

KIC 008625821

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})
008625821-01	OBS	1859.01	45.396917	136.938802	1355.3	4.510	42.4	40.0	0.70	5649	4.97	8.63
008625821-02	OBS	No	45.396803	155.288807	1403.3	2.416	28.0	29.9	0.70	5649	4.19	8.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008625821-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
008625821-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST

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 008625821-01

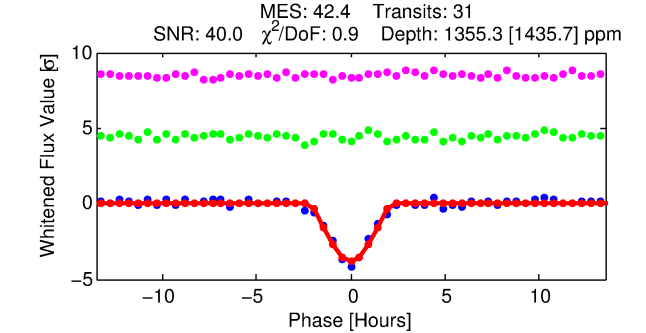
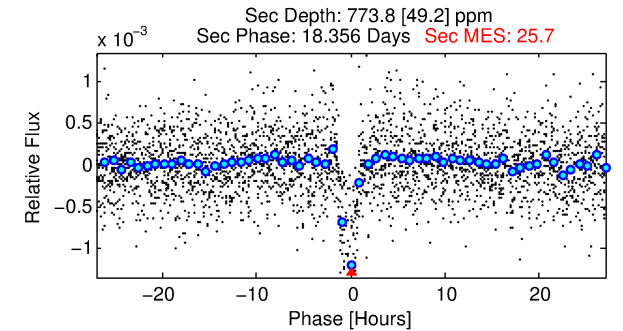
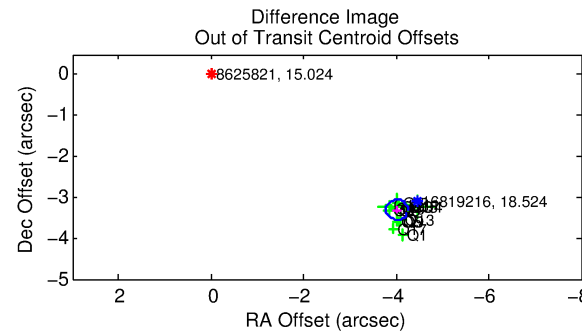
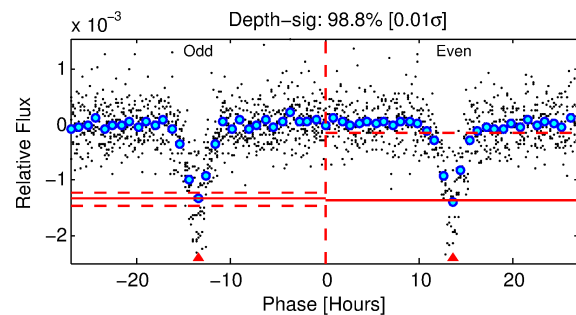
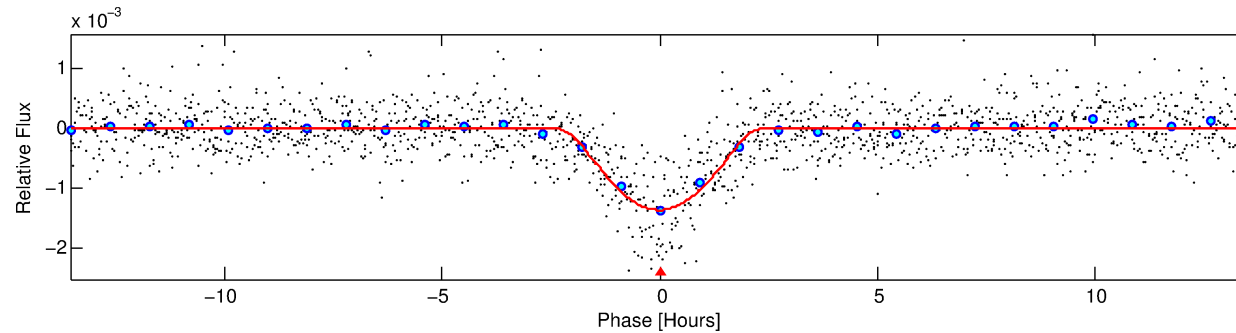
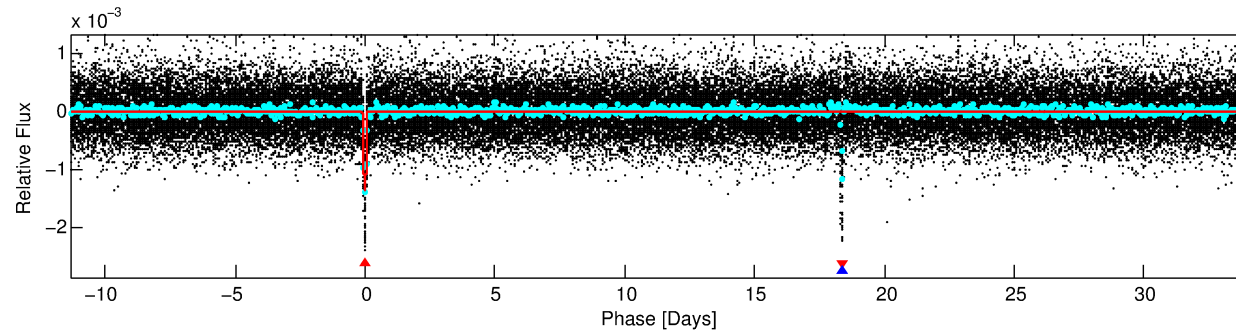
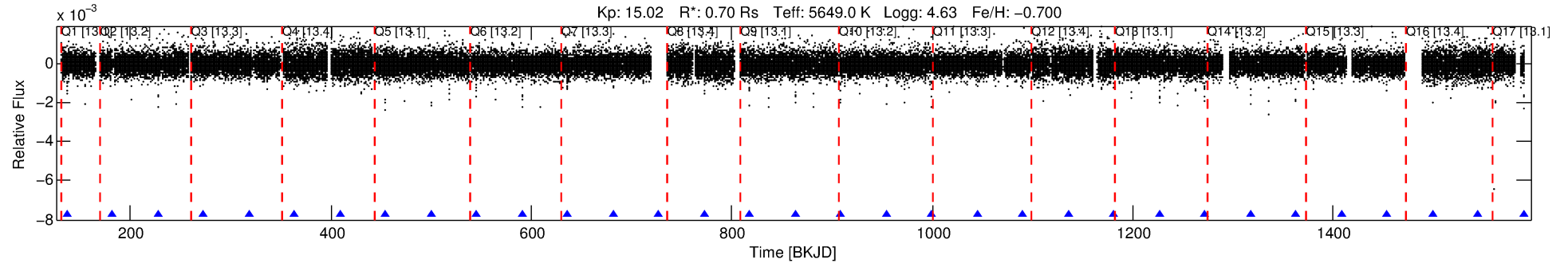
No Significant Match Found

DV One-Page Summary

KIC: 8625821 Candidate: 1 of 2 Period: 45.397 d

KOI: K01859.01 Corr: 0.989

Kp: 15.02 R*: 0.70 Rs Teff: 5649.0 K Logg: 4.63 Fe/H: -0.700



DV Fit Results:

Period = 45.39692 [0.00015] d
Epoch = 136.9388 [0.0029] BKJD
Rp/R* = 0.0646 [0.0733]
a/R* = 28.10 [7.30]
b = 1.00 [0.15]
Seff = 8.63 [2.07]
Teq = 437 [26] K
Rp = 4.97 [5.71] Re
a = 0.2292 [0.0331] AU
Ag = 906.00 [2067.02] [0.44σ]
Teff = 3708 [2109] K [1.55σ]

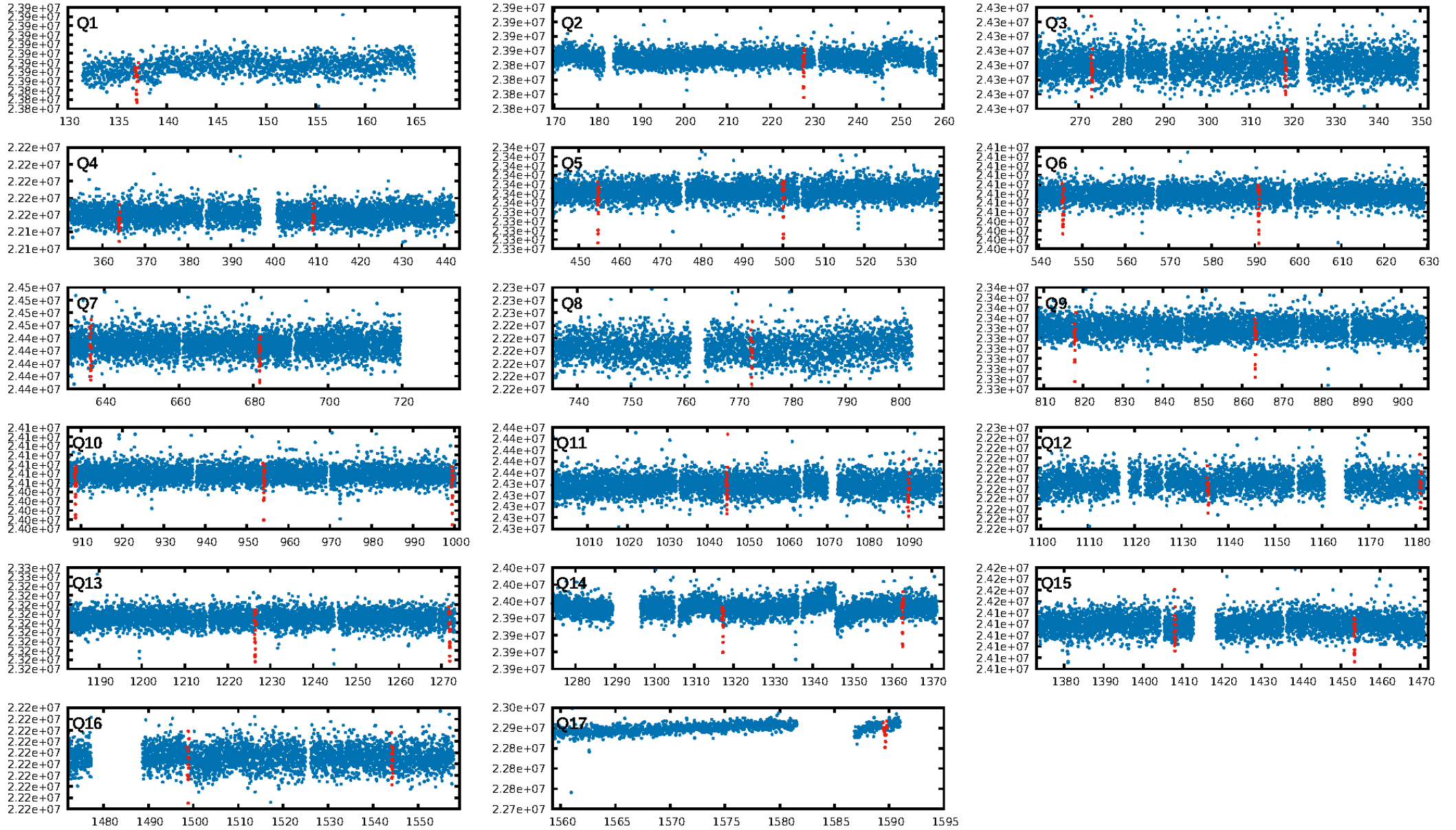
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 99.9%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [29/29]
GhostDiagnostic-chr: 0.03648
Centroid-sig: 0.0%
Centroid-so: 9.702 arcsec [28.13σ]
OotOffset-rm: 5.197 arcsec [64.59σ]
KicOffset-rm: 5.196 arcsec [63.23σ]
OotOffset-st: 4/4/2/5 [15]
KicOffset-st: 4/4/2/5 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [17/17]

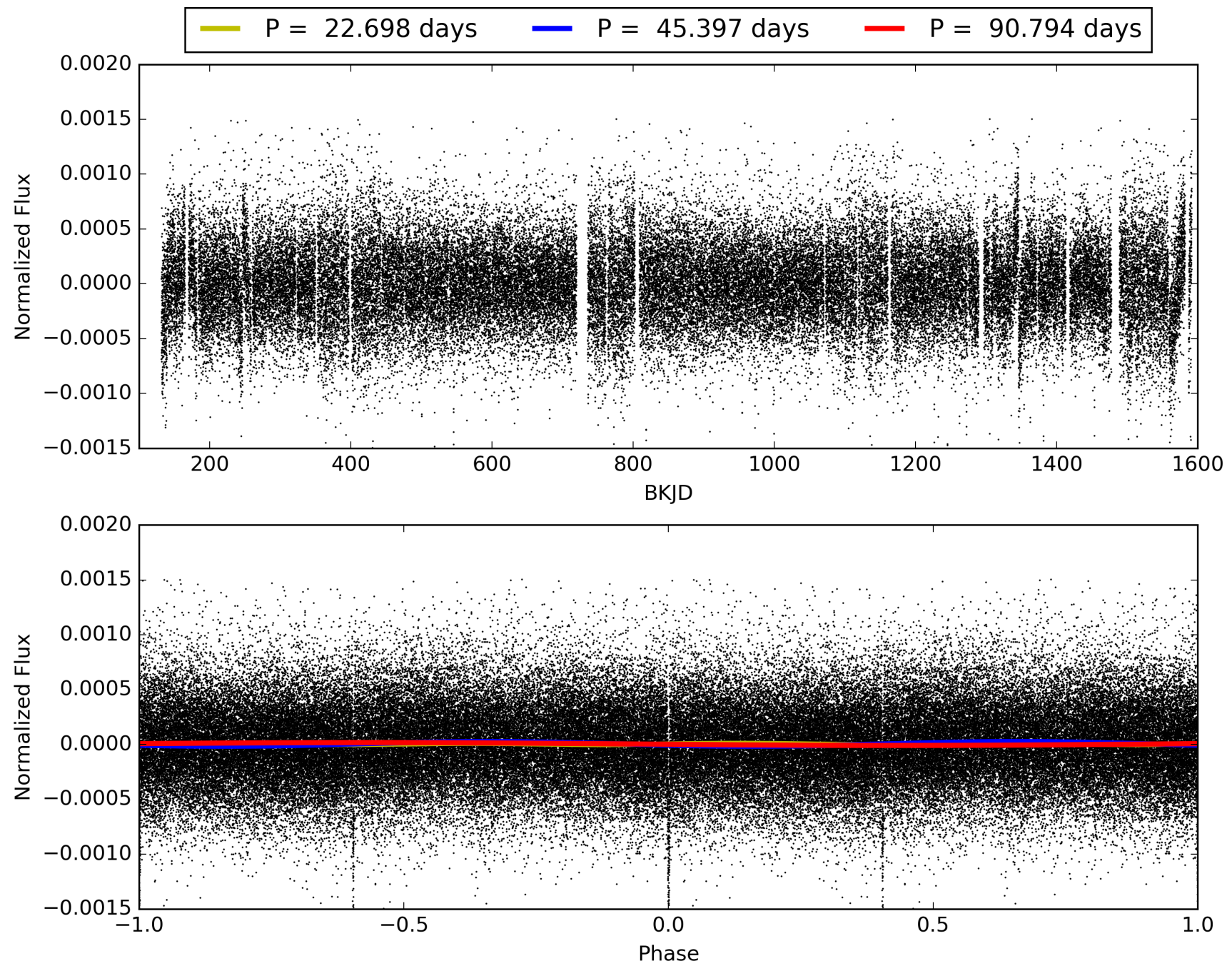
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:30:02 Z

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

TCE 008625821-01, PDC Light Curves

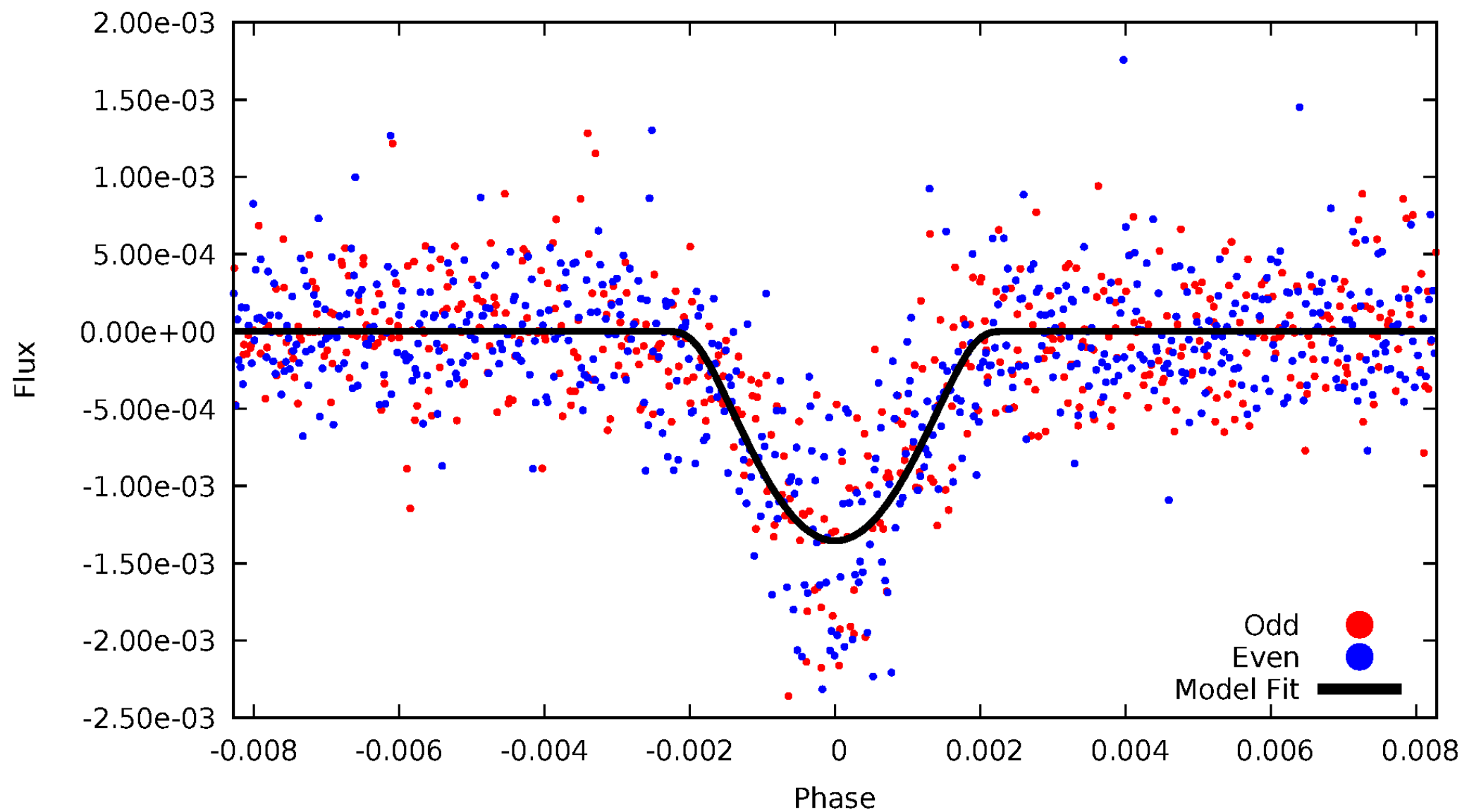


TCE 008625821-01



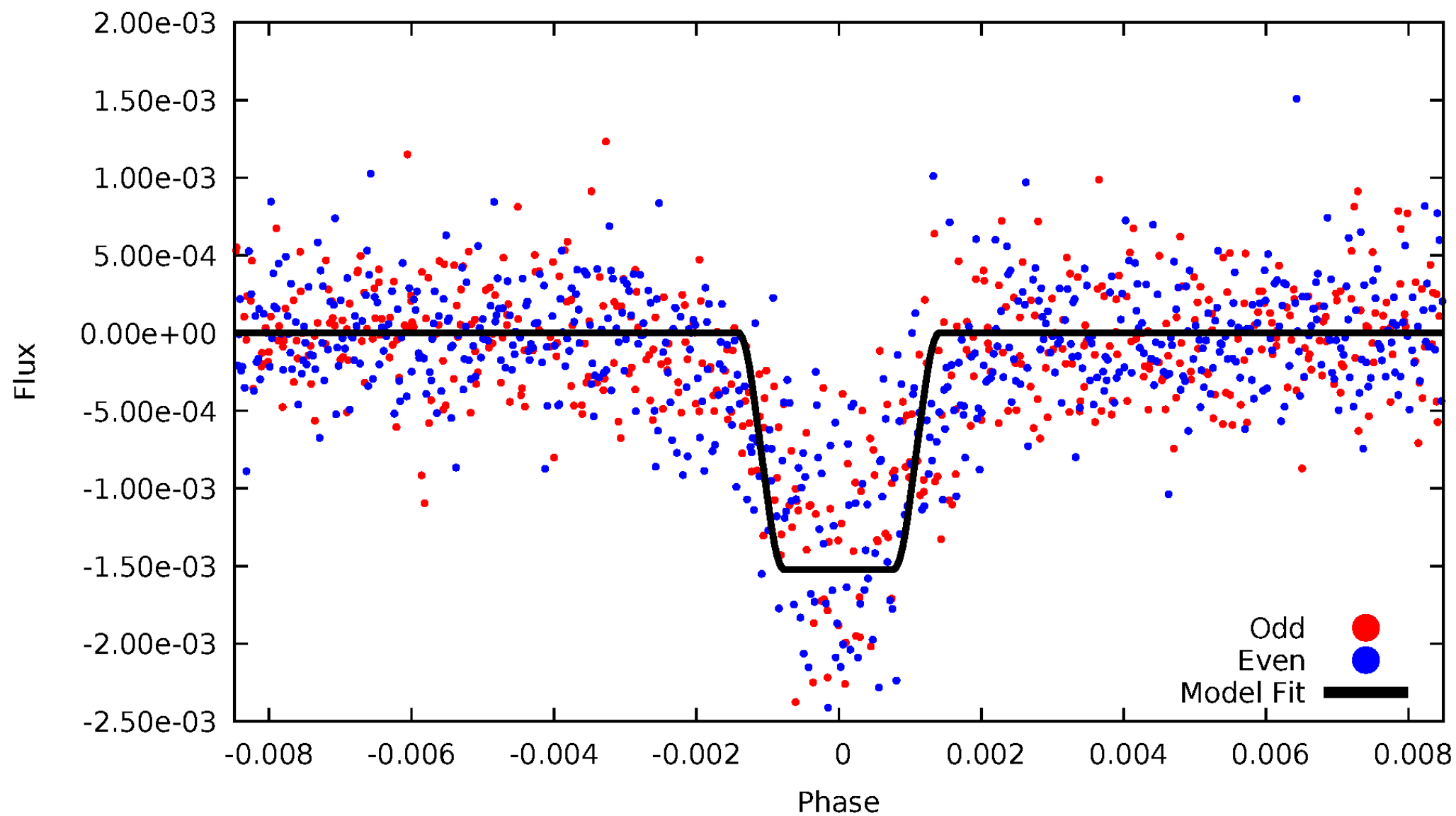
DV Odd/Even

TCE 008625821-01



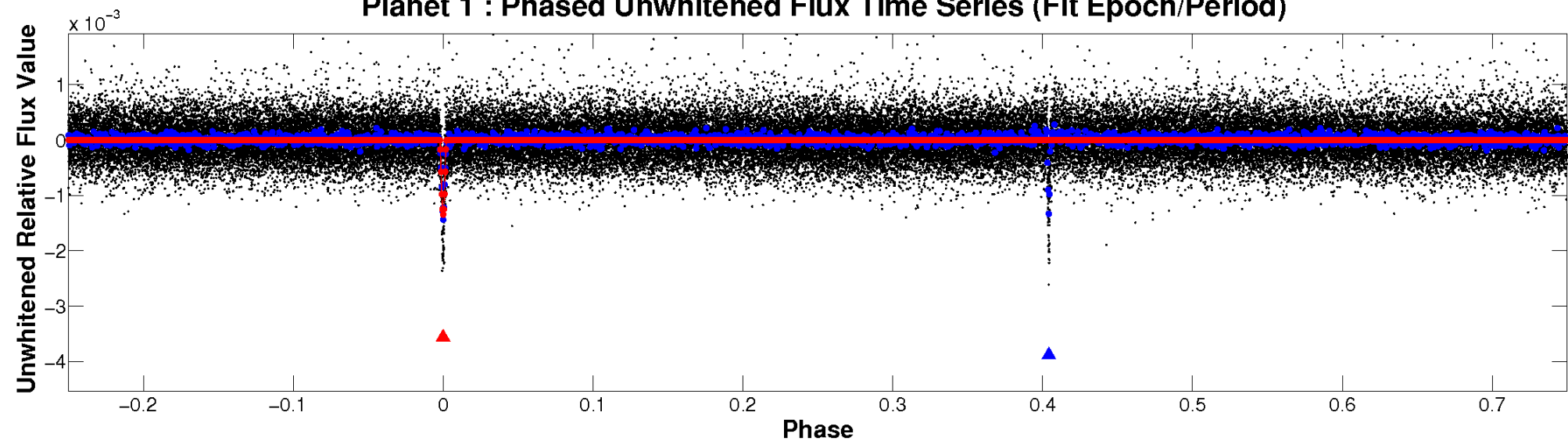
ALT Odd/Even

TCE 008625821-01

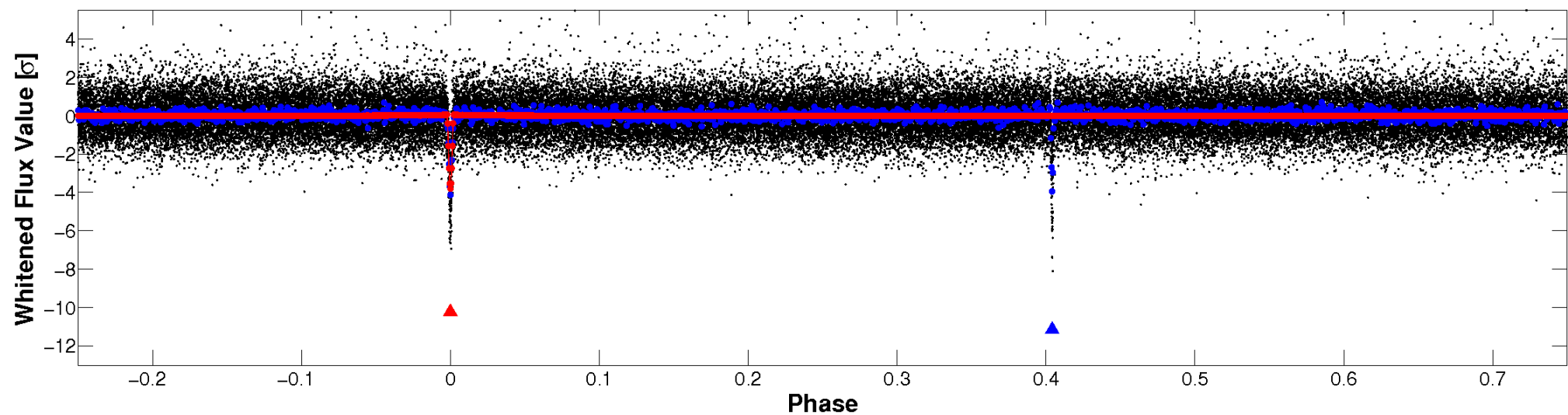


Non-Whitened Vs. Whitened Light Curve

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

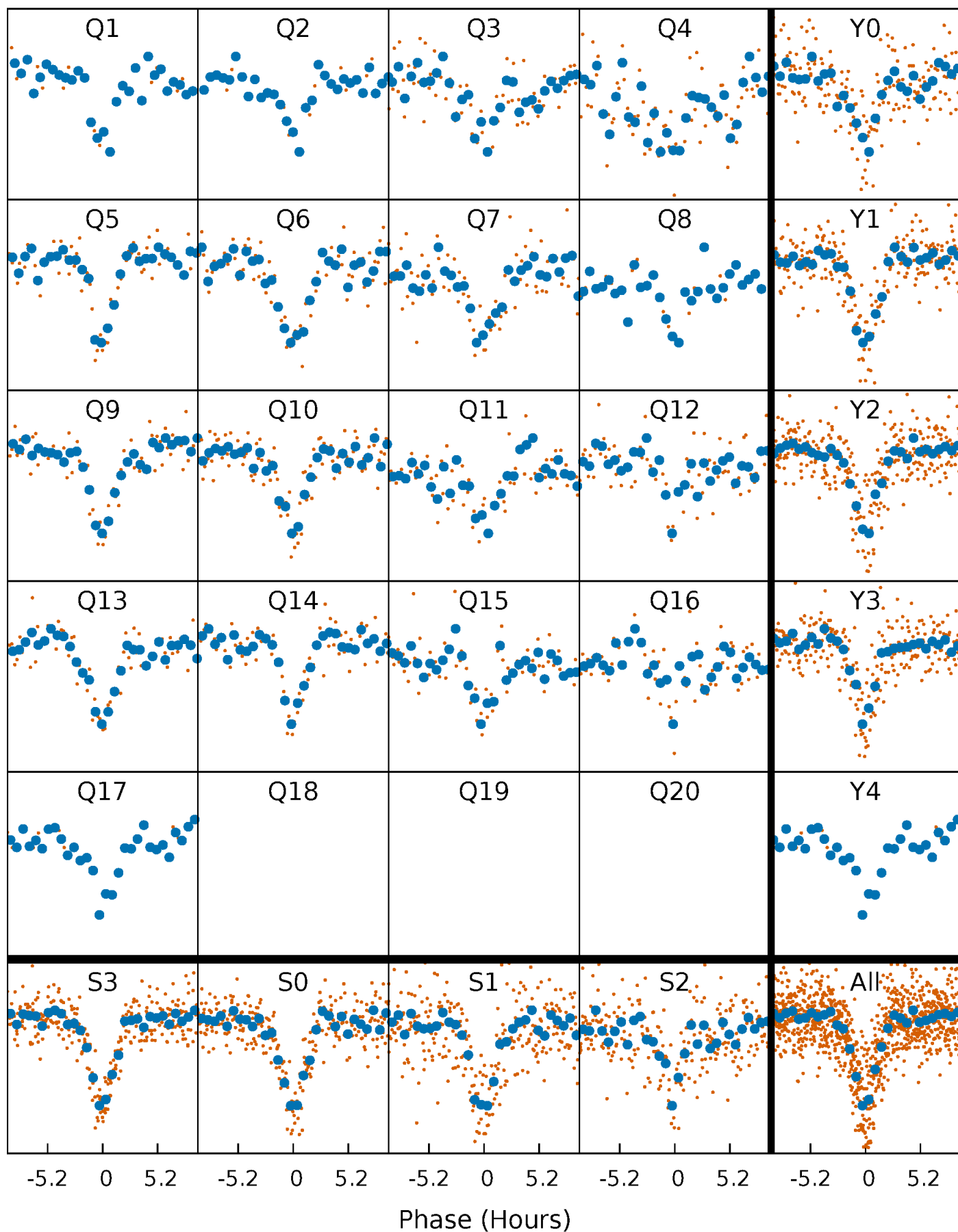


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



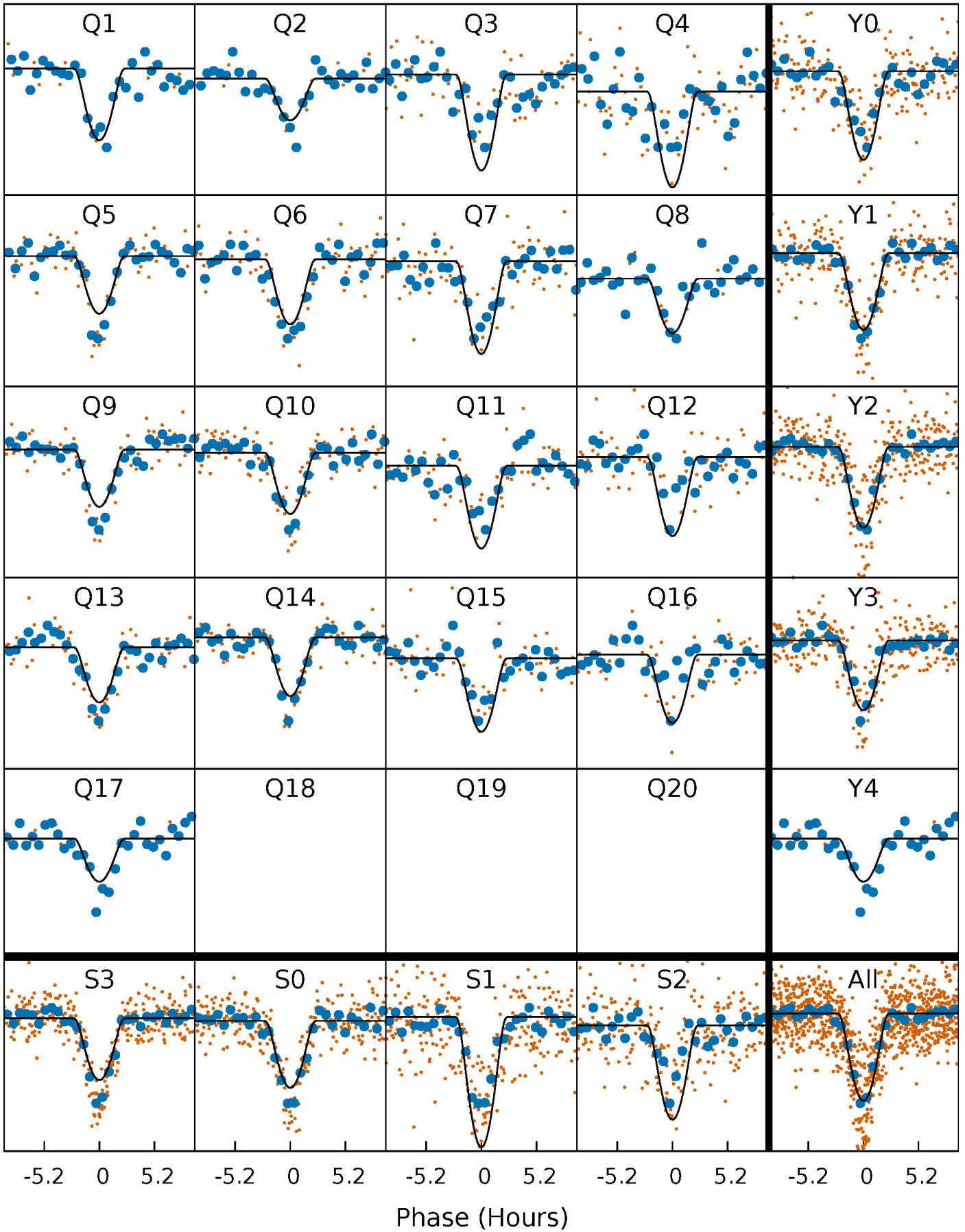
PDC Quarter-Phased Transit Curves

TCE 008625821-01 P= 45.396917 Days $T_0=136.938802$ (BKJD)



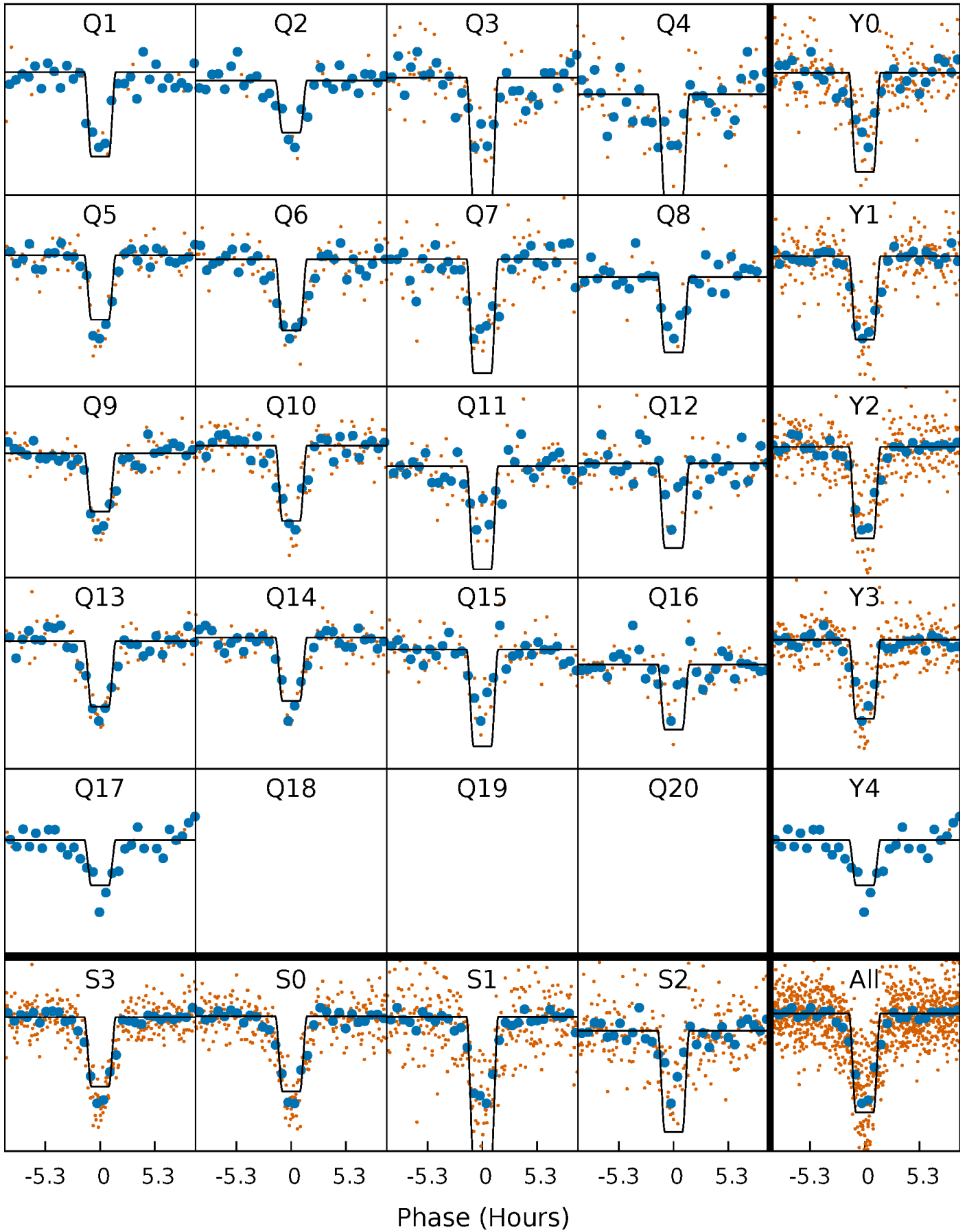
DV Quarter-Phased Transit Curves

TCE 008625821-01 P= 45.396917 Days $T_0=136.938802$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

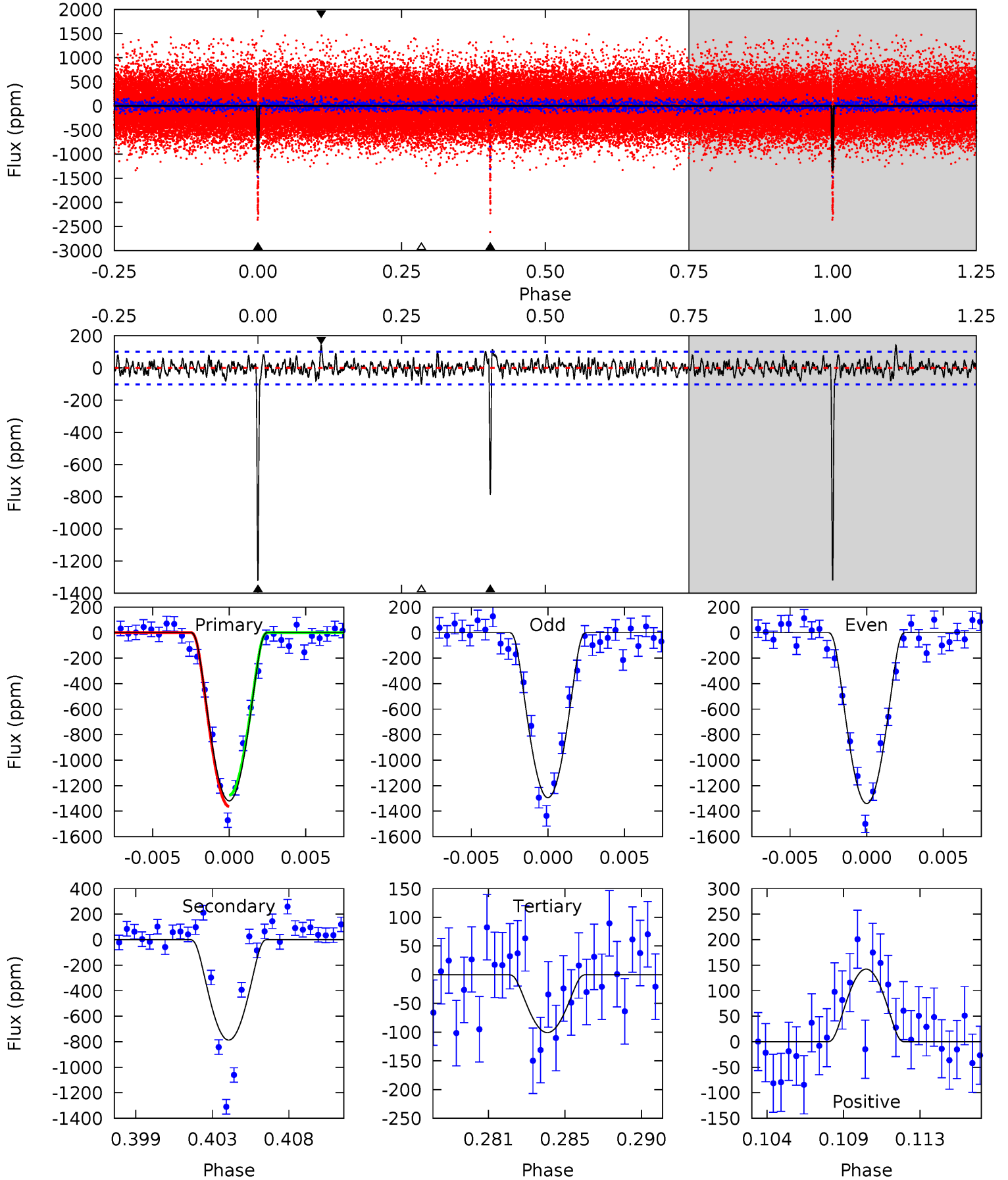
TCE 008625821-01 P= 45.396932 Days $T_0=136.937182$ (BKJD)



DV Model-Shift Uniqueness Test

008625821-01, P = 45.396917 Days, E = 91.541885 Days

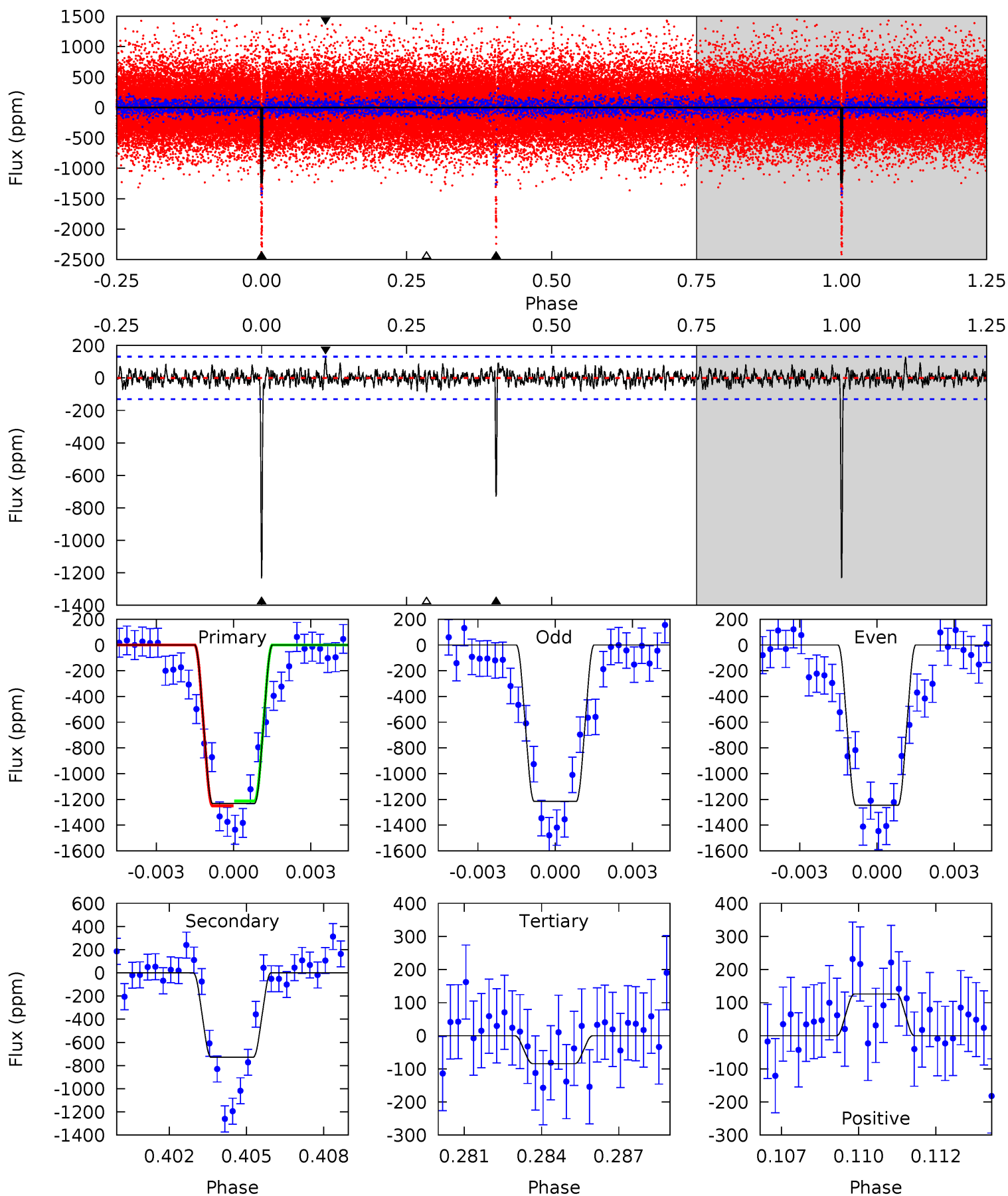
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
67.0	40.0	5.12	7.22	5.18	2.84	1.60	61.9	59.7	34.8	32.7	1.17	1.01	0.10	2.23



Alt Model-Shift Uniqueness Test

008625821-01, P = 45.396932 Days, E = 91.540250 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.5	29.3	3.39	5.07	5.26	2.99	1.18	46.1	44.4	25.9	24.2	0.60	0.97	0.09	0.74



Stellar Parameters For KIC 008625821

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5649^{+169}_{-152}	$4.633^{+0.030}_{-0.112}$	$-0.700^{+0.300}_{-0.300}$	$0.705^{+0.123}_{-0.044}$	$0.786^{+0.069}_{-0.076}$	$3.157^{+0.484}_{-1.097}$
	+3%/-3%	+1%/-2%	+43%/-43%	+17%/-6%	+9%/-10%	+15%/-35%
Source	PHO1	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 008625821-01 / KOI 1859.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-787 ± 20	$6.45^{+5.49}_{-4.17}$	620^{+28}_{-23}	3712^{+1931}_{-625}	544^{+3851}_{-383}
Alt.	-729 ± 25	$5.51^{+4.81}_{-3.85}$	618^{+27}_{-20}	3868^{+2571}_{-688}	680^{+7030}_{-481}

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 $A_{obs} \gg 1.0$

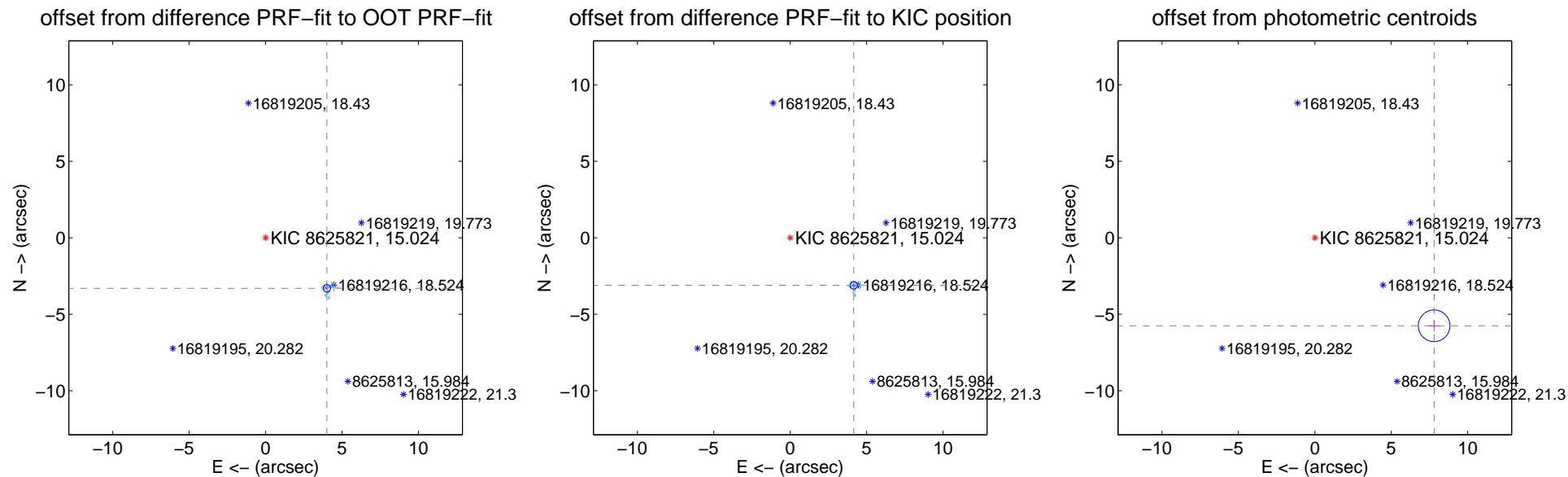
DV Centroid Data

Supplemental centroid analysis for 008625821-01. Kepler magnitude: 15.02. Transit SNR 40.03

There are 15 quarters with good PRF difference image offsets

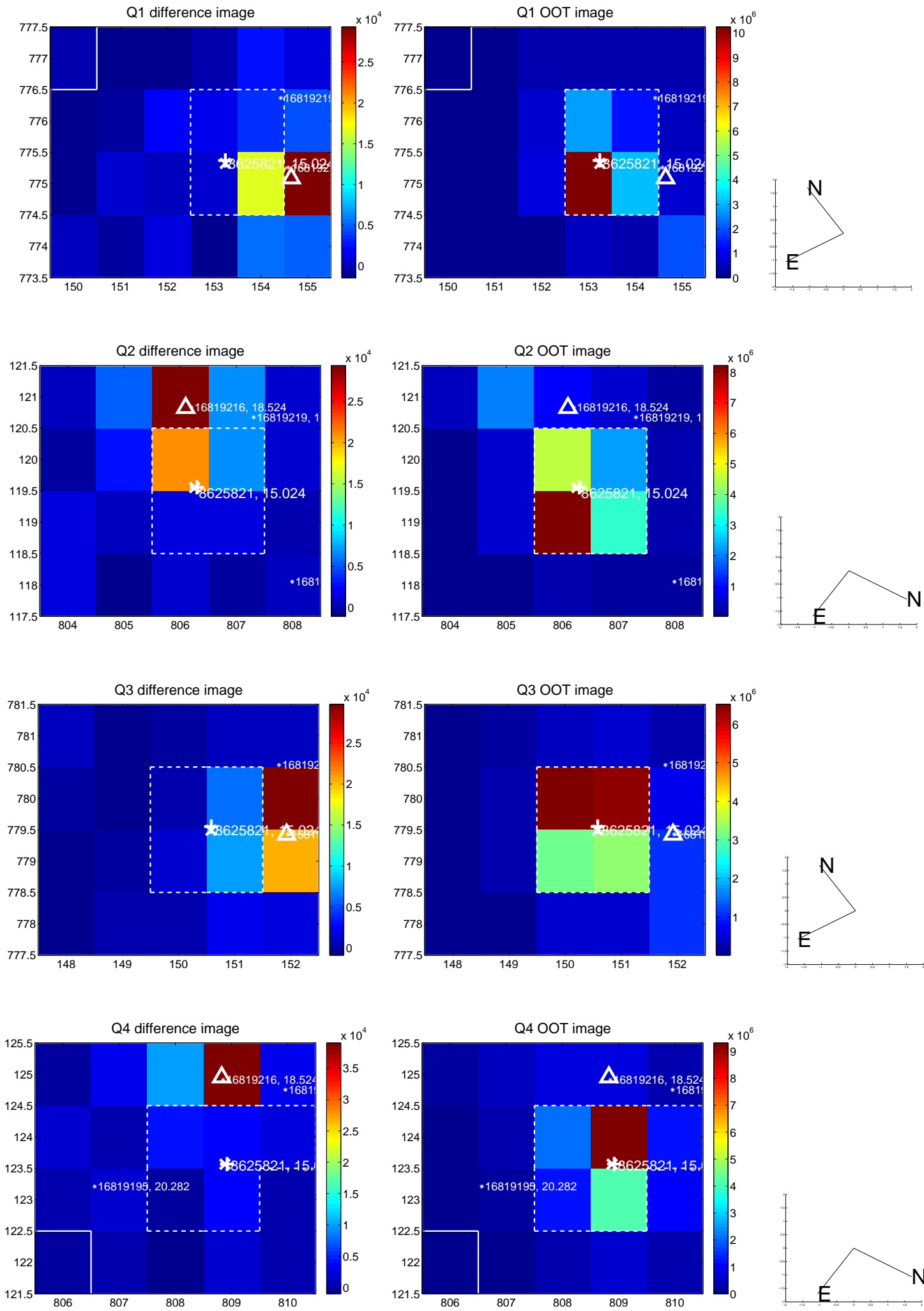
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.197 ± 0.080	64.59	-4.011 ± 0.076	-3.305 ± 0.087
PRF-fit source offset from KIC position	5.196 ± 0.082	63.23	-4.163 ± 0.079	-3.109 ± 0.089
photometric centroid source offset	9.70 ± 0.34	28.13	-7.81 ± 0.32	-5.76 ± 0.38

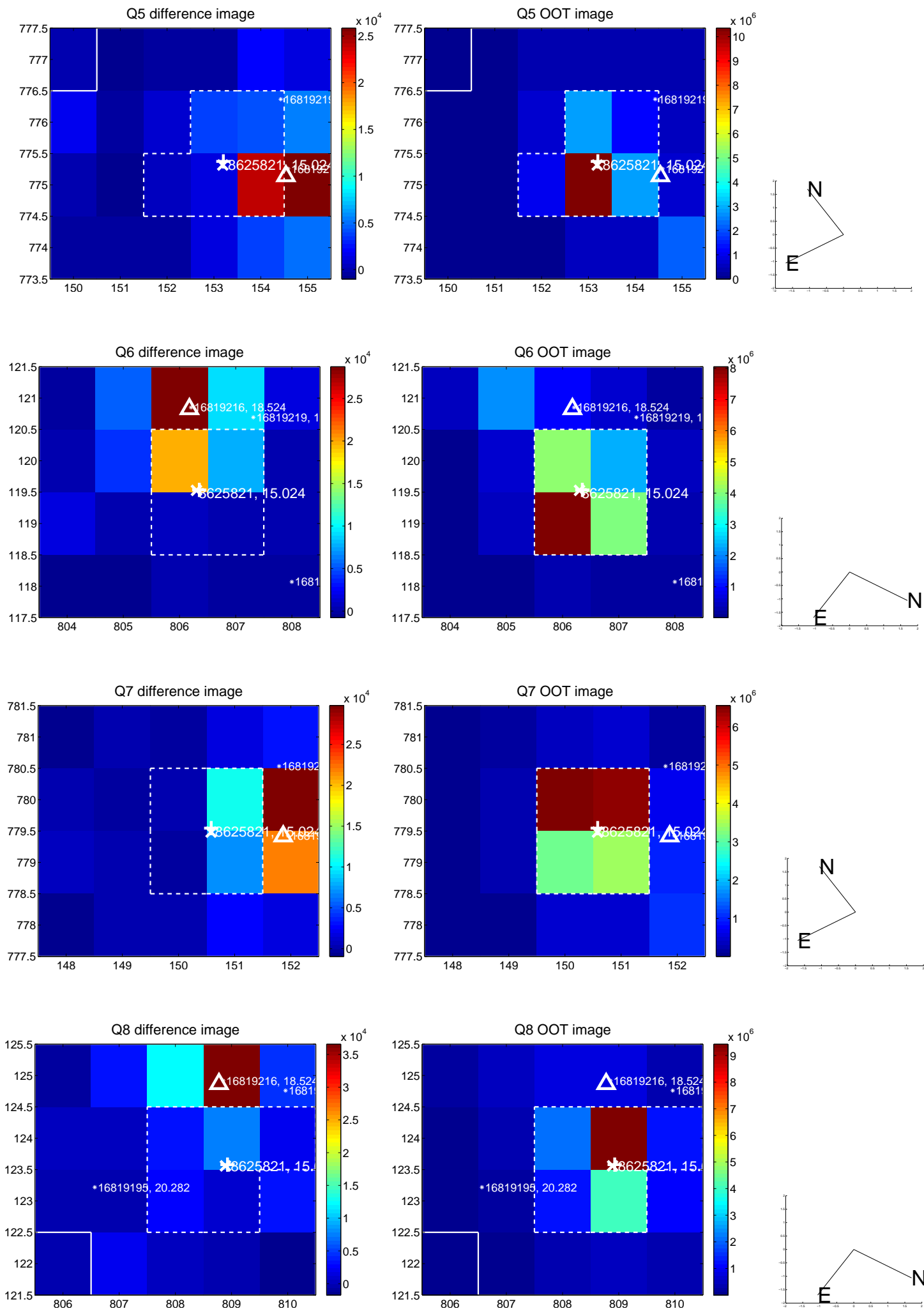


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

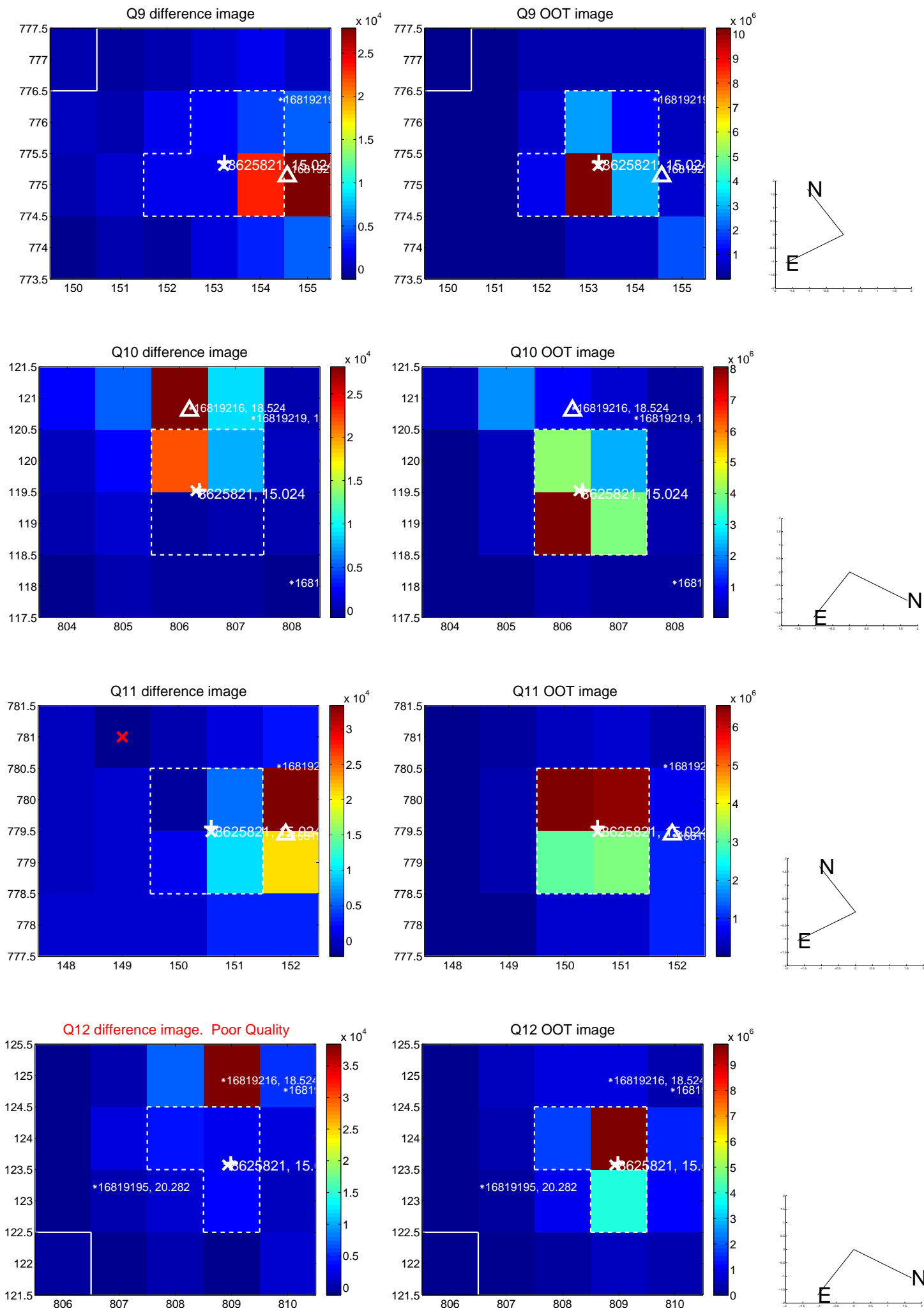
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



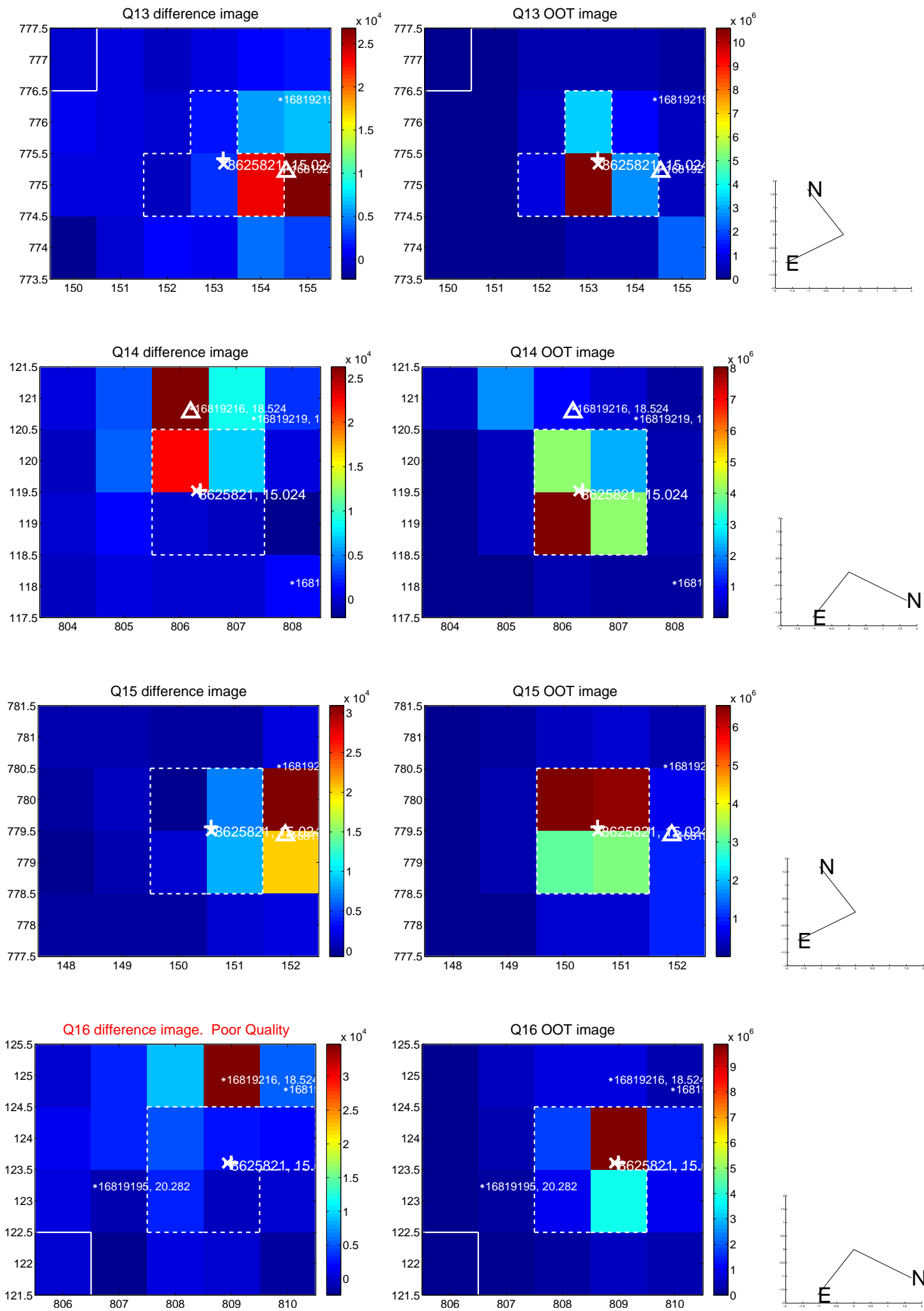
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



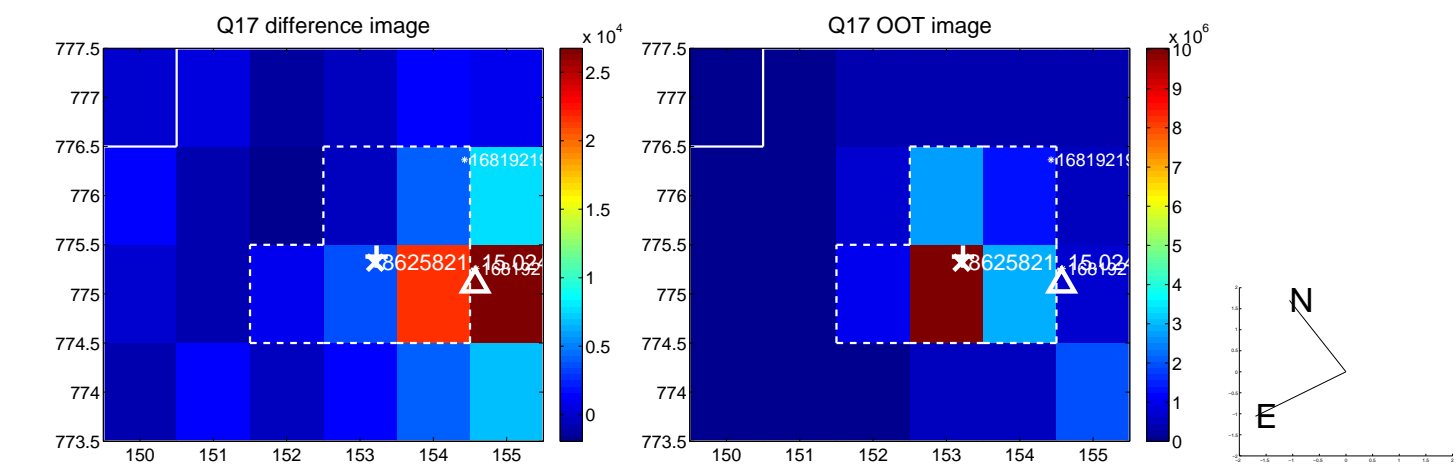
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



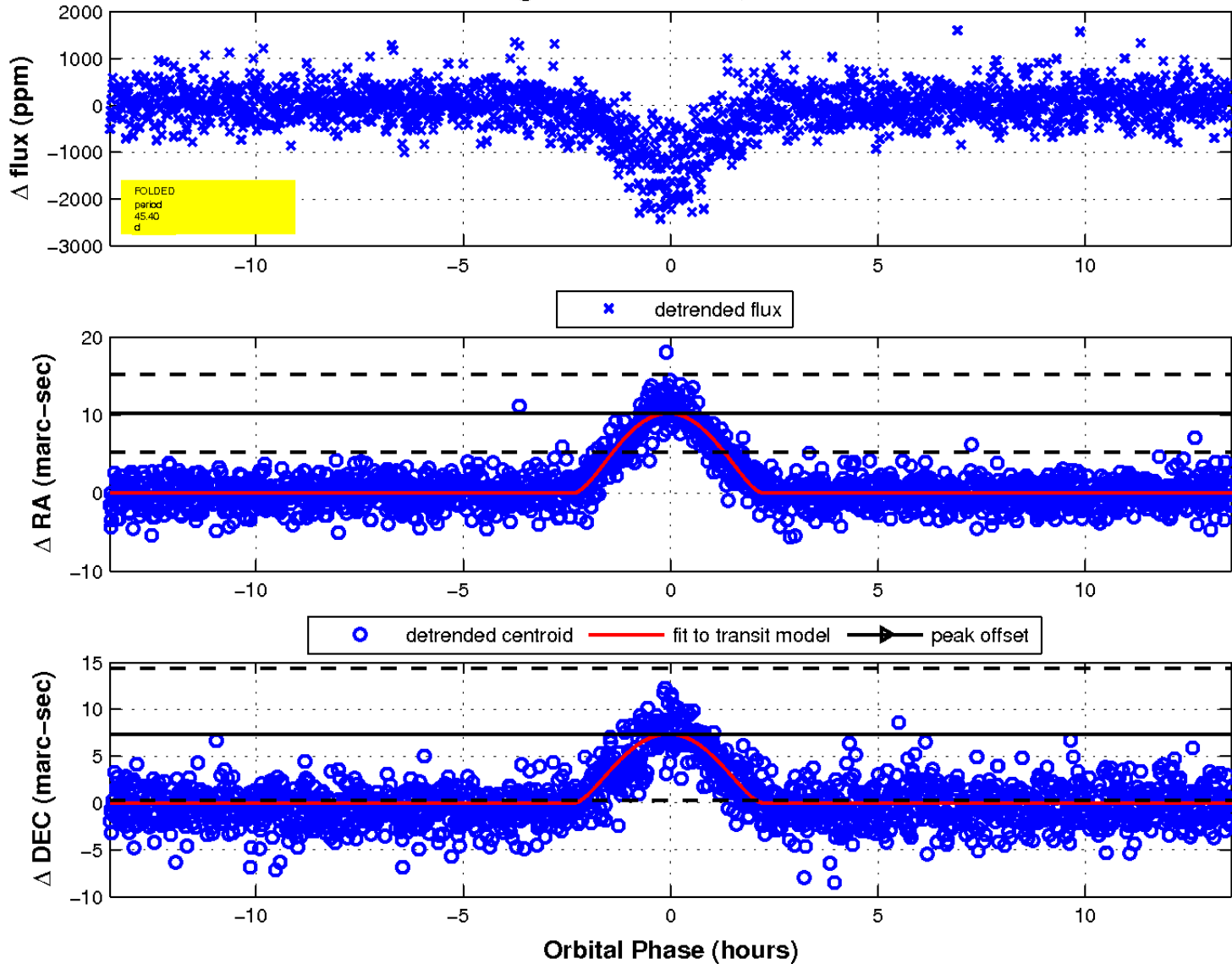
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



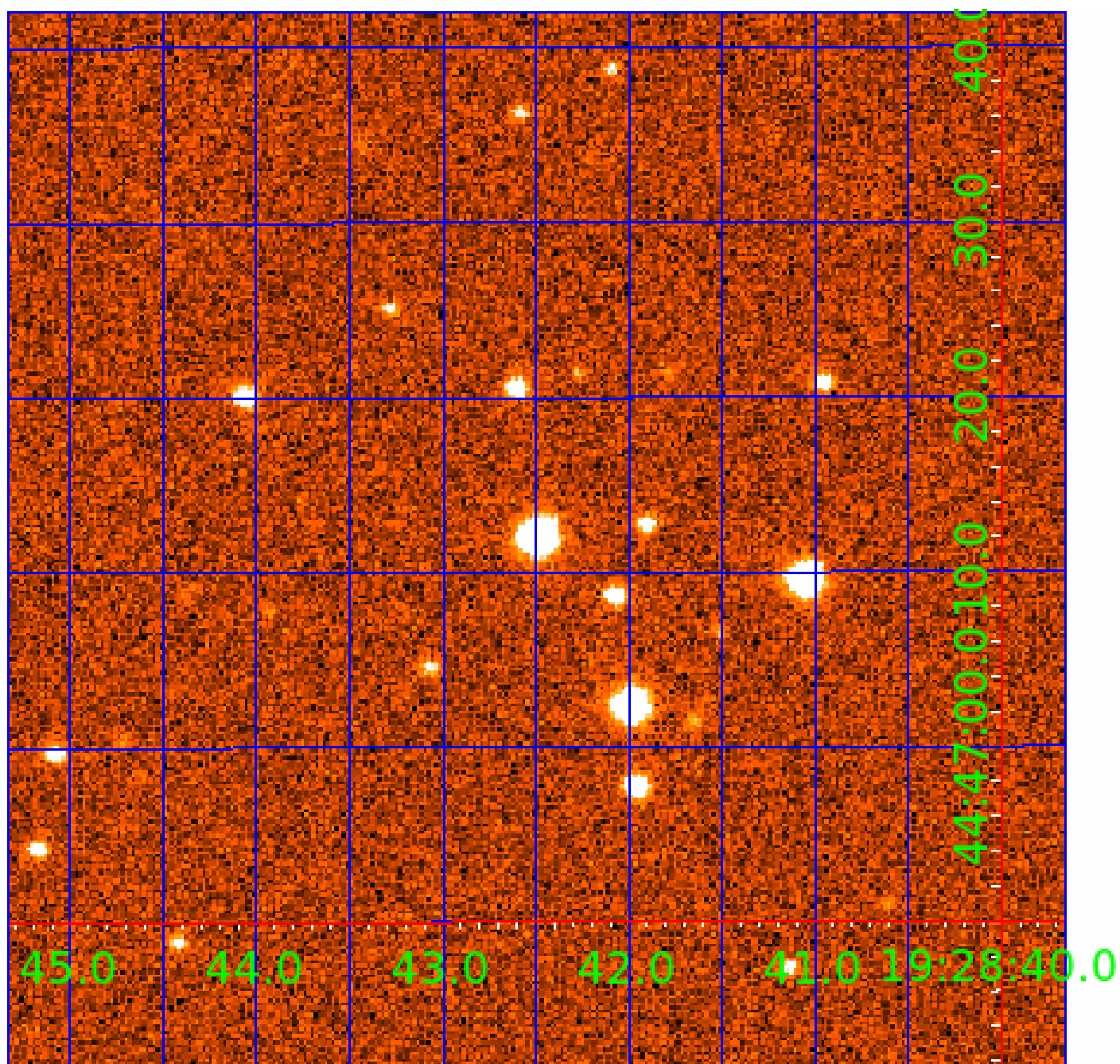
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 008625821

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})
008625821-01	OBS	1859.01	45.396917	136.938802	1355.3	4.510	42.4	40.0	0.70	5649	4.97	8.63
008625821-02	OBS	No	45.396803	155.288807	1403.3	2.416	28.0	29.9	0.70	5649	4.19	8.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008625821-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST
008625821-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST

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 008625821-02

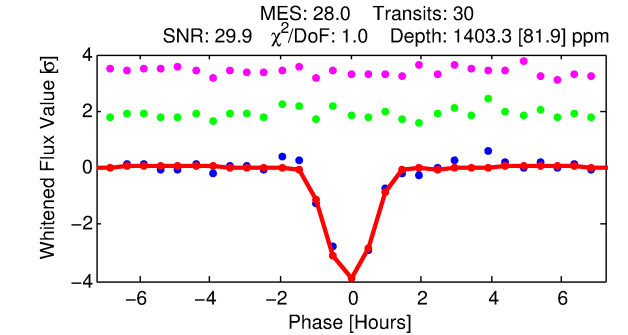
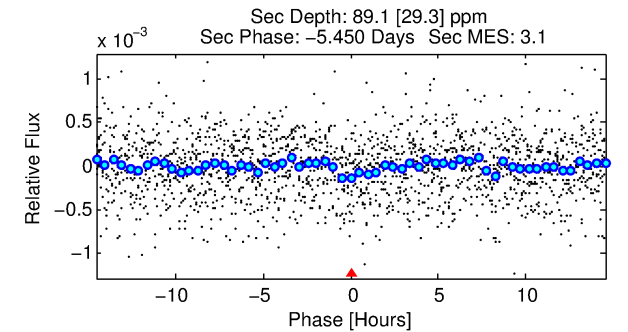
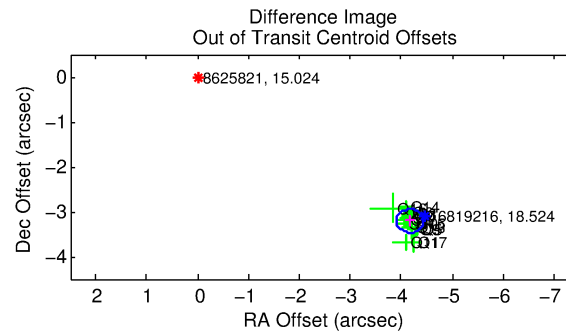
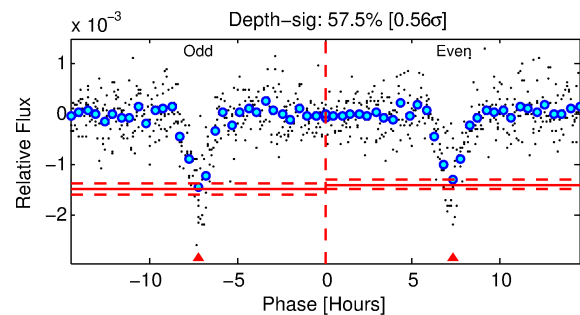
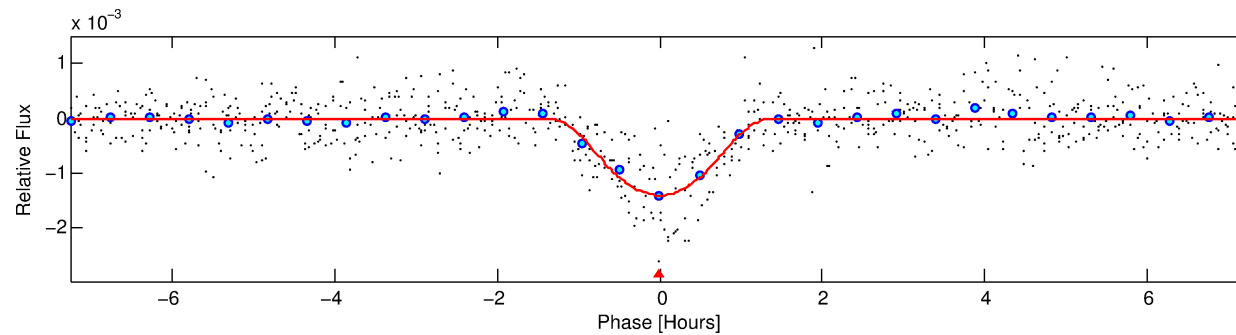
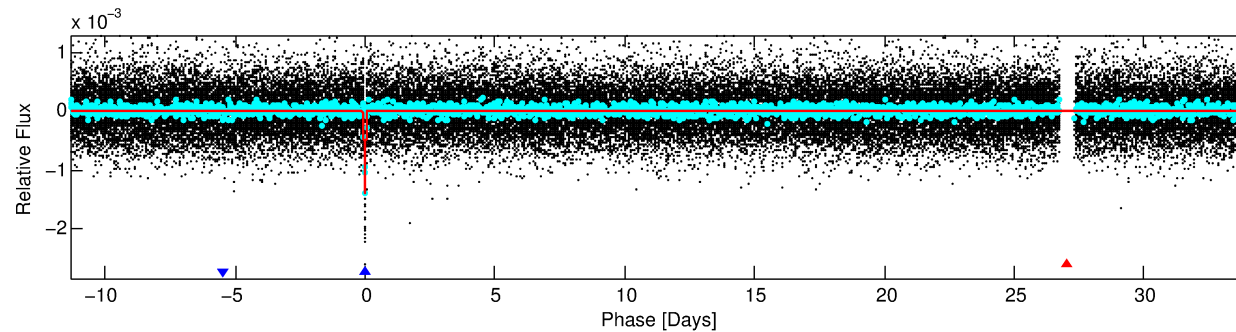
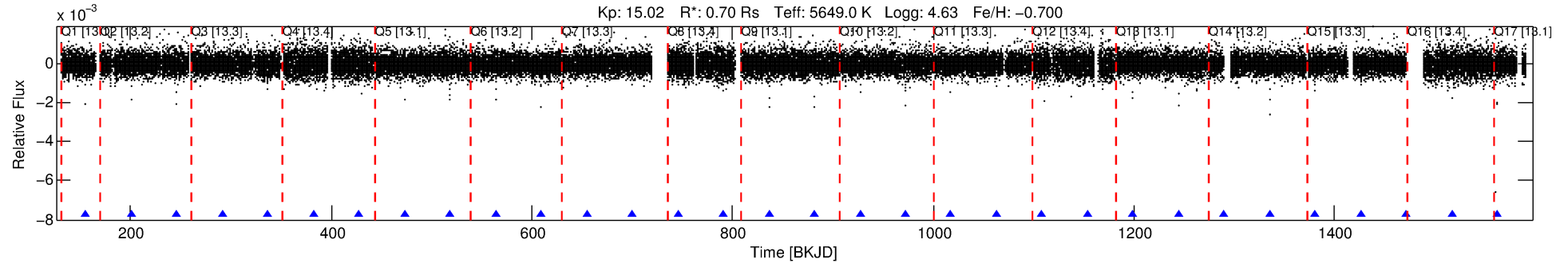
No Significant Match Found

DV One-Page Summary

KIC: 8625821 Candidate: 2 of 2 Period: 45.397 d

KOI: K01859 Corr: No Ephemeris Match

Kp: 15.02 R*: 0.70 Rs Teff: 5649.0 K Logg: 4.63 Fe/H: -0.700



DV Fit Results:

Period = 45.39680 [0.00013] d
Epoch = 155.2888 [0.0021] BKJD
Rp/R* = 0.0545 [0.0562]
a/R* = 55.38 [19.08]
b = 0.98 [0.10]
Seff = 8.63 [2.07]
Teq = 437 [26] K
Rp = 4.19 [4.38] Re
a = 0.2292 [0.0331] AU
Ag = 146.50 [307.30] [0.47σ]
Teffp = 2351 [1229] K [1.56σ]

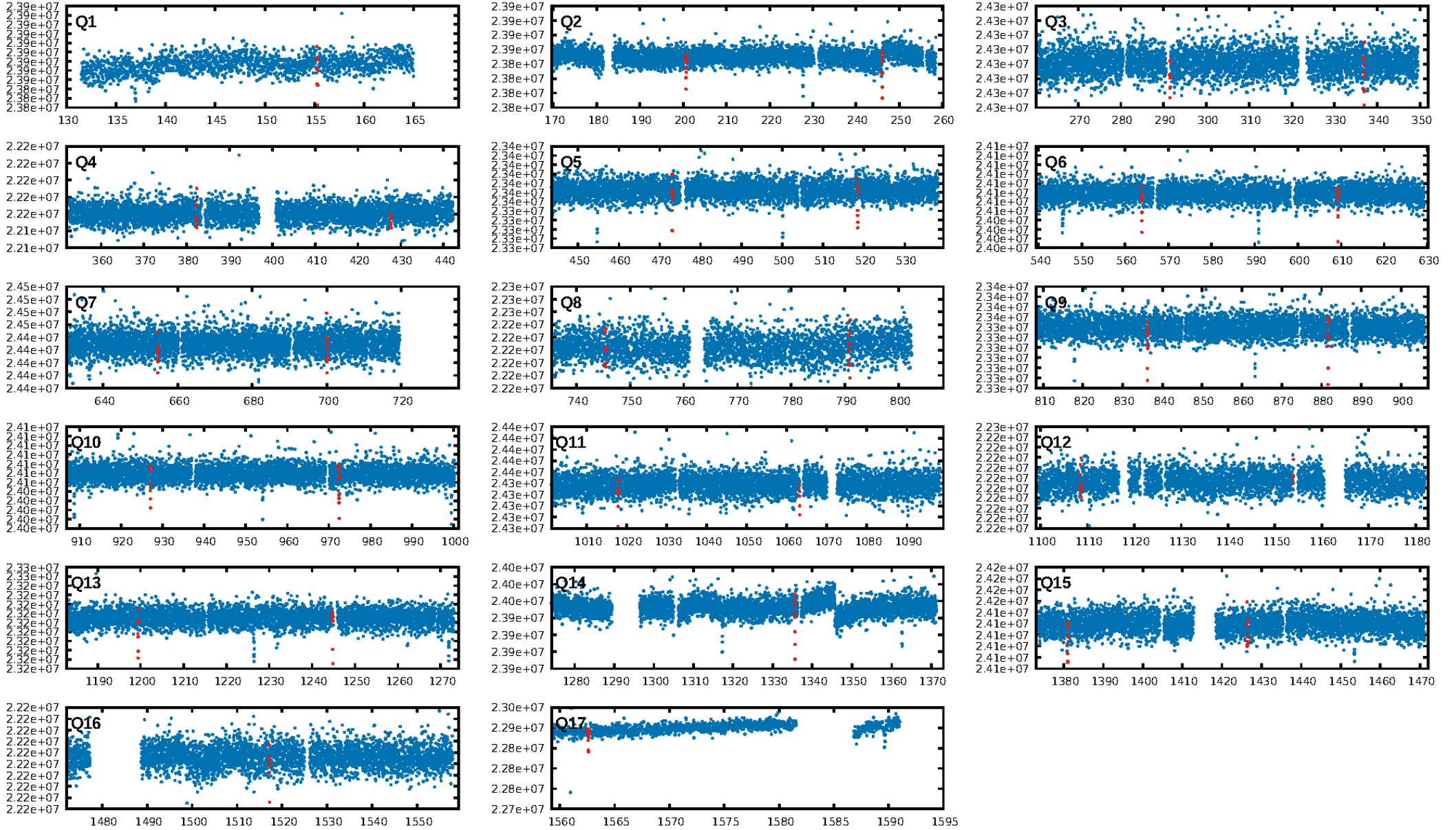
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGoF-sig: 99.4%
Bootstrap-pfa: 7.03e-175
RollingBand-fgt: 1.00 [28/28]
GhostDiagnostic-chr: 0.04379
Centroid-sig: 0.0%
Centroid-so: 10.234 arcsec [22.35σ]
OotOffset-rm: 5.258 arcsec [60.30σ]
KicOffset-rm: 5.258 arcsec [61.43σ]
OotOffset-st: 4/4/1/5 [14]
KicOffset-st: 4/4/1/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [17/17]

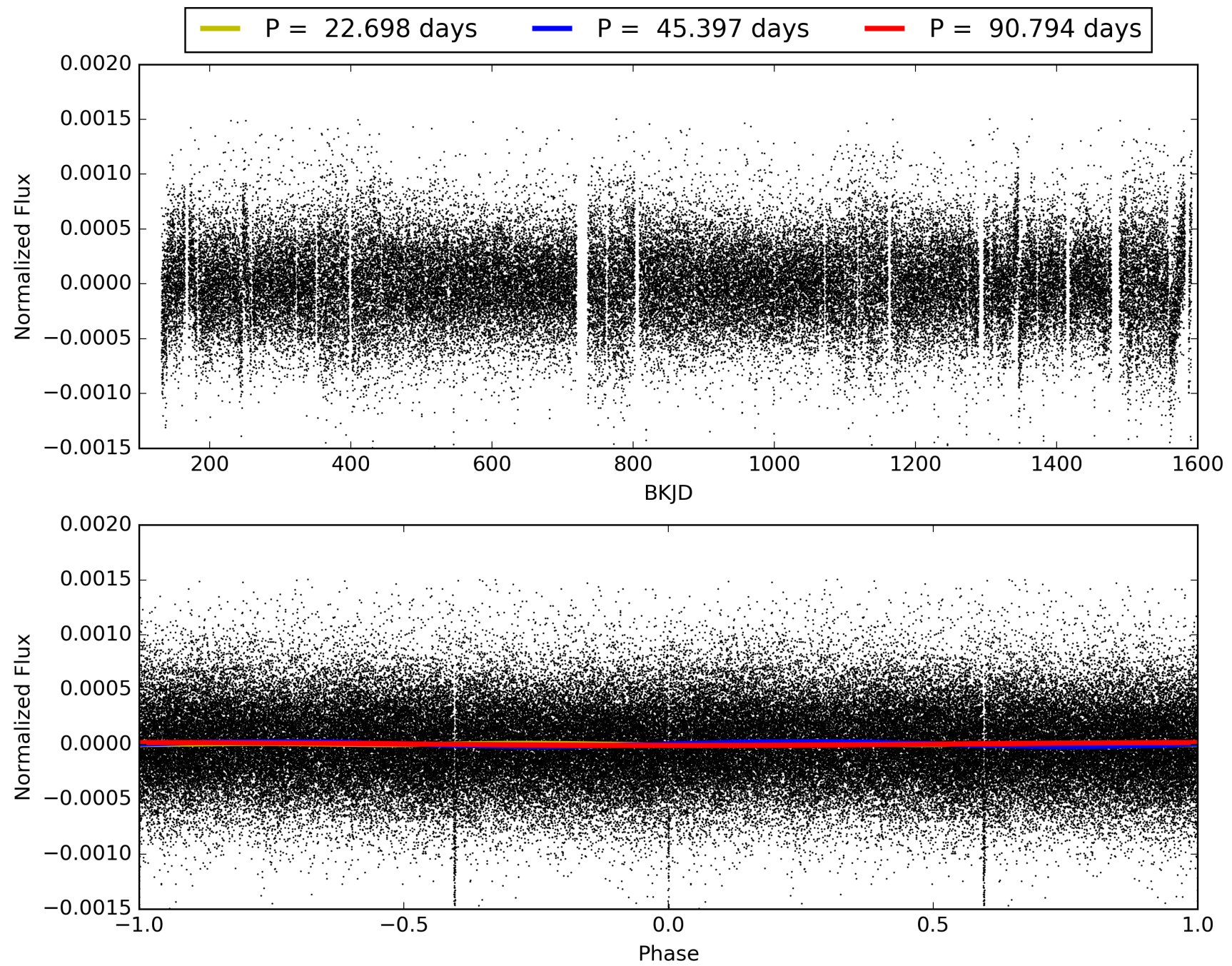
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:30:10 Z

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

TCE 008625821-02, PDC Light Curves

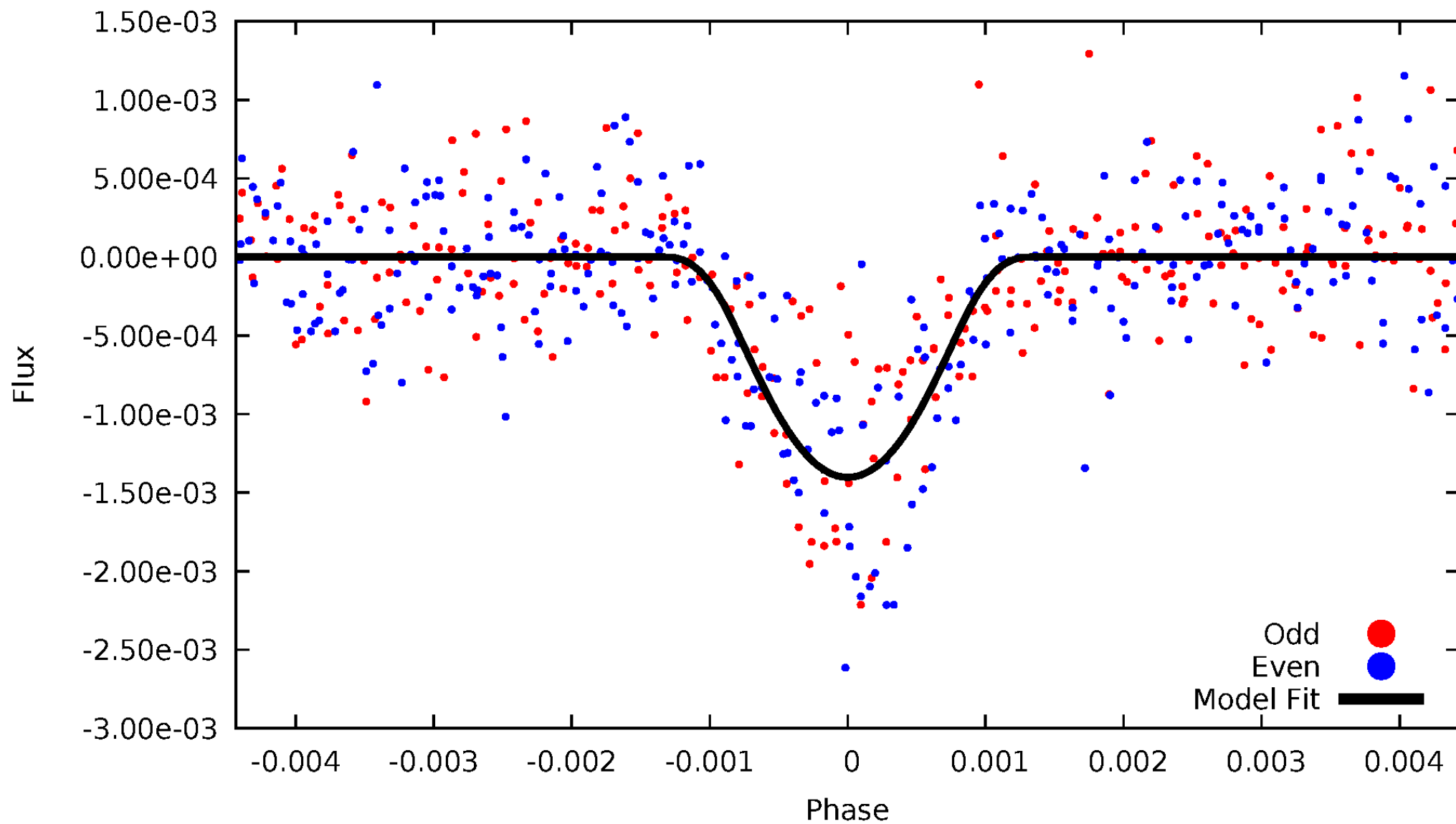


TCE 008625821-02



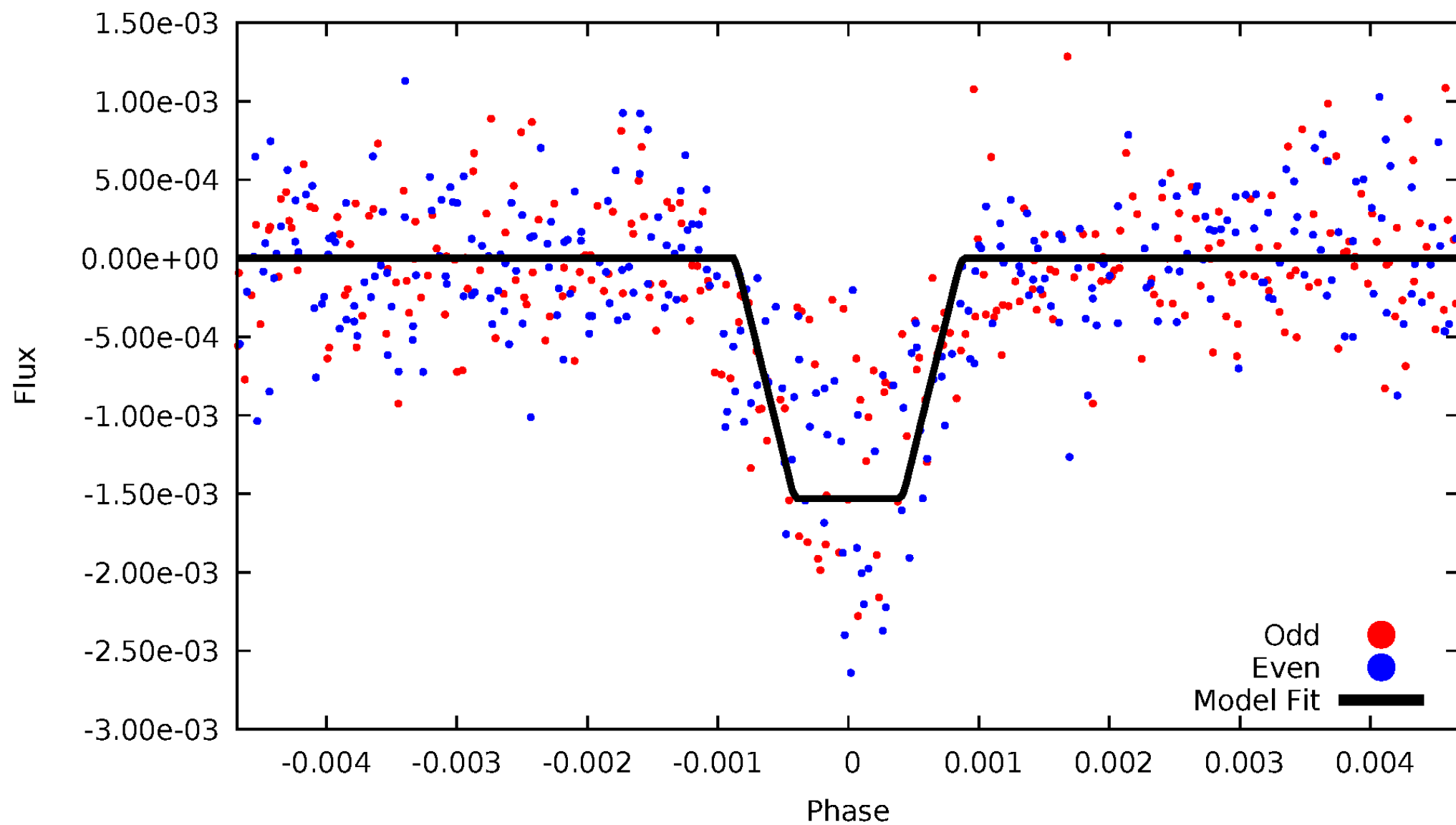
DV Odd/Even

TCE 008625821-02



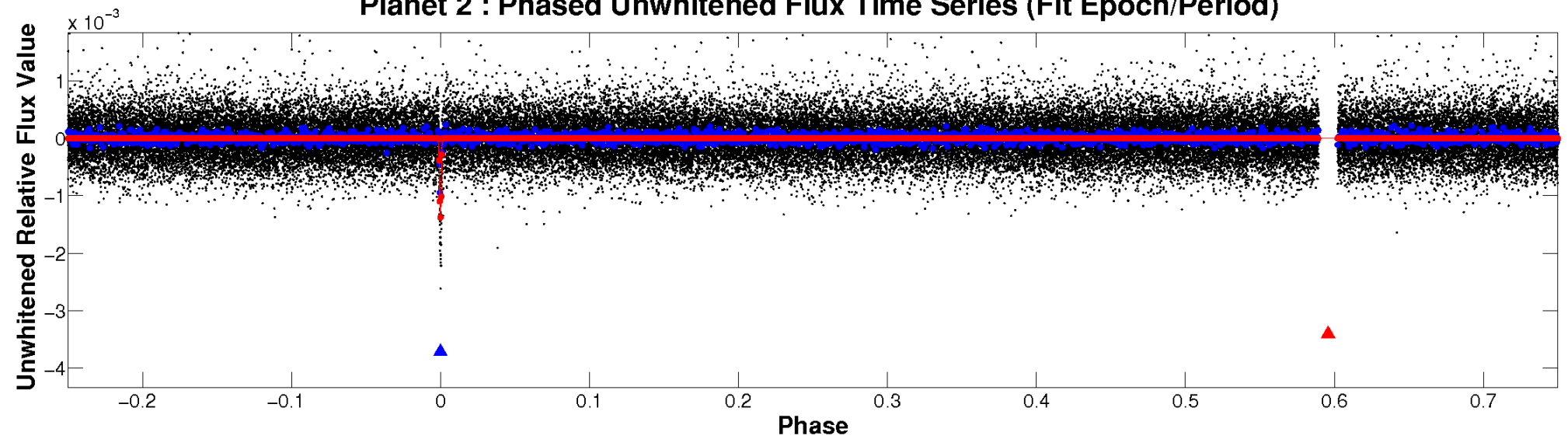
ALT Odd/Even

TCE 008625821-02

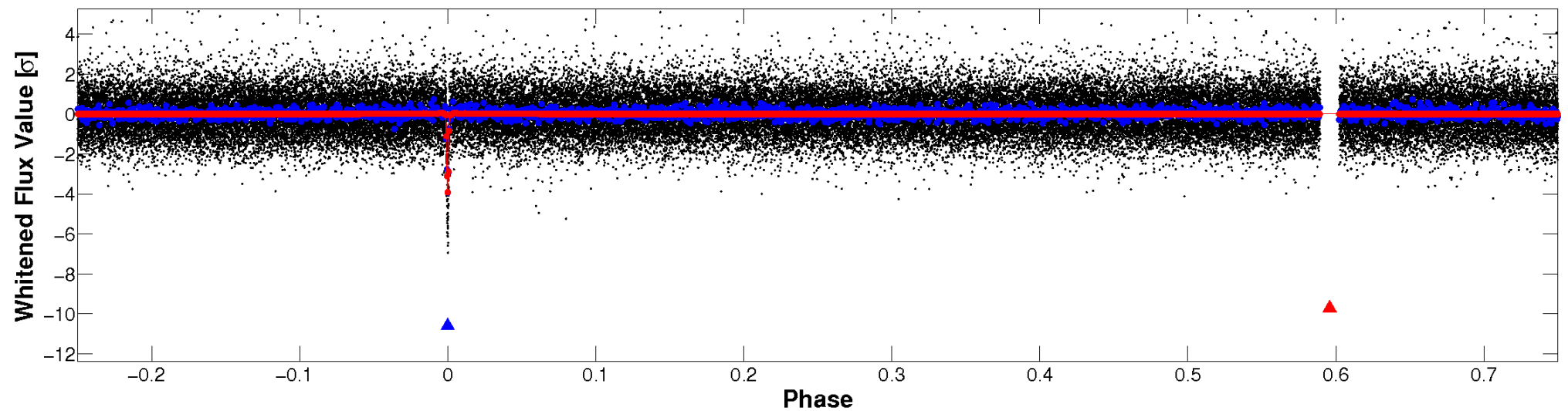


Non-Whitened Vs. Whitened Light Curve

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

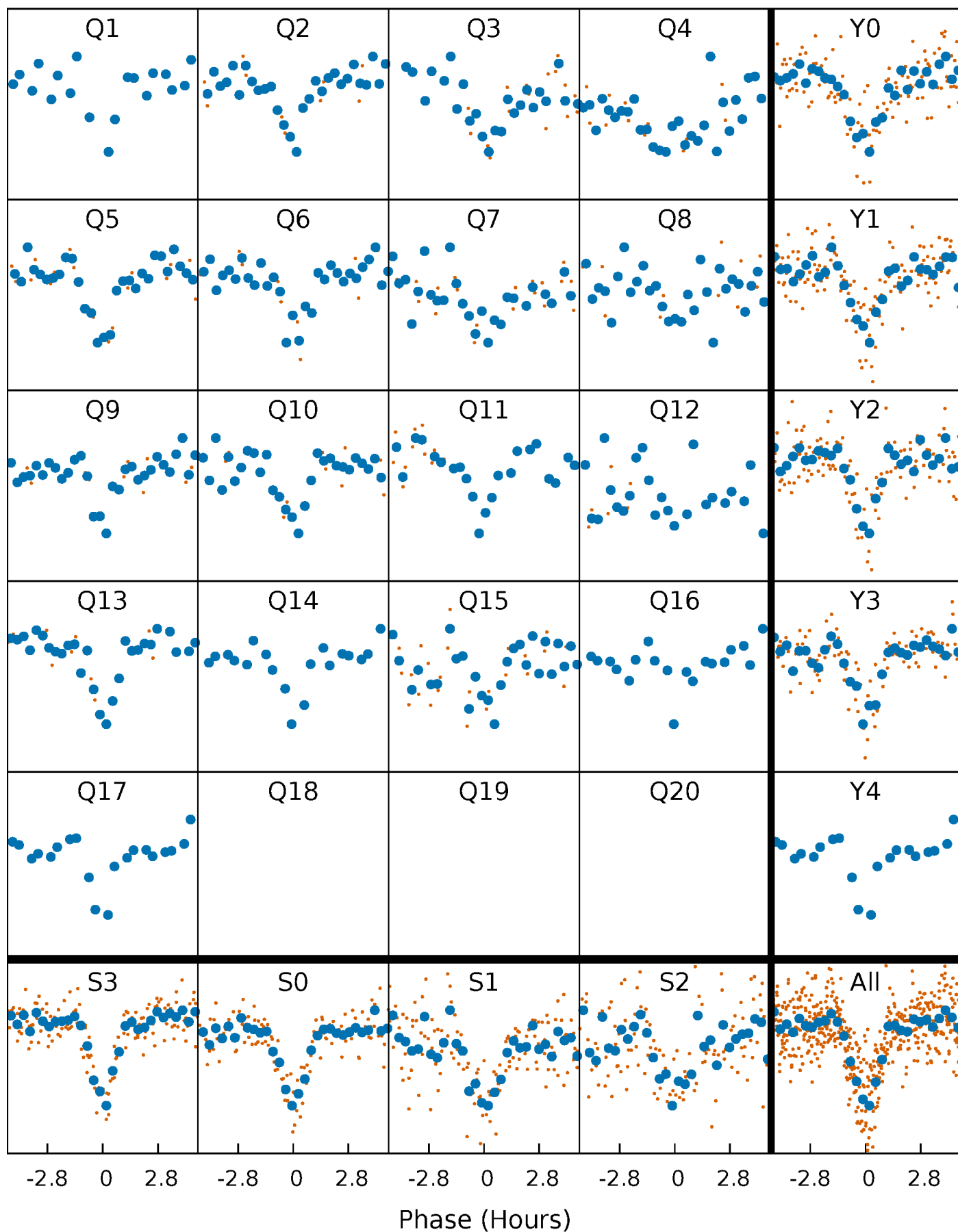


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



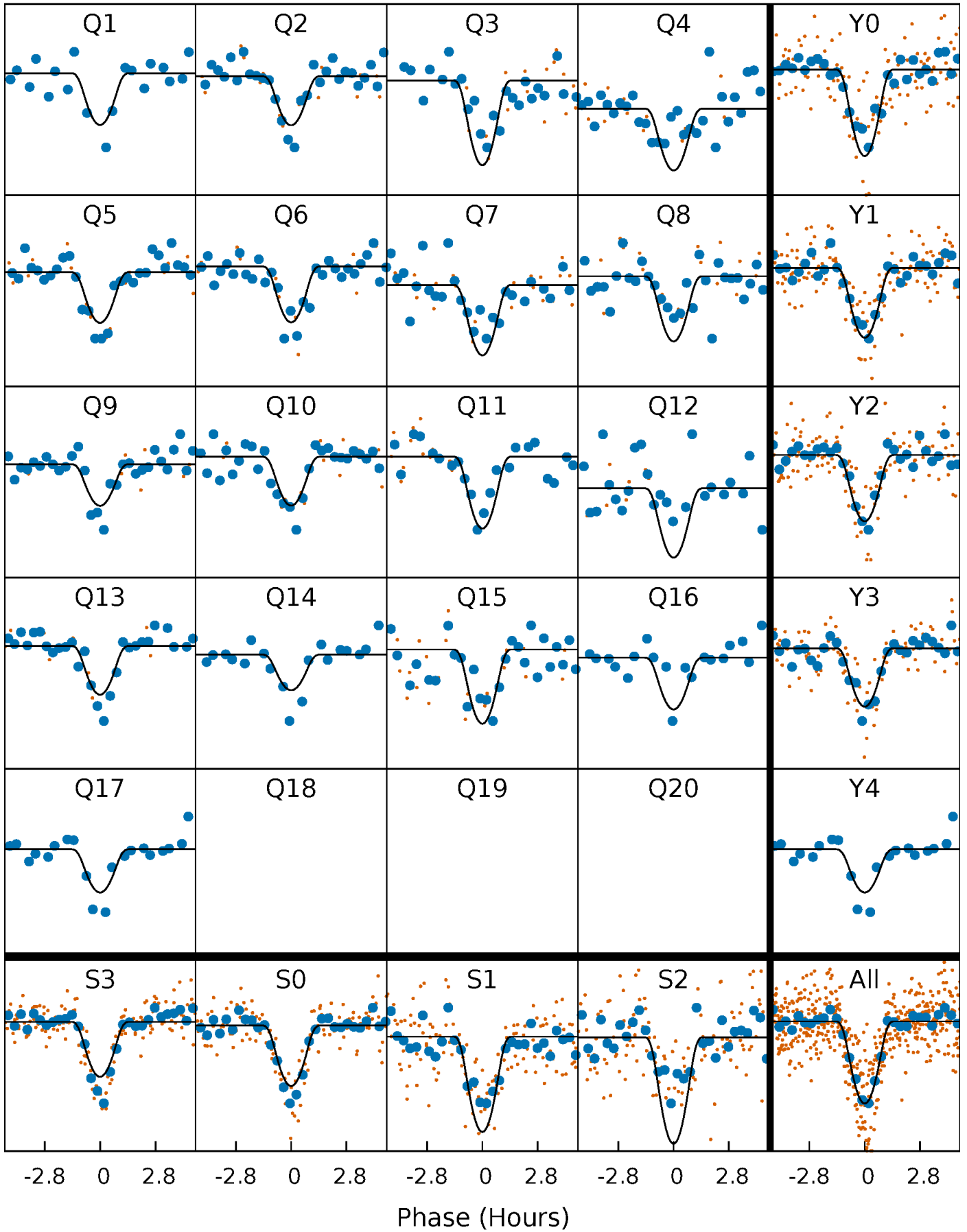
PDC Quarter-Phased Transit Curves

TCE 008625821-02 P= 45.396803 Days $T_0=155.288807$ (BKJD)



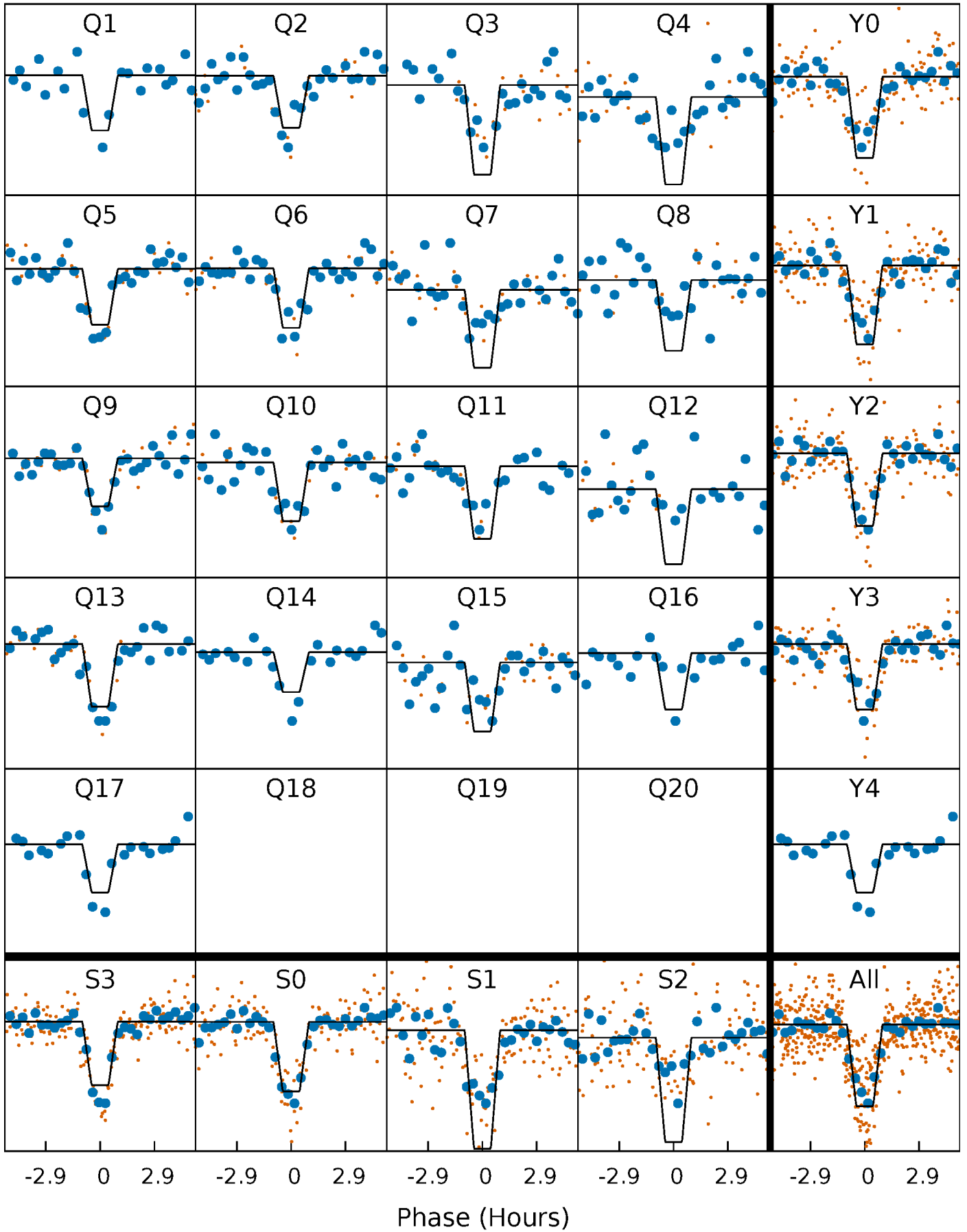
DV Quarter-Phased Transit Curves

TCE 008625821-02 P= 45.396803 Days $T_0=155.288807$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

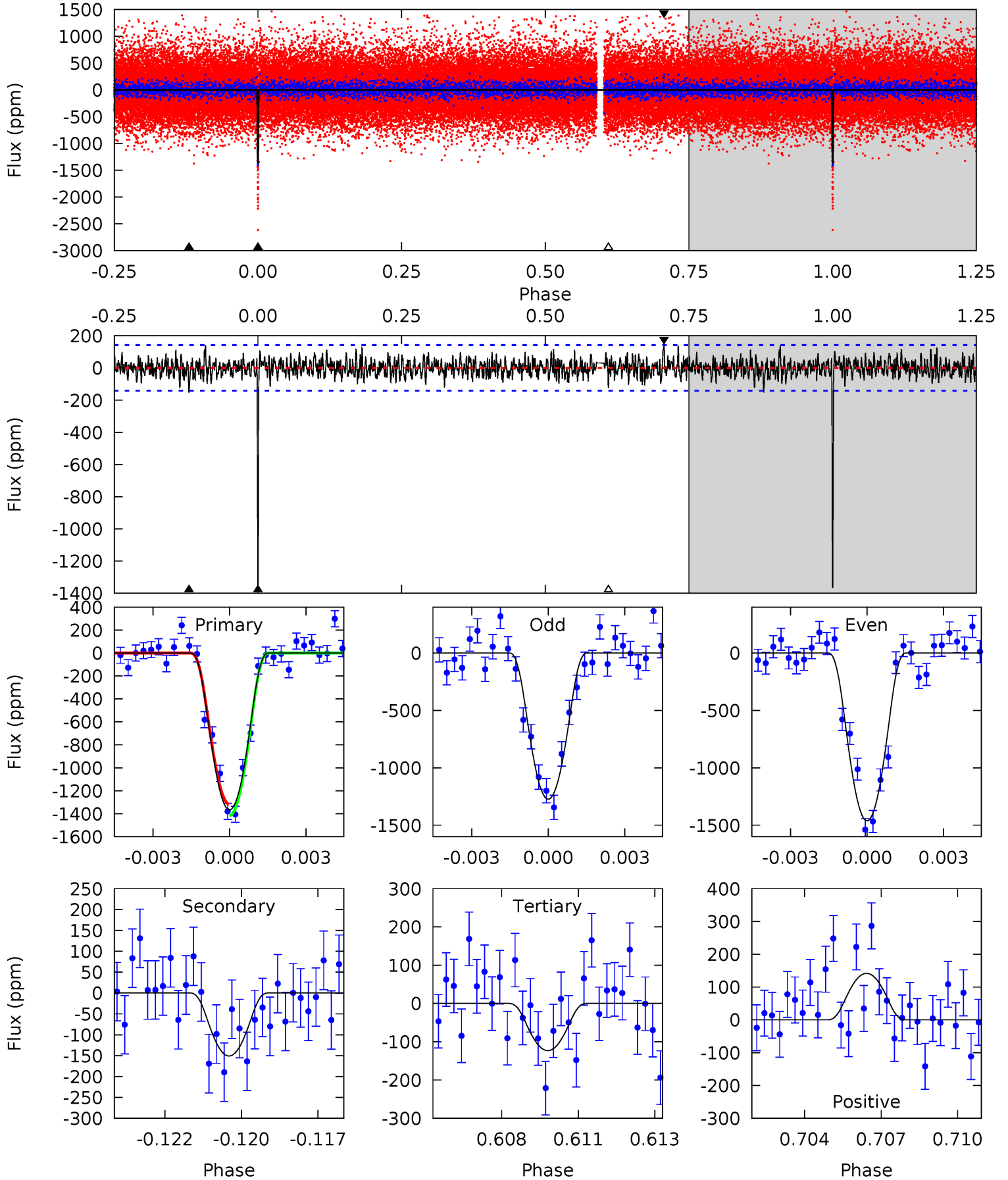
TCE 008625821-02 P= 45.396571 Days $T_0=155.293221$ (BKJD)



DV Model-Shift Uniqueness Test

008625821-02, P = 45.396803 Days, E = 109.892004 Days

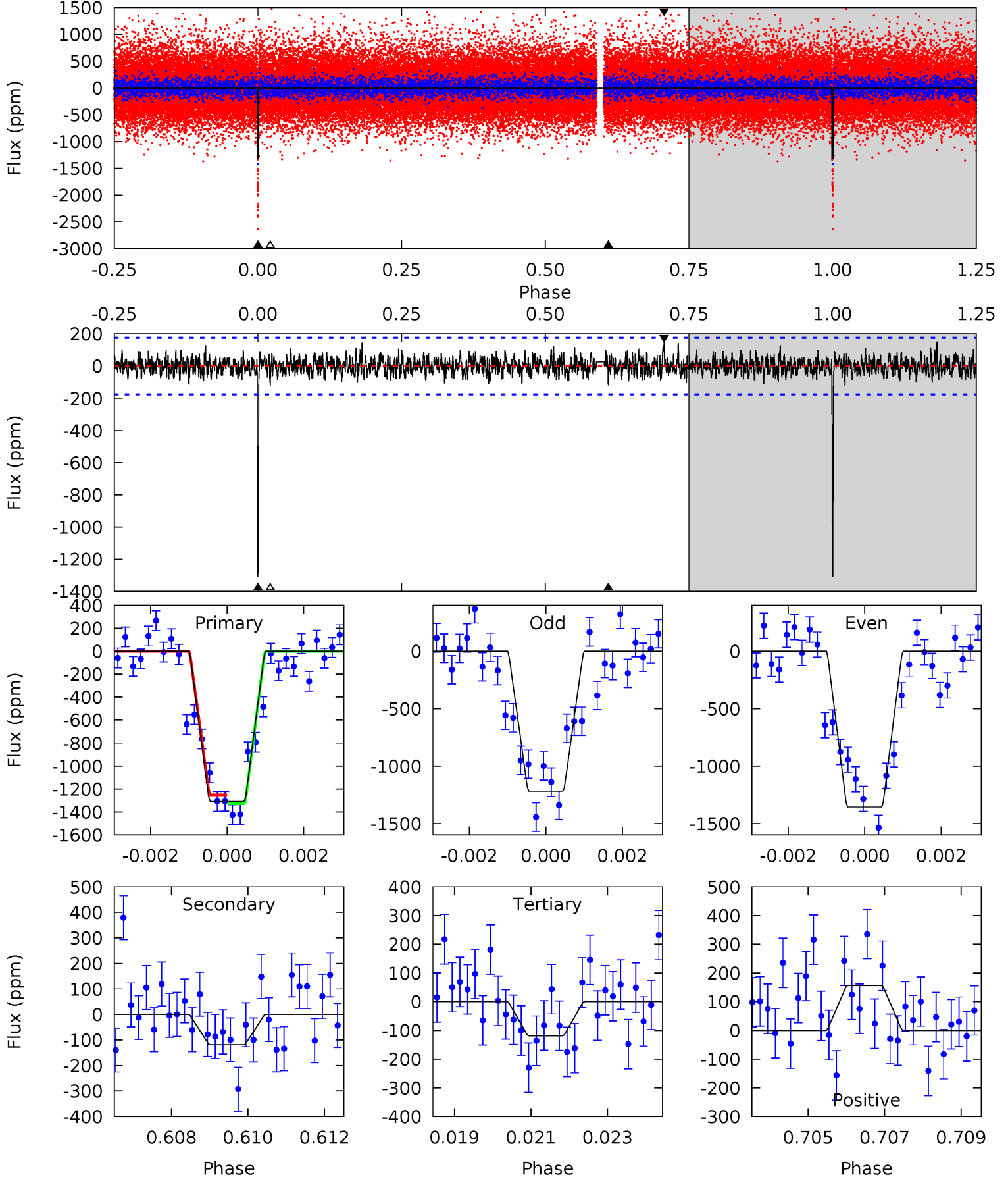
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.9	5.62	4.59	5.28	5.28	3.01	1.53	46.3	45.6	1.03	0.34	3.50	0.96	0.09	1.84



Alt Model-Shift Uniqueness Test

008625821-02, P = 45.396571 Days, E = 109.896650 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.8	3.61	3.61	4.77	5.35	3.13	1.22	36.2	35.1	0.00	-1.16	2.09	0.90	0.11	1.19



Stellar Parameters For KIC 008625821

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5649^{+169}_{-152}	$4.633^{+0.030}_{-0.112}$	$-0.700^{+0.300}_{-0.300}$	$0.705^{+0.123}_{-0.044}$	$0.786^{+0.069}_{-0.076}$	$3.157^{+0.484}_{-1.097}$
	+3%/-3%	+1%/-2%	+43%/-43%	+17%/-6%	+9%/-10%	+15%/-35%
Source	PHO1	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 008625821-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-151 ± 27	$5.16^{+4.08}_{-3.25}$	620^{+28}_{-22}	3083^{+1185}_{-458}	158^{+1043}_{-108}
Alt.	-119 ± 33	$4.47^{+3.71}_{-3.01}$	620^{+27}_{-21}	3112^{+1402}_{-512}	167^{+1423}_{-121}

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 $A_{obs} \gg 1.0$

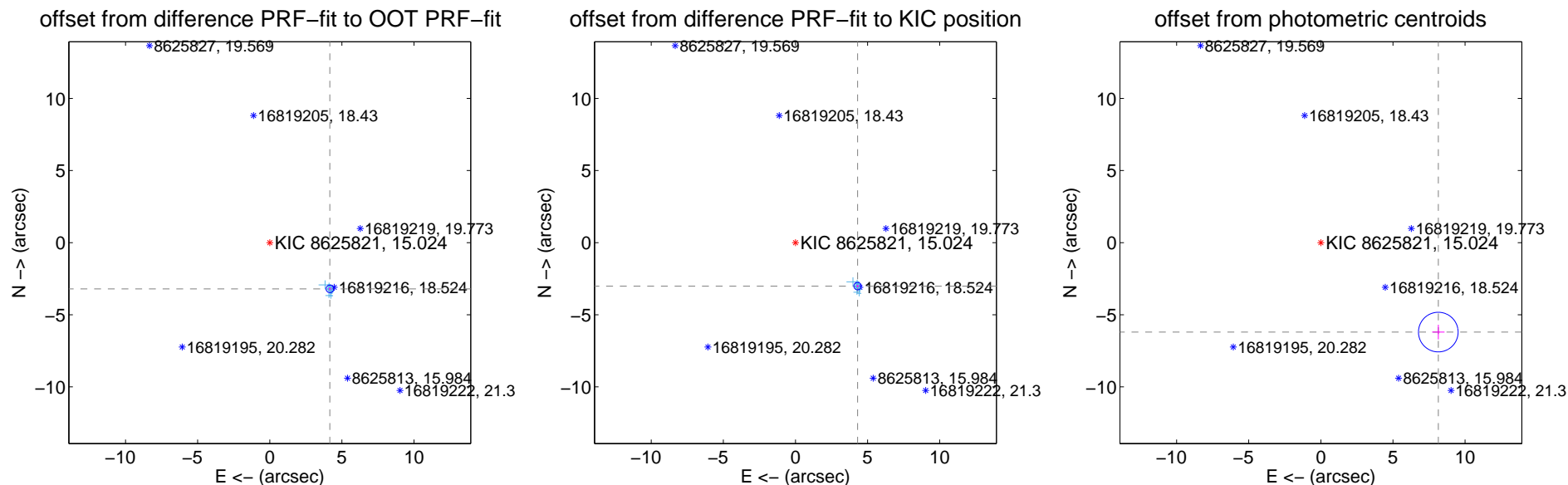
DV Centroid Data

Supplemental centroid analysis for 008625821-02. Kepler magnitude: 15.02. Transit SNR 29.91

There are 14 quarters with good PRF difference image offsets

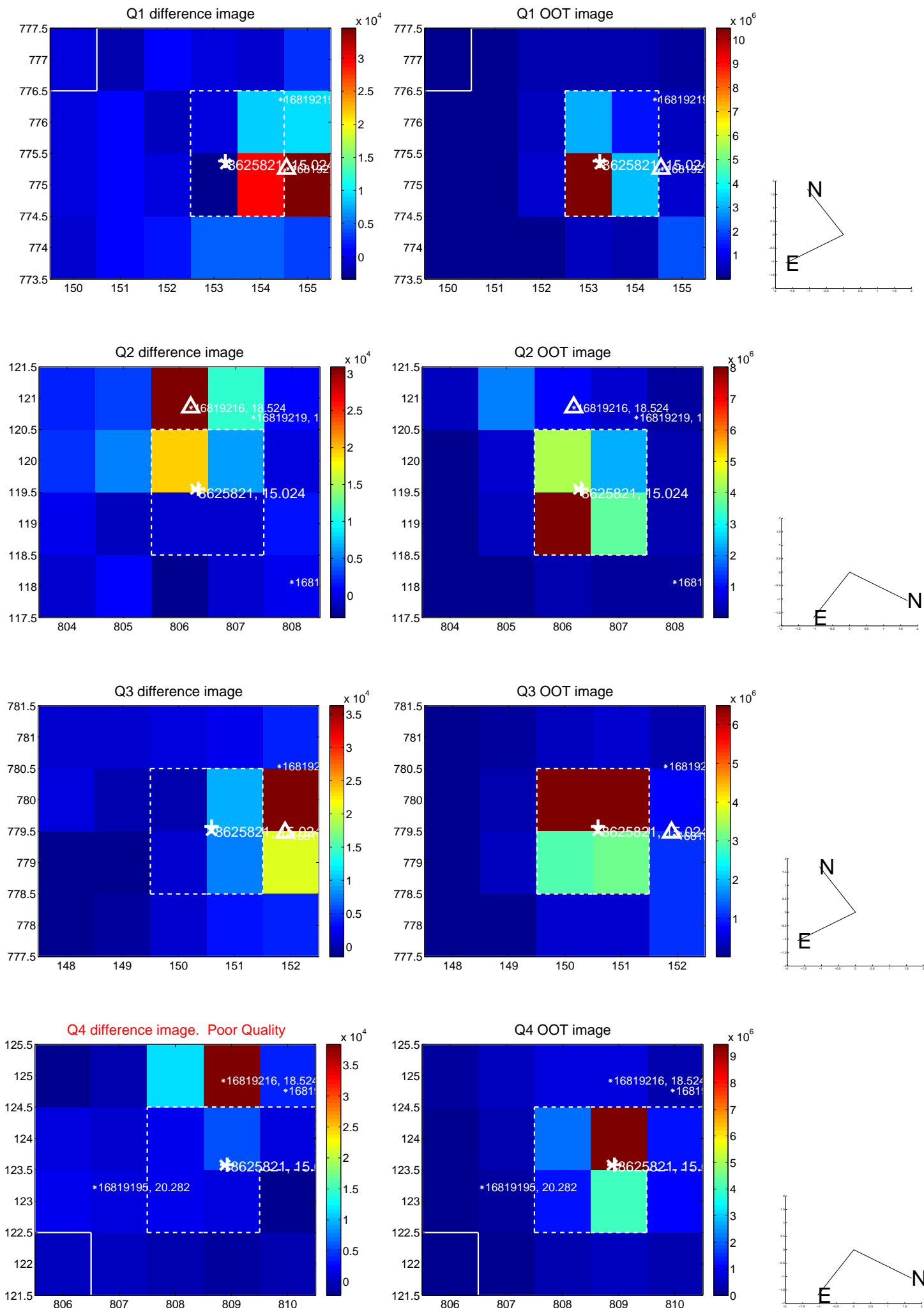
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.258 ± 0.087	60.30	-4.166 ± 0.073	-3.207 ± 0.093
PRF-fit source offset from KIC position	5.258 ± 0.086	61.43	-4.308 ± 0.075	-3.016 ± 0.091
photometric centroid source offset	10.23 ± 0.46	22.35	-8.14 ± 0.43	-6.20 ± 0.51

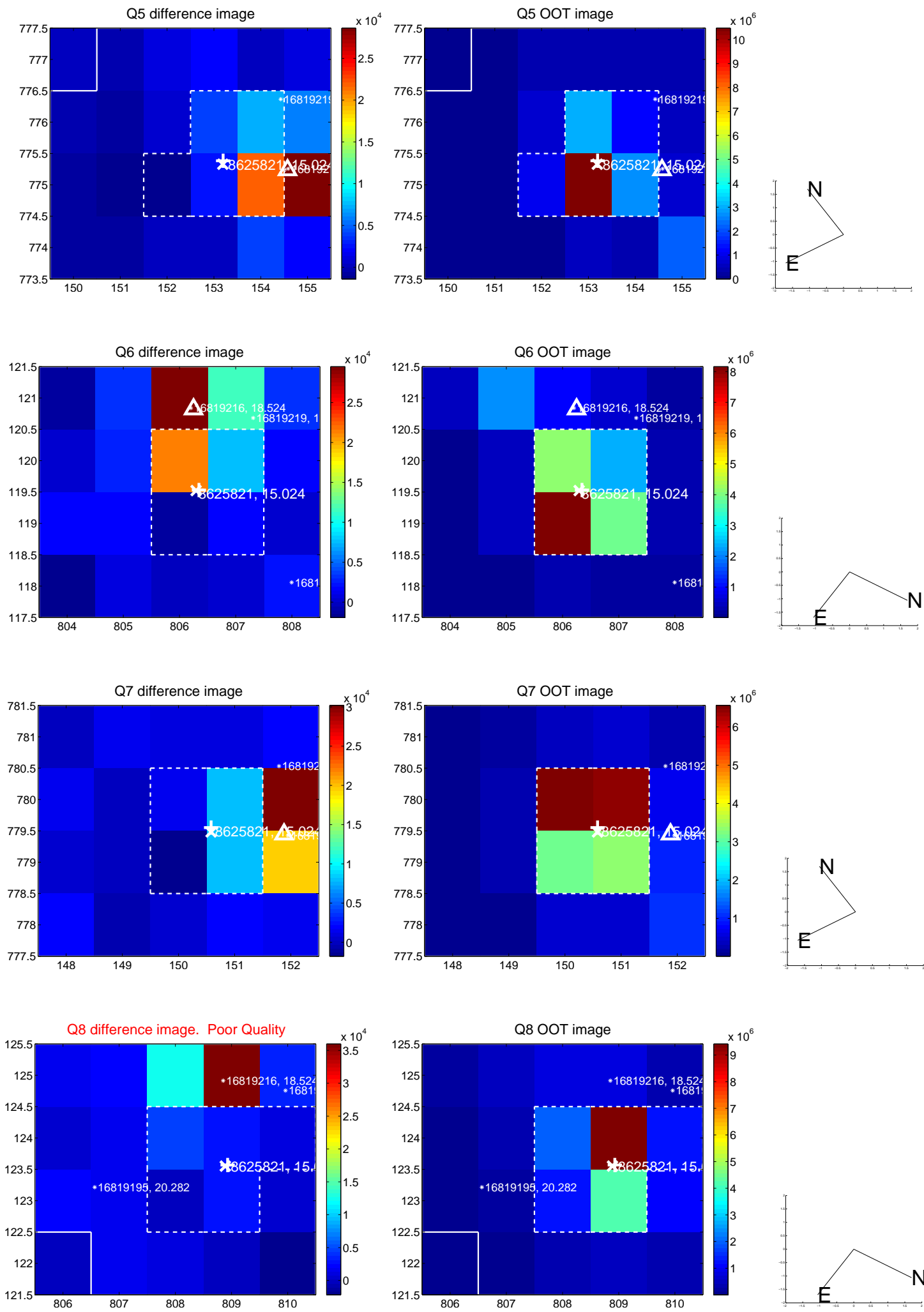


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

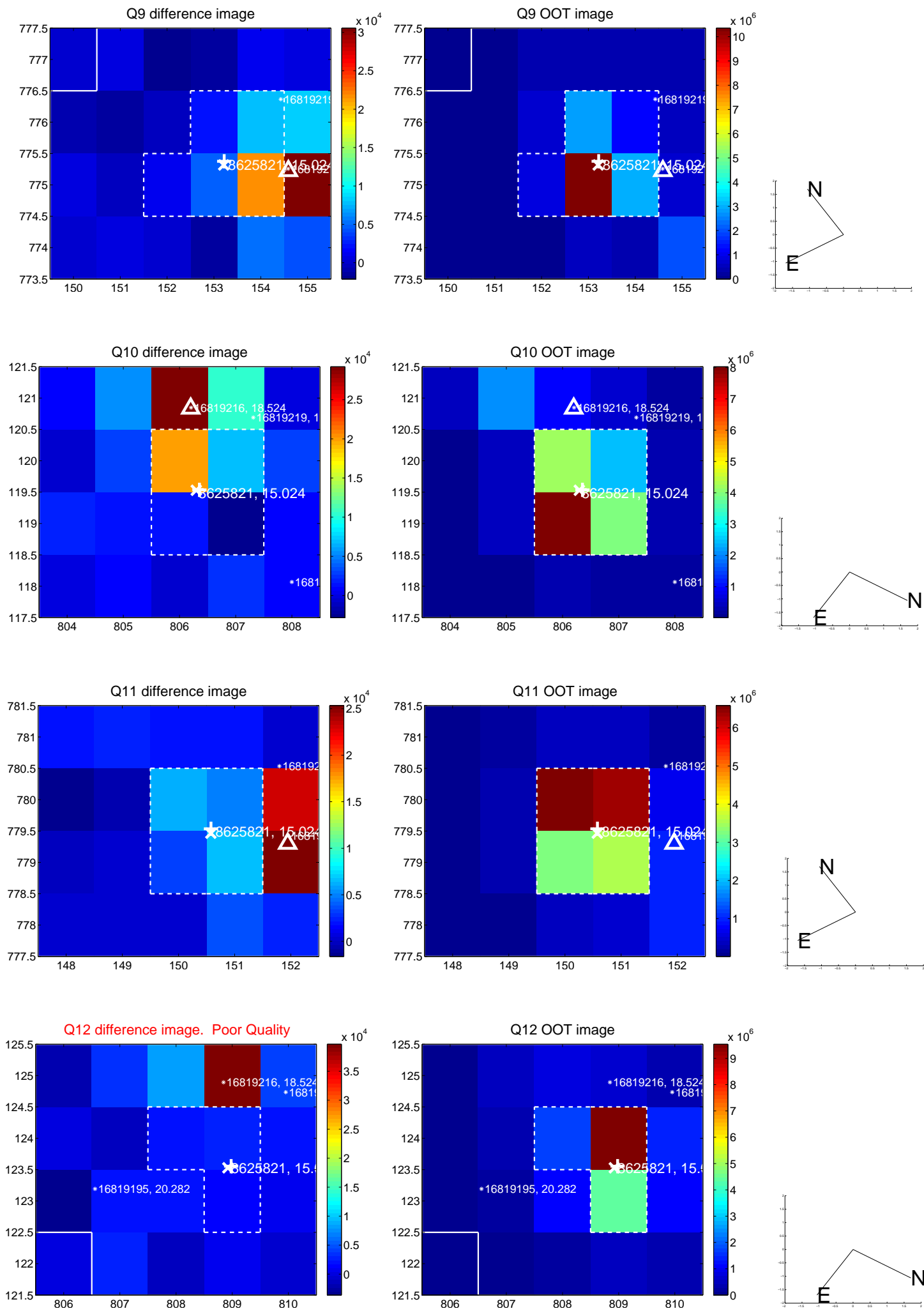
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



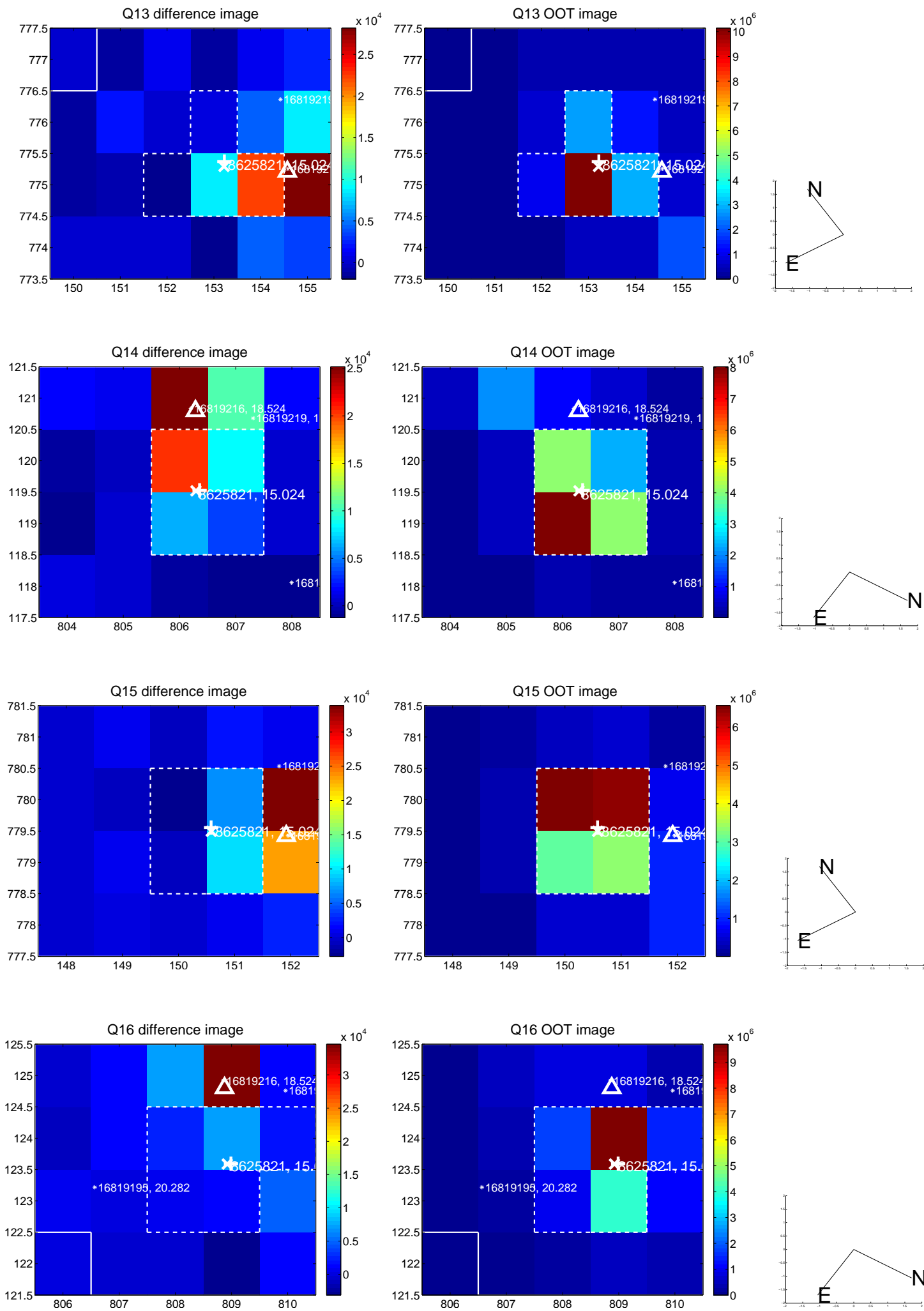
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



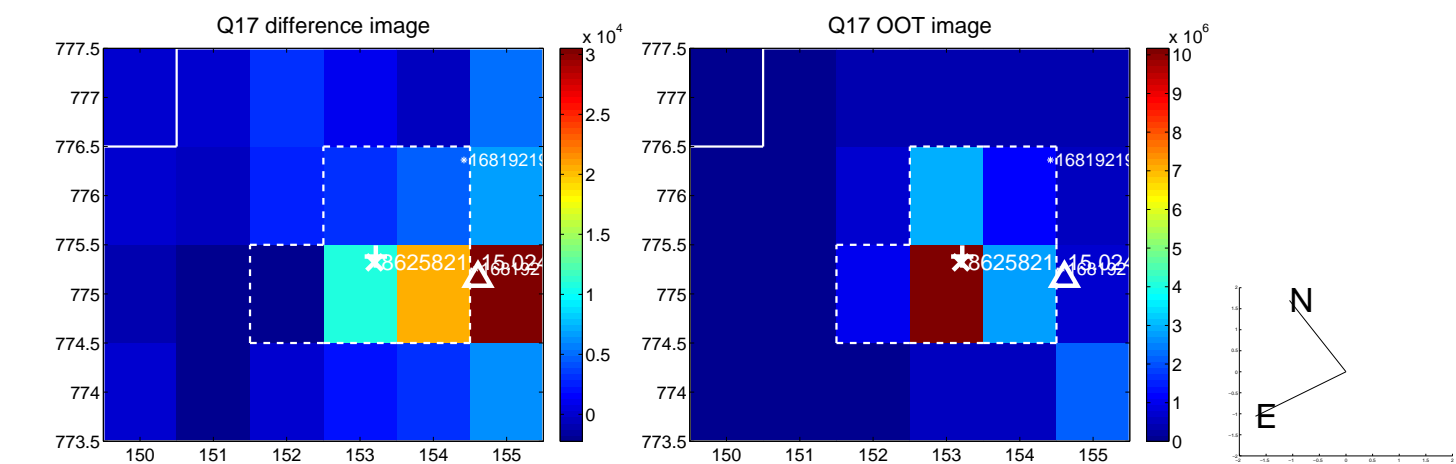
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



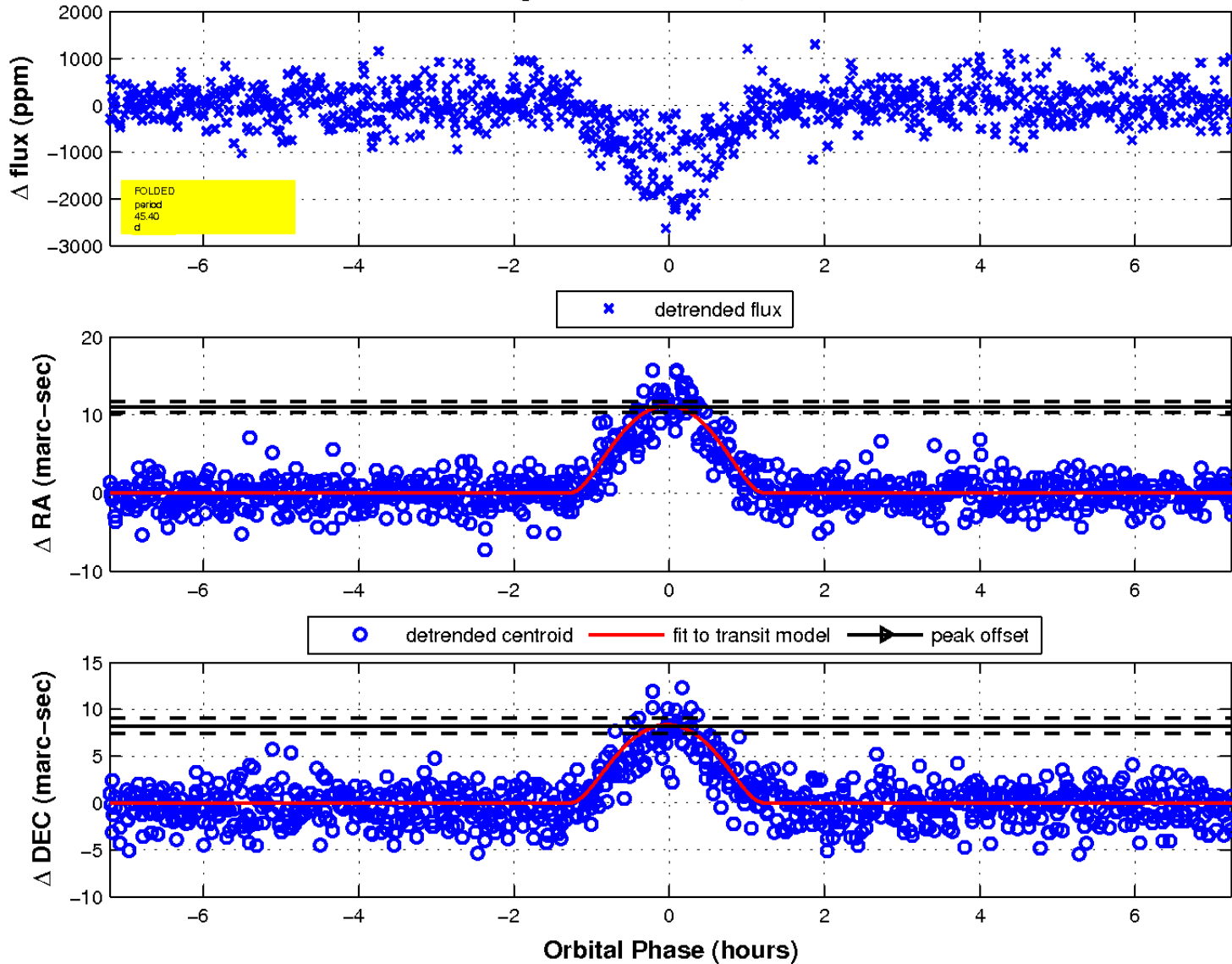
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



This astronomical image shows a field of stars against a dark, noisy background. A blue grid is overlaid on the image, with green numerical labels at the intersections. The labels include right ascension values (45.0, 44.0, 43.0, 42.0, 41.0) and declination values (19:28:40, 20.0, 30.0, 40.0). The stars are concentrated in the central region of the image.

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