

KIC 010399321

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})
010399321-01	OBS	4556.01	21.581935	146.071214	45.0	13.815	8.7	9.9	1.34	5601	0.99	73.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010399321-01	OBS	FP	0.28	0	0	1	0	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.

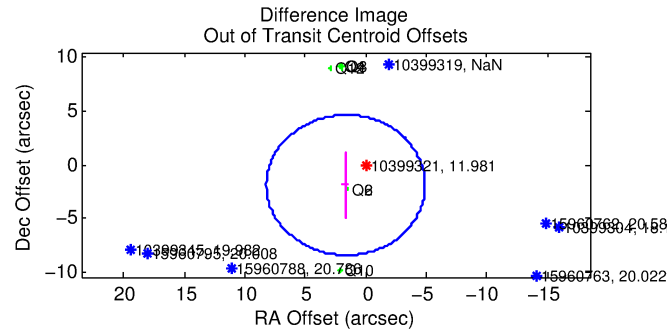
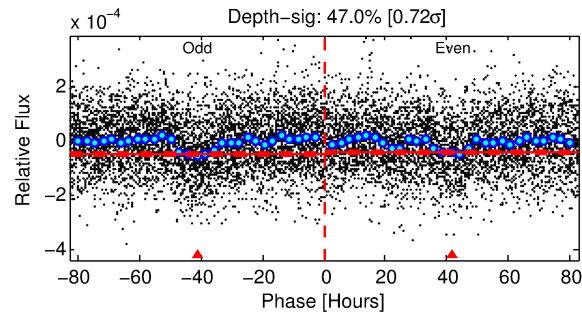
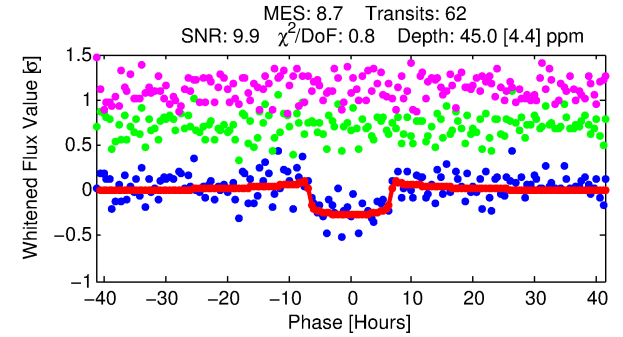
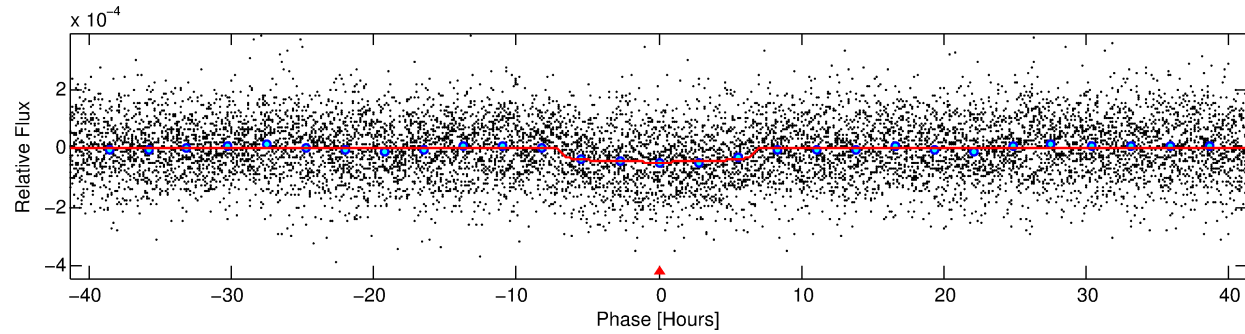
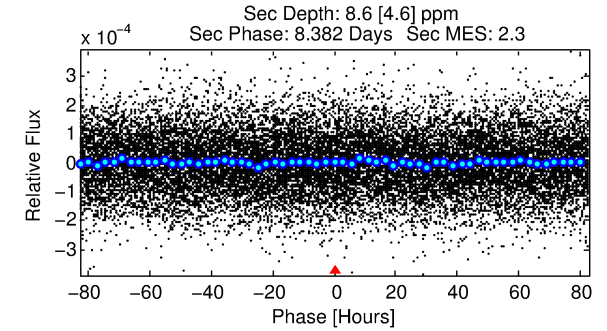
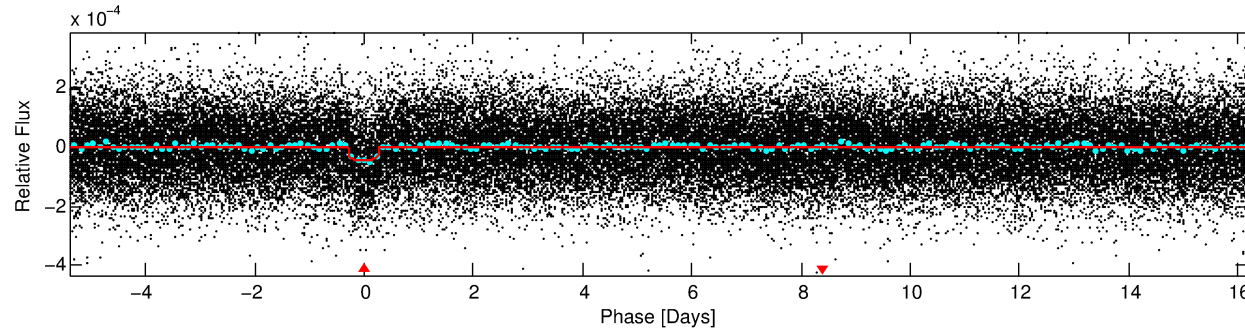
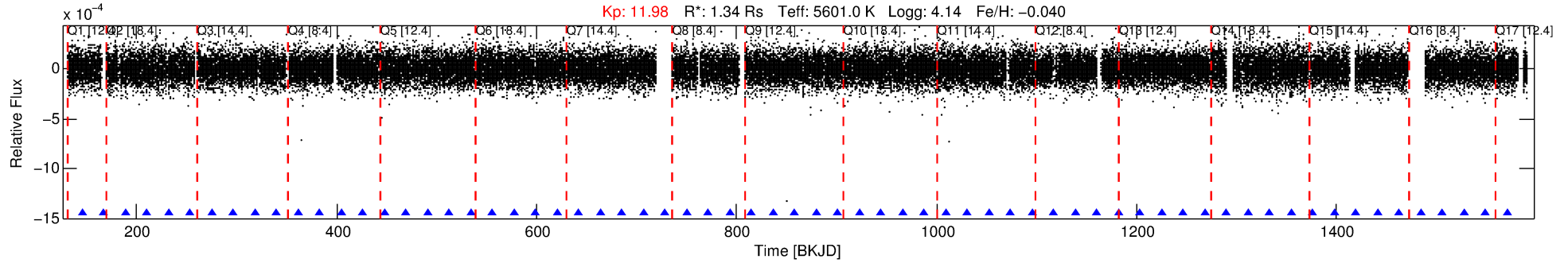
Ephemeris Match Information For 010399321-01

No Significant Match Found

DV One-Page Summary

KIC: 10399321 Candidate: 1 of 1 Period: 21.582 d

KOI: K04556.01 Corr: 0.954



DV Fit Results:

Period = 21.58194 [0.00037] d
Epoch = 146.0712 [0.0140] BKJD
Rp/R* = 0.0068 [0.0019]
a/R* = 7.68 [8.92]
b = 0.78 [0.61]
Seff = 73.17 [27.22]
Teq = 746 [69] K
Rp = 0.99 [0.35] Re
a = 0.1473 [0.0331] AU
Ag = 104.62 [89.33] [1.16σ]
Teffp = 3688 [716] K [4.09σ]

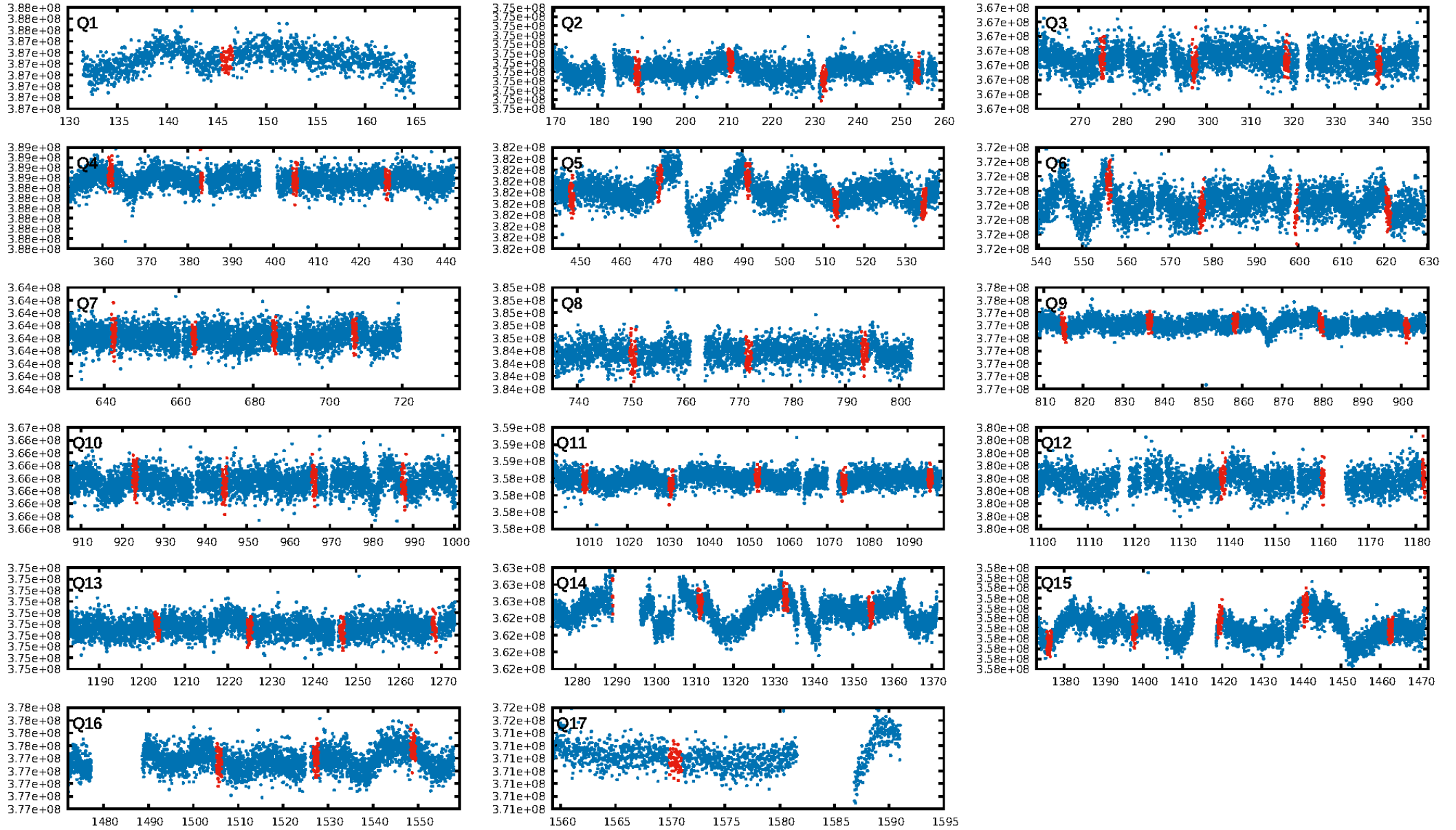
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.52e-17
RollingBand-fgt: 1.00 [60/60]
GhostDiagnostic-chr: 1.134
Centroid-sig: 0.4%
Centroid-so: 9.186 arcsec [2.62σ]
OotOffset-rm: 2.537 arcsec [1.16σ]
OotOffset-st: 3/0/3/0 [6]
KicOffset-rm: 8.975 arcsec [8.90σ]
KicOffset-st: 4/0/3/0 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 1.00 [16/16]

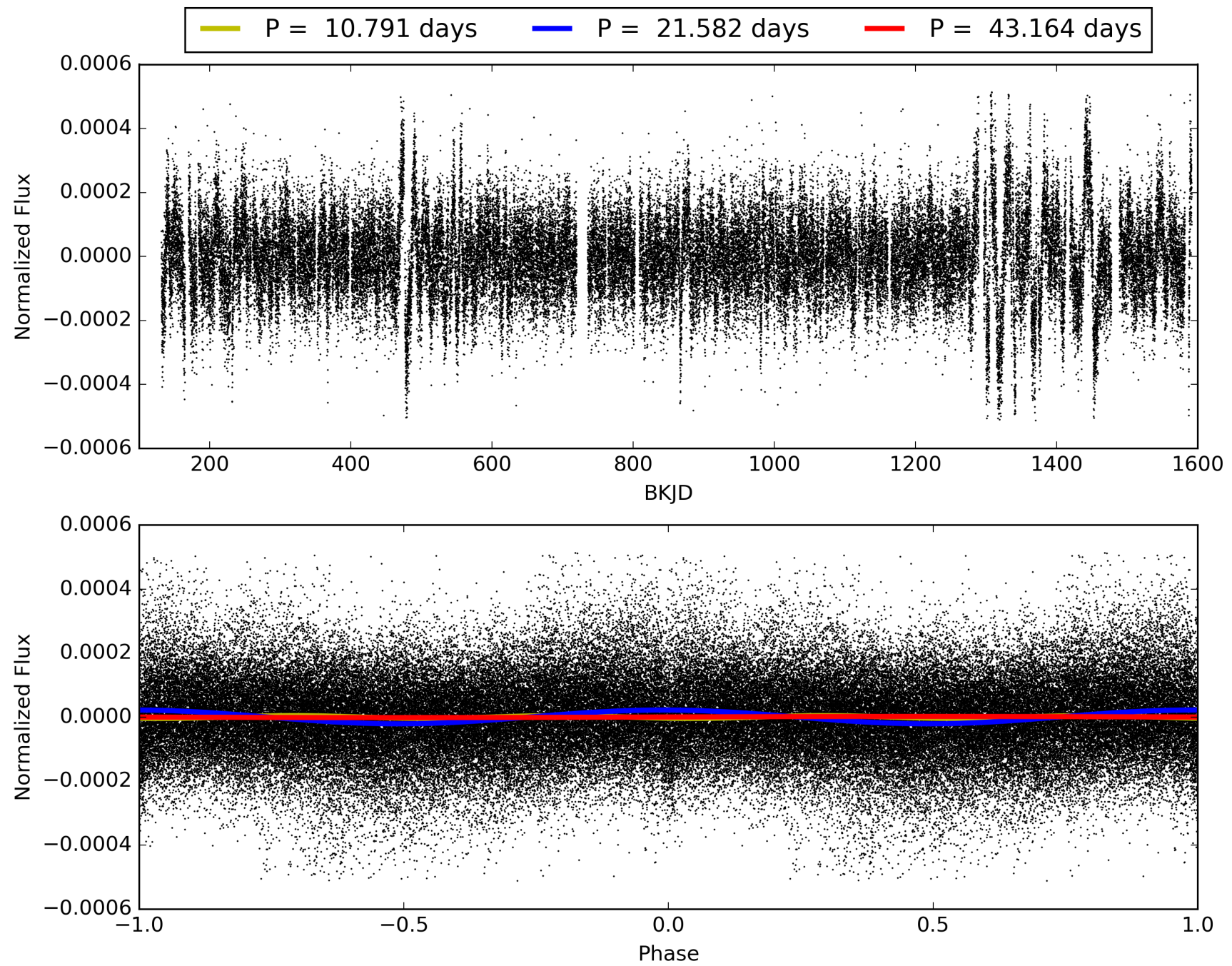
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:19:42 Z

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

TCE 010399321-01, PDC Light Curves

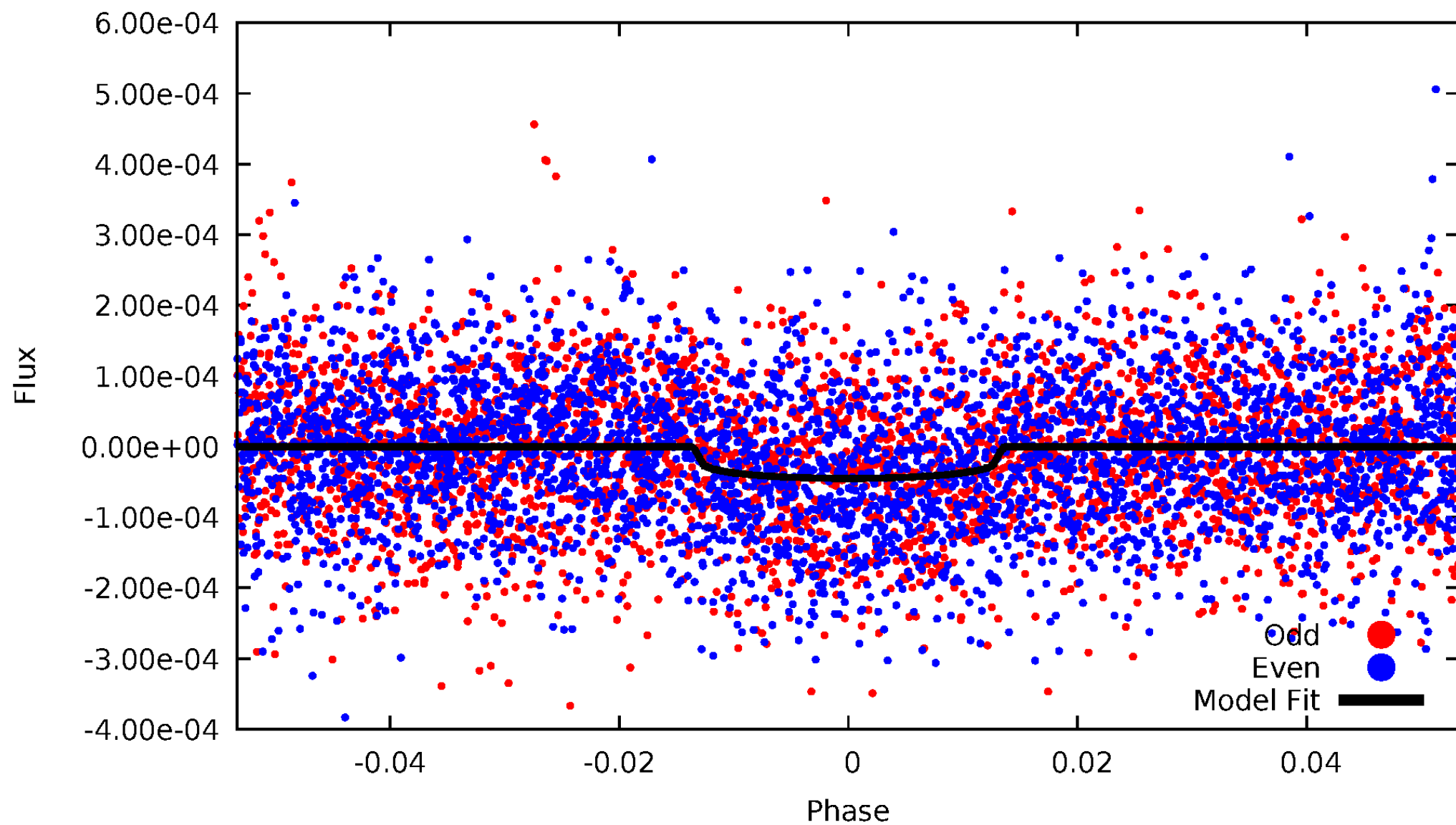


TCE 010399321-01



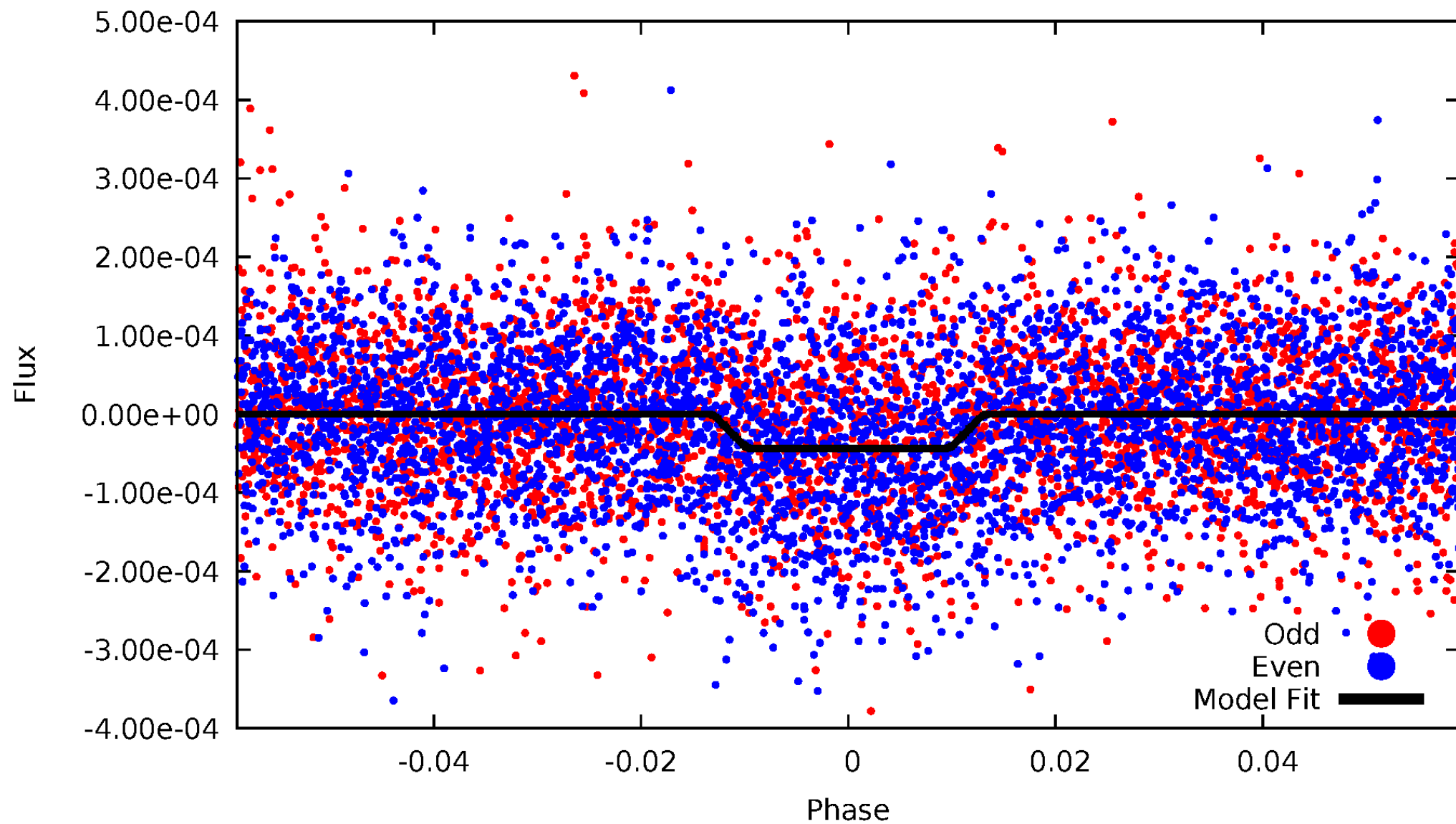
DV Odd/Even

TCE 010399321-01



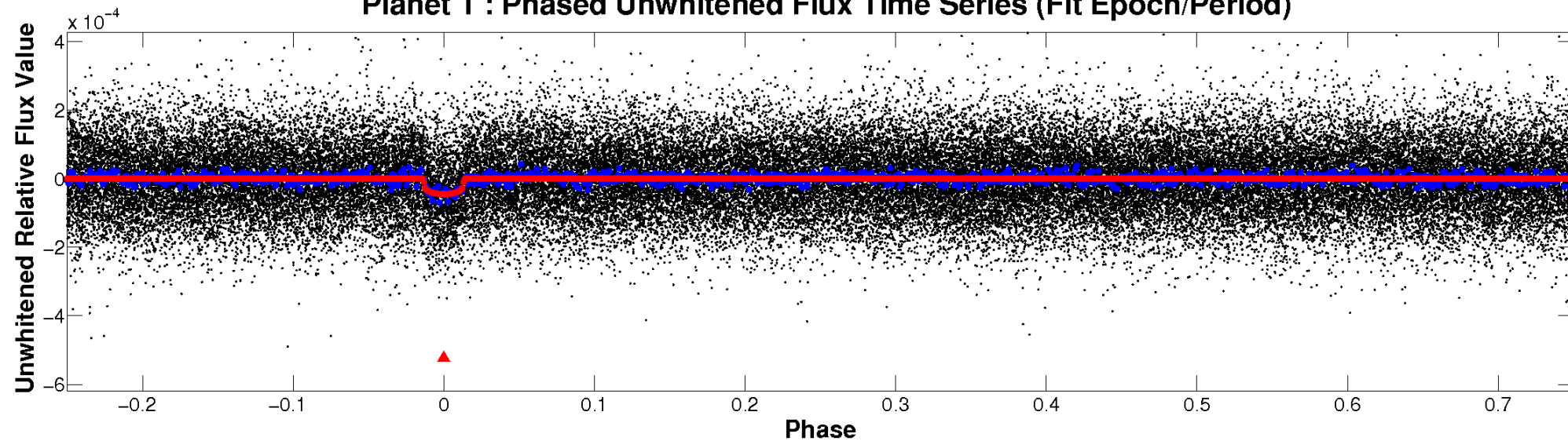
ALT Odd/Even

TCE 010399321-01

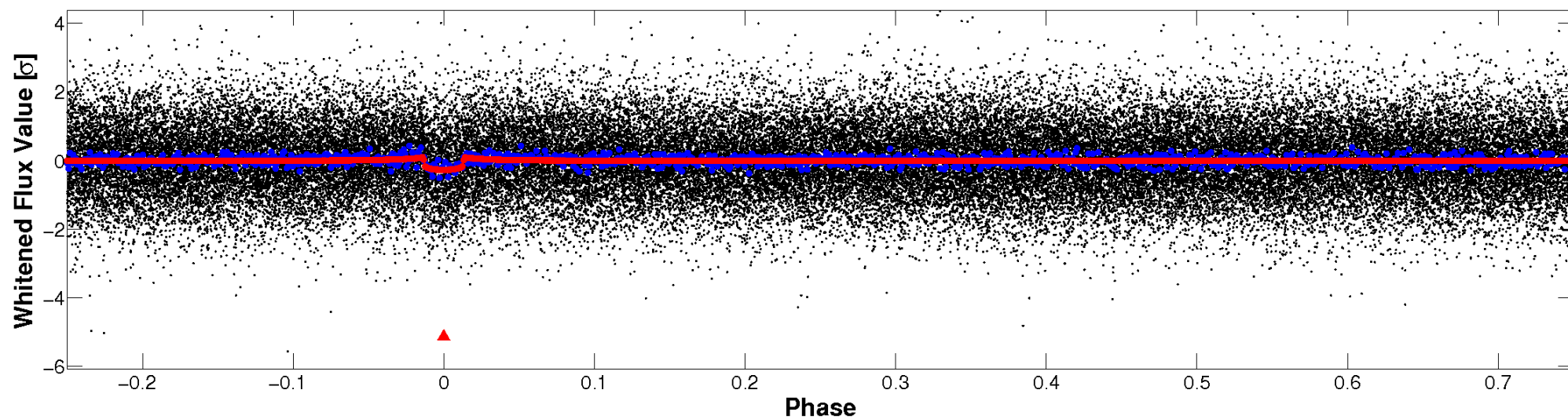


Non-Whitened Vs. Whitened Light Curve

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

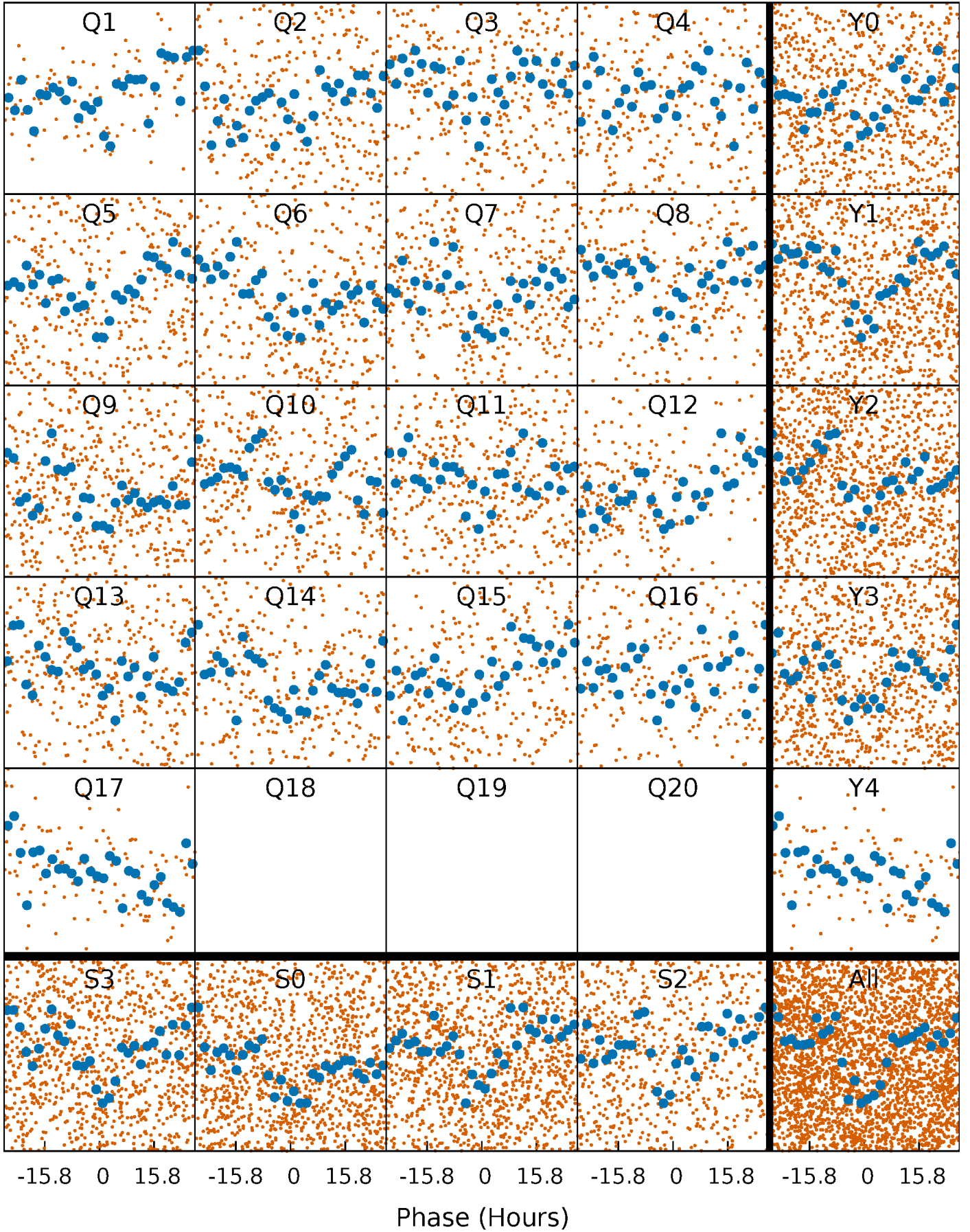


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



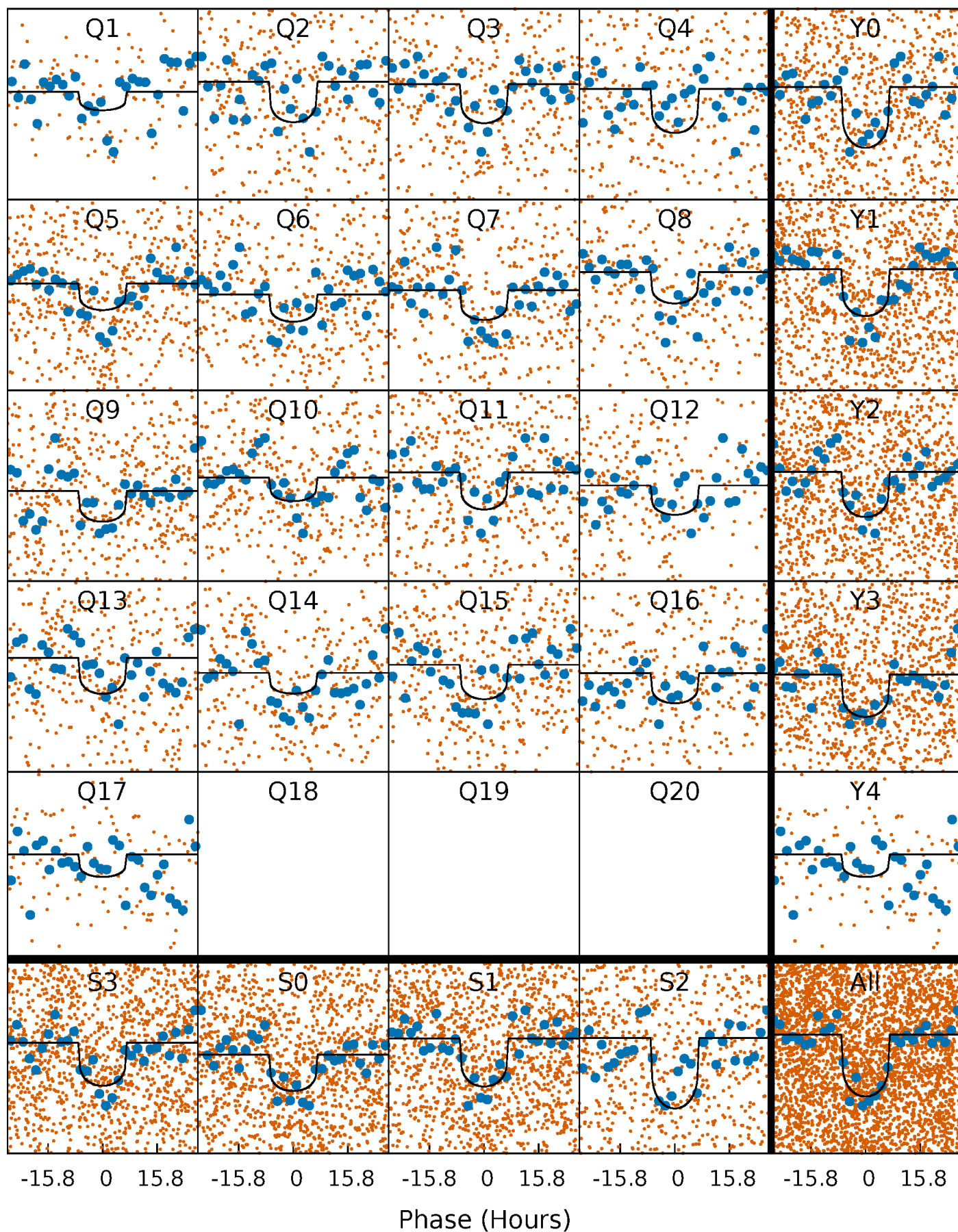
PDC Quarter-Phased Transit Curves

TCE 010399321-01 P= 21.581935 Days $T_0=146.071214$ (BKJD)



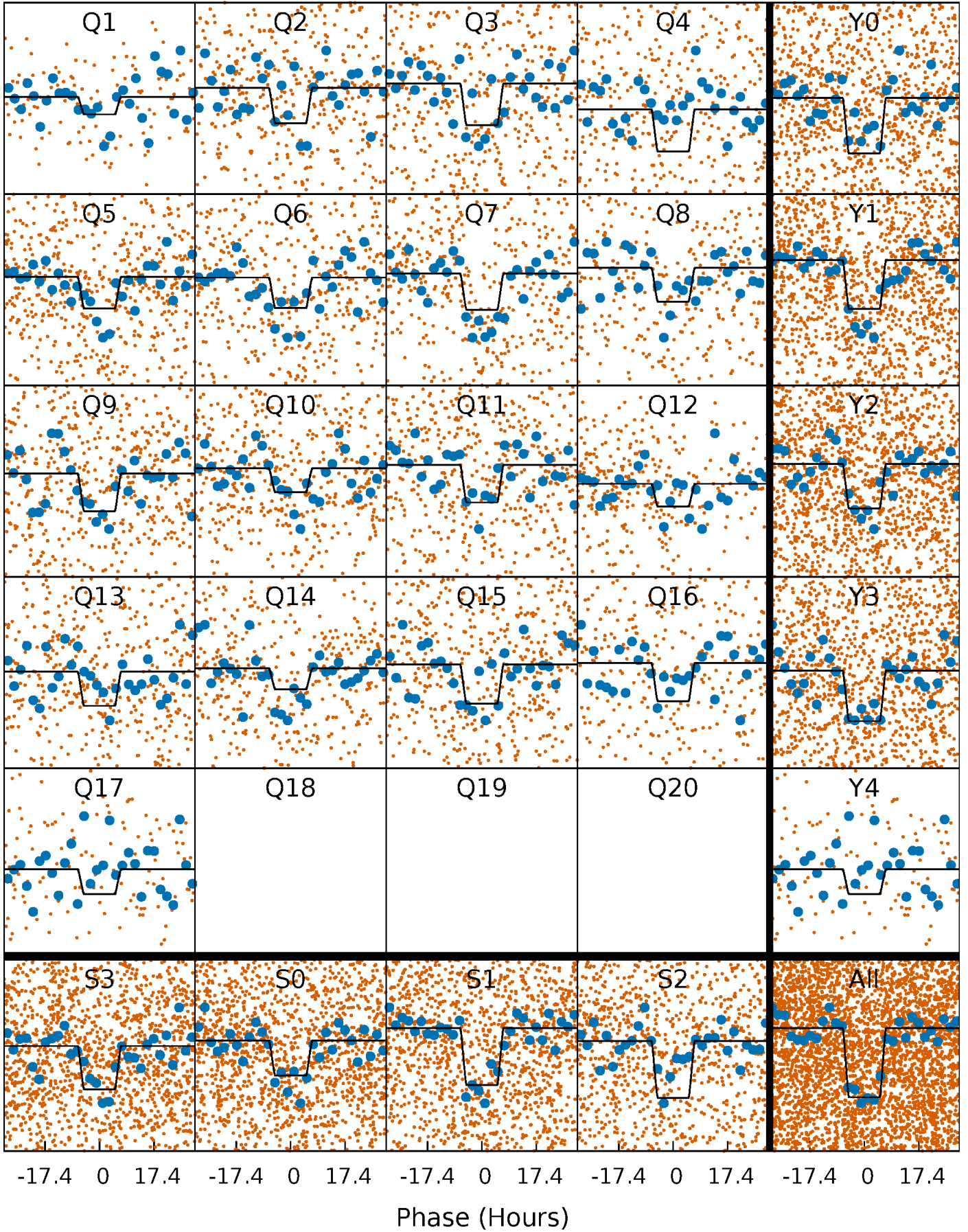
DV Quarter-Phased Transit Curves

TCE 010399321-01 P= 21.581935 Days $T_0=146.071214$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

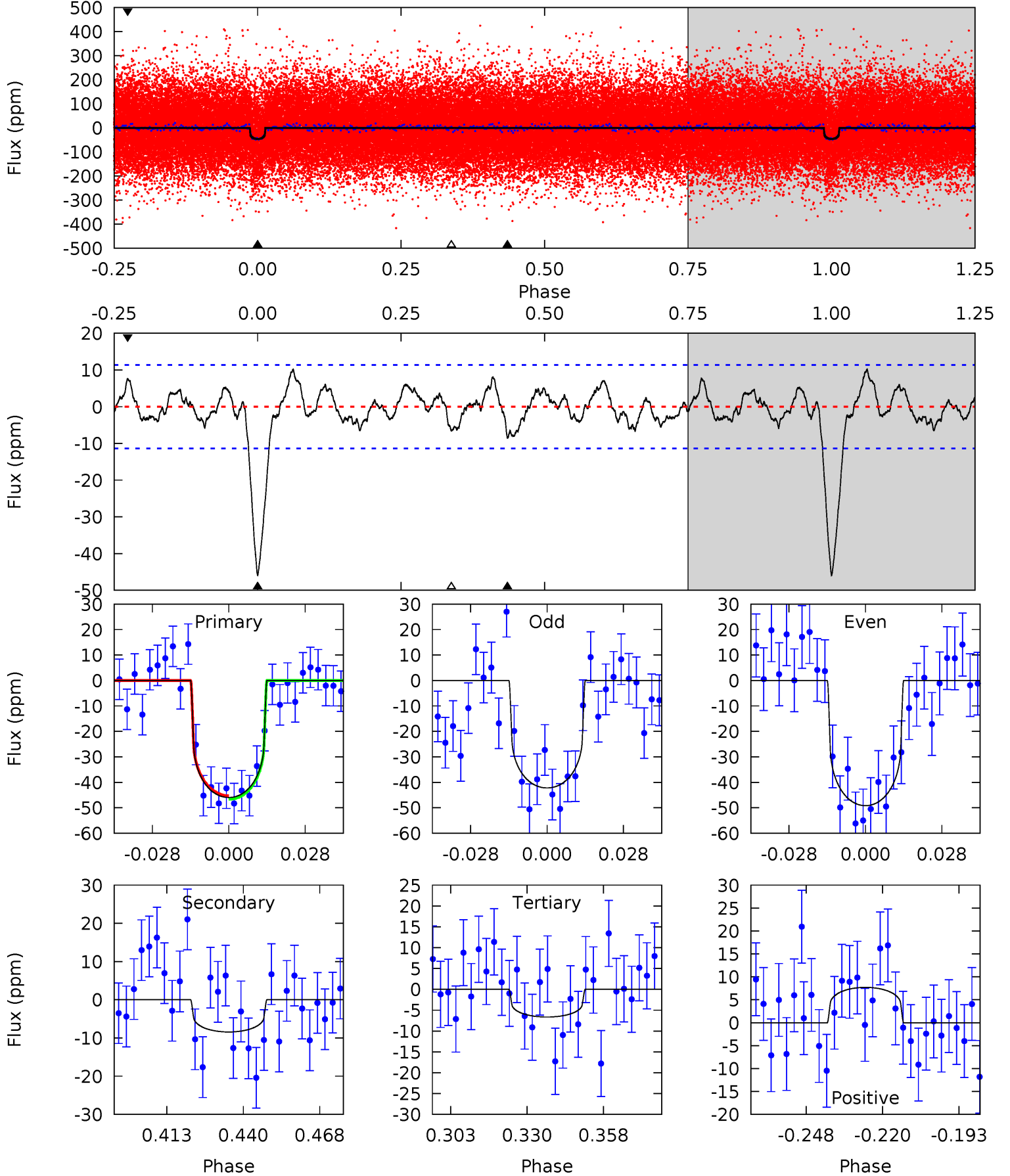
TCE 010399321-01 P= 21.581977 Days $T_0=146.068141$ (BKJD)



DV Model-Shift Uniqueness Test

010399321-01, P = 21.581935 Days, E = 124.489279 Days

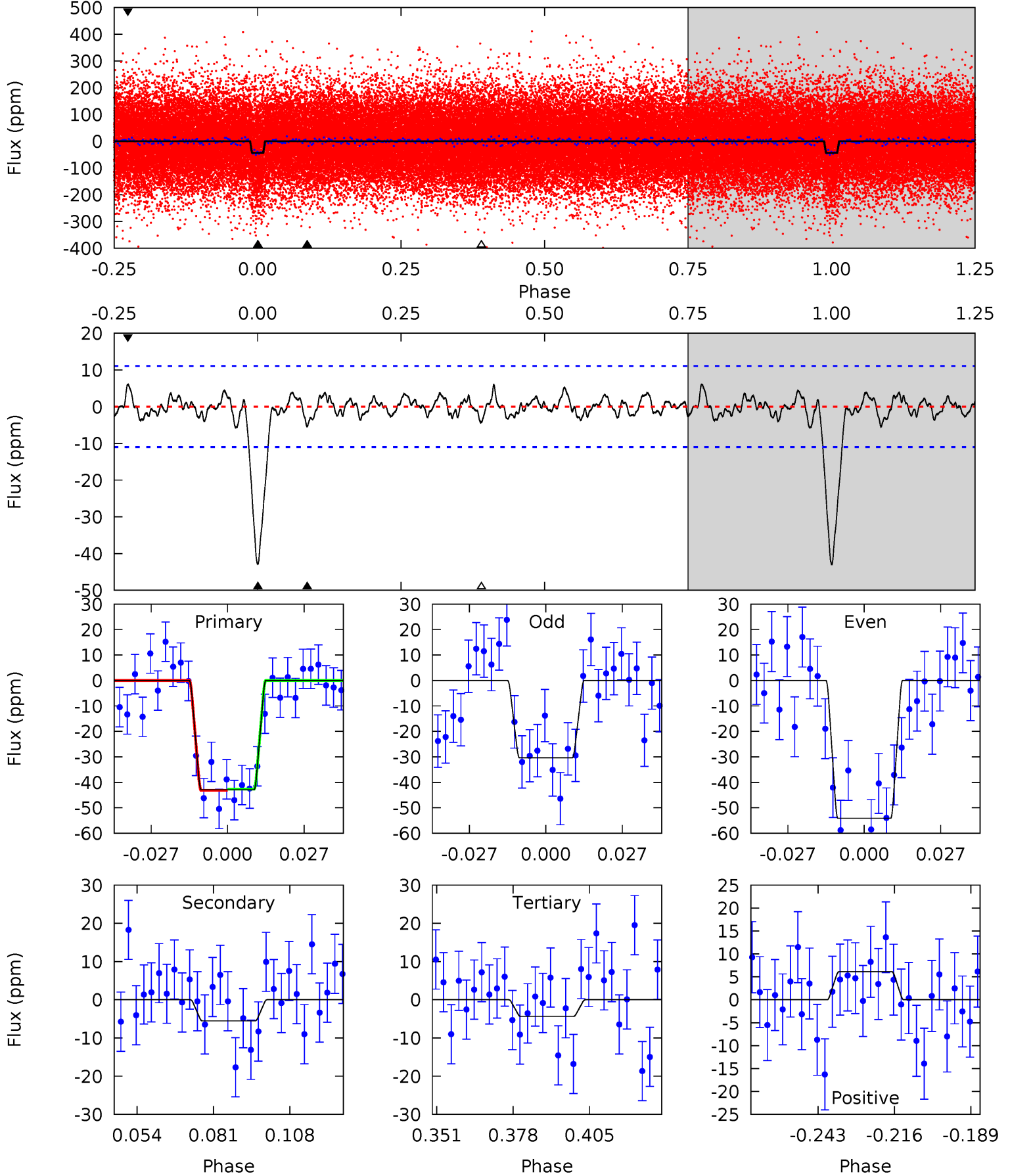
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	3.58	2.82	3.27	4.83	2.20	1.44	16.7	16.2	0.76	0.31	1.47	0.96	0.18	0.27



Alt Model-Shift Uniqueness Test

010399321-01, P = 21.581977 Days, E = 124.486164 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	2.42	1.91	2.68	4.83	2.21	0.89	16.9	16.1	0.51	-0.25	5.19	1.00	0.12	0.11



Stellar Parameters For KIC 010399321

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5601^{+112}_{-78}	$4.144^{+0.215}_{-0.116}$	$-0.040^{+0.150}_{-0.100}$	$1.342^{+0.223}_{-0.306}$	$0.915^{+0.074}_{-0.049}$	$0.533^{+0.608}_{-0.179}$
	+2%/-1%	+5%/-3%	+375%/-250%	+17%/-23%	+8%/-5%	+114%/-34%
Source	SPE59	SPE59	SPE59	DSEP		

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

Secondary Eclipse Parameters for KIC 010399321-01 / KOI 4556.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 2	$0.98^{+0.28}_{-0.29}$	1039^{+51}_{-67}	3948^{+560}_{-374}	102^{+113}_{-46}
Alt.	-6 ± 2	$0.93^{+0.32}_{-0.29}$	1039^{+55}_{-64}	3727^{+562}_{-406}	70^{+99}_{-35}

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

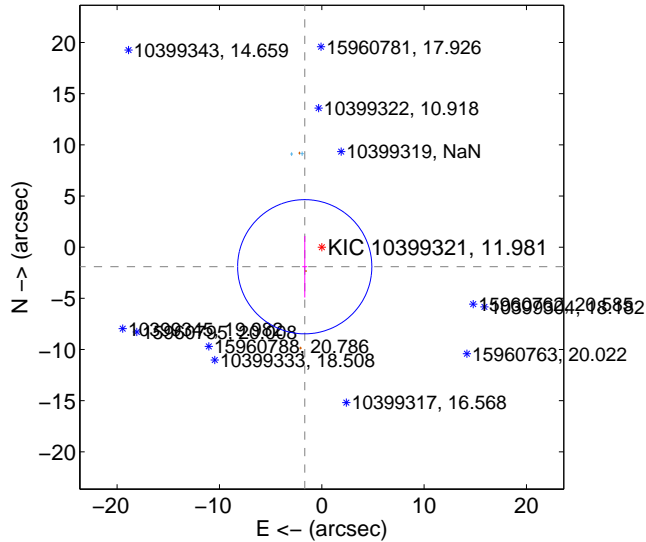
Supplemental centroid analysis for 010399321-01. **Kepler magnitude: 11.98.** Transit SNR 9.95

There are 4 quarters with good PRF difference image offsets

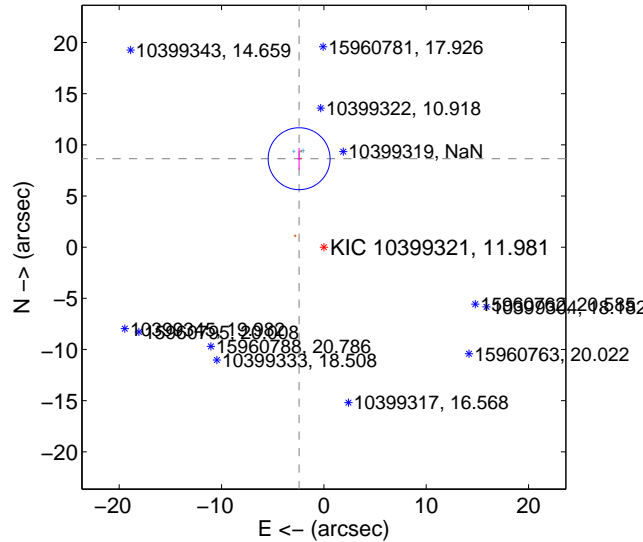
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.537 ± 2.185	1.16	1.666 ± 0.242	-1.913 ± 3.009
PRF-fit source offset from KIC position	8.975 ± 1.008	8.90	2.419 ± 0.132	8.643 ± 1.064
photometric centroid source offset	9.19 ± 3.50	2.62	-0.57 ± 0.83	9.17 ± 3.51

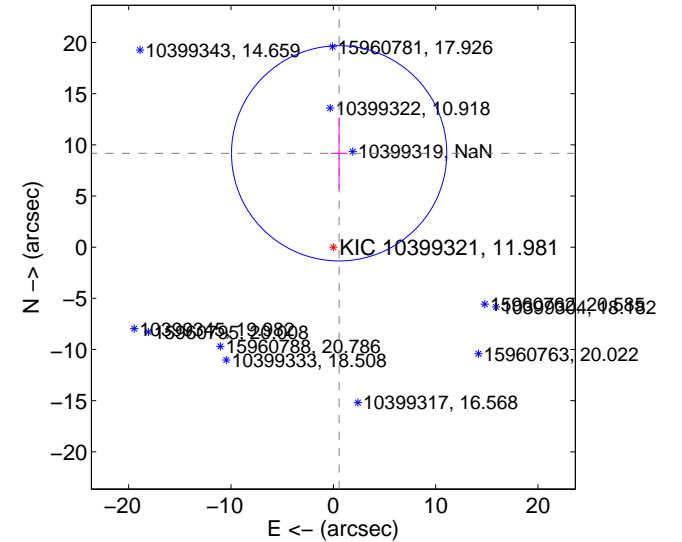
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

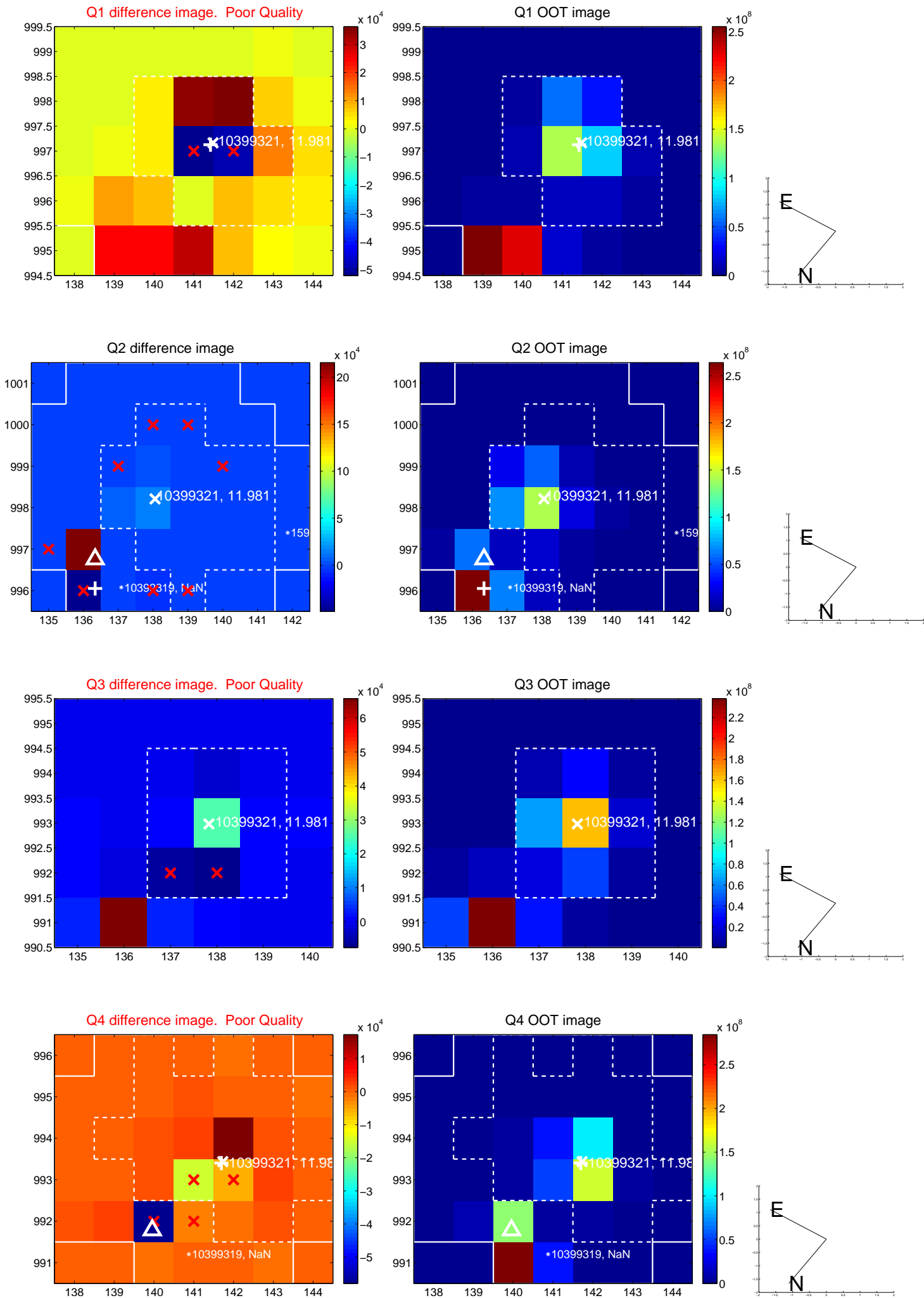


offset from photometric centroids

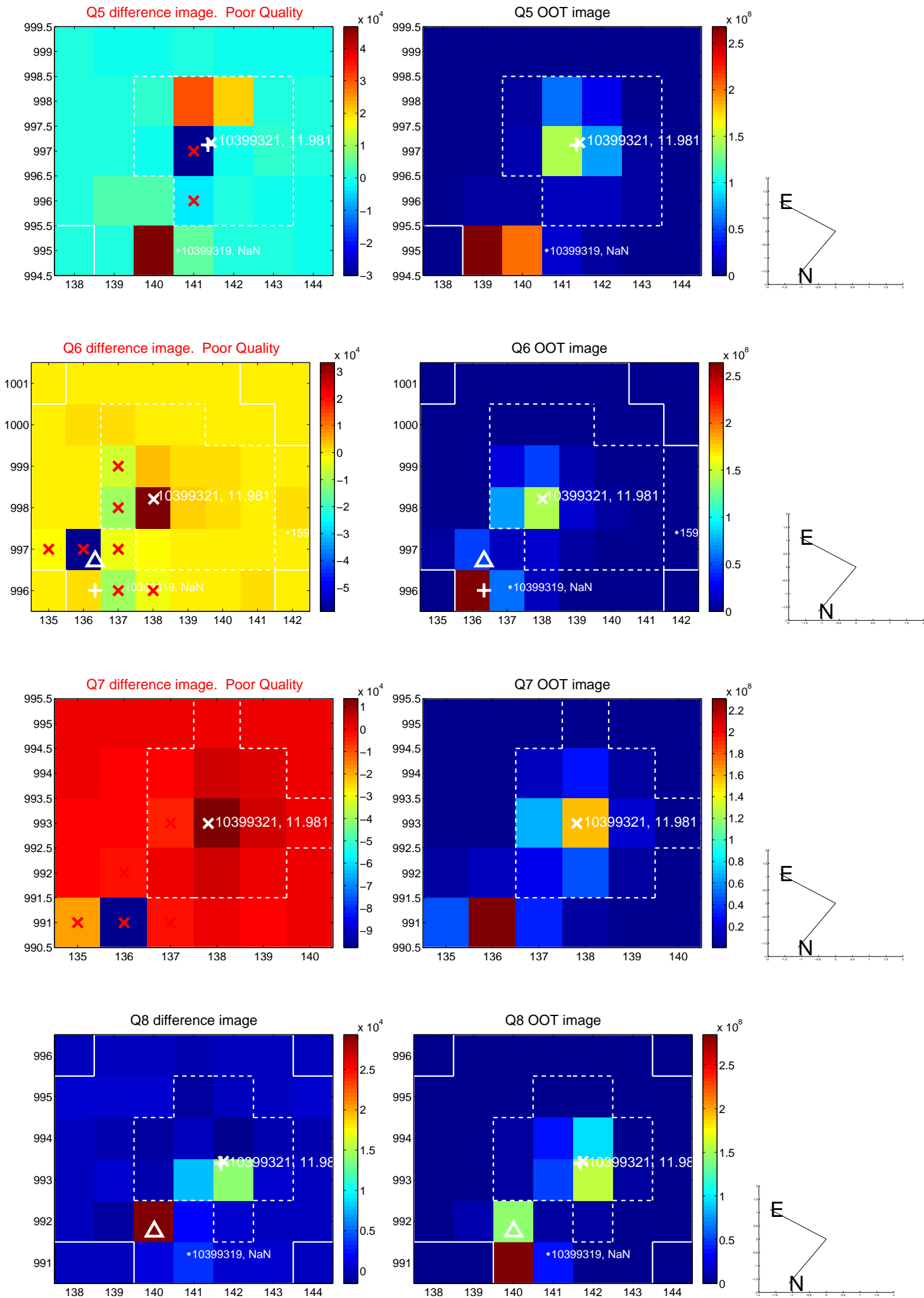


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

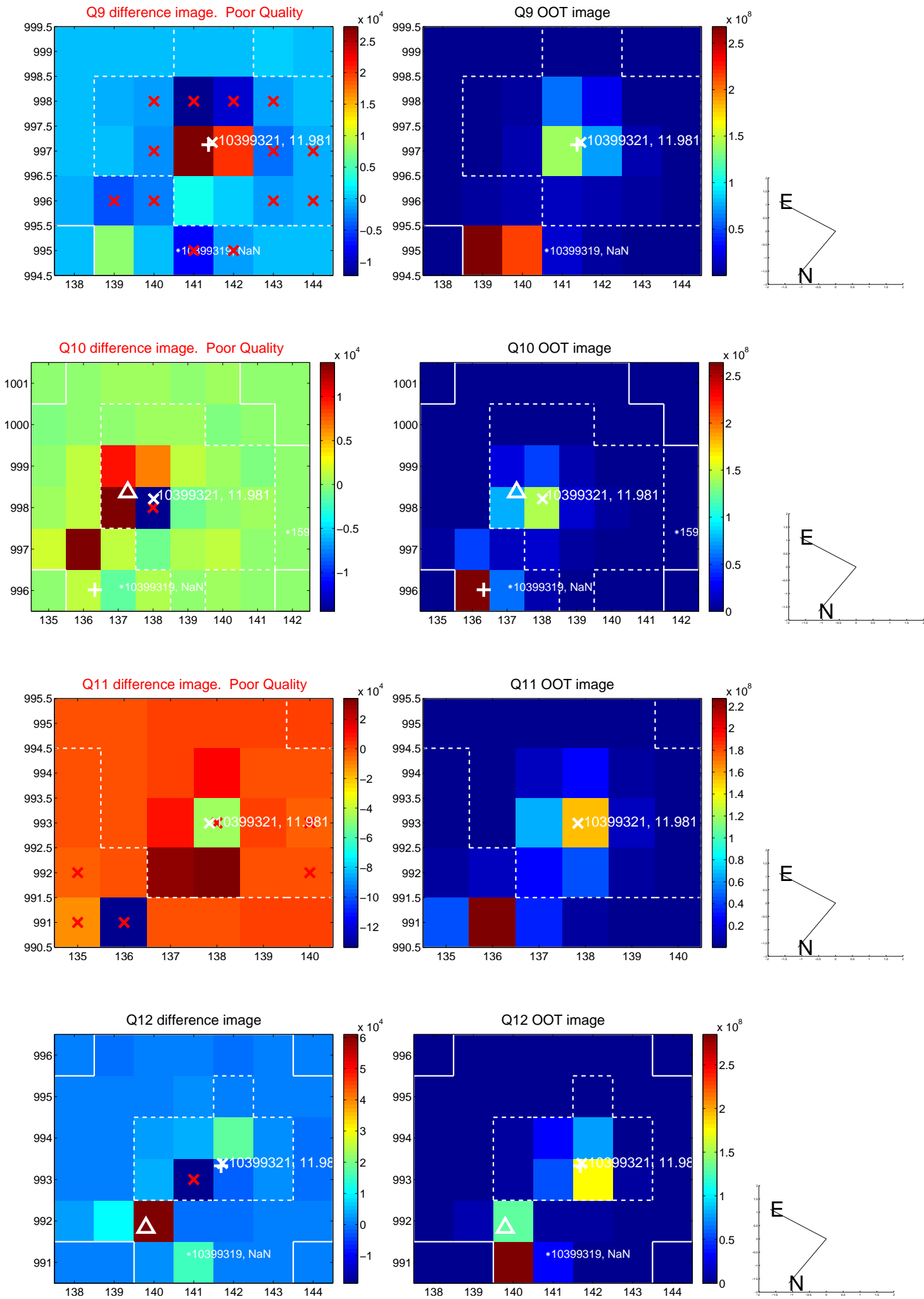
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



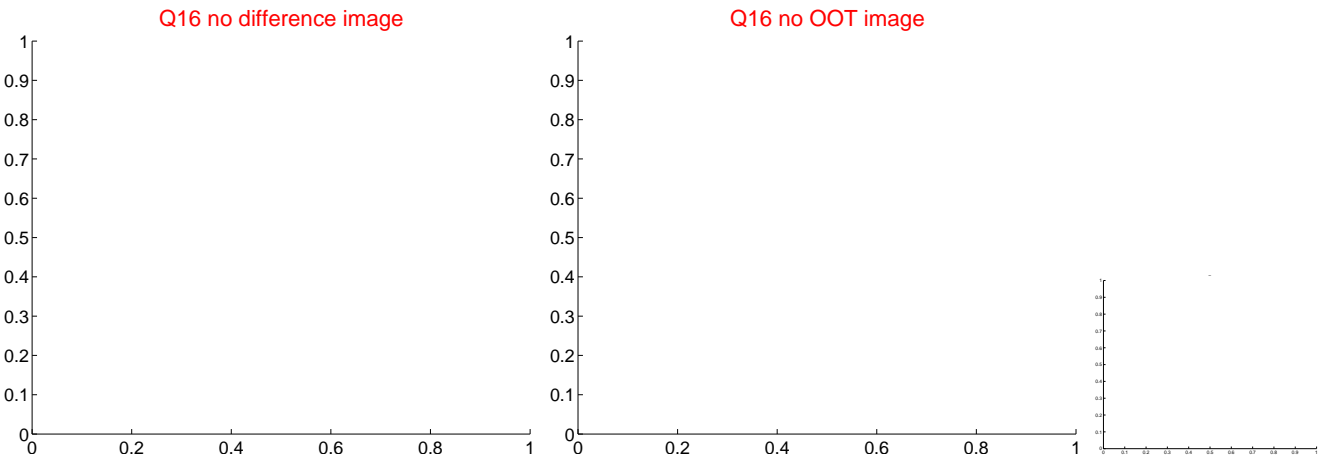
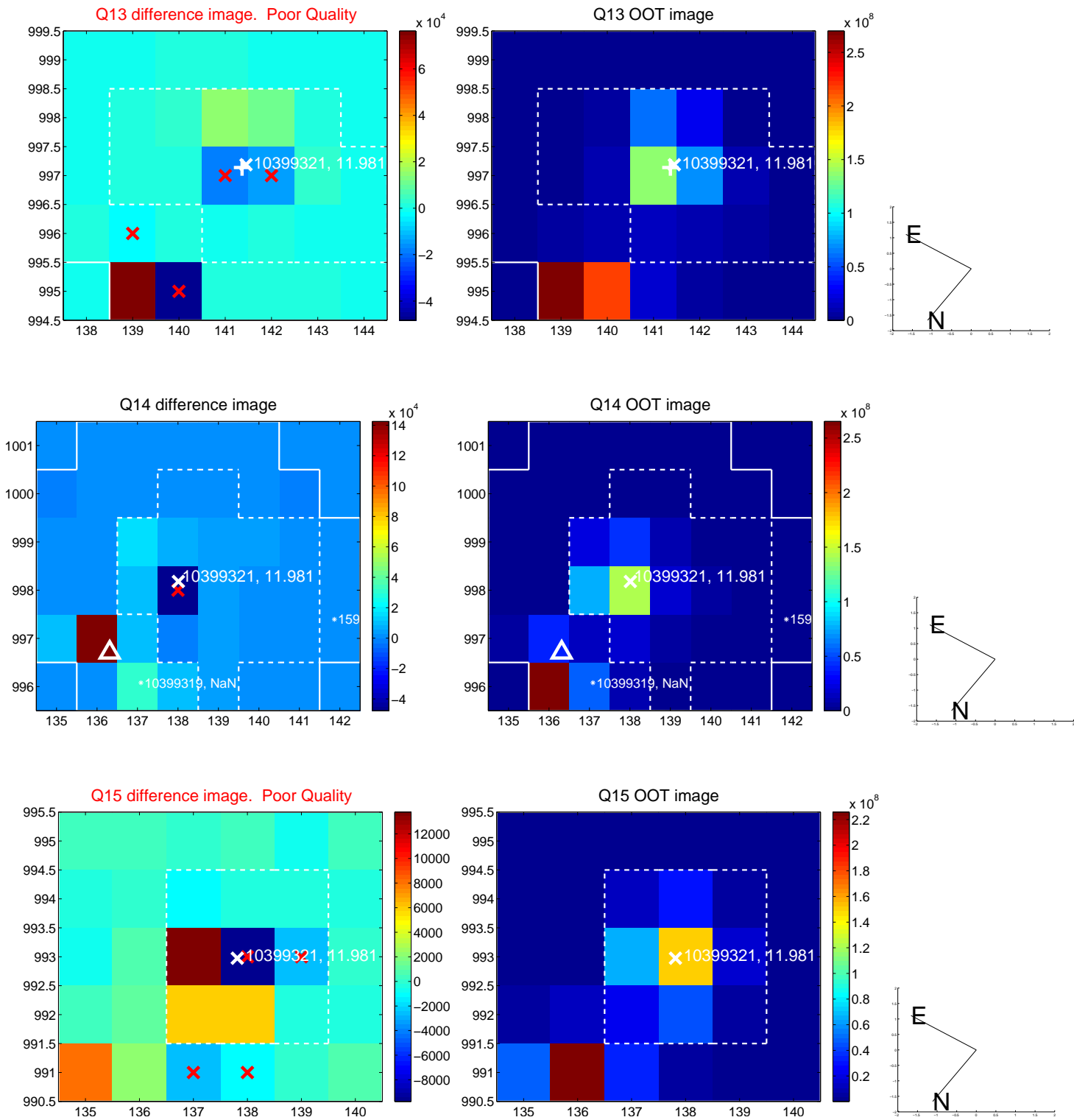
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



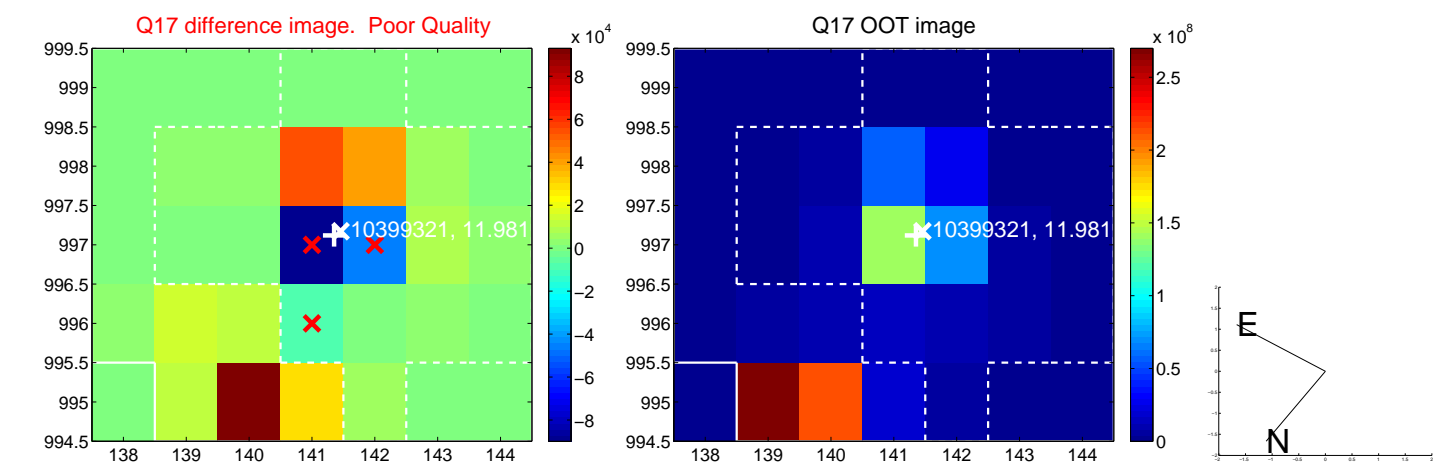
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



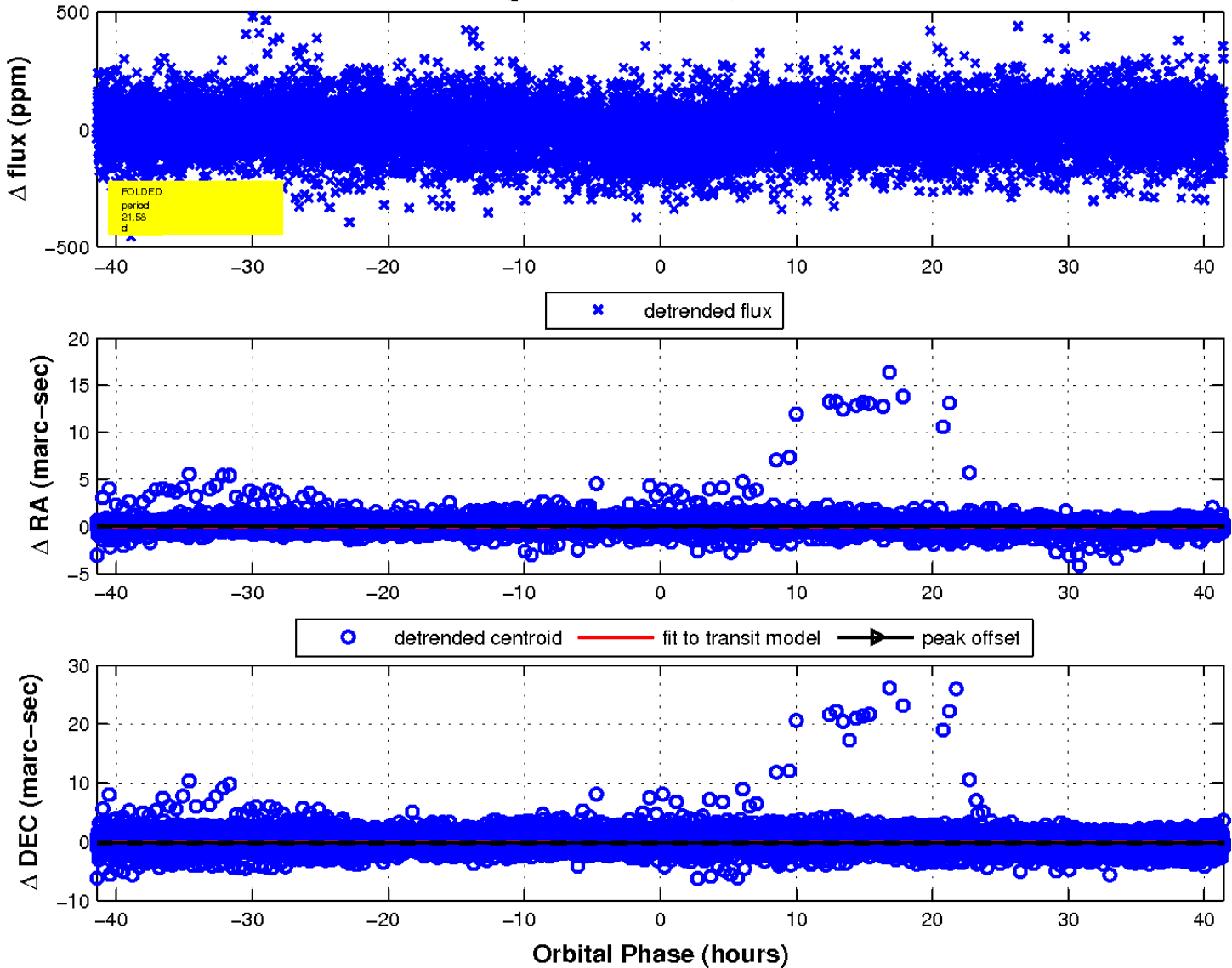
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

