

KIC 010877024

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
010877024-01	OBS	8036.01	0.786503	131.828927	30.5	2.862	13.2	13.5	1.28	6315	0.78	7968.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010877024-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_UNRESOLVED_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.

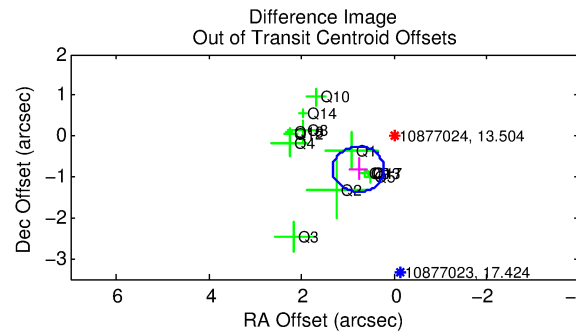
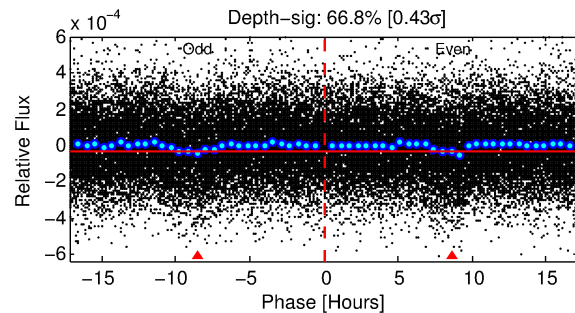
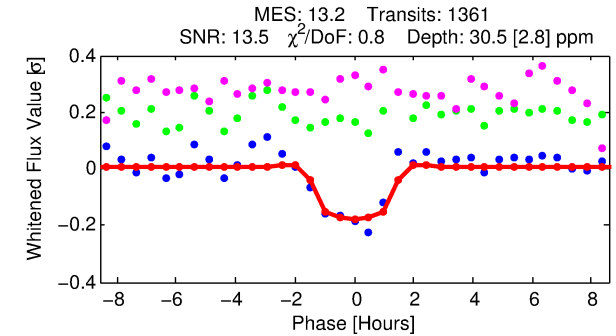
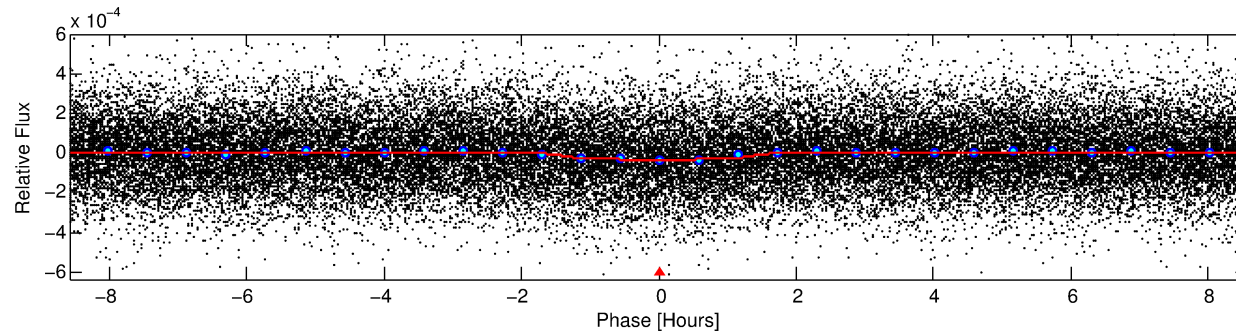
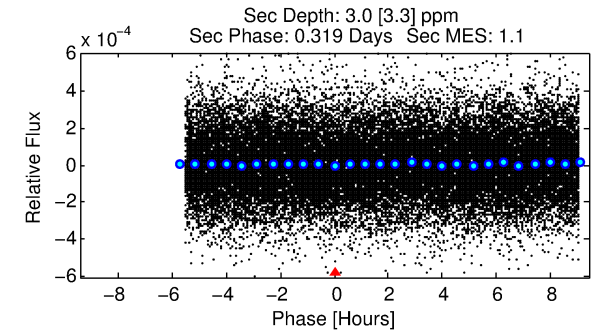
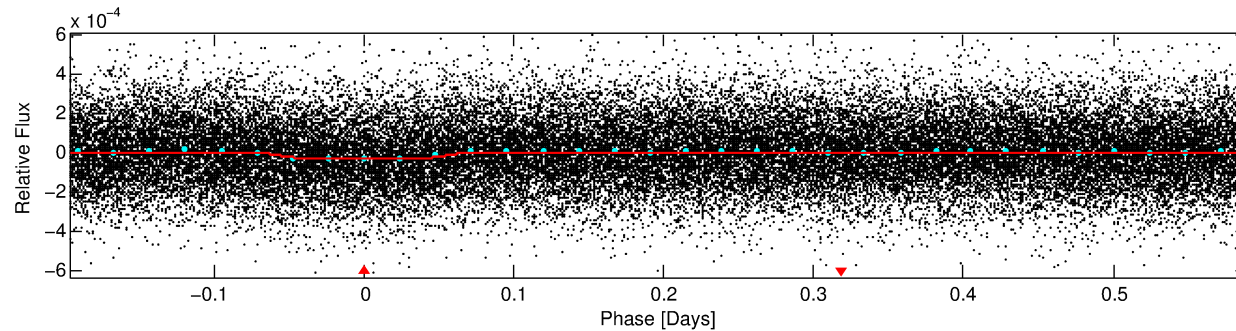
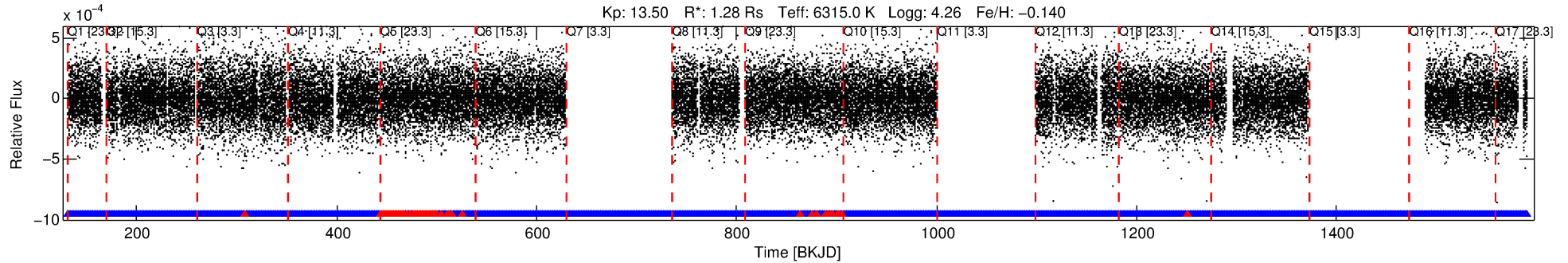
Ephemeris Match Information For 010877024-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
010877024-01	10877024	010934755-pri	10934755	1:1	382.1	96	0	14.40	13.51	12923.00	Col-Anomaly	0	2.45	1.08

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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 σ_P < 5.0 and σ_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: 10877024 Candidate: 1 of 1 Period: 0.787 d



DV Fit Results:

Period = 0.78650 [0.00001] d
Epoch = 131.8289 [0.0026] BKJD
Rp/R* = 0.0055 [0.0013]
a/R* = 1.60 [1.19]
b = 0.77 [0.64]
Seff = 7968.55 [2993.26]
Teq = 2409 [226] K
Rp = 0.78 [0.30] Re
a = 0.0171 [0.0043] AU
Ag = 0.82 [1.01] [-0.18σ]
Teffp = 3541 [1061] K [1.04σ]

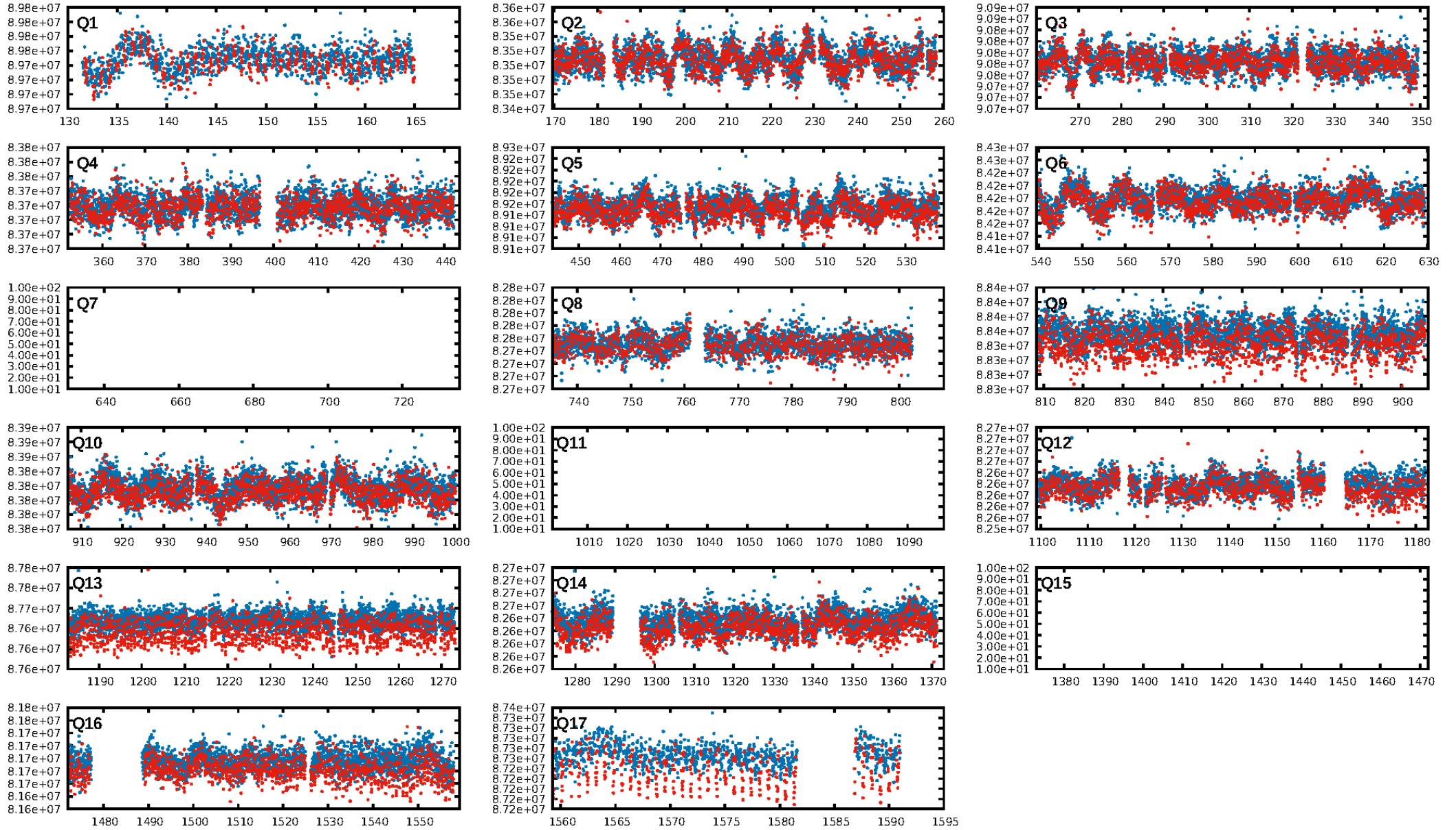
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.58e-34
RollingBand-fgt: 0.94 [1210/1283]
GhostDiagnostic-chr: 5.859
Centroid-sig: 0.0%
Centroid-so: 5.614 arcsec [5.98σ]
OotOffset-rm: 1.118 arcsec [6.04σ]
KicOffset-rm: 1.158 arcsec [5.56σ]
OotOffset-st: 3/1/4/5 [13]
KicOffset-st: 3/1/4/5 [13]
DiffImageQuality-fgm: 0.92 [12/13]
DiffImageOverlap-fno: 1.00 [14/14]

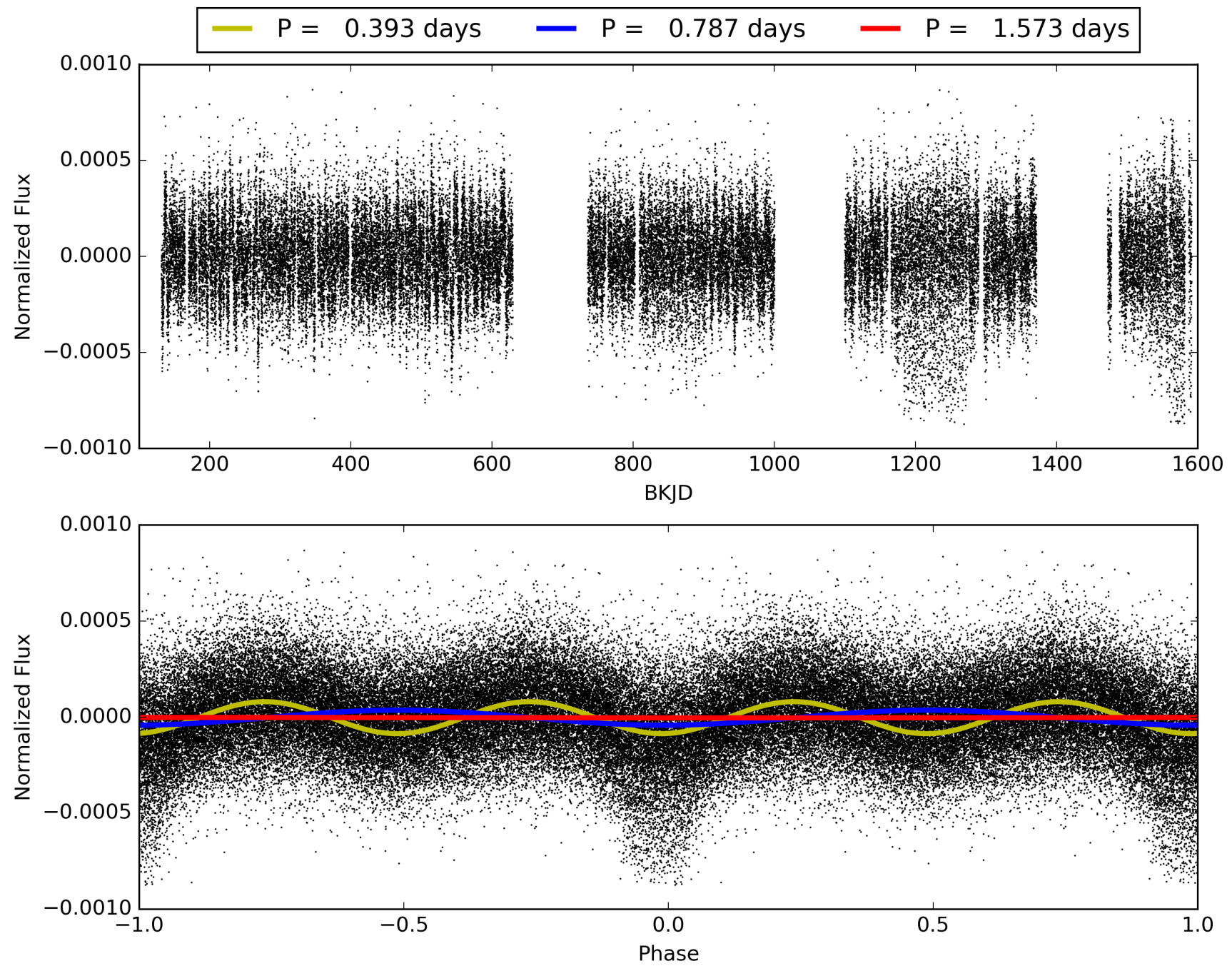
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:45:48 Z

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

TCE 010877024-01, PDC Light Curves

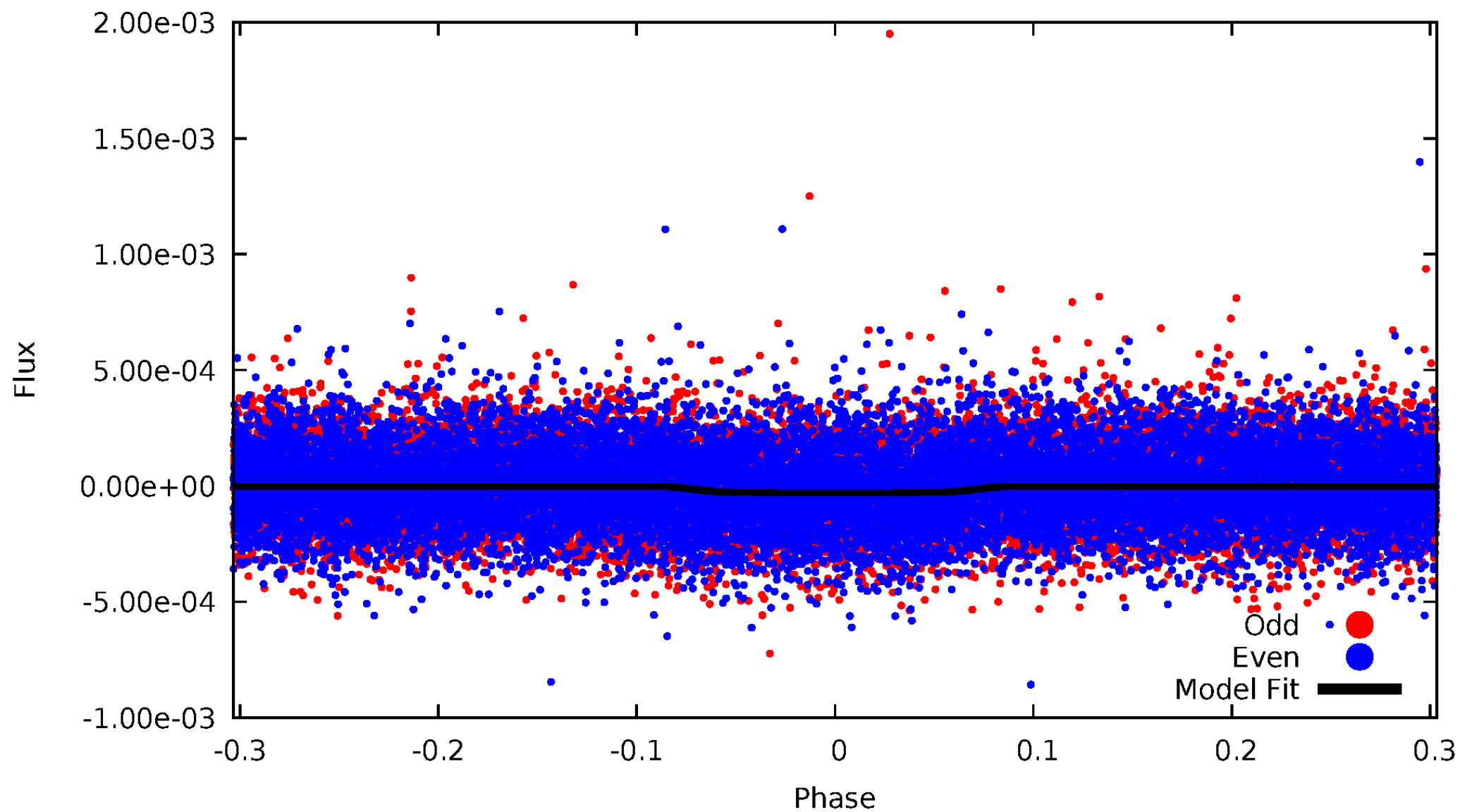


TCE 010877024-01



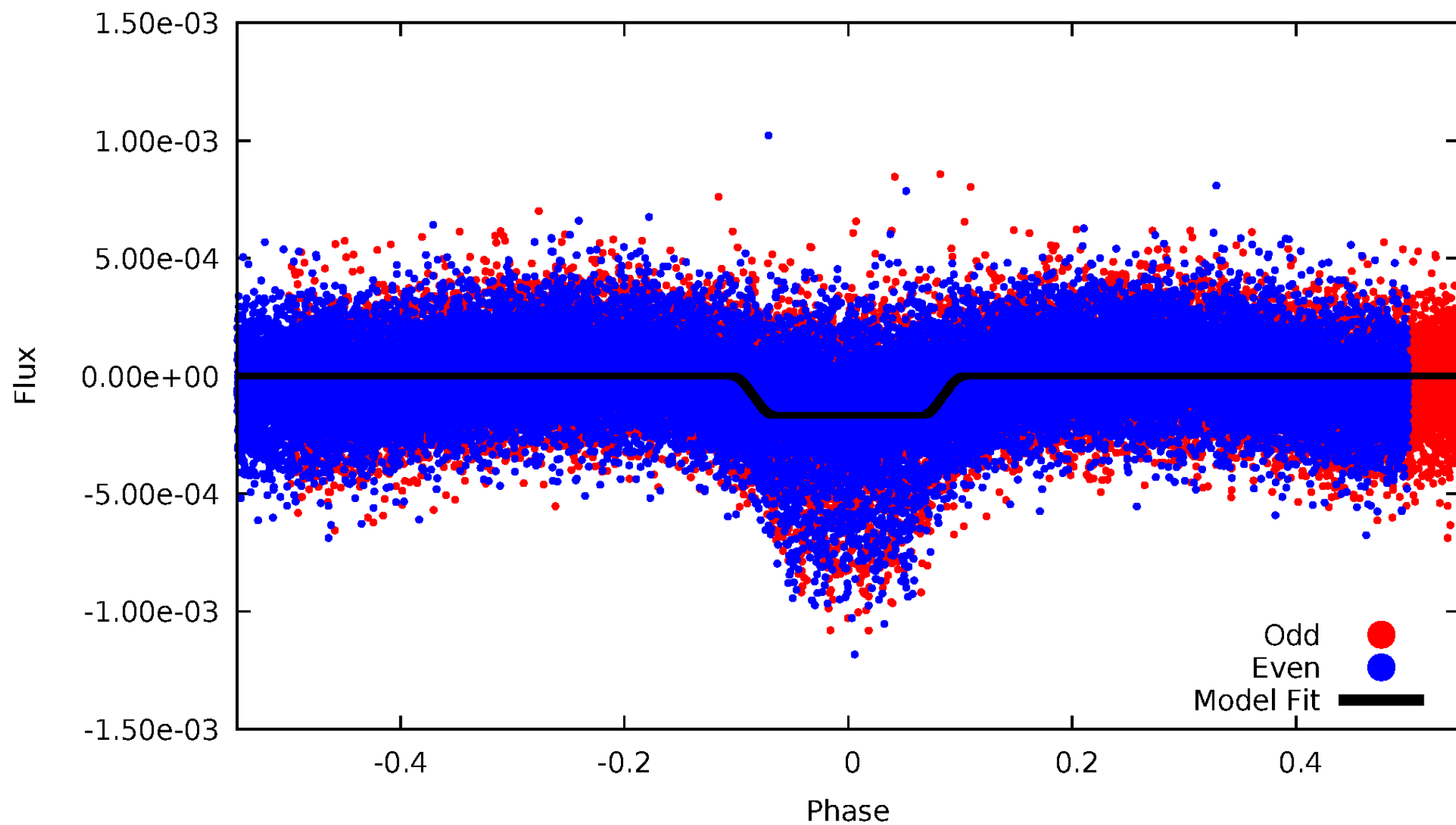
DV Odd/Even

TCE 010877024-01



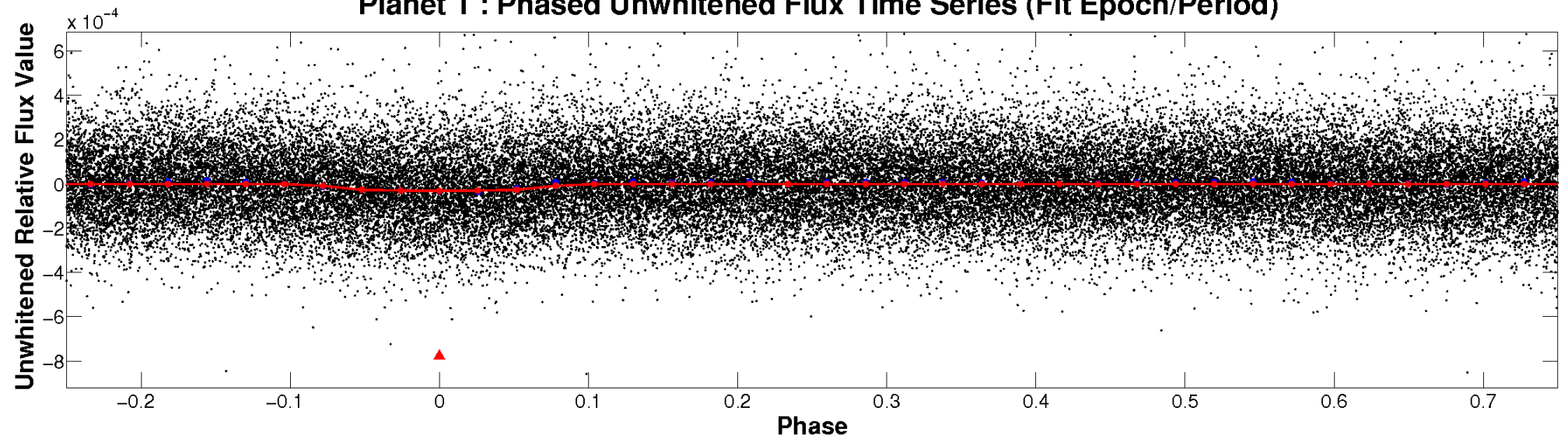
ALT Odd/Even

TCE 010877024-01

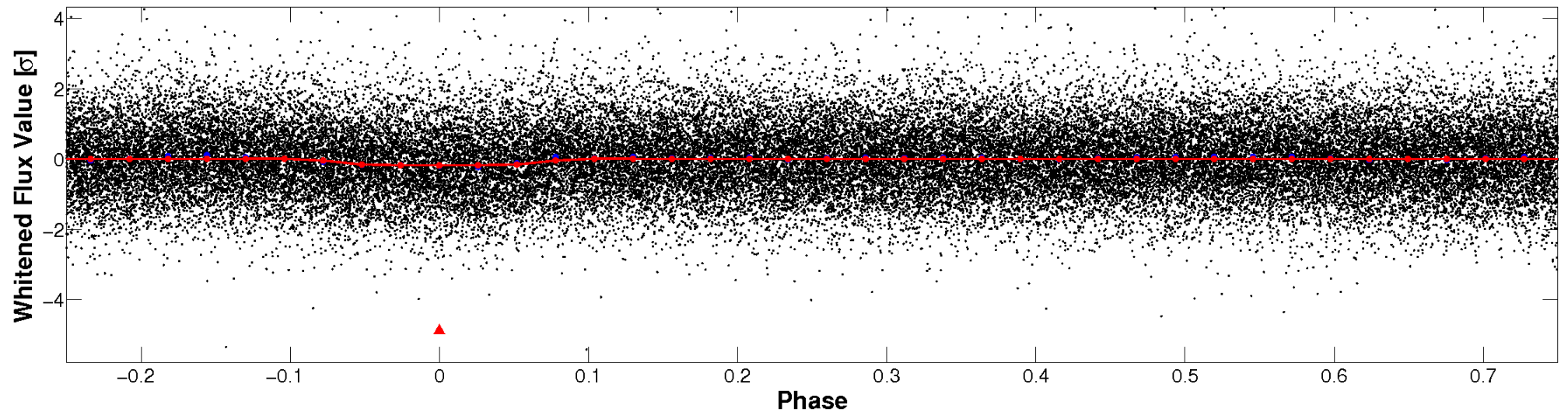


Non-Whitened Vs. Whitened Light Curve

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

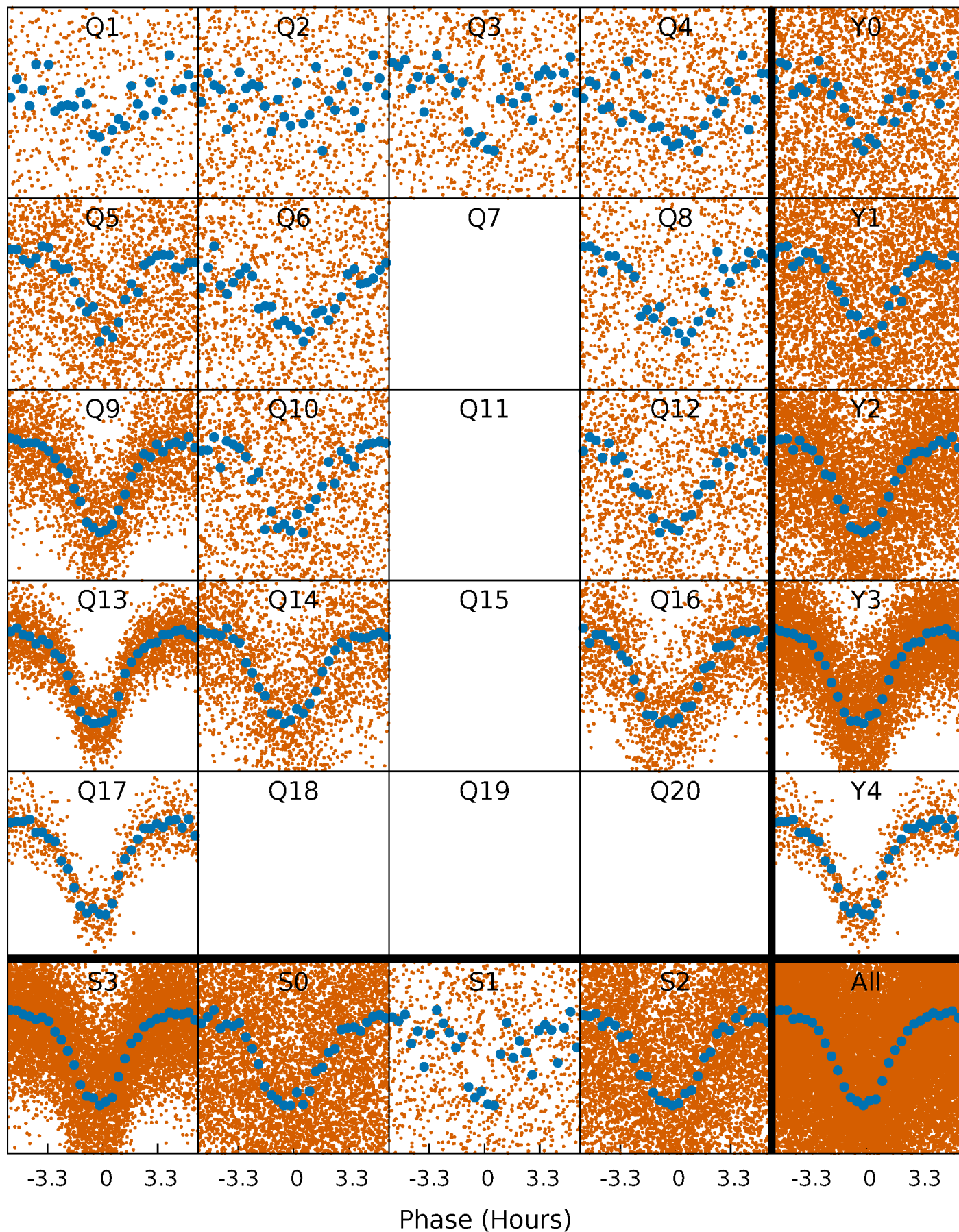


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



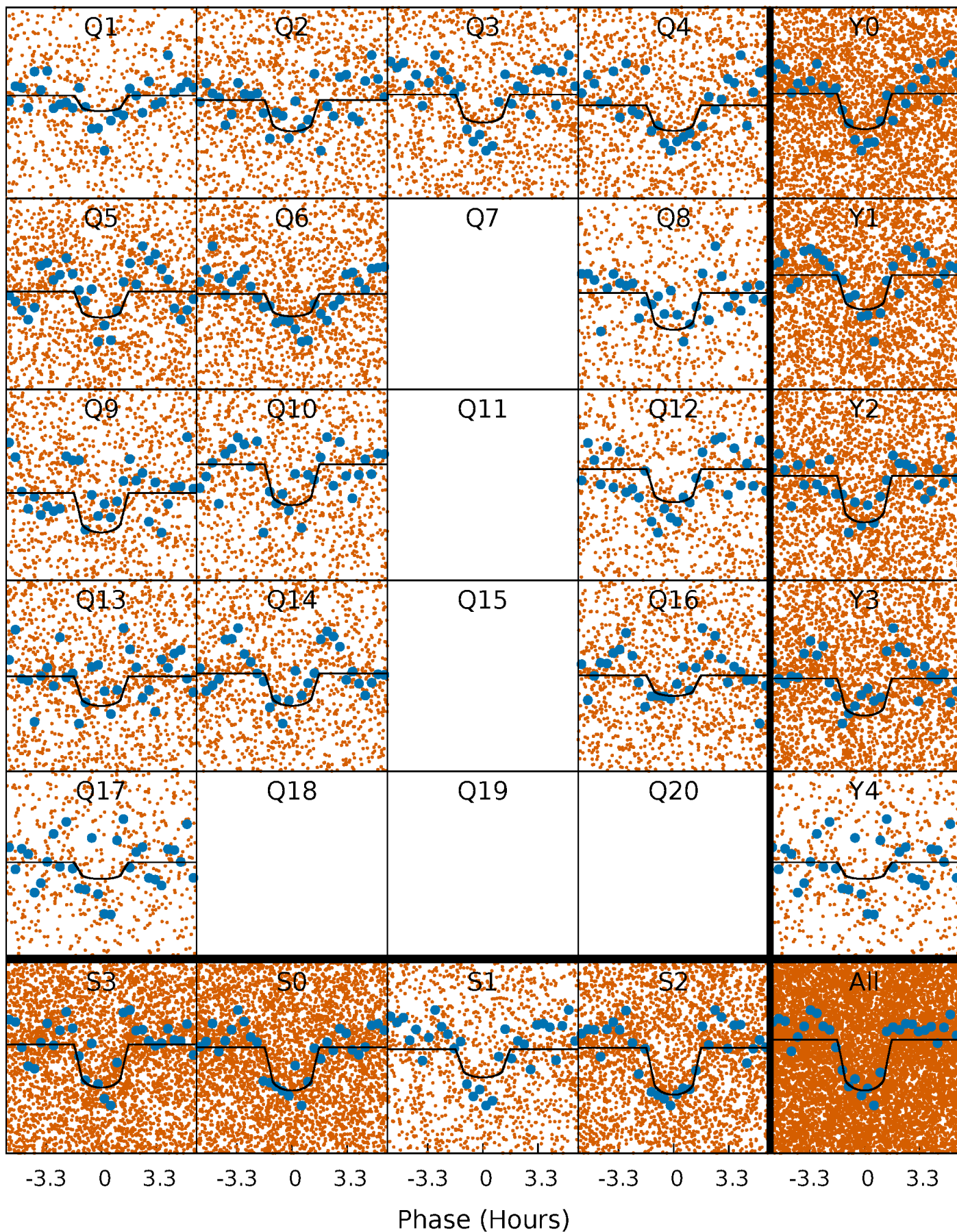
PDC Quarter-Phased Transit Curves

TCE 010877024-01 P= 0.786503 Days $T_0=131.828927$ (BKJD)



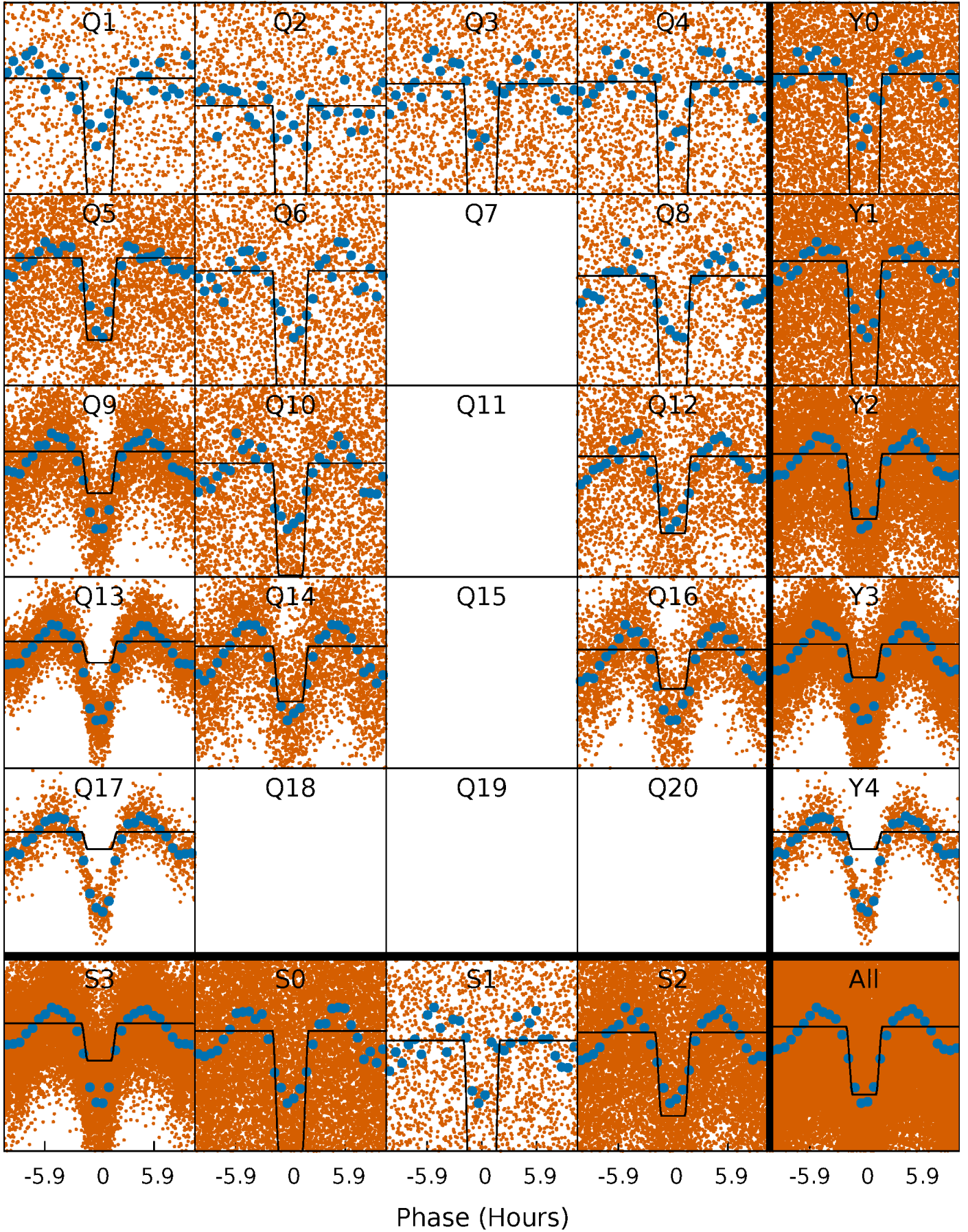
DV Quarter-Phased Transit Curves

TCE 010877024-01 P= 0.786503 Days $T_0=131.828927$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

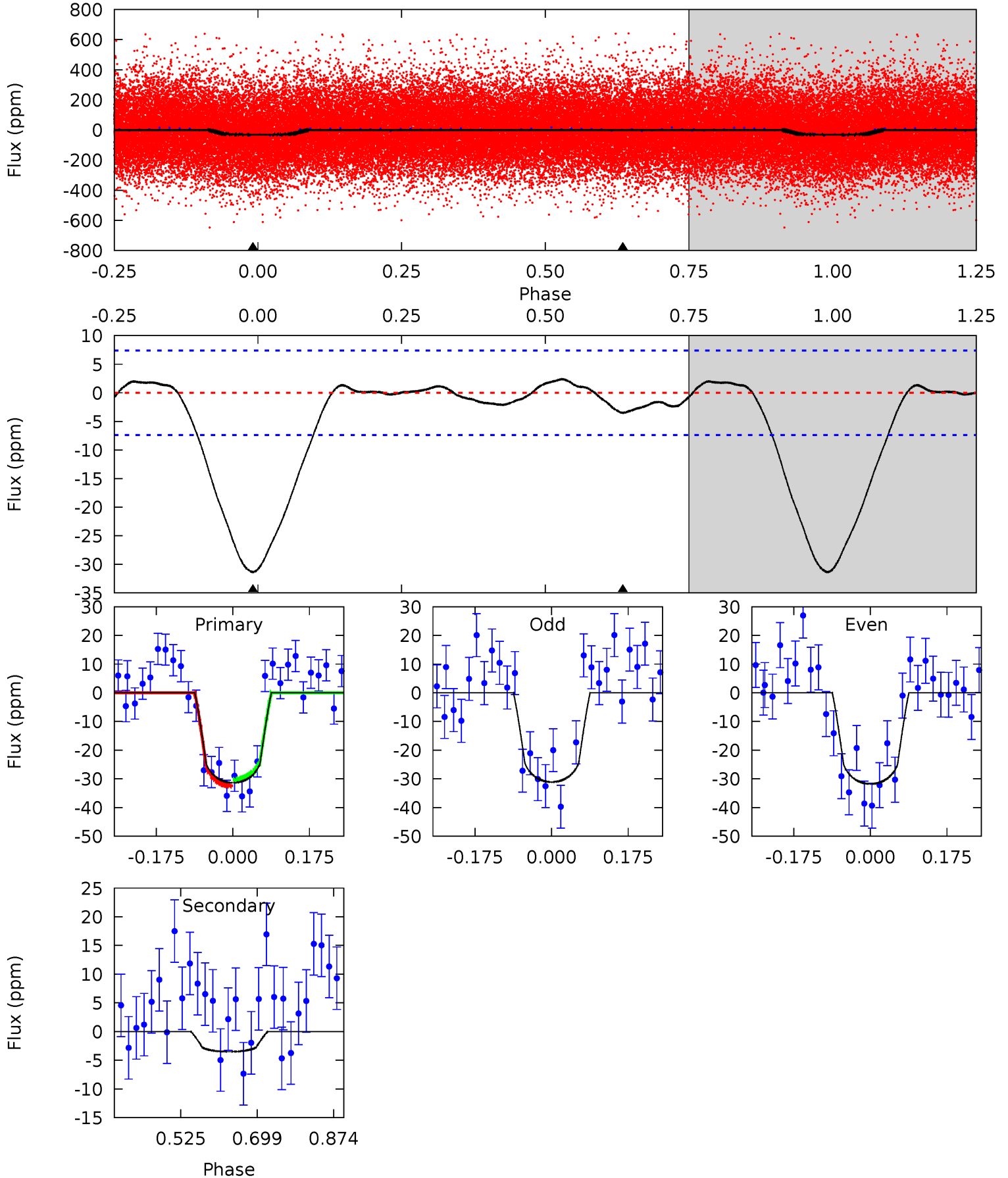
TCE 010877024-01 P= 0.786485 Days $T_0=131.841032$ (BKJD)



DV Model-Shift Uniqueness Test

010877024-01, P = 0.786503 Days, E = 131.042424 Days

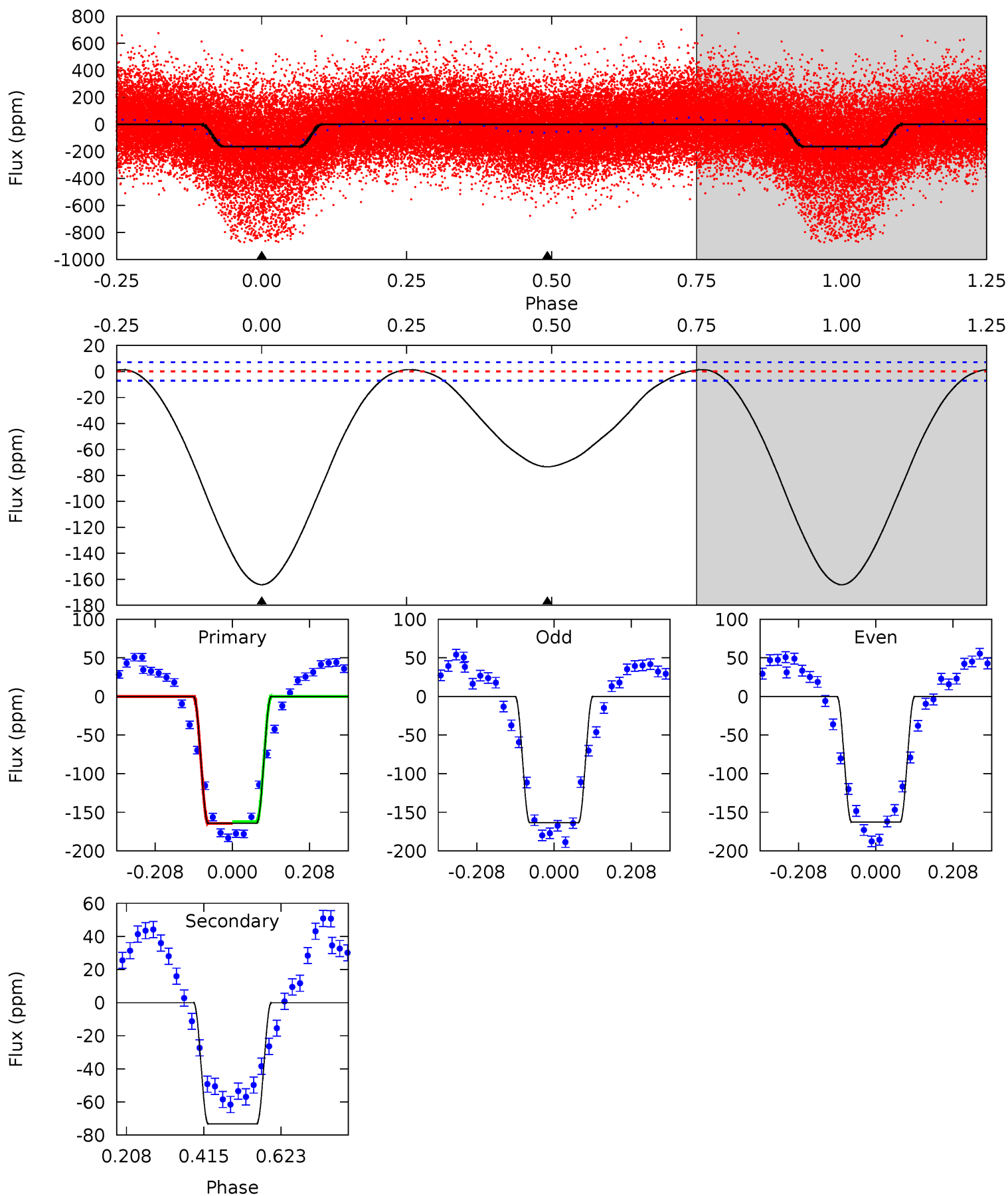
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.9	2.11	0	0	4.45	1.36	0.61	18.9	18.9	2.11	2.11	0.20	1.08	0.07	0.59



Alt Model-Shift Uniqueness Test

010877024-01, P = 0.786485 Days, E = 131.054547 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
102.3	45.7	0	0	4.41	1.26	1.28	102.3	102.3	45.7	45.7	0.24	1.40	0.01	0.70



Stellar Parameters For KIC 010877024

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6315^{+151}_{-208}	$4.258^{+0.153}_{-0.187}$	$-0.140^{+0.250}_{-0.300}$	$1.282^{+0.391}_{-0.261}$	$1.083^{+0.197}_{-0.131}$	$0.724^{+0.542}_{-0.354}$
	+2%/-3%	+4%/-4%	+179%/-214%	+30%/-20%	+18%/-12%	+75%/-49%
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 010877024-01 / KOI 8036.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 2	$0.77^{+0.22}_{-0.20}$	3369^{+233}_{-231}	3730^{+657}_{-896}	$0.929^{+0.990}_{-0.534}$
Alt.	-73 ± 2	$1.84^{+0.35}_{-0.29}$	3375^{+245}_{-212}	5063^{+296}_{-266}	$3.483^{+1.327}_{-0.946}$

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 $A_{obs} \gg 1.0$

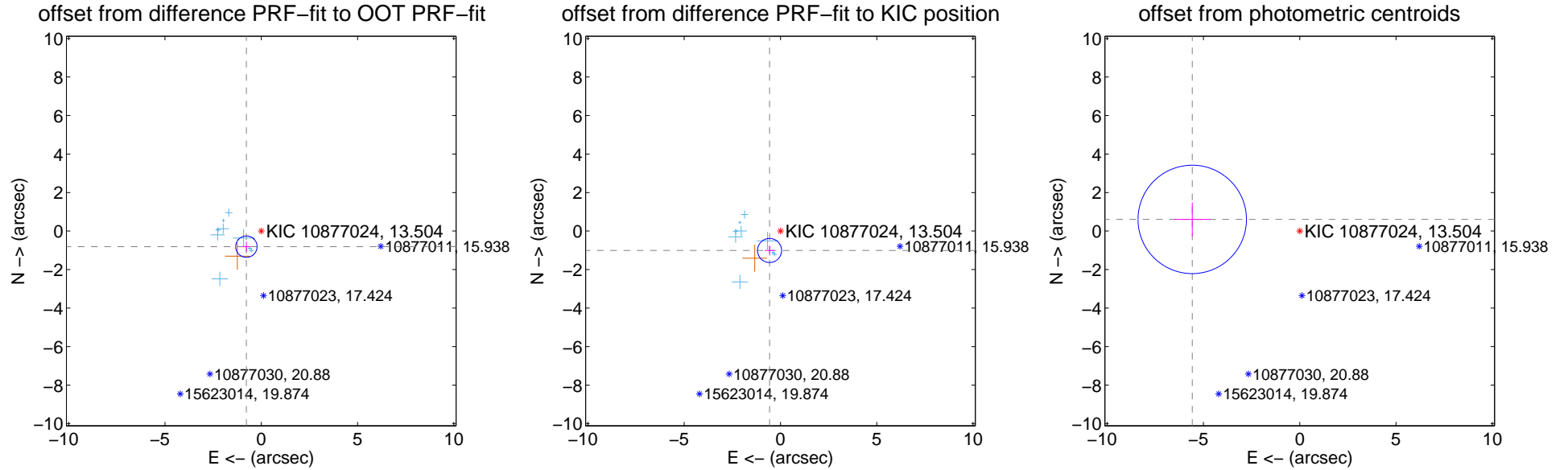
DV Centroid Data

Supplemental centroid analysis for 010877024-01. Kepler magnitude: 13.50. Transit SNR 13.51

There are 12 quarters with good PRF difference image offsets

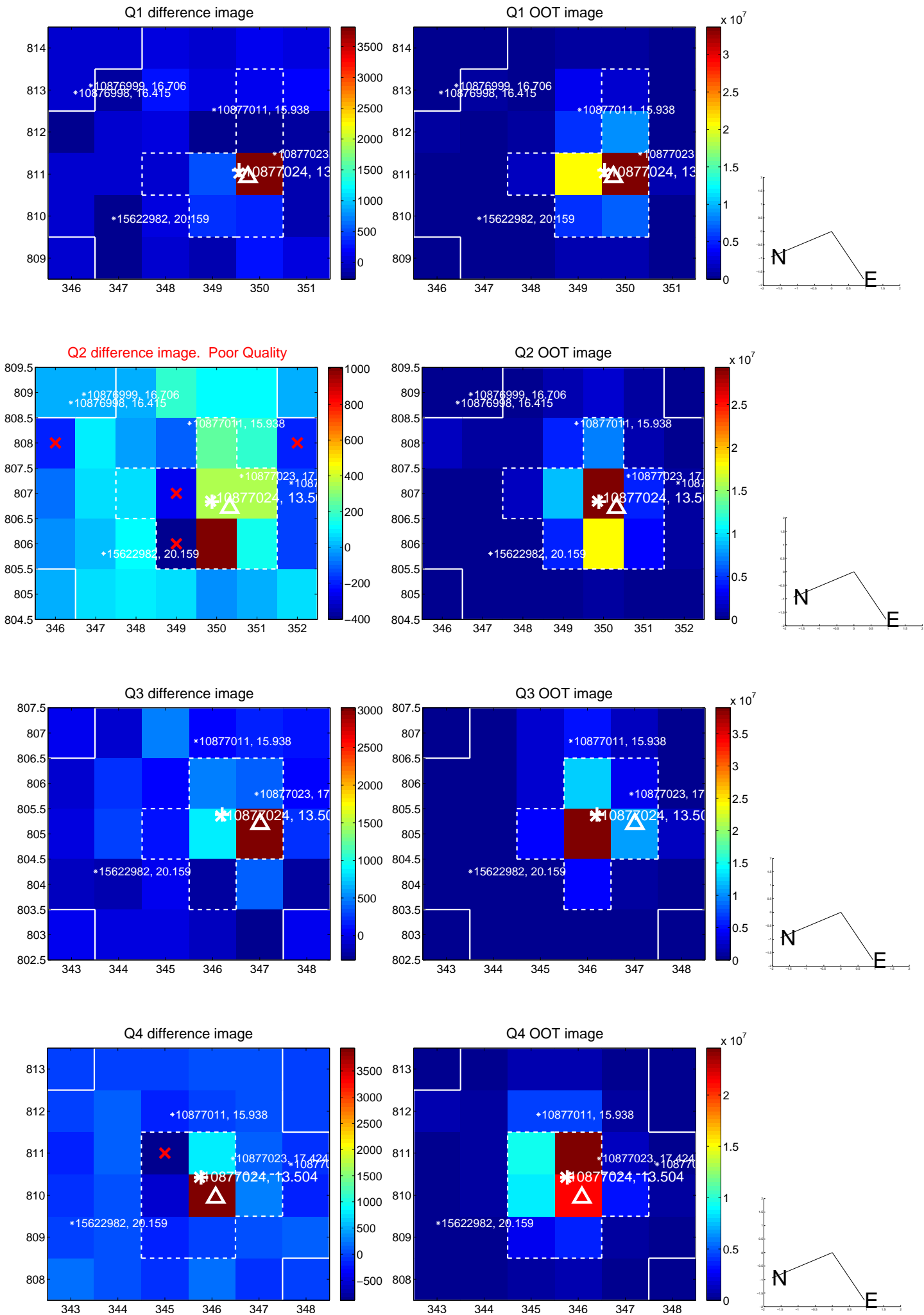
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.118 ± 0.185	6.04	0.772 ± 0.198	-0.809 ± 0.256
PRF-fit source offset from KIC position	1.158 ± 0.208	5.56	0.568 ± 0.247	-1.009 ± 0.258
photometric centroid source offset	5.61 ± 0.94	5.98	5.58 ± 0.94	0.61 ± 0.88

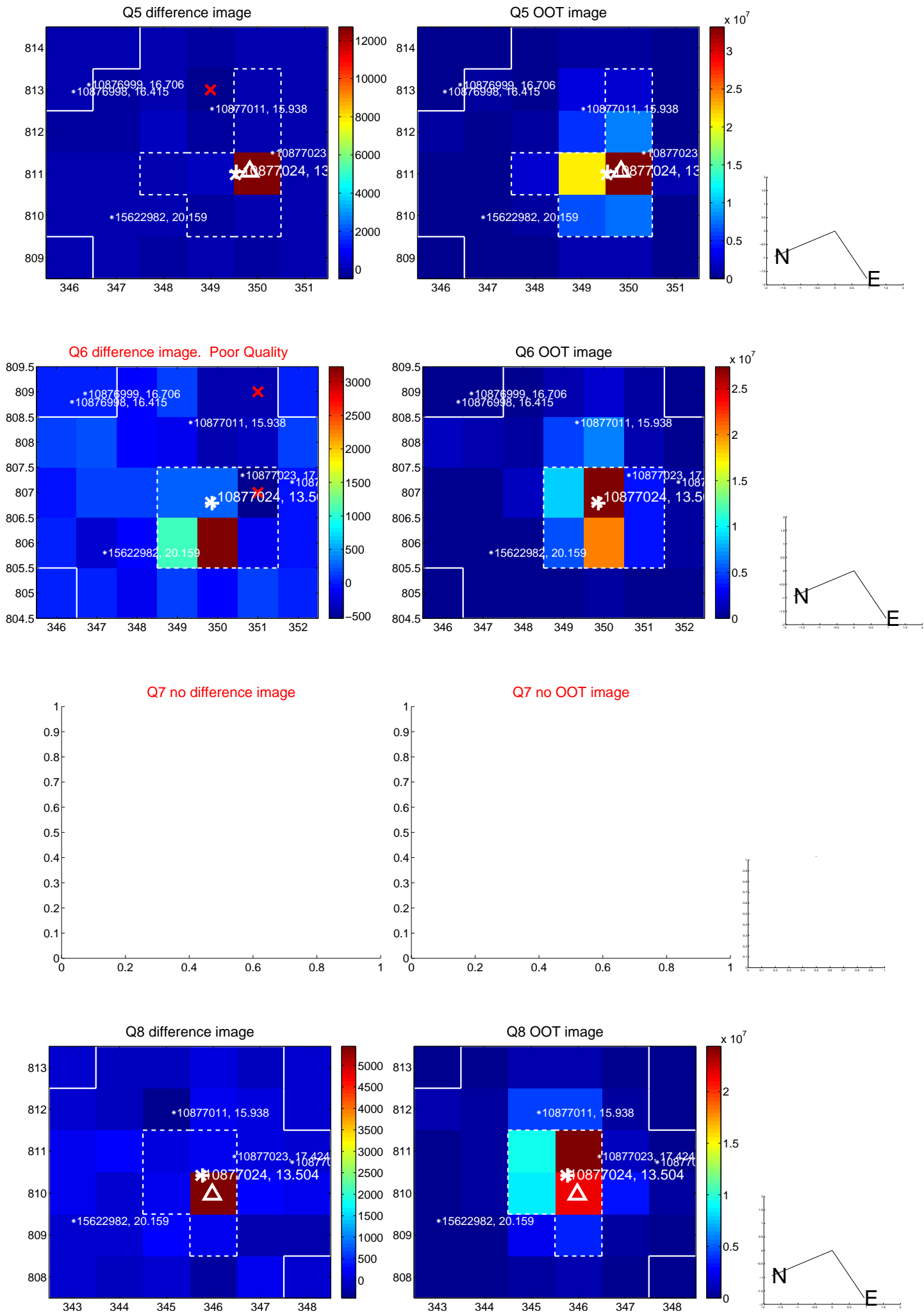


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

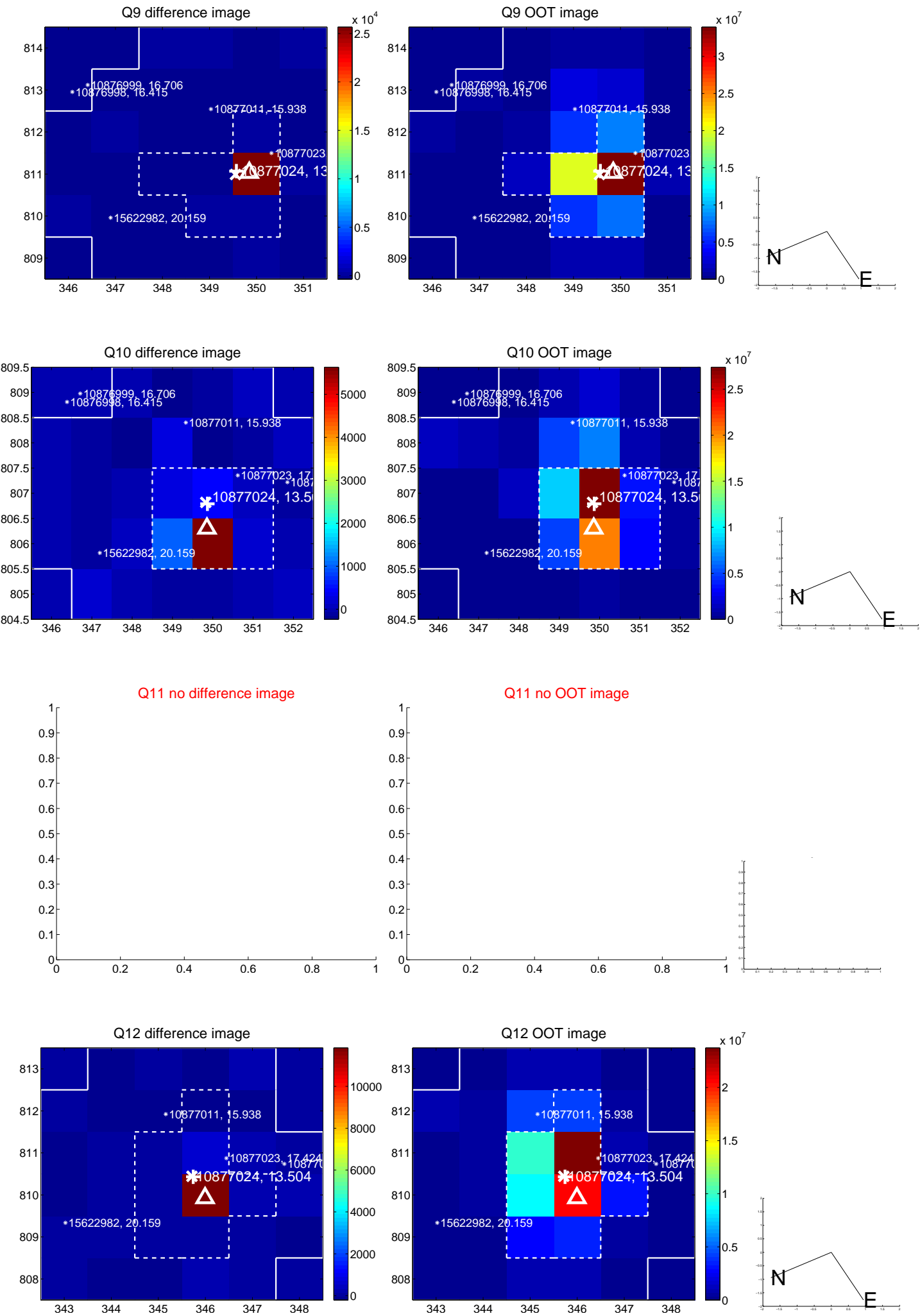
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



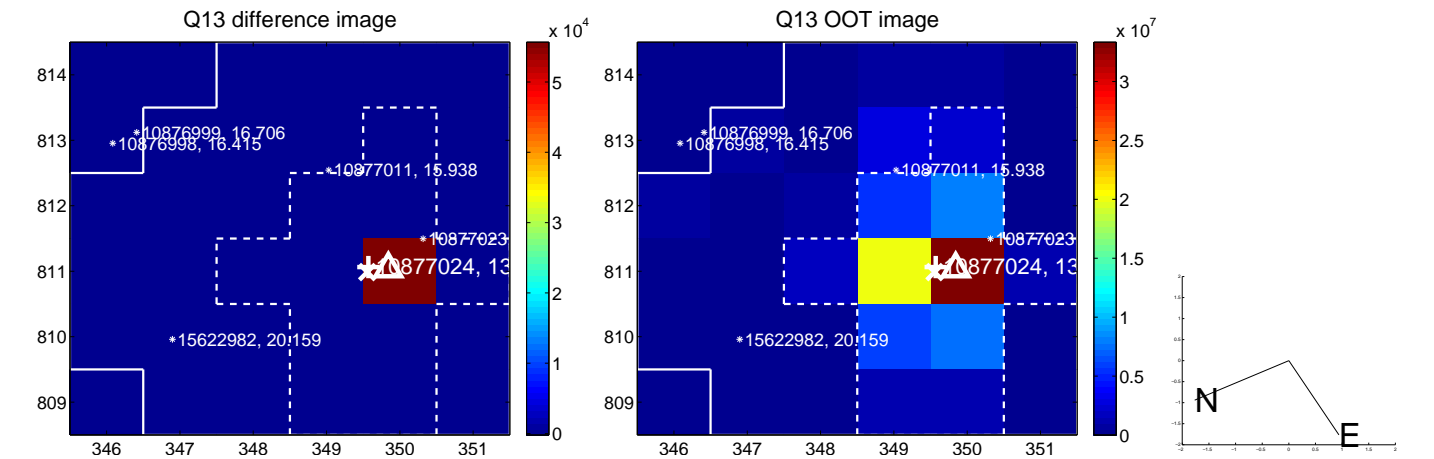
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



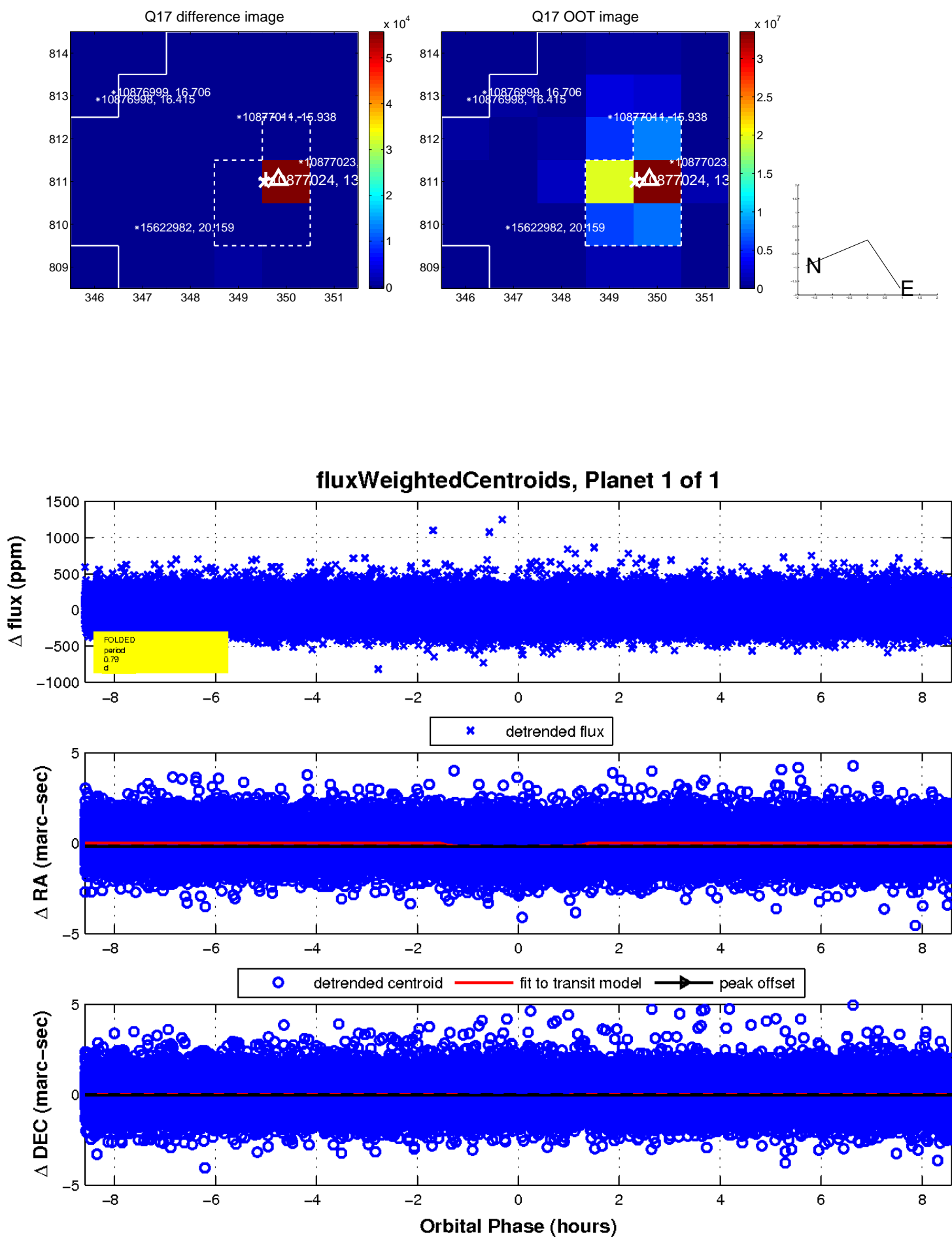
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

