

KIC 003233302

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})
003233302-01	OBS	No	2.123634	132.732669	24.6	10.718	12.9	12.0	1.25	6476	0.62	2186.22
003233302-02	OBS	No	2.123345	132.053559	18.1	25.480	13.8	8.1	1.25	6476	0.68	2186.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003233302-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003233302-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—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.

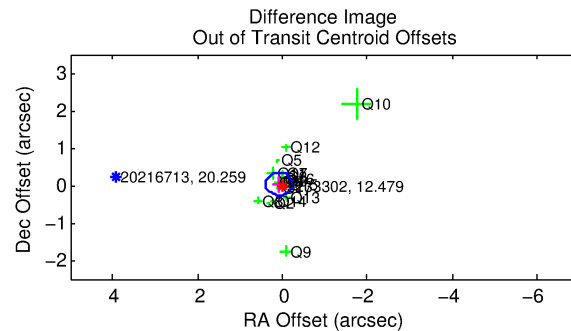
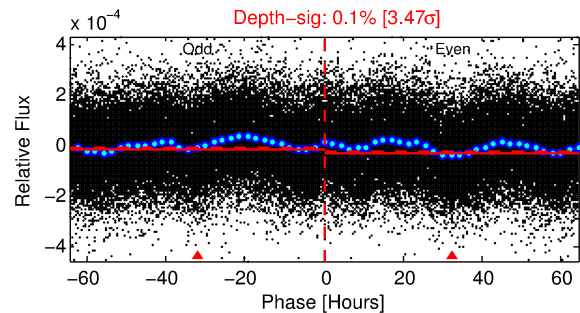
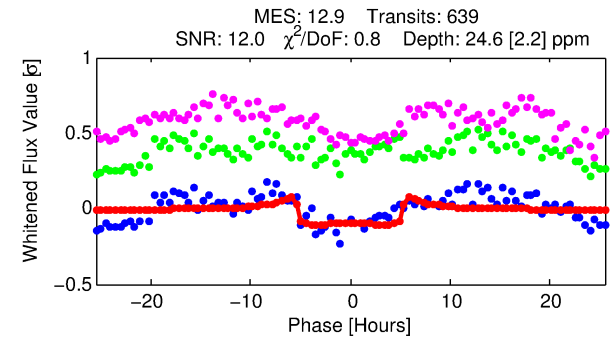
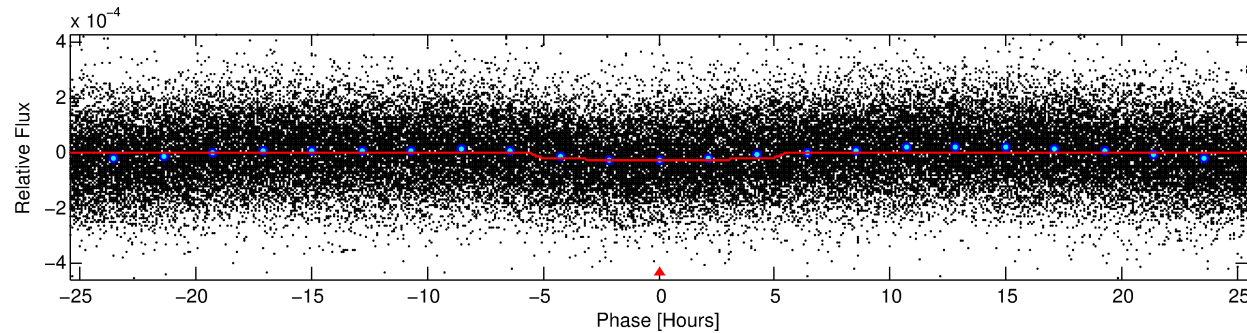
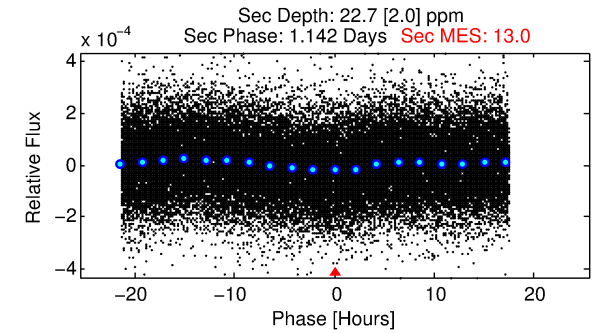
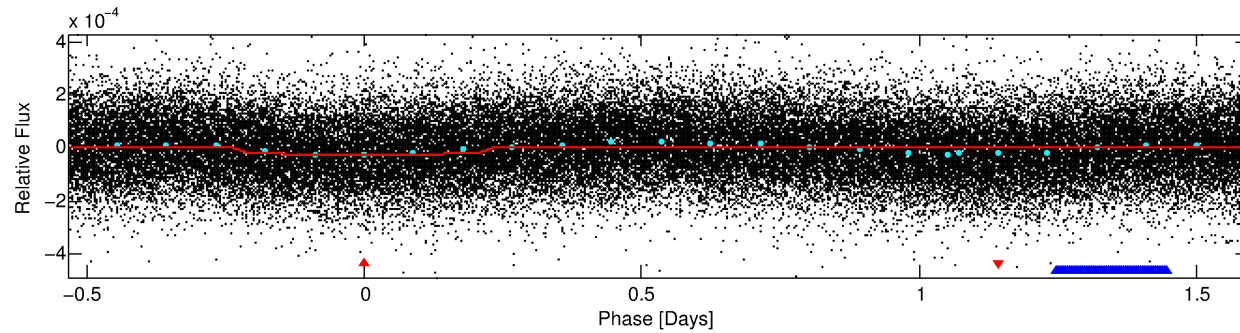
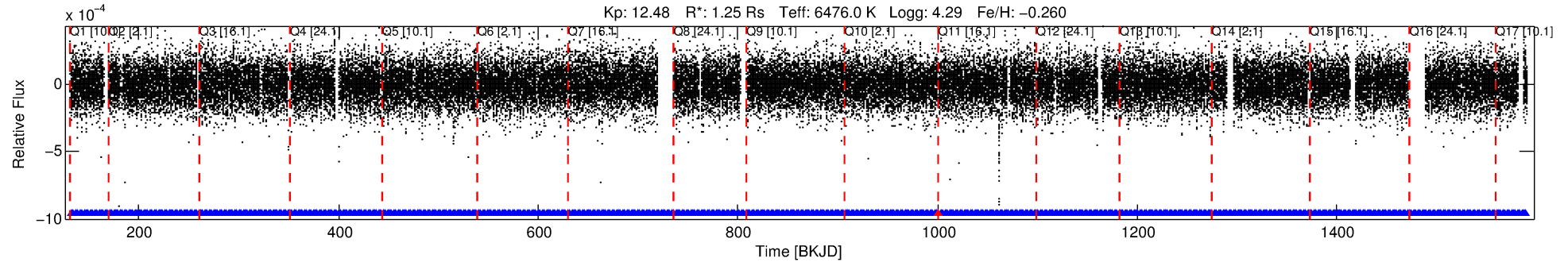
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003233302-01

No Significant Match Found

DV One-Page Summary

KIC: 3233302 Candidate: 1 of 2 Period: 2.124 d



DV Fit Results:

Period = 2.12363 [0.00002] d
Epoch = 132.7327 [0.0042] BKJD
Rp/R* = 0.0046 [0.0021]
a/R* = 1.64 [2.51]
b = 0.03 [97.13]
Seff = 2186.22 [610.56]
Teq = 1744 [122] K
Rp = 0.62 [0.31] Re
a = 0.0335 [0.0058] AU
Ag = 36.12 [34.52] [1.02σ]
Teffp = 6609 [1536] K [3.16σ]

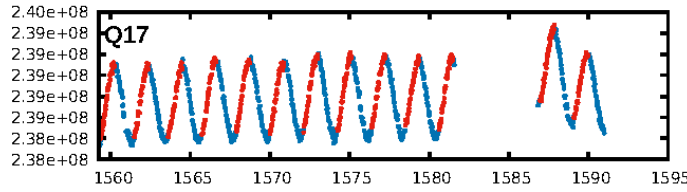
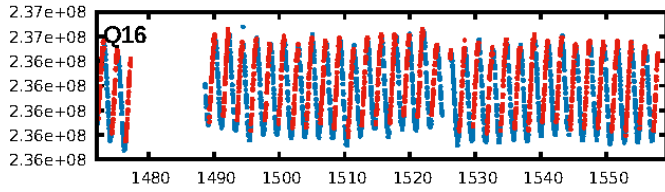
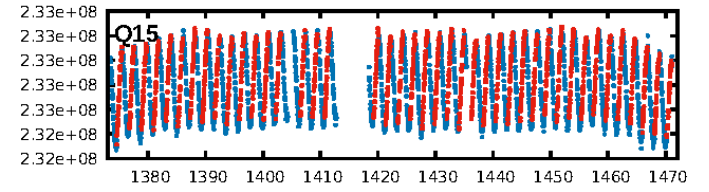
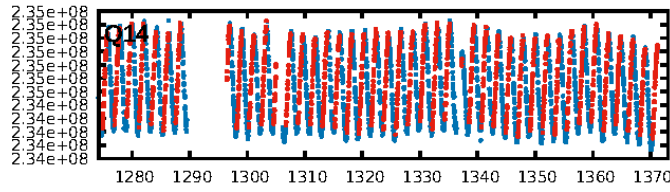
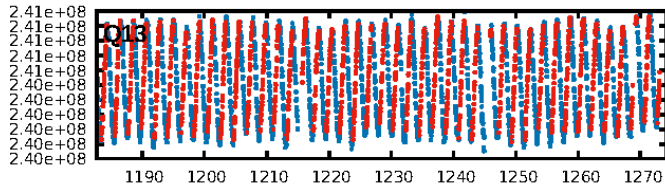
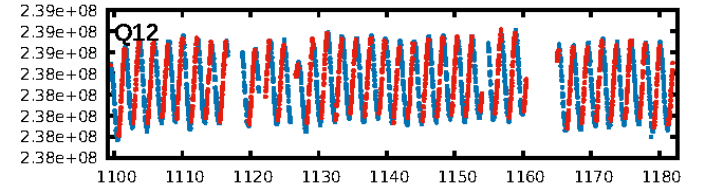
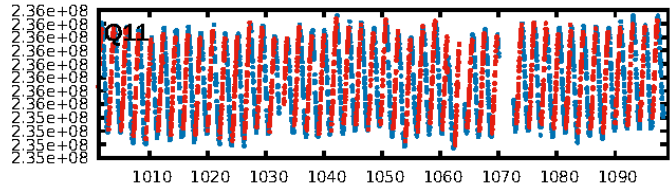
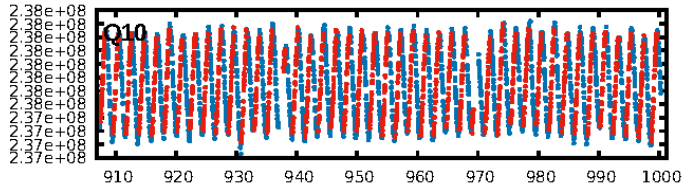
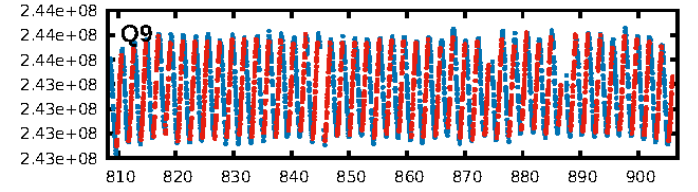
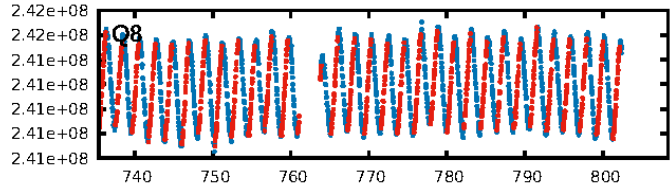
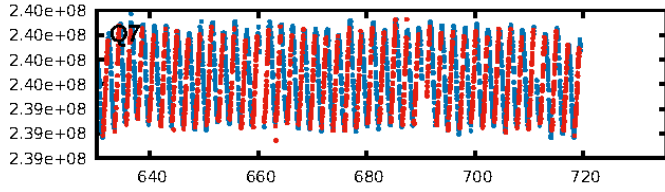
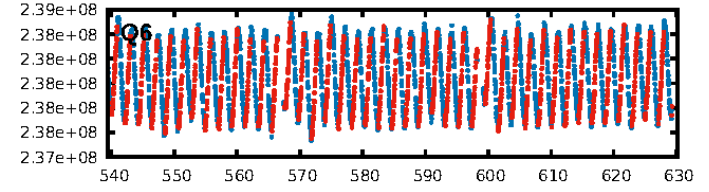
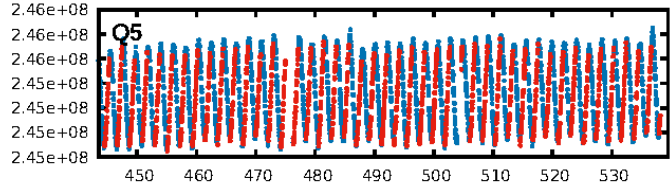
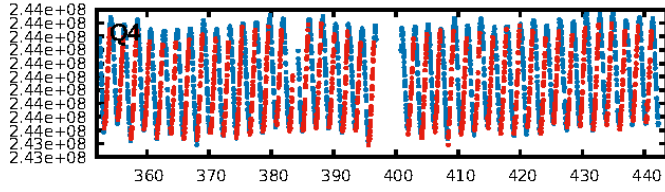
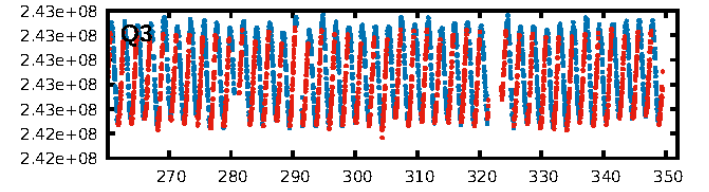
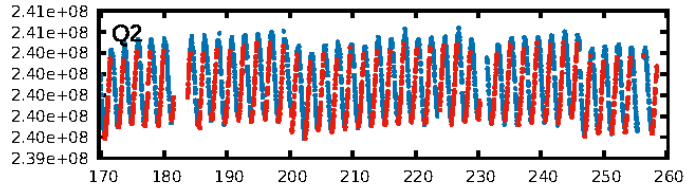
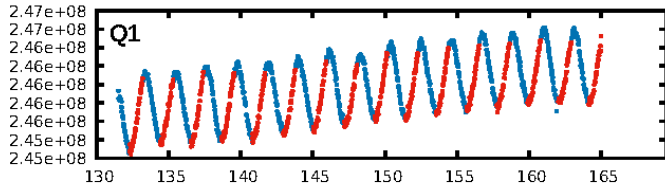
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [609/610]
GhostDiagnostic-chr: 1.505
Centroid-sig: 29.1%
Centroid-so: 0.712 arcsec [0.97σ]
OotOffset-rm: 0.093 arcsec [0.91σ]
KicOffset-rm: 0.126 arcsec [0.92σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.53 [9/17]
DiffImageOverlap-fno: 0.00 [0/17]

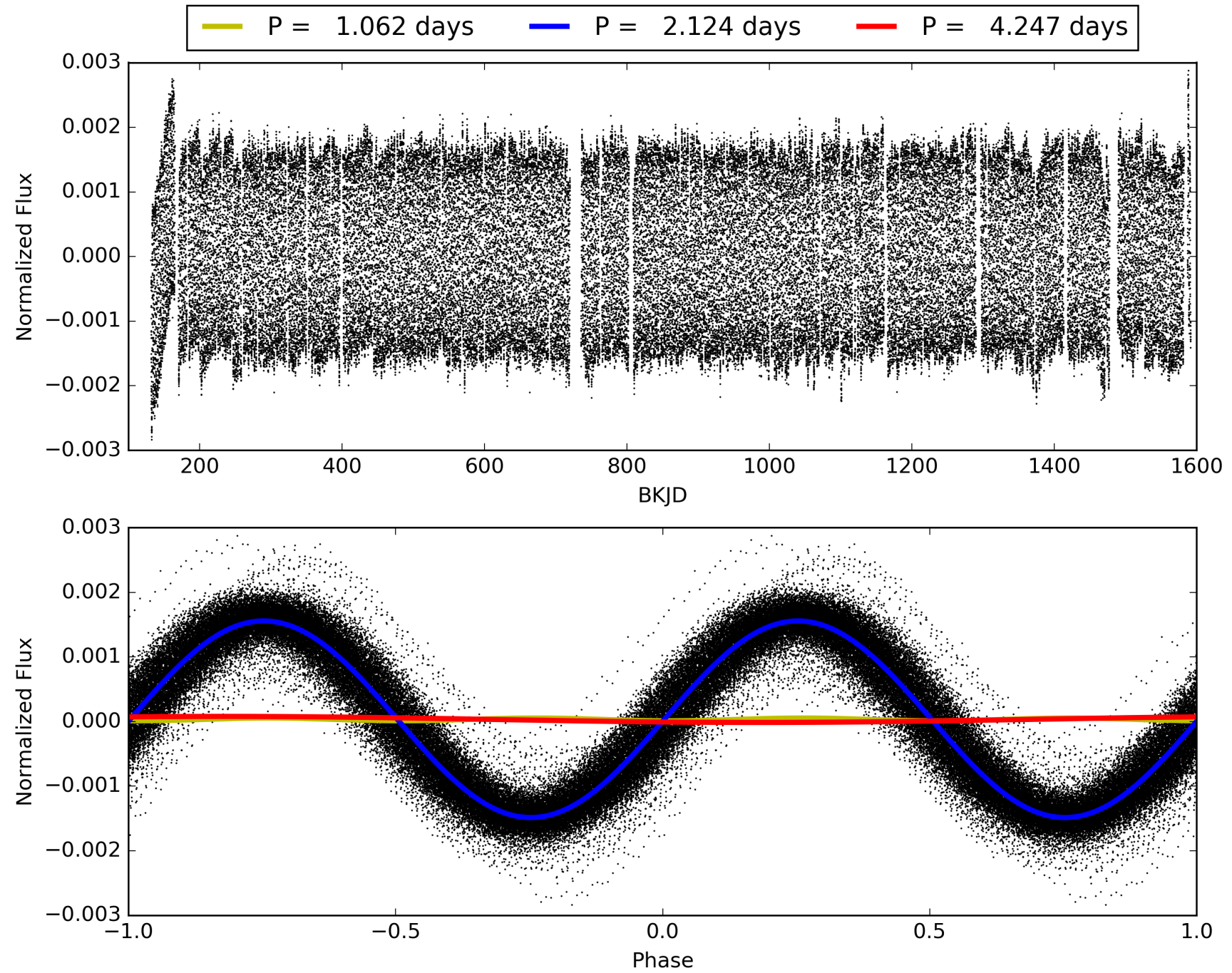
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:13:29 Z

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

TCE 003233302-01, PDC Light Curves

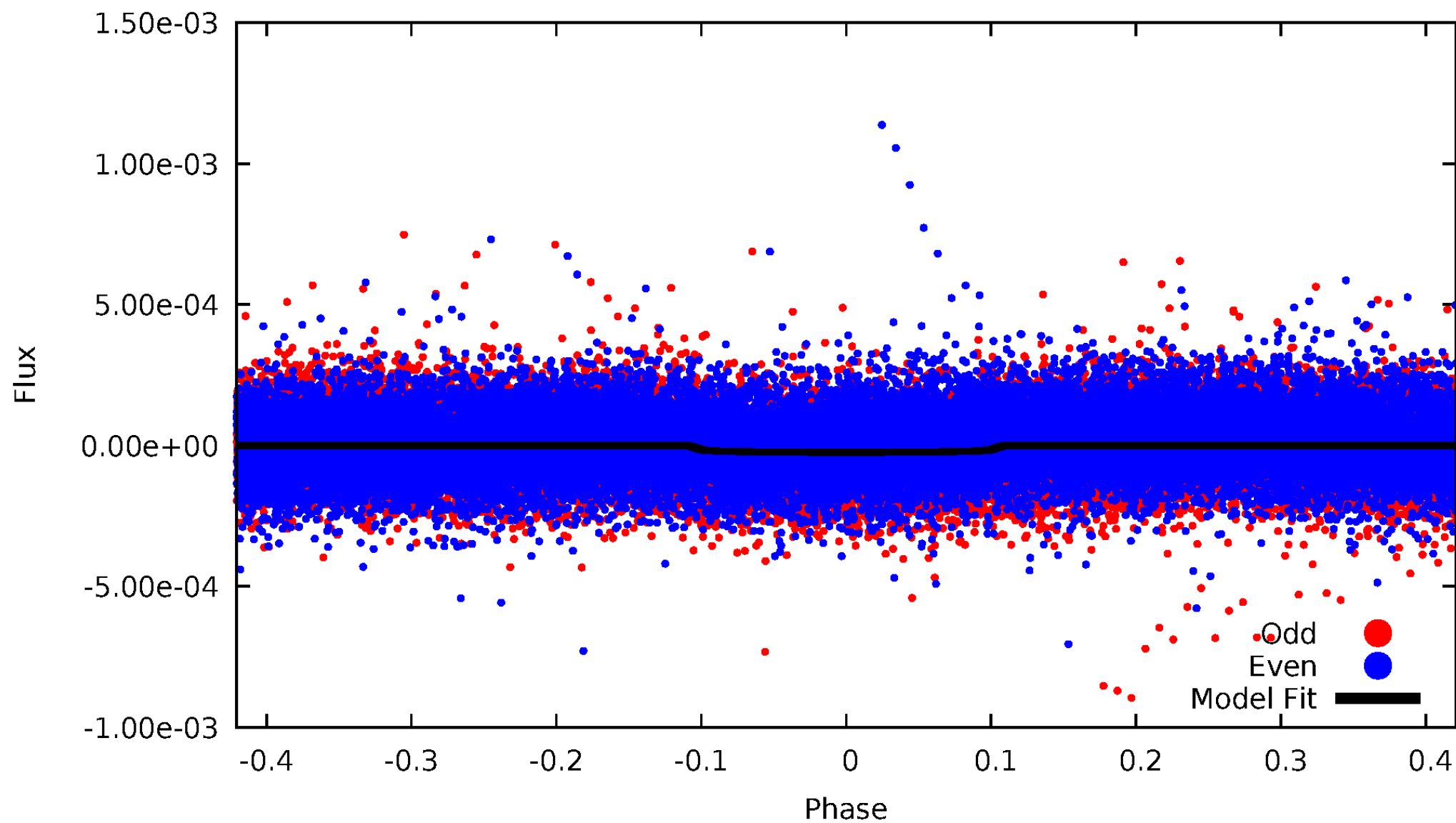


TCE 003233302-01



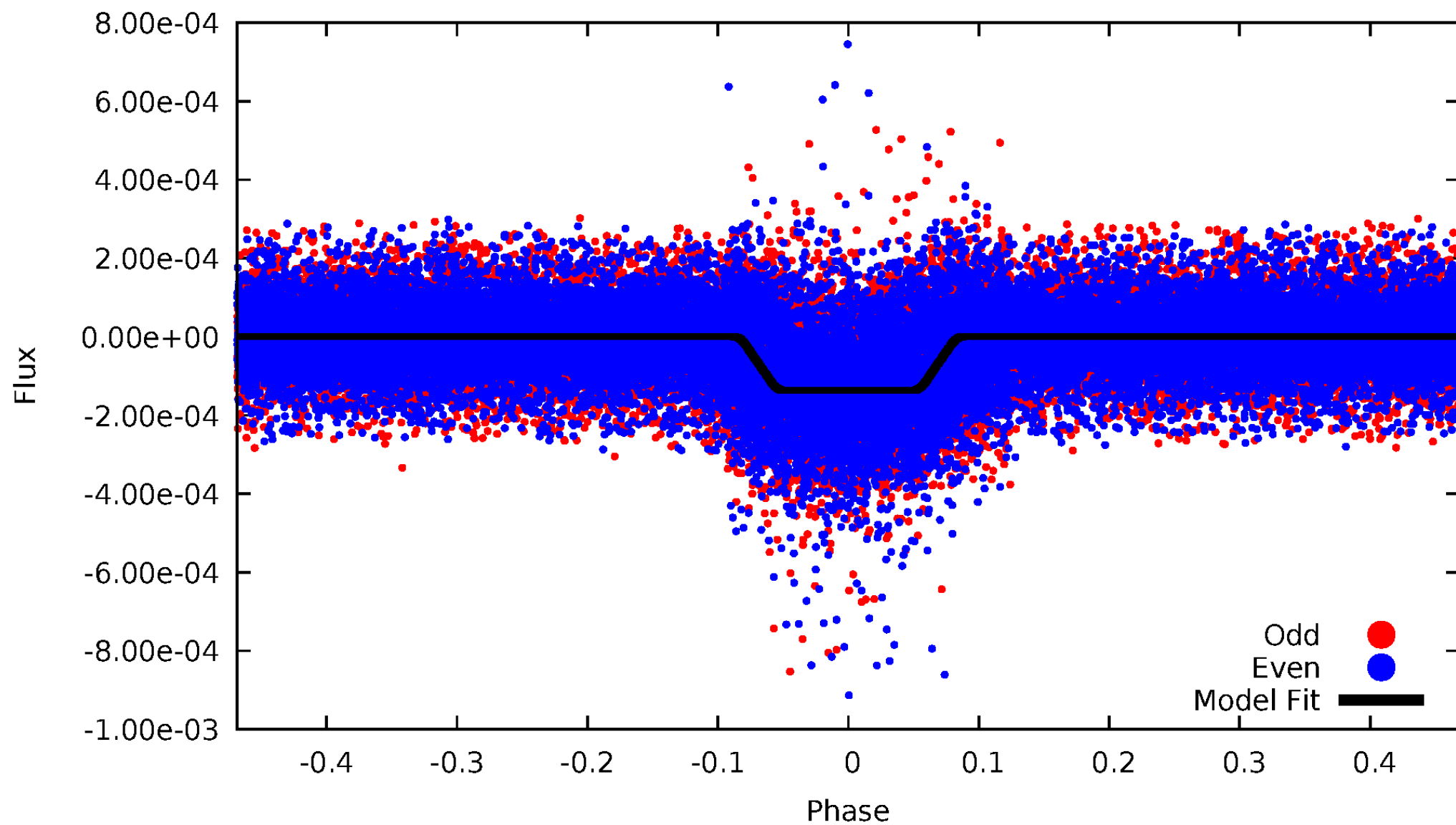
DV Odd/Even

TCE 003233302-01



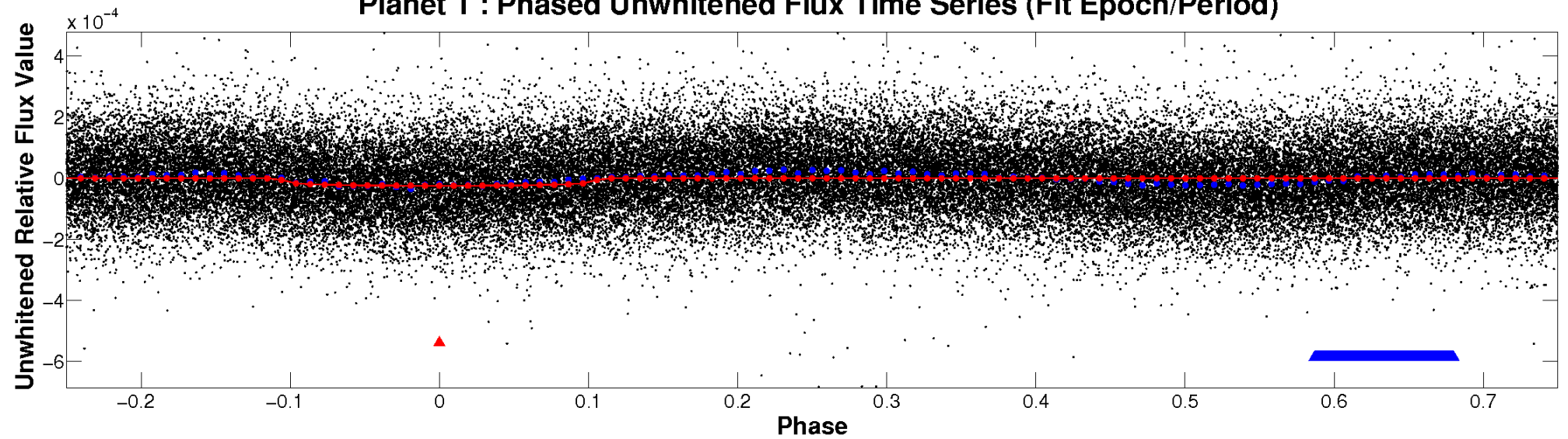
ALT Odd/Even

TCE 003233302-01

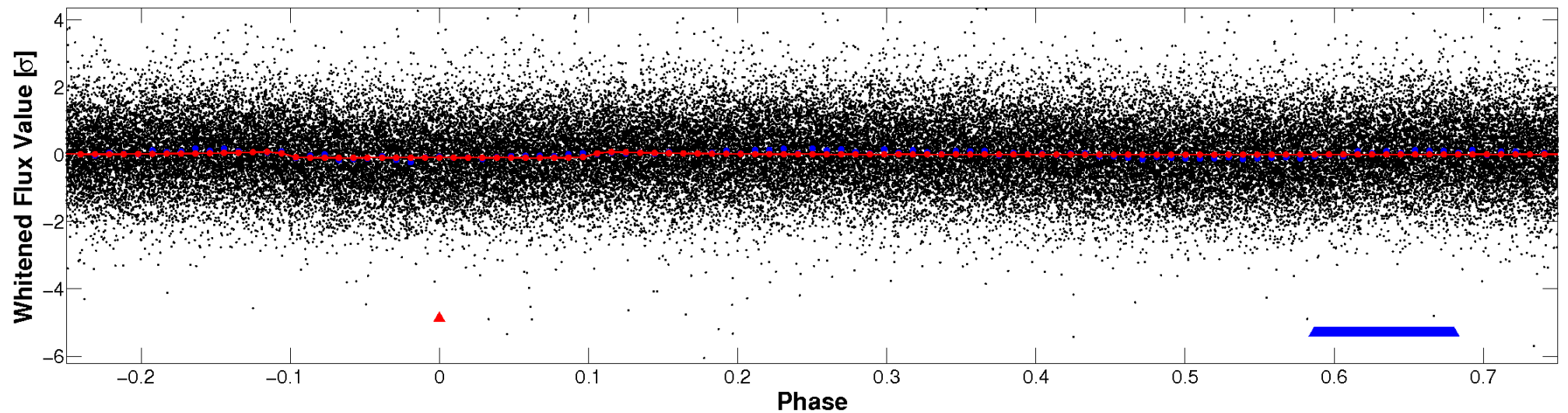


Non-Whitened Vs. Whitened Light Curve

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

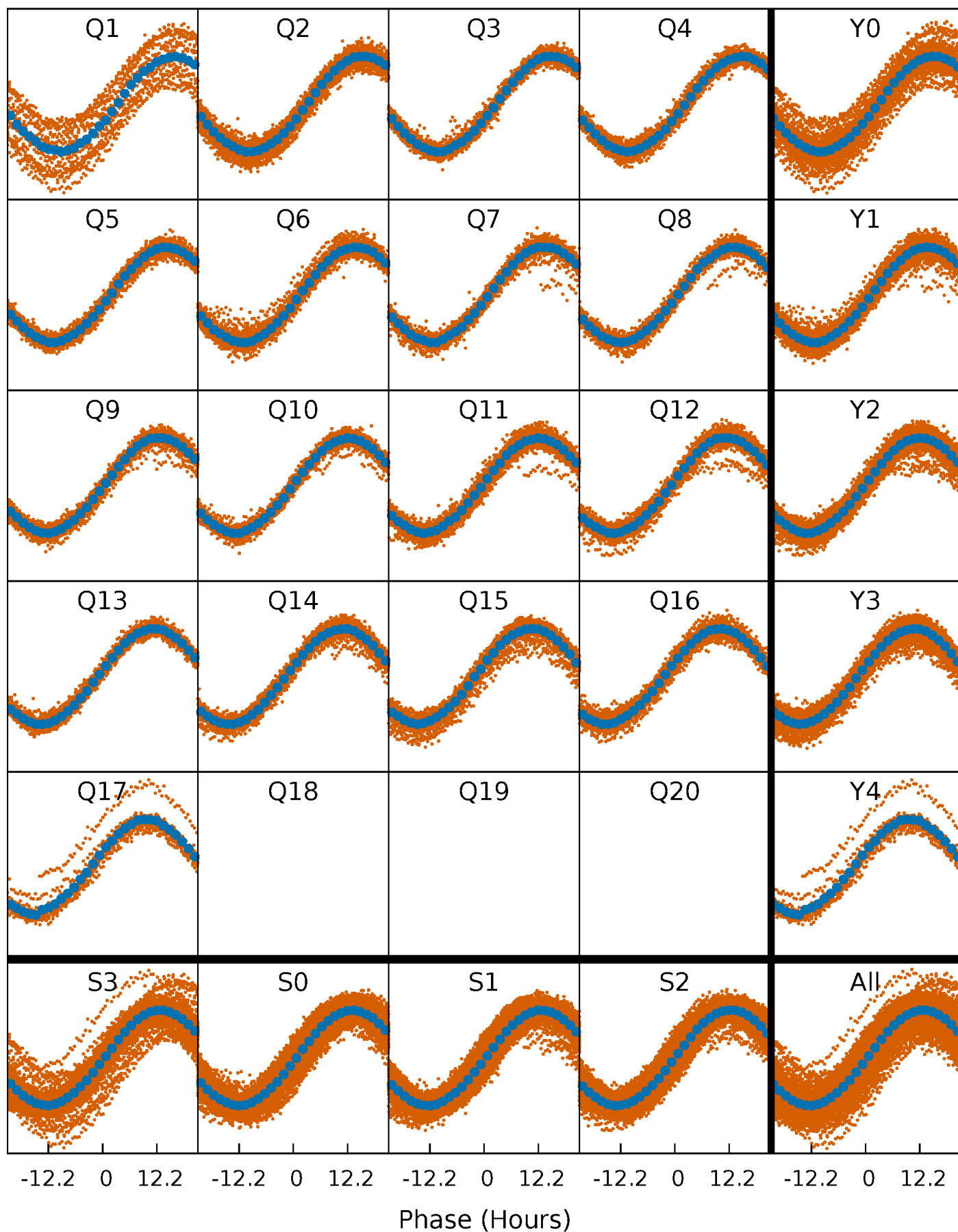


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



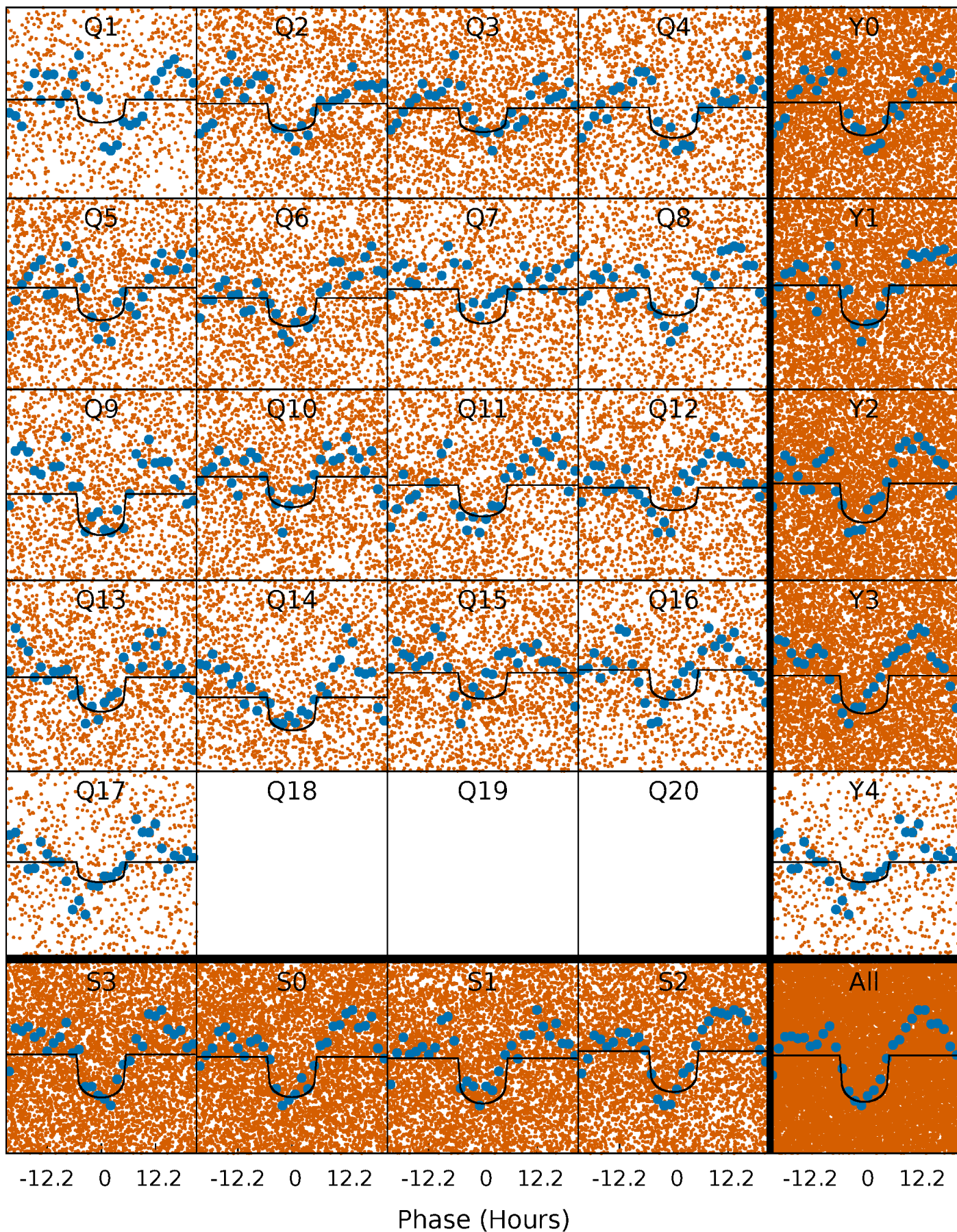
PDC Quarter-Phased Transit Curves

TCE 003233302-01 P= 2.123634 Days $T_0=132.732669$ (BKJD)



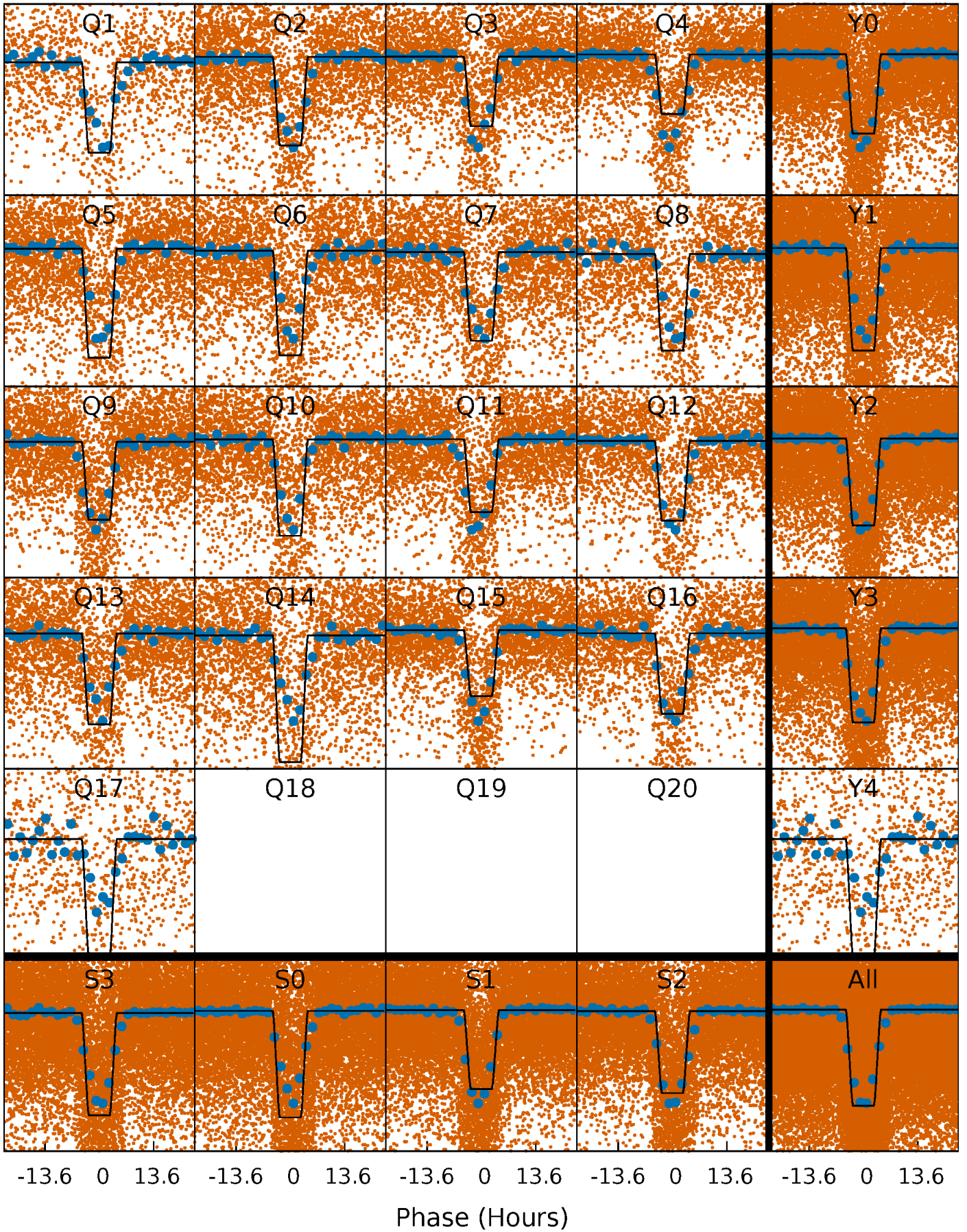
DV Quarter-Phased Transit Curves

TCE 003233302-01 P= 2.123634 Days $T_0=132.732669$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

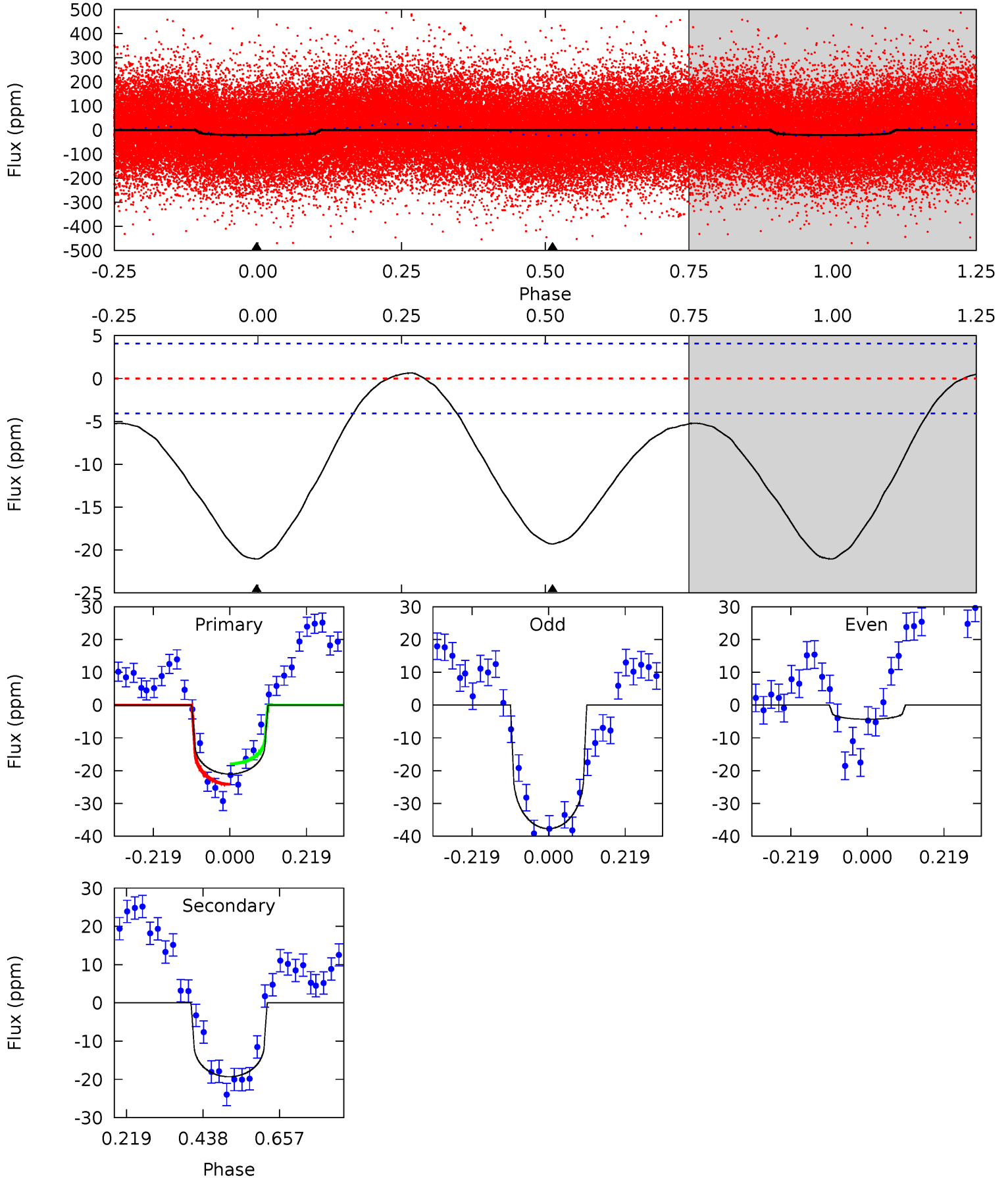
TCE 003233302-01 $P = 2.123277$ Days $T_0 = 132.743813$ (BKJD)



DV Model-Shift Uniqueness Test

003233302-01, P = 2.123634 Days, E = 130.609035 Days

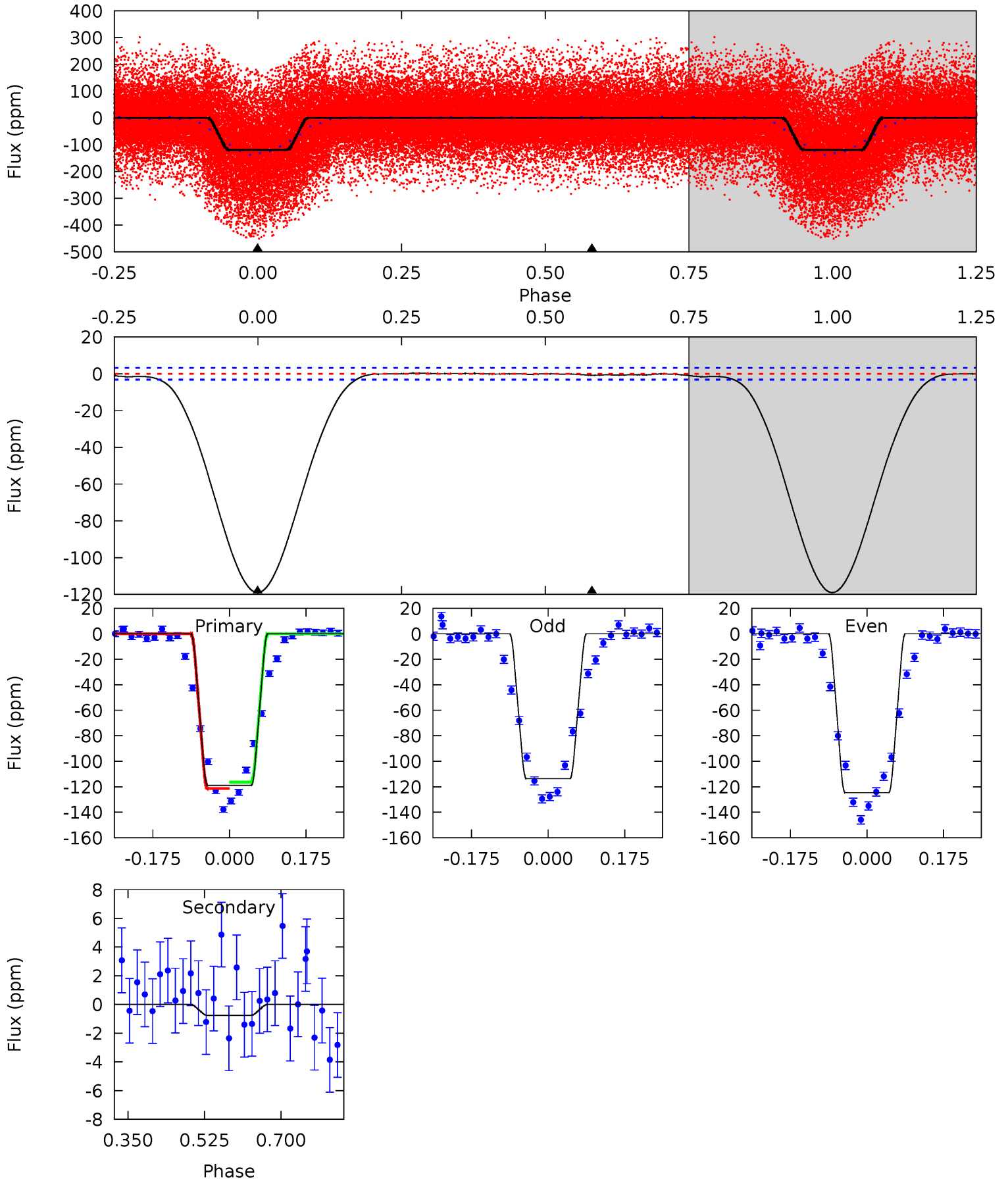
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.7	20.8	0	0	4.40	1.23	2.96	22.7	22.7	20.8	20.8	18.2	0.92	0.03	3.40



Alt Model-Shift Uniqueness Test

003233302-01, P = 2.123277 Days, E = 130.620536 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
164.7	1.05	0	0	4.45	1.36	1.12	164.7	164.7	1.05	1.05	7.54	1.05	0.00	3.45



Stellar Parameters For KIC 003233302

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6476^{+145}_{-194}	$4.291^{+0.112}_{-0.138}$	$-0.260^{+0.250}_{-0.300}$	$1.246^{+0.256}_{-0.186}$	$1.106^{+0.152}_{-0.125}$	$0.806^{+0.408}_{-0.316}$
	+2%/-3%	+3%/-3%	+96%/-115%	+21%/-15%	+14%/-11%	+51%/-39%
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 003233302-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-19 ± 1	$0.64^{+0.28}_{-0.29}$	2442^{+126}_{-113}	6266^{+2570}_{-1024}	29^{+72}_{-15}
Alt.	-1 ± 1	$1.58^{+0.31}_{-0.31}$	2433^{+134}_{-113}	-2430^{+4910}_{-329}	$0.187^{+0.253}_{-0.175}$

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

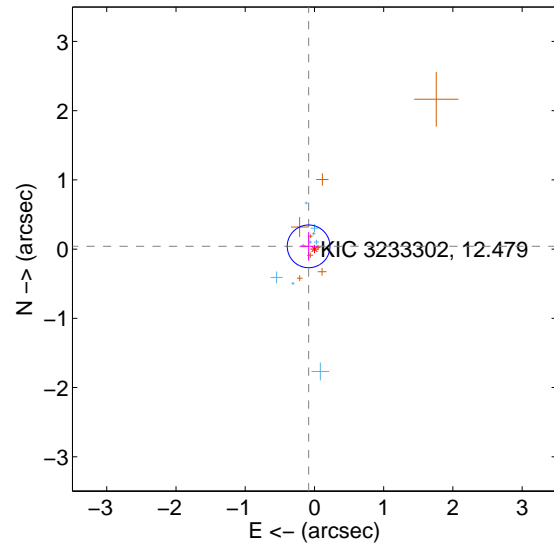
Supplemental centroid analysis for 003233302-01. Kepler magnitude: 12.48. Transit SNR 12.04

There are 9 quarters with good PRF difference image offsets

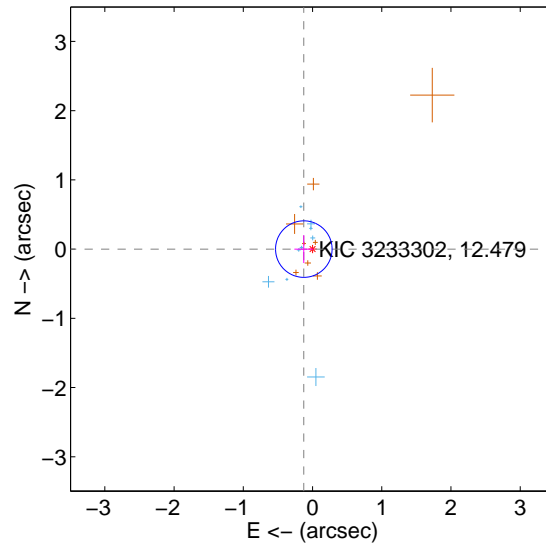
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.093 ± 0.103	0.91	0.084 ± 0.131	0.040 ± 0.205
PRF-fit source offset from KIC position	0.126 ± 0.136	0.92	0.126 ± 0.136	-0.000 ± 0.201
photometric centroid source offset	0.71 ± 0.73	0.97	0.20 ± 0.62	-0.68 ± 0.74

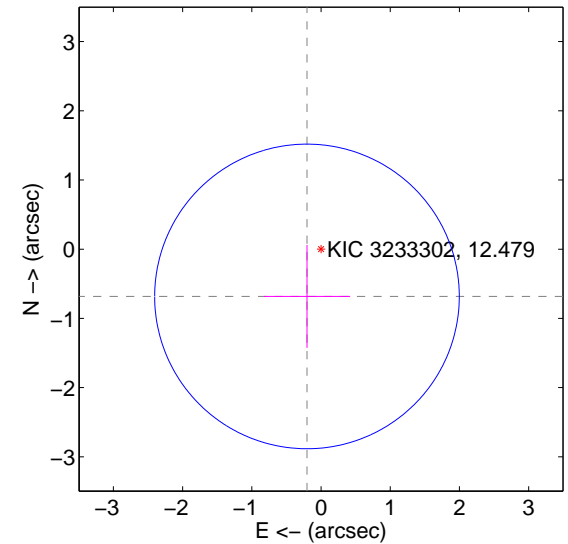
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

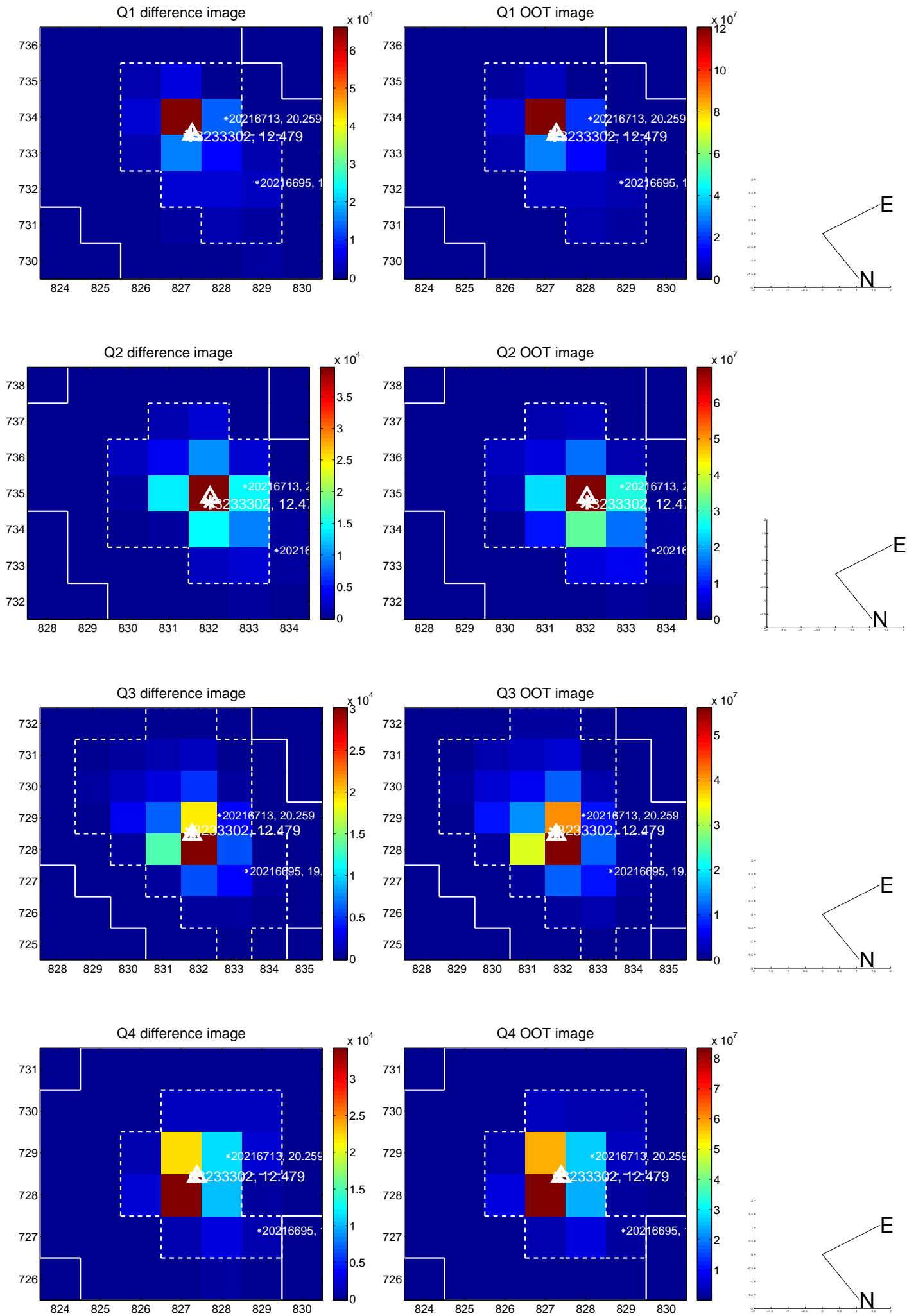


offset from photometric centroids

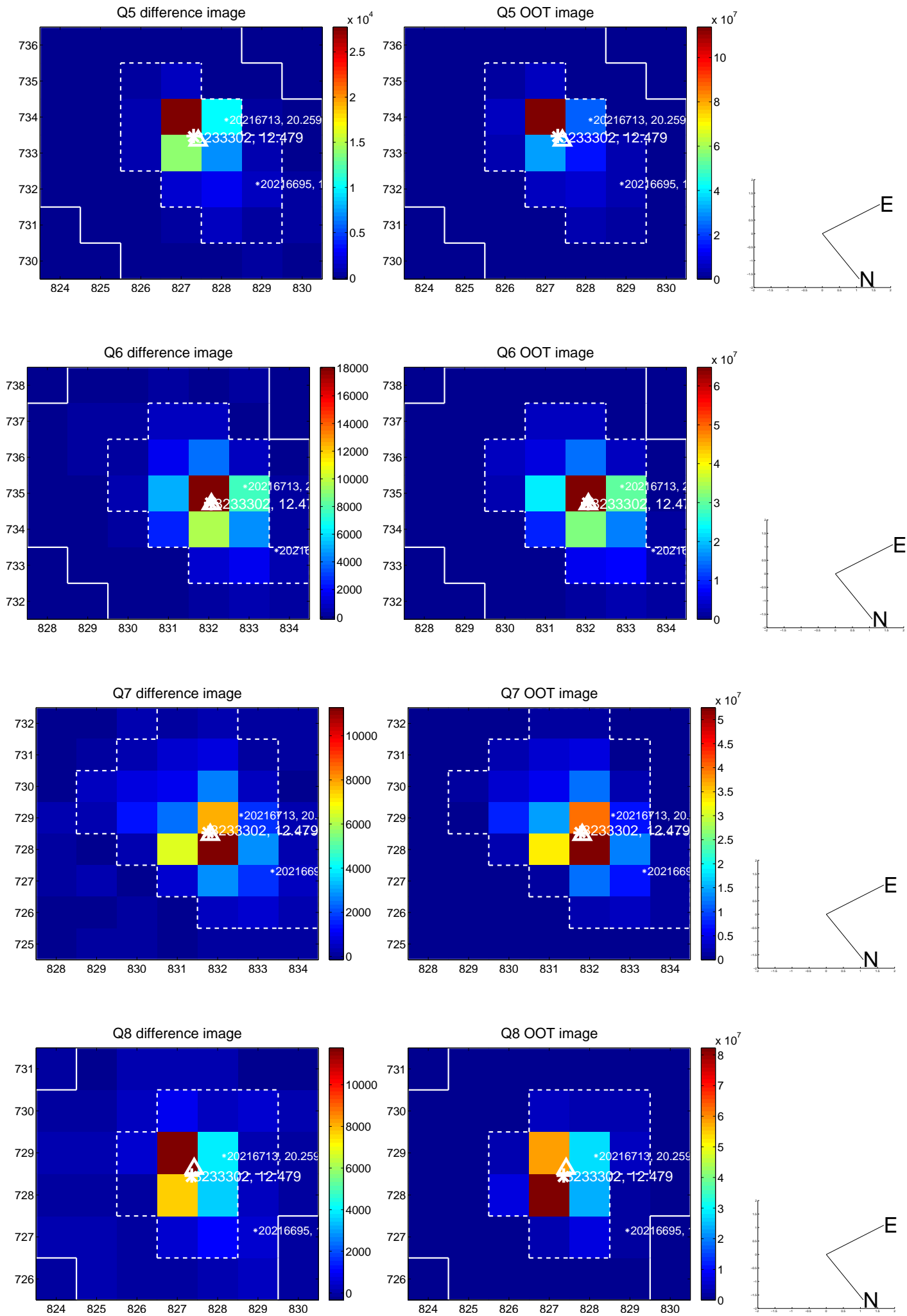


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

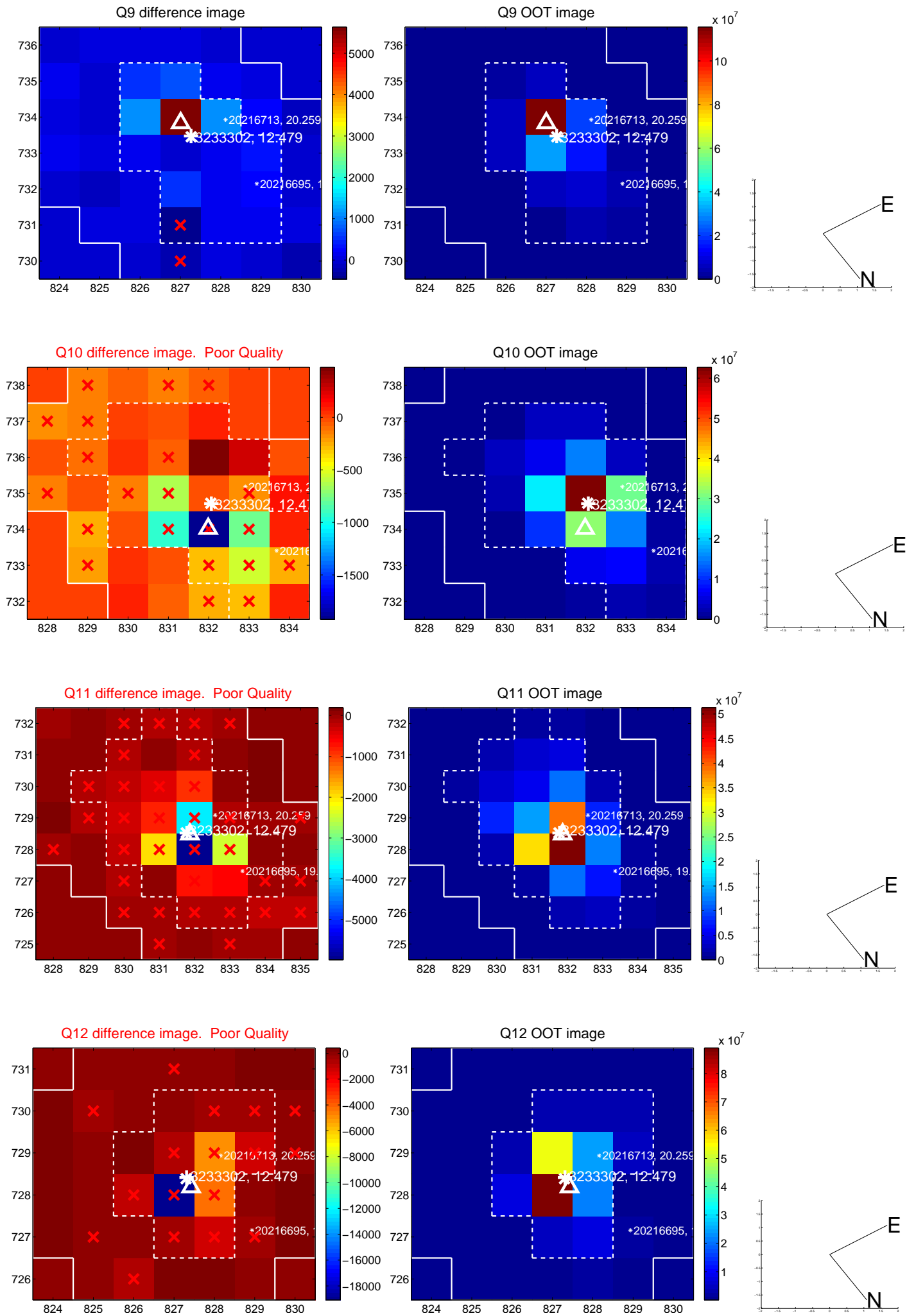
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



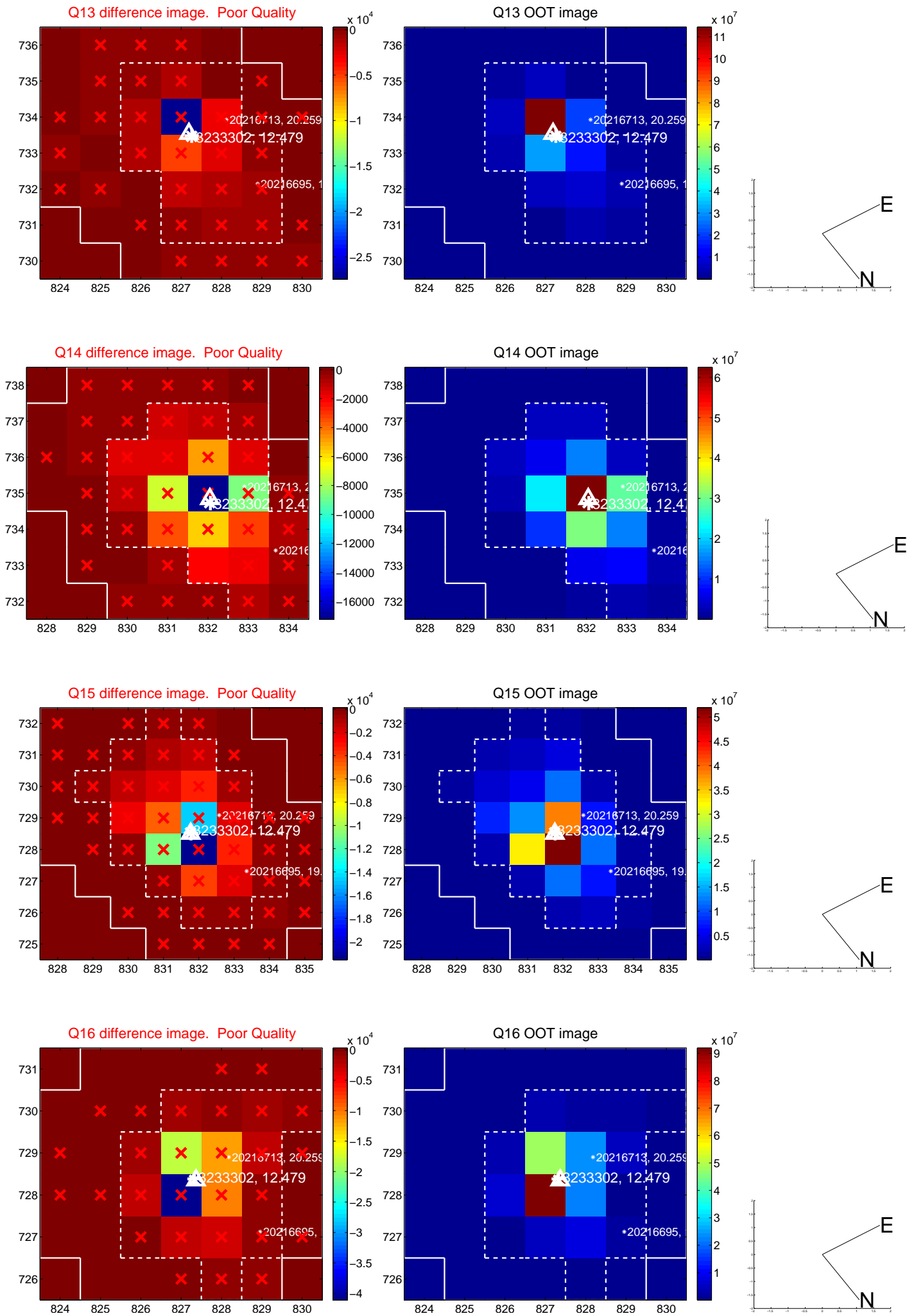
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



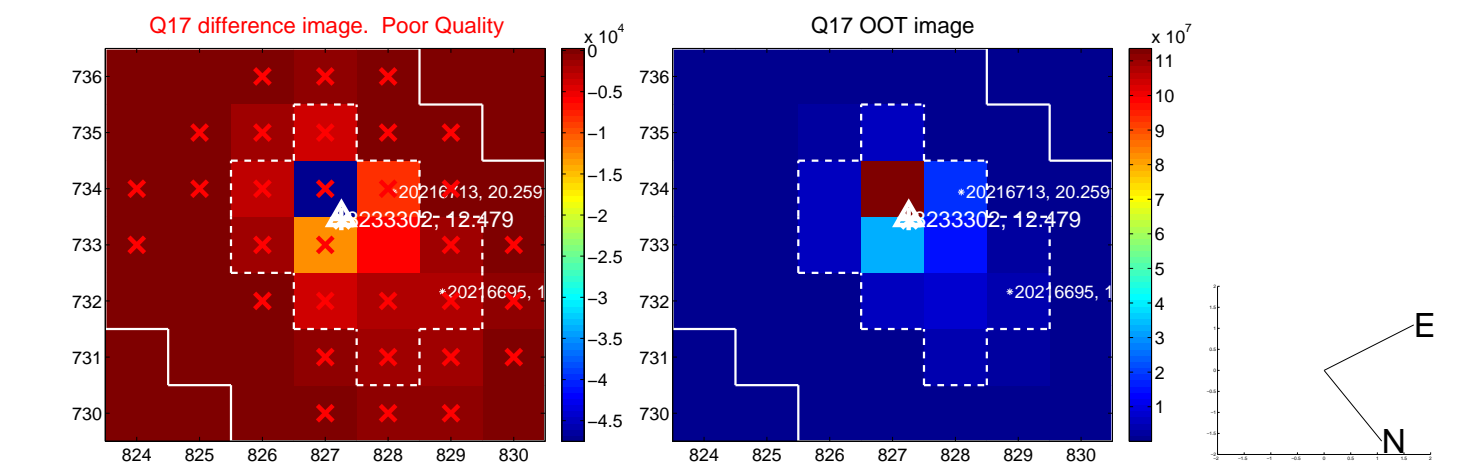
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



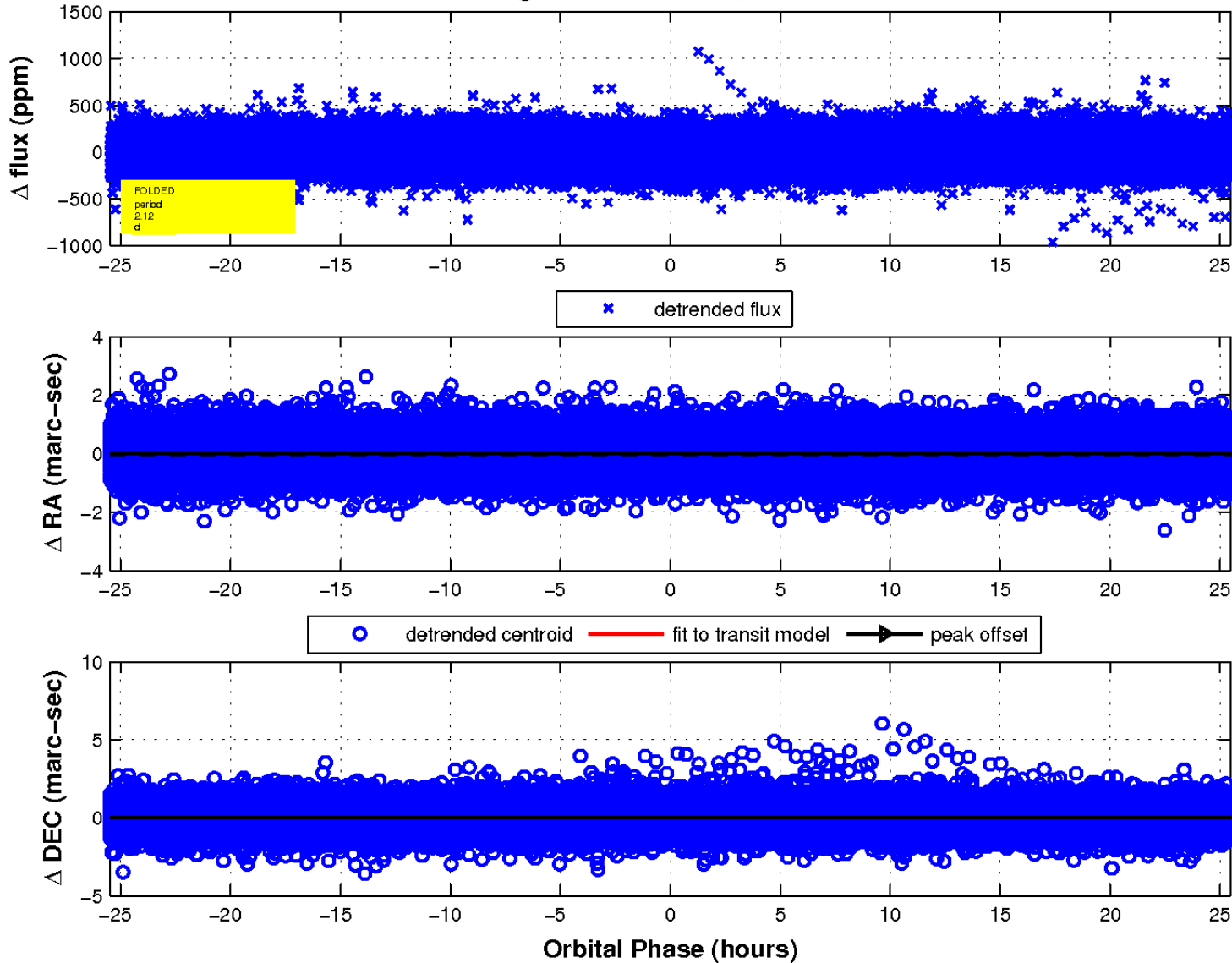
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

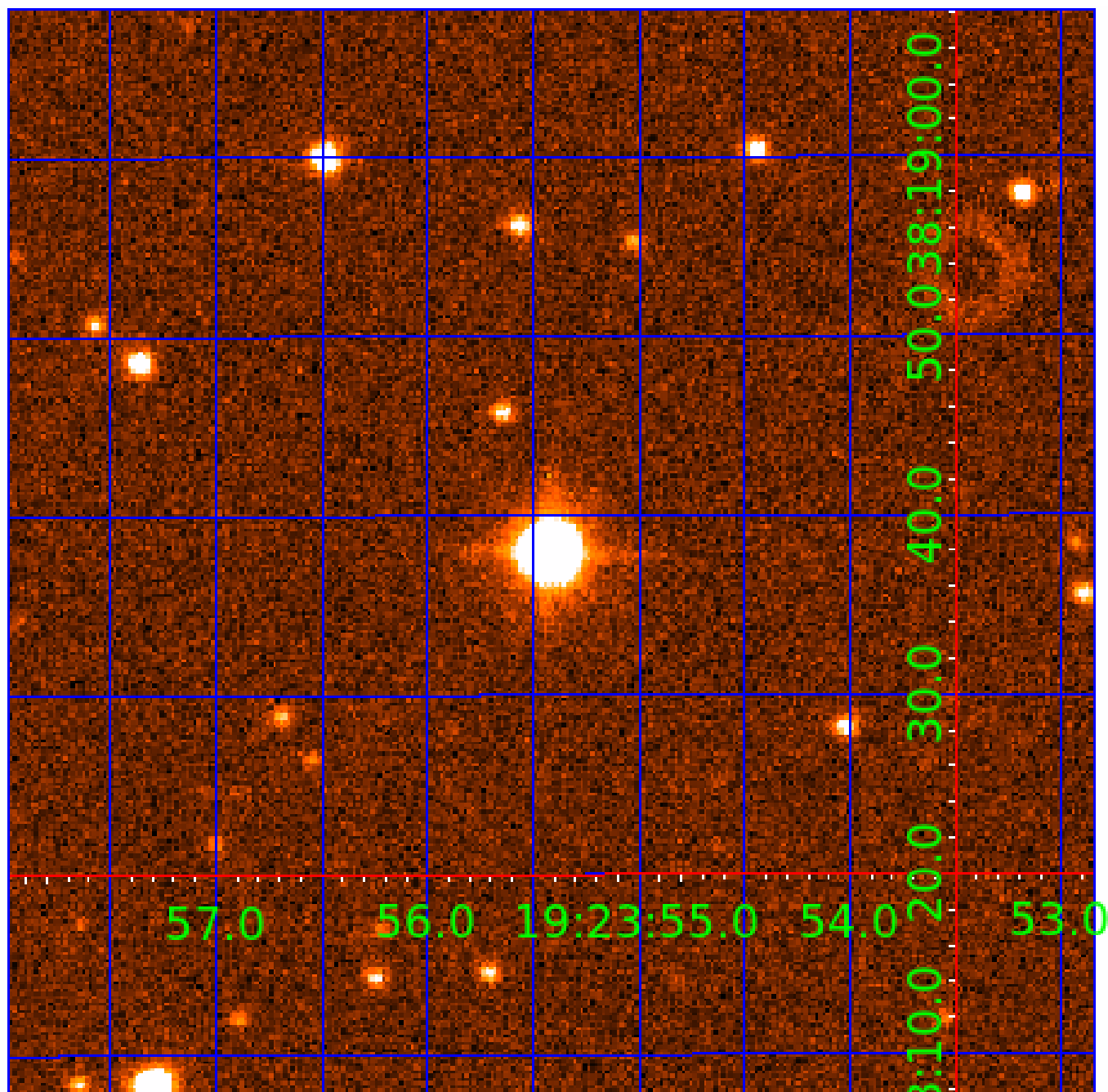


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003233302

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})
003233302-01	OBS	No	2.123634	132.732669	24.6	10.718	12.9	12.0	1.25	6476	0.62	2186.22
003233302-02	OBS	No	2.123345	132.053559	18.1	25.480	13.8	8.1	1.25	6476	0.68	2186.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003233302-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003233302-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—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.

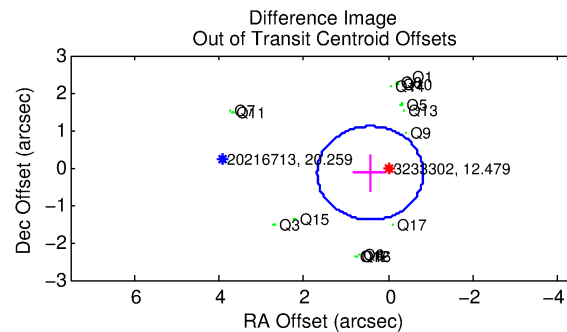
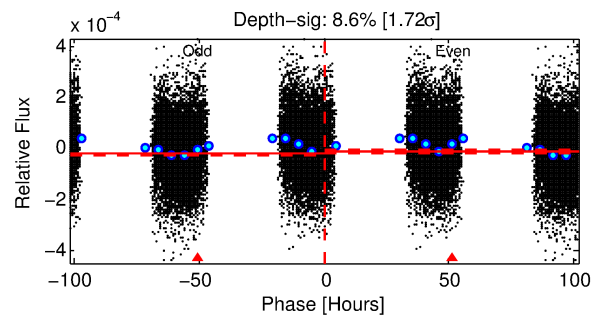
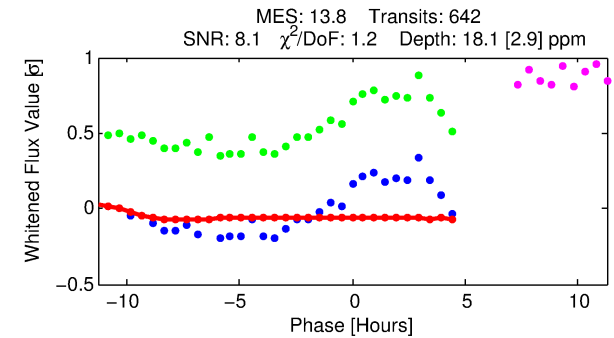
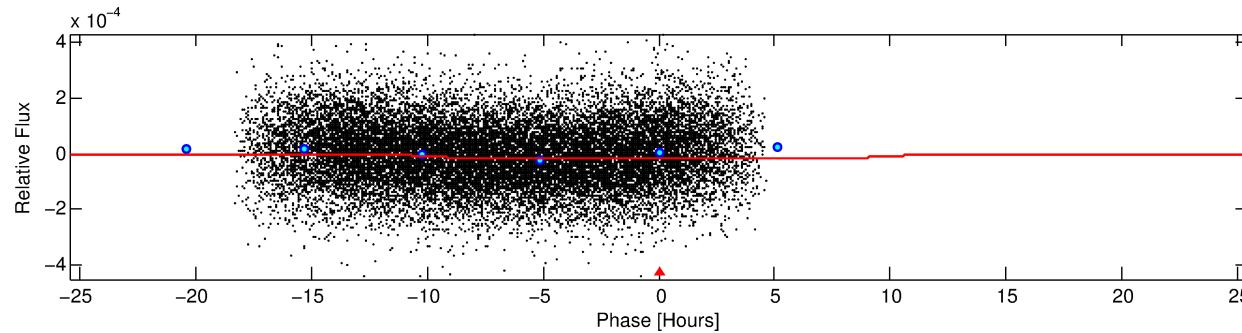
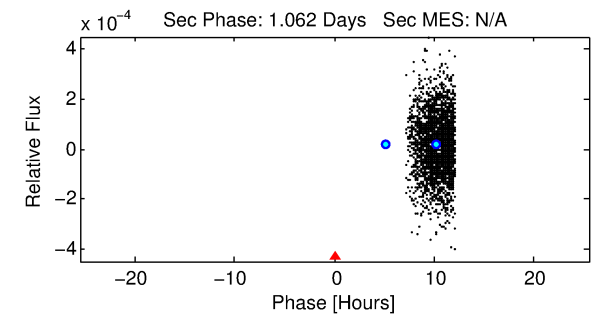
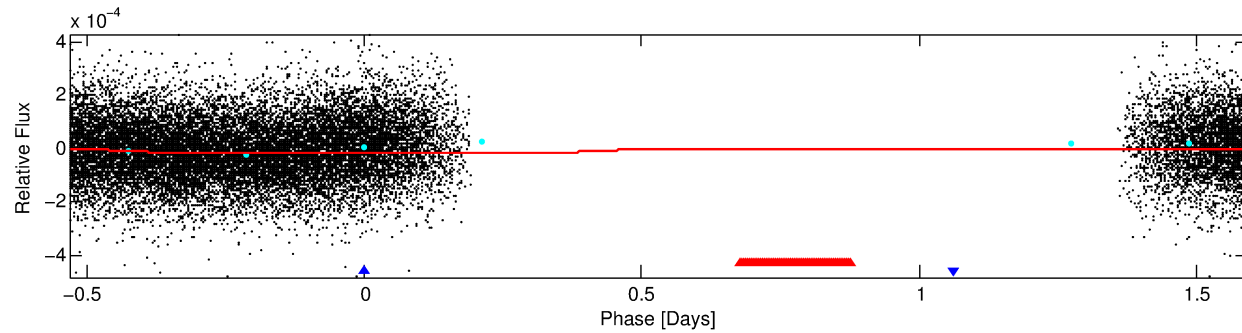
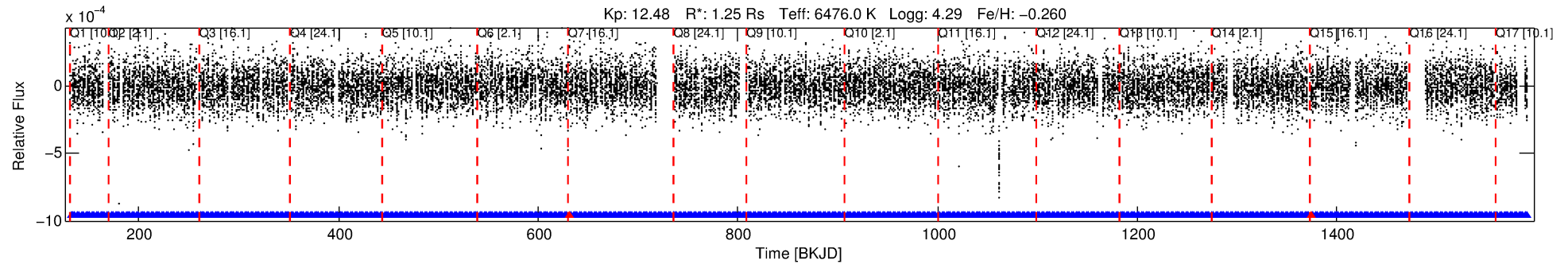
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003233302-02

No Significant Match Found

DV One-Page Summary

KIC: 3233302 Candidate: 2 of 2 Period: 2.123 d



DV Fit Results:

Period = 2.12334 [0.00010] d
Epoch = 132.0536 [0.0431] BKJD
Rp/R* = 0.0050 [0.0004]
a/R* = 1.00 [0.00]
b = 0.97 [0.02]
Seff = 2186.62 [610.67]
Teq = 1744 [122] K
Rp = 0.68 [0.15] Re
a = 0.0334 [0.0058] AU

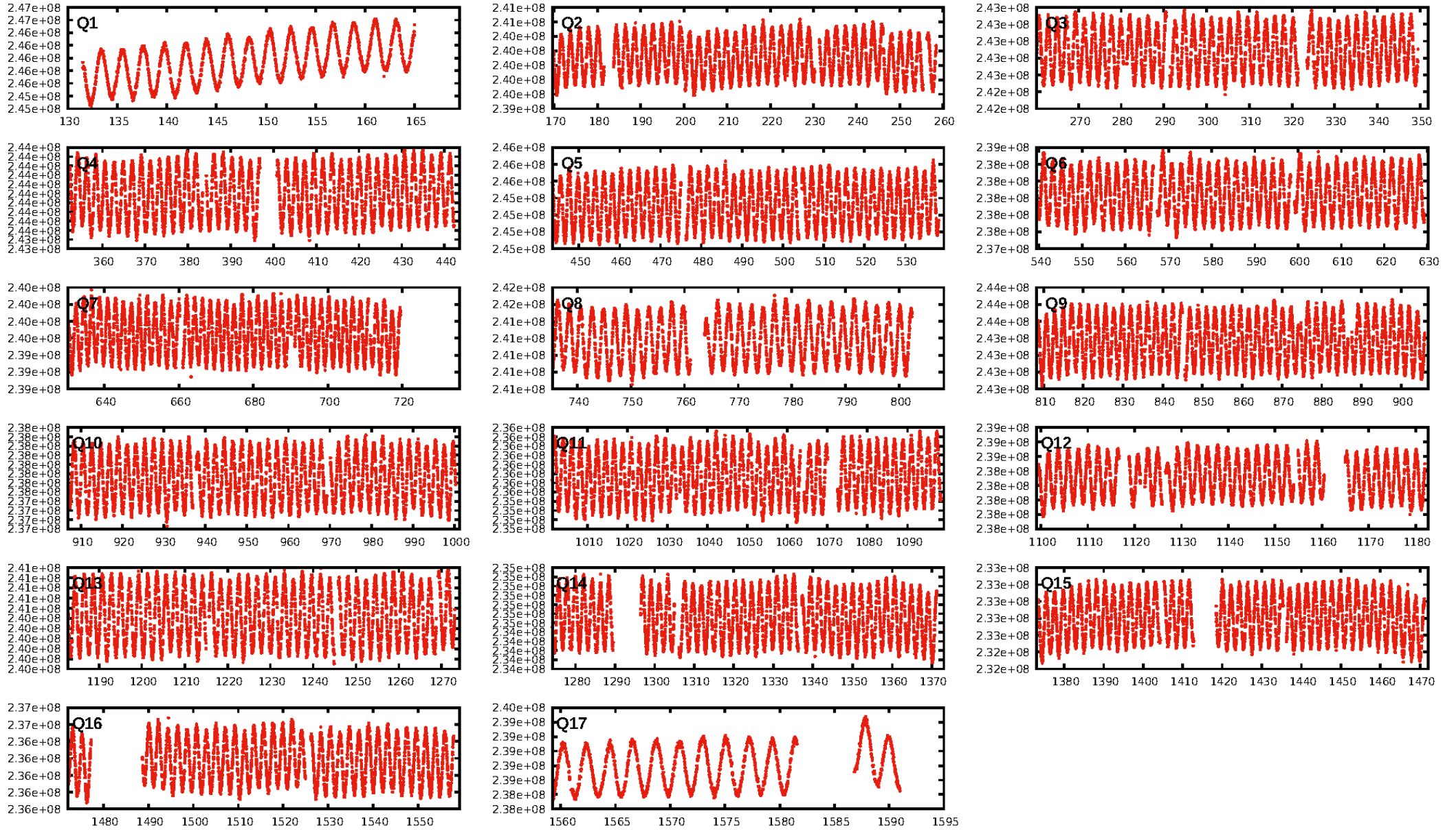
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [612/614]
GhostDiagnostic-chr: 0.9431
Centroid-sig: 0.2%
Centroid-so: 1.512 arcsec [1.97σ]
OotOffset-rm: 0.452 arcsec [1.08σ]
KicOffset-rm: 0.527 arcsec [1.34σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 0.00 [0/17]

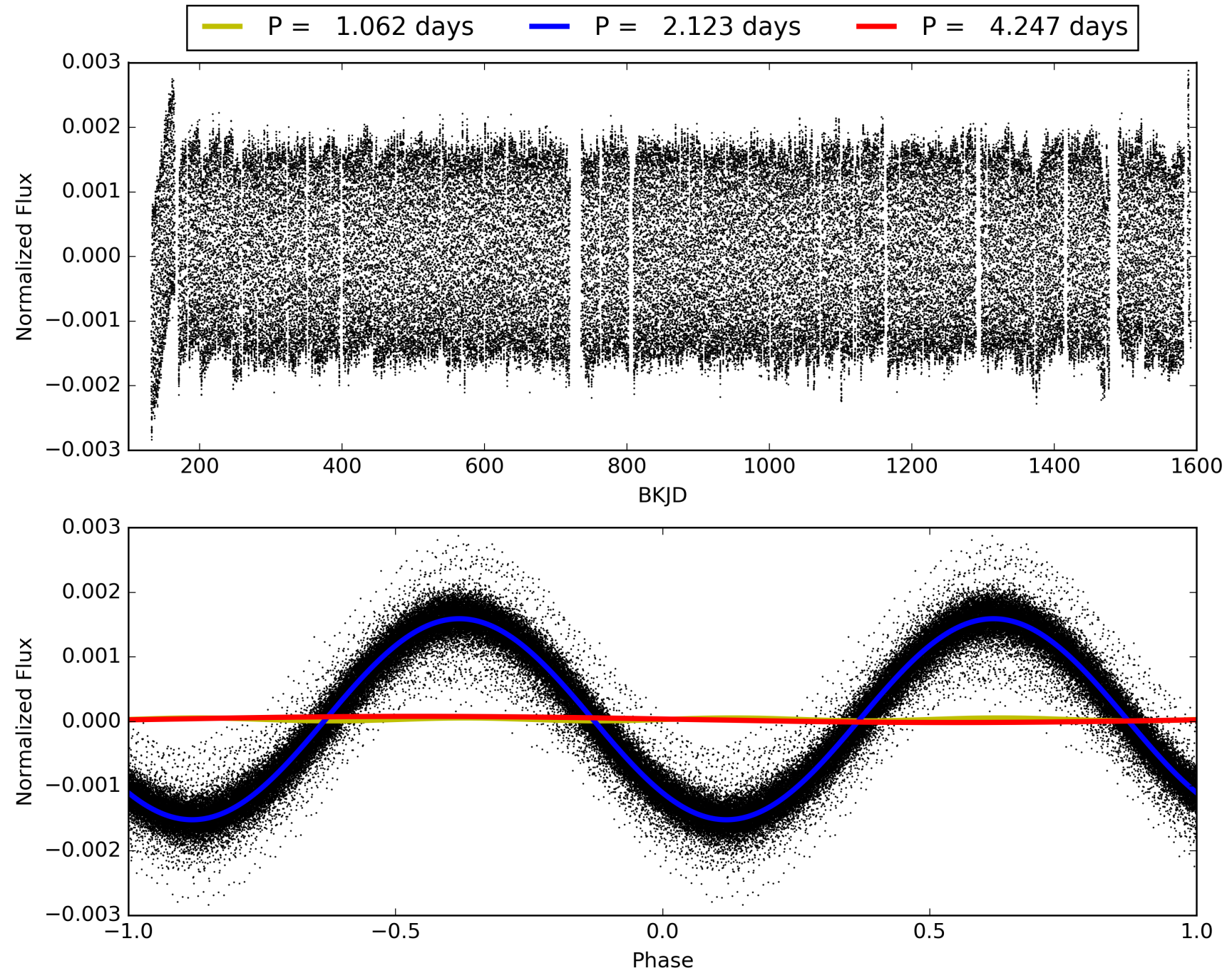
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:13:46 Z

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

TCE 003233302-02, PDC Light Curves

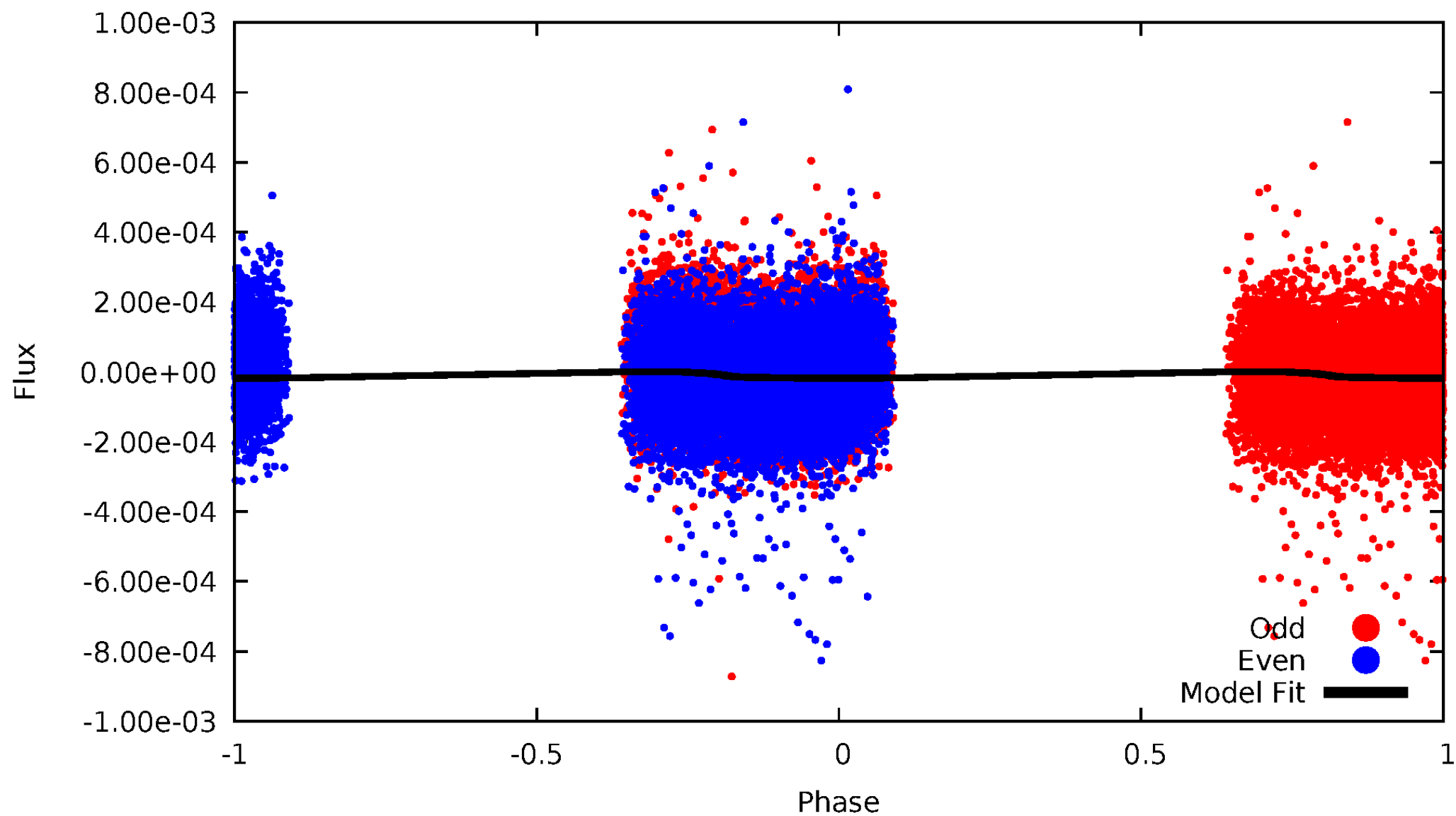


TCE 003233302-02



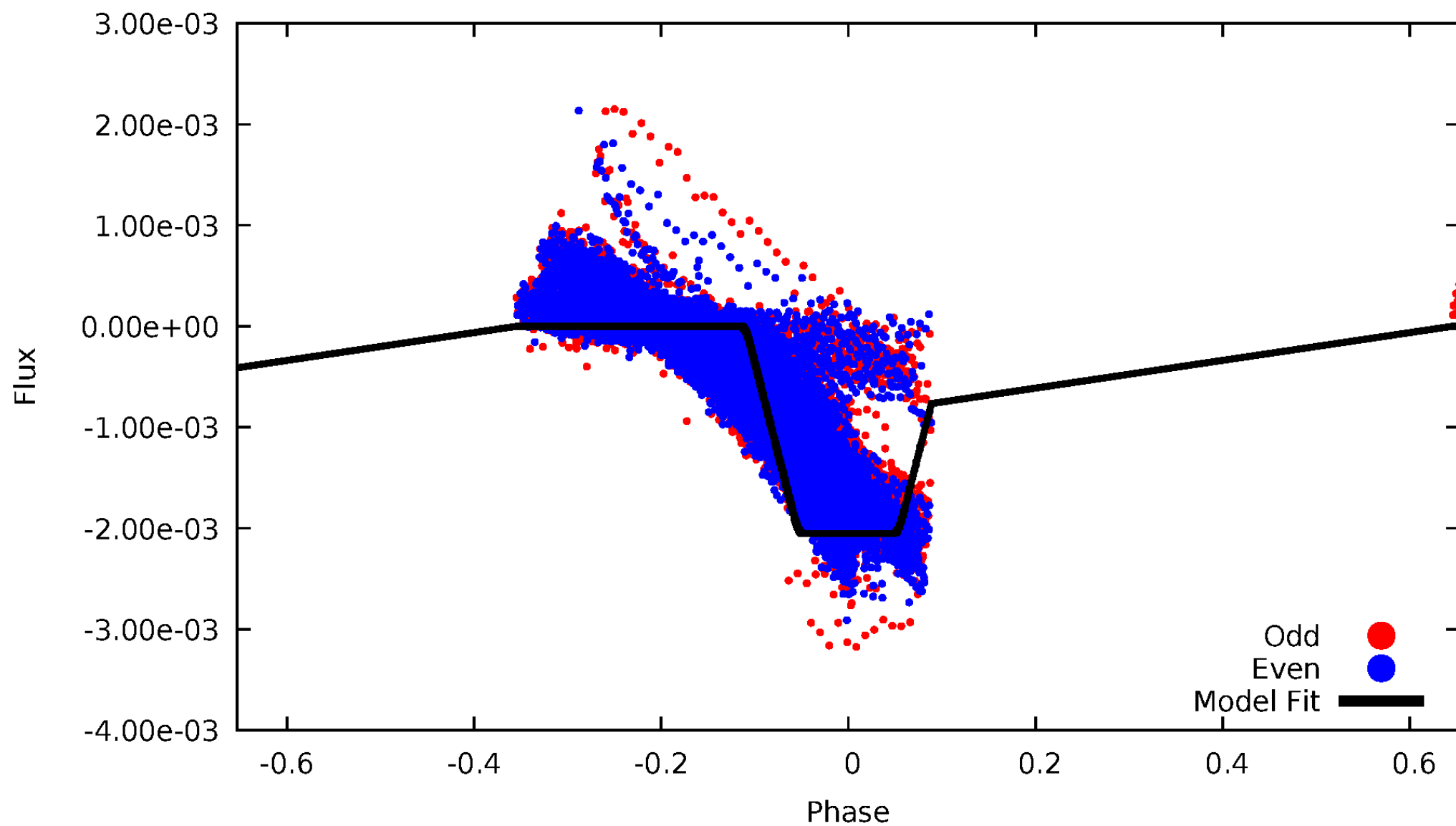
DV Odd/Even

TCE 003233302-02



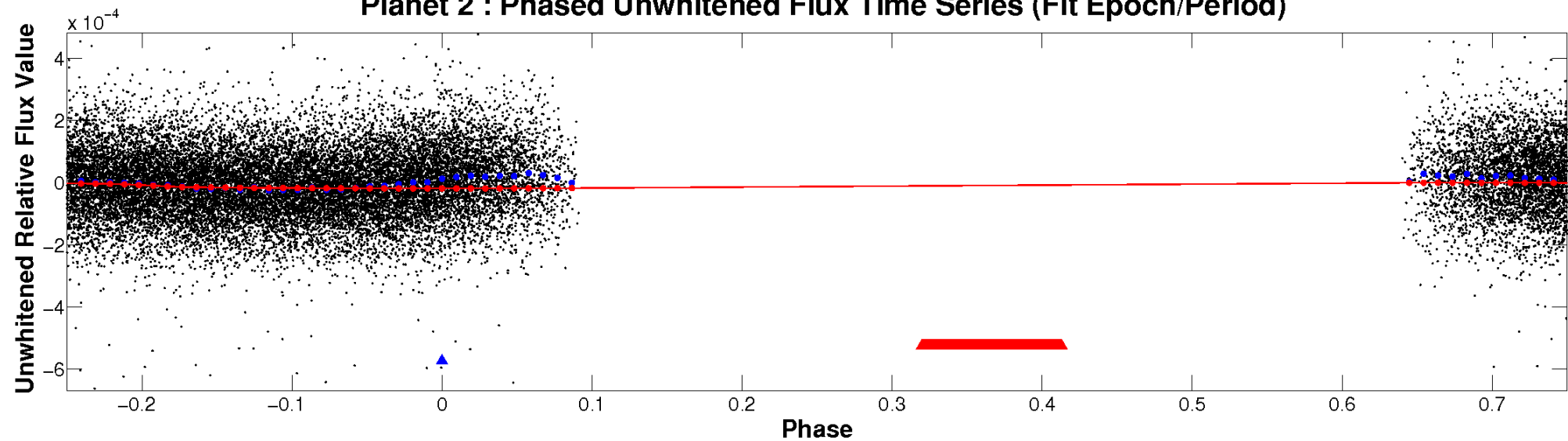
ALT Odd/Even

TCE 003233302-02

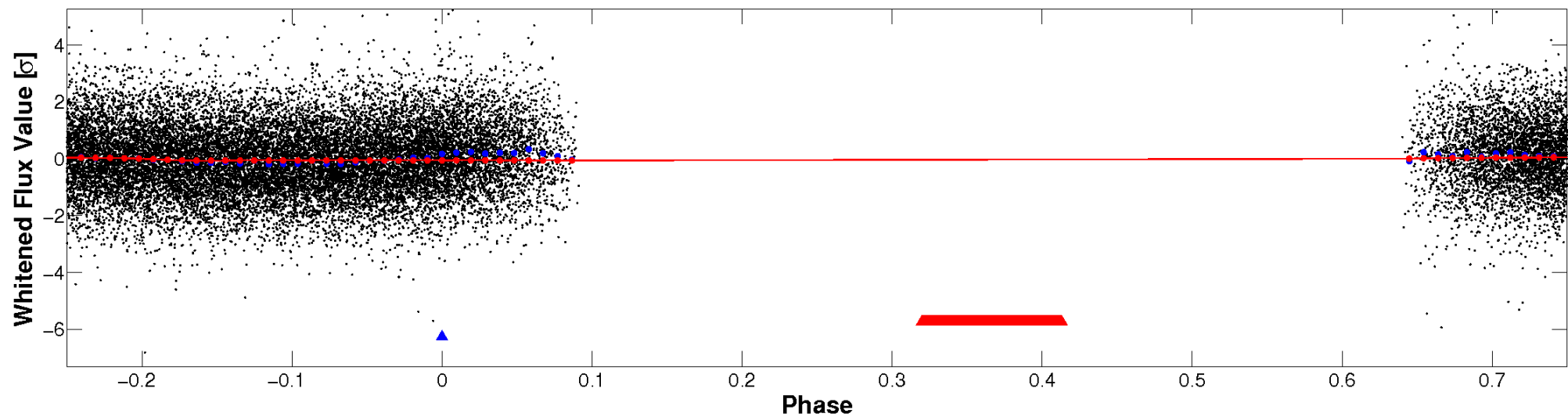


Non-Whitened Vs. Whitened Light Curve

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

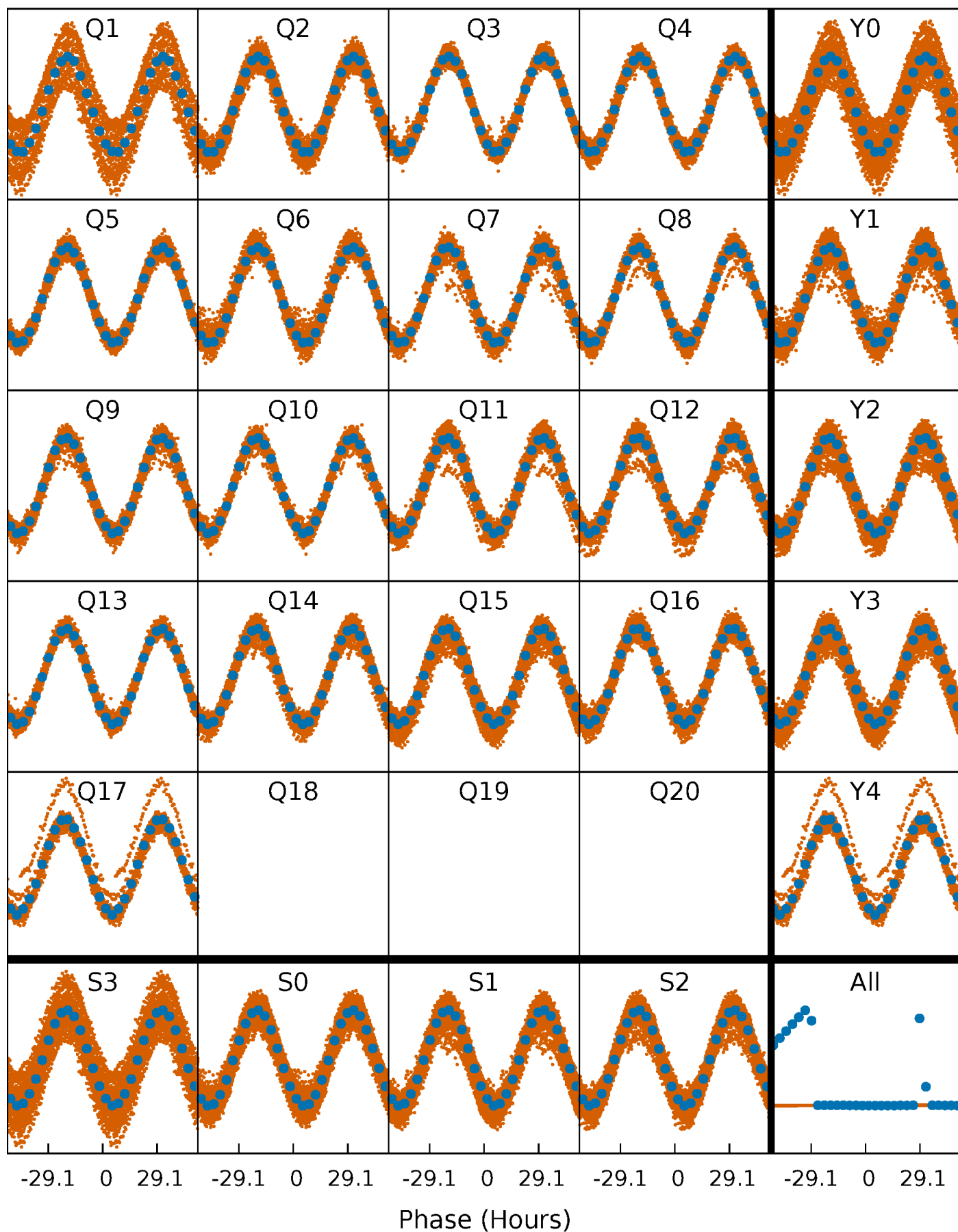


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



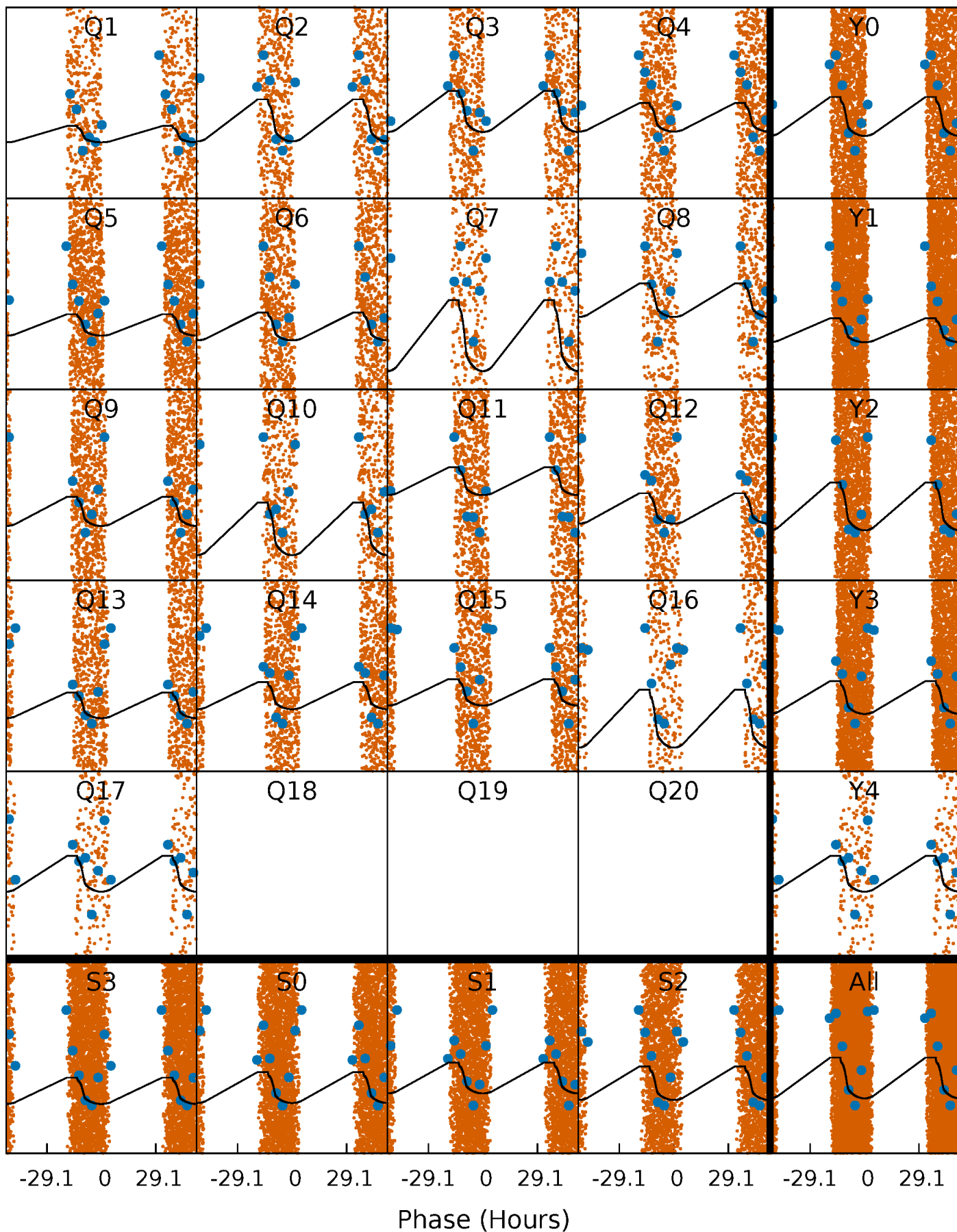
PDC Quarter-Phased Transit Curves

TCE 003233302-02 P= 2.123345 Days $T_0=132.053559$ (BKJD)



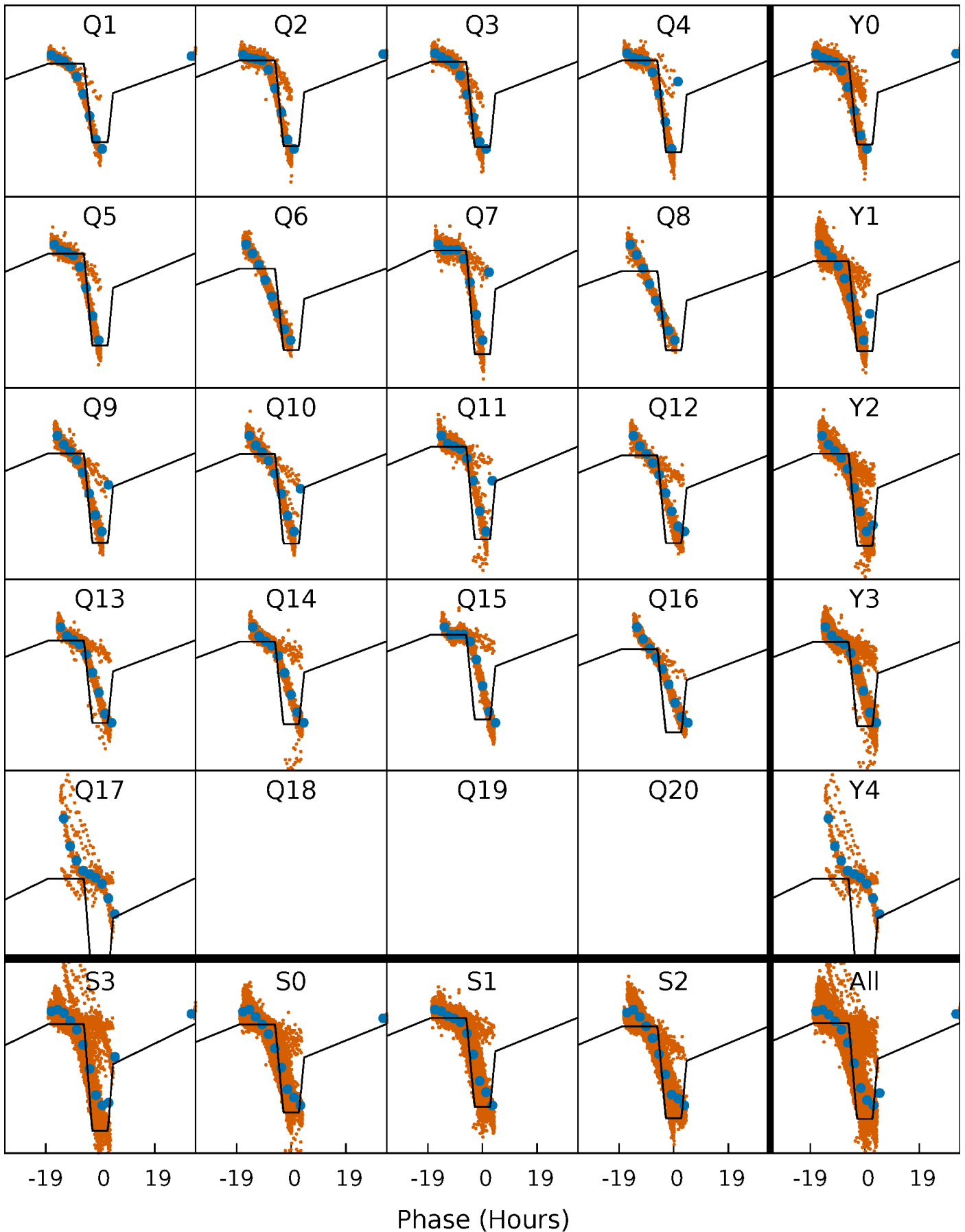
DV Quarter-Phased Transit Curves

TCE 003233302-02 P= 2.123345 Days $T_0=132.053559$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

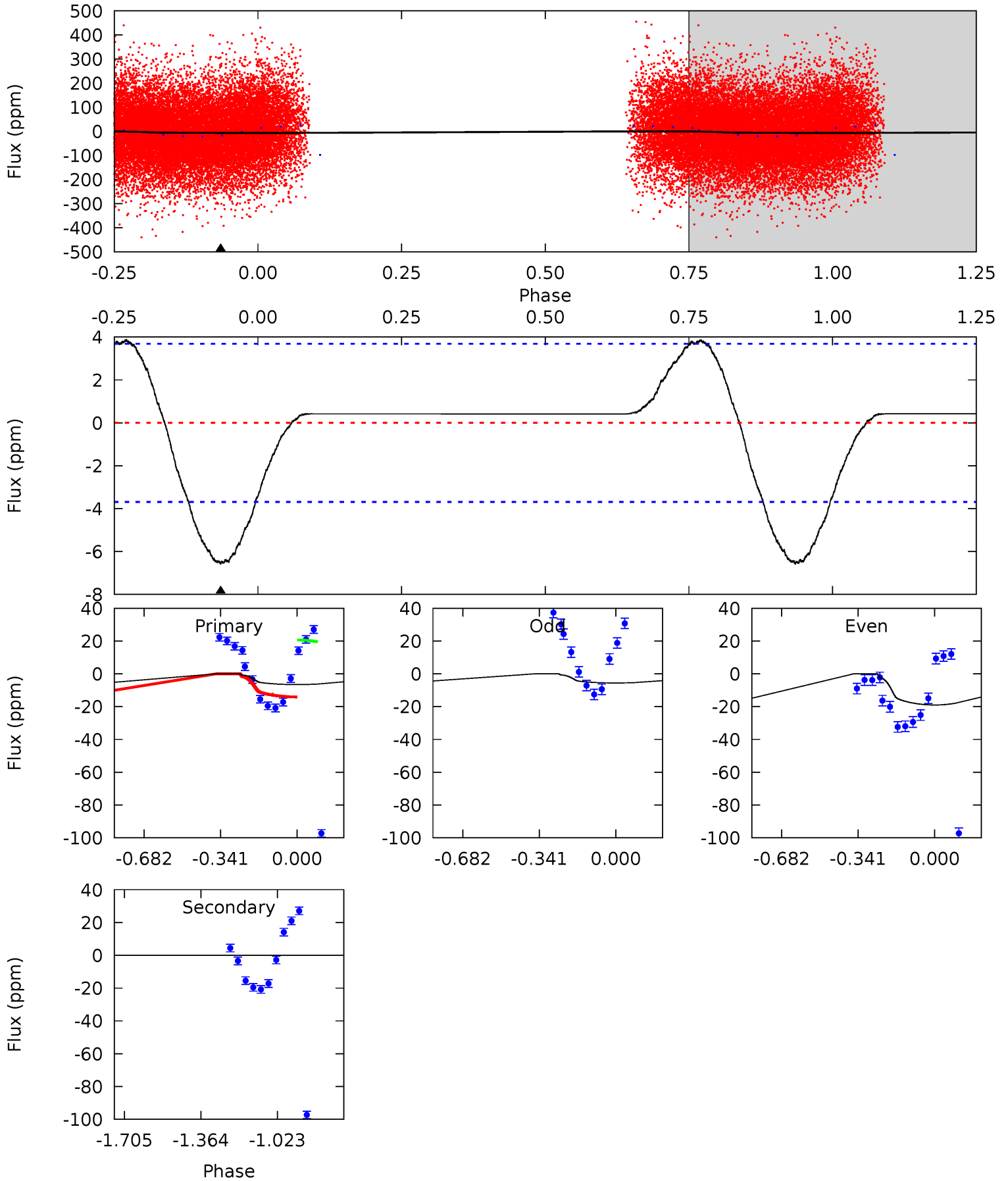
TCE 003233302-02 $P = 2.123367$ Days $T_0 = 132.043048$ (BKJD)



DV Model-Shift Uniqueness Test

003233302-02, P = 2.123345 Days, E = 129.930214 Days

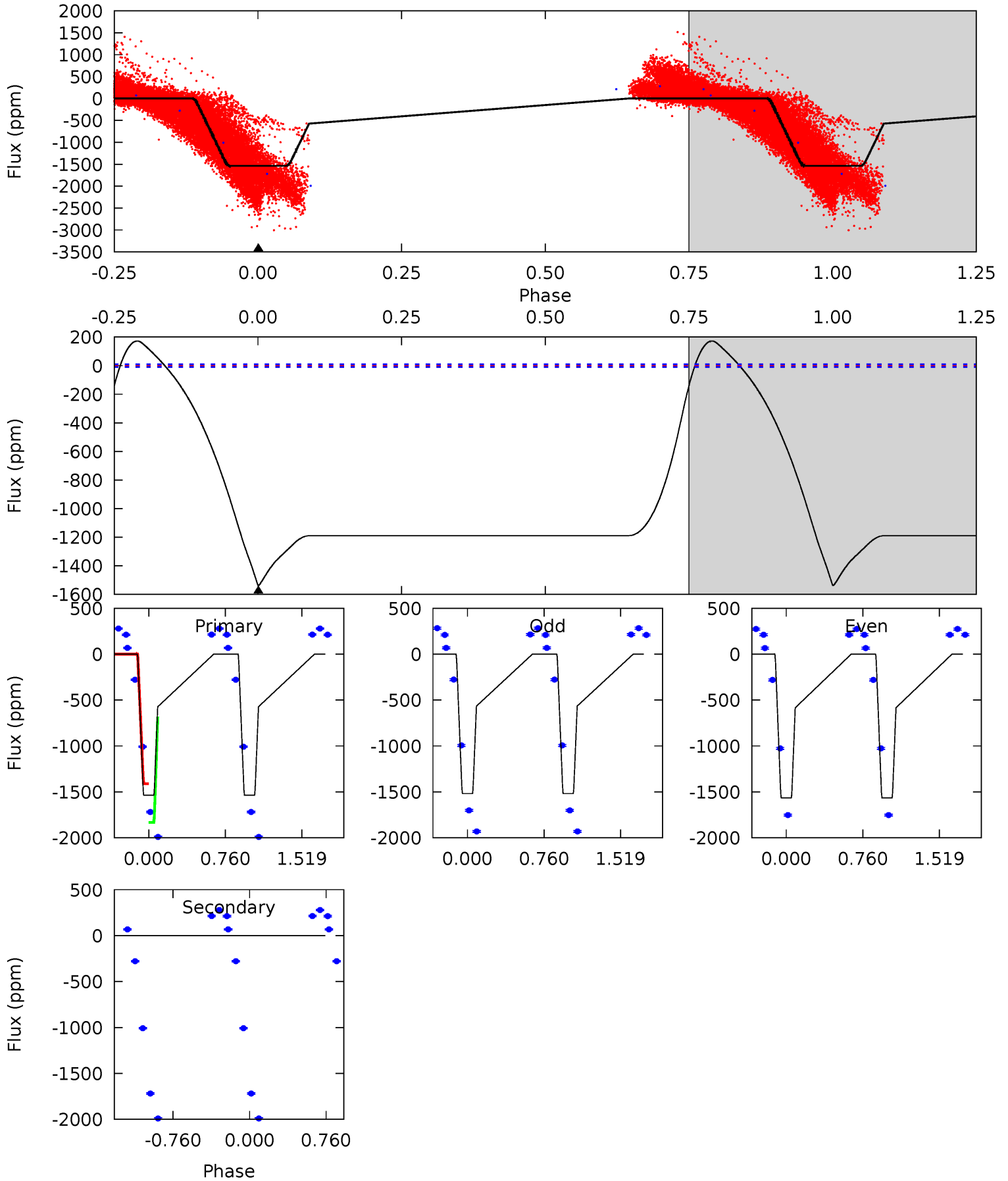
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.67	0	0	0	4.30	0.95	0.92	7.67	7.67	0	0	8.21	2.42	0.37	2.90



Alt Model-Shift Uniqueness Test

003233302-02, P = 2.123367 Days, E = 129.919681 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
684.1	0	0	0	4.12	0.31	20.9	684.1	684.1	0	0	10.6	0.98	0.10	21.3



Stellar Parameters For KIC 003233302

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6476^{+145}_{-194}	$4.291^{+0.112}_{-0.138}$	$-0.260^{+0.250}_{-0.300}$	$1.246^{+0.256}_{-0.186}$	$1.106^{+0.152}_{-0.125}$	$0.806^{+0.408}_{-0.316}$
	+2%/-3%	+3%/-3%	+96%/-115%	+21%/-15%	+14%/-11%	+51%/-39%
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 003233302-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1	$0.68^{+0.09}_{-0.09}$	2439^{+125}_{-122}	-2785^{+5968}_{-641}	$-0.016^{+1.177}_{-0.996}$
Alt.	0 ± 2	$6.18^{+0.81}_{-0.55}$	2440^{+136}_{-121}	-2760^{+87}_{-85}	$0.001^{+0.036}_{-0.035}$

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

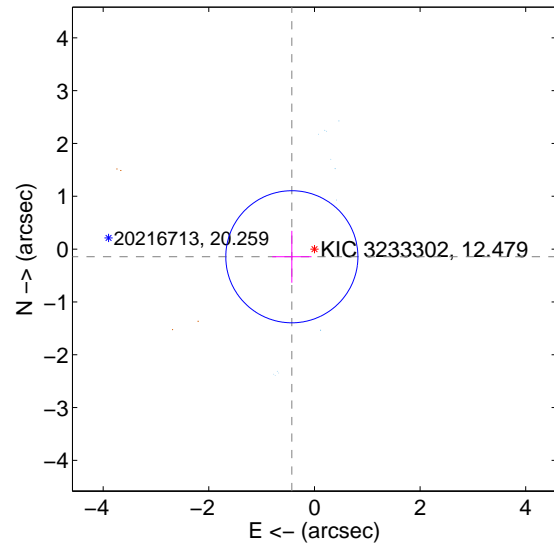
Supplemental centroid analysis for 003233302-02. Kepler magnitude: 12.48. Transit SNR 8.07

There are 12 quarters with good PRF difference image offsets

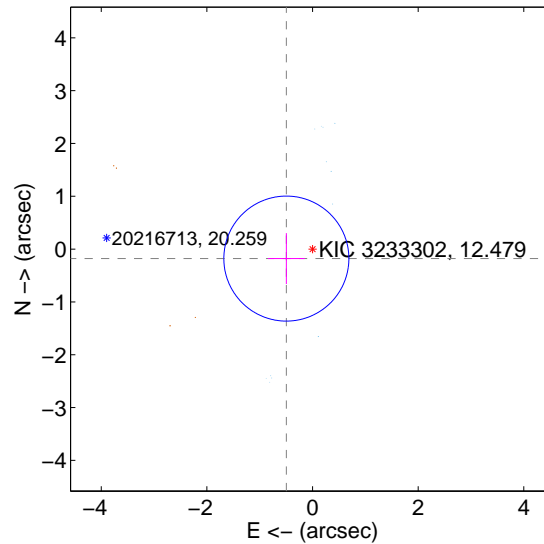
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.452 ± 0.417	1.08	0.428 ± 0.372	-0.145 ± 0.491
PRF-fit source offset from KIC position	0.527 ± 0.395	1.34	0.495 ± 0.347	-0.180 ± 0.483
photometric centroid source offset	1.51 ± 0.77	1.97	-0.41 ± 0.65	-1.45 ± 0.78

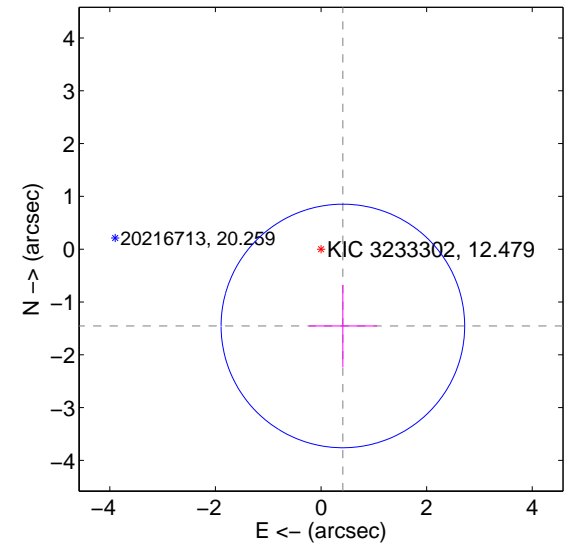
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

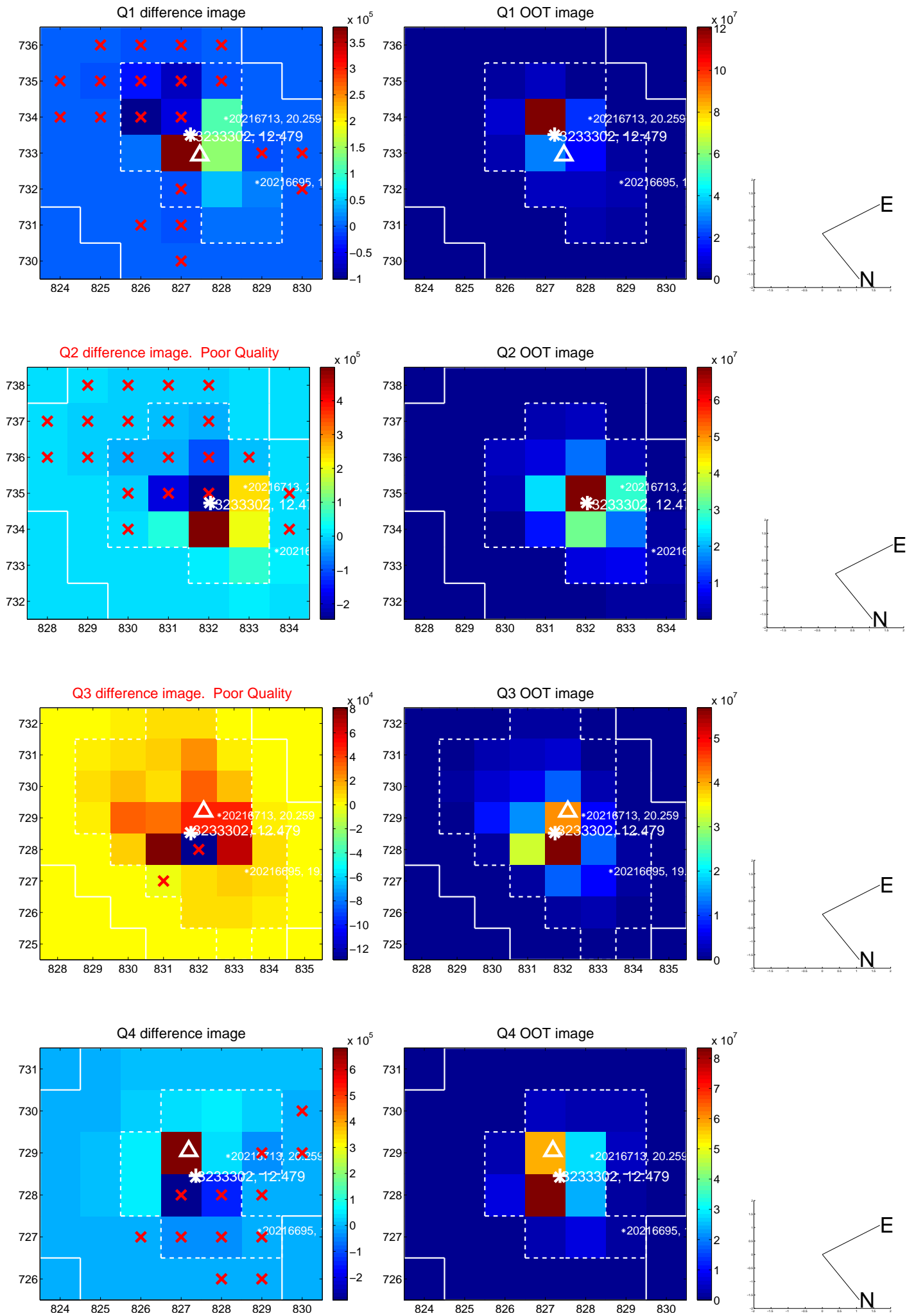


offset from photometric centroids

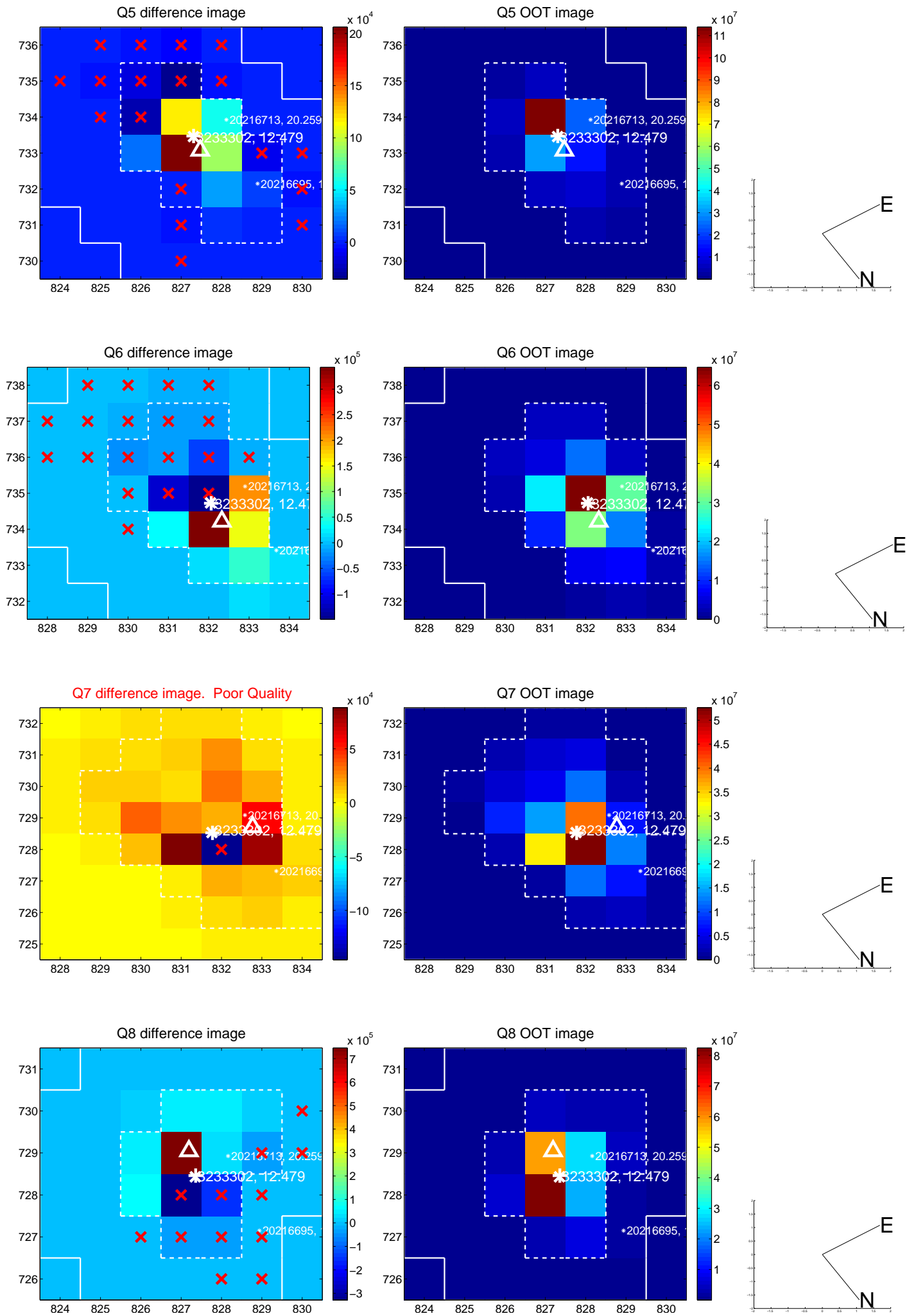


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

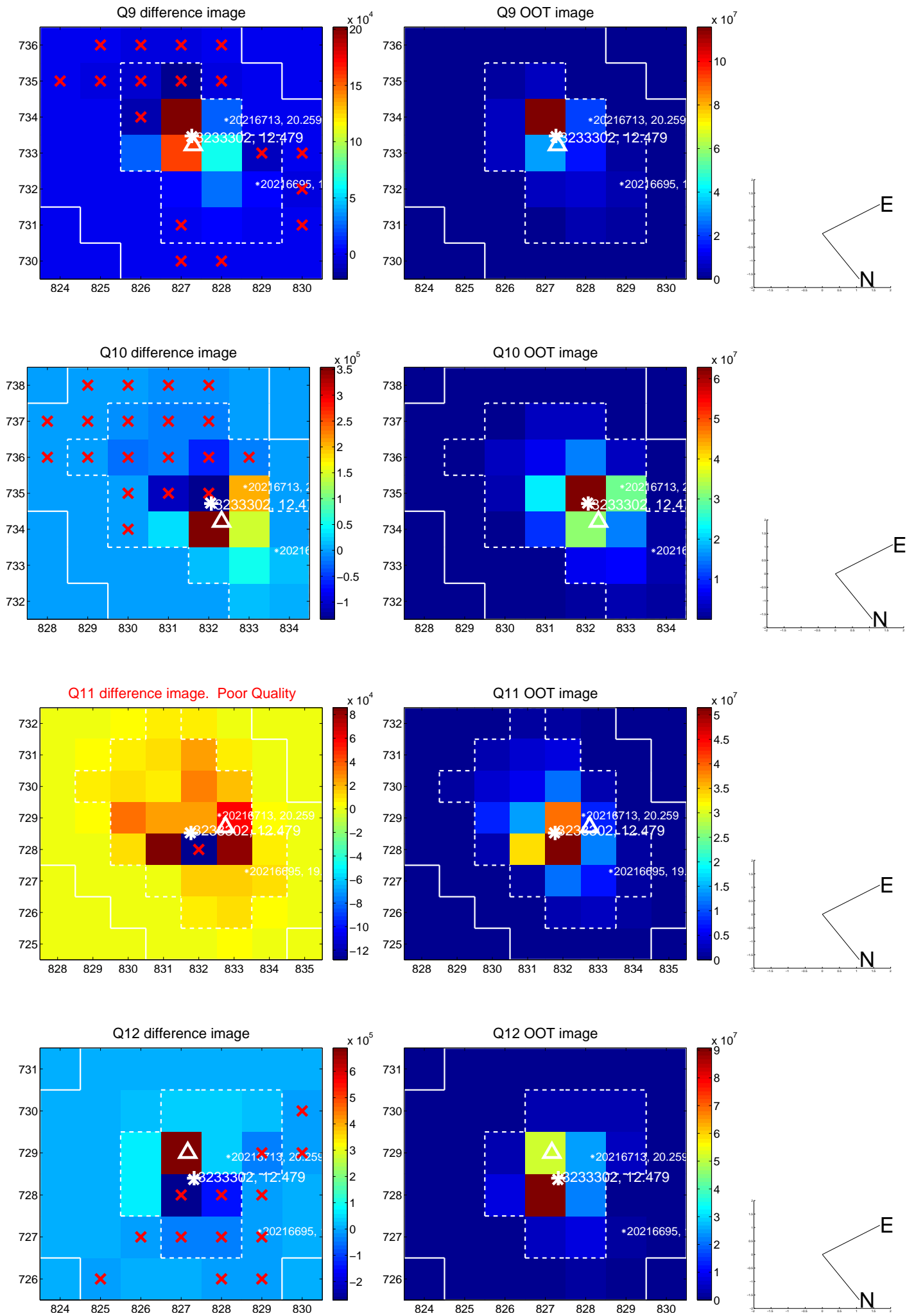
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



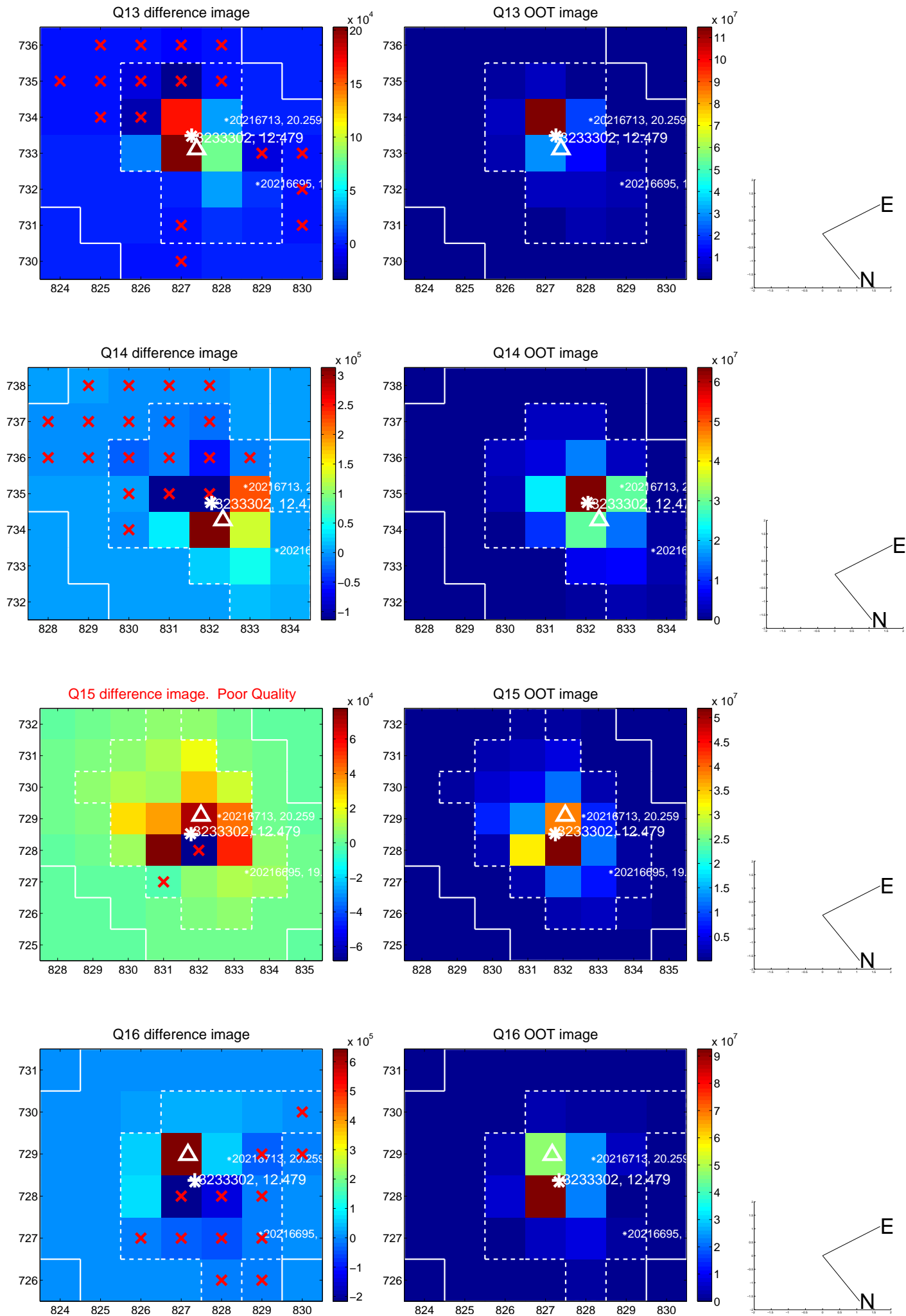
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



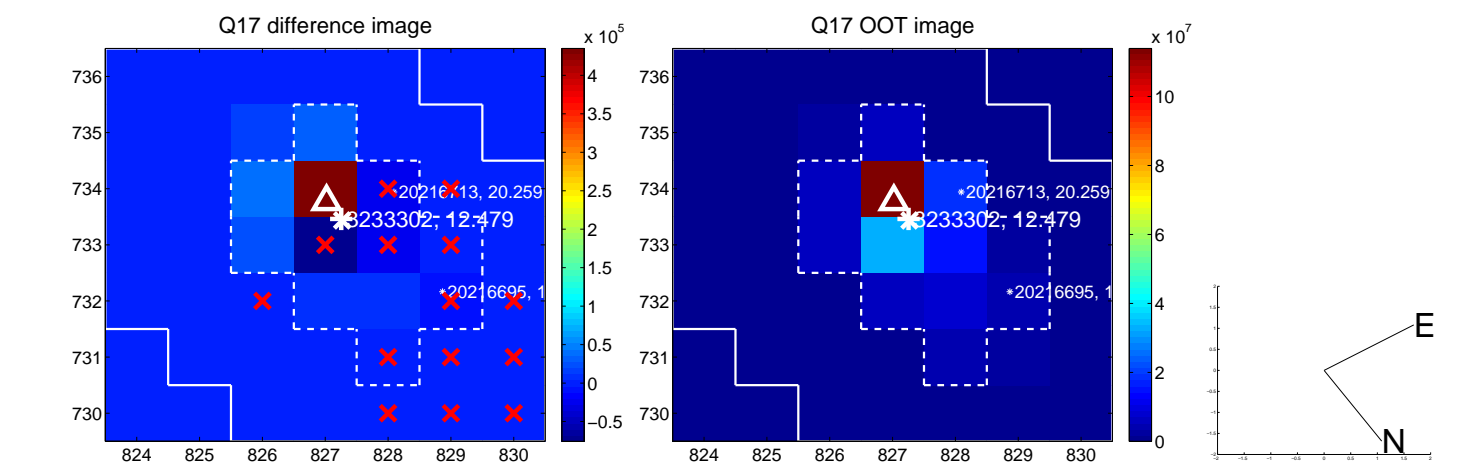
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



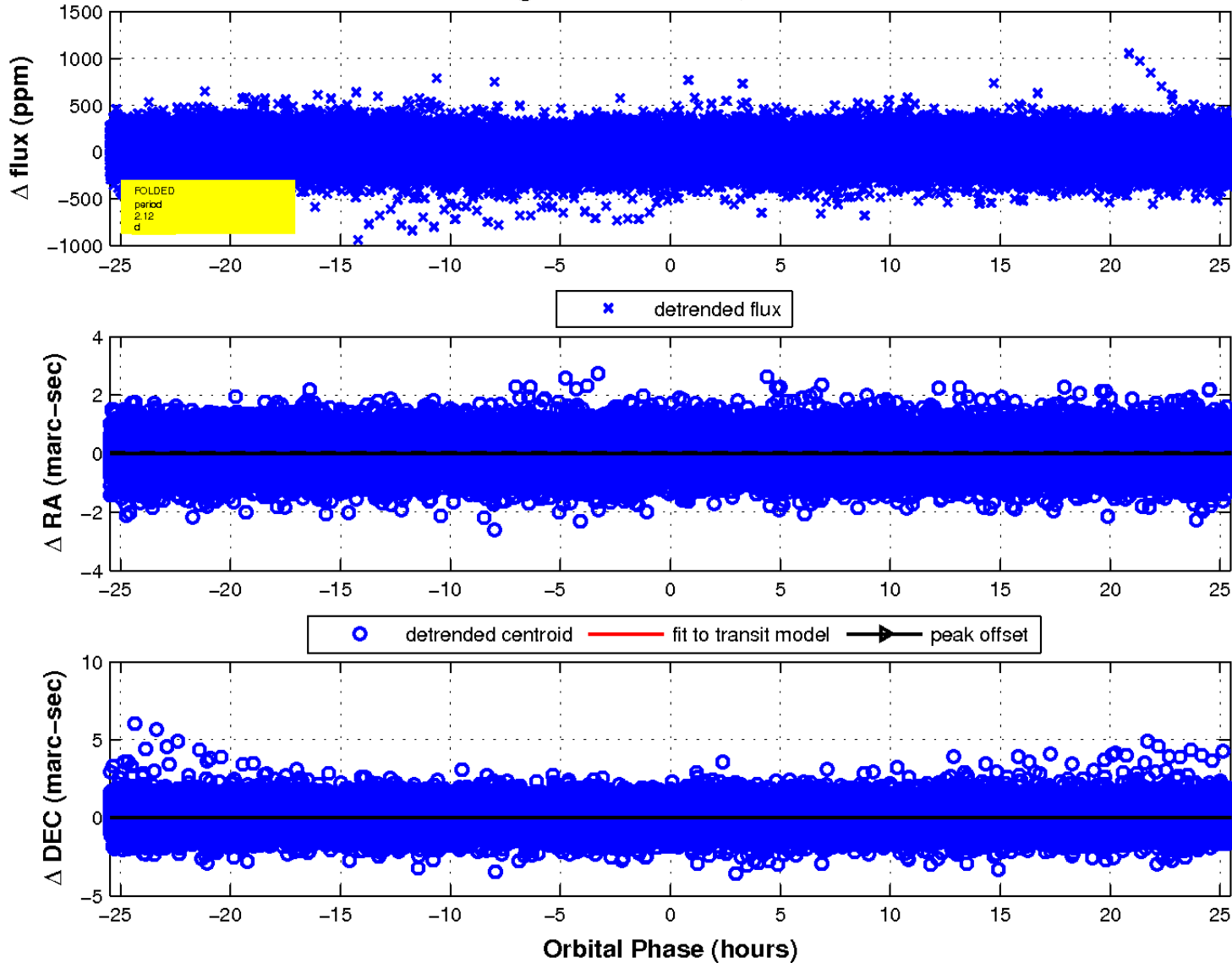
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

