

KIC 012251650

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})
012251650-01	OBS	0621.01	17.761998	138.659128	24116.9	2.487	759.2	758.8	0.67	5088	15.07	19.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012251650-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

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.

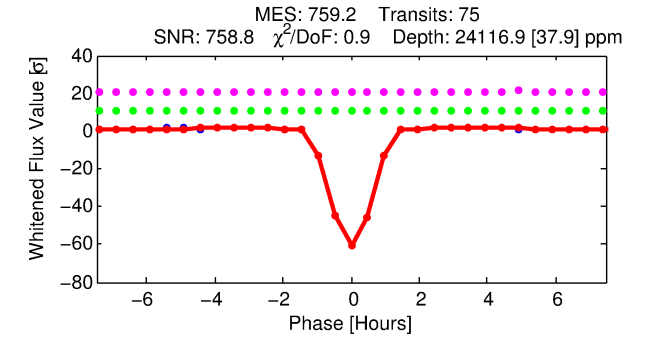
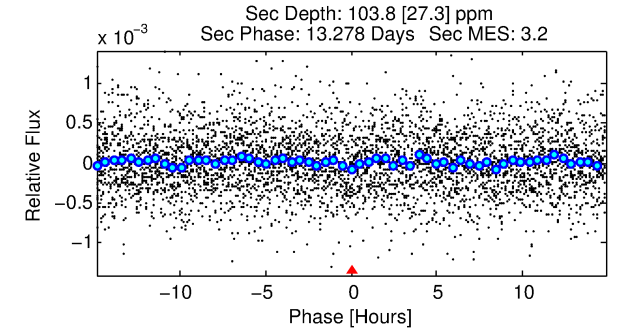
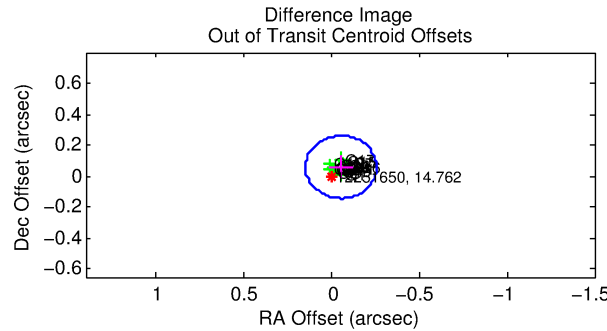
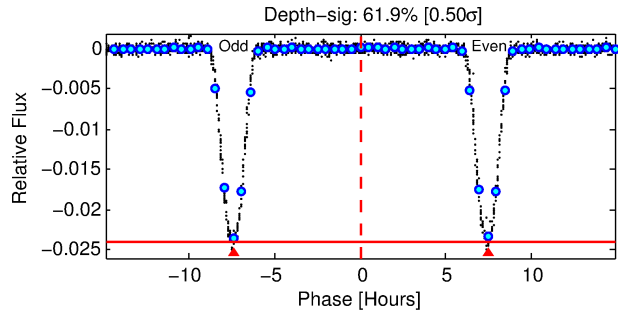
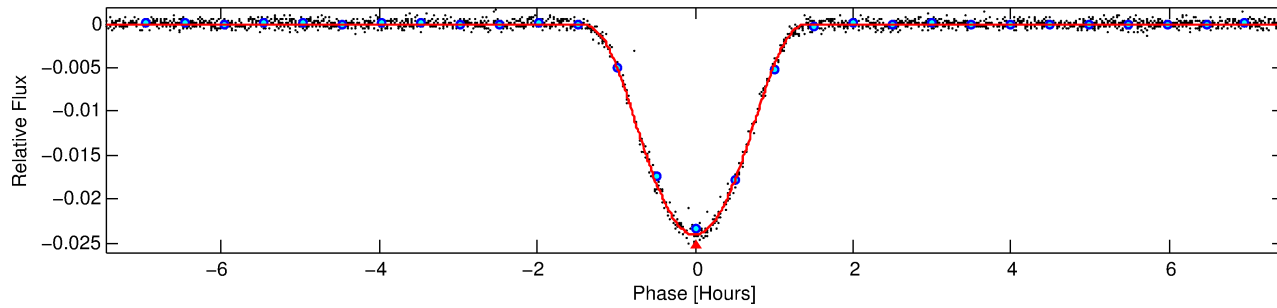
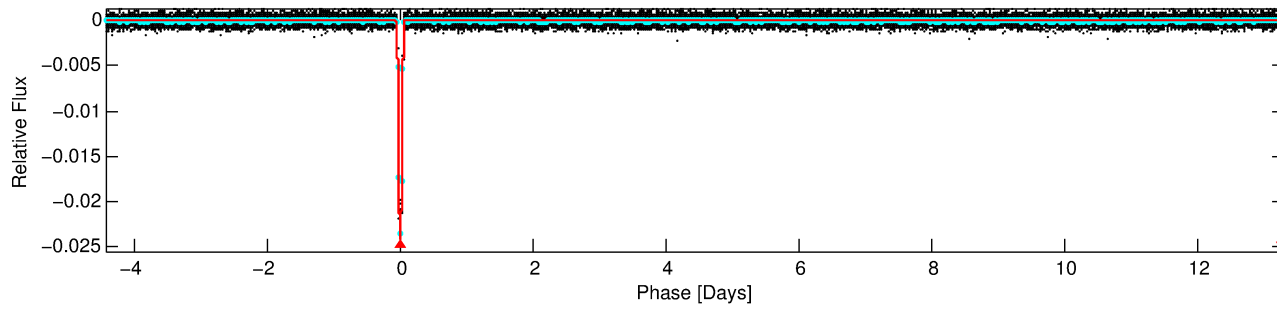
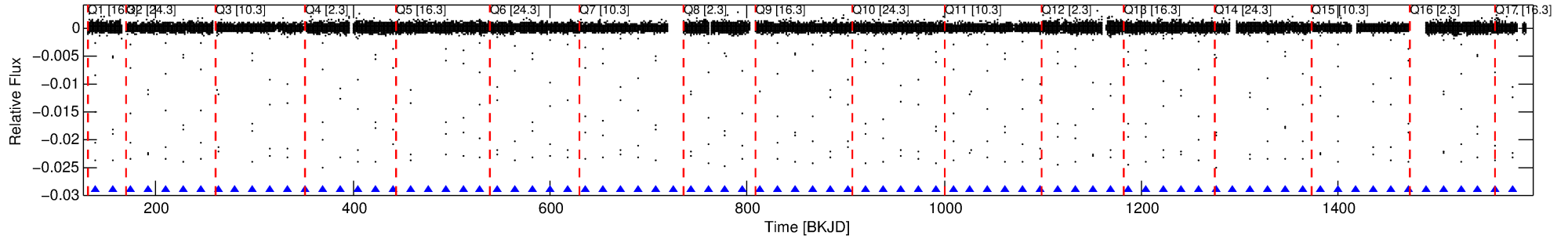
Ephemeris Match Information For 012251650-01

No Significant Match Found

DV One-Page Summary

KIC: 12251650 Candidate: 1 of 1 Period: 17.762 d
KOI: K00621.01 Corr: 0.995

Kp: 14.76 R*: 0.67 Rs Teff: 5088.0 K Logg: 4.61 Fe/H: -0.580



DV Fit Results:

Period = 17.76200 [0.00000] d
Epoch = 138.6591 [0.0001] BKJD
Rp/R* = 0.2064 [0.0092]
a/R* = 42.18 [0.34]
b = 0.93 [0.02]
Seff = 19.80 [3.26]
Teq = 538 [22] K
Rp = 15.07 [1.61] Re
a = 0.1165 [0.0093] AU
Ag = 3.41 [1.02] [2.35σ]
Teff = 1130 [85] K [6.72σ]

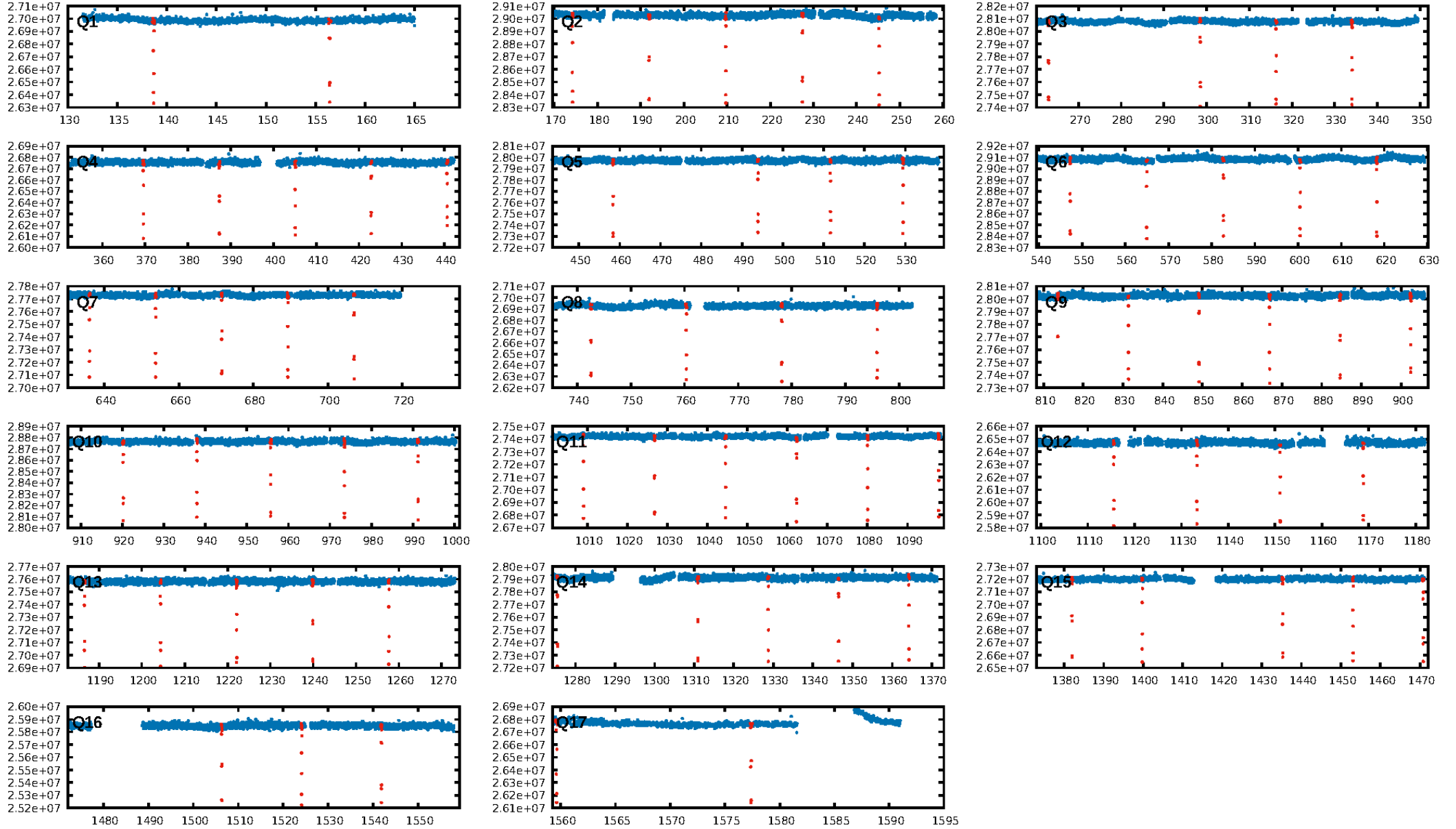
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [71/71]
GhostDiagnostic-chr: 3.285
Centroid-sig: 0.0%
Centroid-so: 0.721 arcsec [40.80σ]
OotOffset-rm: 0.080 arcsec [1.19σ]
KicOffset-rm: 0.145 arcsec [2.10σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

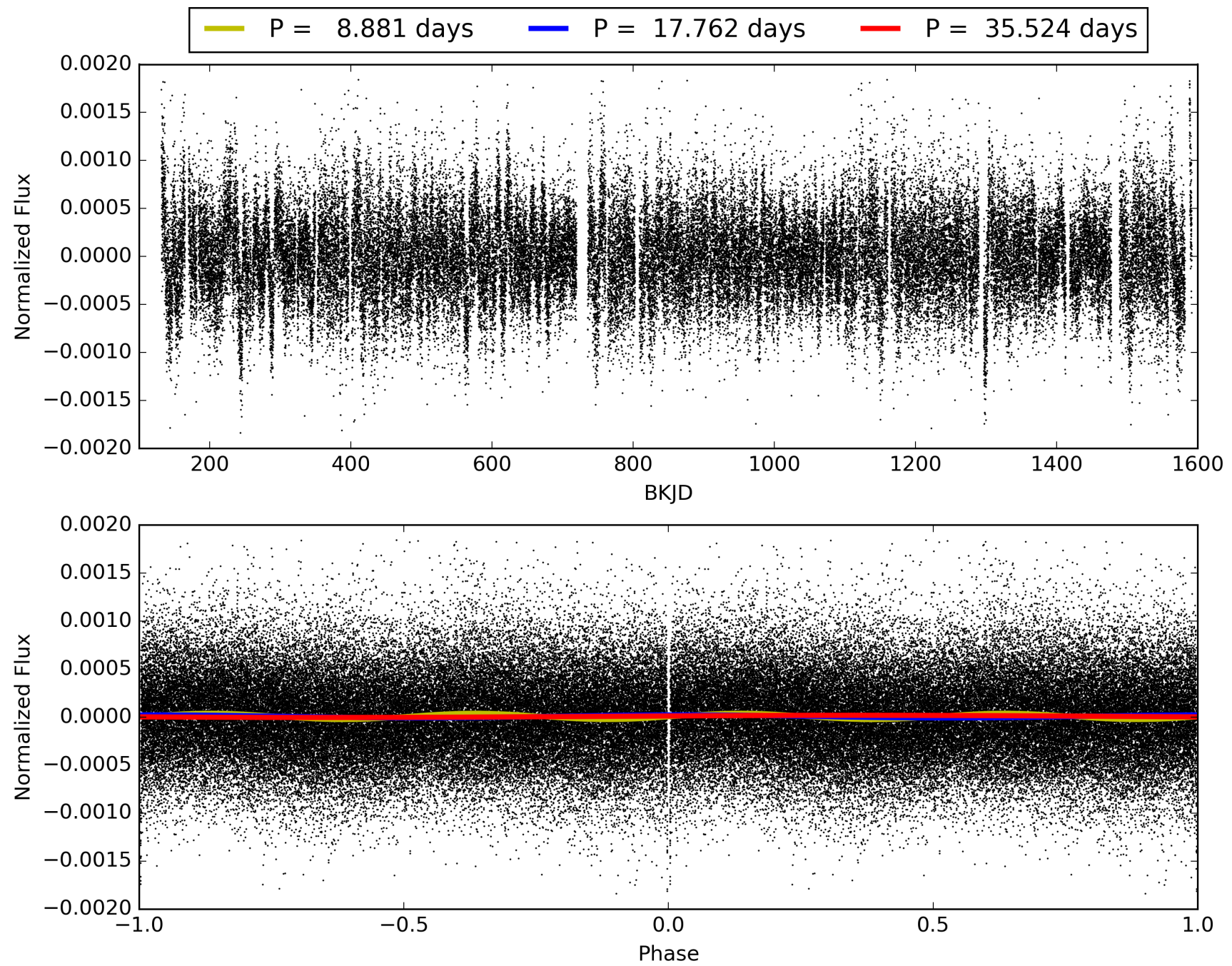
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:11:24 Z

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

TCE 012251650-01, PDC Light Curves

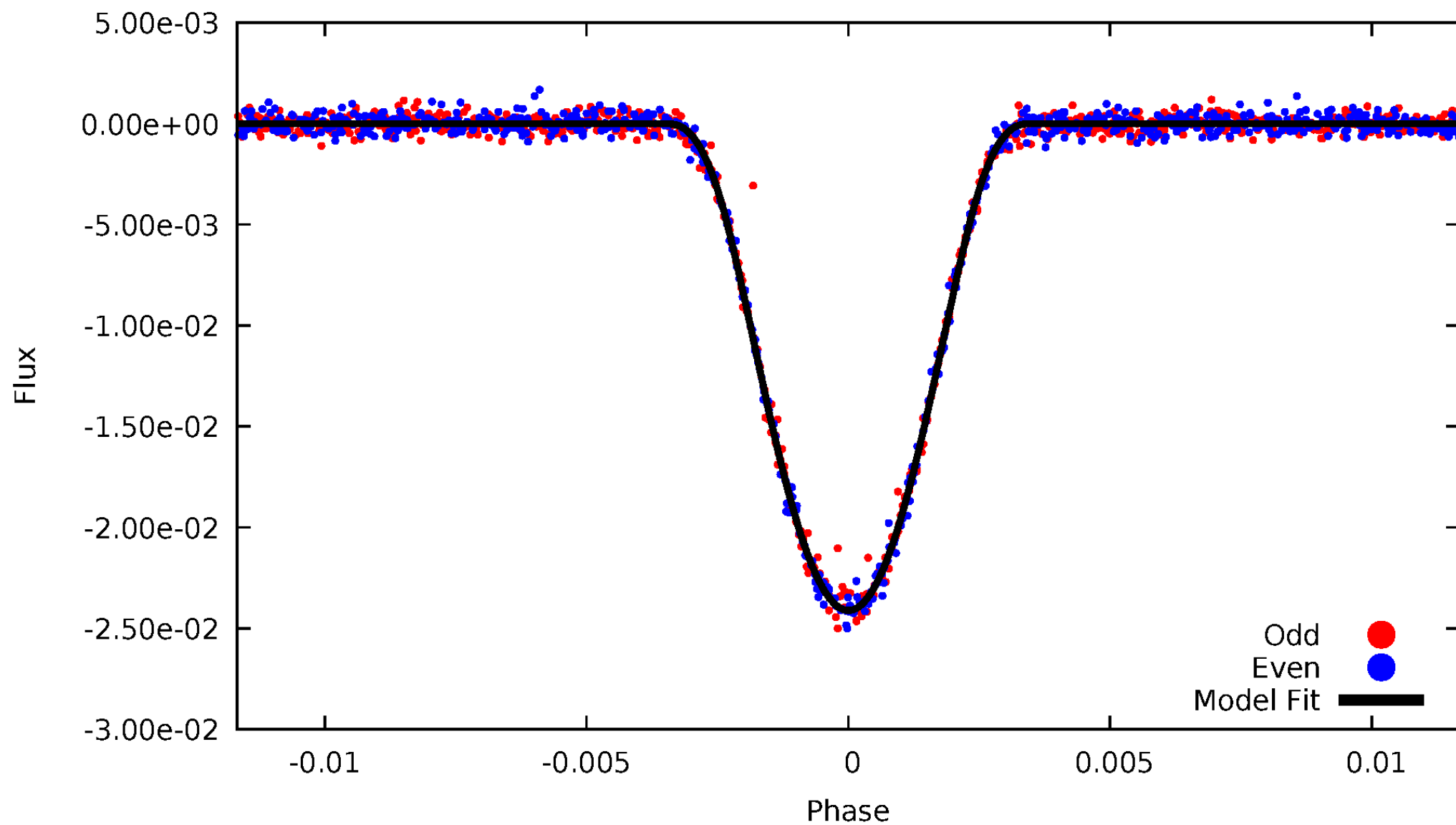


TCE 012251650-01



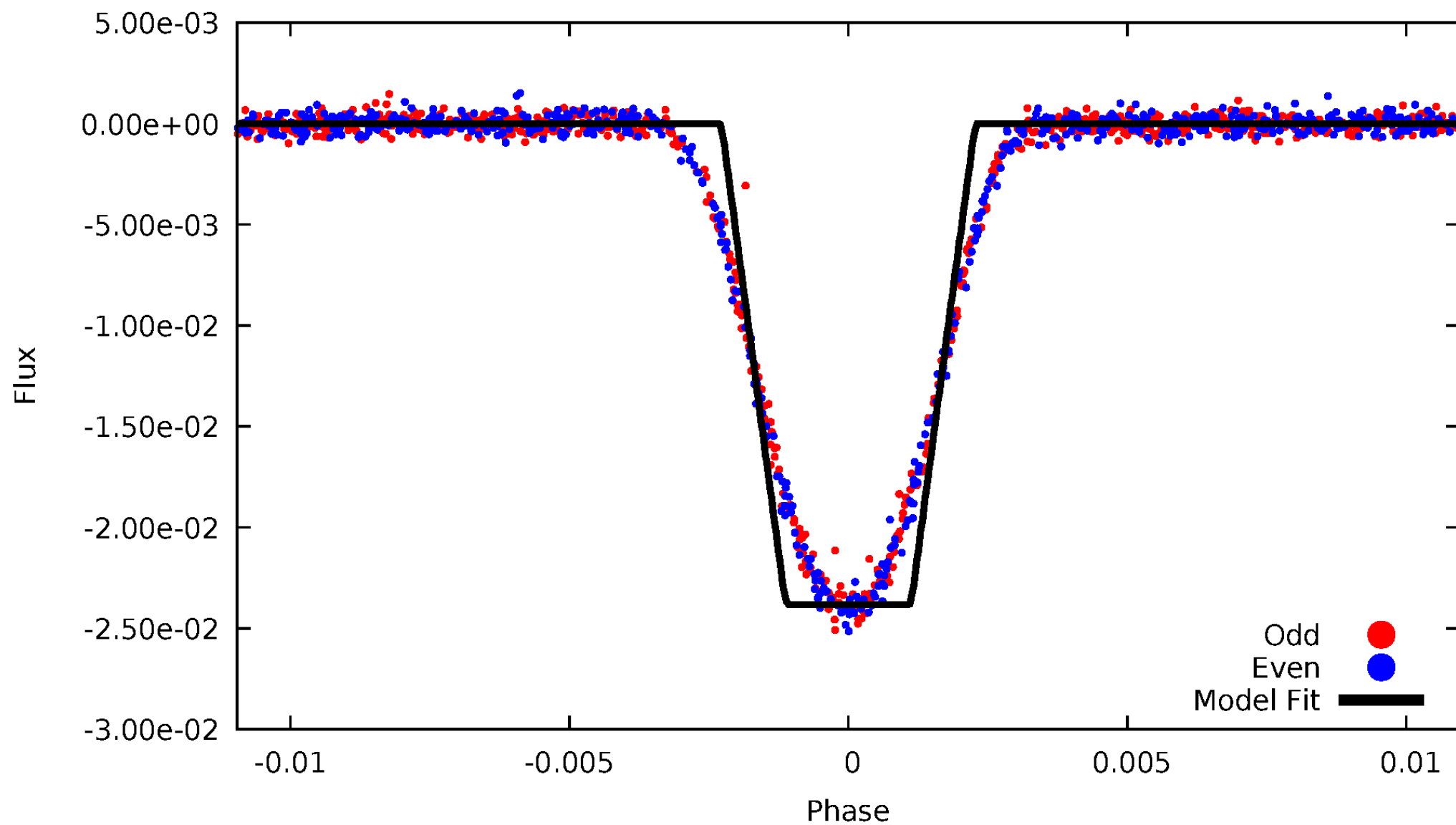
DV Odd/Even

TCE 012251650-01



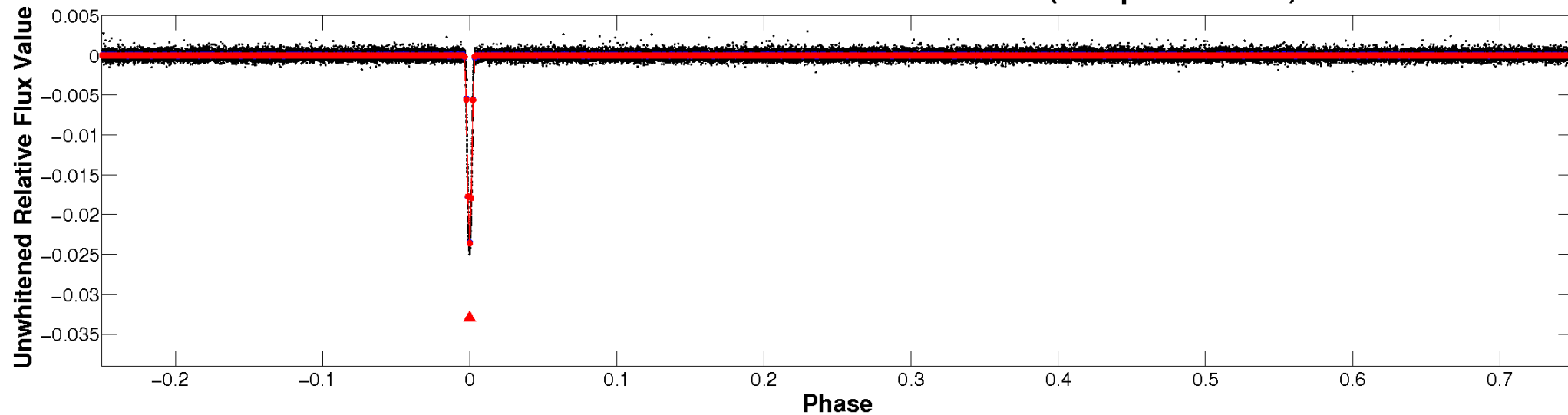
ALT Odd/Even

TCE 012251650-01

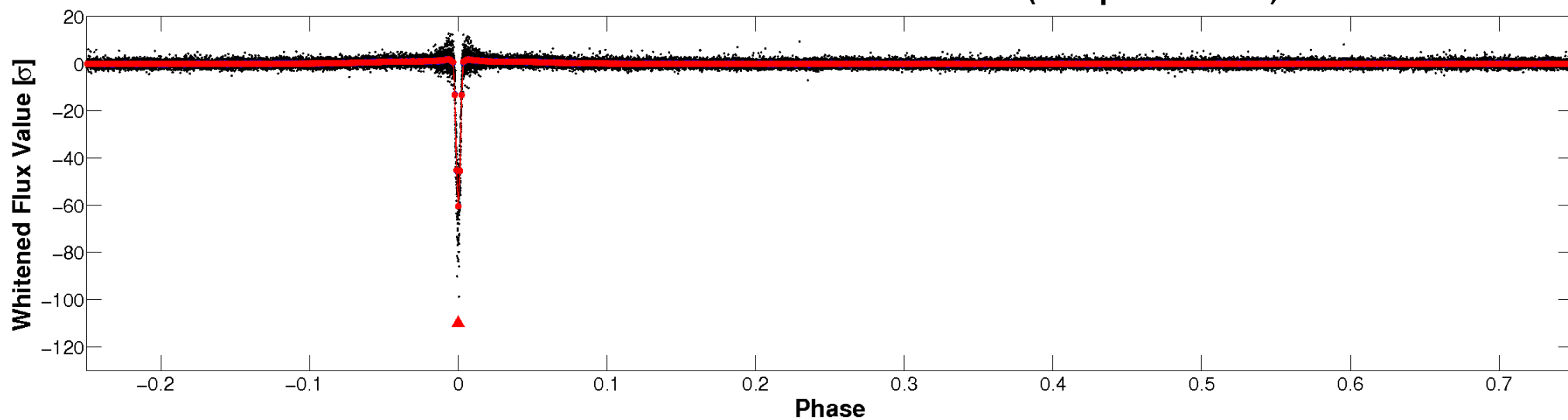


Non-Whitened Vs. Whitened Light Curve

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

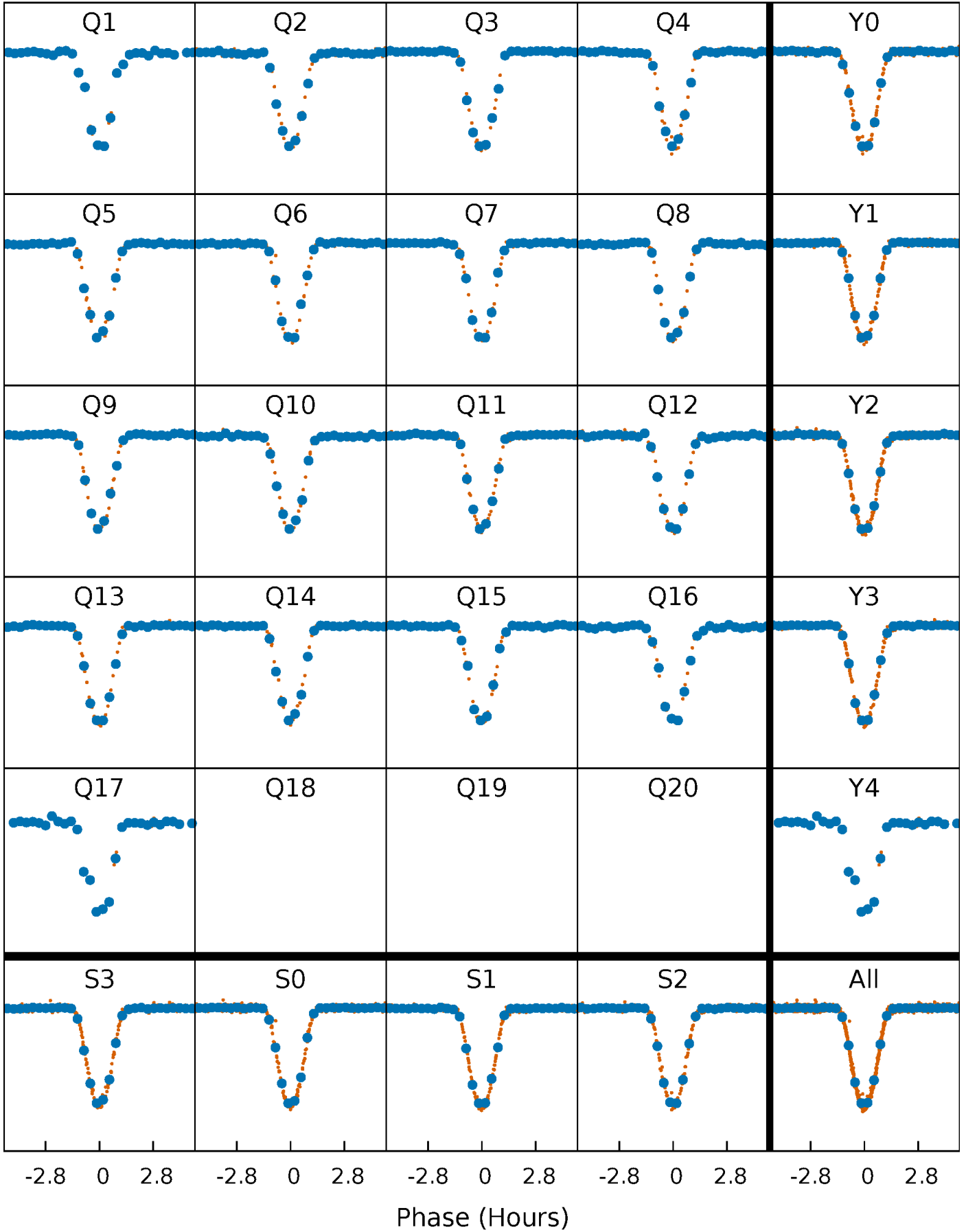


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



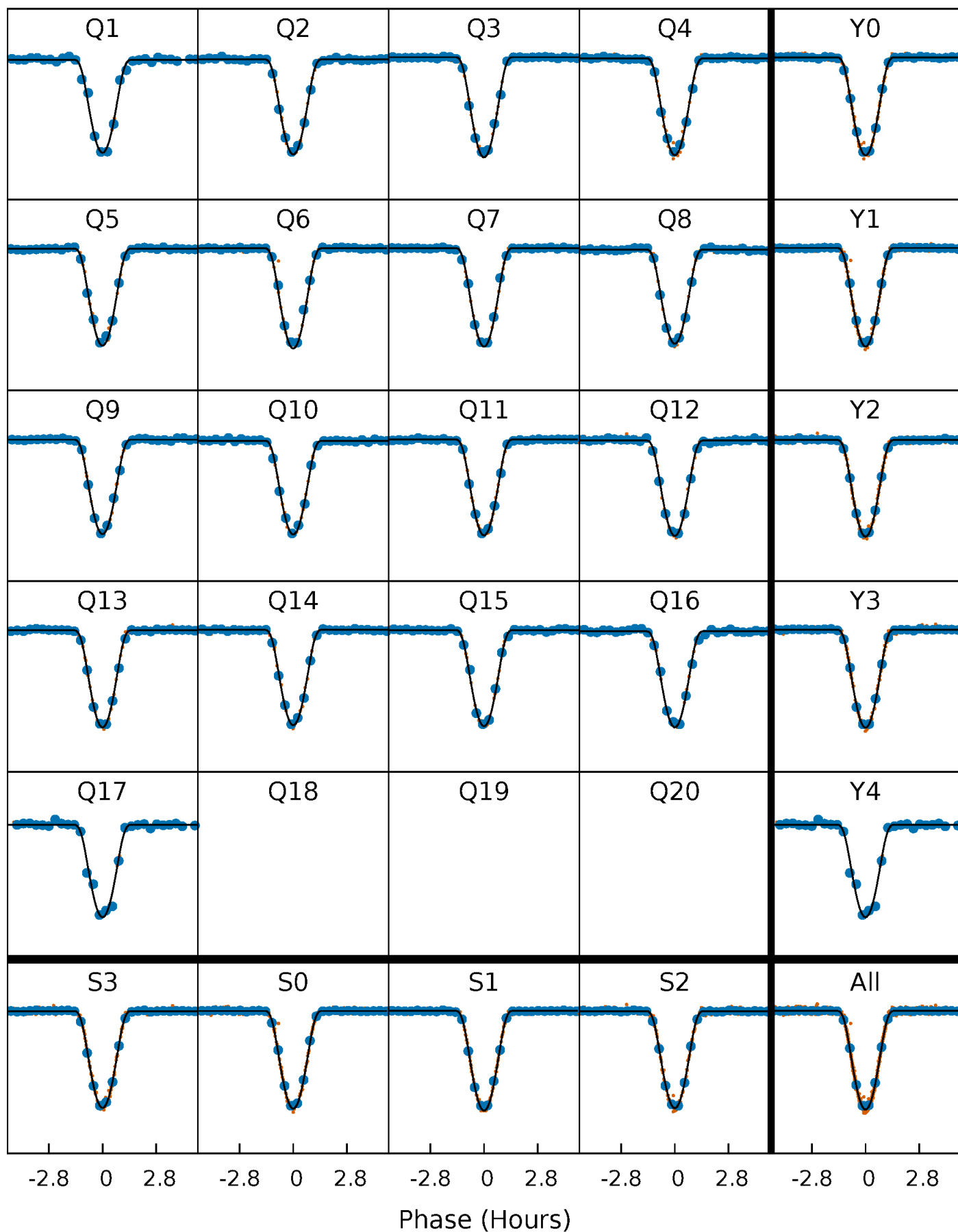
PDC Quarter-Phased Transit Curves

TCE 012251650-01 P= 17.761998 Days $T_0=138.659128$ (BKJD)



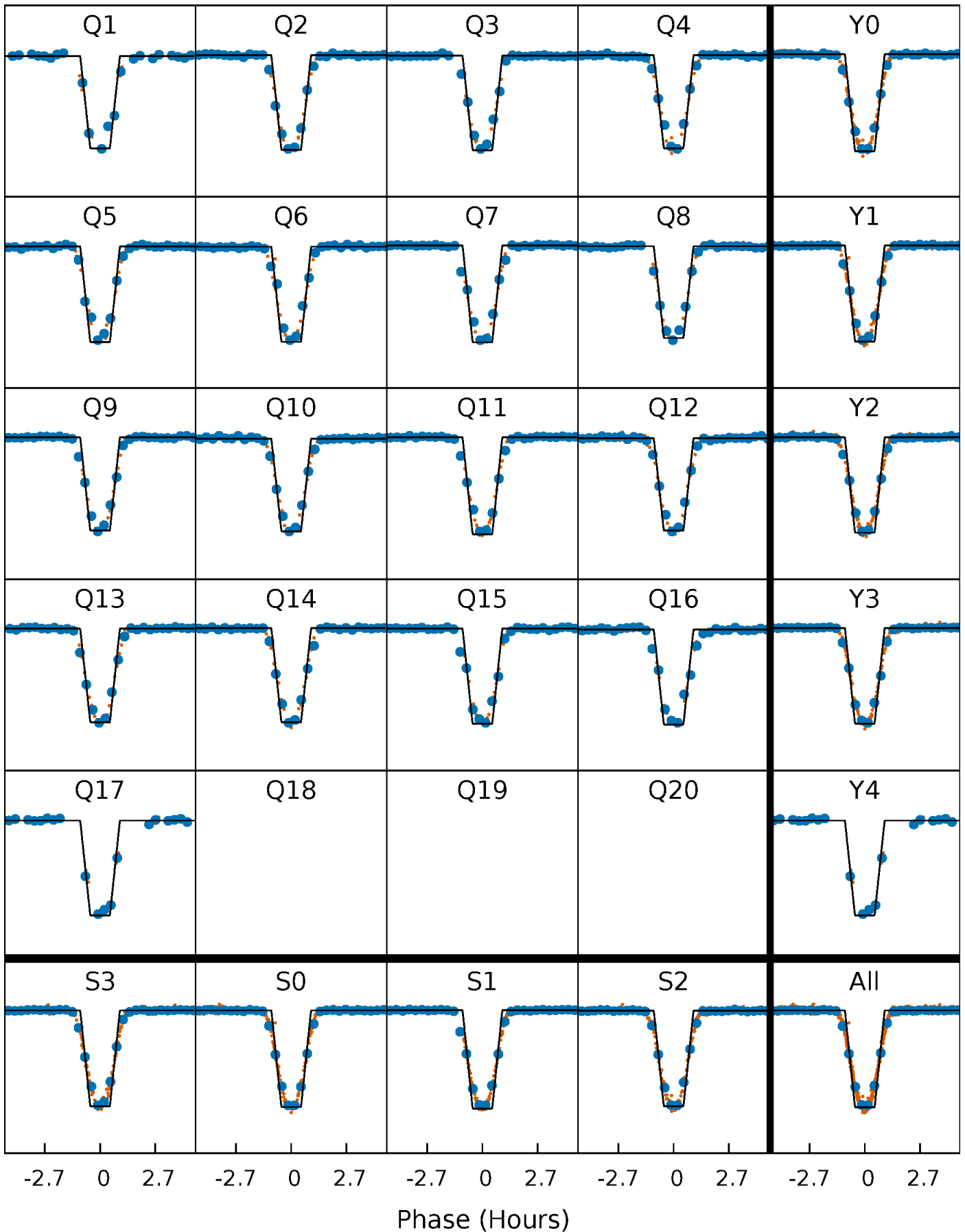
DV Quarter-Phased Transit Curves

TCE 012251650-01 P= 17.761998 Days $T_0=138.659128$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

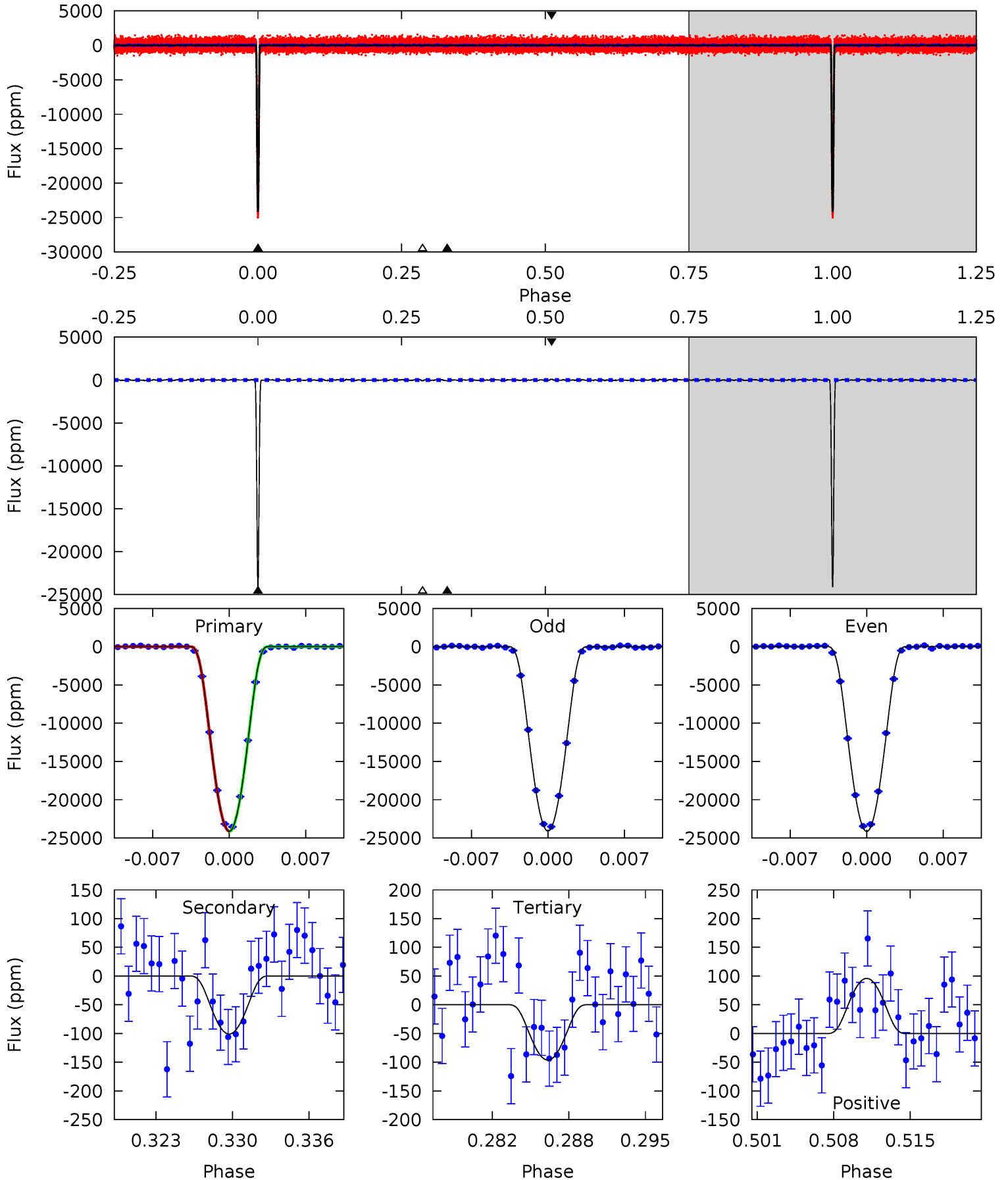
TCE 012251650-01 P= 17.761974 Days $T_0=138.660151$ (BKJD)



DV Model-Shift Uniqueness Test

012251650-01, P = 17.761998 Days, E = 120.897130 Days

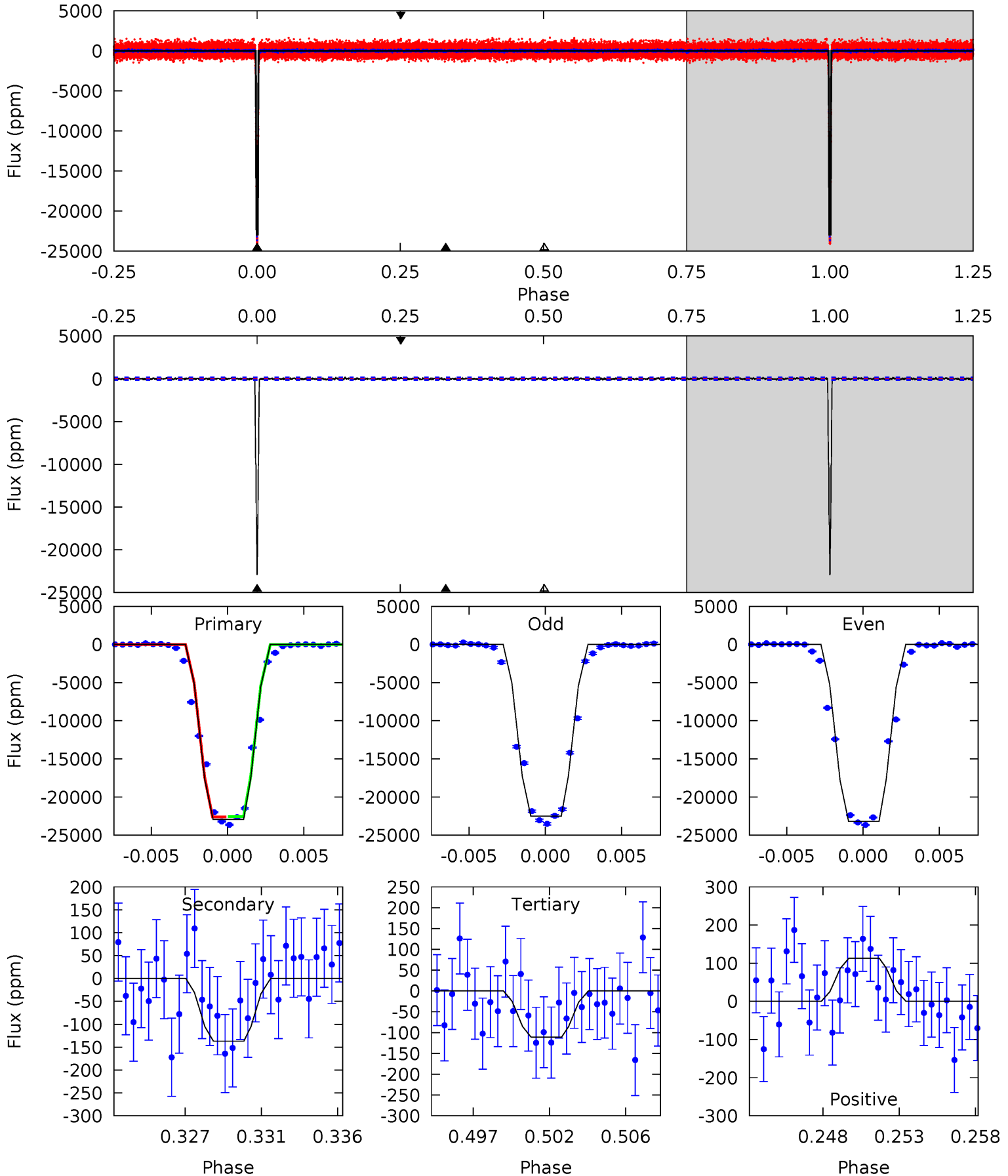
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1334	5.58	5.33	5.31	5.10	2.70	1.61	1329	1329	0.26	0.28	1.69	1.00	0.00	1.40



Alt Model-Shift Uniqueness Test

012251650-01, P = 17.761974 Days, E = 120.898177 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
756.4	4.51	3.66	3.73	5.17	2.83	1.20	752.7	752.6	0.85	0.79	10.9	0.99	0.00	0



Stellar Parameters For KIC 012251650

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5088^{+151}_{-136}	$4.612^{+0.061}_{-0.044}$	$-0.580^{+0.300}_{-0.300}$	$0.669^{+0.065}_{-0.059}$	$0.667^{+0.073}_{-0.043}$	$3.142^{+0.765}_{-0.559}$
	+3%/-3%	+1%/-1%	+52%/-52%	+10%/-9%	+11%/-6%	+24%/-18%
Source	PHO1	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 012251650-01 / KOI 0621.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-101 ± 18	$14.99^{+1.13}_{-0.97}$	750^{+27}_{-26}	2070^{+56}_{-57}	$3.395^{+0.768}_{-0.716}$
Alt.	-137 ± 30	$11.20^{+0.88}_{-0.87}$	749^{+28}_{-24}	2299^{+74}_{-85}	$8.347^{+2.223}_{-2.005}$

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

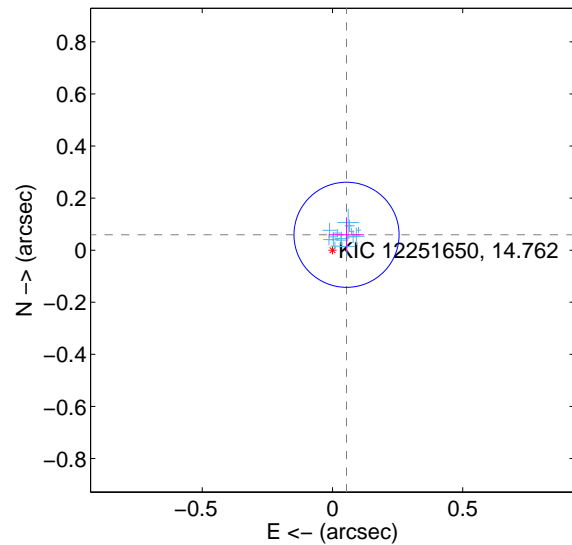
Supplemental centroid analysis for 012251650-01. Kepler magnitude: 14.76. Transit SNR 758.82

There are 17 quarters with good PRF difference image offsets

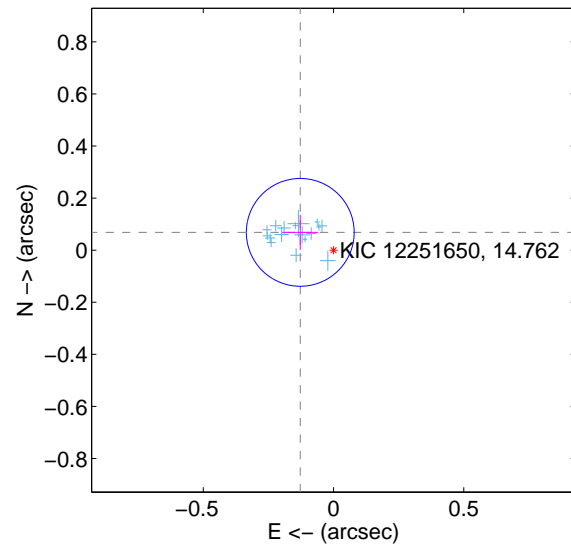
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.080 ± 0.067	1.19	-0.054 ± 0.067	0.059 ± 0.067
PRF-fit source offset from KIC position	0.145 ± 0.069	2.10	0.128 ± 0.069	0.068 ± 0.067
photometric centroid source offset	0.72 ± 0.02	40.80	-0.08 ± 0.02	0.72 ± 0.02

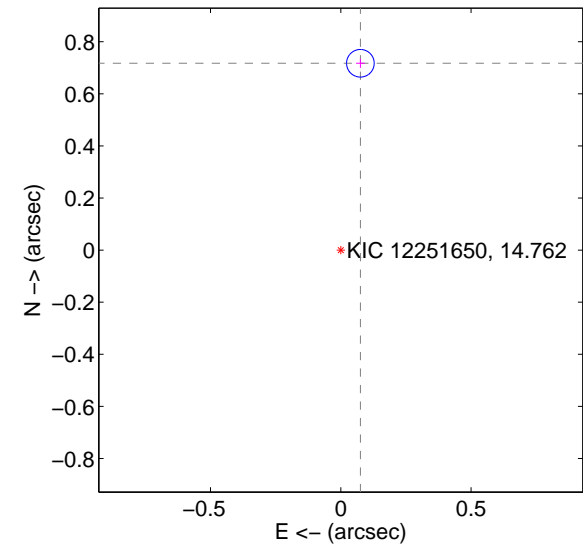
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

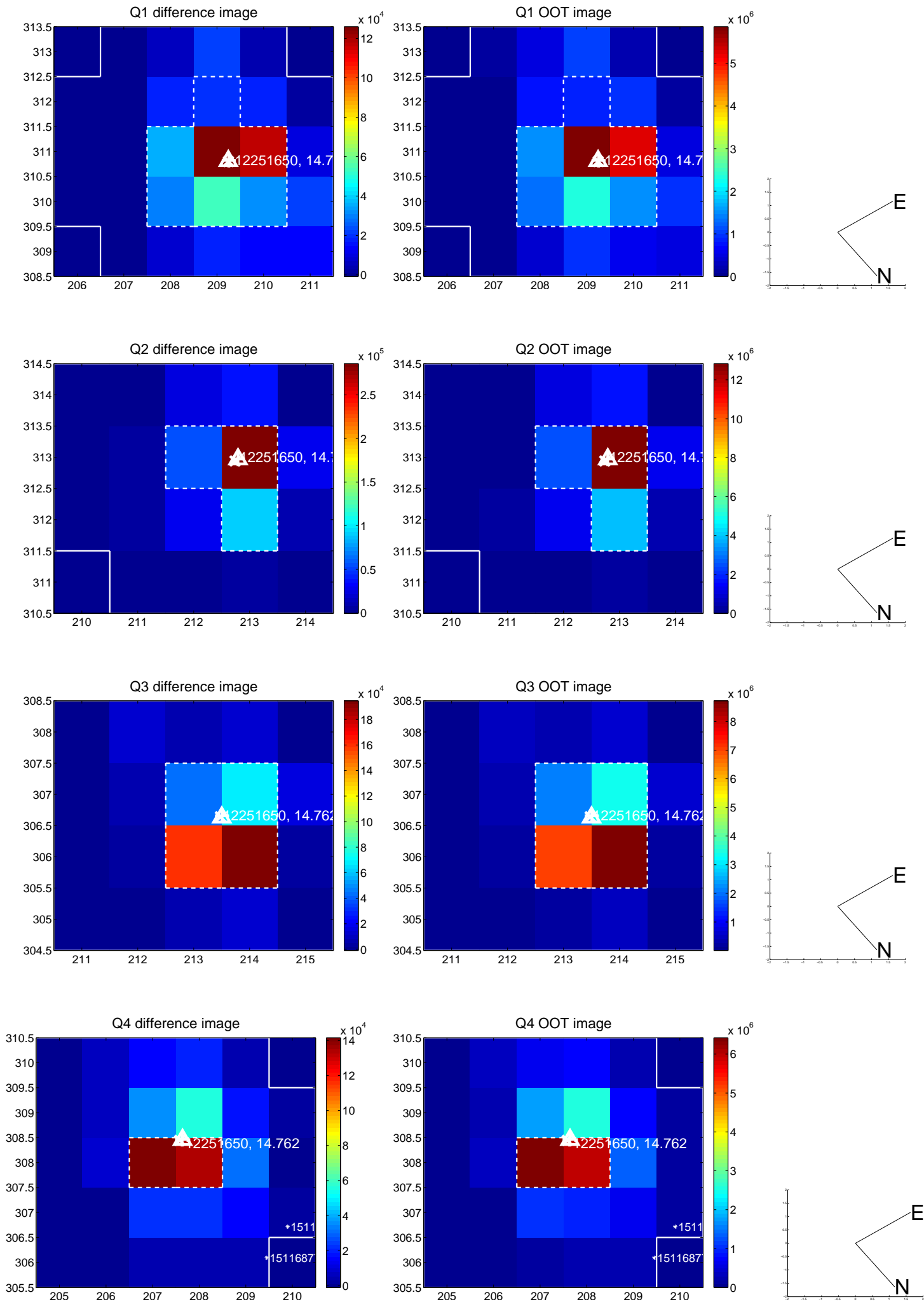


offset from photometric centroids

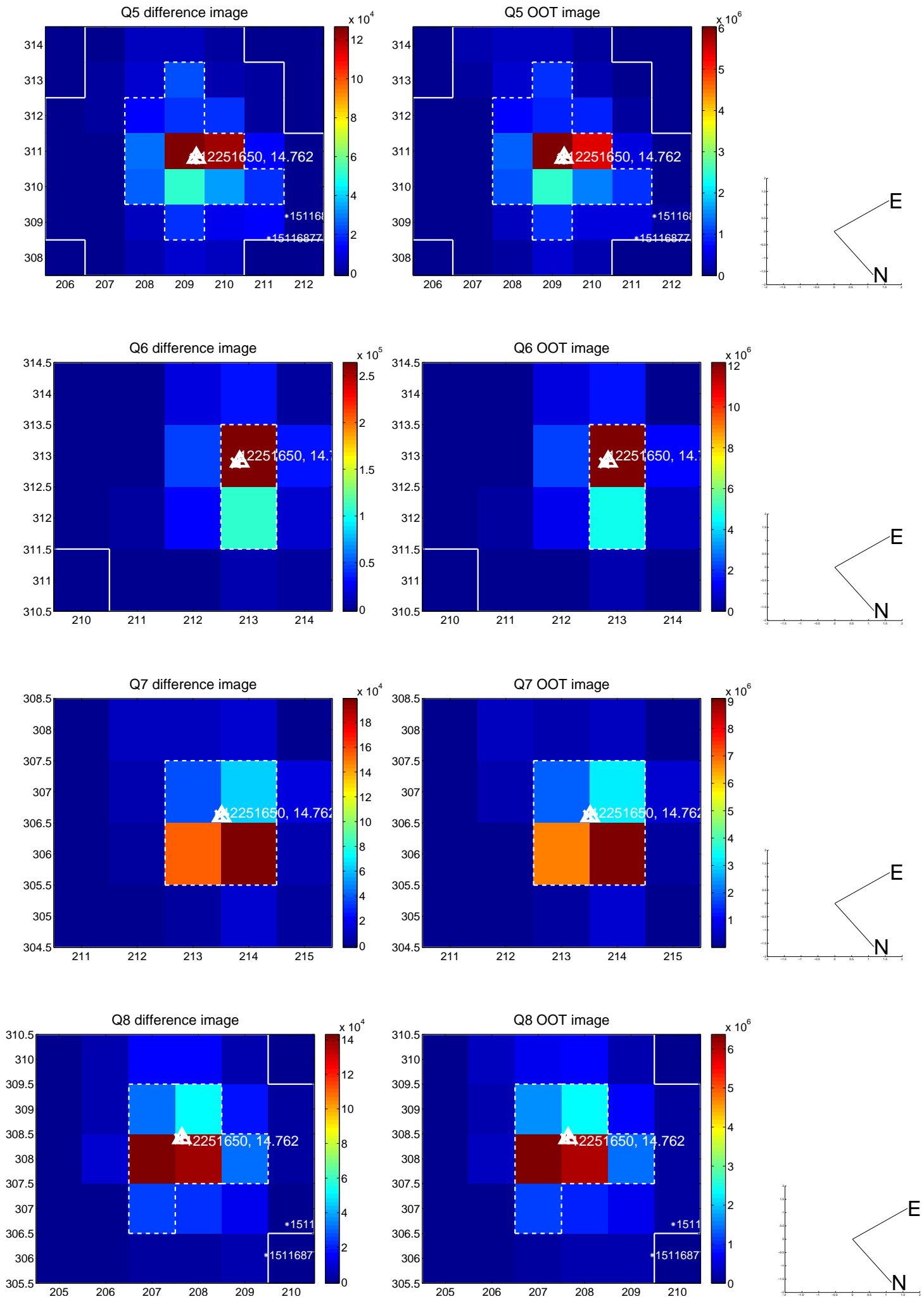


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

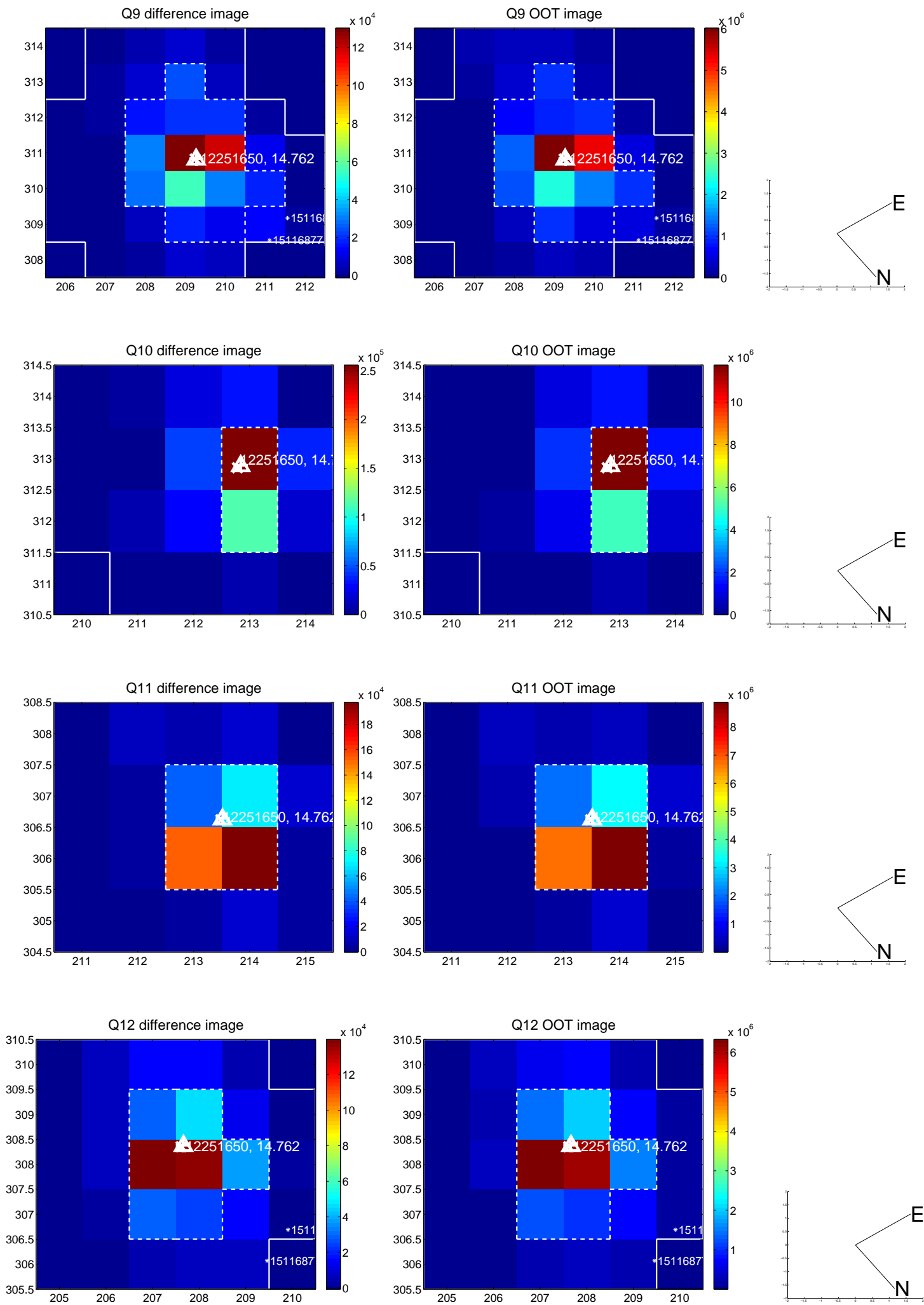
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



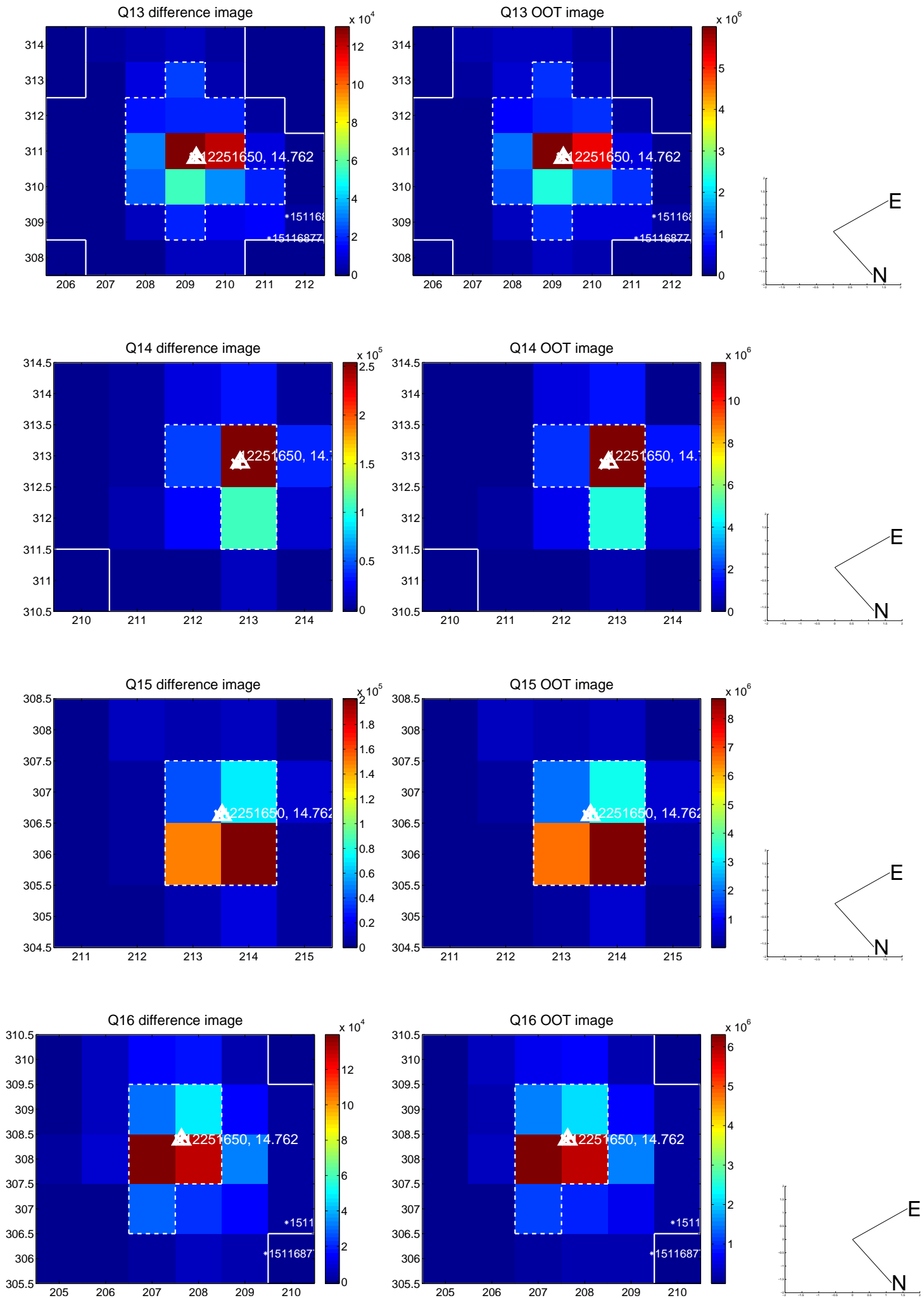
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



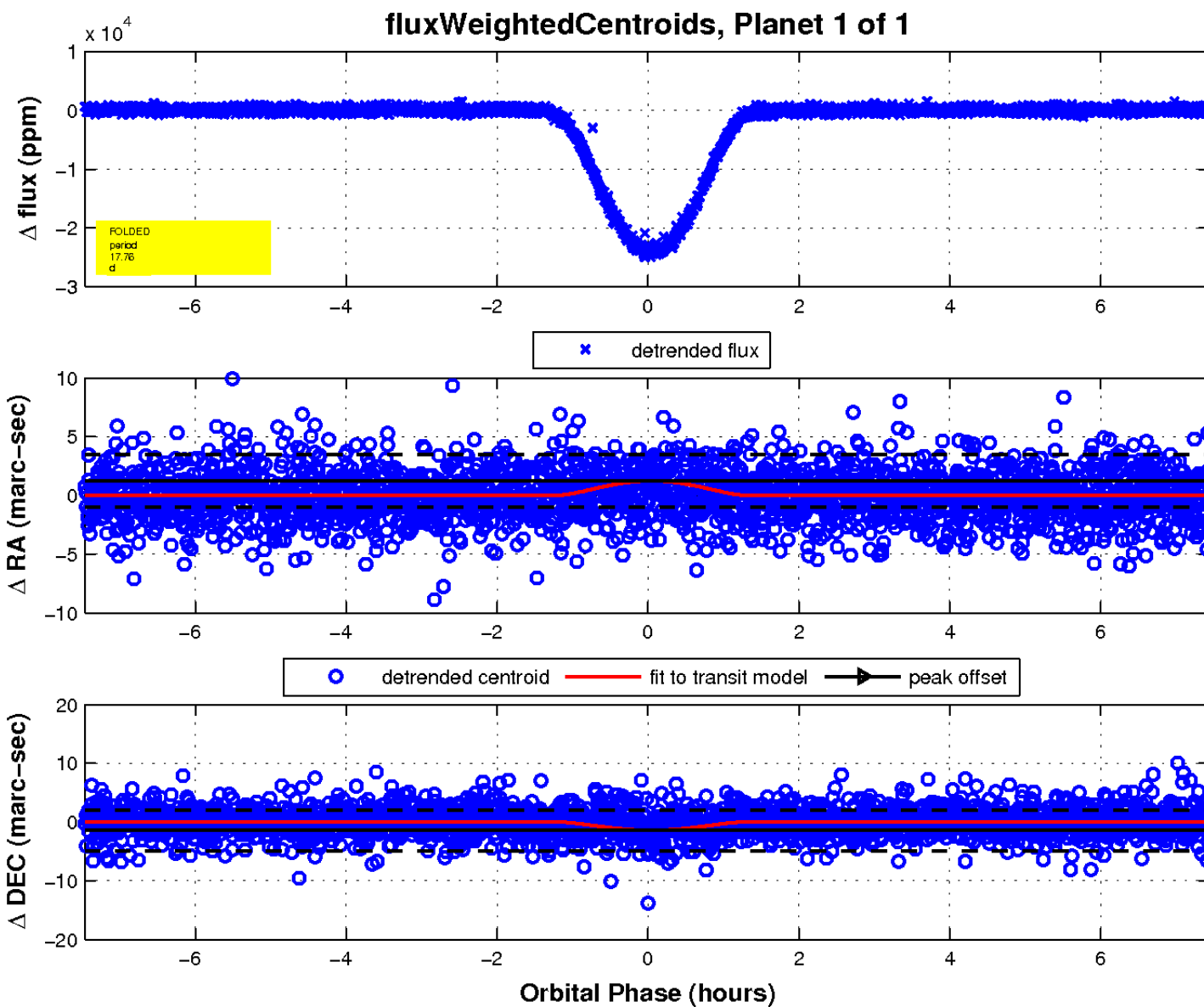
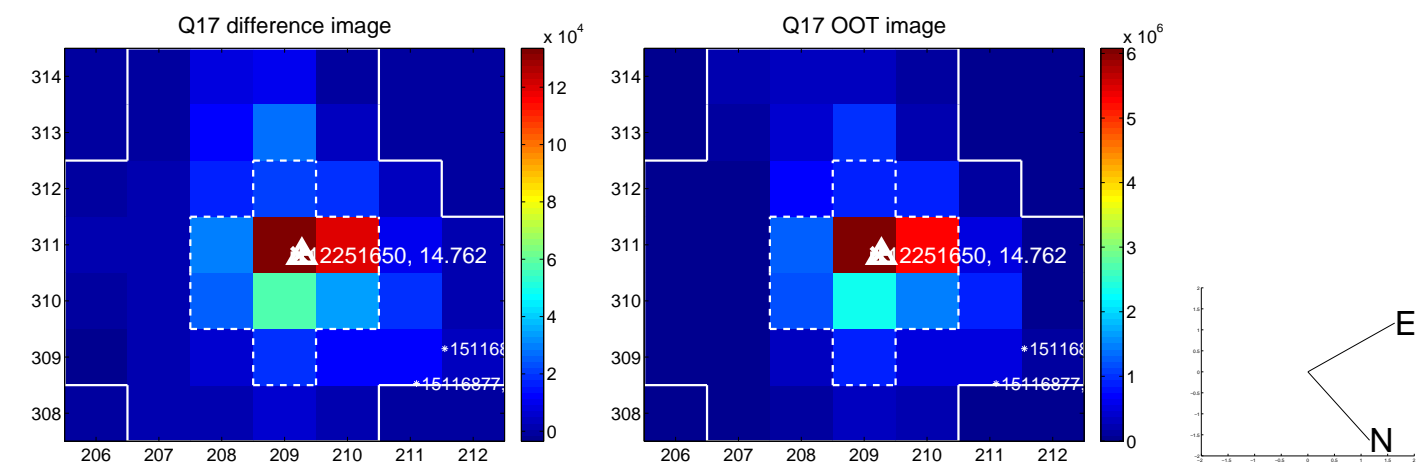
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

