

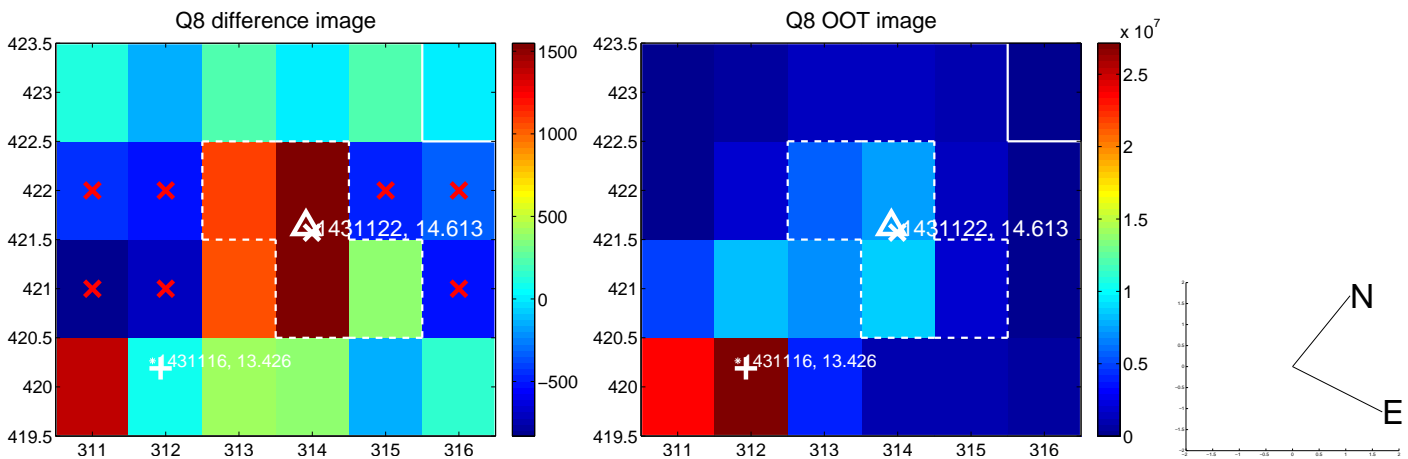
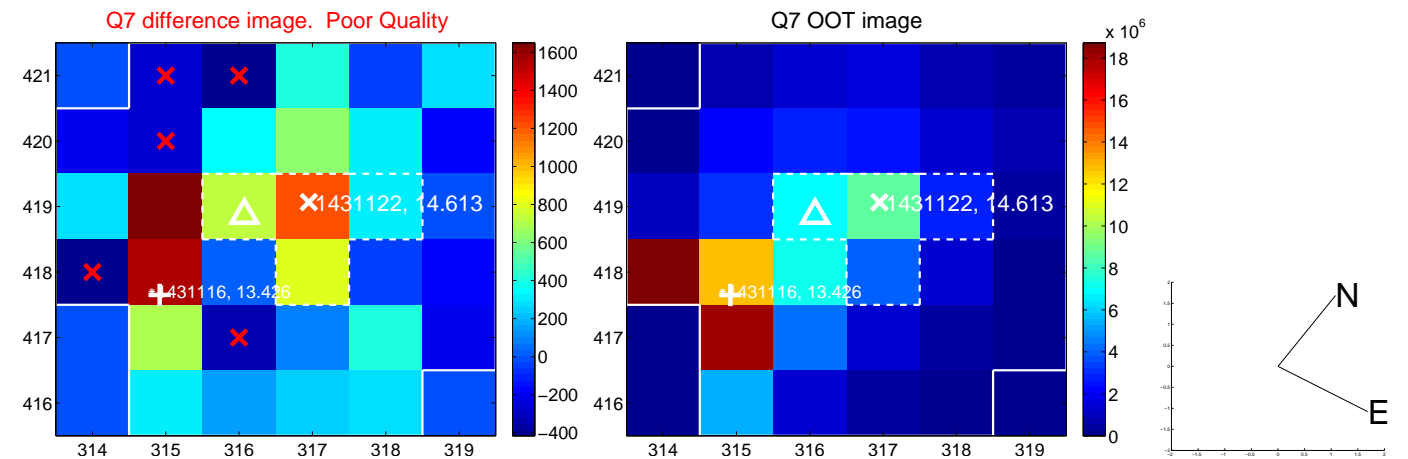
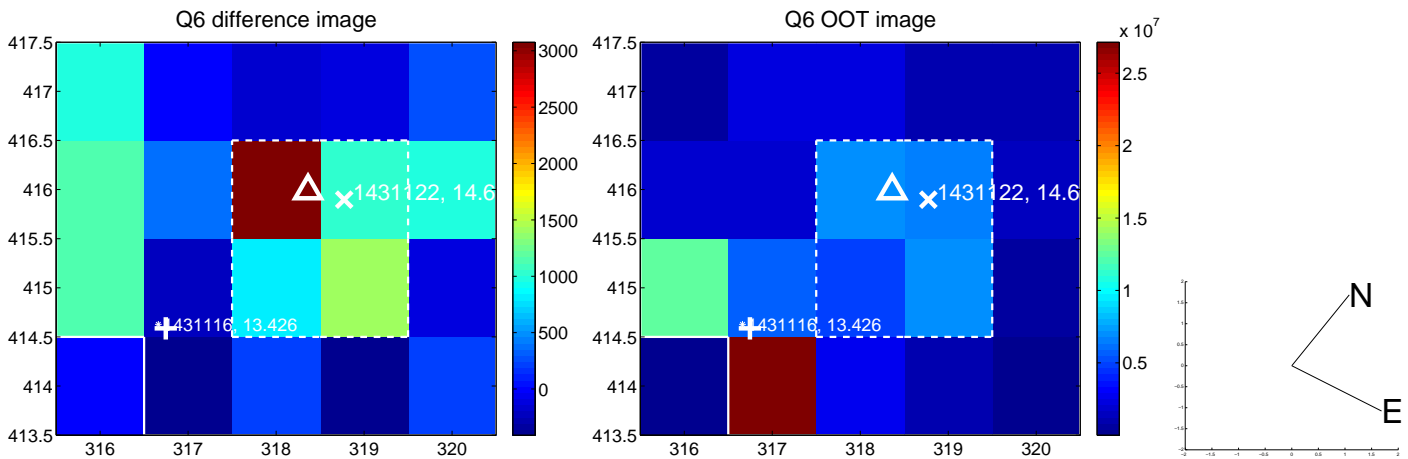
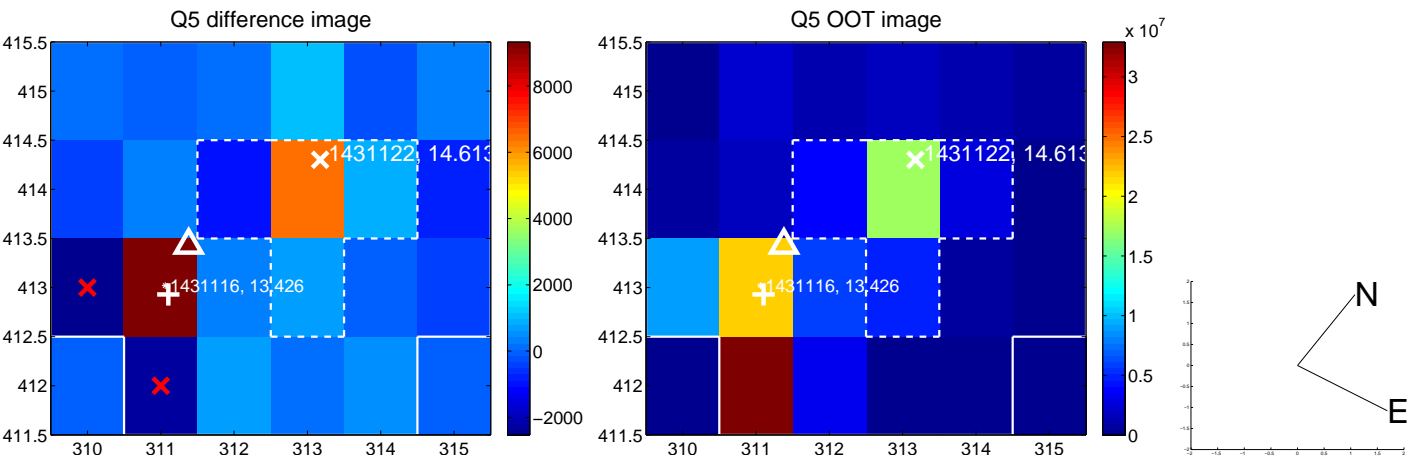


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

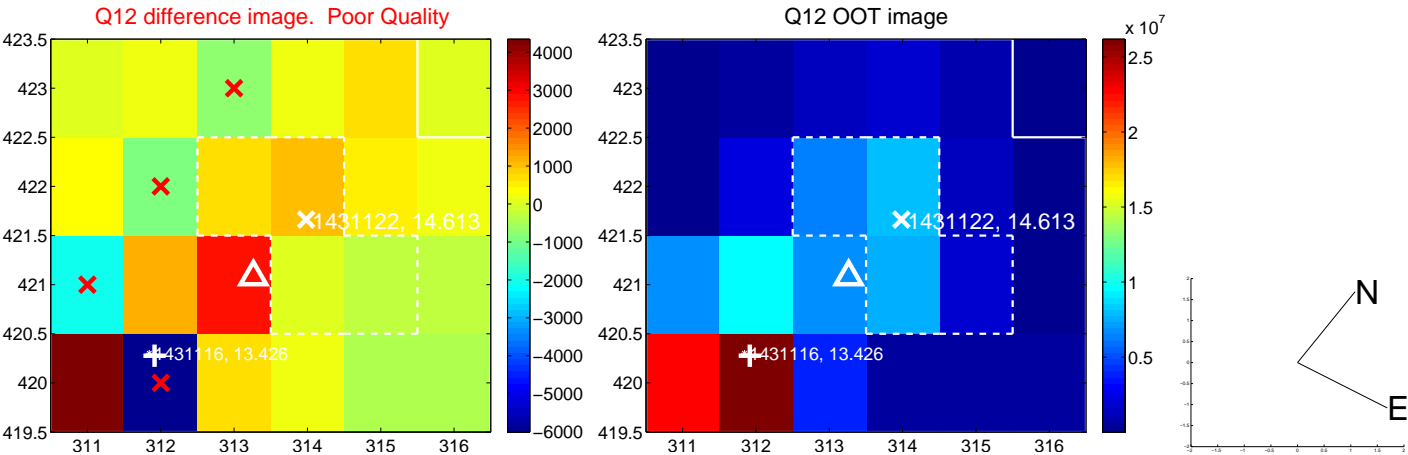
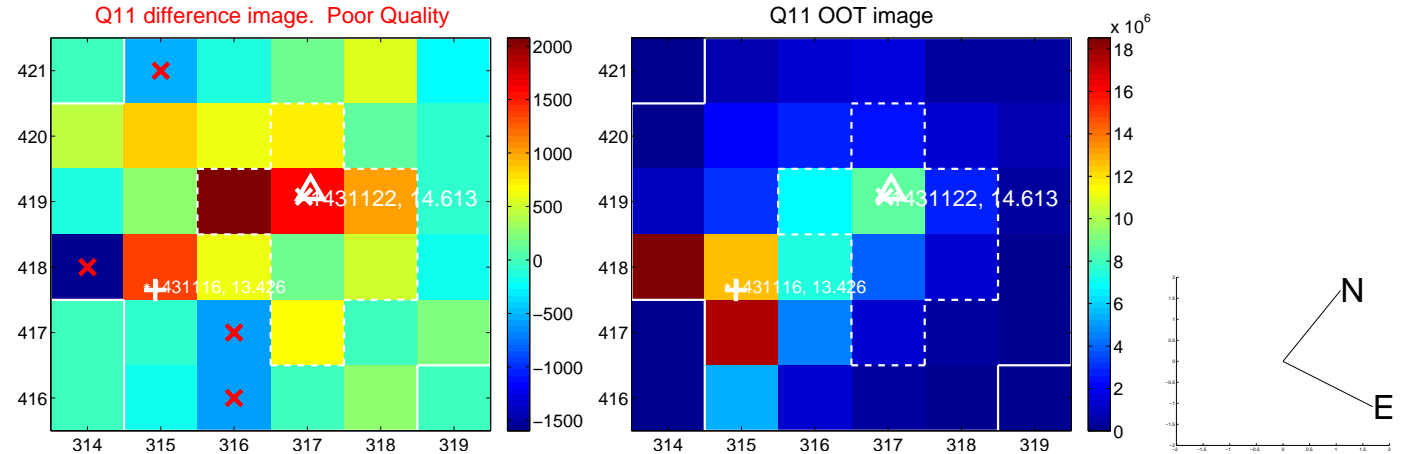
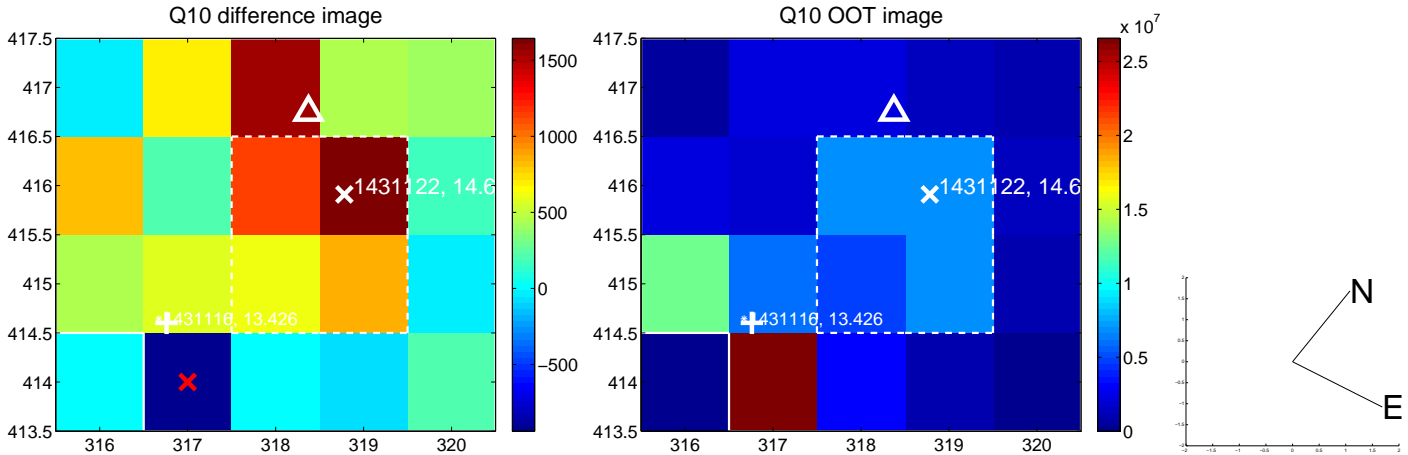
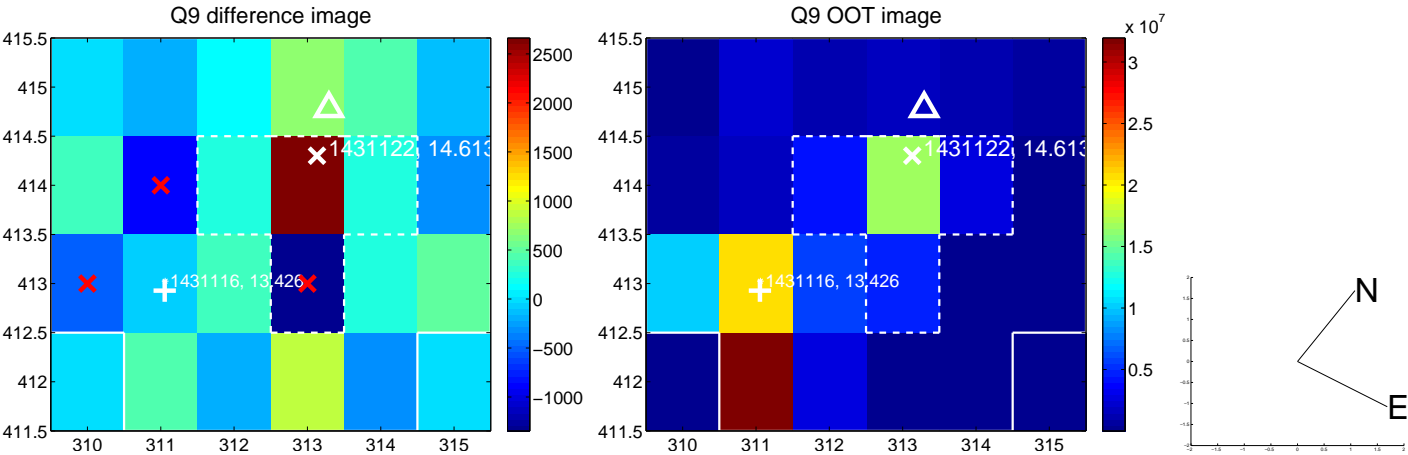
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



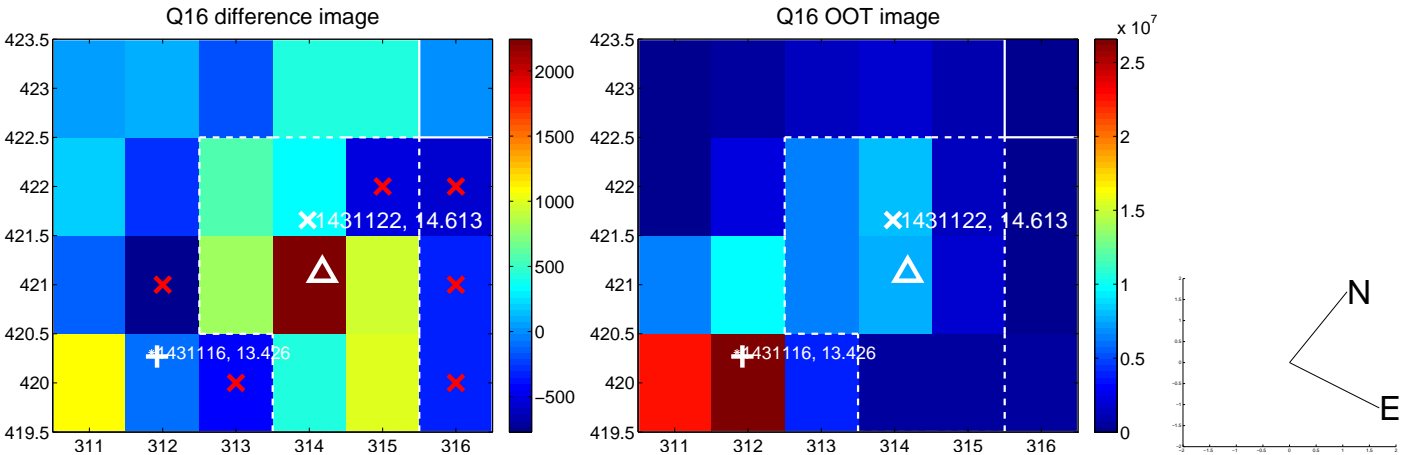
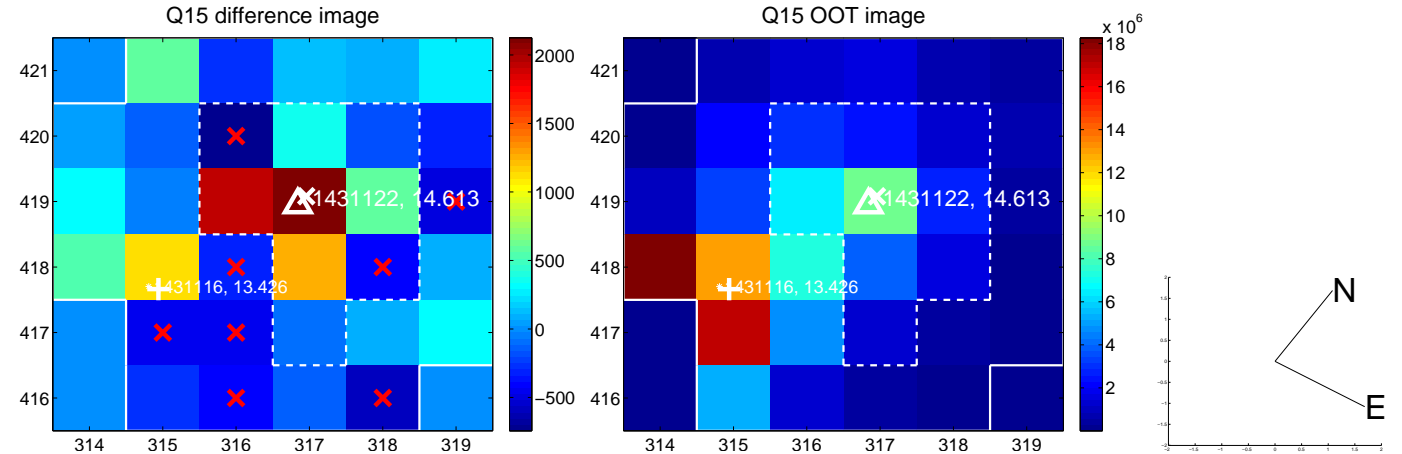
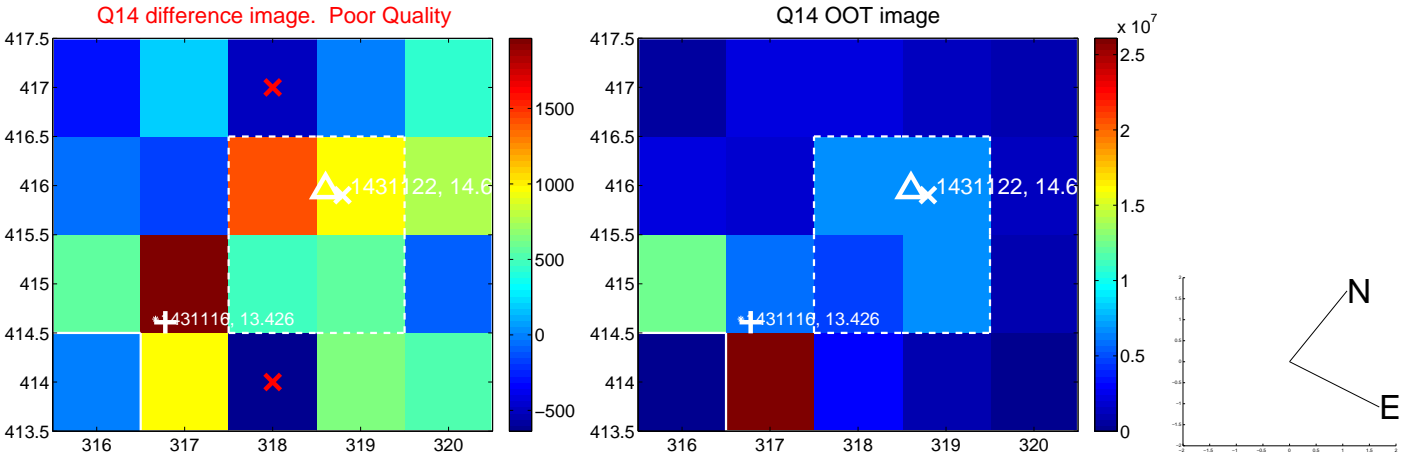
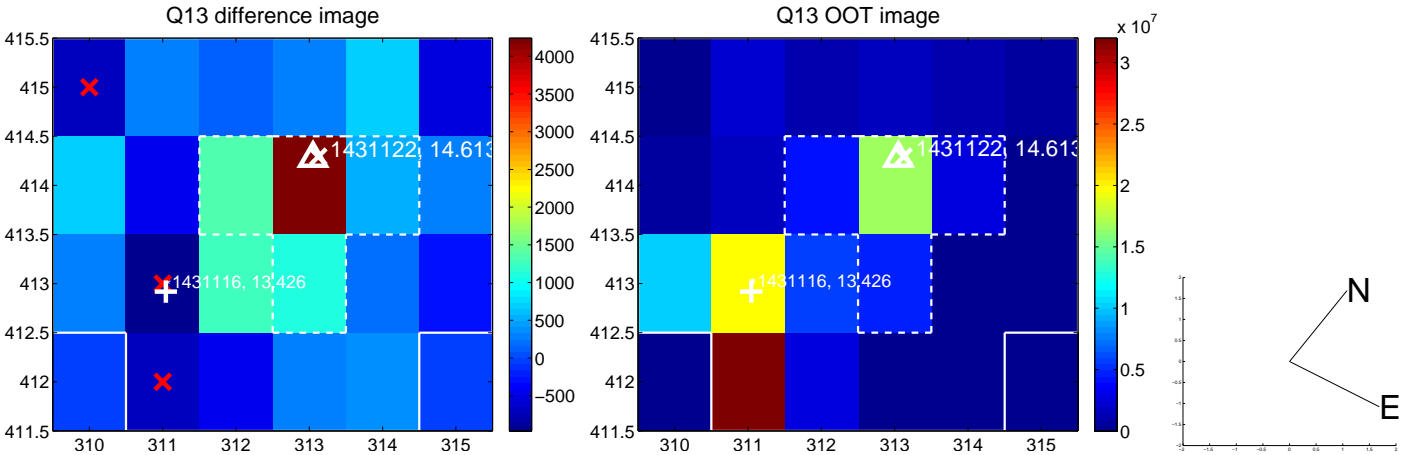
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



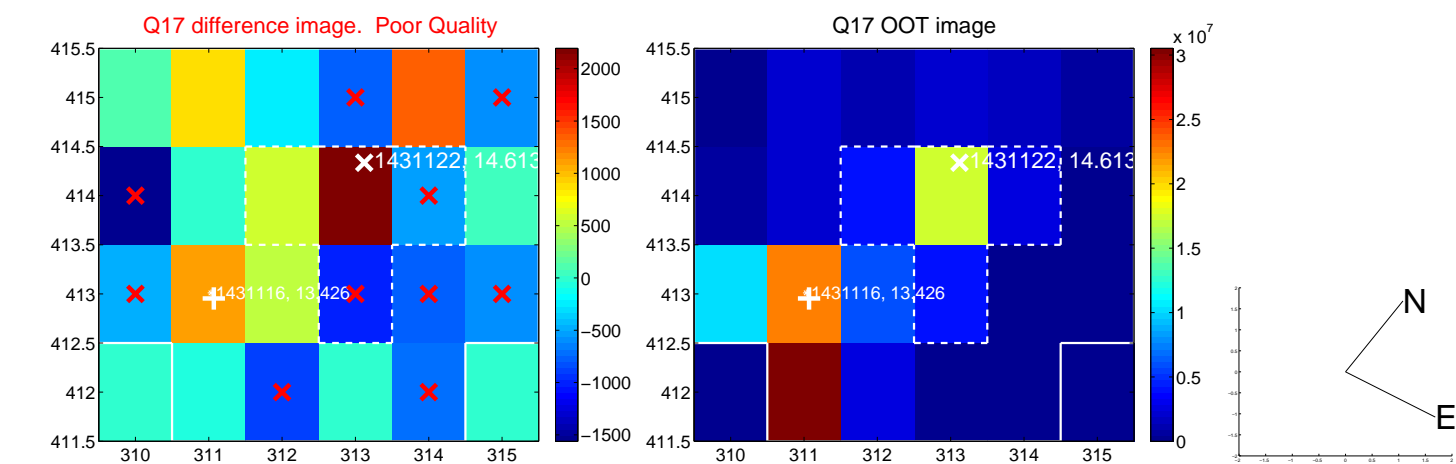
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



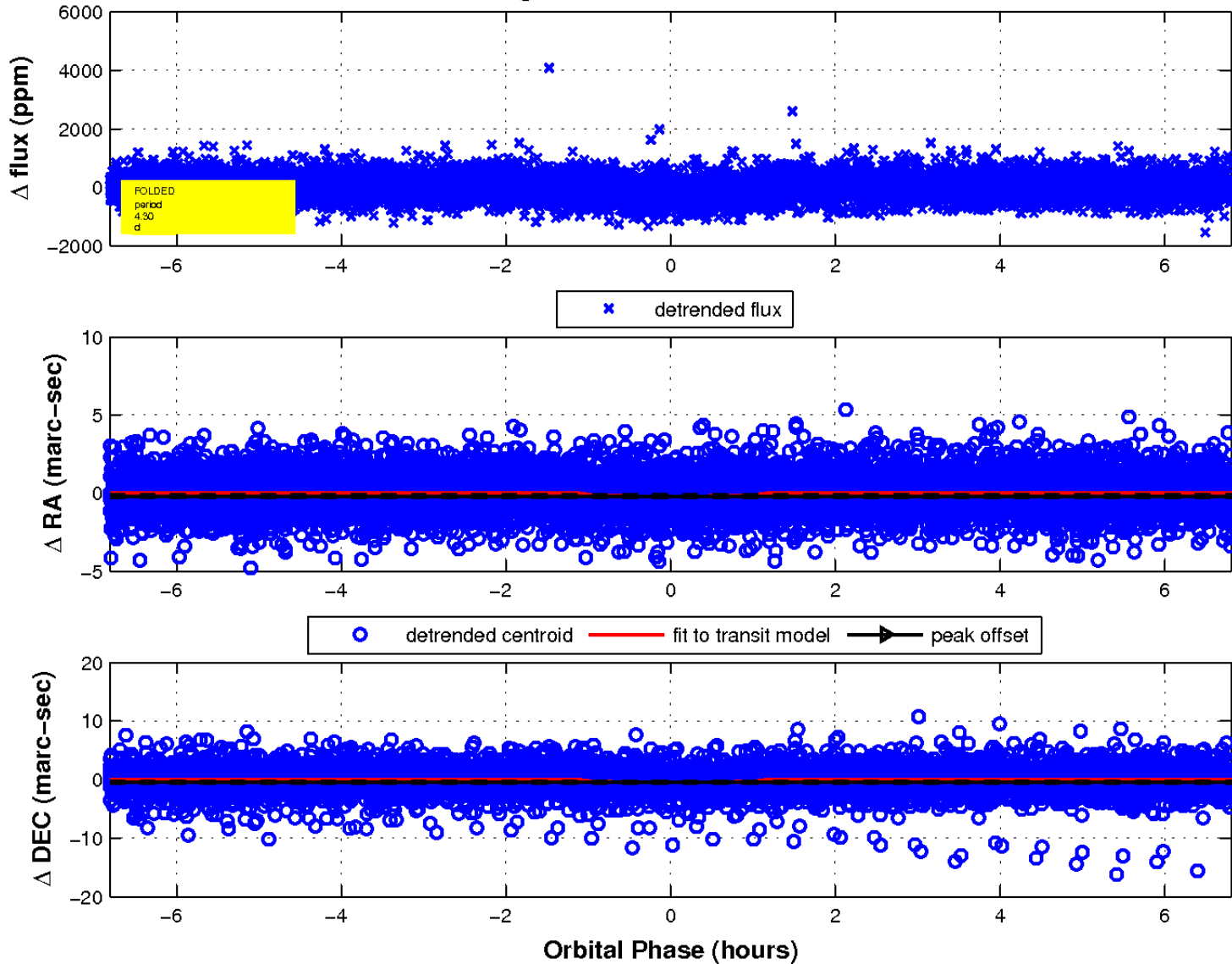
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

