

KIC 008867870

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})
008867870-01	OBS	No	4.510330	135.597373	72.6	36.302	7.3	7.1	0.85	5380	0.71	216.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008867870-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—CENT_RESOLVED_OFFSET

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

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

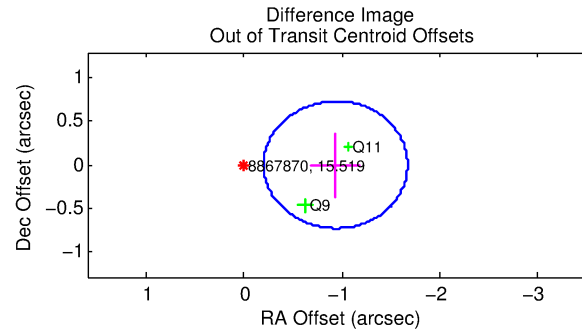
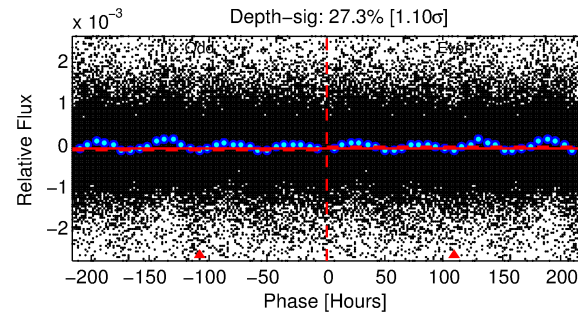
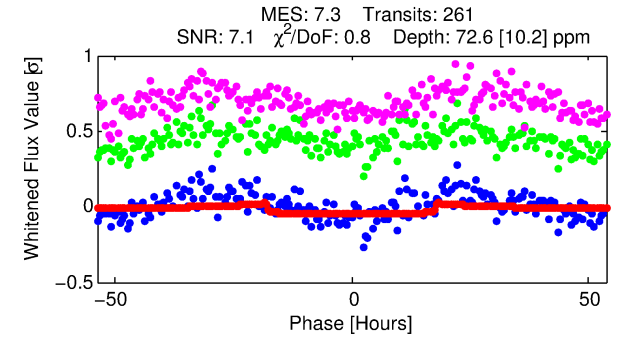
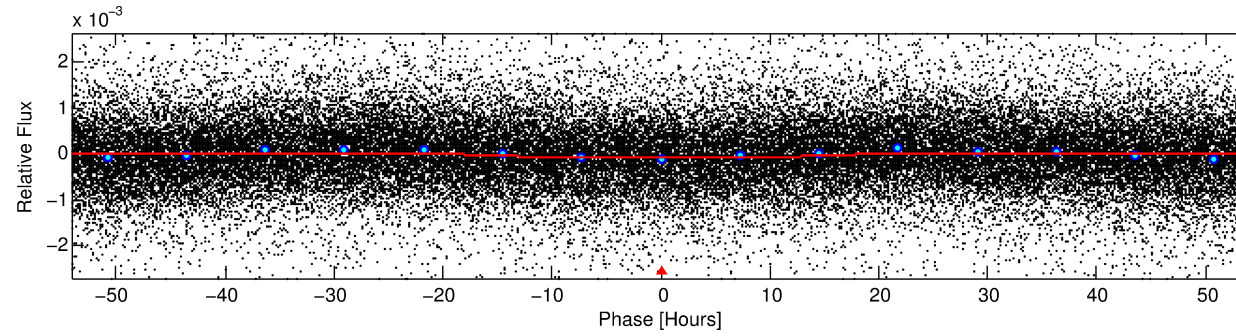
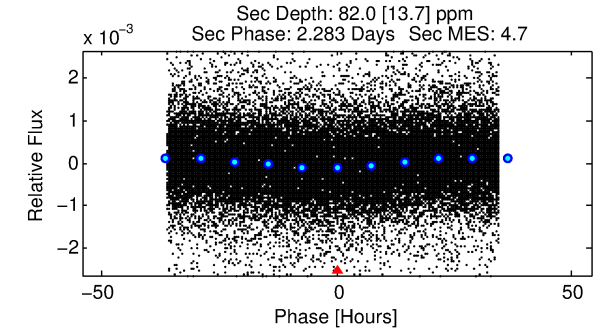
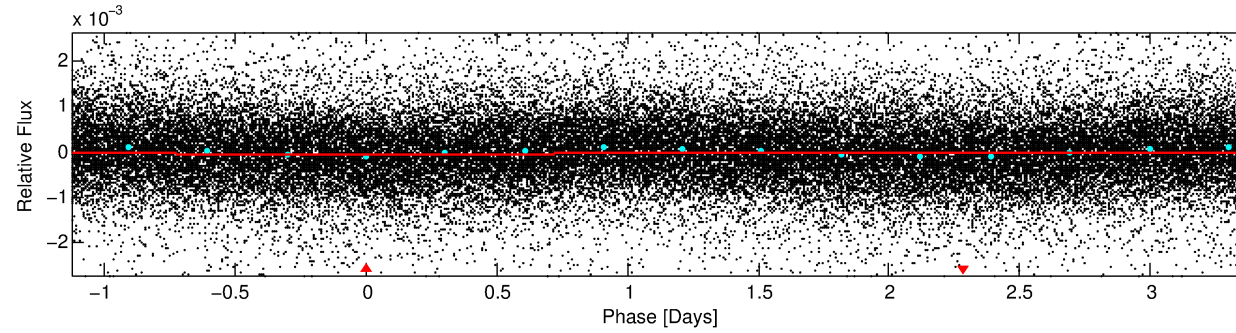
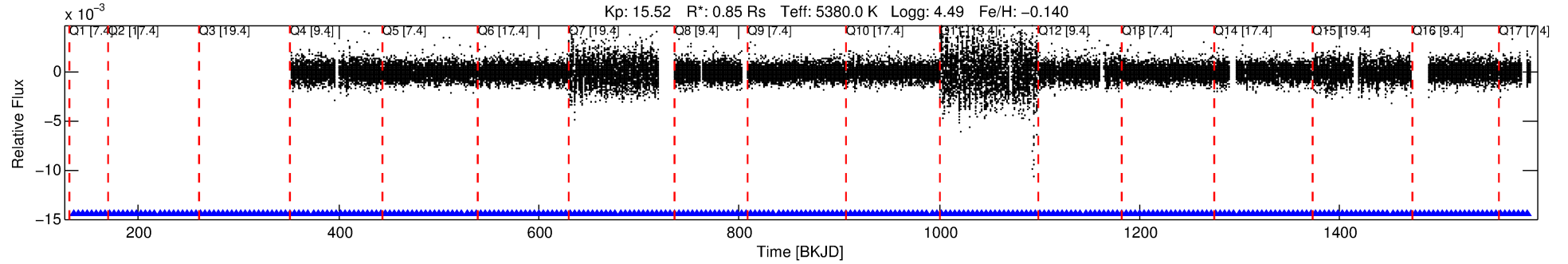
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008867870-01

No Significant Match Found

DV One-Page Summary

KIC: 8867870 Candidate: 1 of 1 Period: 4.510 d



DV Fit Results:

Period = 4.51033 [0.00019] d
Epoch = 135.5974 [0.0329] BKJD
Rp/R* = 0.0077 [0.0063]
a/R* = 1.15 [0.91]
b = 0.26 [11.98]
Seff = 216.10 [58.32]
Teq = 978 [66] K
Rp = 0.71 [0.59] Re
a = 0.0499 [0.0080] AU
Ag = 221.29 [364.96] [0.60σ]
Teffp = 5830 [2388] K [2.03σ]

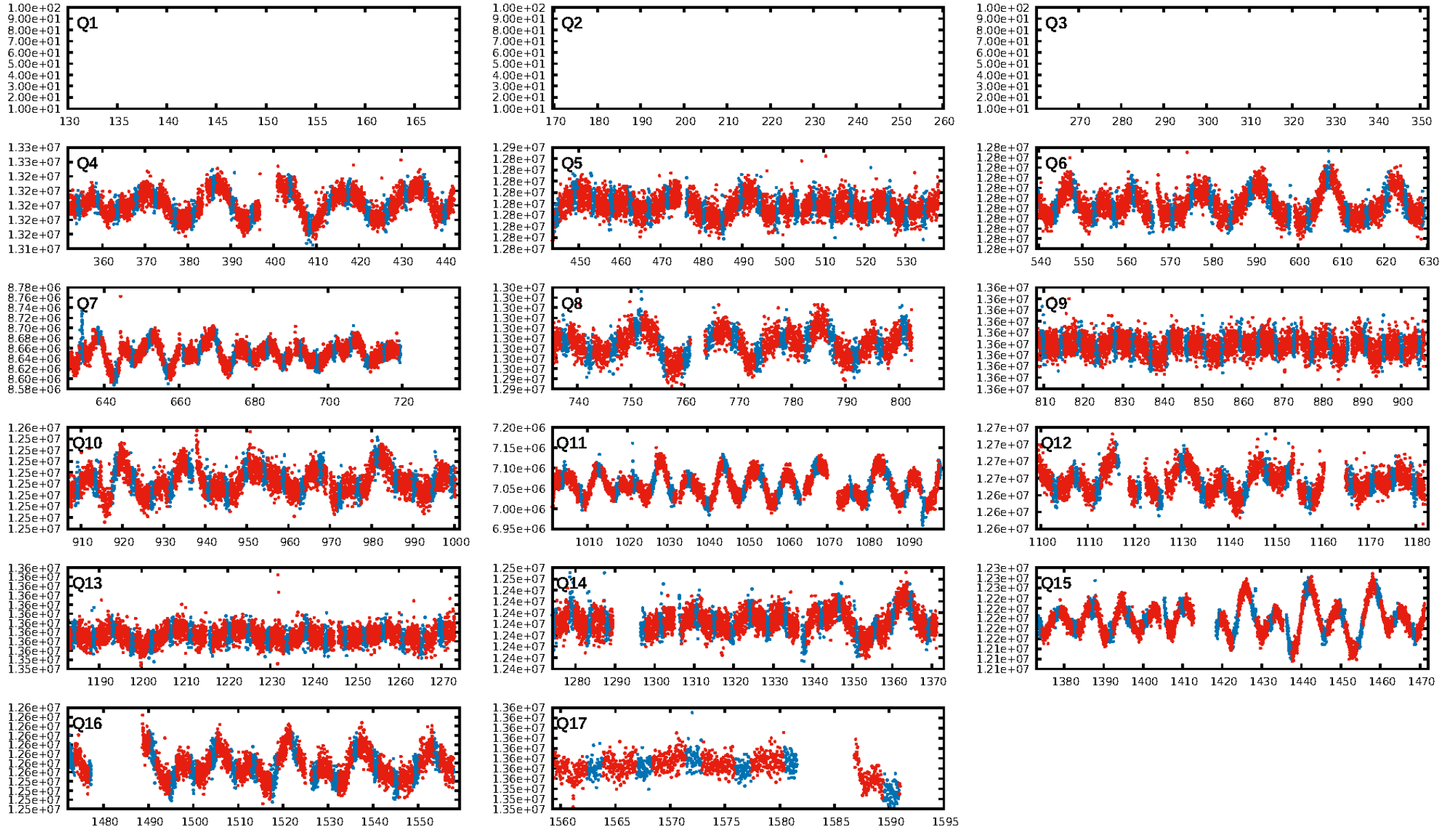
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [255/255]
GhostDiagnostic-chr: 45.71
Centroid-sig: 0.0%
Centroid-so: 2.078 arcsec [2.97σ]
OotOffset-rm: 0.936 arcsec [3.82σ]
KicOffset-rm: 5.385 arcsec [19.68σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [14/14]

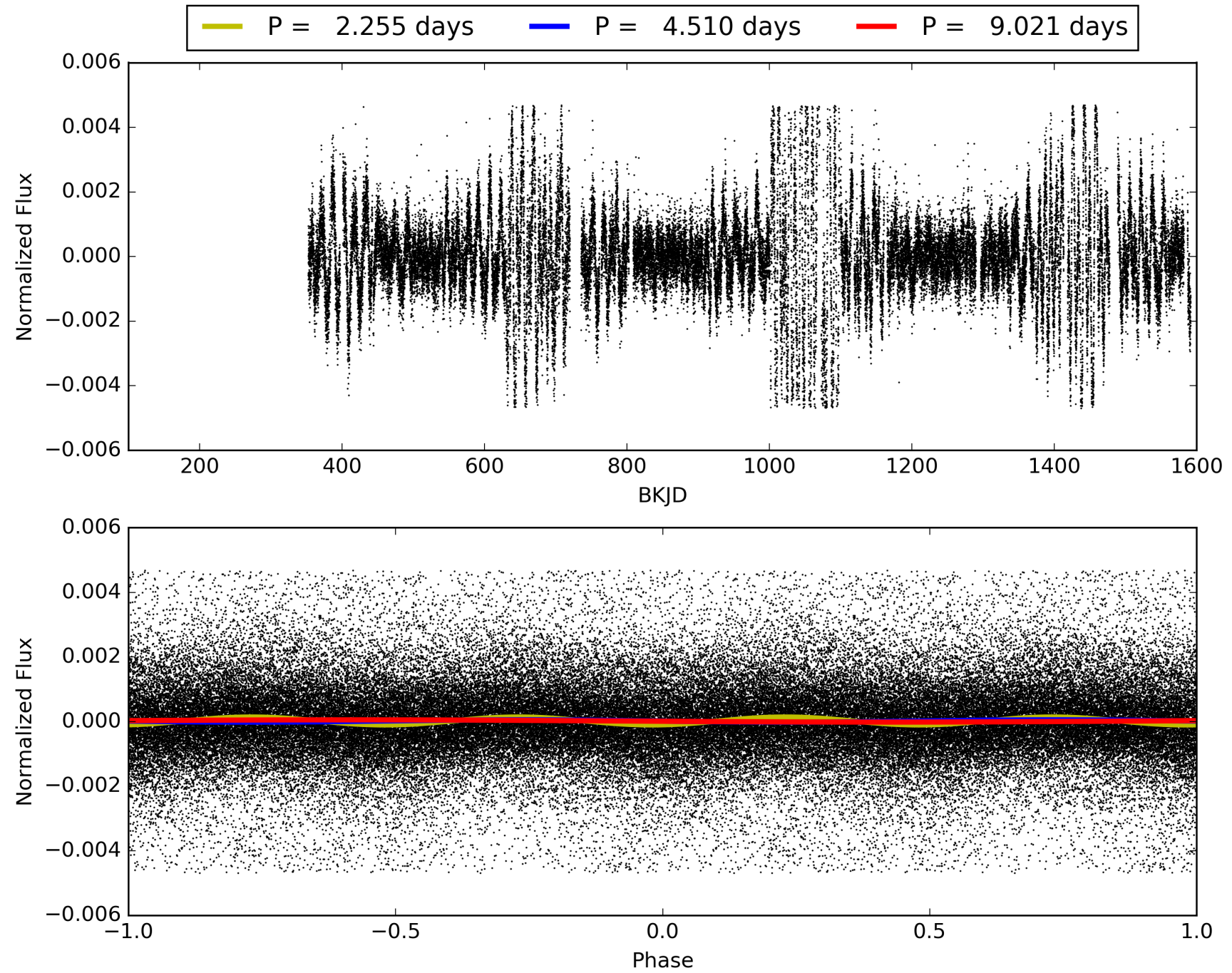
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:42:19 Z

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

TCE 008867870-01, PDC Light Curves

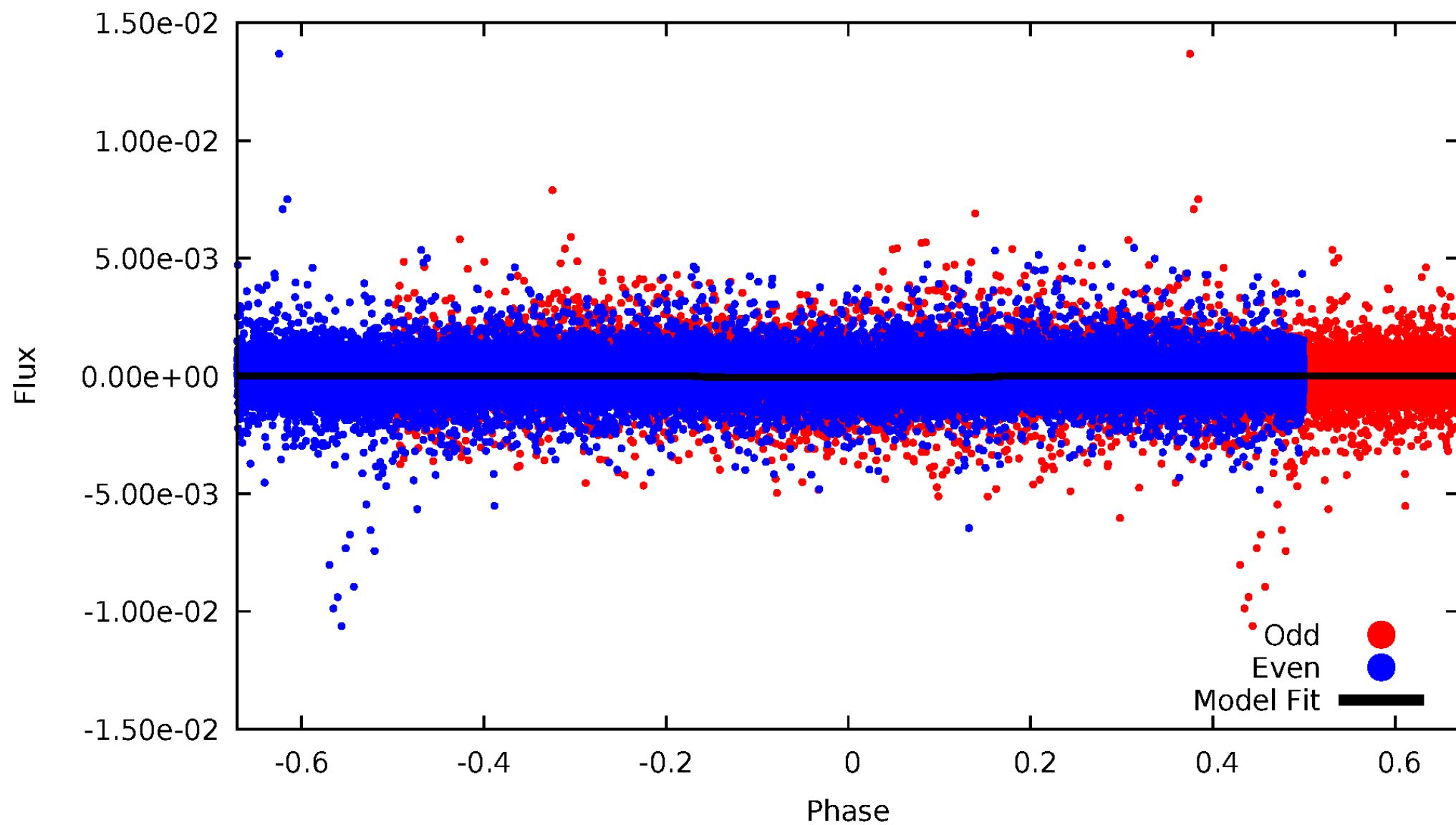


TCE 008867870-01



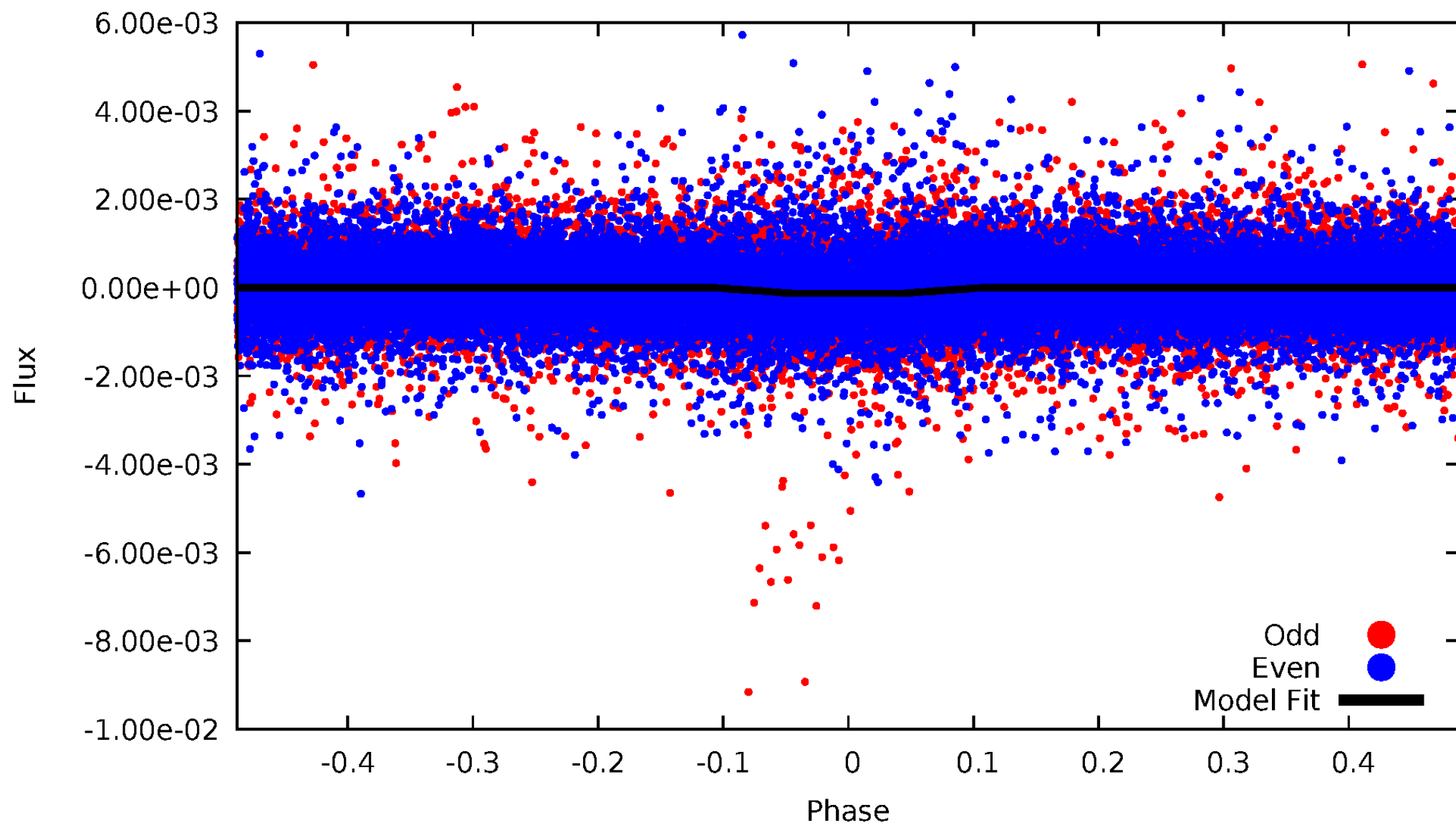
DV Odd/Even

TCE 008867870-01



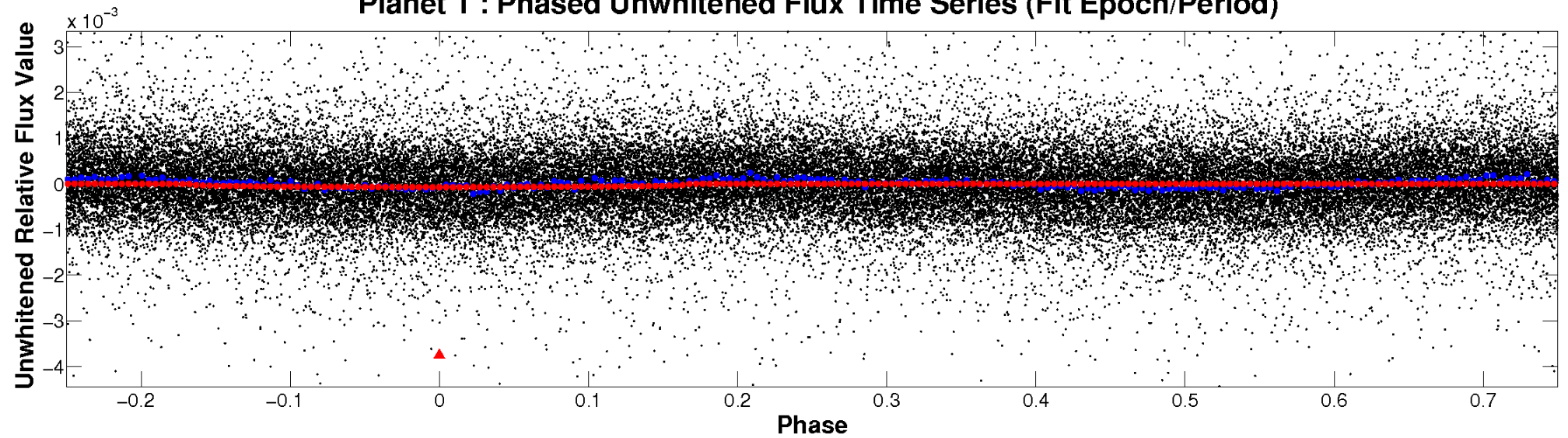
ALT Odd/Even

TCE 008867870-01

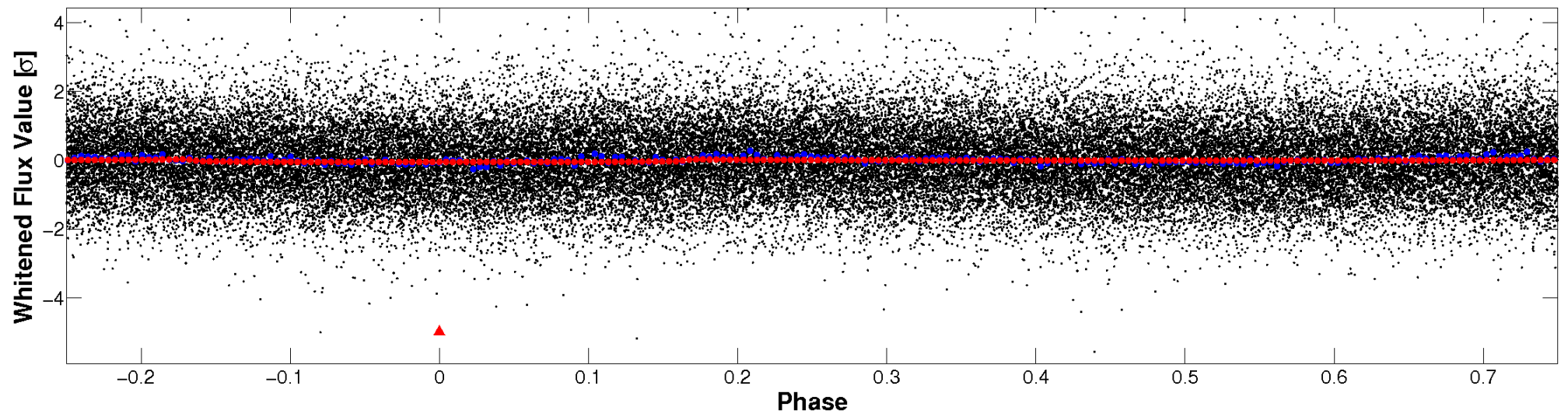


Non-Whitened Vs. Whitened Light Curve

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

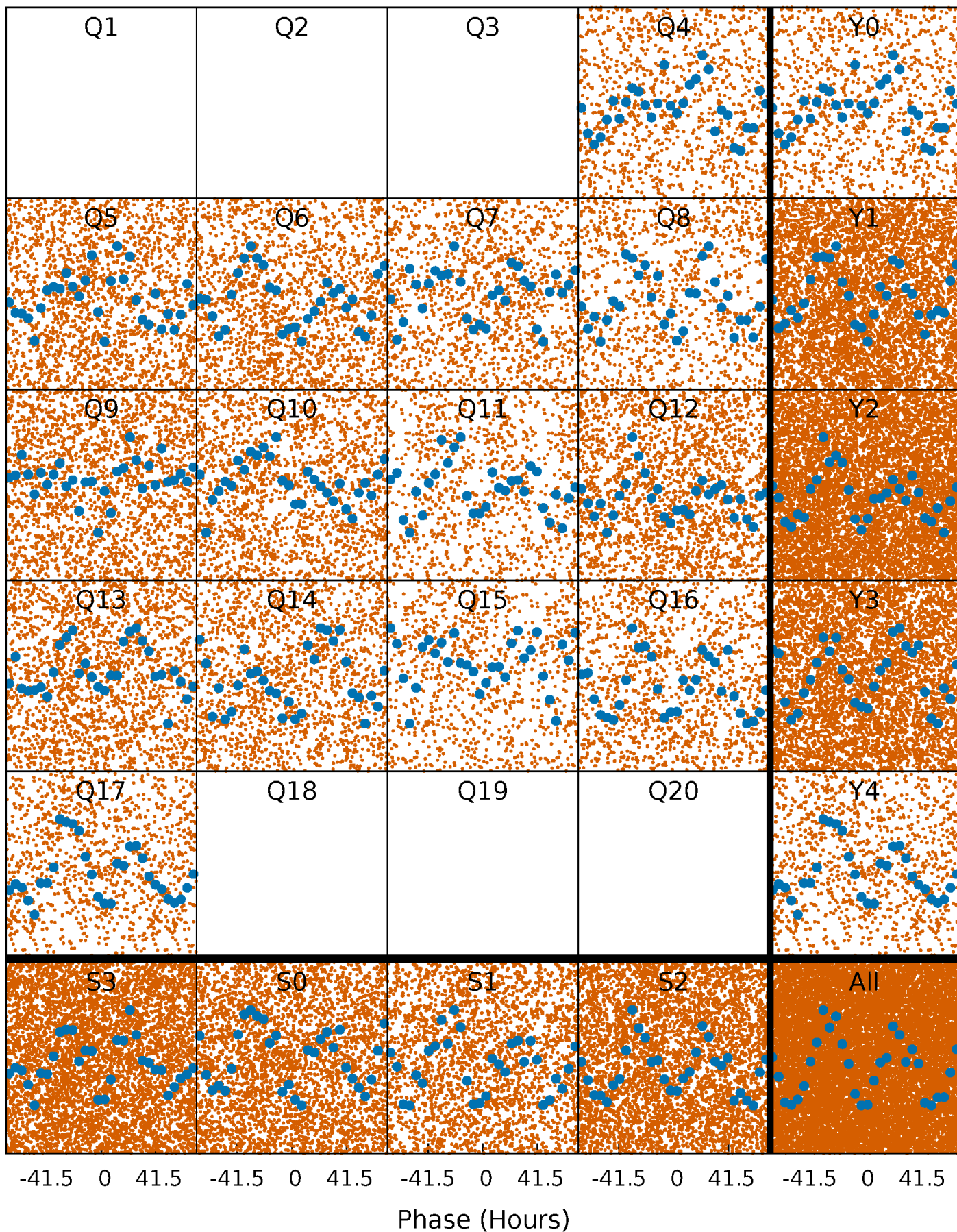


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



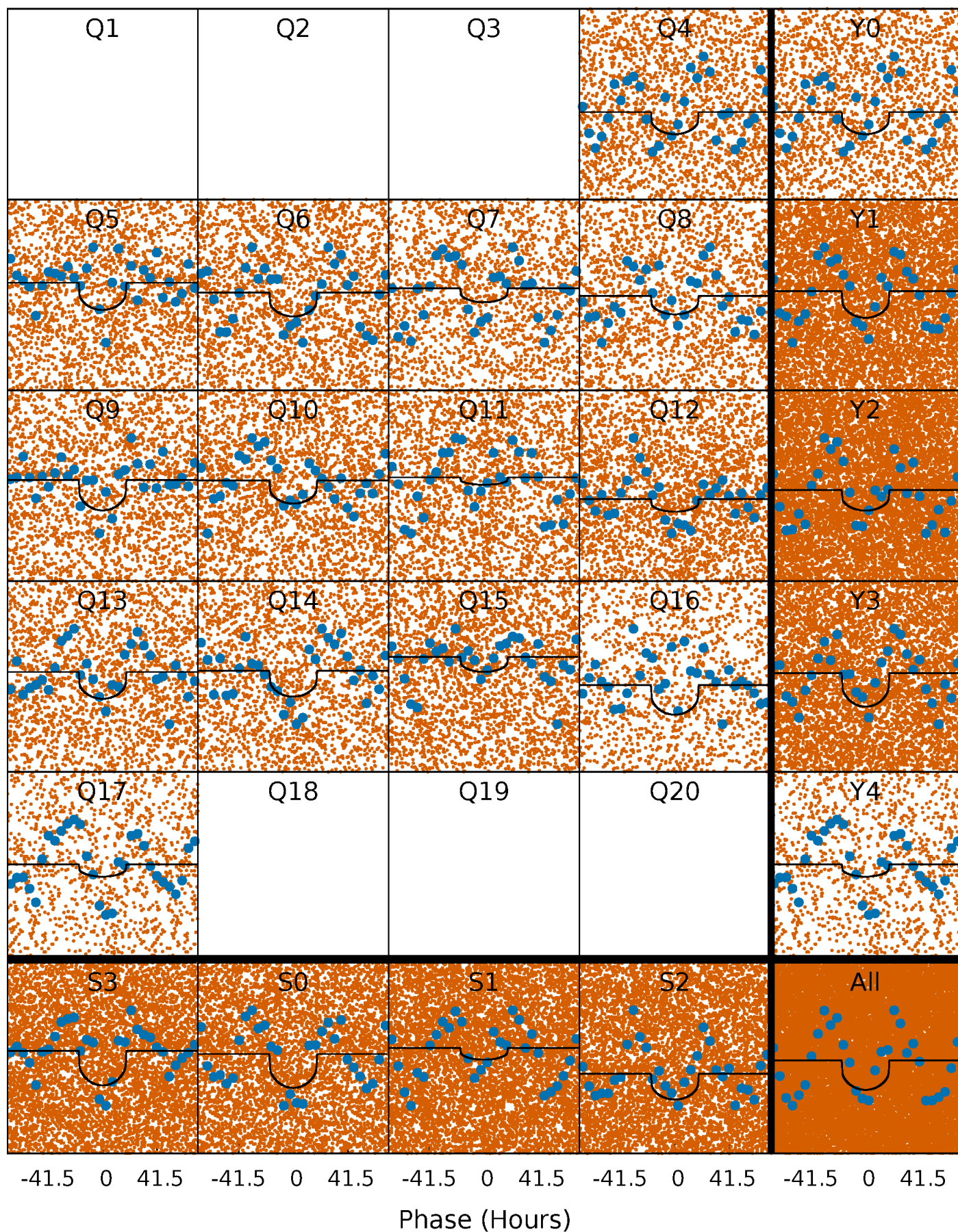
PDC Quarter-Phased Transit Curves

TCE 008867870-01 P= 4.510330 Days $T_0=135.597373$ (BKJD)



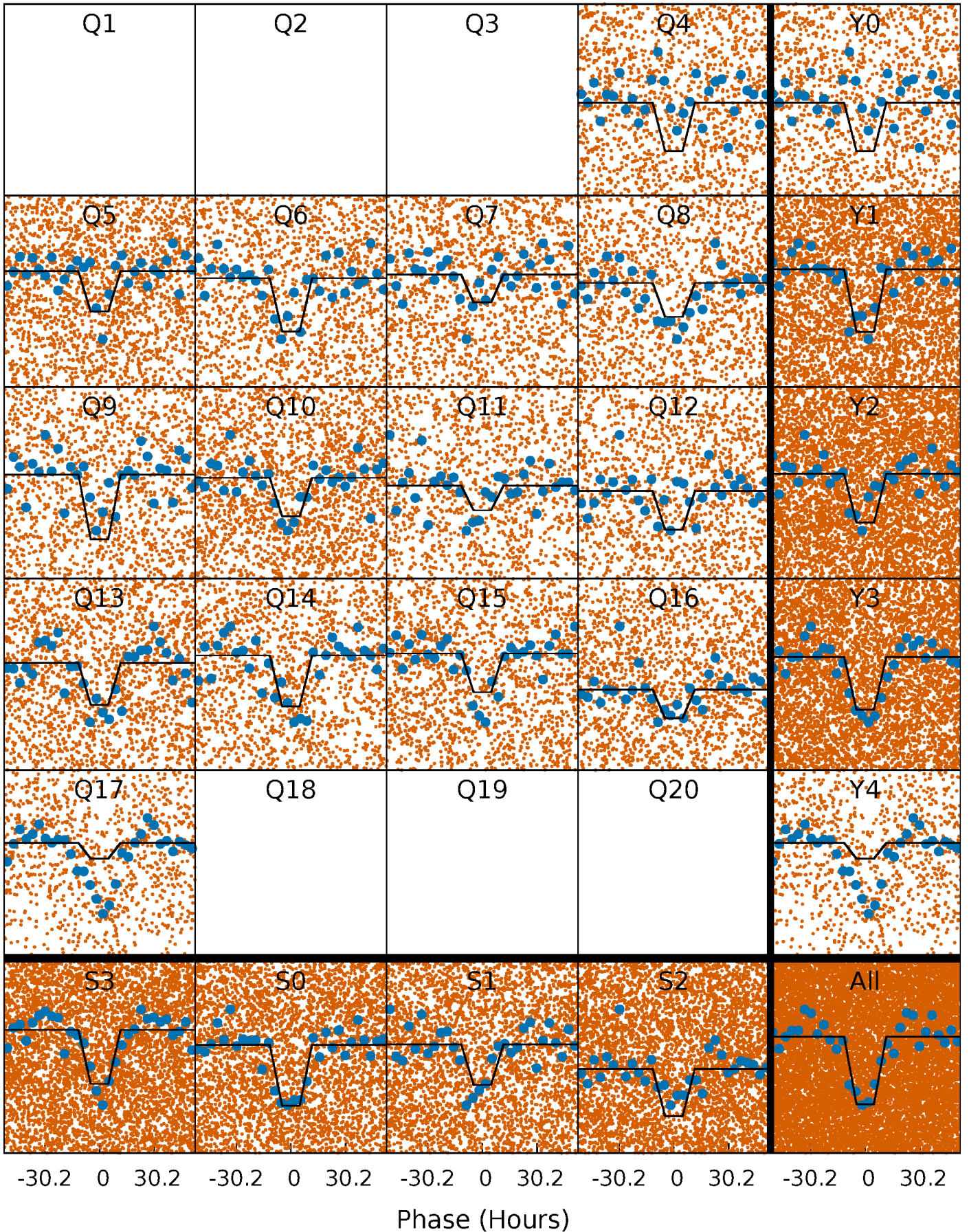
DV Quarter-Phased Transit Curves

TCE 008867870-01 P= 4.510330 Days $T_0=135.597373$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

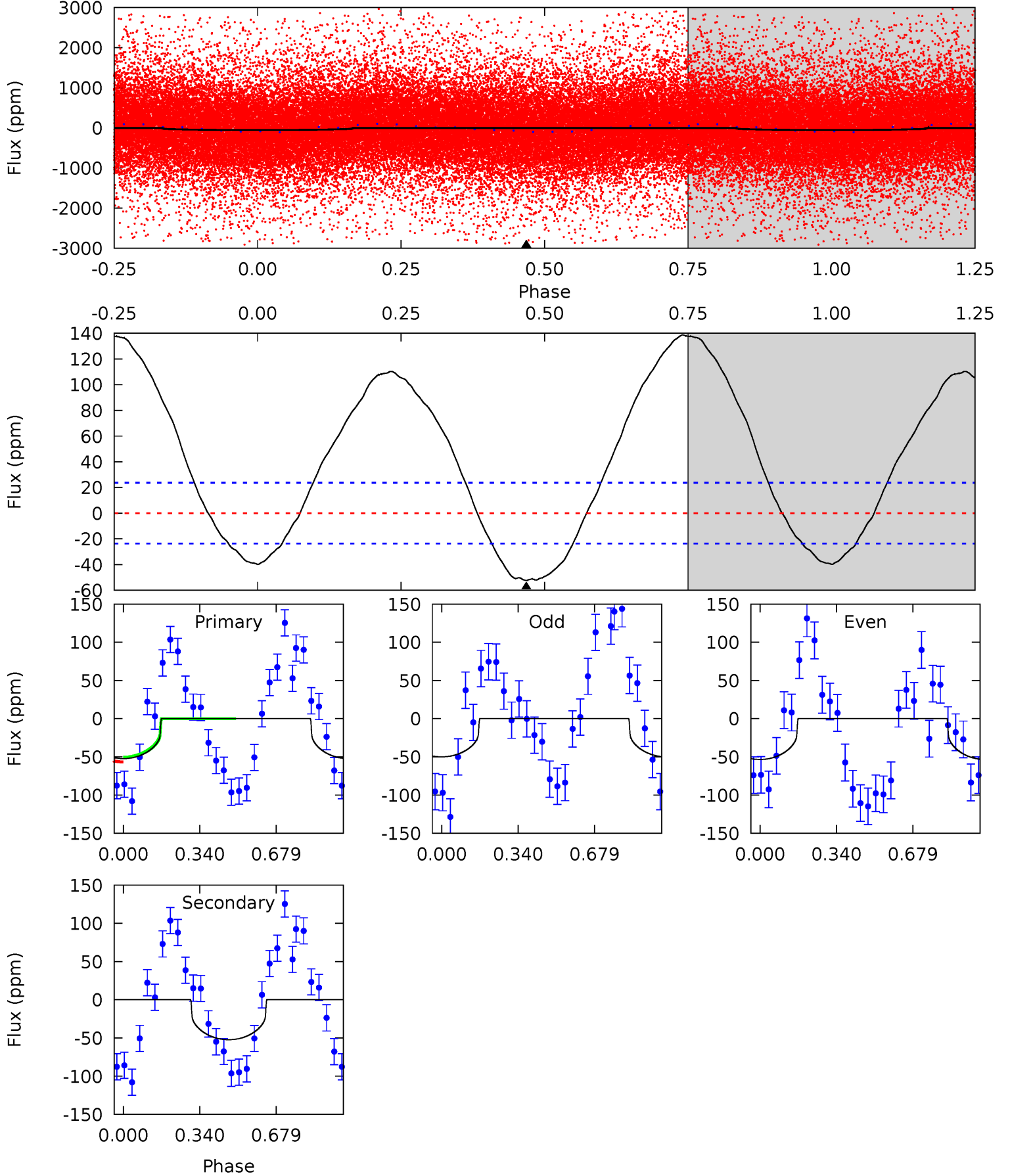
TCE 008867870-01 P= 4.510167 Days $T_0=135.636714$ (BKJD)



DV Model-Shift Uniqueness Test

008867870-01, P = 4.510330 Days, E = 135.597373 Days

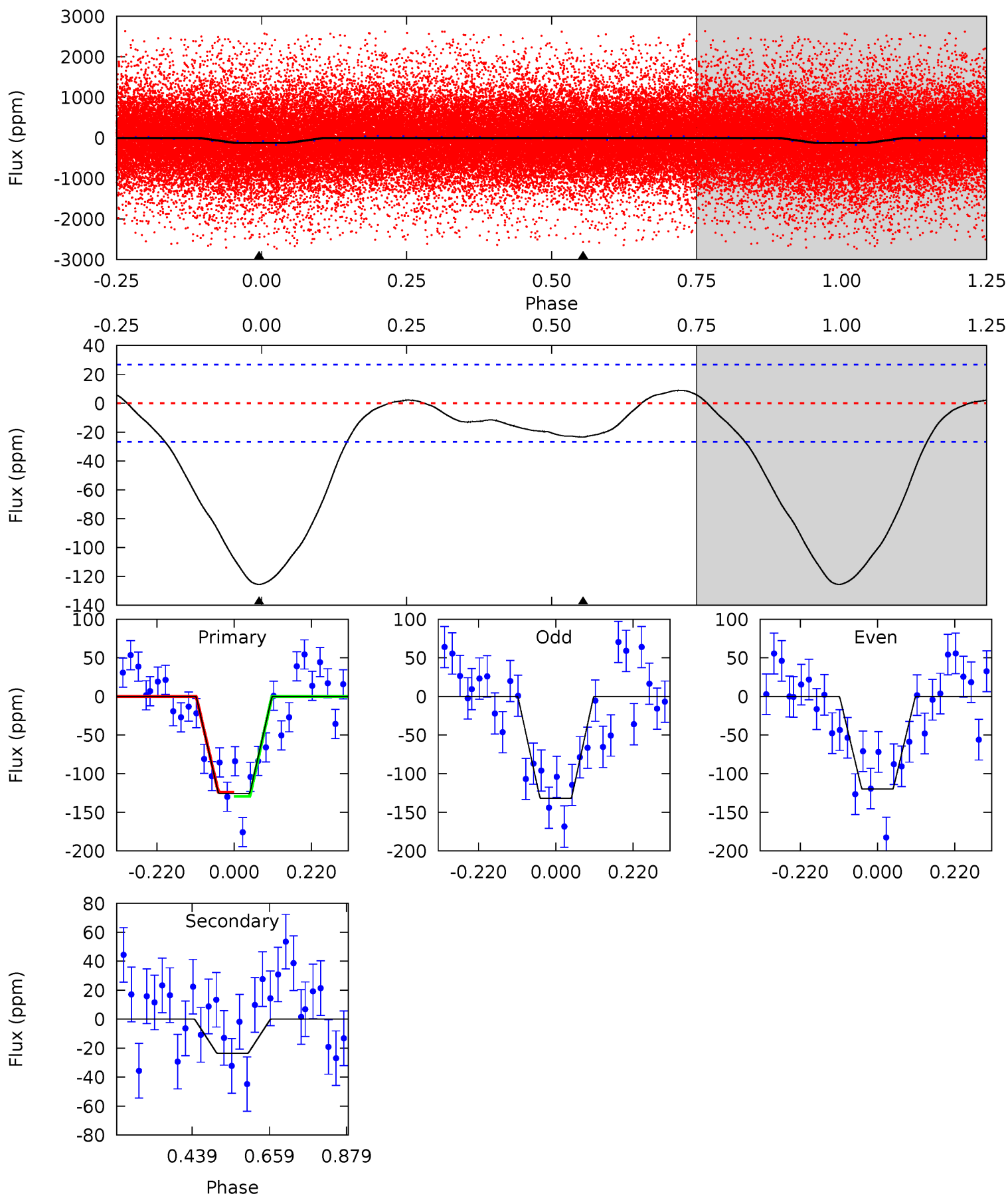
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.51	9.51	0	0	4.30	0.96	7.91	9.51	9.51	9.51	9.51	0.31	1.21	0.73	0.56



Alt Model-Shift Uniqueness Test

008867870-01, P = 4.510167 Days, E = 135.636714 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.6	3.87	0	0	4.40	1.23	0.66	20.6	20.6	3.87	3.87	1.00	0.84	0.07	0.46



Stellar Parameters For KIC 008867870

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5380^{+185}_{-185}	$4.493^{+0.084}_{-0.126}$	$-0.140^{+0.300}_{-0.300}$	$0.846^{+0.163}_{-0.101}$	$0.813^{+0.104}_{-0.070}$	$1.891^{+0.689}_{-0.702}$
	+3%/-3%	+2%/-3%	+214%/-214%	+19%/-12%	+13%/-9%	+36%/-37%
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 008867870-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-52 ± 6	$0.79^{+0.60}_{-0.46}$	1376^{+77}_{-62}	5041^{+2850}_{-991}	115^{+516}_{-77}
Alt.	-24 ± 6	$1.09^{+0.56}_{-0.56}$	1371^{+81}_{-65}	3814^{+1280}_{-512}	27^{+95}_{-15}

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

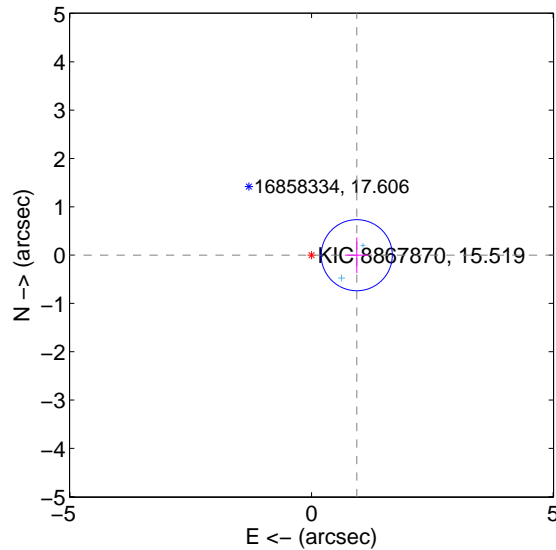
Supplemental centroid analysis for 008867870-01. Kepler magnitude: 15.52. Transit SNR 7.14

There are 2 quarters with good PRF difference image offsets

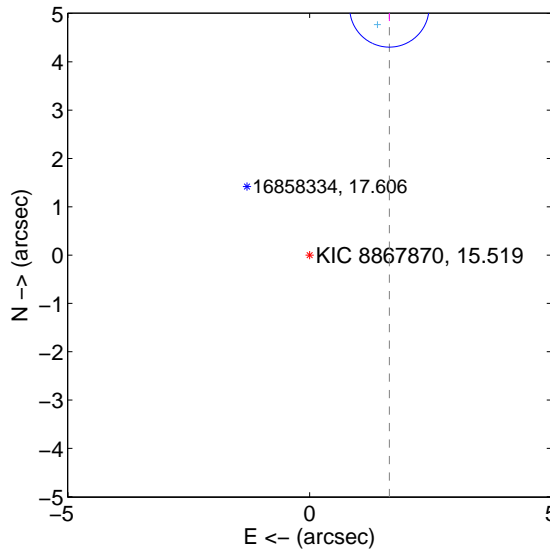
The OOT PRF centroid is offset from the target star catalog position by about 5.12 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.936 ± 0.245	3.82	-0.936 ± 0.245	-0.002 ± 0.368
PRF-fit source offset from KIC position	5.385 ± 0.274	19.68	-1.650 ± 0.197	5.125 ± 0.280
photometric centroid source offset	2.08 ± 0.70	2.97	0.00 ± 0.24	2.08 ± 0.70

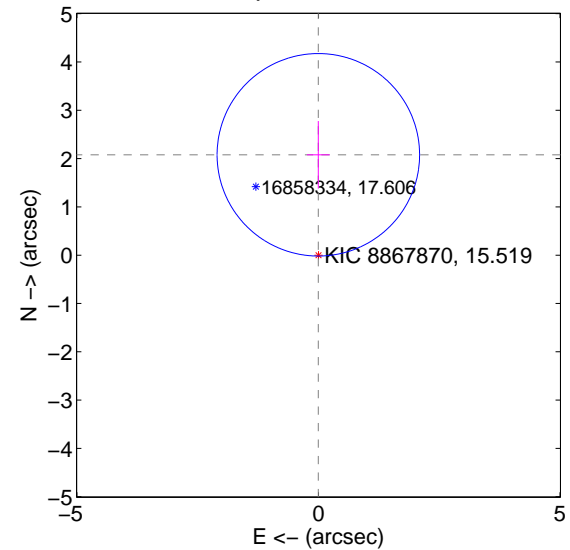
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

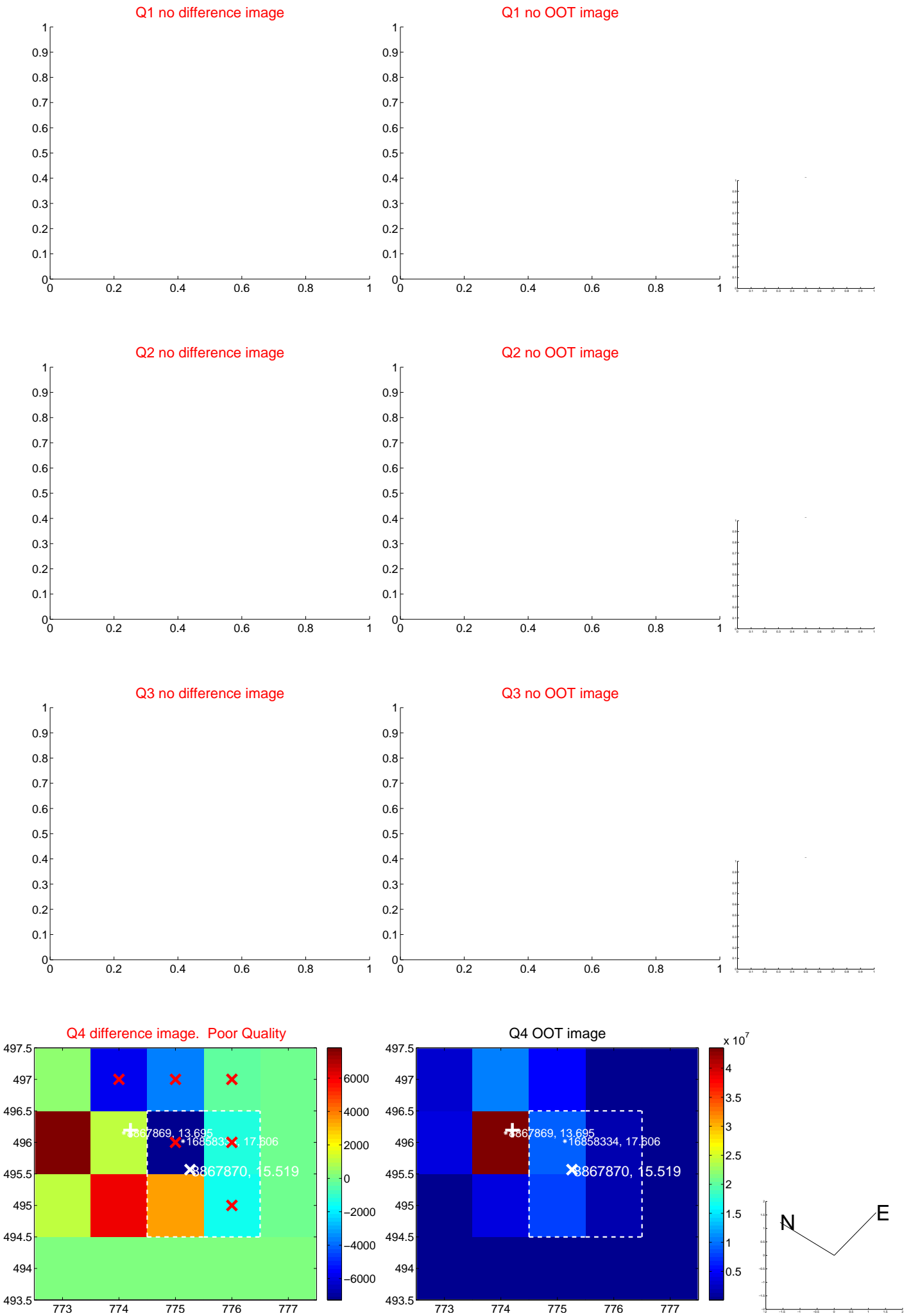


offset from photometric centroids

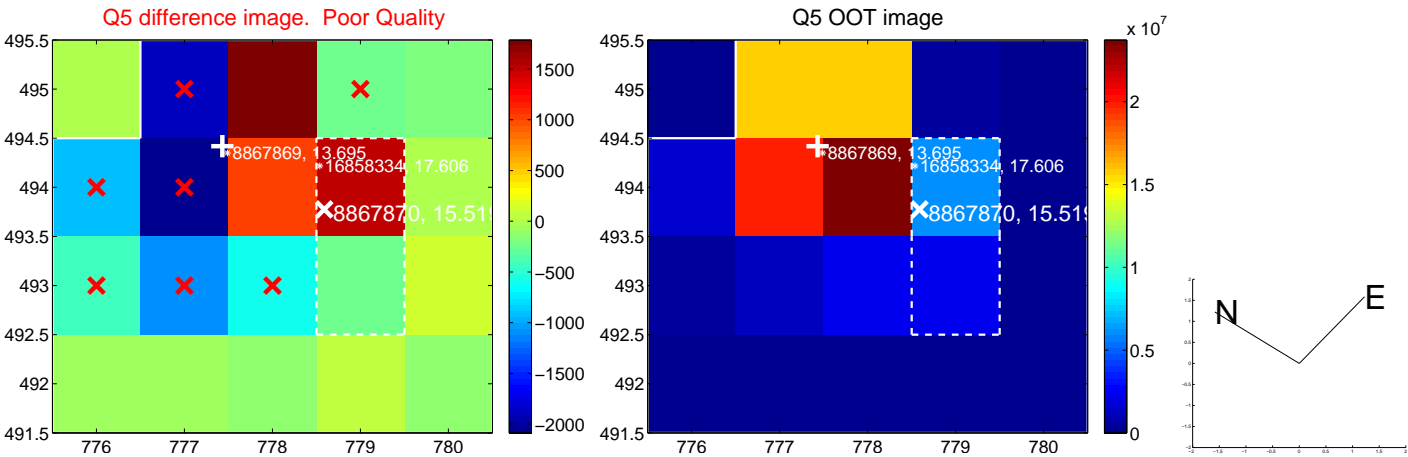


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

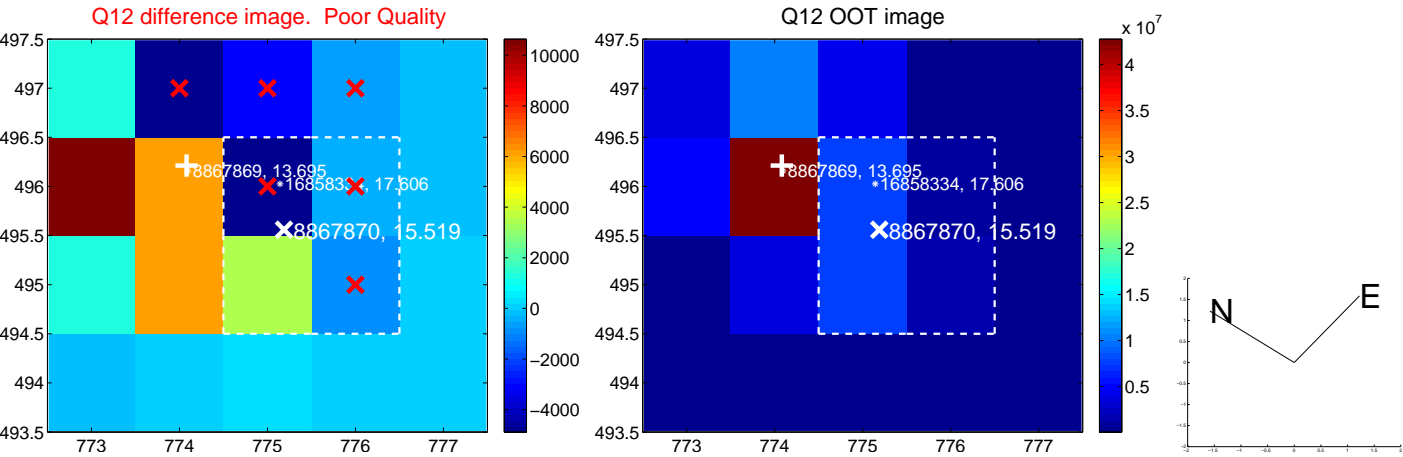
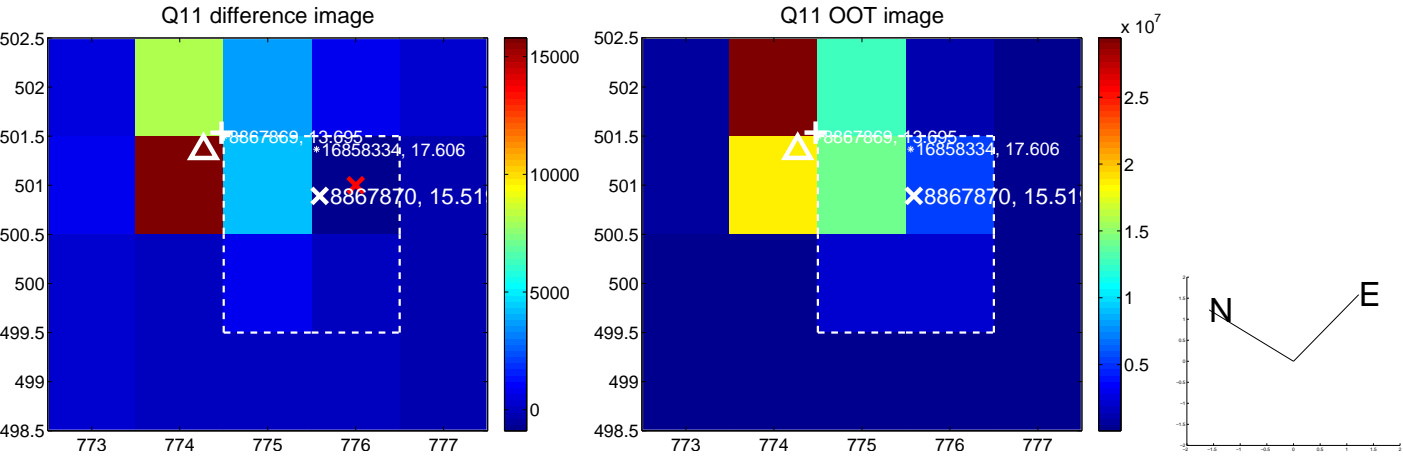
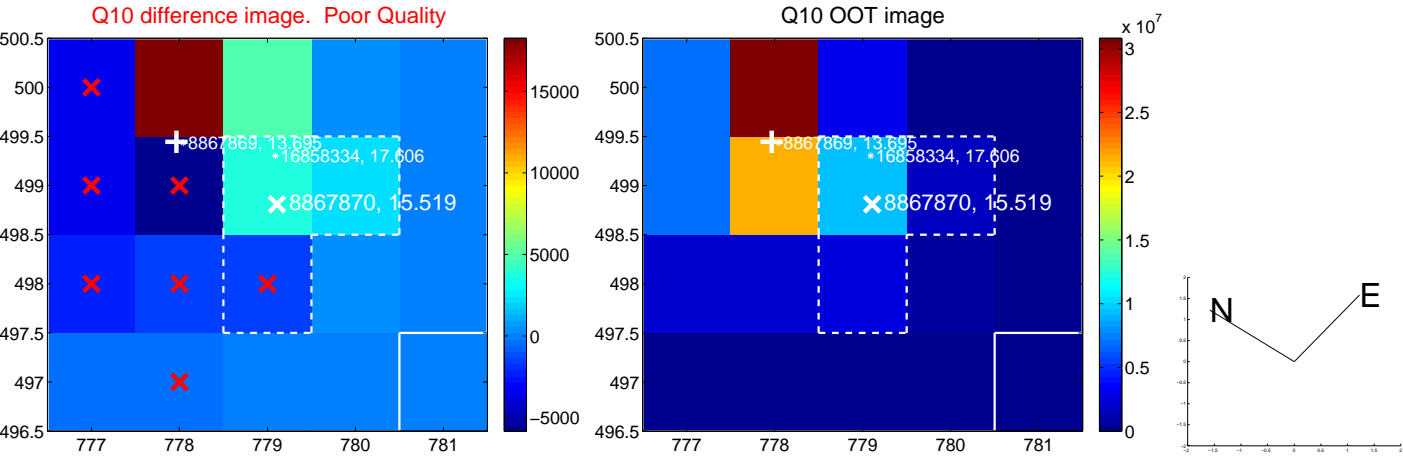
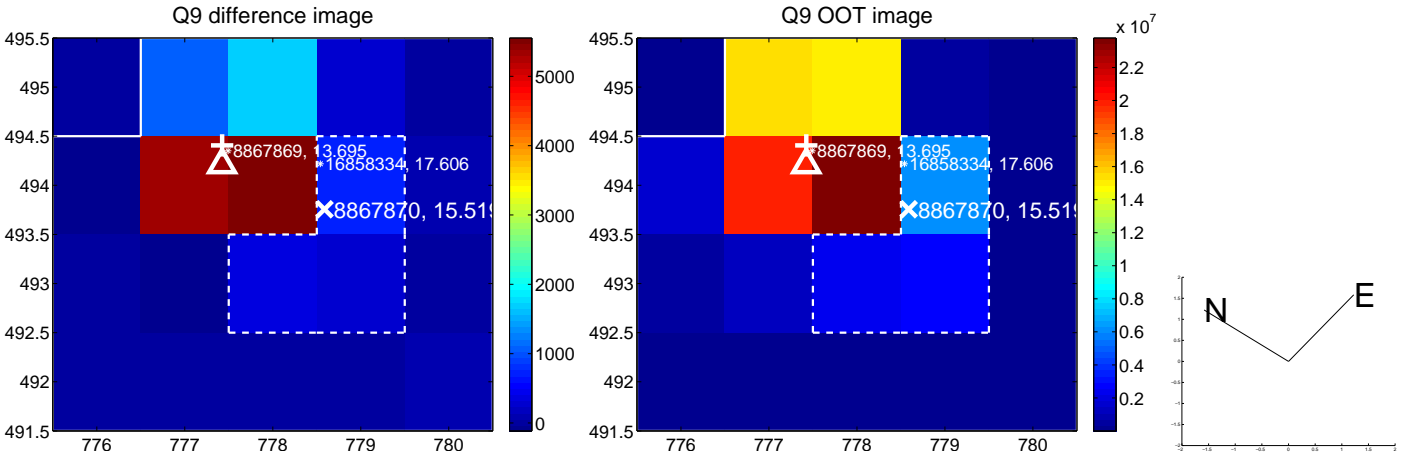
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



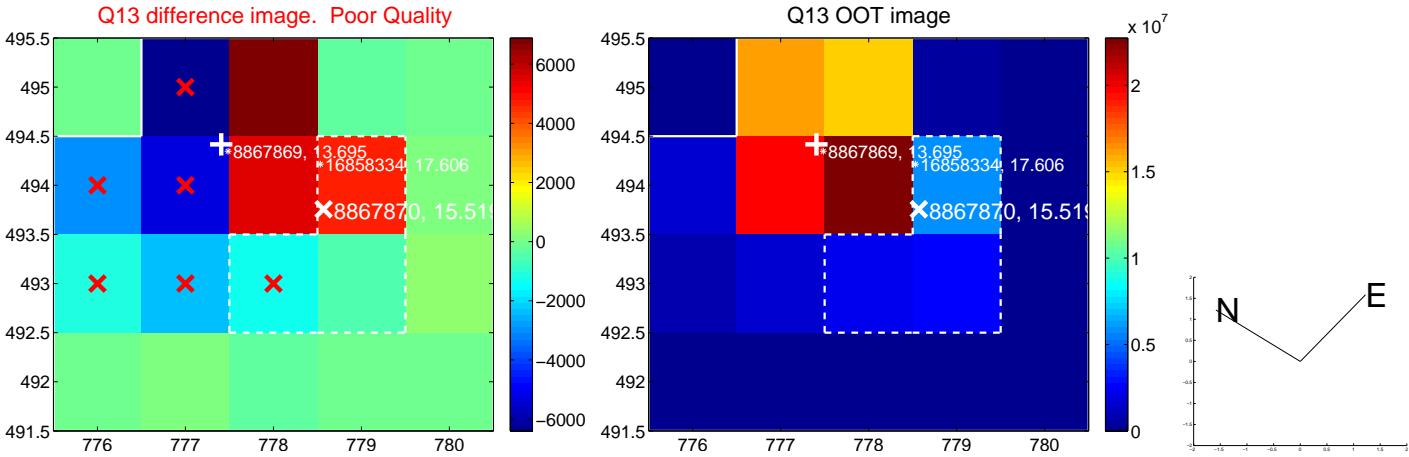
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



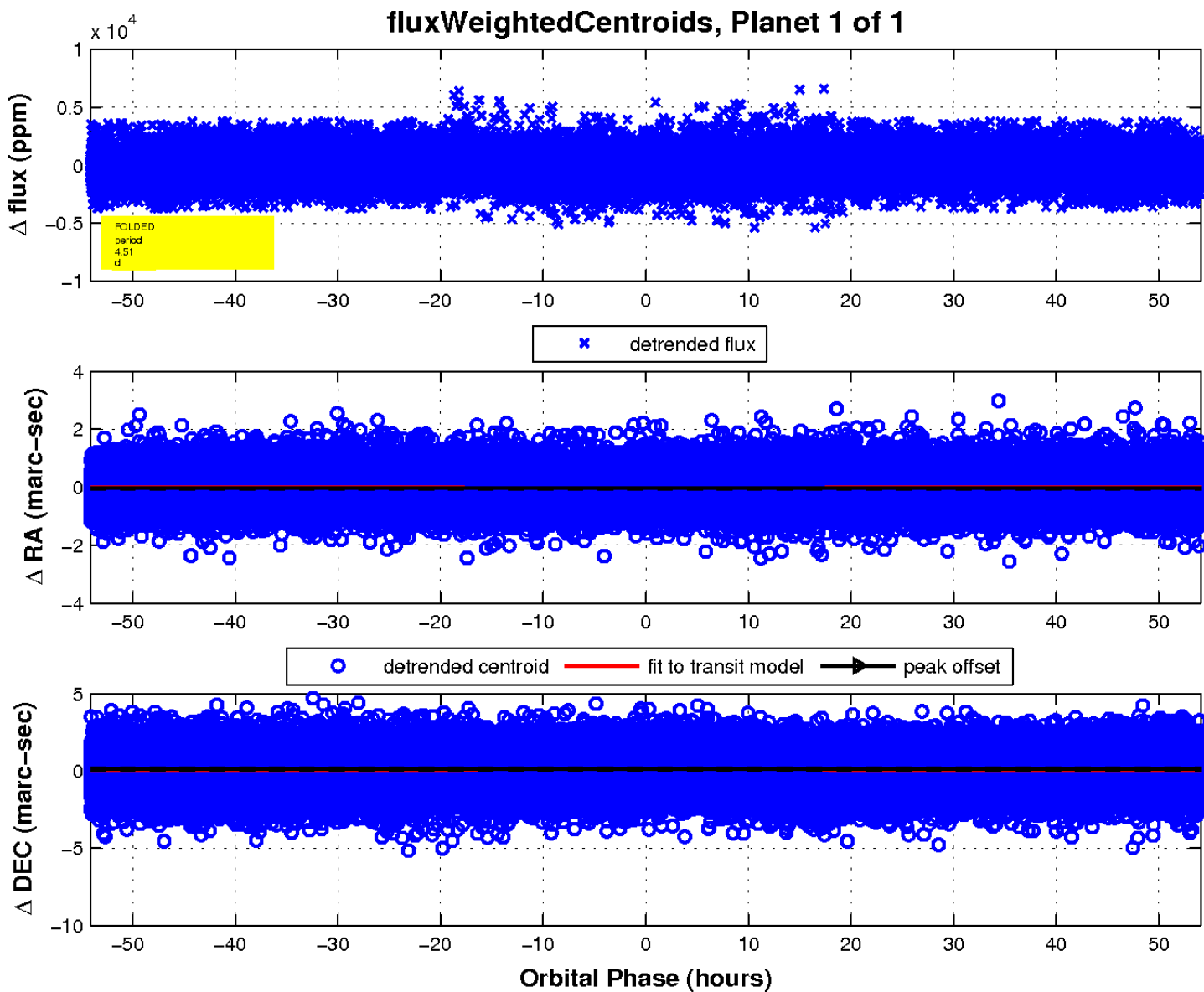
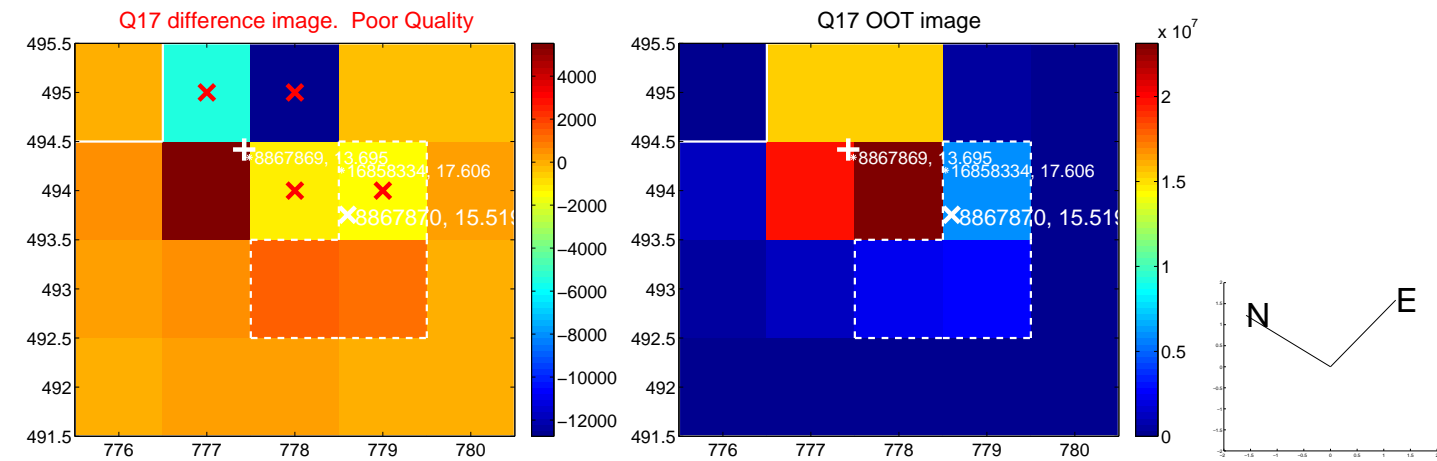
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

