

KIC 008277797

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})
008277797-01	OBS	1820.01	4.337217	132.851823	358.7	2.654	50.6	55.2	0.88	5390	1.98	232.62
008277797-02	OBS	1820.02	1.653889	132.190152	127.4	1.766	23.6	27.3	0.88	5390	1.19	841.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008277797-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008277797-02	OBS	PC	0.97	0	0	0	0	NO_COMMENT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

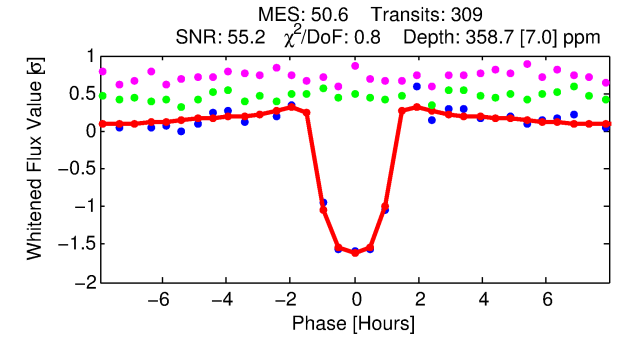
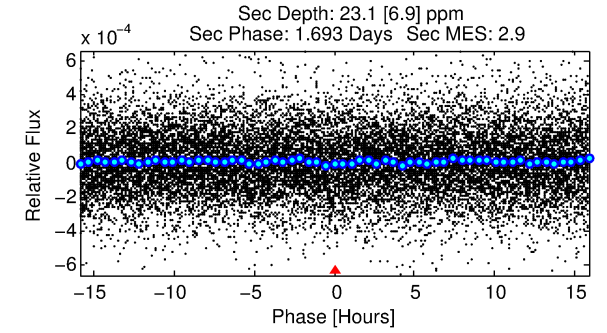
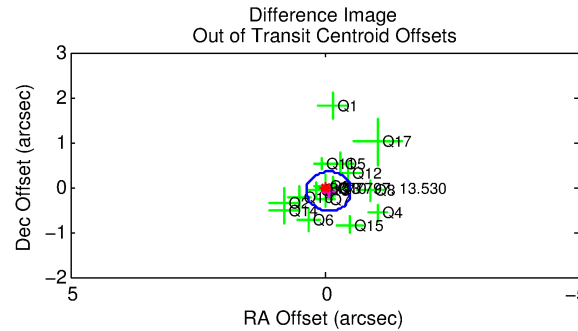
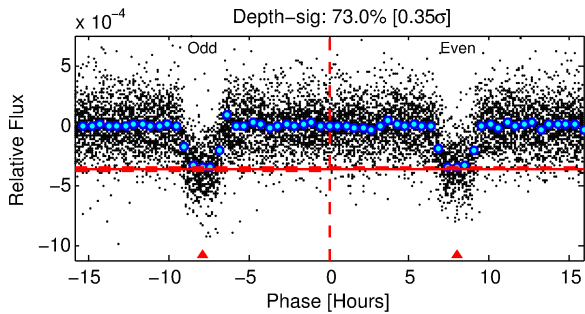
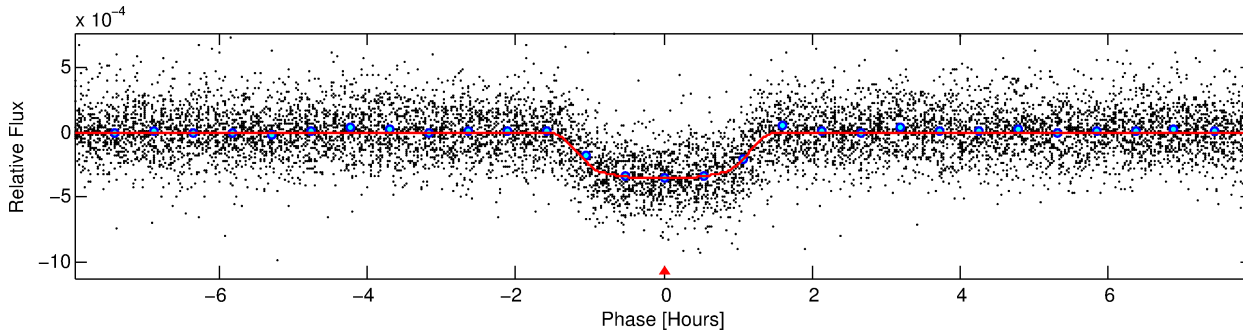
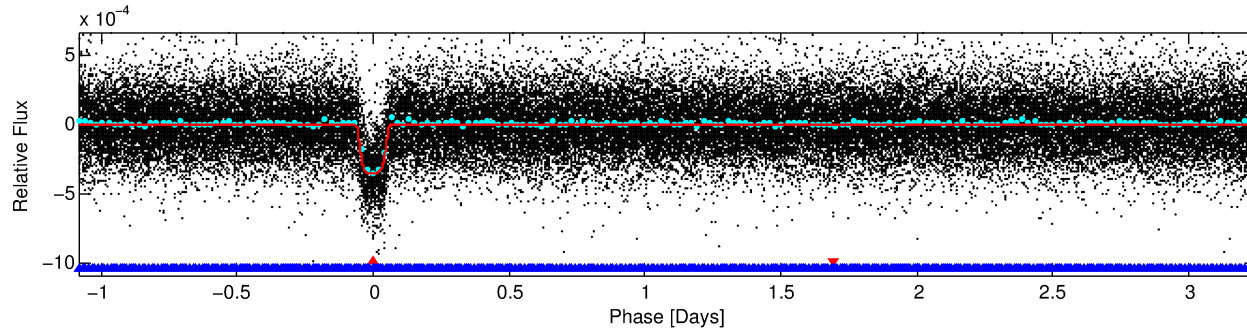
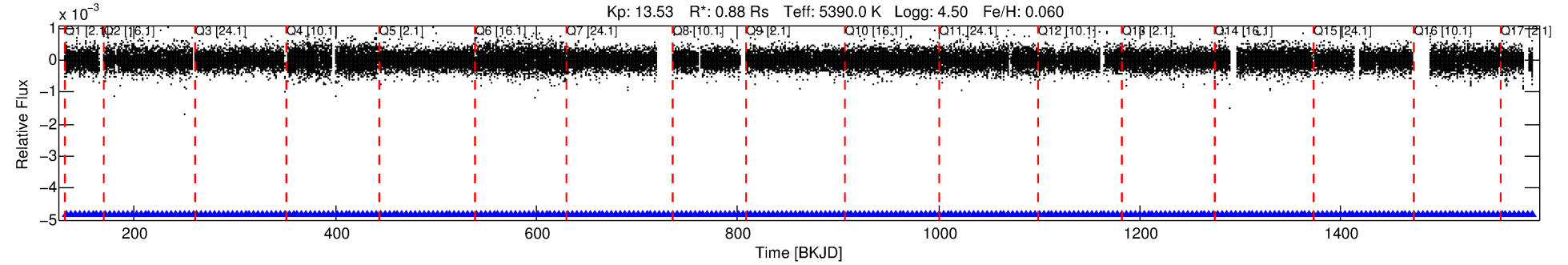
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008277797-01

No Significant Match Found

DV One-Page Summary

KIC: 8277797 Candidate: 1 of 2 Period: 4.337 d
KOI: K01820.01 Name: Kepler-322c Corr: 0.965



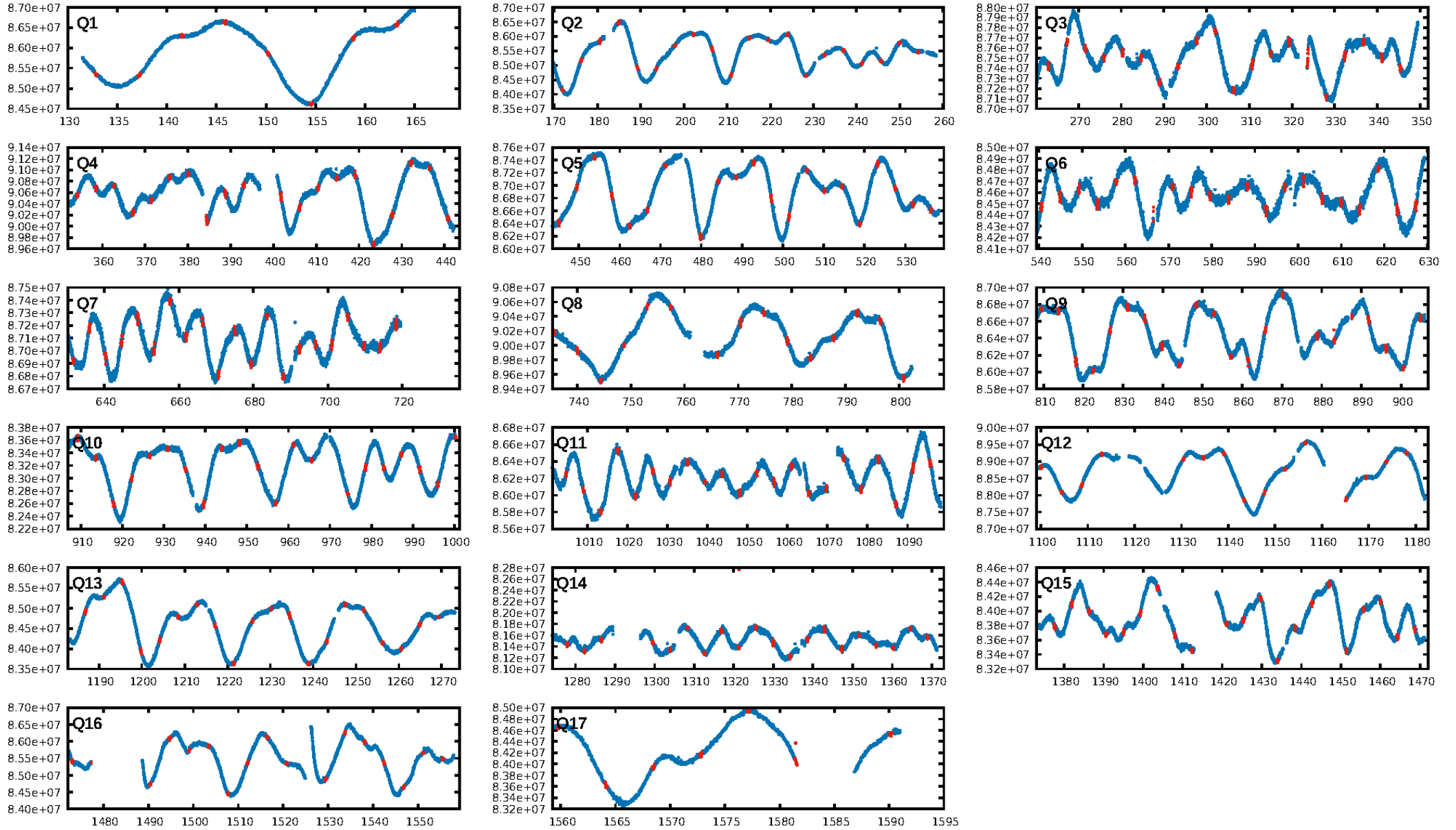
DV Fit Results:

Period = 4.33722 [0.00000] d
Epoch = 132.8518 [0.0007] BKJD
Rp/R* = 0.0207 [0.0019]
a/R* = 6.29 [2.33]
b = 0.89 [0.09]
Seff = 232.61 [36.58]
Teq = 996 [39] K
Rp = 1.98 [0.26] Re
a = 0.0499 [0.0044] AU
Ag = 8.08 [3.02] [2.35 σ]
Teffp = 2596 [231] K [6.82 σ]

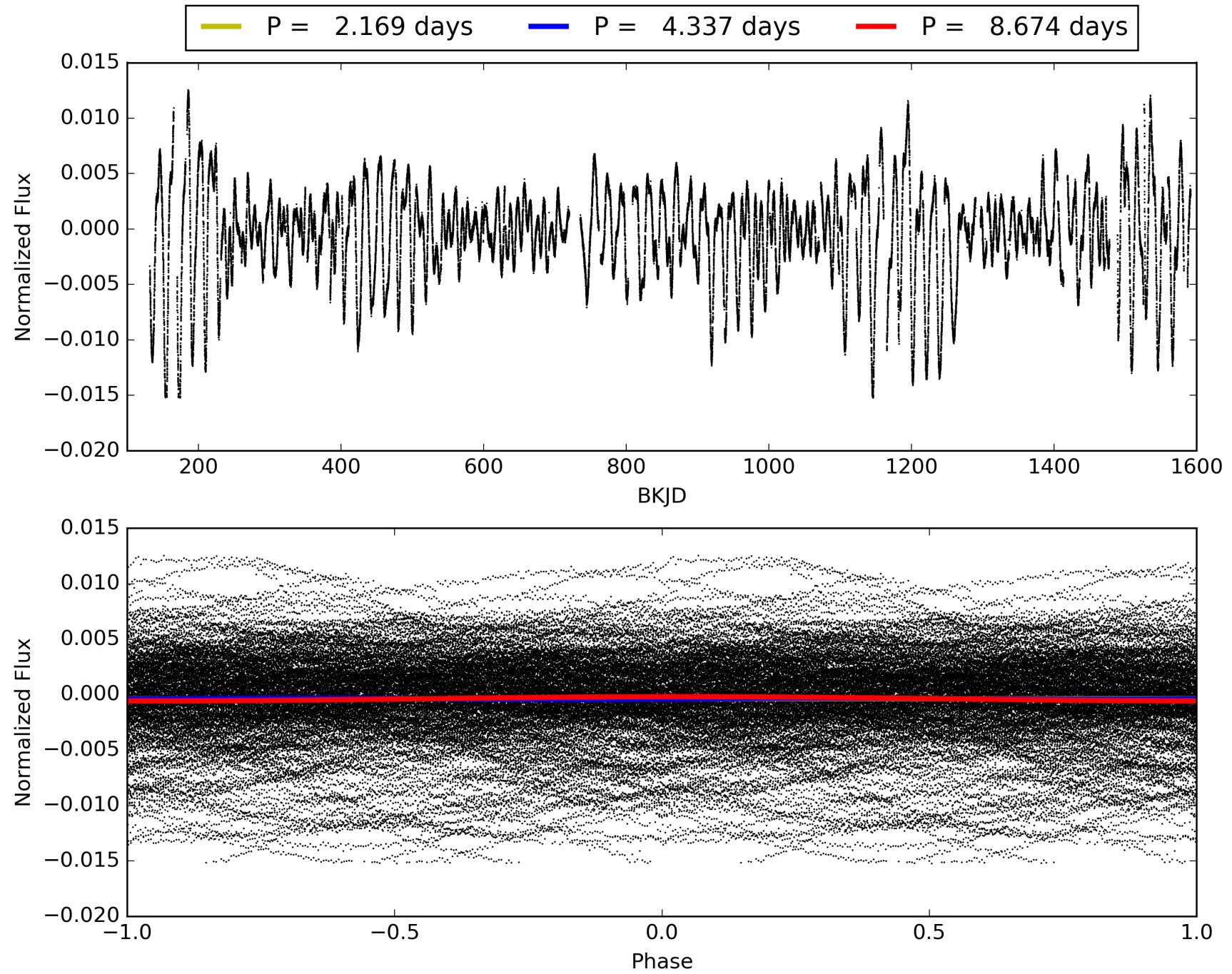
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [20.20 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [294/294]
GhostDiagnostic-chr: 2.138
Centroid-sig: 11.9%
Centroid-so: 0.115 arcsec [0.56 σ]
OotOffset-rm: 0.123 arcsec [0.84 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.256 arcsec [1.86 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008277797-01, PDC Light Curves

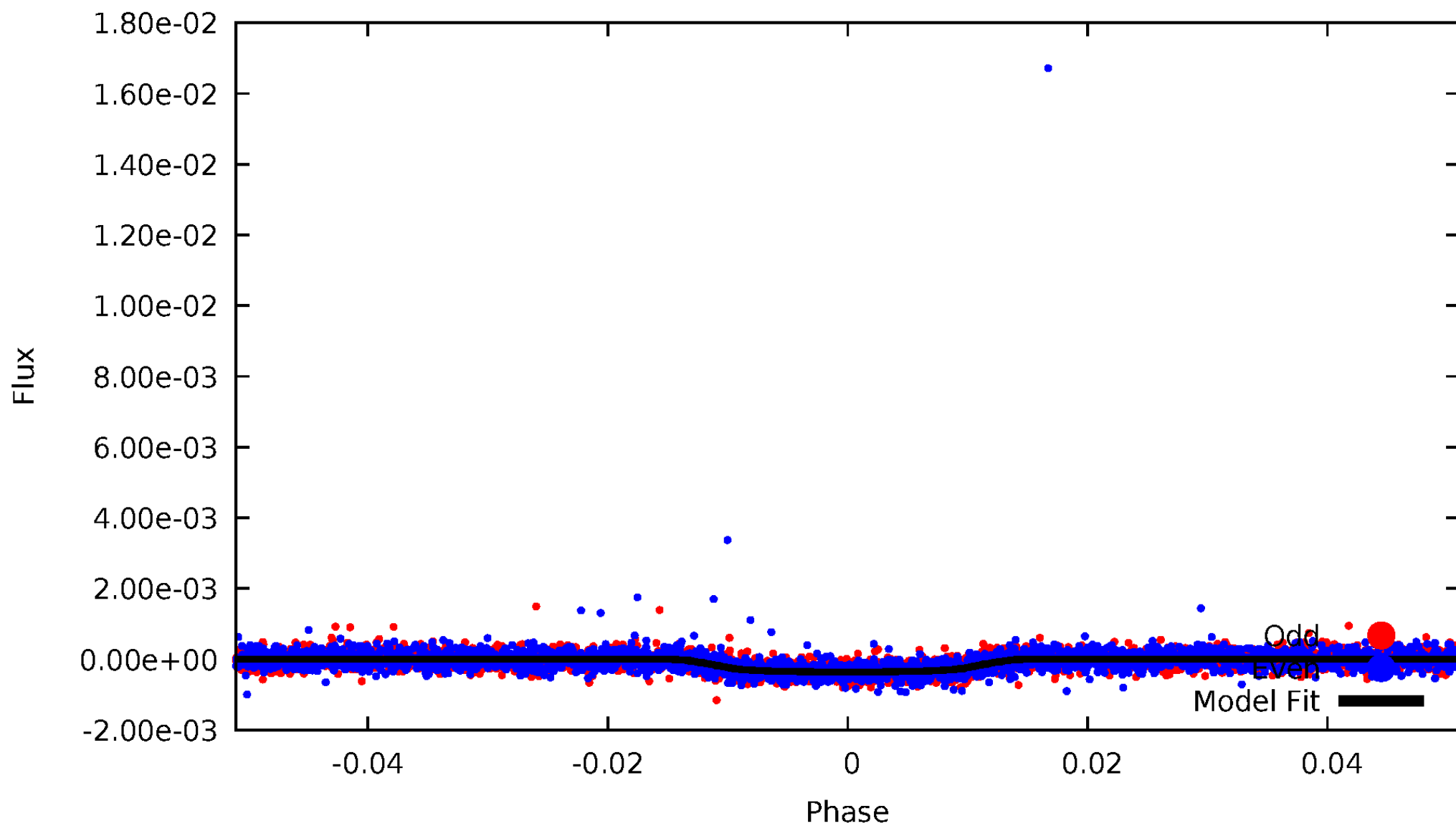


TCE 008277797-01



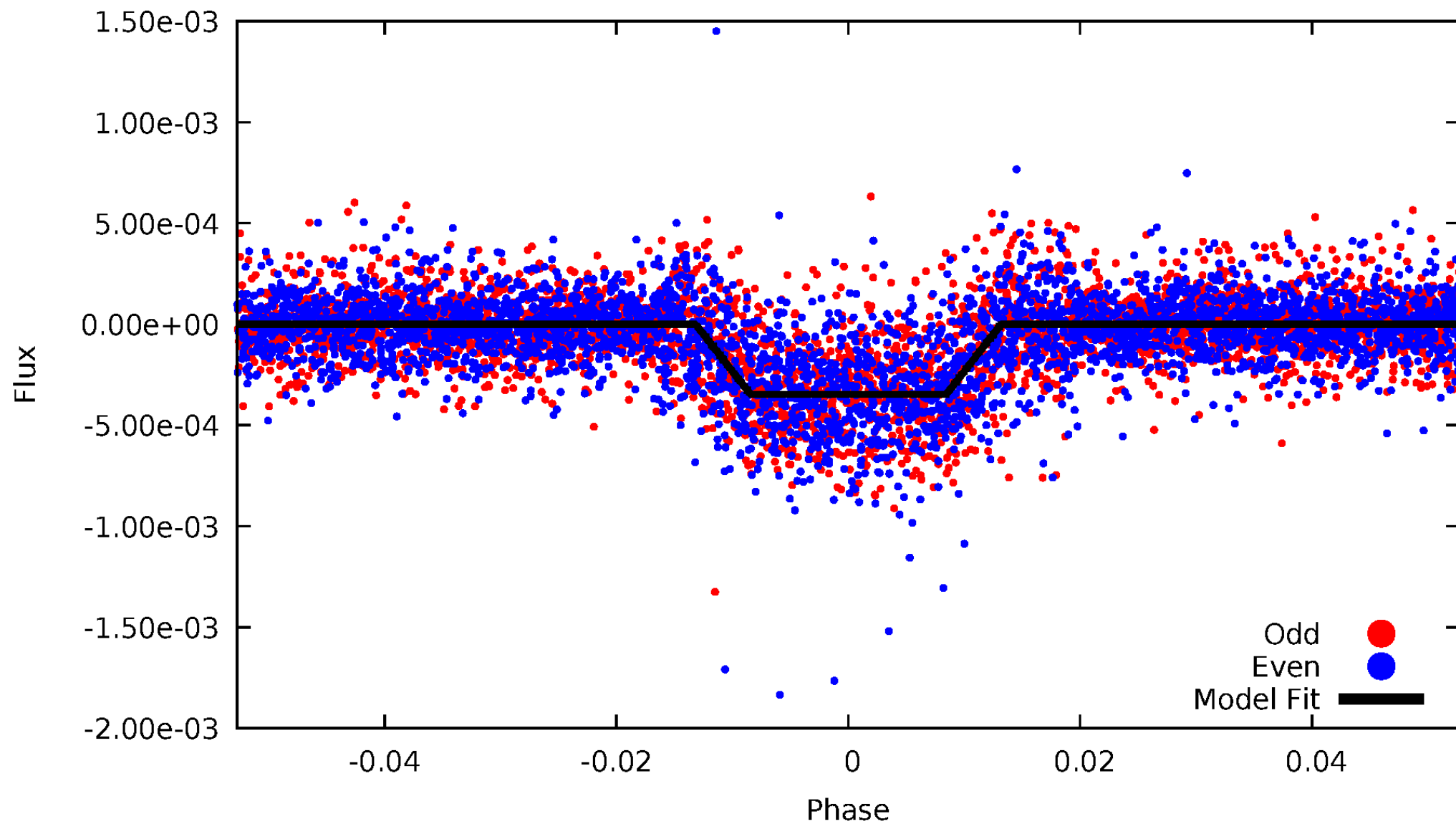
DV Odd/Even

TCE 008277797-01



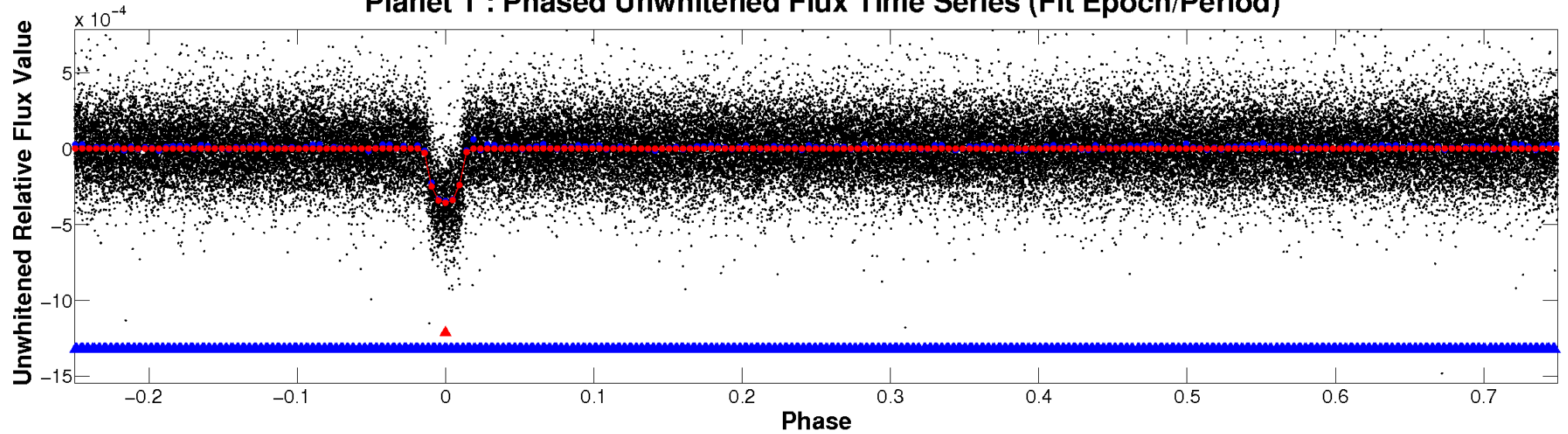
ALT Odd/Even

TCE 008277797-01

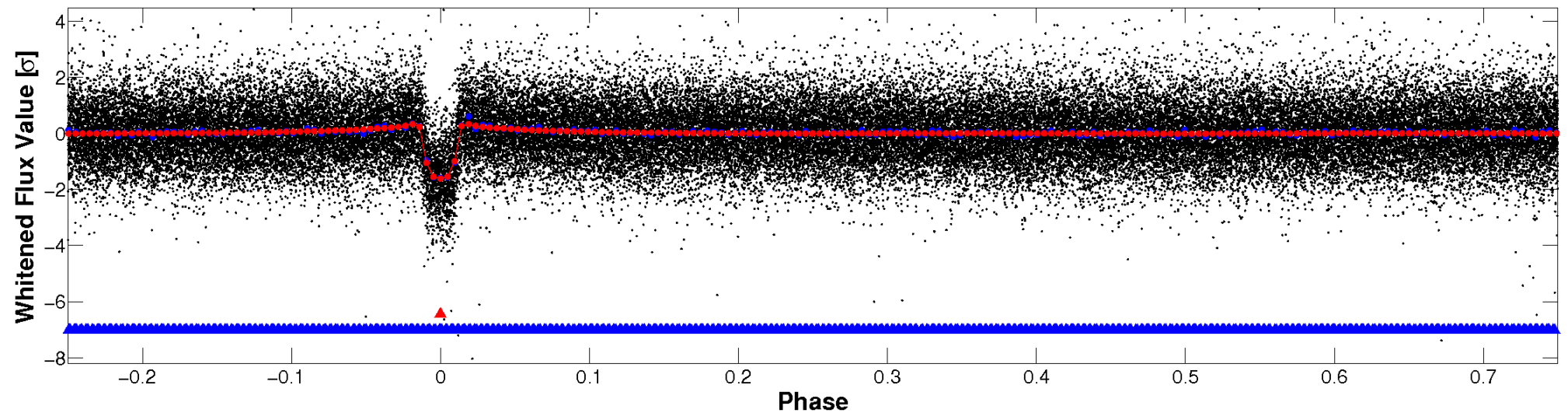


Non-Whitened Vs. Whitened Light Curve

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

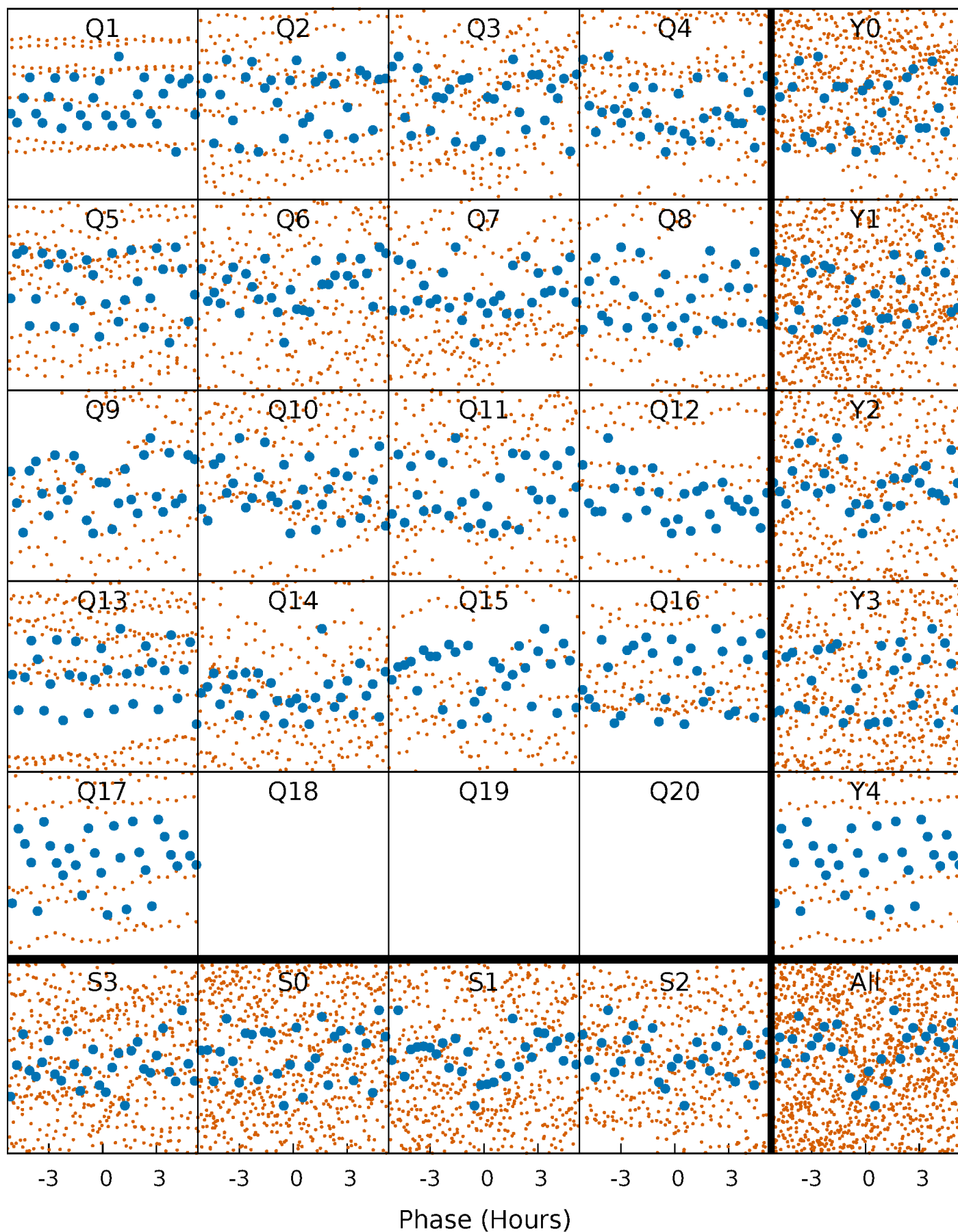


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



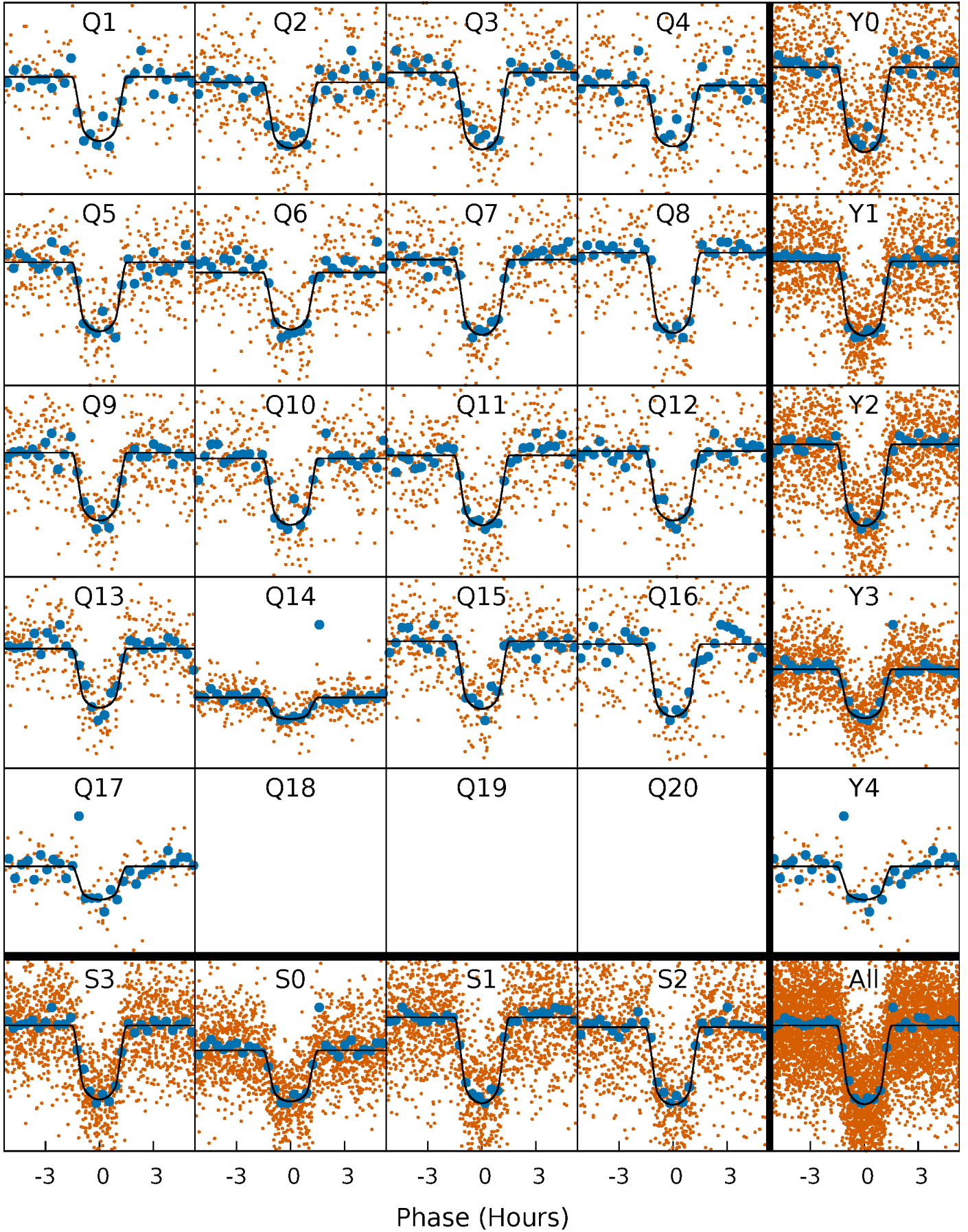
PDC Quarter-Phased Transit Curves

TCE 008277797-01 P= 4.337217 Days $T_0=132.851823$ (BKJD)



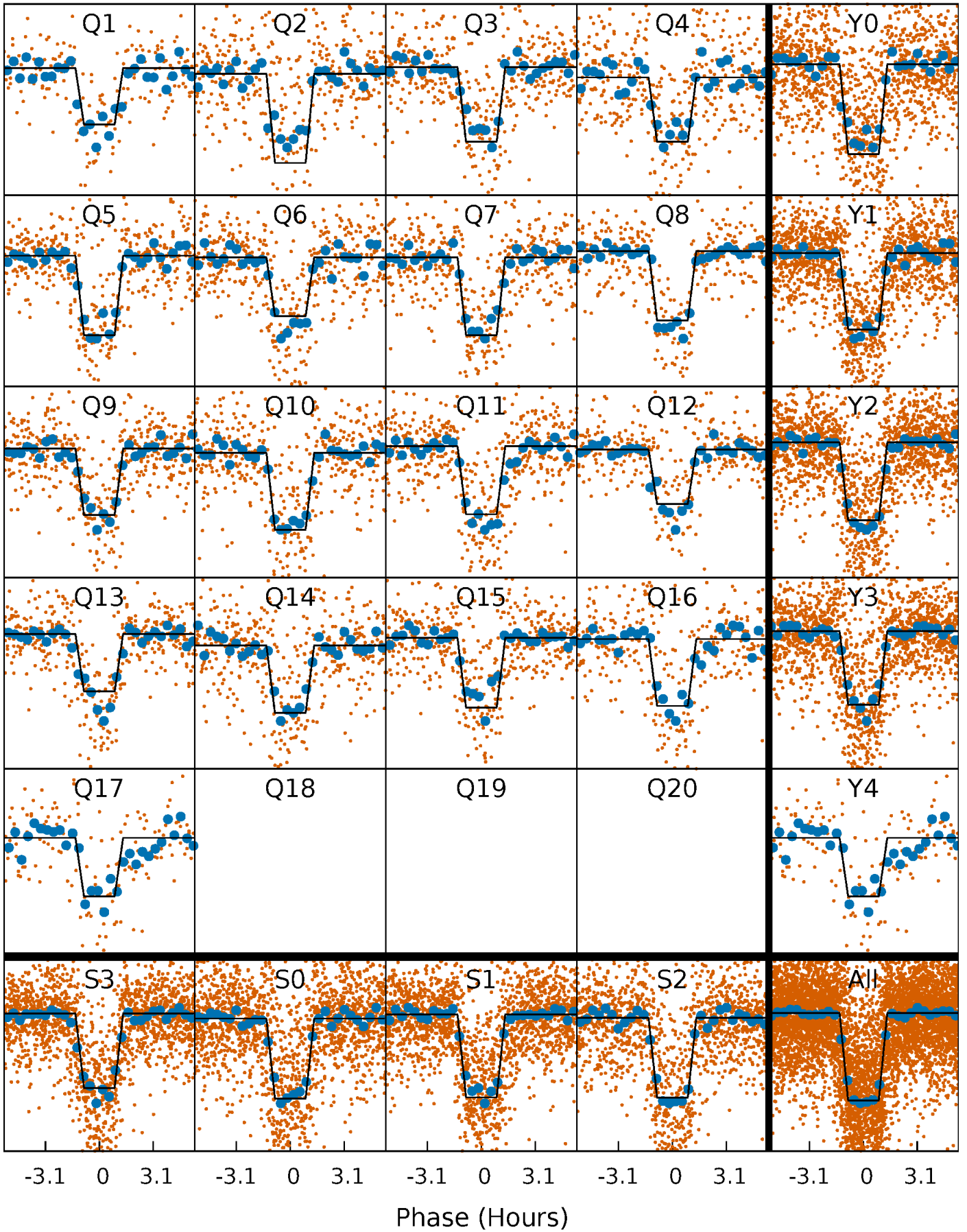
DV Quarter-Phased Transit Curves

TCE 008277797-01 P= 4.337217 Days $T_0=132.851823$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

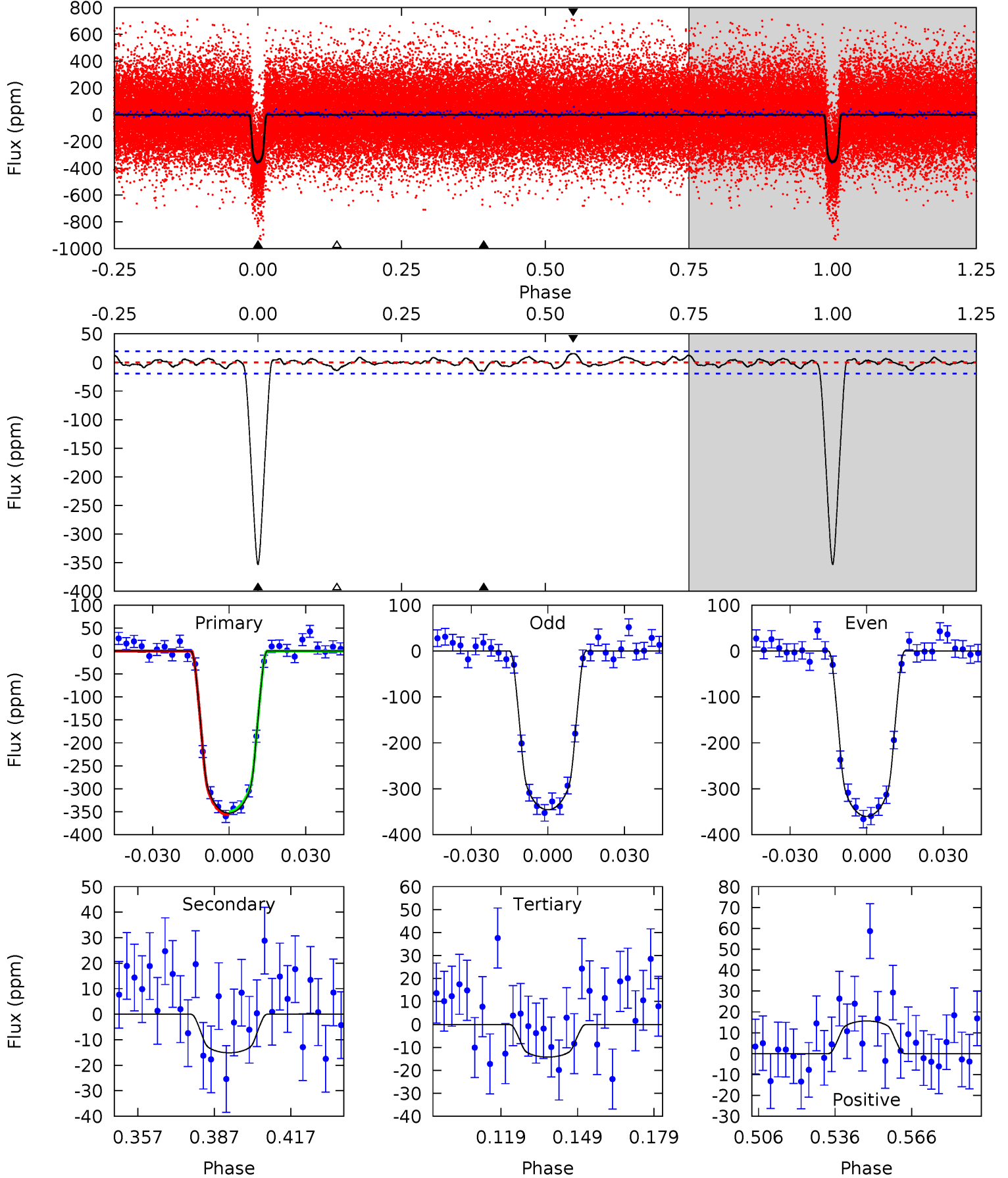
TCE 008277797-01 P= 4.337200 Days $T_0=132.854484$ (BKJD)



DV Model-Shift Uniqueness Test

008277797-01, P = 4.337217 Days, E = 128.514606 Days

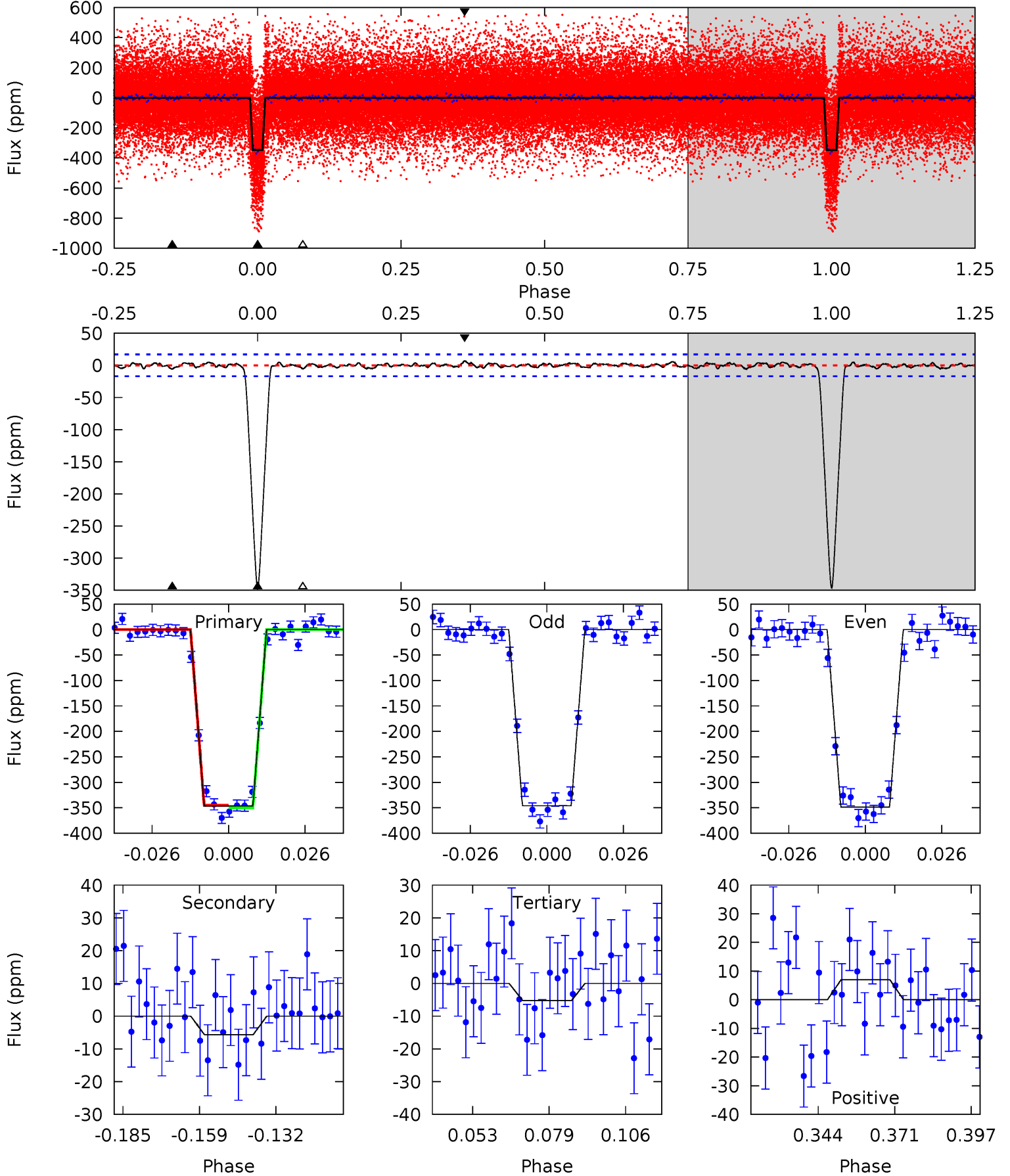
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
87.1	3.73	3.51	3.86	4.81	2.17	1.30	83.6	83.2	0.22	-0.13	1.78	0.98	0.04	0.85



Alt Model-Shift Uniqueness Test

008277797-01, P = 4.337200 Days, E = 128.517284 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
98.9	1.62	1.50	2.00	4.84	2.22	0.64	97.4	96.9	0.11	-0.38	0.40	0.98	0.02	0.68



Stellar Parameters For KIC 008277797

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5390^{+107}_{-107}	$4.499^{+0.052}_{-0.078}$	$0.060^{+0.150}_{-0.150}$	$0.876^{+0.084}_{-0.058}$	$0.883^{+0.054}_{-0.049}$	$1.848^{+0.397}_{-0.435}$
	+2%/-2%	+1%/-2%	+250%/-250%	+10%/-7%	+6%/-6%	+22%/-24%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 008277797-01 / KOI 1820.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-15 ± 4	$2.00^{+0.20}_{-0.19}$	1396^{+43}_{-38}	2967^{+141}_{-154}	$5.223^{+1.934}_{-1.695}$
Alt.	-6 ± 4	$1.79^{+0.21}_{-0.19}$	1397^{+41}_{-41}	2654^{+206}_{-370}	$2.427^{+1.633}_{-1.539}$

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

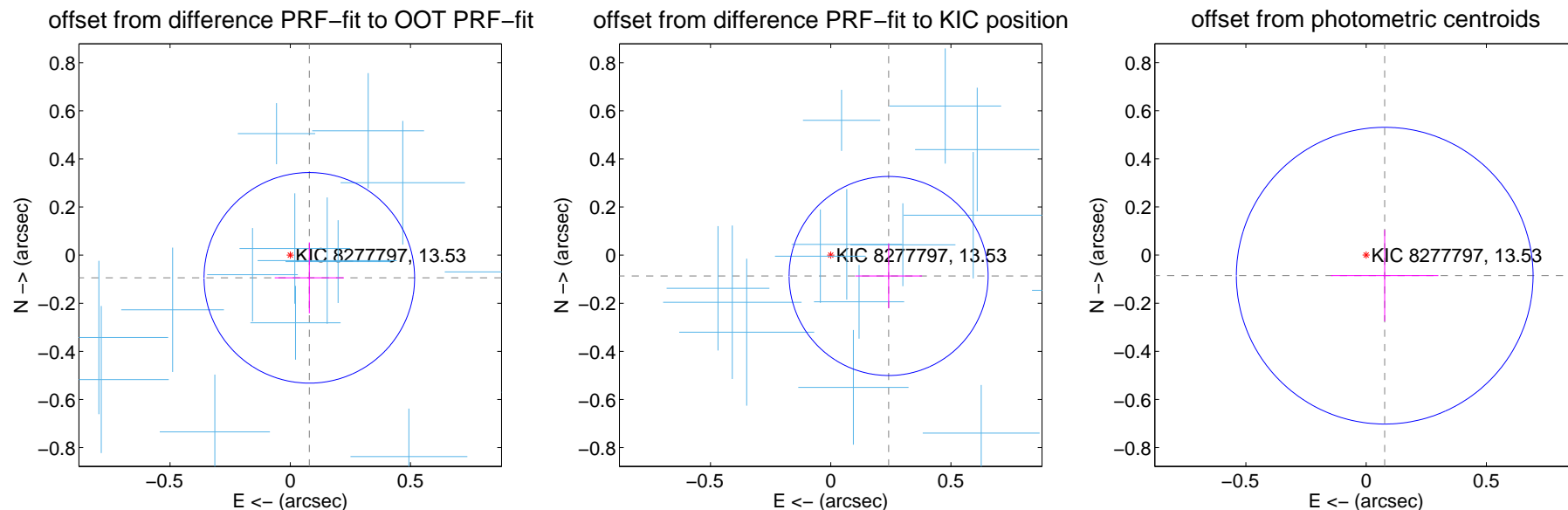
DV Centroid Data

Supplemental centroid analysis for 008277797-01. Kepler magnitude: 13.53. Transit SNR 55.16

There are 17 quarters with good PRF difference image offsets

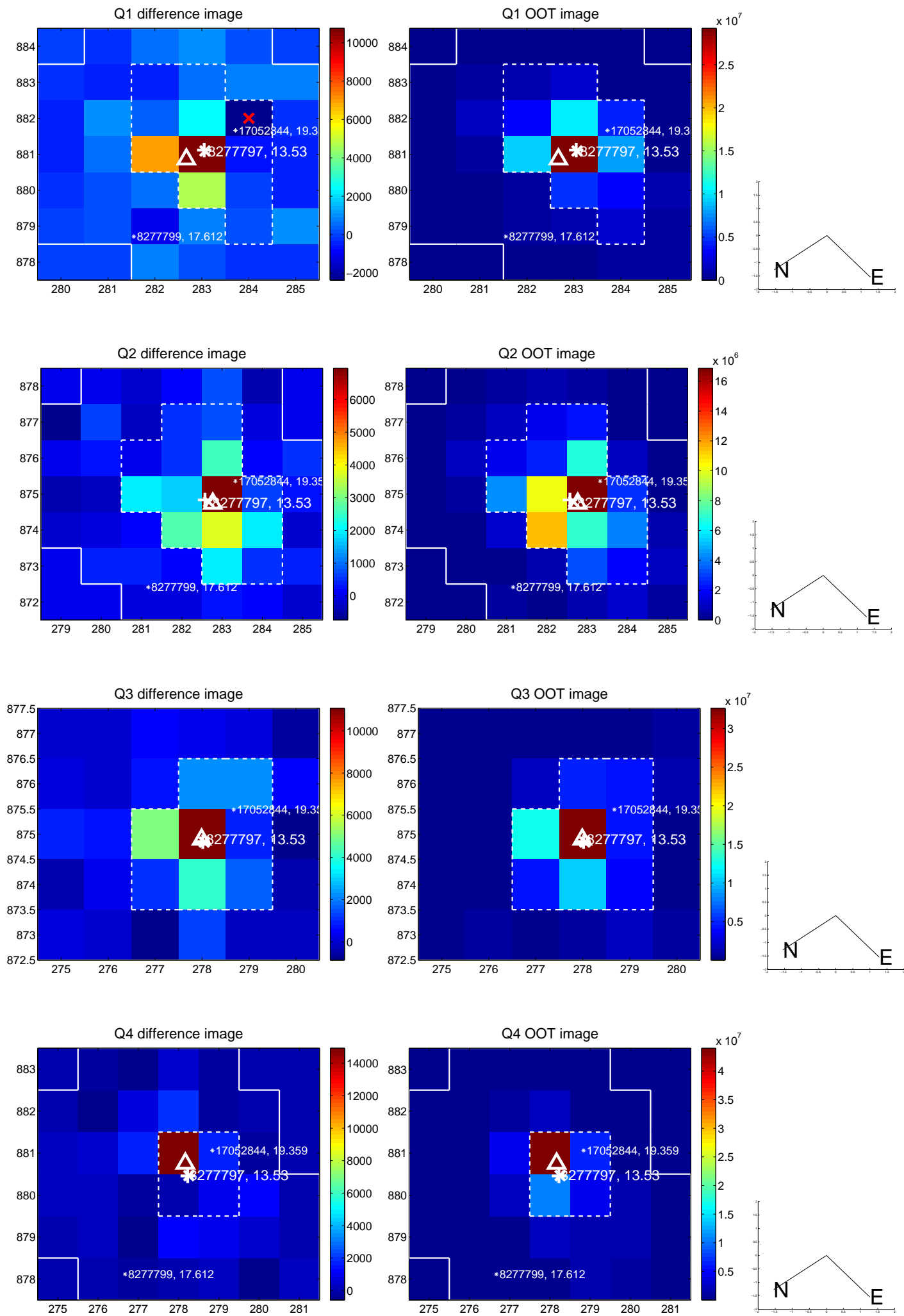
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.123 ± 0.146	0.84	-0.079 ± 0.144	-0.094 ± 0.147
PRF-fit source offset from KIC position	0.256 ± 0.138	1.86	-0.241 ± 0.138	-0.087 ± 0.134
photometric centroid source offset	0.12 ± 0.21	0.56	-0.08 ± 0.22	-0.09 ± 0.19

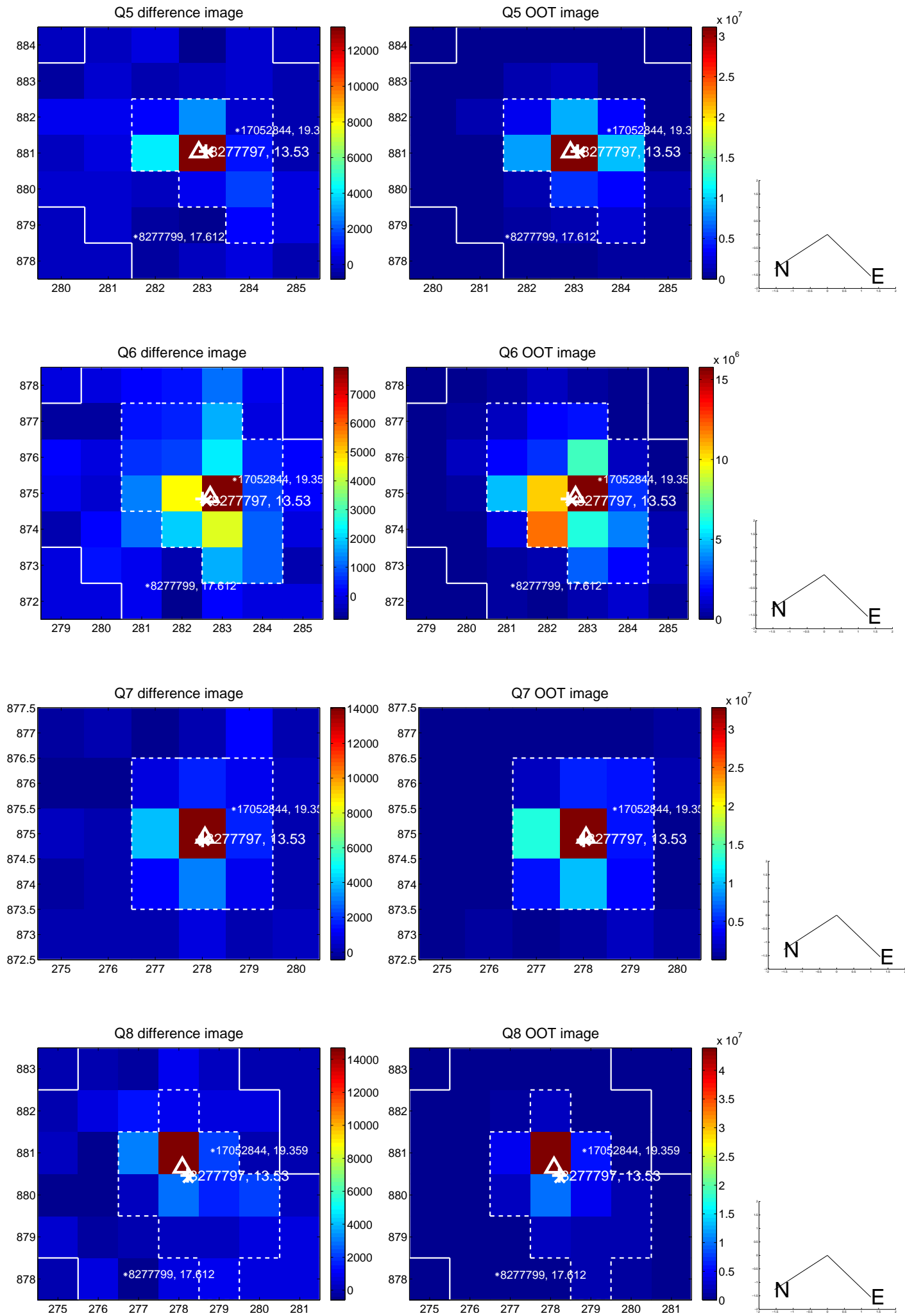


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

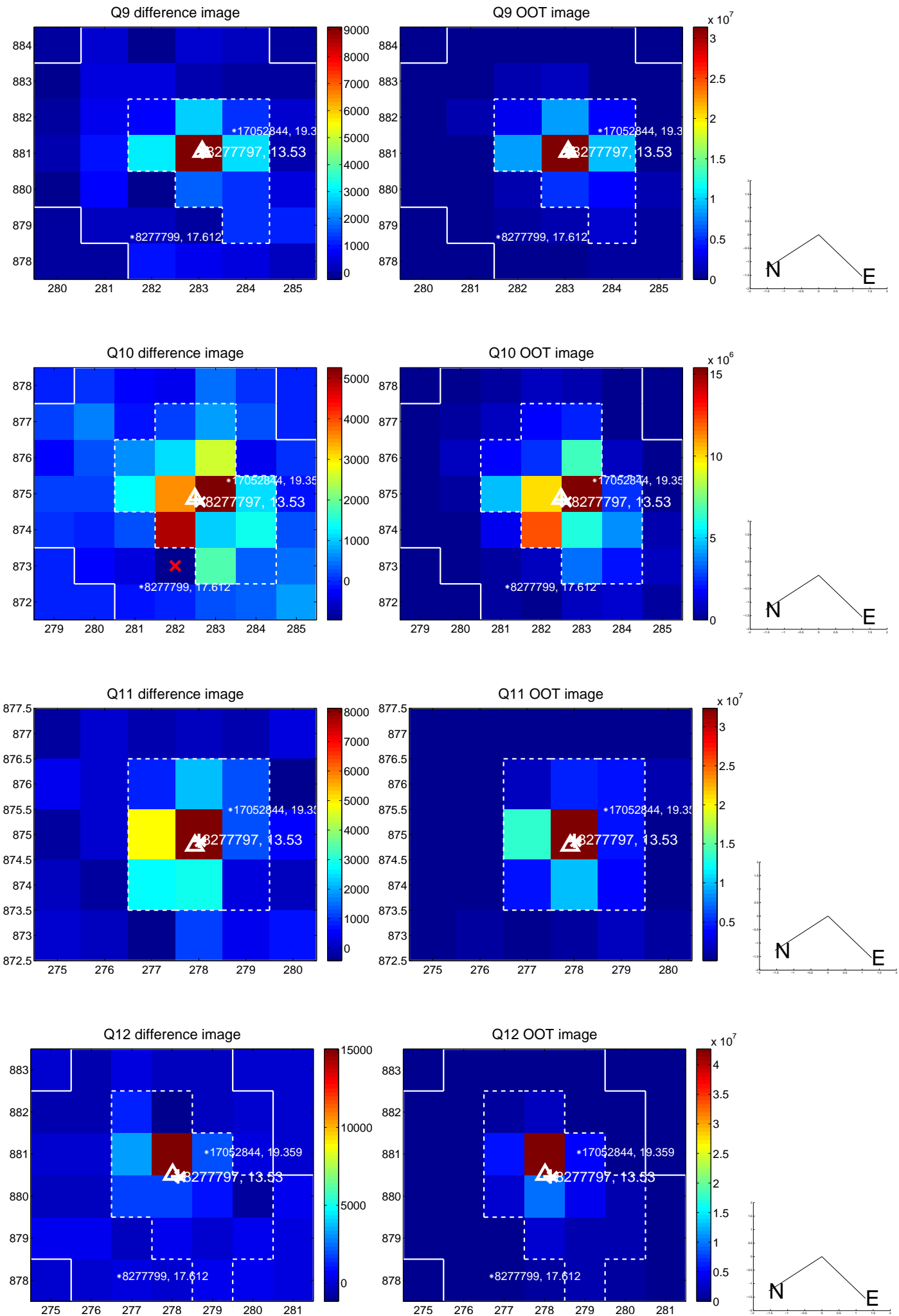
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



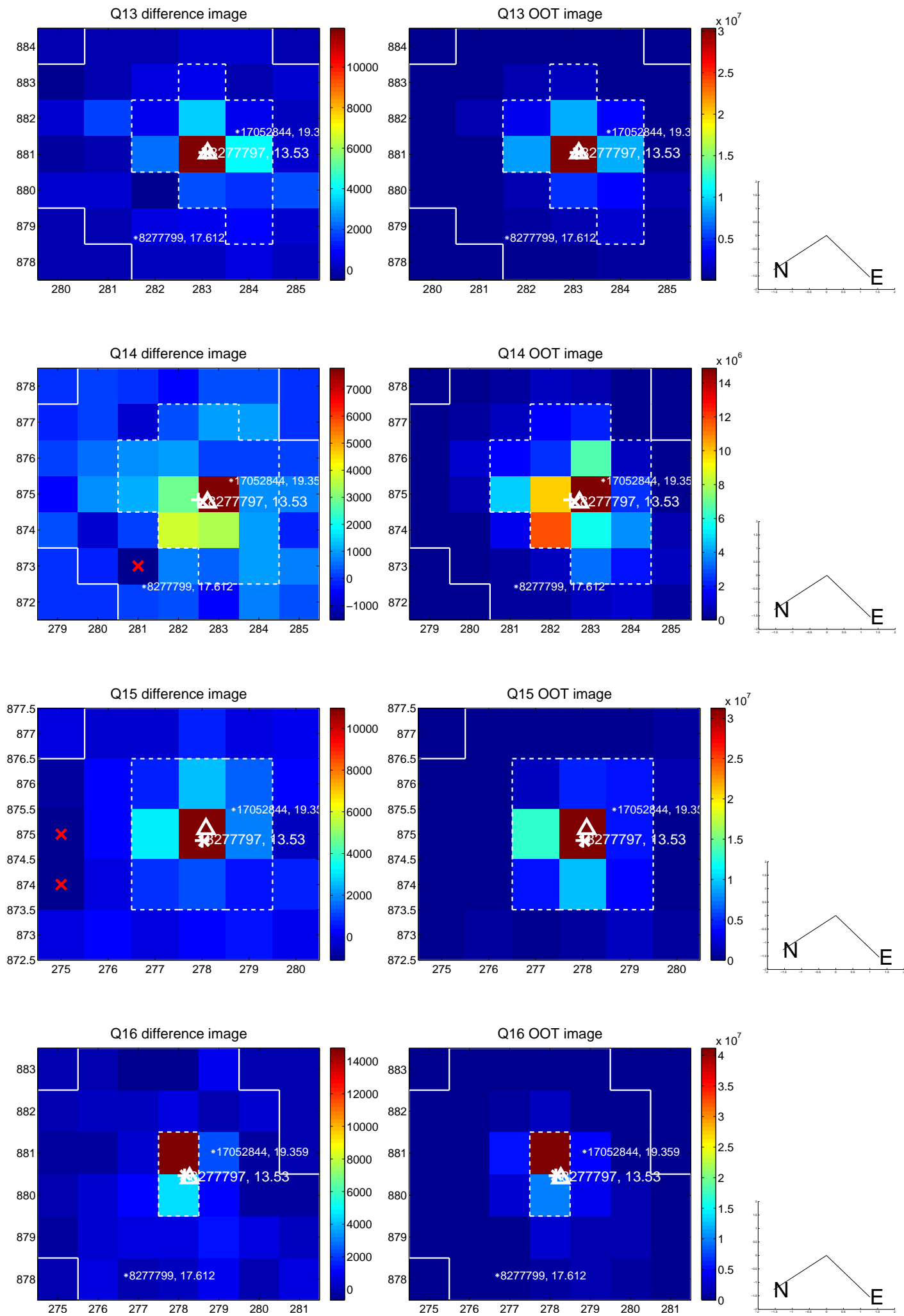
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



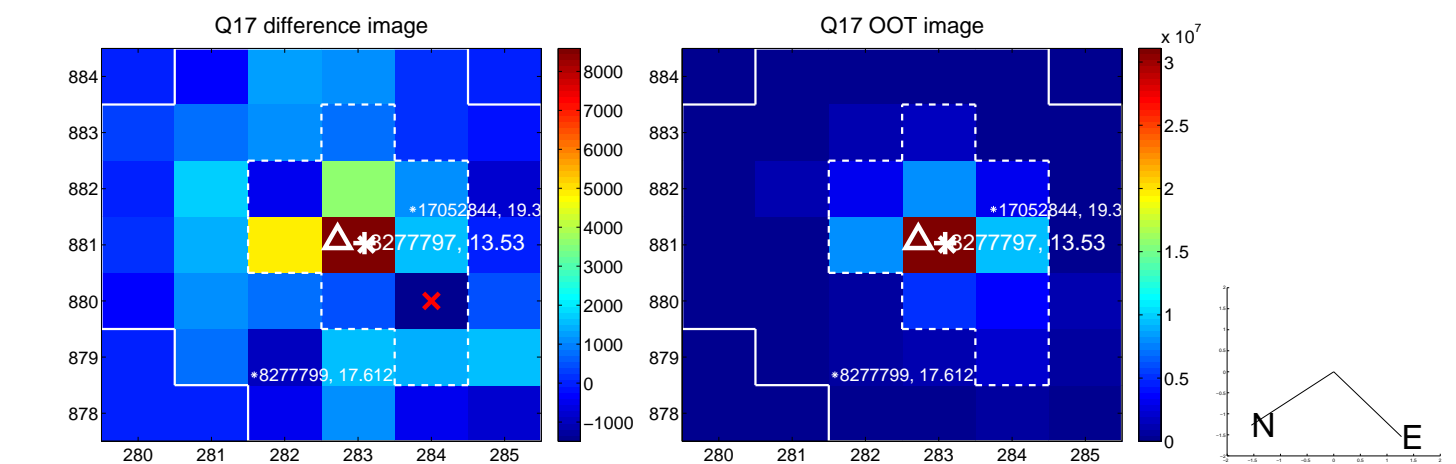
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



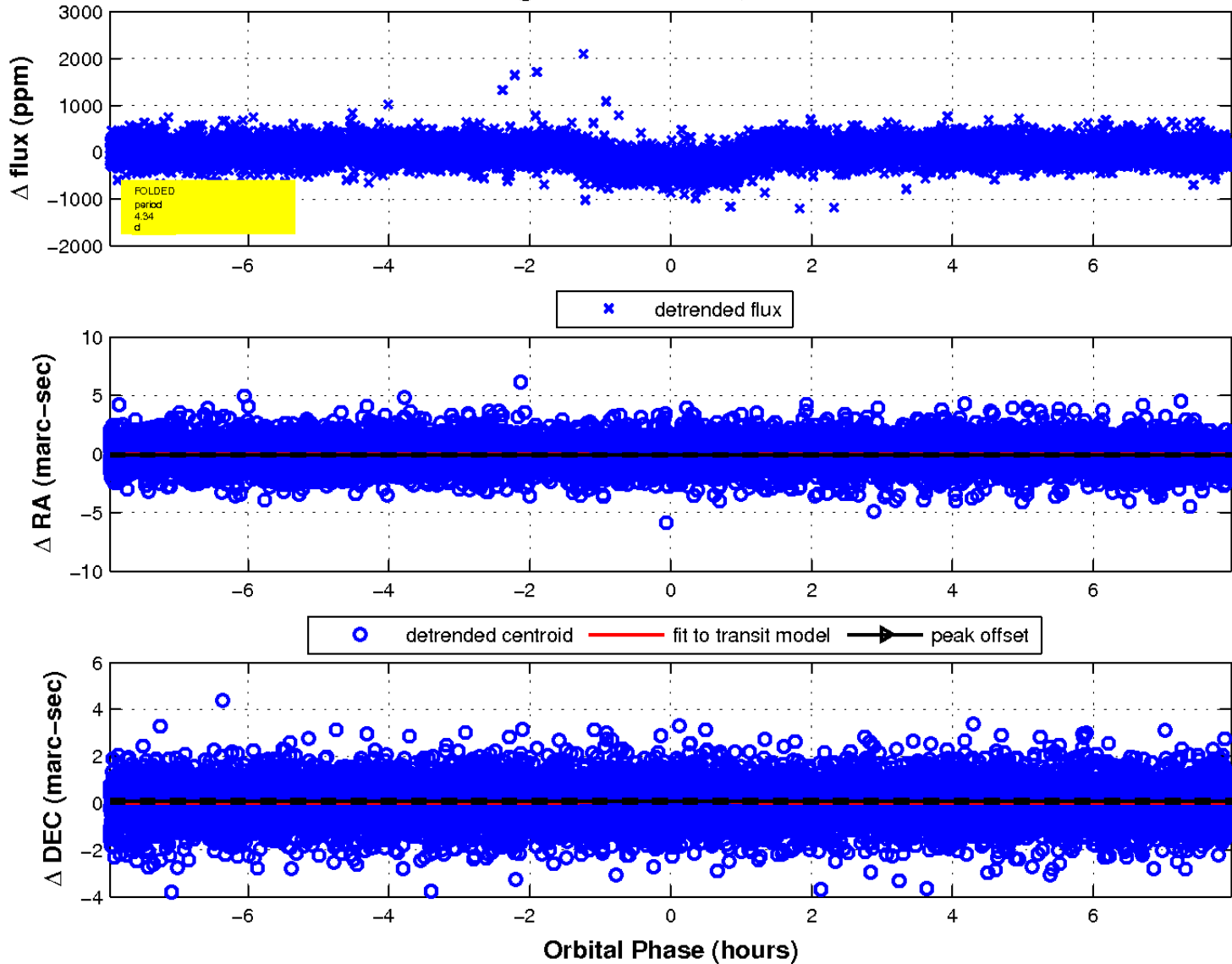
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

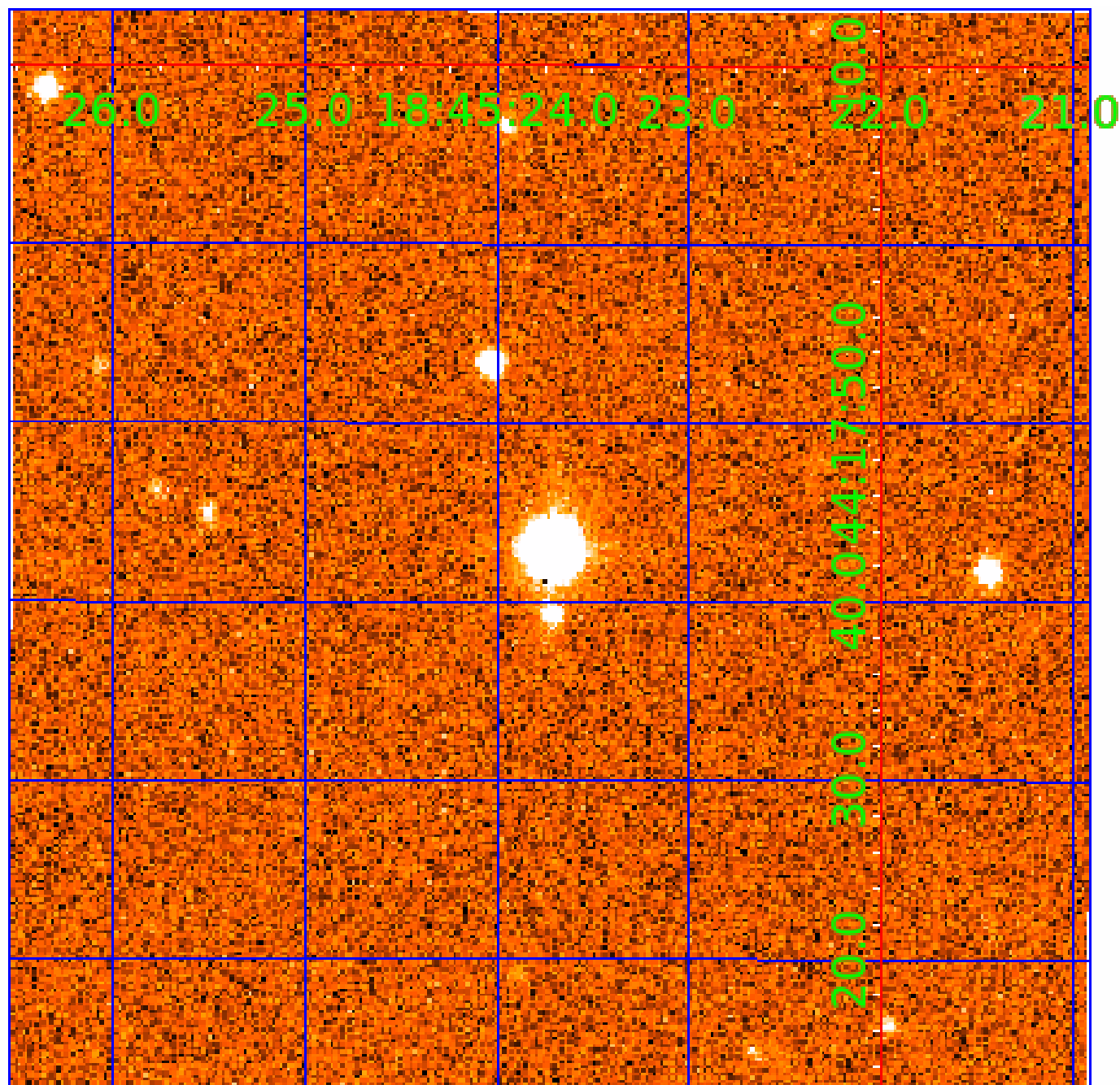


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008277797

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})
008277797-01	OBS	1820.01	4.337217	132.851823	358.7	2.654	50.6	55.2	0.88	5390	1.98	232.62
008277797-02	OBS	1820.02	1.653889	132.190152	127.4	1.766	23.6	27.3	0.88	5390	1.19	841.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008277797-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008277797-02	OBS	PC	0.97	0	0	0	0	NO_COMMENT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

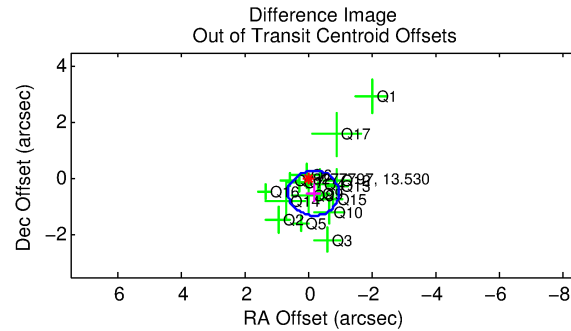
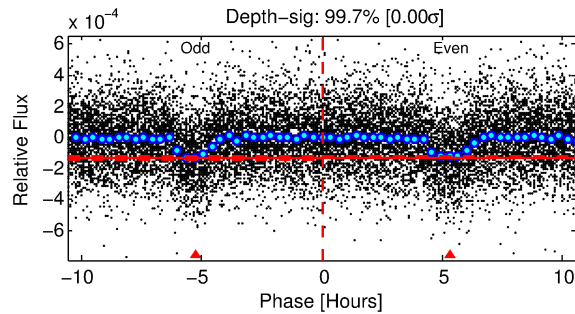
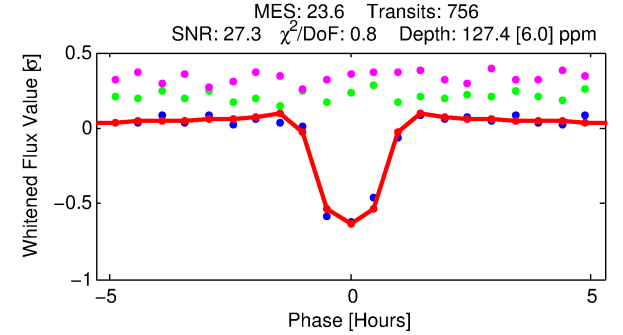
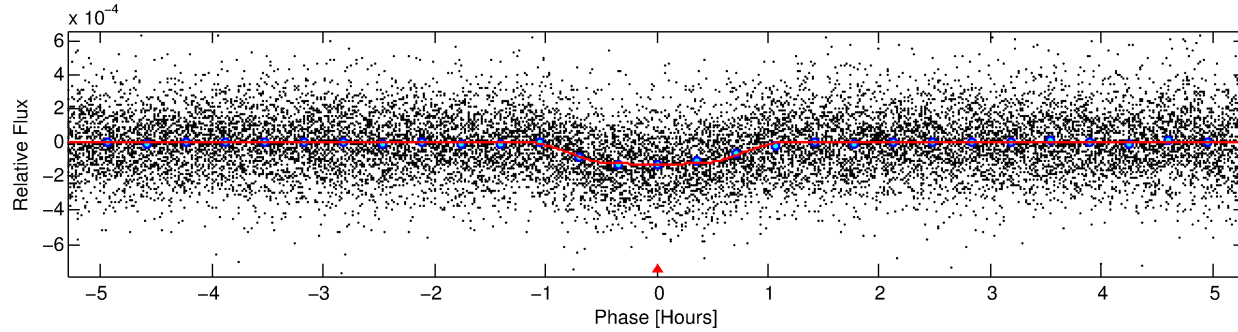
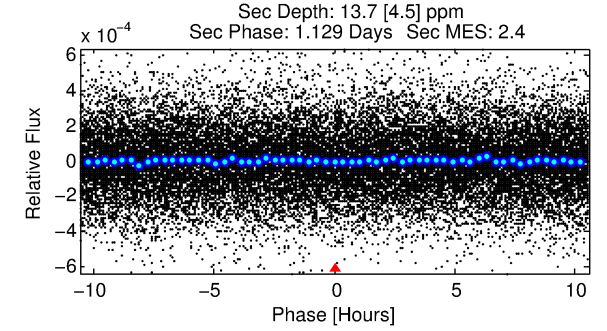
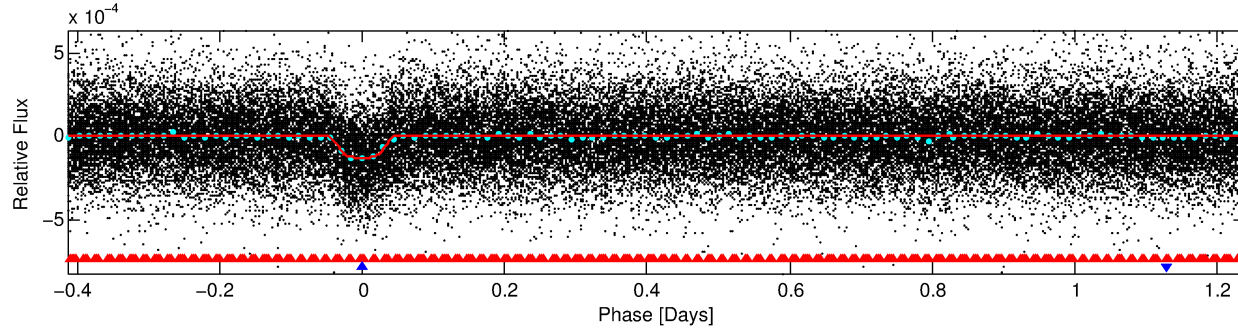
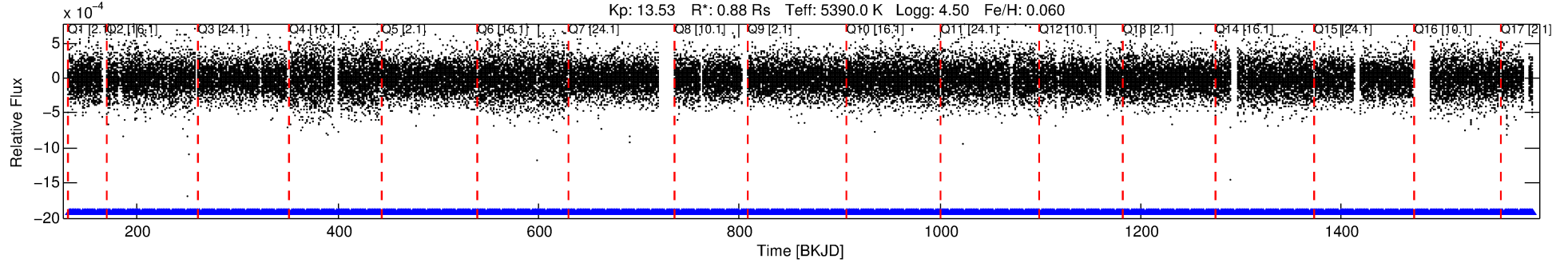
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008277797-02

No Significant Match Found

DV One-Page Summary

KIC: 8277797 Candidate: 2 of 2 Period: 1.654 d
KOI: K01820.02 Name: Kepler-322b Corr: 0.977



DV Fit Results:

Period = 1.65389 [0.00000] d
Epoch = 132.1902 [0.0009] BKJD
Rp/R* = 0.0124 [0.0039]
a/R* = 3.54 [4.42]
b = 0.89 [0.32]
Seff = 841.22 [132.28]
Teff = 1373 [54] K
Rp = 1.18 [0.39] Re
a = 0.0263 [0.0023] AU
Ag = 3.71 [2.68] [1.01σ]
Teffp = 2947 [526] K [2.98σ]

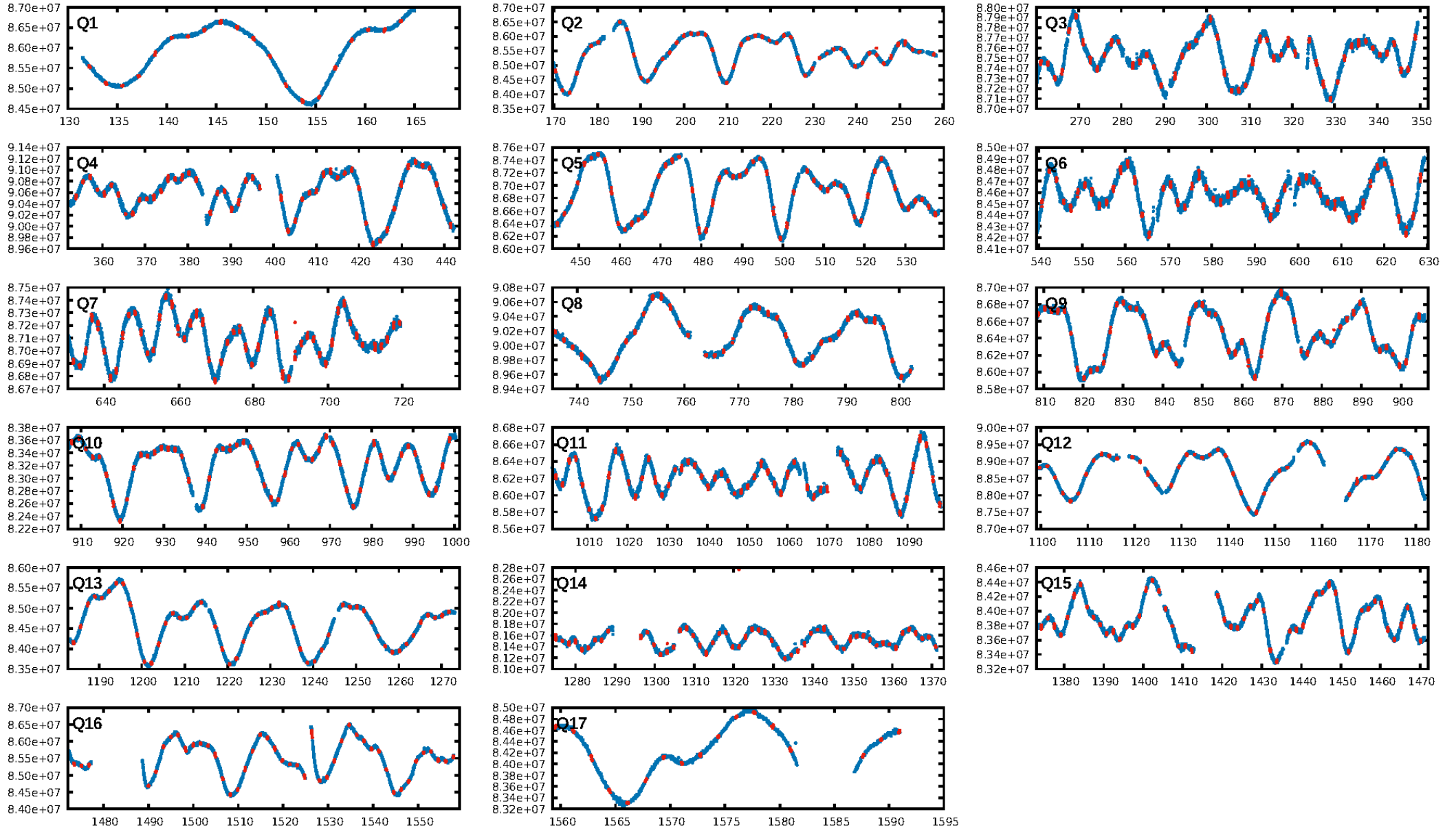
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [20.20σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.22e-116
RollingBand-fgt: 1.00 [721/721]
GhostDiagnostic-chr: 1.749
Centroid-sig: 2.4%
Centroid-so: 1.087 arcsec [2.41σ]
OotOffset-rm: 0.537 arcsec [2.01σ]
KicOffset-rm: 0.514 arcsec [2.40σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 1.00 [17/17]

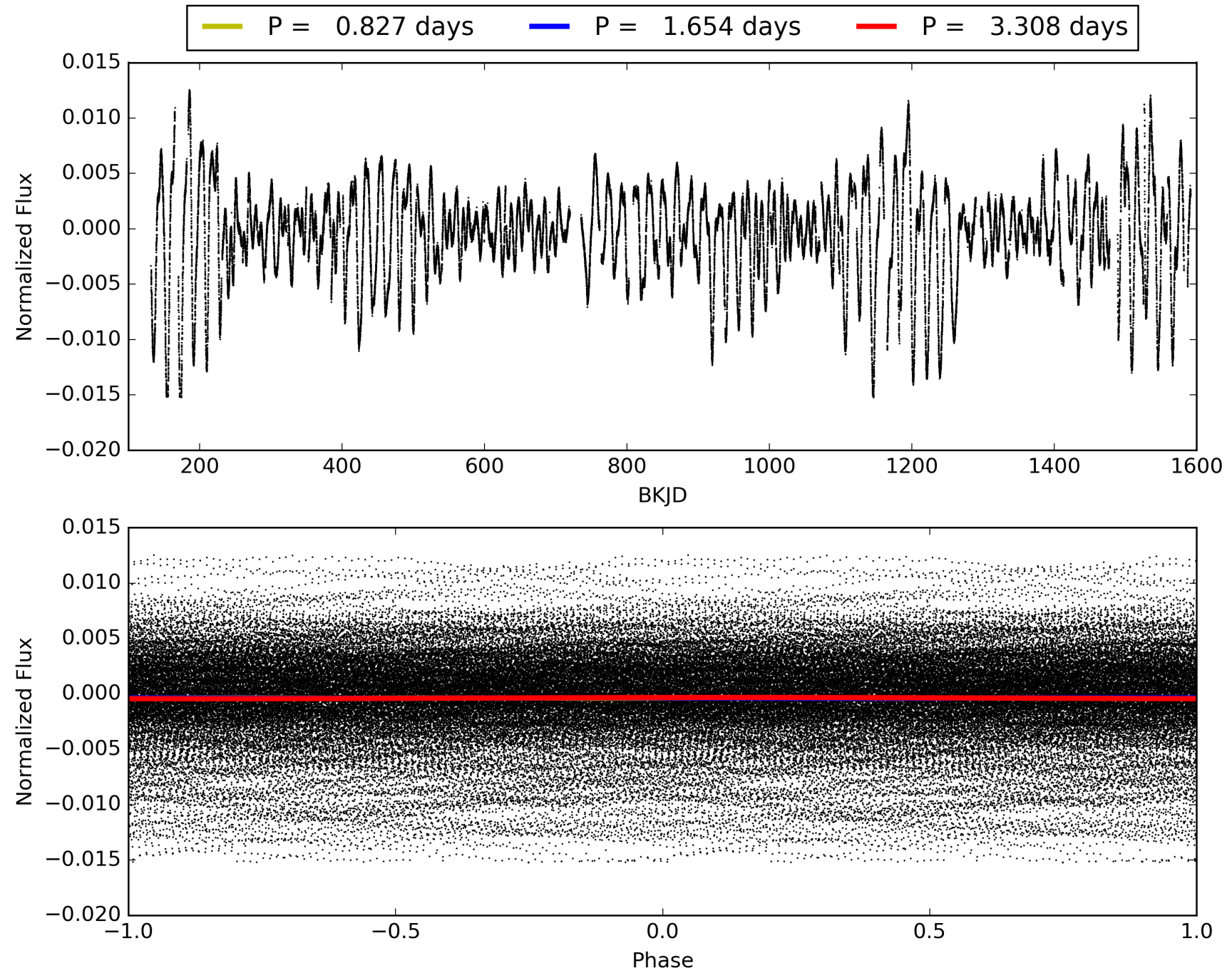
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 11:54:06 Z

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

TCE 008277797-02, PDC Light Curves

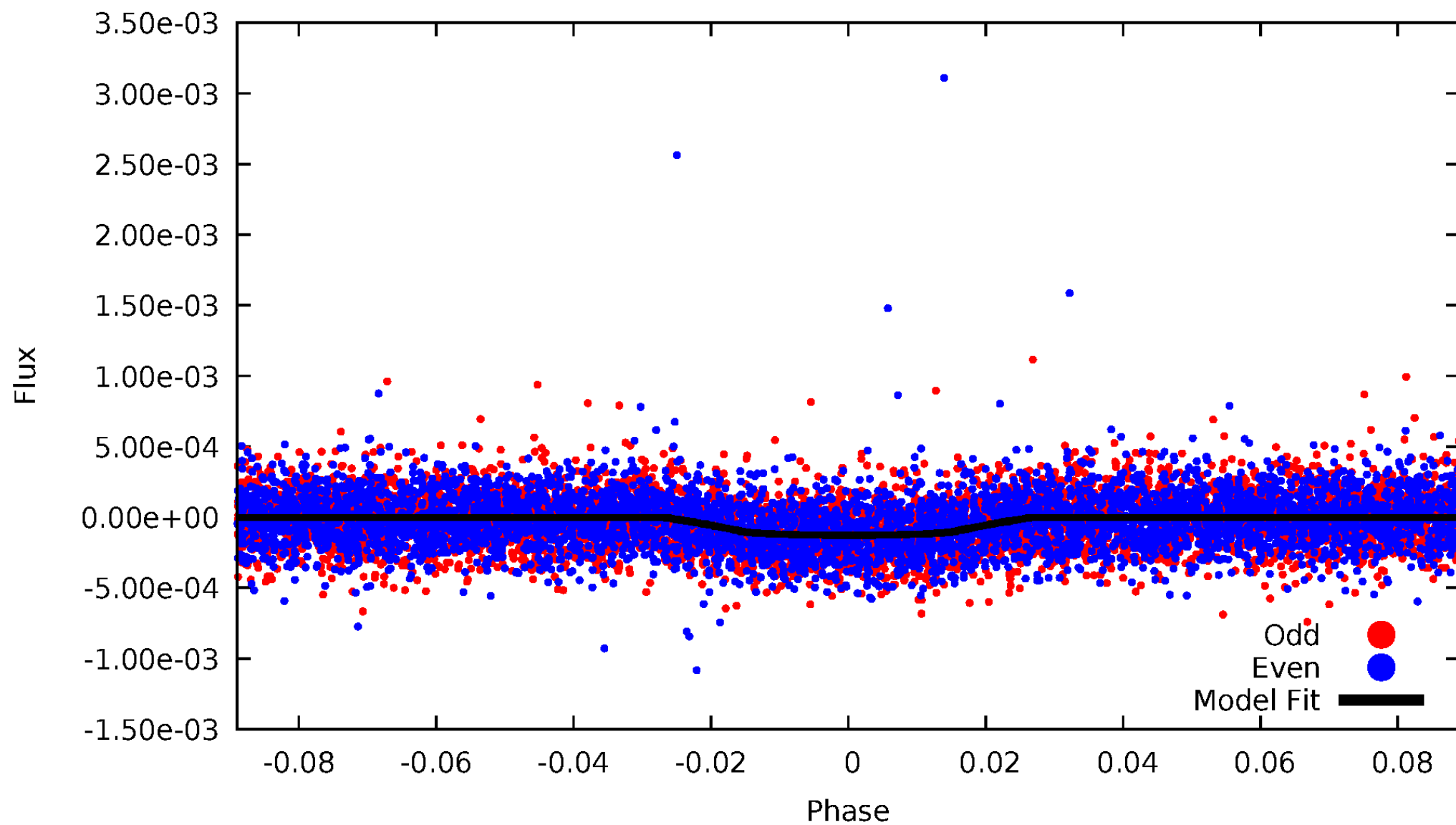


TCE 008277797-02



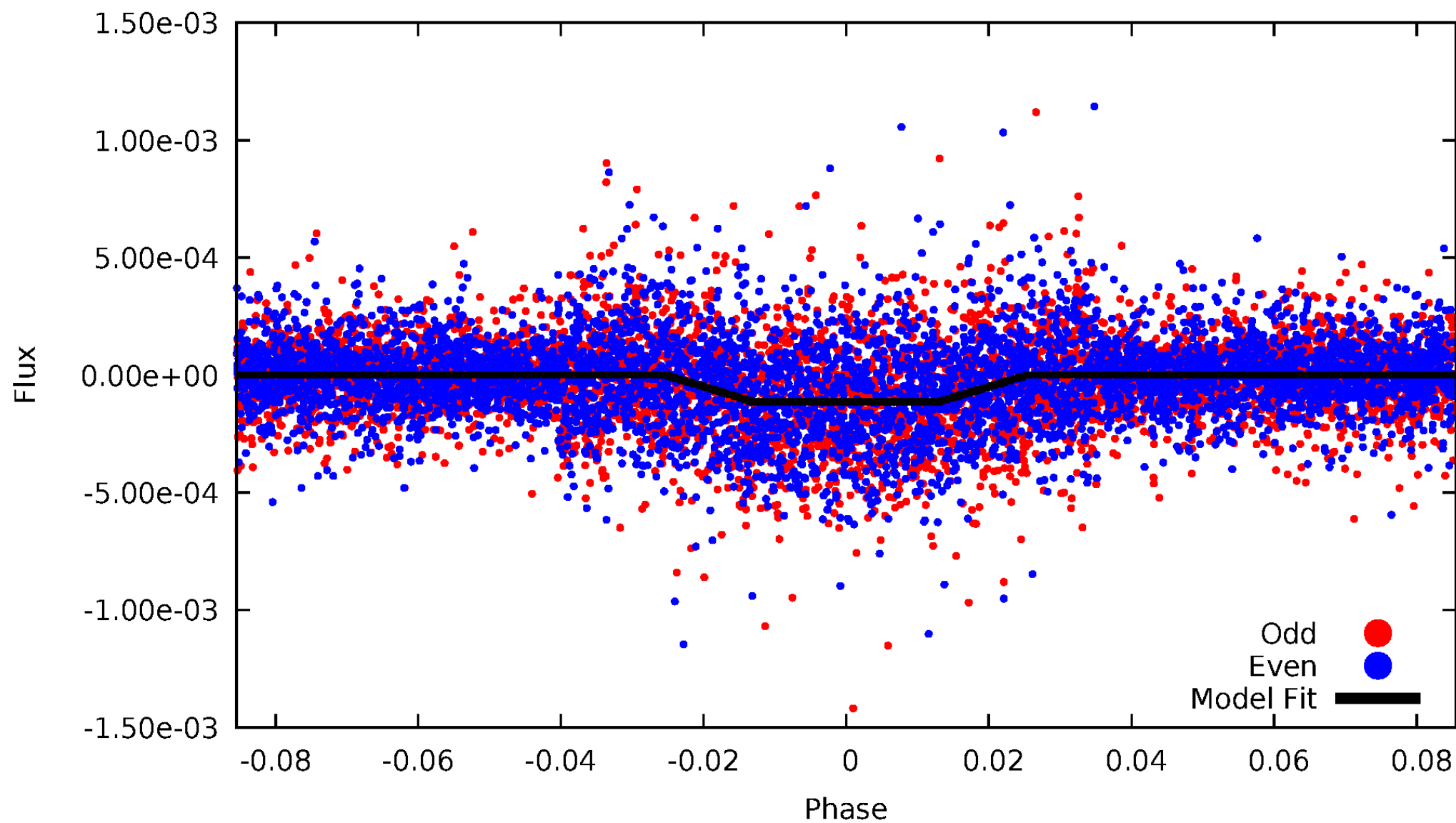
DV Odd/Even

TCE 008277797-02



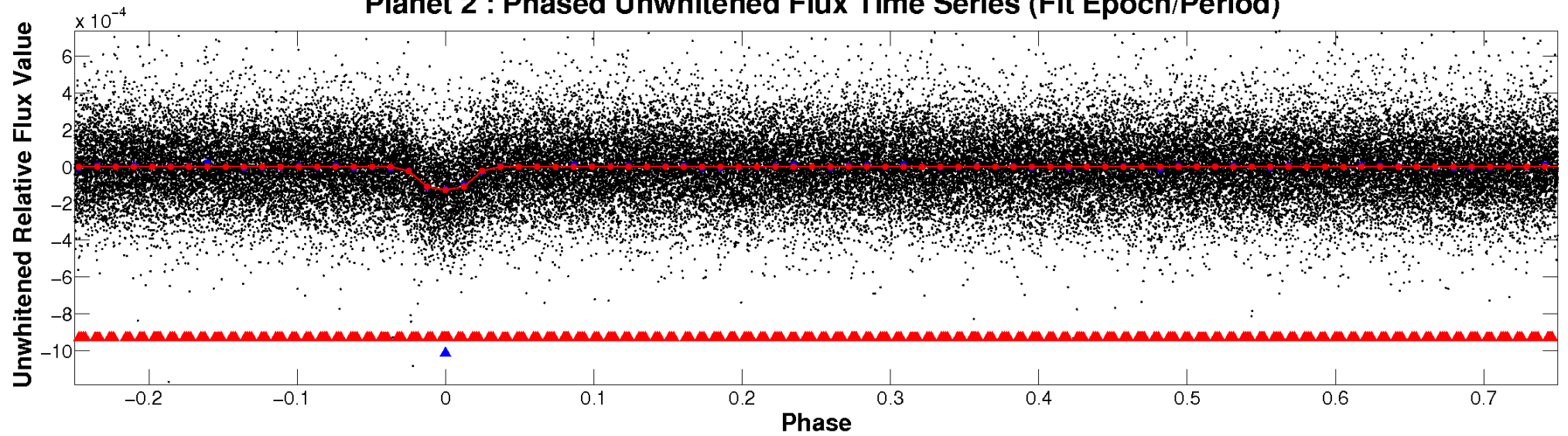
ALT Odd/Even

TCE 008277797-02

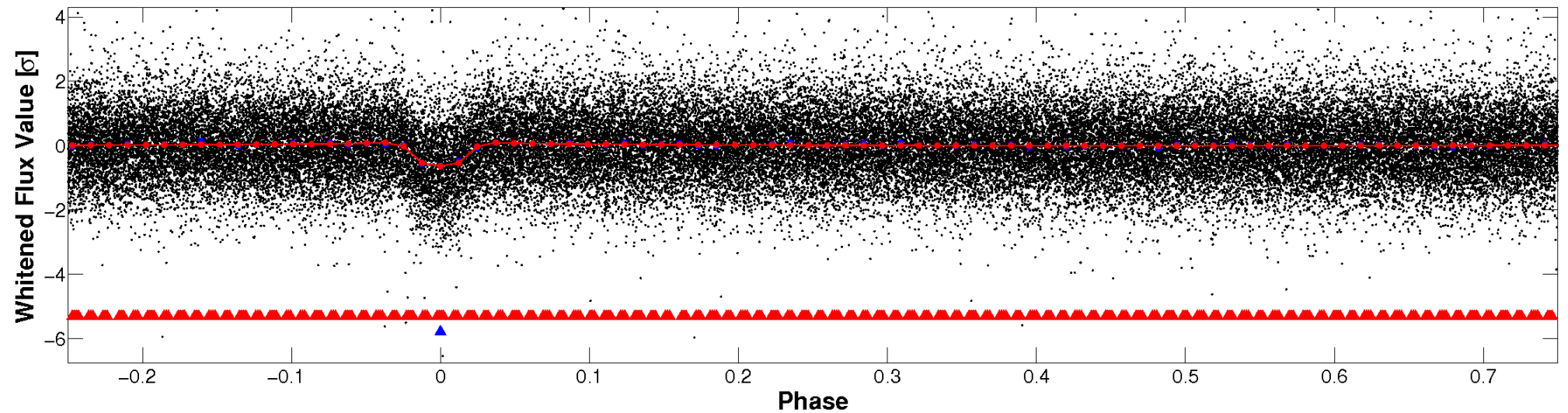


Non-Whitened Vs. Whitened Light Curve

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

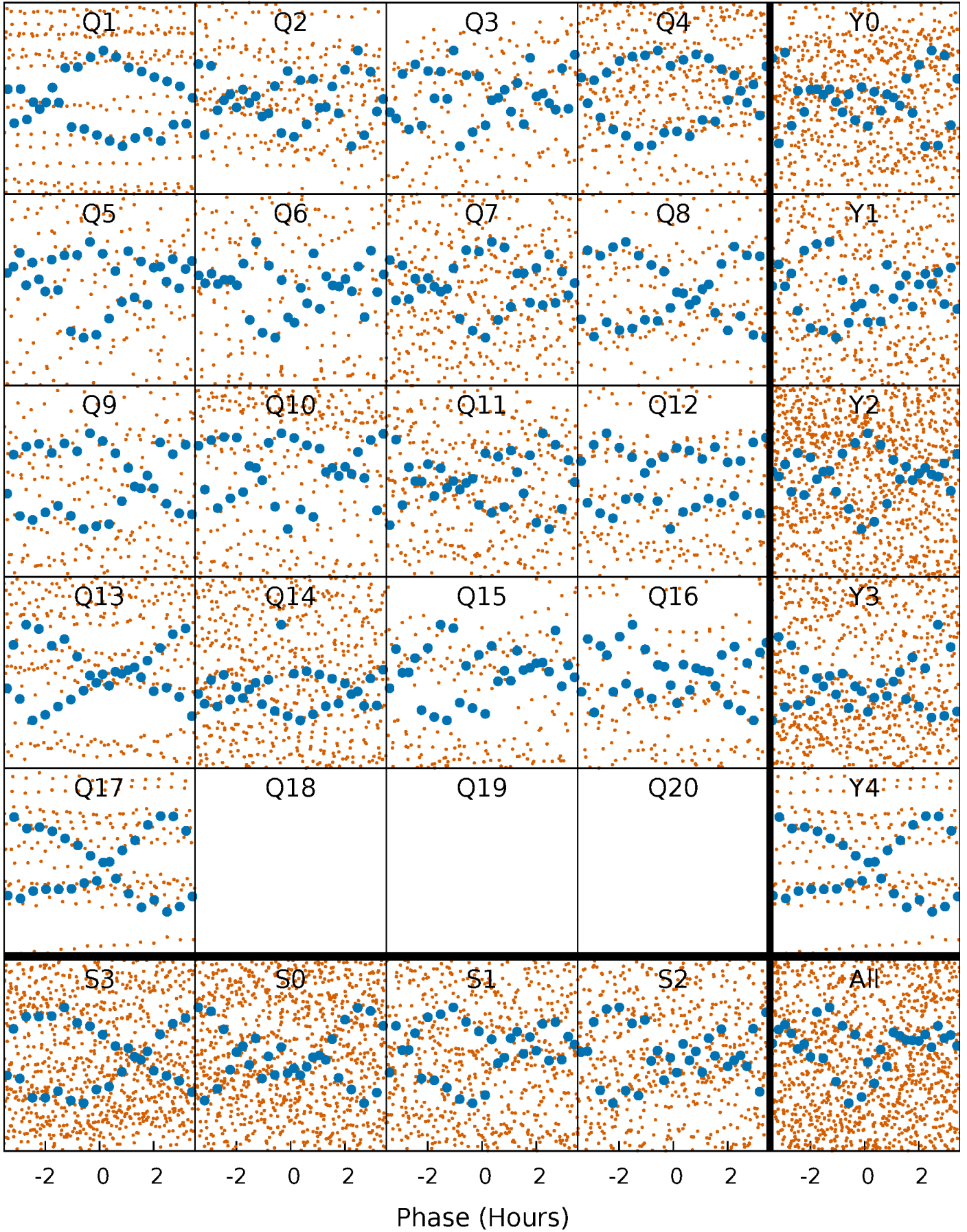


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



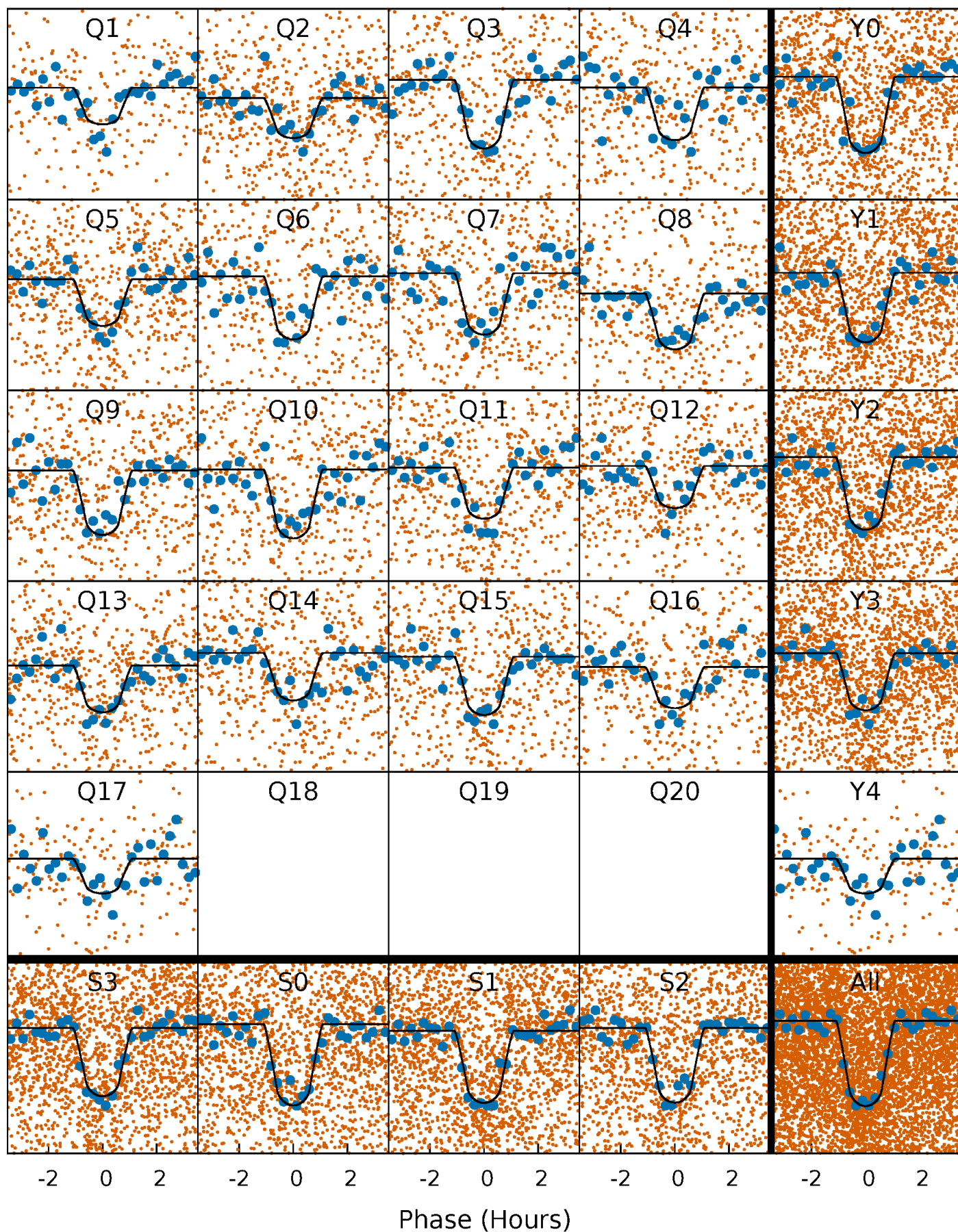
PDC Quarter-Phased Transit Curves

TCE 008277797-02 P= 1.653889 Days $T_0=132.190152$ (BKJD)



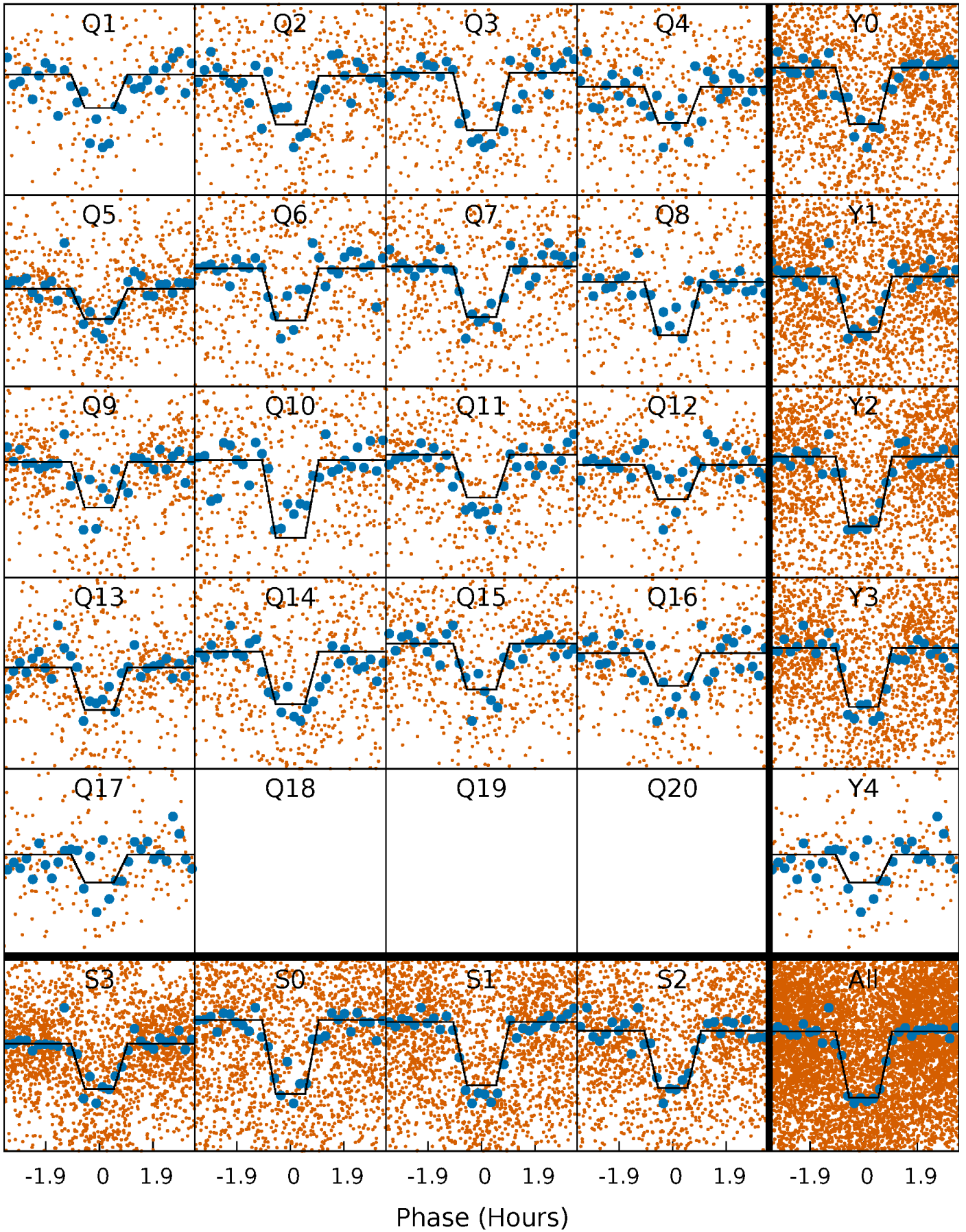
DV Quarter-Phased Transit Curves

TCE 008277797-02 P= 1.653889 Days $T_0=132.190152$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

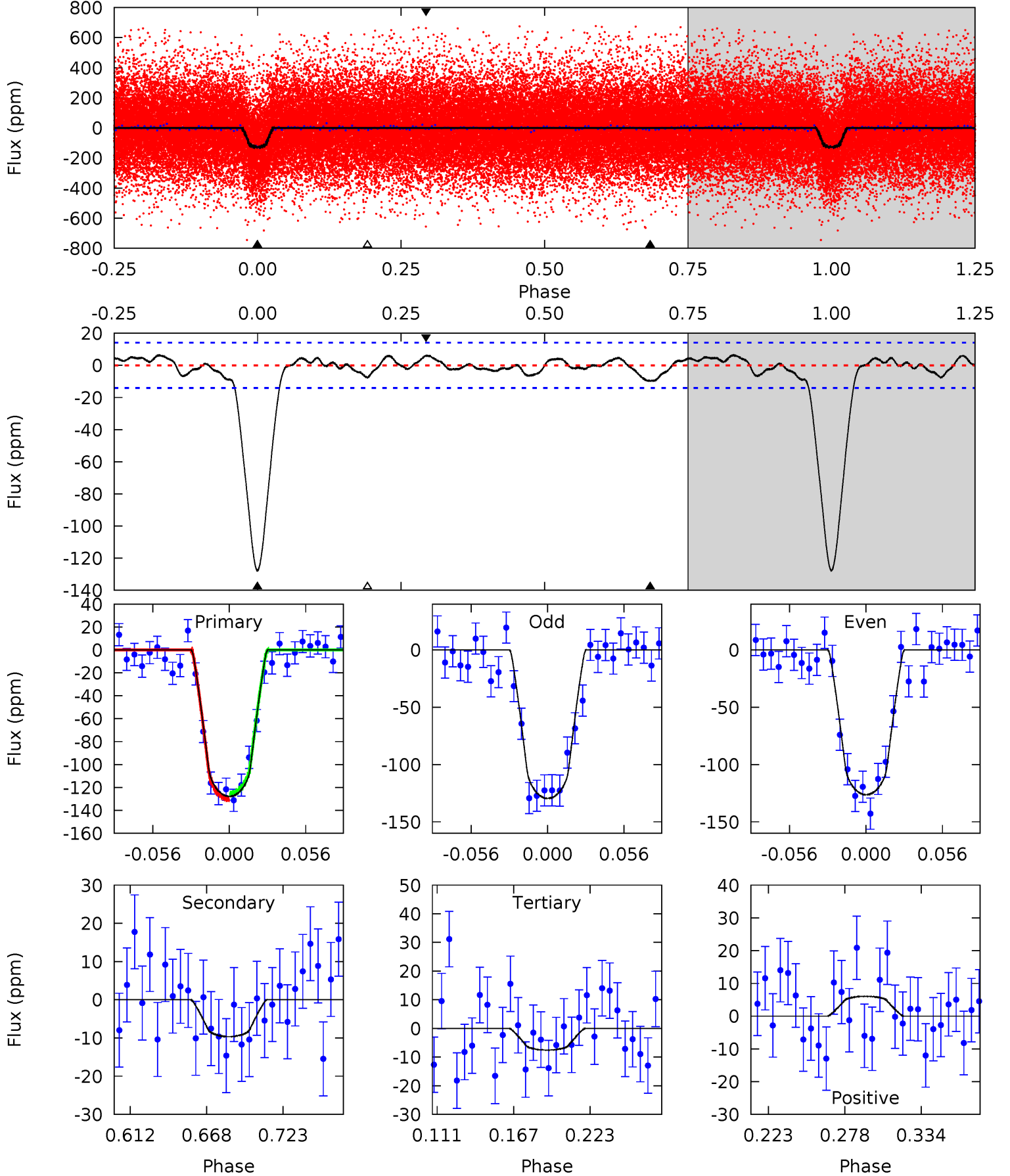
TCE 008277797-02 P= 1.653884 Days $T_0=132.191737$ (BKJD)



DV Model-Shift Uniqueness Test

008277797-02, P = 1.653889 Days, E = 130.536263 Days

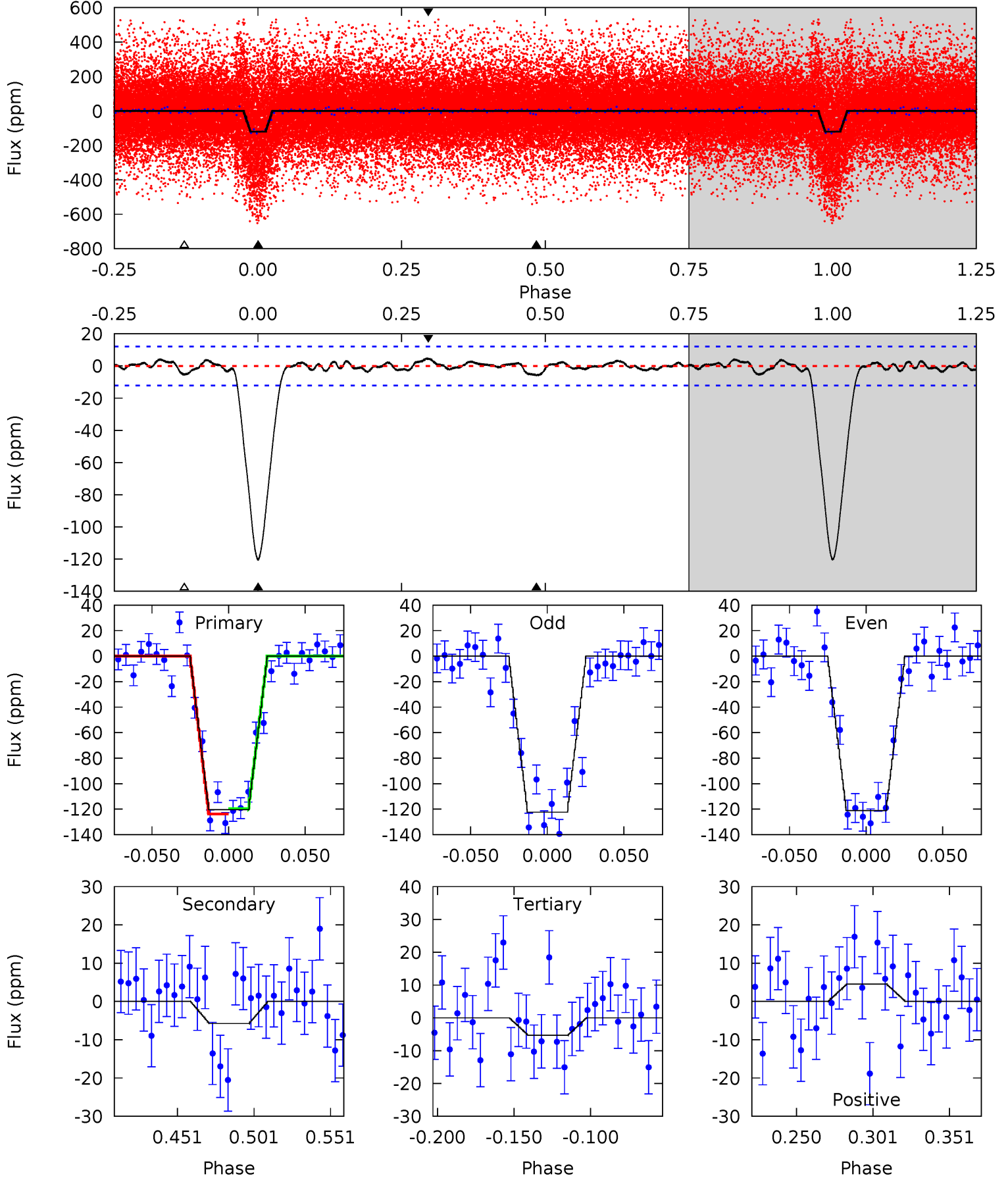
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.4	3.21	2.51	2.01	4.69	1.91	1.12	39.9	40.4	0.70	1.20	0.53	0.99	0.05	0.74



Alt Model-Shift Uniqueness Test

008277797-02, P = 1.653884 Days, E = 130.537853 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.6	2.23	2.04	1.76	4.71	1.96	0.73	44.6	44.8	0.19	0.47	0.25	0.99	0.04	0.79



Stellar Parameters For KIC 008277797

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5390^{+107}_{-107}	$4.499^{+0.052}_{-0.078}$	$0.060^{+0.150}_{-0.150}$	$0.876^{+0.084}_{-0.058}$	$0.883^{+0.054}_{-0.049}$	$1.848^{+0.397}_{-0.435}$
	+2%/-2%	+1%/-2%	+250%/-250%	+10%/-7%	+6%/-6%	+22%/-24%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 008277797-02 / KOI 1820.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10 ± 3	$1.17^{+0.38}_{-0.36}$	1925^{+66}_{-57}	3202^{+498}_{-343}	$2.580^{+3.634}_{-1.281}$
Alt.	-6 ± 3	$1.03^{+0.40}_{-0.37}$	1928^{+58}_{-57}	3030^{+548}_{-410}	$1.934^{+3.105}_{-1.109}$

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

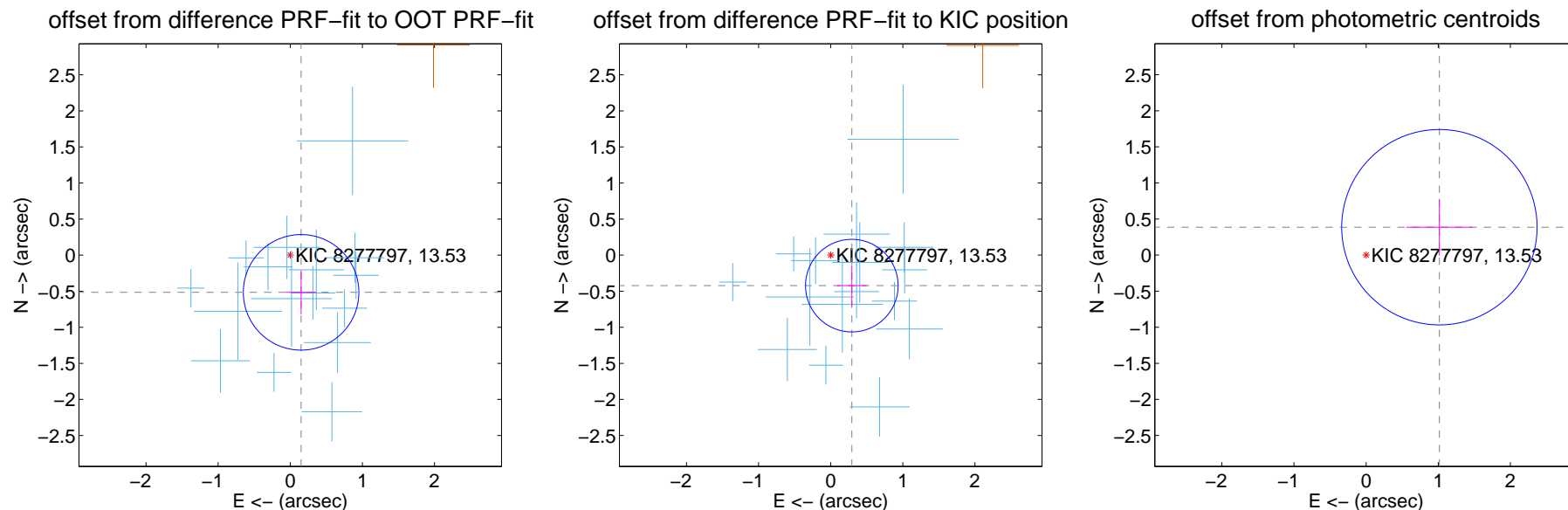
DV Centroid Data

Supplemental centroid analysis for 008277797-02. Kepler magnitude: 13.53. Transit SNR 27.29

There are 16 quarters with good PRF difference image offsets

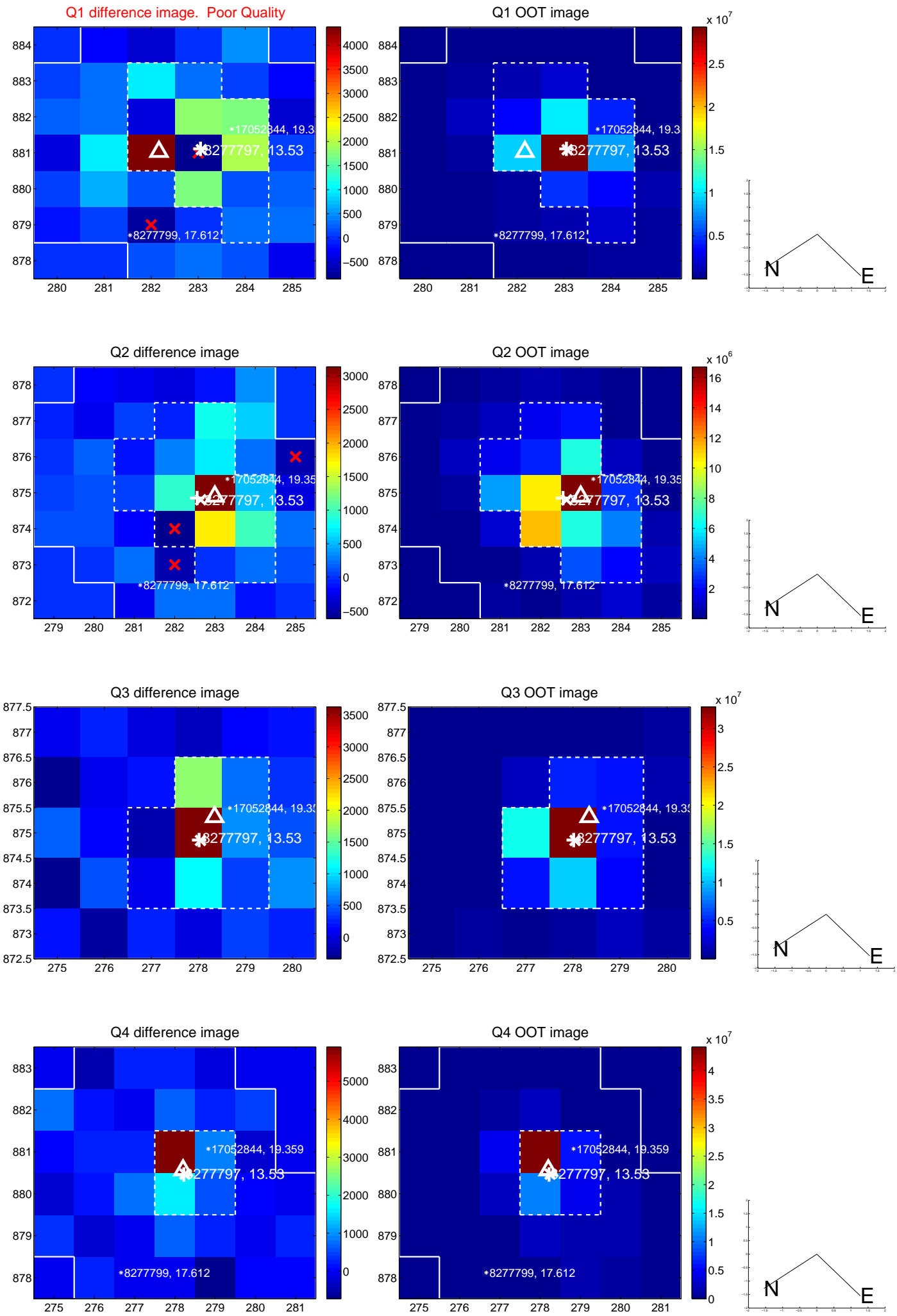
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.537 ± 0.267	2.01	-0.150 ± 0.213	-0.515 ± 0.306
PRF-fit source offset from KIC position	0.514 ± 0.214	2.40	-0.293 ± 0.205	-0.422 ± 0.282
photometric centroid source offset	1.09 ± 0.45	2.41	-1.02 ± 0.46	0.39 ± 0.39

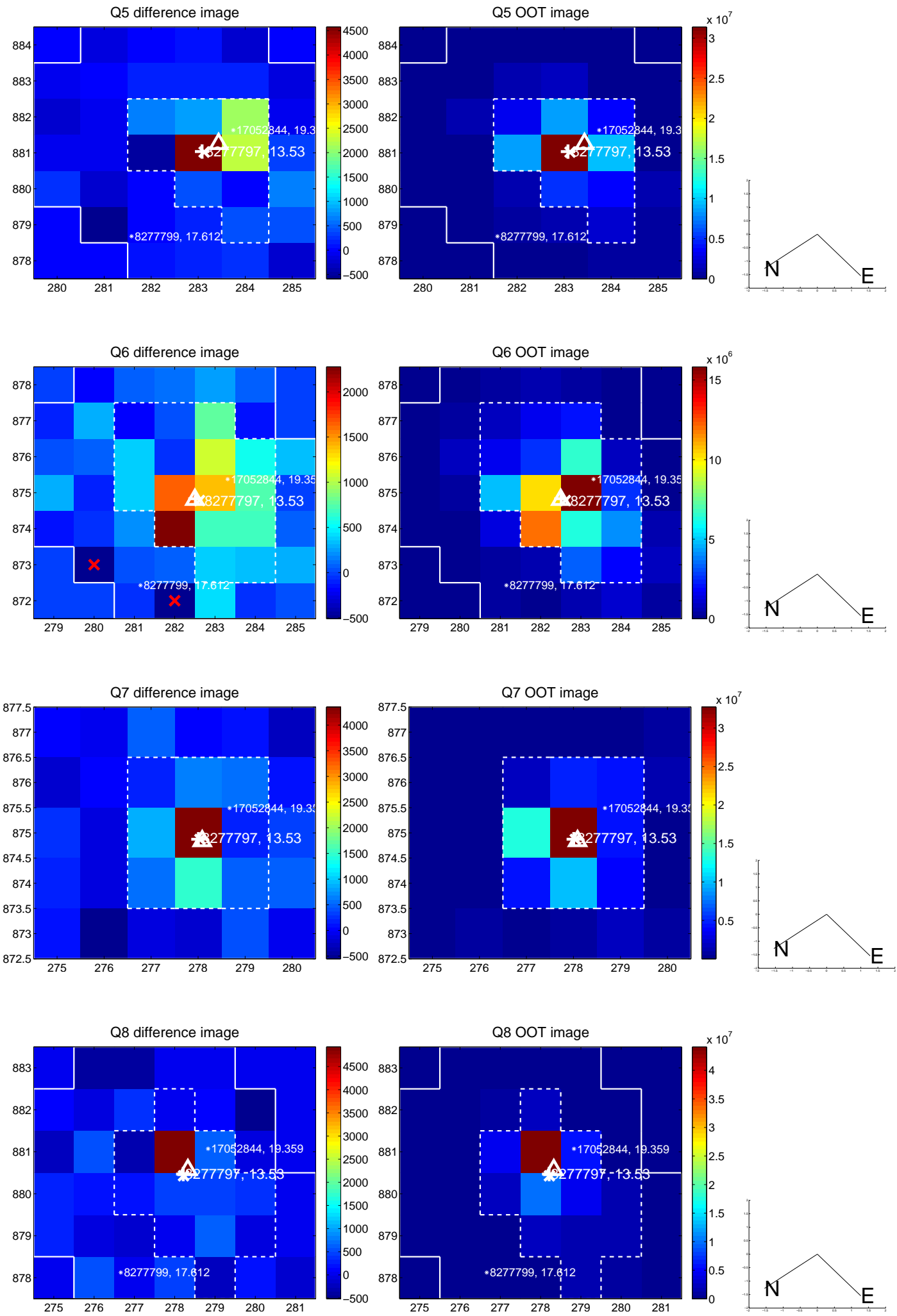


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

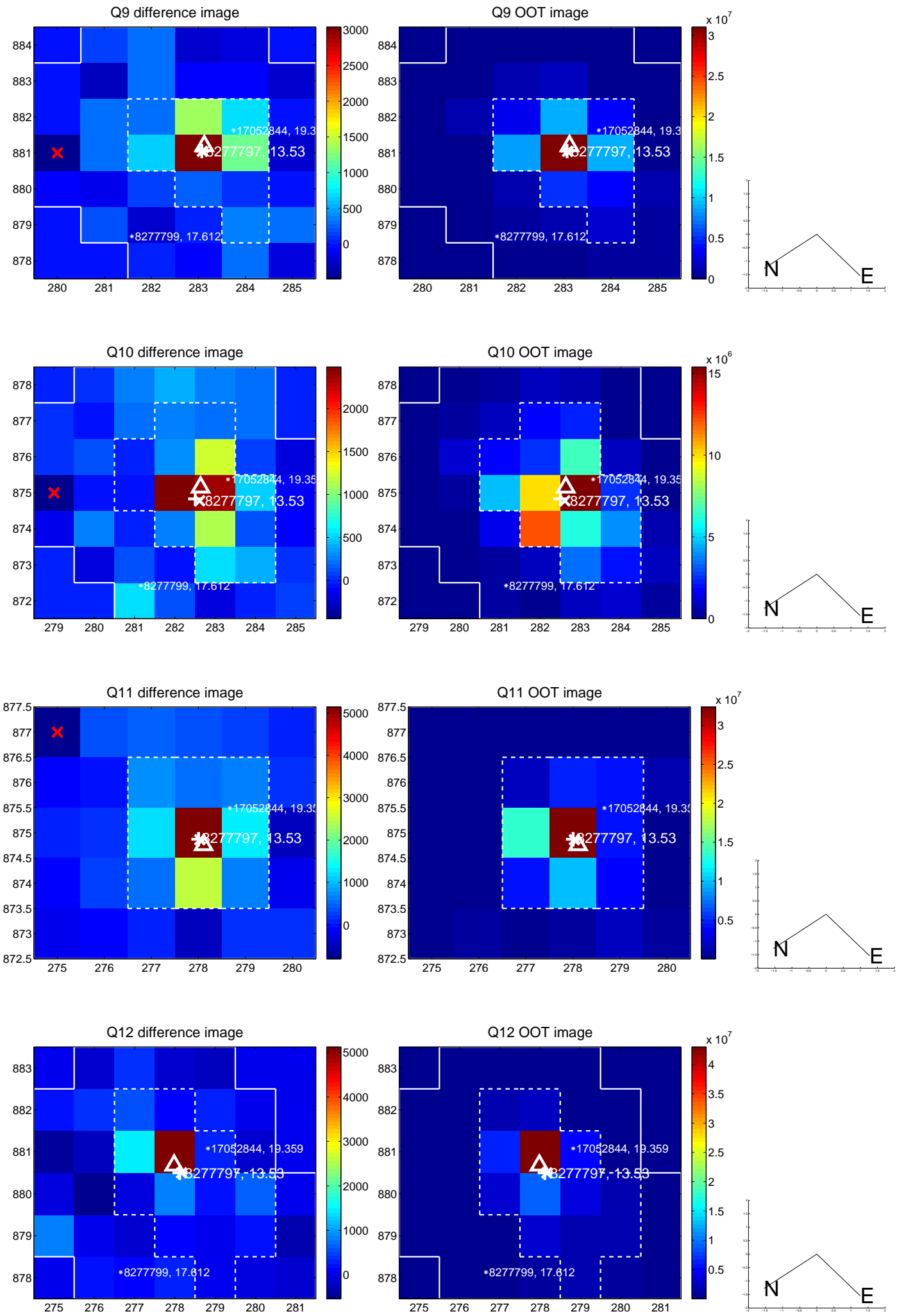
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



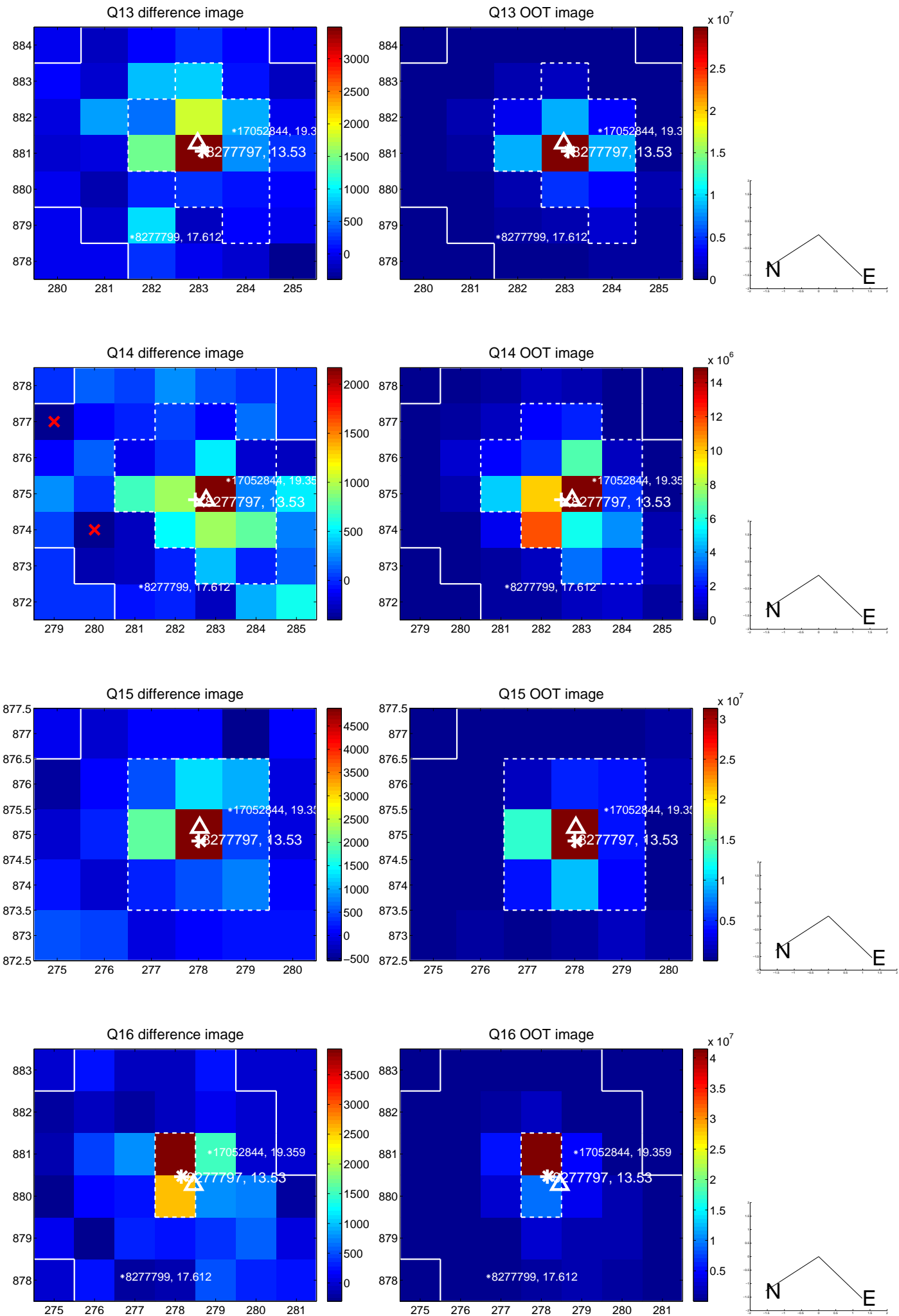
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



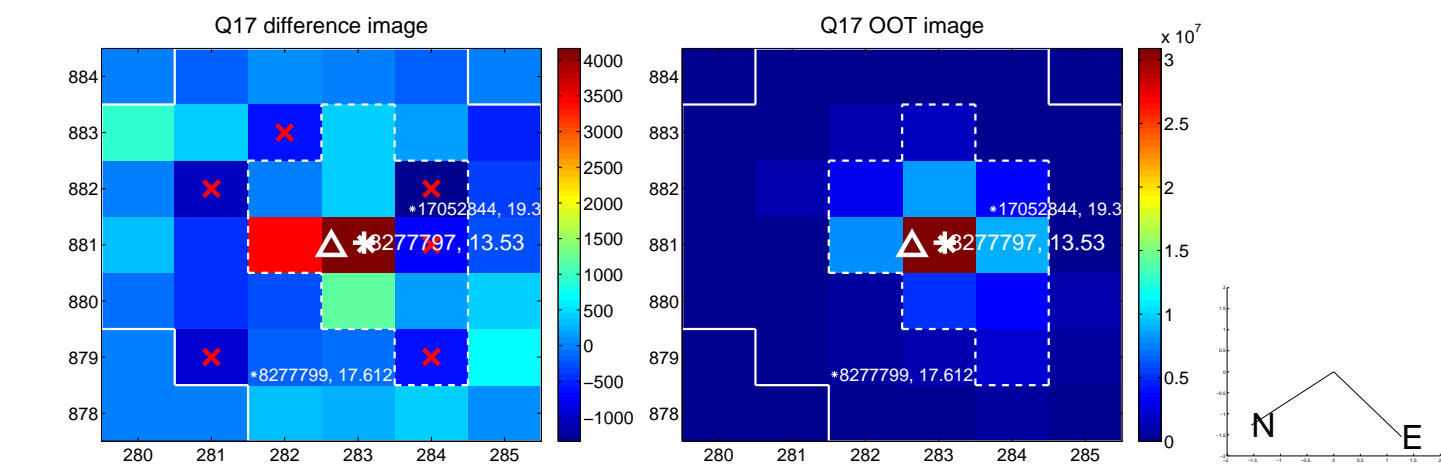
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



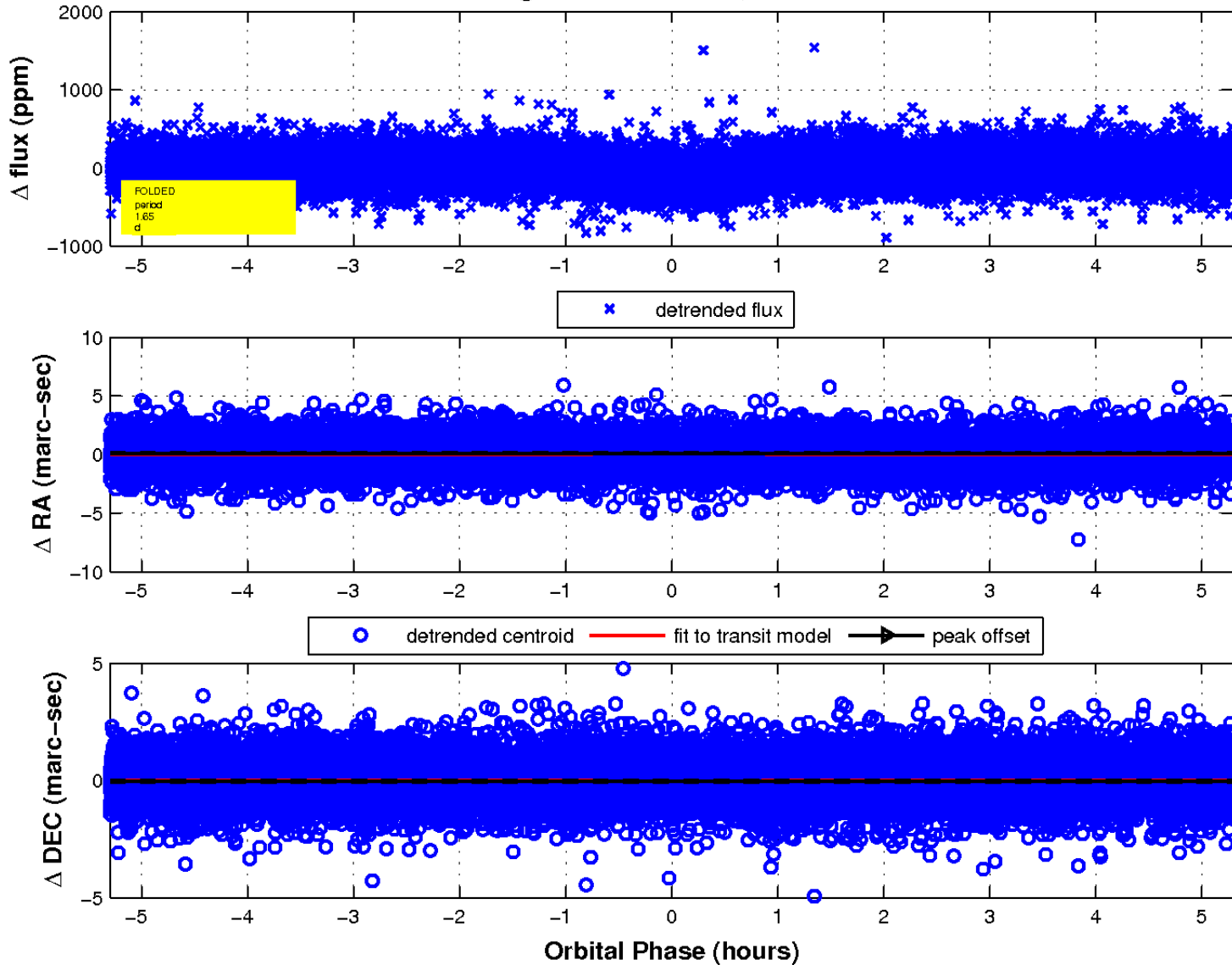
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

