

KIC 008210721

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})
008210721-01	OBS	6991.01	22.672847	138.152621	65763.7	6.449	3401.5	2511.6	1.15	5619	30.81	51.77

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008210721-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT

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 008210721-01

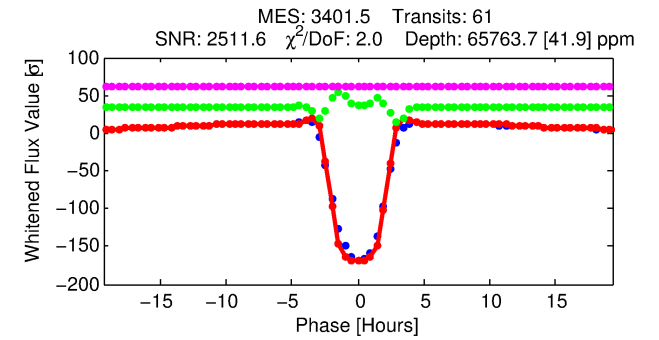
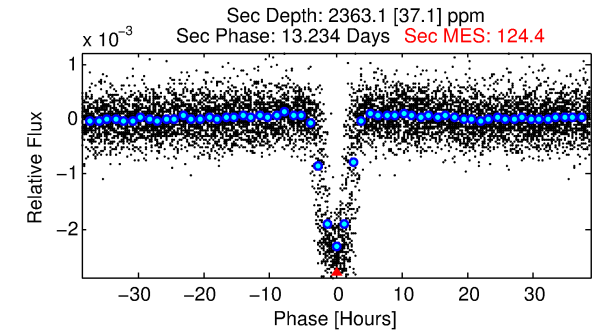
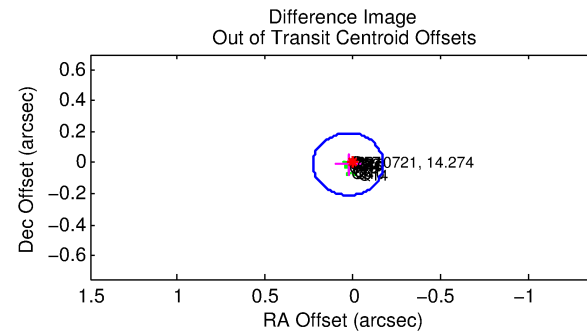
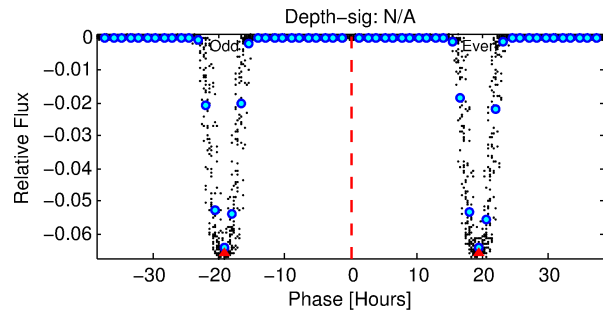
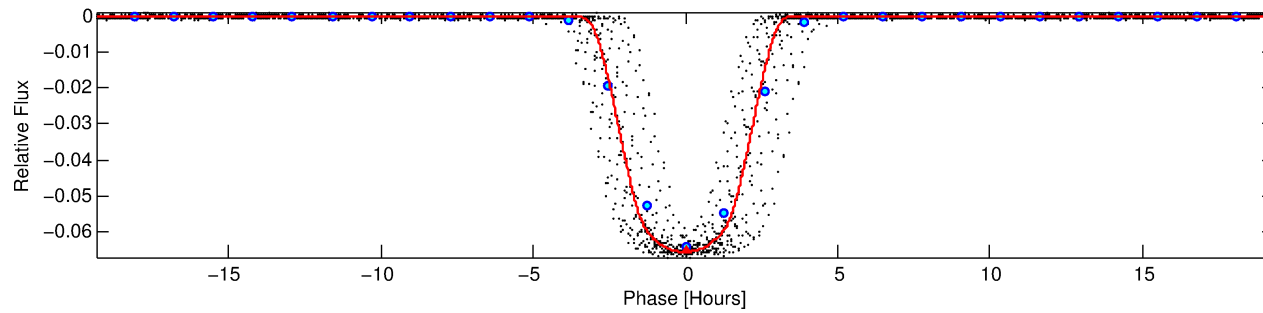
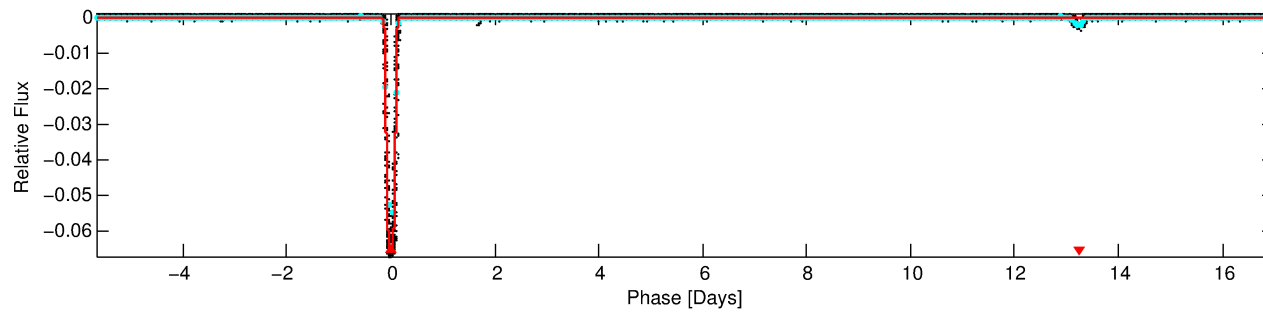
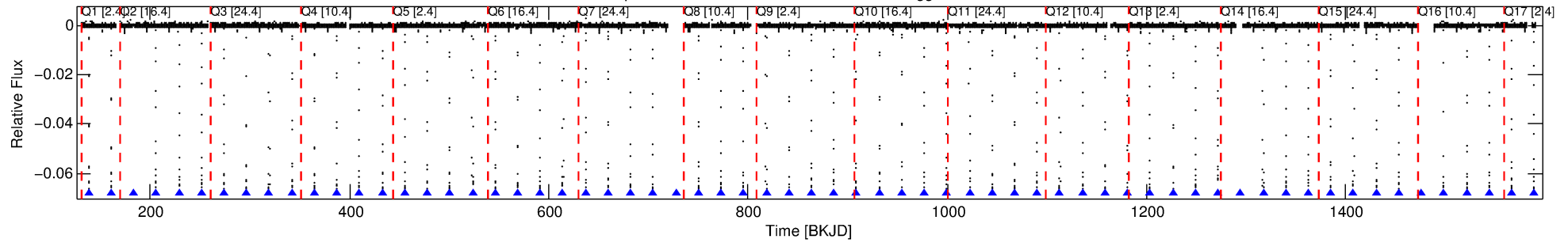
No Significant Match Found

DV One-Page Summary

KIC: 8210721 Candidate: 1 of 1 Period: 22.673 d

KOI: K06991.01 Corr: 0.964

Kp: 14.27 R*: 1.15 Rs Teff: 5619.0 K Logg: 4.27 Fe/H: -0.020



DV Fit Results:

Period = 22.67285 [0.00000] d
Epoch = 138.1526 [0.0001] BKJD
Rp/R* = 0.2449 [0.0001]
a/R* = 29.64 [0.04]
b = 0.58 [0.00]
Seff = 51.77 [21.21]
Teff = 684 [70] K
Rp = 30.81 [8.87] Re
a = 0.1514 [0.0391] AU
Ag = 31.41 [12.42] [2.45σ]
Teffp = 2503 [68] K [18.58σ]

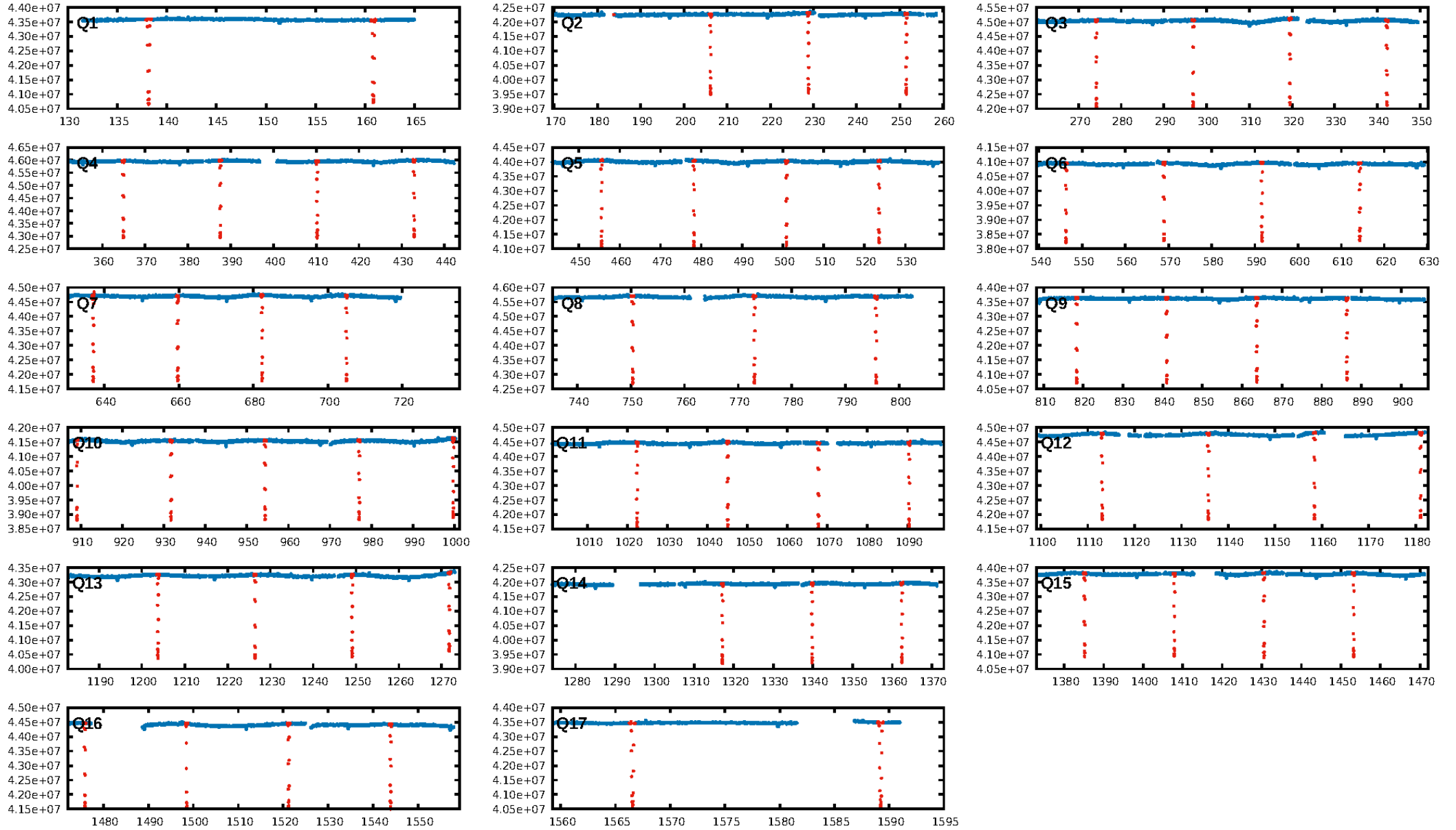
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 1.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [57/57]
GhostDiagnostic-chr: 3.429
Centroid-sig: 0.0%
Centroid-so: 0.714 arcsec [221.27σ]
OotOffset-rm: 0.030 arcsec [0.45σ]
KicOffset-rm: 0.121 arcsec [1.74σ]
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]

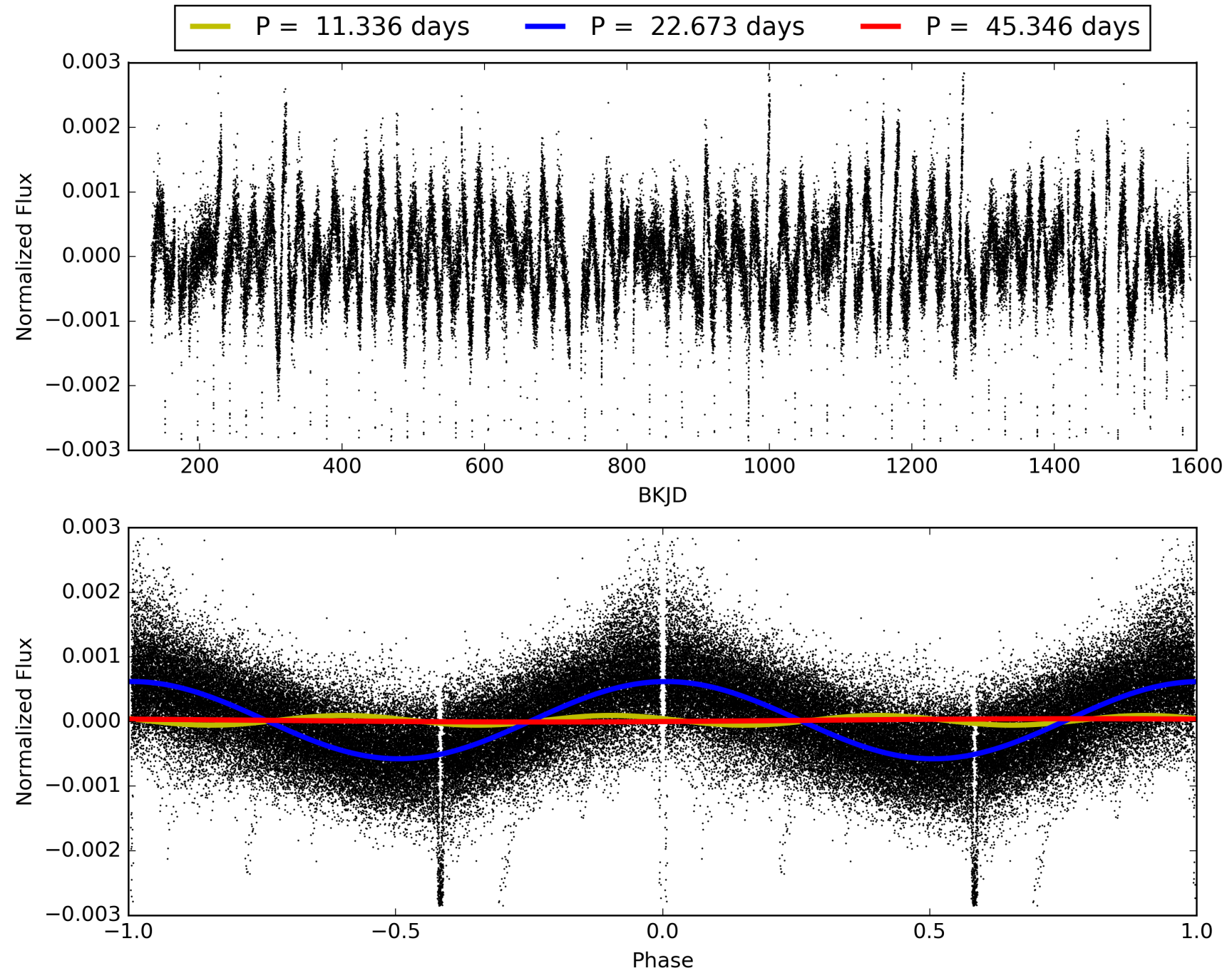
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 14:18:17 Z

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

TCE 008210721-01, PDC Light Curves

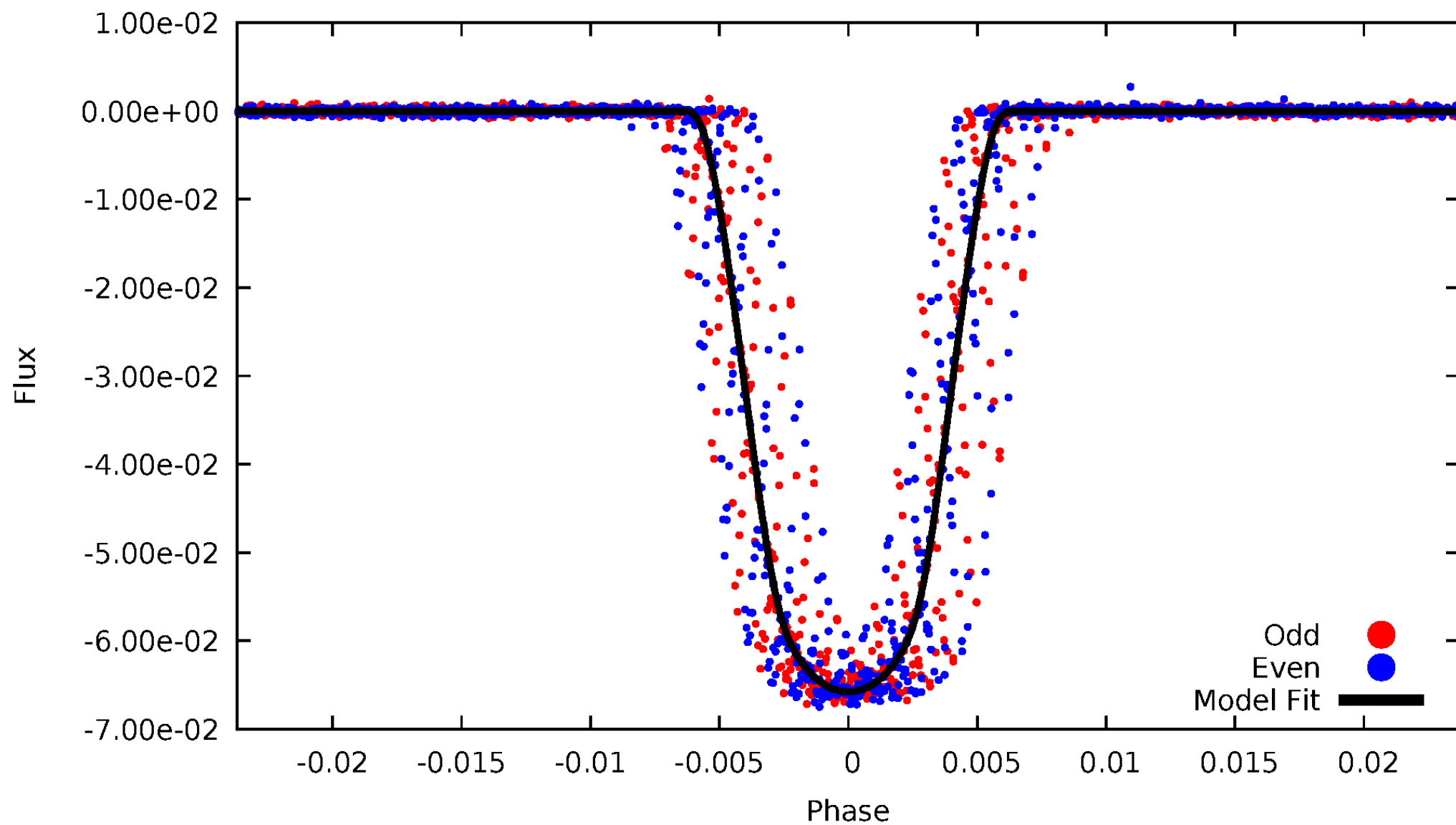


TCE 008210721-01



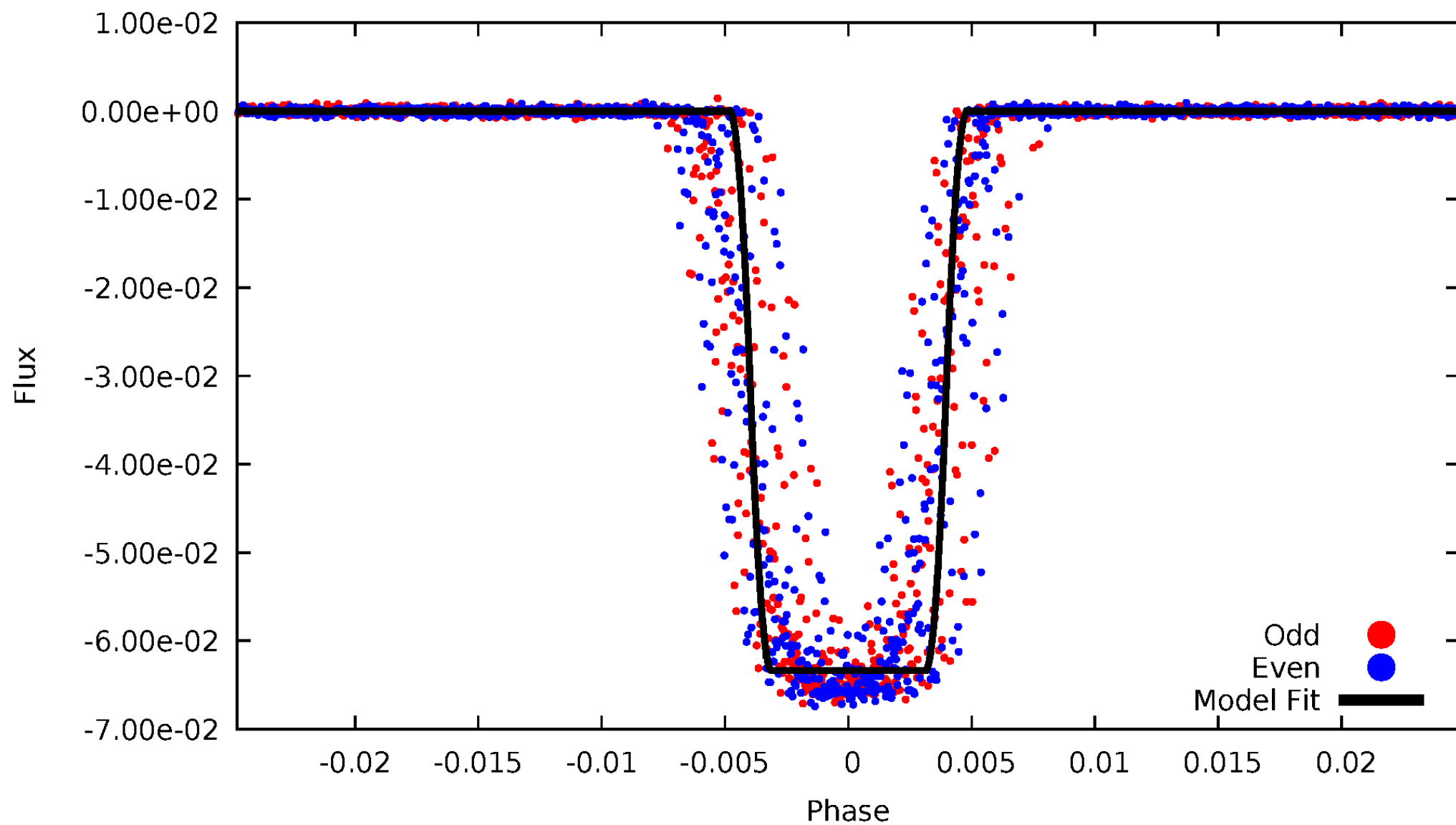
DV Odd/Even

TCE 008210721-01



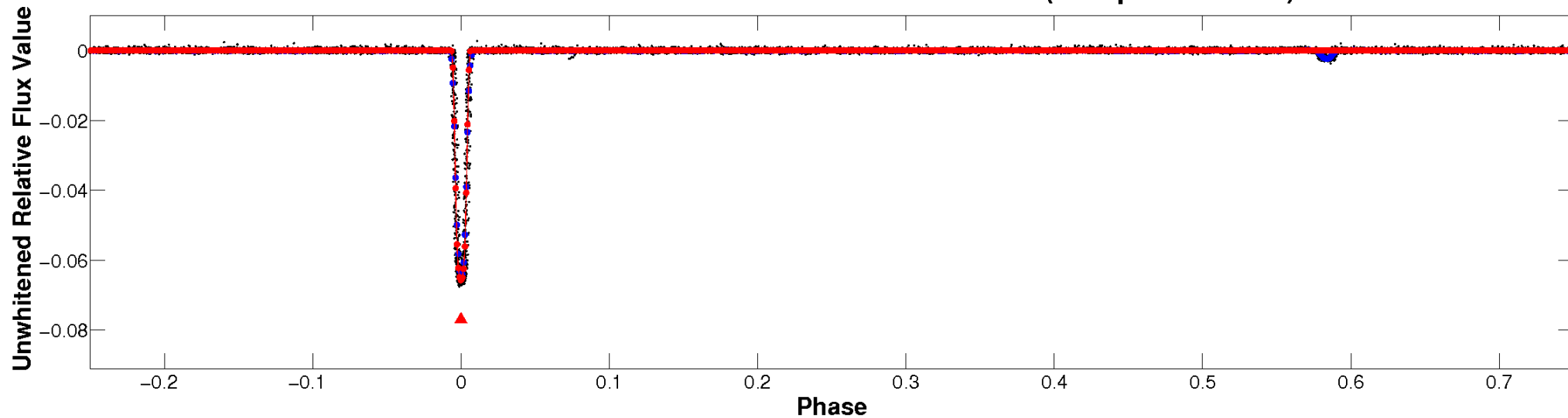
ALT Odd/Even

TCE 008210721-01

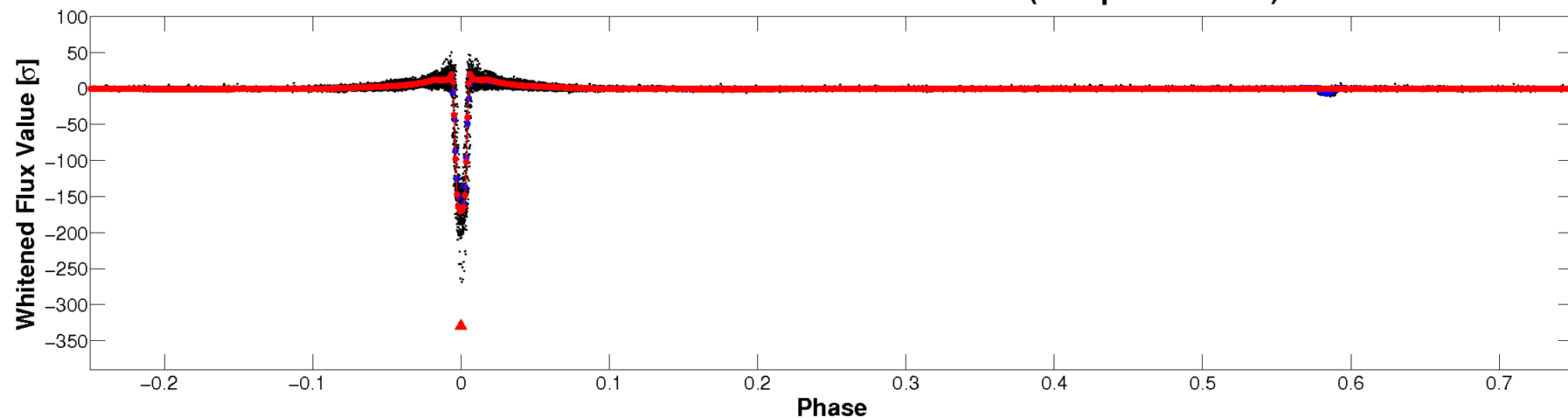


Non-Whitened Vs. Whitened Light Curve

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

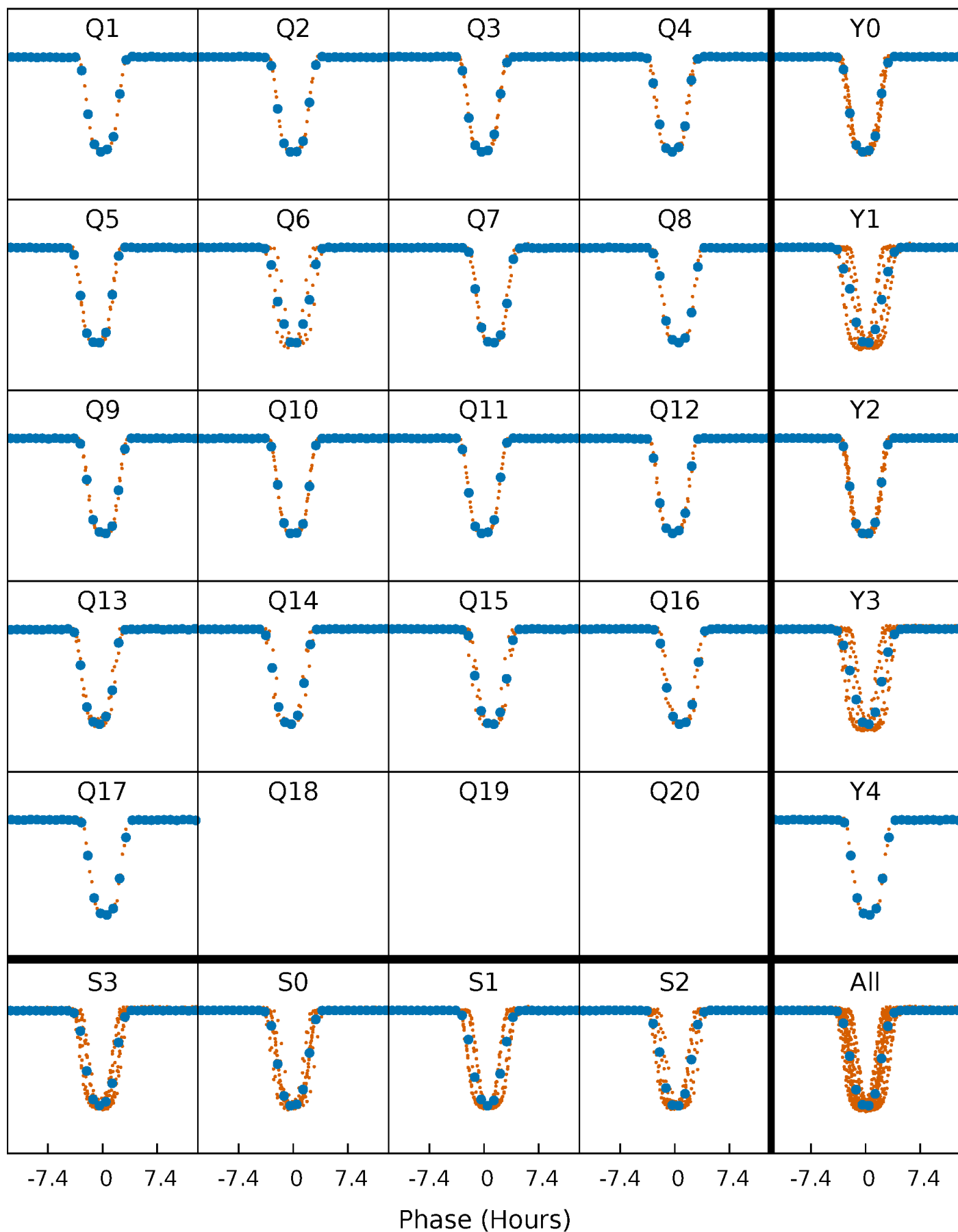


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



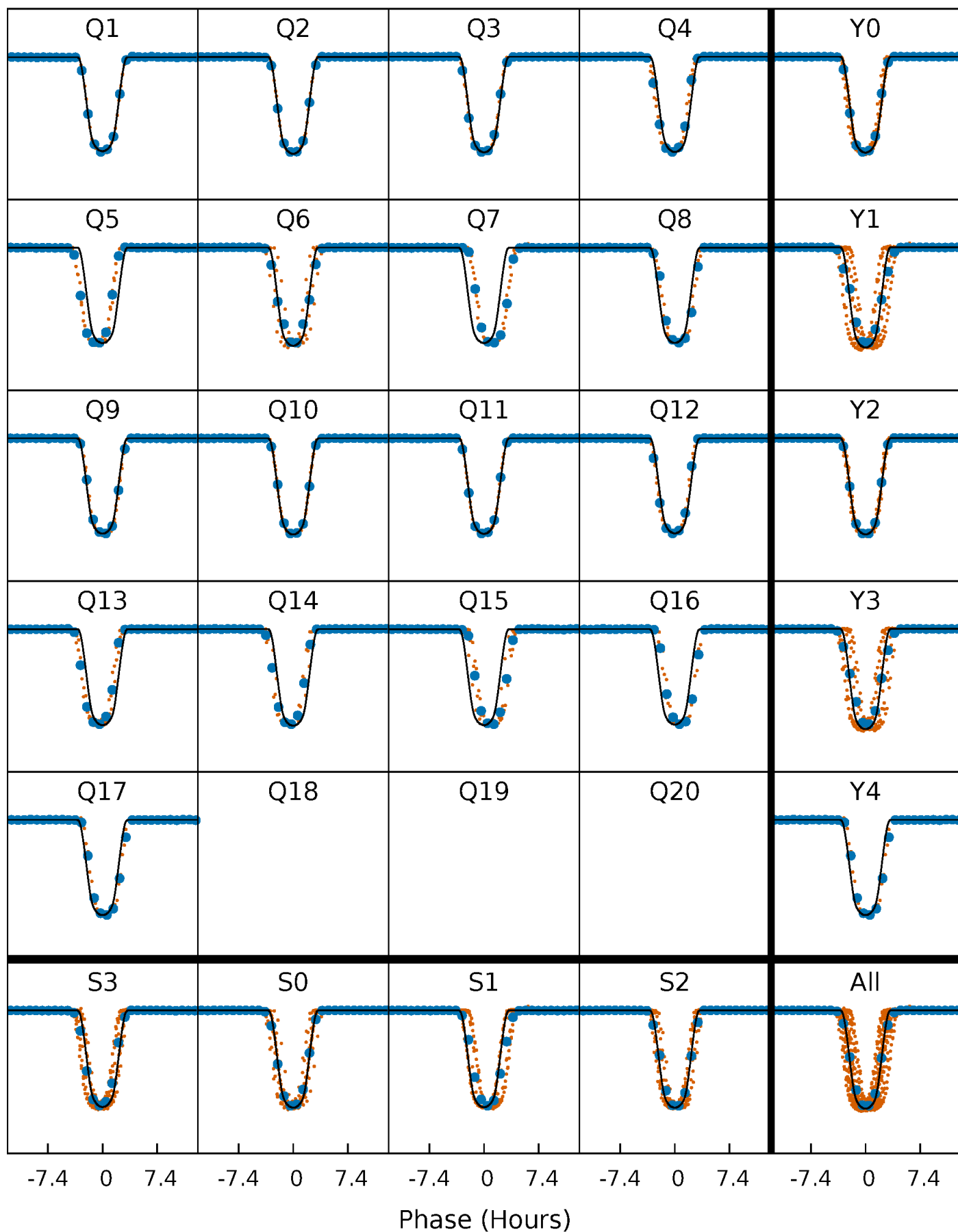
PDC Quarter-Phased Transit Curves

TCE 008210721-01 P= 22.672847 Days $T_0=138.152621$ (BKJD)



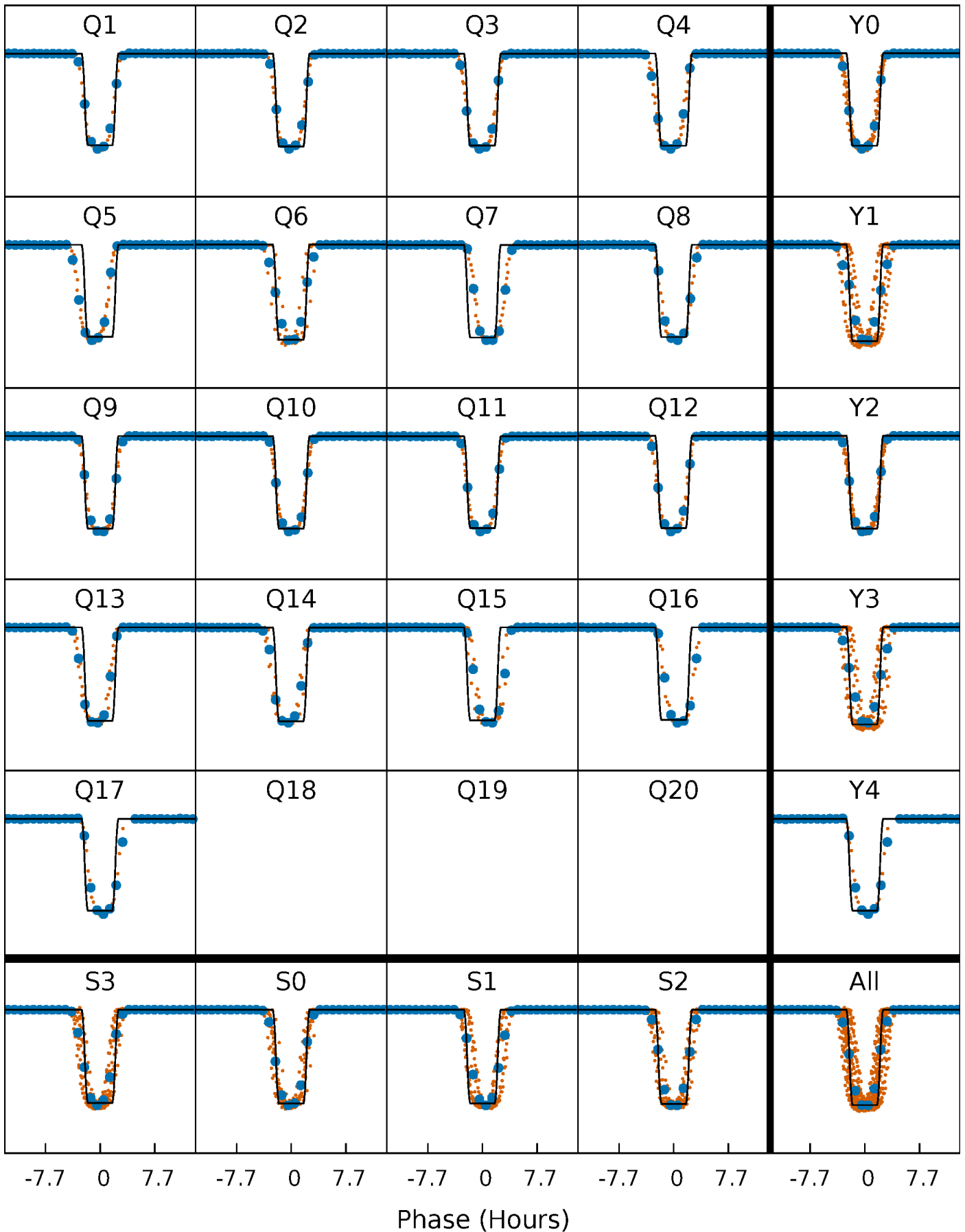
DV Quarter-Phased Transit Curves

TCE 008210721-01 P= 22.672847 Days $T_0=138.152621$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

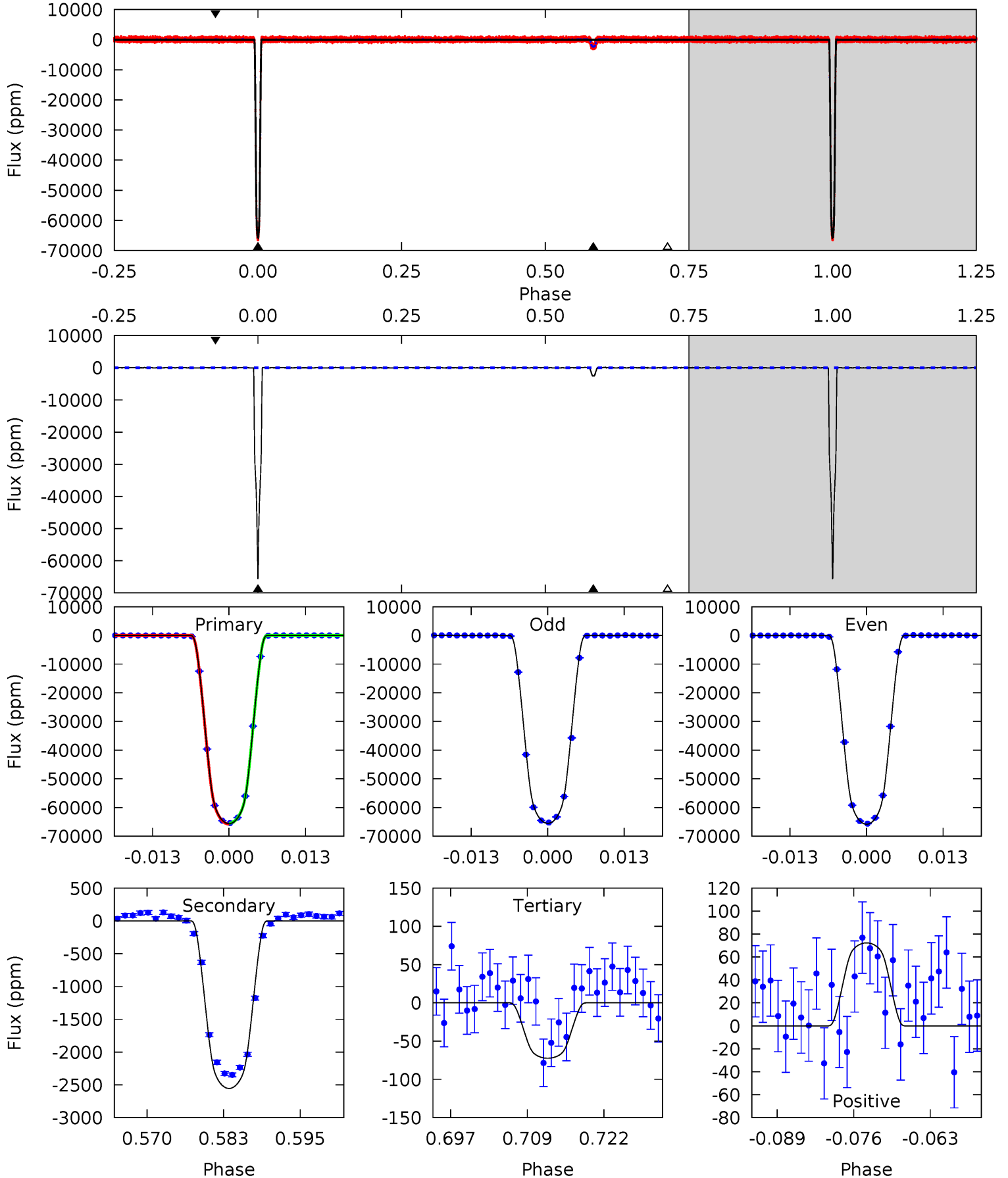
TCE 008210721-01 P= 22.672690 Days $T_0=138.160302$ (BKJD)



DV Model-Shift Uniqueness Test

008210721-01, P = 22.672847 Days, E = 115.479774 Days

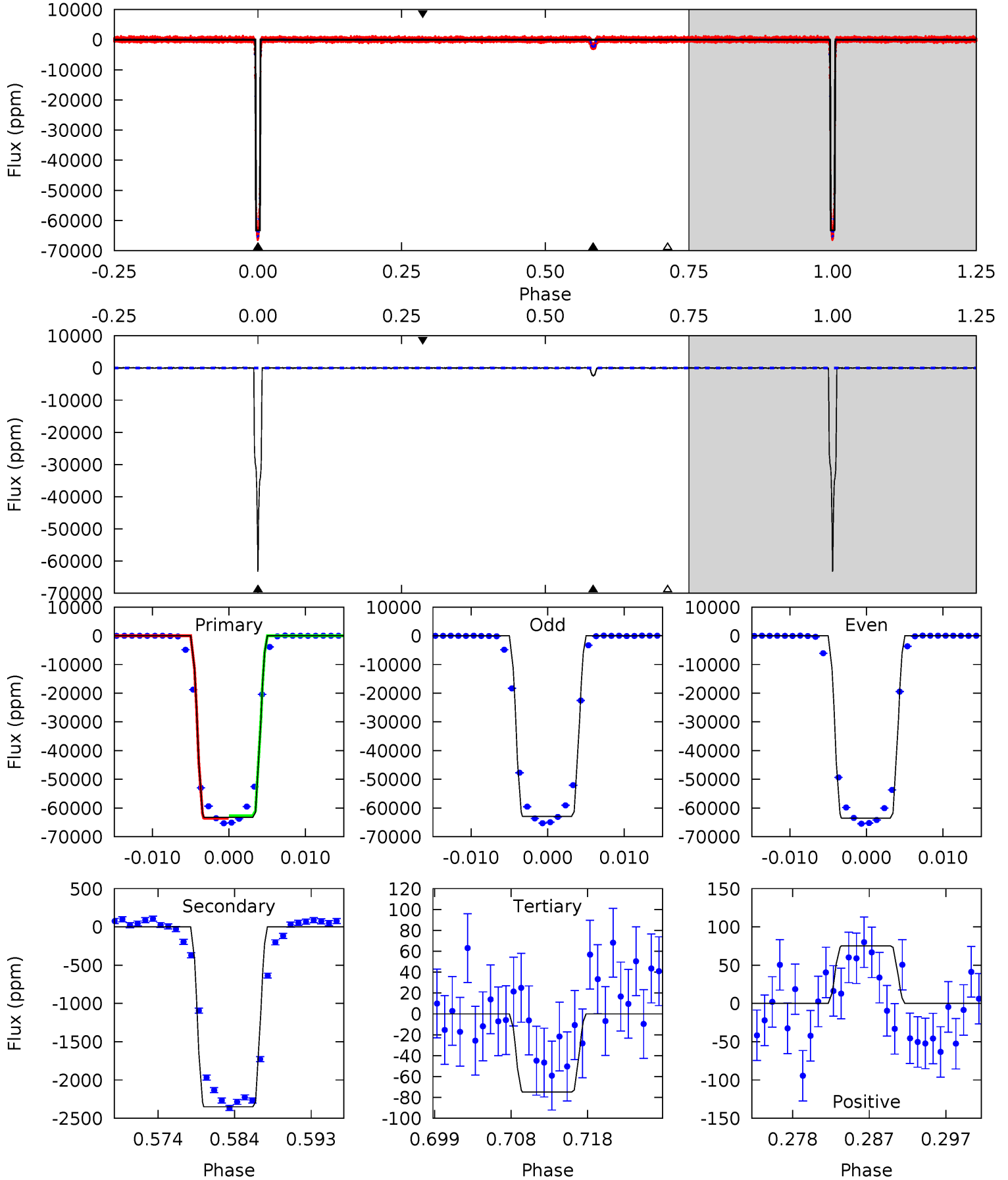
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3907	152.1	4.31	4.30	4.98	2.49	1.68	3902	3902	147.8	147.8	9.17	0.97	0.00	8.03



Alt Model-Shift Uniqueness Test

008210721-01, P = 22.672690 Days, E = 115.487612 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2976	110.5	3.52	3.54	5.03	2.59	1.15	2972	2972	107.0	107.0	12.5	0.97	0.00	0



Stellar Parameters For KIC 008210721

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5619^{+152}_{-152}	$4.269^{+0.225}_{-0.184}$	$-0.020^{+0.250}_{-0.300}$	$1.153^{+0.332}_{-0.272}$	$0.901^{+0.125}_{-0.073}$	$0.828^{+1.018}_{-0.400}$
	+3%/-3%	+5%/-4%	+1250%/-1500%	+29%/-24%	+14%/-8%	+123%/-48%
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 008210721-01 / KOI 6991.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2555 ± 17	$30.40^{+5.22}_{-3.86}$	950^{+75}_{-71}	3158^{+47}_{-59}	35^{+11}_{-9}
Alt.	-2349 ± 21	$31.76^{+5.10}_{-4.50}$	955^{+76}_{-70}	3095^{+53}_{-51}	30^{+9}_{-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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

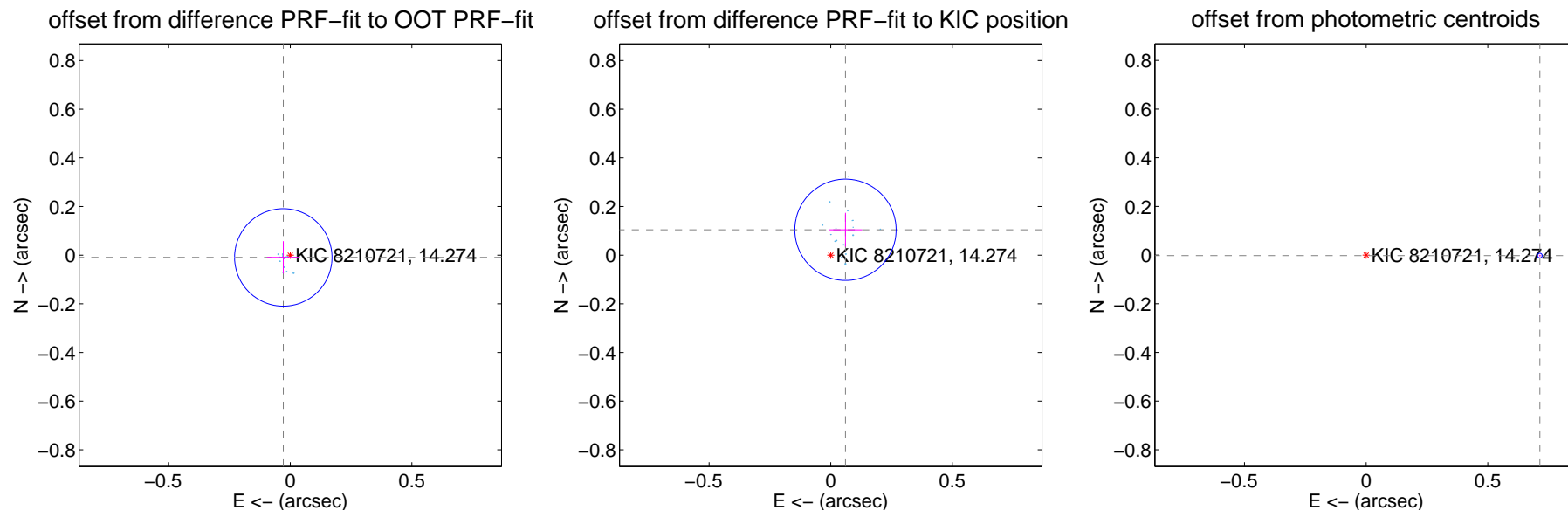
DV Centroid Data

Supplemental centroid analysis for 008210721-01. Kepler magnitude: 14.27. Transit SNR 2511.59

There are 17 quarters with good PRF difference image offsets

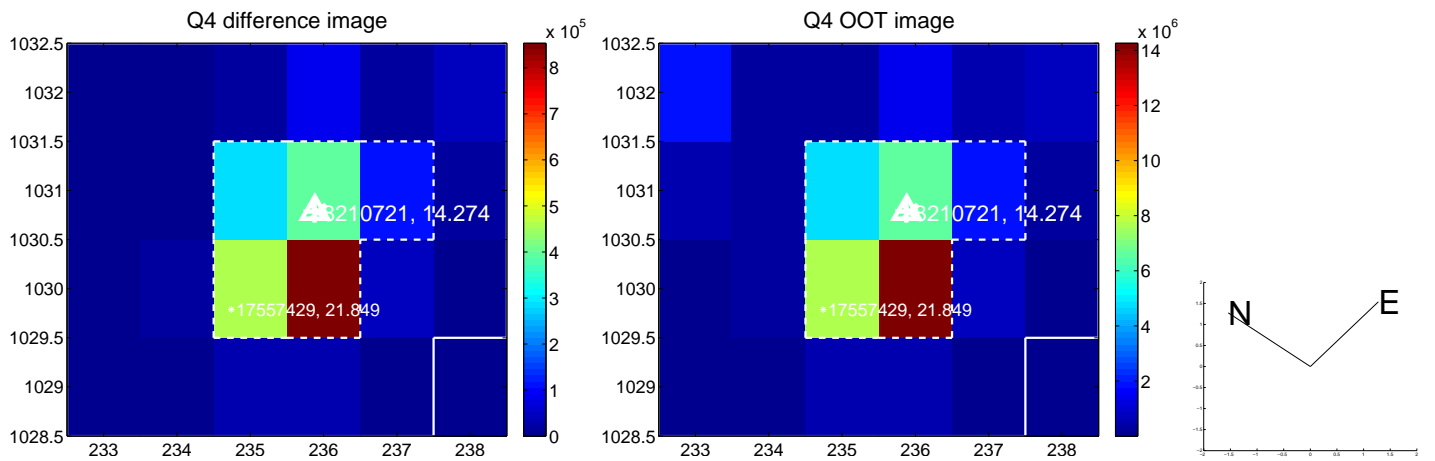
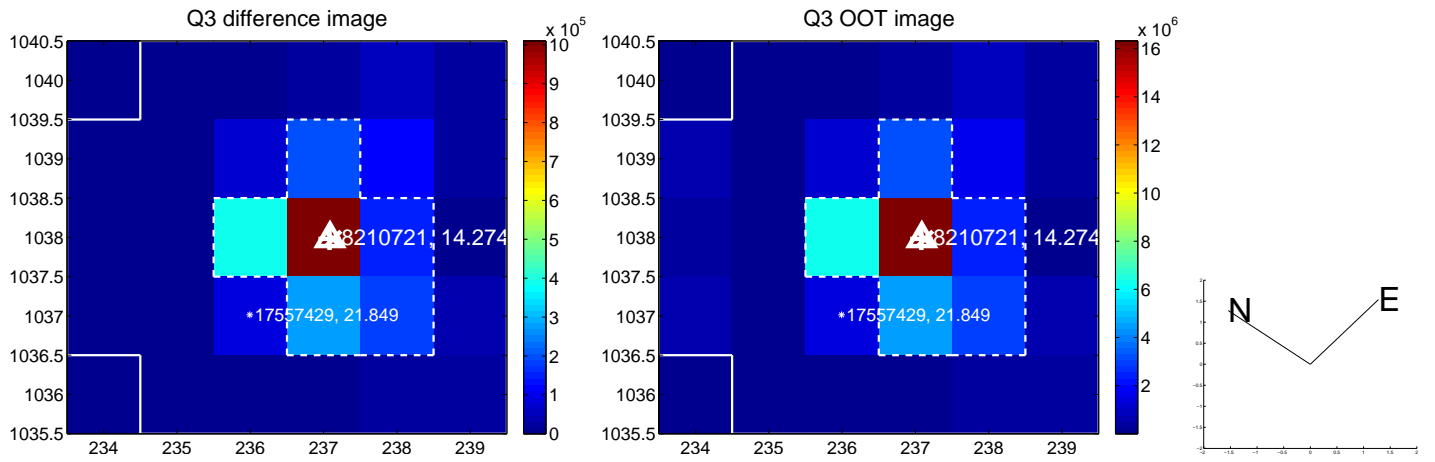
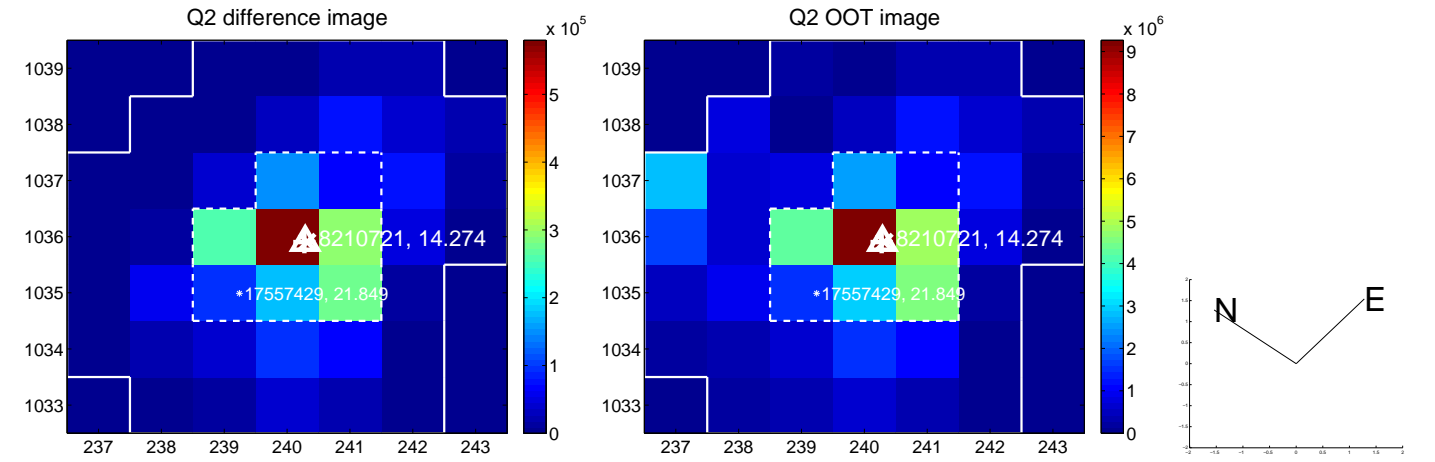
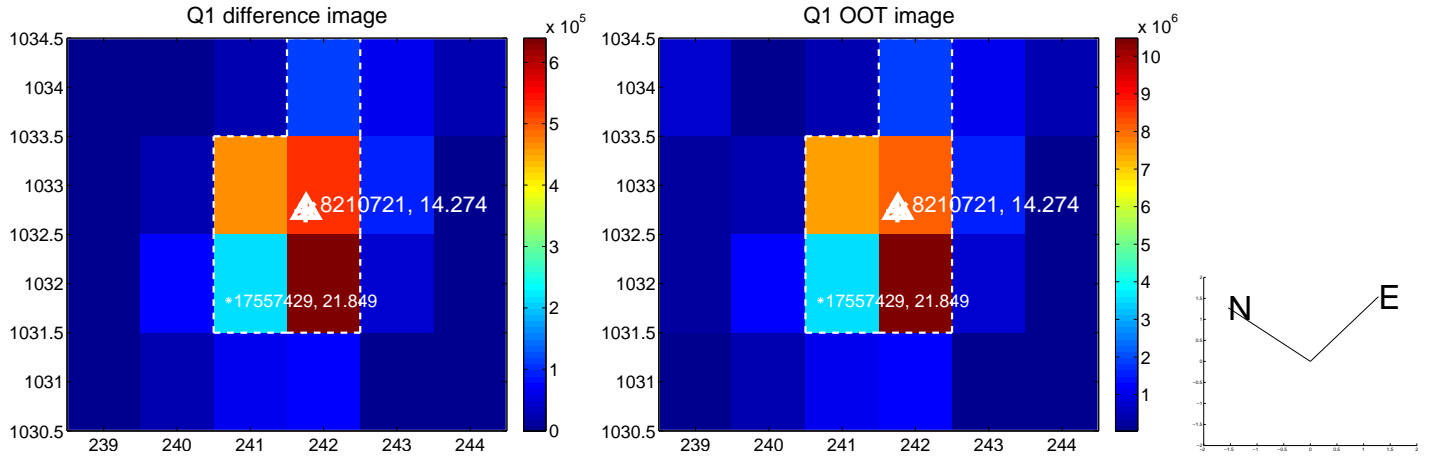
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.030 ± 0.067	0.45	0.029 ± 0.067	-0.009 ± 0.067
PRF-fit source offset from KIC position	0.121 ± 0.069	1.74	-0.061 ± 0.068	0.104 ± 0.070
photometric centroid source offset	0.71 ± 0.00	221.27	-0.71 ± 0.00	-0.00 ± 0.00

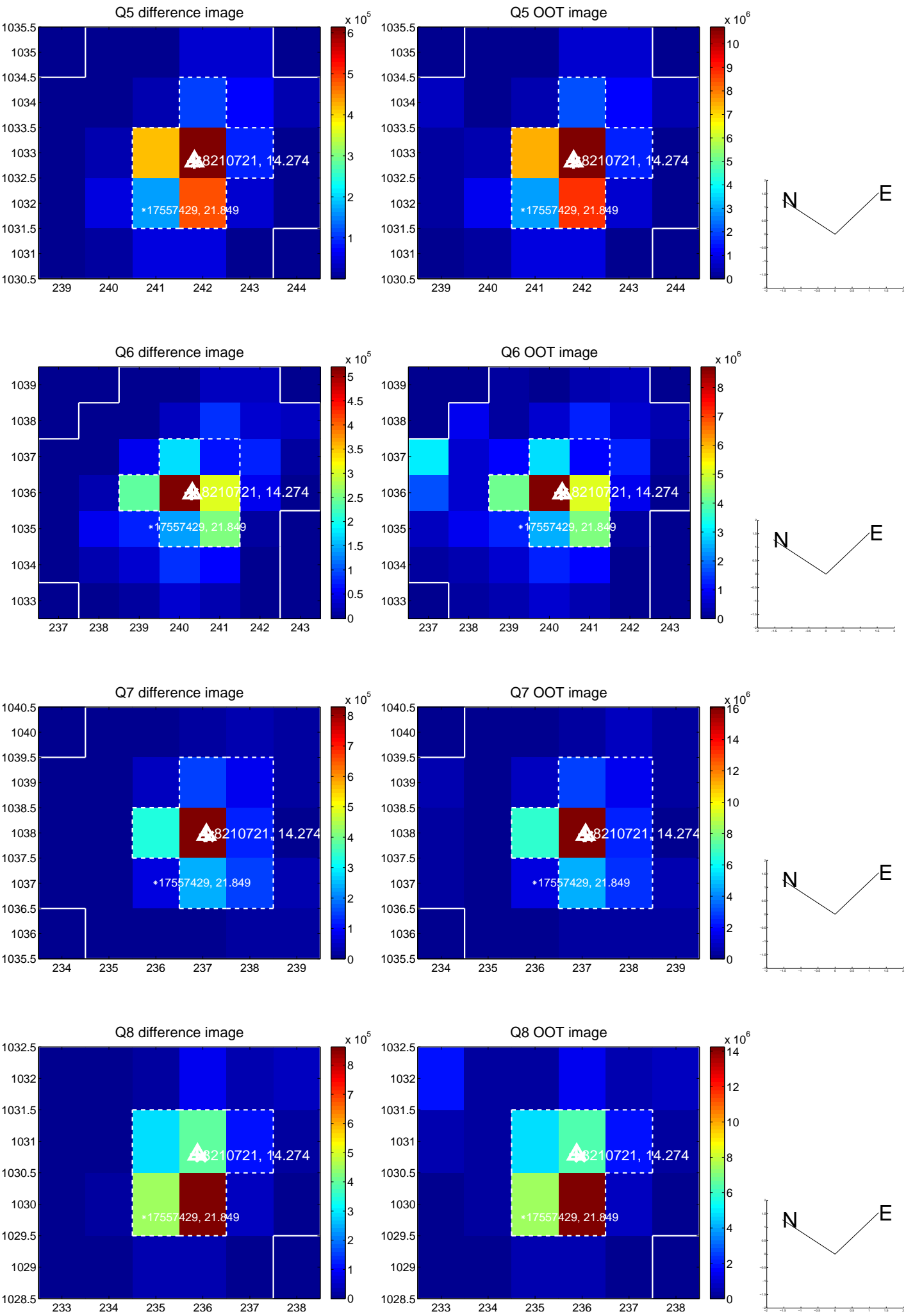


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

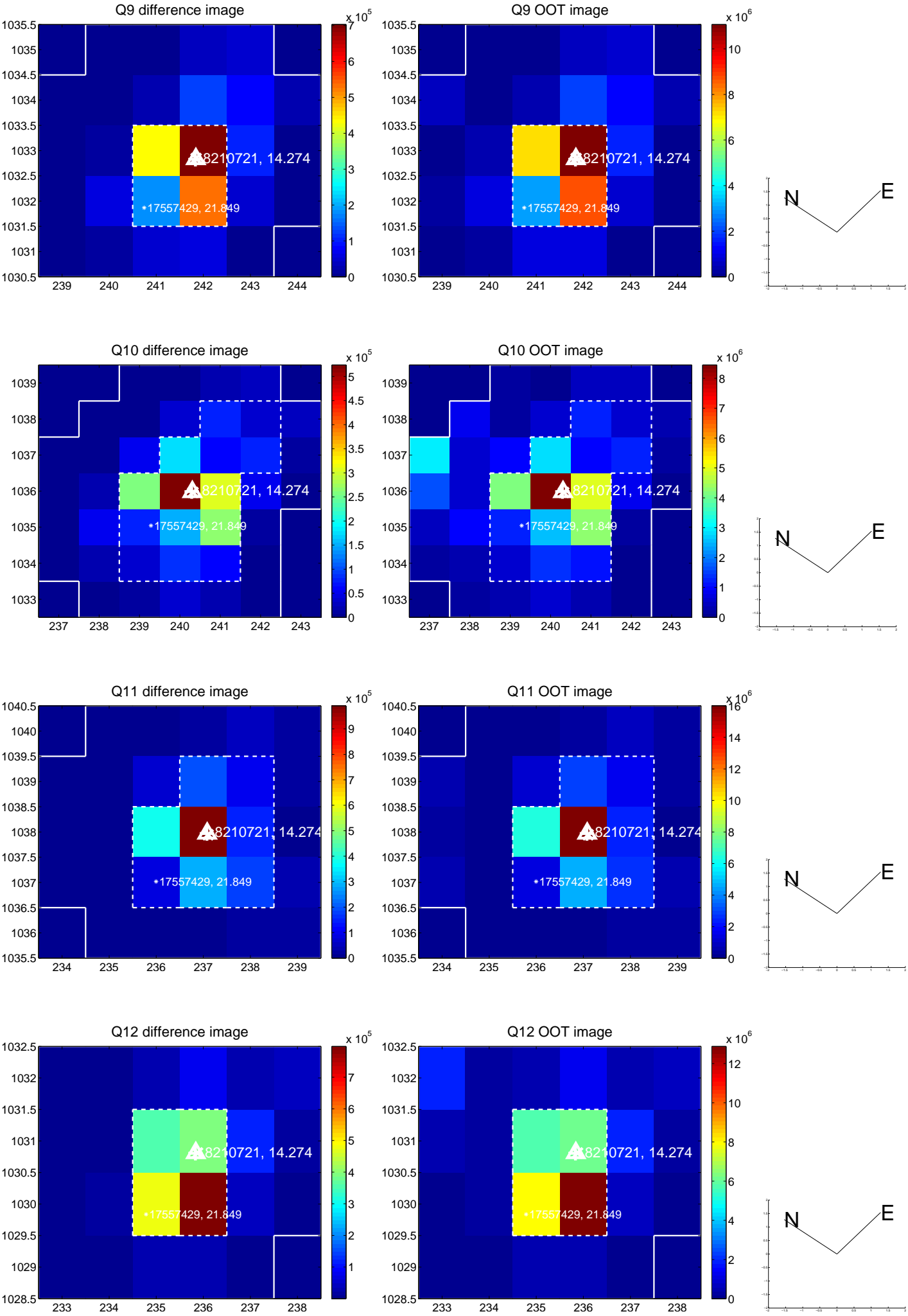
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



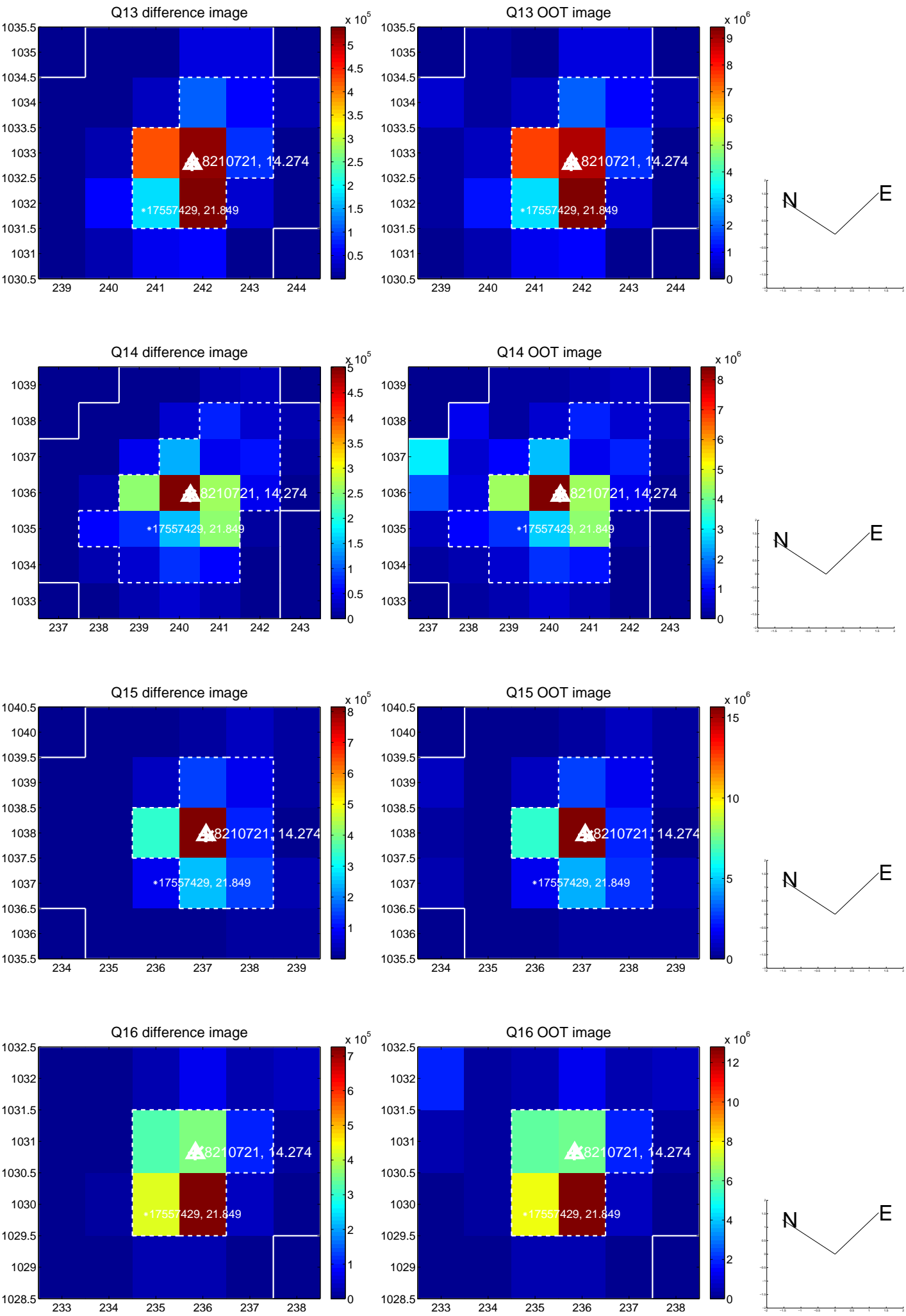
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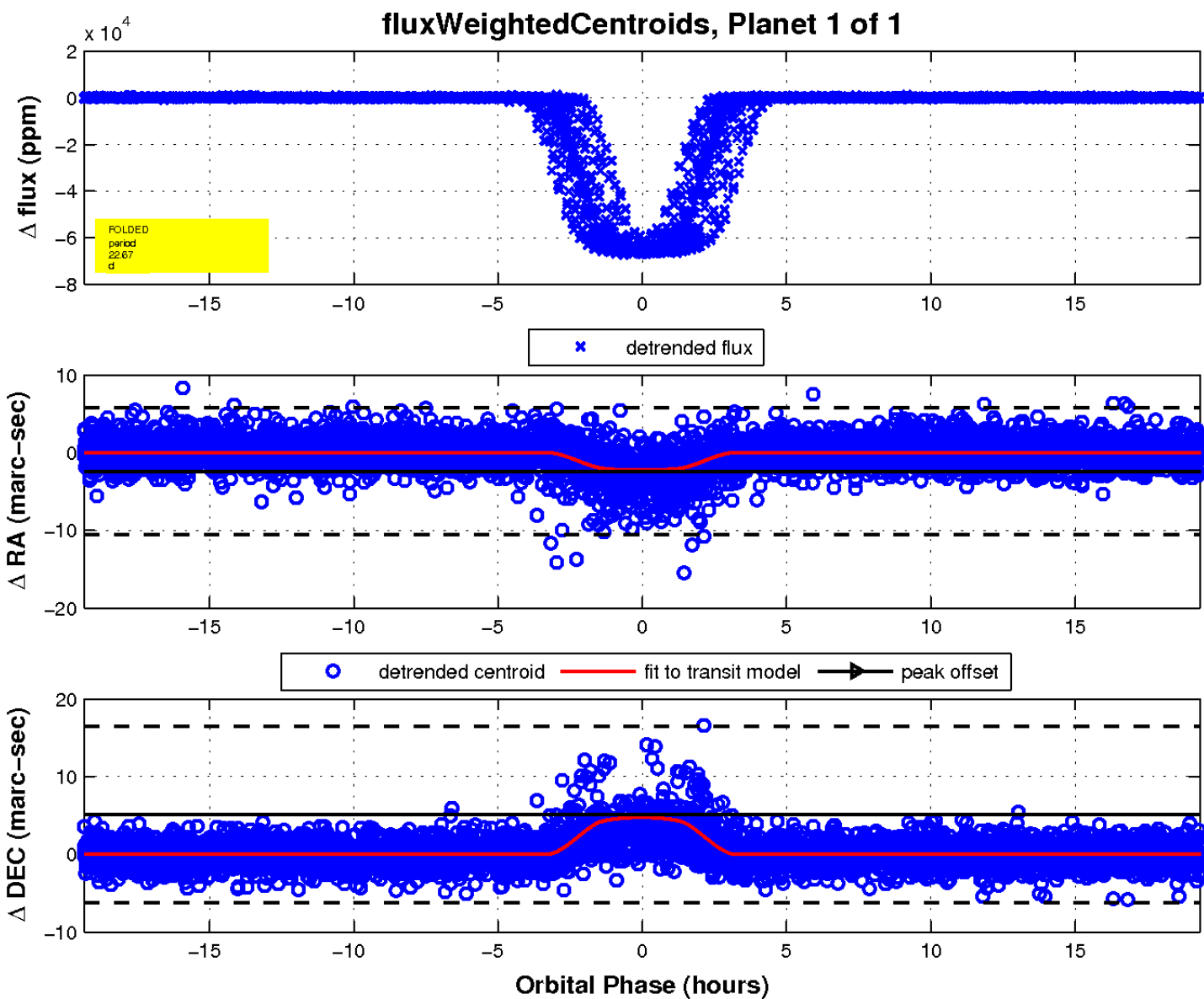
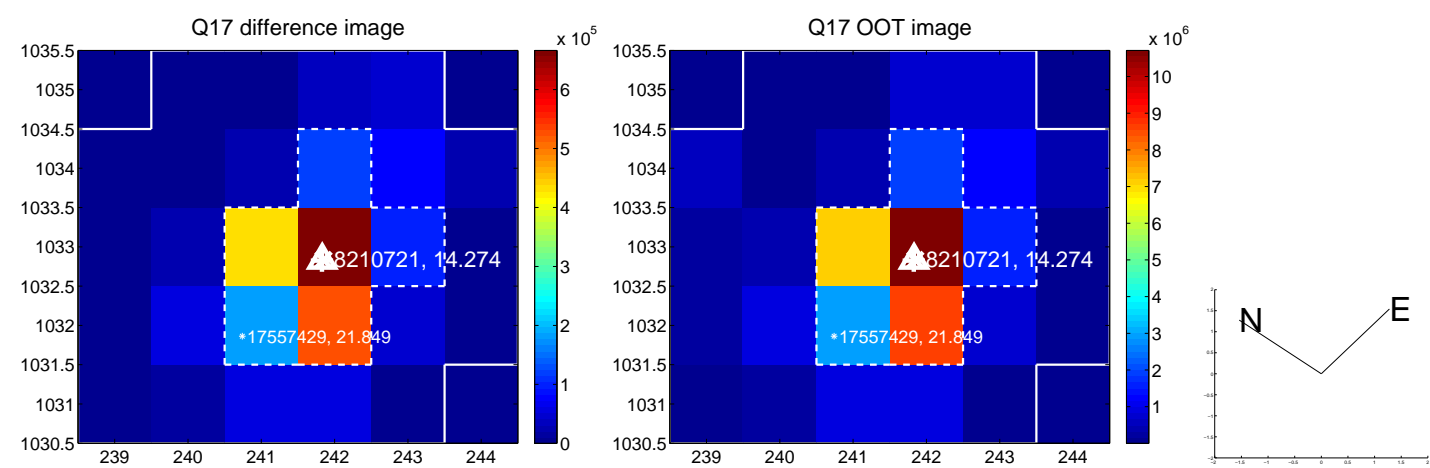
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

