

KIC 008397138

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})
008397138-01	OBS	No	0.580740	131.558735	104.2	2.227	12.3	10.5	3.00	5959	3.53	45169.11
008397138-02	OBS	No	0.580720	131.872329	117.6	1.919	11.4	10.5	3.00	5959	3.31	45171.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008397138-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008397138-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

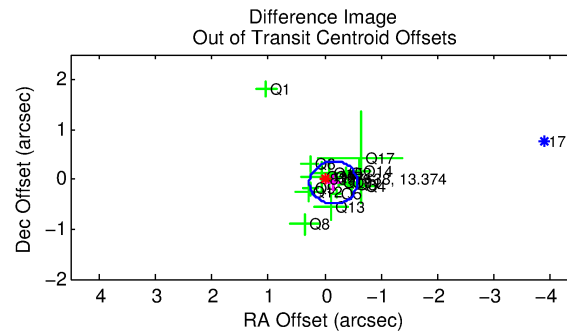
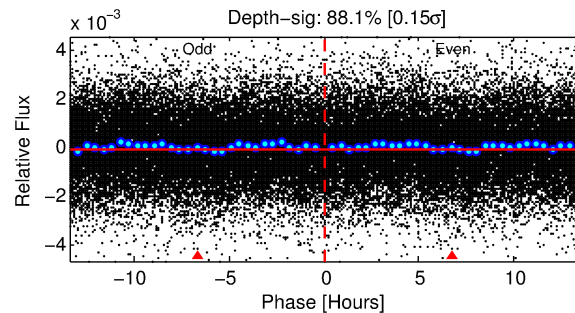
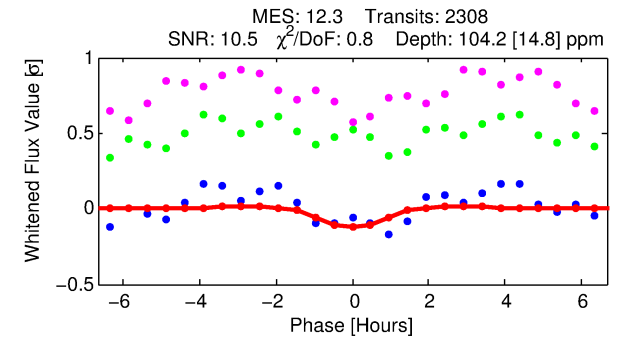
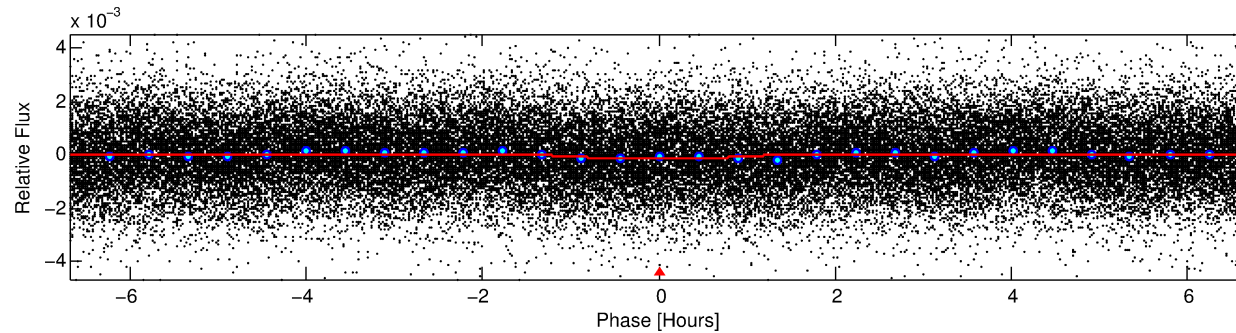
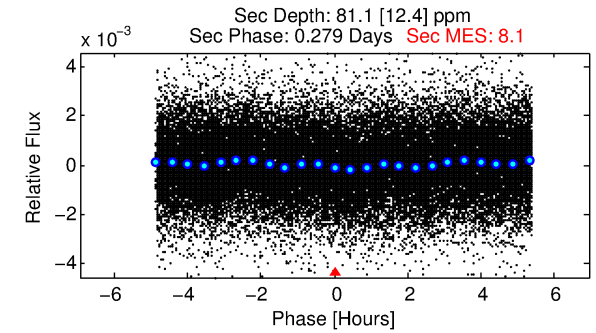
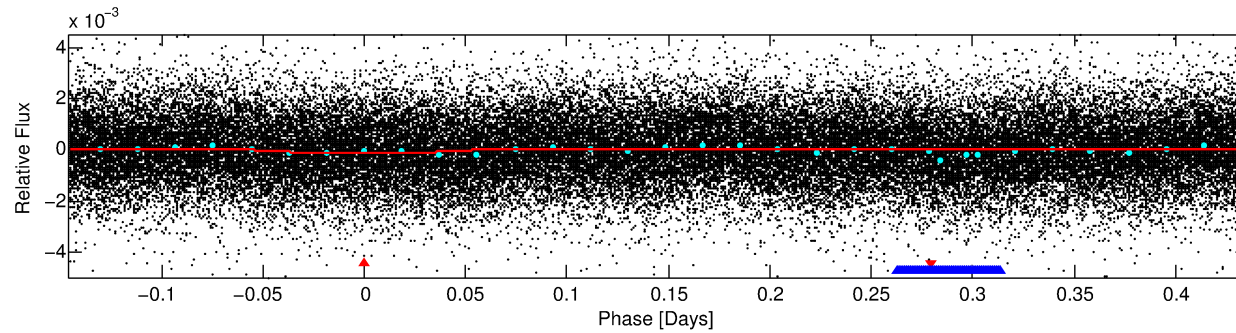
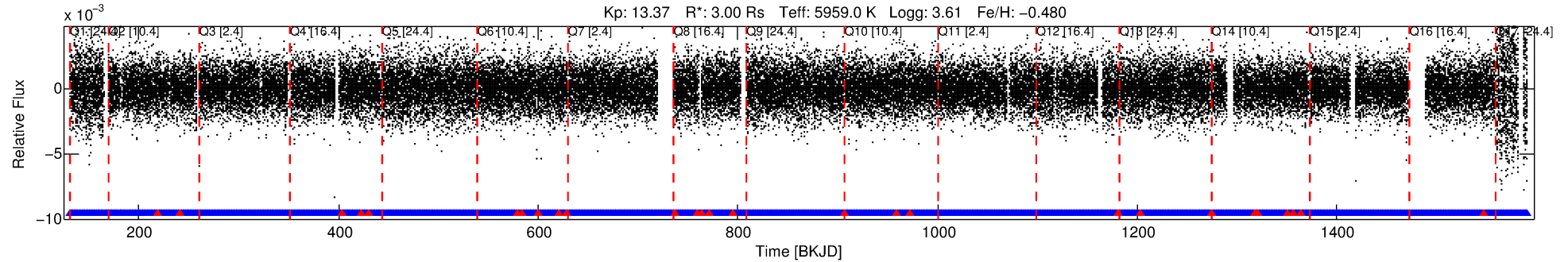
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008397138-01

No Significant Match Found

DV One-Page Summary

KIC: 8397138 Candidate: 1 of 2 Period: 0.581 d



DV Fit Results:

Period = 0.58074 [0.00001] d
Epoch = 131.5587 [0.0034] BKJD
Rp/R* = 0.0108 [0.0123]
a/R* = 1.38 [3.95]
b = 0.87 [1.71]
Seff = 45169.11 [56770.72]
Teq = 3717 [1168] K
Rp = 3.53 [4.62] Re
a = 0.0150 [0.0109] AU
Ag = 0.81 [2.10] [-0.09σ]
Teffp = 5450 [3116] K [0.52σ]

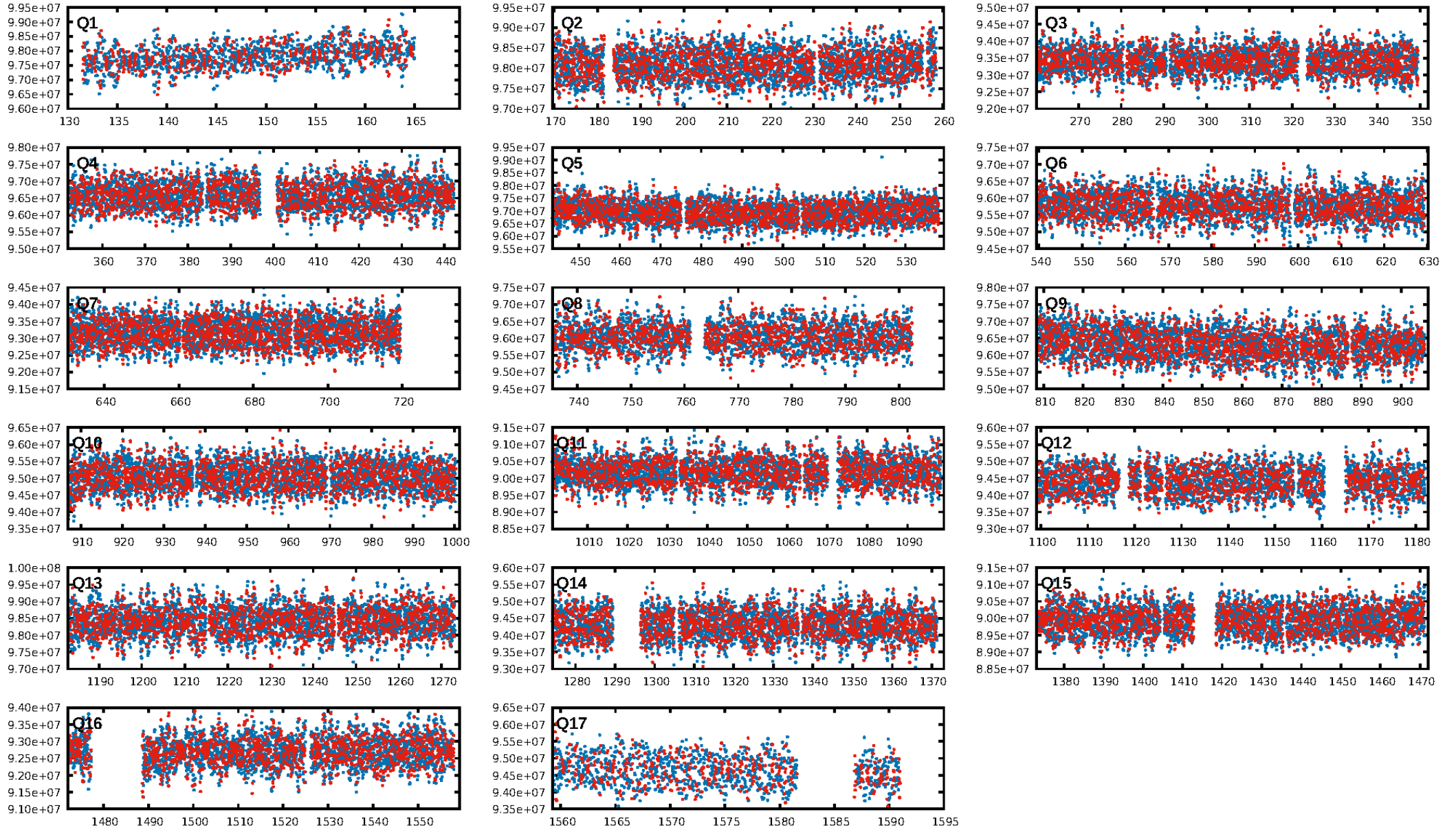
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.68e-96
RollingBand-fgt: 0.99 [2177/2204]
GhostDiagnostic-chr: 1.677
Centroid-sig: 19.3%
Centroid-so: 0.917 arcsec [3.02σ]
OotOffset-rm: 0.170 arcsec [1.19σ]
KicOffset-rm: 0.112 arcsec [0.96σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

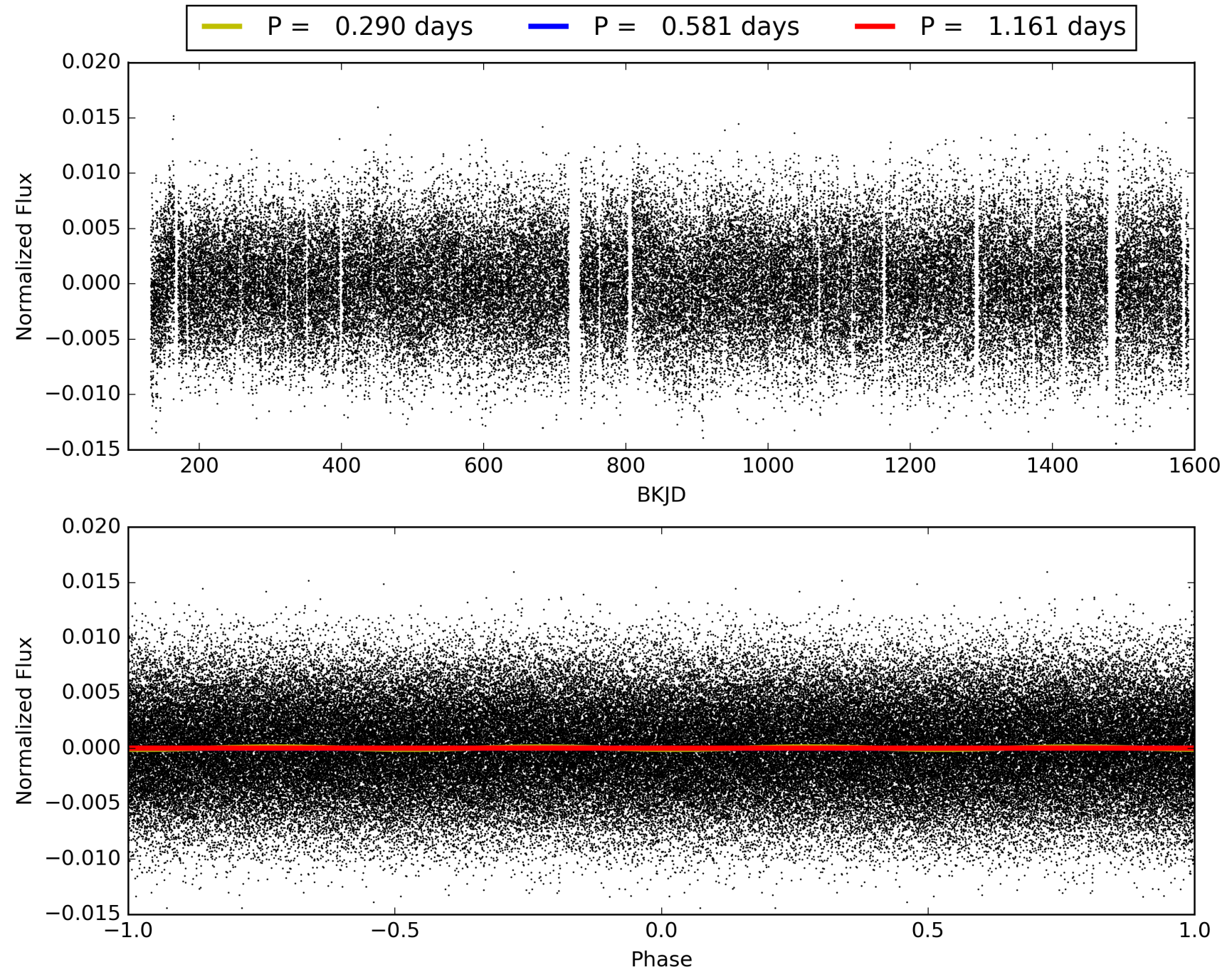
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:30:31 Z

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

TCE 008397138-01, PDC Light Curves

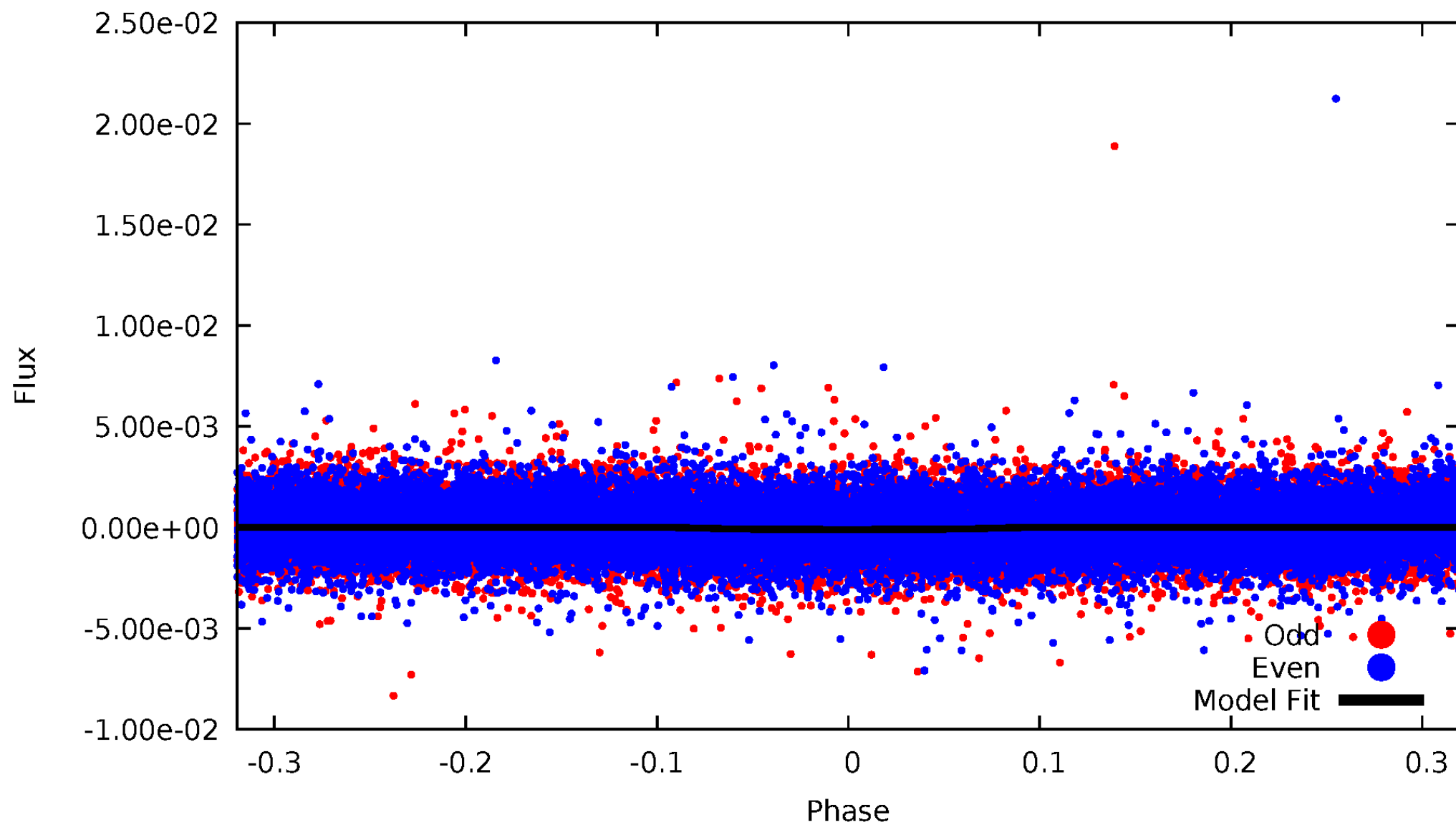


TCE 008397138-01



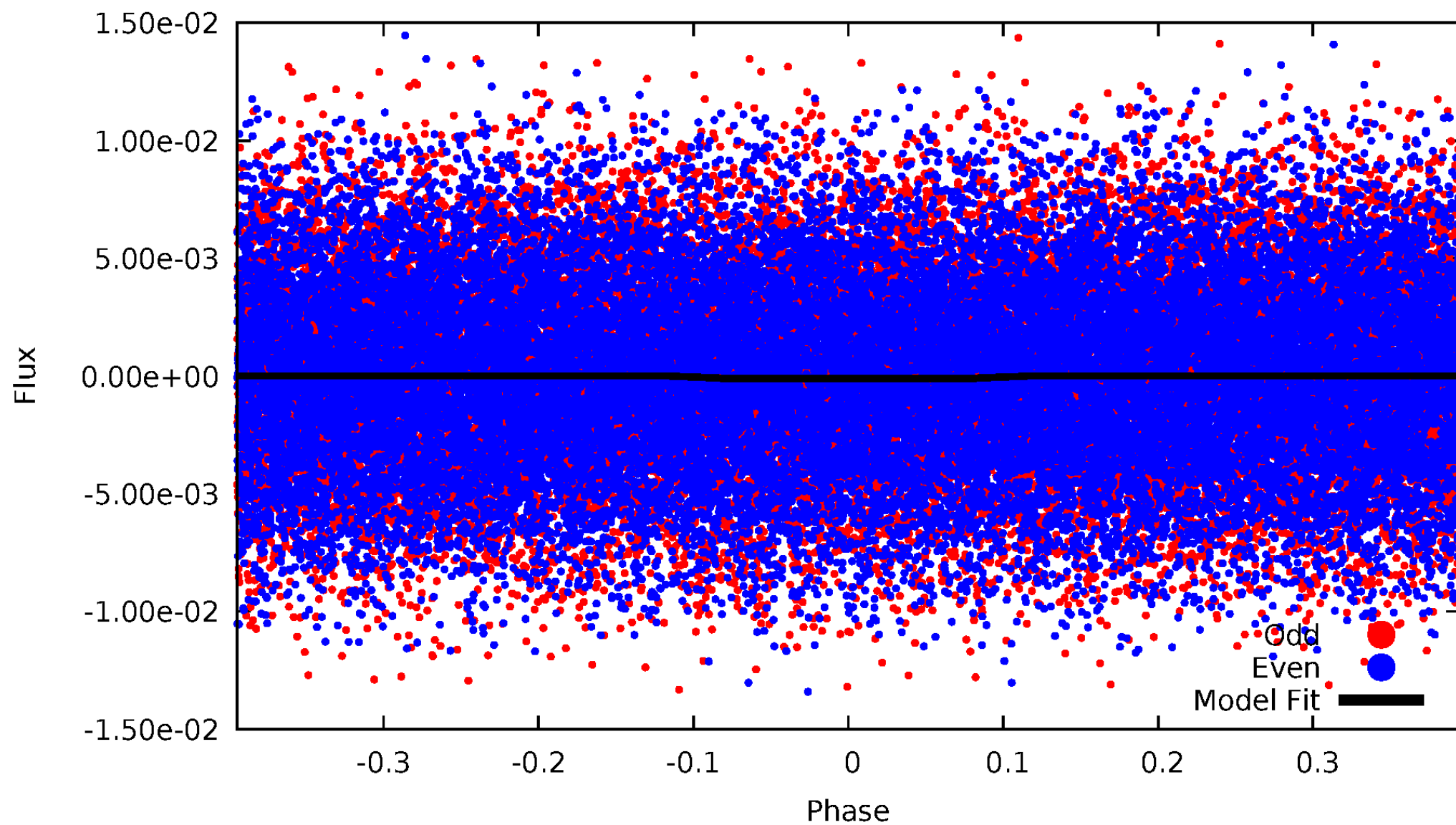
DV Odd/Even

TCE 008397138-01



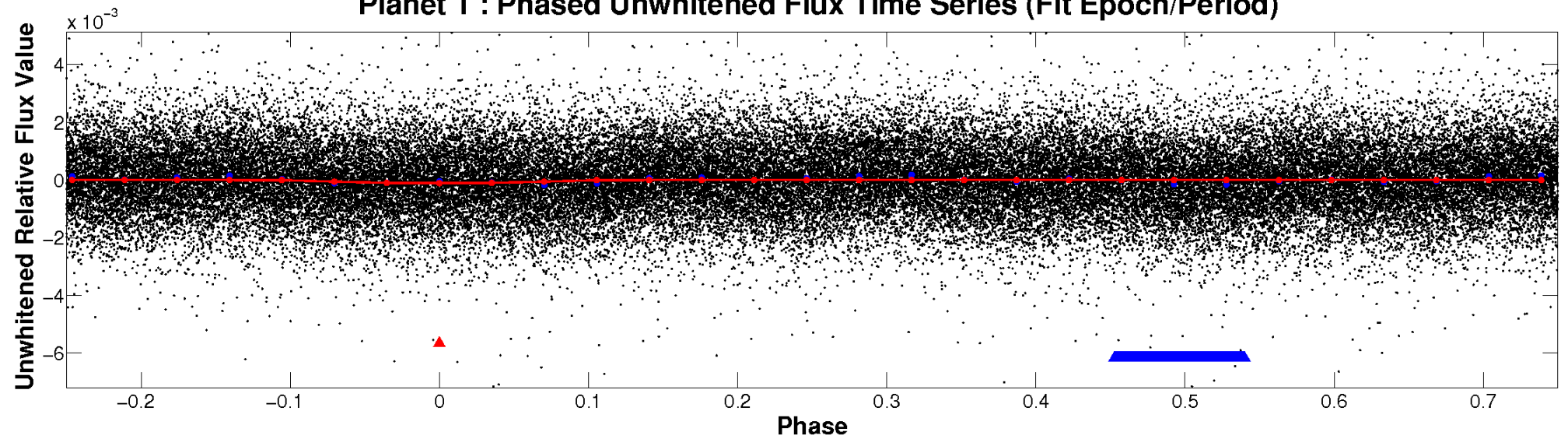
ALT Odd/Even

TCE 008397138-01

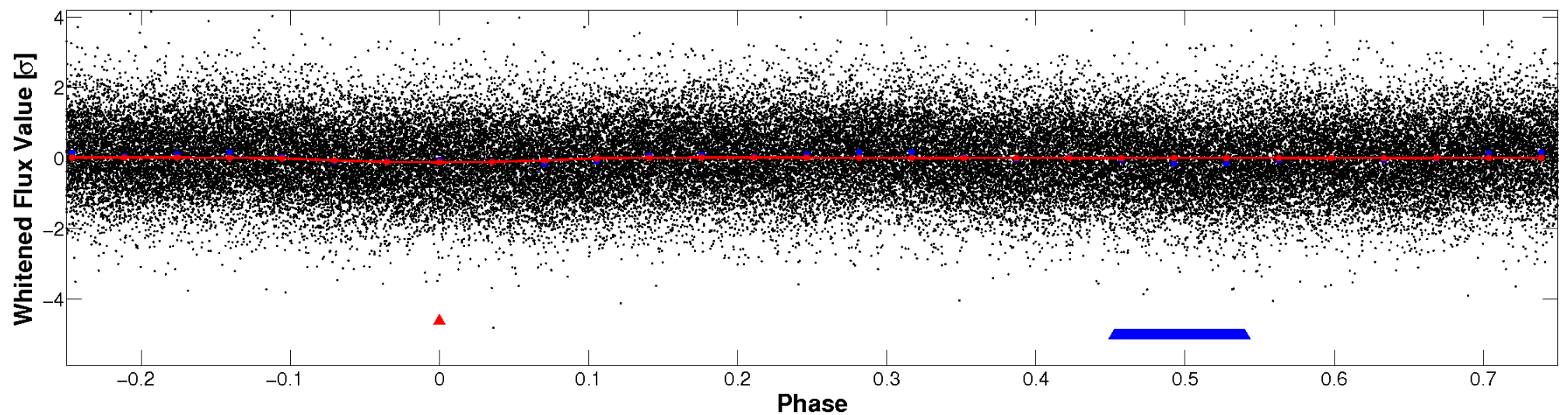


Non-Whitened Vs. Whitened Light Curve

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

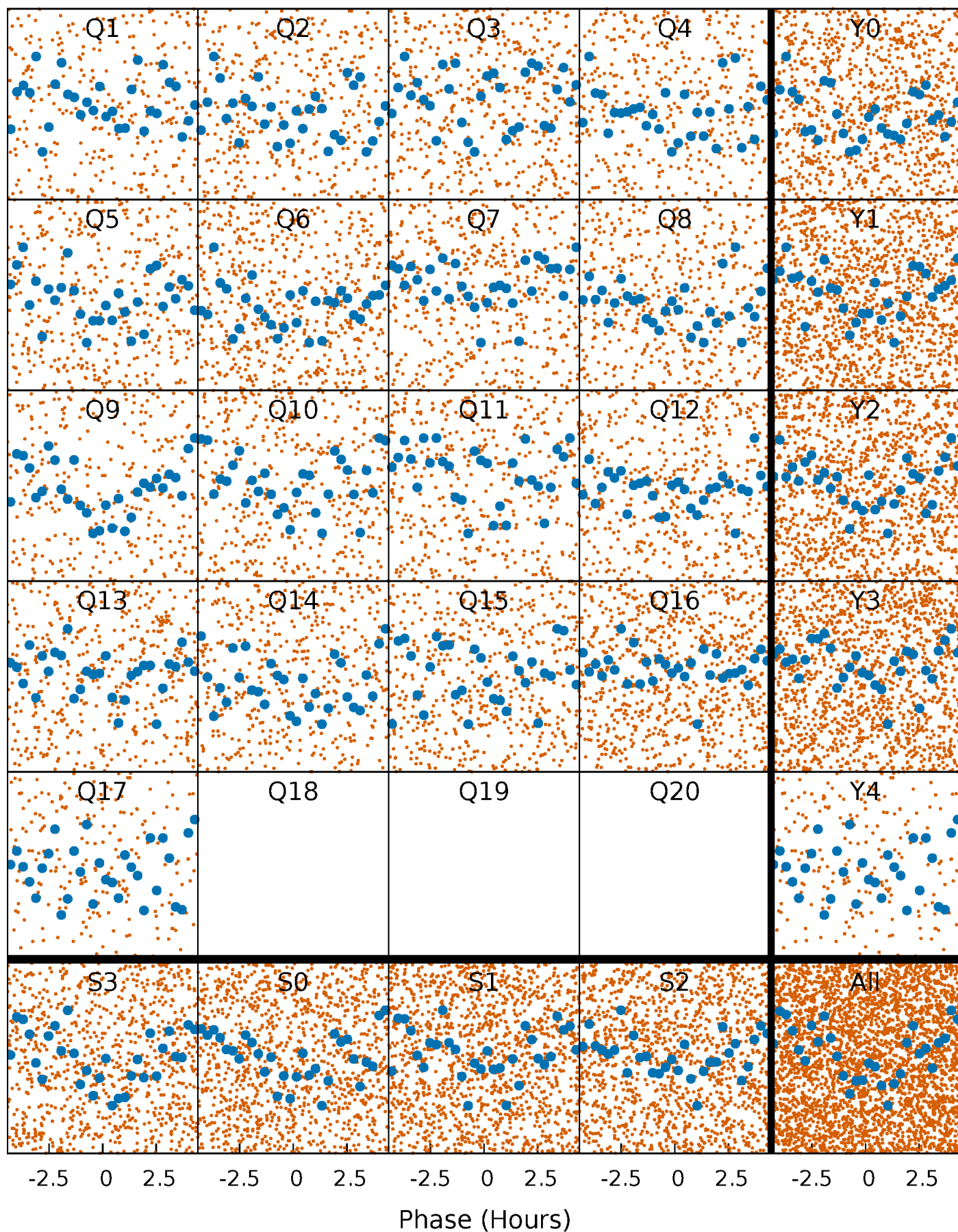


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



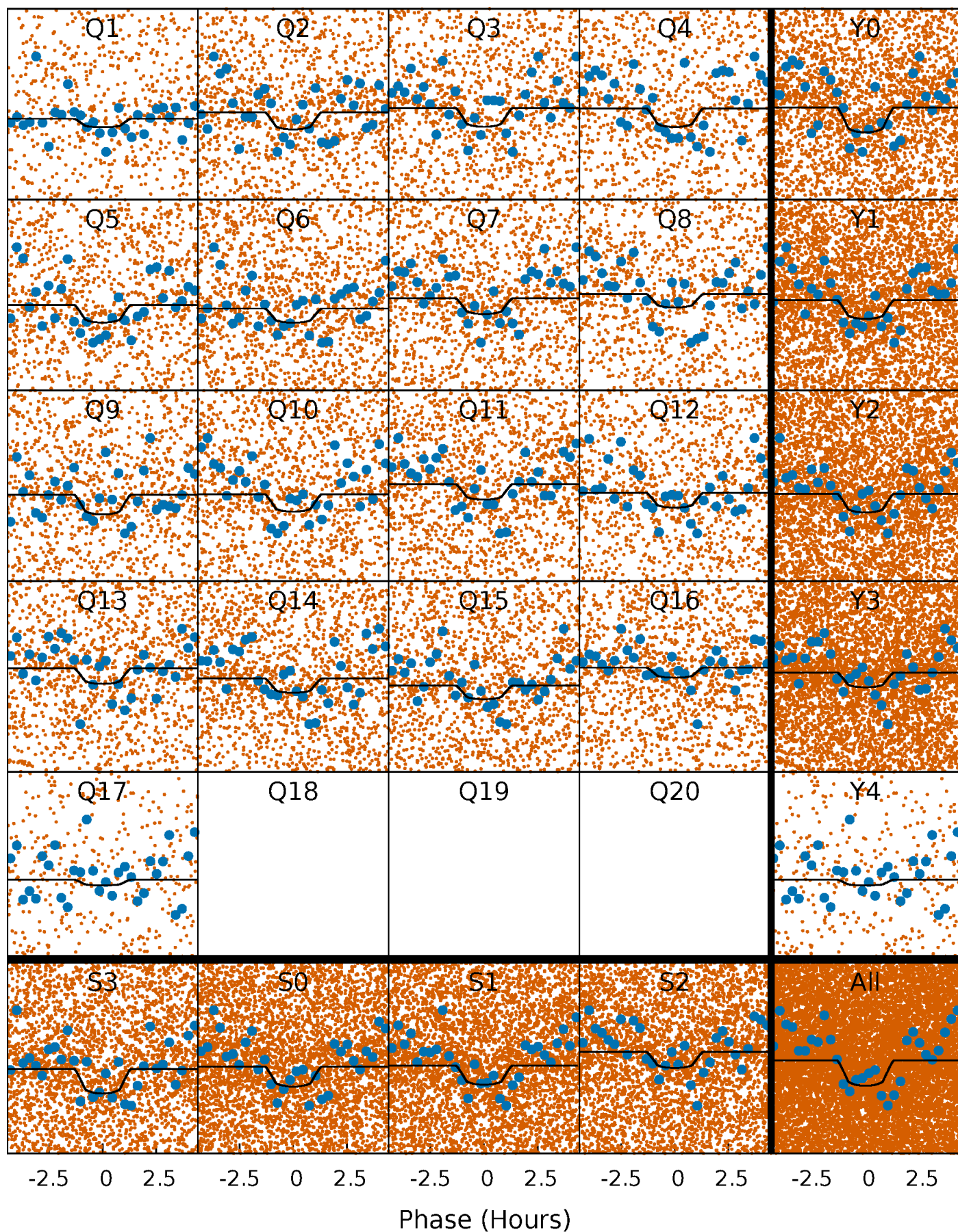
PDC Quarter-Phased Transit Curves

TCE 008397138-01 P= 0.580740 Days $T_0=131.558735$ (BKJD)



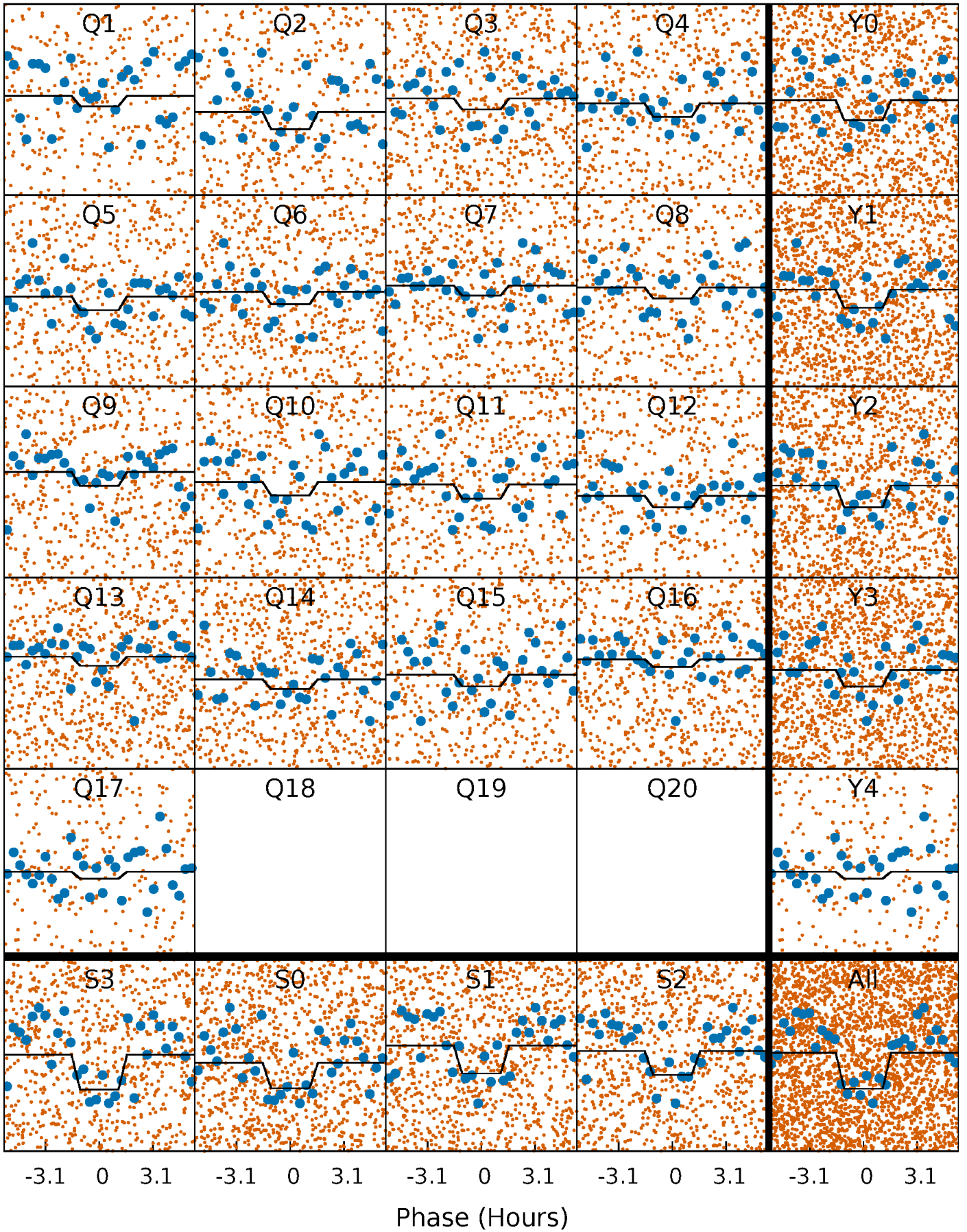
DV Quarter-Phased Transit Curves

TCE 008397138-01 P= 0.580740 Days $T_0=131.558735$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

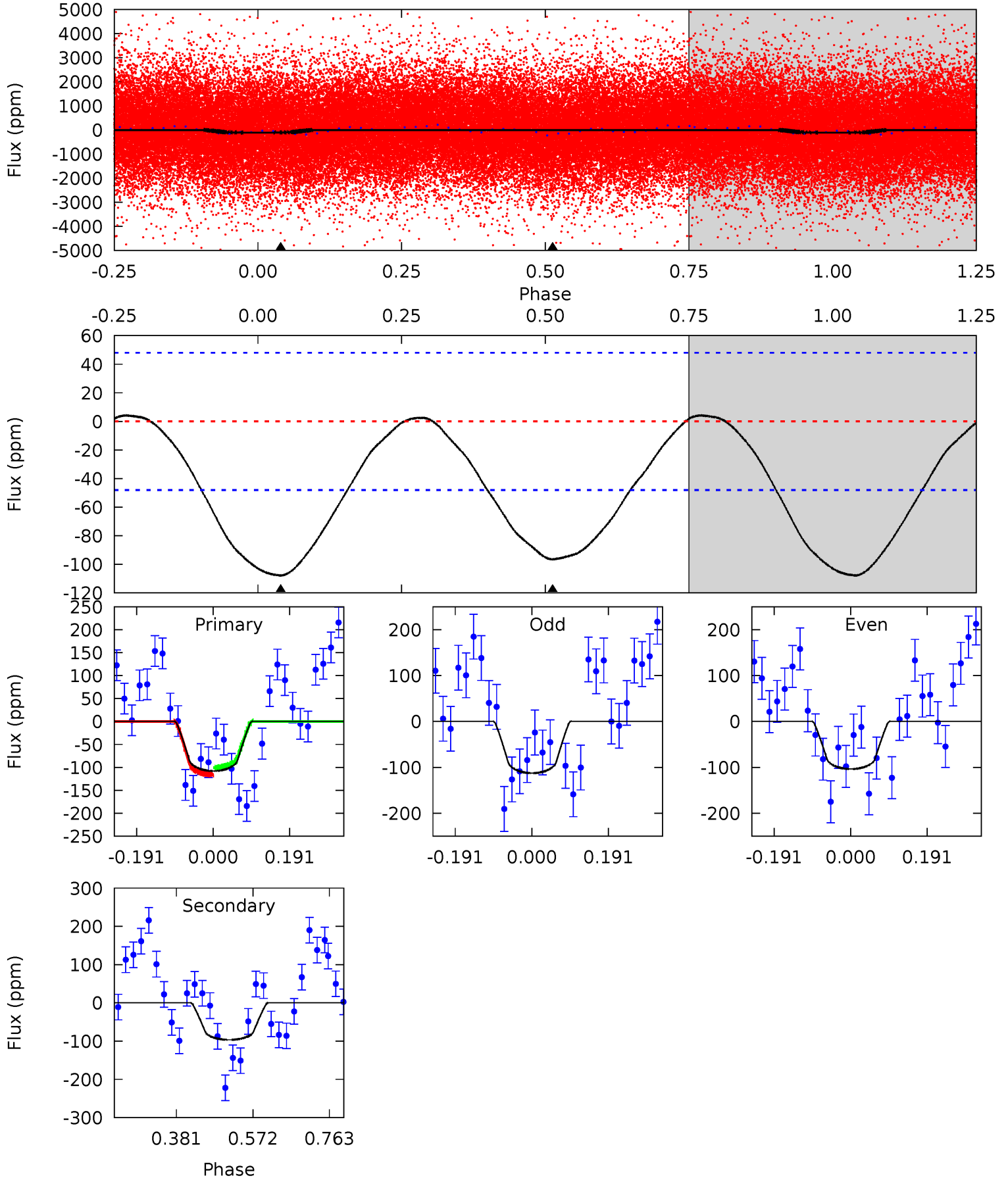
TCE 008397138-01 P= 0.580754 Days $T_0=131.556547$ (BKJD)



DV Model-Shift Uniqueness Test

008397138-01, P = 0.580740 Days, E = 130.977995 Days

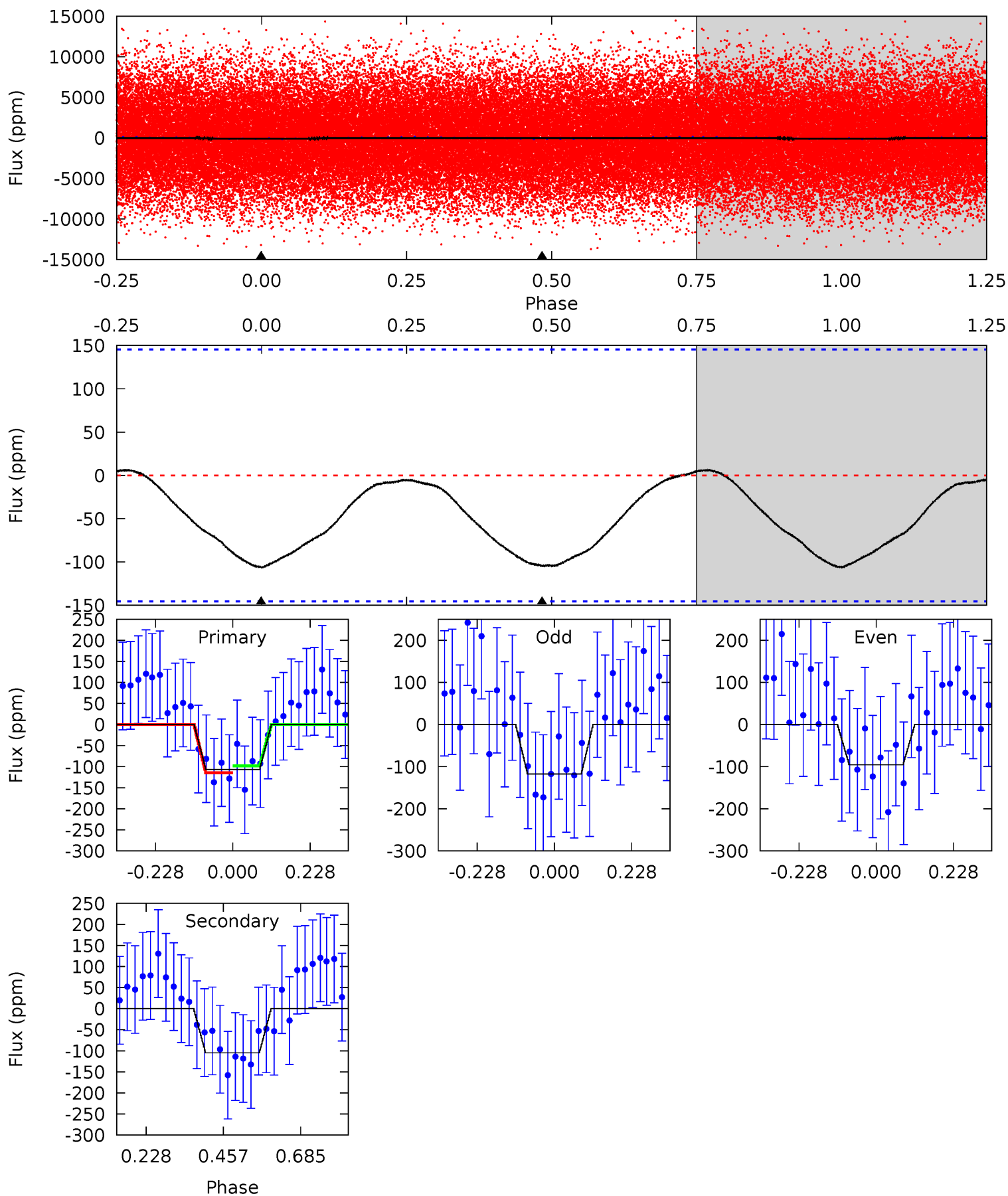
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.96	8.92	0	0	4.43	1.31	0.49	9.96	9.96	8.92	8.92	0.41	0.97	0.04	0.67



Alt Model-Shift Uniqueness Test

008397138-01, P = 0.580754 Days, E = 130.975793 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.21	3.17	0	0	4.39	1.20	0.15	3.21	3.21	3.17	3.17	0.33	1.05	0.06	0.25



Stellar Parameters For KIC 008397138

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5959^{+196}_{-178}	$3.610^{+0.765}_{-0.135}$	$-0.480^{+0.300}_{-0.250}$	$3.005^{+0.827}_{-1.930}$	$1.342^{+0.192}_{-0.480}$	$0.070^{+1.028}_{-0.029}$
	+3%/-3%	+21%/-4%	+62%/-52%	+28%/-64%	+14%/-36%	+1477%/-42%
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 008397138-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-97 ± 11	$3.59^{+3.65}_{-2.31}$	5017^{+445}_{-856}	4631^{+3854}_{-8152}	$0.930^{+6.055}_{-0.722}$
Alt.	-105 ± 33	$3.64^{+3.53}_{-2.35}$	4962^{+523}_{-903}	4669^{+3755}_{-8066}	$0.908^{+6.266}_{-0.675}$

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 $A_{obs} \gg 1.0$

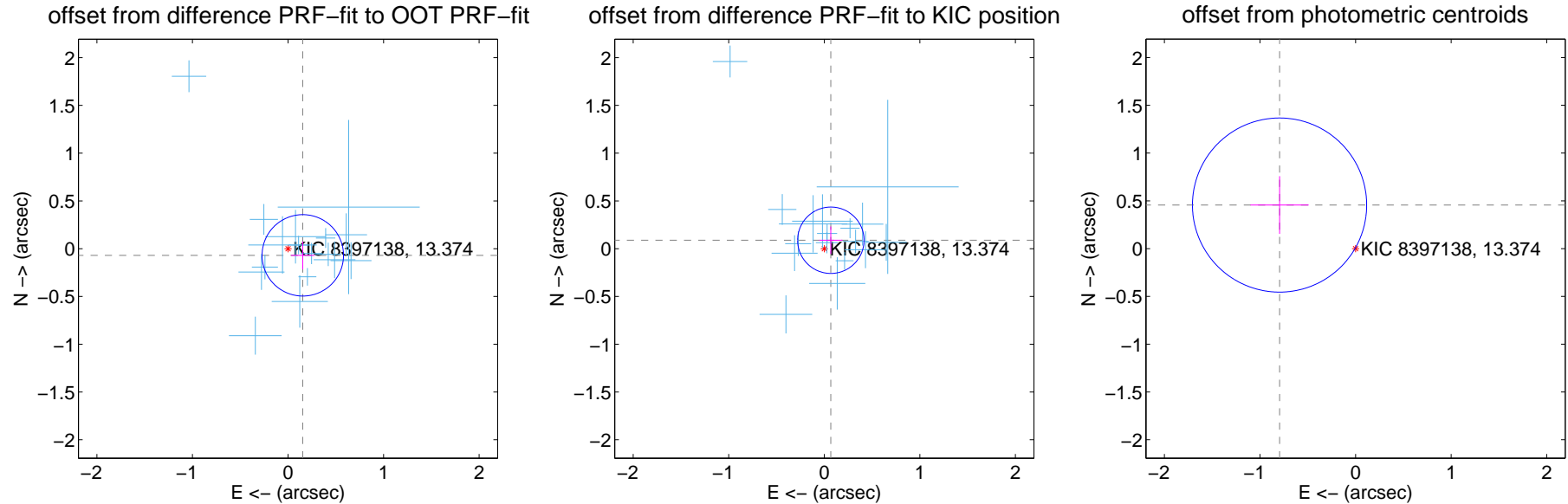
DV Centroid Data

Supplemental centroid analysis for 008397138-01. Kepler magnitude: 13.37. Transit SNR 10.45

There are 17 quarters with good PRF difference image offsets

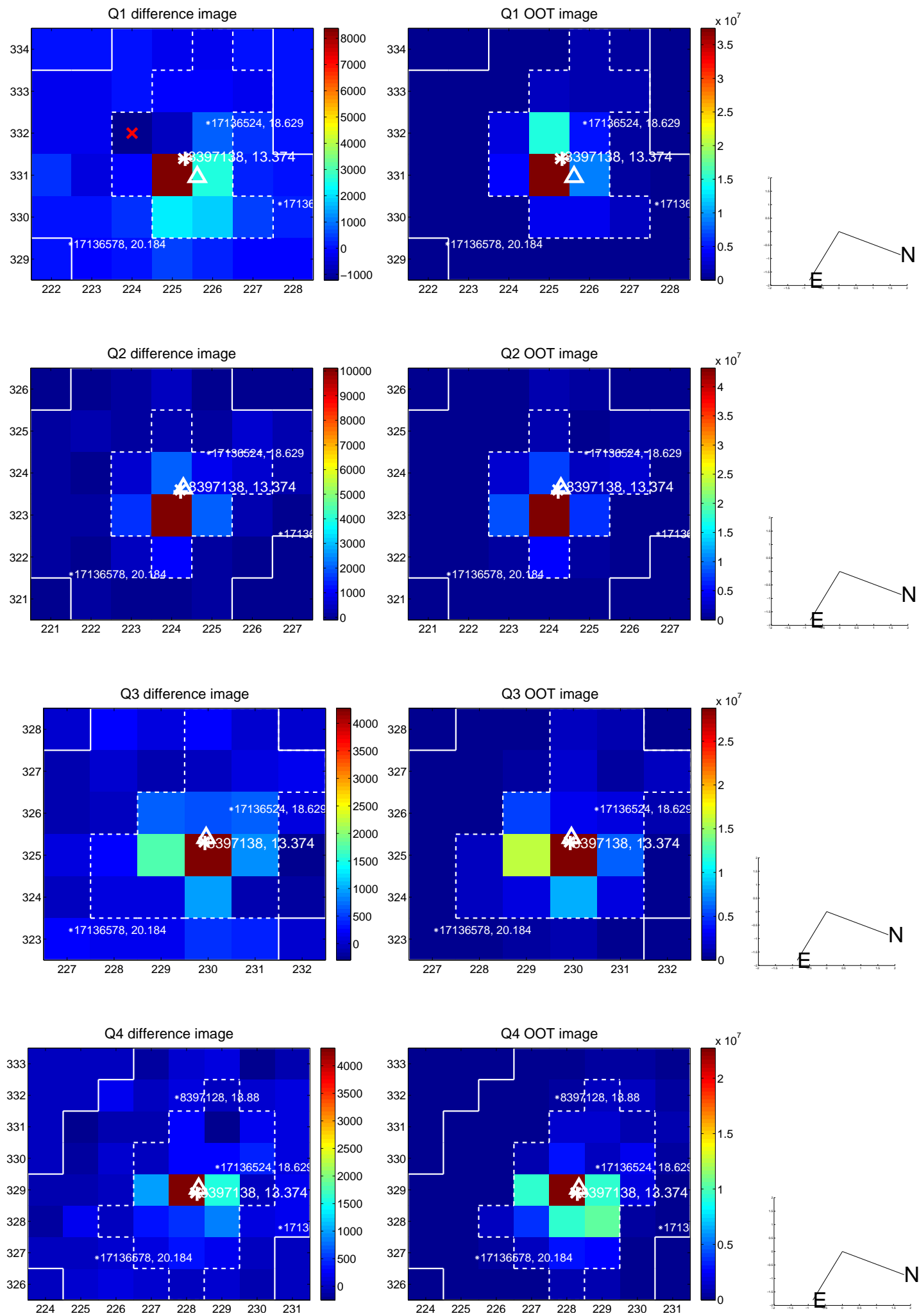
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.170 ± 0.142	1.19	-0.155 ± 0.124	-0.070 ± 0.145
PRF-fit source offset from KIC position	0.112 ± 0.116	0.96	-0.068 ± 0.122	0.088 ± 0.144
photometric centroid source offset	0.92 ± 0.30	3.02	0.80 ± 0.30	0.46 ± 0.30

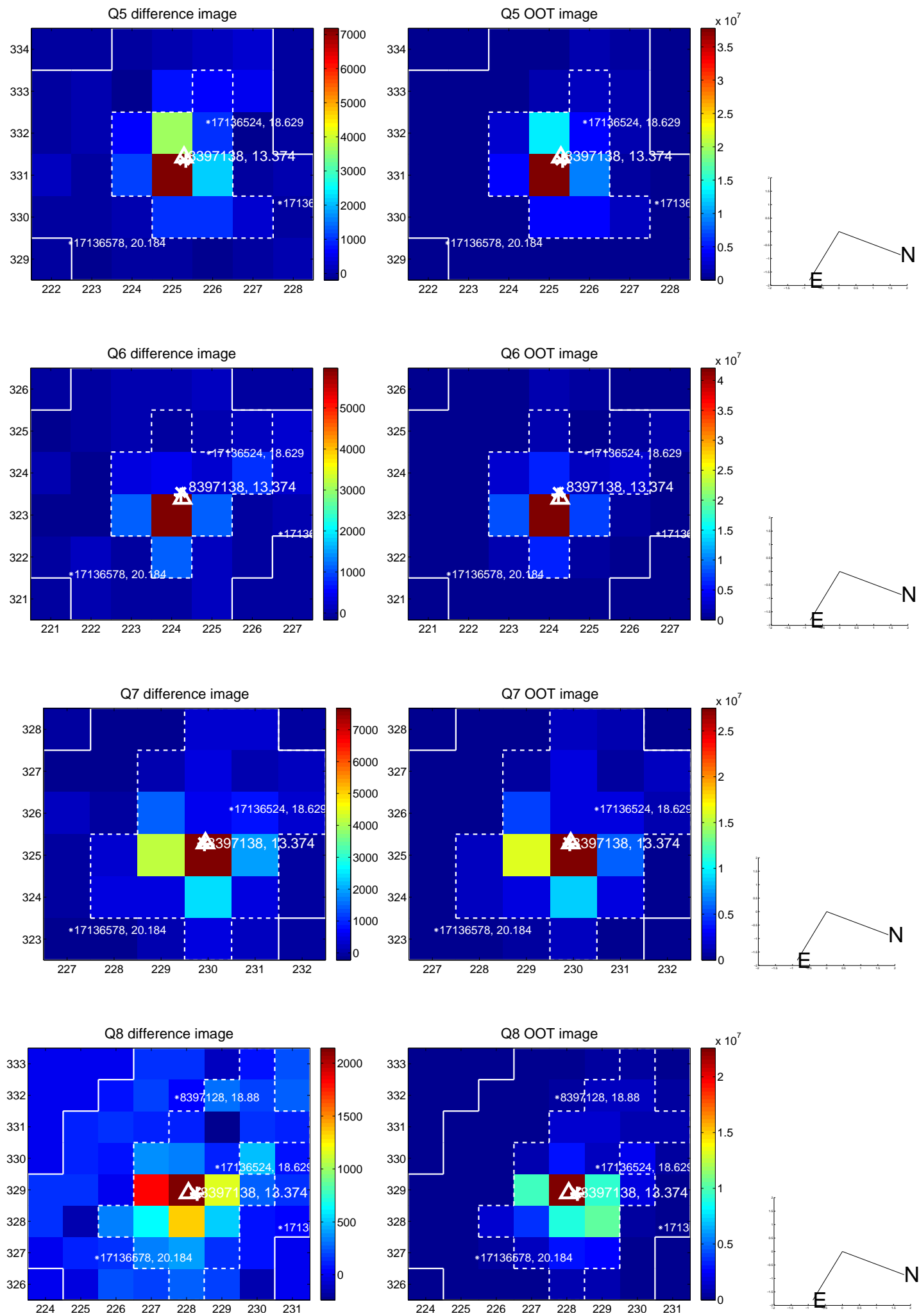


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

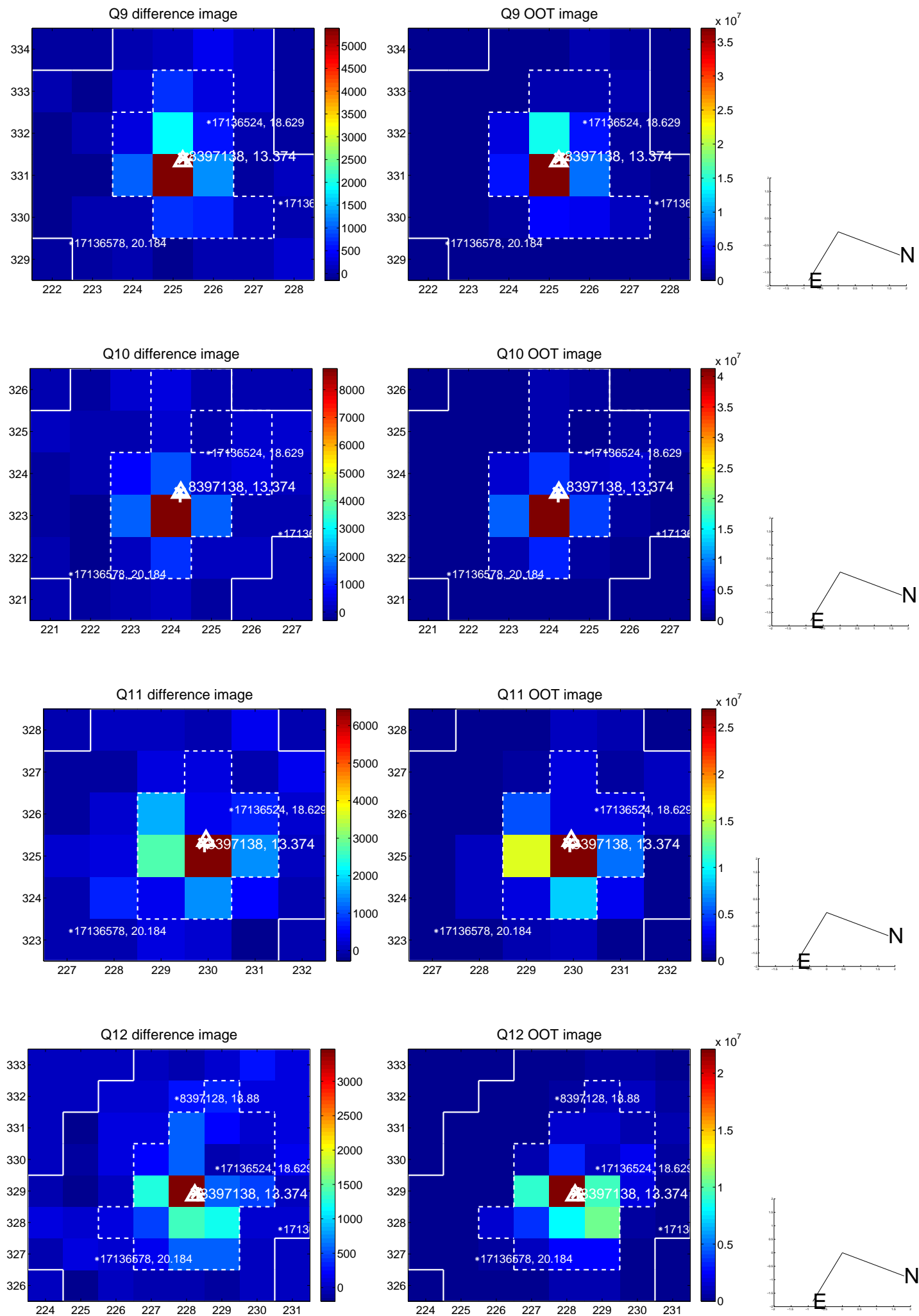
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



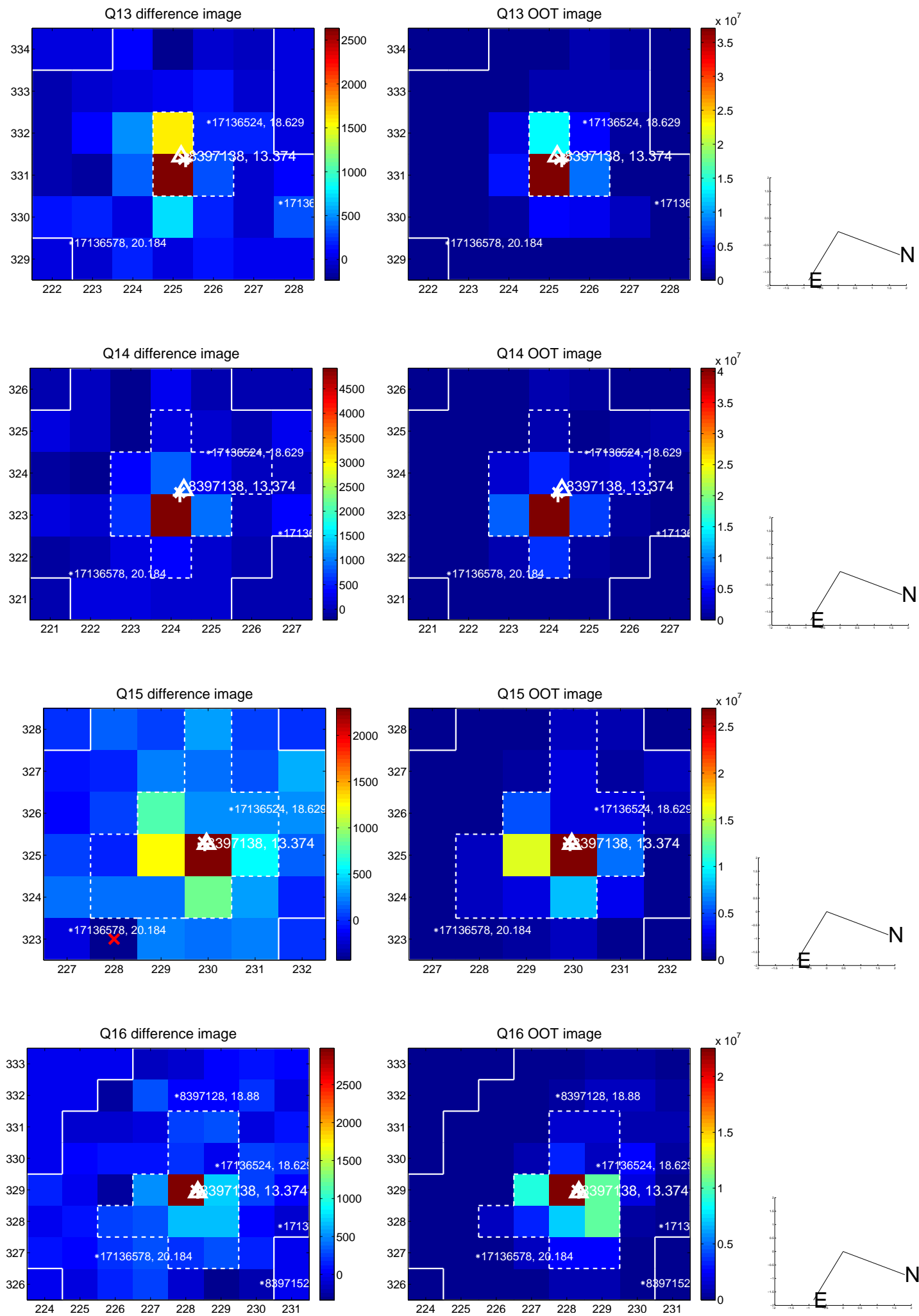
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



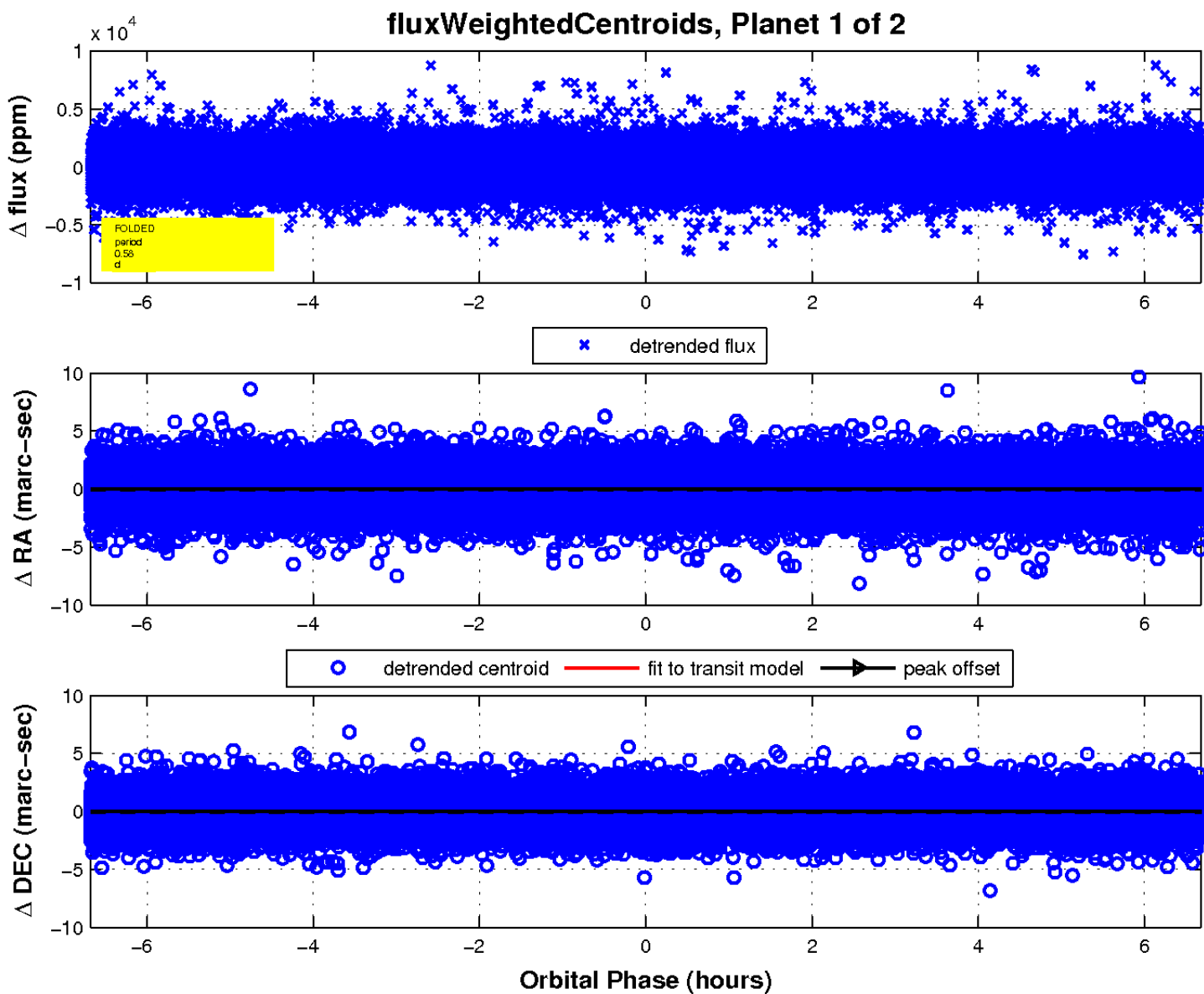
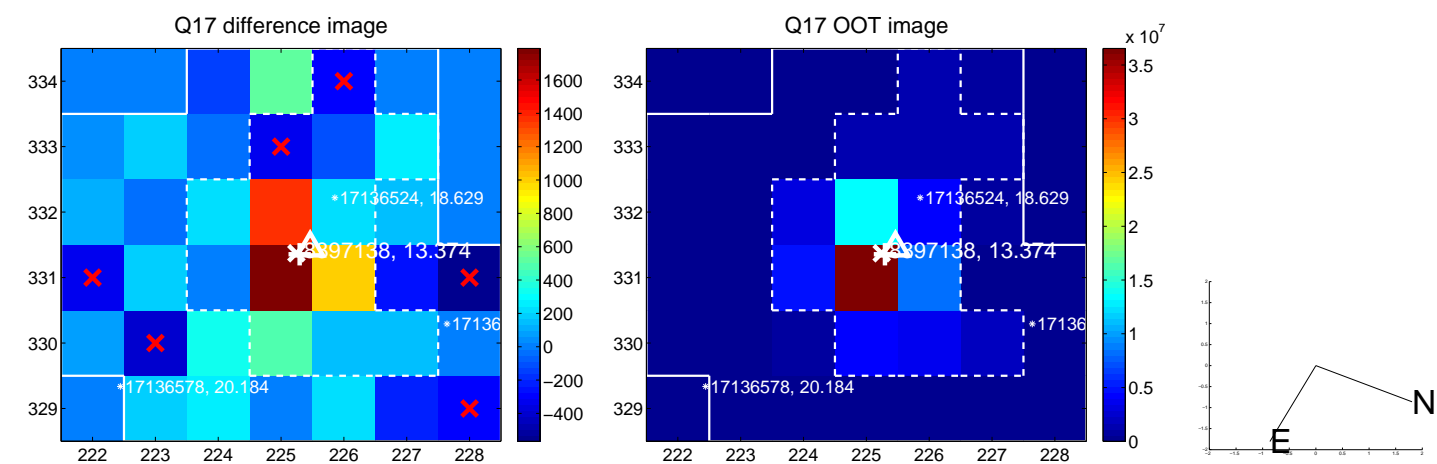
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

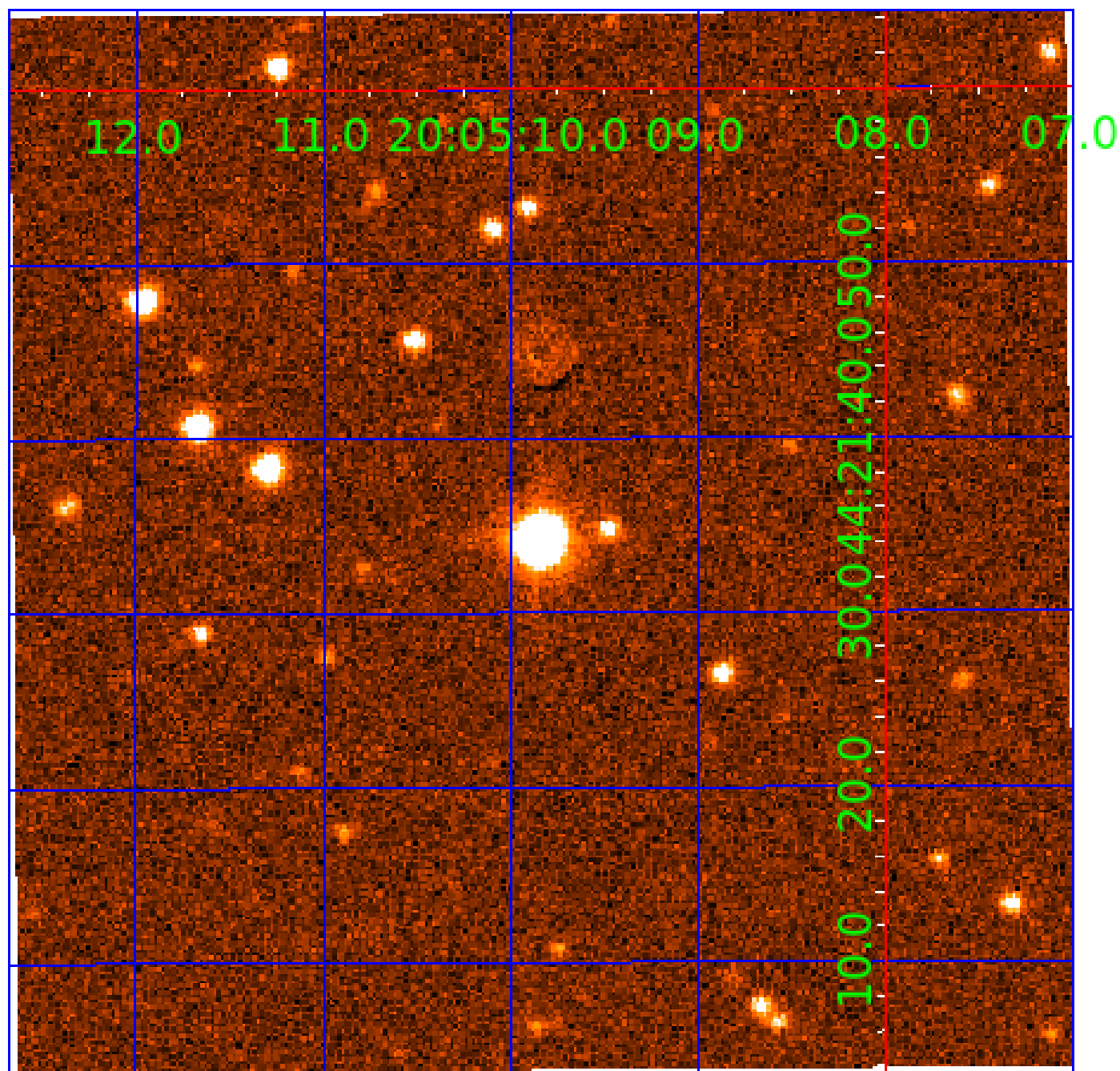


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008397138

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})
008397138-01	OBS	No	0.580740	131.558735	104.2	2.227	12.3	10.5	3.00	5959	3.53	45169.11
008397138-02	OBS	No	0.580720	131.872329	117.6	1.919	11.4	10.5	3.00	5959	3.31	45171.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008397138-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
008397138-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

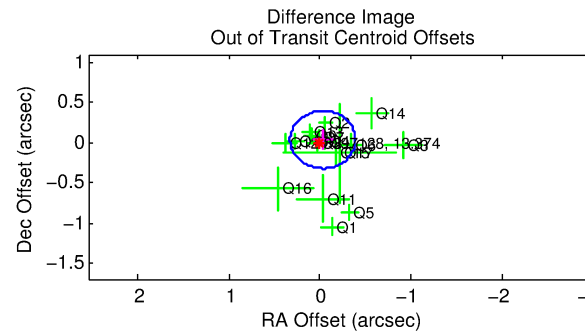
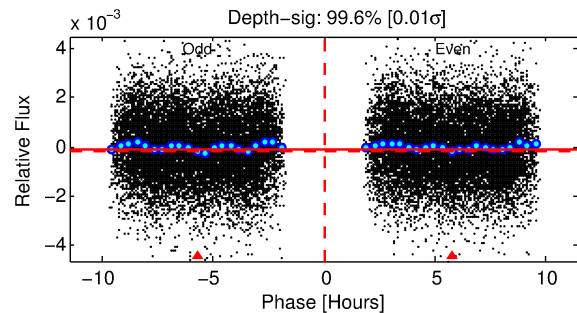
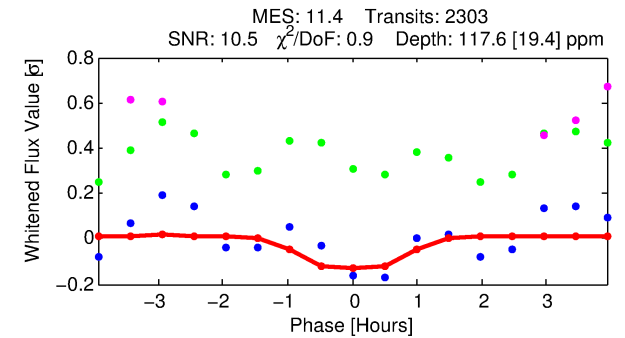
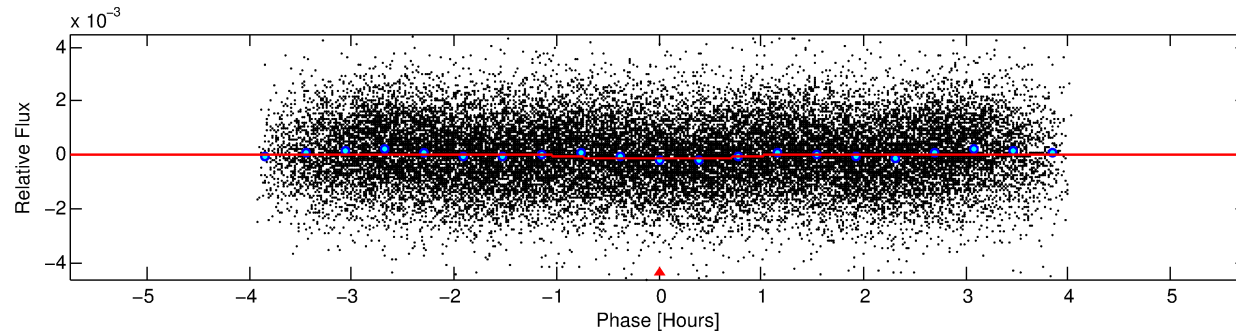
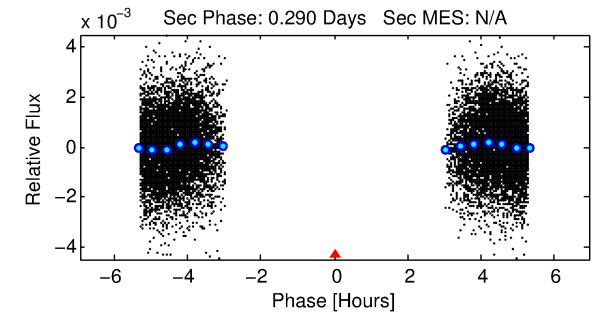
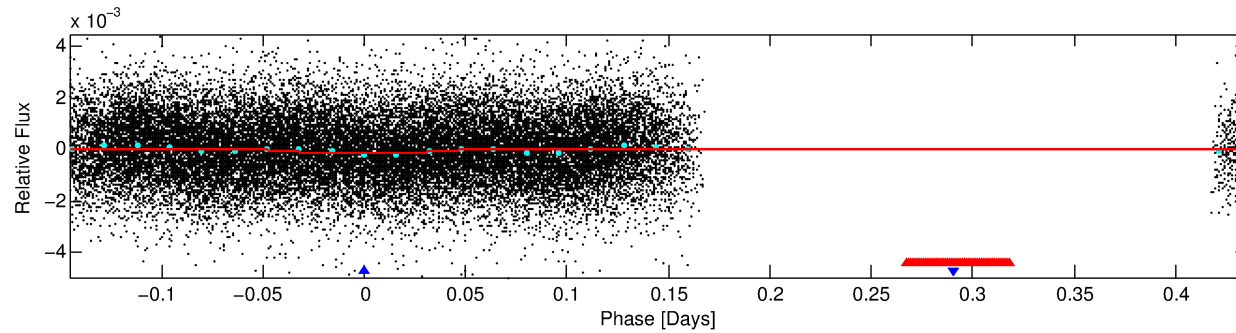
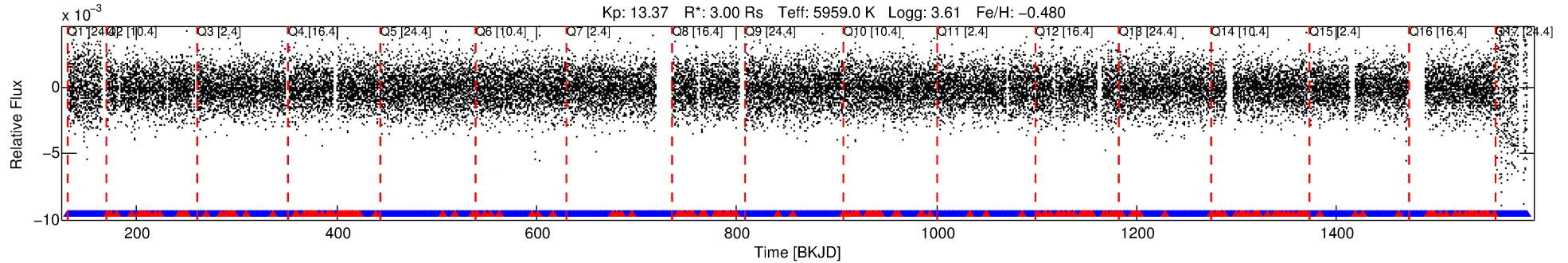
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008397138-02

No Significant Match Found

DV One-Page Summary

KIC: 8397138 Candidate: 2 of 2 Period: 0.581 d



DV Fit Results:

Period = 0.58072 [0.00001] d
Epoch = 131.8723 [0.0032] BKJD
Rp/R* = 0.0101 [0.0116]
a/R* = 2.28 [10.35]
b = 0.35 [13.97]
Seff = 45171.21 [56773.35]
Teq = 3717 [1168] K
Rp = 3.31 [4.34] Re
a = 0.0150 [0.0109] AU

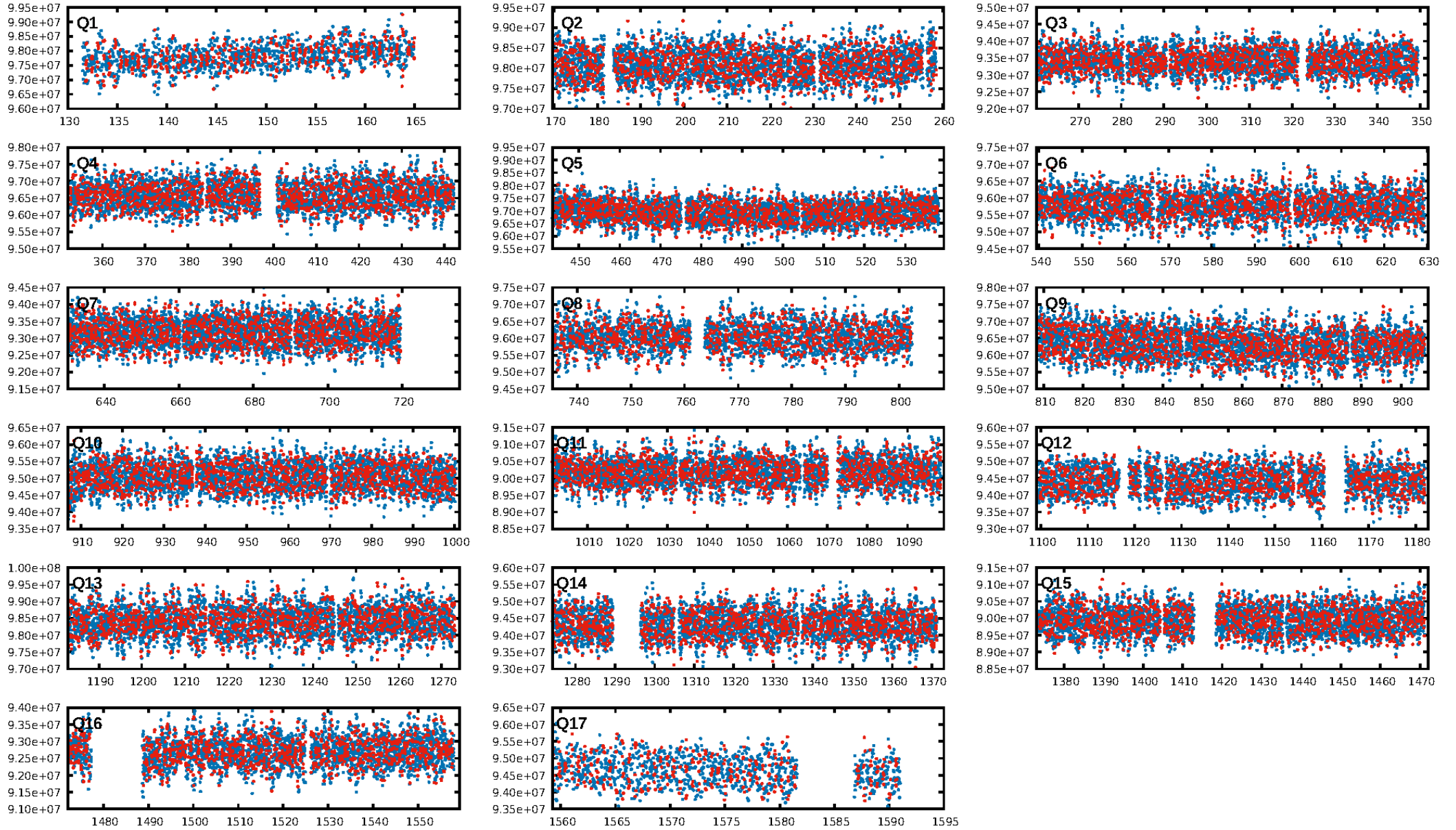
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.49e-52
RollingBand-fgt: 0.90 [1980/2199]
GhostDiagnostic-chr: 5.39
Centroid-sig: 55.4%
Centroid-so: 0.554 arcsec [1.92σ]
OotOffset-rm: 0.046 arcsec [0.39σ]
KicOffset-rm: 0.217 arcsec [1.89σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.94 [16/17]
DiffImageOverlap-fno: 0.00 [0/17]

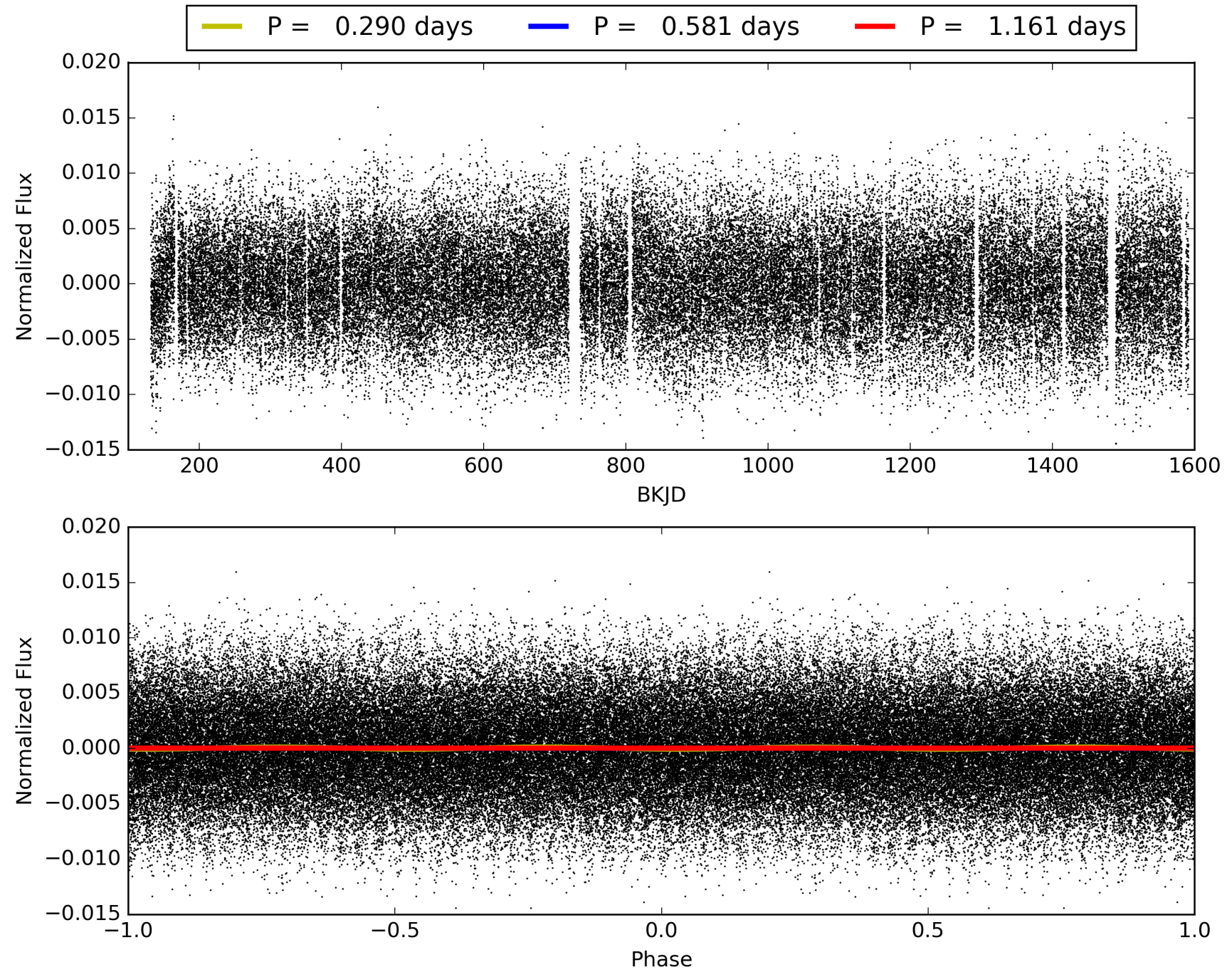
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 23:30:43 Z

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

TCE 008397138-02, PDC Light Curves

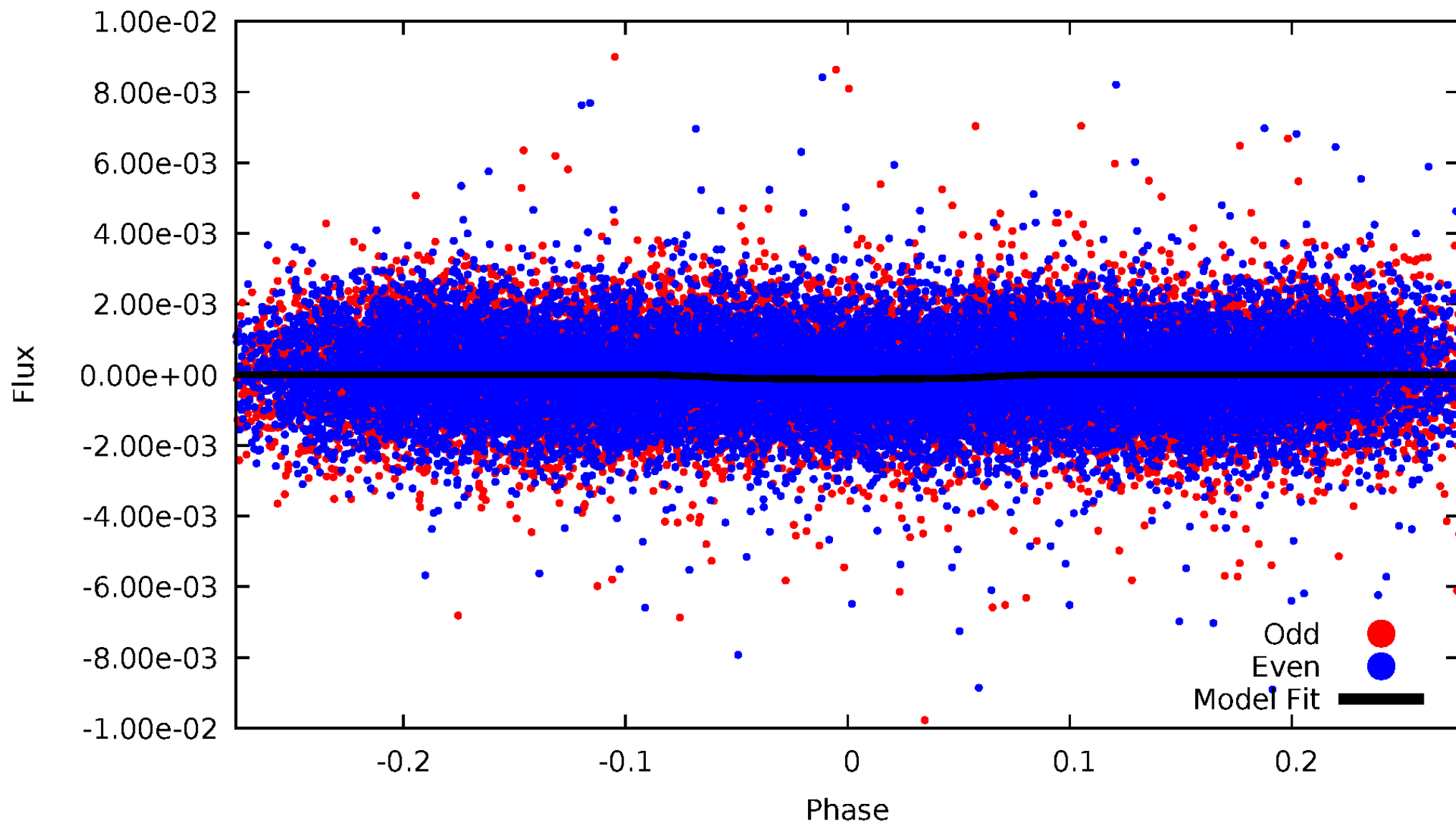


TCE 008397138-02



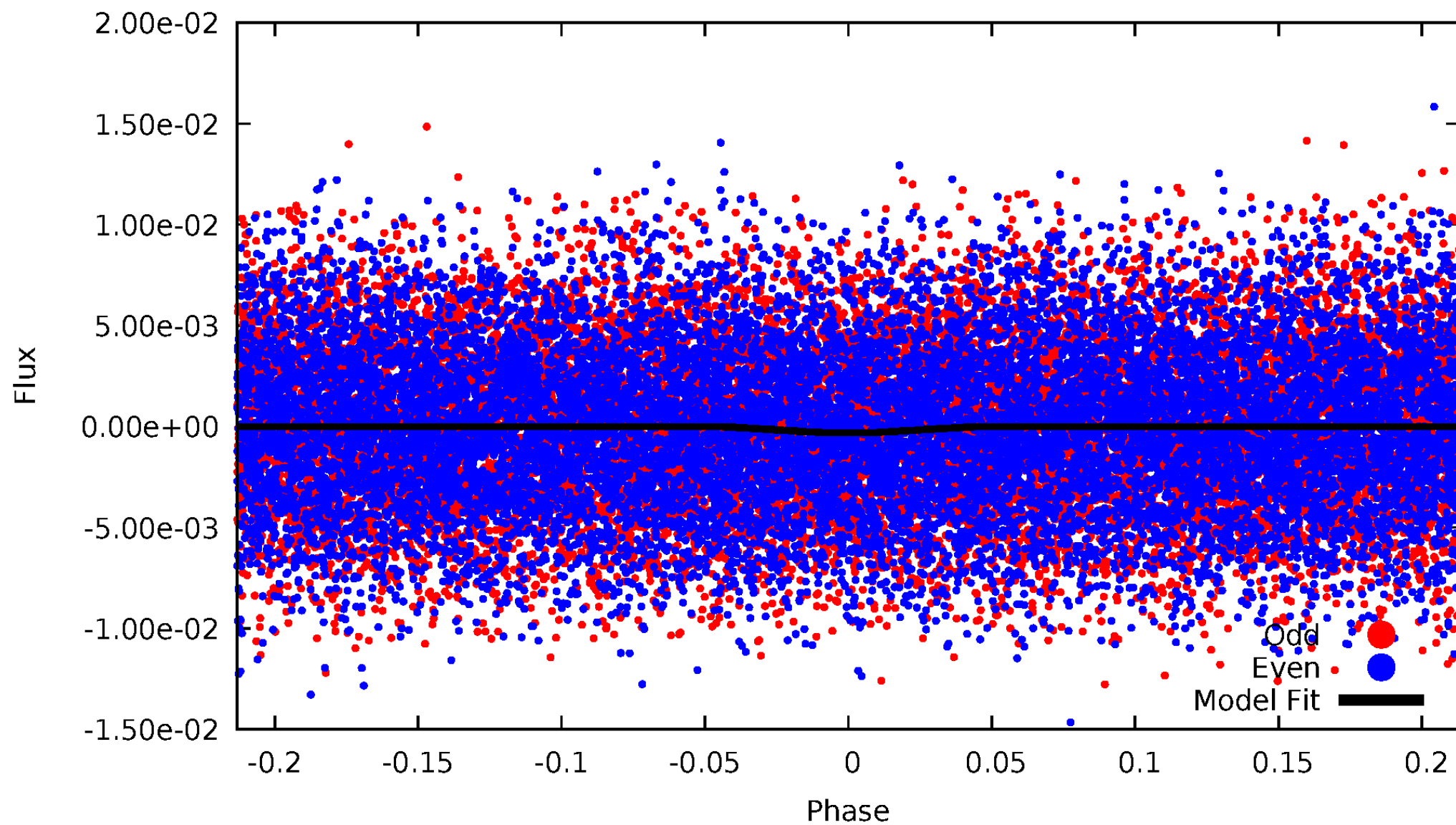
DV Odd/Even

TCE 008397138-02



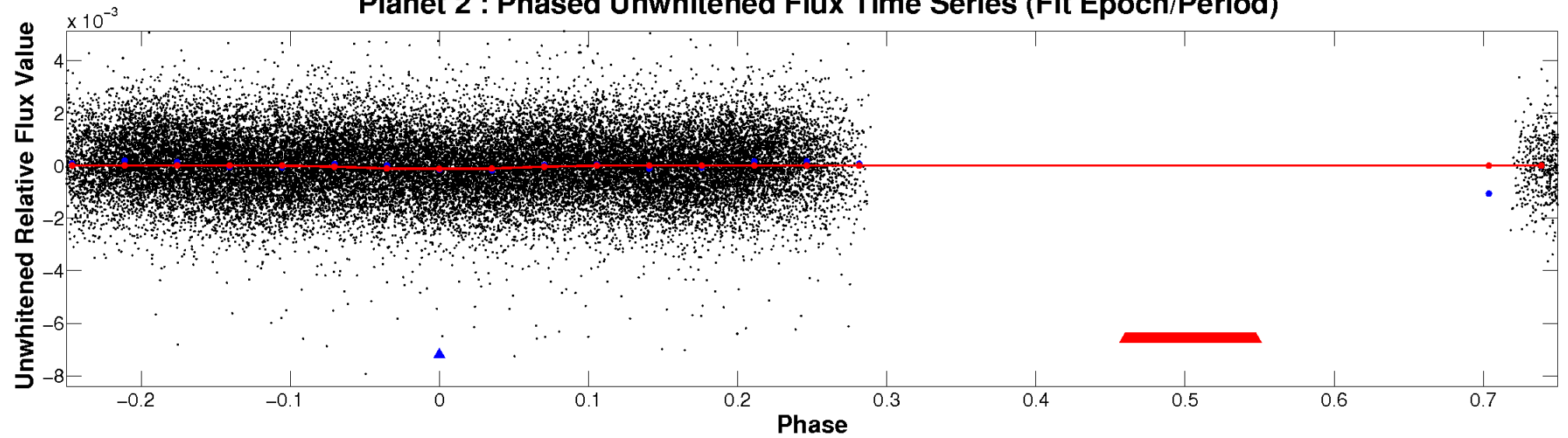
ALT Odd/Even

TCE 008397138-02

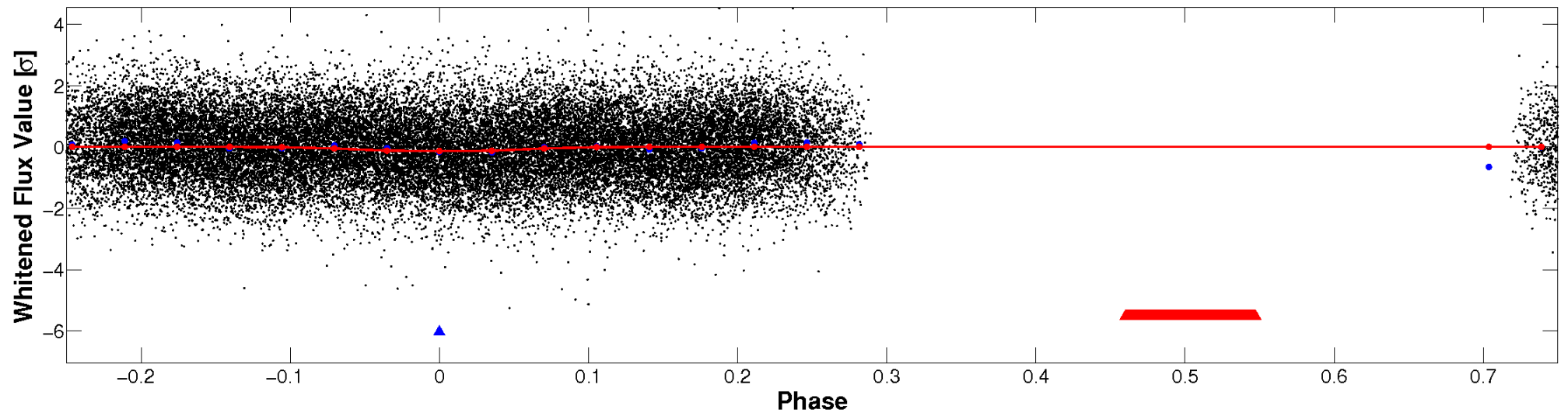


Non-Whitened Vs. Whitened Light Curve

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

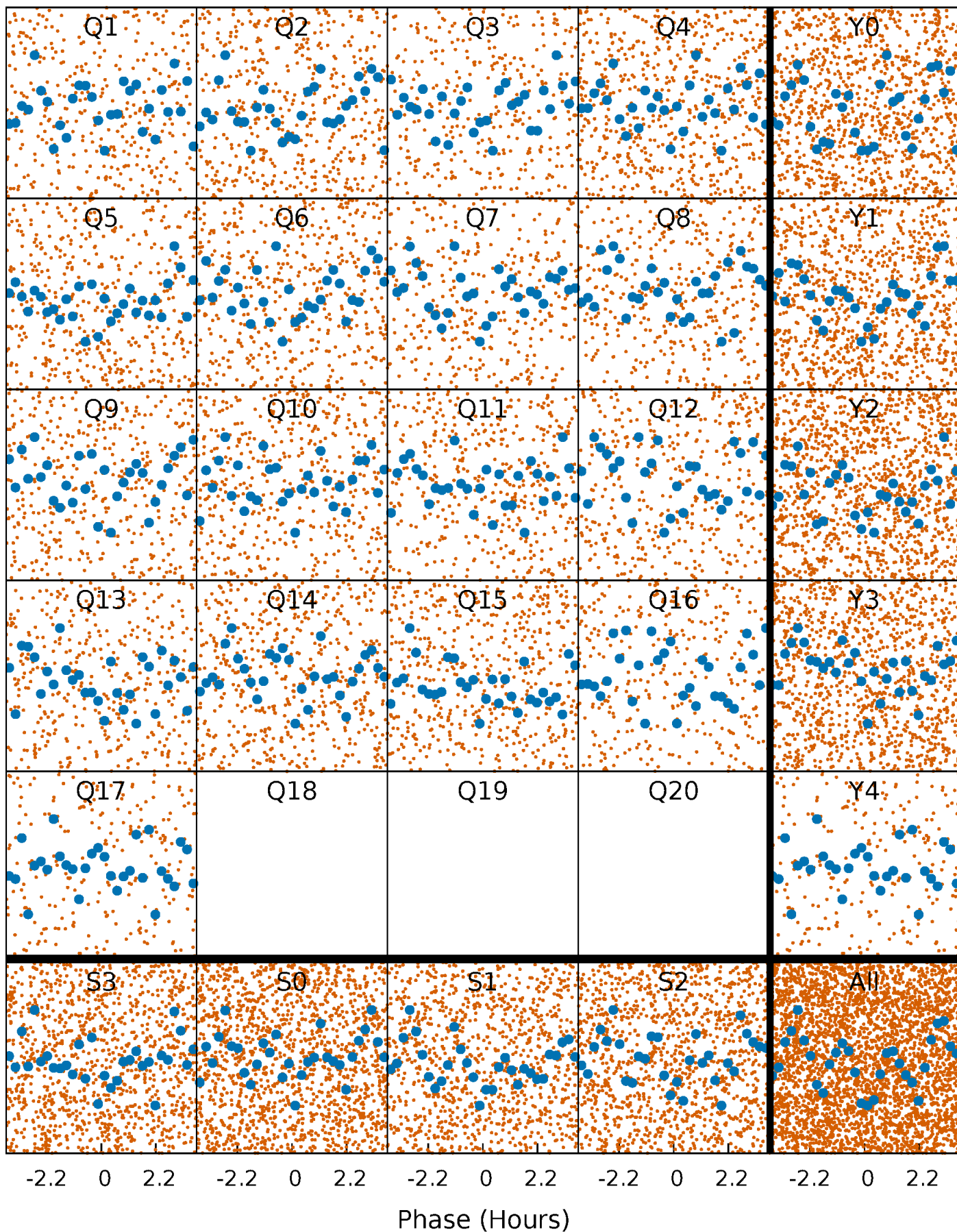


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



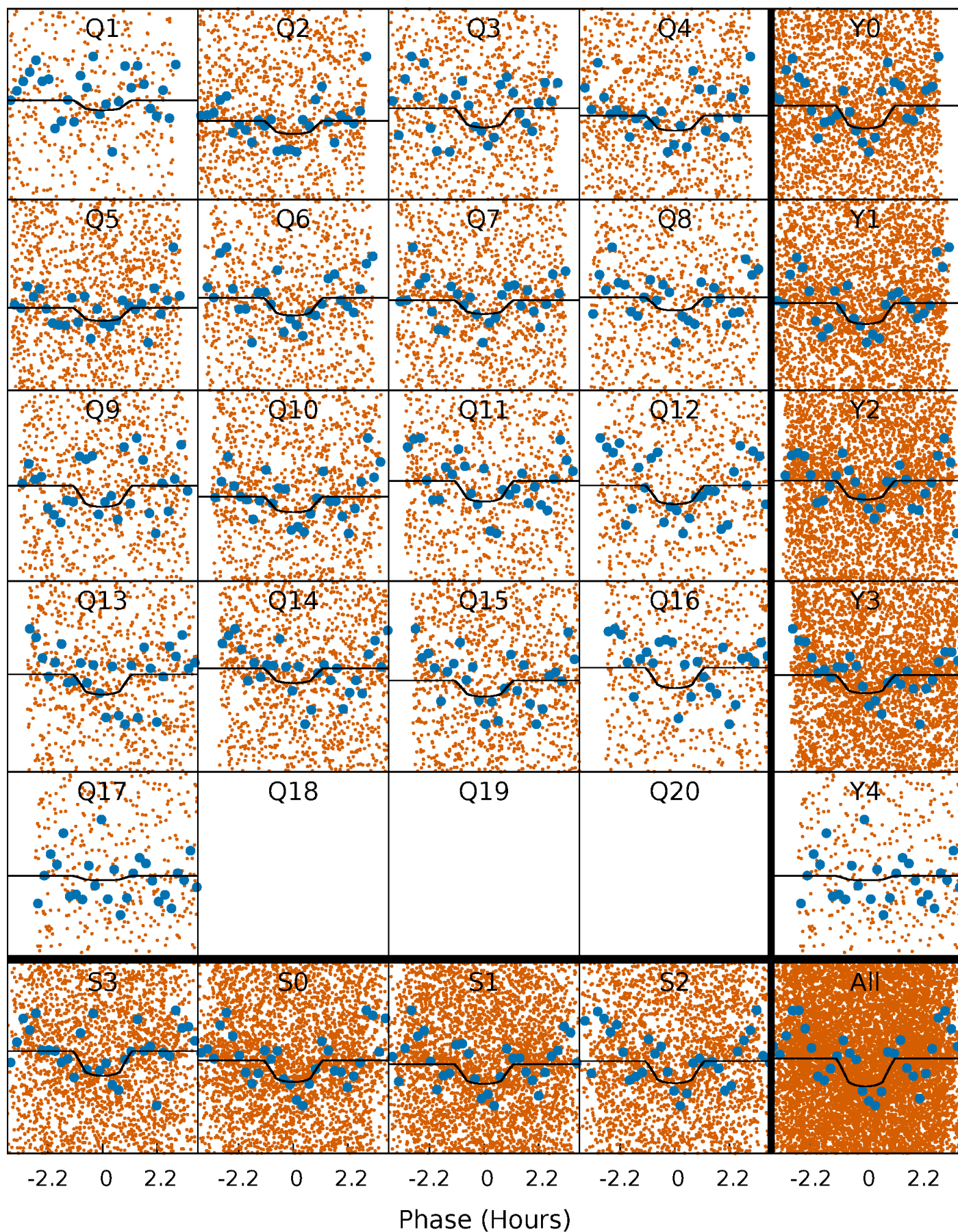
PDC Quarter-Phased Transit Curves

TCE 008397138-02 P= 0.580720 Days $T_0=131.872329$ (BKJD)



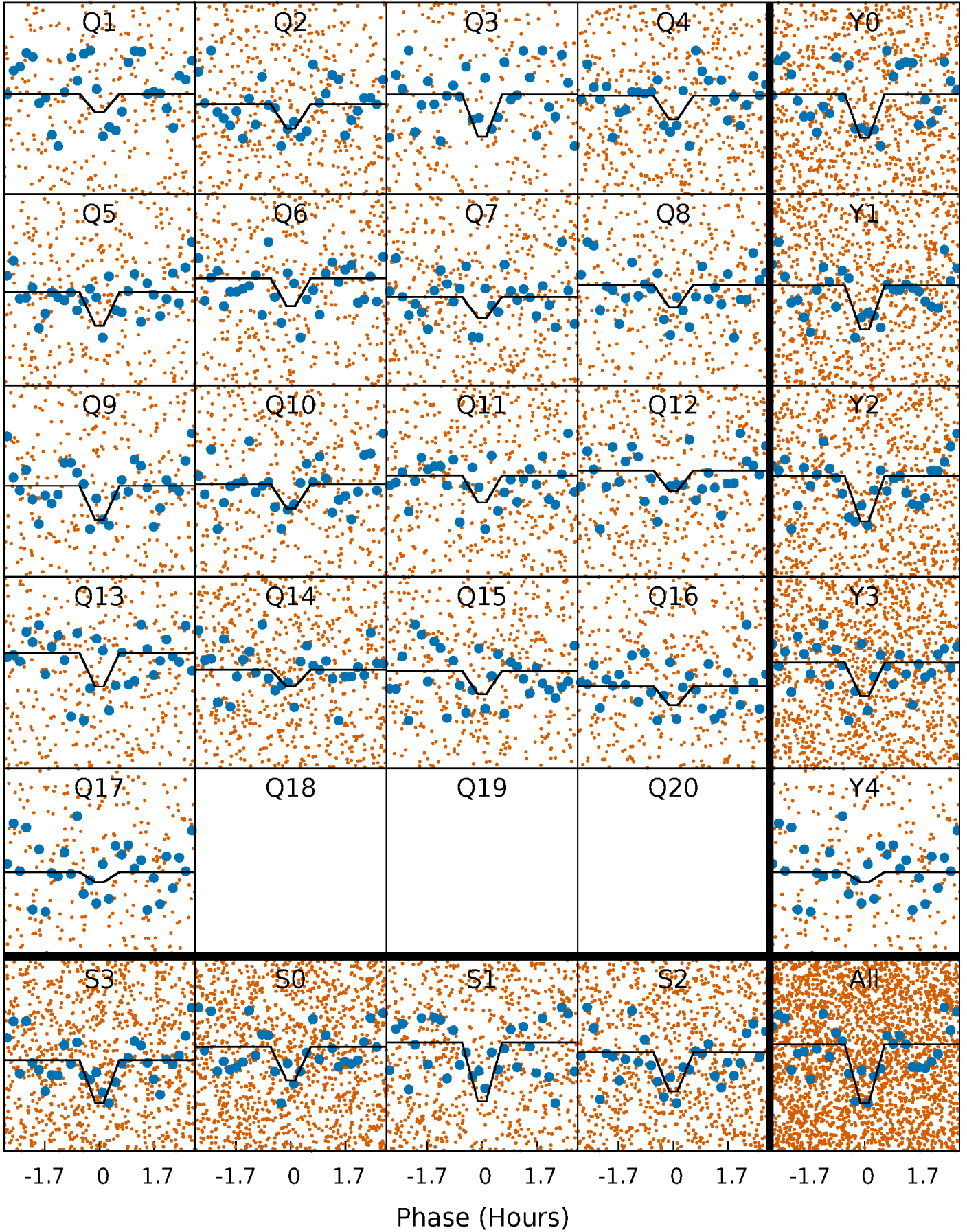
DV Quarter-Phased Transit Curves

TCE 008397138-02 $P = 0.580720$ Days $T_0 = 131.872329$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

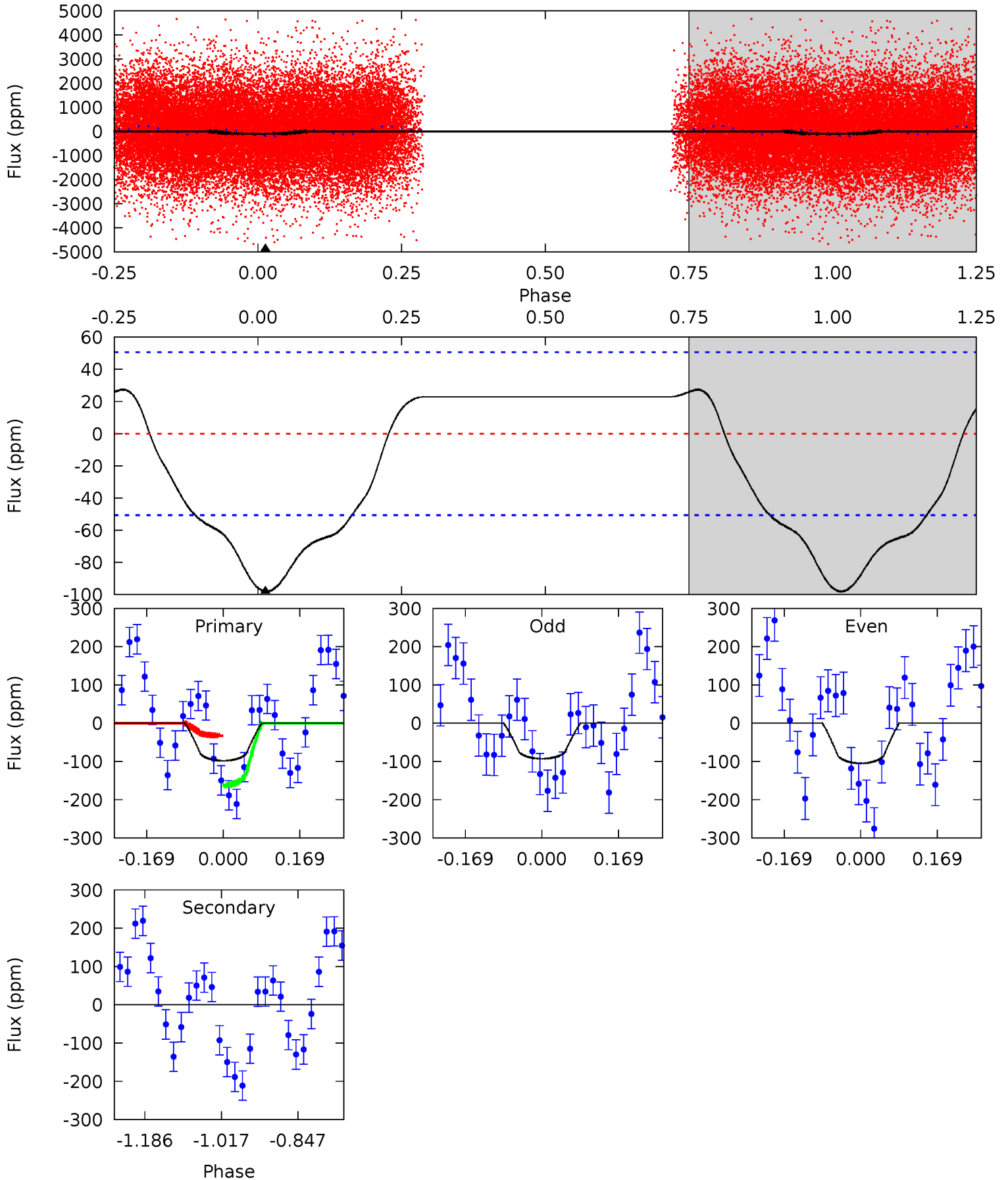
TCE 008397138-02 P= 0.580736 Days $T_0=131.862300$ (BKJD)



DV Model-Shift Uniqueness Test

008397138-02, P = 0.580720 Days, E = 131.291609 Days

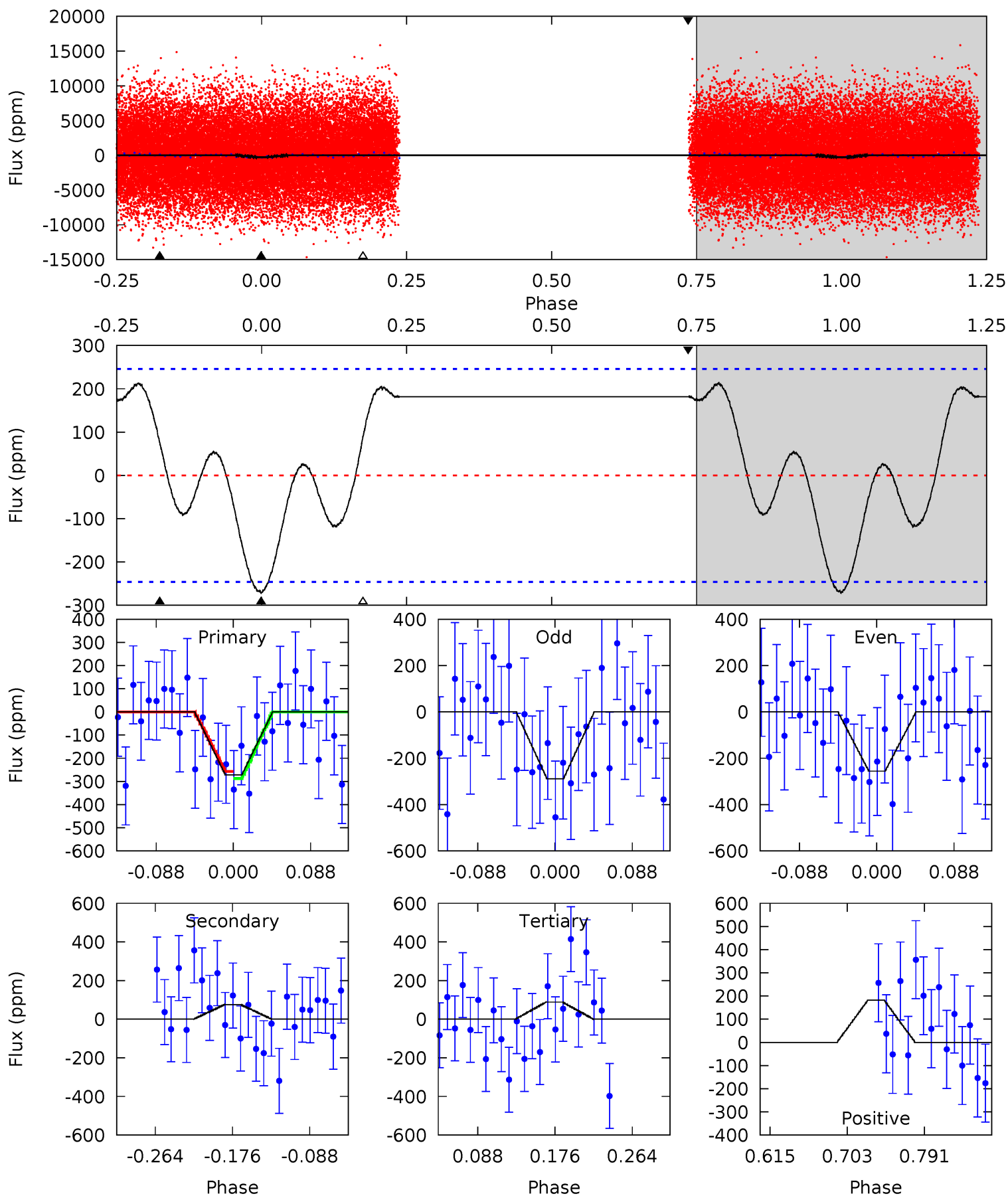
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.63	0	0	0	4.45	1.37	1.84	8.63	8.63	0	0	0.53	0.87	0.22	5.78



Alt Model-Shift Uniqueness Test

008397138-02, P = 0.580736 Days, E = 131.281564 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.09	-1.41	-1.65	3.39	4.59	1.71	2.30	6.74	1.69	0.25	-4.80	0.32	0.70	0.44	0.29



Stellar Parameters For KIC 008397138

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5959^{+196}_{-178}	$3.610^{+0.765}_{-0.135}$	$-0.480^{+0.300}_{-0.250}$	$3.005^{+0.827}_{-1.930}$	$1.342^{+0.192}_{-0.480}$	$0.070^{+1.028}_{-0.029}$
	+3%/-3%	+21%/-4%	+62%/-52%	+28%/-64%	+14%/-36%	+1477%/-42%
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 008397138-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 11	$3.48^{+3.67}_{-2.32}$	4998^{+477}_{-880}	-4304^{+948}_{-551}	$-0.001^{+0.190}_{-0.171}$
Alt.	75 ± 54	$5.10^{+3.87}_{-3.09}$	4994^{+476}_{-864}	-4945^{+654}_{-1472}	$-0.301^{+0.246}_{-1.842}$

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

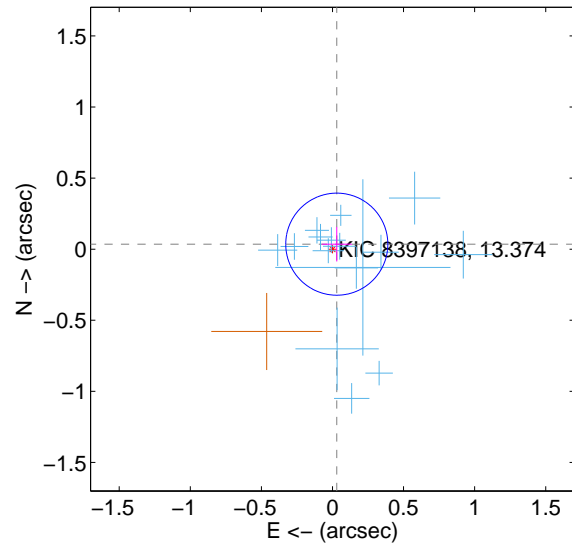
Supplemental centroid analysis for 008397138-02. Kepler magnitude: 13.37. Transit SNR 10.49

There are 16 quarters with good PRF difference image offsets

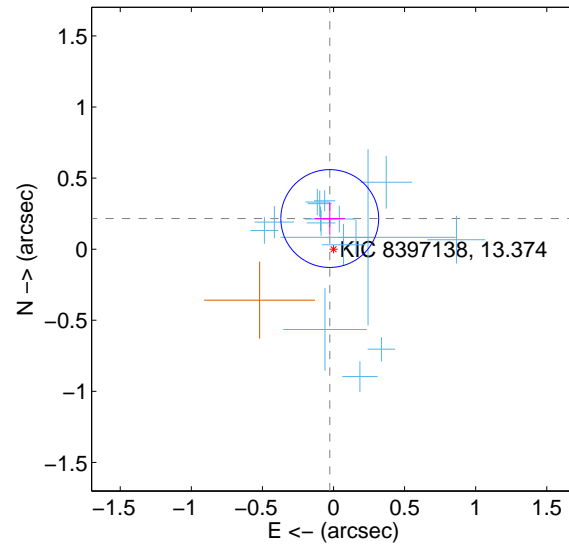
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.046 ± 0.120	0.39	-0.030 ± 0.106	0.035 ± 0.122
PRF-fit source offset from KIC position	0.217 ± 0.115	1.89	0.026 ± 0.108	0.215 ± 0.114
photometric centroid source offset	0.55 ± 0.29	1.92	0.47 ± 0.29	0.29 ± 0.29

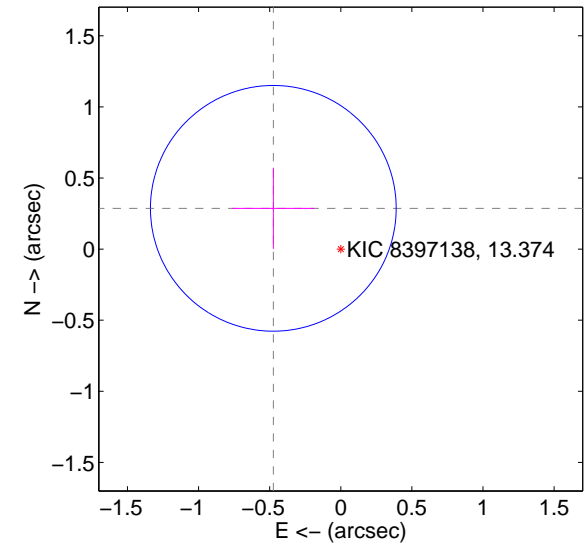
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

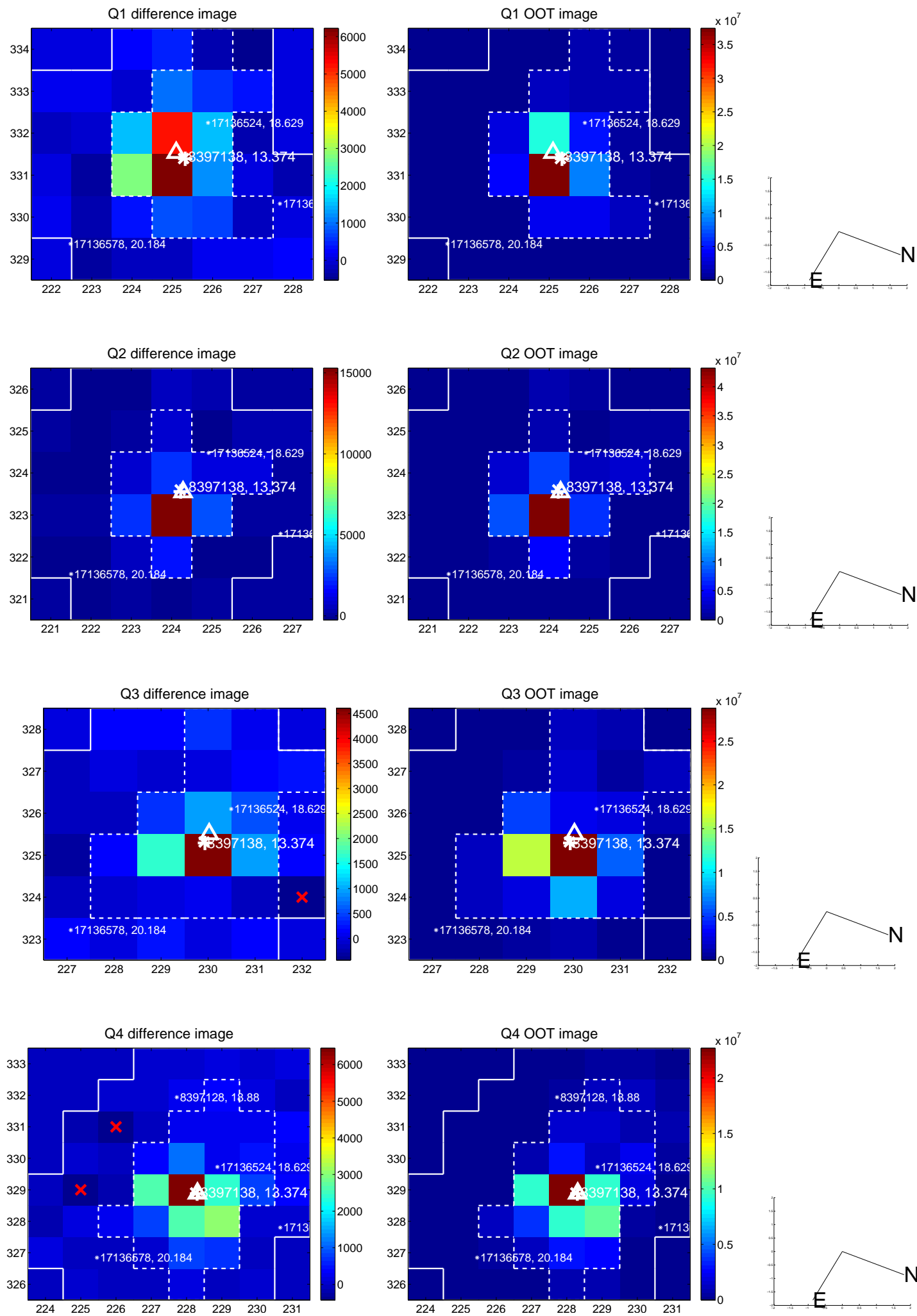


offset from photometric centroids

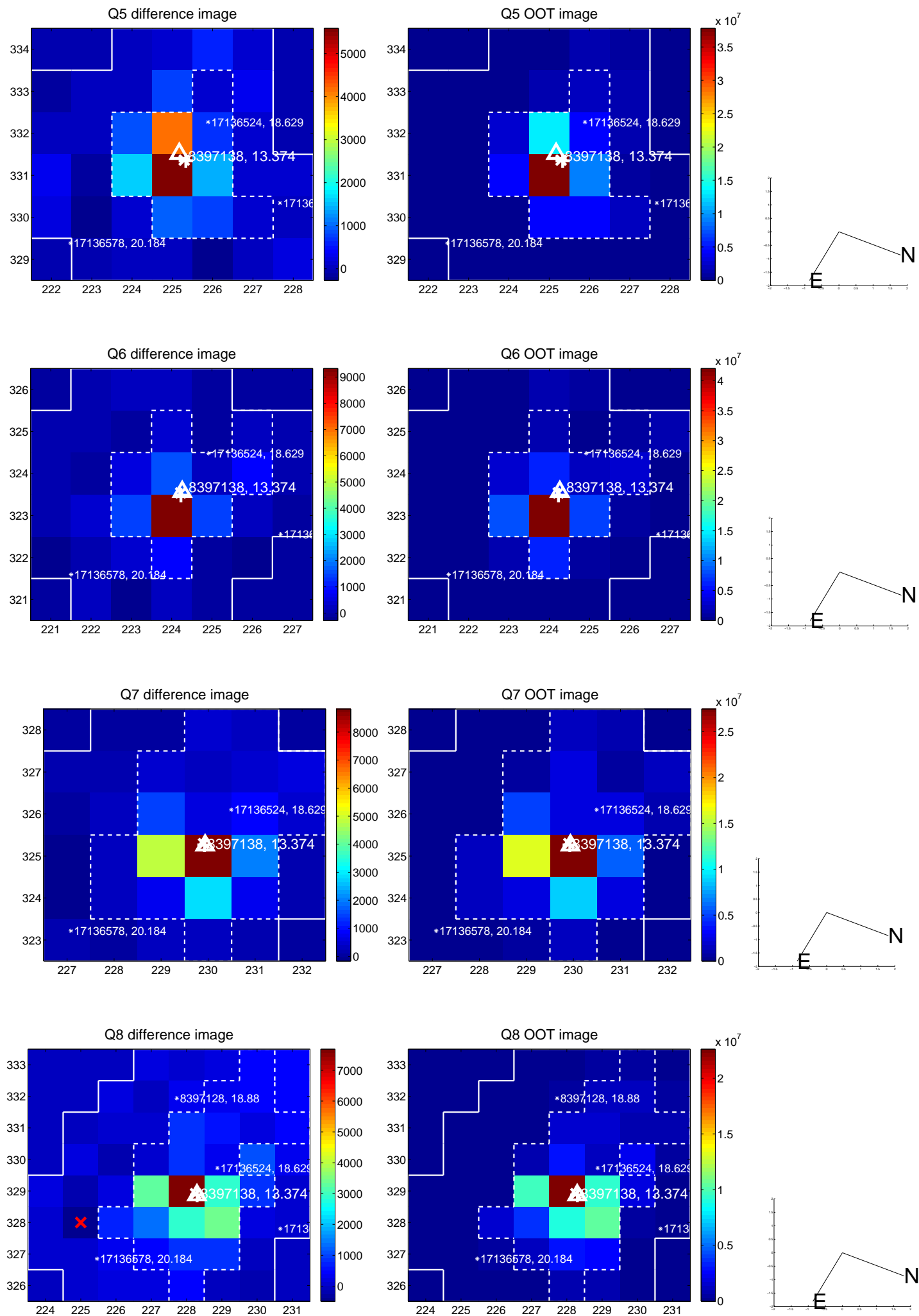


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

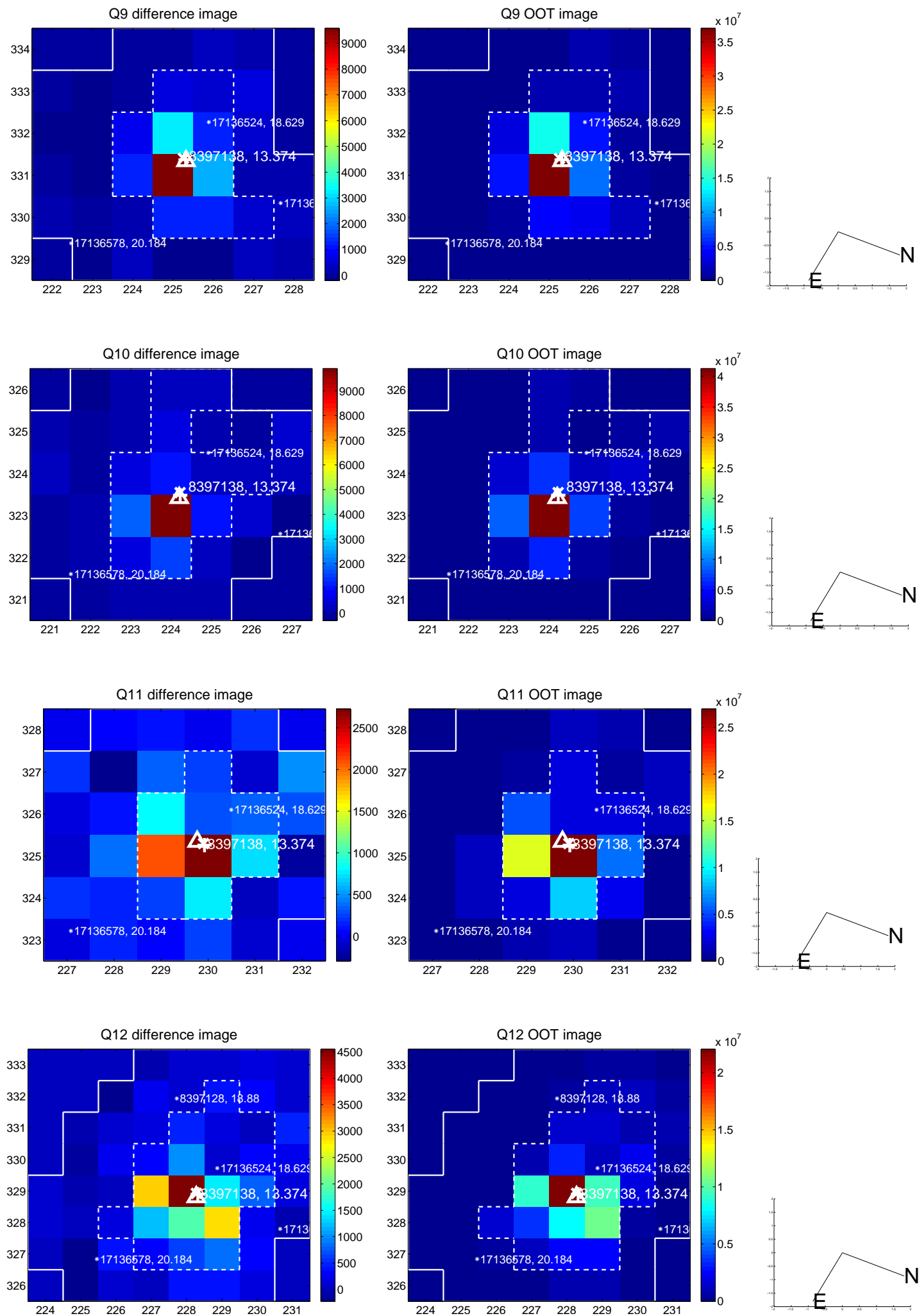
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



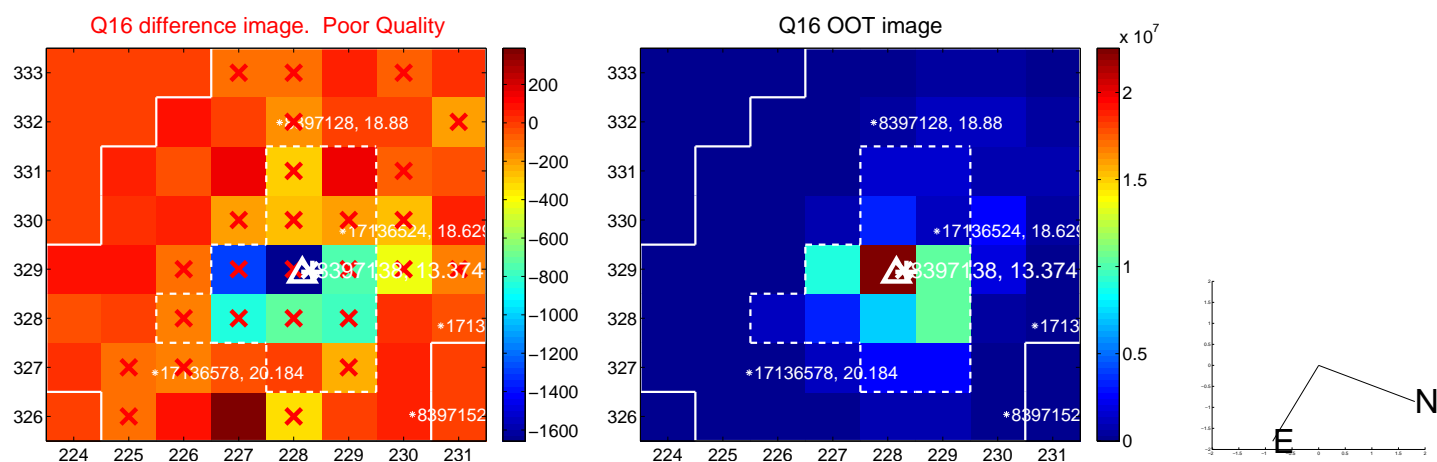
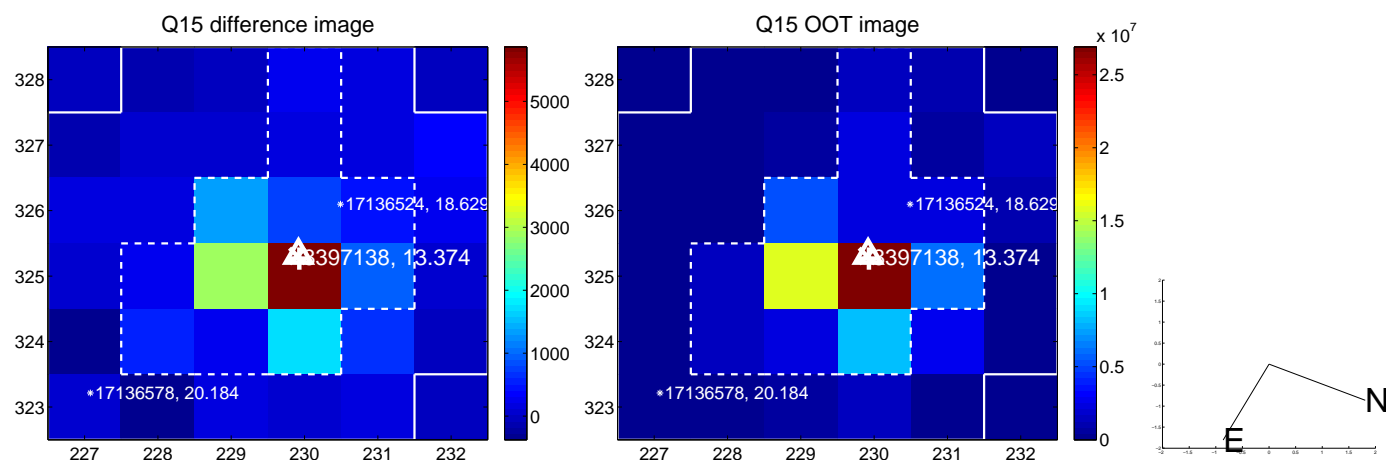
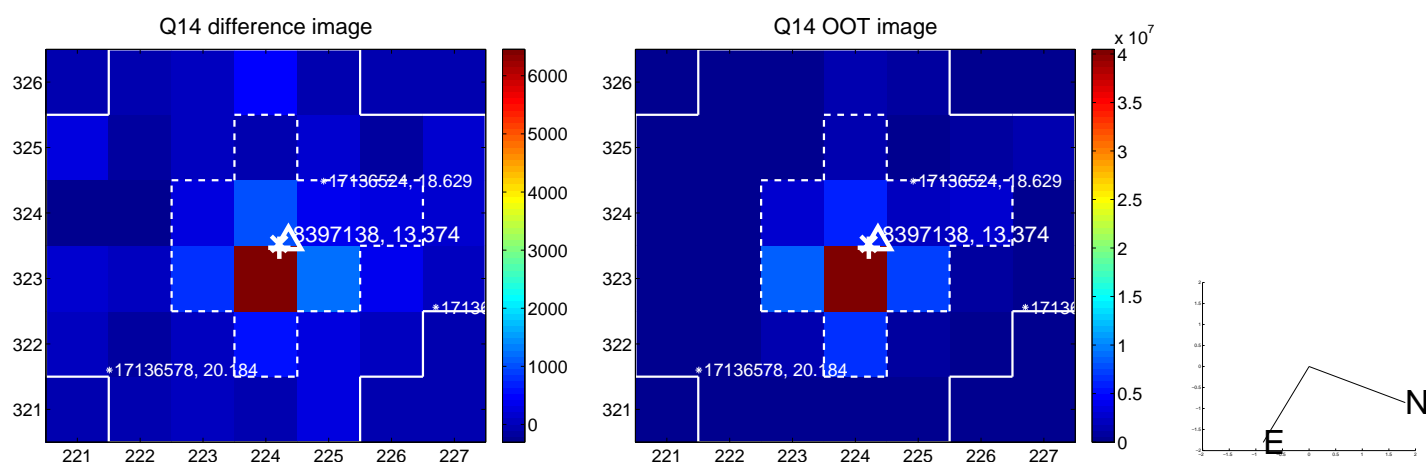
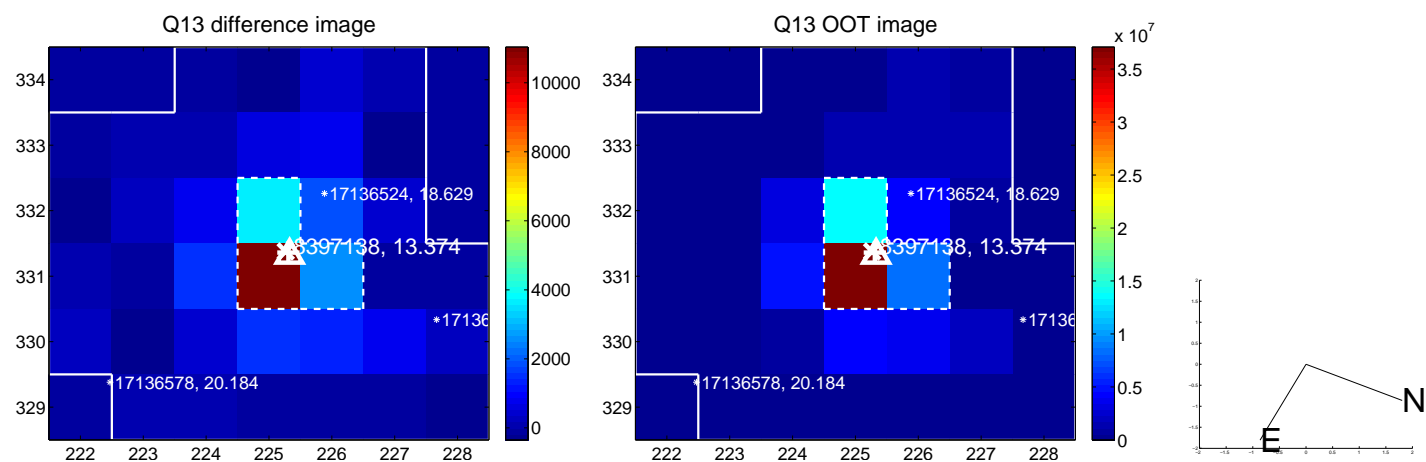
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



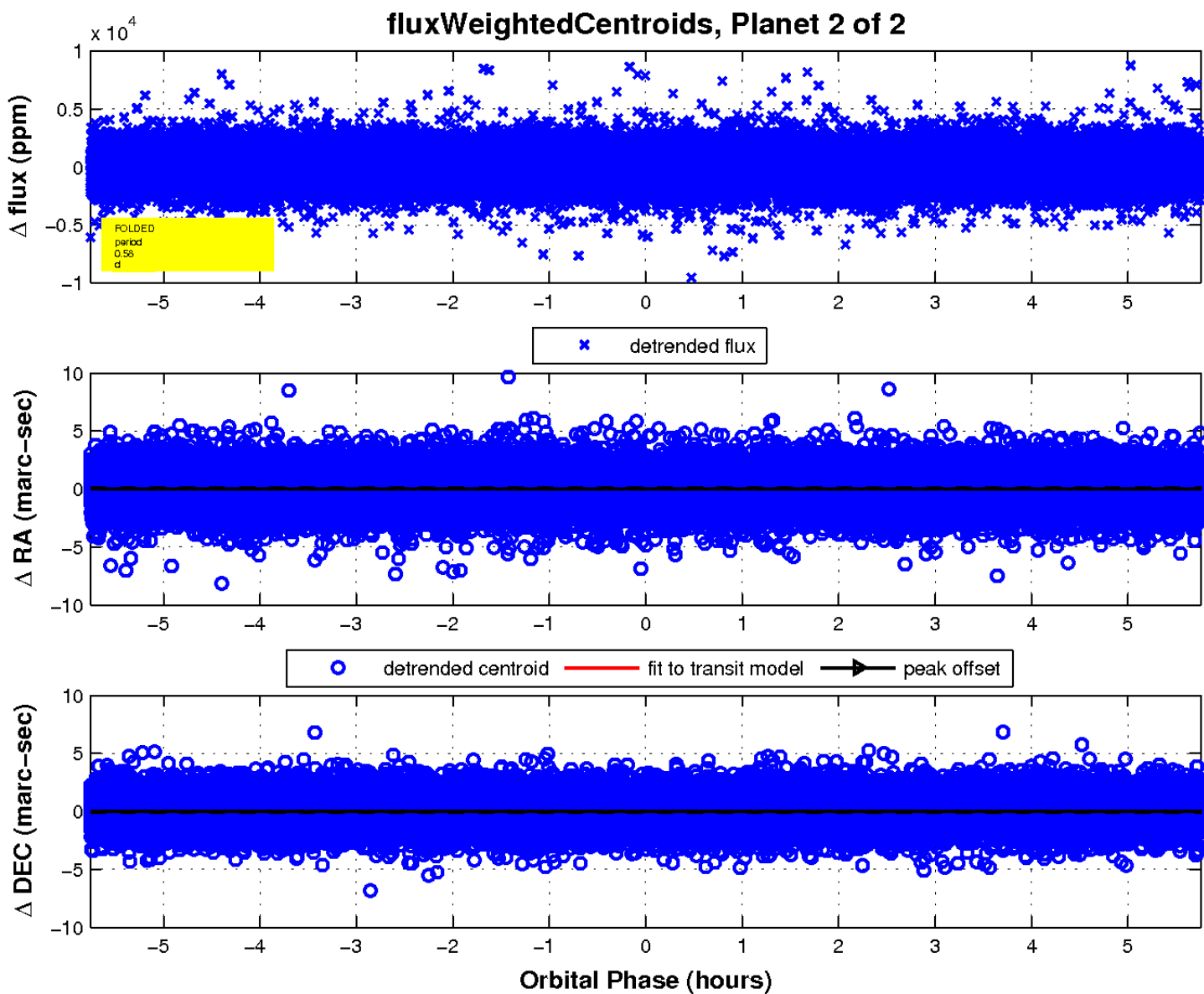
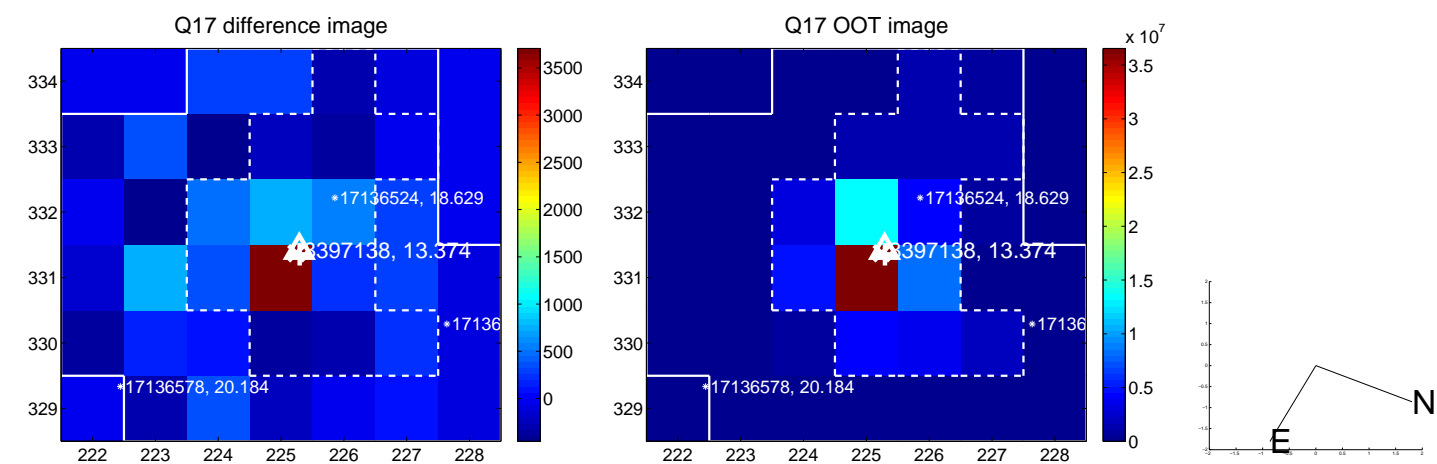
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

