

KIC 005735878

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})
005735878-01	OBS	6622.01	16.832079	133.174746	48473.8	7.806	5343.1	4914.8	2.75	6300	61.44	566.00
005735878-02	OBS	No	16.832082	137.256911	1679.0	6.308	194.7	188.0	2.75	6300	12.77	566.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005735878-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
005735878-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 005735878-01

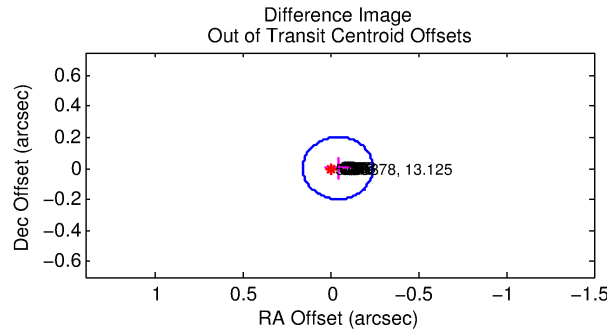
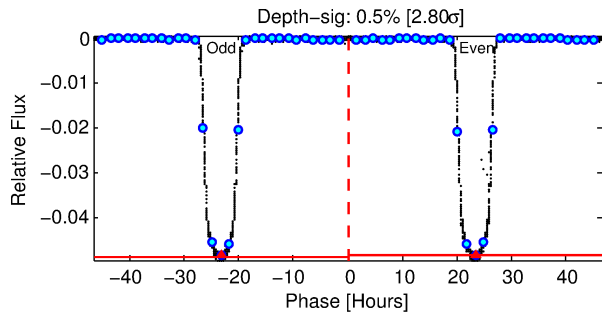
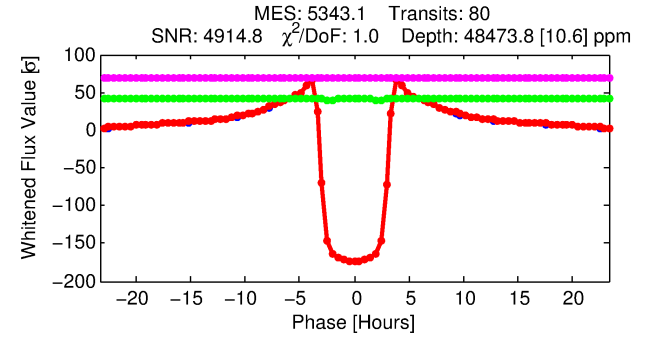
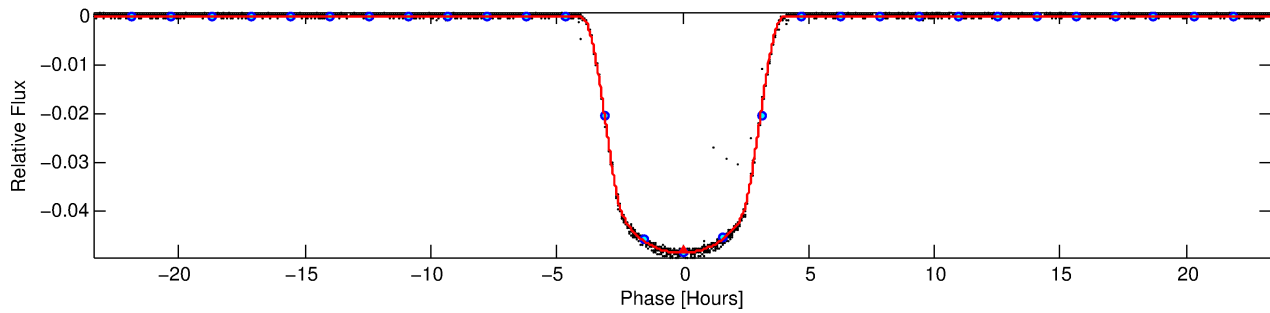
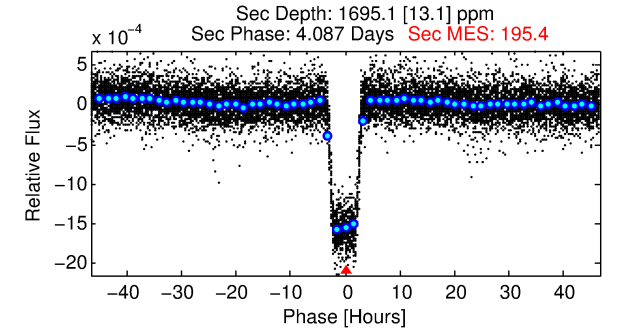
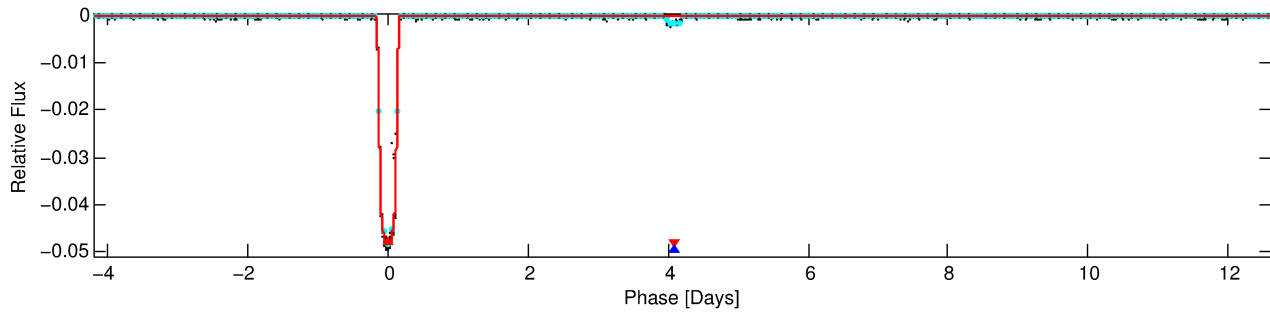
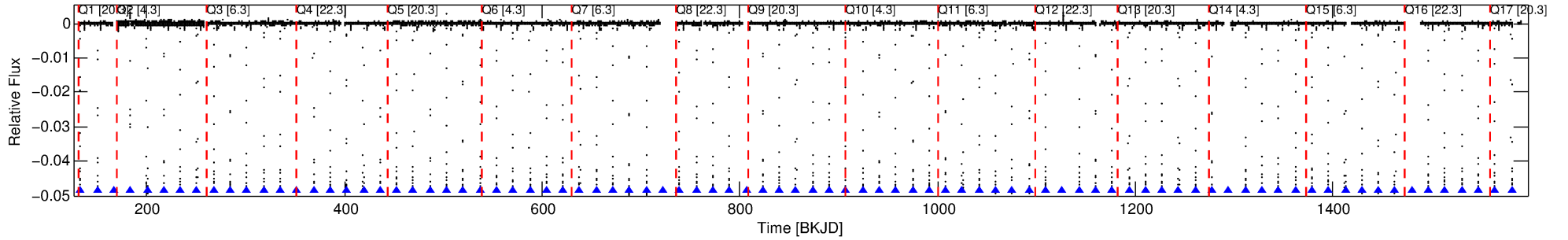
No Significant Match Found

DV One-Page Summary

KIC: 5735878 Candidate: 1 of 2 Period: 16.832 d

KOI: K06622.01 Corr: 1.000

Kp: 13.12 R*: 2.75 Rs Teff: 6300.0 K Logg: 3.65 Fe/H: -0.800



DV Fit Results:

Period = 16.83208 [0.00000] d
Epoch = 133.1747 [0.0000] BKJD
Rp/R* = 0.2044 [0.0000]
a/R* = 19.41 [0.01]
b = 0.25 [0.00]
Seff = 566.01 [324.18]
Teq = 1244 [178] K
Rp = 61.44 [24.26] Re
a = 0.1376 [0.0497] AU
Ag = 4.68 [2.62] [1.40σ]
Teffp = 2828 [85] K [8.03σ]

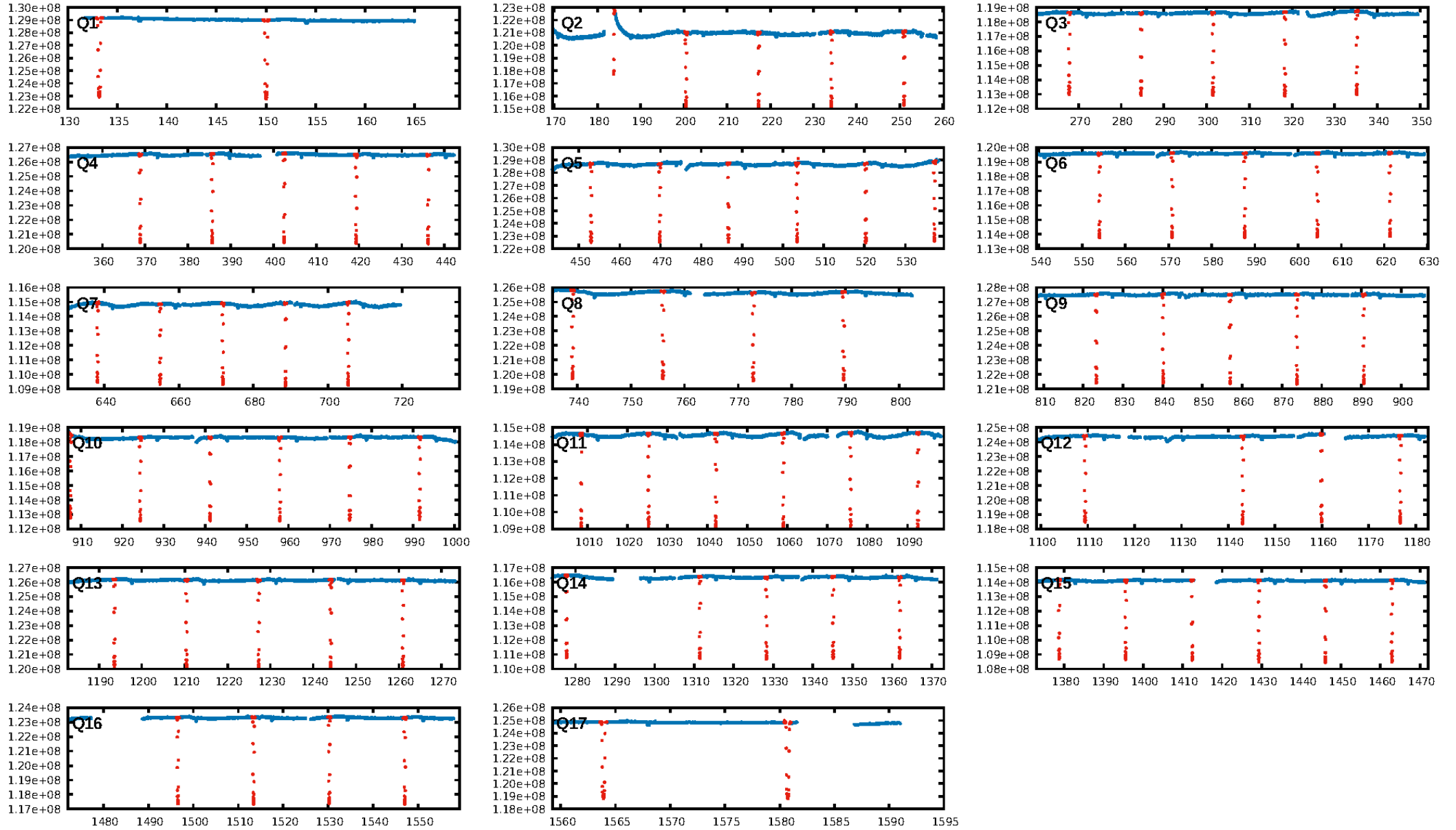
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [76/76]
GhostDiagnostic-chr: 5.893
Centroid-sig: 0.0%
Centroid-so: 0.119 arcsec [58.62σ]
OotOffset-rm: 0.040 arcsec [0.59σ]
KicOffset-rm: 0.124 arcsec [1.83σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

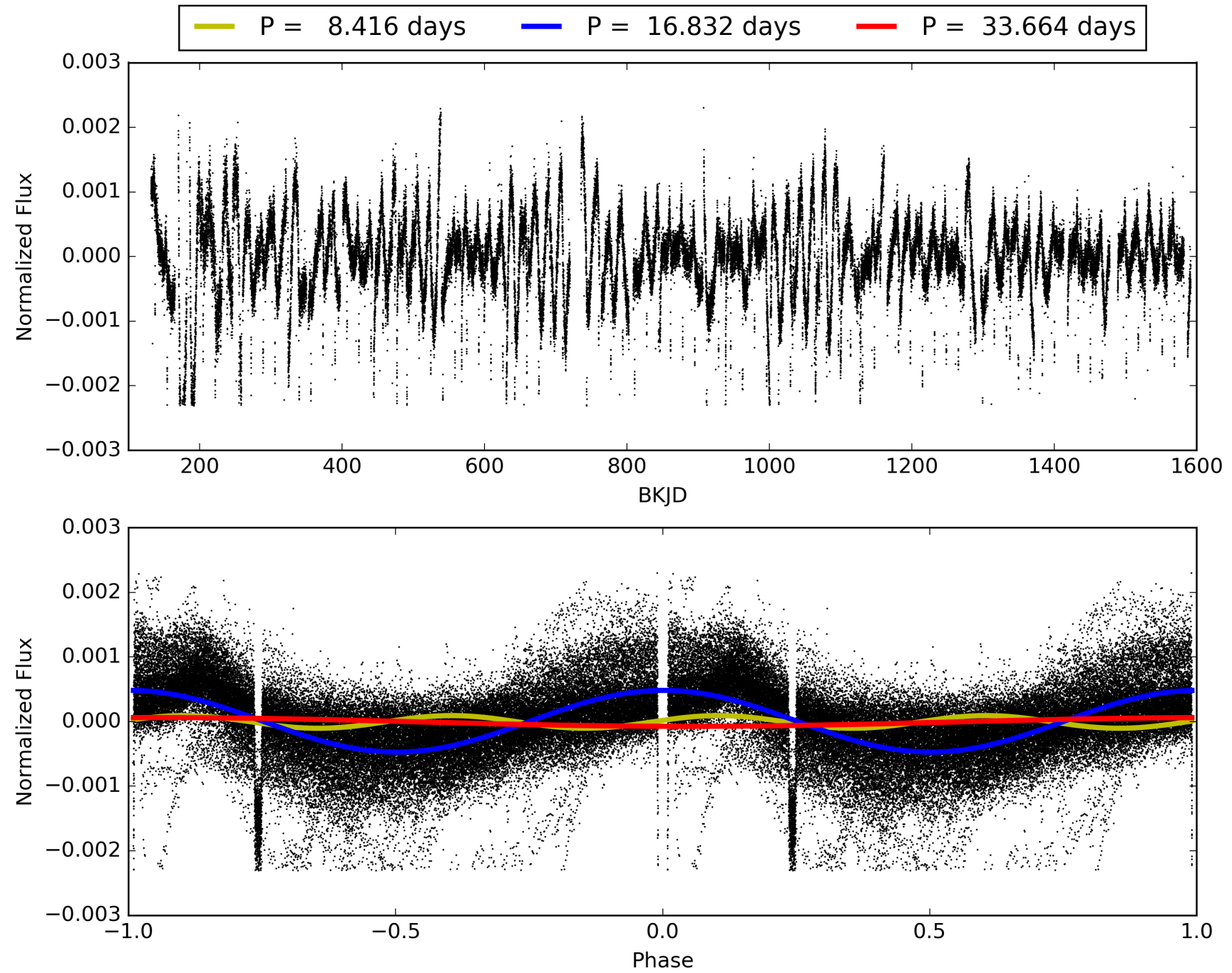
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:32:25 Z

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

TCE 005735878-01, PDC Light Curves

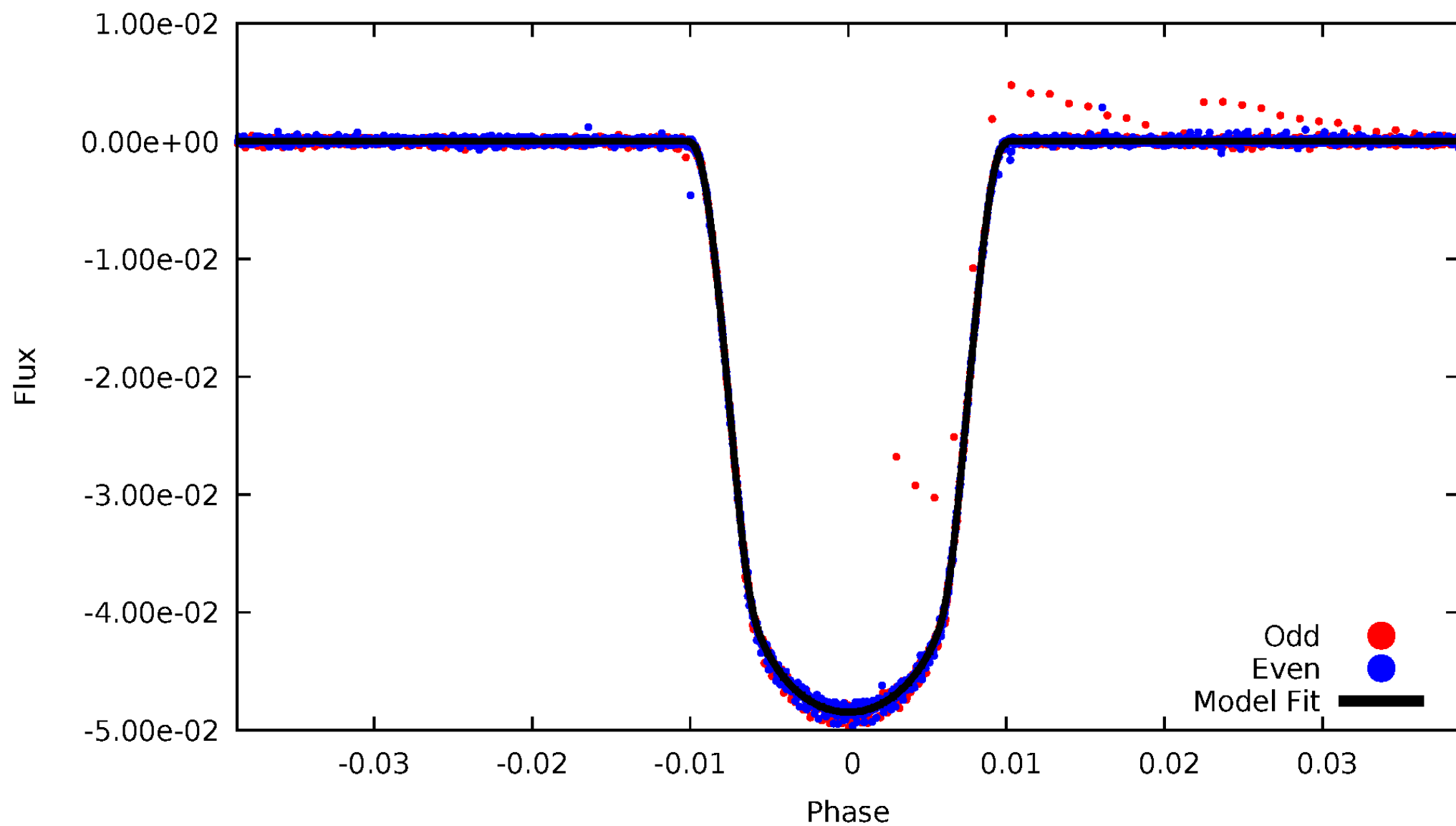


TCE 005735878-01



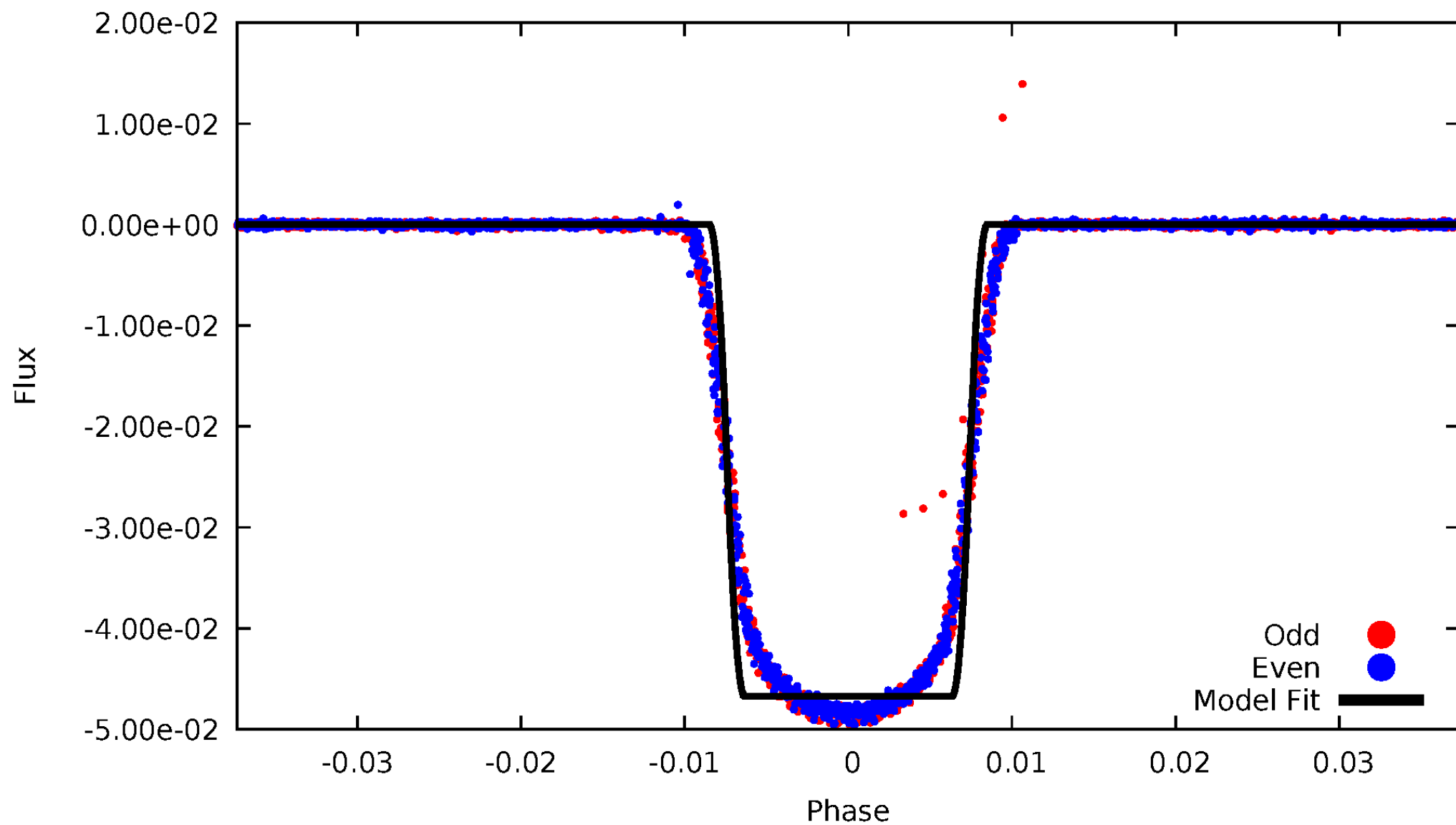
DV Odd/Even

TCE 005735878-01



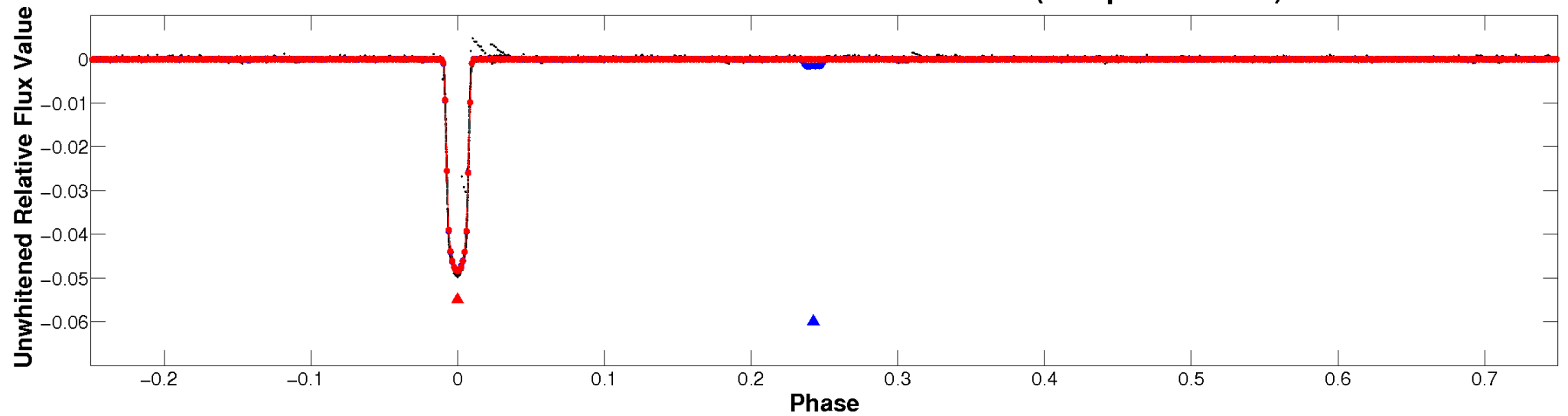
ALT Odd/Even

TCE 005735878-01

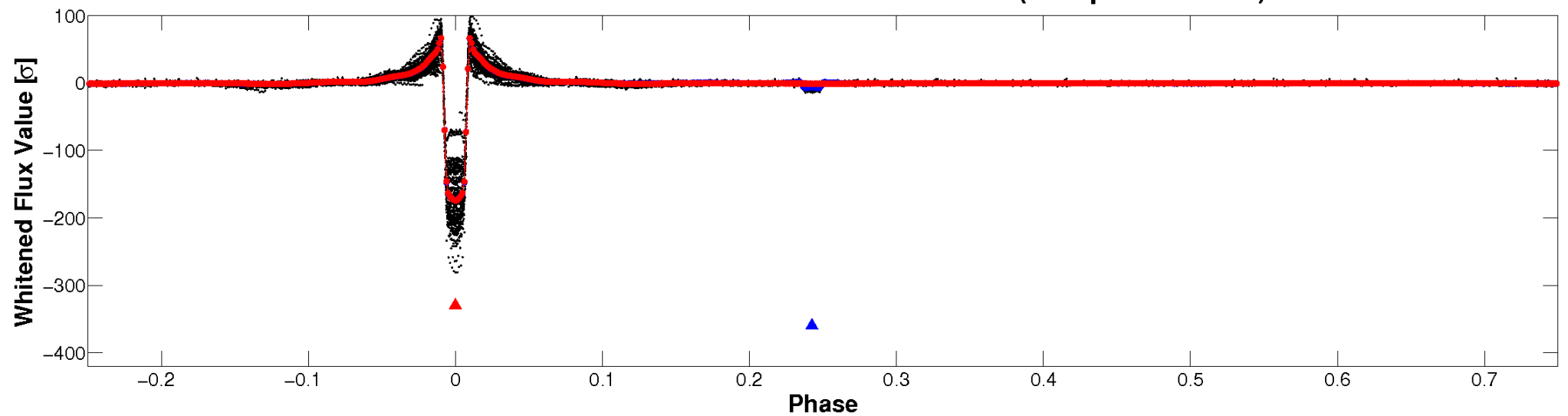


Non-Whitened Vs. Whitened Light Curve

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

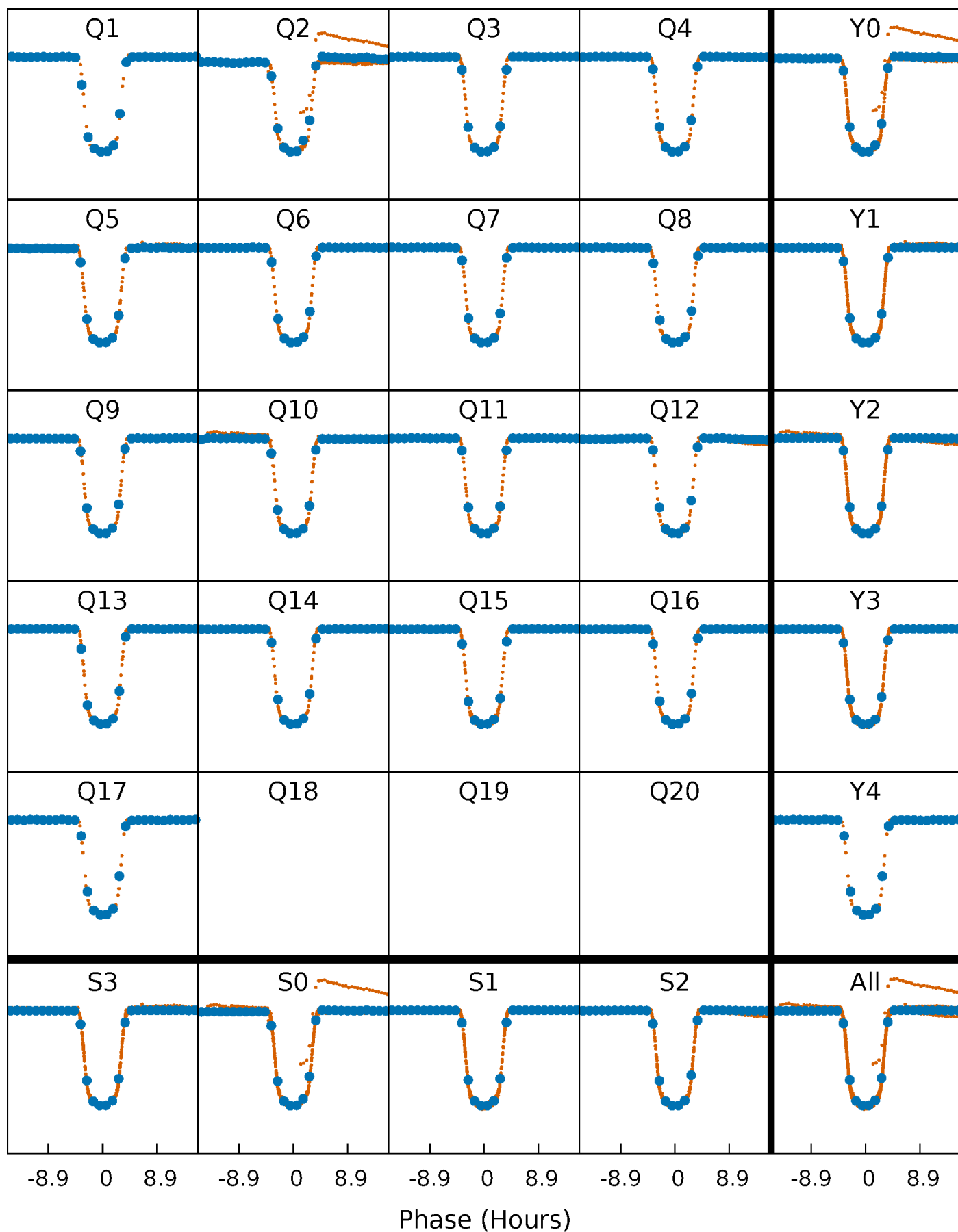


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



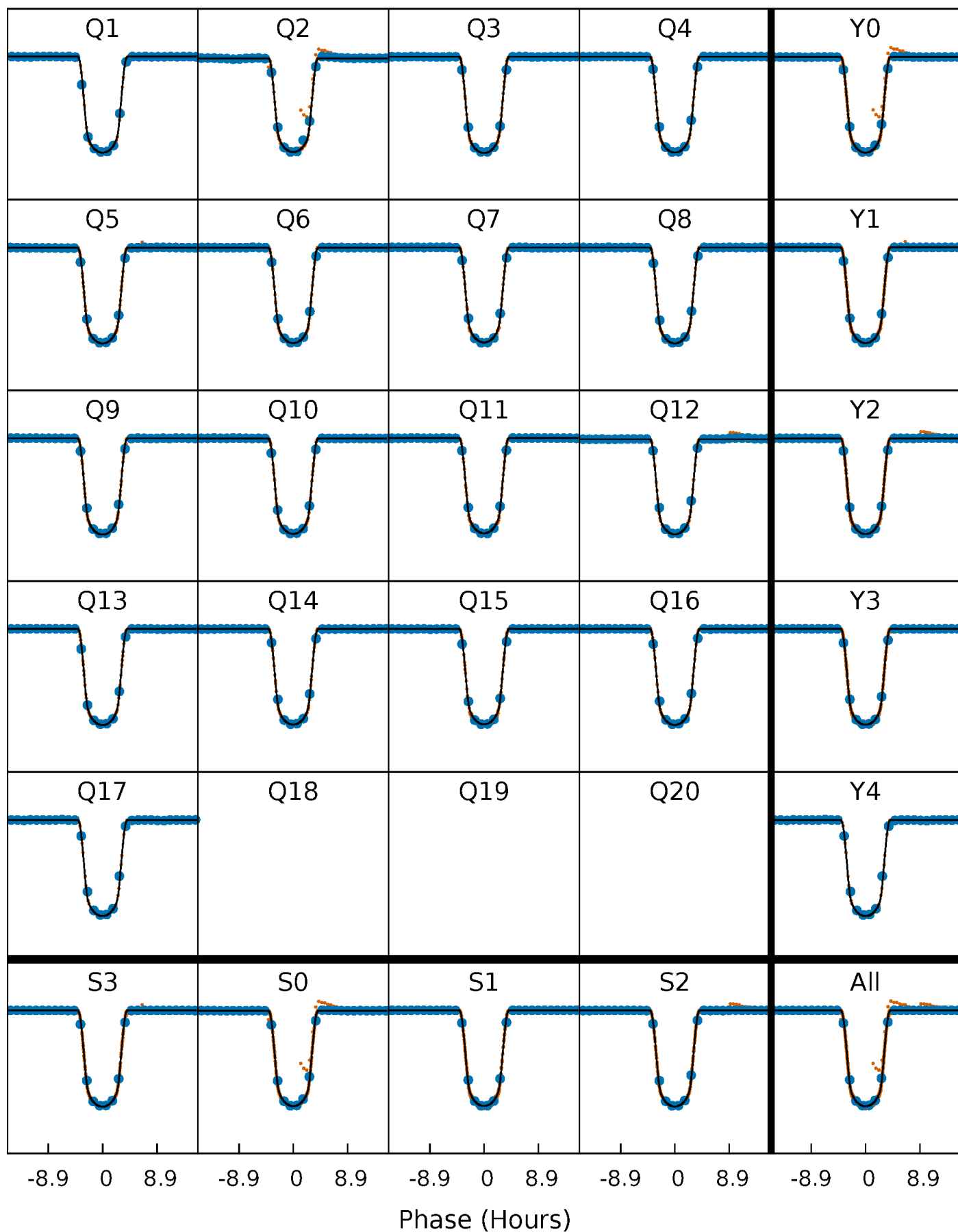
PDC Quarter-Phased Transit Curves

TCE 005735878-01 P= 16.832079 Days $T_0=133.174746$ (BKJD)



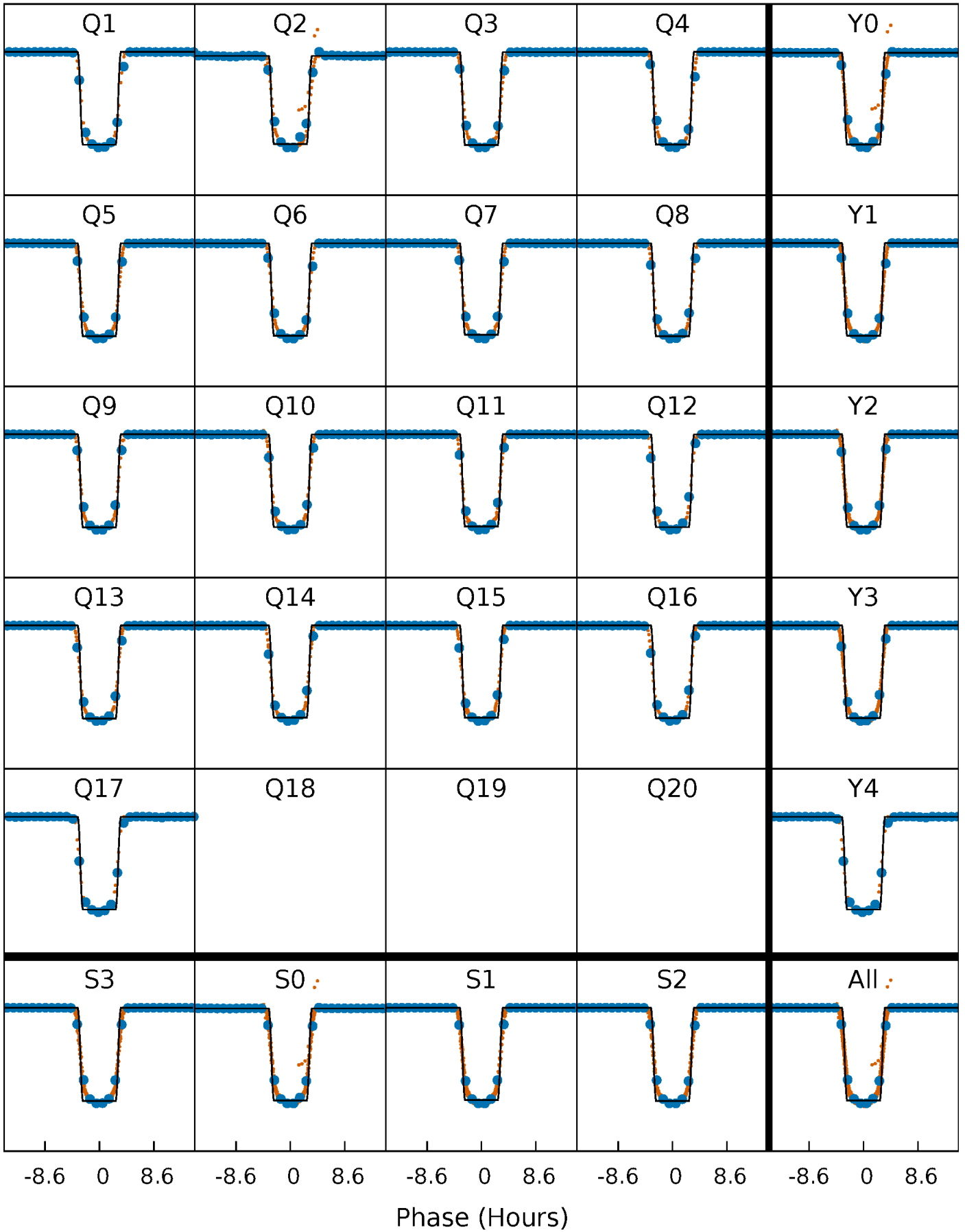
DV Quarter-Phased Transit Curves

TCE 005735878-01 P= 16.832079 Days $T_0=133.174746$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

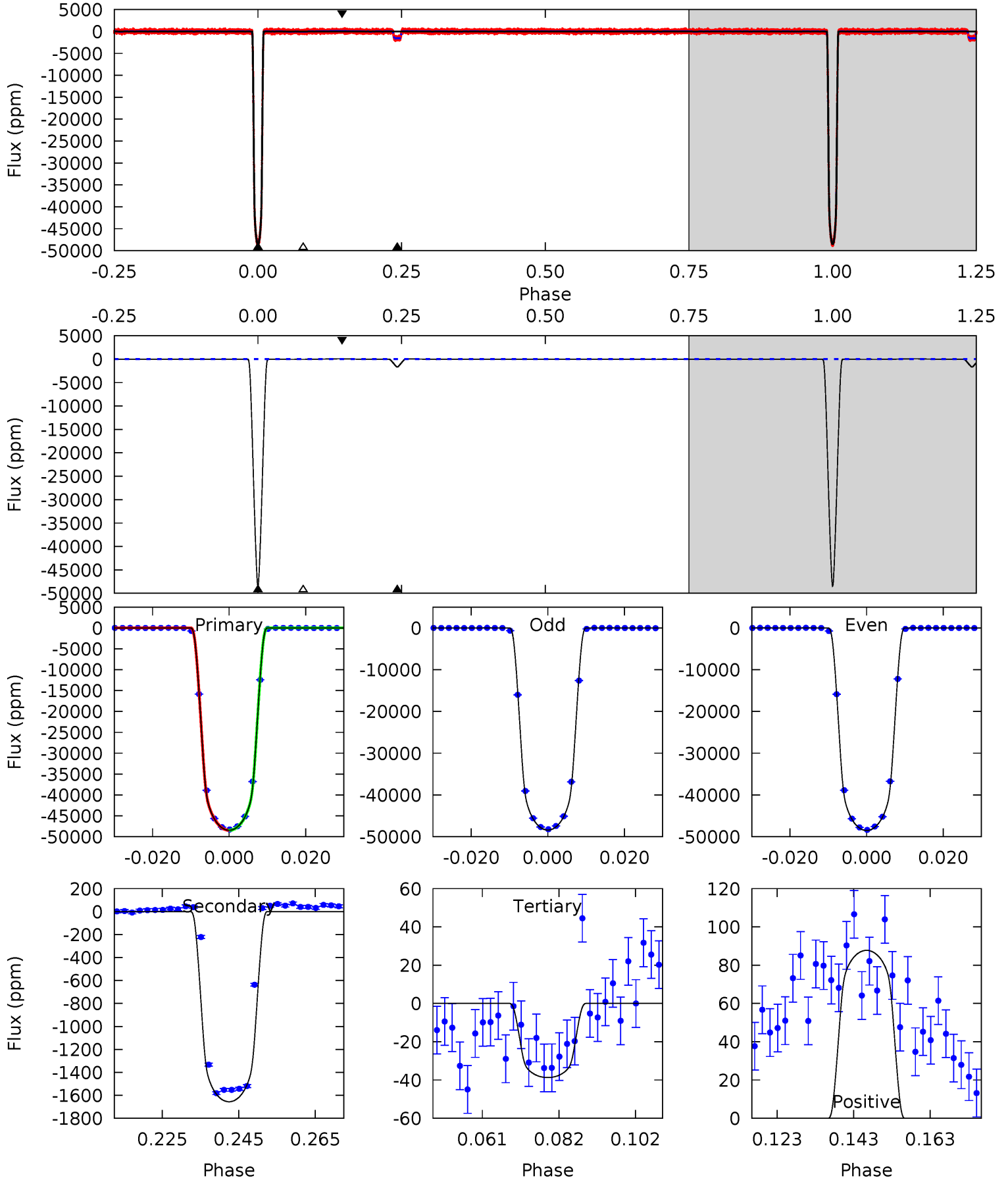
TCE 005735878-01 P= 16.832207 Days $T_0=133.168748$ (BKJD)



DV Model-Shift Uniqueness Test

005735878-01, P = 16.832079 Days, E = 116.342667 Days

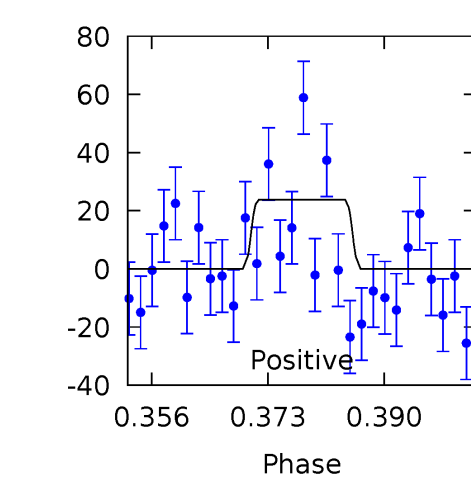
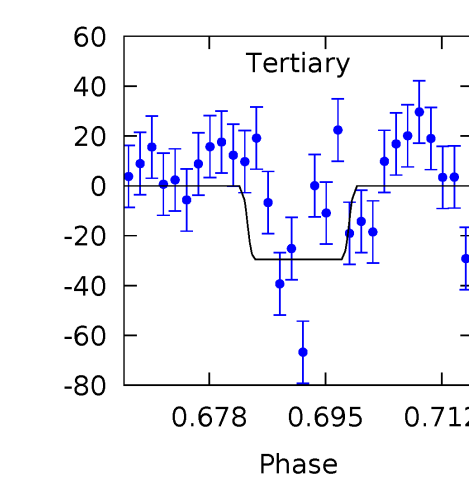
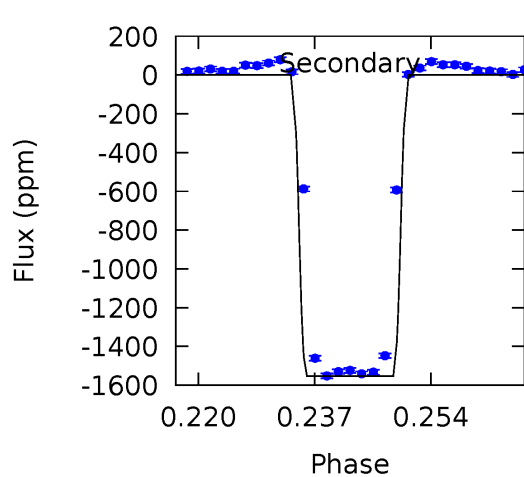
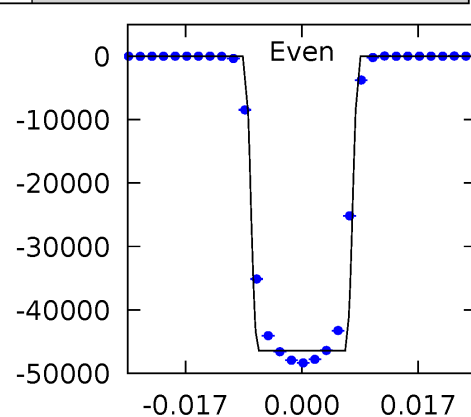
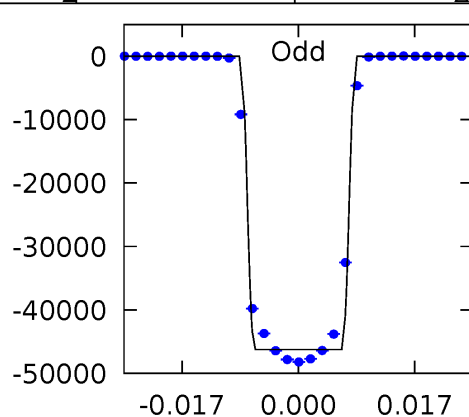
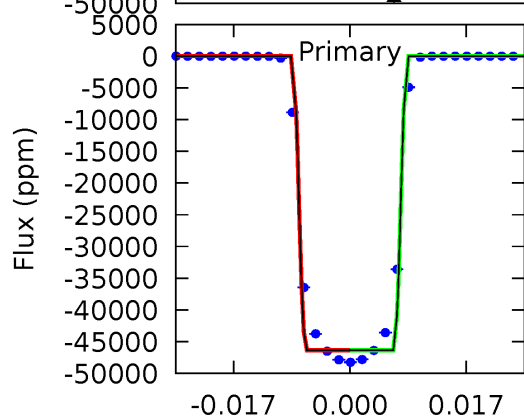
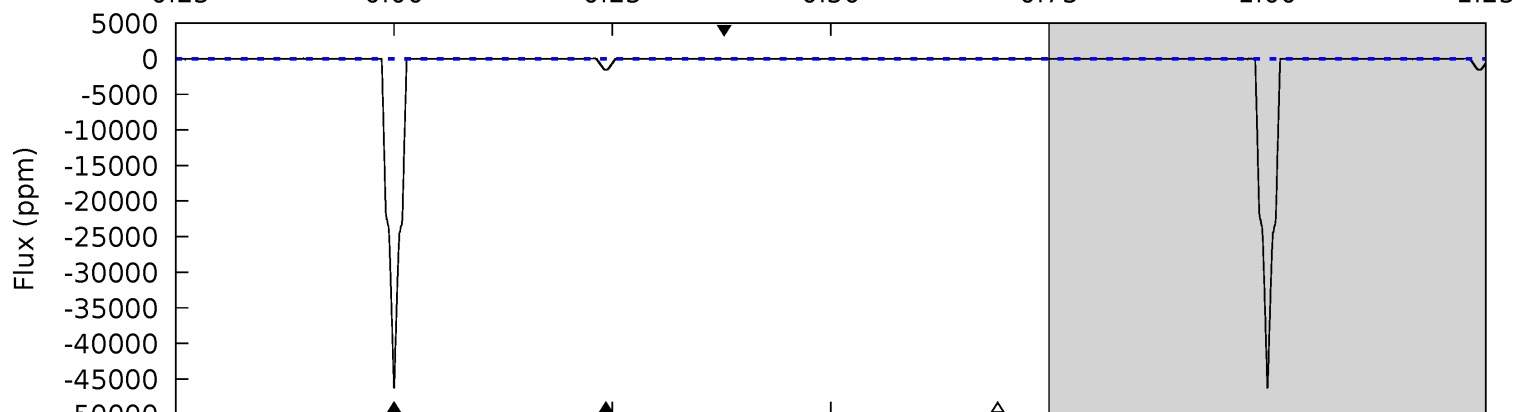
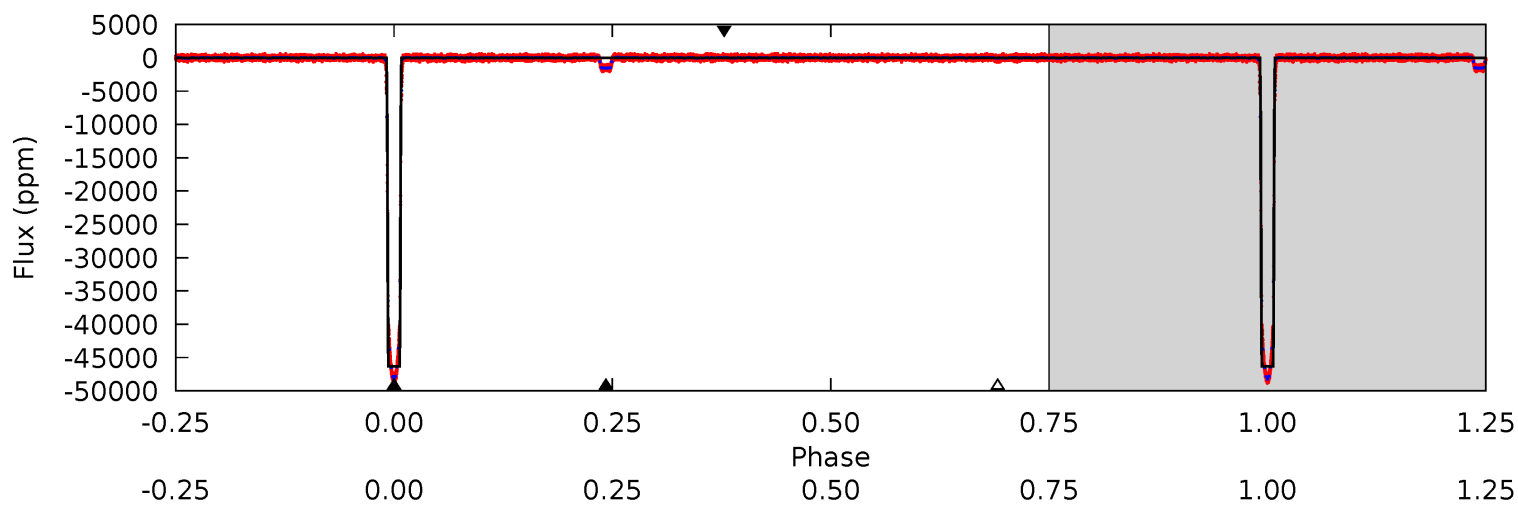
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10175	347.7	8.13	18.4	4.89	2.32	4.32	10167	10157	339.6	329.3	11.0	1.00	0.00	0.49



Alt Model-Shift Uniqueness Test

005735878-01, P = 16.832207 Days, E = 116.336541 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7536	252.6	4.80	3.87	4.92	2.39	1.31	7531	7532	247.8	248.8	14.5	1.00	0.00	0.52



Stellar Parameters For KIC 005735878

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6300^{+170}_{-189}	$3.646^{+0.322}_{-0.115}$	$-0.800^{+0.350}_{-0.300}$	$2.755^{+0.586}_{-1.088}$	$1.223^{+0.163}_{-0.303}$	$0.082^{+0.216}_{-0.028}$
	+3%/-3%	+9%/-3%	+44%/-37%	+21%/-39%	+13%/-25%	+263%/-34%
Source	PHO1	FLK73	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 005735878-01 / KOI 6622.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1656 ± 5	$60.28^{+7.37}_{-13.12}$	1707^{+118}_{-171}	3318^{+55}_{-62}	$4.773^{+2.423}_{-0.913}$
Alt.	-1553 ± 6	$62.66^{+8.69}_{-12.88}$	1697^{+123}_{-158}	3228^{+50}_{-64}	$4.091^{+1.911}_{-0.860}$

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 $A_{obs} \gg 1.0$

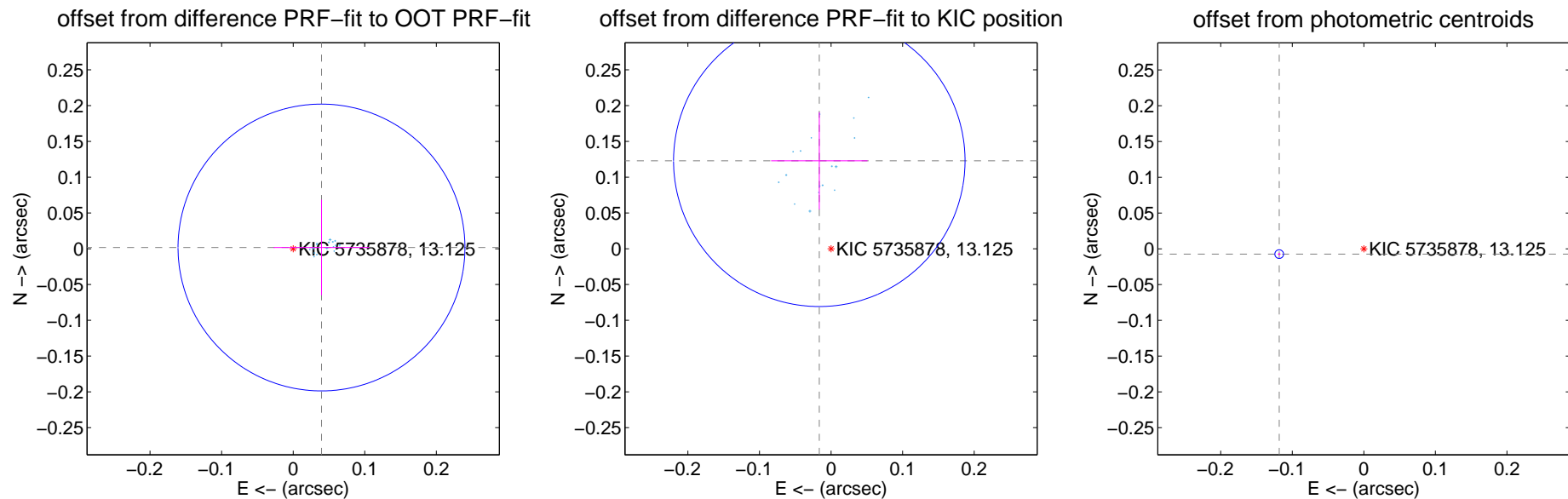
DV Centroid Data

Supplemental centroid analysis for 005735878-01. Kepler magnitude: 13.12. Transit SNR 4914.82

There are 17 quarters with good PRF difference image offsets

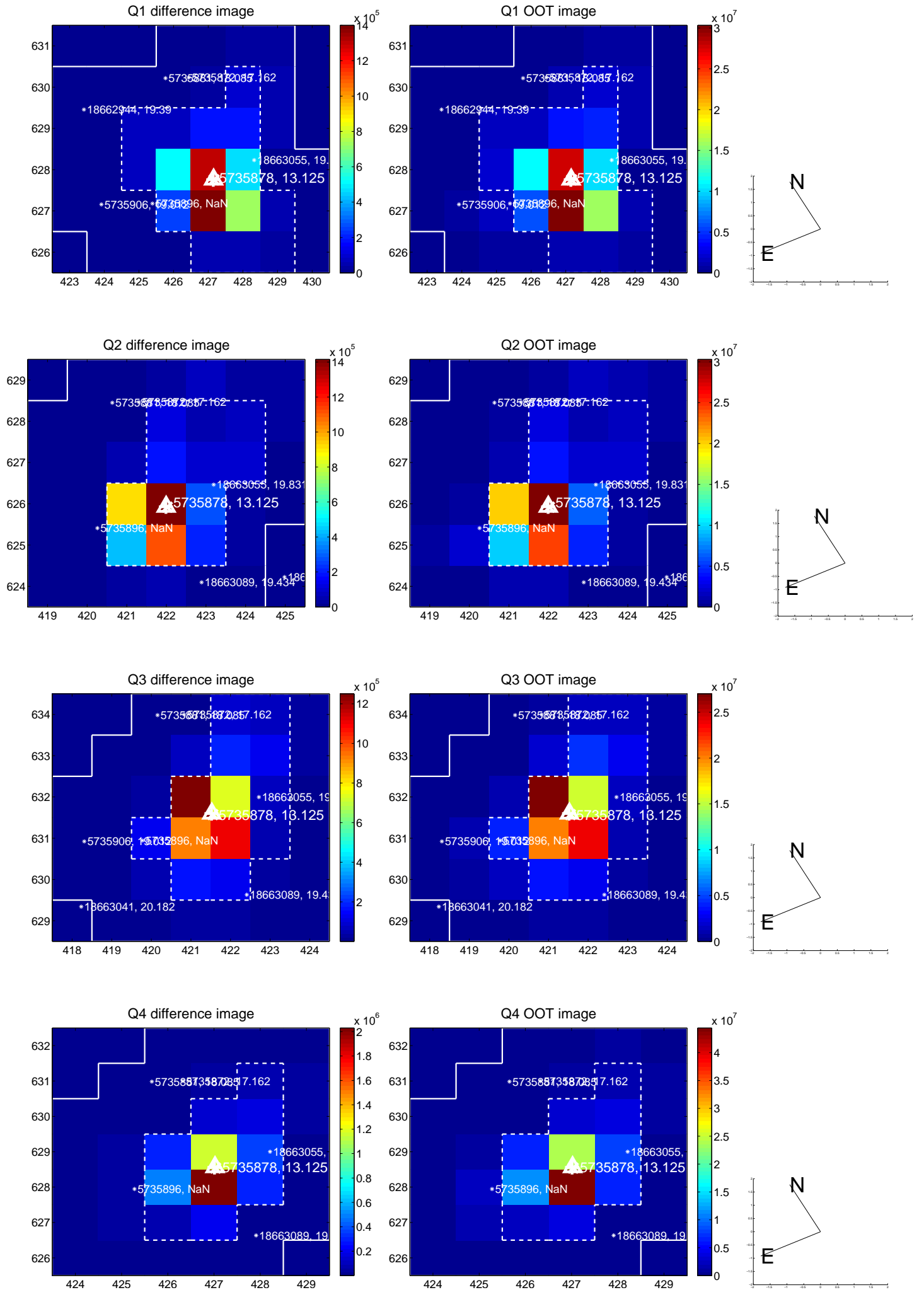
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.040 ± 0.067	0.59	-0.040 ± 0.067	0.002 ± 0.067
PRF-fit source offset from KIC position	0.124 ± 0.068	1.83	0.016 ± 0.067	0.123 ± 0.068
photometric centroid source offset	0.12 ± 0.00	58.62	0.12 ± 0.00	-0.01 ± 0.00

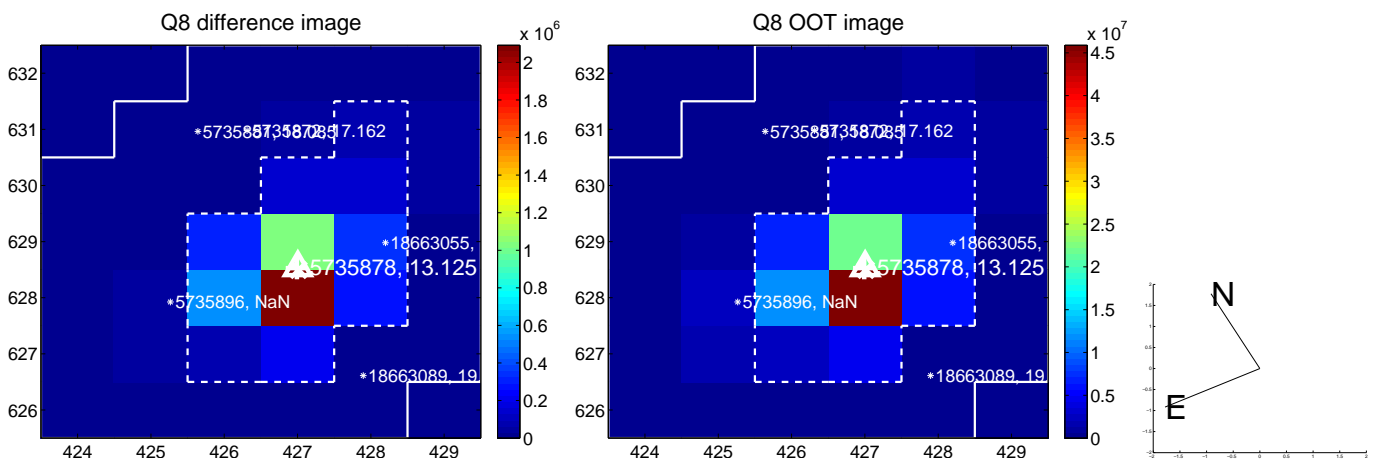
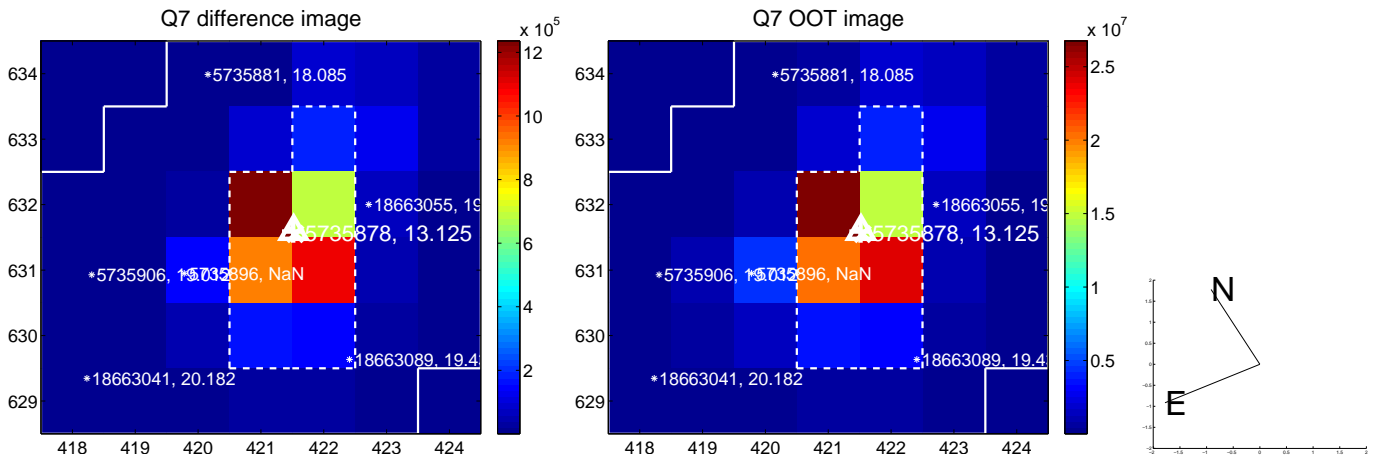
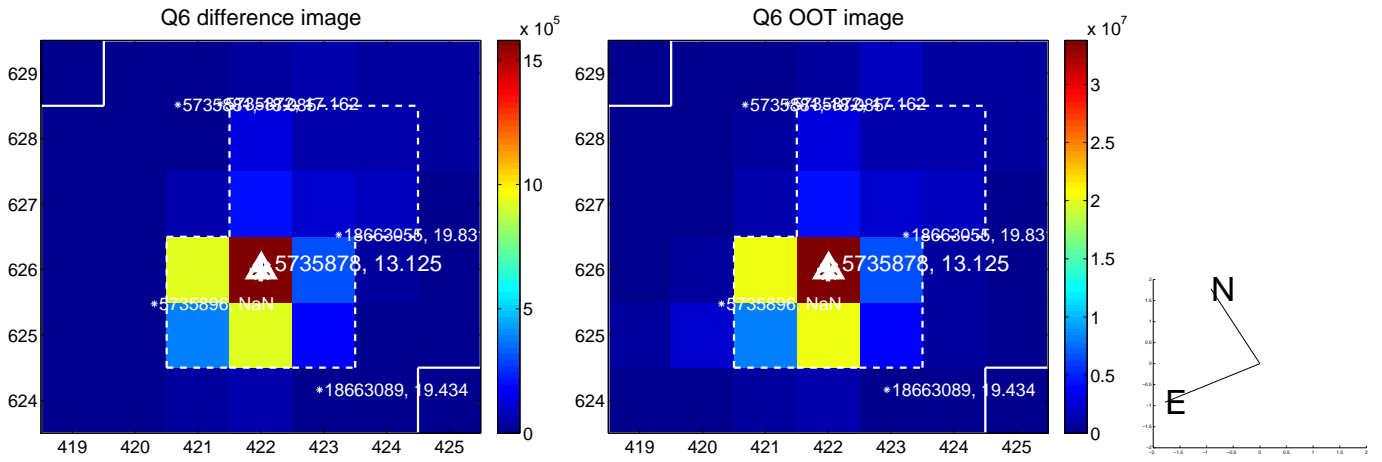
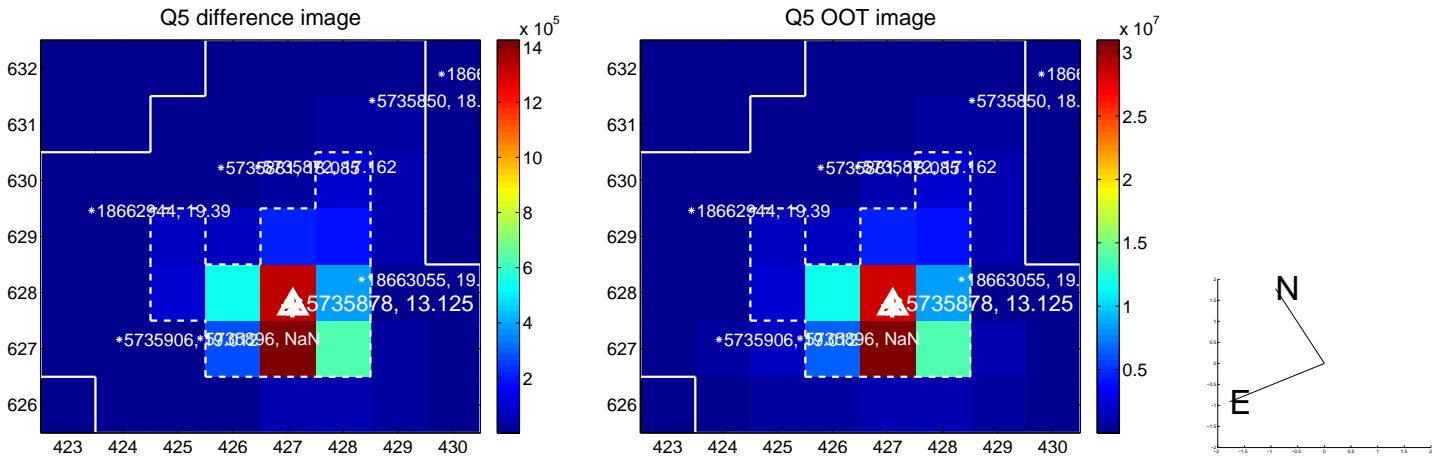


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

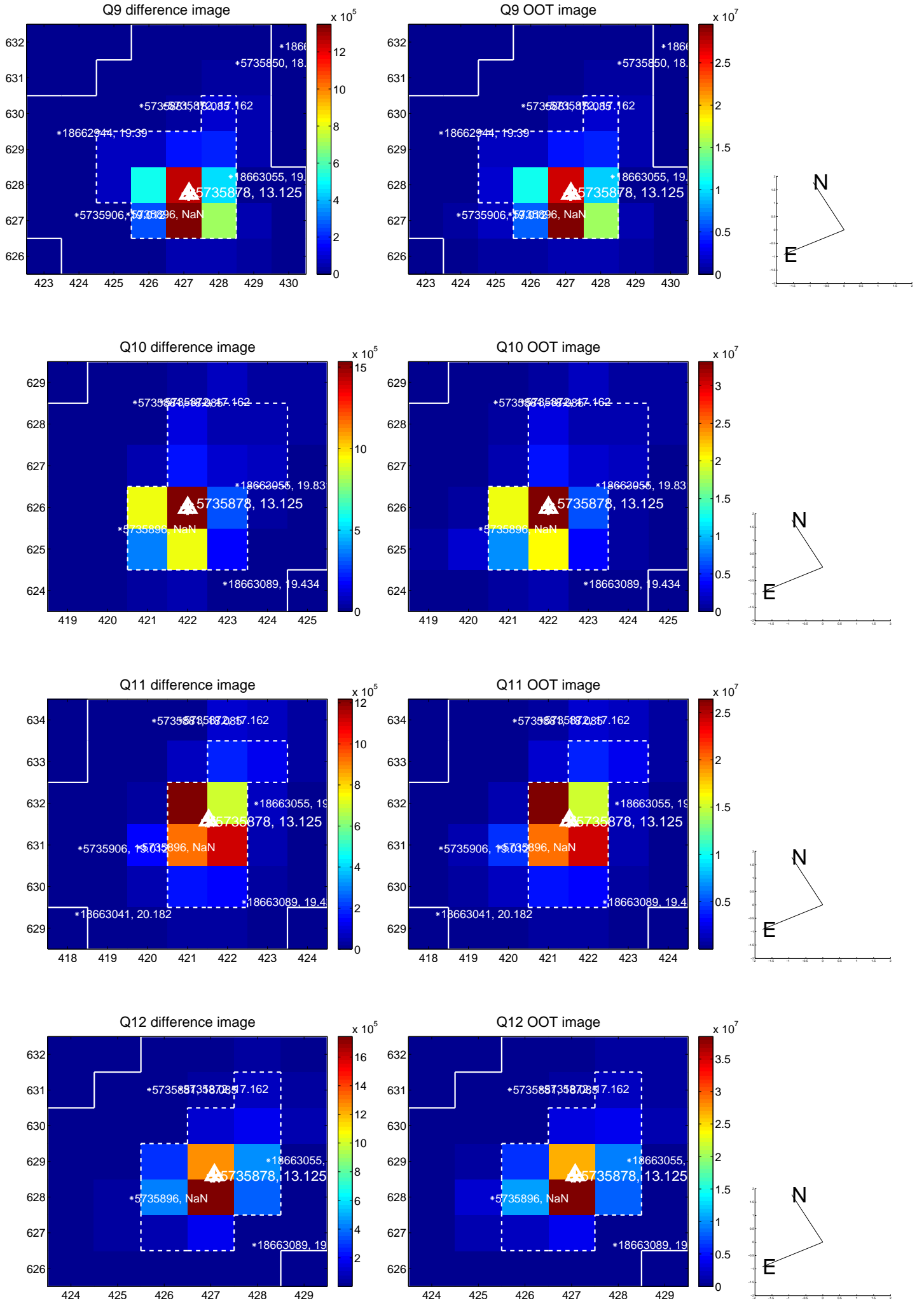
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



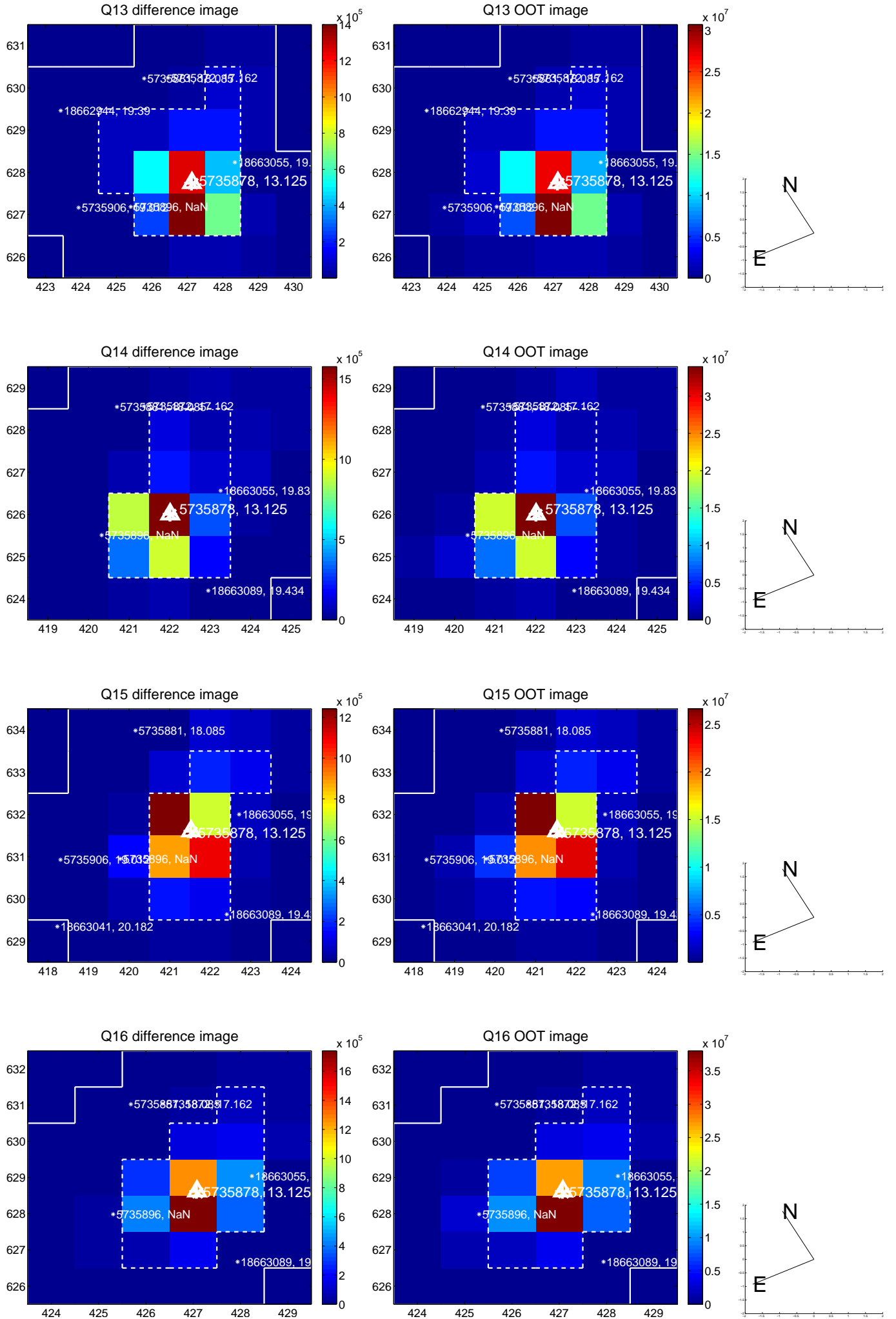
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



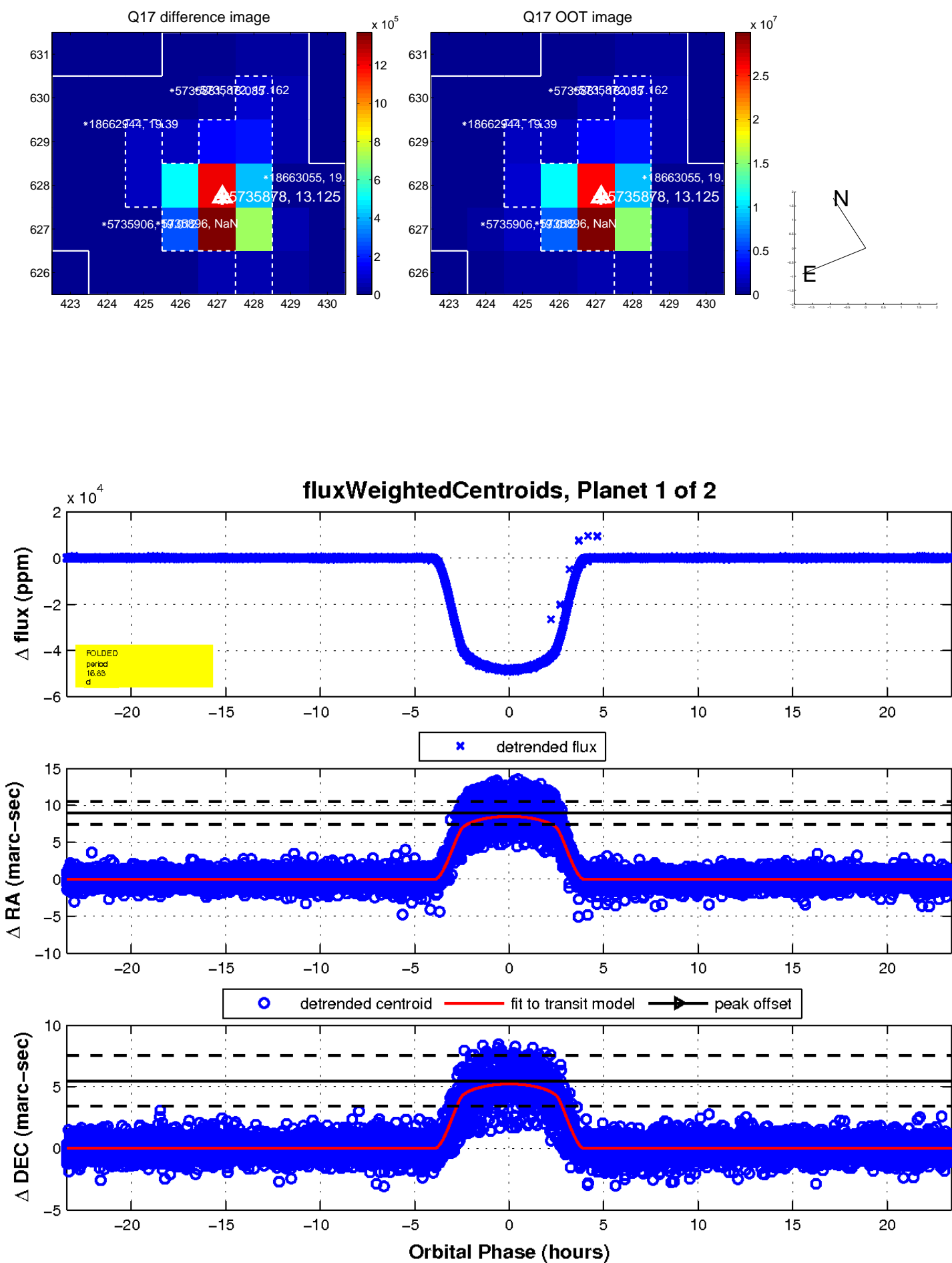
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

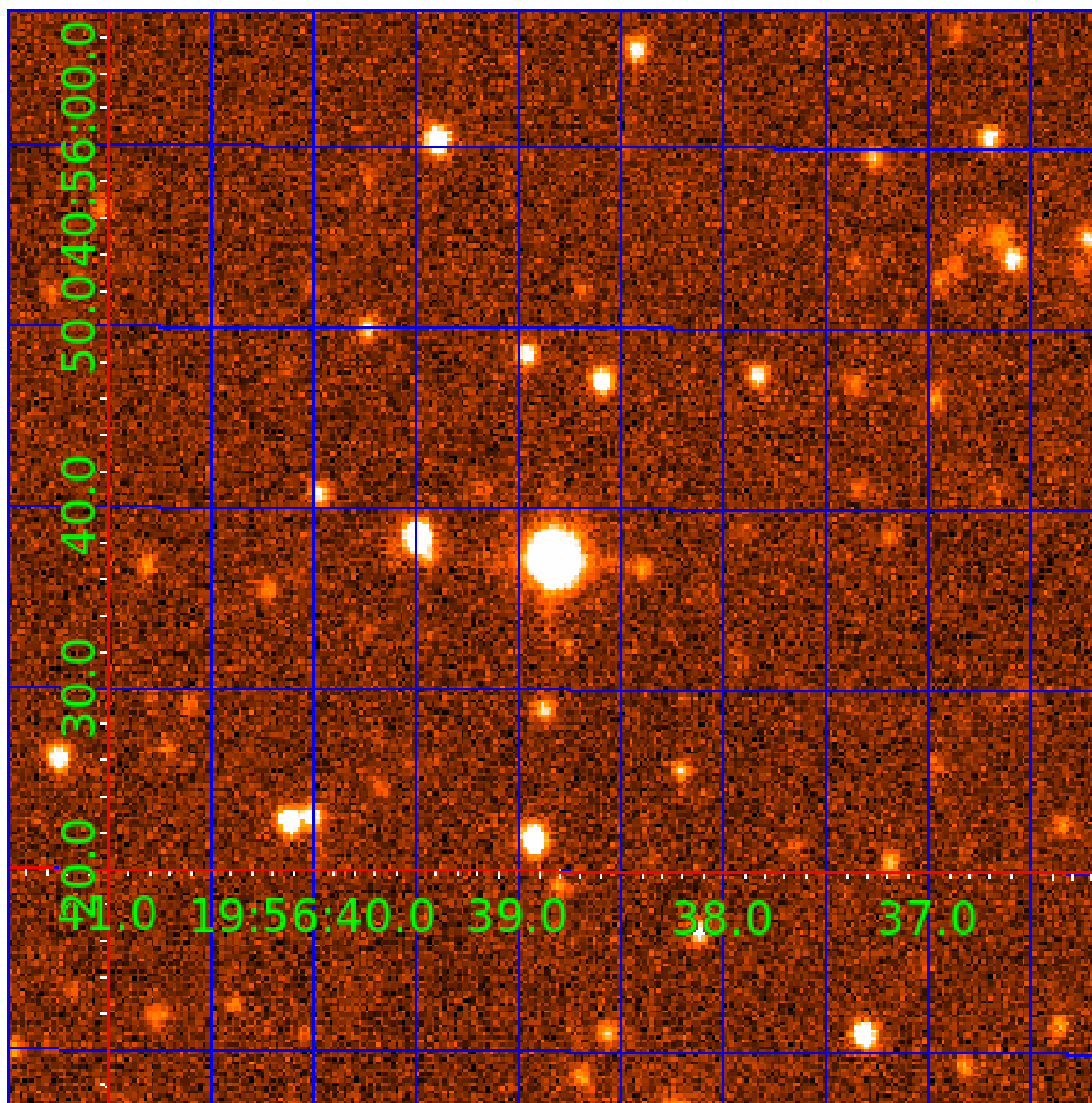


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005735878

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})
005735878-01	OBS	6622.01	16.832079	133.174746	48473.8	7.806	5343.1	4914.8	2.75	6300	61.44	566.00
005735878-02	OBS	No	16.832082	137.256911	1679.0	6.308	194.7	188.0	2.75	6300	12.77	566.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005735878-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
005735878-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

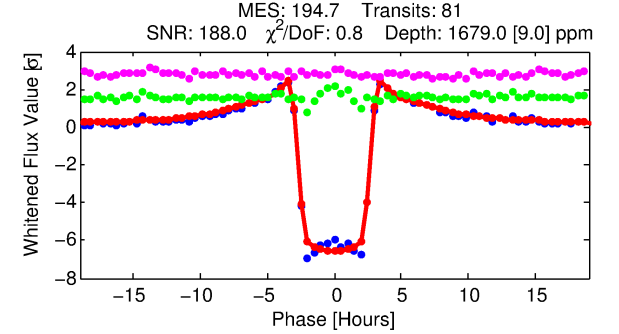
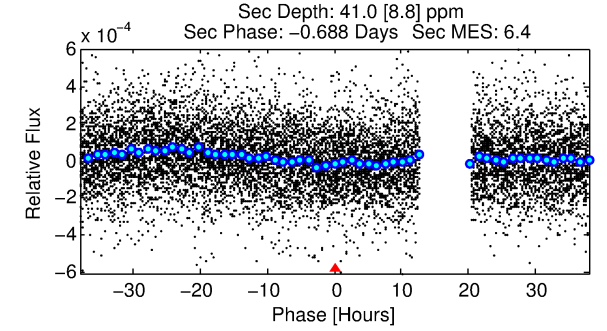
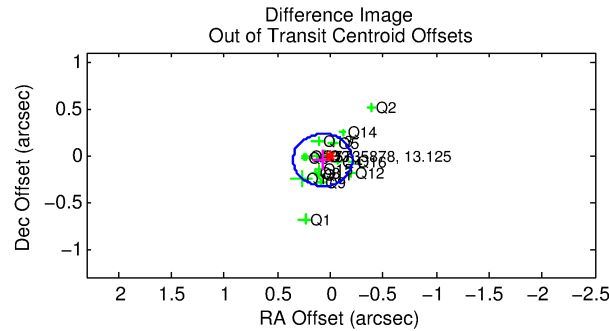
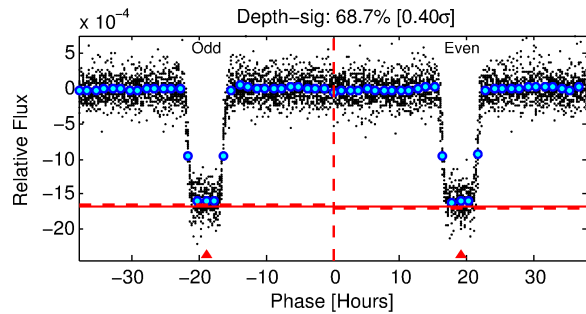
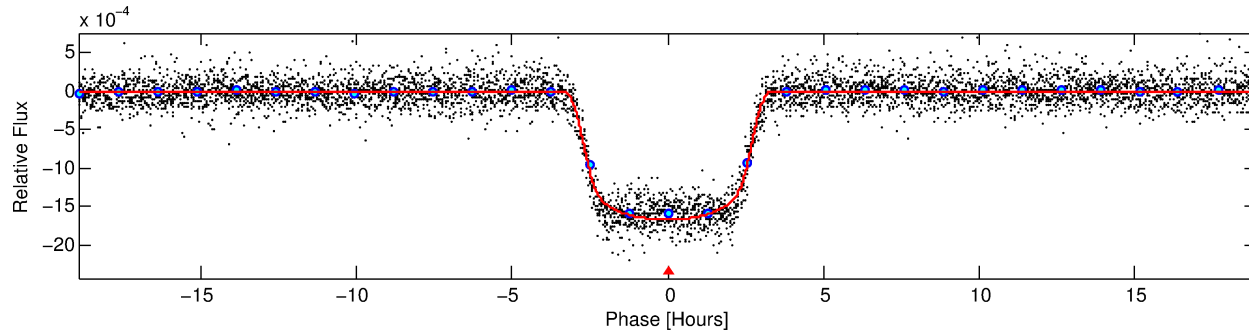
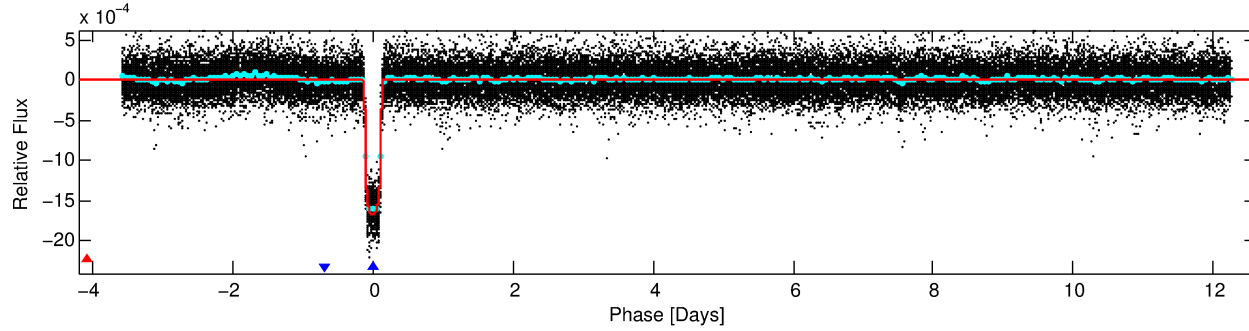
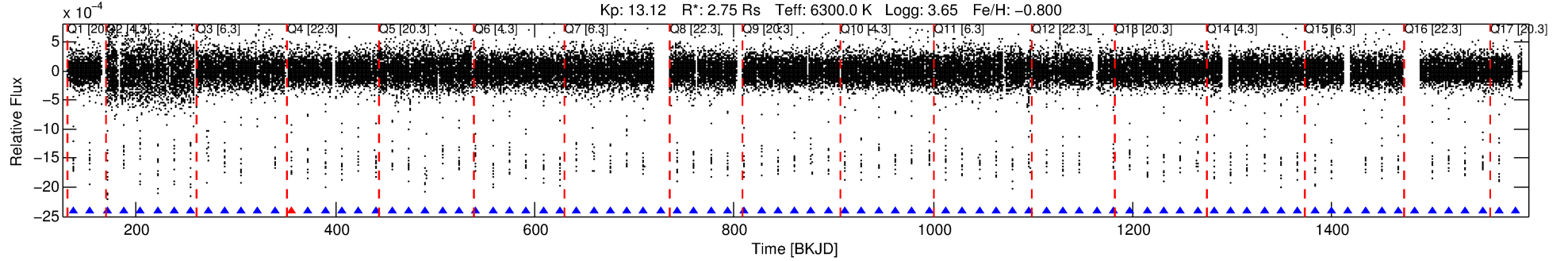
Ephemeris Match Information For 005735878-02

No Significant Match Found

DV One-Page Summary

KIC: 5735878 Candidate: 2 of 2 Period: 16.832 d
KOI: K06622 Corr: No Ephemeris Match

Kp: 13.12 R*: 2.75 Rs Teff: 6300.0 K Logg: 3.65 Fe/H: -0.800



DV Fit Results:

Period = 16.83208 [0.00001] d
Epoch = 137.2569 [0.0005] BKJD
Rp/R* = 0.0425 [0.0002]
a/R* = 12.33 [0.25]
b = 0.85 [0.01]
Seff = 566.01 [324.18]
Teff = 1244 [178] K
Rp = 12.77 [5.04] Re
a = 0.1376 [0.0497] AU
Ag = 2.62 [1.57] [1.03σ]
Teffp = 2446 [150] K [5.16σ]

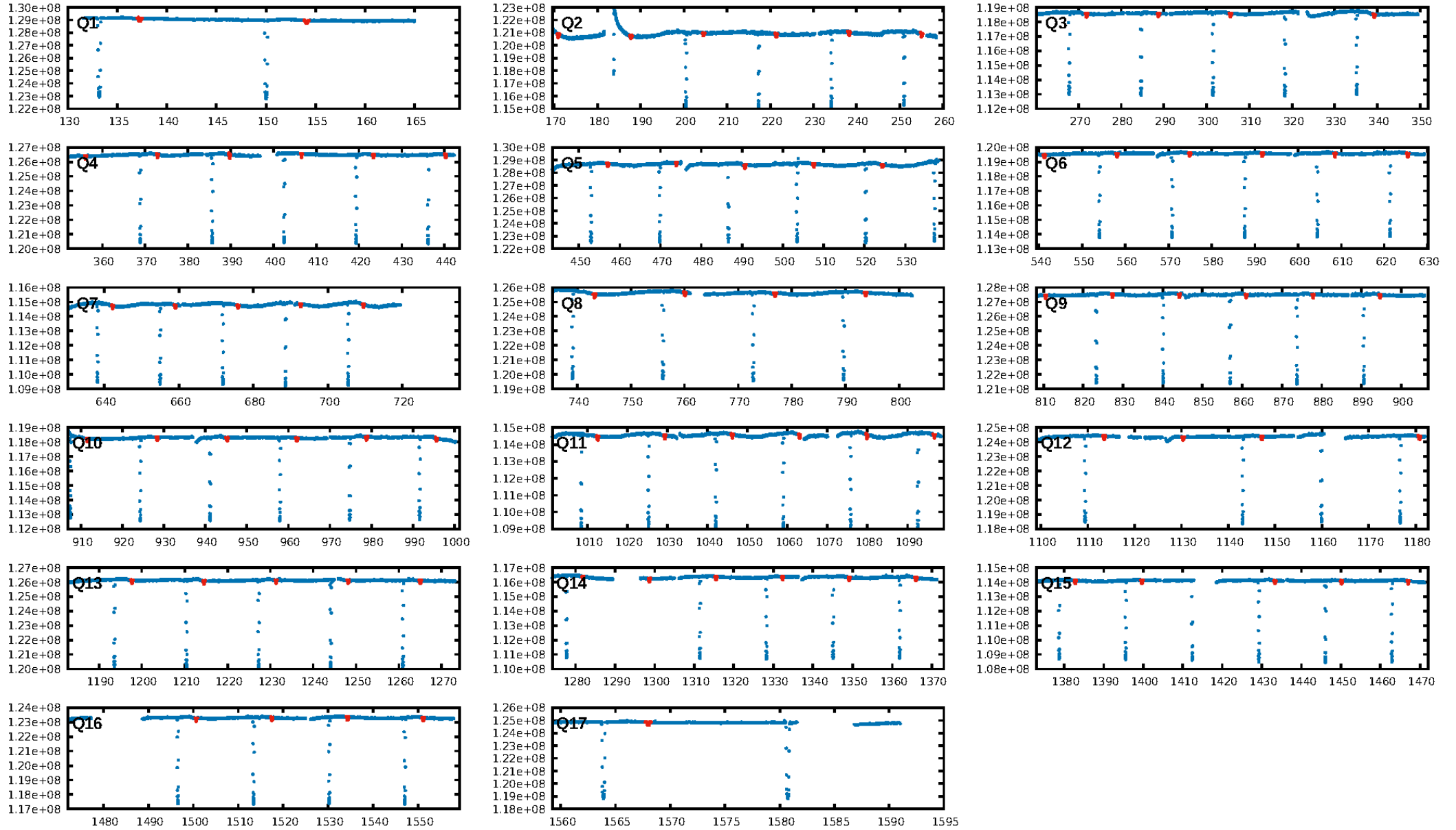
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [77/78]
GhostDiagnostic-chr: 5.318
Centroid-sig: 0.0%
Centroid-so: 0.254 arcsec [4.30σ]
OotOffset-rm: 0.086 arcsec [0.92σ]
KicOffset-rm: 0.130 arcsec [1.57σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

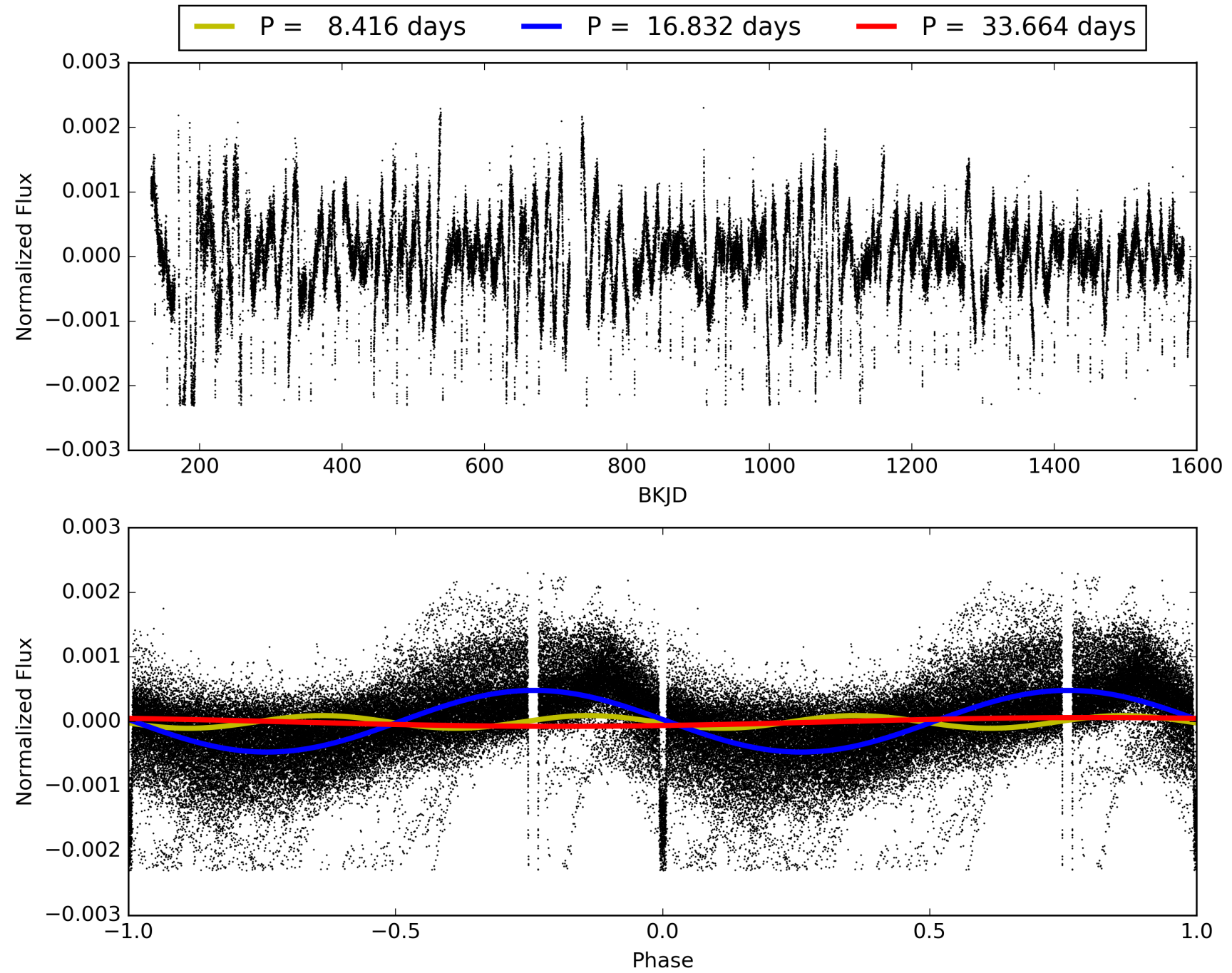
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005735878-02, PDC Light Curves

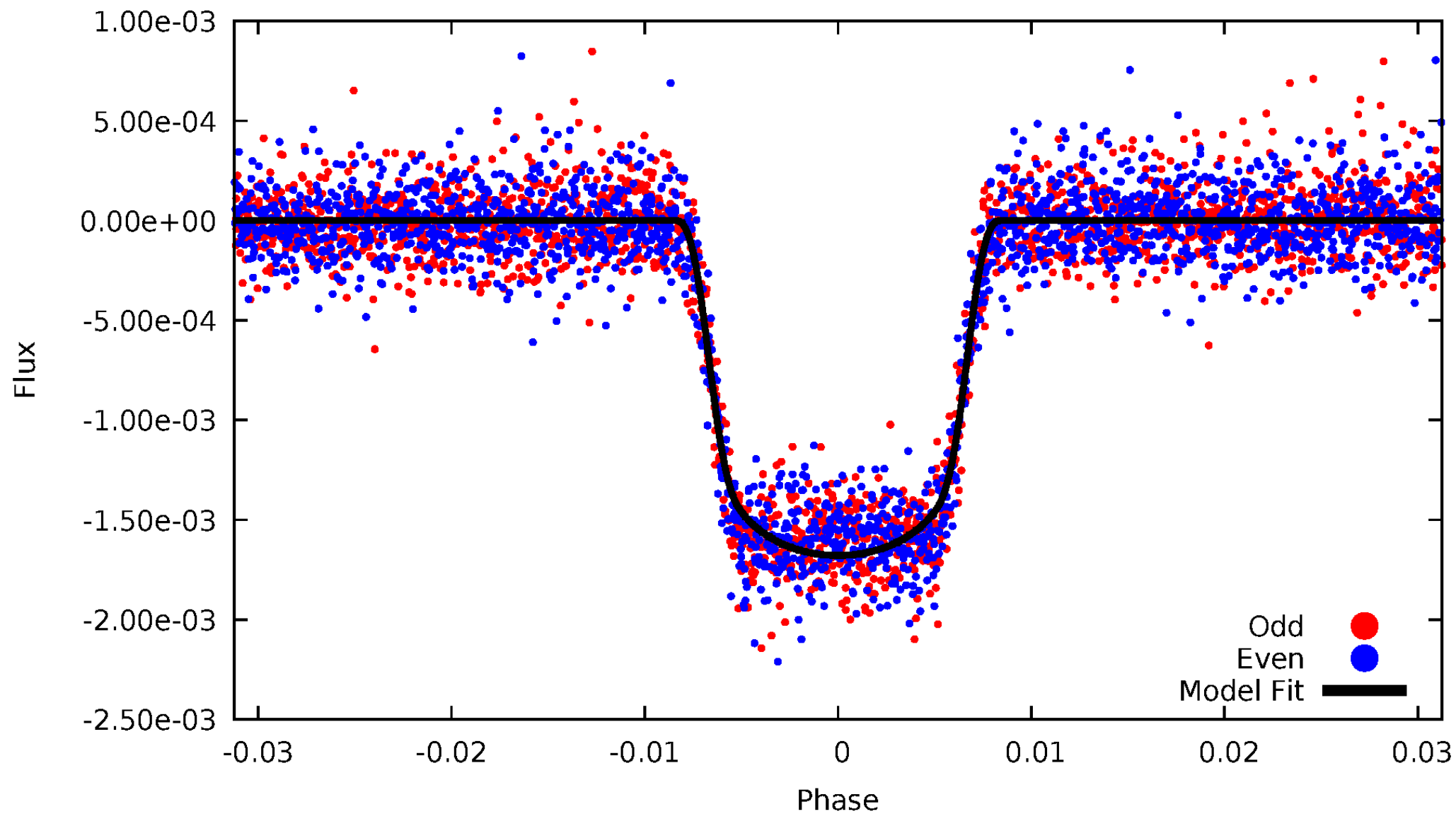


TCE 005735878-02



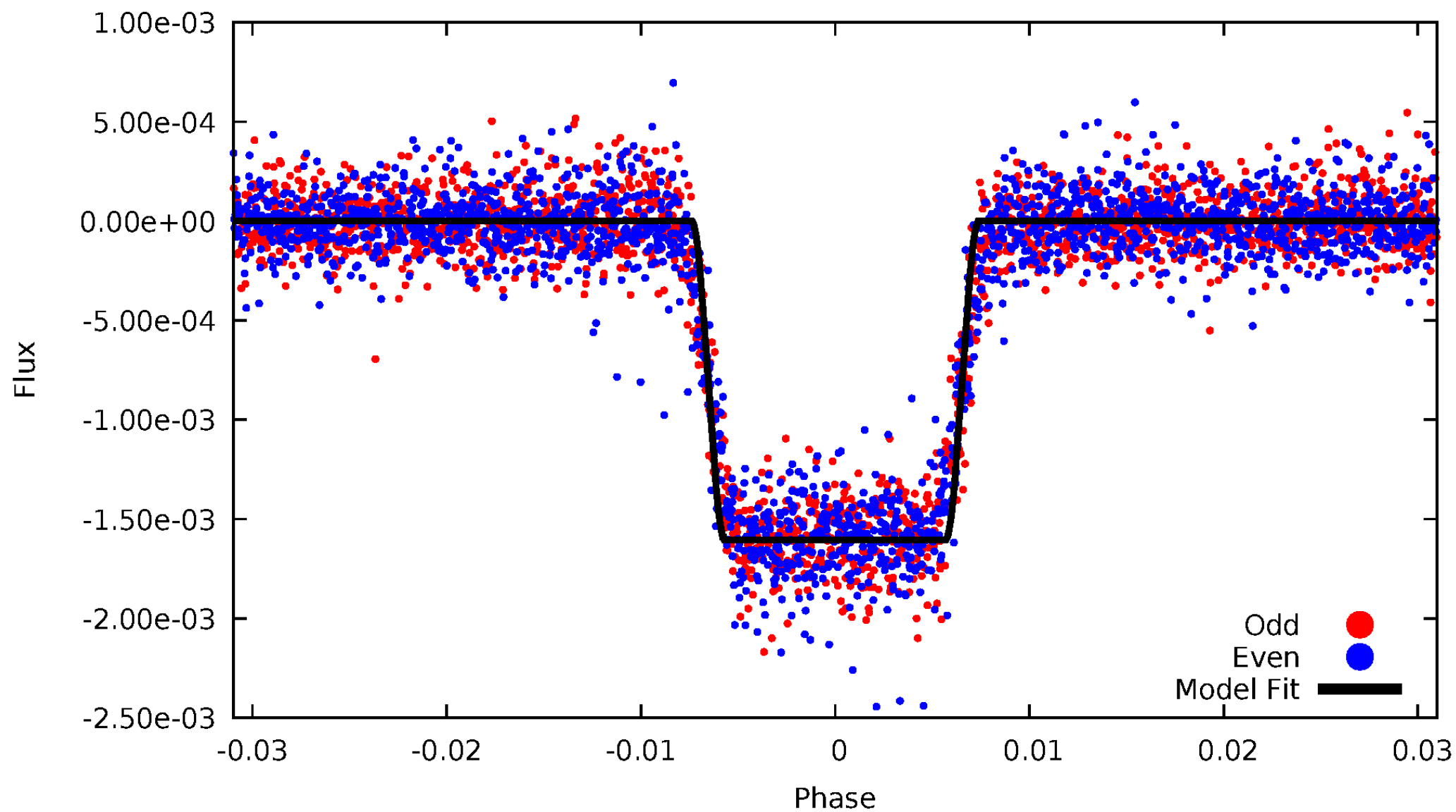
DV Odd/Even

TCE 005735878-02



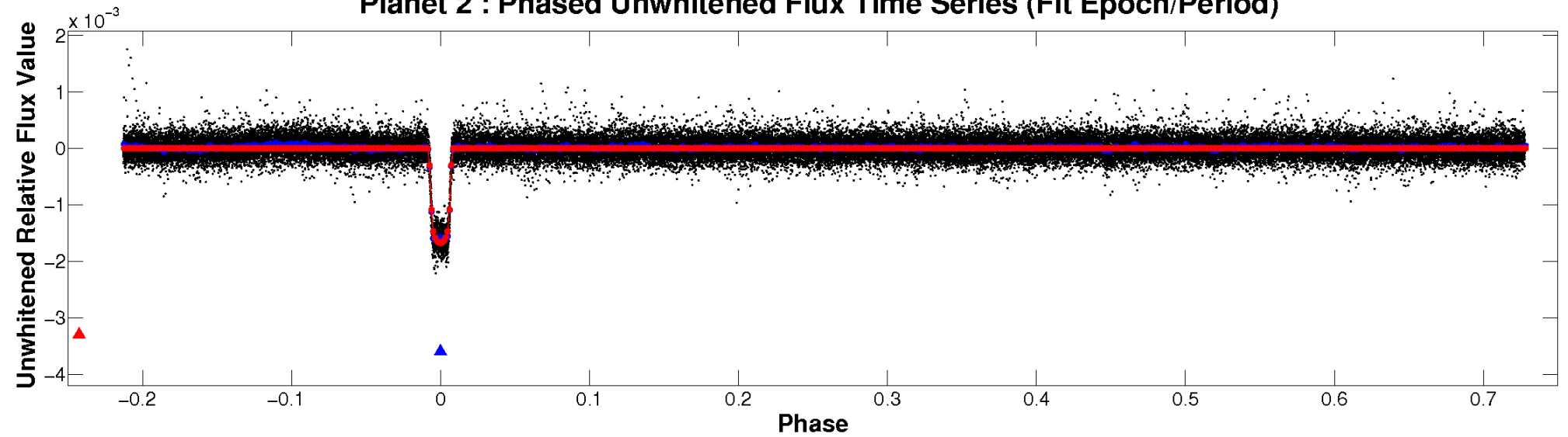
ALT Odd/Even

TCE 005735878-02

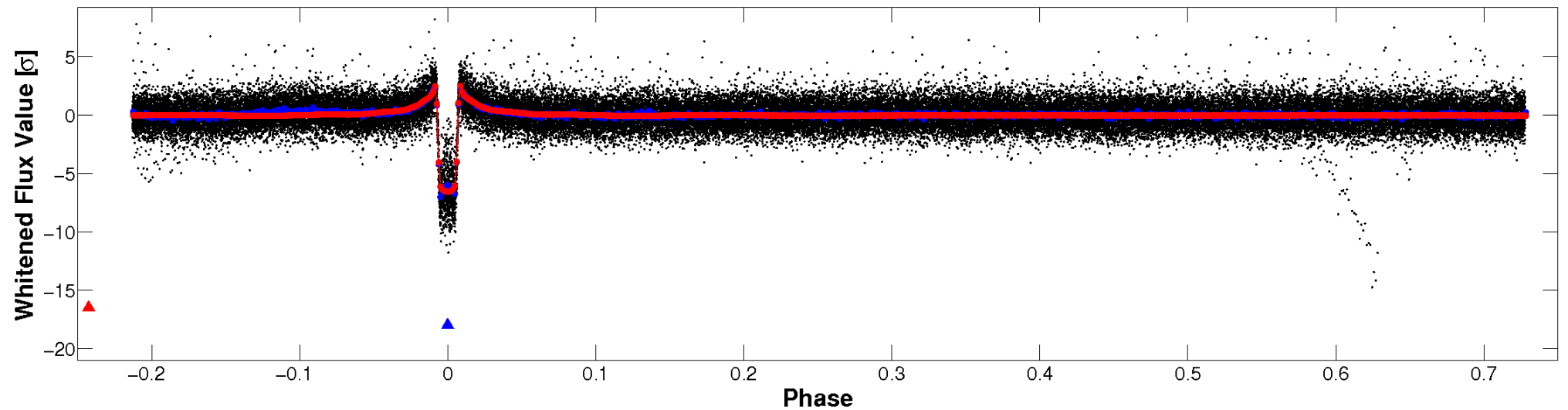


Non-Whitened Vs. Whitened Light Curve

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

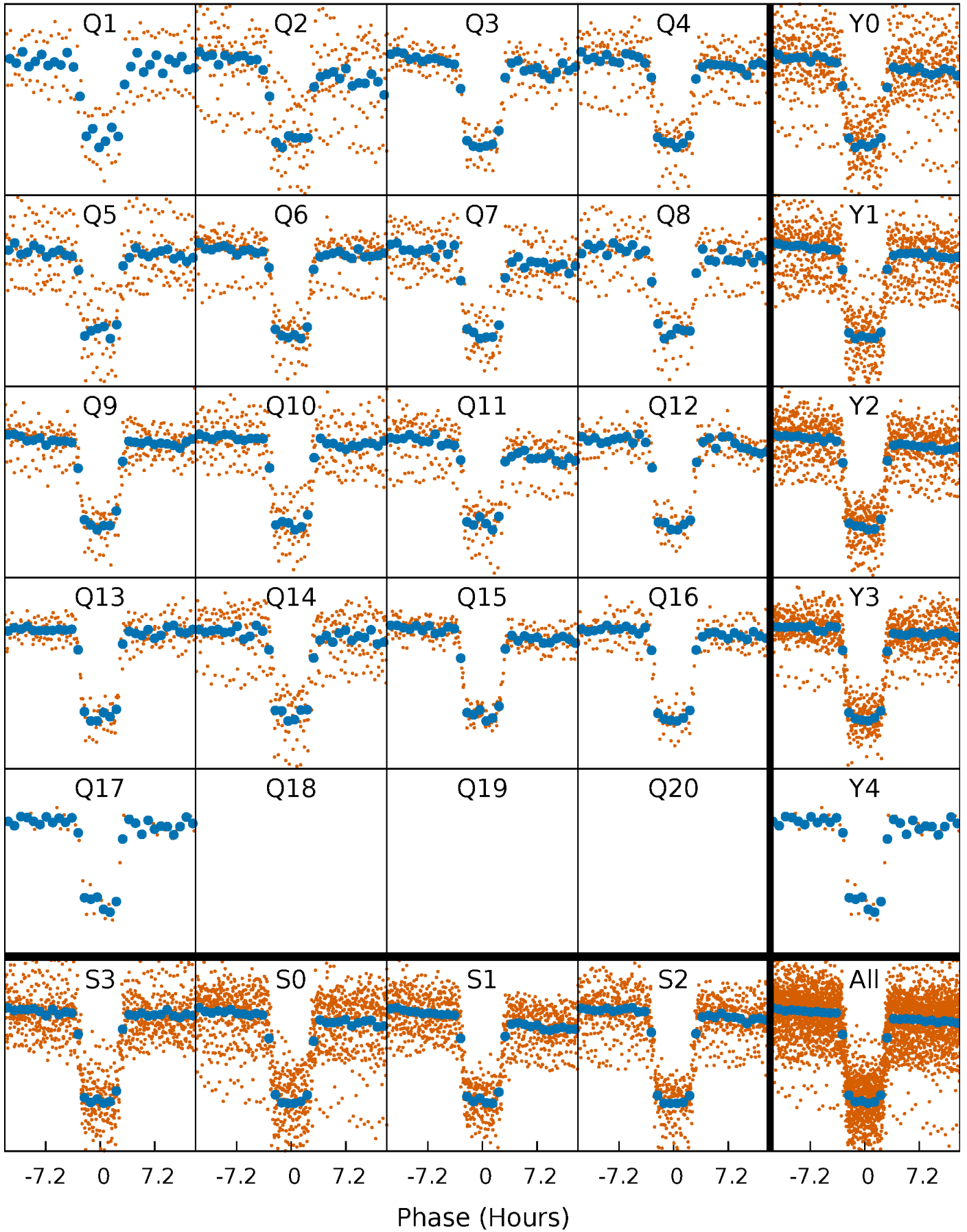


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



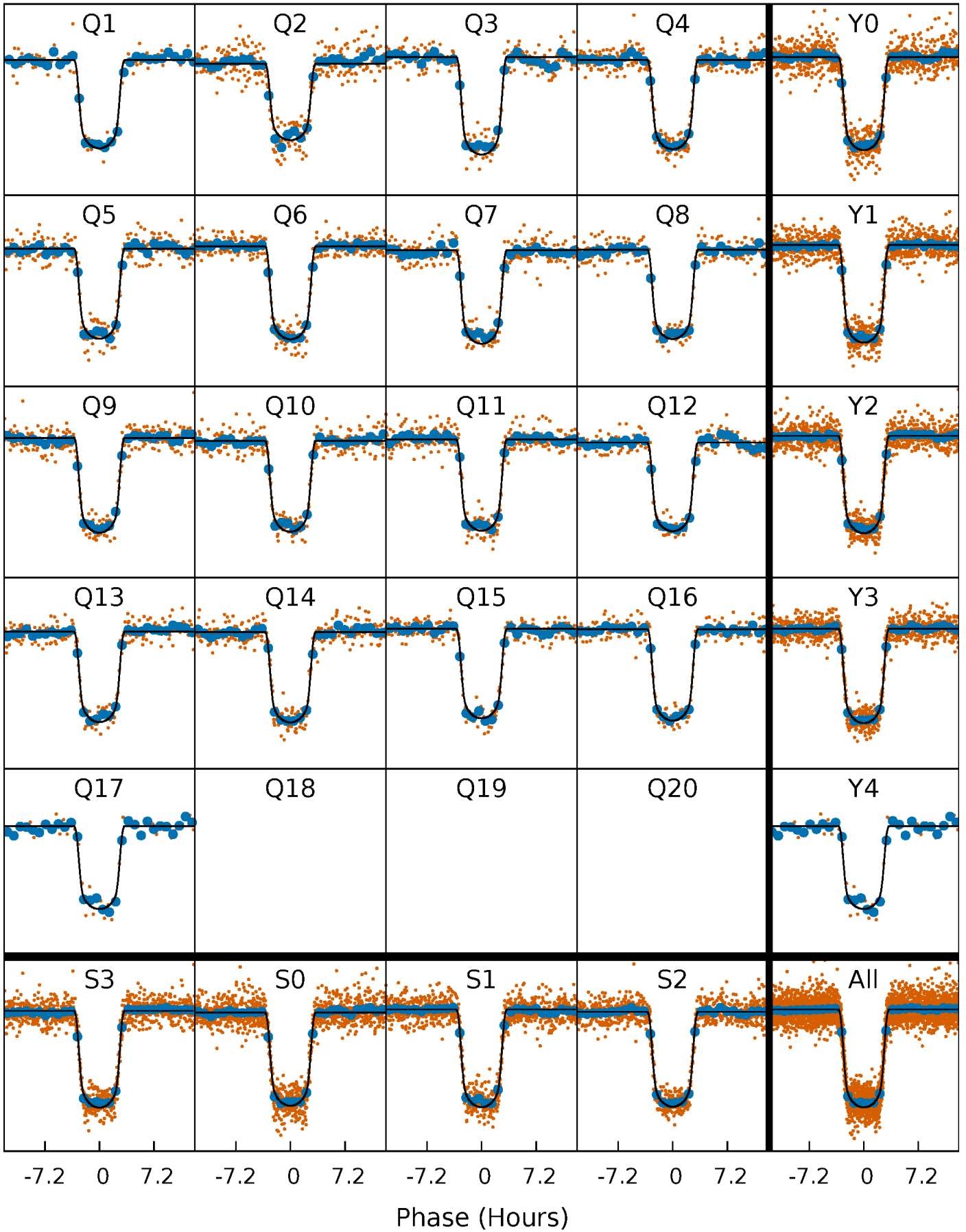
PDC Quarter-Phased Transit Curves

TCE 005735878-02 P= 16.832082 Days $T_0=137.256911$ (BKJD)



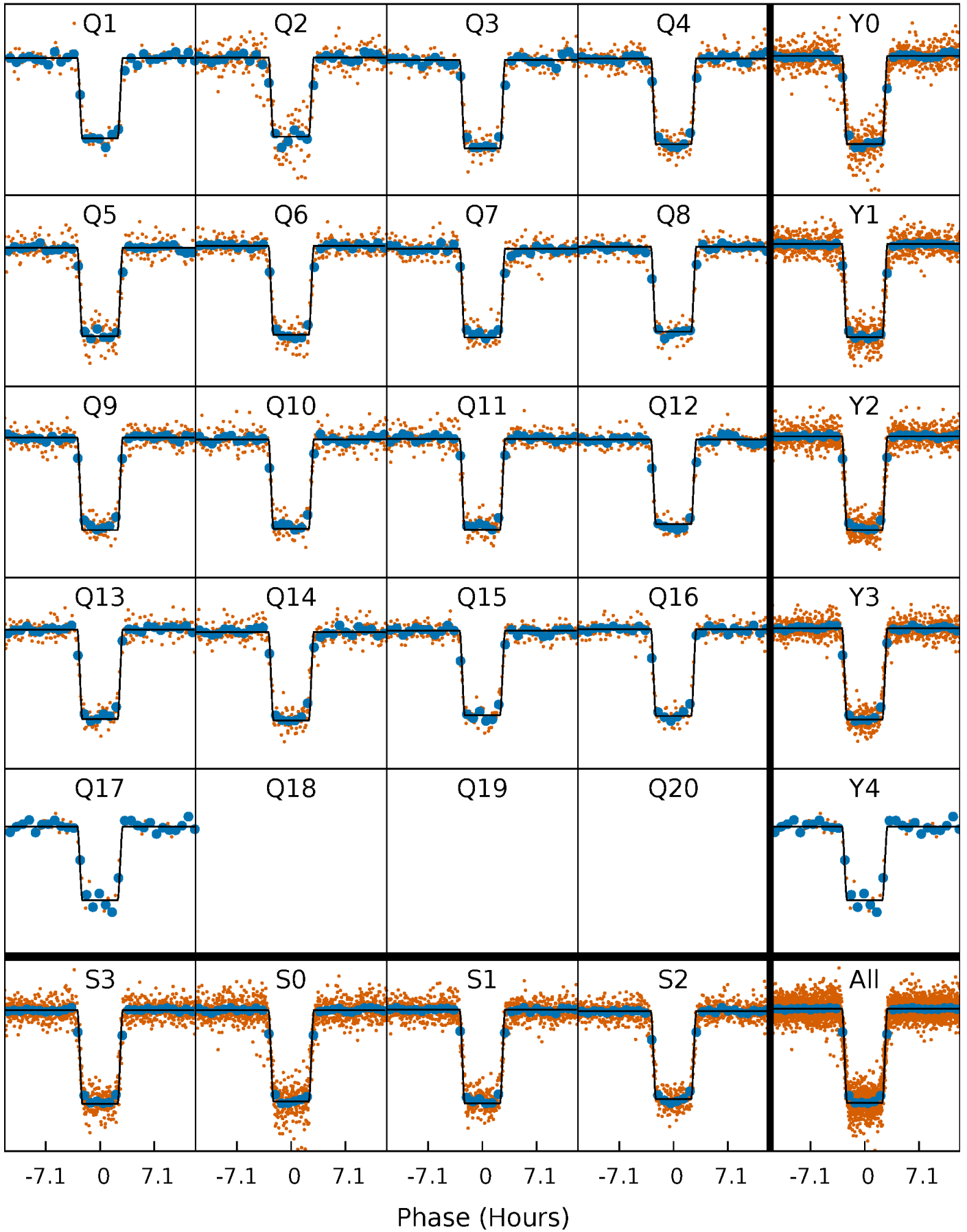
DV Quarter-Phased Transit Curves

TCE 005735878-02 P= 16.832082 Days $T_0=137.256911$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

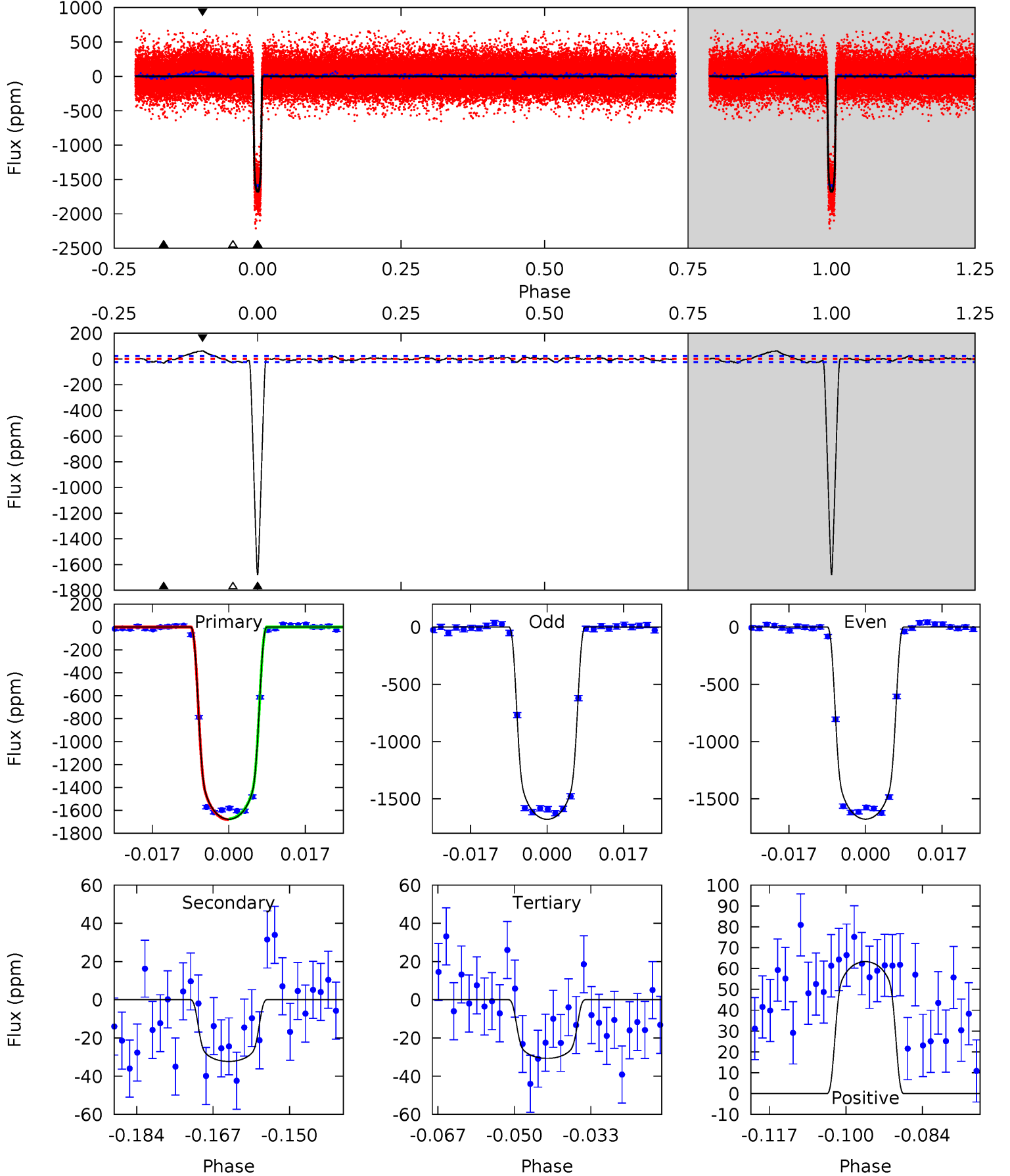
TCE 005735878-02 P= 16.832207 Days $T_0=137.251258$ (BKJD)



DV Model-Shift Uniqueness Test

005735878-02, $P = 16.832082$ Days, $E = 120.424829$ Days

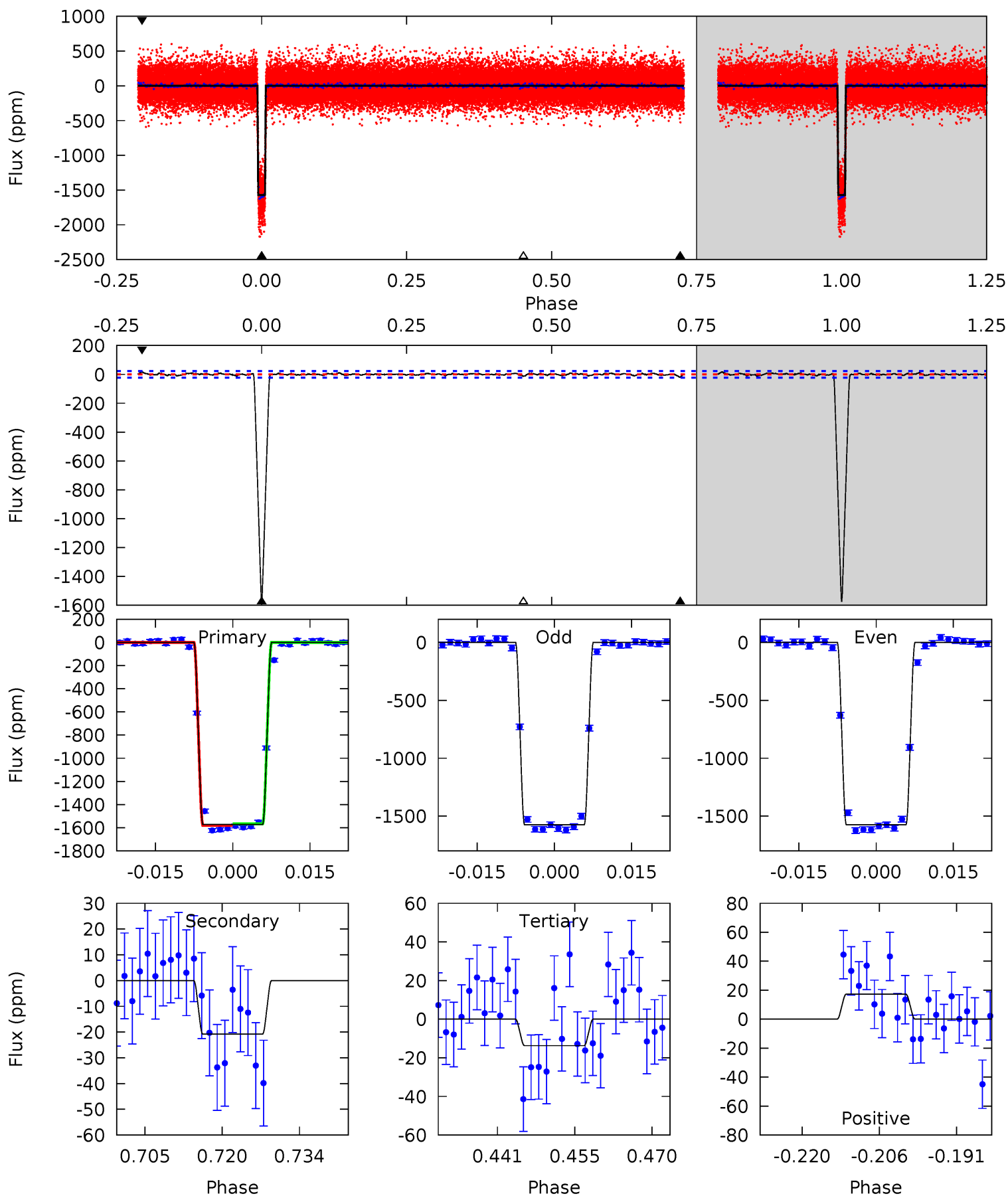
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
344.3	6.63	6.30	13.0	4.93	2.39	2.98	338.0	331.4	0.33	-6.36	0.15	1.00	0.04	0.76



Alt Model-Shift Uniqueness Test

005735878-02, P = 16.832207 Days, E = 120.419051 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
340.7	4.51	2.97	3.73	4.95	2.44	0.92	337.7	336.9	1.55	0.78	0.02	1.00	0.01	1.61



Stellar Parameters For KIC 005735878

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6300^{+170}_{-189}	$3.646^{+0.322}_{-0.115}$	$-0.800^{+0.350}_{-0.300}$	$2.755^{+0.586}_{-1.088}$	$1.223^{+0.163}_{-0.303}$	$0.082^{+0.216}_{-0.028}$
	+3%/-3%	+9%/-3%	+44%/-37%	+21%/-39%	+13%/-25%	+263%/-34%
Source	PHO1	FLK73	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 005735878-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-32 ± 5	$12.59^{+1.44}_{-2.81}$	1716^{+110}_{-175}	2923^{+78}_{-94}	$2.203^{+1.183}_{-0.568}$
Alt.	-21 ± 5	$11.80^{+1.48}_{-2.56}$	1706^{+118}_{-172}	2775^{+101}_{-121}	$1.607^{+0.907}_{-0.457}$

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 $A_{obs} \gg 1.0$

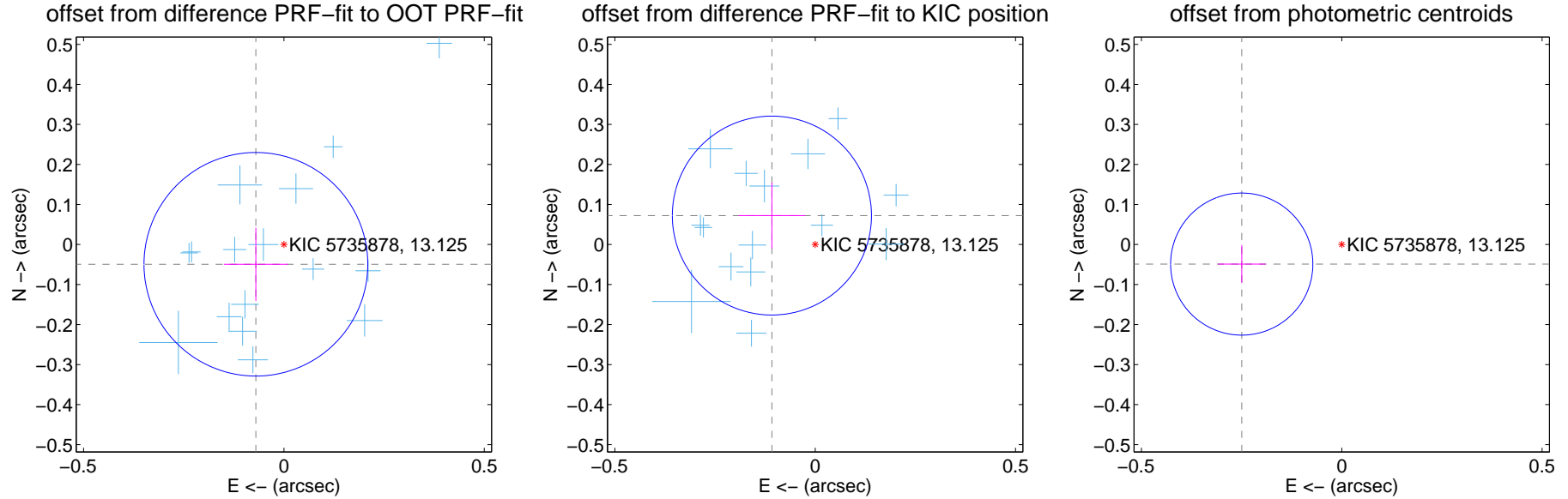
DV Centroid Data

Supplemental centroid analysis for 005735878-02. Kepler magnitude: 13.12. Transit SNR 187.99

There are 17 quarters with good PRF difference image offsets

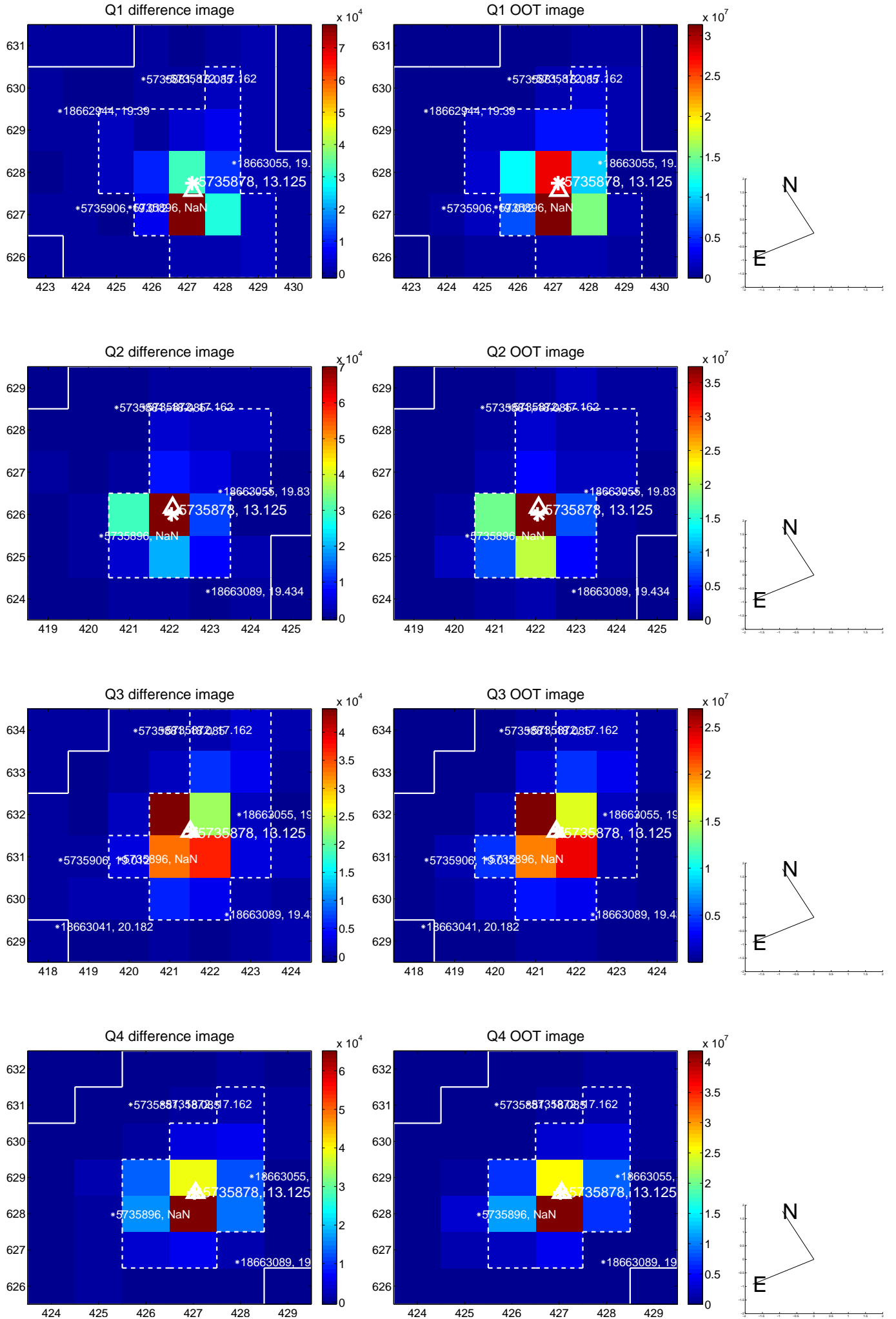
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.086 ± 0.093	0.92	0.070 ± 0.080	-0.049 ± 0.091
PRF-fit source offset from KIC position	0.130 ± 0.083	1.57	0.108 ± 0.083	0.072 ± 0.082
photometric centroid source offset	0.25 ± 0.06	4.30	0.25 ± 0.06	-0.05 ± 0.05

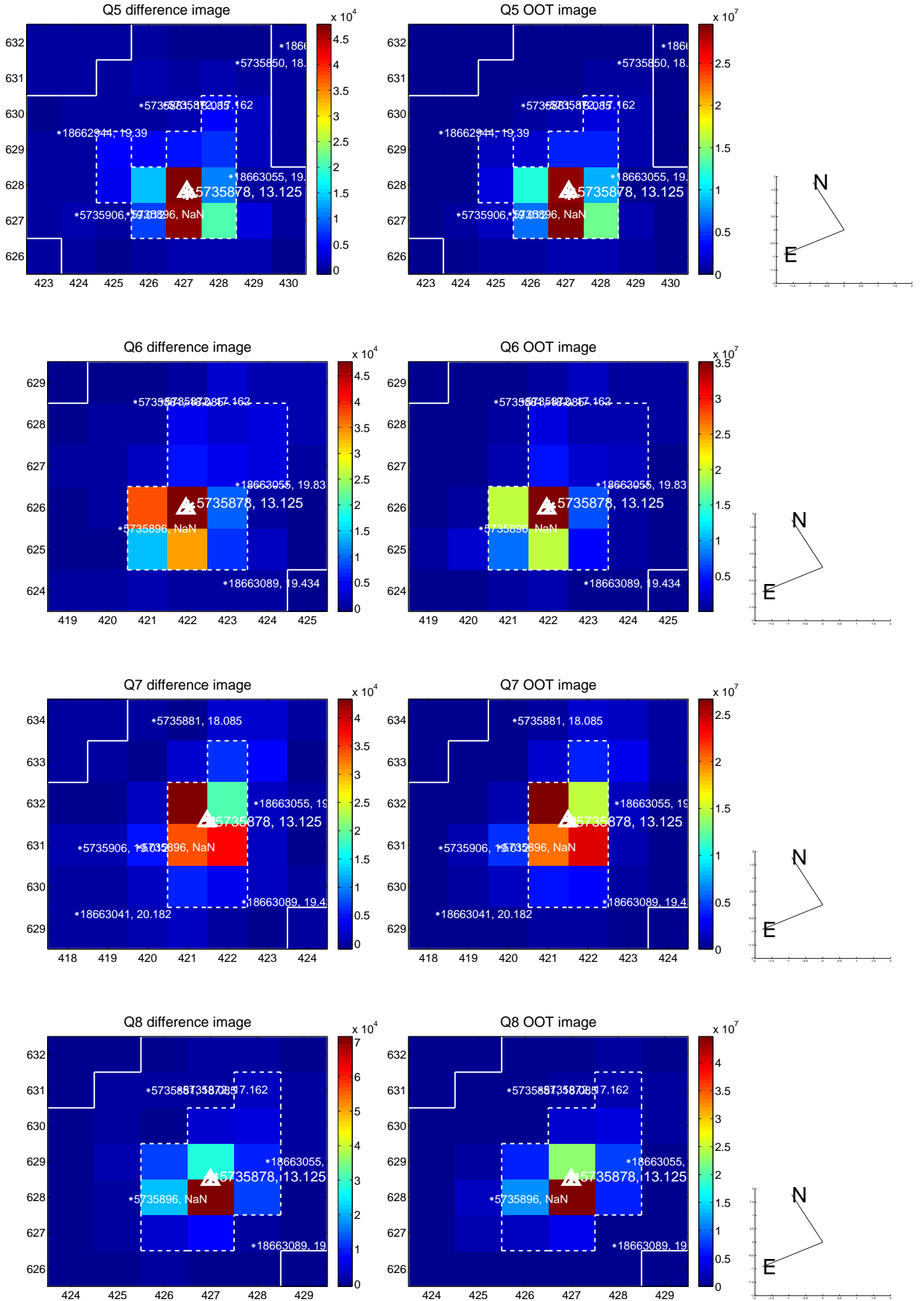


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

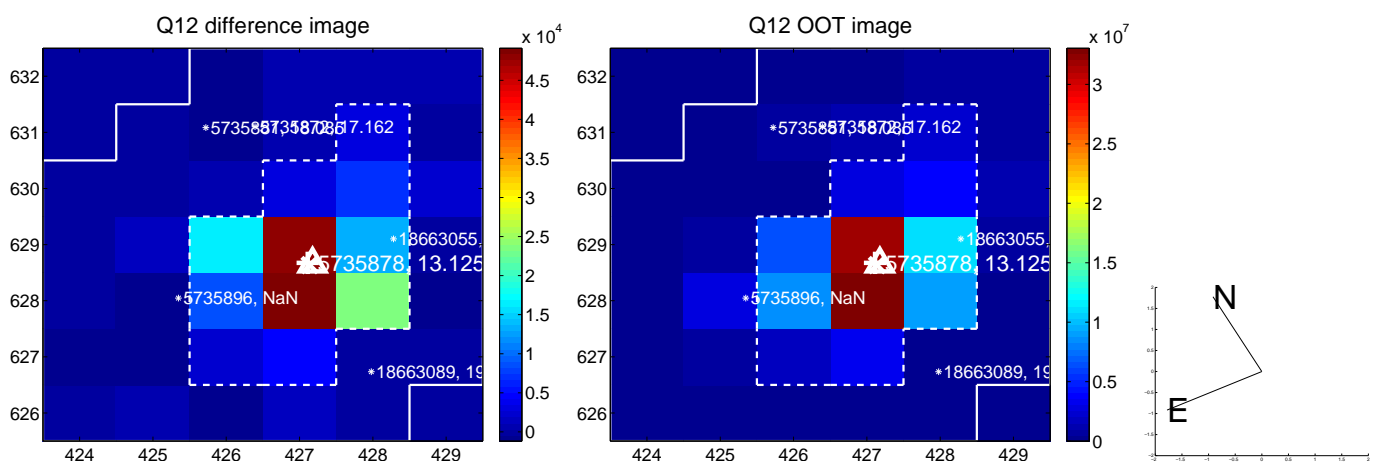
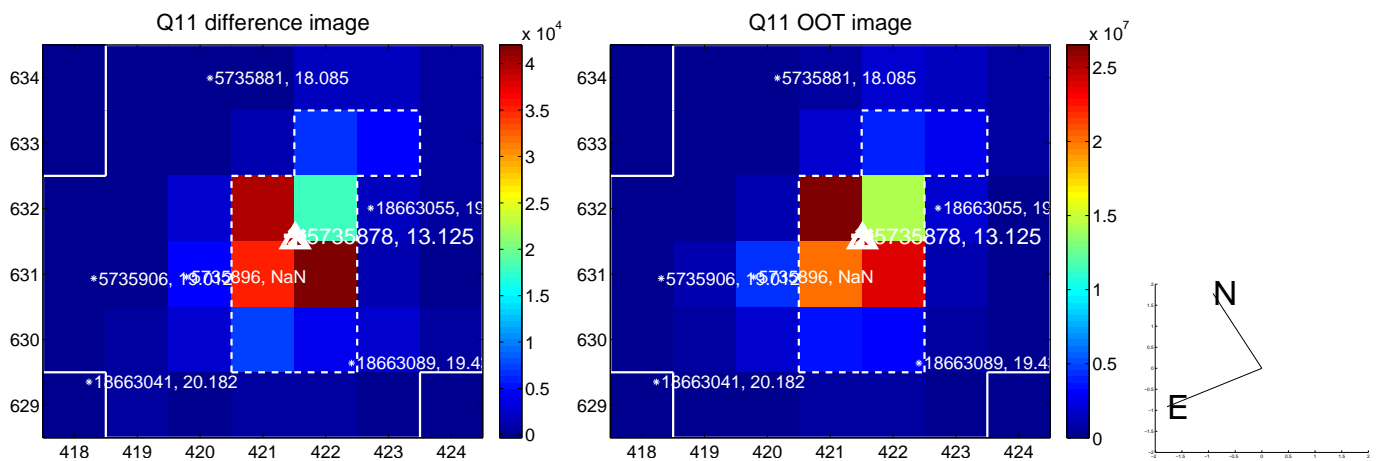
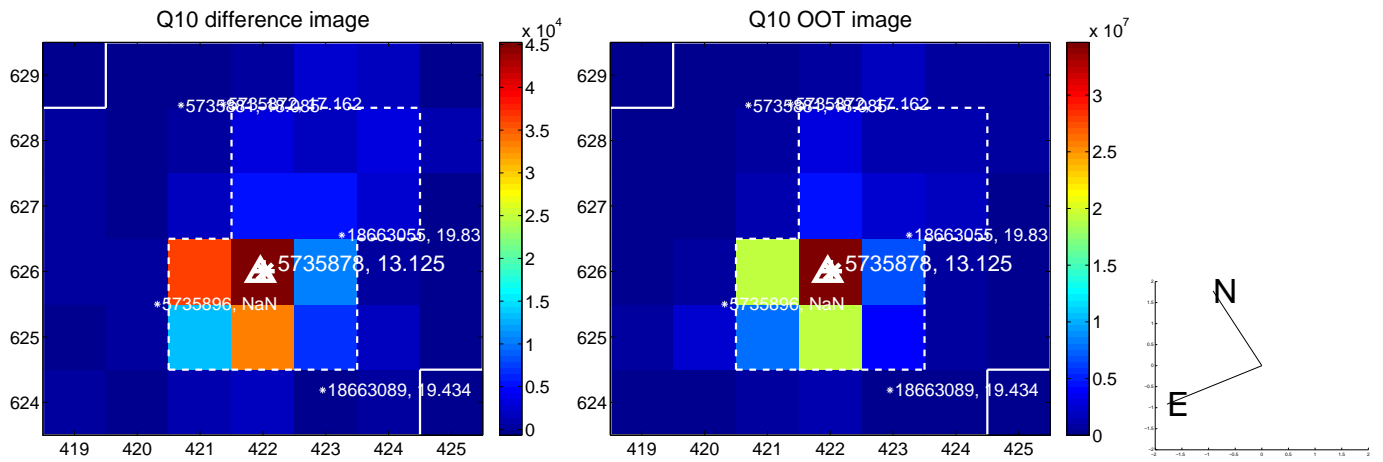
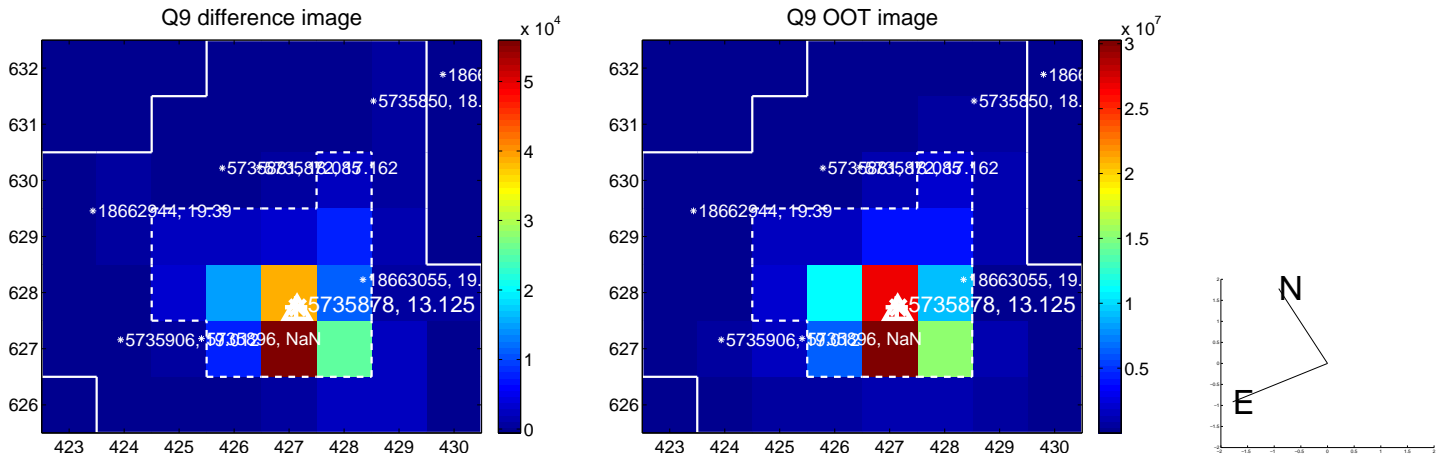
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



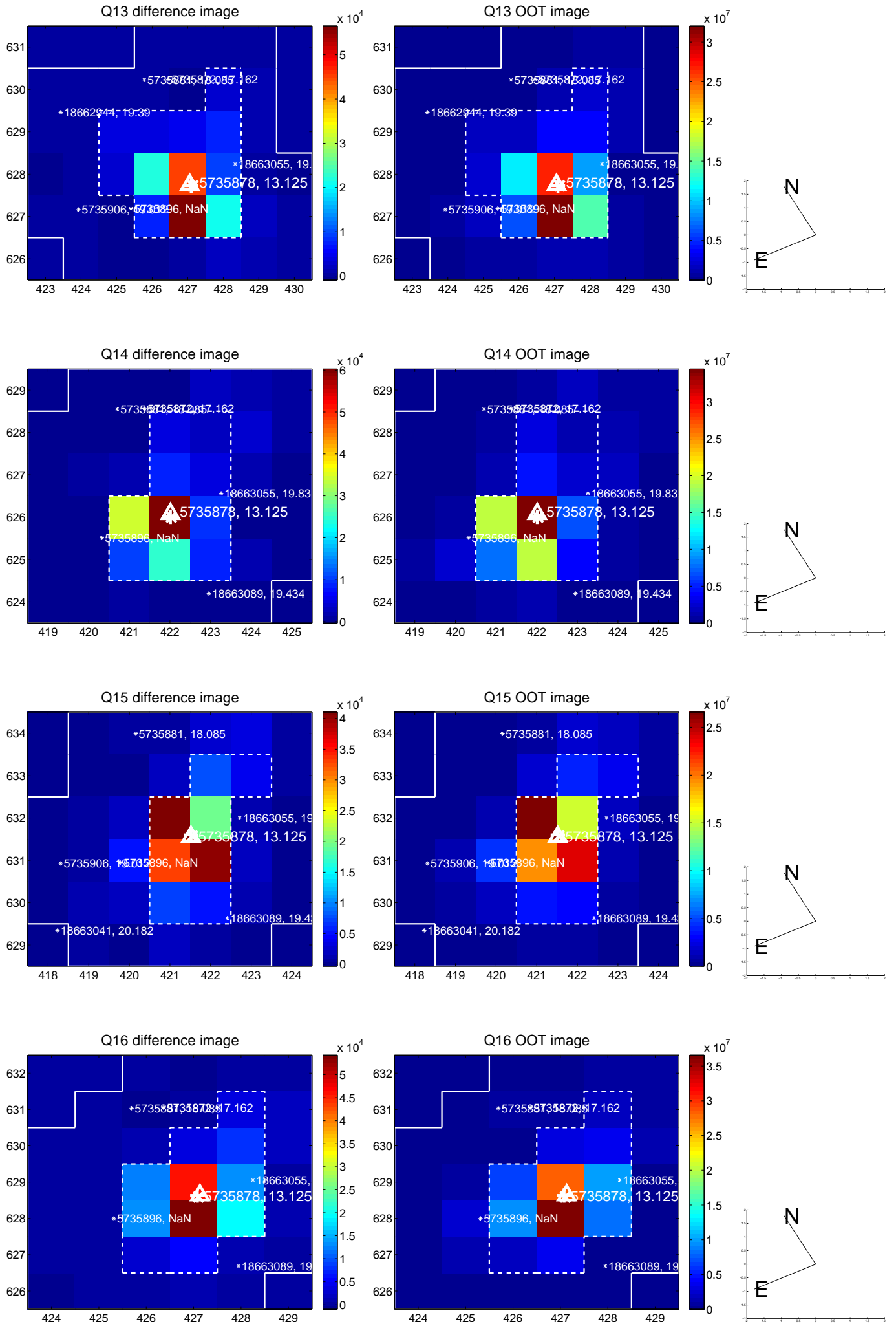
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



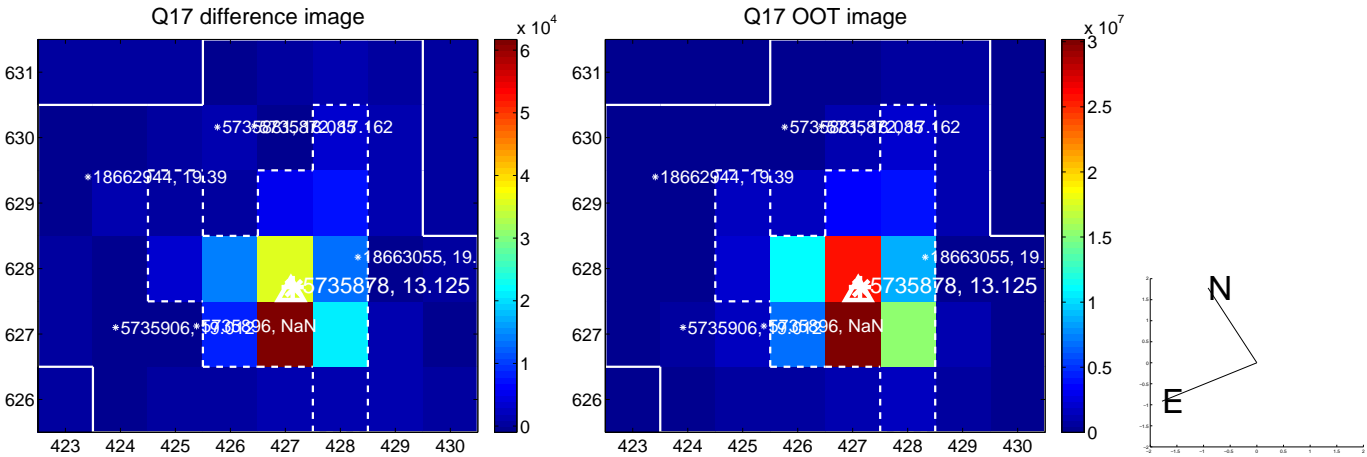
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



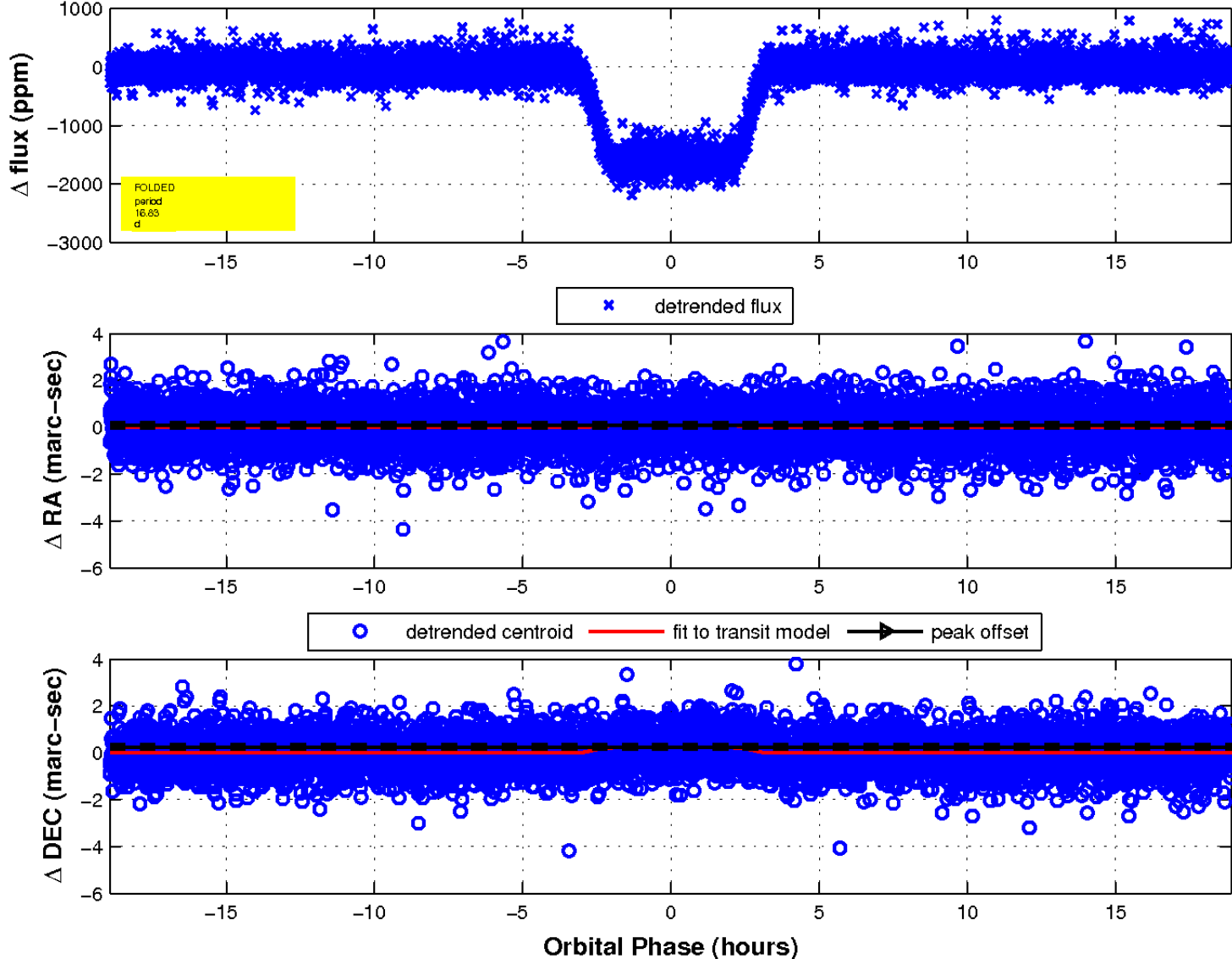
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

