

KIC 005215980

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})
005215980-01	OBS	3866.01	2.531141	132.494670	399.8	9.537	19.6	22.9	0.75	5325	1.83	347.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005215980-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—MOD_ODDEVEN_ALT—SEASONAL_DEPTH_ALT—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 005215980-01

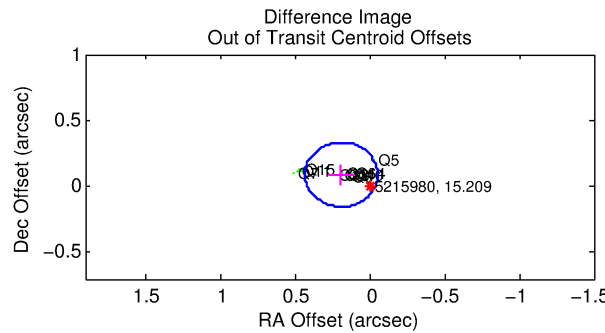
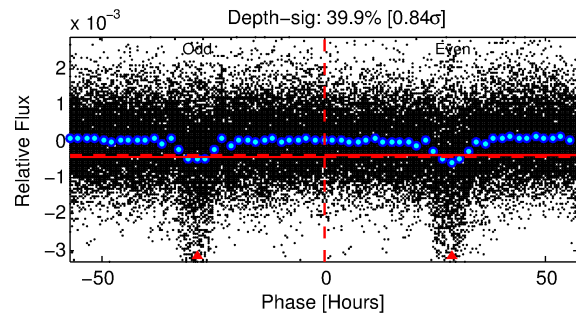
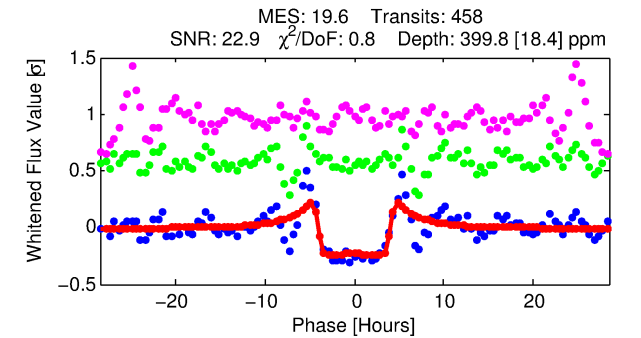
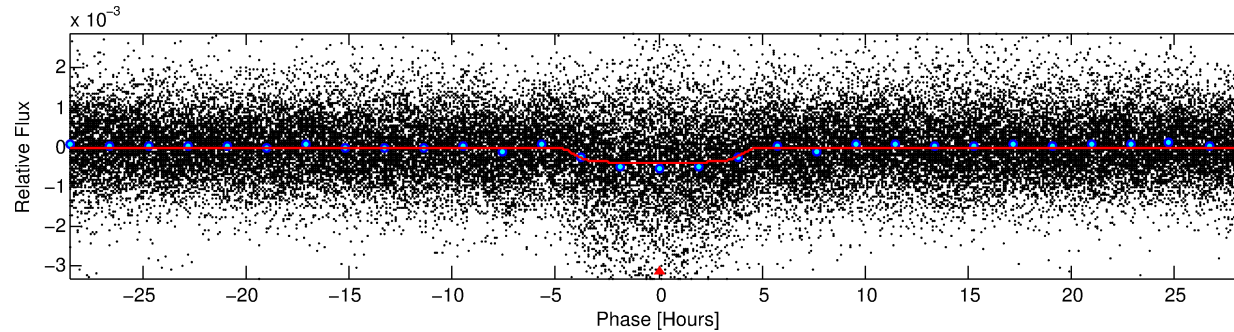
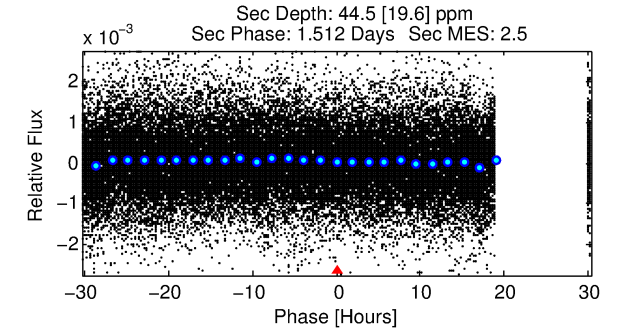
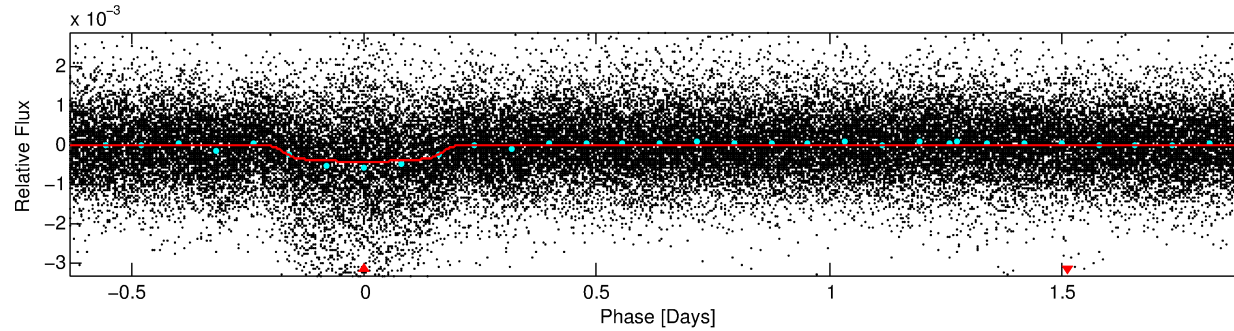
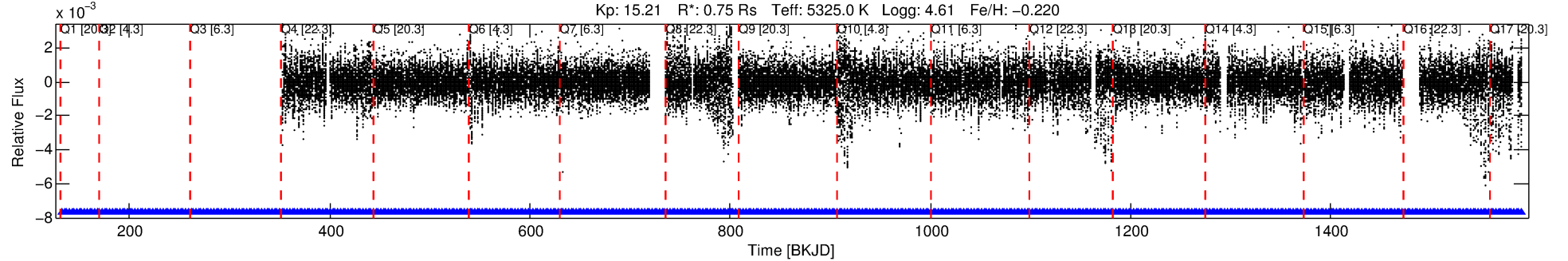
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
005215980-01	5215980	005215999-pri	5215999	1:1	8.6	1	1	14.11	15.21	249.50	Direct-PRF	0	0.44	0.62

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: 5215980 Candidate: 1 of 1 Period: 2.531 d
KOI: K03866 Corr: No Ephemeris Match

Kp: 15.21 R*: 0.75 Rs Teff: 5325.0 K Logg: 4.61 Fe/H: -0.220



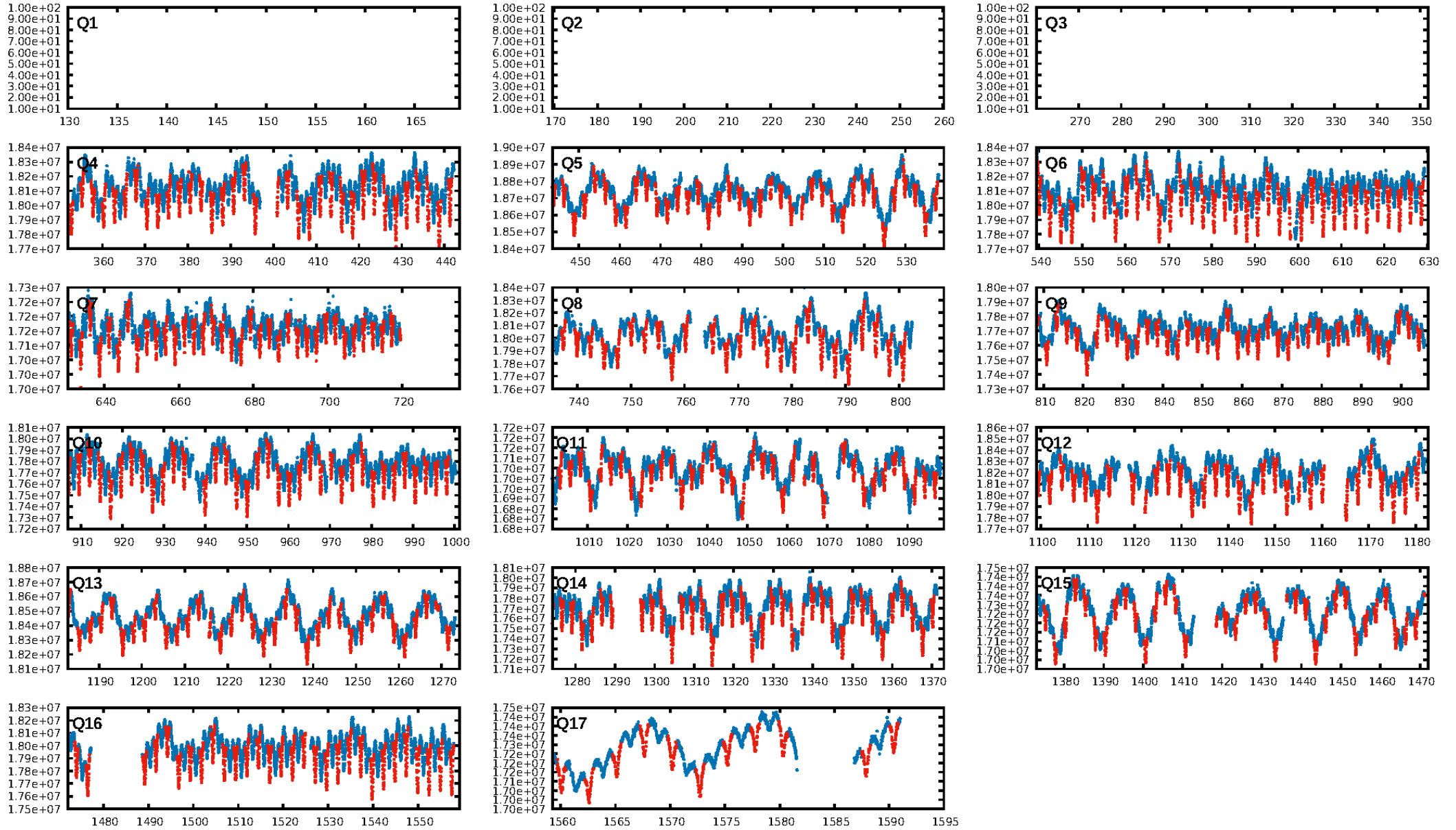
DV Fit Results:

Period = 2.53114 [0.00001] d
Epoch = 132.4947 [0.0034] BKJD
Rp/R* = 0.0224 [0.0008]
a/R* = 1.33 [0.07]
b = 0.91 [0.02]
Seff = 347.10 [86.87]
Teq = 1101 [69] K
Rp = 1.83 [0.33] Re
a = 0.0342 [0.0050] AU
Ag = 8.53 [4.19] [1.80σ]
Teff = 2908 [339] K [5.2σ]

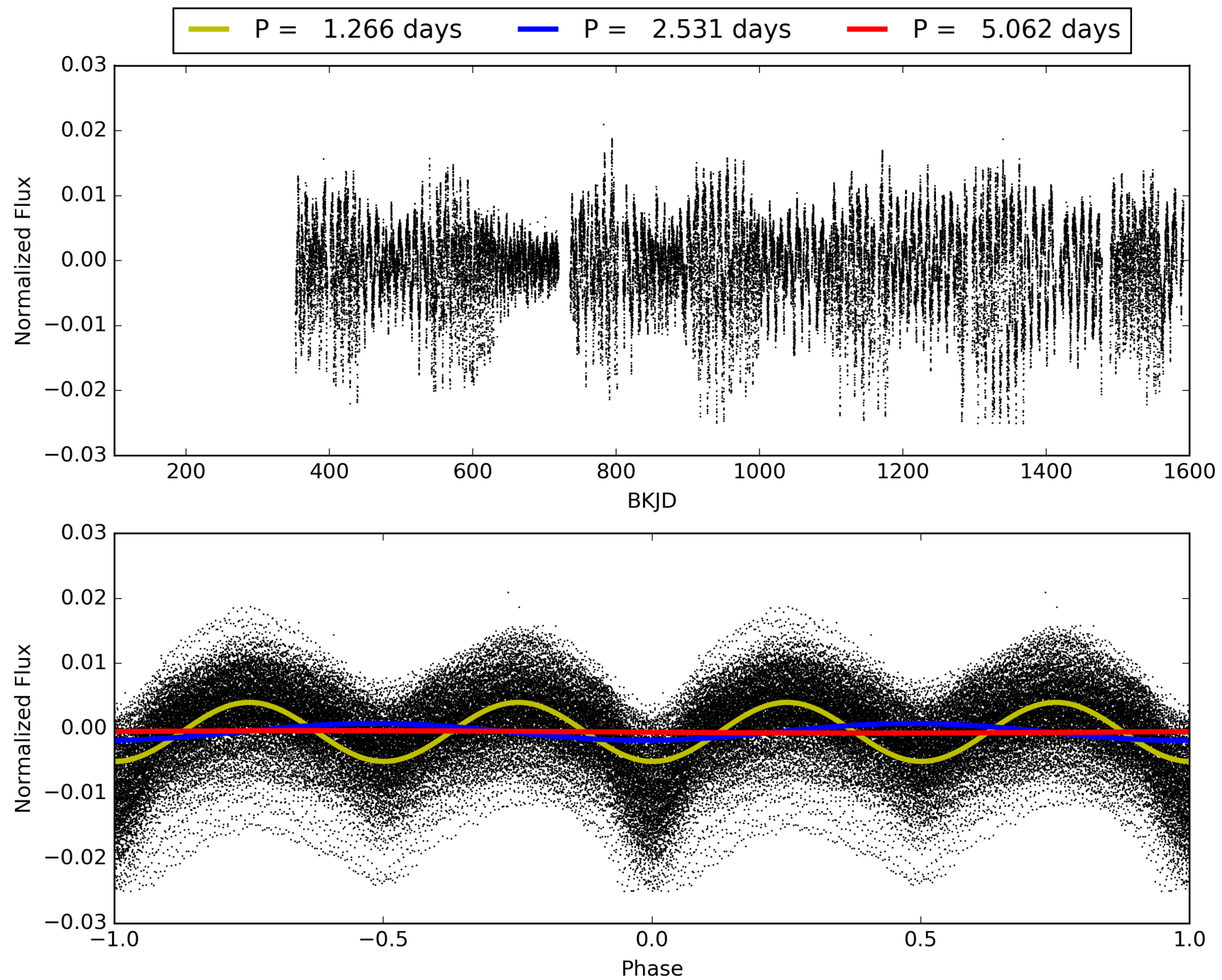
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.96e-66
RollingBand-fgt: 1.00 [447/447]
GhostDiagnostic-chr: -0.7697
Centroid-sig: 0.0%
Centroid-so: 12.377 arcsec [14.48σ]
OotOffset-rm: 0.209 arcsec [2.58σ]
KicOffset-rm: 8.662 arcsec [124.05σ]
OotOffset-st: 3/3/4/1 [11]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 005215980-01, PDC Light Curves

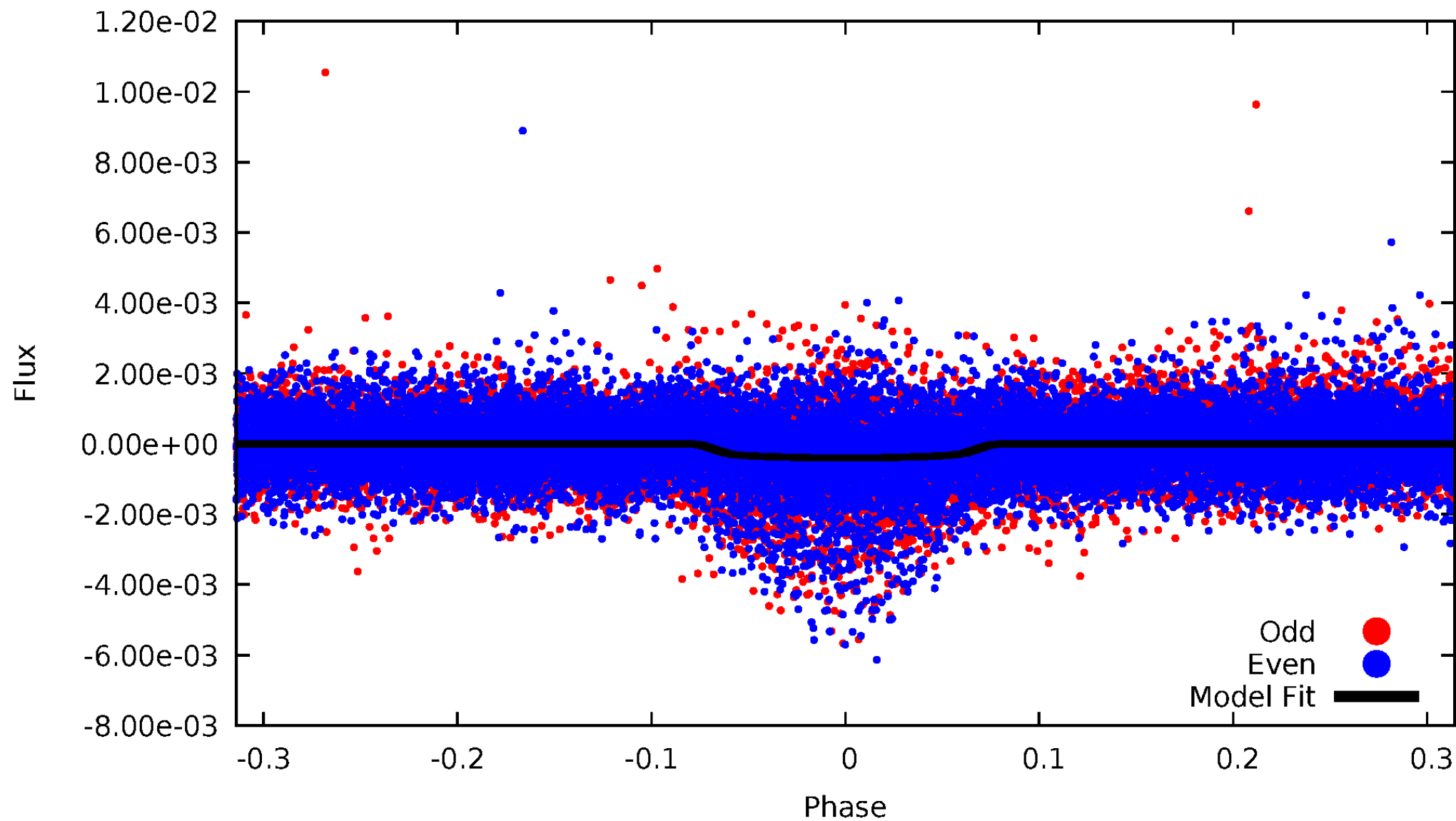


TCE 005215980-01



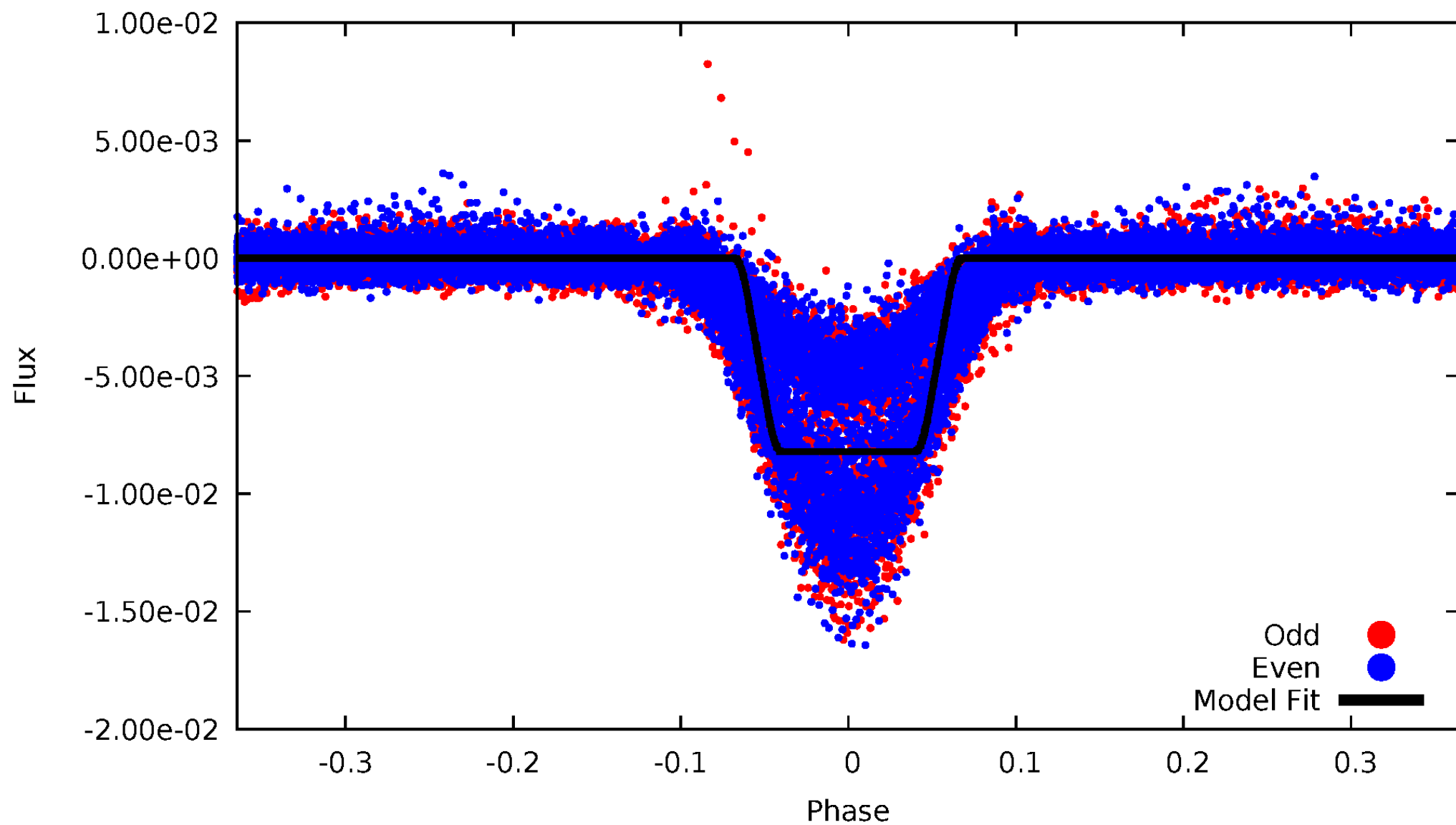
DV Odd/Even

TCE 005215980-01



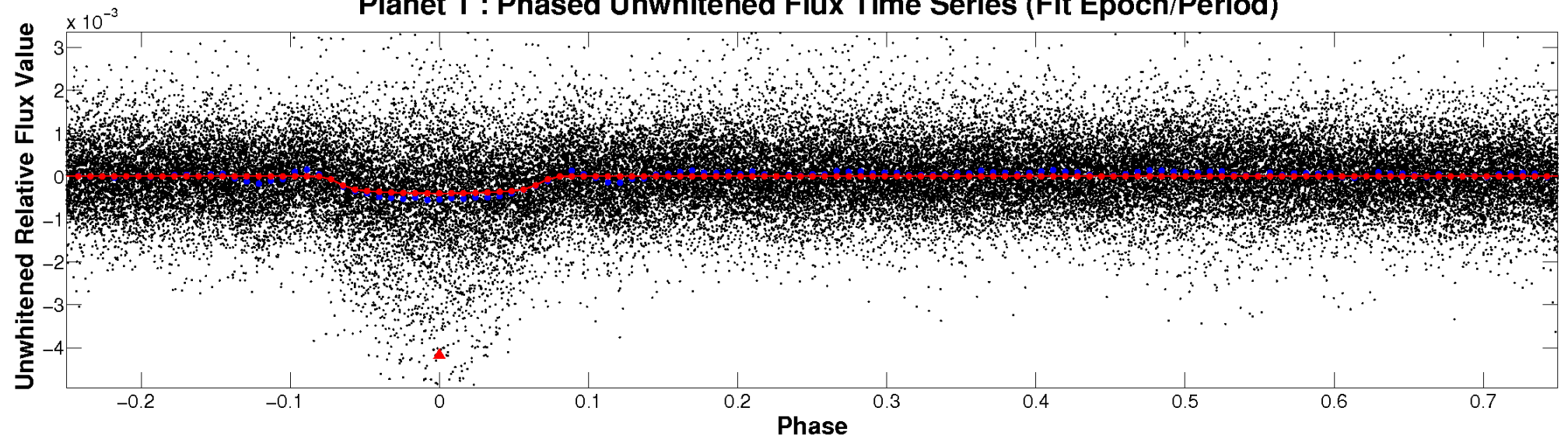
ALT Odd/Even

TCE 005215980-01

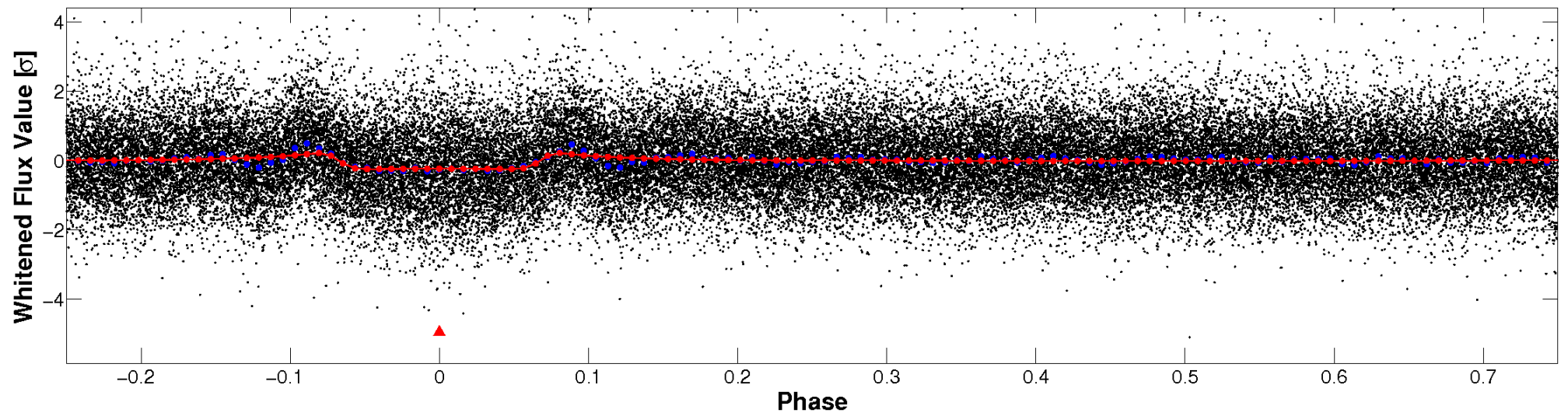


Non-Whitened Vs. Whitened Light Curve

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

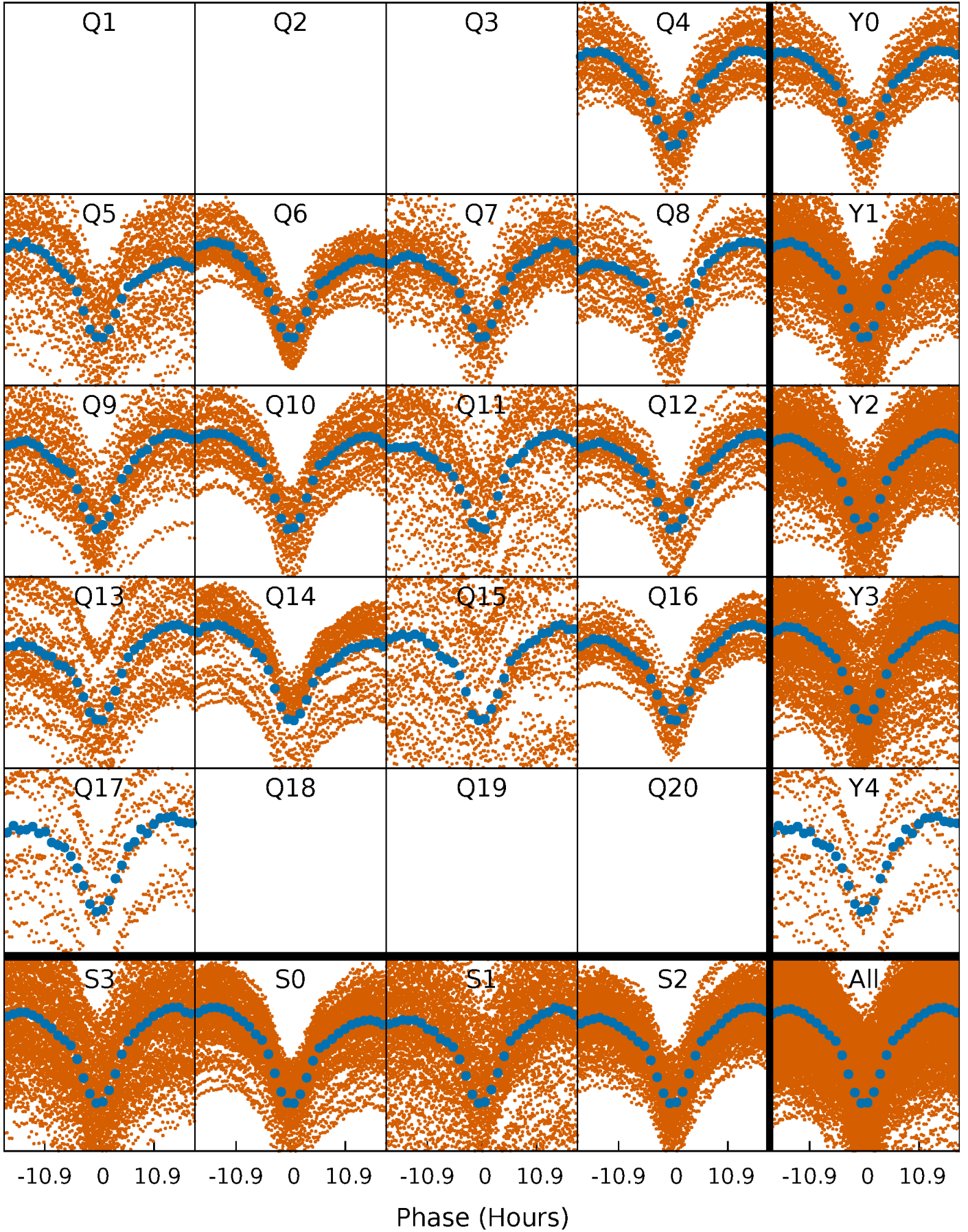


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



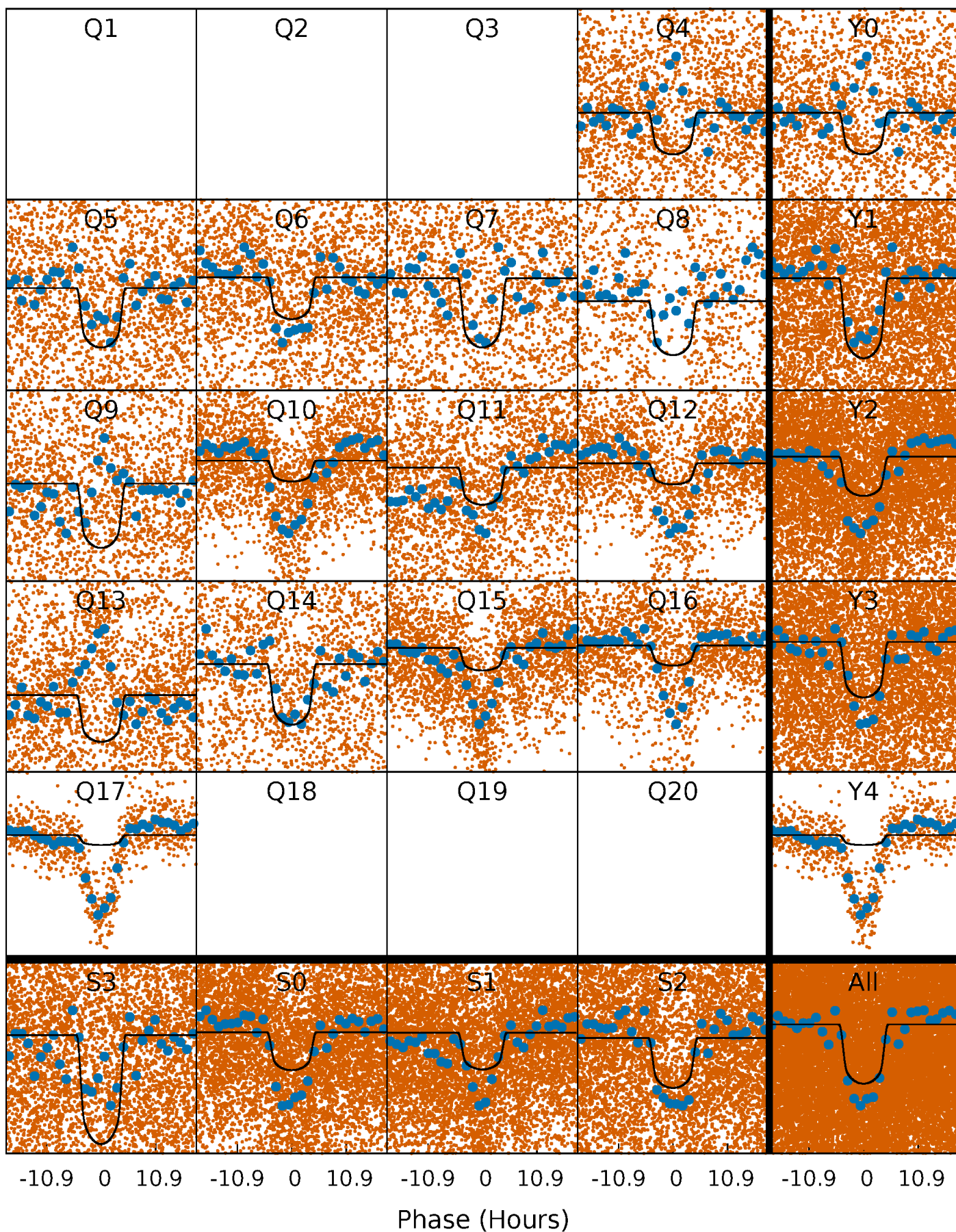
PDC Quarter-Phased Transit Curves

TCE 005215980-01 P= 2.531141 Days $T_0=132.494670$ (BKJD)



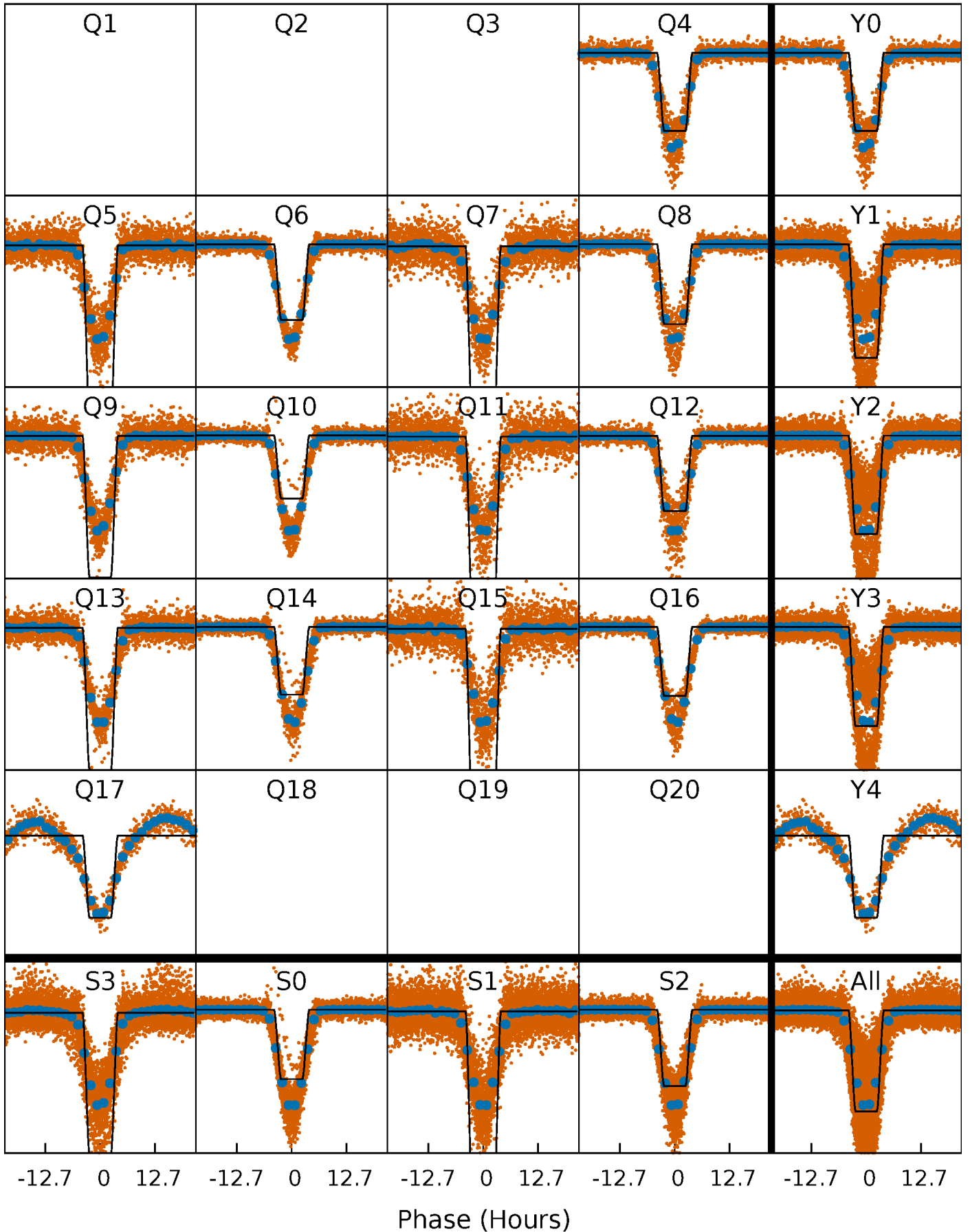
DV Quarter-Phased Transit Curves

TCE 005215980-01 P= 2.531141 Days $T_0=132.494670$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

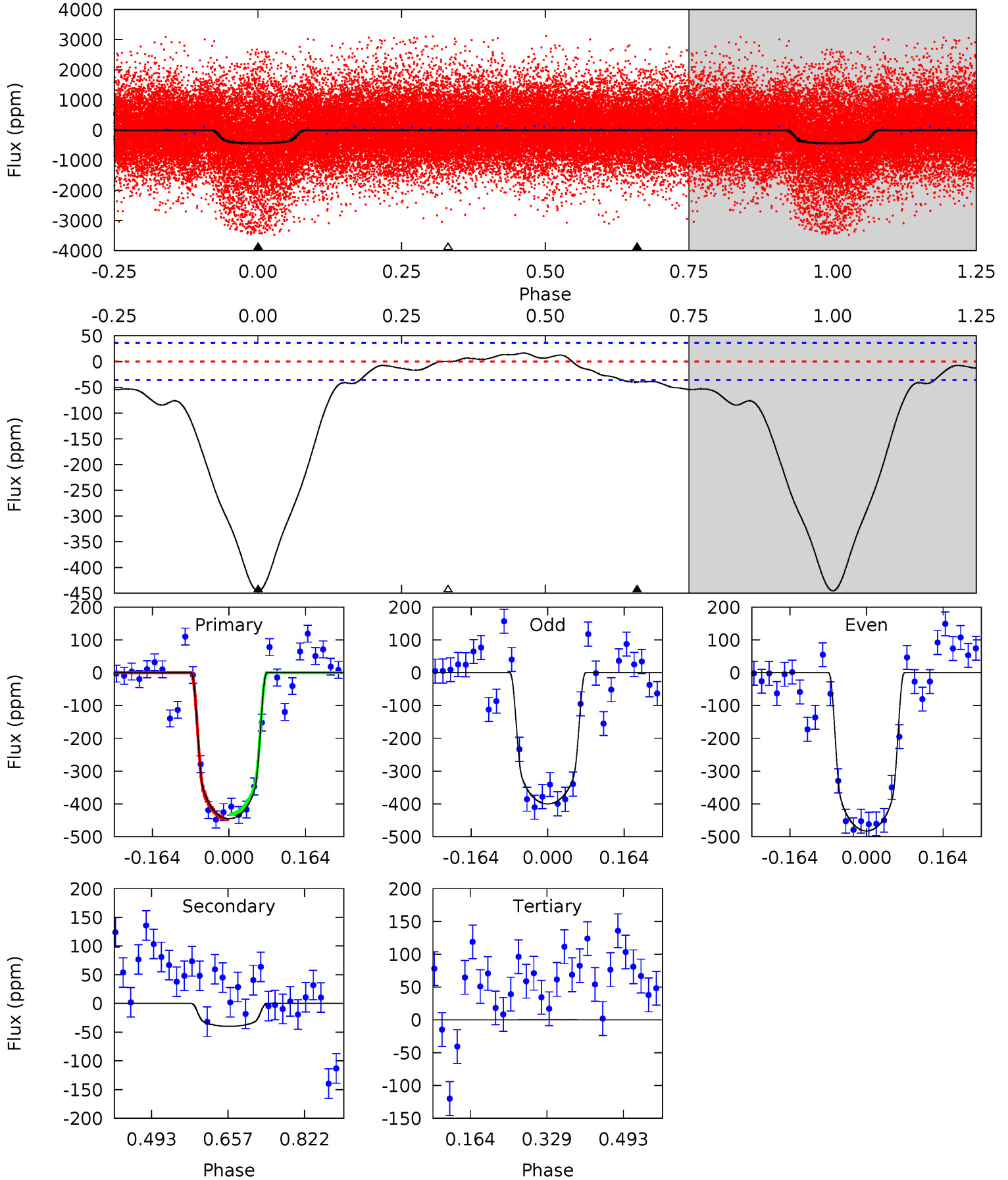
TCE 005215980-01 P= 2.531125 Days $T_0=132.499350$ (BKJD)



DV Model-Shift Uniqueness Test

005215980-01, P = 2.531141 Days, E = 132.494670 Days

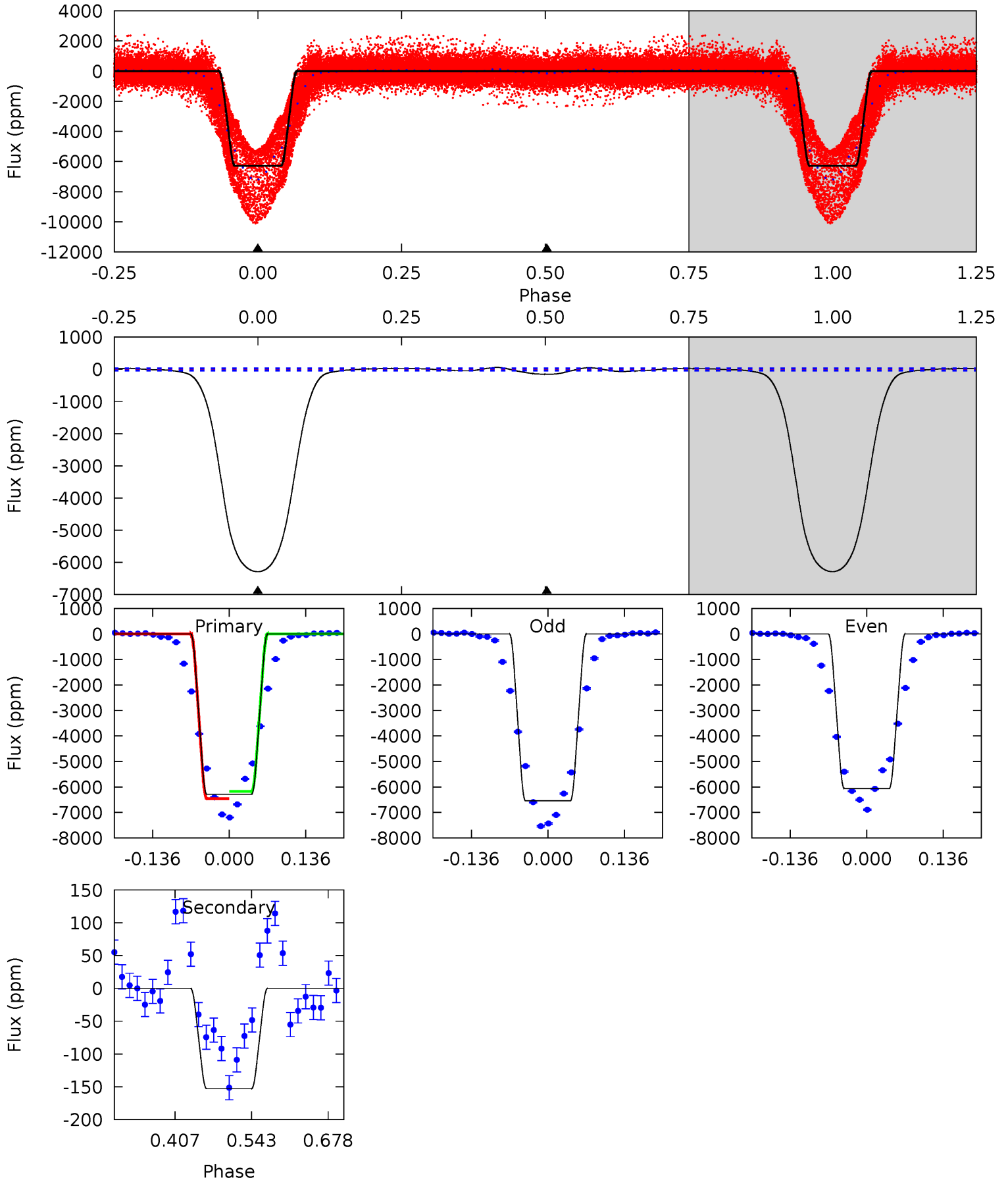
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.2	4.94	-0.02	0	4.46	1.39	2.51	55.2	55.2	4.96	4.94	5.14	1.26	0.04	0.95



Alt Model-Shift Uniqueness Test

005215980-01, P = 2.531125 Days, E = 132.499350 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
817.6	19.9	0	0	4.50	1.49	3.66	817.6	817.6	19.9	19.9	30.5	1.04	0.01	0



Stellar Parameters For KIC 005215980

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5325^{+185}_{-185}	$4.607^{+0.035}_{-0.112}$	$-0.220^{+0.300}_{-0.300}$	$0.750^{+0.132}_{-0.057}$	$0.840^{+0.078}_{-0.096}$	$2.803^{+0.521}_{-0.917}$
	+3%/-3%	+1%/-2%	+136%/-136%	+18%/-8%	+9%/-11%	+19%/-33%
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 005215980-01 / KOI 3866.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-40 ± 8	$1.88^{+0.17}_{-0.15}$	1566^{+69}_{-72}	3309^{+139}_{-134}	$7.008^{+1.853}_{-1.643}$
Alt.	-153 ± 8	$7.54^{+0.68}_{-0.44}$	1560^{+75}_{-67}	2654^{+60}_{-58}	$1.699^{+0.202}_{-0.236}$

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

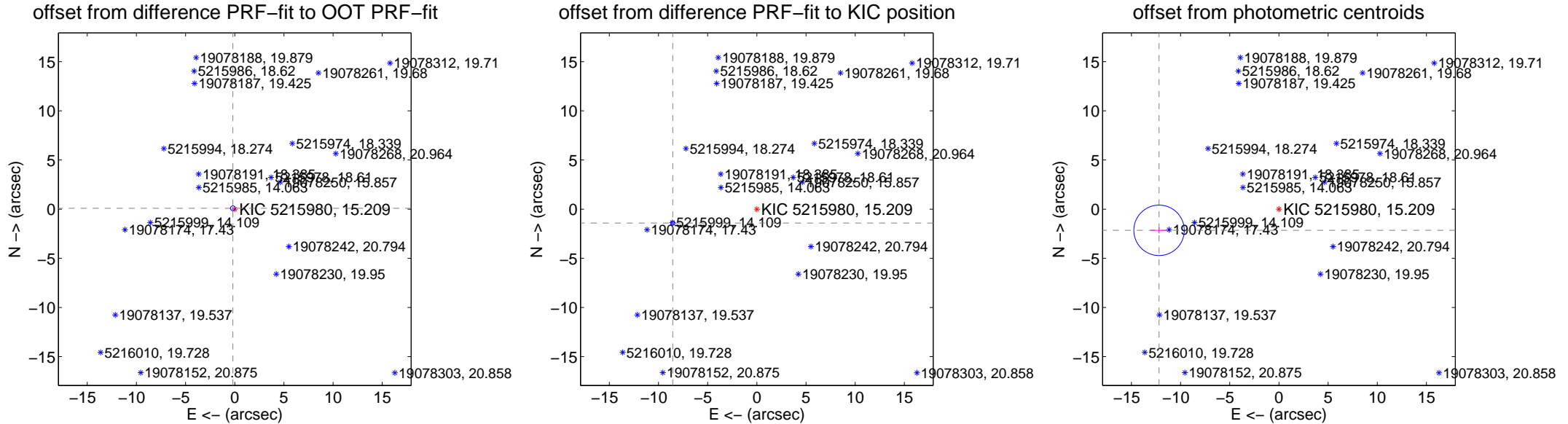
DV Centroid Data

Supplemental centroid analysis for 005215980-01. Kepler magnitude: 15.21. Transit SNR 22.87

There are 14 quarters with good PRF difference image offsets

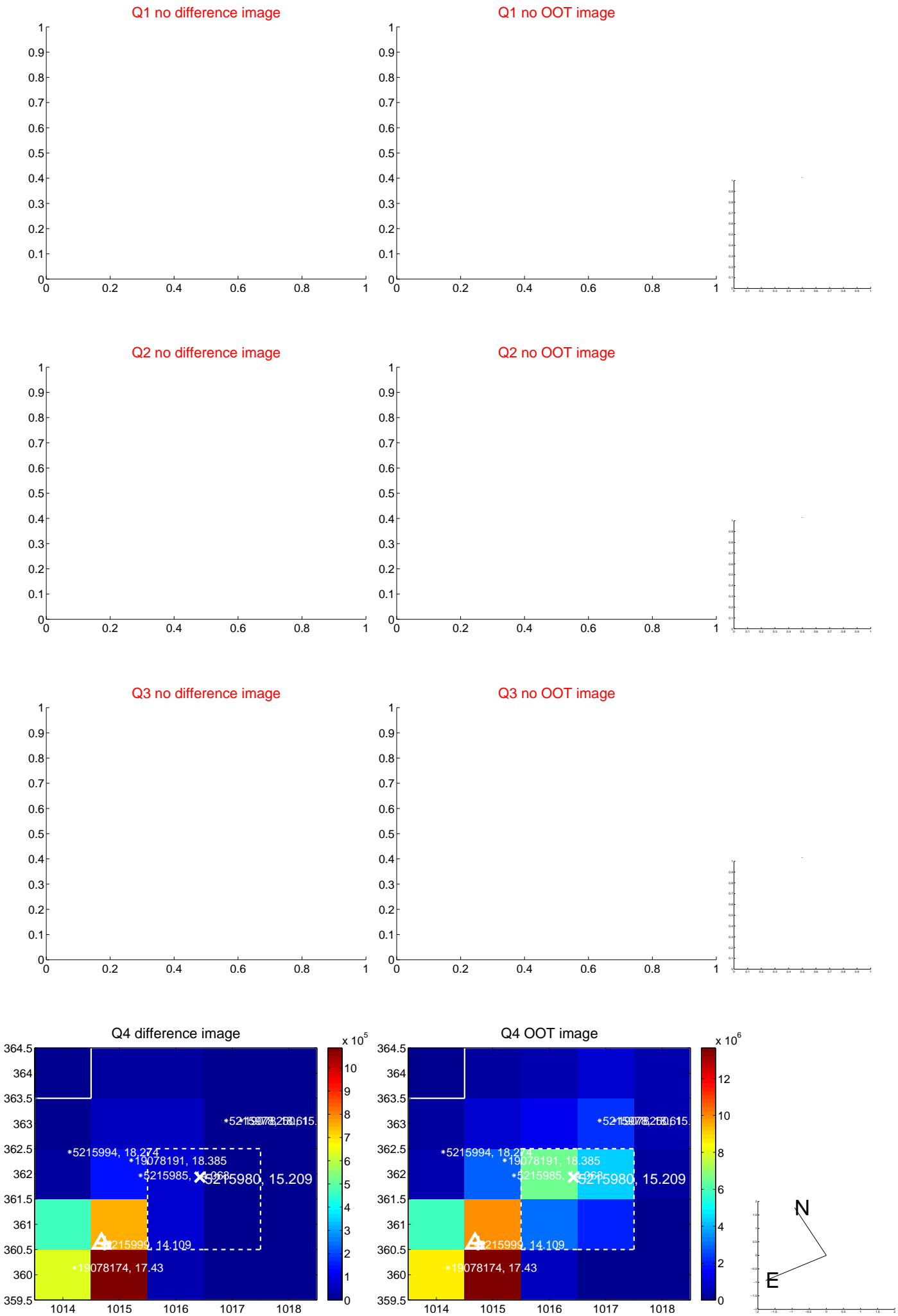
The OOT PRF centroid is offset from the target star catalog position by about 8.52 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.209 ± 0.081	2.58	0.189 ± 0.085	0.089 ± 0.067
PRF-fit source offset from KIC position	8.662 ± 0.070	124.05	8.547 ± 0.069	-1.410 ± 0.073
photometric centroid source offset	12.38 ± 0.86	14.48	12.19 ± 0.87	-2.15 ± 0.31

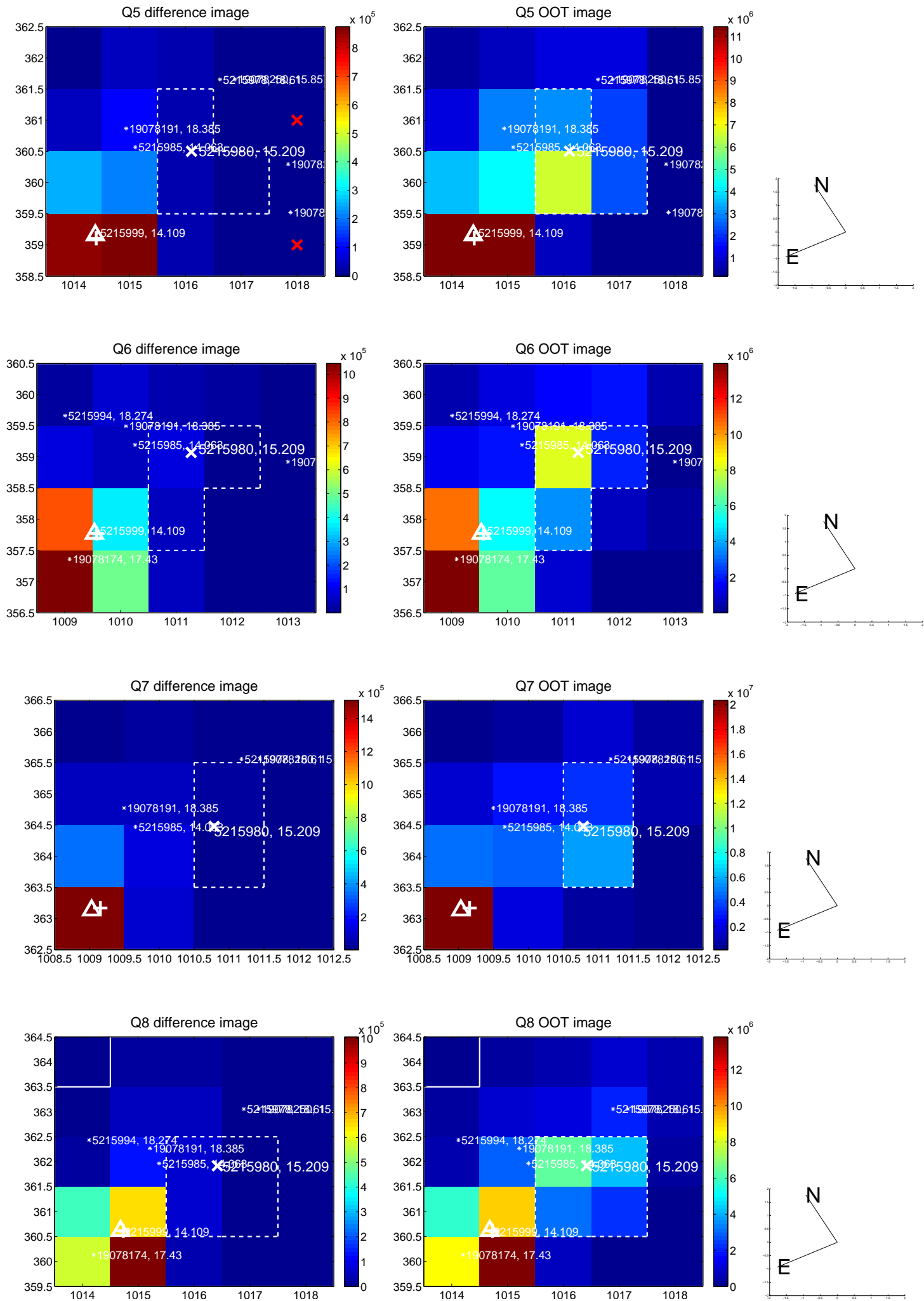


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

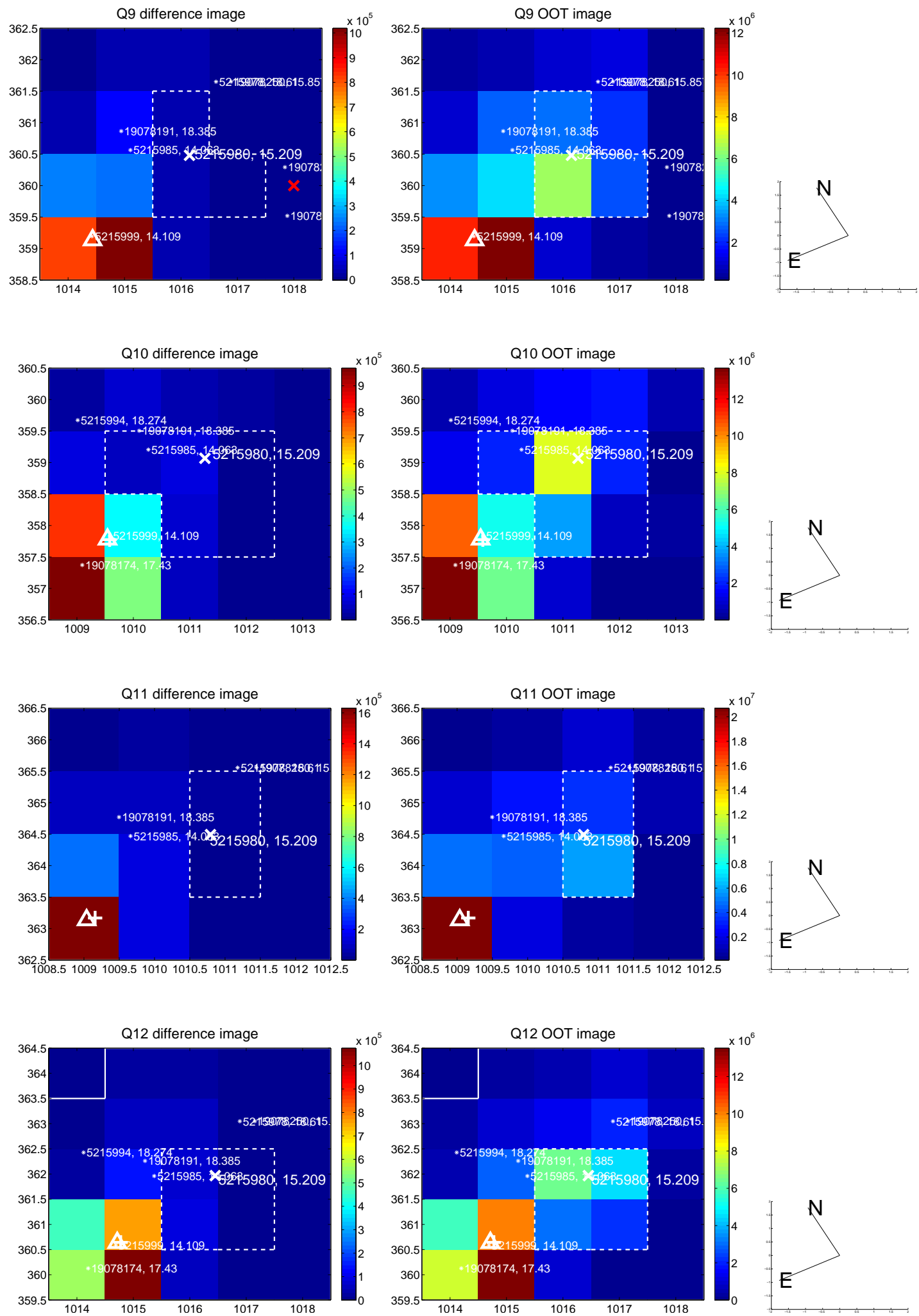
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



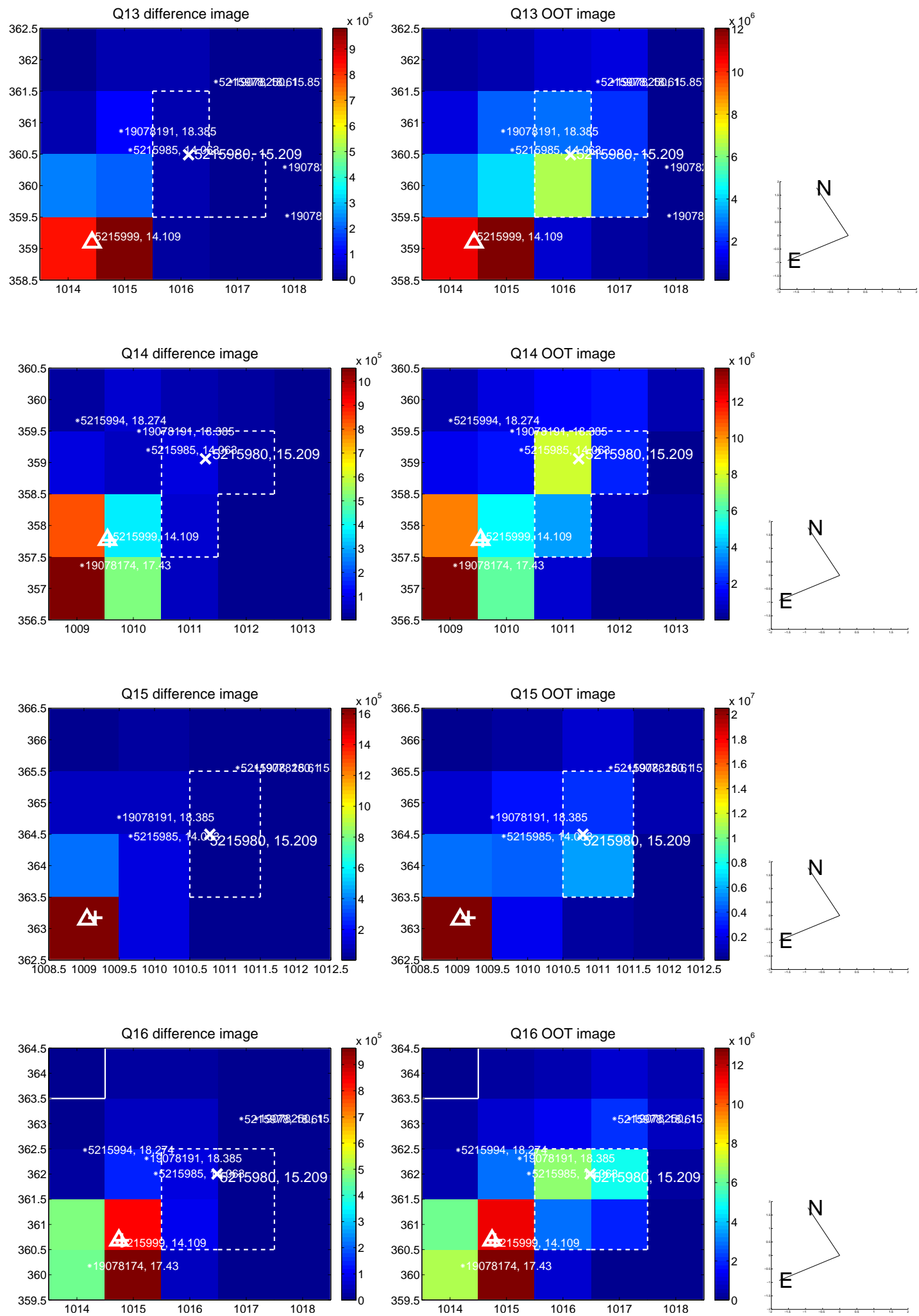
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



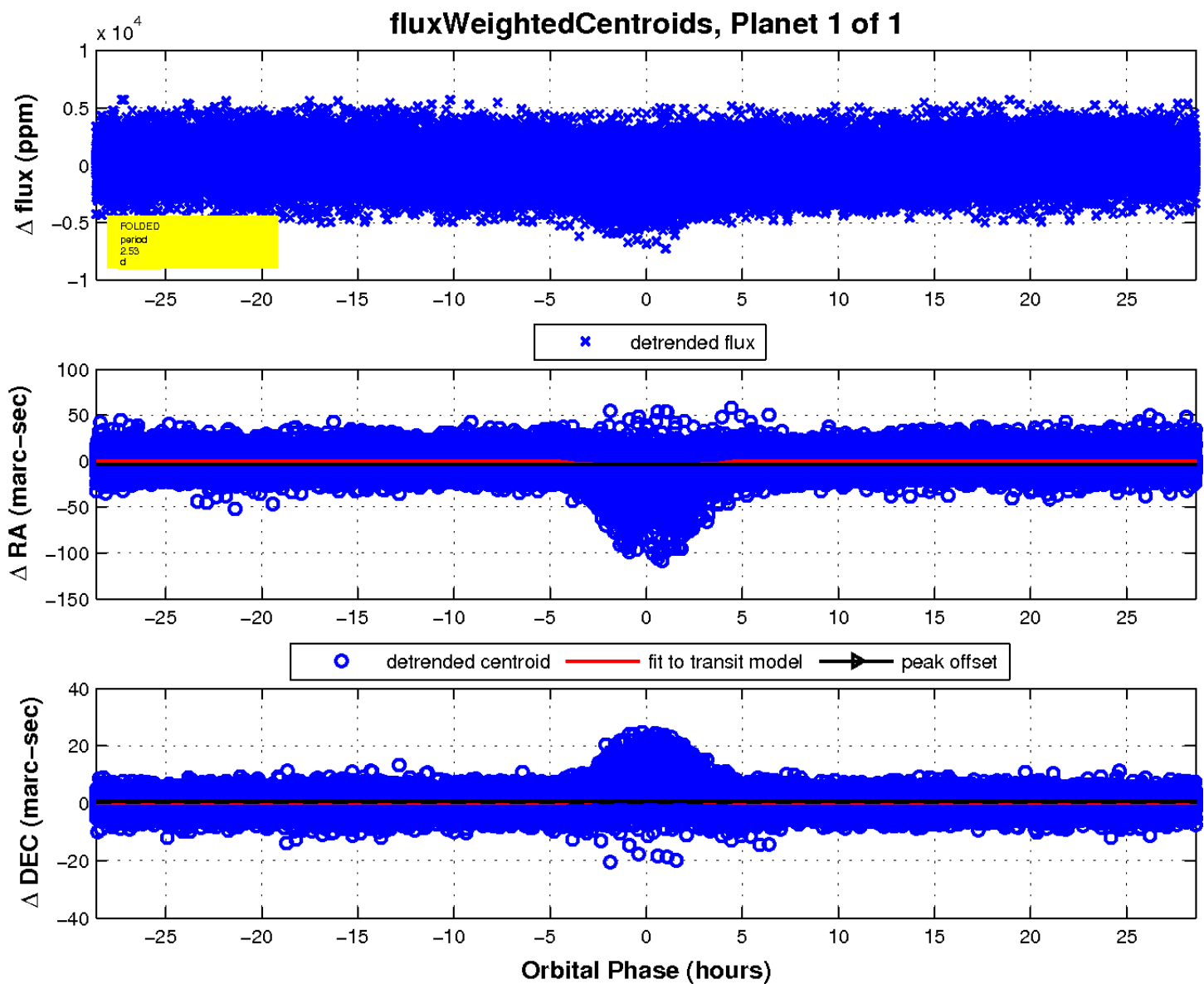
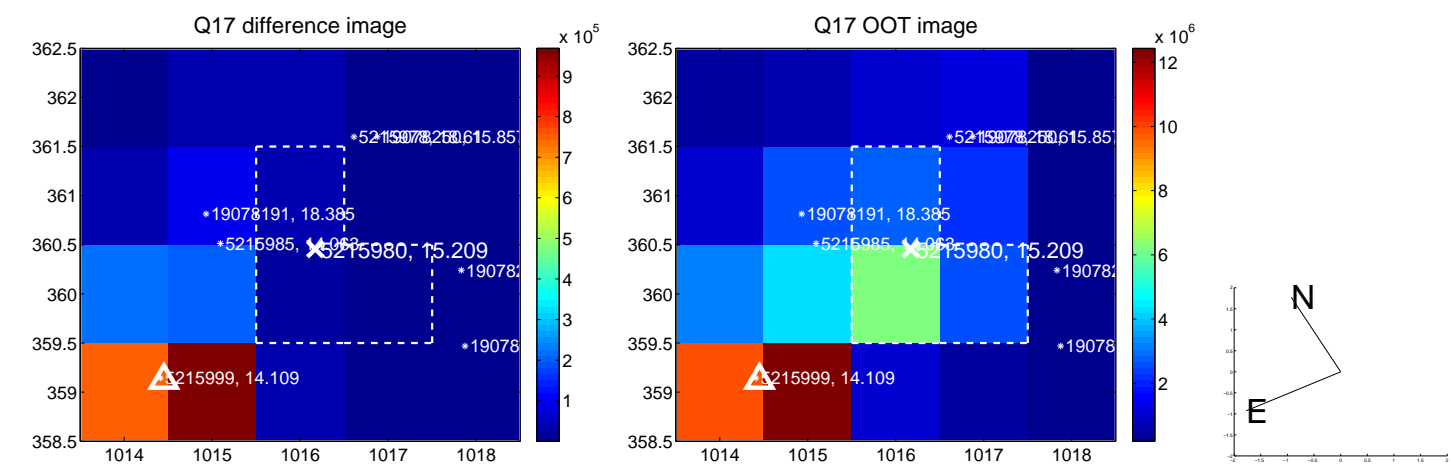
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

