

KIC 006301132

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})
006301132-01	OBS	No	0.594354	131.785131	44.6	1.341	12.4	14.0	2.10	7573	1.63	49358.51
006301132-02	OBS	No	0.594358	132.019705	43.2	1.482	11.9	14.1	2.10	7573	1.60	49358.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006301132-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006301132-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_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.

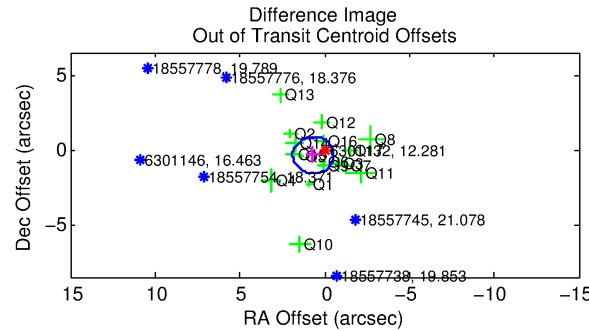
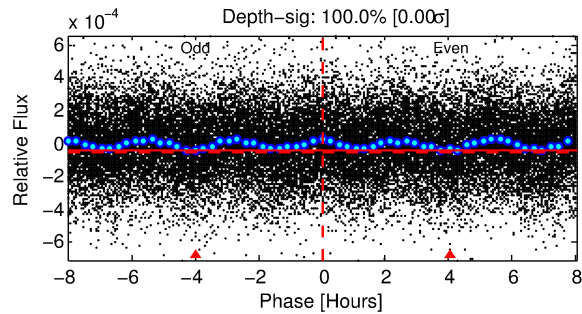
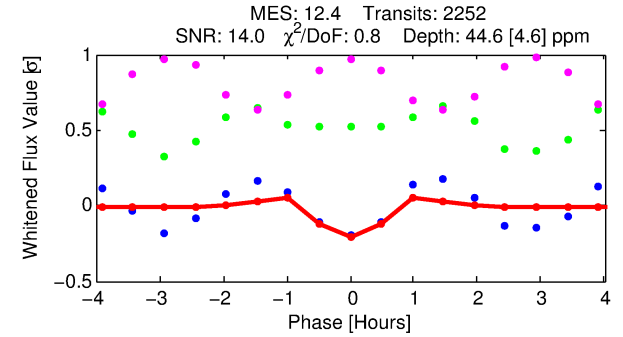
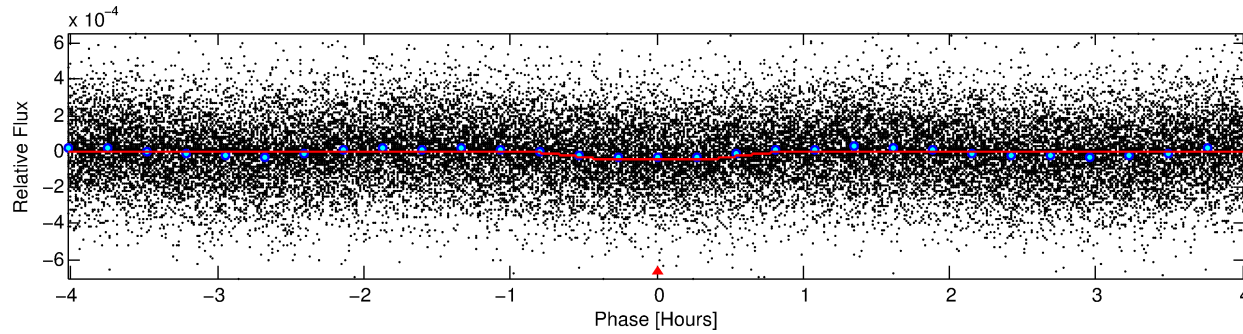
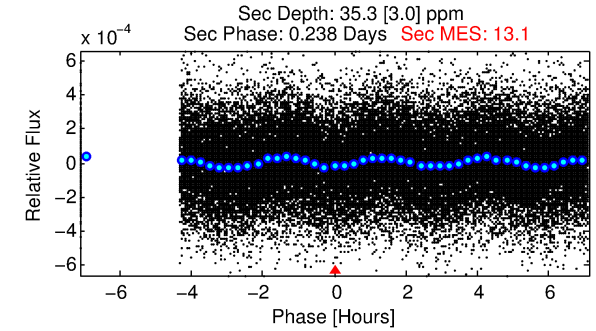
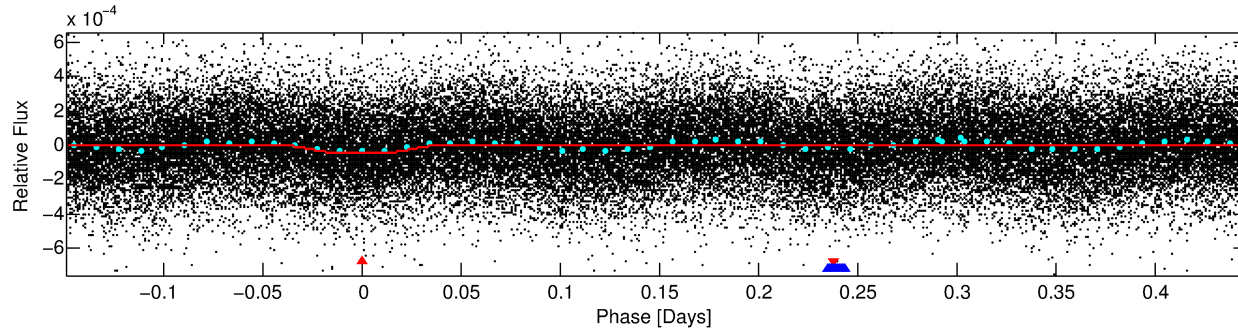
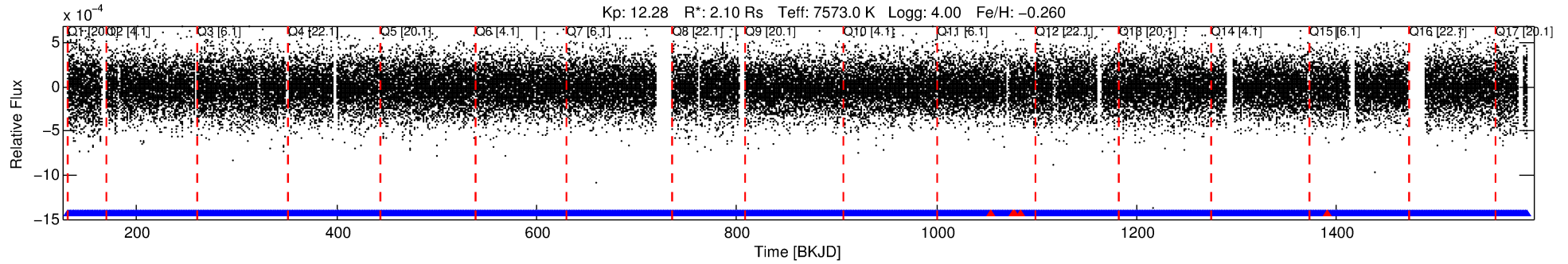
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006301132-01

No Significant Match Found

DV One-Page Summary

KIC: 6301132 Candidate: 1 of 2 Period: 0.594 d



DV Fit Results:

Period = 0.59435 [0.00001] d
Epoch = 131.7851 [0.0011] BKJD
Rp/R* = 0.0071 [0.0013]
a/R* = 1.80 [1.36]
b = 0.90 [0.24]
Seff = 49358.51 [13126.51]
Teq = 3801 [253] K
Rp = 1.63 [0.44] Re
a = 0.0162 [0.0028] AU
Ag = 1.91 [0.88] [1.03σ]
Teffp = 6905 [661] K [4.39σ]

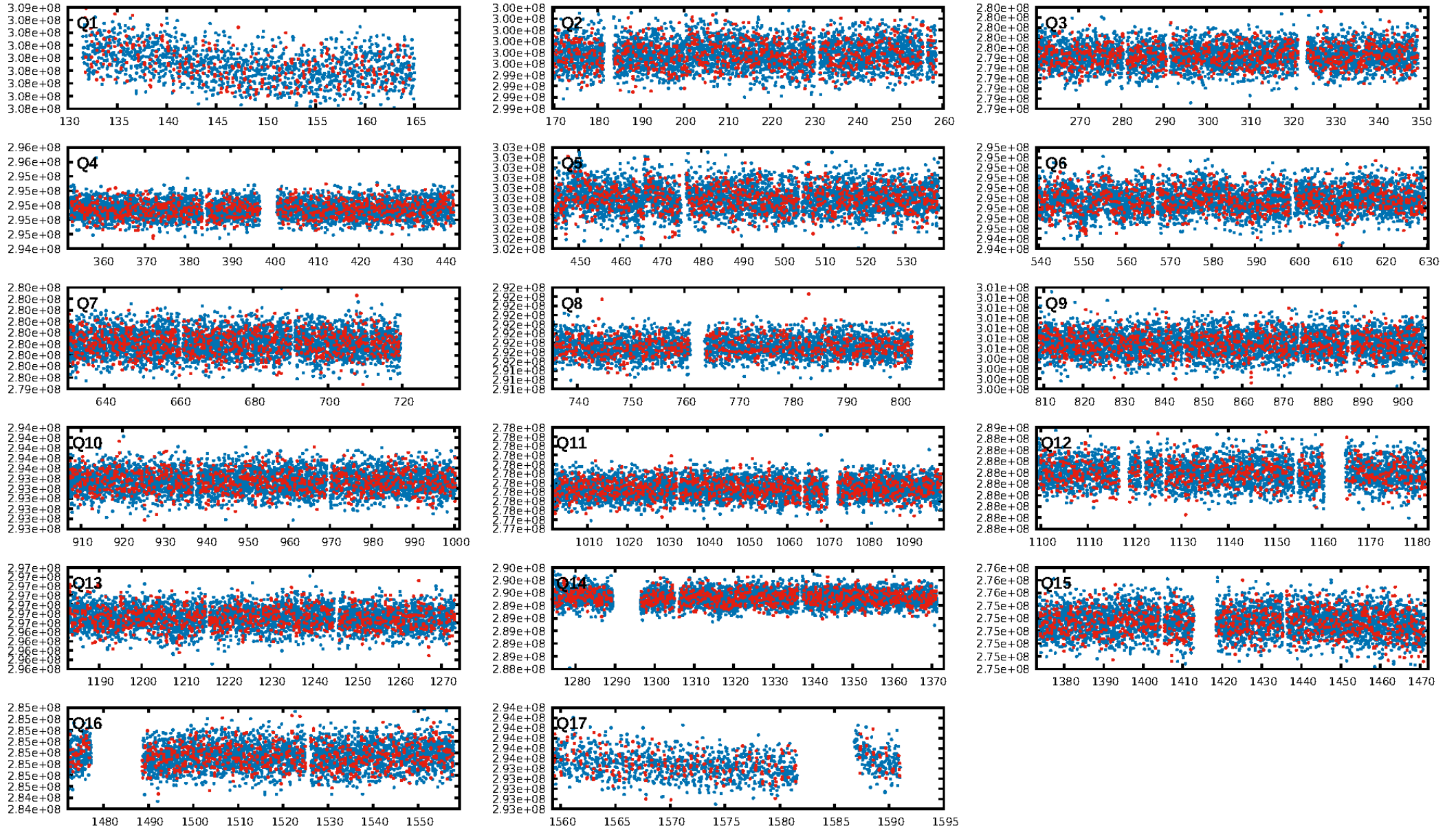
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.01e-26
RollingBand-fgt: 1.00 [2146/2151]
GhostDiagnostic-chr: 2.646
Centroid-sig: N/A
Centroid-so: 0.743 arcsec [2.39σ]
OotOffset-rm: 0.770 arcsec [1.89σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.659 arcsec [1.53σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 0.00 [0/17]

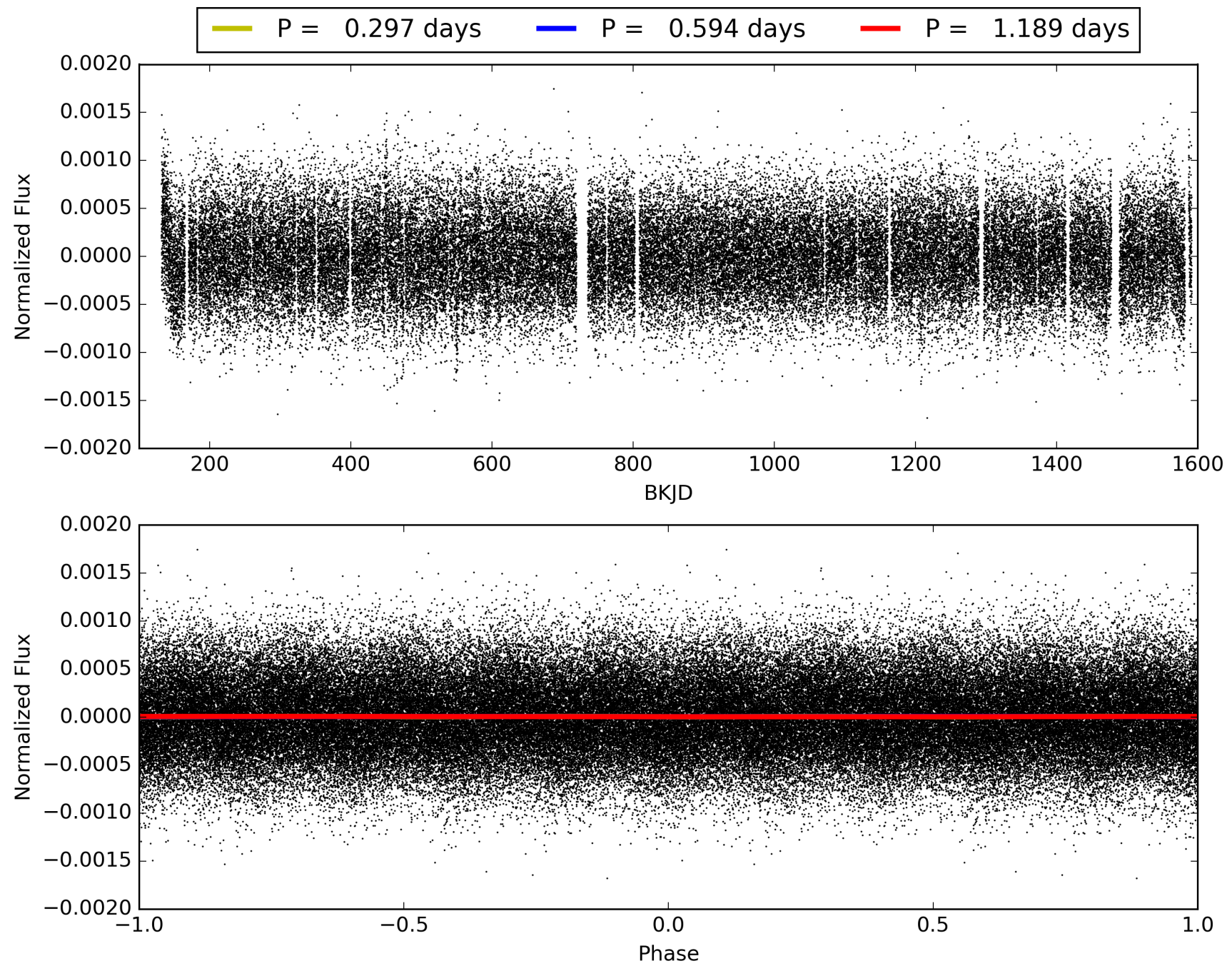
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:28:41 Z

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

TCE 006301132-01, PDC Light Curves

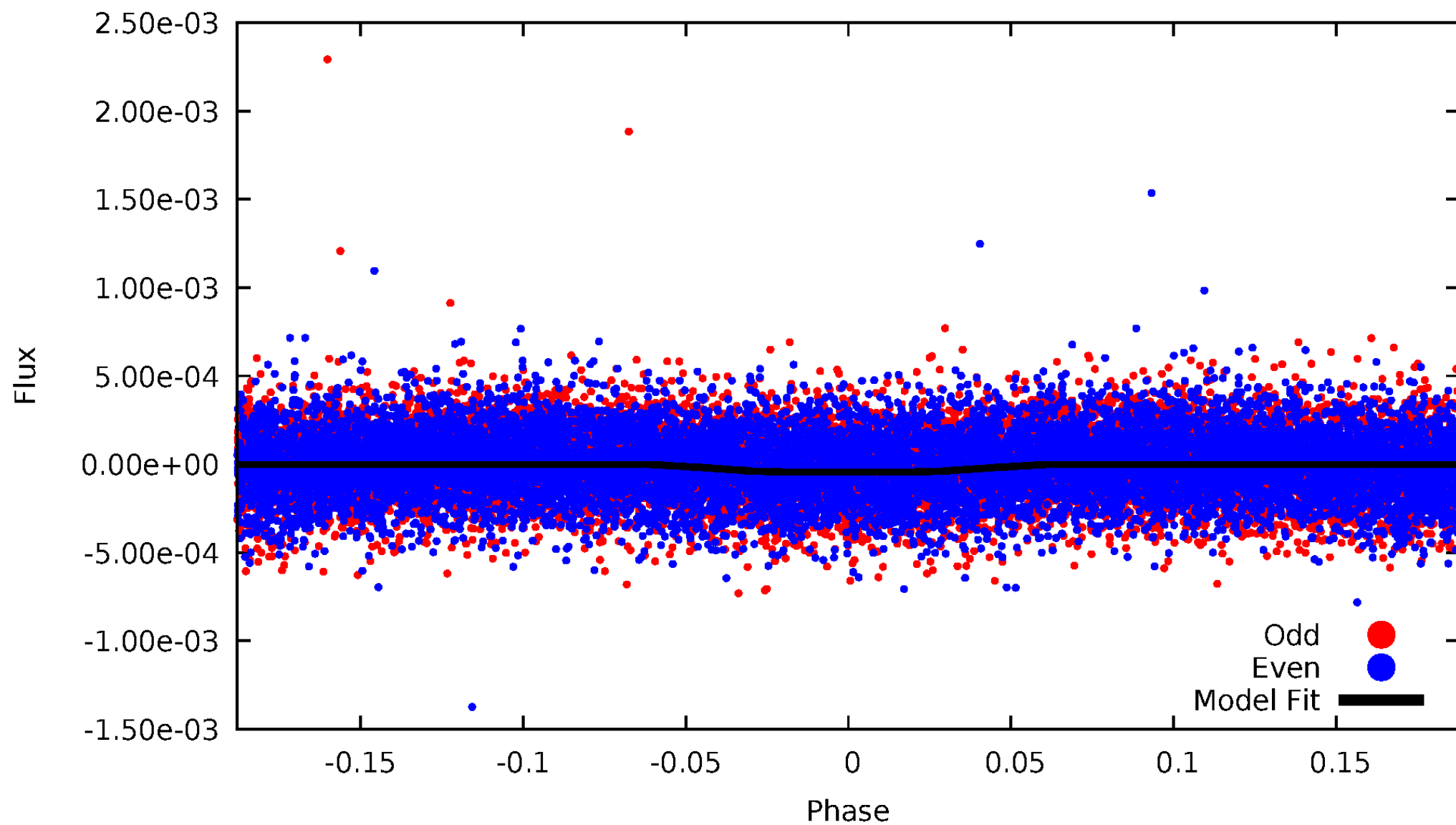


TCE 006301132-01



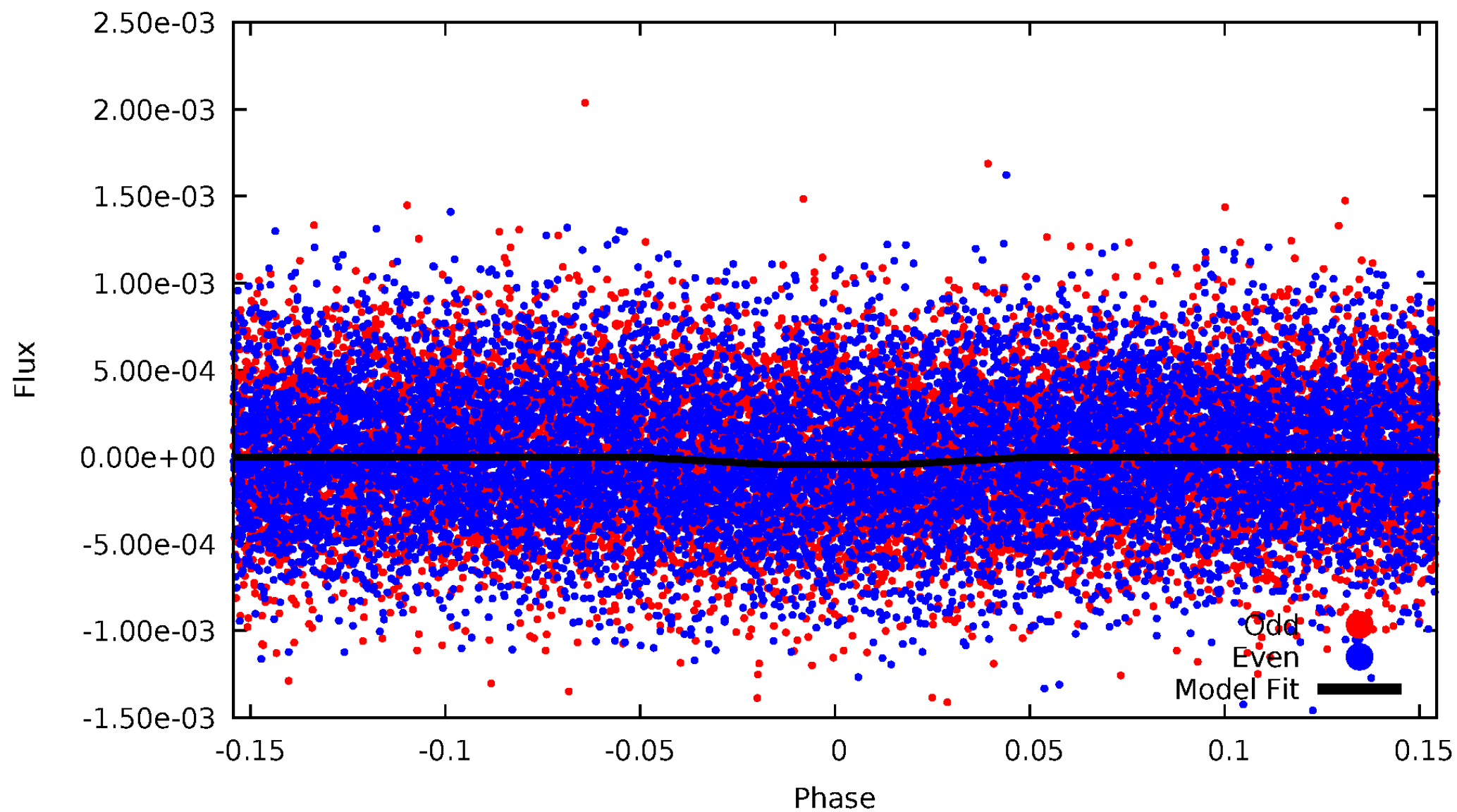
DV Odd/Even

TCE 006301132-01

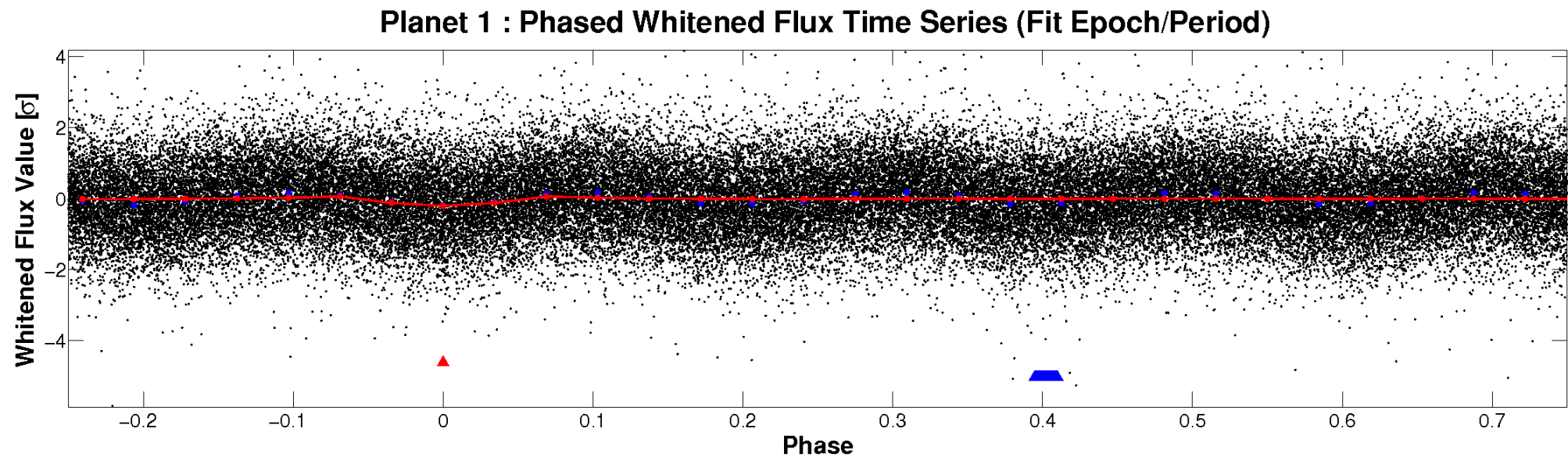
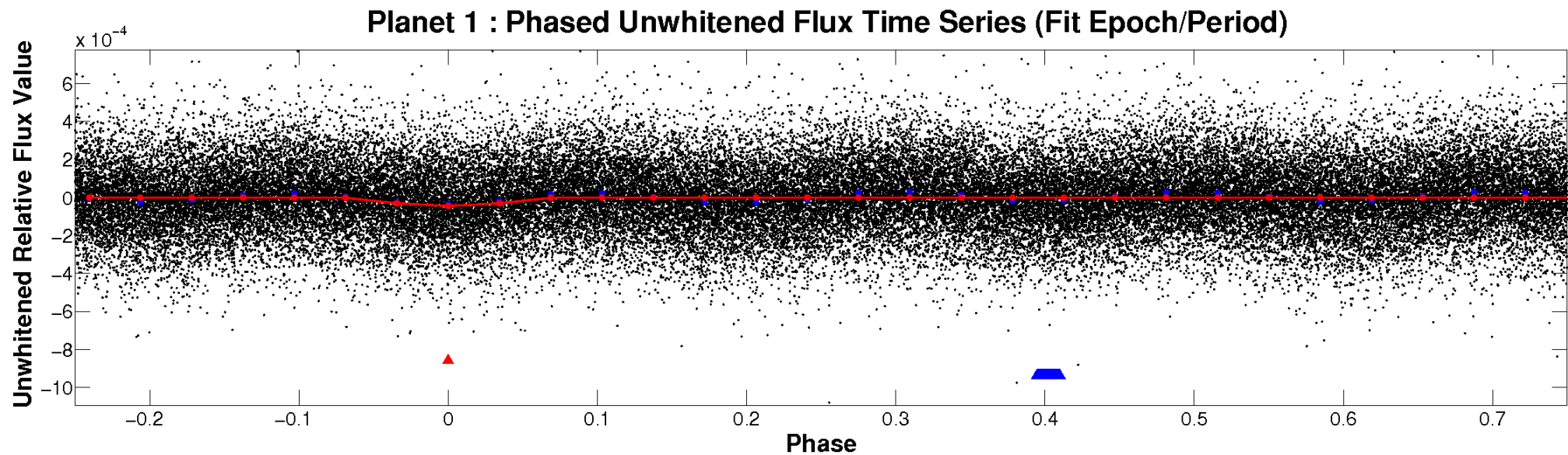


ALT Odd/Even

TCE 006301132-01

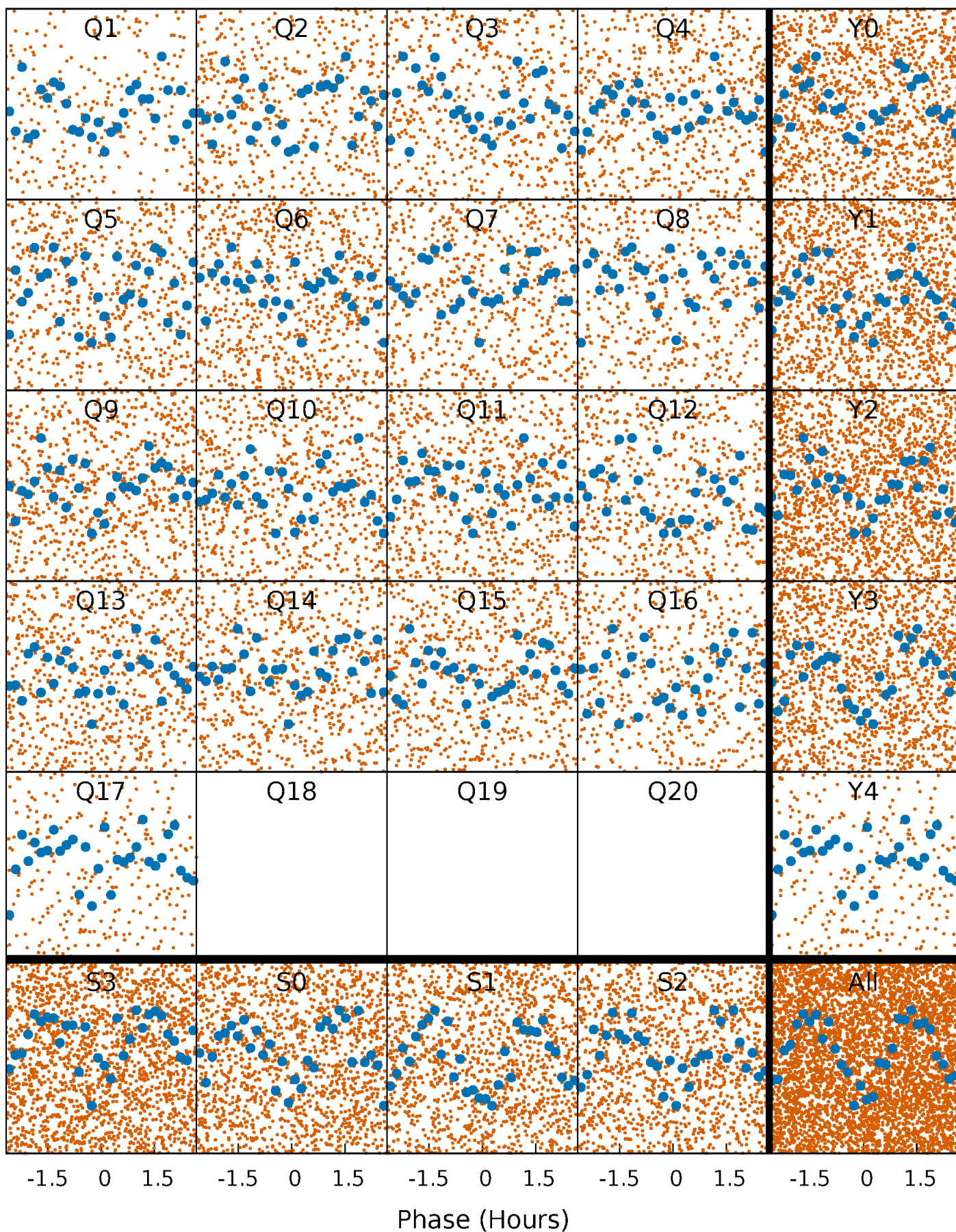


Non-Whitened Vs. Whitened Light Curve



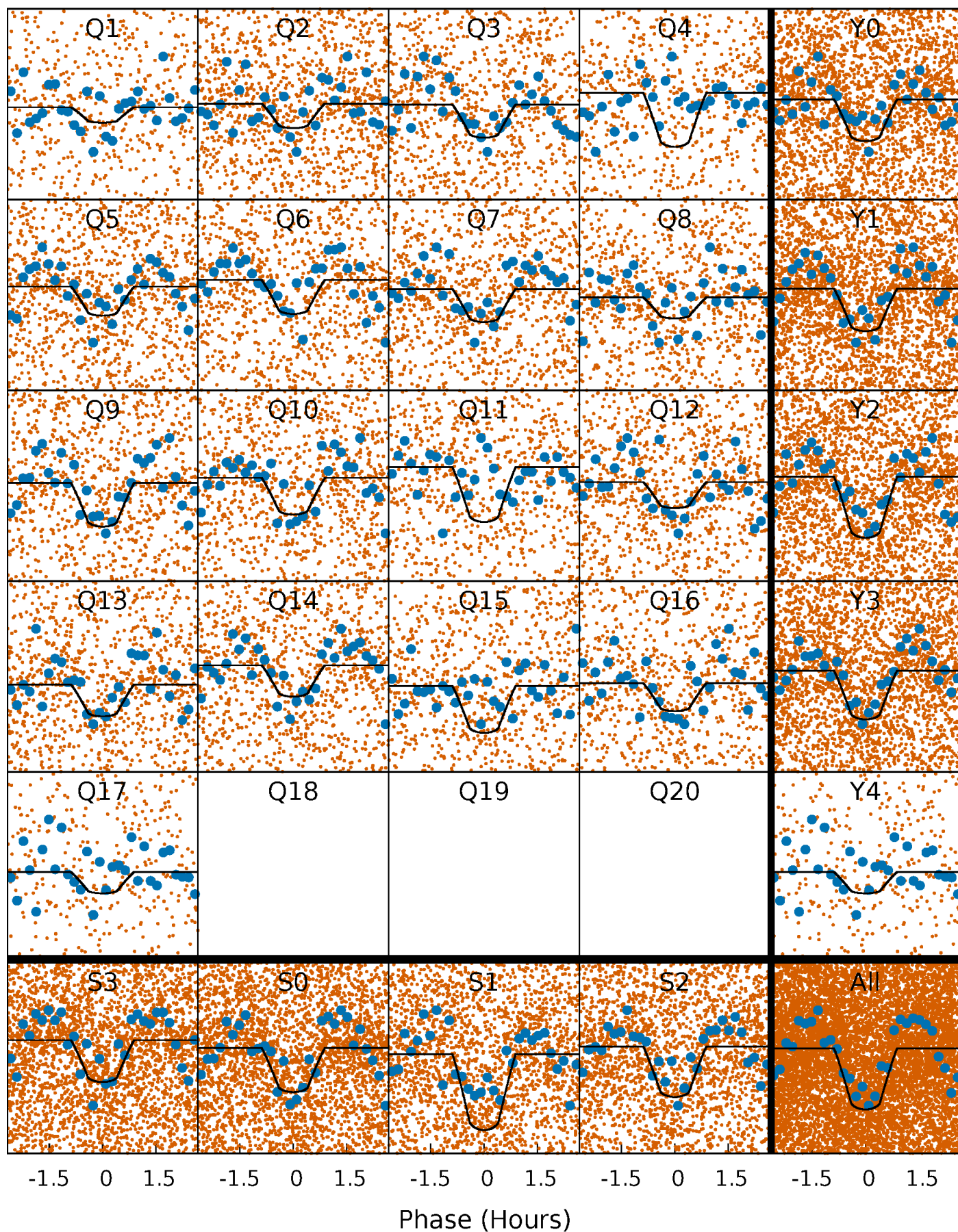
PDC Quarter-Phased Transit Curves

TCE 006301132-01 P= 0.594354 Days $T_0=131.785131$ (BKJD)



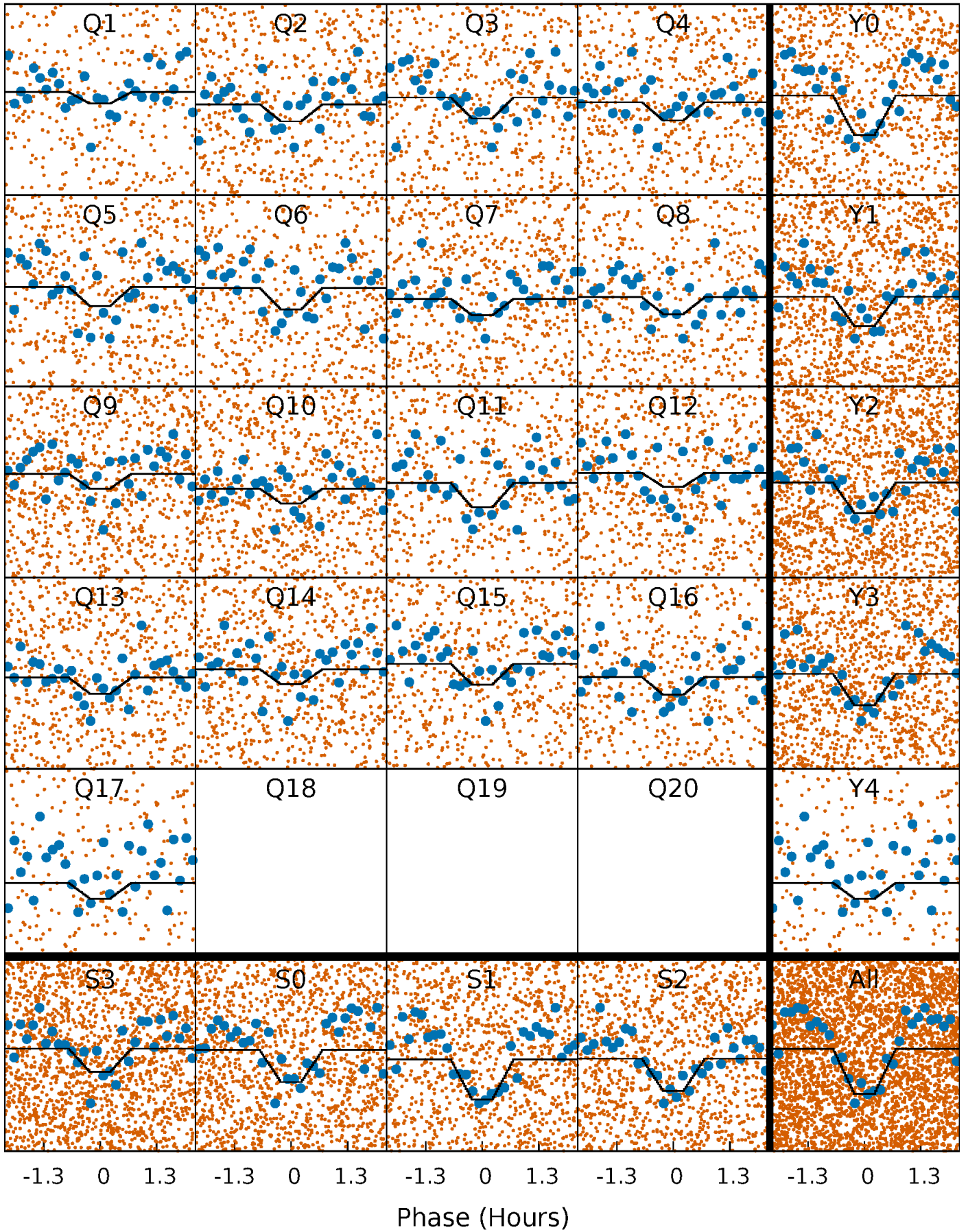
DV Quarter-Phased Transit Curves

TCE 006301132-01 P= 0.594354 Days $T_0=131.785131$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

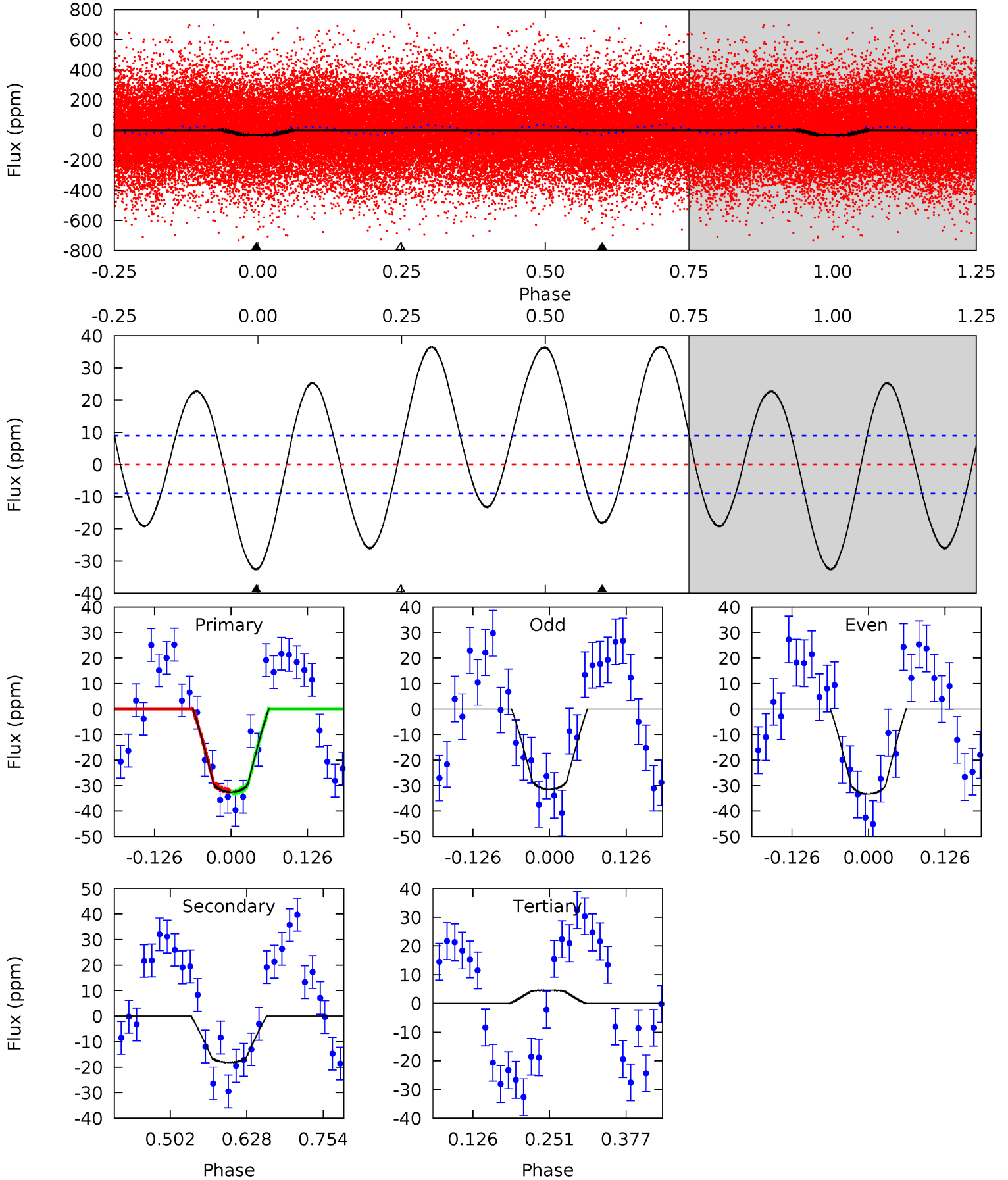
TCE 006301132-01 P= 0.594354 Days $T_0=131.782550$ (BKJD)



DV Model-Shift Uniqueness Test

006301132-01, P = 0.594354 Days, E = 131.190777 Days

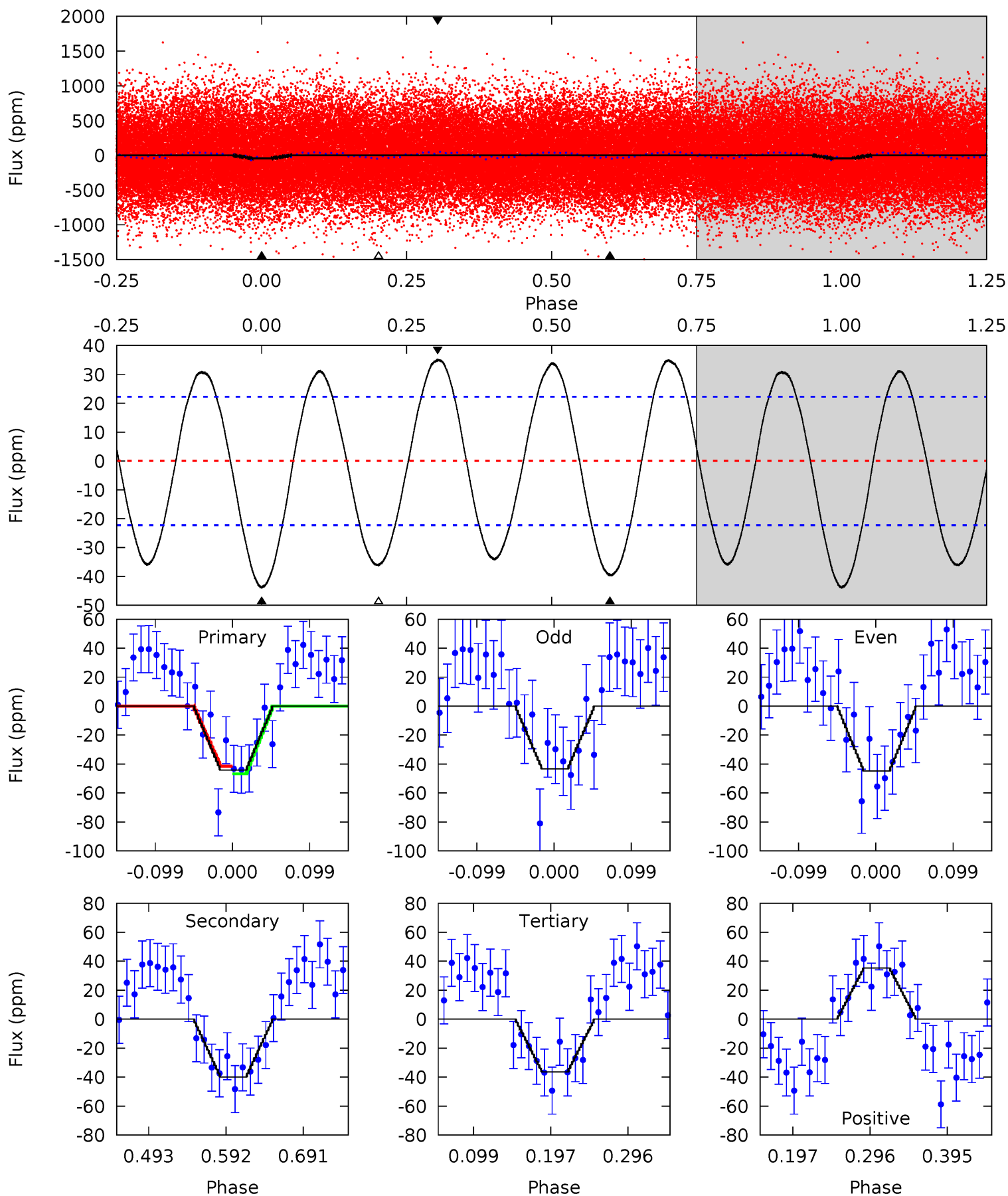
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	9.13	-2.33	0	4.52	1.53	8.89	18.7	16.4	11.5	9.13	0.45	0.91	0.53	0.18



Alt Model-Shift Uniqueness Test

006301132-01, P = 0.594354 Days, E = 131.188196 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.07	8.21	7.48	7.26	4.57	1.65	5.02	1.59	1.81	0.73	0.95	0.15	0.79	0.44	0.54



Stellar Parameters For KIC 006301132

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7573^{+83}_{-75}	$4.000^{+0.148}_{-0.121}$	$-0.260^{+0.150}_{-0.150}$	$2.095^{+0.412}_{-0.412}$	$1.601^{+0.153}_{-0.127}$	$0.245^{+0.180}_{-0.090}$
	+1%/-1%	+4%/-3%	+58%/-58%	+20%/-20%	+10%/-8%	+74%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 006301132-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18 ± 2	$1.63^{+0.35}_{-0.34}$	5312^{+251}_{-267}	5308^{+785}_{-663}	$0.991^{+0.626}_{-0.336}$
Alt.	-40 ± 5	$1.48^{+0.35}_{-0.33}$	5297^{+270}_{-246}	7117^{+1303}_{-801}	$2.569^{+1.752}_{-0.874}$

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

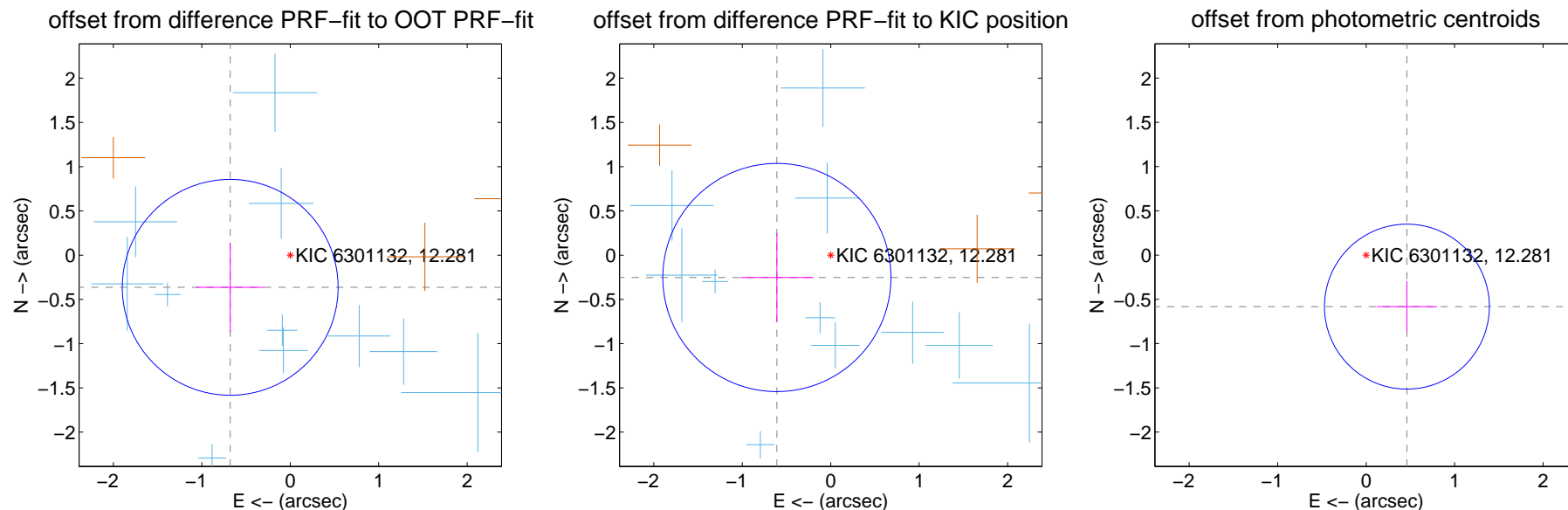
DV Centroid Data

Supplemental centroid analysis for 006301132-01. Kepler magnitude: 12.28. Transit SNR 14.04

There are 12 quarters with good PRF difference image offsets

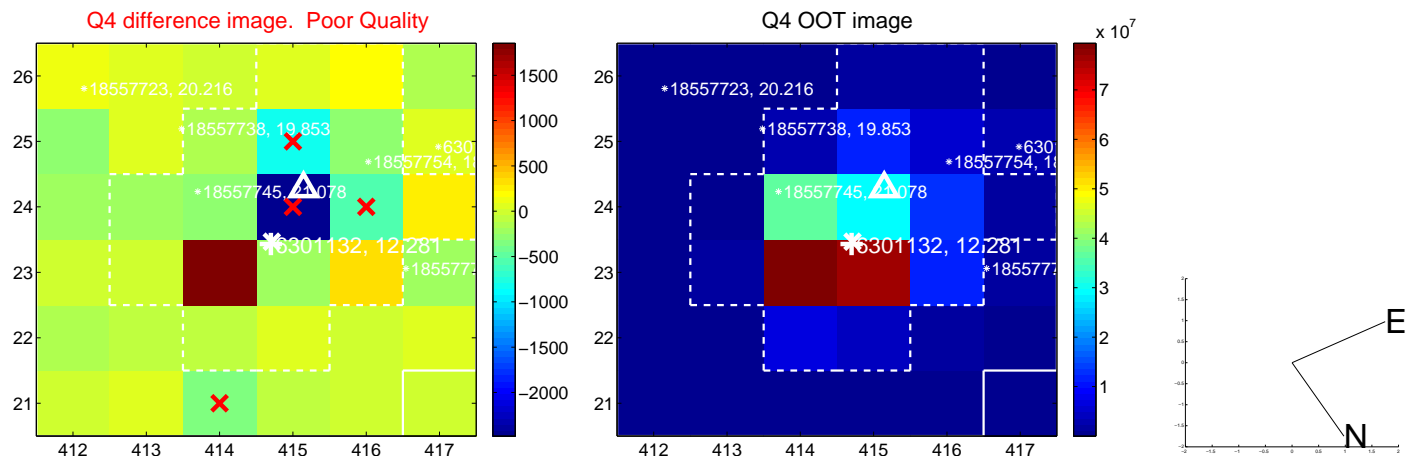
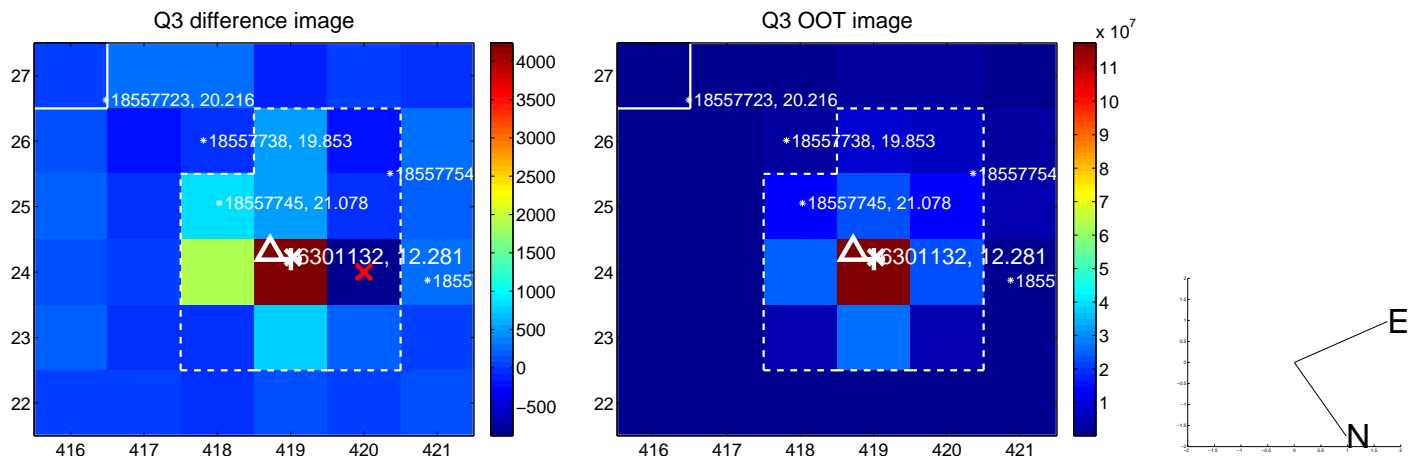
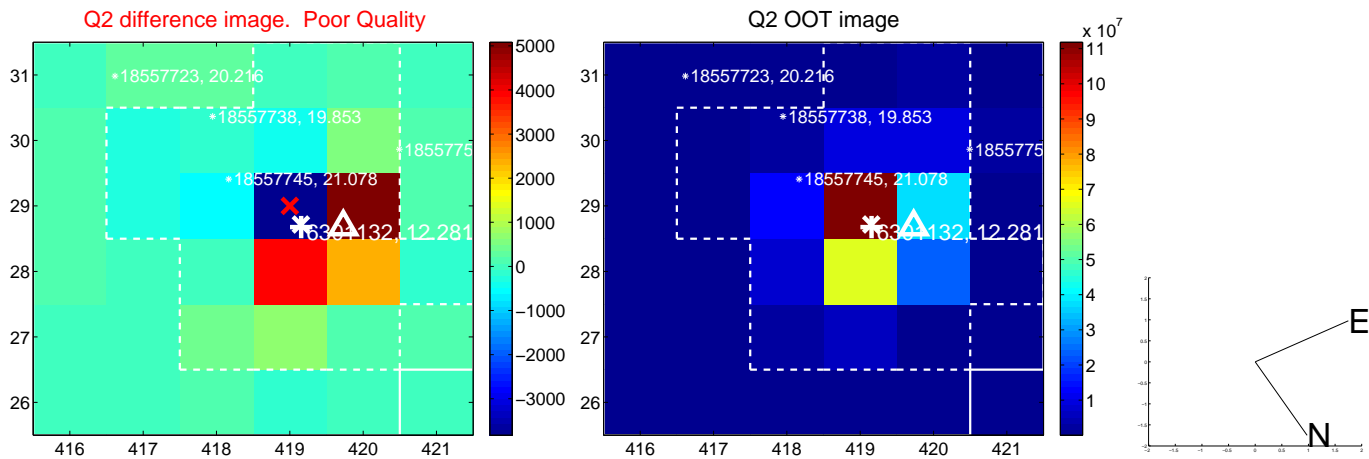
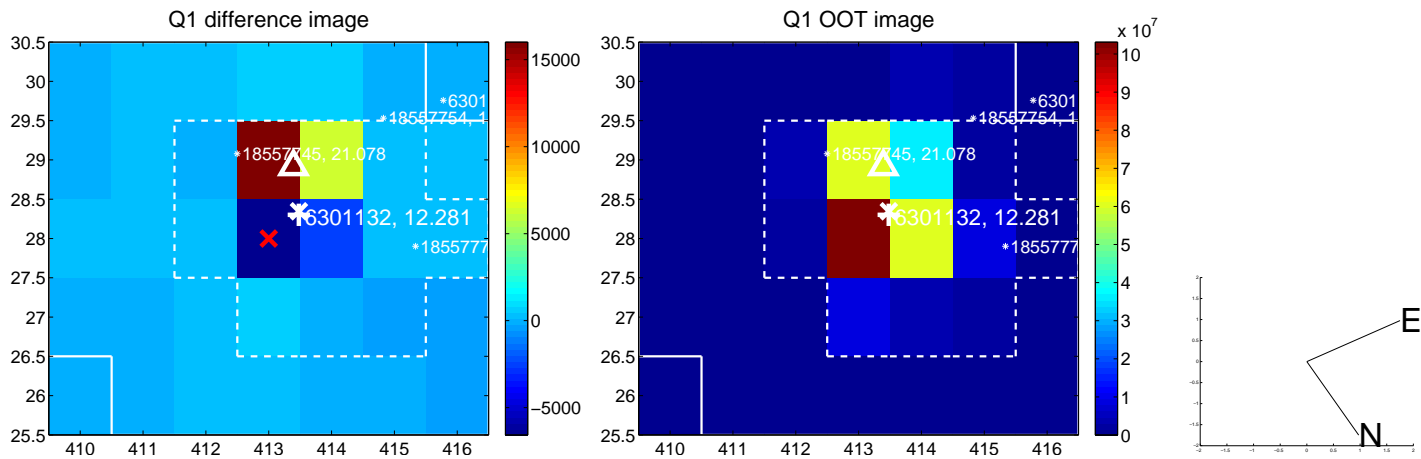
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.770 ± 0.407	1.89	0.679 ± 0.385	-0.364 ± 0.505
PRF-fit source offset from KIC position	0.659 ± 0.430	1.53	0.608 ± 0.414	-0.253 ± 0.501
photometric centroid source offset	0.74 ± 0.31	2.39	-0.46 ± 0.34	-0.58 ± 0.29

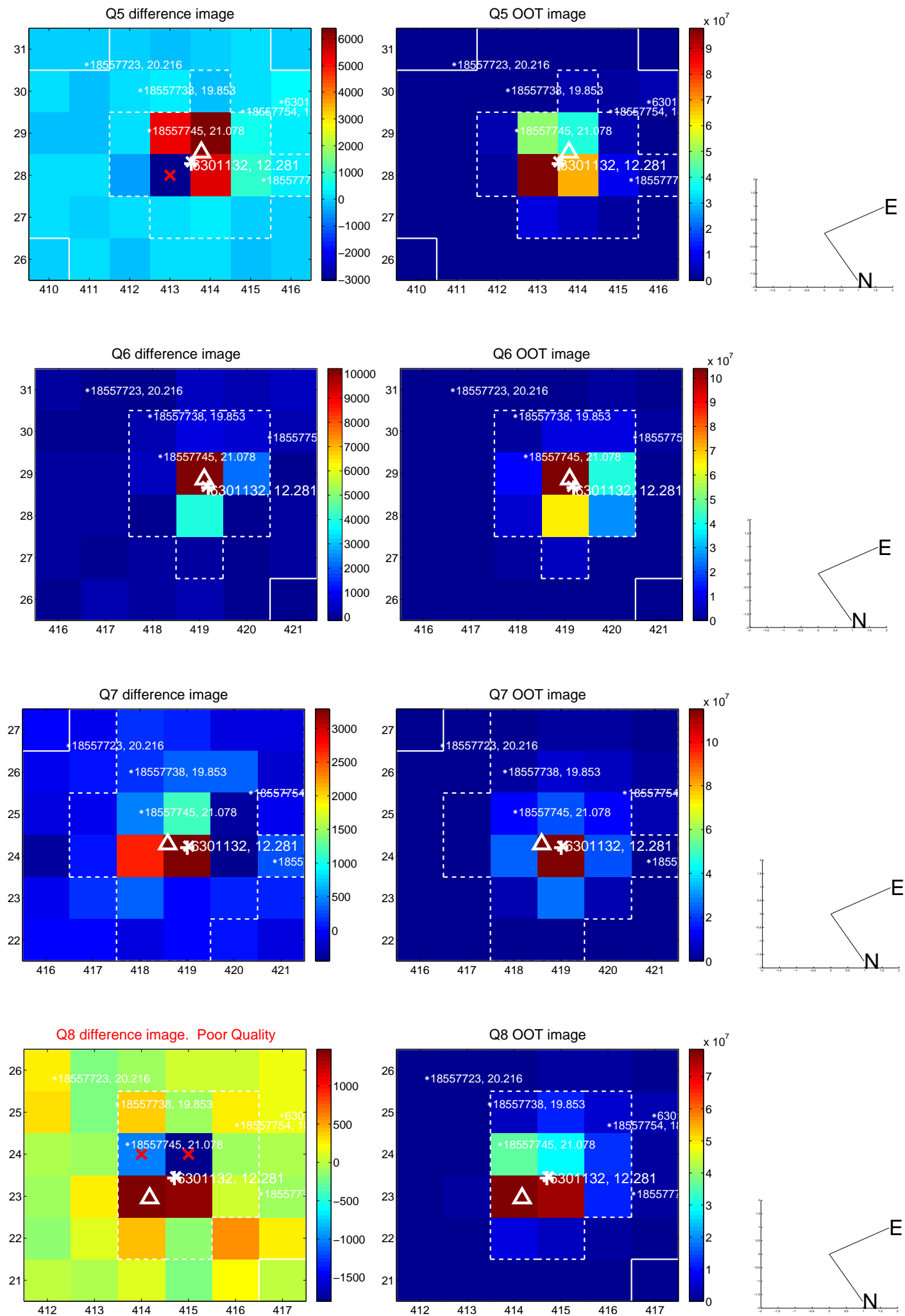


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

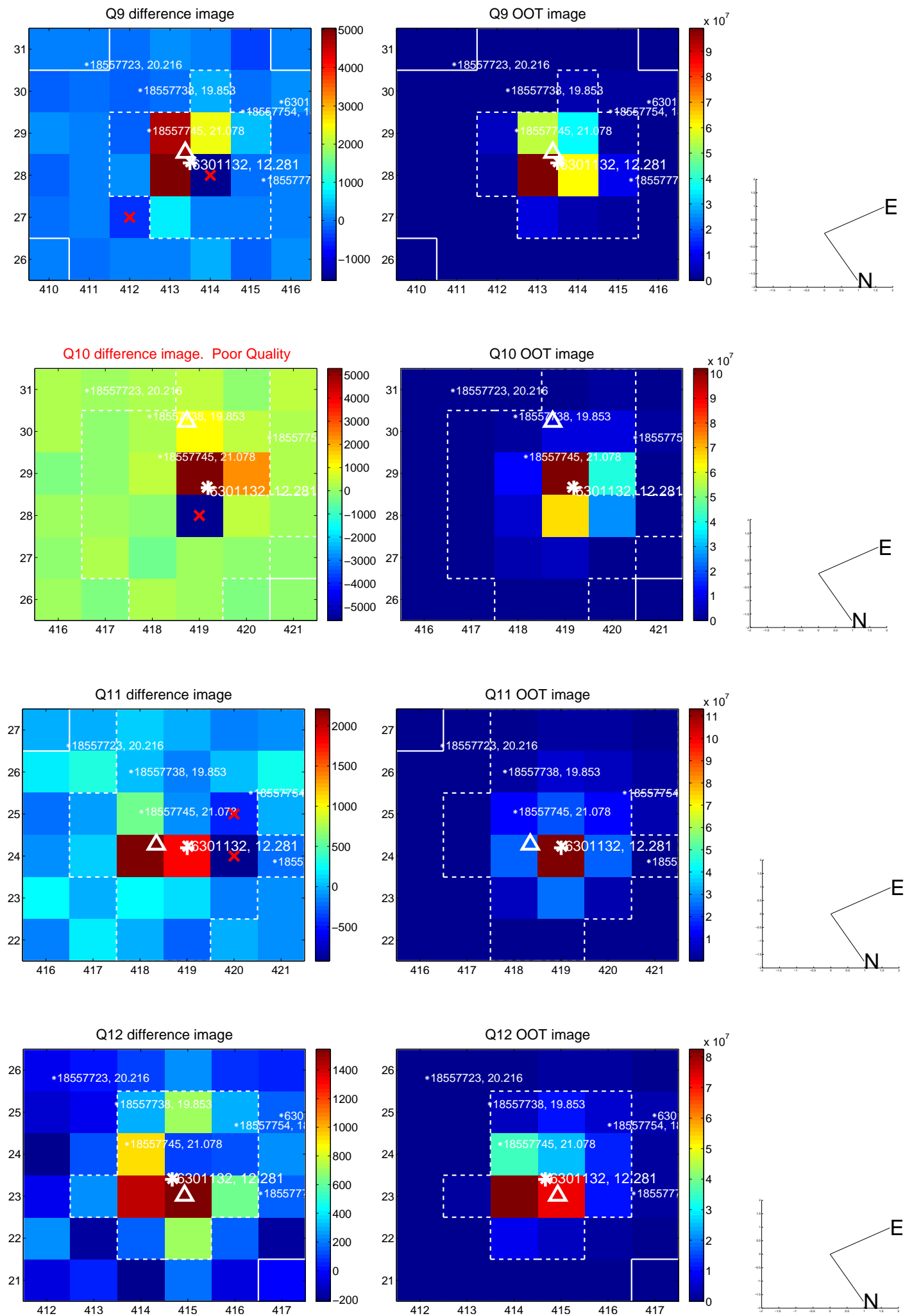
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



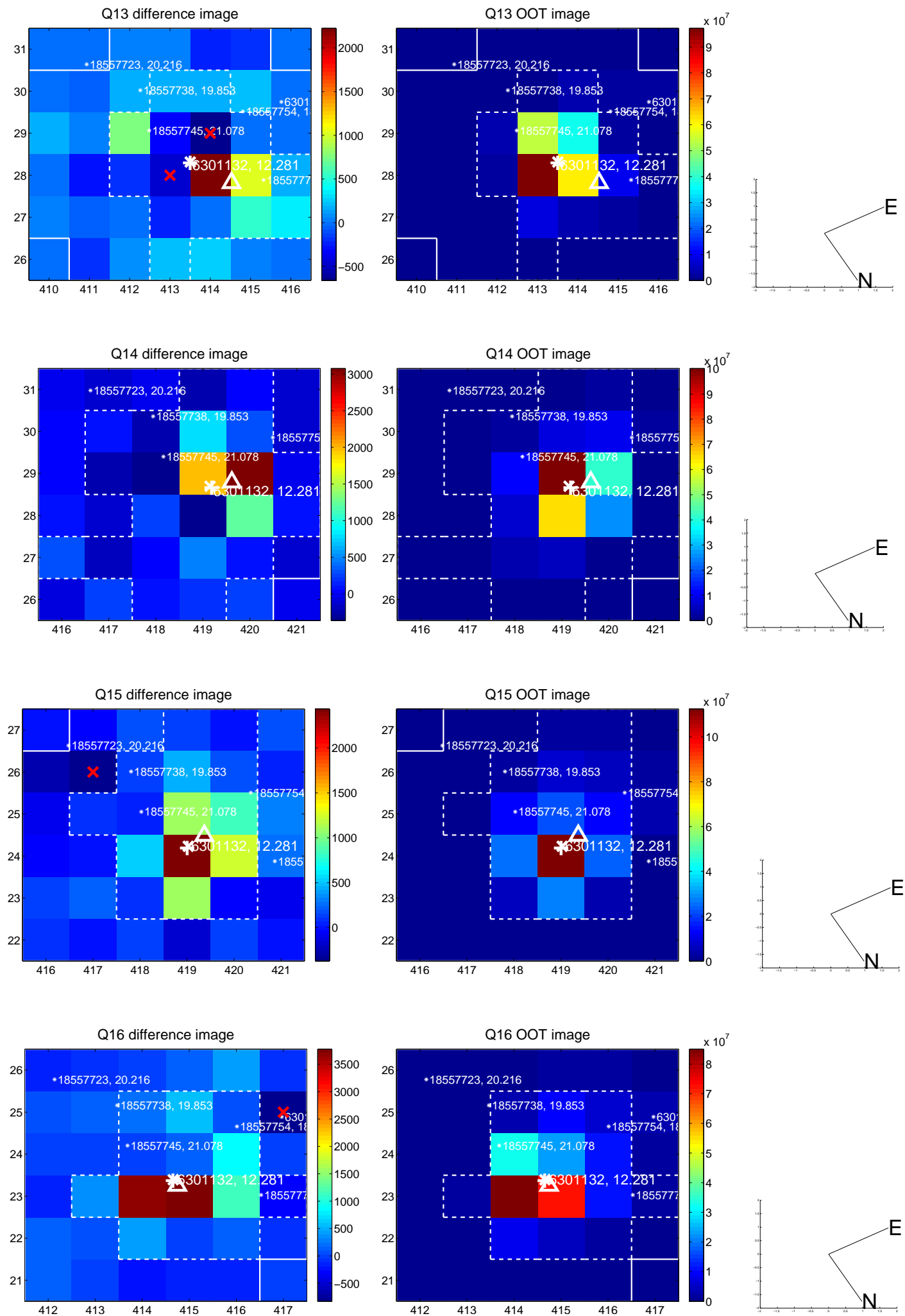
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



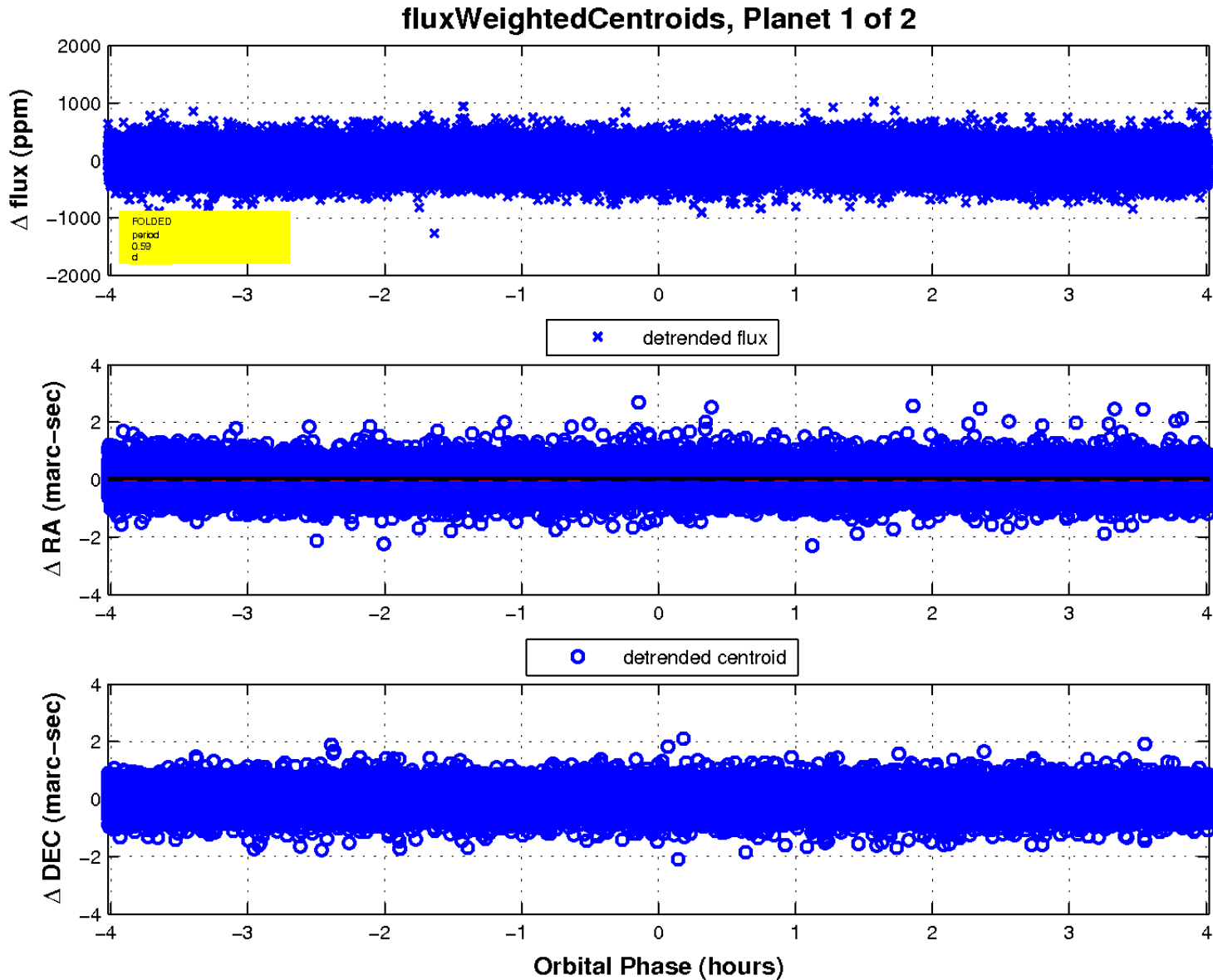
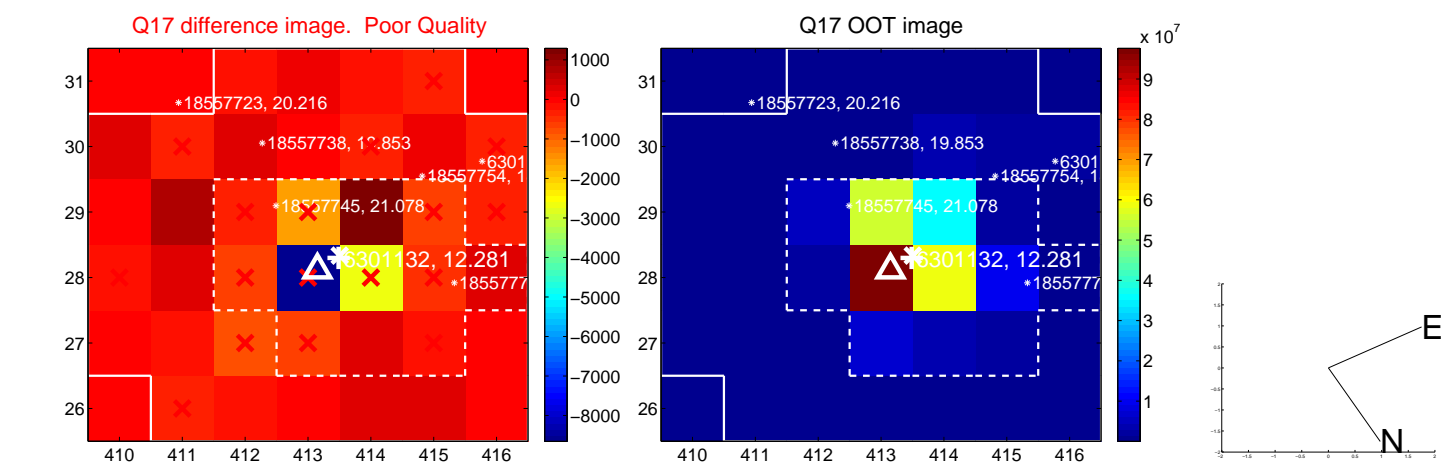
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

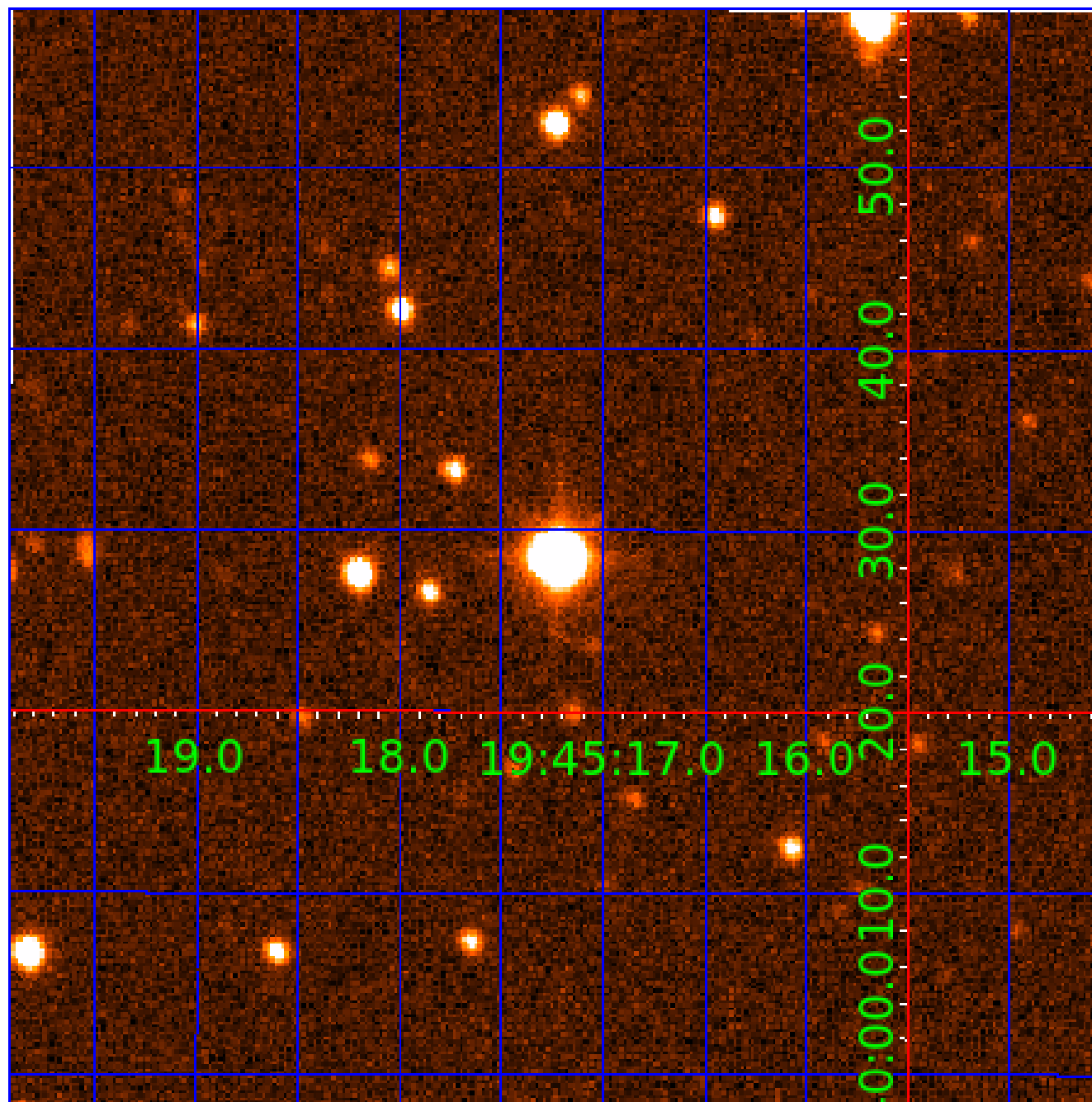


white ×: KIC target position; +: OOT centroid; Δ: difference centroid. red ×: large negative pixel value.



UKIRT Image

Declination



KIC 006301132

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})
006301132-01	OBS	No	0.594354	131.785131	44.6	1.341	12.4	14.0	2.10	7573	1.63	49358.51
006301132-02	OBS	No	0.594358	132.019705	43.2	1.482	11.9	14.1	2.10	7573	1.60	49358.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006301132-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
006301132-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_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.

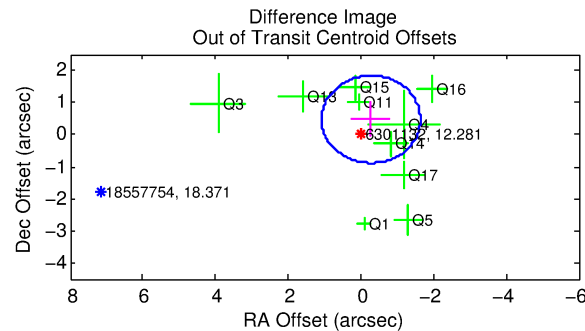
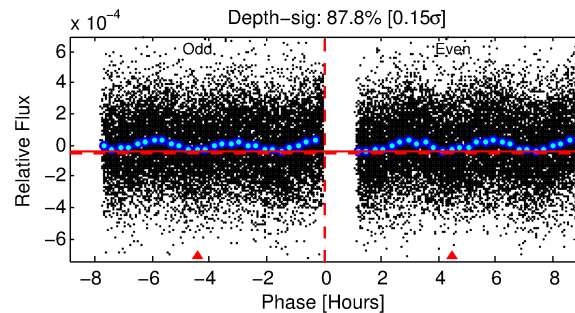
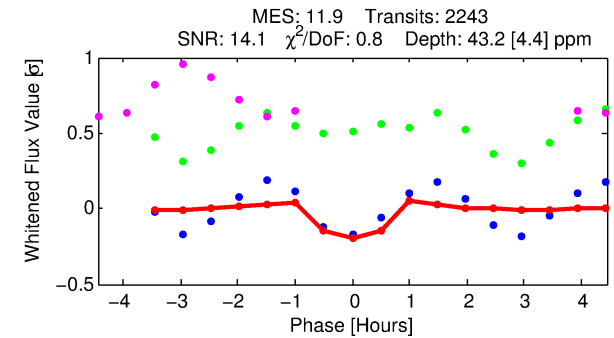
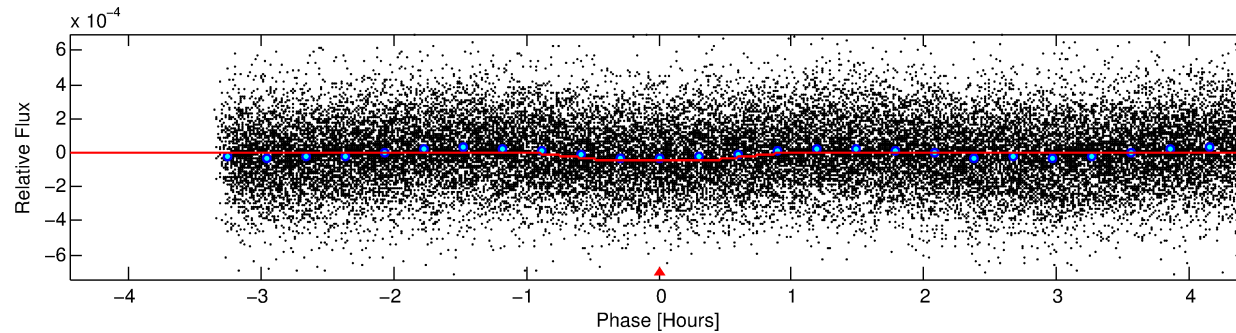
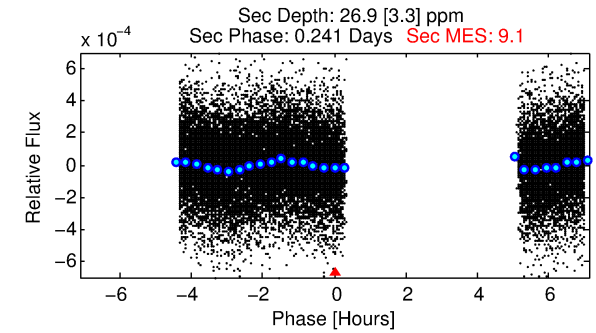
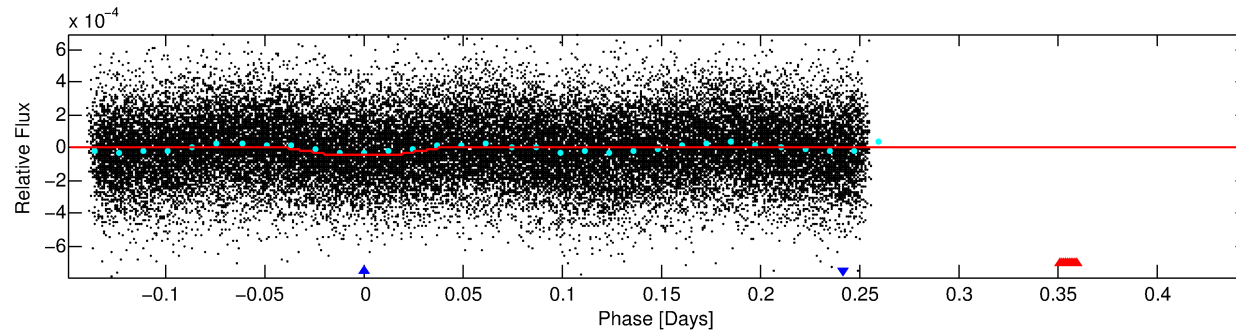
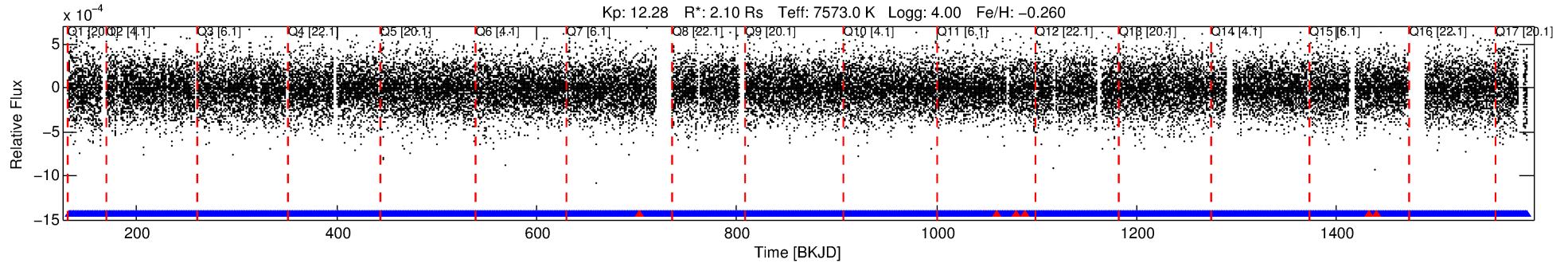
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006301132-02

No Significant Match Found

DV One-Page Summary

KIC: 6301132 Candidate: 2 of 2 Period: 0.594 d



DV Fit Results:

Period = 0.59436 [0.00001] d
Epoch = 132.0197 [0.0012] BKJD
Rp/R* = 0.0070 [0.0014]
a/R* = 1.70 [1.33]
b = 0.89 [0.27]
Seff = 49358.10 [13126.40]
Teq = 3801 [253] K
Rp = 1.60 [0.45] Re
a = 0.0162 [0.0028] AU
Ag = 1.51 [0.76] [0.68σ]
Teffp = 6519 [697] K [3.67σ]

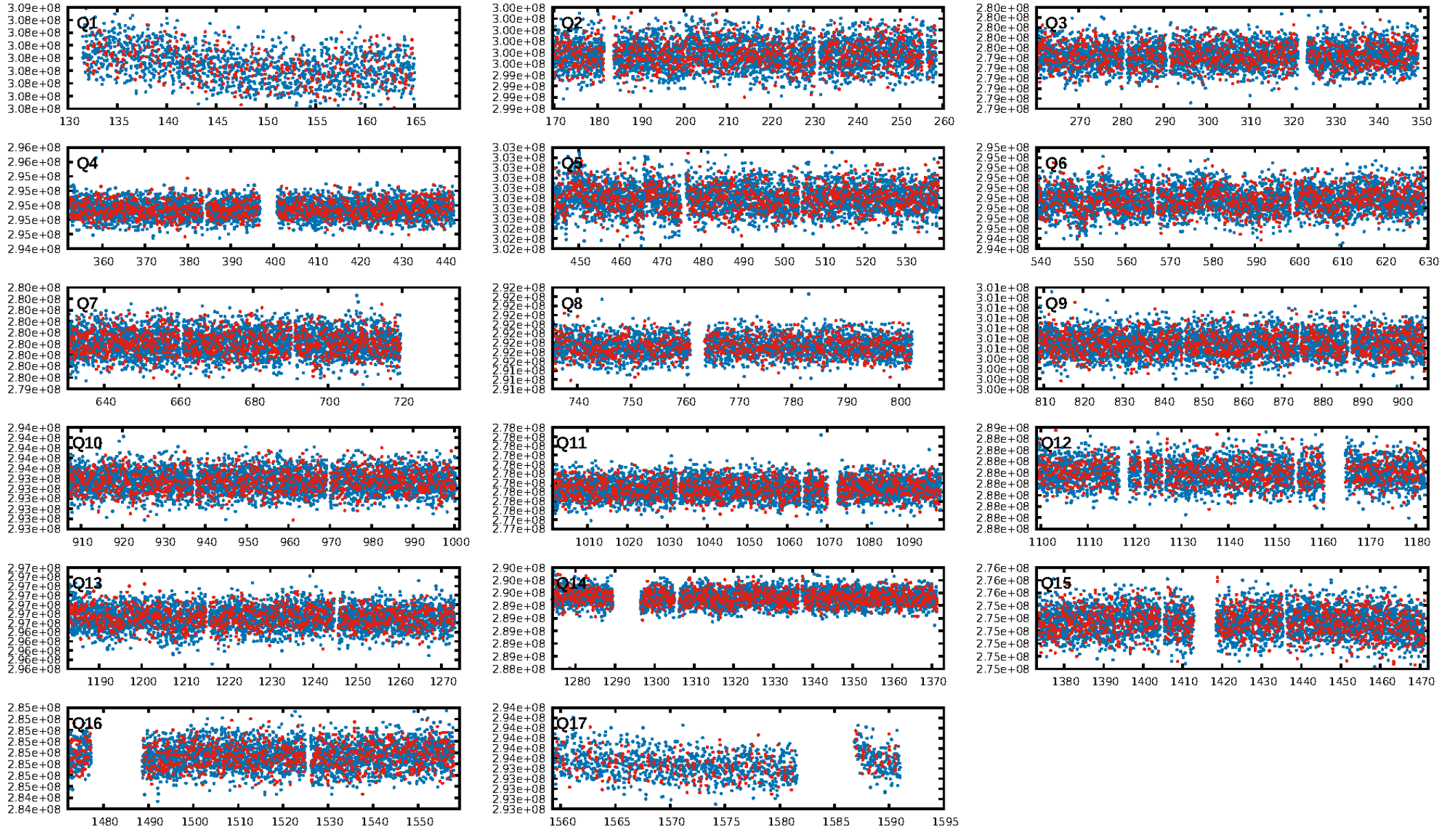
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.99e-24
RollingBand-fgt: 1.00 [2137/2143]
GhostDiagnostic-chr: 1.642
Centroid-sig: N/A
Centroid-so: 0.049 arcsec [0.15σ]
OotOffset-rm: 0.547 arcsec [1.21σ]
OotOffset-st: 1/3/2/4 [10]
KicOffset-rm: 0.692 arcsec [1.71σ]
KicOffset-st: 1/3/2/4 [10]
DiffImageQuality-fgm: 0.90 [9/10]
DiffImageOverlap-fno: 0.00 [0/17]

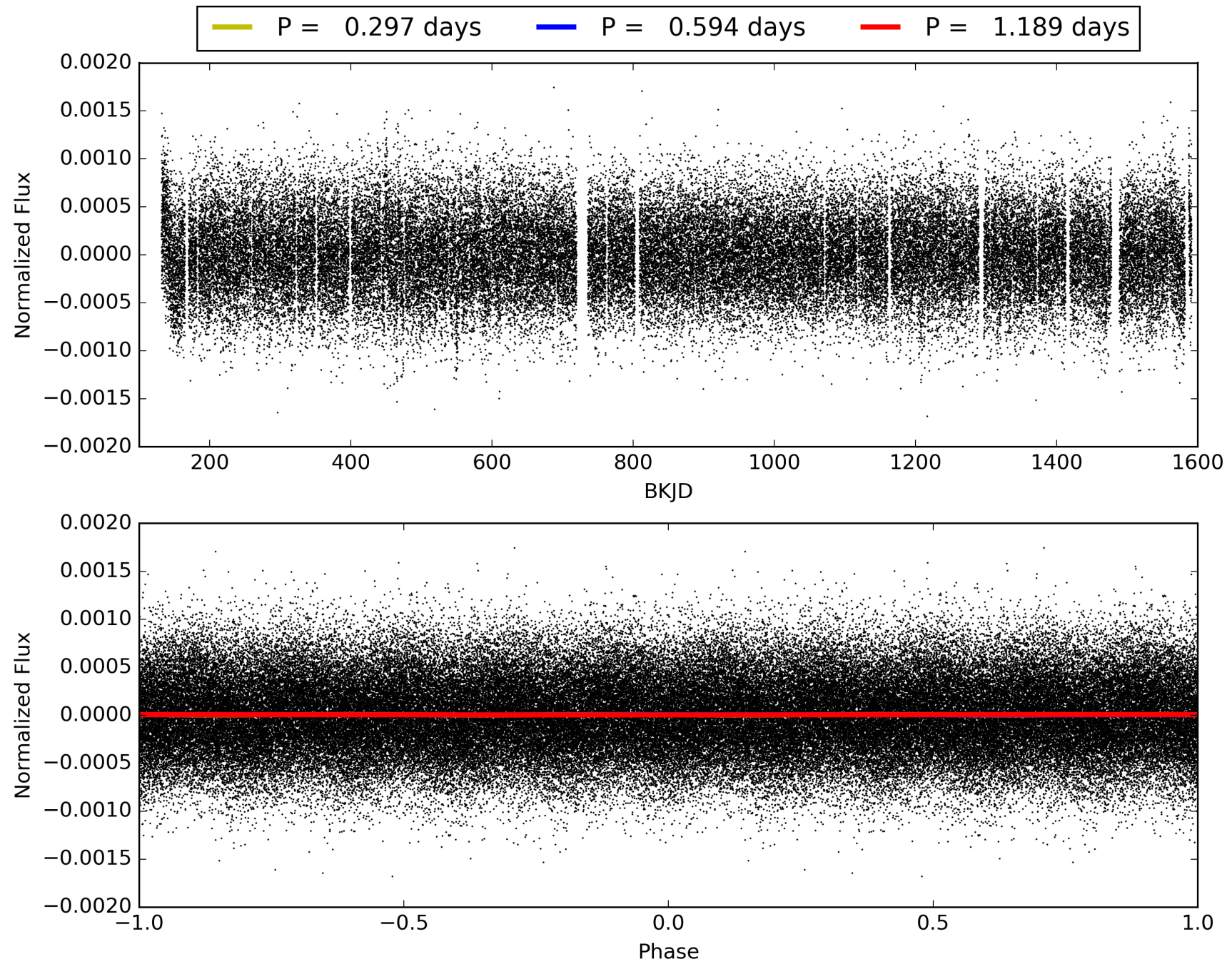
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:28:51 Z

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

TCE 006301132-02, PDC Light Curves

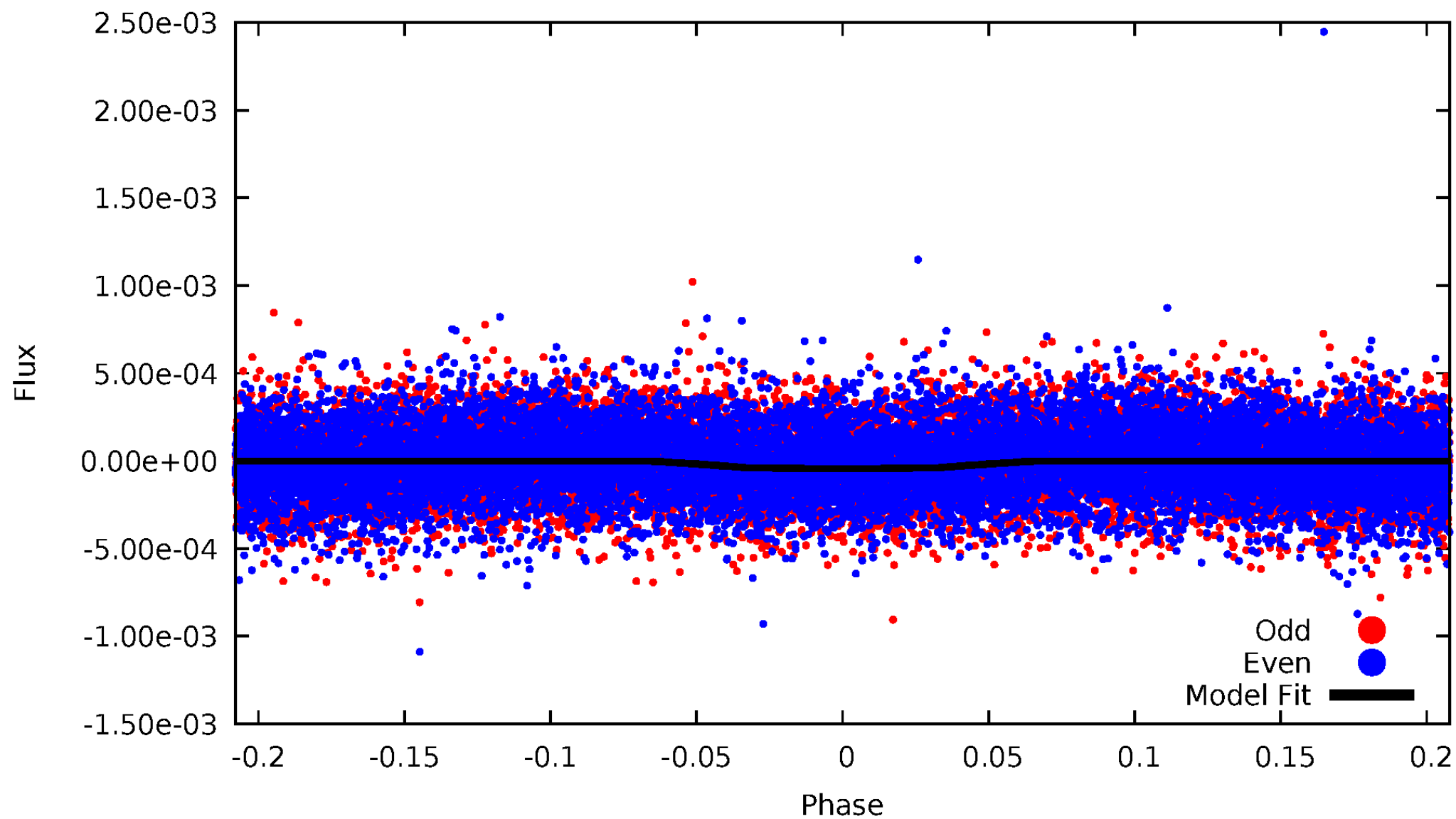


TCE 006301132-02



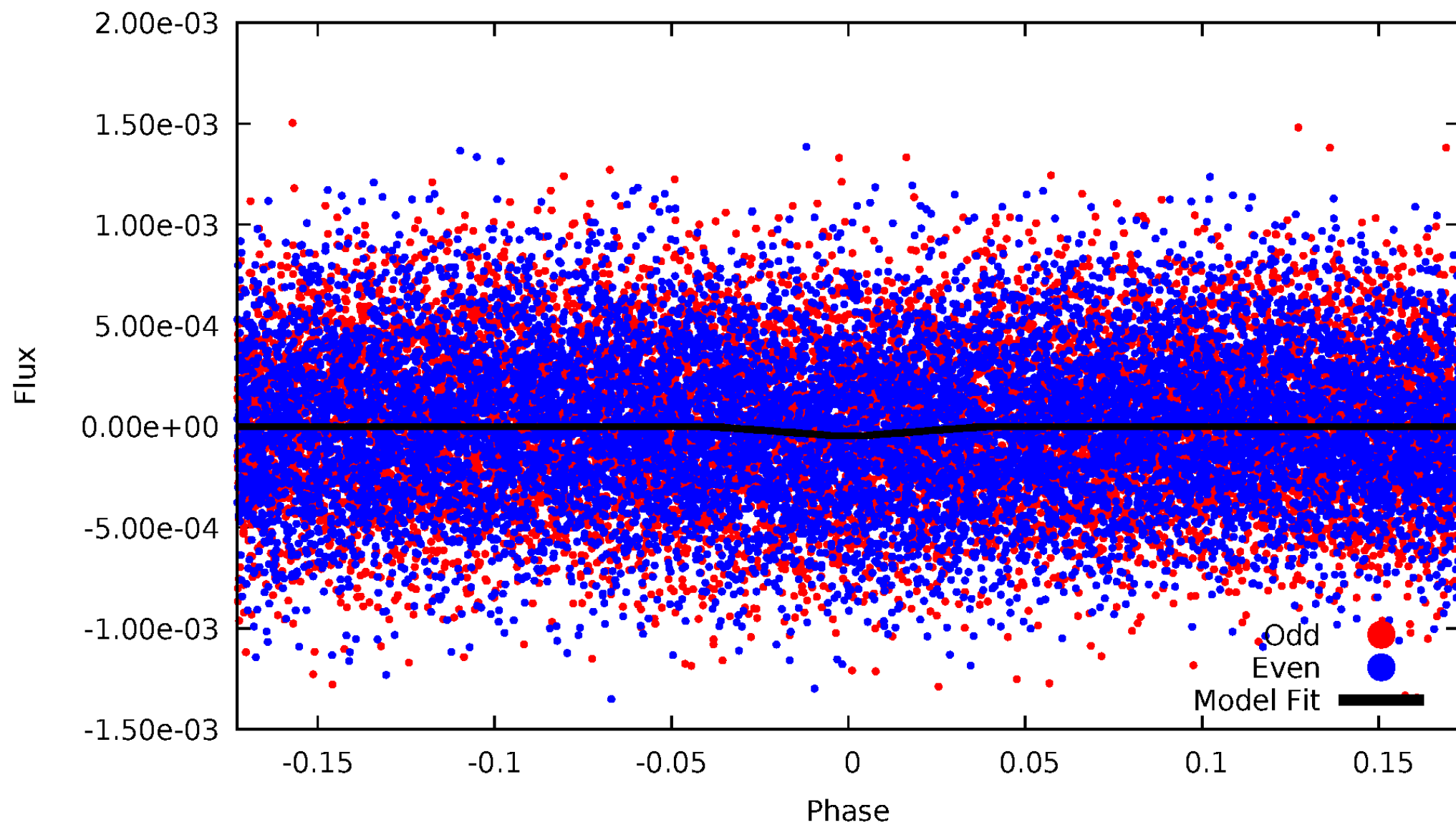
DV Odd/Even

TCE 006301132-02



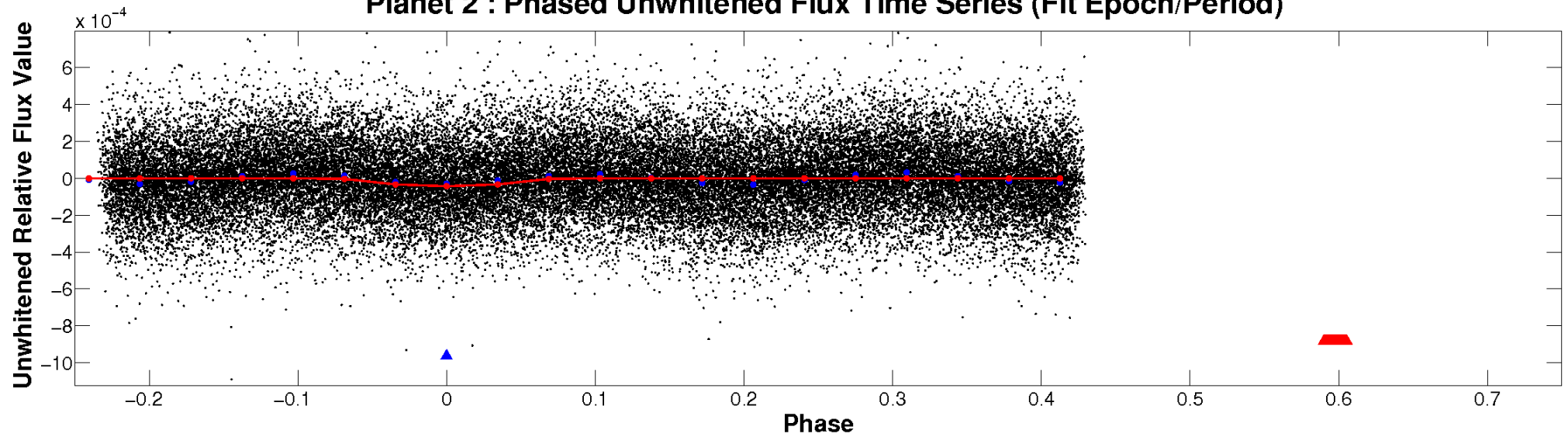
ALT Odd/Even

TCE 006301132-02

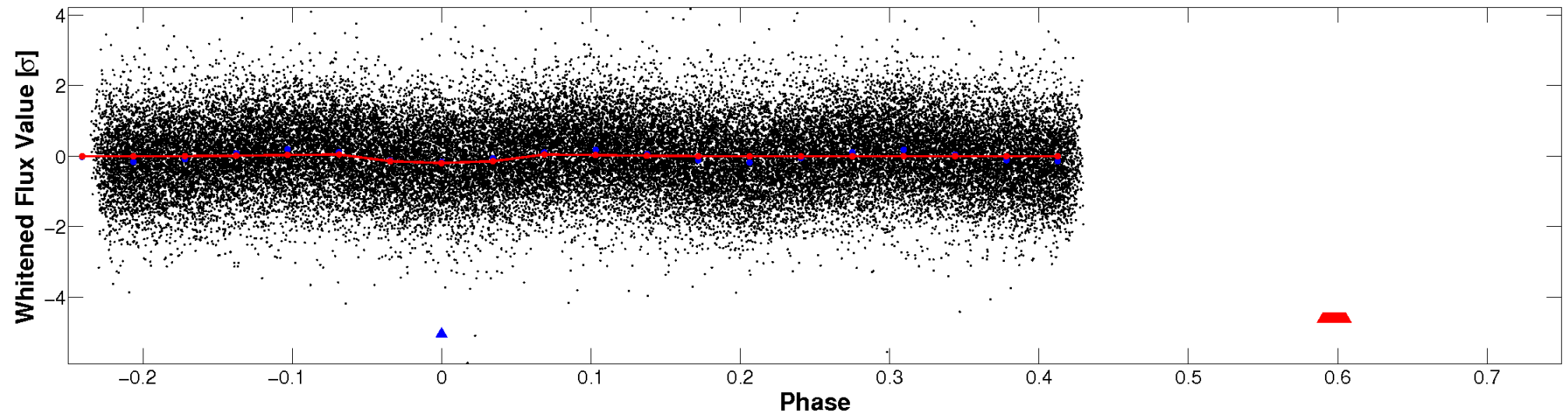


Non-Whitened Vs. Whitened Light Curve

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

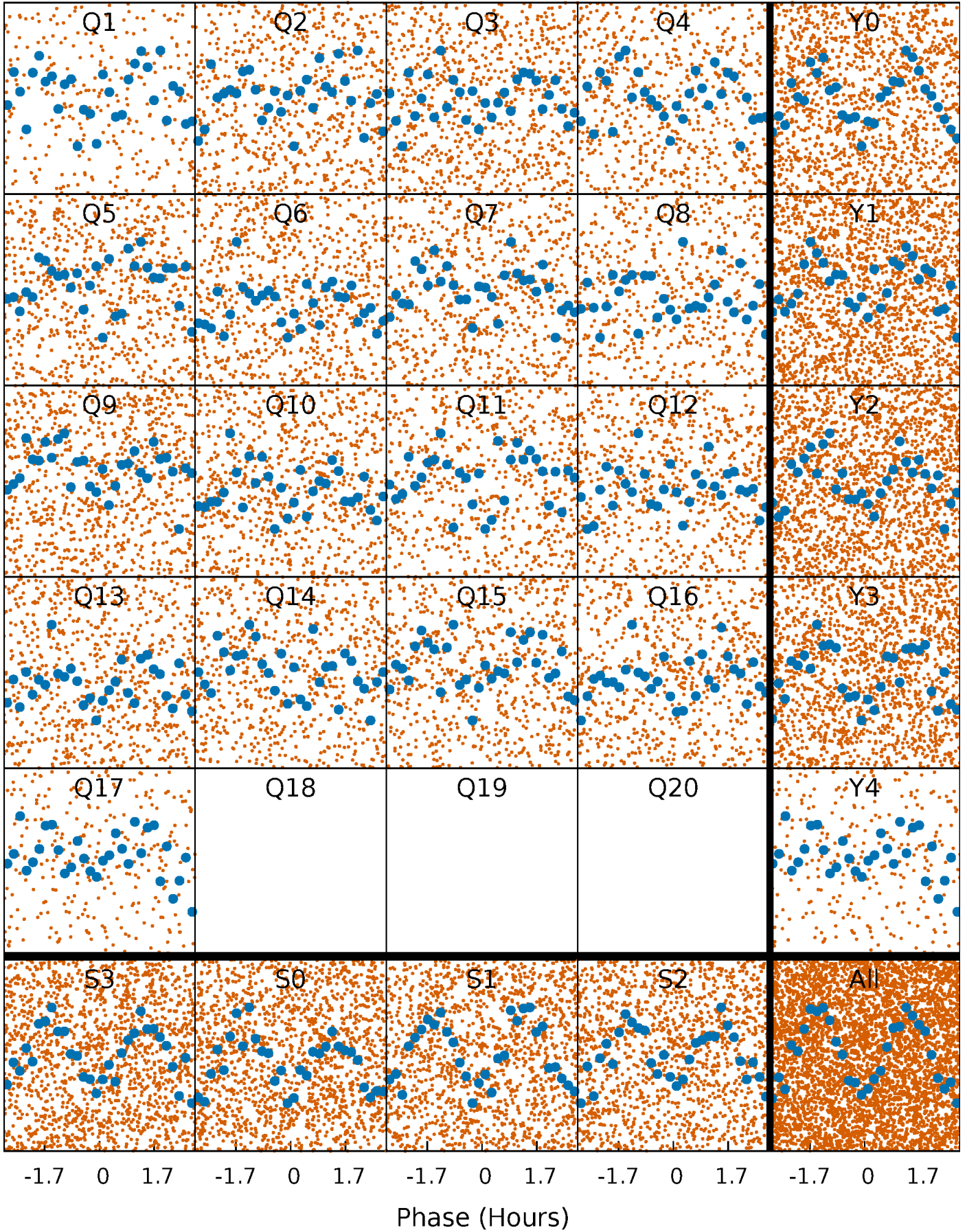


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



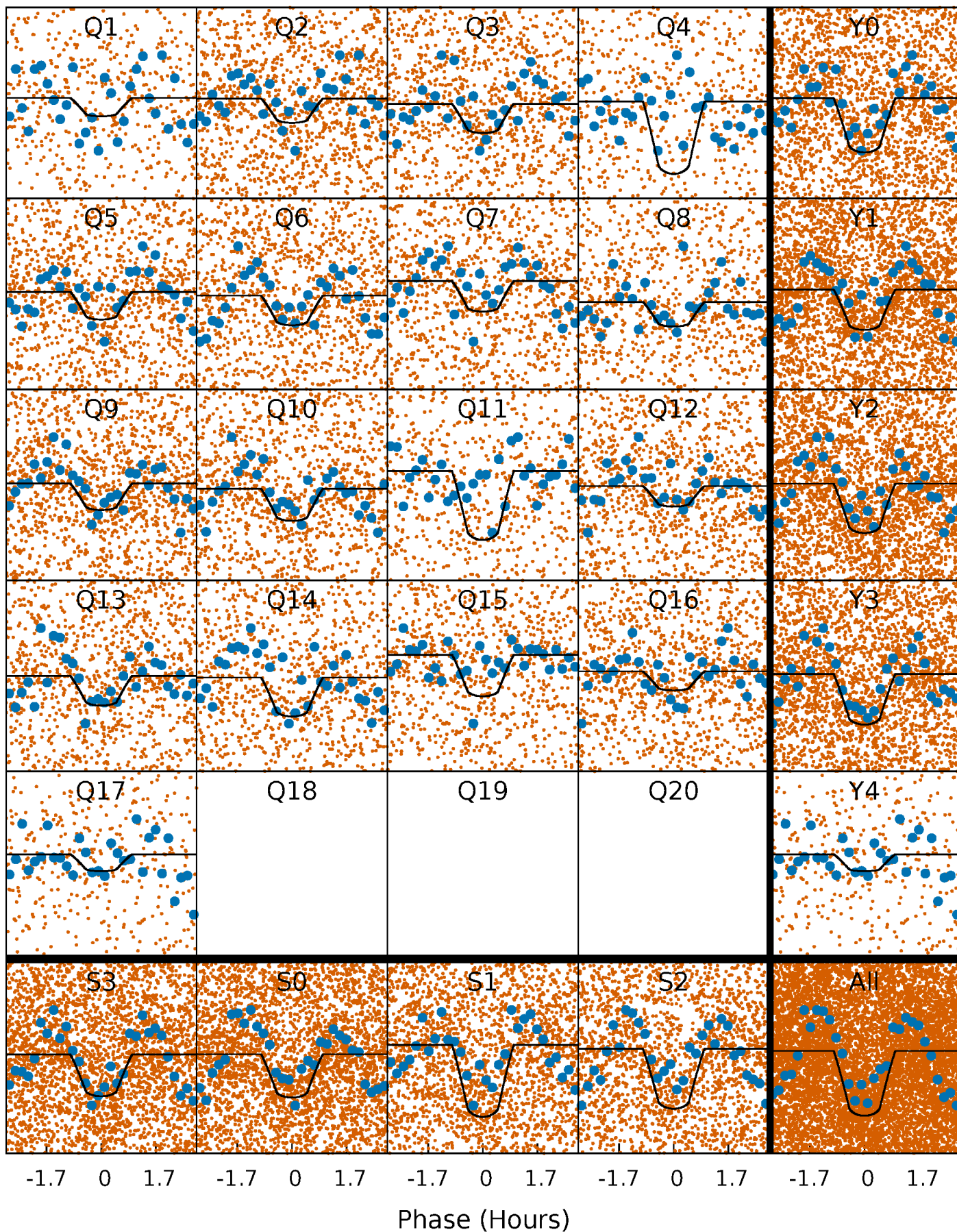
PDC Quarter-Phased Transit Curves

TCE 006301132-02 P= 0.594358 Days $T_0=132.019704$ (BKJD)



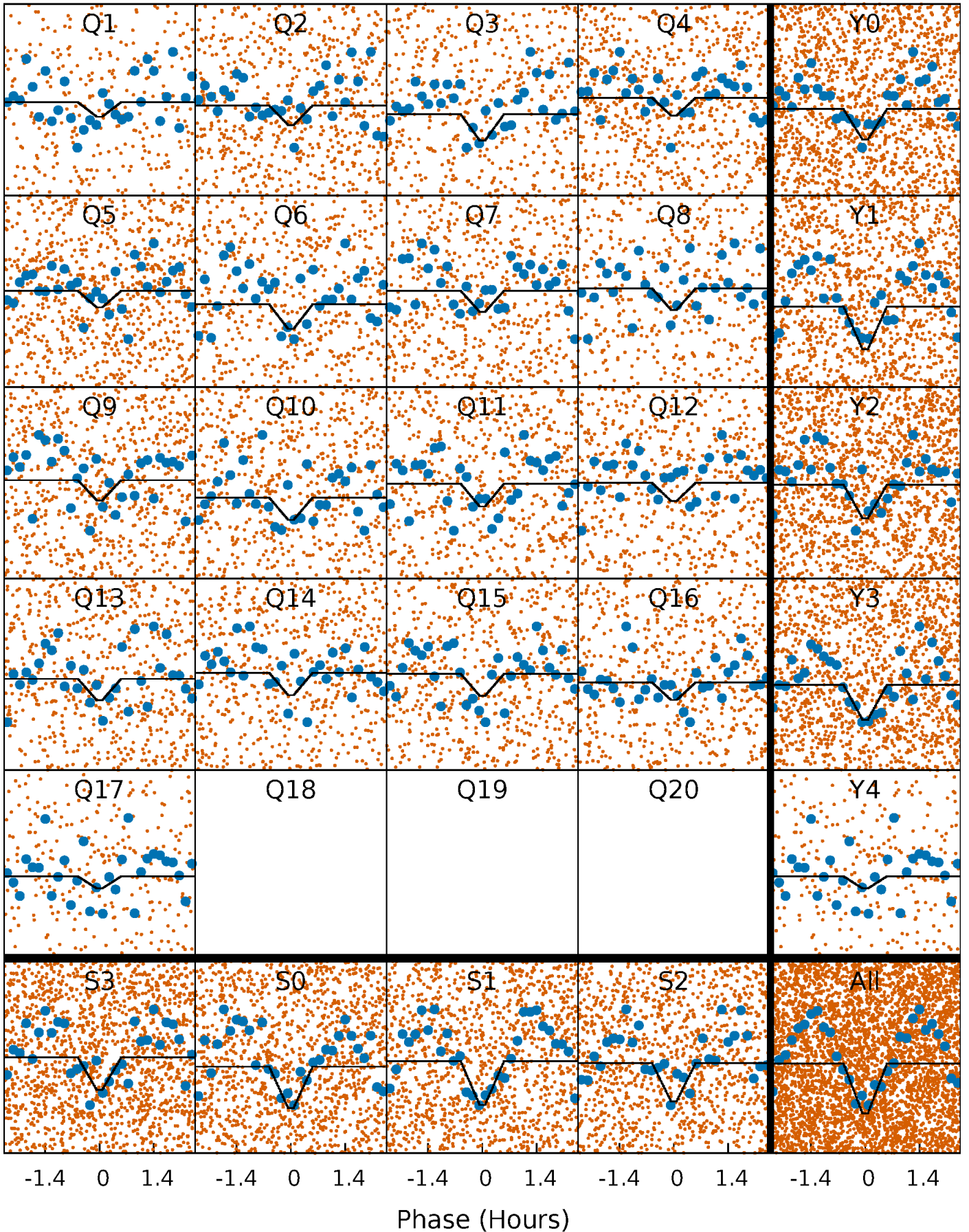
DV Quarter-Phased Transit Curves

TCE 006301132-02 P= 0.594358 Days $T_0=132.019704$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

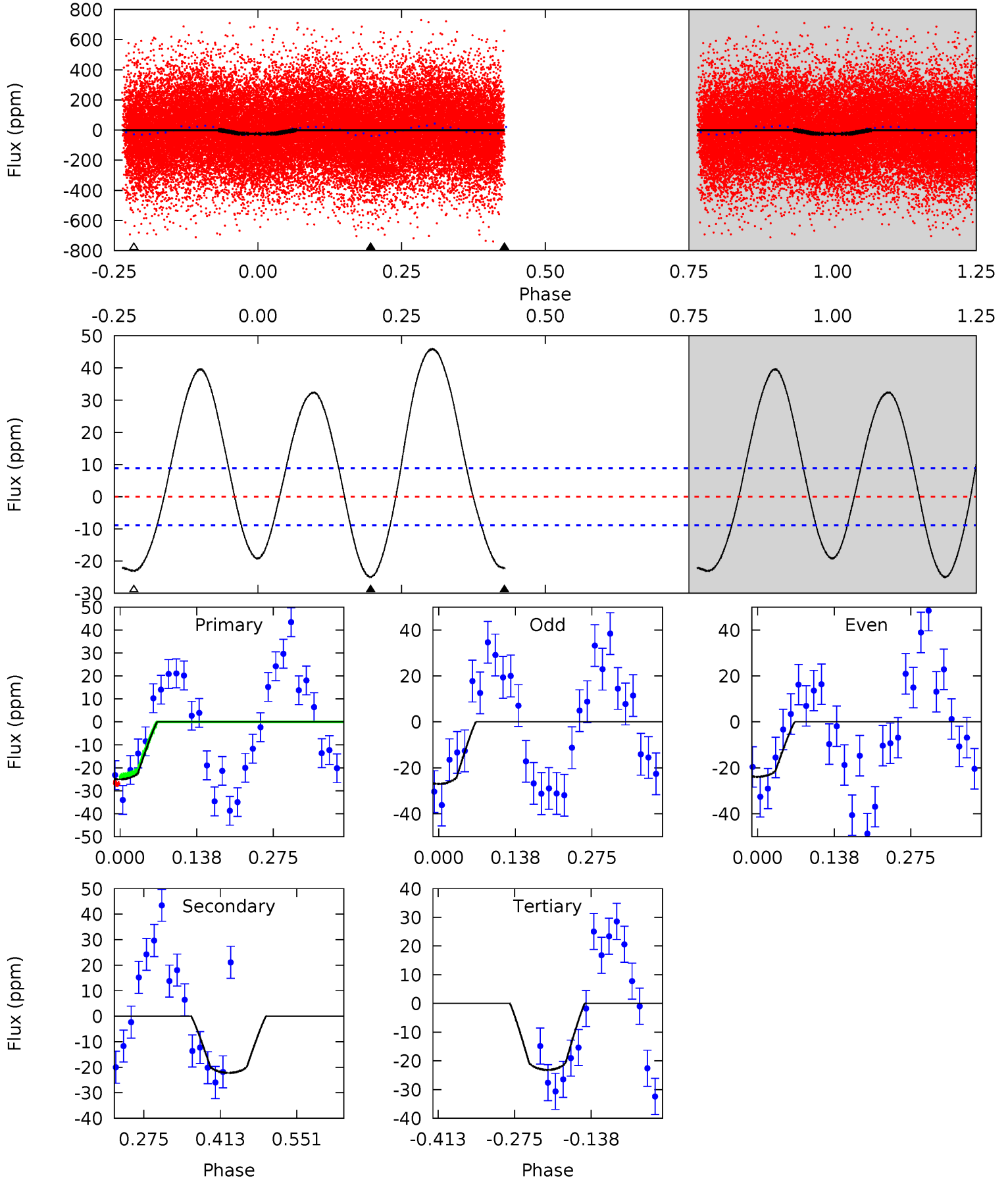
TCE 006301132-02 $P = 0.594354$ Days $T_0 = 132.020390$ (BKJD)



DV Model-Shift Uniqueness Test

006301132-02, P = 0.594358 Days, E = 131.425346 Days

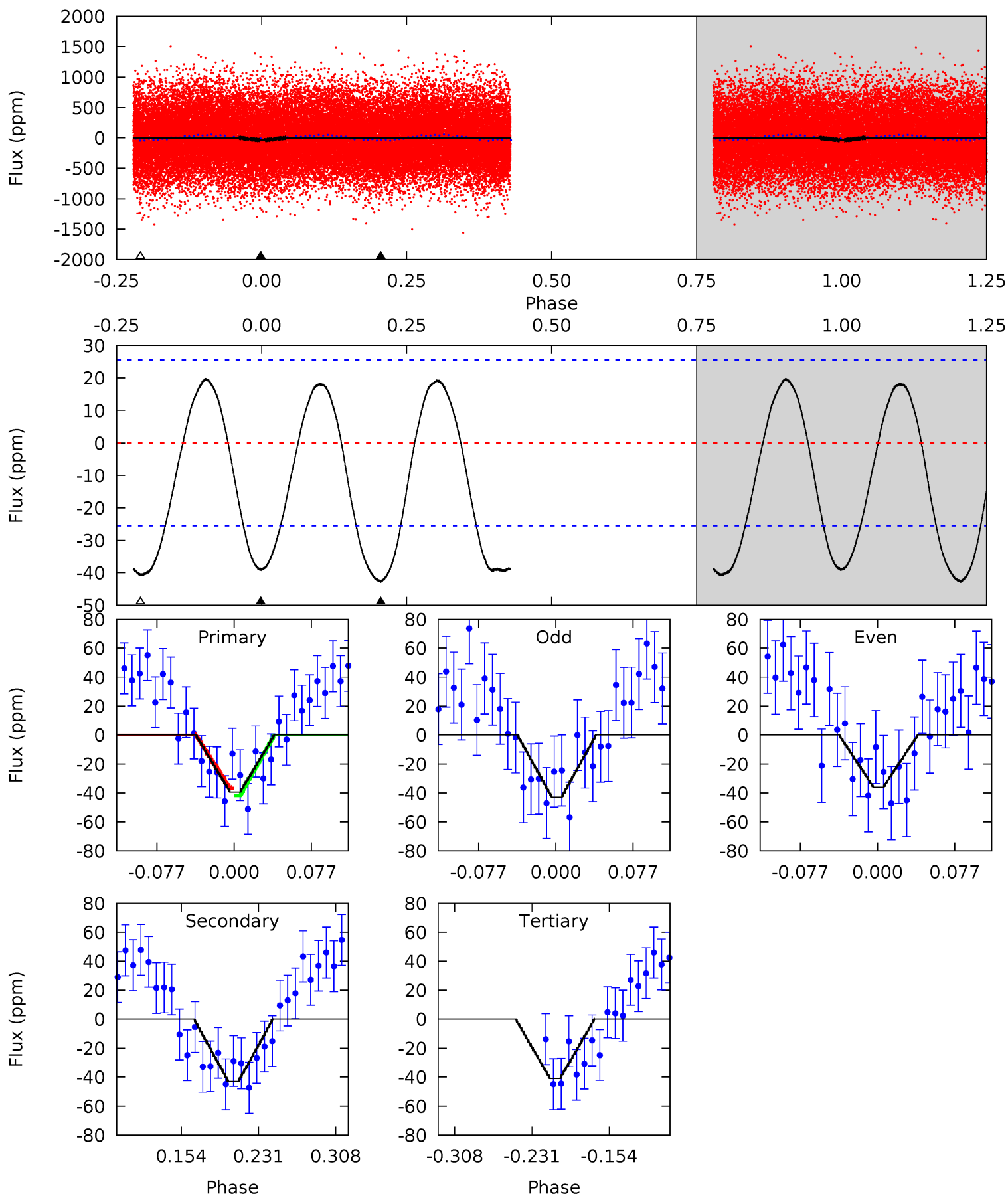
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	11.3	11.8	0	4.50	1.48	10.5	0.94	12.7	-0.47	11.3	0.79	0.88	0.65	0.87



Alt Model-Shift Uniqueness Test

006301132-02, P = 0.594354 Days, E = 131.426036 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.14	7.81	7.45	0	4.62	1.77	4.29	-0.31	7.14	0.36	7.81	0.63	0.94	0.32	0.47



Stellar Parameters For KIC 006301132

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7573^{+83}_{-75}	$4.000^{+0.148}_{-0.121}$	$-0.260^{+0.150}_{-0.150}$	$2.095^{+0.412}_{-0.412}$	$1.601^{+0.153}_{-0.127}$	$0.245^{+0.180}_{-0.090}$
	+1%/-1%	+4%/-3%	+58%/-58%	+20%/-20%	+10%/-8%	+74%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 006301132-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-22 ± 2	$1.61^{+0.41}_{-0.37}$	5302^{+272}_{-260}	5659^{+929}_{-634}	$1.244^{+0.859}_{-0.438}$
Alt.	-43 ± 6	$1.53^{+0.35}_{-0.36}$	5300^{+261}_{-277}	7230^{+1251}_{-853}	$2.673^{+1.880}_{-0.950}$

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

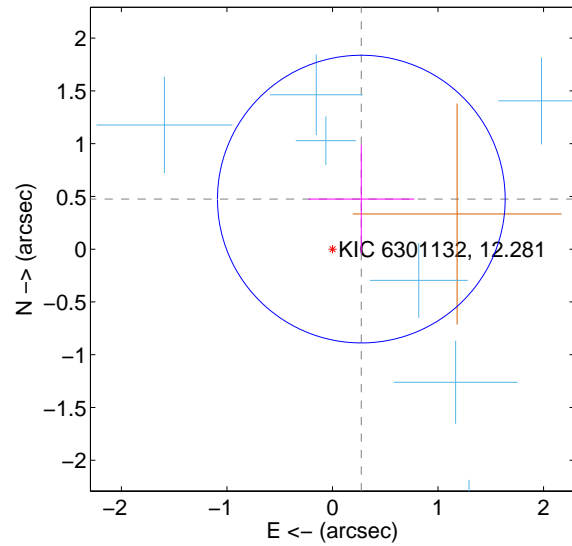
Supplemental centroid analysis for 006301132-02. Kepler magnitude: 12.28. Transit SNR 14.14

There are 9 quarters with good PRF difference image offsets

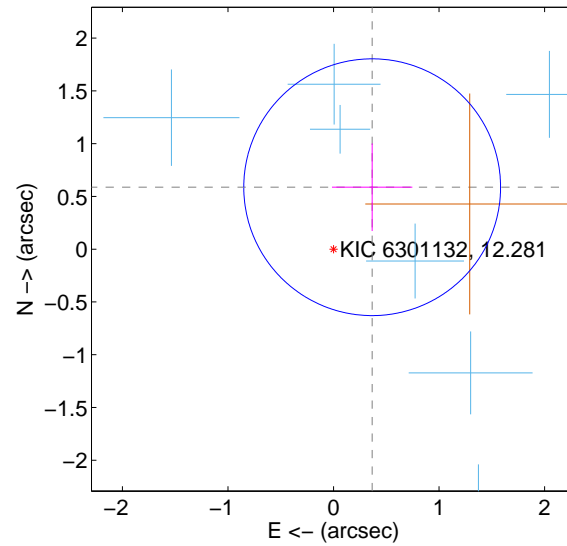
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.547 ± 0.454	1.21	-0.273 ± 0.502	0.474 ± 0.514
PRF-fit source offset from KIC position	0.692 ± 0.405	1.71	-0.366 ± 0.381	0.587 ± 0.414
photometric centroid source offset	0.05 ± 0.33	0.15	-0.04 ± 0.34	0.02 ± 0.28

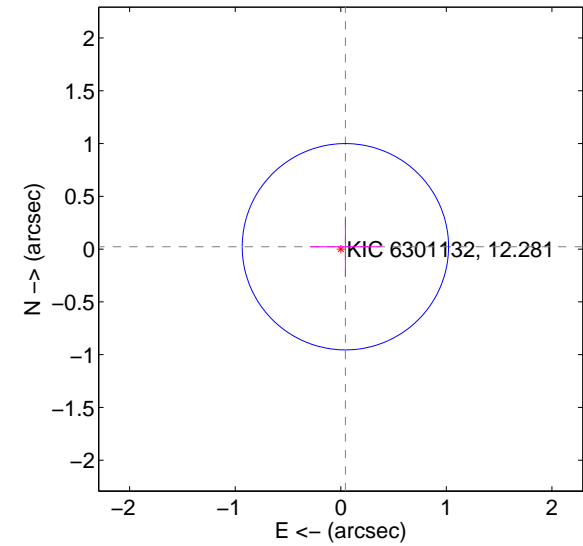
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

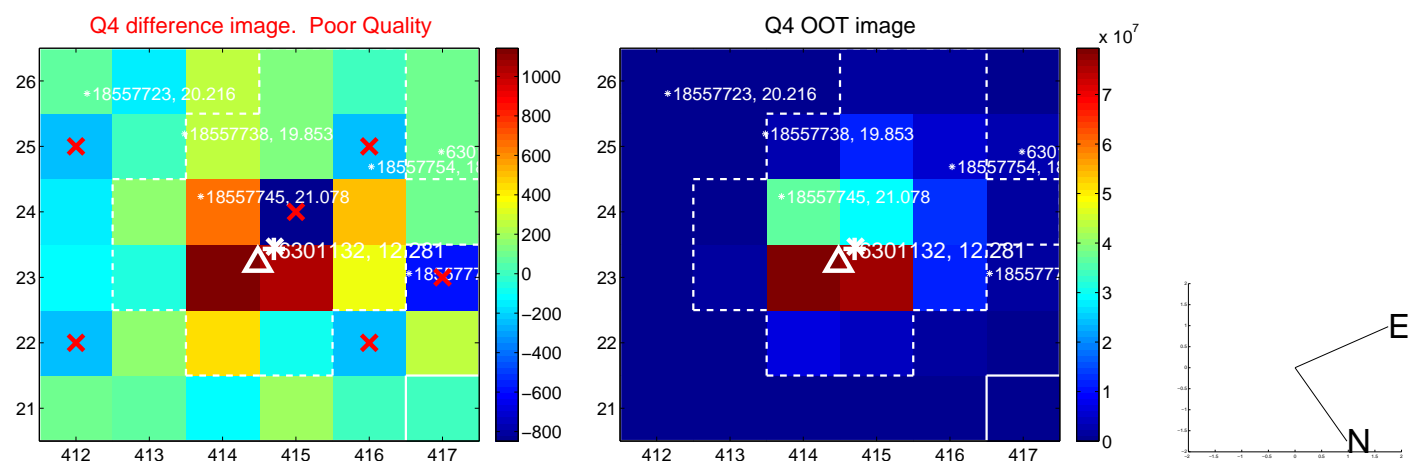
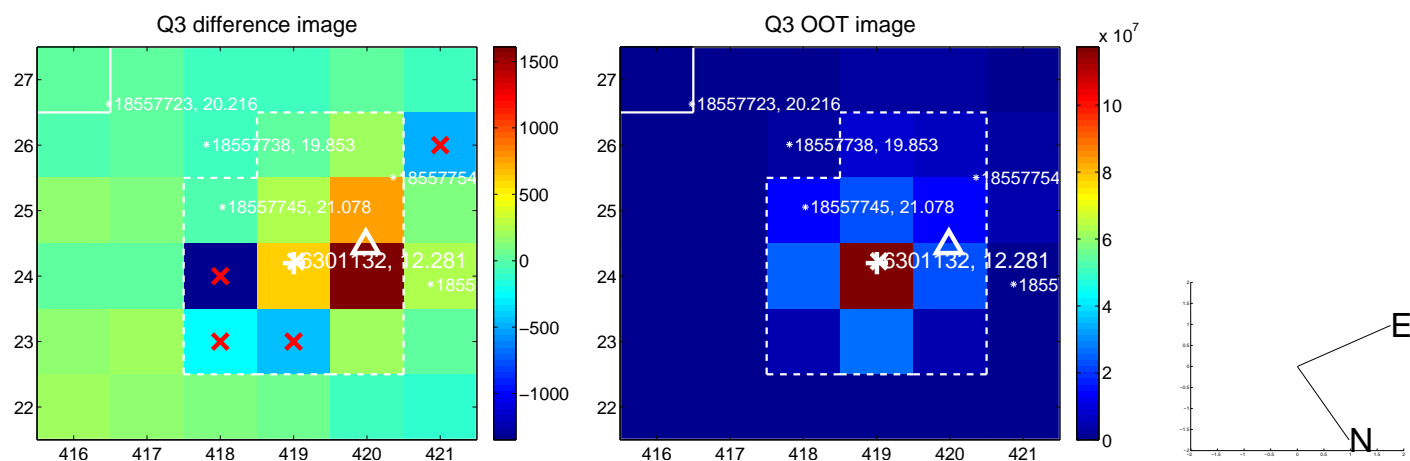
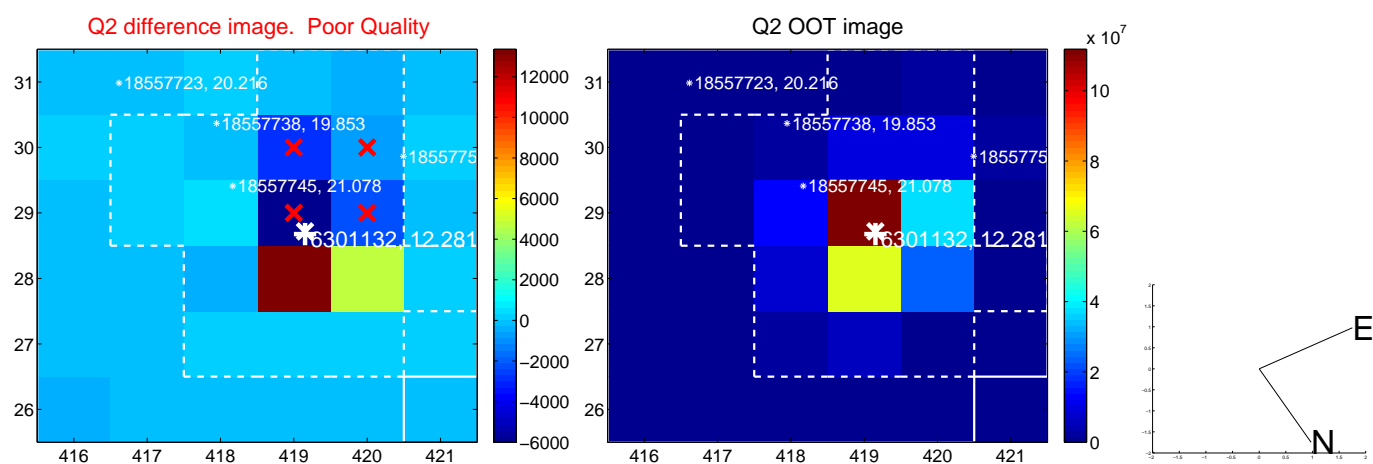
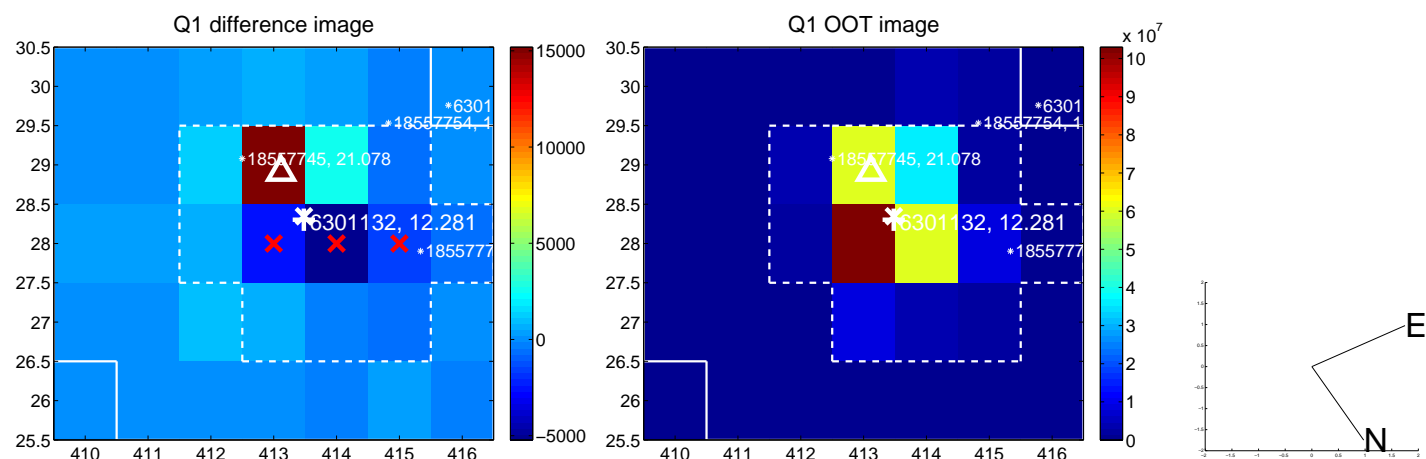


offset from photometric centroids

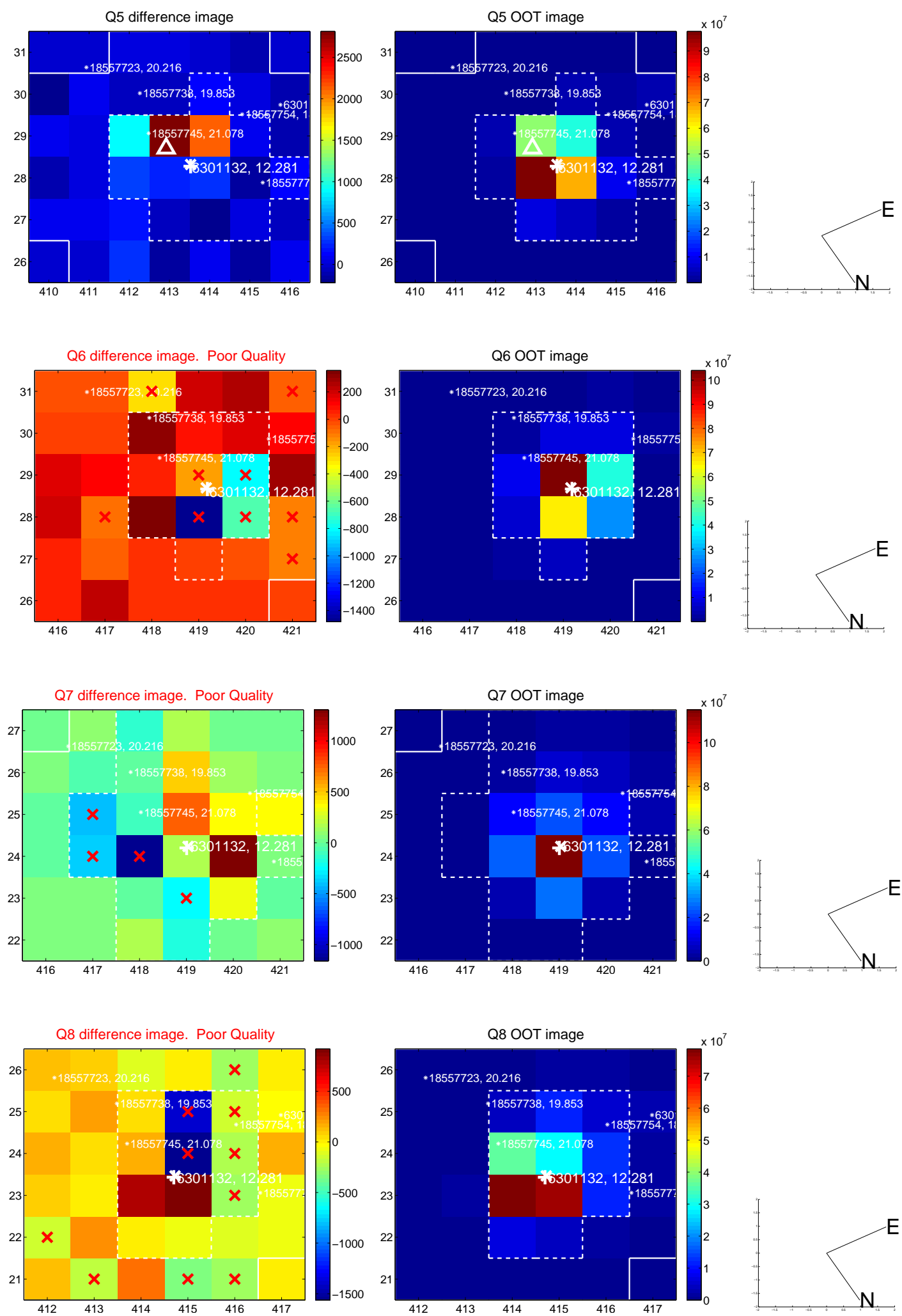


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

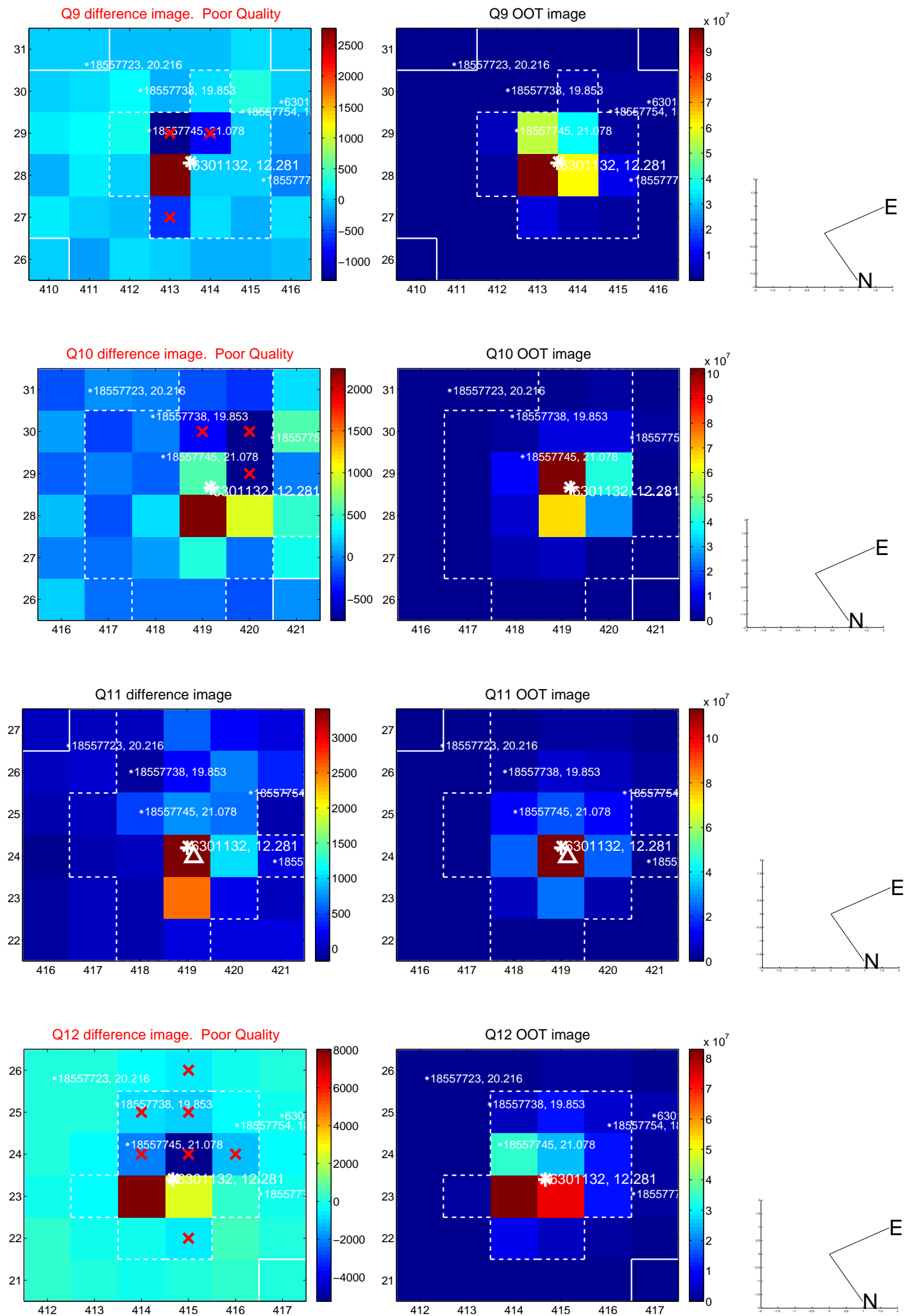
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



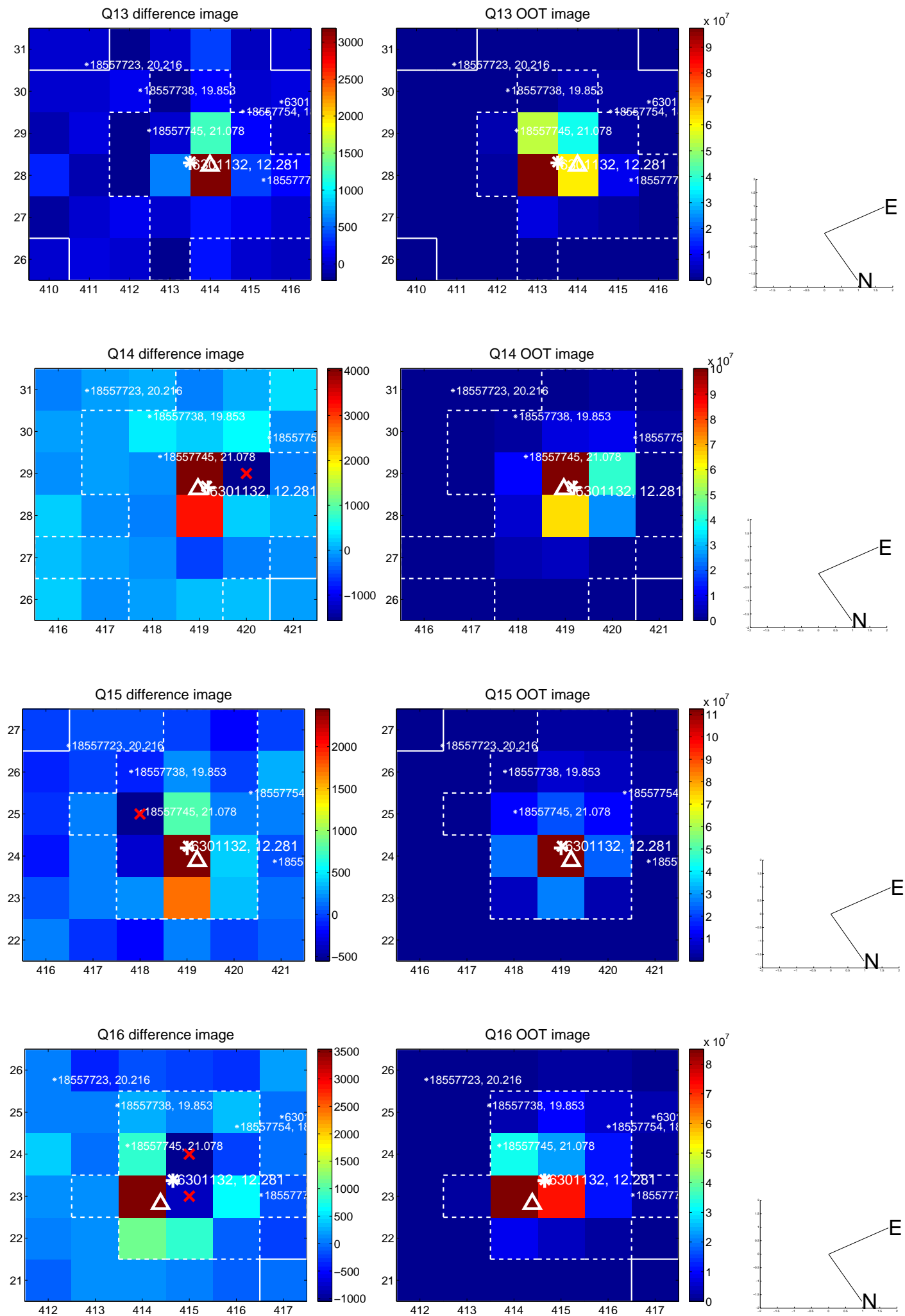
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



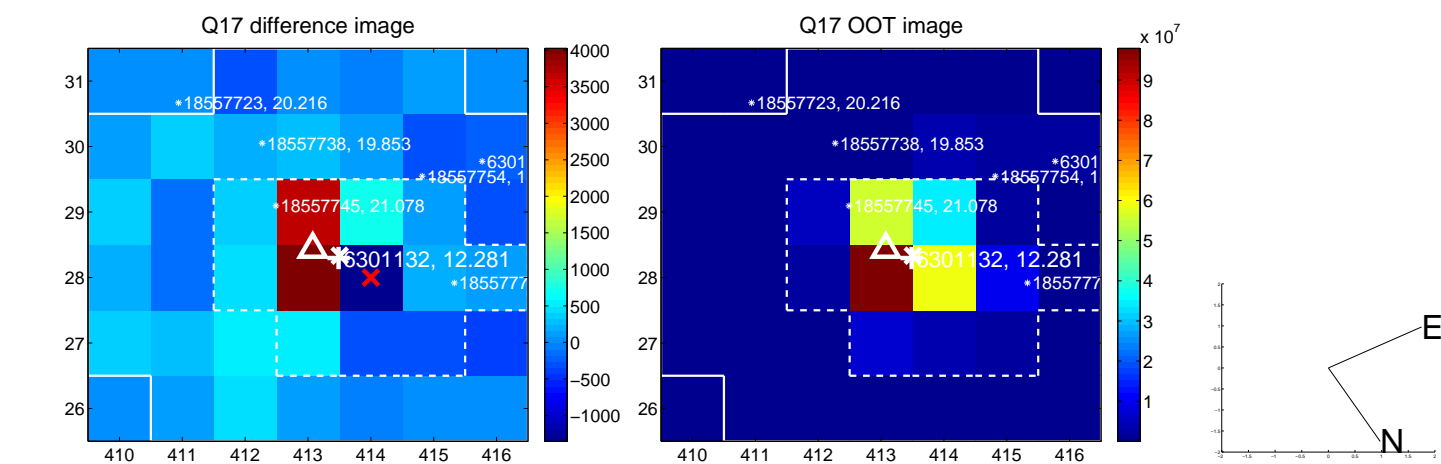
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



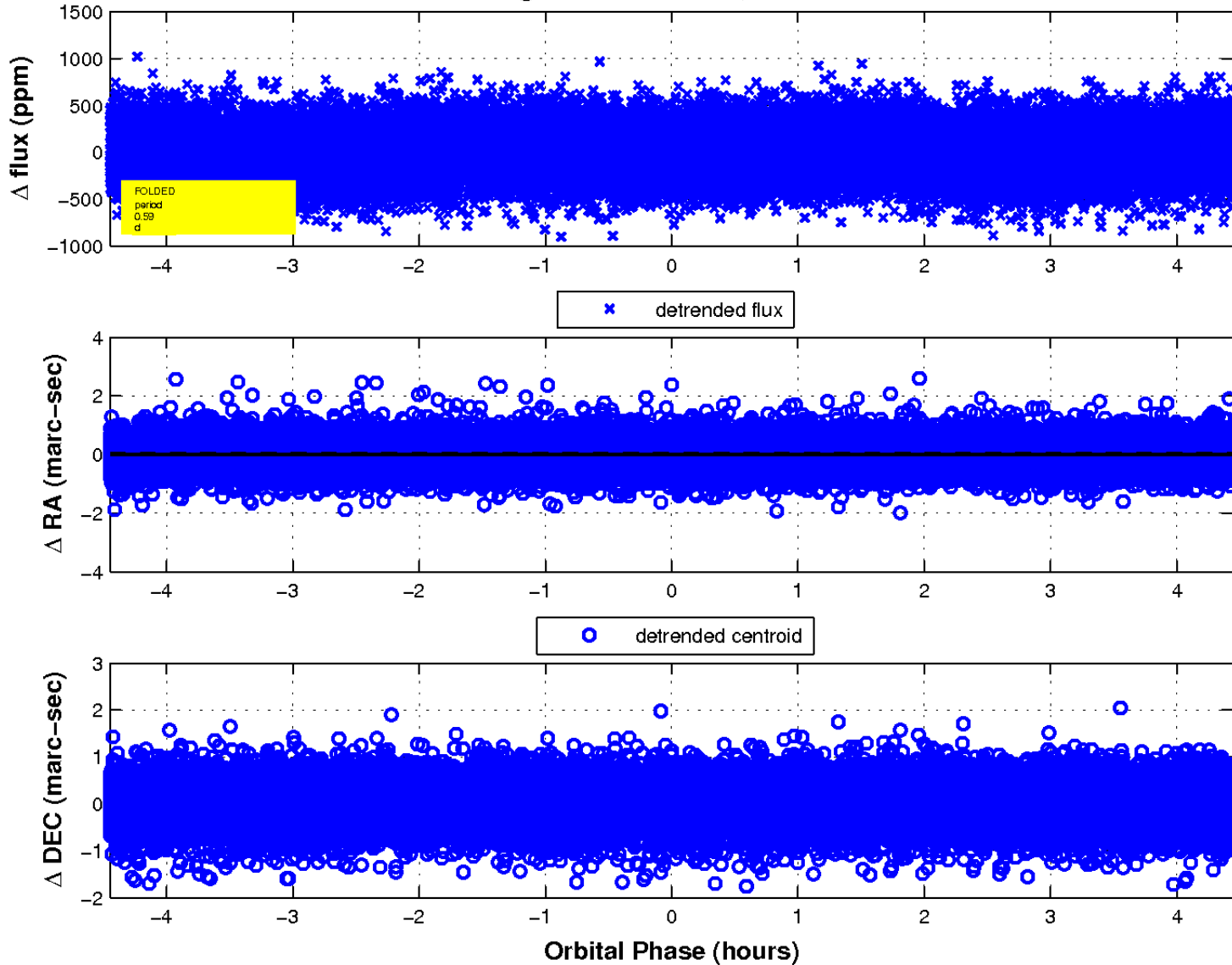
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

