

KIC 008329629

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})
008329629-01	OBS	No	0.568710	131.685333	96.0	2.477	12.7	13.8	2.15	8334	2.45	74669.51
008329629-02	OBS	No	0.568710	131.870940	103.6	1.671	12.5	14.1	2.15	8334	2.53	74669.52
008329629-03	OBS	No	87.025940	145.752064	814.4	14.122	9.9	10.2	2.15	8334	6.58	91.23
008329629-04	OBS	No	48.984275	168.138150	156.7	5.000	7.6	-1.0	2.15	8334	2.72	196.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008329629-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008329629-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
008329629-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008329629-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

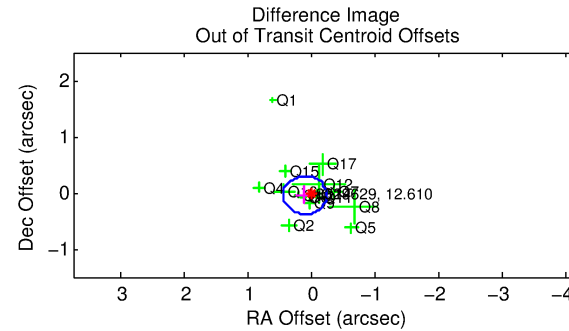
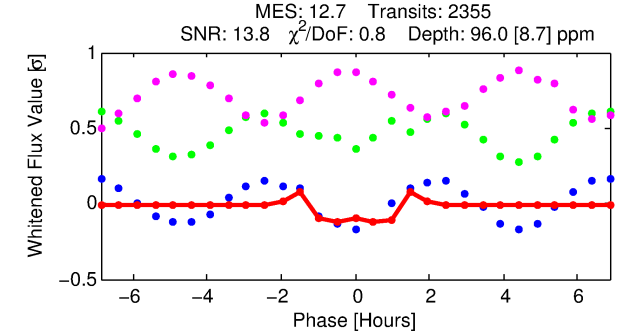
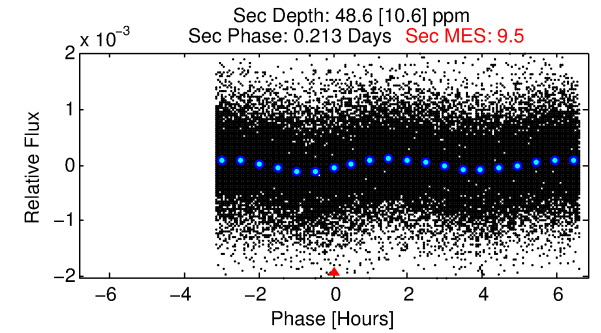
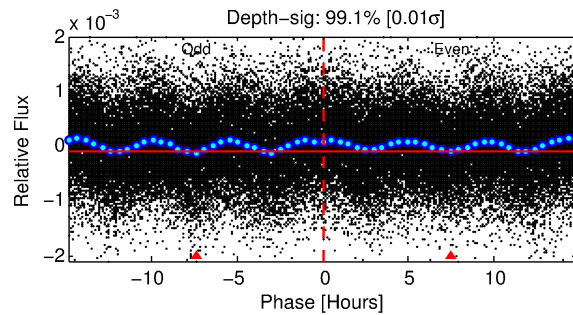
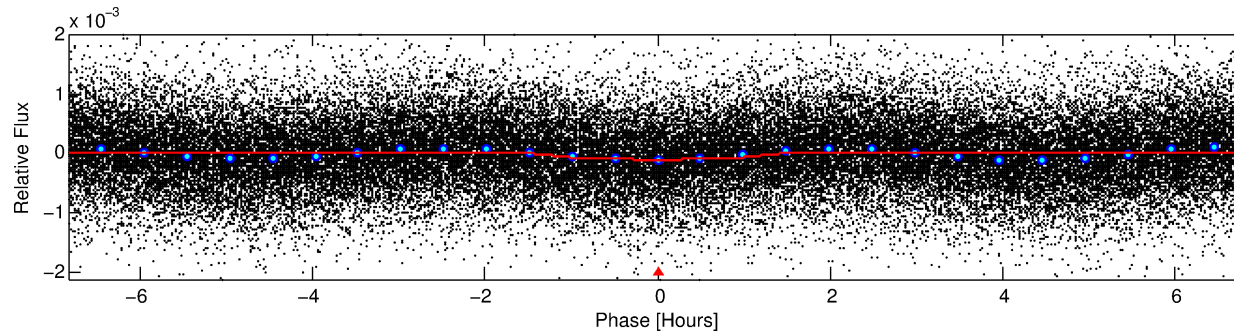
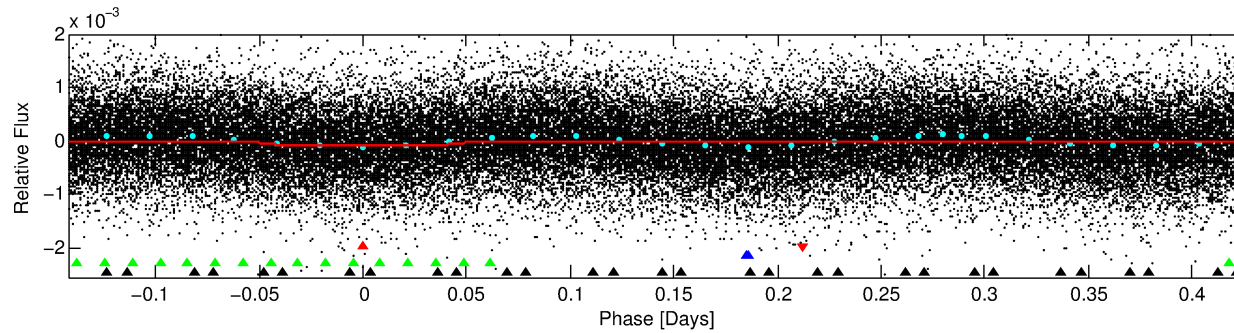
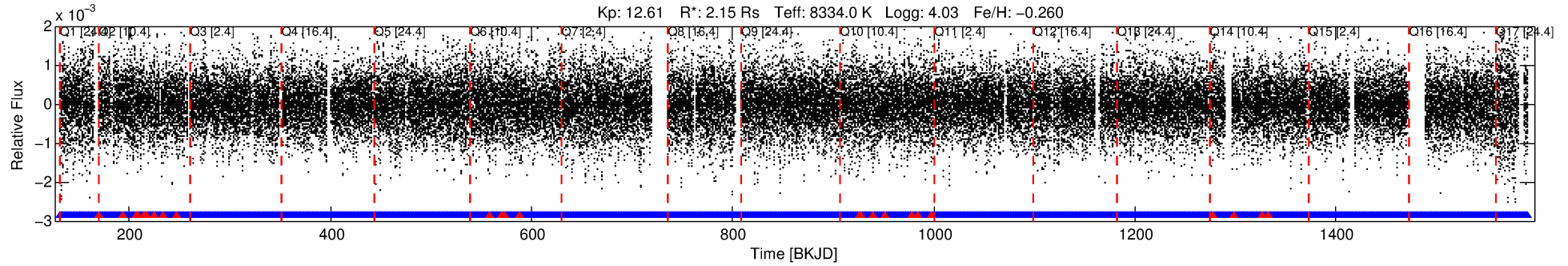
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008329629-01

No Significant Match Found

DV One-Page Summary

KIC: 8329629 Candidate: 1 of 4 Period: 0.569 d



DV Fit Results:

Period = 0.56871 [0.00001] d
Epoch = 131.6853 [0.0011] BKJD
Rp/R* = 0.0104 [0.0018]
a/R* = 1.24 [0.45]
b = 0.90 [0.23]
Seff = 74669.51 [29688.98]
Teq = 4215 [419] K
Rp = 2.45 [0.81] Re
a = 0.0163 [0.0040] AU
Ag = 1.19 [0.65] [0.30σ]
Teffp = 6810 [741] K [3.05σ]

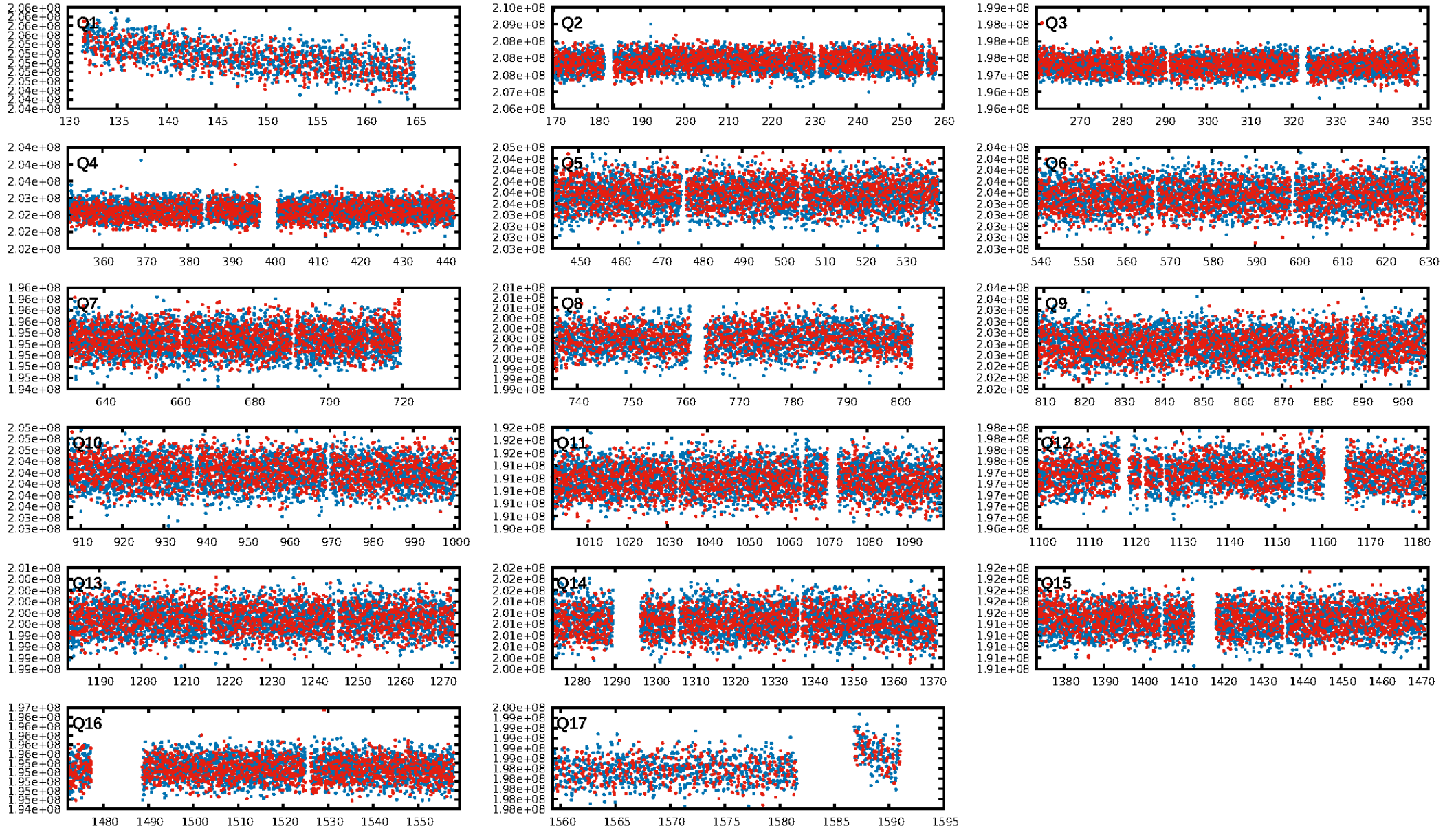
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [208.24σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [2225/2249]
GhostDiagnostic-chr: 0.8075
Centroid-sig: 0.0%
Centroid-so: 0.909 arcsec [2.90σ]
OotOffset-rm: 0.114 arcsec [1.00σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-rm: 0.268 arcsec [1.89σ]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.60 [9/15]
DiffImageOverlap-fno: 0.00 [0/17]

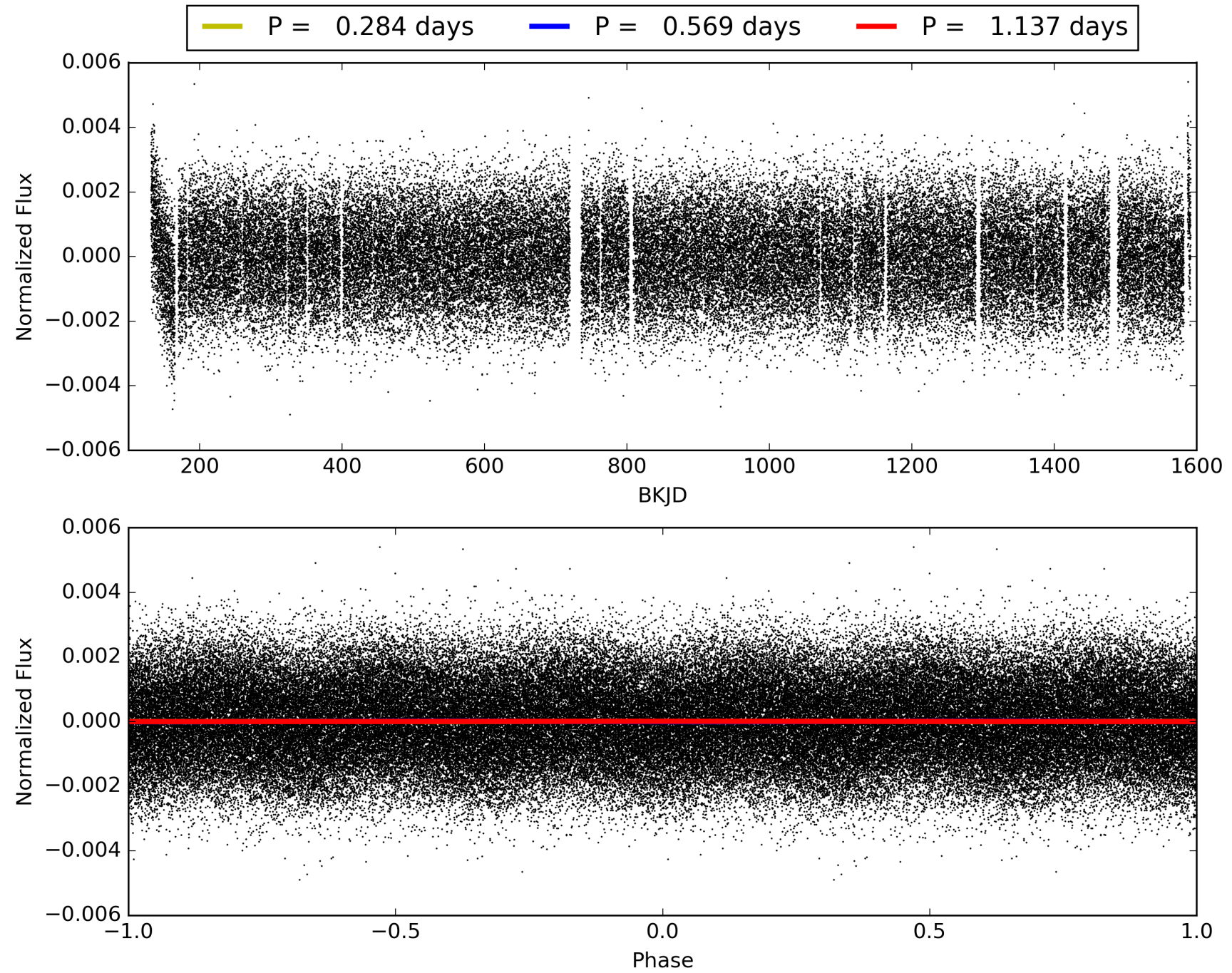
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:05:07 Z

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

TCE 008329629-01, PDC Light Curves

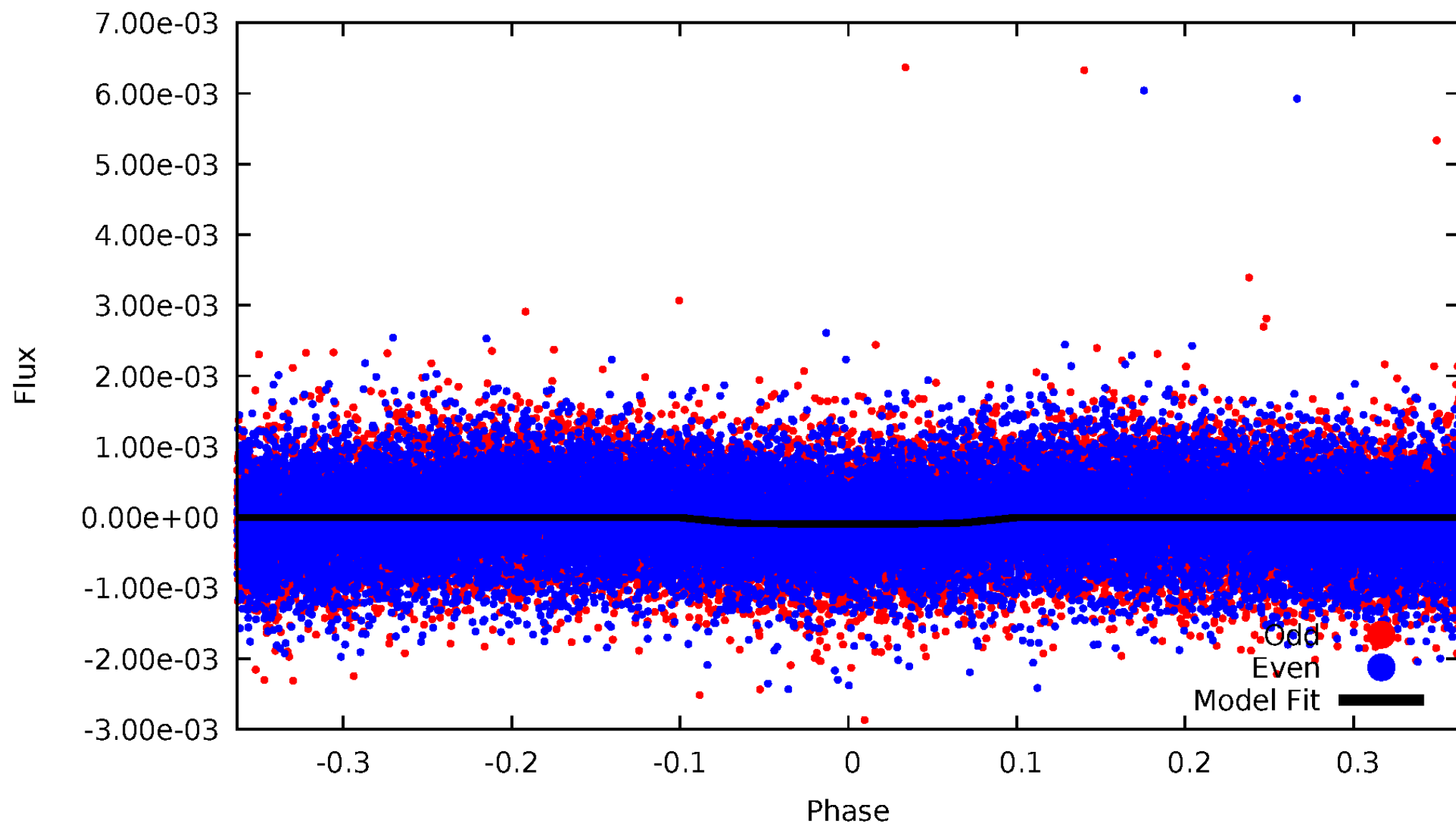


TCE 008329629-01



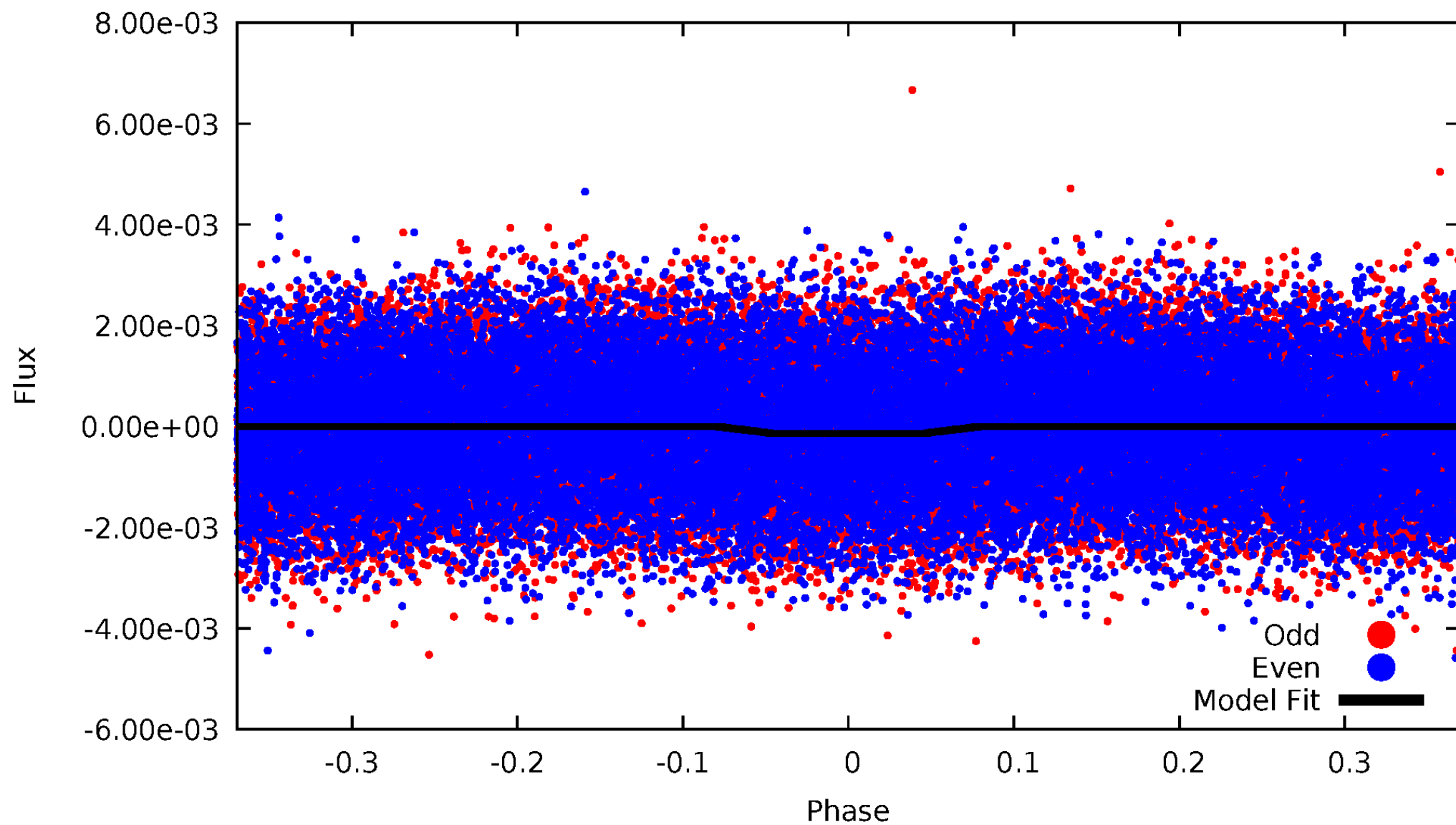
DV Odd/Even

TCE 008329629-01

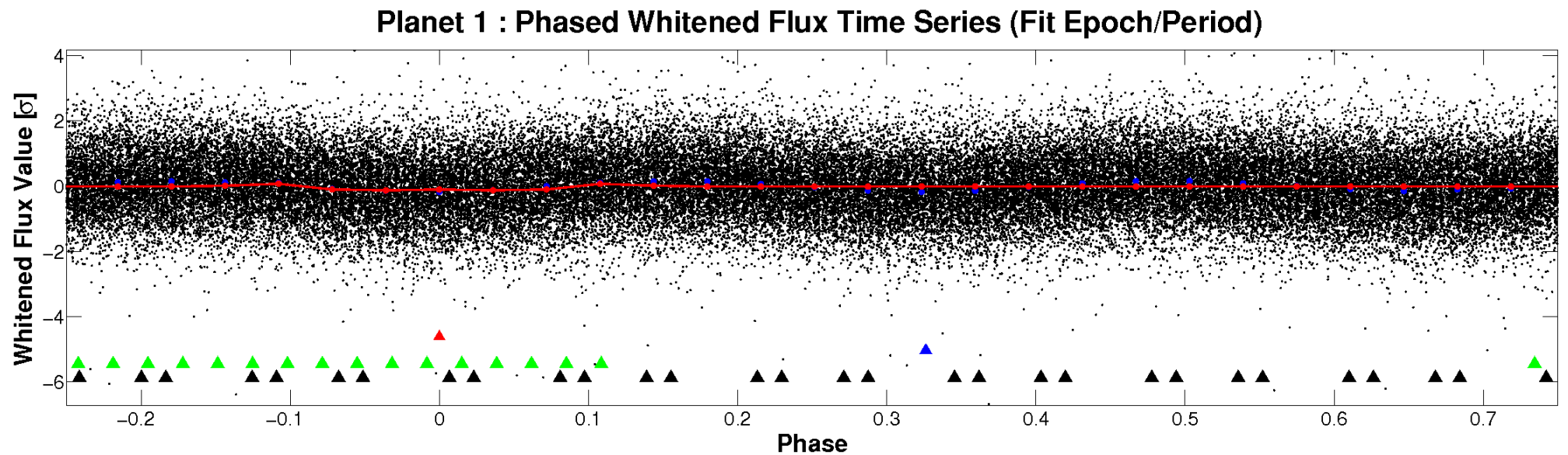
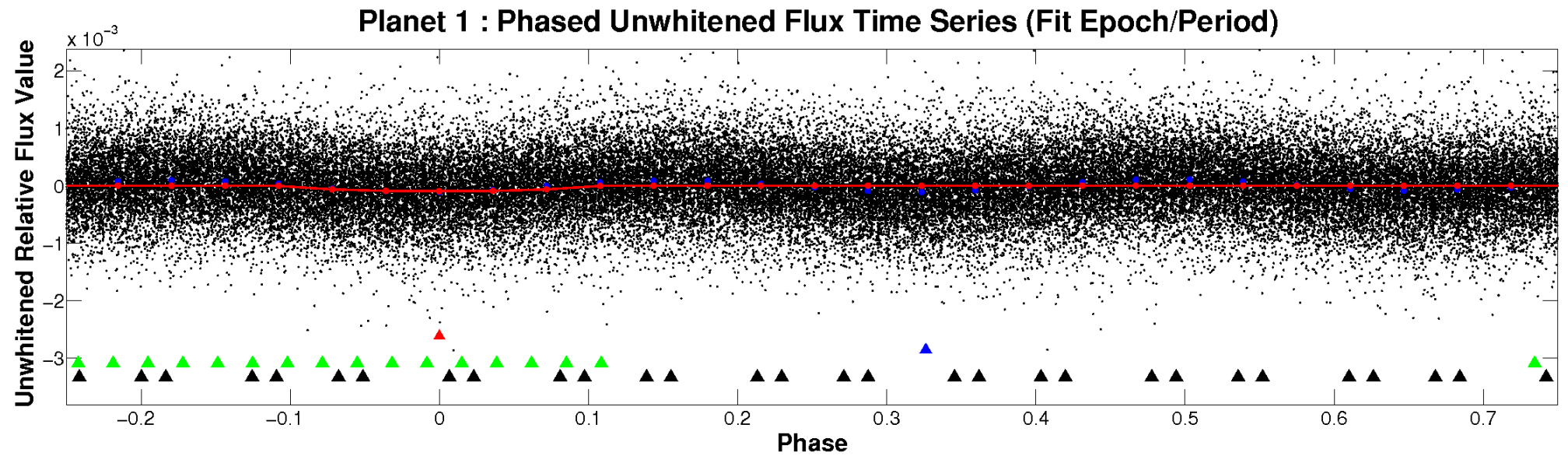


ALT Odd/Even

TCE 008329629-01

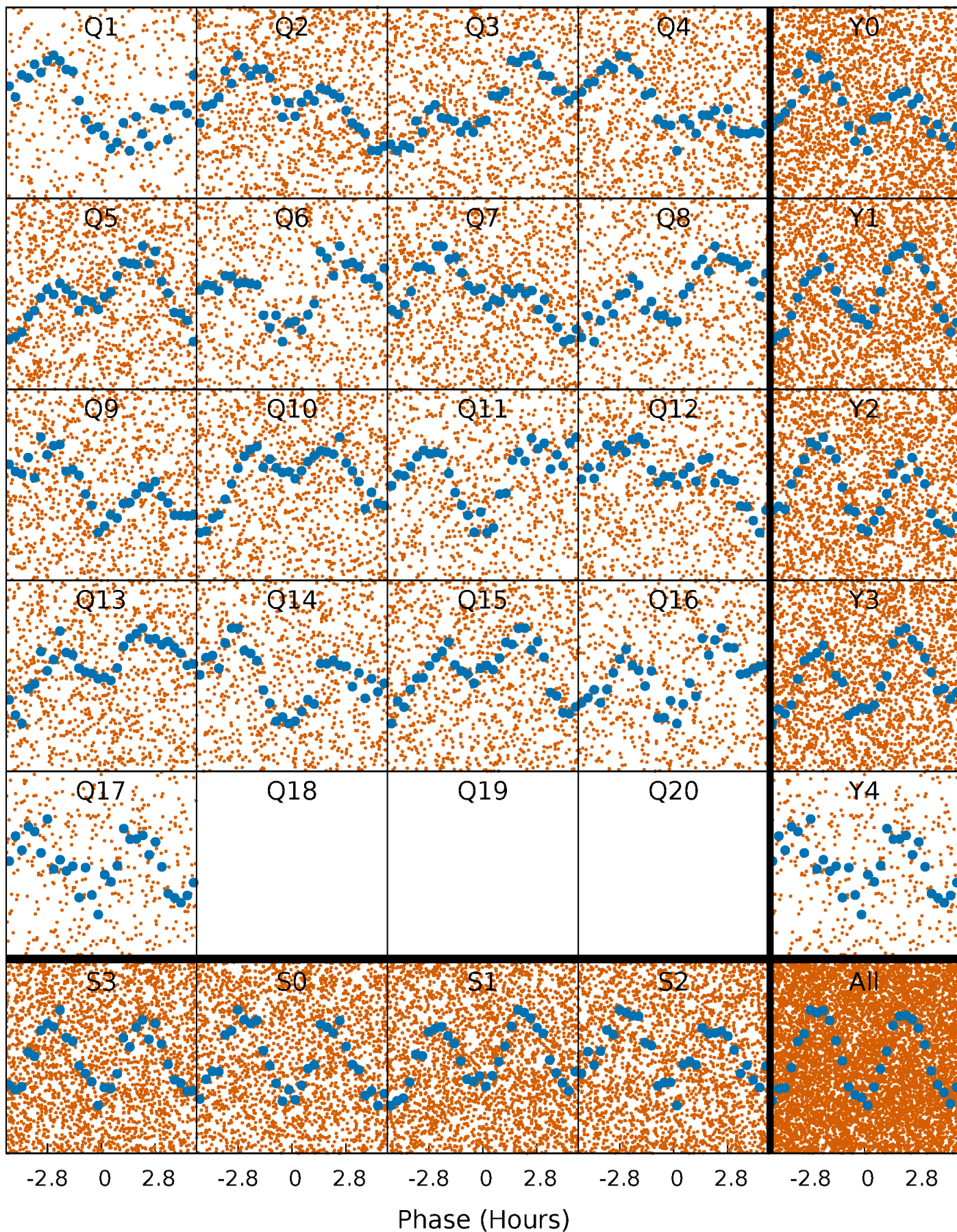


Non-Whitened Vs. Whitened Light Curve



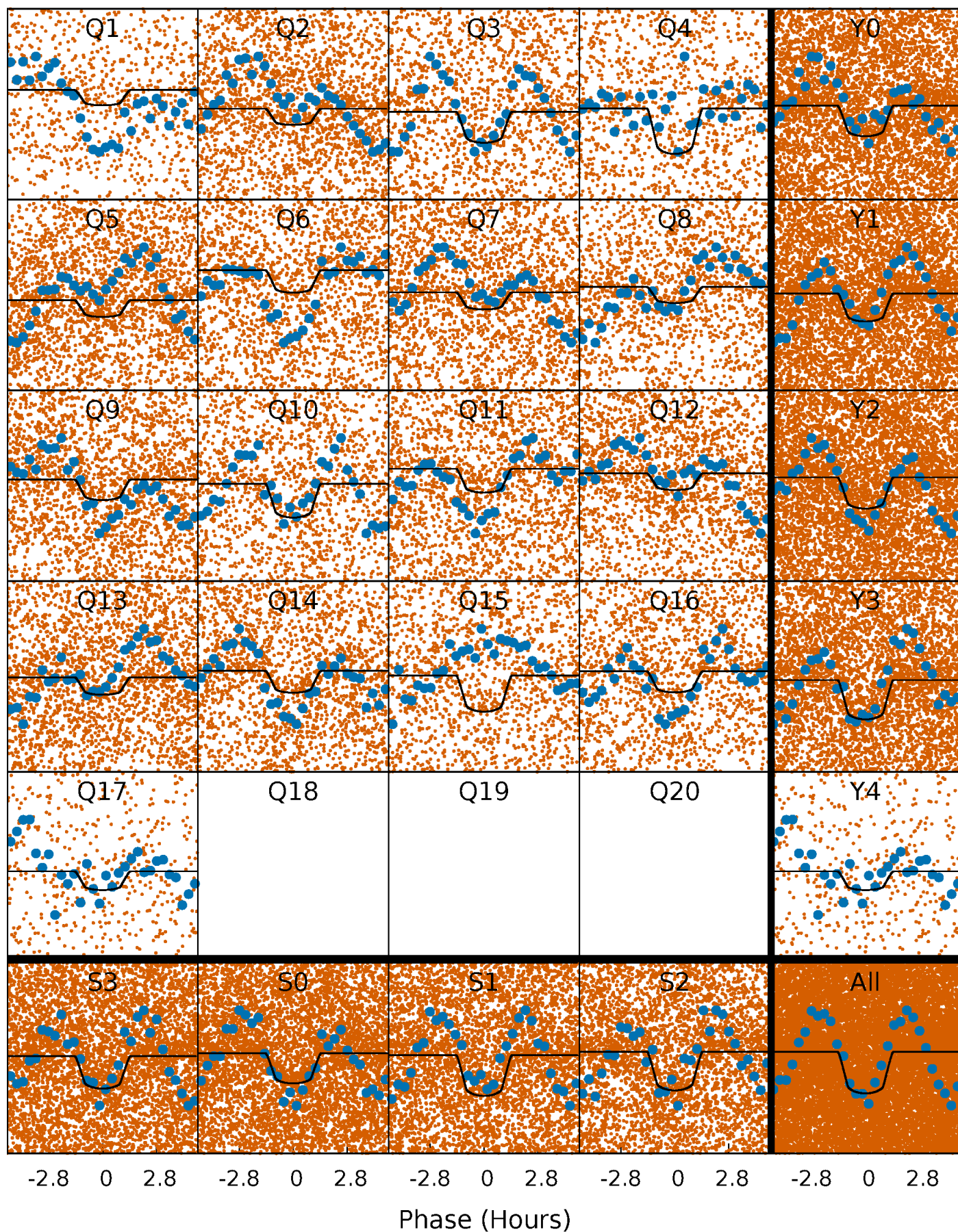
PDC Quarter-Phased Transit Curves

TCE 008329629-01 P= 0.568710 Days $T_0=131.685333$ (BKJD)



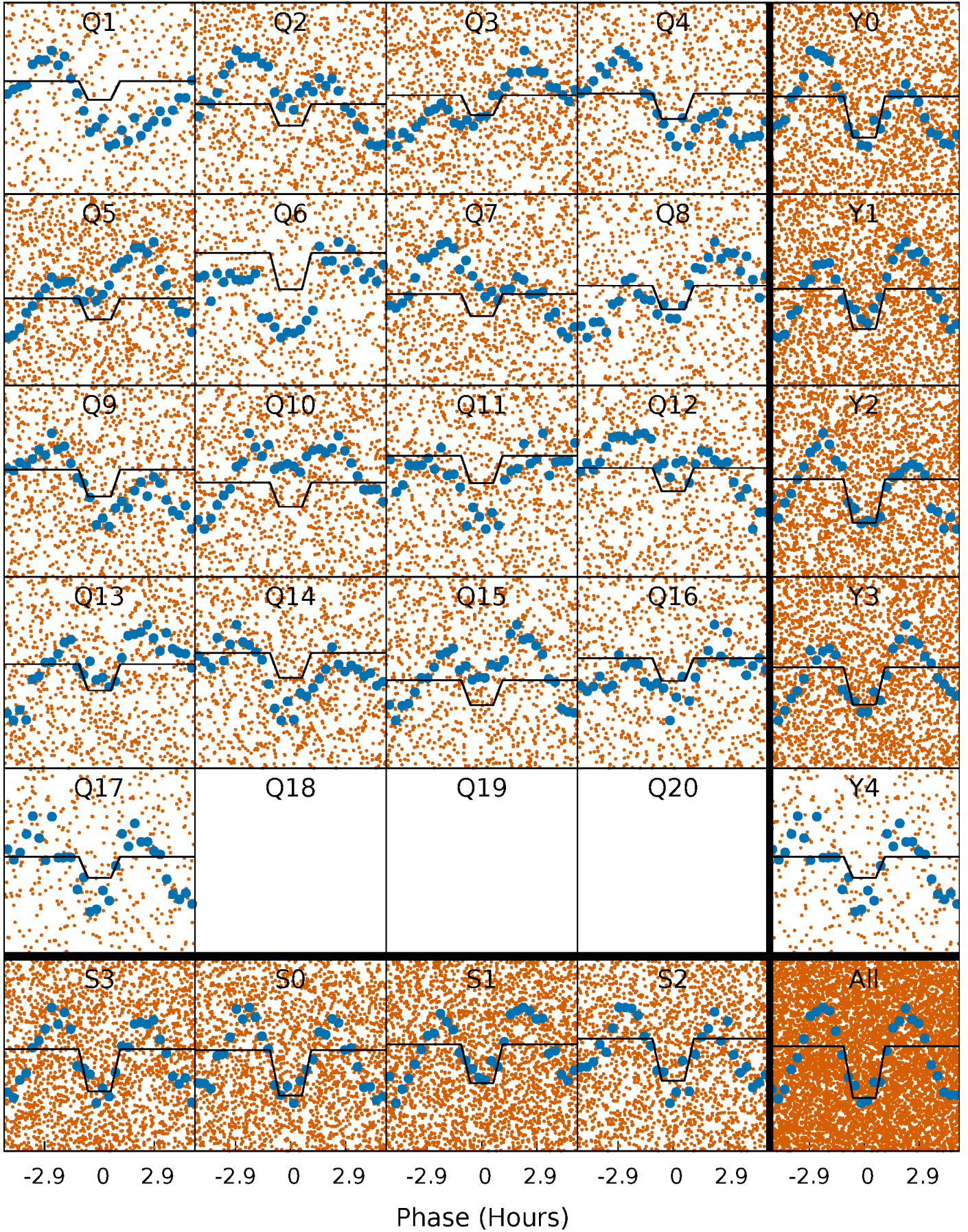
DV Quarter-Phased Transit Curves

TCE 008329629-01 P= 0.568710 Days $T_0=131.685333$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

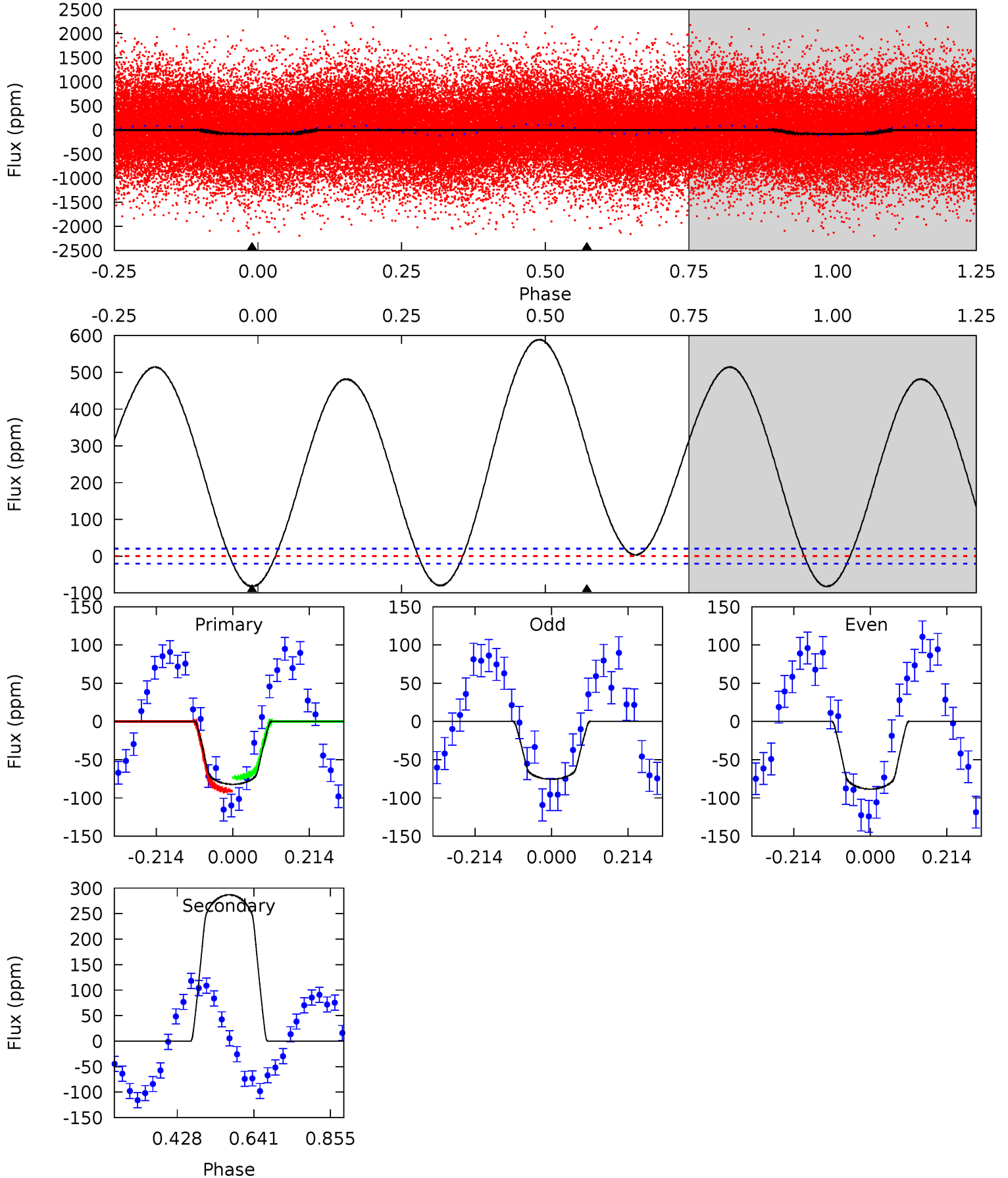
TCE 008329629-01 P= 0.568707 Days $T_0=131.684041$ (BKJD)



DV Model-Shift Uniqueness Test

008329629-01, P = 0.568710 Days, E = 131.116623 Days

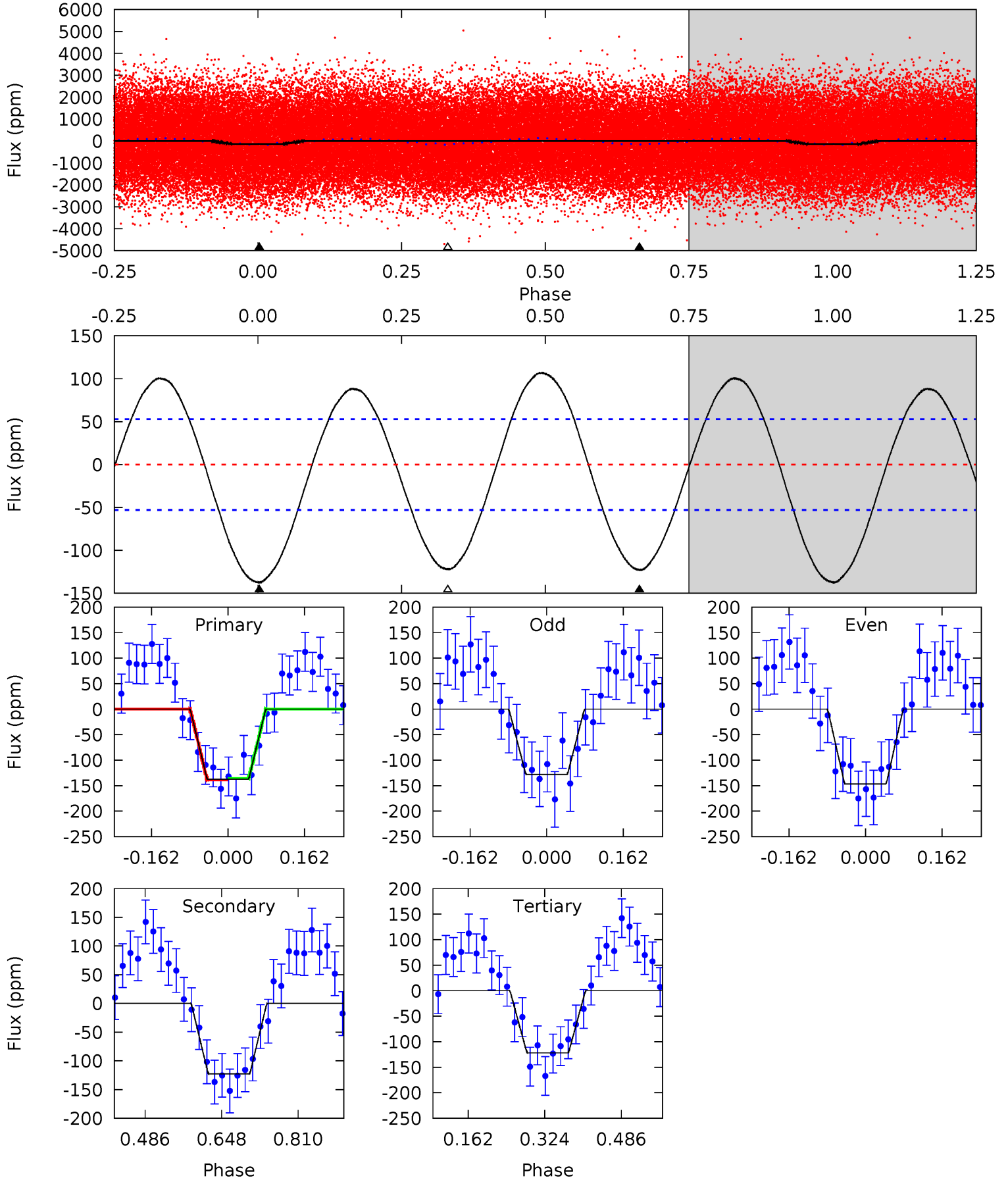
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	-61.9	0	0	4.40	1.24	30.5	17.7	17.7	-61.9	-61.9	1.40	1.05	0.88	1.91



Alt Model-Shift Uniqueness Test

008329629-01, P = 0.568707 Days, E = 131.115334 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	10.3	10.3	0	4.46	1.40	6.75	1.30	11.6	0.08	10.3	0.78	0.97	0.44	0.11



Stellar Parameters For KIC 008329629

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot cm^{-3})$
	8334^{+236}_{-324}	$4.029^{+0.204}_{-0.119}$	$-0.260^{+0.150}_{-0.300}$	$2.148^{+0.407}_{-0.610}$	$1.799^{+0.103}_{-0.329}$	$0.256^{+0.328}_{-0.092}$
	+3%/-4%	+5%/-3%	+58%/-115%	+19%/-28%	+6%/-18%	+128%/-36%
Source	KIC0	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 008329629-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	287 ± 5	$2.34^{+0.54}_{-0.50}$	5828^{+372}_{-434}	-12061^{+1375}_{-2196}	$-7.555^{+2.569}_{-4.528}$
Alt.	-123 ± 12	$2.71^{+0.57}_{-0.57}$	5793^{+409}_{-381}	7593^{+1040}_{-781}	$2.432^{+1.368}_{-0.783}$

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 $A_{obs} \gg 1.0$

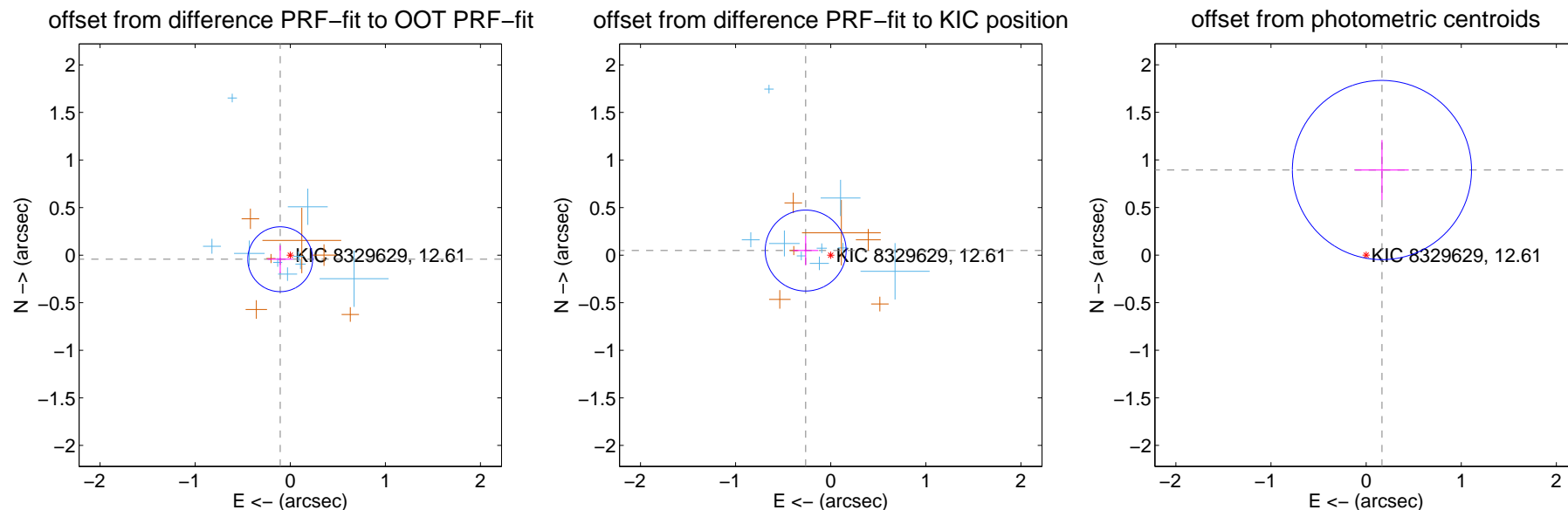
DV Centroid Data

Supplemental centroid analysis for 008329629-01. Kepler magnitude: 12.61. Transit SNR 13.76

There are 9 quarters with good PRF difference image offsets

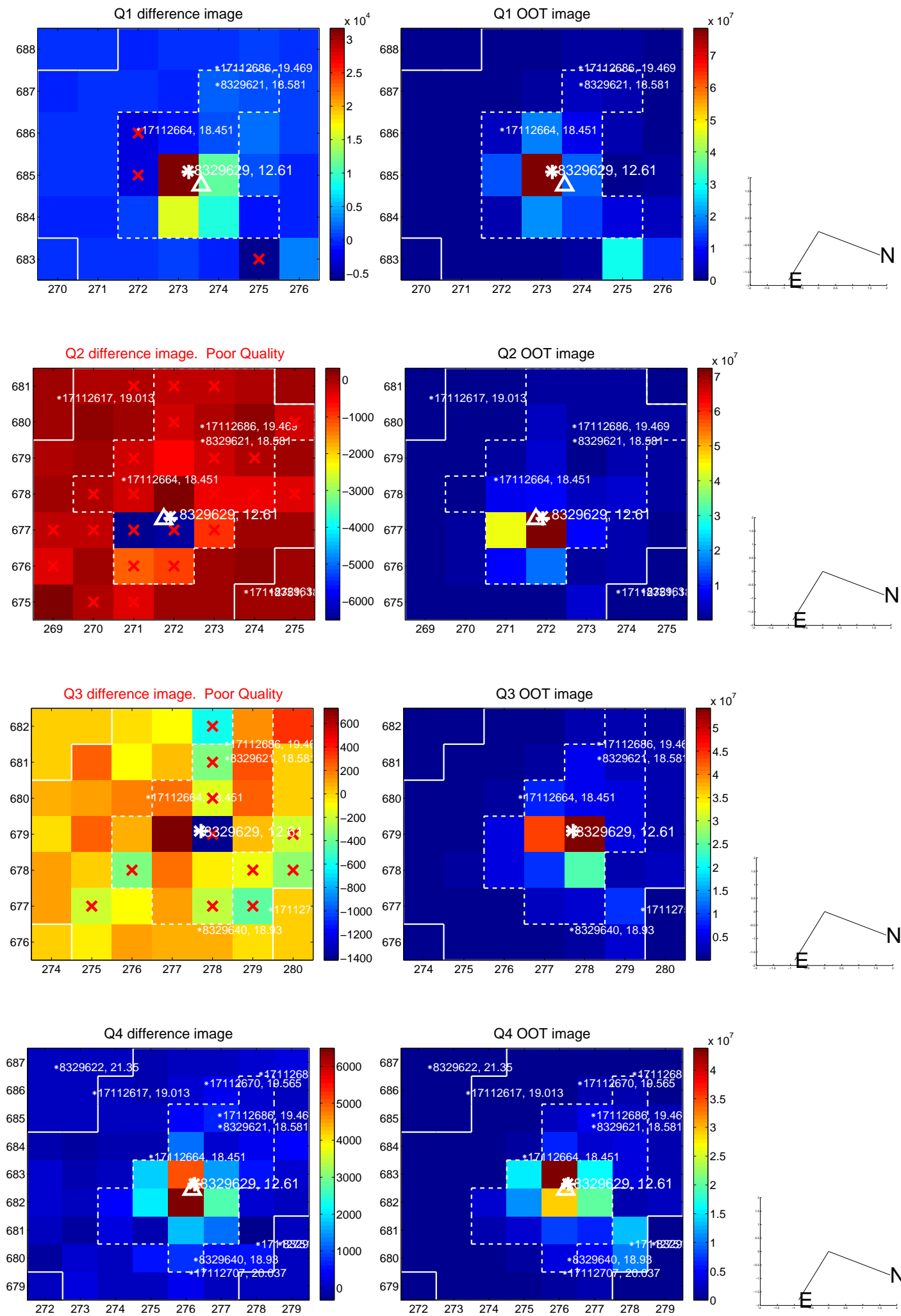
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.114 ± 0.114	1.00	0.106 ± 0.133	-0.043 ± 0.146
PRF-fit source offset from KIC position	0.268 ± 0.142	1.89	0.263 ± 0.133	0.048 ± 0.154
photometric centroid source offset	0.91 ± 0.31	2.90	-0.17 ± 0.28	0.89 ± 0.31

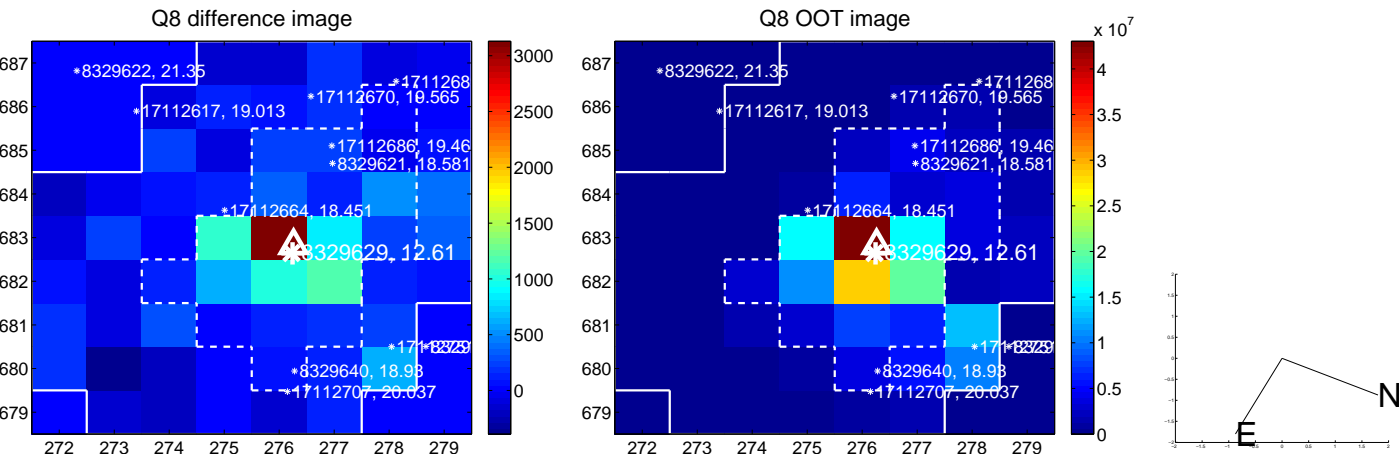
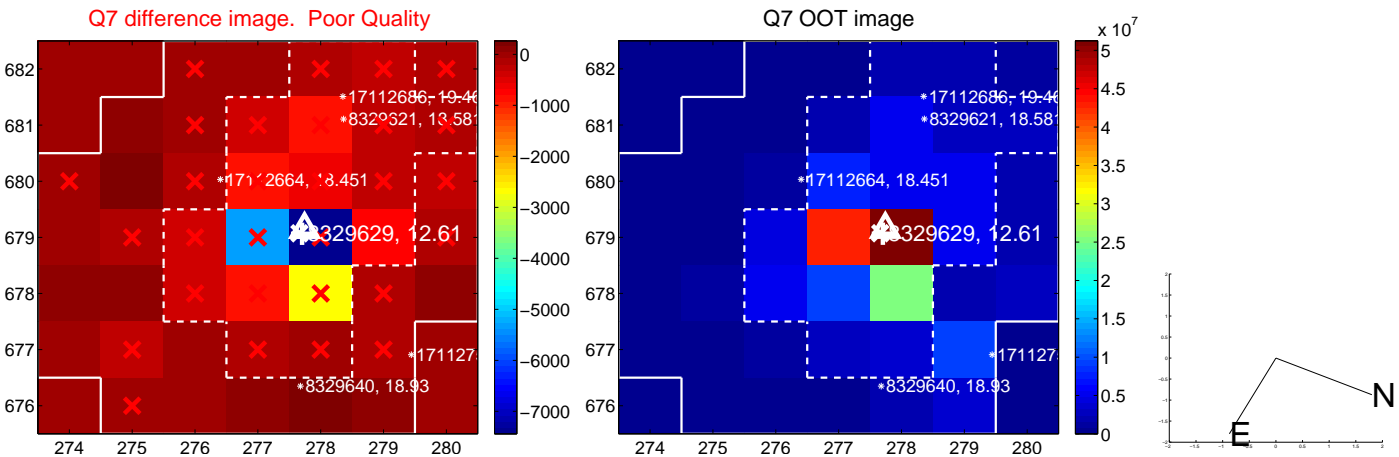
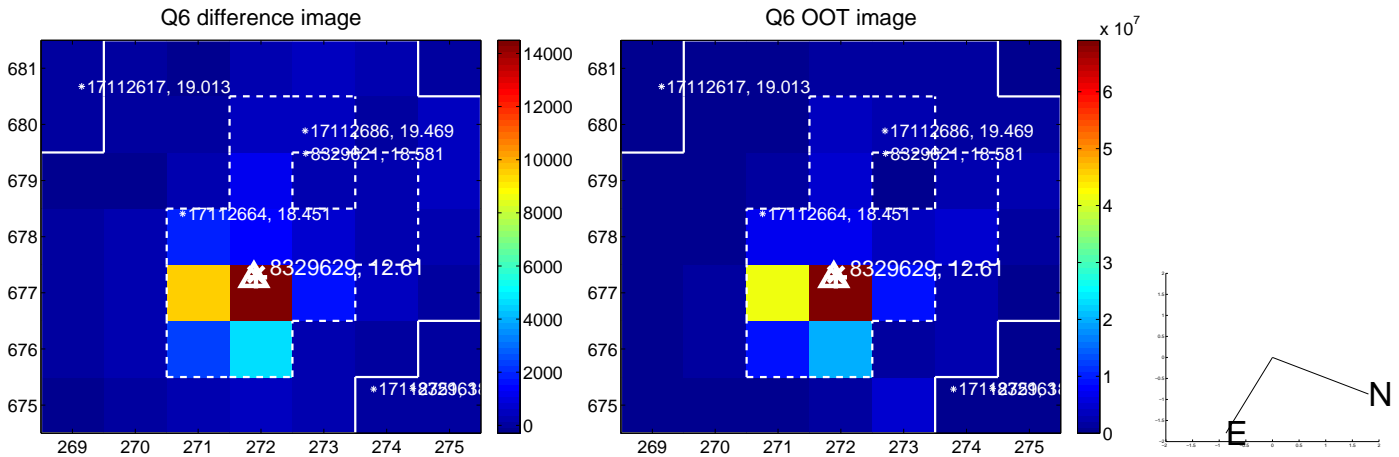
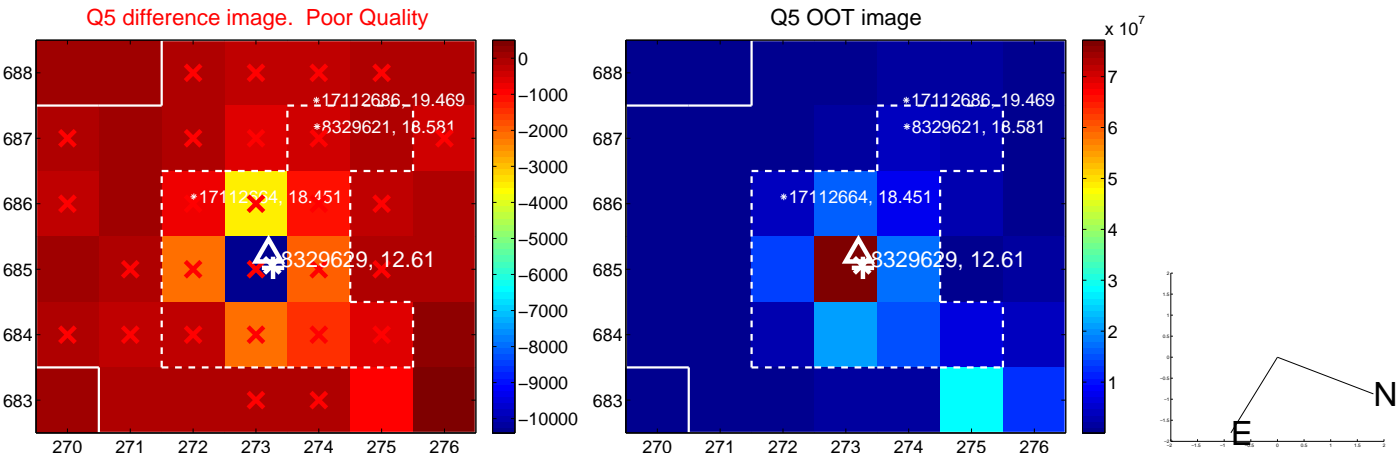


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

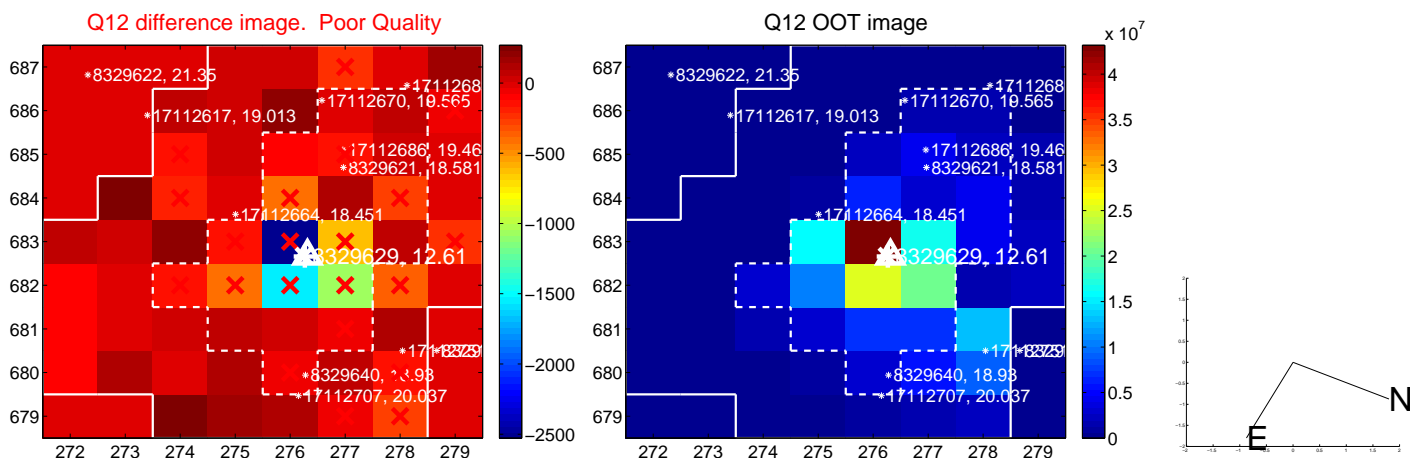
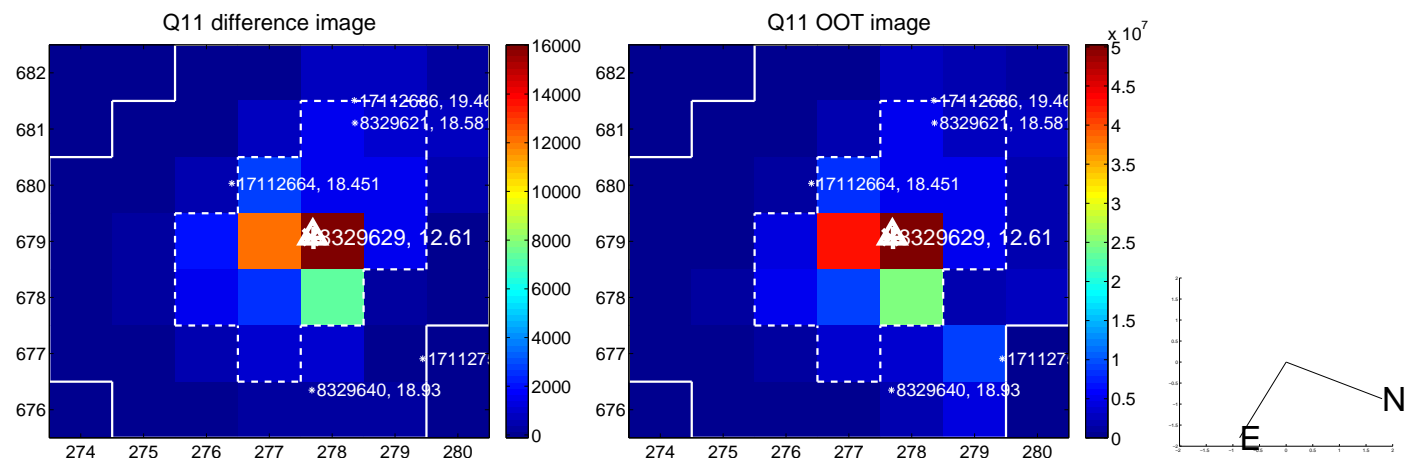
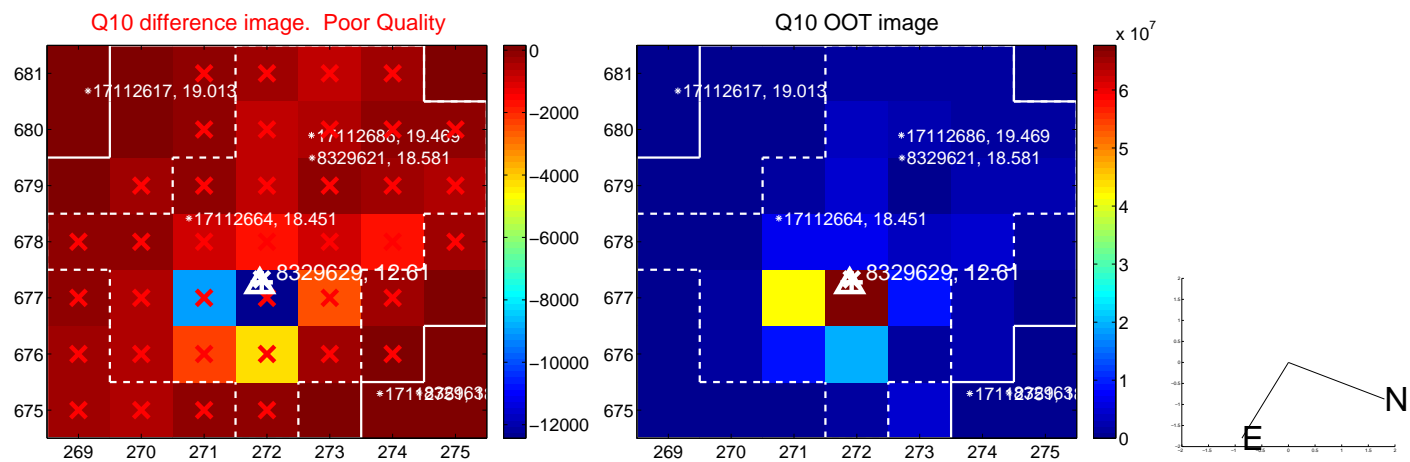
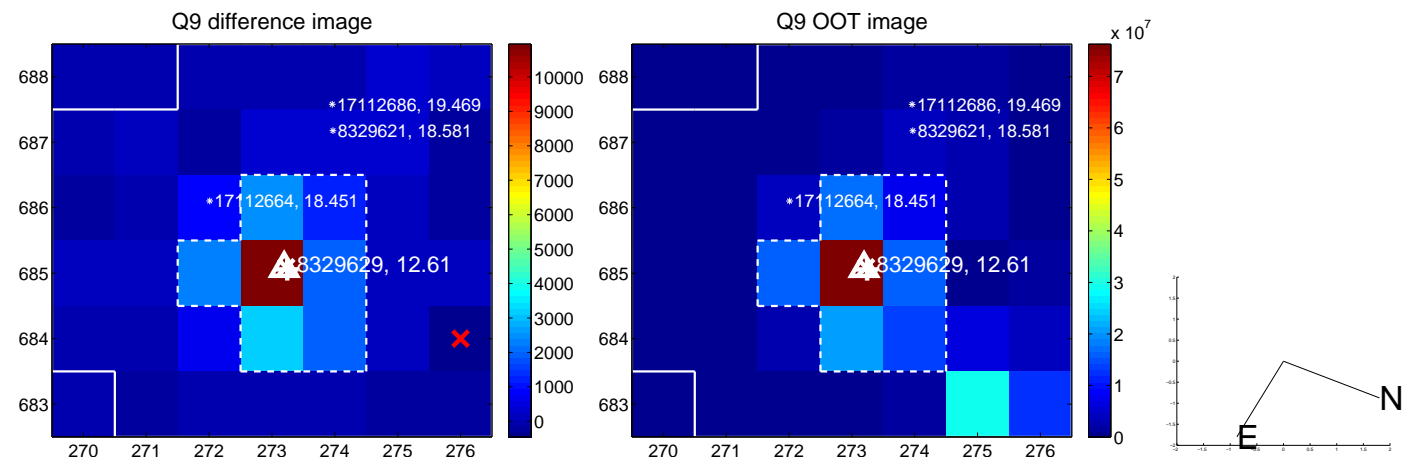
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



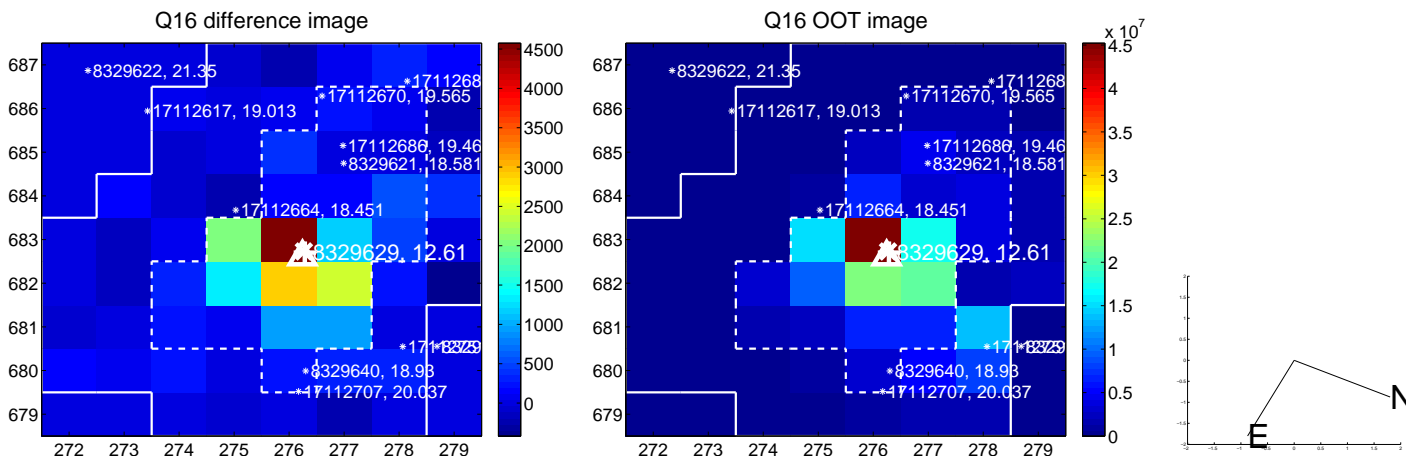
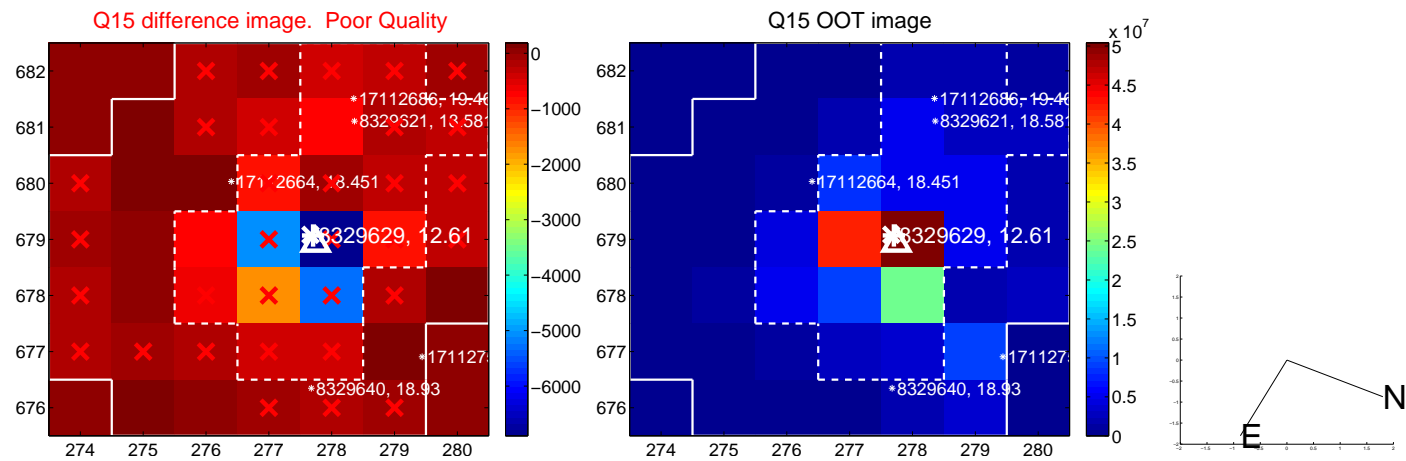
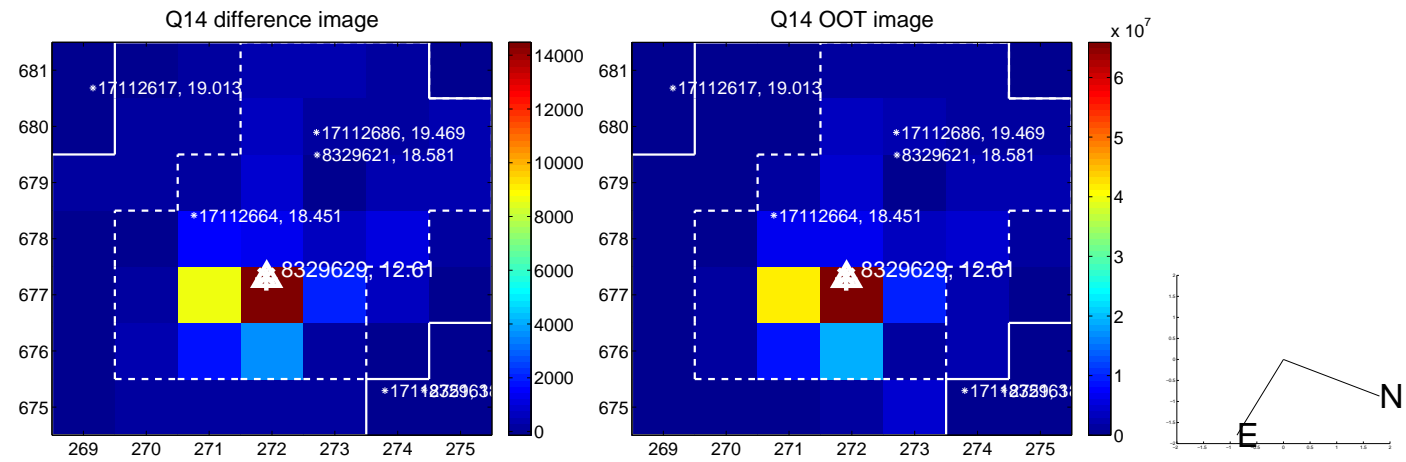
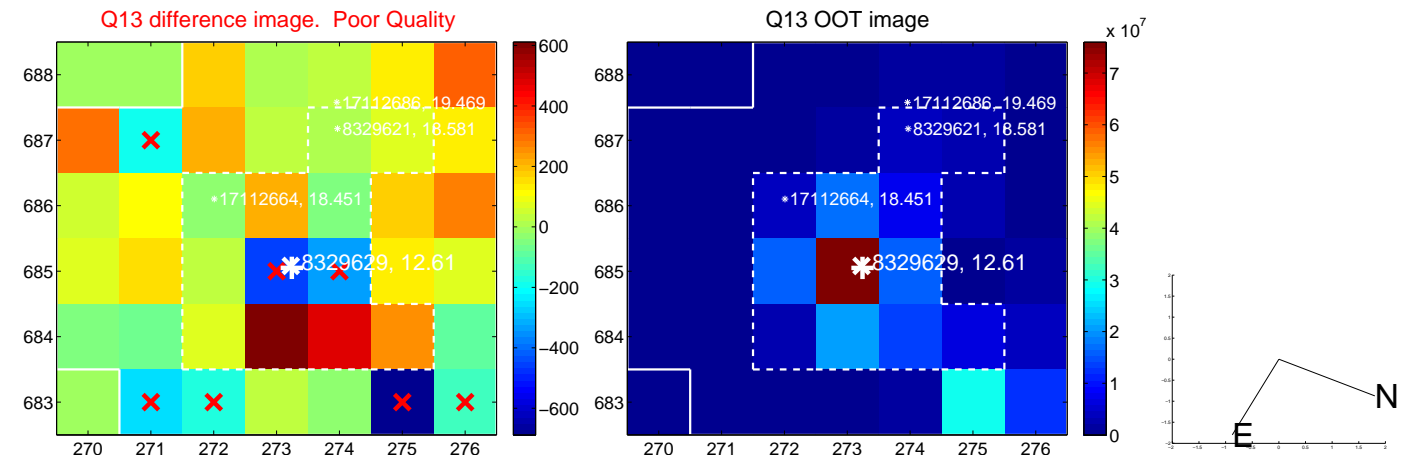
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



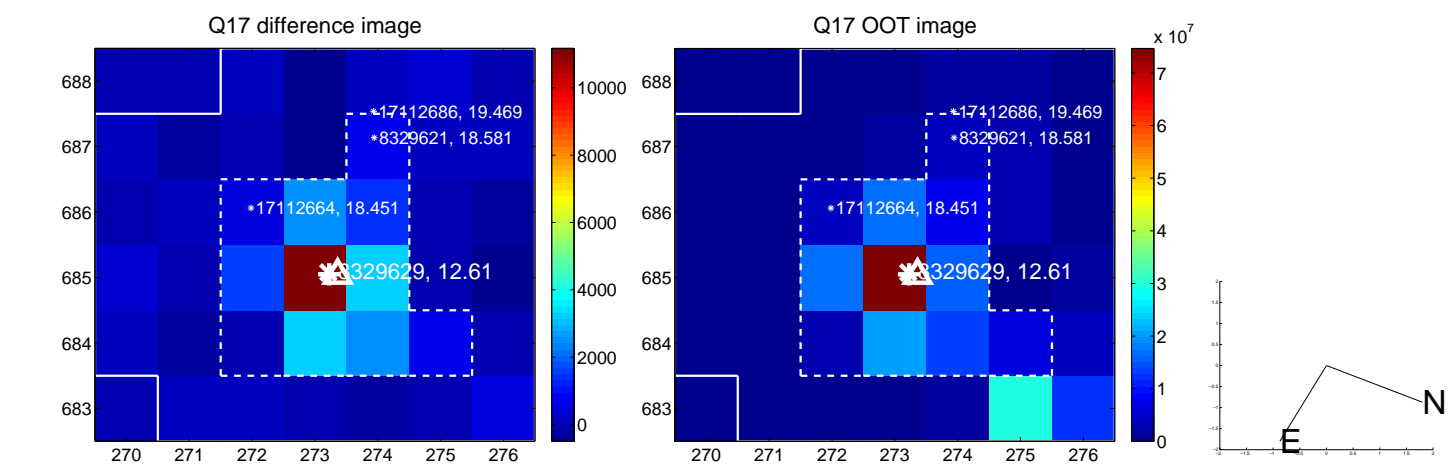
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



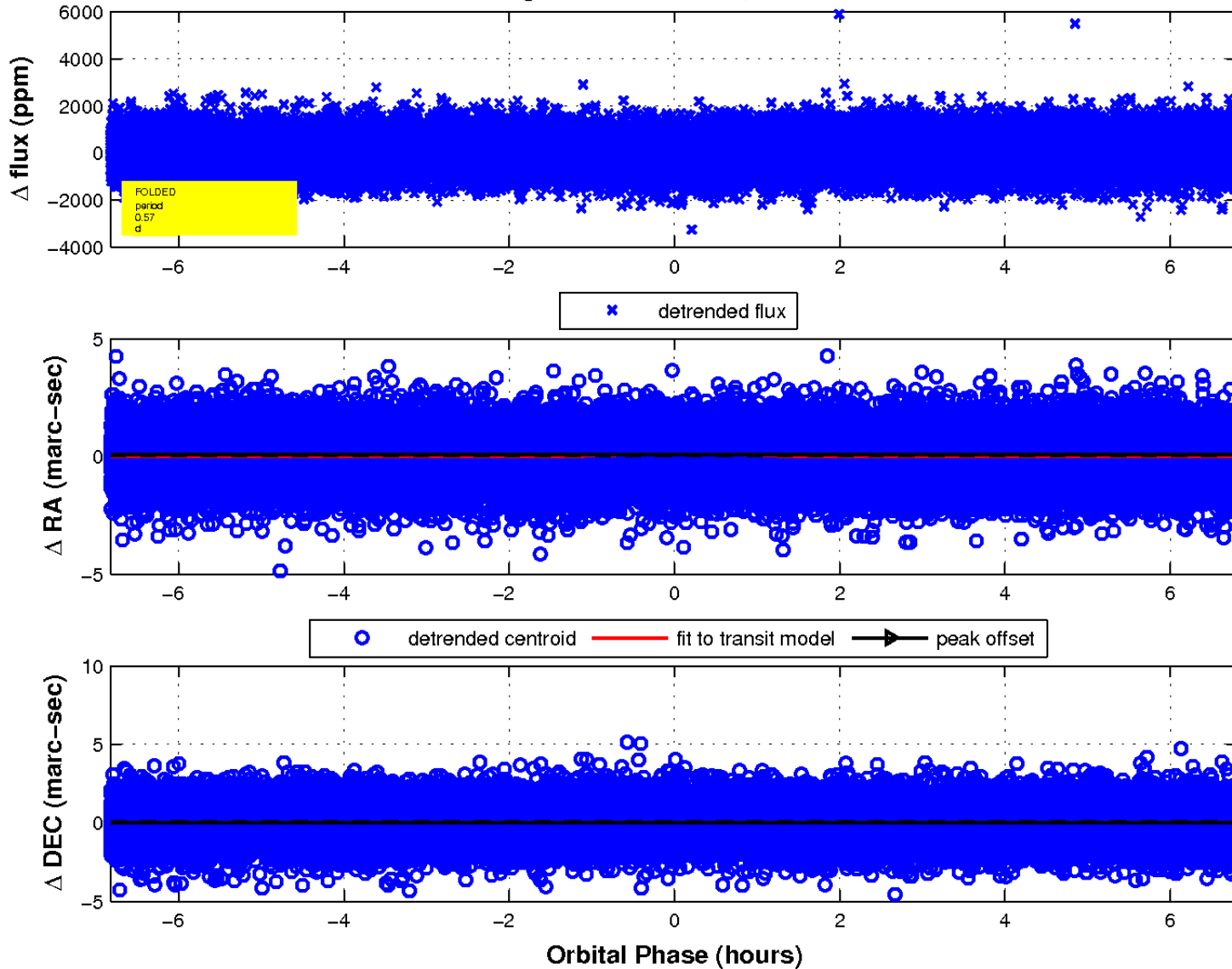
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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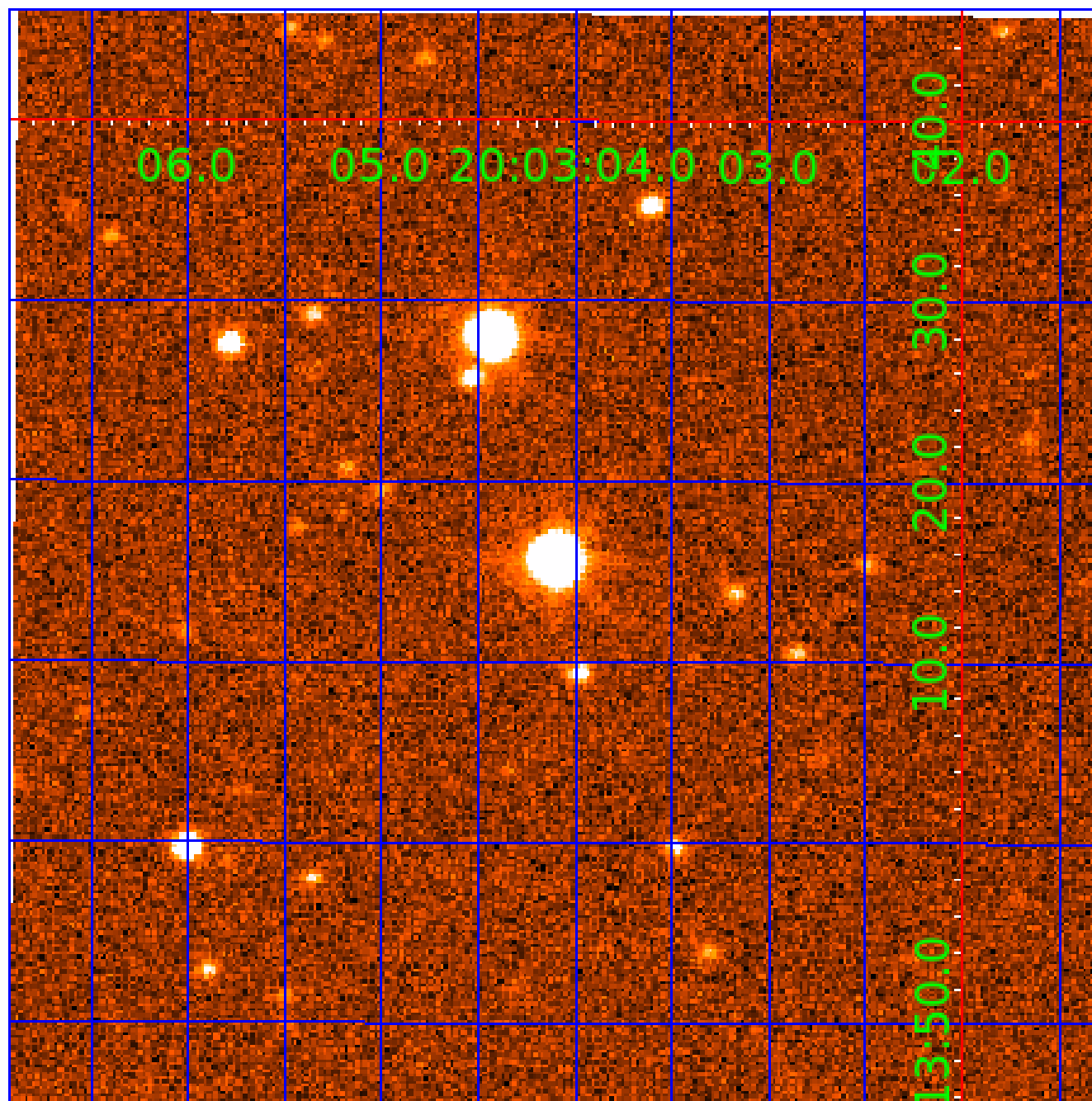


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 008329629

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})
008329629-01	OBS	No	0.568710	131.685333	96.0	2.477	12.7	13.8	2.15	8334	2.45	74669.51
008329629-02	OBS	No	0.568710	131.870940	103.6	1.671	12.5	14.1	2.15	8334	2.53	74669.52
008329629-03	OBS	No	87.025940	145.752064	814.4	14.122	9.9	10.2	2.15	8334	6.58	91.23
008329629-04	OBS	No	48.984275	168.138150	156.7	5.000	7.6	-1.0	2.15	8334	2.72	196.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008329629-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008329629-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
008329629-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008329629-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

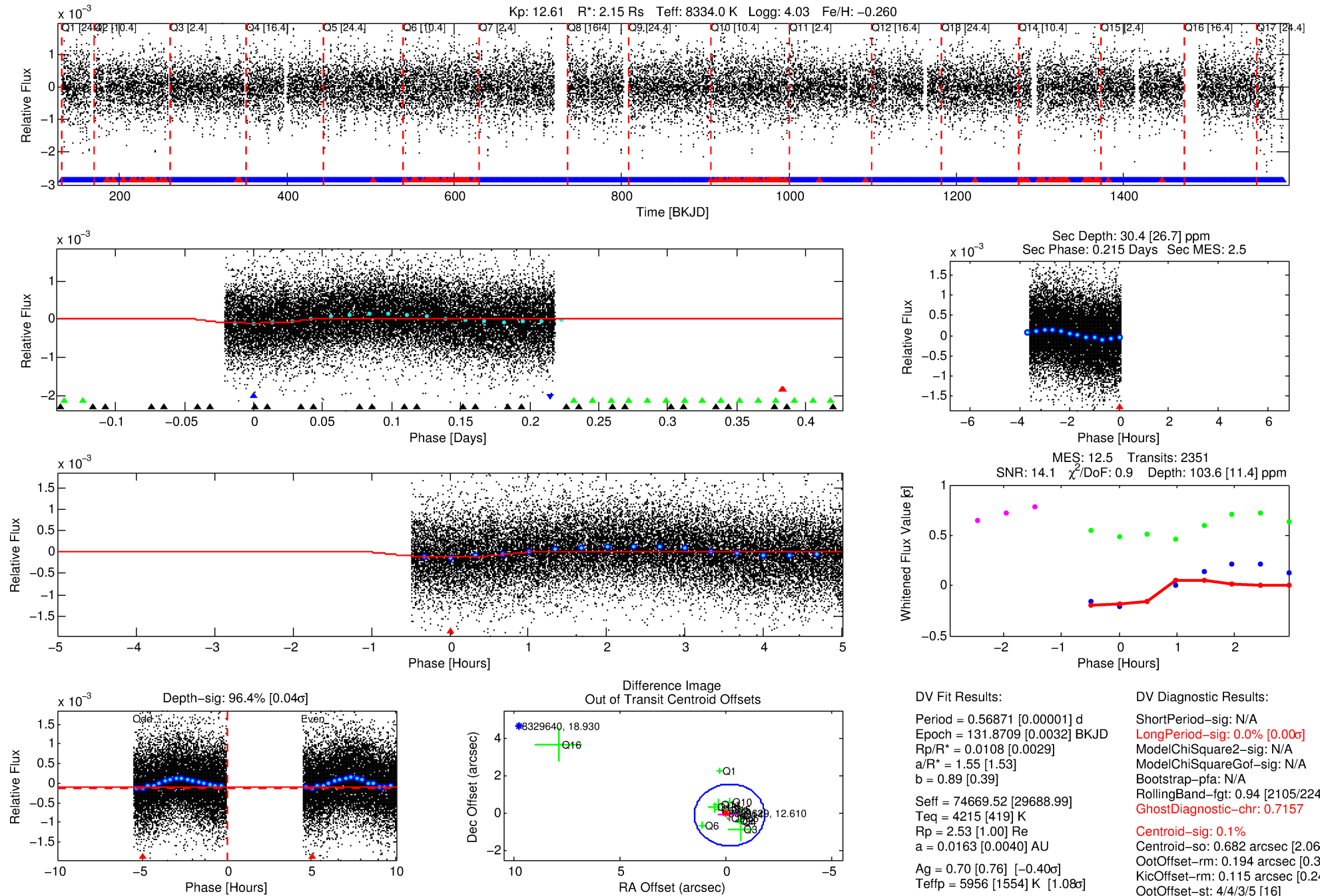
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008329629-02

No Significant Match Found

DV One-Page Summary

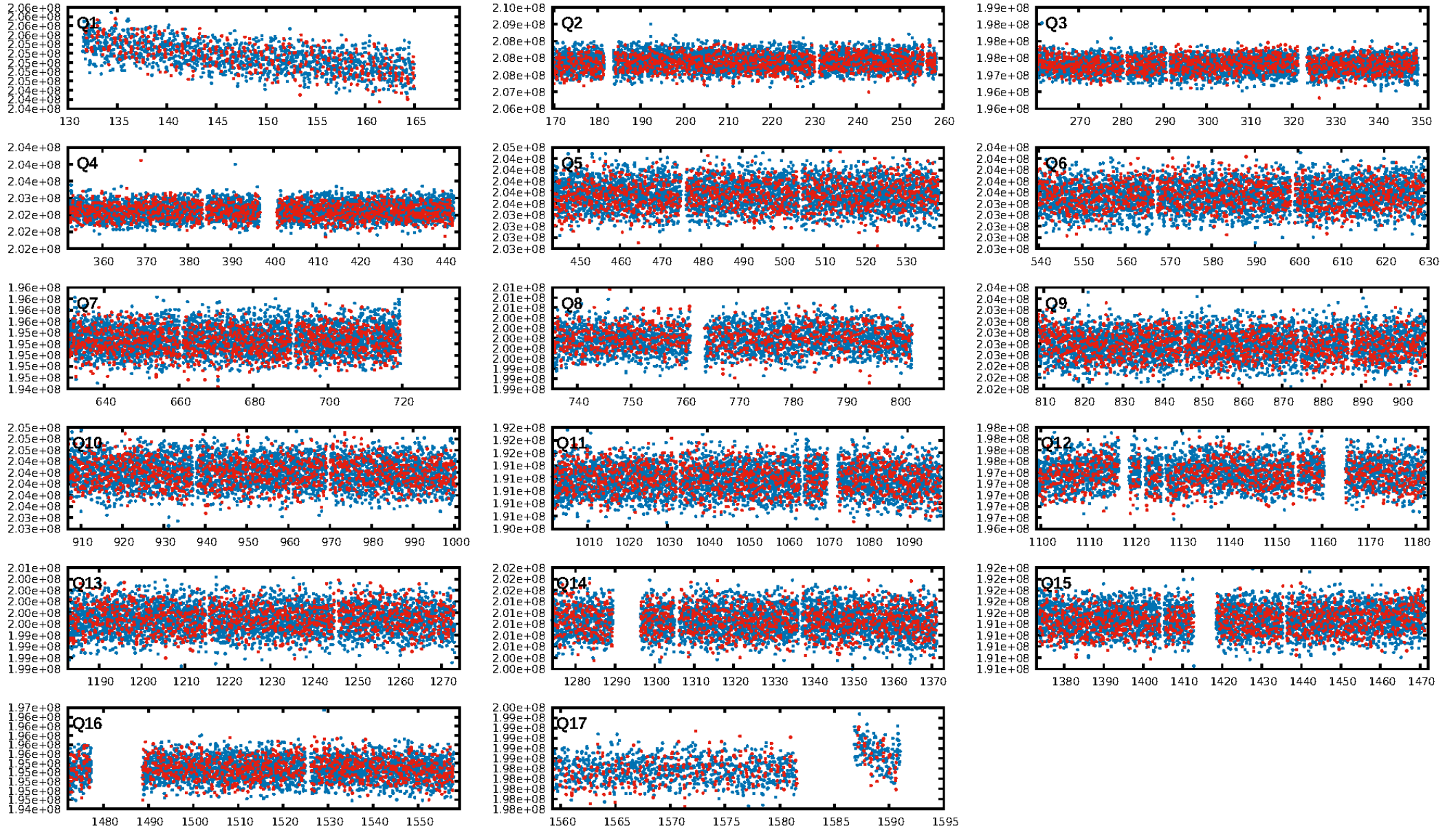
KIC: 8329629 Candidate: 2 of 4 Period: 0.569 d



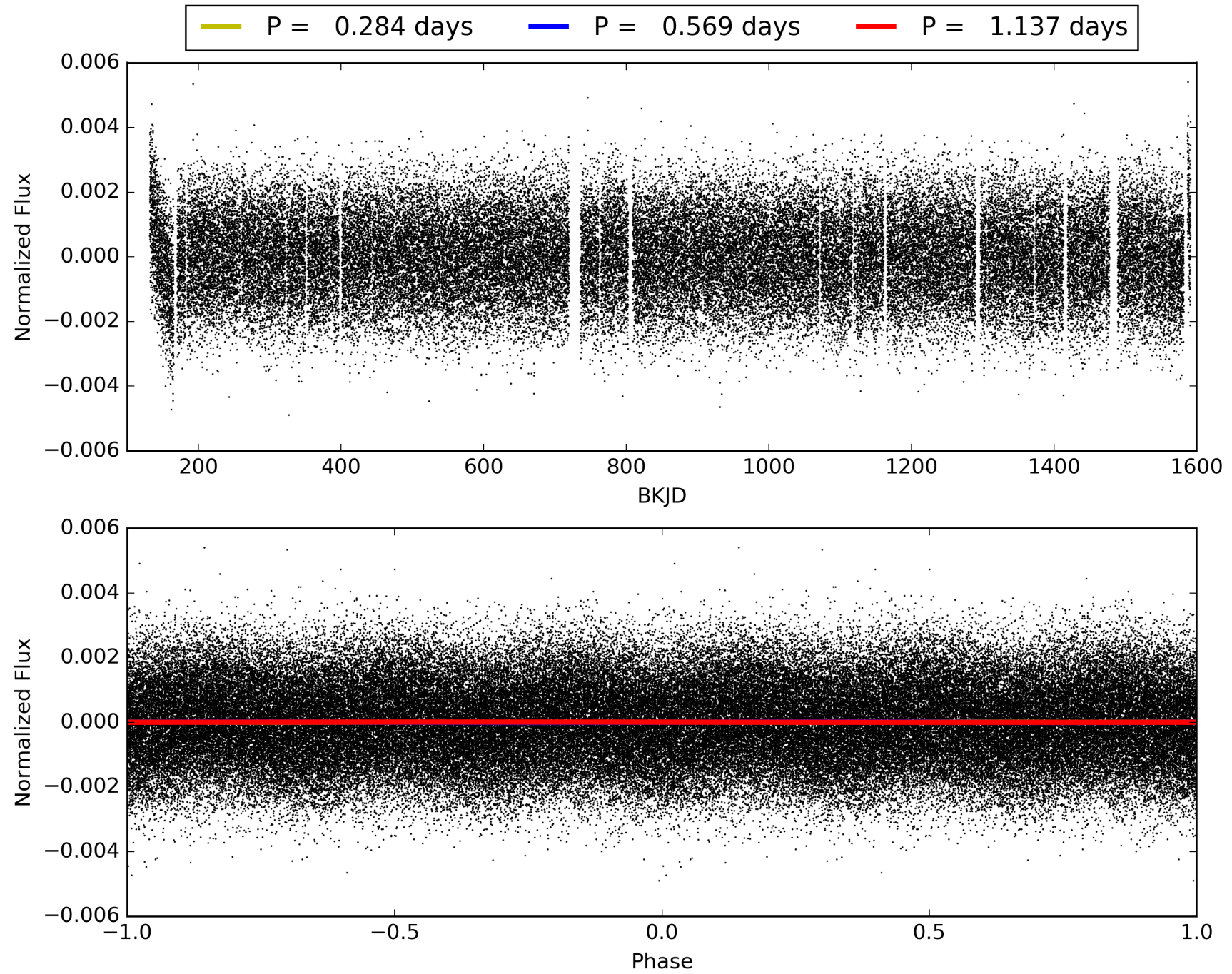
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 008329629-02, PDC Light Curves

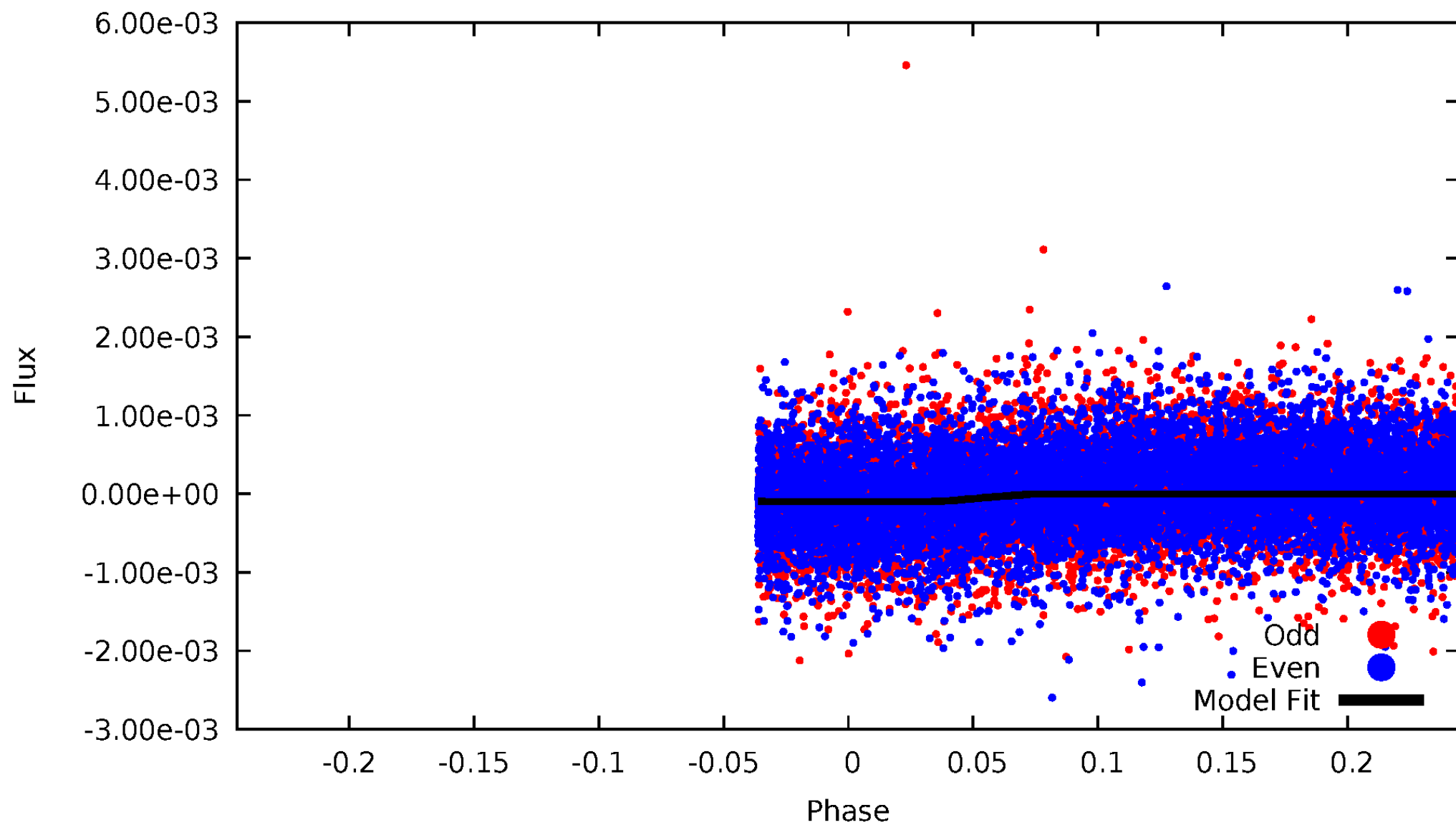


TCE 008329629-02



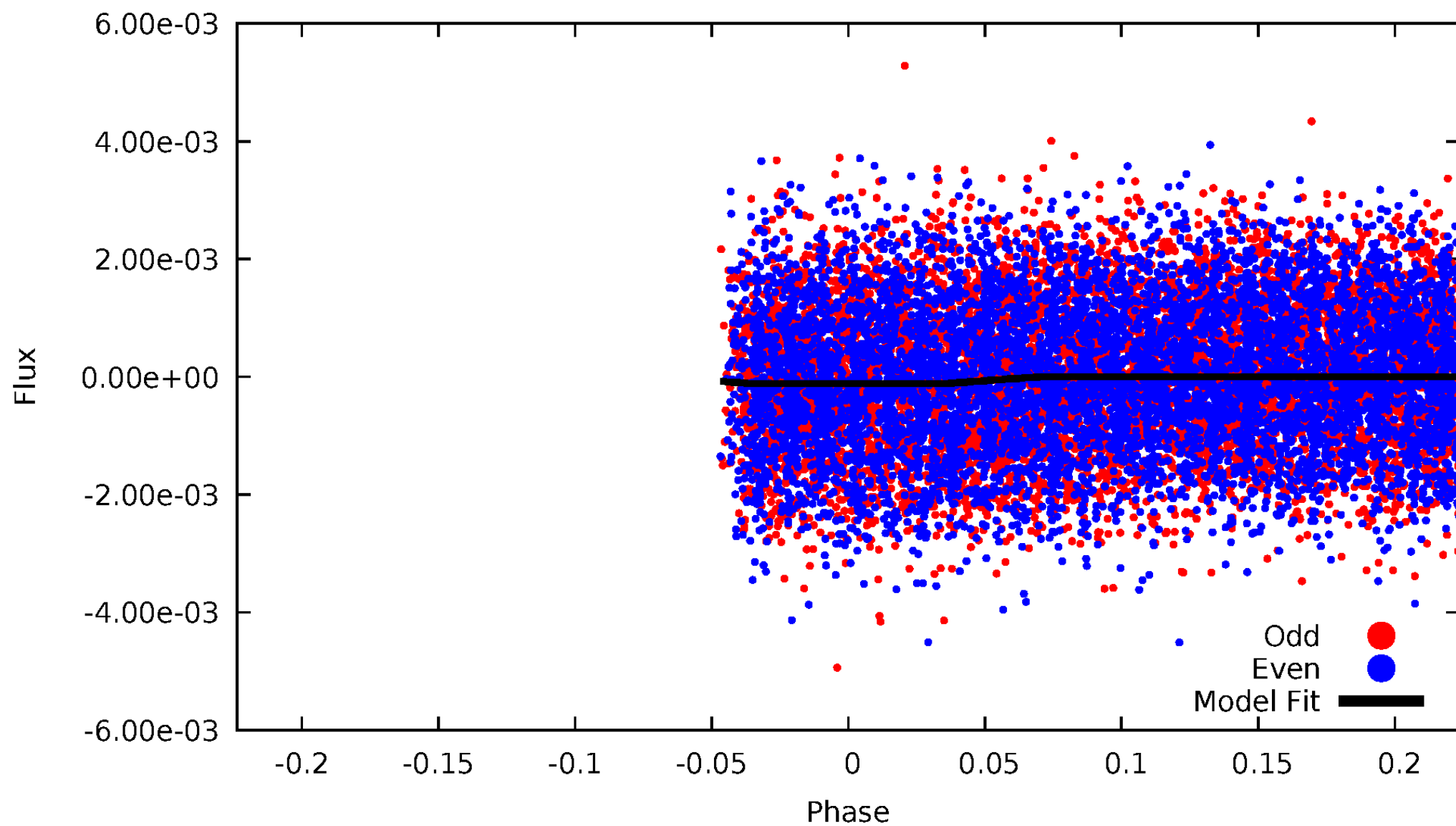
DV Odd/Even

TCE 008329629-02



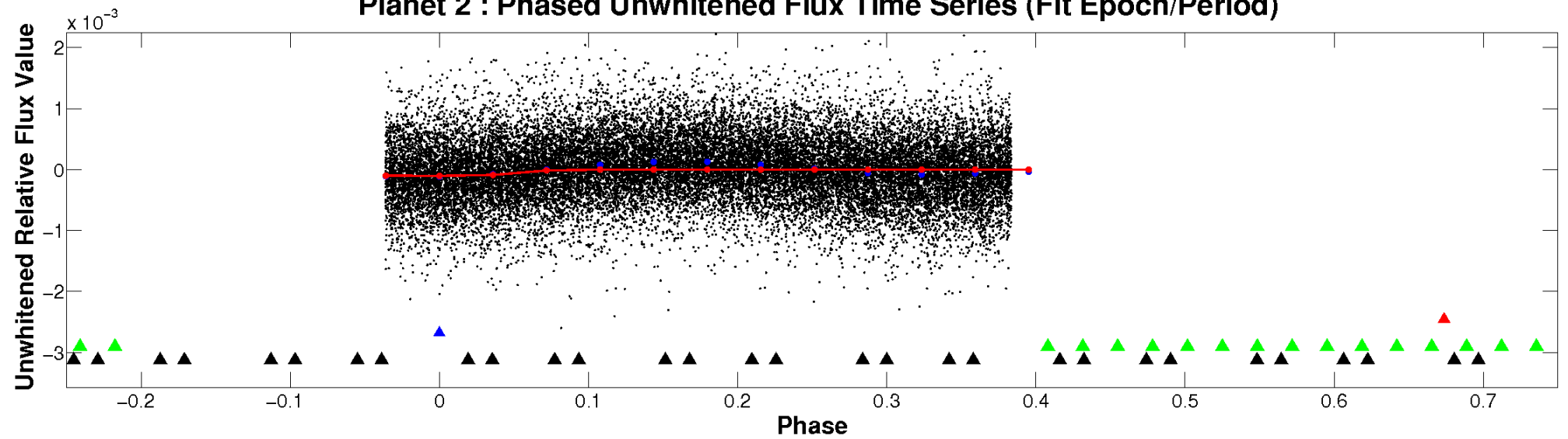
ALT Odd/Even

TCE 008329629-02

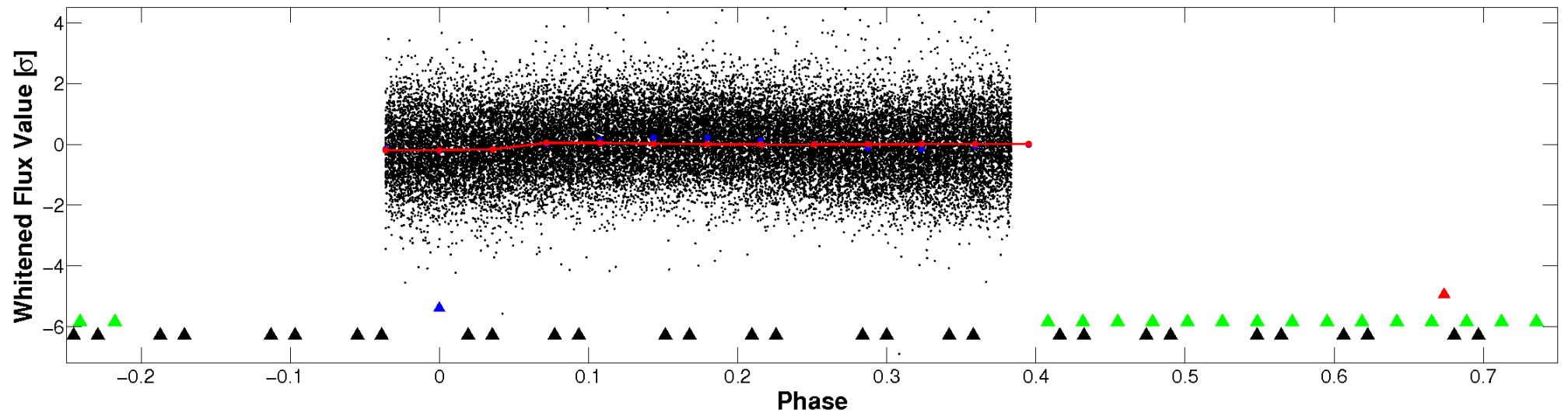


Non-Whitened Vs. Whitened Light Curve

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

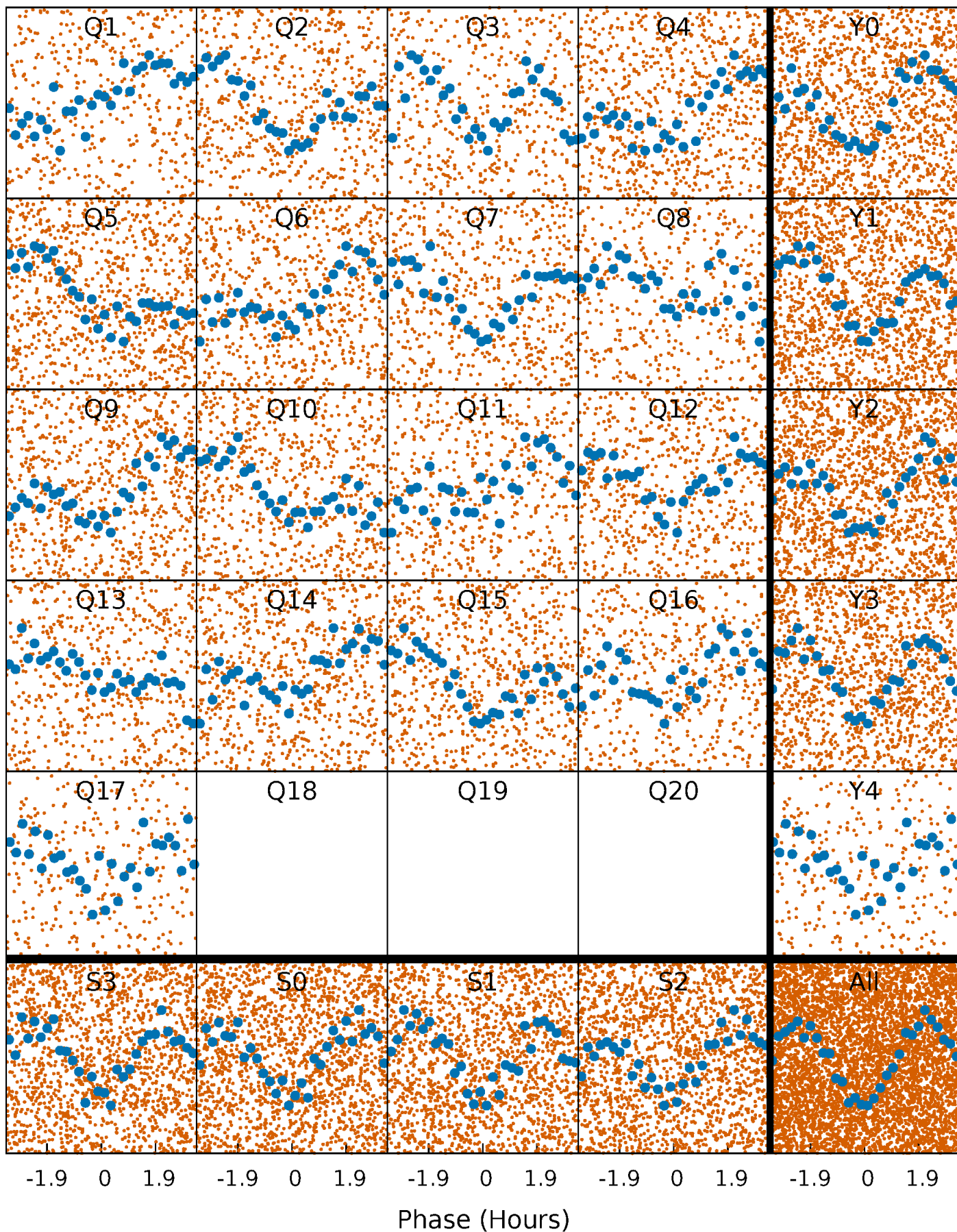


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



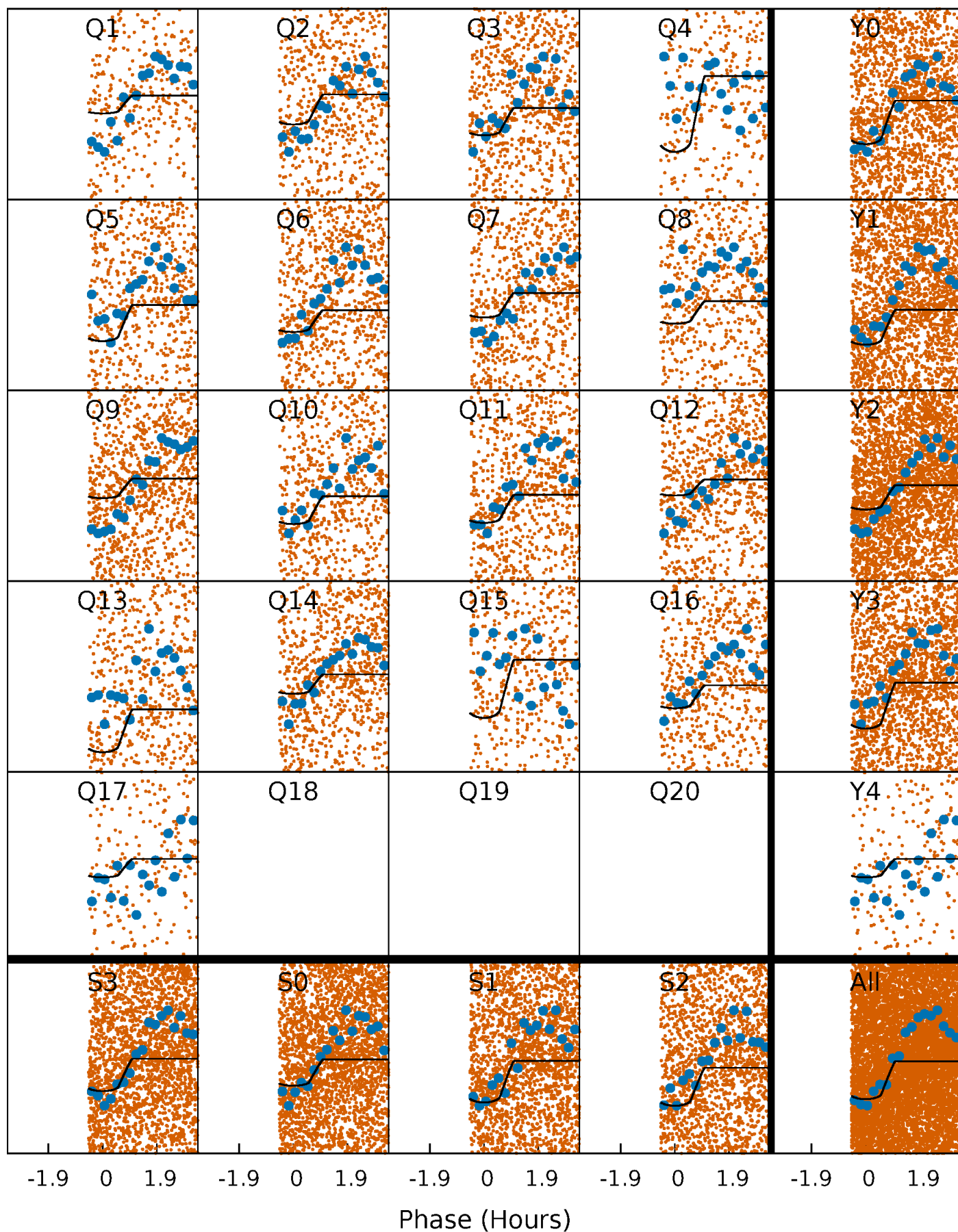
PDC Quarter-Phased Transit Curves

TCE 008329629-02 P= 0.568710 Days $T_0=131.870940$ (BKJD)



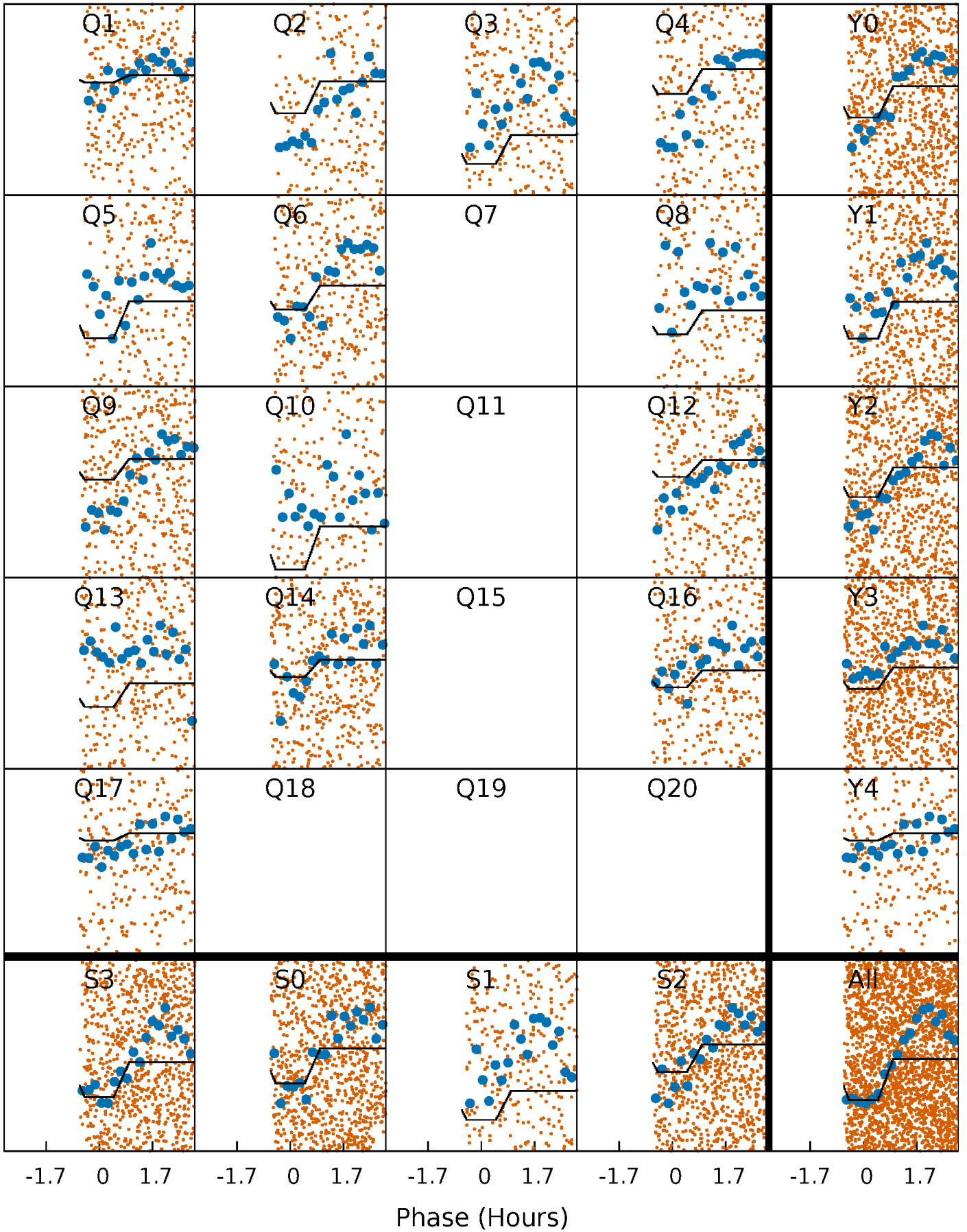
DV Quarter-Phased Transit Curves

TCE 008329629-02 P= 0.568710 Days $T_0=131.870940$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

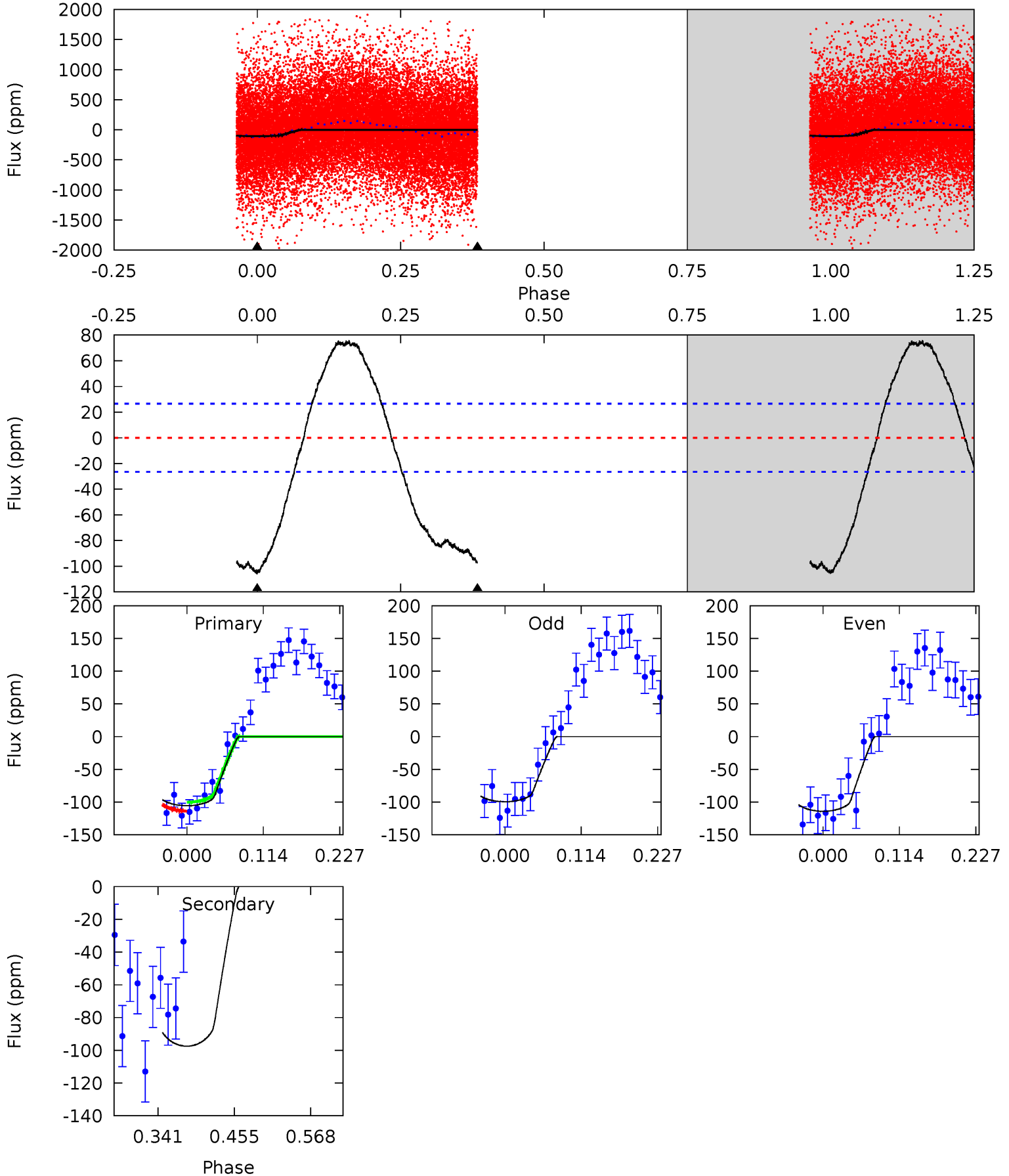
TCE 008329629-02 P= 0.568713 Days $T_0=131.868637$ (BKJD)



DV Model-Shift Uniqueness Test

008329629-02, P = 0.568710 Days, E = 131.302230 Days

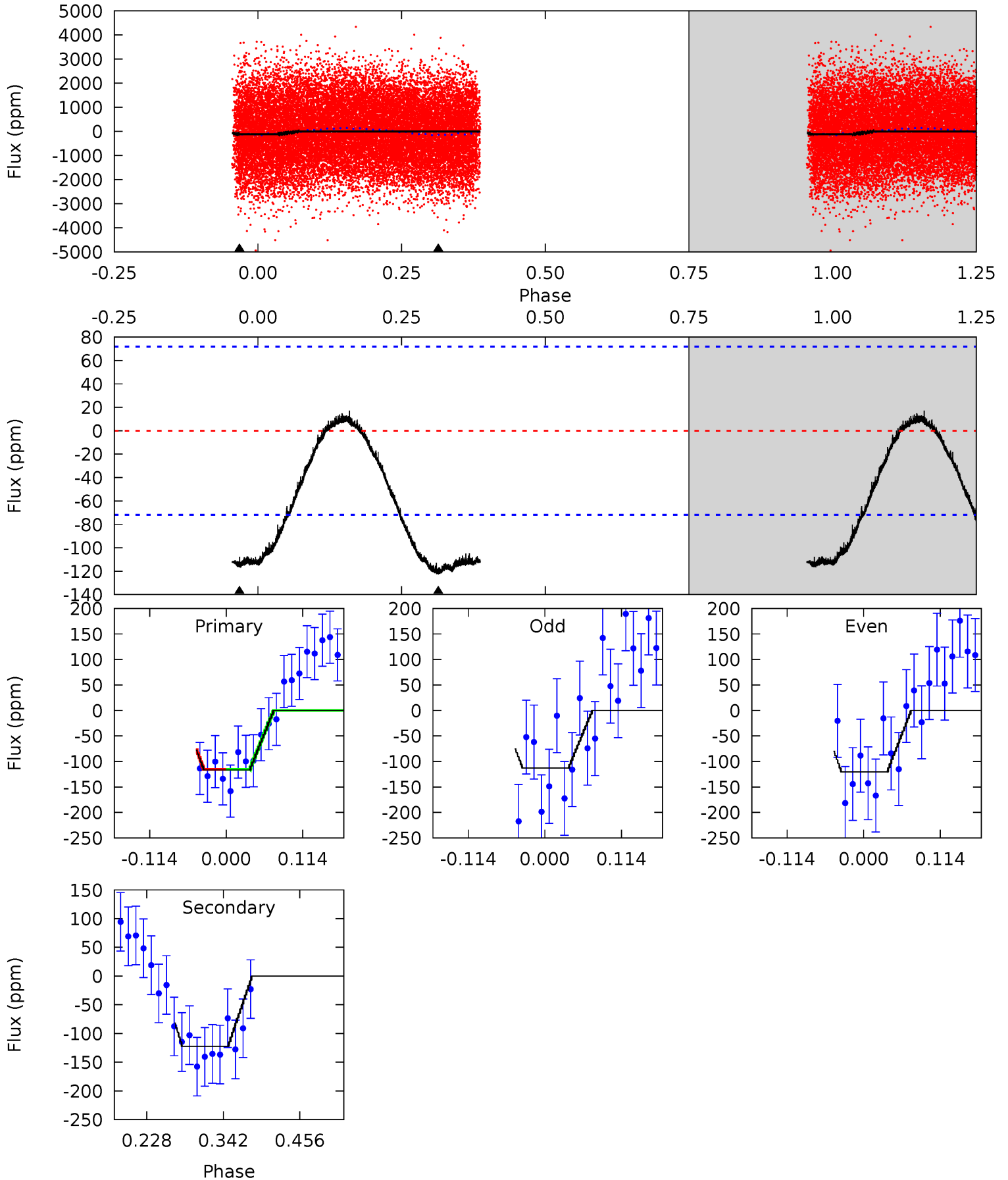
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.1	16.7	0	0	4.54	1.58	9.28	18.1	18.1	16.7	16.7	1.25	1.03	0.42	1.06



Alt Model-Shift Uniqueness Test

008329629-02, P = 0.568713 Days, E = 131.299924 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.36	7.73	0	0	4.54	1.58	0.93	7.36	7.36	7.73	7.73	0.24	1.23	0.12	0.00



Stellar Parameters For KIC 008329629

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8334^{+236}_{-324}	$4.029^{+0.204}_{-0.119}$	$-0.260^{+0.150}_{-0.300}$	$2.148^{+0.407}_{-0.610}$	$1.799^{+0.103}_{-0.329}$	$0.256^{+0.328}_{-0.092}$
	+3%/-4%	+5%/-3%	+58%/-115%	+19%/-28%	+6%/-18%	+128%/-36%
Source	KIC0	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 008329629-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-98 ± 6	$2.45^{+0.81}_{-0.77}$	5815^{+372}_{-390}	7495^{+1958}_{-1104}	$2.374^{+2.299}_{-1.041}$
Alt.	-122 ± 16	$2.45^{+0.78}_{-0.73}$	5811^{+370}_{-433}	8062^{+2087}_{-1228}	$2.935^{+3.069}_{-1.275}$

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 $A_{obs} \gg 1.0$

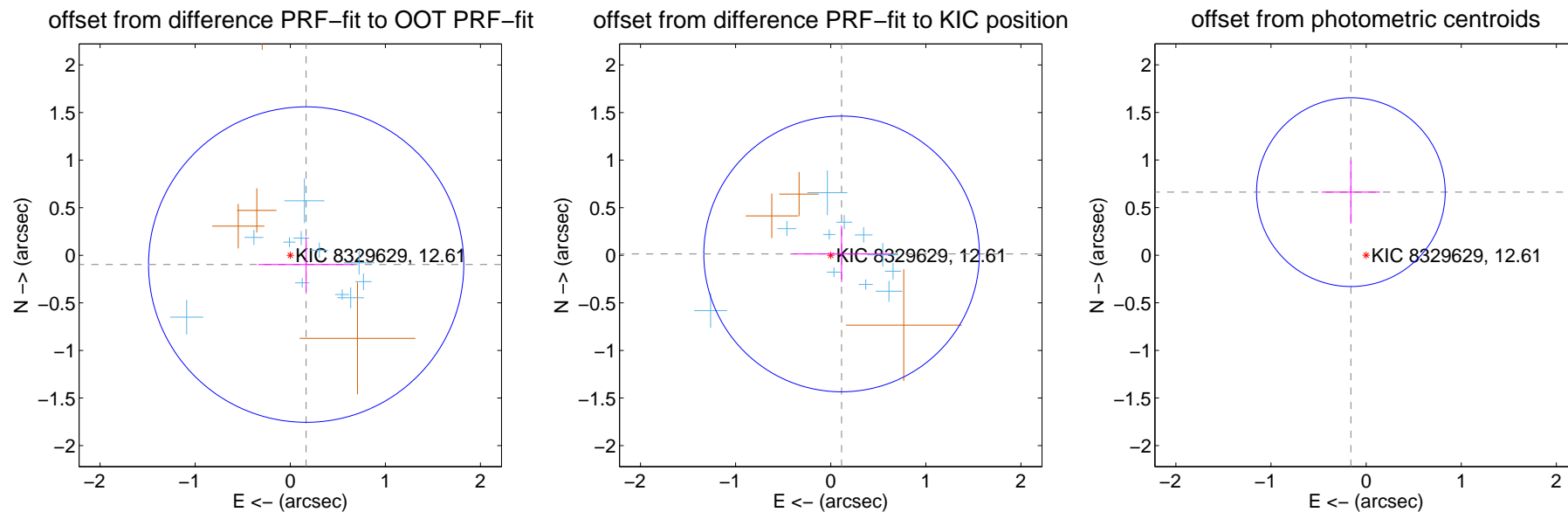
DV Centroid Data

Supplemental centroid analysis for 008329629-02. Kepler magnitude: 12.61. Transit SNR 14.12

There are 11 quarters with good PRF difference image offsets

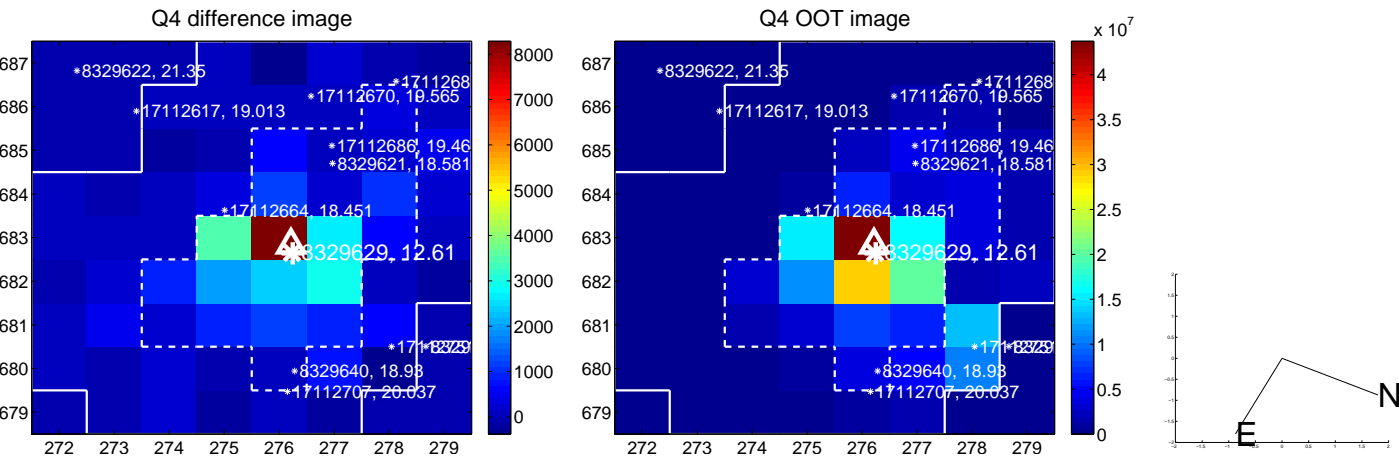
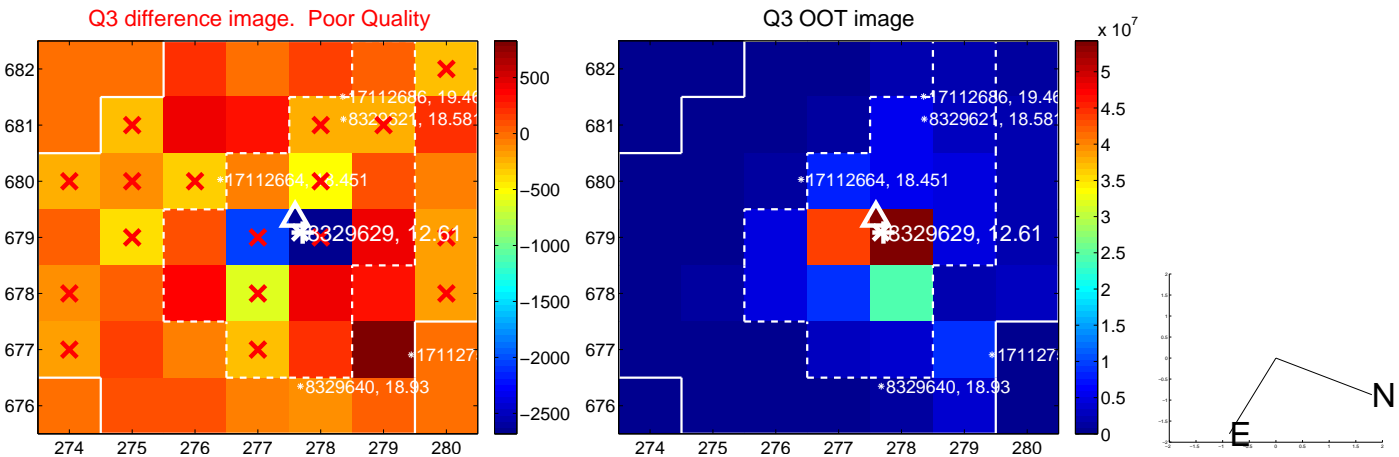
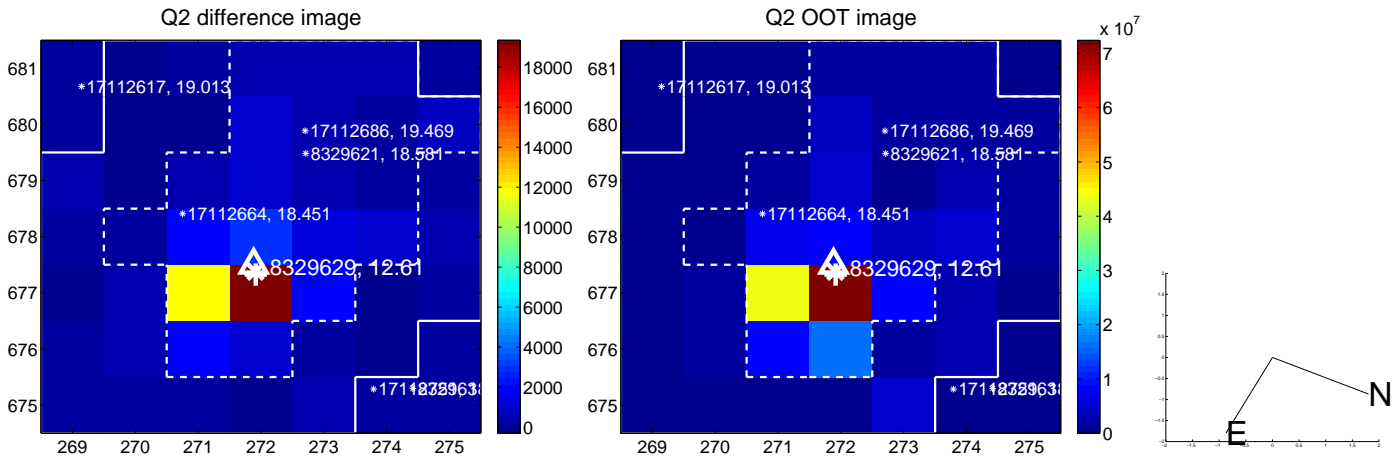
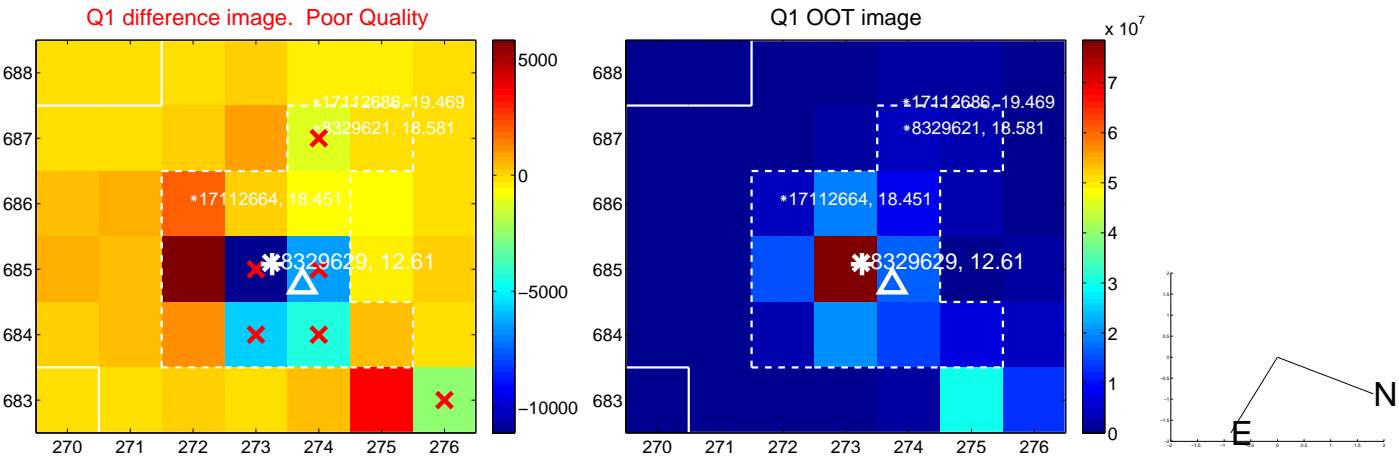
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.194 ± 0.553	0.35	-0.167 ± 0.504	-0.098 ± 0.286
PRF-fit source offset from KIC position	0.115 ± 0.483	0.24	-0.114 ± 0.516	0.014 ± 0.295
photometric centroid source offset	0.68 ± 0.33	2.06	0.16 ± 0.31	0.66 ± 0.33

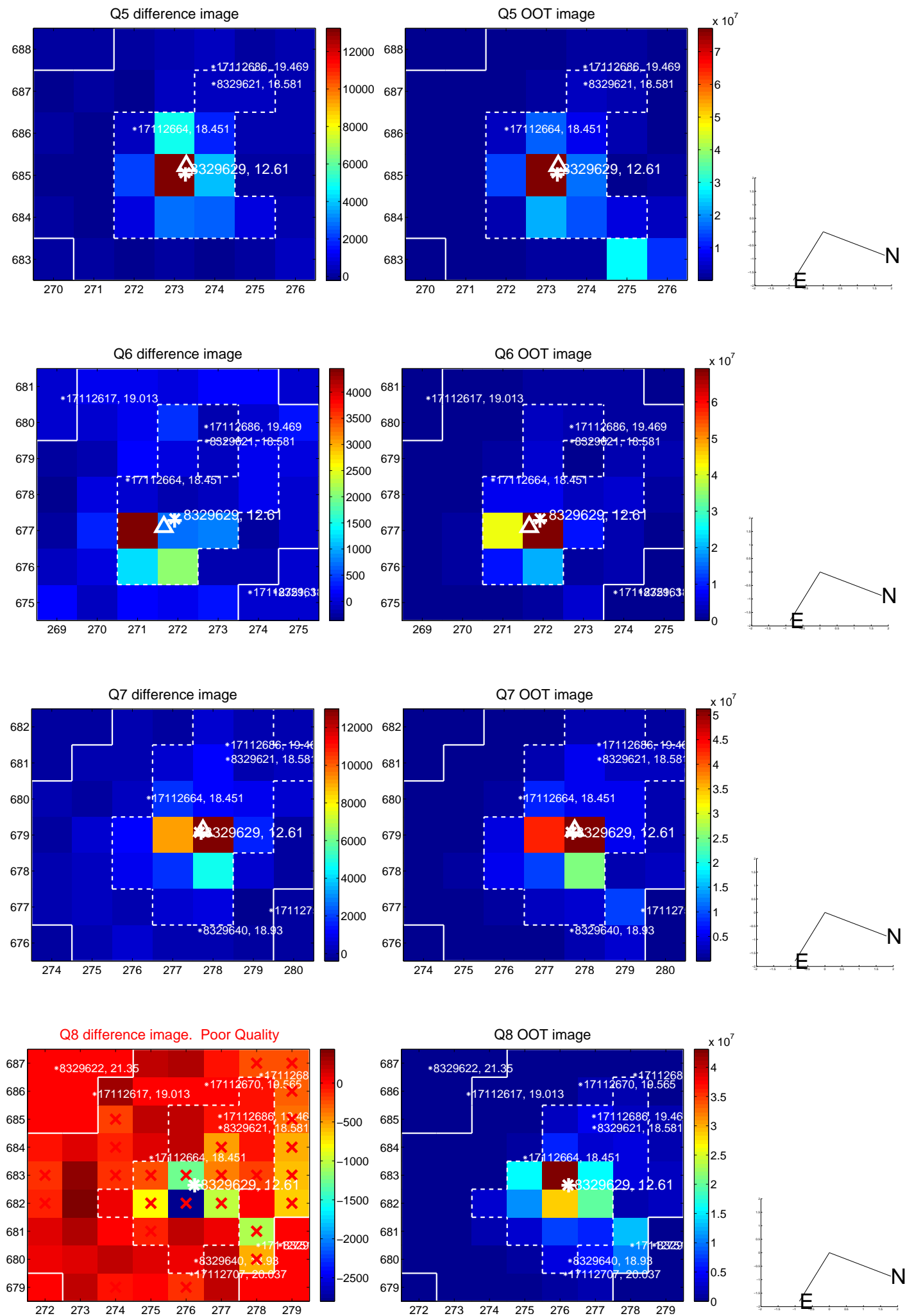


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

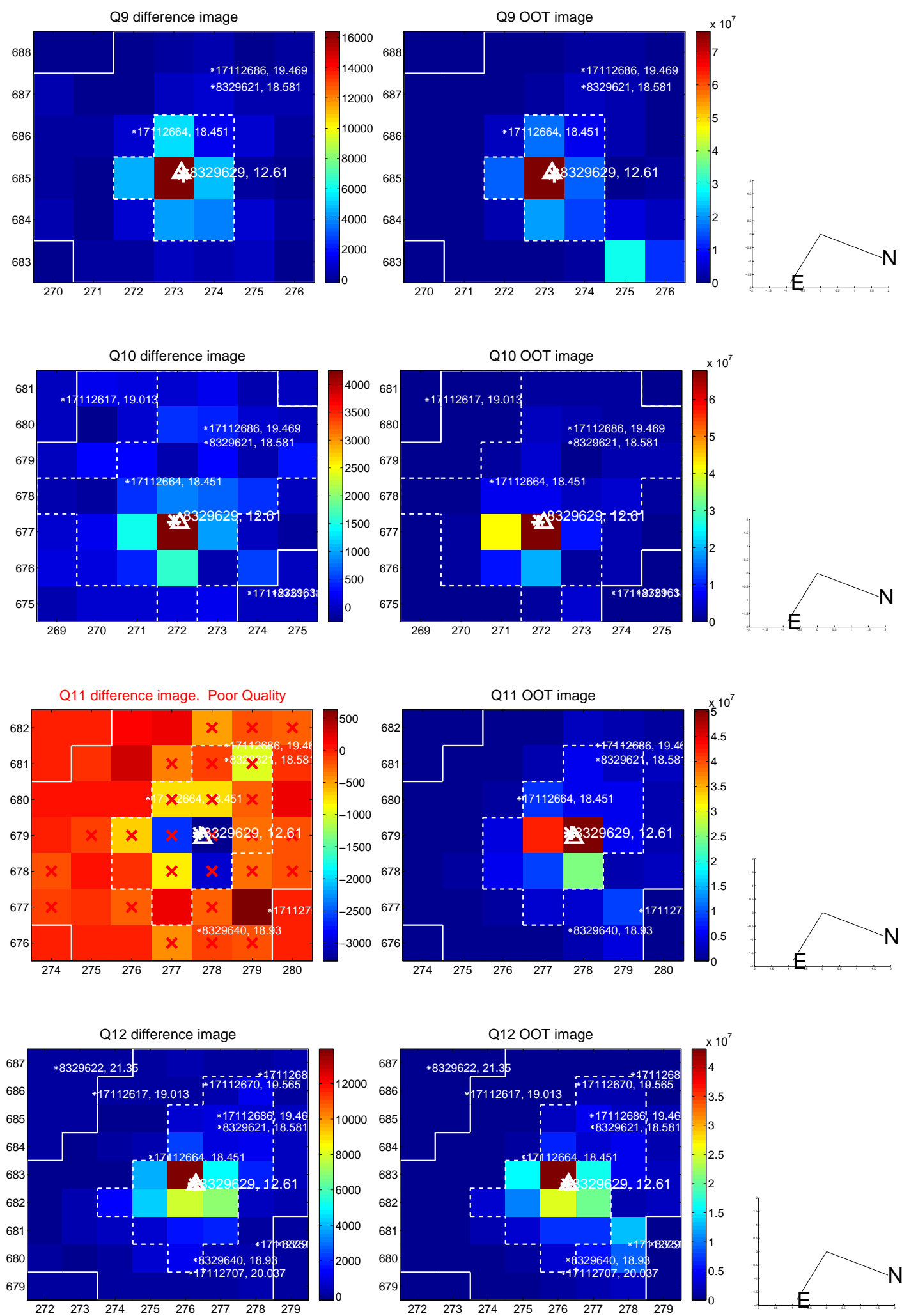
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



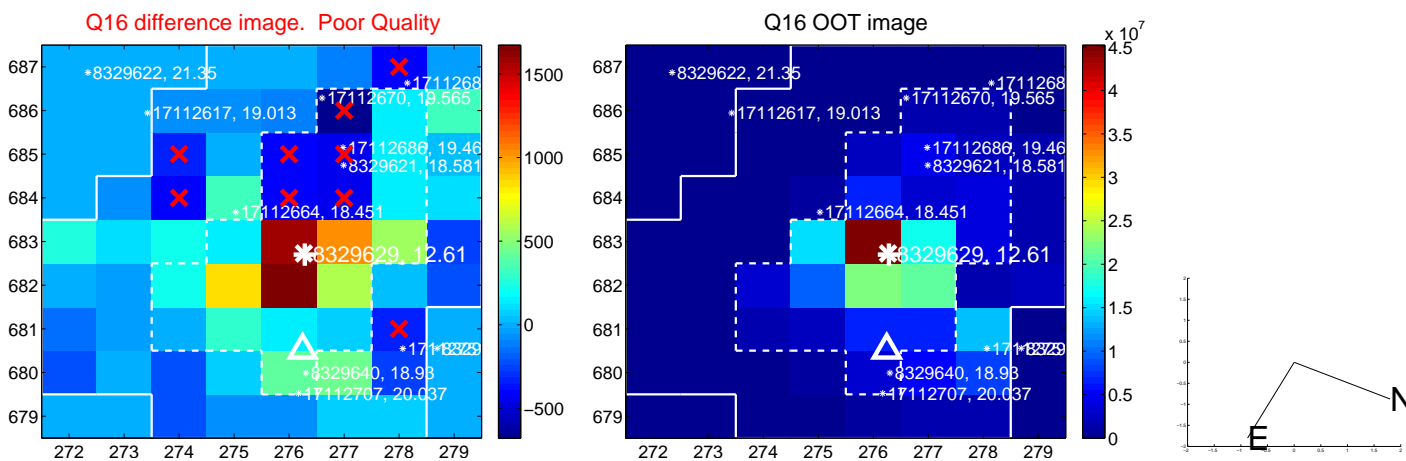
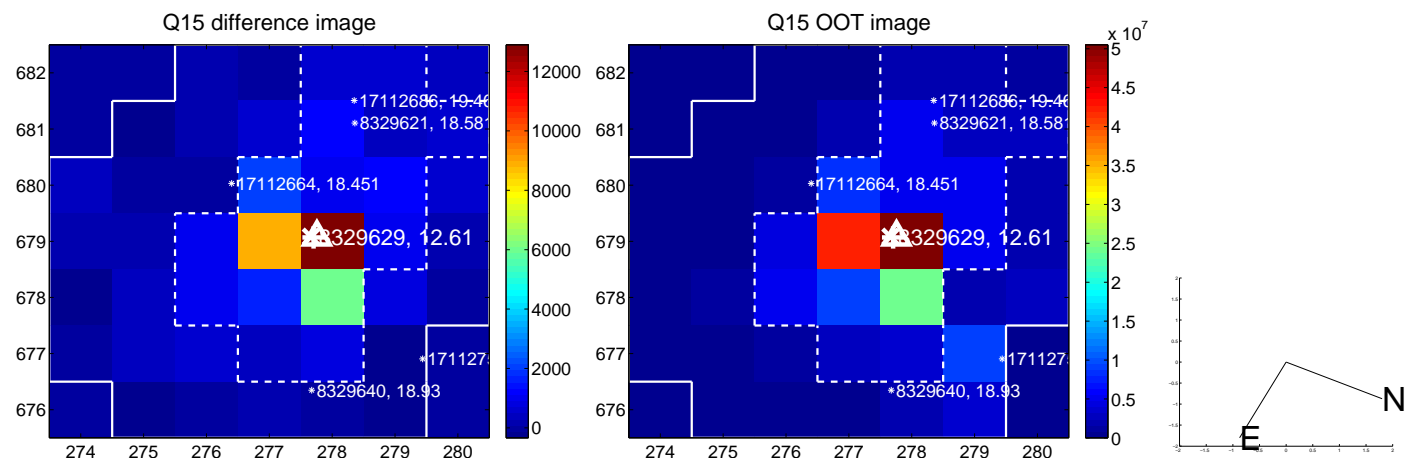
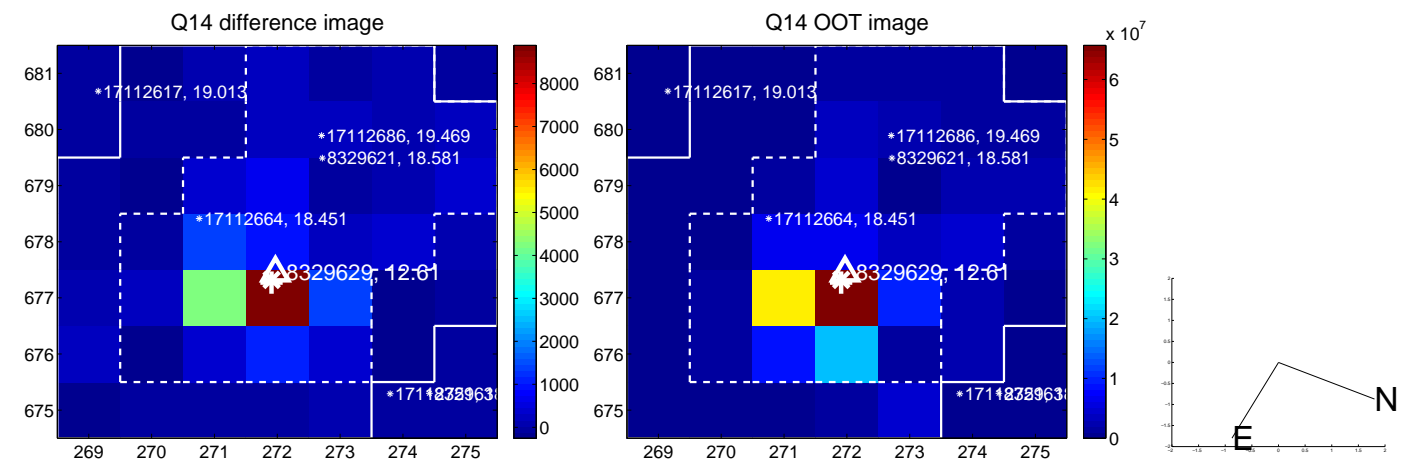
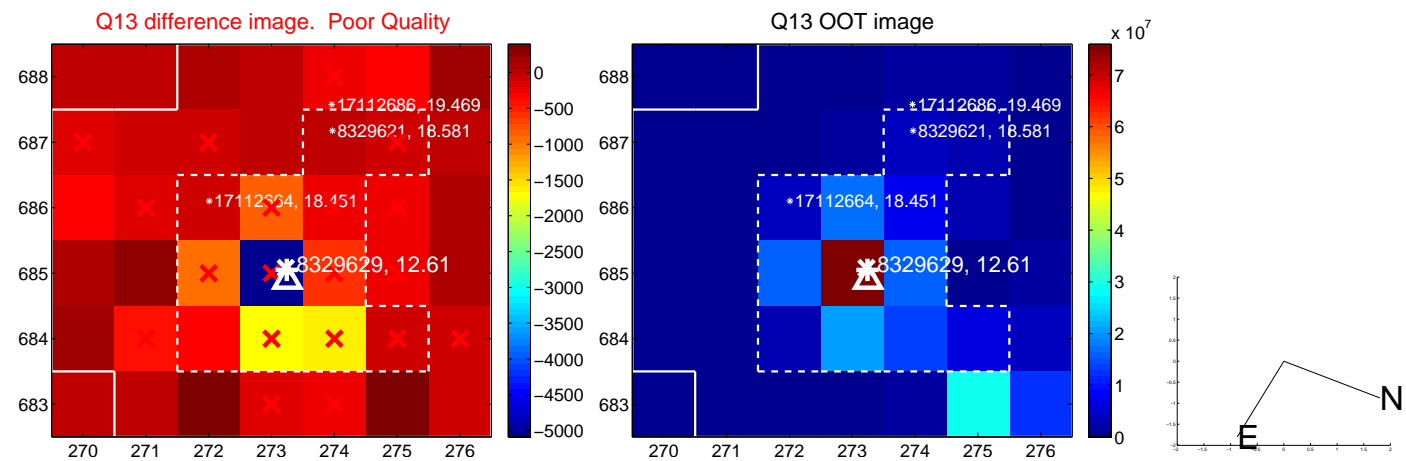
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



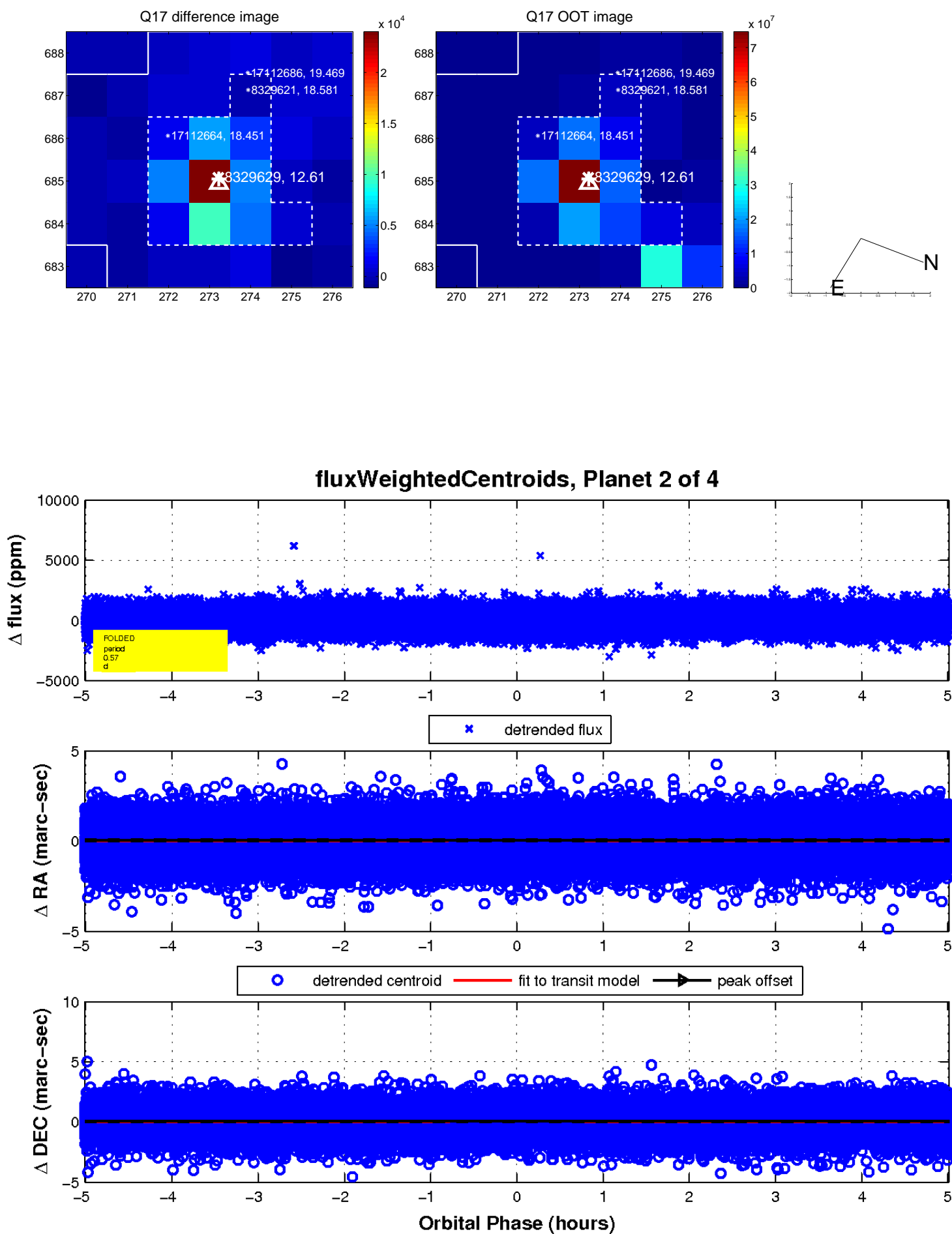
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

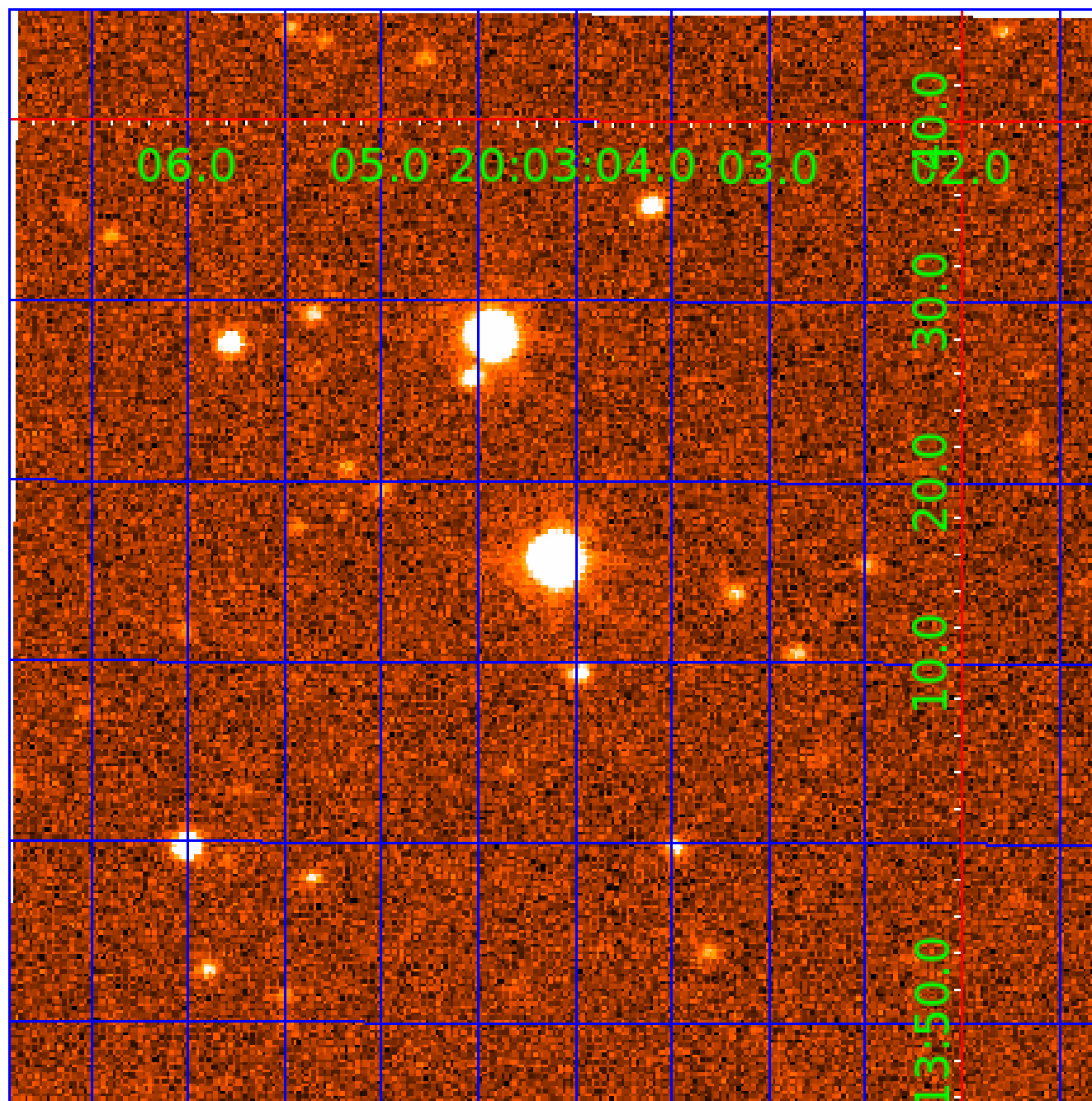


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008329629

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})
008329629-01	OBS	No	0.568710	131.685333	96.0	2.477	12.7	13.8	2.15	8334	2.45	74669.51
008329629-02	OBS	No	0.568710	131.870940	103.6	1.671	12.5	14.1	2.15	8334	2.53	74669.52
008329629-03	OBS	No	87.025940	145.752064	814.4	14.122	9.9	10.2	2.15	8334	6.58	91.23
008329629-04	OBS	No	48.984275	168.138150	156.7	5.000	7.6	-1.0	2.15	8334	2.72	196.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008329629-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008329629-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
008329629-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008329629-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

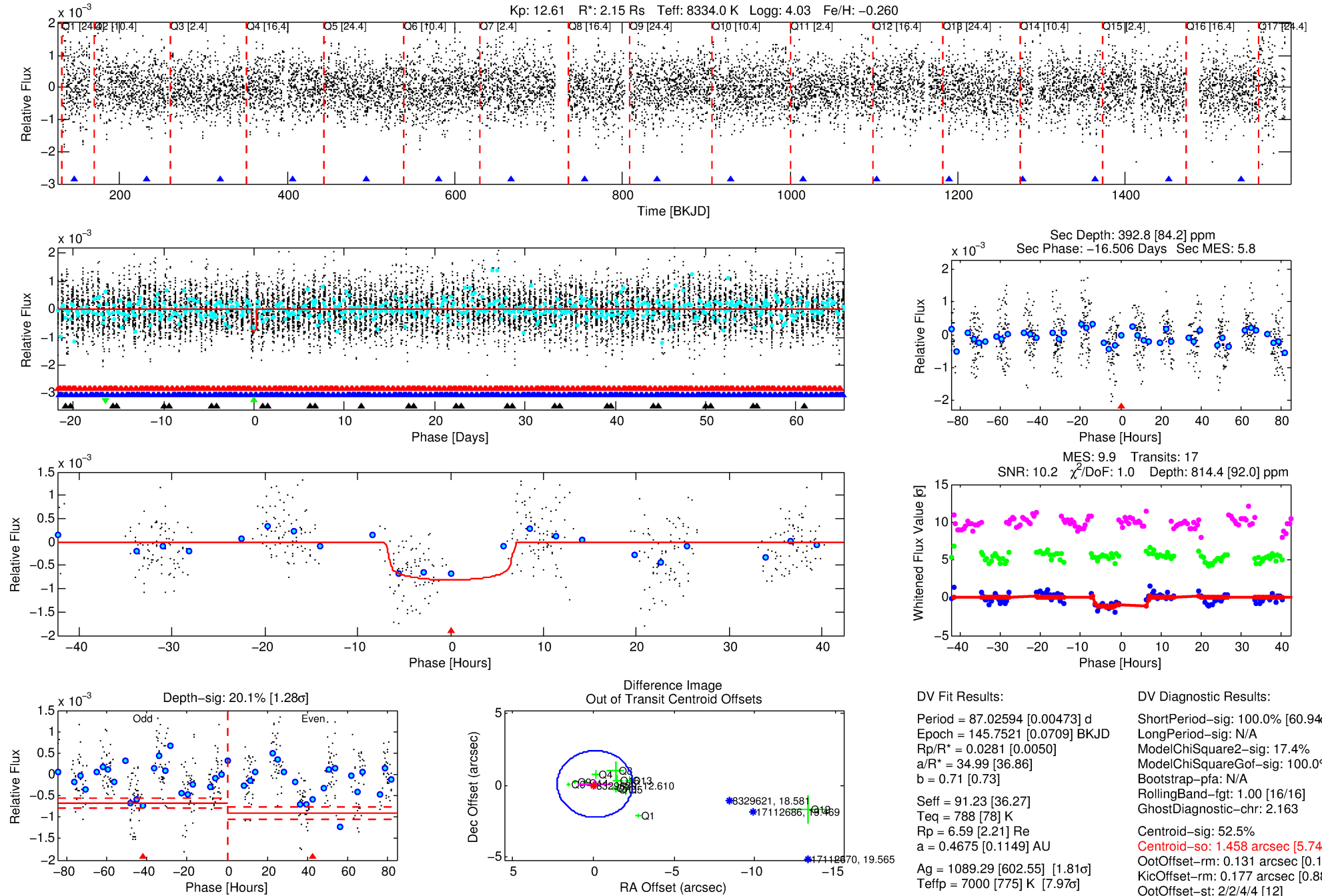
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008329629-03

No Significant Match Found

DV One-Page Summary

KIC: 8329629 Candidate: 3 of 4 Period: 87.026 d



DV Fit Results:

Period = 87.02594 [0.00473] d
Epoch = 145.7521 [0.0709] BKJD
Rp/R* = 0.0281 [0.0050]
a/R* = 34.99 [36.86]
b = 0.71 [0.73]
Seff = 91.23 [36.27]
Teff = 788 [78] K
Rp = 6.59 [2.21] Re
a = 0.4675 [0.1149] AU
Ag = 1089.29 [602.55] [1.81 σ]
Teffp = 7000 [775] K [7.97 σ]

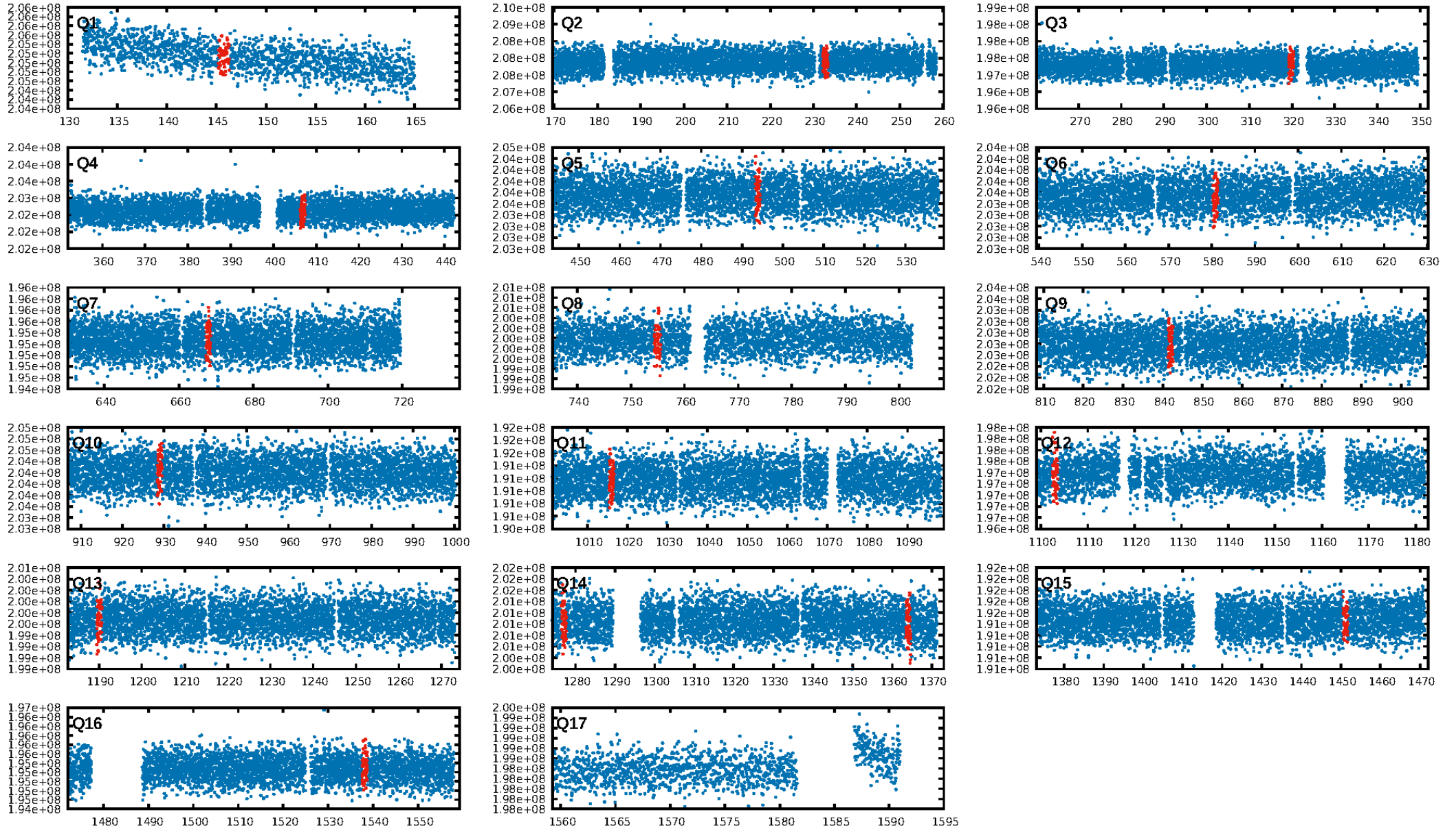
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [60.94 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 17.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [16/16]
GhostDiagnostic-chr: 2.163
Centroid-sig: 52.5%
Centroid-so: 1.458 arcsec [5.74 σ]
OotOffset-rm: 0.131 arcsec [0.17 σ]
KicOffset-rm: 0.177 arcsec [0.88 σ]
OotOffset-st: 2/2/4/4 [12]
KicOffset-st: 2/2/4/4 [12]
DiffImageQuality-fgm: 0.33 [4/12]
DiffImageOverlap-fno: 0.00 [0/13]

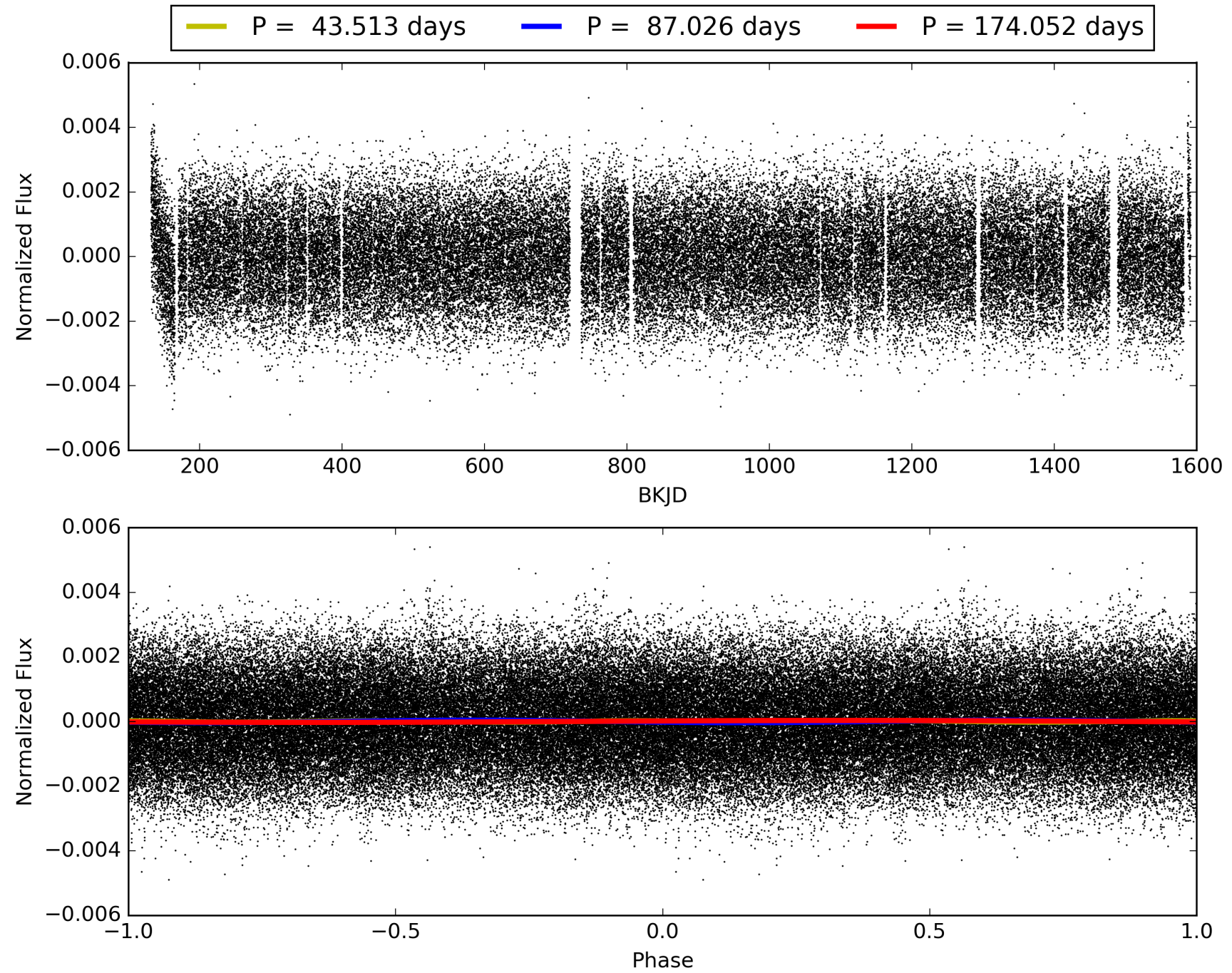
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:05:26 Z

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

TCE 008329629-03, PDC Light Curves

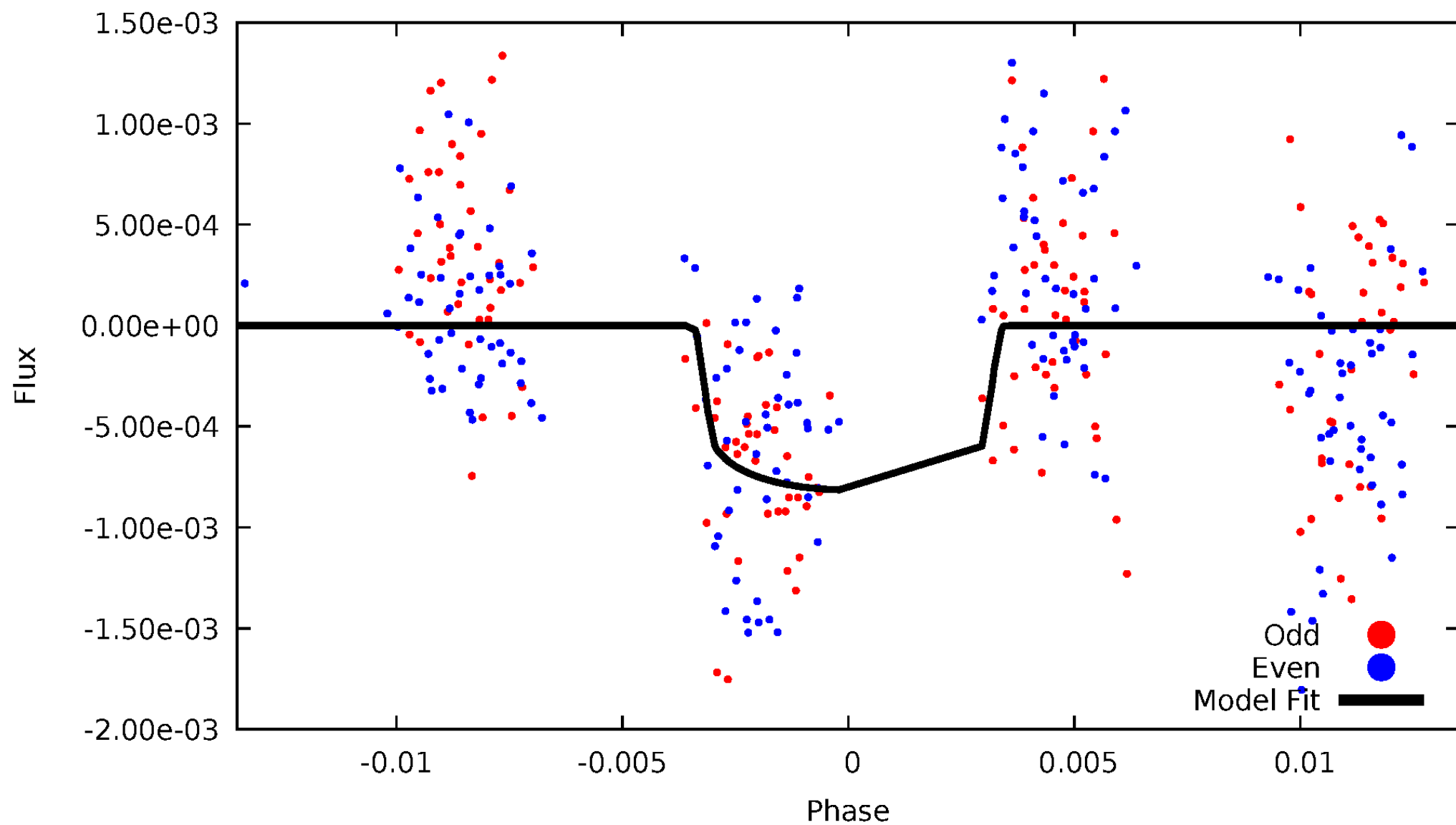


TCE 008329629-03



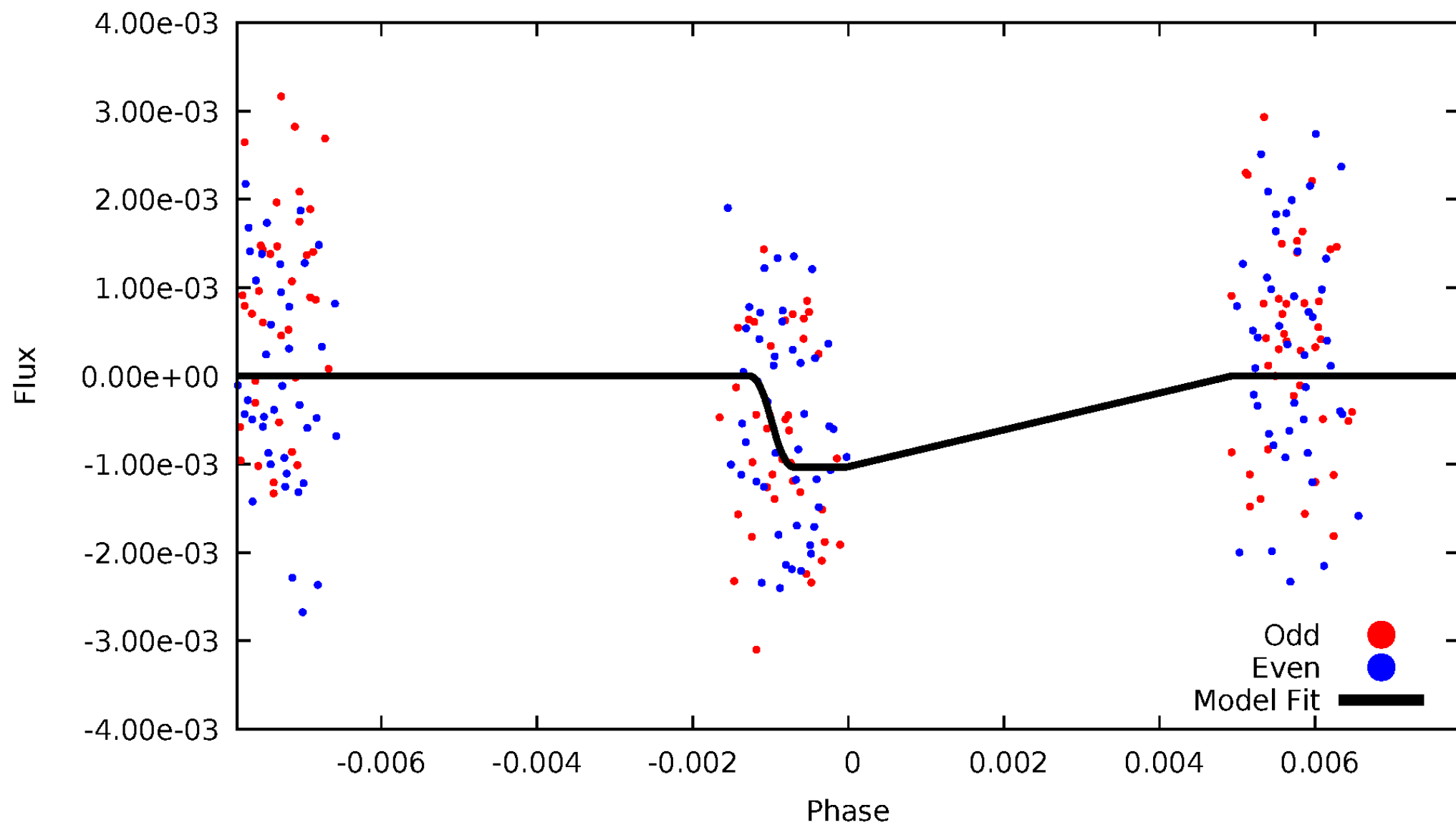
DV Odd/Even

TCE 008329629-03



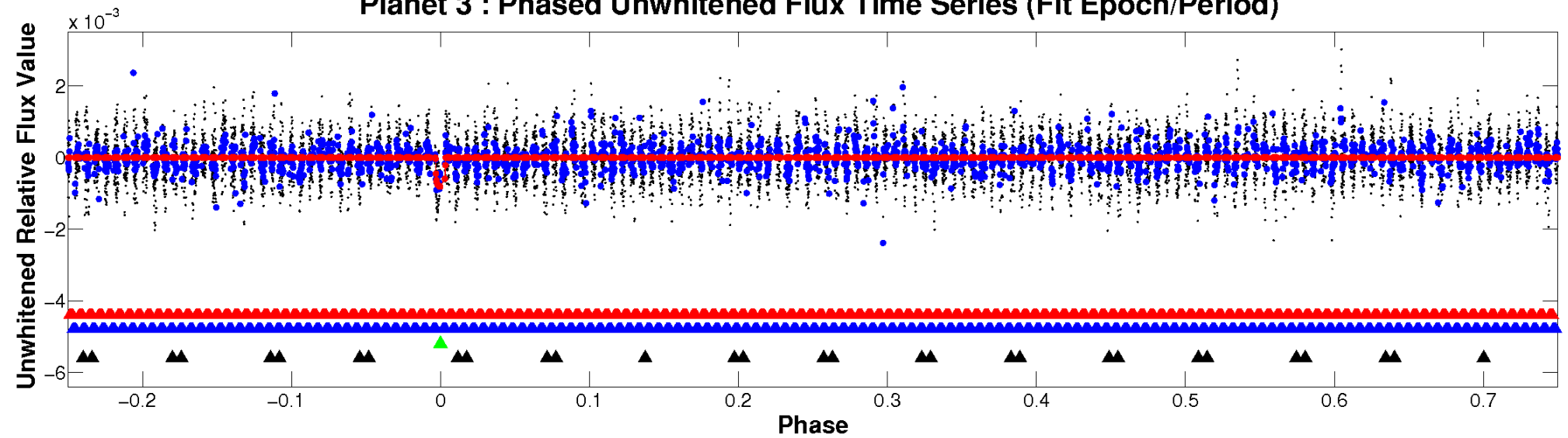
ALT Odd/Even

TCE 008329629-03

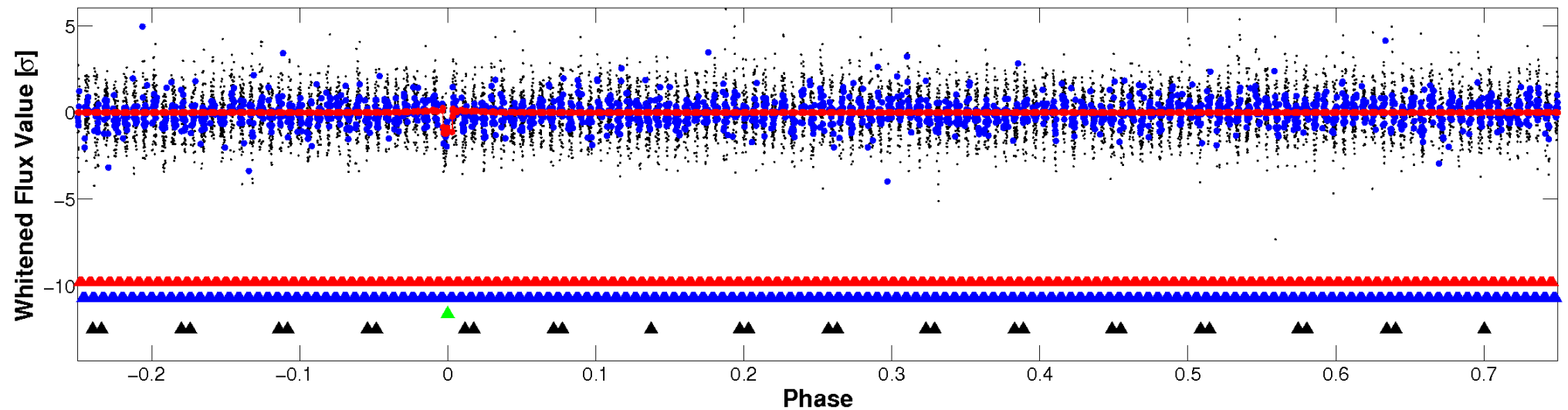


Non-Whitened Vs. Whitened Light Curve

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

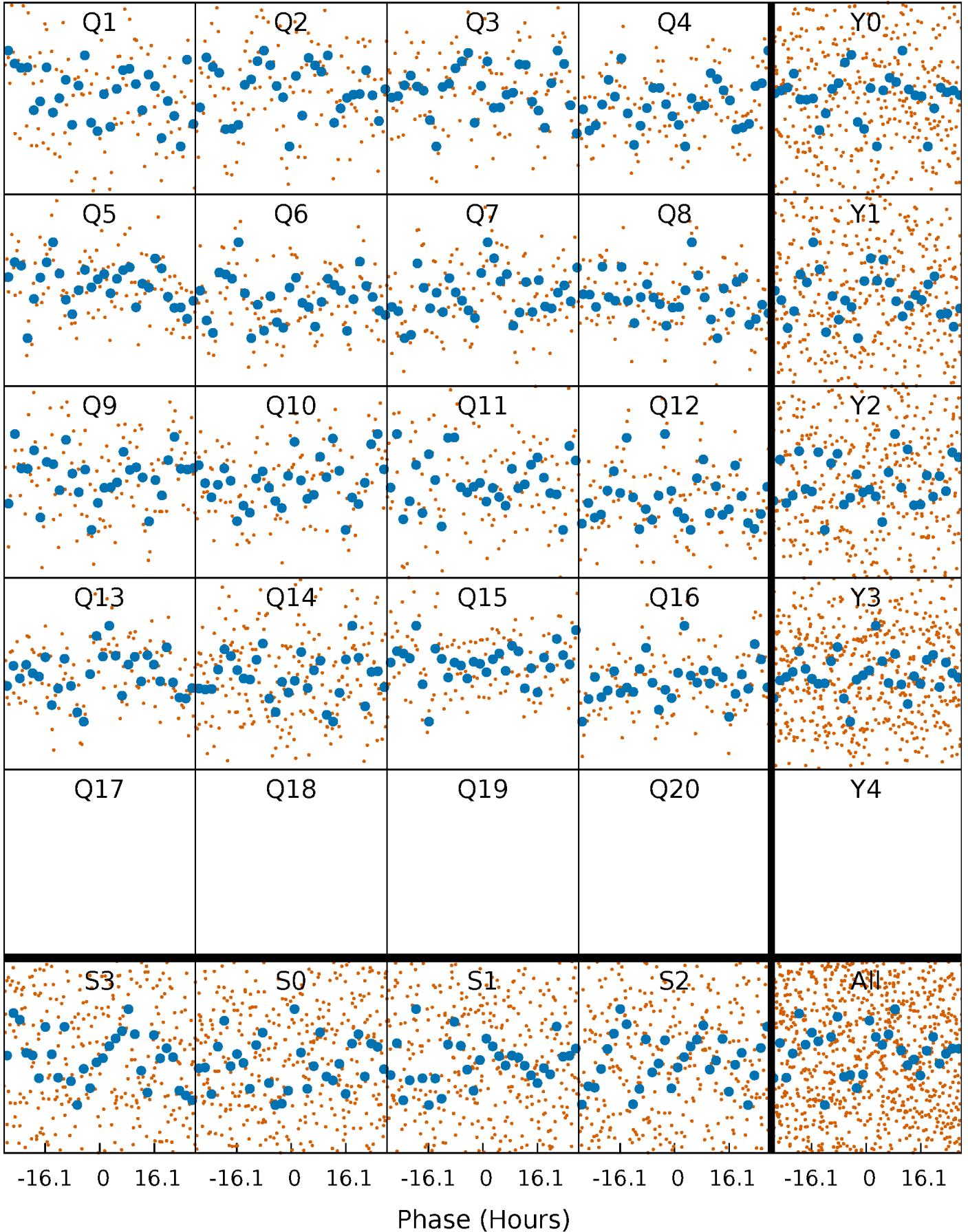


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



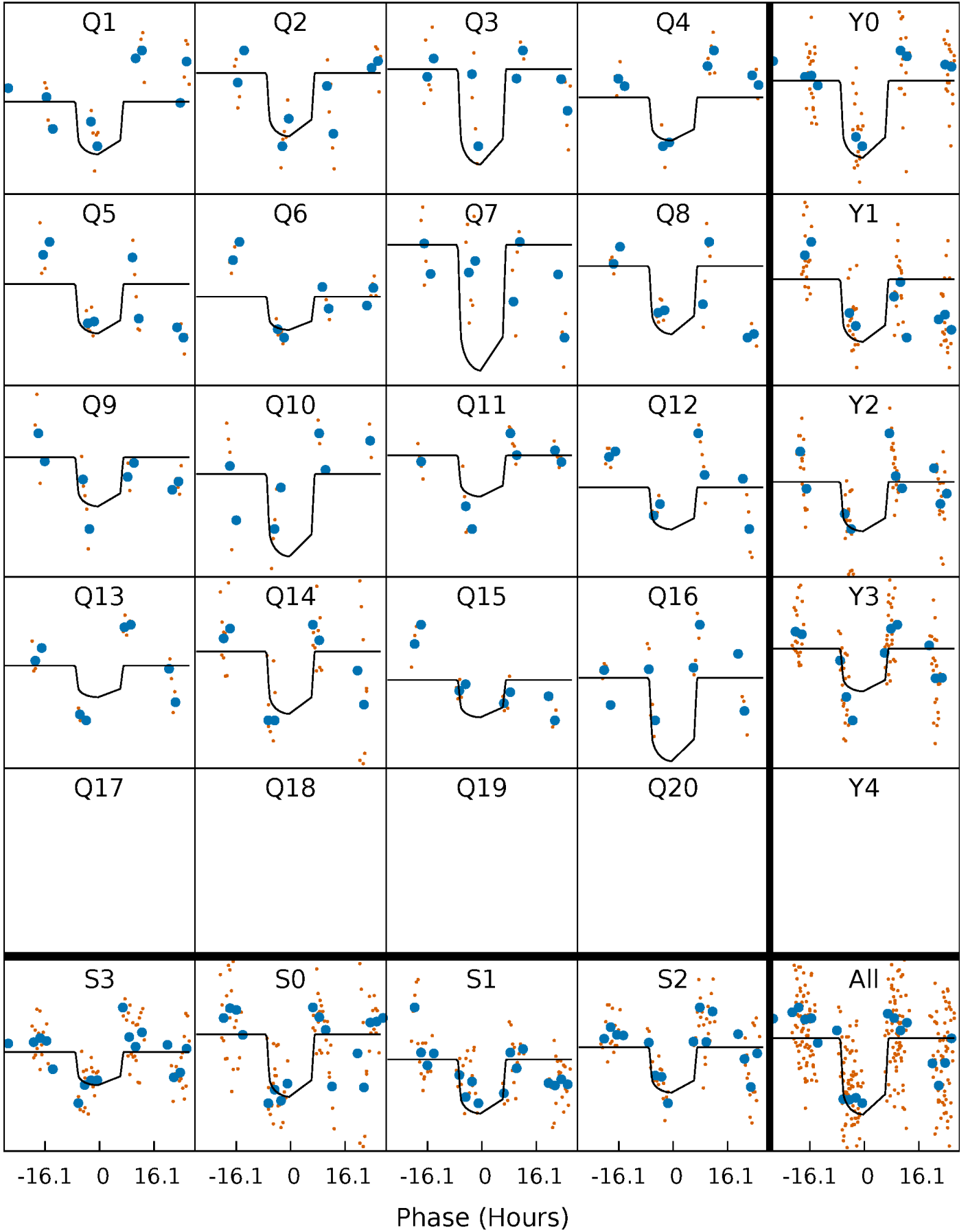
PDC Quarter-Phased Transit Curves

TCE 008329629-03 P= 87.025940 Days $T_0=145.752064$ (BKJD)



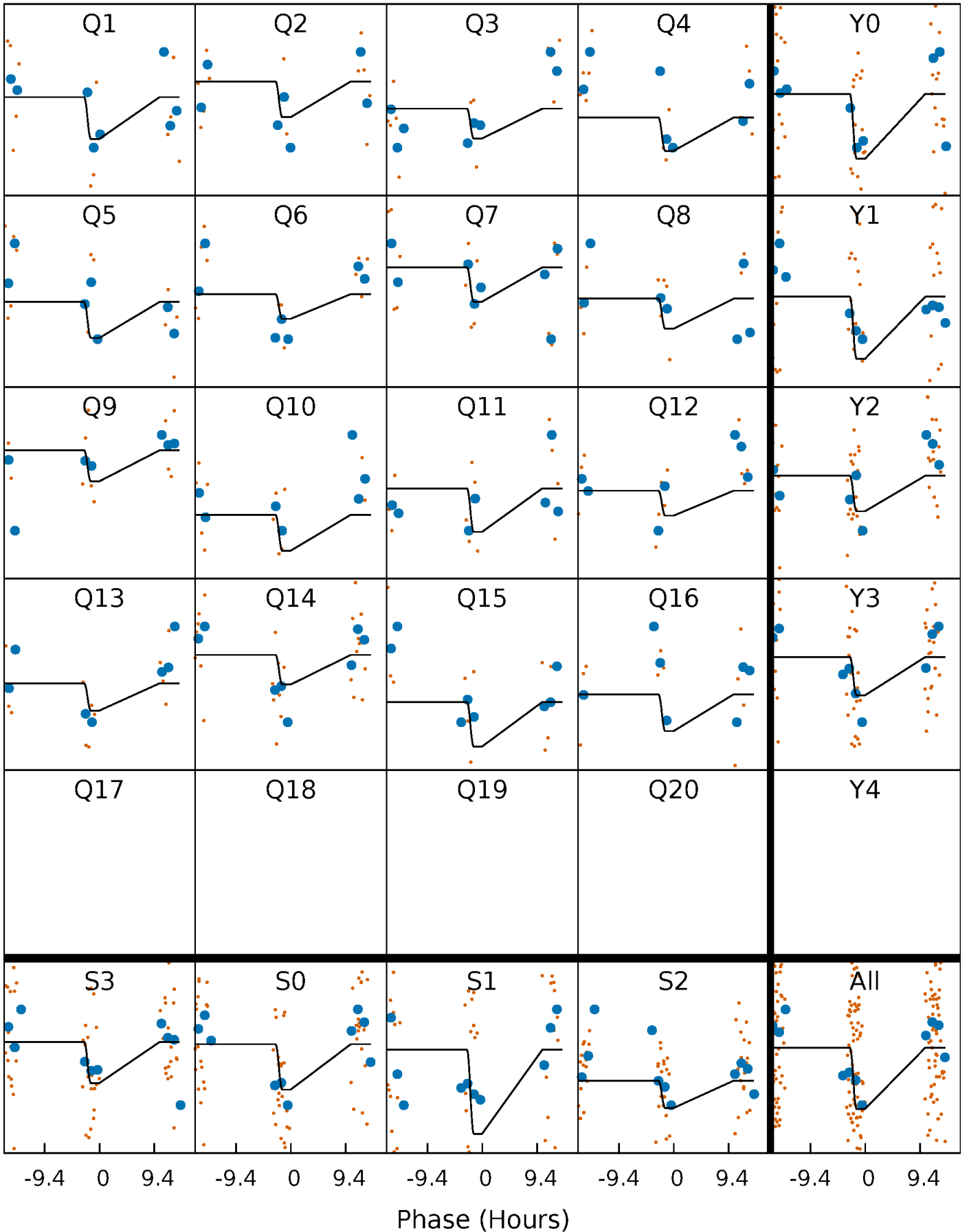
DV Quarter-Phased Transit Curves

TCE 008329629-03 P= 87.025940 Days $T_0=145.752064$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

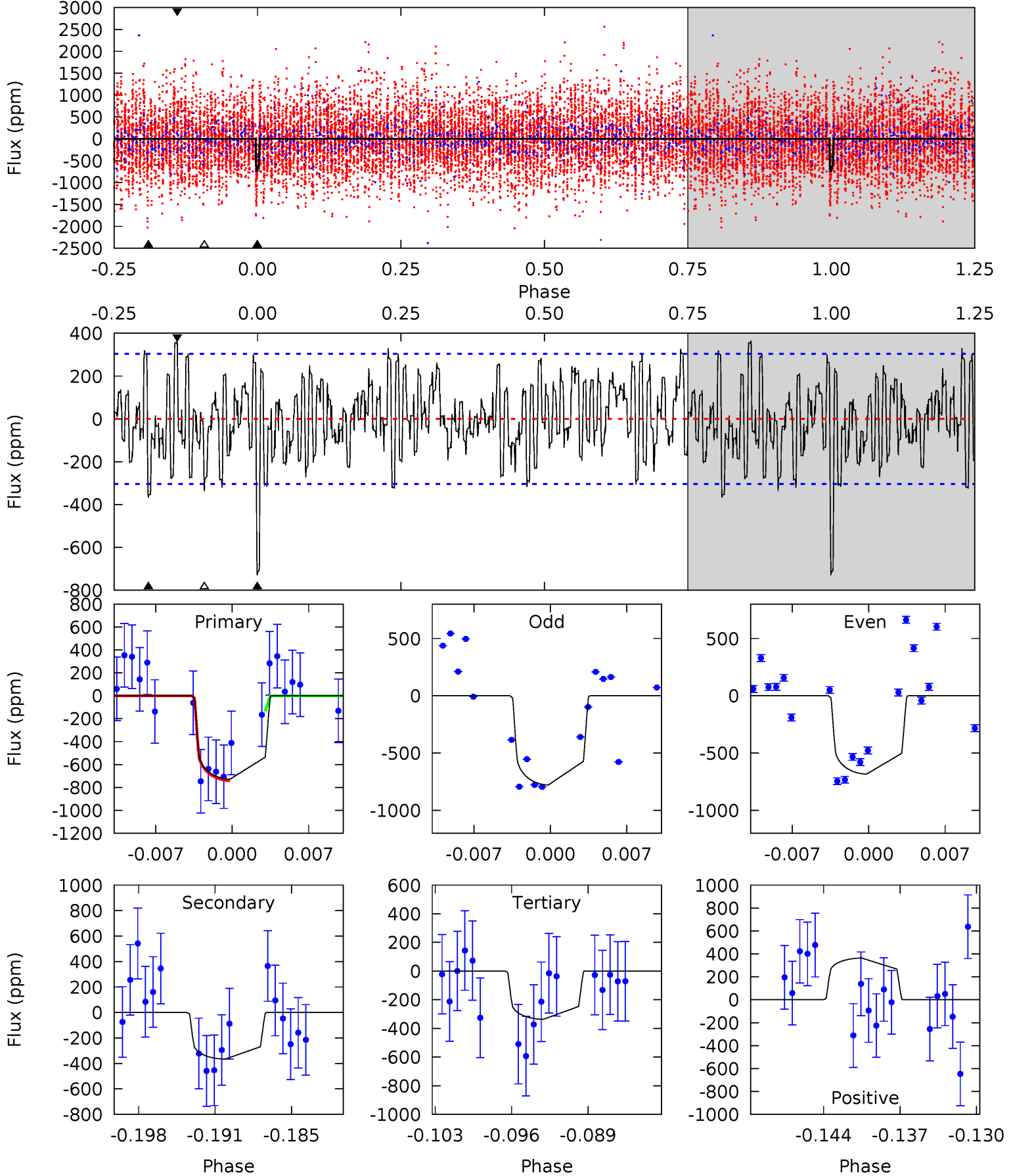
TCE 008329629-03 P= 87.015645 Days $T_0=145.735942$ (BKJD)



DV Model-Shift Uniqueness Test

008329629-03, P = 87.025940 Days, E = 58.726124 Days

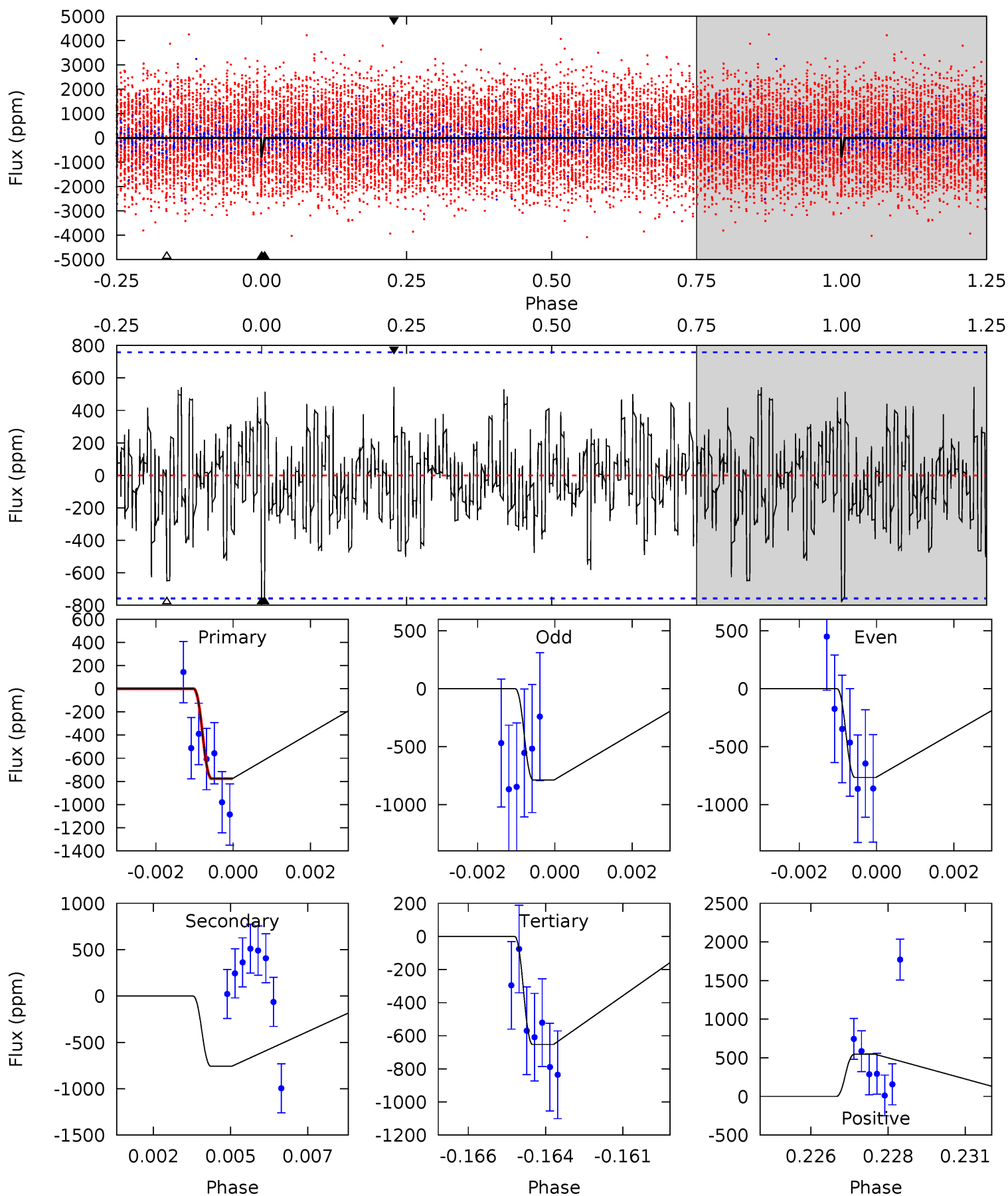
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	6.15	5.65	6.12	5.10	2.70	2.14	6.60	6.13	0.50	0.03	0.80	1.12	0.33	3.19



Alt Model-Shift Uniqueness Test

008329629-03, P = 87.015645 Days, E = 58.720297 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.41	5.28	4.55	3.80	5.29	3.03	1.32	0.85	1.61	0.73	1.48	0.08	0	0.41	0



Stellar Parameters For KIC 008329629

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8334^{+236}_{-324}	$4.029^{+0.204}_{-0.119}$	$-0.260^{+0.150}_{-0.300}$	$2.148^{+0.407}_{-0.610}$	$1.799^{+0.103}_{-0.329}$	$0.256^{+0.328}_{-0.092}$
	+3%/-4%	+5%/-3%	+58%/-115%	+19%/-28%	+6%/-18%	+128%/-36%
Source	KIC0	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 008329629-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-366 ± 60	$6.35^{+1.58}_{-1.31}$	1094^{+63}_{-79}	6613^{+841}_{-638}	1054^{+669}_{-385}
Alt.	-757 ± 143	$7.41^{+1.50}_{-1.52}$	1089^{+72}_{-79}	7469^{+944}_{-748}	1594^{+1048}_{-534}

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 $A_{obs} \gg 1.0$

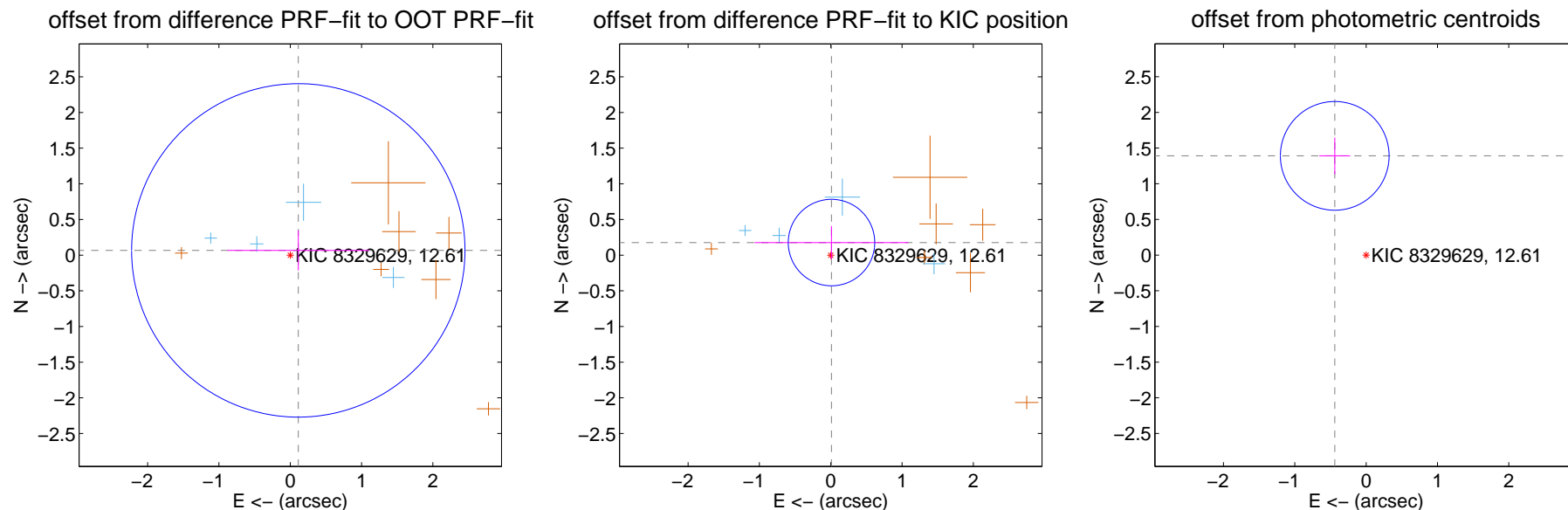
DV Centroid Data

Supplemental centroid analysis for 008329629-03. Kepler magnitude: 12.61. Transit SNR 10.16

There are 4 quarters with good PRF difference image offsets

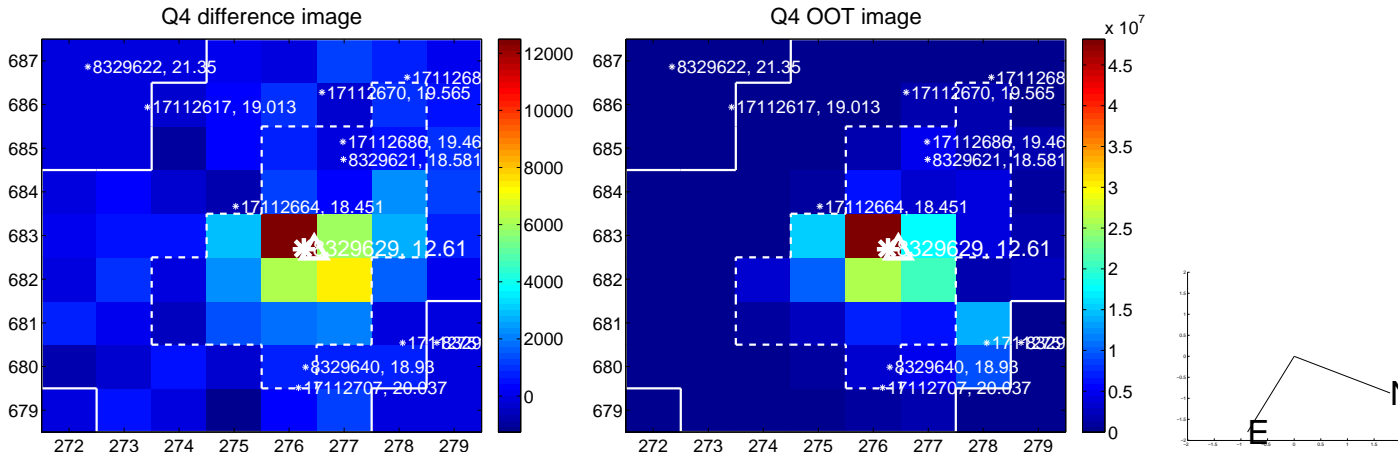
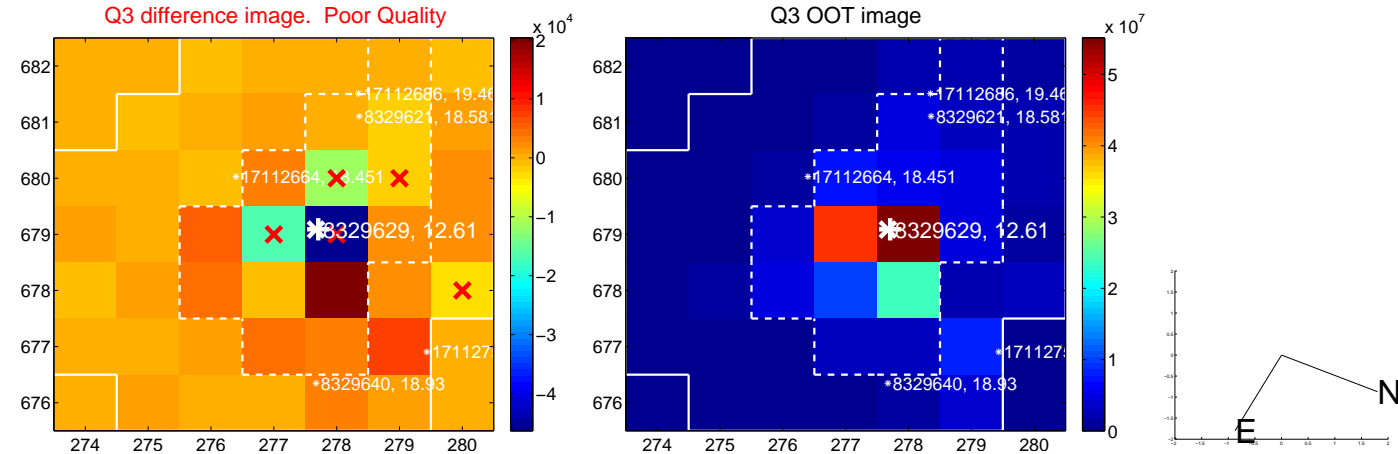
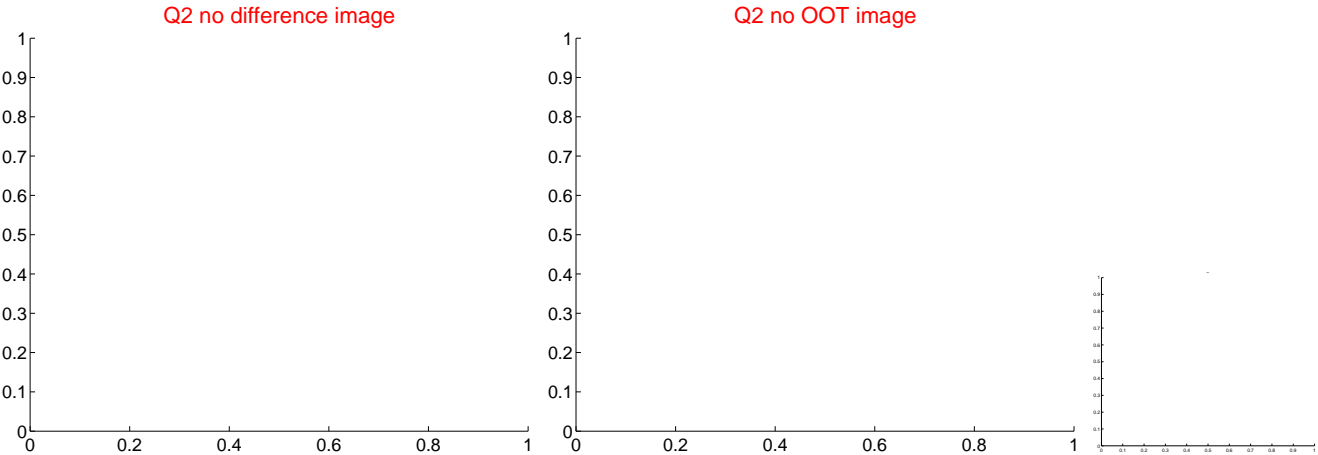
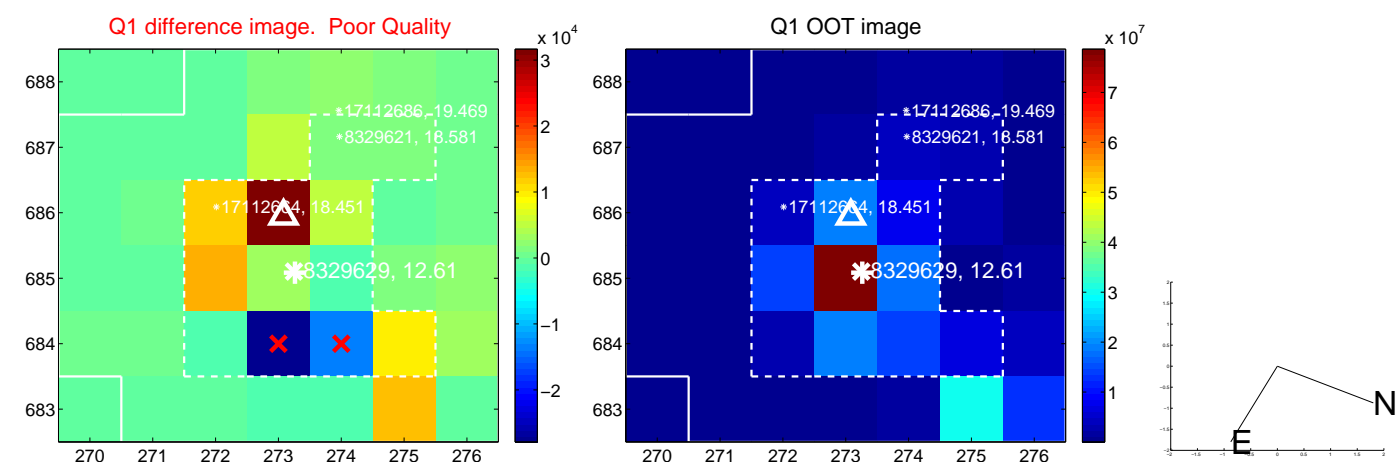
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.131 ± 0.779	0.17	-0.113 ± 0.997	0.067 ± 0.280
PRF-fit source offset from KIC position	0.177 ± 0.202	0.88	-0.011 ± 1.078	0.177 ± 0.232
photometric centroid source offset	1.46 ± 0.25	5.74	0.44 ± 0.22	1.39 ± 0.26

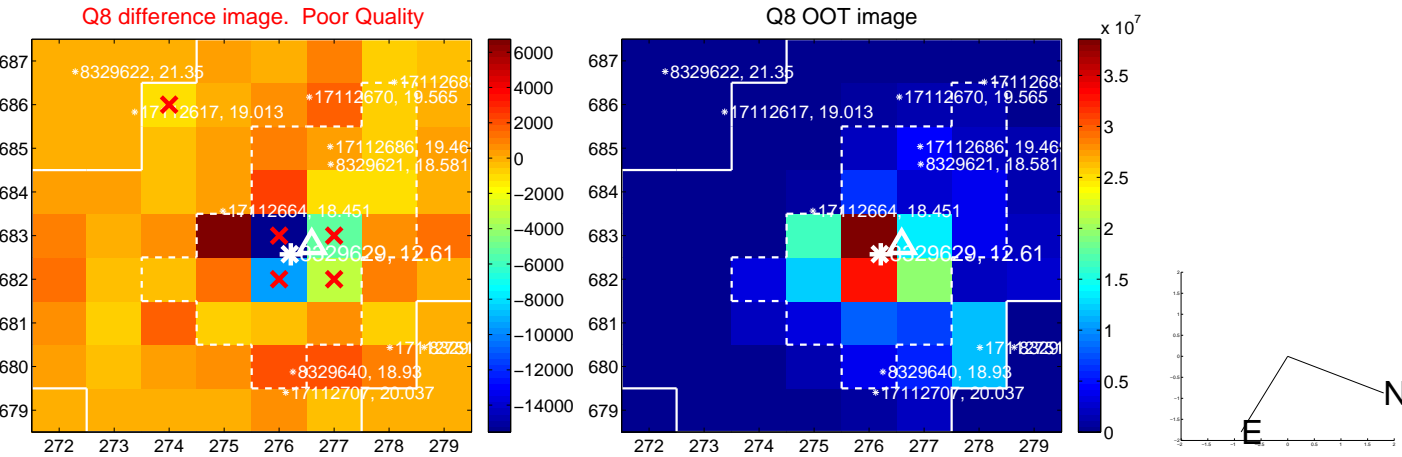
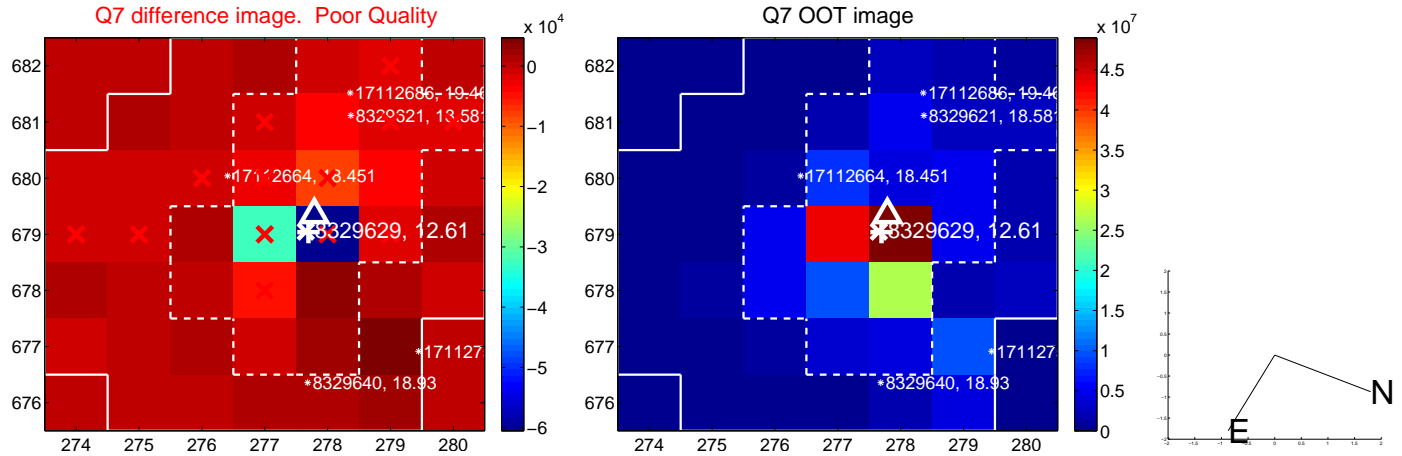
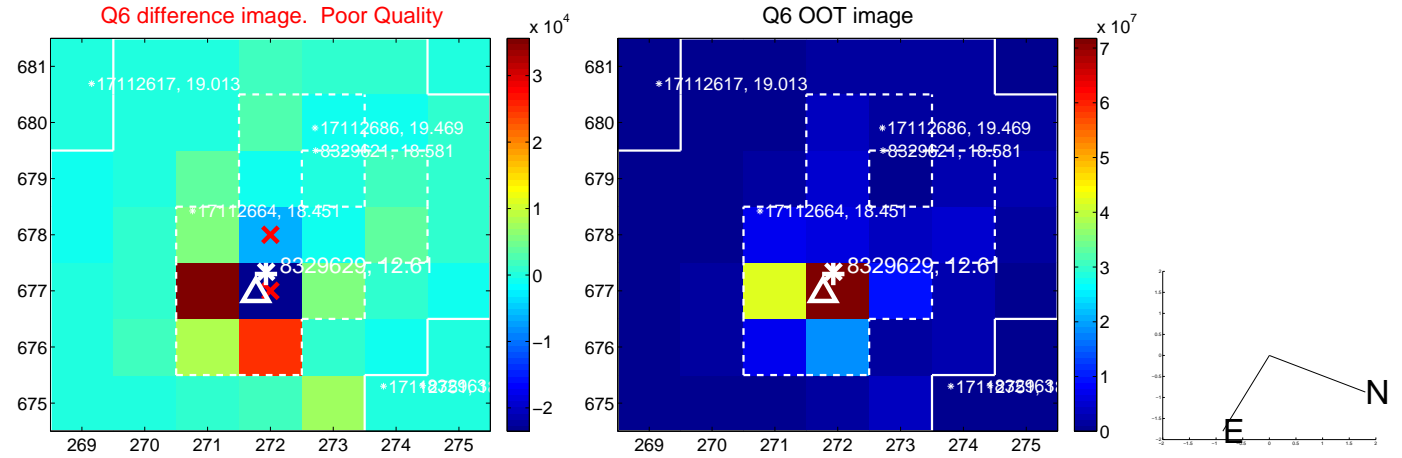
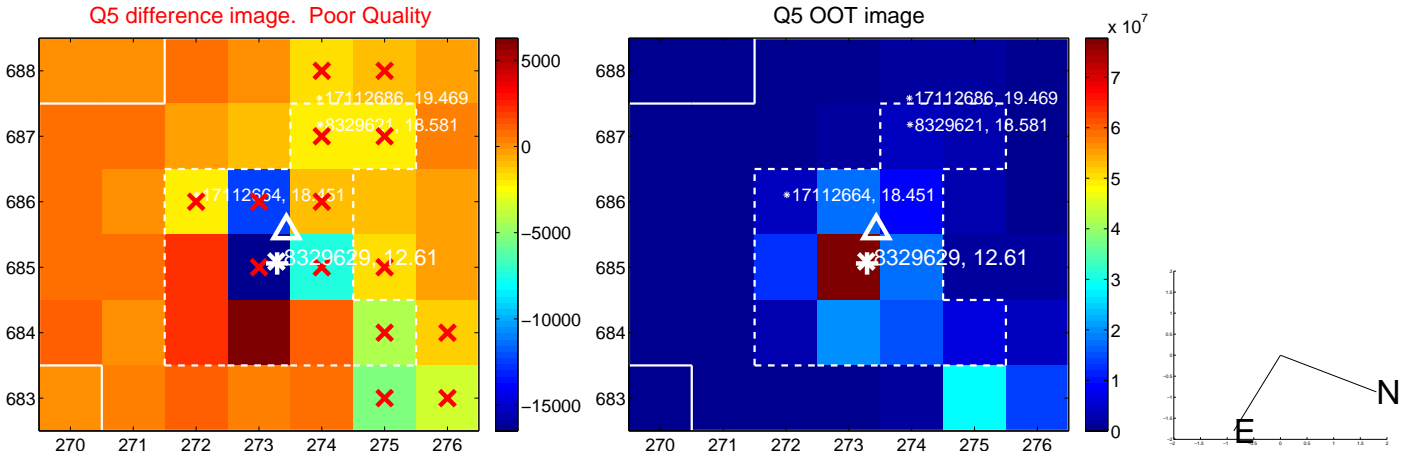


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

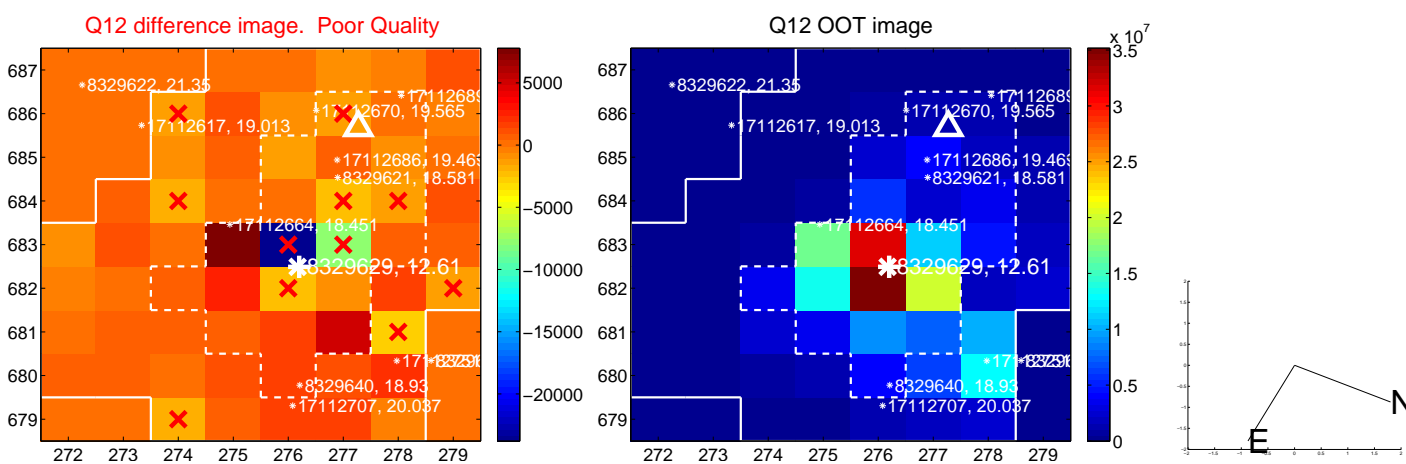
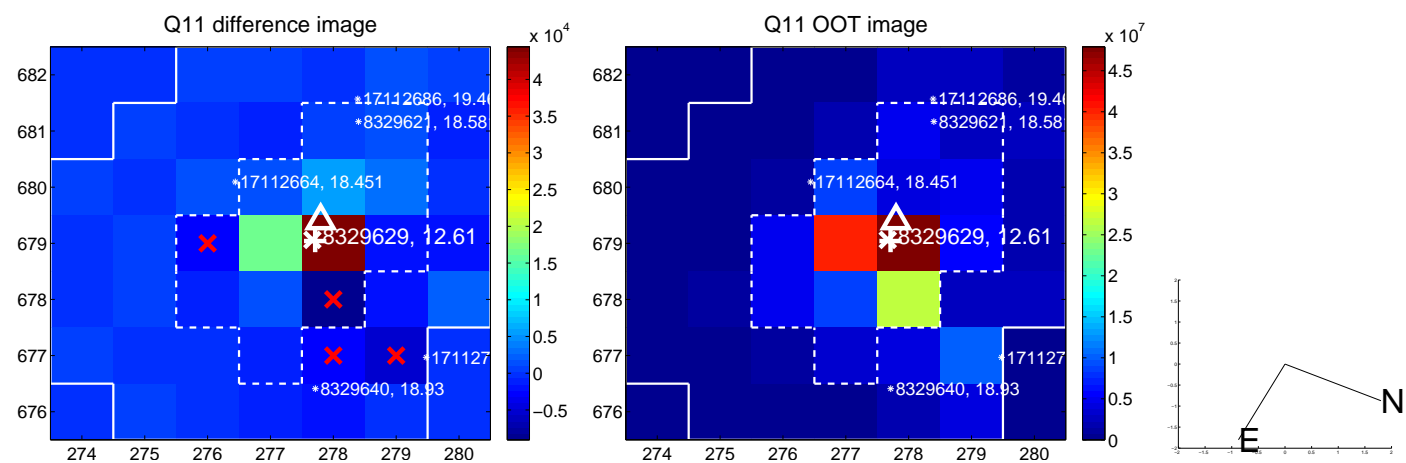
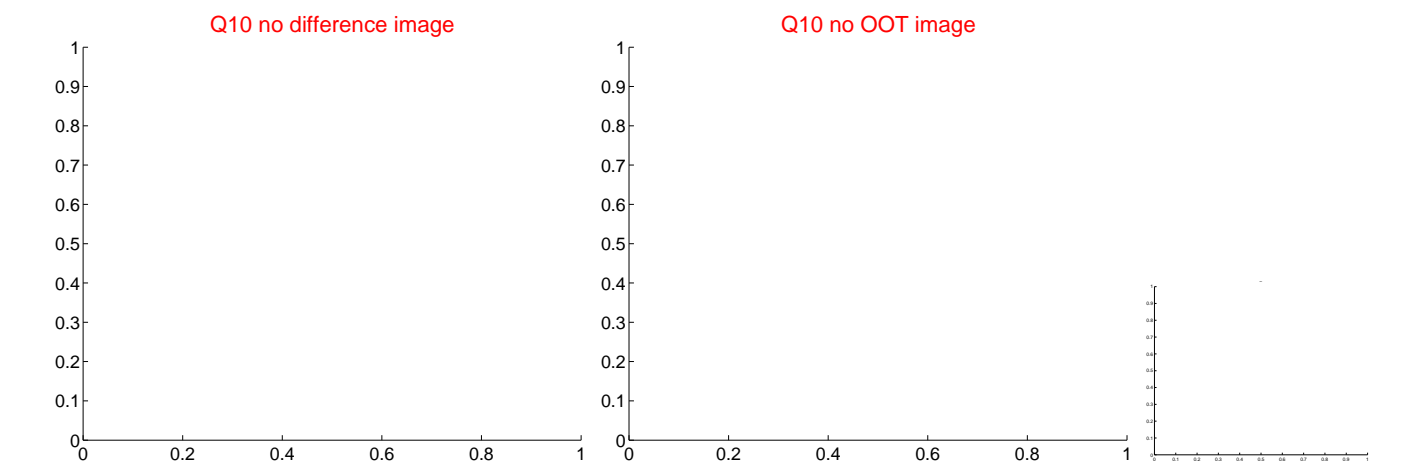
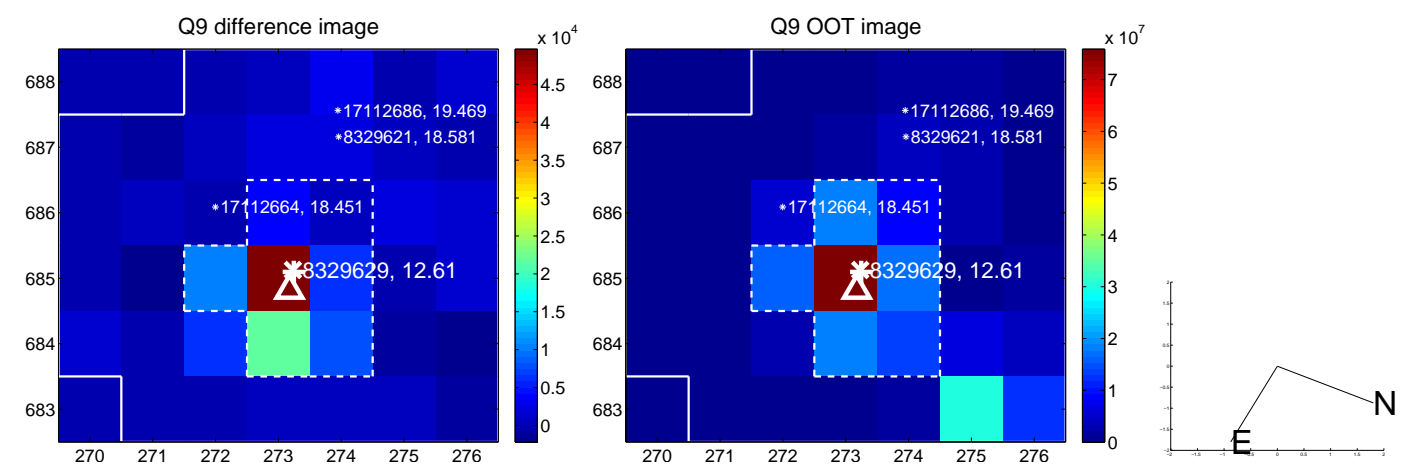
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



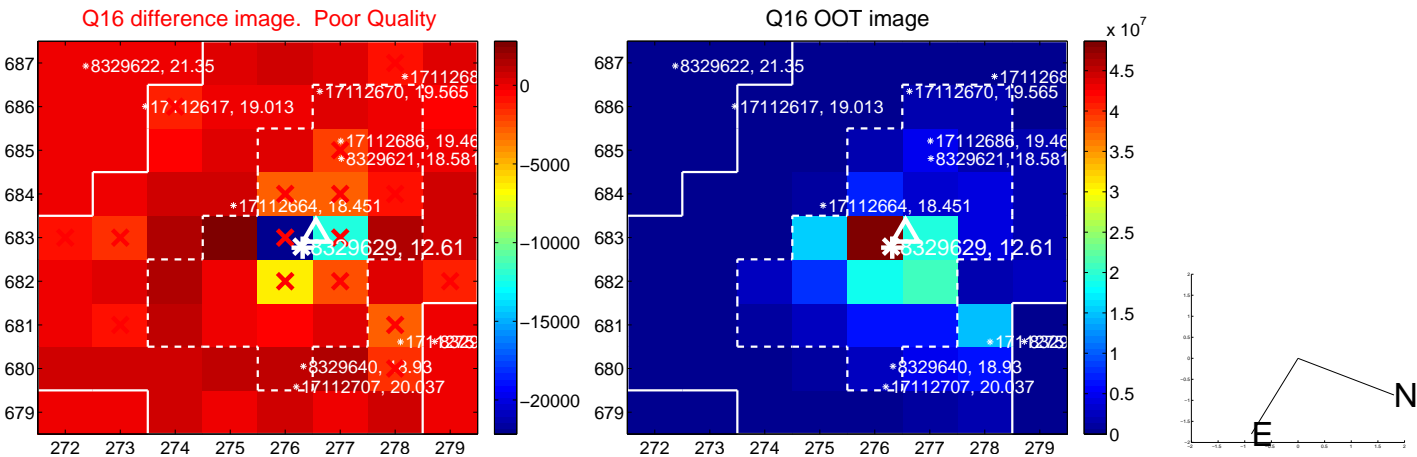
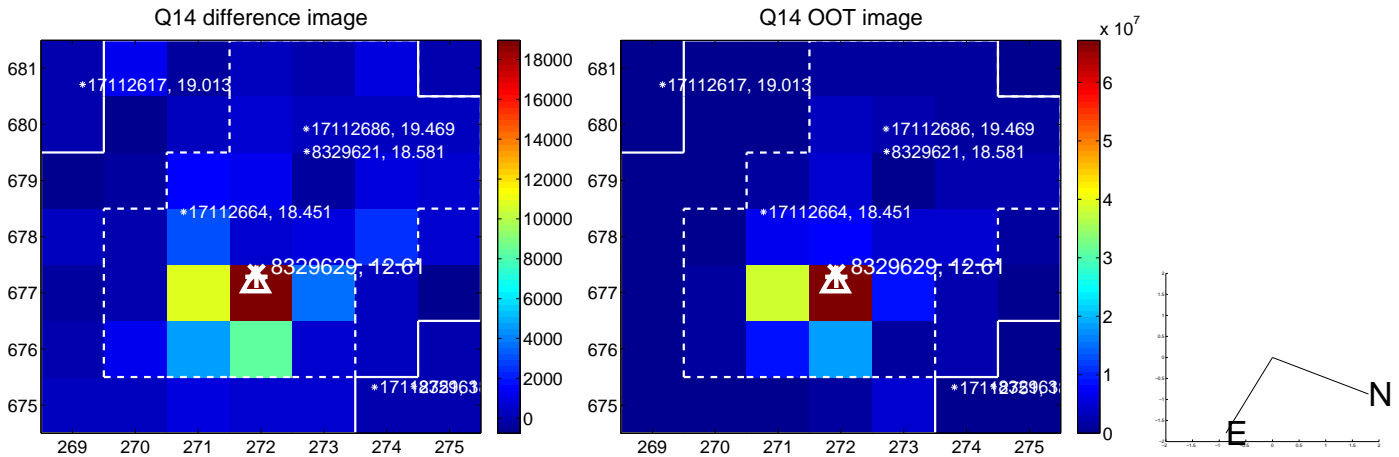
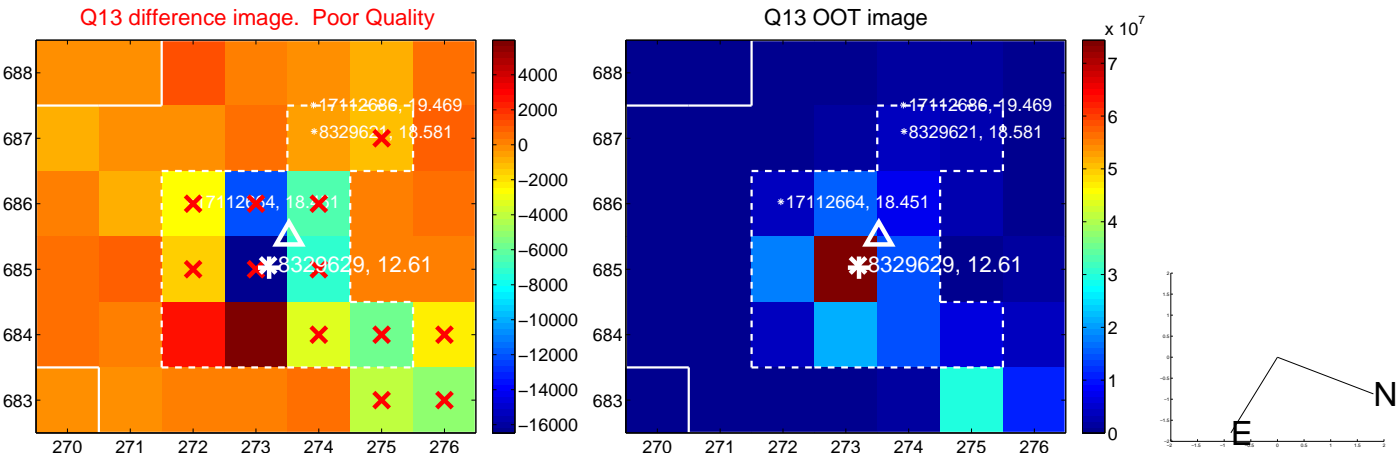
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



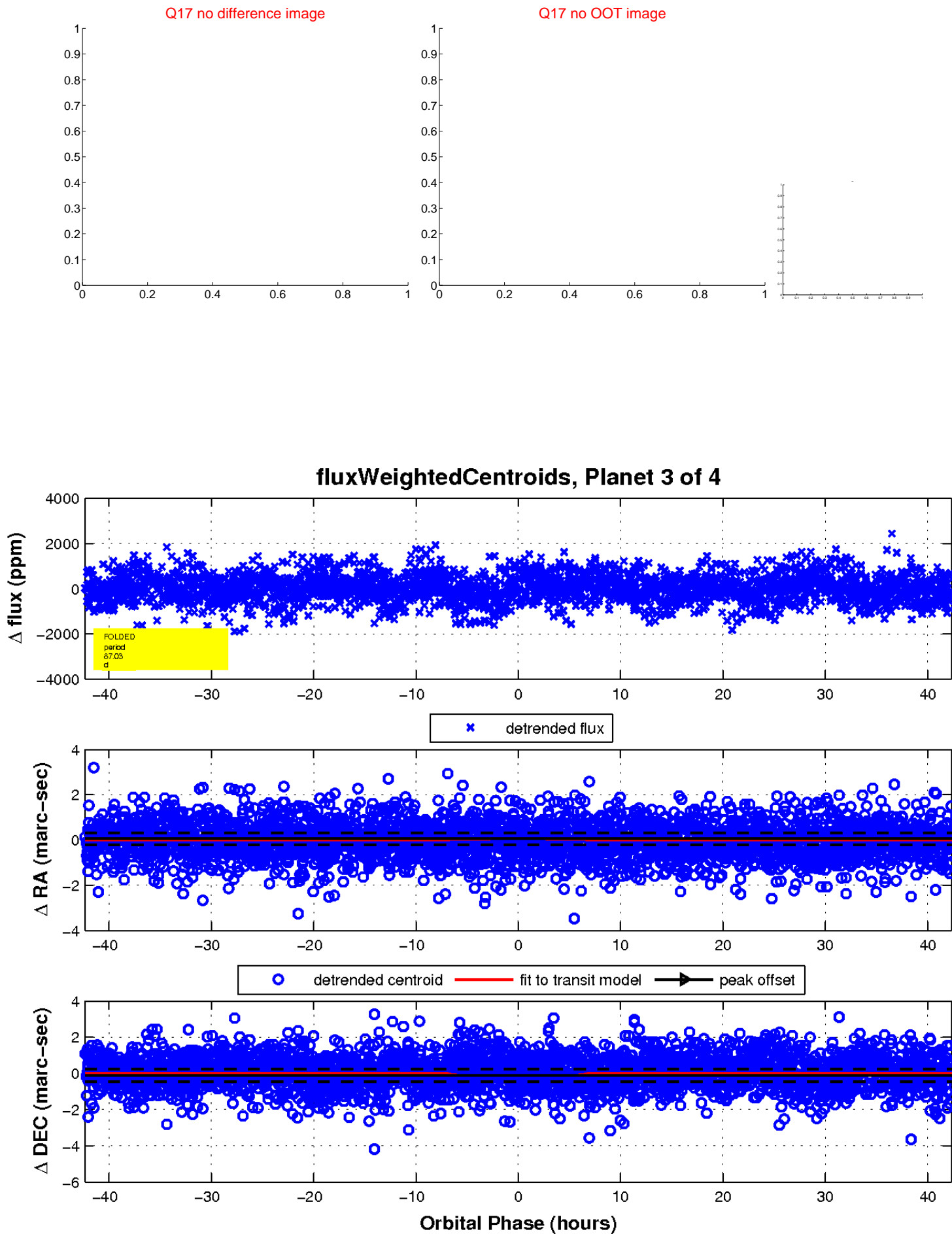
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

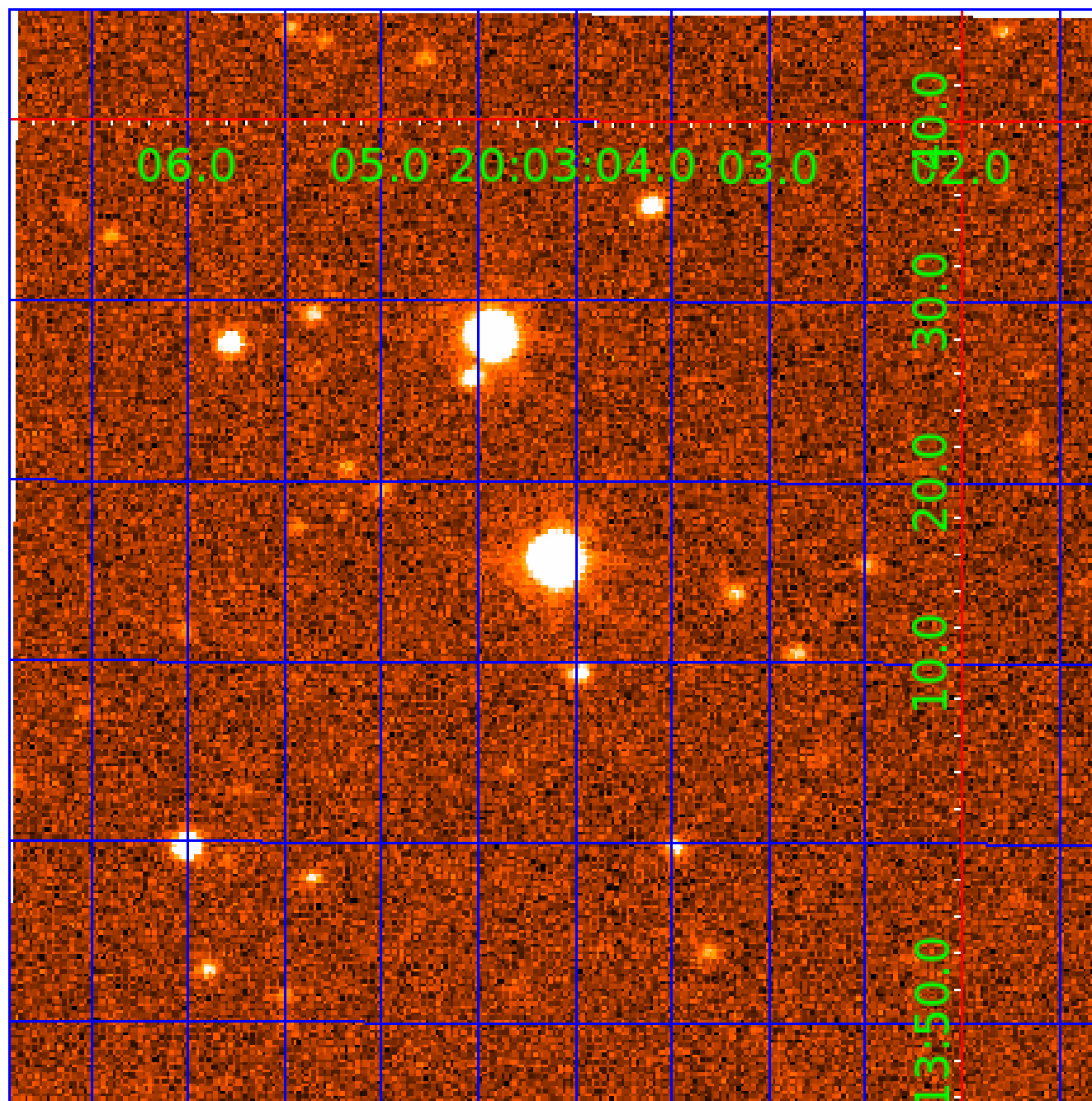


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008329629

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})
008329629-01	OBS	No	0.568710	131.685333	96.0	2.477	12.7	13.8	2.15	8334	2.45	74669.51
008329629-02	OBS	No	0.568710	131.870940	103.6	1.671	12.5	14.1	2.15	8334	2.53	74669.52
008329629-03	OBS	No	87.025940	145.752064	814.4	14.122	9.9	10.2	2.15	8334	6.58	91.23
008329629-04	OBS	No	48.984275	168.138150	156.7	5.000	7.6	-1.0	2.15	8334	2.72	196.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008329629-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008329629-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD
008329629-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008329629-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

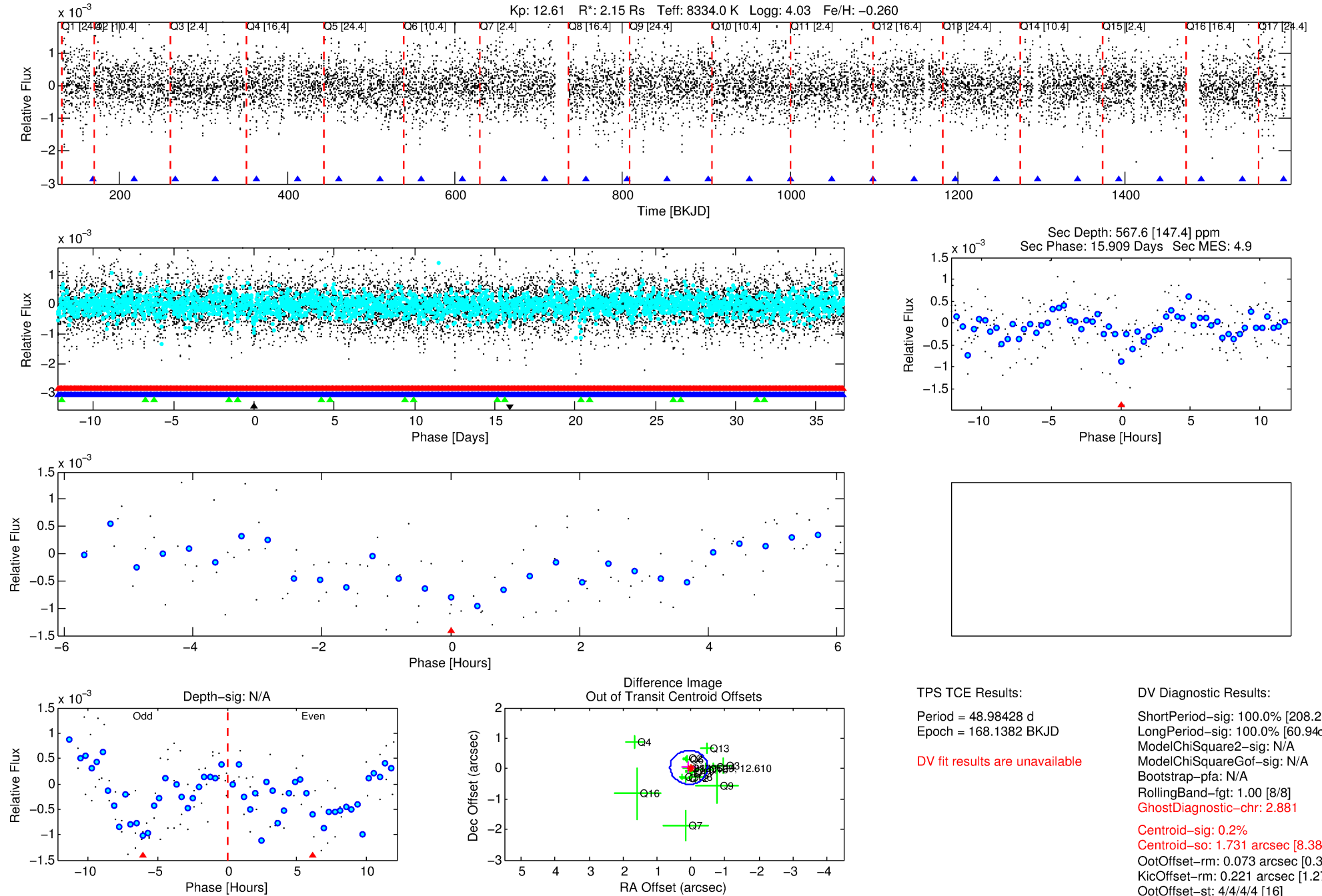
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008329629-04

No Significant Match Found

DV One-Page Summary

KIC: 8329629 Candidate: 4 of 4 Period: 48.984 d



TPS TCE Results:

Period = 48.98428 d
Epoch = 168.1382 BKJD

DV fit results are unavailable

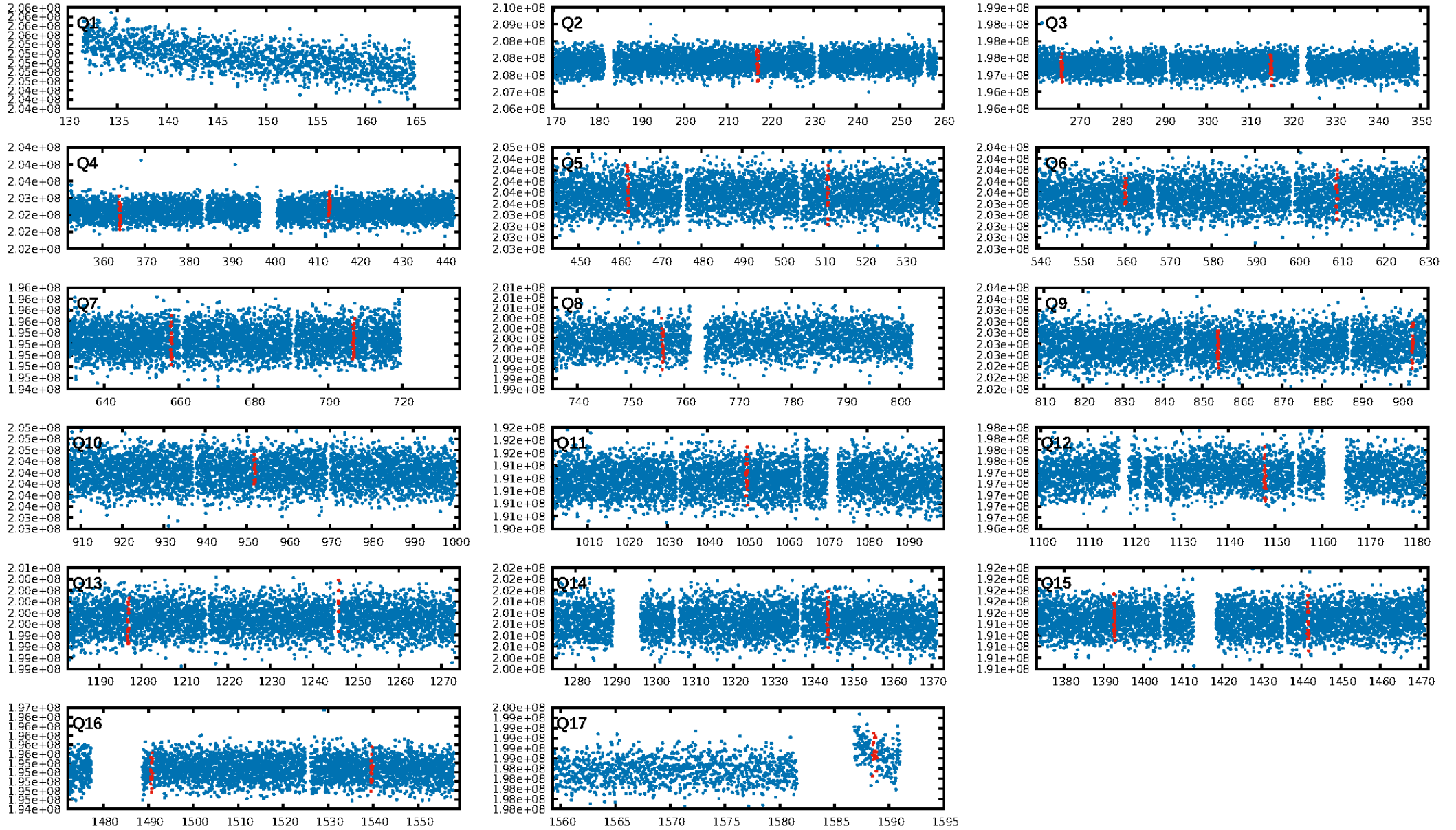
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [208.24 σ]
LongPeriod-sig: 100.0% [60.94 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 2.881
Centroid-sig: 0.2%
Centroid-so: 1.731 arcsec [8.38 σ]
OotOffset-rm: 0.073 arcsec [0.39 σ]
KicOffset-rm: 0.221 arcsec [1.27 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.44 [7/16]
DiffImageOverlap-fno: 0.00 [0/16]

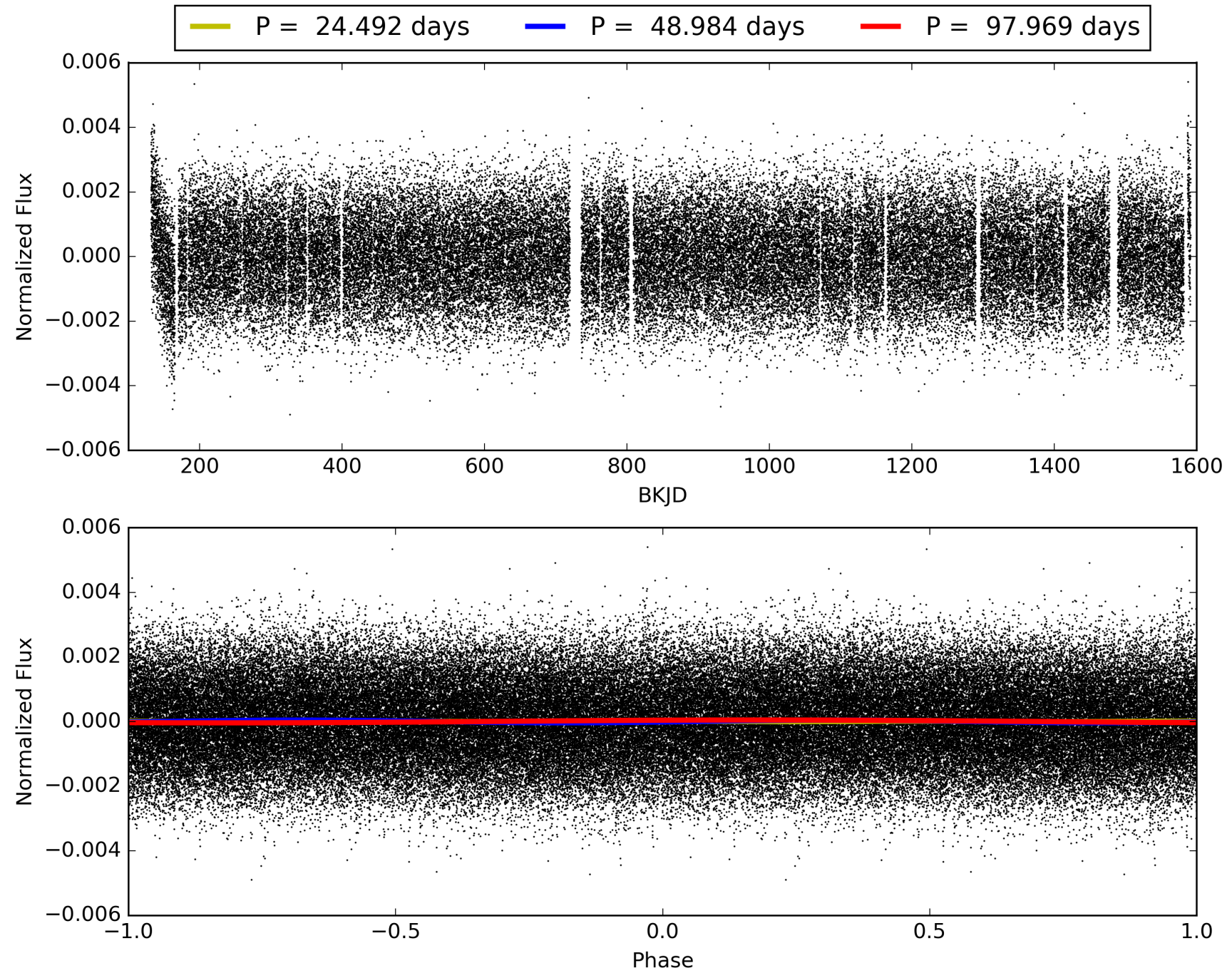
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:05:29 Z

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

TCE 008329629-04, PDC Light Curves

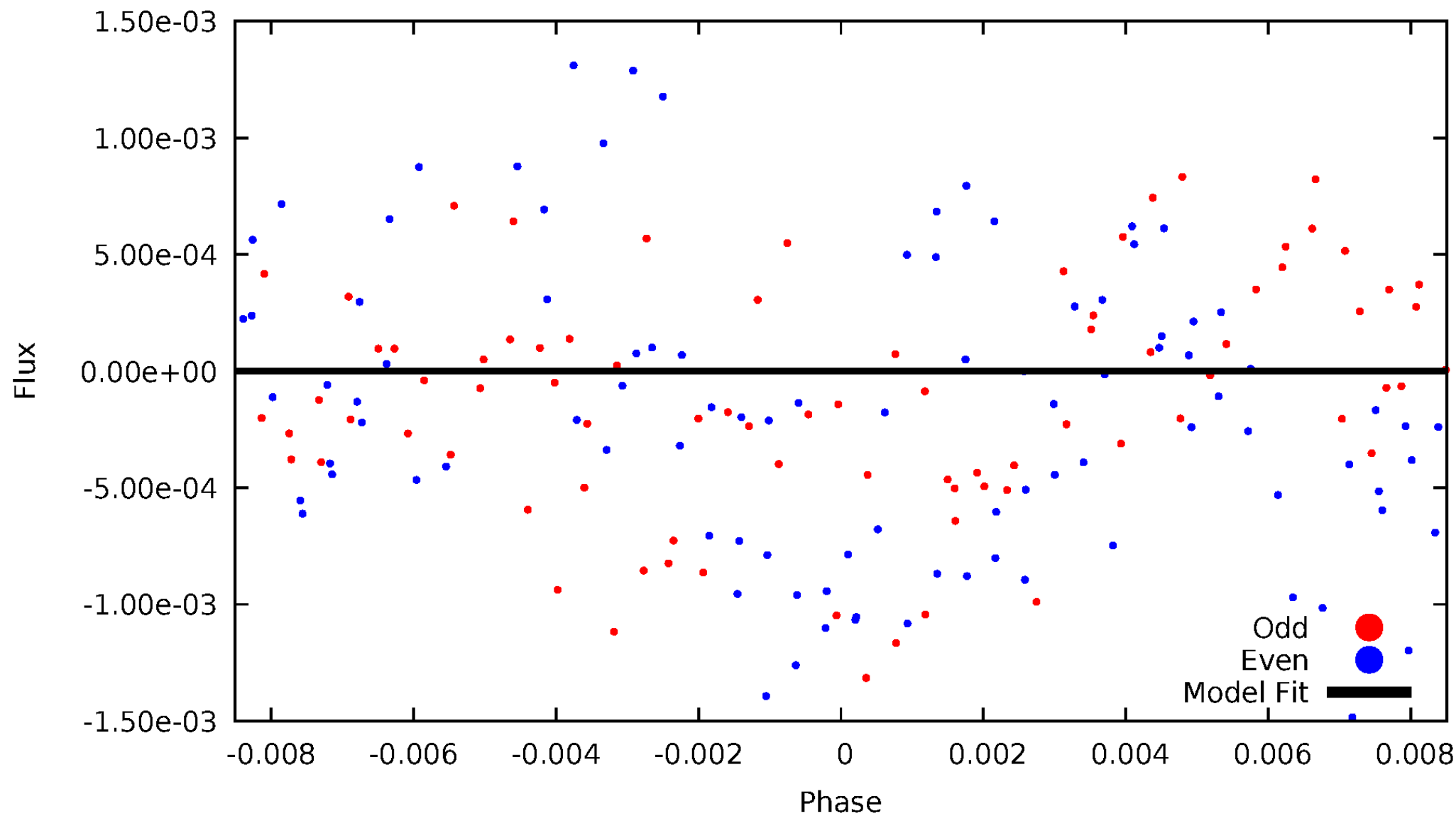


TCE 008329629-04



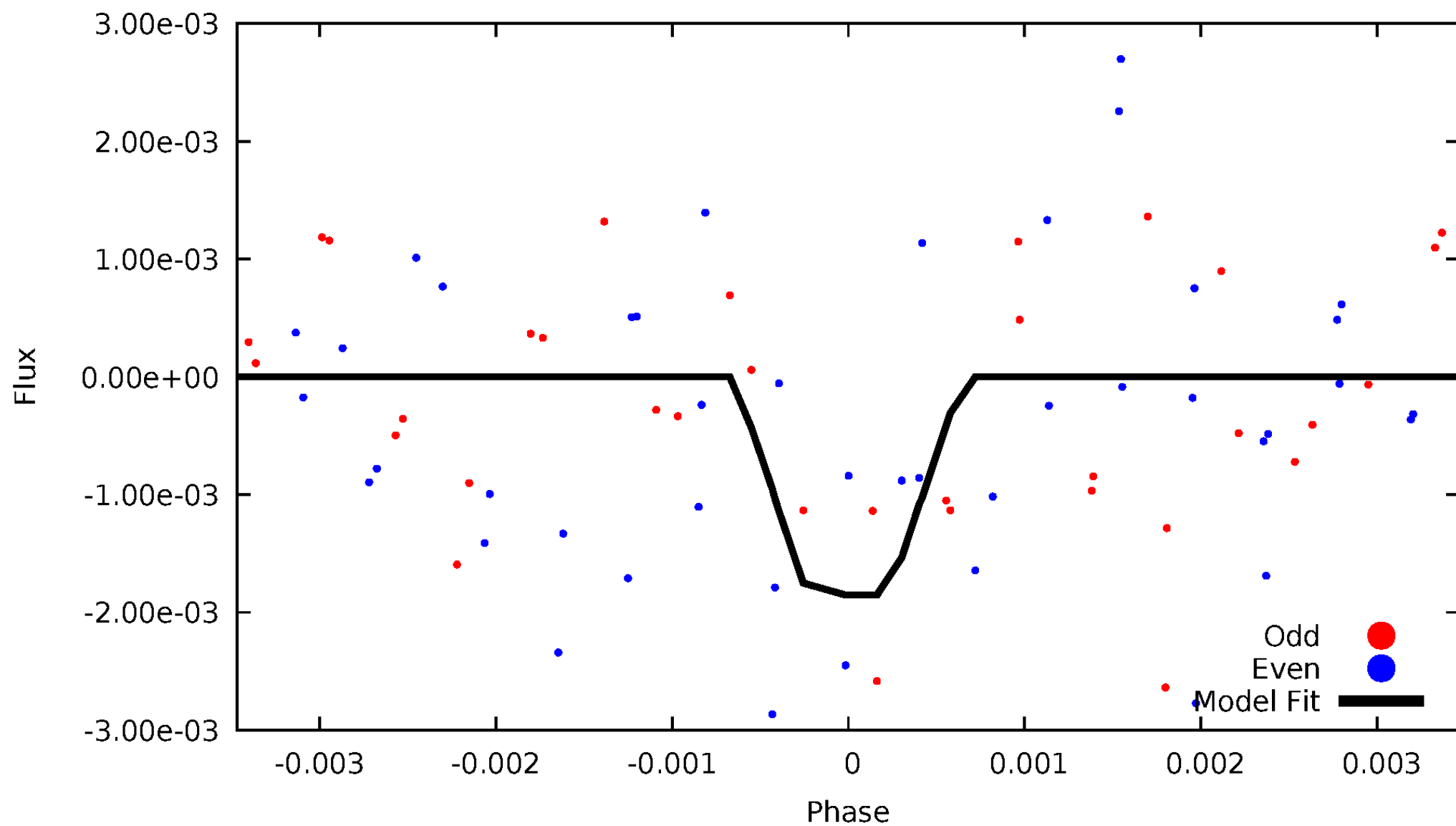
DV Odd/Even

TCE 008329629-04



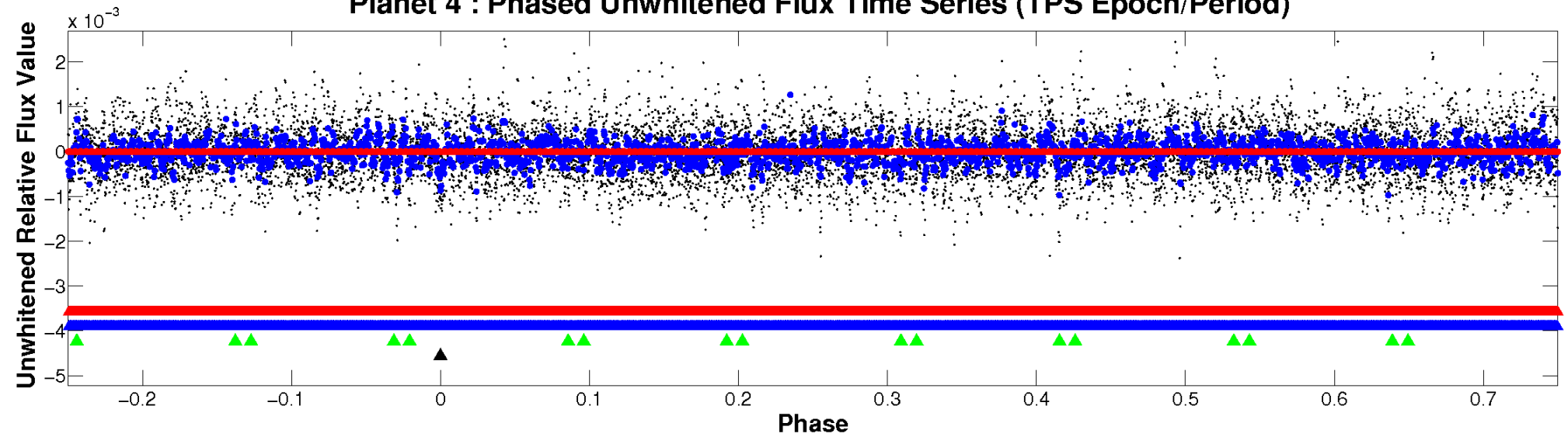
ALT Odd/Even

TCE 008329629-04

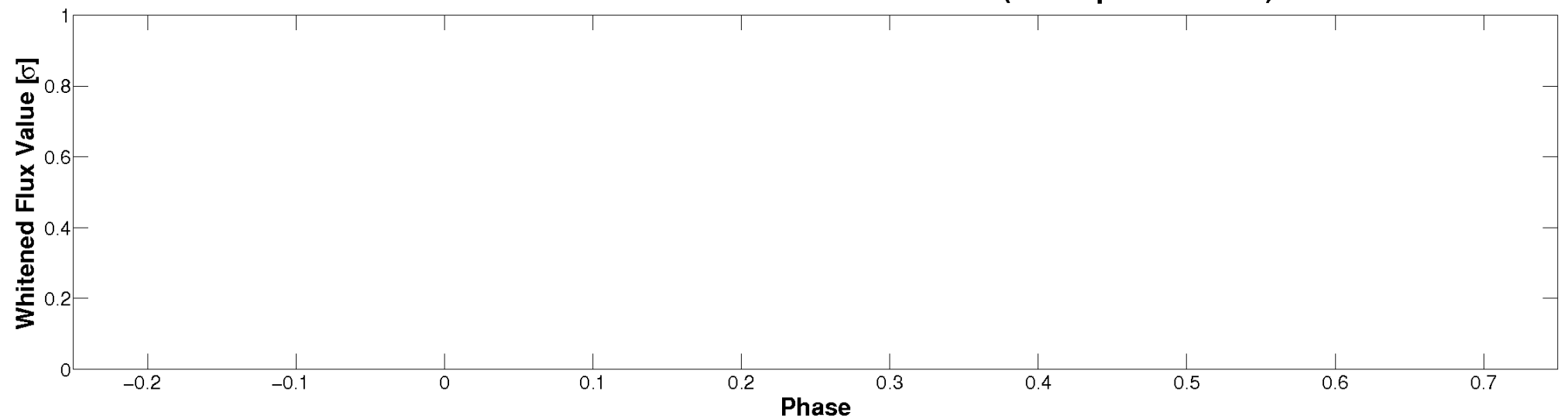


Non-Whitened Vs. Whitened Light Curve

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

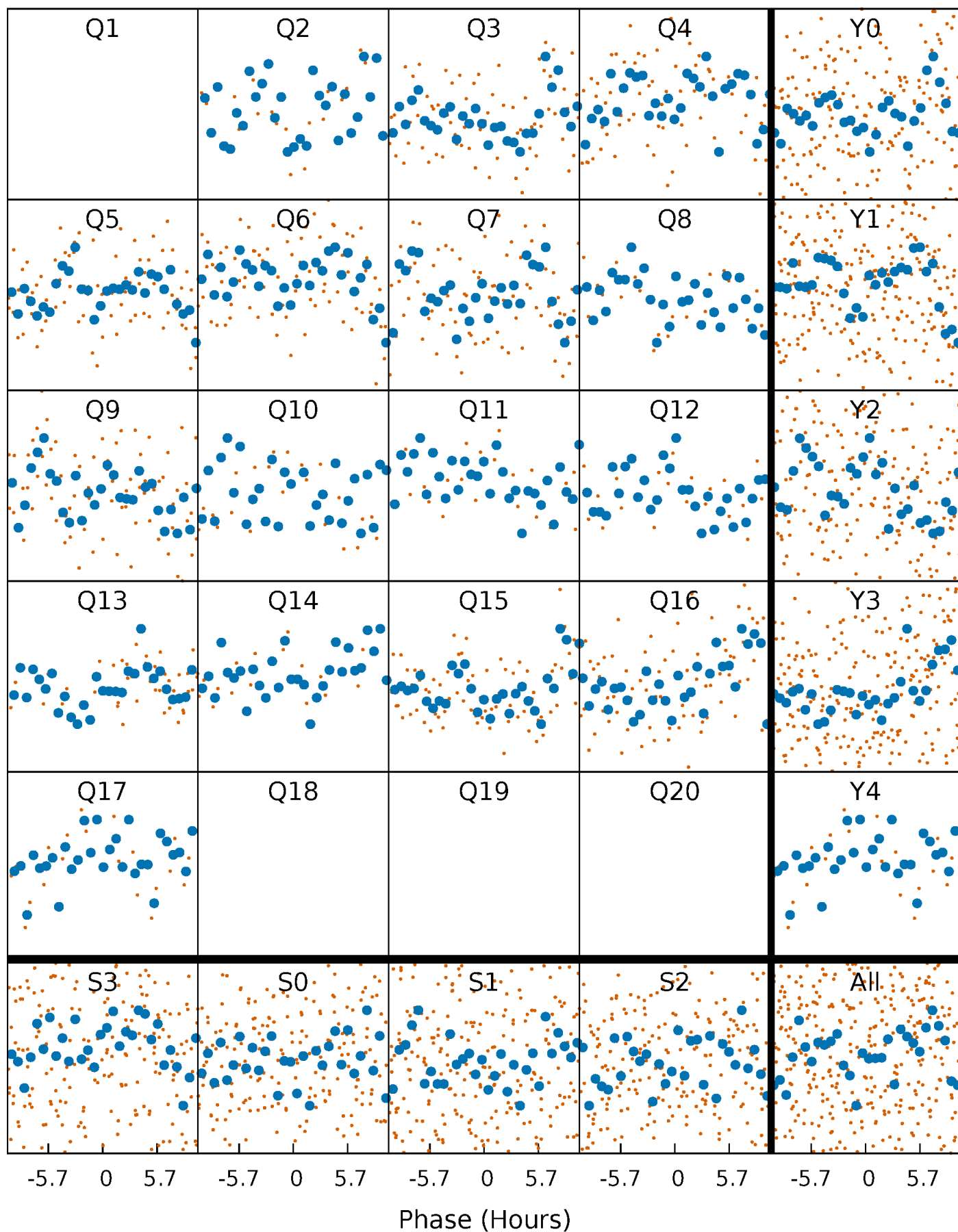


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



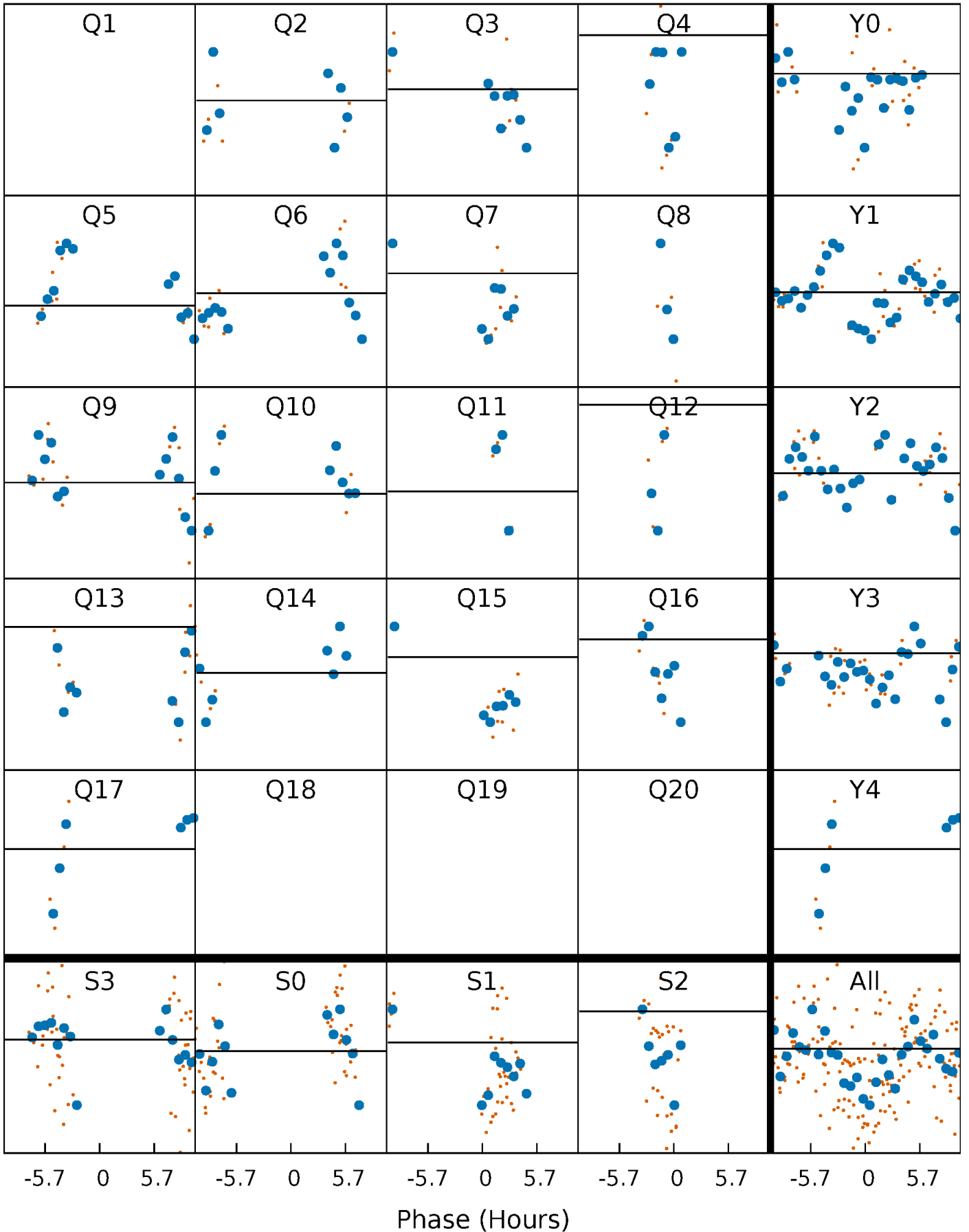
PDC Quarter-Phased Transit Curves

TCE 008329629-04 P= 48.984275 Days $T_0=168.138150$ (BKJD)



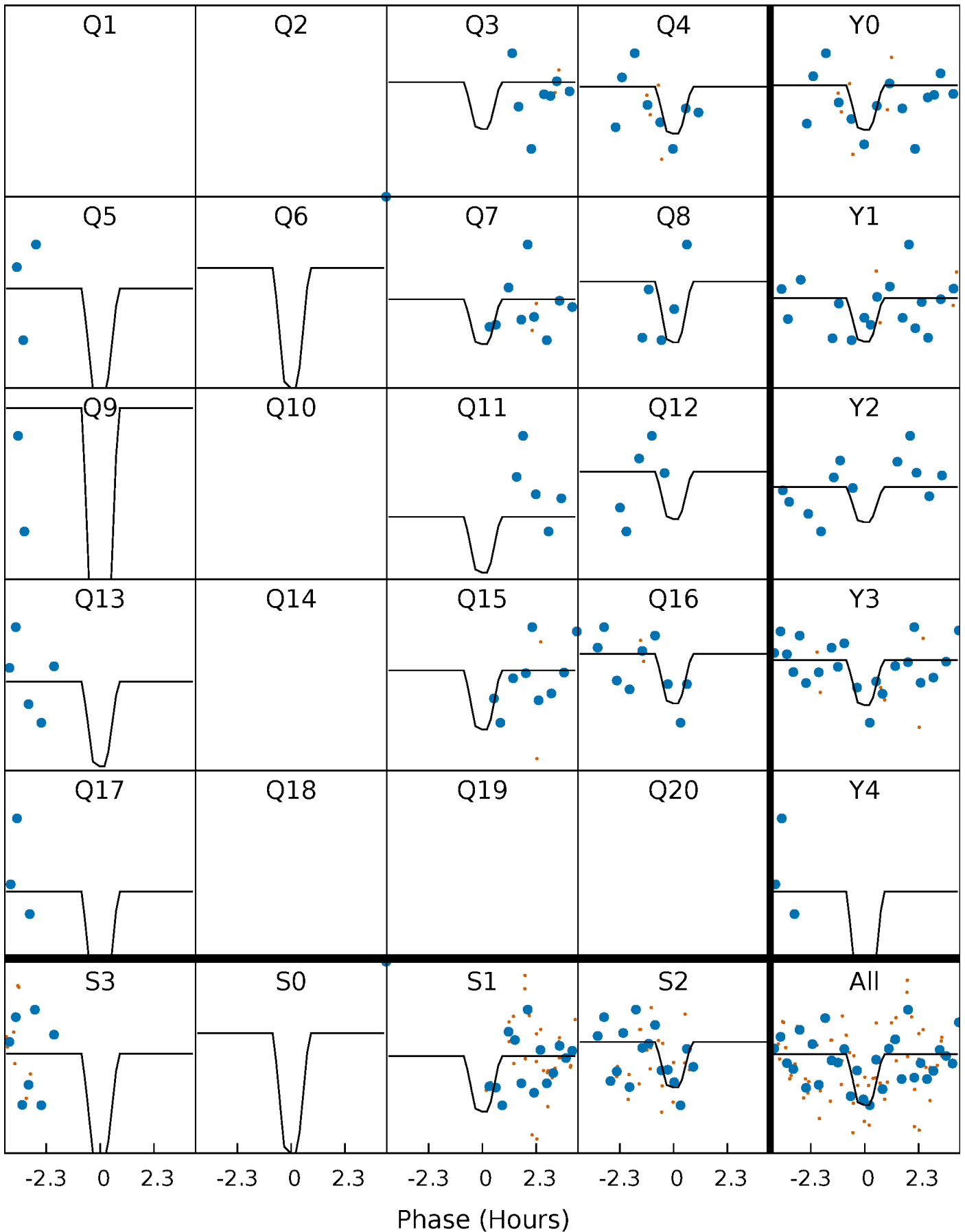
DV Quarter-Phased Transit Curves

TCE 008329629-04 P= 48.984275 Days $T_0=168.138150$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

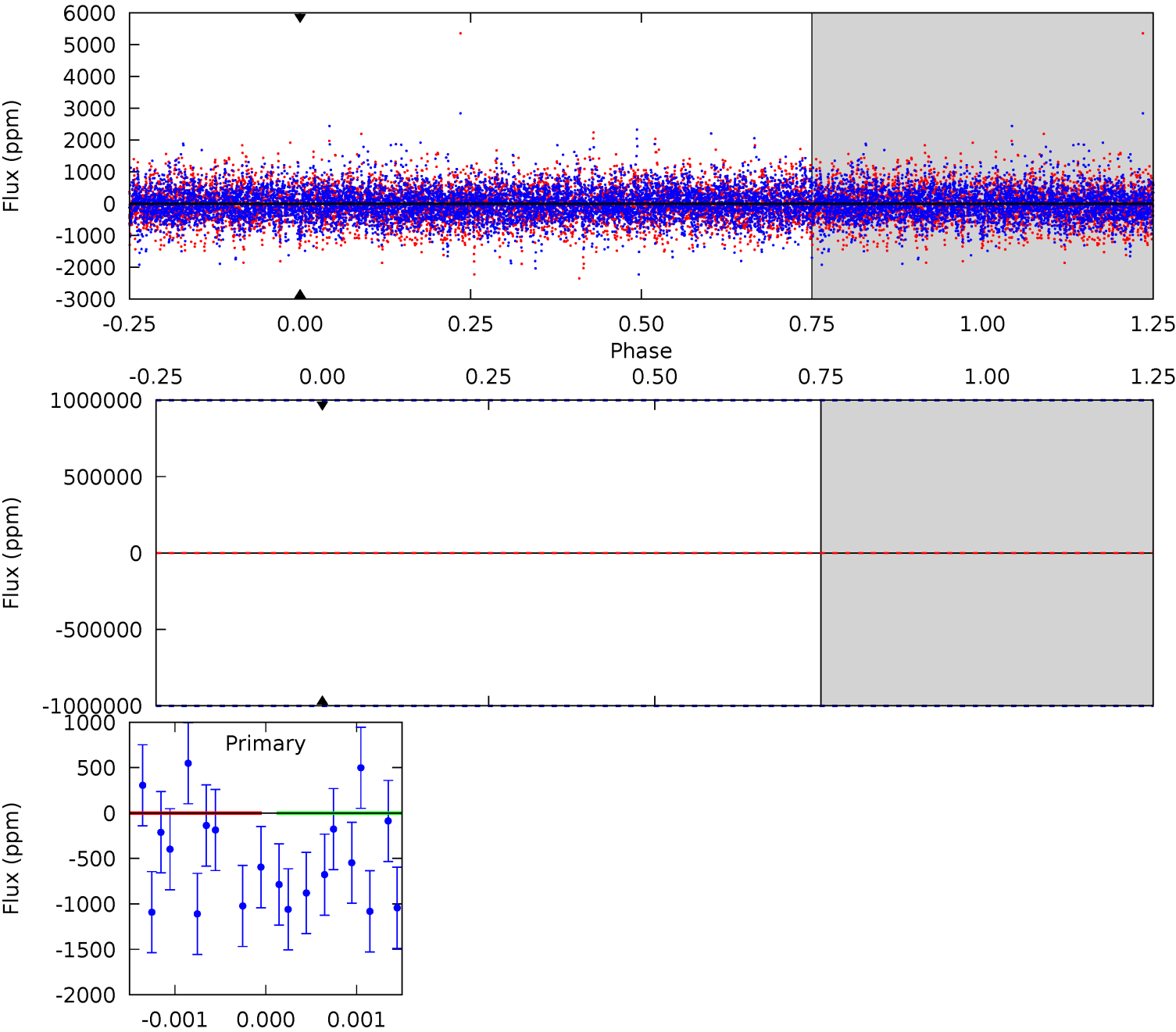
TCE 008329629-04 $P = 48.984275$ Days $T_0 = 168.128324$ (BKJD)



DV Model-Shift Uniqueness Test

008329629-04, P = 48.984275 Days, E = 119.153875 Days

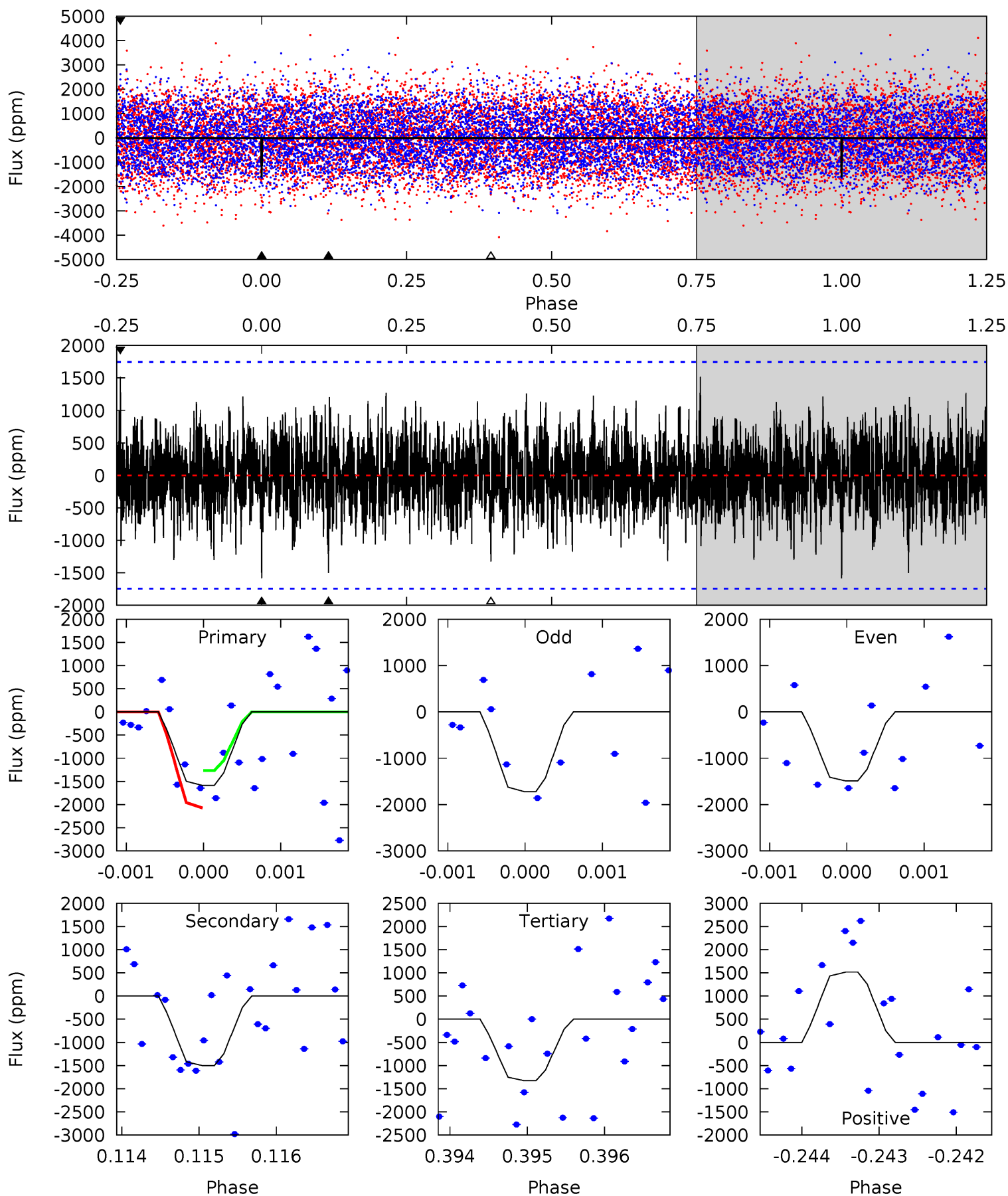
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008329629-04, P = 48.984275 Days, E = 119.144049 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.93	4.67	4.13	4.72	5.43	3.25	1.34	0.81	0.22	0.55	-0.04	0.35	1.03	0.49	1.18



Stellar Parameters For KIC 008329629

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8334^{+236}_{-324}	$4.029^{+0.204}_{-0.119}$	$-0.260^{+0.150}_{-0.300}$	$2.148^{+0.407}_{-0.610}$	$1.799^{+0.103}_{-0.329}$	$0.256^{+0.328}_{-0.092}$
	+3%/-4%	+5%/-3%	+58%/-115%	+19%/-28%	+6%/-18%	+128%/-36%
Source	KIC0	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 008329629-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$15.23^{+19.39}_{-10.91}$	1324^{+82}_{-109}	-5915^{+65201}_{-48963}	$-279.145^{+43028.485}_{-37477.162}$
Alt.	-1502 ± 321	$18.15^{+19.28}_{-12.11}$	1322^{+85}_{-100}	5574^{+5128}_{-1410}	248^{+2012}_{-191}

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

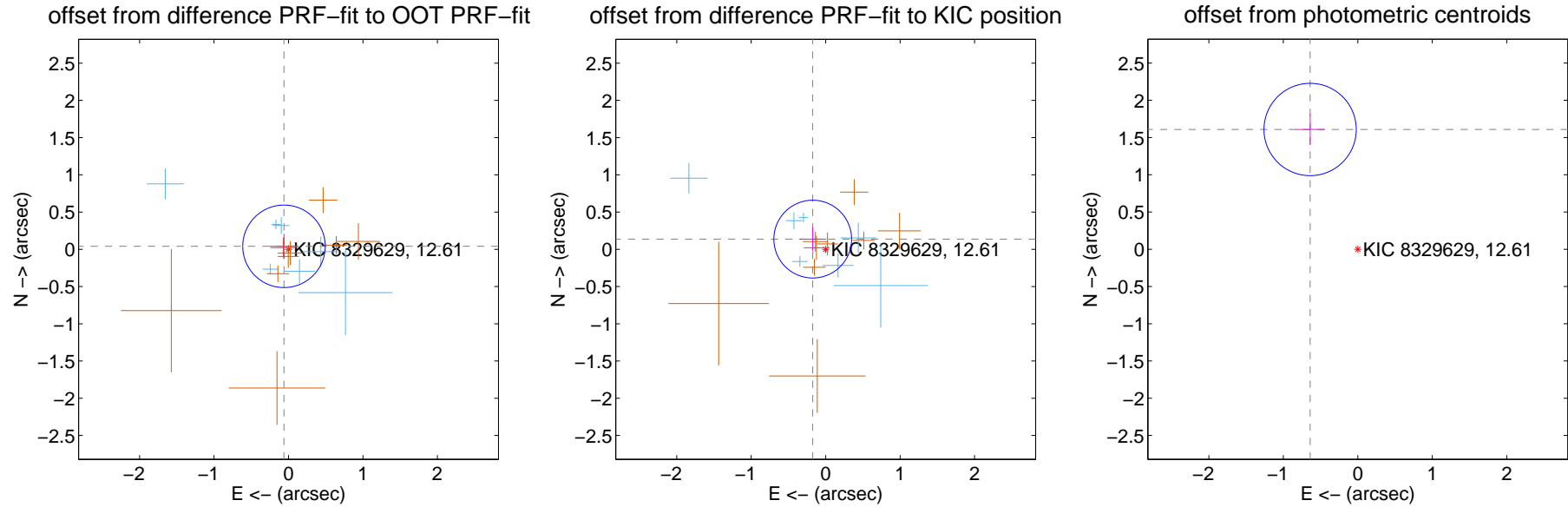
DV Centroid Data

Supplemental centroid analysis for 008329629-04. Kepler magnitude: 12.61. Transit SNR -1.00

There are 7 quarters with good PRF difference image offsets

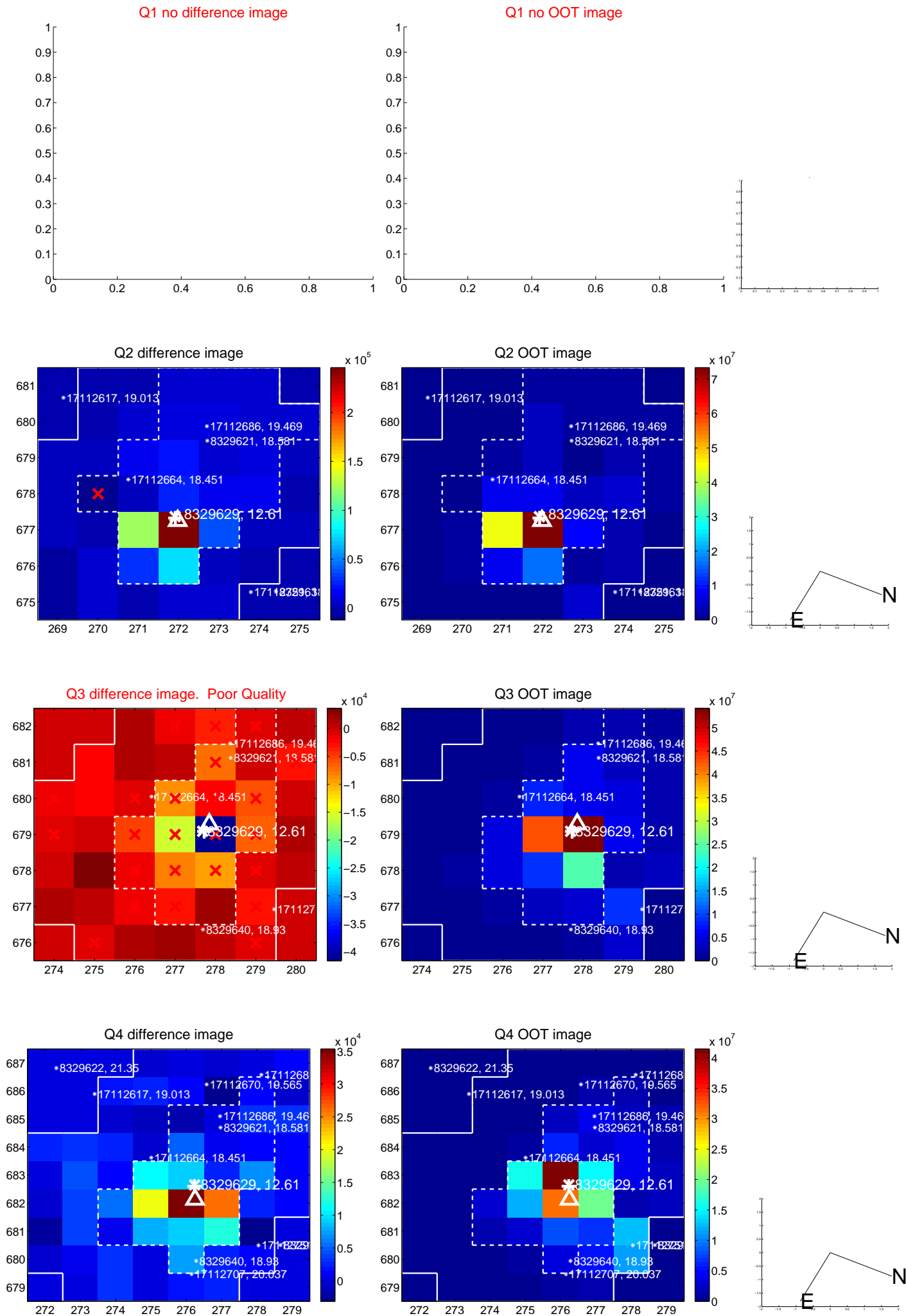
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.073 ± 0.185	0.39	0.061 ± 0.193	0.040 ± 0.168
PRF-fit source offset from KIC position	0.221 ± 0.174	1.27	0.174 ± 0.182	0.137 ± 0.162
photometric centroid source offset	1.73 ± 0.21	8.38	0.64 ± 0.20	1.61 ± 0.21

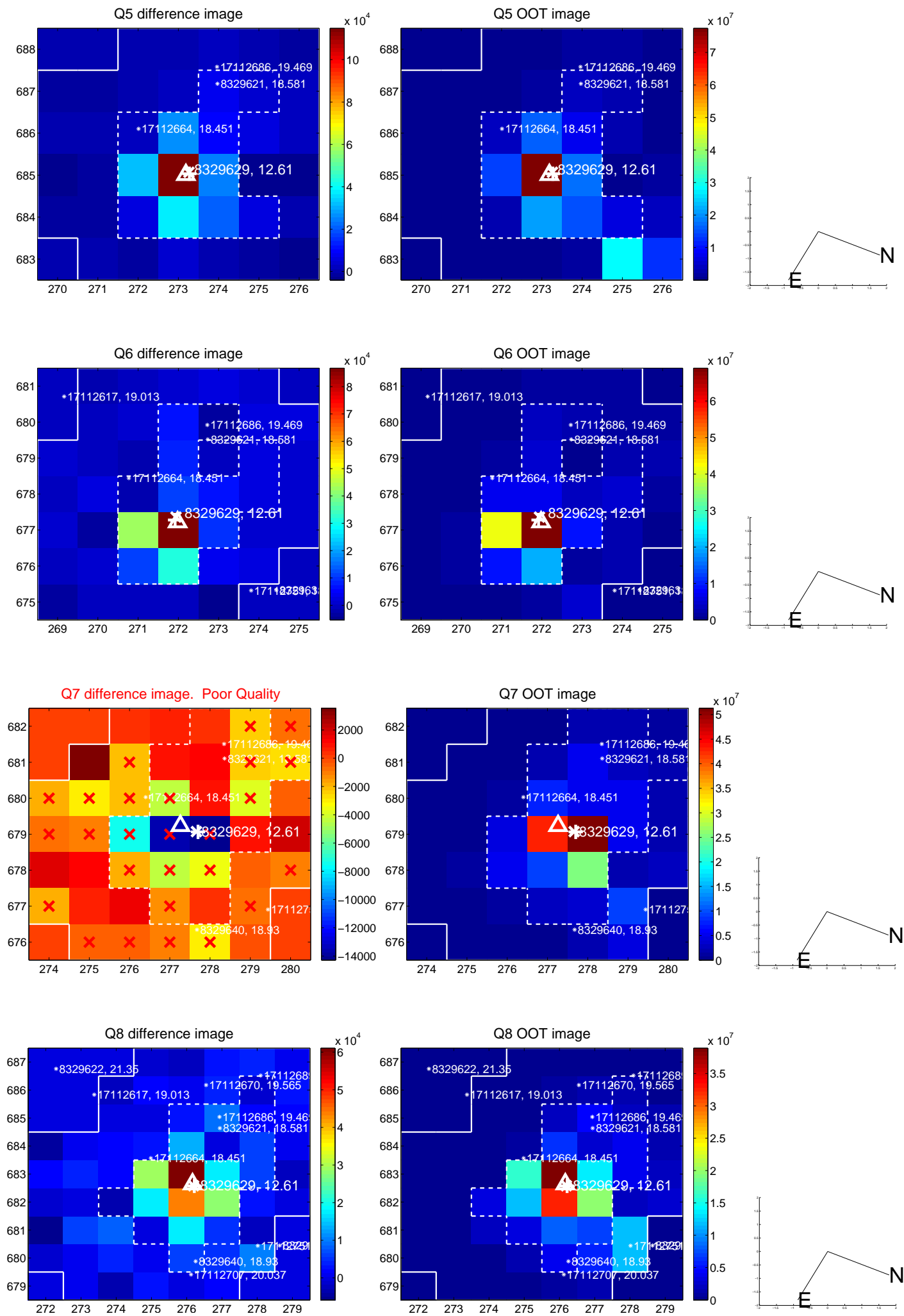


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

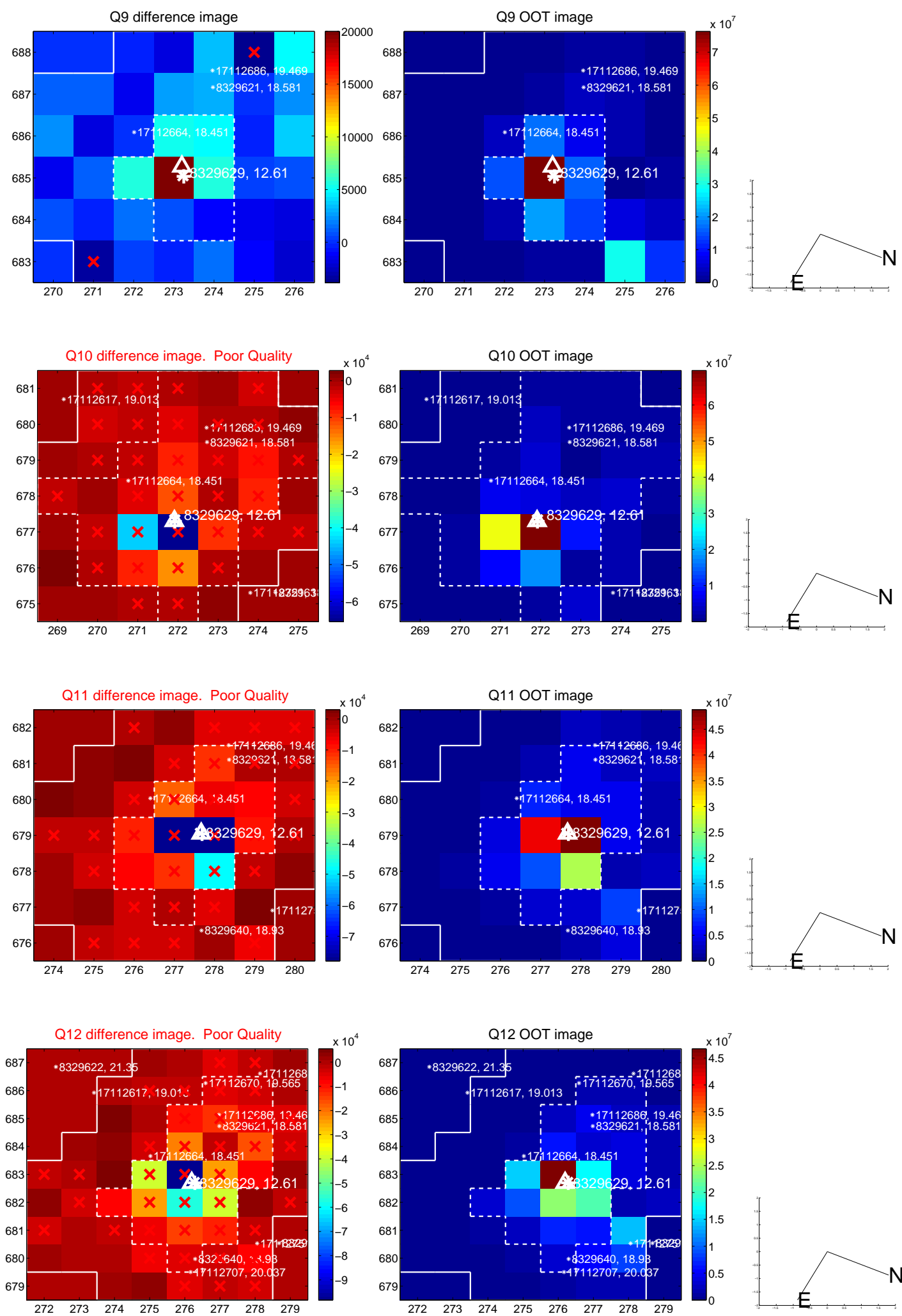
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



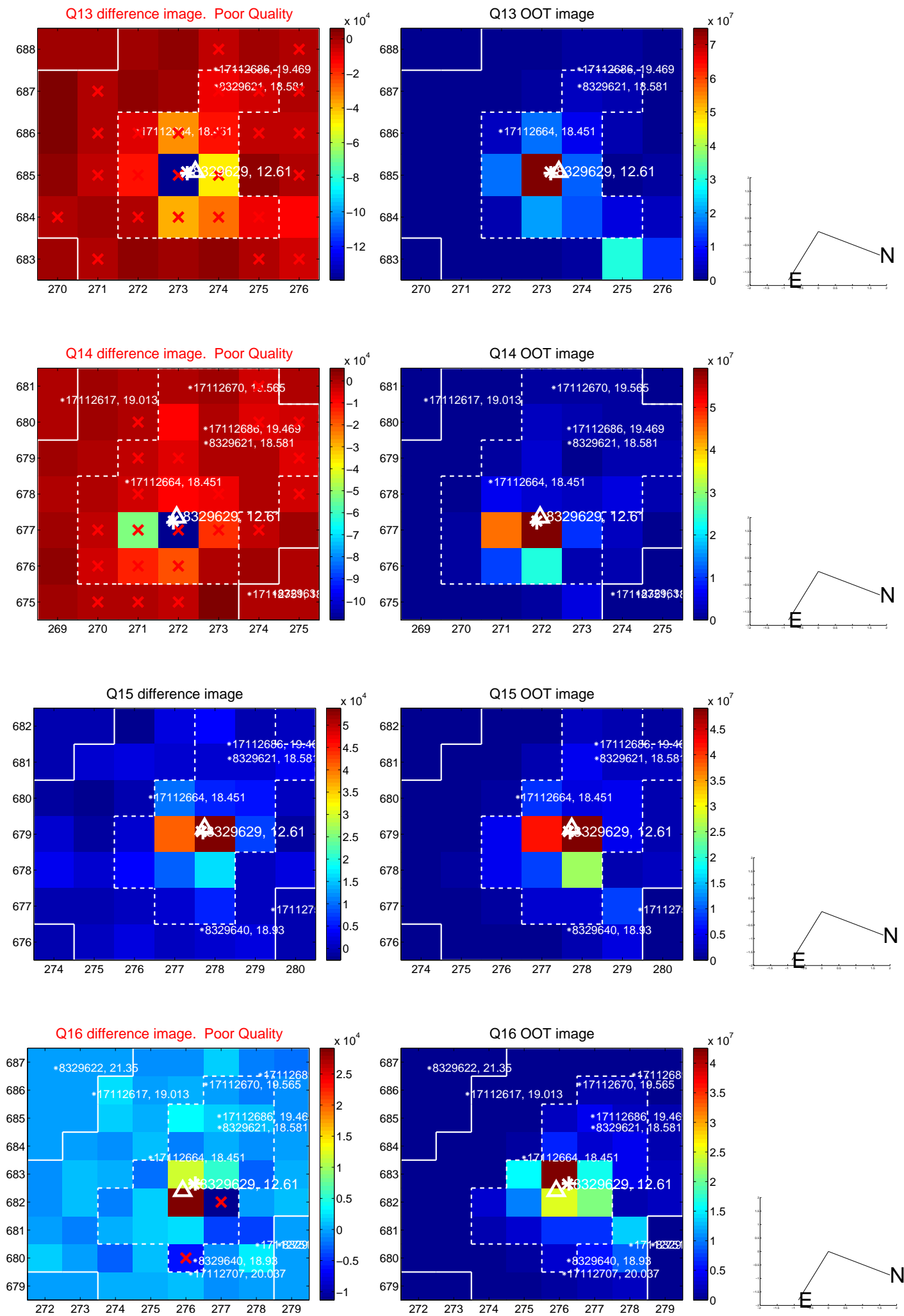
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



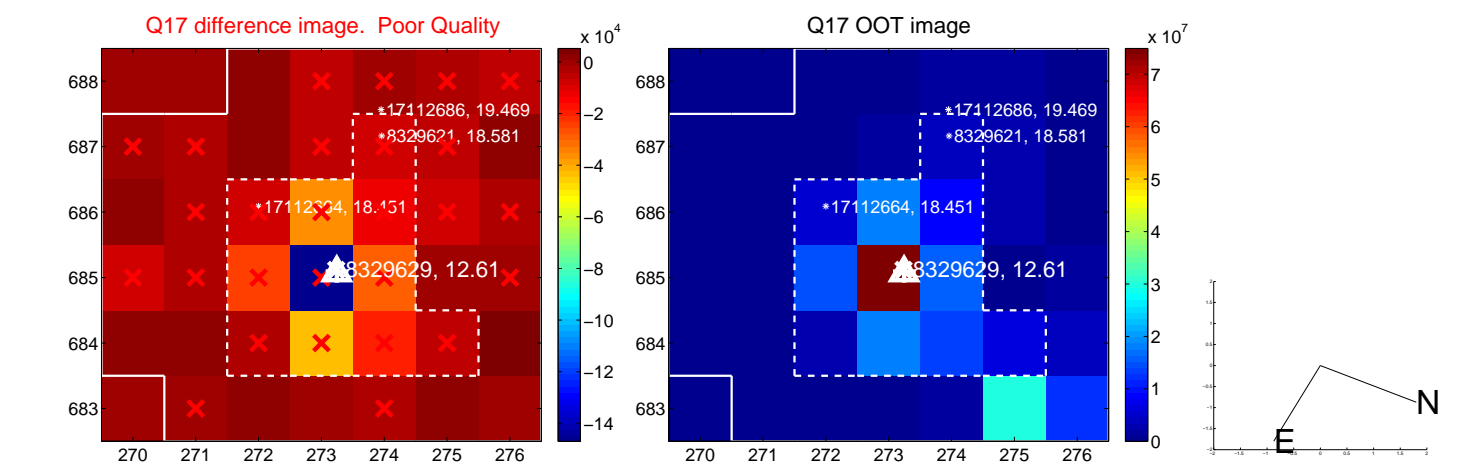
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



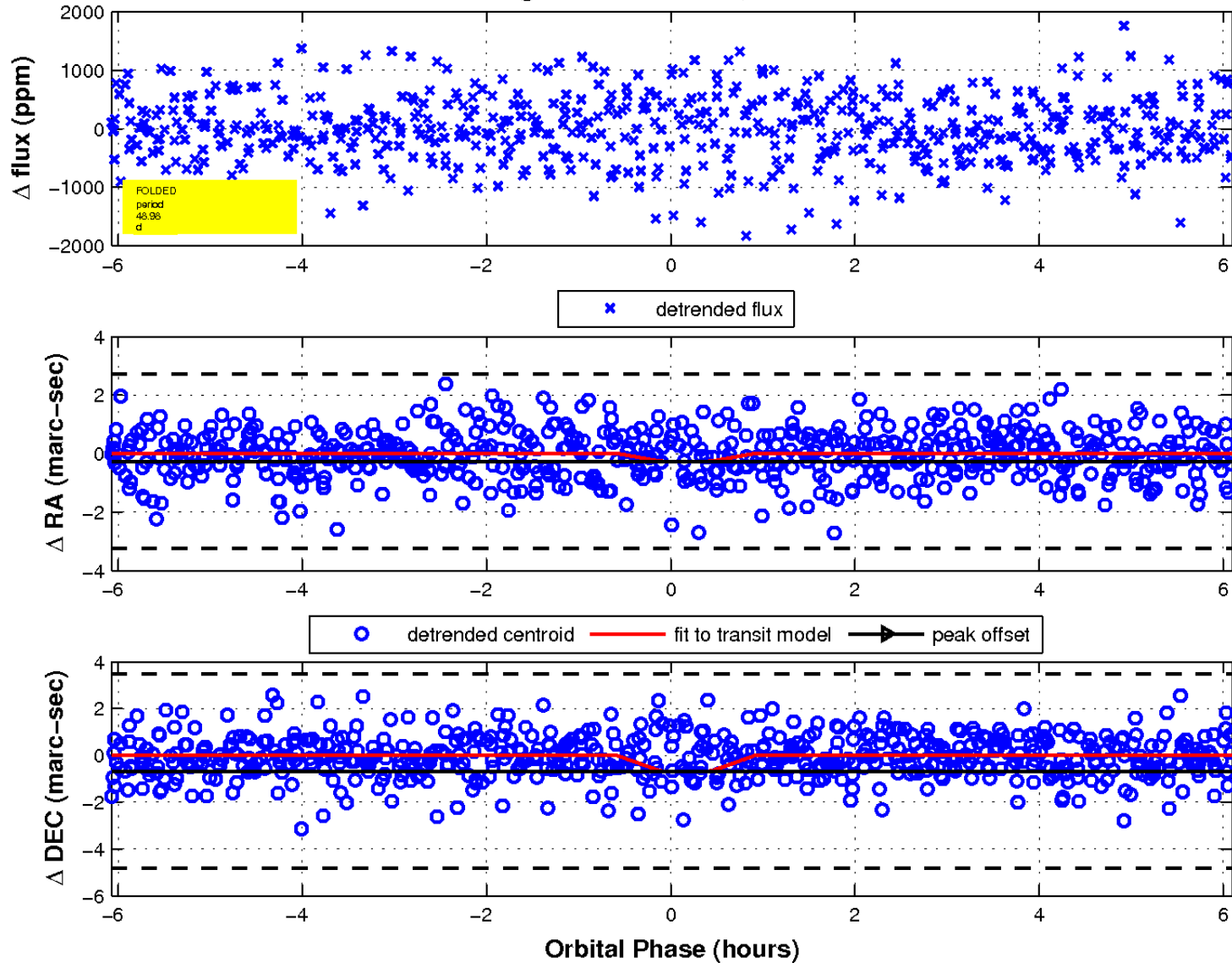
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

