

KIC 002995931

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})
002995931-01	OBS	No	1.034301	131.813838	142.2	2.236	12.0	8.7	1.26	6943	1.75	7080.30
002995931-02	OBS	No	1.034301	132.257517	58.8	0.775	12.2	4.1	1.26	6943	0.99	7080.30
002995931-03	OBS	No	2.895067	133.672711	682.8	8.437	8.1	8.1	1.26	6943	4.31	1794.88
002995931-04	OBS	No	1.010108	132.259846	593.0	6.114	8.8	12.4	1.26	6943	4.00	7307.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002995931-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
002995931-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
002995931-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
002995931-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

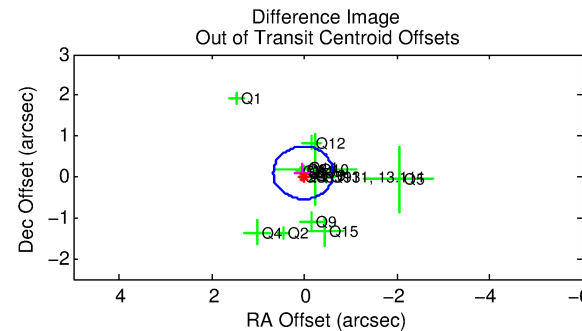
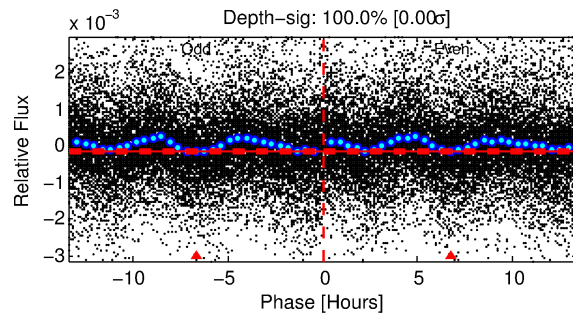
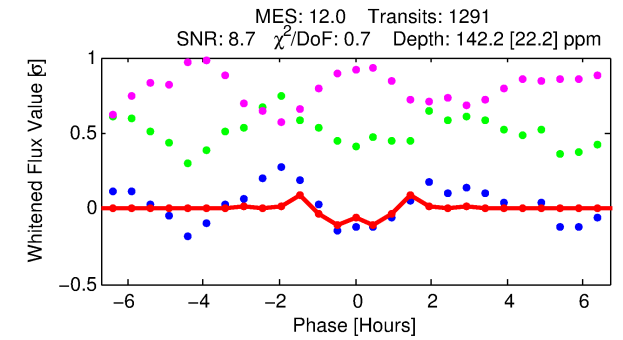
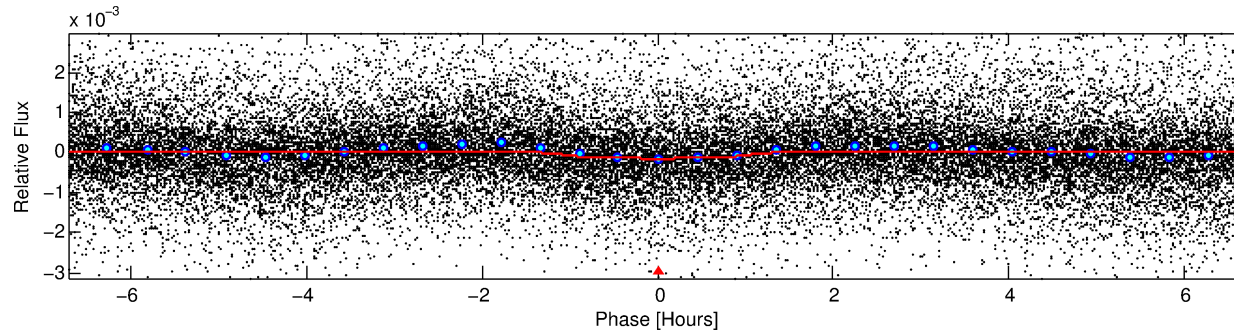
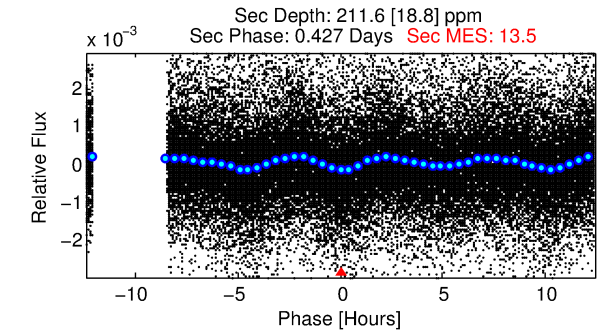
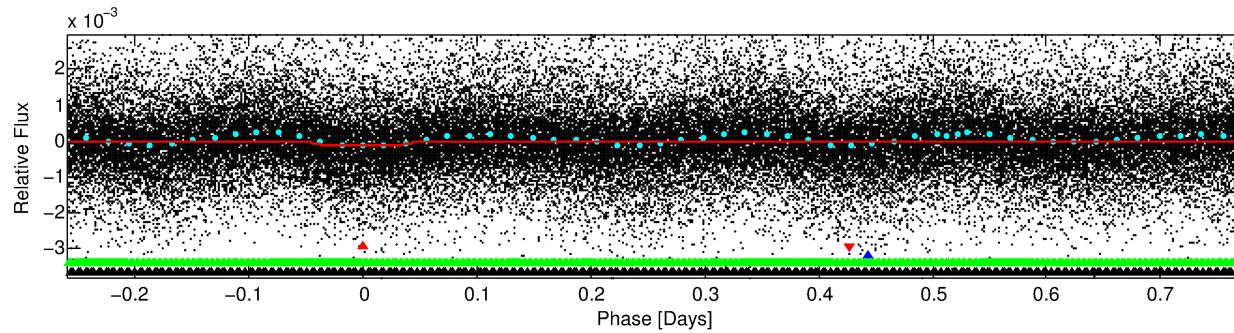
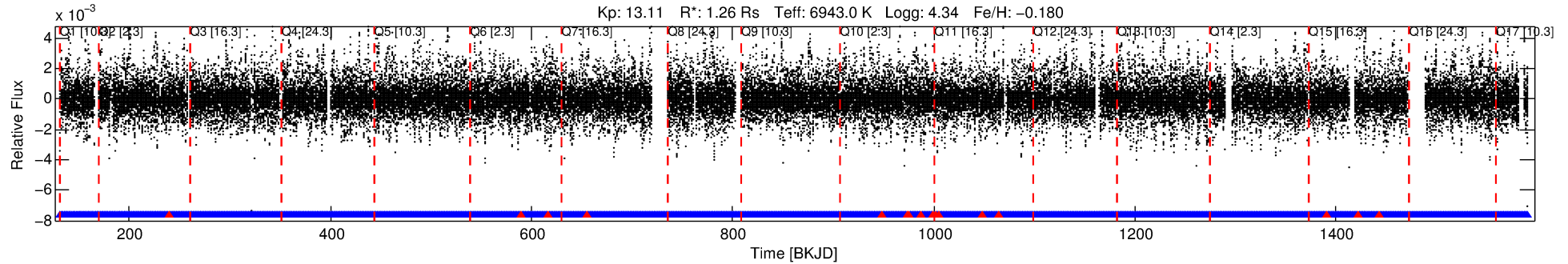
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002995931-01

No Significant Match Found

DV One-Page Summary

KIC: 2995931 Candidate: 1 of 4 Period: 1.034 d



DV Fit Results:

Period = 1.03430 [0.00001] d
Epoch = 131.8138 [0.0013] BKJD
Rp/R* = 0.0127 [0.0028]
a/R* = 1.89 [1.62]
b = 0.90 [0.25]
Seff = 7080.30 [2990.75]
Teq = 2339 [247] K
Rp = 1.75 [0.72] Re
a = 0.0217 [0.0061] AU
Ag = 17.78 [10.65] [1.58σ]
Teffp = 7427 [887] K [5.53σ]

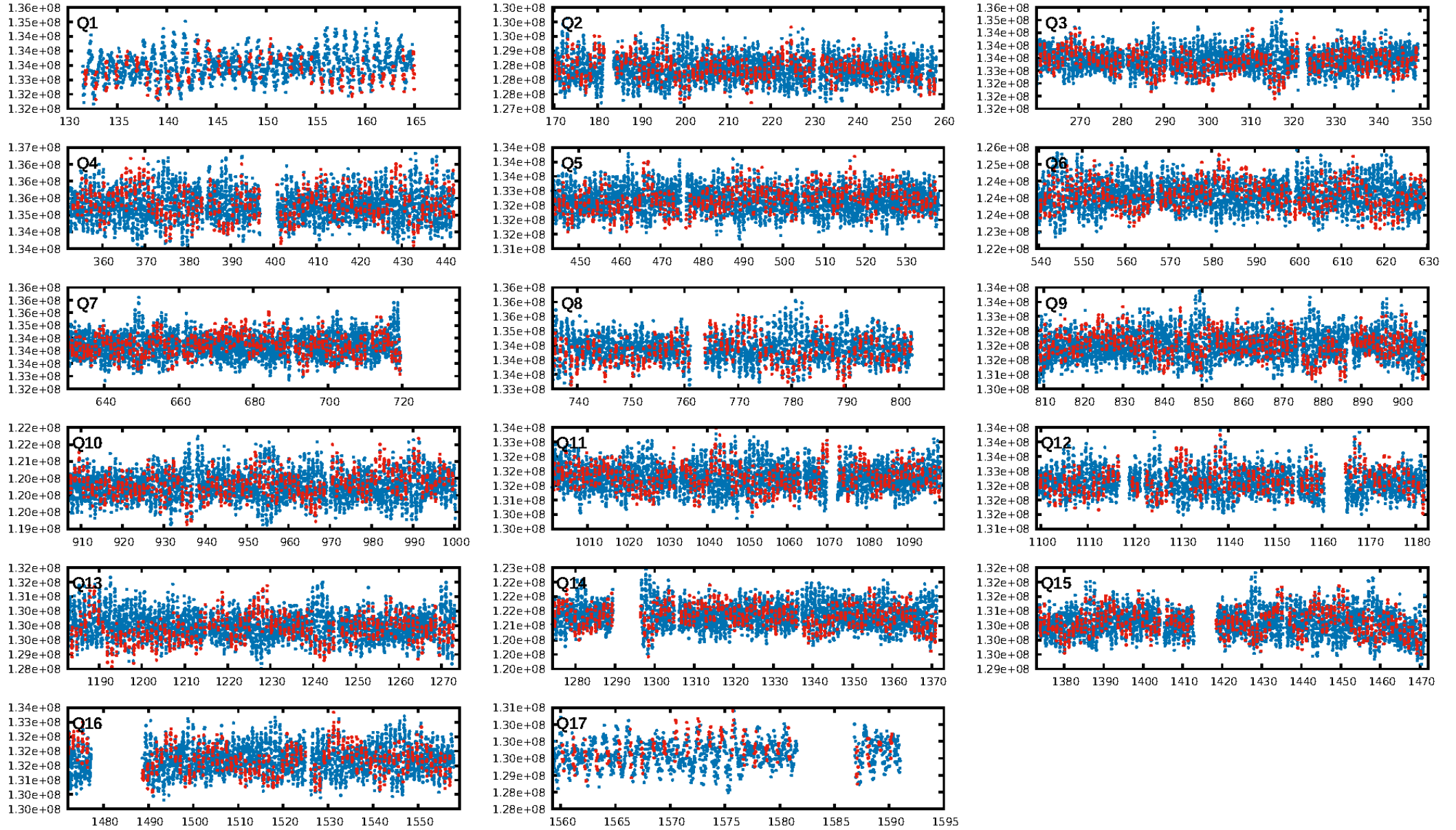
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [5.12σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1217/1233]
GhostDiagnostic-chr: 3.029
Centroid-sig: 1.6%
Centroid-so: 0.239 arcsec [1.17σ]
OotOffset-rm: 0.103 arcsec [0.48σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.036 arcsec [0.17σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 0.94 [16/17]

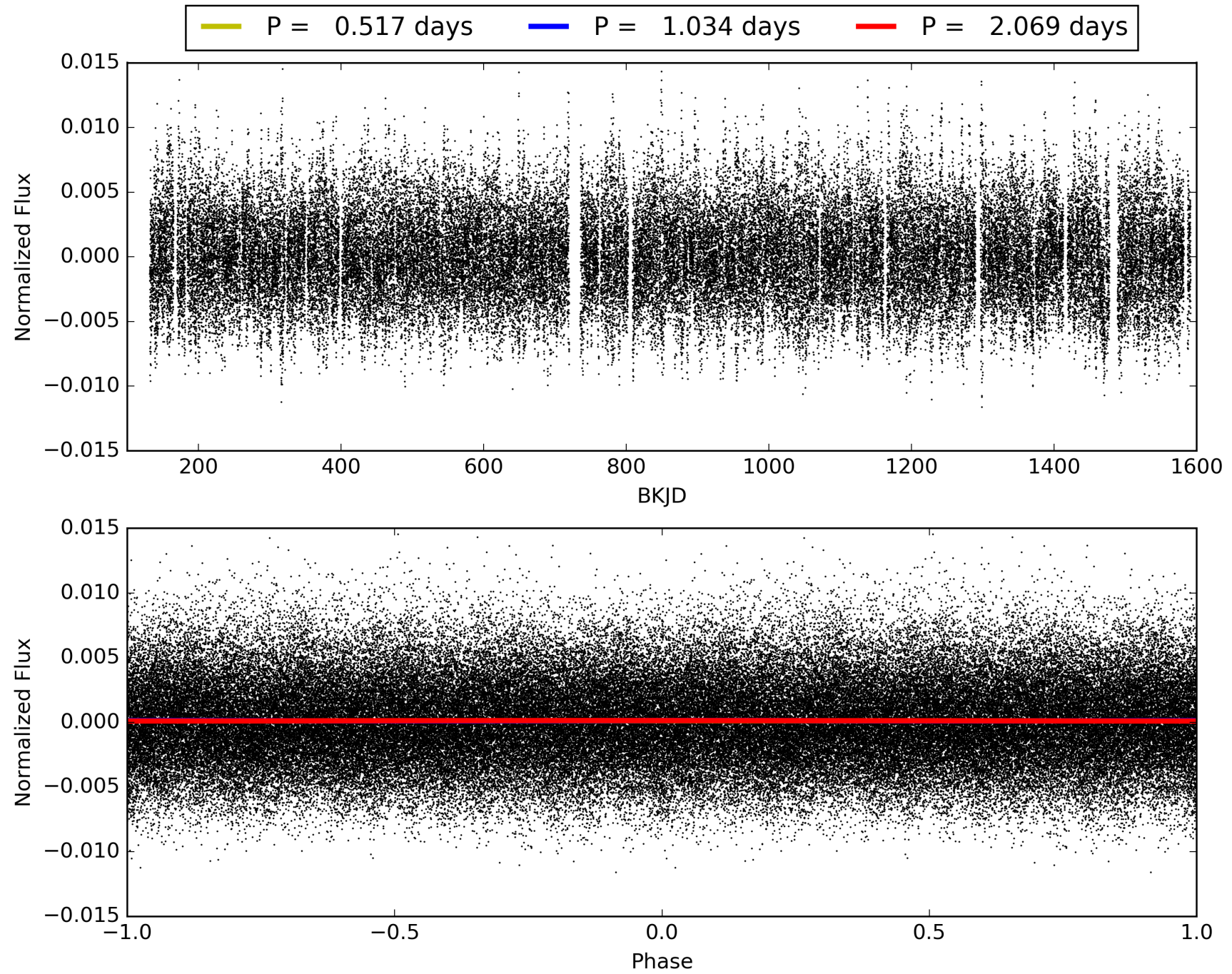
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:30:09 Z

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

TCE 002995931-01, PDC Light Curves

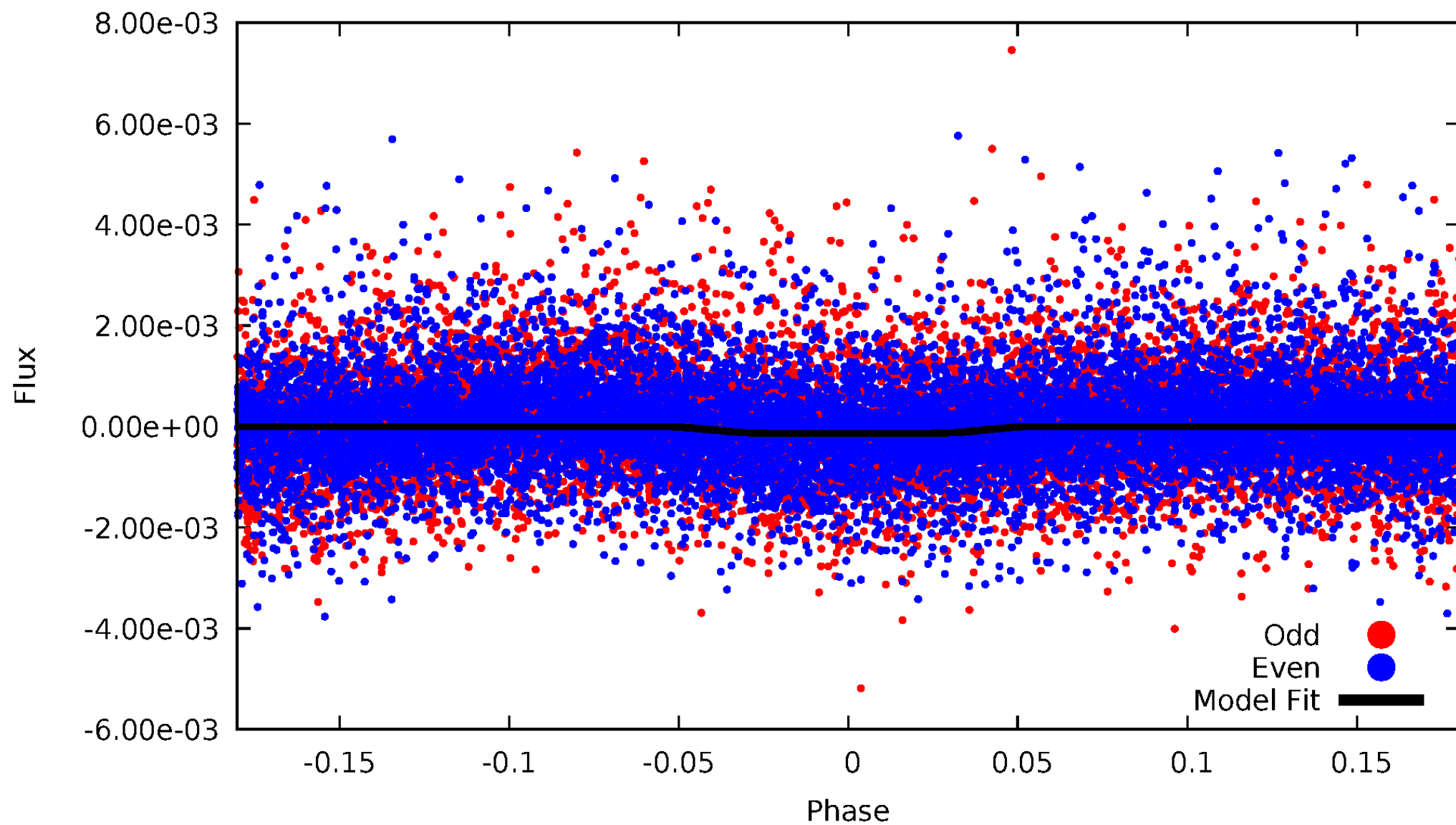


TCE 002995931-01



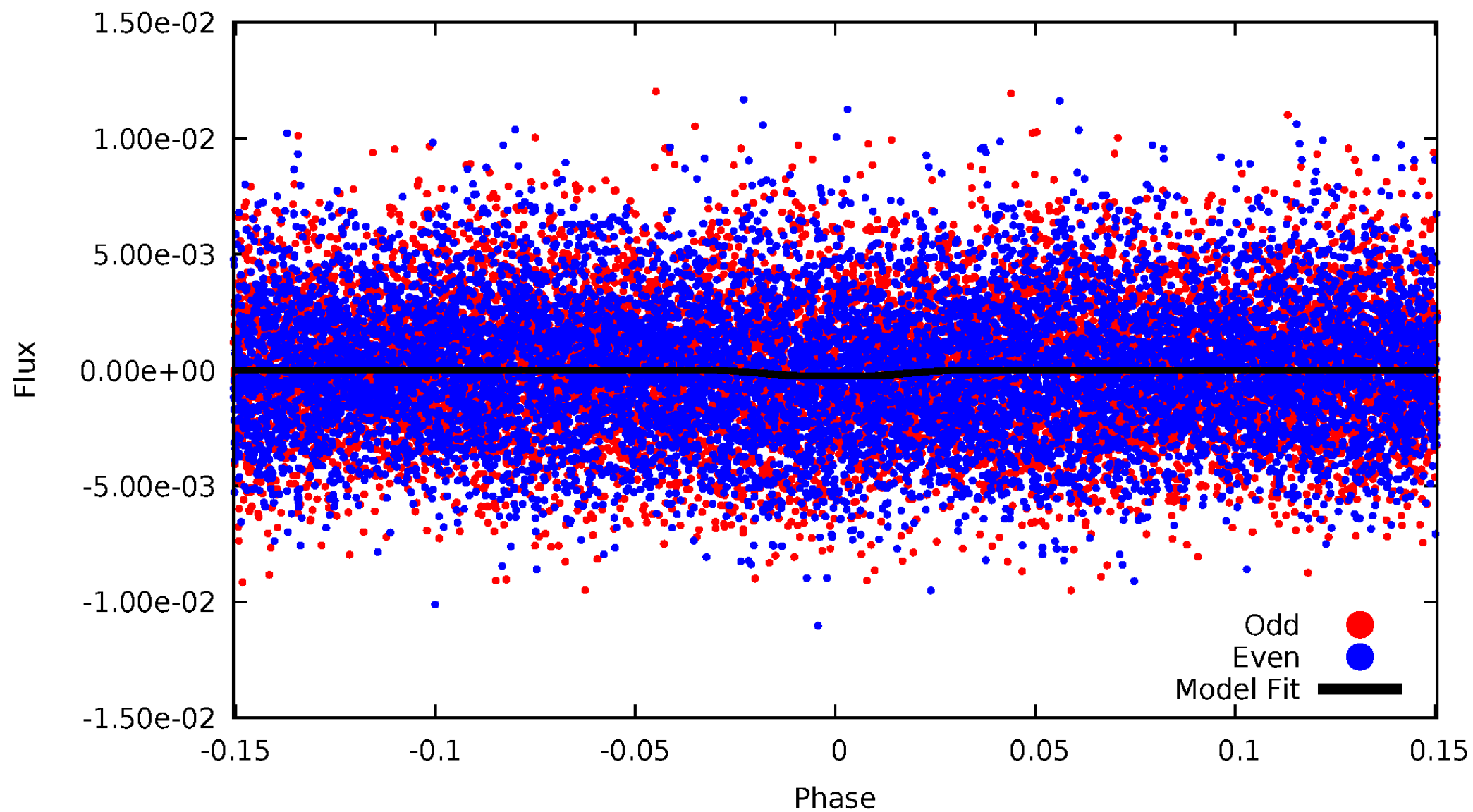
DV Odd/Even

TCE 002995931-01



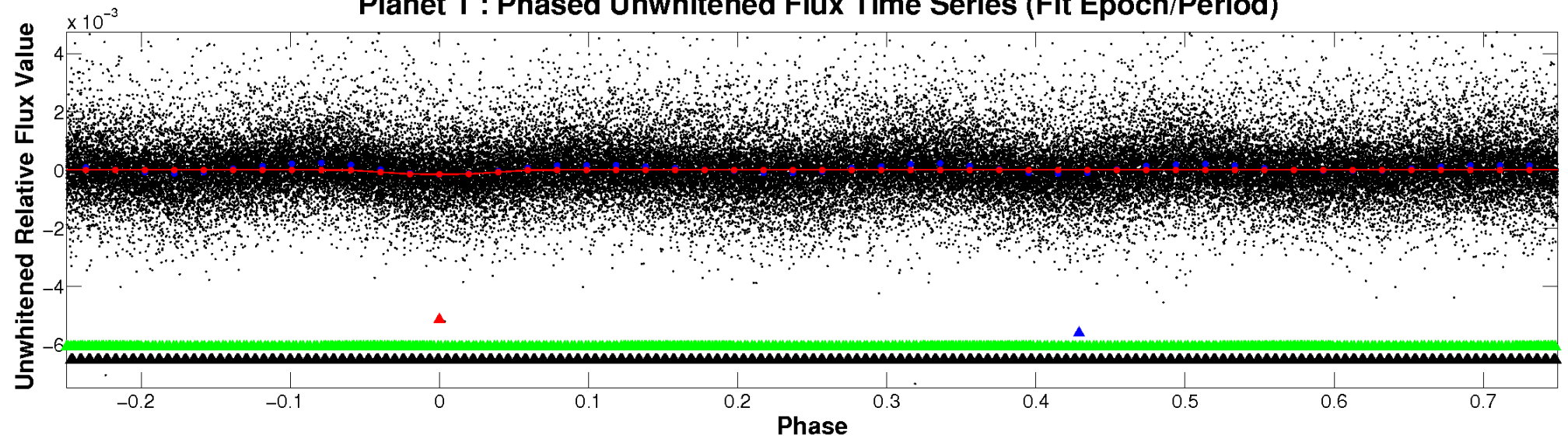
ALT Odd/Even

TCE 002995931-01

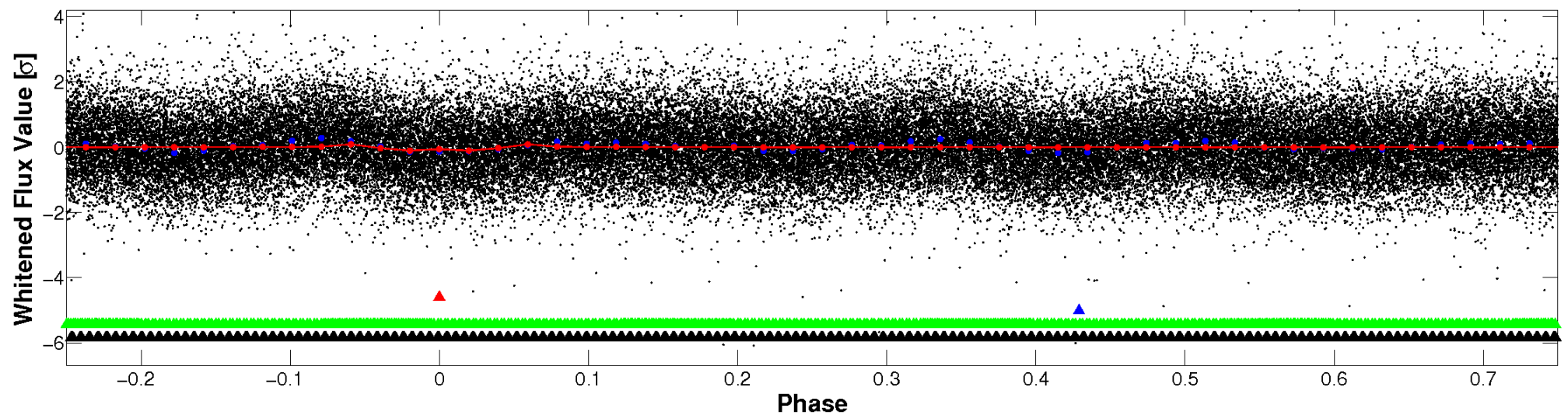


Non-Whitened Vs. Whitened Light Curve

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

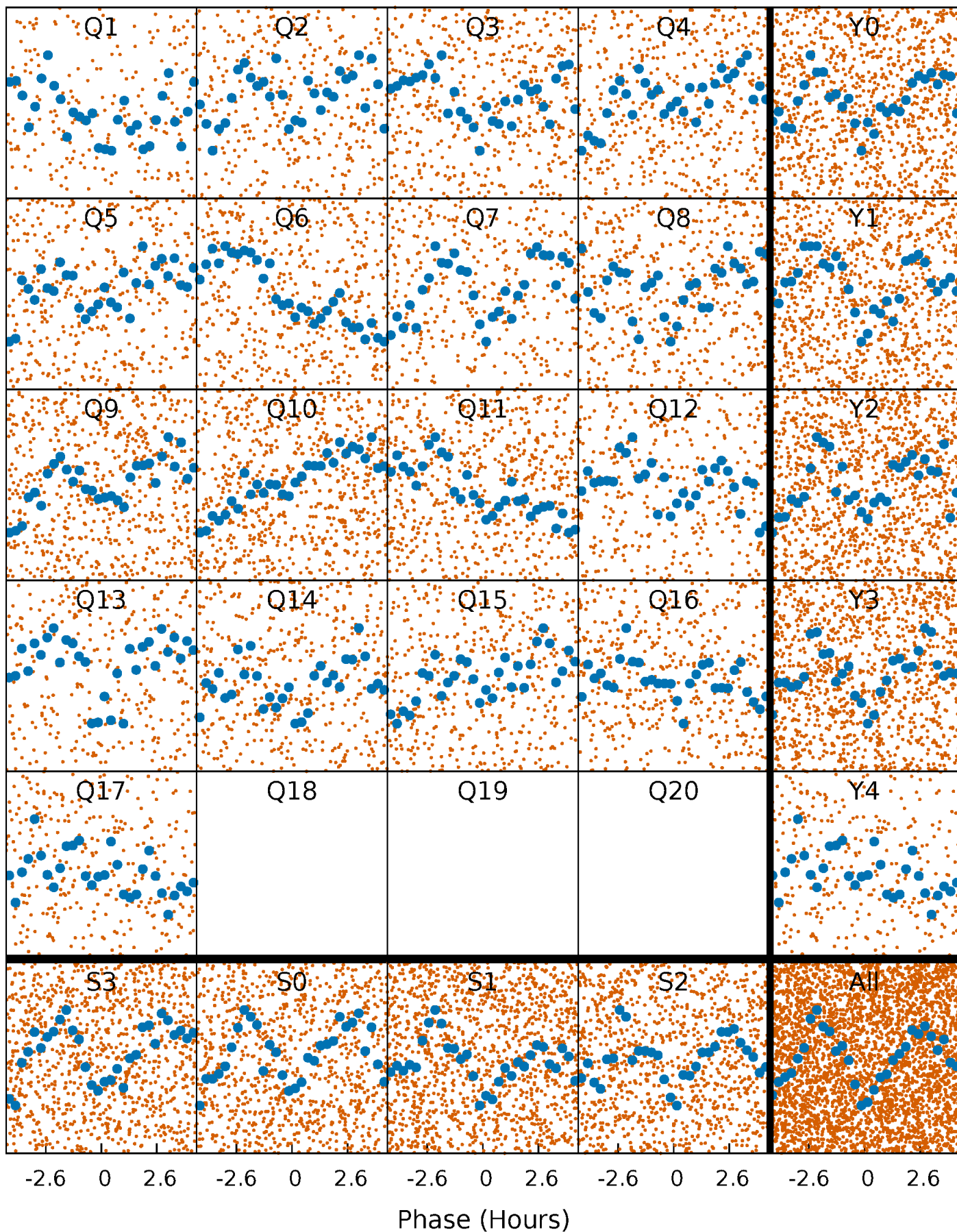


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



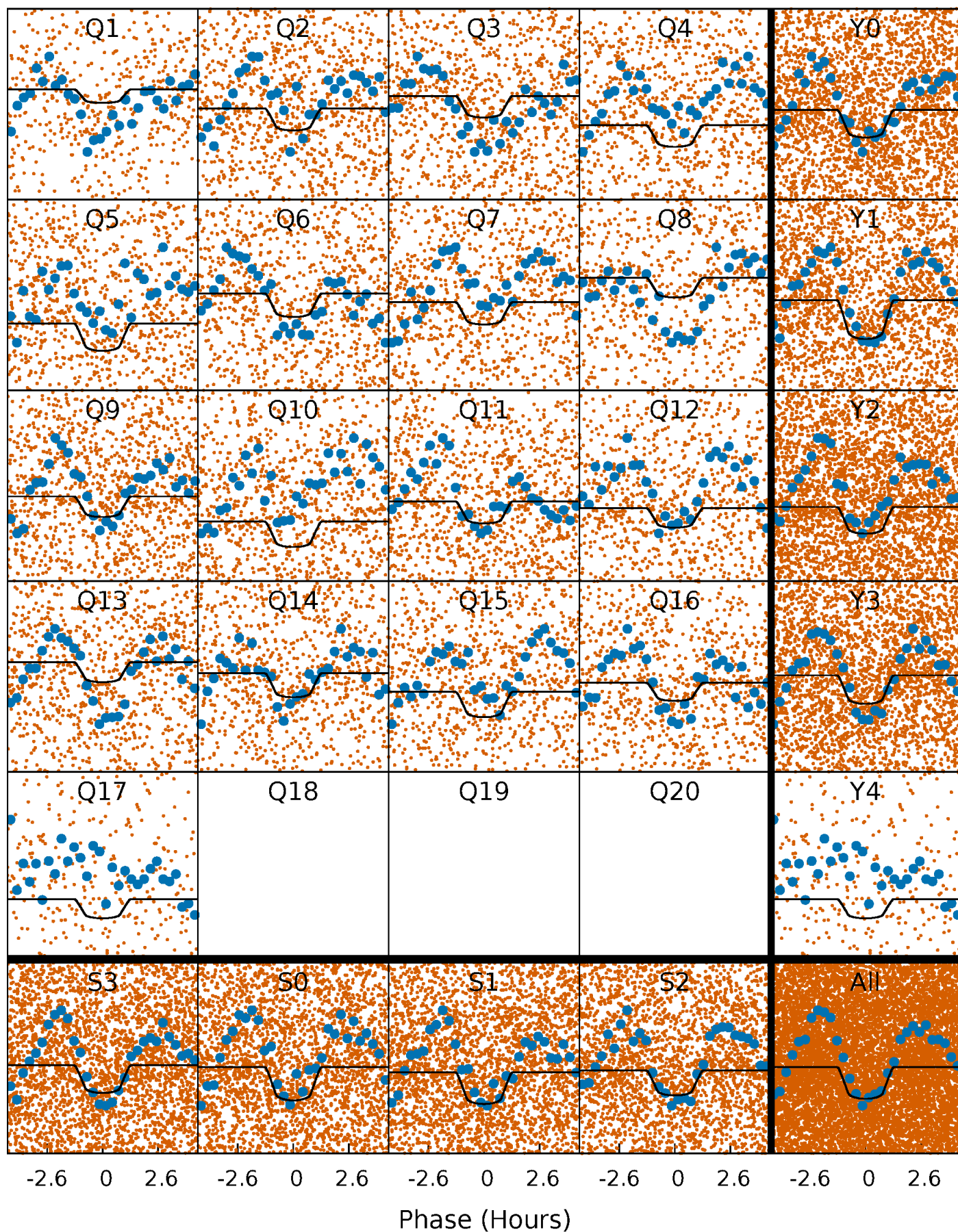
PDC Quarter-Phased Transit Curves

TCE 002995931-01 P= 1.034301 Days $T_0=131.813838$ (BKJD)



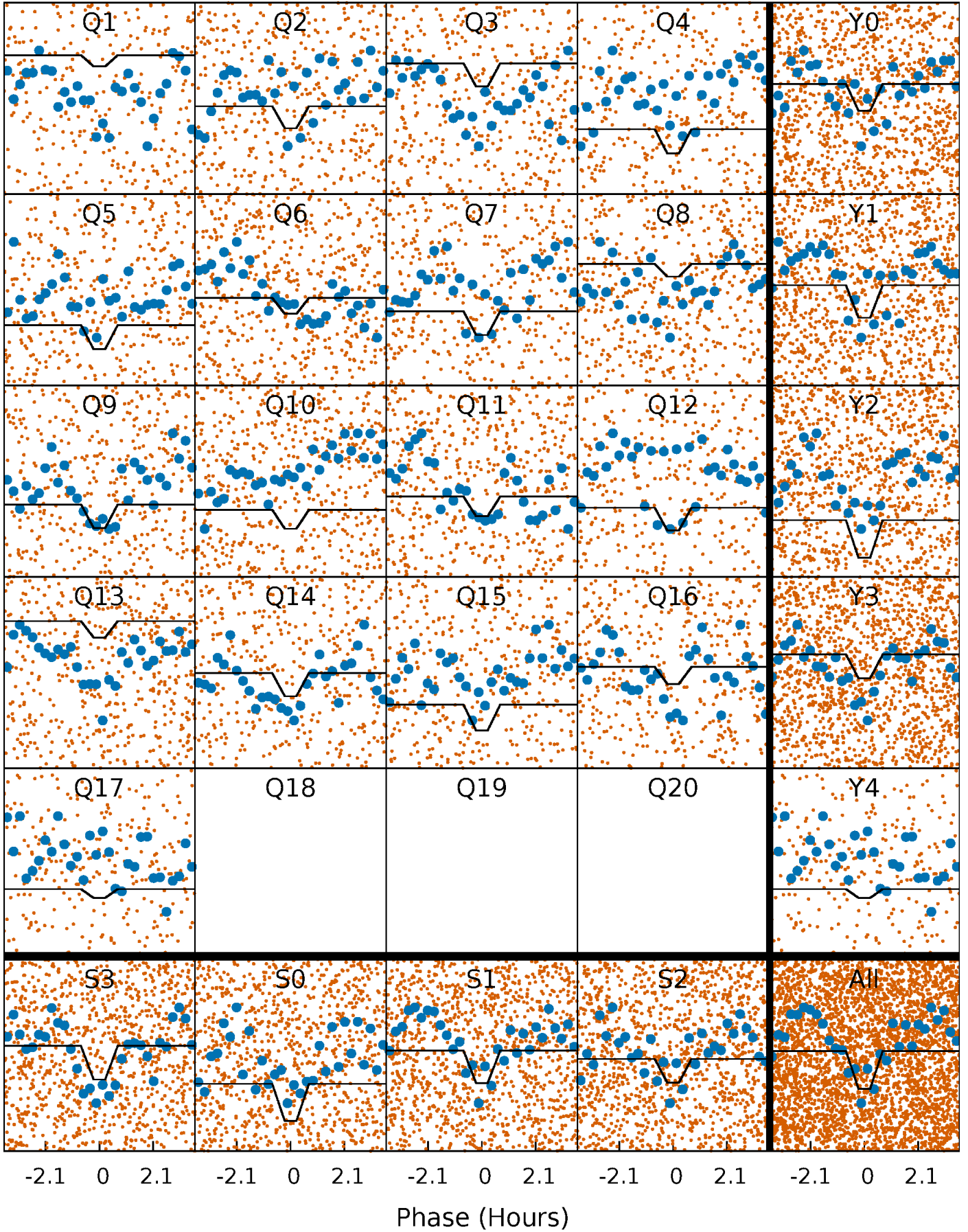
DV Quarter-Phased Transit Curves

TCE 002995931-01 P= 1.034301 Days $T_0=131.813838$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

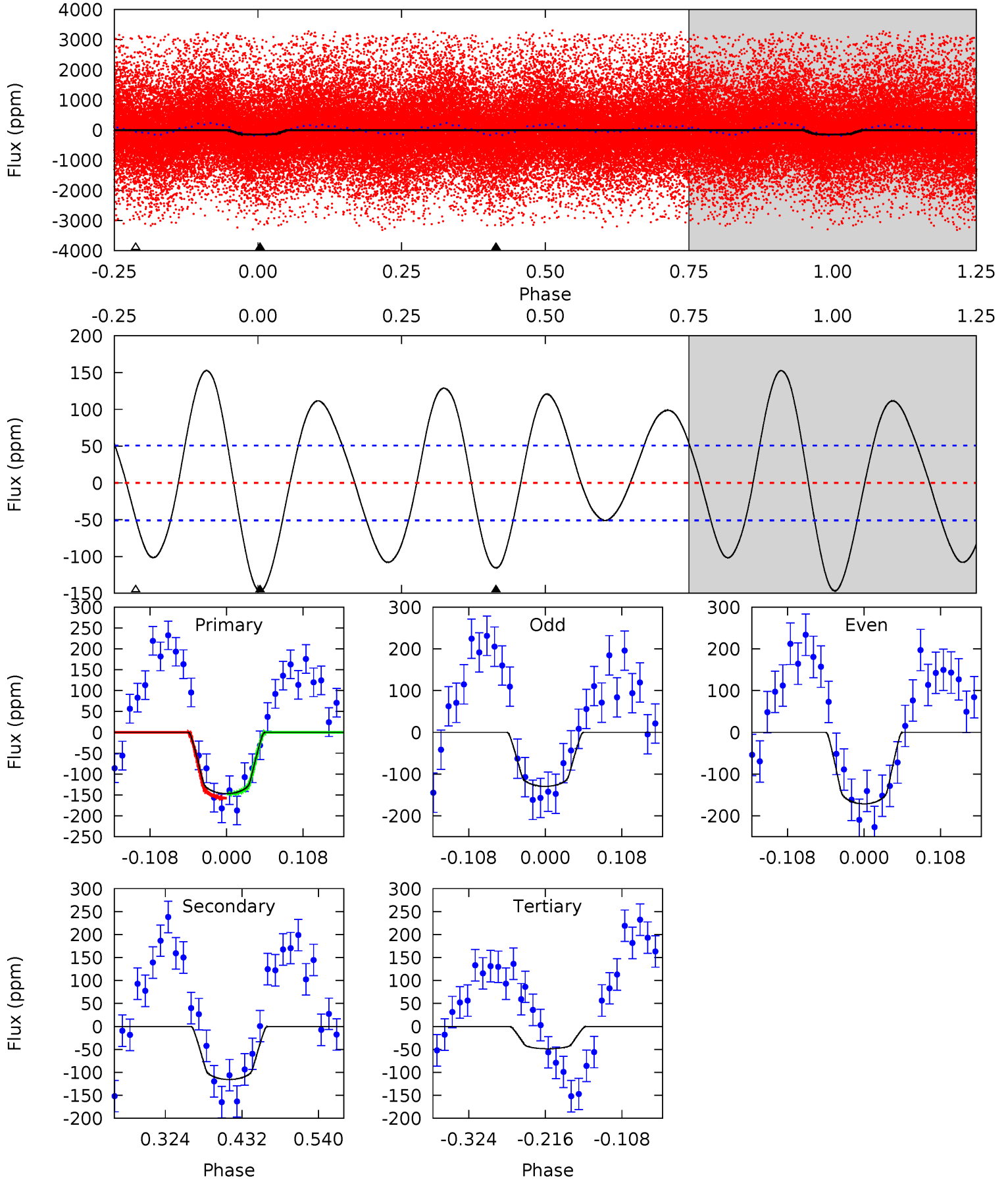
TCE 002995931-01 P= 1.034315 Days $T_0=131.812056$ (BKJD)



DV Model-Shift Uniqueness Test

002995931-01, P = 1.034301 Days, E = 130.779537 Days

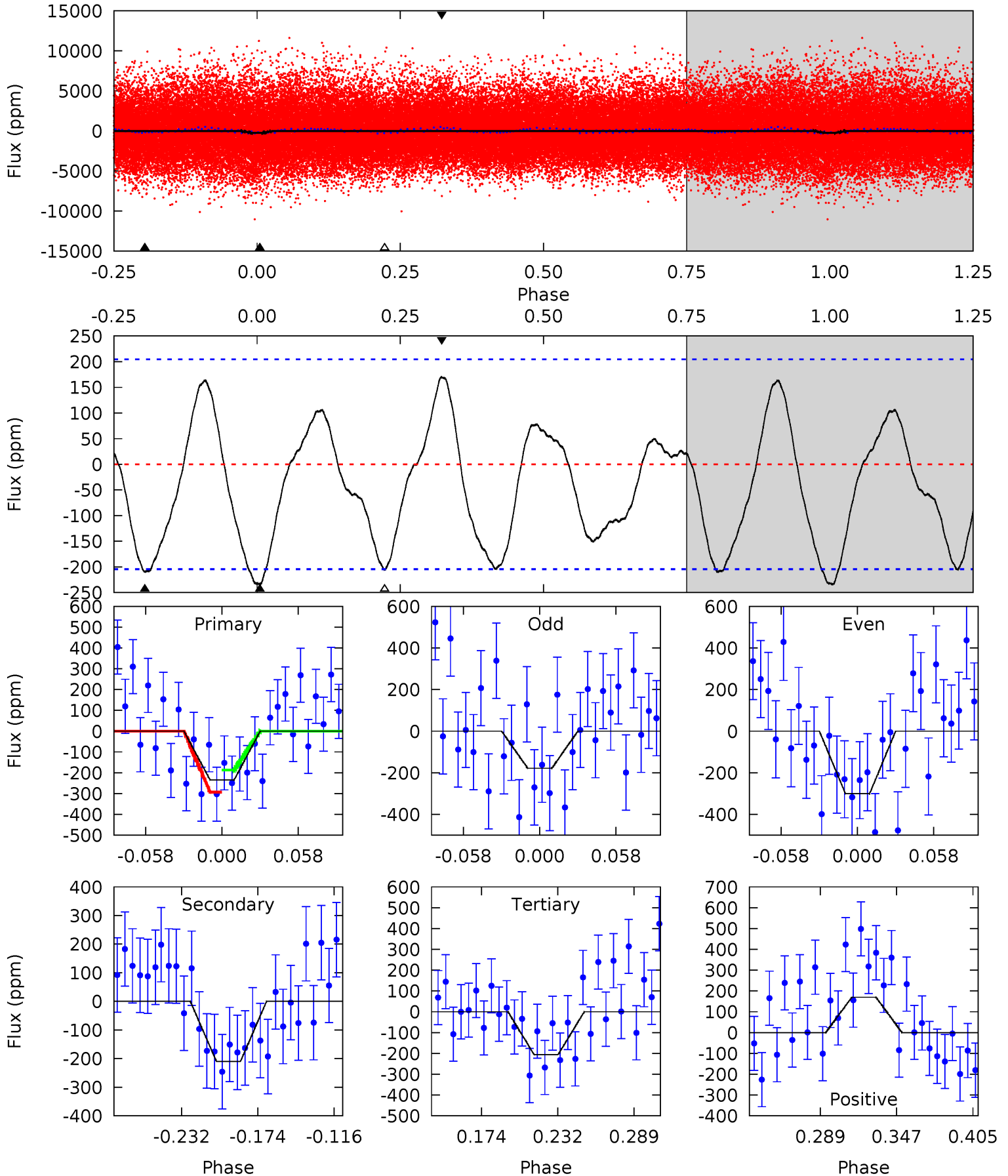
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	10.3	4.35	0	4.55	1.61	6.03	8.78	13.1	5.98	10.3	1.90	0.77	0.51	0.45



Alt Model-Shift Uniqueness Test

002995931-01, P = 1.034315 Days, E = 130.777741 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.36	4.80	4.71	3.89	4.68	1.90	2.28	0.65	1.47	0.09	0.91	1.40	0.78	0.42	1.21



Stellar Parameters For KIC 002995931

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6943^{+164}_{-268}	$4.338^{+0.052}_{-0.208}$	$-0.180^{+0.250}_{-0.350}$	$1.264^{+0.435}_{-0.145}$	$1.284^{+0.191}_{-0.174}$	$0.895^{+0.258}_{-0.477}$
	+2%/-4%	+1%/-5%	+139%/-194%	+34%/-11%	+15%/-14%	+29%/-53%
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 002995931-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-116 ± 11	$1.88^{+0.47}_{-0.47}$	3338^{+261}_{-184}	6225^{+959}_{-612}	$8.330^{+6.195}_{-2.867}$
Alt.	-210 ± 44	$2.36^{+0.52}_{-0.47}$	3338^{+237}_{-176}	6401^{+893}_{-648}	$9.371^{+6.061}_{-3.448}$

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

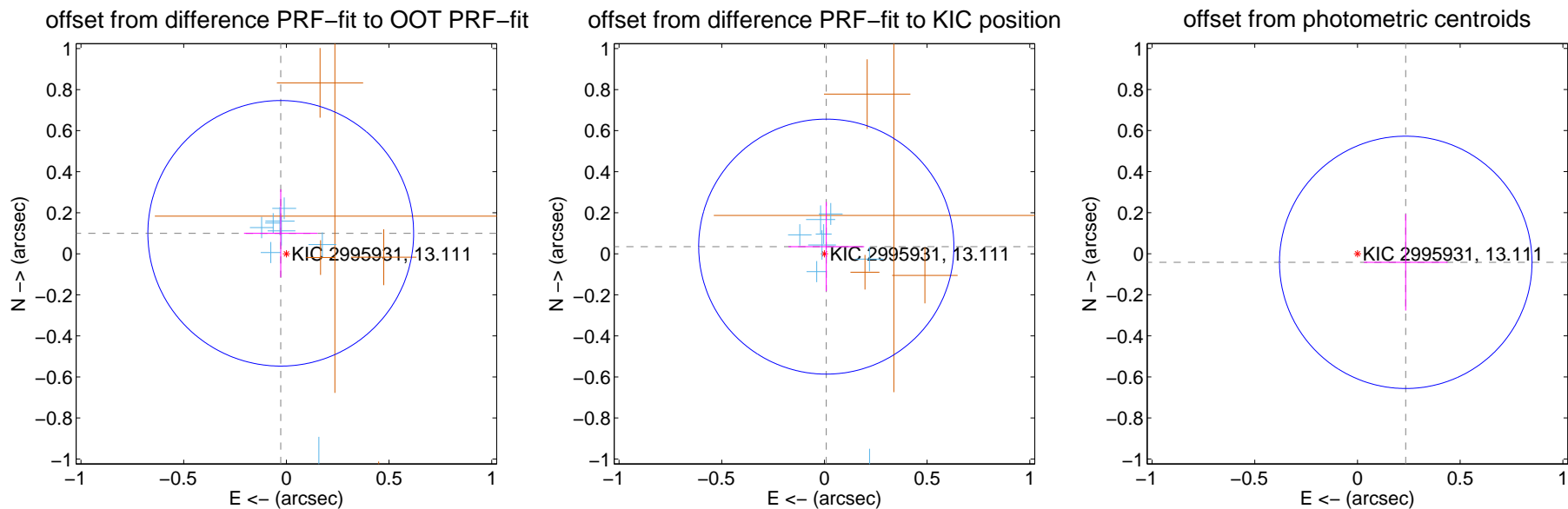
DV Centroid Data

Supplemental centroid analysis for 002995931-01. Kepler magnitude: 13.11. Transit SNR 8.68

There are 12 quarters with good PRF difference image offsets

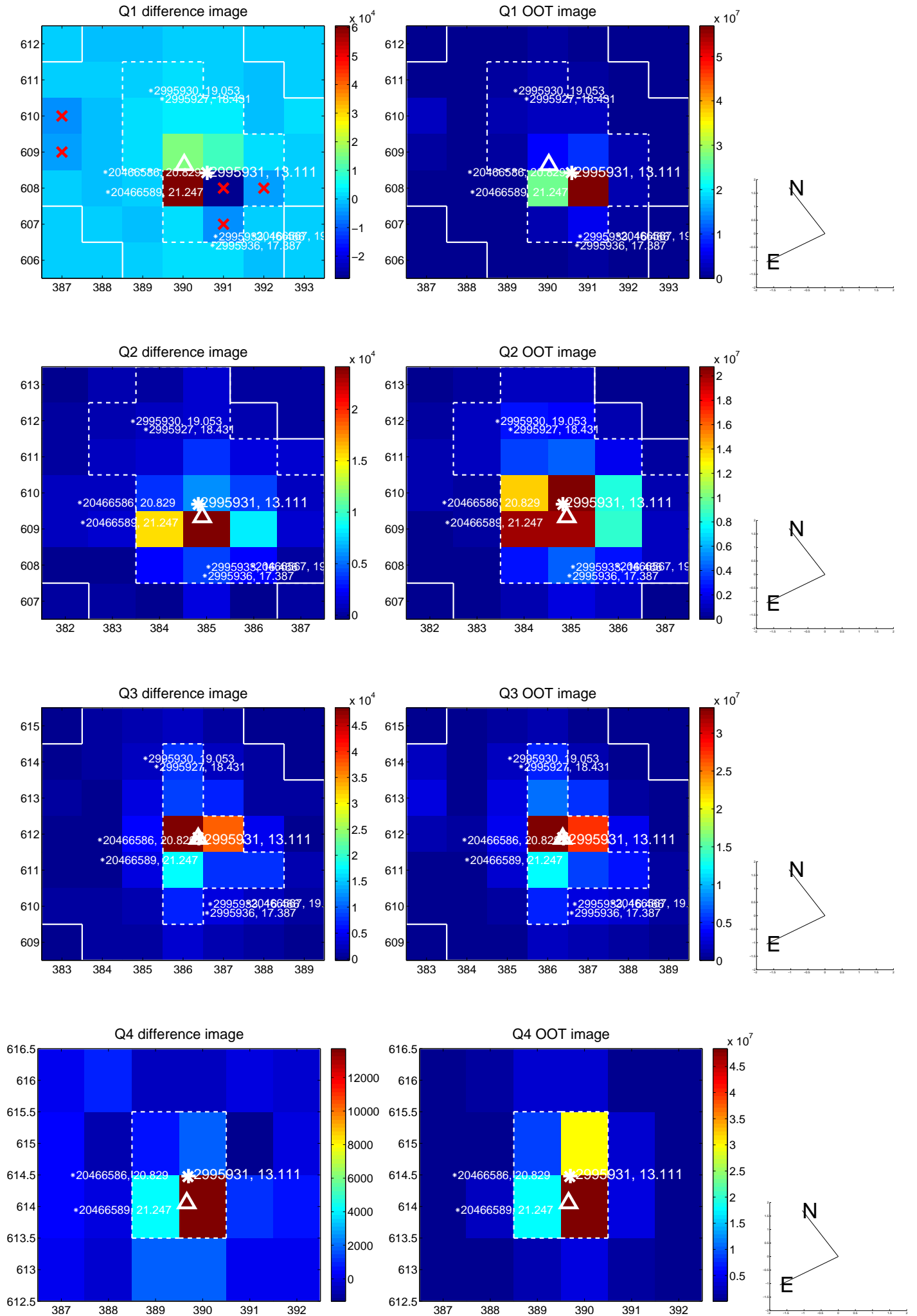
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.103 ± 0.216	0.48	0.027 ± 0.179	0.100 ± 0.214
PRF-fit source offset from KIC position	0.036 ± 0.207	0.17	-0.009 ± 0.184	0.035 ± 0.217
photometric centroid source offset	0.24 ± 0.20	1.17	-0.24 ± 0.20	-0.04 ± 0.23

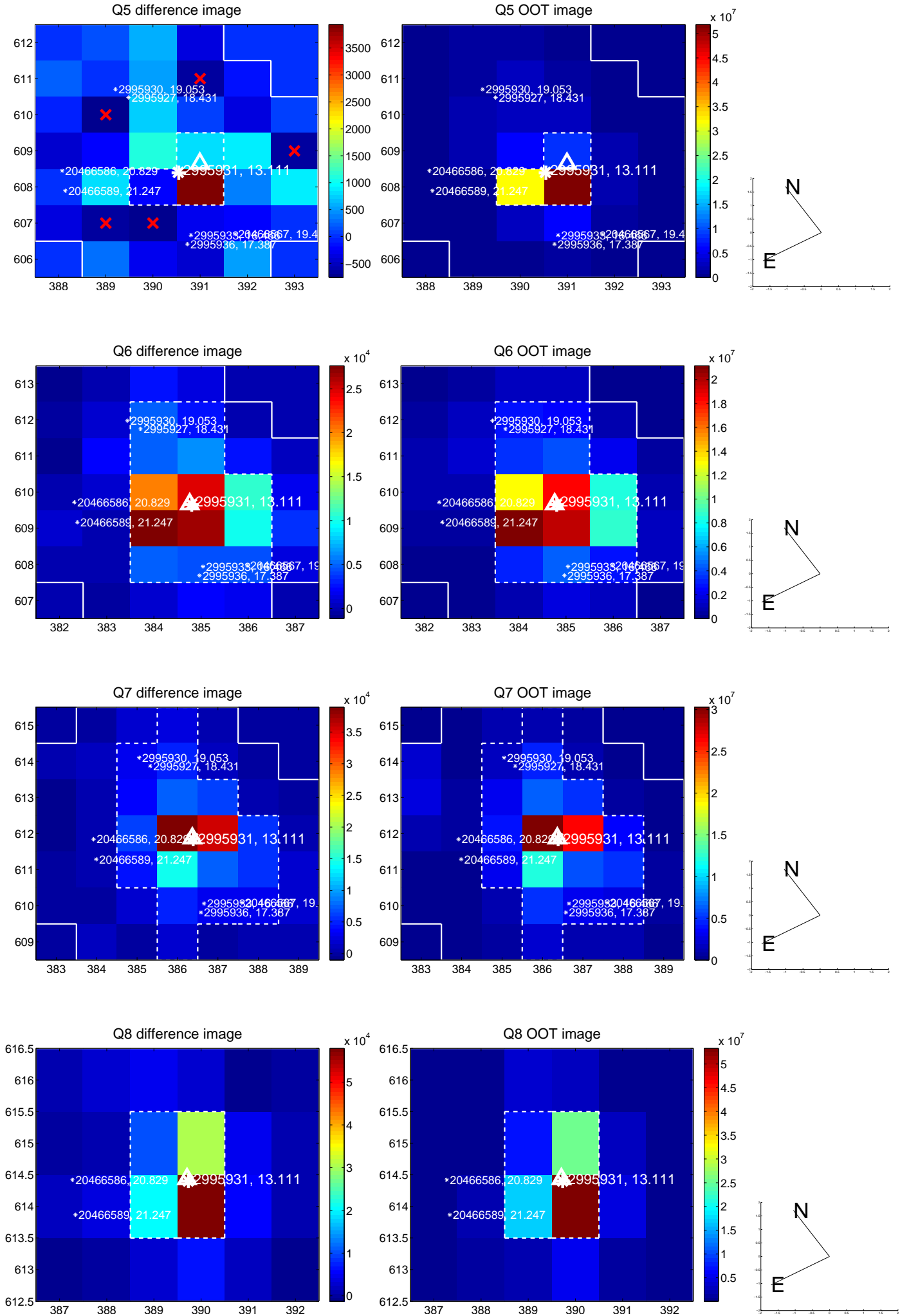


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

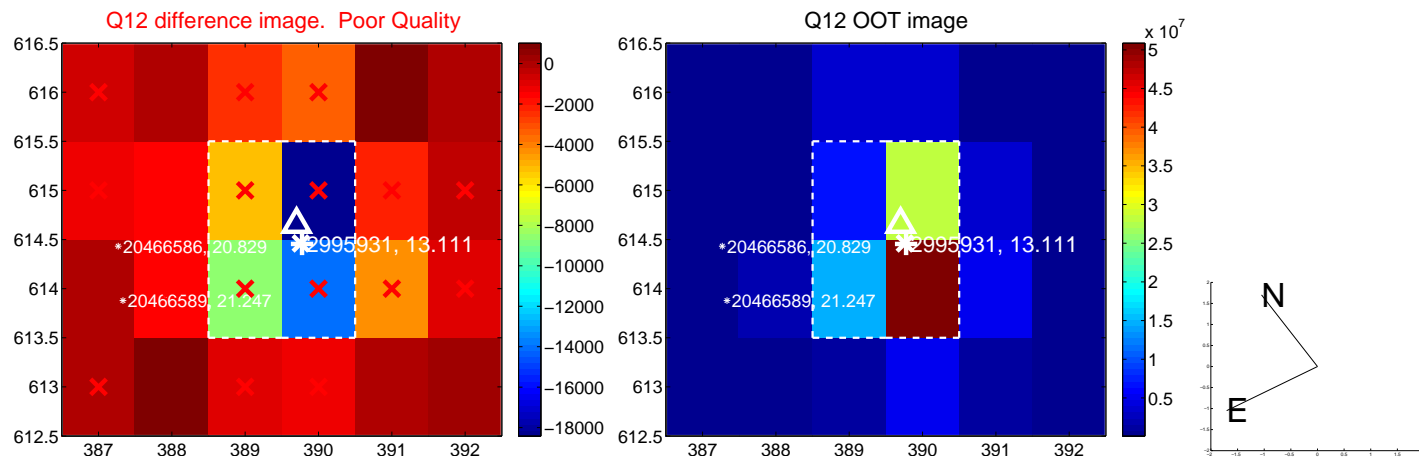
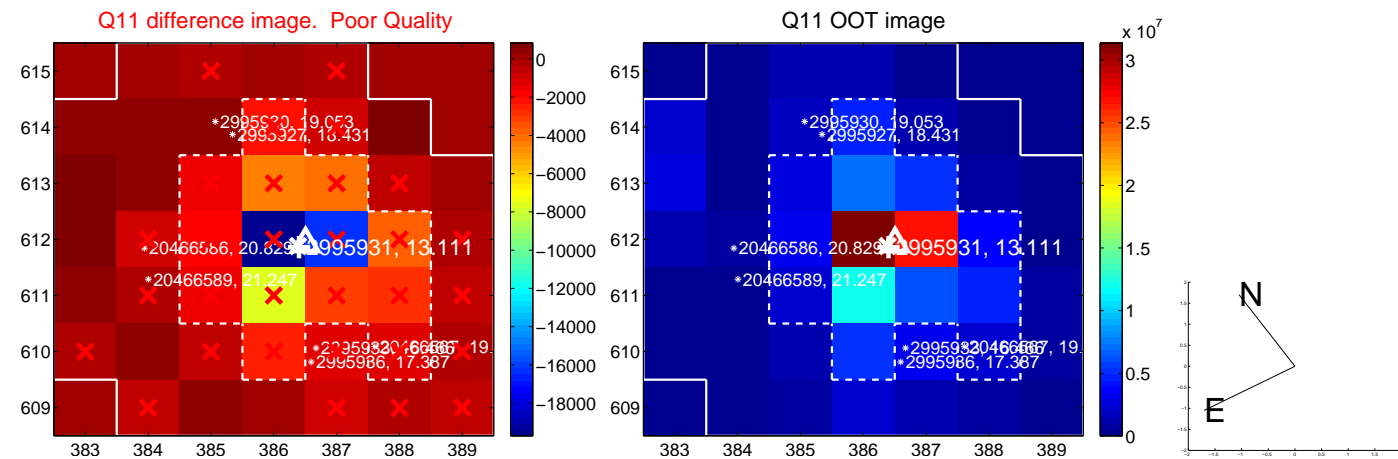
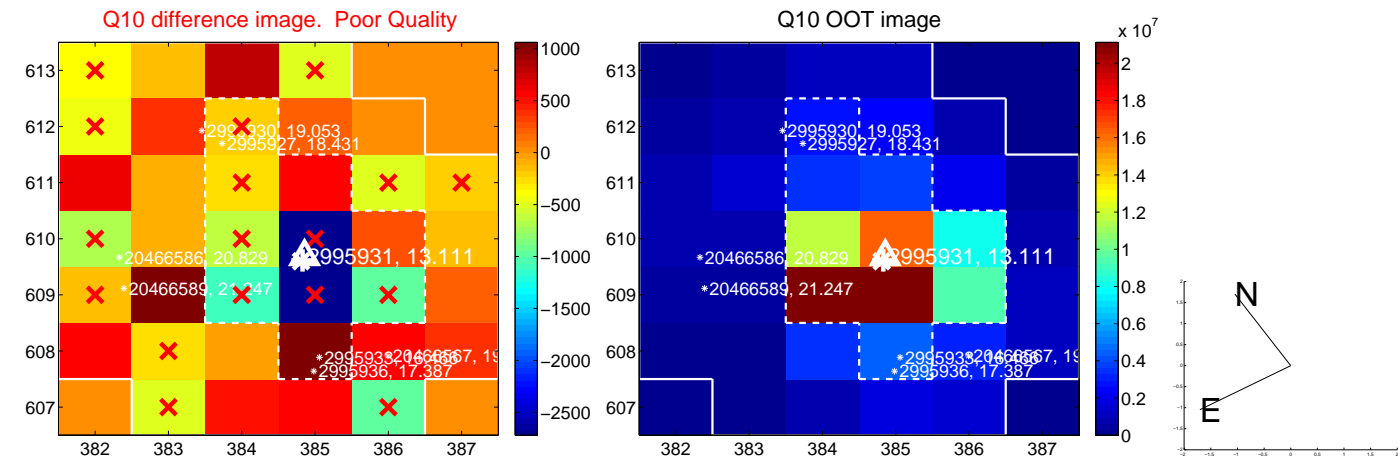
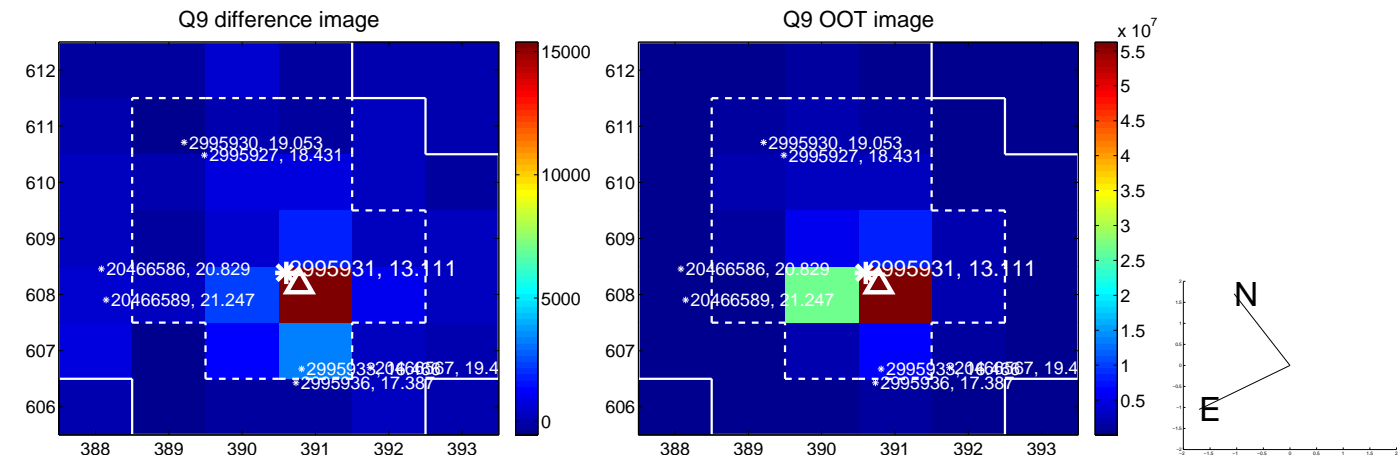
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



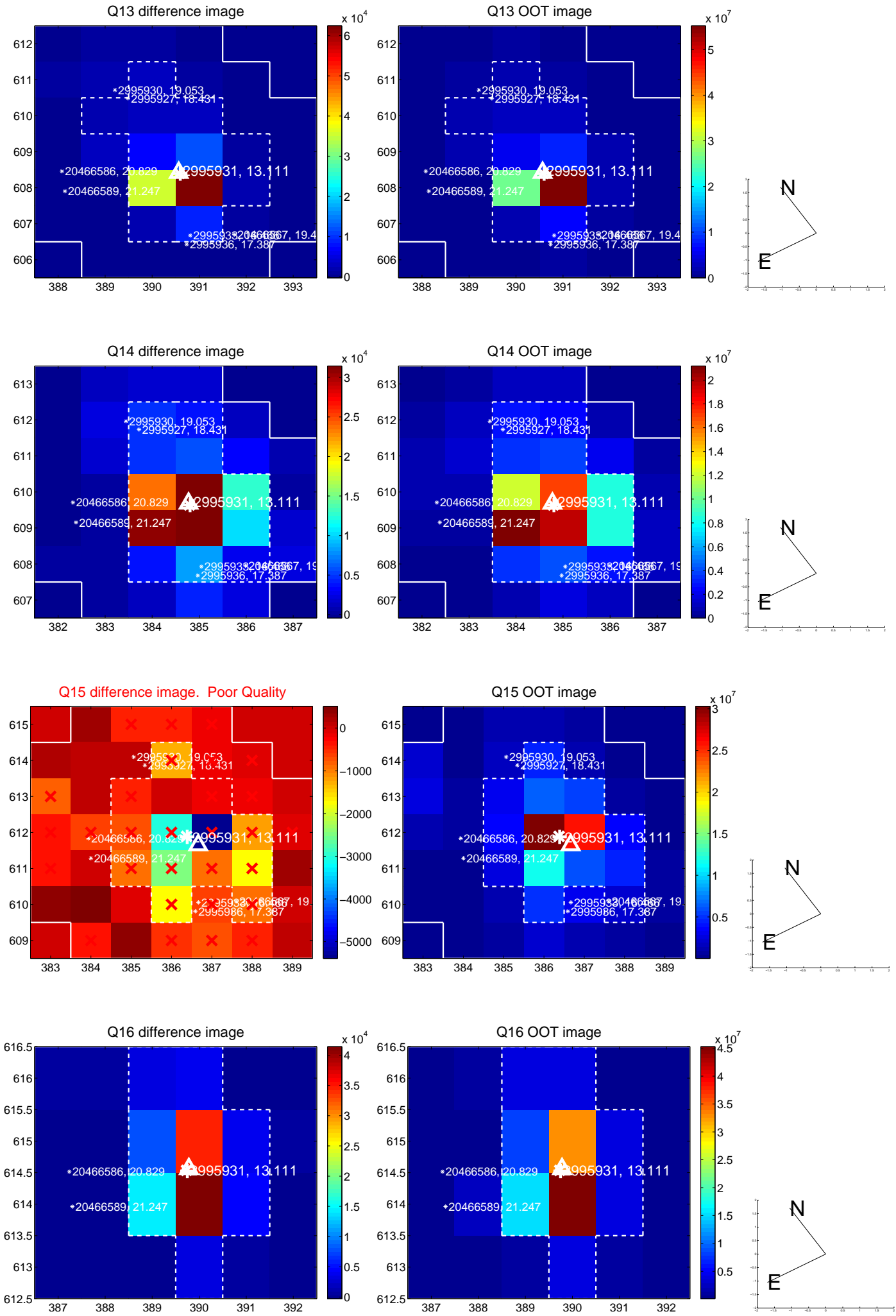
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



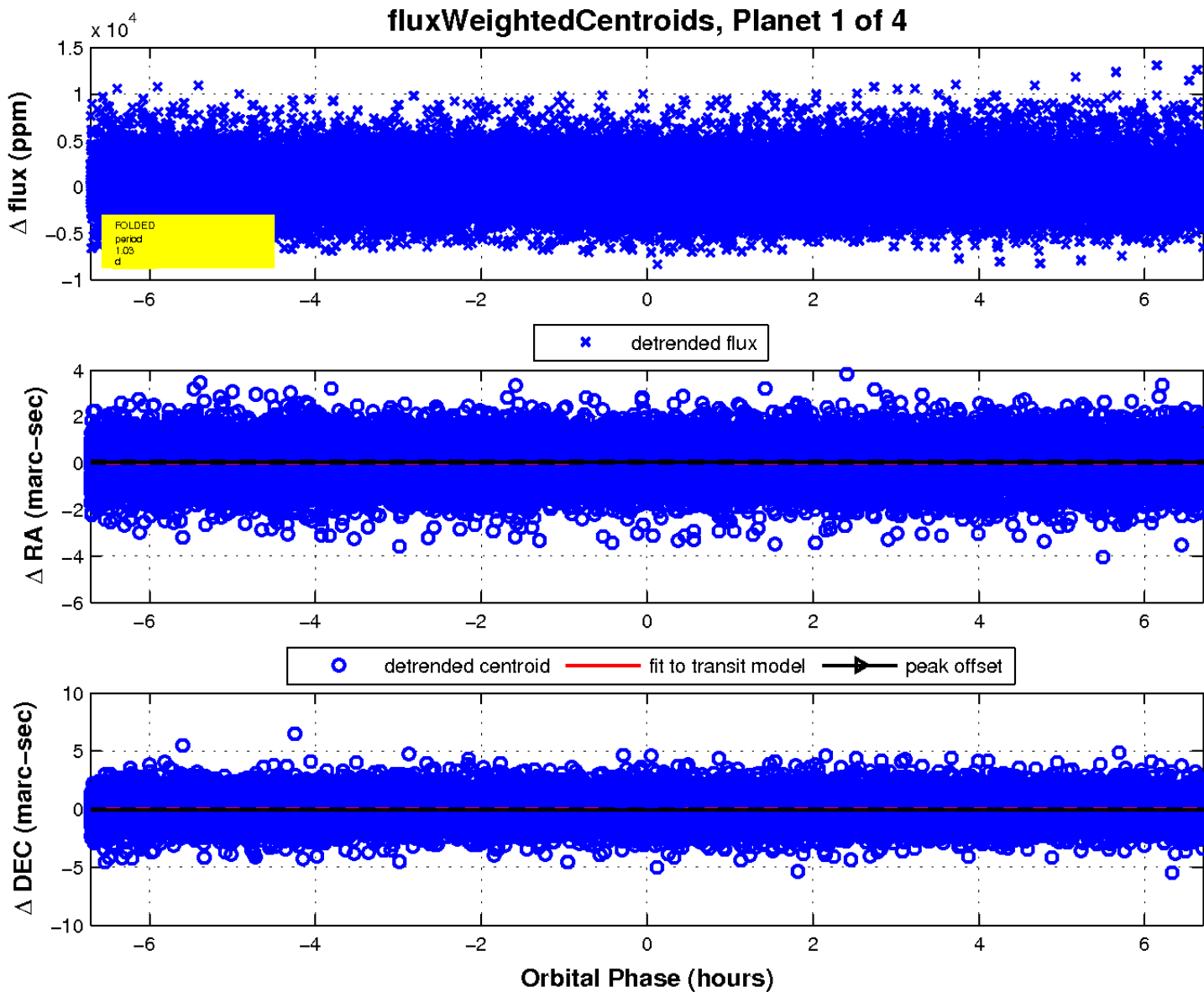
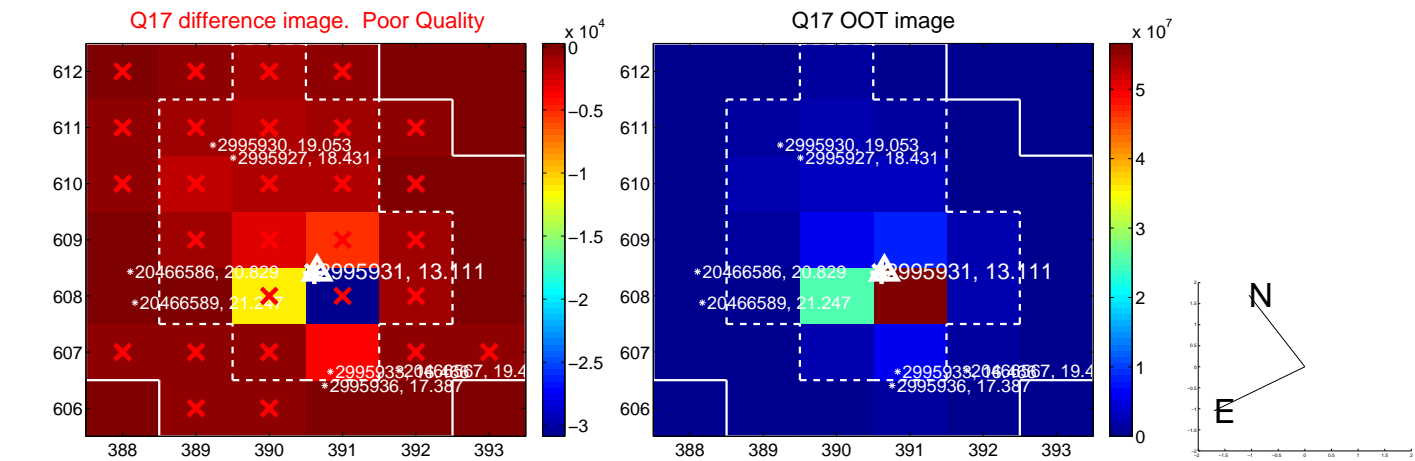
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



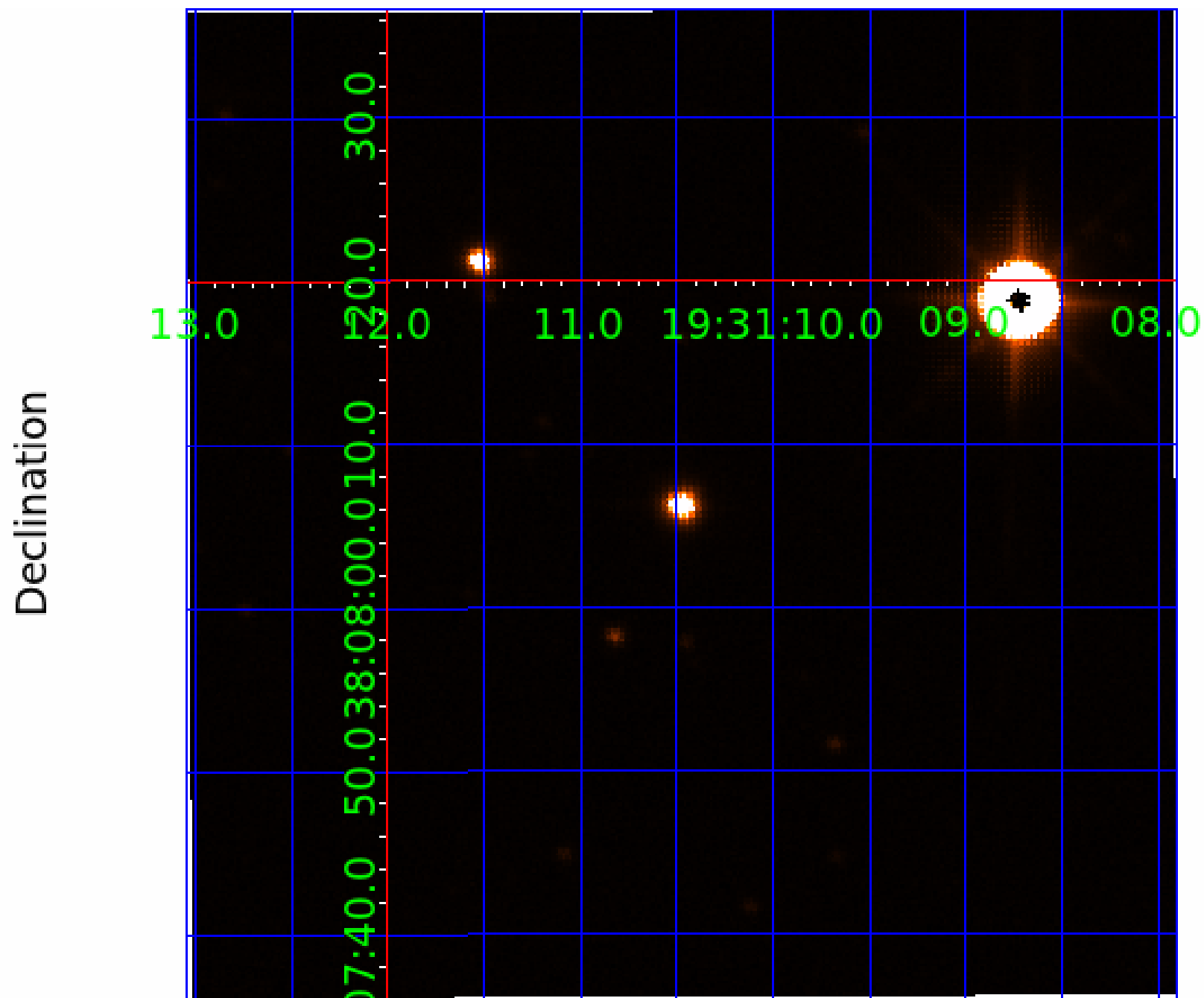
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 002995931

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})
002995931-01	OBS	No	1.034301	131.813838	142.2	2.236	12.0	8.7	1.26	6943	1.75	7080.30
002995931-02	OBS	No	1.034301	132.257517	58.8	0.775	12.2	4.1	1.26	6943	0.99	7080.30
002995931-03	OBS	No	2.895067	133.672711	682.8	8.437	8.1	8.1	1.26	6943	4.31	1794.88
002995931-04	OBS	No	1.010108	132.259846	593.0	6.114	8.8	12.4	1.26	6943	4.00	7307.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002995931-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
002995931-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
002995931-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
002995931-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

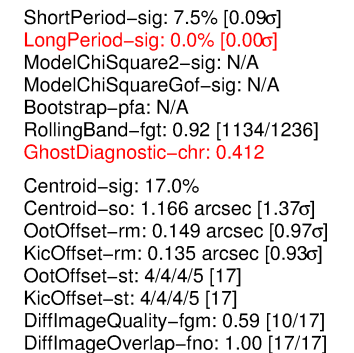
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

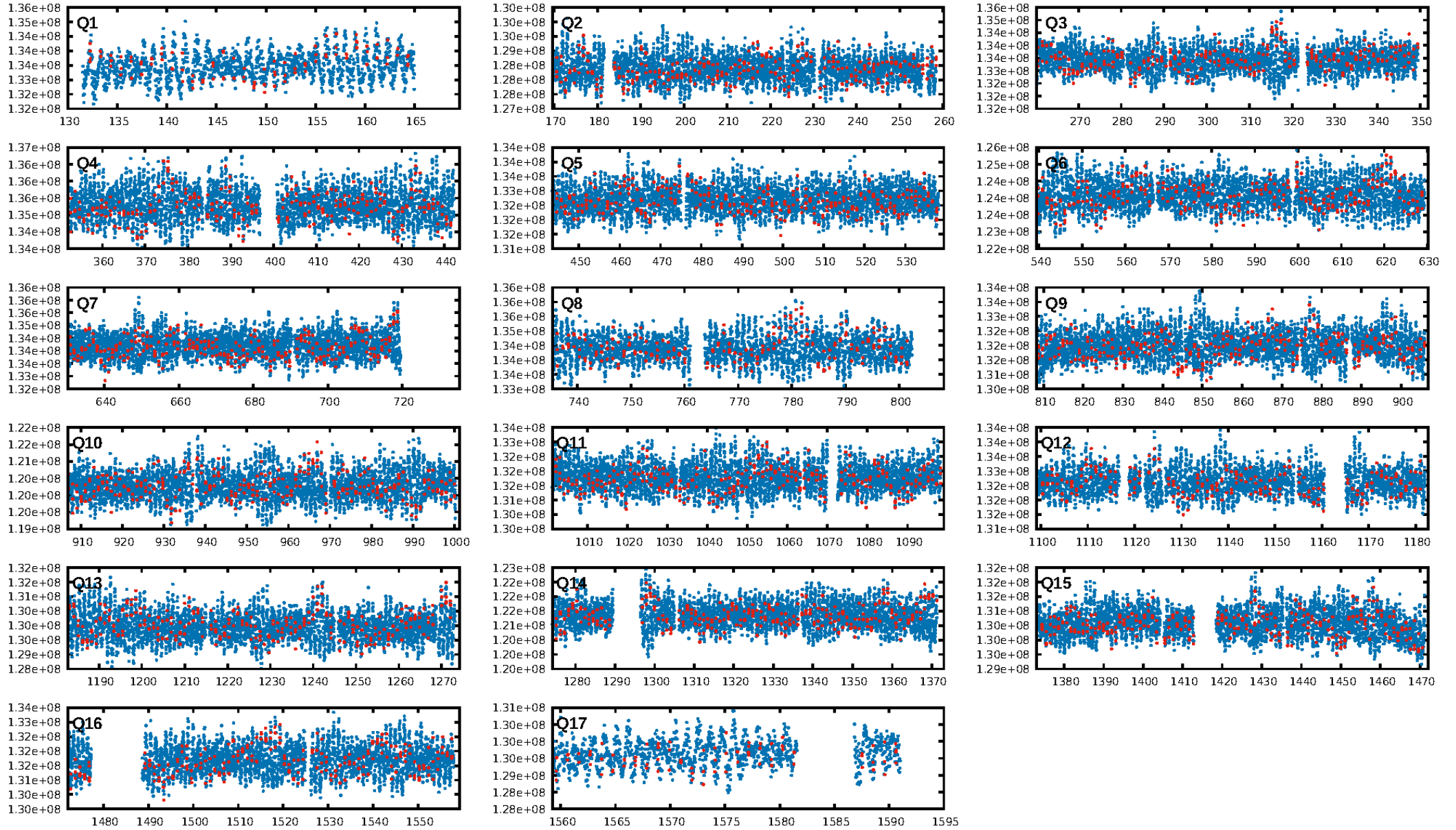
Ephemeris Match Information For 002995931-02

No Significant Match Found

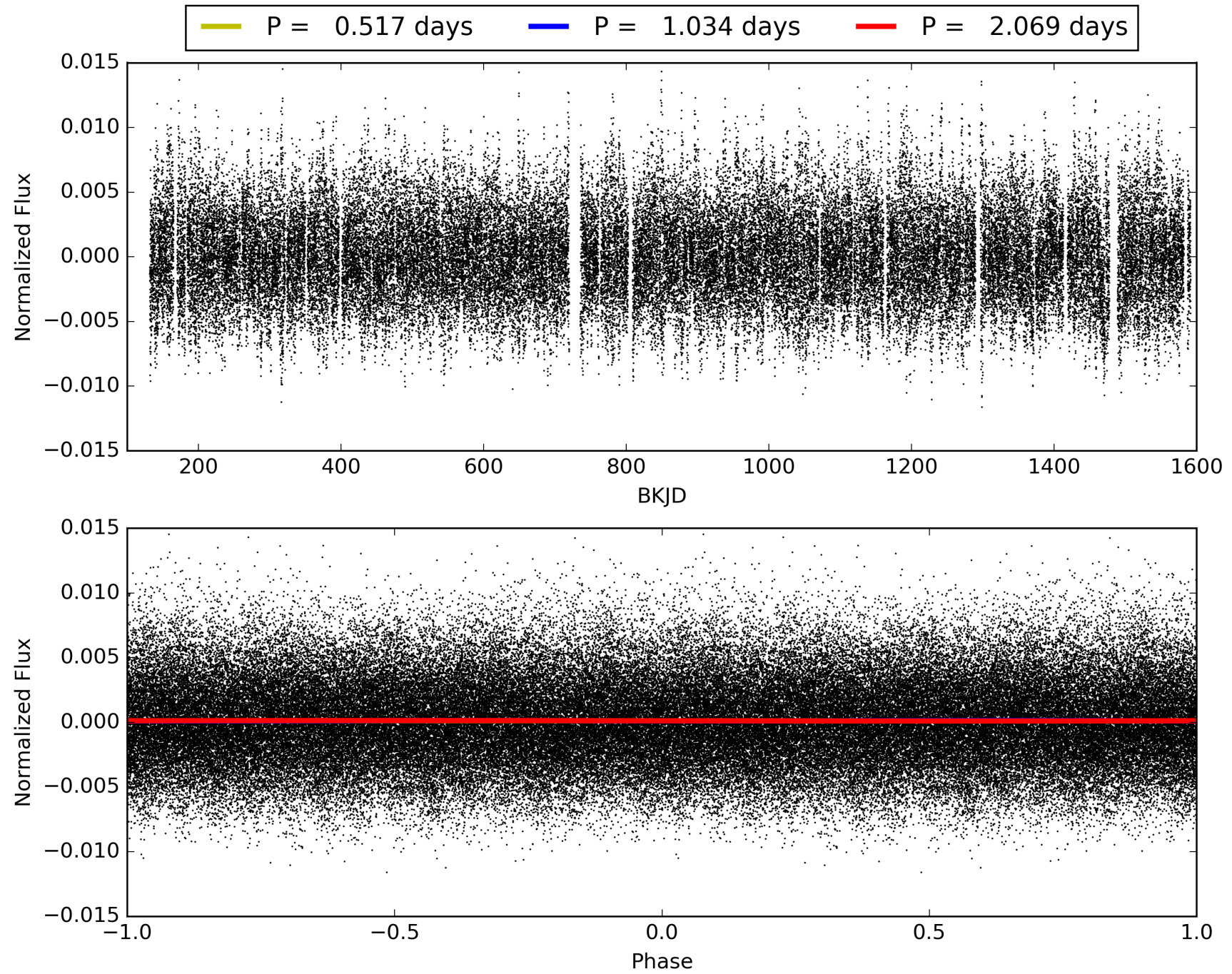
KIC: 2995931 Candidate: 2 of 4 Period: 1.034 d



TCE 002995931-02, PDC Light Curves

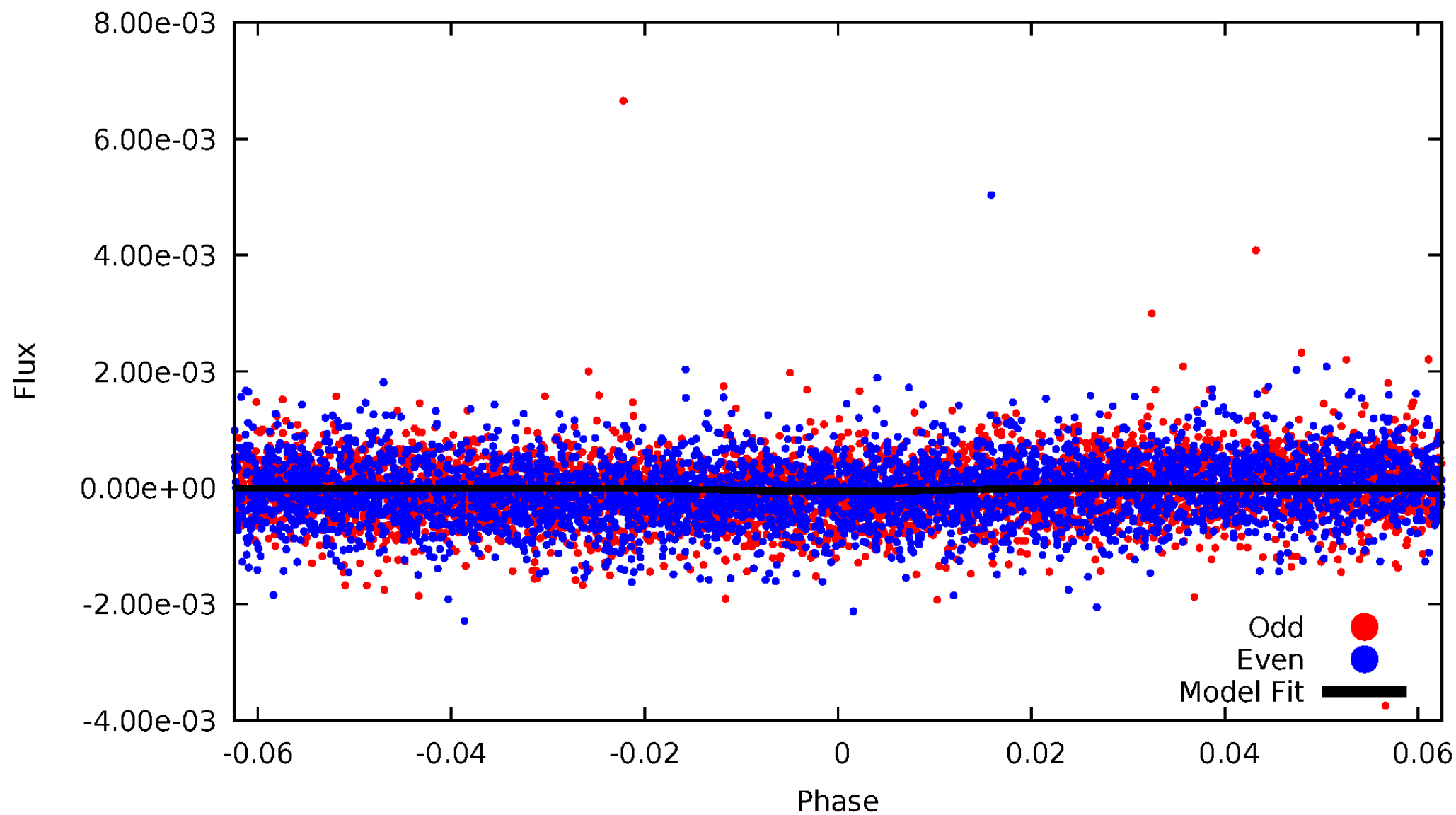


TCE 002995931-02



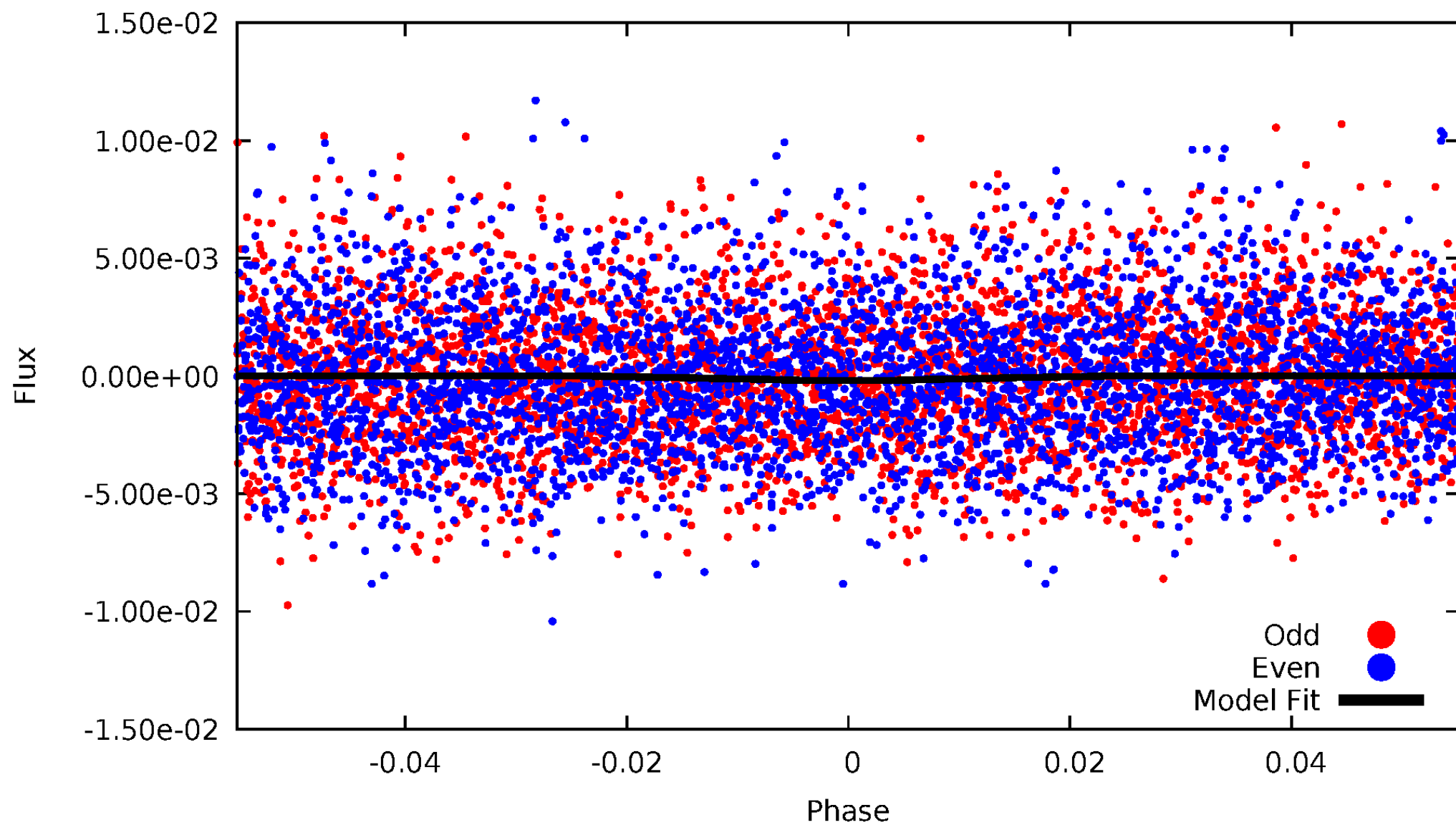
DV Odd/Even

TCE 002995931-02



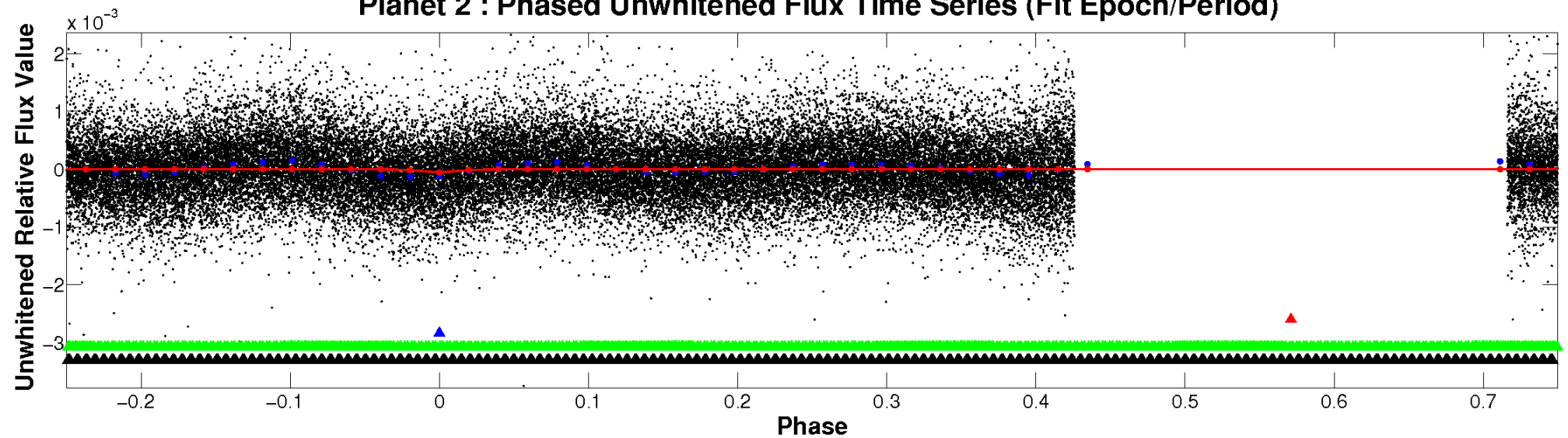
ALT Odd/Even

TCE 002995931-02

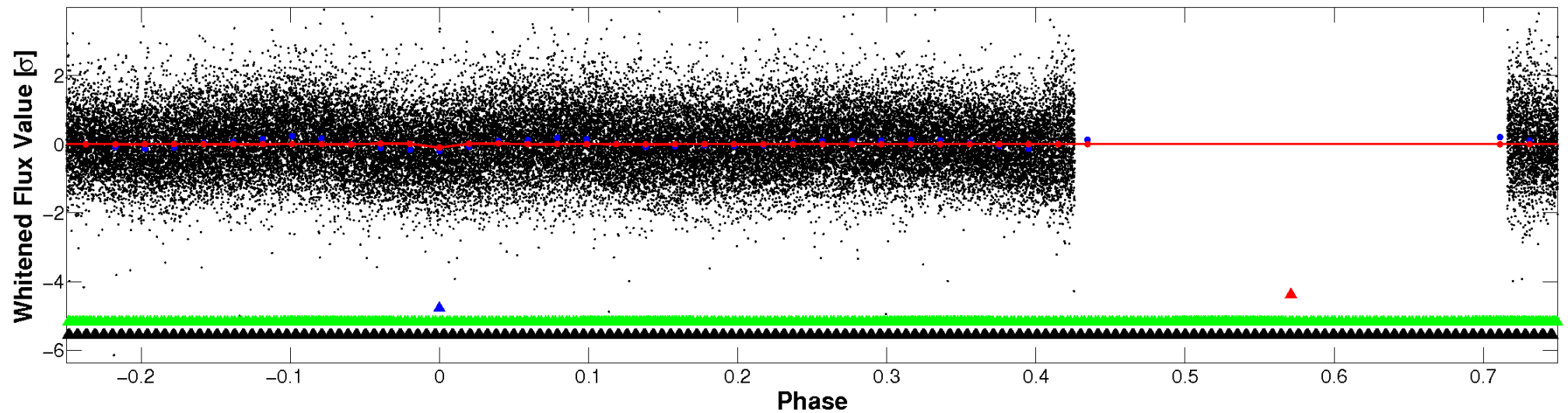


Non-Whitened Vs. Whitened Light Curve

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

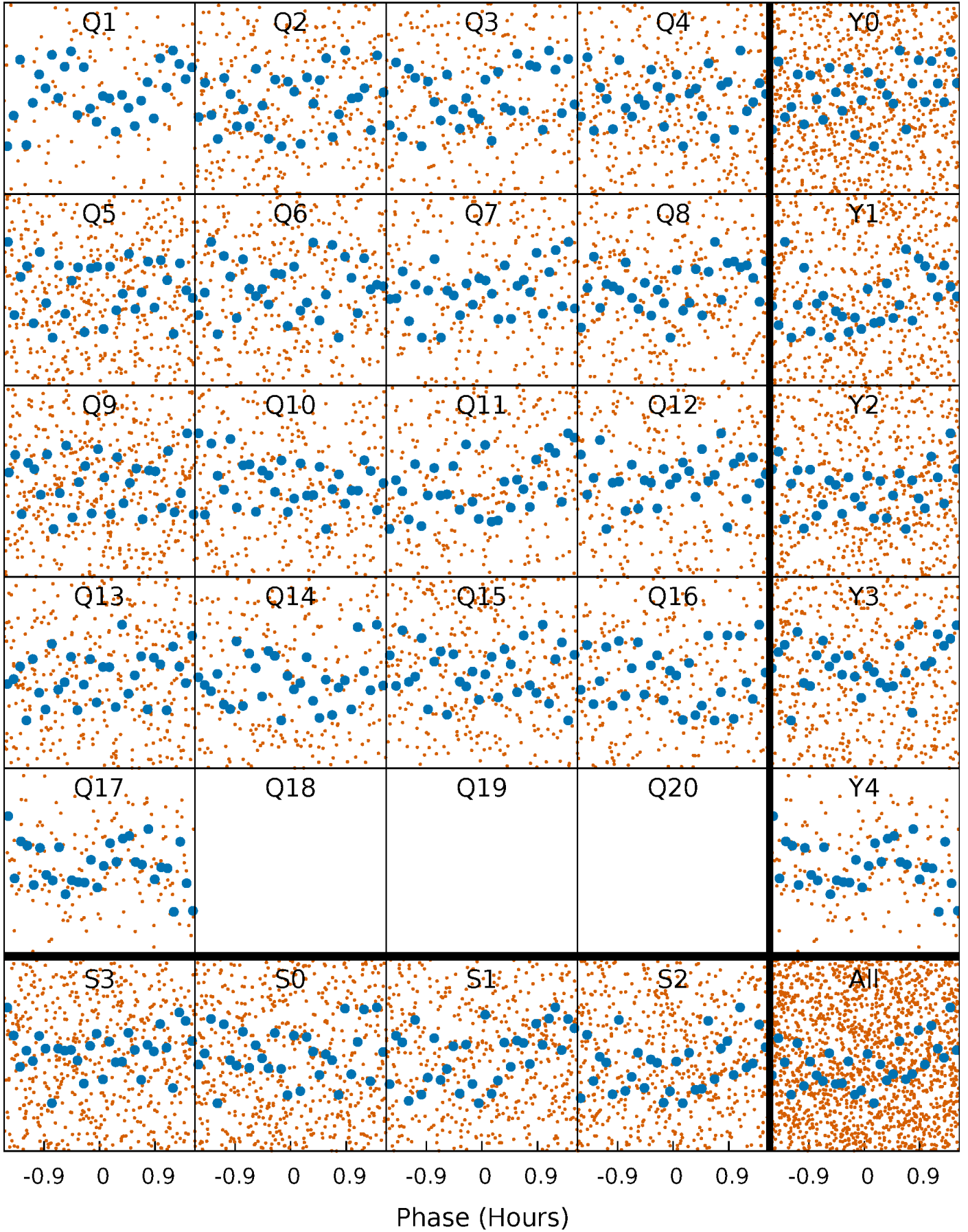


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



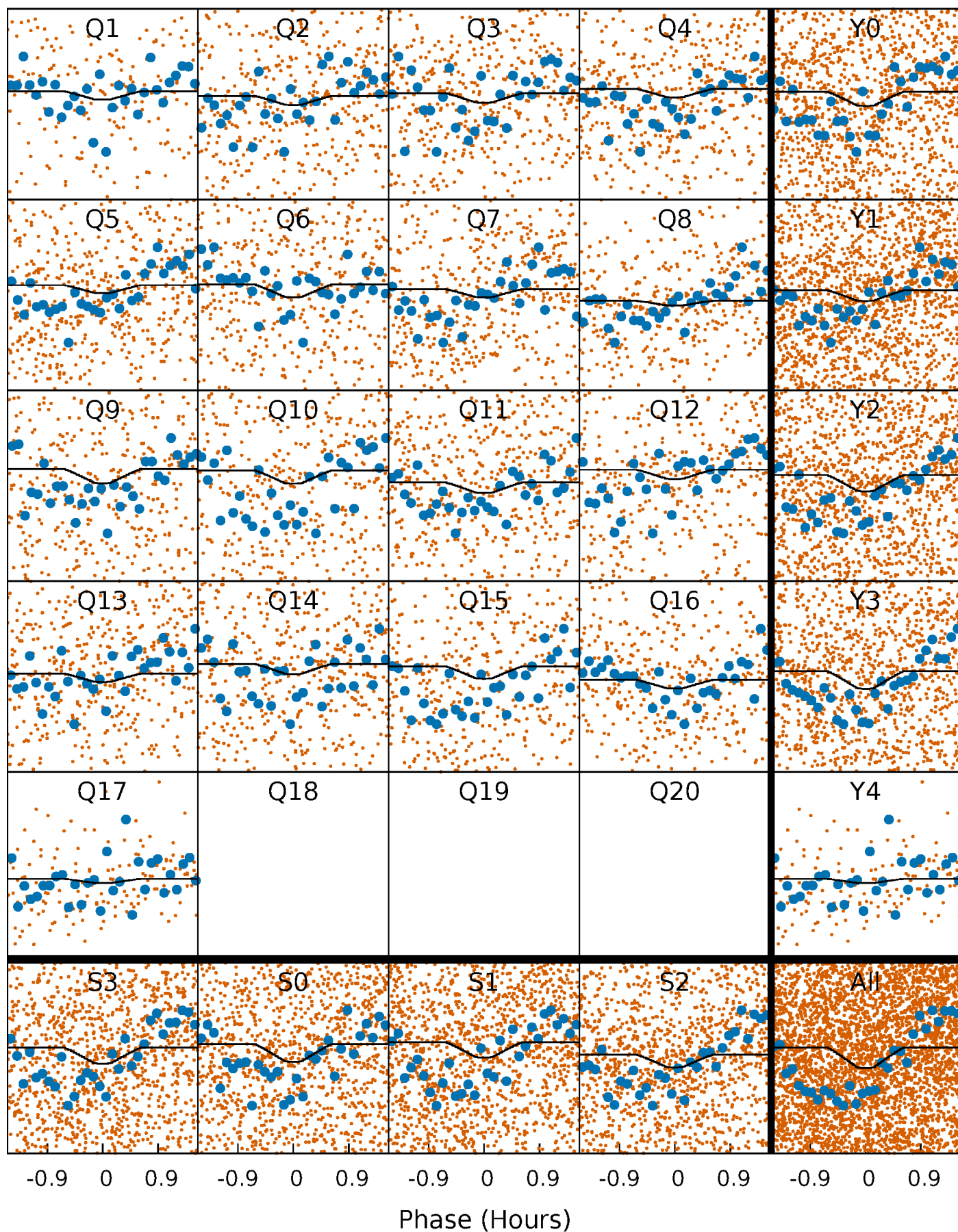
PDC Quarter-Phased Transit Curves

TCE 002995931-02 P= 1.034301 Days $T_0=132.257517$ (BKJD)



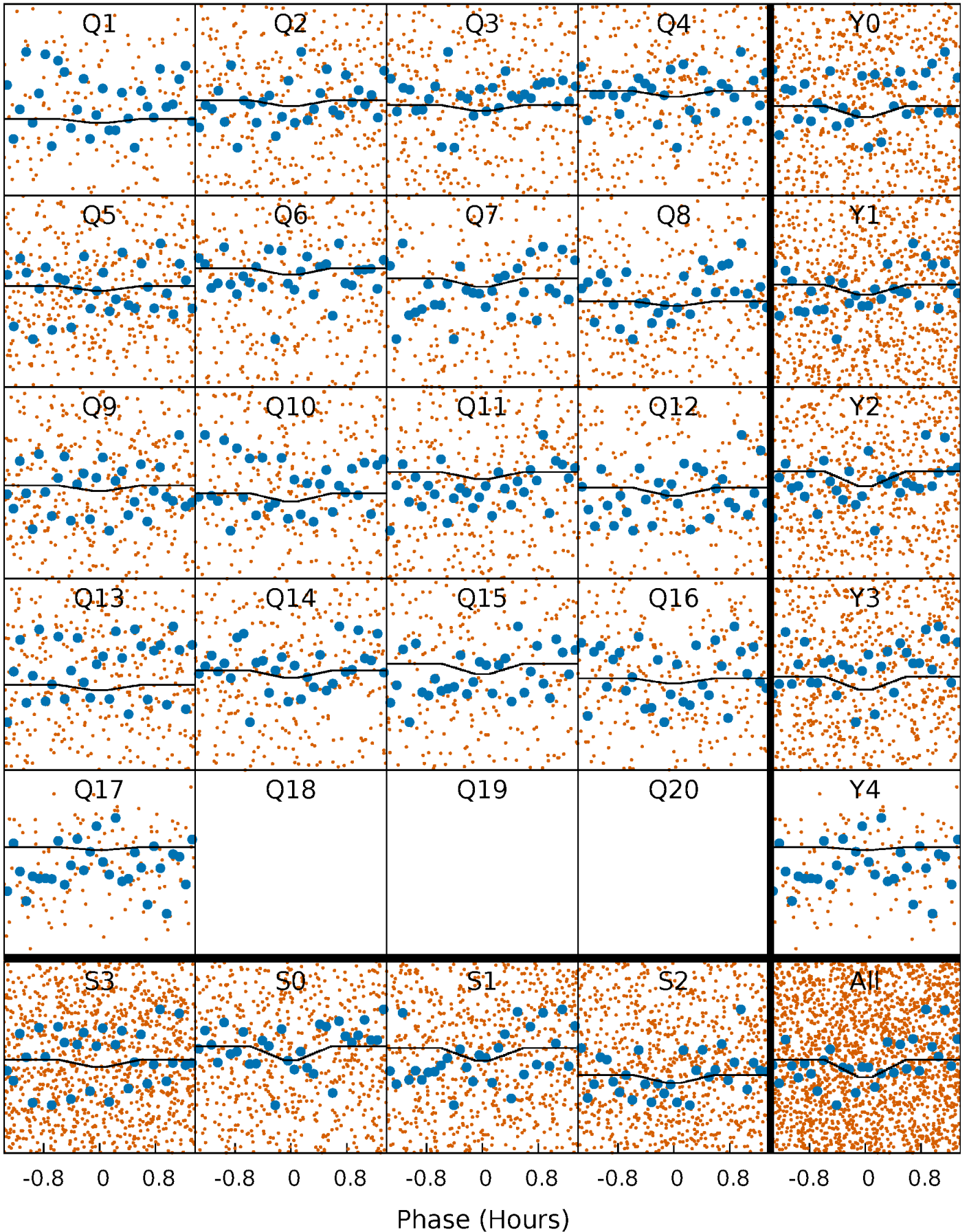
DV Quarter-Phased Transit Curves

TCE 002995931-02 P= 1.034301 Days $T_0=132.257517$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

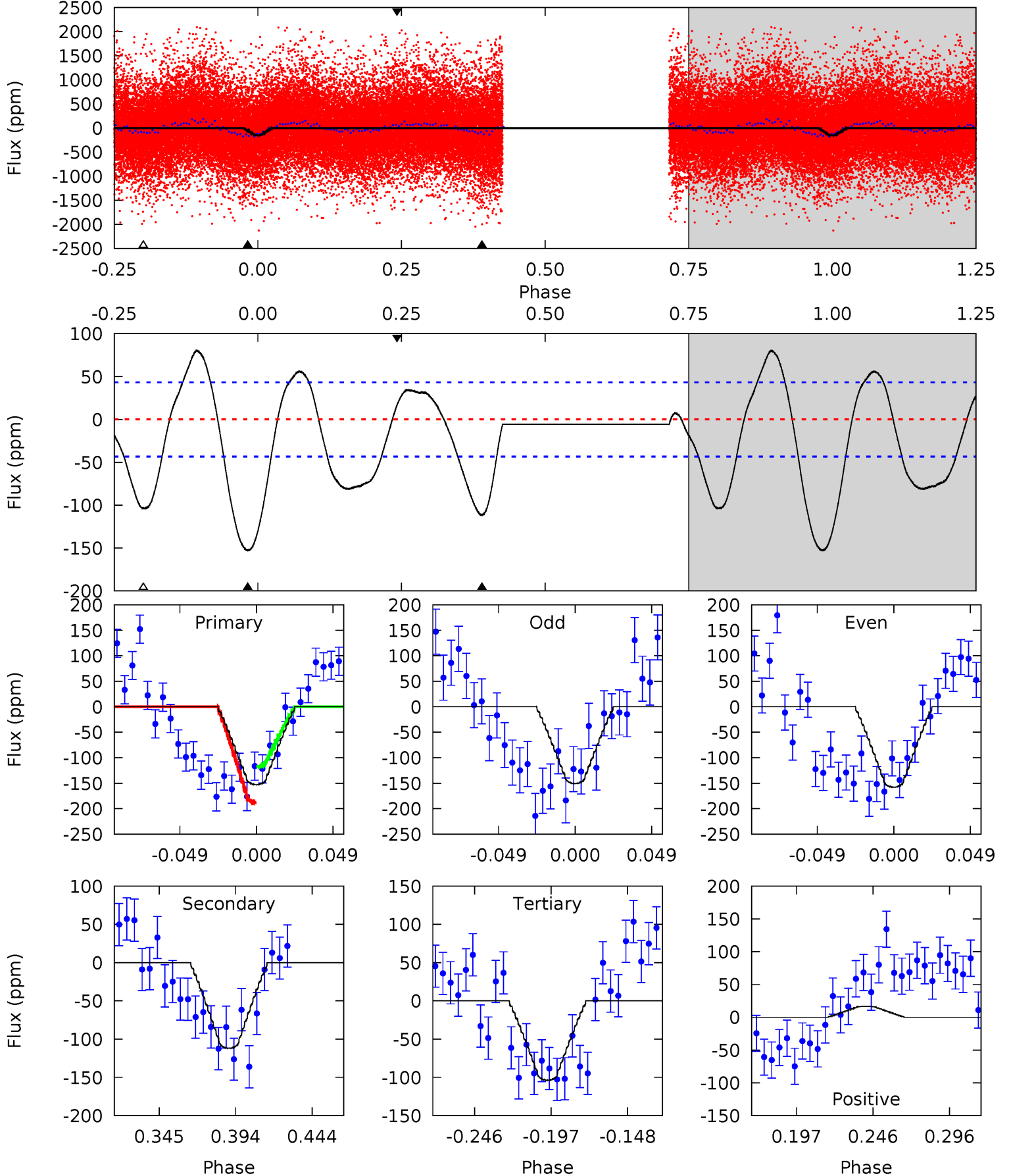
TCE 002995931-02 P= 1.034315 Days $T_0=132.259158$ (BKJD)



DV Model-Shift Uniqueness Test

002995931-02, P = 1.034301 Days, E = 131.223216 Days

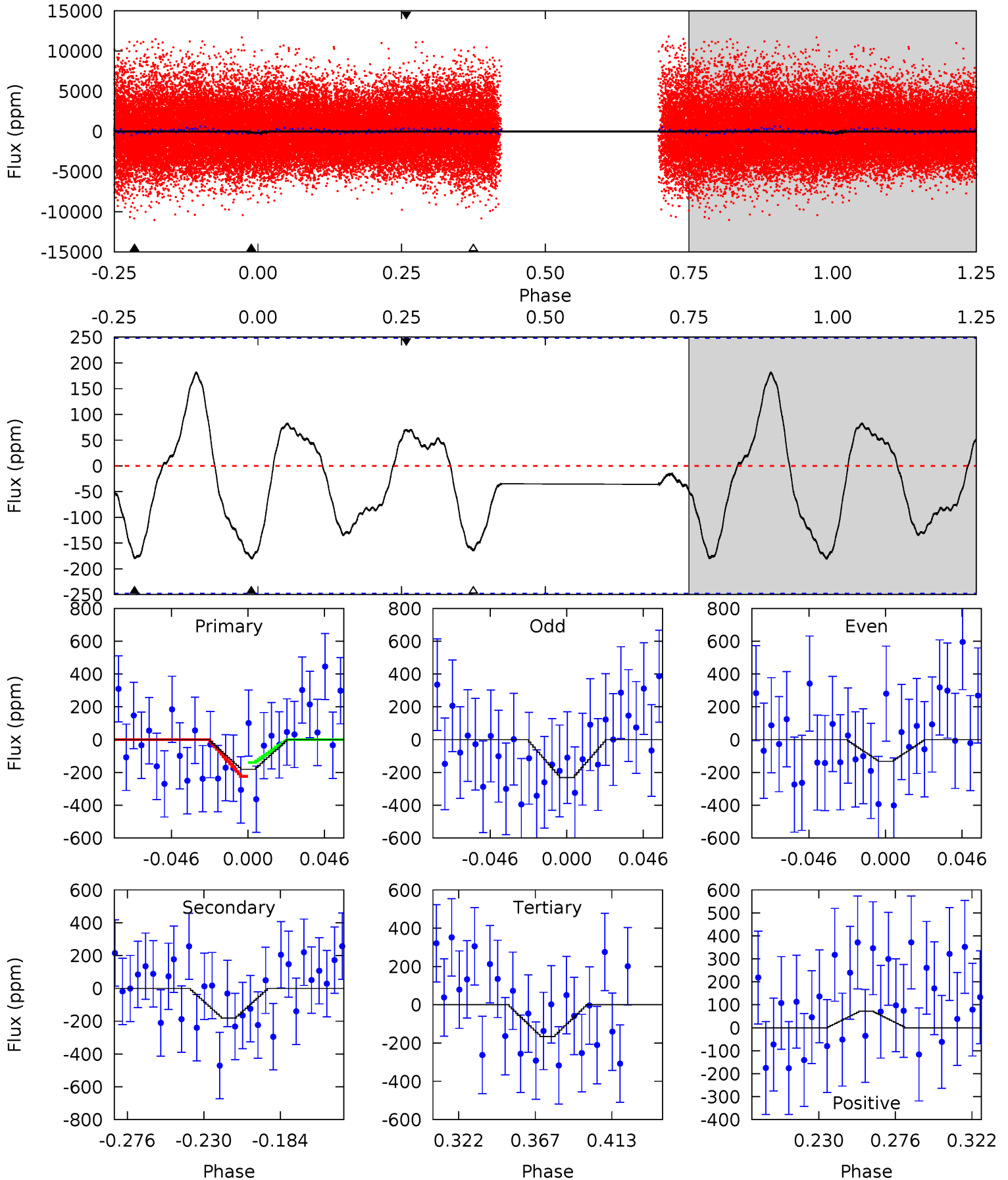
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	12.2	11.3	1.80	4.71	1.97	5.58	5.36	14.9	0.89	10.4	0.39	1.02	0.34	3.89



Alt Model-Shift Uniqueness Test

002995931-02, P = 1.034315 Days, E = 131.224843 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.45	3.44	3.15	1.36	4.73	2.00	1.57	0.30	2.09	0.29	2.08	0.93	0.54	0.50	0.79



Stellar Parameters For KIC 002995931

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6943^{+164}_{-268}	$4.338^{+0.052}_{-0.208}$	$-0.180^{+0.250}_{-0.350}$	$1.264^{+0.435}_{-0.145}$	$1.284^{+0.191}_{-0.174}$	$0.895^{+0.258}_{-0.477}$
	+2%/-4%	+1%/-5%	+139%/-194%	+34%/-11%	+15%/-14%	+29%/-53%
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 002995931-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-112 ± 9	$2.15^{+2.31}_{-1.46}$	3338^{+228}_{-179}	5721^{+6276}_{-1611}	$6.139^{+53.533}_{-4.718}$
Alt.	-181 ± 53	$2.77^{+2.52}_{-1.92}$	3335^{+241}_{-171}	5673^{+6134}_{-1499}	$5.932^{+54.259}_{-4.389}$

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

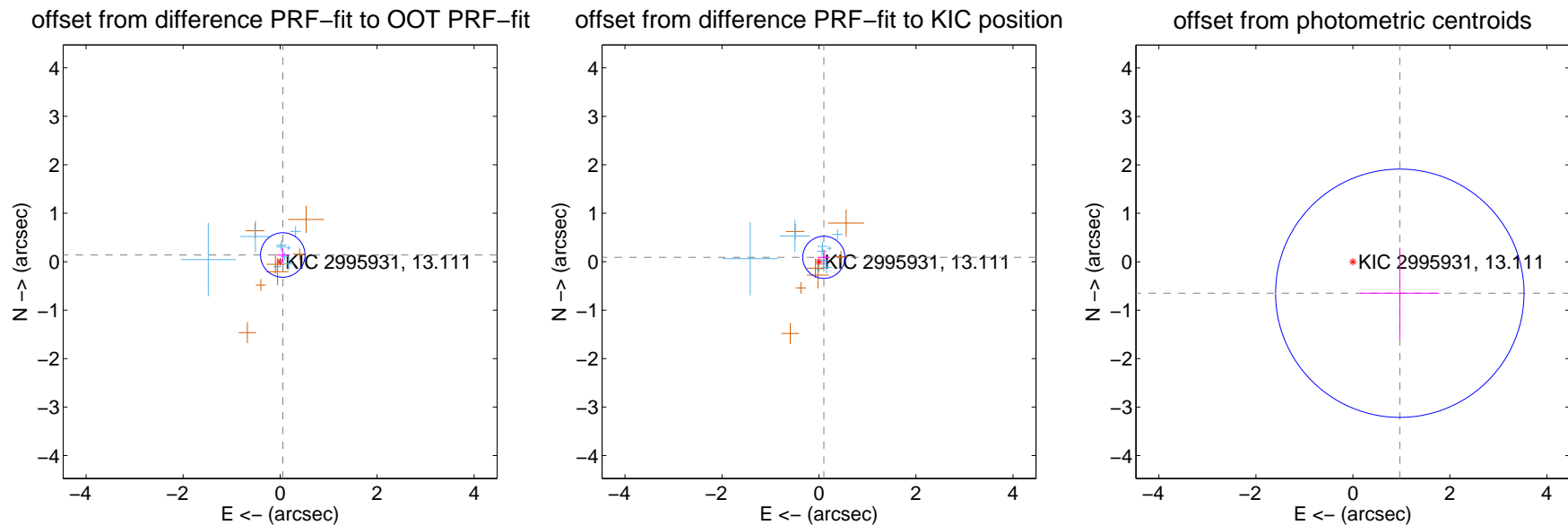
DV Centroid Data

Supplemental centroid analysis for 002995931-02. Kepler magnitude: 13.11. Transit SNR 4.12

There are 10 quarters with good PRF difference image offsets

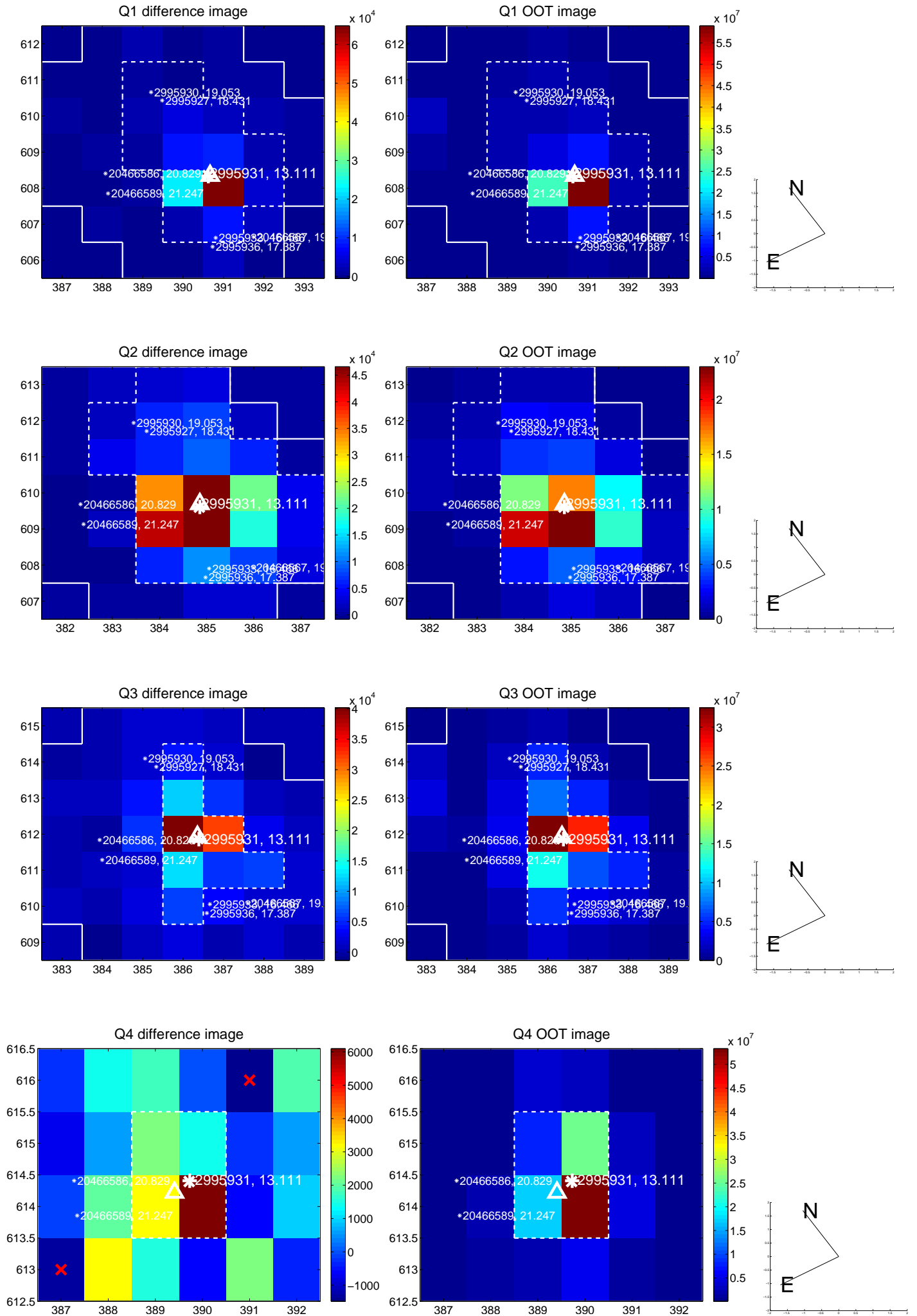
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.149 ± 0.153	0.97	-0.055 ± 0.128	0.138 ± 0.143
PRF-fit source offset from KIC position	0.135 ± 0.145	0.93	-0.100 ± 0.129	0.091 ± 0.135
photometric centroid source offset	1.17 ± 0.85	1.37	-0.97 ± 0.81	-0.65 ± 0.94

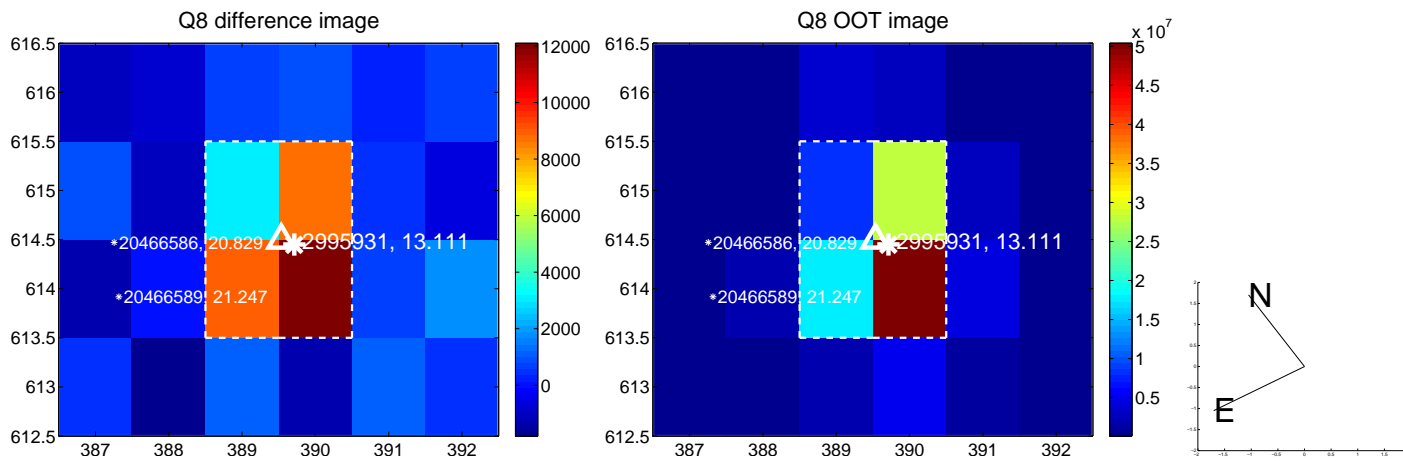
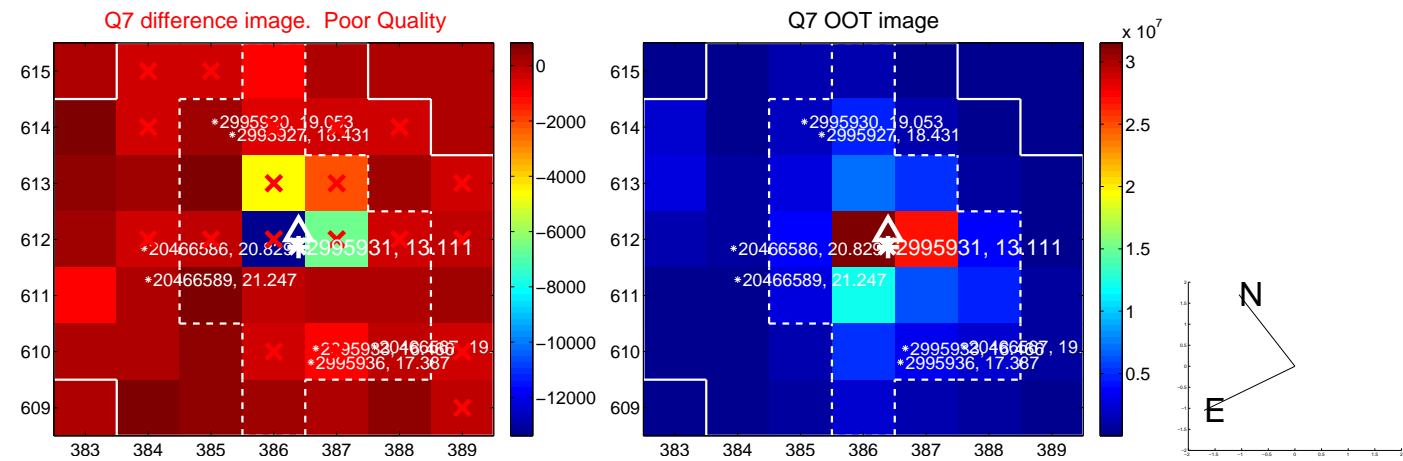
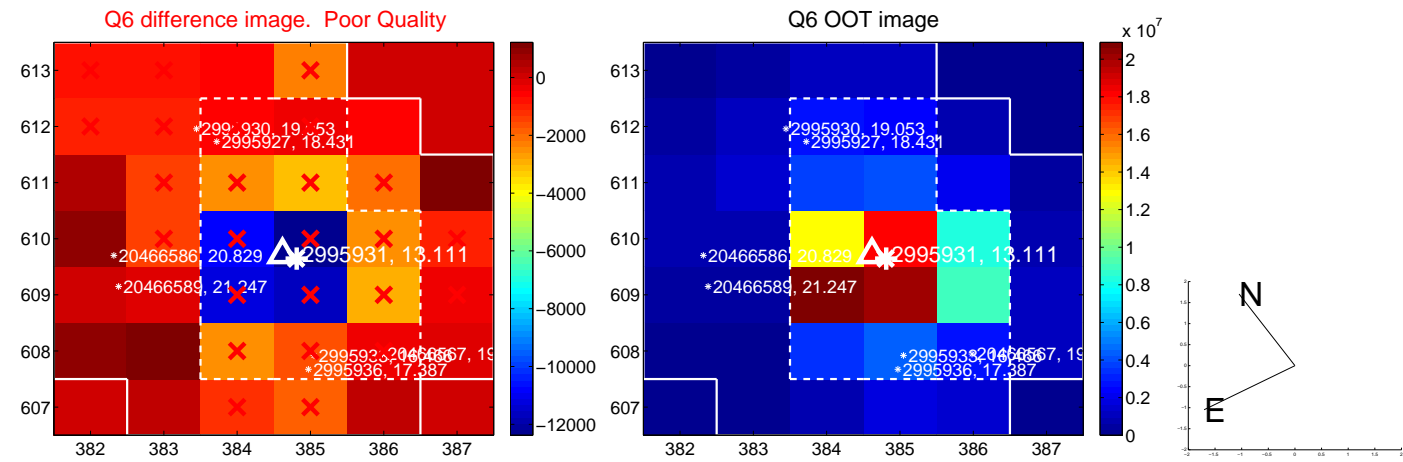
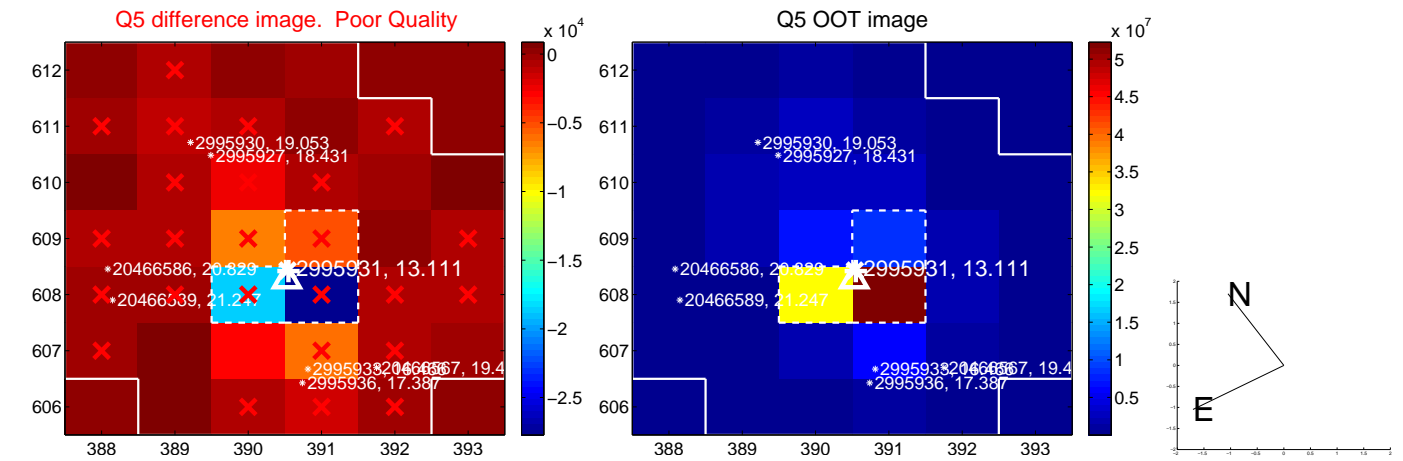


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

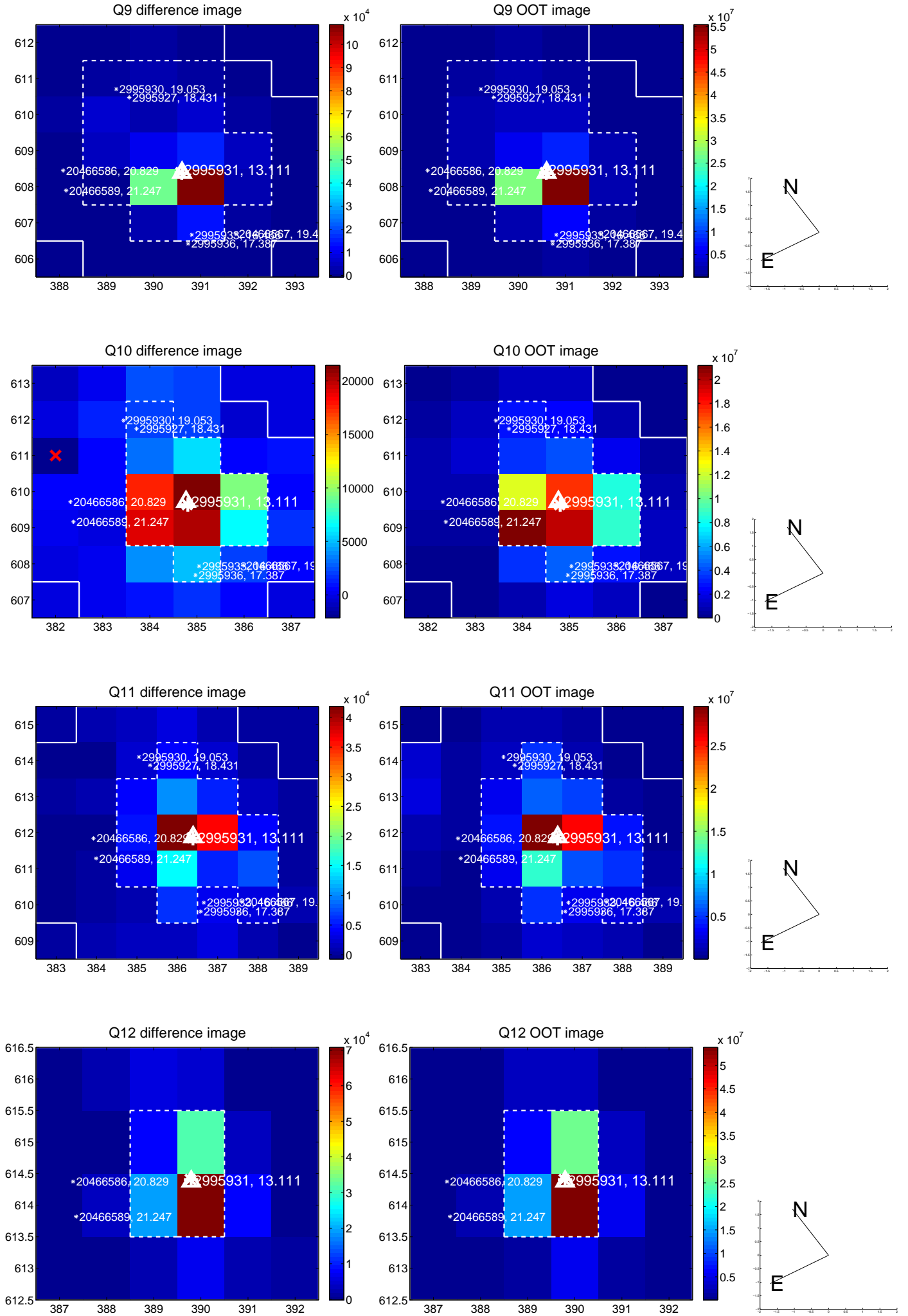
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



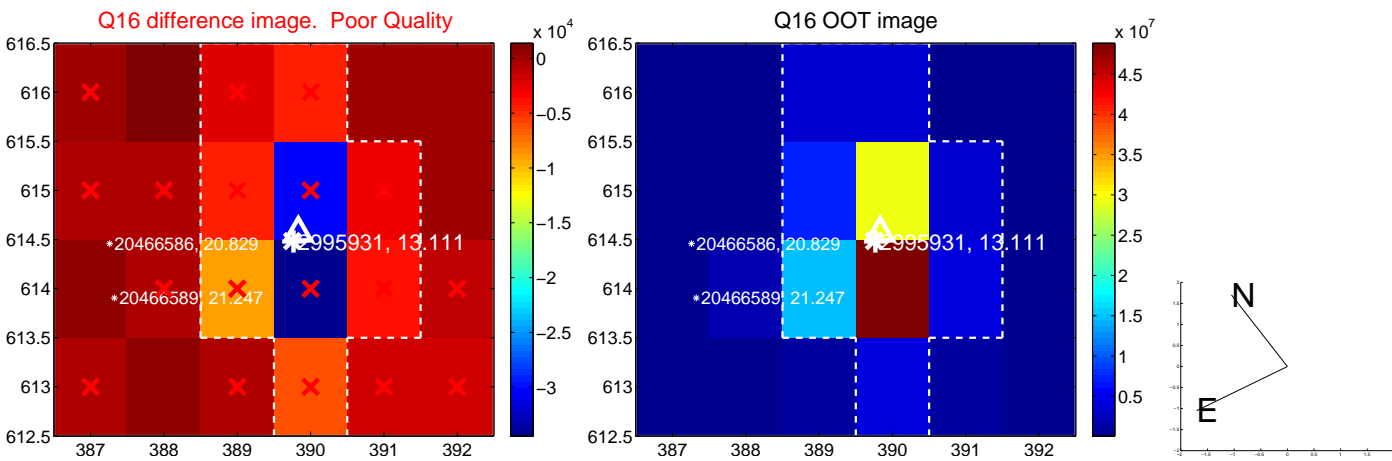
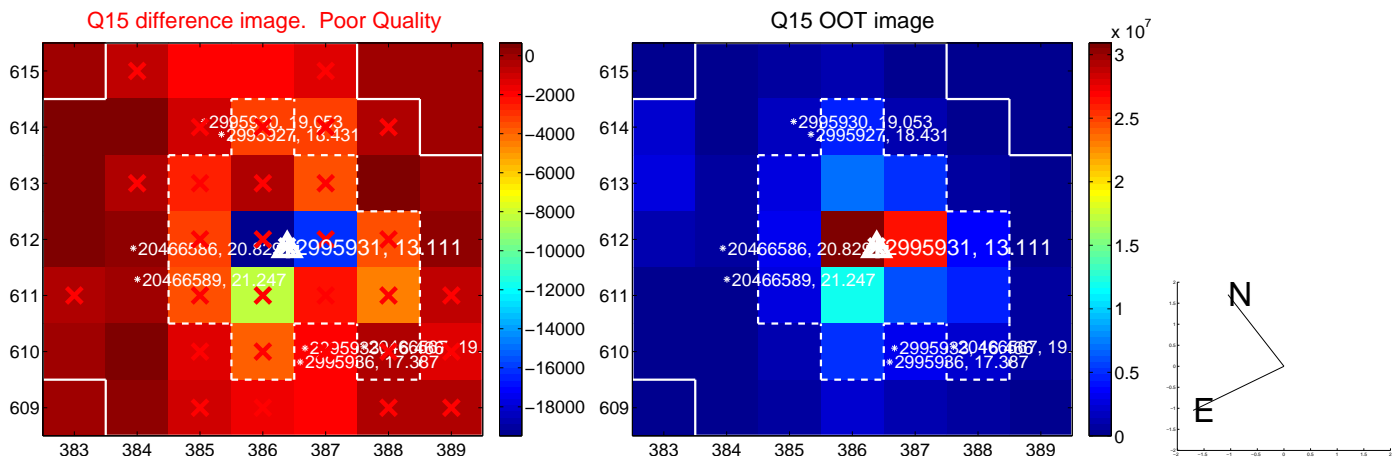
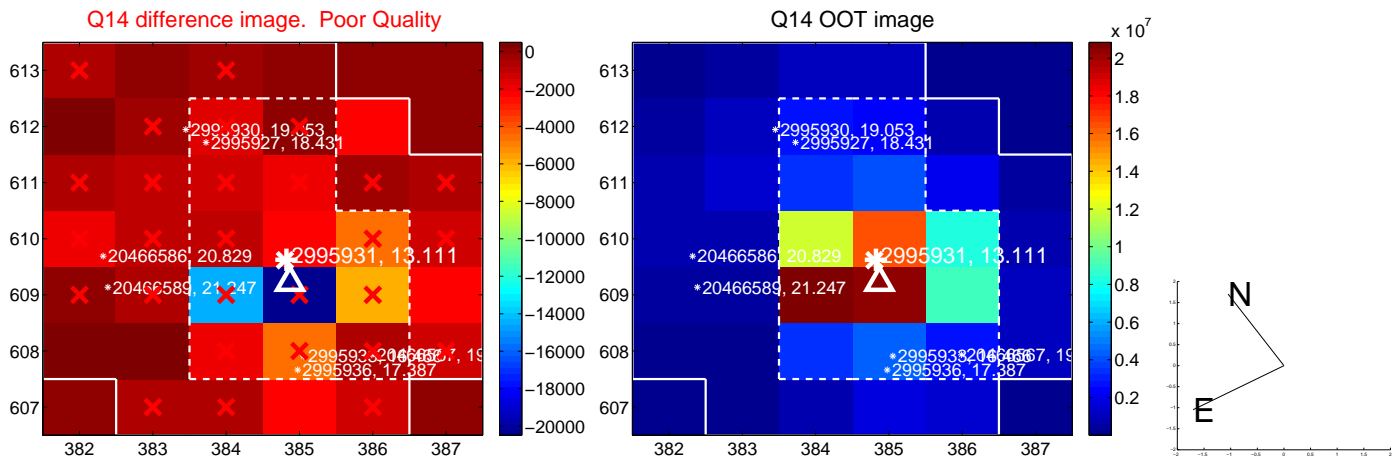
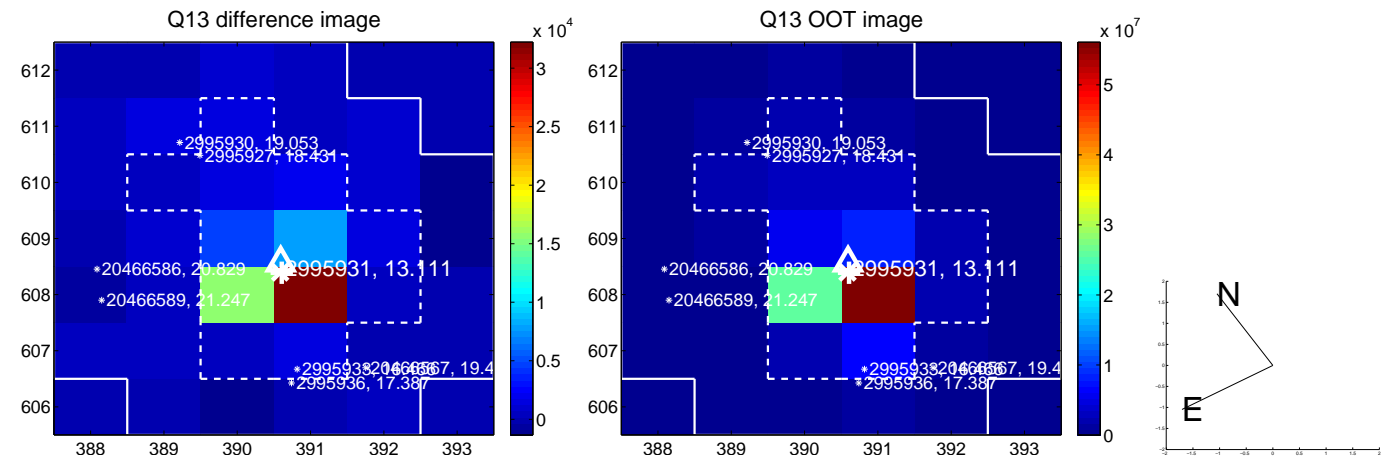
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



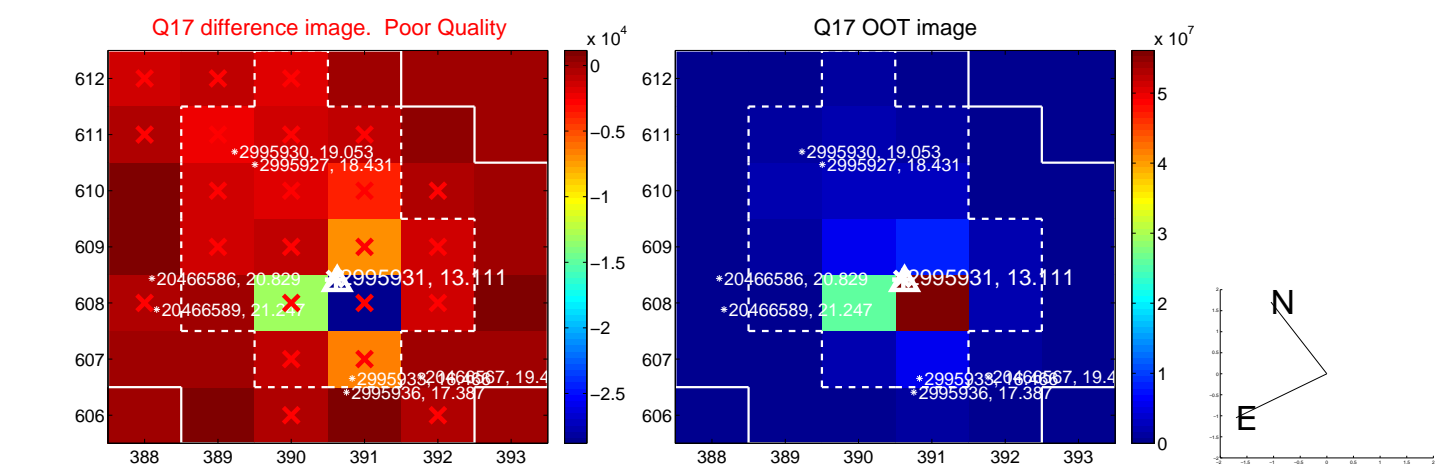
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



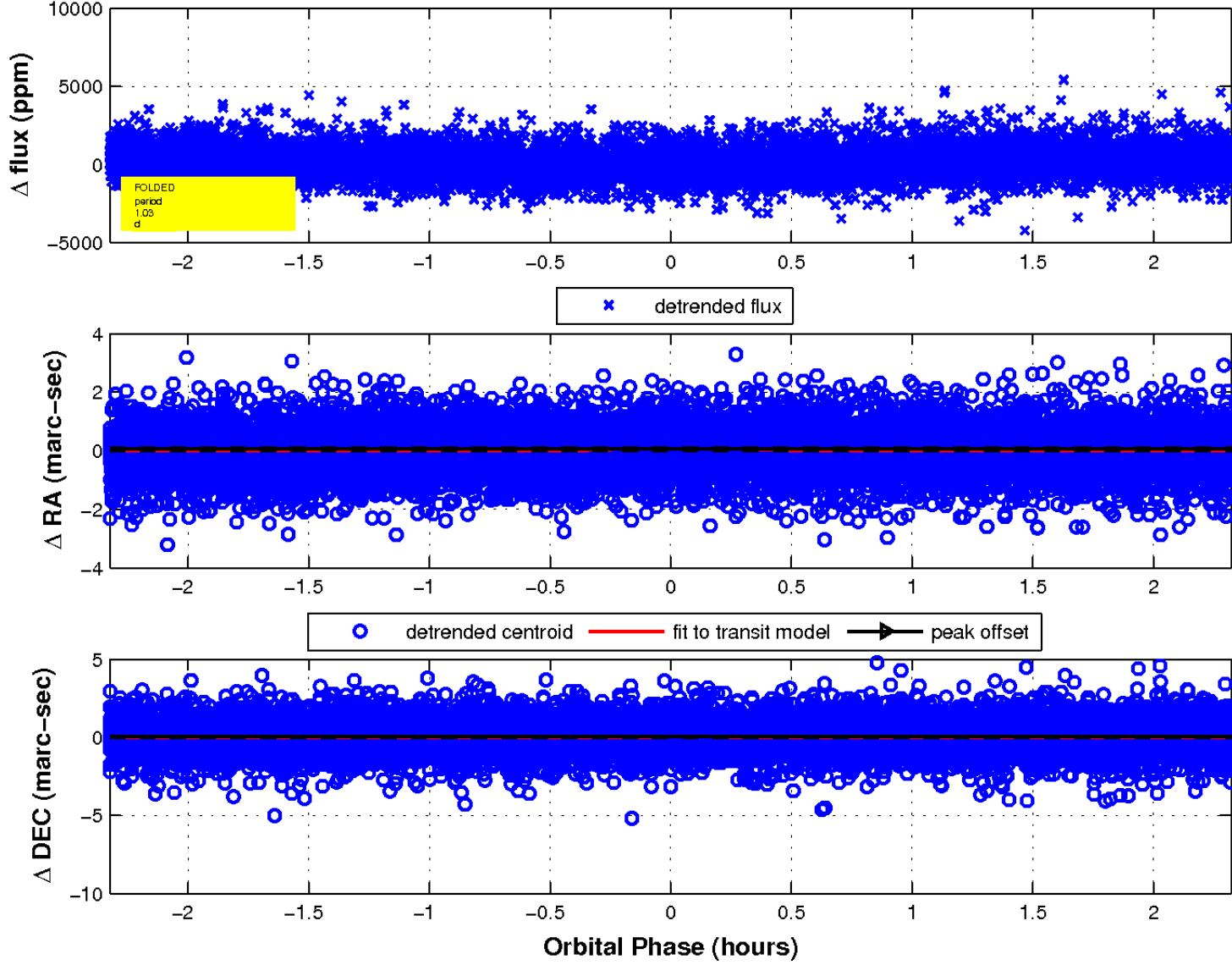
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



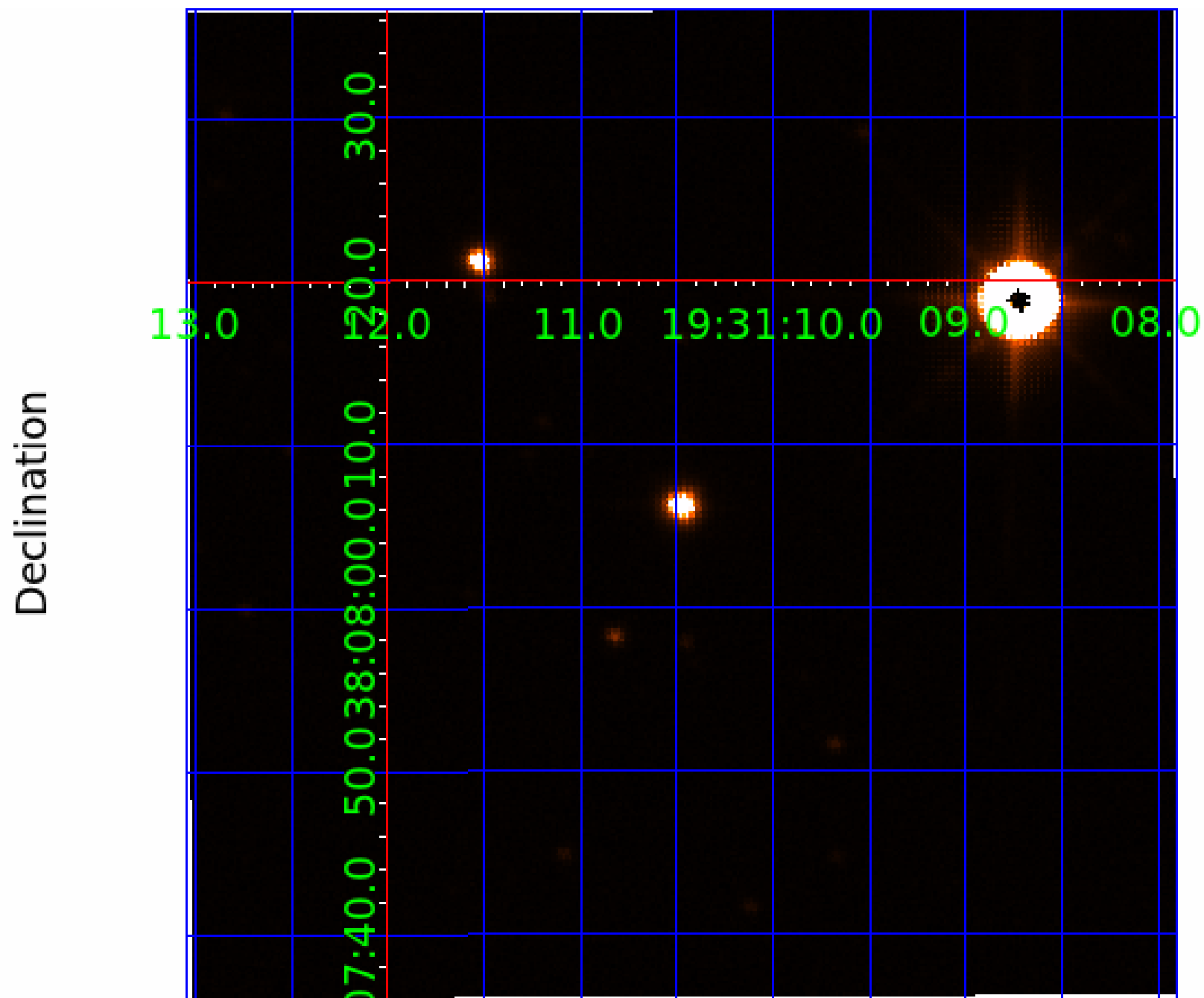
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 4



UKIRT Image



KIC 002995931

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})
002995931-01	OBS	No	1.034301	131.813838	142.2	2.236	12.0	8.7	1.26	6943	1.75	7080.30
002995931-02	OBS	No	1.034301	132.257517	58.8	0.775	12.2	4.1	1.26	6943	0.99	7080.30
002995931-03	OBS	No	2.895067	133.672711	682.8	8.437	8.1	8.1	1.26	6943	4.31	1794.88
002995931-04	OBS	No	1.010108	132.259846	593.0	6.114	8.8	12.4	1.26	6943	4.00	7307.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002995931-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
002995931-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
002995931-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
002995931-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

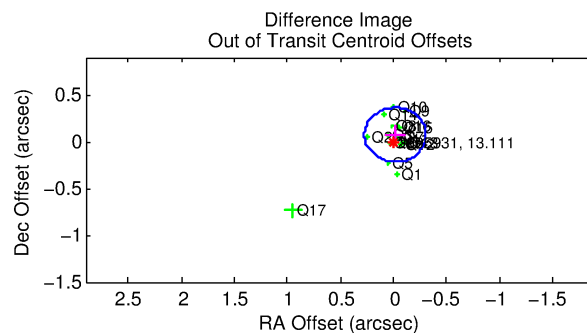
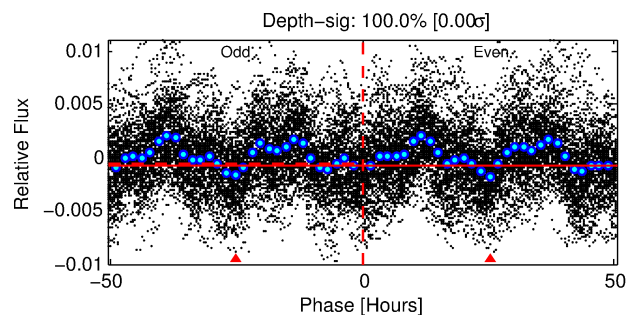
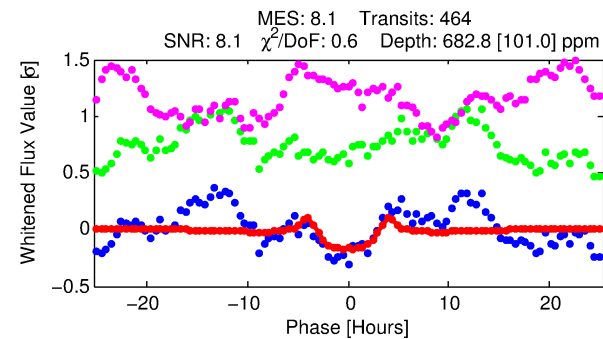
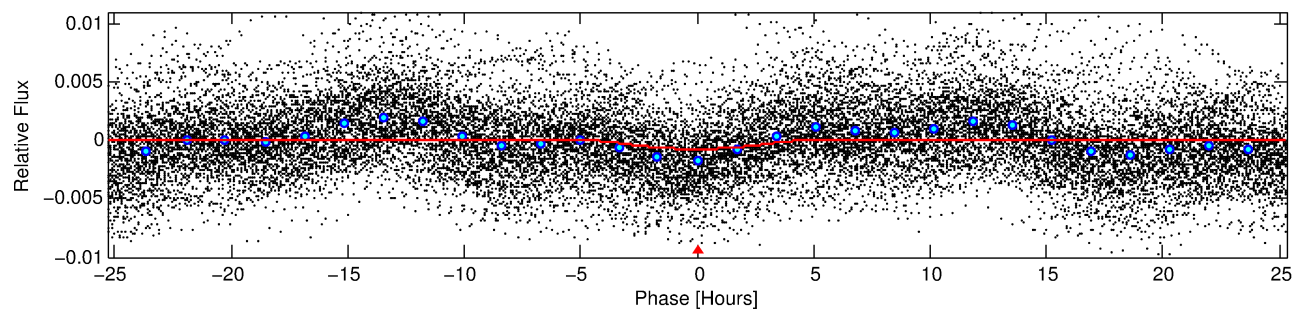
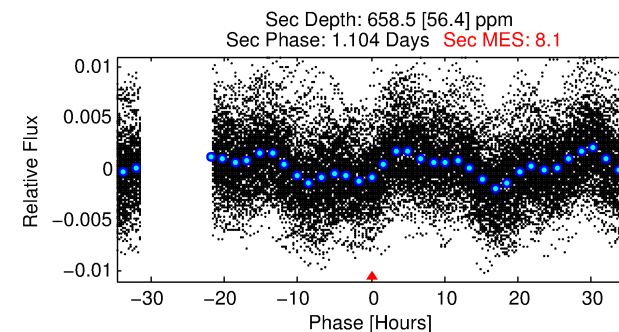
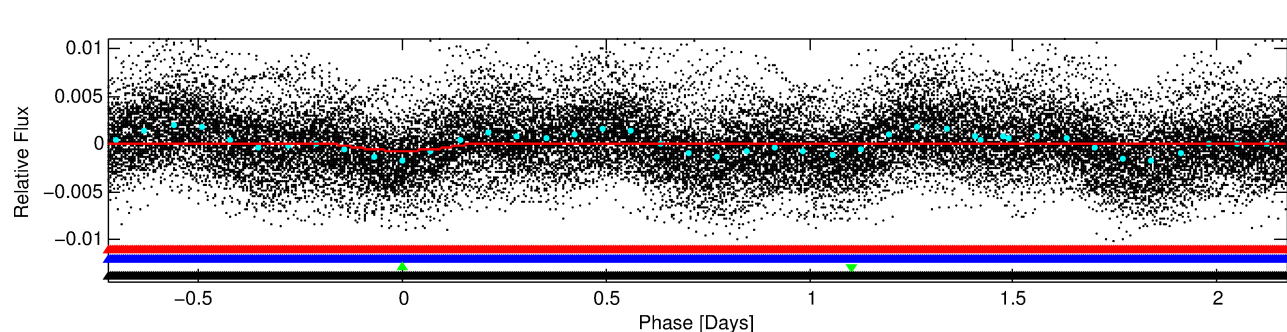
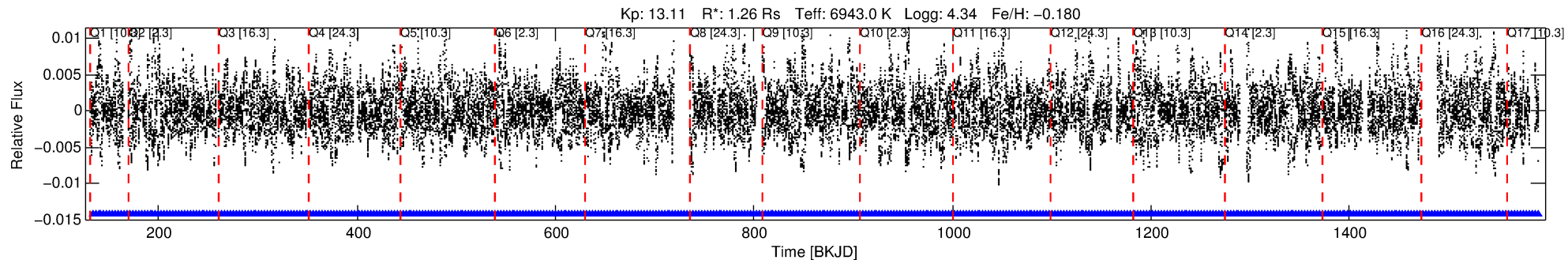
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002995931-03

No Significant Match Found

DV One-Page Summary

KIC: 2995931 Candidate: 3 of 4 Period: 2.895 d



DV Fit Results:

Period = 2.89507 [0.00004] d
Epoch = 133.6727 [0.0089] BKJD
Rp/R* = 0.0313 [0.0038]
a/R* = 1.34 [0.05]
b = 0.97 [0.01]
Seff = 1794.88 [758.17]
Teq = 1660 [175] K
Rp = 4.31 [1.57] Re
a = 0.0430 [0.0120] AU
Ag = 36.11 [17.00] [2.07σ]
Teff = 6291 [474] K [9.17σ]

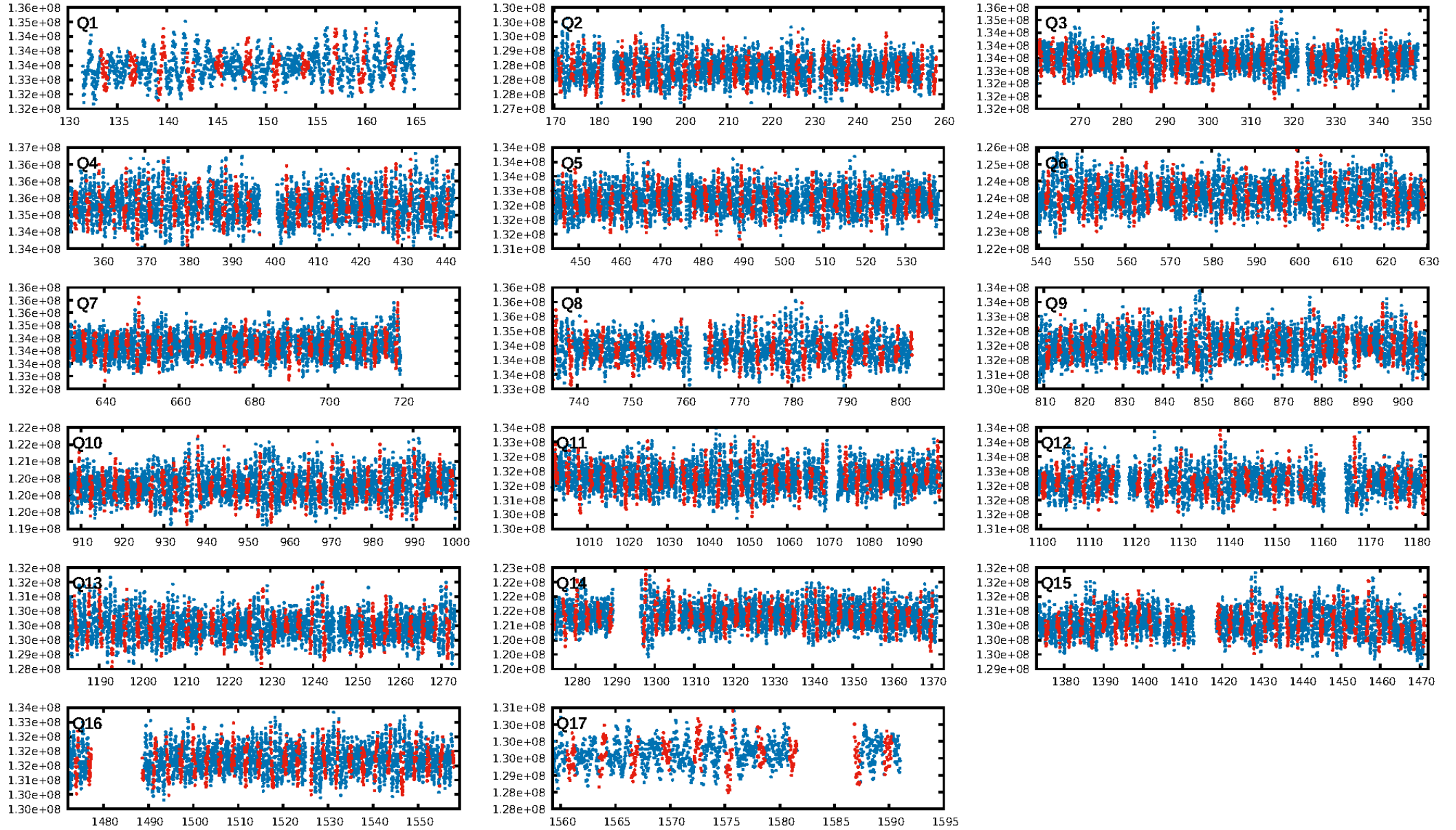
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.12σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [443/443]
GhostDiagnostic-chr: 0.7776
Centroid-sig: 91.4%
Centroid-so: 0.323 arcsec [5.24σ]
OotOffset-rm: 0.074 arcsec [0.77σ]
KicOffset-rm: 0.064 arcsec [0.61σ]
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]

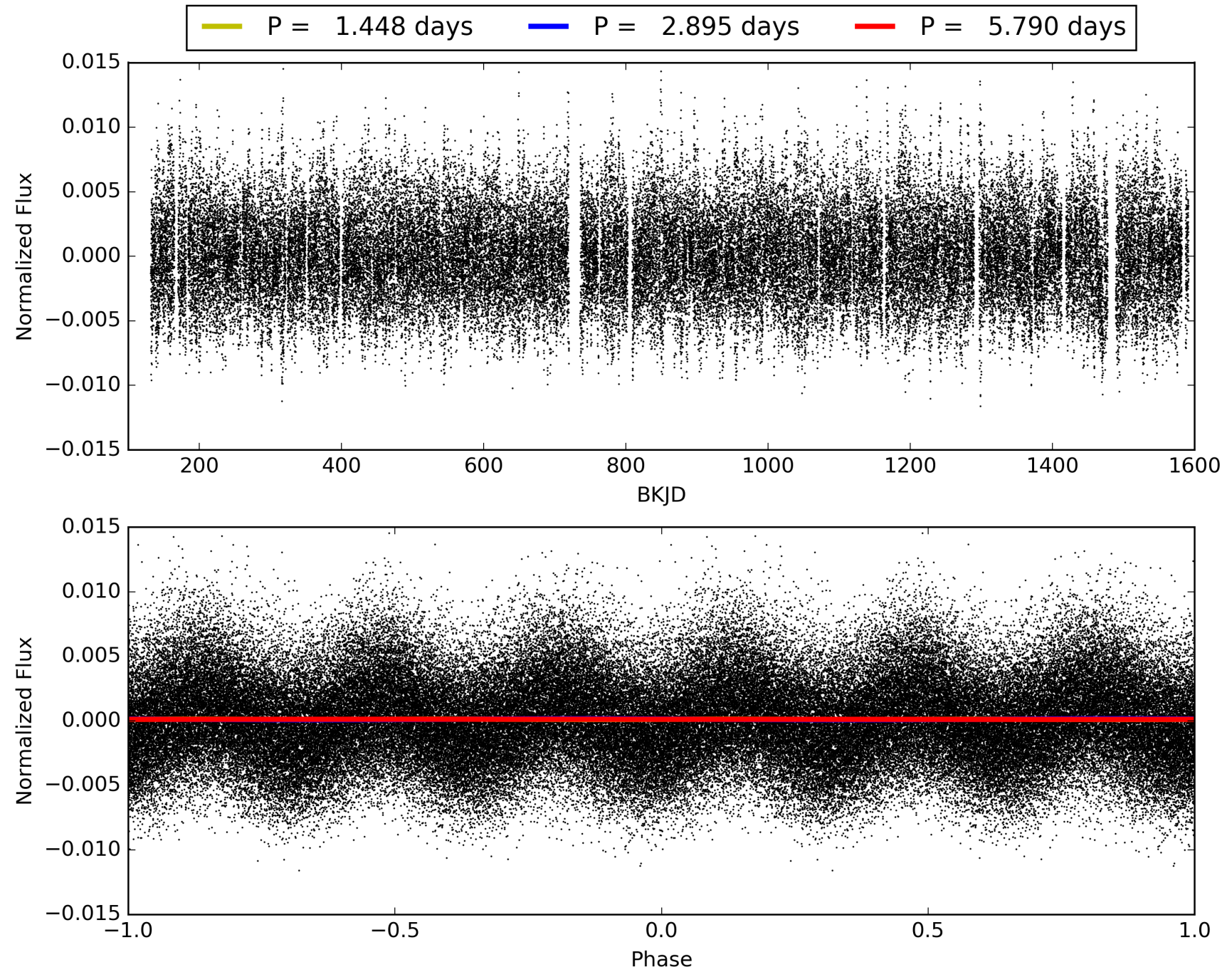
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:30:27 Z

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

TCE 002995931-03, PDC Light Curves

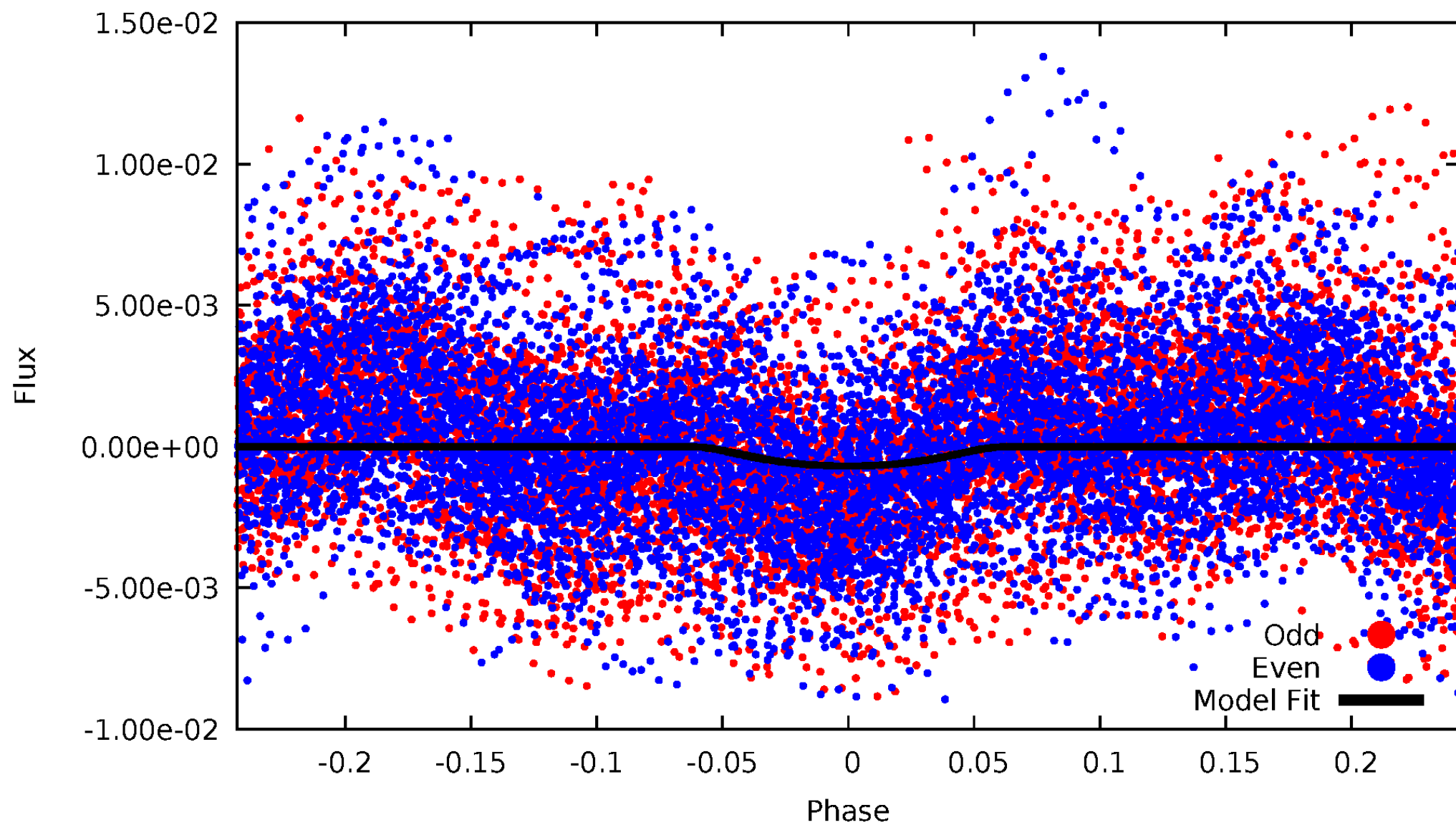


TCE 002995931-03



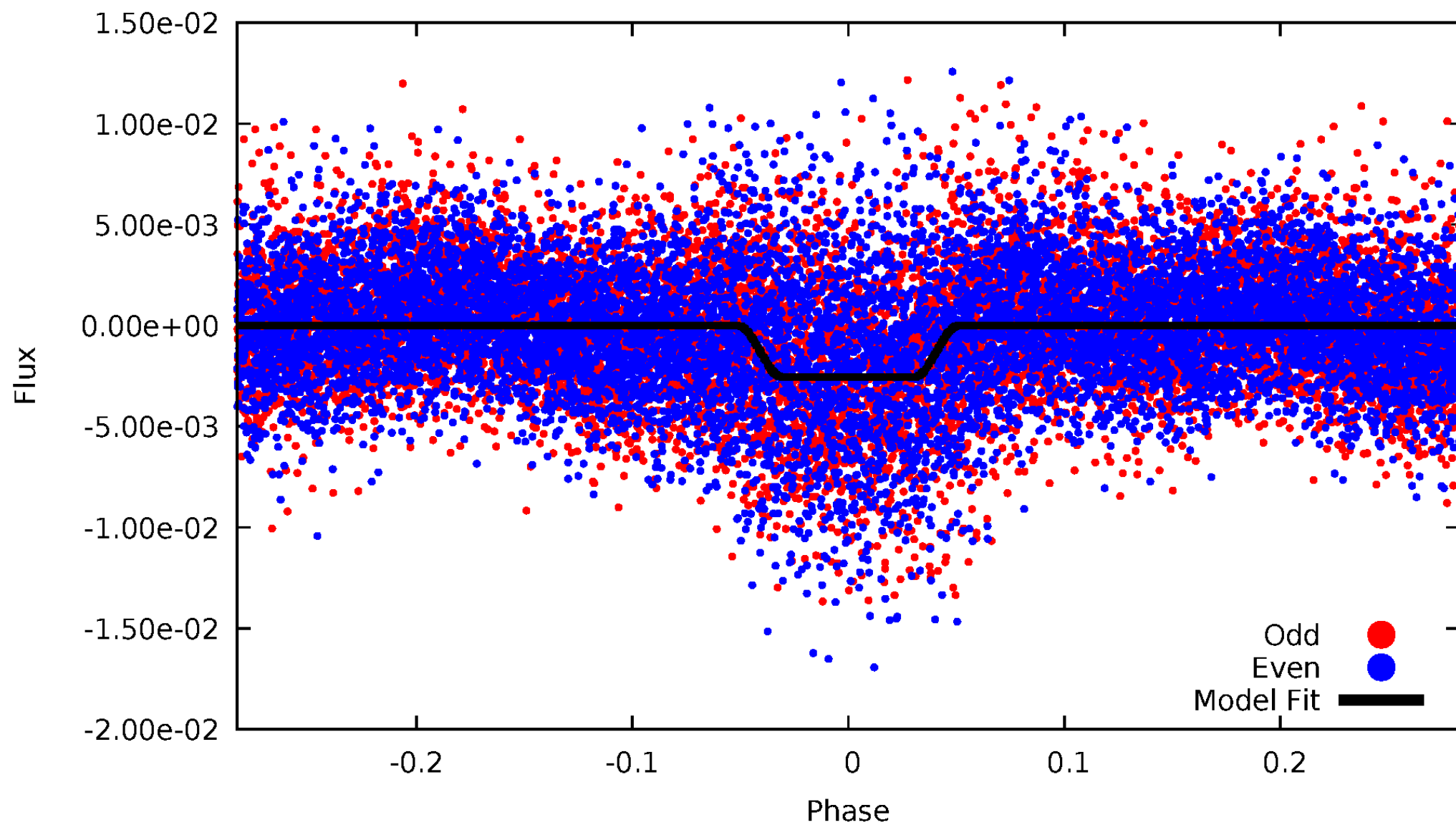
DV Odd/Even

TCE 002995931-03



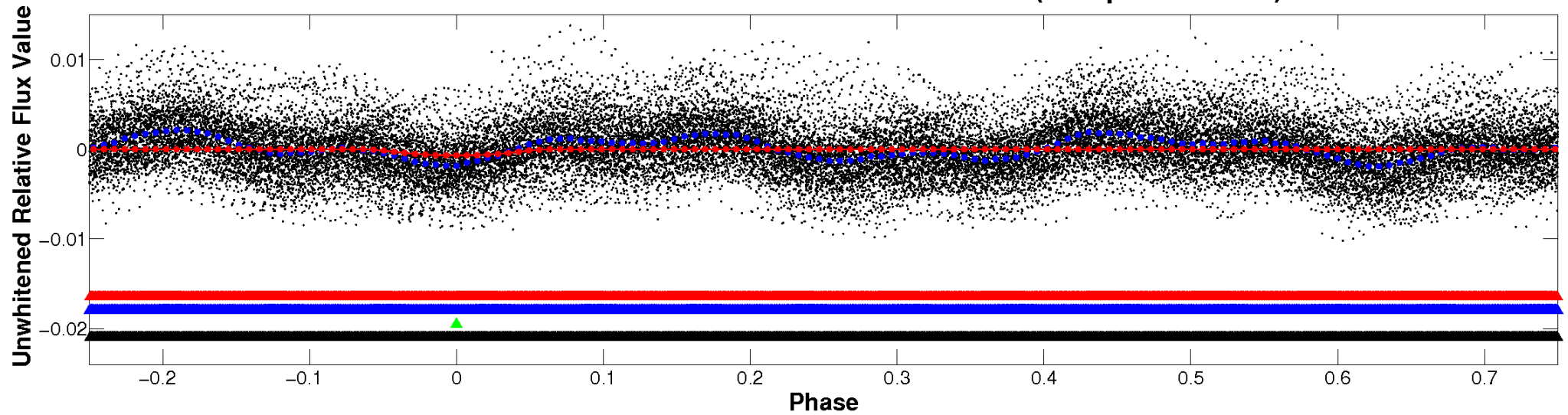
ALT Odd/Even

TCE 002995931-03

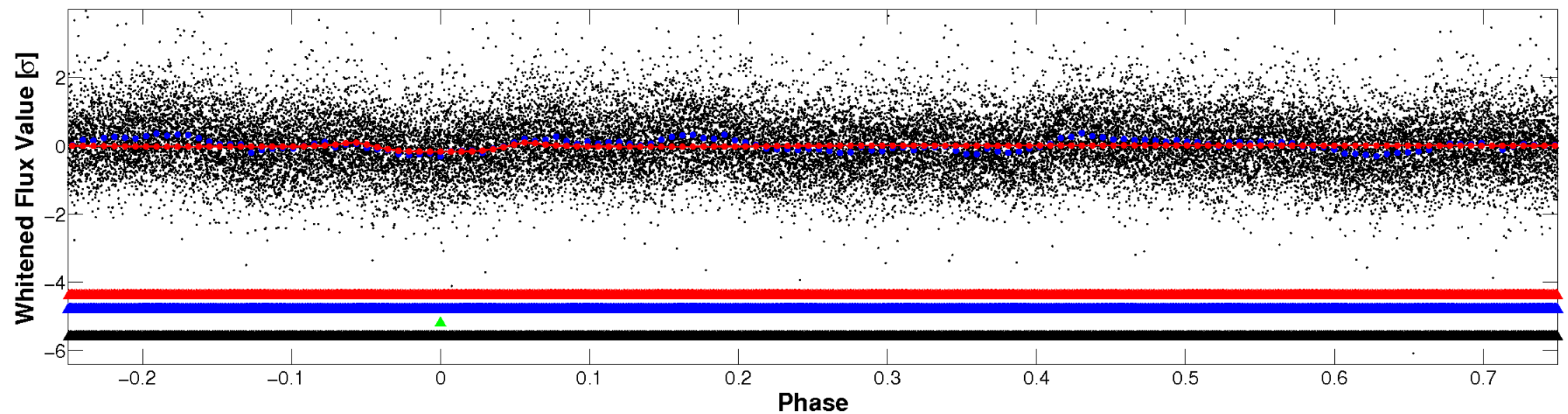


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

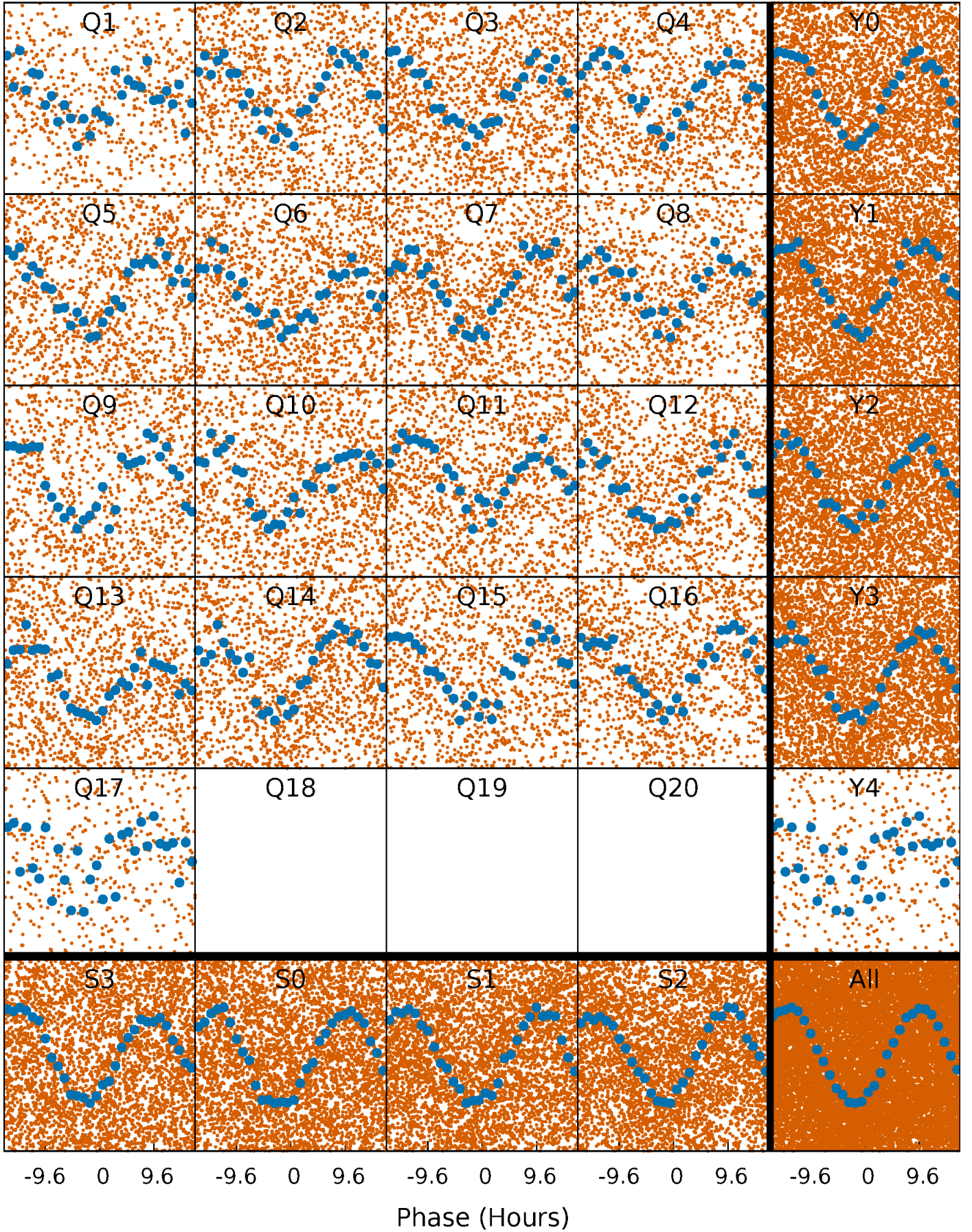


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



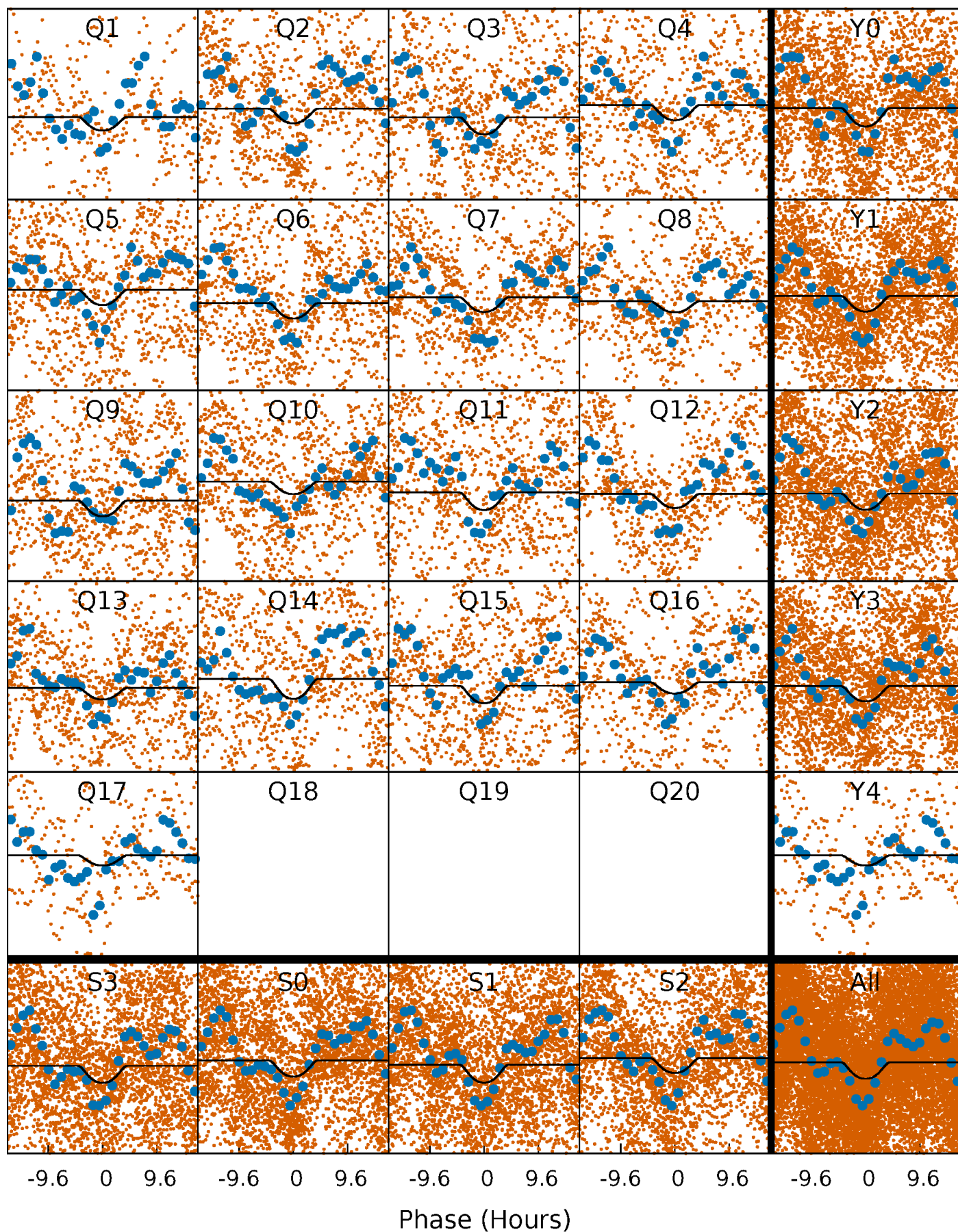
PDC Quarter-Phased Transit Curves

TCE 002995931-03 P= 2.895067 Days $T_0=133.672711$ (BKJD)



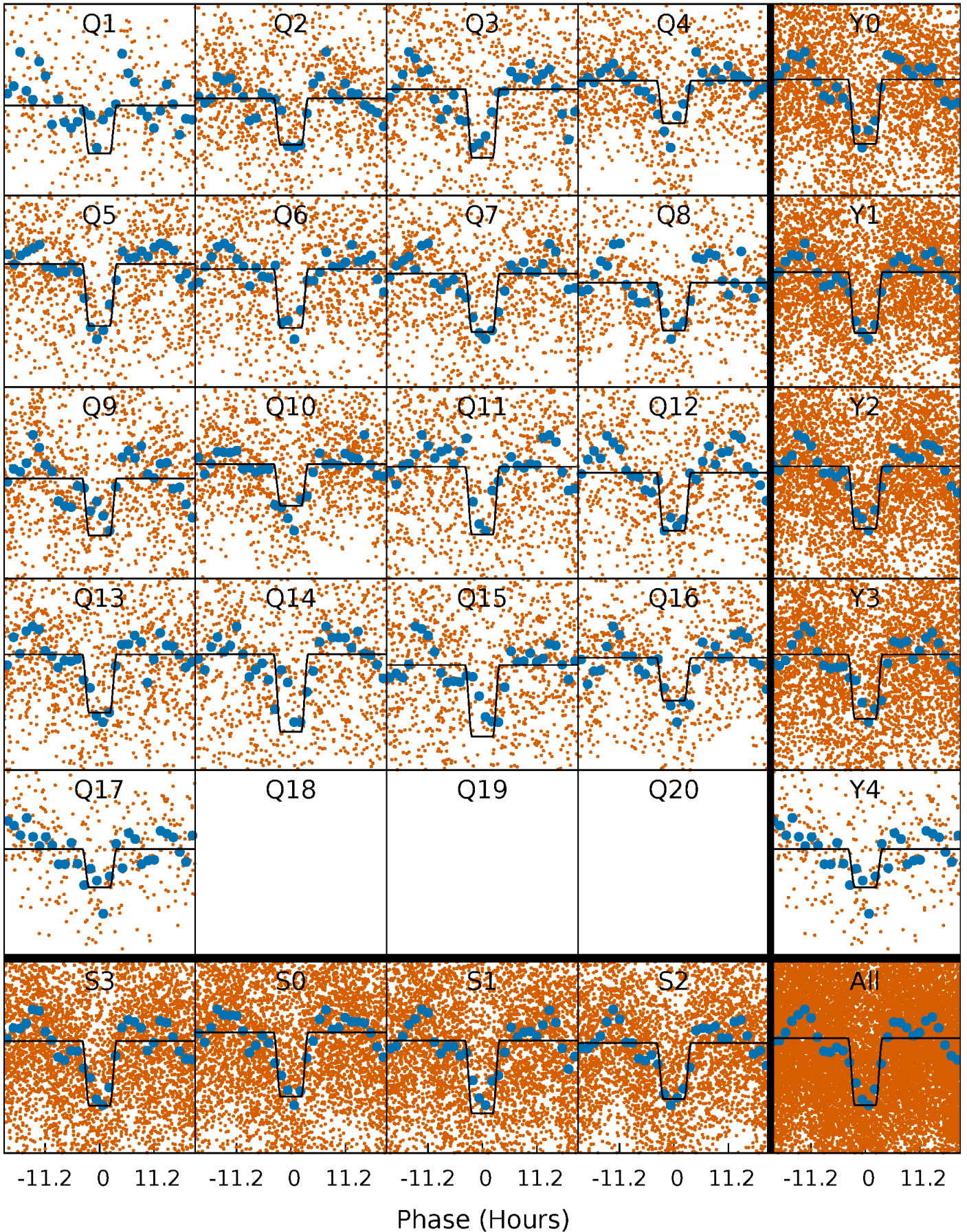
DV Quarter-Phased Transit Curves

TCE 002995931-03 P= 2.895067 Days $T_0=133.672711$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

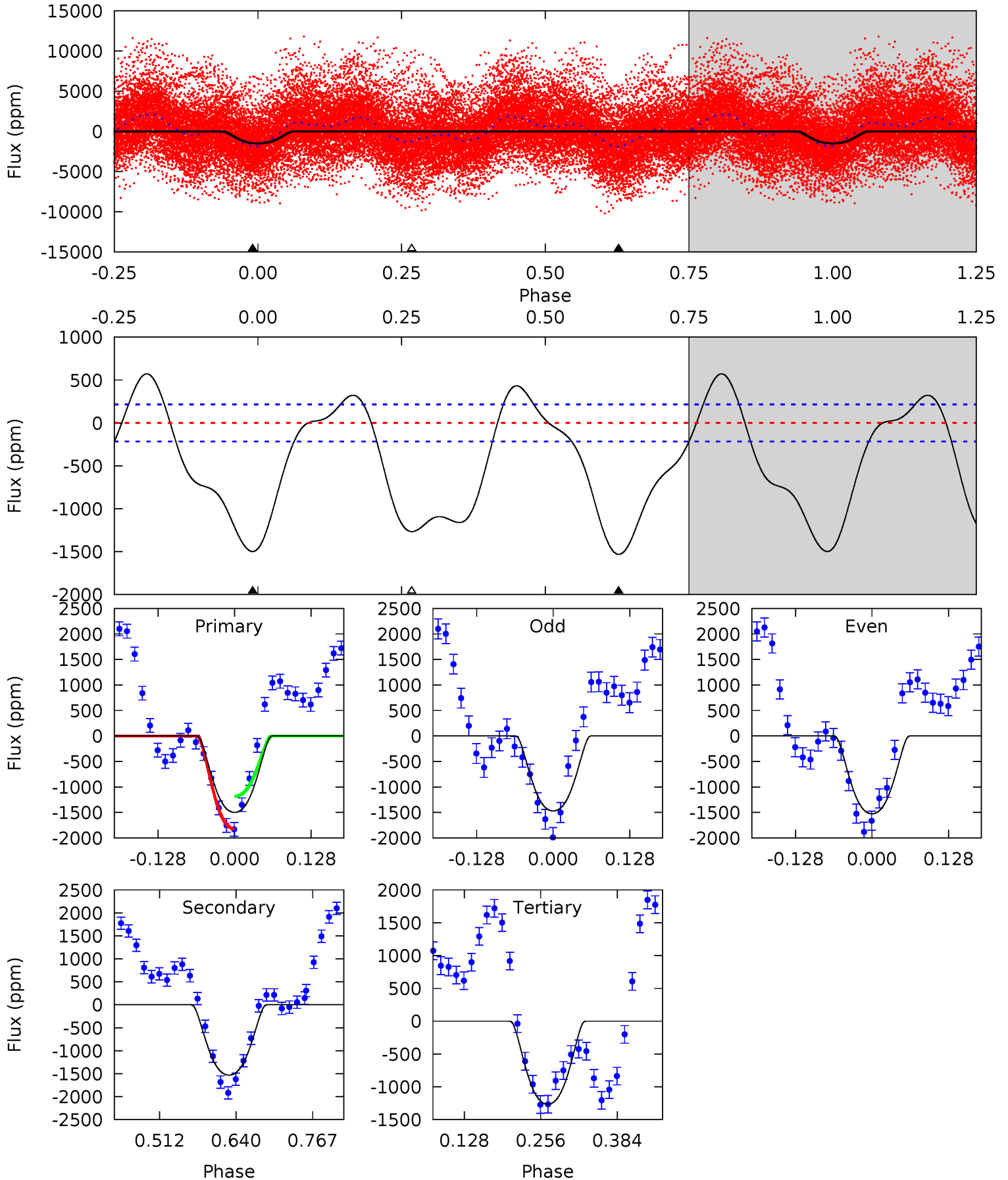
TCE 002995931-03 P= 2.894887 Days $T_0=133.684837$ (BKJD)



DV Model-Shift Uniqueness Test

002995931-03, P = 2.895067 Days, E = 130.777644 Days

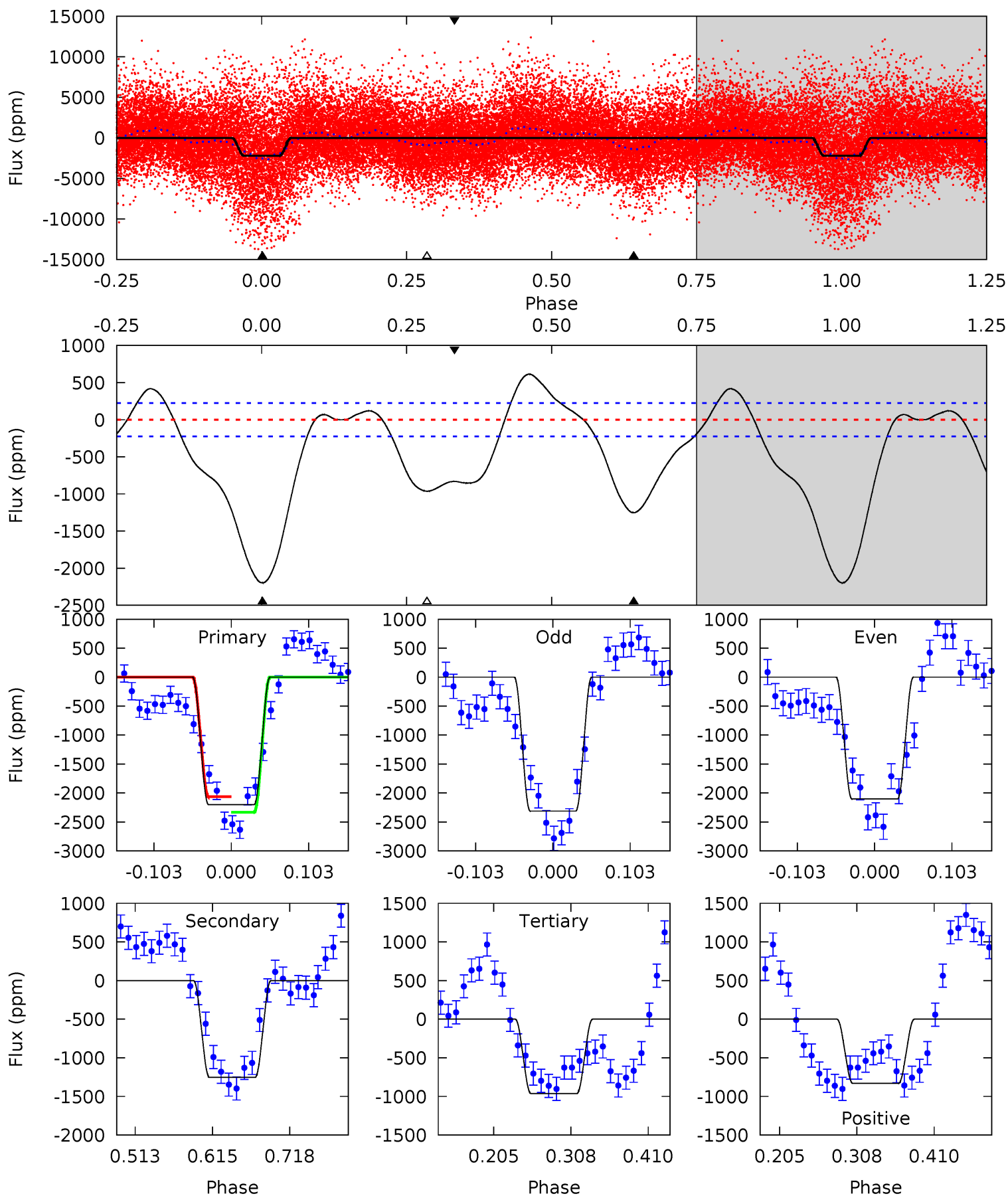
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.4	32.1	26.5	0	4.51	1.52	13.4	4.87	31.4	5.56	32.1	0.57	0.39	0.27	6.61



Alt Model-Shift Uniqueness Test

002995931-03, P = 2.894887 Days, E = 130.789950 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.6	25.4	19.5	-16.8	4.56	1.63	9.75	25.1	61.4	5.89	42.3	2.12	0.91	0.22	2.73



Stellar Parameters For KIC 002995931

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6943^{+164}_{-268}	$4.338^{+0.052}_{-0.208}$	$-0.180^{+0.250}_{-0.350}$	$1.264^{+0.435}_{-0.145}$	$1.284^{+0.191}_{-0.174}$	$0.895^{+0.258}_{-0.477}$
	+2%/-4%	+1%/-5%	+139%/-194%	+34%/-11%	+15%/-14%	+29%/-53%
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 002995931-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1531 ± 48	$4.50^{+0.95}_{-0.72}$	2367^{+179}_{-117}	7906^{+721}_{-651}	77^{+29}_{-22}
Alt.	-1254 ± 49	$7.27^{+1.24}_{-0.88}$	2363^{+170}_{-122}	5754^{+286}_{-270}	24^{+6}_{-6}

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 $A_{obs} \gg 1.0$

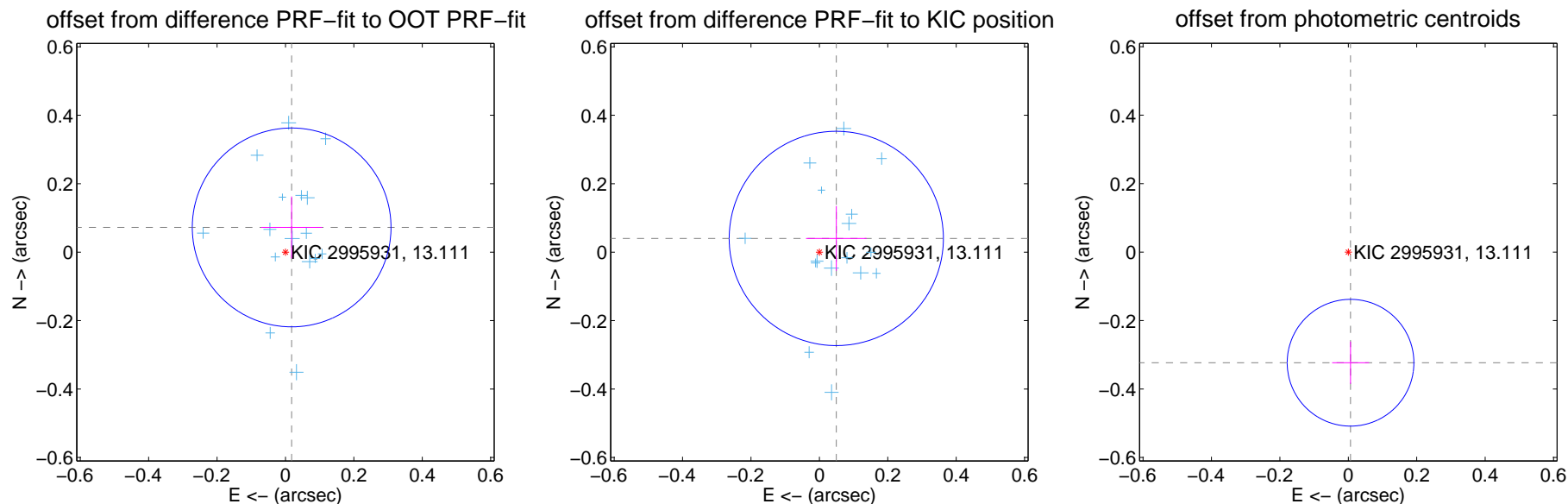
DV Centroid Data

Supplemental centroid analysis for 002995931-03. Kepler magnitude: 13.11. Transit SNR 8.10

There are 17 quarters with good PRF difference image offsets

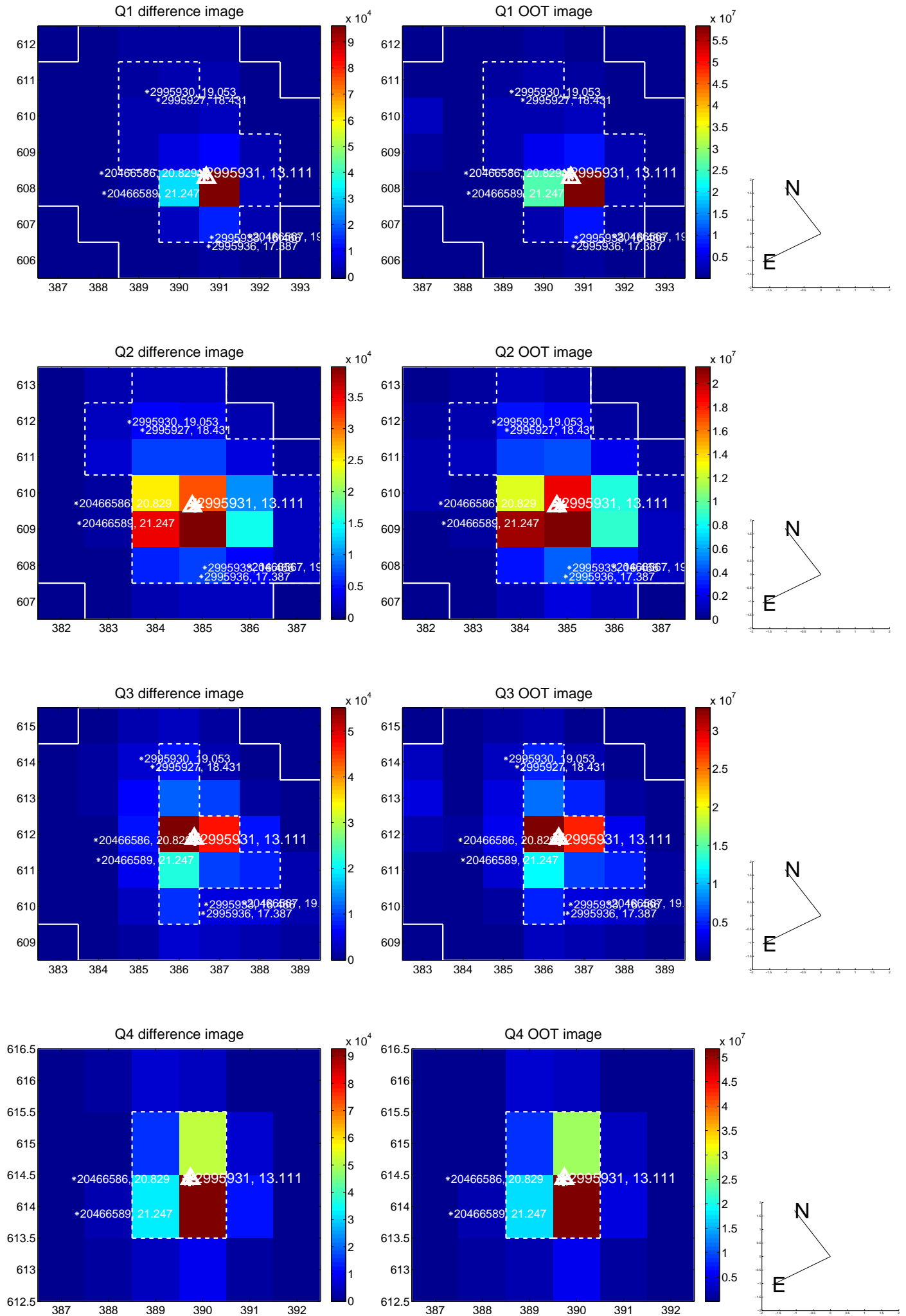
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.074 ± 0.097	0.77	-0.018 ± 0.089	0.072 ± 0.091
PRF-fit source offset from KIC position	0.064 ± 0.104	0.61	-0.049 ± 0.089	0.040 ± 0.095
photometric centroid source offset	0.32 ± 0.06	5.24	-0.01 ± 0.05	-0.32 ± 0.06

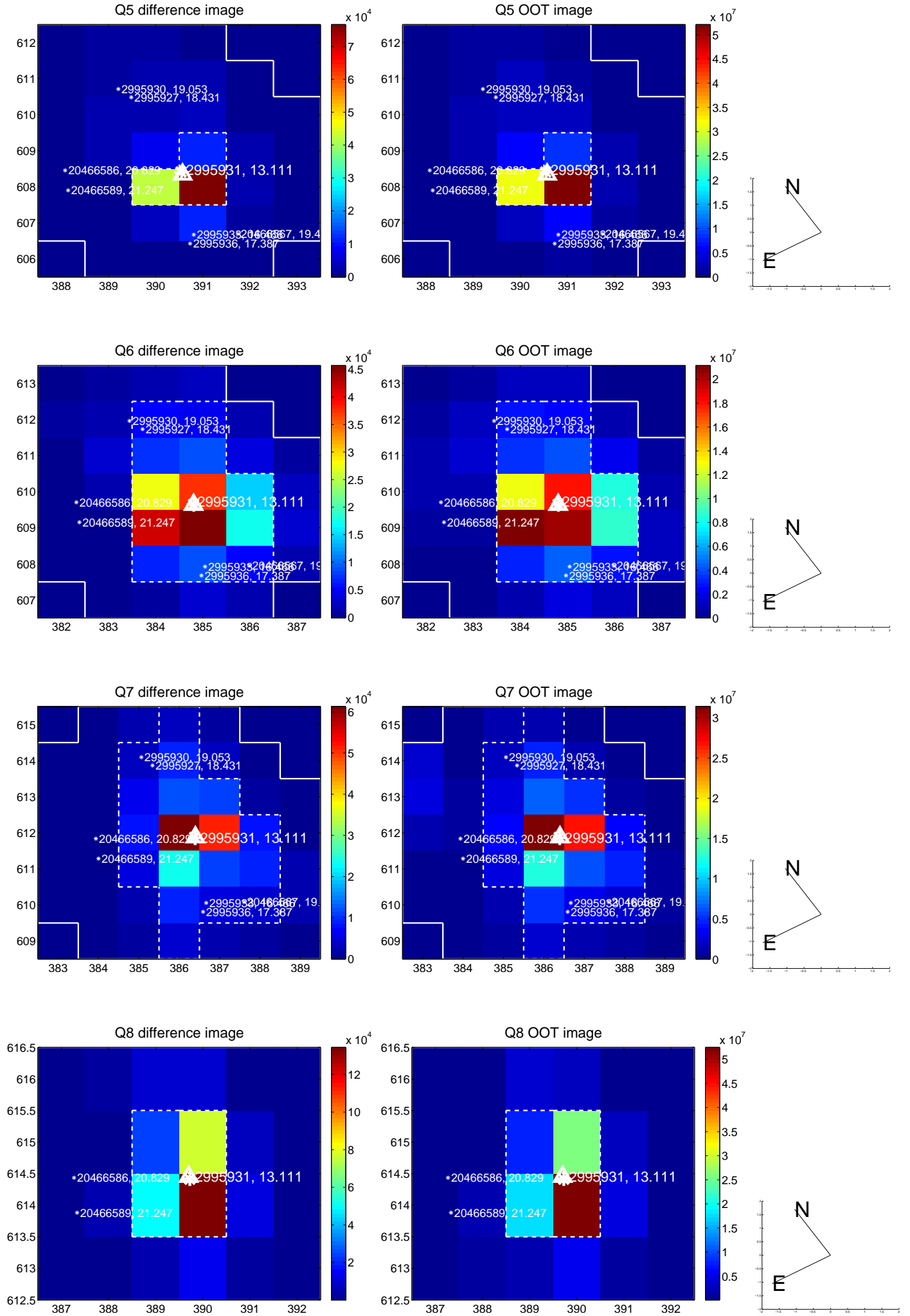


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

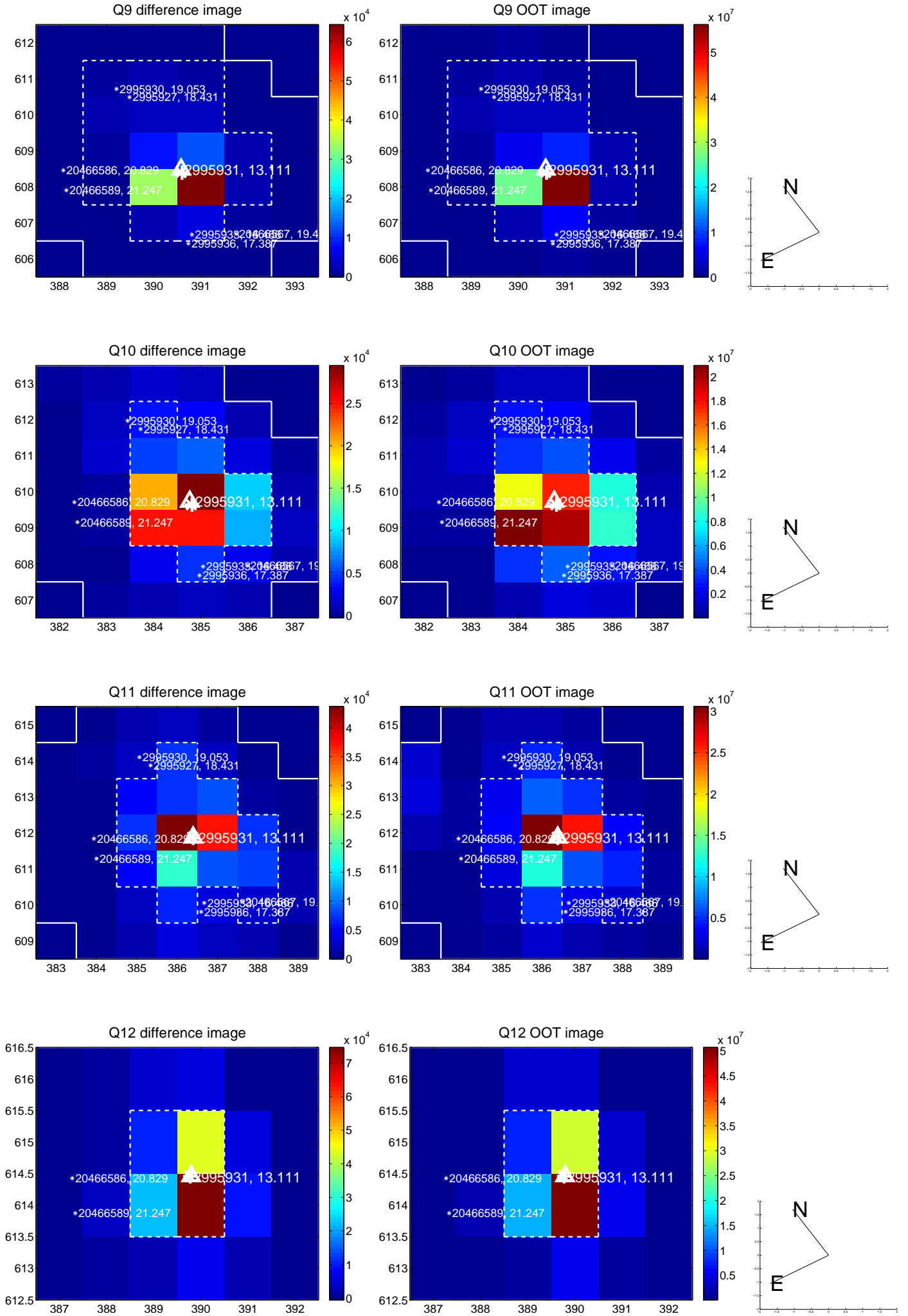
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



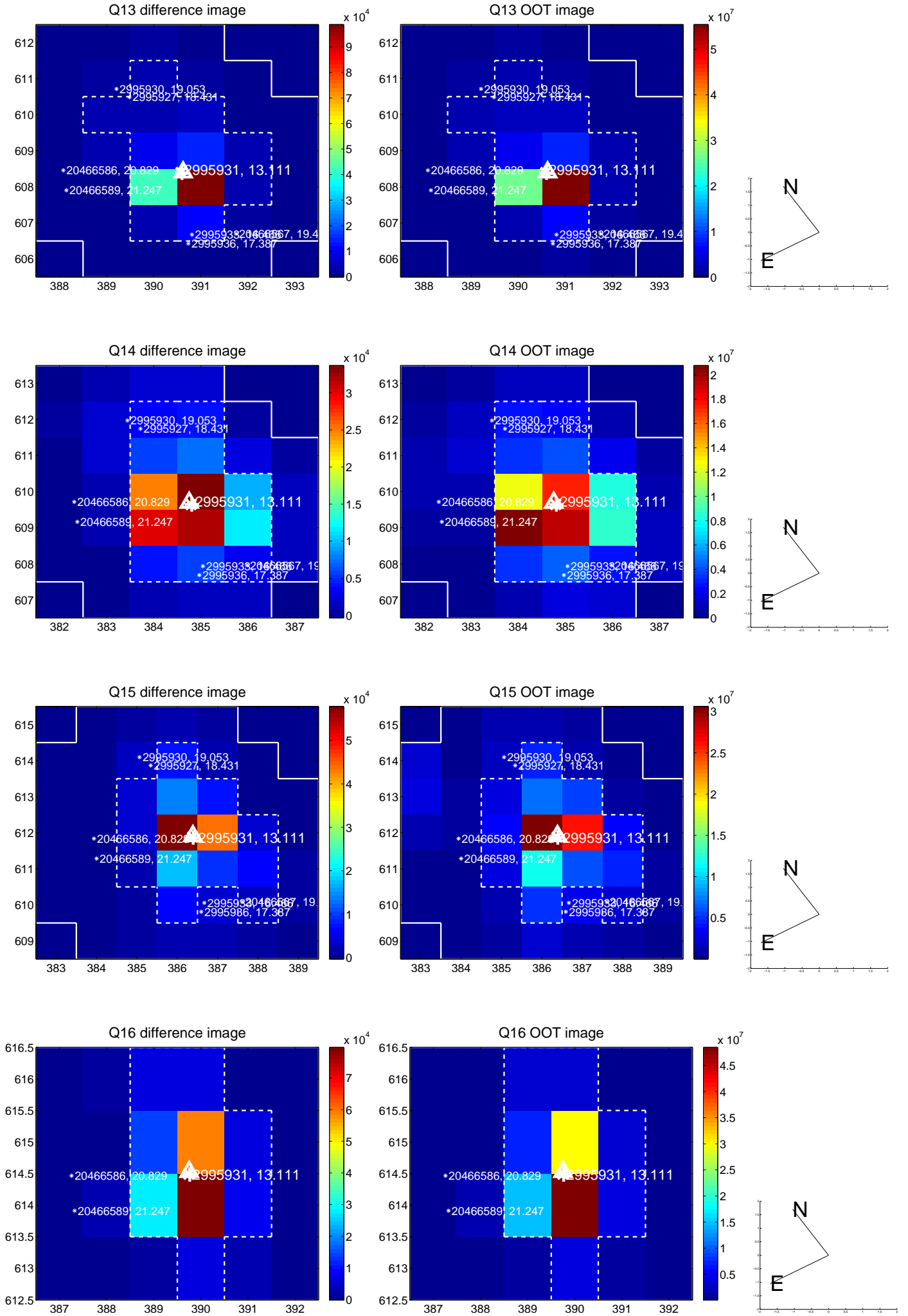
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



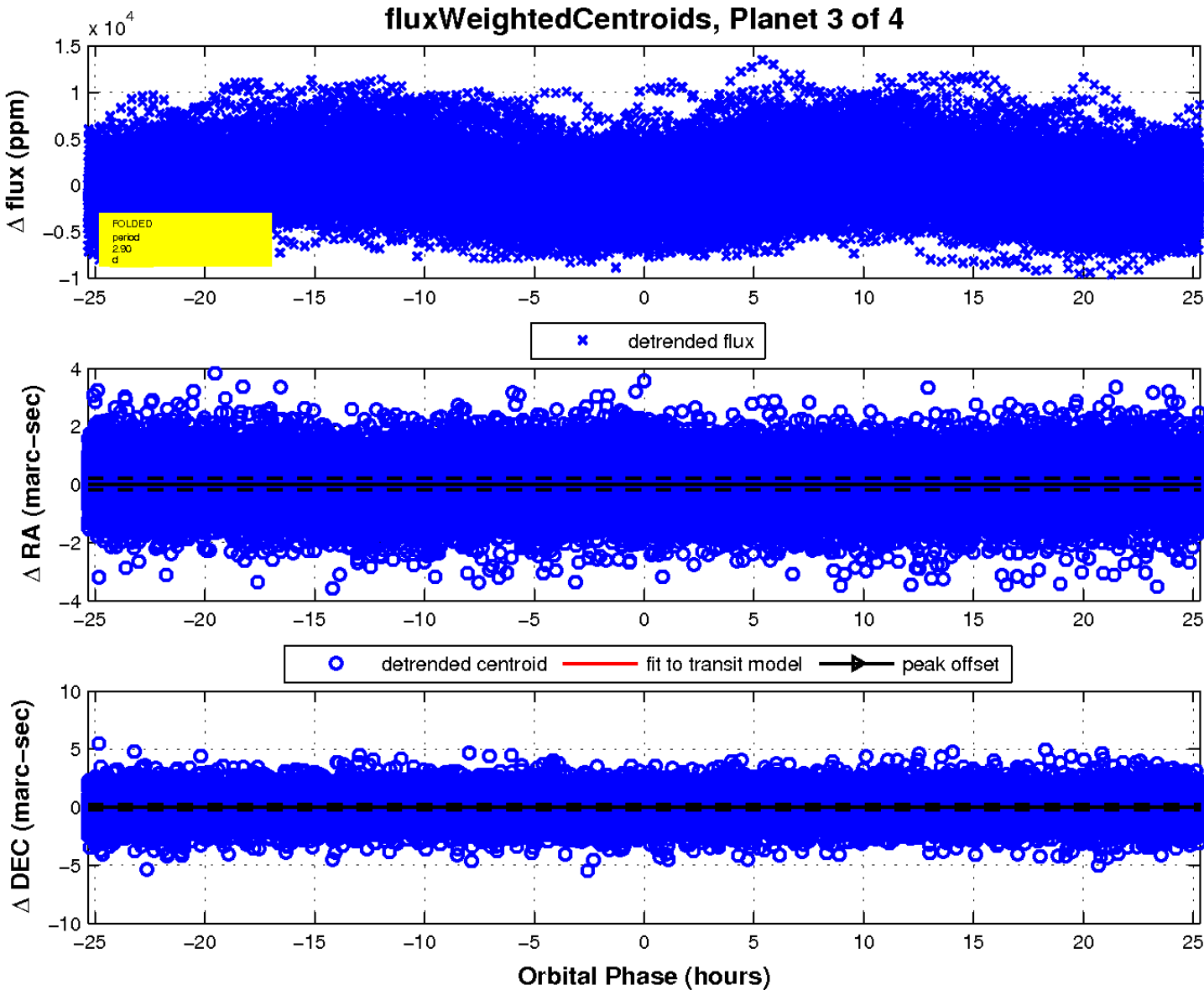
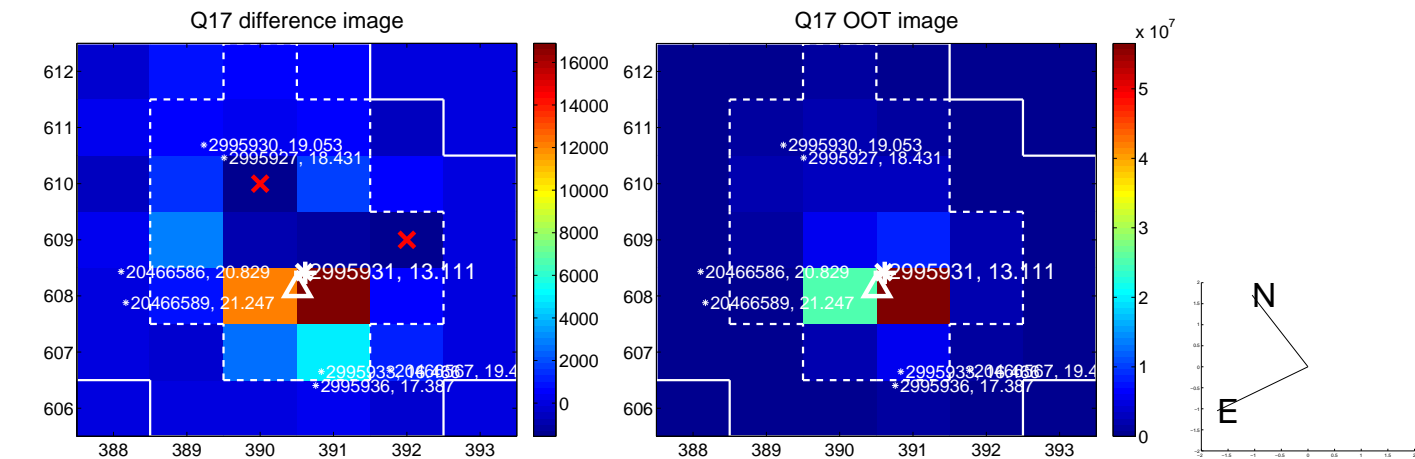
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



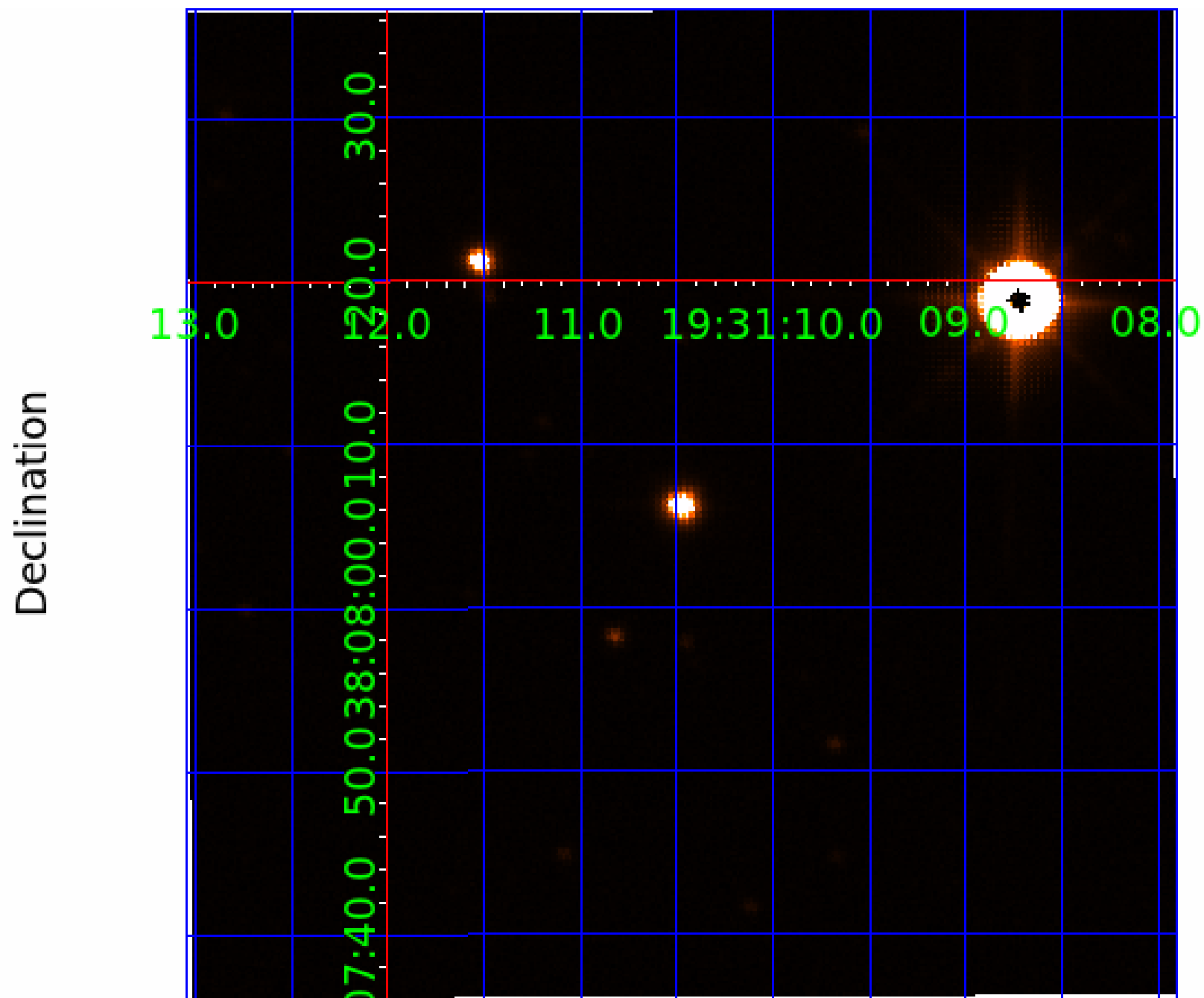
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 002995931

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})
002995931-01	OBS	No	1.034301	131.813838	142.2	2.236	12.0	8.7	1.26	6943	1.75	7080.30
002995931-02	OBS	No	1.034301	132.257517	58.8	0.775	12.2	4.1	1.26	6943	0.99	7080.30
002995931-03	OBS	No	2.895067	133.672711	682.8	8.437	8.1	8.1	1.26	6943	4.31	1794.88
002995931-04	OBS	No	1.010108	132.259846	593.0	6.114	8.8	12.4	1.26	6943	4.00	7307.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002995931-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
002995931-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD
002995931-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
002995931-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

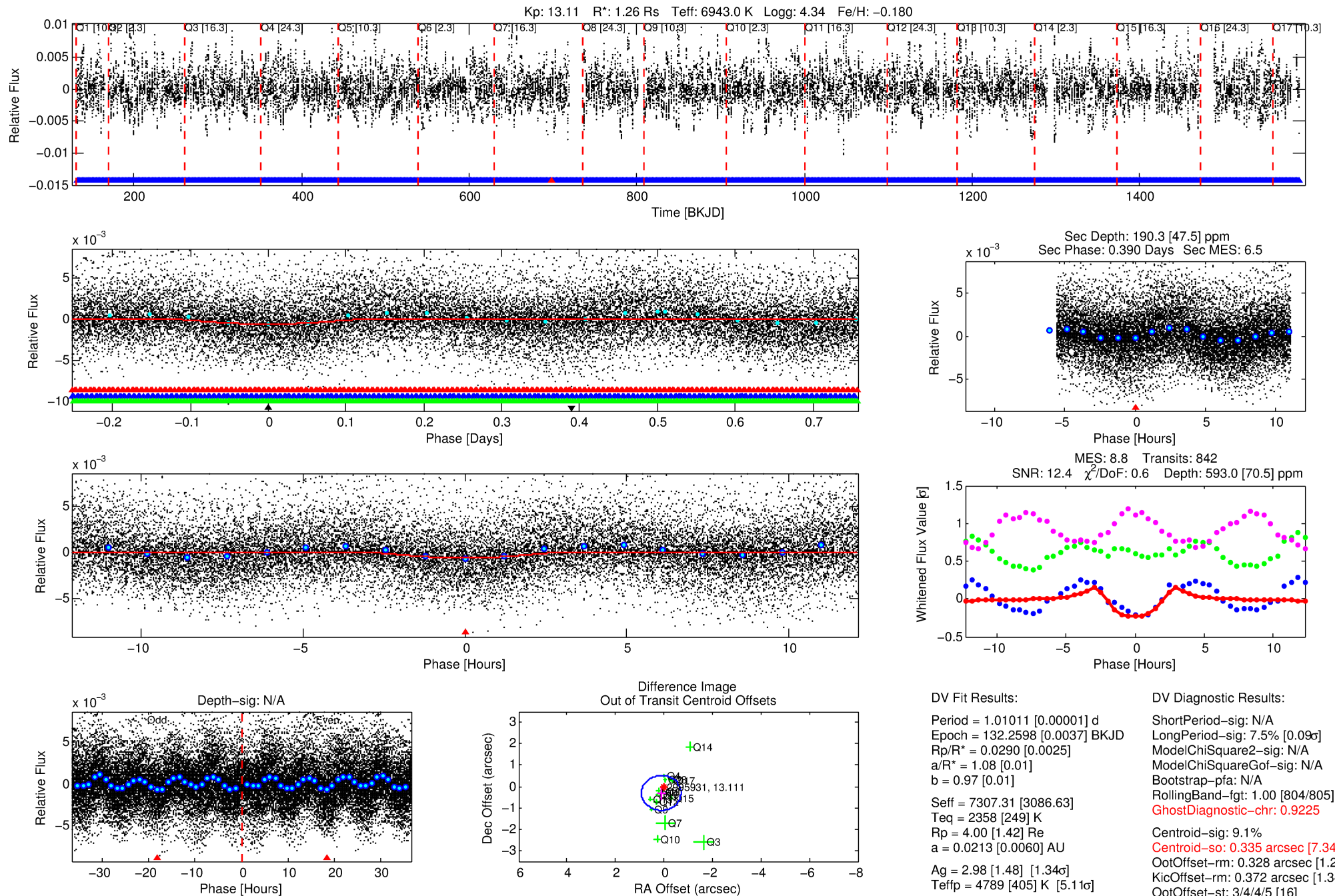
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002995931-04

No Significant Match Found

DV One-Page Summary

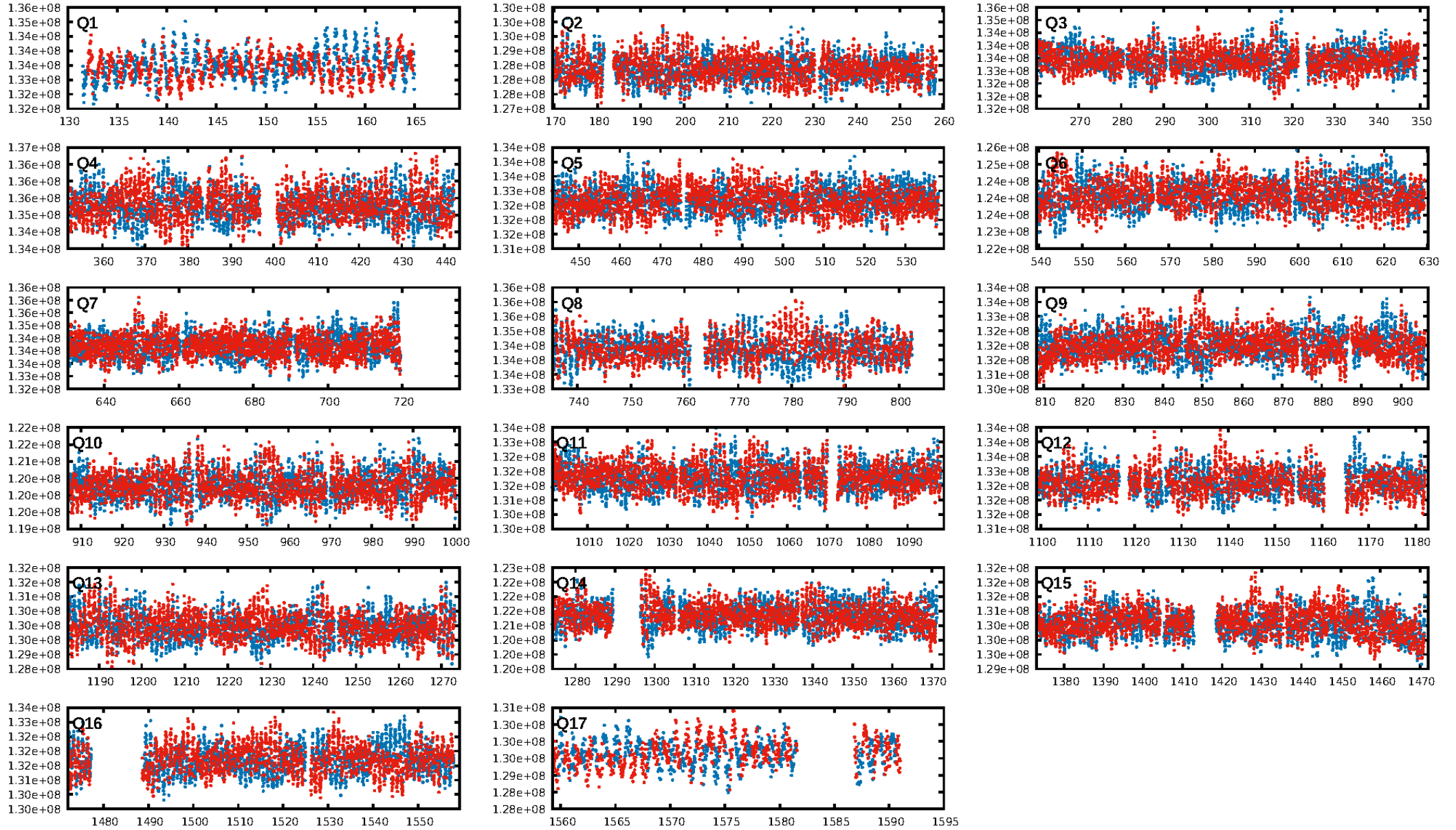
KIC: 2995931 Candidate: 4 of 4 Period: 1.010 d



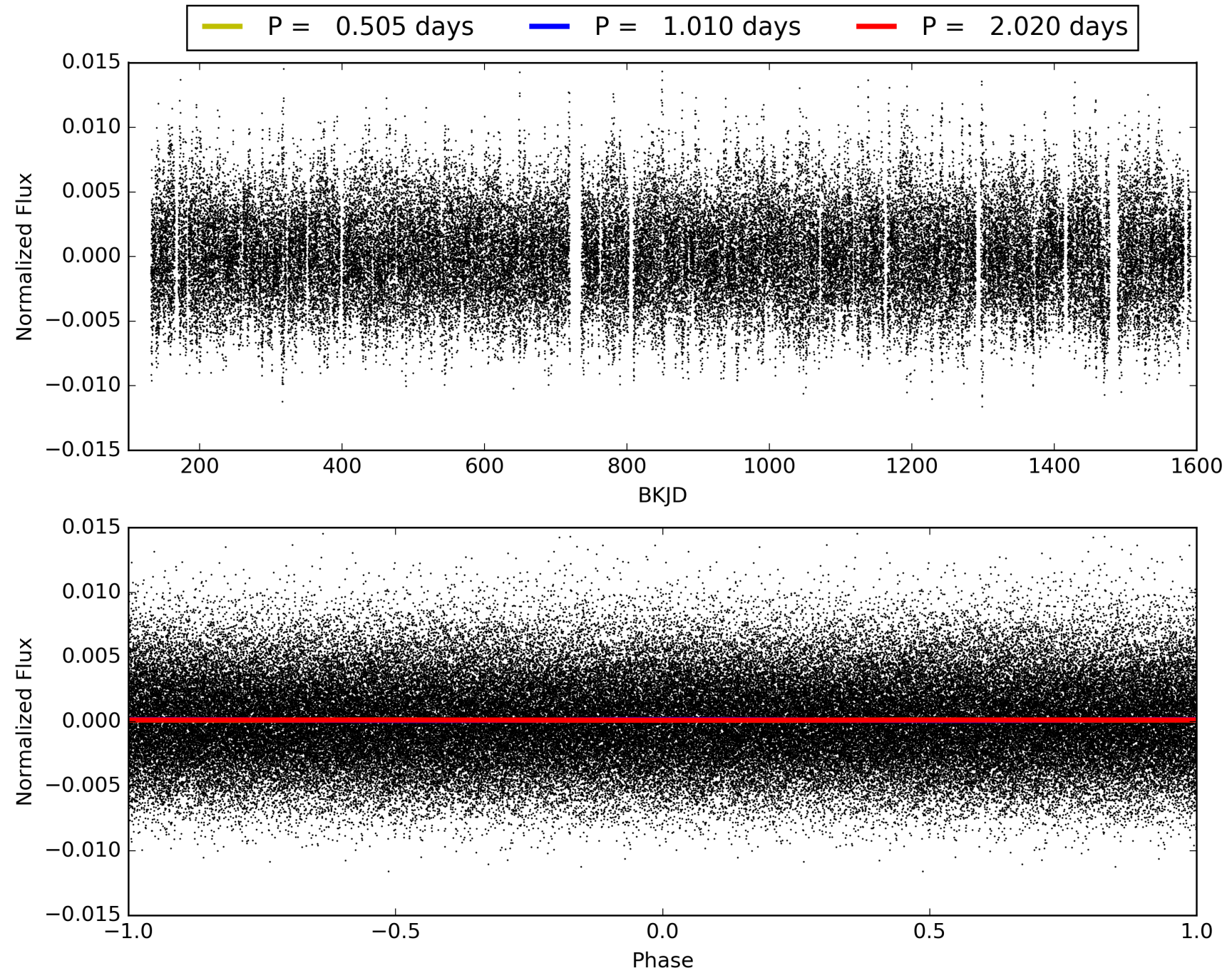
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:30:37 Z

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

TCE 002995931-04, PDC Light Curves

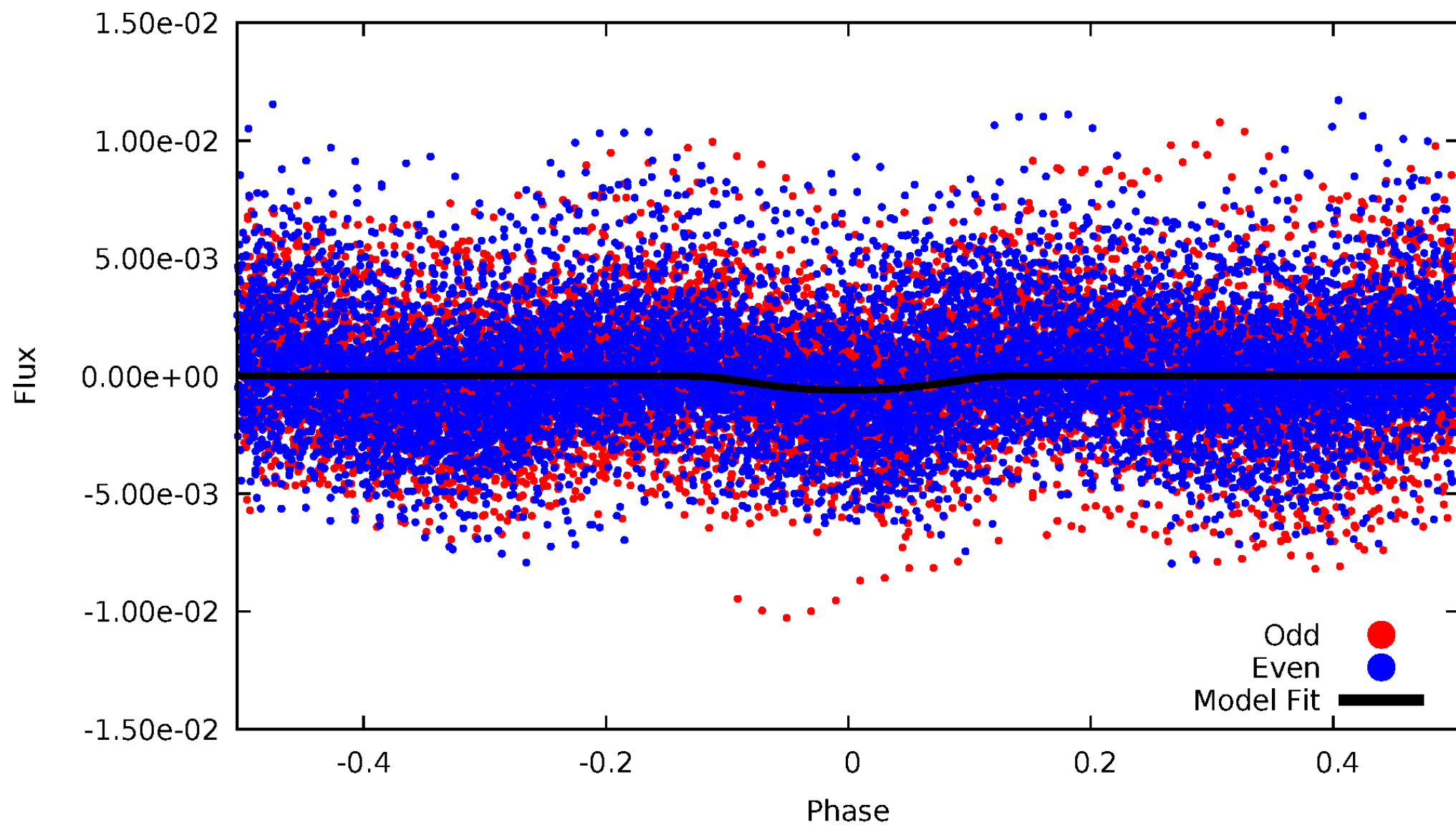


TCE 002995931-04



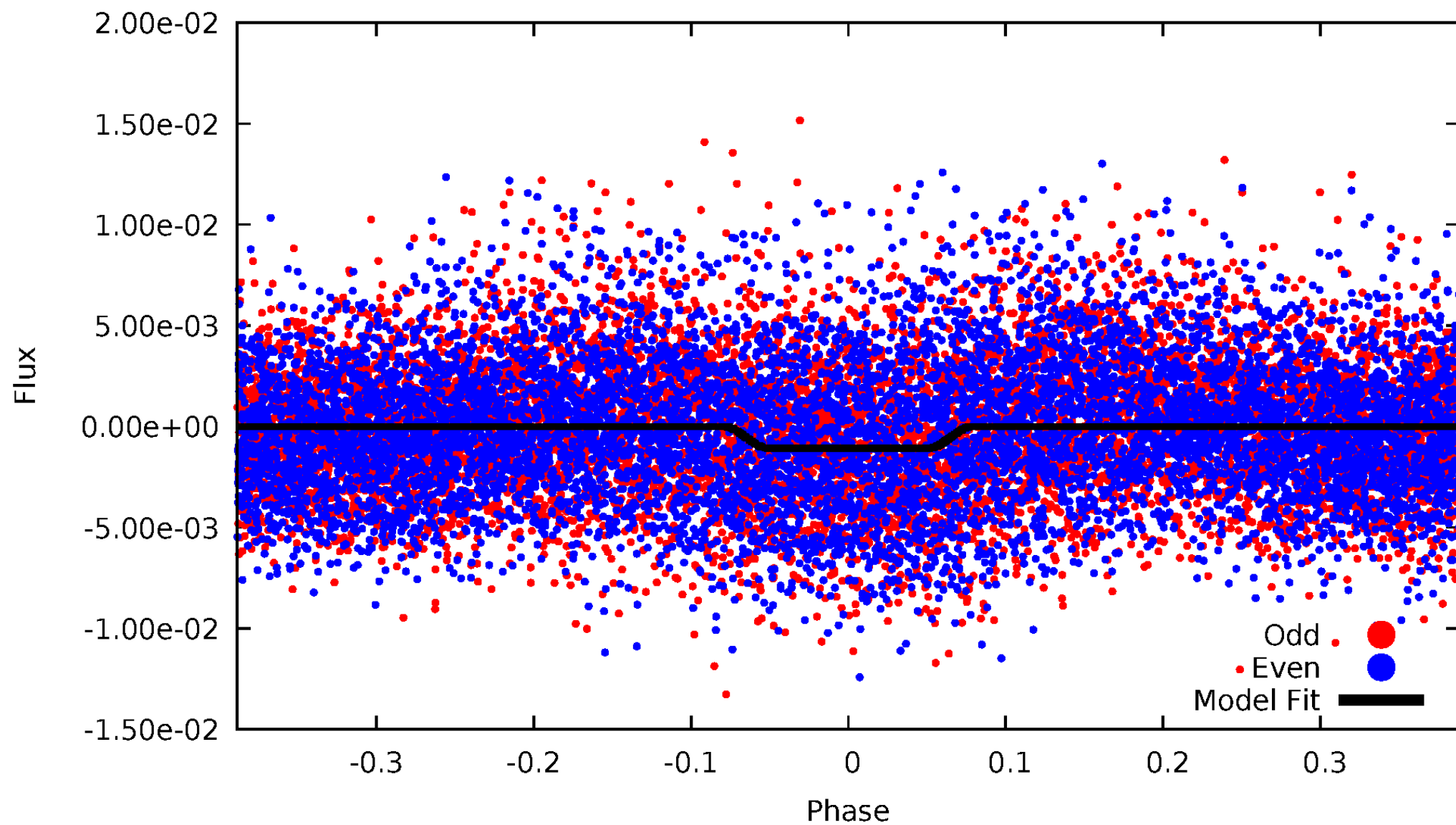
DV Odd/Even

TCE 002995931-04



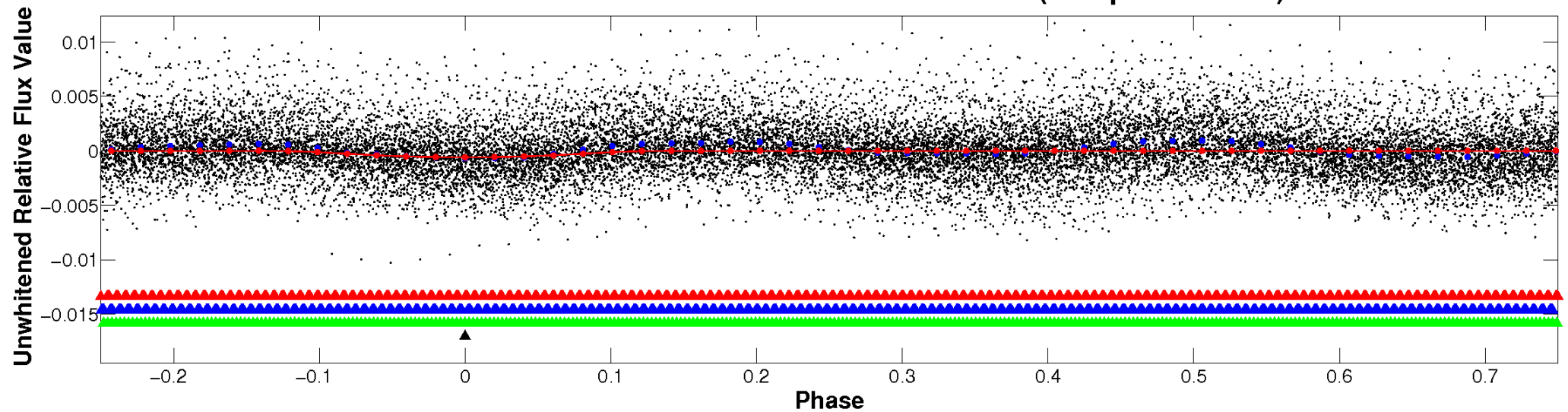
ALT Odd/Even

TCE 002995931-04

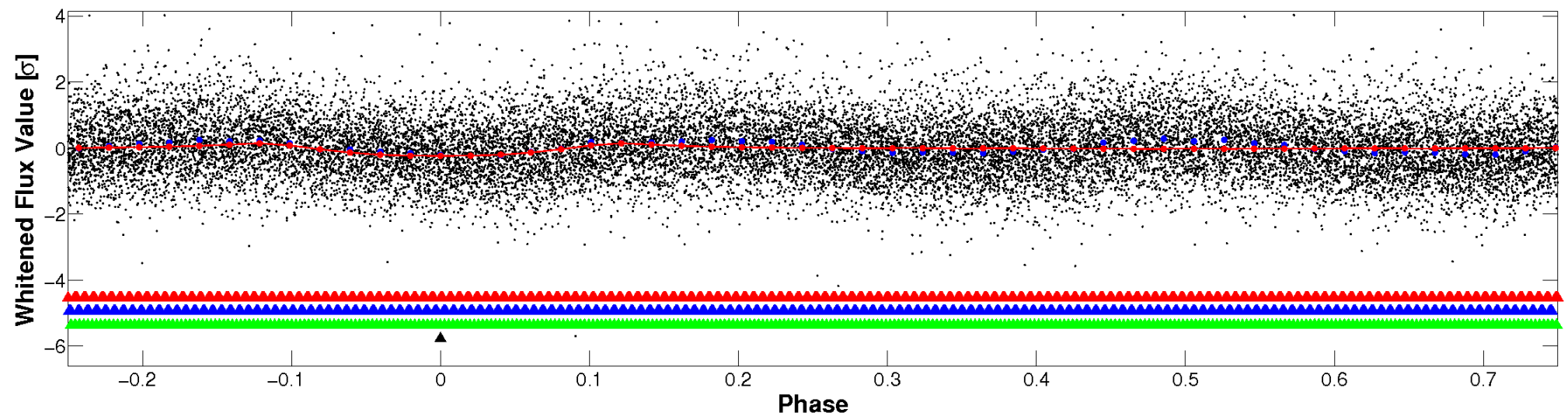


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

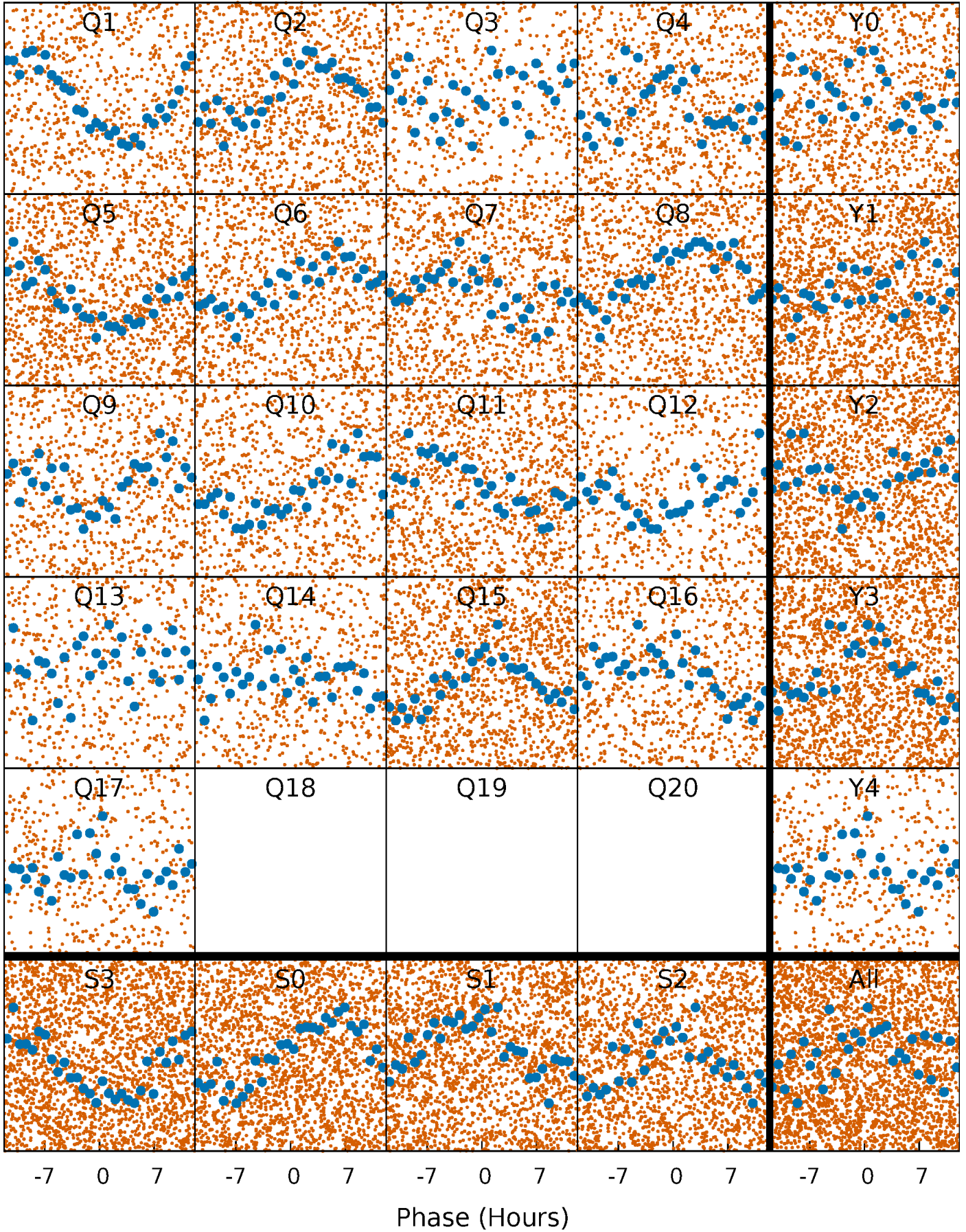


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



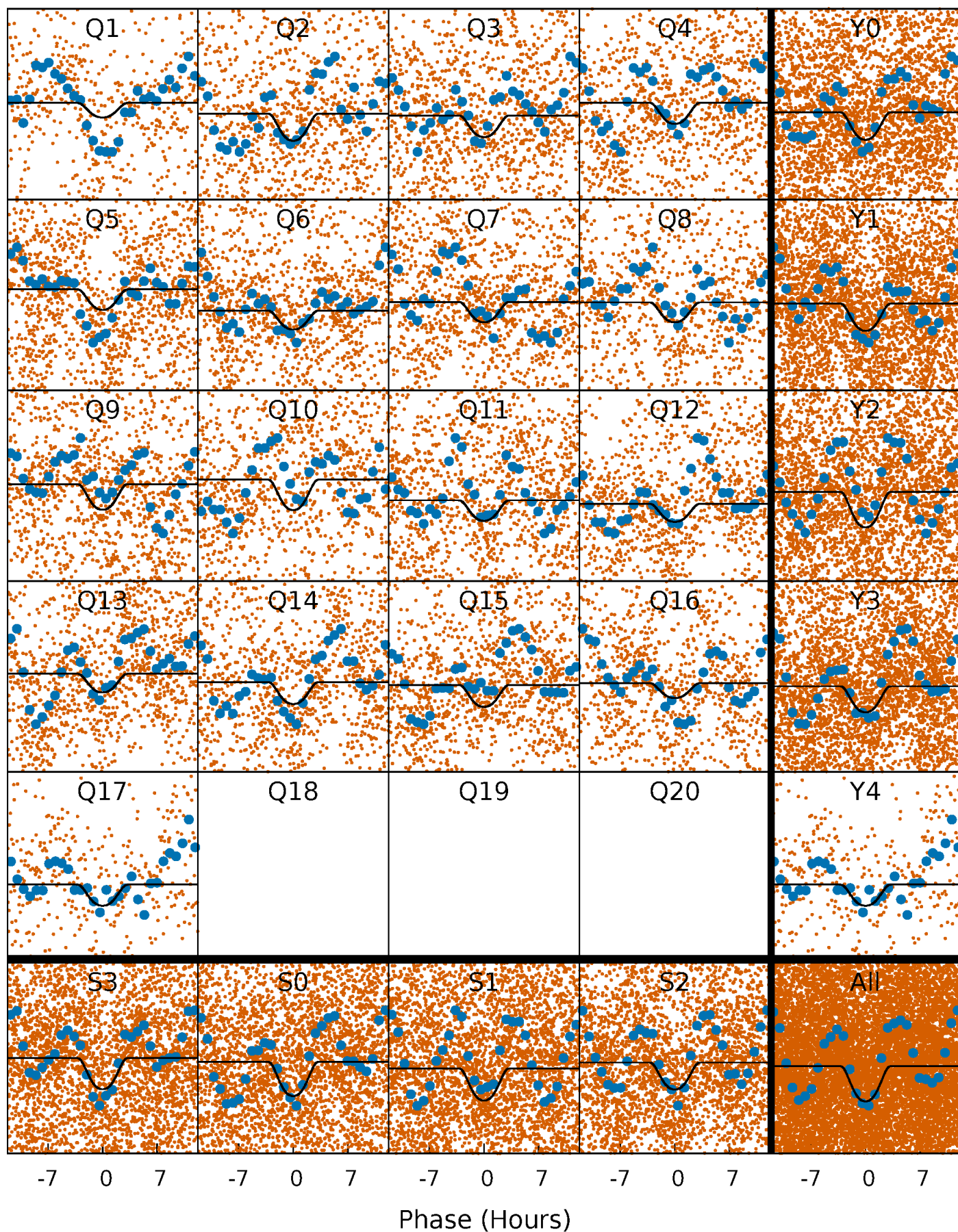
PDC Quarter-Phased Transit Curves

TCE 002995931-04 P= 1.010108 Days $T_0=132.259846$ (BKJD)



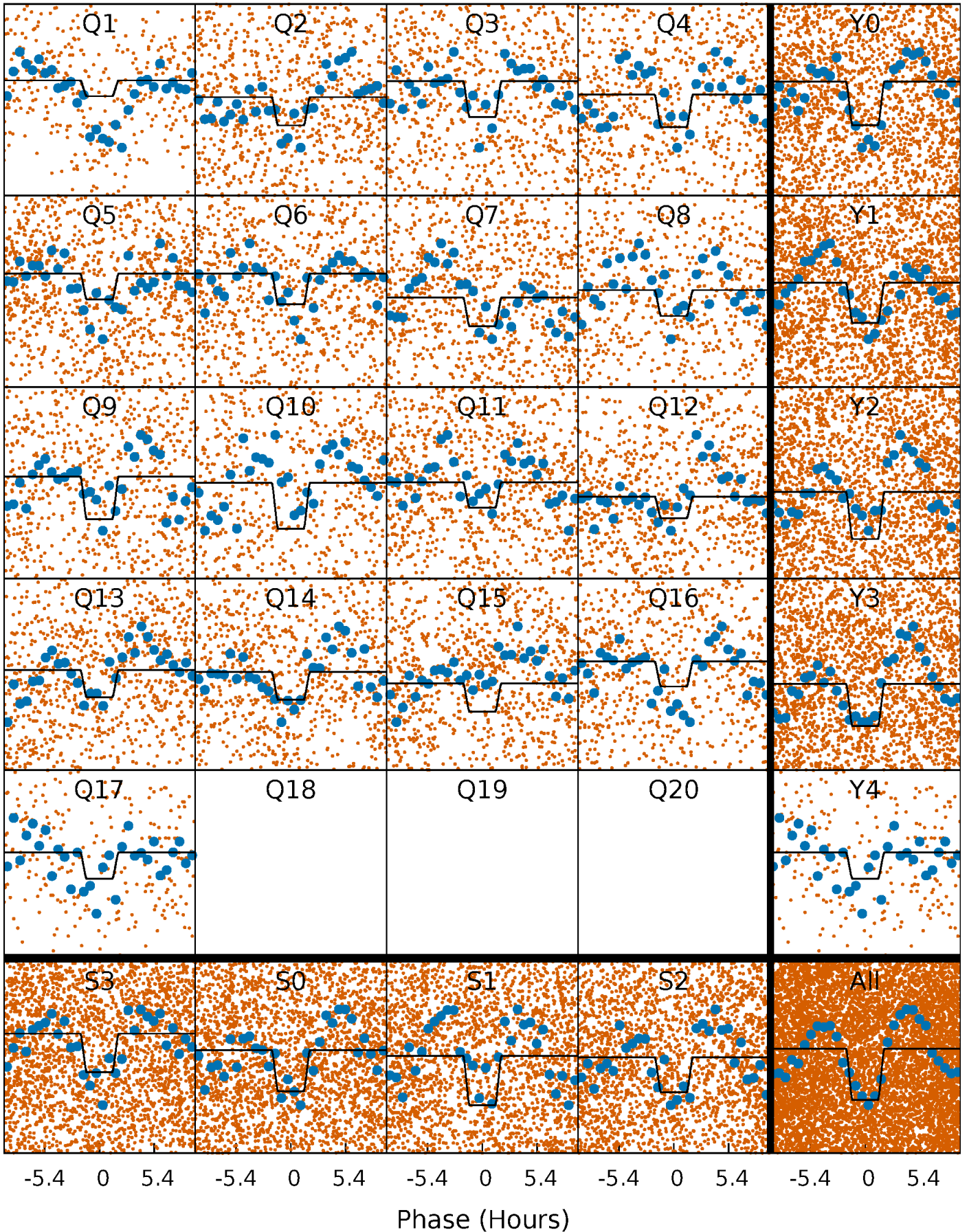
DV Quarter-Phased Transit Curves

TCE 002995931-04 P= 1.010108 Days $T_0=132.259846$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

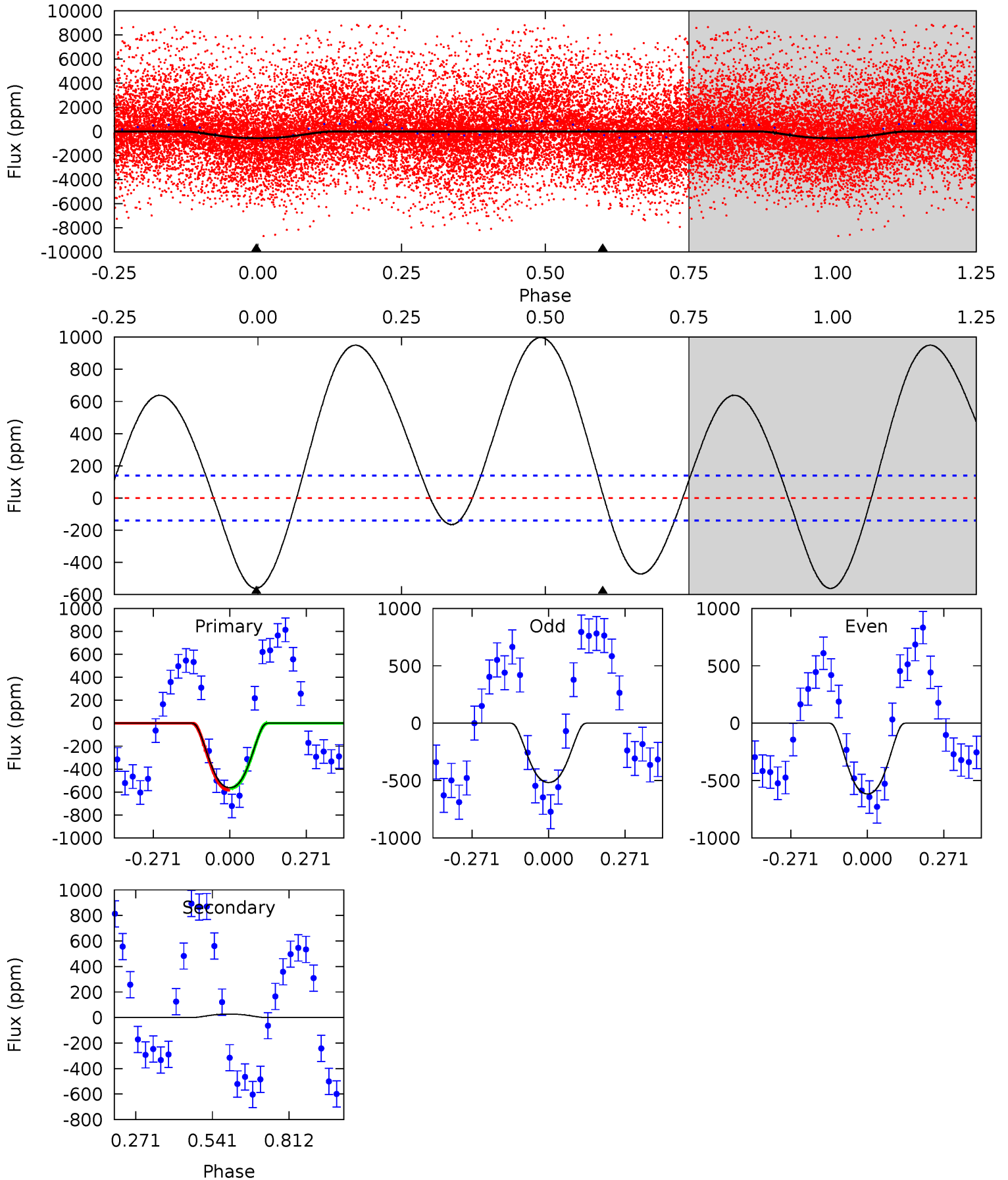
TCE 002995931-04 P= 1.010144 Days $T_0=132.233698$ (BKJD)



DV Model-Shift Uniqueness Test

002995931-04, P = 1.010108 Days, E = 131.249738 Days

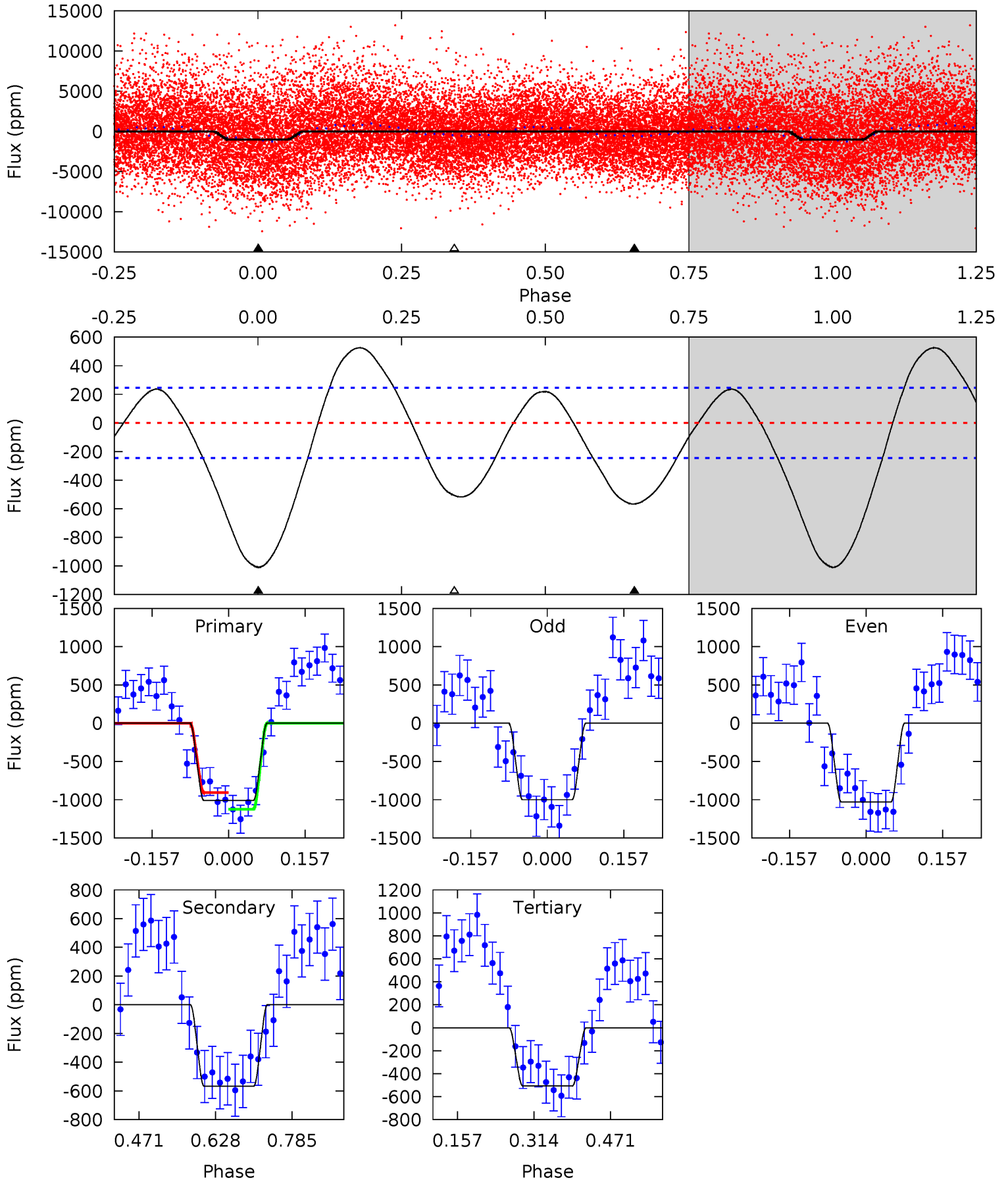
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	-0.83	0	0	4.35	1.10	6.27	17.5	17.5	-0.83	-0.83	1.55	-6.75	0.64	0.27



Alt Model-Shift Uniqueness Test

002995931-04, P = 1.010144 Days, E = 131.223554 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	10.3	9.22	0	4.47	1.42	6.18	9.13	18.3	1.11	10.3	0.29	0.89	0.34	1.96



Stellar Parameters For KIC 002995931

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6943^{+164}_{-268}	$4.338^{+0.052}_{-0.208}$	$-0.180^{+0.250}_{-0.350}$	$1.264^{+0.435}_{-0.145}$	$1.284^{+0.191}_{-0.174}$	$0.895^{+0.258}_{-0.477}$
	+2%/-4%	+1%/-5%	+139%/-194%	+34%/-11%	+15%/-14%	+29%/-53%
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 002995931-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	27 ± 32	$4.20^{+0.78}_{-0.53}$	3372^{+273}_{-175}	-3806^{+588}_{-367}	$-0.383^{+0.428}_{-0.479}$
Alt.	-568 ± 55	$4.75^{+0.88}_{-0.57}$	3363^{+271}_{-179}	5803^{+326}_{-339}	$6.188^{+1.730}_{-1.614}$

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 $A_{obs} \gg 1.0$

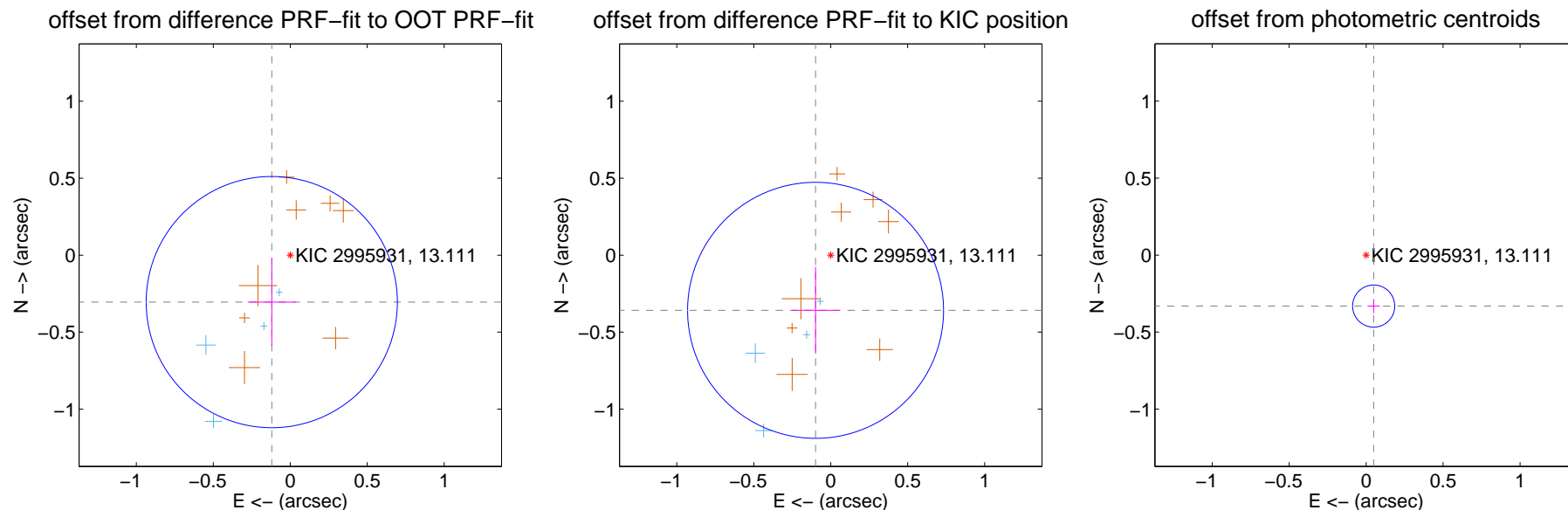
DV Centroid Data

Supplemental centroid analysis for 002995931-04. Kepler magnitude: 13.11. Transit SNR 12.38

There are 5 quarters with good PRF difference image offsets

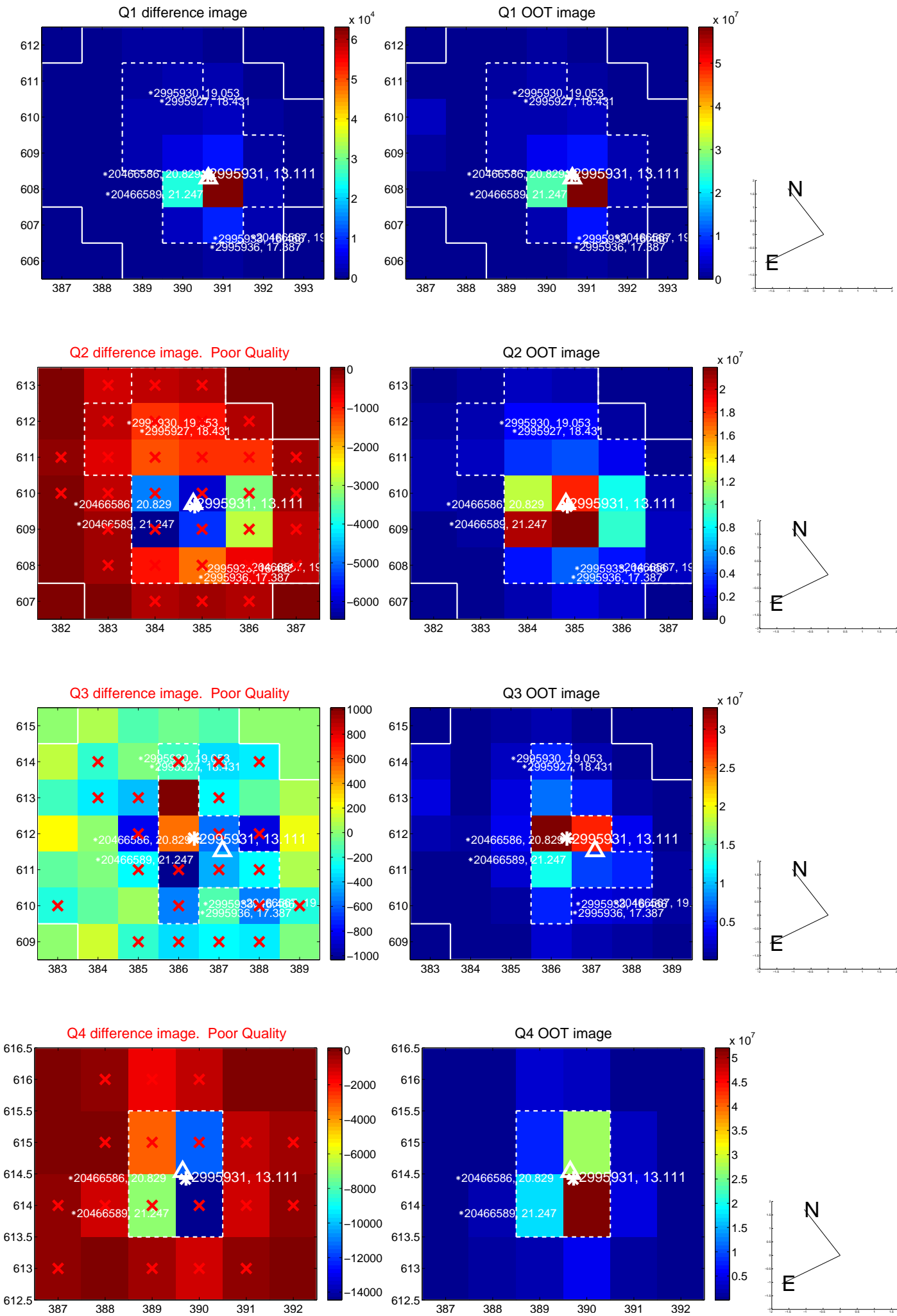
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.328 ± 0.272	1.20	0.120 ± 0.156	-0.305 ± 0.286
PRF-fit source offset from KIC position	0.372 ± 0.277	1.34	0.098 ± 0.156	-0.358 ± 0.282
photometric centroid source offset	0.33 ± 0.05	7.34	-0.05 ± 0.04	-0.33 ± 0.05

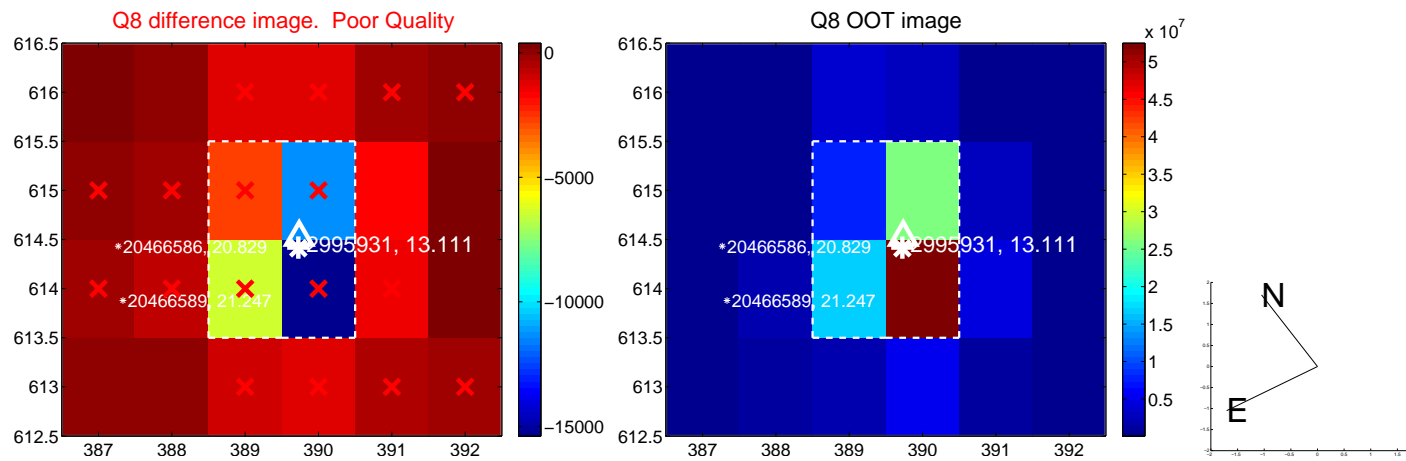
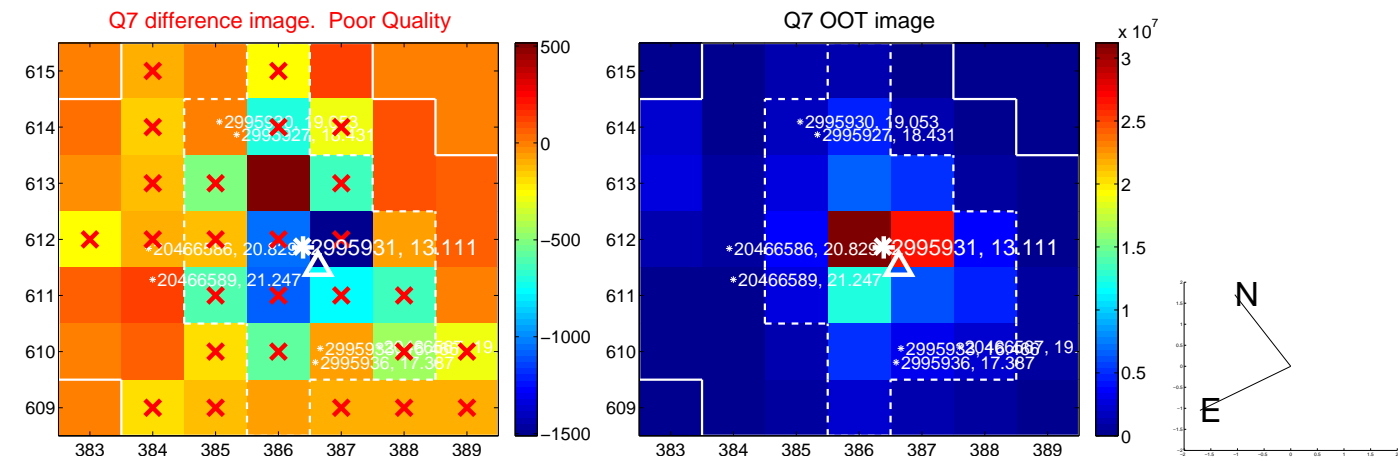
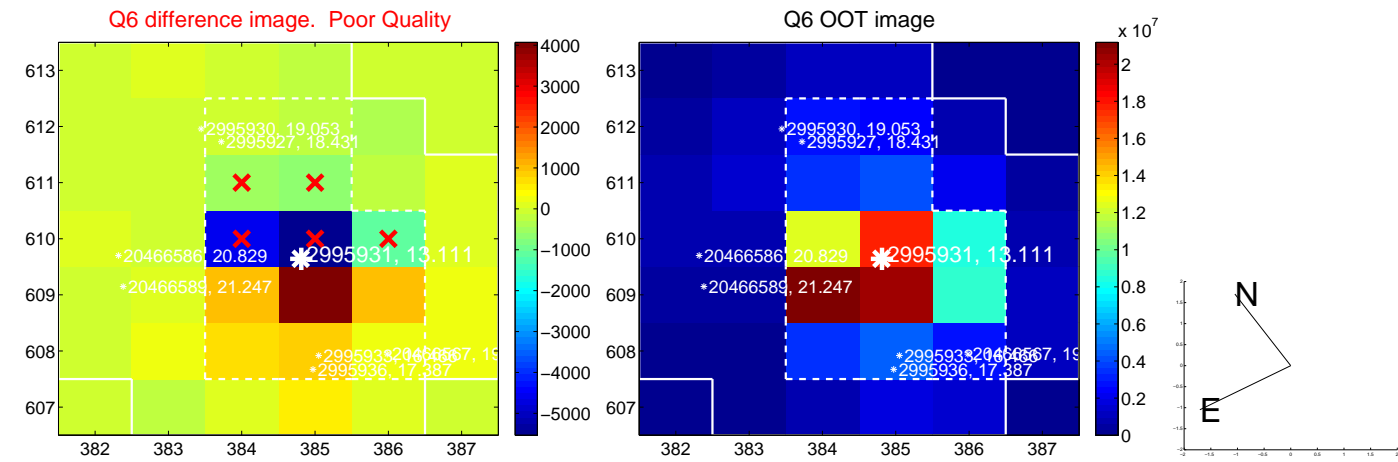
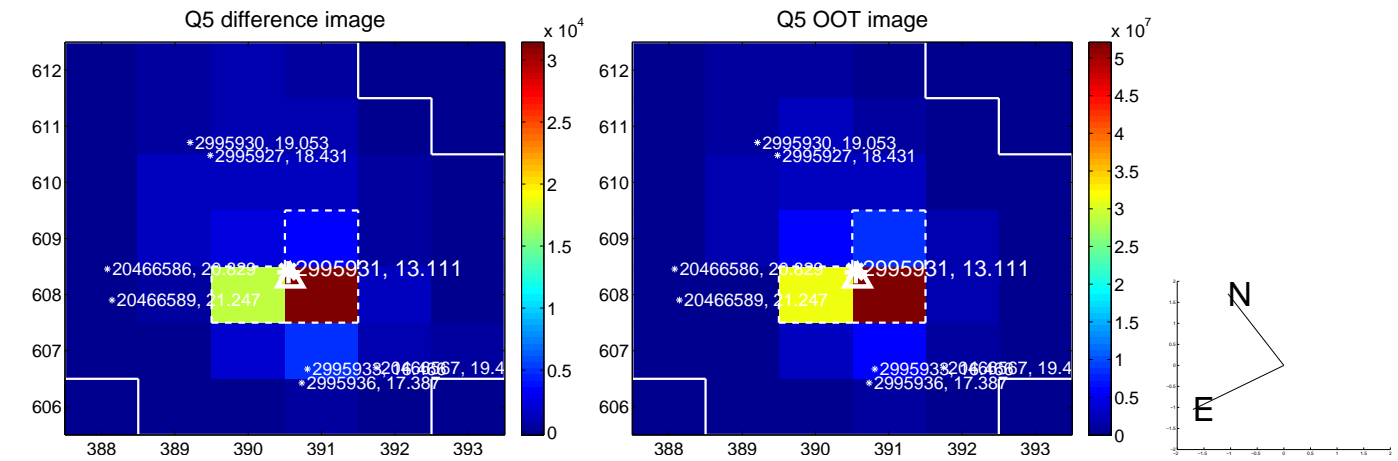


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

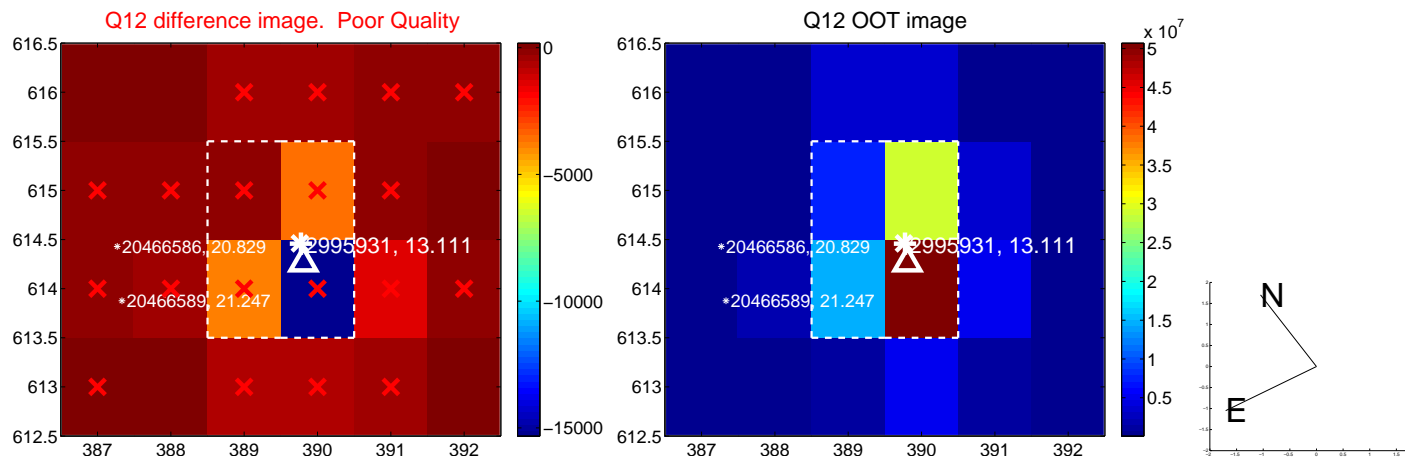
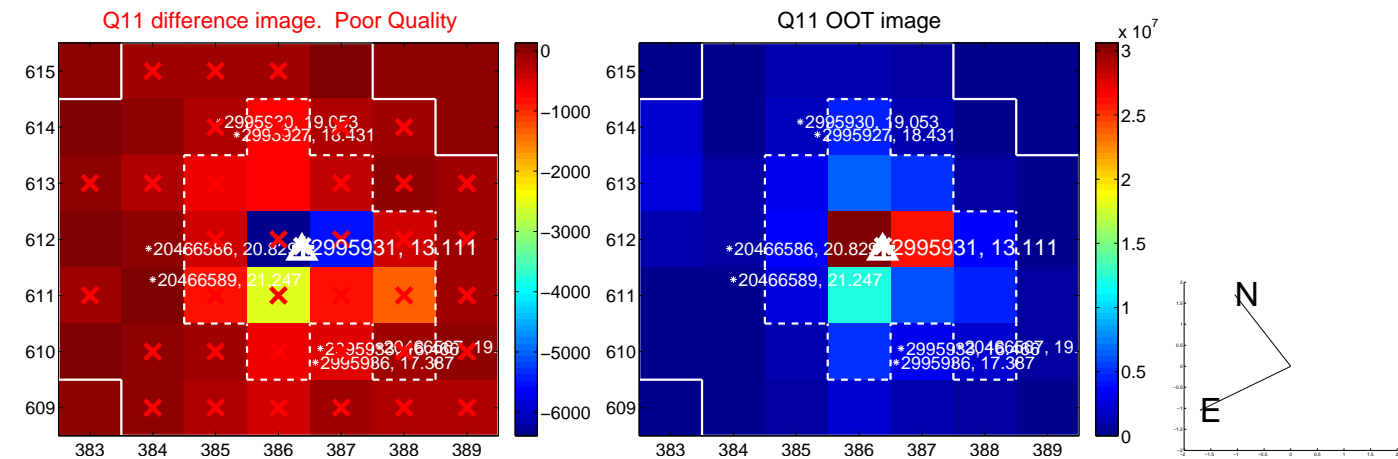
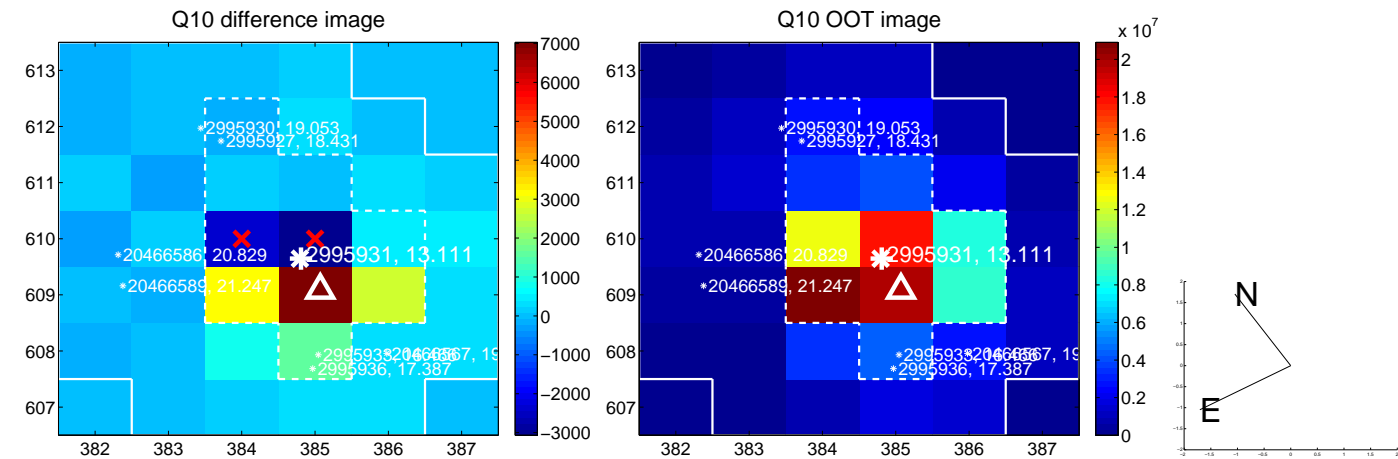
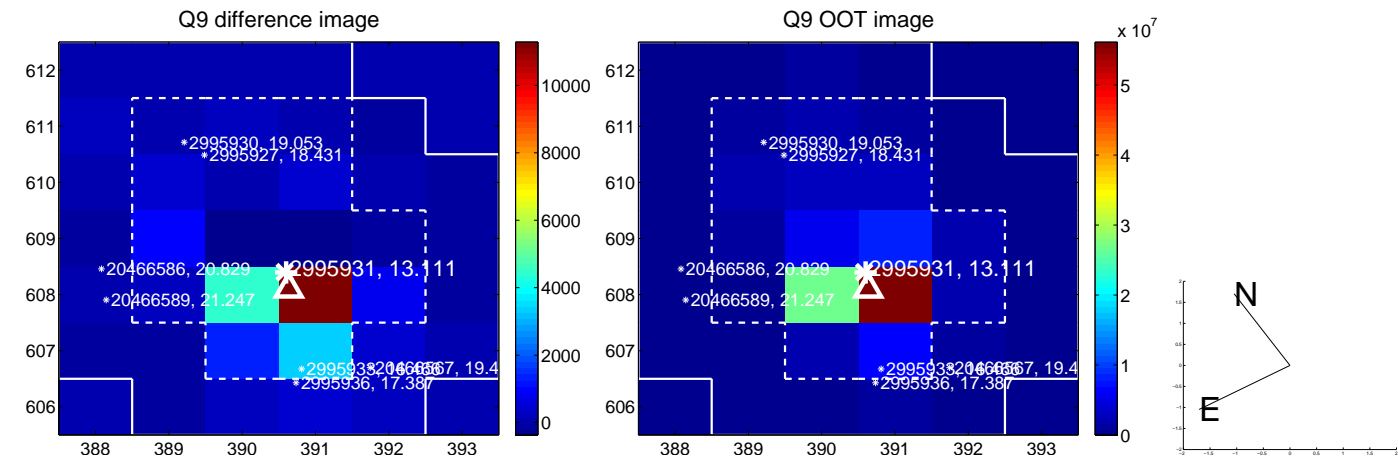
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



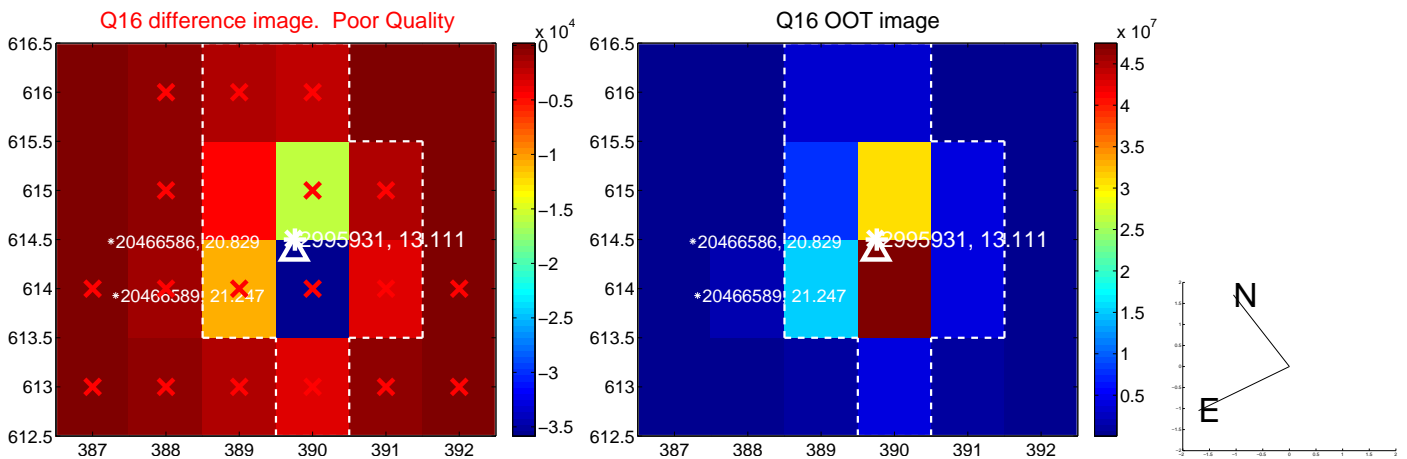
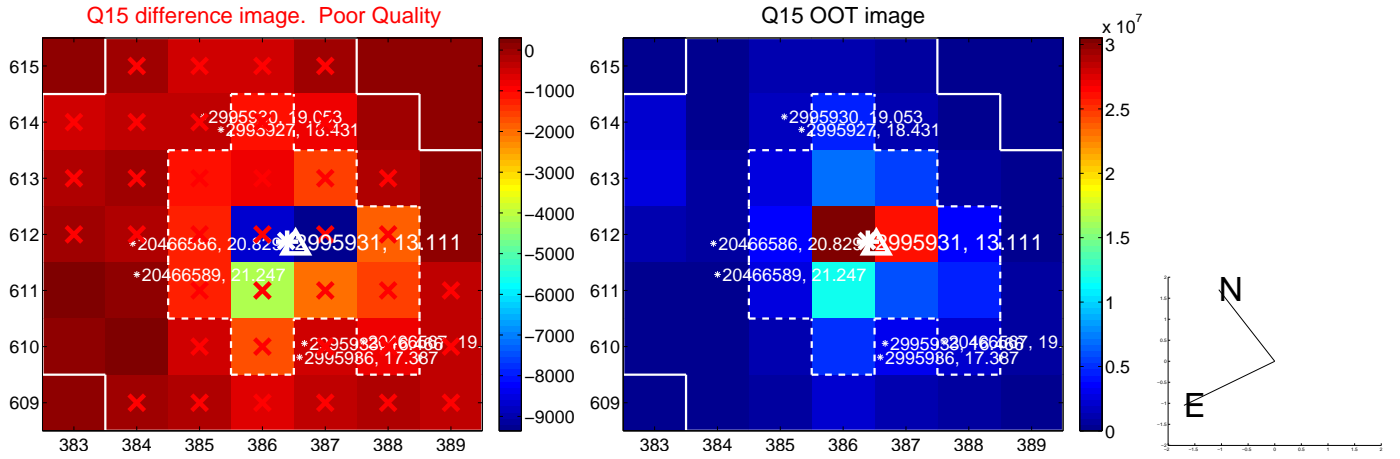
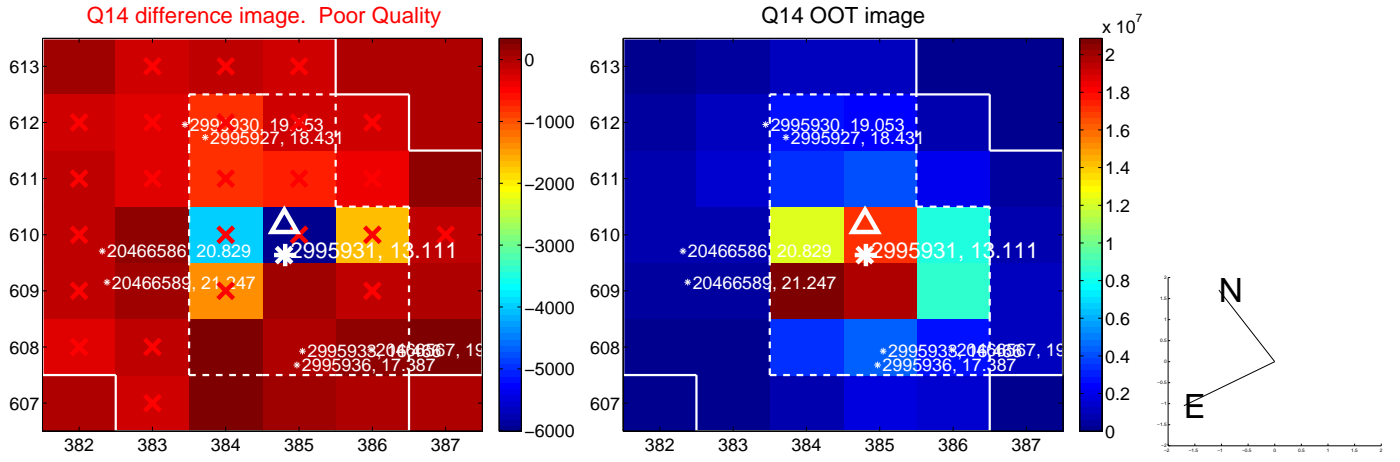
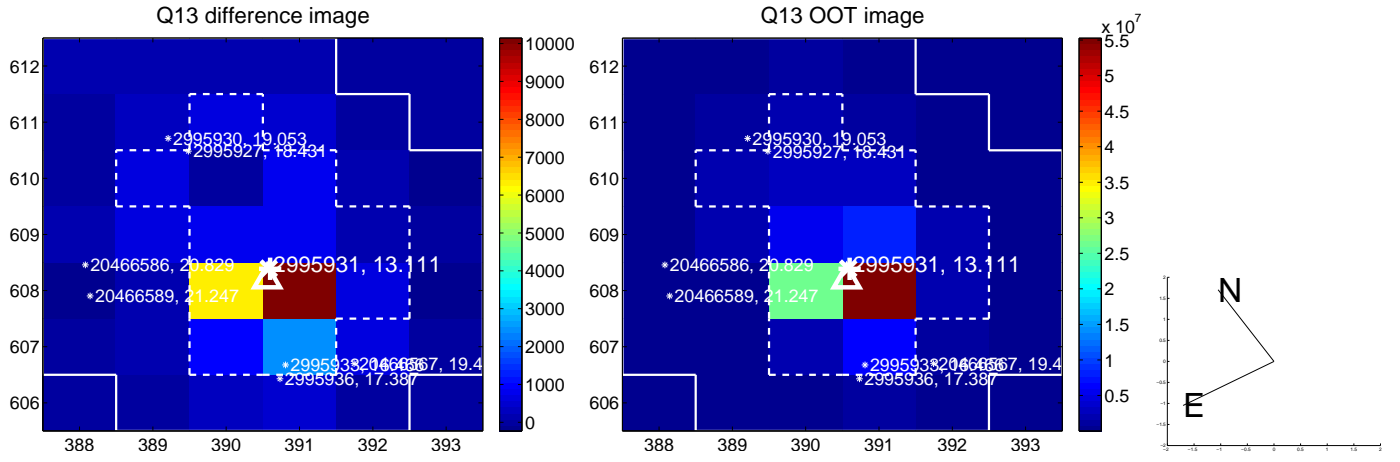
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



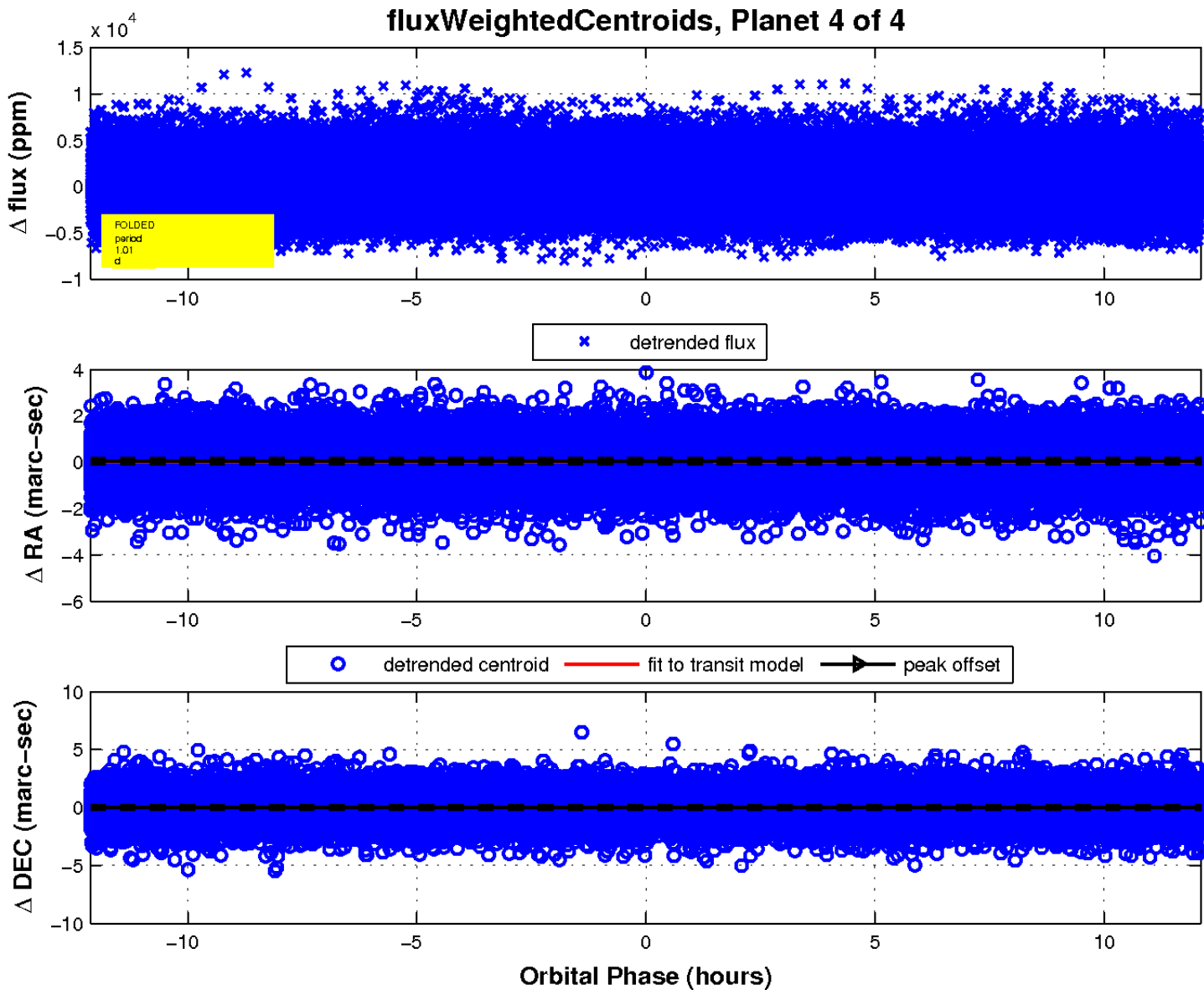
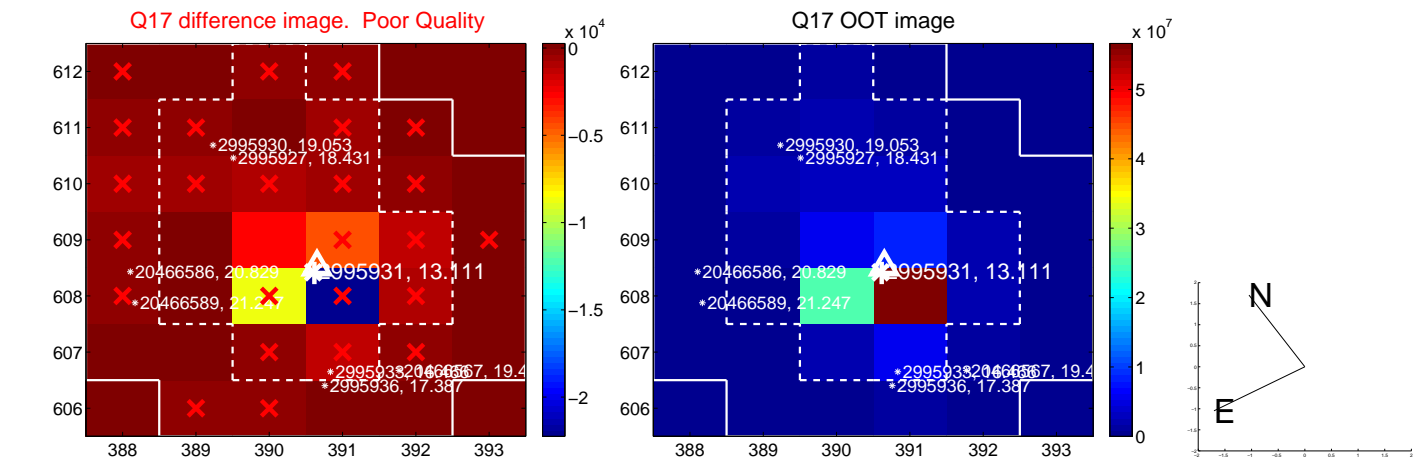
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UKIRT Image

