

KIC 008891278

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})
008891278-01	OBS	0698.01	12.718712	134.839187	8325.0	2.474	494.7	490.7	1.60	6120	24.12	279.68
008891278-02	OBS	No	12.718278	135.061750	192.7	31.988	9.1	13.1	1.60	6120	4.43	279.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008891278-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_KIC_POS
008891278-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—RESIDUAL_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.

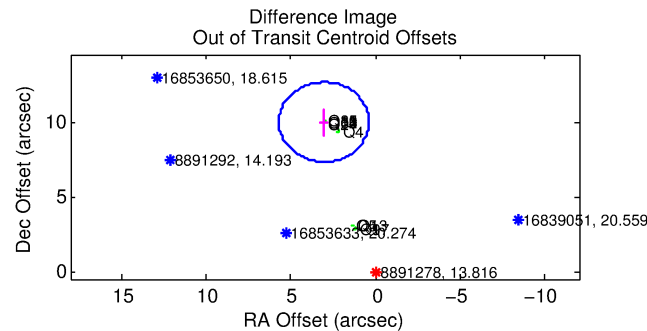
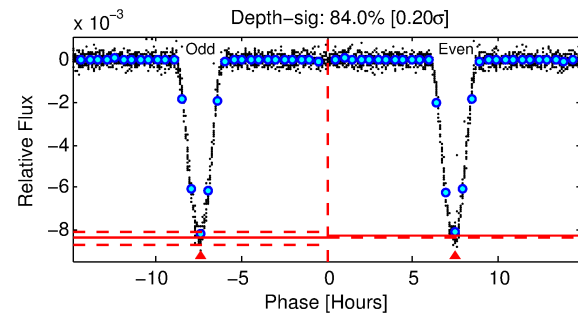
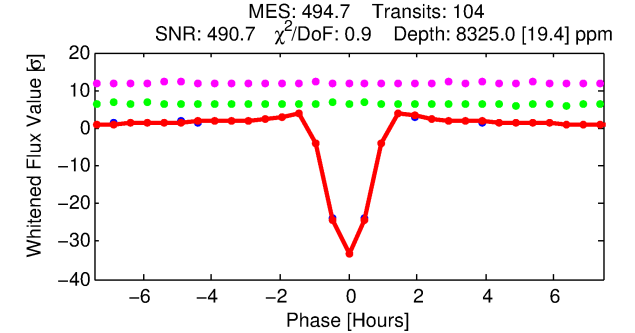
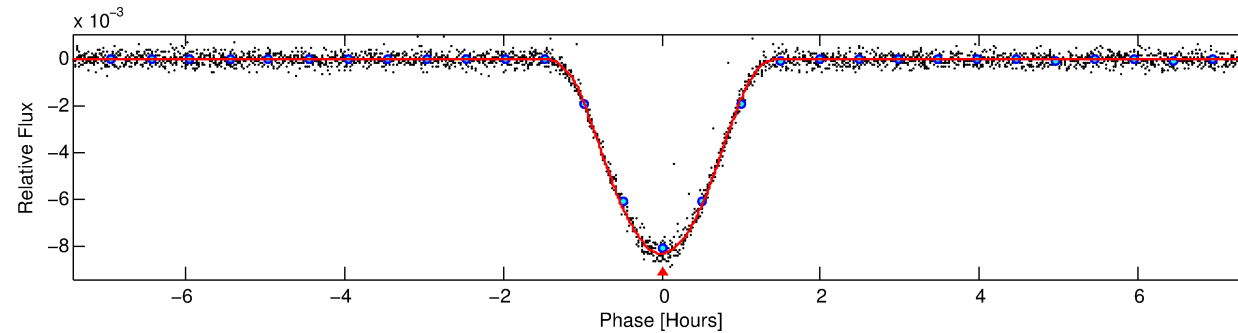
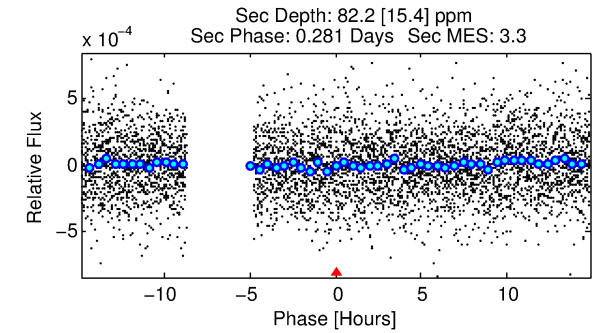
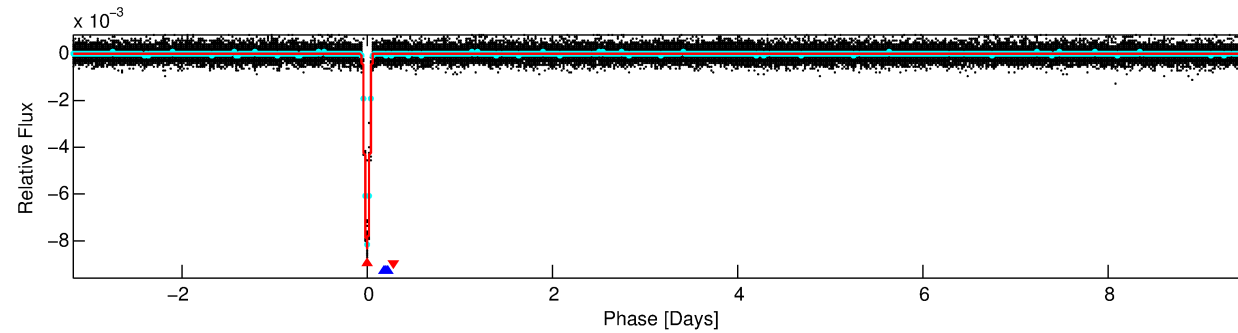
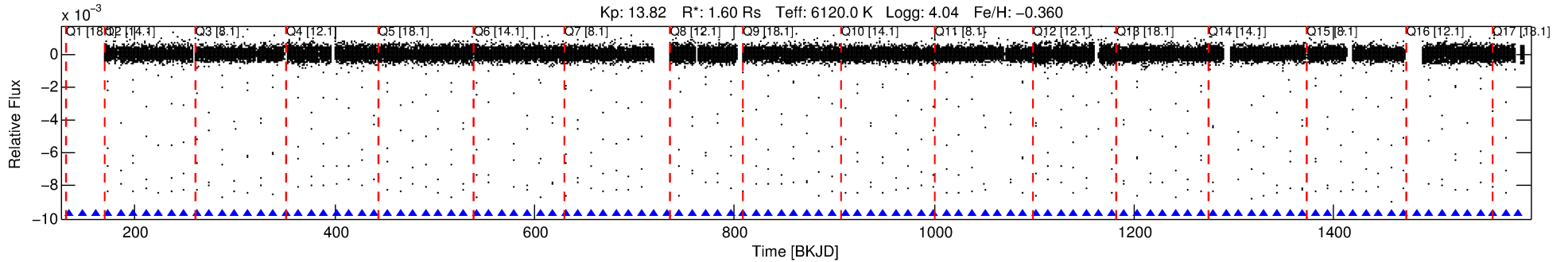
Ephemeris Match Information For 008891278-01

No Significant Match Found

DV One-Page Summary

KIC: 8891278 Candidate: 1 of 2 Period: 12.719 d
KOI: K00698.01 Corr: 0.996

Kp: 13.82 R*: 1.60 Rs Teff: 6120.0 K Logg: 4.04 Fe/H: -0.360



DV Fit Results:

Period = 12.71871 [0.00000] d
Epoch = 134.8392 [0.0001] BKJD
Rp/R* = 0.1385 [0.0112]
a/R* = 22.65 [0.36]
b = 0.98 [0.02]
Seff = 279.68 [181.47]
Teq = 1043 [169] K
Rp = 24.12 [9.42] Re
a = 0.1070 [0.0413] AU
Ag = 0.89 [0.61] [-0.18σ]
Teff = 1566 [111] K [2.58σ]

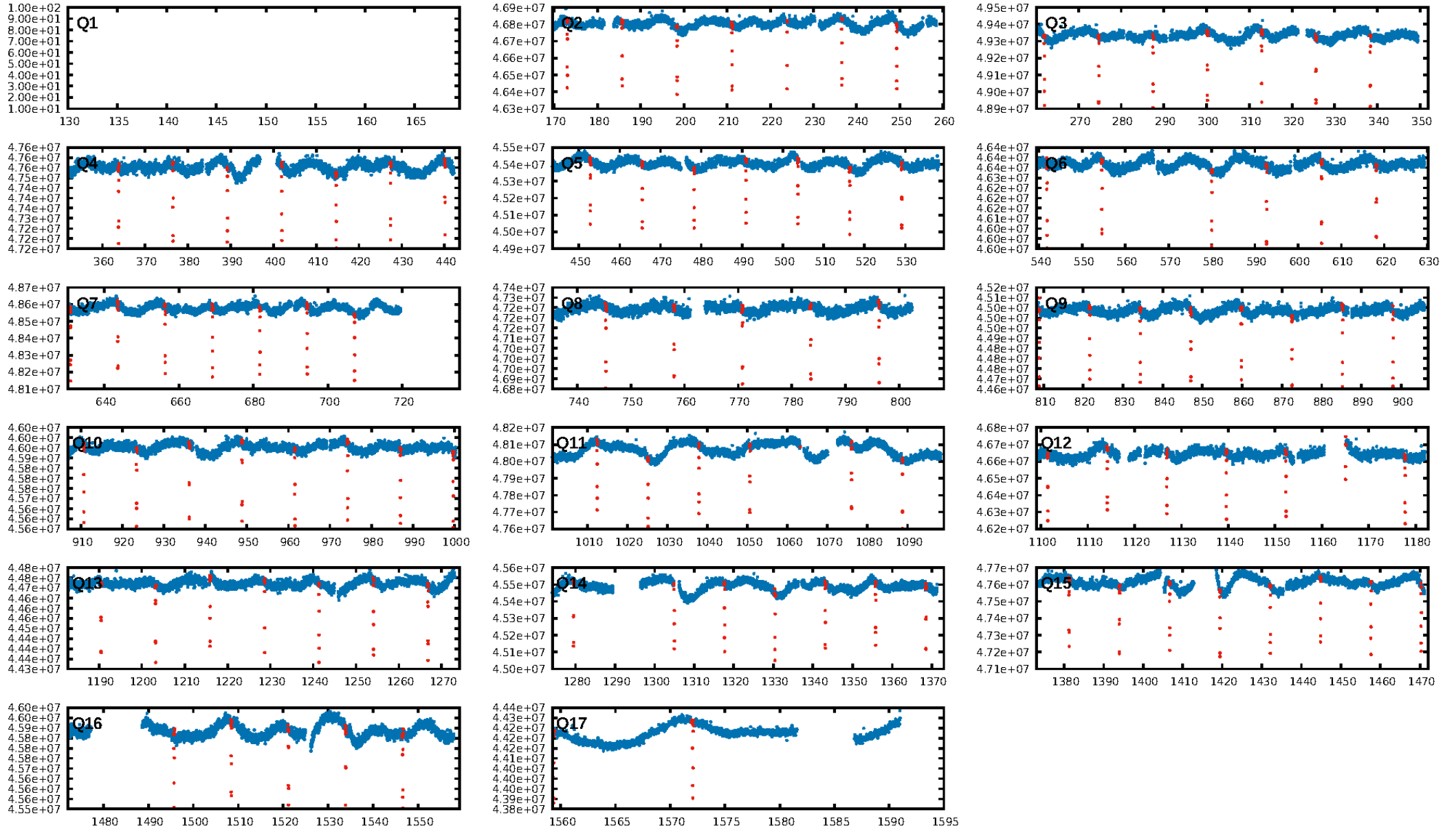
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 7.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [102/102]
GhostDiagnostic-chr: 6.807
Centroid-sig: 0.0%
Centroid-so: 2.093 arcsec [60.12σ]
OotOffset-rm: 10.438 arcsec [11.78σ]
KicOffset-rm: 0.187 arcsec [2.74σ]
OotOffset-st: 4/2/4/4 [14]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.00 [0/16]

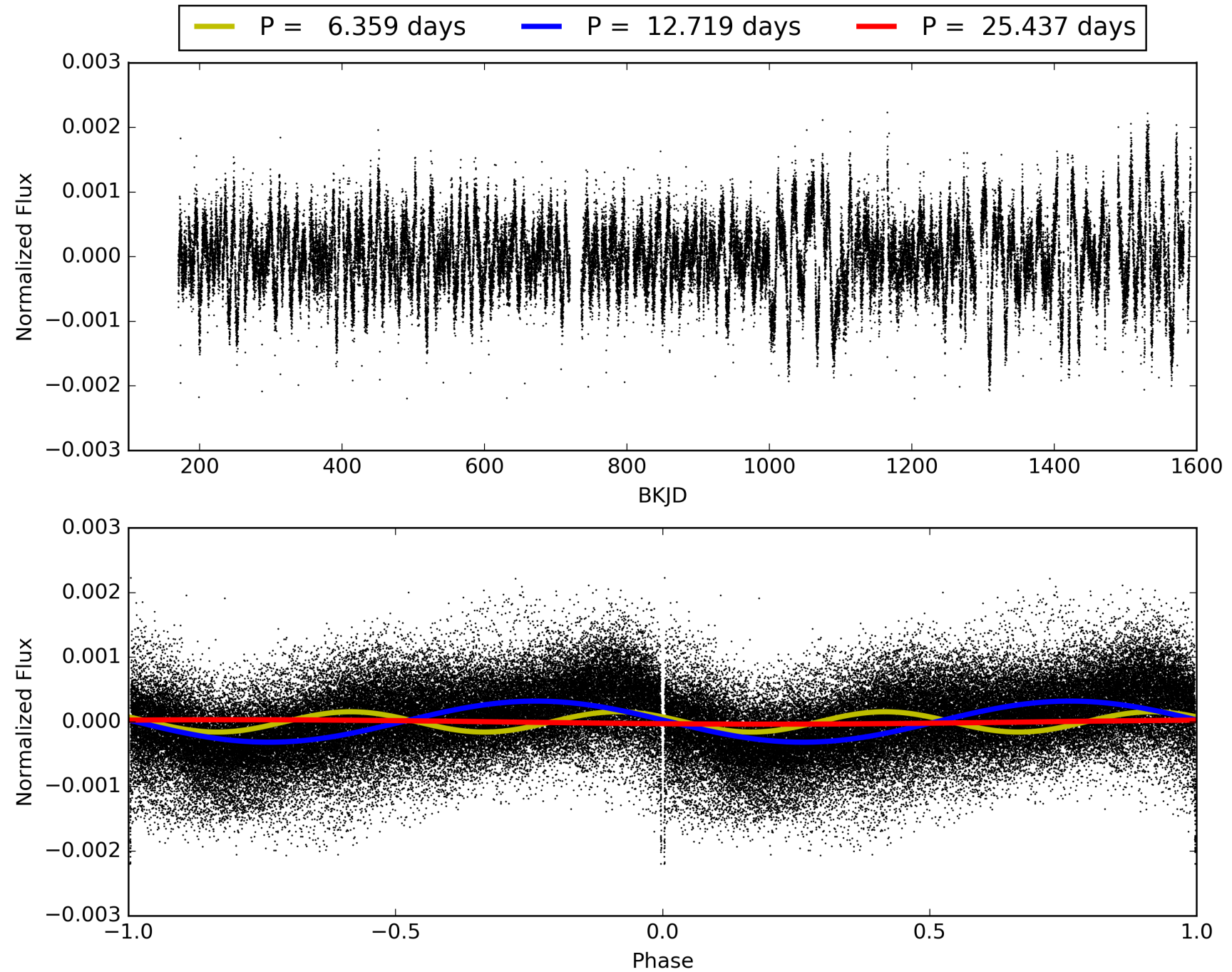
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:35:28 Z

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

TCE 008891278-01, PDC Light Curves

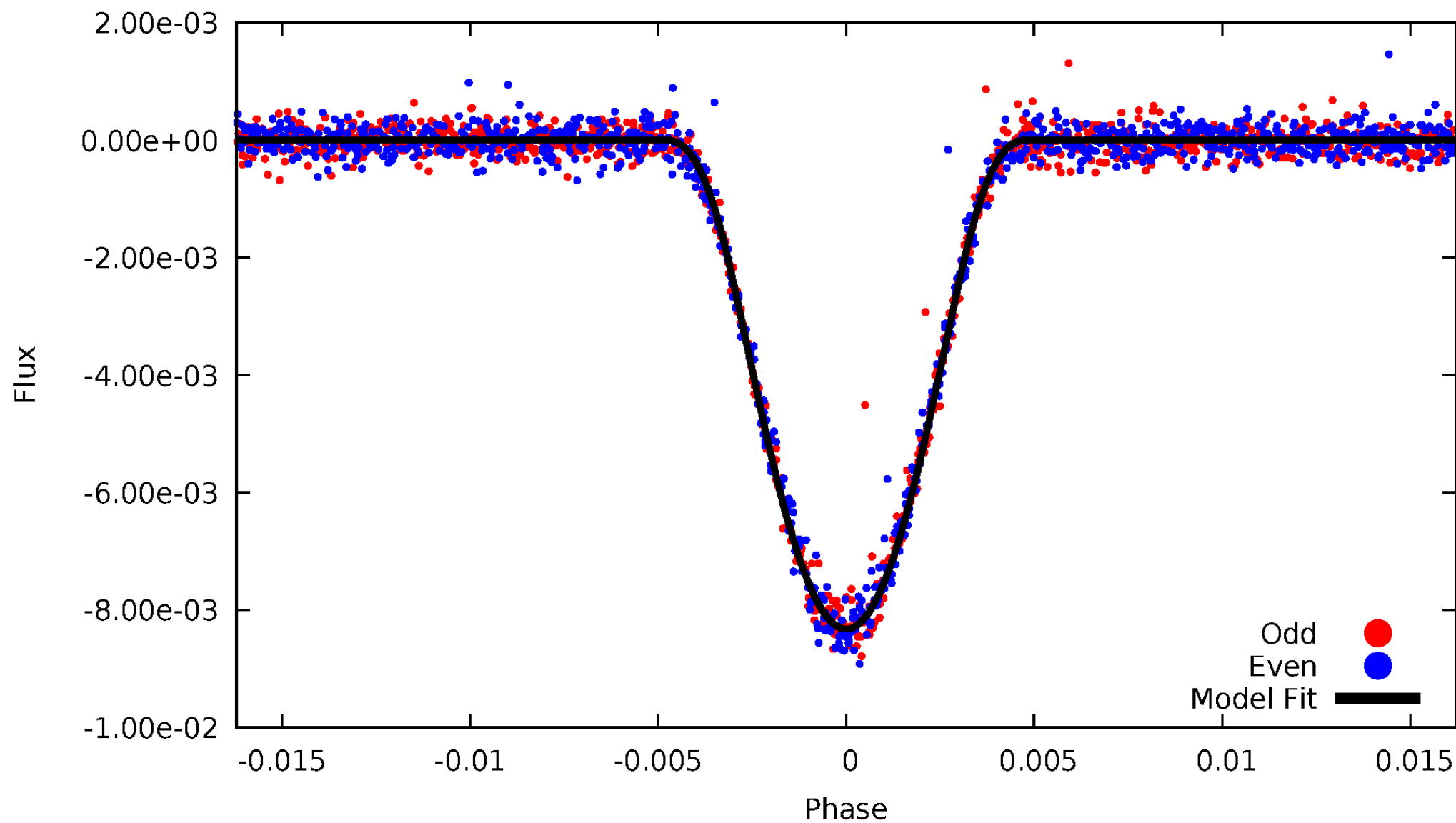


TCE 008891278-01



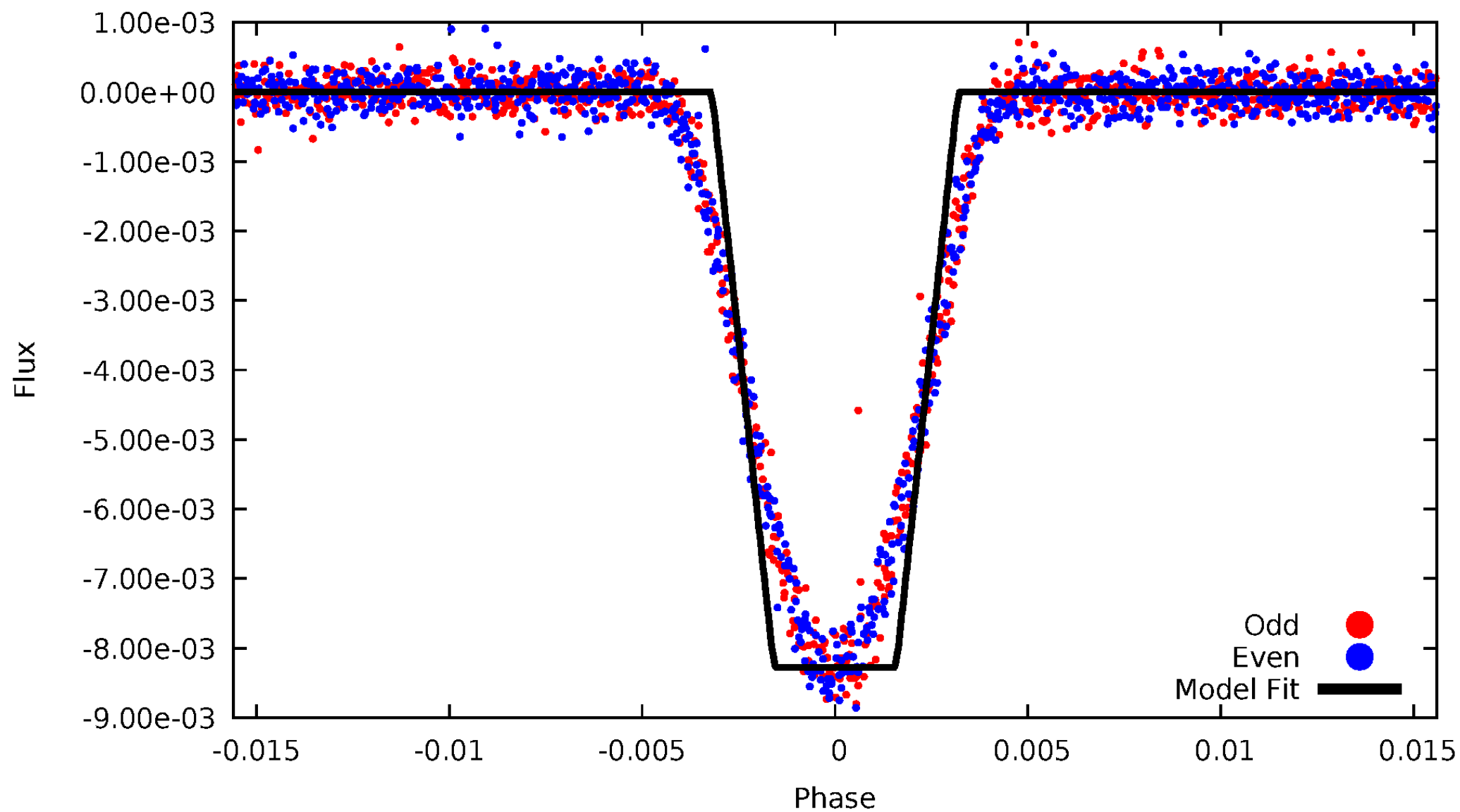
DV Odd/Even

TCE 008891278-01

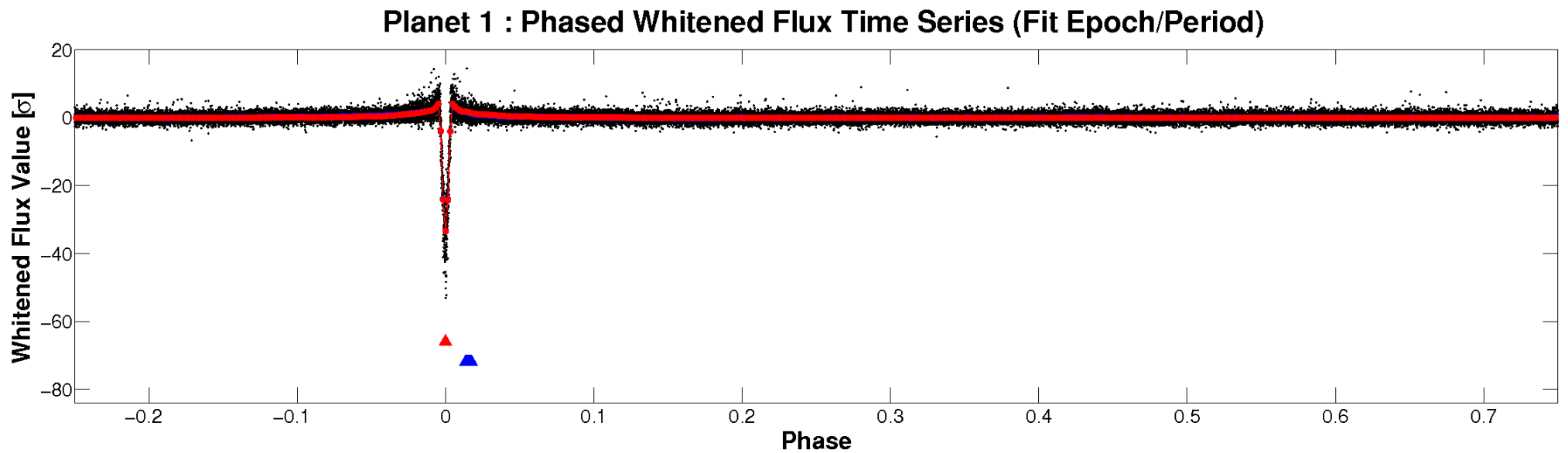
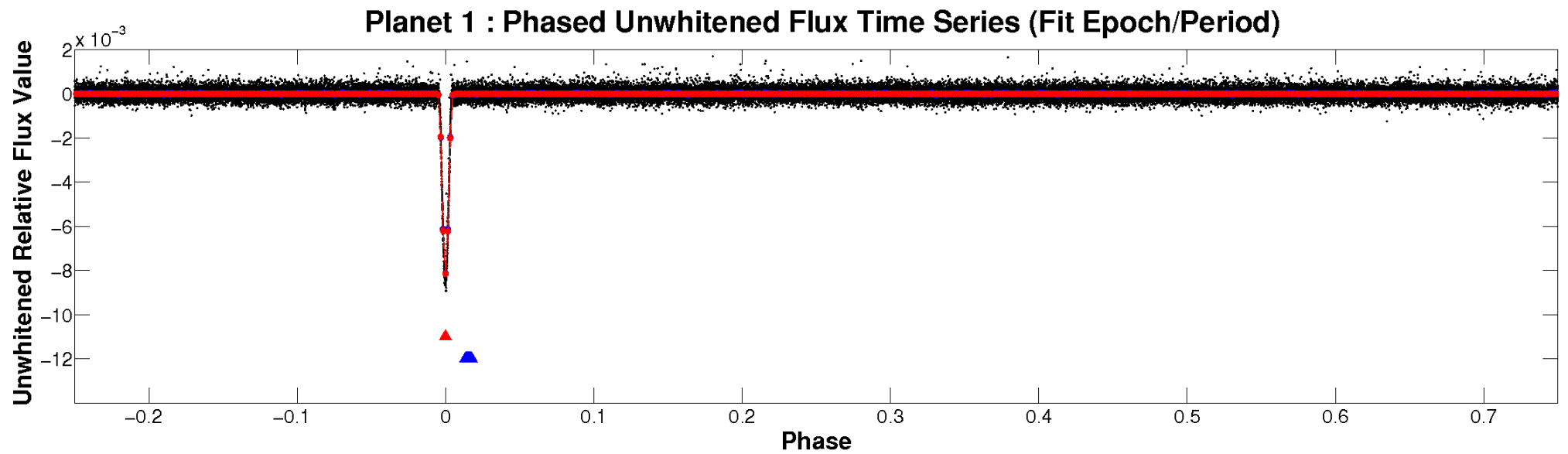


ALT Odd/Even

TCE 008891278-01

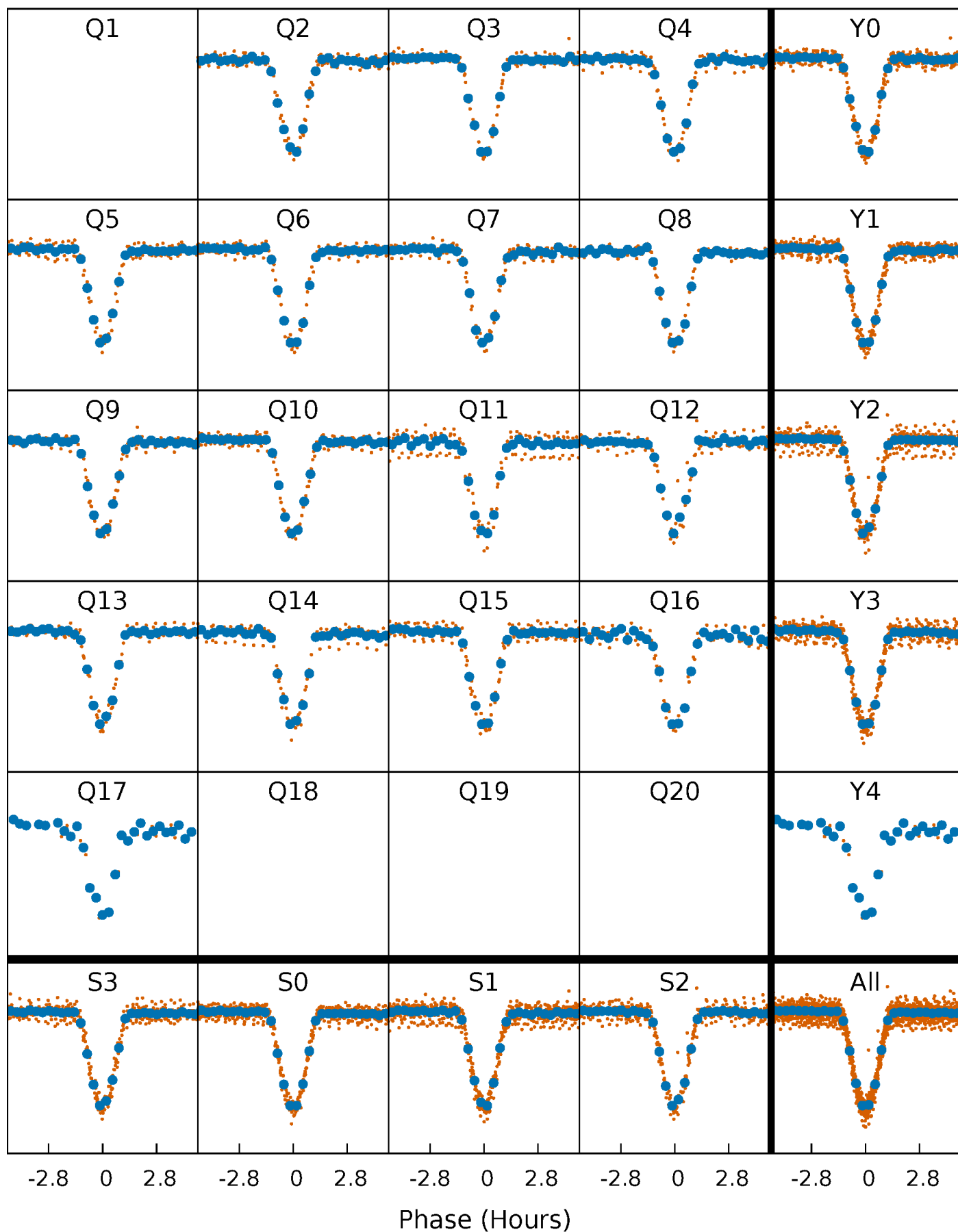


Non-Whitened Vs. Whitened Light Curve



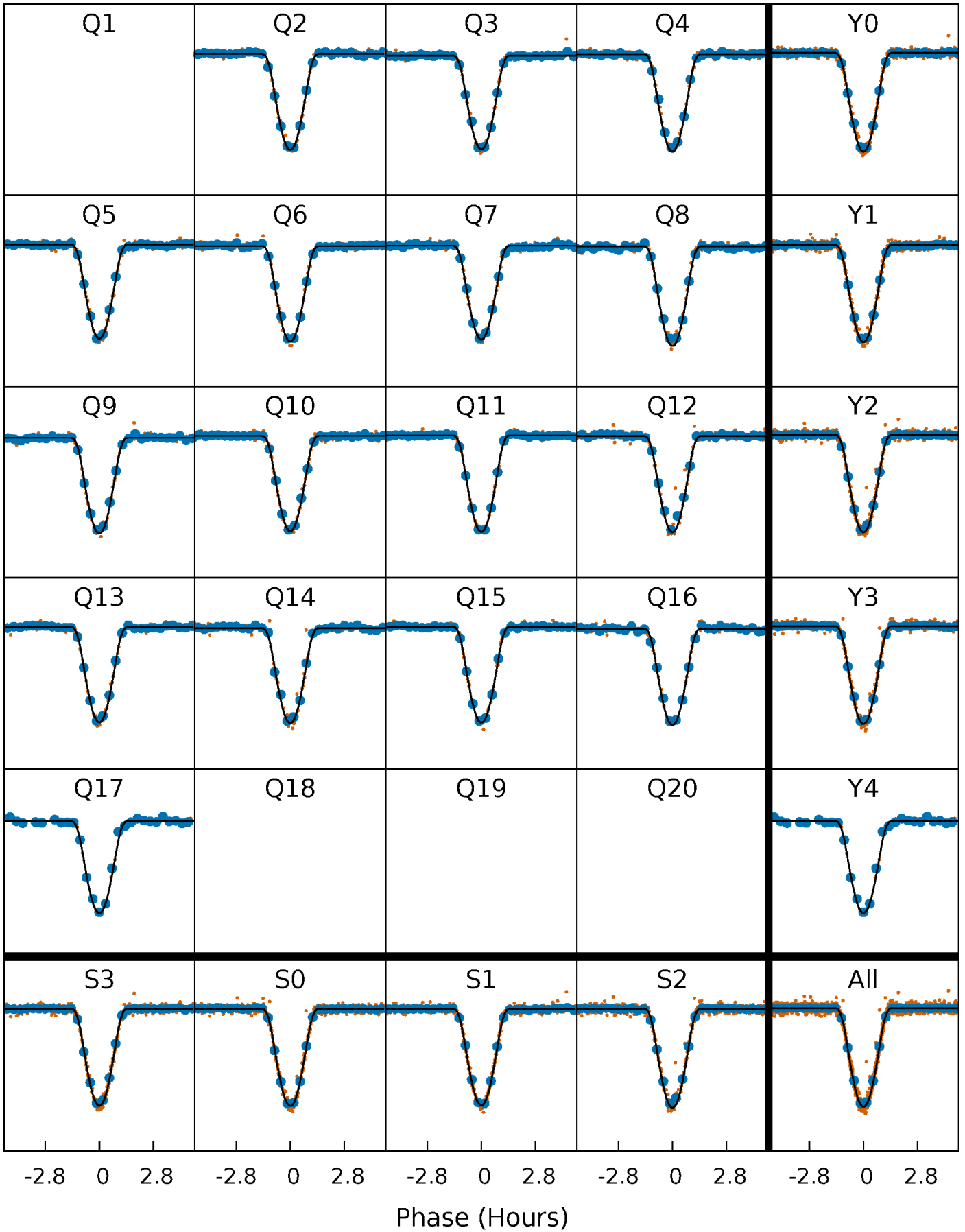
PDC Quarter-Phased Transit Curves

TCE 008891278-01 P= 12.718712 Days $T_0=134.839187$ (BKJD)



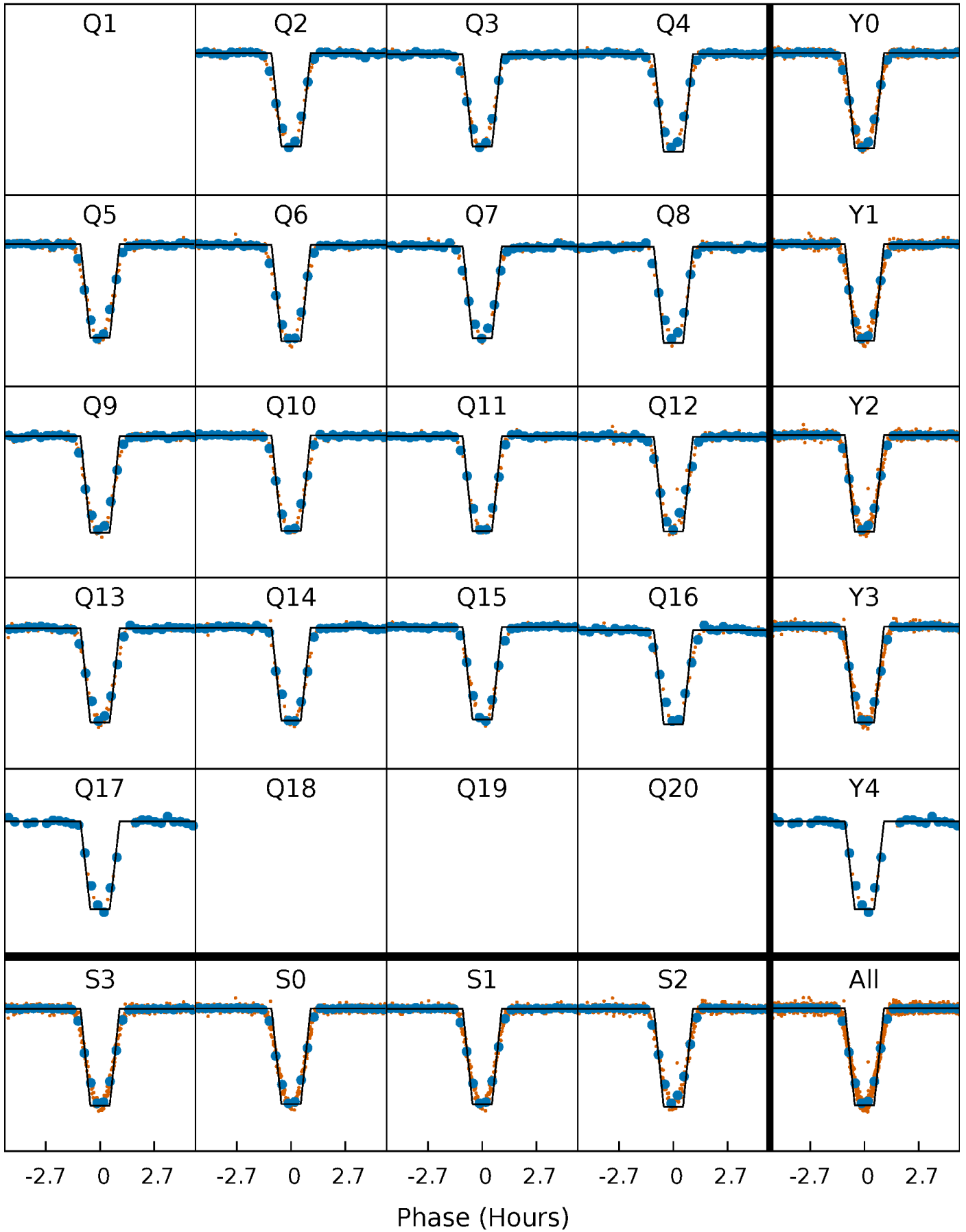
DV Quarter-Phased Transit Curves

TCE 008891278-01 P= 12.718712 Days $T_0=134.839187$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

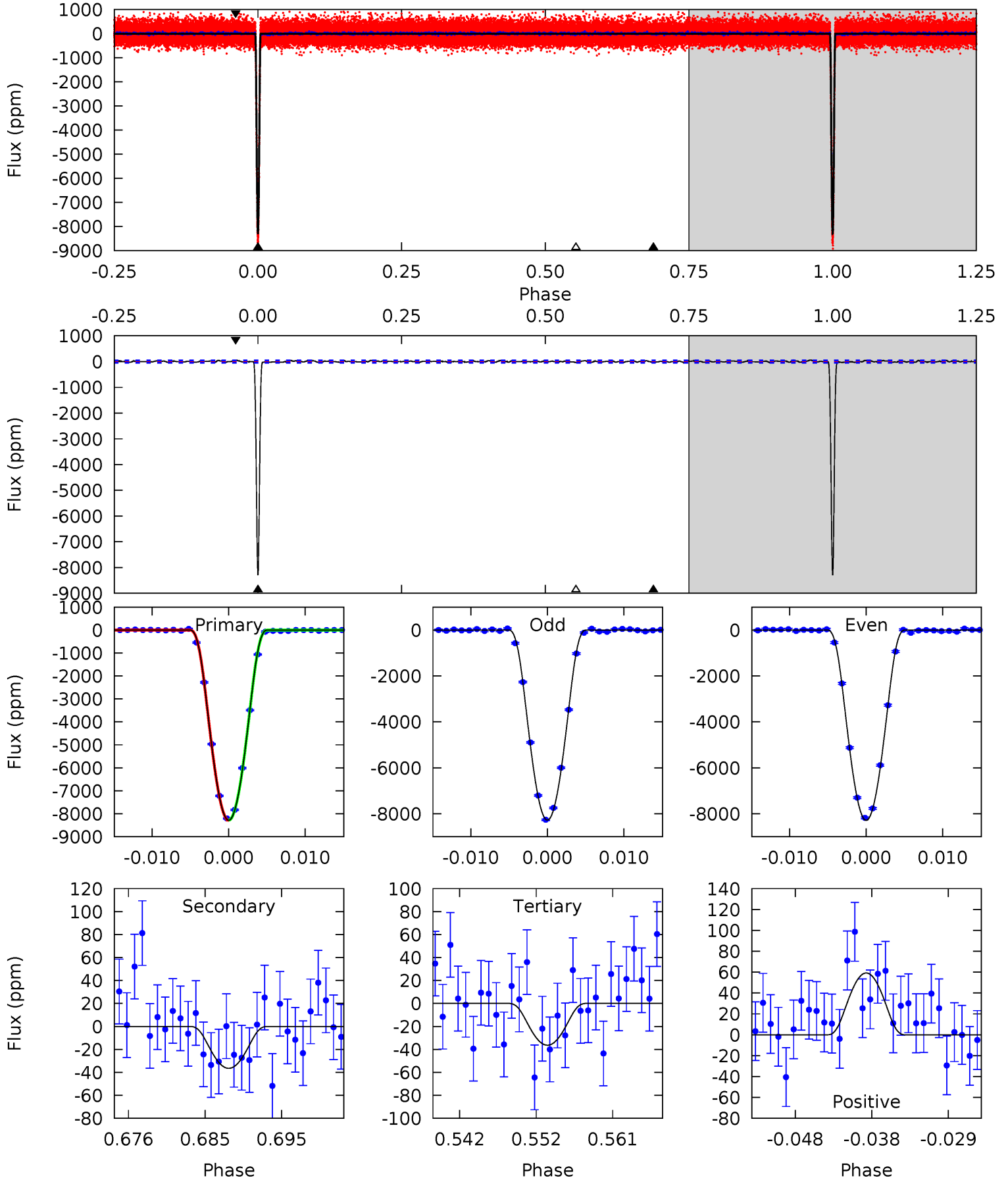
TCE 008891278-01 P= 12.718663 Days $T_0=134.841920$ (BKJD)



DV Model-Shift Uniqueness Test

008891278-01, P = 12.718712 Days, E = 134.839187 Days

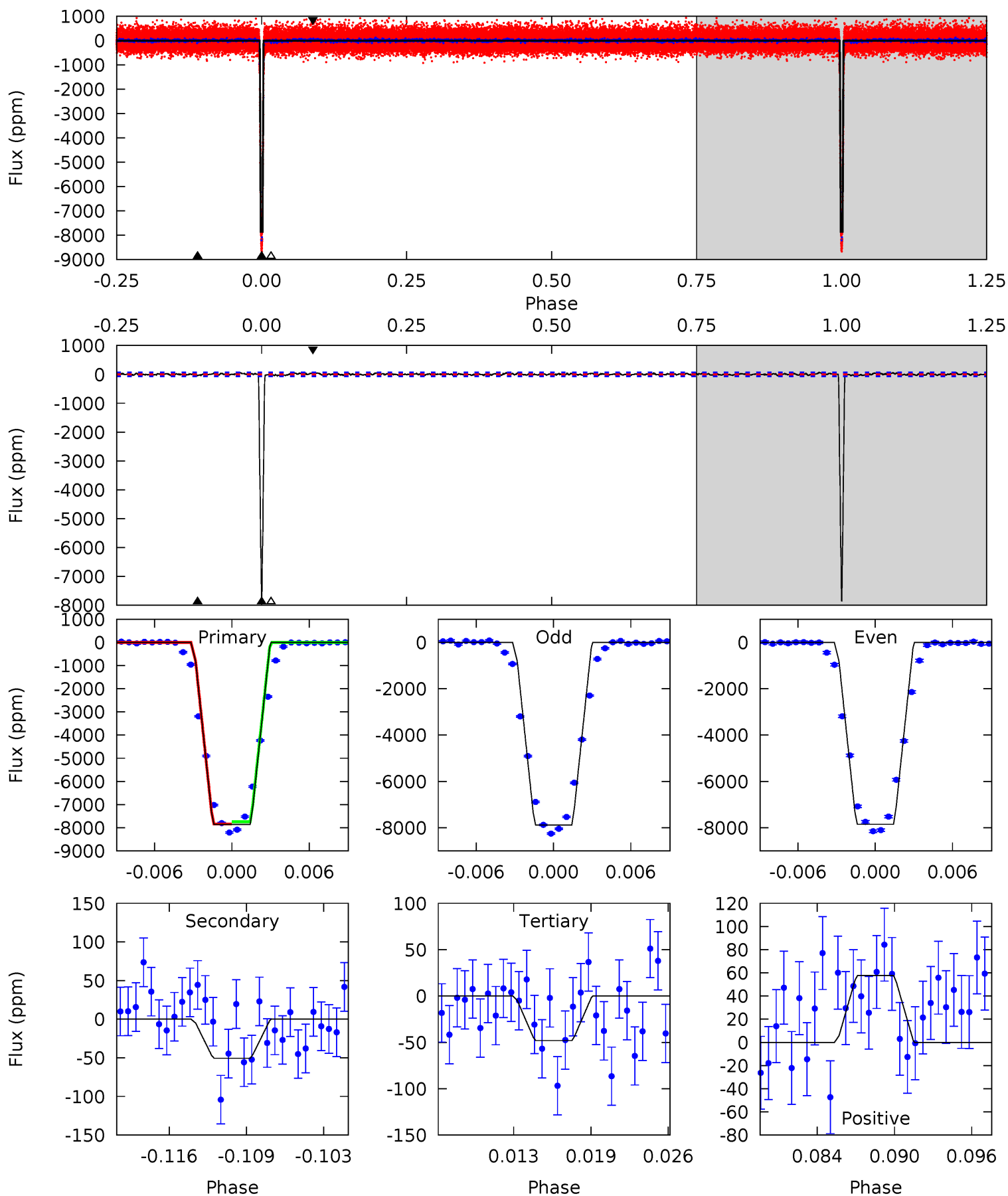
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
910.5	4.01	4.00	6.51	5.04	2.59	1.82	906.5	904.0	0.01	-2.49	0.58	0.99	0.01	0.38



Alt Model-Shift Uniqueness Test

008891278-01, $P = 12.718663$ Days, $E = 134.841920$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
598.8	3.85	3.66	4.39	5.11	2.73	1.40	595.2	594.4	0.19	-0.55	1.13	1.00	0.01	3.70



Stellar Parameters For KIC 008891278

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6120^{+213}_{-213}	$4.036^{+0.378}_{-0.162}$	$-0.360^{+0.300}_{-0.300}$	$1.596^{+0.407}_{-0.610}$	$1.009^{+0.162}_{-0.147}$	$0.350^{+0.977}_{-0.152}$
	+3%/-3%	+9%/-4%	+83%/-83%	+26%/-38%	+16%/-15%	+279%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008891278-01 / KOI 0698.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-37 ± 9	$23.25^{+4.84}_{-4.73}$	1432^{+117}_{-150}	1935^{+195}_{-3665}	$0.419^{+0.266}_{-0.147}$
Alt.	-50 ± 13	$15.29^{+3.30}_{-3.58}$	1440^{+109}_{-166}	2458^{+159}_{-152}	$1.332^{+1.008}_{-0.520}$

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

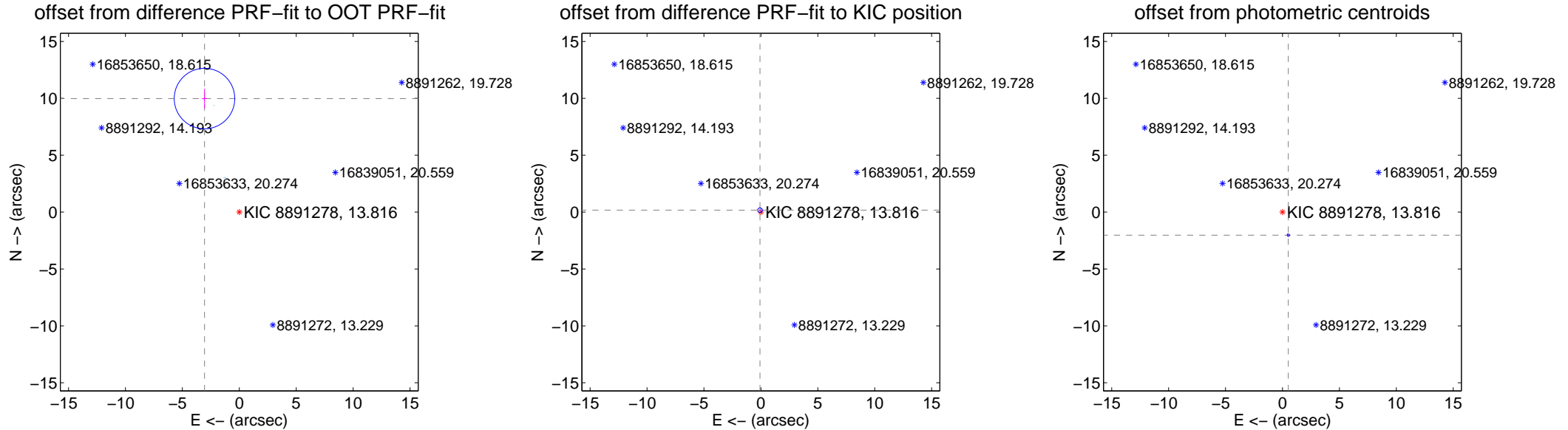
DV Centroid Data

Supplemental centroid analysis for 008891278-01. Kepler magnitude: 13.82. Transit SNR 490.65

There are 16 quarters with good PRF difference image offsets

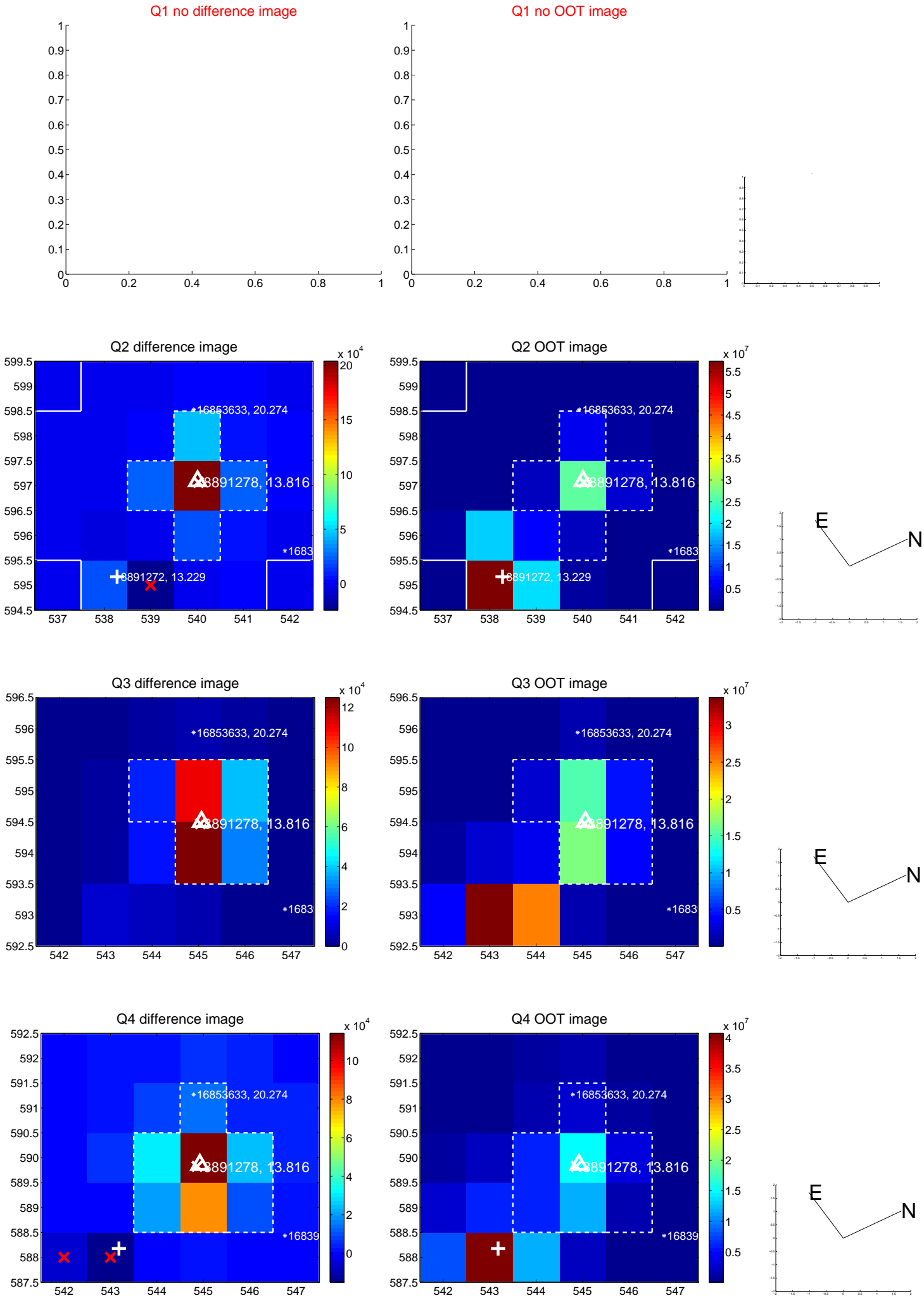
The OOT PRF centroid is offset from the target star catalog position by about 3.00 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.438 ± 0.886	11.78	3.057 ± 0.229	9.980 ± 0.861
PRF-fit source offset from KIC position	0.187 ± 0.068	2.74	0.076 ± 0.067	0.171 ± 0.069
photometric centroid source offset	2.09 ± 0.03	60.12	-0.51 ± 0.02	-2.03 ± 0.04

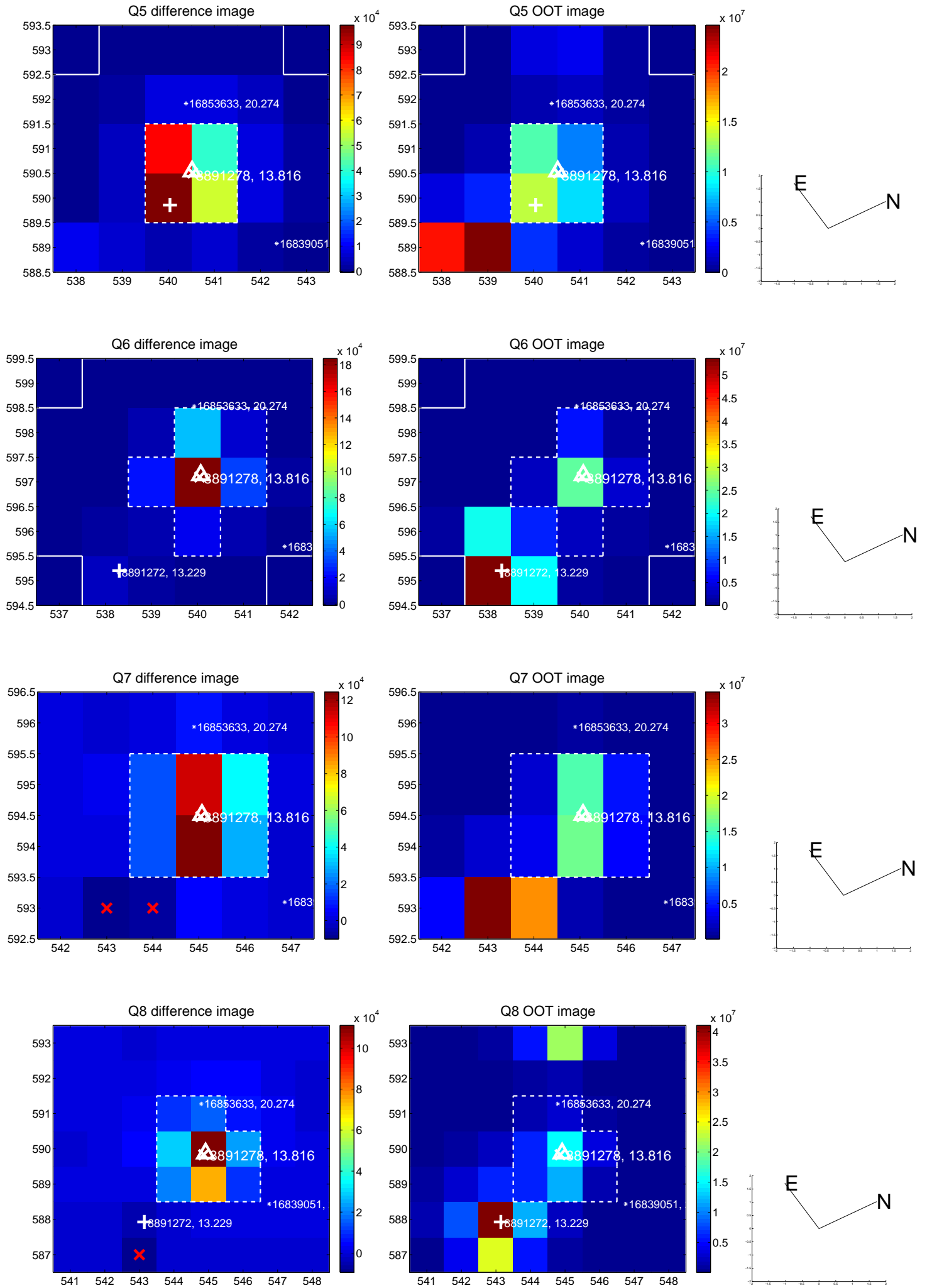


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

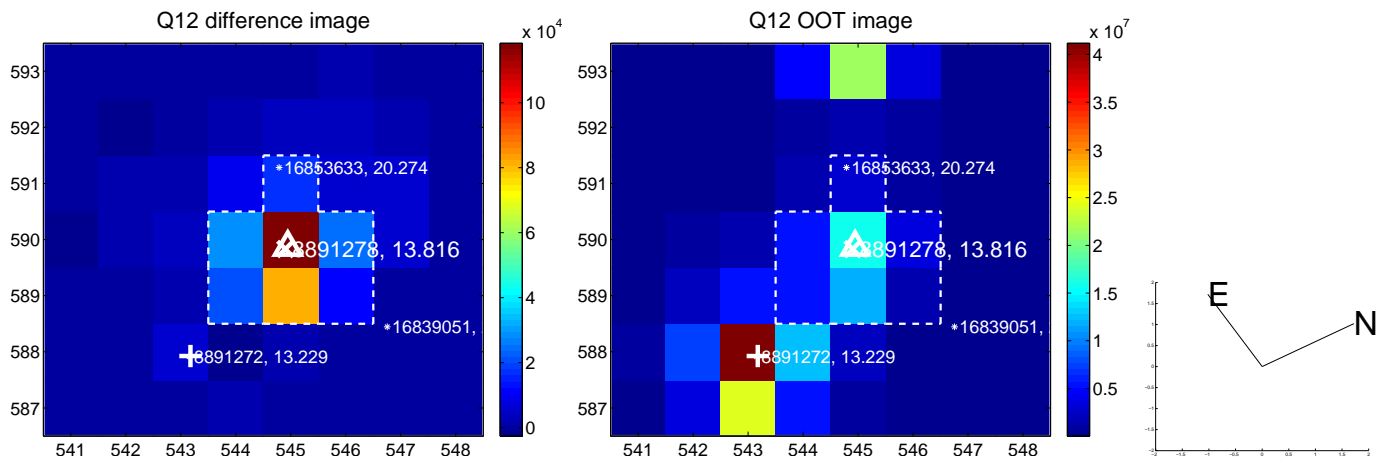
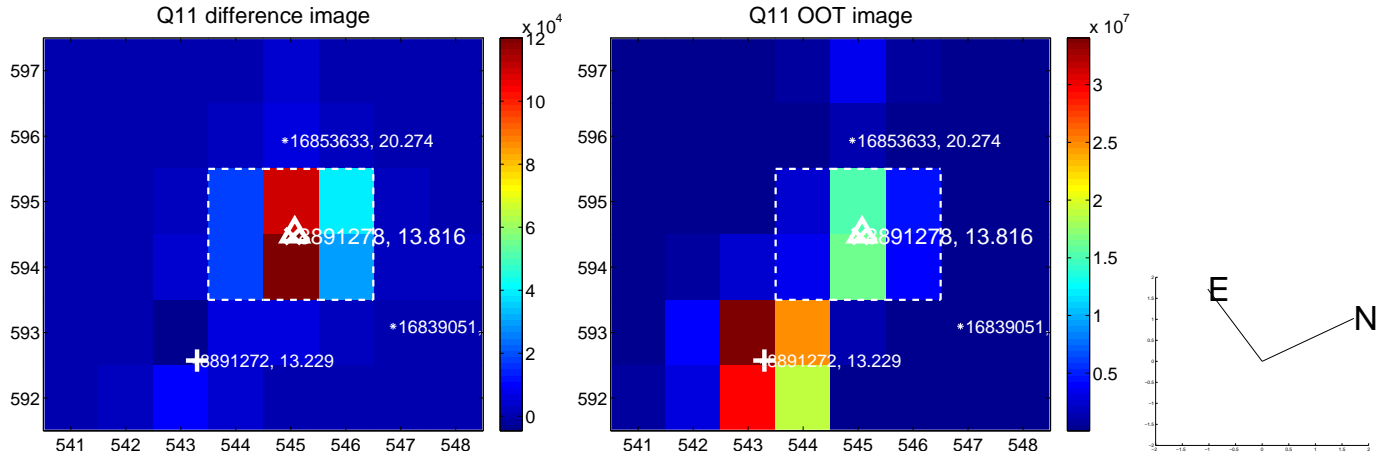
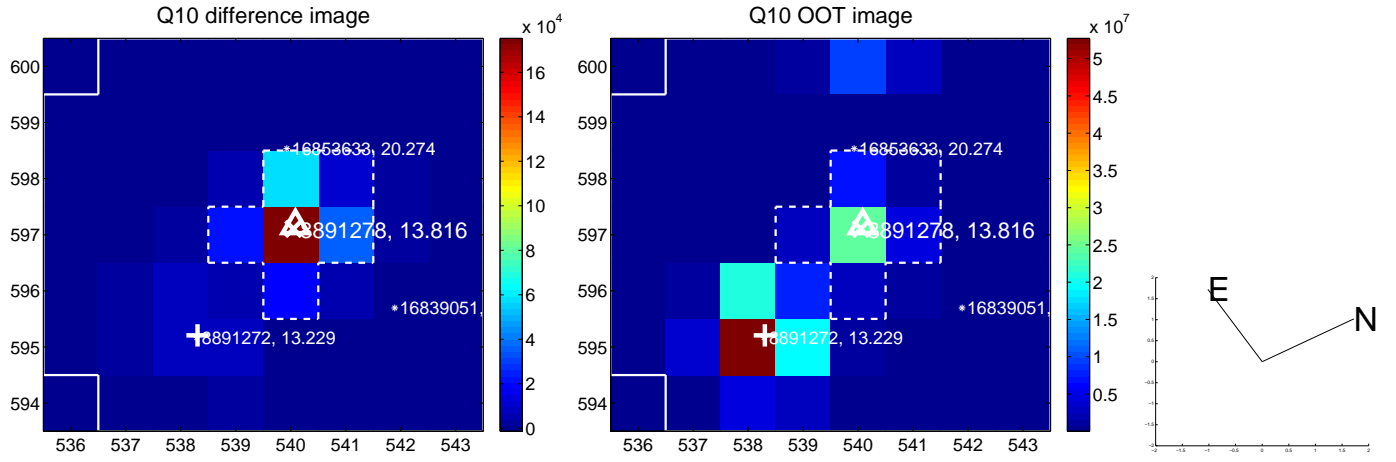
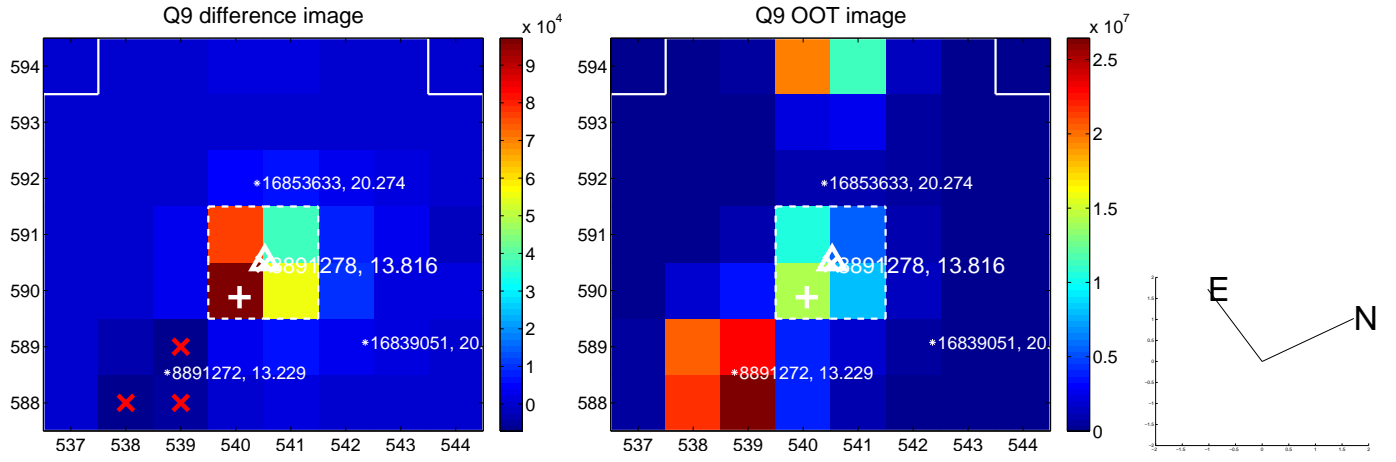
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



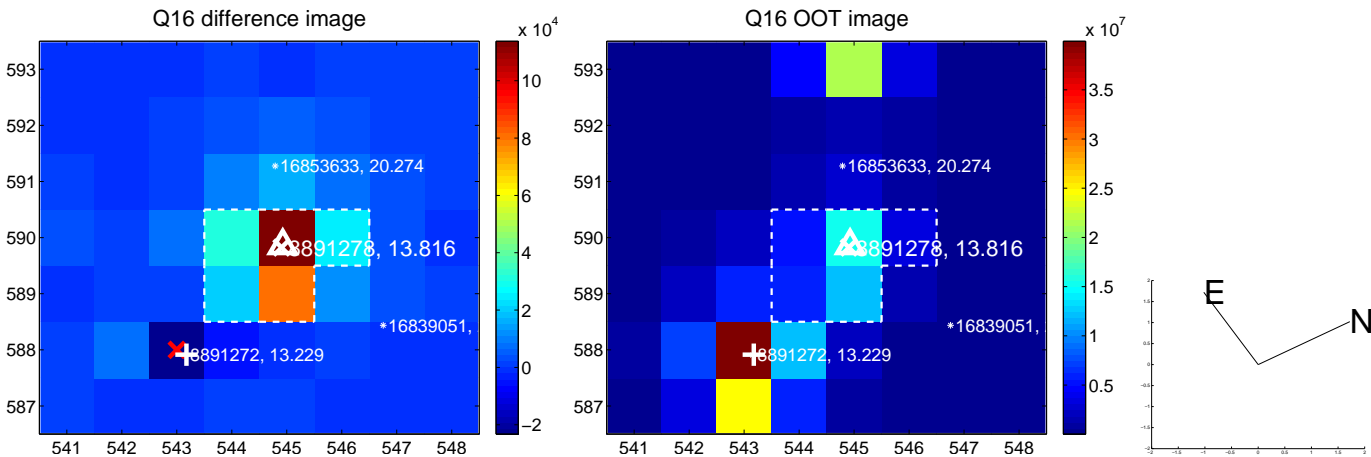
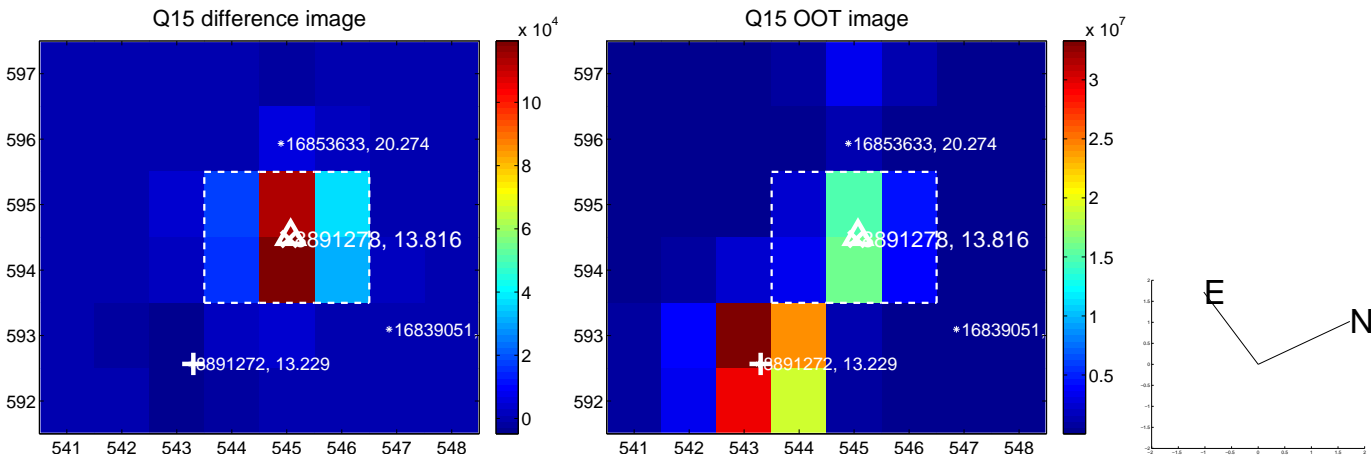
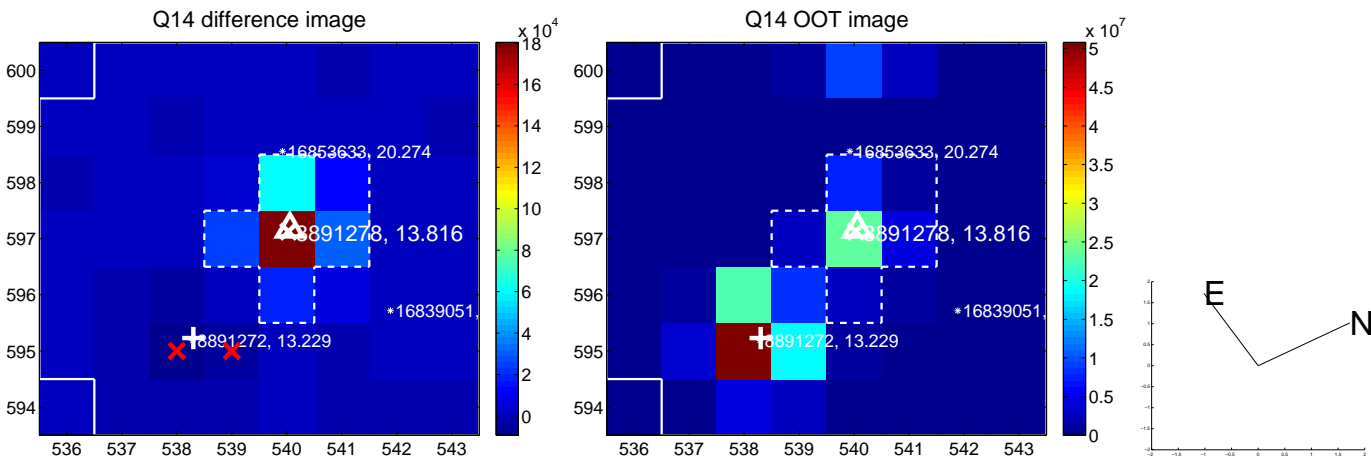
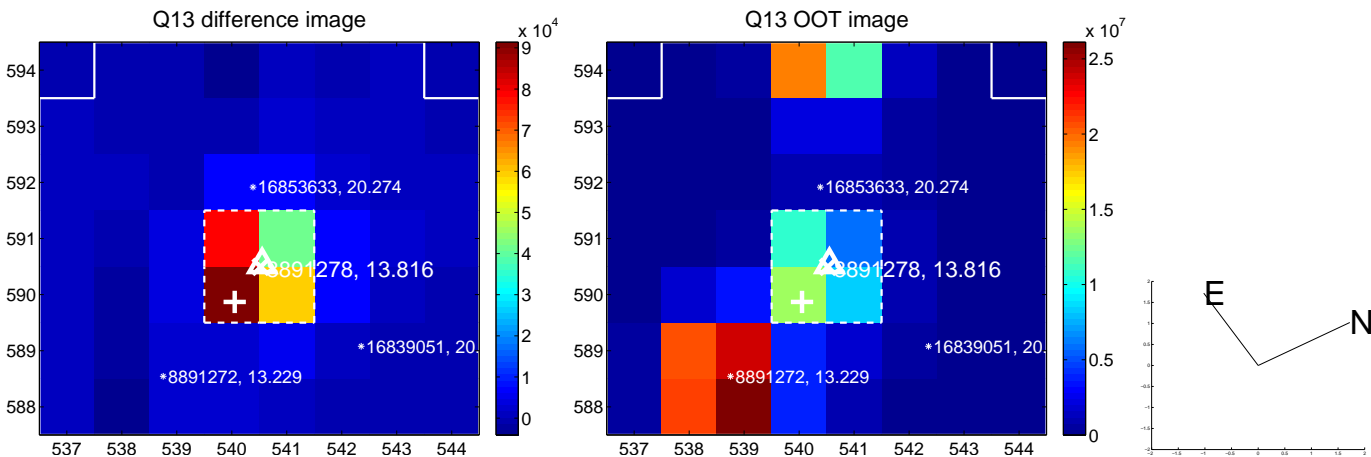
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



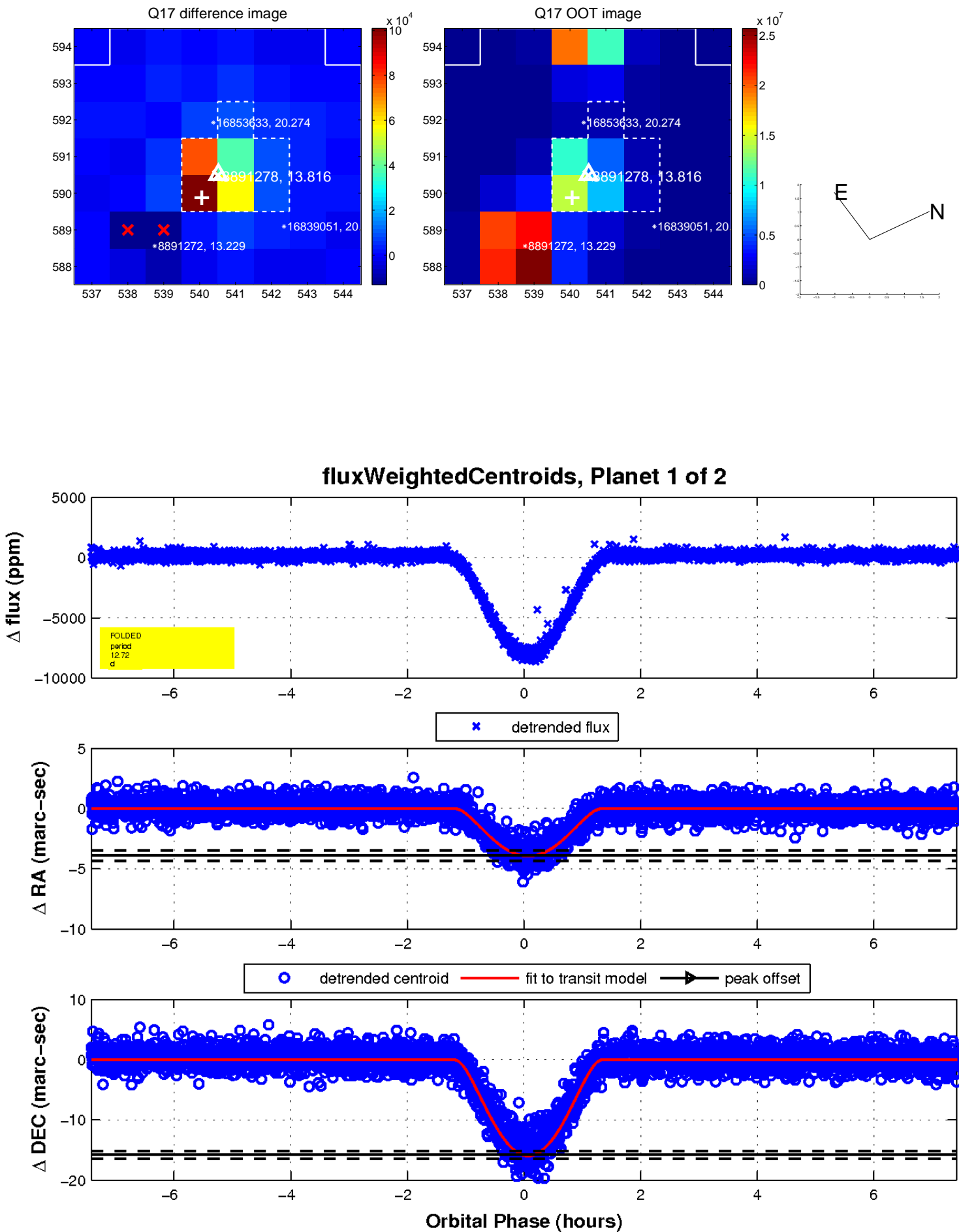
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



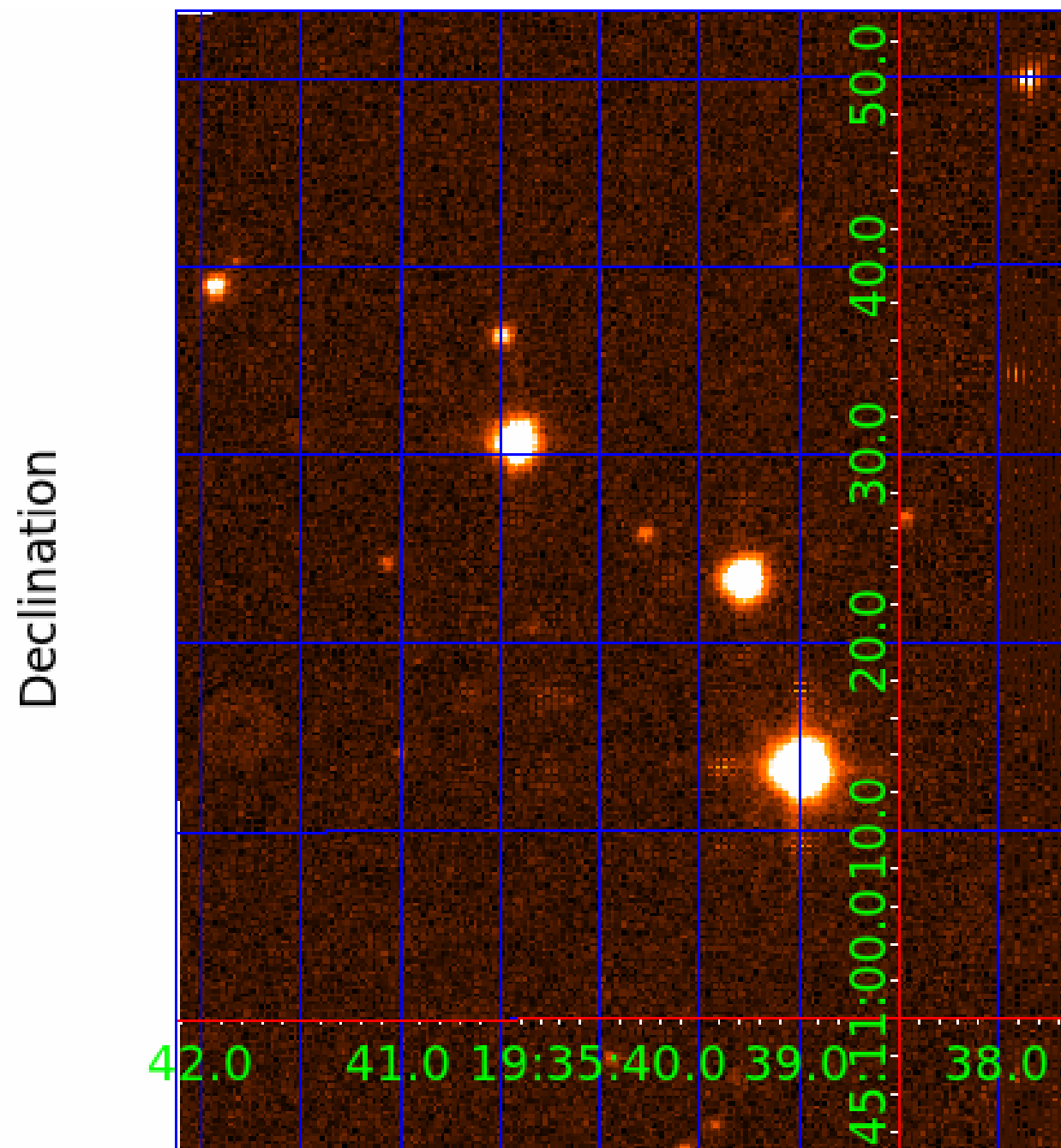
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008891278

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})
008891278-01	OBS	0698.01	12.718712	134.839187	8325.0	2.474	494.7	490.7	1.60	6120	24.12	279.68
008891278-02	OBS	No	12.718278	135.061750	192.7	31.988	9.1	13.1	1.60	6120	4.43	279.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008891278-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_KIC_POS
008891278-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—RESIDUAL_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.

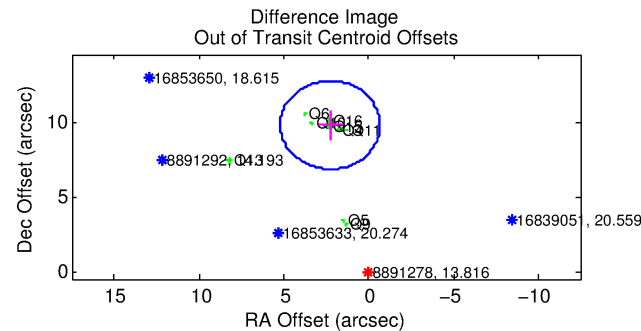
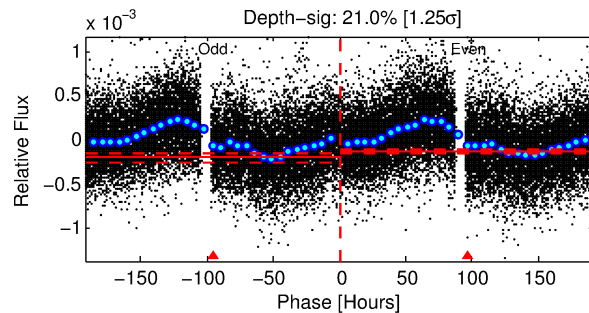
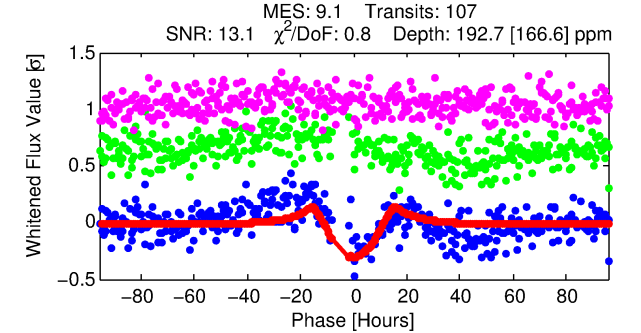
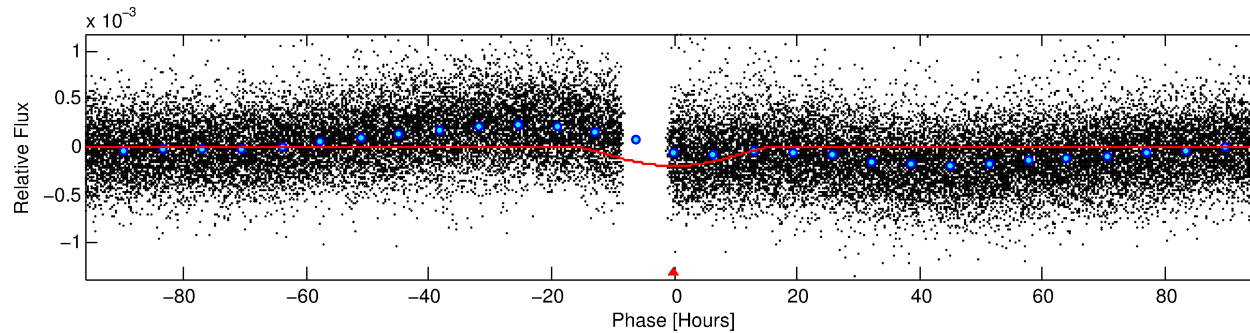
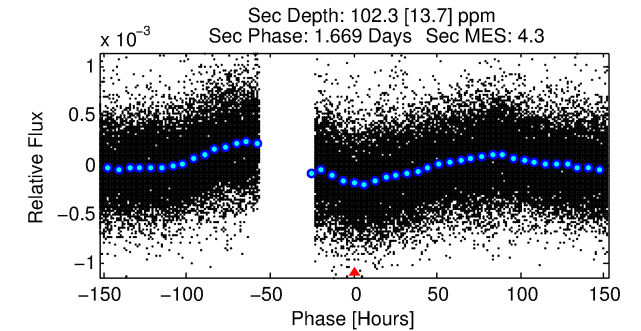
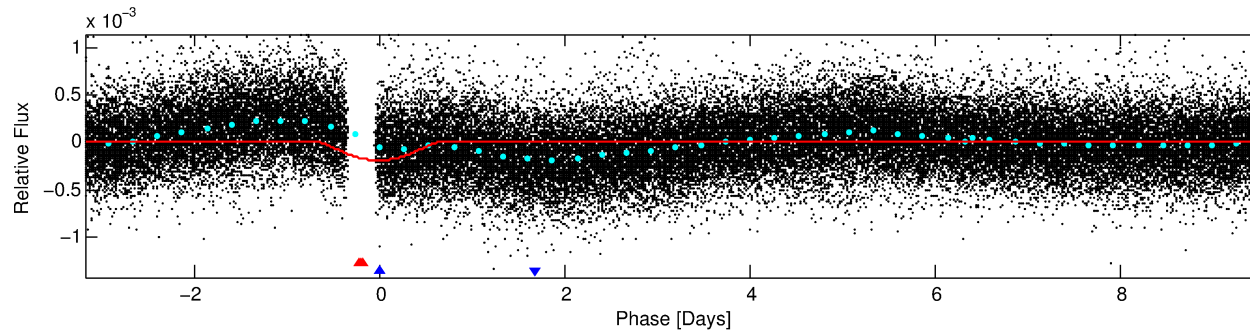
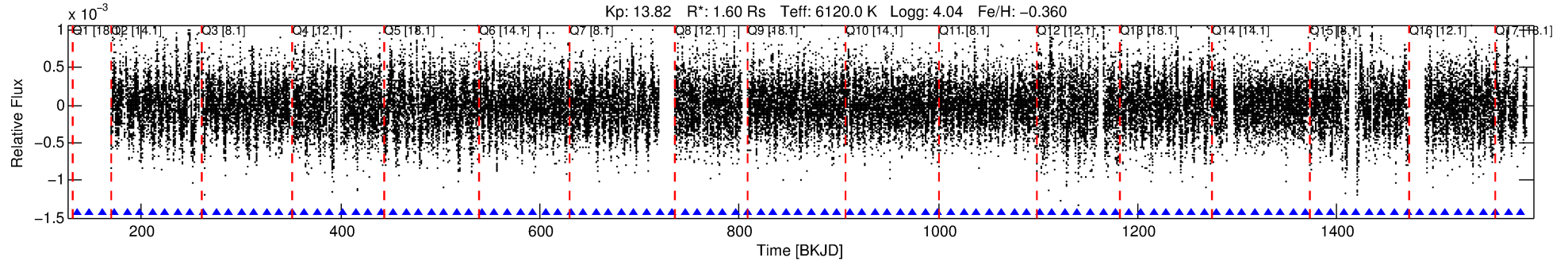
Ephemeris Match Information For 008891278-02

No Significant Match Found

DV One-Page Summary

KIC: 8891278 Candidate: 2 of 2 Period: 12.718 d
KOI: K00698 Corr: No Ephemeris Match

Kp: 13.82 R*: 1.60 Rs Teff: 6120.0 K Logg: 4.04 Fe/H: -0.360



DV Fit Results:

Period = 12.71828 [0.00054] d
Epoch = 135.0617 [0.0353] BKJD
Rp/R* = 0.0254 [0.0295]
a/R* = 1.22 [0.09]
b = 1.00 [0.06]
Seff = 279.69 [181.48]
Teq = 1043 [169] K
Rp = 4.43 [5.41] Re
a = 0.1070 [0.0413] AU
Ag = 32.87 [79.19] [0.40σ]
Teff = 3860 [2247] K [1.25σ]

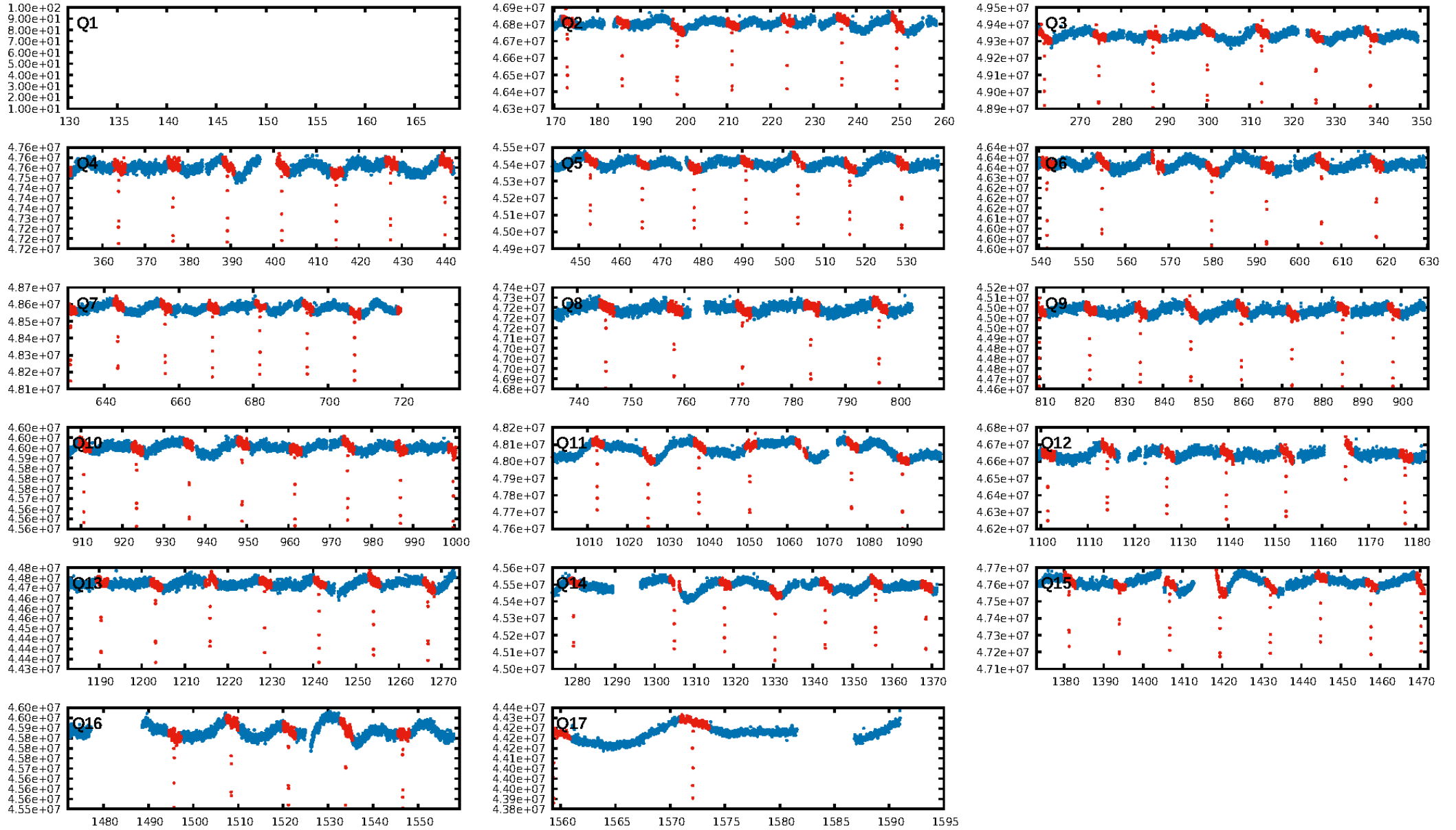
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 89.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.82e-21
RollingBand-fgt: 1.00 [105/105]
GhostDiagnostic-chr: 3.708
Centroid-sig: 6.3%
Centroid-so: 2.729 arcsec [2.61σ]
OotOffset-rm: 10.034 arcsec [10.22σ]
KicOffset-rm: 0.155 arcsec [0.35σ]
OotOffset-st: 2/2/2/3 [9]
KicOffset-st: 2/4/2/3 [11]
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DiffImageOverlap-fno: 0.00 [0/16]

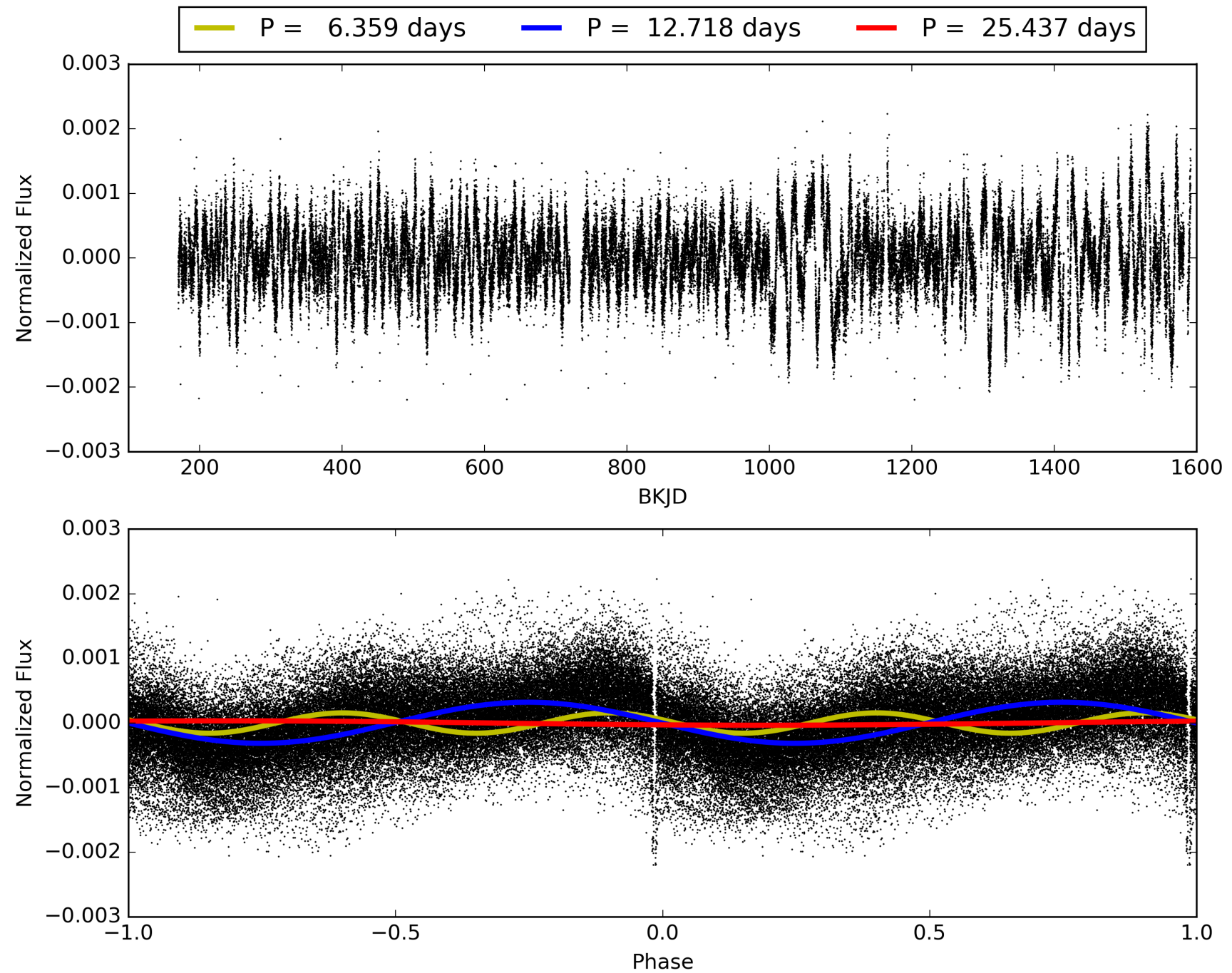
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008891278-02, PDC Light Curves

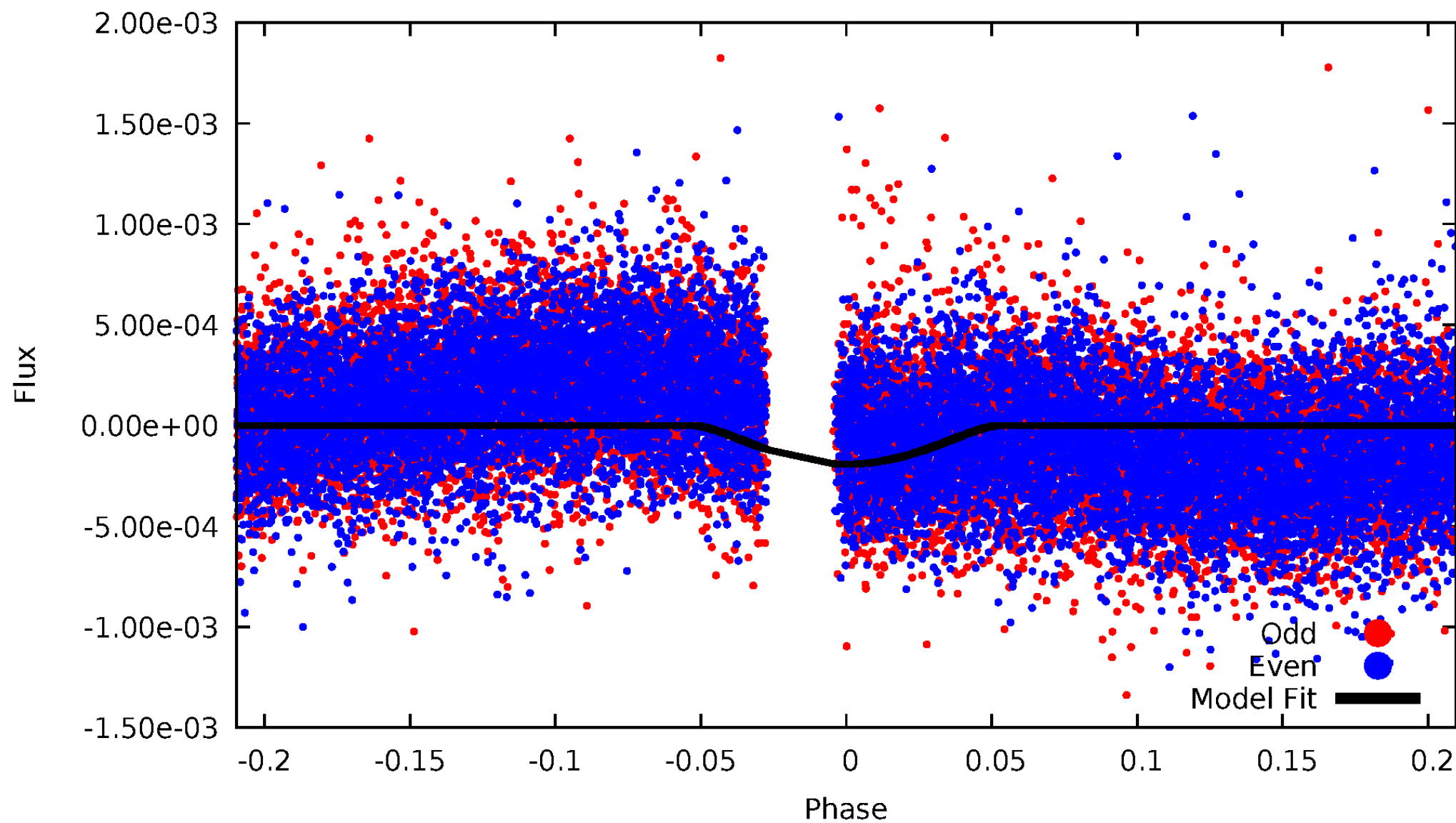


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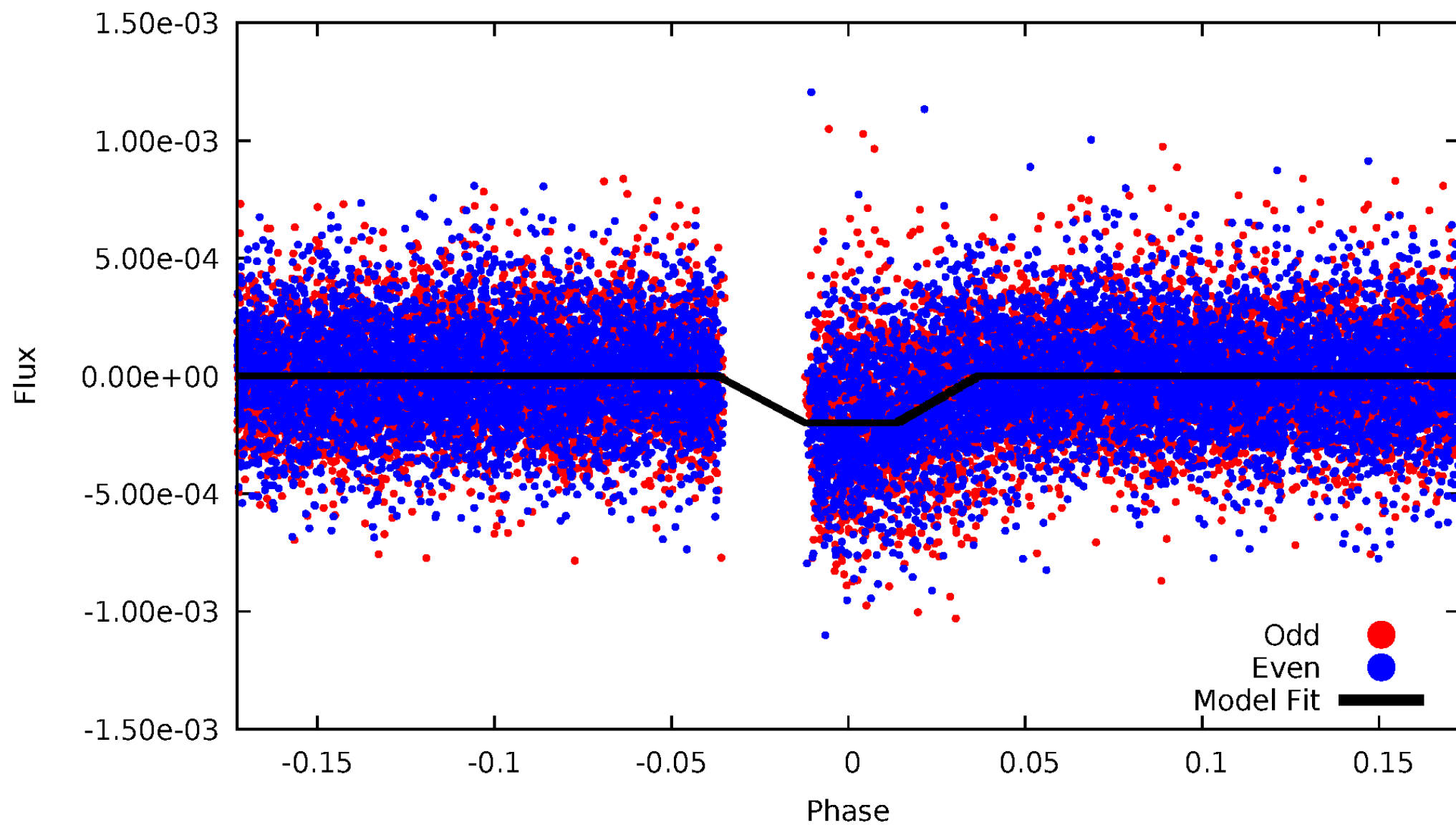
DV Odd/Even

TCE 008891278-02



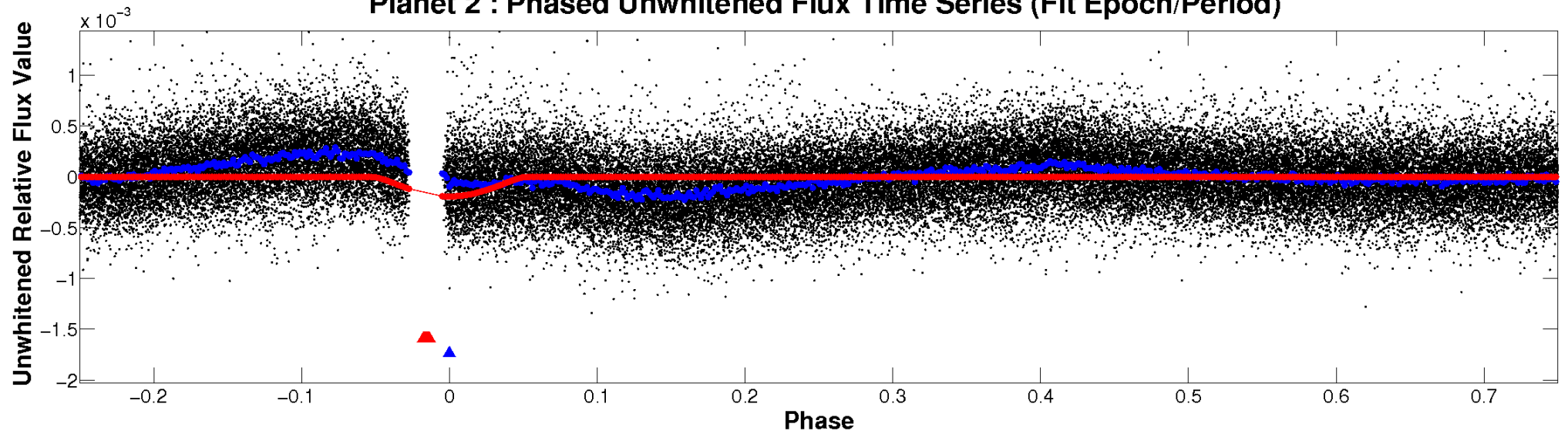
ALT Odd/Even

TCE 008891278-02

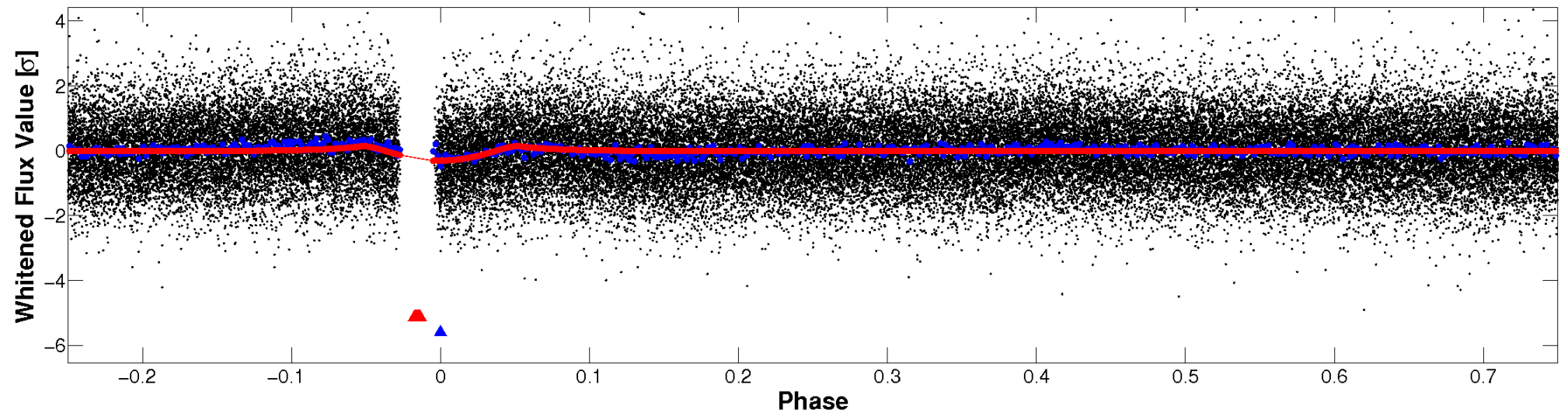


Non-Whitened Vs. Whitened Light Curve

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

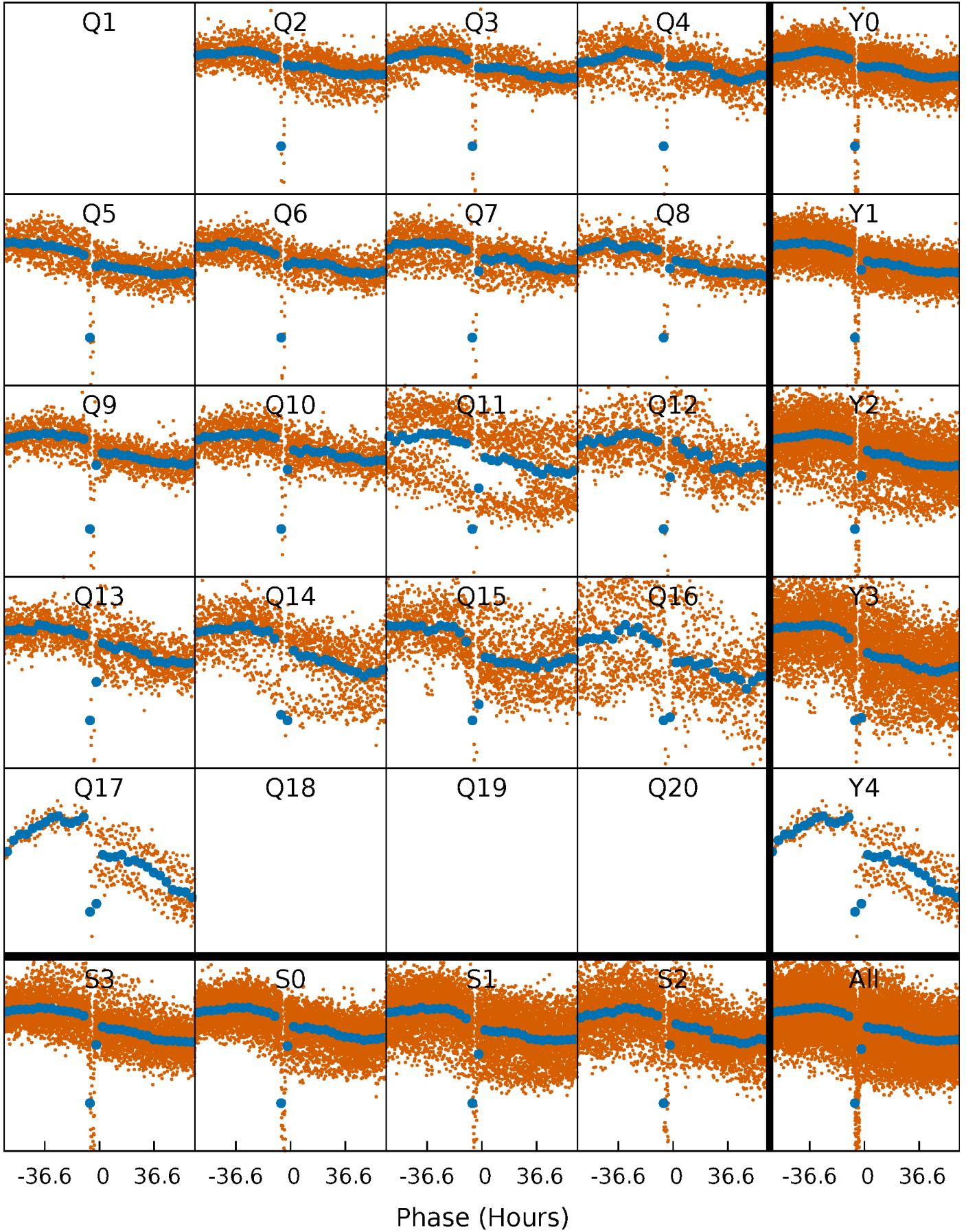


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



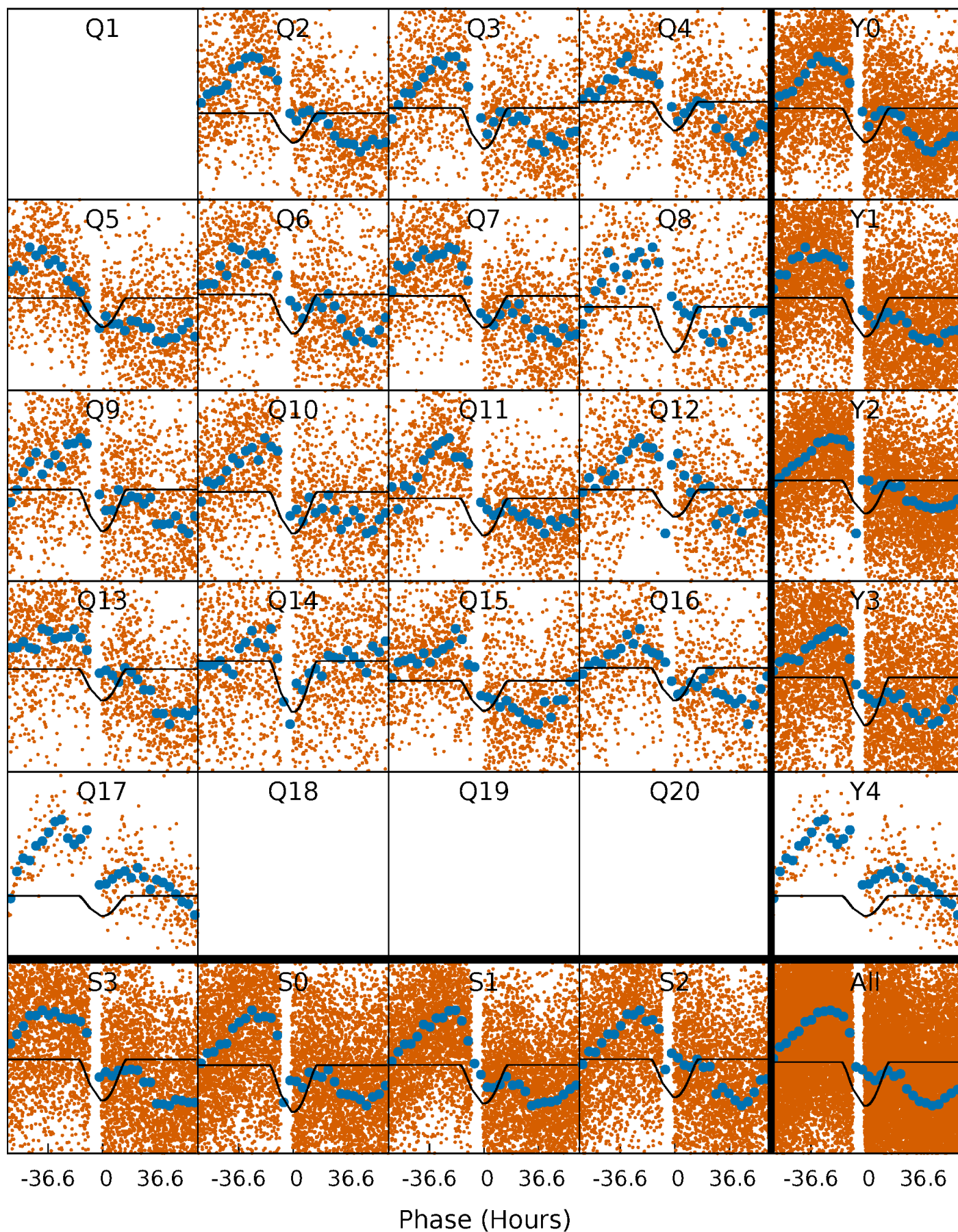
PDC Quarter-Phased Transit Curves

TCE 008891278-02 P= 12.718278 Days $T_0=135.061750$ (BKJD)



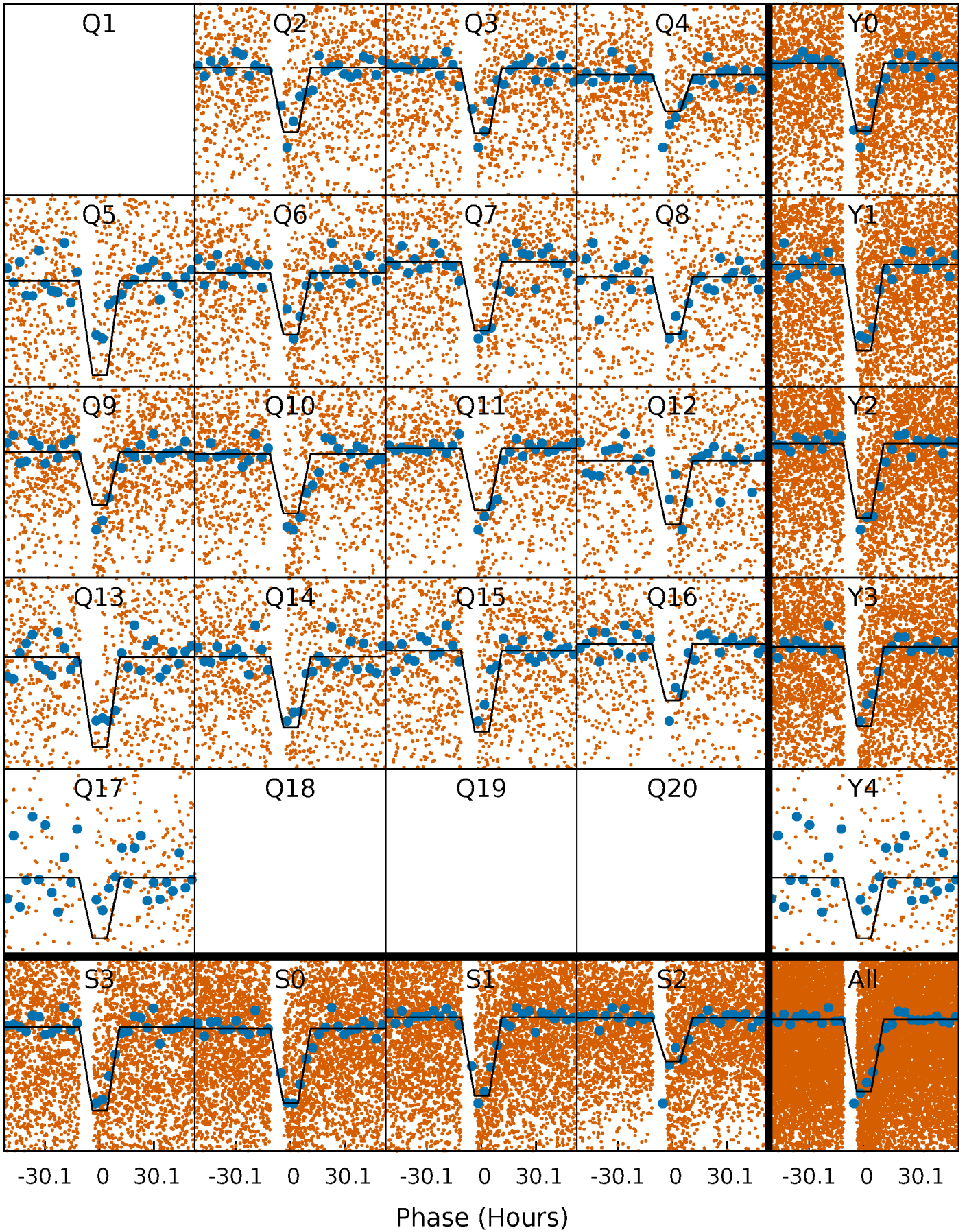
DV Quarter-Phased Transit Curves

TCE 008891278-02 P= 12.718278 Days $T_0=135.061750$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

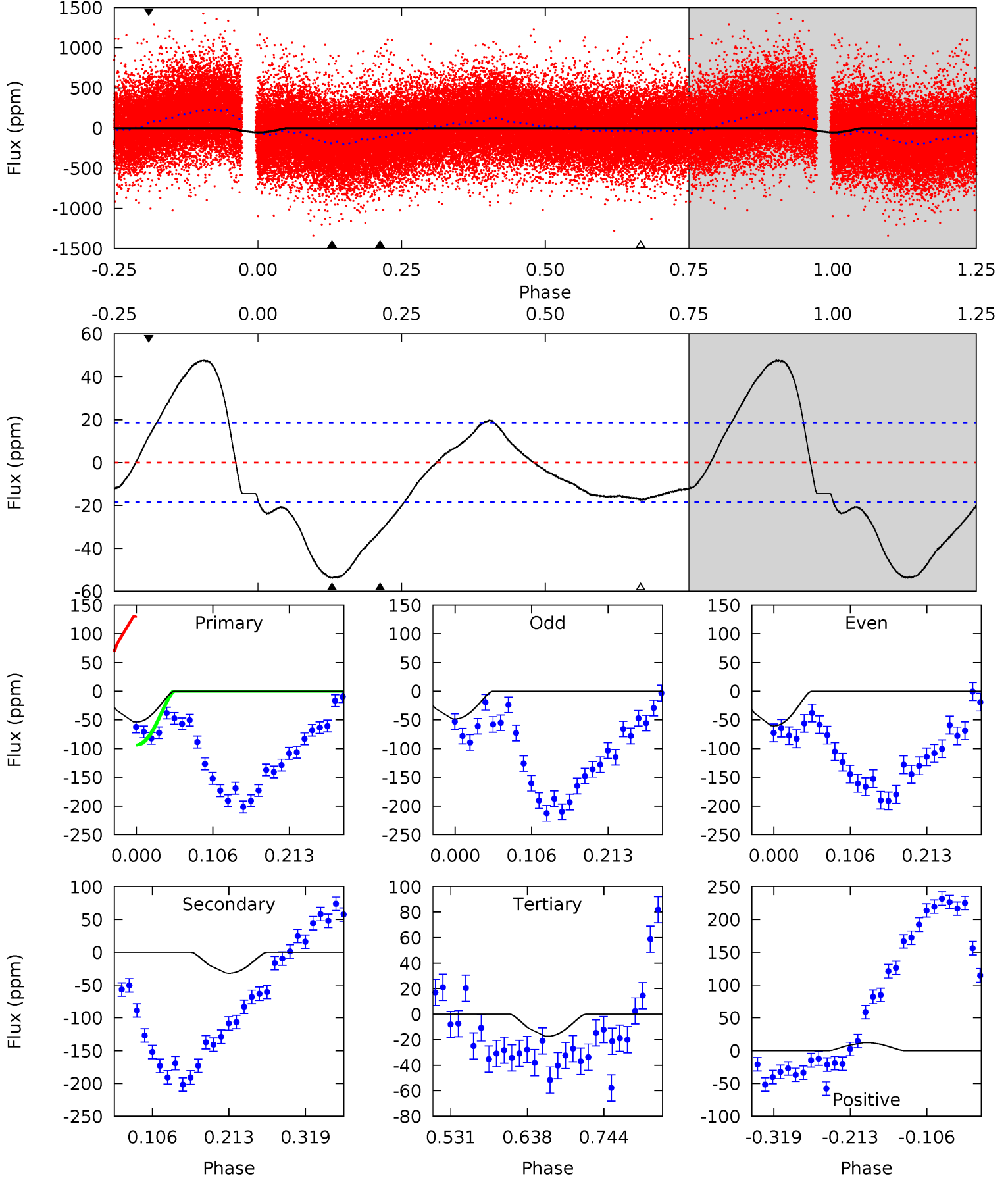
TCE 008891278-02 P= 12.718299 Days $T_0=135.161264$ (BKJD)



DV Model-Shift Uniqueness Test

008891278-02, P = 12.718278 Days, E = 135.061750 Days

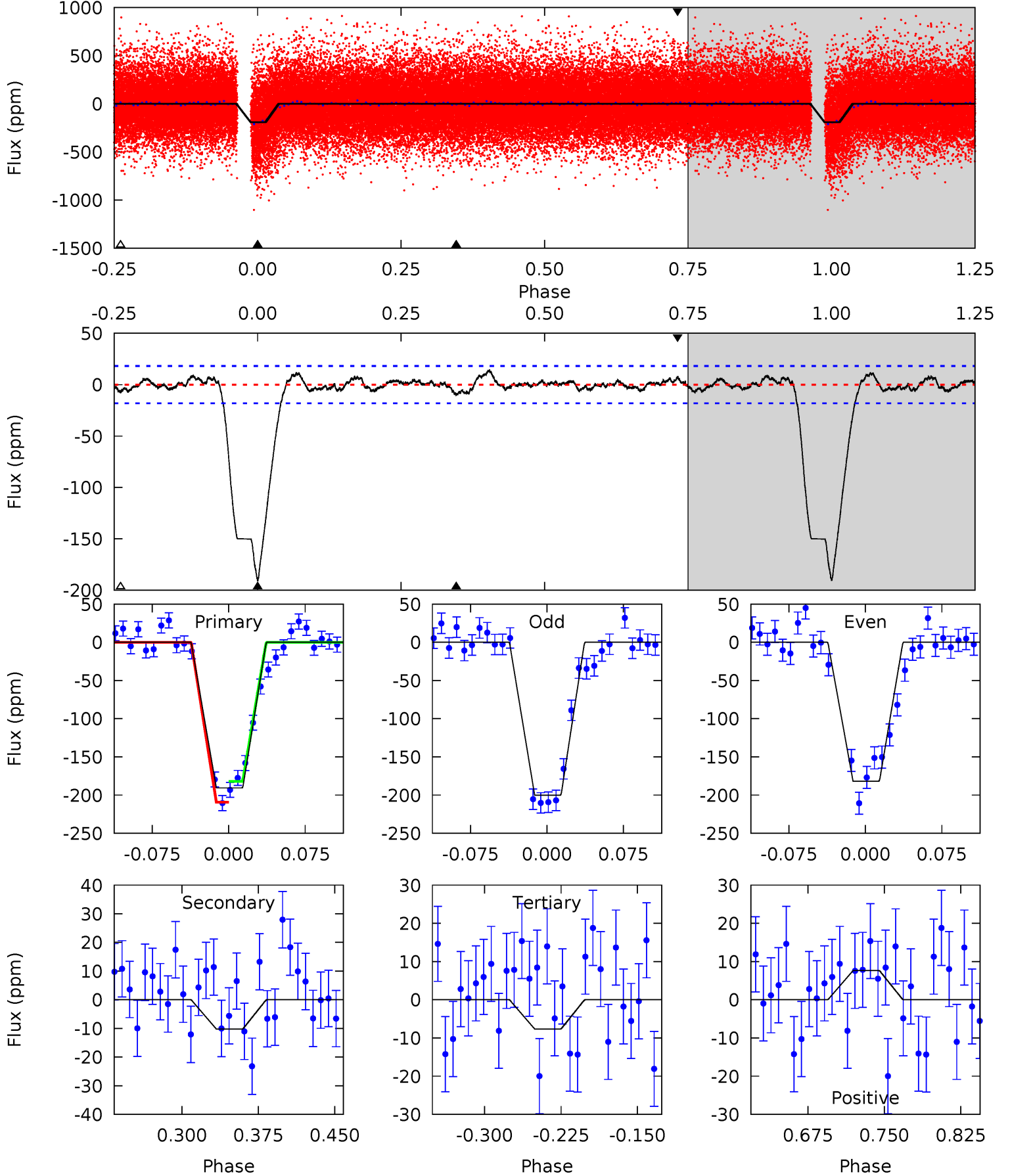
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	7.87	4.24	2.98	4.55	1.62	4.84	8.96	10.2	3.63	4.89	1.51	0.42	0.47	4.54



Alt Model-Shift Uniqueness Test

008891278-02, P = 12.718299 Days, E = 135.161264 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.7	2.61	1.95	1.95	4.62	1.78	0.87	46.8	46.8	0.66	0.66	2.33	1.00	0.07	2.95



Stellar Parameters For KIC 008891278

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6120^{+213}_{-213}	$4.036^{+0.378}_{-0.162}$	$-0.360^{+0.300}_{-0.300}$	$1.596^{+0.407}_{-0.610}$	$1.009^{+0.162}_{-0.147}$	$0.350^{+0.977}_{-0.152}$
	+3%/-3%	+9%/-4%	+83%/-83%	+26%/-38%	+16%/-15%	+279%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008891278-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-32 ± 4	$5.34^{+4.91}_{-3.51}$	1434^{+124}_{-151}	3146^{+1296}_{-550}	$7.046^{+52.576}_{-5.137}$
Alt.	-10 ± 4	$4.56^{+4.60}_{-2.84}$	1442^{+114}_{-149}	2758^{+995}_{-560}	$2.944^{+18.087}_{-2.249}$

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

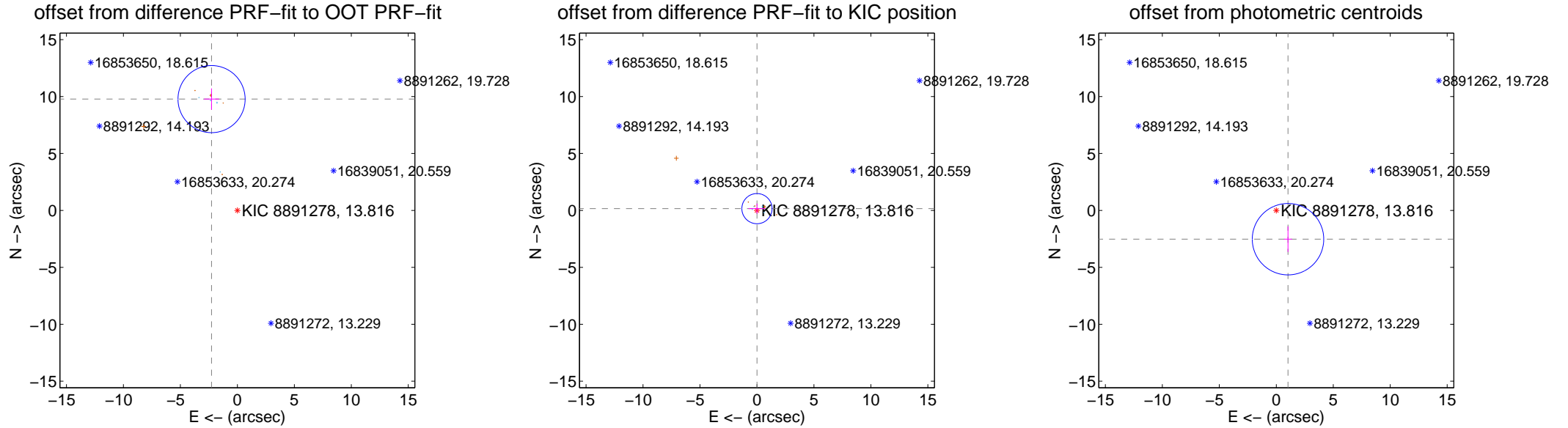
DV Centroid Data

Supplemental centroid analysis for 008891278-02. Kepler magnitude: 13.82. Transit SNR 13.13

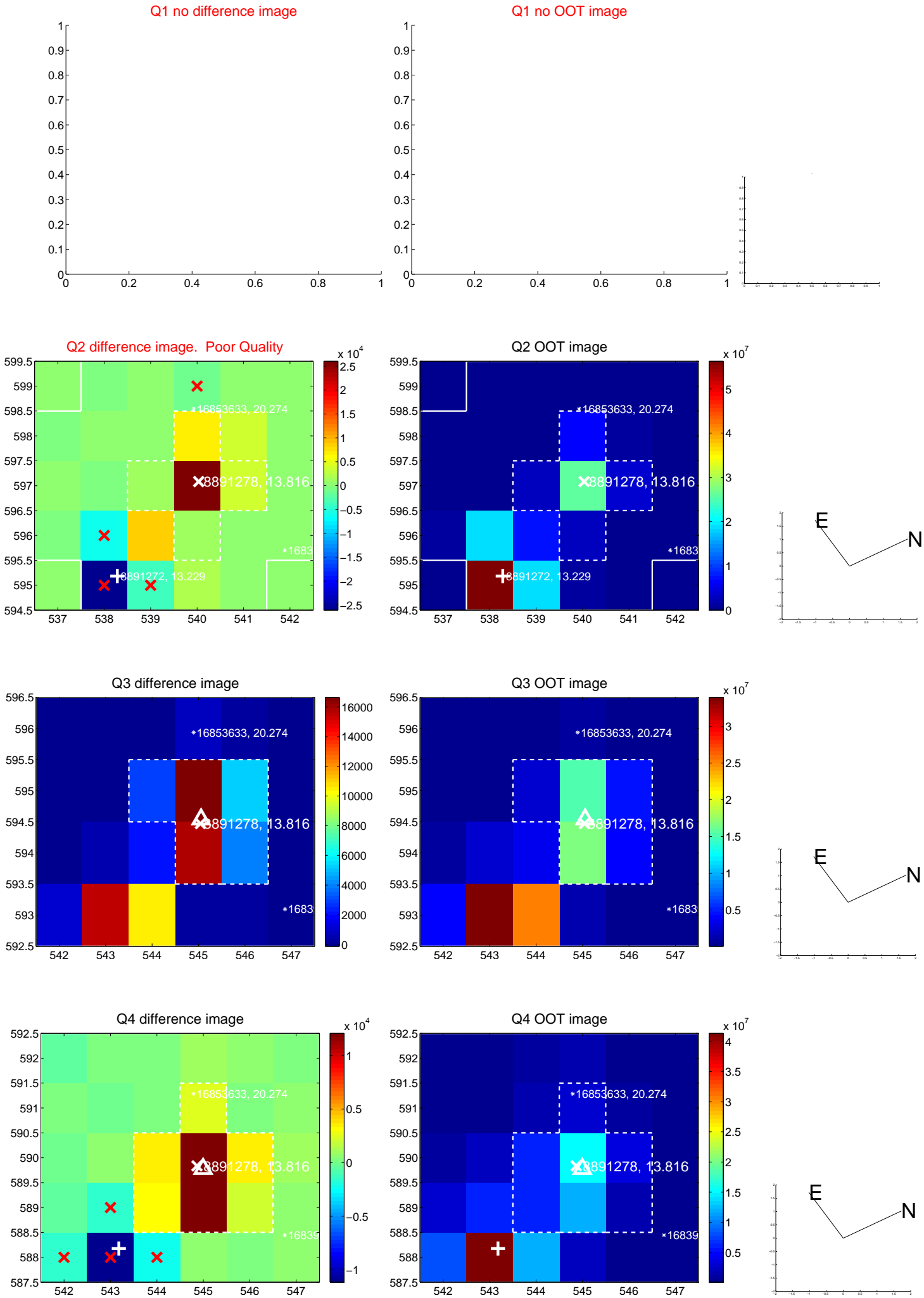
There are 6 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 10.24 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

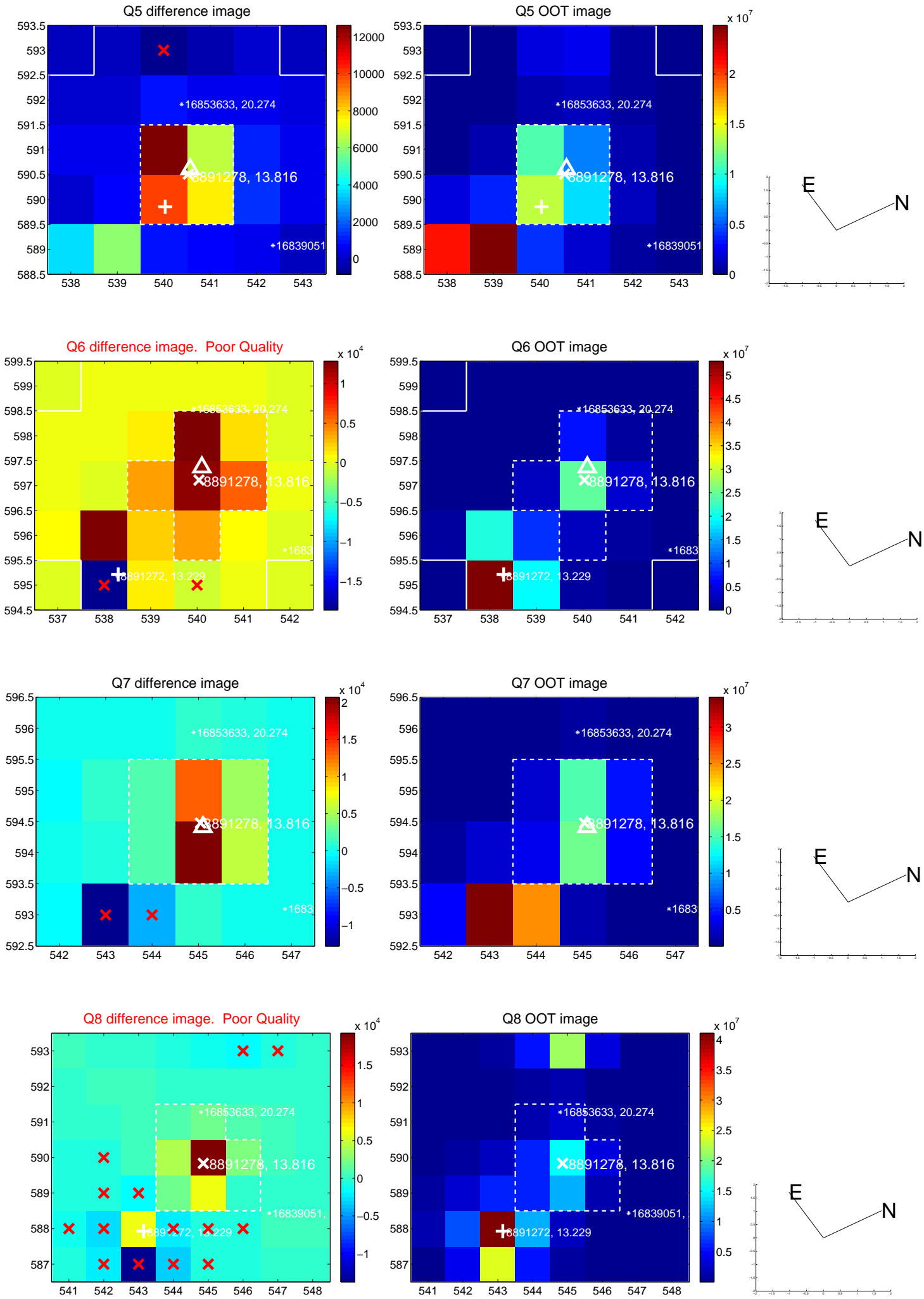
	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.034 \pm 0.982	10.22	2.265 \pm 0.660	9.775 \pm 0.940
PRF-fit source offset from KIC position	0.155 \pm 0.442	0.35	-0.000 \pm 0.735	0.155 \pm 0.443
photometric centroid source offset	2.73 \pm 1.05	2.61	-1.03 \pm 0.35	-2.53 \pm 1.12



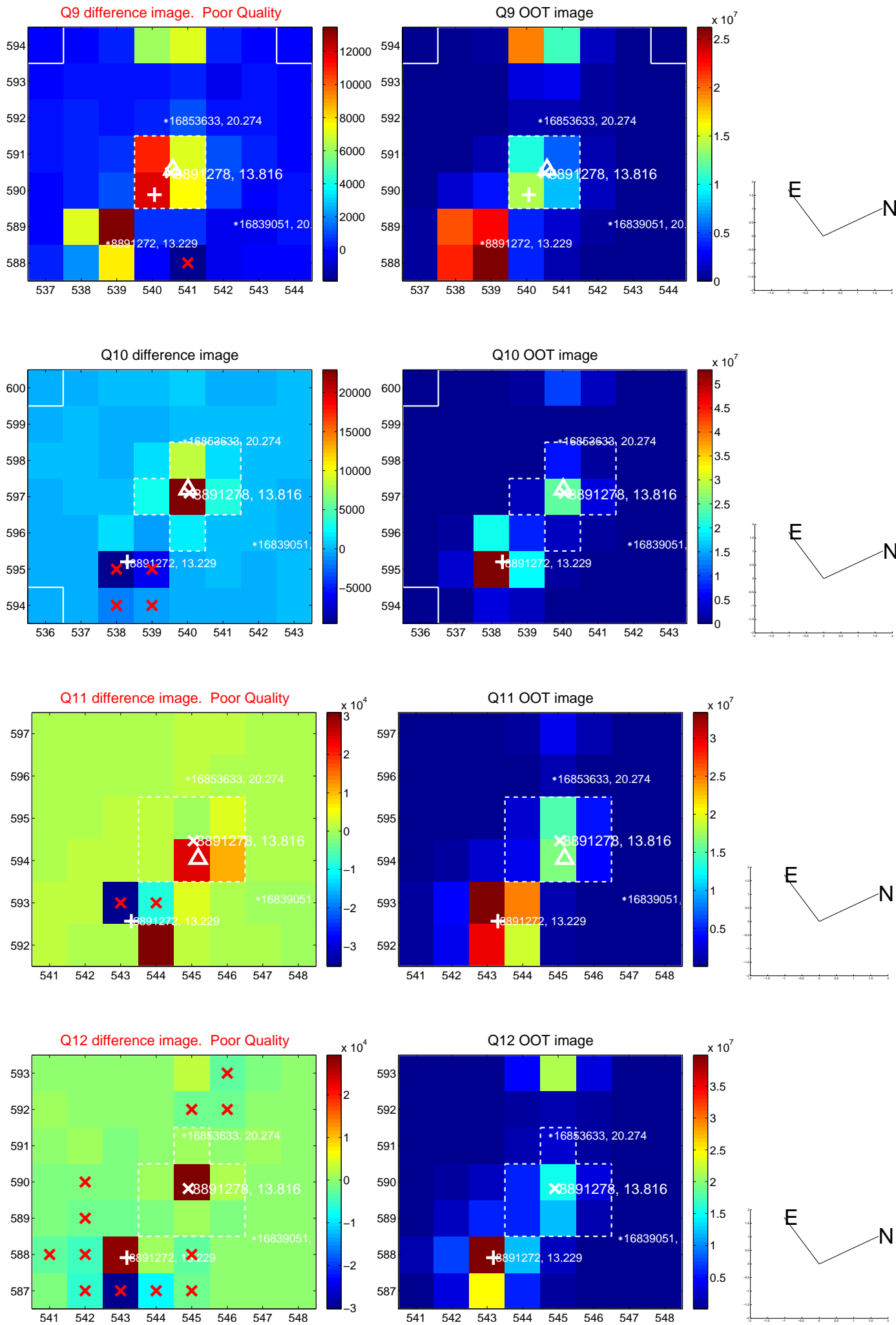
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



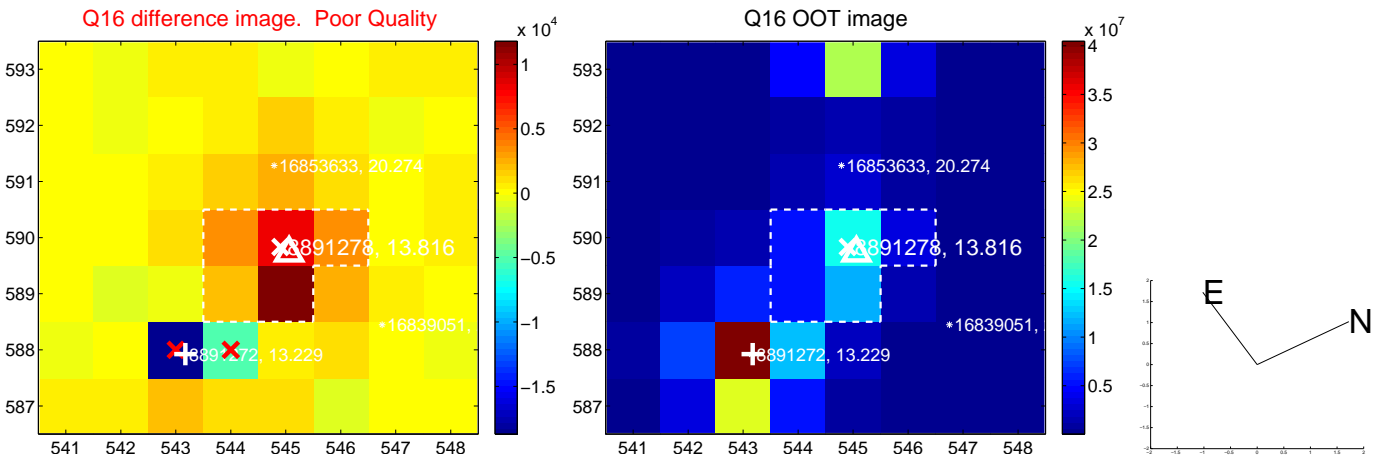
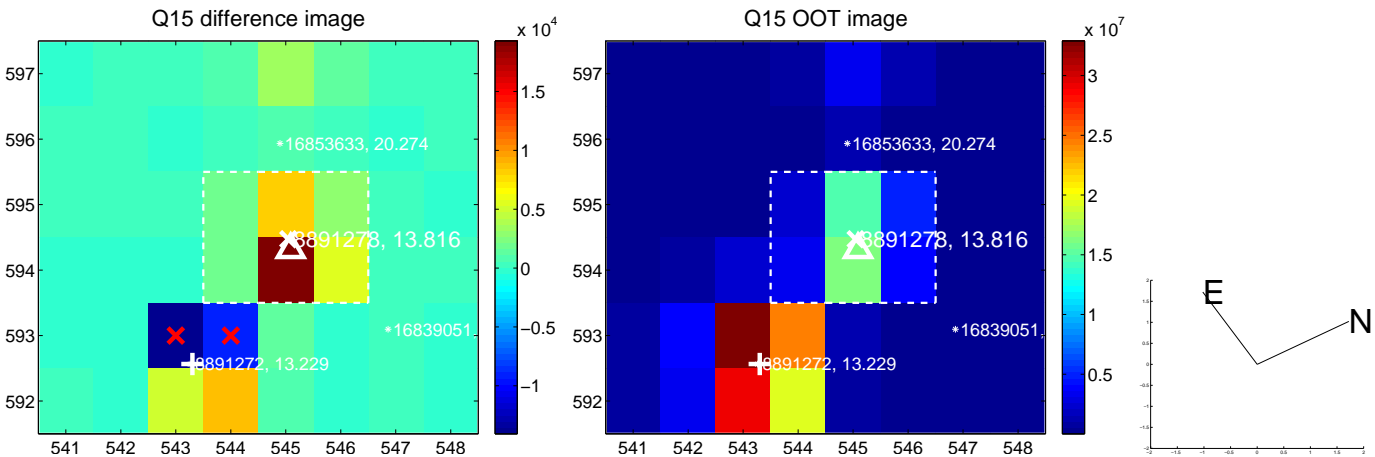
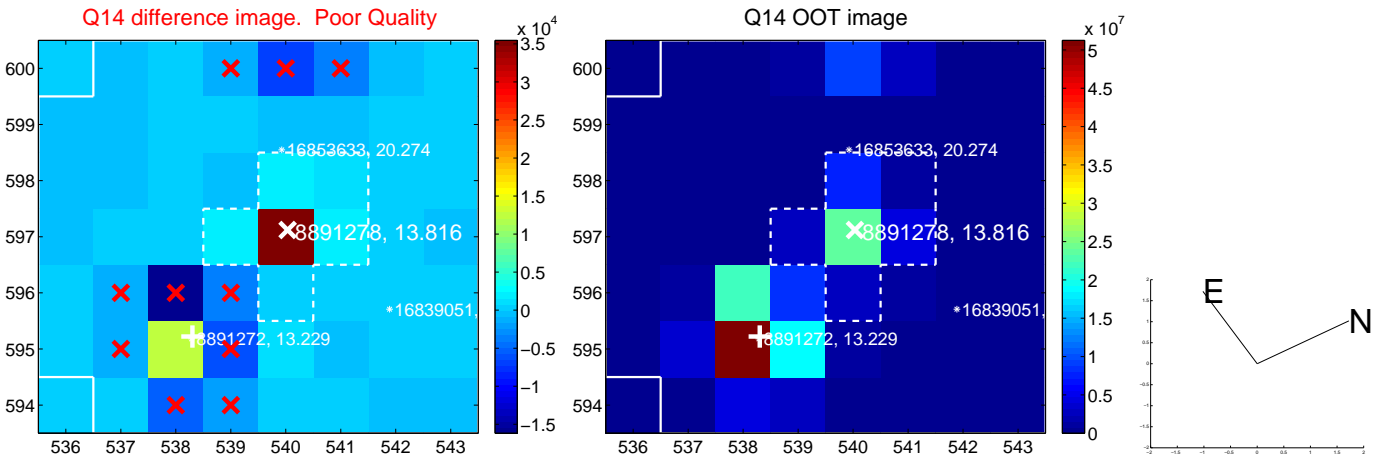
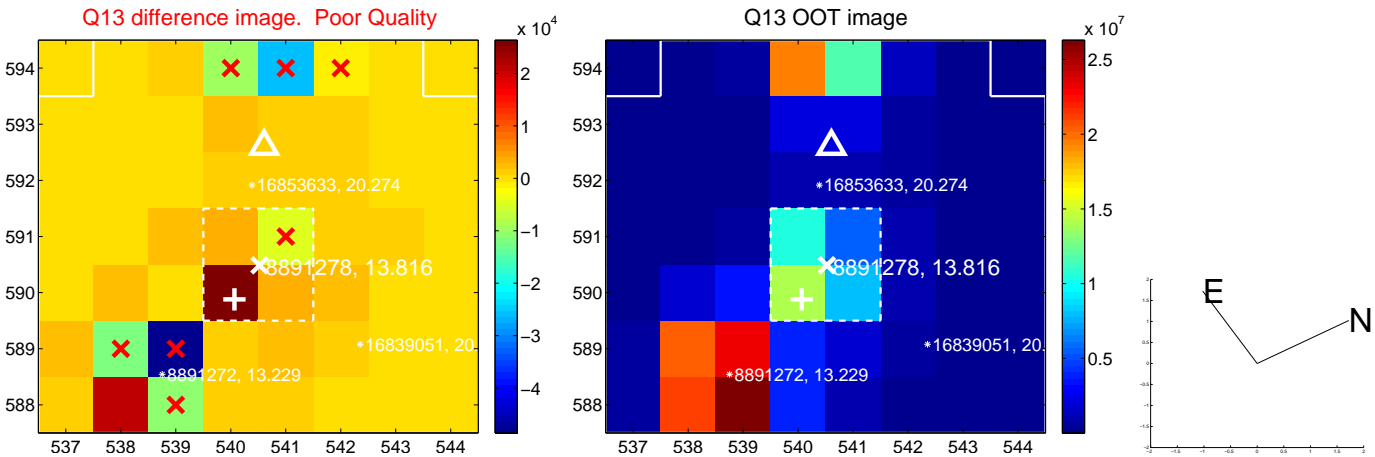
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



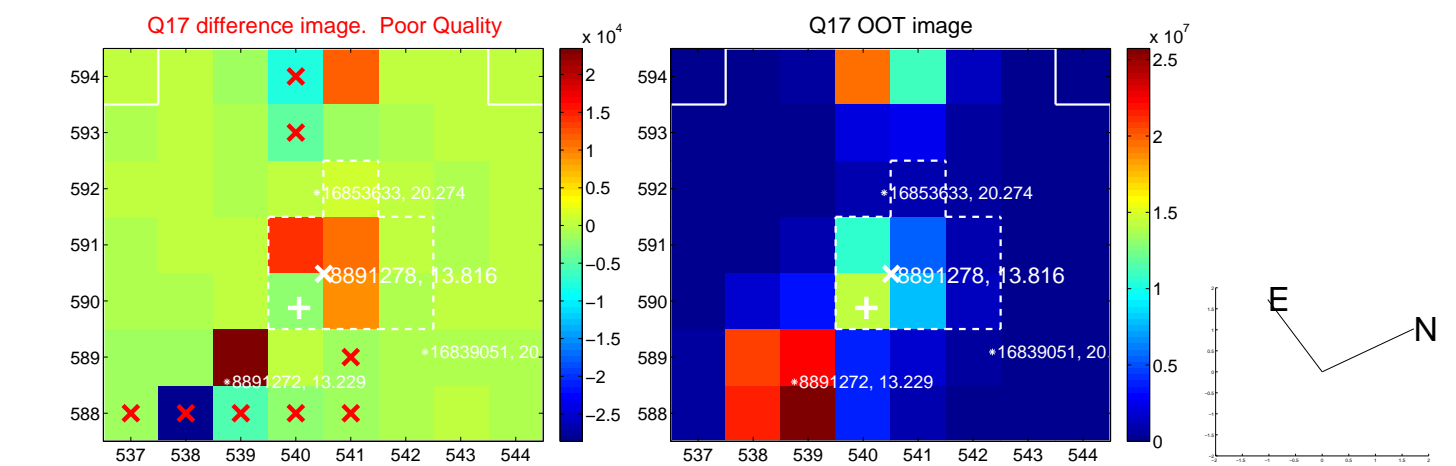
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



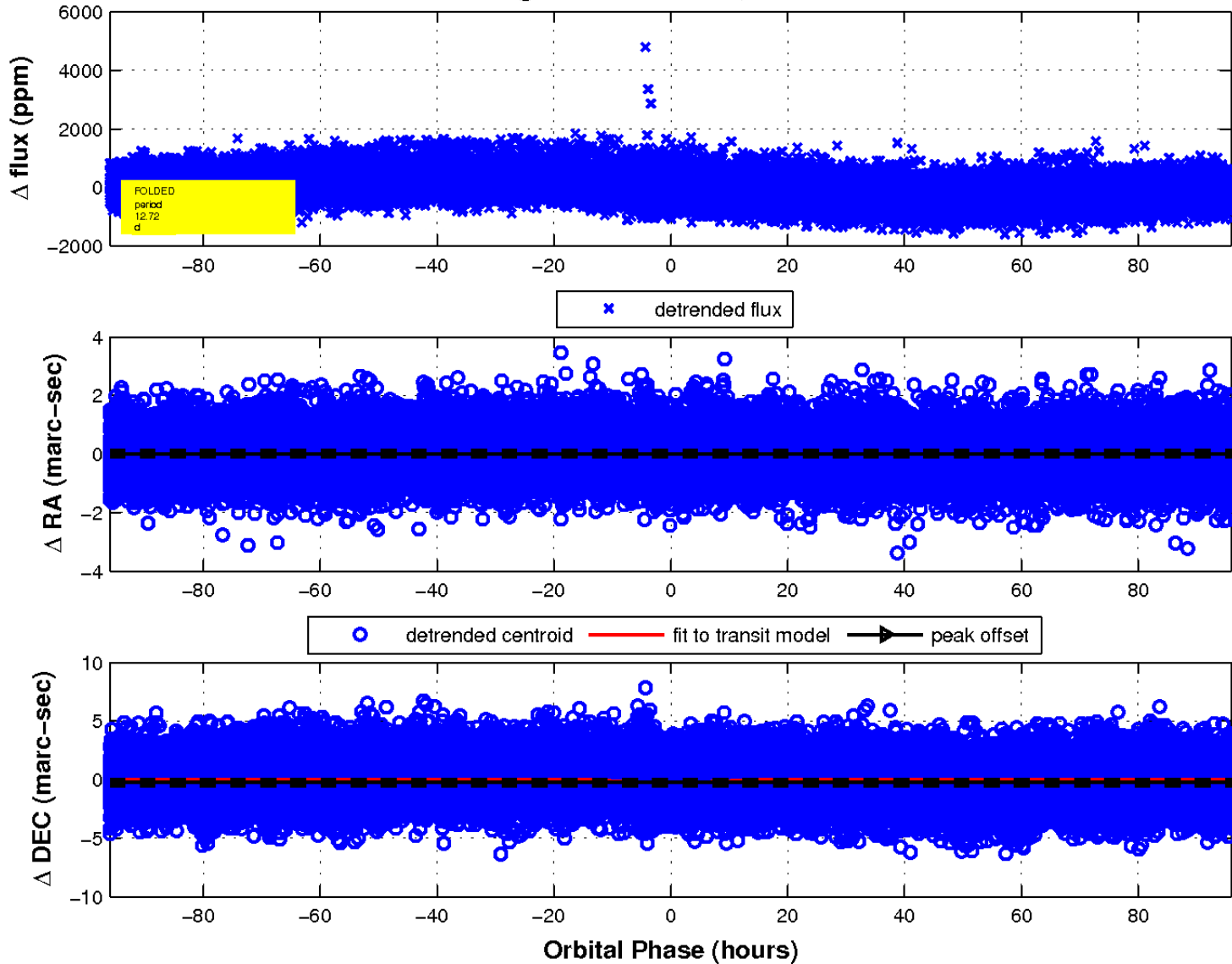
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

