

KIC 002708221

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})
002708221-01	OBS	4352.01	1.891200	132.721802	614.2	6.701	19.4	23.7	0.79	4883	3.67	427.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002708221-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—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 002708221-01

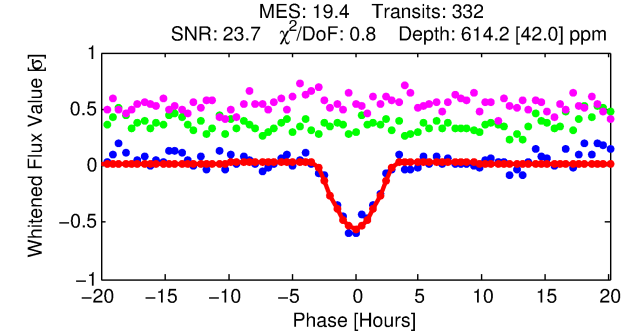
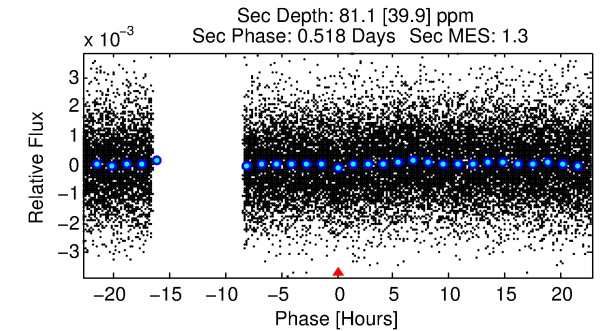
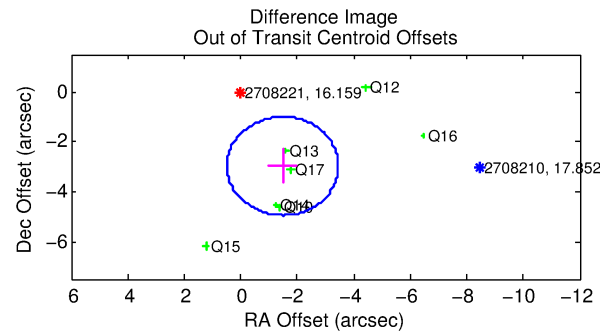
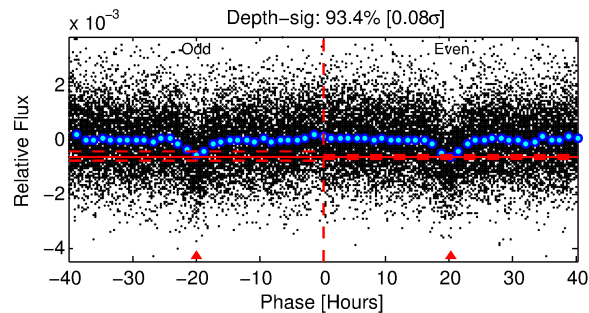
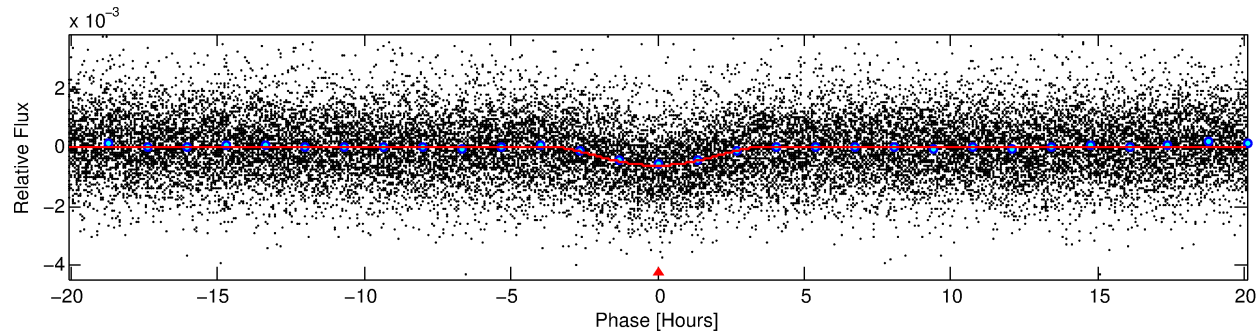
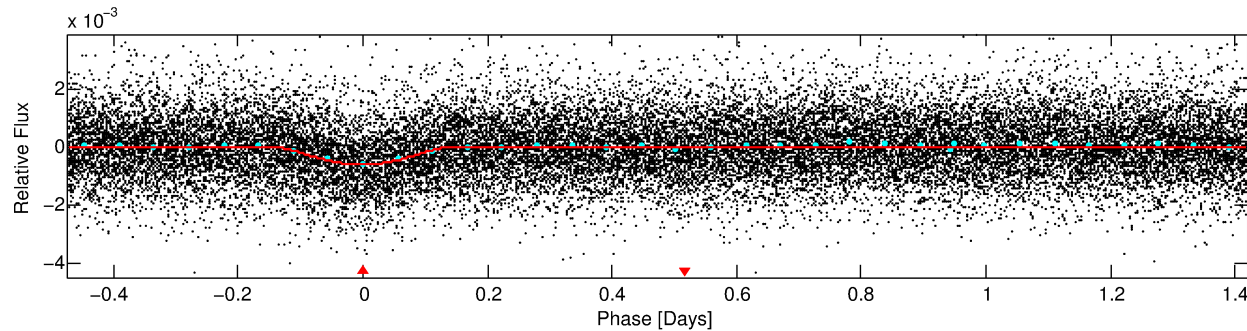
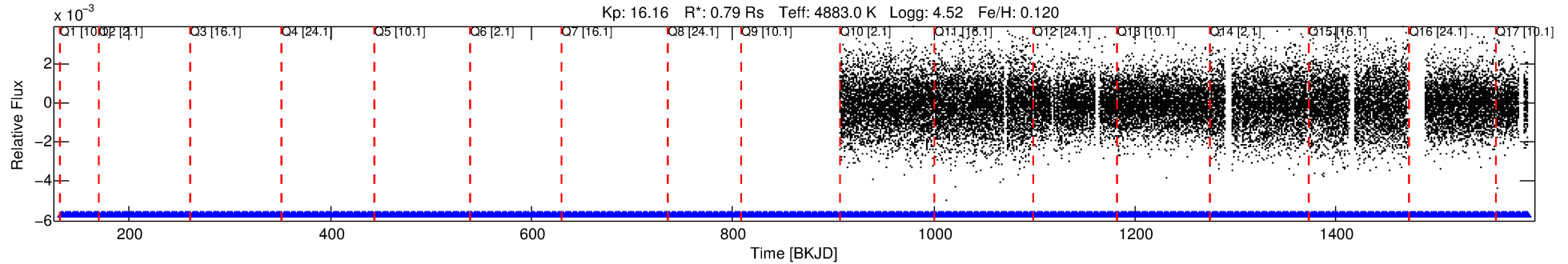
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
002708221-01	2708221	6286.01	2708156	1:1	64.7	16	4	10.67	16.16	1043.80	Direct-PRF	0	2.62	2.23

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: 2708221 Candidate: 1 of 1 Period: 1.891 d

KOI: K04352.01 Corr: 0.807



DV Fit Results:

Period = 1.89120 [0.00002] d
Epoch = 132.7218 [0.0081] BKJD
Rp/R* = 0.0424 [0.0473]
a/R* = 1.22 [0.08]
b = 0.99 [0.08]
Seff = 427.76 [85.15]
Teq = 1160 [58] K
Rp = 3.67 [4.12] Re
a = 0.0274 [0.0025] AU
Ag = 2.48 [5.68] [0.26 σ]
Teffp = 2250 [1288] K [0.85 σ]

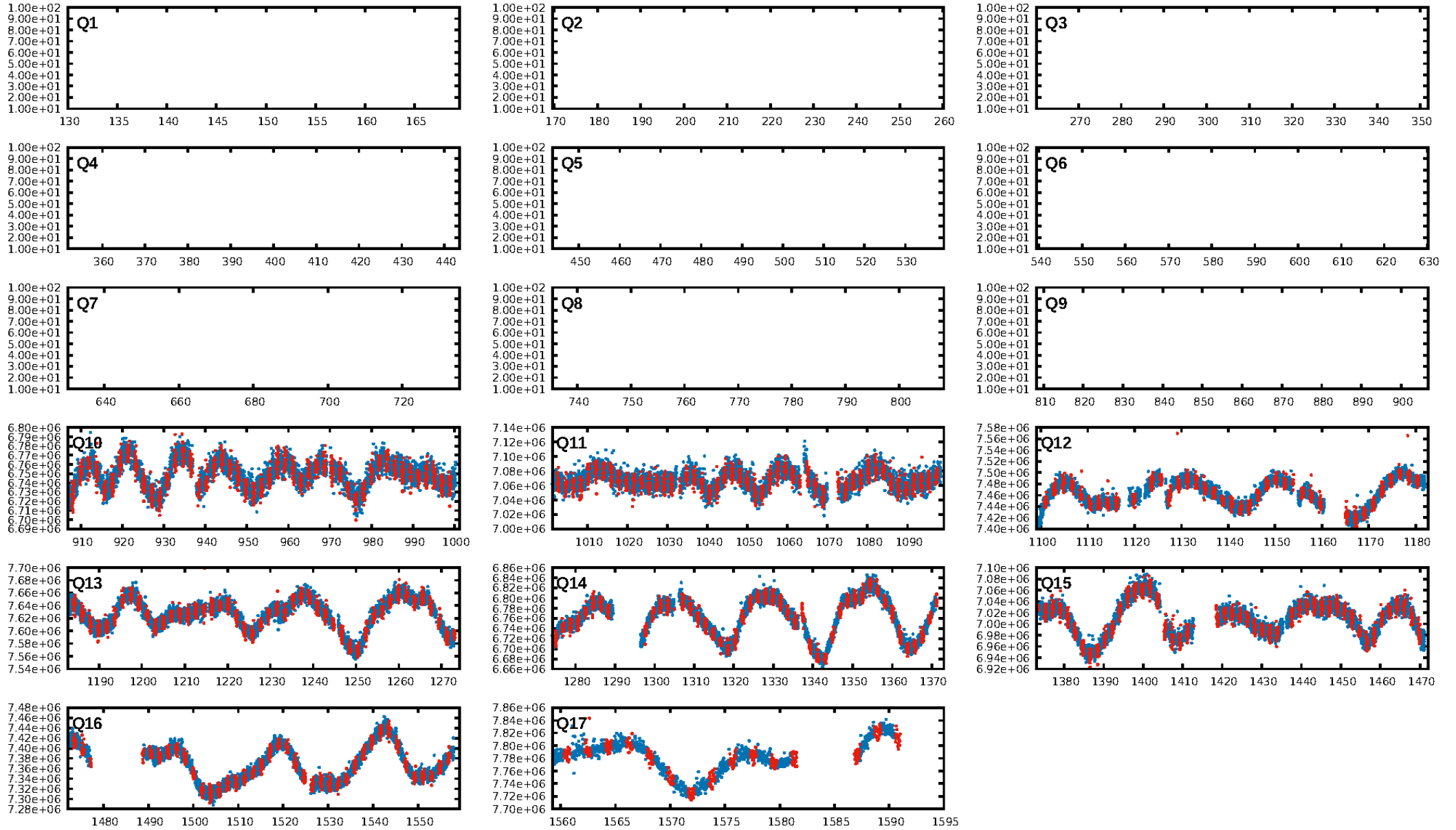
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.16e-69
RollingBand-fgt: 1.00 [317/317]
GhostDiagnostic-chr: -0.5519
Centroid-sig: 0.0%
Centroid-so: 1.387 arcsec [2.50 σ]
OotOffset-rm: 3.324 arcsec [5.05 σ]
KicOffset-rm: 3.254 arcsec [5.26 σ]
OotOffset-st: 2/1/2/2 [7]
KicOffset-st: 2/1/2/2 [7]
DiffImageQuality-fgm: 0.00 [0/7]
DiffImageOverlap-fno: 1.00 [8/8]

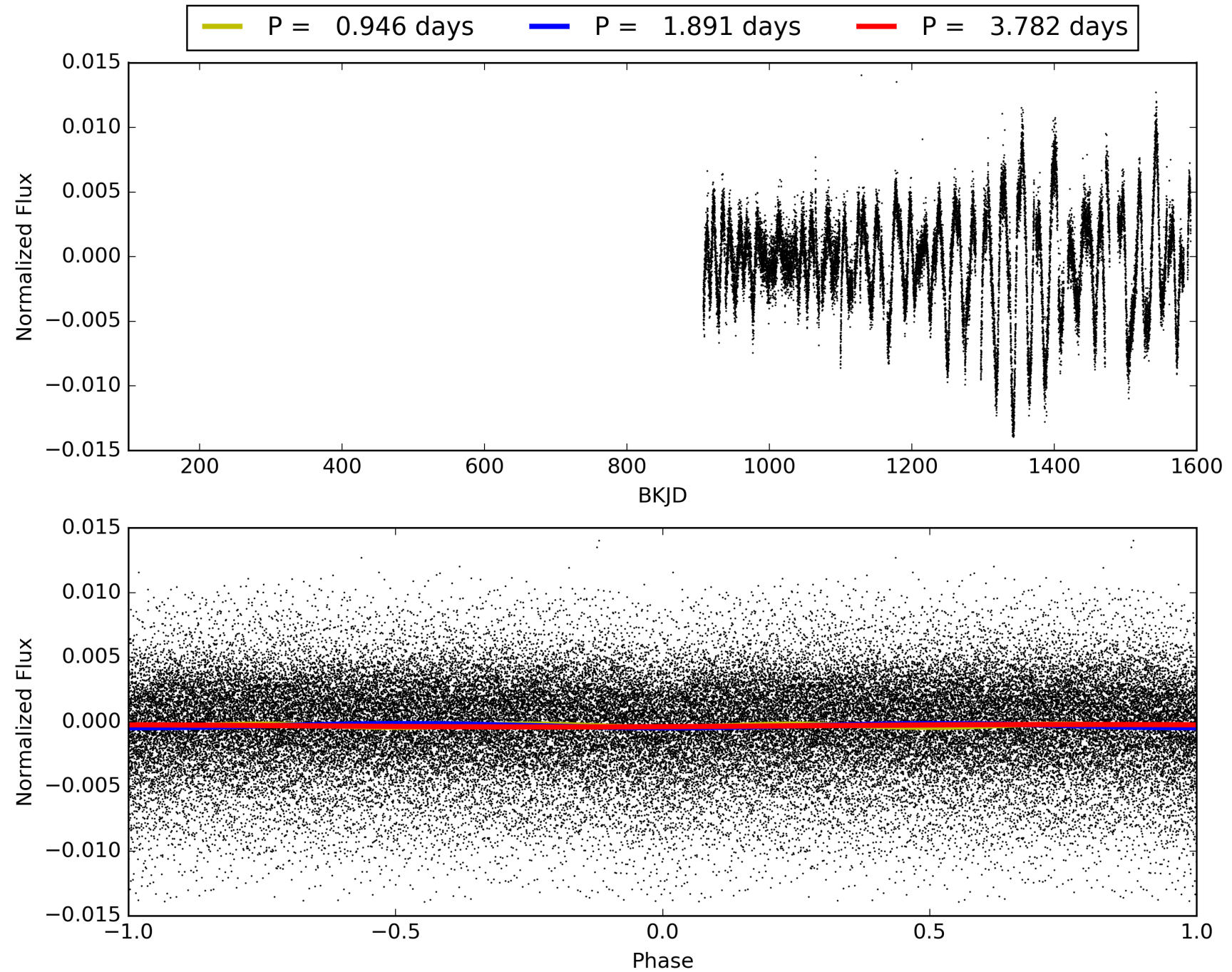
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:33:35 Z

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

TCE 002708221-01, PDC Light Curves

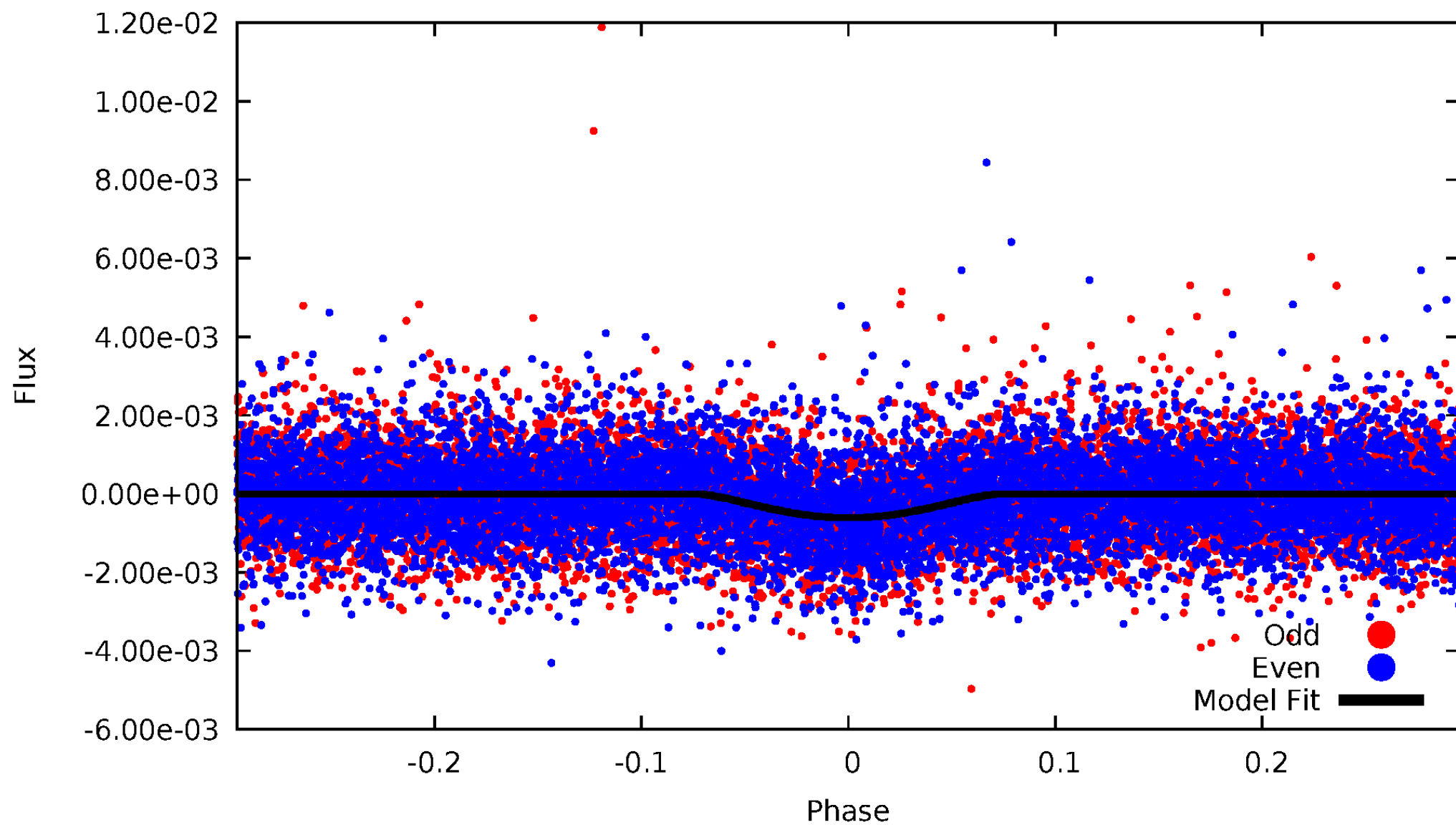


TCE 002708221-01



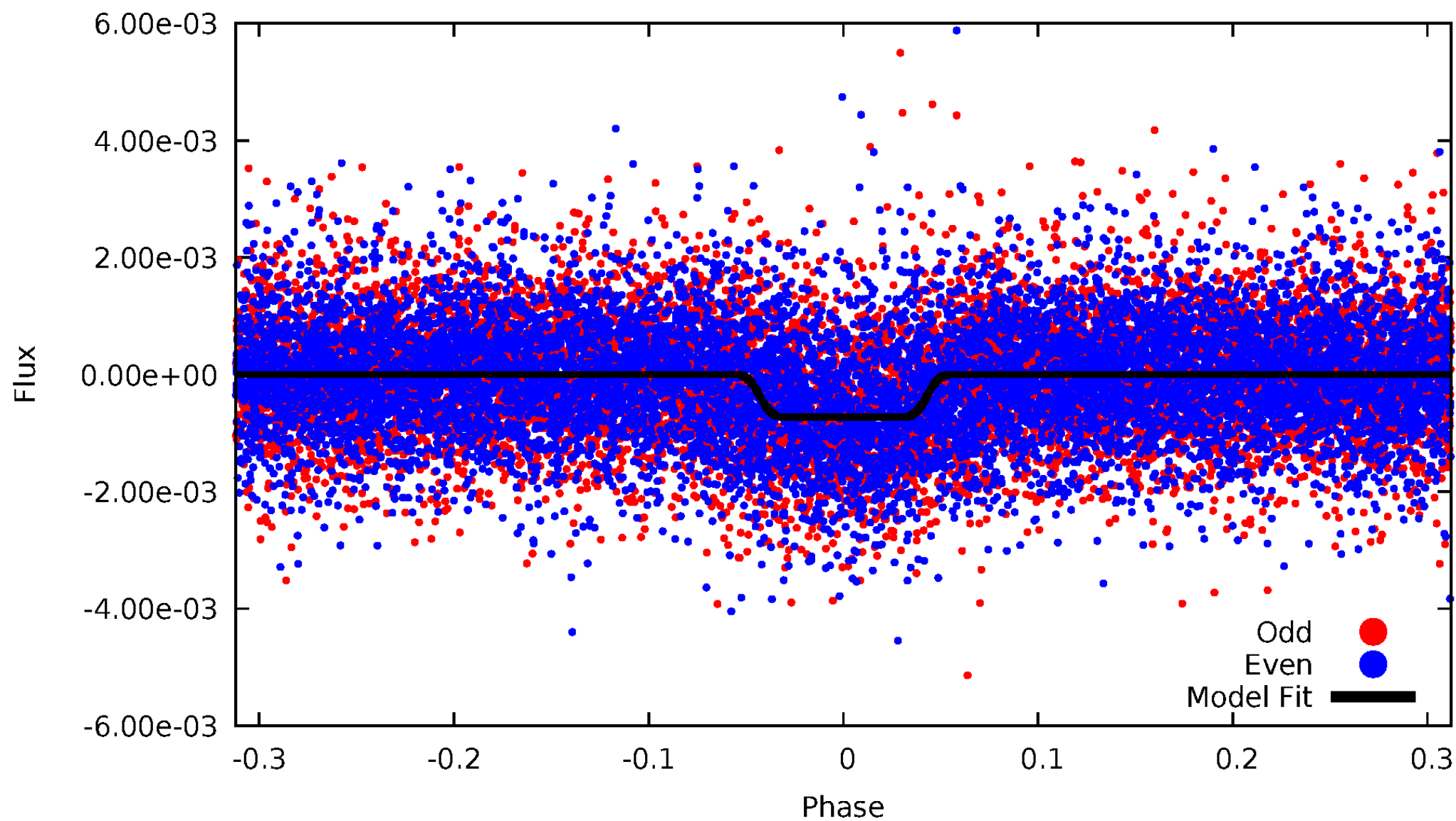
DV Odd/Even

TCE 002708221-01



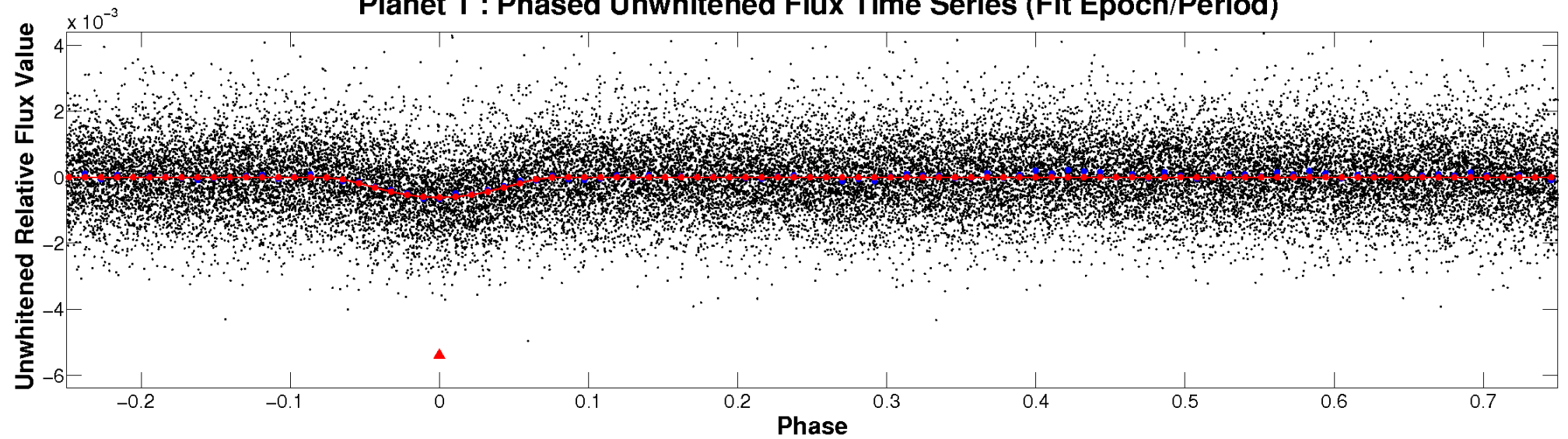
ALT Odd/Even

TCE 002708221-01

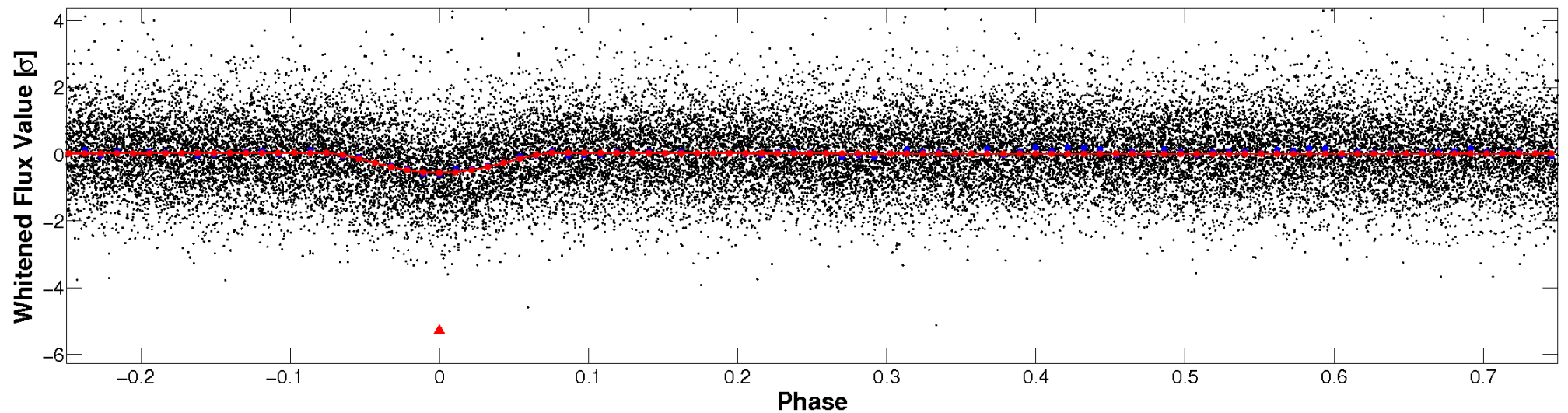


Non-Whitened Vs. Whitened Light Curve

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

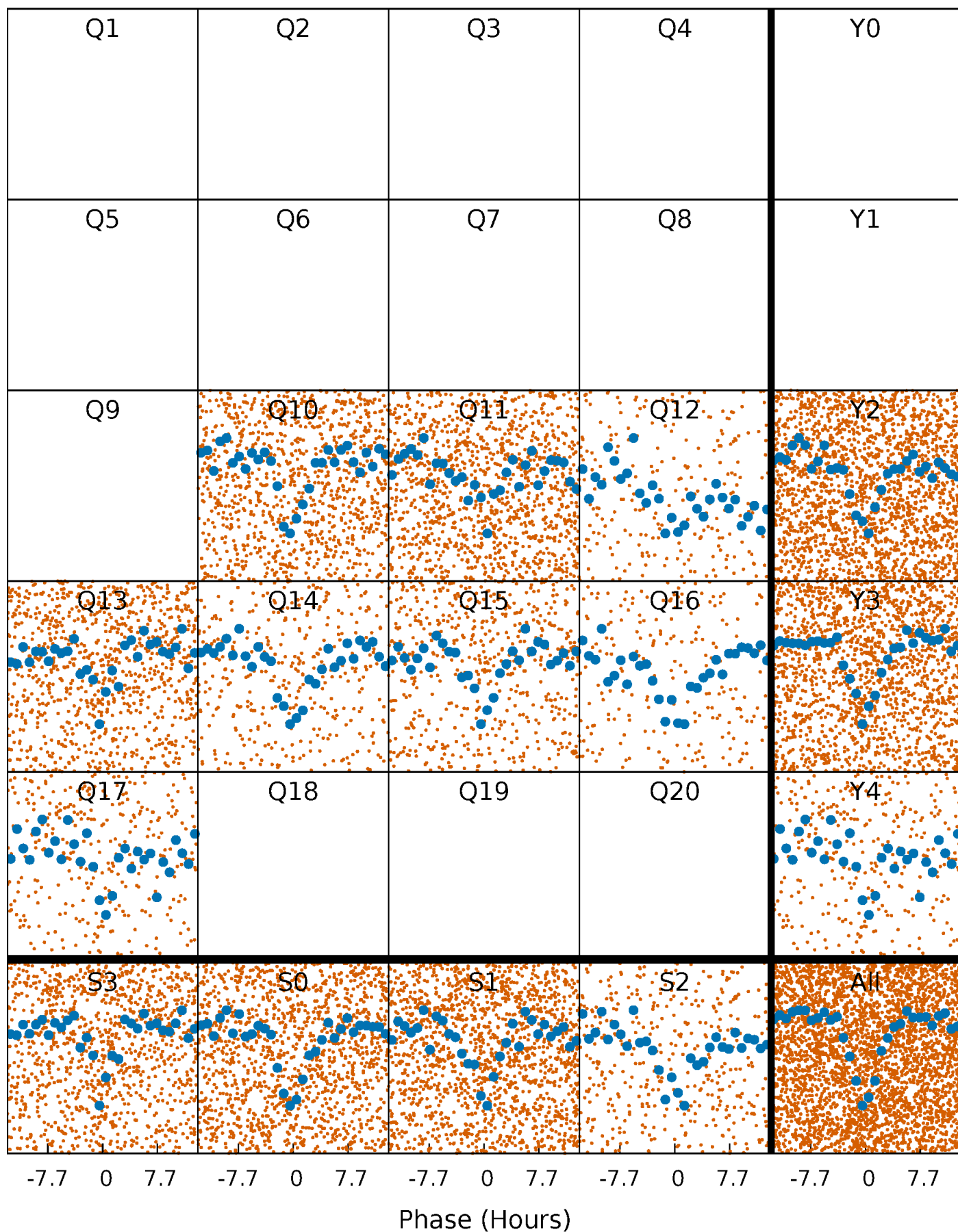


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



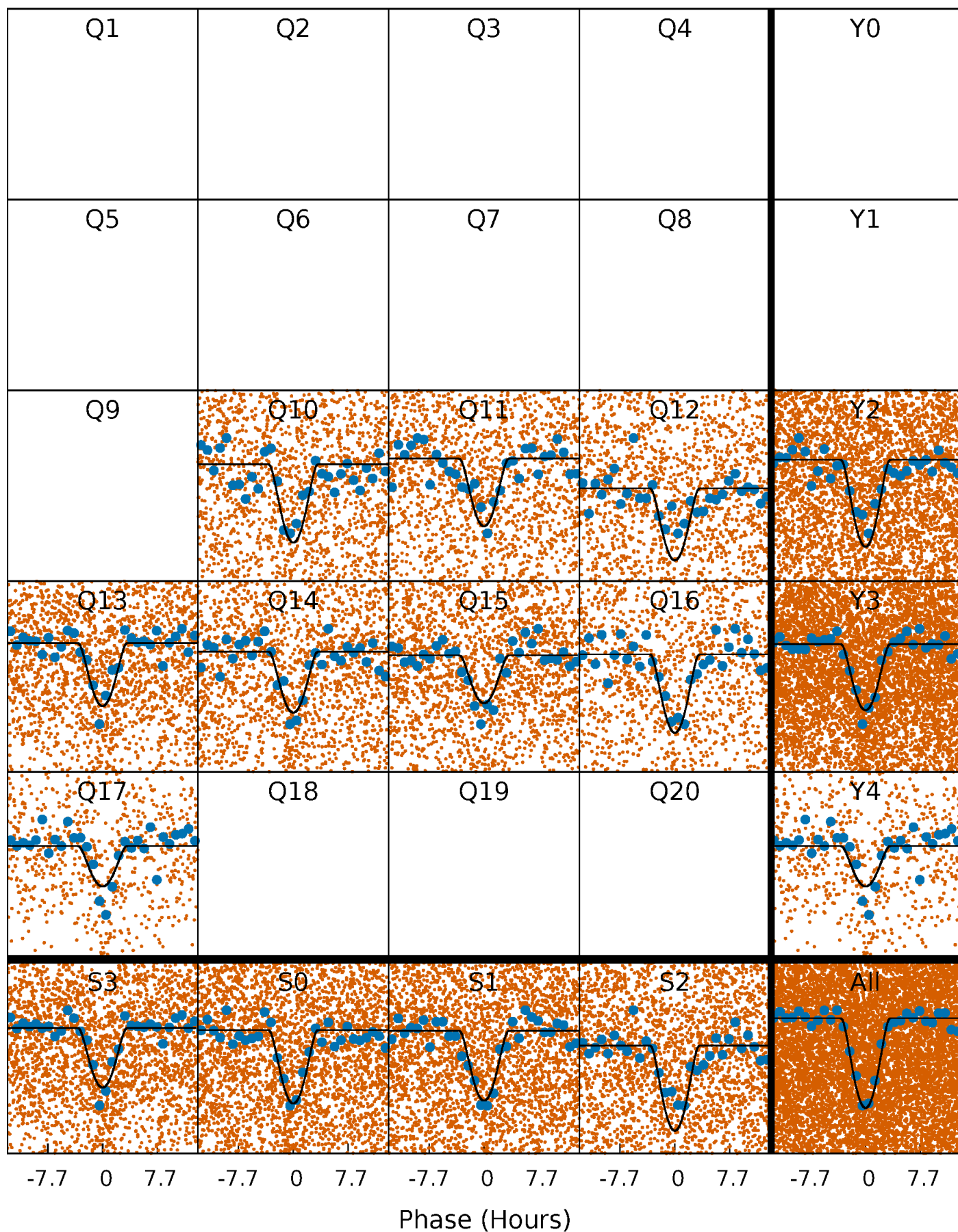
PDC Quarter-Phased Transit Curves

TCE 002708221-01 P= 1.891200 Days $T_0=132.721802$ (BKJD)



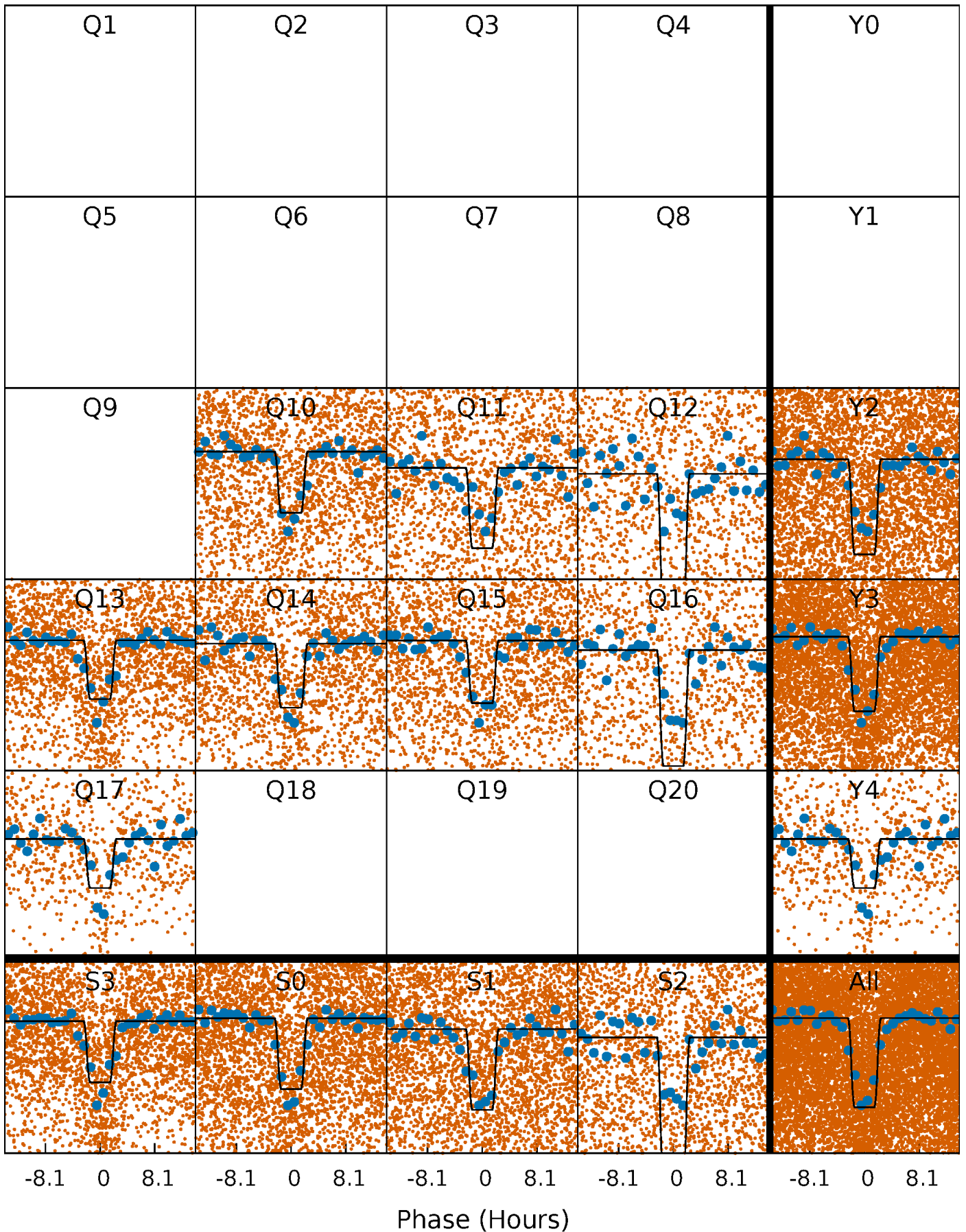
DV Quarter-Phased Transit Curves

TCE 002708221-01 P= 1.891200 Days $T_0=132.721802$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

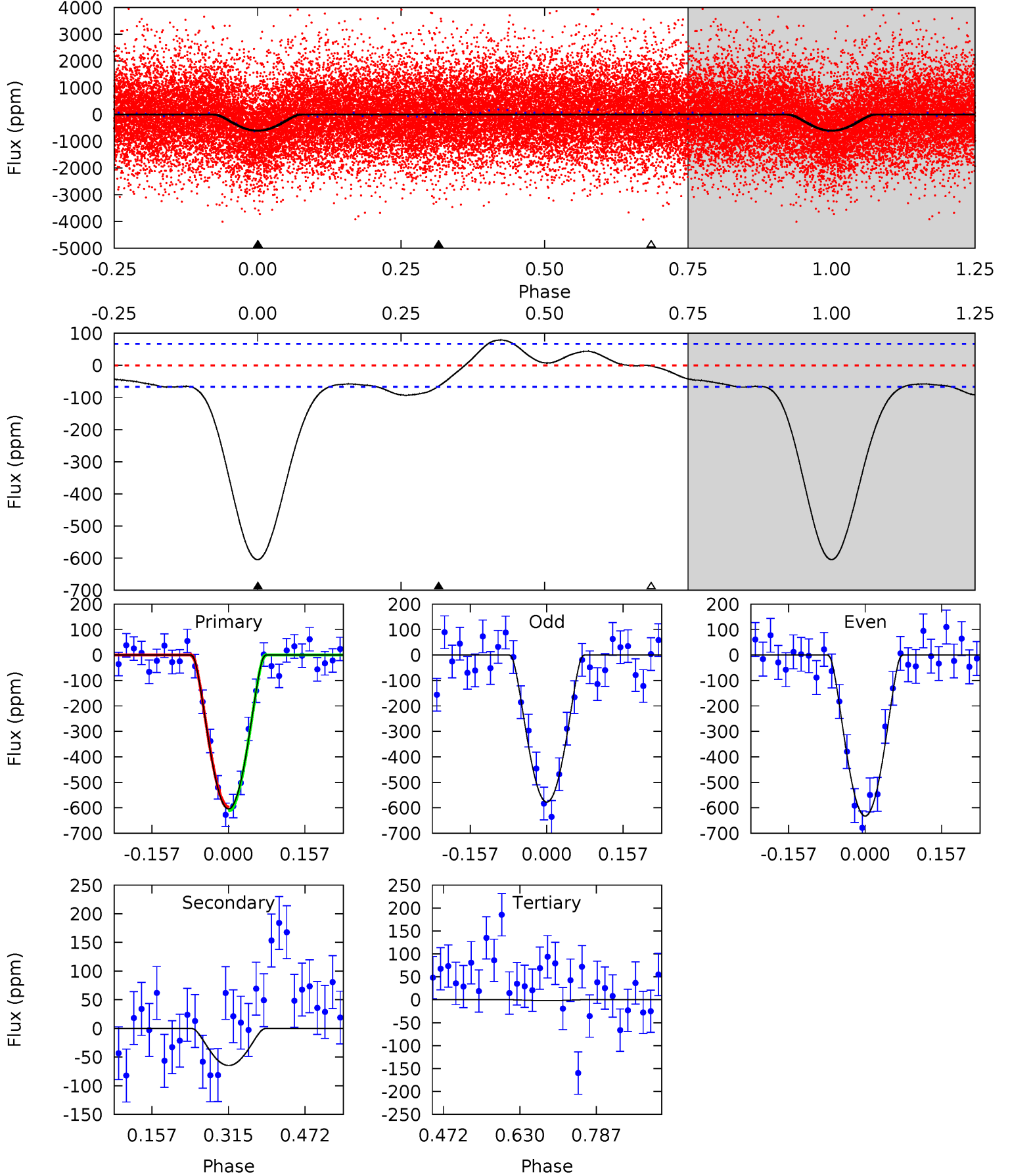
TCE 002708221-01 P= 1.891233 Days $T_0=132.698309$ (BKJD)



DV Model-Shift Uniqueness Test

002708221-01, P = 1.891200 Days, E = 132.721802 Days

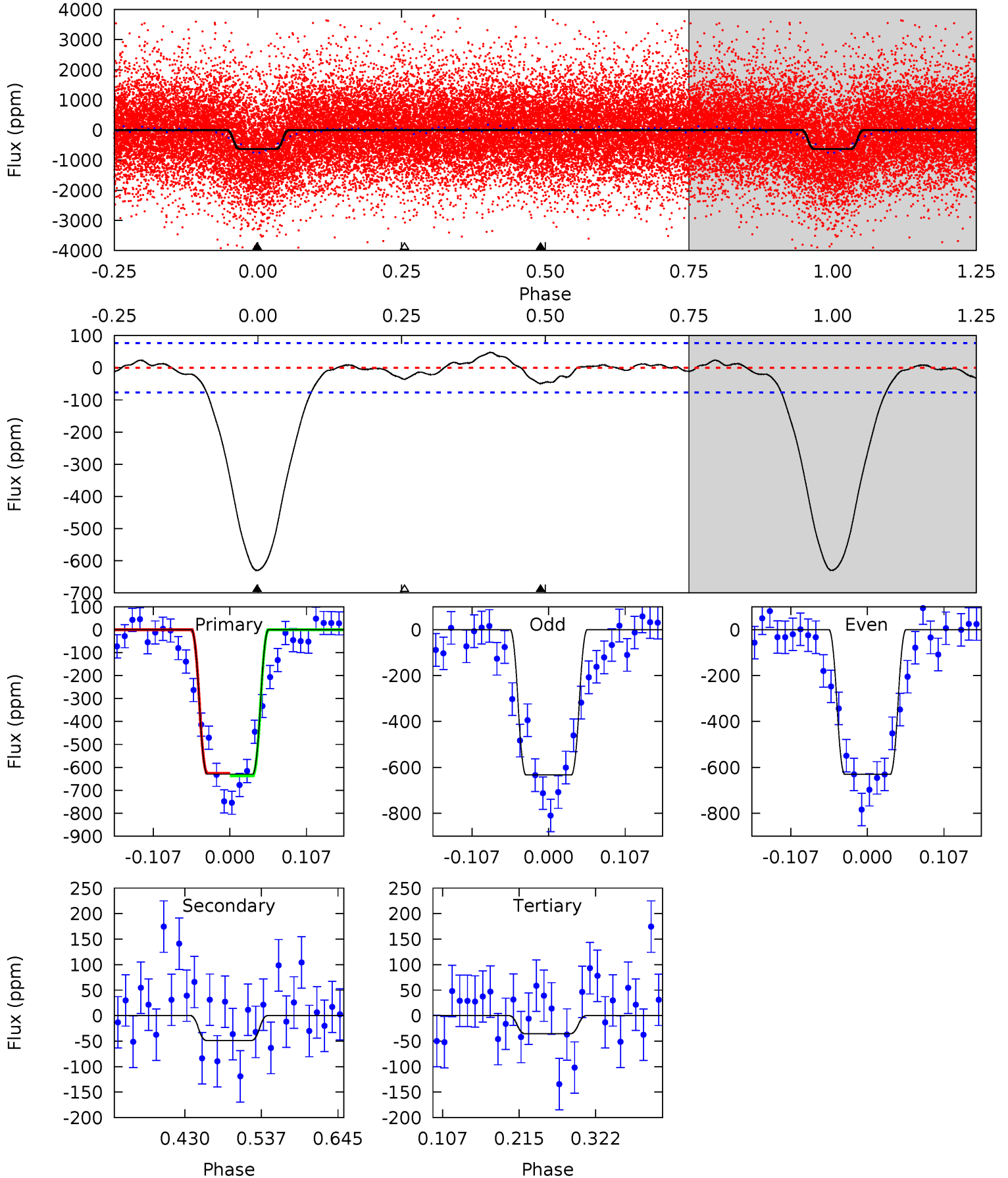
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.4	4.32	0.13	0	4.47	1.41	2.25	40.3	40.4	4.20	4.32	1.83	1.04	0.12	0.44



Alt Model-Shift Uniqueness Test

002708221-01, P = 1.891233 Days, E = 132.698309 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.2	2.87	2.10	0	4.55	1.61	0.82	35.1	37.2	0.77	2.87	0.07	1.02	0.07	0.34



Stellar Parameters For KIC 002708221

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4883^{+174}_{-174}	$4.523^{+0.078}_{-0.045}$	$0.120^{+0.250}_{-0.300}$	$0.794^{+0.056}_{-0.084}$	$0.767^{+0.079}_{-0.054}$	$2.157^{+0.707}_{-0.345}$
	+4%/-4%	+2%/-1%	+208%/-250%	+7%/-11%	+10%/-7%	+33%/-16%
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 002708221-01 / KOI 4352.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-65 ± 15	$4.58^{+3.76}_{-2.99}$	1613^{+63}_{-68}	2557^{+986}_{-638}	$1.308^{+9.136}_{-0.933}$
Alt.	-49 ± 17	$3.86^{+3.44}_{-2.58}$	1614^{+65}_{-72}	2590^{+1072}_{-765}	$1.307^{+11.134}_{-0.954}$

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

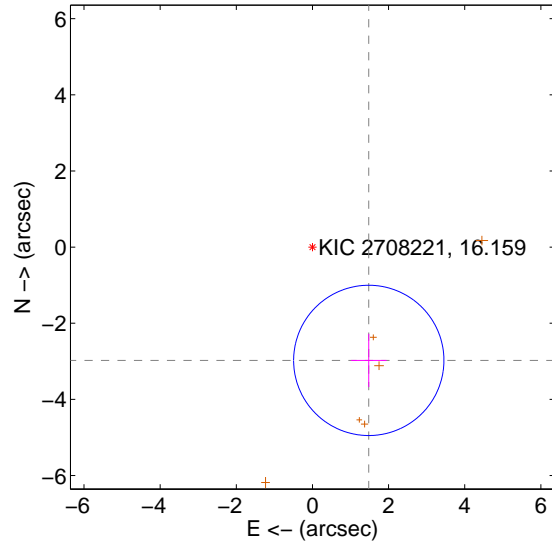
Supplemental centroid analysis for 002708221-01. Kepler magnitude: 16.16. Transit SNR 23.70

There are 0 quarters with good PRF difference image offsets

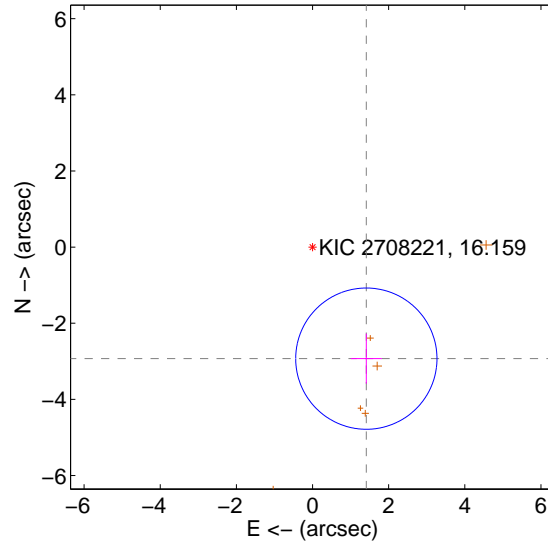
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.324 ± 0.658	5.05	-1.480 ± 0.466	-2.977 ± 0.697
PRF-fit source offset from KIC position	3.254 ± 0.619	5.26	-1.414 ± 0.407	-2.931 ± 0.658
photometric centroid source offset	1.39 ± 0.55	2.50	0.37 ± 0.56	1.34 ± 0.55

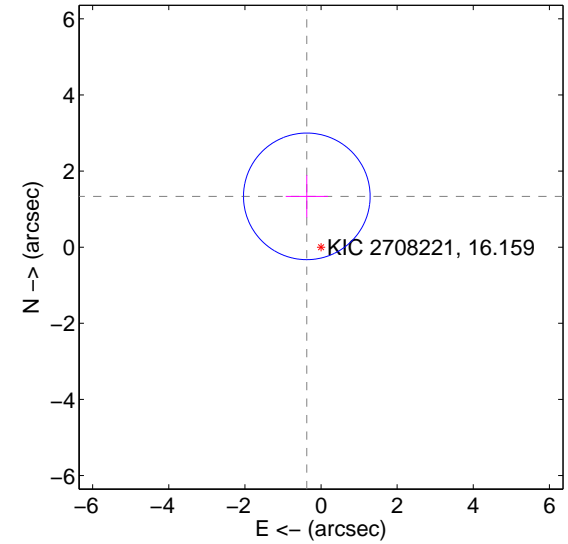
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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.

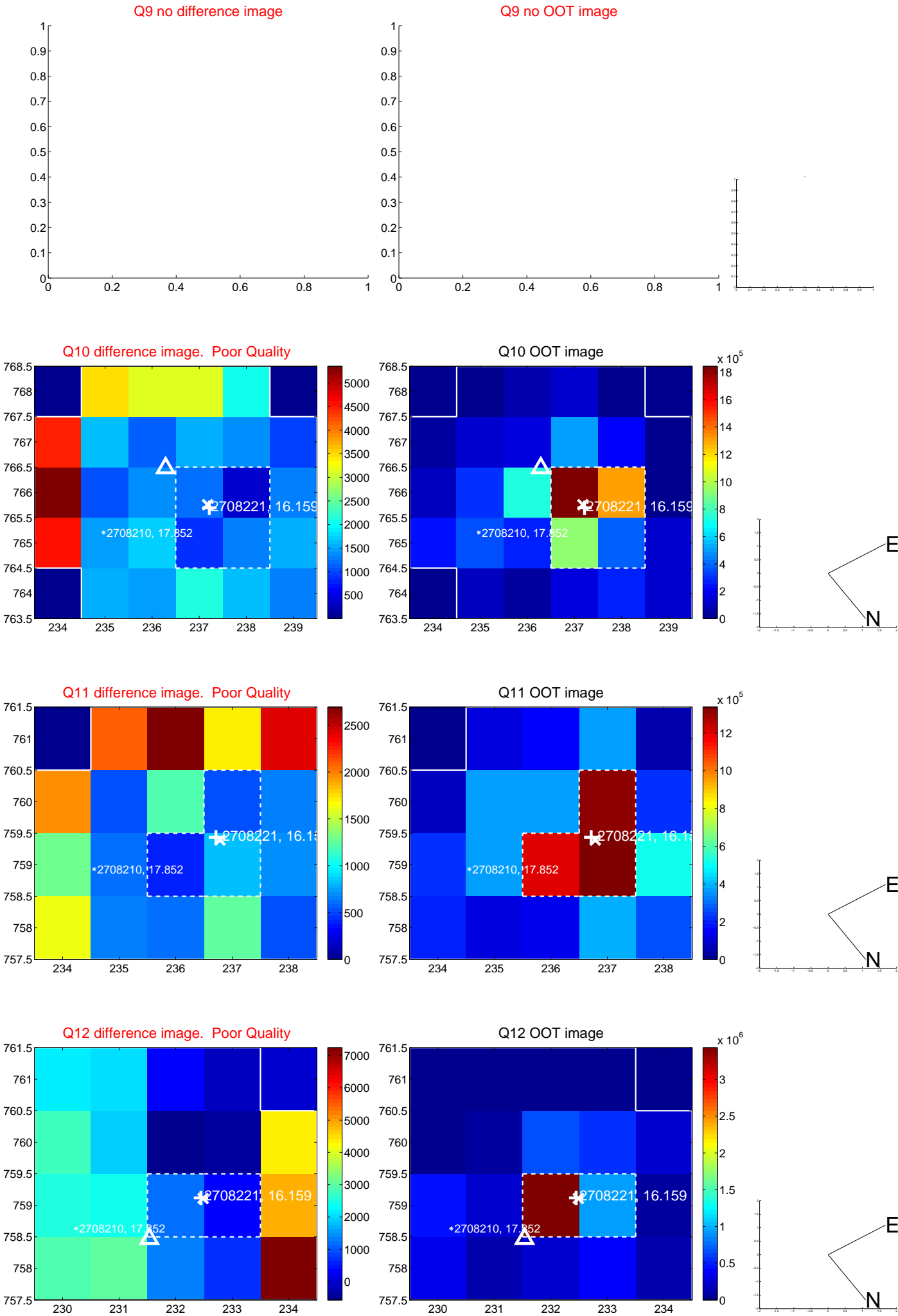
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



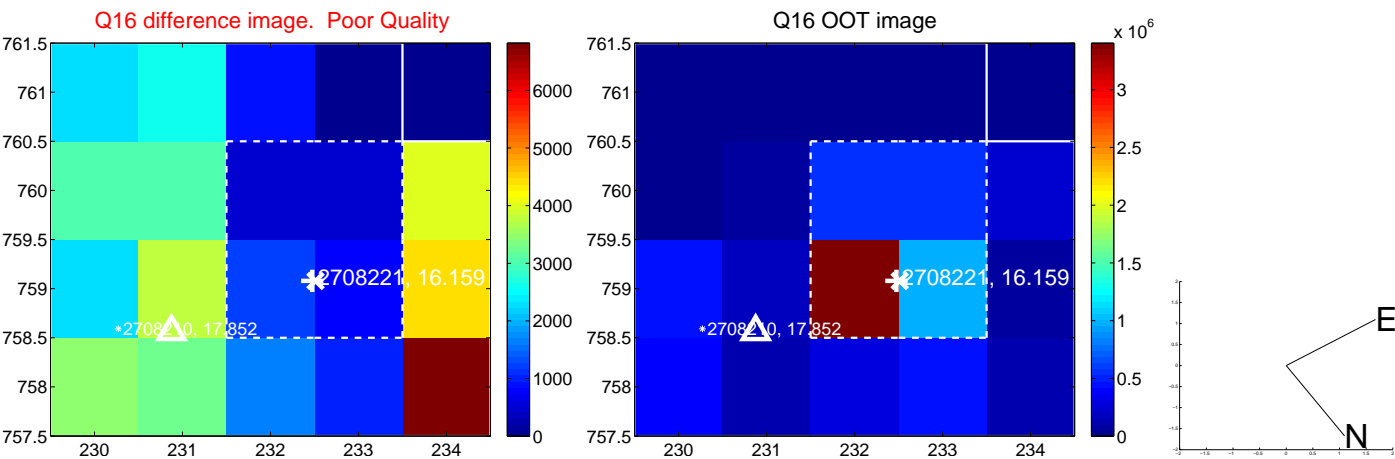
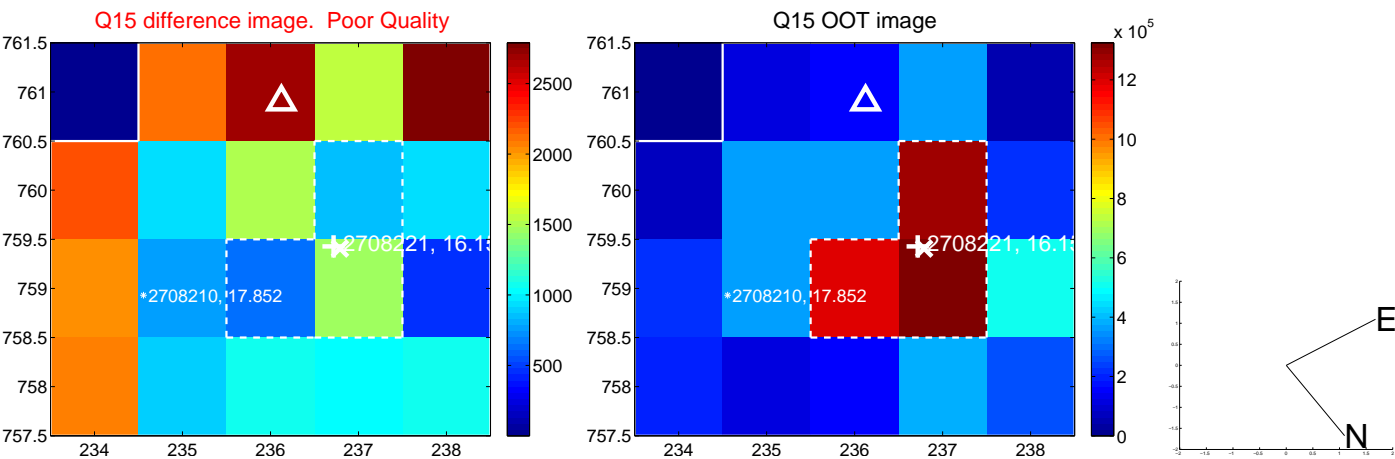
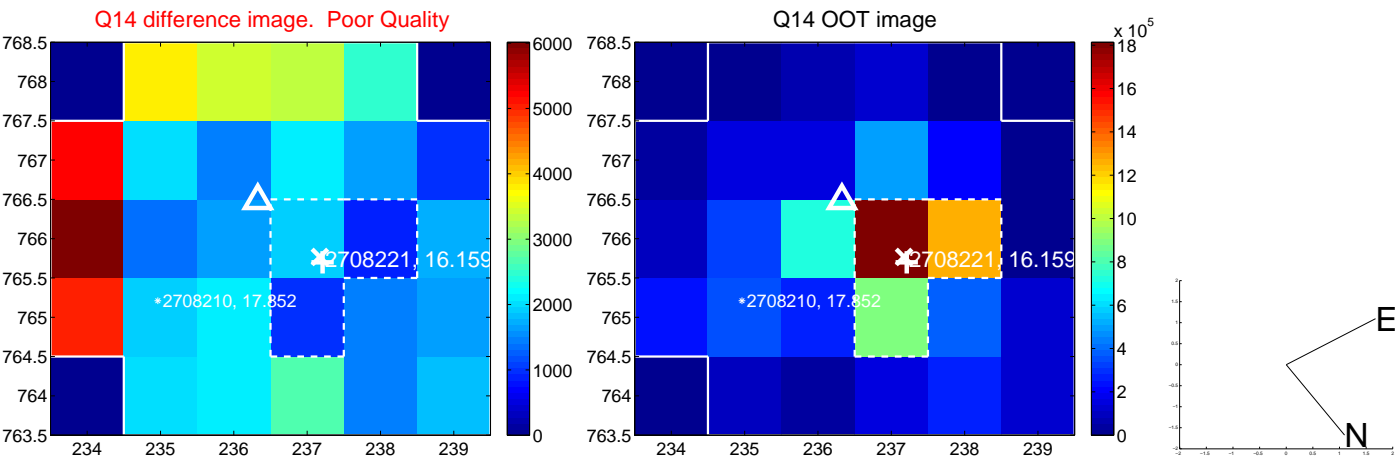
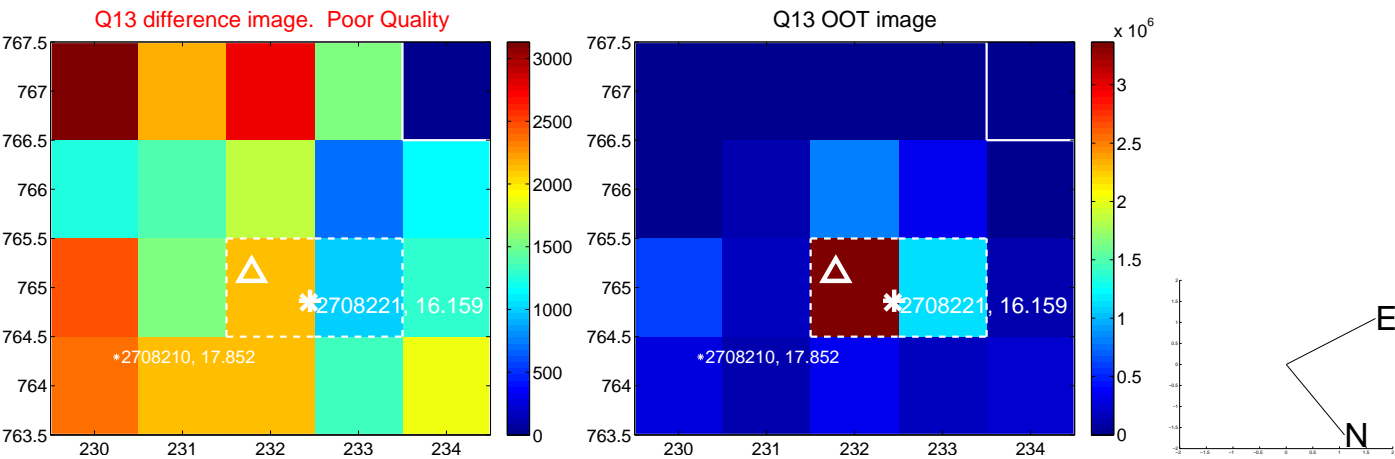
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



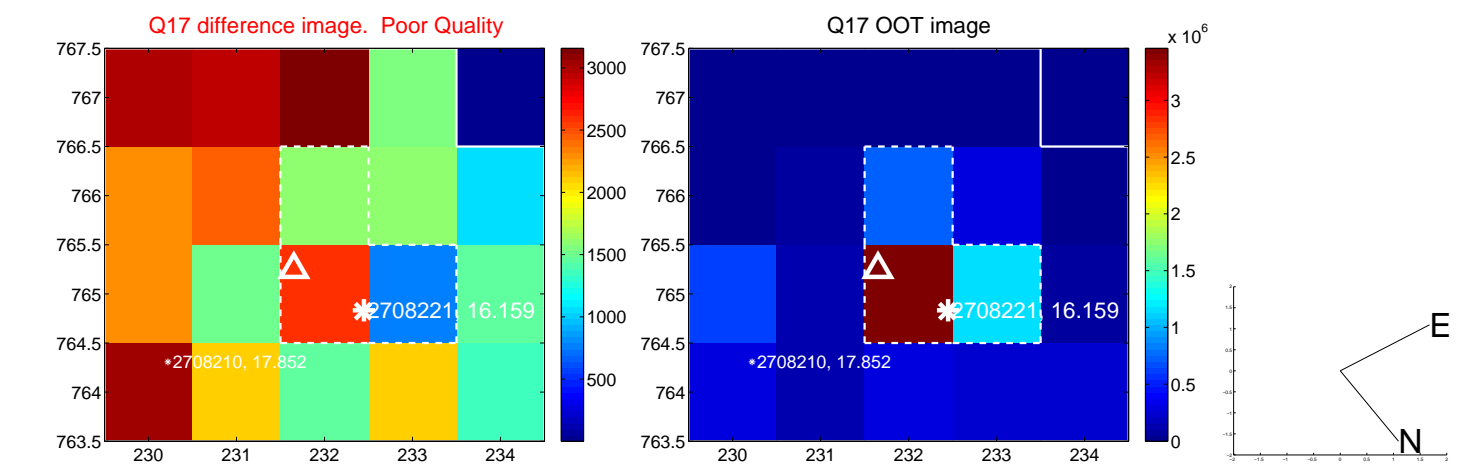
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



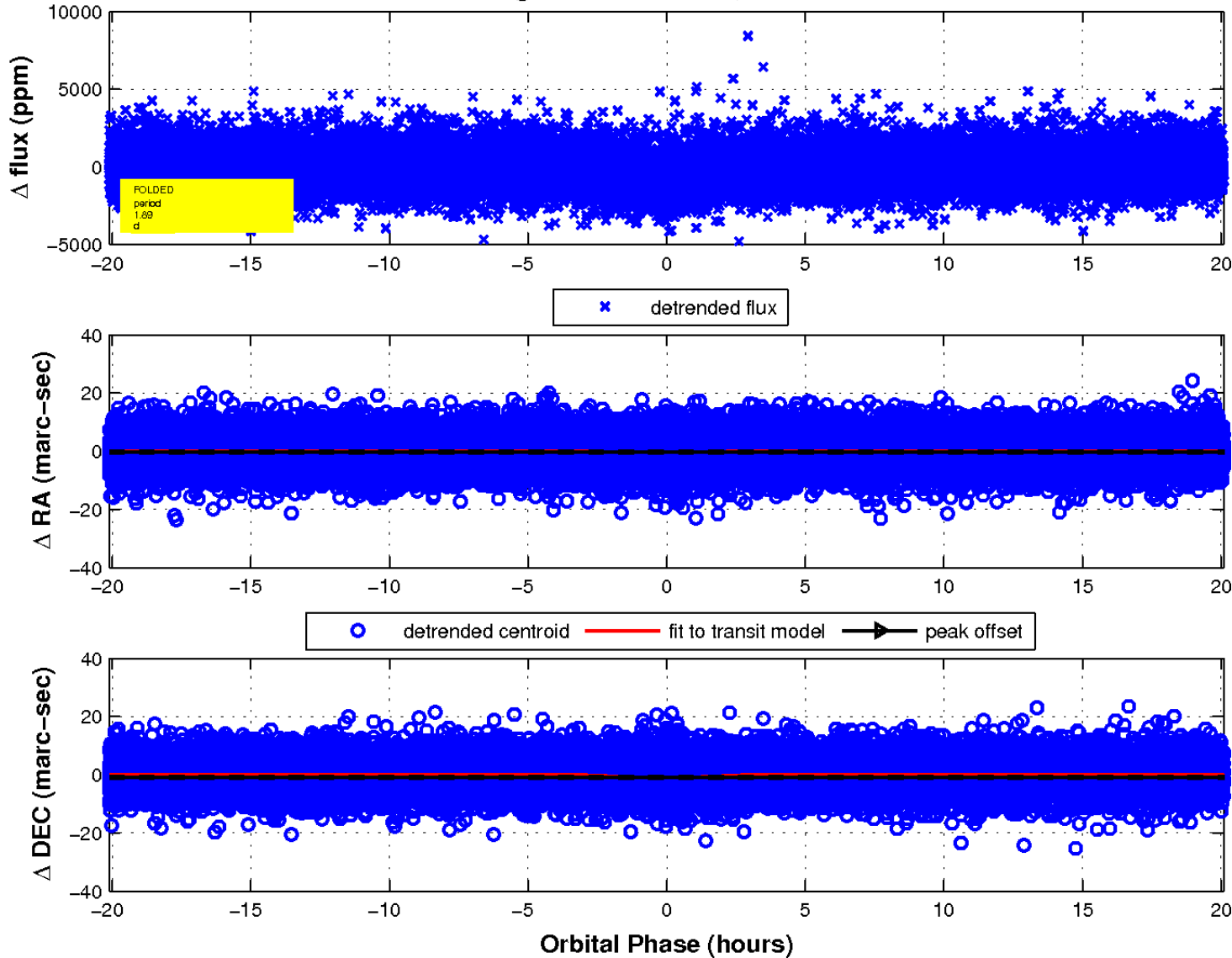
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

