

KIC 008414216

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})
008414216-01	OBS	7036.01	11.931320	142.829390	111.5	3.725	12.5	12.9	0.51	3787	0.62	7.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008414216-01	OBS	FP	0.00	0	0	0	1	CENT_KIC_POS—EPHEM_MATCH

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.

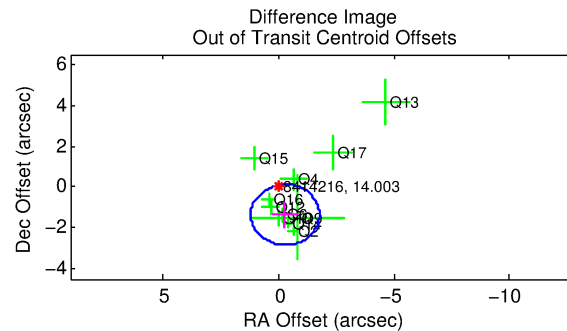
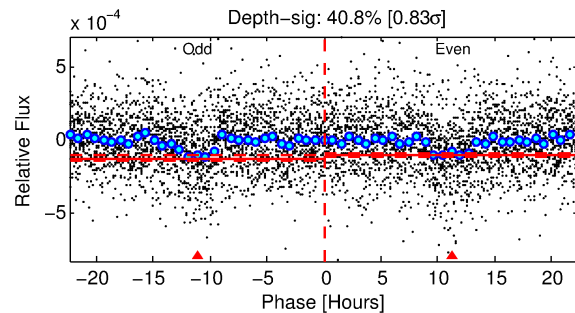
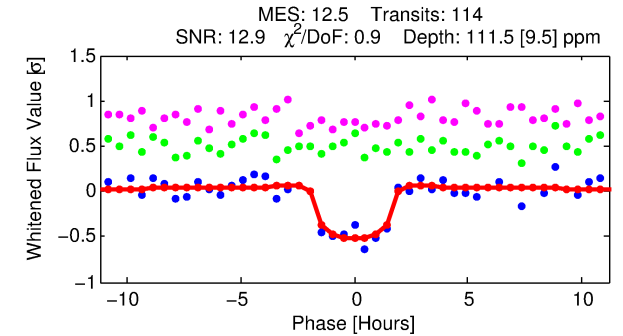
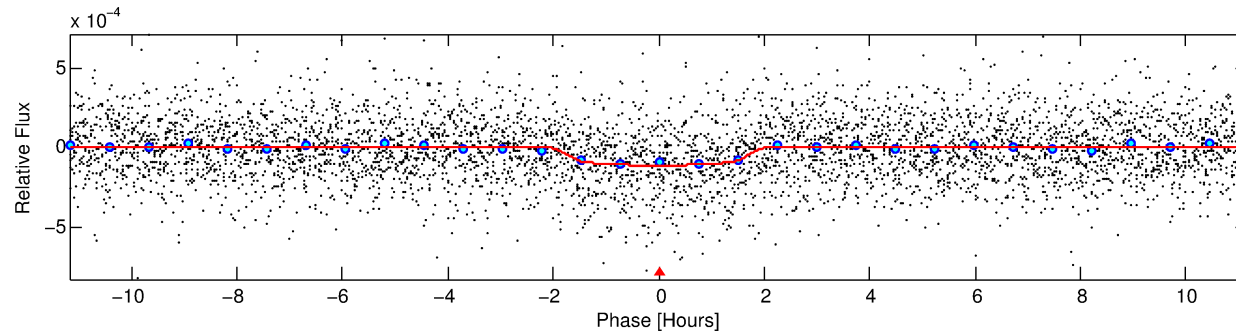
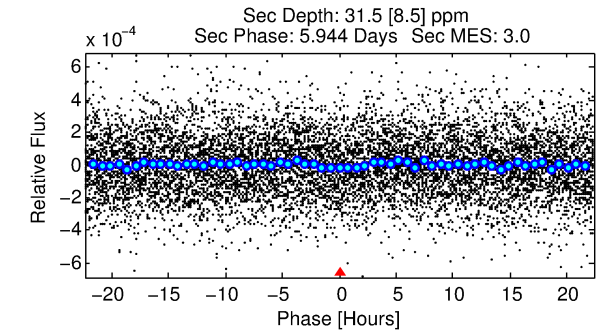
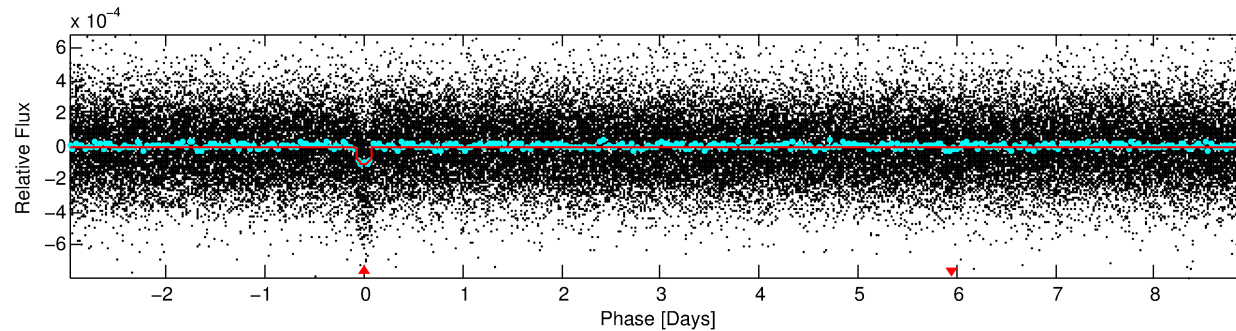
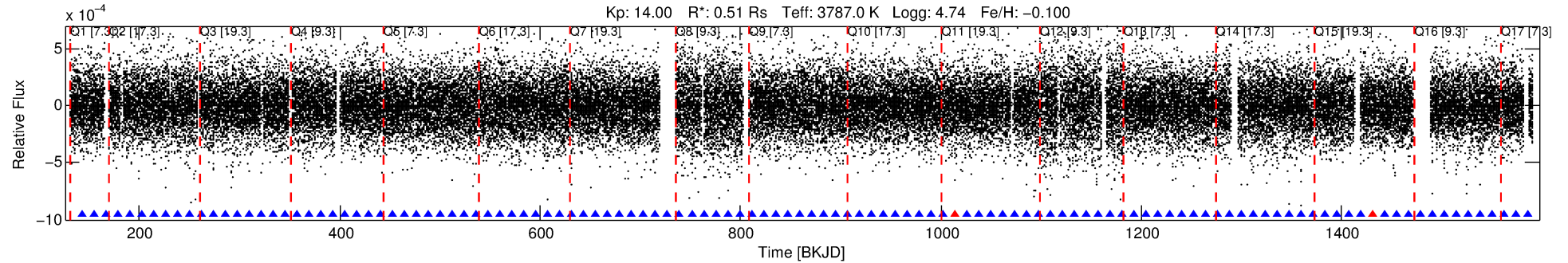
Ephemeris Match Information For 008414216-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008414216-01	8414216	7035.01	8414159	1:1	111.1	28	0	14.38	14.00	2696.20	Col-Anomaly	0	0.47	0.65

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 8414216 Candidate: 1 of 1 Period: 11.931 d
KOI: K07036.01 Corr: 0.978



DV Fit Results:

Period = 11.93132 [0.00009] d
Epoch = 142.8294 [0.0058] BKJD
Rp/R* = 0.0113 [0.0056]
a/R* = 12.06 [27.19]
b = 0.88 [0.57]
Seff = 7.01 [0.57]
Teq = 415 [8] K
Rp = 0.62 [0.31] Re
a = 0.0818 [0.0036] AU
Ag = 298.83 [307.00] [0.97σ]
Teffp = 2668 [685] K [3.29σ]

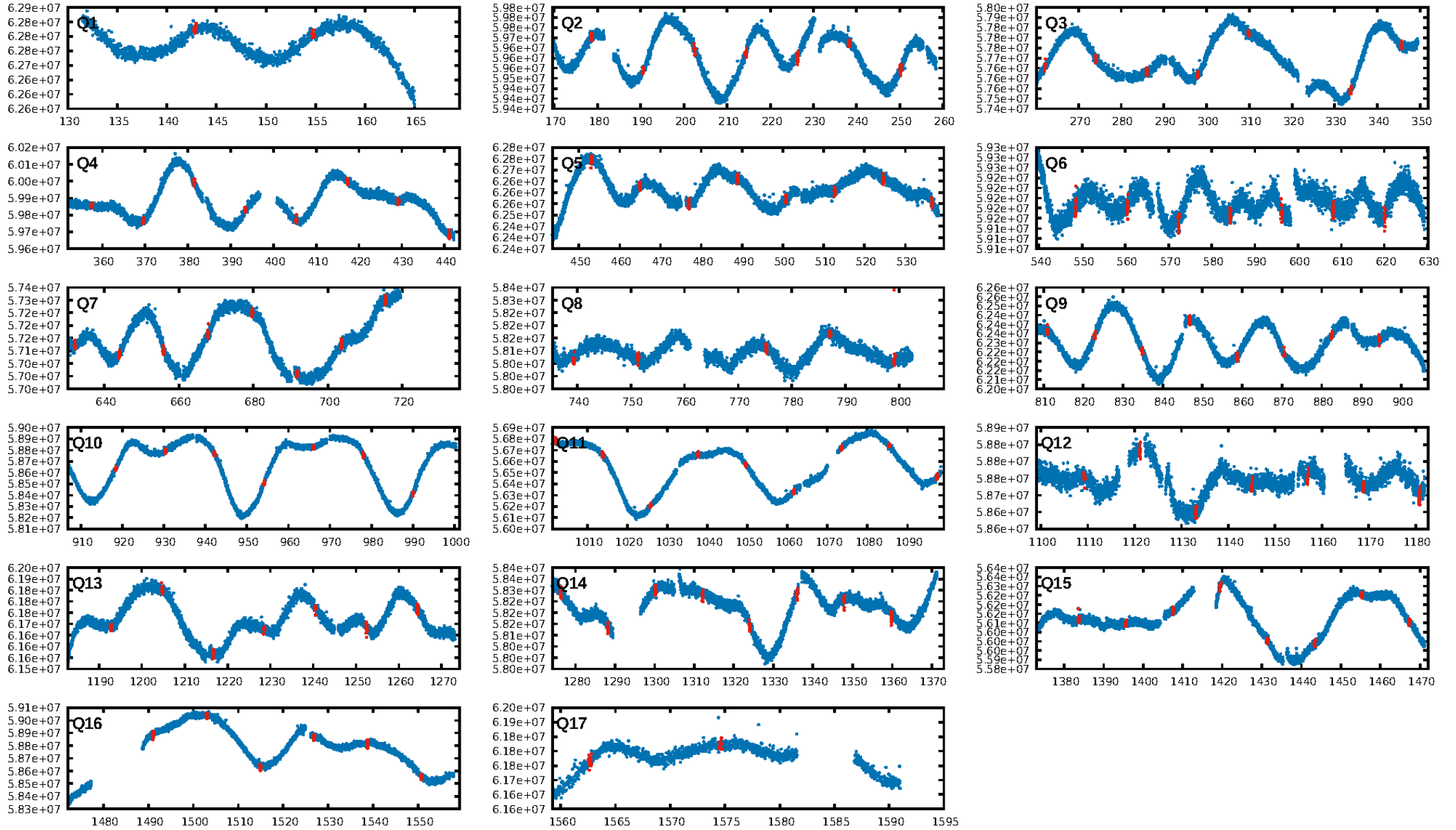
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.89e-35
RollingBand-fgt: 0.98 [108/110]
GhostDiagnostic-chr: 2.584
Centroid-sig: 0.0%
Centroid-so: 2.718 arcsec [3.57σ]
OotOffset-rm: 1.387 arcsec [2.80σ]
KicOffset-rm: 0.888 arcsec [2.95σ]
OotOffset-st: 4/1/3/3 [11]
KicOffset-st: 4/1/3/3 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 1.00 [17/17]

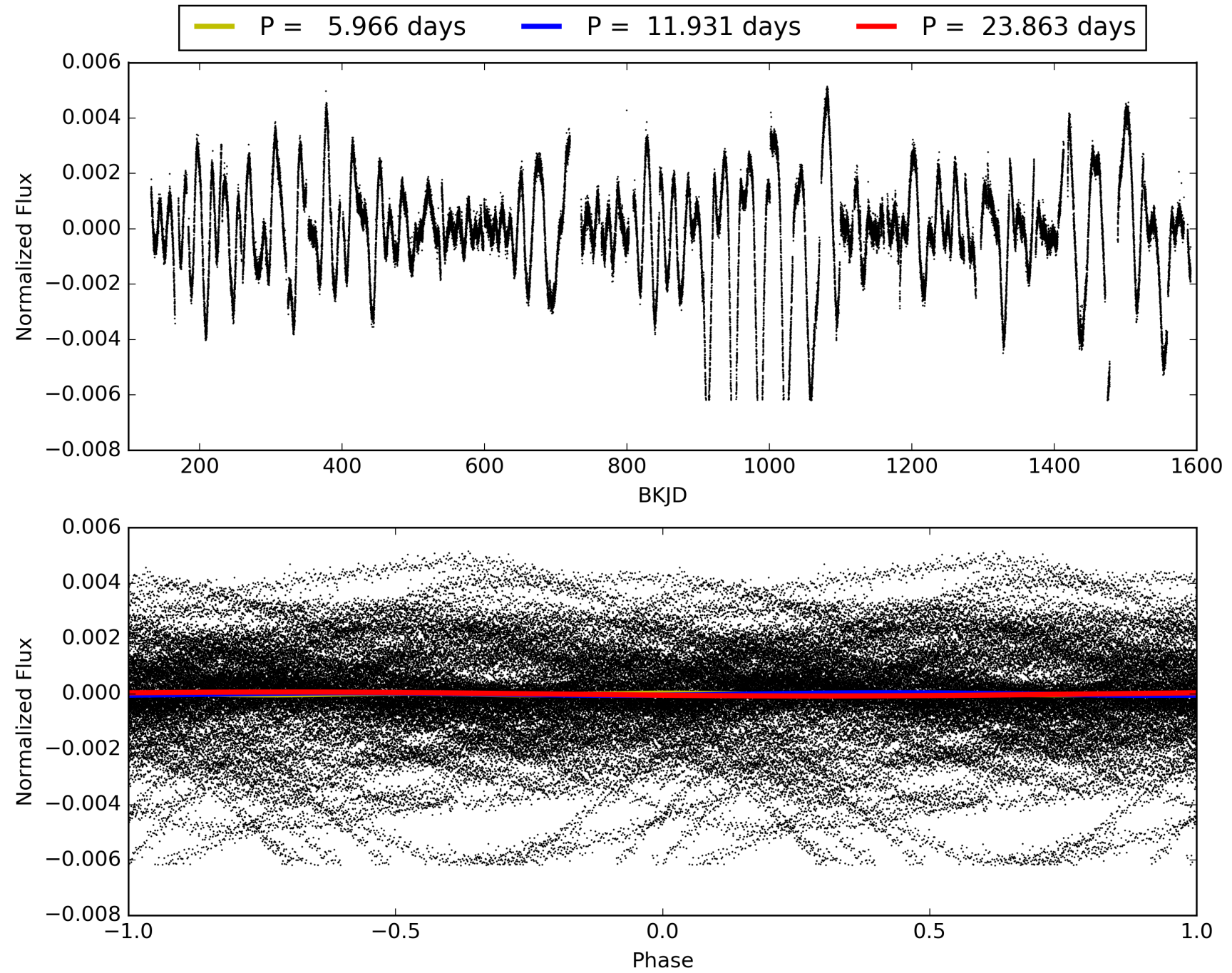
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:05:01 Z

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

TCE 008414216-01, PDC Light Curves

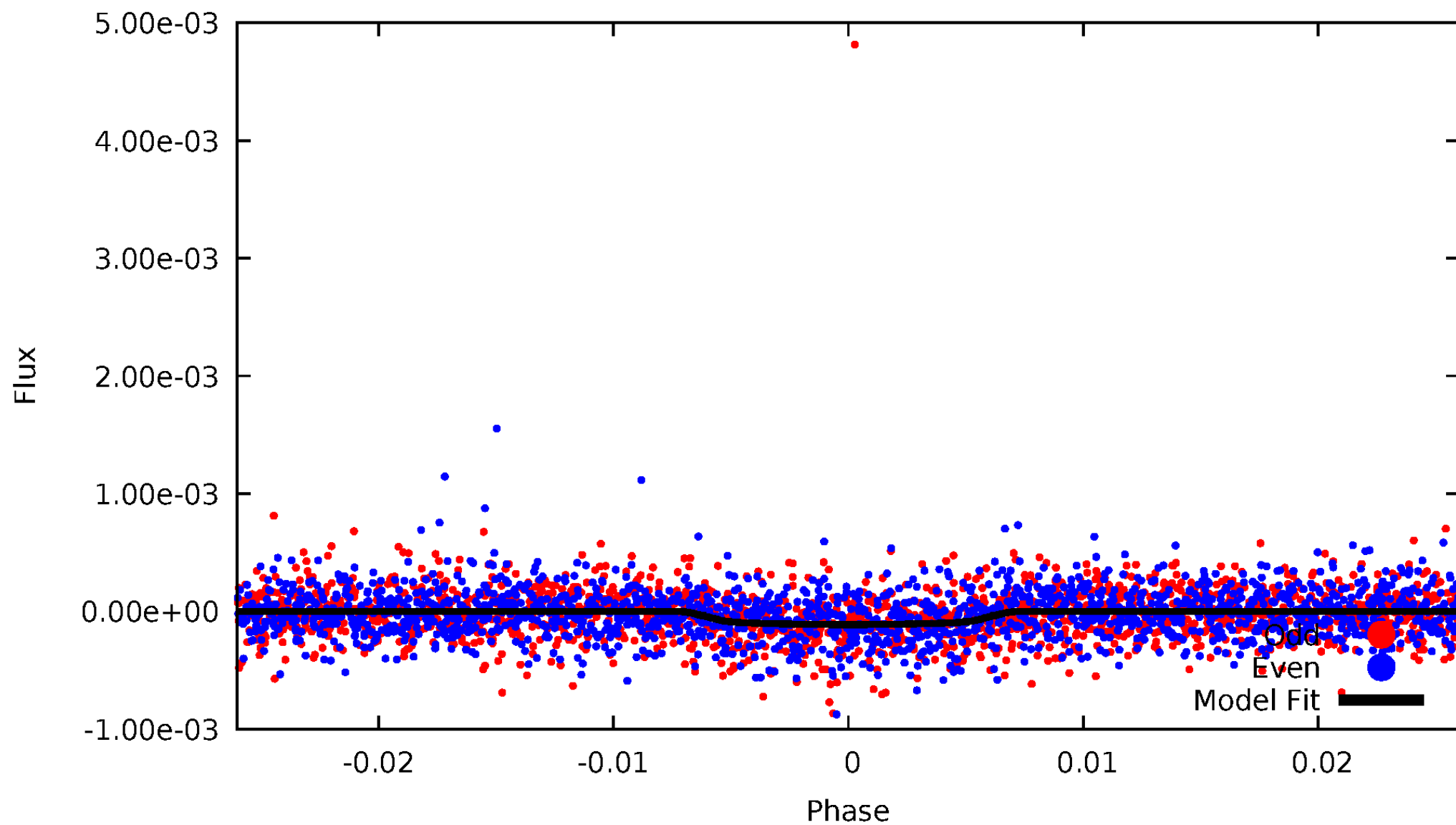


TCE 008414216-01



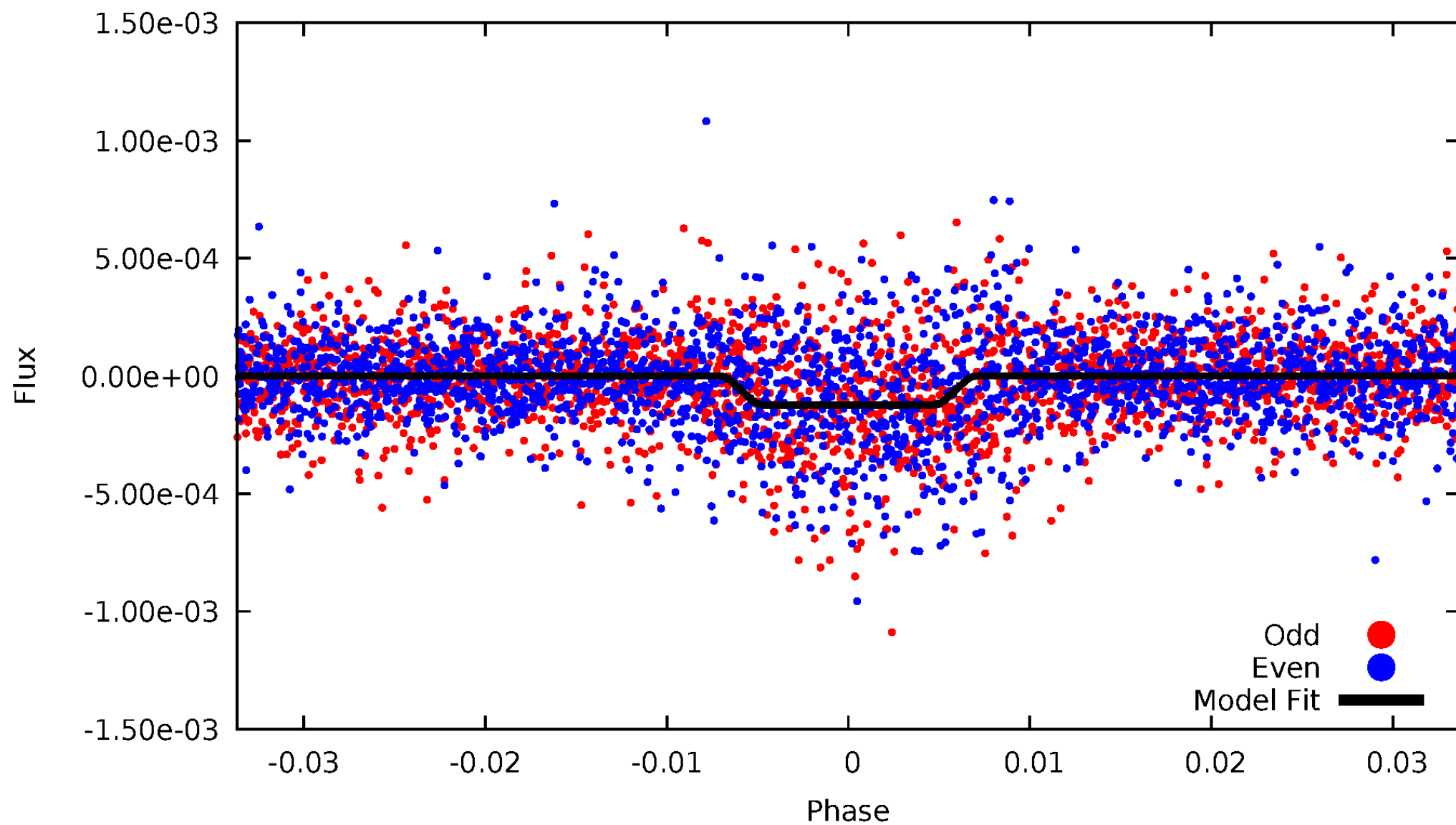
DV Odd/Even

TCE 008414216-01

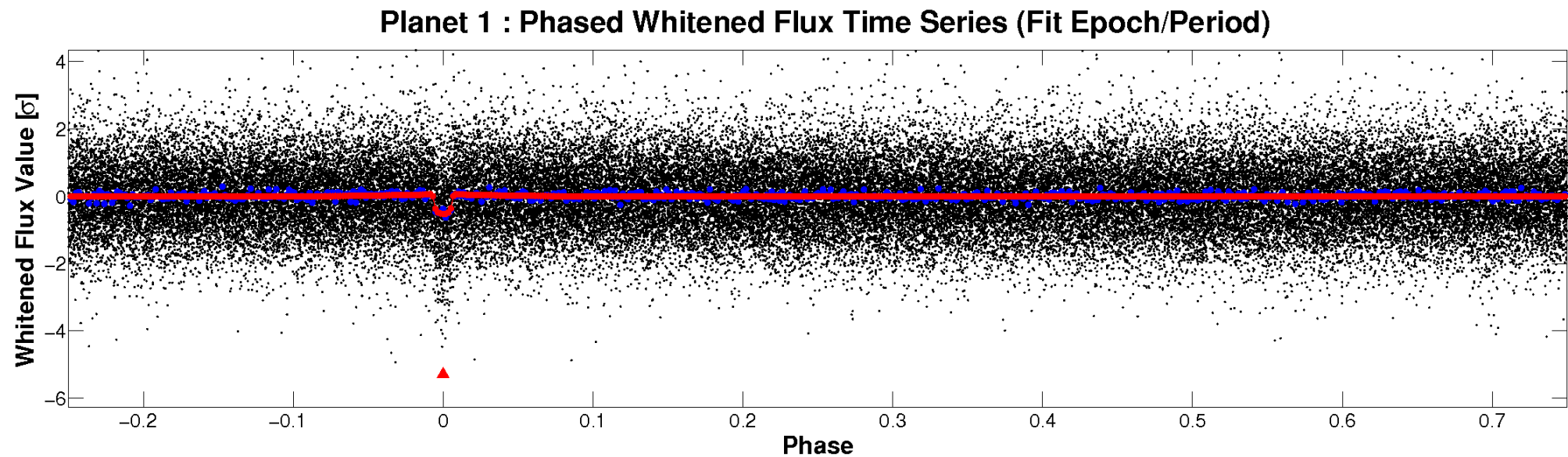
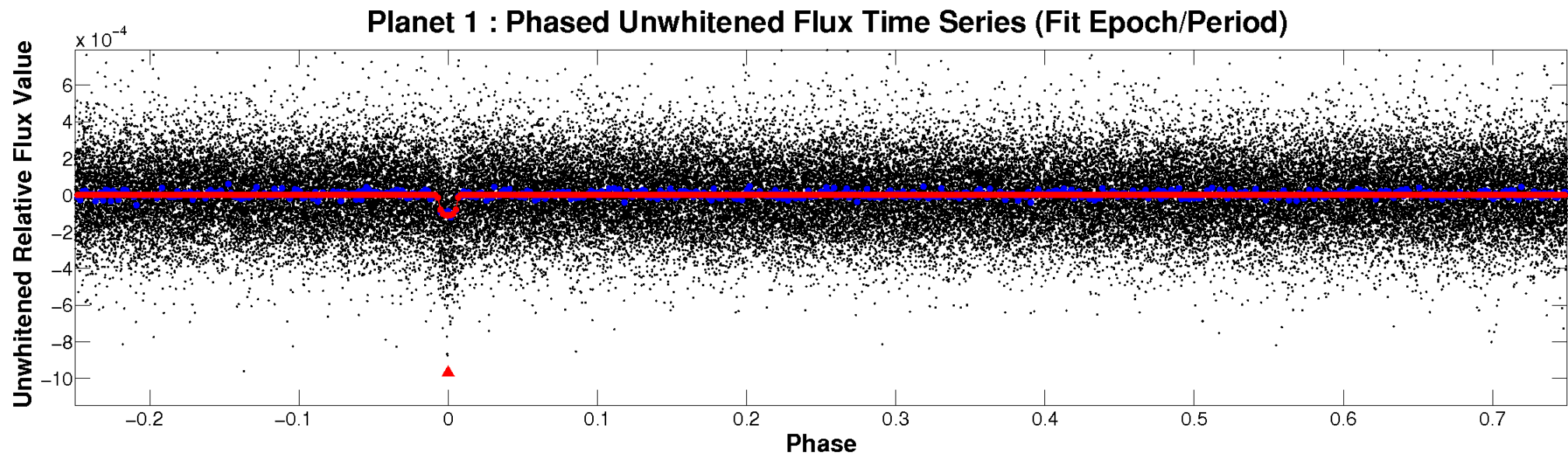


ALT Odd/Even

TCE 008414216-01

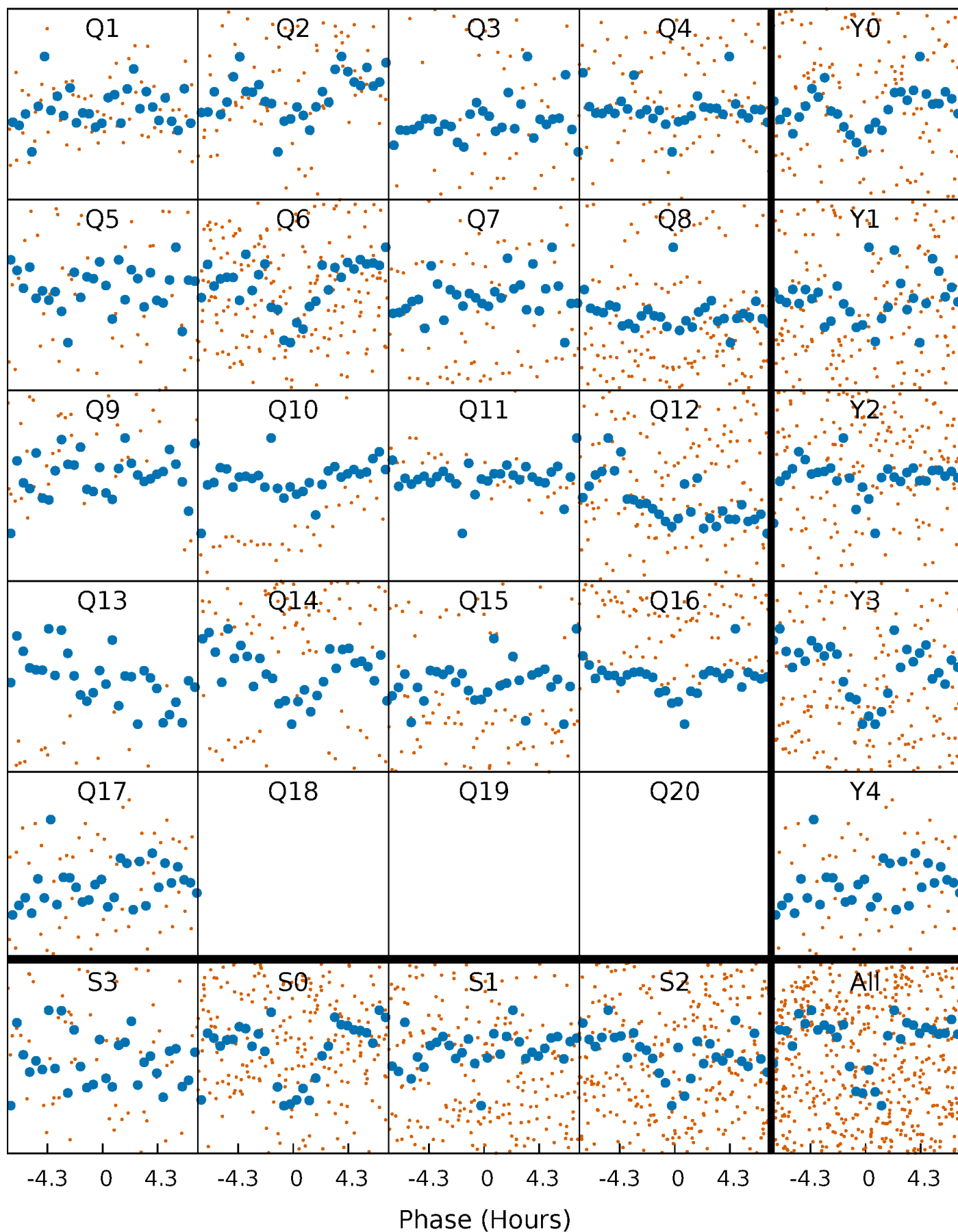


Non-Whitened Vs. Whitened Light Curve



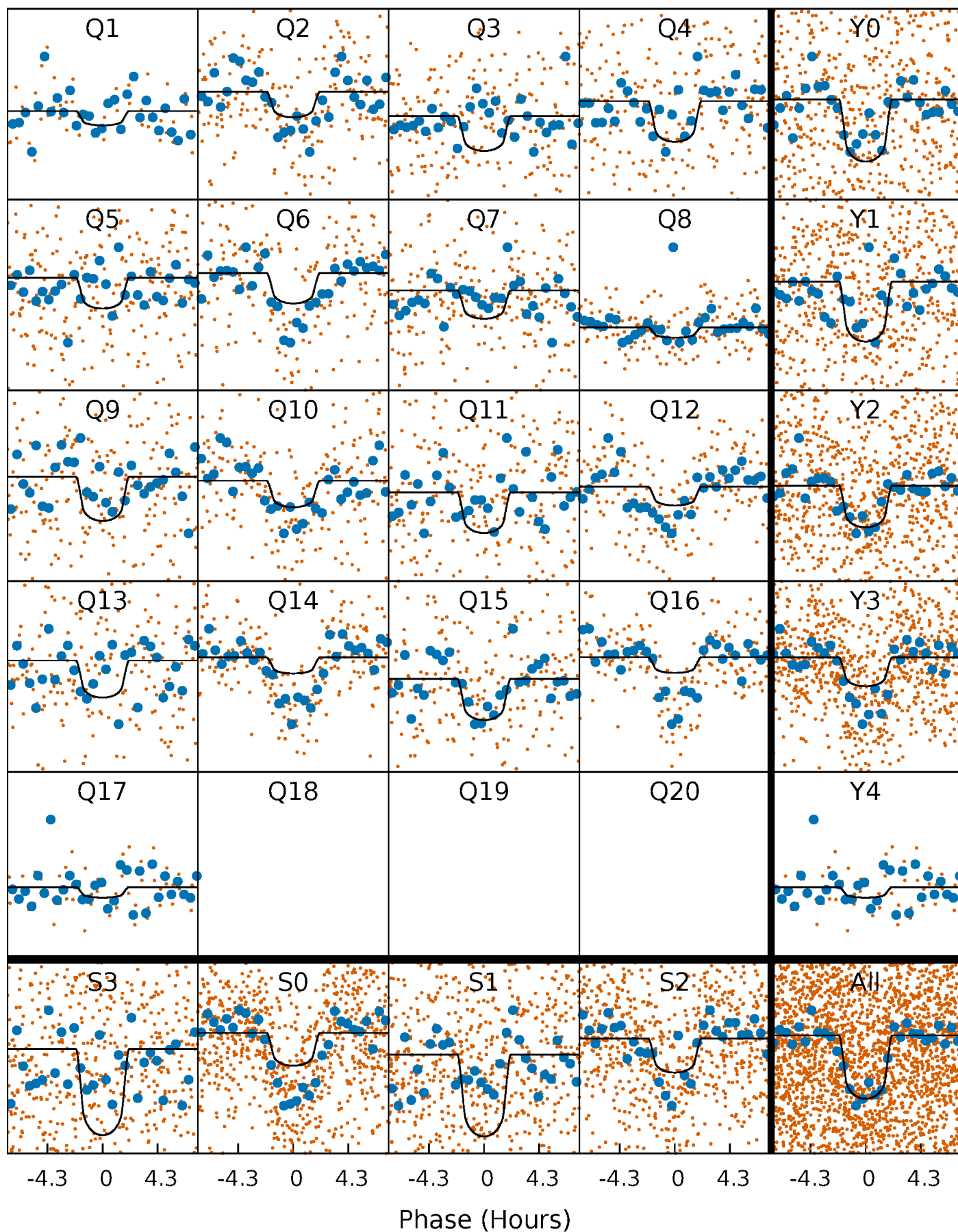
PDC Quarter-Phased Transit Curves

TCE 008414216-01 P= 11.931320 Days $T_0=142.829390$ (BKJD)



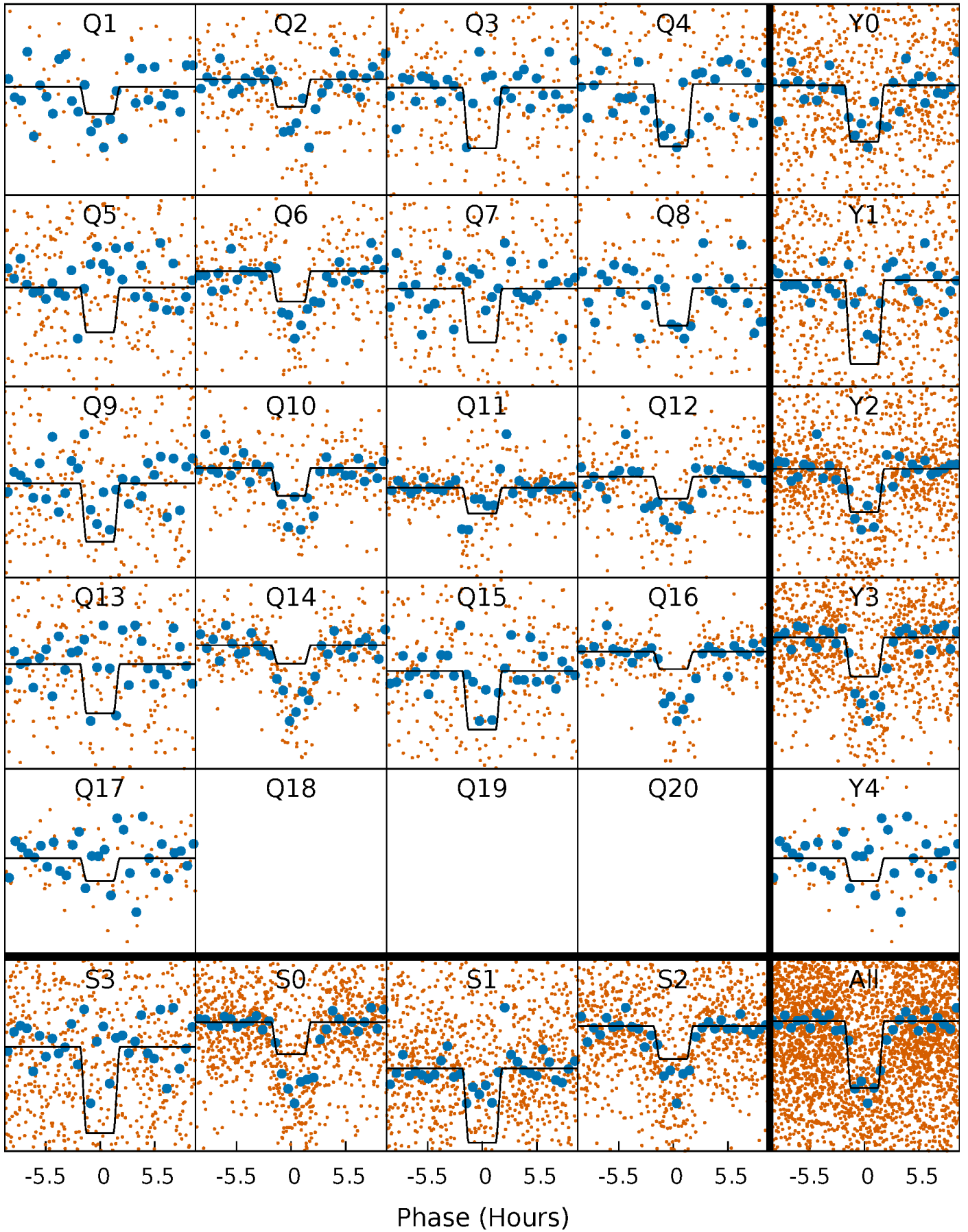
DV Quarter-Phased Transit Curves

TCE 008414216-01 P= 11.931320 Days $T_0=142.829390$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

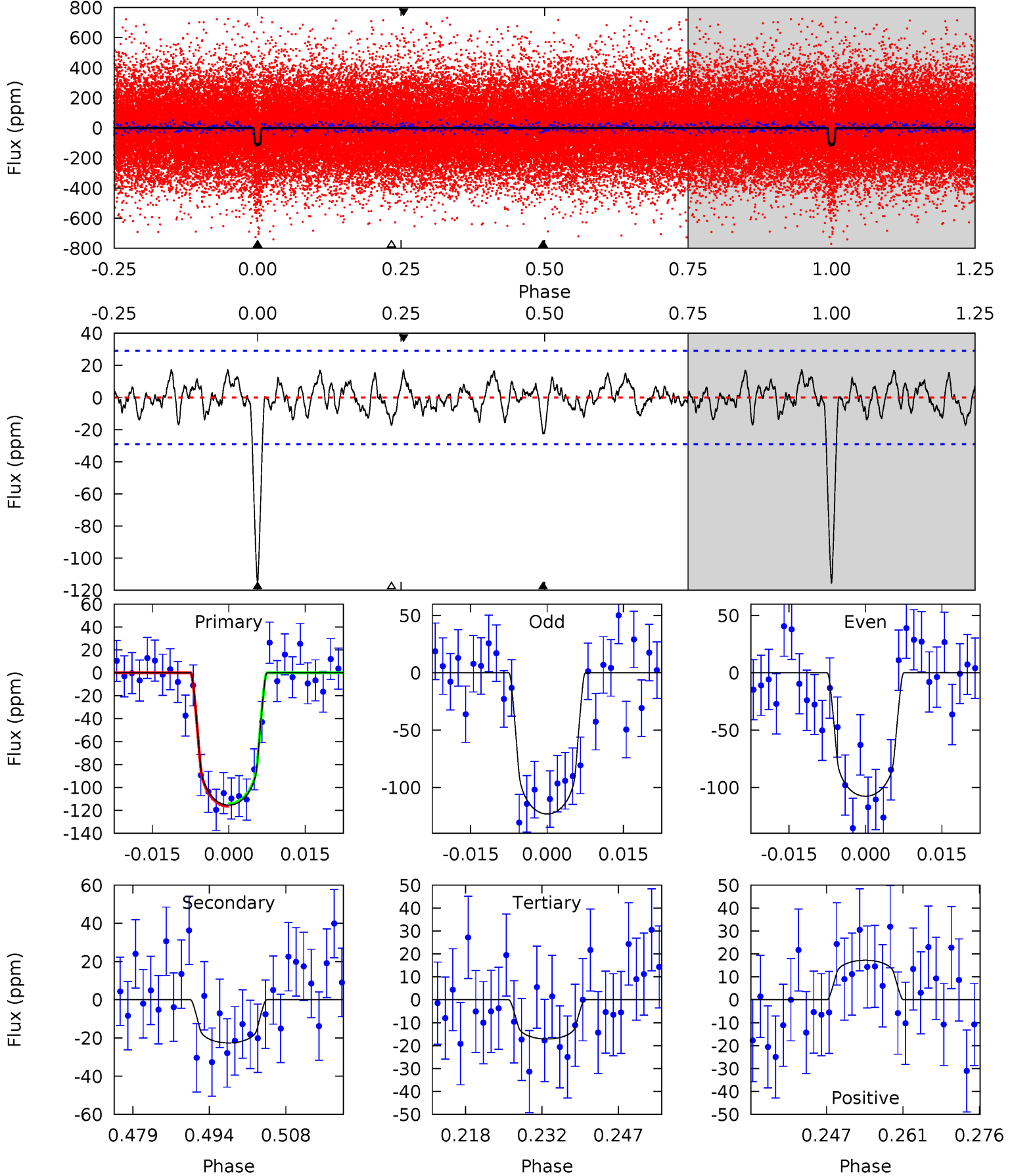
TCE 008414216-01 P= 11.931458 Days $T_0=142.803495$ (BKJD)



DV Model-Shift Uniqueness Test

008414216-01, P = 11.931320 Days, E = 130.898070 Days

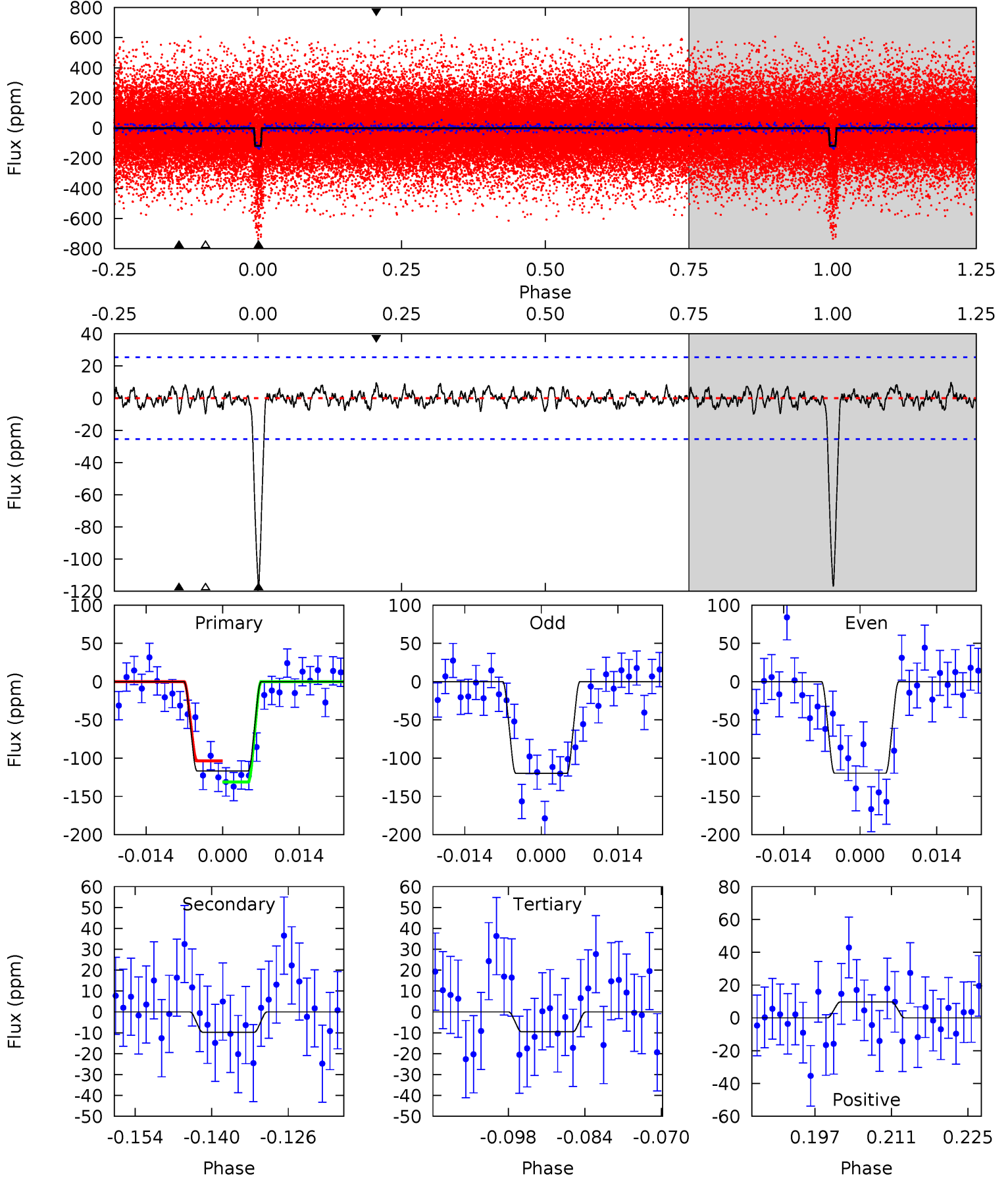
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	3.86	2.92	2.95	4.95	2.44	1.17	16.8	16.8	0.94	0.92	1.32	1.14	0.13	0.19



Alt Model-Shift Uniqueness Test

008414216-01, P = 11.931458 Days, E = 130.872037 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	1.91	1.86	1.89	4.96	2.46	0.63	20.9	20.9	0.05	0.01	0.01	1.07	0.08	2.70



Stellar Parameters For KIC 008414216

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3787^{+51}_{-51}	$4.742^{+0.032}_{-0.017}$	$-0.100^{+0.100}_{-0.100}$	$0.505^{+0.023}_{-0.028}$	$0.514^{+0.025}_{-0.023}$	$5.610^{+0.757}_{-0.434}$
	+1%/-1%	+1%/-0%	+100%/-100%	+5%/-6%	+5%/-4%	+14%/-8%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 008414216-01 / KOI 7036.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-23 ± 6	$0.63^{+0.31}_{-0.29}$	578^{+9}_{-10}	2885^{+589}_{-298}	199^{+514}_{-109}
Alt.	-10 ± 5	$0.62^{+0.31}_{-0.28}$	579^{+8}_{-10}	2571^{+545}_{-298}	85^{+265}_{-56}

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 $A_{obs} \gg 1.0$

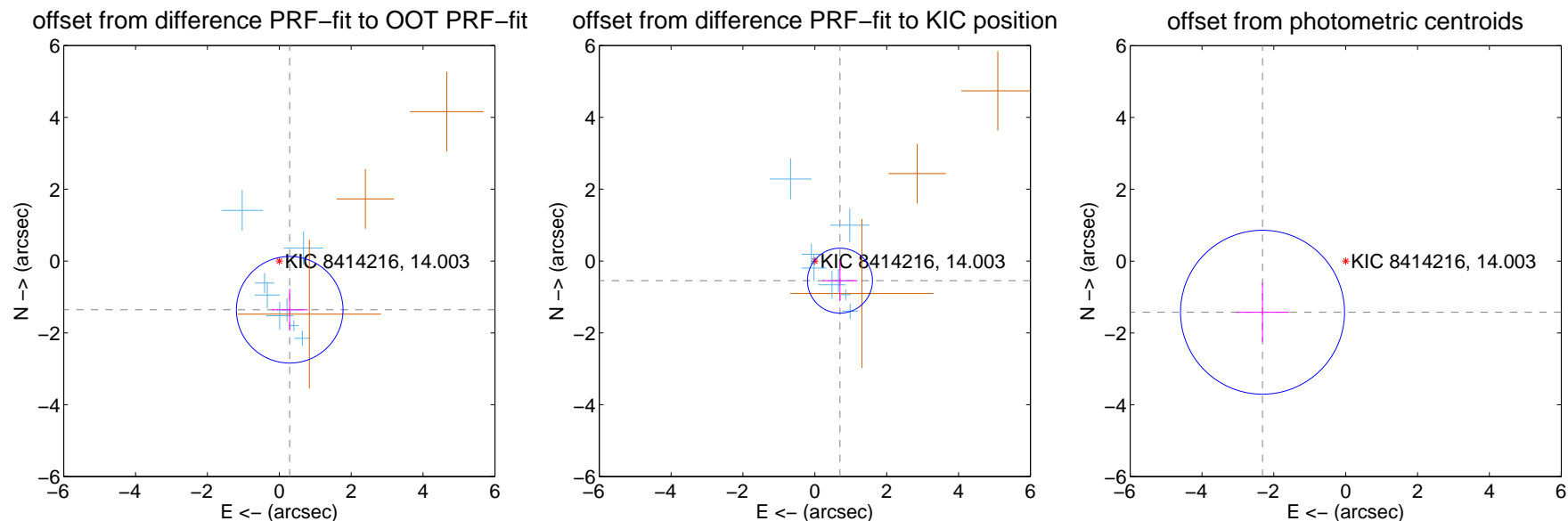
DV Centroid Data

Supplemental centroid analysis for 008414216-01. Kepler magnitude: 14.00. Transit SNR 12.89

There are 8 quarters with good PRF difference image offsets

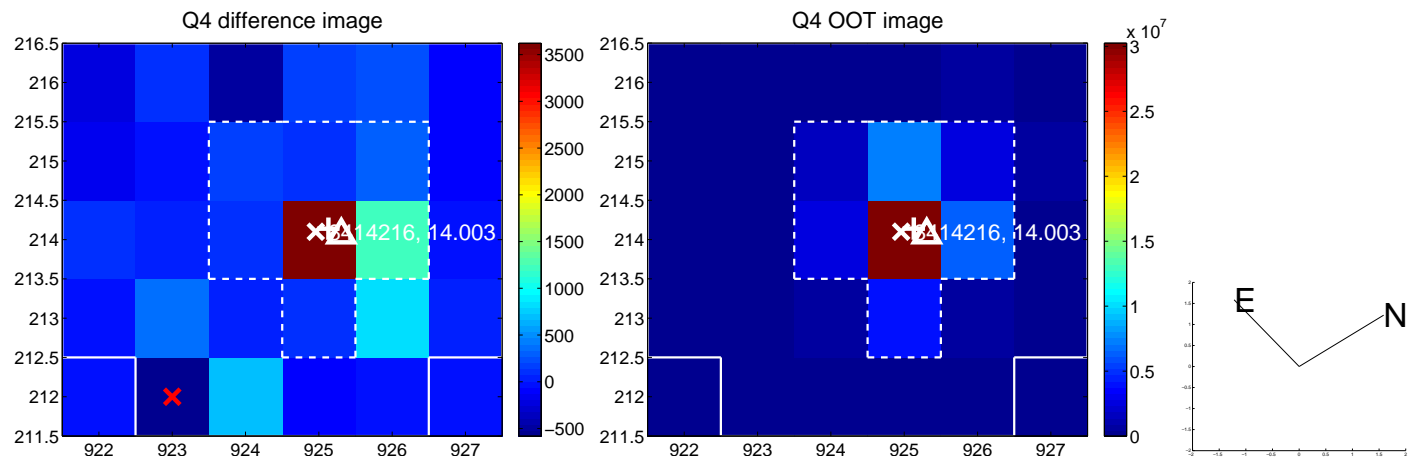
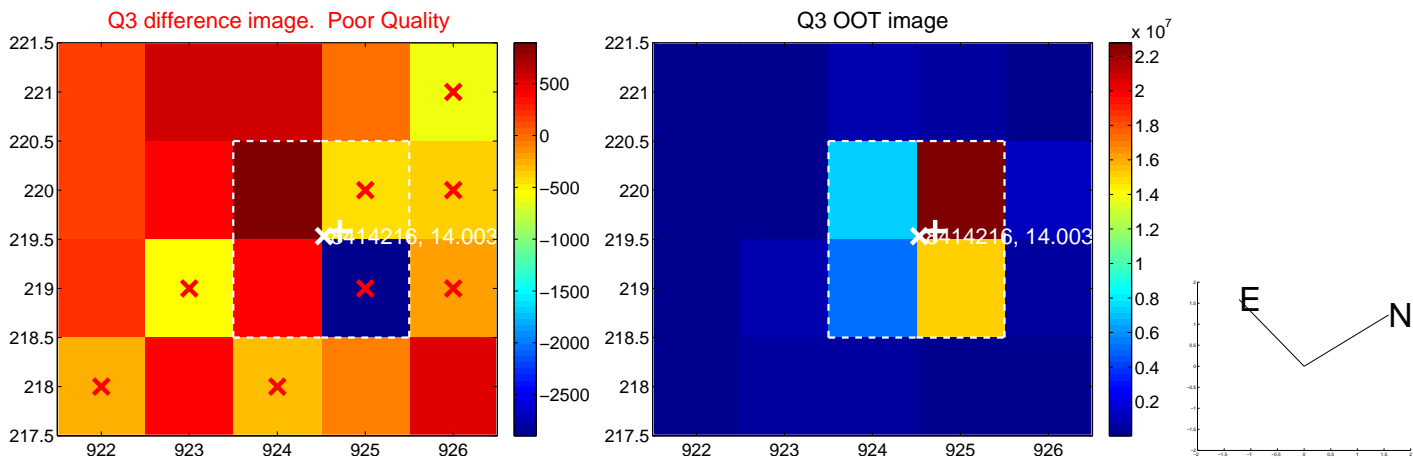
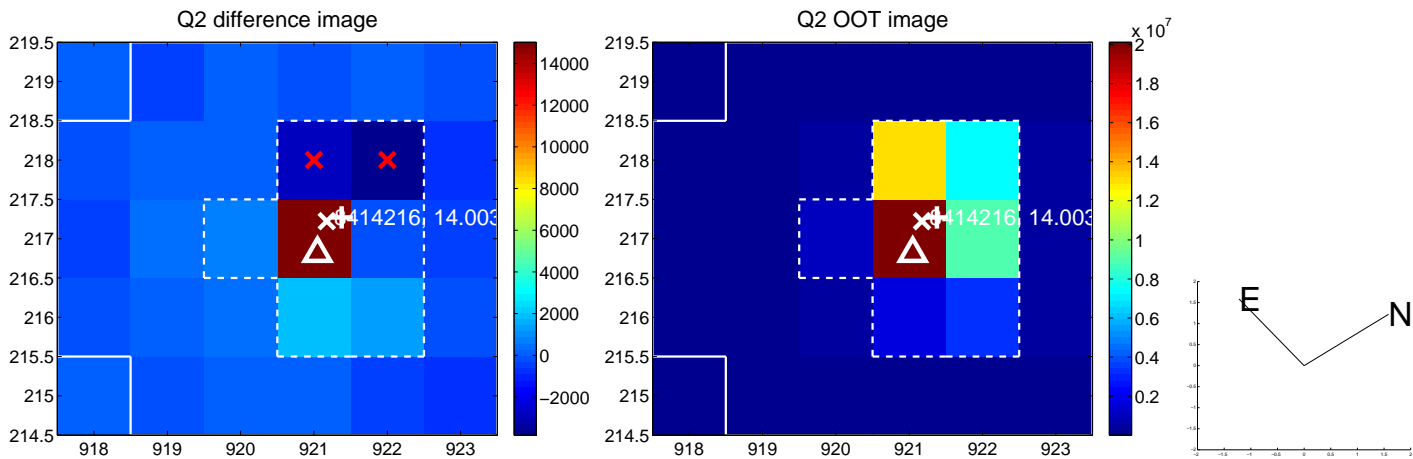
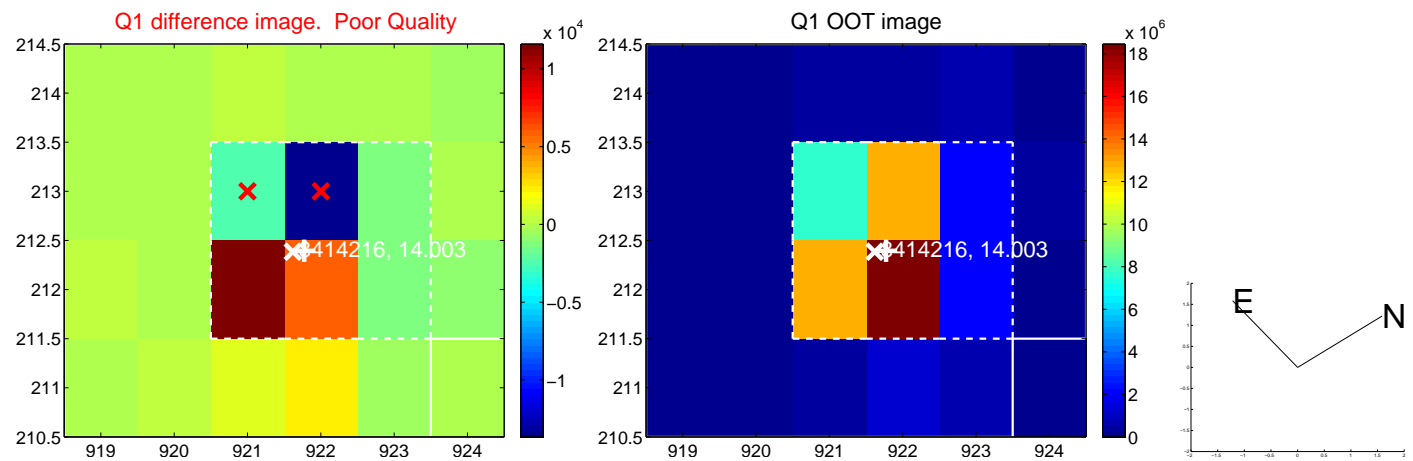
The direct PRF centroid is offset from the target star catalog position by about 0.84 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.387 ± 0.495	2.80	-0.289 ± 0.498	-1.357 ± 0.579
PRF-fit source offset from KIC position	0.888 ± 0.301	2.95	-0.700 ± 0.488	-0.546 ± 0.568
photometric centroid source offset	2.72 ± 0.76	3.57	2.32 ± 0.74	-1.42 ± 0.82

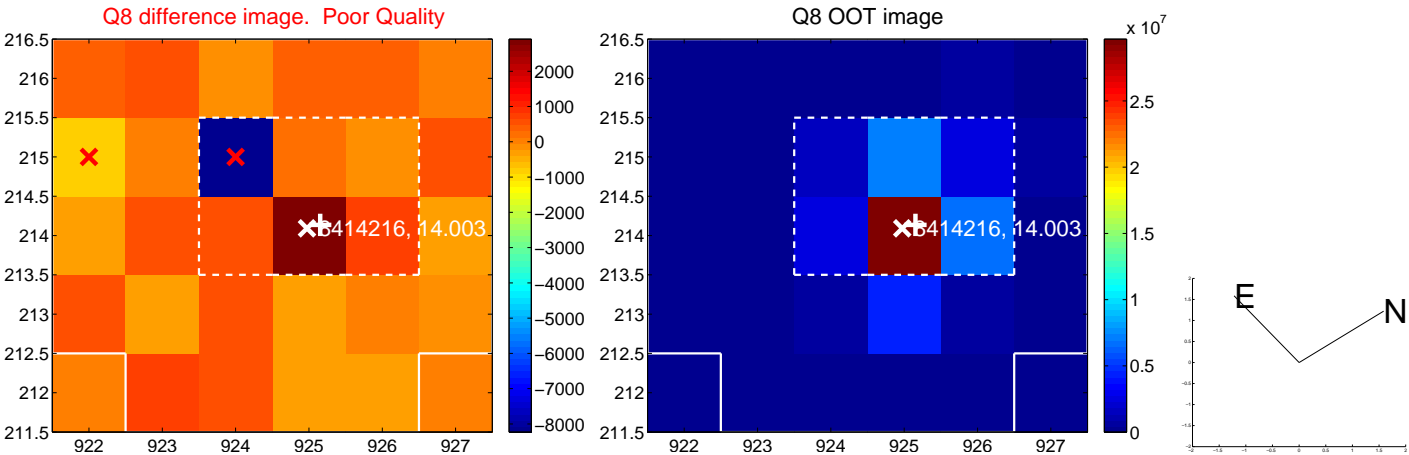
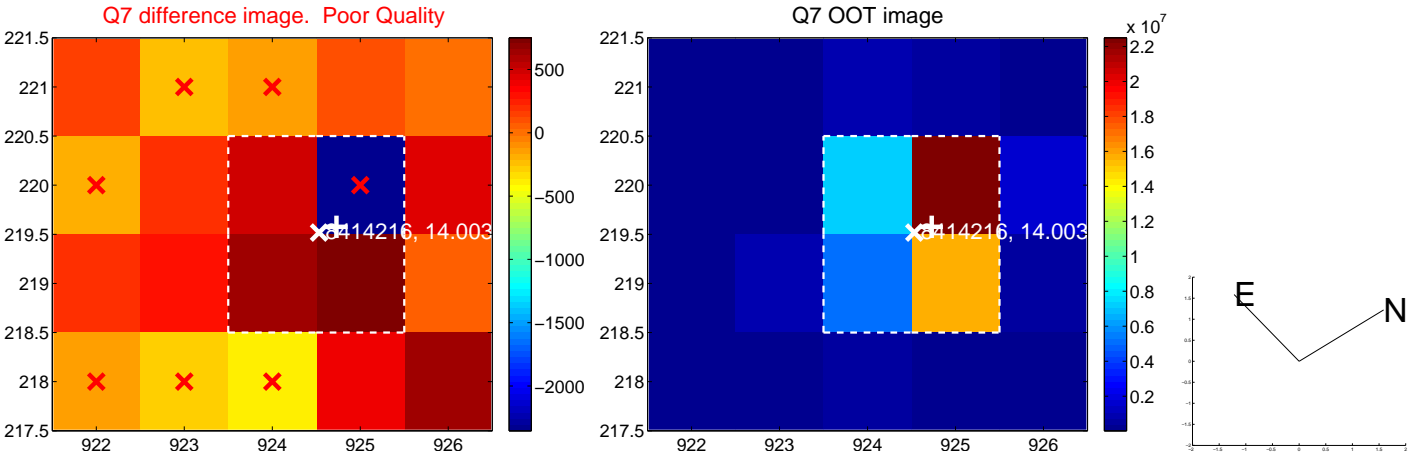
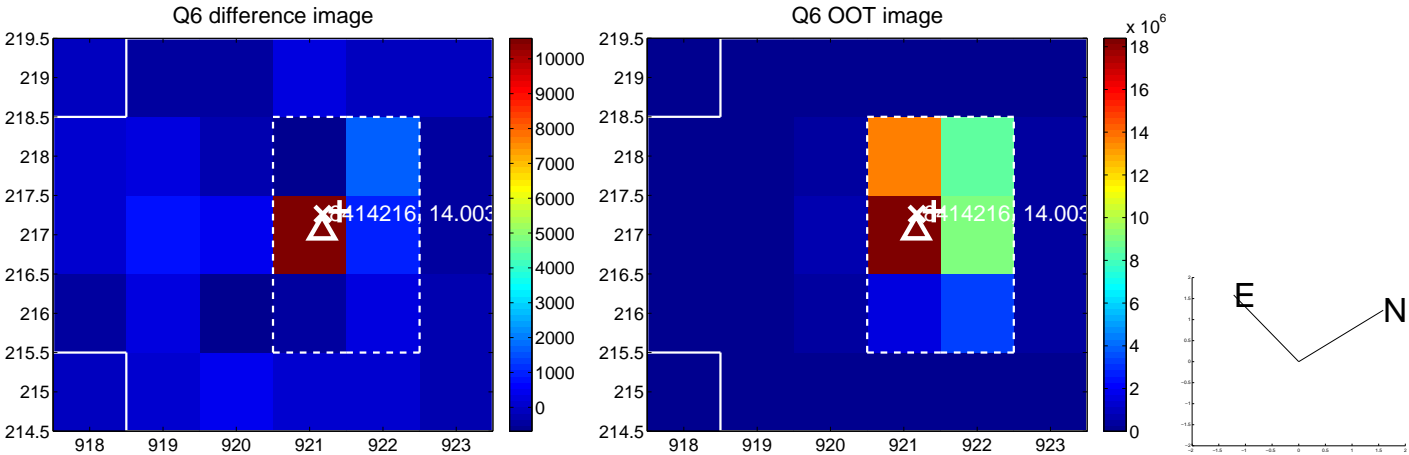
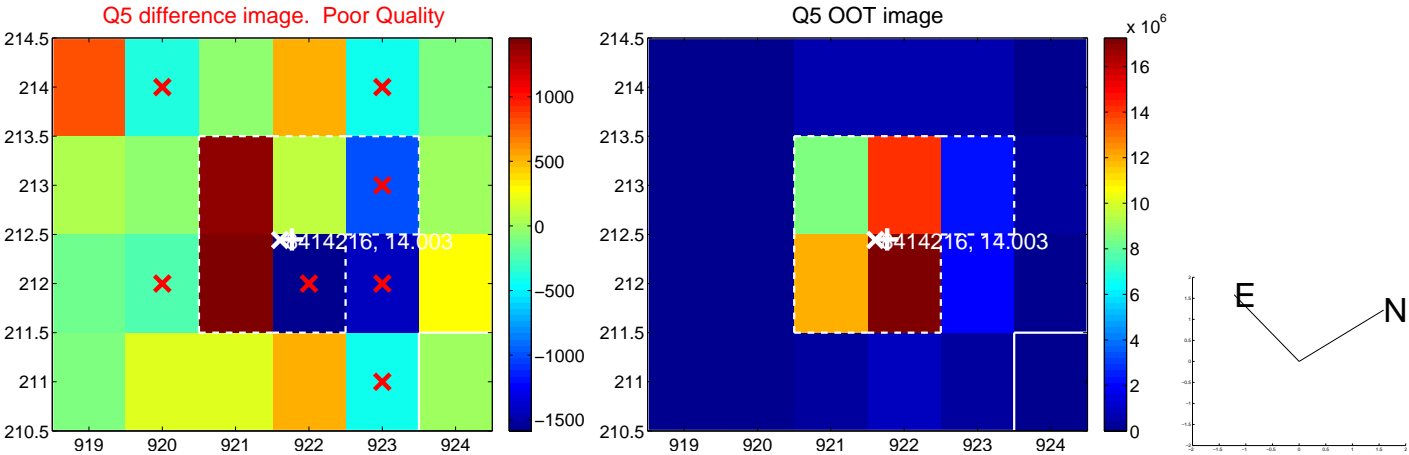


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

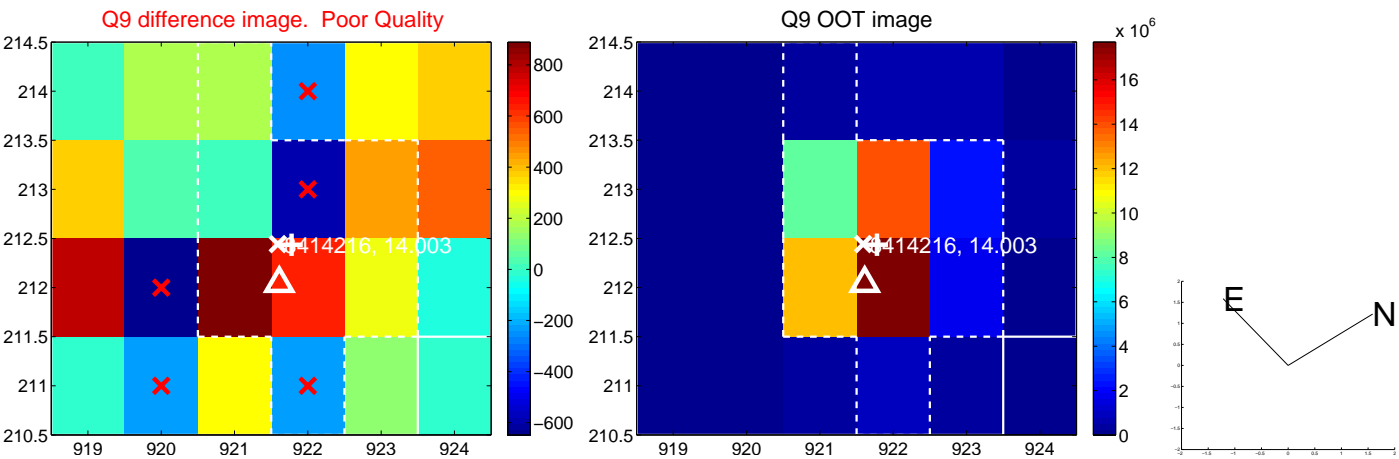
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



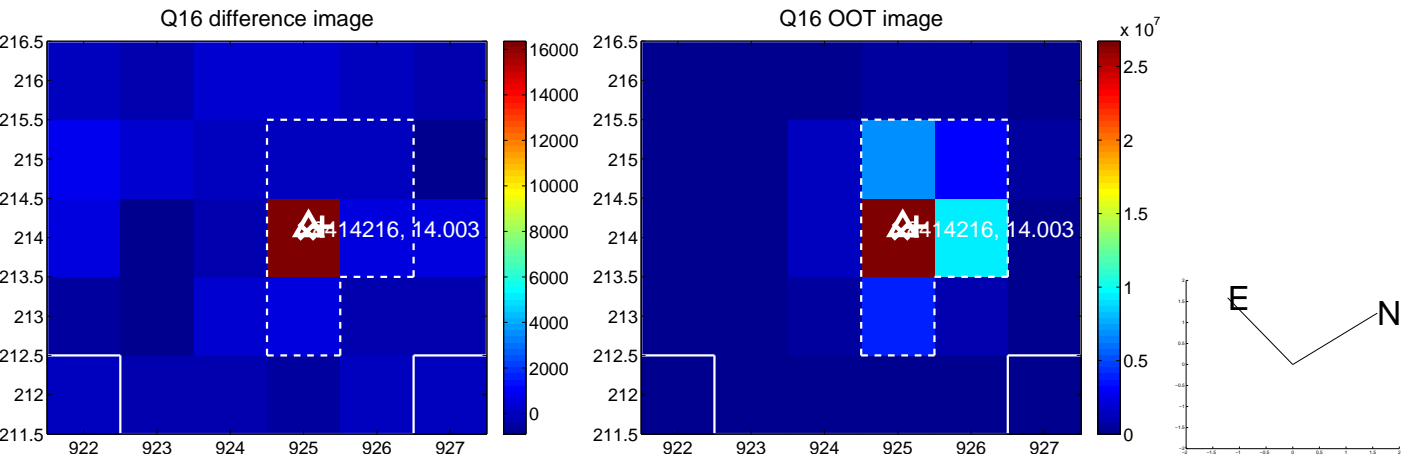
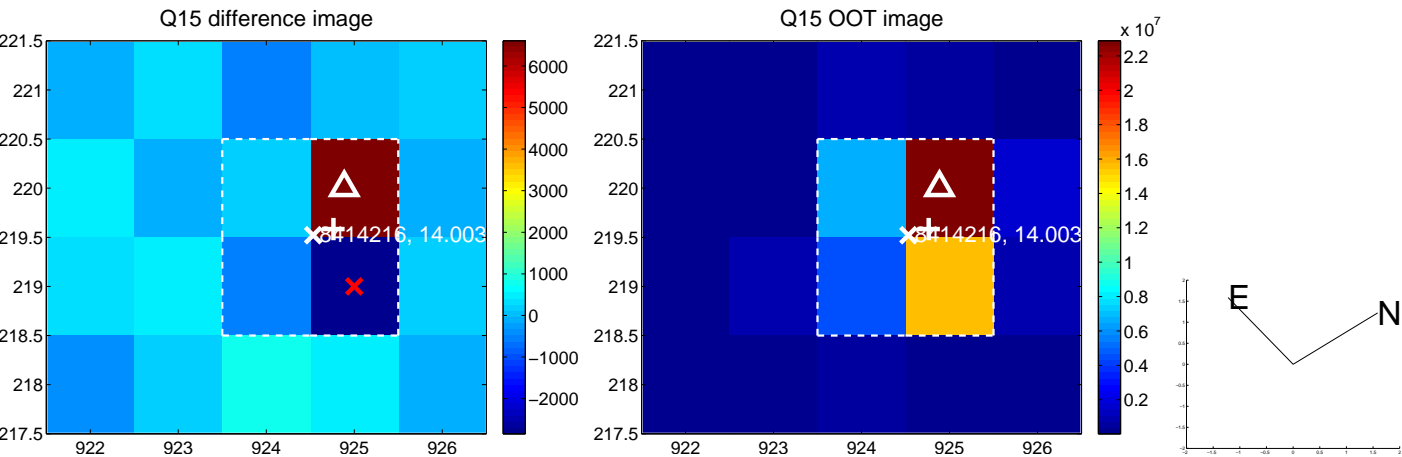
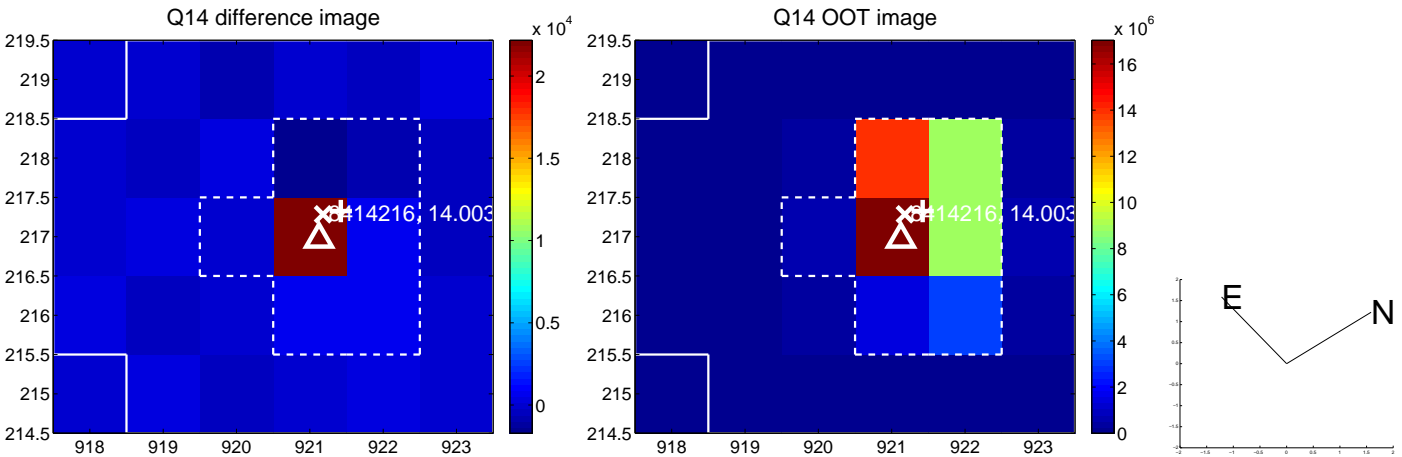
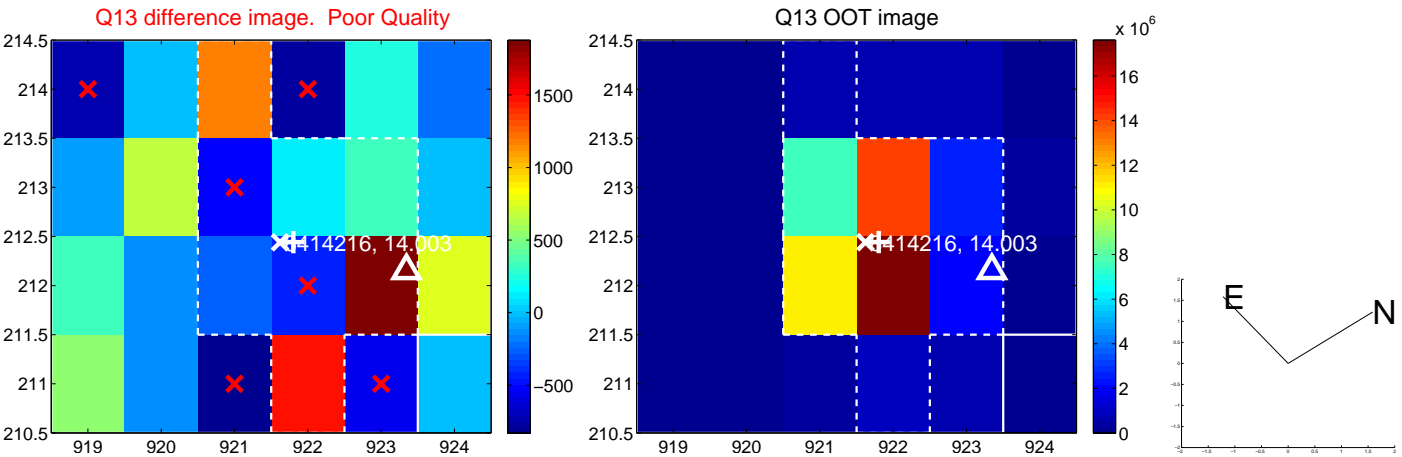
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



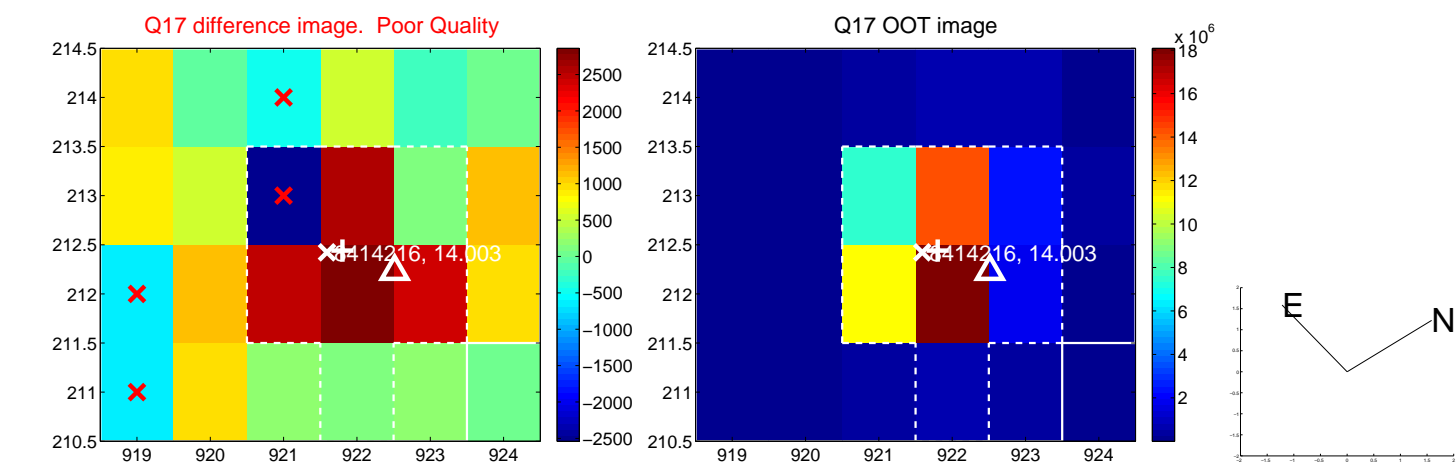
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



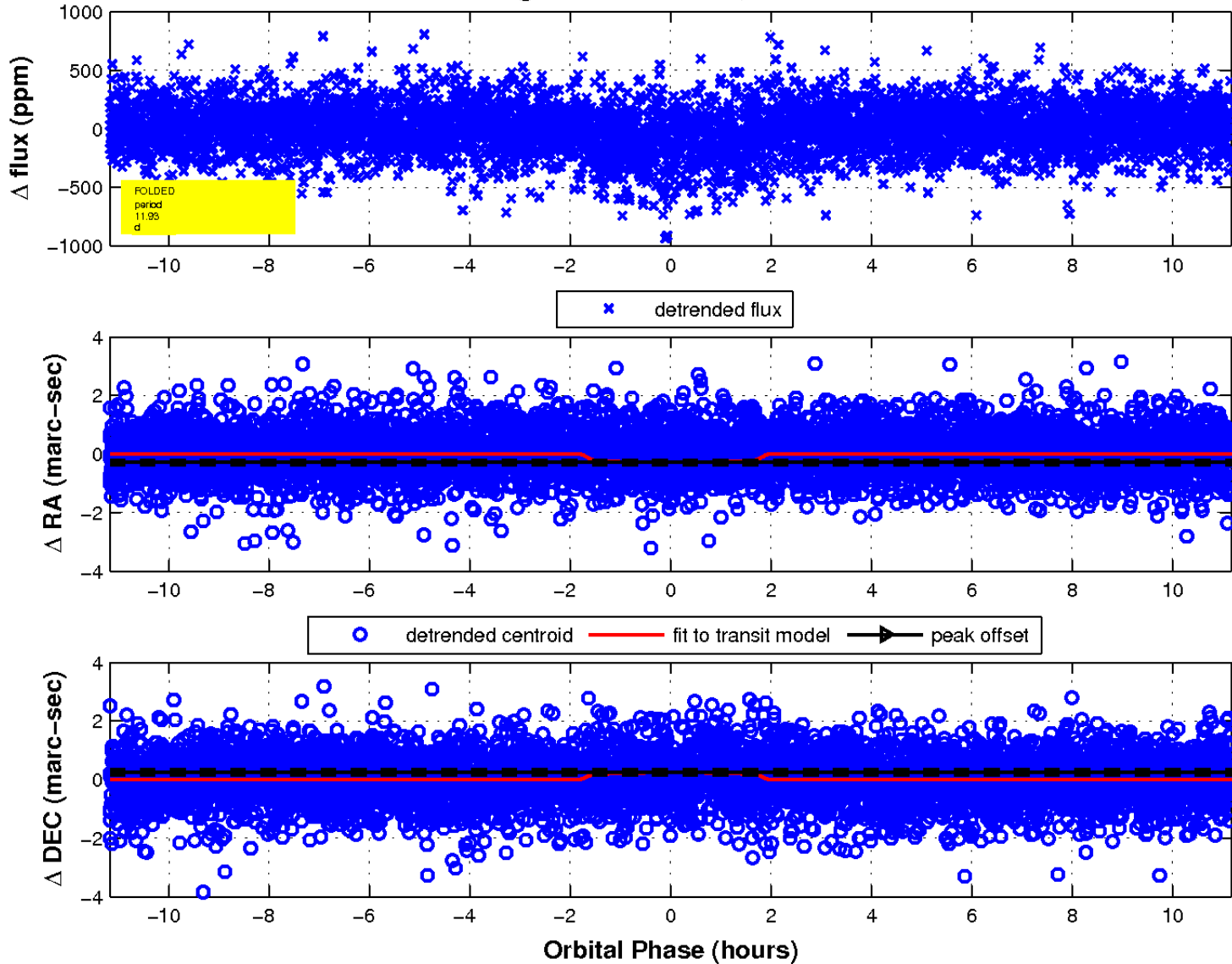
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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

