

KIC 007954278

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})
007954278-01	OBS	7859.01	0.613402	131.514189	111.9	0.950	10.2	13.2	0.79	5310	0.83	2711.61
007954278-02	OBS	No	0.613407	131.814510	127.5	0.849	9.8	14.5	0.79	5310	0.90	2711.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007954278-01	OBS	PC	1.00	0	0	0	0	MOD_SEC_DV—MOD_SEC_ALT—PLANET_PERIOD_IS_HALF_ALT—HAS_SEC_TCE—CENT_KIC_POS
007954278-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

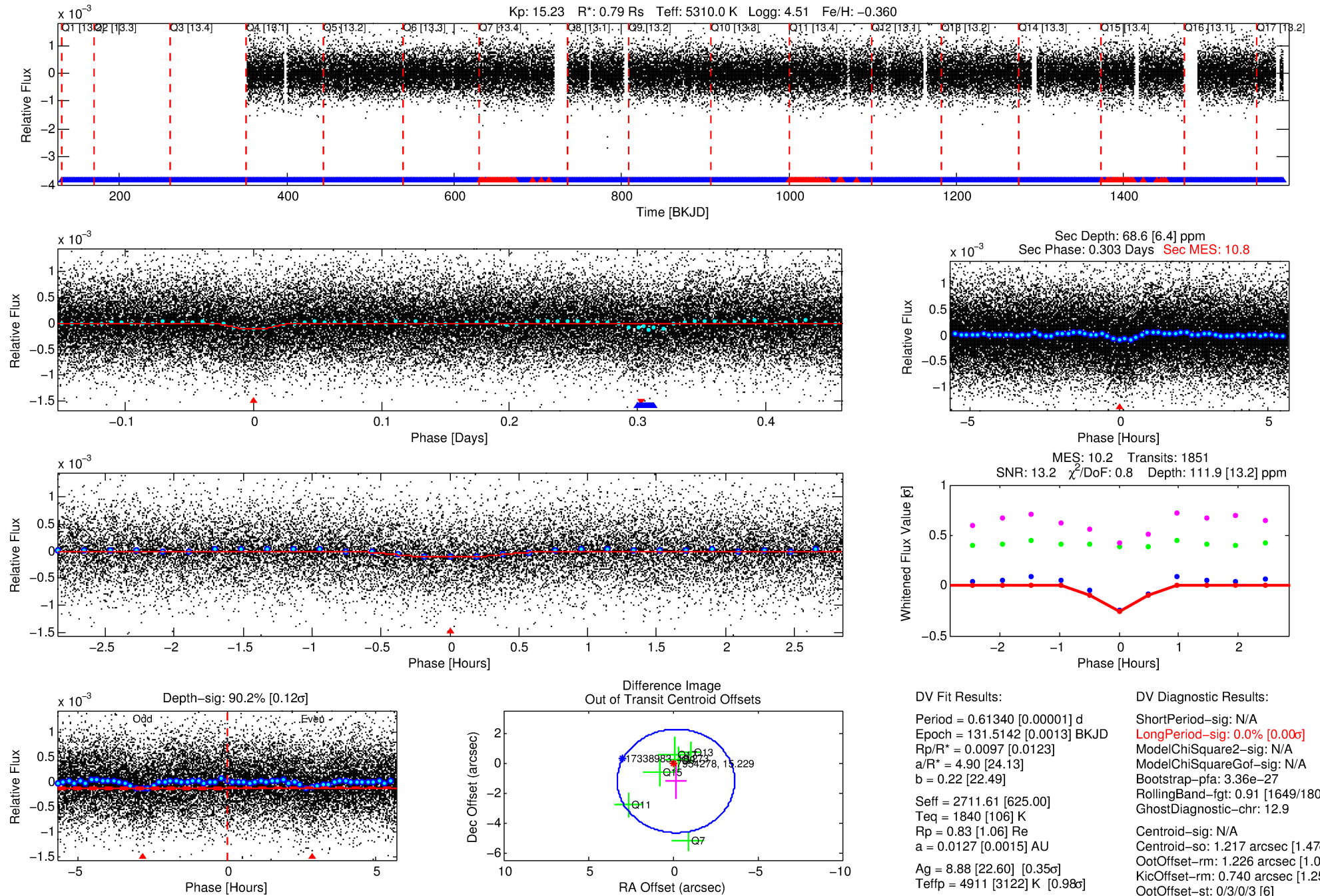
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007954278-01

No Significant Match Found

DV One-Page Summary

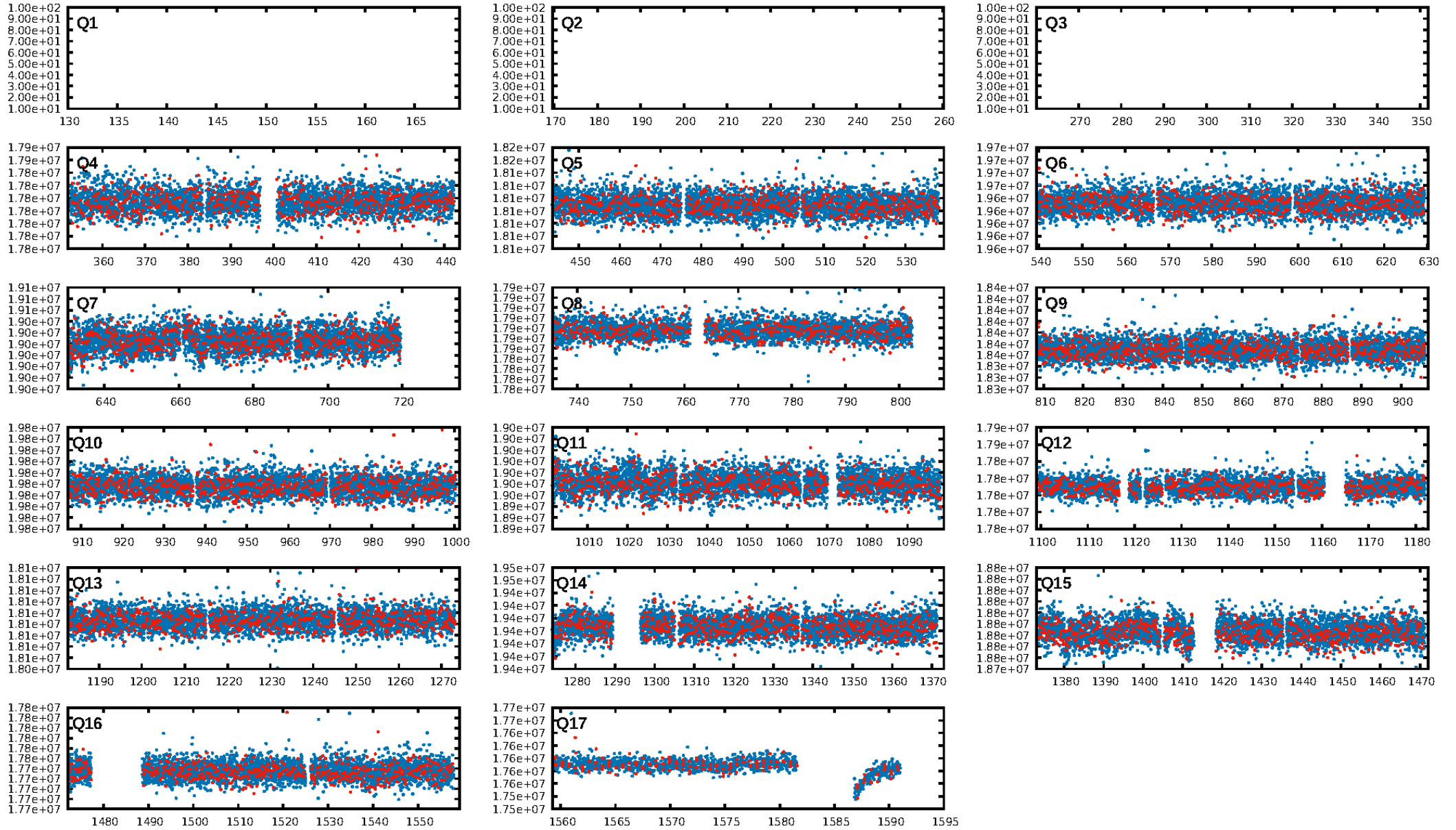
KIC: 7954278 Candidate: 1 of 2 Period: 0.613 d



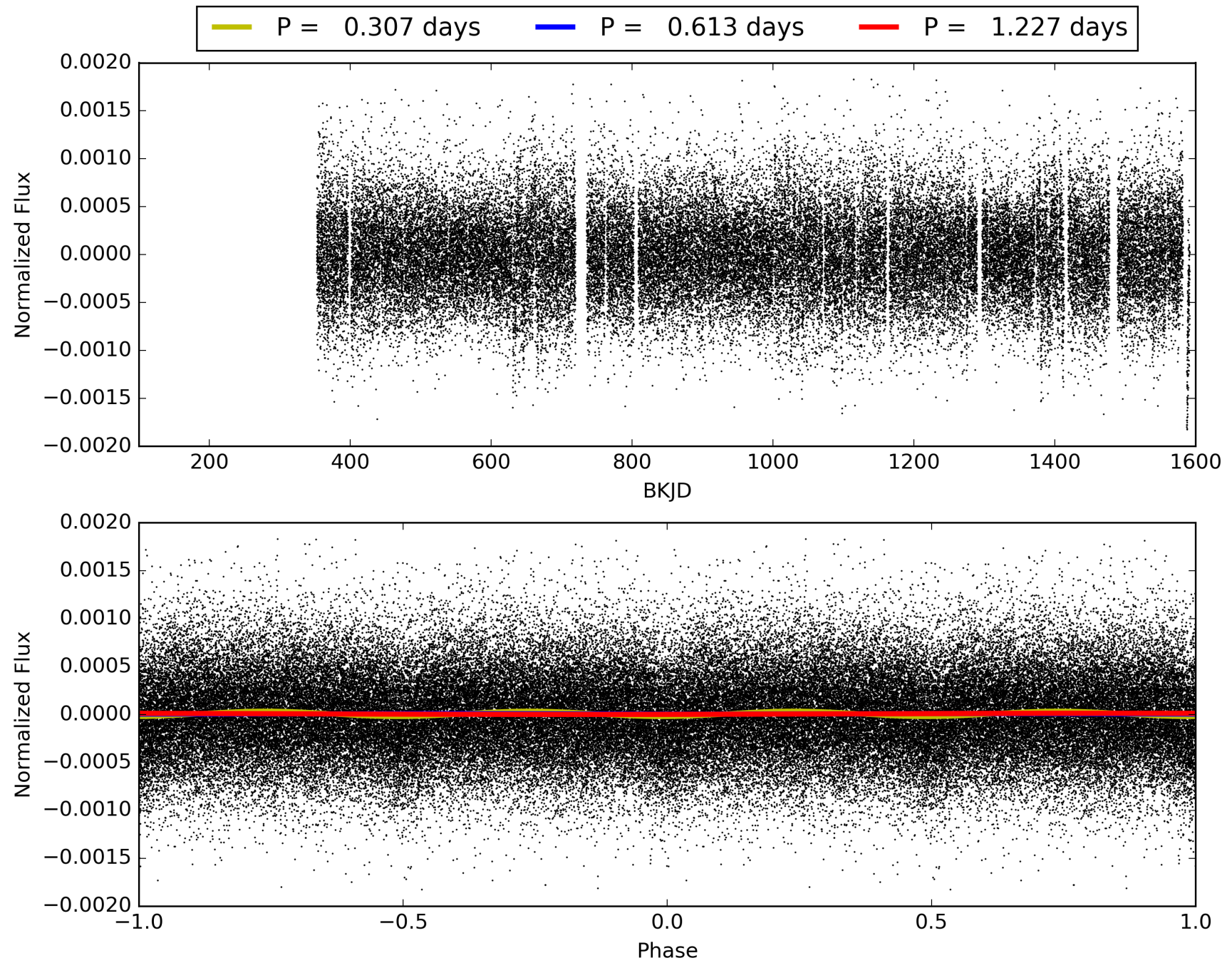
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:35:46 Z

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

TCE 007954278-01, PDC Light Curves

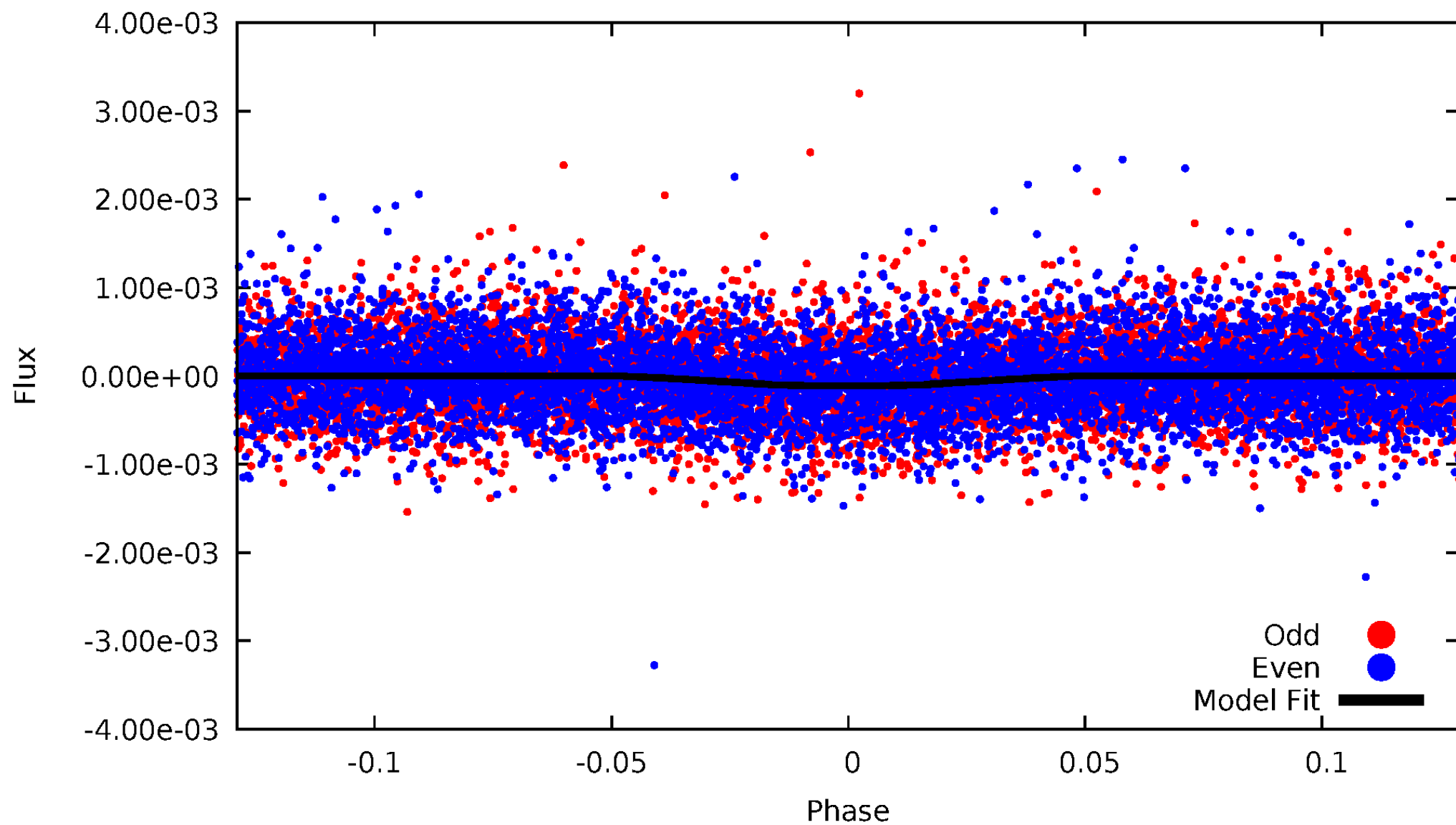


TCE 007954278-01



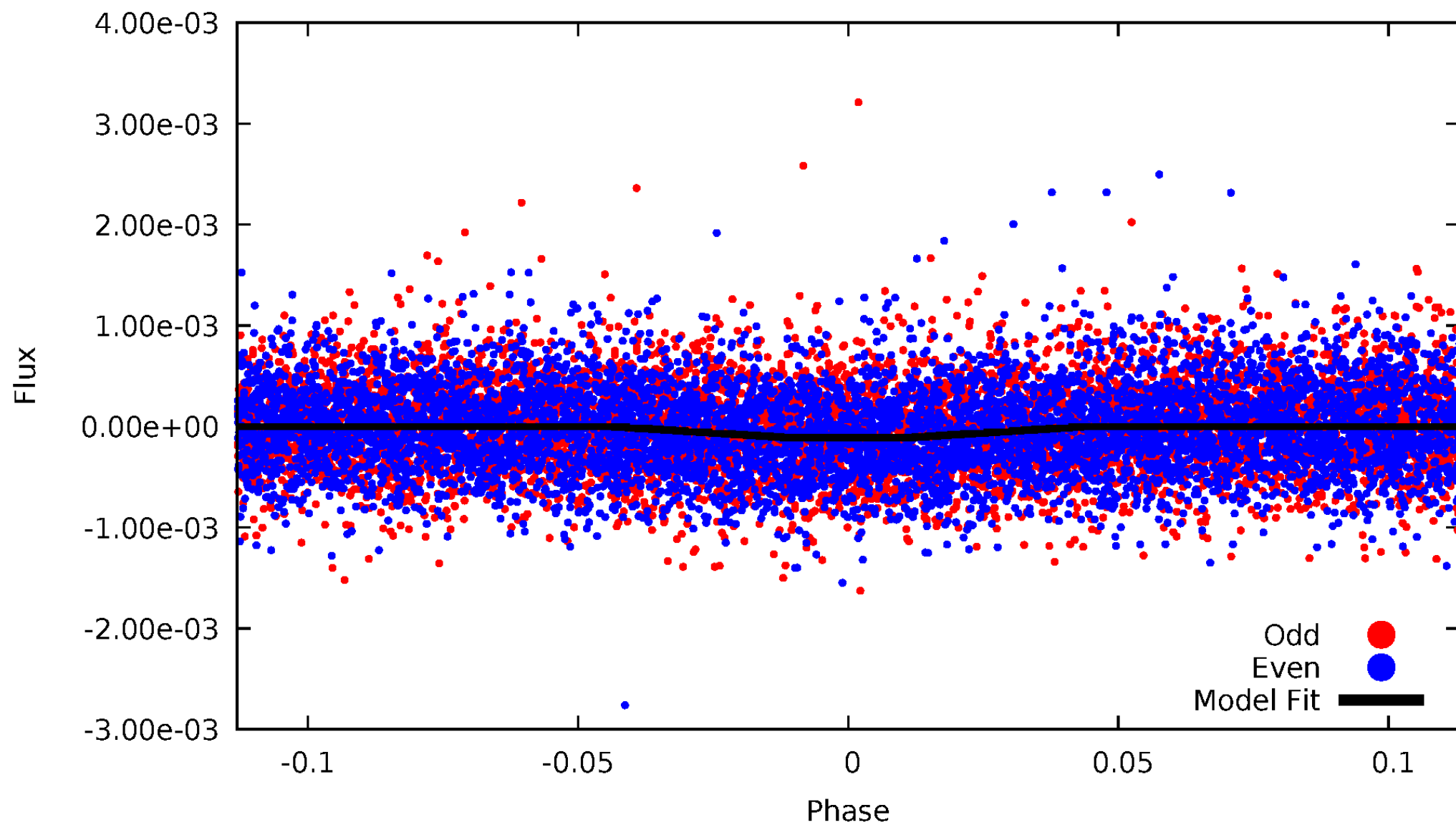
DV Odd/Even

TCE 007954278-01

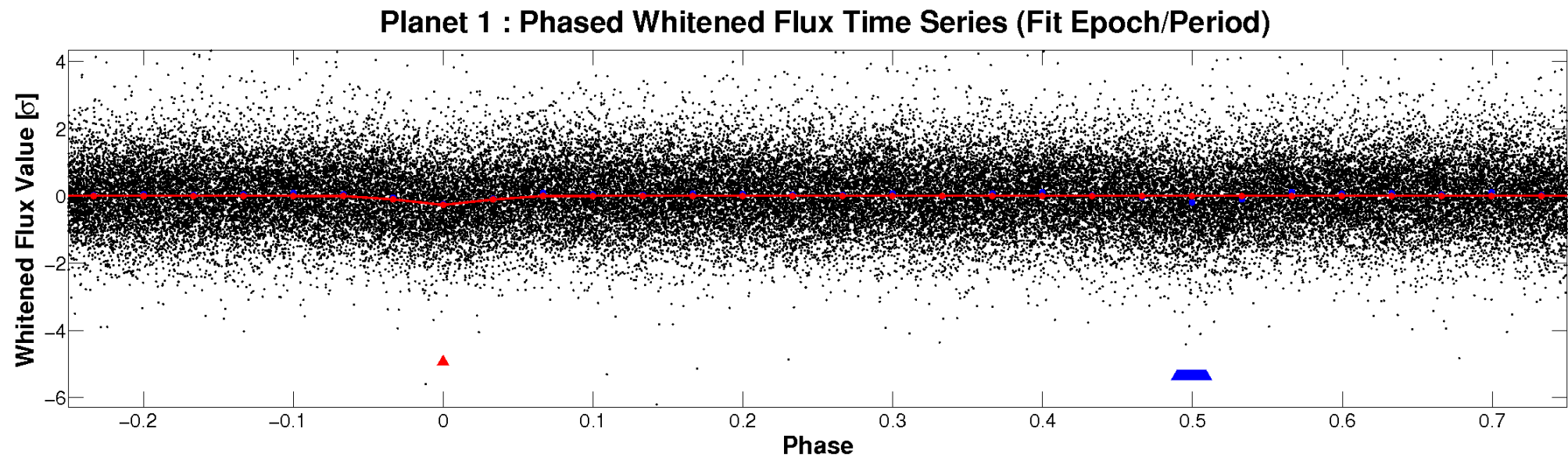
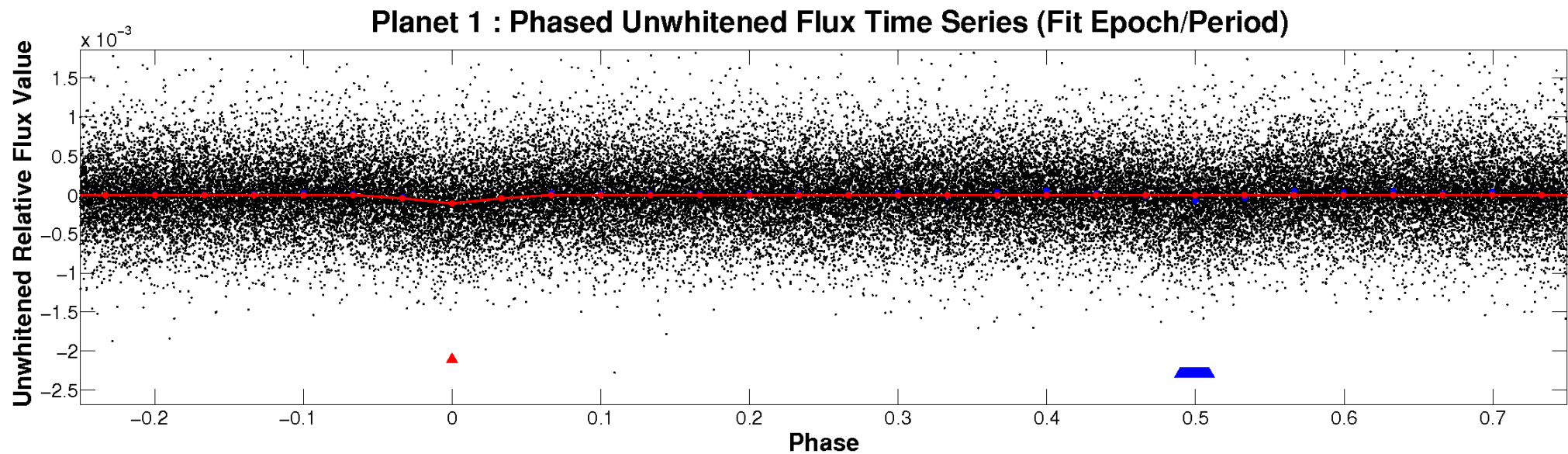


ALT Odd/Even

TCE 007954278-01

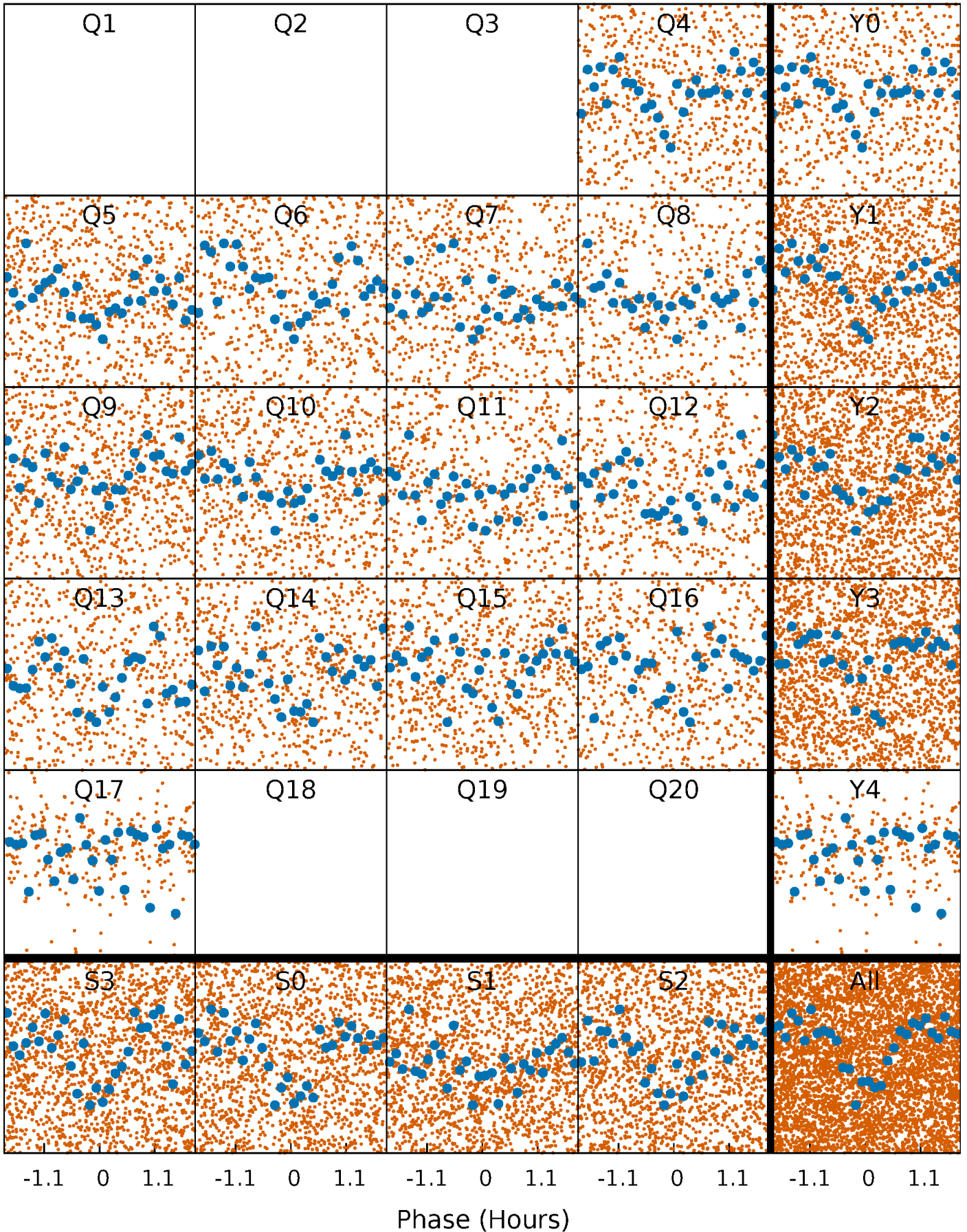


Non-Whitened Vs. Whitened Light Curve



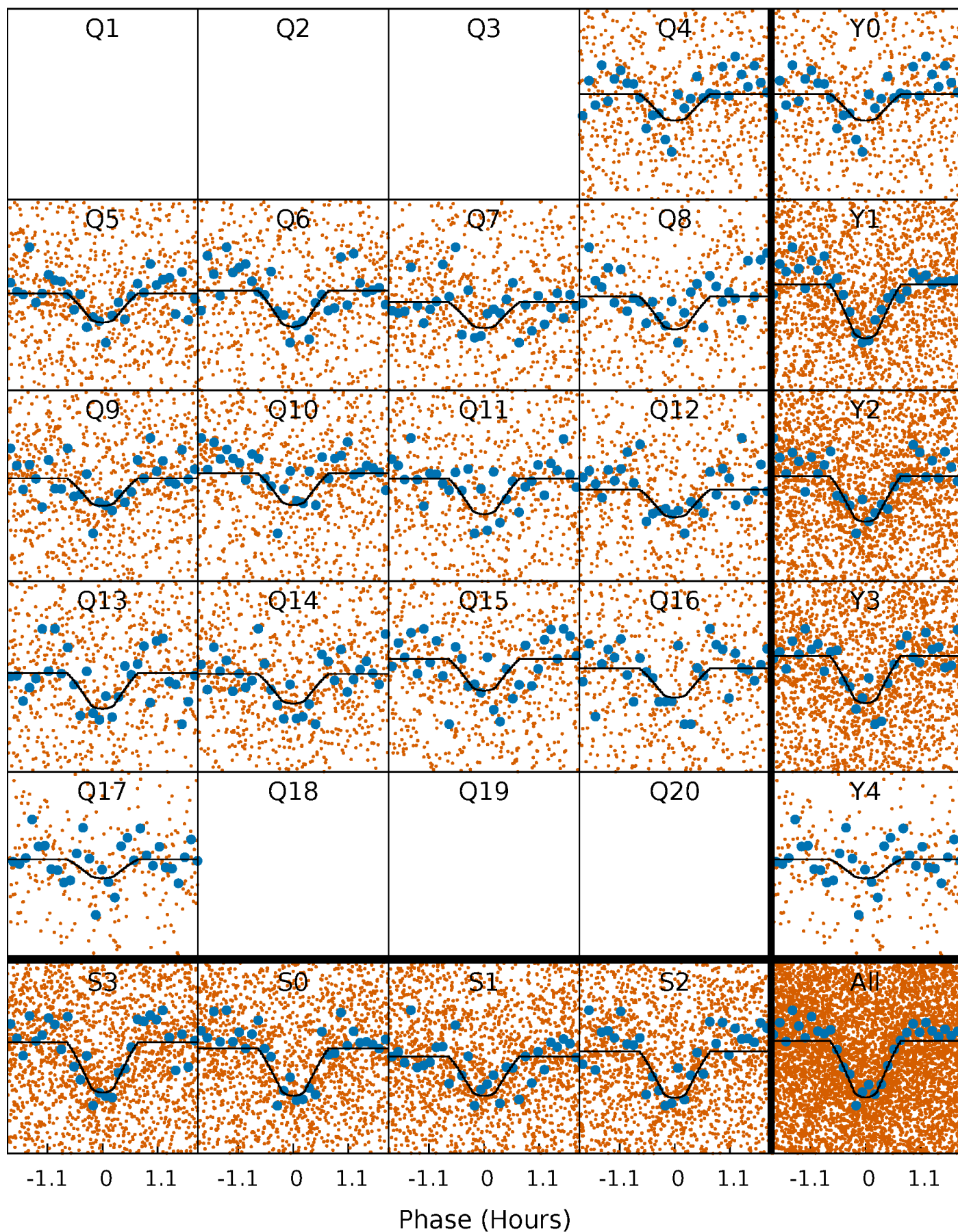
PDC Quarter-Phased Transit Curves

TCE 007954278-01 P= 0.613402 Days $T_0=131.514189$ (BKJD)



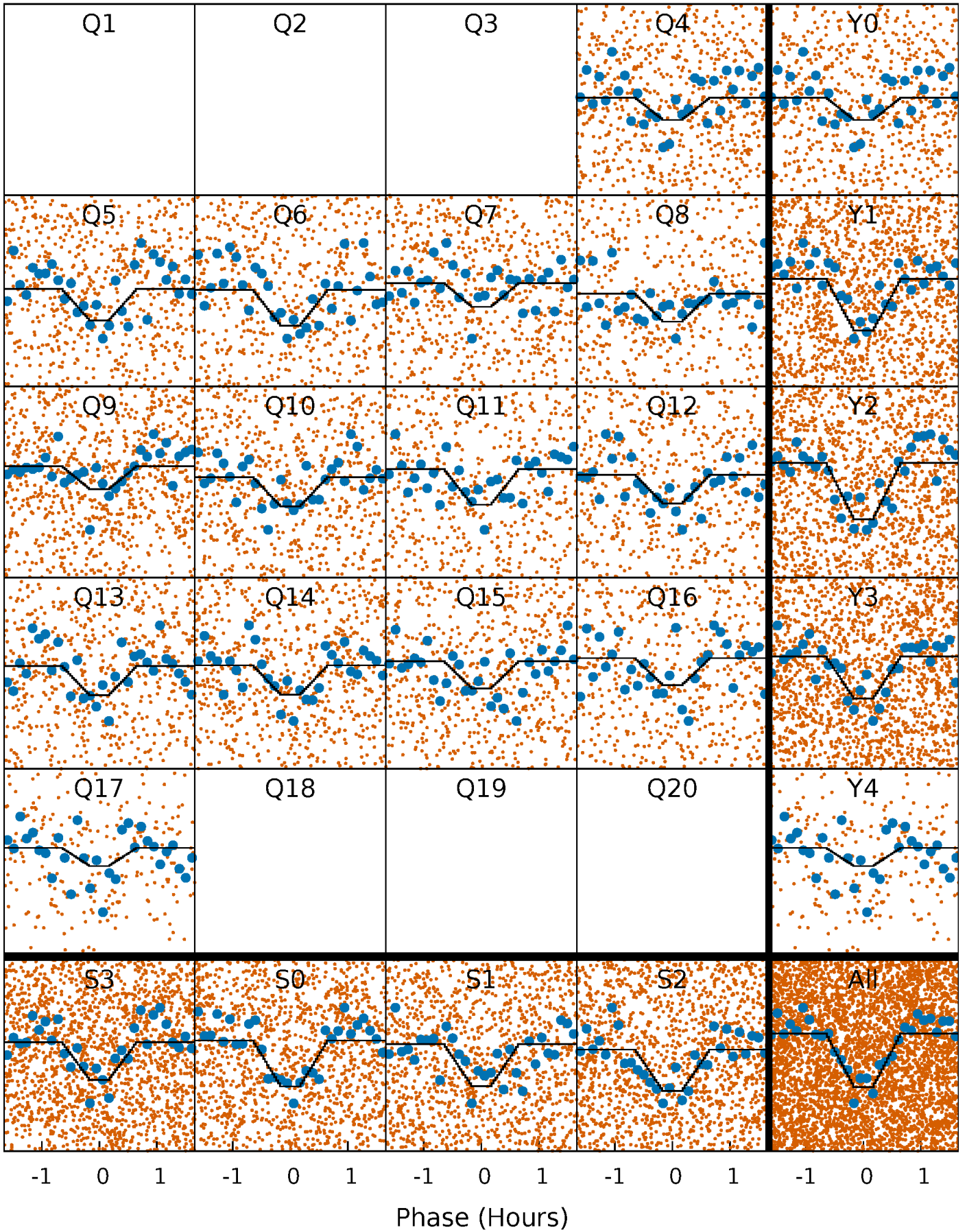
DV Quarter-Phased Transit Curves

TCE 007954278-01 P= 0.613402 Days $T_0=131.514189$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

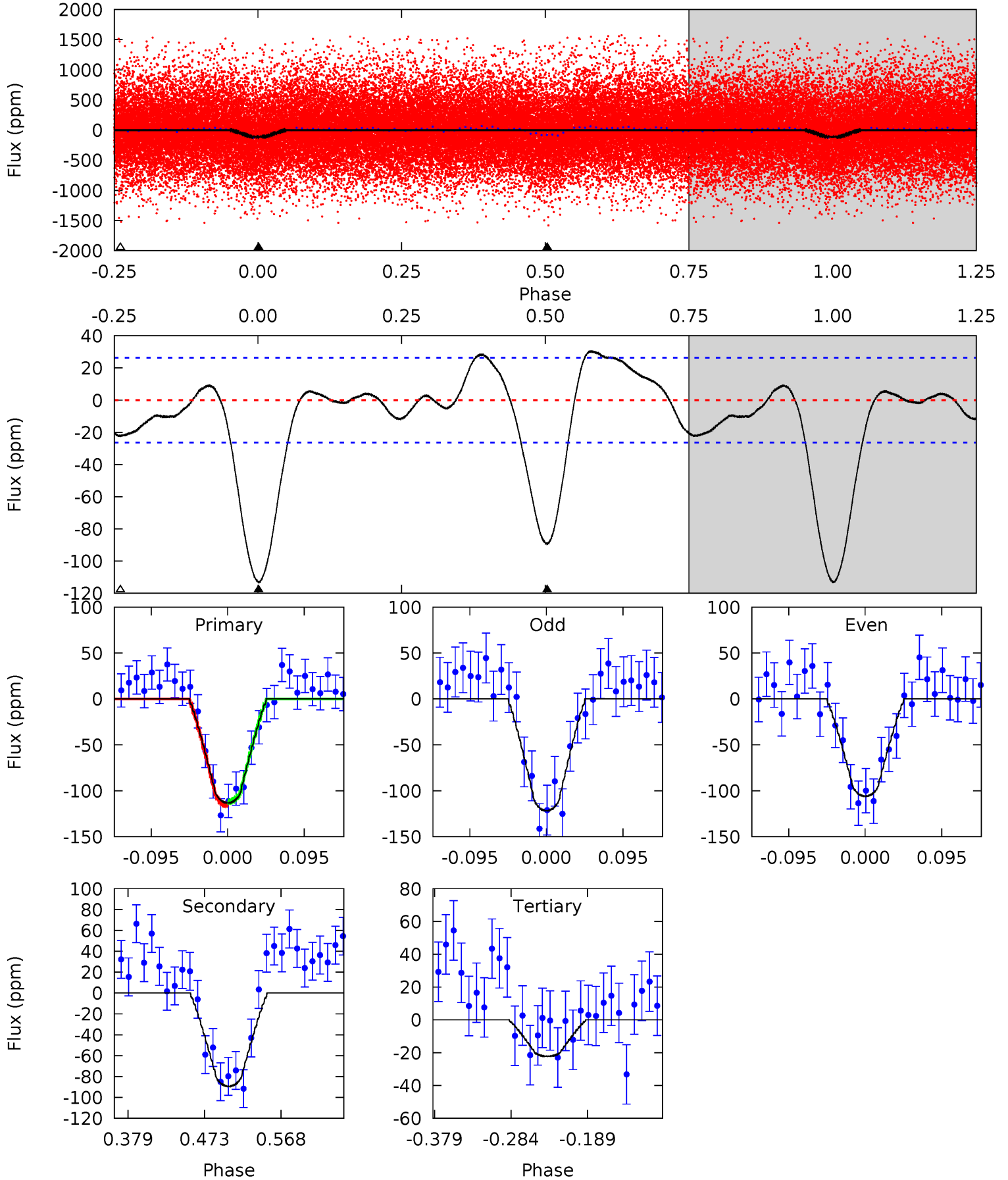
TCE 007954278-01 P= 0.613402 Days $T_0=131.514153$ (BKJD)



DV Model-Shift Uniqueness Test

007954278-01, P = 0.613402 Days, E = 131.514189 Days

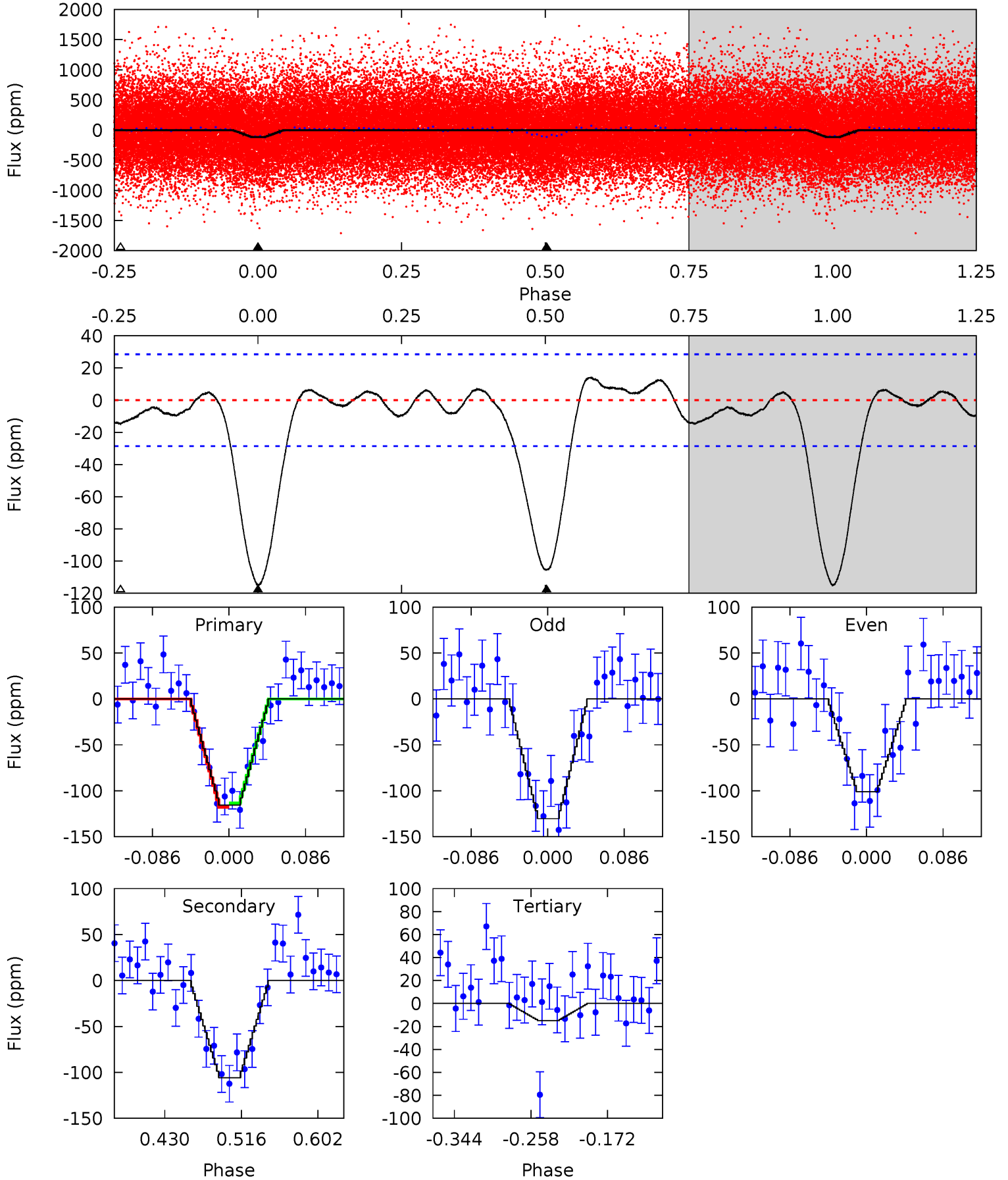
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.7	15.5	3.86	0	4.58	1.67	2.33	15.8	19.7	11.7	15.5	1.38	0.93	0.21	0.31



Alt Model-Shift Uniqueness Test

007954278-01, P = 0.613402 Days, E = 131.514153 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	17.0	2.40	0	4.60	1.72	1.11	16.2	18.6	14.6	17.0	2.37	0.90	0.11	0.36



Stellar Parameters For KIC 007954278

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5310^{+202}_{-184}	$4.512^{+0.095}_{-0.085}$	$-0.360^{+0.350}_{-0.300}$	$0.786^{+0.110}_{-0.099}$	$0.732^{+0.115}_{-0.046}$	$2.127^{+0.932}_{-0.596}$
	+4%/-3%	+2%/-2%	+97%/-83%	+14%/-13%	+16%/-6%	+44%/-28%
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 007954278-01 / KOI 7859.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-89 ± 6	$1.10^{+0.96}_{-0.72}$	2572^{+126}_{-131}	4669^{+3317}_{-1058}	$6.788^{+52.469}_{-4.825}$
Alt.	-106 ± 6	$1.16^{+0.90}_{-0.70}$	2579^{+124}_{-127}	4730^{+2470}_{-1001}	$7.159^{+39.550}_{-4.952}$

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

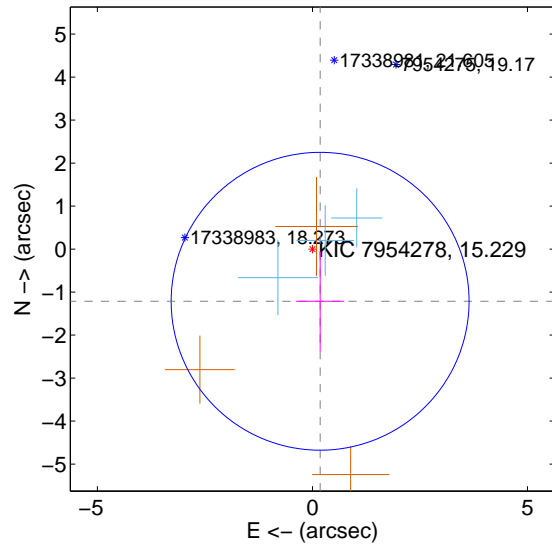
Supplemental centroid analysis for 007954278-01. Kepler magnitude: 15.23. Transit SNR 13.17

There are 7 quarters with good PRF difference image offsets

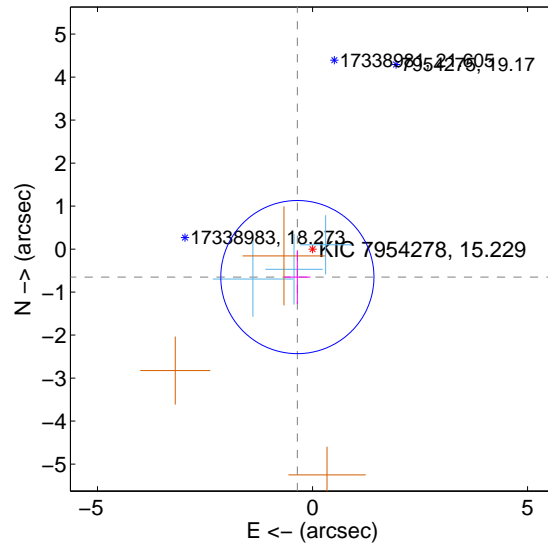
The direct PRF centroid is offset from the target star catalog position by about 1.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.226 ± 1.154	1.06	-0.178 ± 0.559	-1.213 ± 1.164
PRF-fit source offset from KIC position	0.740 ± 0.594	1.25	0.352 ± 0.303	-0.651 ± 0.623
photometric centroid source offset	1.22 ± 0.83	1.47	0.48 ± 0.83	1.12 ± 0.82

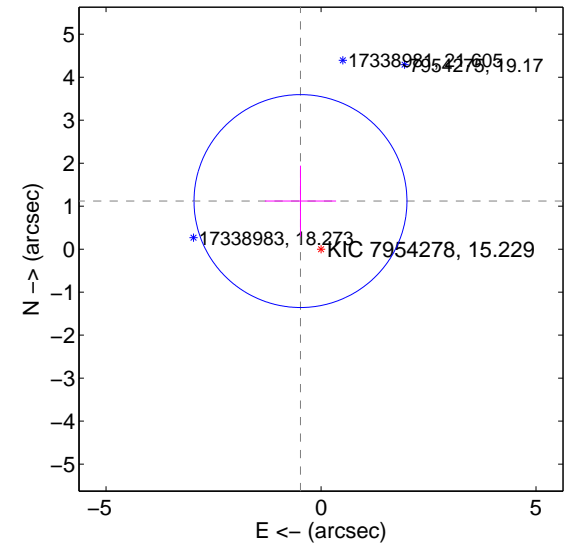
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

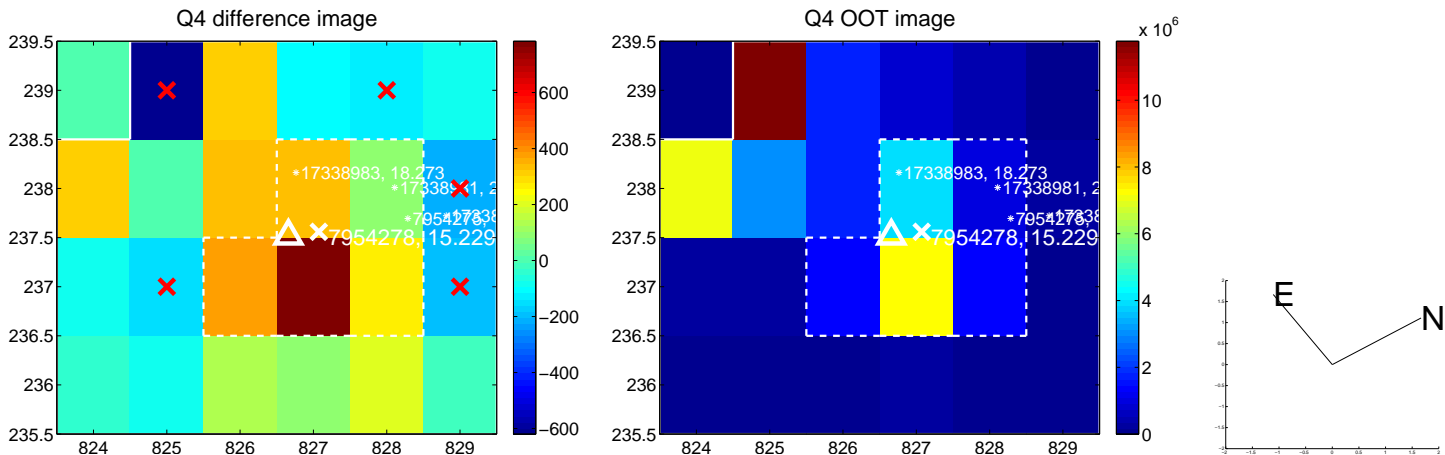
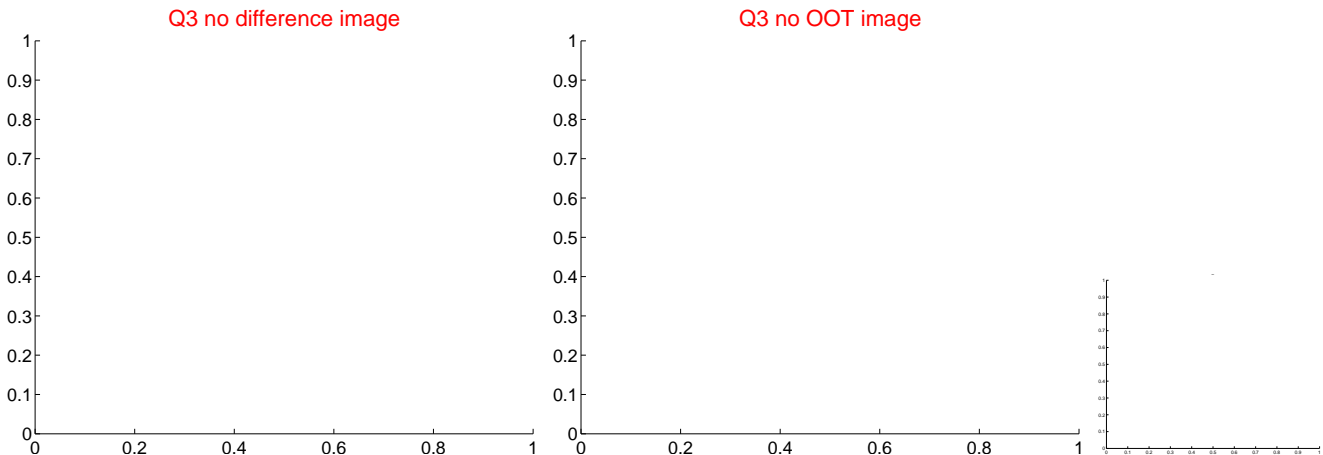


offset from photometric centroids

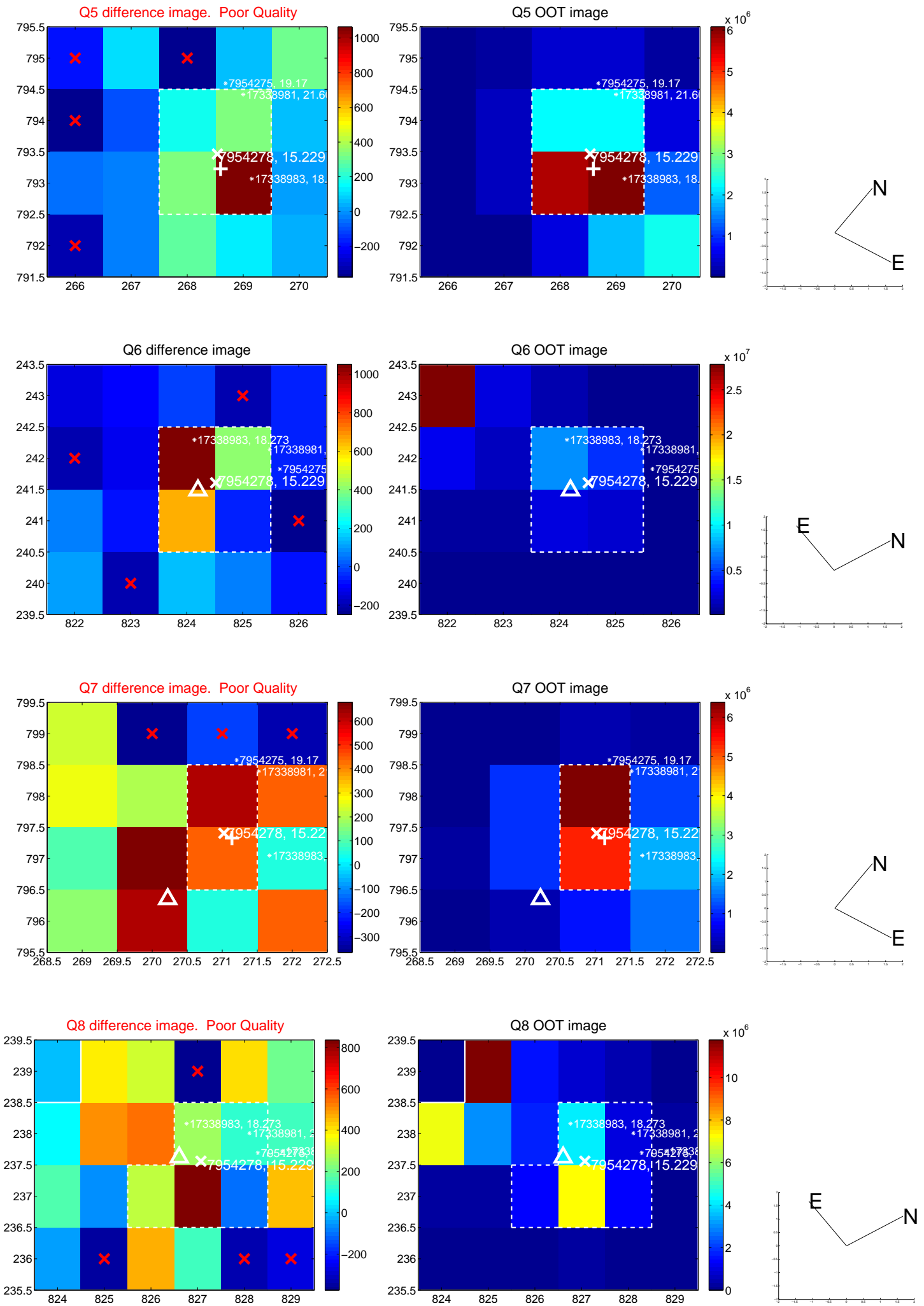


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

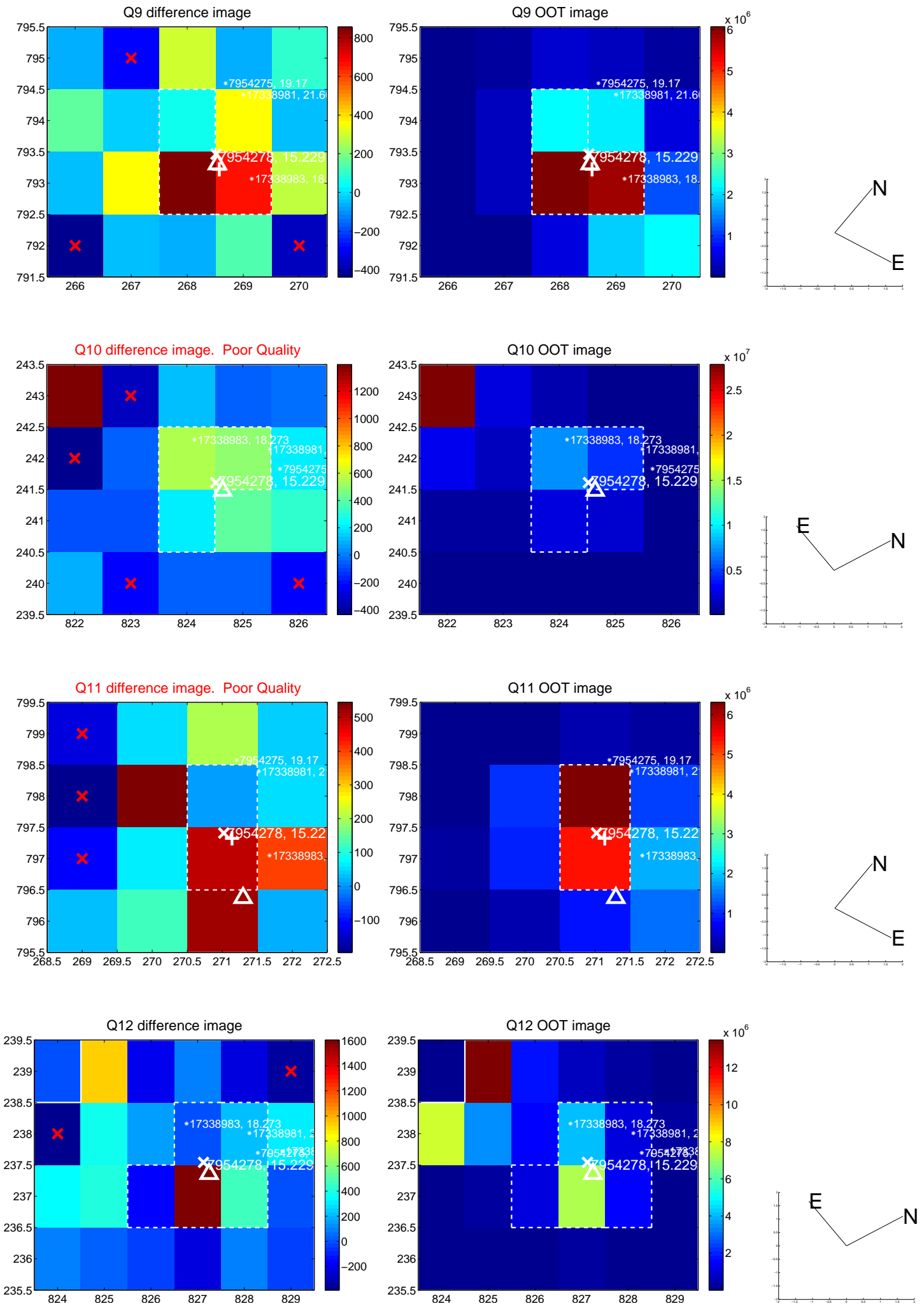
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



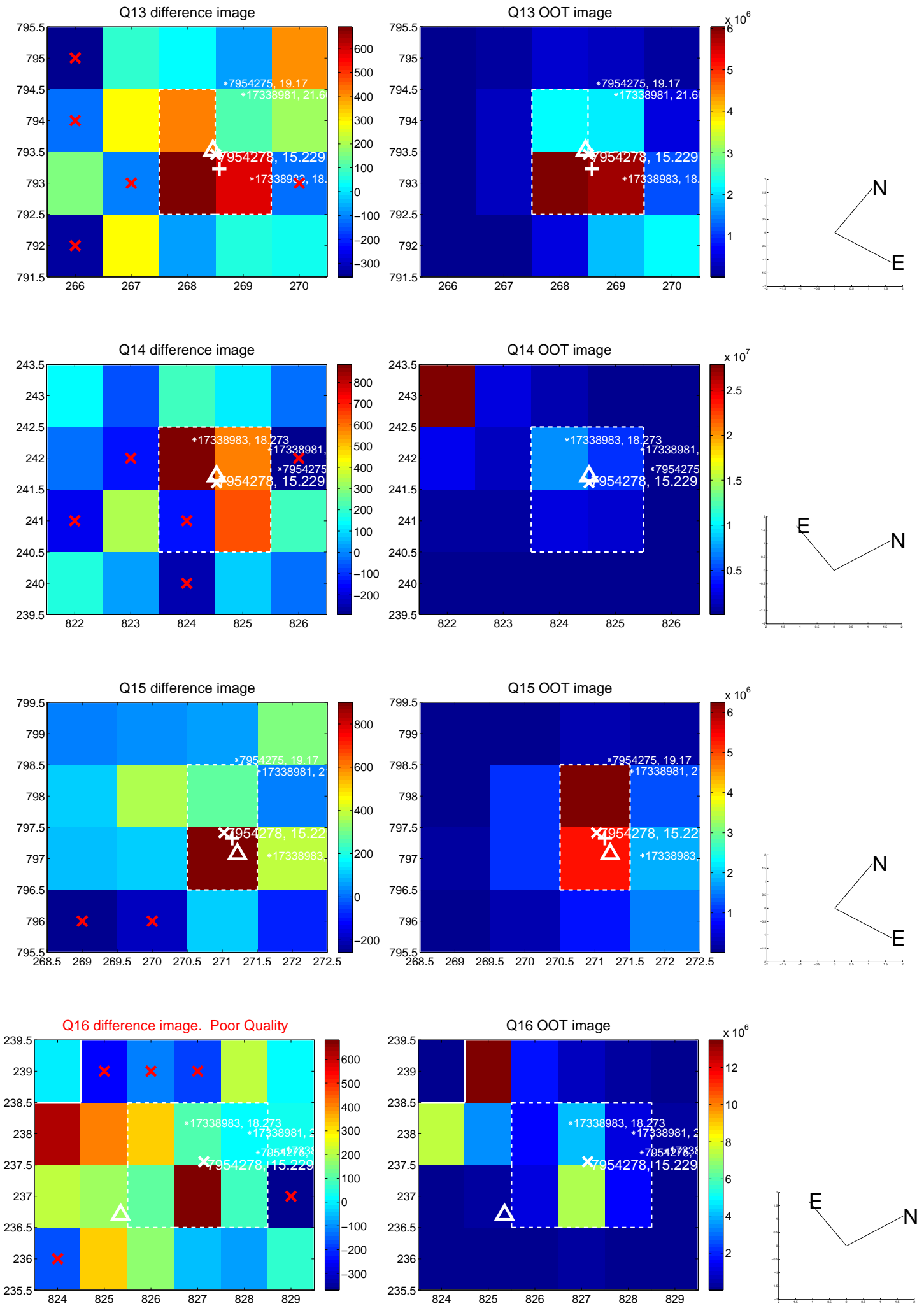
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



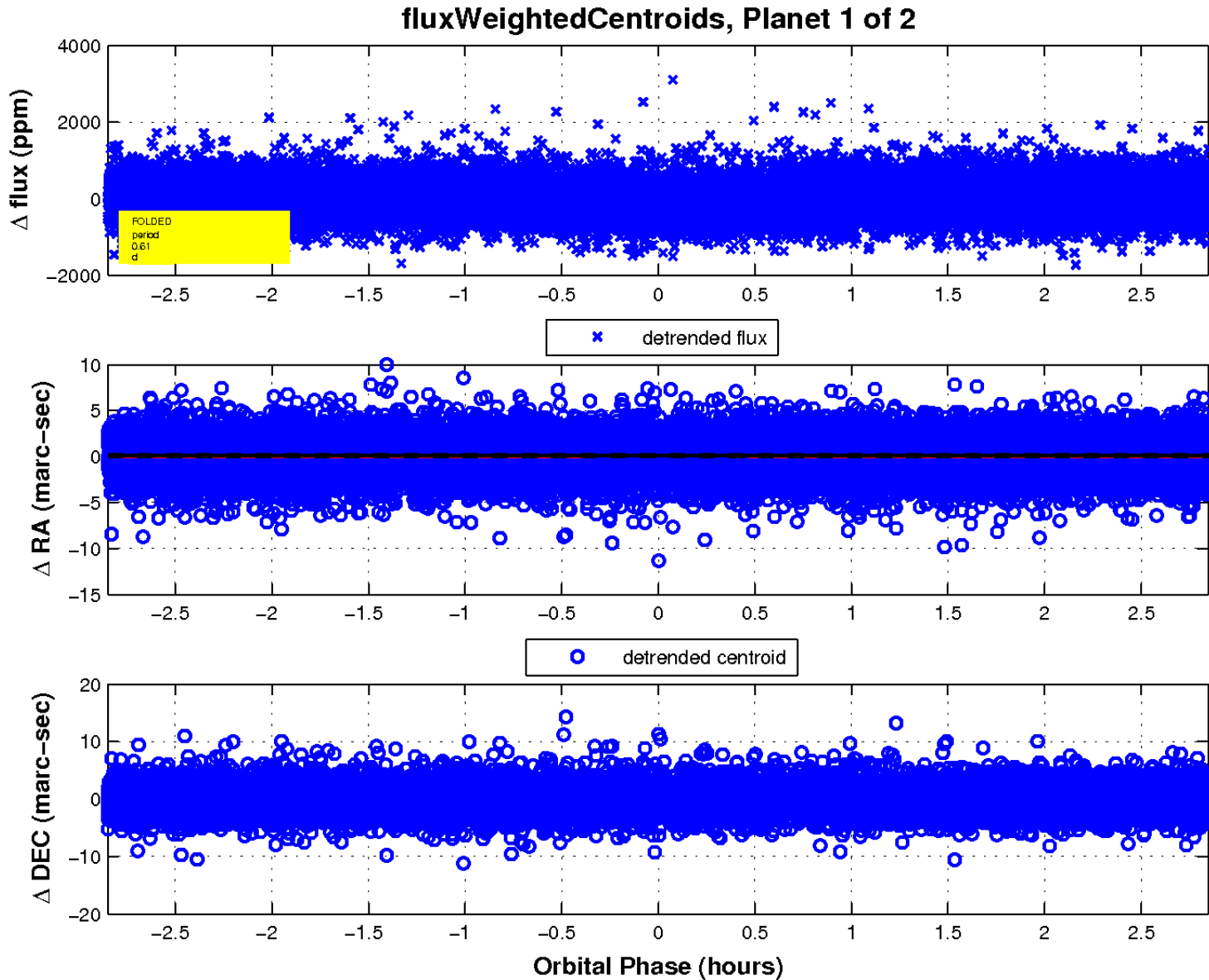
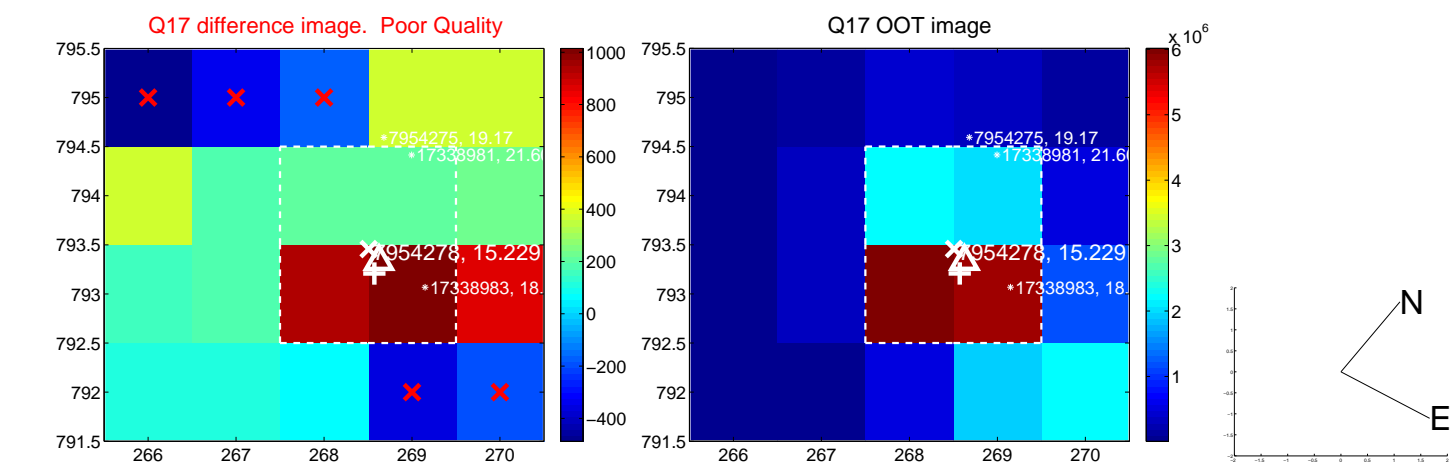
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

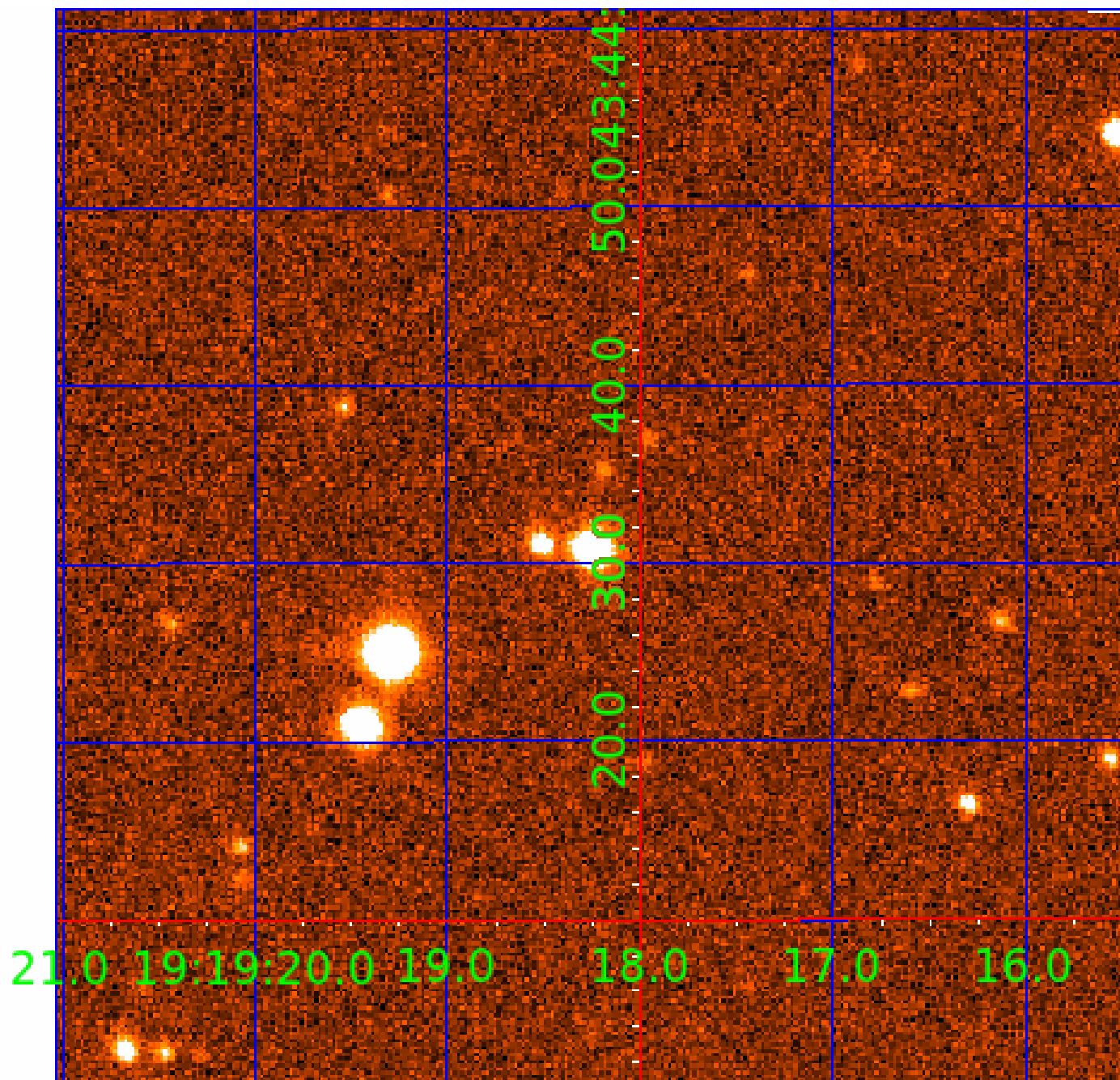


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007954278

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})
007954278-01	OBS	7859.01	0.613402	131.514189	111.9	0.950	10.2	13.2	0.79	5310	0.83	2711.61
007954278-02	OBS	No	0.613407	131.814510	127.5	0.849	9.8	14.5	0.79	5310	0.90	2711.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007954278-01	OBS	PC	1.00	0	0	0	0	MOD_SEC_DV—MOD_SEC_ALT—PLANET_PERIOD_IS_HALF_ALT—HAS_SEC_TCE—CENT_KIC_POS
007954278-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

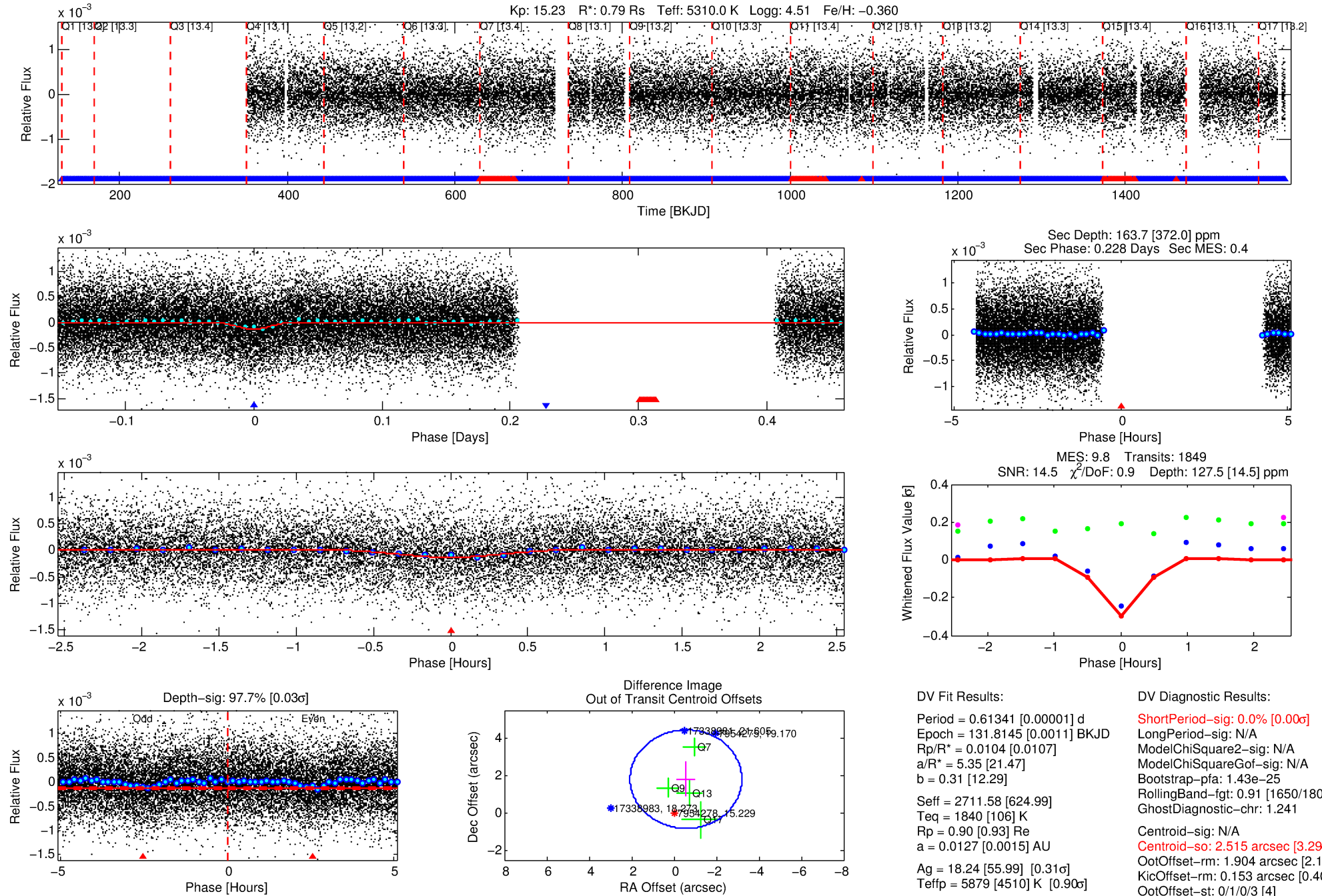
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007954278-02

No Significant Match Found

DV One-Page Summary

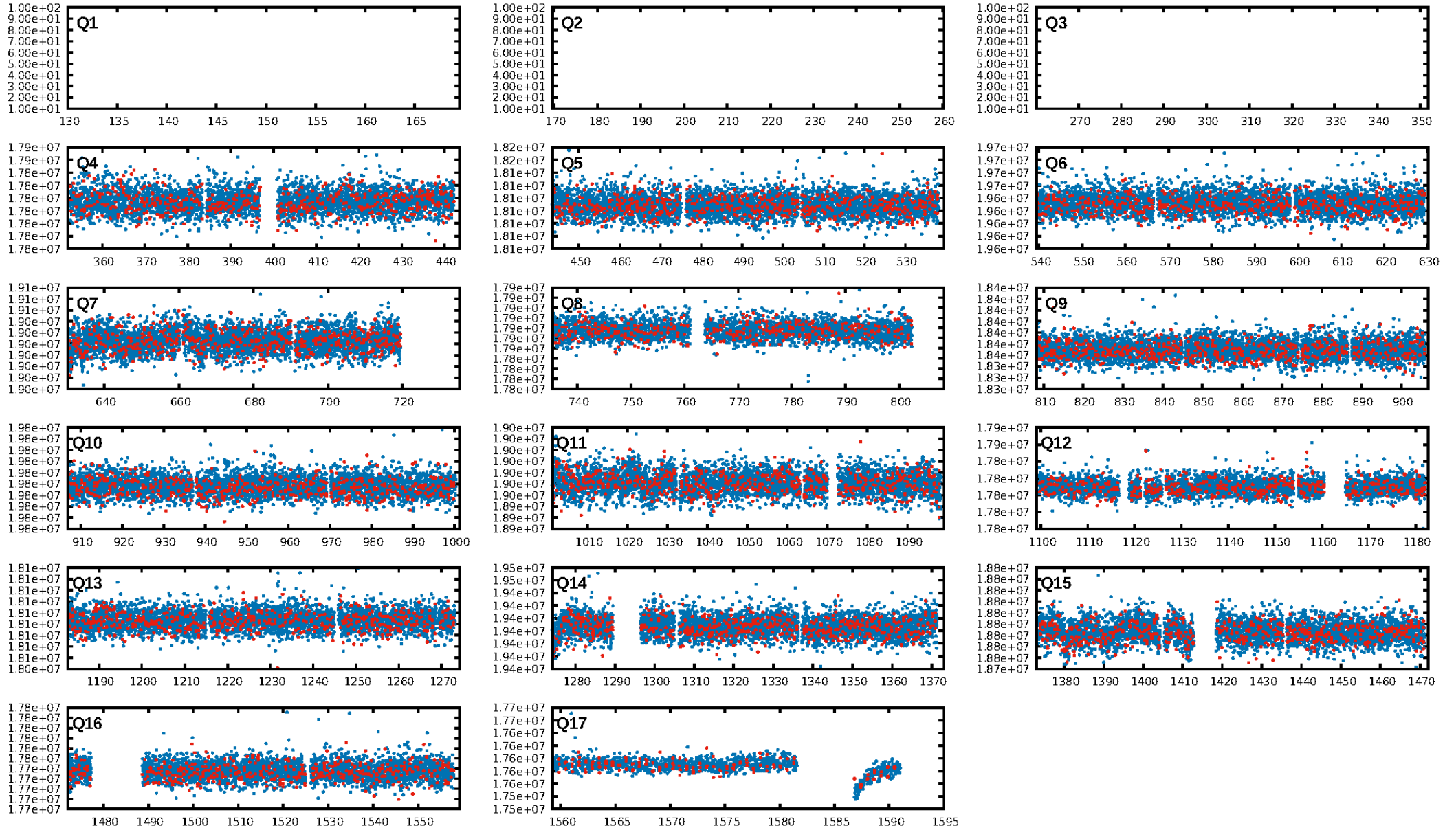
KIC: 7954278 Candidate: 2 of 2 Period: 0.613 d



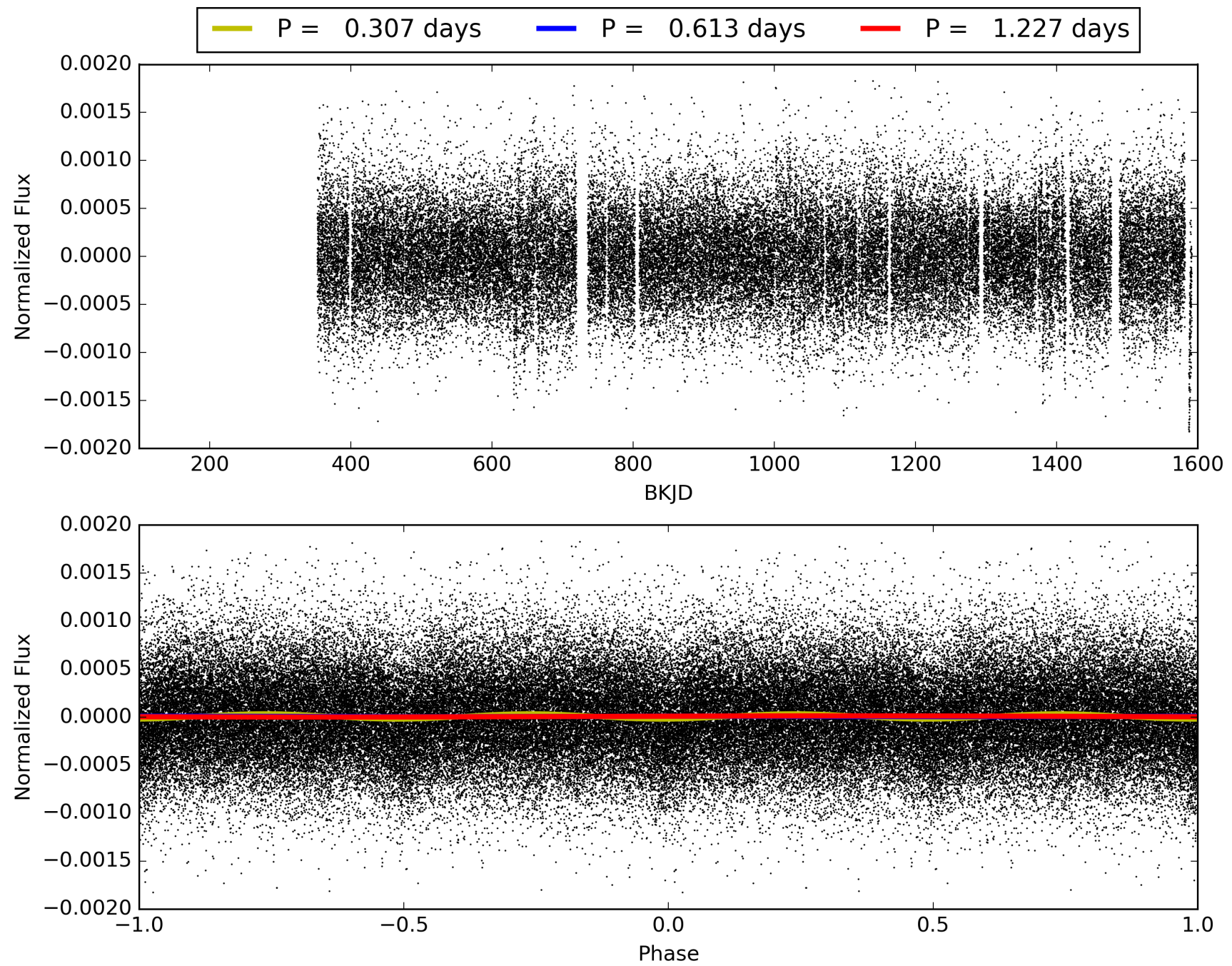
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:35:55 Z

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

TCE 007954278-02, PDC Light Curves

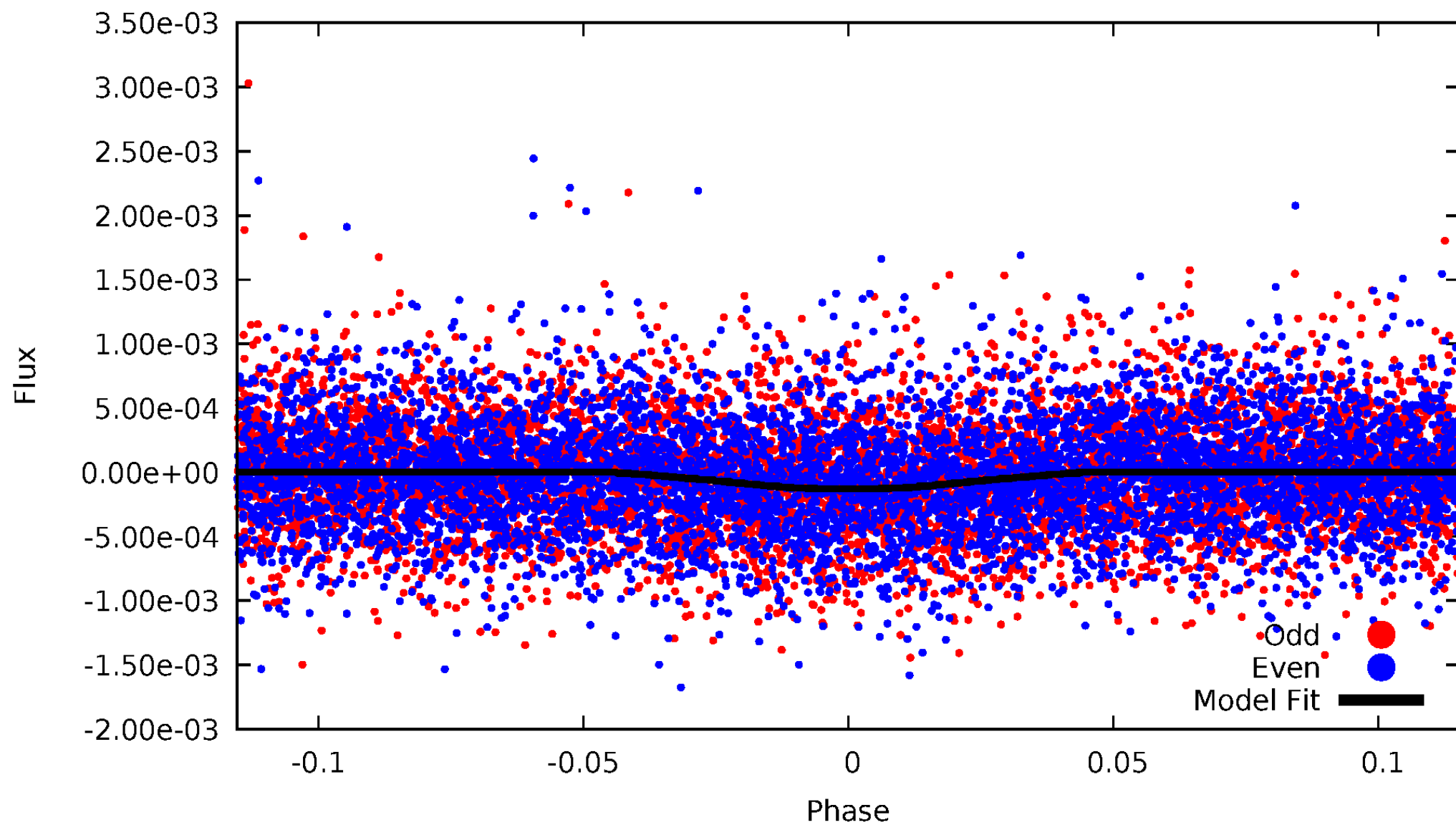


TCE 007954278-02



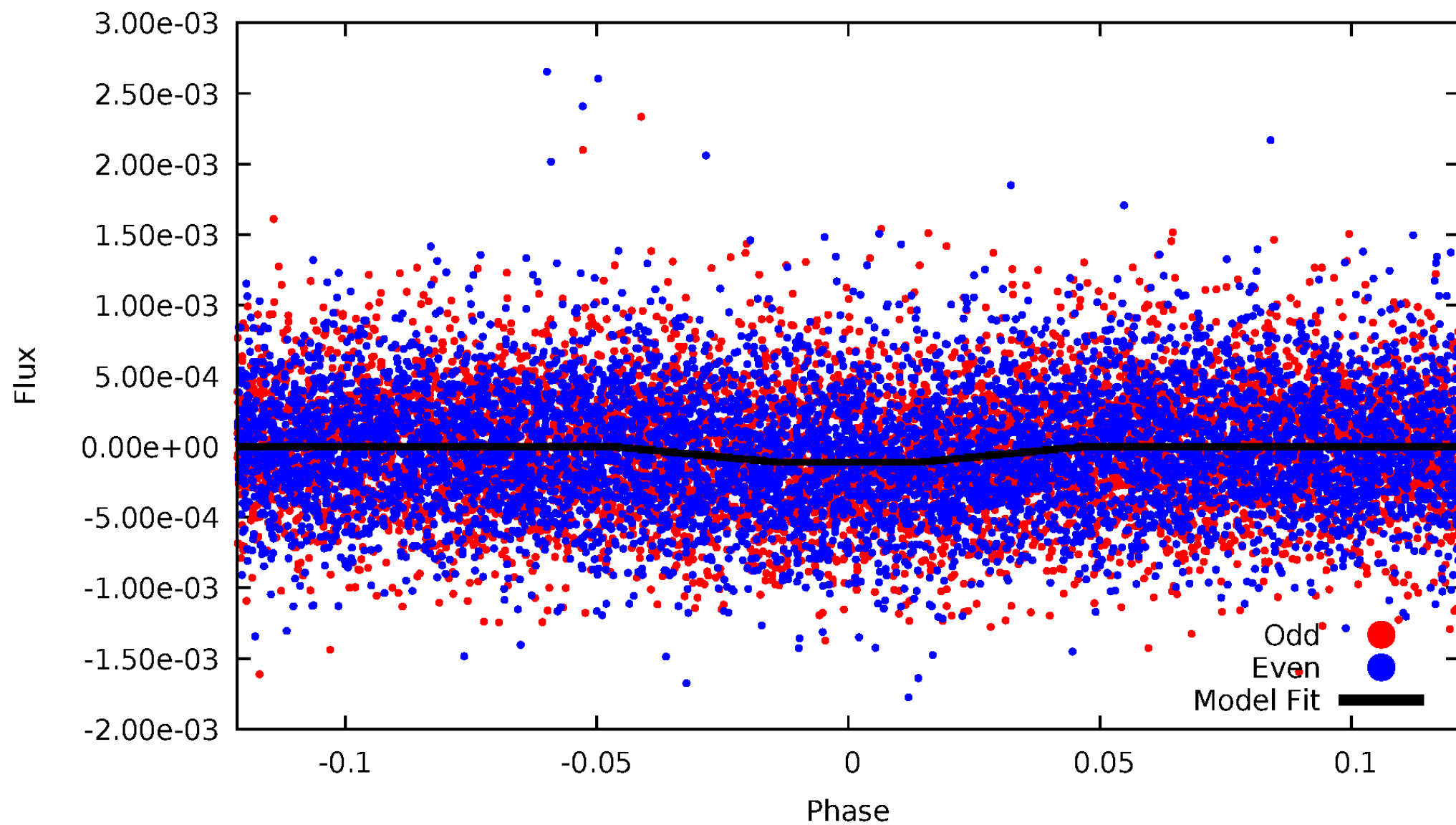
DV Odd/Even

TCE 007954278-02



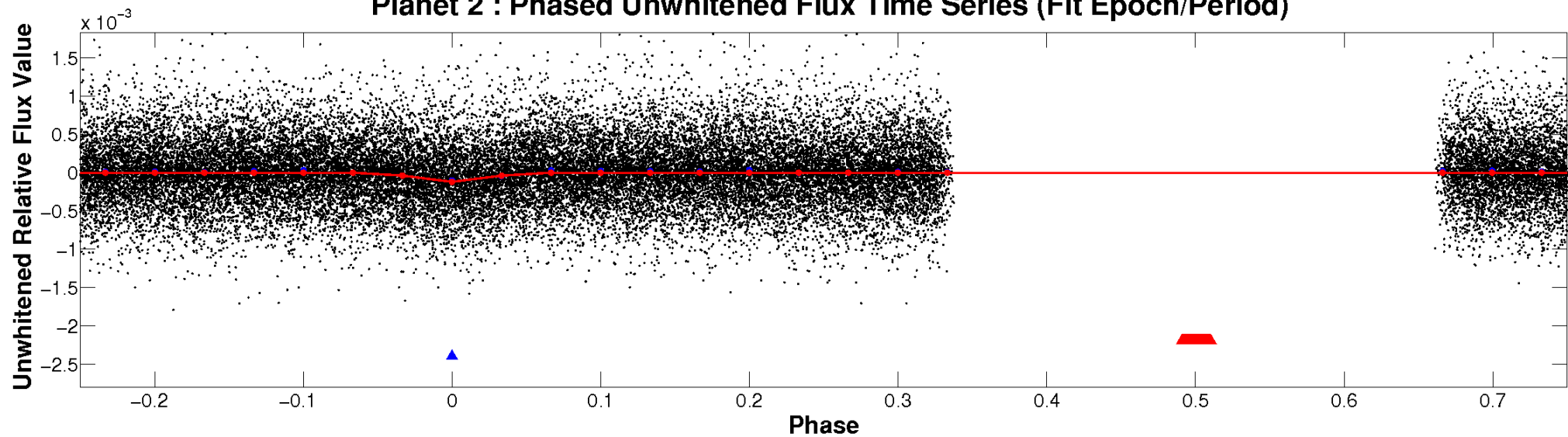
ALT Odd/Even

TCE 007954278-02

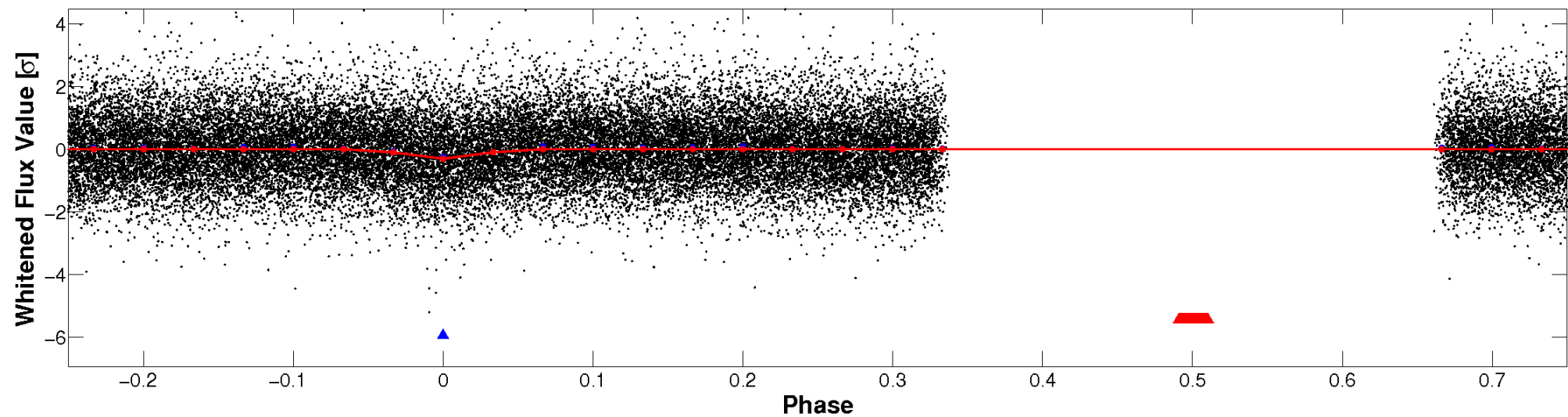


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

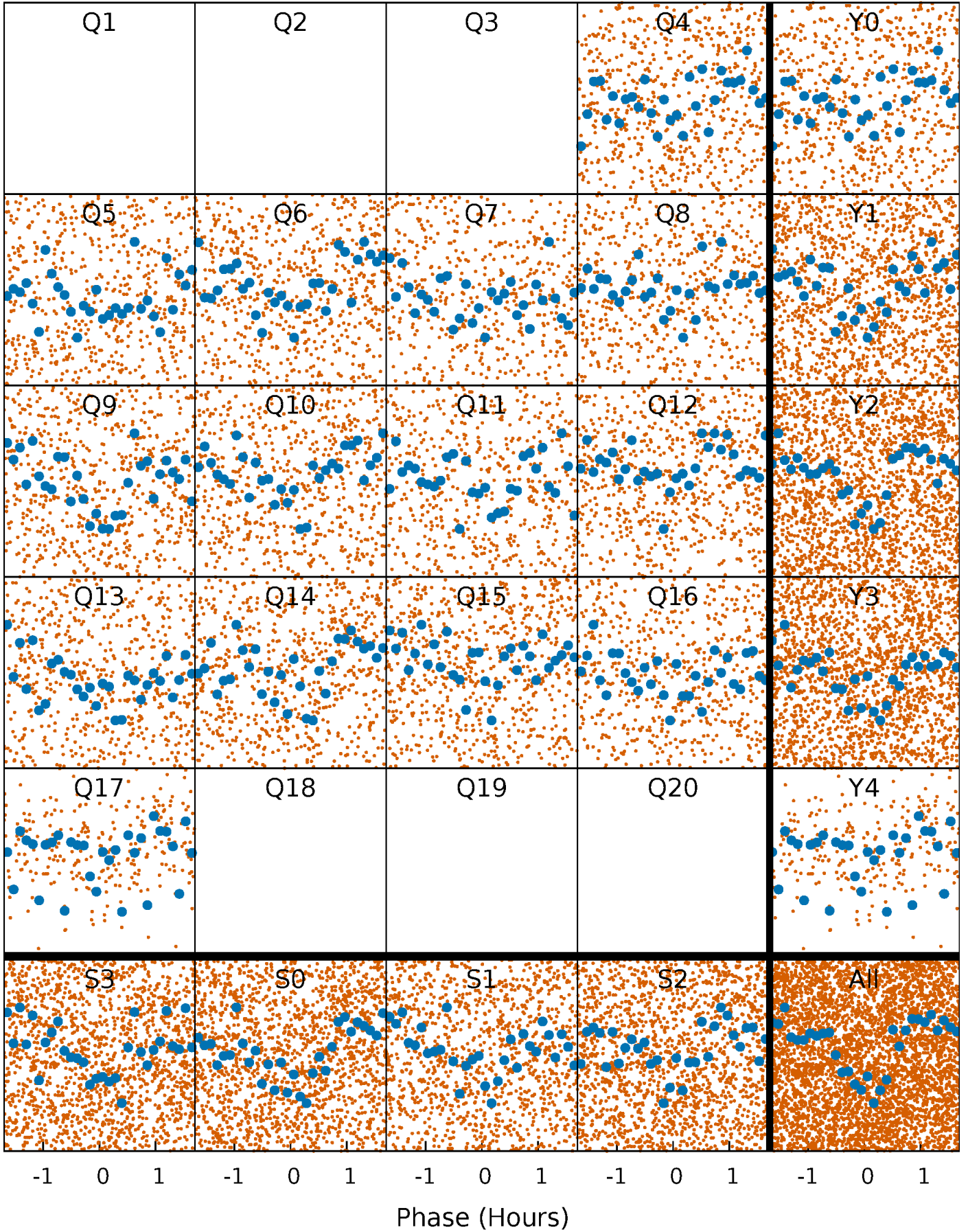


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



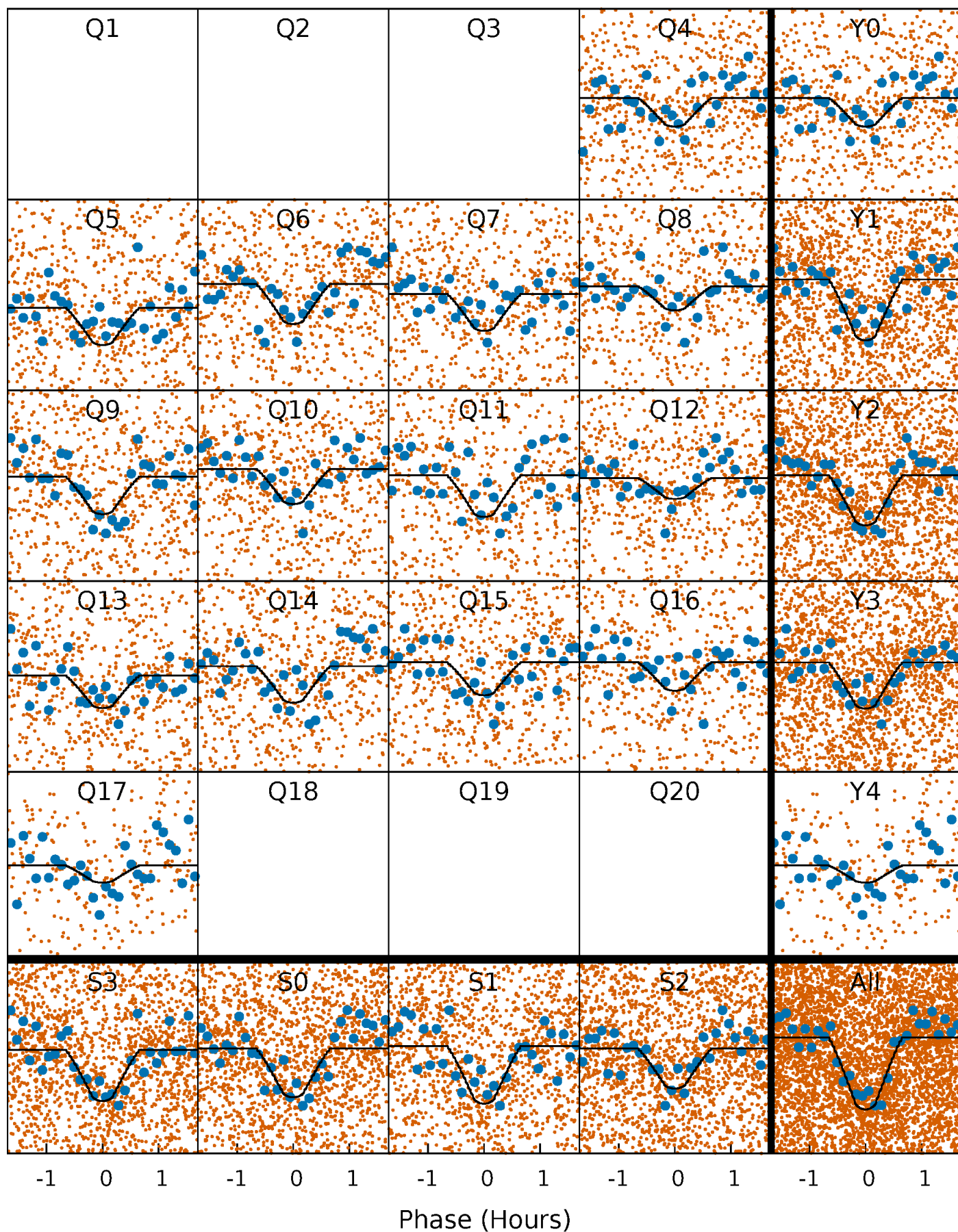
PDC Quarter-Phased Transit Curves

TCE 007954278-02 P= 0.613407 Days $T_0=131.814510$ (BKJD)



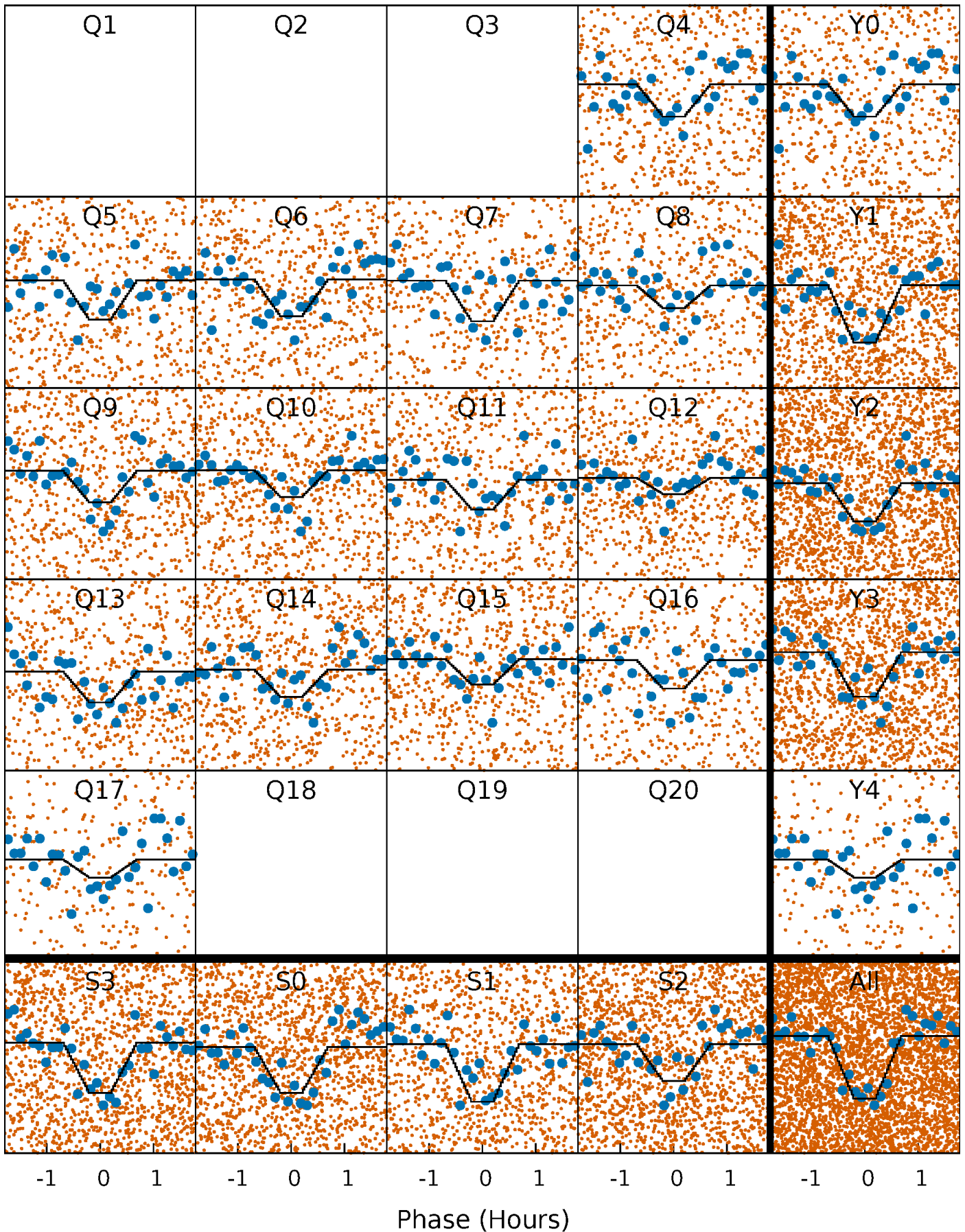
DV Quarter-Phased Transit Curves

TCE 007954278-02 P= 0.613407 Days $T_0=131.814510$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

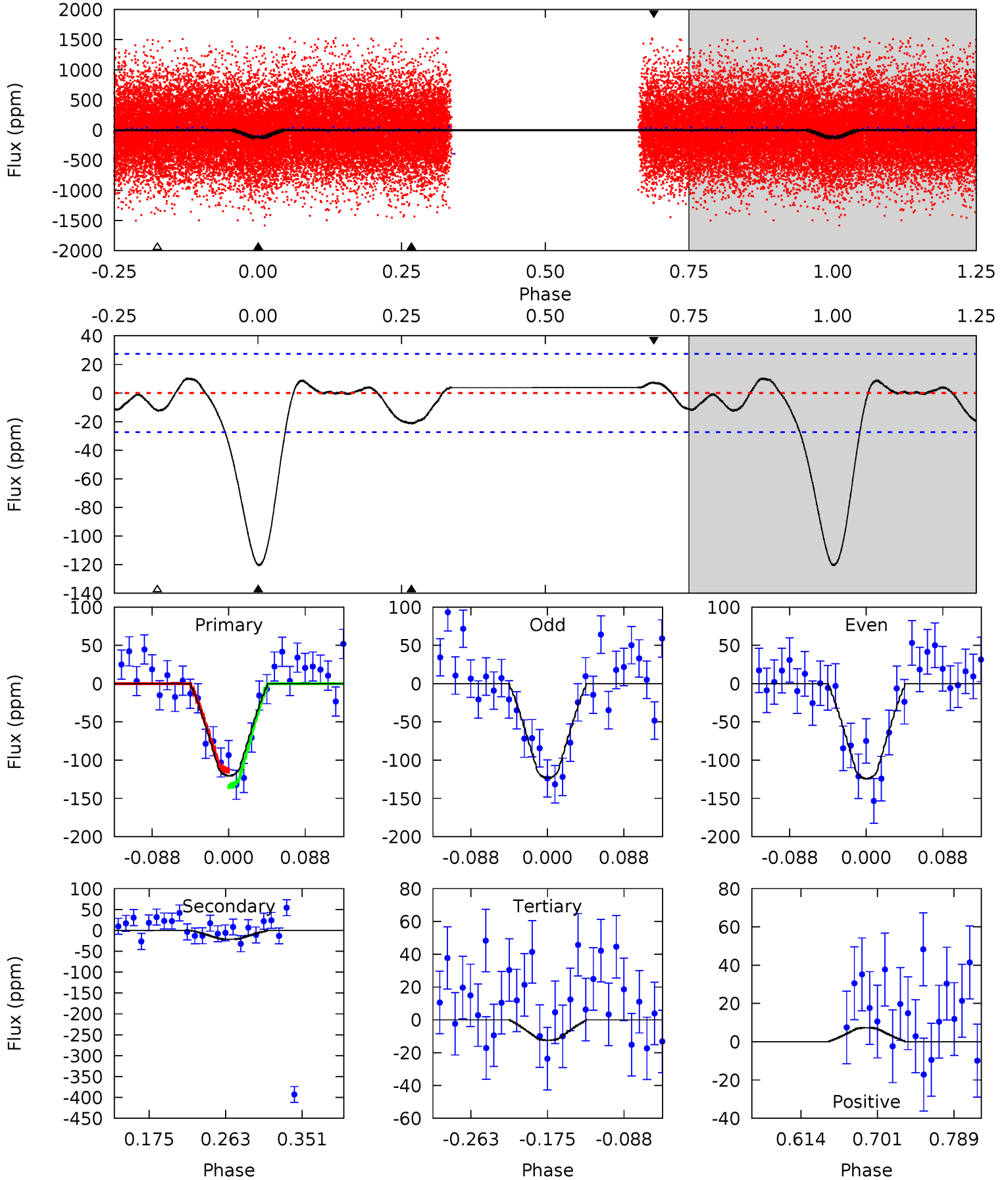
TCE 007954278-02 P= 0.613408 Days $T_0=131.814095$ (BKJD)



DV Model-Shift Uniqueness Test

007954278-02, P = 0.613407 Days, E = 131.814510 Days

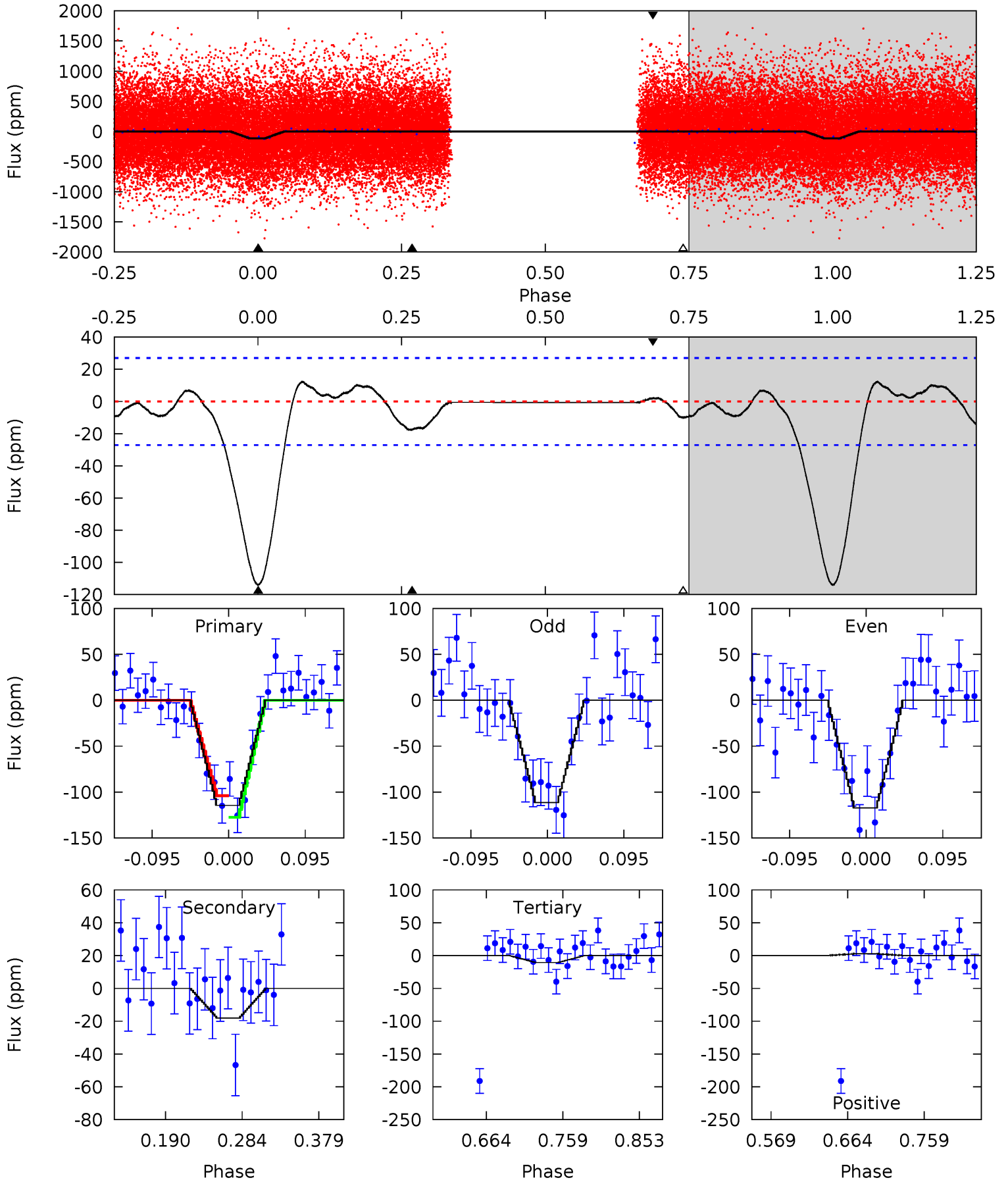
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.2	3.58	2.09	1.23	4.59	1.71	1.06	18.1	19.0	1.49	2.35	0.07	0.95	0.08	1.72



Alt Model-Shift Uniqueness Test

007954278-02, P = 0.613408 Days, E = 131.814095 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.4	3.07	1.81	0.45	4.58	1.67	0.93	17.6	18.9	1.26	2.62	0.49	0.96	0.10	1.99



Stellar Parameters For KIC 007954278

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5310^{+202}_{-184}	$4.512^{+0.095}_{-0.085}$	$-0.360^{+0.350}_{-0.300}$	$0.786^{+0.110}_{-0.099}$	$0.732^{+0.115}_{-0.046}$	$2.127^{+0.932}_{-0.596}$
	+4%/-3%	+2%/-2%	+97%/-83%	+14%/-13%	+16%/-6%	+44%/-28%
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 007954278-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-21 ± 6	$1.12^{+0.81}_{-0.68}$	2572^{+135}_{-124}	3441^{+1699}_{-824}	$1.472^{+9.164}_{-0.991}$
Alt.	-18 ± 6	$1.16^{+0.86}_{-0.75}$	2567^{+134}_{-125}	3274^{+1720}_{-954}	$1.155^{+7.752}_{-0.785}$

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

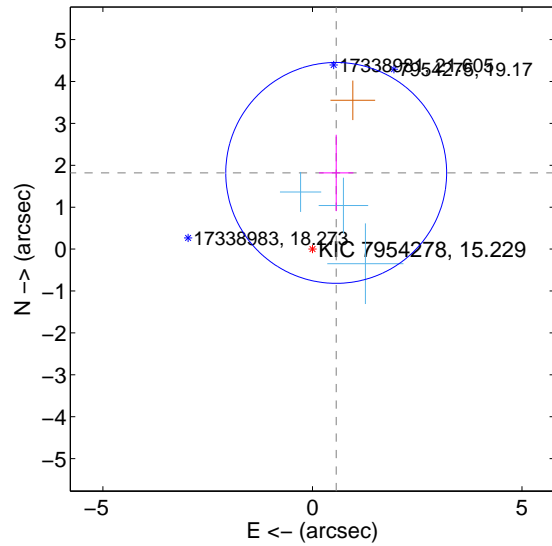
Supplemental centroid analysis for 007954278-02. Kepler magnitude: 15.23. Transit SNR 14.50

There are 7 quarters with good PRF difference image offsets

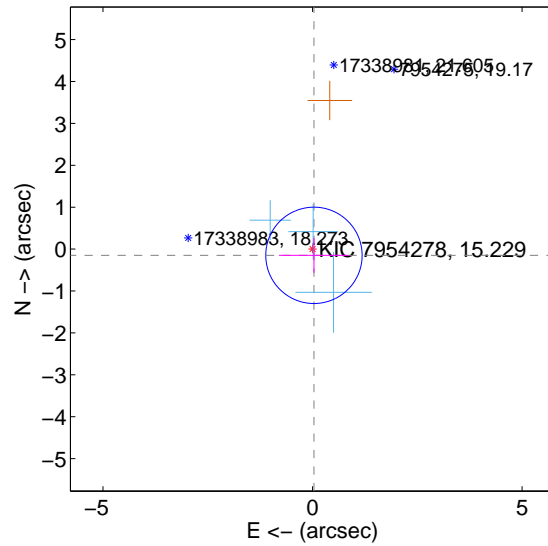
The direct PRF centroid is offset from the target star catalog position by about 1.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.904 ± 0.878	2.17	-0.567 ± 0.409	1.818 ± 0.911
PRF-fit source offset from KIC position	0.153 ± 0.383	0.40	-0.034 ± 0.833	-0.149 ± 0.415
photometric centroid source offset	2.52 ± 0.77	3.29	2.09 ± 0.76	-1.40 ± 0.77

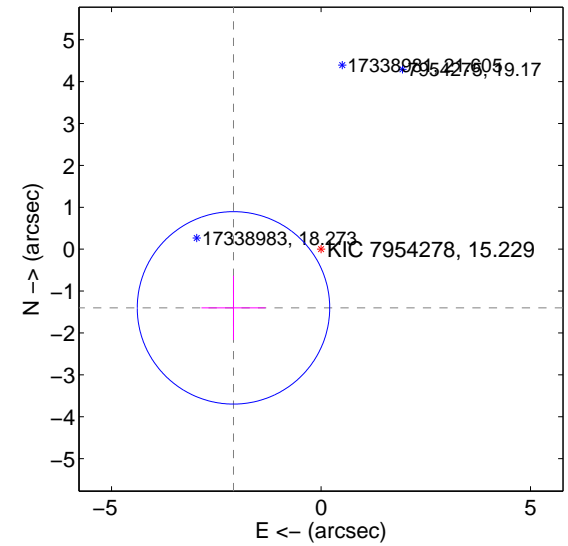
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



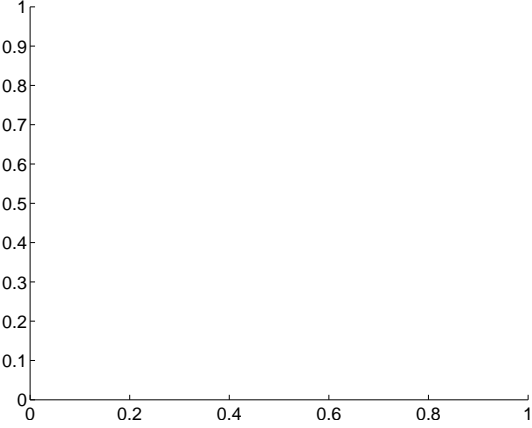
Q2 no difference image



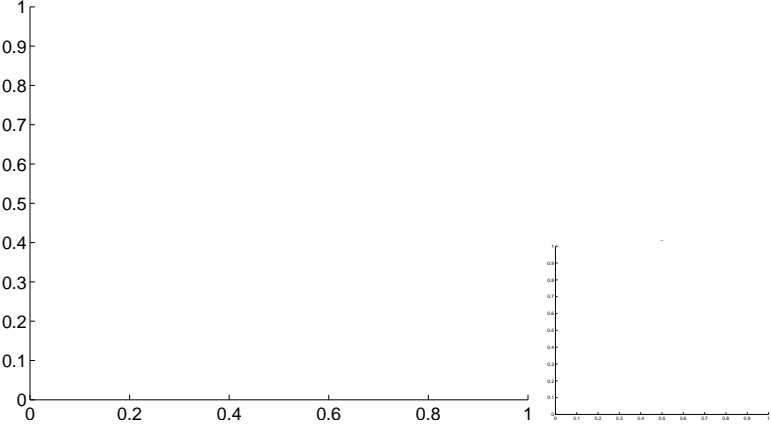
Q2 no OOT image



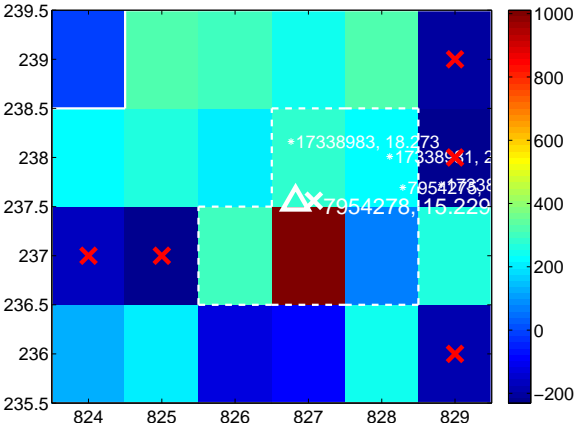
Q3 no difference image



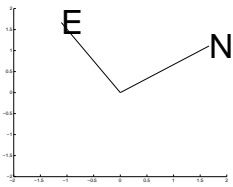
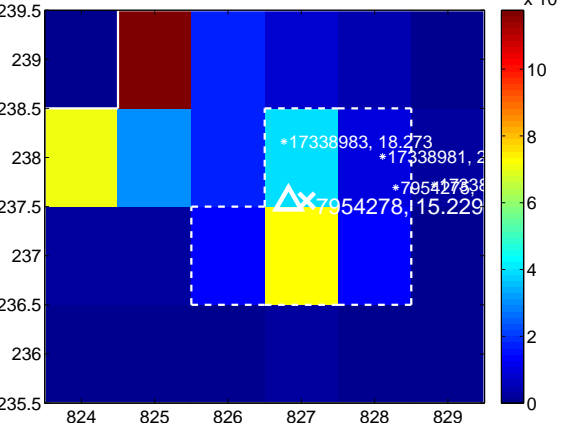
Q3 no OOT image



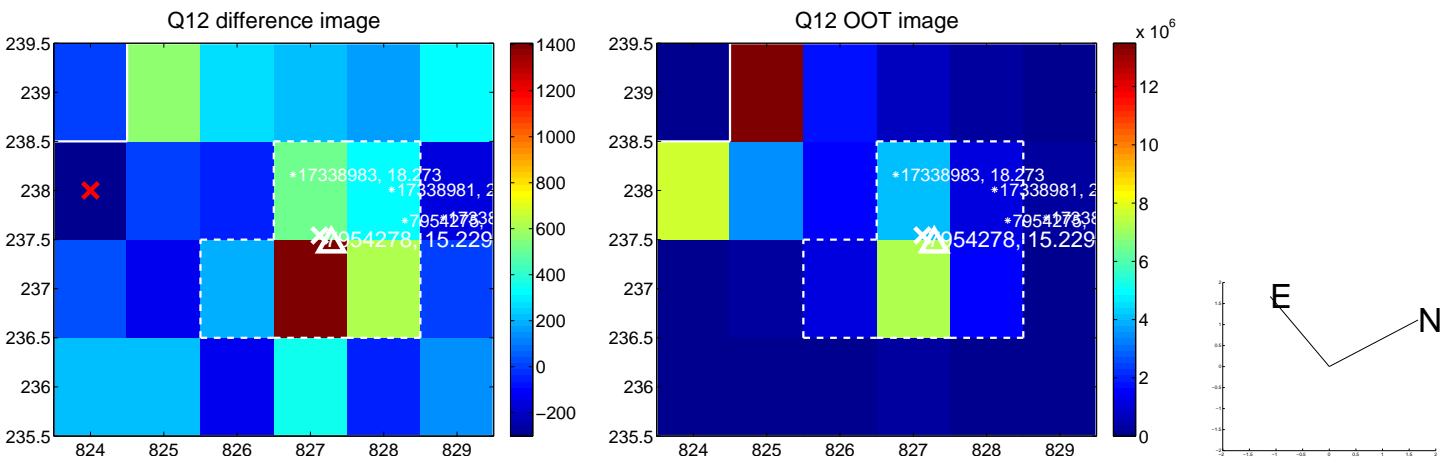
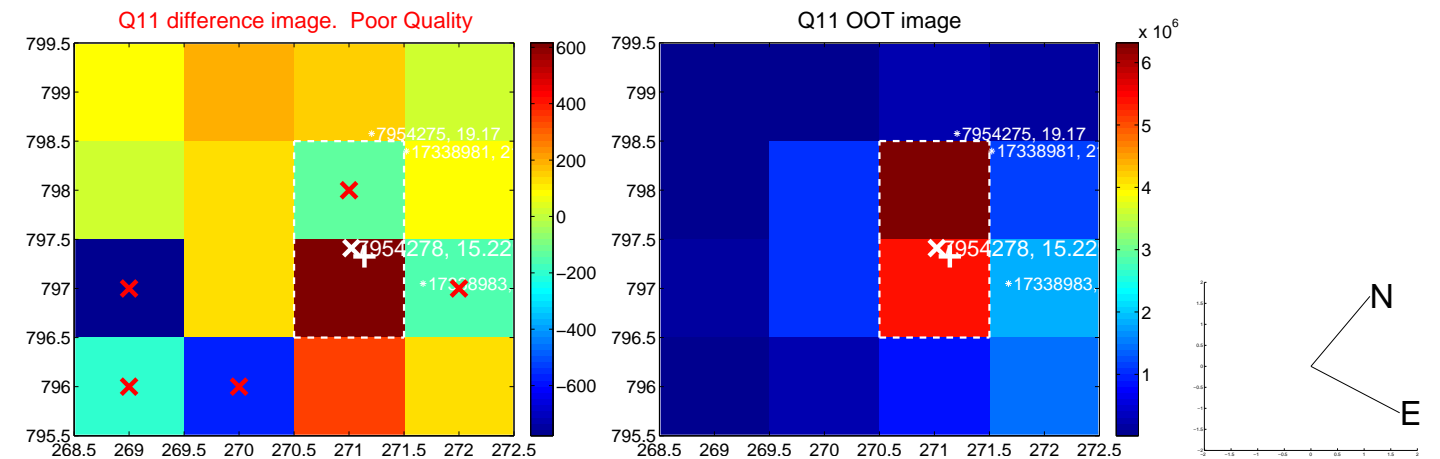
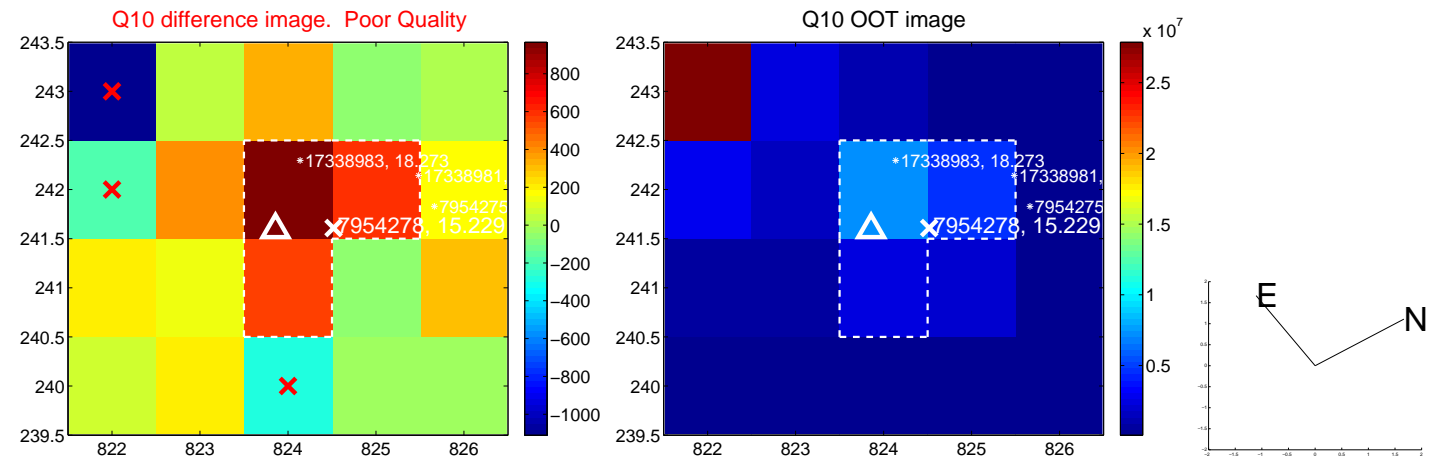
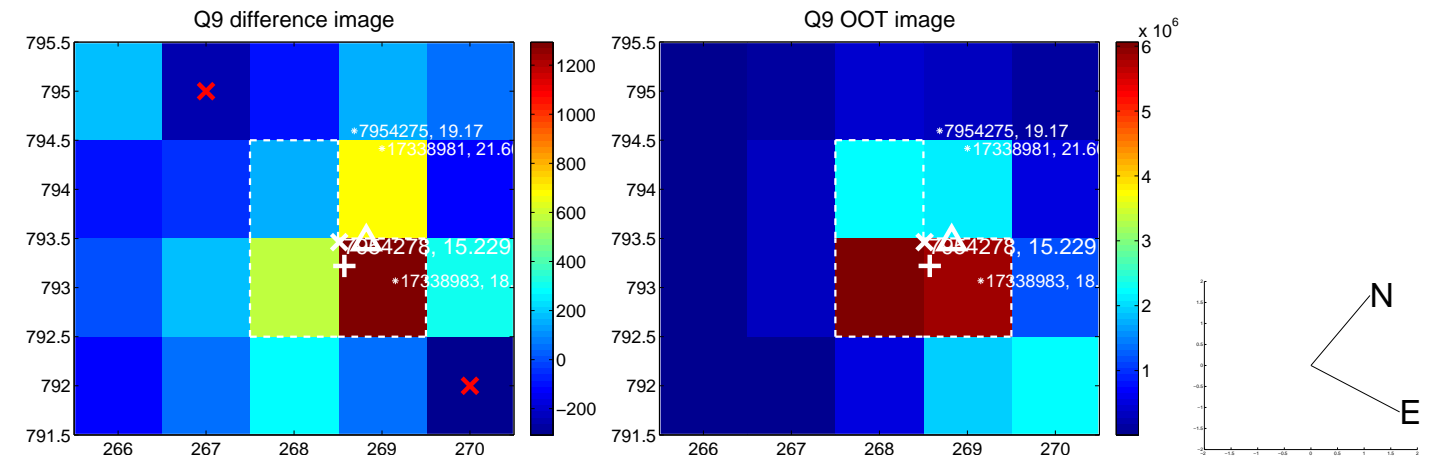
Q4 difference image



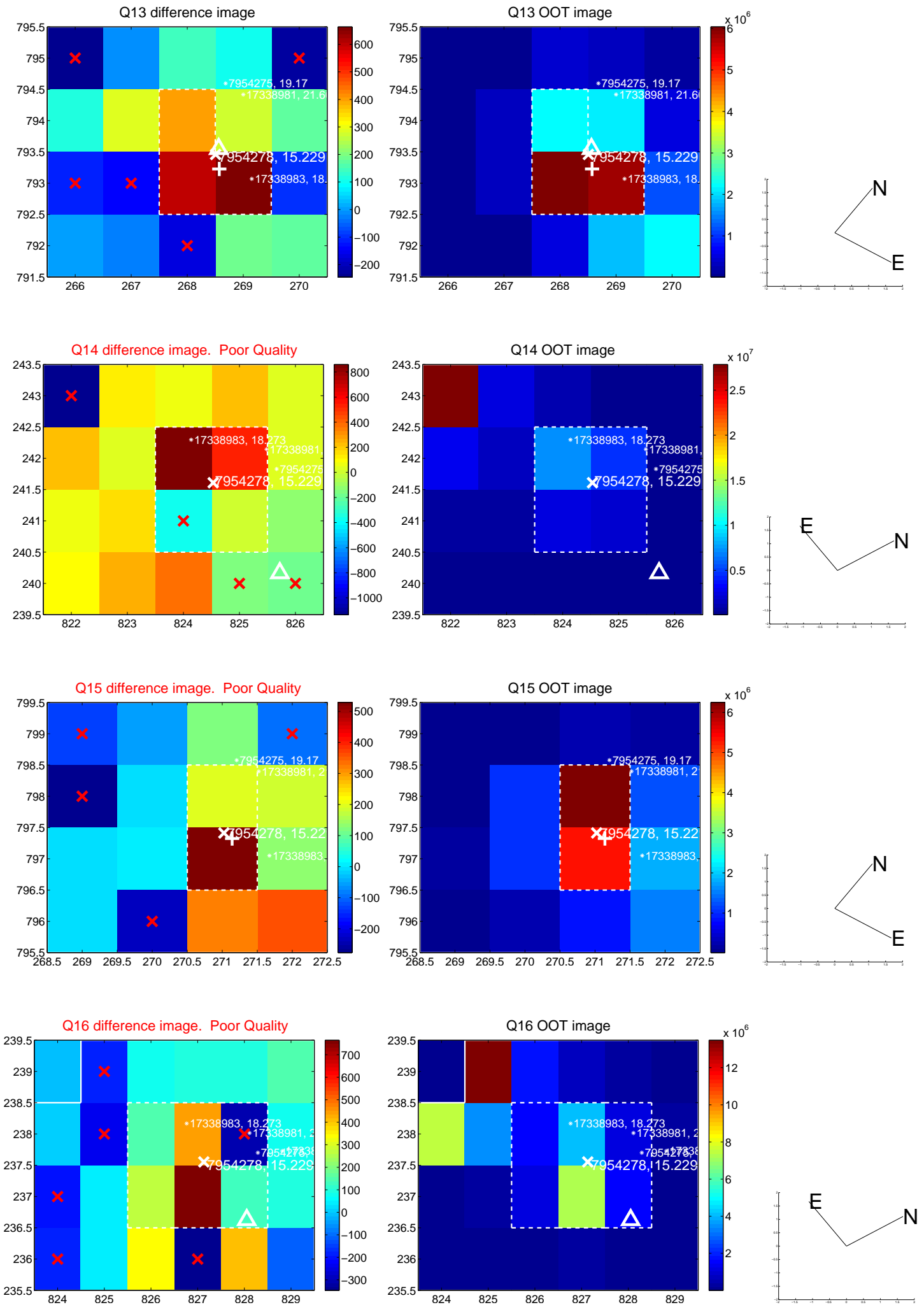
Q4 OOT image



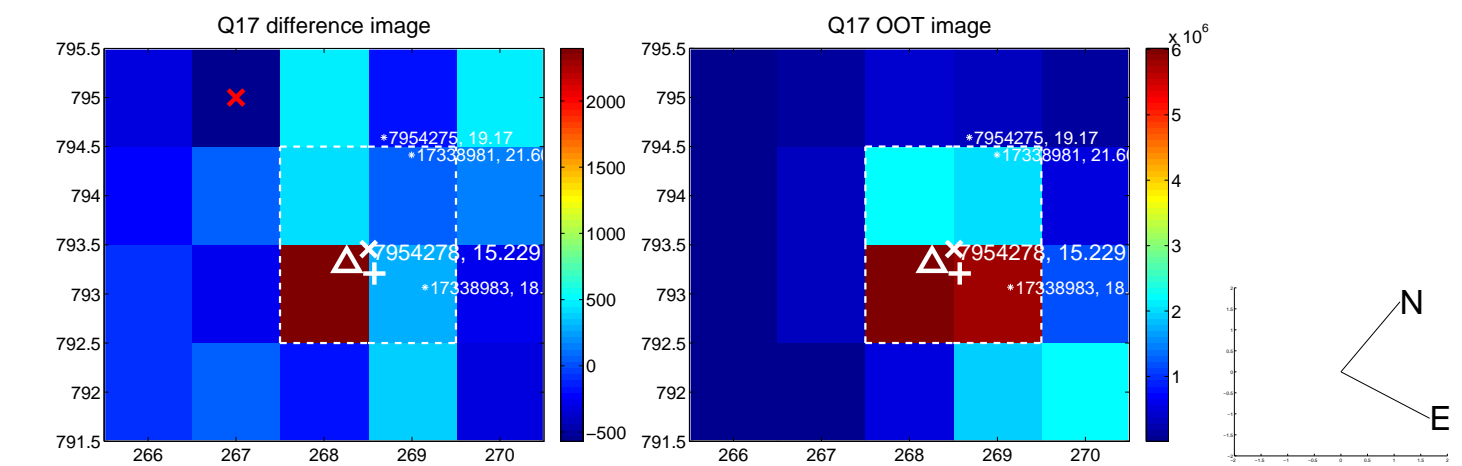
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



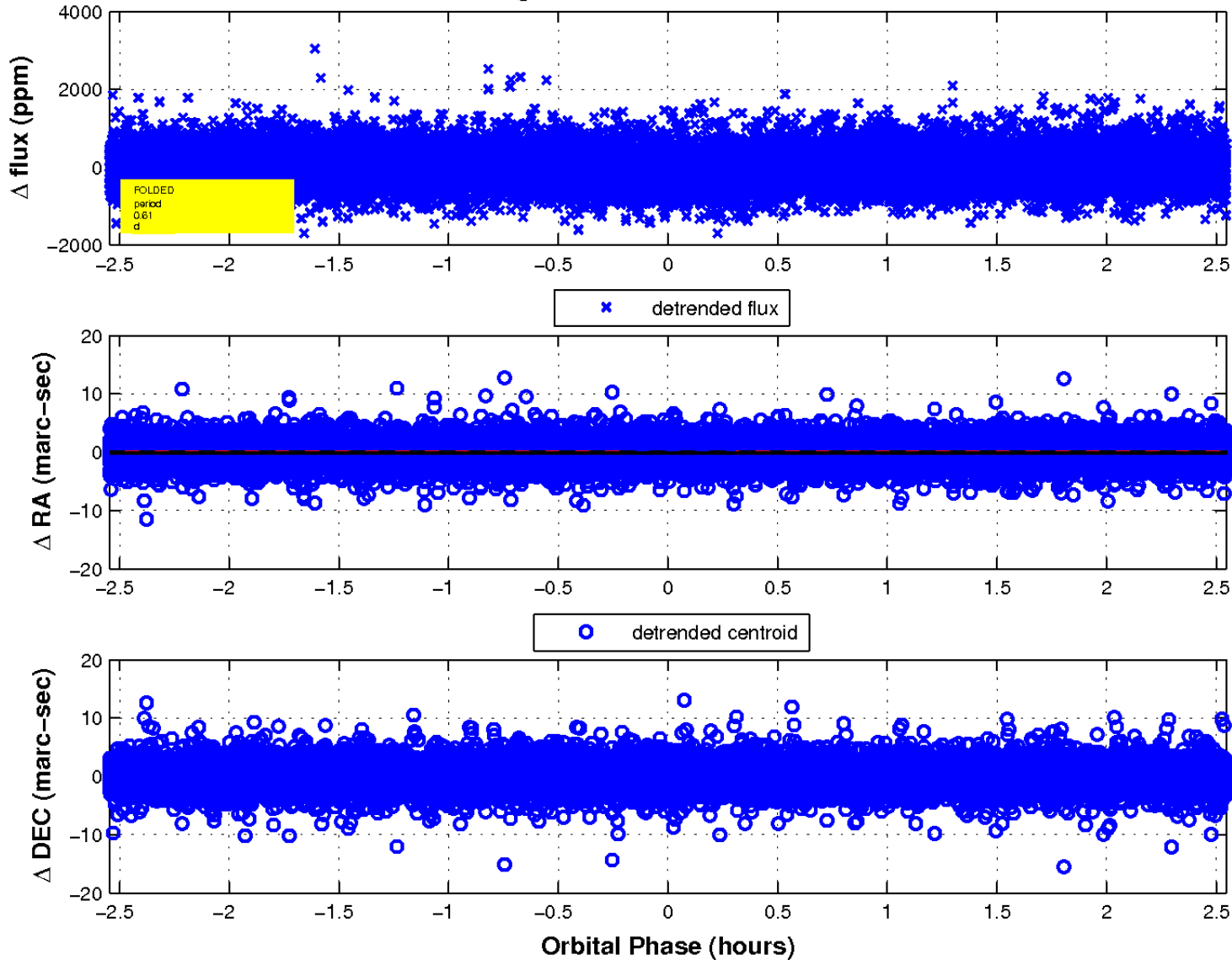
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

