

KIC 010972902

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})
010972902-01	OBS	4692.02	7.672007	134.185043	75.2	3.715	8.2	8.3	0.81	5972	0.78	139.13
010972902-02	OBS	No	0.952331	131.873186	18.8	3.076	8.1	5.2	0.81	5972	0.41	2246.84
010972902-03	OBS	No	0.952349	132.353759	28.3	2.422	8.6	7.4	0.81	5972	0.51	2246.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010972902-01	OBS	PC	0.68	0	0	0	0	NO_COMMENT
010972902-02	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_MEAS—EPHEM_MATCH
010972902-03	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_MEAS—EPHEM_MATCH

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.

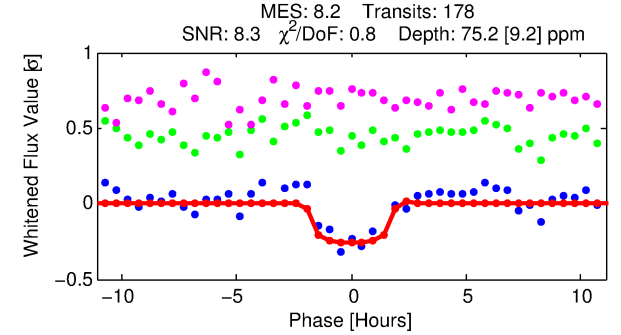
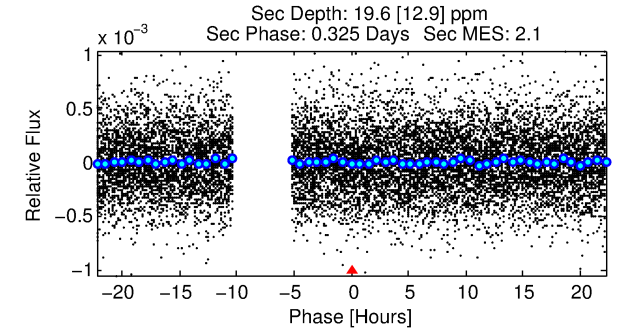
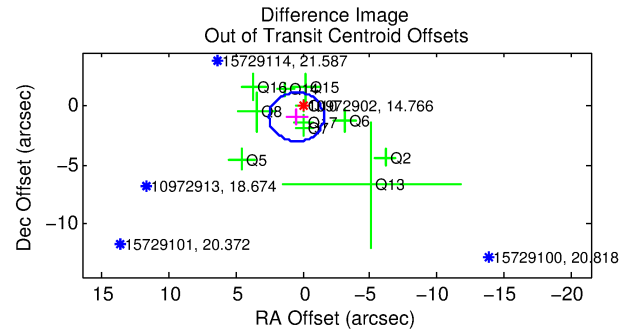
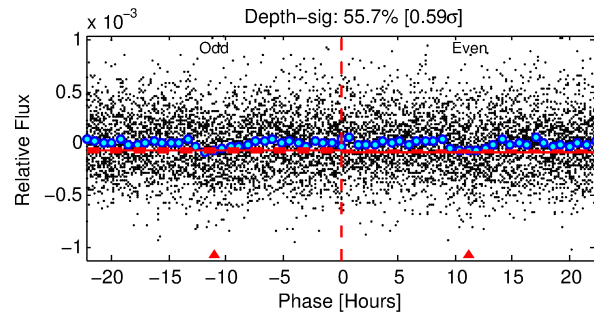
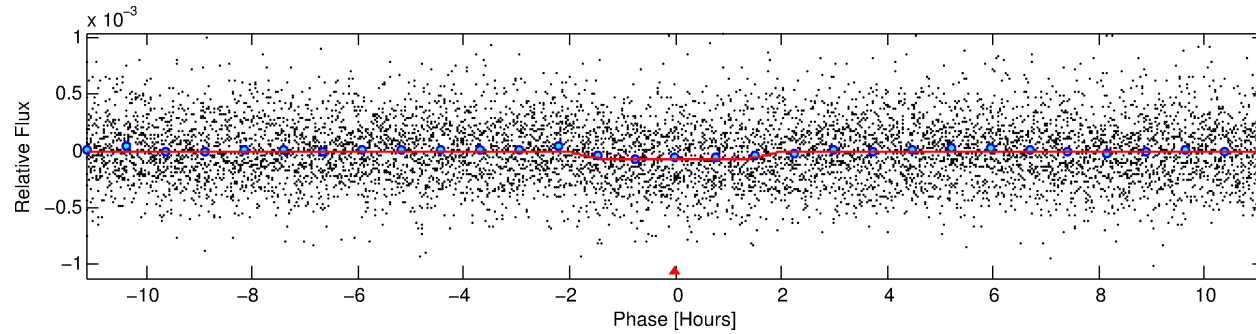
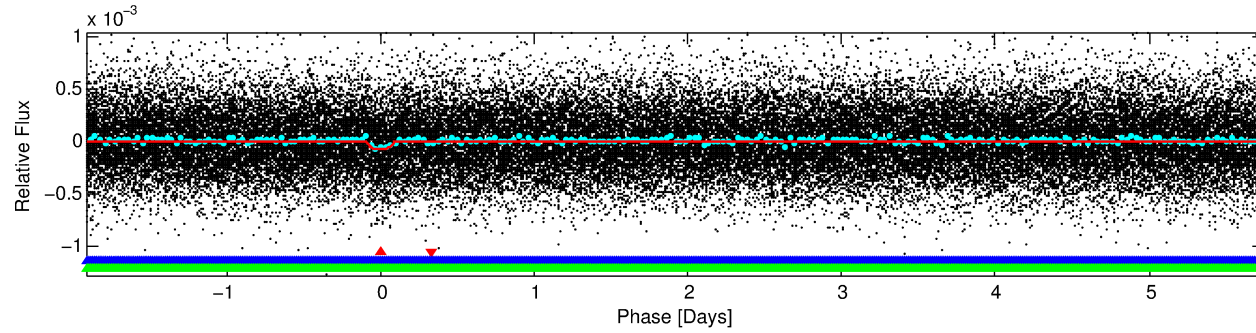
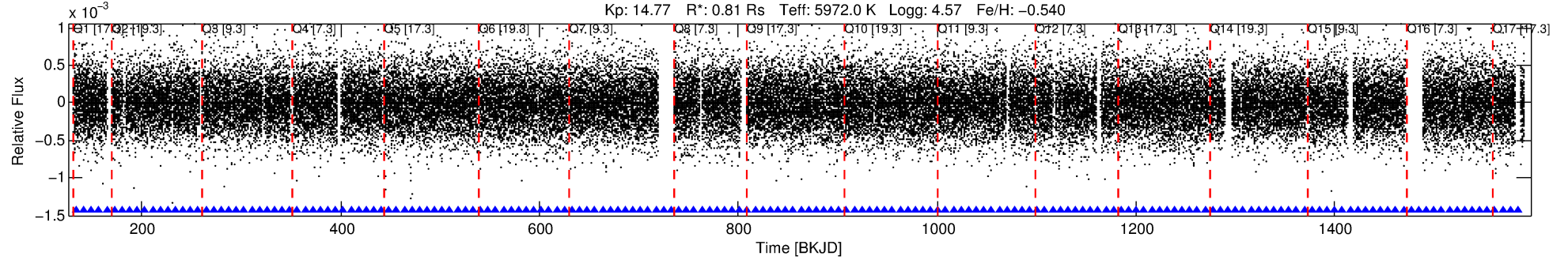
Ephemeris Match Information For 010972902-01

No Significant Match Found

DV One-Page Summary

KIC: 10972902 Candidate: 1 of 3 Period: 7.672 d
KOI: K04692 Corr: No Ephemeris Match

Kp: 14.77 R*: 0.81 Rs Teff: 5972.0 K Logg: 4.57 Fe/H: -0.540



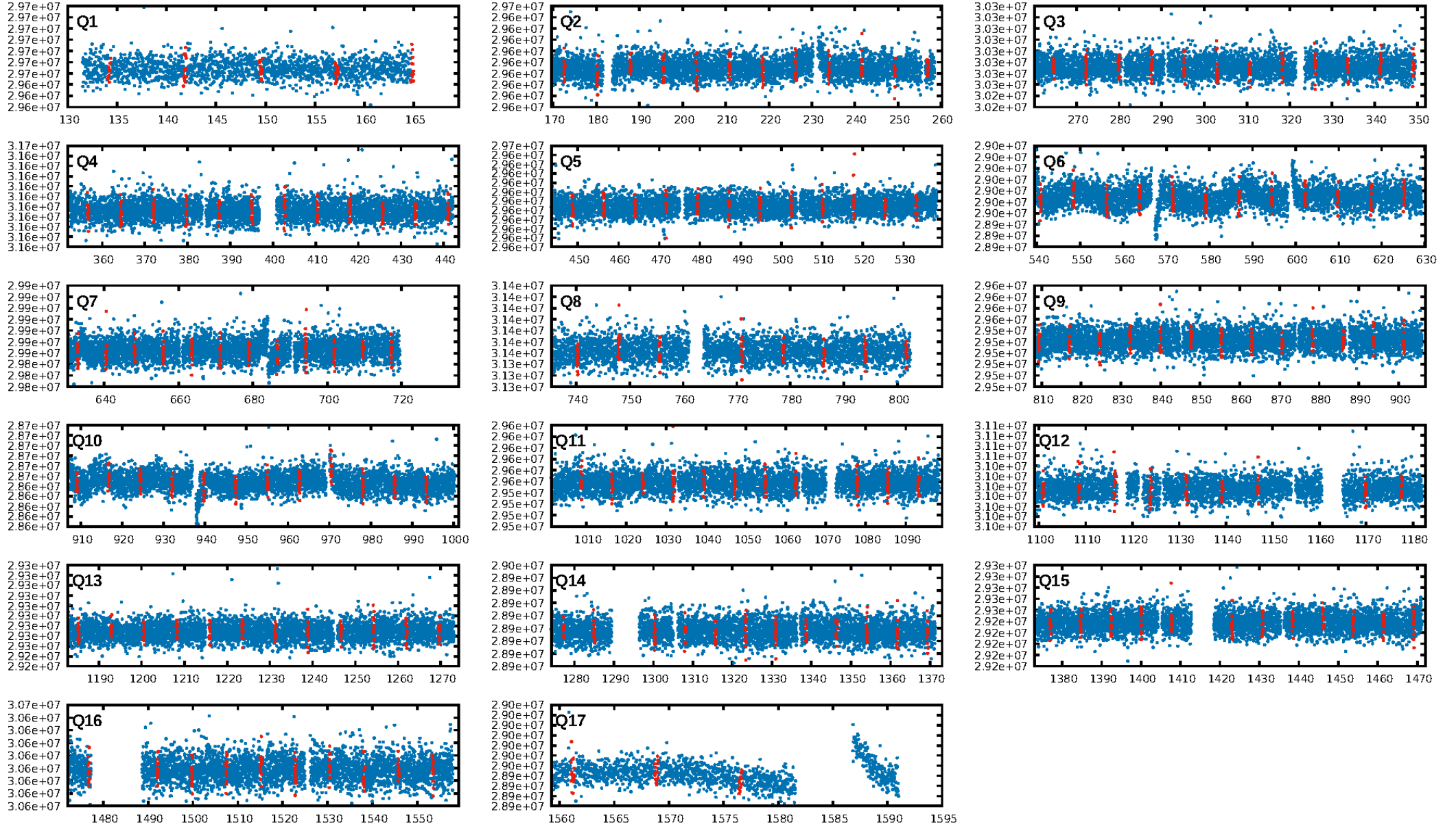
DV Fit Results:

Period = 7.67201 [0.00008] d
Epoch = 134.1850 [0.0084] BKJD
Rp/R* = 0.0088 [0.0060]
a/R* = 9.56 [33.28]
b = 0.81 [1.53]
Seff = 139.13 [51.78]
Teq = 876 [81] K
Rp = 0.78 [0.57] Re
a = 0.0730 [0.0173] AU
Ag = 95.39 [147.35] [0.64σ]
Teffp = 4232 [1596] K [2.10σ]

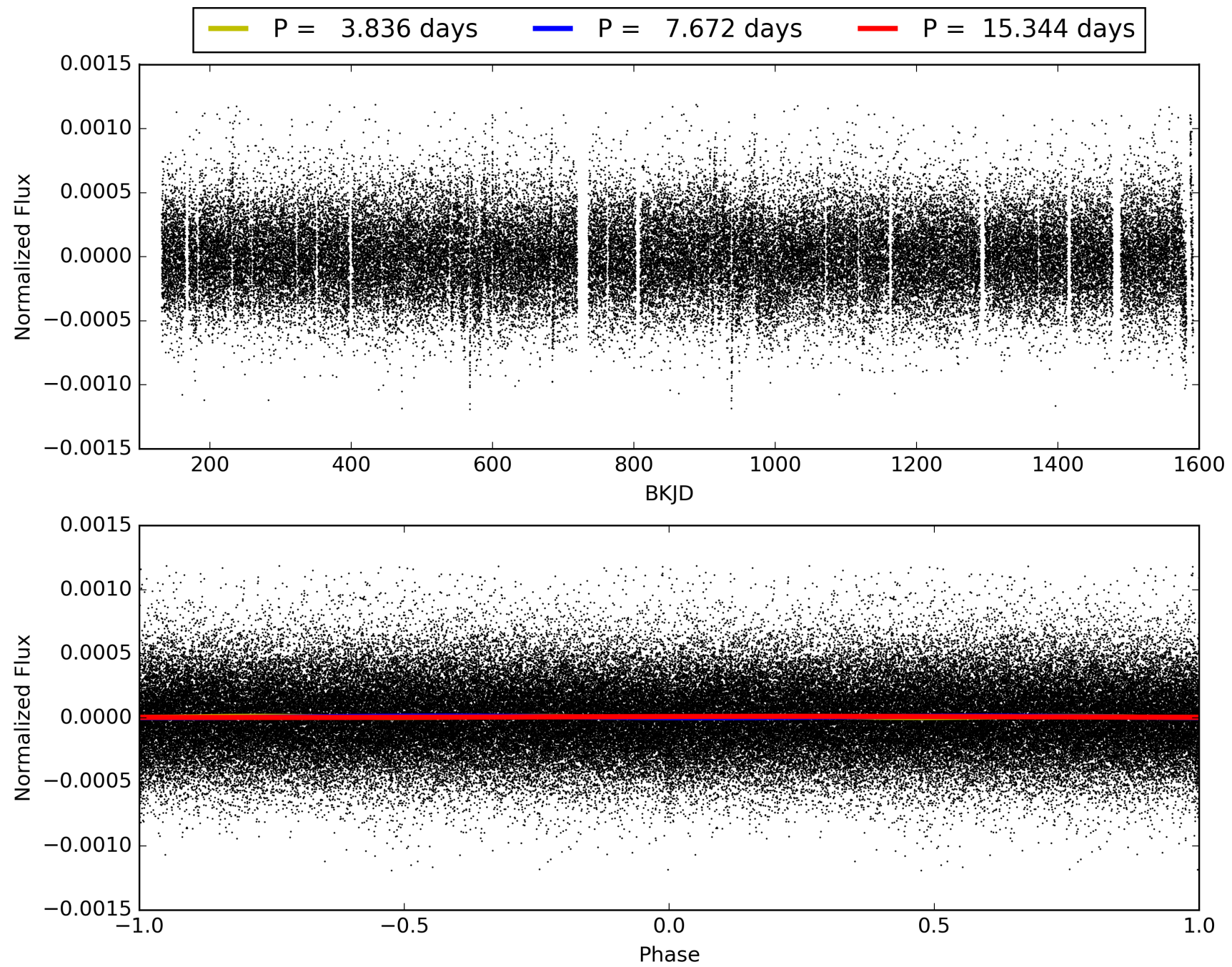
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [36.37σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.98e-17
RollingBand-fgt: 1.00 [170/170]
GhostDiagnostic-chr: -4.682
Centroid-sig: 0.0%
Centroid-so: 6.119 arcsec [3.55σ]
OotOffset-rm: 1.074 arcsec [1.57σ]
KicOffset-rm: 0.972 arcsec [1.42σ]
OotOffset-st: 4/2/2/3 [11]
KicOffset-st: 4/2/2/3 [11]
DiffImageQuality-fgm: 0.36 [4/11]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 010972902-01, PDC Light Curves

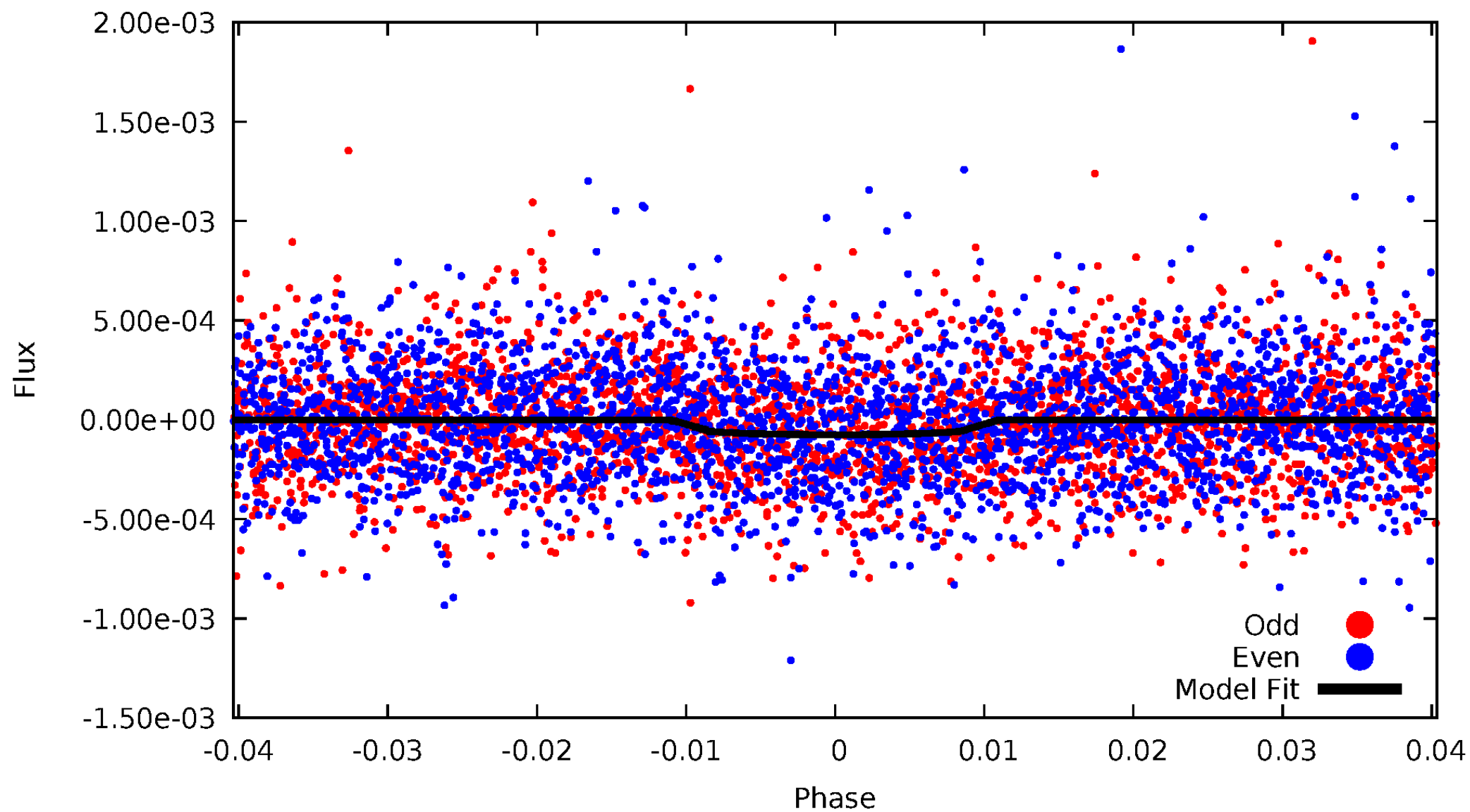


TCE 010972902-01



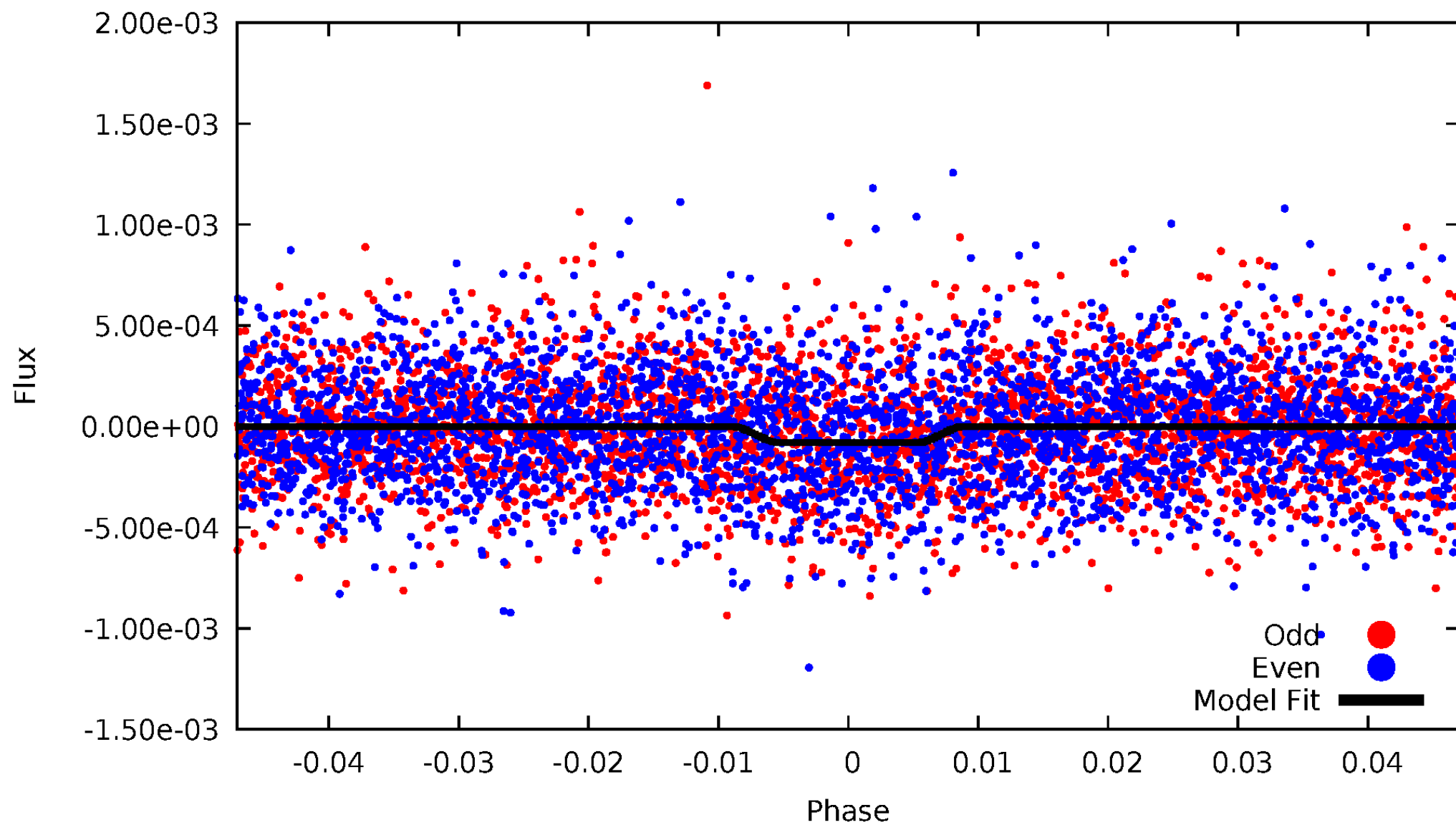
DV Odd/Even

TCE 010972902-01

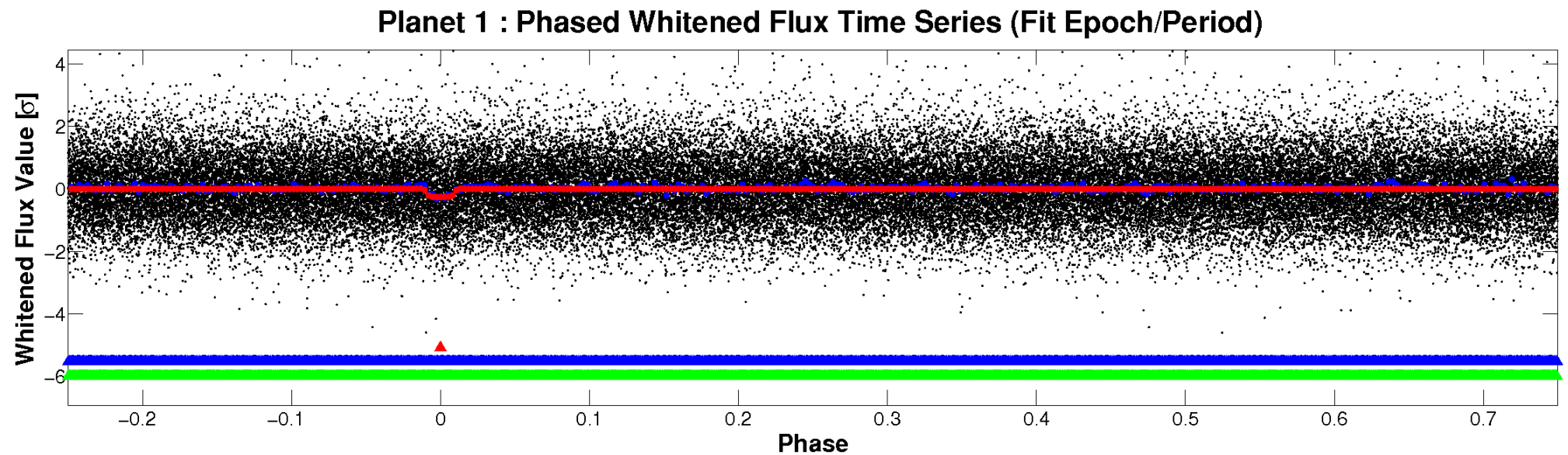
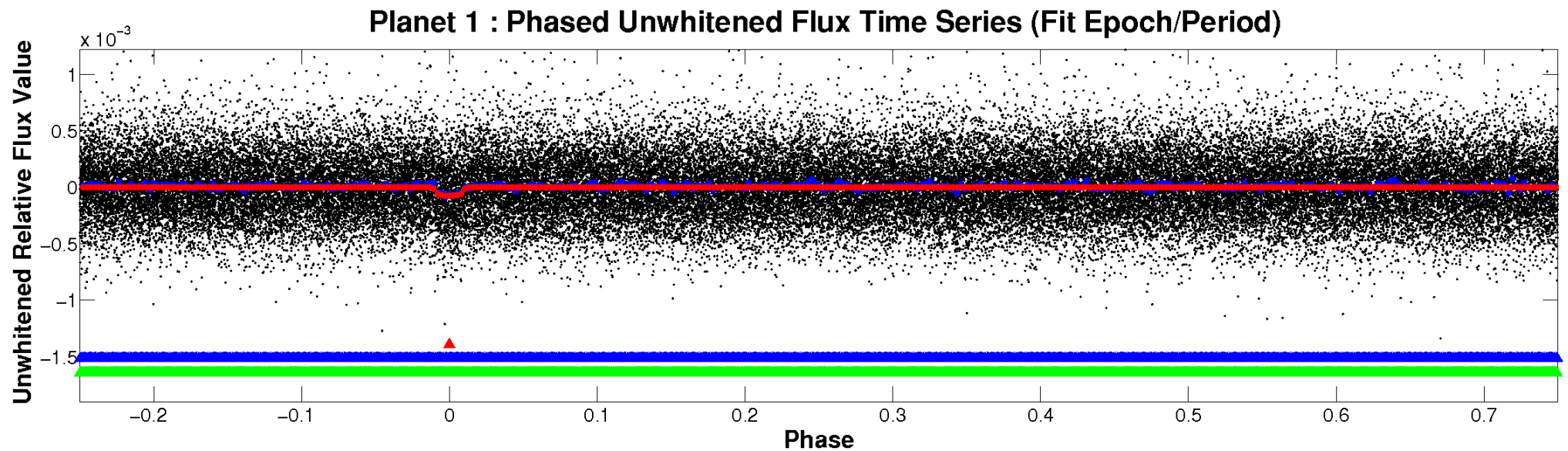


ALT Odd/Even

TCE 010972902-01

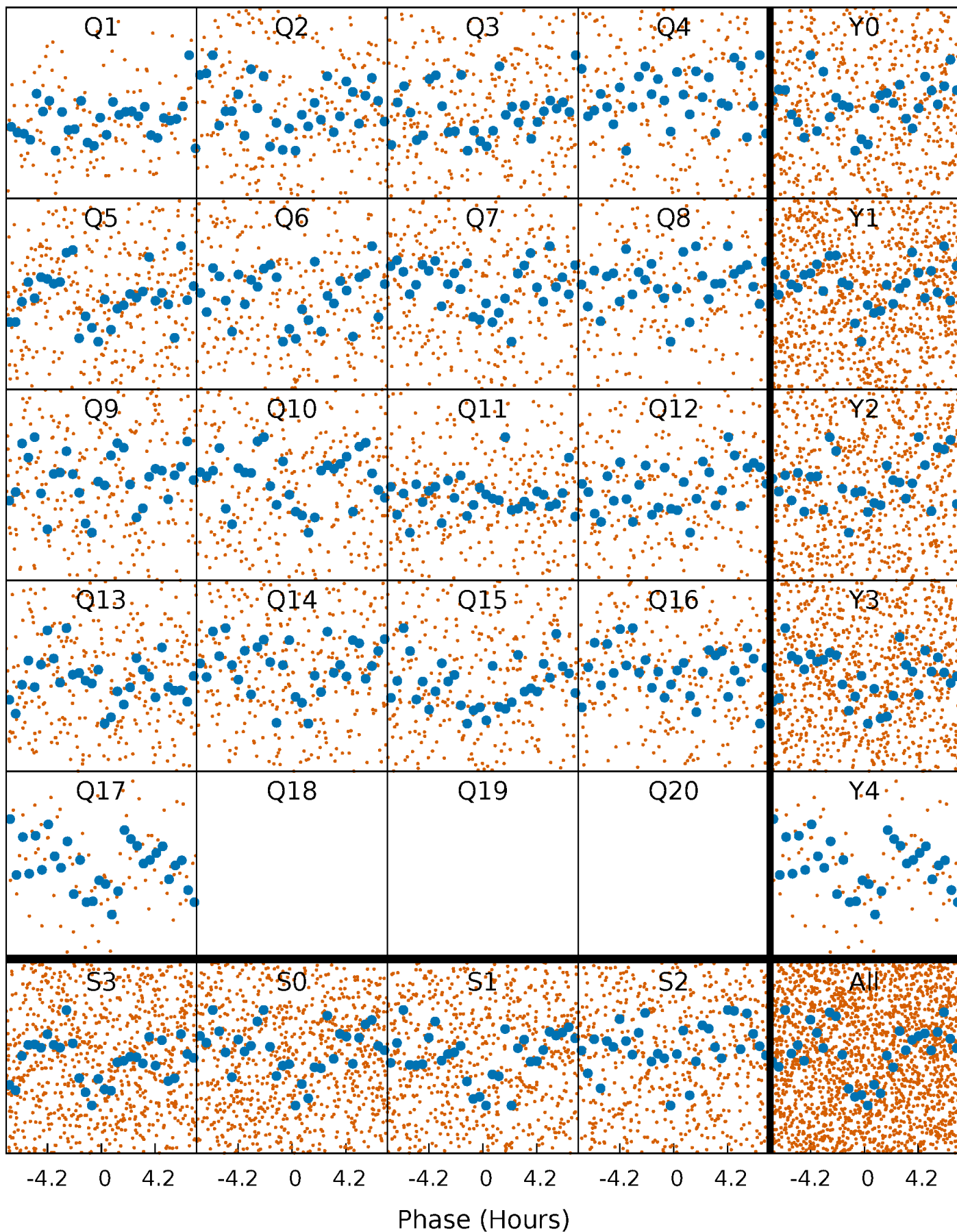


Non-Whitened Vs. Whitened Light Curve



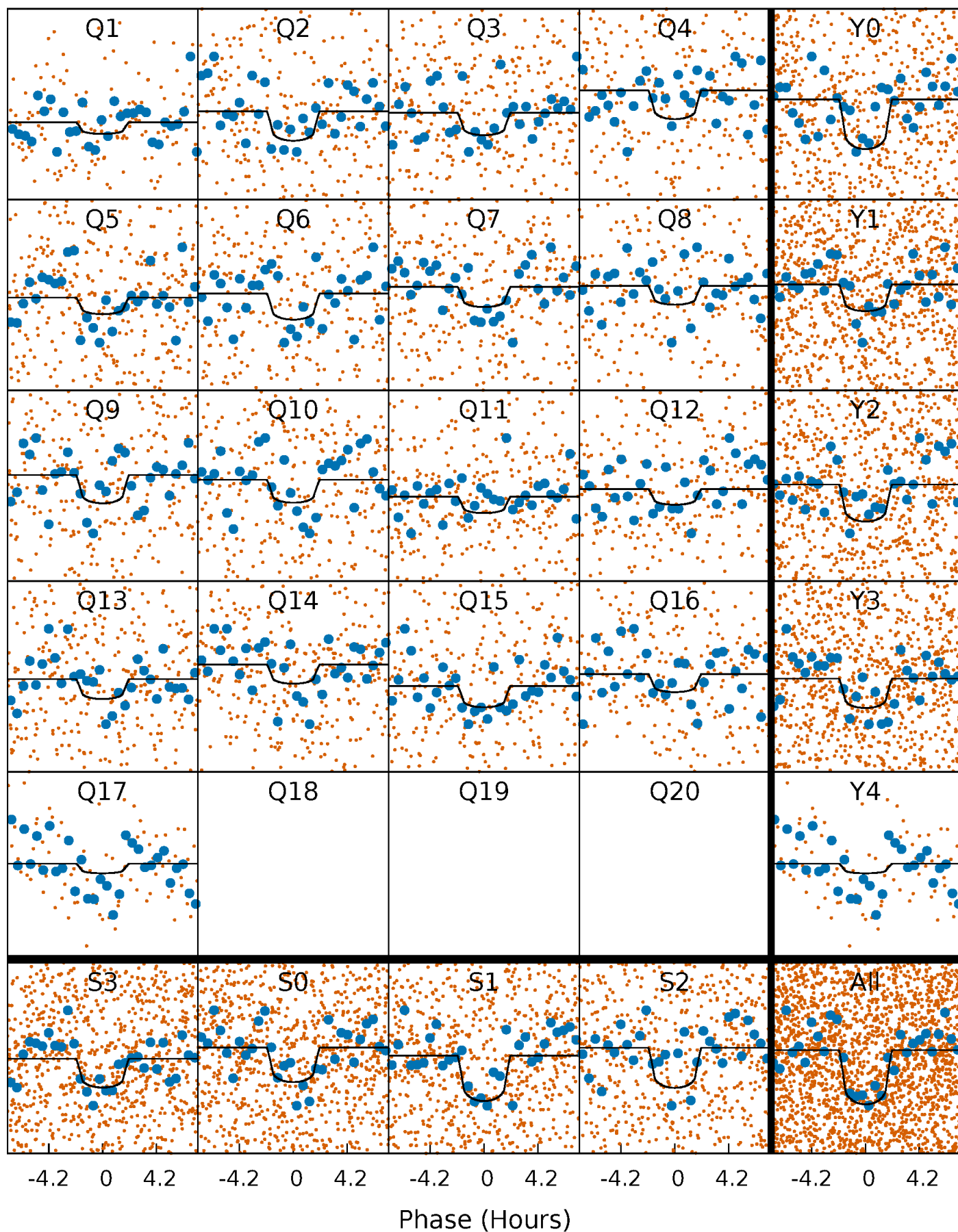
PDC Quarter-Phased Transit Curves

TCE 010972902-01 P= 7.672007 Days $T_0=134.185043$ (BKJD)



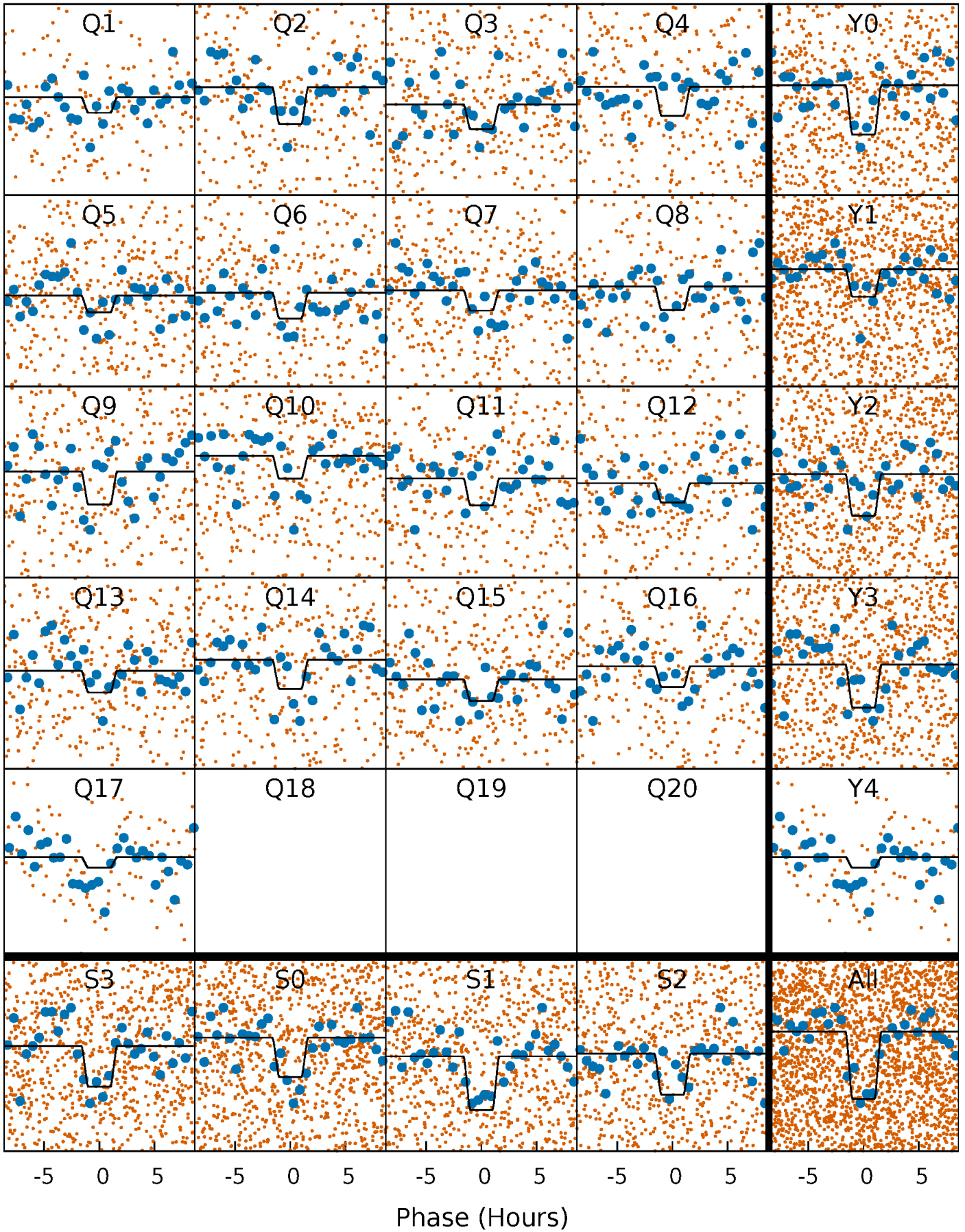
DV Quarter-Phased Transit Curves

TCE 010972902-01 P= 7.672007 Days $T_0=134.185043$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

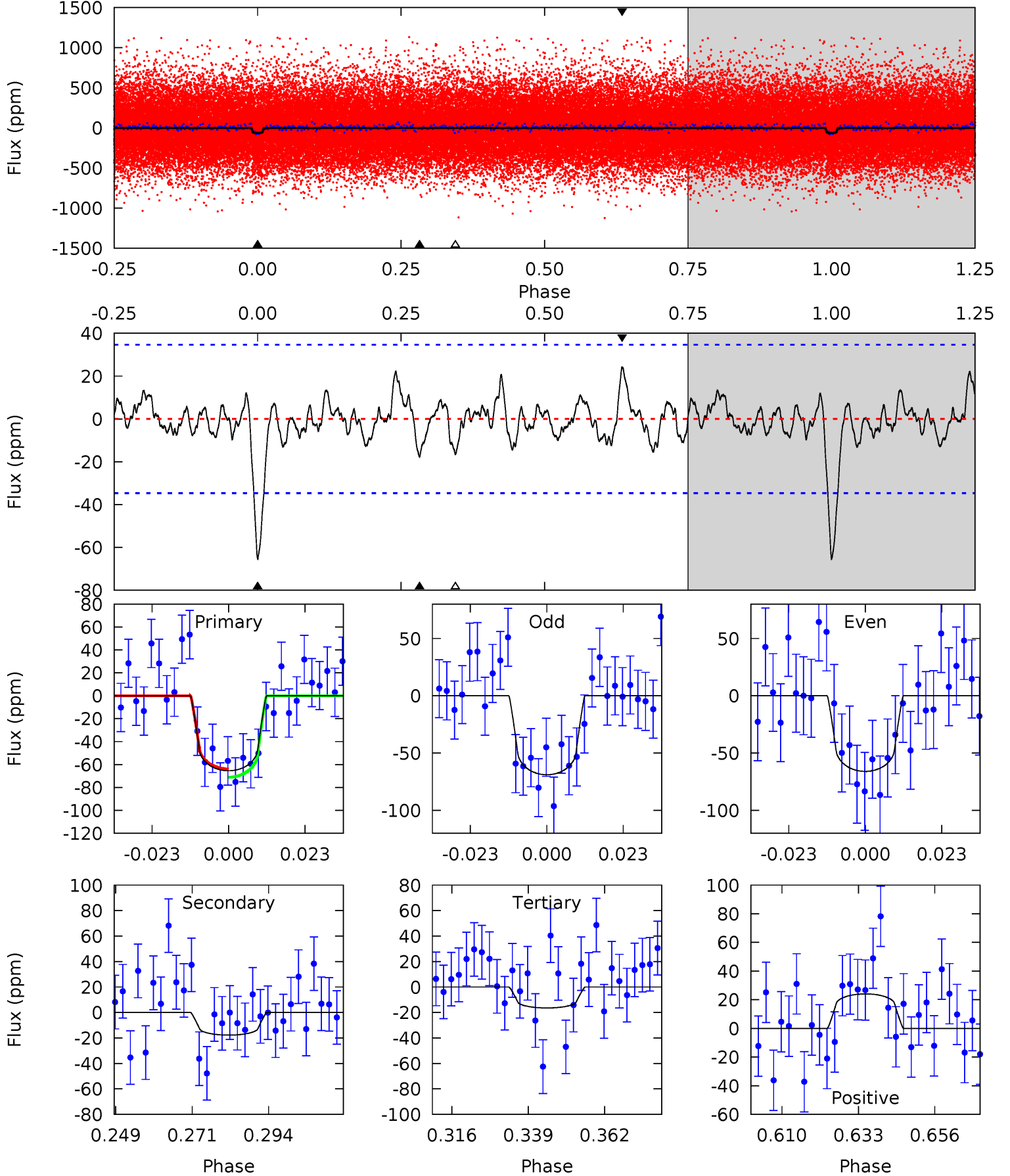
TCE 010972902-01 P= 7.672121 Days $T_0=134.180462$ (BKJD)



DV Model-Shift Uniqueness Test

010972902-01, P = 7.672007 Days, E = 126.513036 Days

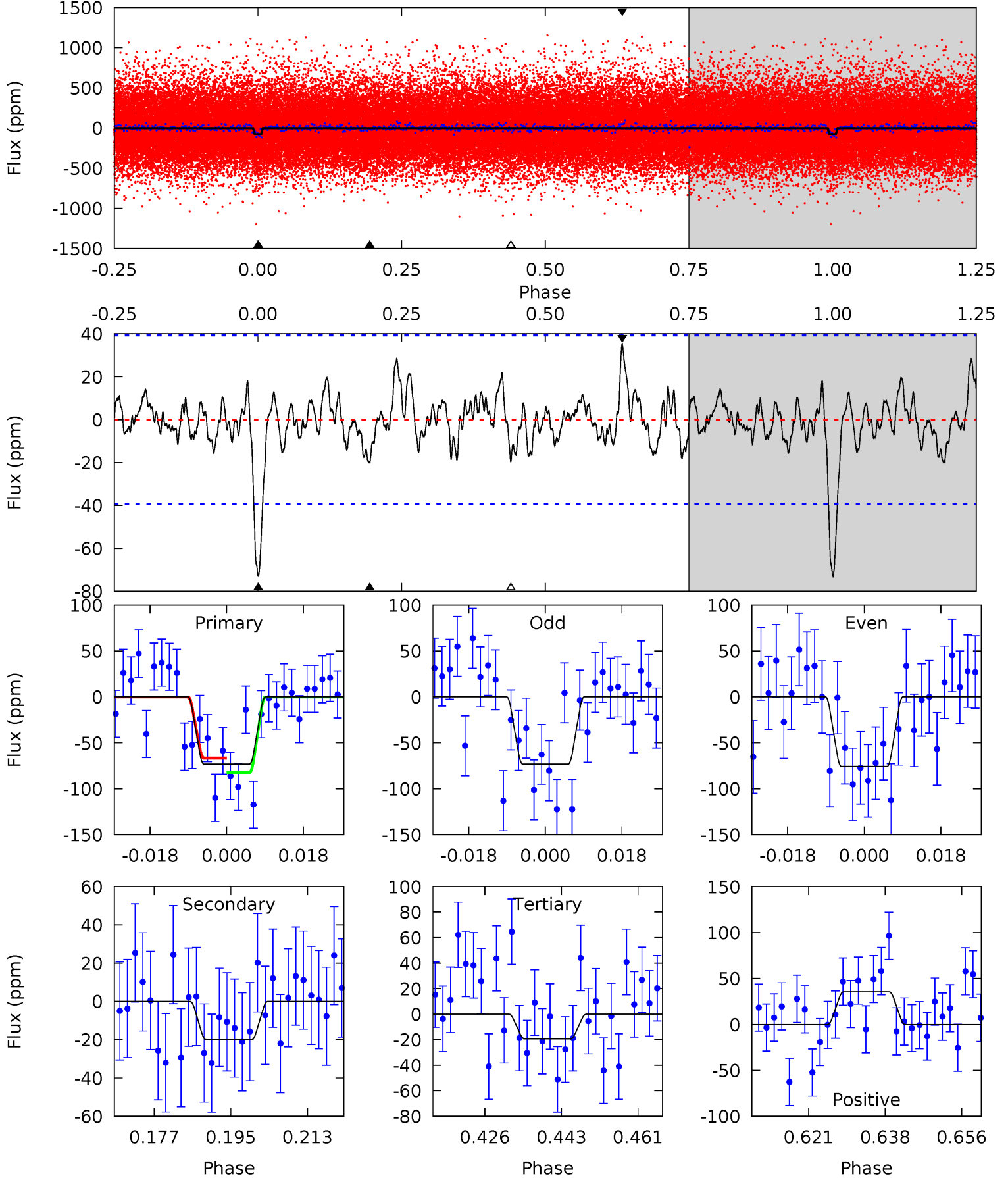
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.19	2.49	2.31	3.38	4.87	2.28	1.01	6.88	5.81	0.18	-0.89	0.21	1.02	0.27	0.51



Alt Model-Shift Uniqueness Test

010972902-01, P = 7.672121 Days, E = 126.508341 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.15	2.50	2.42	4.43	4.92	2.37	1.12	6.73	4.72	0.08	-1.93	0.17	1.04	0.33	0.97



Stellar Parameters For KIC 010972902

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5972^{+161}_{-179}	$4.570^{+0.035}_{-0.196}$	$-0.540^{+0.300}_{-0.300}$	$0.807^{+0.222}_{-0.059}$	$0.884^{+0.090}_{-0.099}$	$2.366^{+0.434}_{-1.153}$
	+3%/-3%	+1%/-4%	+56%/-56%	+28%/-7%	+10%/-11%	+18%/-49%
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 010972902-01 / KOI 4692.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18 ± 7	$0.87^{+0.57}_{-0.50}$	1250^{+87}_{-52}	4170^{+1784}_{-716}	63^{+282}_{-43}
Alt.	-20 ± 8	$0.85^{+0.56}_{-0.45}$	1248^{+77}_{-52}	4333^{+2039}_{-762}	76^{+342}_{-50}

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

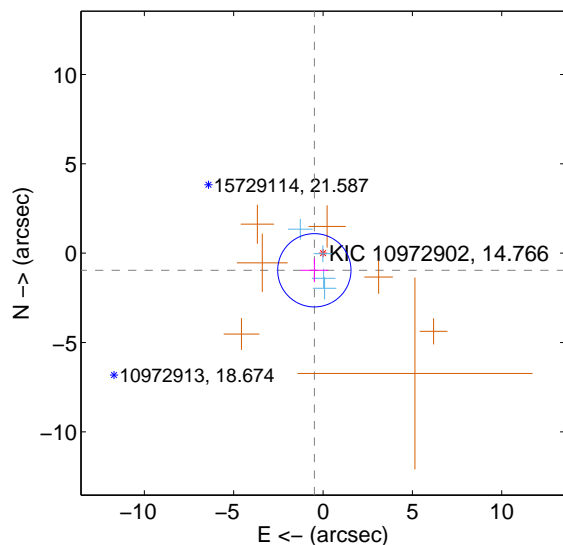
Supplemental centroid analysis for 010972902-01. Kepler magnitude: 14.77. Transit SNR 8.28

There are 4 quarters with good PRF difference image offsets

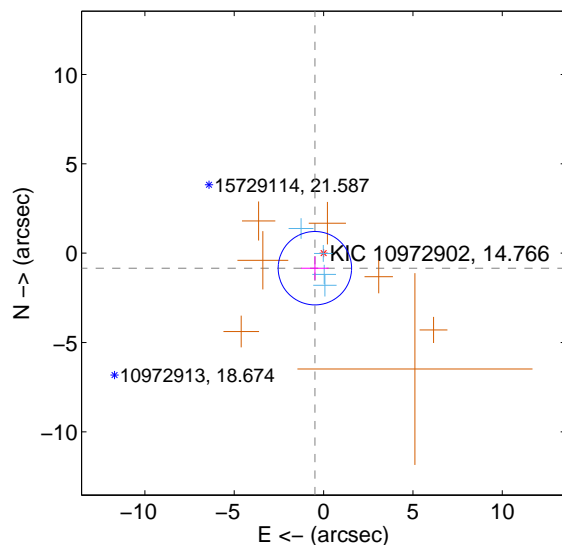
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.074 ± 0.684	1.57	0.486 ± 0.773	-0.957 ± 0.658
PRF-fit source offset from KIC position	0.972 ± 0.685	1.42	0.487 ± 0.772	-0.841 ± 0.653
photometric centroid source offset	6.12 ± 1.72	3.55	-4.12 ± 1.79	4.52 ± 1.66

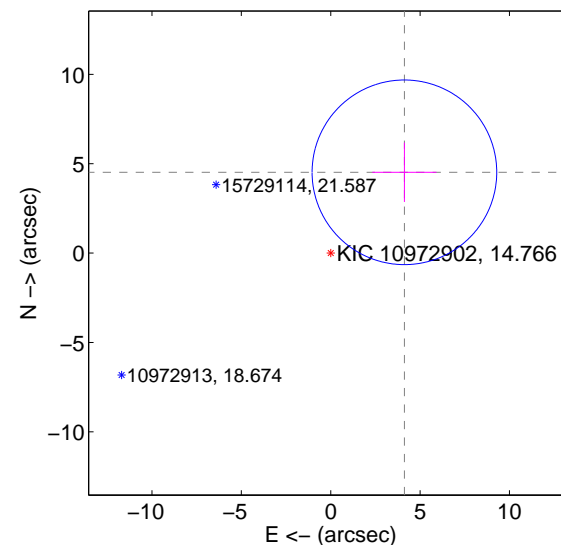
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

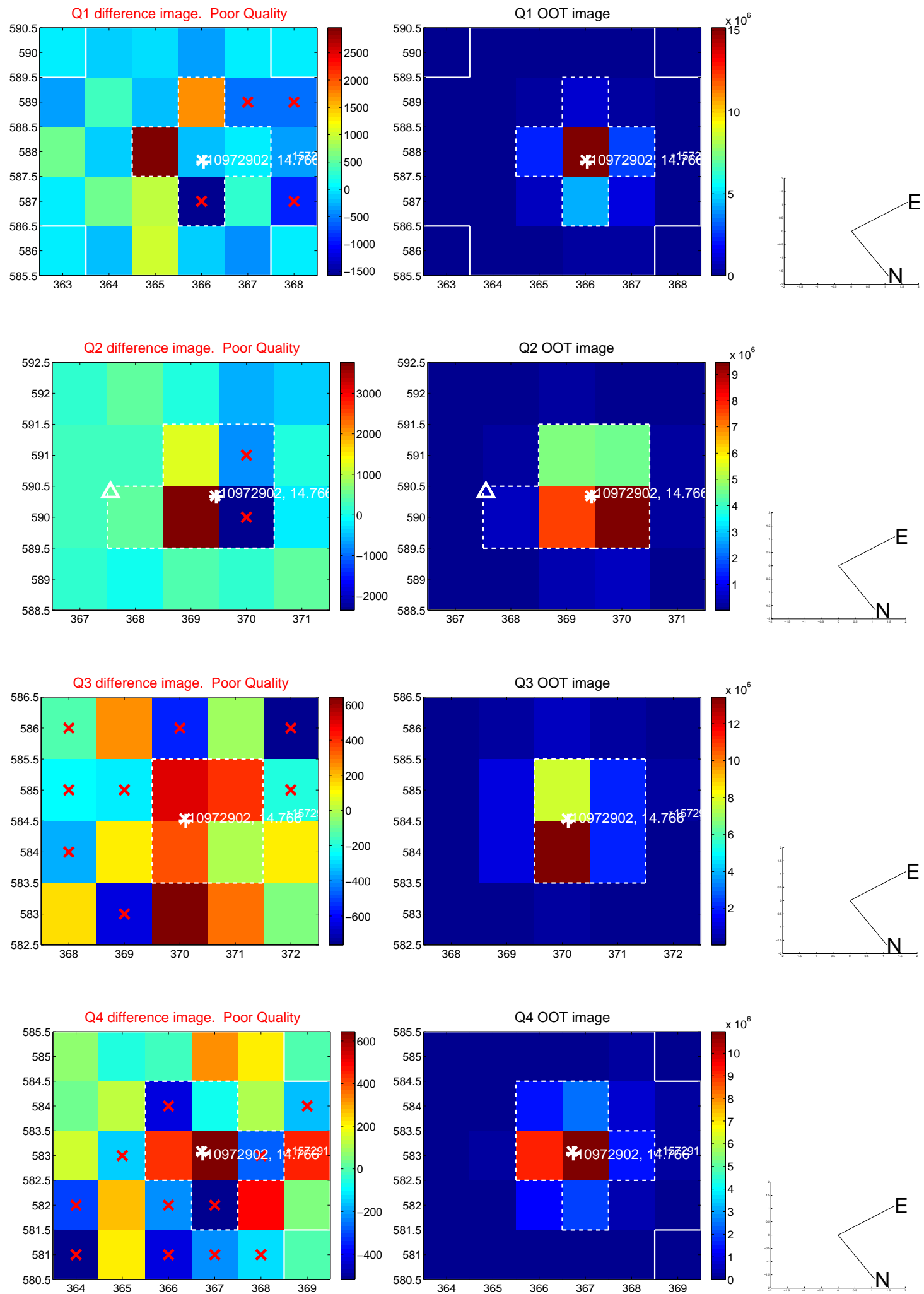


offset from photometric centroids

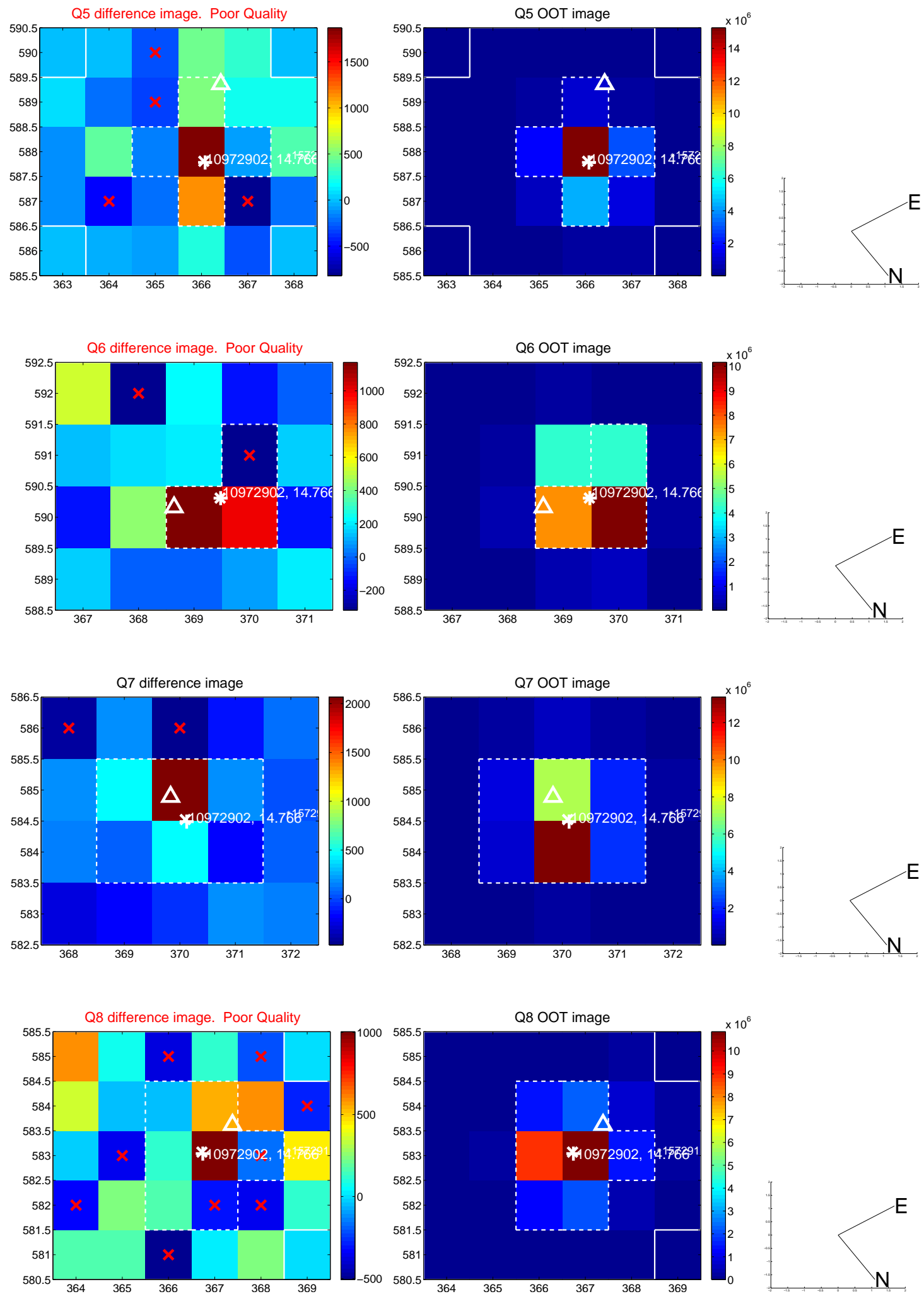


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

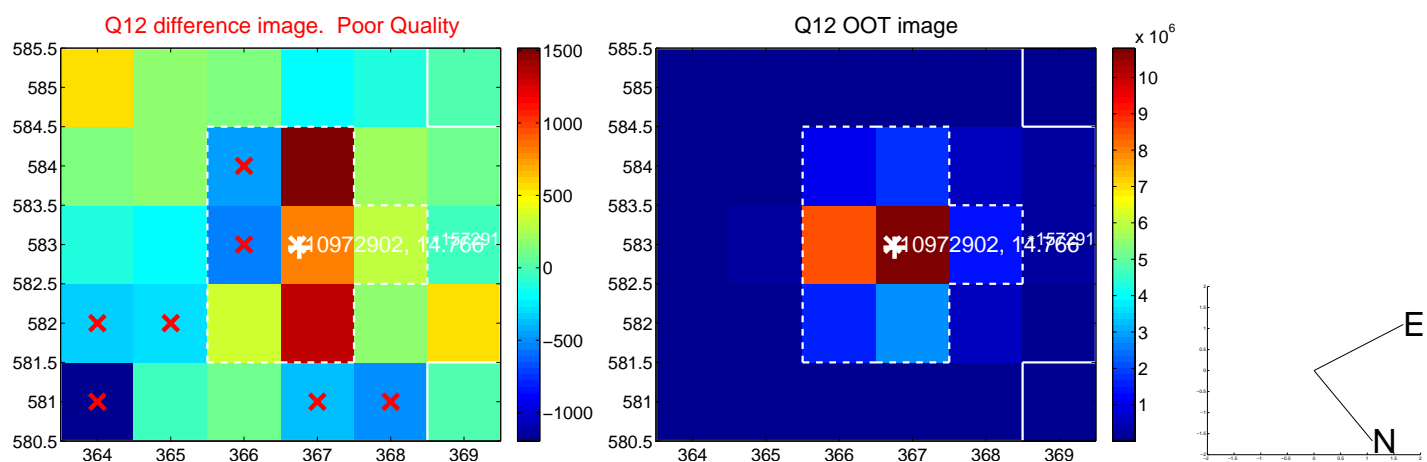
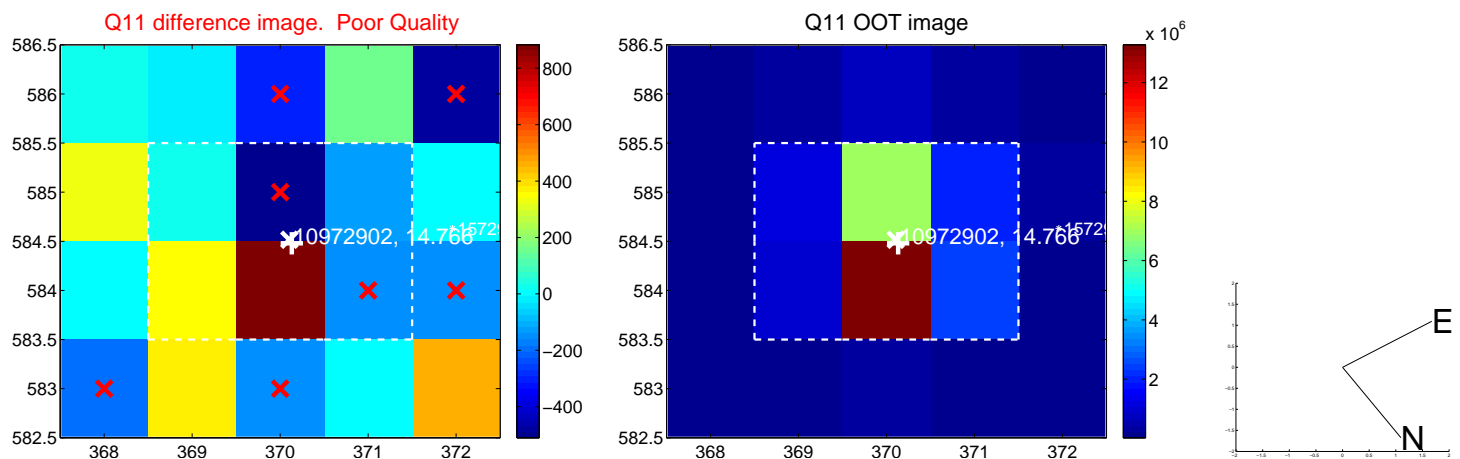
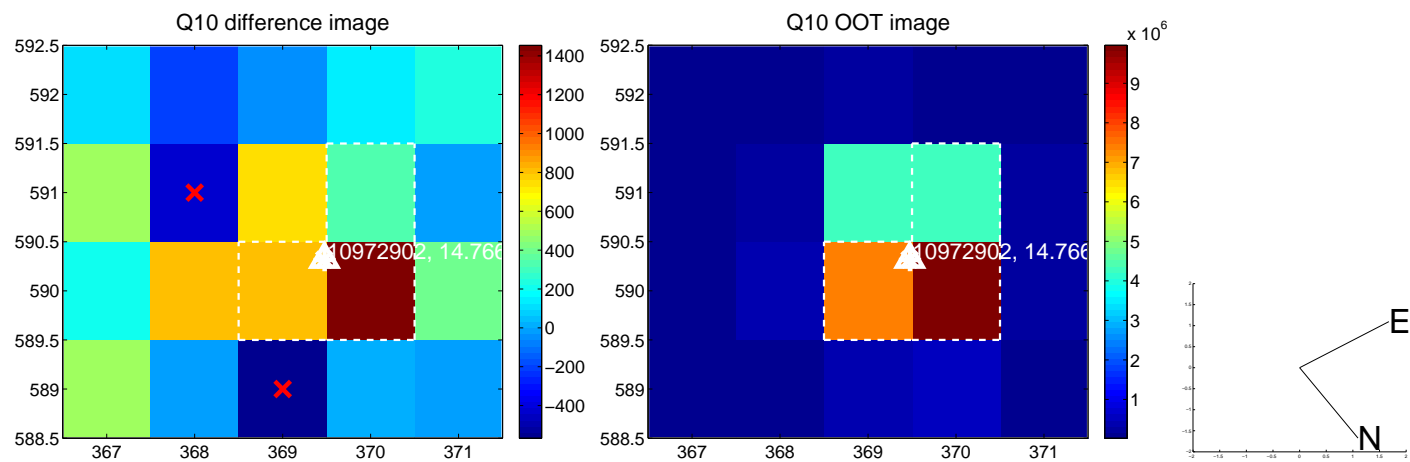
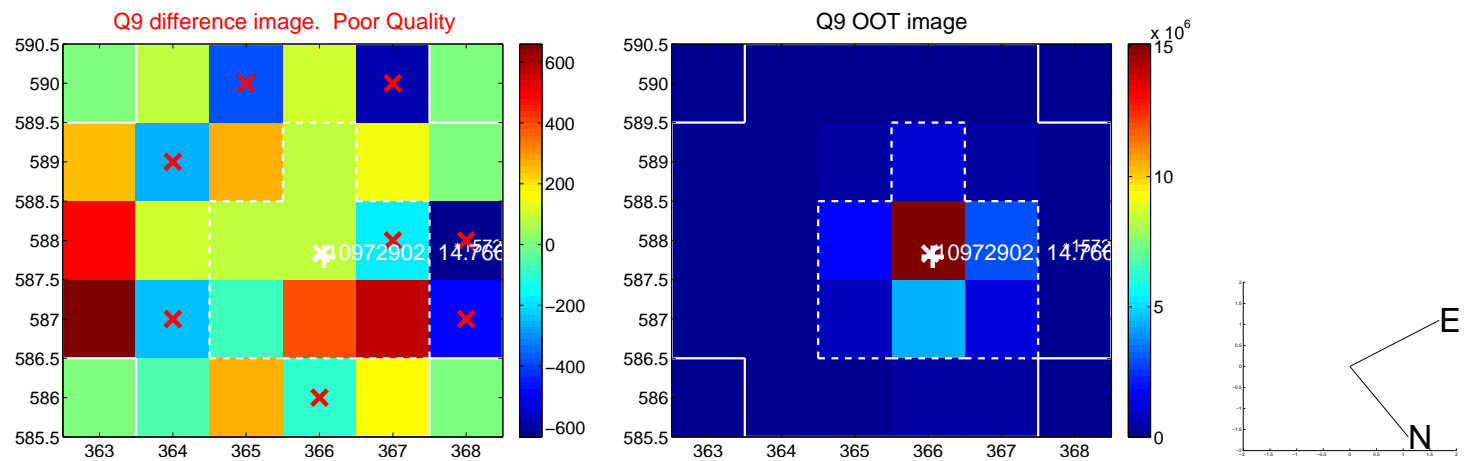
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



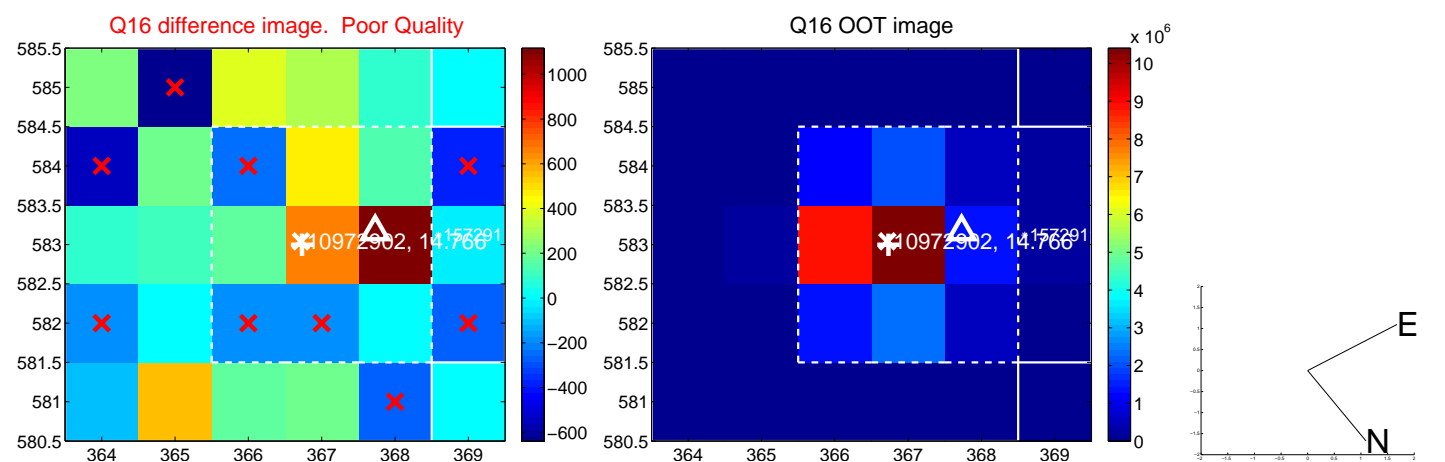
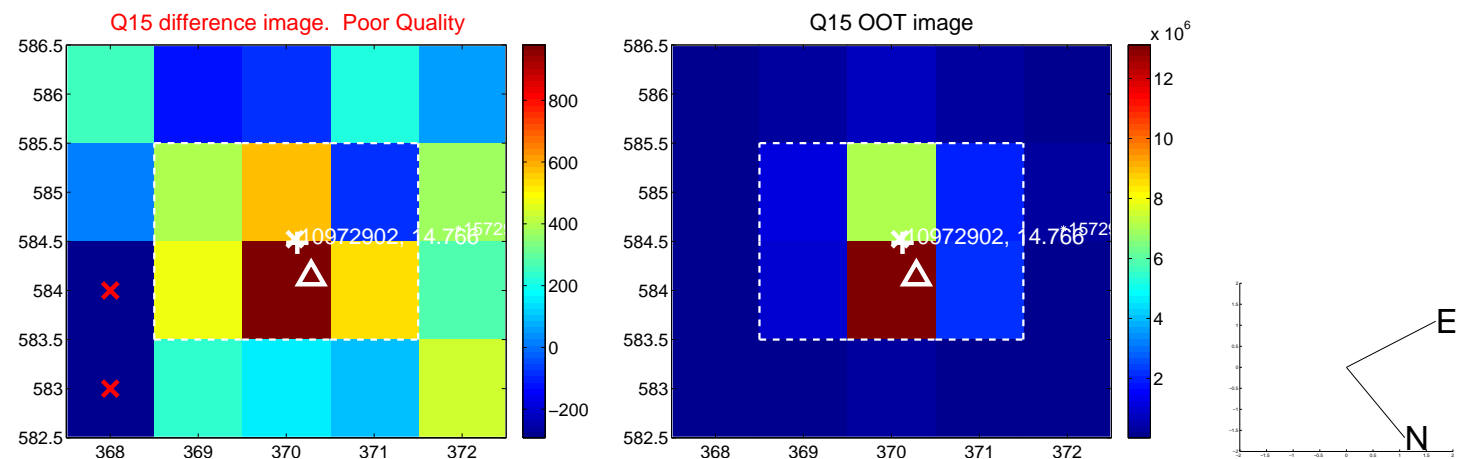
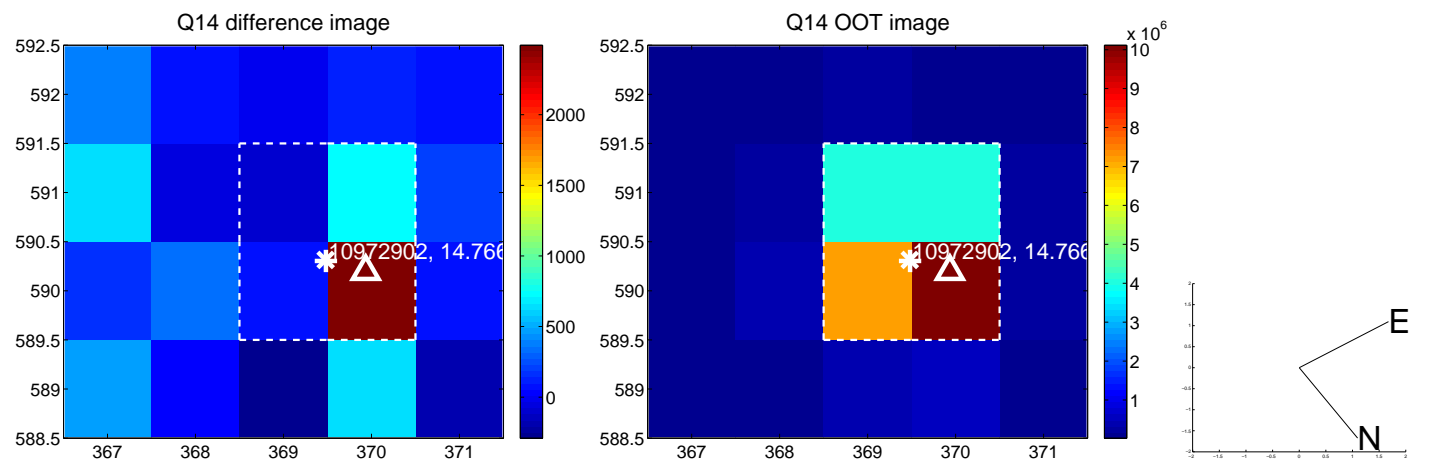
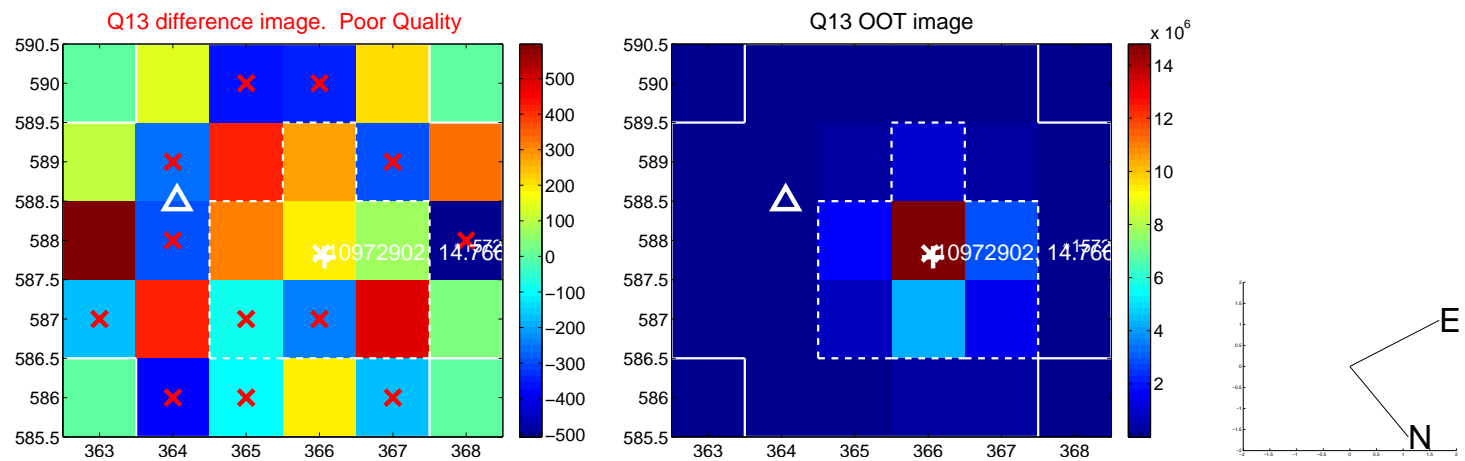
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



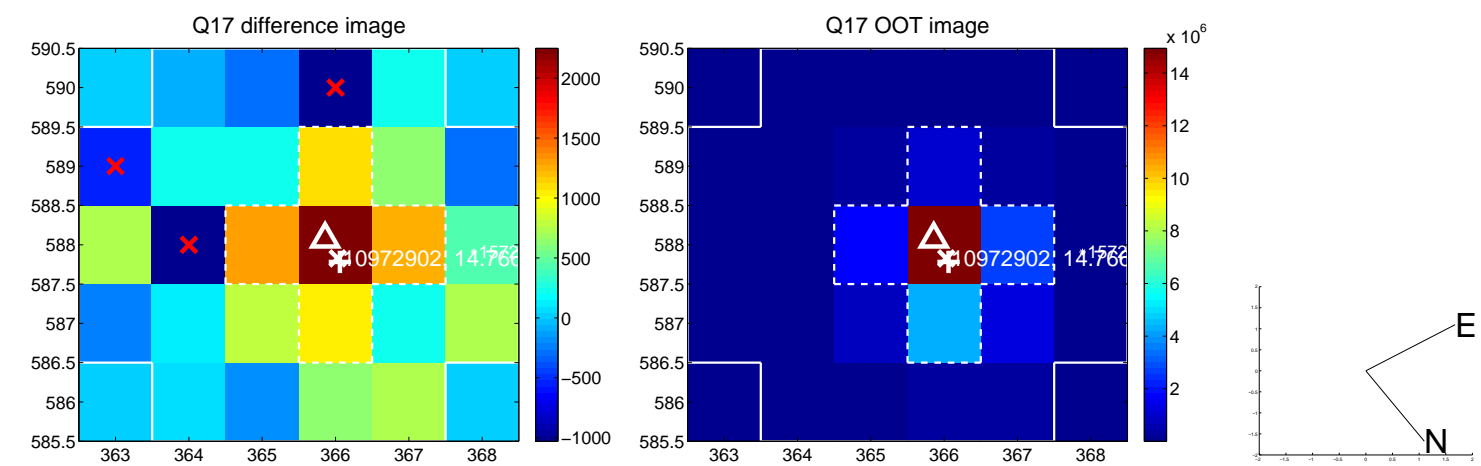
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



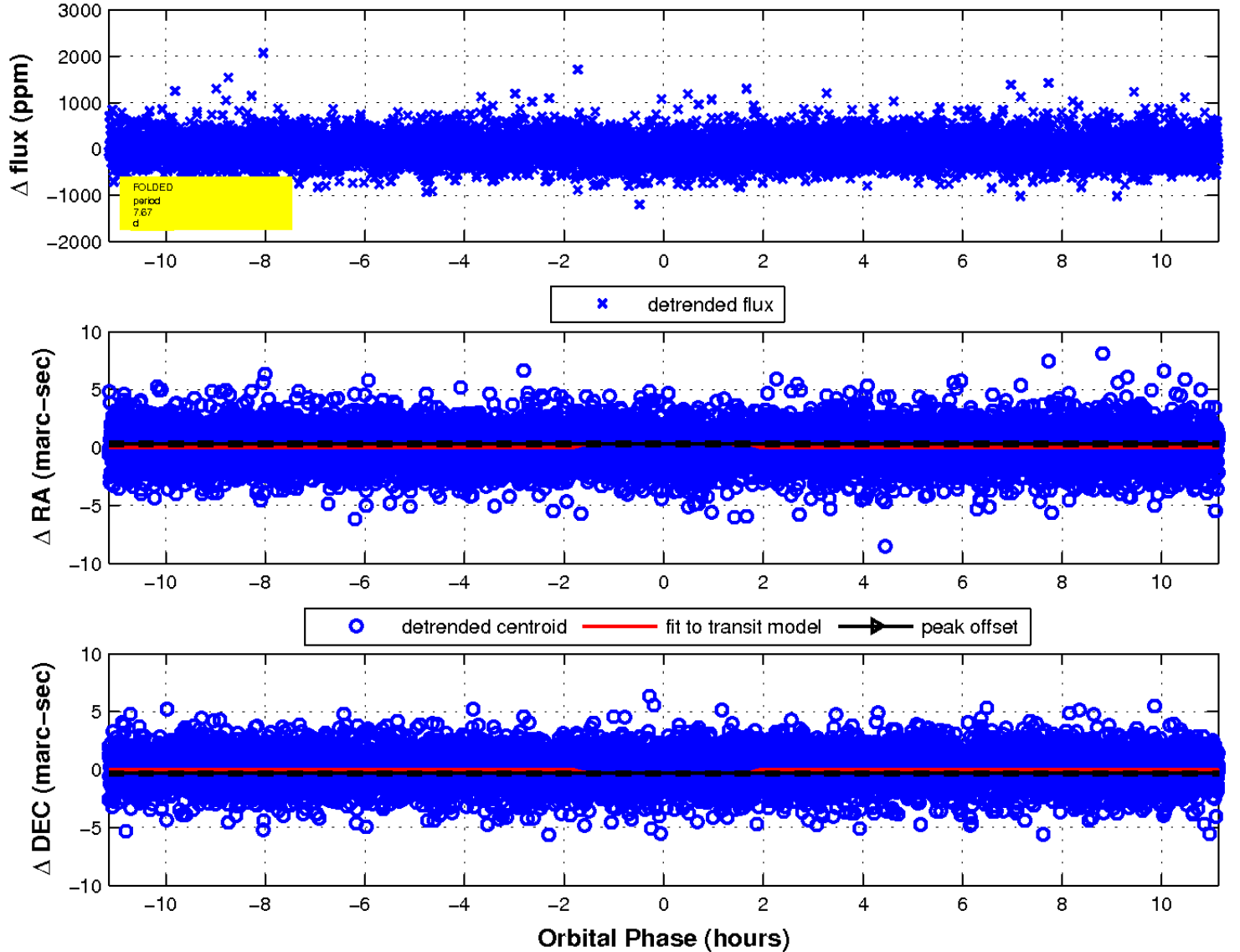
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

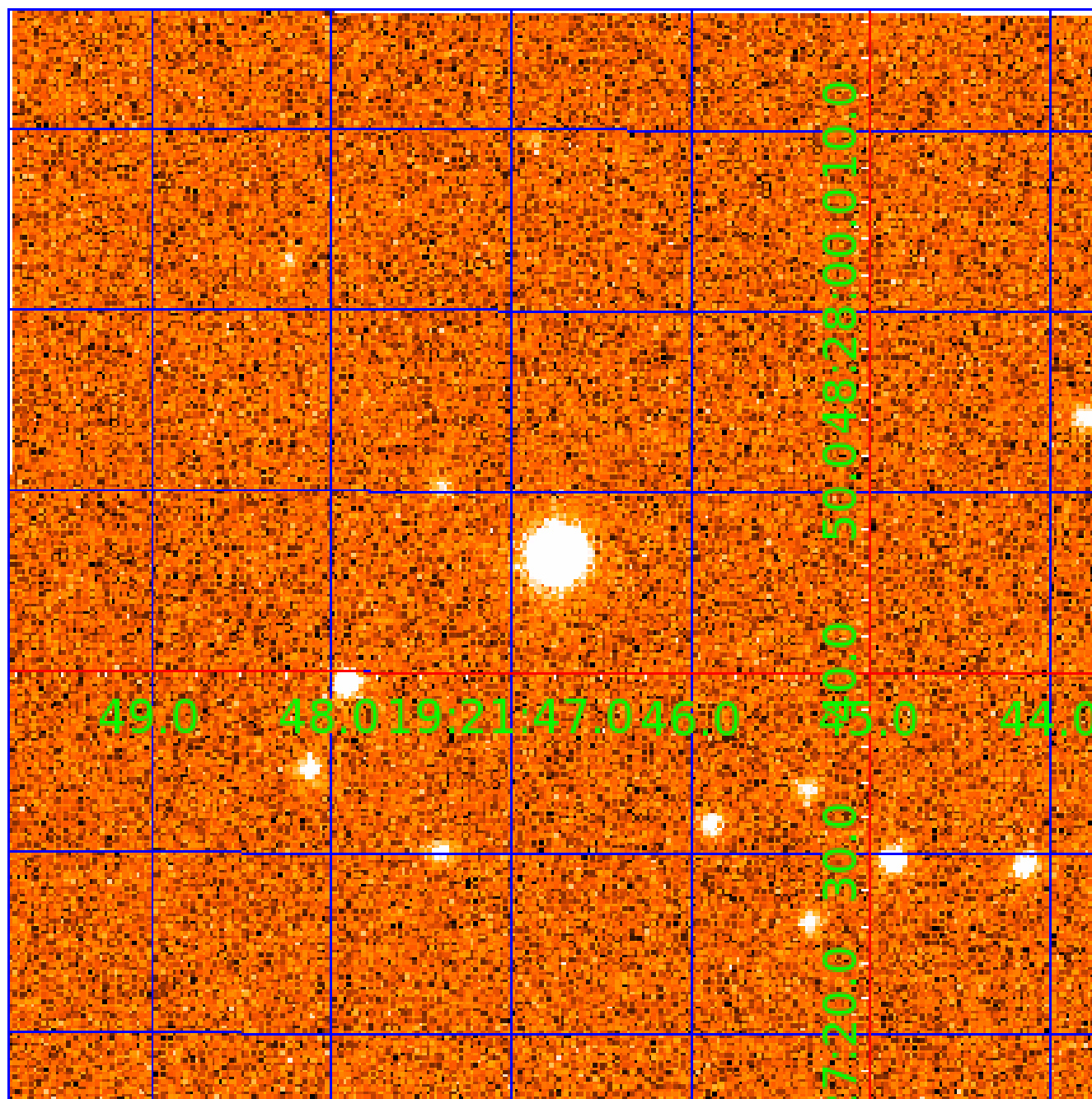


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 010972902

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})
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Robovetter Results

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010972902-02	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_MEAS—EPHEM_MATCH
010972902-03	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_MEAS—EPHEM_MATCH

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 010972902-02

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist (μ)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010972902-02	10972902	010858720-sec	10858720	1:1	1112.4	-280	1	10.97	14.76	24205.00	Col-Anomaly	0	4.60	1.09

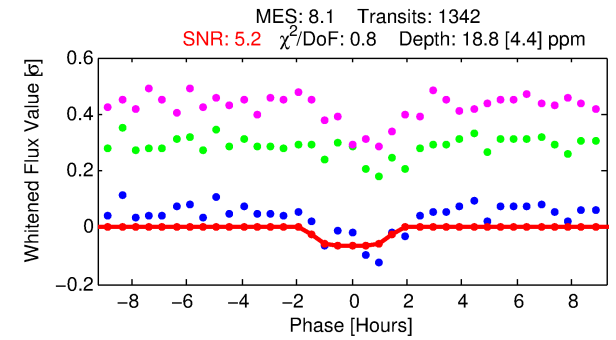
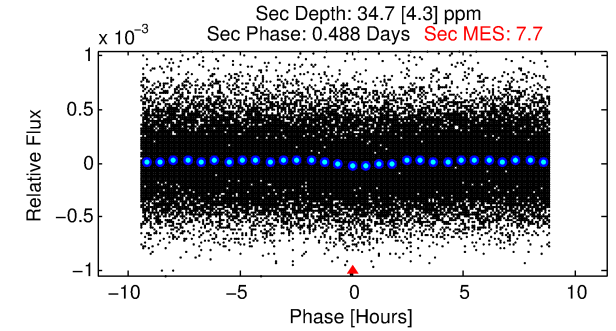
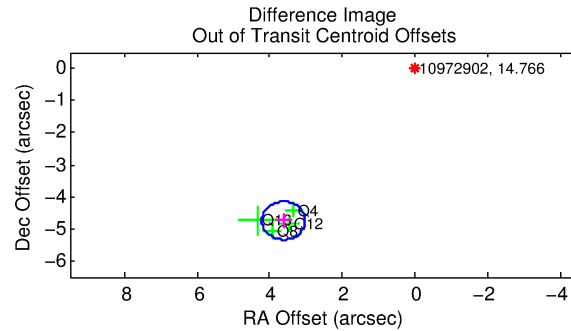
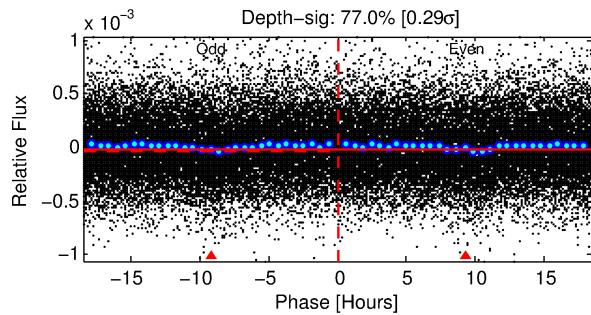
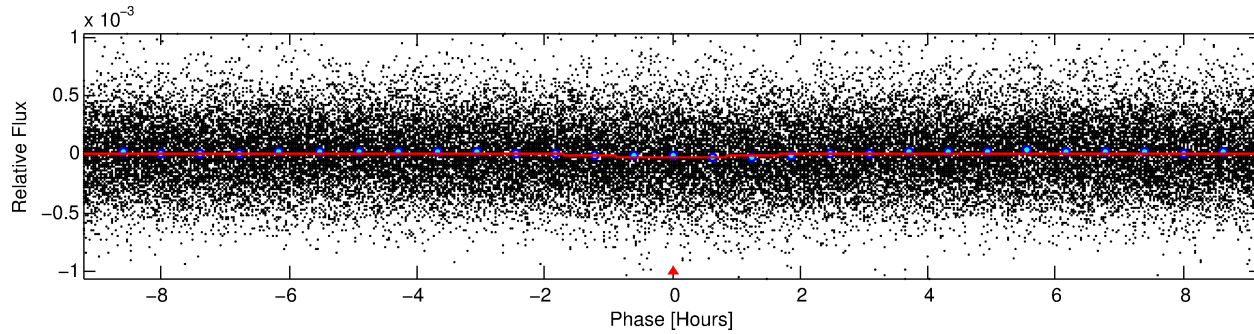
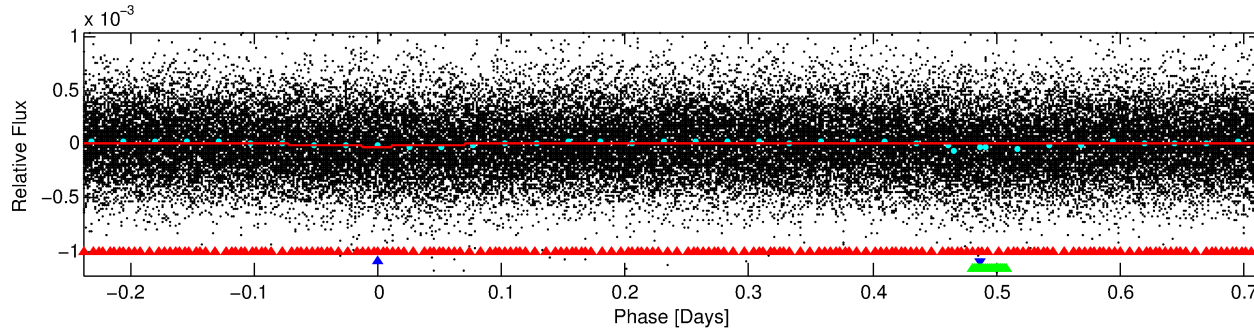
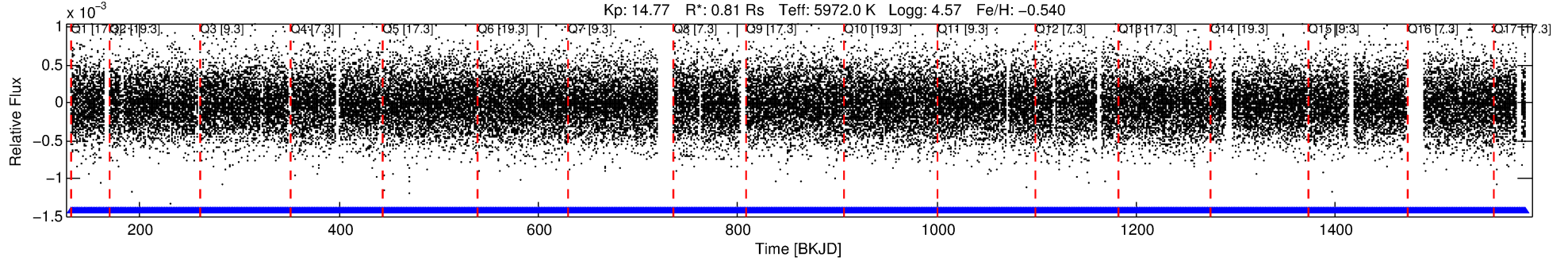
Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10972902 Candidate: 2 of 3 Period: 0.952 d

KOI: K04692 Corr: No Ephemeris Match

Kp: 14.77 R*: 0.81 Rs Teff: 5972.0 K Logg: 4.57 Fe/H: -0.540



DV Fit Results:

Period = 0.95233 [0.00002] d
Epoch = 131.8732 [0.0075] BKJD
Rp/R* = 0.0046 [0.0035]
a/R* = 1.45 [3.09]
b = 0.89 [0.99]
Seff = 2246.84 [836.27]
Teq = 1756 [163] K
Rp = 0.41 [0.33] Re
a = 0.0182 [0.0043] AU
Ag = 37.99 [59.40] [0.62σ]
Teffp = 6739 [2574] K [1.93σ]

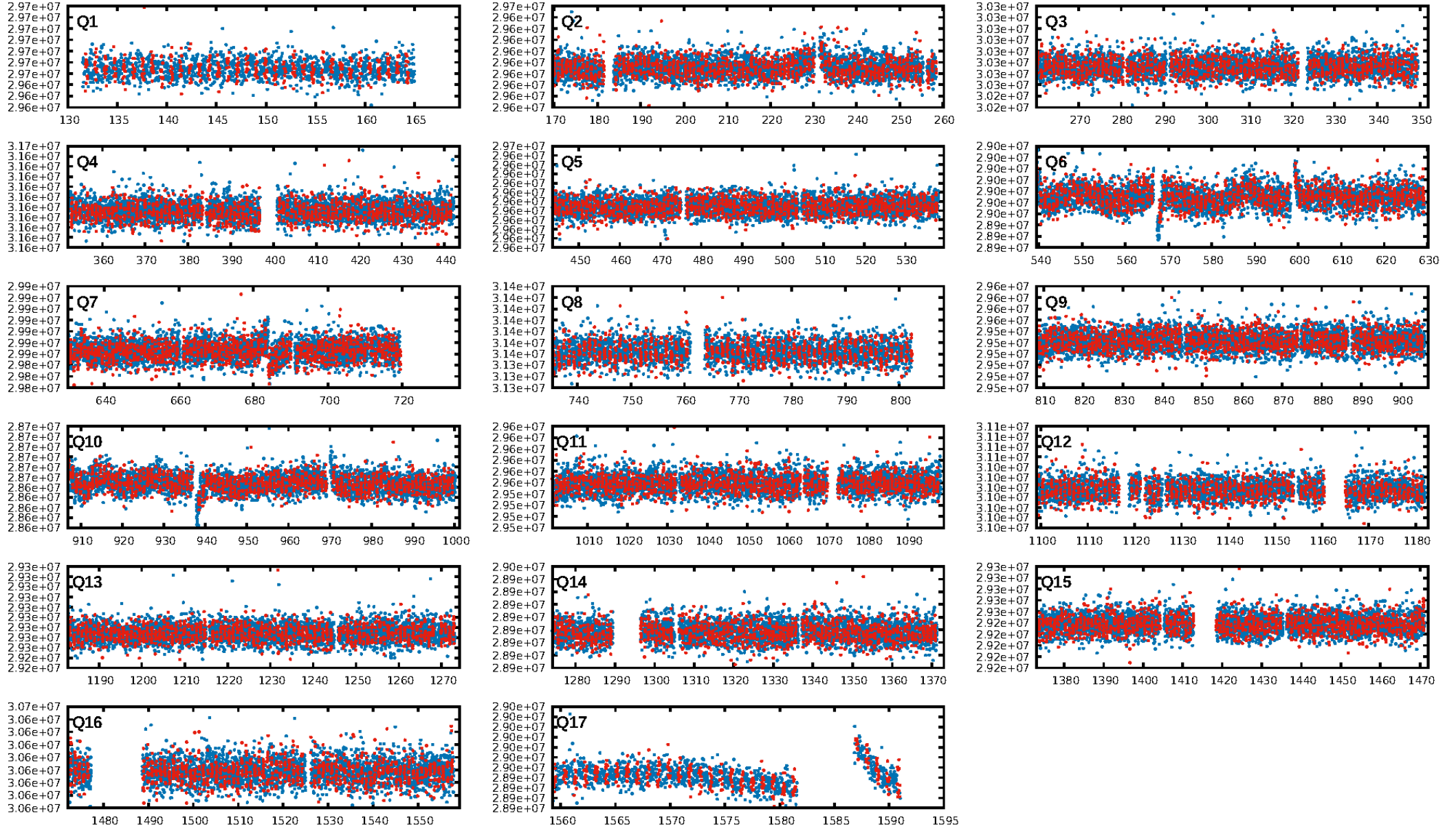
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.43e-20
RollingBand-fgt: 1.00 [1281/1281]
GhostDiagnostic-chr: -5.489
Centroid-sig: 0.0%
Centroid-so: 9.781 arcsec [3.49σ]
OotOffset-rm: 5.969 arcsec [30.17σ]
KicOffset-rm: 5.838 arcsec [27.89σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
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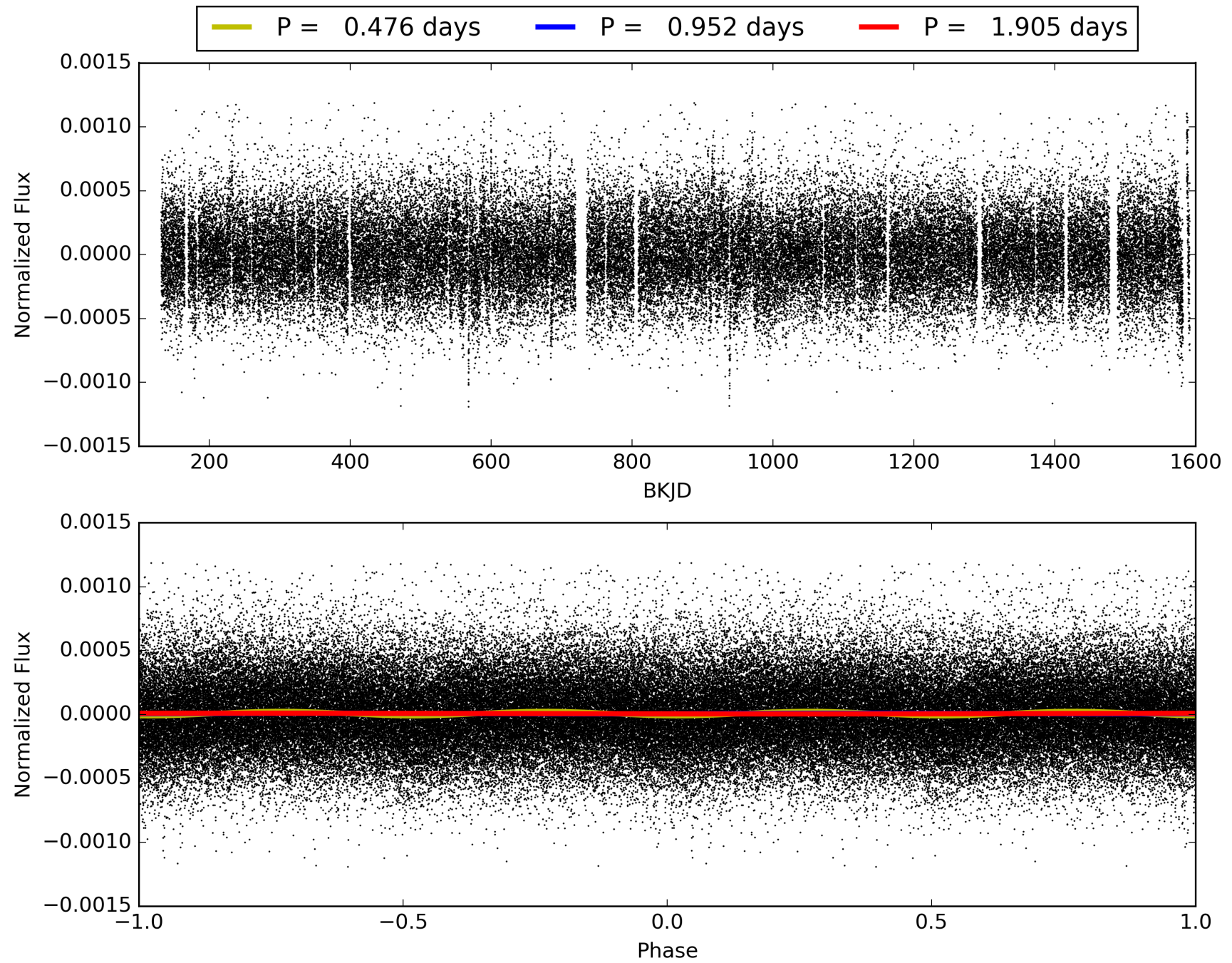
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:03:31 Z

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

TCE 010972902-02, PDC Light Curves

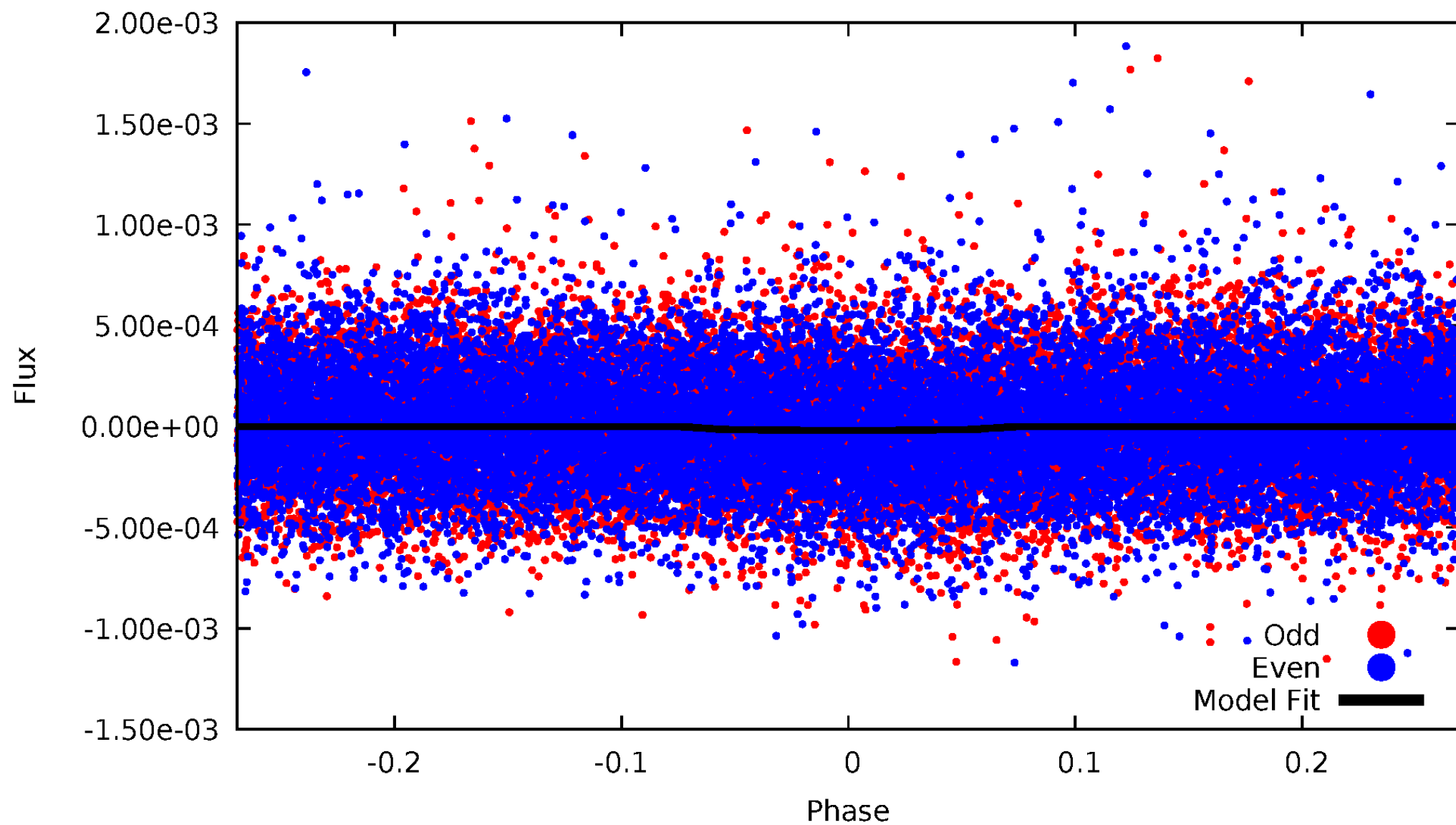


TCE 010972902-02



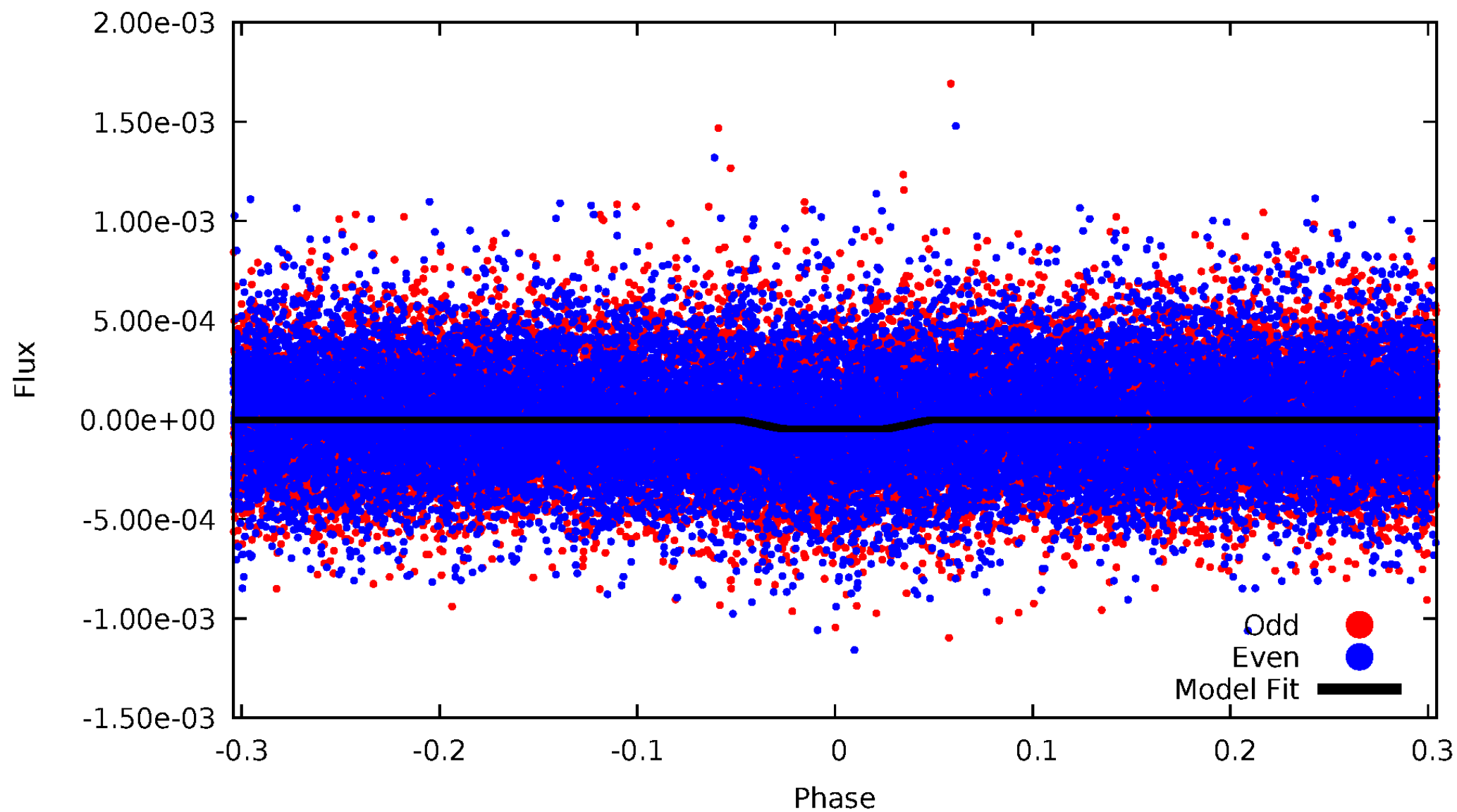
DV Odd/Even

TCE 010972902-02



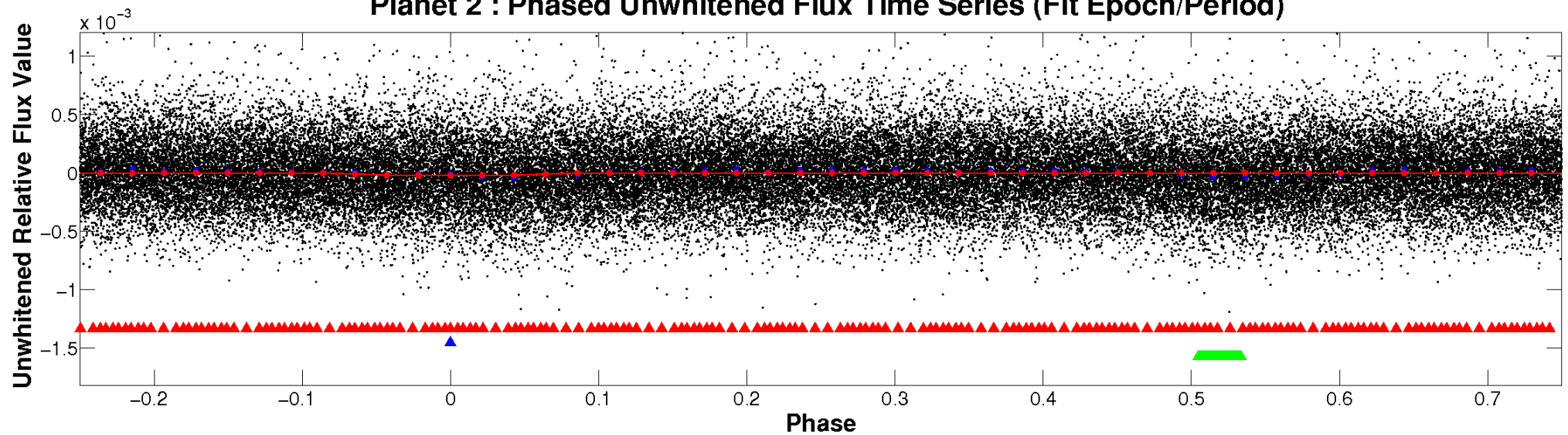
ALT Odd/Even

TCE 010972902-02

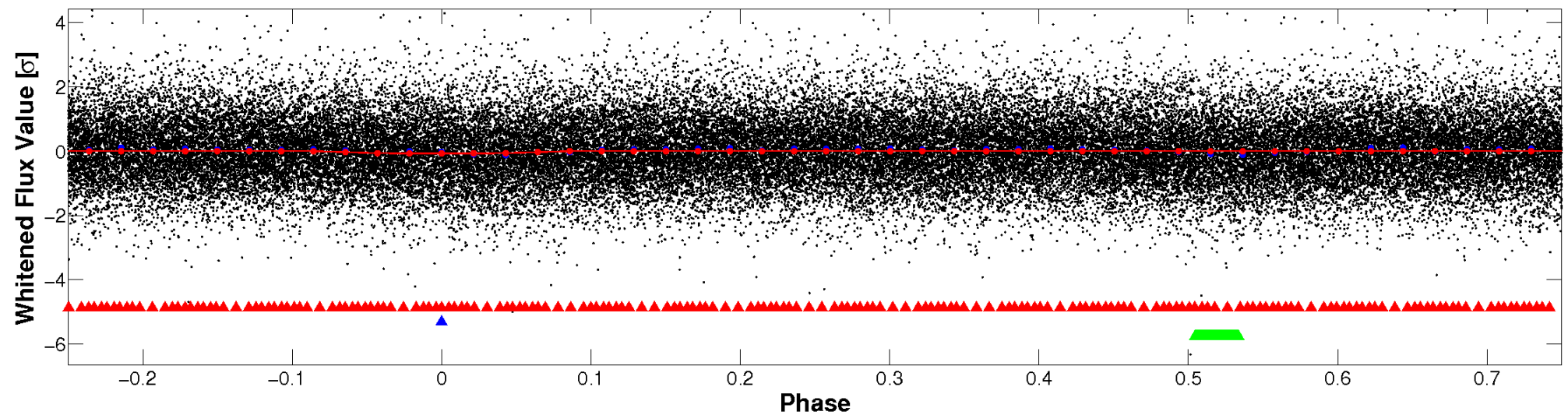


Non-Whitened Vs. Whitened Light Curve

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

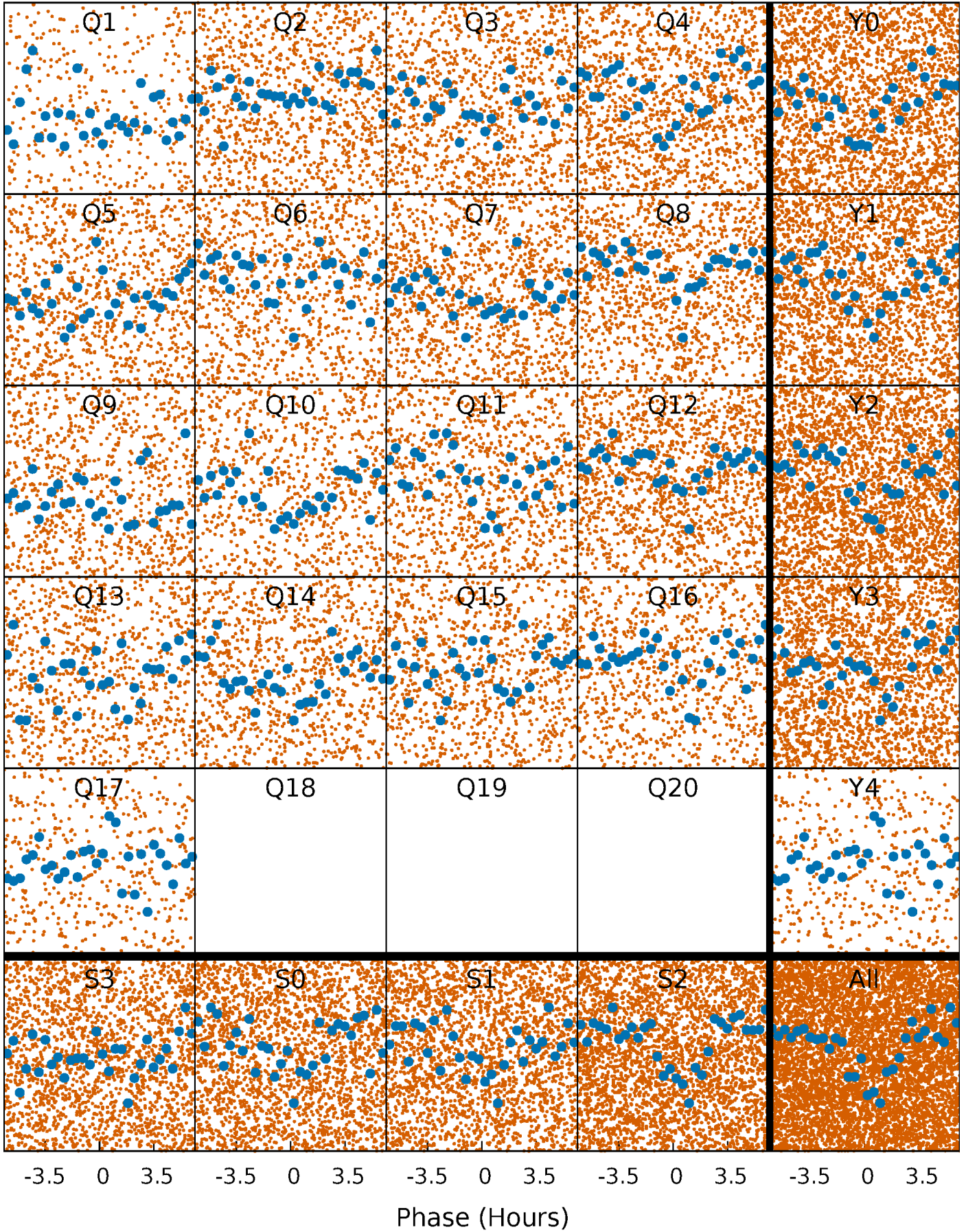


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



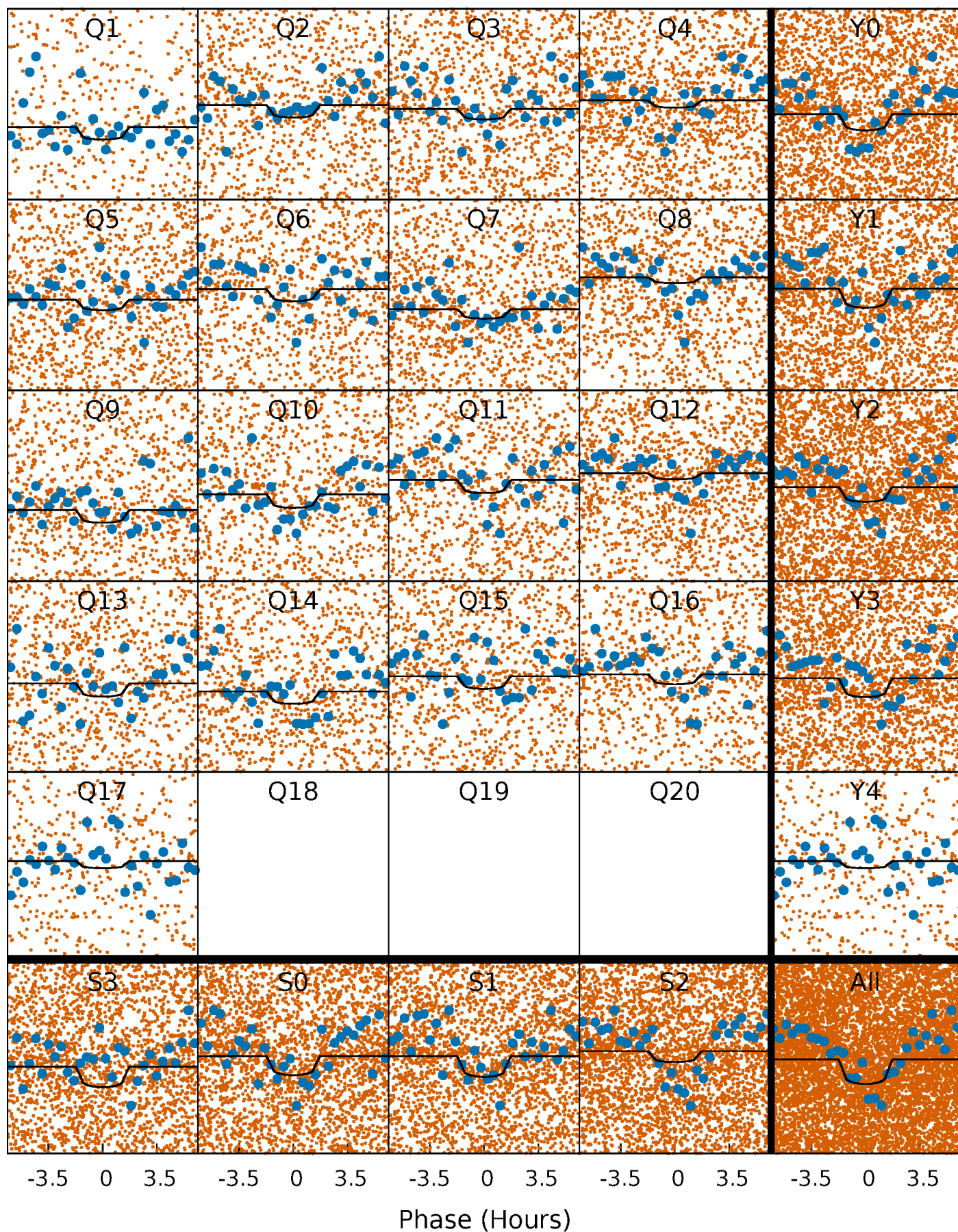
PDC Quarter-Phased Transit Curves

TCE 010972902-02 P= 0.952331 Days $T_0=131.873186$ (BKJD)



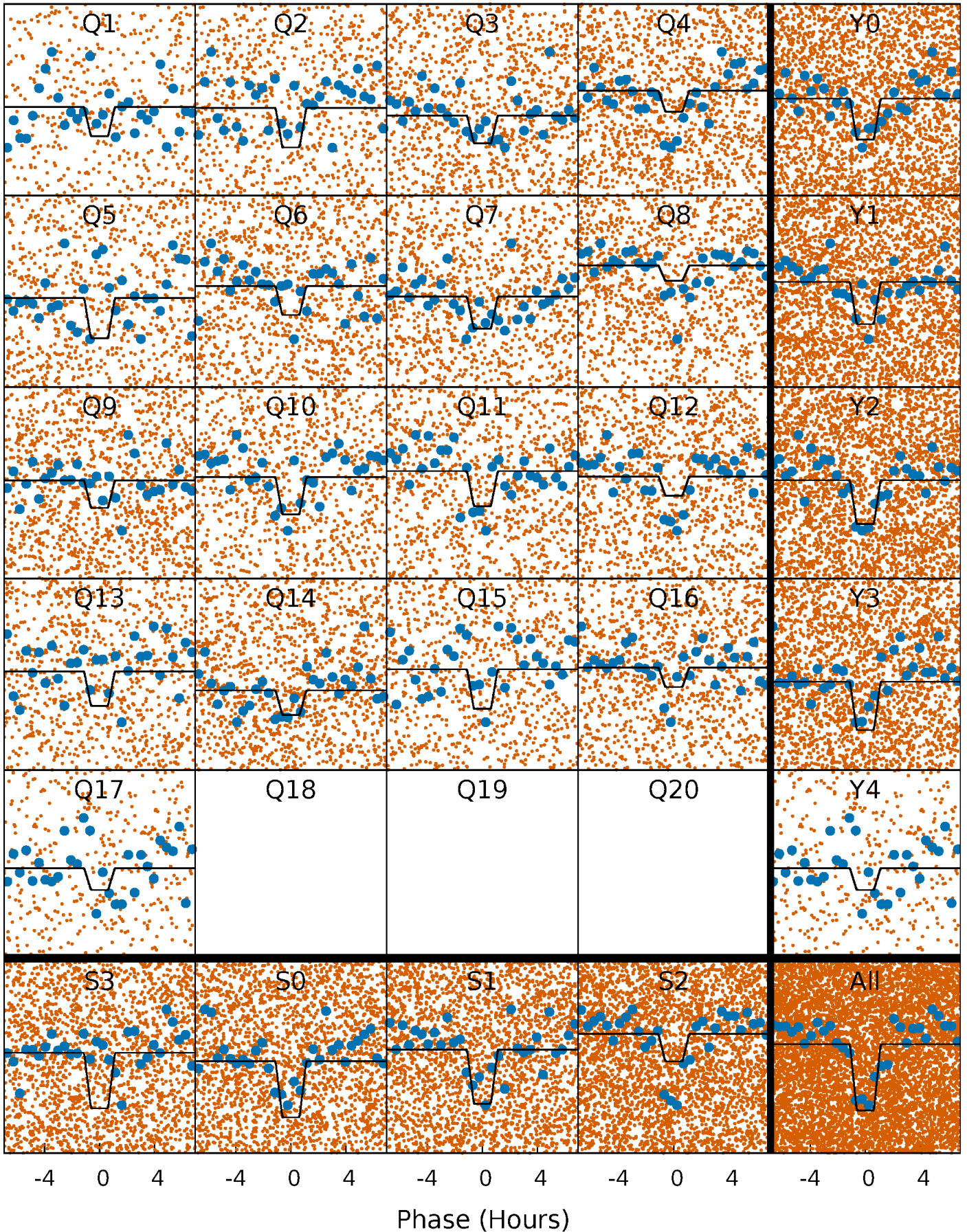
DV Quarter-Phased Transit Curves

TCE 010972902-02 $P = 0.952331$ Days $T_0 = 131.873186$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

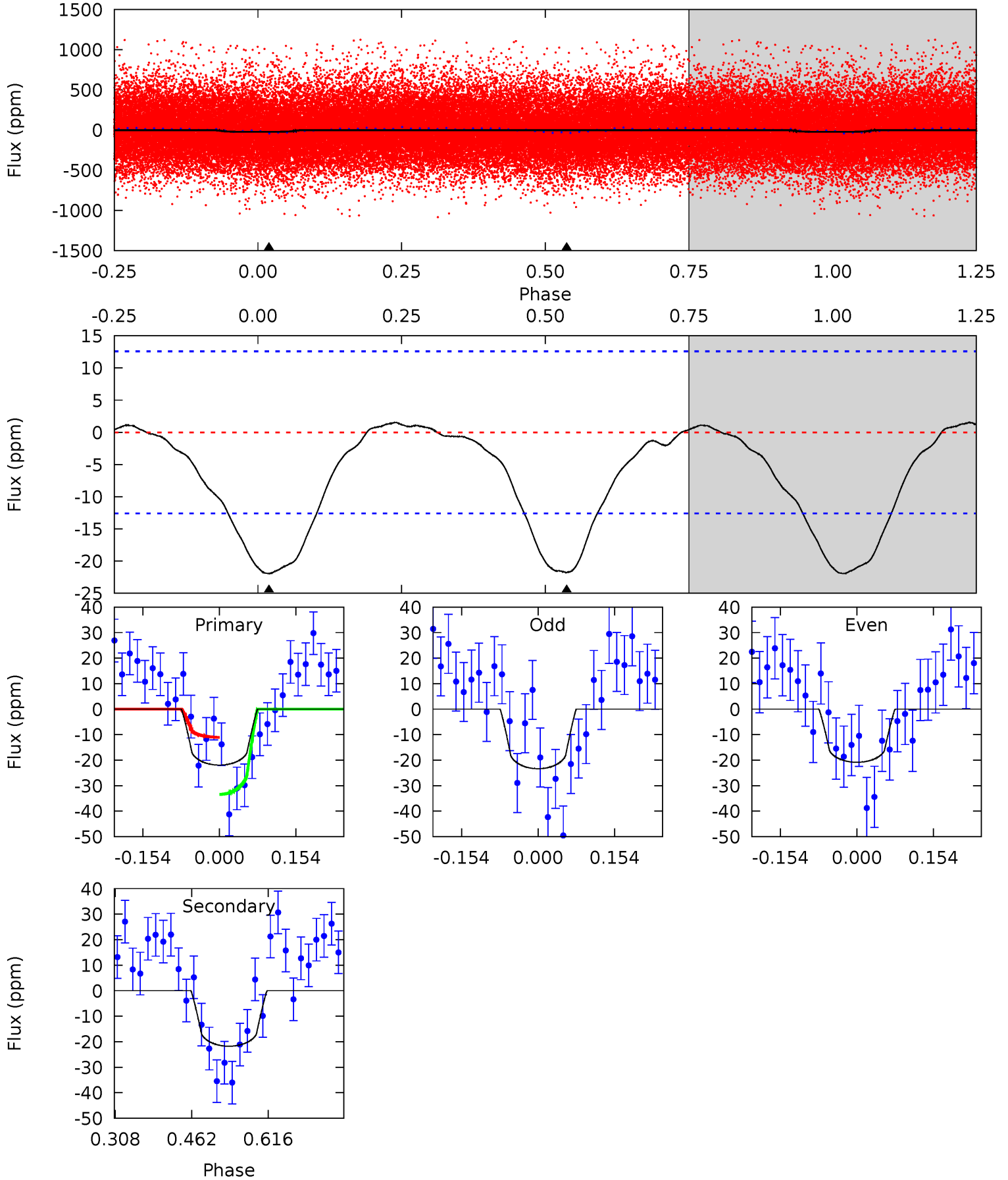
TCE 010972902-02 $P = 0.952402$ Days $T_0 = 131.839552$ (BKJD)



DV Model-Shift Uniqueness Test

010972902-02, P = 0.952331 Days, E = 130.920855 Days

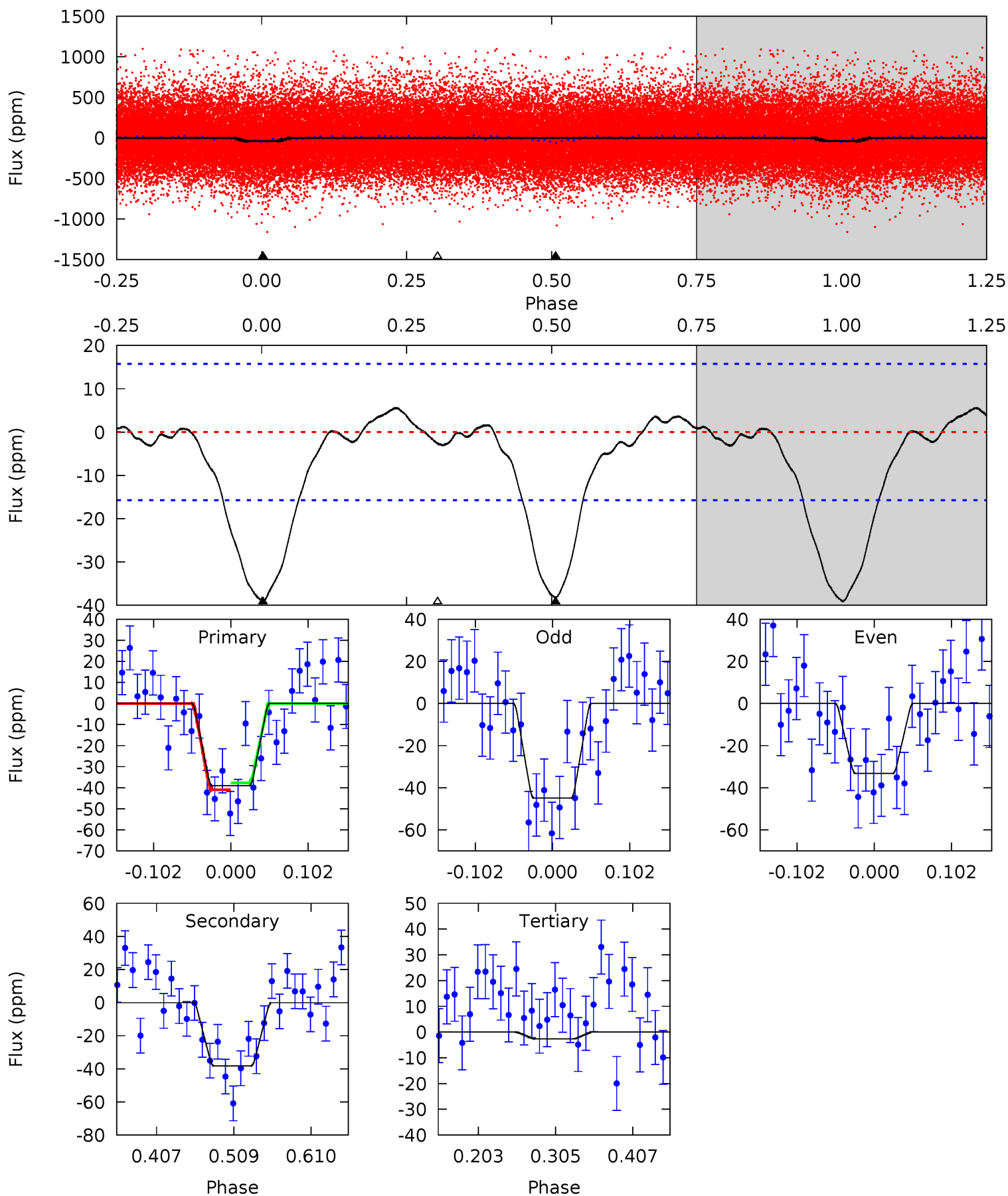
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.79	7.73	0	0	4.47	1.43	0.39	7.79	7.79	7.73	7.73	0.45	0.83	0.07	3.98



Alt Model-Shift Uniqueness Test

010972902-02, P = 0.952402 Days, E = 130.887150 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	11.1	0.76	0	4.56	1.64	0.67	10.6	11.3	10.3	11.1	1.69	0.98	0.12	0.47



Stellar Parameters For KIC 010972902

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5972^{+161}_{-179}	$4.570^{+0.035}_{-0.196}$	$-0.540^{+0.300}_{-0.300}$	$0.807^{+0.222}_{-0.059}$	$0.884^{+0.090}_{-0.099}$	$2.366^{+0.434}_{-1.153}$
	+3%/-3%	+1%/-4%	+56%/-56%	+28%/-7%	+10%/-11%	+18%/-49%
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 010972902-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-22 ± 3	$0.45^{+0.32}_{-0.27}$	2520^{+162}_{-116}	5803^{+4076}_{-1202}	19^{+94}_{-13}
Alt.	-38 ± 3	$0.62^{+0.32}_{-0.30}$	2509^{+146}_{-105}	5683^{+2620}_{-928}	18^{+48}_{-10}

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

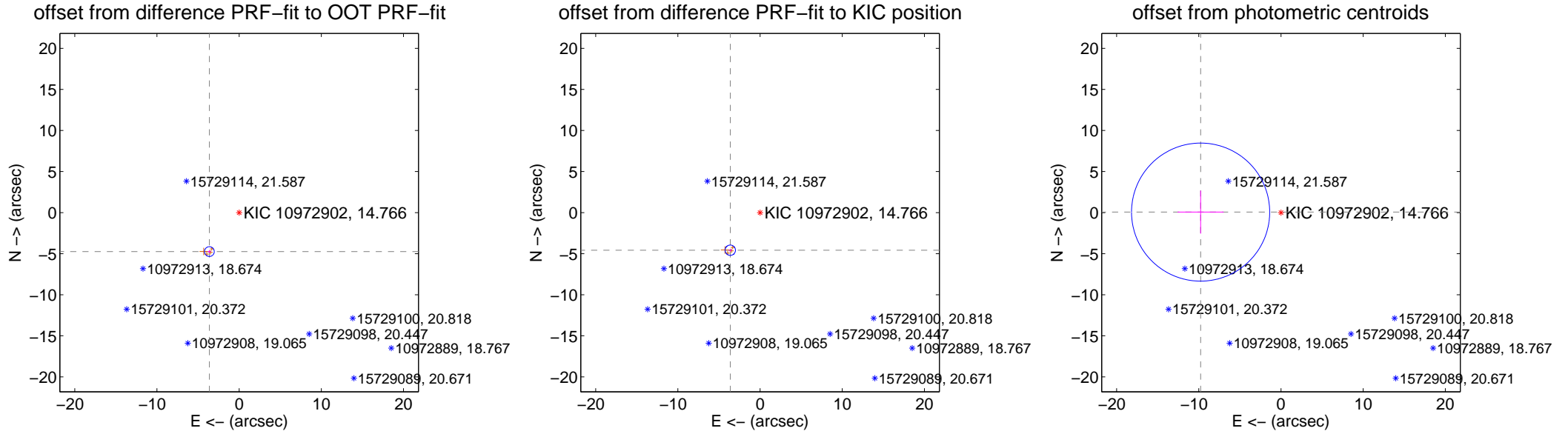
DV Centroid Data

Supplemental centroid analysis for 010972902-02. Kepler magnitude: 14.77. Transit SNR 5.25

There are 0 quarters with good PRF difference image offsets

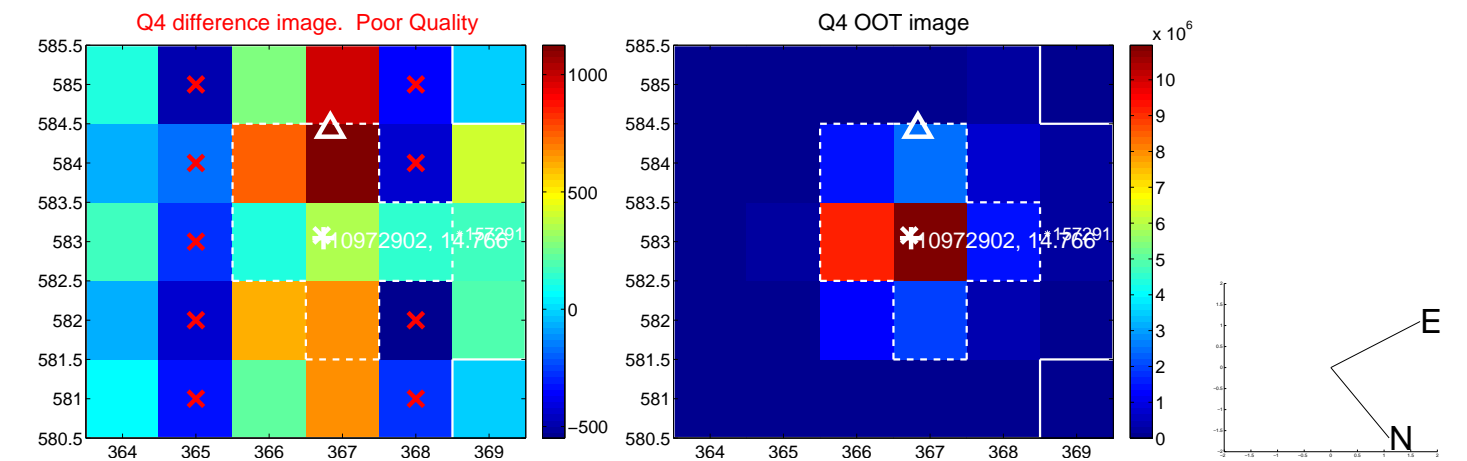
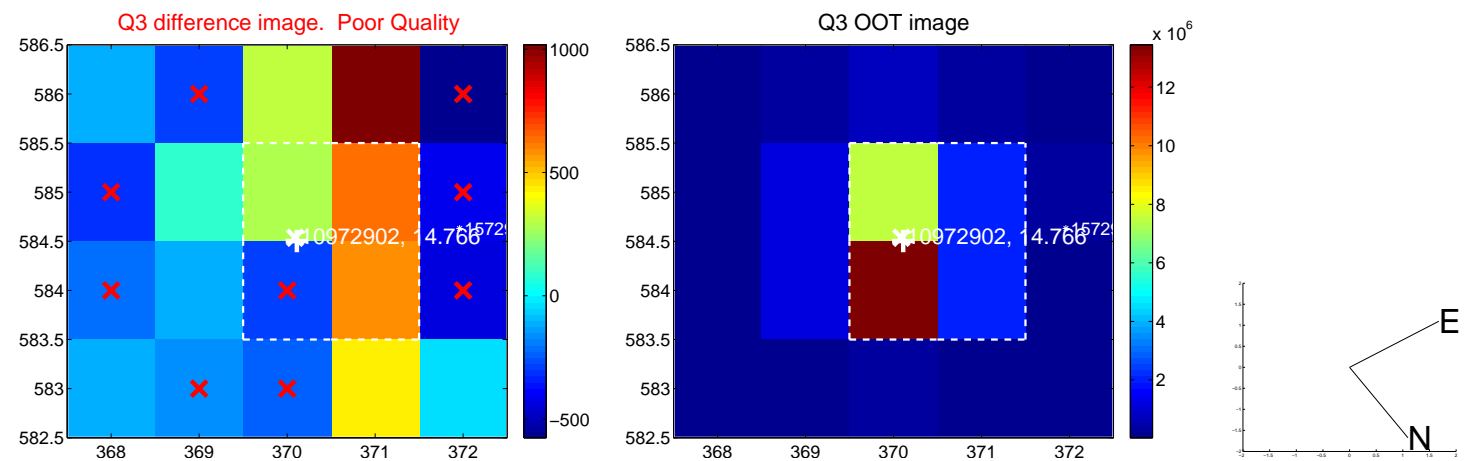
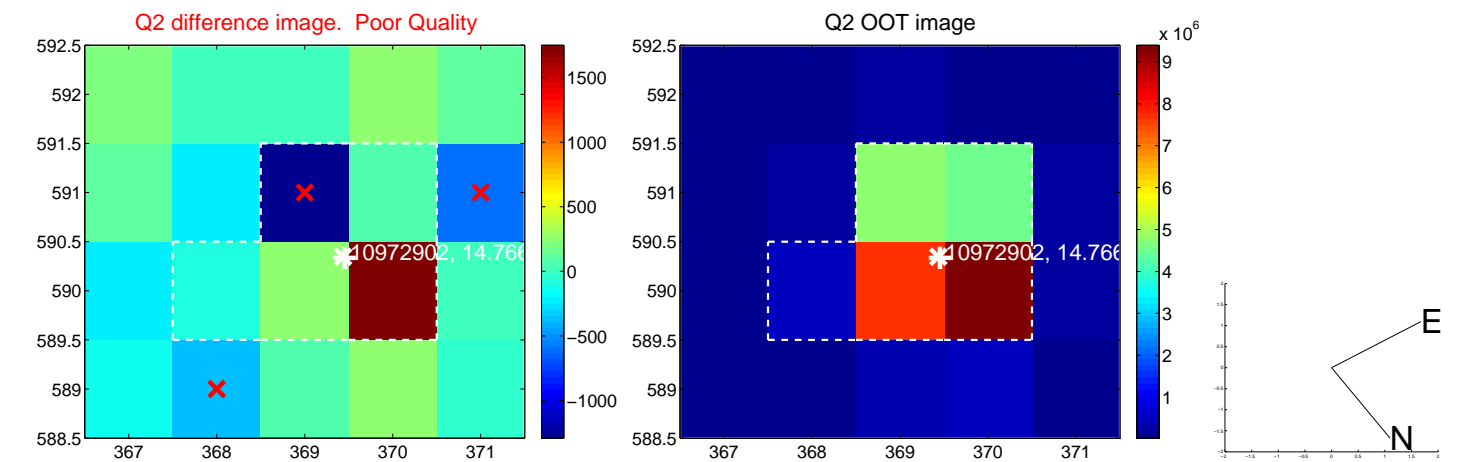
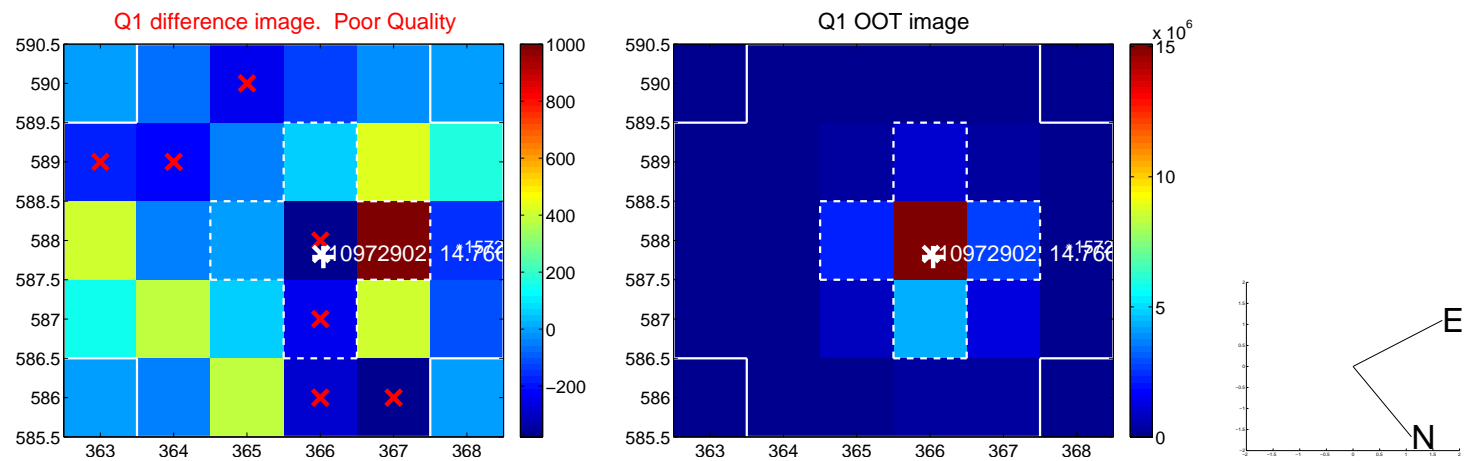
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.969 ± 0.198	30.17	3.621 ± 0.213	-4.745 ± 0.189
PRF-fit source offset from KIC position	5.838 ± 0.209	27.89	3.623 ± 0.186	-4.578 ± 0.161
photometric centroid source offset	9.78 ± 2.80	3.49	9.78 ± 2.80	0.06 ± 2.62

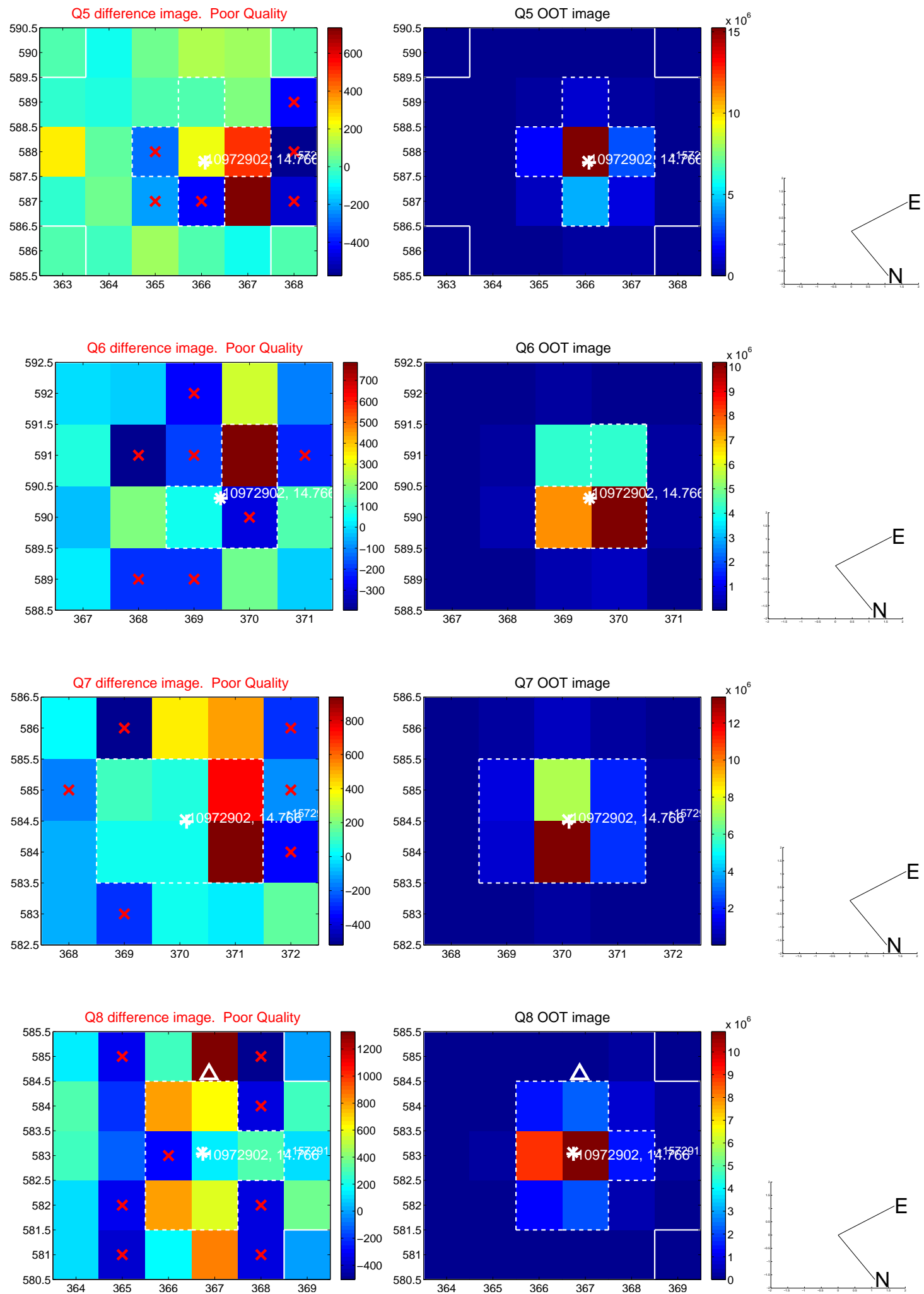


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

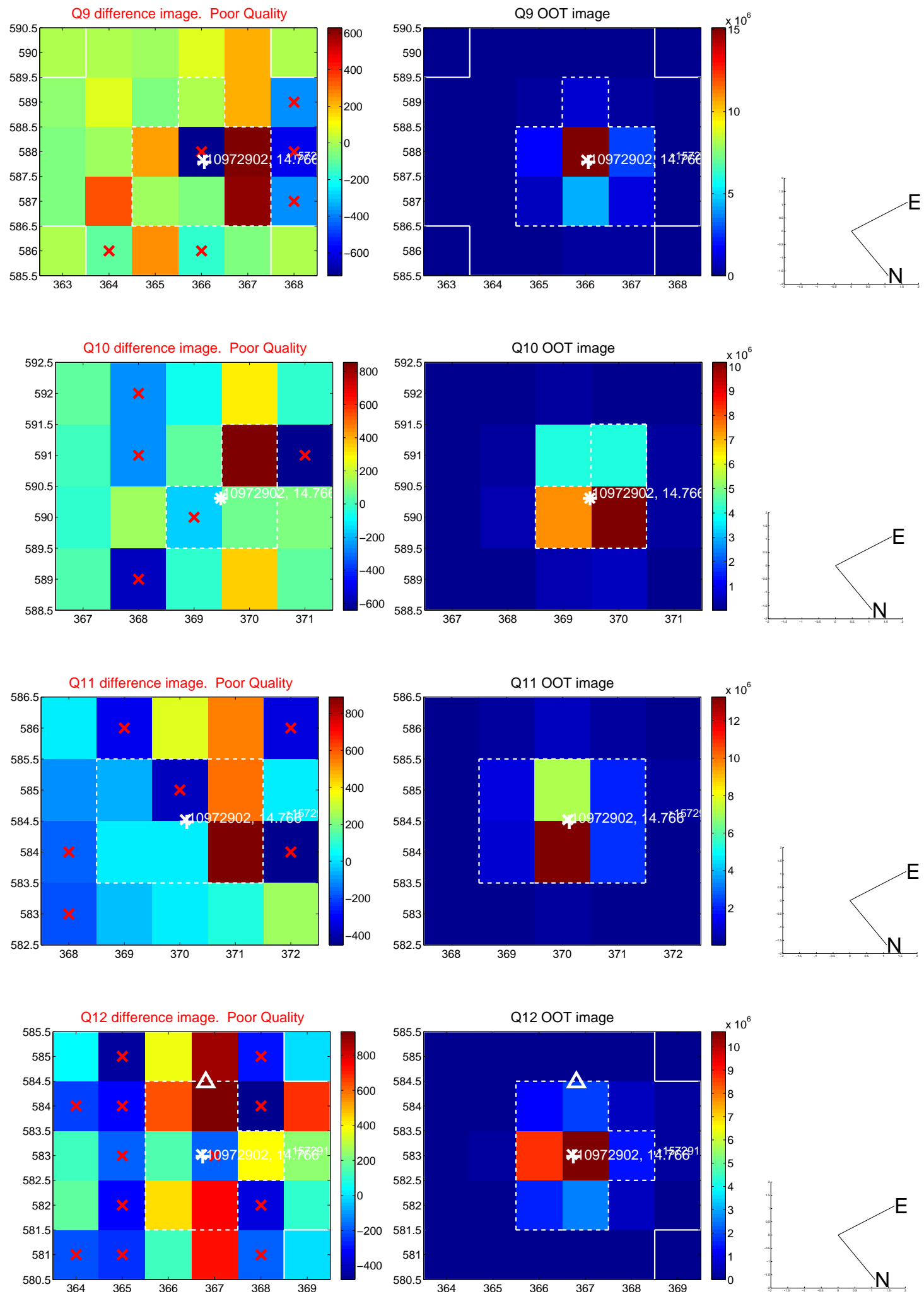
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



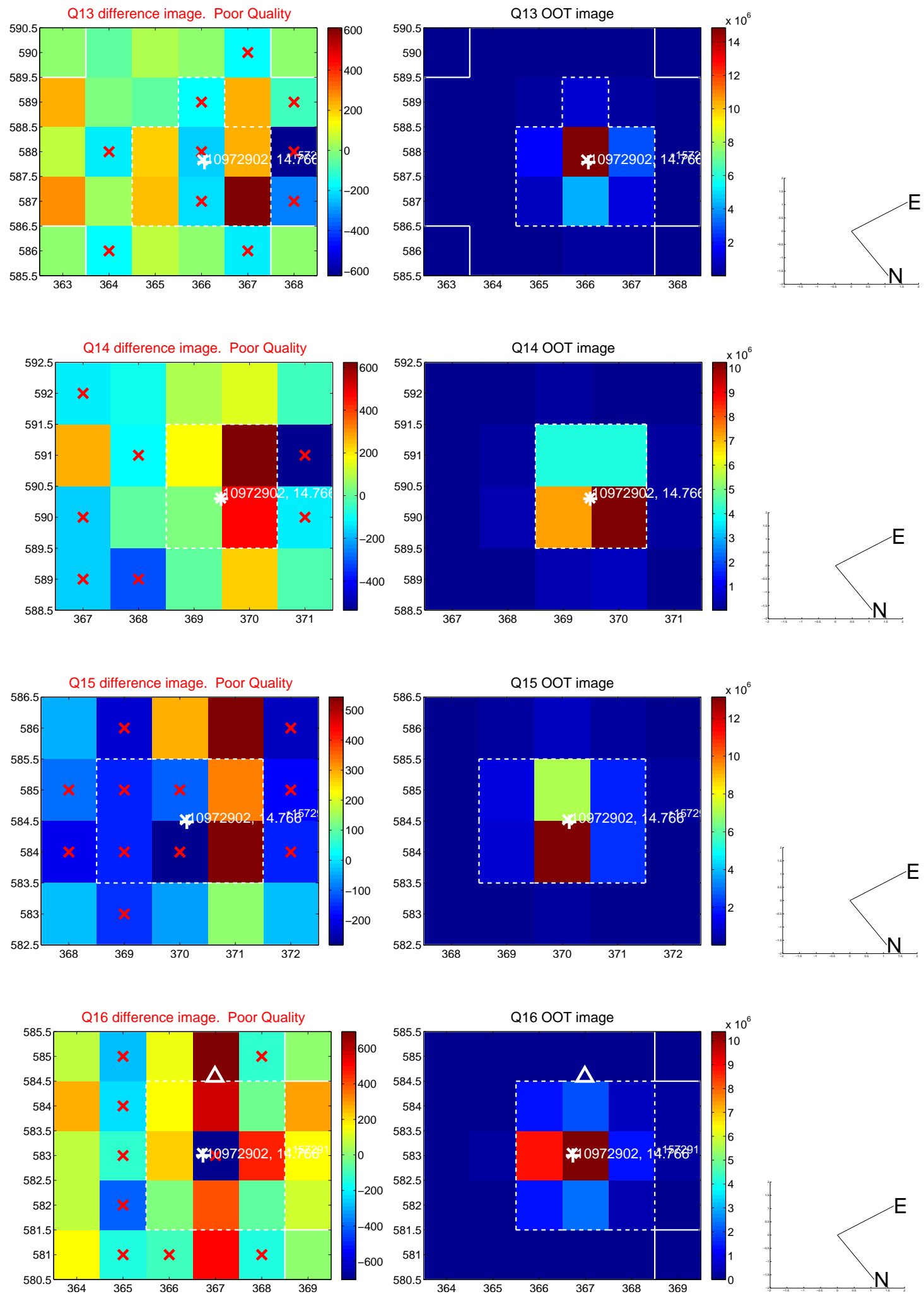
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



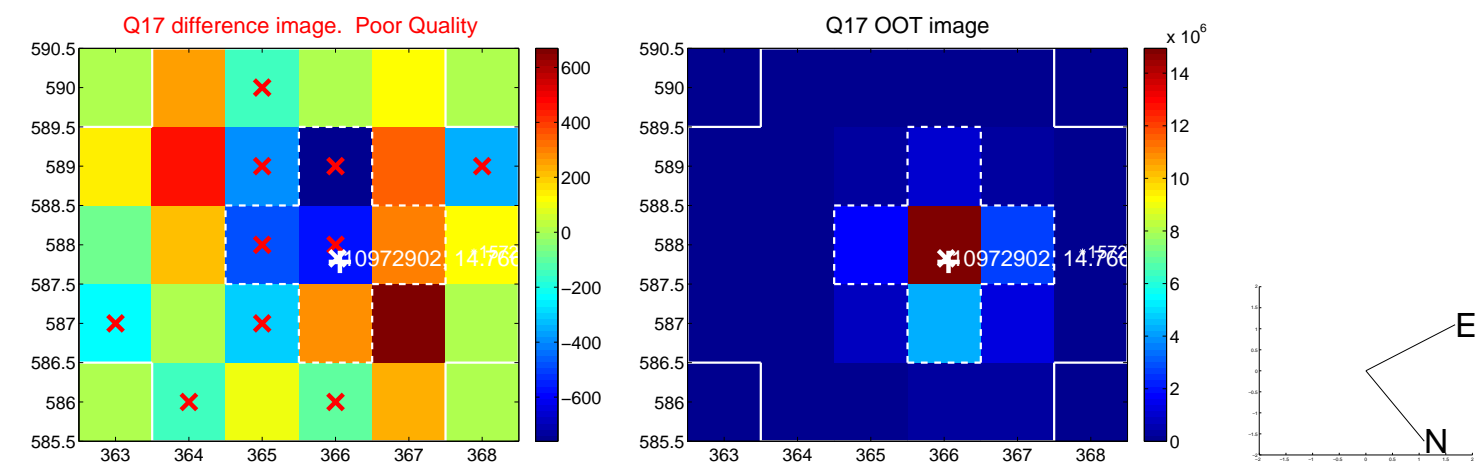
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



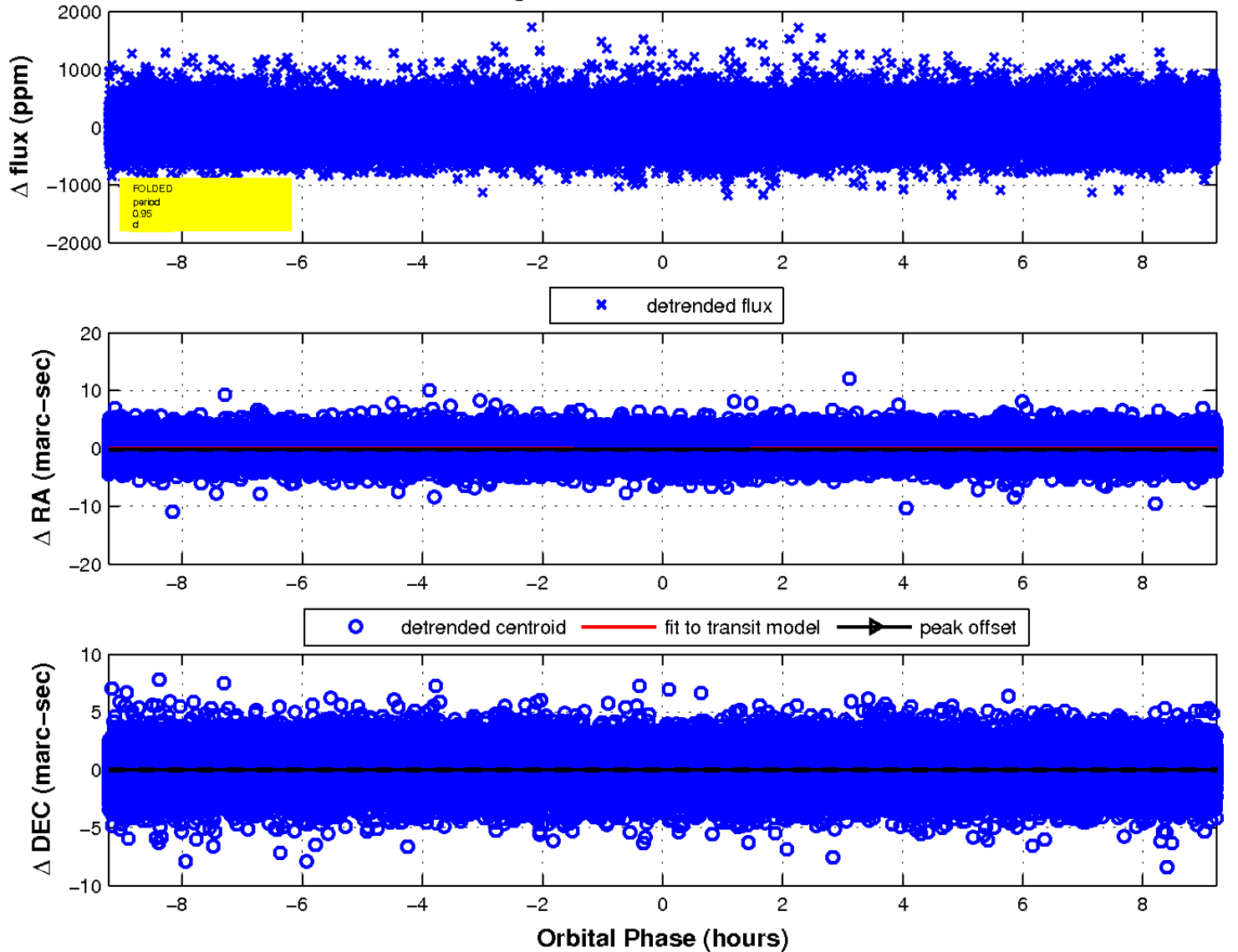
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

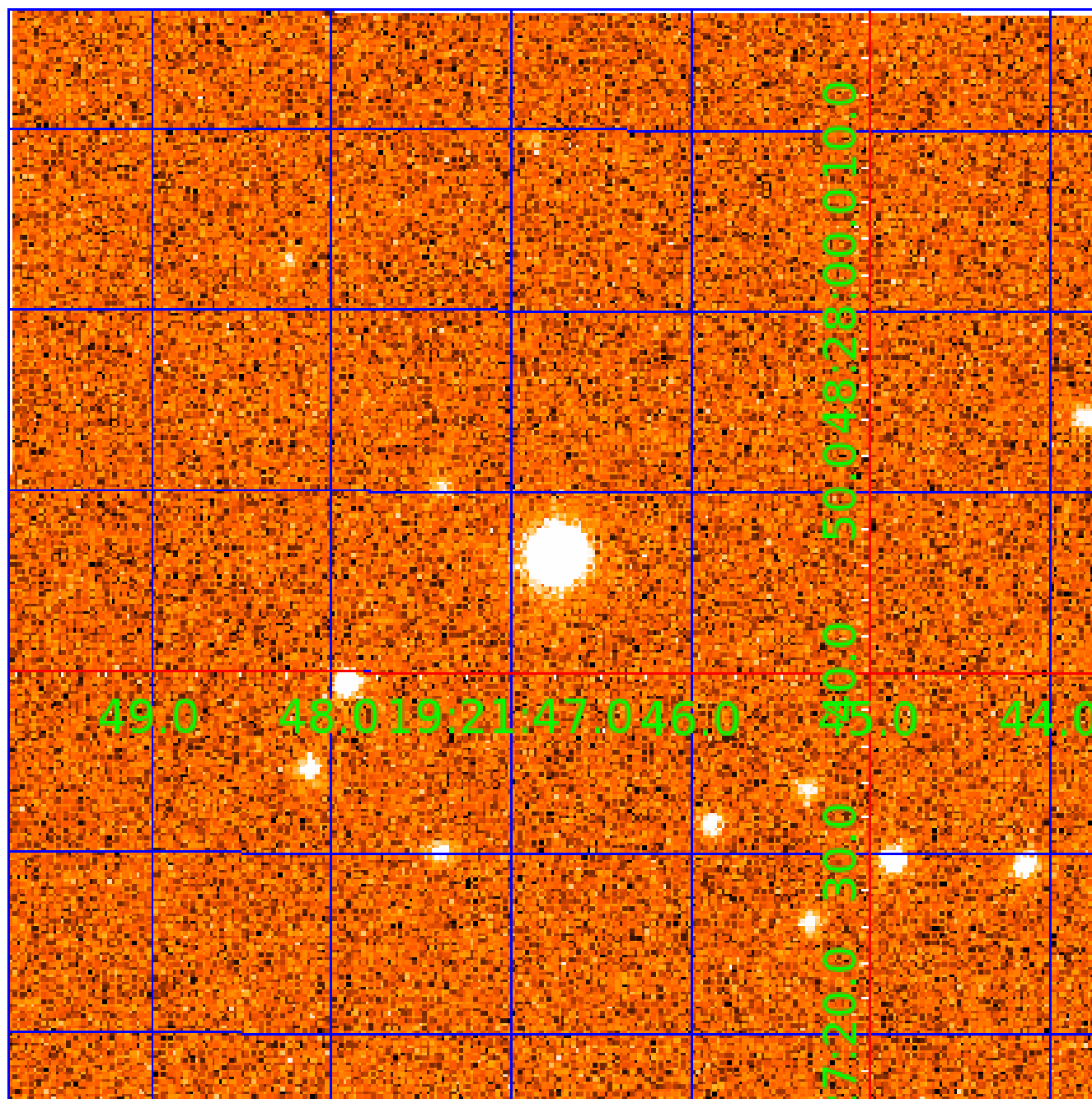


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 010972902

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})
010972902-01	OBS	4692.02	7.672007	134.185043	75.2	3.715	8.2	8.3	0.81	5972	0.78	139.13
010972902-02	OBS	No	0.952331	131.873186	18.8	3.076	8.1	5.2	0.81	5972	0.41	2246.84
010972902-03	OBS	No	0.952349	132.353759	28.3	2.422	8.6	7.4	0.81	5972	0.51	2246.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010972902-01	OBS	PC	0.68	0	0	0	0	NO_COMMENT
010972902-02	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_FEW_MEAS—EPHEM_MATCH
010972902-03	OBS	FP	0.00	1	0	0	1	LPP_DV—LPP_ALT—SAME_NTL_PERIOD—CENT_FEW_MEAS—EPHEM_MATCH

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 010972902-03

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist ($''$)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
010972902-03	10972902	010858720-pri	10858720	1:1	1112.4	-280	1	10.97	14.76	17104.00	Col-Anomaly	0	2.83	1.41

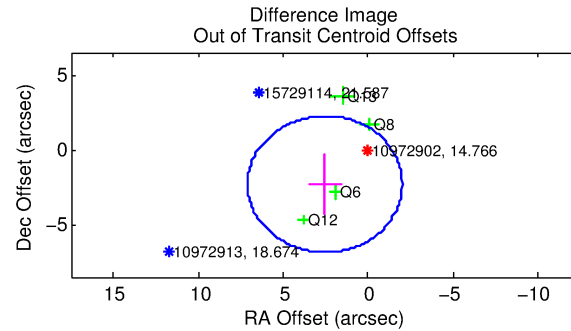
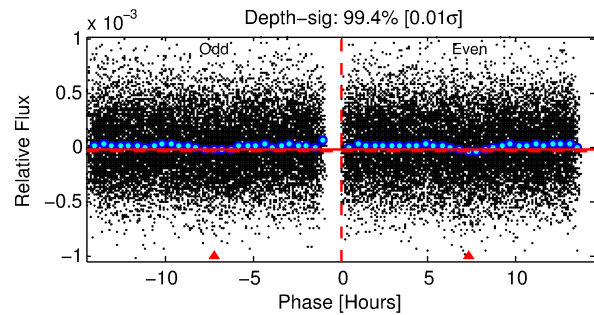
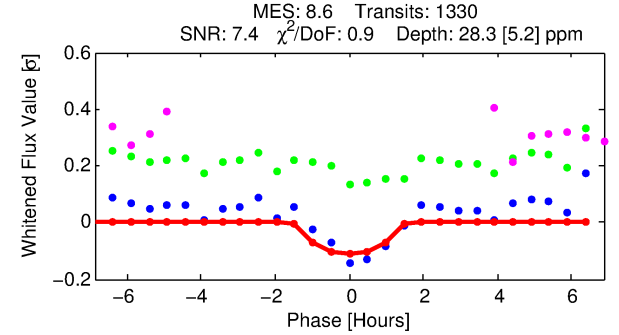
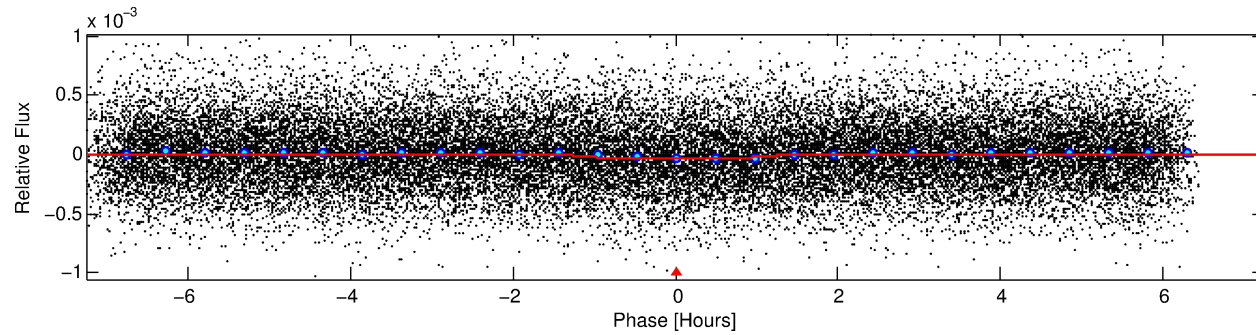
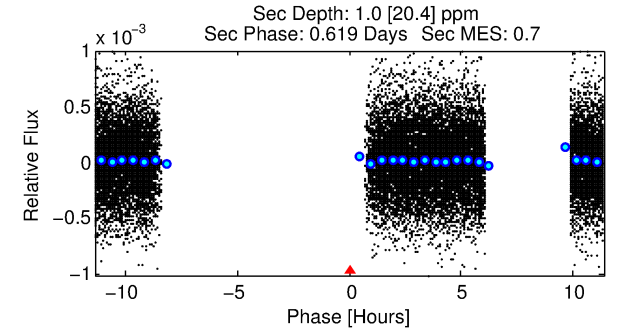
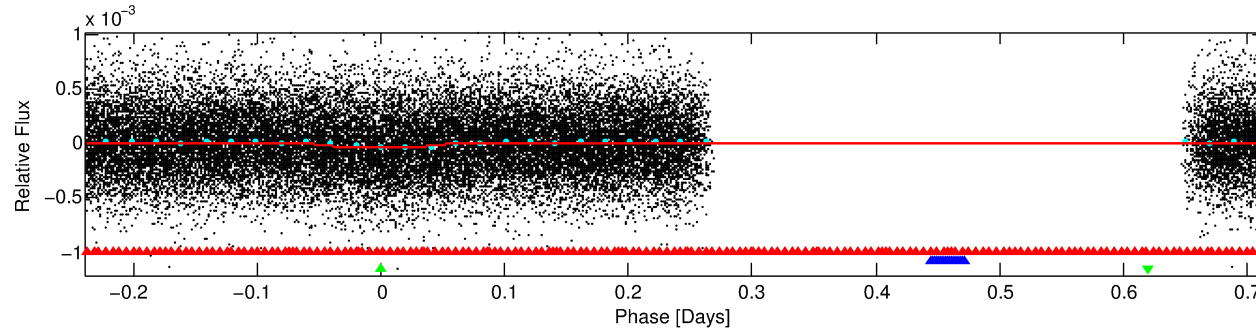
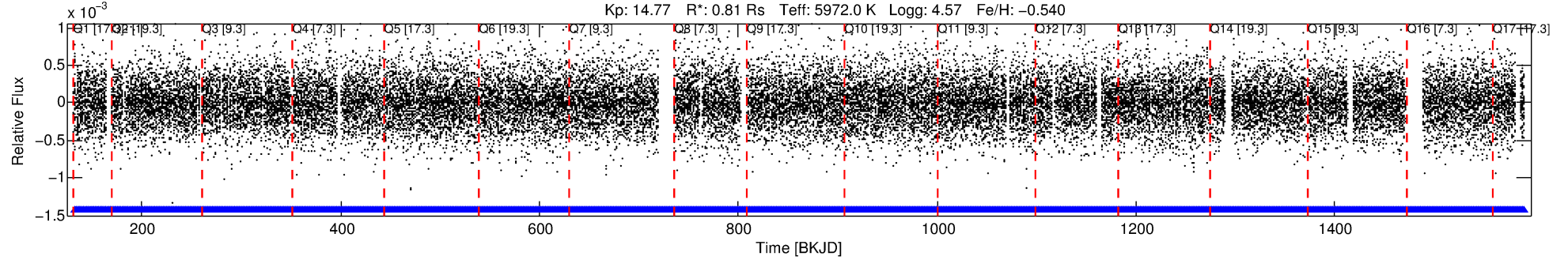
Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10972902 Candidate: 3 of 3 Period: 0.952 d

KOI: K04692 Corr: No Ephemeris Match

Kp: 14.77 R*: 0.81 Rs Teff: 5972.0 K Logg: 4.57 Fe/H: -0.540



DV Fit Results:

Period = 0.95235 [0.00001] d
Epoch = 132.3538 [0.0047] BKJD
Rp/R* = 0.0058 [0.0035]
a/R* = 1.61 [3.31]
b = 0.91 [0.66]
Seff = 2246.78 [836.25]
Teff = 1756 [163] K
Rp = 0.51 [0.34] Re
a = 0.0182 [0.0043] AU
Ag = 0.74 [14.44] [-0.02σ]
Teffp = 2517 [12294] K [0.06σ]

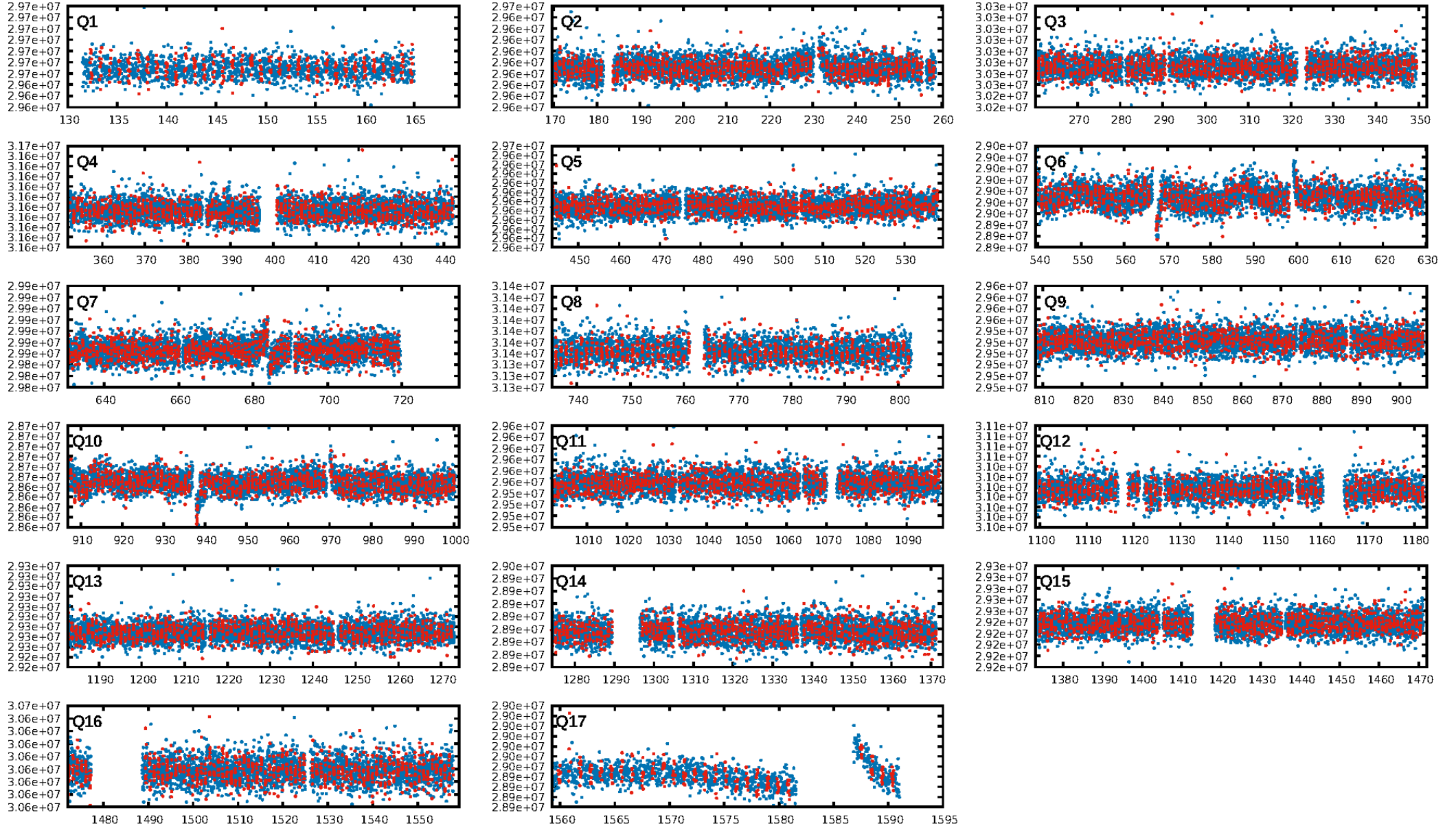
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [36.37σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.57e-22
RollingBand-fgt: 1.00 [1273/1273]
GhostDiagnostic-chr: -19.74
Centroid-sig: 0.4%
Centroid-so: 4.094 arcsec [2.00σ]
OotOffset-rm: 3.428 arcsec [2.26σ]
KicOffset-rm: 3.343 arcsec [2.23σ]
OotOffset-st: 1/0/2/1 [4]
KicOffset-st: 1/0/2/1 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 1.00 [17/17]

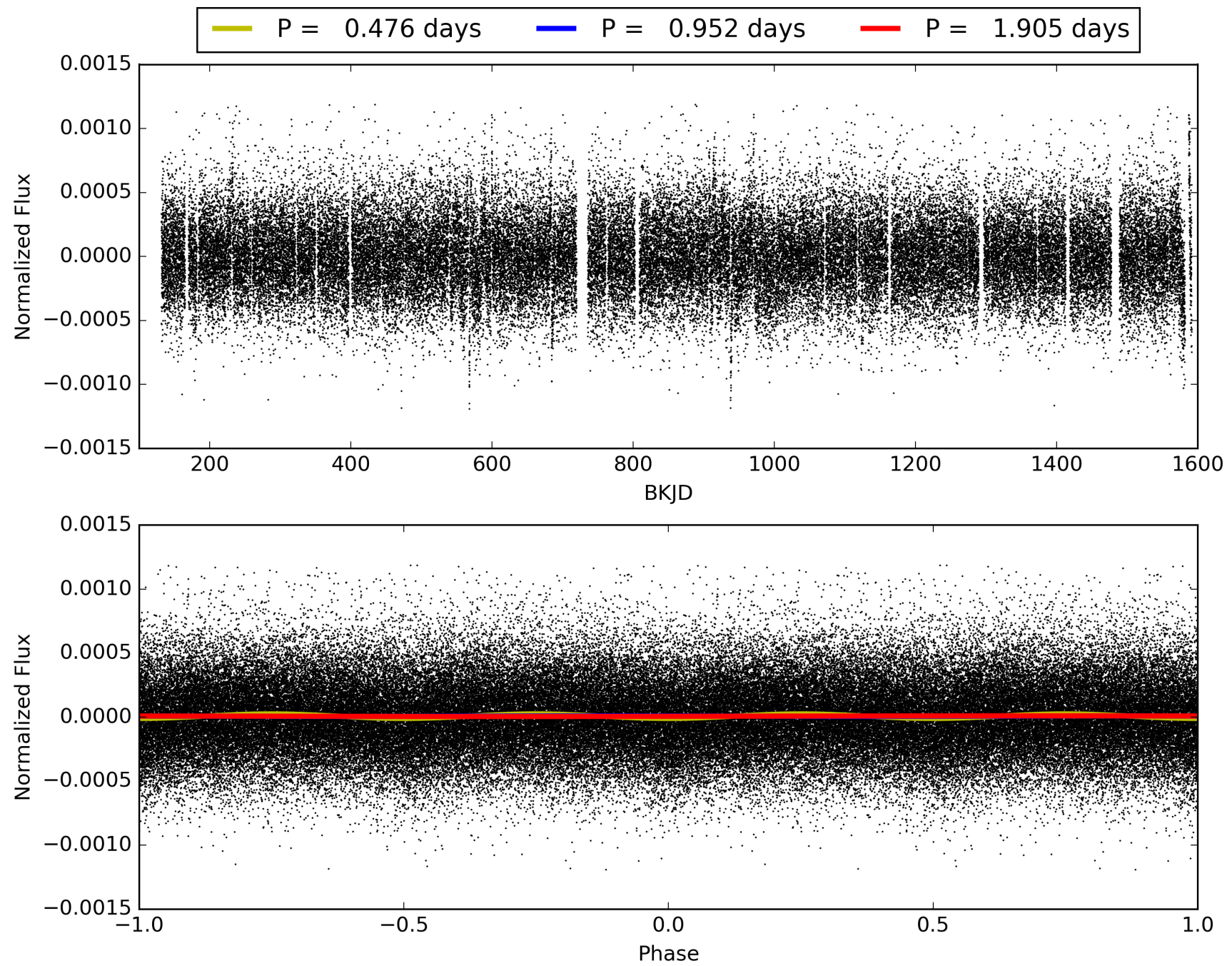
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:03:42 Z

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

TCE 010972902-03, PDC Light Curves

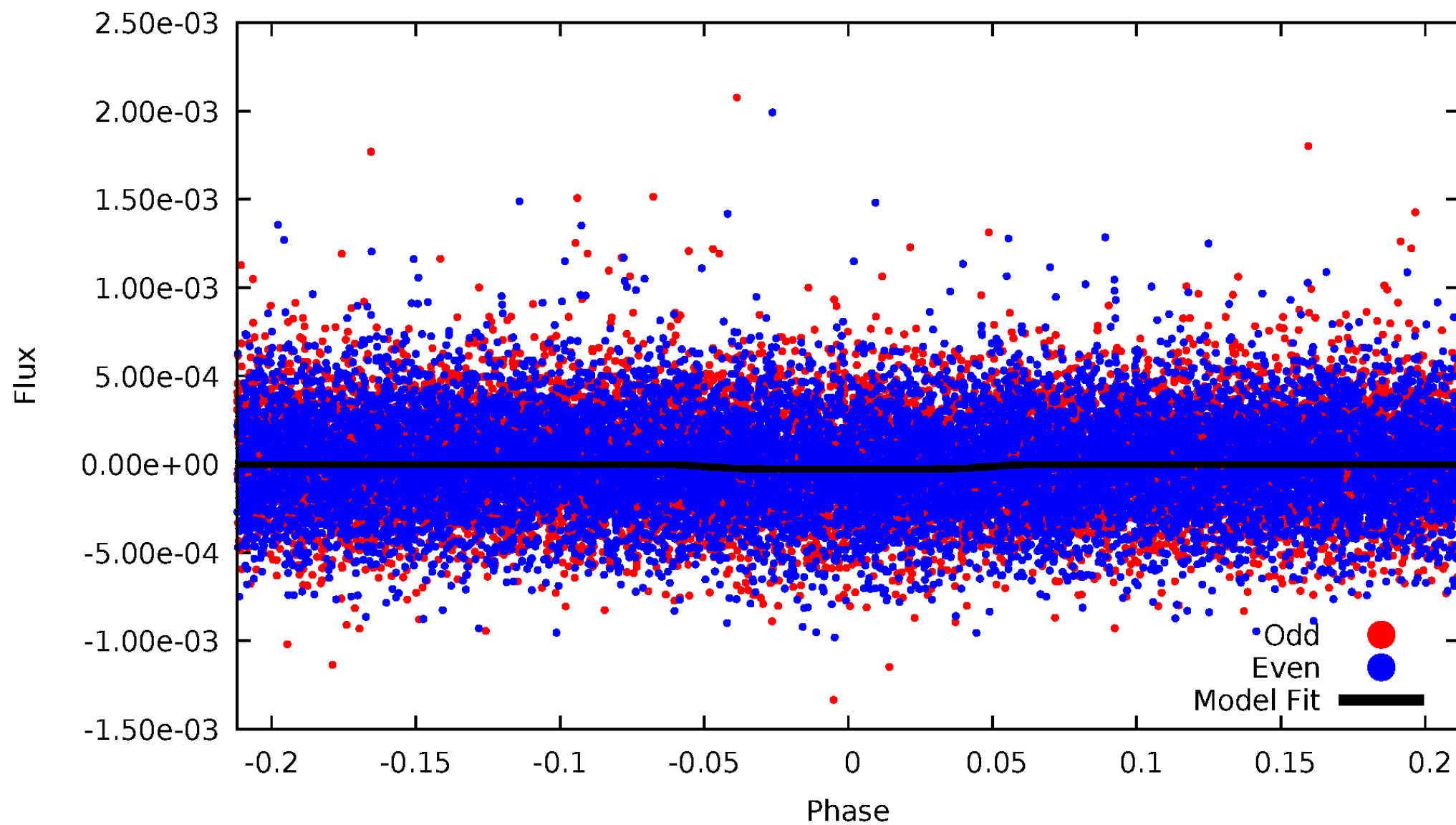


TCE 010972902-03



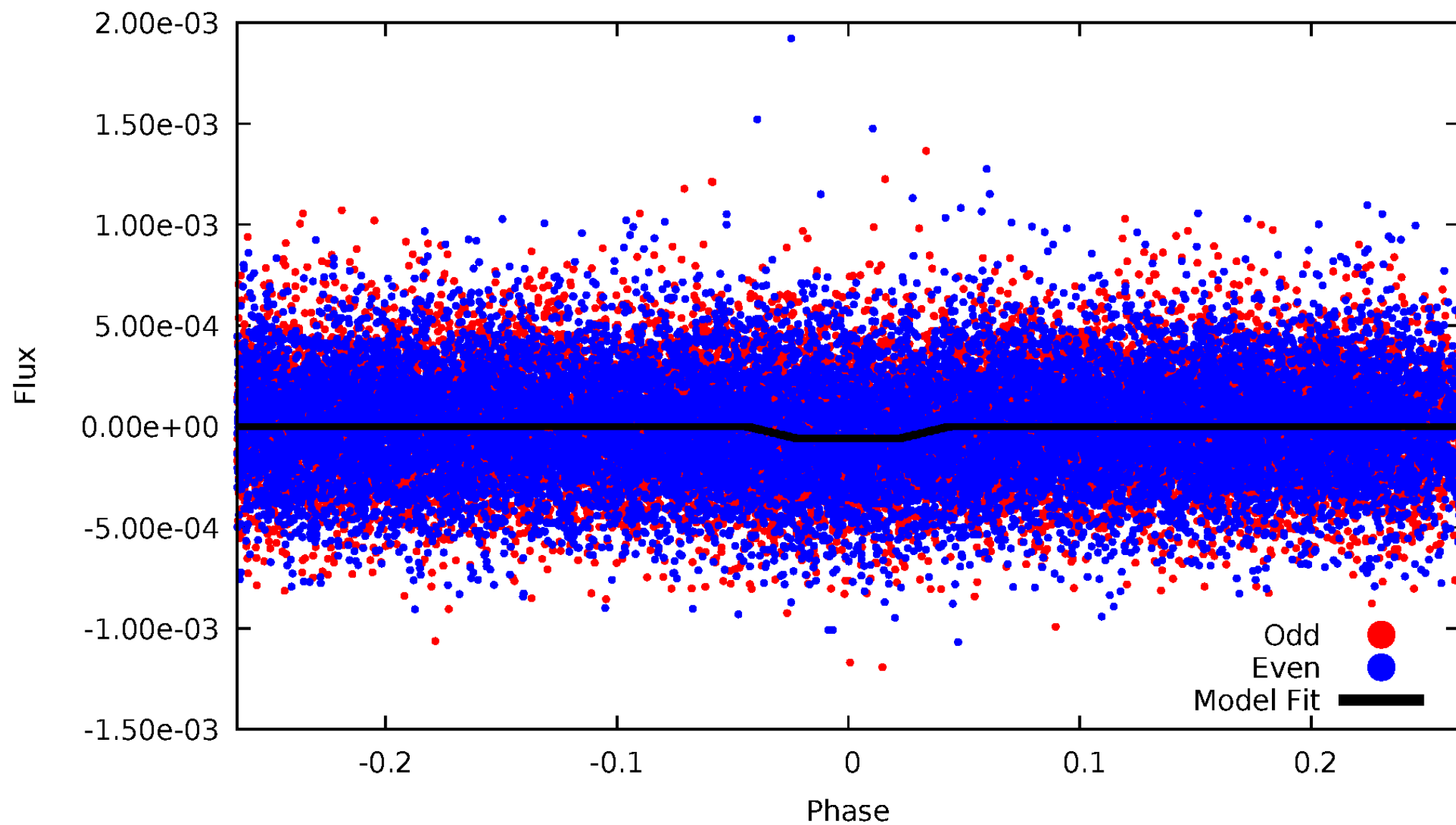
DV Odd/Even

TCE 010972902-03



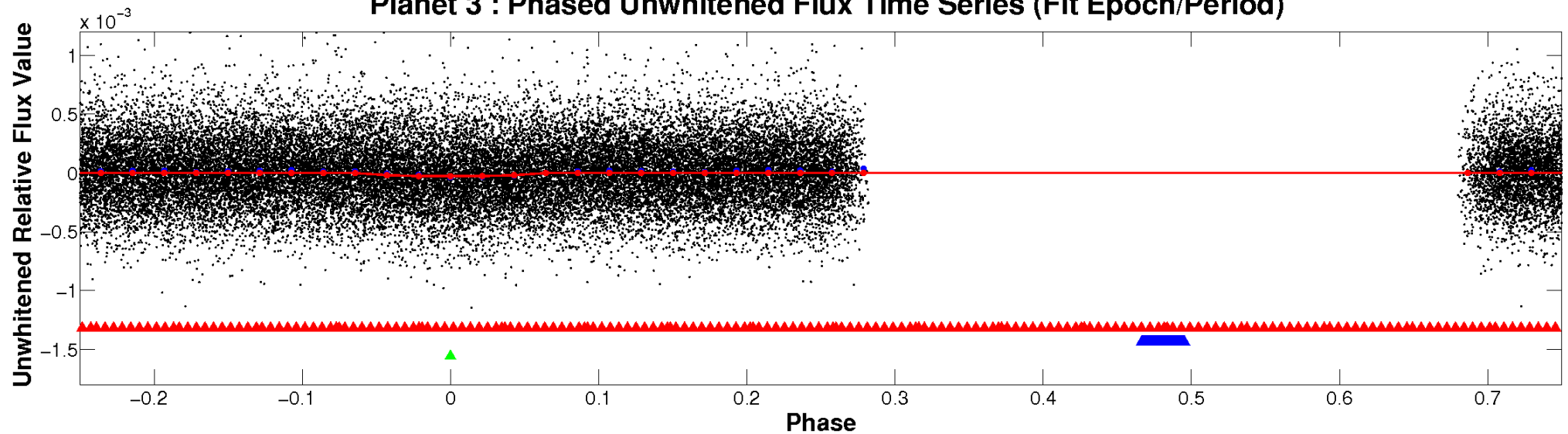
ALT Odd/Even

TCE 010972902-03

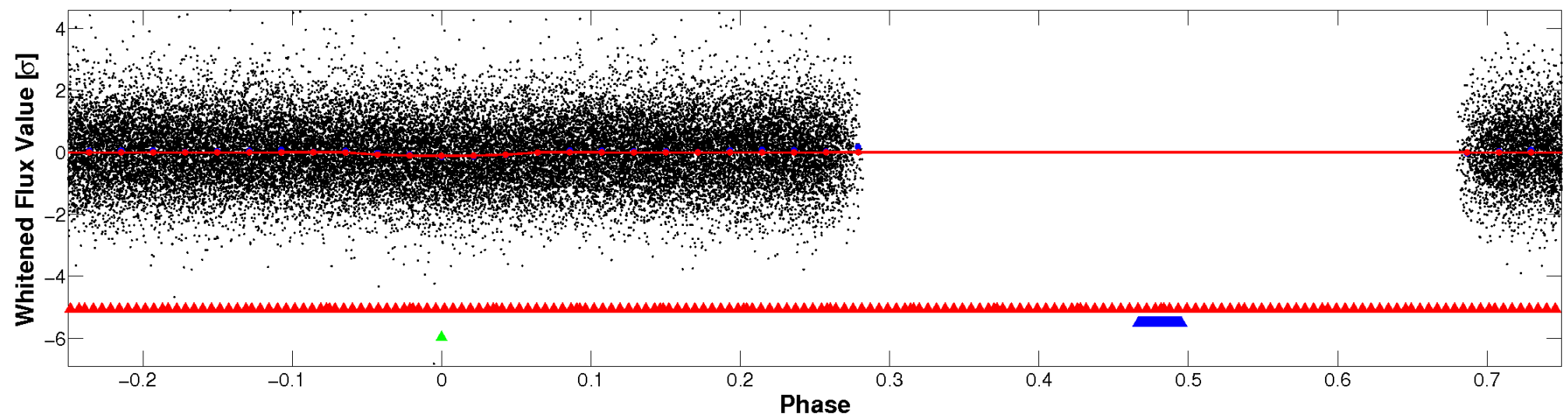


Non-Whitened Vs. Whitened Light Curve

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

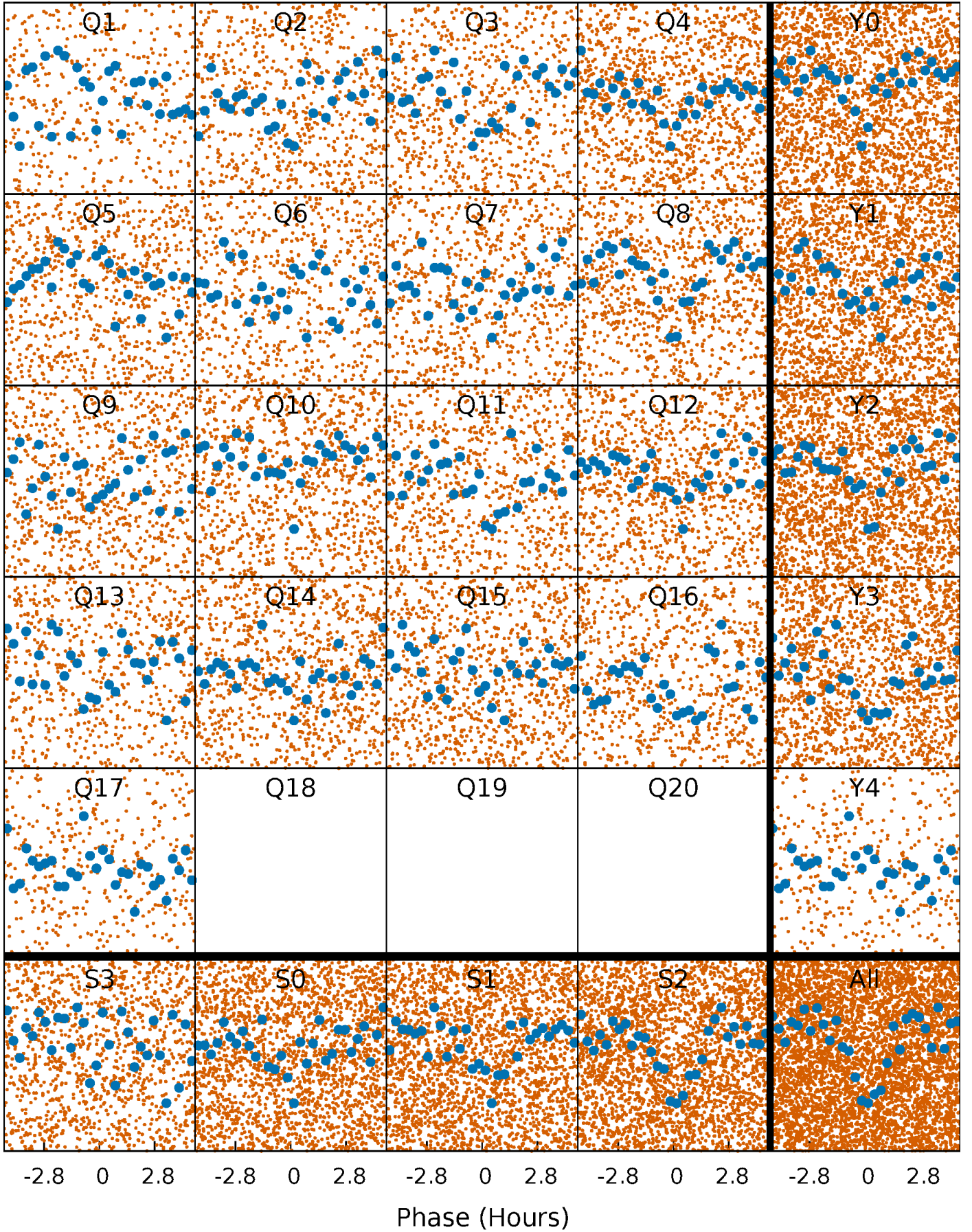


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



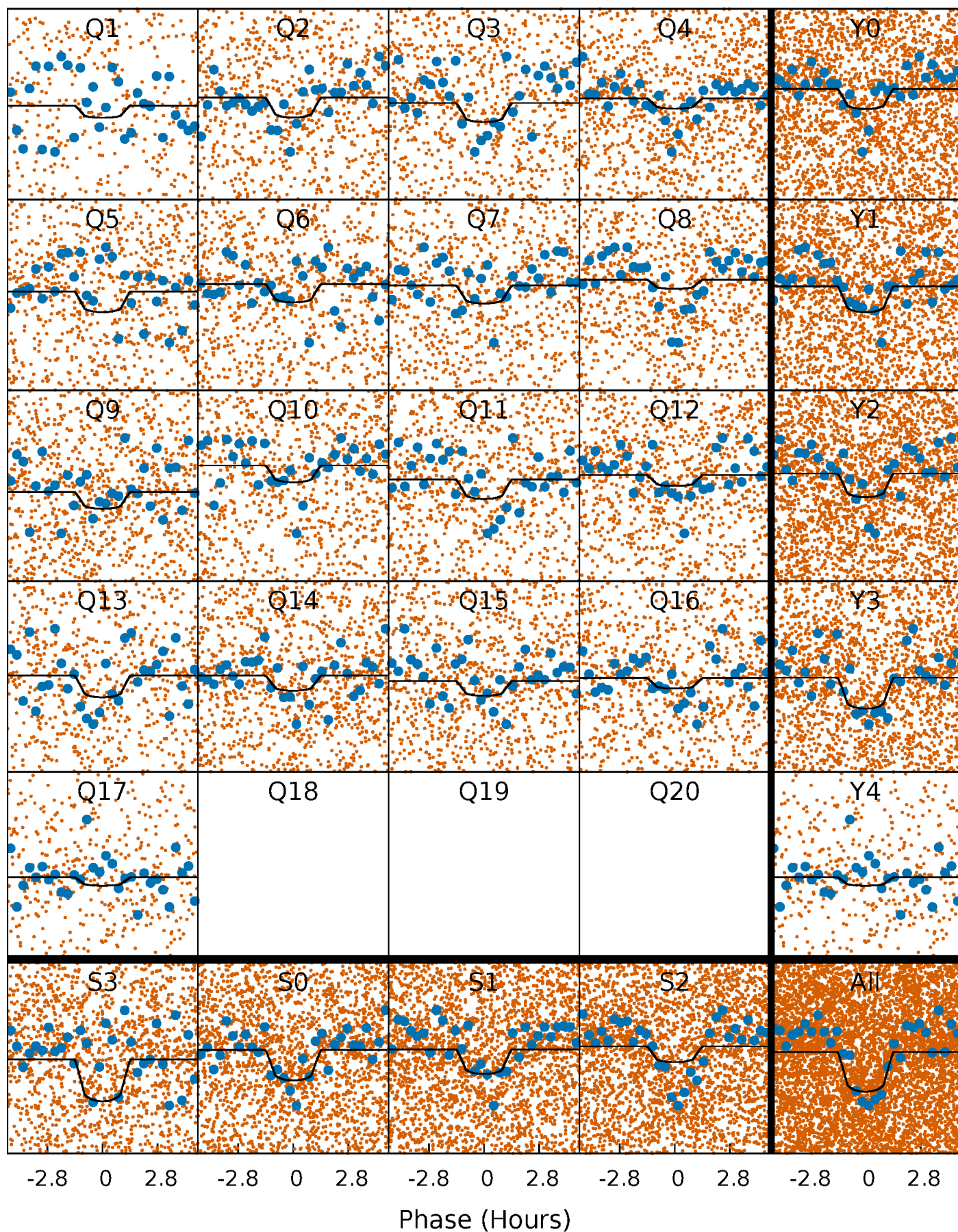
PDC Quarter-Phased Transit Curves

TCE 010972902-03 P= 0.952349 Days $T_0=132.353759$ (BKJD)



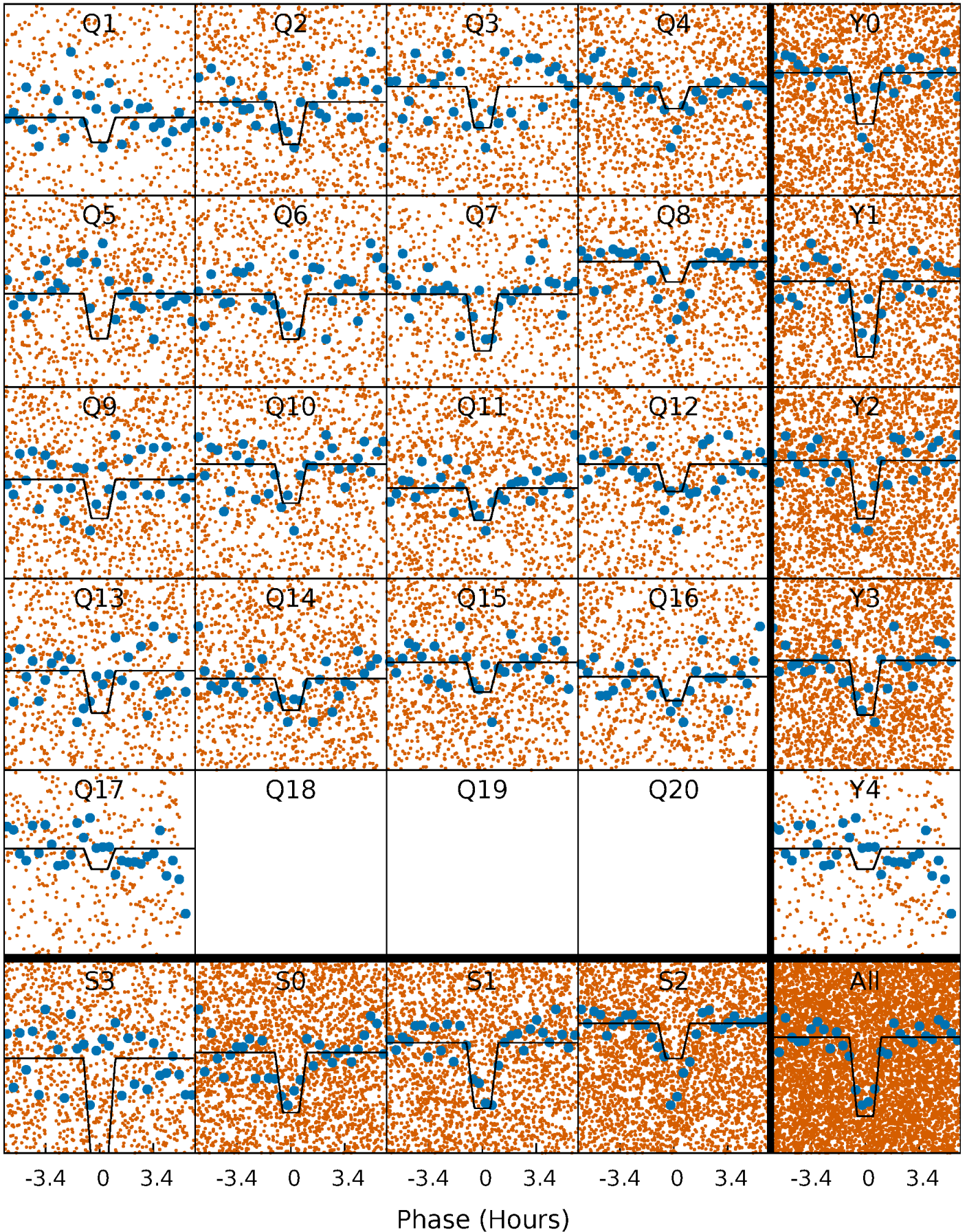
DV Quarter-Phased Transit Curves

TCE 010972902-03 P= 0.952349 Days $T_0=132.353759$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

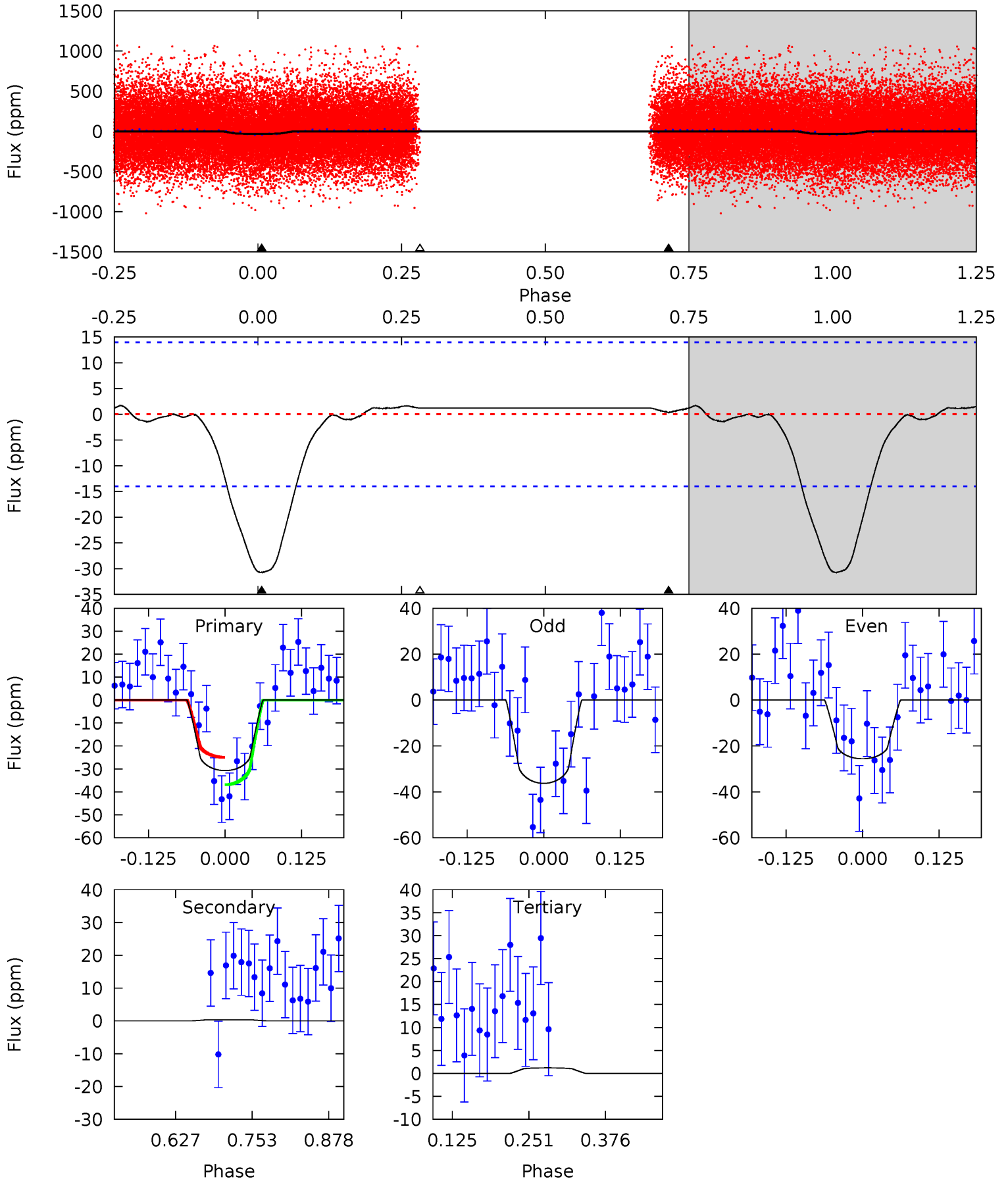
TCE 010972902-03 $P = 0.952369$ Days $T_0 = 132.346099$ (BKJD)



DV Model-Shift Uniqueness Test

010972902-03, P = 0.952349 Days, E = 131.401410 Days

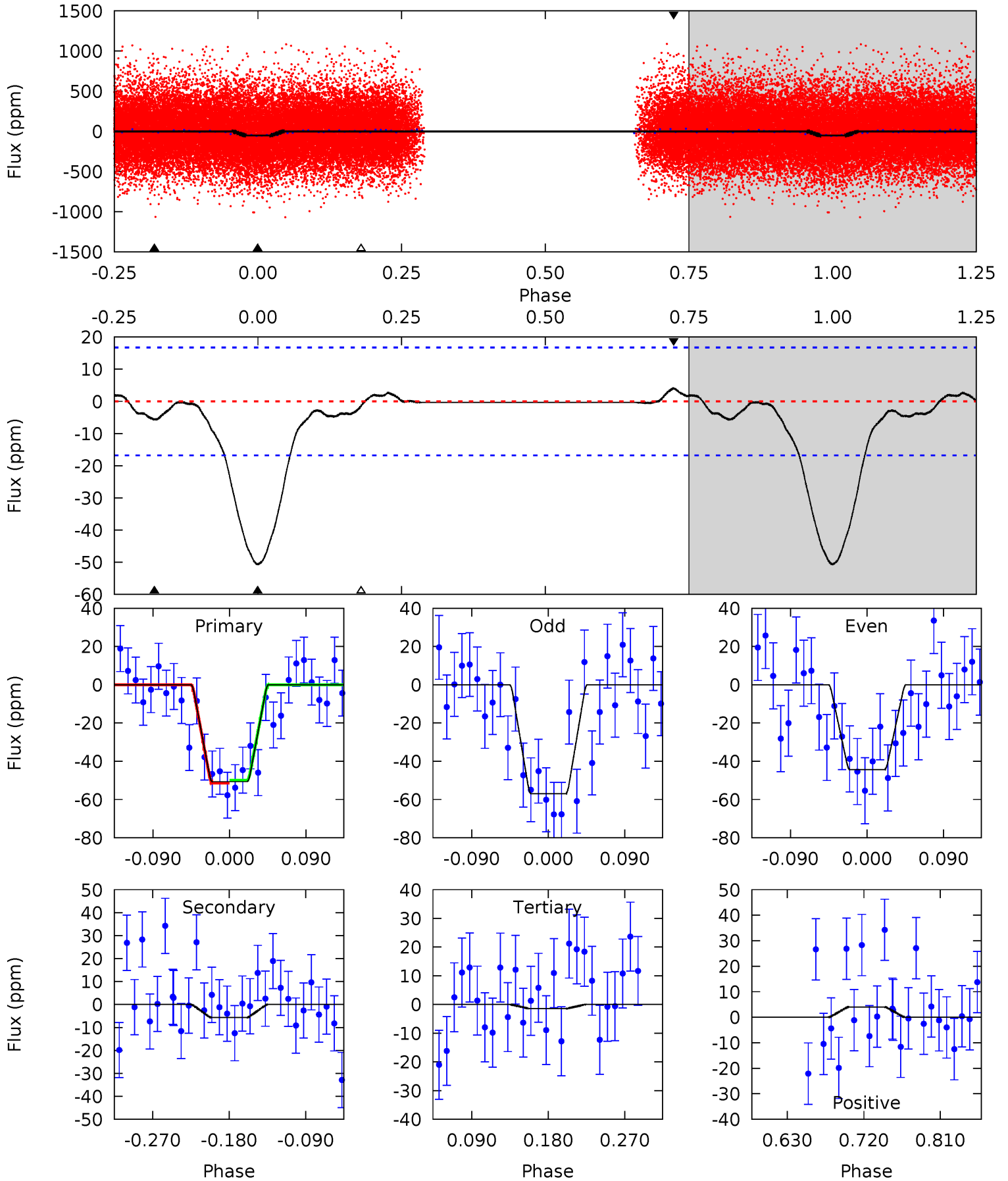
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.92	-0.11	-0.39	0	4.52	1.53	0.29	10.3	9.92	0.28	-0.11	1.74	0.89	0.05	1.93



Alt Model-Shift Uniqueness Test

010972902-03, P = 0.952369 Days, E = 131.393730 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	1.55	0.39	1.11	4.59	1.70	0.75	13.5	12.8	1.16	0.44	1.73	1.02	0.07	0.20



Stellar Parameters For KIC 010972902

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5972^{+161}_{-179}	$4.570^{+0.035}_{-0.196}$	$-0.540^{+0.300}_{-0.300}$	$0.807^{+0.222}_{-0.059}$	$0.884^{+0.090}_{-0.099}$	$2.366^{+0.434}_{-1.153}$
	+3%/-3%	+1%/-4%	+56%/-56%	+28%/-7%	+10%/-11%	+18%/-49%
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 010972902-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 3	$0.56^{+0.33}_{-0.30}$	2507^{+156}_{-110}	-2909^{+6600}_{-1116}	$-0.097^{+2.217}_{-2.596}$
Alt.	-6 ± 4	$0.73^{+0.33}_{-0.34}$	2507^{+161}_{-109}	3522^{+1031}_{-914}	$1.732^{+4.293}_{-1.276}$

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

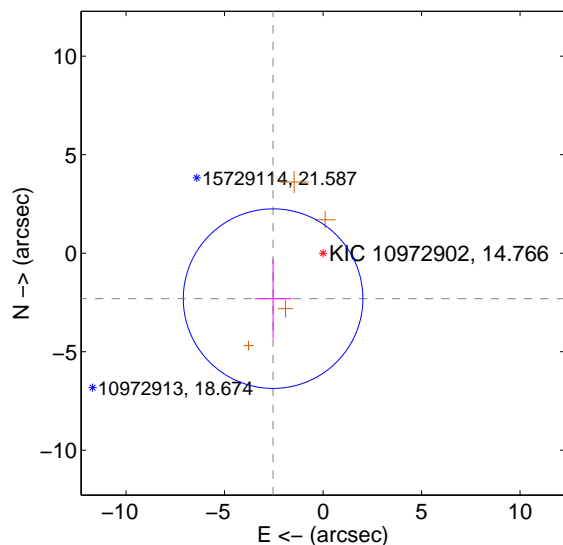
Supplemental centroid analysis for 010972902-03. Kepler magnitude: 14.77. Transit SNR 7.37

There are 0 quarters with good PRF difference image offsets

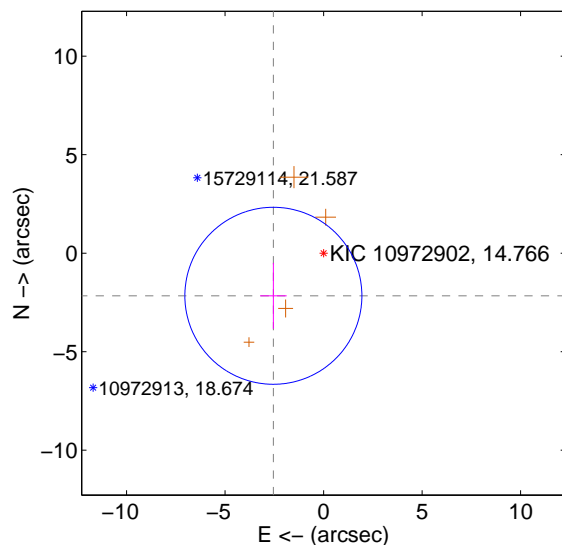
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.428 ± 1.519	2.26	2.535 ± 0.937	-2.308 ± 2.008
PRF-fit source offset from KIC position	3.343 ± 1.498	2.23	2.549 ± 0.673	-2.163 ± 1.674
photometric centroid source offset	4.09 ± 2.05	2.00	3.00 ± 2.11	-2.79 ± 1.97

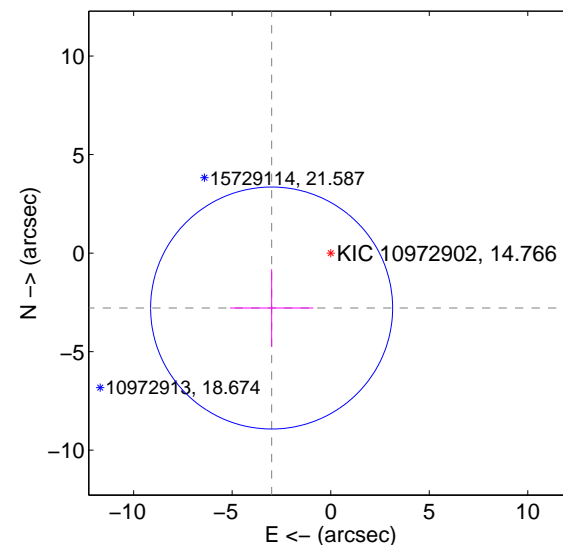
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

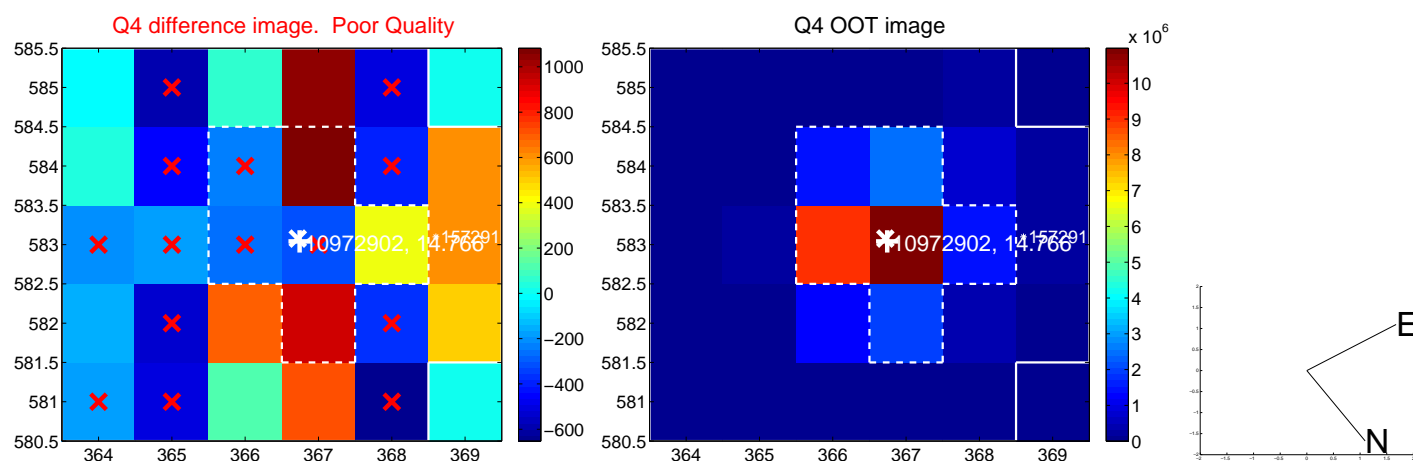
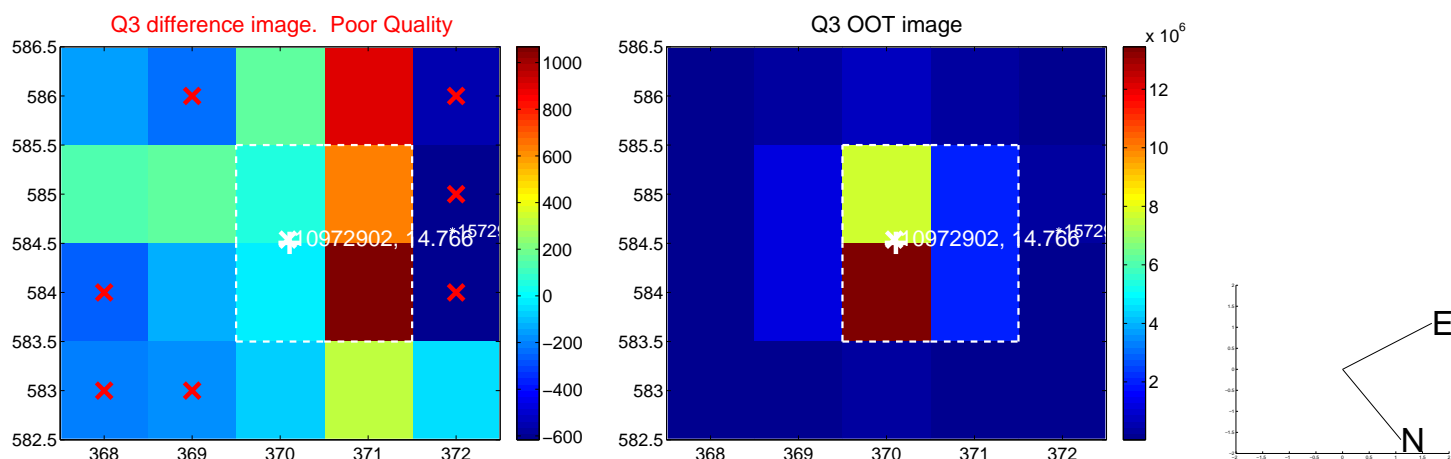
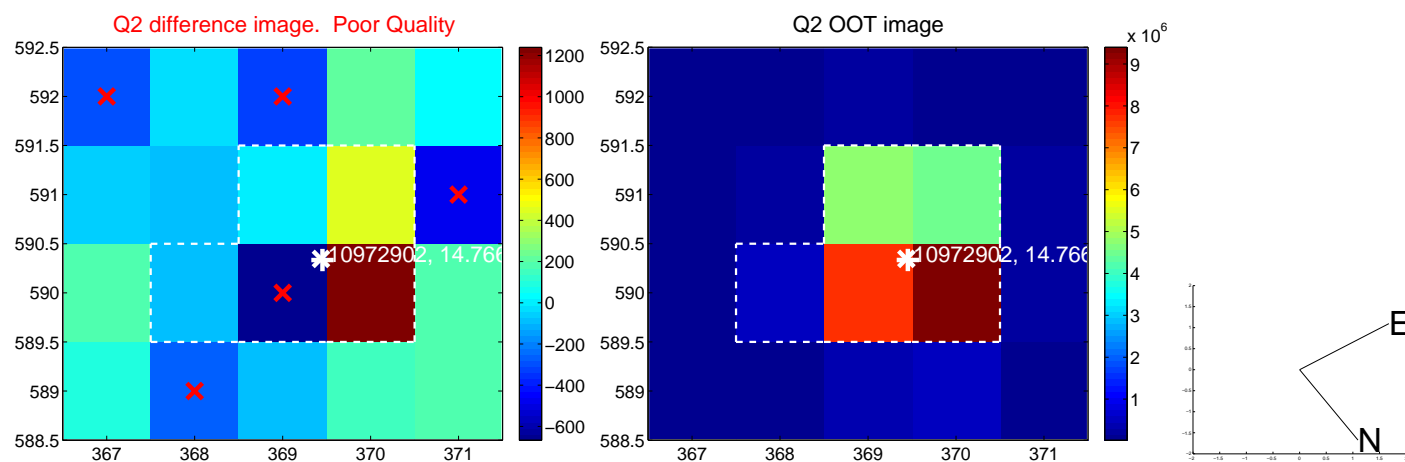
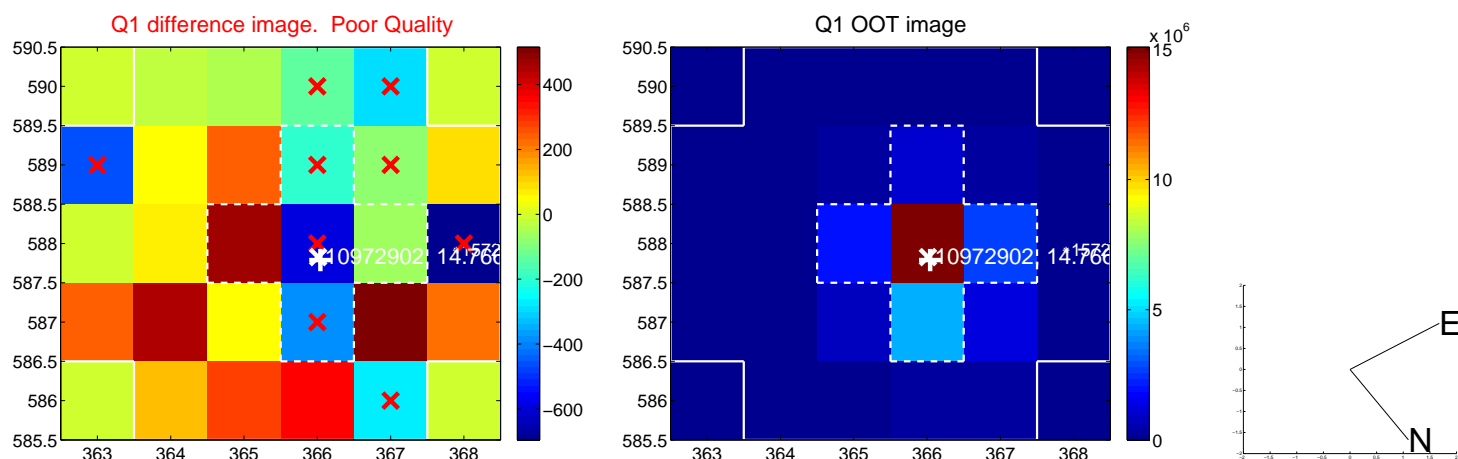


offset from photometric centroids

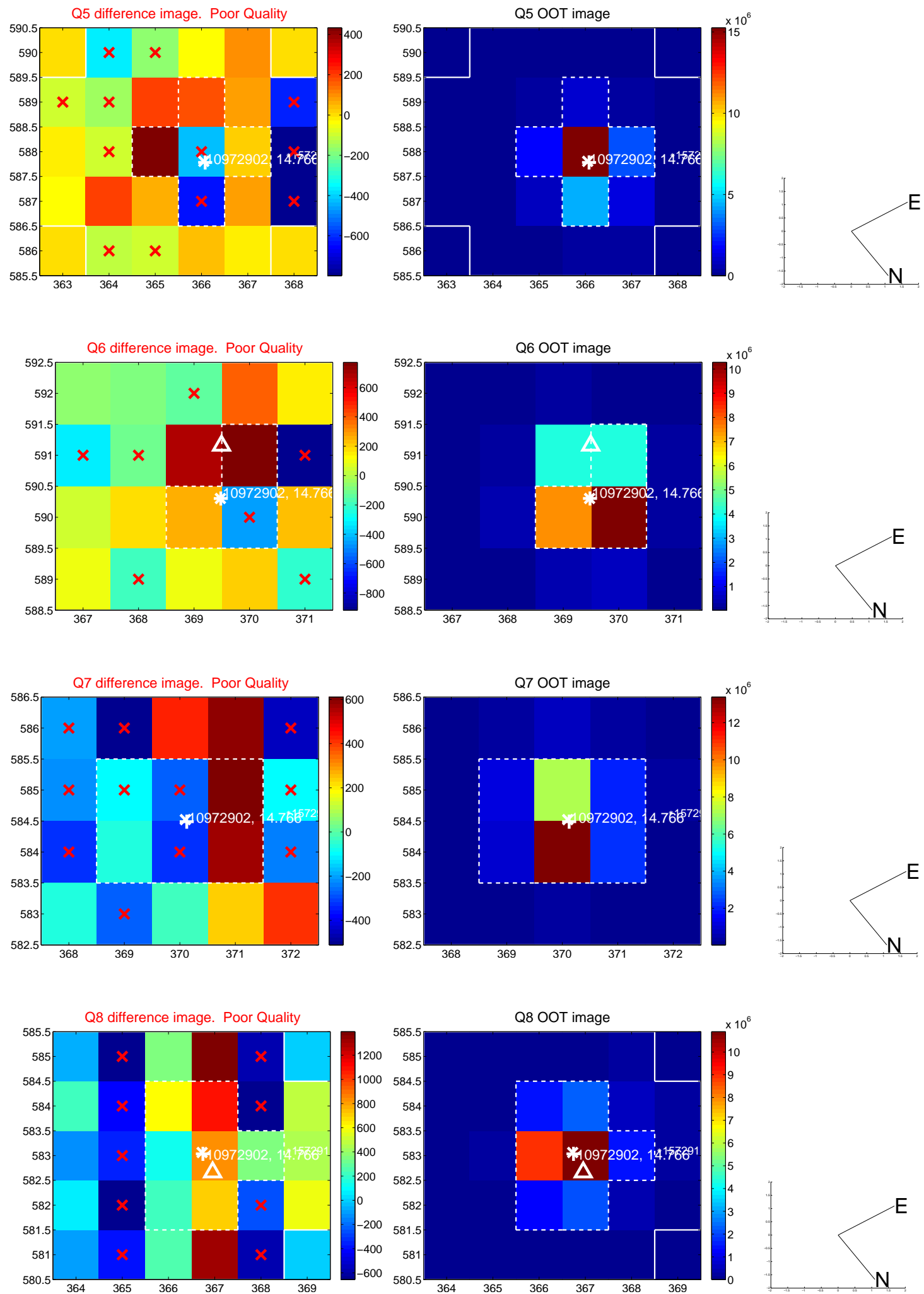


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

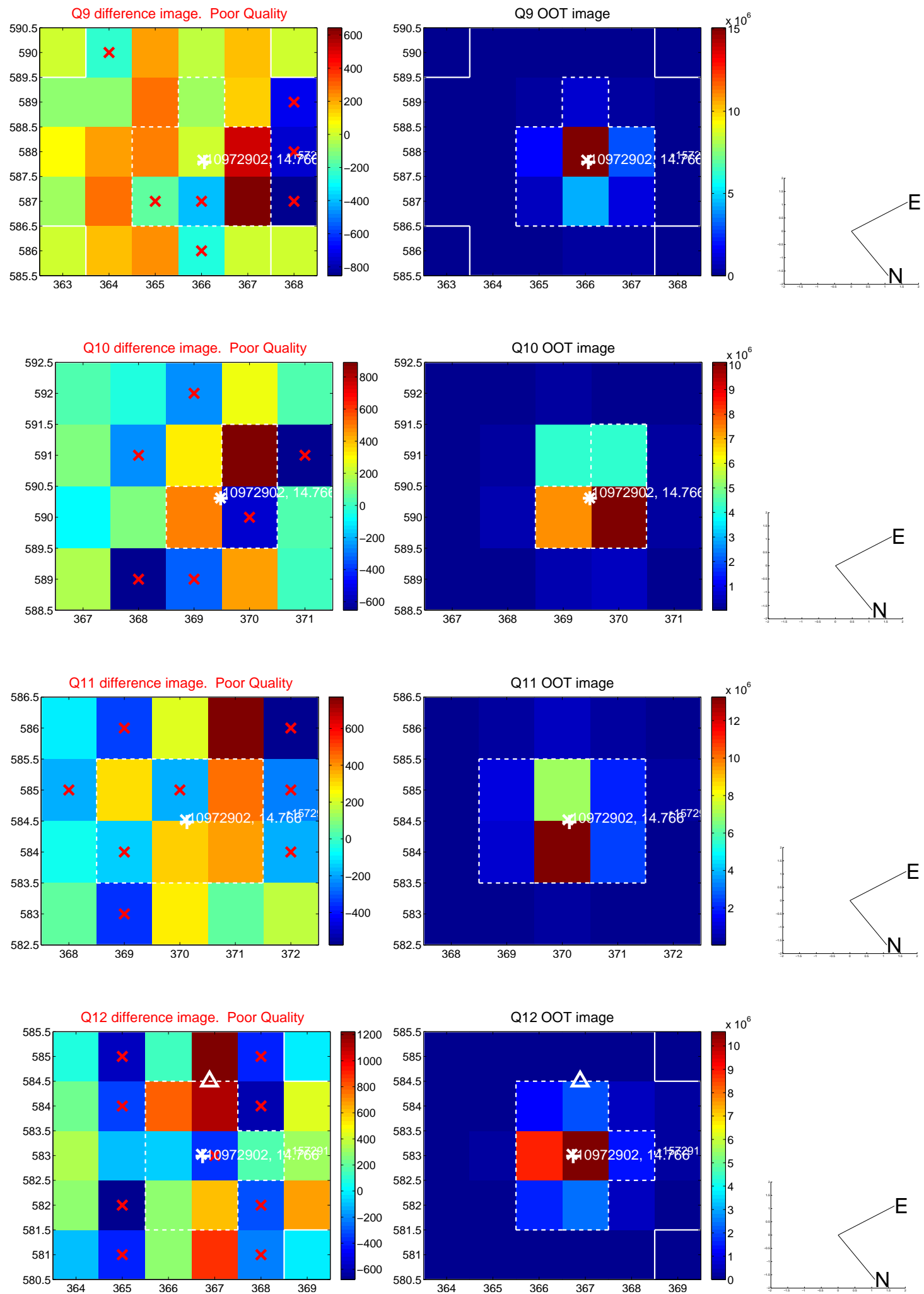
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



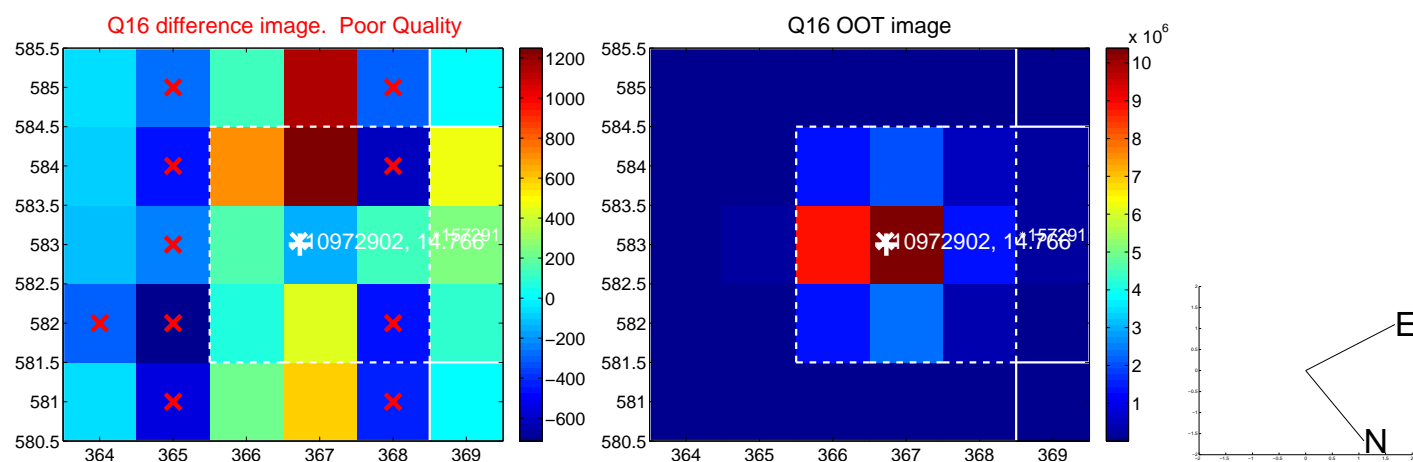
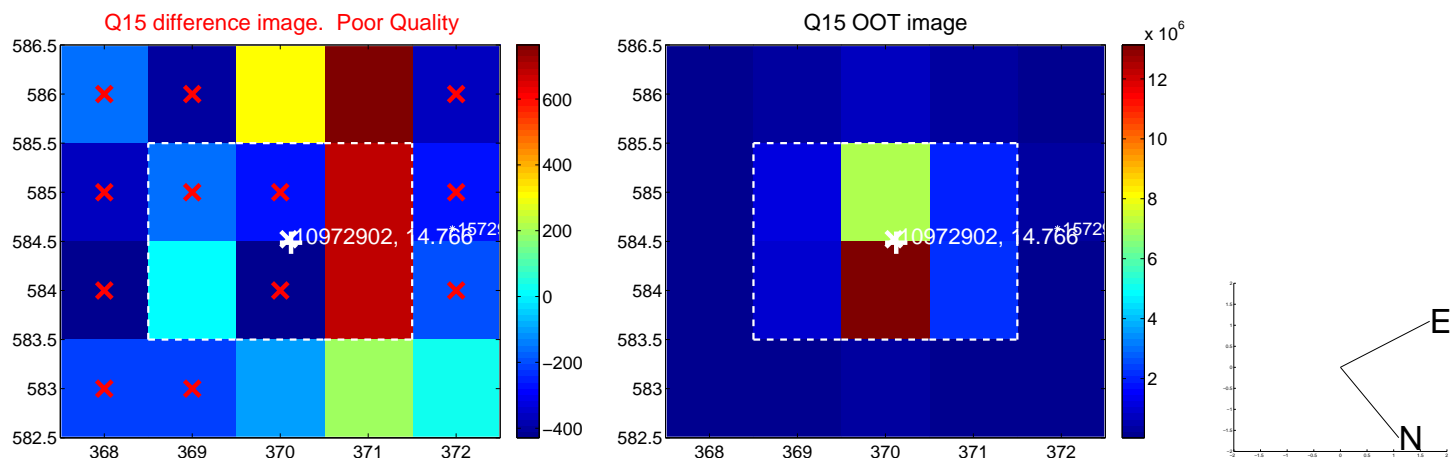
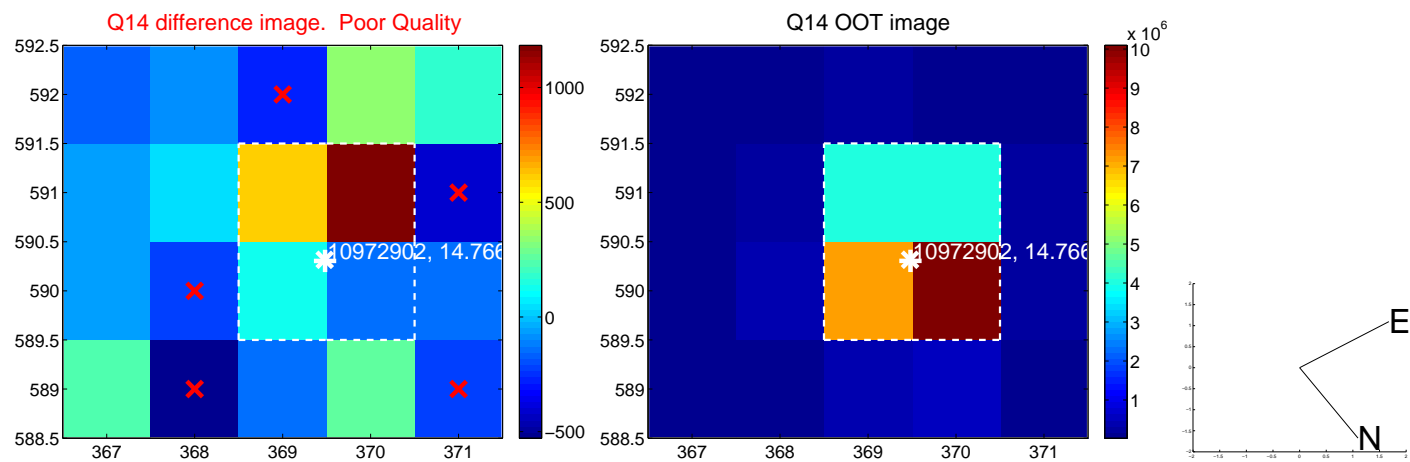
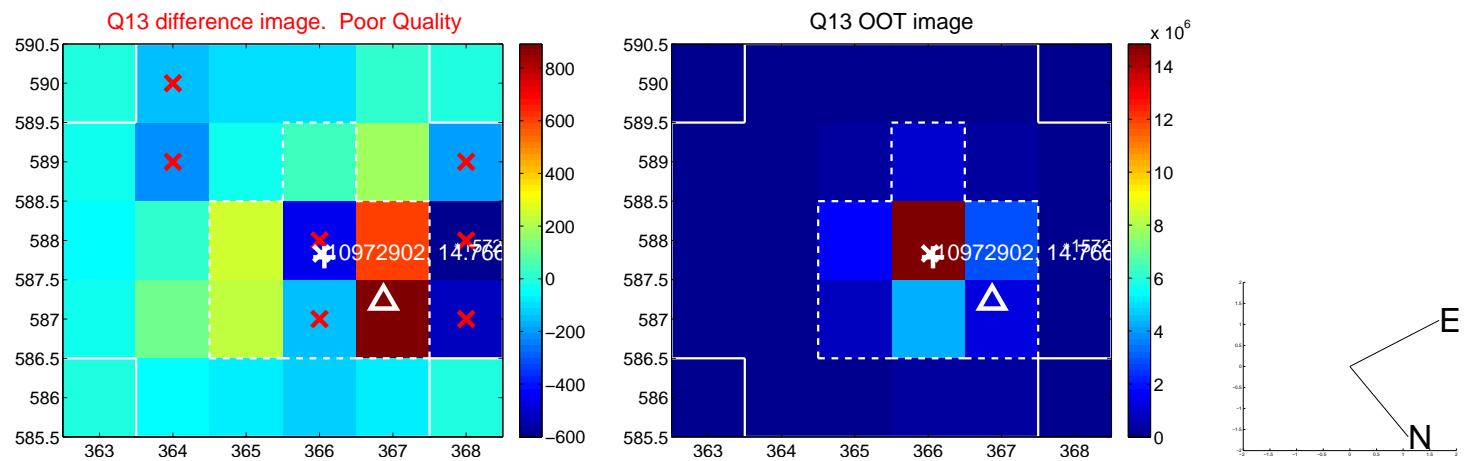
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



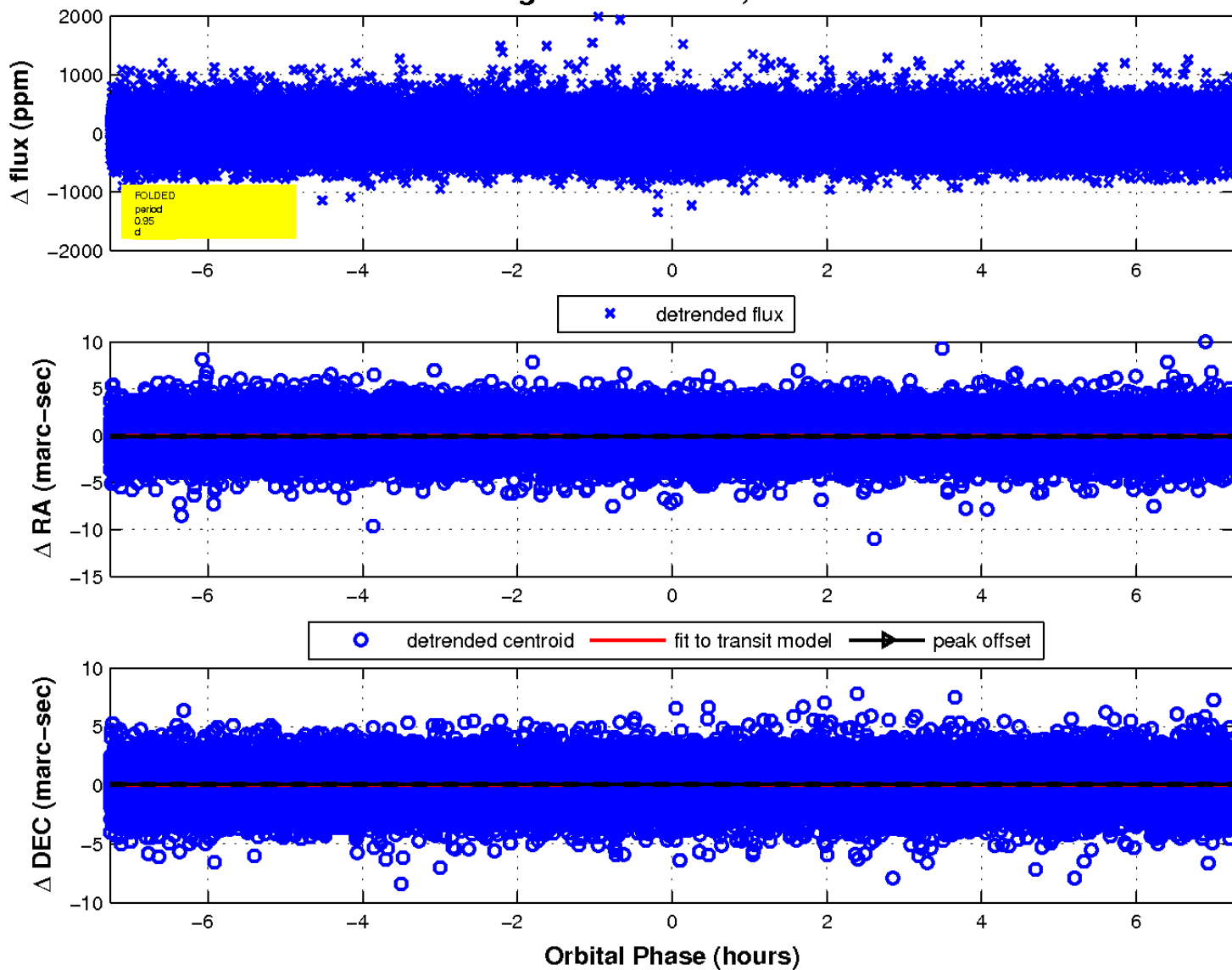
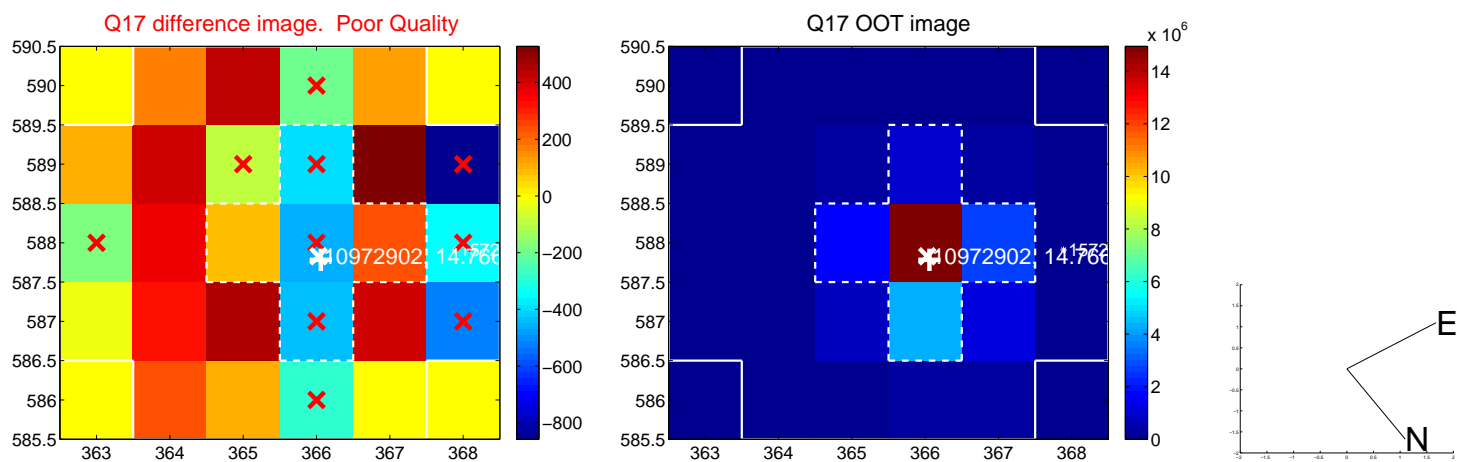
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

