

KIC 008713828

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})
008713828-01	OBS	No	1.370277	132.597456	13.2	5.611	8.1	7.4	2.52	6431	1.11	12740.83
008713828-02	OBS	No	0.912769	132.403842	16.6	9.172	8.9	10.2	2.52	6431	1.04	21900.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008713828-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
008713828-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_FEW_DIFFS

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.

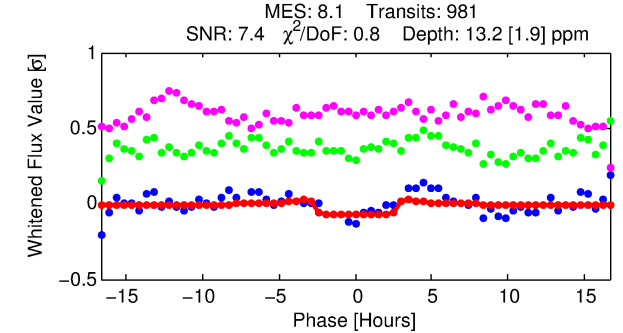
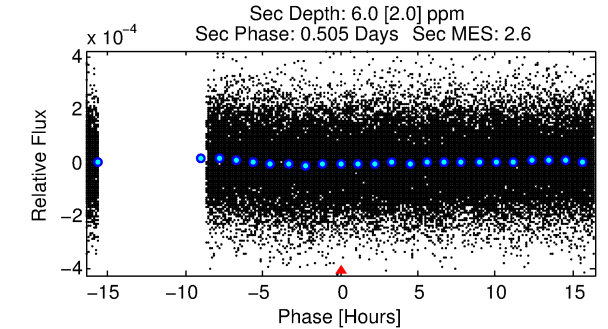
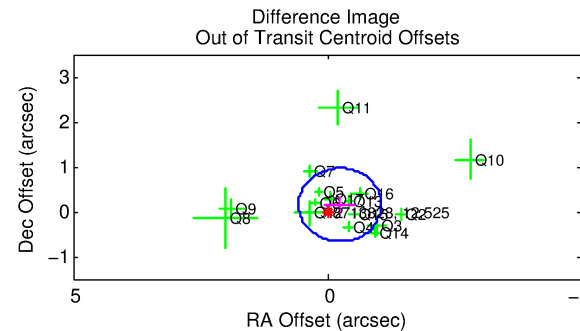
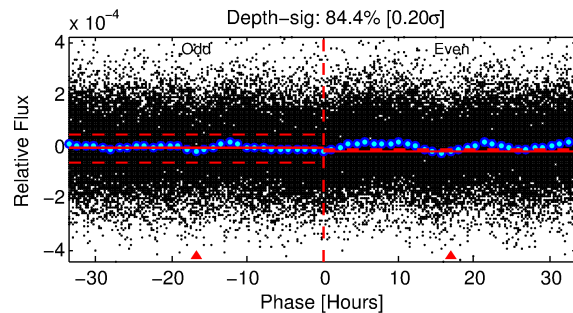
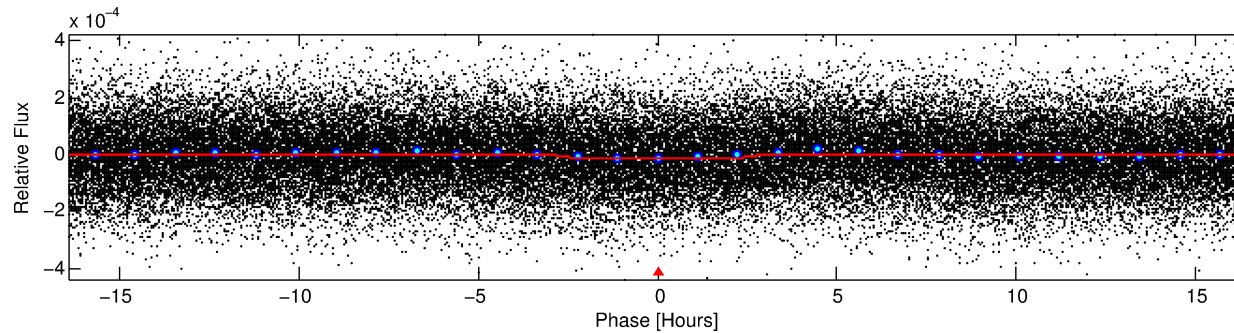
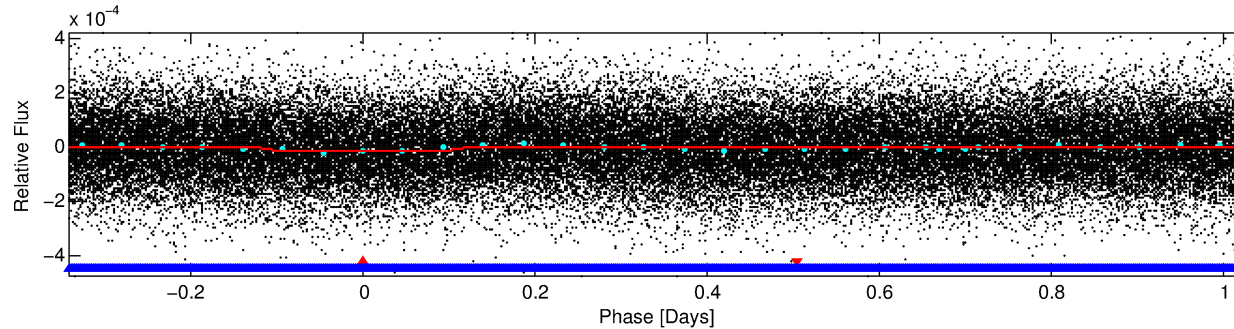
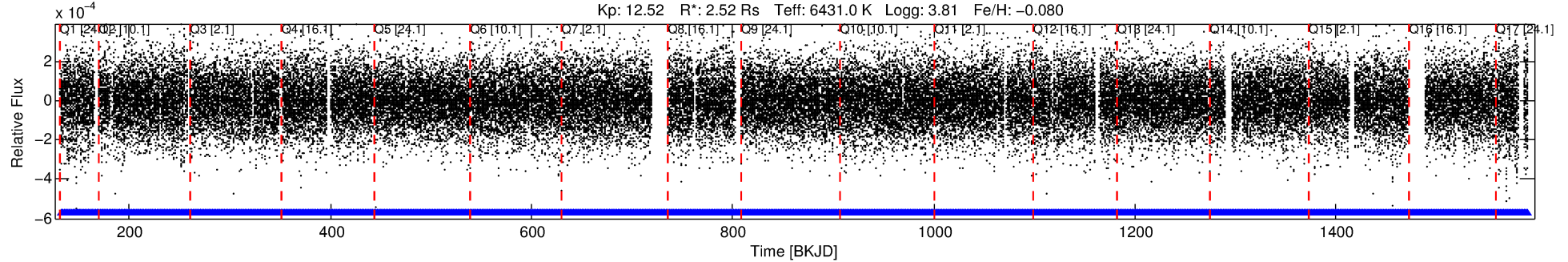
Ephemeris Match Information For 008713828-01

No Significant Match Found

DV One-Page Summary

KIC: 8713828 Candidate: 1 of 2 Period: 1.370 d
KOI: K07080 Corr: No Ephemeris Match

Kp: 12.52 R*: 2.52 Rs Teff: 6431.0 K Logg: 3.81 Fe/H: -0.080



DV Fit Results:

Period = 1.37028 [0.00002] d
Epoch = 132.5975 [0.0054] BKJD
Rp/R* = 0.0040 [0.0013]
a/R* = 1.18 [0.63]
b = 0.93 [0.26]
Seff = 12740.82 [9996.69]
Teq = 2709 [531] K
Rp = 1.11 [0.65] Re
a = 0.0276 [0.0132] AU
Ag = 2.05 [2.18] [0.48σ]
Teffp = 5013 [934] K [2.14σ]

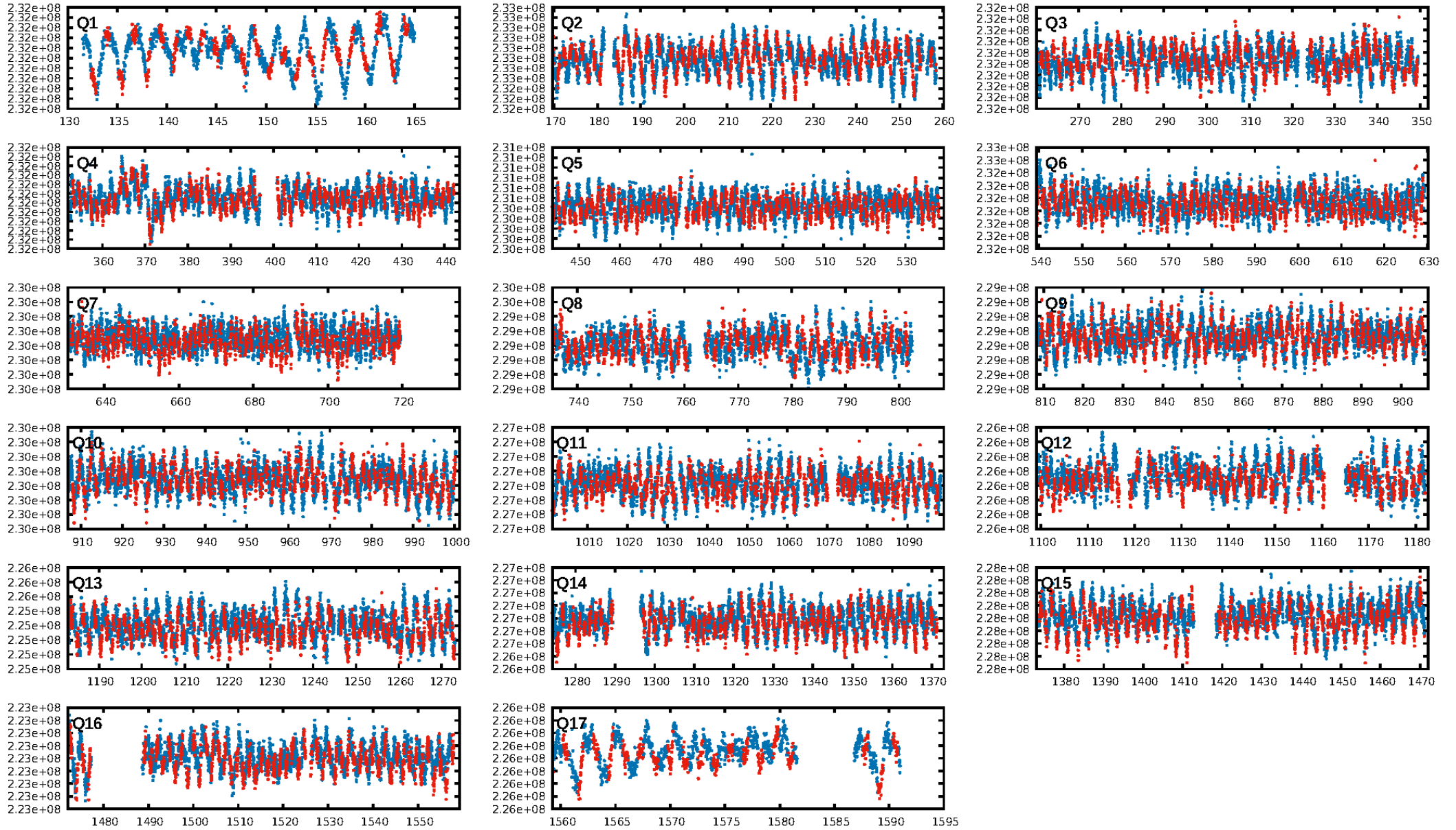
DV Diagnostic Results:

ShortPeriod-sig: 69.3% [1.02σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [938/938]
GhostDiagnostic-chr: 1.719
Centroid-sig: 0.0%
Centroid-so: 6.083 arcsec [4.84σ]
OotOffset-rm: 0.284 arcsec [1.05σ]
KicOffset-rm: 0.257 arcsec [1.00σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 0.00 [0/17]

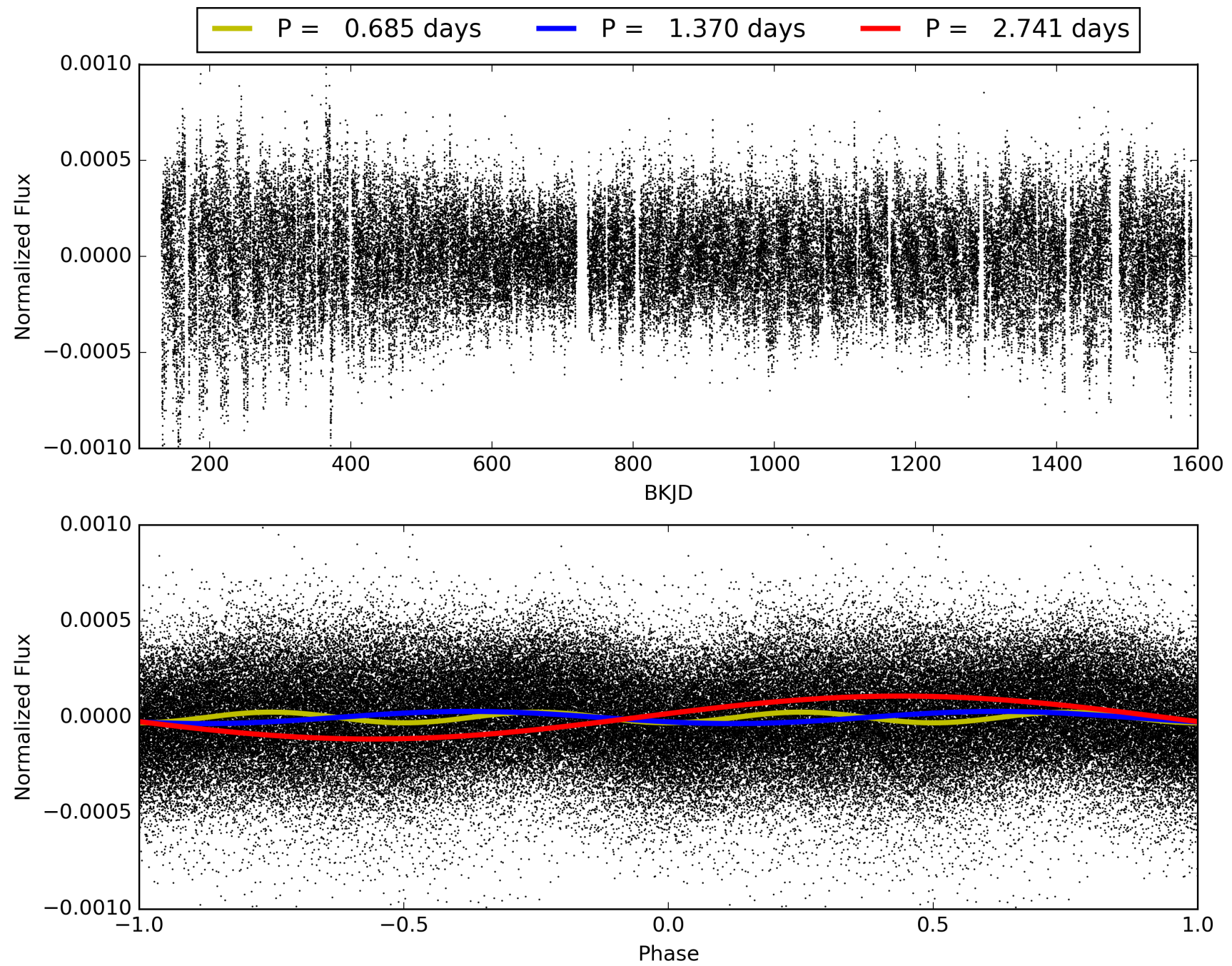
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008713828-01, PDC Light Curves

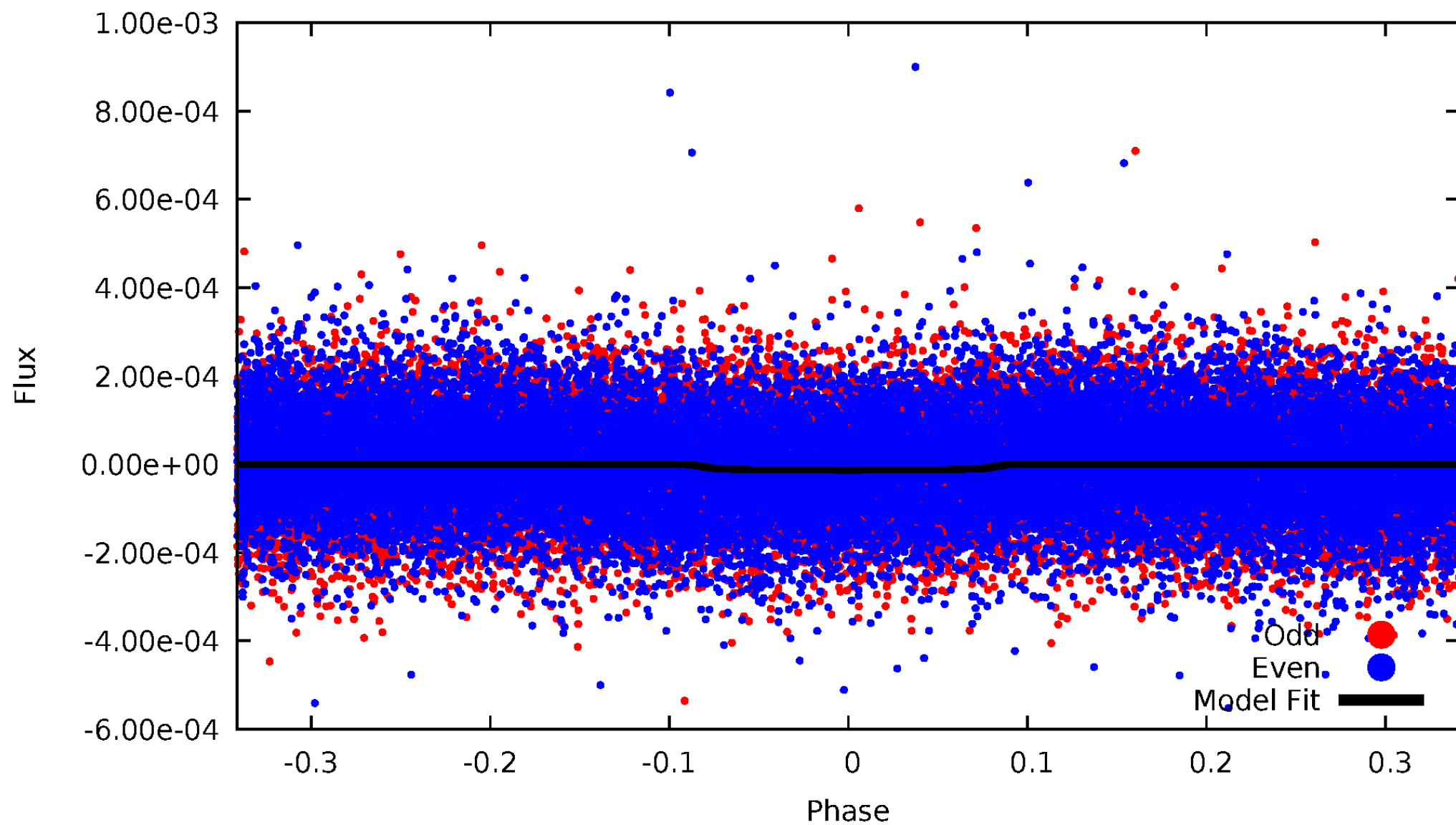


TCE 008713828-01



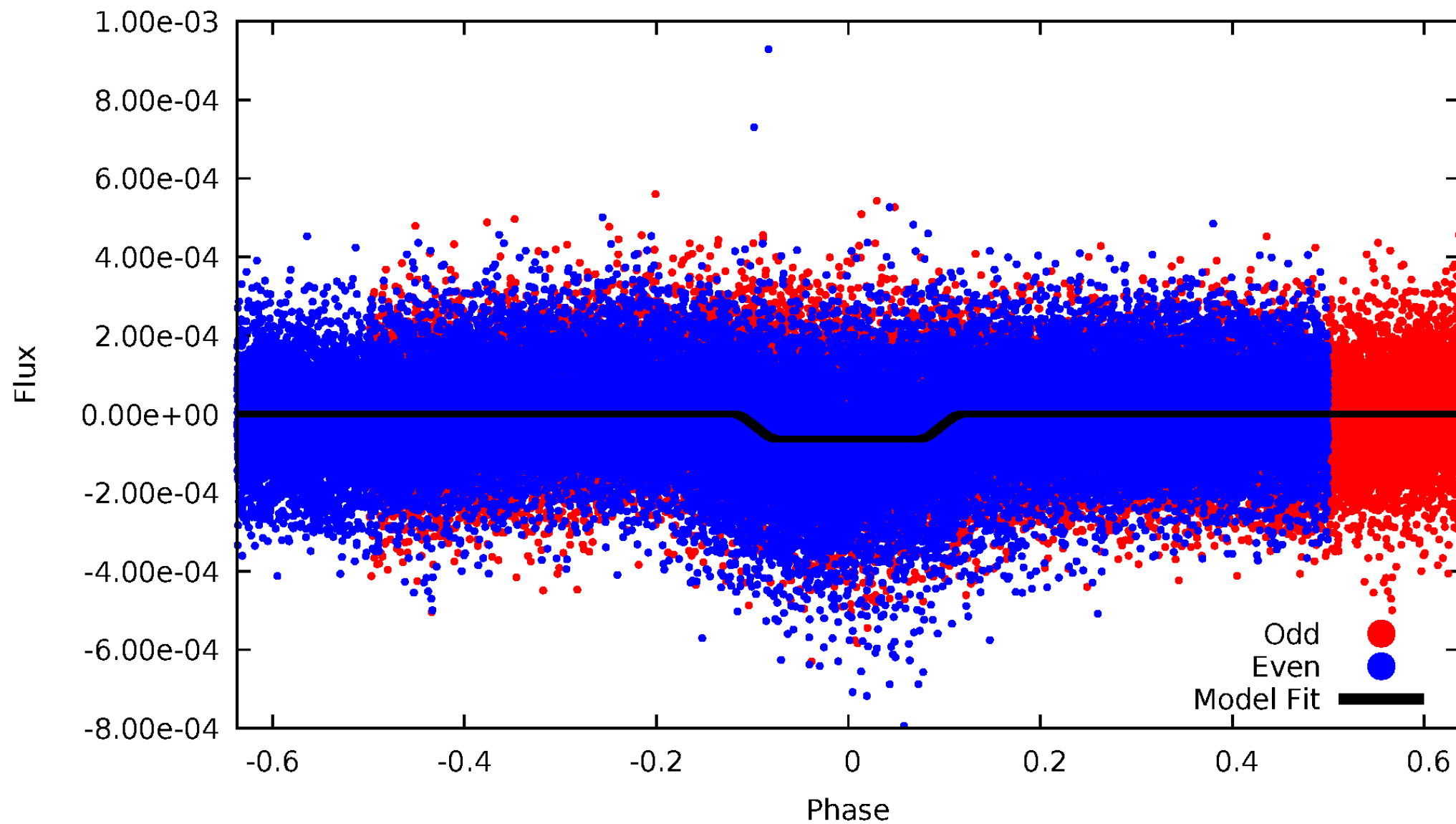
DV Odd/Even

TCE 008713828-01



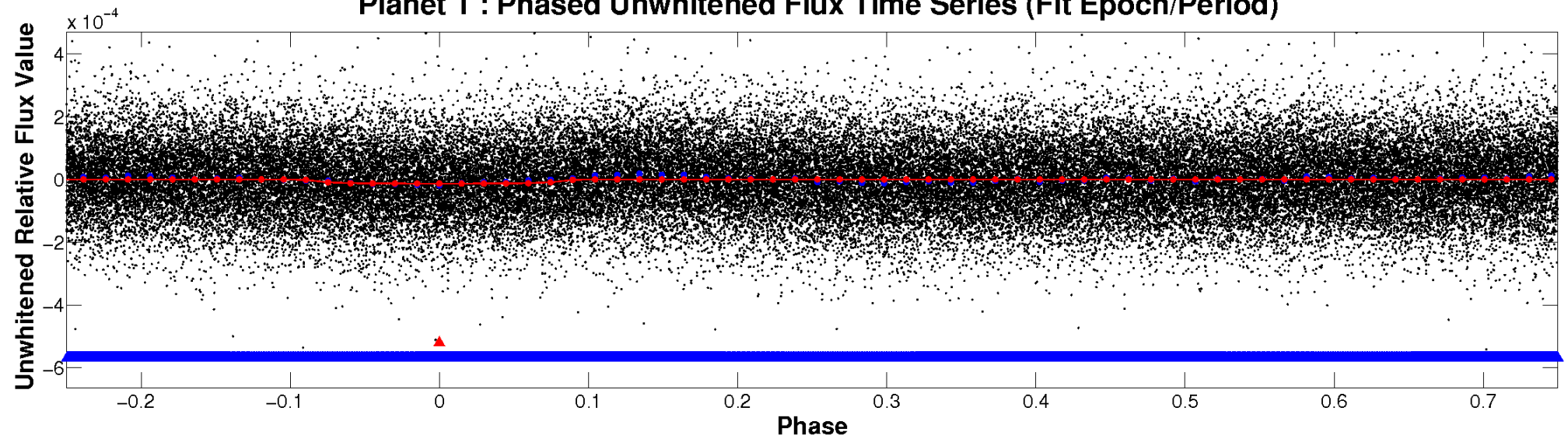
ALT Odd/Even

TCE 008713828-01

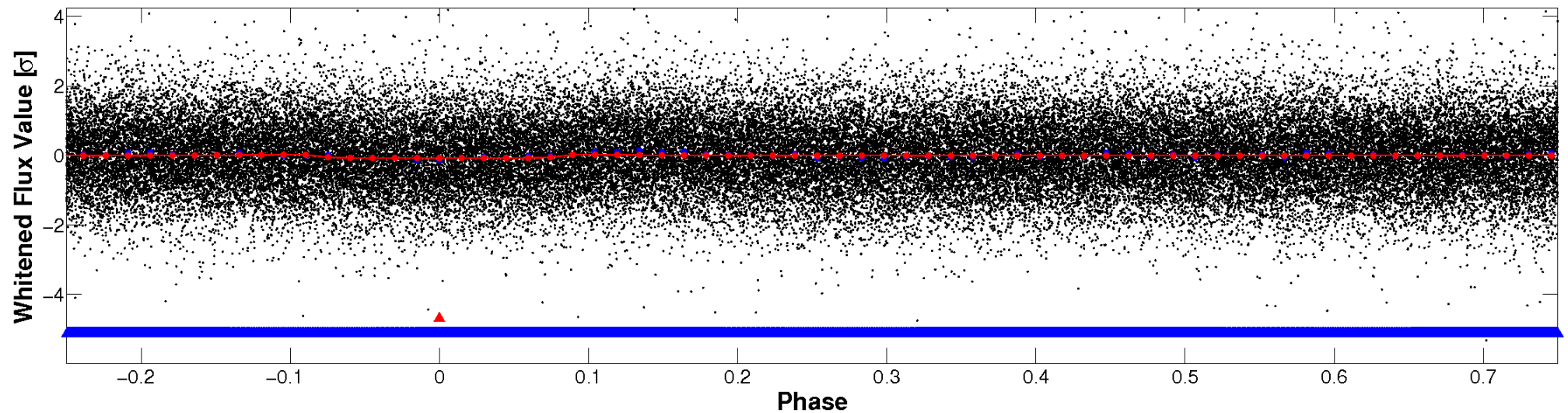


Non-Whitened Vs. Whitened Light Curve

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

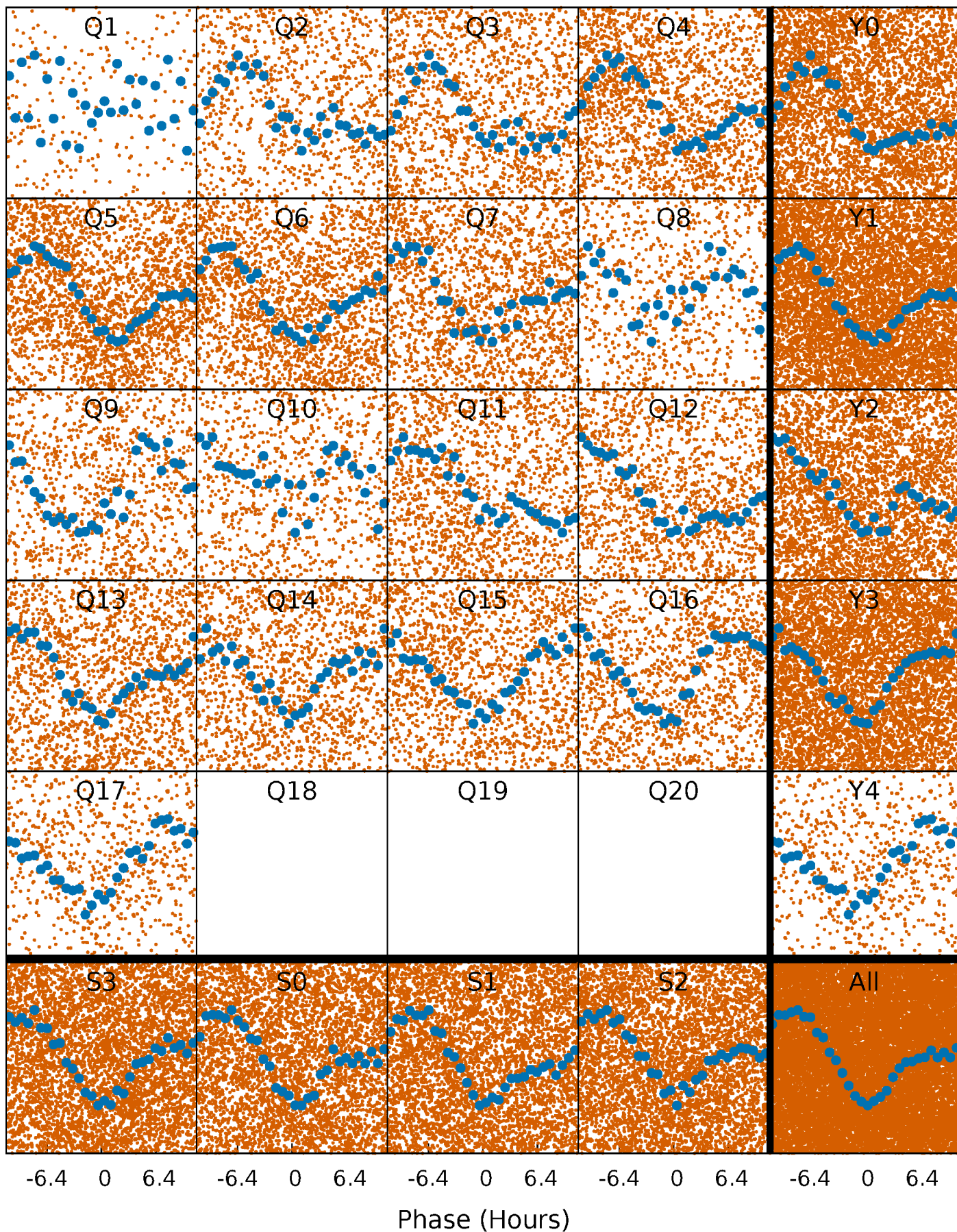


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



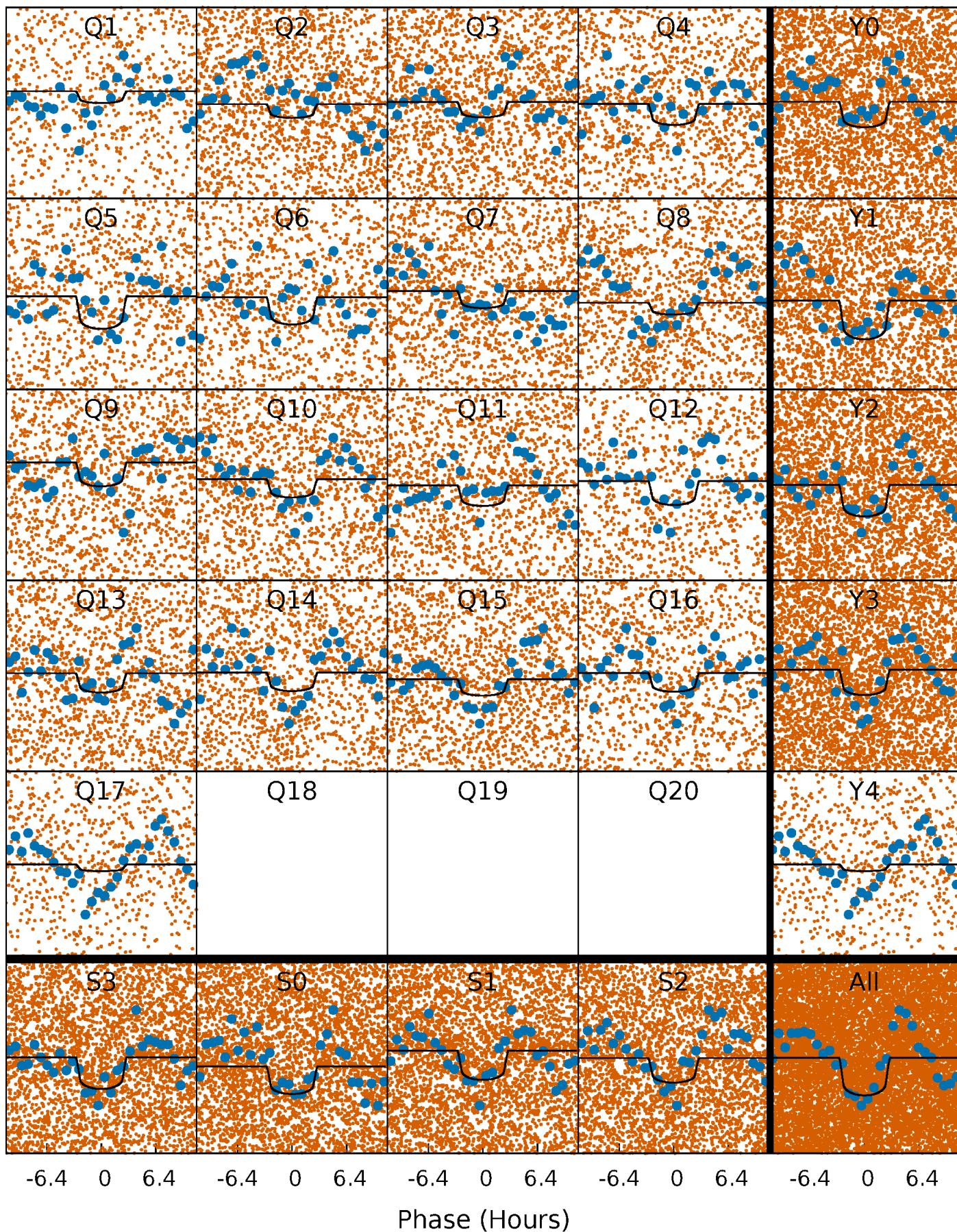
PDC Quarter-Phased Transit Curves

TCE 008713828-01 P= 1.370277 Days $T_0=132.597456$ (BKJD)



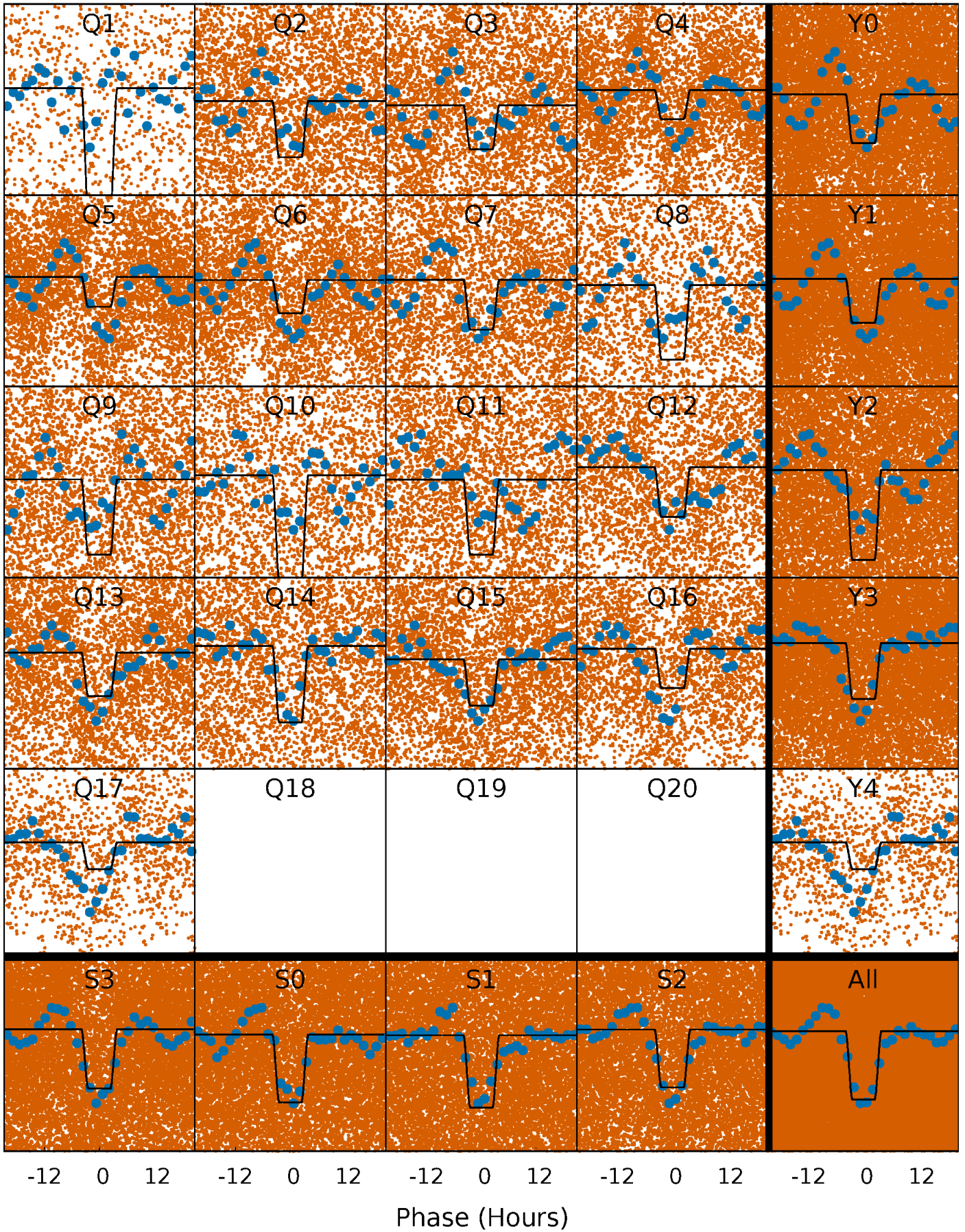
DV Quarter-Phased Transit Curves

TCE 008713828-01 P= 1.370277 Days $T_0=132.597456$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

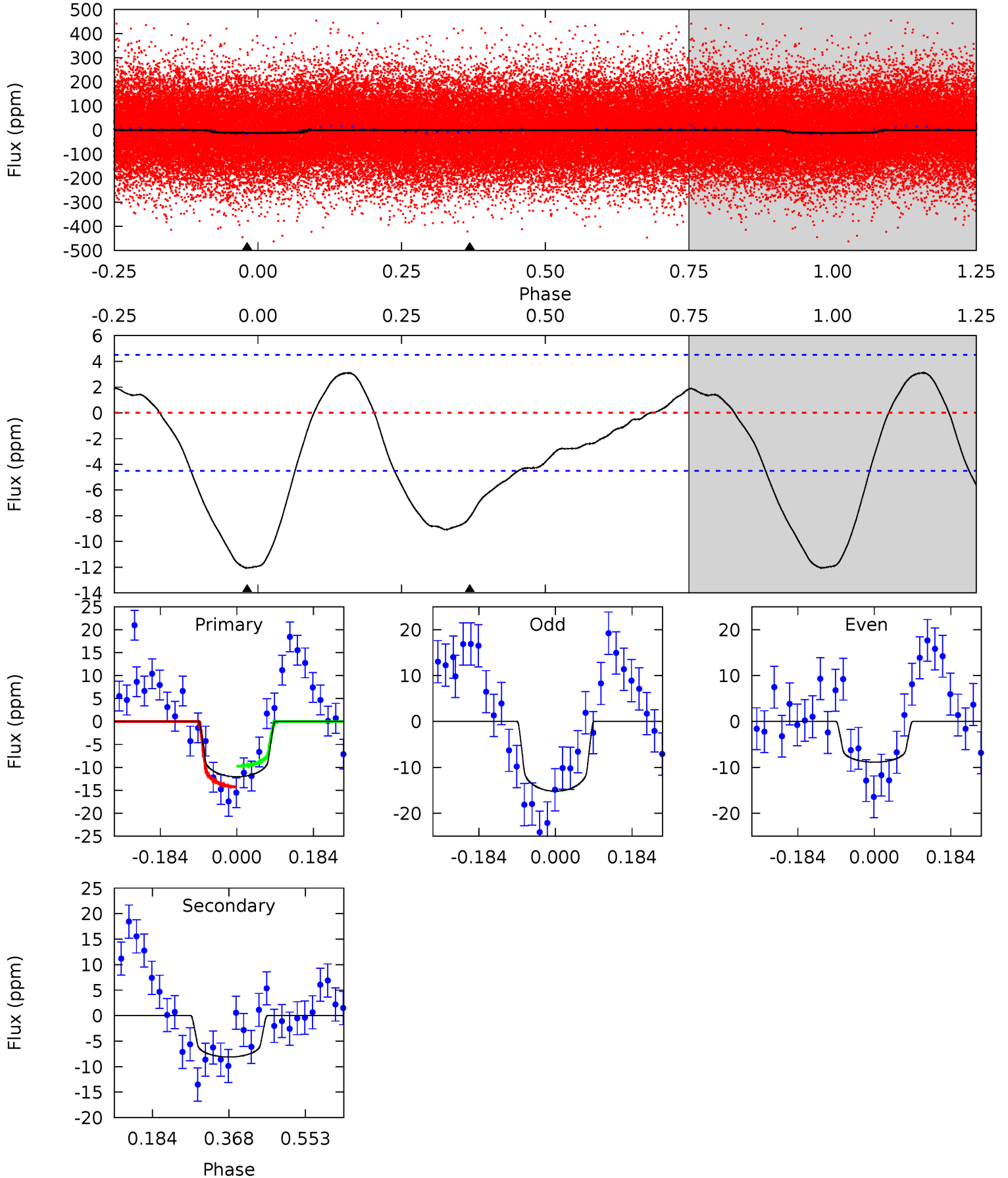
TCE 008713828-01 P= 1.370307 Days $T_0=132.585053$ (BKJD)



DV Model-Shift Uniqueness Test

008713828-01, P = 1.370277 Days, E = 131.227179 Days

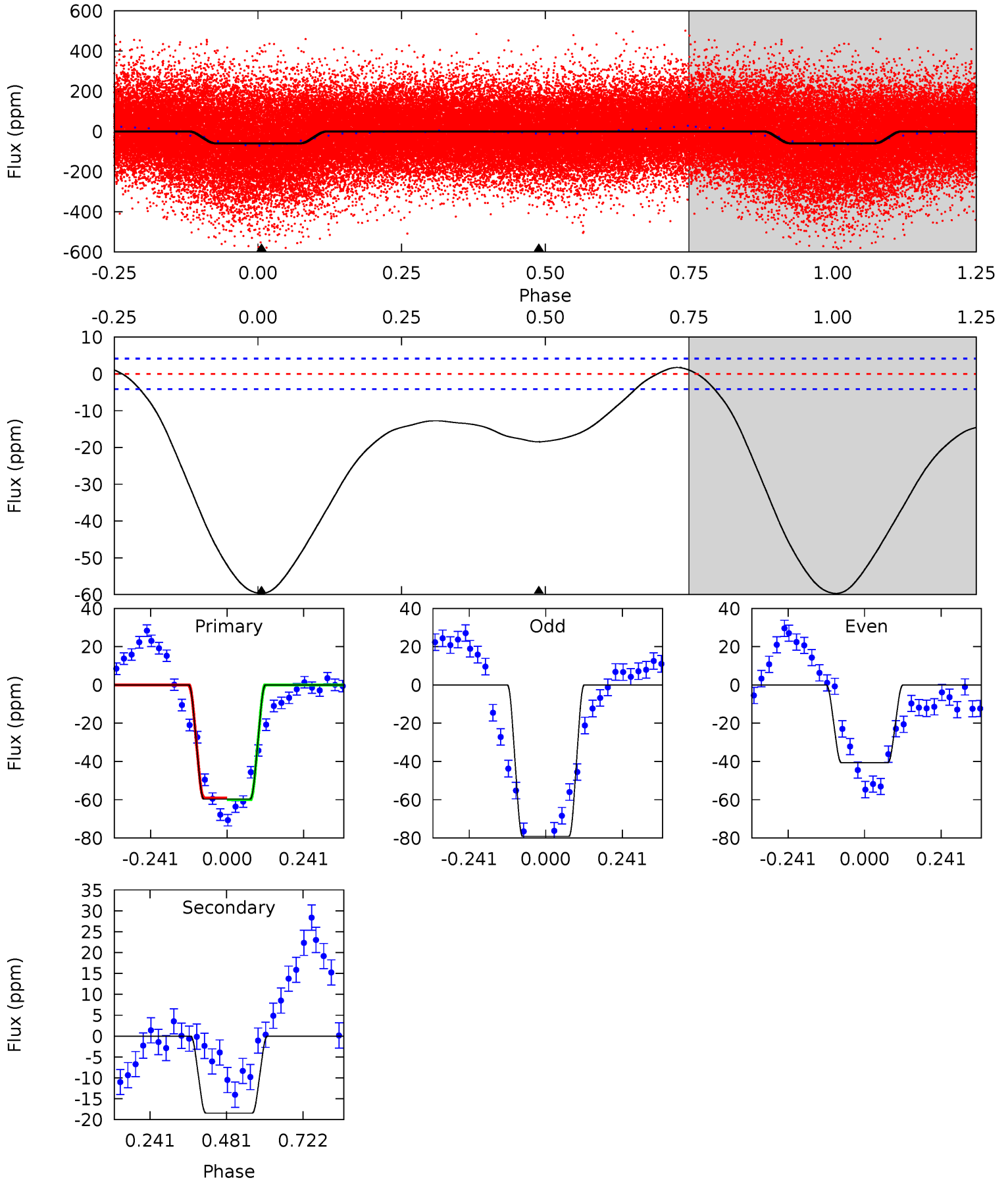
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	7.98	0	0	4.43	1.33	1.57	11.9	11.9	7.98	7.98	3.12	1.22	0.20	2.25



Alt Model-Shift Uniqueness Test

008713828-01, P = 1.370307 Days, E = 131.214746 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
63.0	19.5	0	0	4.38	1.17	7.66	63.0	63.0	19.5	19.5	20.3	1.08	0.03	0.48



Stellar Parameters For KIC 008713828

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6431^{+181}_{-227}	$3.811^{+0.456}_{-0.114}$	$-0.080^{+0.250}_{-0.300}$	$2.520^{+0.527}_{-1.229}$	$1.501^{+0.216}_{-0.401}$	$0.132^{+0.574}_{-0.049}$
	+3%/-4%	+12%/-3%	+312%/-375%	+21%/-49%	+14%/-27%	+434%/-37%
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 008713828-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 1	$1.02^{+0.41}_{-0.37}$	3699^{+277}_{-460}	5271^{+1145}_{-708}	$3.249^{+4.881}_{-1.613}$
Alt.	-18 ± 1	$2.03^{+0.49}_{-0.52}$	3682^{+280}_{-438}	4676^{+420}_{-349}	$1.917^{+1.290}_{-0.669}$

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 $A_{obs} \gg 1.0$

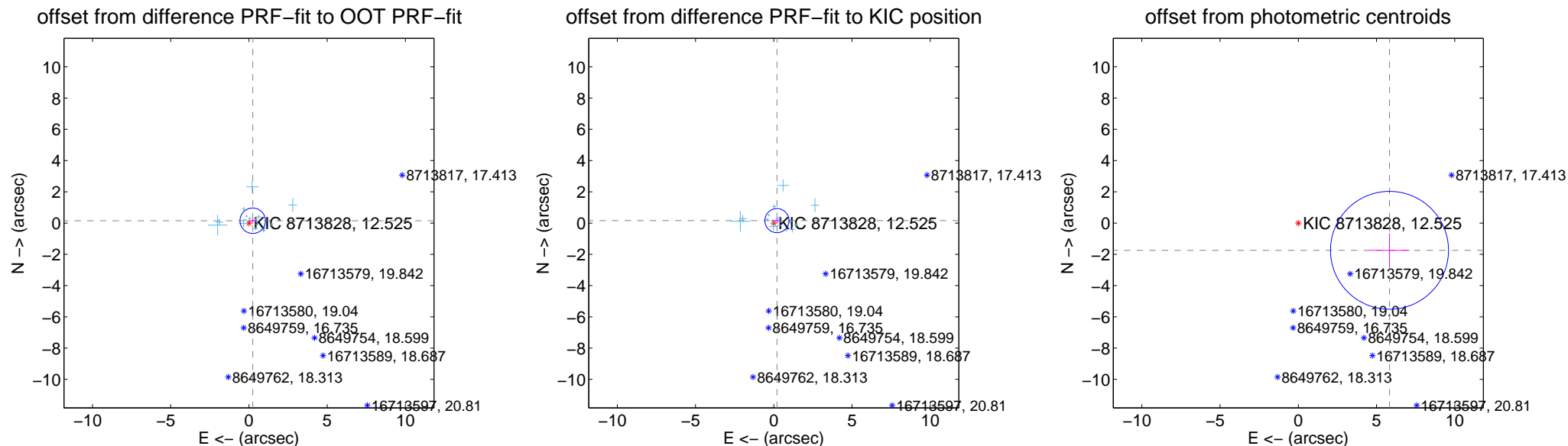
DV Centroid Data

Supplemental centroid analysis for 008713828-01. Kepler magnitude: 12.53. Transit SNR 7.35

There are 16 quarters with good PRF difference image offsets

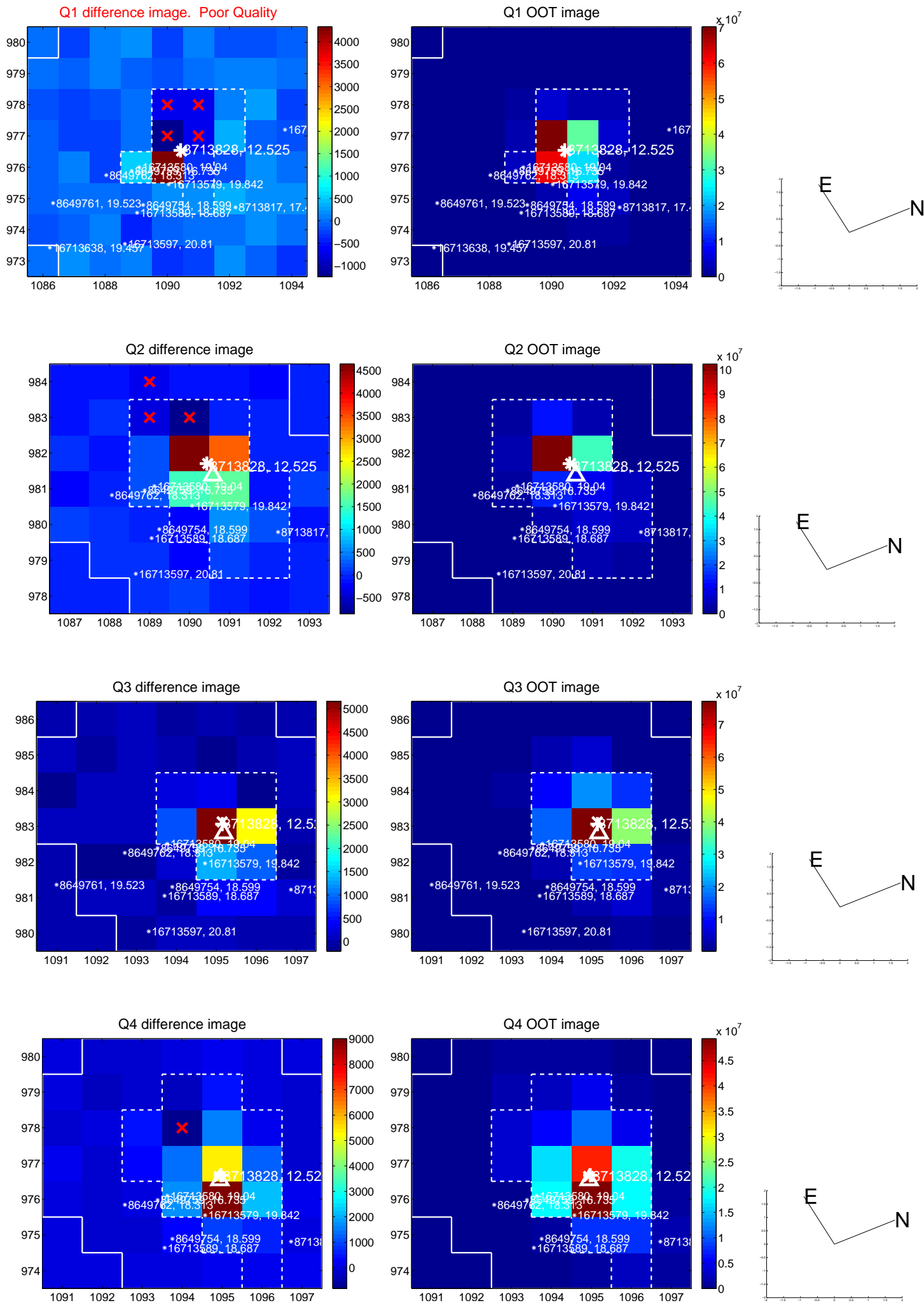
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.284 ± 0.271	1.05	-0.241 ± 0.290	0.150 ± 0.170
PRF-fit source offset from KIC position	0.257 ± 0.257	1.00	-0.202 ± 0.284	0.158 ± 0.184
photometric centroid source offset	6.08 ± 1.26	4.84	-5.83 ± 1.27	-1.74 ± 1.09

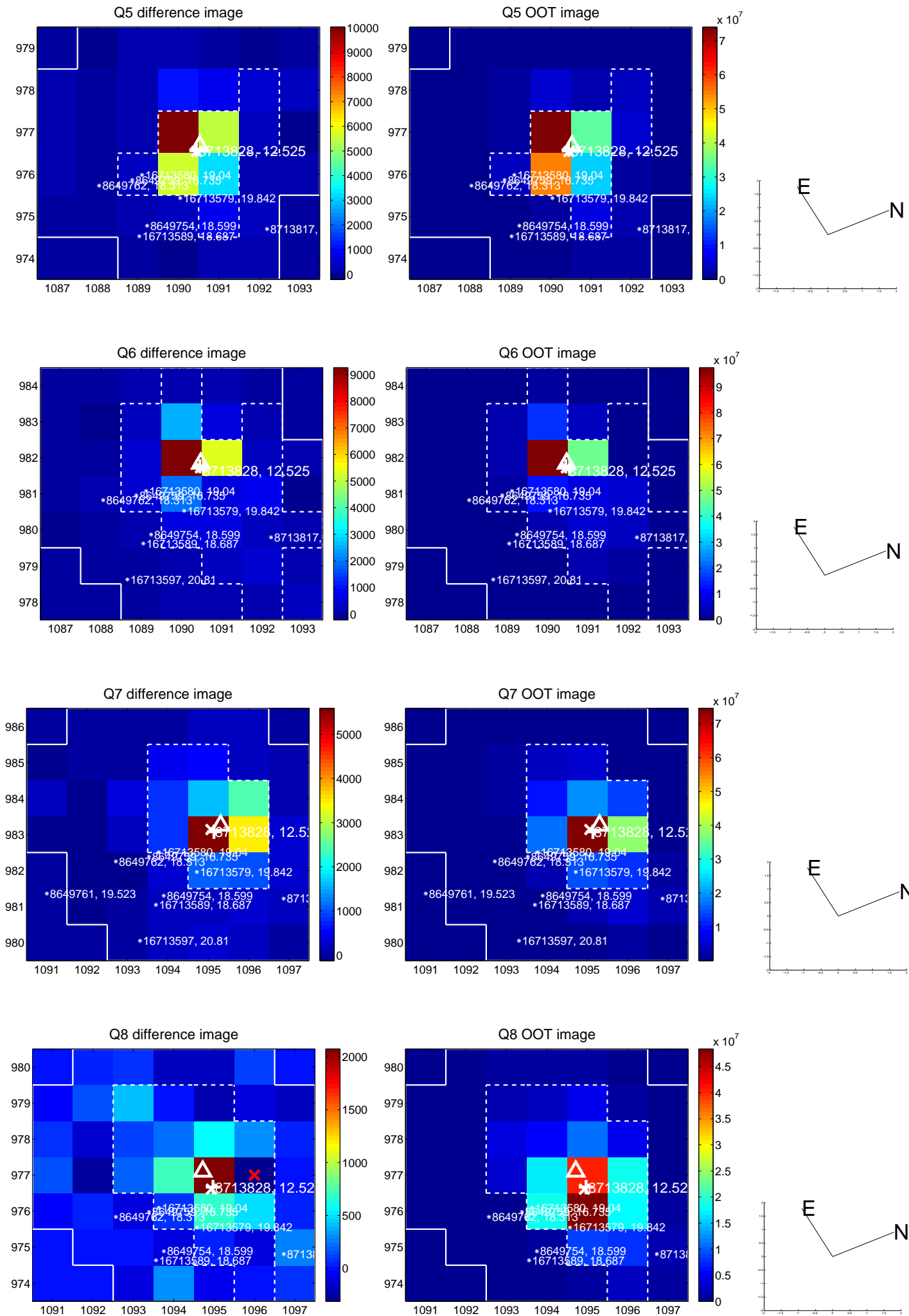


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

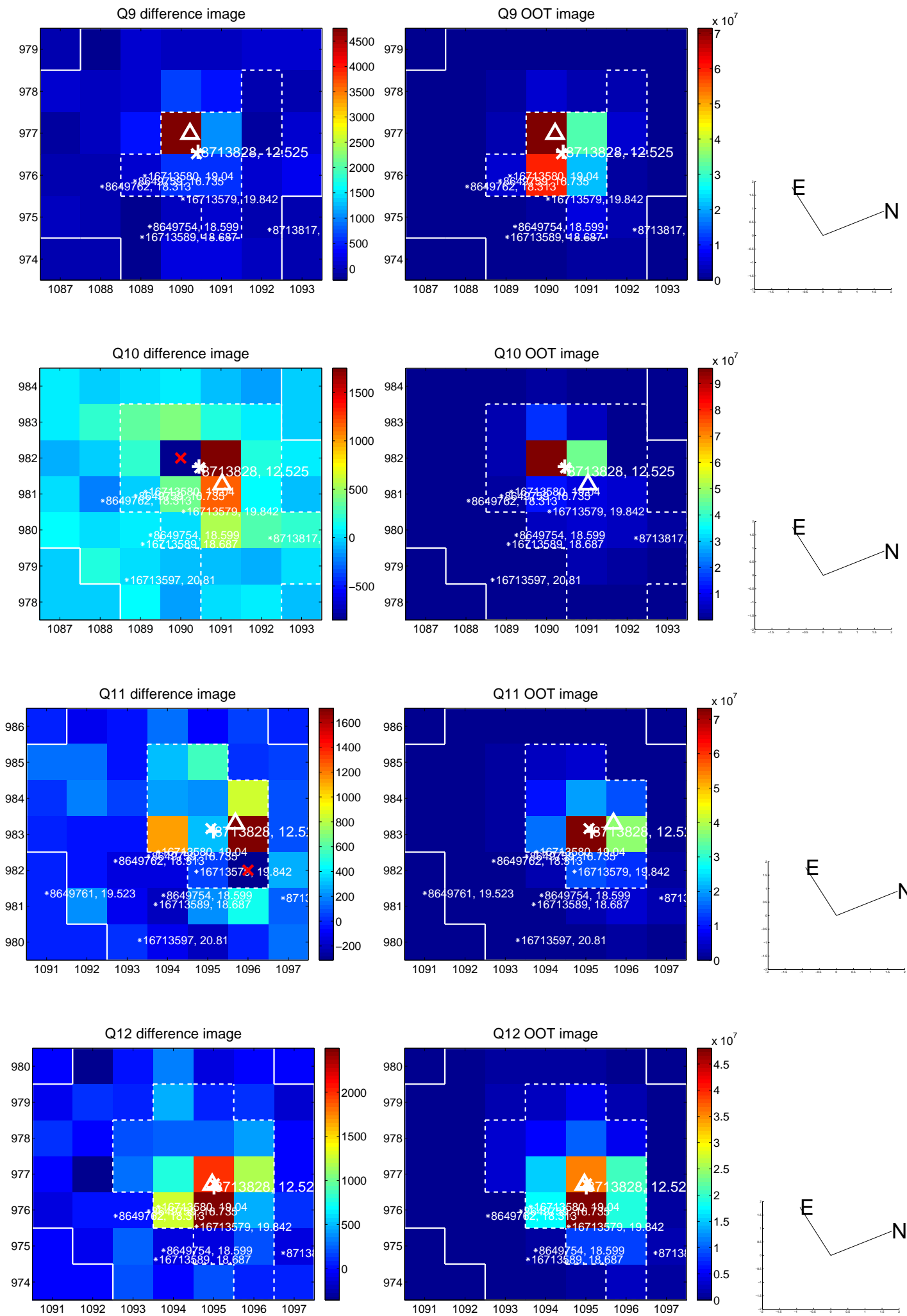
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



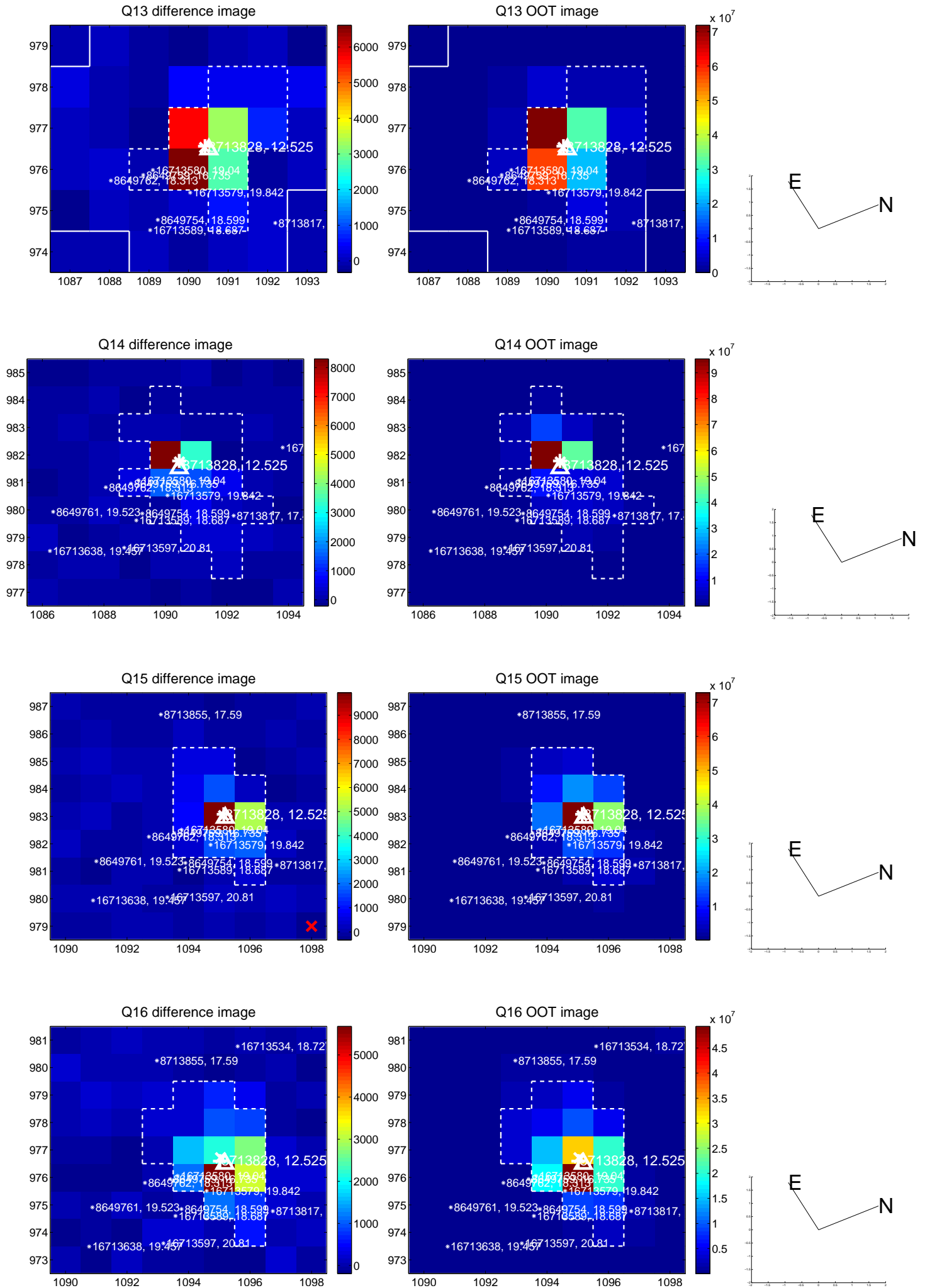
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



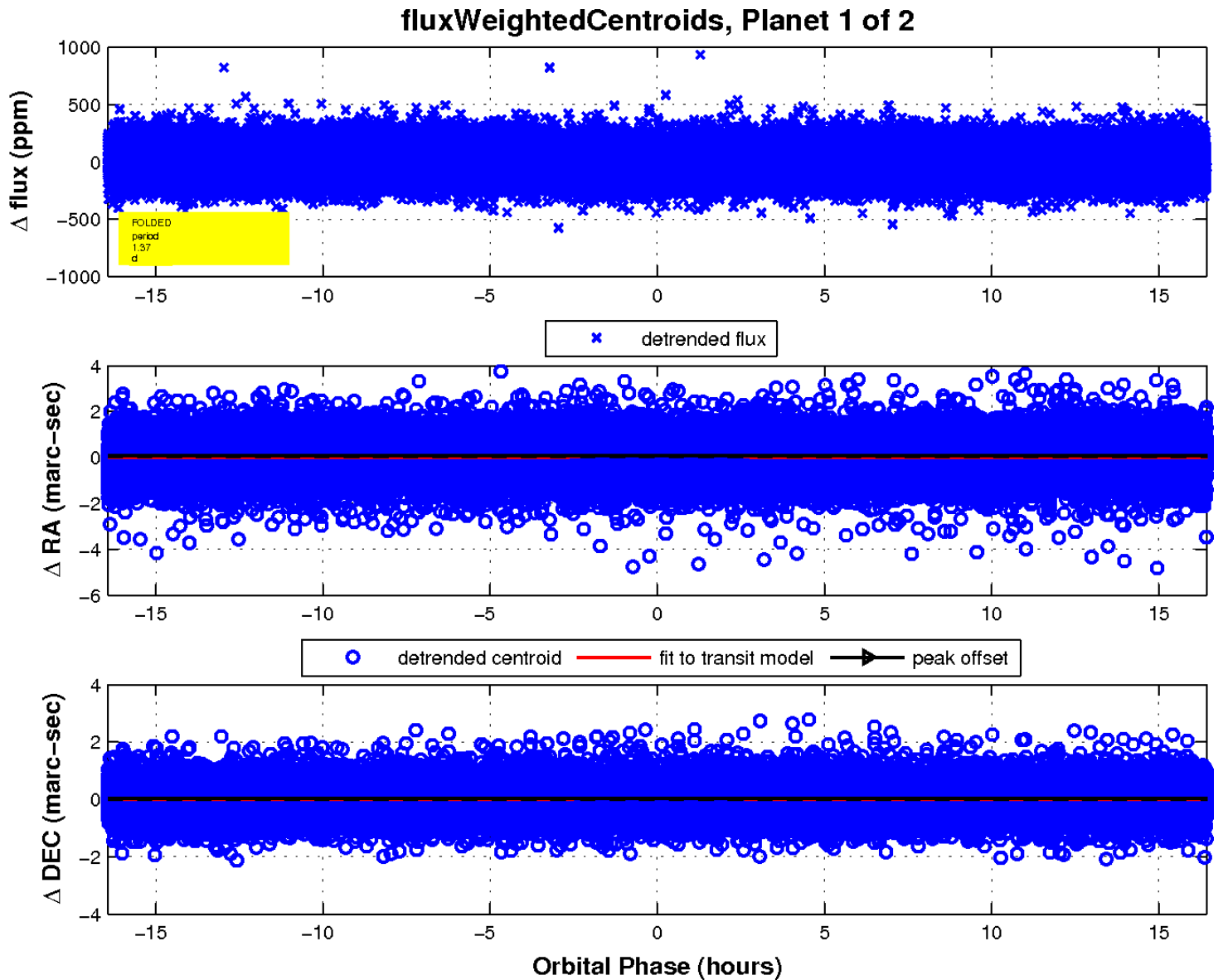
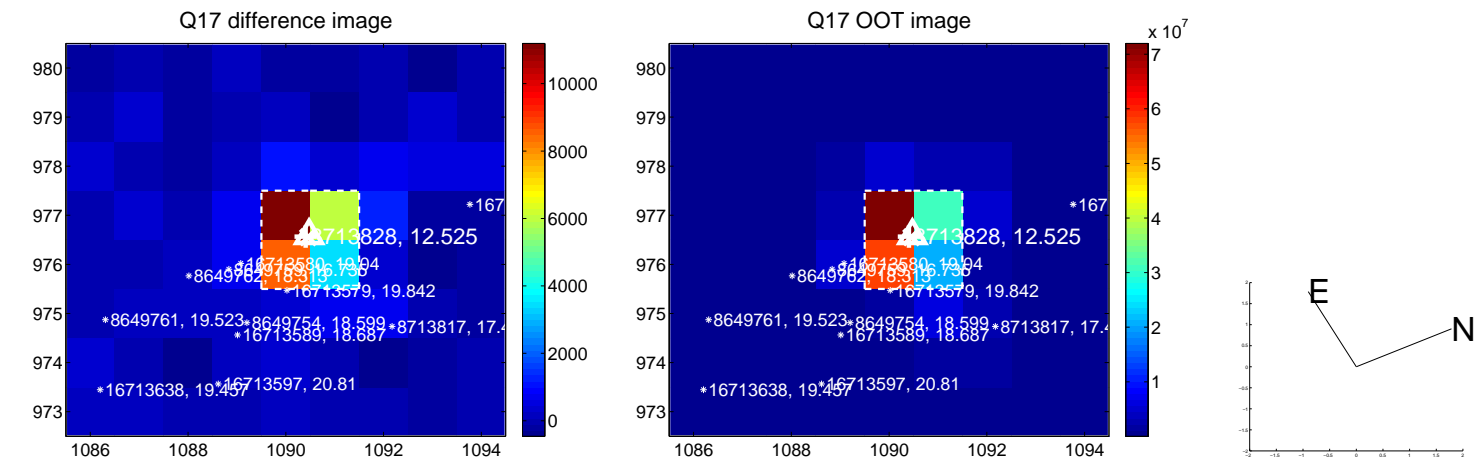
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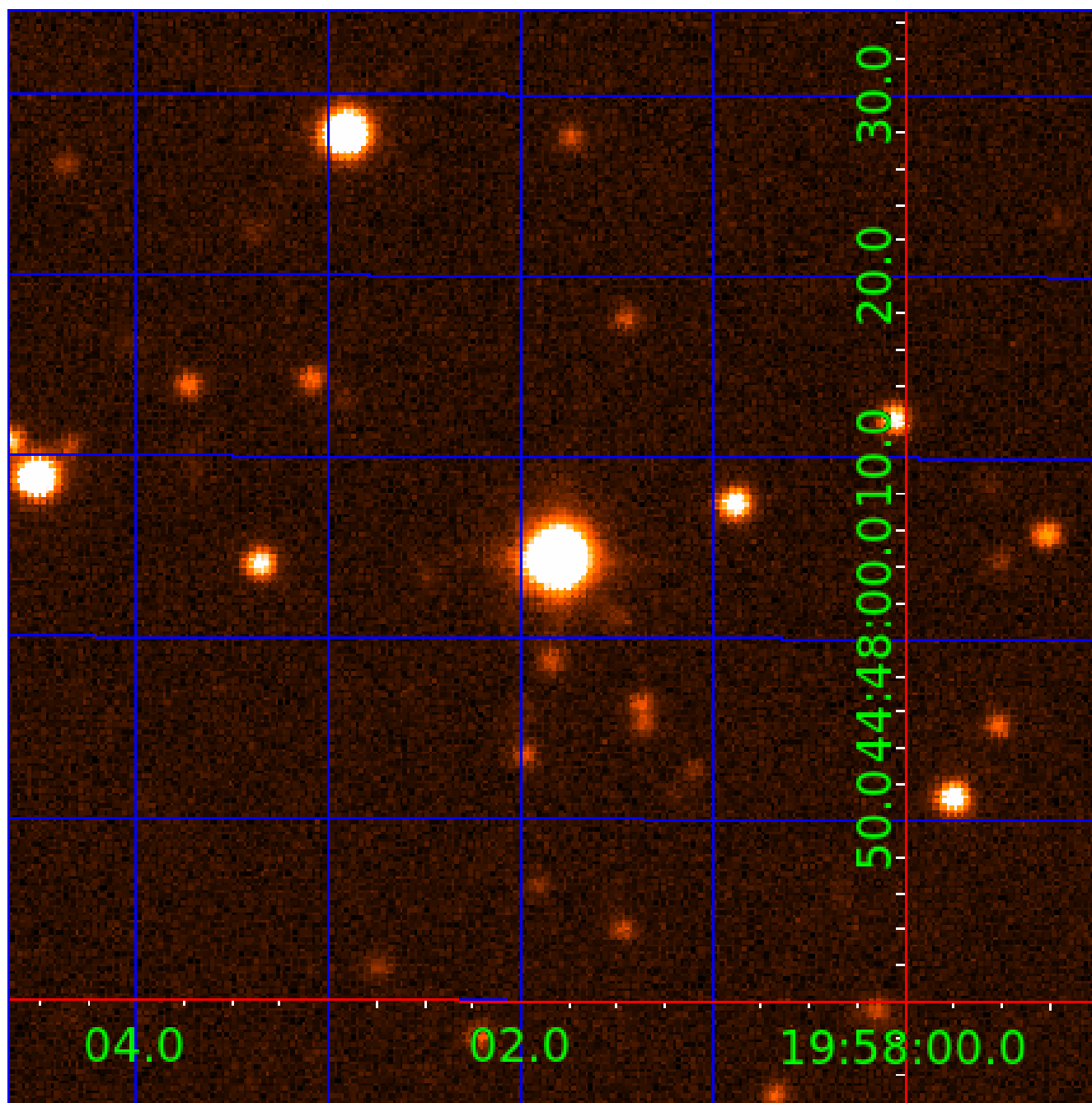


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008713828

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})
008713828-01	OBS	No	1.370277	132.597456	13.2	5.611	8.1	7.4	2.52	6431	1.11	12740.83
008713828-02	OBS	No	0.912769	132.403842	16.6	9.172	8.9	10.2	2.52	6431	1.04	21900.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008713828-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
008713828-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—CENT_FEW_DIFFS

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.

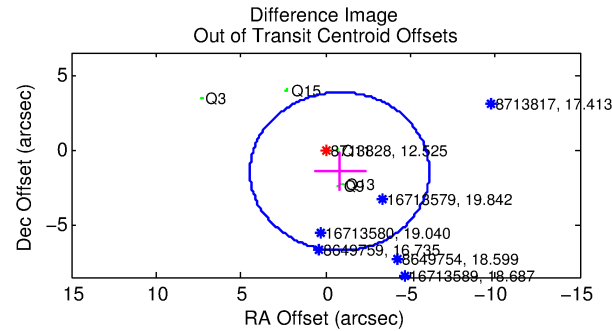
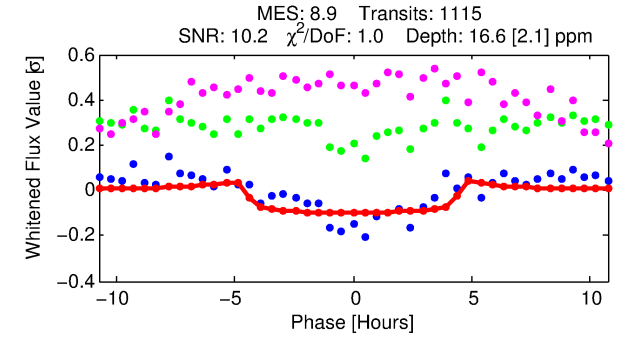
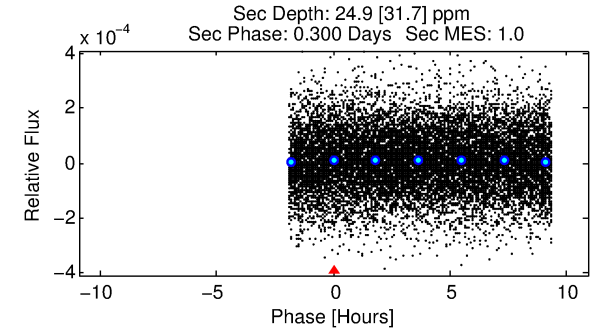
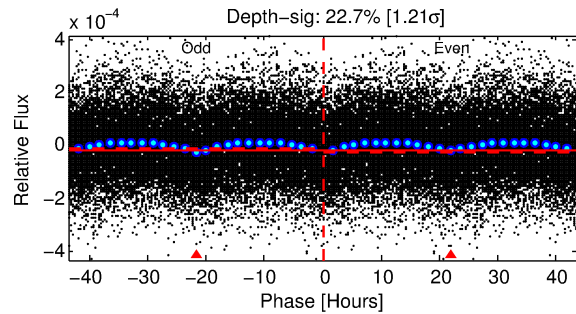
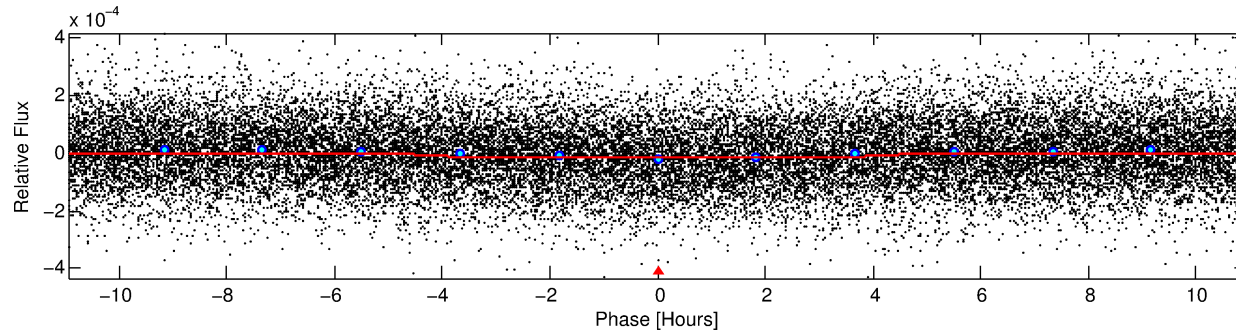
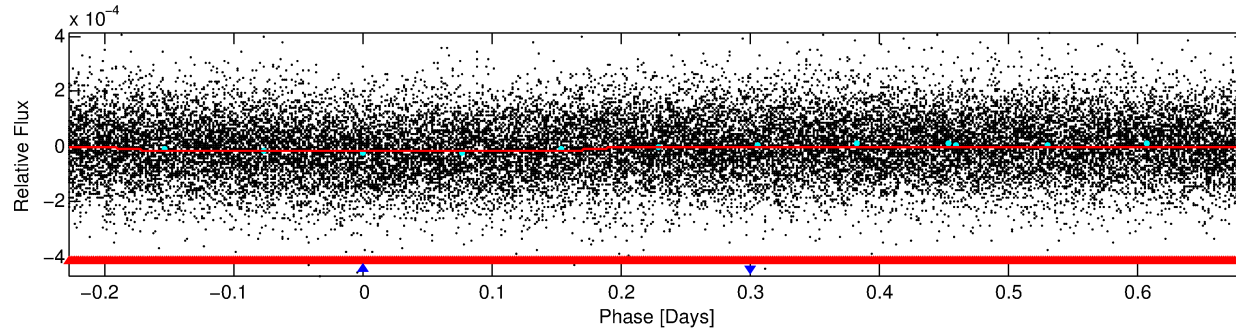
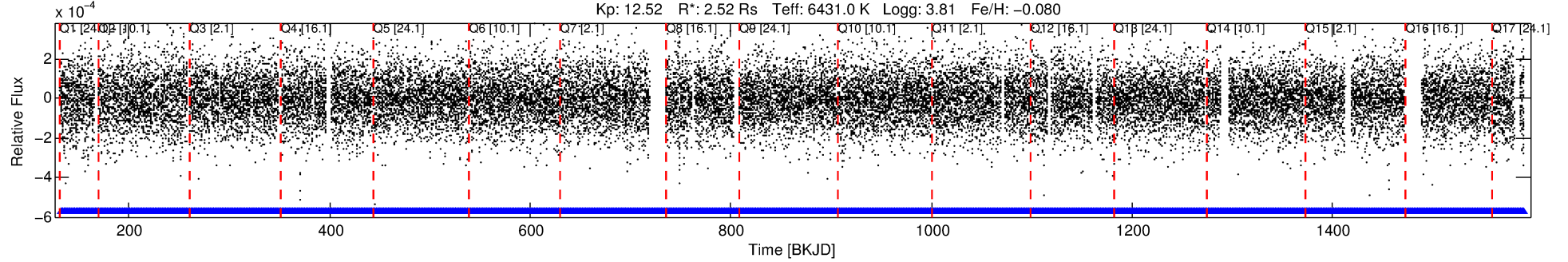
Ephemeris Match Information For 008713828-02

No Significant Match Found

DV One-Page Summary

KIC: 8713828 Candidate: 2 of 2 Period: 0.913 d
KOI: K07080 Corr: No Ephemeris Match

Kp: 12.52 R*: 2.52 Rs Teff: 6431.0 K Logg: 3.81 Fe/H: -0.080



DV Fit Results:

Period = 0.91277 [0.00002] d
Epoch = 132.4038 [0.0063] BKJD
Rp/R* = 0.0038 [0.0027]
a/R* = 1.03 [0.25]
b = 0.31 [10.92]
Seff = 21900.84 [17183.80]
Teff = 3102 [608] K
Rp = 1.04 [0.90] Re
a = 0.0211 [0.0101] AU
Ag = 5.61 [11.58] [0.40σ]
Teffp = 7382 [3542] K [1.19σ]

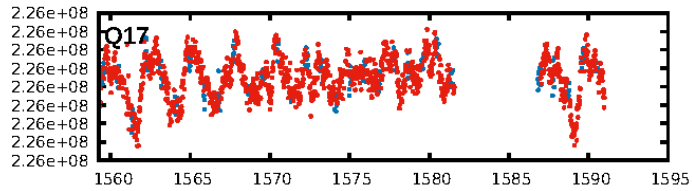
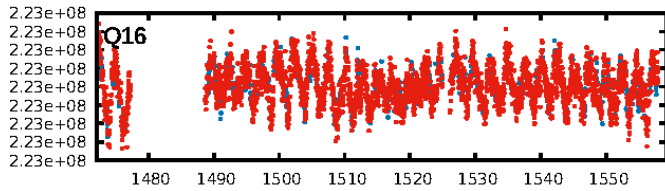
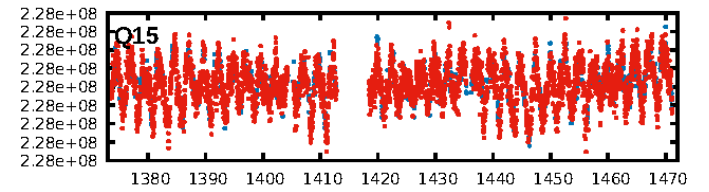
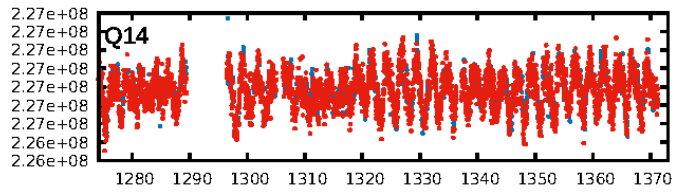
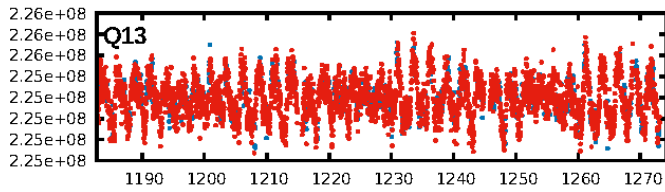
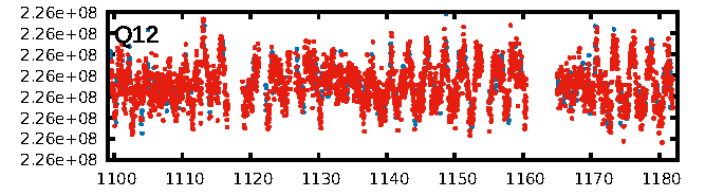
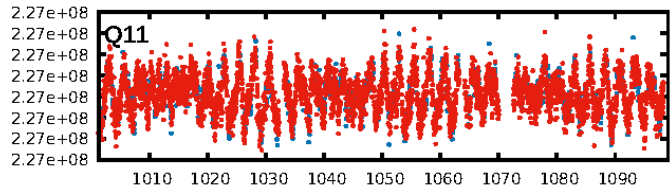
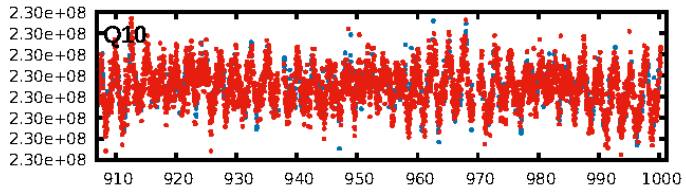
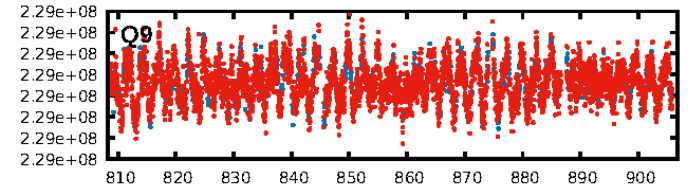
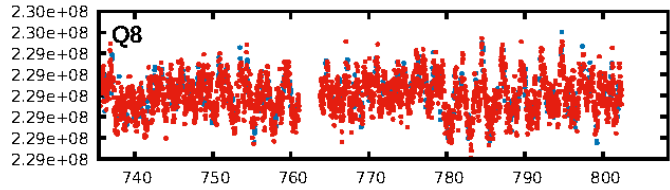
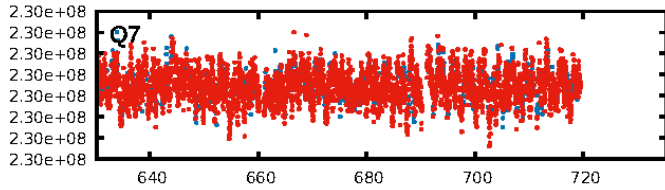
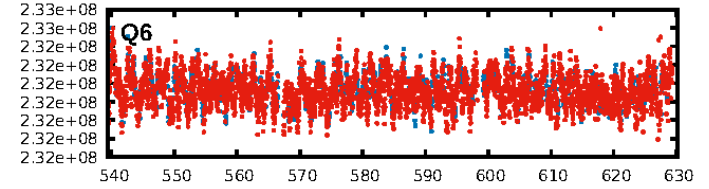
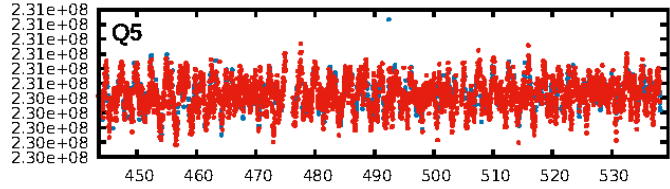
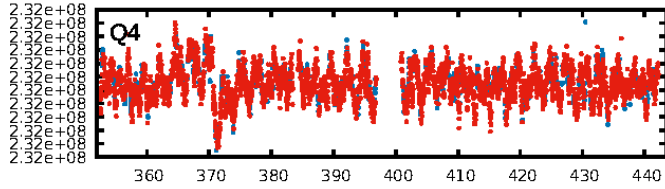
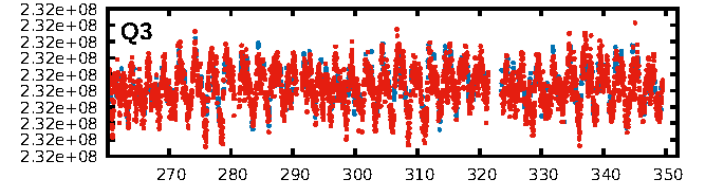
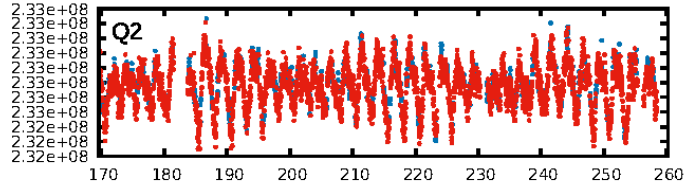
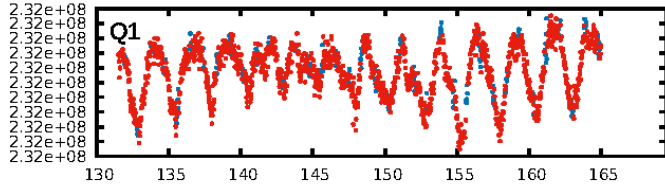
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 69.3% [1.02σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1058/1058]
GhostDiagnostic-chr: 2.558
Centroid-sig: 1.8%
Centroid-so: 0.973 arcsec [1.59σ]
OotOffset-rm: 1.679 arcsec [0.95σ]
KicOffset-rm: 1.568 arcsec [1.13σ]
OotOffset-st: 0/3/0/2 [5]
KicOffset-st: 0/3/0/2 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 0.41 [7/17]

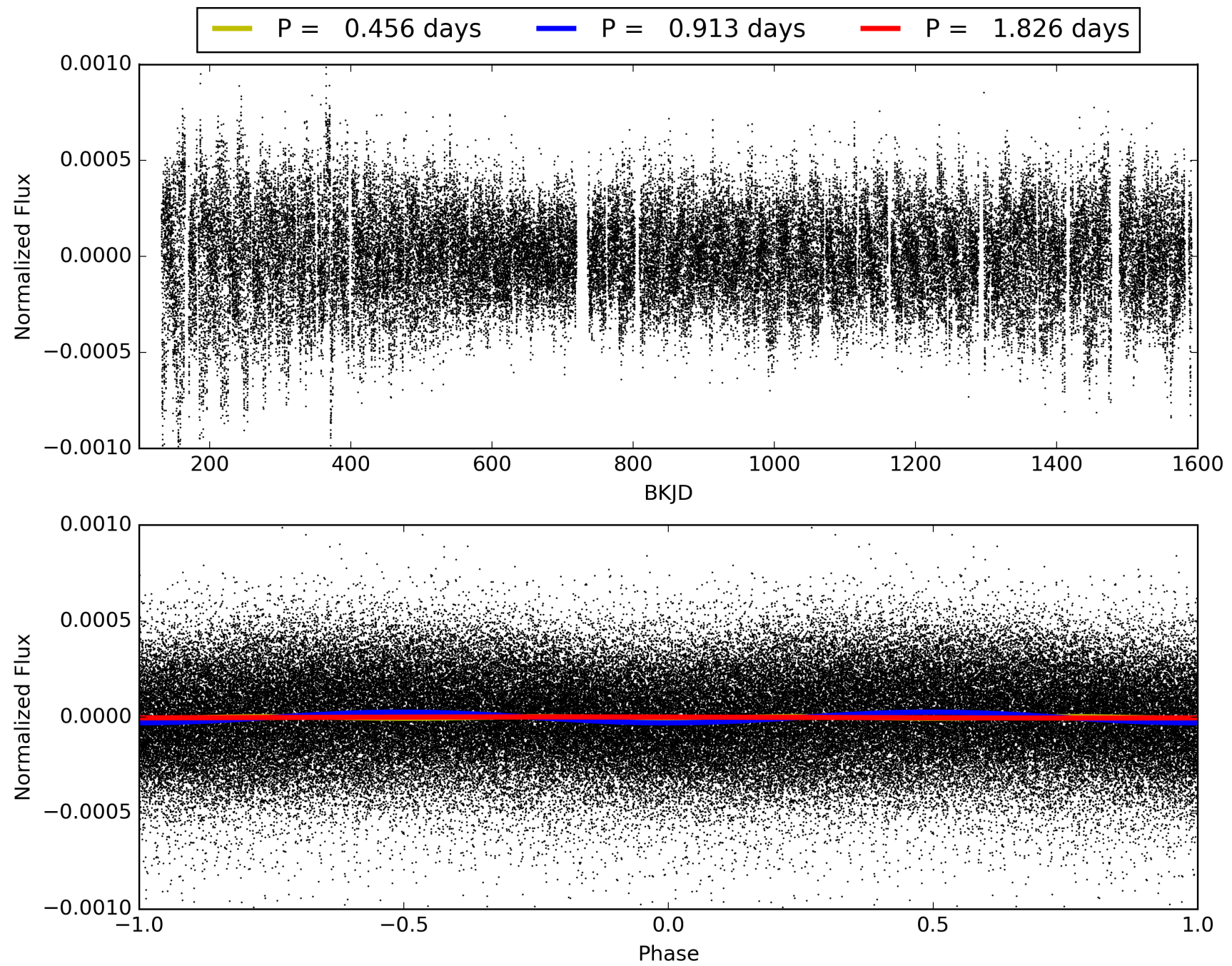
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:35:19 Z

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

TCE 008713828-02, PDC Light Curves

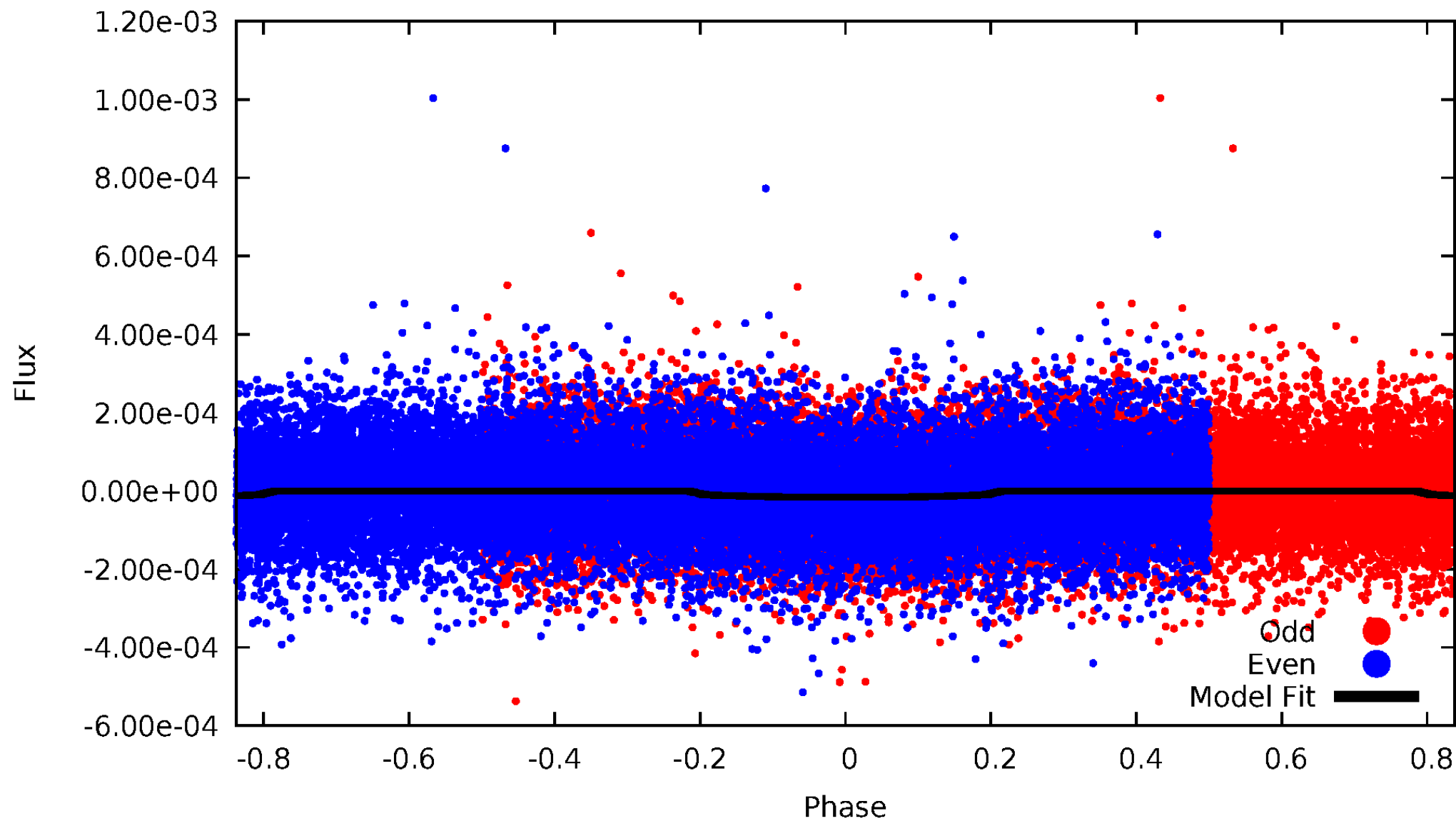


TCE 008713828-02



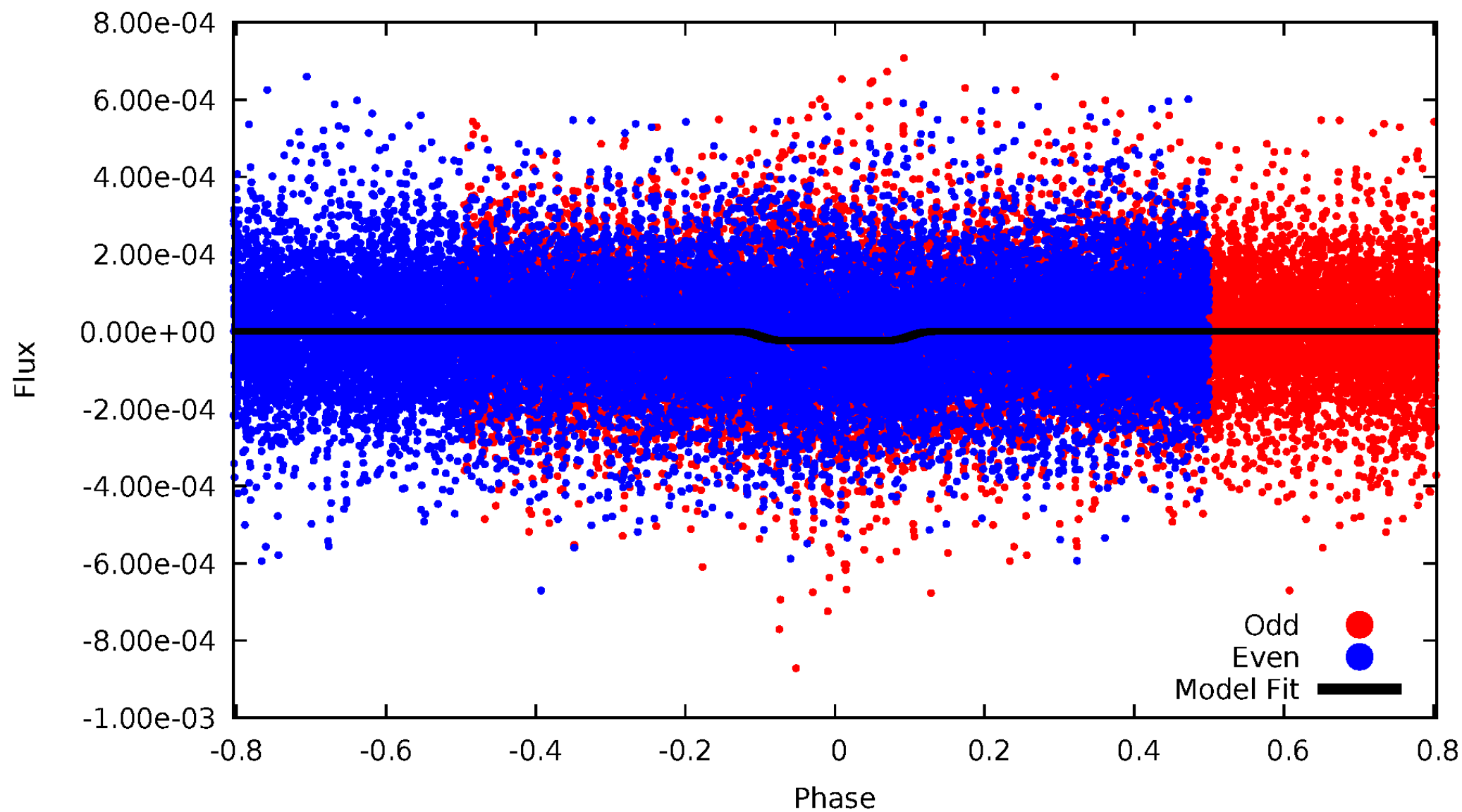
DV Odd/Even

TCE 008713828-02



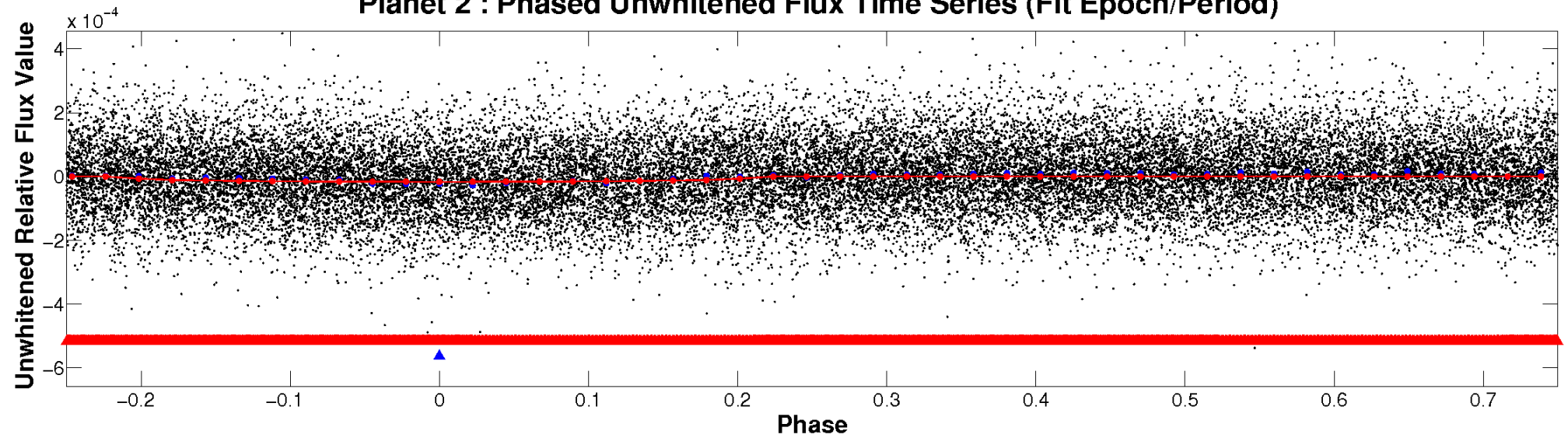
ALT Odd/Even

TCE 008713828-02

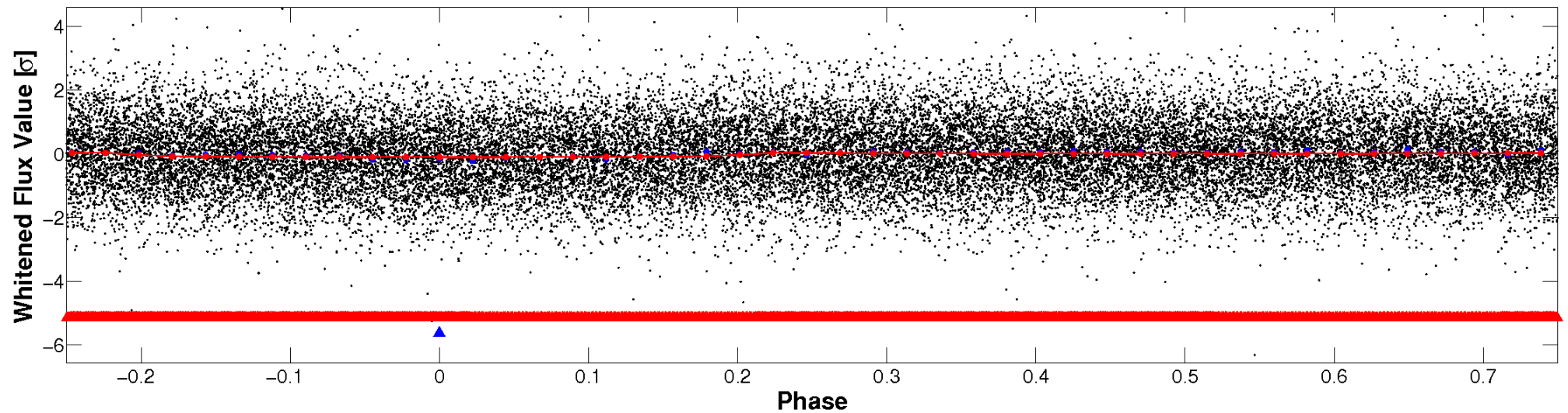


Non-Whitened Vs. Whitened Light Curve

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

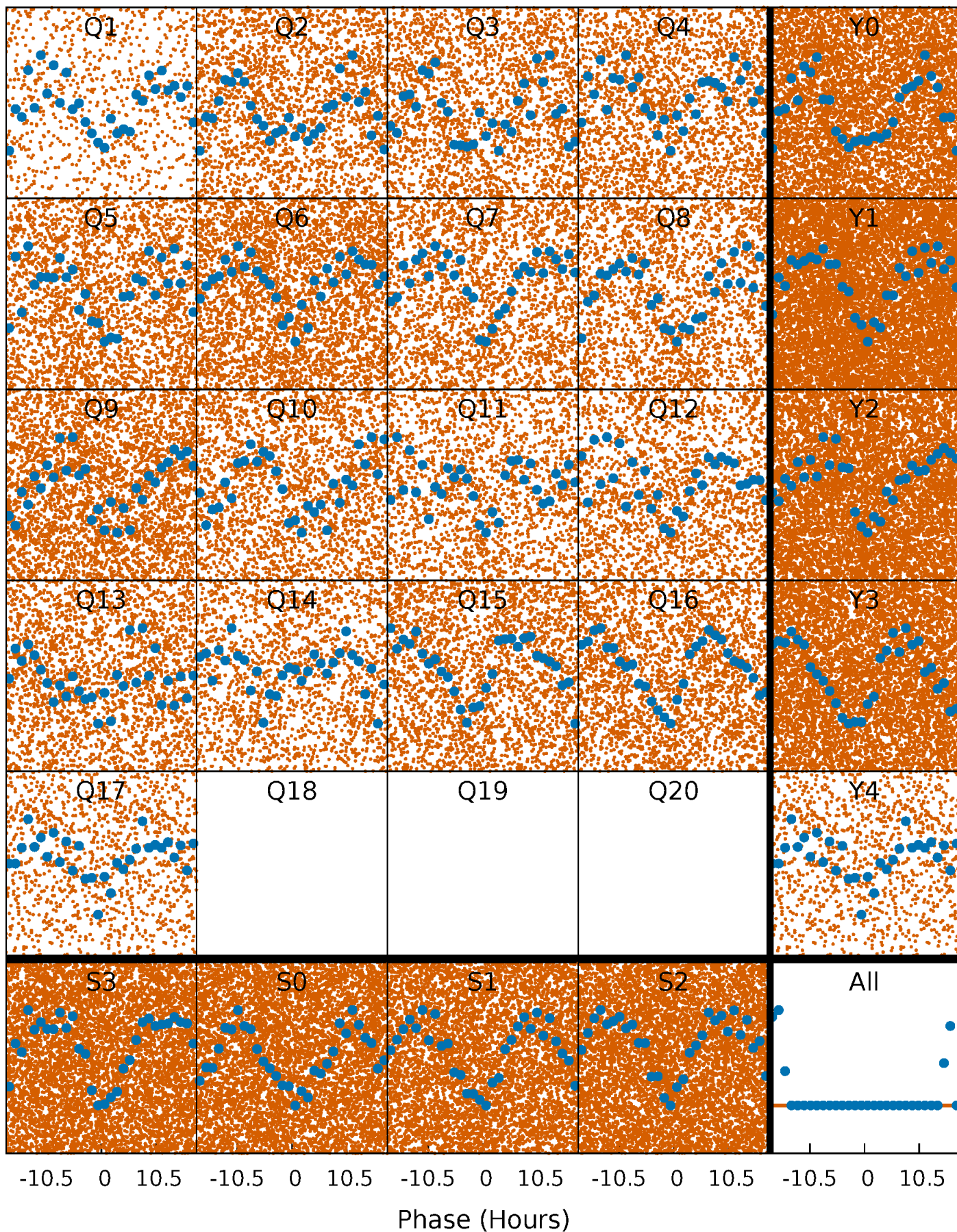


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



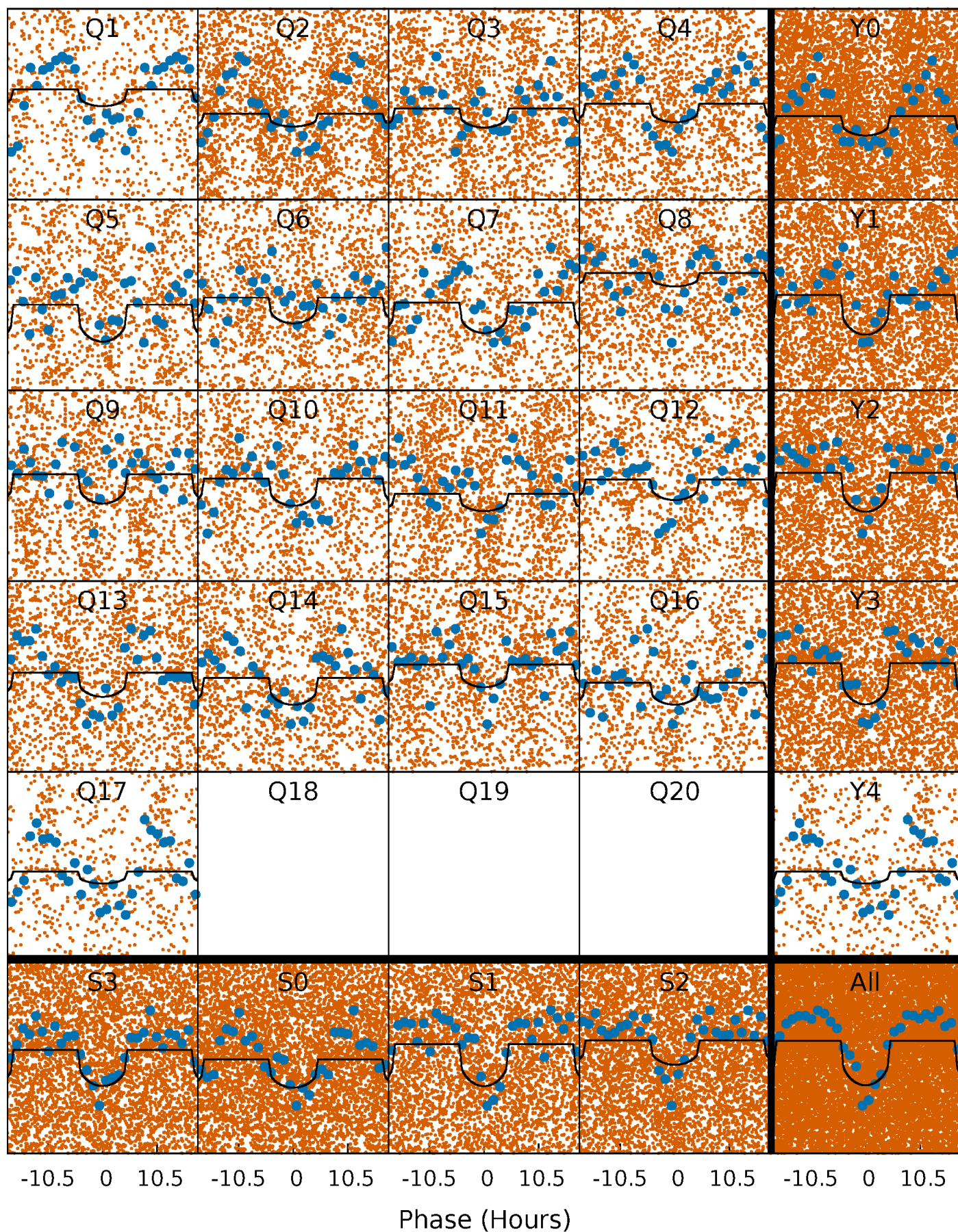
PDC Quarter-Phased Transit Curves

TCE 008713828-02 P= 0.912769 Days $T_0=132.403842$ (BKJD)



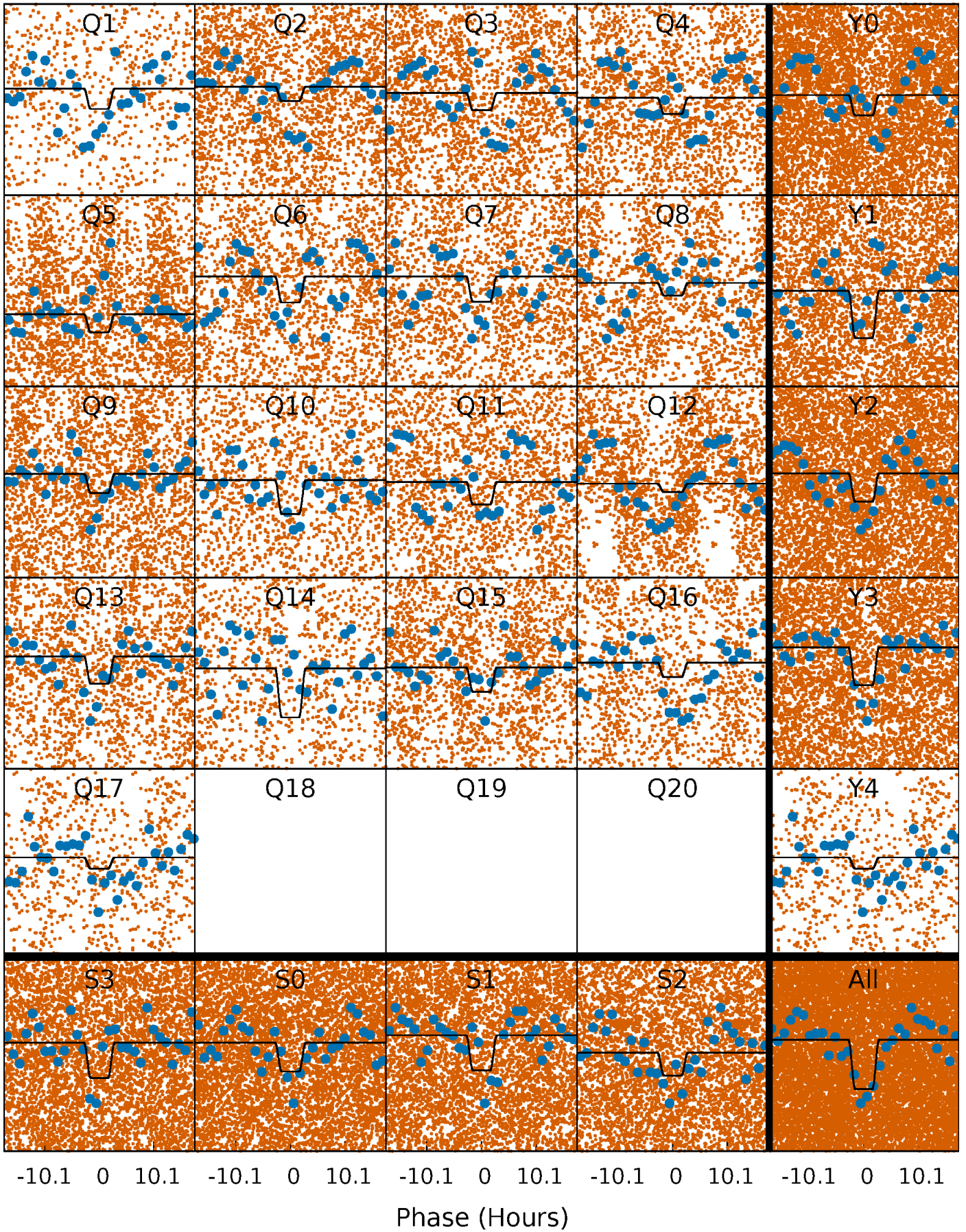
DV Quarter-Phased Transit Curves

TCE 008713828-02 P= 0.912769 Days $T_0=132.403842$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

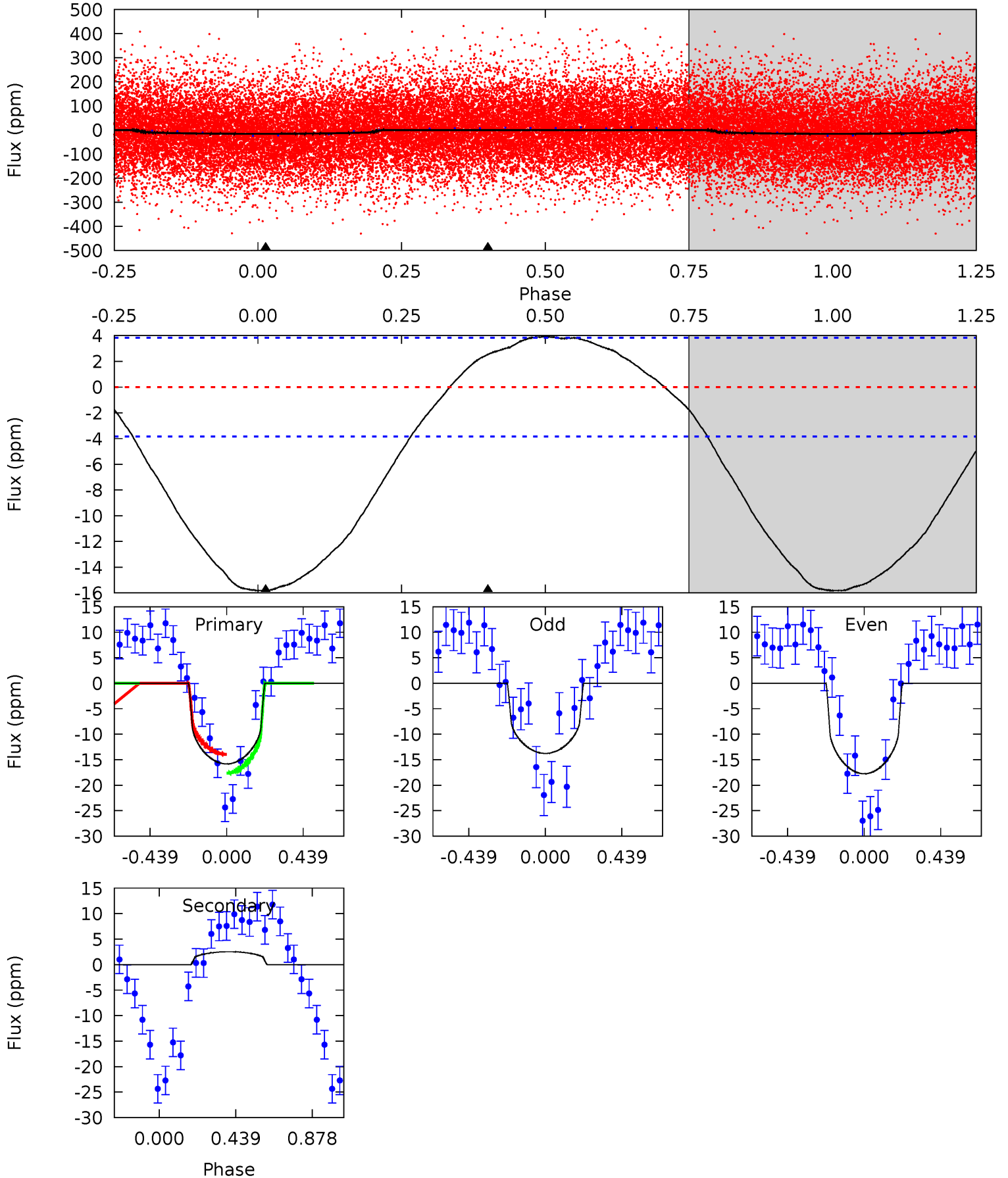
TCE 008713828-02 P= 0.912754 Days $T_0=132.408263$ (BKJD)



DV Model-Shift Uniqueness Test

008713828-02, P = 0.912769 Days, E = 131.491073 Days

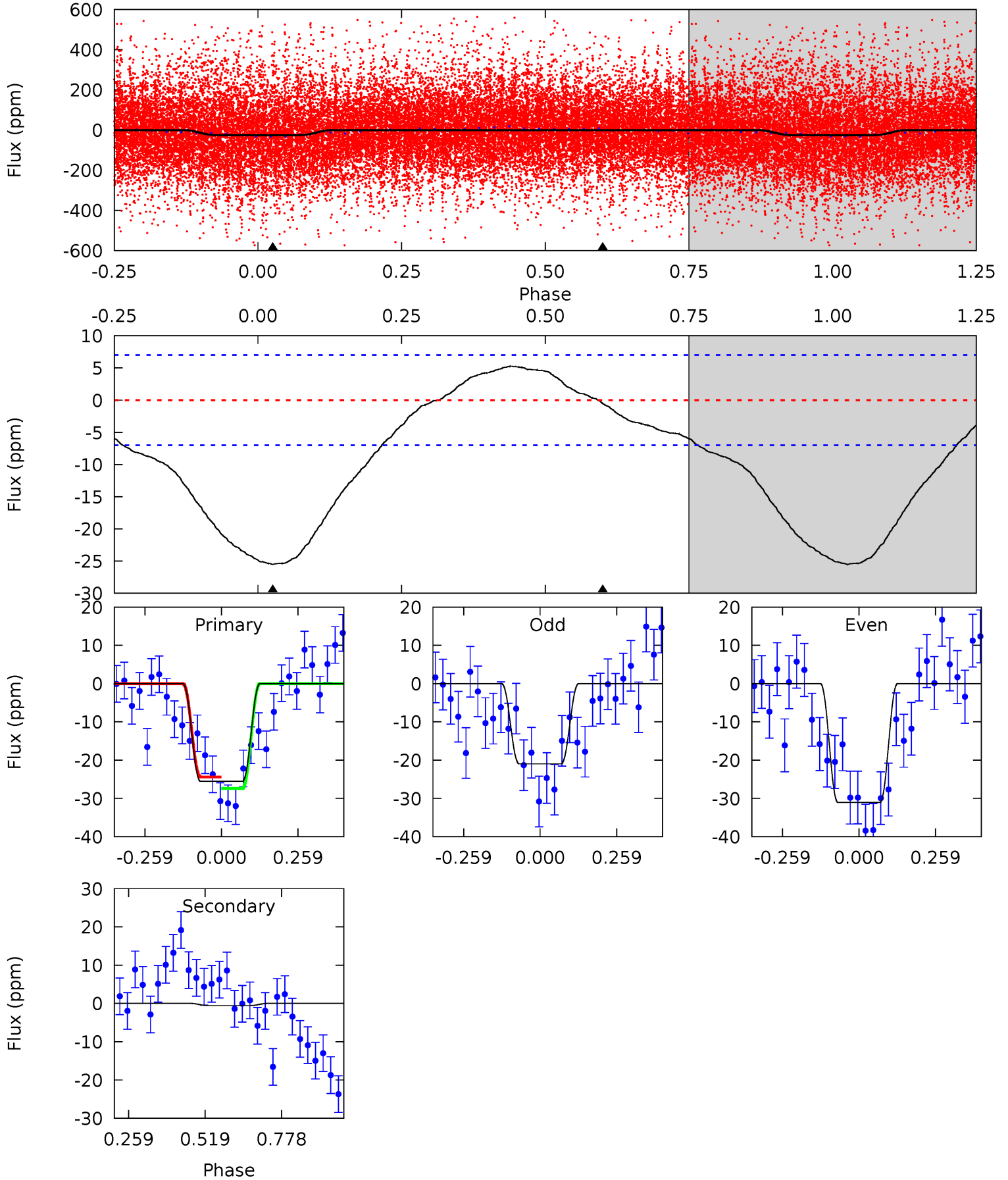
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	-2.80	0	0	4.24	0.77	1.26	17.5	17.5	-2.80	-2.80	2.21	1.06	0.20	1.97



Alt Model-Shift Uniqueness Test

008713828-02, P = 0.912754 Days, E = 131.495509 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	0.34	0	0	4.36	1.13	0.90	15.9	15.9	0.34	0.34	3.12	0.64	0.17	0.94



Stellar Parameters For KIC 008713828

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6431^{+181}_{-227}	$3.811^{+0.456}_{-0.114}$	$-0.080^{+0.250}_{-0.300}$	$2.520^{+0.527}_{-1.229}$	$1.501^{+0.216}_{-0.401}$	$0.132^{+0.574}_{-0.049}$
	+3%/-4%	+12%/-3%	+312%/-375%	+21%/-49%	+14%/-27%	+434%/-37%
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 008713828-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	3 ± 1	$1.00^{+0.70}_{-0.57}$	4219^{+308}_{-529}	-4614^{+491}_{-1603}	$-0.599^{+0.412}_{-2.457}$
Alt.	-1 ± 2	$1.22^{+0.79}_{-0.64}$	4208^{+308}_{-503}	-3606^{+7213}_{-583}	$0.070^{+0.483}_{-0.258}$

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 $A_{obs} \gg 1.0$

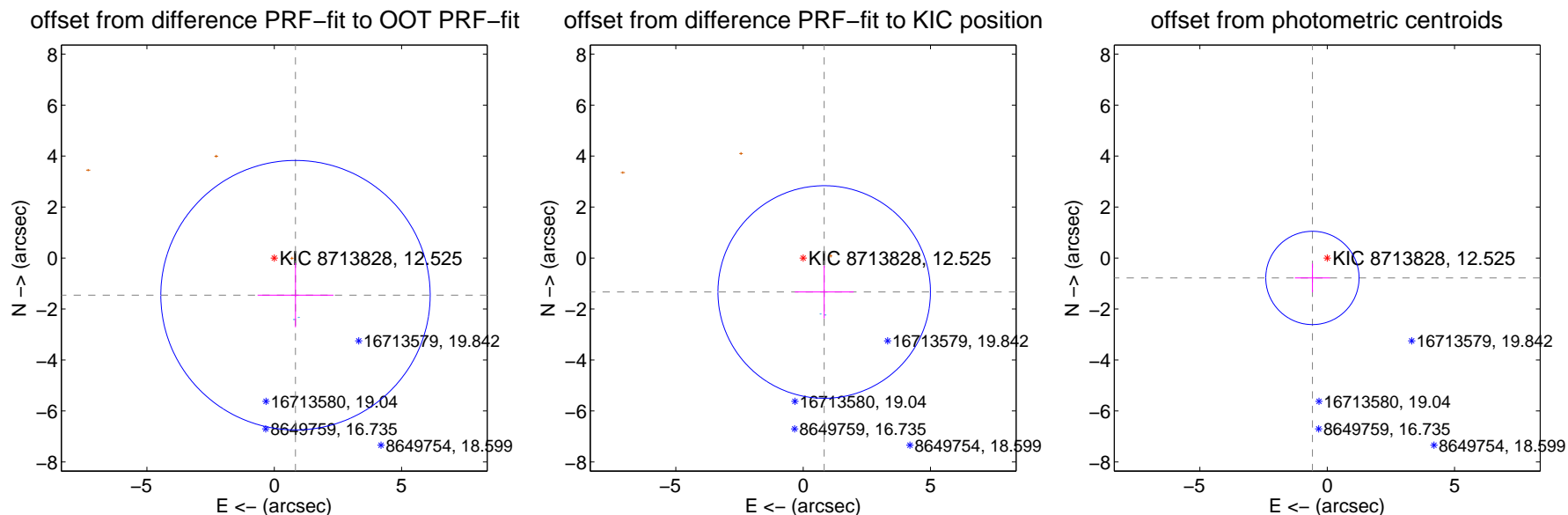
DV Centroid Data

Supplemental centroid analysis for 008713828-02. Kepler magnitude: 12.53. Transit SNR 10.21

There are 2 quarters with good PRF difference image offsets

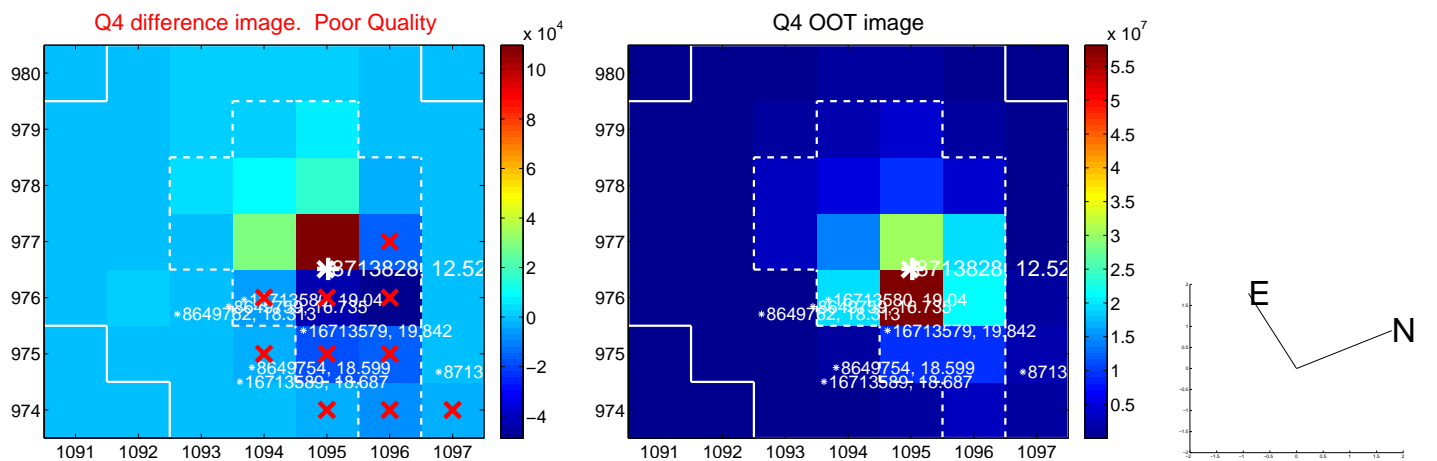
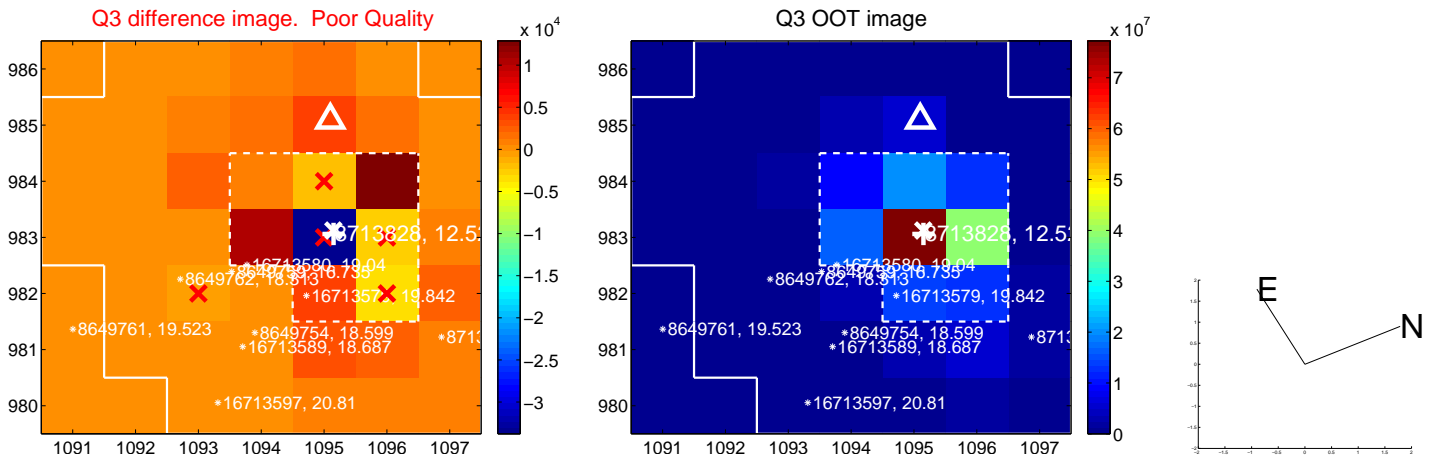
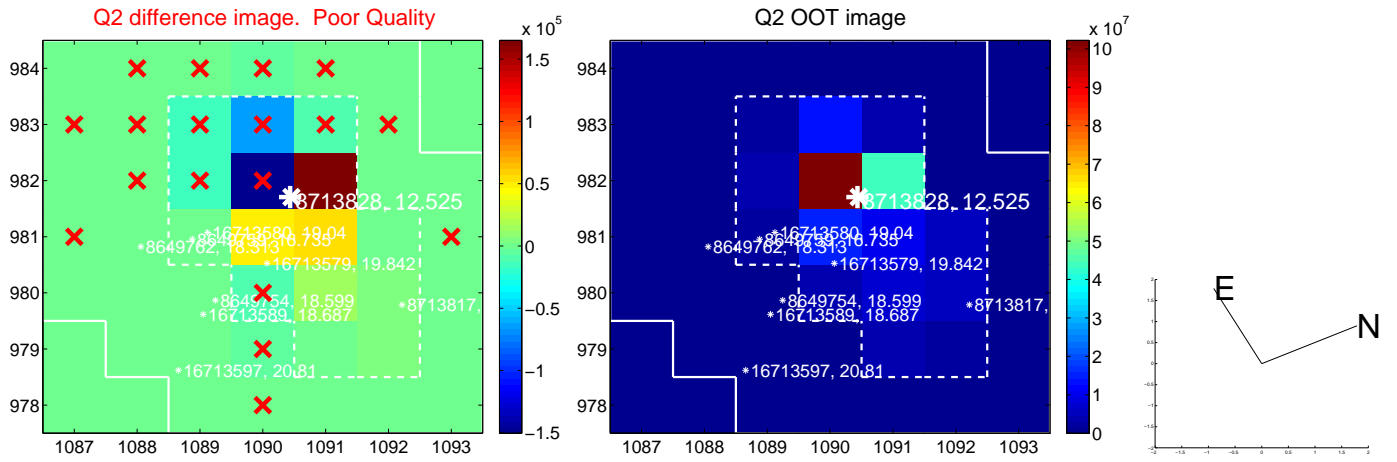
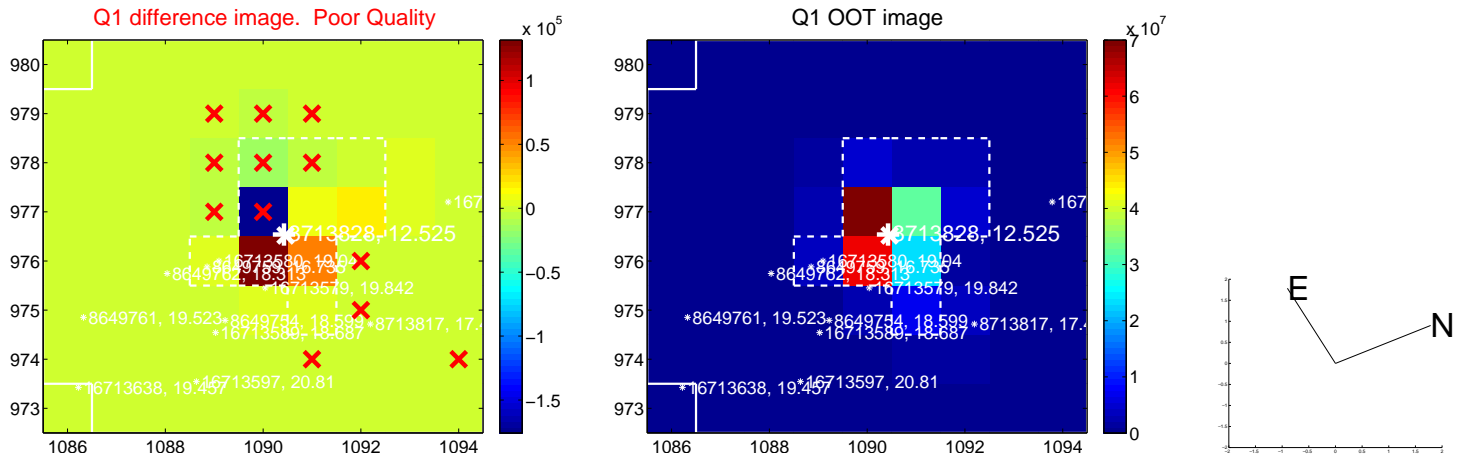
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.679 ± 1.762	0.95	-0.834 ± 1.491	-1.458 ± 1.258
PRF-fit source offset from KIC position	1.568 ± 1.390	1.13	-0.826 ± 1.153	-1.333 ± 1.039
photometric centroid source offset	0.97 ± 0.61	1.59	0.58 ± 0.69	-0.78 ± 0.56

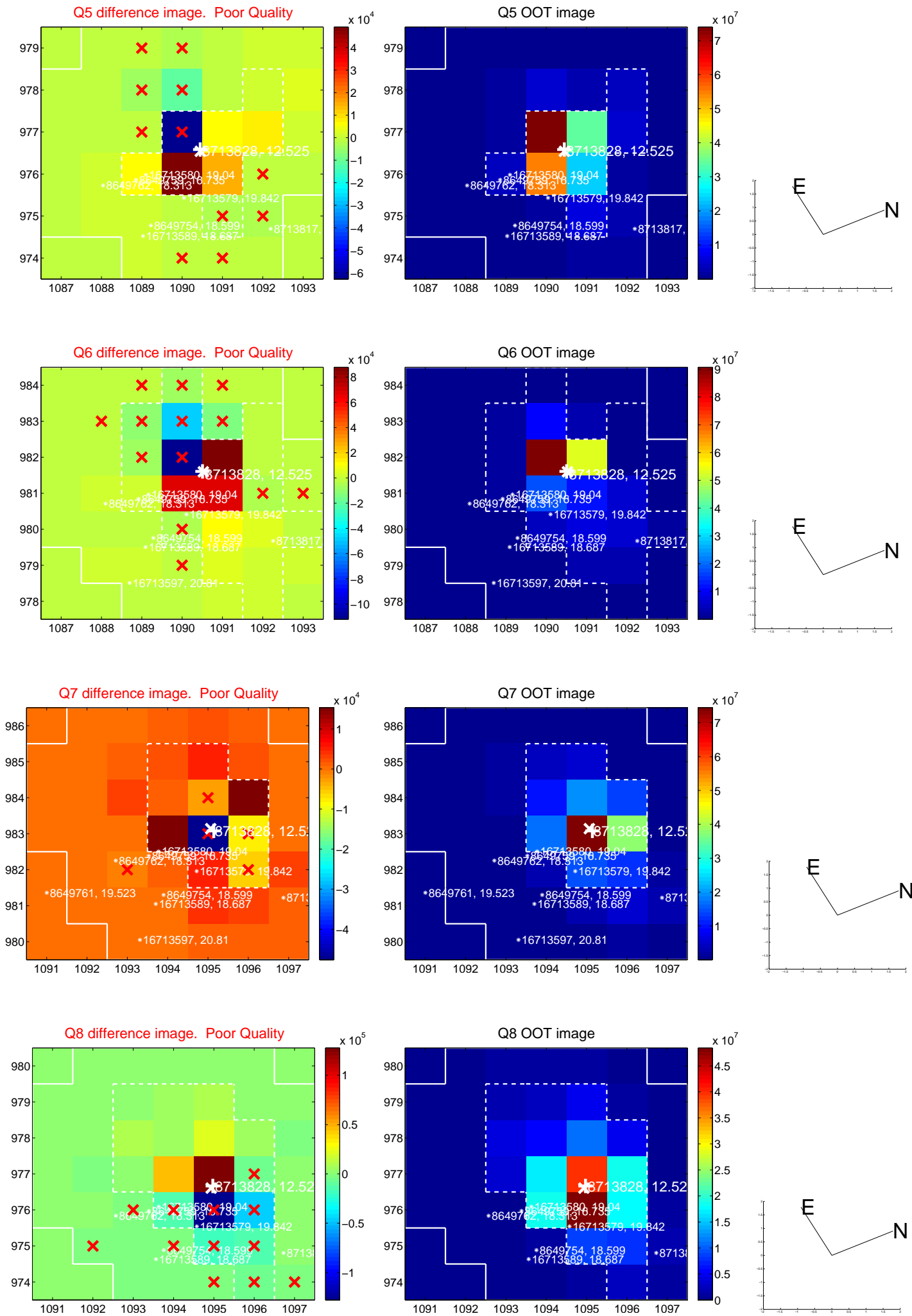


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

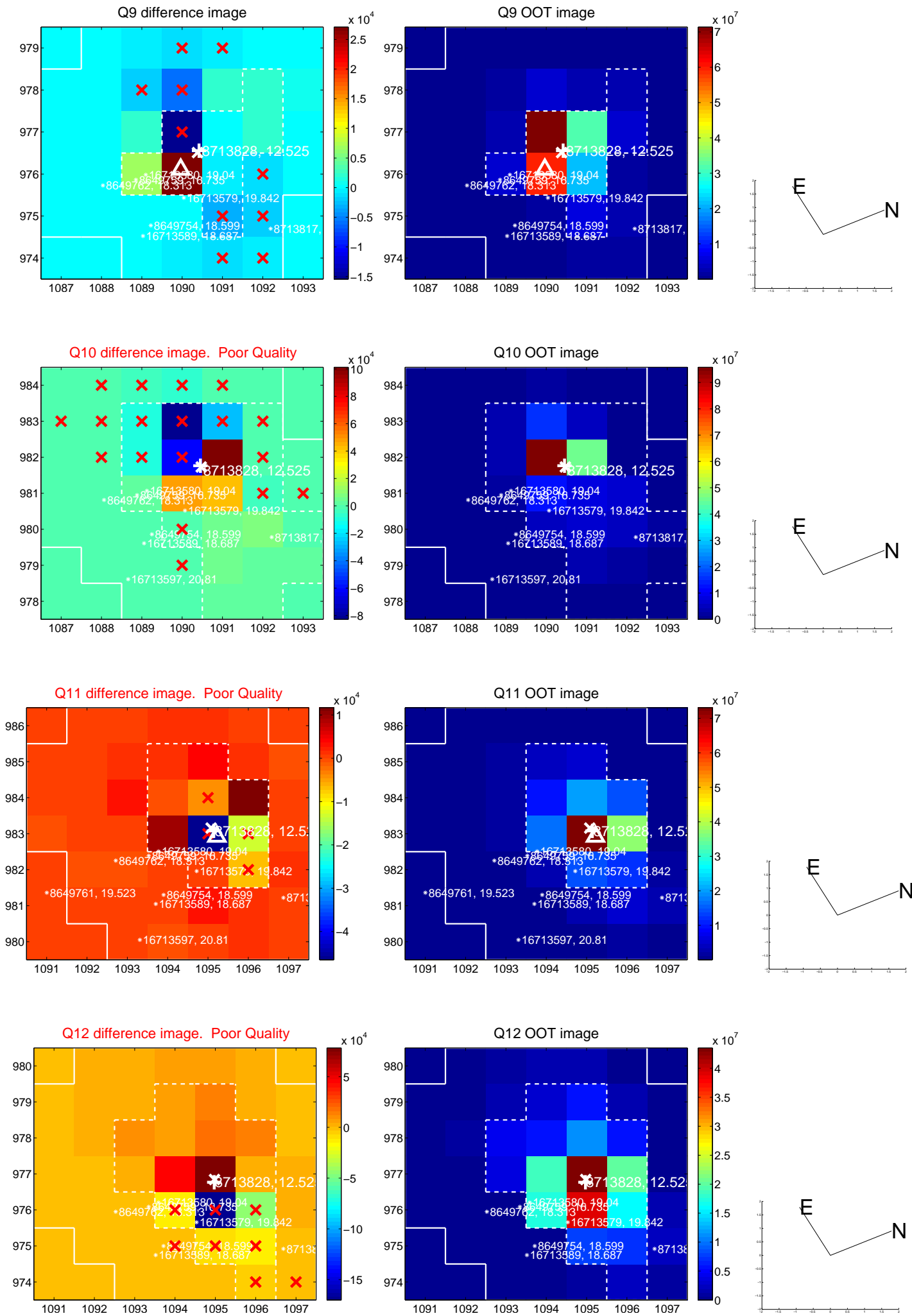
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



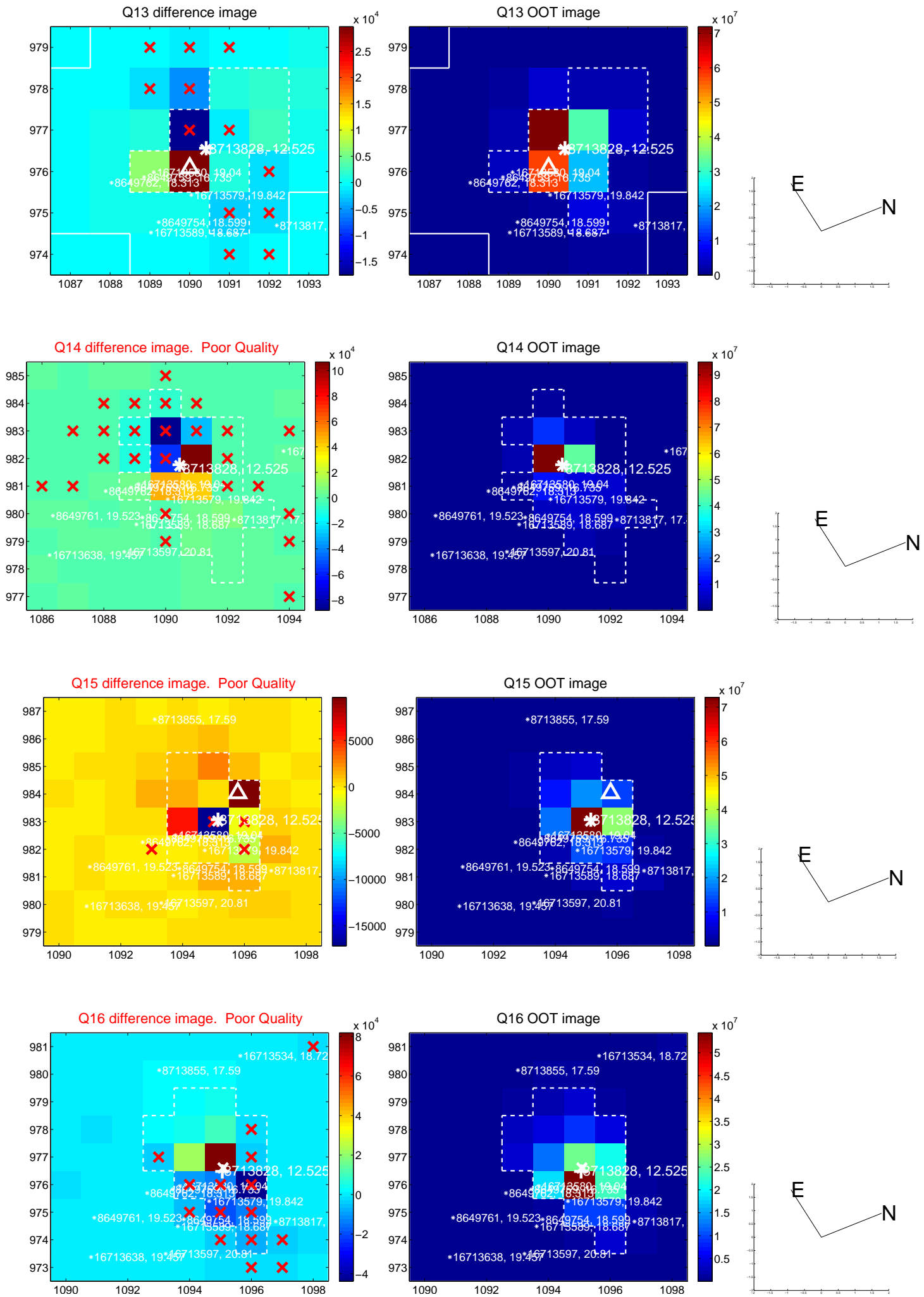
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



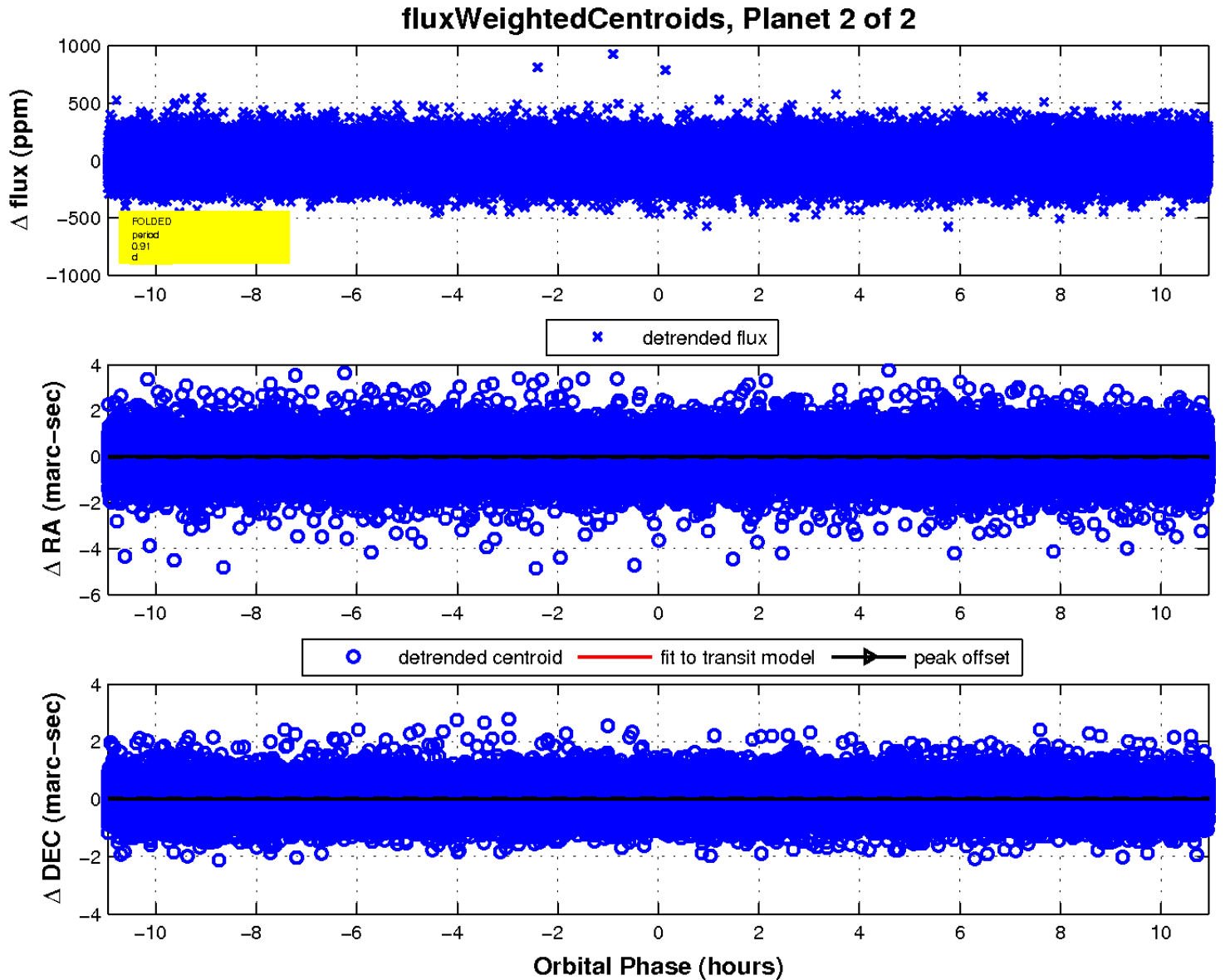
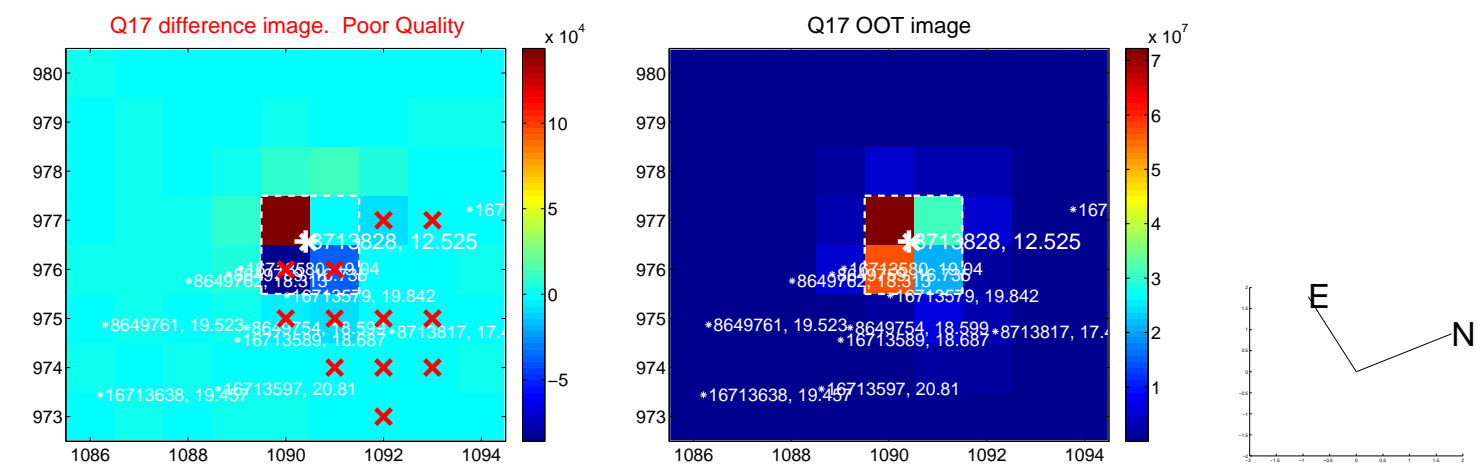
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

