

KIC 004571091

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})
004571091-01	OBS	No	3.101677	132.543014	62.5	5.074	7.2	7.4	0.47	3650	0.41	32.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004571091-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—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.

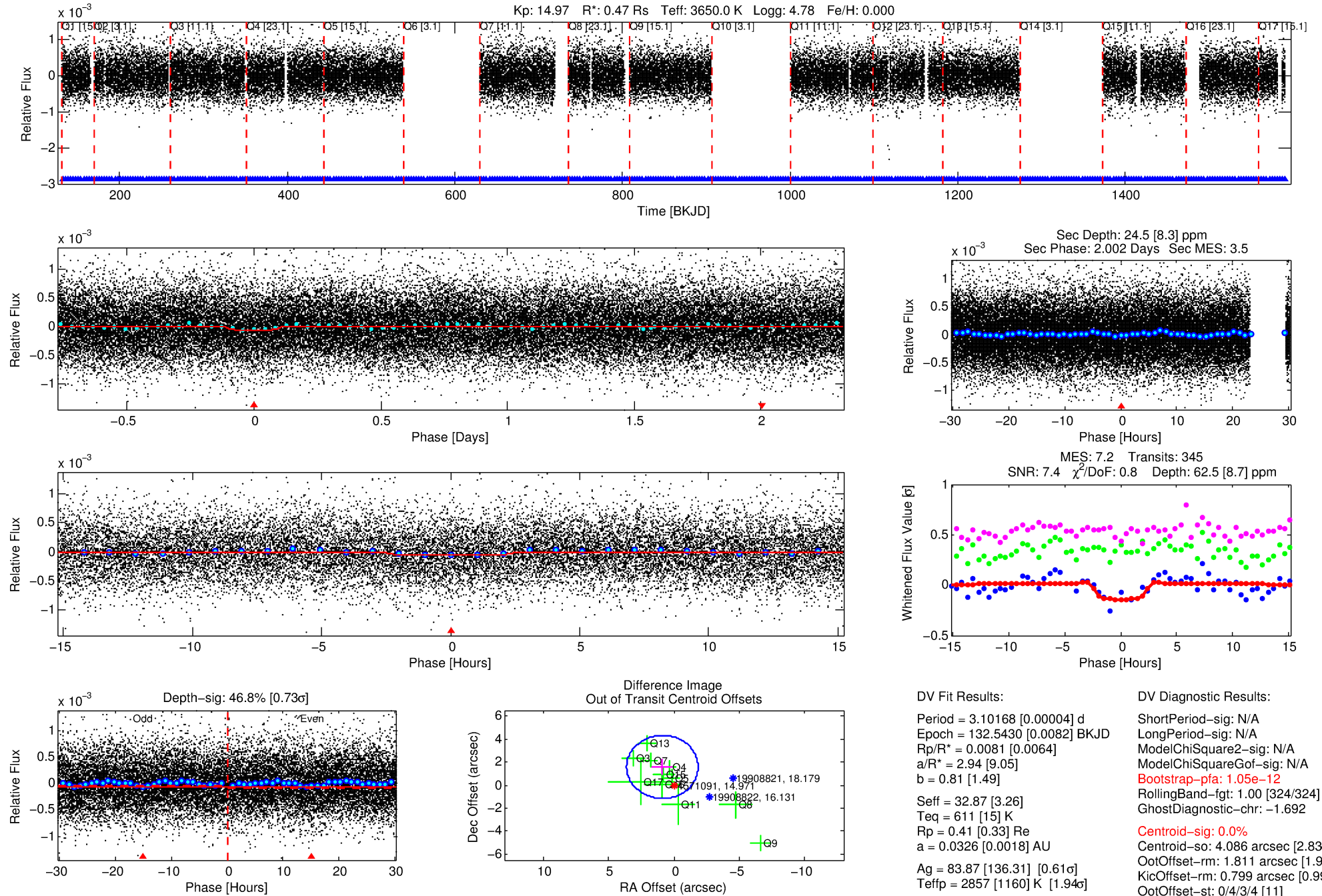
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004571091-01

No Significant Match Found

DV One-Page Summary

KIC: 4571091 Candidate: 1 of 1 Period: 3.102 d



DV Fit Results:

Period = 3.10168 [0.00004] d
Epoch = 132.5430 [0.0082] BKJD
Rp/R* = 0.0081 [0.0064]
a/R* = 2.94 [9.05]
b = 0.81 [1.49]
Seff = 32.87 [3.26]
Teff = 611 [15] K
Rp = 0.41 [0.33] Re
a = 0.0326 [0.0018] AU
Ag = 83.87 [136.31] [0.61 σ]
Teffp = 2857 [1160] K [1.94 σ]

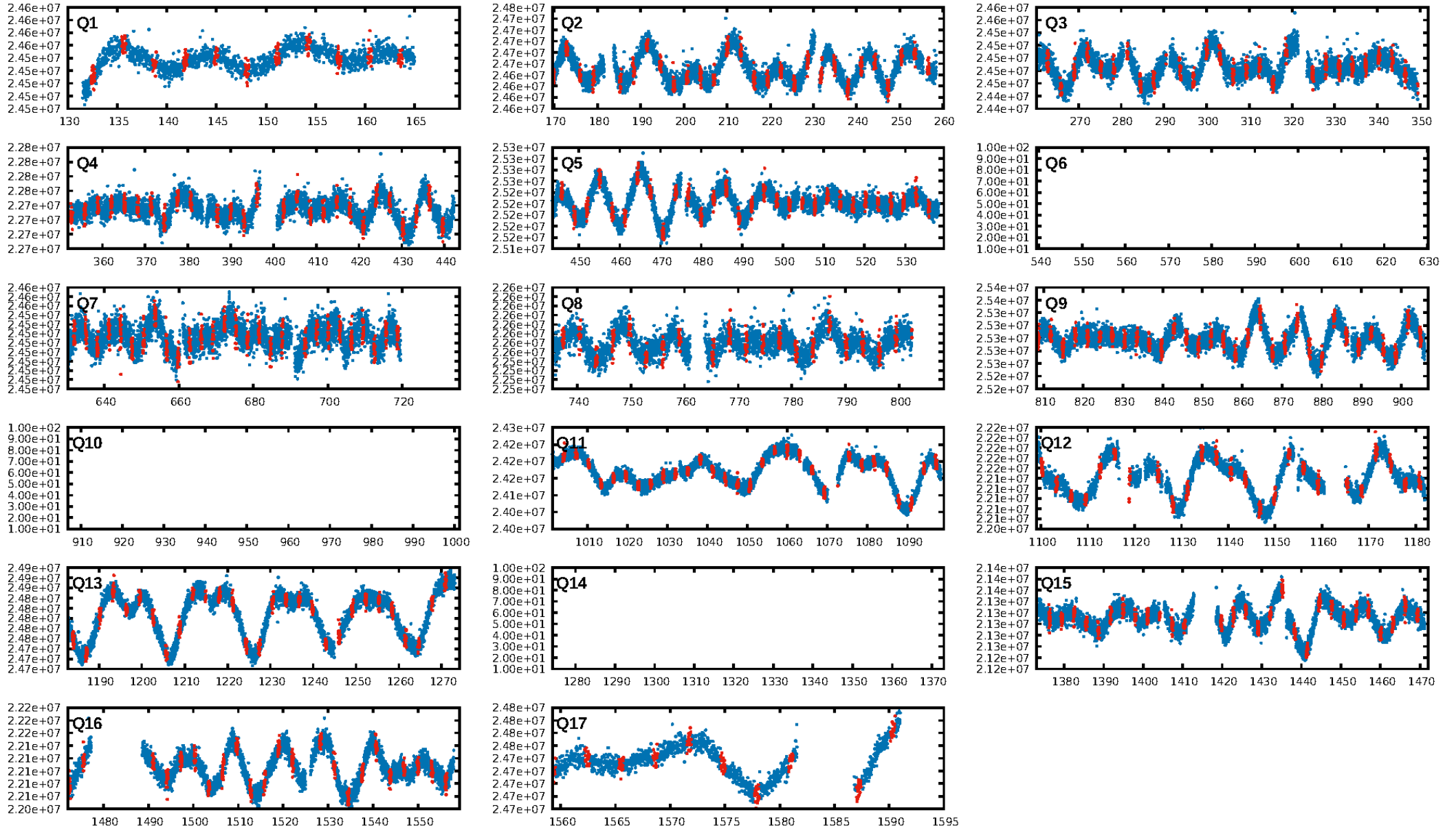
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.05e-12
RollingBand-fgt: 1.00 [324/324]
GhostDiagnostic-chr: -1.692
Centroid-sig: 0.0%
Centroid-so: 4.086 arcsec [2.83 σ]
OotOffset-rm: 1.811 arcsec [1.98 σ]
KicOffset-rm: 0.799 arcsec [0.99 σ]
OotOffset-st: 0/4/3/4 [11]
KicOffset-st: 0/4/3/4 [11]
DiffImageQuality-fgm: 0.36 [4/11]
DiffImageOverlap-fno: 1.00 [14/14]

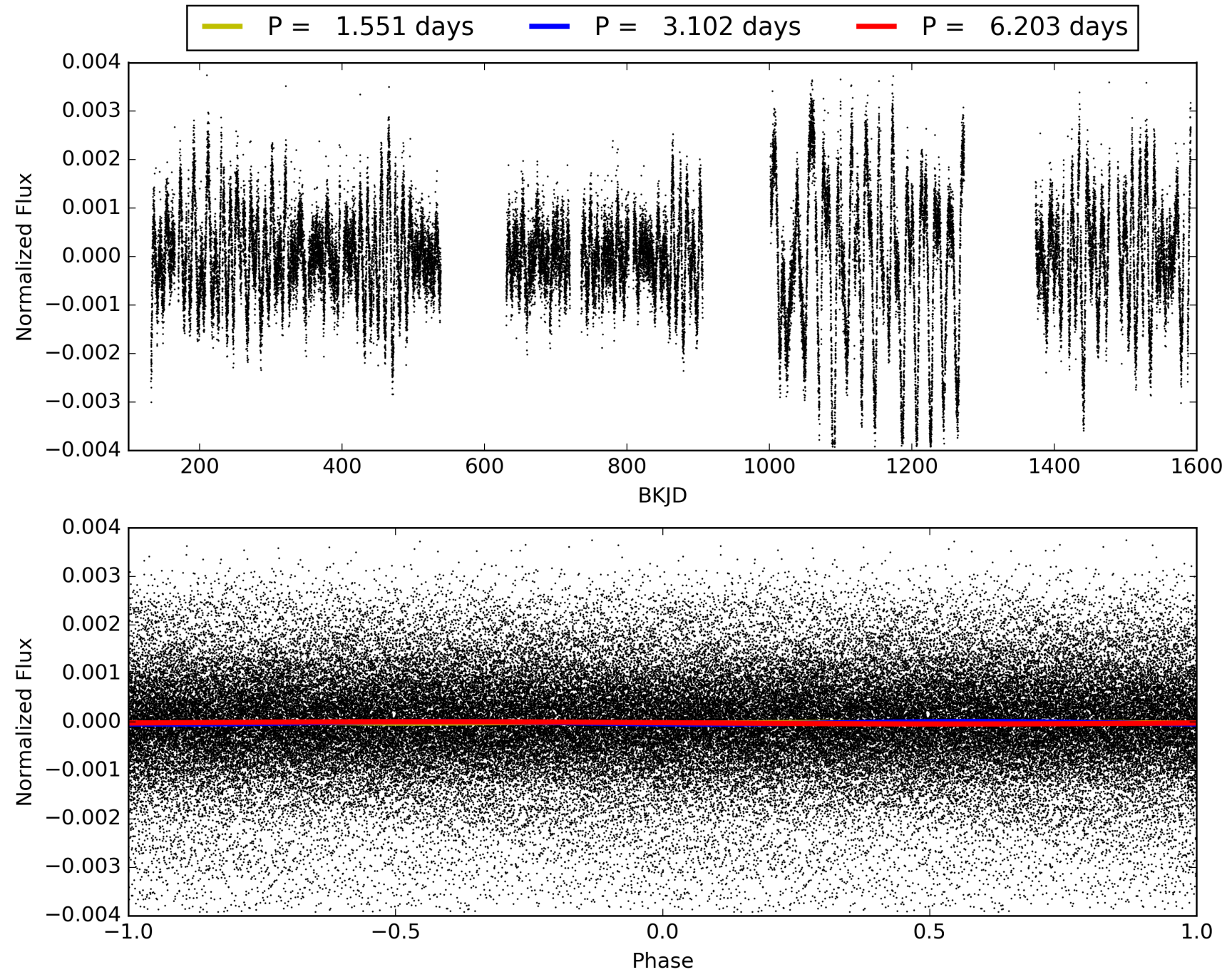
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:43:21 Z

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

TCE 004571091-01, PDC Light Curves

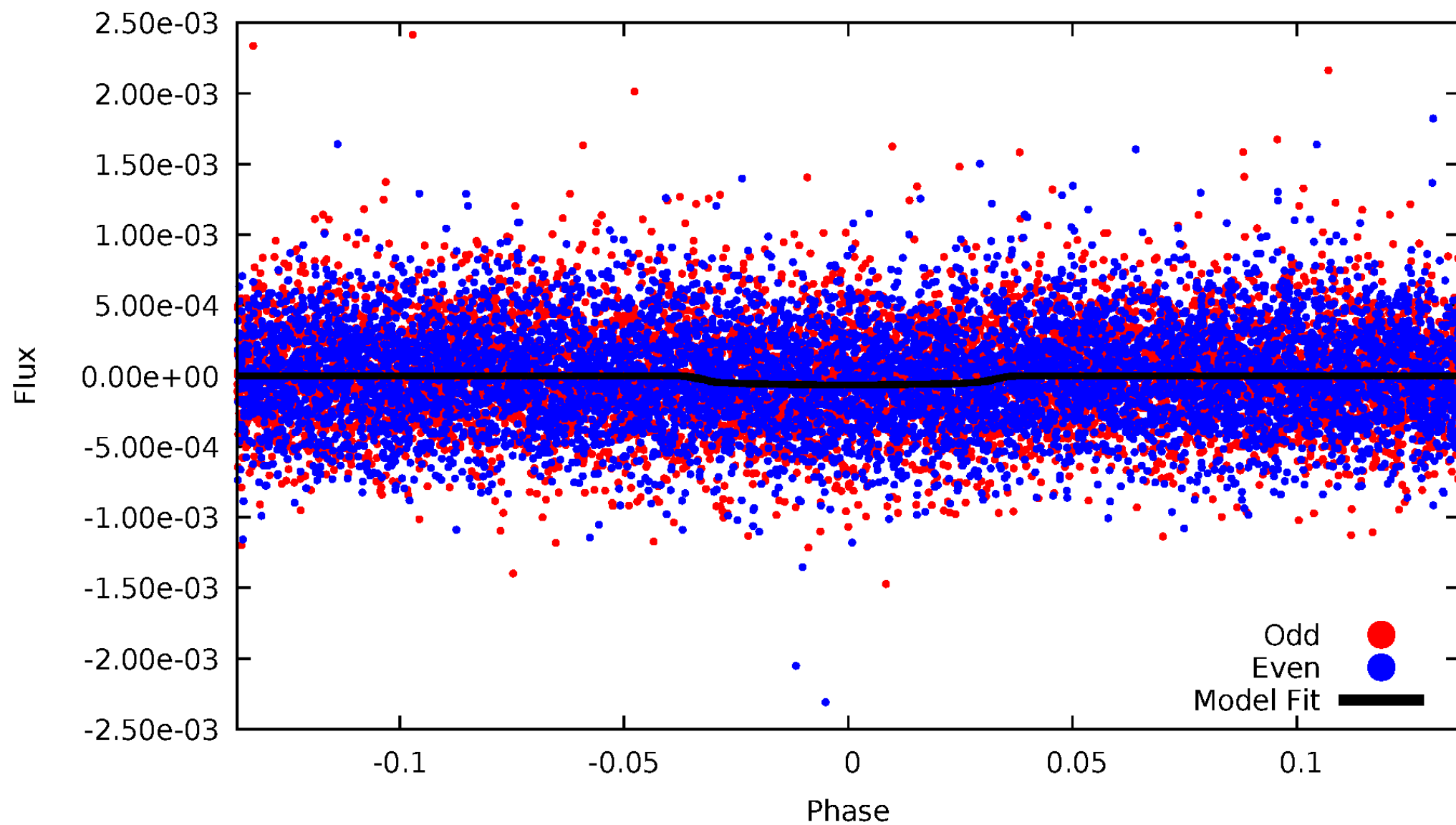


TCE 004571091-01



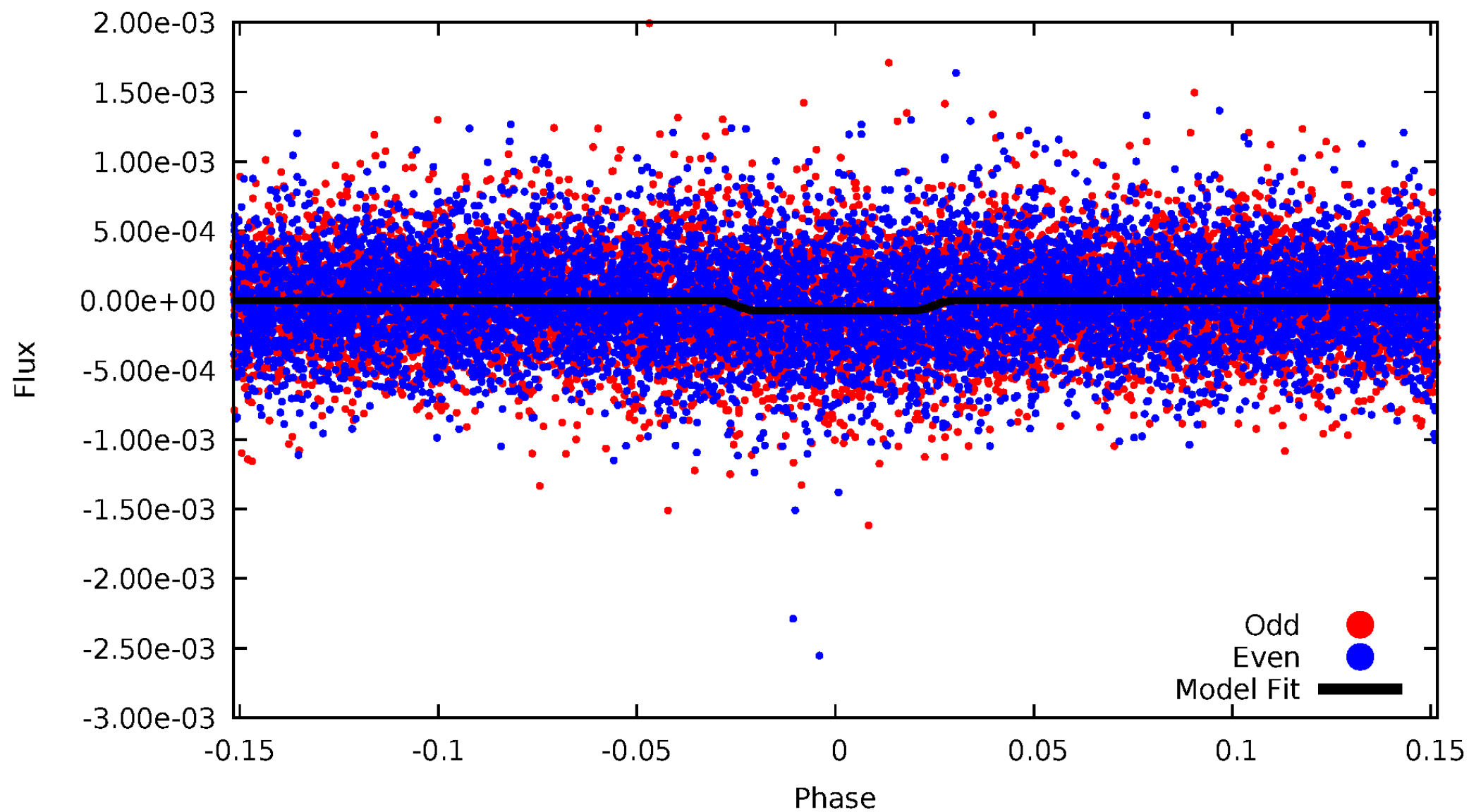
DV Odd/Even

TCE 004571091-01



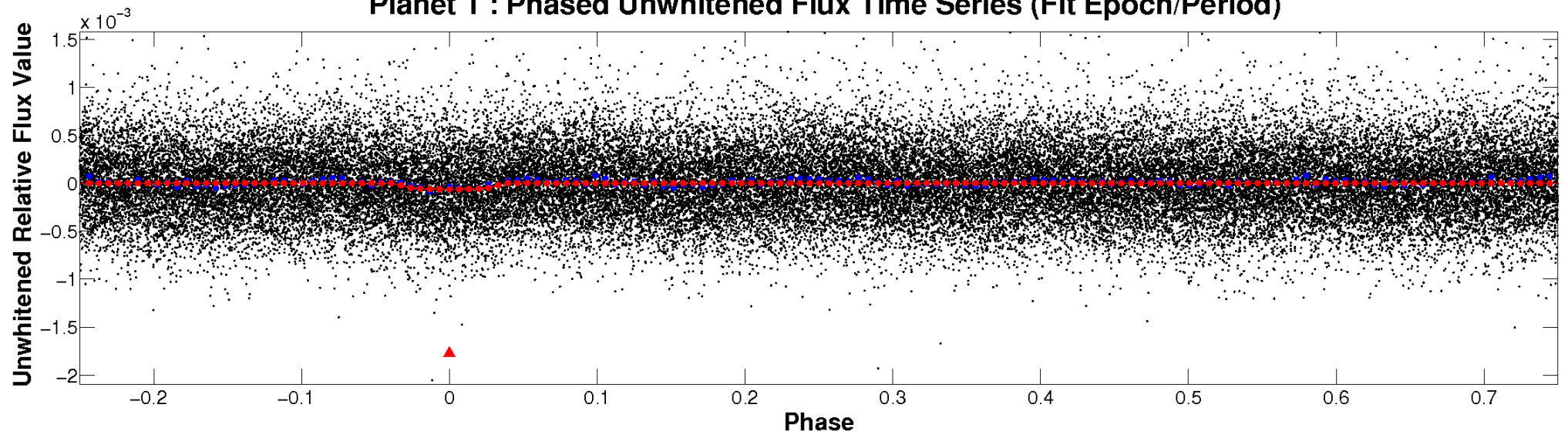
ALT Odd/Even

TCE 004571091-01

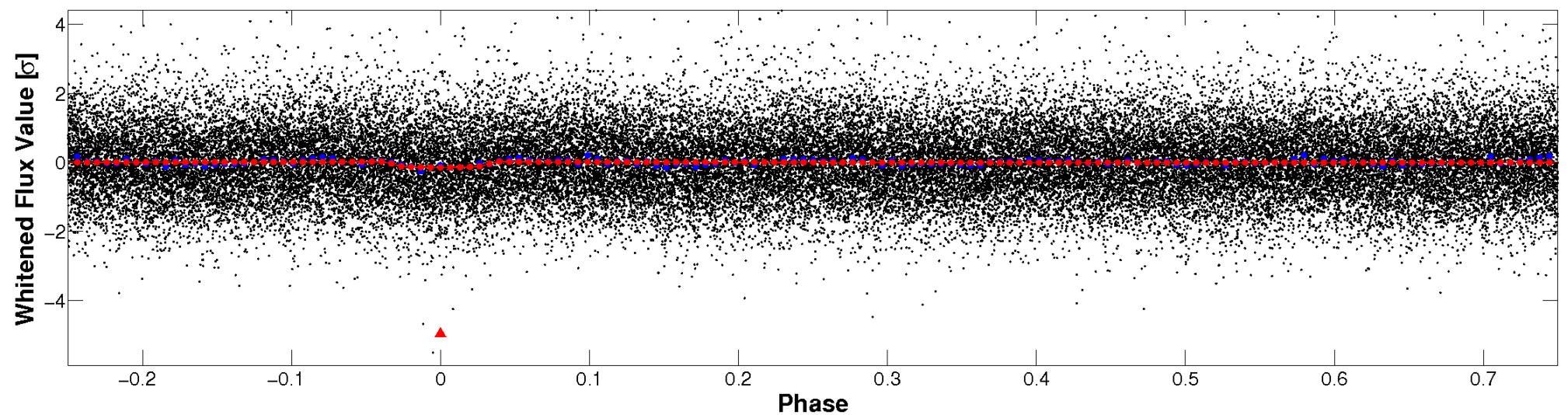


Non-Whitened Vs. Whitened Light Curve

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

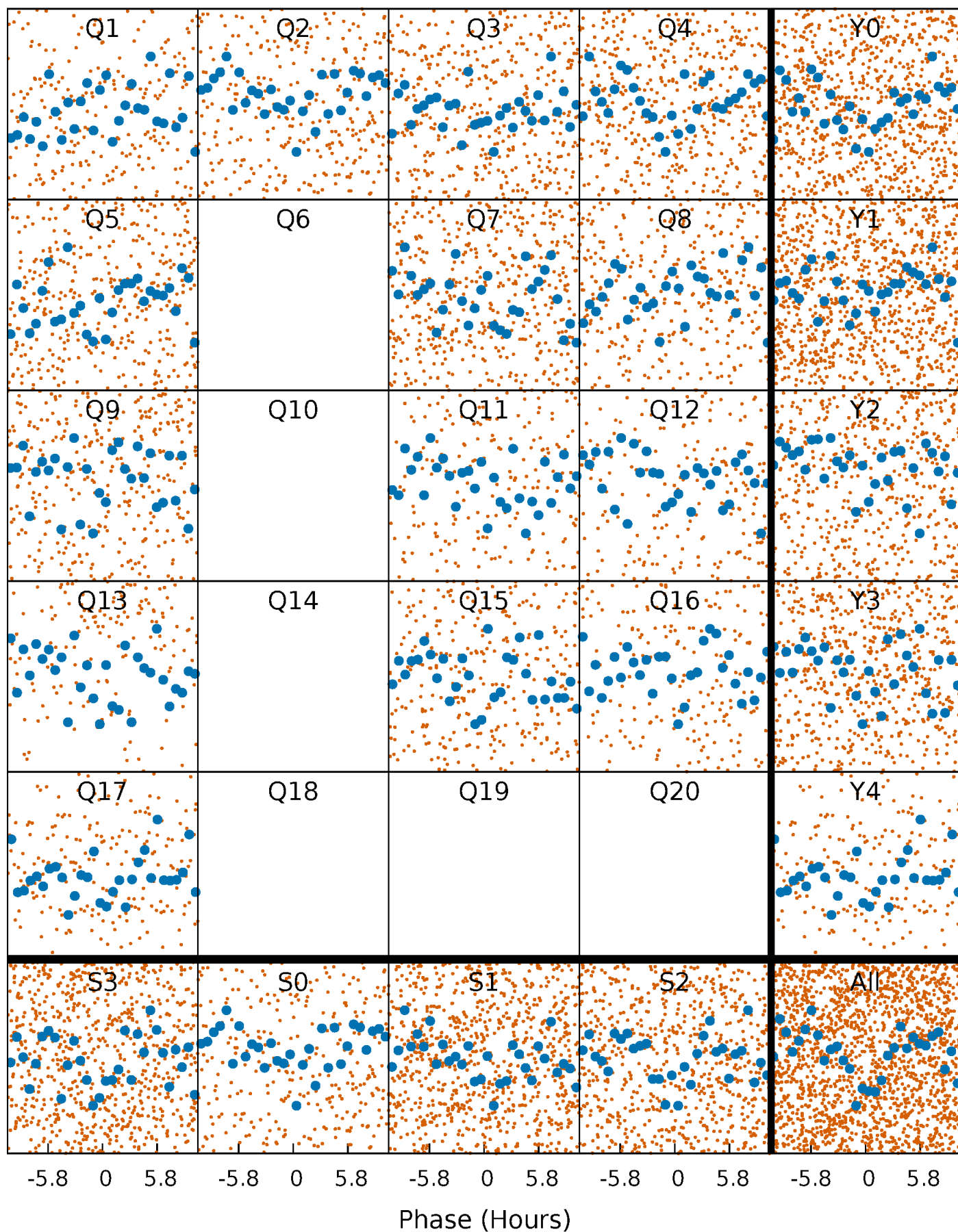


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



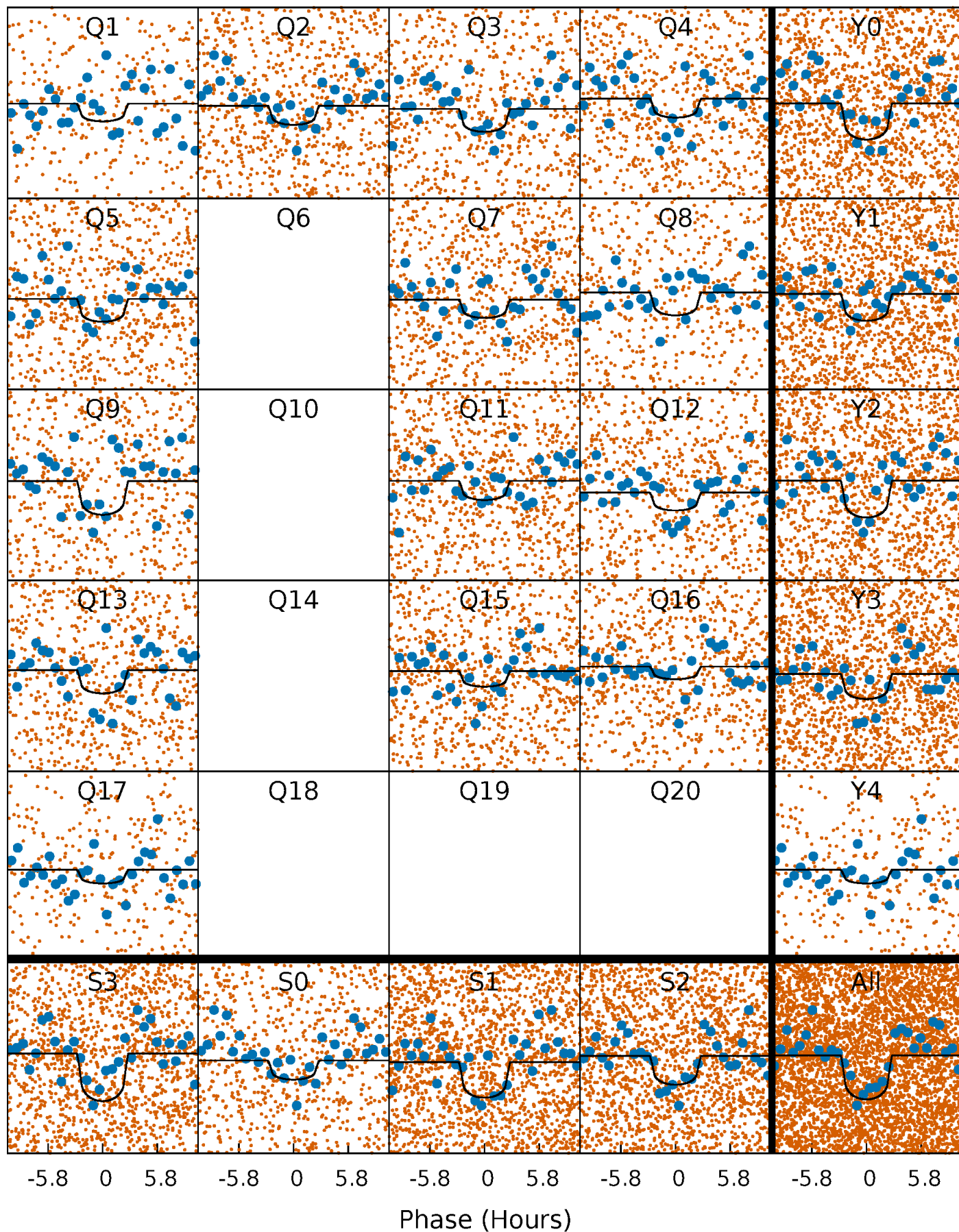
PDC Quarter-Phased Transit Curves

TCE 004571091-01 P= 3.101677 Days $T_0=132.543014$ (BKJD)



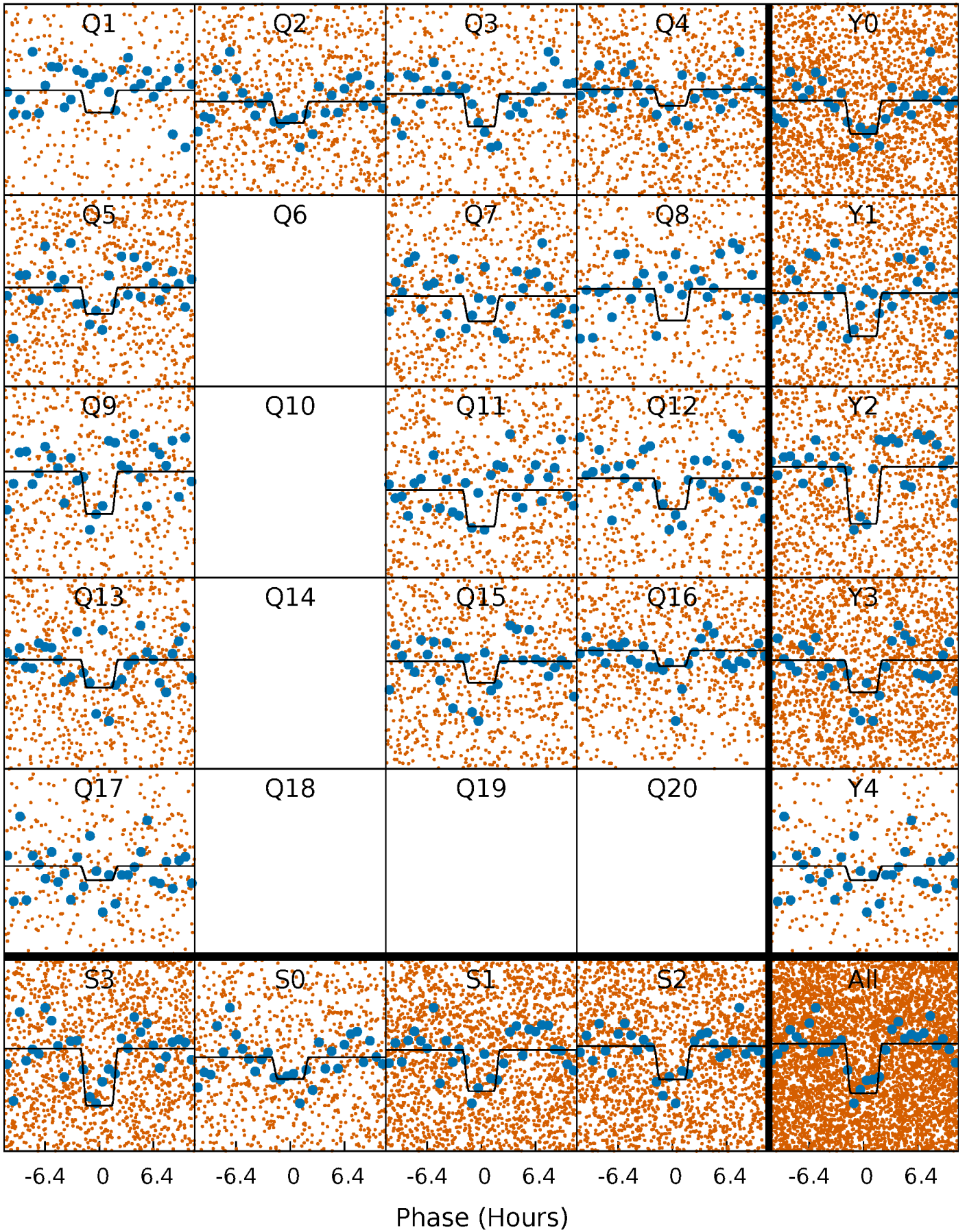
DV Quarter-Phased Transit Curves

TCE 004571091-01 P= 3.101677 Days $T_0=132.543014$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

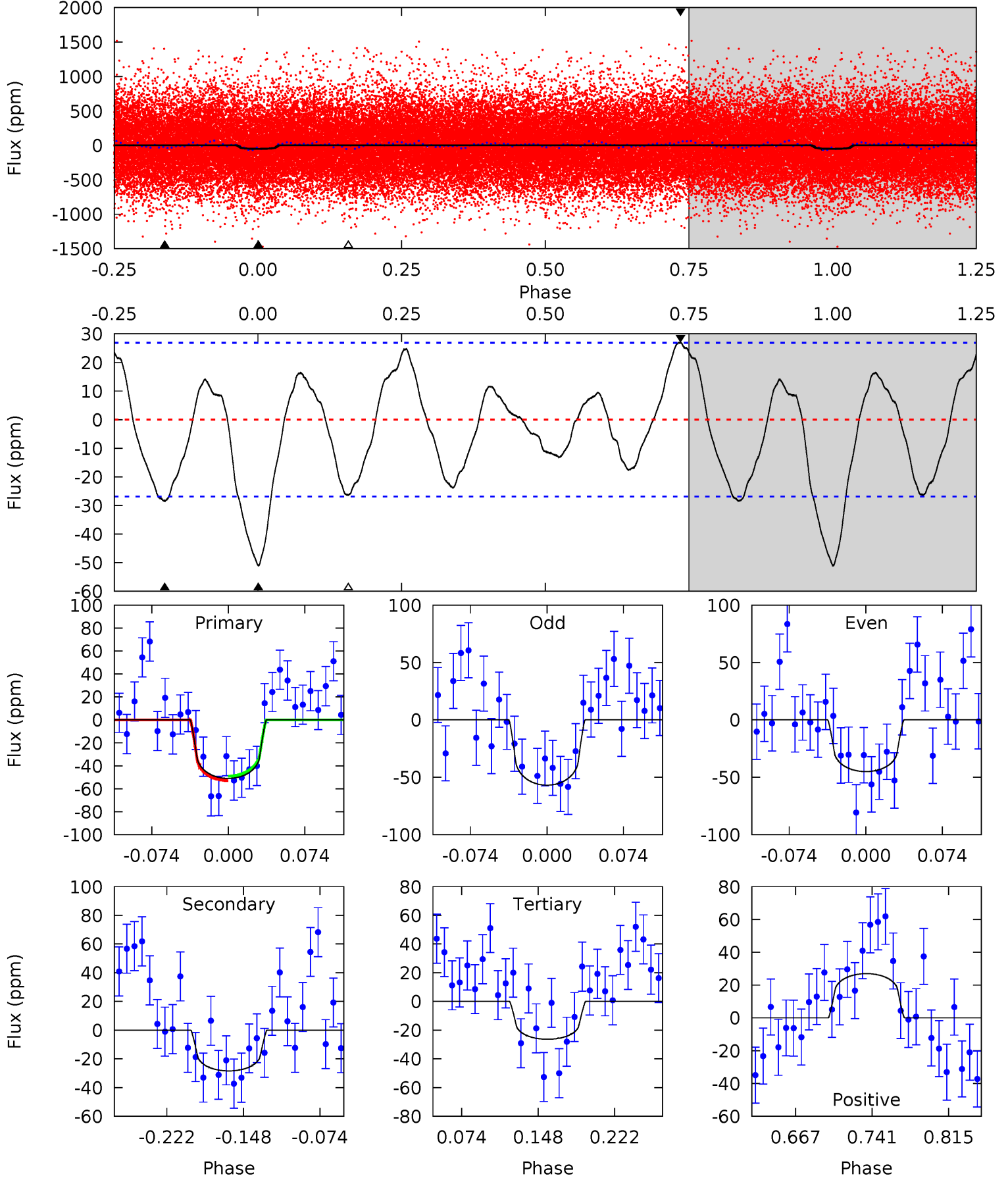
TCE 004571091-01 P= 3.101704 Days $T_0=132.531323$ (BKJD)



DV Model-Shift Uniqueness Test

004571091-01, P = 3.101677 Days, E = 129.441337 Days

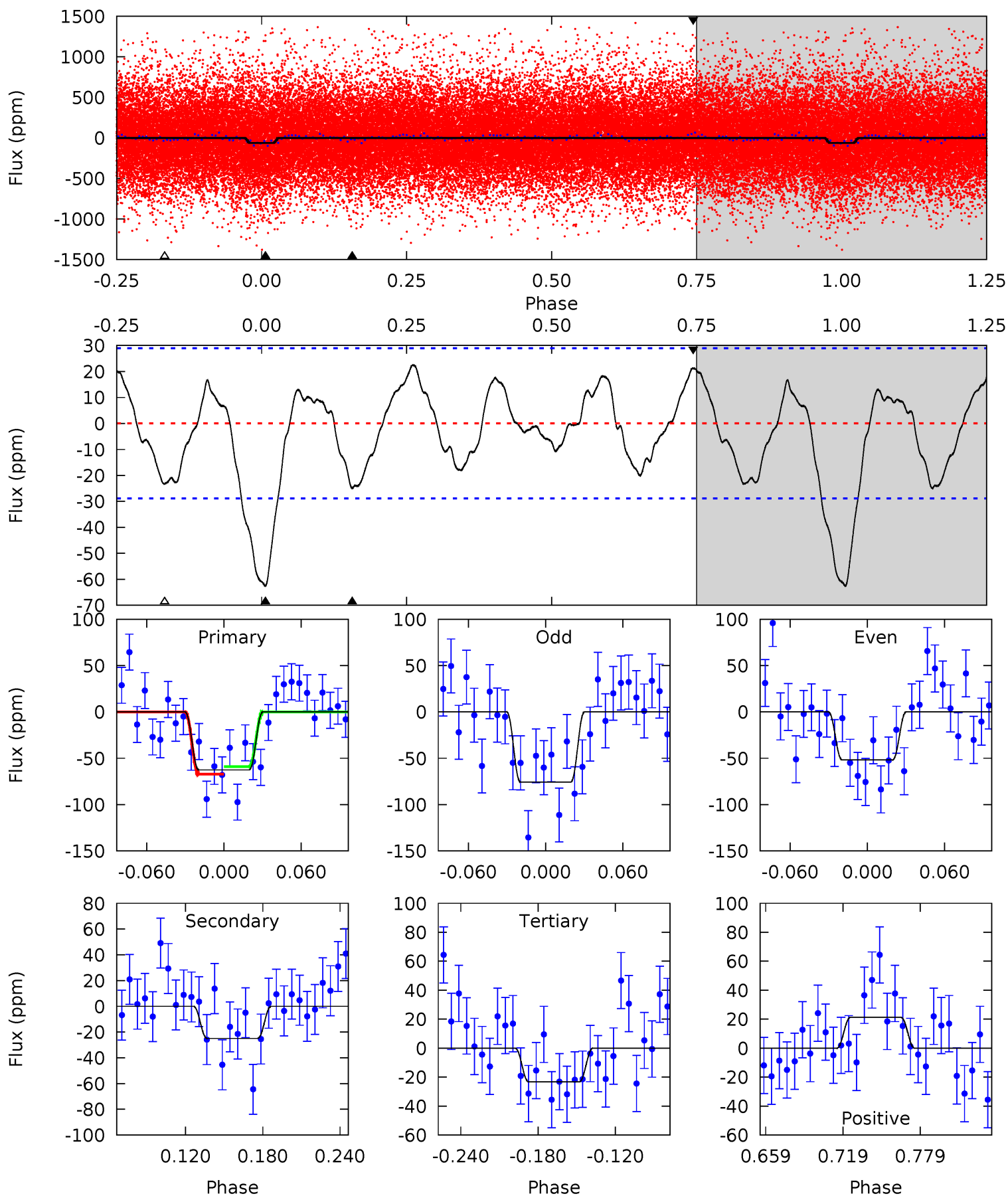
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.78	4.89	4.54	4.64	4.63	1.79	2.36	4.24	4.14	0.35	0.25	1.02	0.95	0.35	0.33



Alt Model-Shift Uniqueness Test

004571091-01, P = 3.101704 Days, E = 129.429619 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	4.03	3.77	3.43	4.67	1.88	1.94	6.35	6.68	0.27	0.60	1.93	0.93	0.26	0.67



Stellar Parameters For KIC 004571091

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3650^{+51}_{-58}	$4.777^{+0.039}_{-0.024}$	$0.000^{+0.100}_{-0.100}$	$0.468^{+0.026}_{-0.033}$	$0.479^{+0.033}_{-0.030}$	$6.563^{+1.176}_{-0.601}$
	+1%/-2%	+1%/-1%	+inf%/-inf%	+6%/-7%	+7%/-6%	+18%/-9%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 004571091-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-28 ± 6	$0.43^{+0.32}_{-0.25}$	851^{+15}_{-18}	3150^{+997}_{-441}	87^{+396}_{-58}
Alt.	-25 ± 6	$0.48^{+0.28}_{-0.27}$	851^{+16}_{-19}	2999^{+873}_{-370}	63^{+258}_{-39}

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

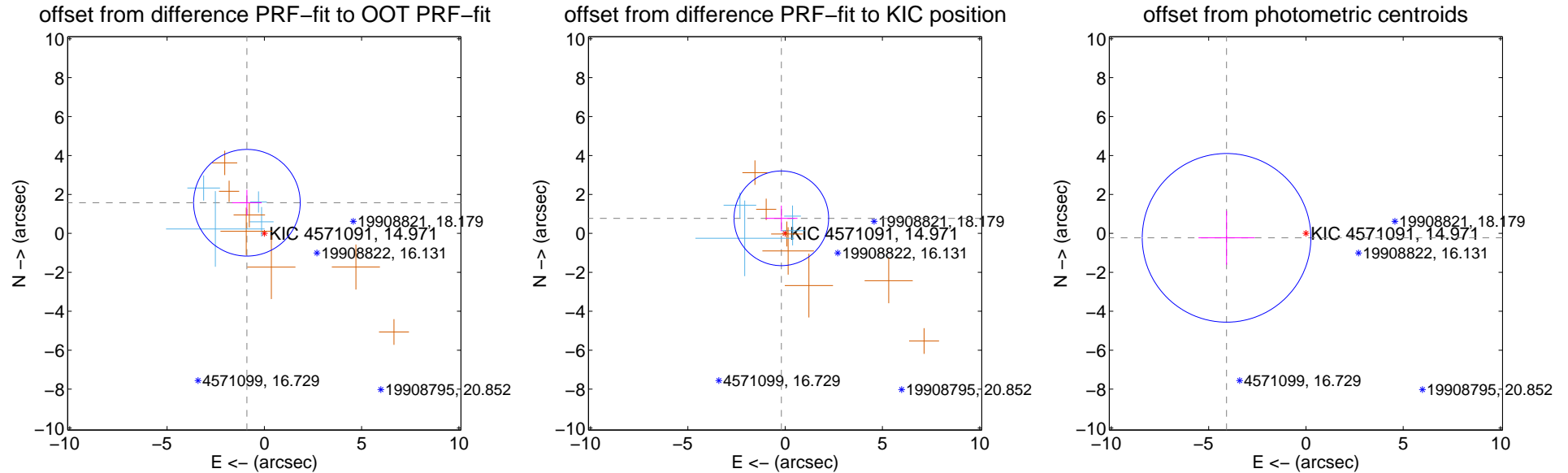
DV Centroid Data

Supplemental centroid analysis for 004571091-01. Kepler magnitude: 14.97. Transit SNR 7.36

There are 4 quarters with good PRF difference image offsets

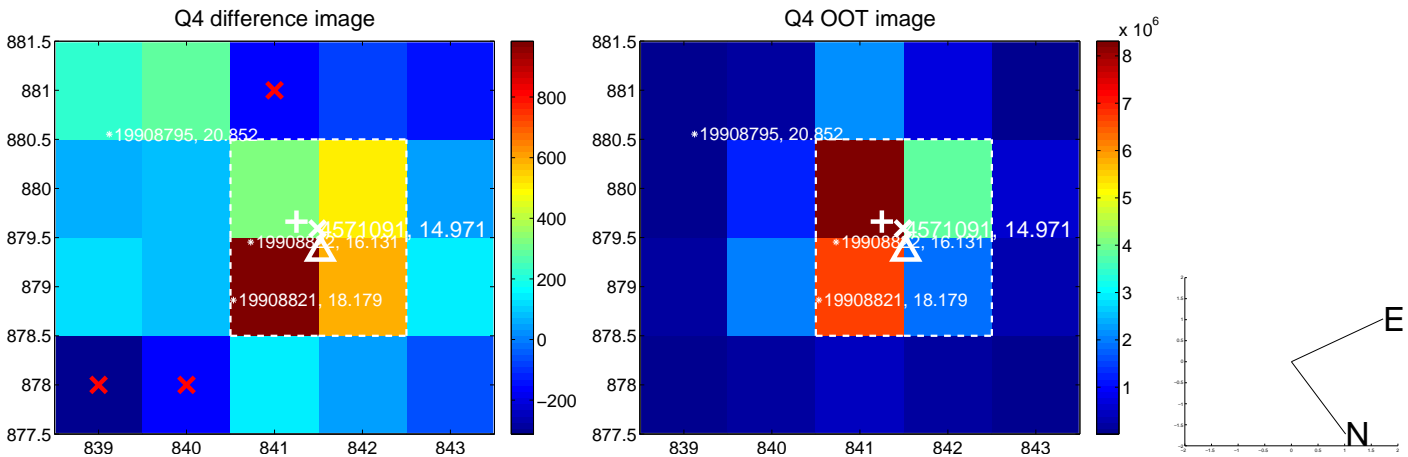
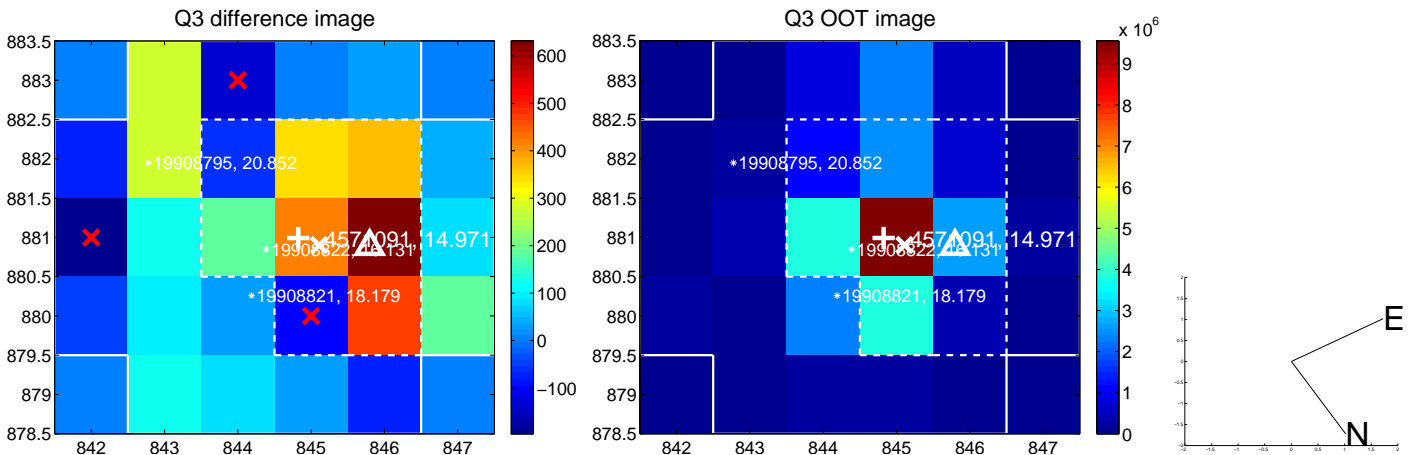
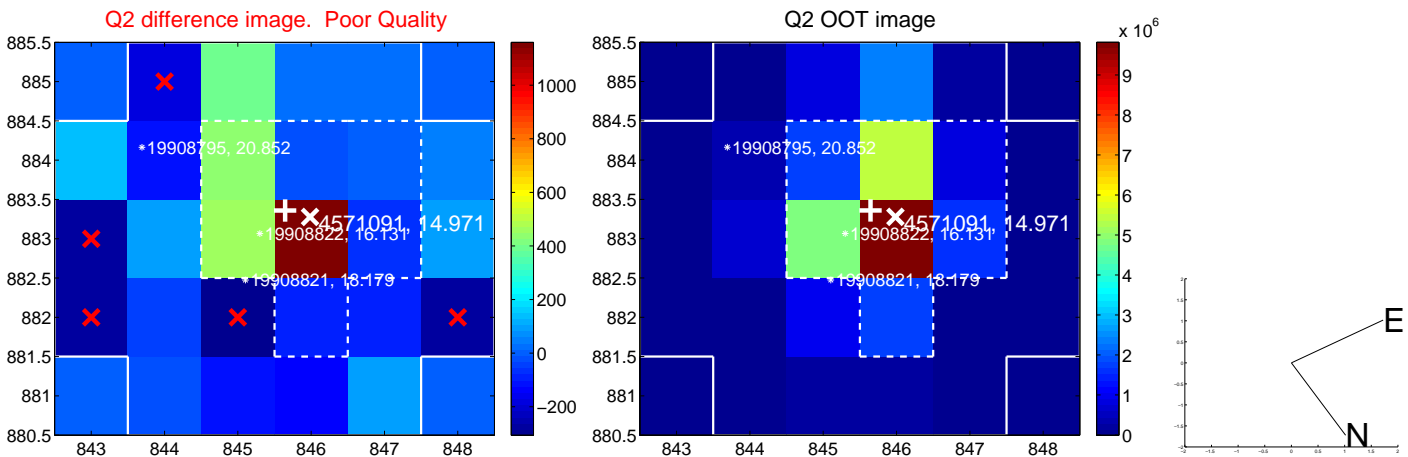
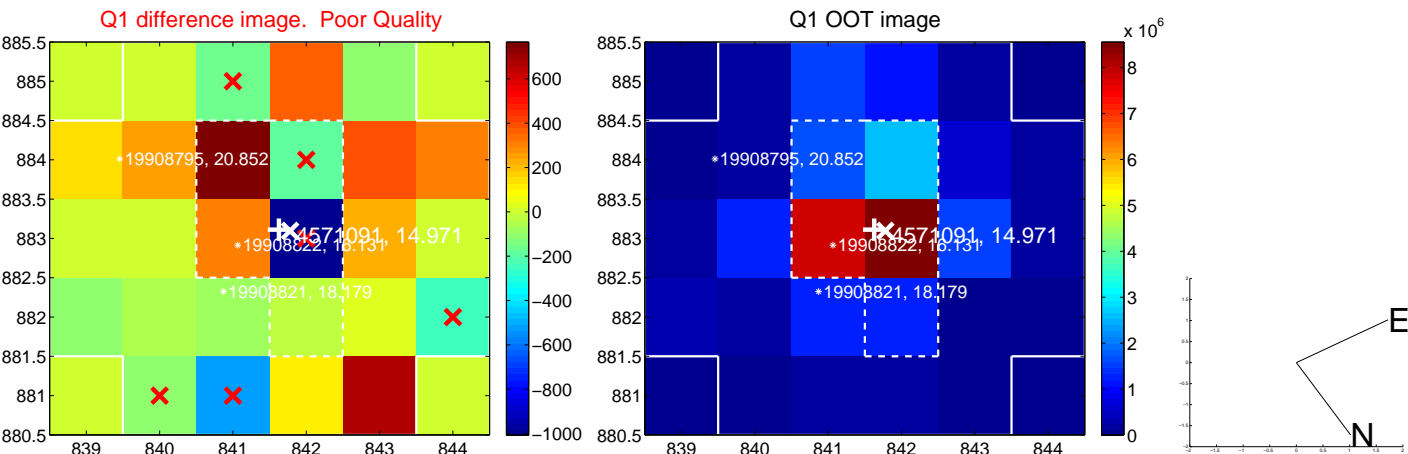
The direct PRF centroid is offset from the target star catalog position by about 0.65 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.811 ± 0.913	1.98	0.896 ± 0.758	1.575 ± 0.660
PRF-fit source offset from KIC position	0.799 ± 0.810	0.99	0.196 ± 0.830	0.774 ± 0.651
photometric centroid source offset	4.09 ± 1.44	2.83	4.08 ± 1.44	-0.23 ± 1.39

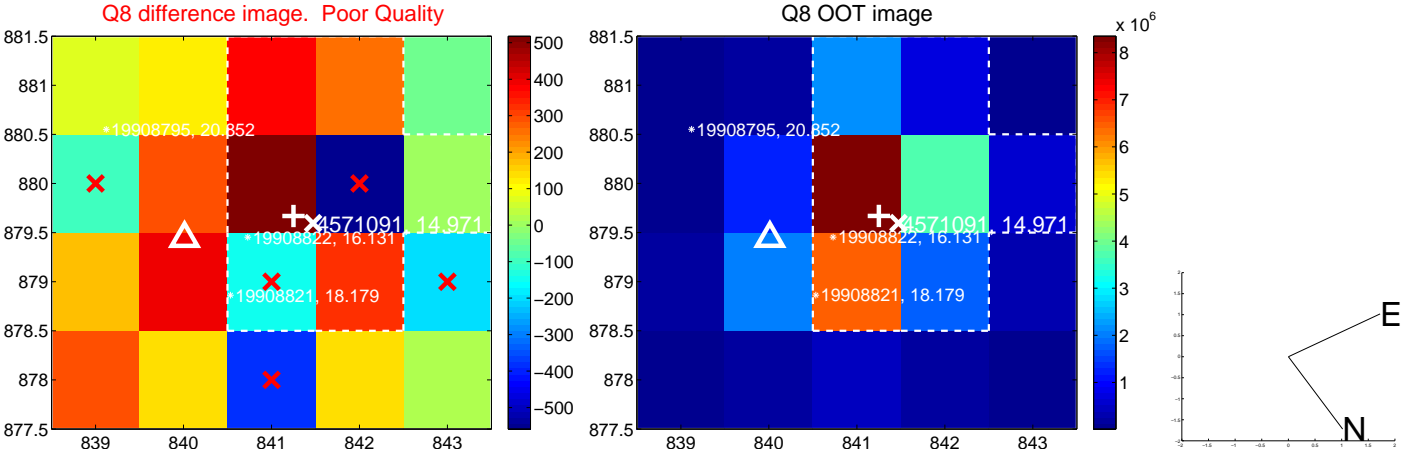
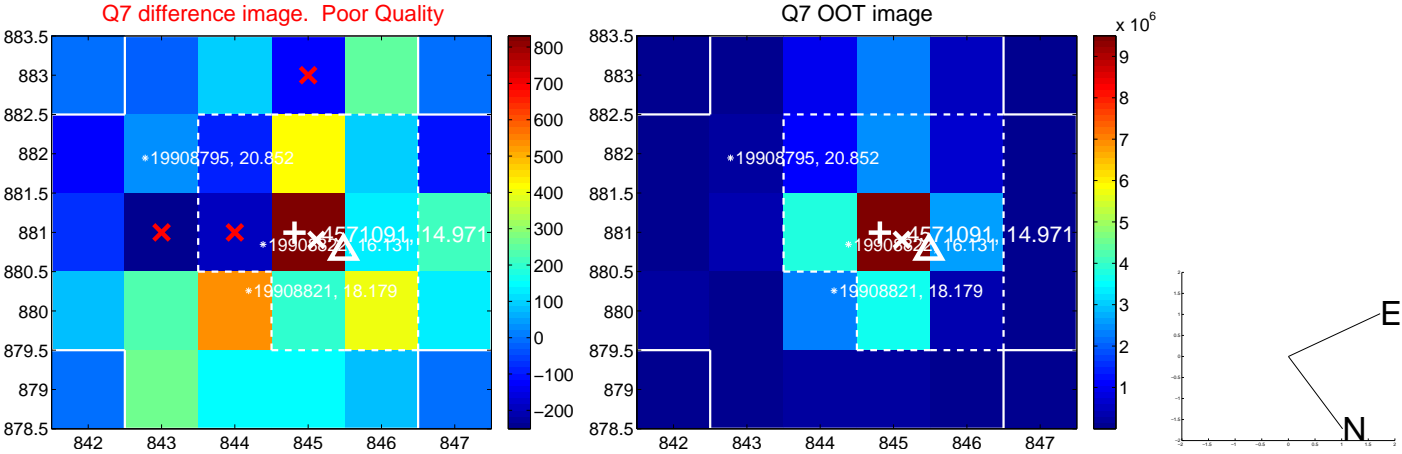
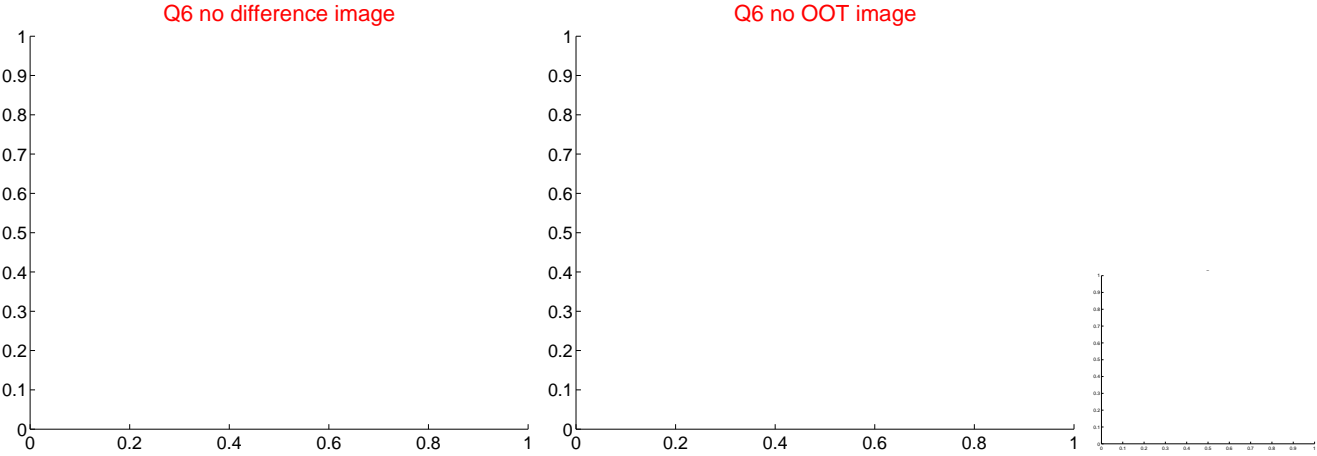
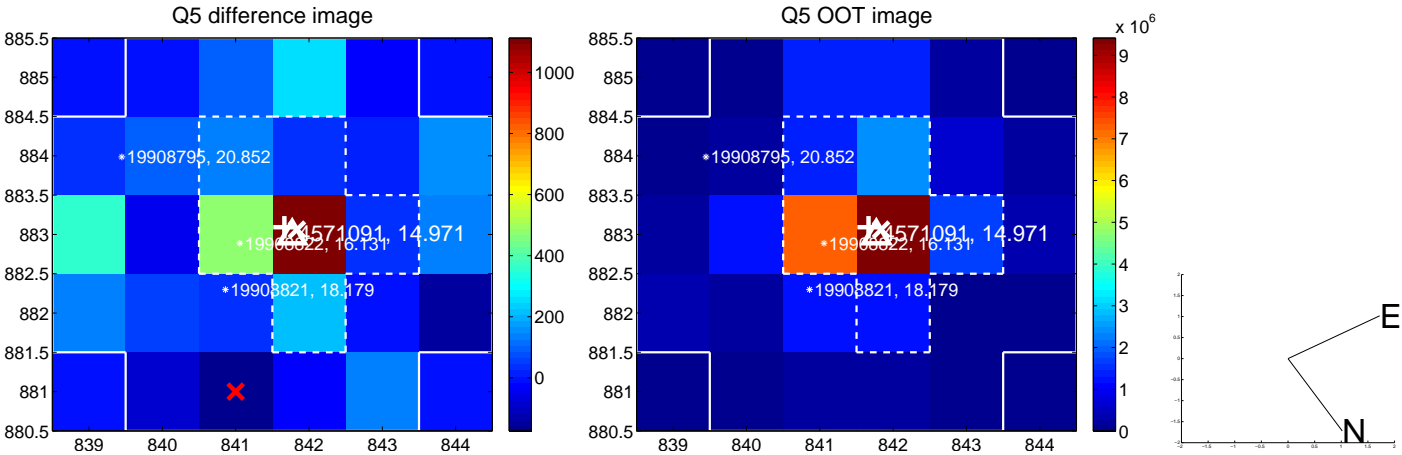


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

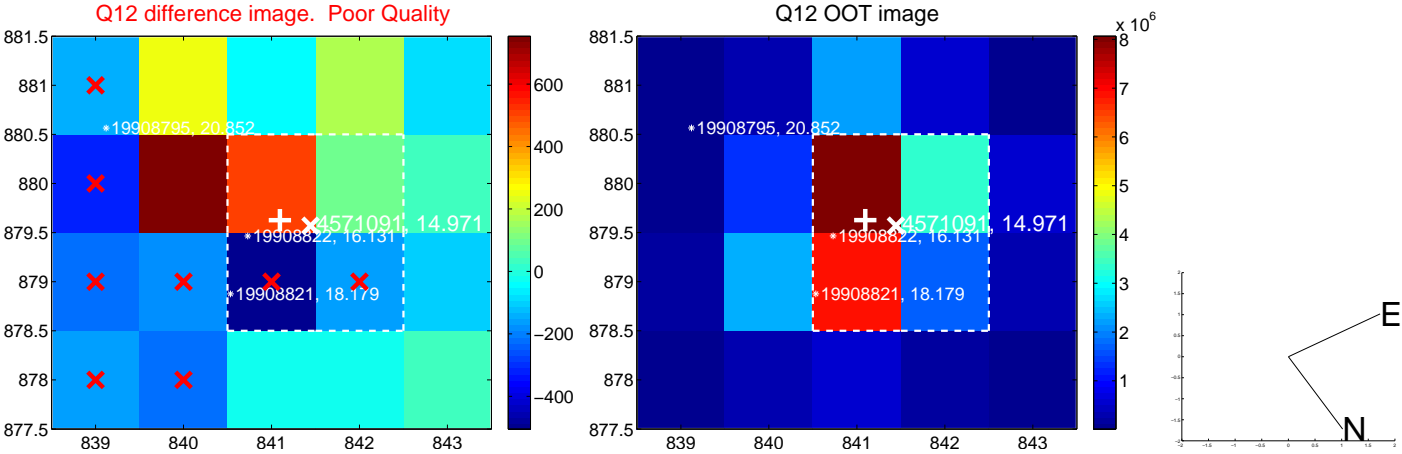
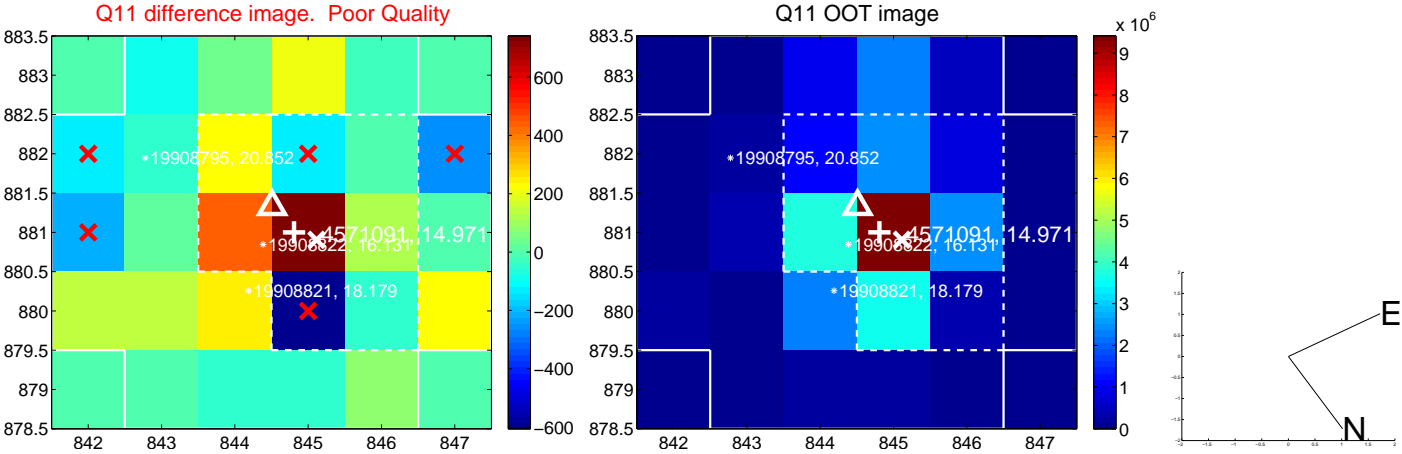
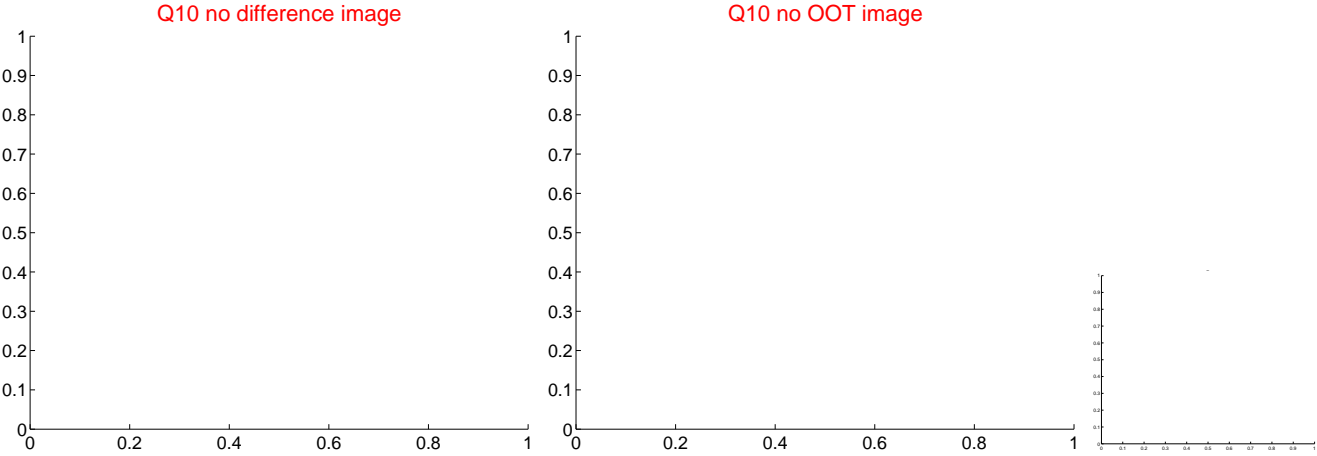
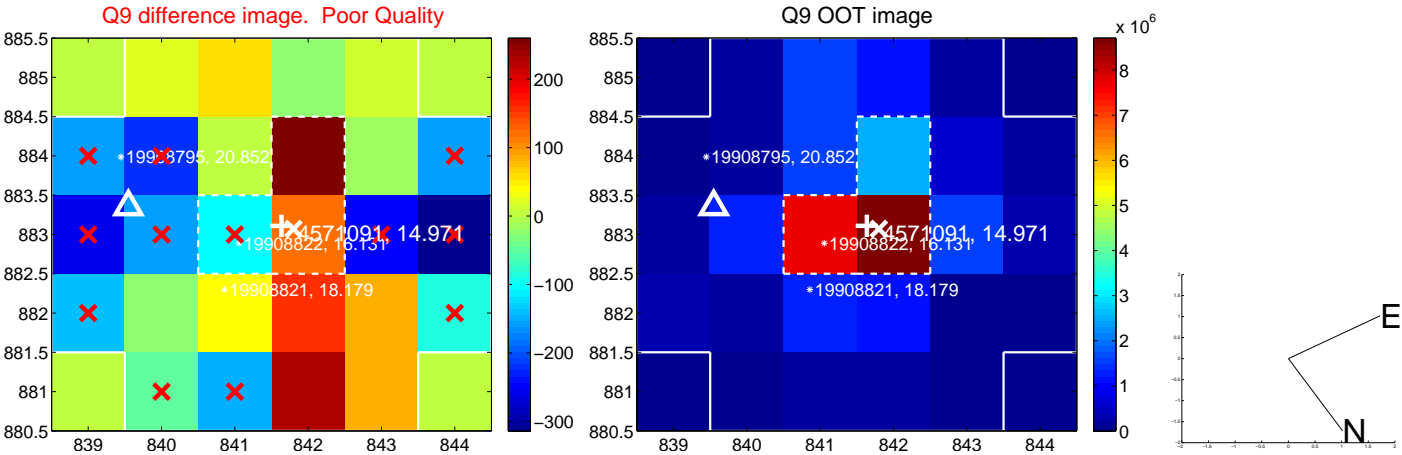
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



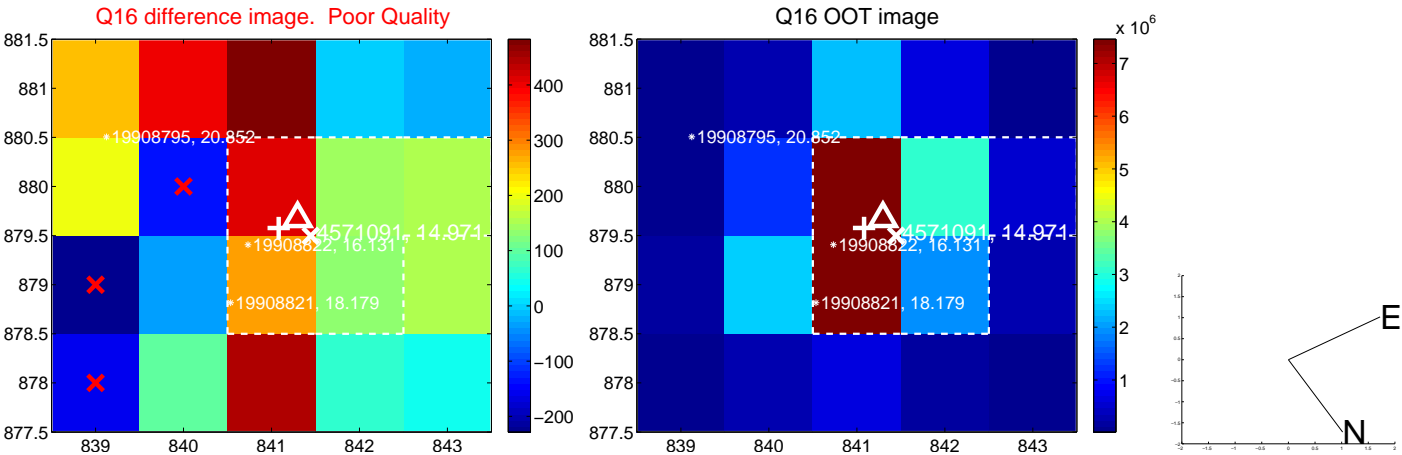
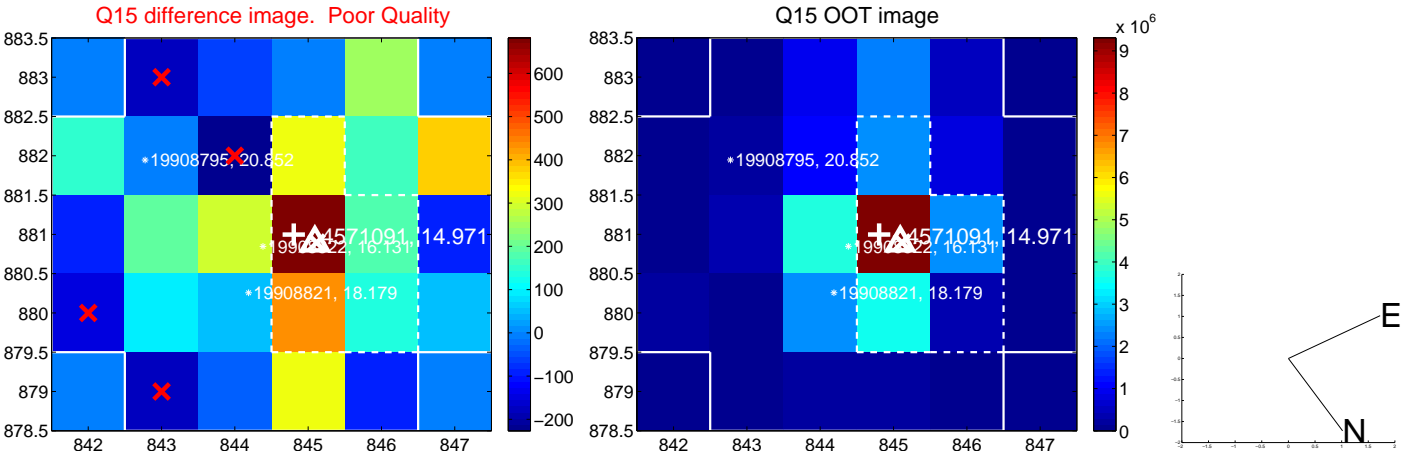
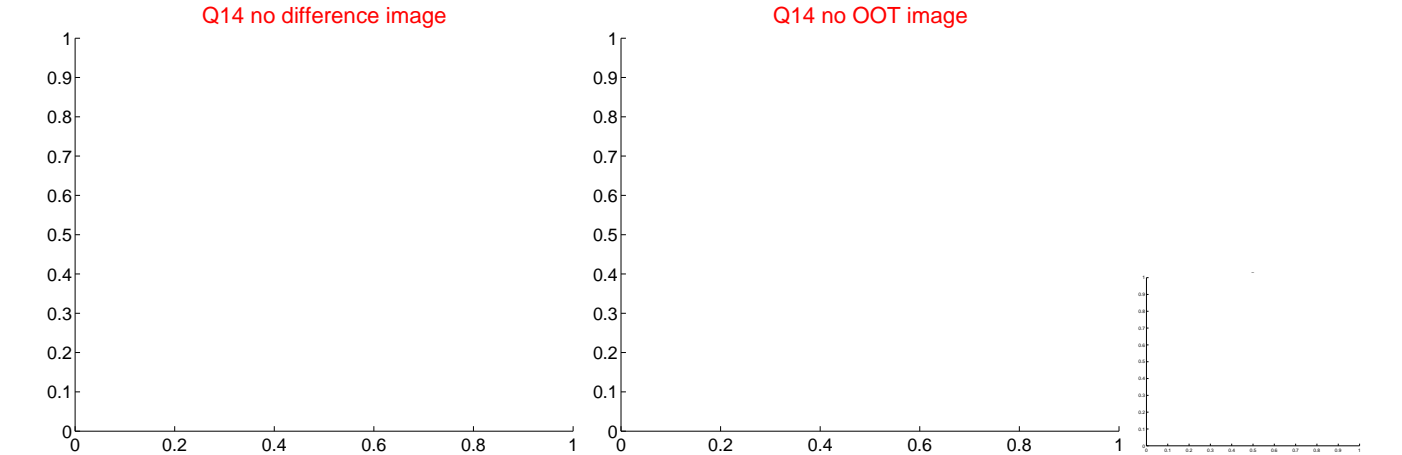
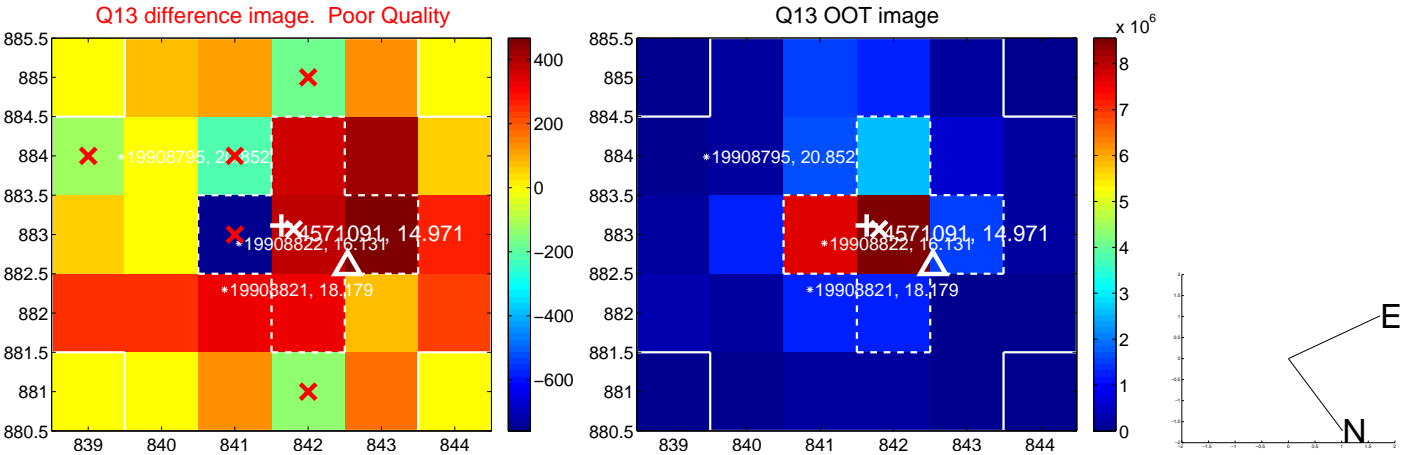
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



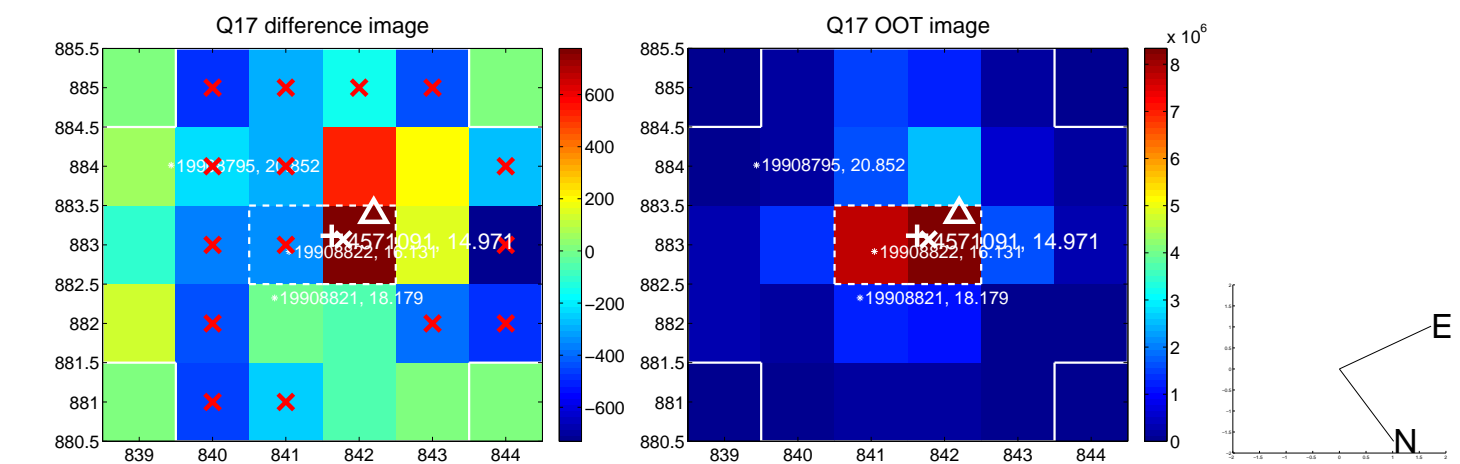
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



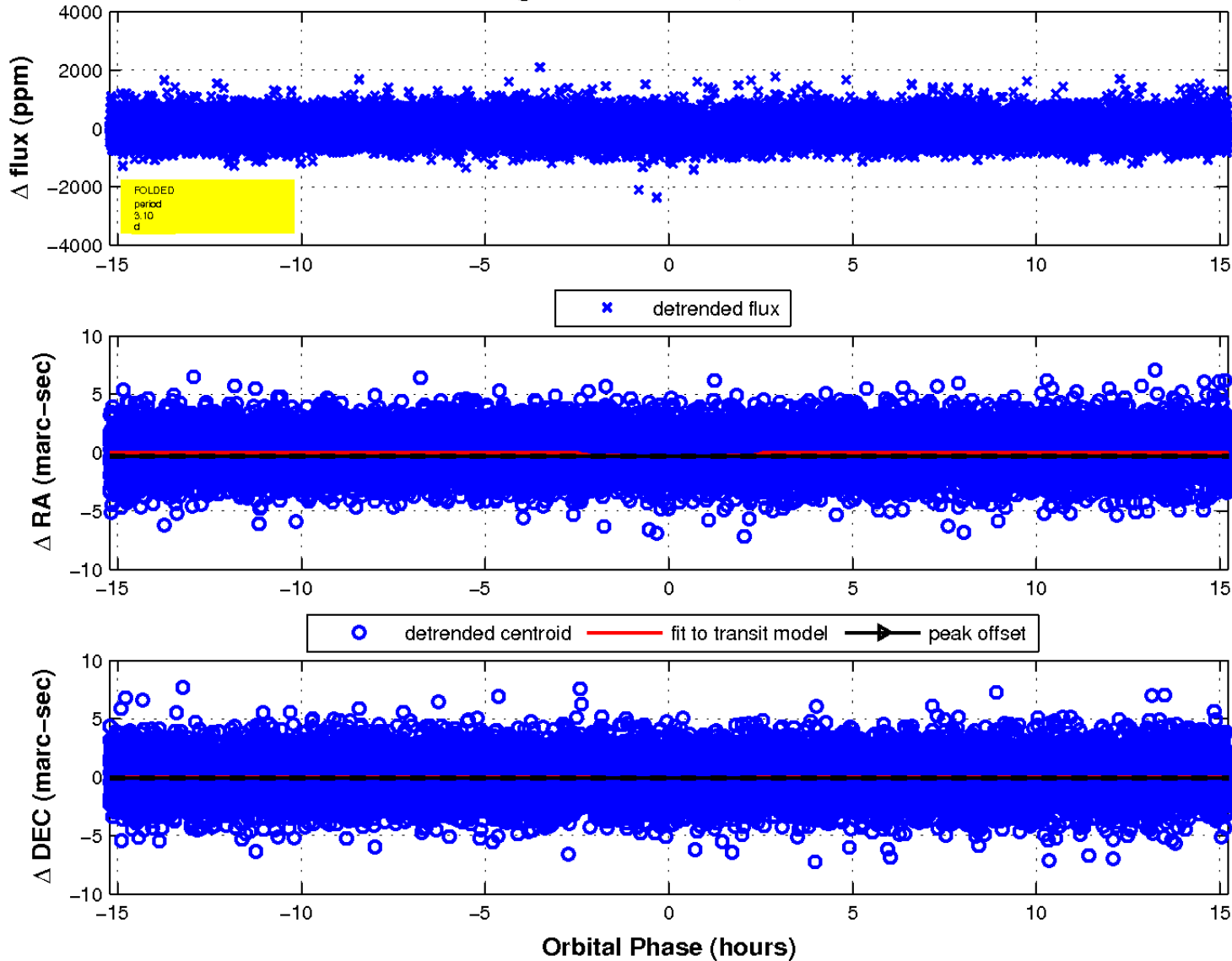
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

