

KIC 008142787

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})
008142787-01	OBS	4005.01	178.139514	210.117251	656.3	10.152	17.8	19.0	0.88	5431	2.53	1.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008142787-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

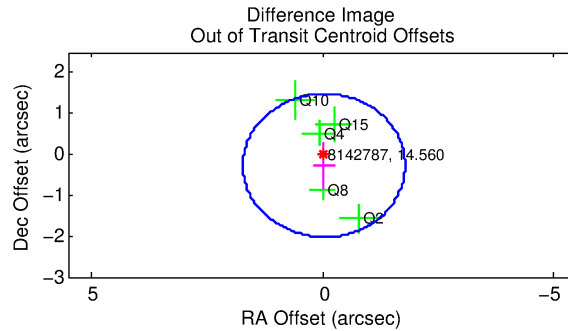
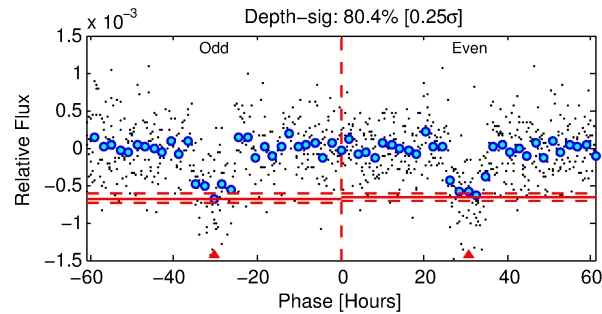
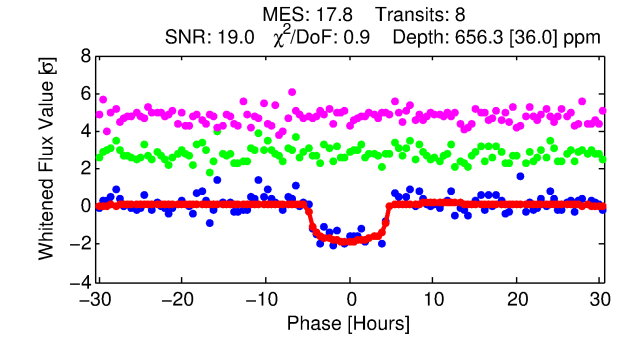
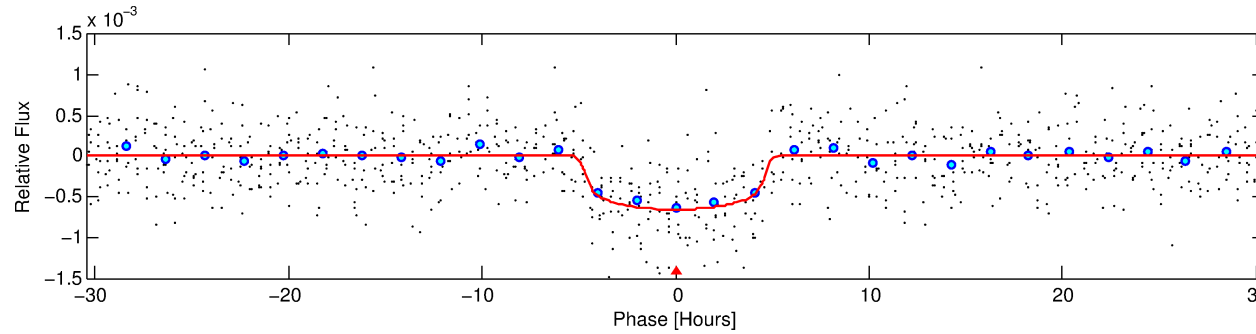
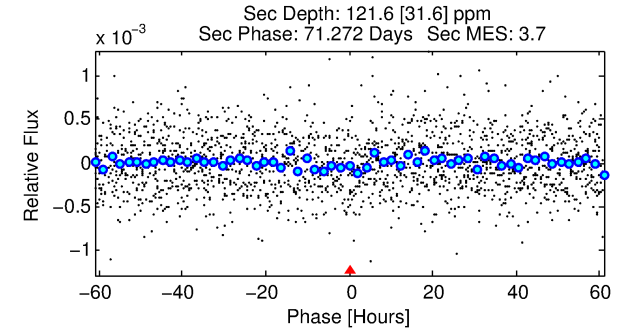
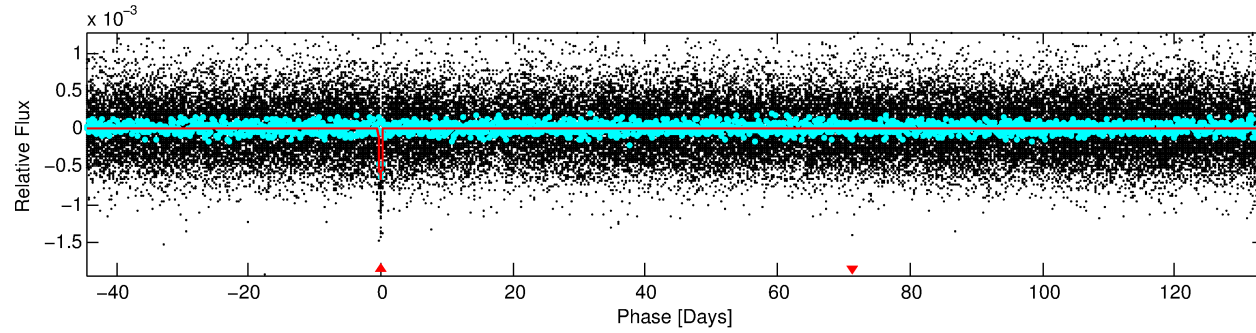
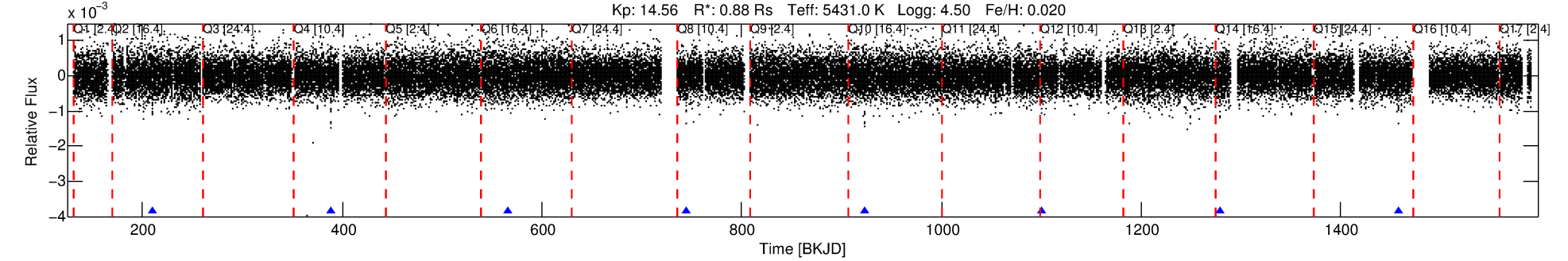
Ephemeris Match Information For 008142787-01

No Significant Match Found

DV One-Page Summary

KIC: 8142787 Candidate: 1 of 1 Period: 178.140 d
KOI: K04005.01 Name: Kepler-439b Corr: 0.992

Kp: 14.56 R*: 0.88 Rs Teff: 5431.0 K Logg: 4.50 Fe/H: 0.020



DV Fit Results:

Period = 178.13951 [0.00238] d
Epoch = 210.1173 [0.0099] BKJD
Rp/R* = 0.0264 [0.0039]
a/R* = 83.48 [48.46]
b = 0.82 [0.24]
Seff = 1.70 [0.25]
Teq = 291 [11] K
Rp = 2.53 [0.45] Re
a = 0.5946 [0.0526] AU
Ag = 3691.23 [1529.40] [2.41σ]
Teffp = 3511 [347] K [9.26σ]

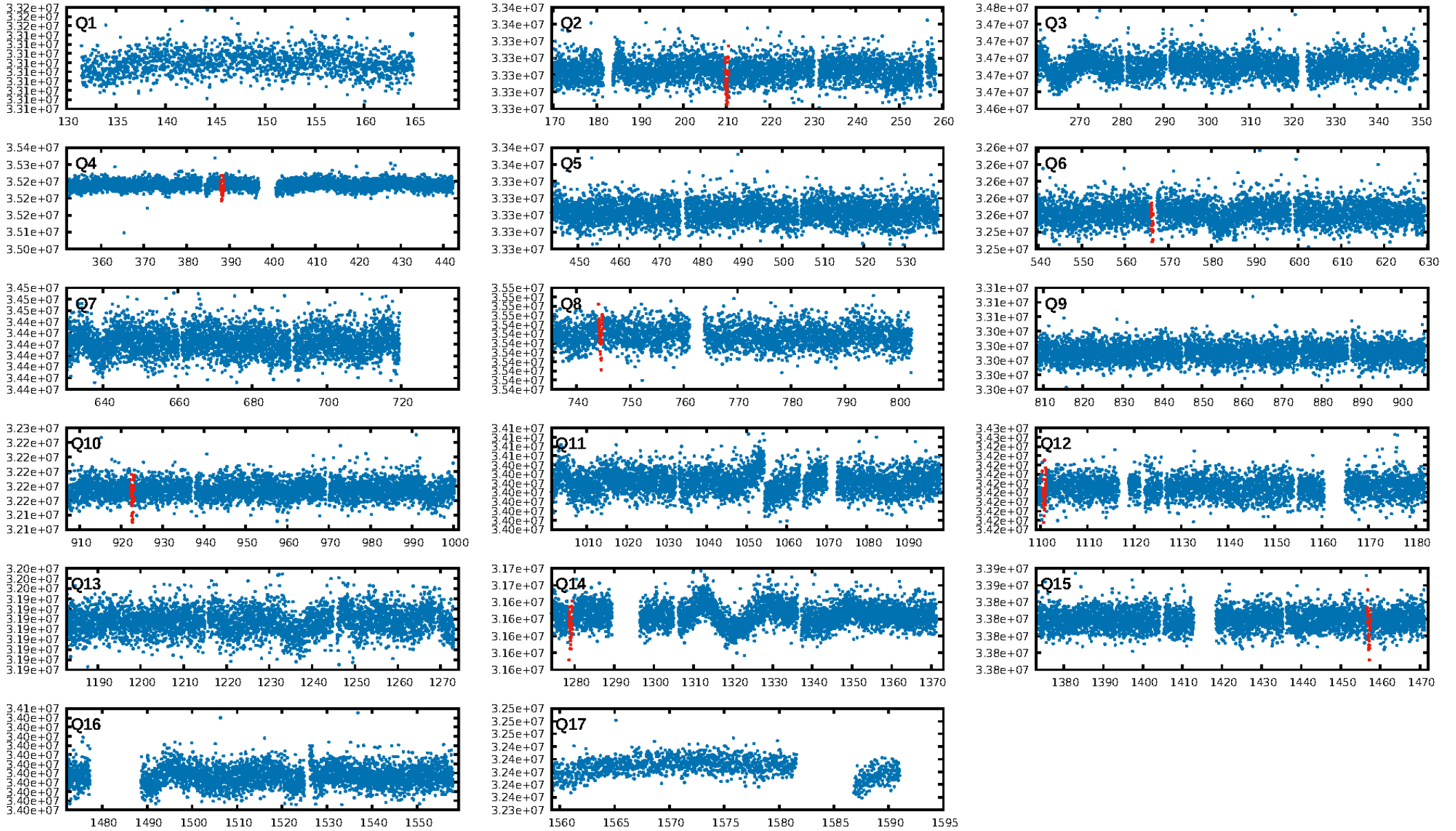
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.04e-69
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 1.01
Centroid-sig: 20.2%
Centroid-so: 0.252 arcsec [0.38σ]
OotOffset-rm: 0.272 arcsec [0.47σ]
OotOffset-st: 2/1/2/0 [5]
KicOffset-rm: 0.209 arcsec [0.40σ]
KicOffset-st: 2/1/2/0 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [5/5]

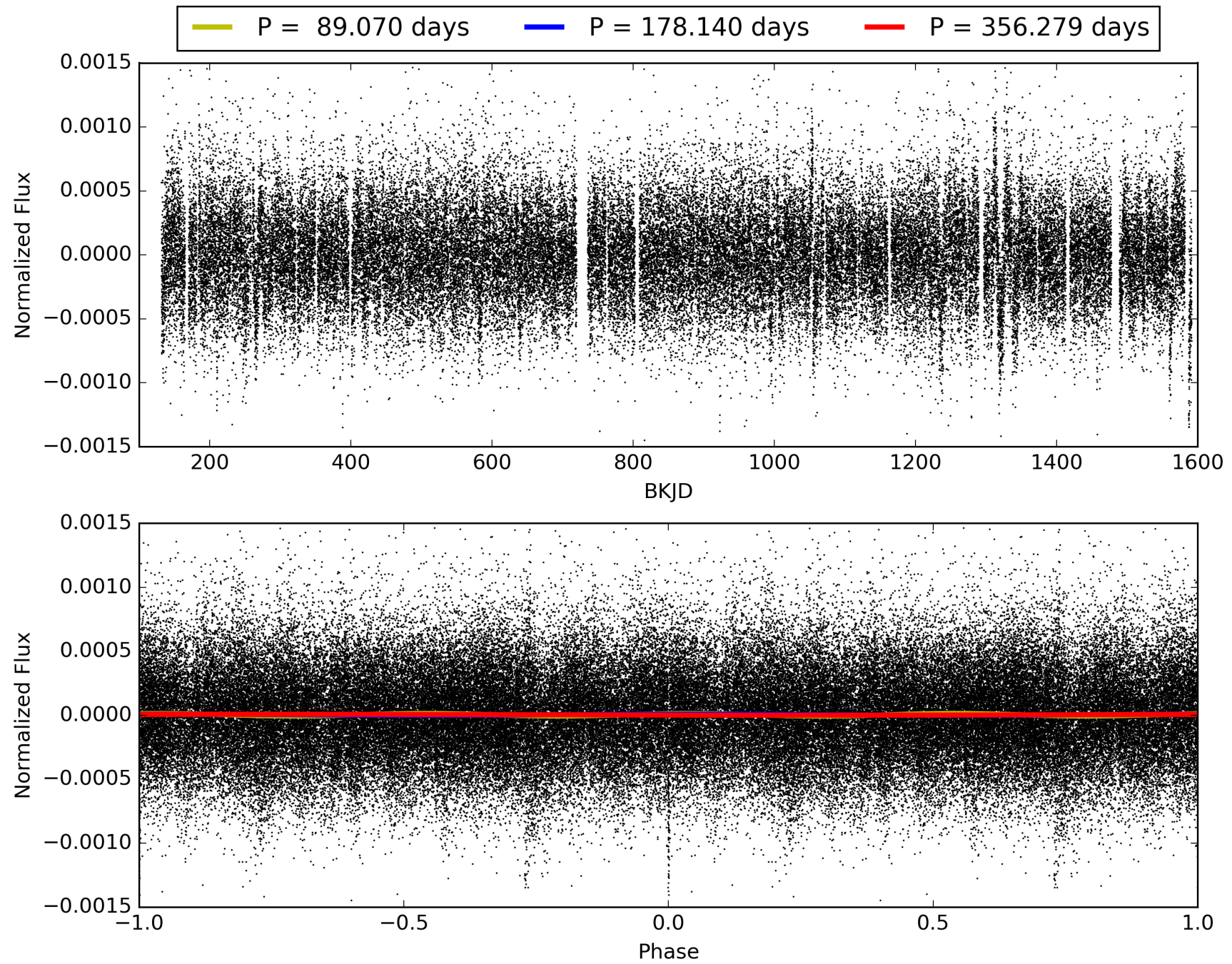
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:14:00 Z

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

TCE 008142787-01, PDC Light Curves

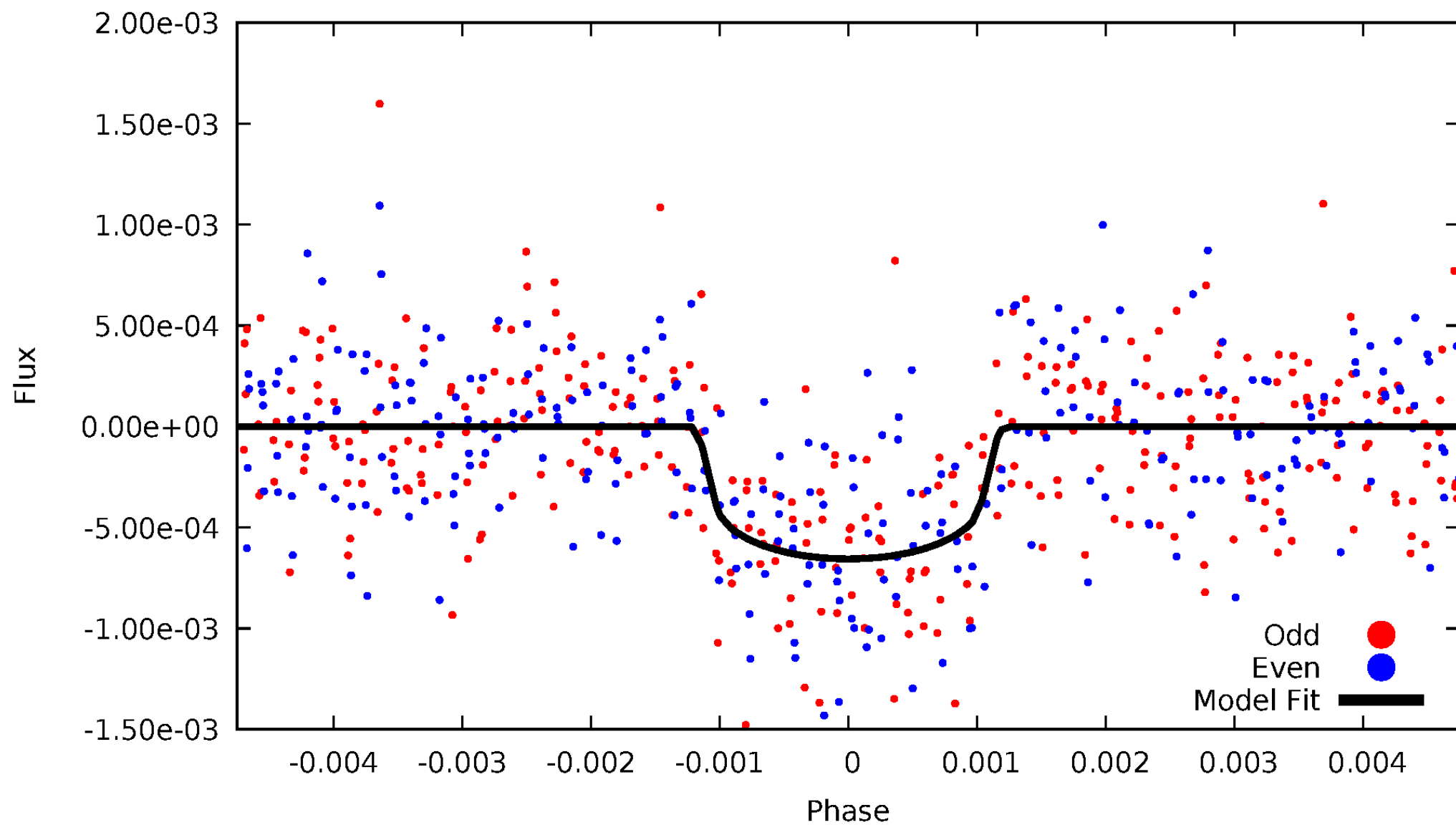


TCE 008142787-01



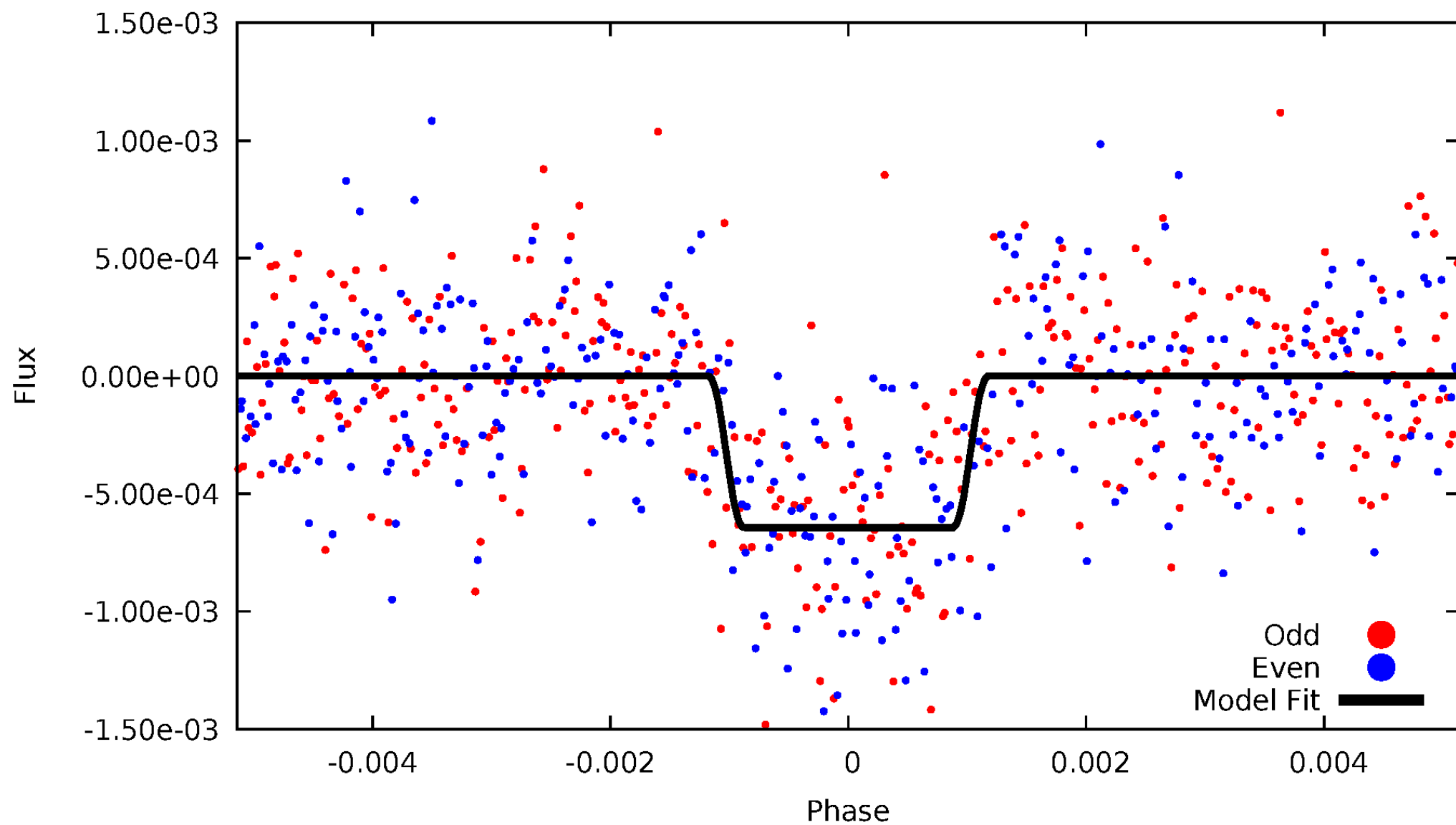
DV Odd/Even

TCE 008142787-01



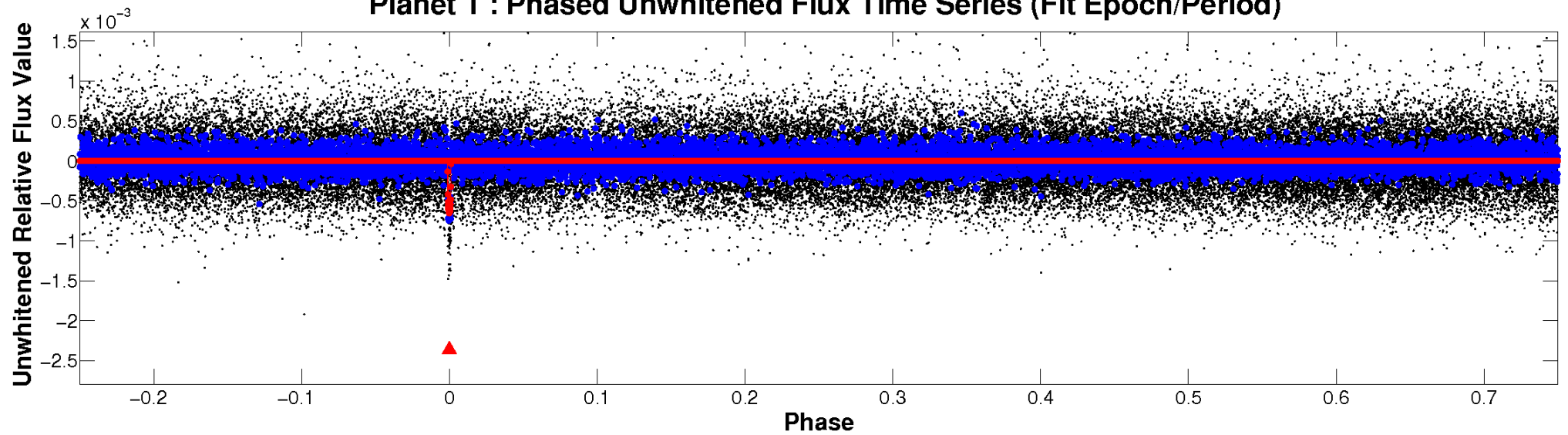
ALT Odd/Even

TCE 008142787-01

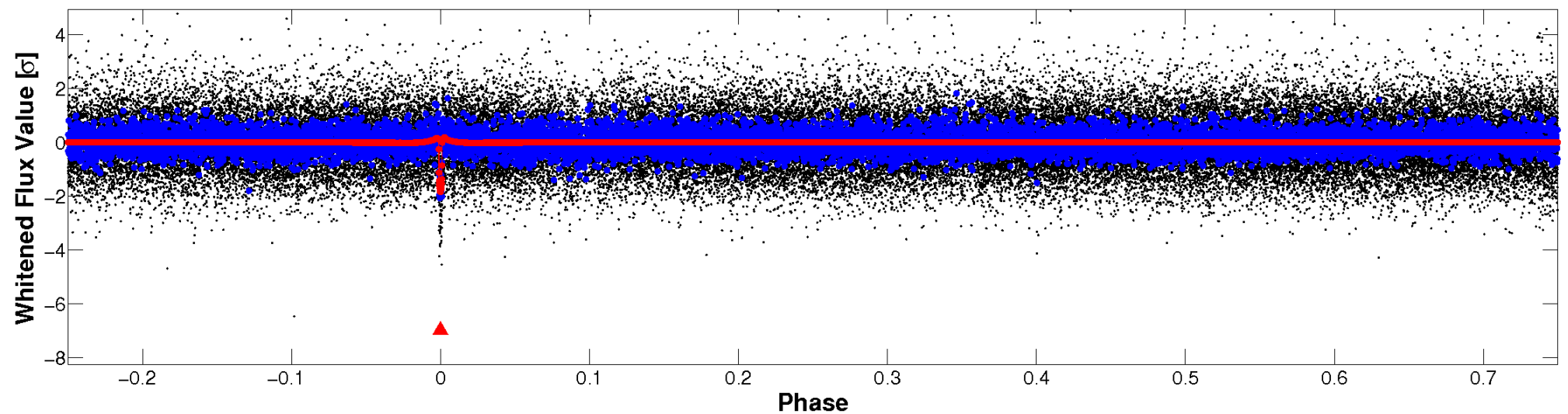


Non-Whitened Vs. Whitened Light Curve

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

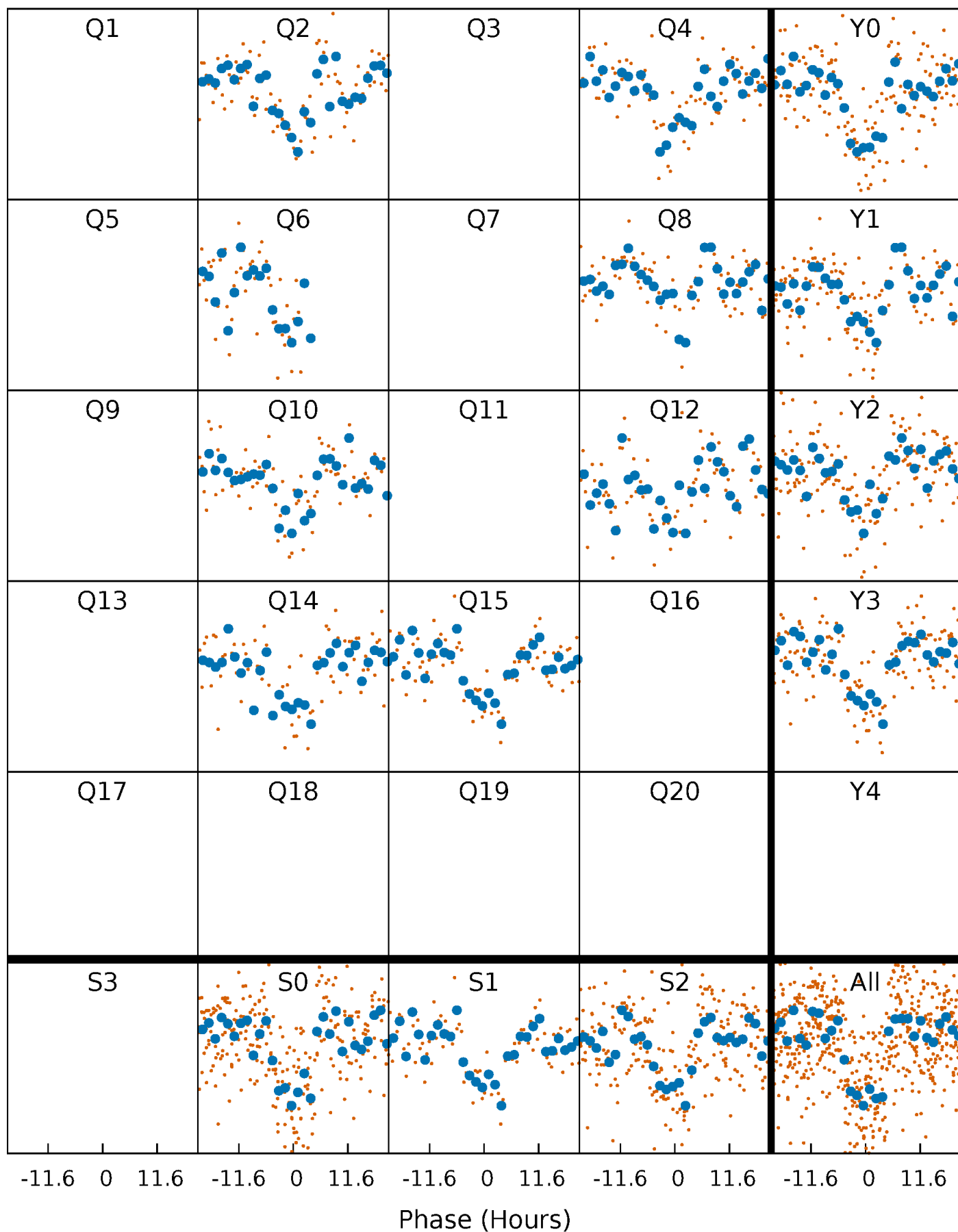


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



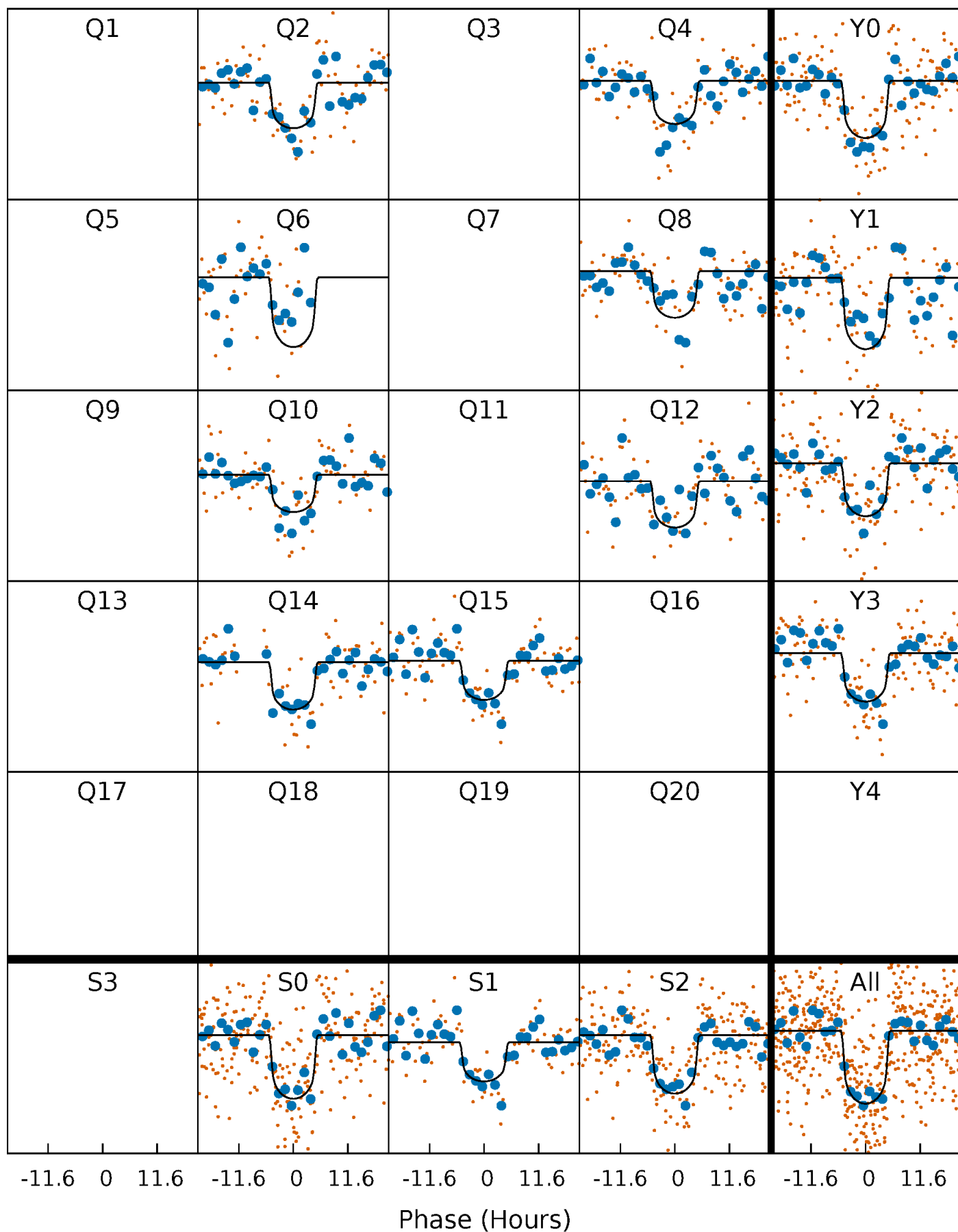
PDC Quarter-Phased Transit Curves

TCE 008142787-01 P=178.139514 Days $T_0=210.117251$ (BKJD)



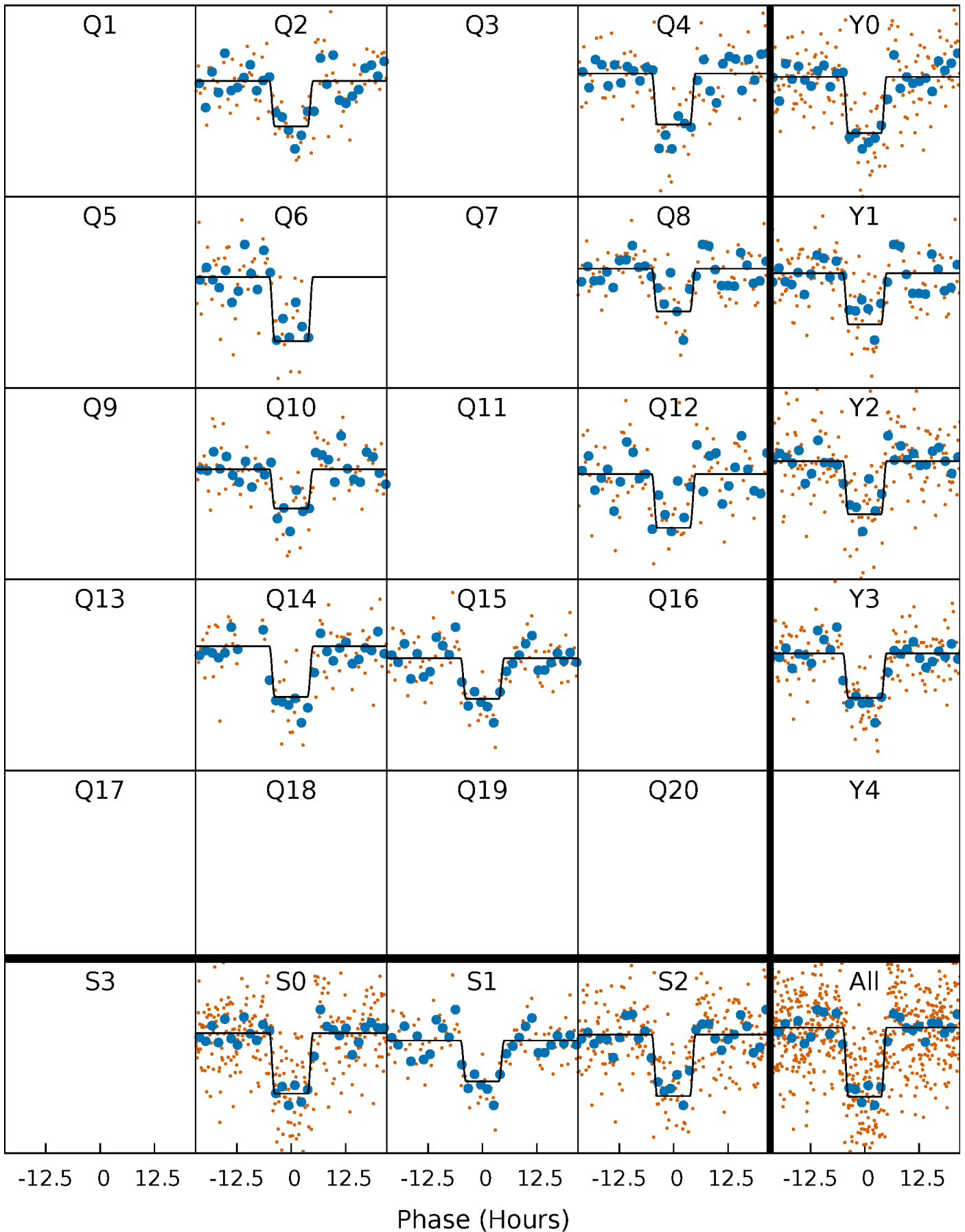
DV Quarter-Phased Transit Curves

TCE 008142787-01 P=178.139514 Days $T_0=210.117251$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

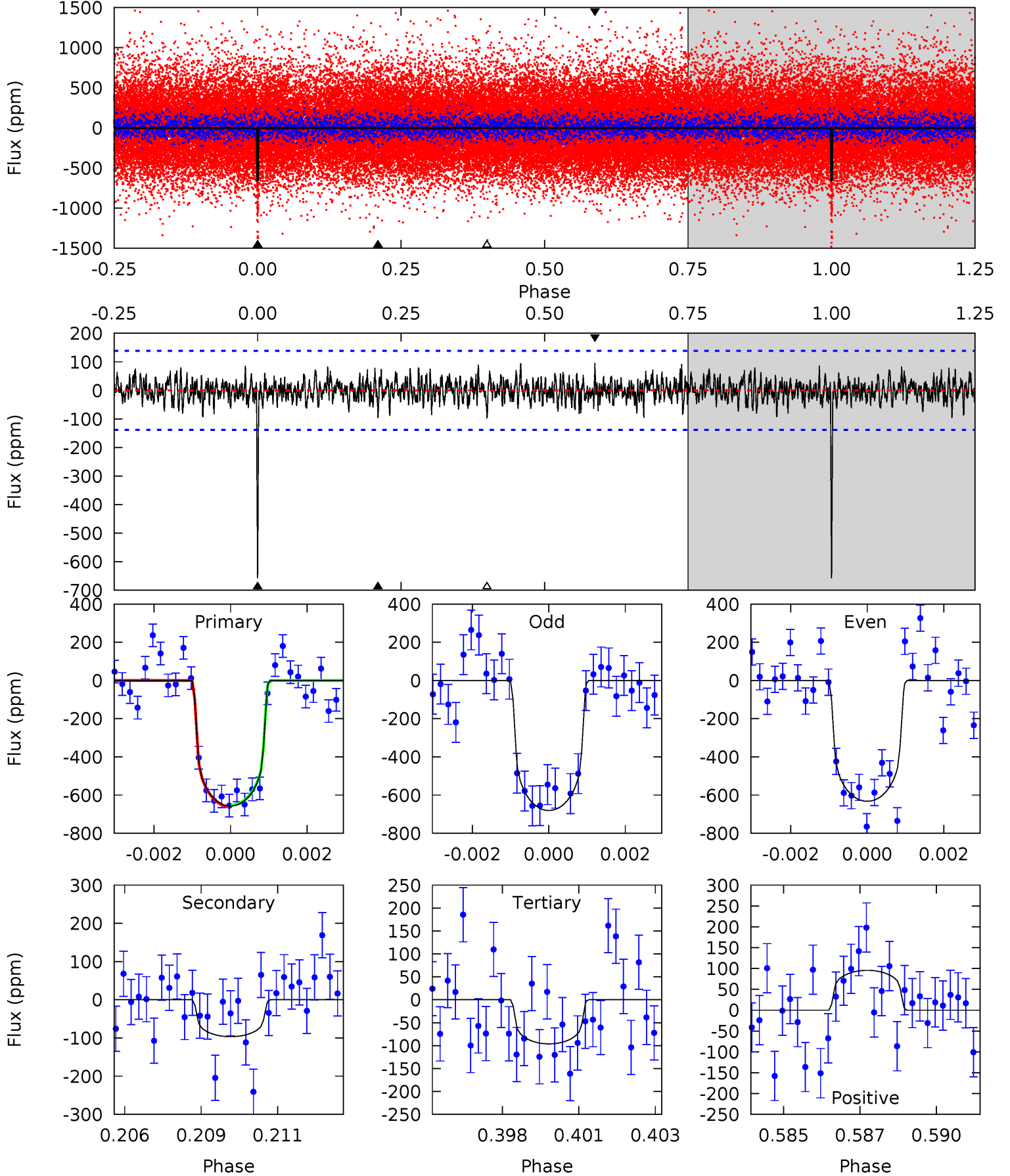
TCE 008142787-01 P=178.146587 Days $T_0=210.092062$ (BKJD)



DV Model-Shift Uniqueness Test

008142787-01, $P = 178.139514$ Days, $E = 31.977737$ Days

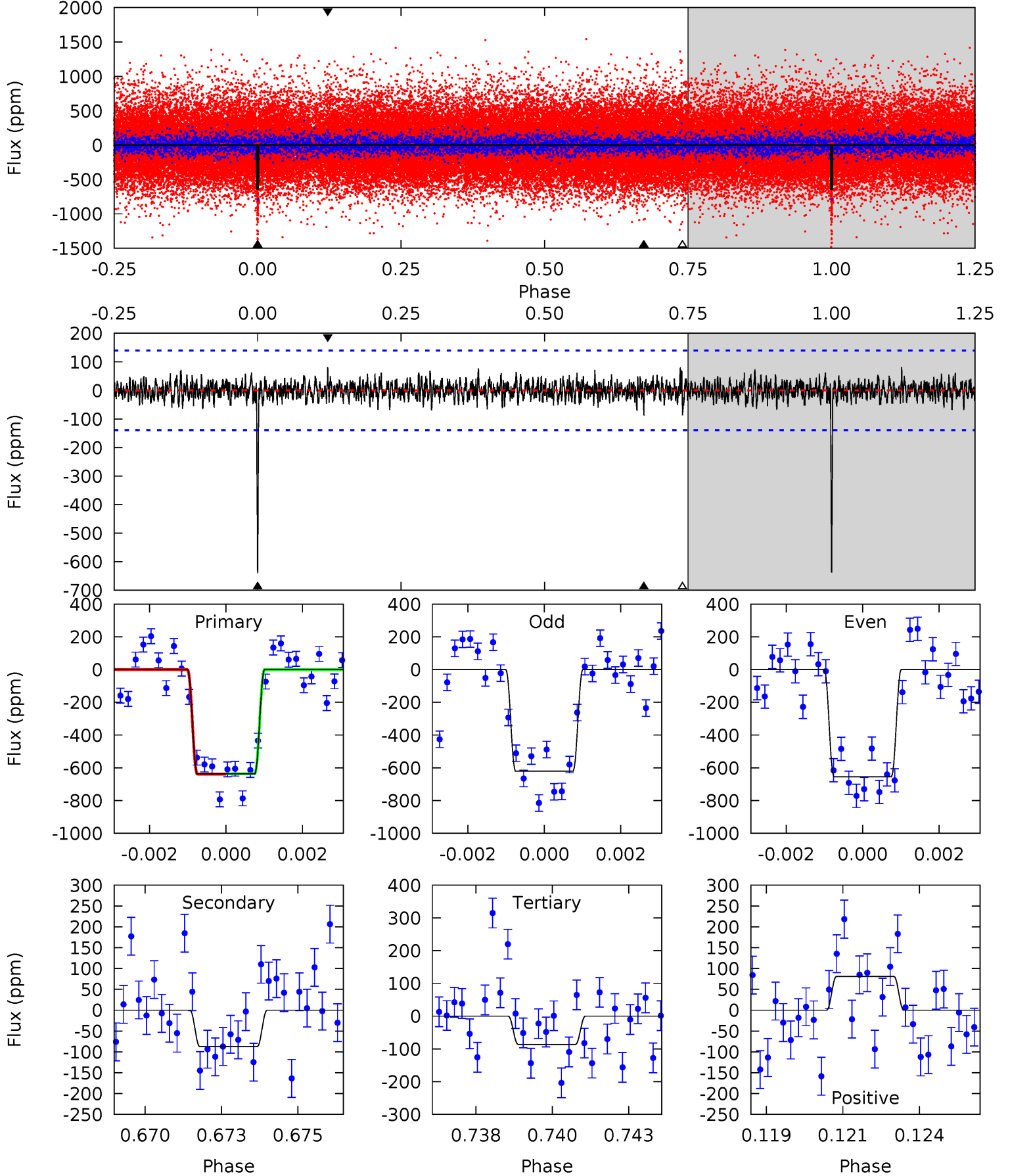
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.2	3.70	3.69	3.66	5.29	3.03	1.13	21.5	21.5	0.02	0.04	0.93	0.88	0.13	0.13



Alt Model-Shift Uniqueness Test

008142787-01, $P = 178.146587$ Days, $E = 31.945475$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.2	3.32	3.28	3.08	5.30	3.04	0.89	20.9	21.1	0.05	0.24	0.65	0.92	0.11	0.05



Stellar Parameters For KIC 008142787

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5431^{+81}_{-81}	$4.496^{+0.052}_{-0.078}$	$0.020^{+0.150}_{-0.150}$	$0.879^{+0.086}_{-0.060}$	$0.881^{+0.050}_{-0.050}$	$1.830^{+0.370}_{-0.441}$
	+1%/-1%	+1%/-2%	+750%/-750%	+10%/-7%	+6%/-6%	+20%/-24%
Source	SPE85	SPE85	SPE85	DSEP		

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

Secondary Eclipse Parameters for KIC 008142787-01 / KOI 4005.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-97 ± 26	$2.55^{+0.40}_{-0.38}$	409^{+13}_{-11}	3698^{+251}_{-233}	2818^{+1314}_{-938}
Alt.	-87 ± 26	$2.44^{+0.37}_{-0.38}$	408^{+13}_{-10}	3685^{+308}_{-256}	2819^{+1623}_{-1093}

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 $A_{obs} \gg 1.0$

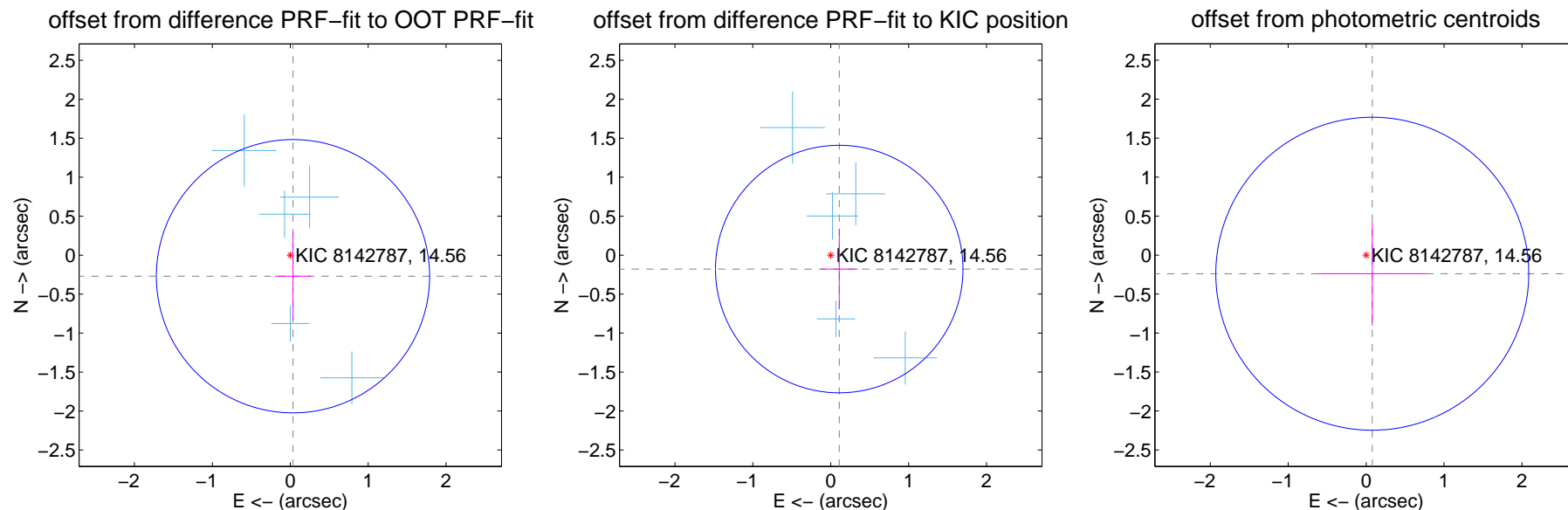
DV Centroid Data

Supplemental centroid analysis for 008142787-01. Kepler magnitude: 14.56. Transit SNR 19.00

There are 5 quarters with good PRF difference image offsets

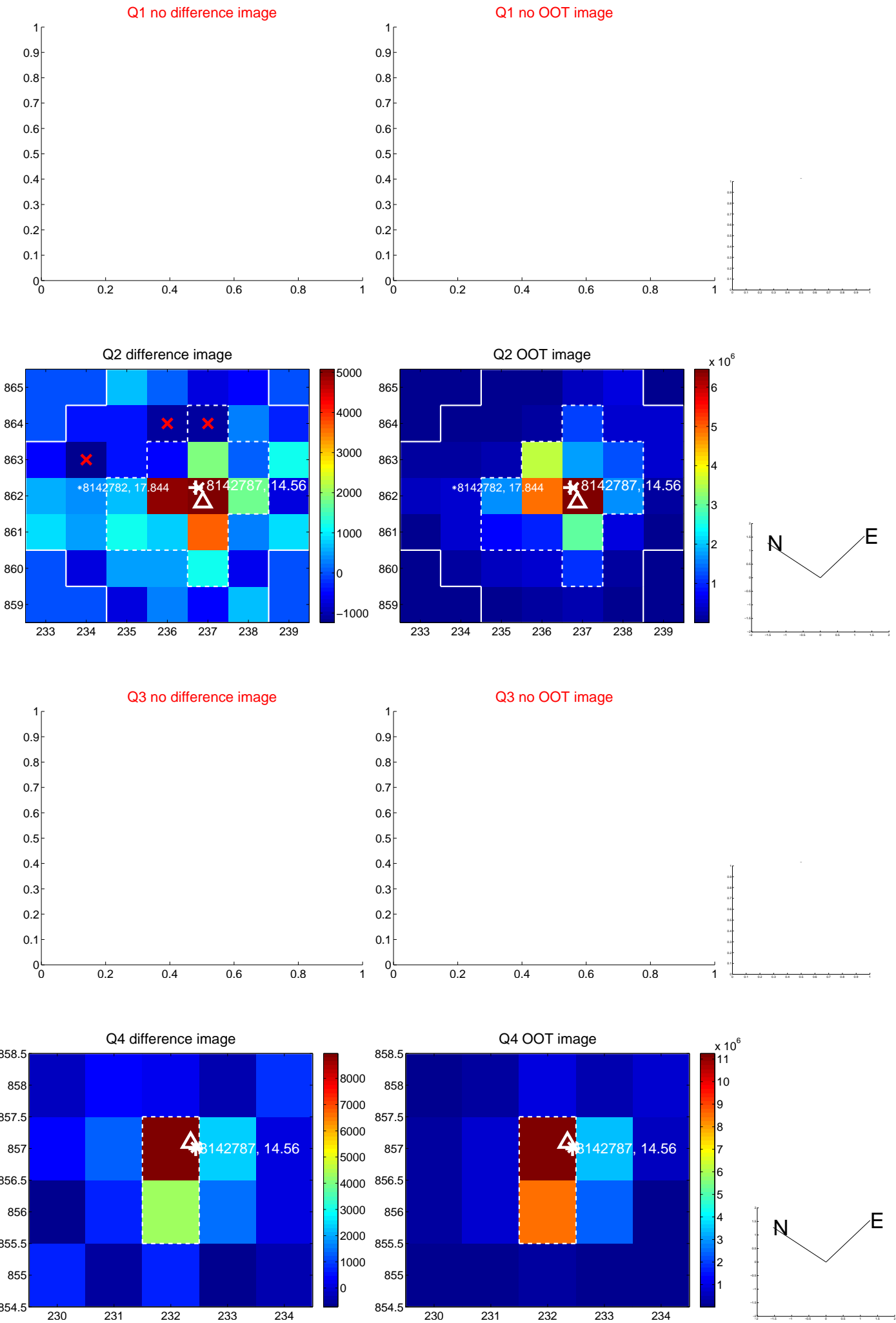
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.272 ± 0.584	0.47	-0.035 ± 0.231	-0.270 ± 0.566
PRF-fit source offset from KIC position	0.209 ± 0.529	0.40	-0.109 ± 0.236	-0.178 ± 0.520
photometric centroid source offset	0.25 ± 0.67	0.38	-0.08 ± 0.70	-0.24 ± 0.67

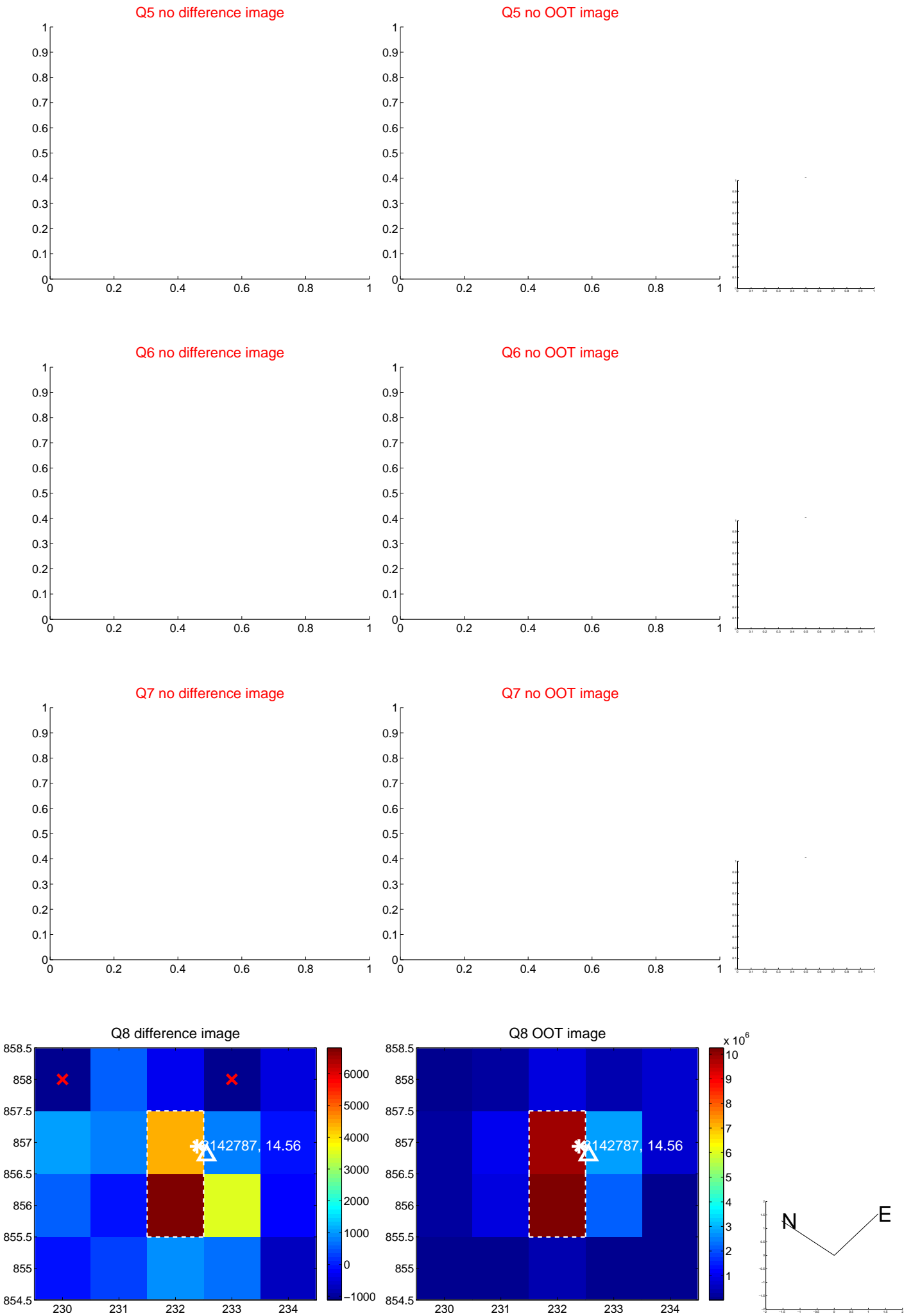


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

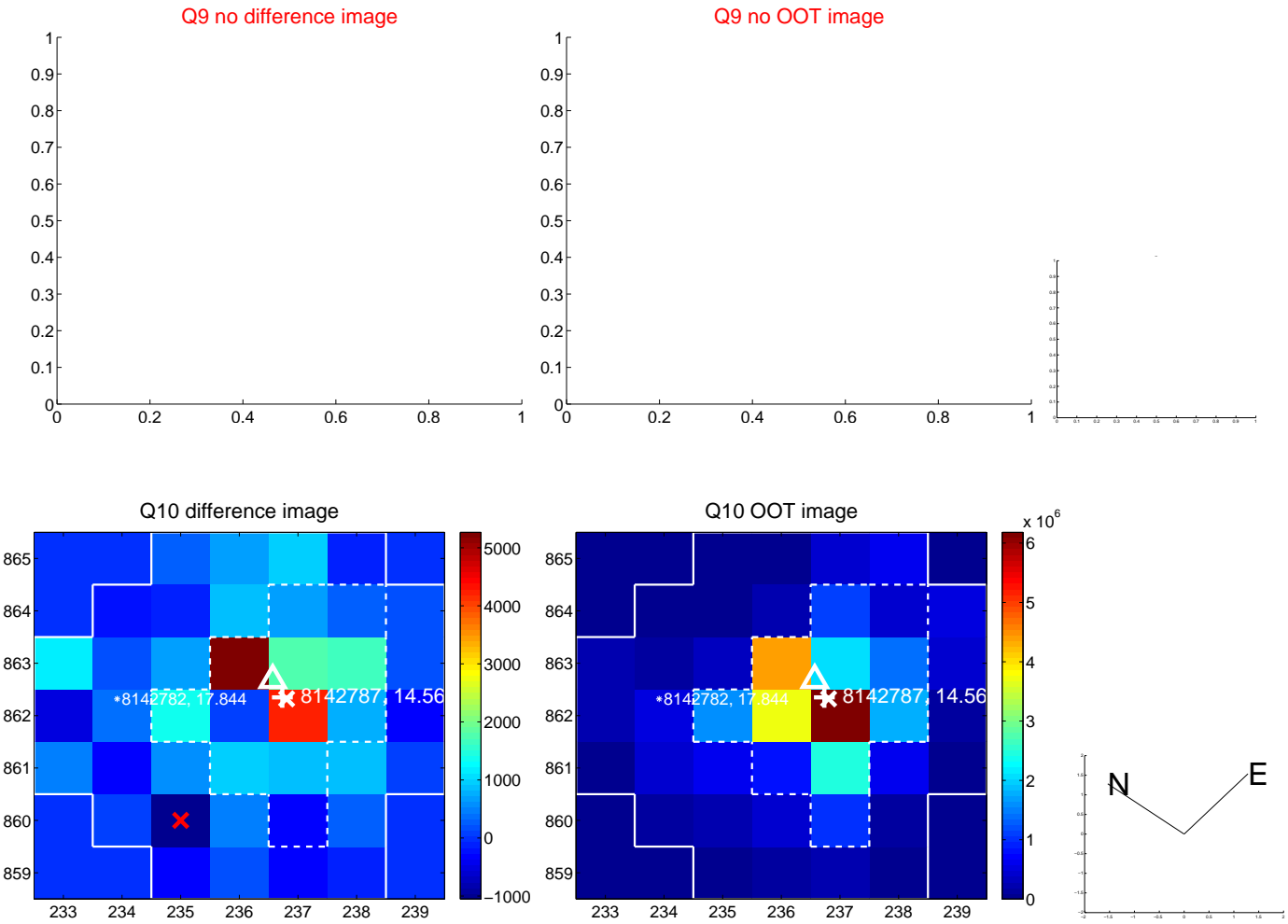
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



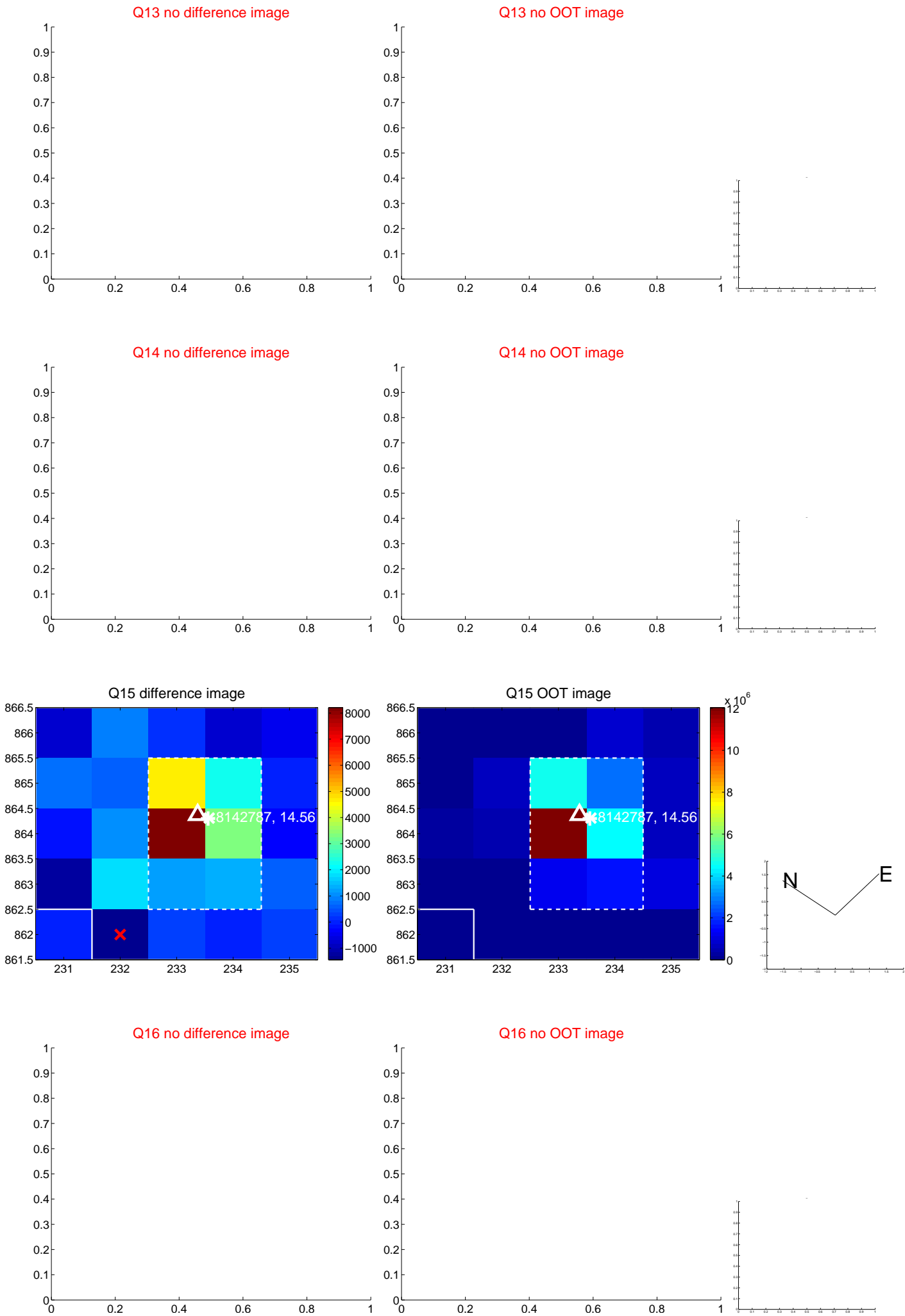
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



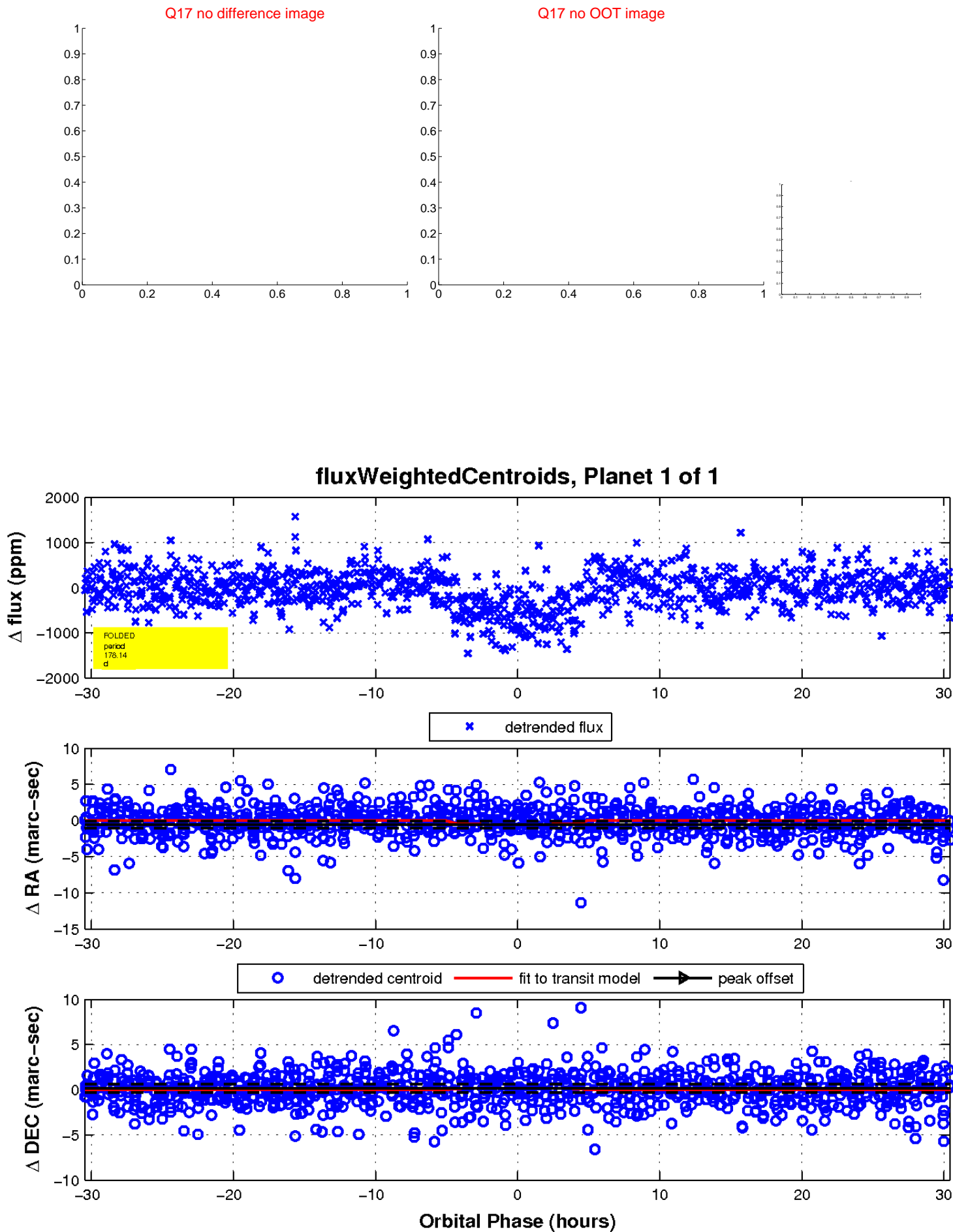
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

