

KIC 009716220

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})
009716220-01	OBS	No	3.220939	133.734682	63.1	33.304	9.1	12.5	3.37	7950	2.97	13795.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009716220-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS

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

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

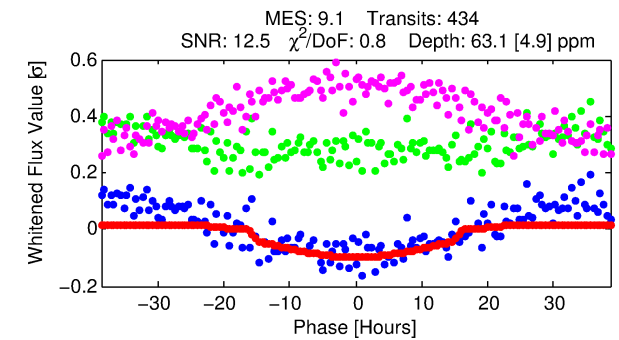
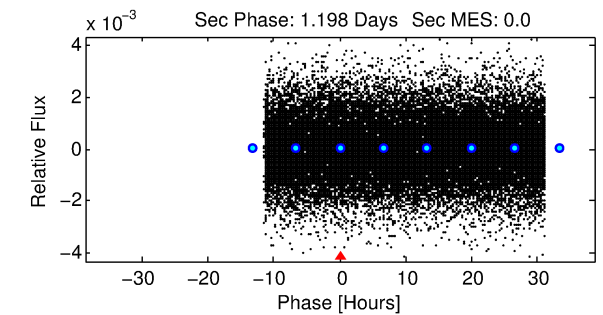
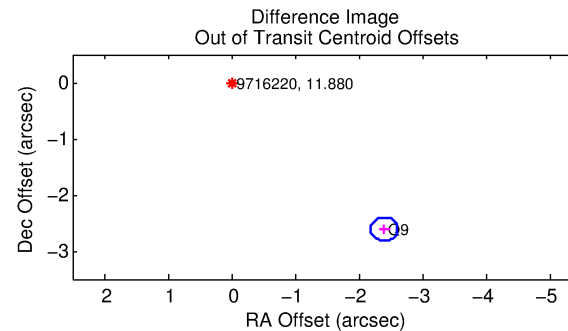
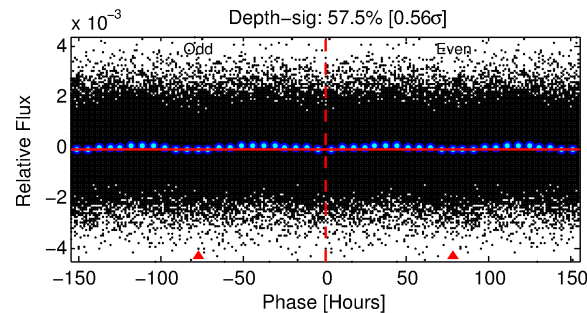
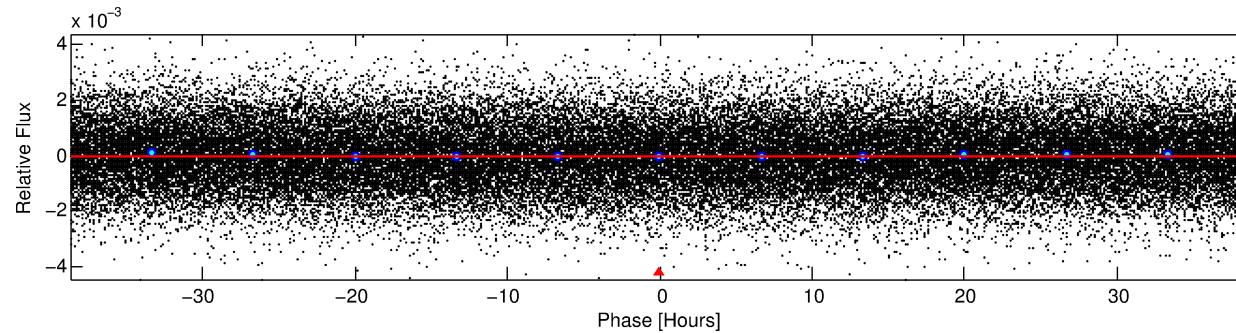
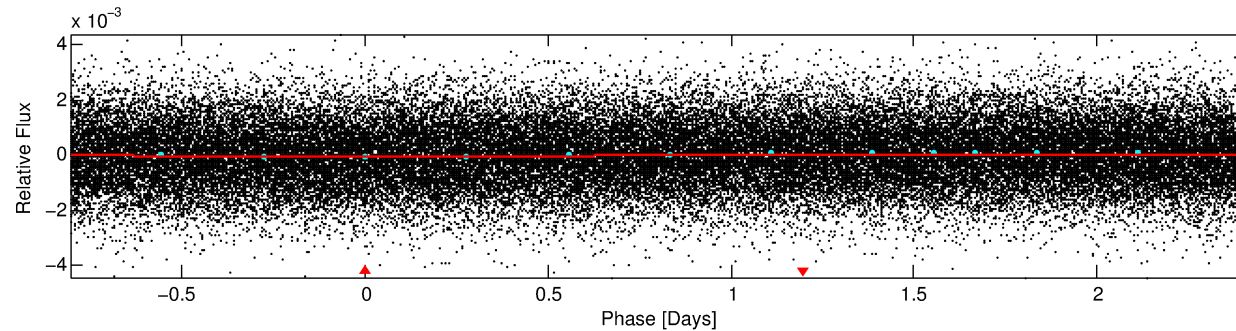
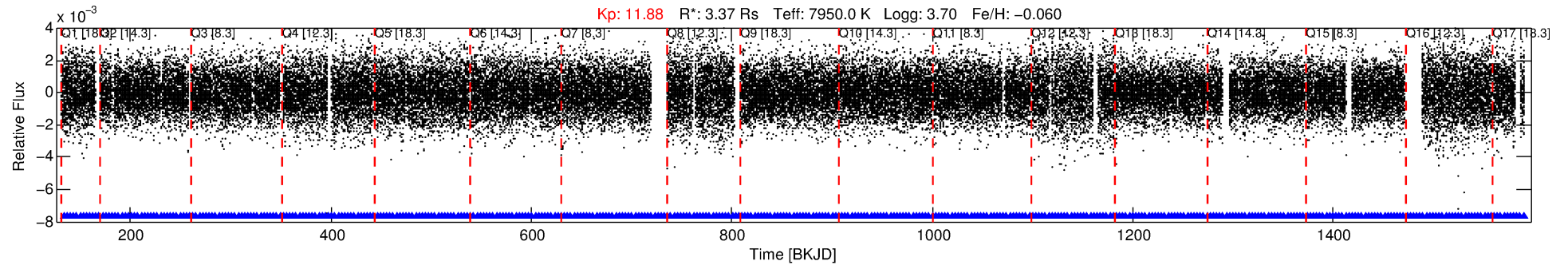
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009716220-01

No Significant Match Found

DV One-Page Summary

KIC: 9716220 Candidate: 1 of 1 Period: 3.221 d



DV Fit Results:

Period = 3.22094 [0.00020] d
Epoch = 133.7347 [0.0486] BKJD
Rp/R* = 0.0081 [0.0015]
a/R* = 1.02 [0.03]
b = 0.81 [0.47]
Seff = 13795.28 [10461.00]
Teq = 2763 [524] K
Rp = 2.97 [1.45] Re
a = 0.0543 [0.0246] AU
Ag = N/A
Teffp = N/A

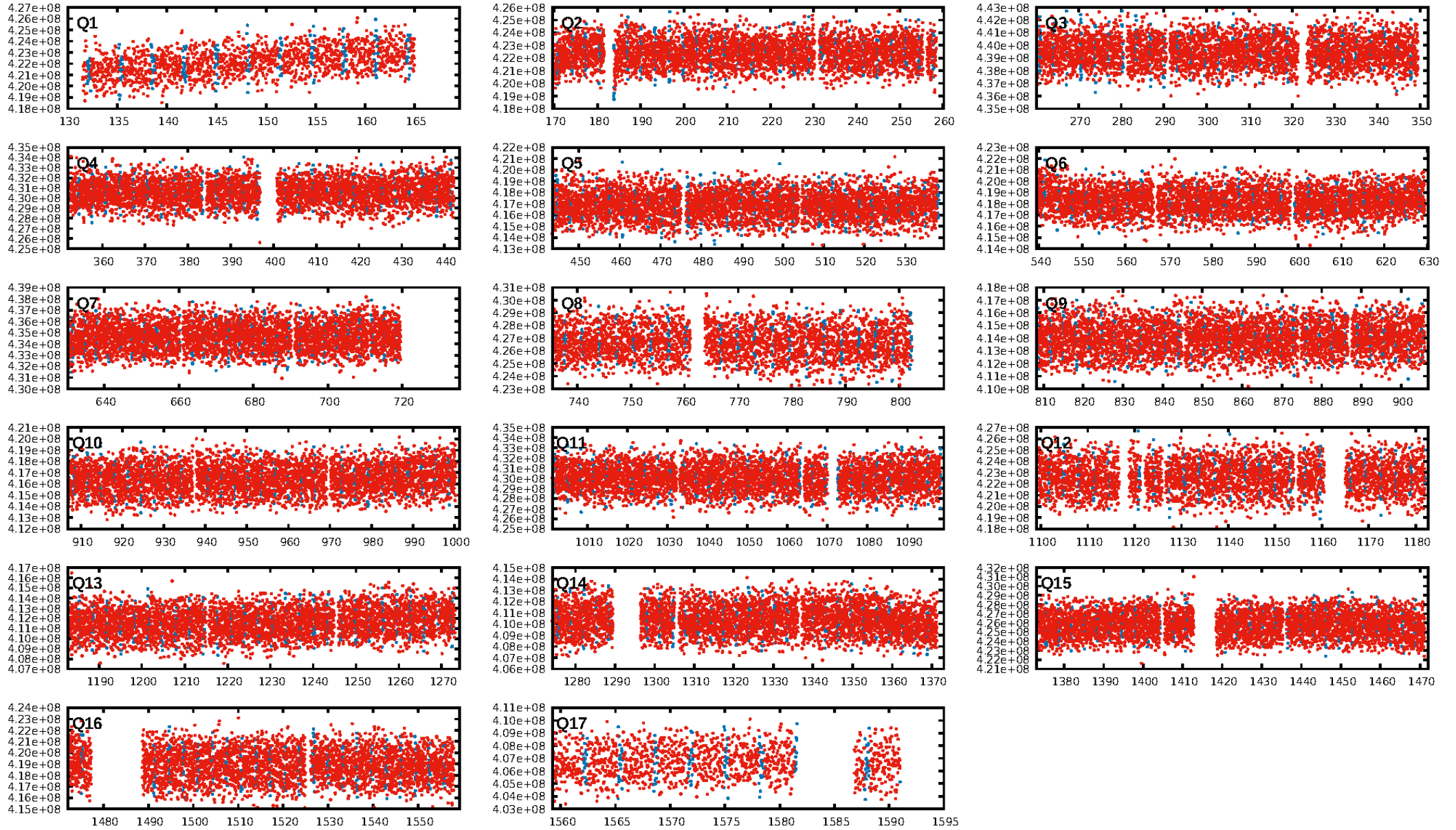
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [415/415]
GhostDiagnostic-chr: 1.96
Centroid-sig: 0.3%
Centroid-so: 0.296 arcsec [2.89 σ]
OotOffset-rm: 3.546 arcsec [50.66 σ]
KicOffset-rm: 3.567 arcsec [50.92 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [17/17]

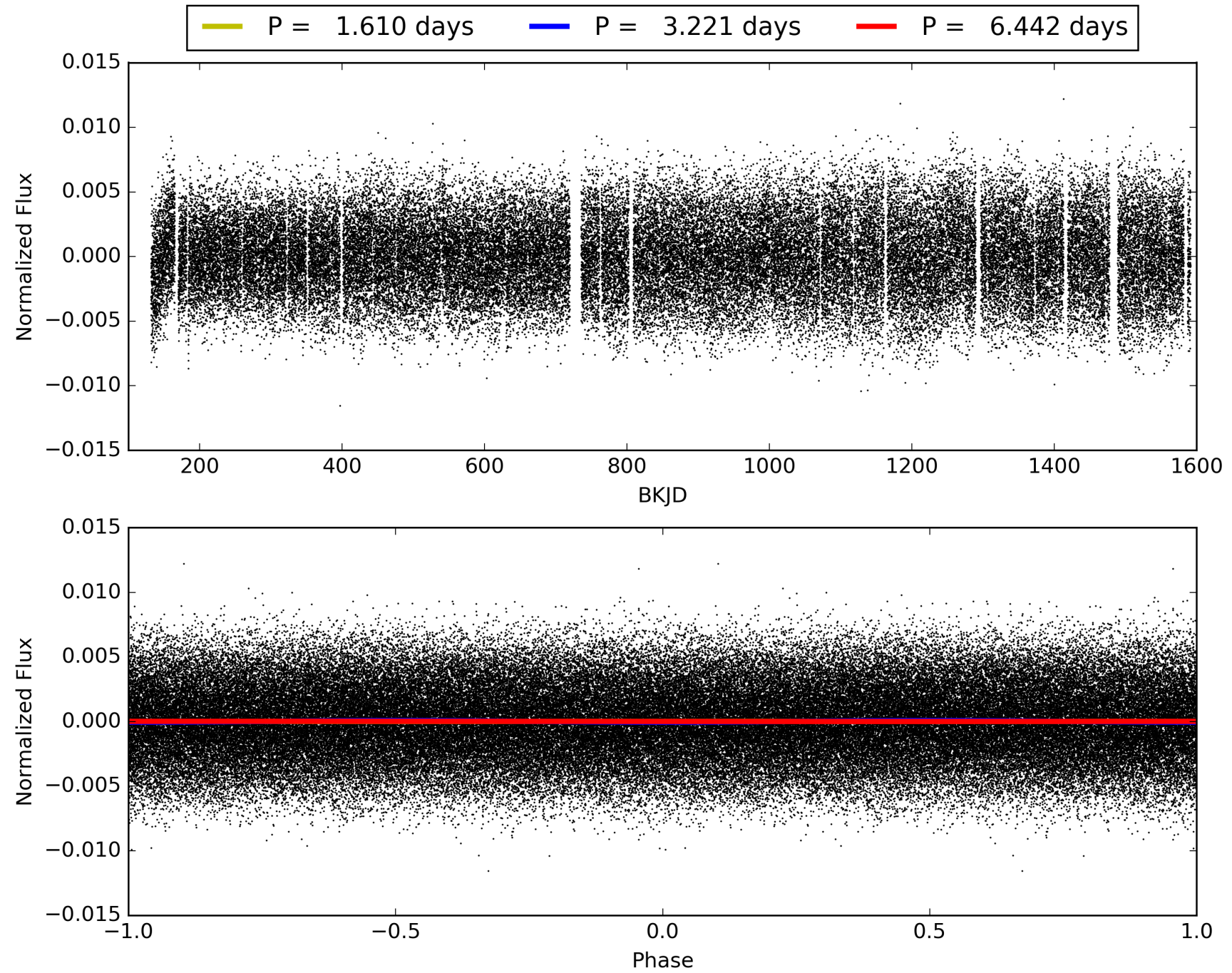
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:16:08 Z

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

TCE 009716220-01, PDC Light Curves

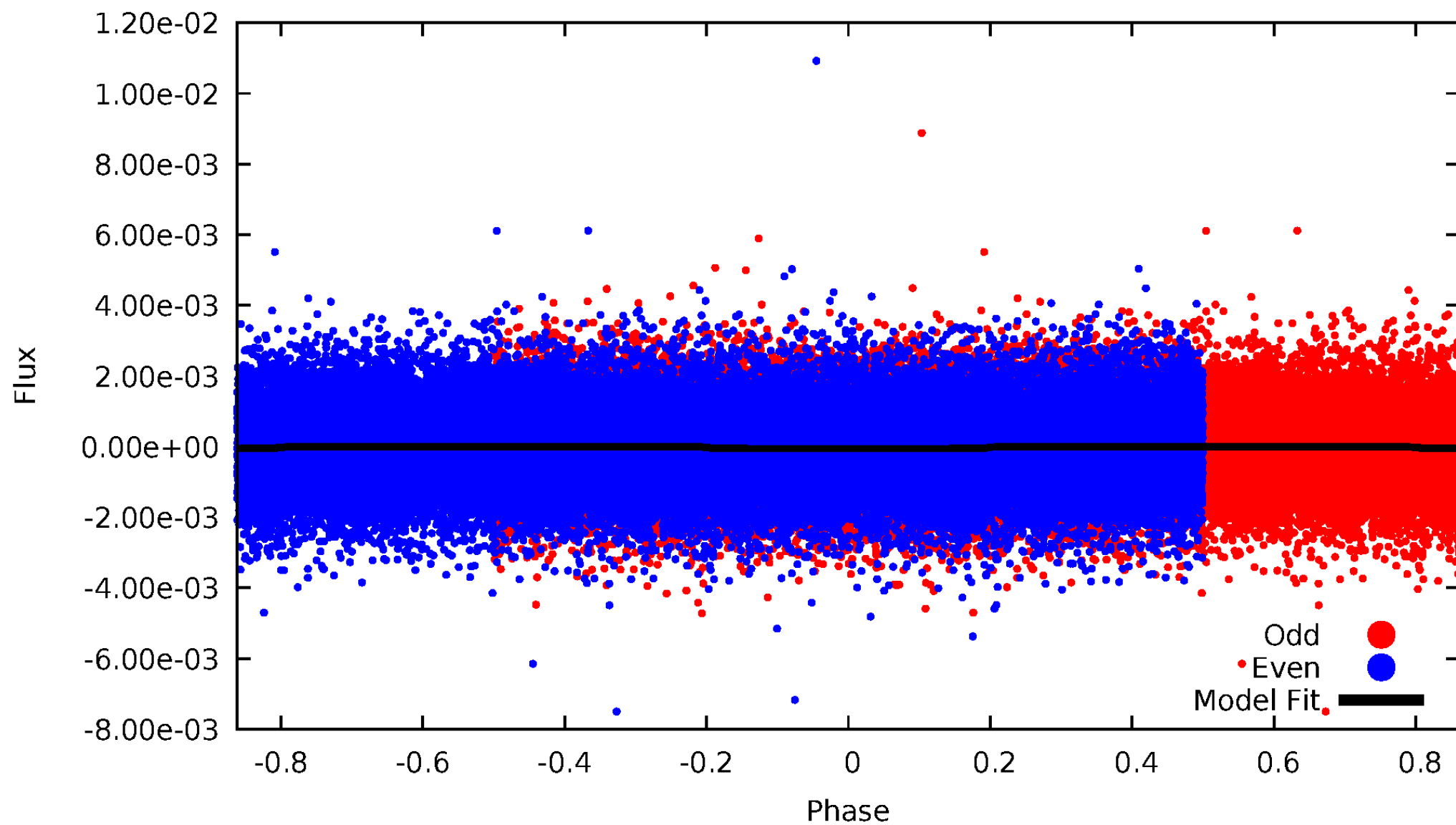


TCE 009716220-01



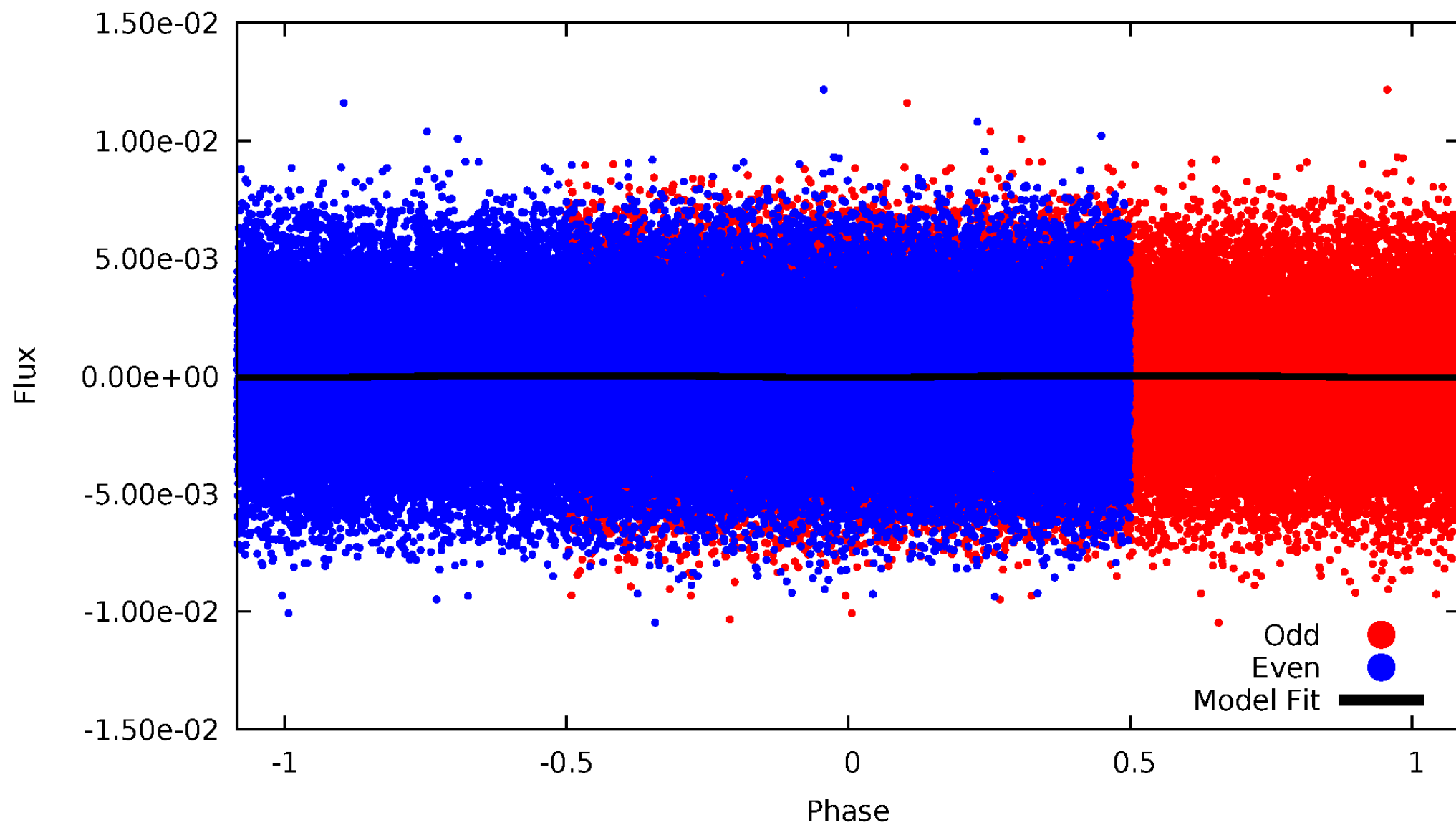
DV Odd/Even

TCE 009716220-01



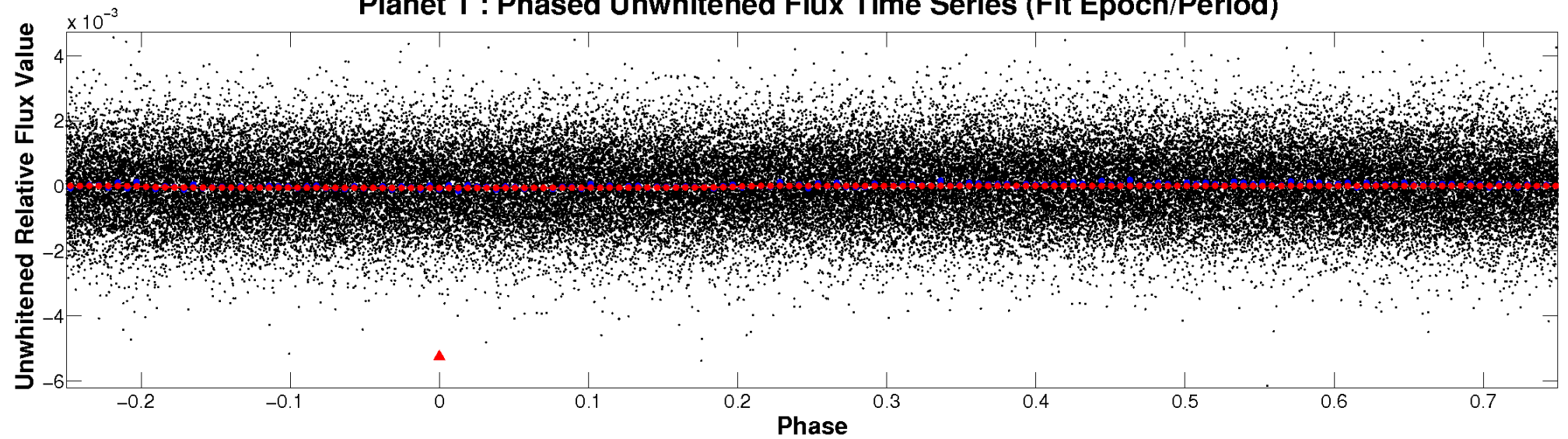
ALT Odd/Even

TCE 009716220-01

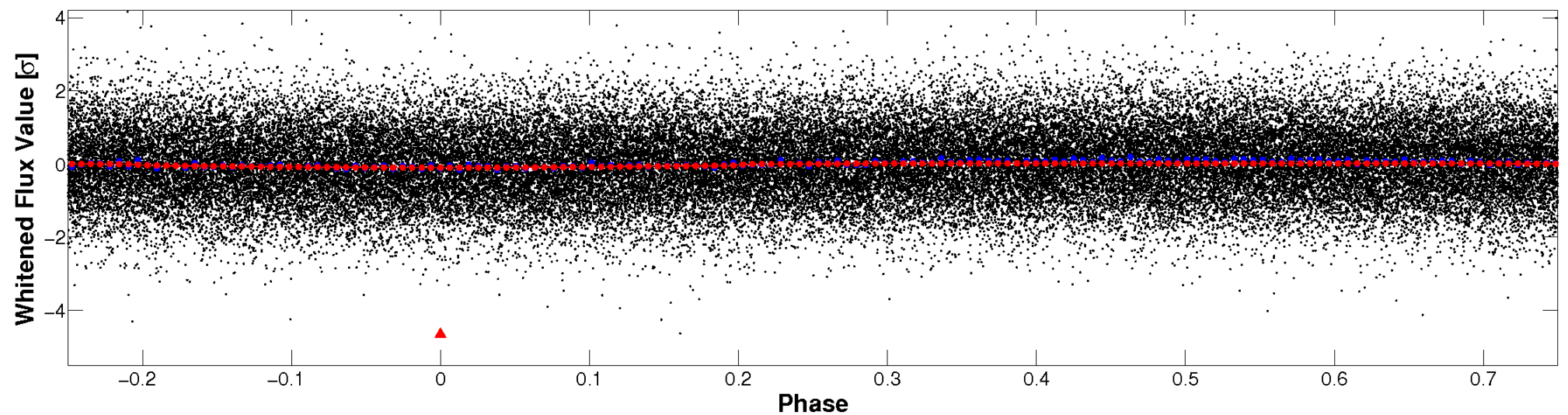


Non-Whitened Vs. Whitened Light Curve

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

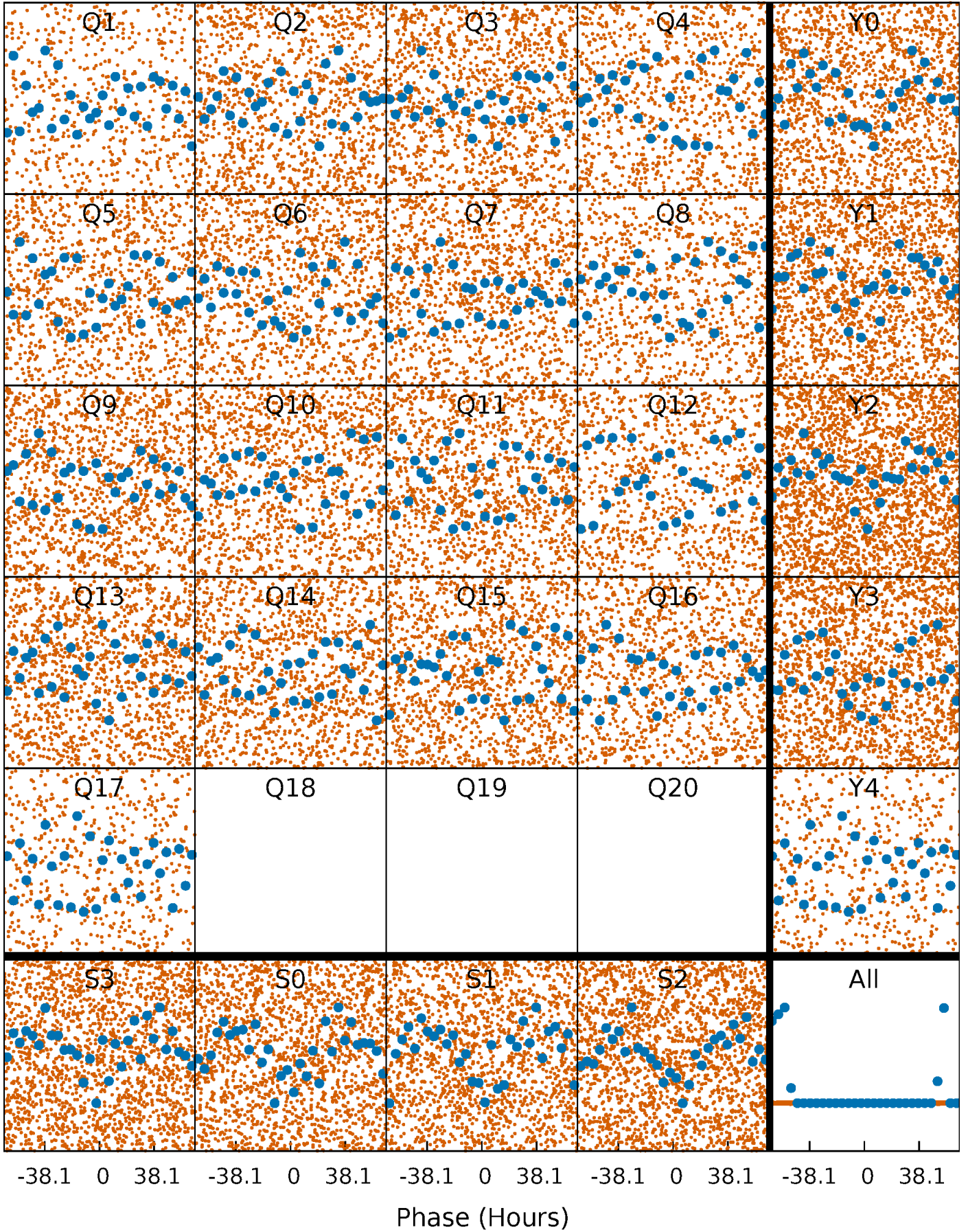


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



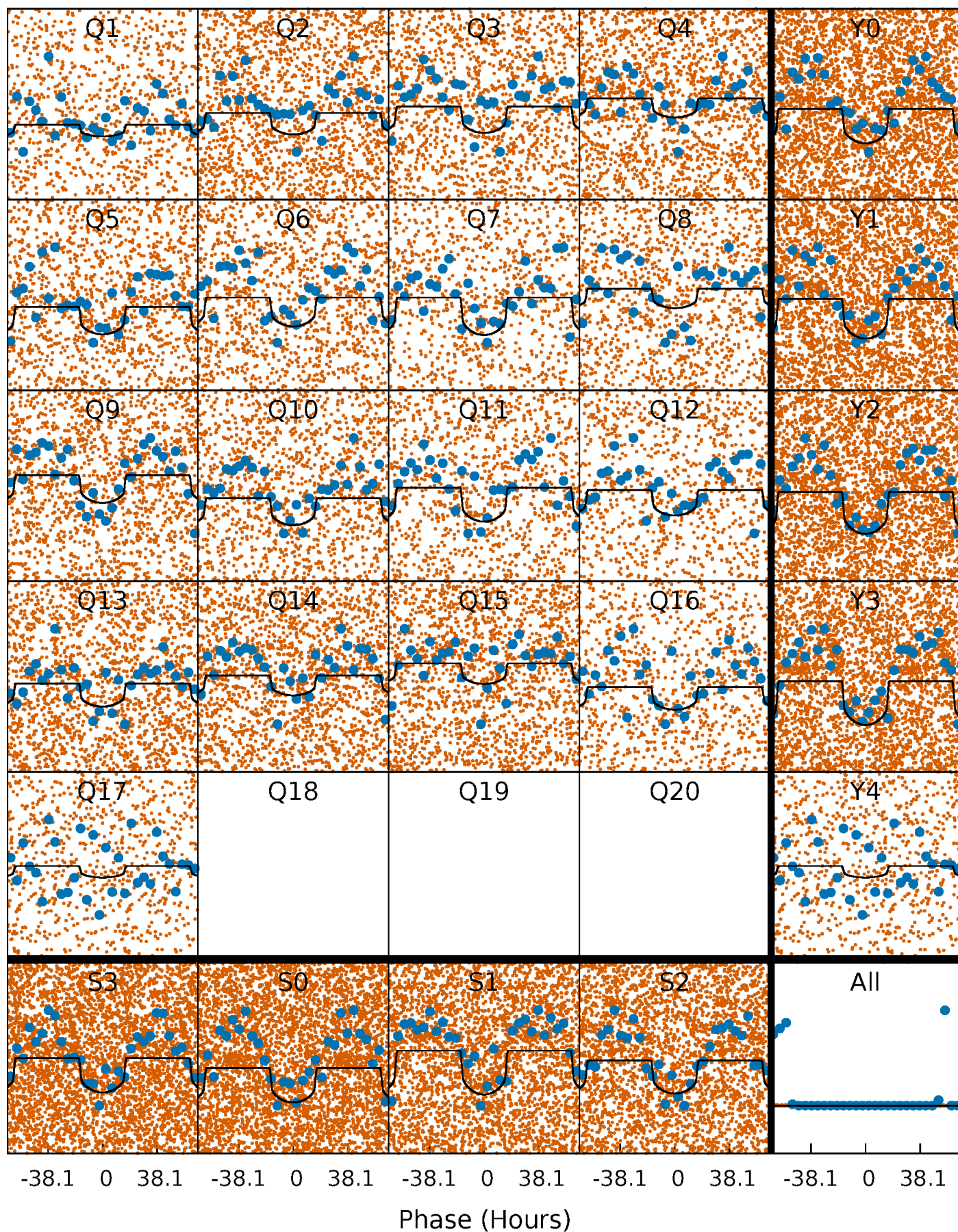
PDC Quarter-Phased Transit Curves

TCE 009716220-01 P= 3.220939 Days $T_0=133.734682$ (BKJD)



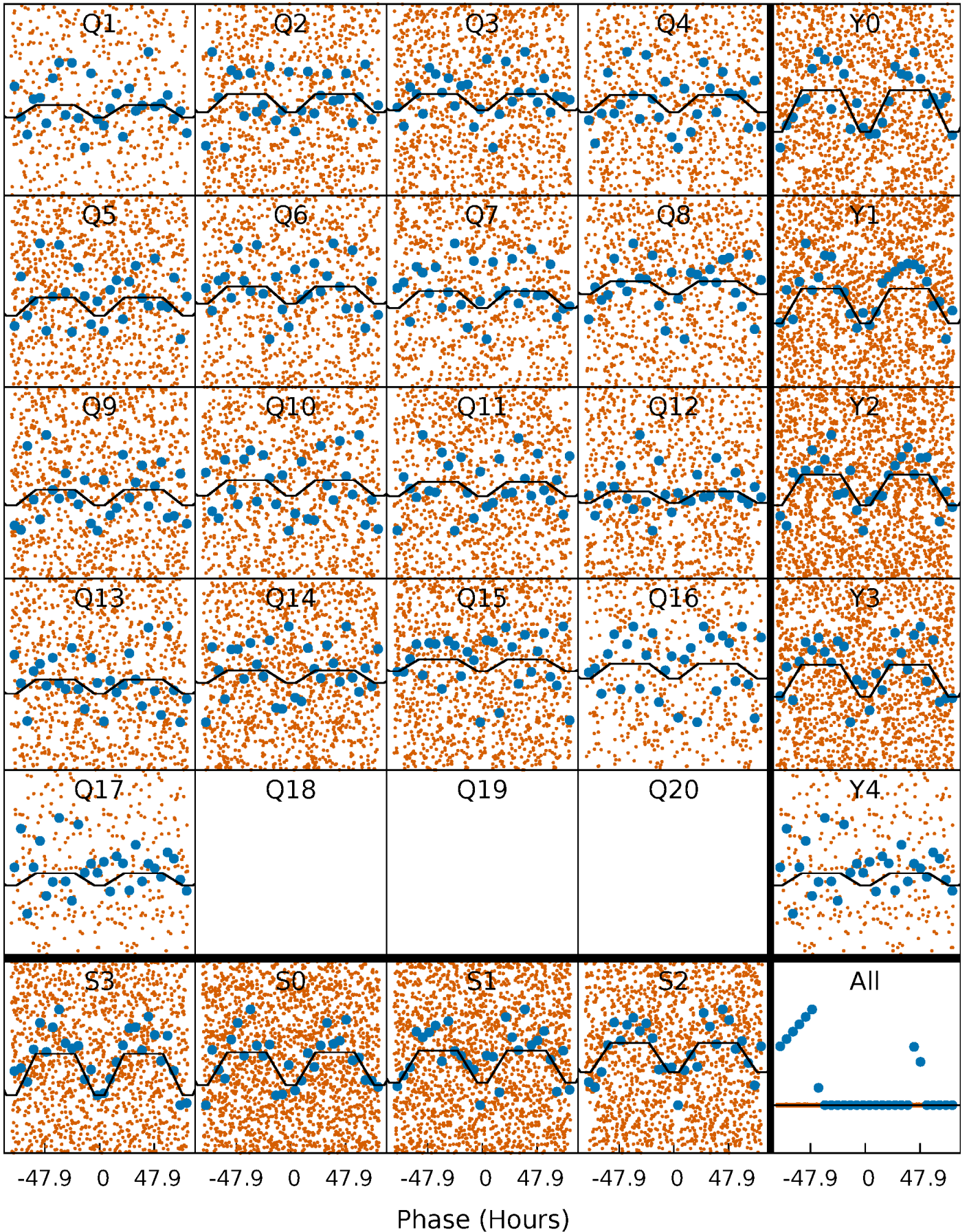
DV Quarter-Phased Transit Curves

TCE 009716220-01 P= 3.220939 Days $T_0=133.734682$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

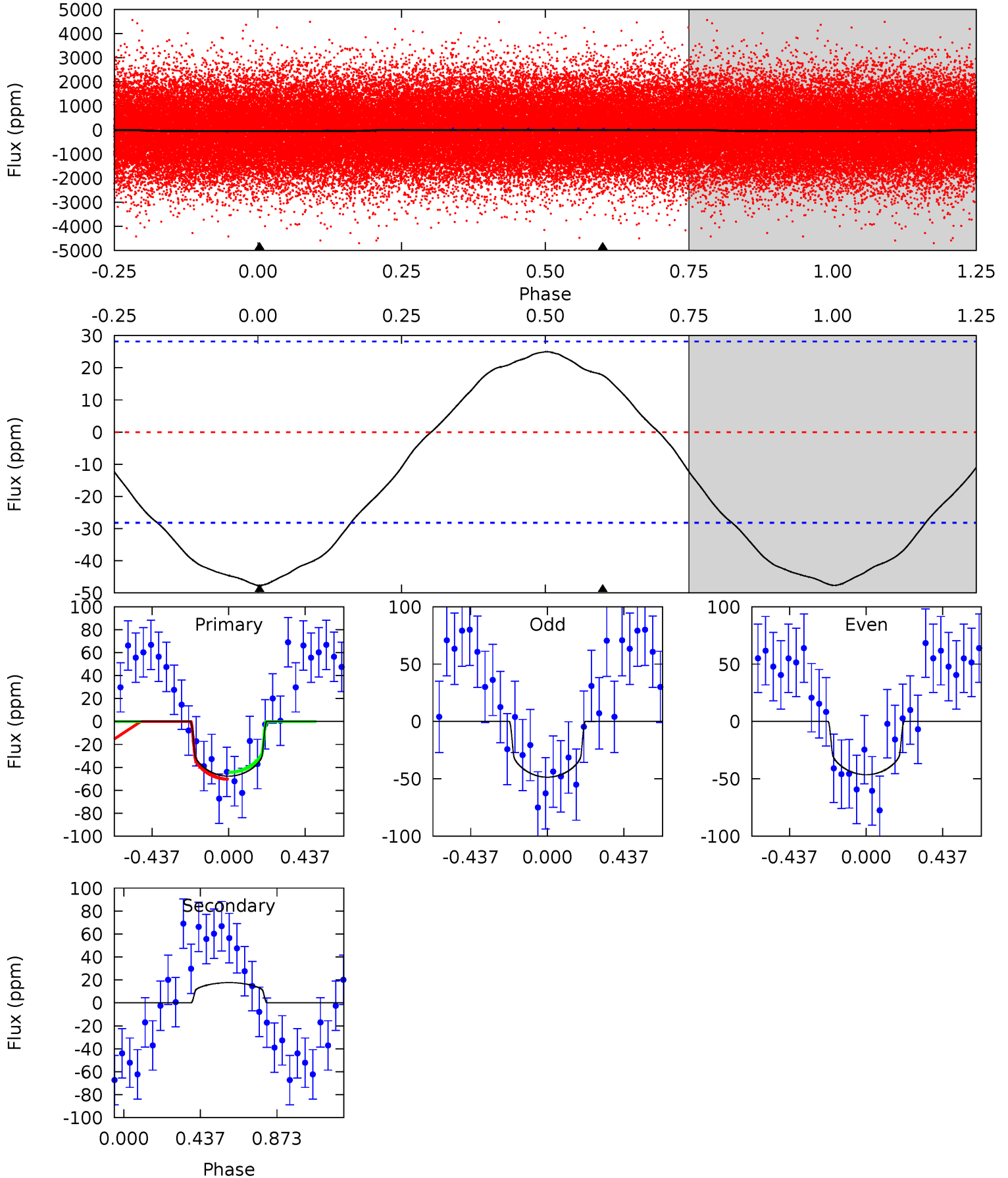
TCE 009716220-01 P= 3.220977 Days $T_0=133.717073$ (BKJD)



DV Model-Shift Uniqueness Test

009716220-01, P = 3.220939 Days, E = 130.513743 Days

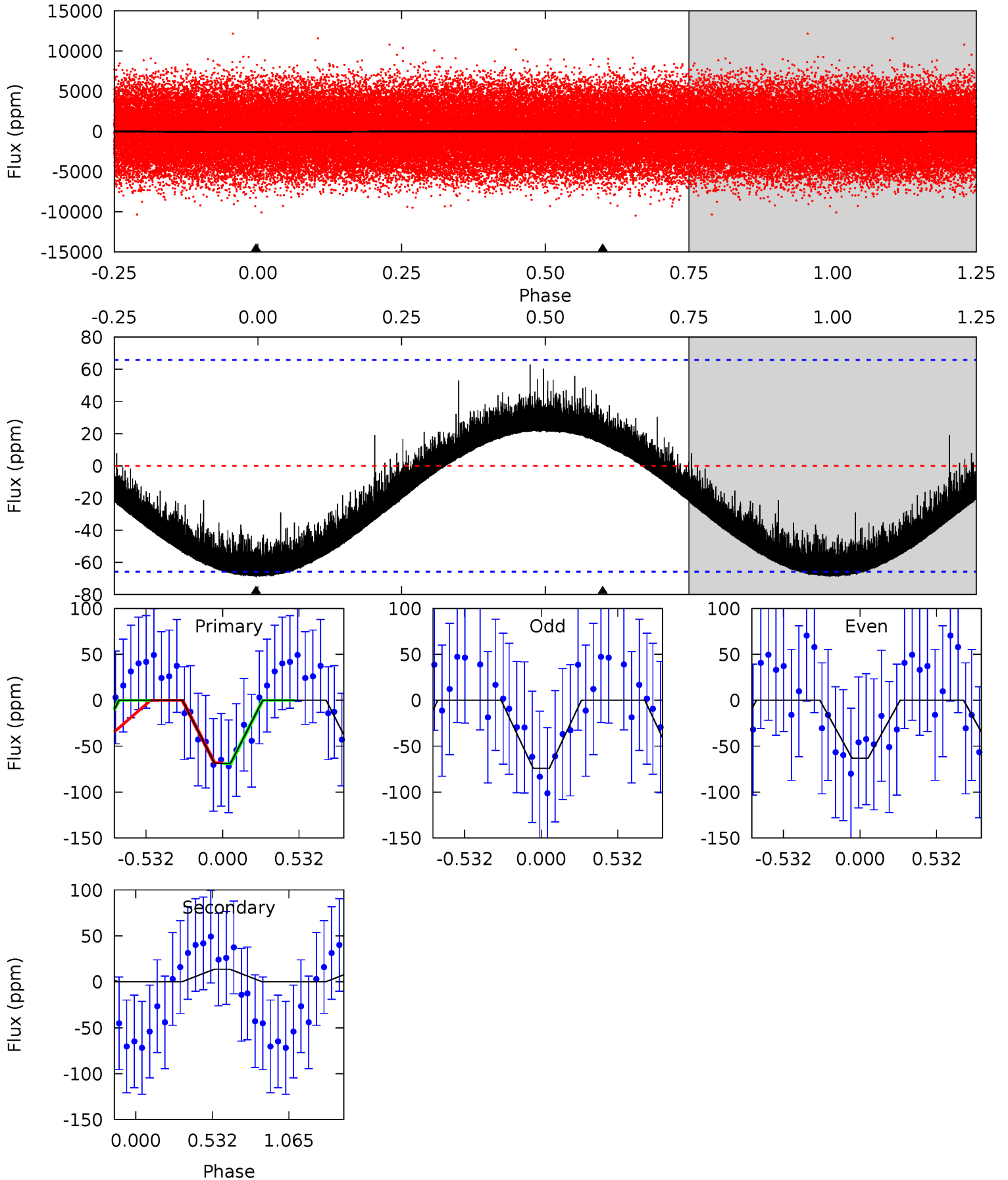
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.19	-2.66	0	0	4.25	0.78	0.81	7.19	7.19	-2.66	-2.66	0.16	1.29	0.34	0.46



Alt Model-Shift Uniqueness Test

009716220-01, P = 3.220977 Days, E = 130.496096 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.38	-0.87	0	0	4.20	0.62	0.53	4.38	4.38	-0.87	-0.87	0.36	0.94	0.48	0.03



Stellar Parameters For KIC 009716220

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7950^{+221}_{-331}	$3.696^{+0.440}_{-0.110}$	$-0.060^{+0.200}_{-0.350}$	$3.373^{+0.705}_{-1.527}$	$2.060^{+0.324}_{-0.526}$	$0.076^{+0.316}_{-0.025}$
	+3%/-4%	+12%/-3%	+333%/-583%	+21%/-45%	+16%/-26%	+417%/-33%
Source	KIC0	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 009716220-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	18 ± 7	$2.77^{+0.74}_{-0.82}$	3742^{+284}_{-422}	-5681^{+619}_{-812}	$-3.780^{+1.798}_{-3.718}$
Alt.	14 ± 16	$2.80^{+0.77}_{-0.76}$	3757^{+272}_{-434}	-5366^{+8183}_{-1259}	$-2.867^{+3.236}_{-4.460}$

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 $A_{obs} \gg 1.0$

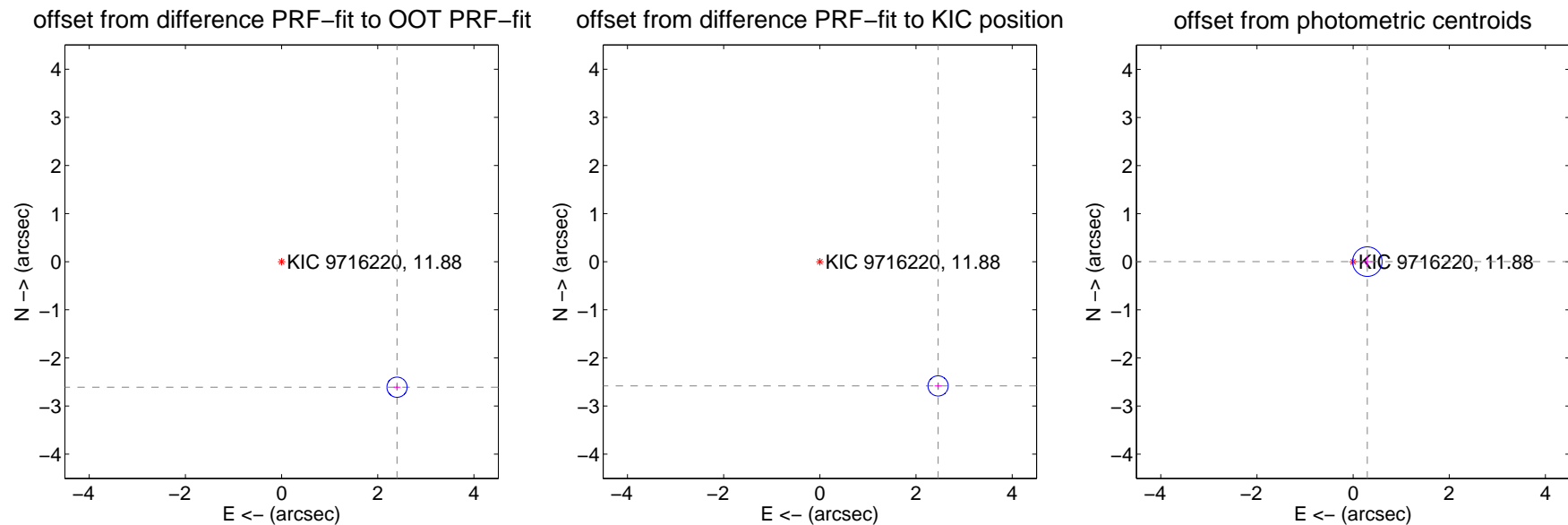
DV Centroid Data

Supplemental centroid analysis for 009716220-01. **Kepler magnitude: 11.88.** Transit SNR 12.54

There are 0 quarters with good PRF difference image offsets

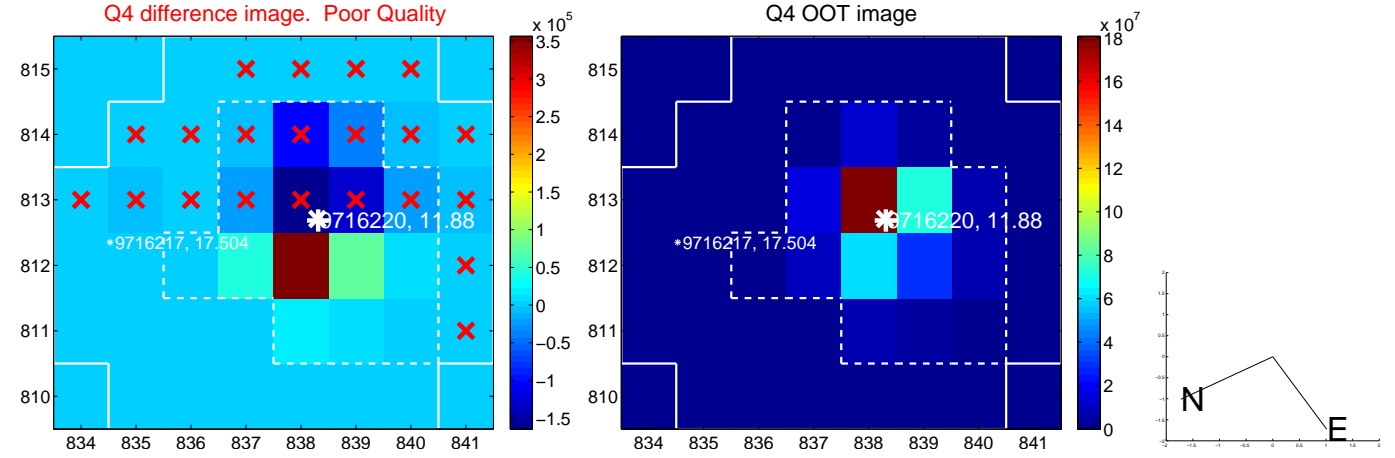
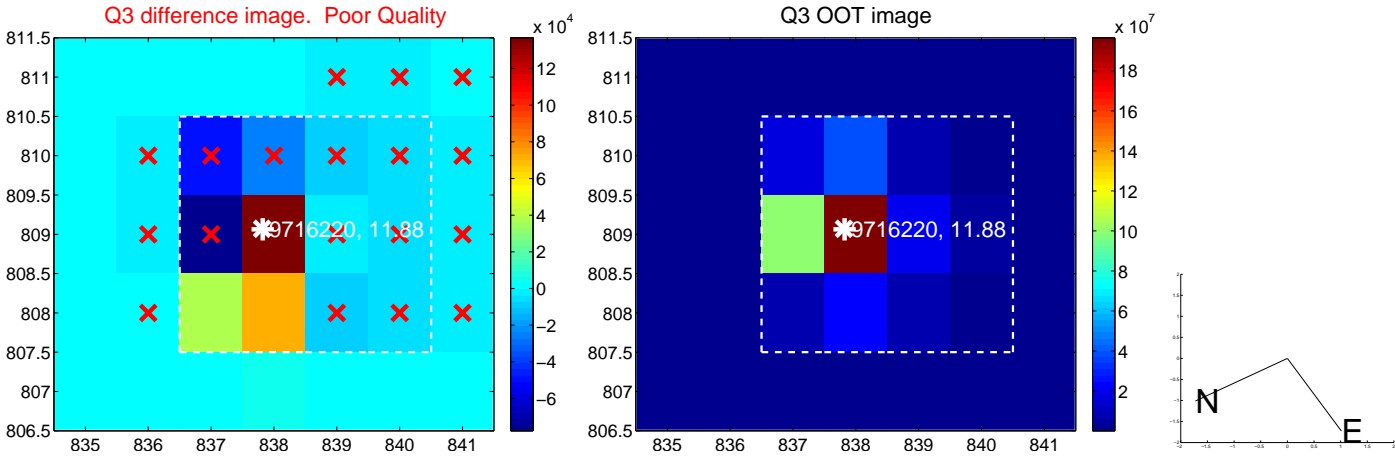
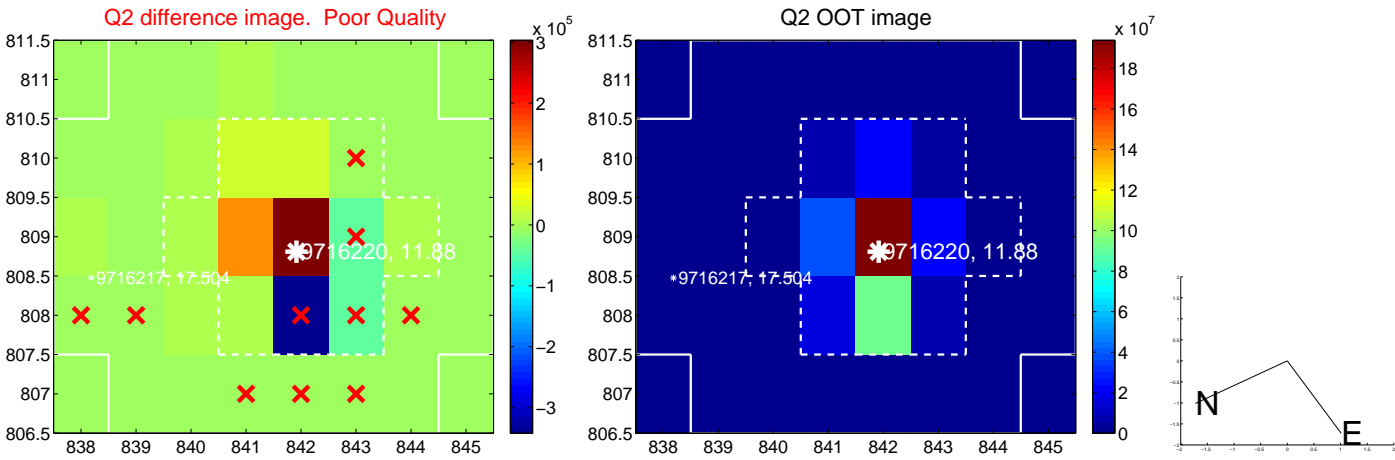
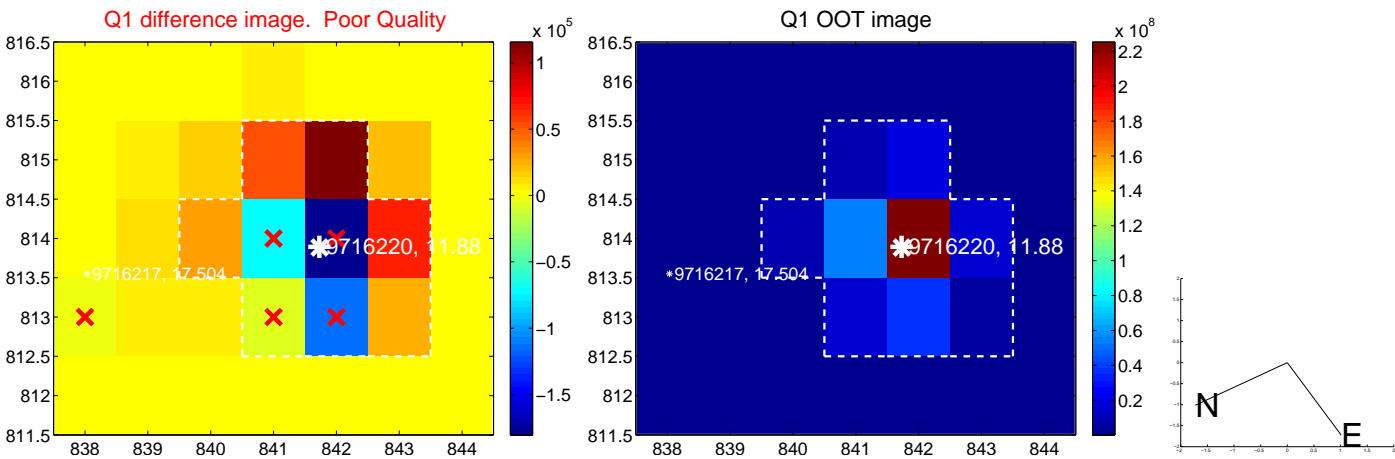
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.546 ± 0.070	50.66	-2.401 ± 0.071	-2.610 ± 0.069
PRF-fit source offset from KIC position	3.567 ± 0.070	50.92	-2.460 ± 0.071	-2.583 ± 0.069
photometric centroid source offset	0.30 ± 0.10	2.89	-0.30 ± 0.10	0.00 ± 0.11

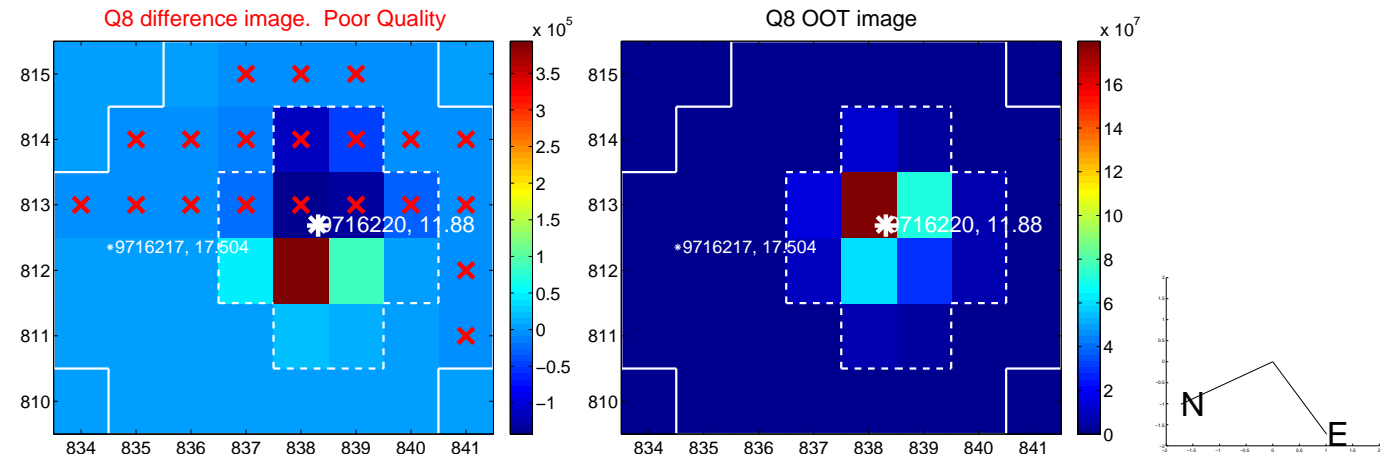
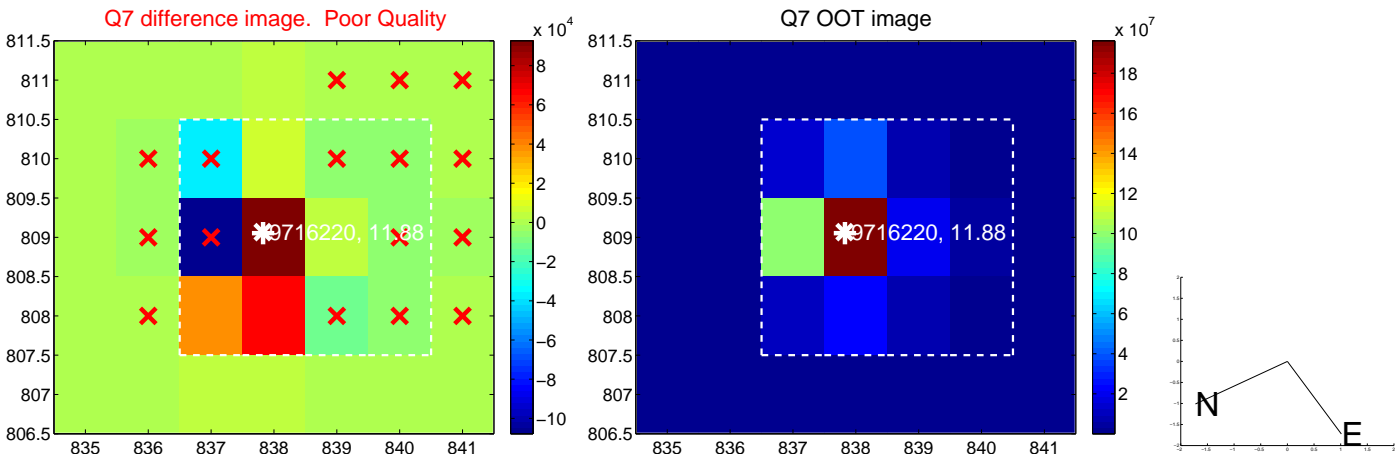
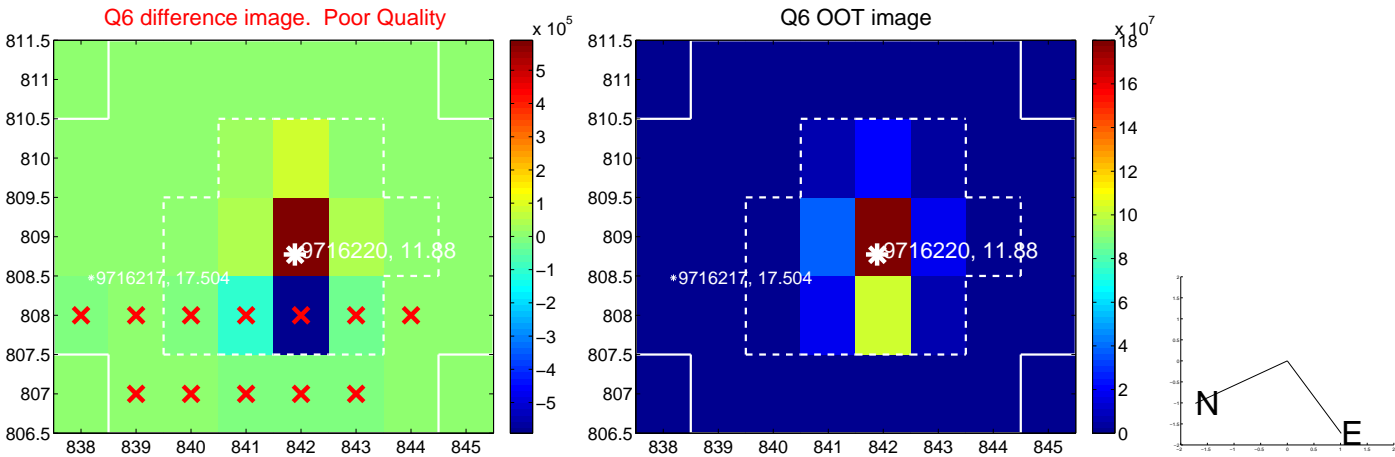
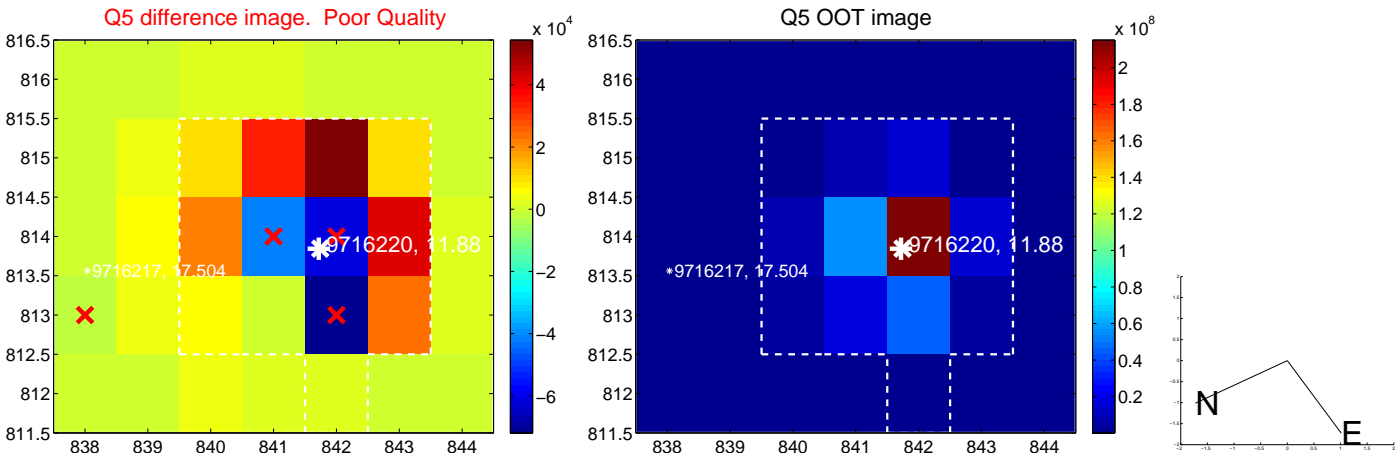


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

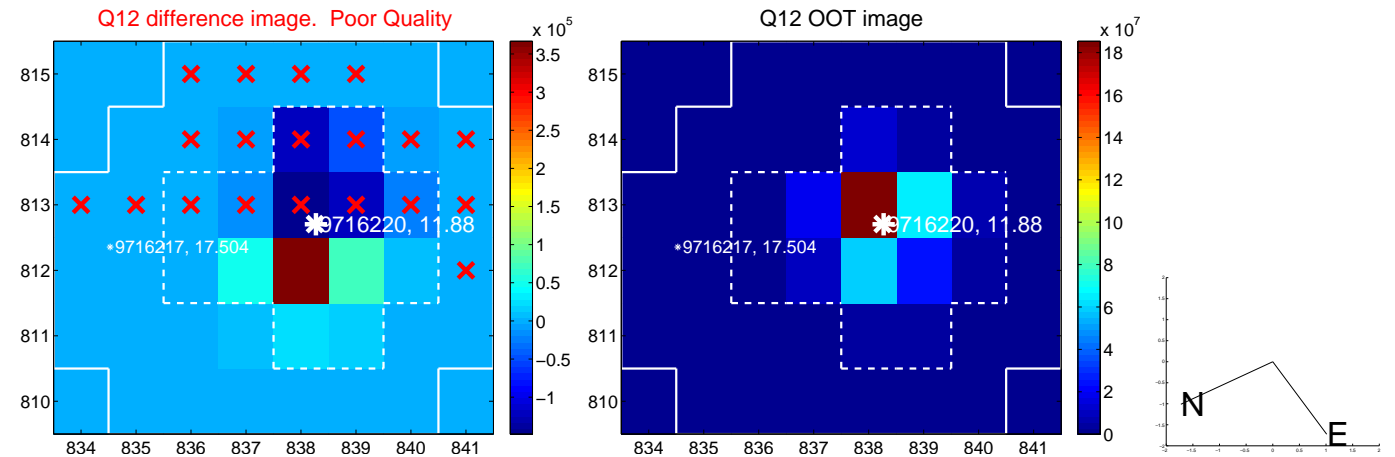
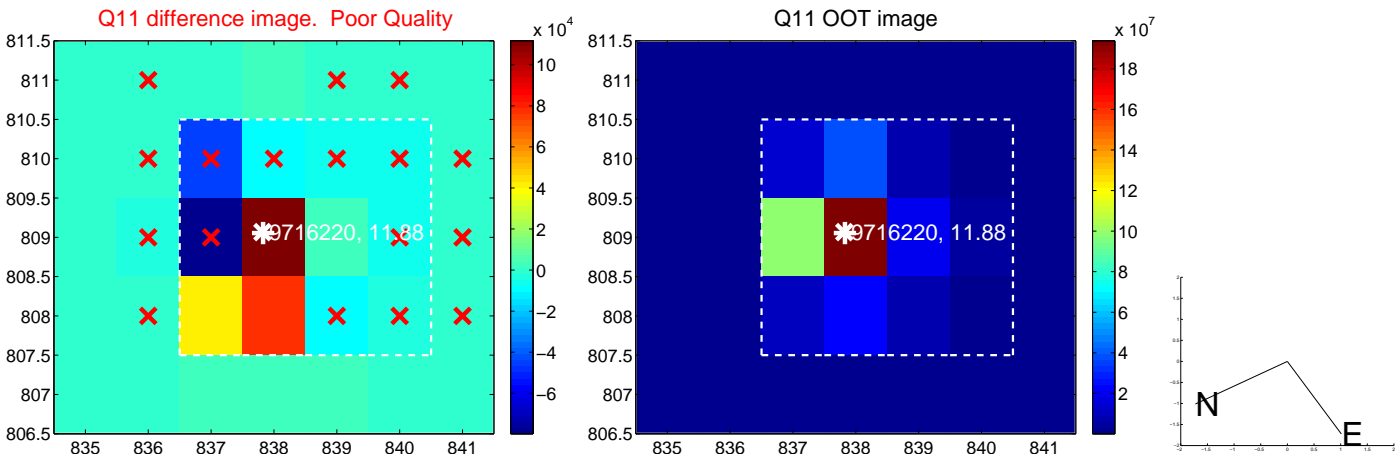
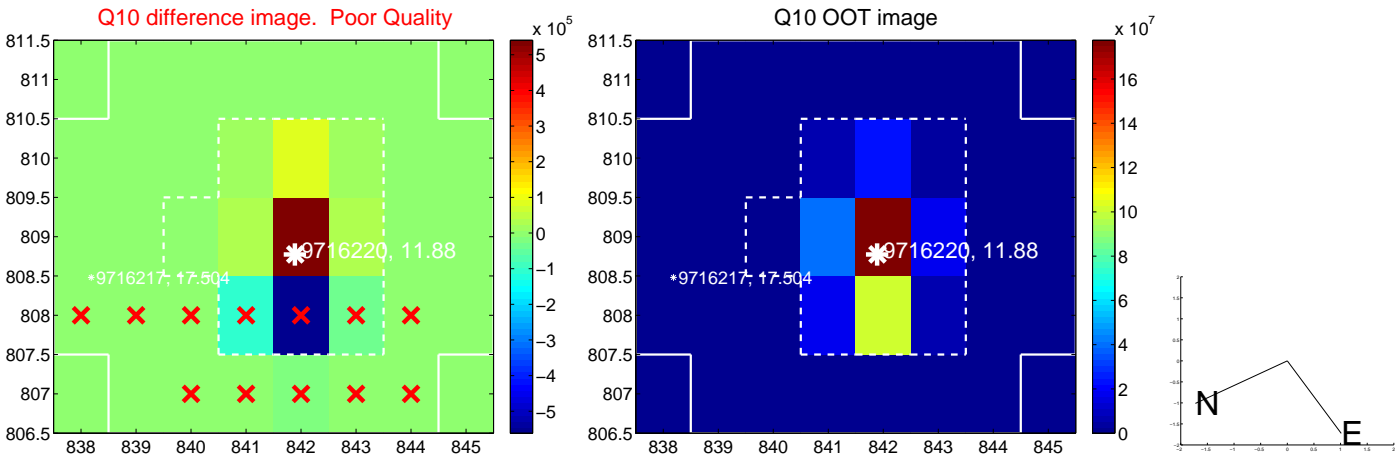
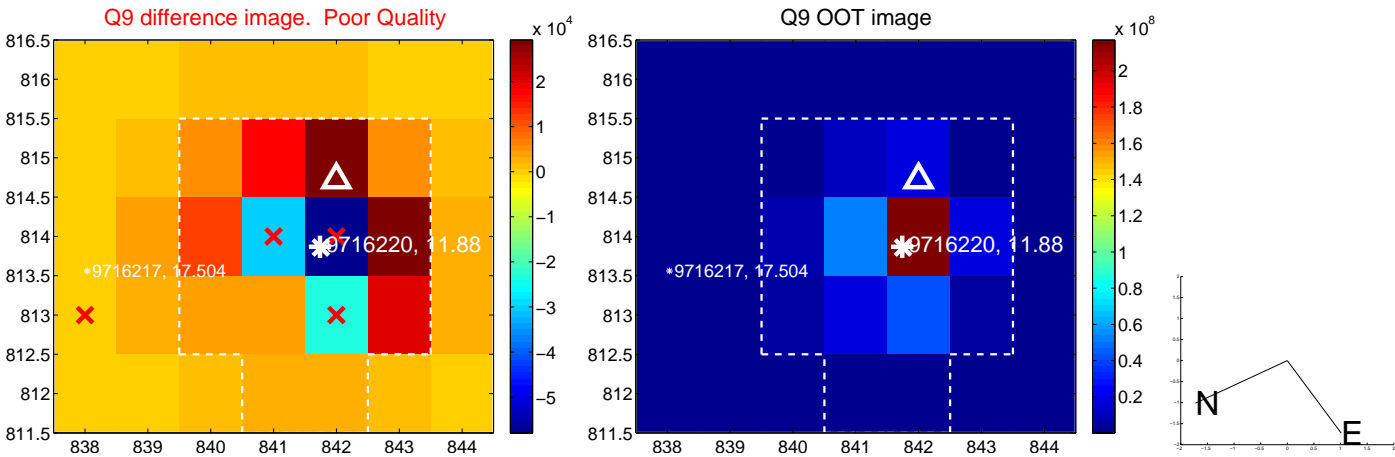
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



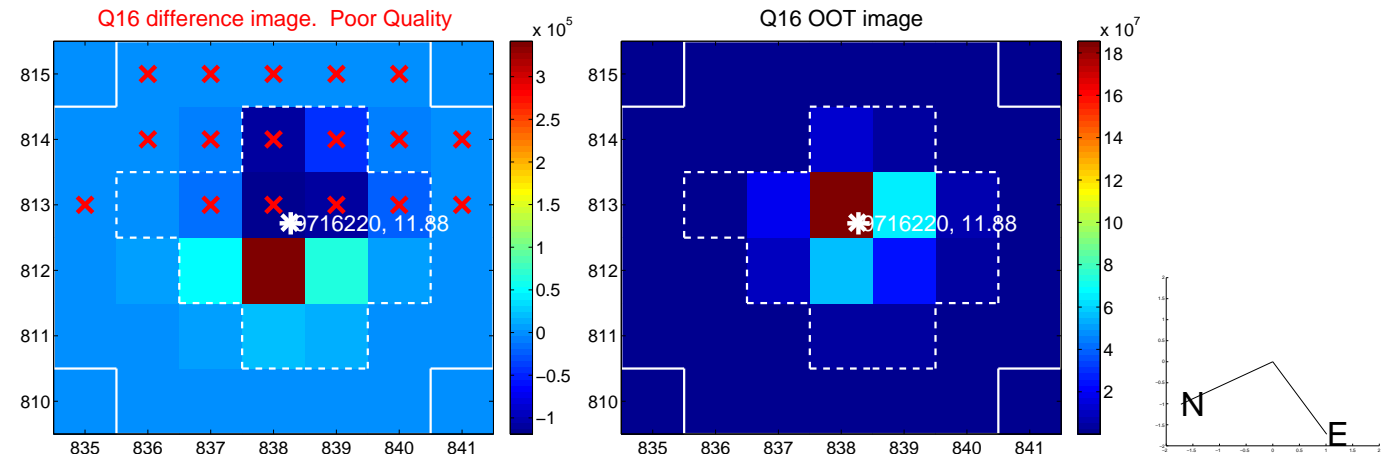
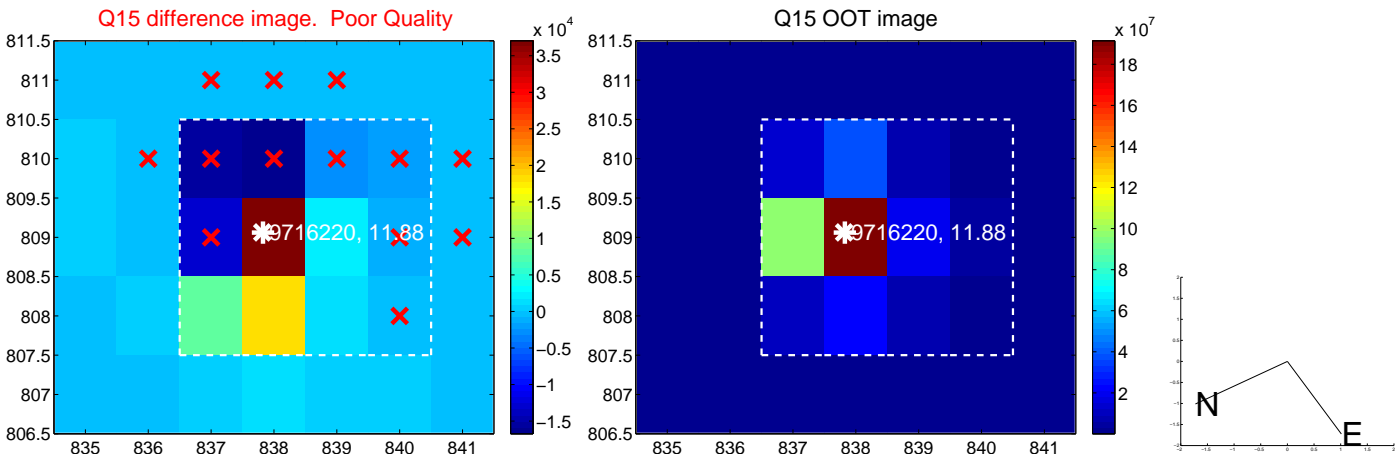
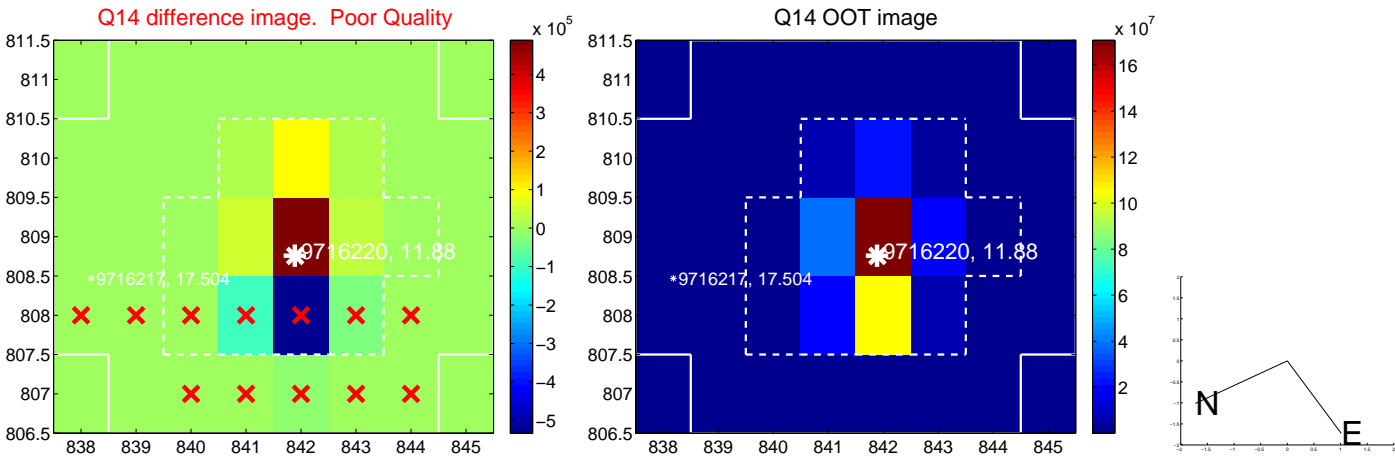
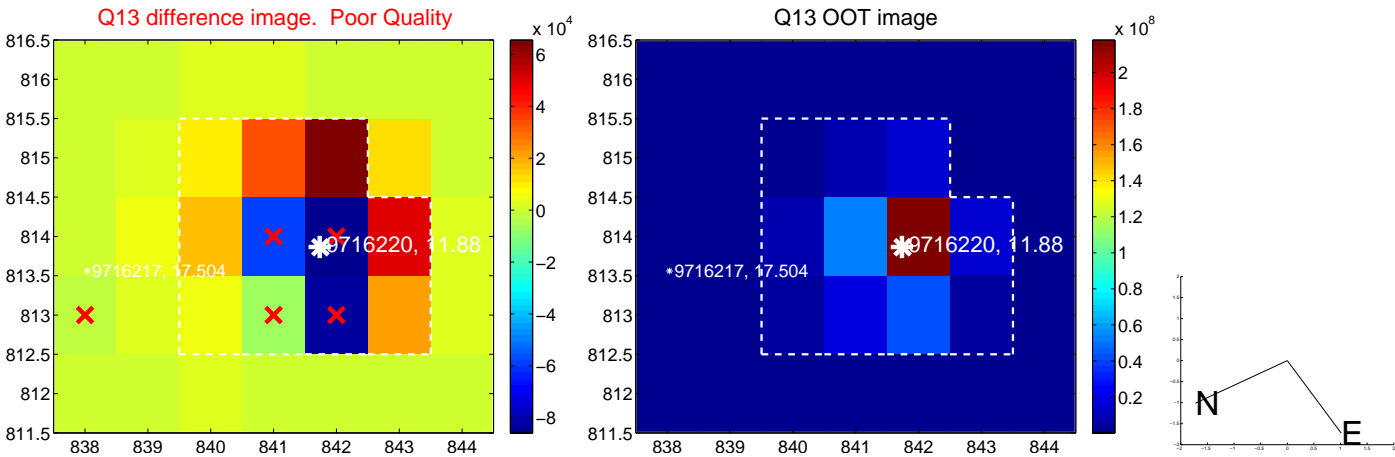
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



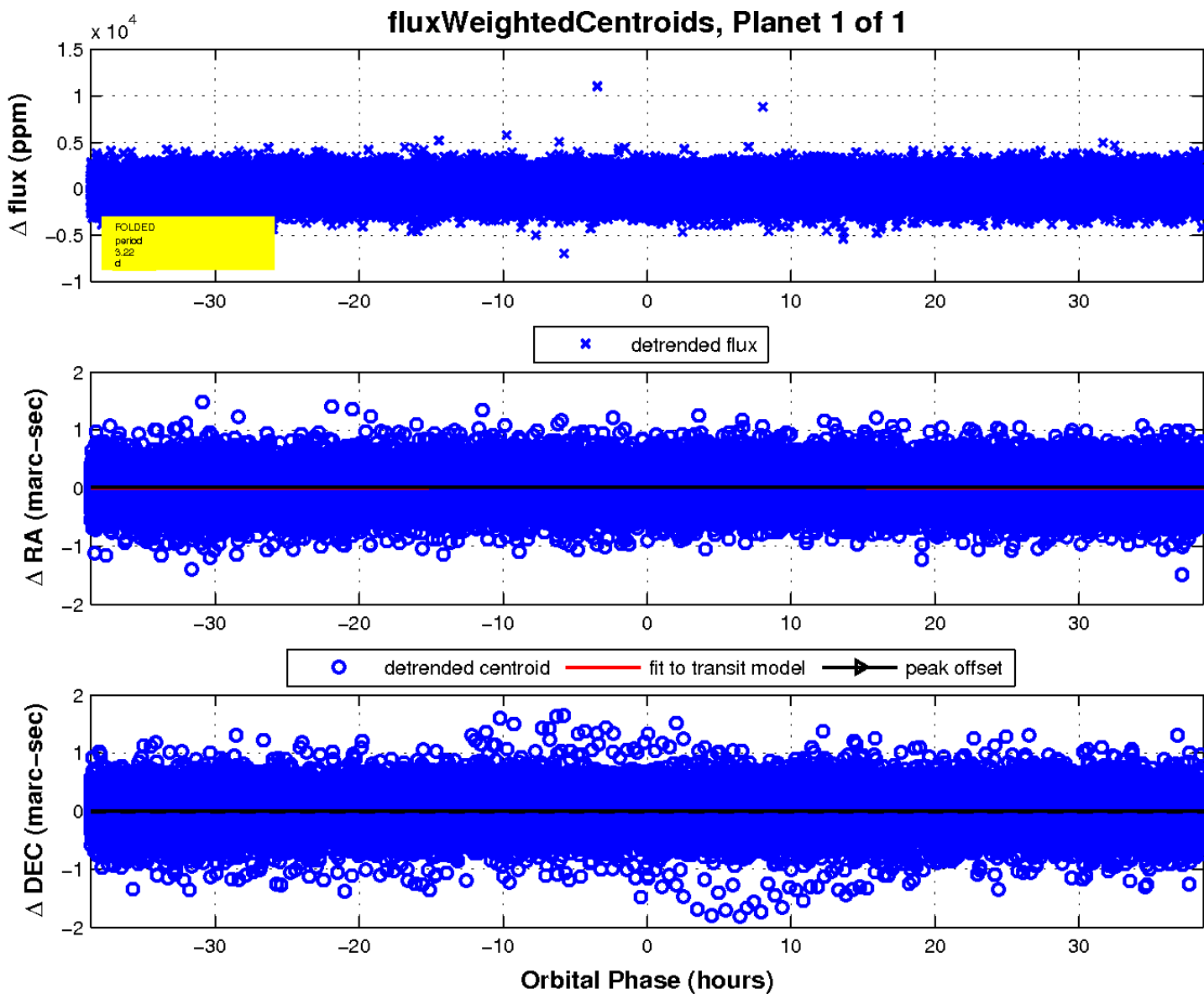
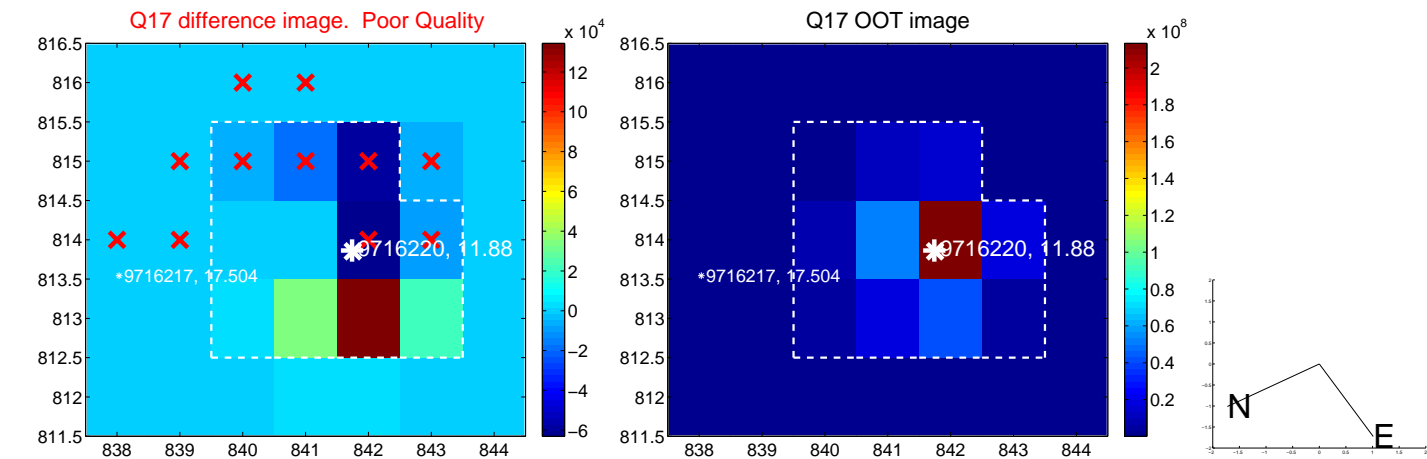
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

