

KIC 004861784

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})
004861784-01	OBS	4278.01	5.629841	136.826667	396.7	6.172	13.3	14.2	0.84	5497	1.90	154.85

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004861784-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET—HALO_GHOST

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 004861784-01

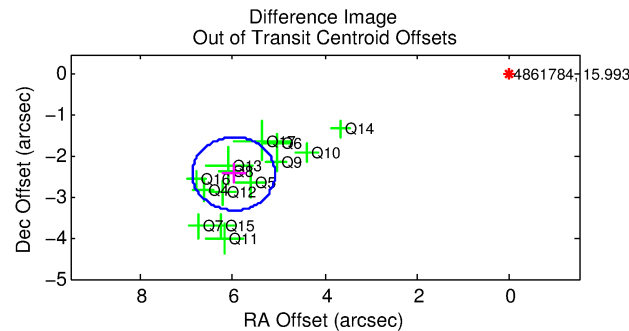
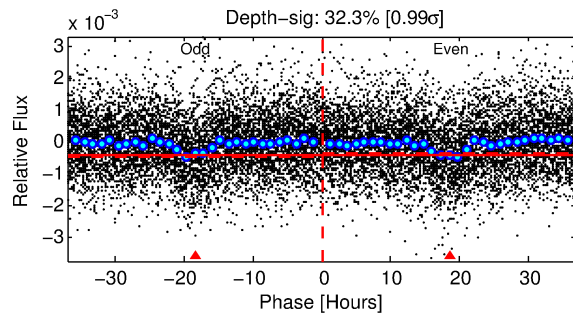
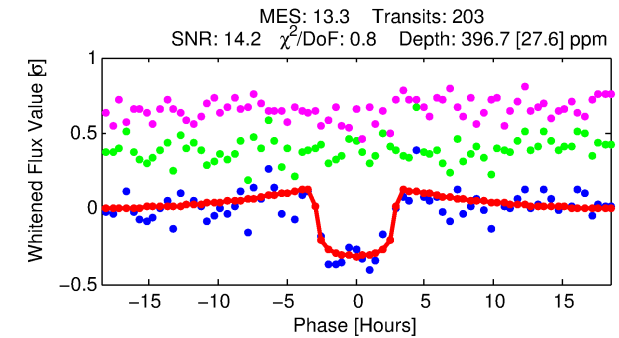
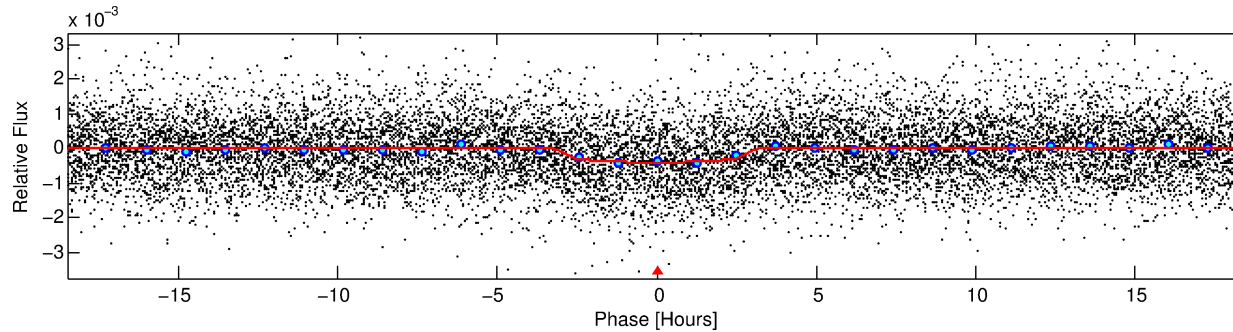
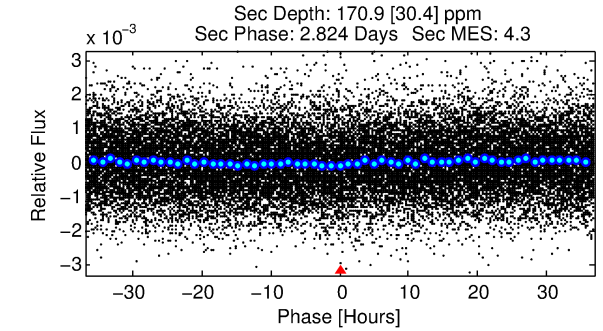
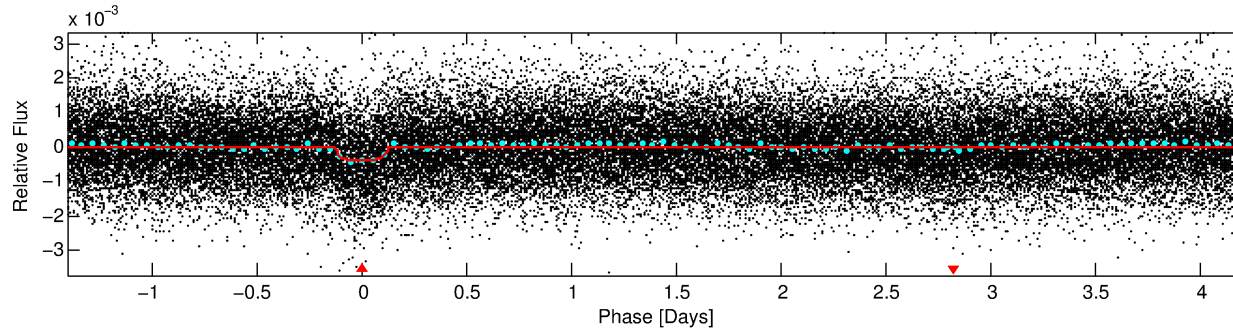
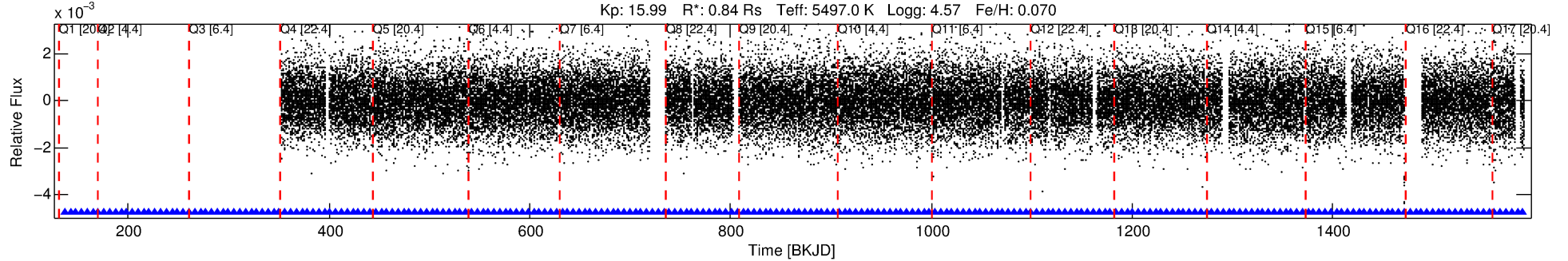
No Significant Match Found

DV One-Page Summary

KIC: 4861784 Candidate: 1 of 1 Period: 5.630 d

KOI: K04278.01 Corr: 0.984

Kp: 15.99 R*: 0.84 Rs Teff: 5497.0 K Logg: 4.57 Fe/H: 0.070



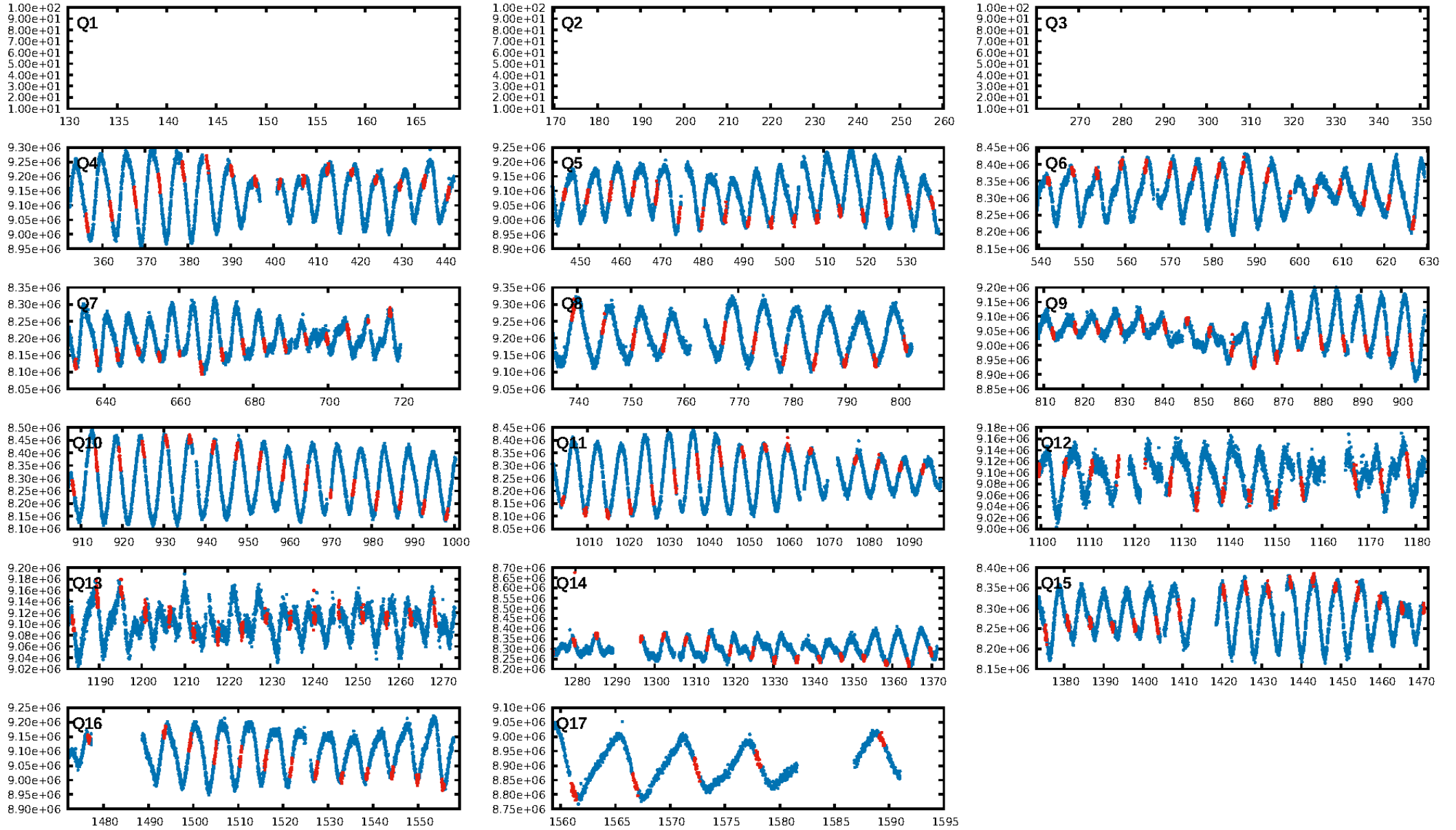
DV Fit Results:

Period = 5.62984 [0.00004] d
Epoch = 136.8267 [0.0061] BKJD
Rp/R* = 0.0207 [0.0052]
a/R* = 4.20 [4.14]
b = 0.83 [0.39]
Seff = 154.85 [48.48]
Teq = 900 [70] K
Rp = 1.90 [0.64] Re
a = 0.0610 [0.0116] AU
Ag = 97.06 [58.53] [1.64σ]
Teff = 4365 [604] K [5.70σ]

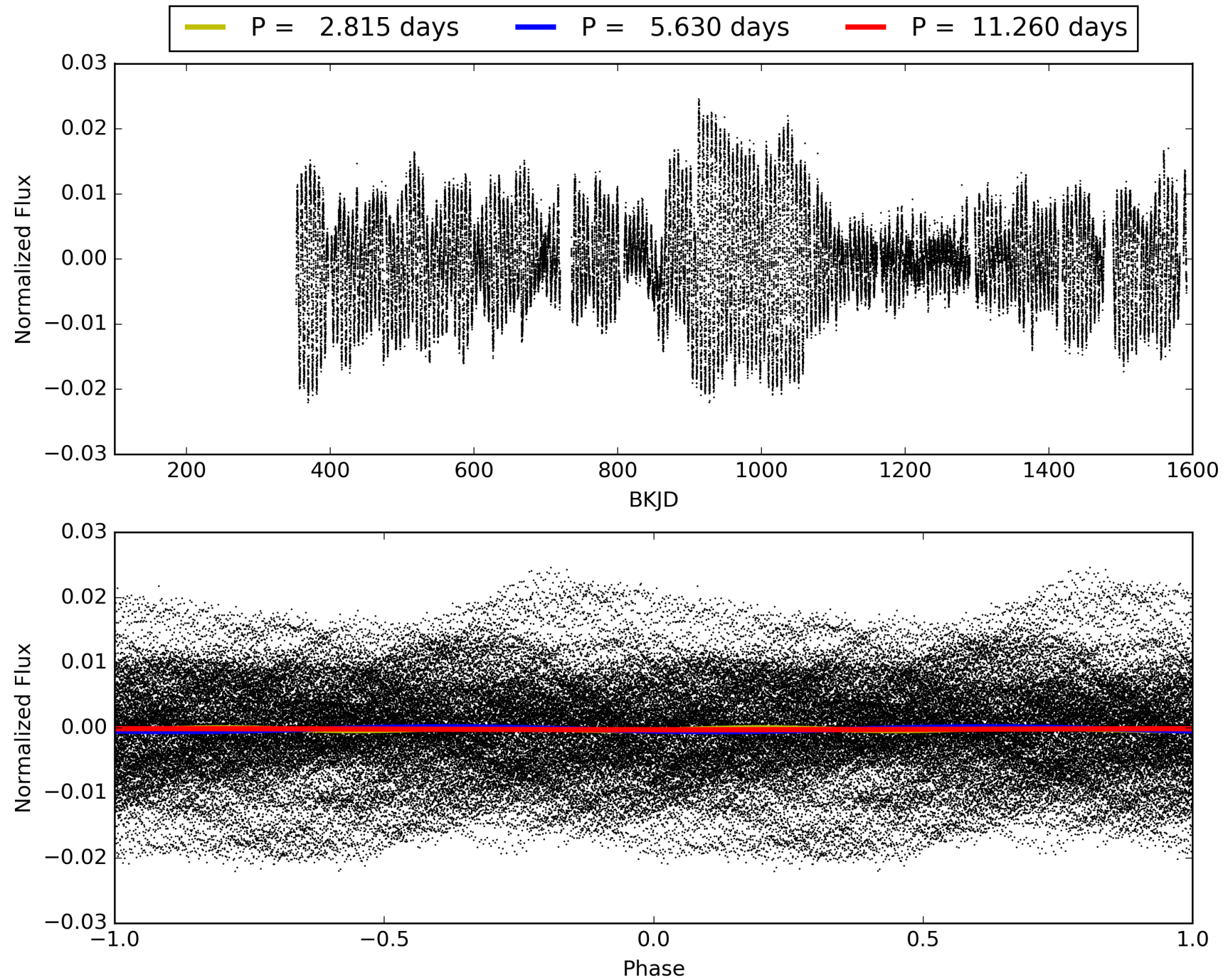
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.10e-40
RollingBand-fgt: 1.00 [198/198]
GhostDiagnostic-chr: 0.1017
Centroid-sig: 0.0%
Centroid-so: 9.289 arcsec [11.55σ]
OotOffset-rm: 6.444 arcsec [21.60σ]
KicOffset-rm: 6.631 arcsec [21.32σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 004861784-01, PDC Light Curves

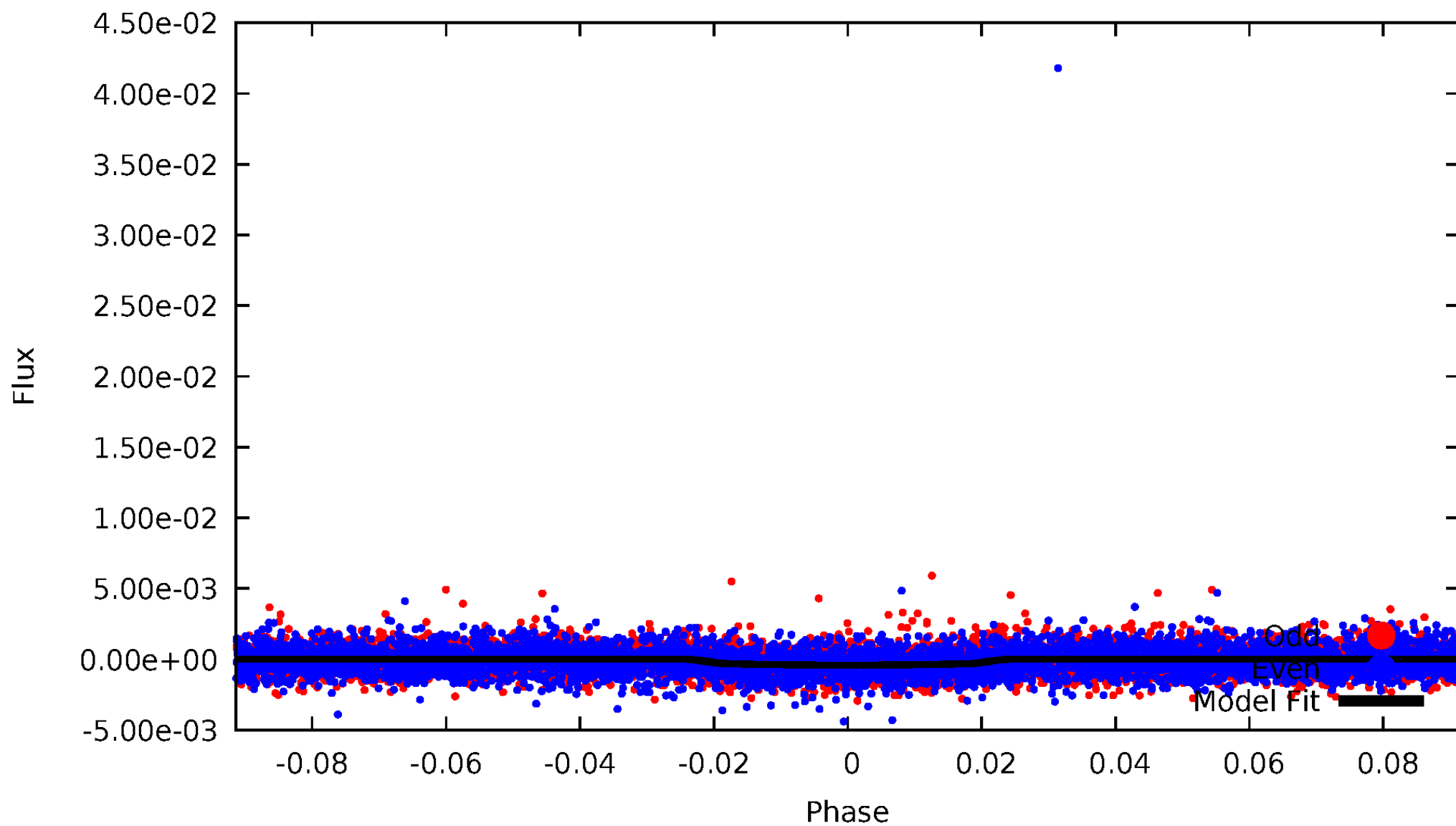


TCE 004861784-01



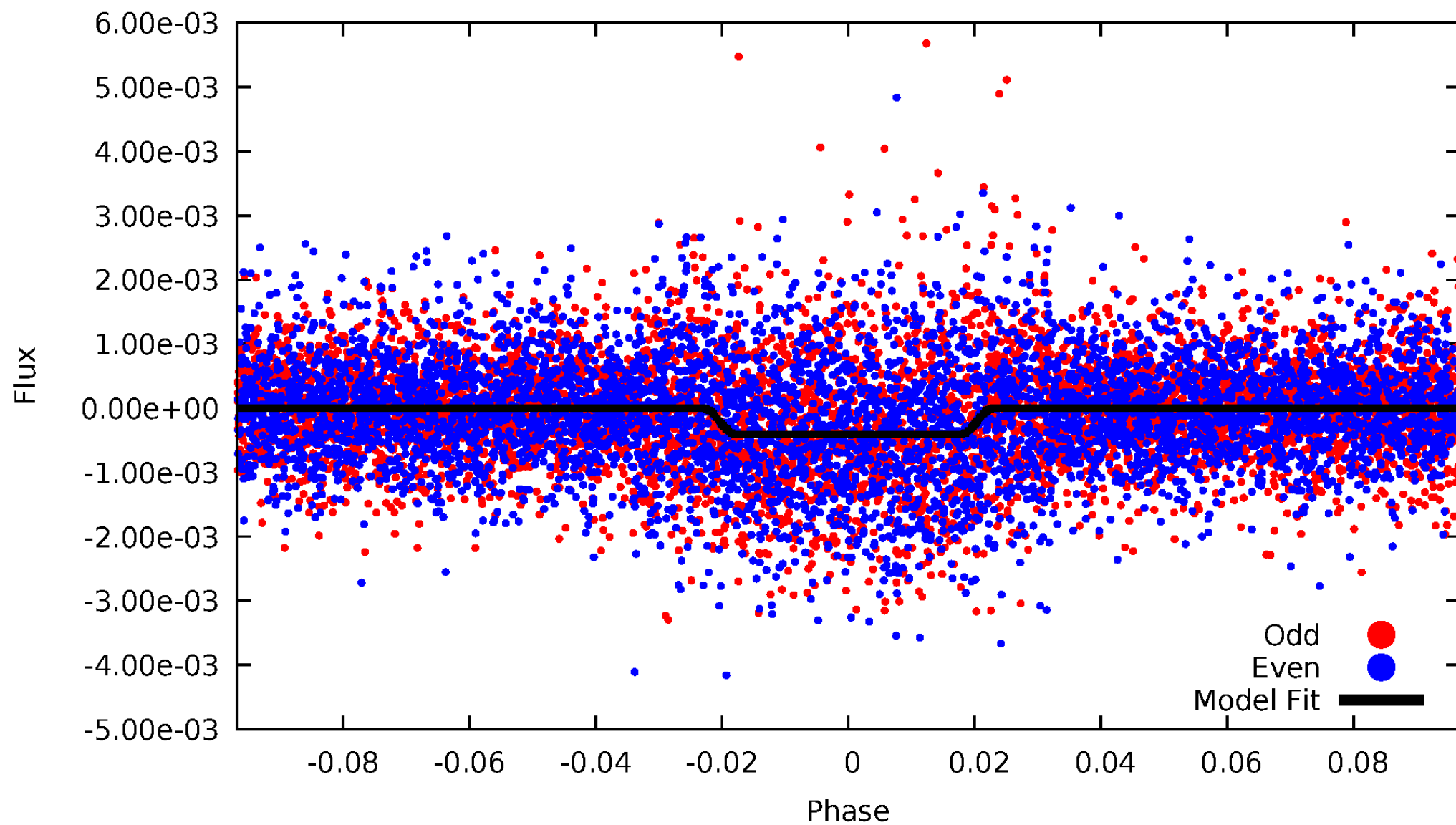
DV Odd/Even

TCE 004861784-01



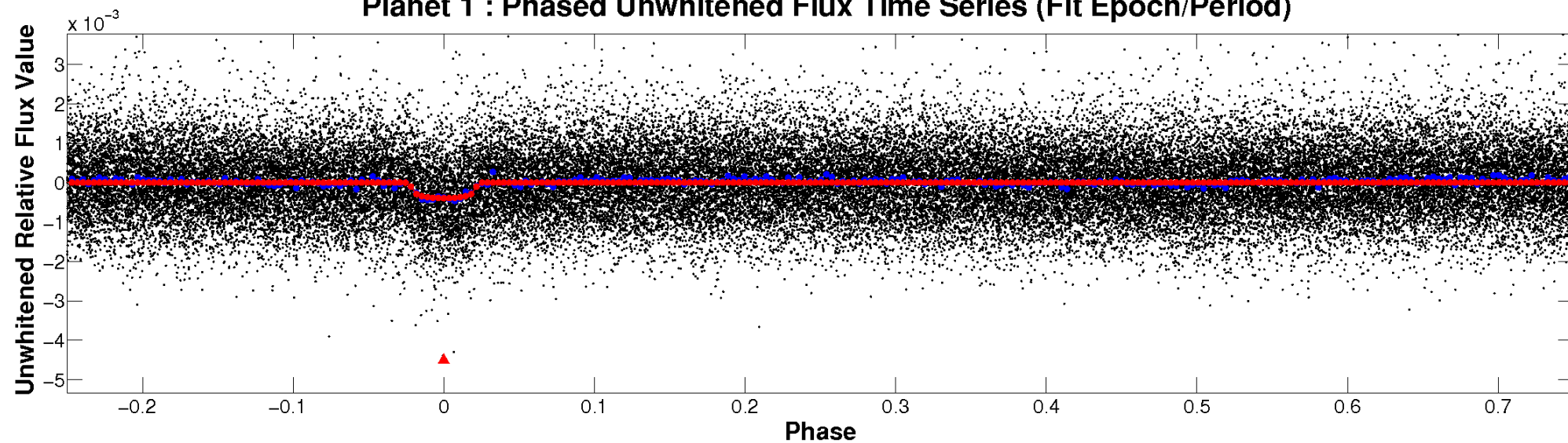
ALT Odd/Even

TCE 004861784-01

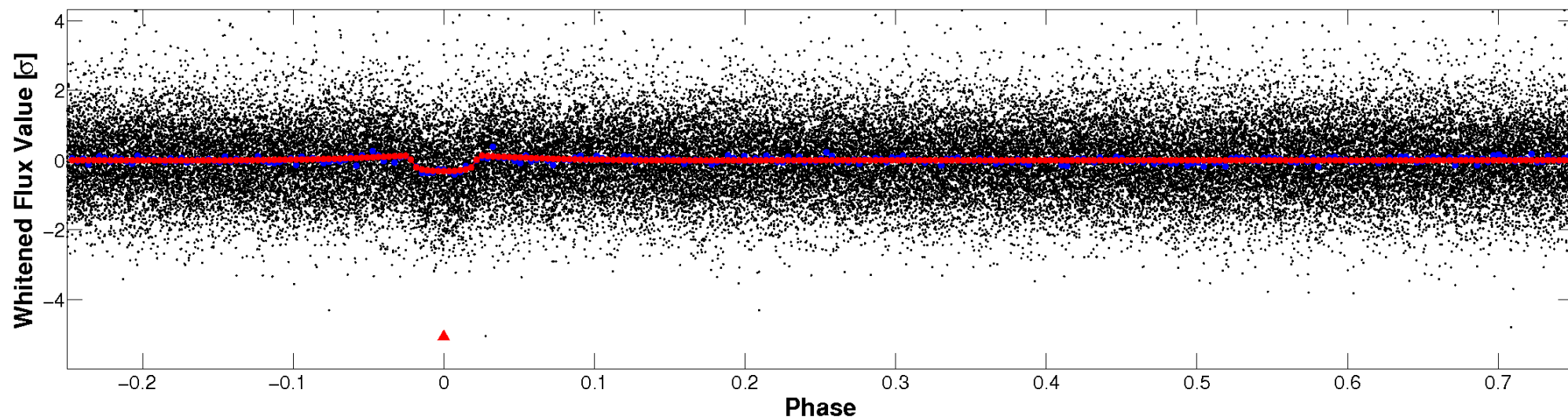


Non-Whitened Vs. Whitened Light Curve

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

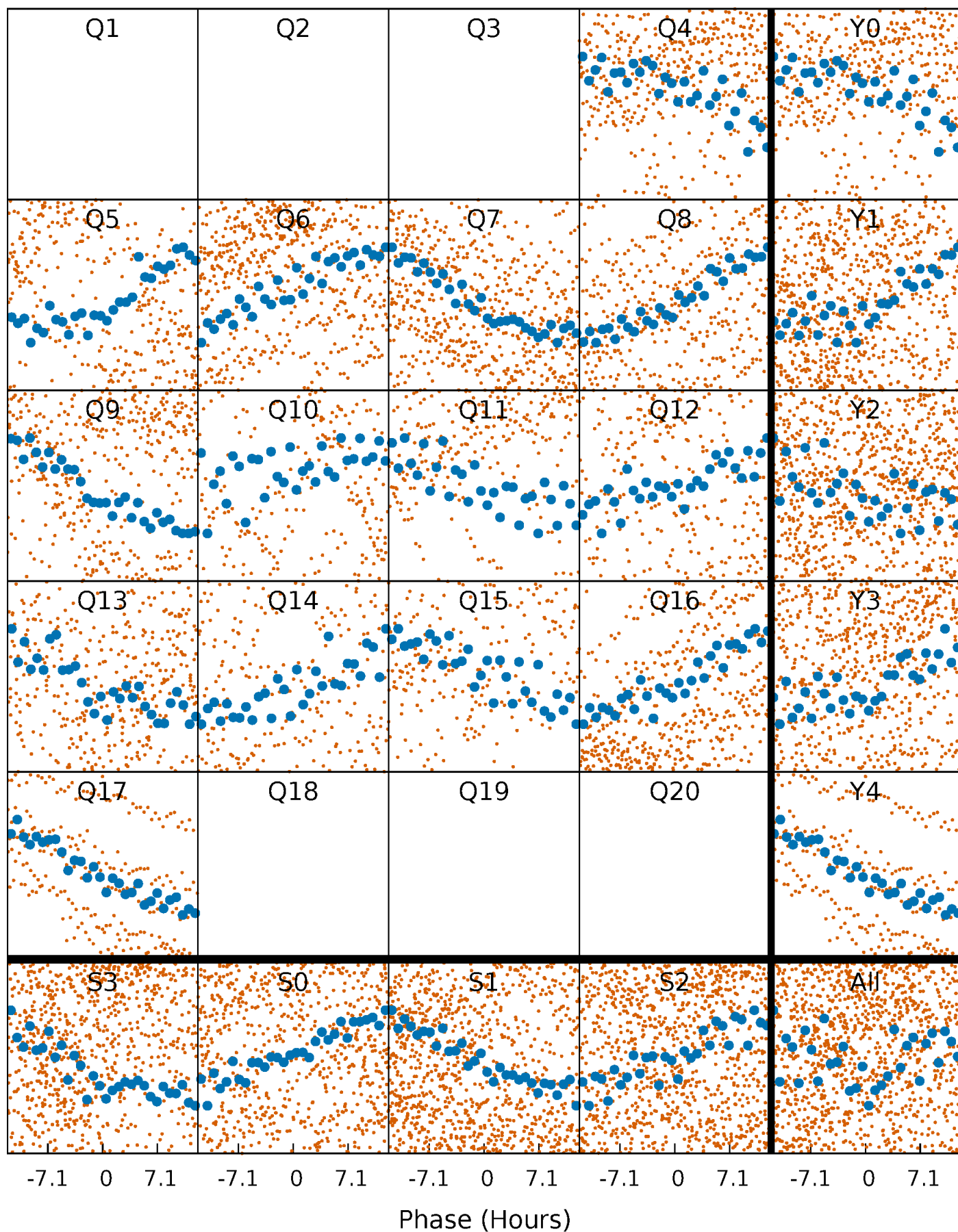


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



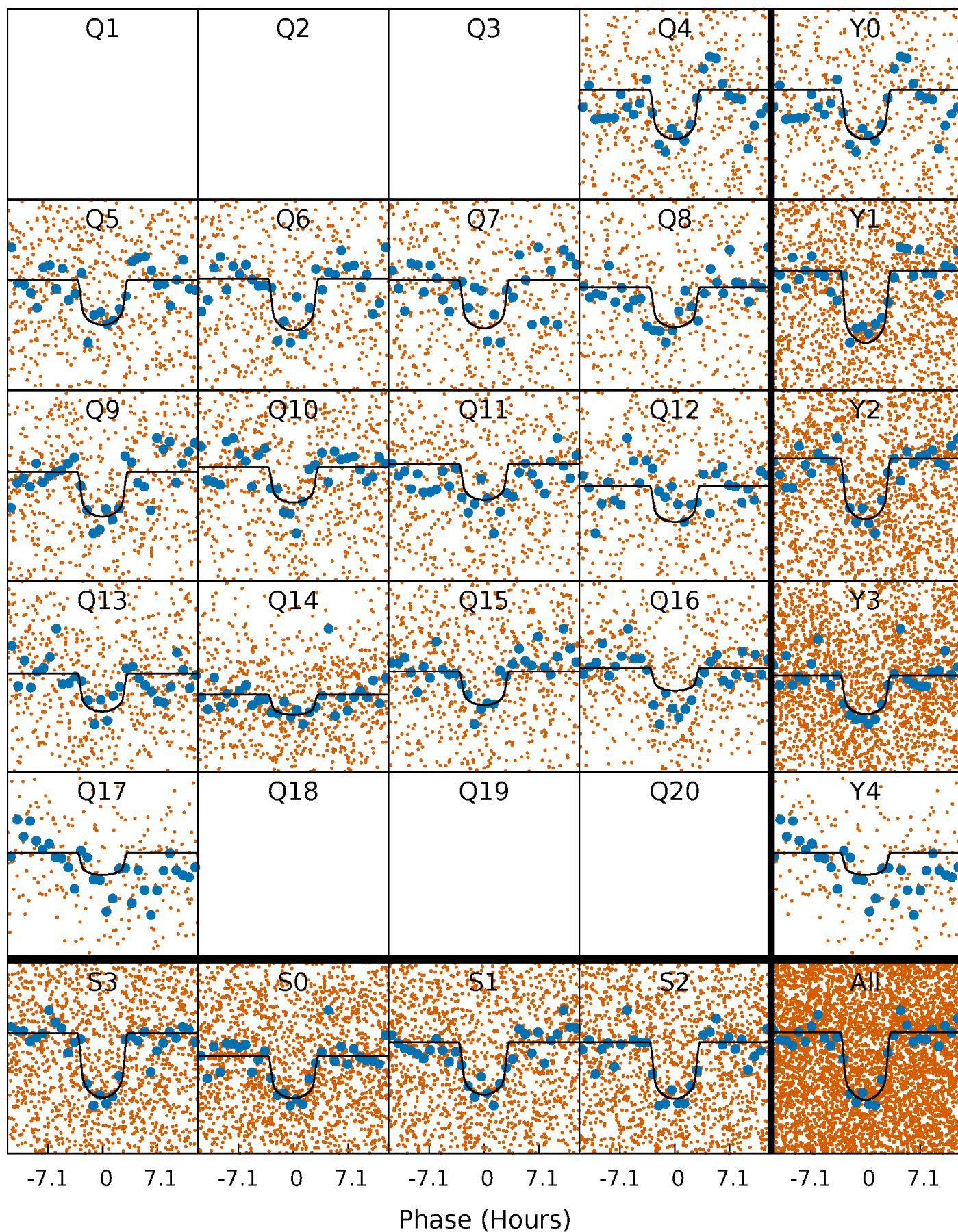
PDC Quarter-Phased Transit Curves

TCE 004861784-01 P= 5.629841 Days $T_0=136.826668$ (BKJD)



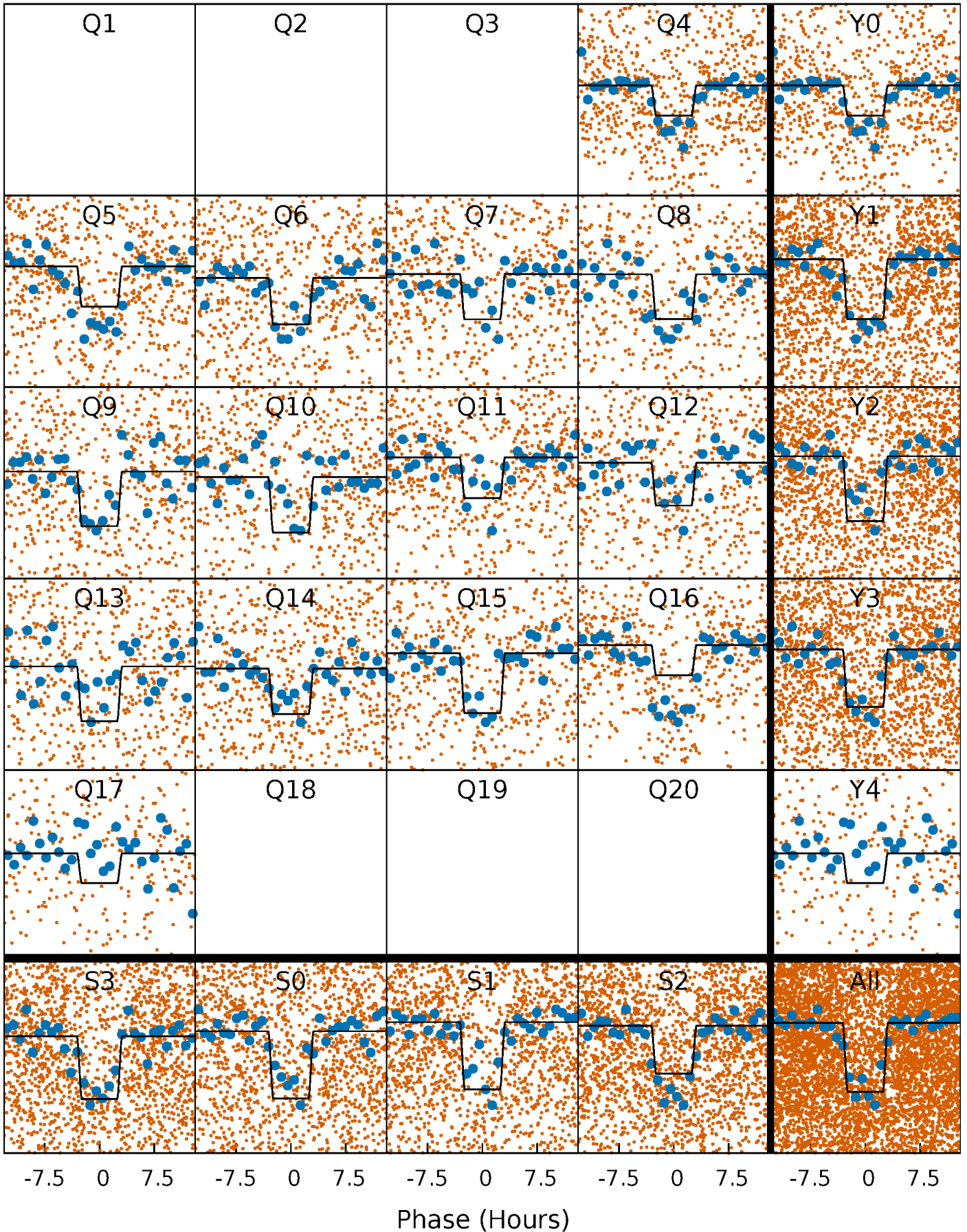
DV Quarter-Phased Transit Curves

TCE 004861784-01 P= 5.629841 Days $T_0=136.826668$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

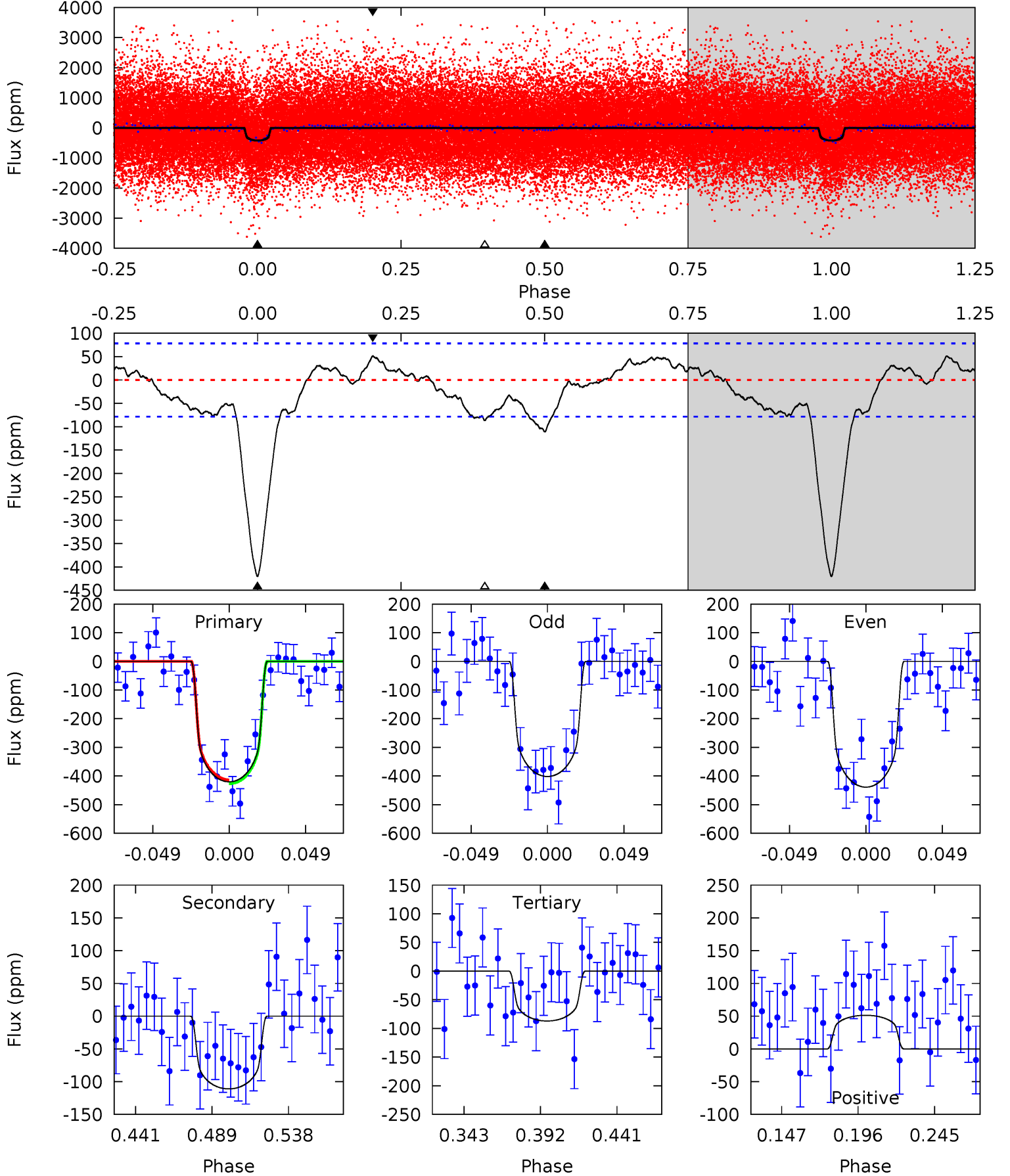
TCE 004861784-01 P= 5.629824 Days $T_0=136.829976$ (BKJD)



DV Model-Shift Uniqueness Test

004861784-01, P = 5.629841 Days, E = 136.826668 Days

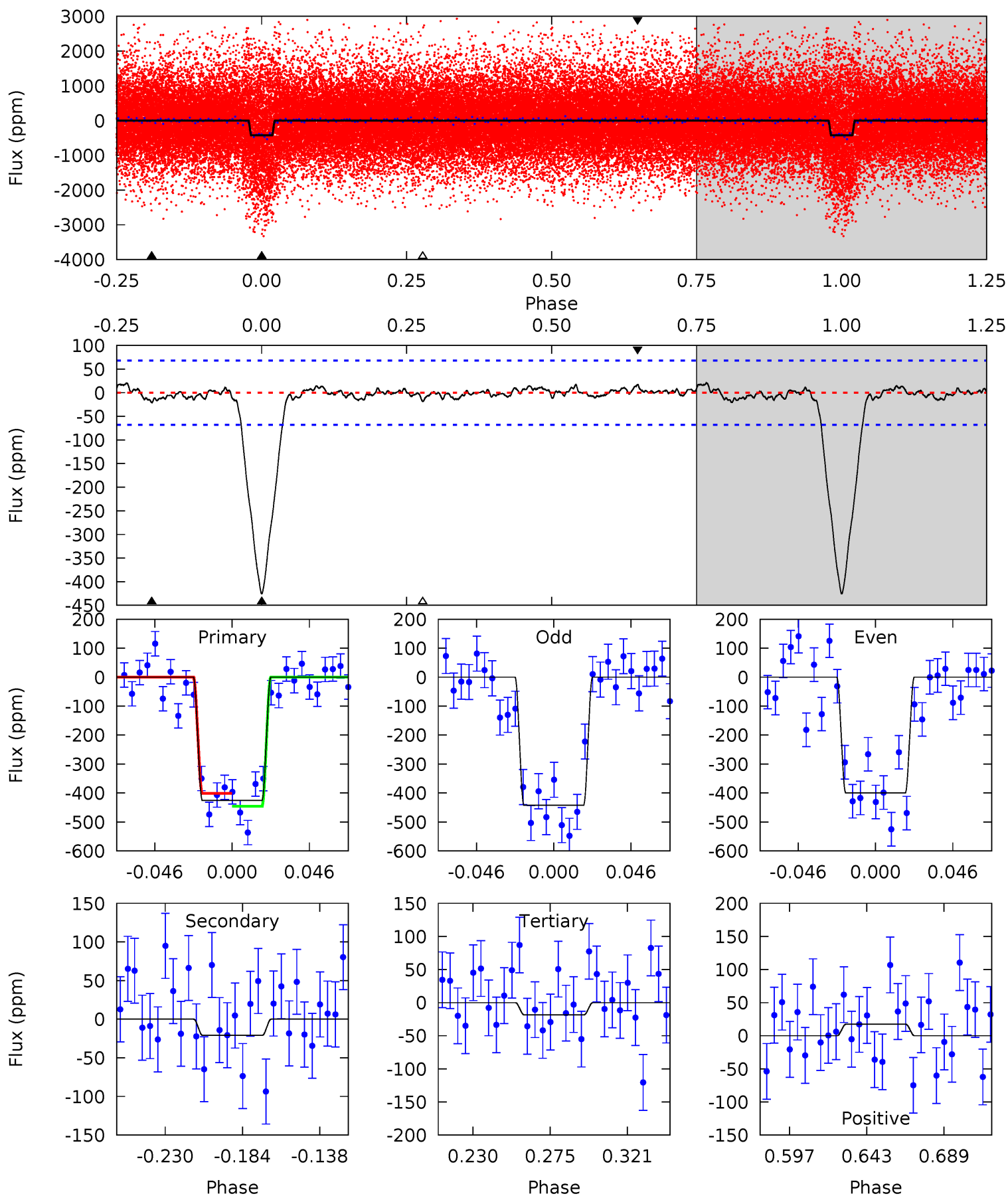
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.2	6.67	5.22	3.08	4.71	1.97	2.31	20.0	22.1	1.44	3.59	1.12	0.94	0.11	0.37



Alt Model-Shift Uniqueness Test

004861784-01, P = 5.629824 Days, E = 136.829976 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.6	1.46	1.29	1.21	4.73	2.00	0.50	28.3	28.4	0.17	0.25	1.49	1.00	0.05	1.54



Stellar Parameters For KIC 004861784

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5497^{+180}_{-197}	$4.570^{+0.027}_{-0.153}$	$0.070^{+0.250}_{-0.300}$	$0.839^{+0.188}_{-0.075}$	$0.952^{+0.073}_{-0.110}$	$2.272^{+0.354}_{-1.003}$
	+3%/-4%	+1%/-3%	+357%/-429%	+22%/-9%	+8%/-12%	+16%/-44%
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 004861784-01 / KOI 4278.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-111±17	$1.92^{+0.60}_{-0.49}$	1287^{+72}_{-61}	4183^{+548}_{-356}	59^{+56}_{-25}
Alt.	-21±14	$1.93^{+0.52}_{-0.54}$	1282^{+73}_{-57}	3174^{+451}_{-529}	11^{+14}_{-8}

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 $A_{\text{obs}} \gg 1.0$

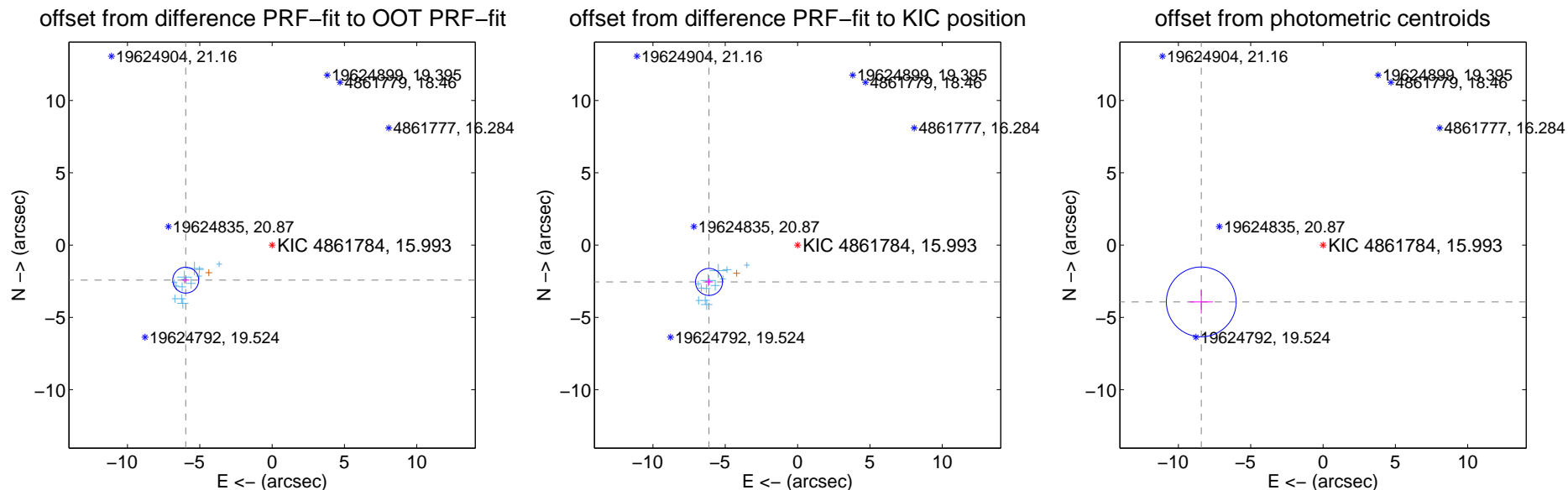
DV Centroid Data

Supplemental centroid analysis for 004861784-01. Kepler magnitude: 15.99. Transit SNR 14.16

There are 13 quarters with good PRF difference image offsets

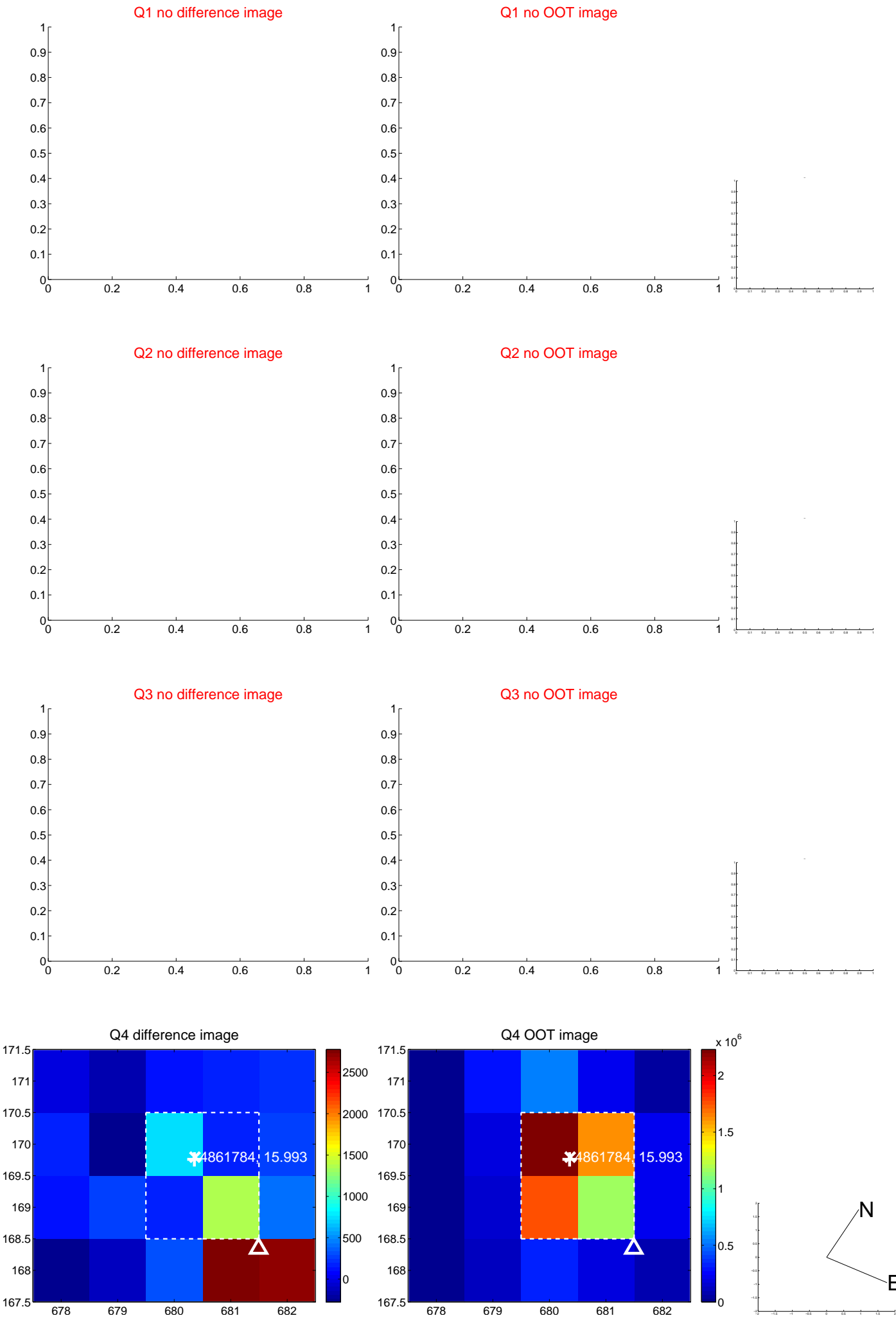
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.444 ± 0.298	21.60	5.971 ± 0.250	-2.425 ± 0.226
PRF-fit source offset from KIC position	6.631 ± 0.311	21.32	6.122 ± 0.261	-2.549 ± 0.232
photometric centroid source offset	9.29 ± 0.80	11.55	8.42 ± 0.80	-3.93 ± 0.80

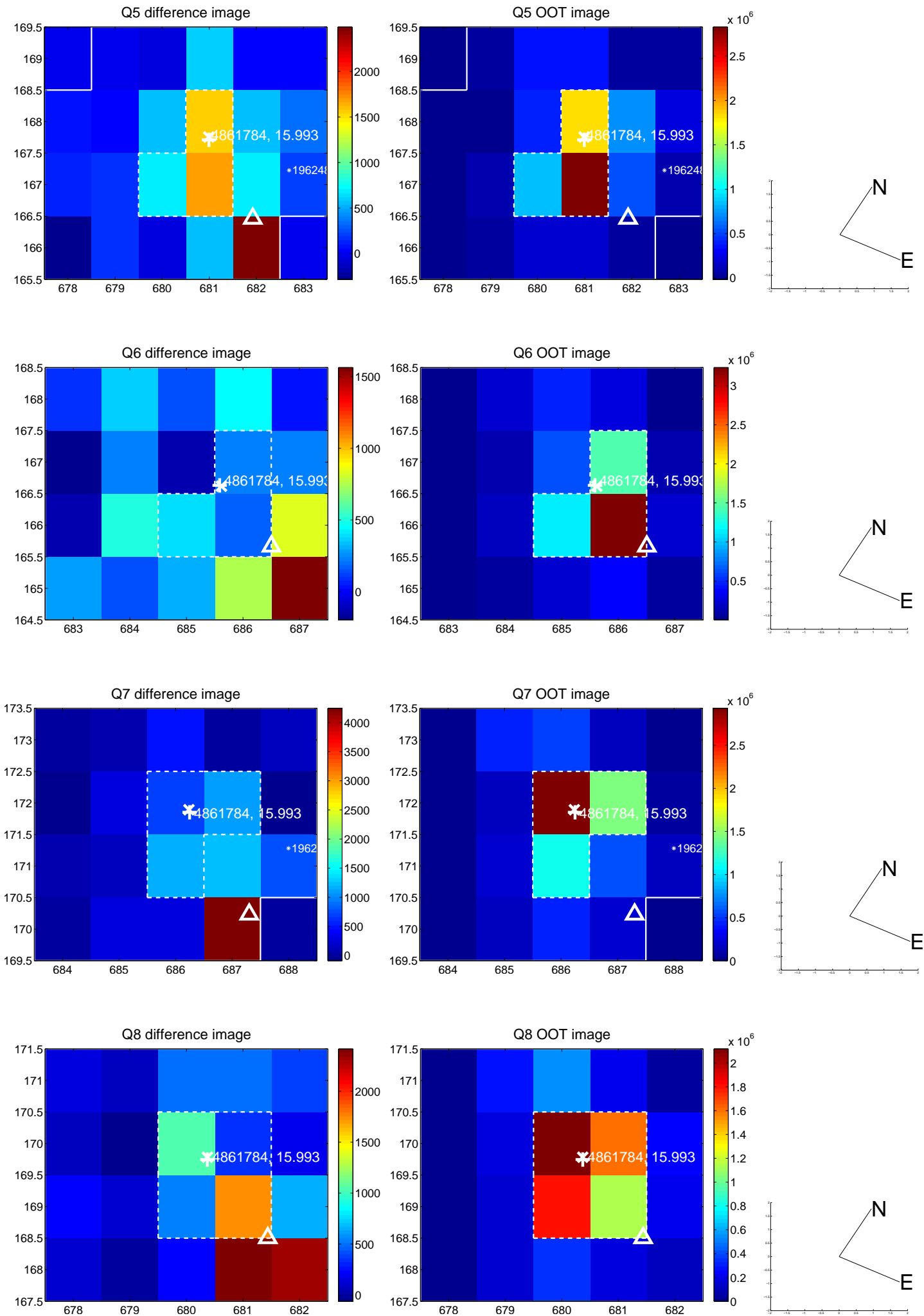


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

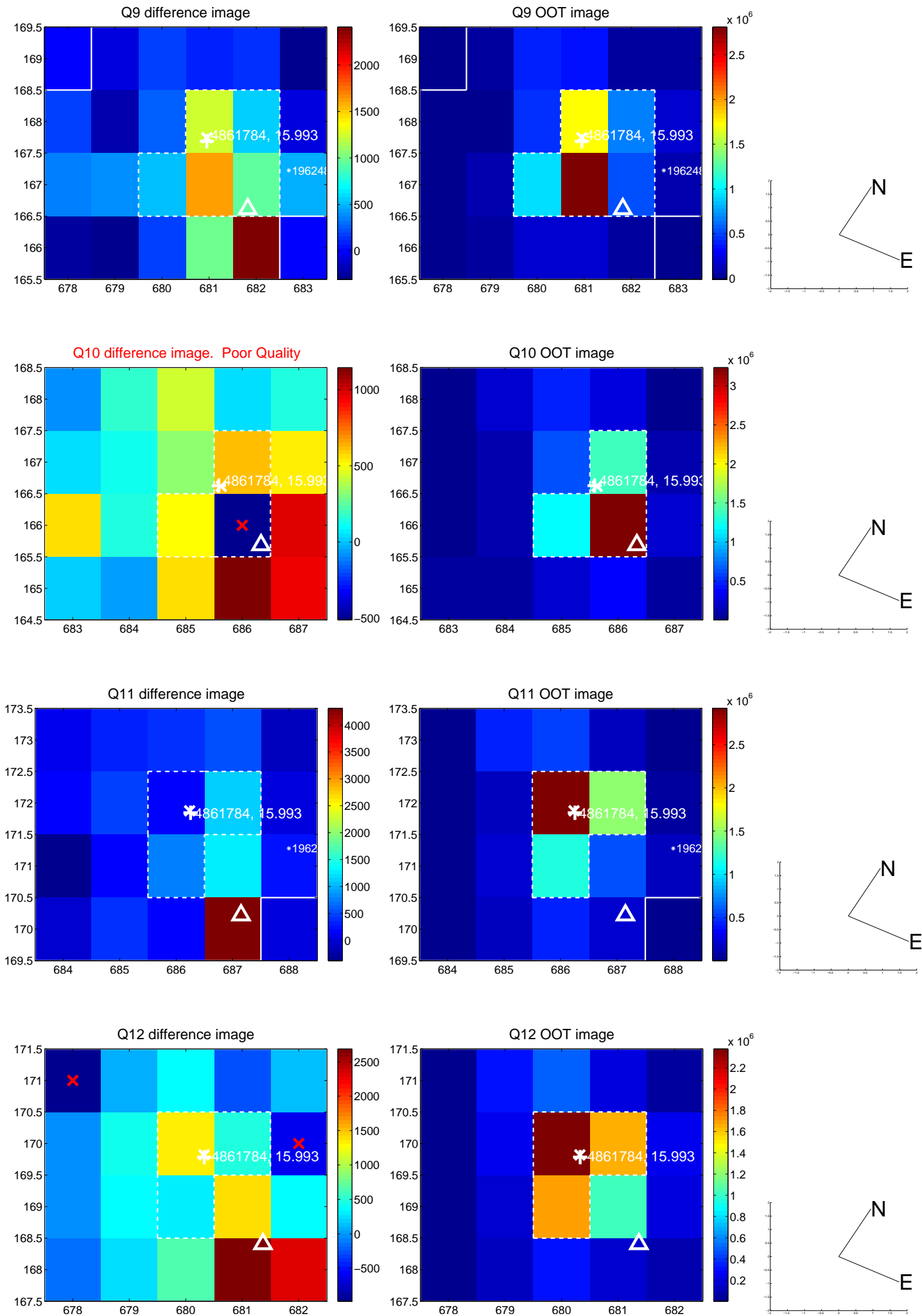
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



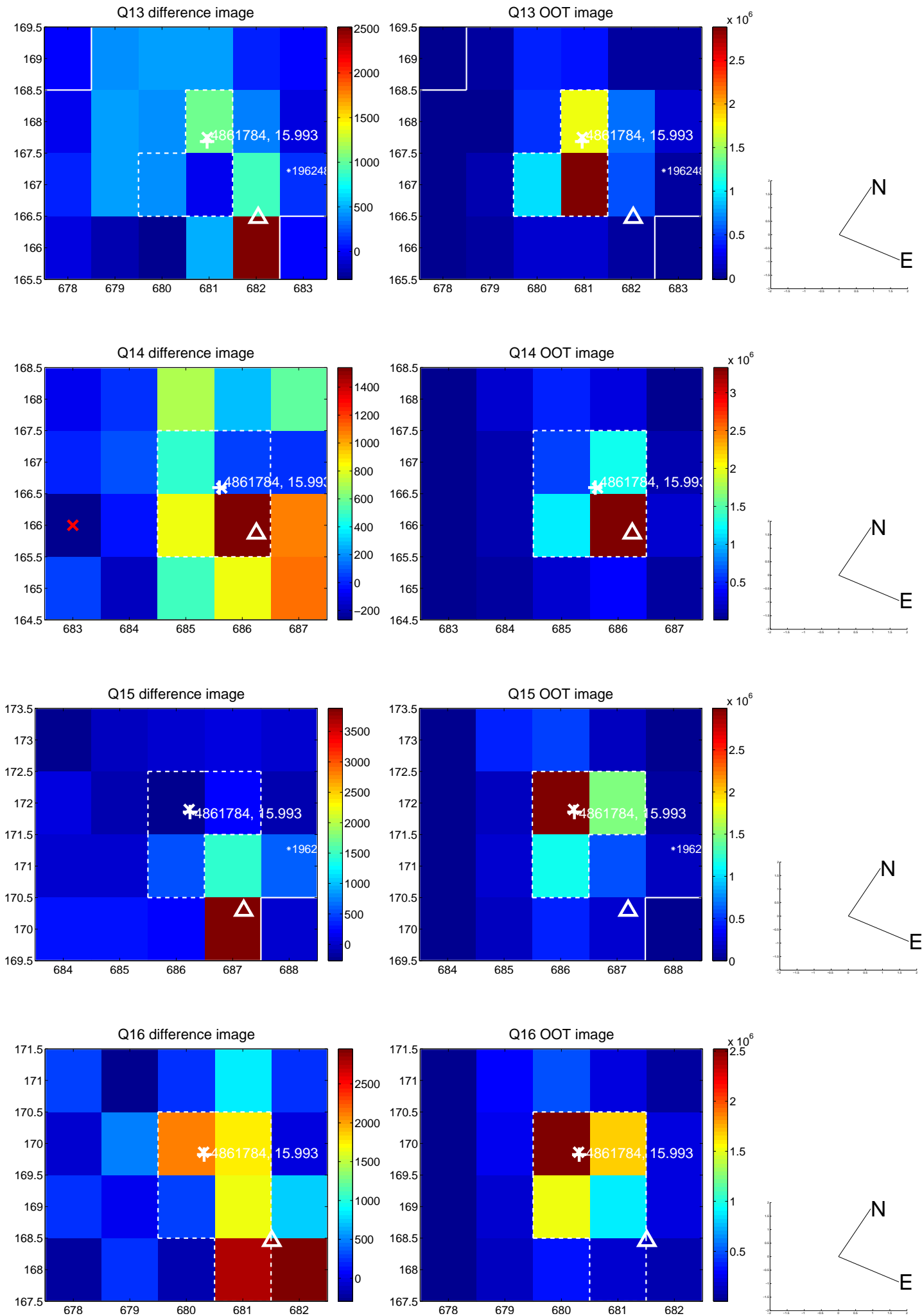
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



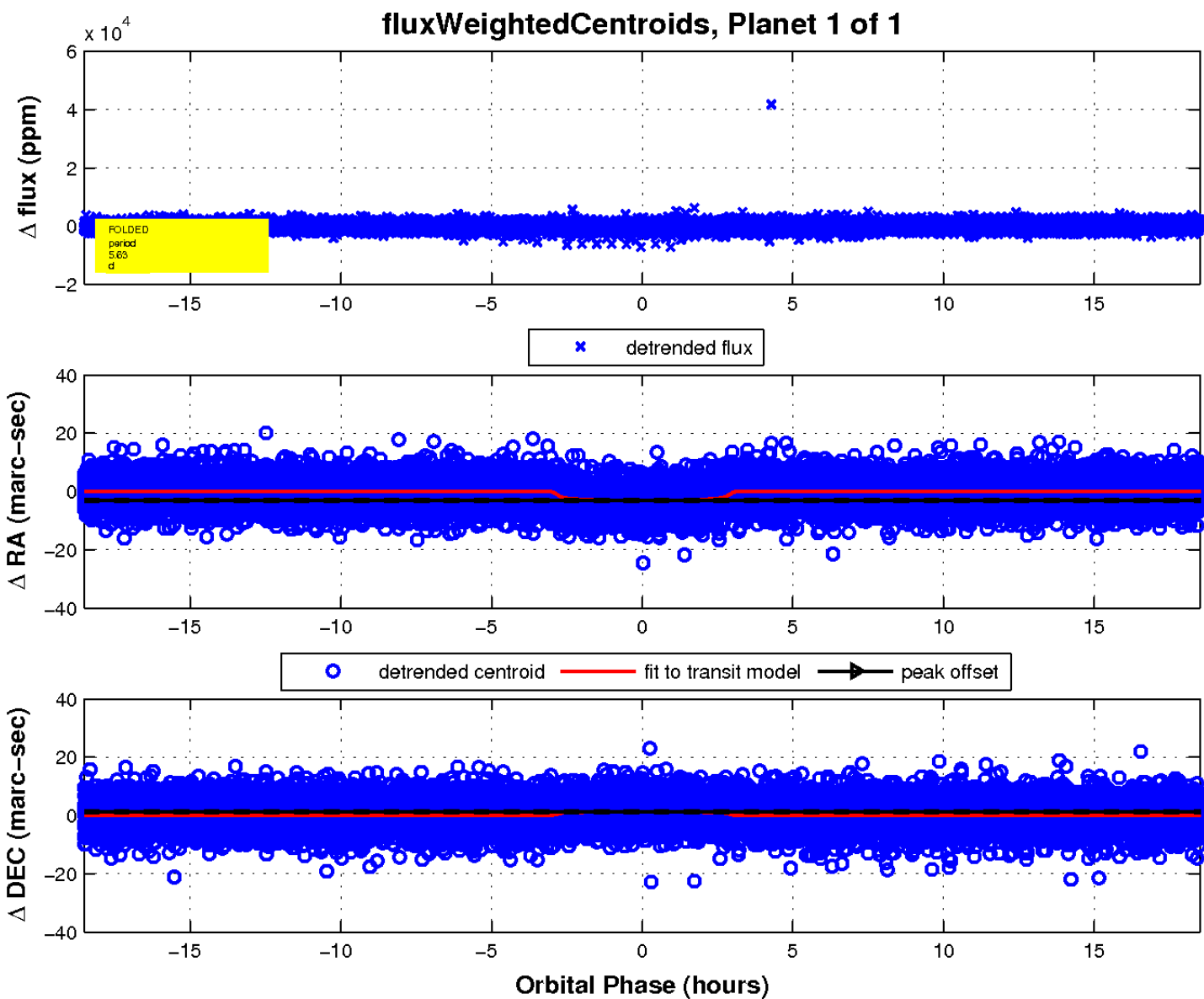
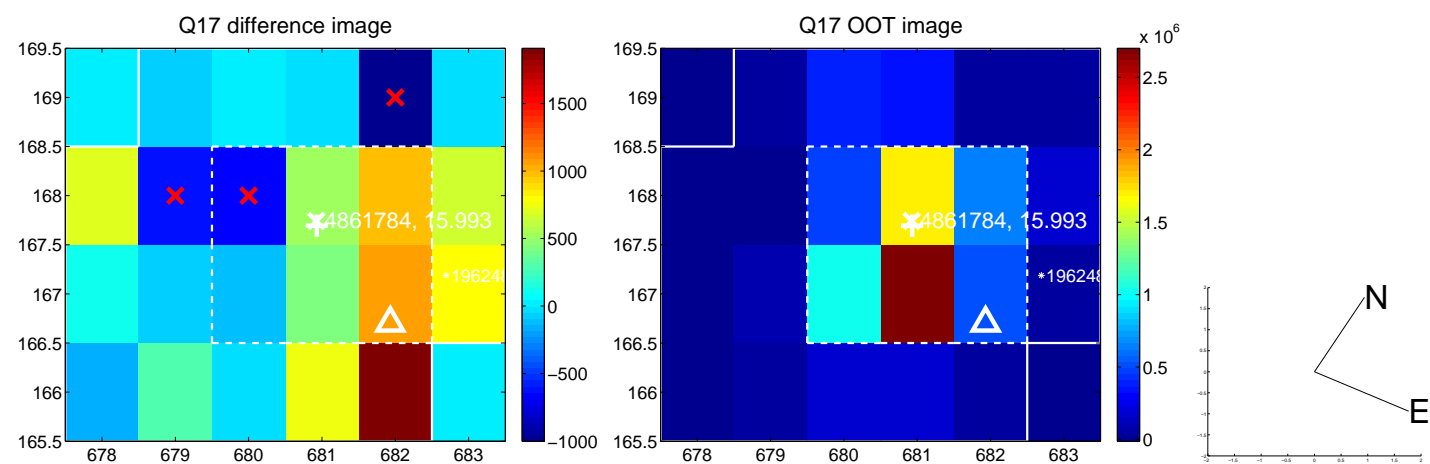
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UKIRT Image

Declination

