

KIC 010862889

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})
010862889-01	OBS	No	4.937484	134.334814	6.5	21.724	8.9	12.1	2.98	8665	0.88	8829.25

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010862889-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED

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

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

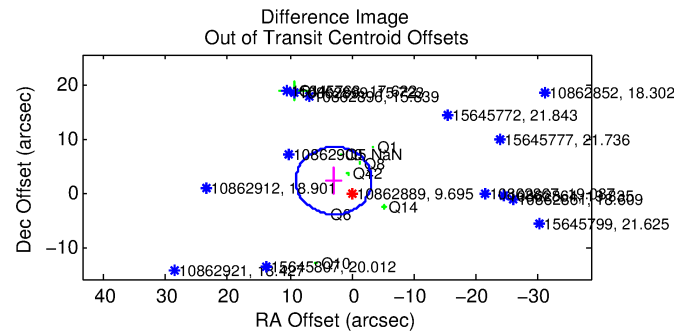
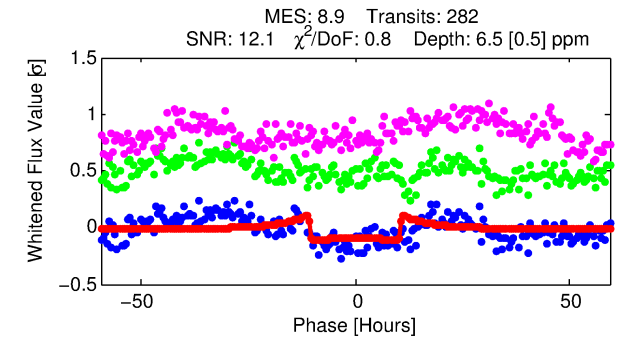
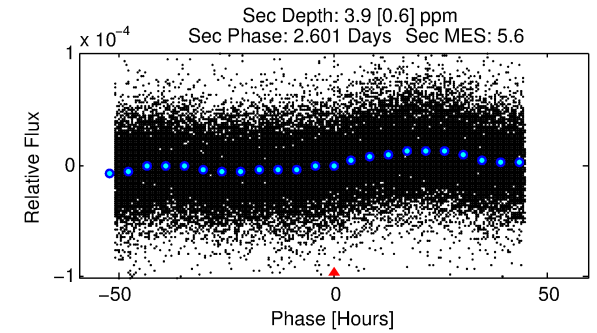
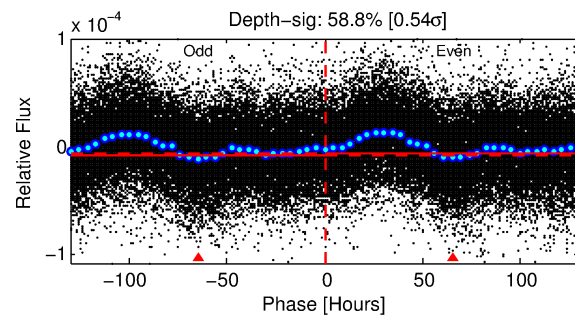
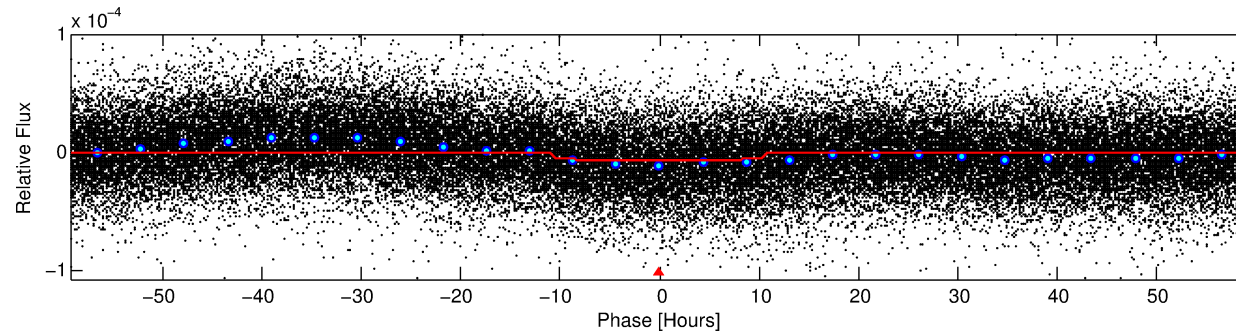
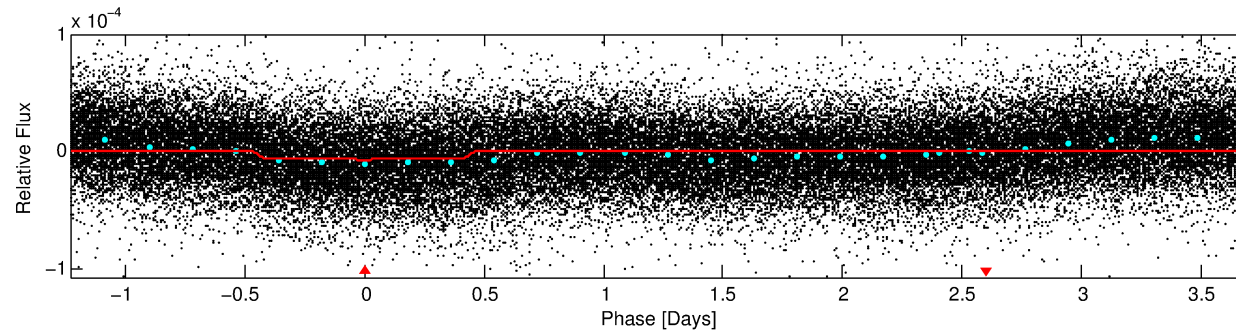
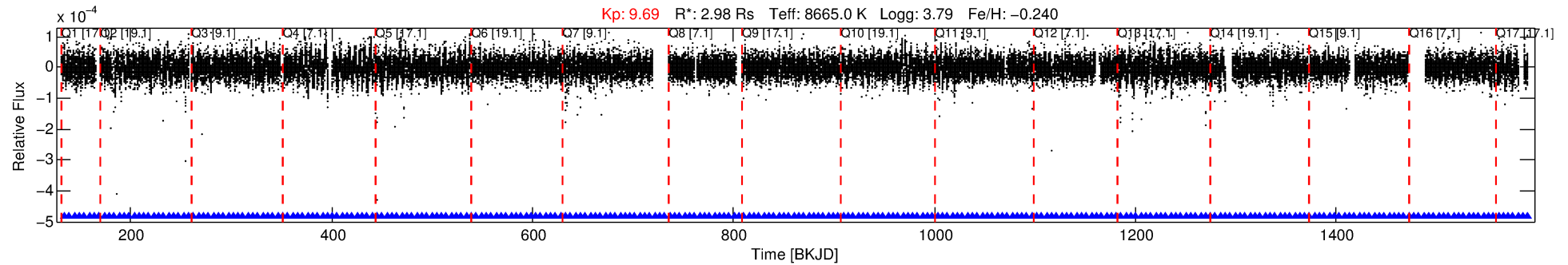
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010862889-01

No Significant Match Found

DV One-Page Summary

KIC: 10862889 Candidate: 1 of 1 Period: 4.937 d



DV Fit Results:

Period = 4.93748 [0.00005] d
Epoch = 134.3348 [0.0068] BKJD
Rp/R* = 0.0027 [0.0002]
a/R* = 1.21 [0.12]
b = 0.90 [0.07]
Seff = 8829.25 [5888.47]
Teq = 2472 [412] K
Rp = 0.88 [0.37] Re
a = 0.0714 [0.0287] AU
Ag = 14.13 [9.52] [1.38 σ]
Teffp = 7409 [491] K [7.70 σ]

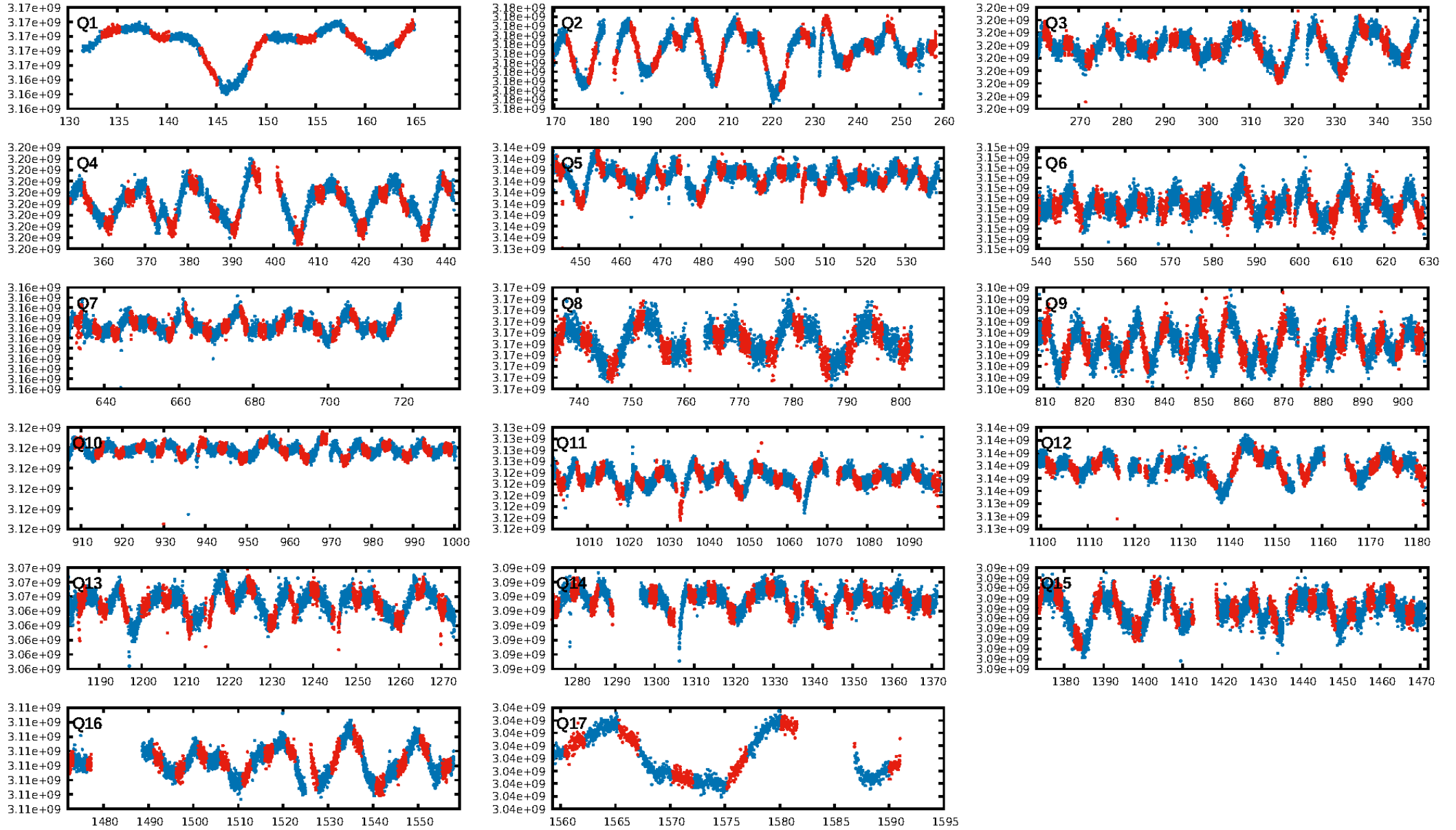
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.43e-21
RollingBand-fgt: 1.00 [269/269]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.449 arcsec [0.20 σ]
OotOffset-rm: 3.835 arcsec [1.87 σ]
OotOffset-st: 3/1/3/2 [9]
KicOffset-rm: 5.494 arcsec [3.43 σ]
KicOffset-st: 3/1/3/2 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 1.00 [17/17]

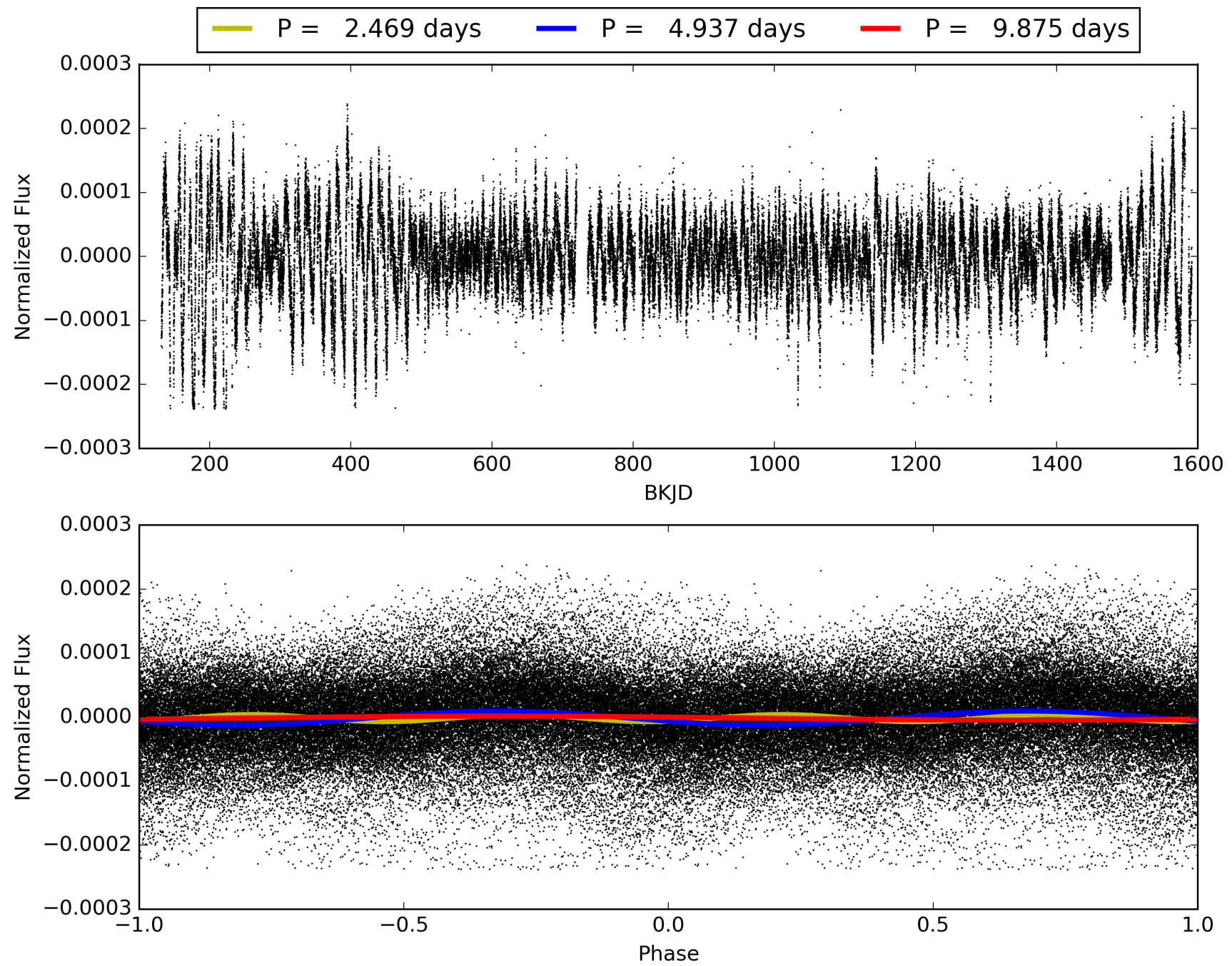
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:17:53 Z

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

TCE 010862889-01, PDC Light Curves

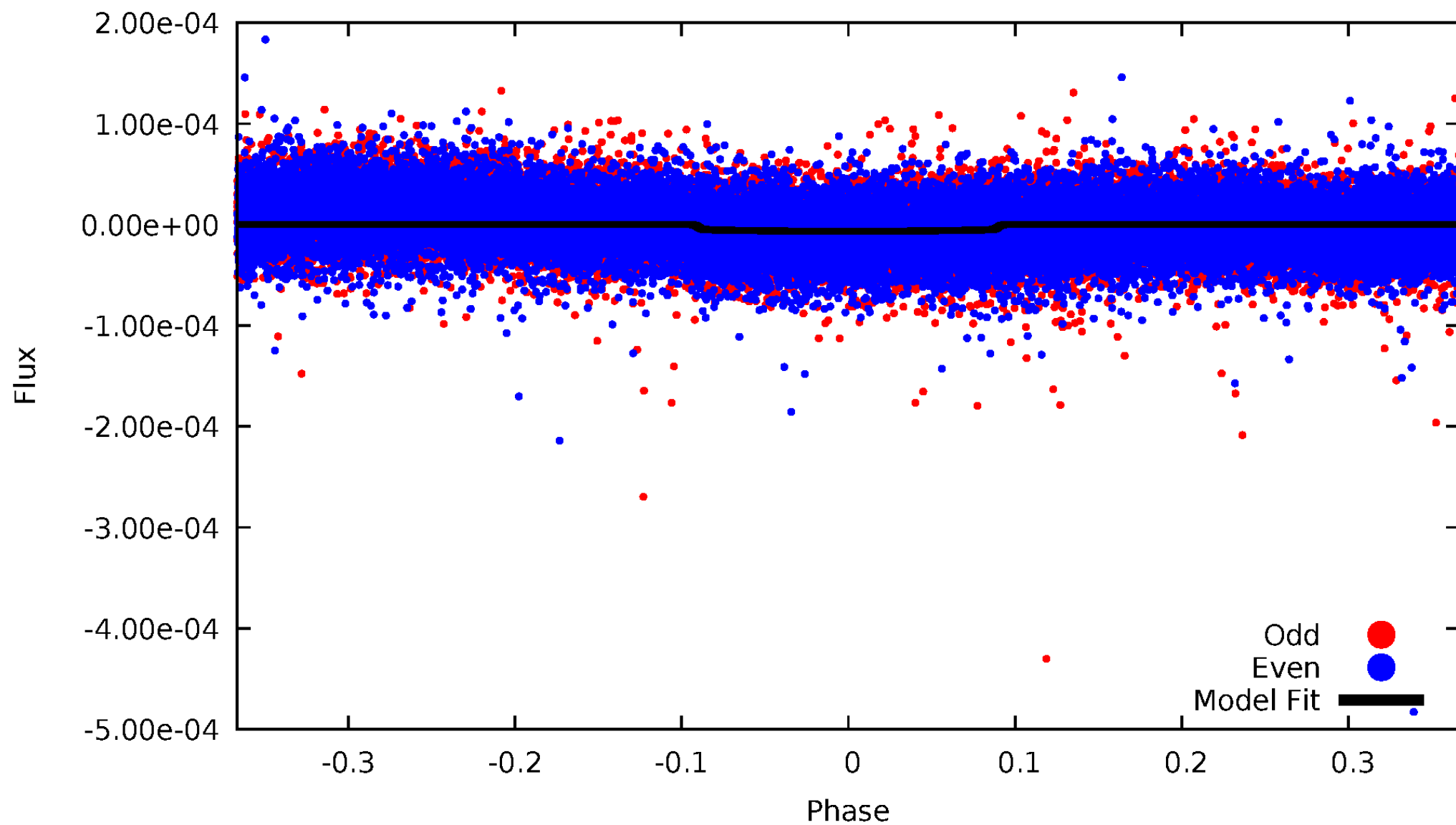


TCE 010862889-01



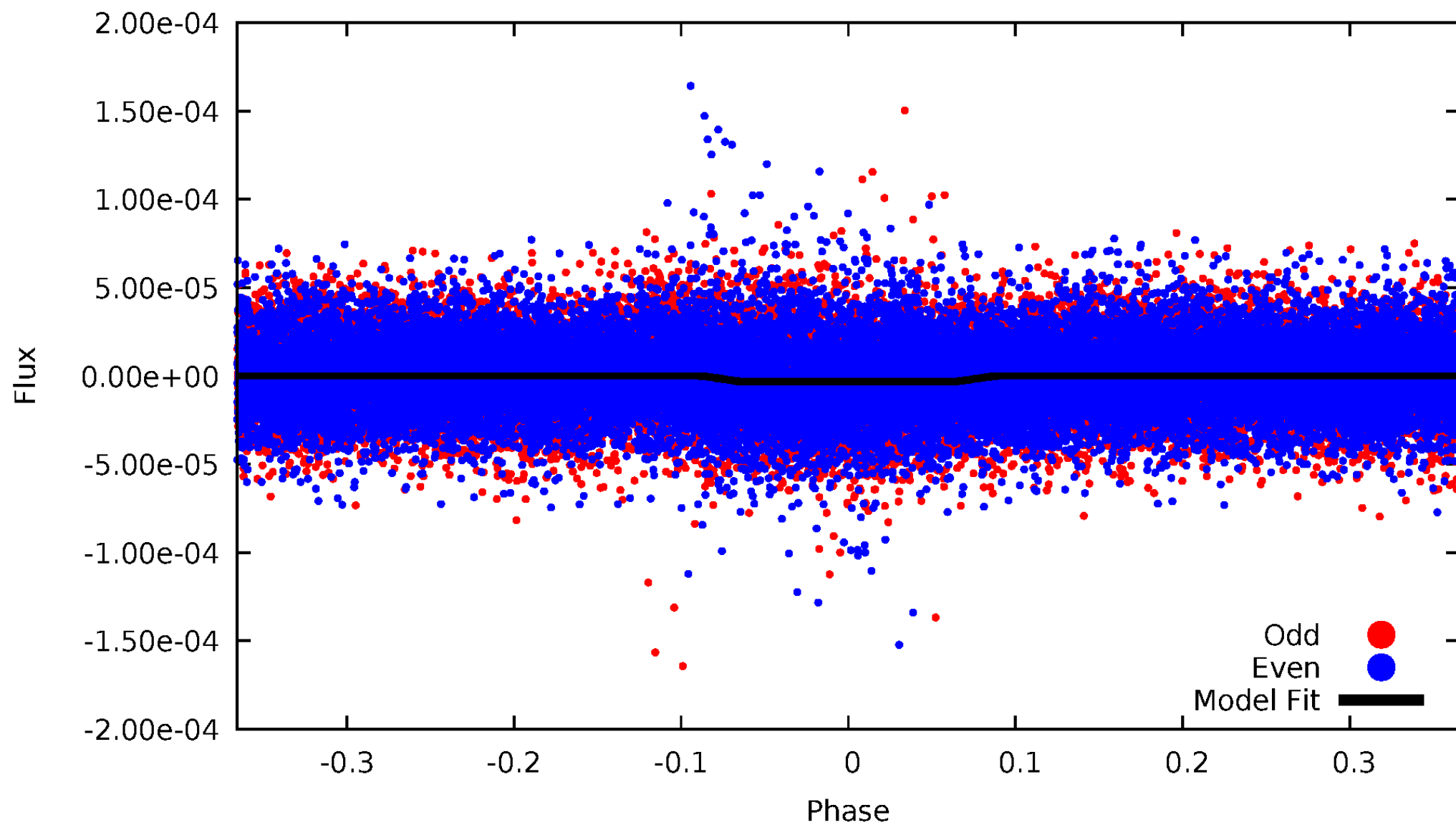
DV Odd/Even

TCE 010862889-01

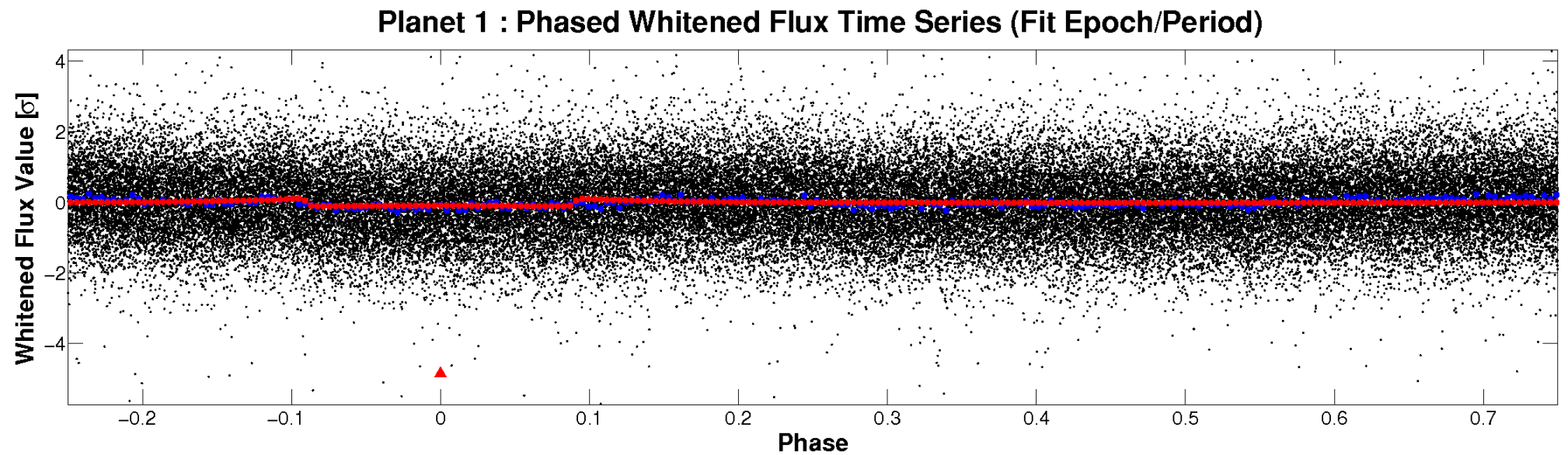
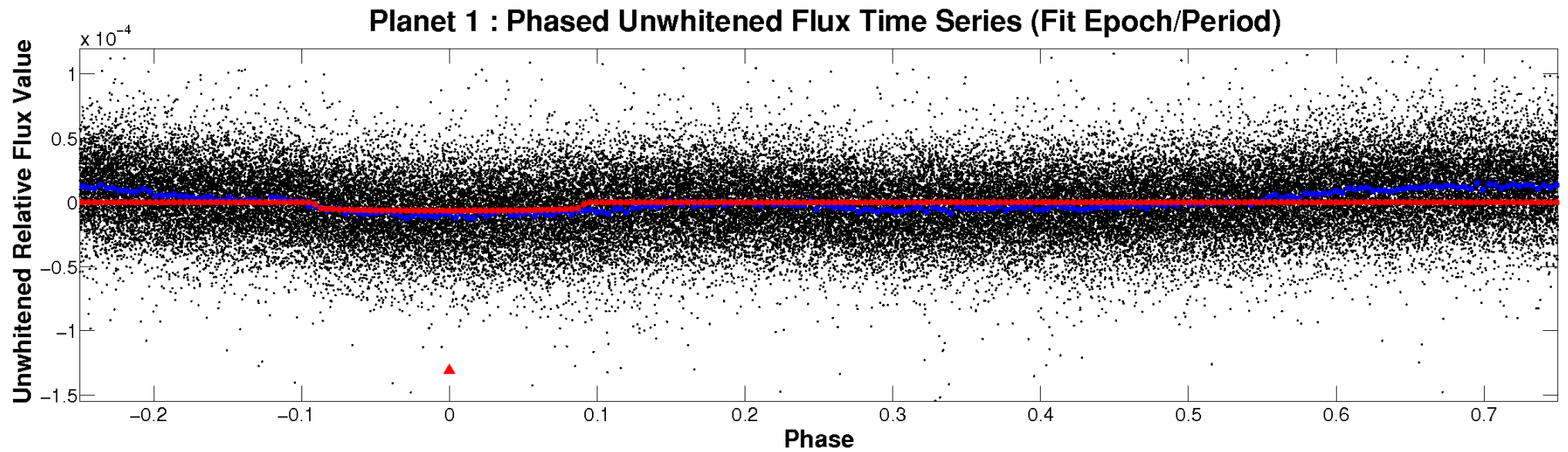


ALT Odd/Even

TCE 010862889-01

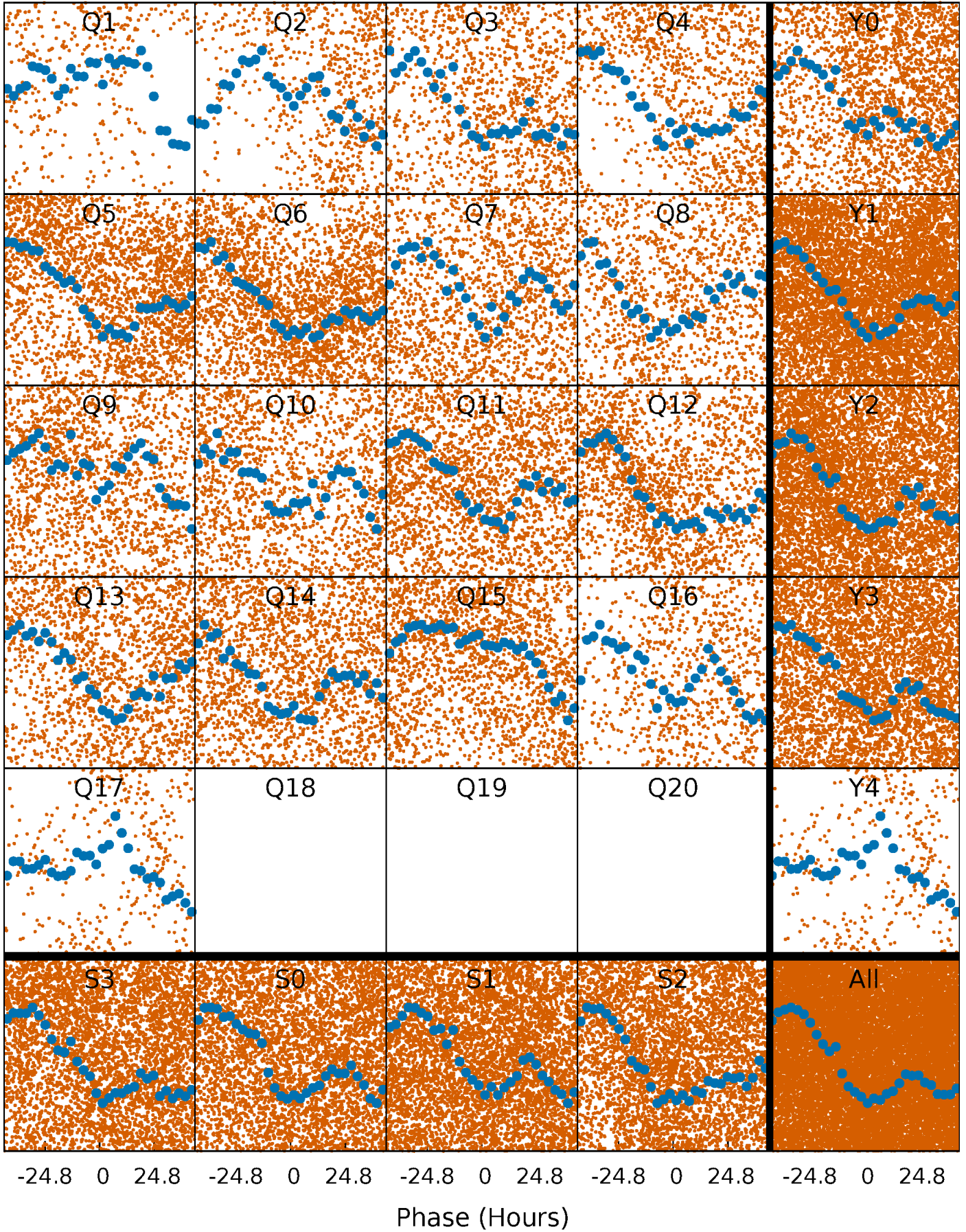


Non-Whitened Vs. Whitened Light Curve



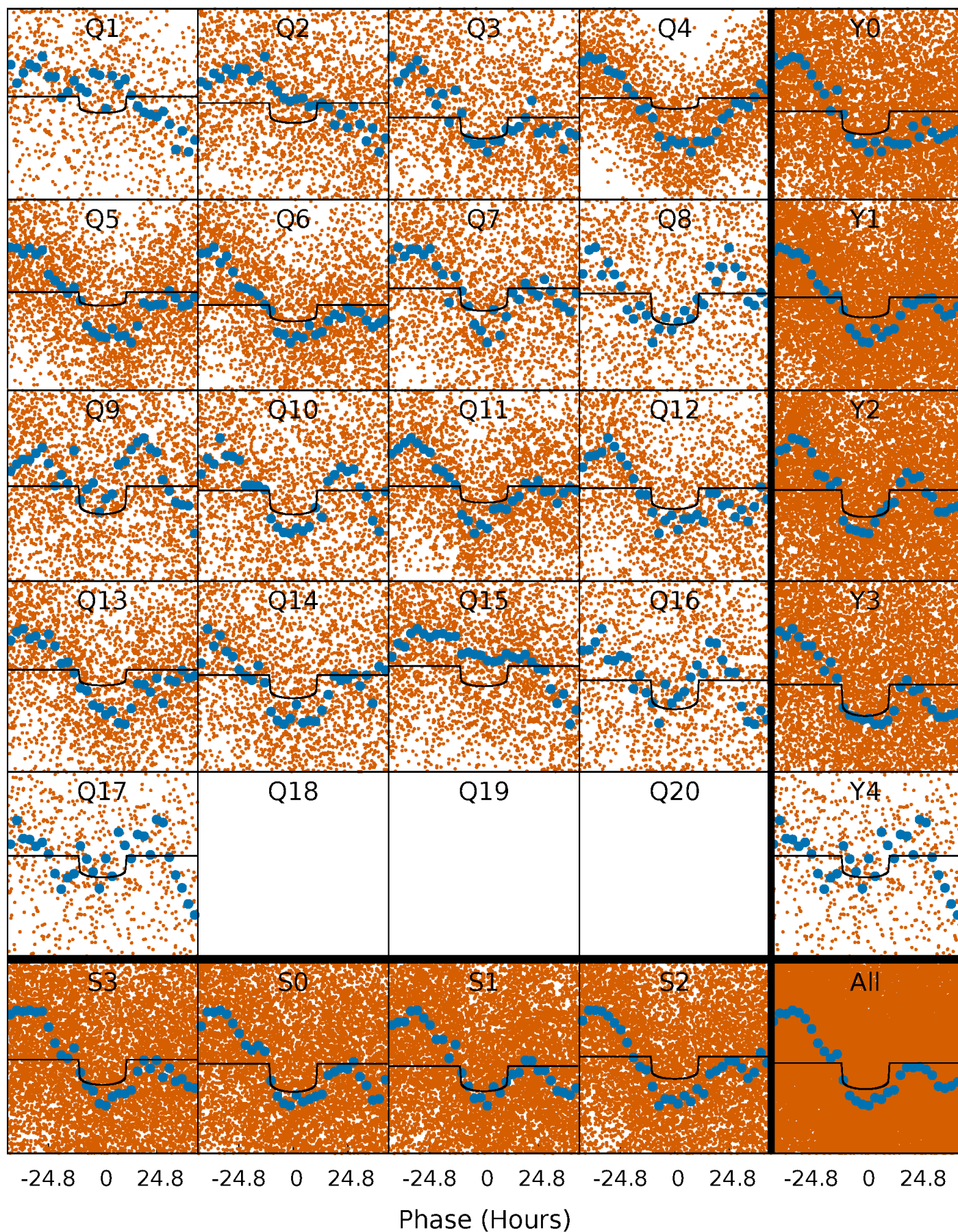
PDC Quarter-Phased Transit Curves

TCE 010862889-01 P= 4.937484 Days $T_0=134.334814$ (BKJD)



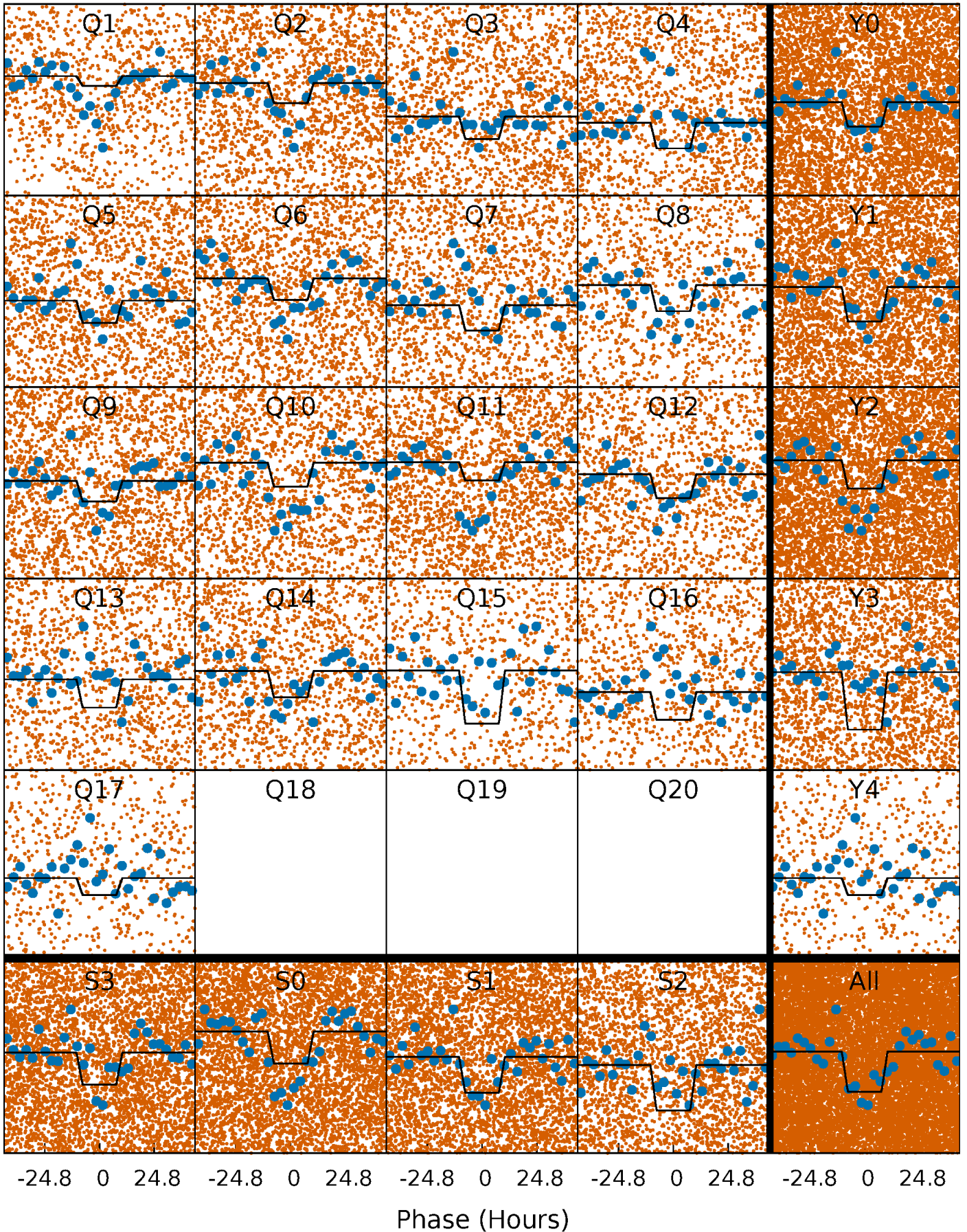
DV Quarter-Phased Transit Curves

TCE 010862889-01 P= 4.937484 Days $T_0=134.334814$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

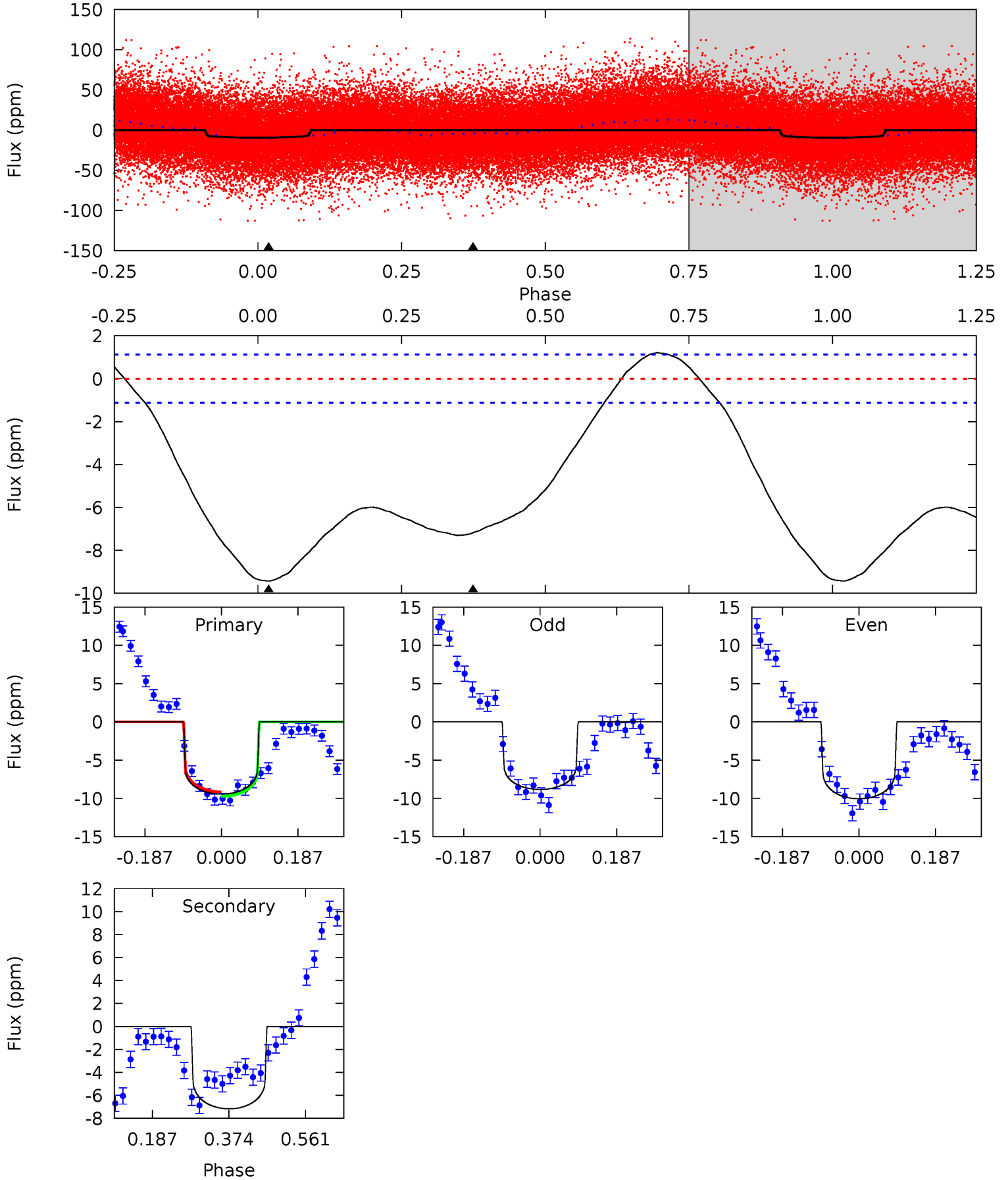
TCE 010862889-01 P= 4.937190 Days $T_0=134.362772$ (BKJD)



DV Model-Shift Uniqueness Test

010862889-01, P = 4.937484 Days, E = 129.397330 Days

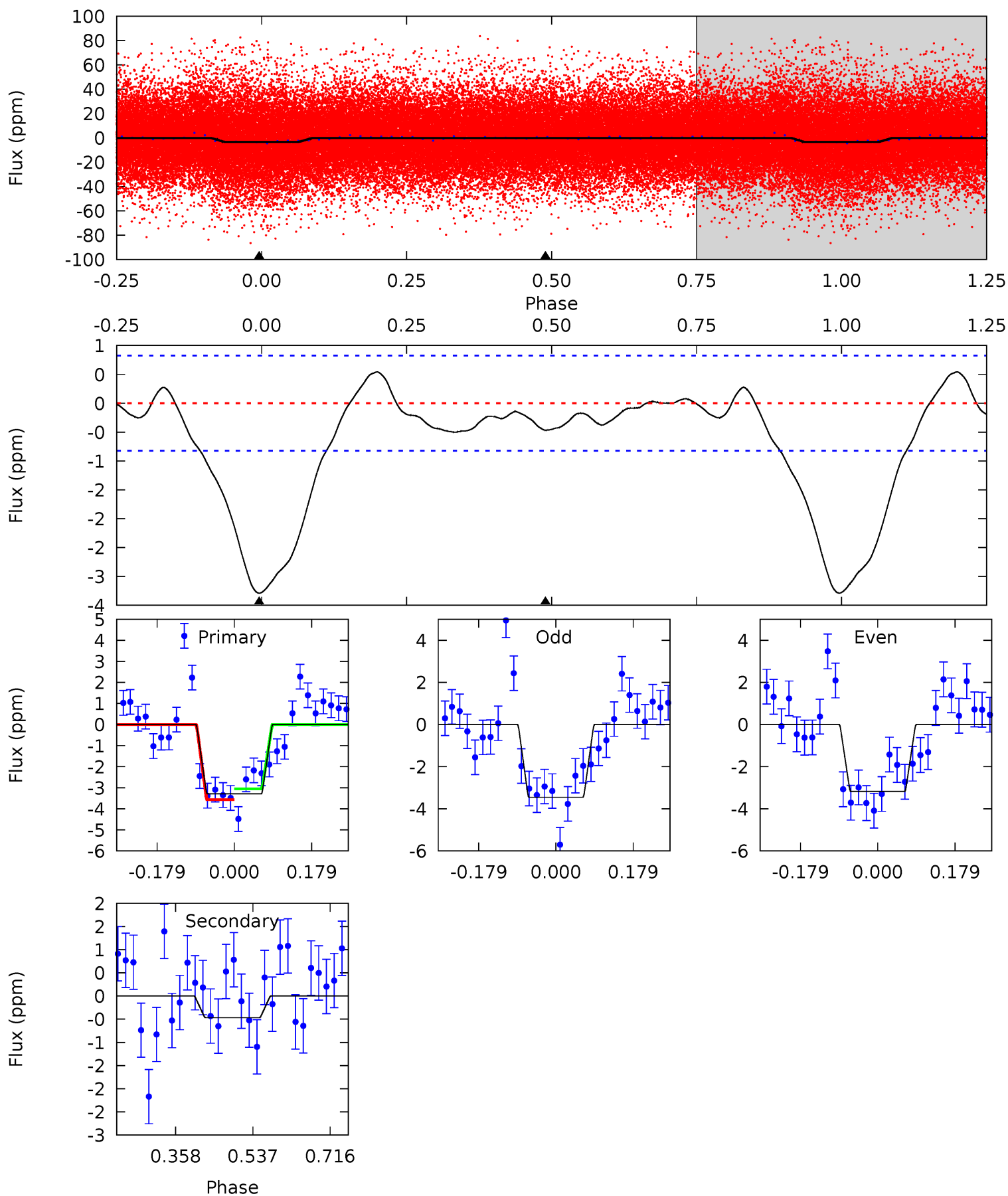
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.3	28.3	0	0	4.43	1.32	4.60	37.3	37.3	28.3	28.3	2.40	1.10	0.11	1.21



Alt Model-Shift Uniqueness Test

010862889-01, P = 4.937190 Days, E = 129.425582 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	2.52	0	0	4.44	1.34	1.39	17.7	17.7	2.52	2.52	0.74	1.27	0.14	1.38



Stellar Parameters For KIC 010862889

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8665^{+240}_{-377}	$3.787^{+0.378}_{-0.162}$	$-0.240^{+0.450}_{-0.350}$	$2.985^{+1.022}_{-1.249}$	$1.994^{+0.452}_{-0.407}$	$0.106^{+0.329}_{-0.047}$
	+3%/-4%	+10%/-4%	+188%/-146%	+34%/-42%	+23%/-20%	+311%/-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 010862889-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-7 ± 0	$0.84^{+0.17}_{-0.18}$	3333^{+323}_{-351}	8562^{+500}_{-487}	29^{+16}_{-8}
Alt.	-0 ± 0	$0.56^{+0.13}_{-0.12}$	3372^{+307}_{-402}	5110^{+492}_{-632}	$4.329^{+3.239}_{-2.104}$

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

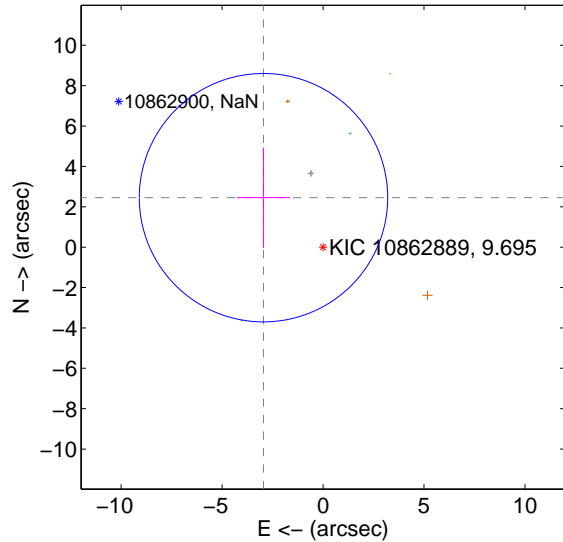
Supplemental centroid analysis for 010862889-01. **Kepler magnitude: 9.70.** Transit SNR 12.07

There are 3 quarters with good PRF difference image offsets

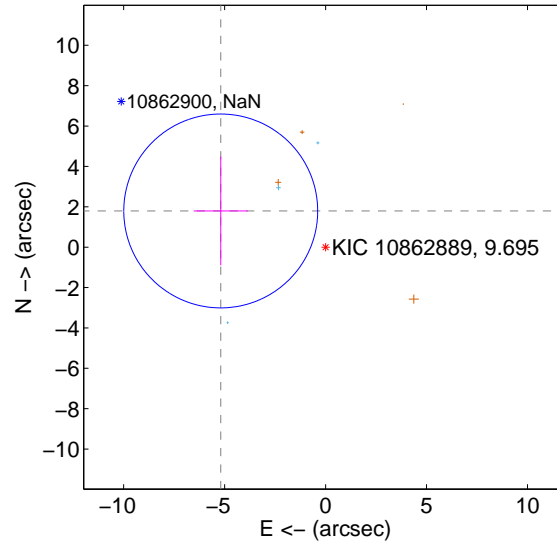
The direct PRF centroid is offset from the target star catalog position by about 0.82 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.835 ± 2.051	1.87	2.950 ± 1.322	2.451 ± 2.488
PRF-fit source offset from KIC position	5.494 ± 1.601	3.43	5.193 ± 1.338	1.794 ± 2.691
photometric centroid source offset	0.45 ± 2.22	0.20	-0.21 ± 1.73	-0.39 ± 2.34

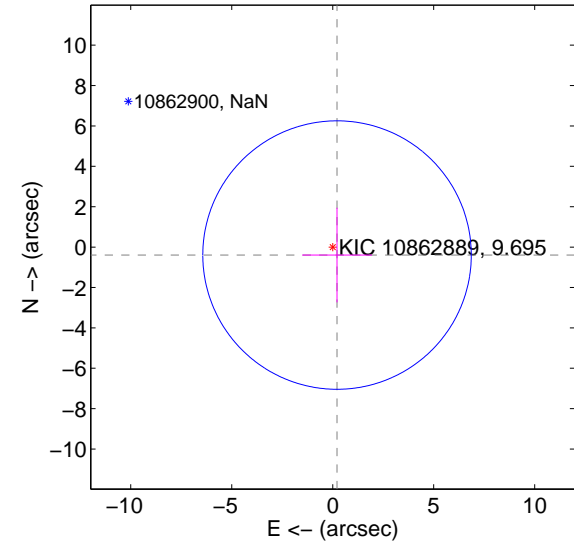
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

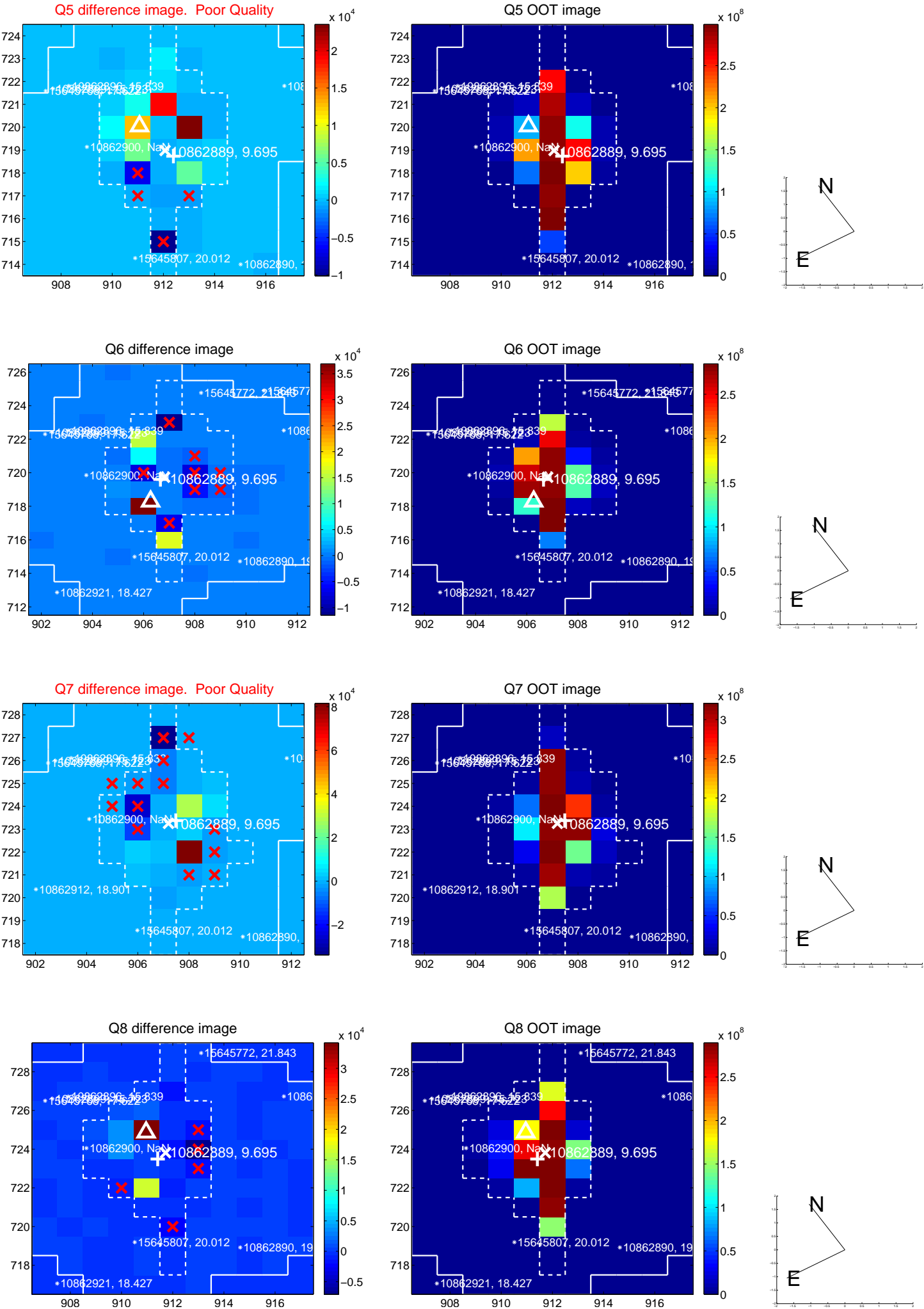


offset from photometric centroids

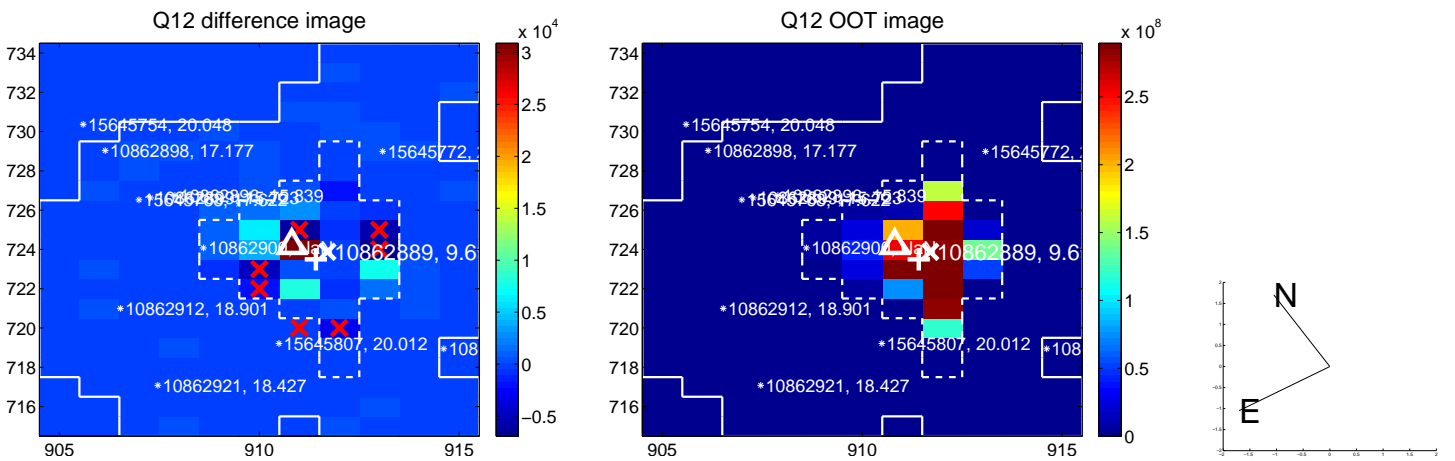
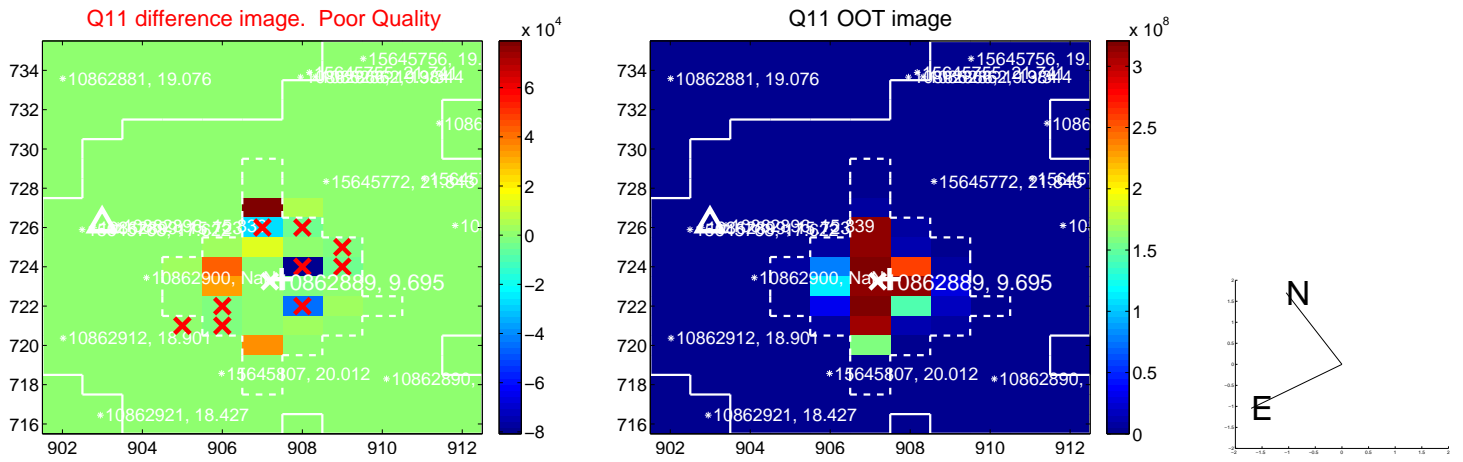
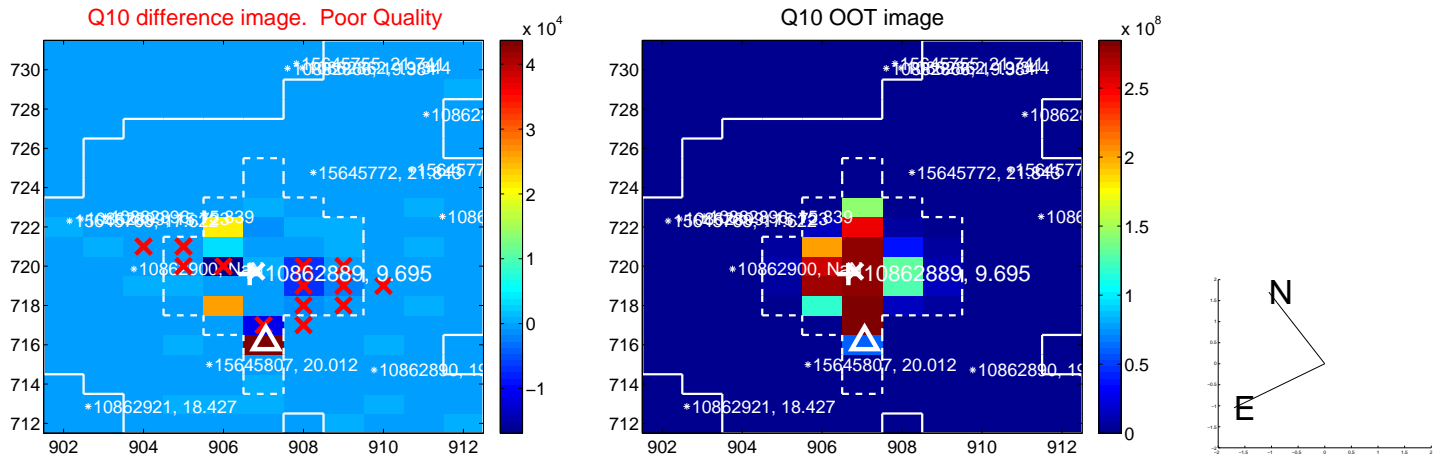
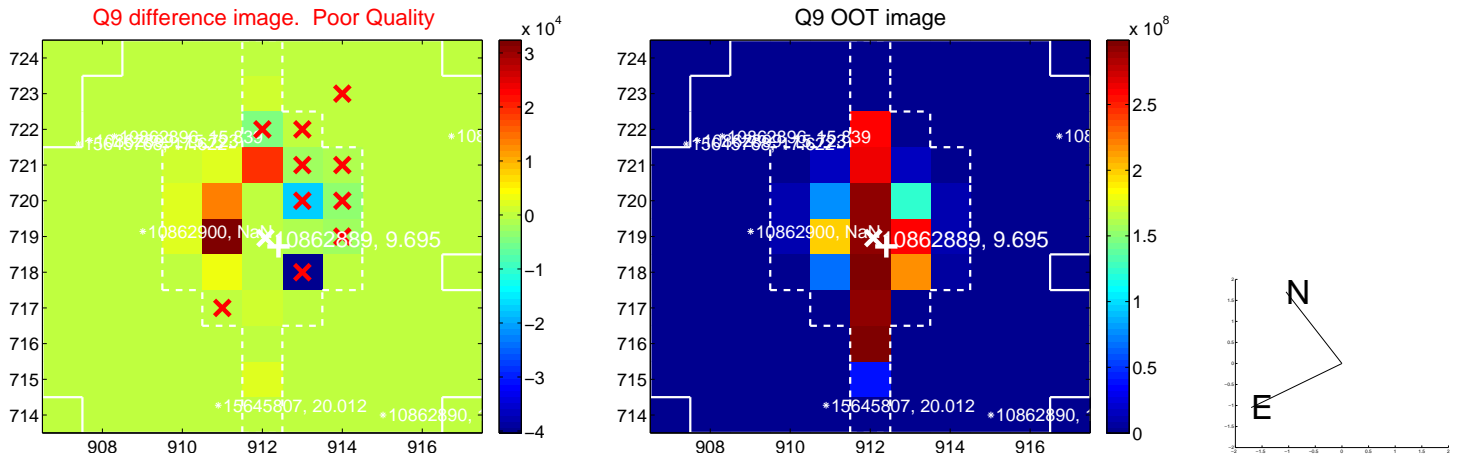


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

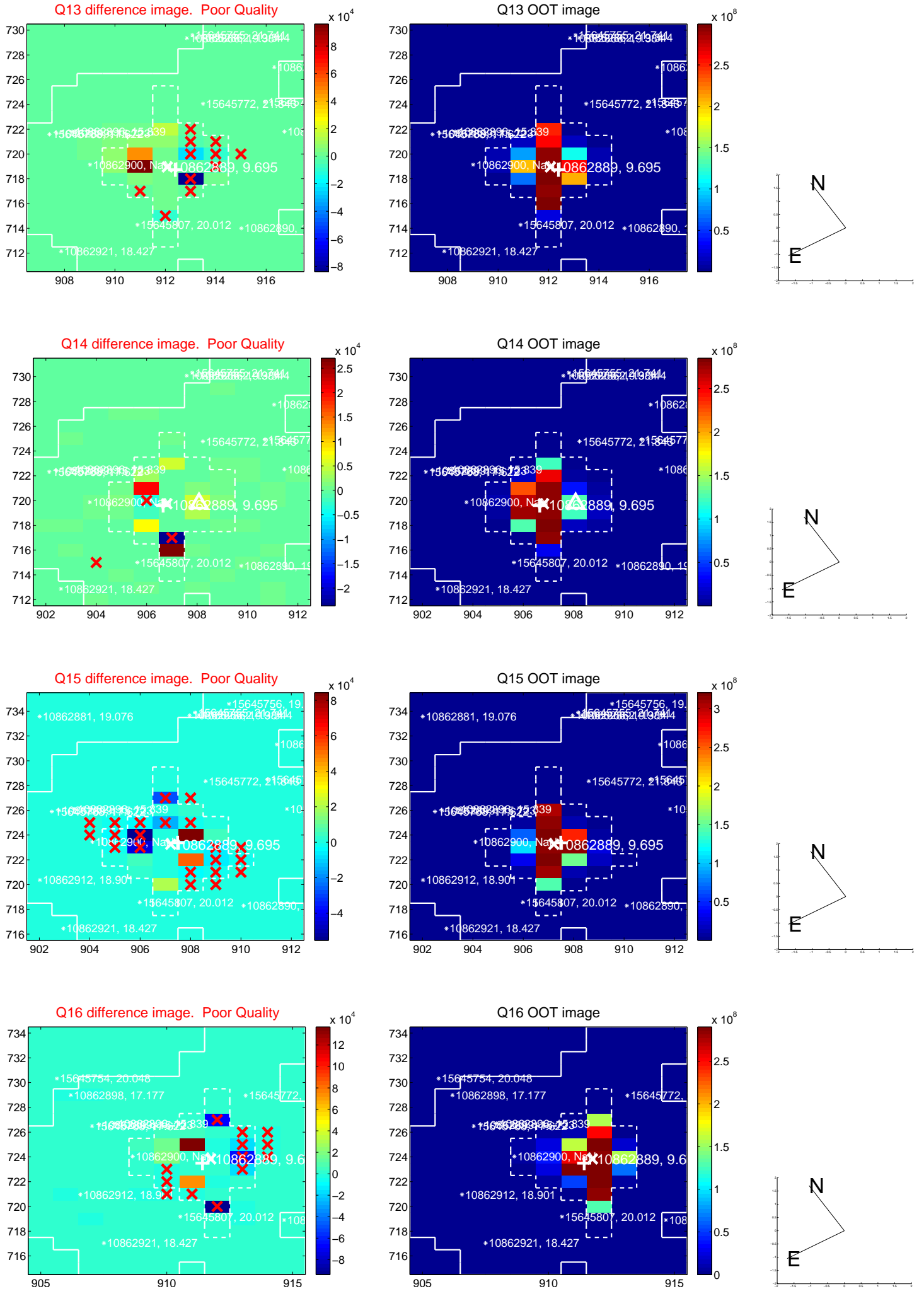
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



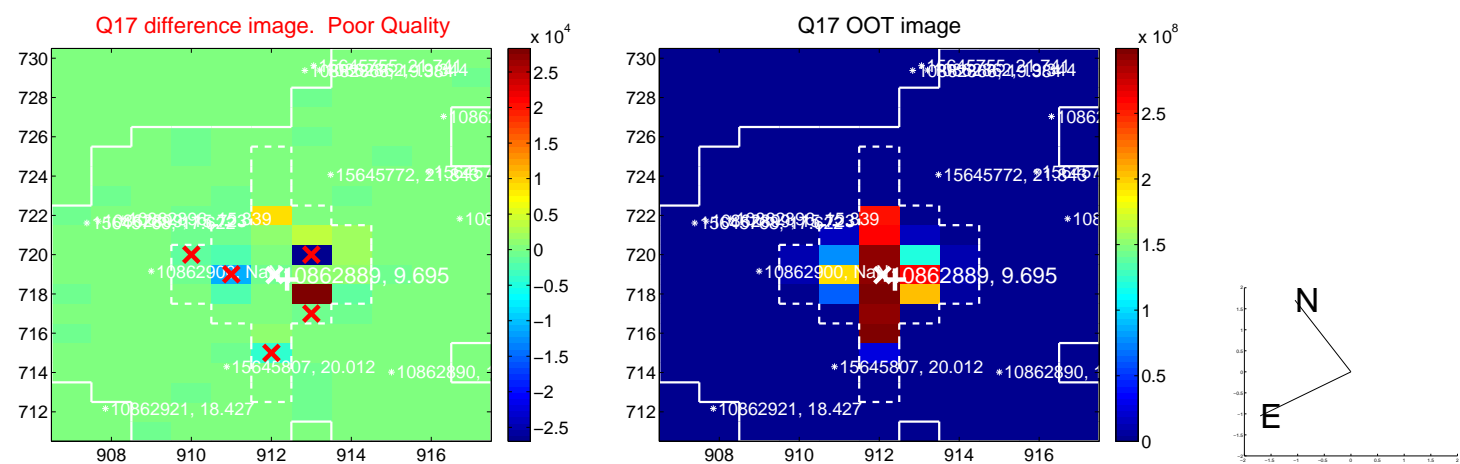
white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



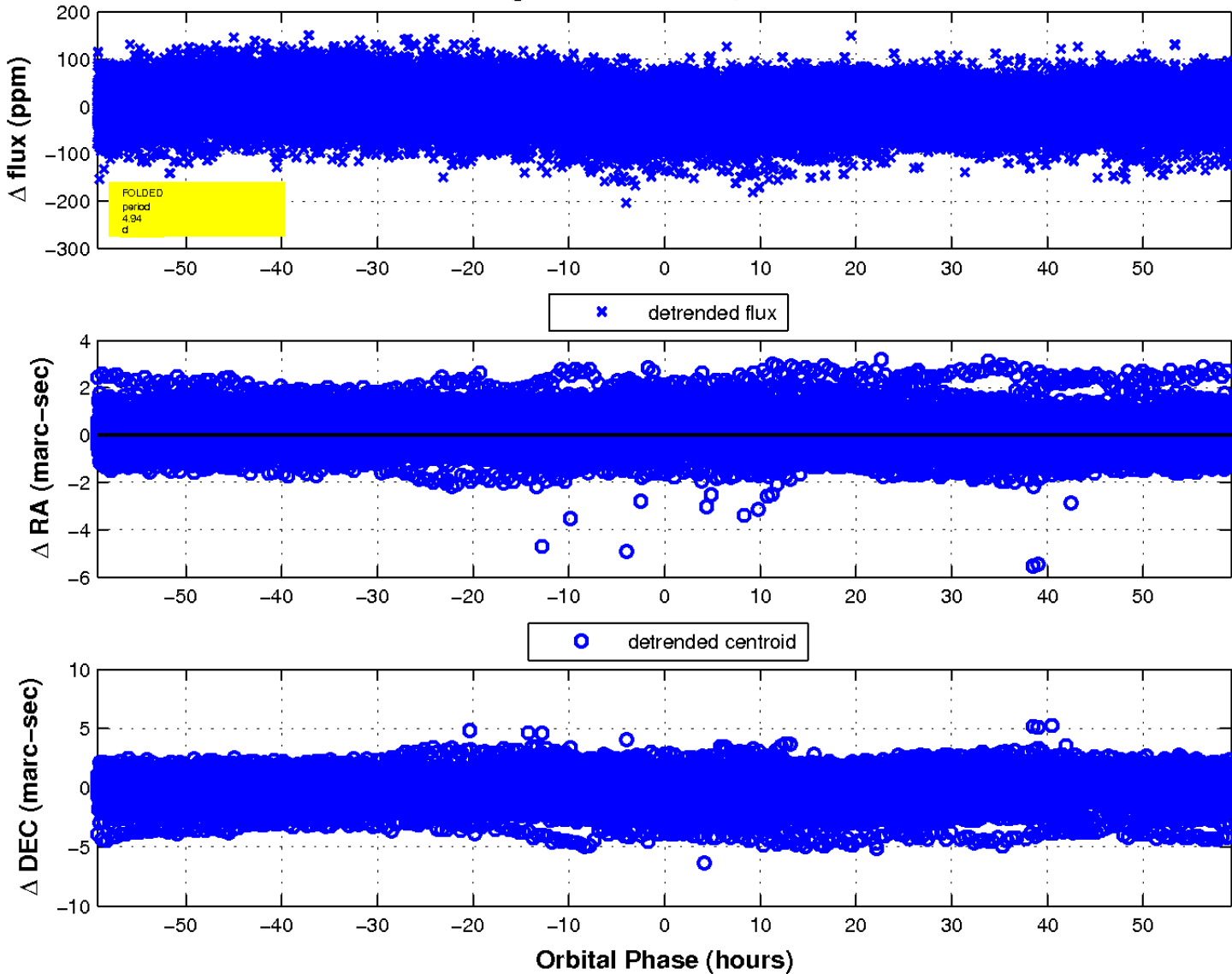
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

