

KIC 009407225

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})
009407225-01	OBS	No	3.194113	134.596848	56.6	8.815	11.9	11.9	3.44	6969	3.78	9637.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009407225-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

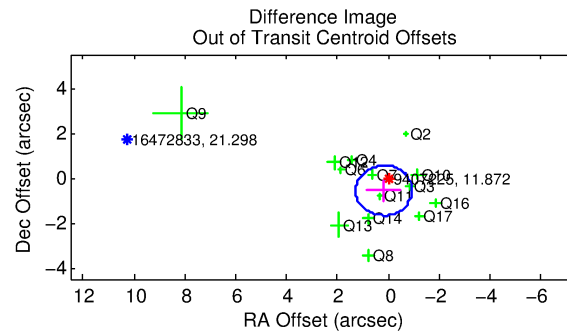
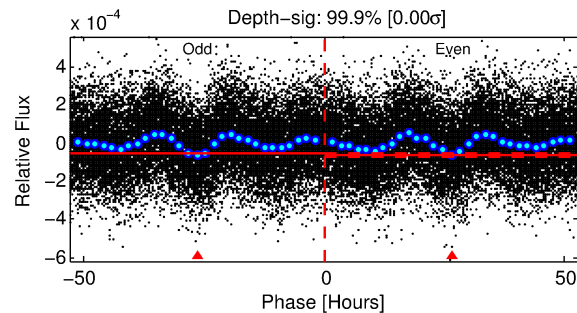
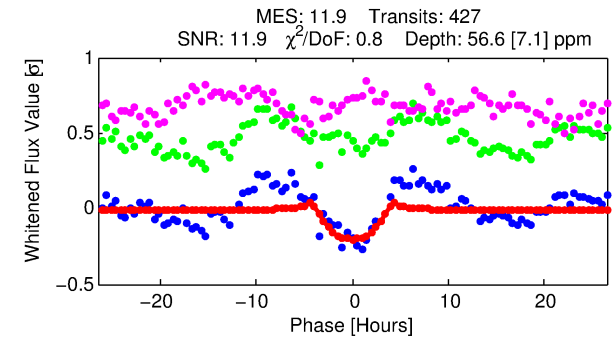
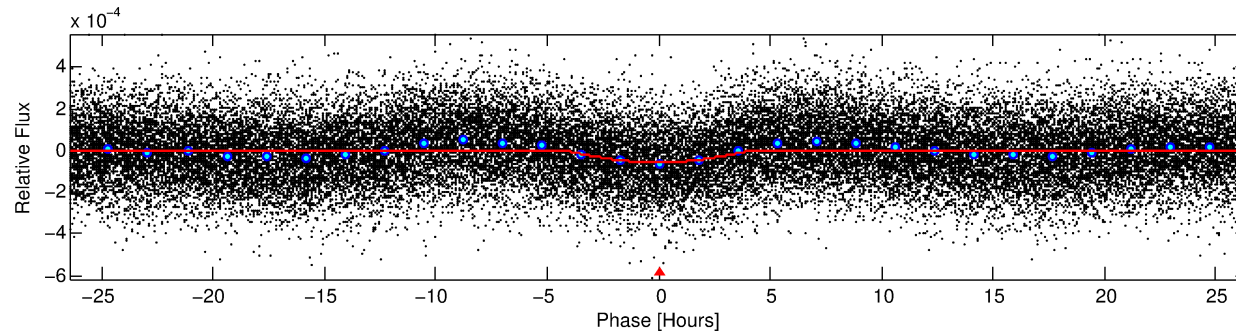
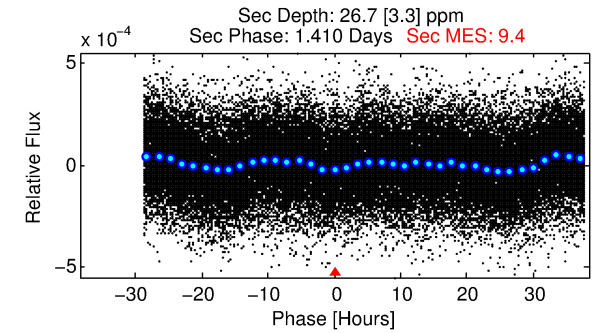
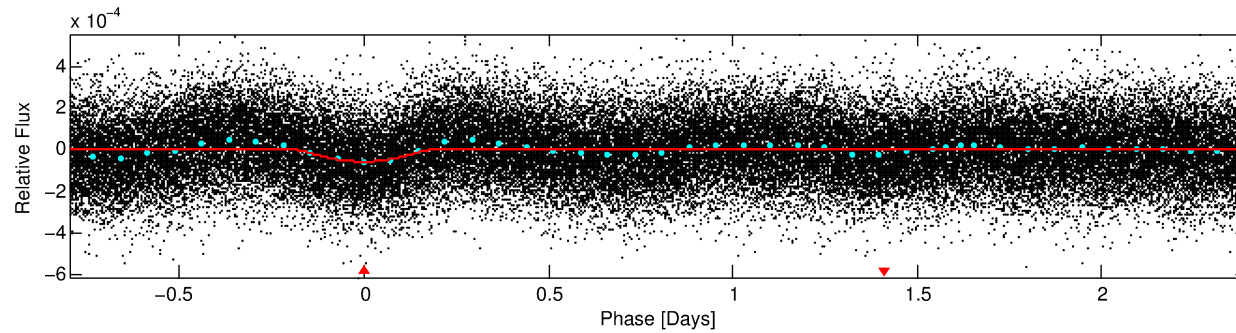
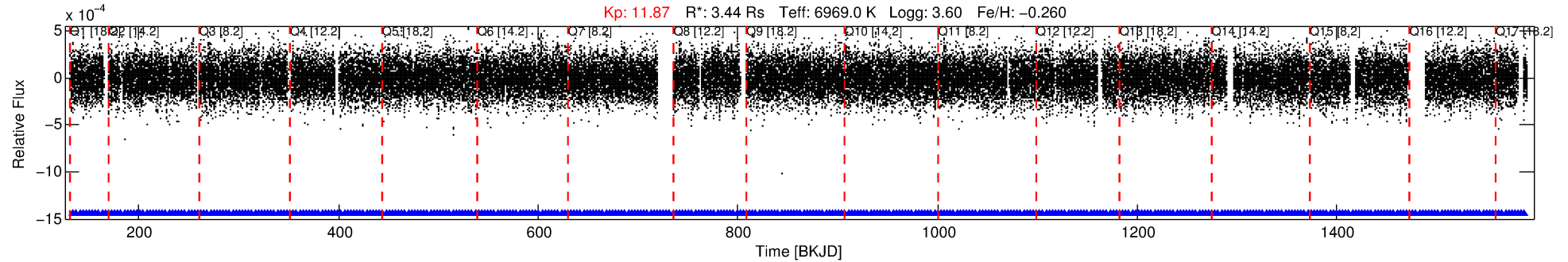
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009407225-01

No Significant Match Found

DV One-Page Summary

KIC: 9407225 Candidate: 1 of 1 Period: 3.194 d



DV Fit Results:

Period = 3.19411 [0.00005] d
Epoch = 134.5968 [0.0124] BKJD
 $R_p/R^* = 0.0101$ [0.0029]
 $a/R^* = 1.12$ [0.04]
 $b = 0.99$ [0.01]
 $\text{Seff} = 9637.84$ [5603.54]
 $T_{\text{eq}} = 2527$ [367] K
 $R_p = 3.78$ [1.76] R_e
 $a = 0.0509$ [0.0181] AU
 $A_g = 2.66$ [2.15] [0.77σ]
 $T_{\text{eff}} = 4987$ [741] K [2.98σ]

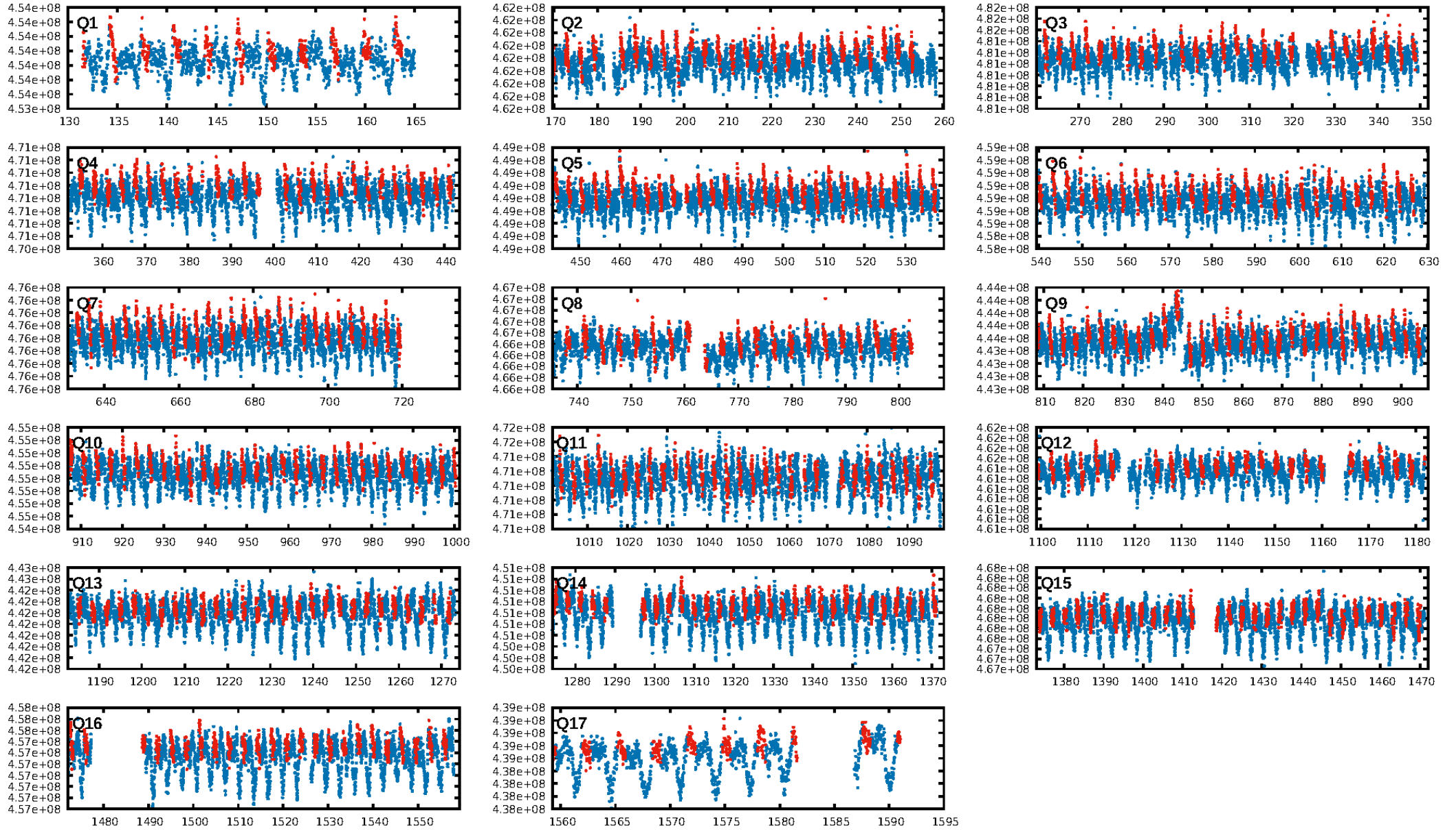
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.33e-21
RollingBand-fgt: 1.00 [406/406]
GhostDiagnostic-chr: 2.833
Centroid-sig: 64.3%
Centroid-so: 0.125 arcsec [0.45σ]
OotOffset-rm: 0.587 arcsec [1.58σ]
KicOffset-rm: 0.588 arcsec [1.71σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.29 [4/14]
DiffImageOverlap-fno: 1.00 [17/17]

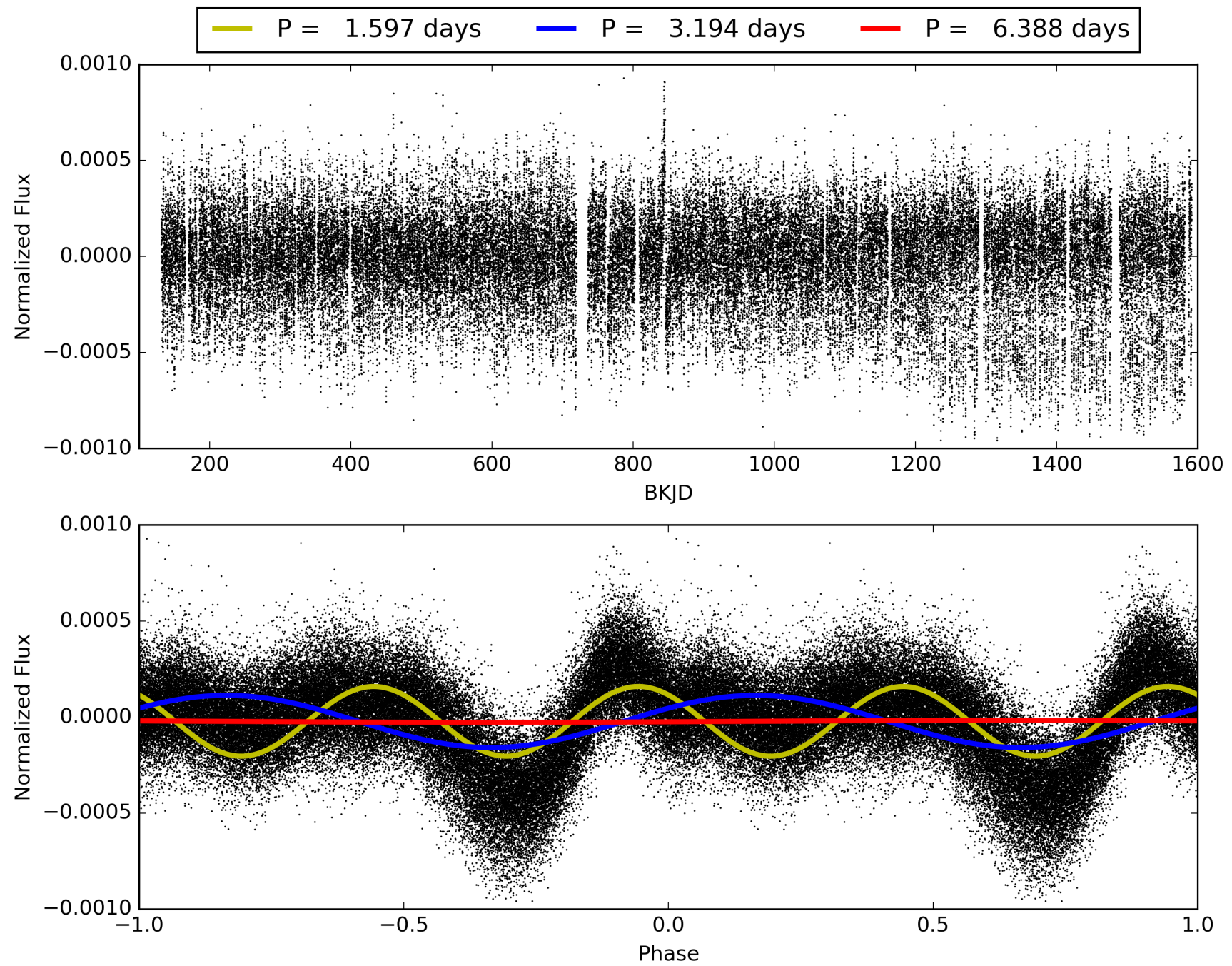
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:08:01 Z

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

TCE 009407225-01, PDC Light Curves

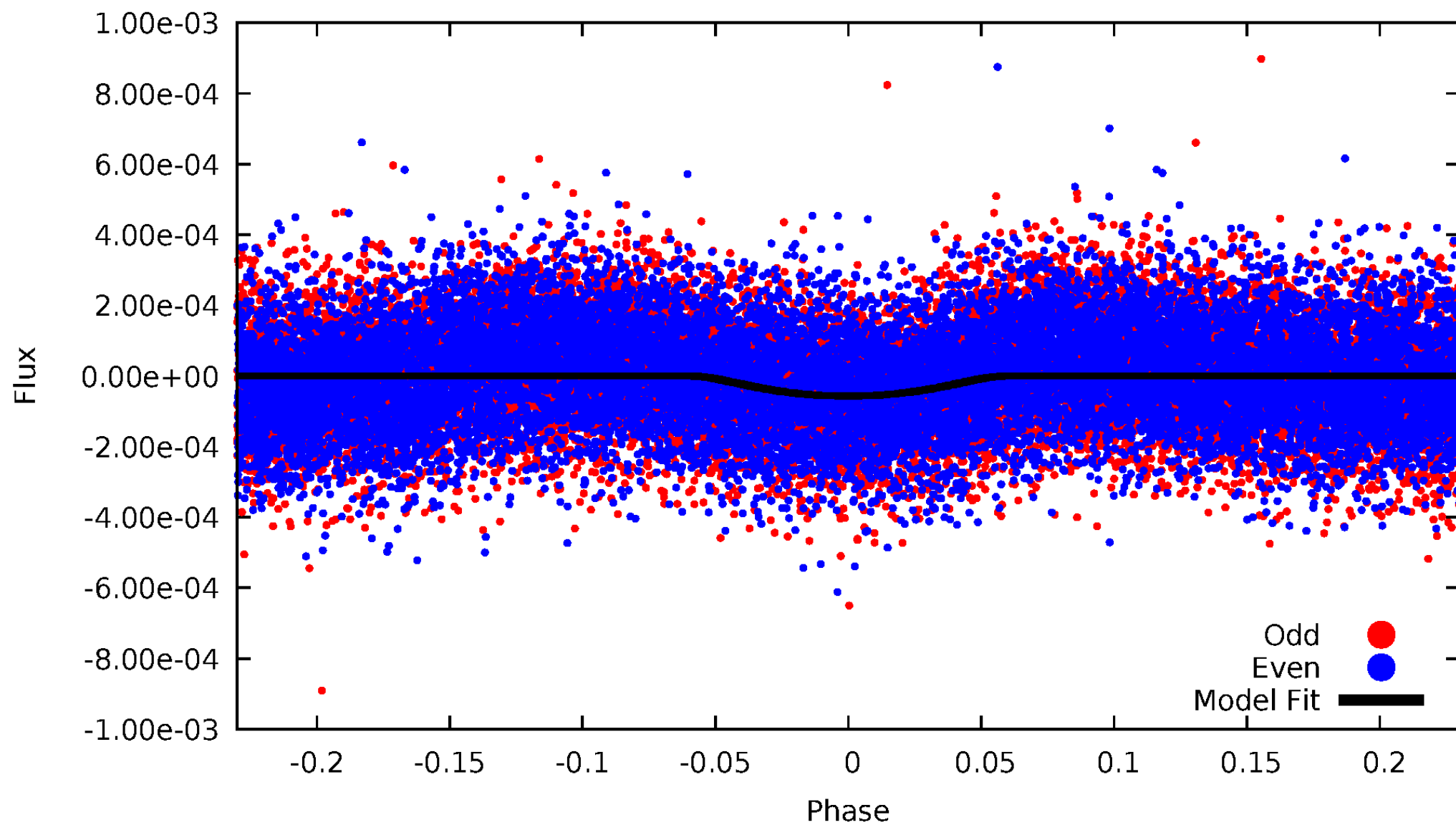


TCE 009407225-01



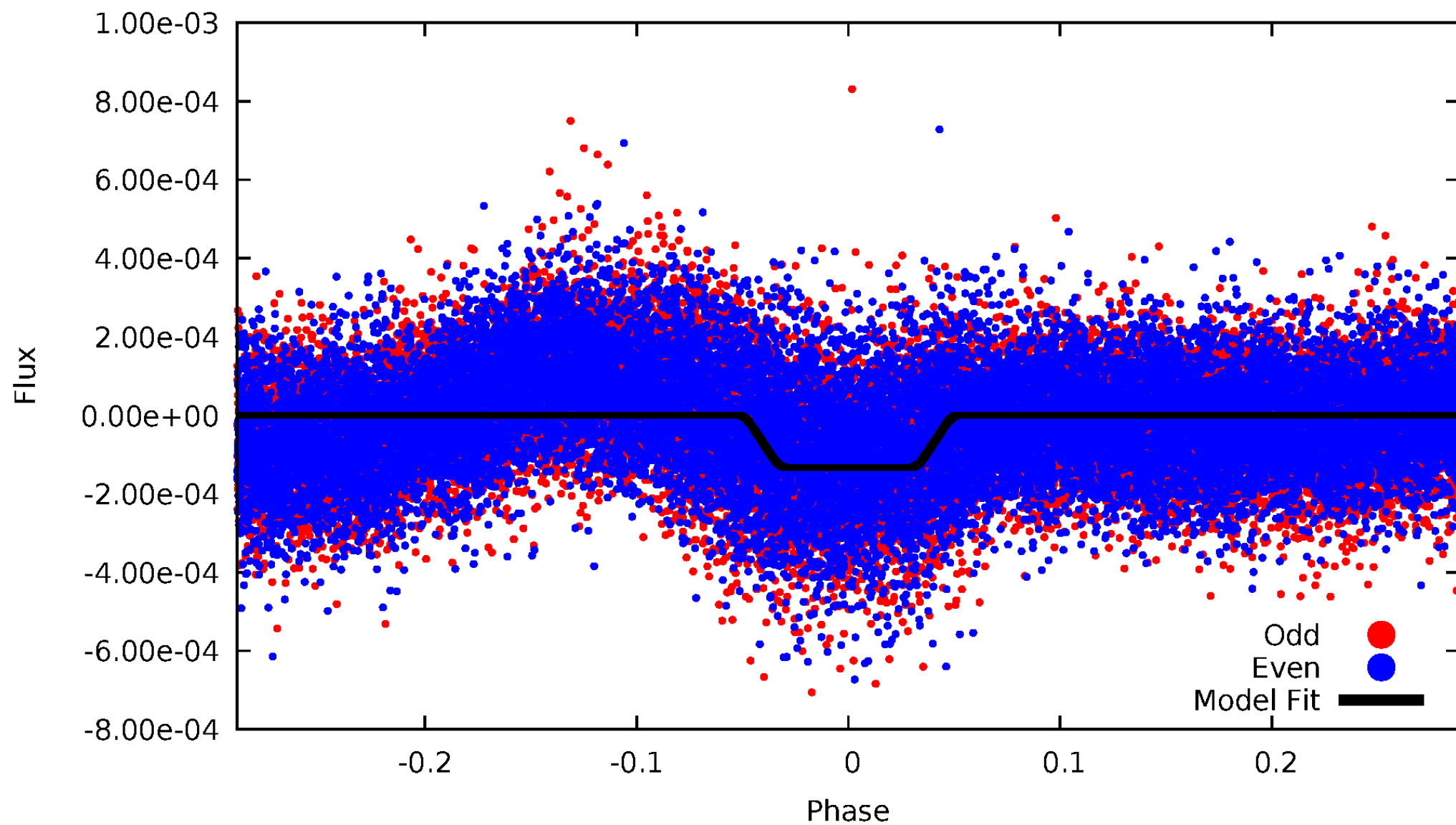
DV Odd/Even

TCE 009407225-01



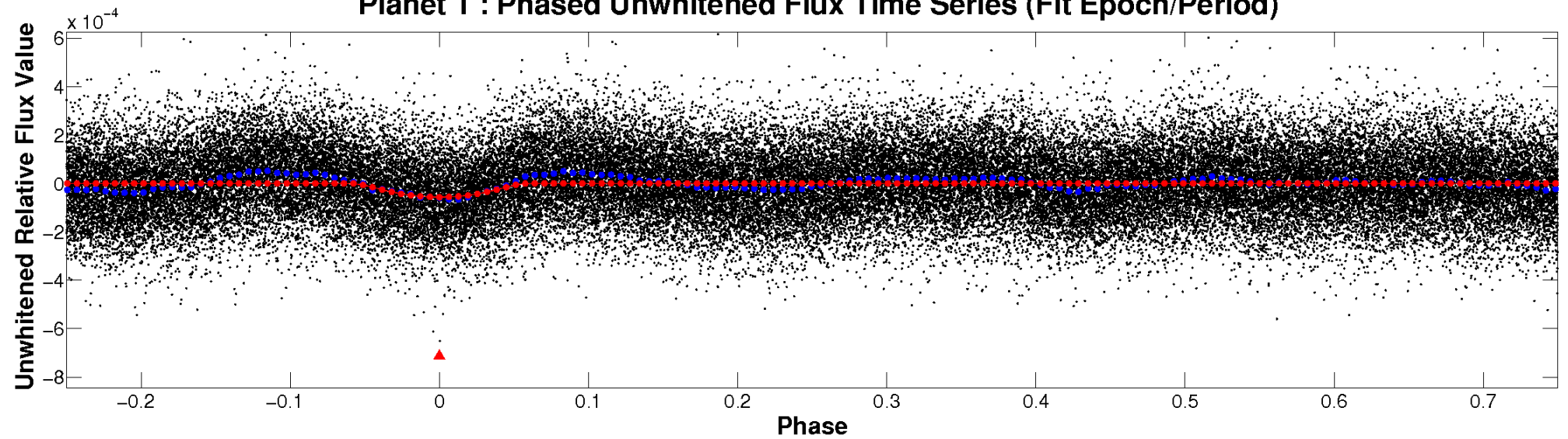
ALT Odd/Even

TCE 009407225-01

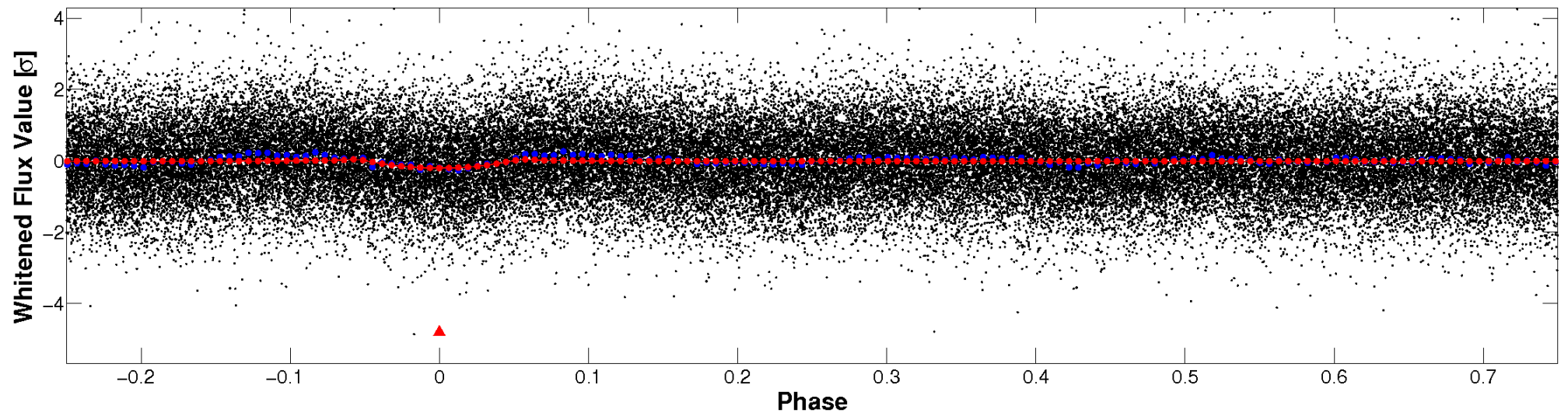


Non-Whitened Vs. Whitened Light Curve

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

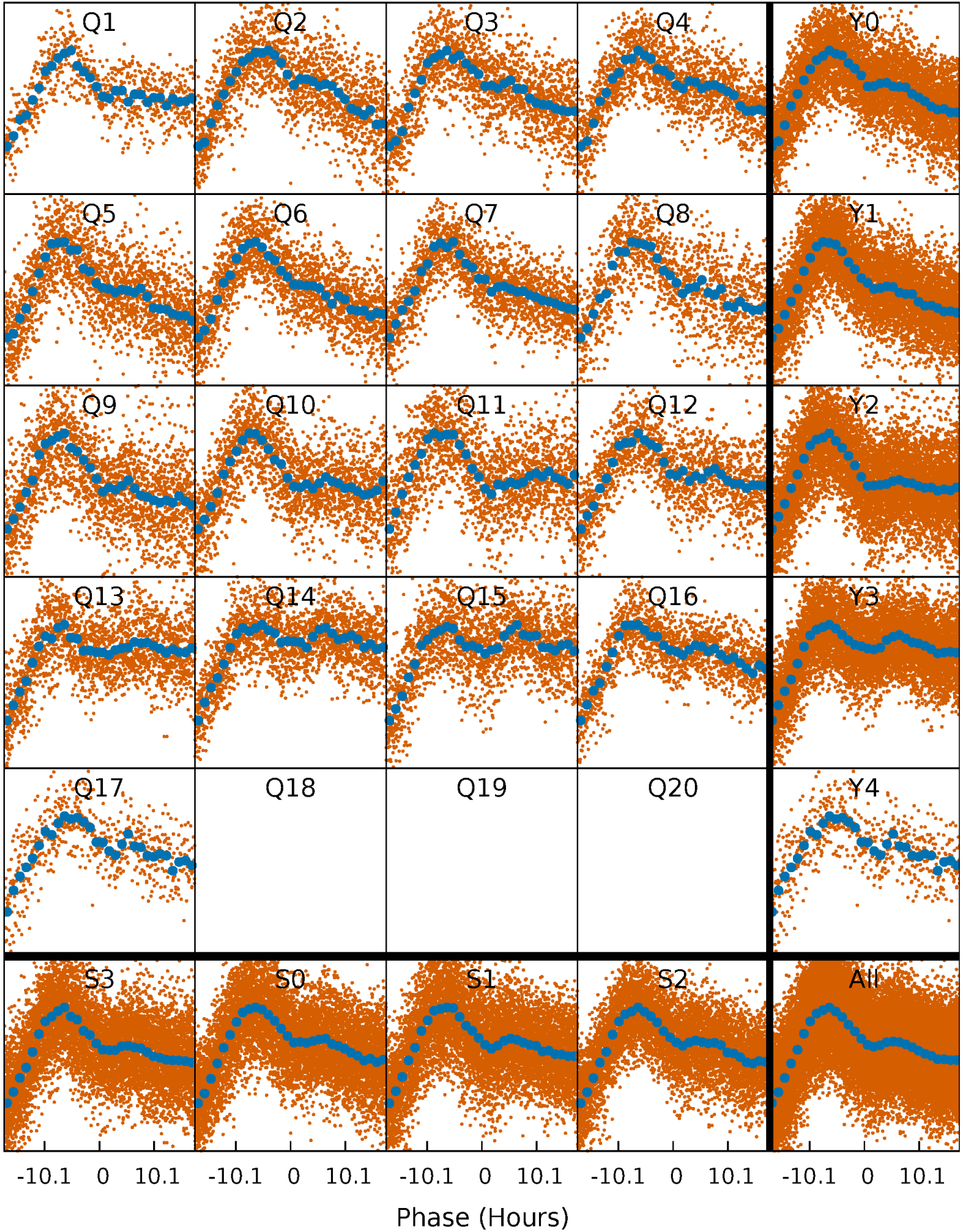


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



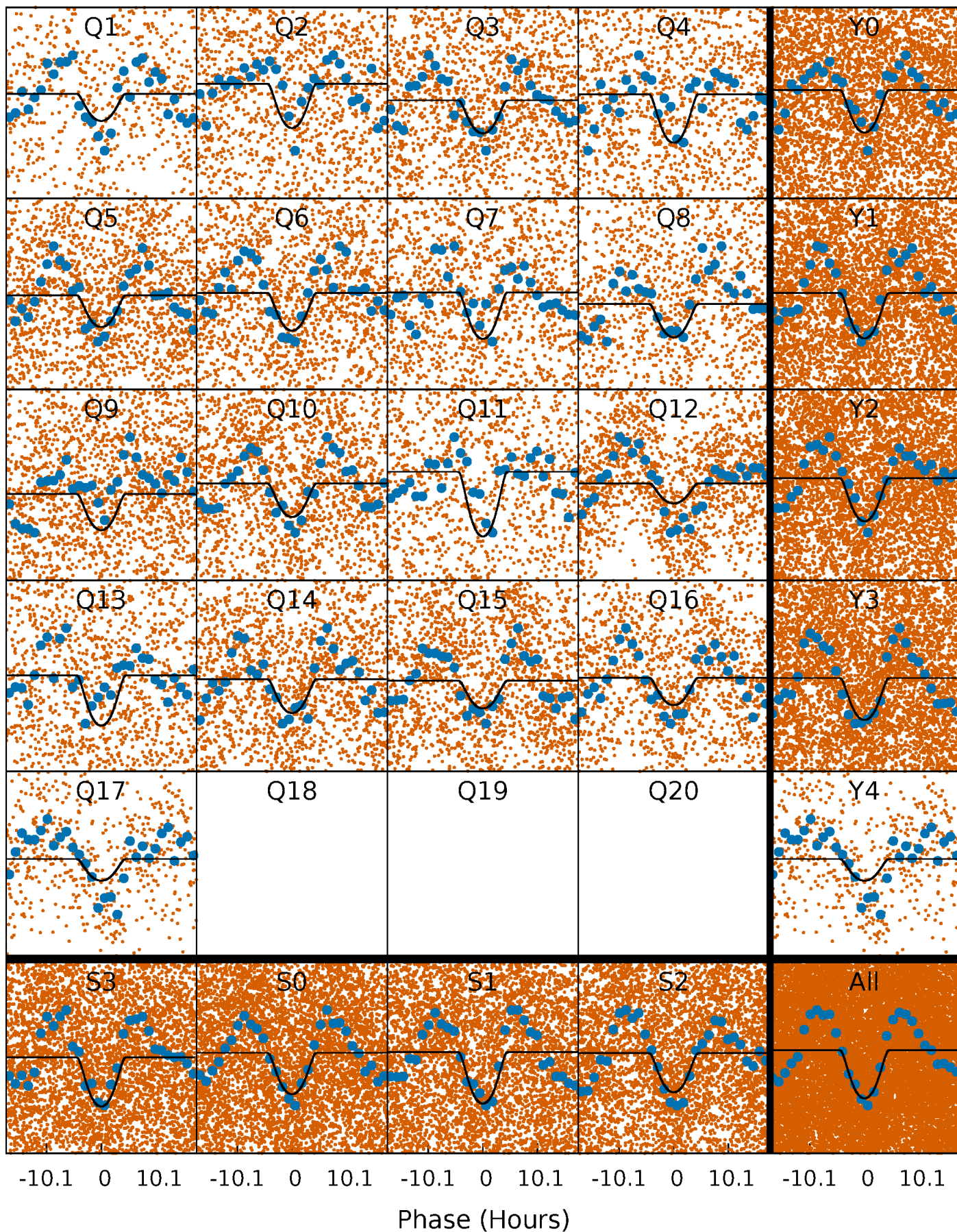
PDC Quarter-Phased Transit Curves

TCE 009407225-01 P= 3.194113 Days $T_0=134.596848$ (BKJD)



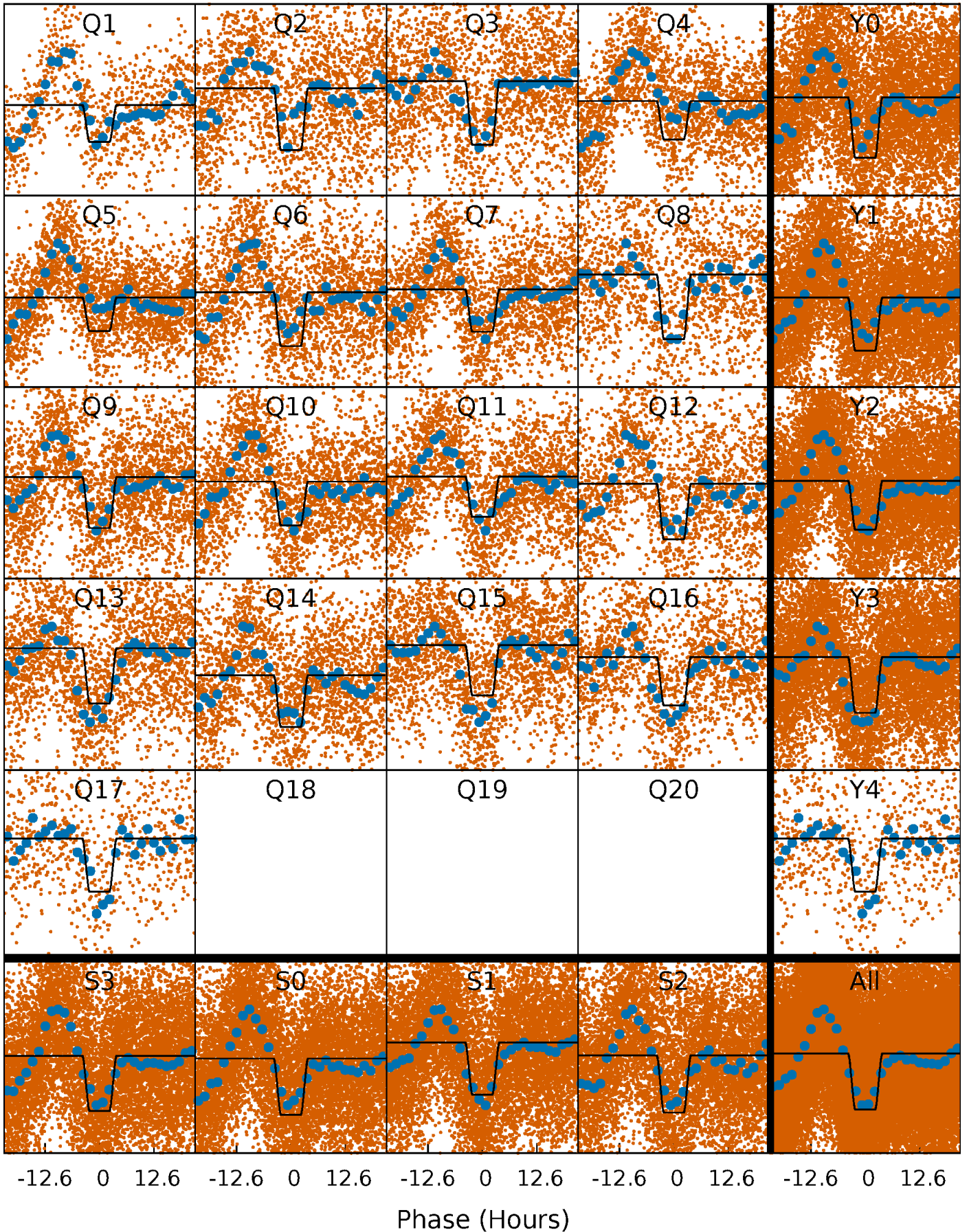
DV Quarter-Phased Transit Curves

TCE 009407225-01 P= 3.194113 Days $T_0=134.596848$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

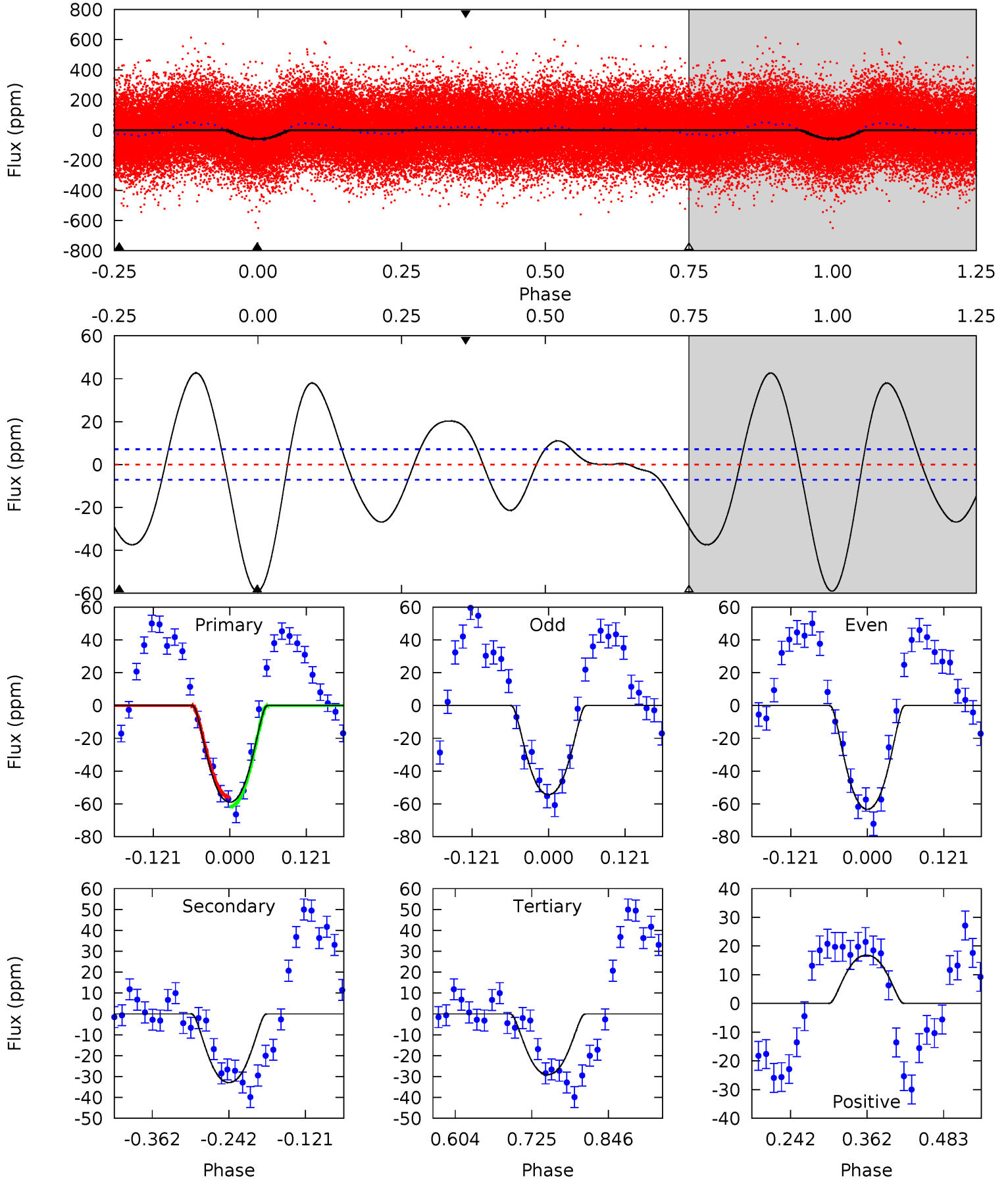
TCE 009407225-01 P= 3.194032 Days $T_0=134.654569$ (BKJD)



DV Model-Shift Uniqueness Test

009407225-01, P = 3.194113 Days, E = 131.402735 Days

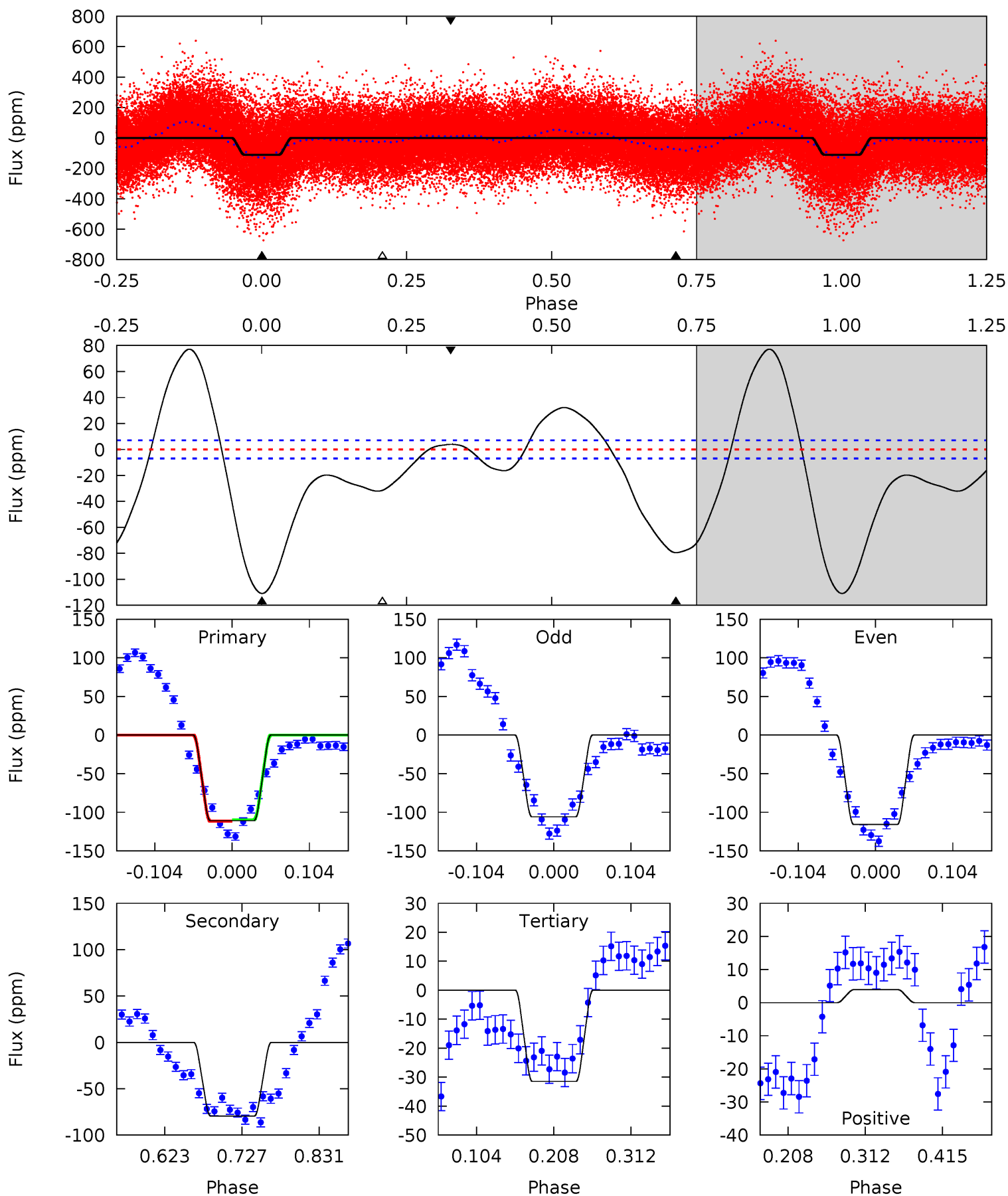
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.6	21.0	18.6	10.7	4.52	1.55	8.85	19.0	26.9	2.39	10.2	2.83	1.01	0.42	1.85



Alt Model-Shift Uniqueness Test

009407225-01, P = 3.194032 Days, E = 131.460537 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
72.3	51.8	20.5	2.55	4.56	1.63	18.8	51.8	69.8	31.3	49.3	3.22	1.04	0.41	0.57



Stellar Parameters For KIC 009407225

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6969^{+167}_{-229}	$3.602^{+0.332}_{-0.059}$	$-0.260^{+0.300}_{-0.250}$	$3.438^{+0.340}_{-1.274}$	$1.723^{+0.182}_{-0.337}$	$0.060^{+0.138}_{-0.011}$
	+2%/-3%	+9%/-2%	+115%/-96%	+10%/-37%	+11%/-20%	+232%/-19%
Source	PHO1	FLK73	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 009407225-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-33 ± 2	$3.58^{+1.14}_{-1.20}$	3444^{+165}_{-284}	5150^{+941}_{-574}	$3.655^{+4.747}_{-1.496}$
Alt.	-79 ± 2	$3.94^{+1.22}_{-1.11}$	3417^{+199}_{-315}	6010^{+980}_{-592}	$7.189^{+6.398}_{-2.826}$

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

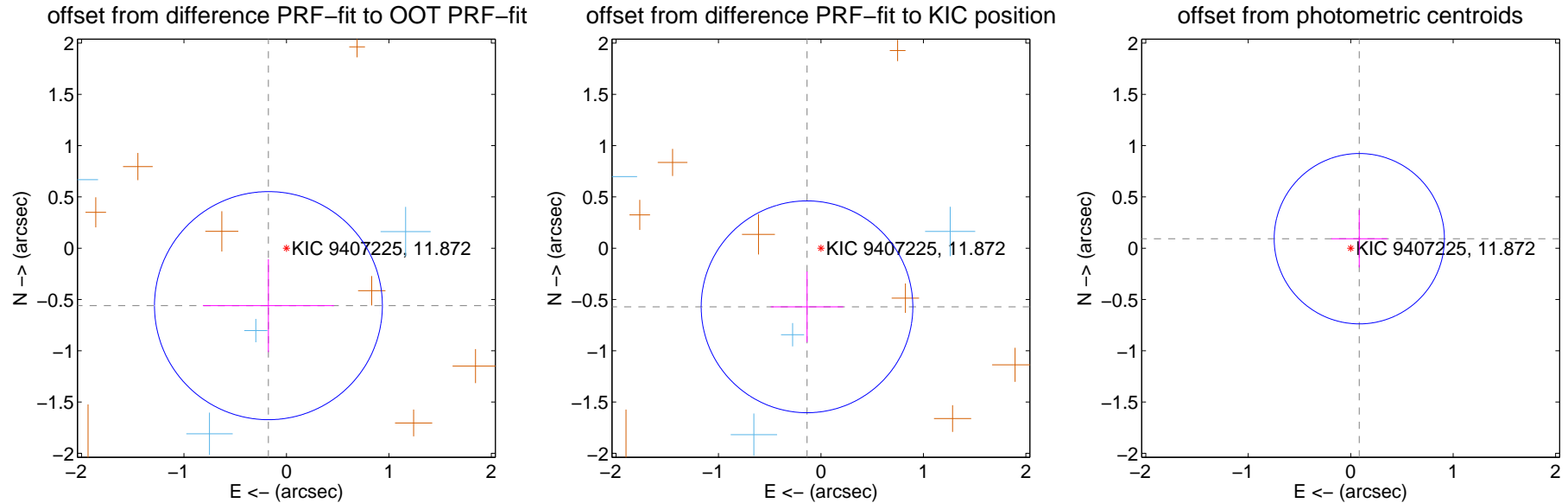
DV Centroid Data

Supplemental centroid analysis for 009407225-01. **Kepler magnitude: 11.87.** Transit SNR 11.90

There are 4 quarters with good PRF difference image offsets

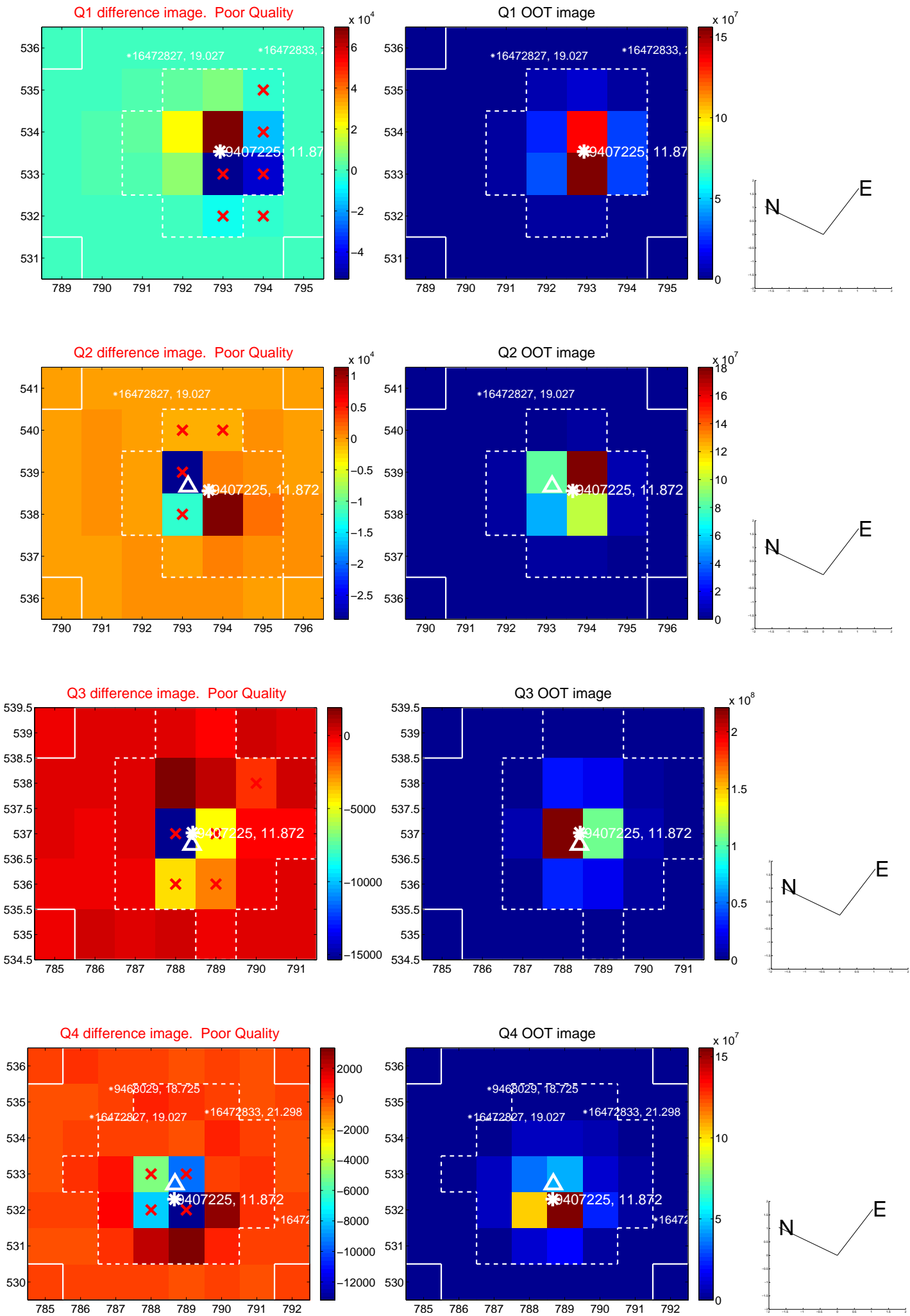
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.587 ± 0.371	1.58	0.176 ± 0.641	-0.560 ± 0.452
PRF-fit source offset from KIC position	0.588 ± 0.344	1.71	0.136 ± 0.354	-0.572 ± 0.344
photometric centroid source offset	0.13 ± 0.28	0.45	-0.08 ± 0.27	0.09 ± 0.28

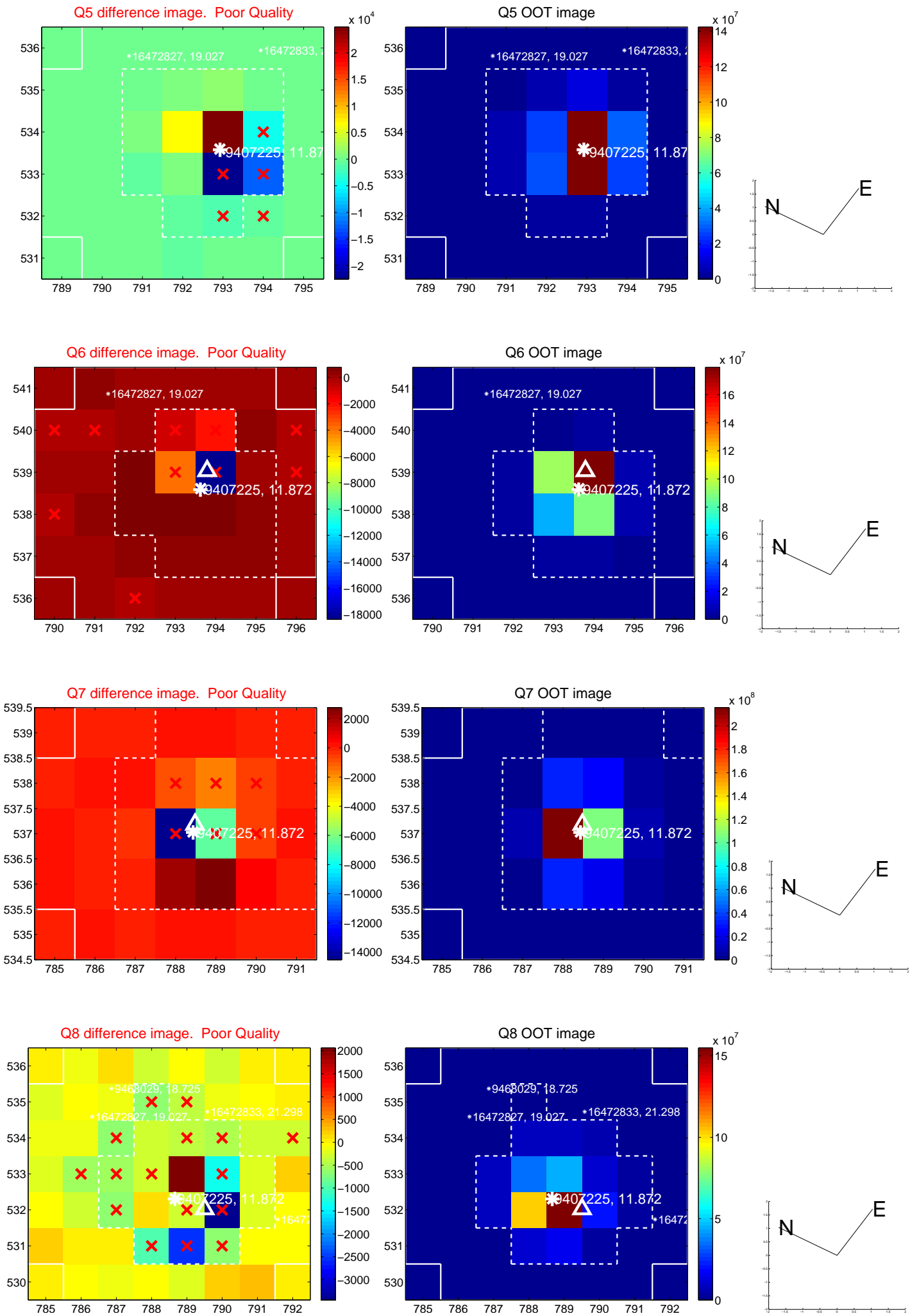


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

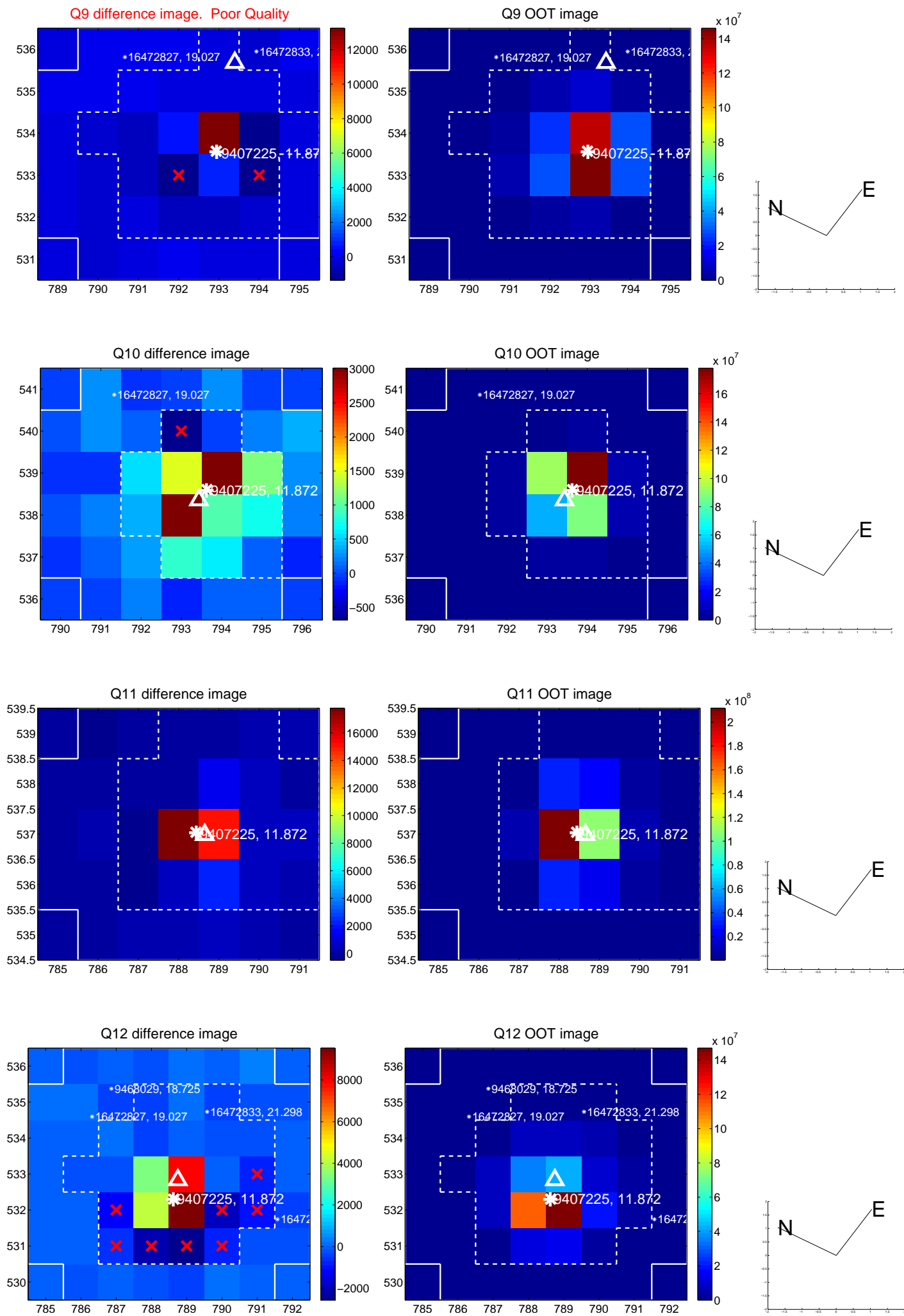
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



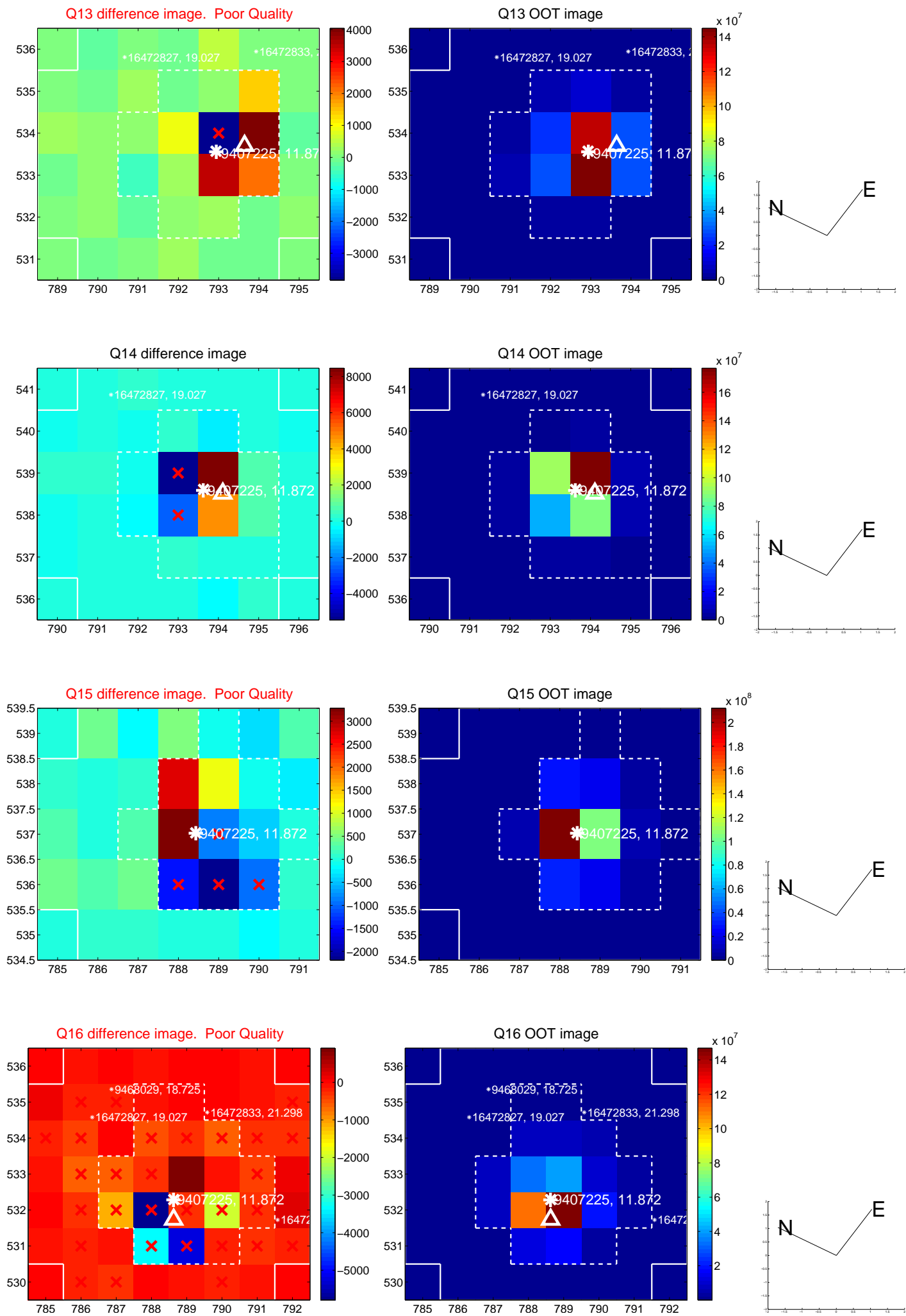
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



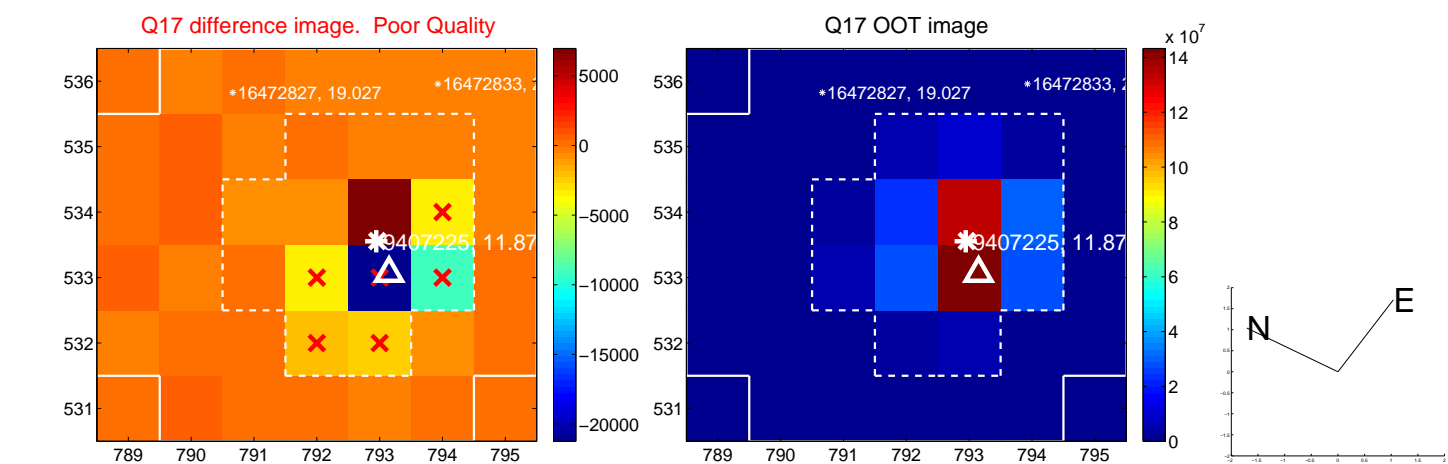
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



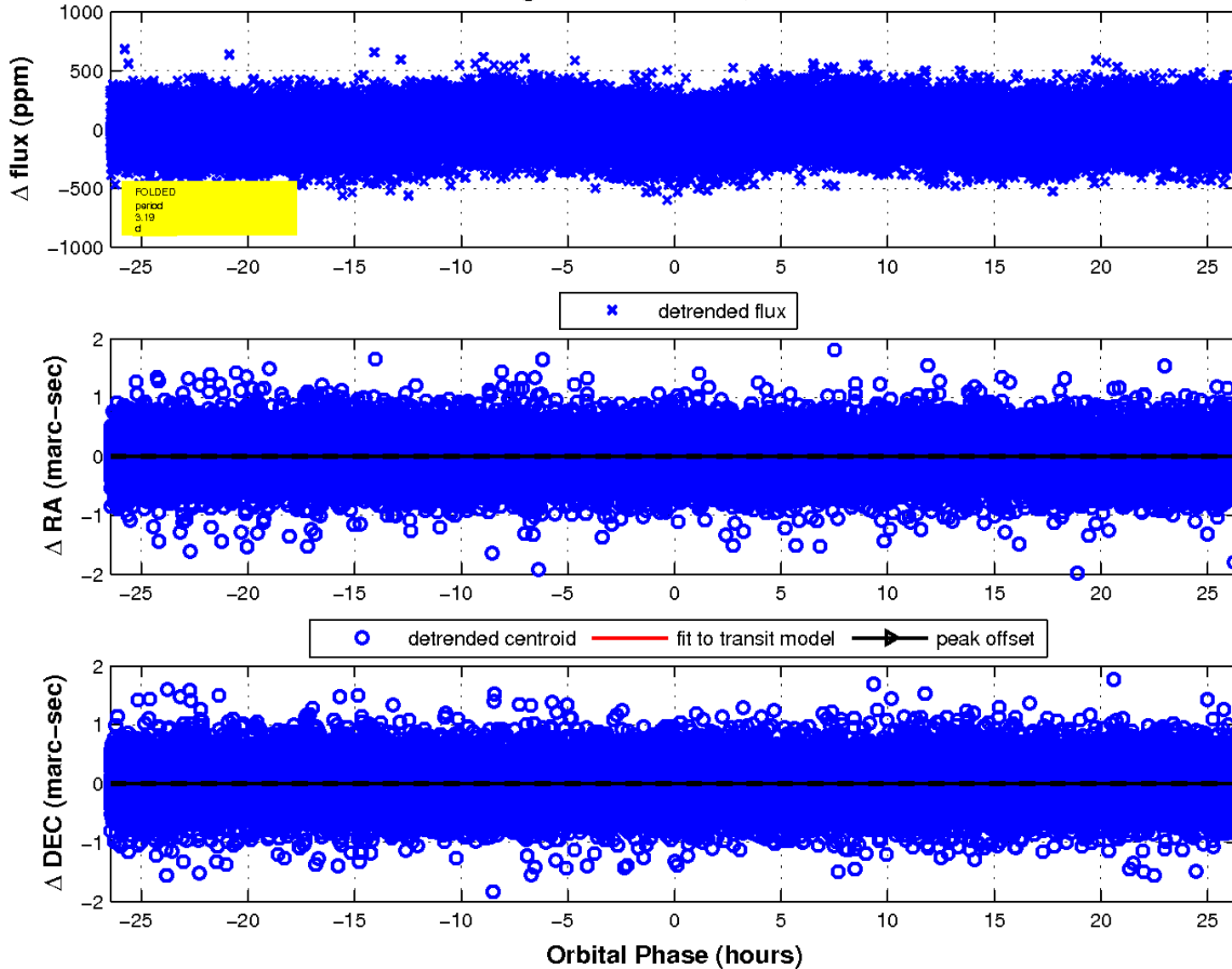
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

