

KIC 004180280

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})
004180280-01	OBS	0144.01	4.176251	133.090868	1355.2	3.705	218.1	220.4	0.78	4957	3.14	139.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004180280-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

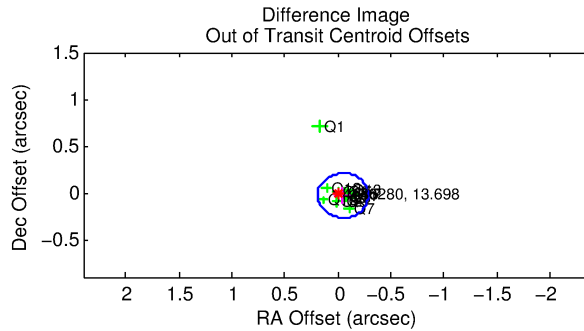
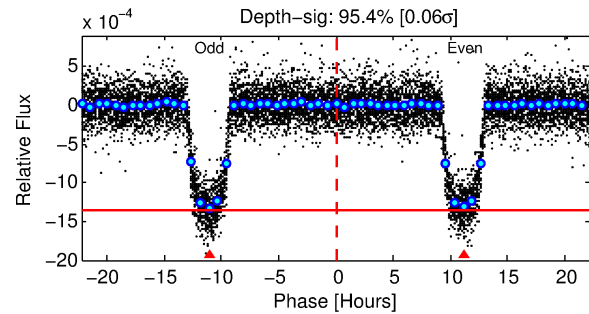
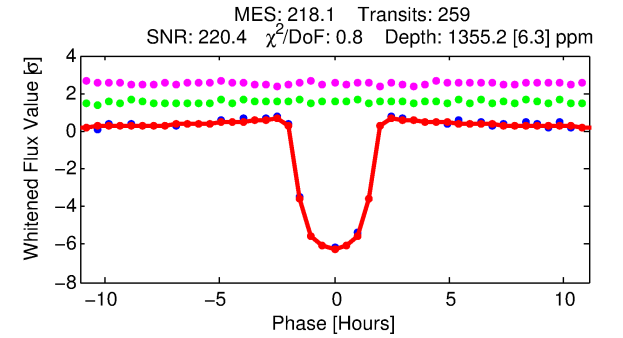
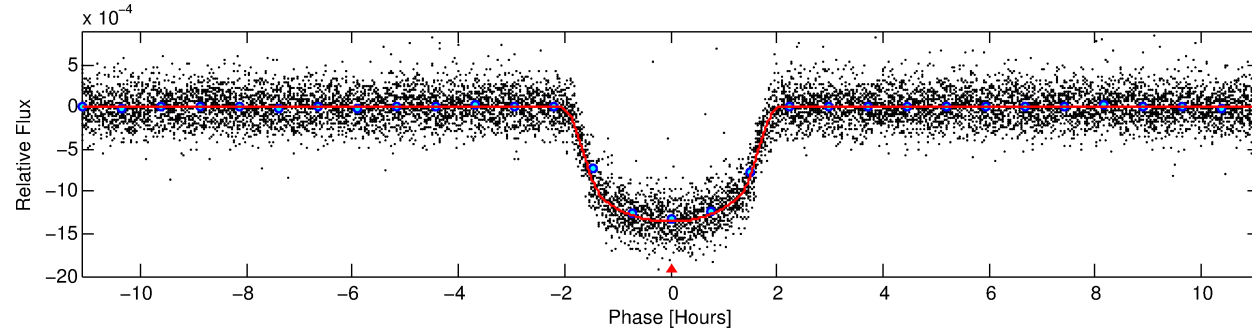
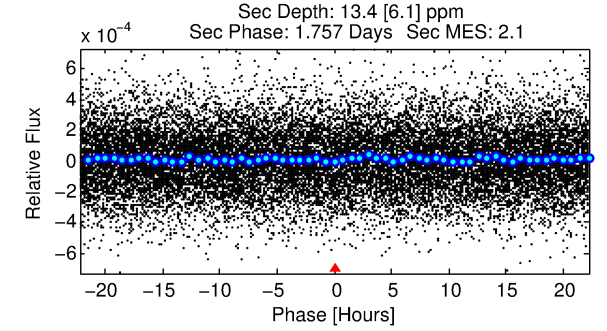
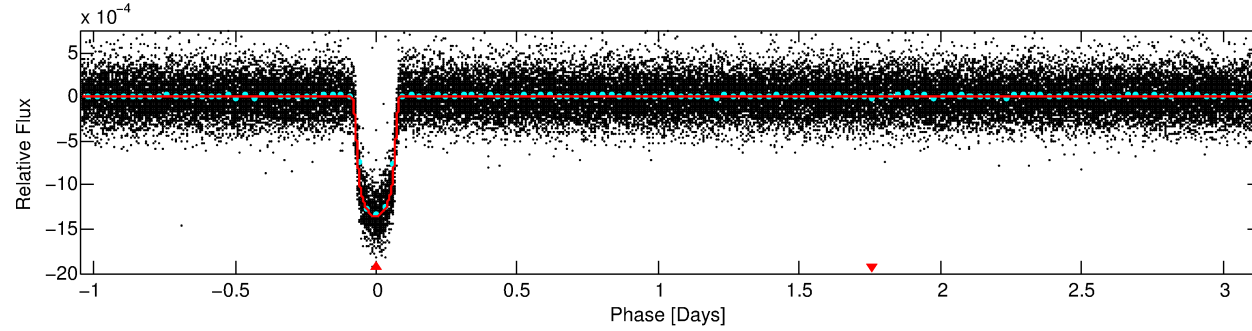
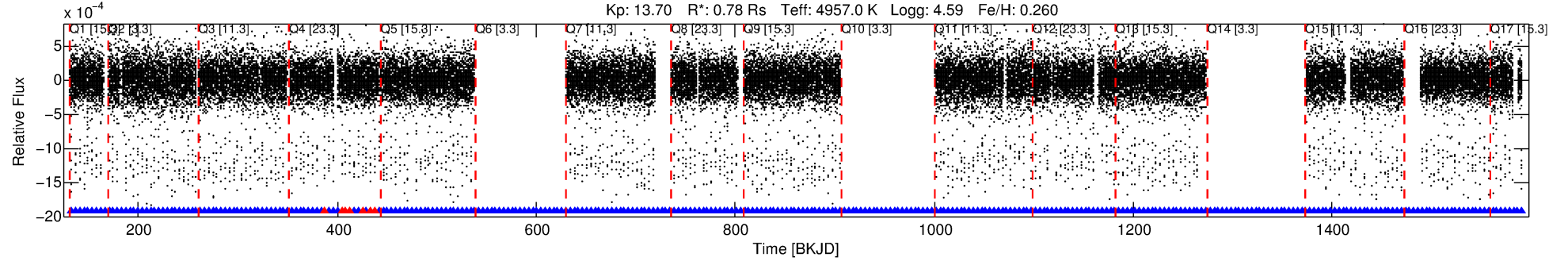
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004180280-01

No Significant Match Found

DV One-Page Summary

KIC: 4180280 Candidate: 1 of 1 Period: 4.176 d
KOI: K00144.01 Corr: 0.997



DV Fit Results:

Period = 4.17625 [0.00000] d
Epoch = 133.0909 [0.0003] BKJD
Rp/R* = 0.0371 [0.0012]
a/R* = 6.11 [0.64]
b = 0.76 [0.06]
Seff = 139.52 [18.14]
Teq = 876 [28] K
Rp = 3.14 [0.23] Re
a = 0.0483 [0.0031] AU
Ag = 1.74 [0.82] [0.90σ]
Teffp = 1557 [182] K [3.70σ]

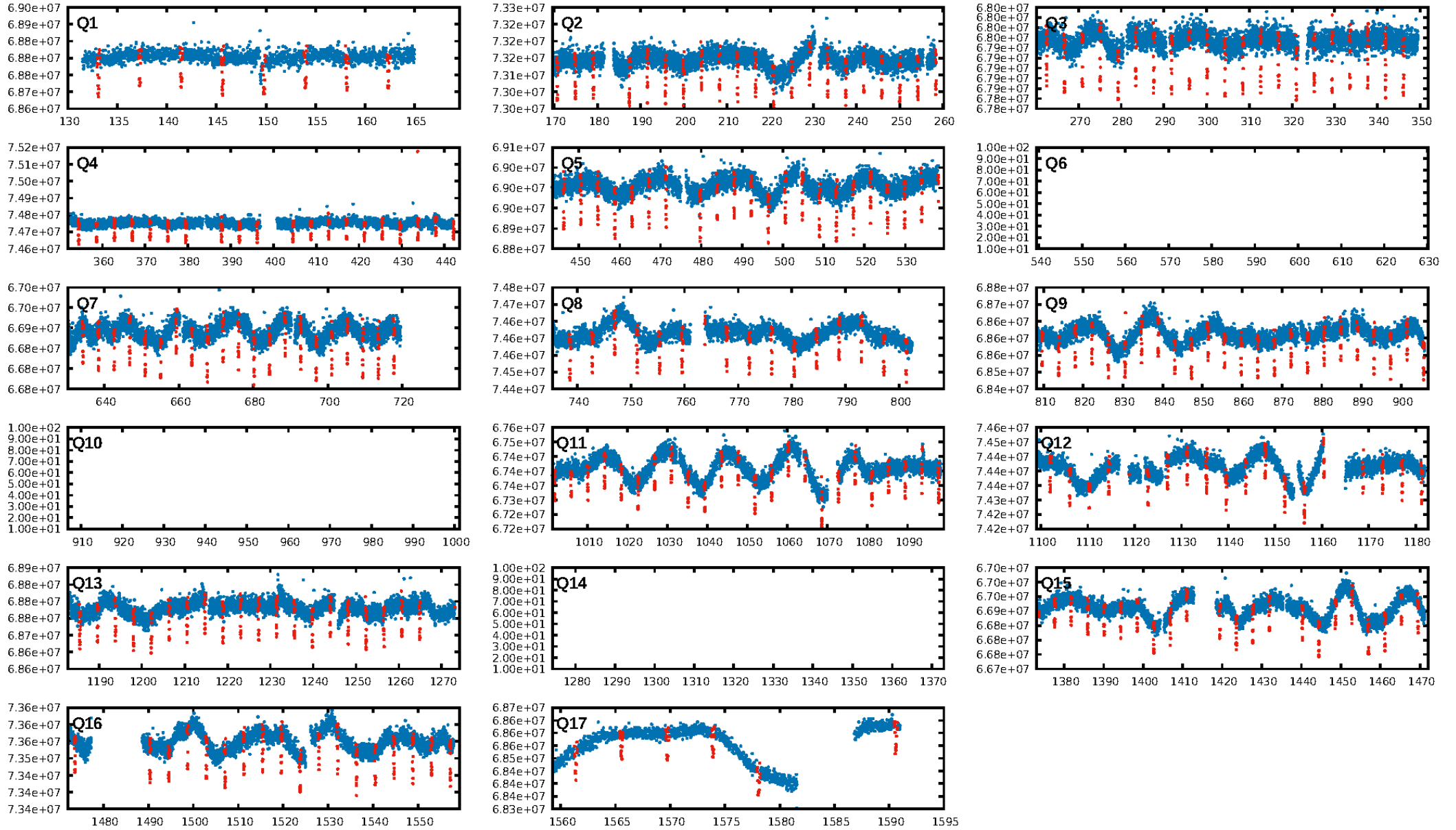
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.97 [238/245]
GhostDiagnostic-chr: 6.787
Centroid-sig: 0.0%
Centroid-so: 0.865 arcsec [11.87σ]
OotOffset-rm: 0.058 arcsec [0.74σ]
KicOffset-rm: 0.517 arcsec [6.64σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

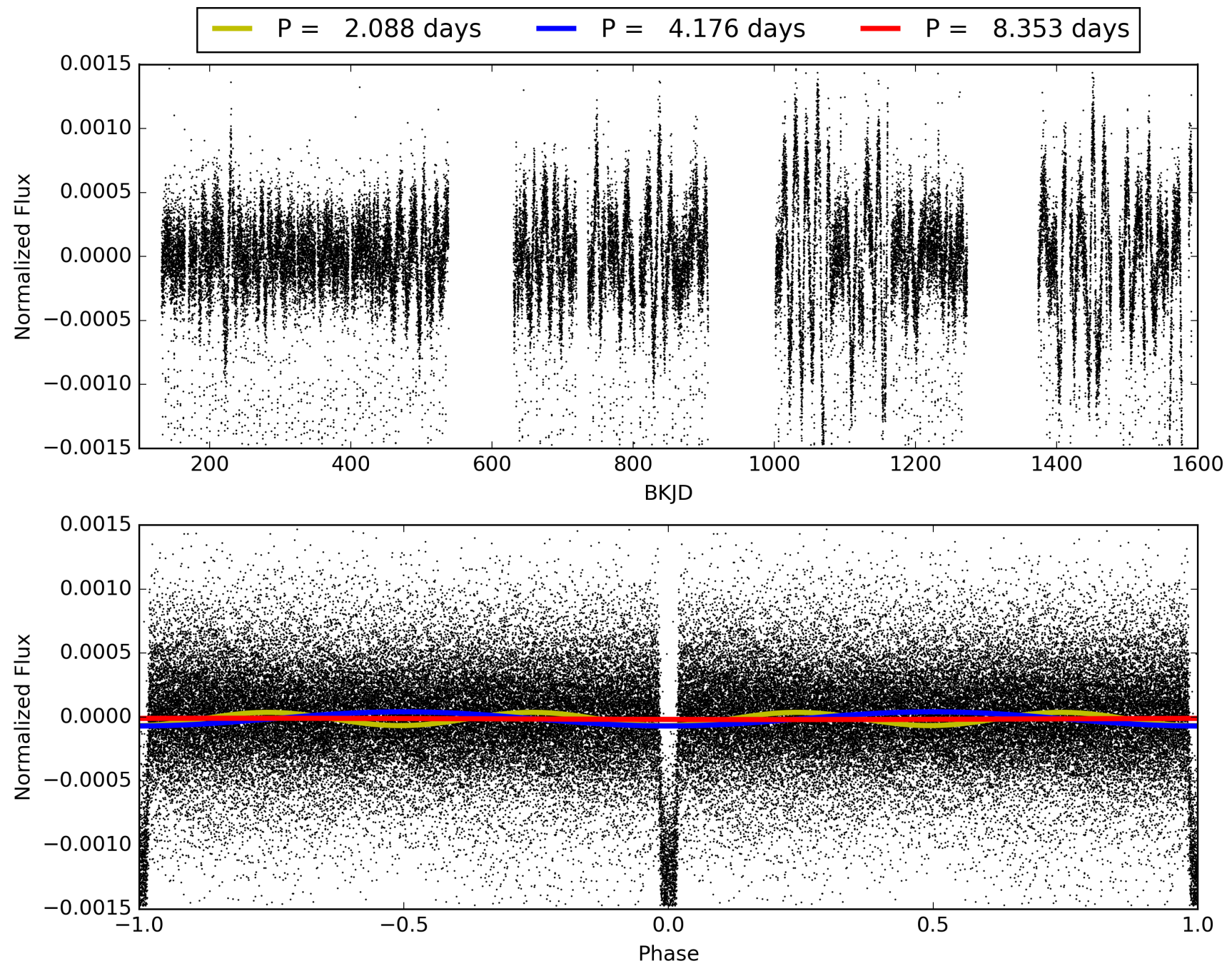
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:06:54 Z

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

TCE 004180280-01, PDC Light Curves

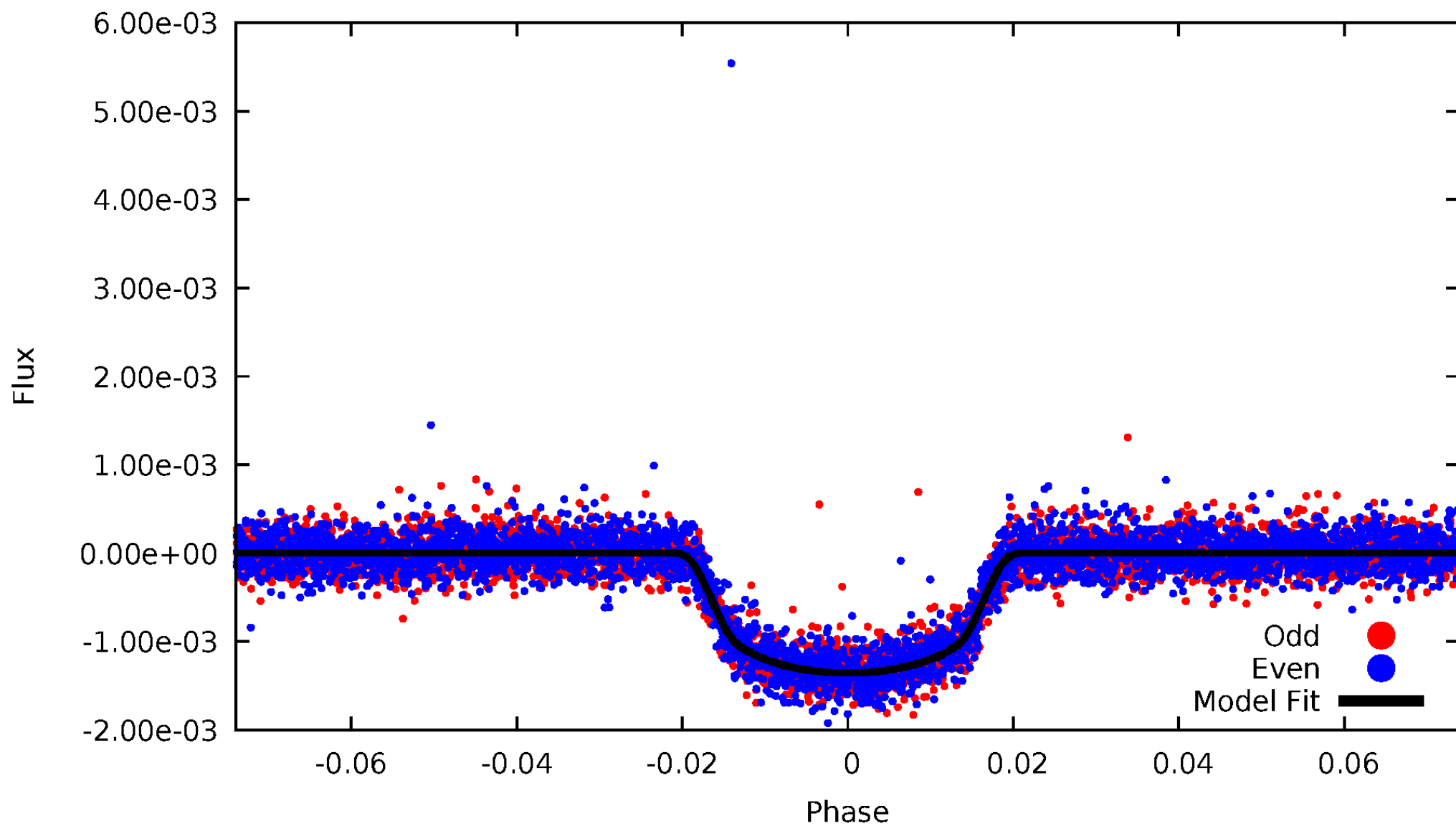


TCE 004180280-01



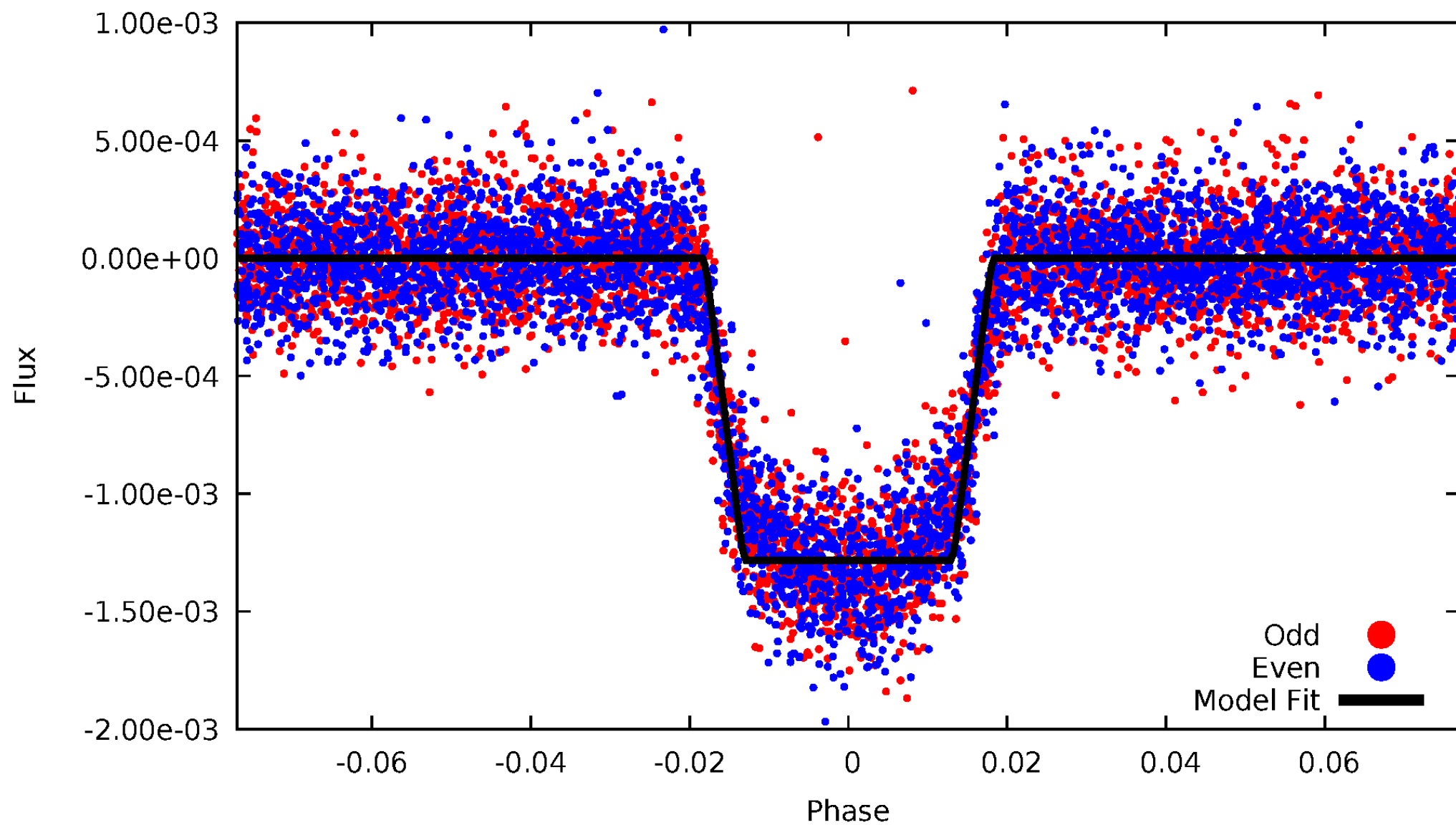
DV Odd/Even

TCE 004180280-01



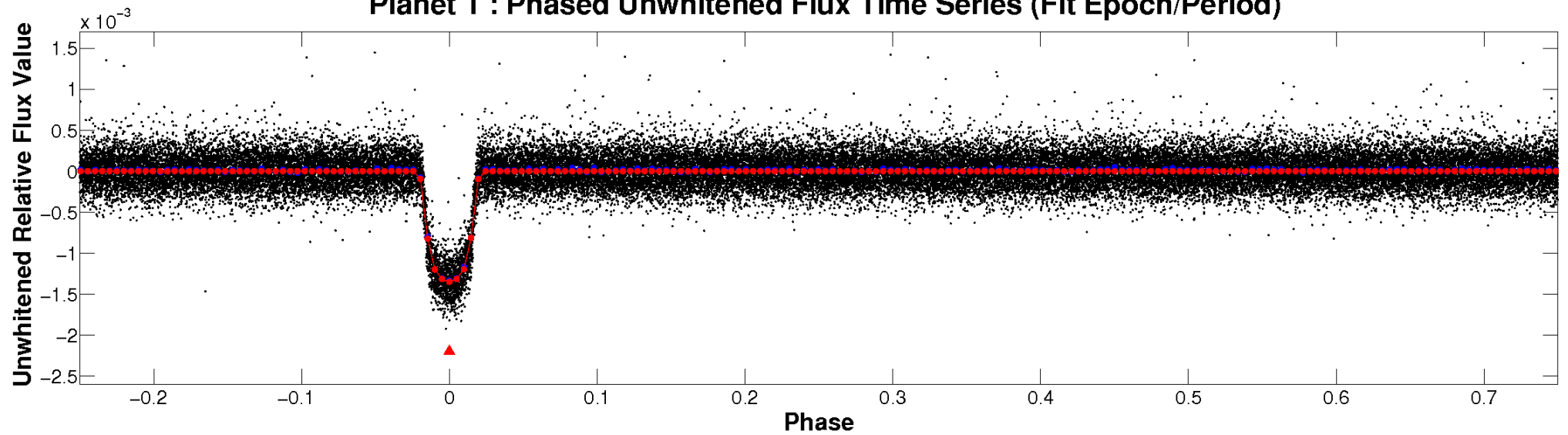
ALT Odd/Even

TCE 004180280-01

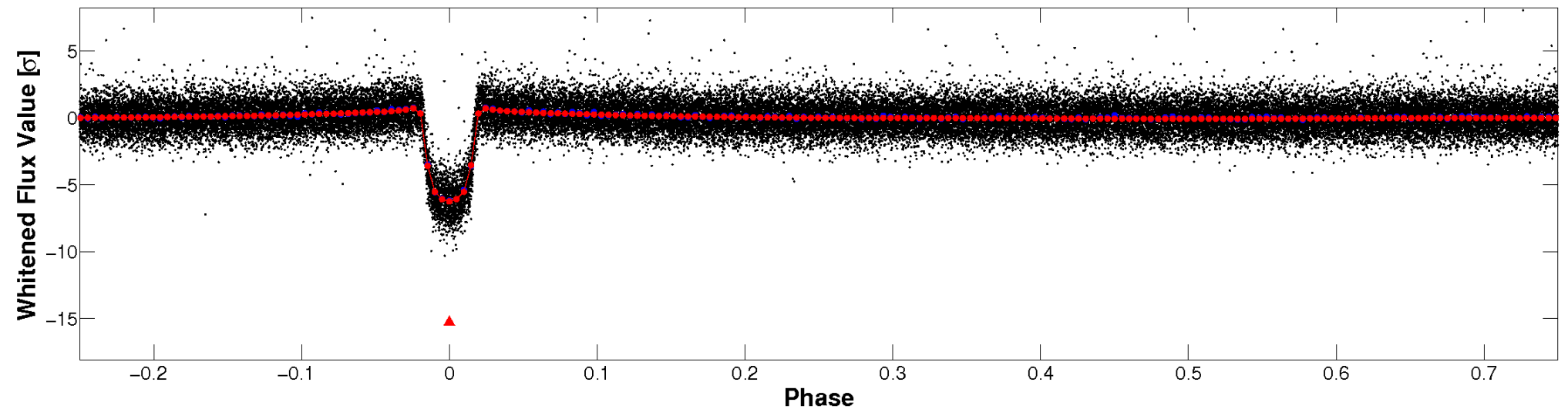


Non-Whitened Vs. Whitened Light Curve

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

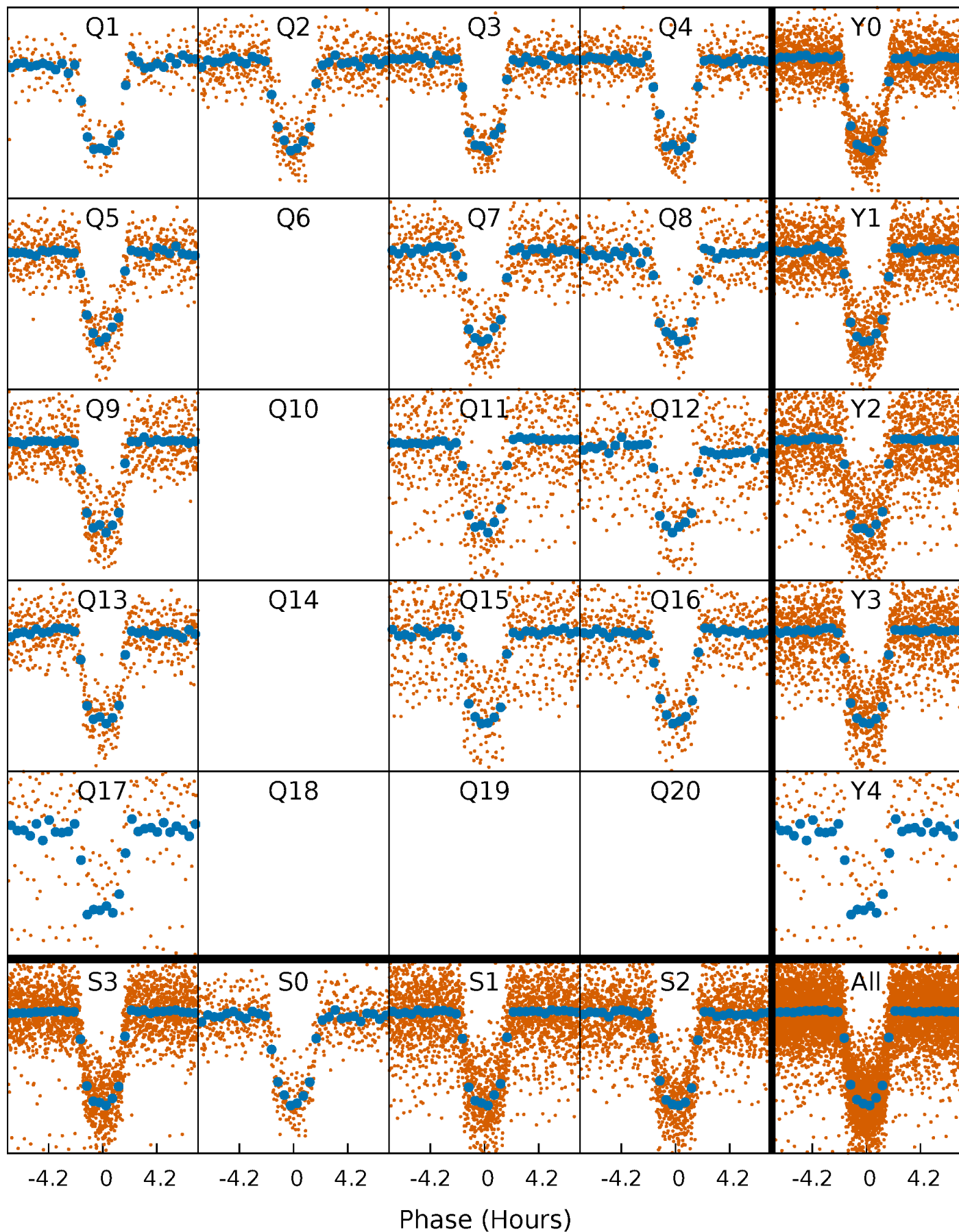


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



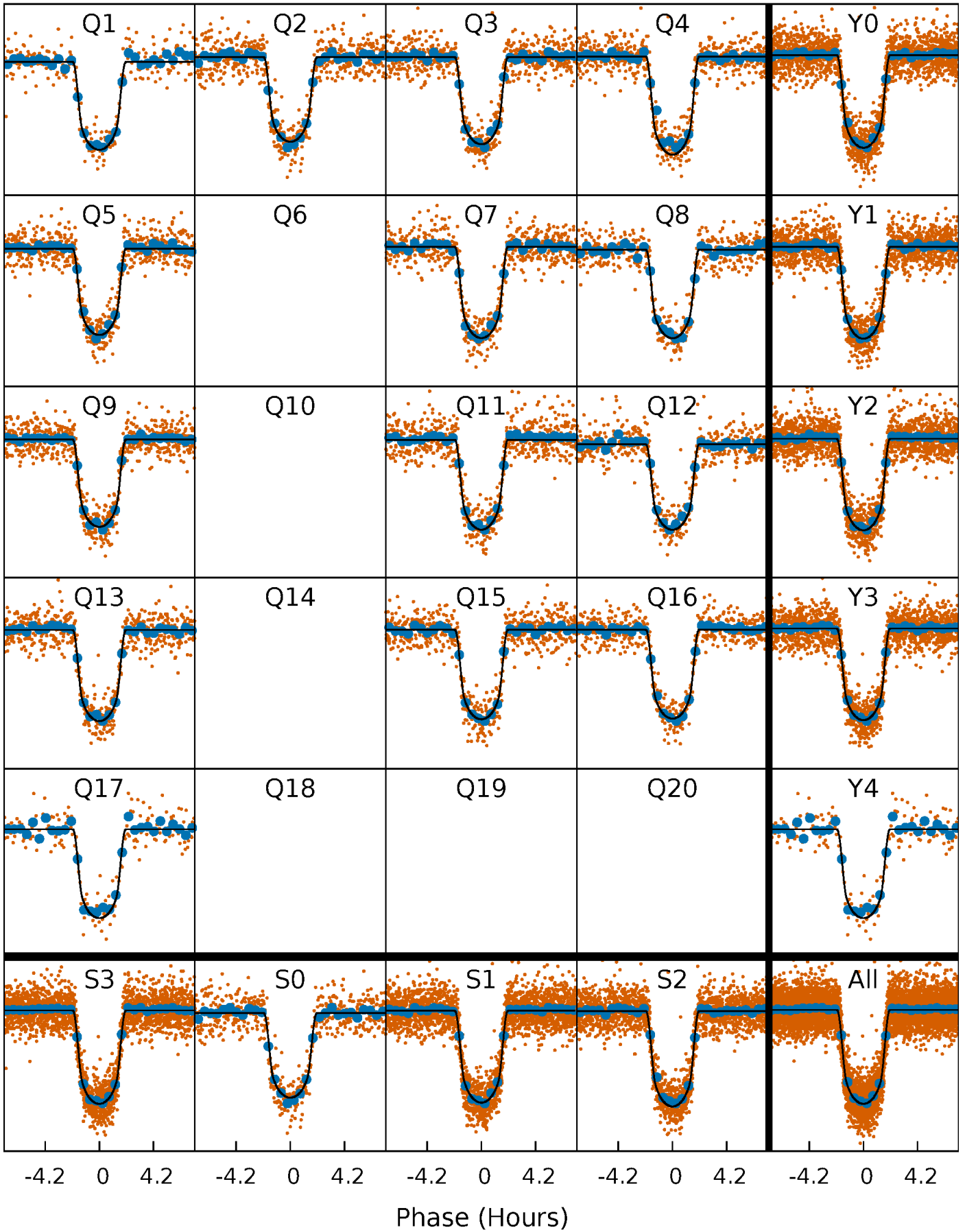
PDC Quarter-Phased Transit Curves

TCE 004180280-01 P= 4.176251 Days $T_0=133.090868$ (BKJD)



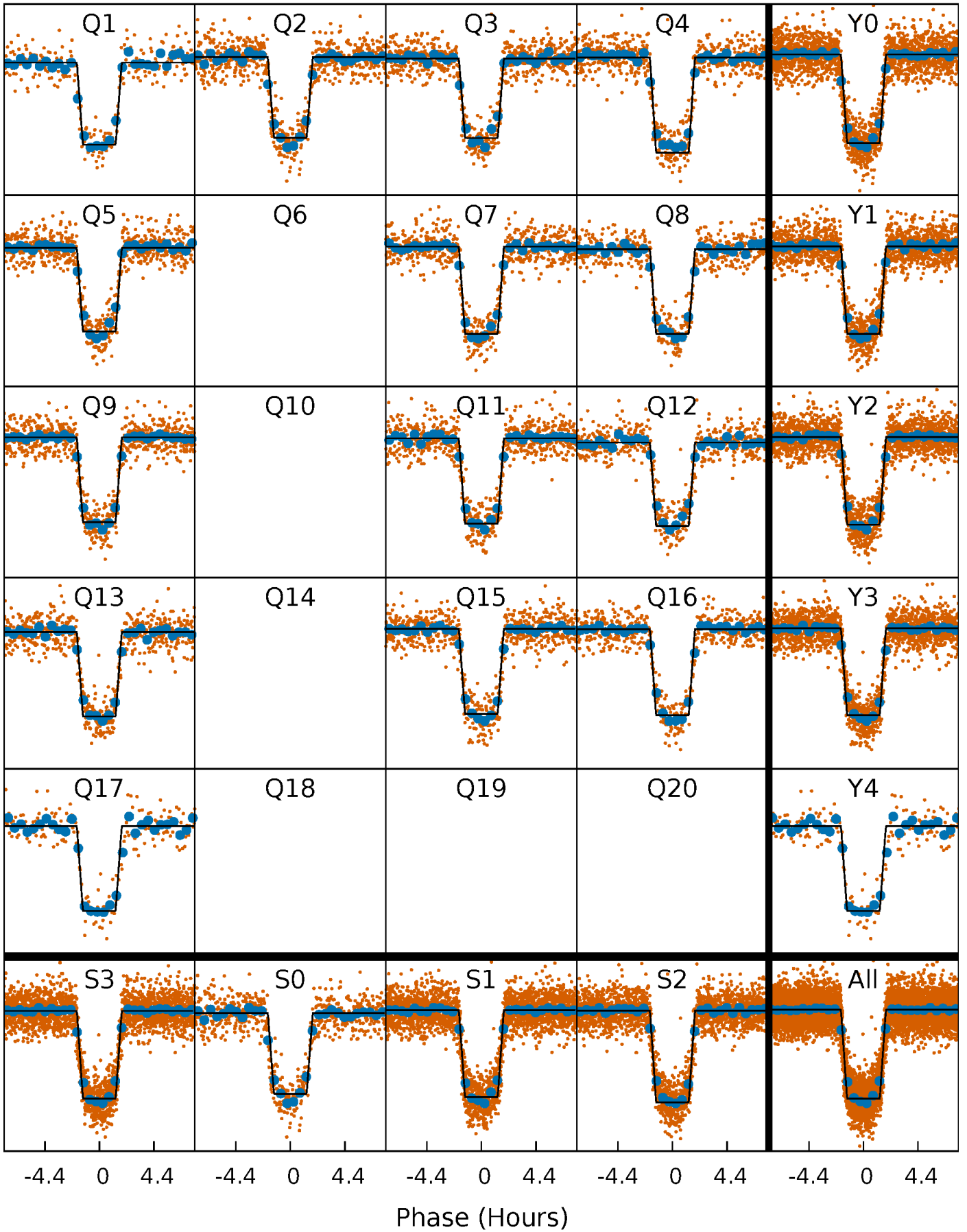
DV Quarter-Phased Transit Curves

TCE 004180280-01 P= 4.176251 Days $T_0=133.090868$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

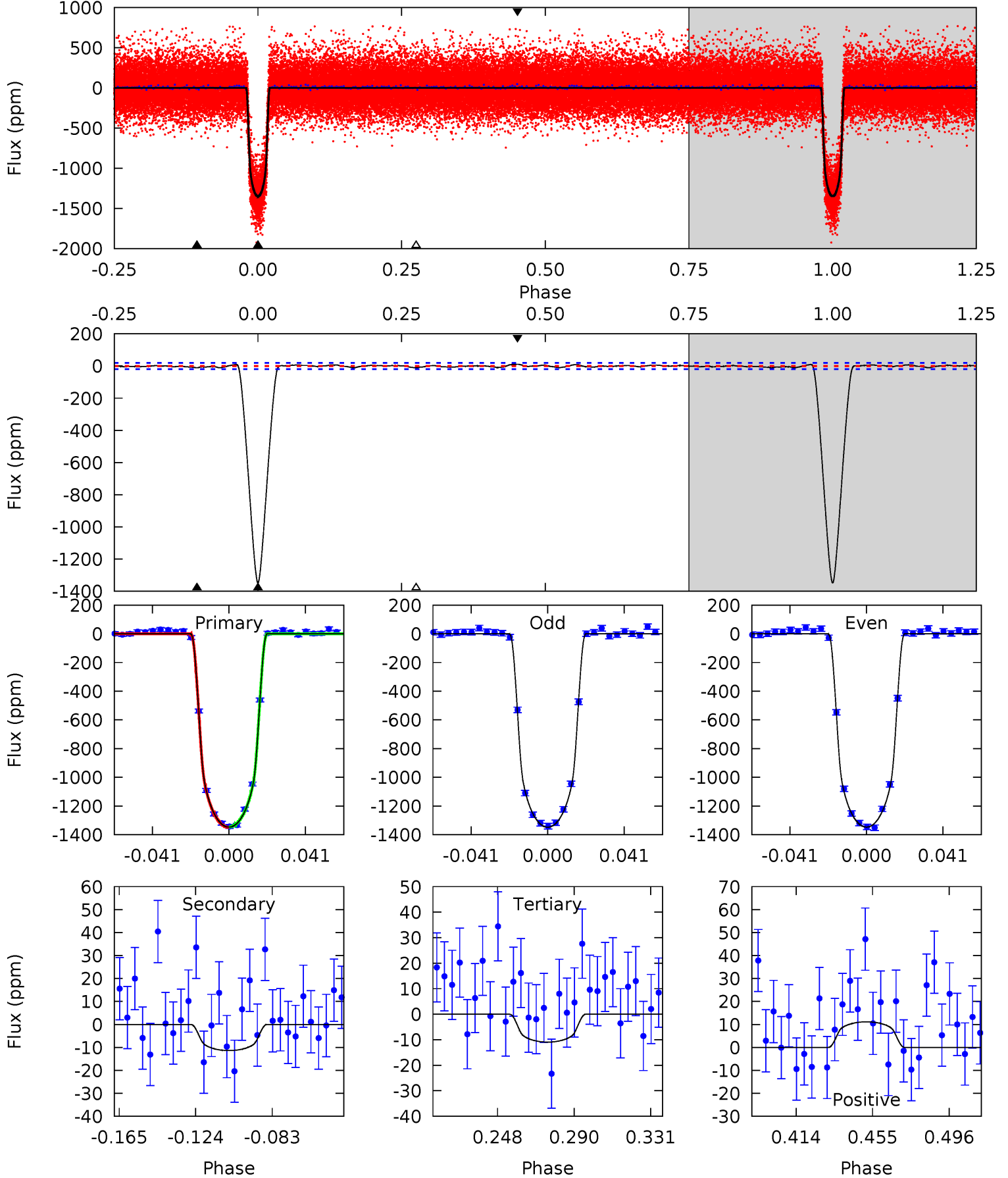
TCE 004180280-01 P= 4.176238 Days $T_0=133.093254$ (BKJD)



DV Model-Shift Uniqueness Test

004180280-01, P = 4.176251 Days, E = 128.914617 Days

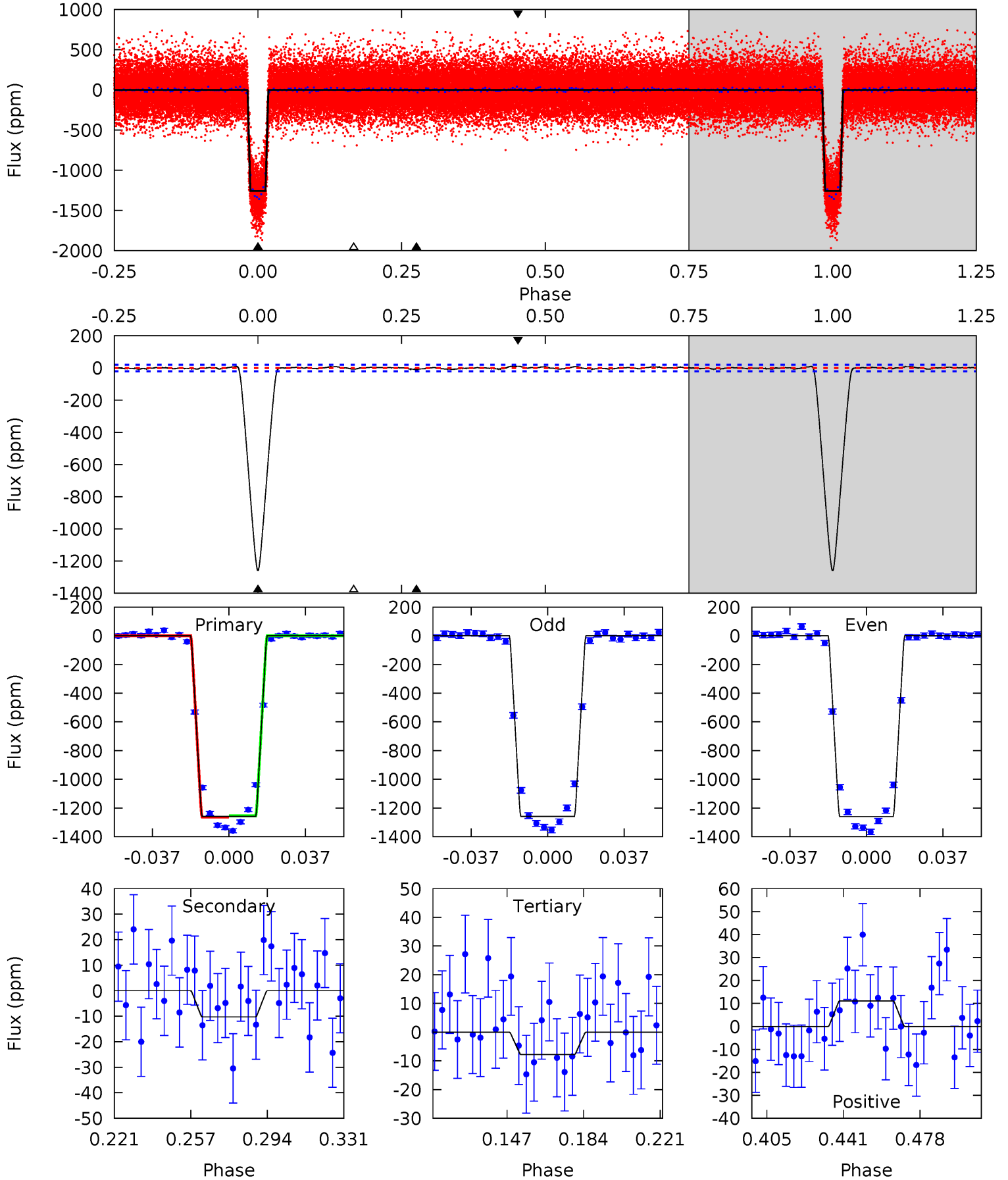
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
330.0	2.79	2.68	2.73	4.75	2.04	1.05	327.4	327.3	0.11	0.06	0.09	1.00	0.01	0.42



Alt Model-Shift Uniqueness Test

004180280-01, P = 4.176238 Days, E = 128.917016 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
295.4	2.40	1.83	2.60	4.77	2.09	0.95	293.6	292.8	0.57	-0.20	0.08	0.99	0.01	1.02



Stellar Parameters For KIC 004180280

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4957^{+100}_{-100}	$4.594^{+0.014}_{-0.060}$	$0.260^{+0.150}_{-0.150}$	$0.776^{+0.051}_{-0.028}$	$0.867^{+0.025}_{-0.056}$	$2.615^{+0.188}_{-0.492}$
	+2%/-2%	+0%/-1%	+58%/-58%	+7%/-4%	+3%/-6%	+7%/-19%
Source	SPE59	SPE59	SPE59	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 004180280-01 / KOI 0144.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-11 ± 4	$3.18^{+0.14}_{-0.14}$	1236^{+31}_{-30}	2301^{+107}_{-147}	$1.412^{+0.527}_{-0.480}$
Alt.	-10 ± 4	$3.07^{+0.16}_{-0.14}$	1235^{+30}_{-30}	2293^{+126}_{-190}	$1.380^{+0.595}_{-0.584}$

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

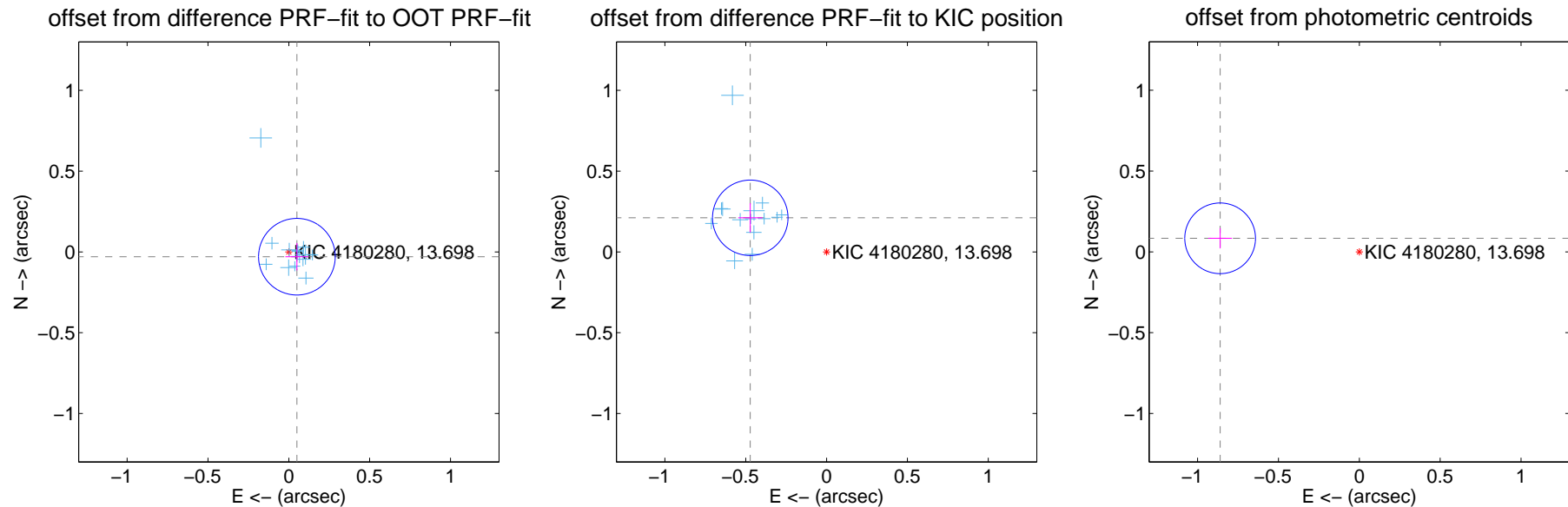
DV Centroid Data

Supplemental centroid analysis for 004180280-01. Kepler magnitude: 13.70. Transit SNR 220.40

There are 14 quarters with good PRF difference image offsets

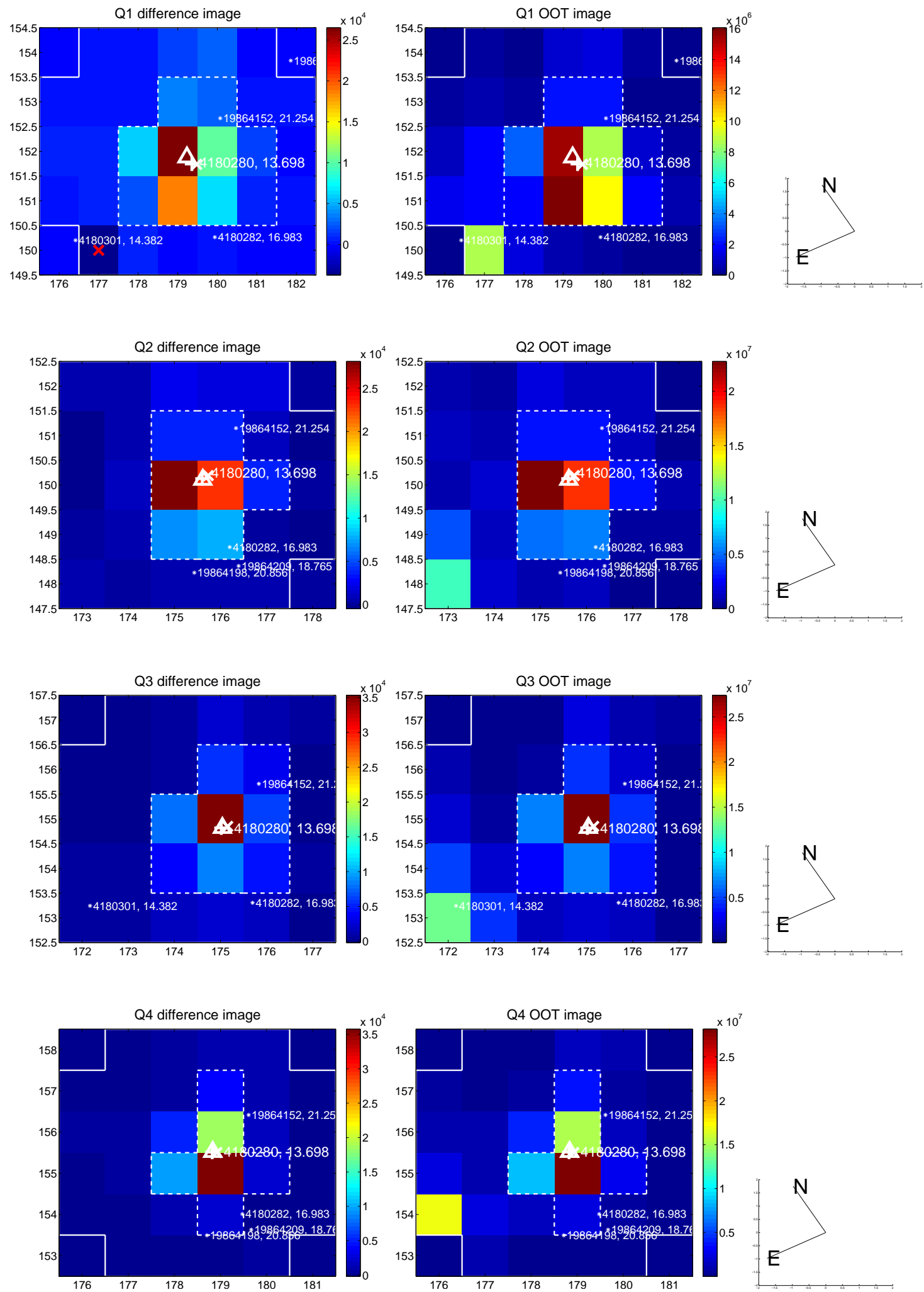
The direct PRF centroid is offset from the target star catalog position by about 0.62 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.058 ± 0.079	0.74	-0.050 ± 0.071	-0.030 ± 0.085
PRF-fit source offset from KIC position	0.517 ± 0.078	6.64	0.472 ± 0.075	0.211 ± 0.090
photometric centroid source offset	0.86 ± 0.07	11.87	0.86 ± 0.07	0.08 ± 0.06

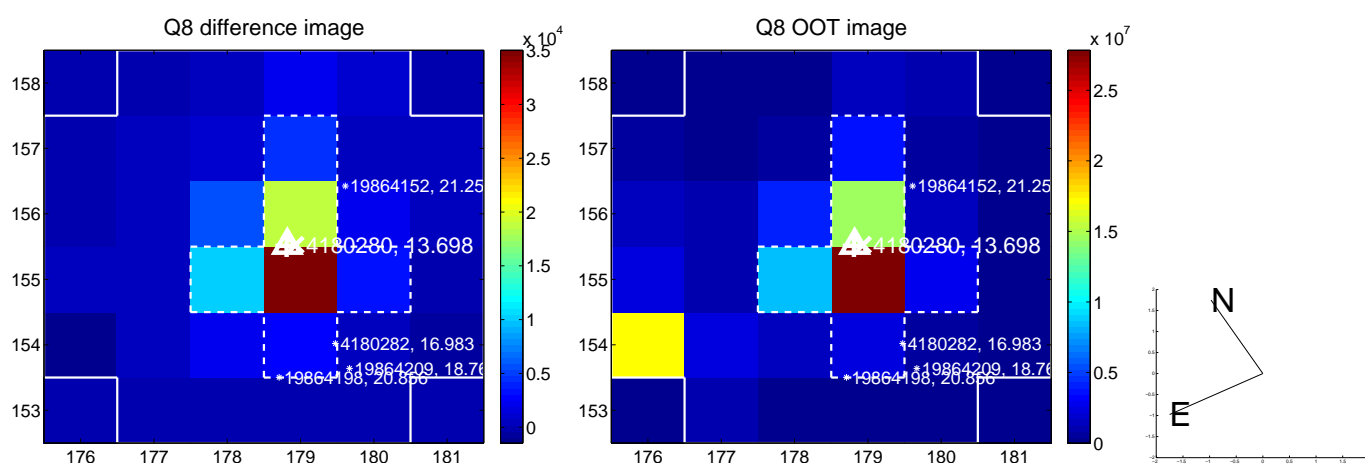
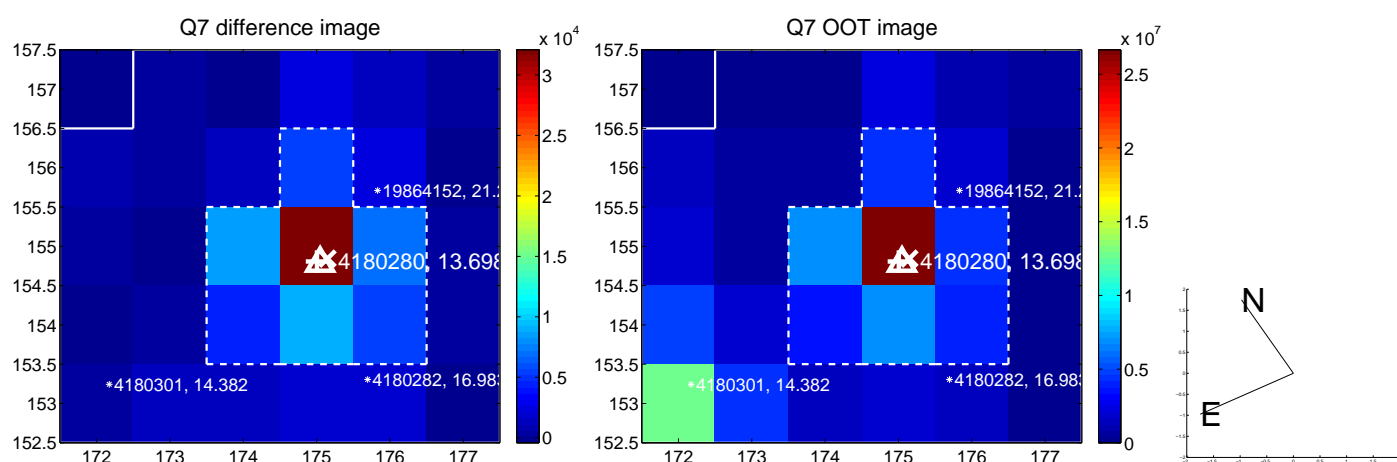
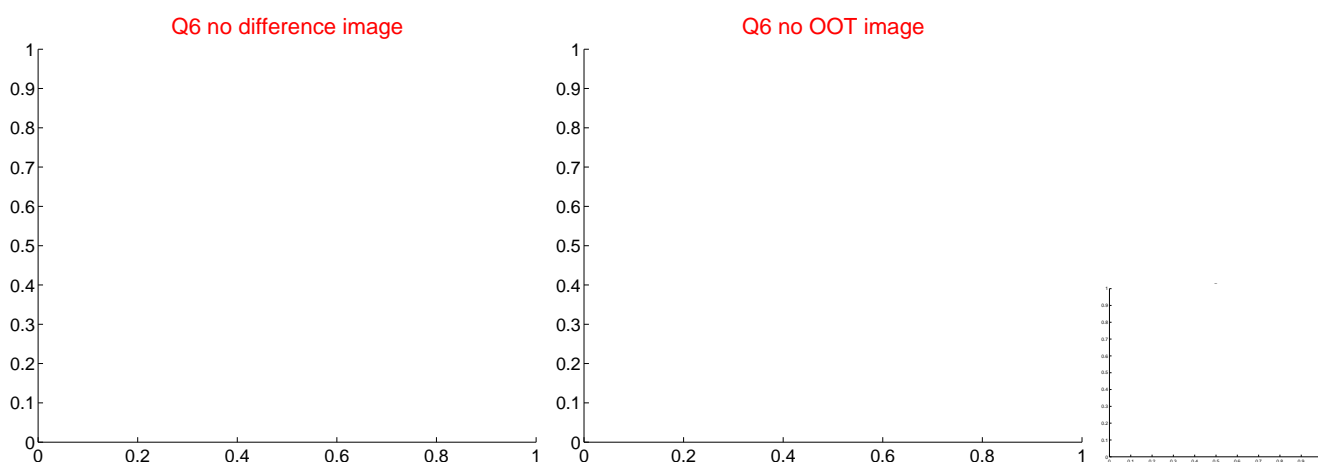
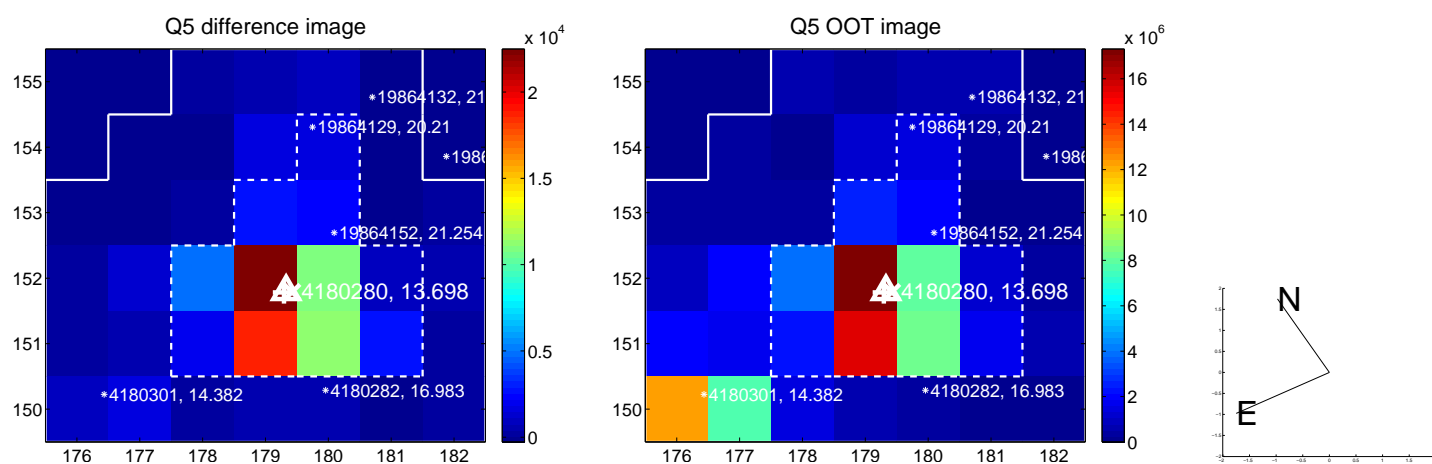


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

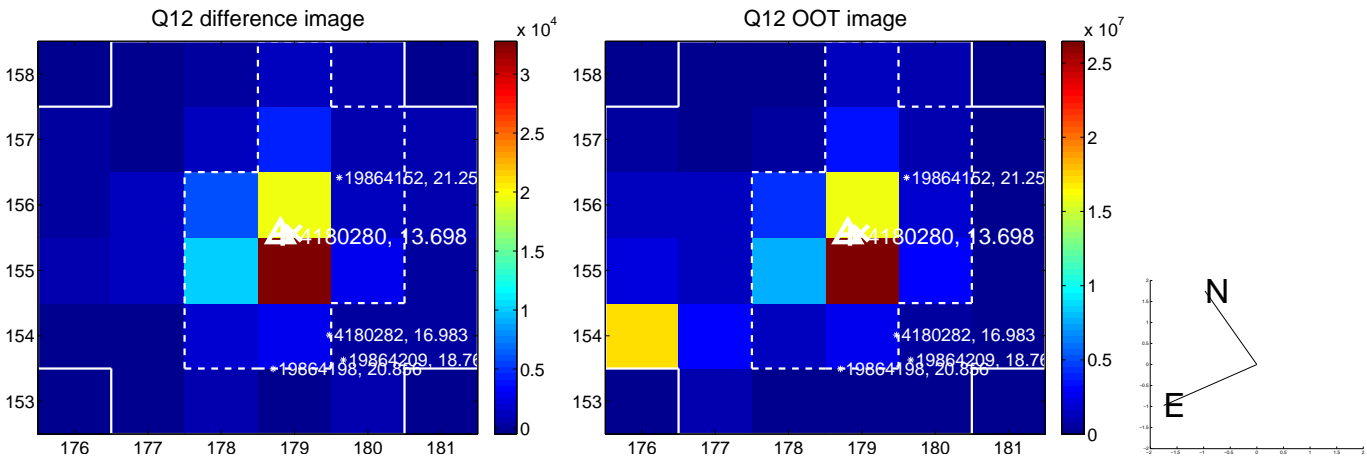
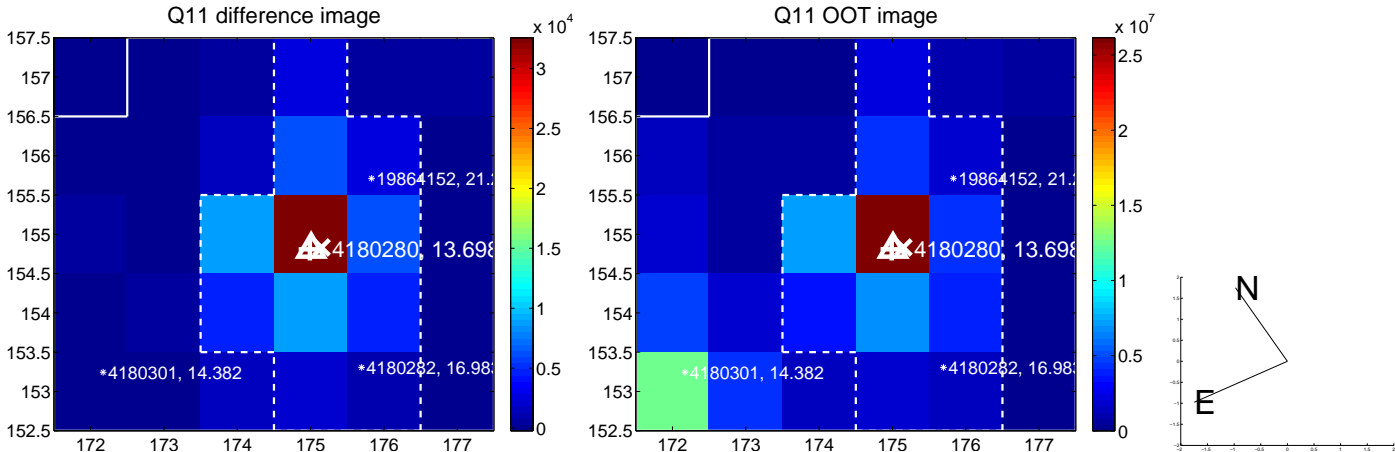
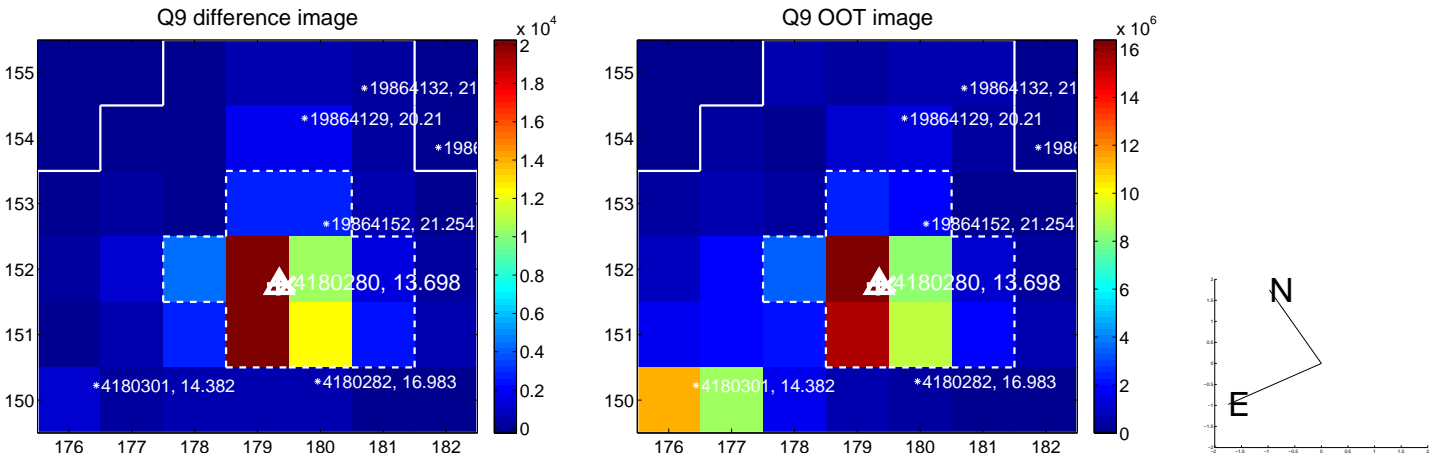
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



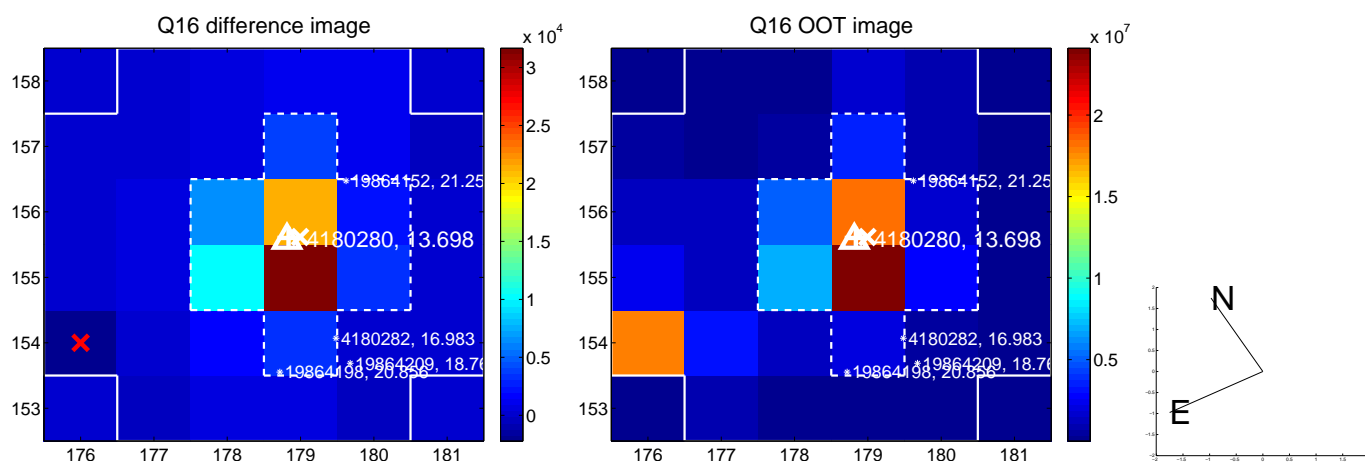
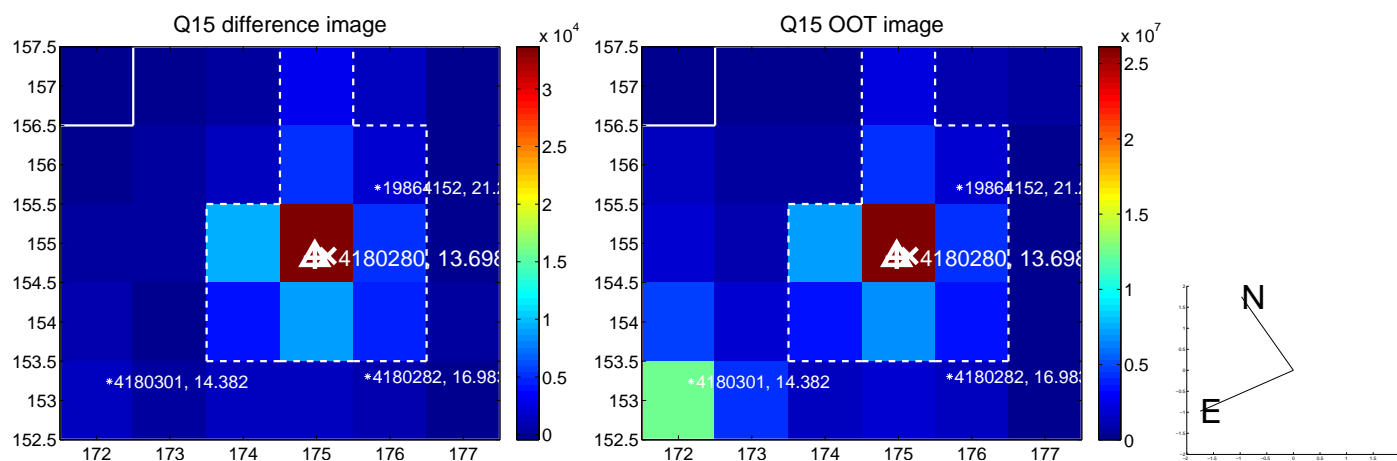
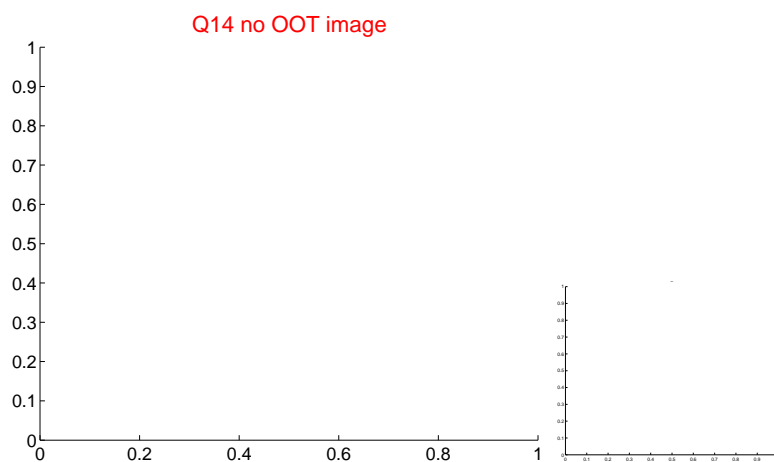
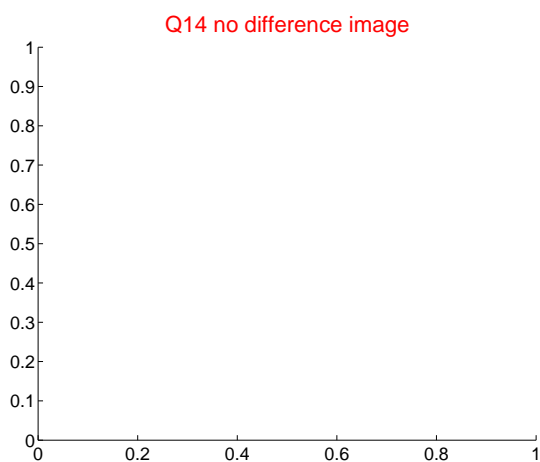
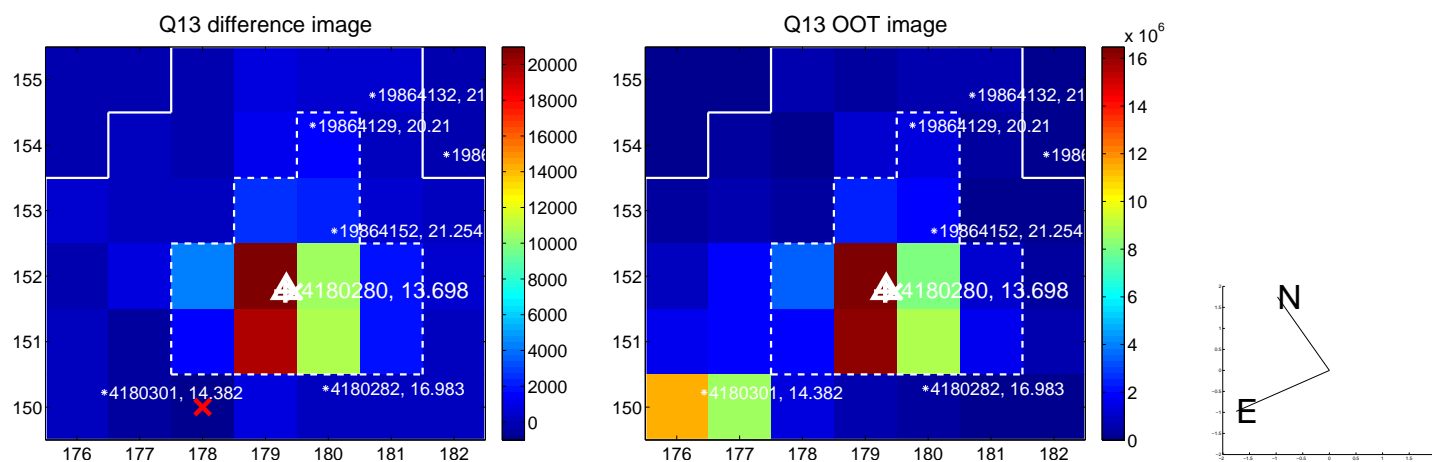
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



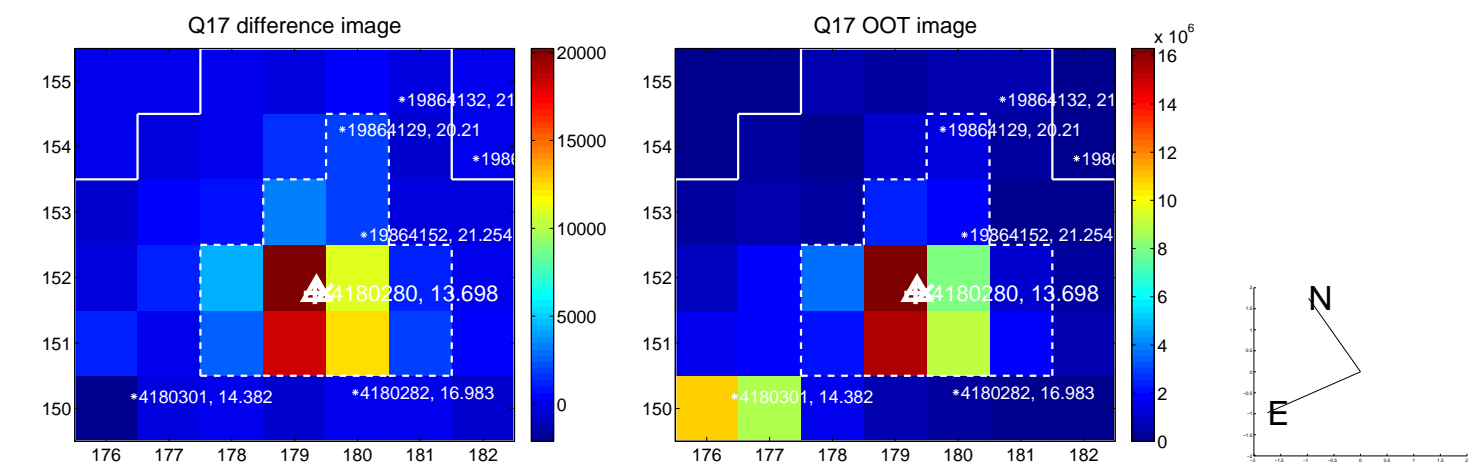
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



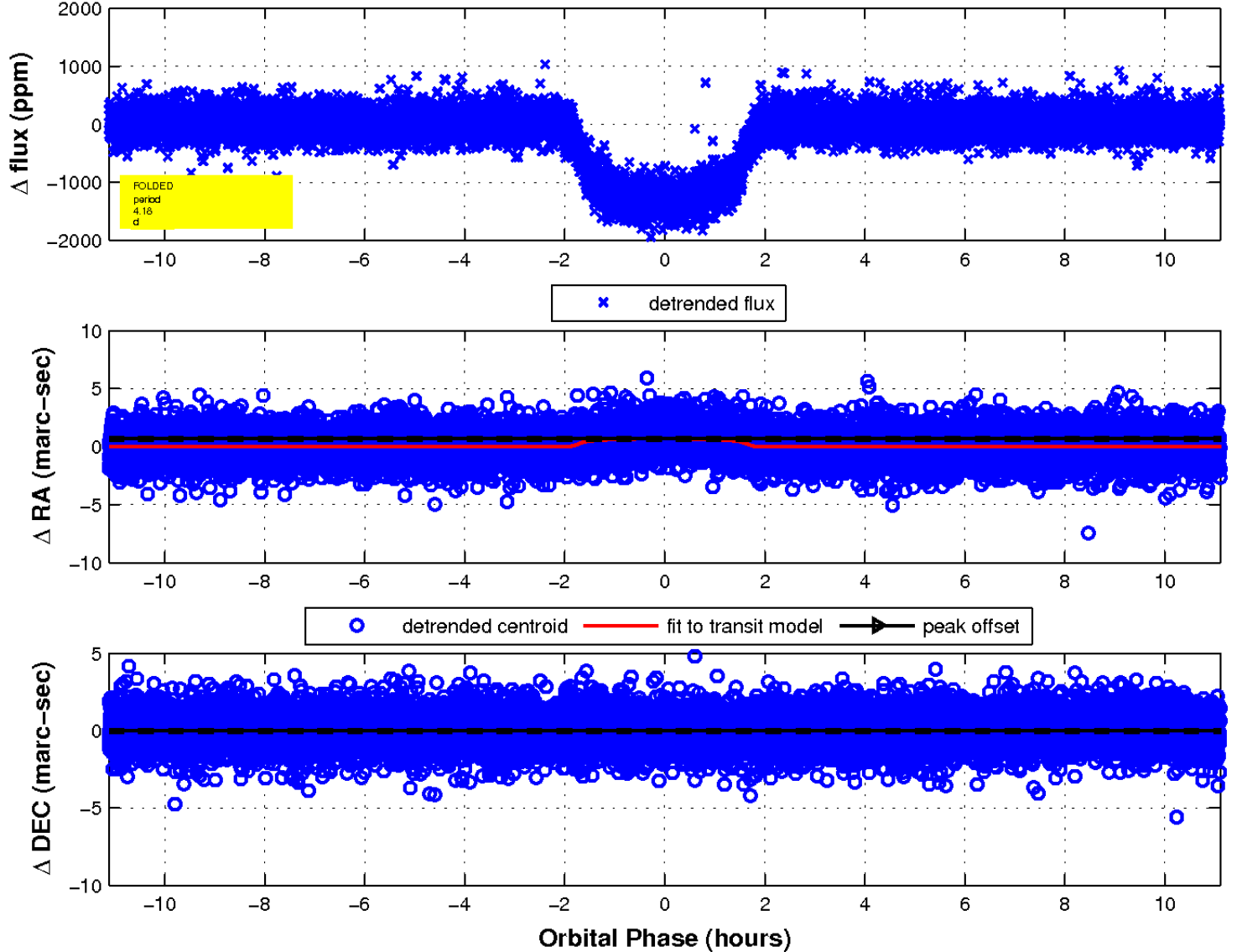
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

