

KIC 007024928

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})
007024928-01	OBS	No	6.729282	132.952530	71.2	17.509	11.5	11.7	1.54	6828	2.42	760.87
007024928-02	OBS	No	6.727327	137.843057	21.8	60.317	9.4	5.8	1.54	6828	0.85	761.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007024928-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007024928-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

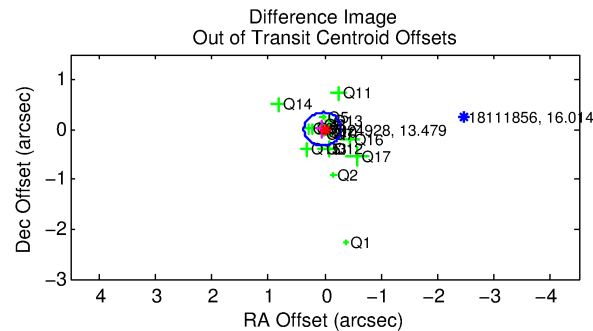
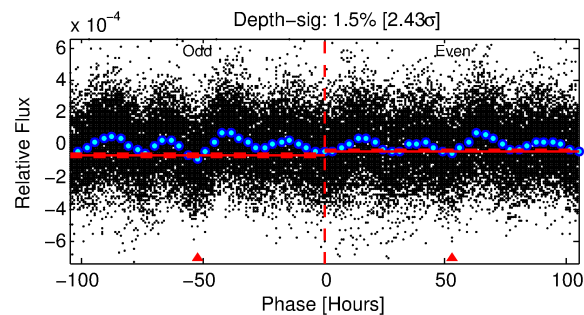
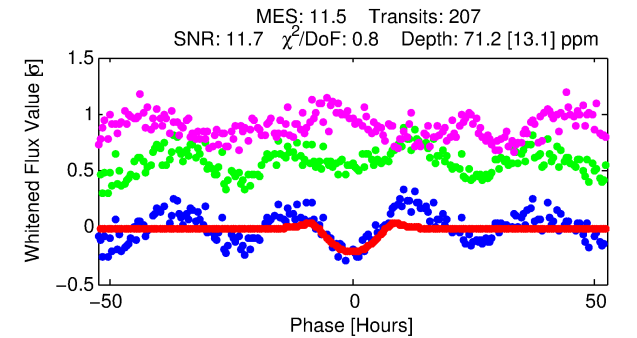
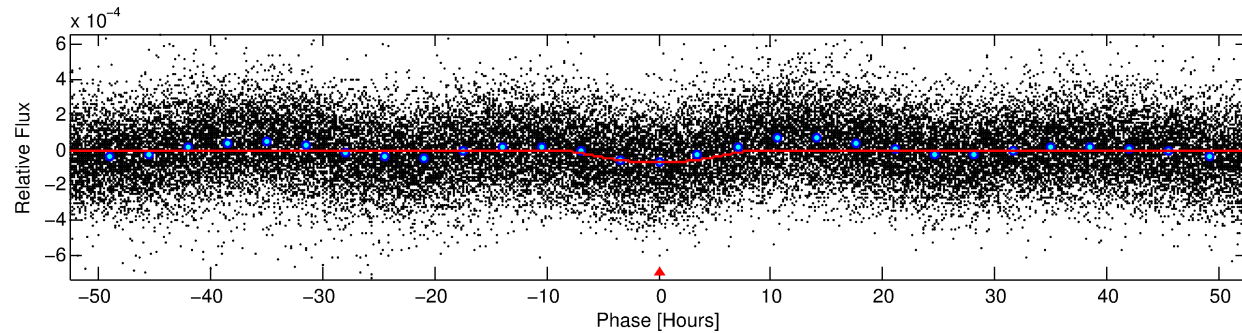
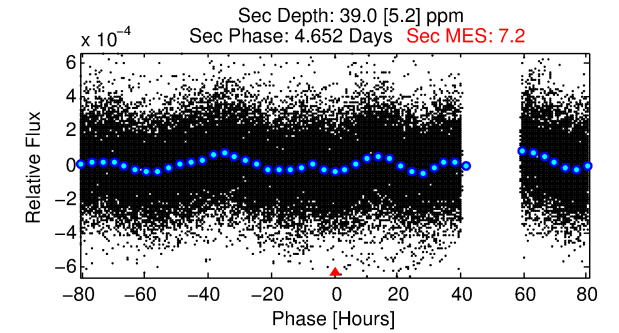
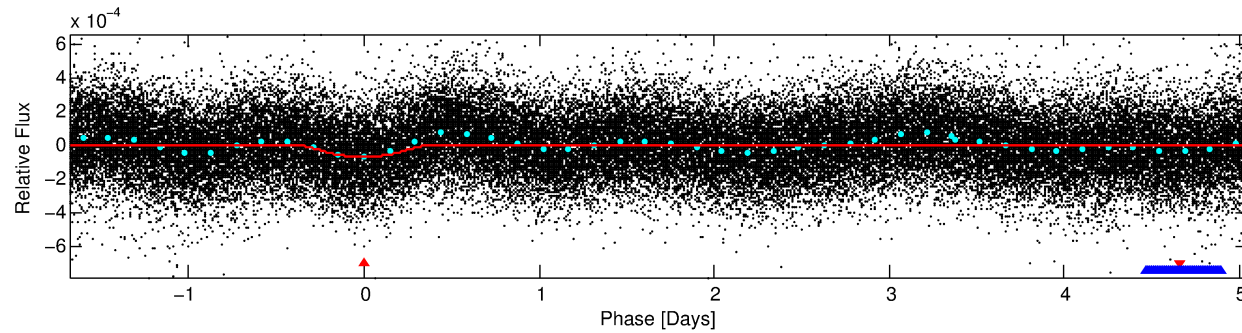
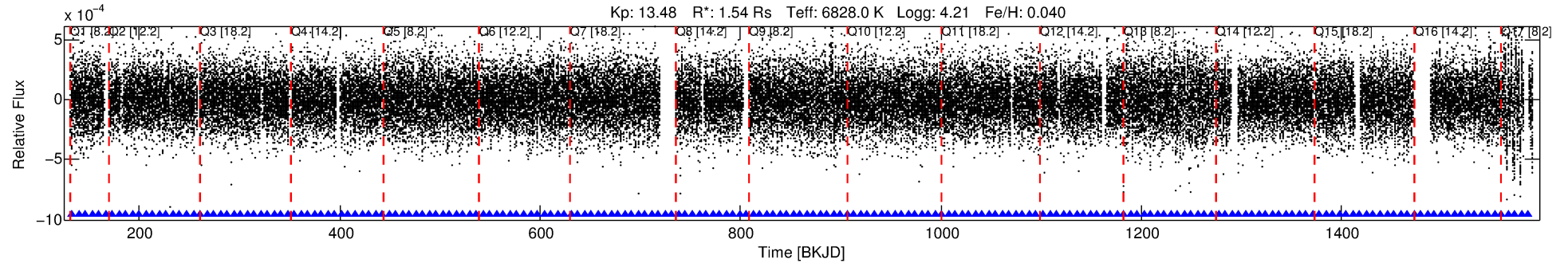
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007024928-01

No Significant Match Found

DV One-Page Summary

KIC: 7024928 Candidate: 1 of 2 Period: 6.729 d



DV Fit Results:

Period = 6.72928 [0.00023] d
Epoch = 132.9525 [0.0280] BKJD
Rp/R* = 0.0144 [0.0162]
a/R* = 1.14 [0.07]
b = 1.00 [0.03]
Seff = 760.87 [148.64]
Teq = 1339 [65] K
Rp = 2.42 [2.76] Re
a = 0.0780 [0.0101] AU
Ag = 22.26 [50.50] [0.42σ]
Teffp = 4497 [2543] K [1.24σ]

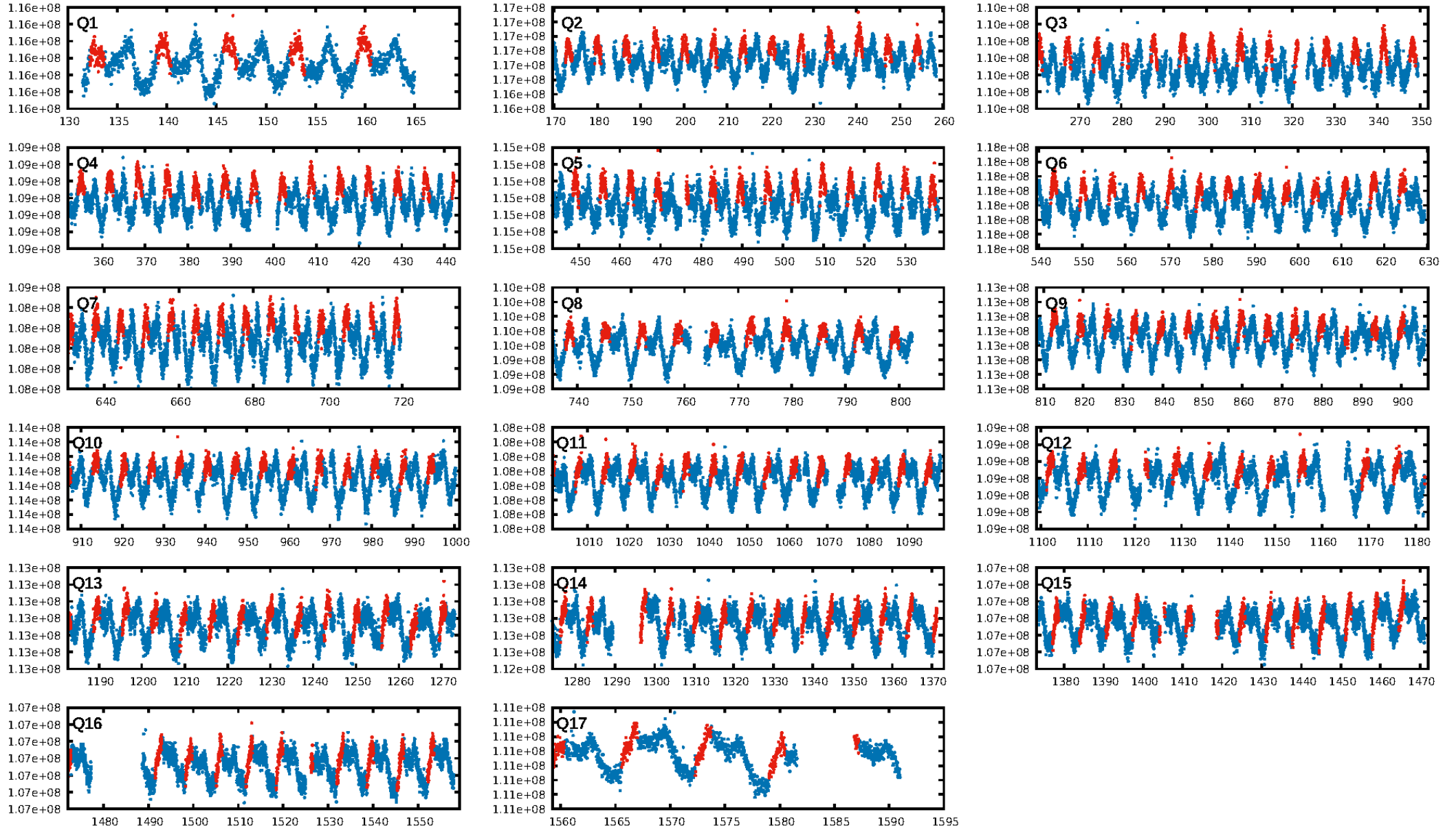
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [197/197]
GhostDiagnostic-chr: -8.909
Centroid-sig: 65.9%
Centroid-so: 0.178 arcsec [0.35σ]
OotOffset-rm: 0.036 arcsec [0.32σ]
KicOffset-rm: 0.067 arcsec [0.43σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.00 [0/17]

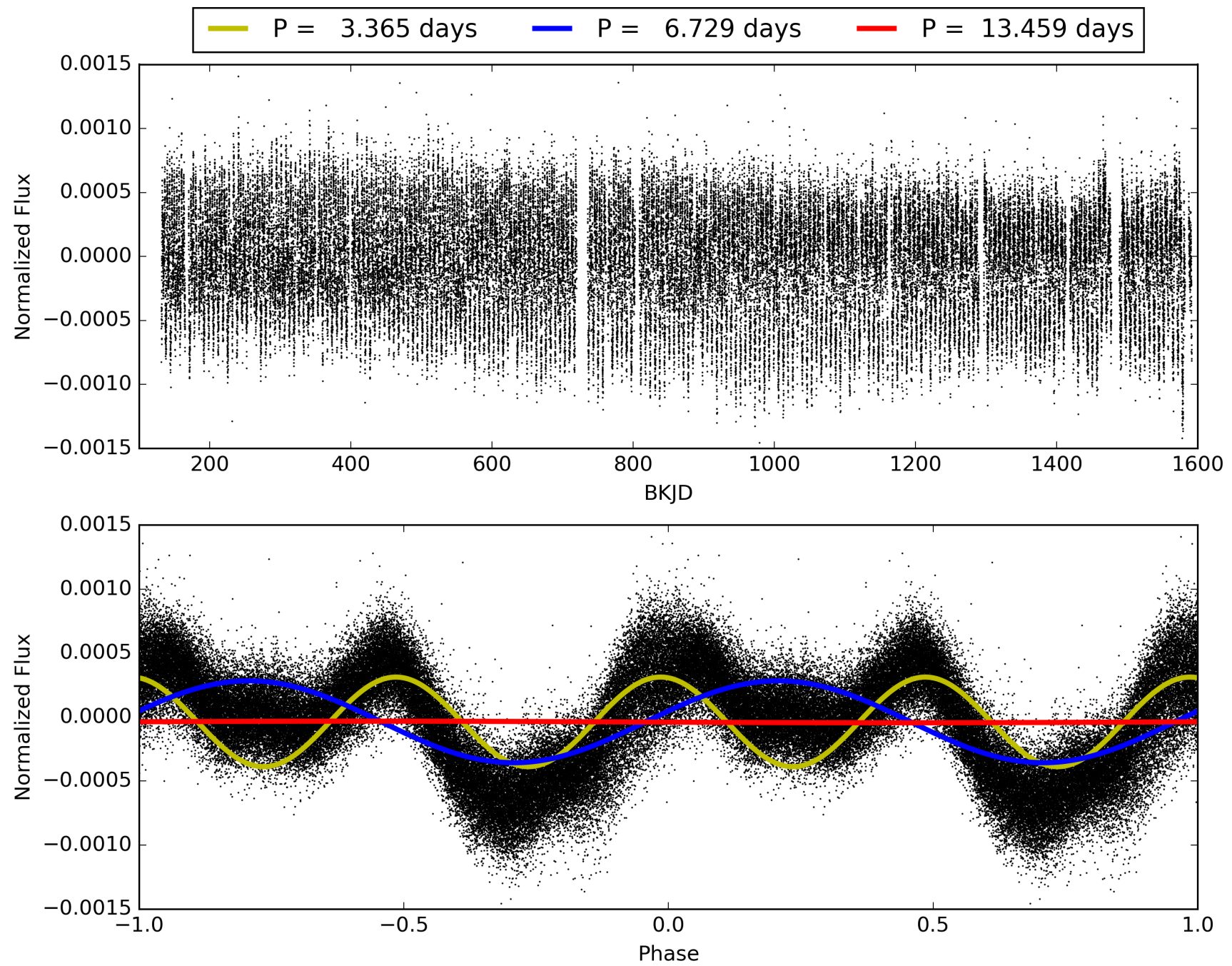
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007024928-01, PDC Light Curves

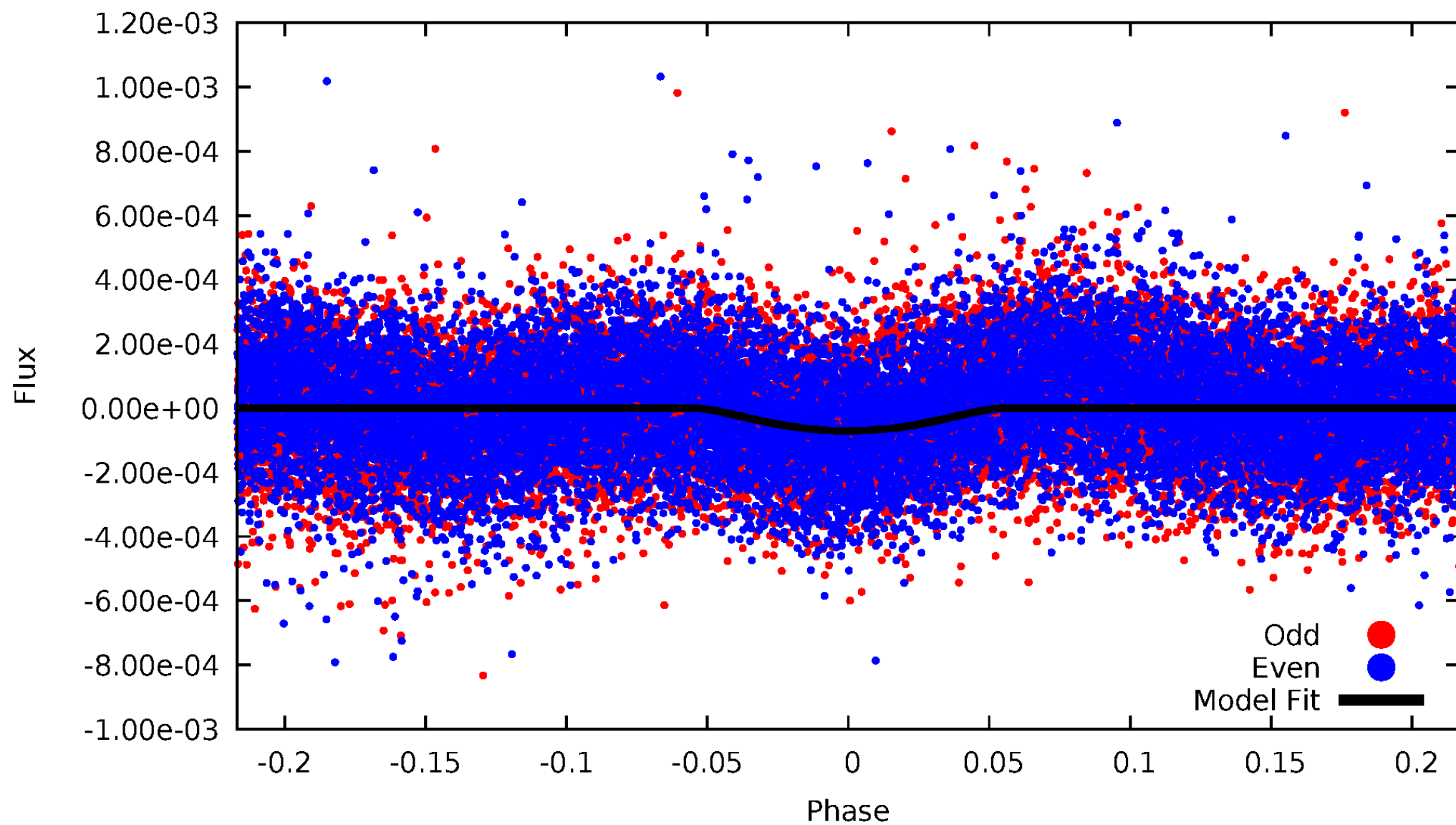


TCE 007024928-01



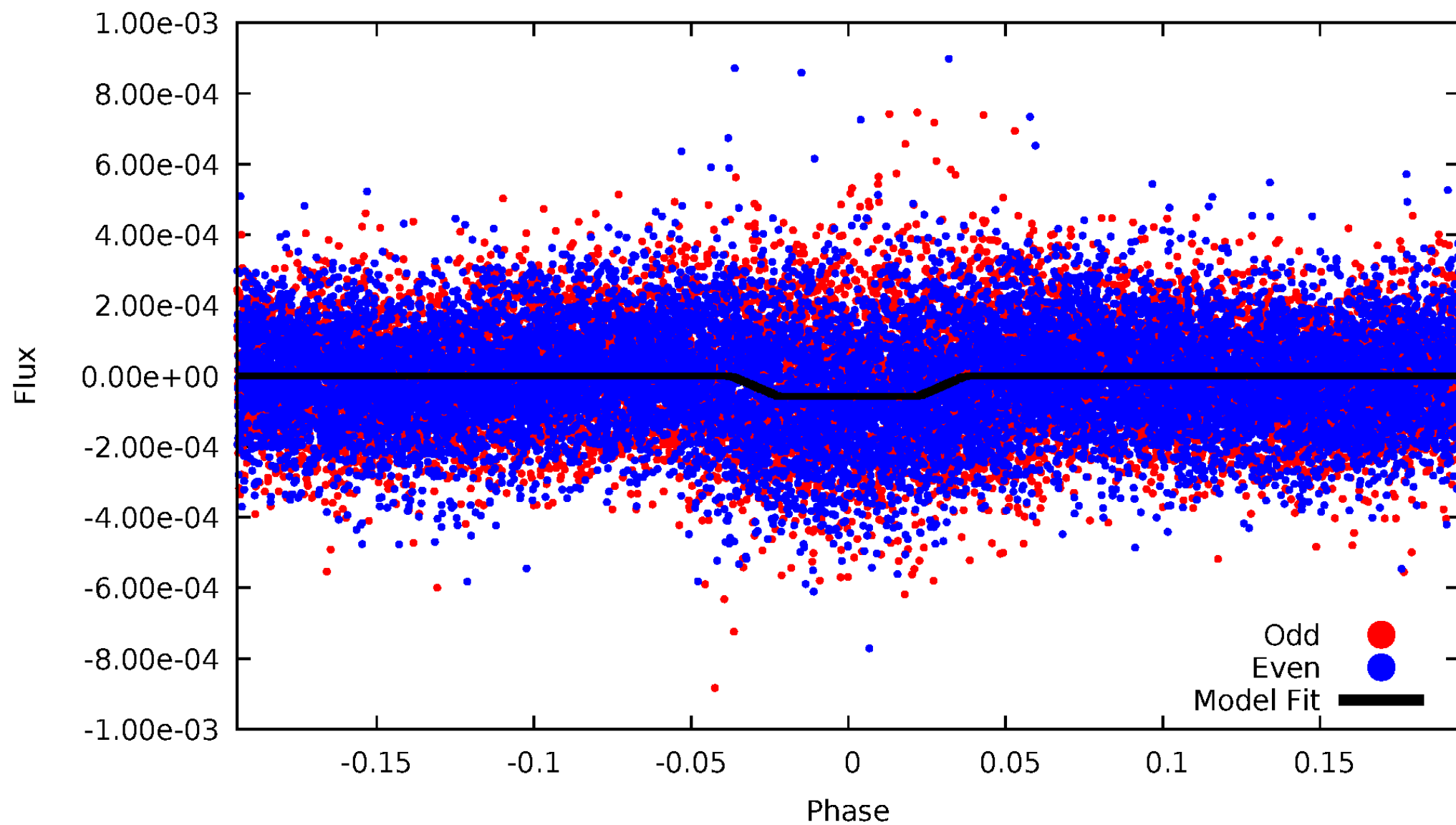
DV Odd/Even

TCE 007024928-01



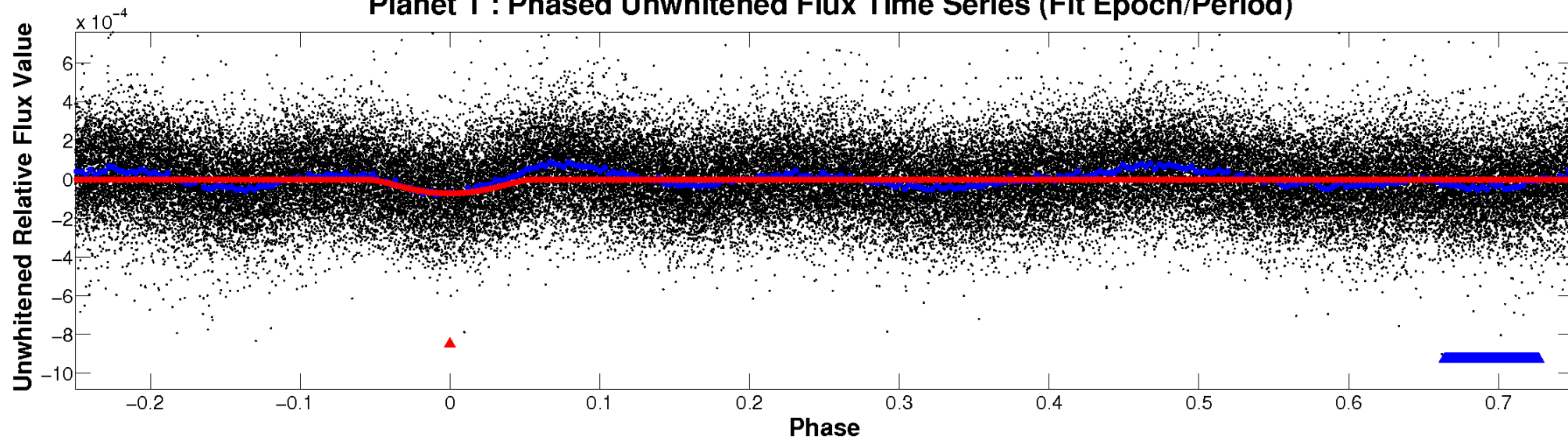
ALT Odd/Even

TCE 007024928-01

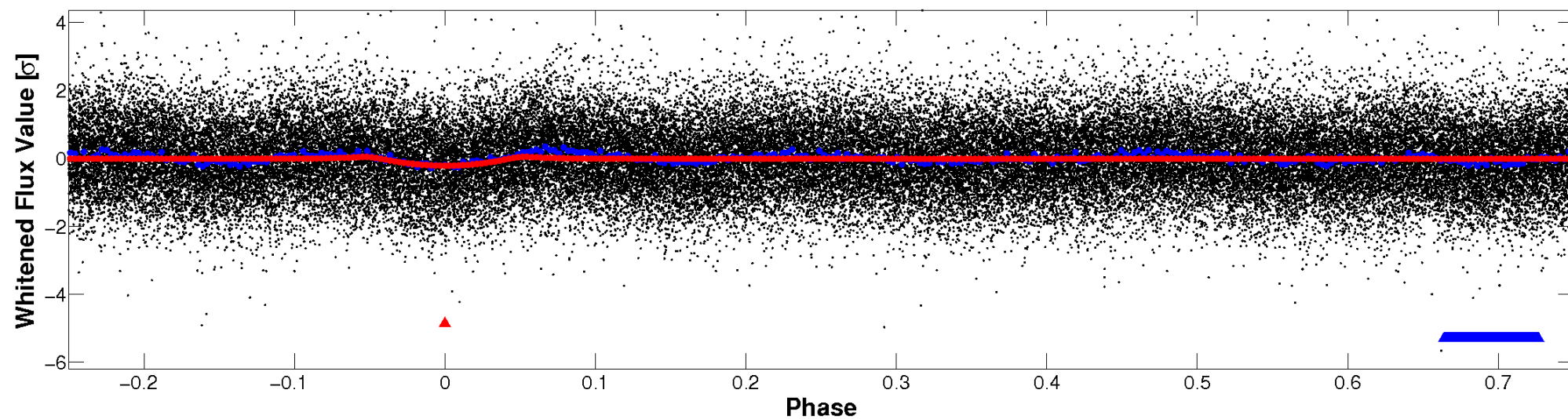


Non-Whitened Vs. Whitened Light Curve

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

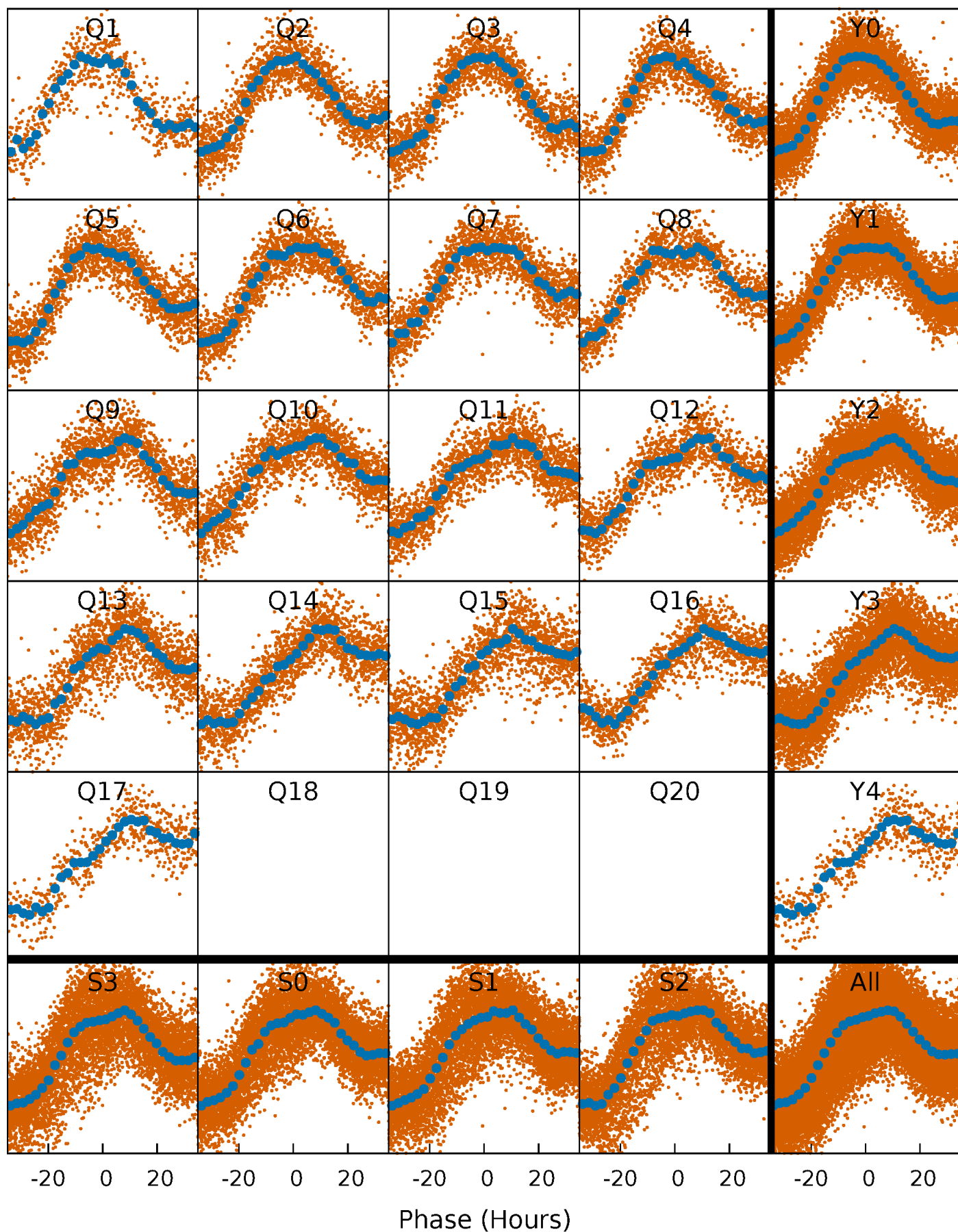


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



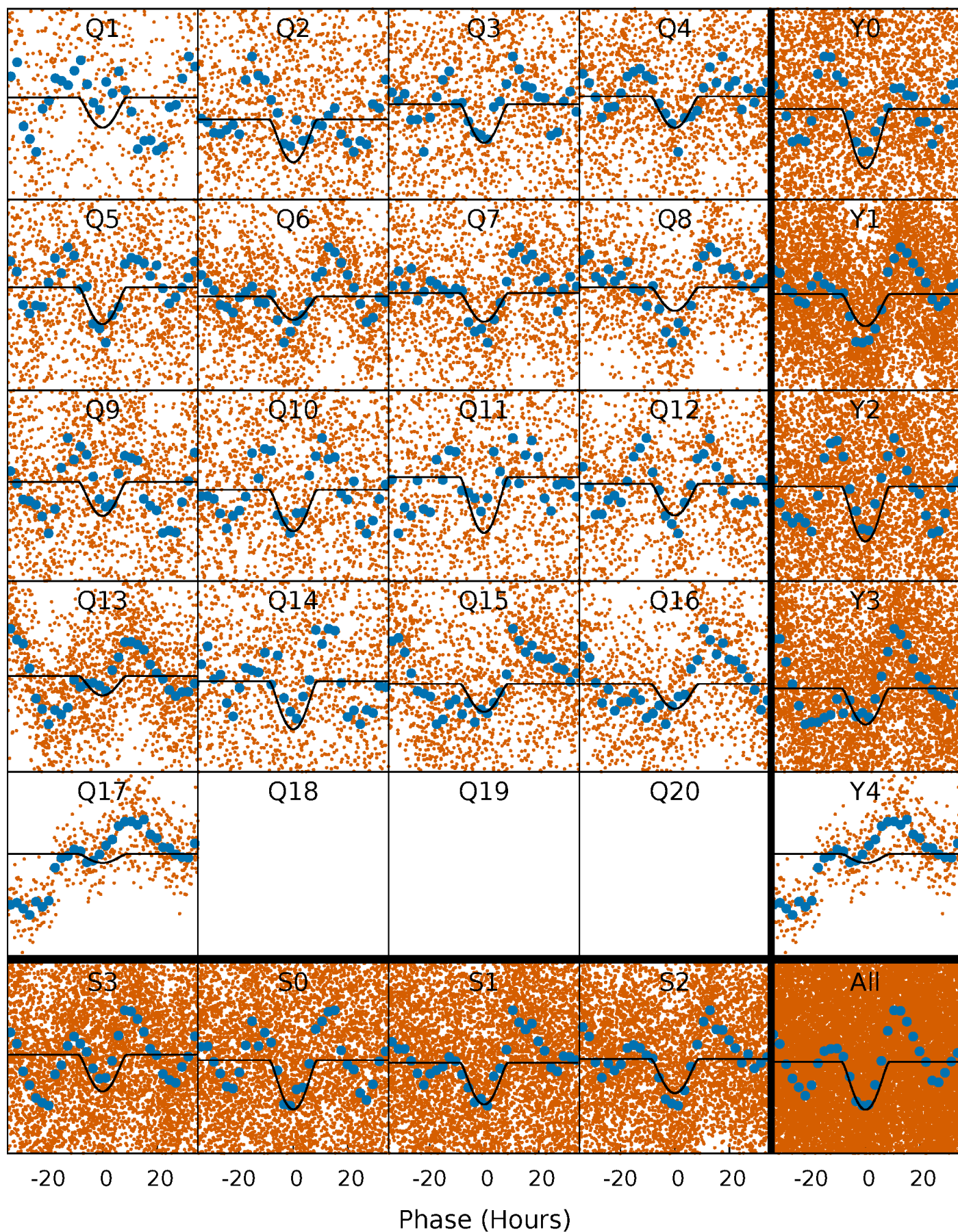
PDC Quarter-Phased Transit Curves

TCE 007024928-01 P= 6.729282 Days $T_0=132.952530$ (BKJD)



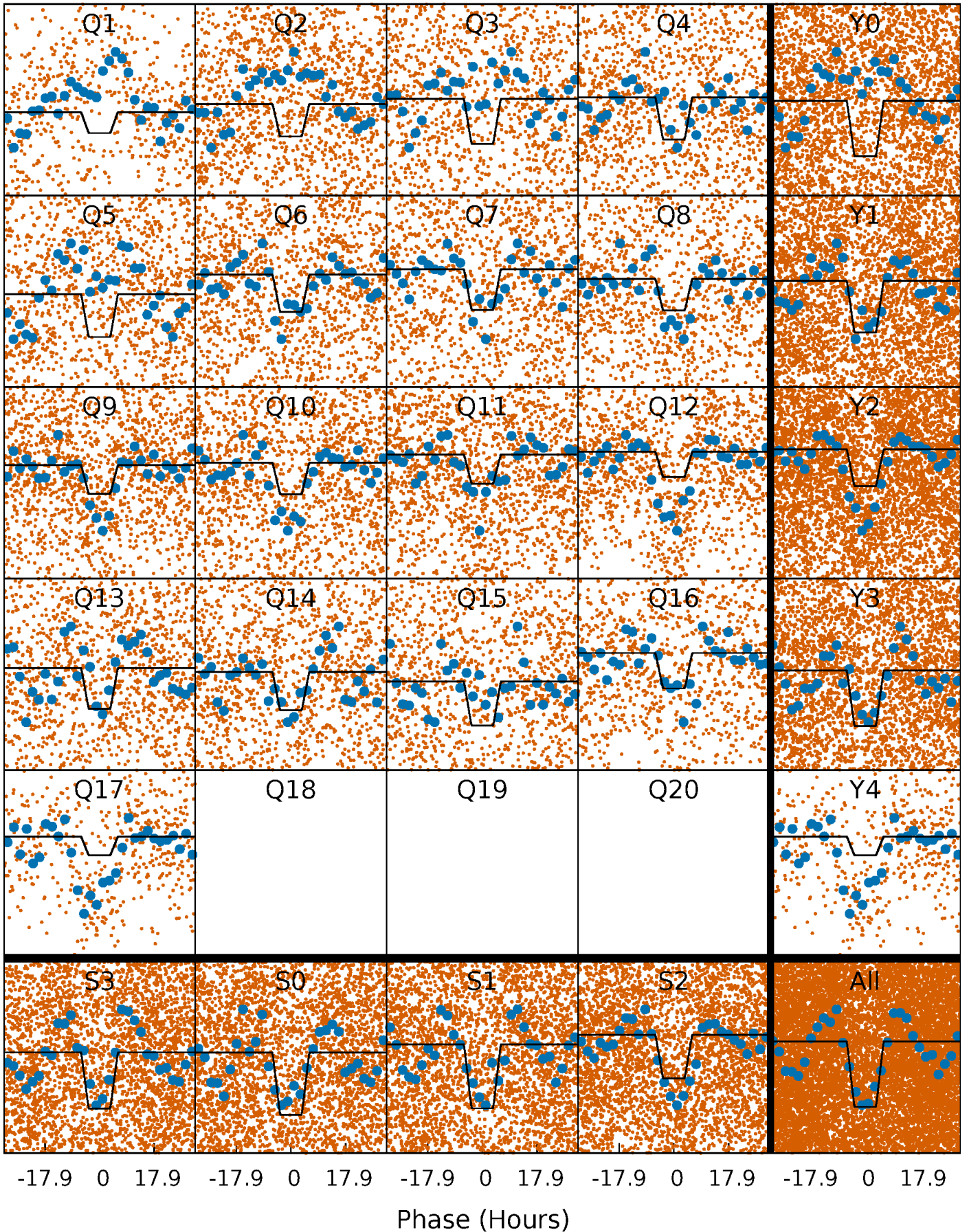
DV Quarter-Phased Transit Curves

TCE 007024928-01 P= 6.729282 Days $T_0=132.952530$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

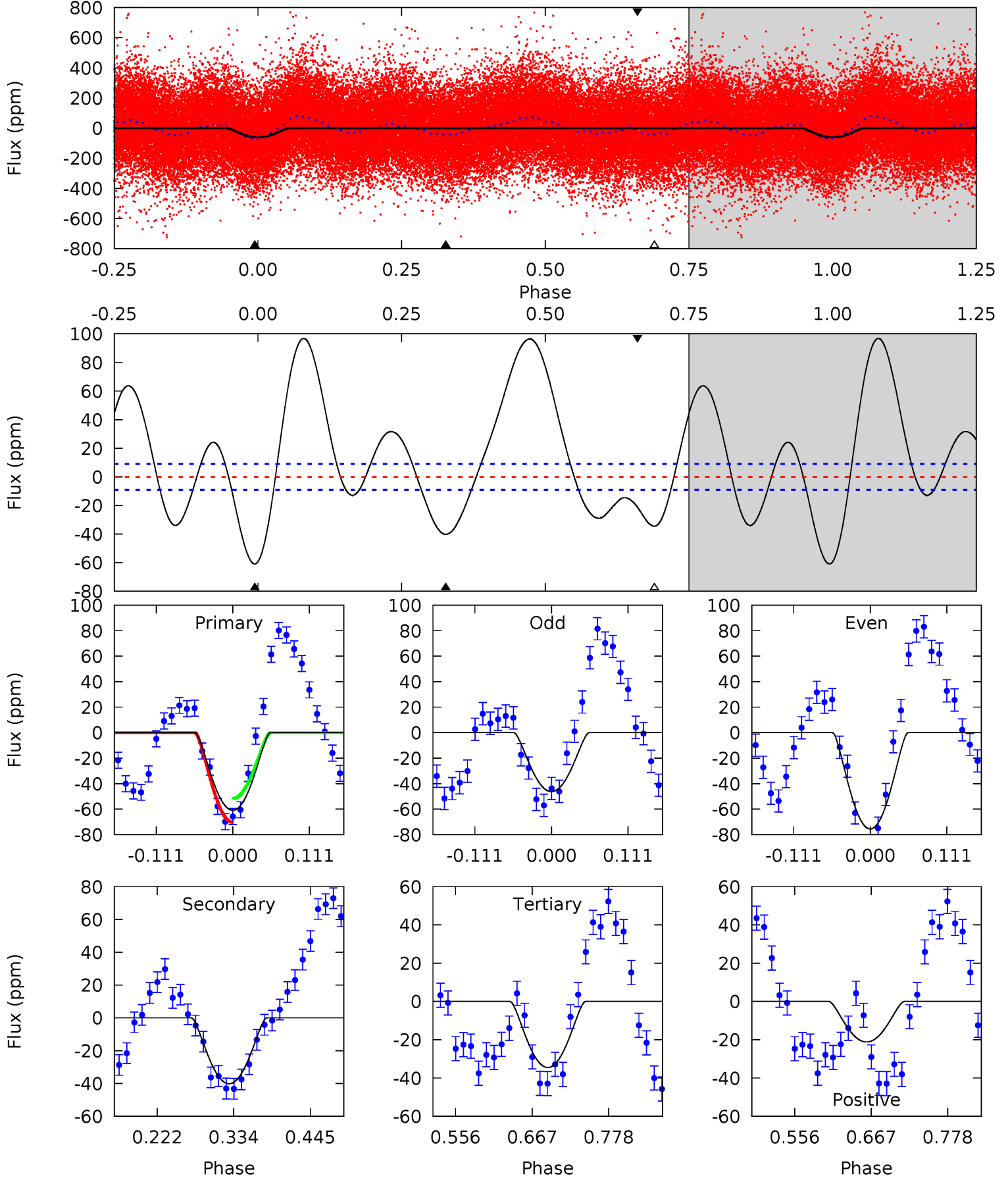
TCE 007024928-01 P= 6.729186 Days $T_0=132.980852$ (BKJD)



DV Model-Shift Uniqueness Test

007024928-01, P = 6.729282 Days, E = 126.223248 Days

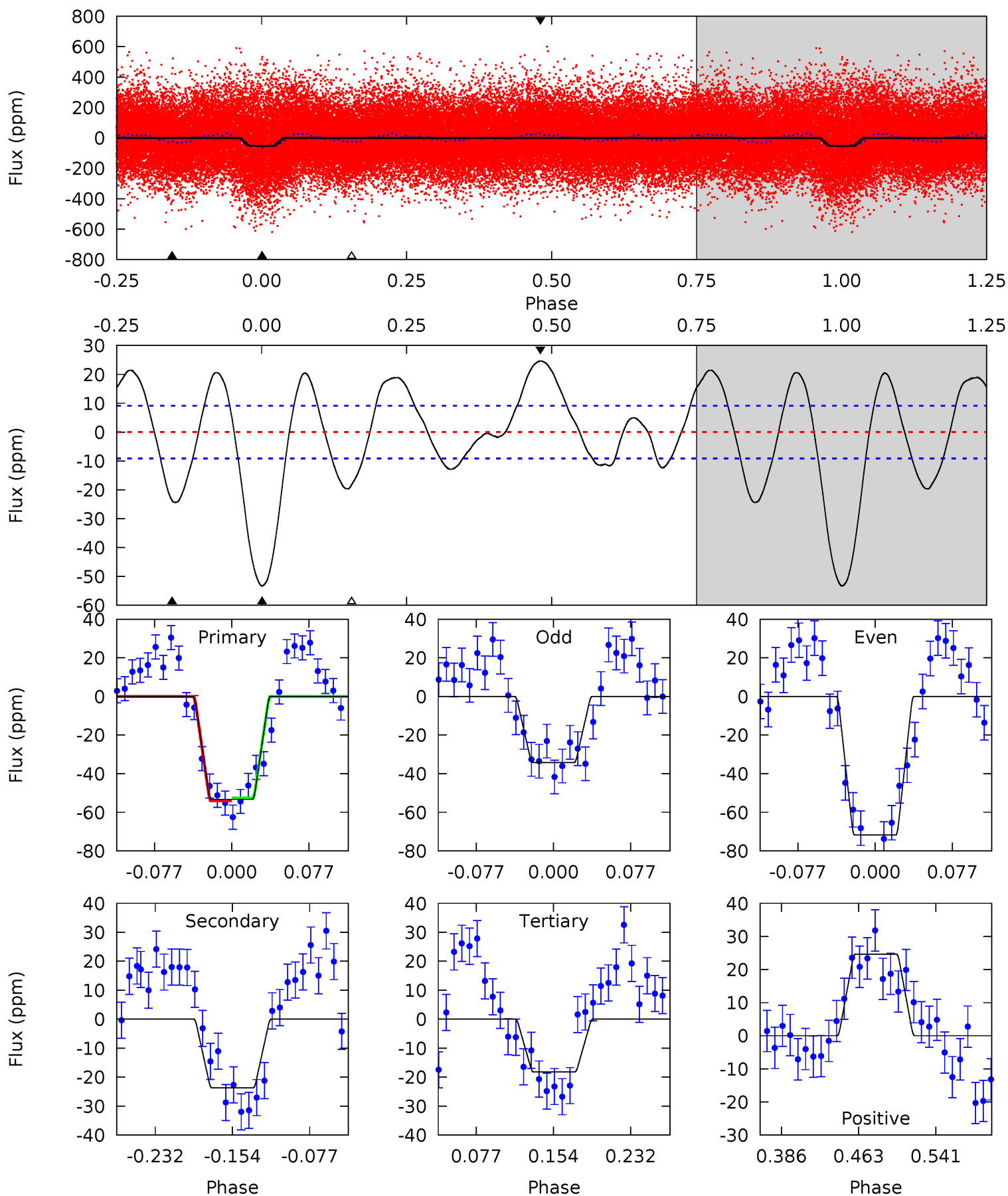
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.5	20.1	17.3	-10.6	4.54	1.59	19.9	13.2	41.1	2.83	30.7	7.35	1.11	0.61	4.68



Alt Model-Shift Uniqueness Test

007024928-01, P = 6.729186 Days, E = 126.251666 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	12.0	9.22	12.5	4.62	1.77	5.94	17.7	14.5	2.77	-0.47	9.46	0.96	0.32	0.36



Stellar Parameters For KIC 007024928

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6828^{+71}_{-81}	$4.207^{+0.064}_{-0.104}$	$0.040^{+0.150}_{-0.150}$	$1.541^{+0.236}_{-0.138}$	$1.395^{+0.099}_{-0.079}$	$0.537^{+0.151}_{-0.167}$
	+1%/-1%	+2%/-2%	+375%/-375%	+15%/-9%	+7%/-6%	+28%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 007024928-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-40 ± 2	$3.13^{+2.48}_{-1.81}$	1878^{+71}_{-51}	4239^{+1963}_{-785}	14^{+63}_{-9}
Alt.	-24 ± 2	$2.54^{+2.21}_{-1.63}$	1876^{+69}_{-55}	4148^{+2496}_{-808}	12^{+89}_{-9}

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 $A_{obs} \gg 1.0$

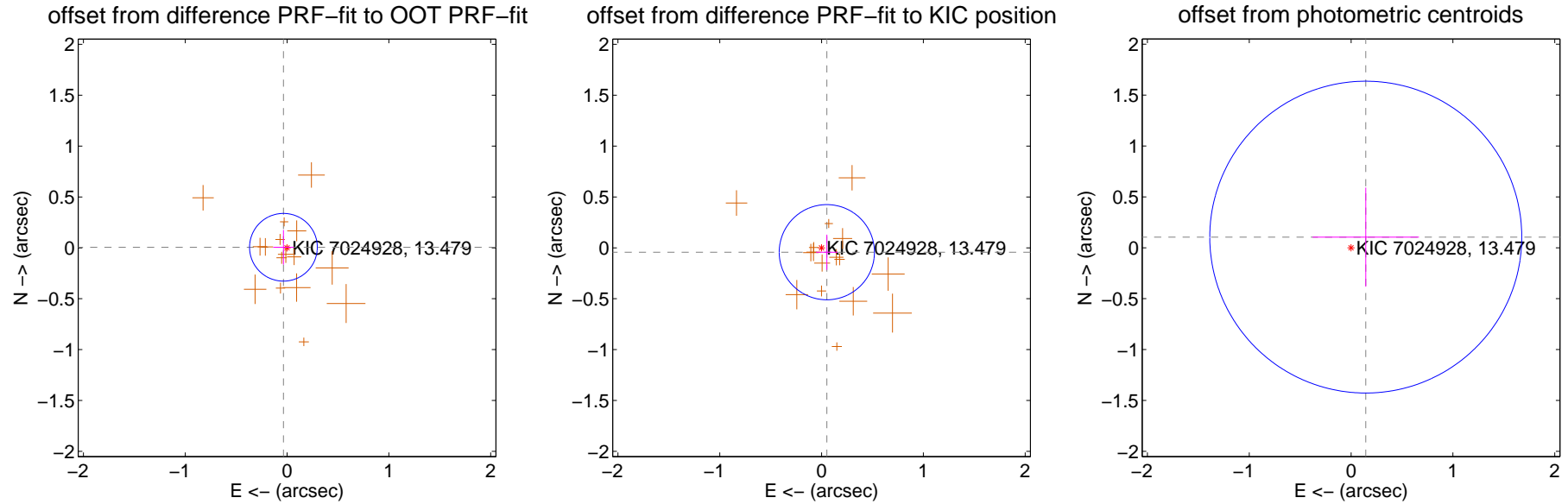
DV Centroid Data

Supplemental centroid analysis for 007024928-01. Kepler magnitude: 13.48. Transit SNR 11.73

There are 0 quarters with good PRF difference image offsets

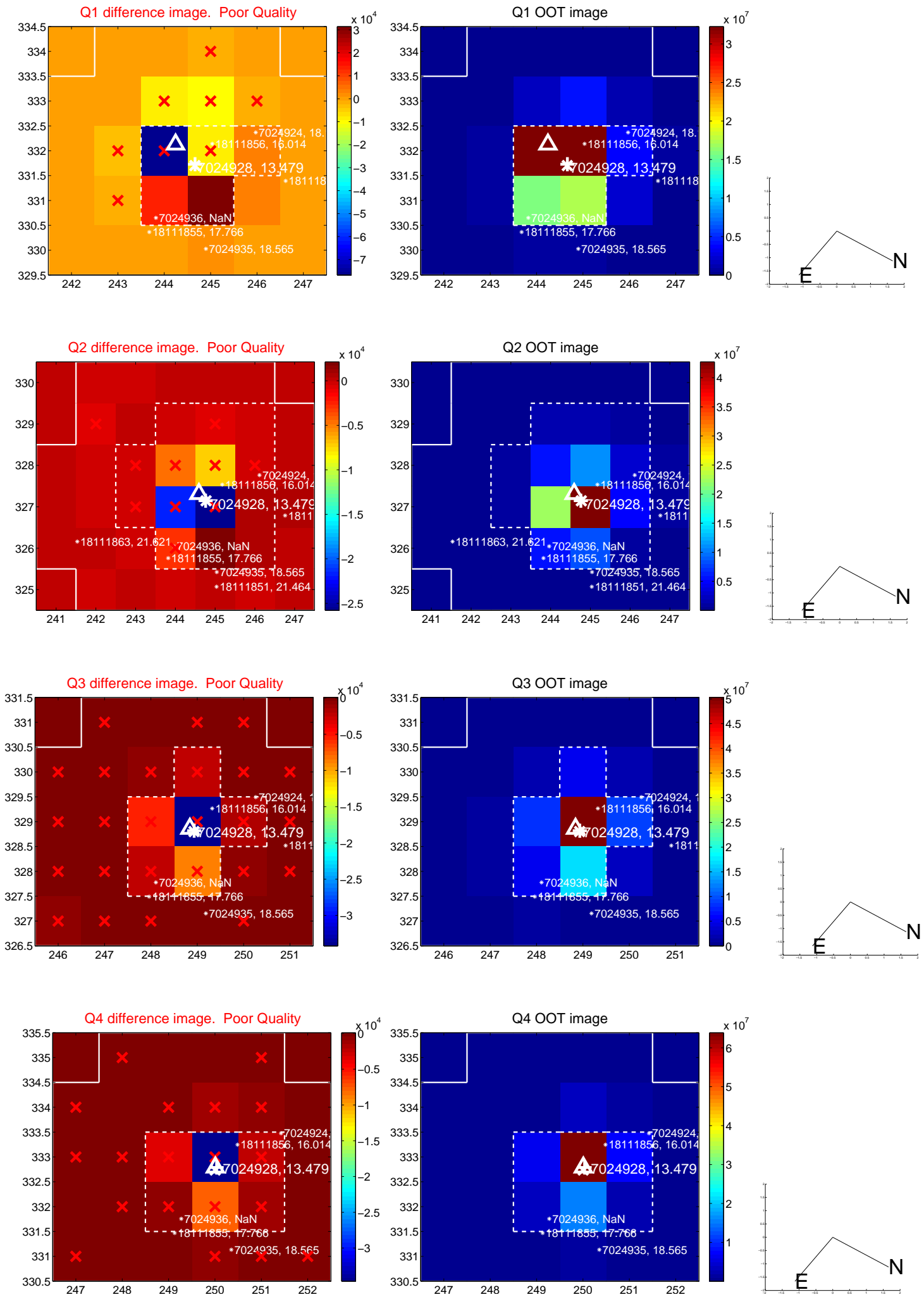
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.036 ± 0.111	0.32	0.036 ± 0.101	0.005 ± 0.170
PRF-fit source offset from KIC position	0.067 ± 0.156	0.43	-0.052 ± 0.106	-0.043 ± 0.173
photometric centroid source offset	0.18 ± 0.51	0.35	-0.14 ± 0.52	0.10 ± 0.49

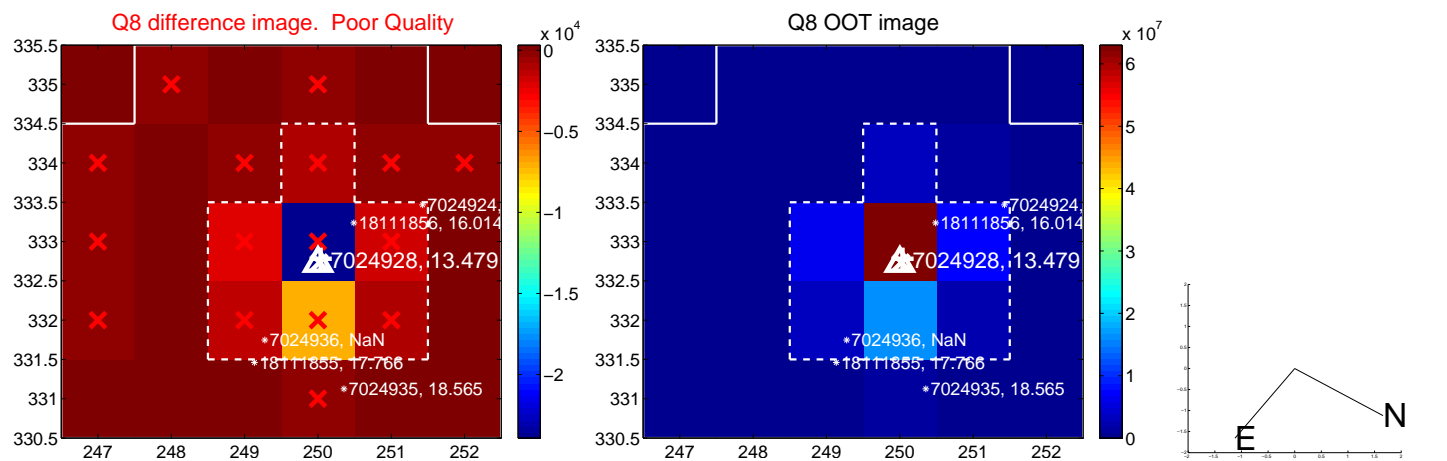
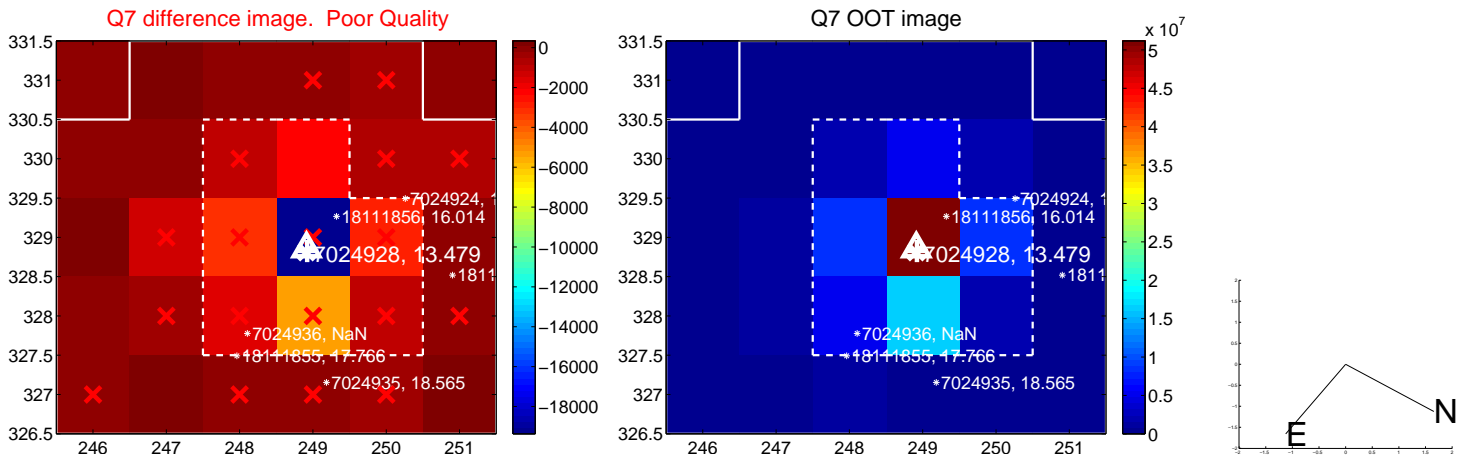
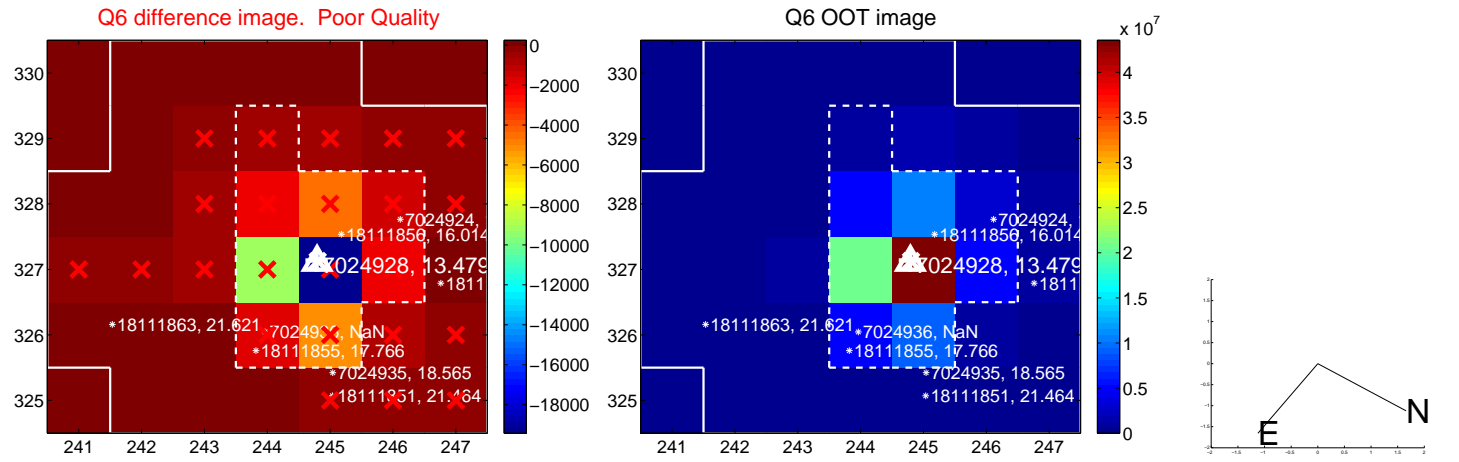
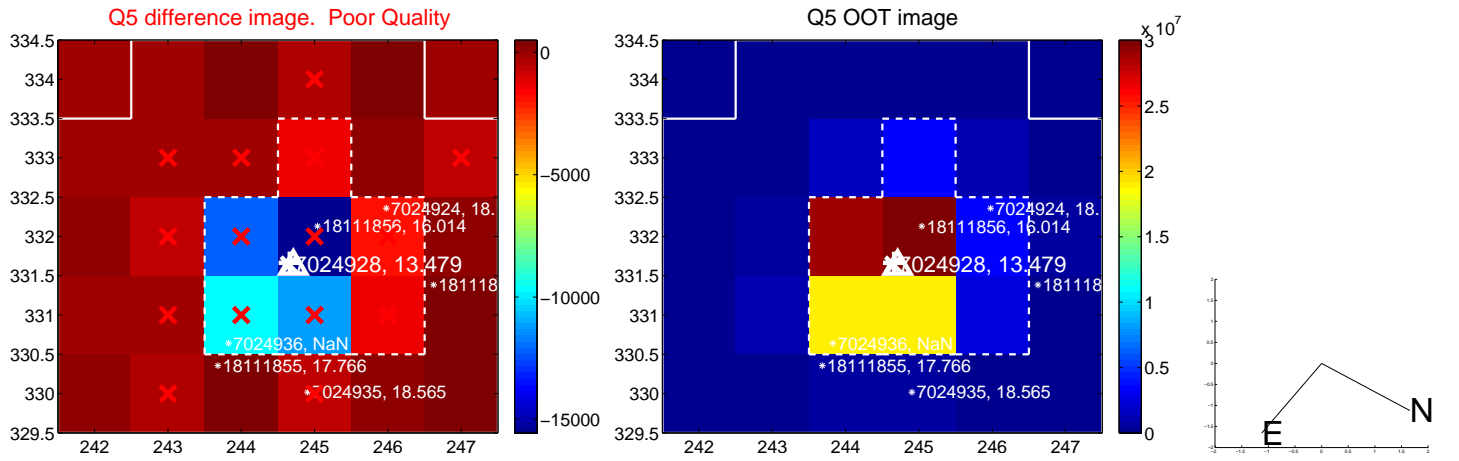


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

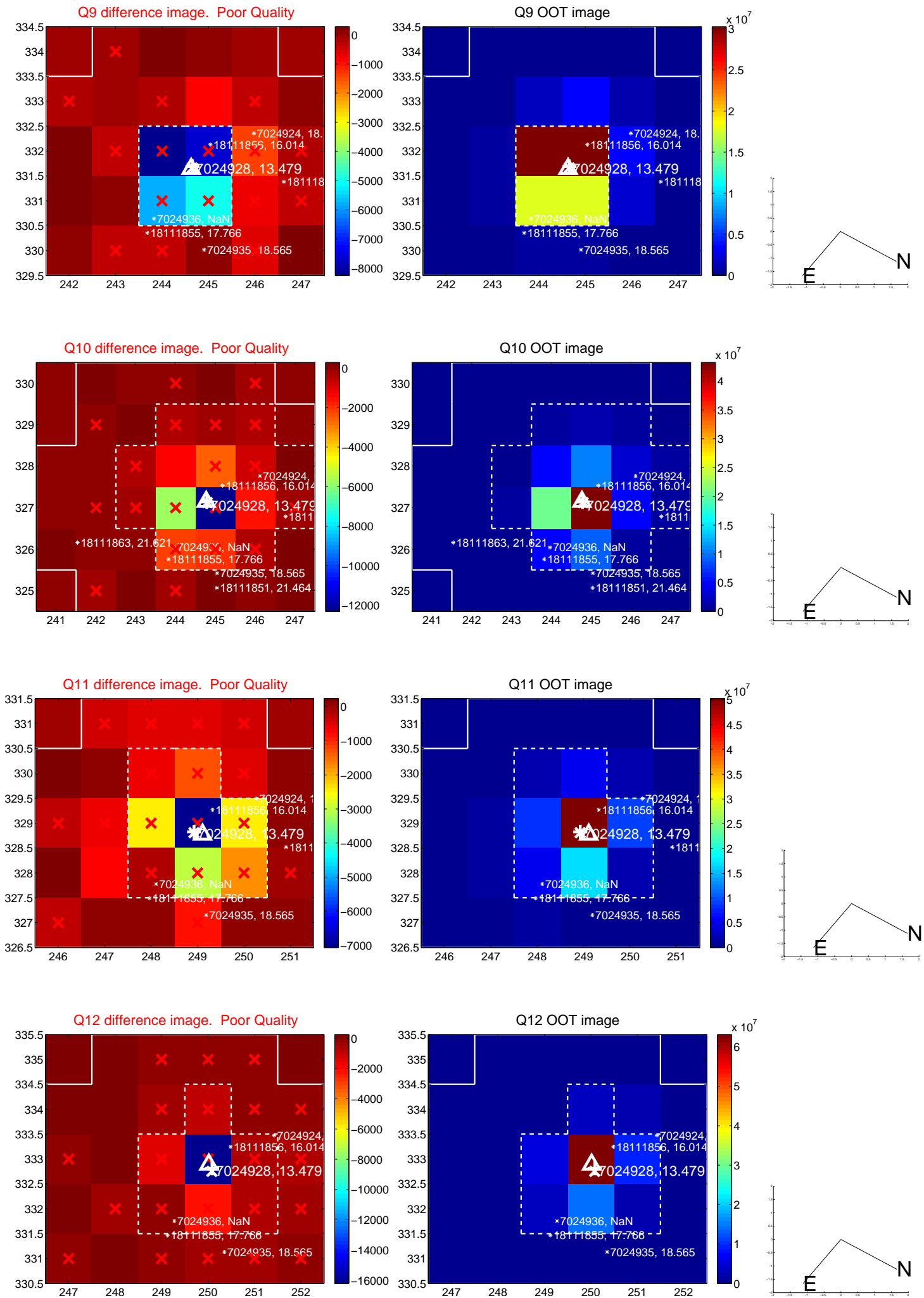
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



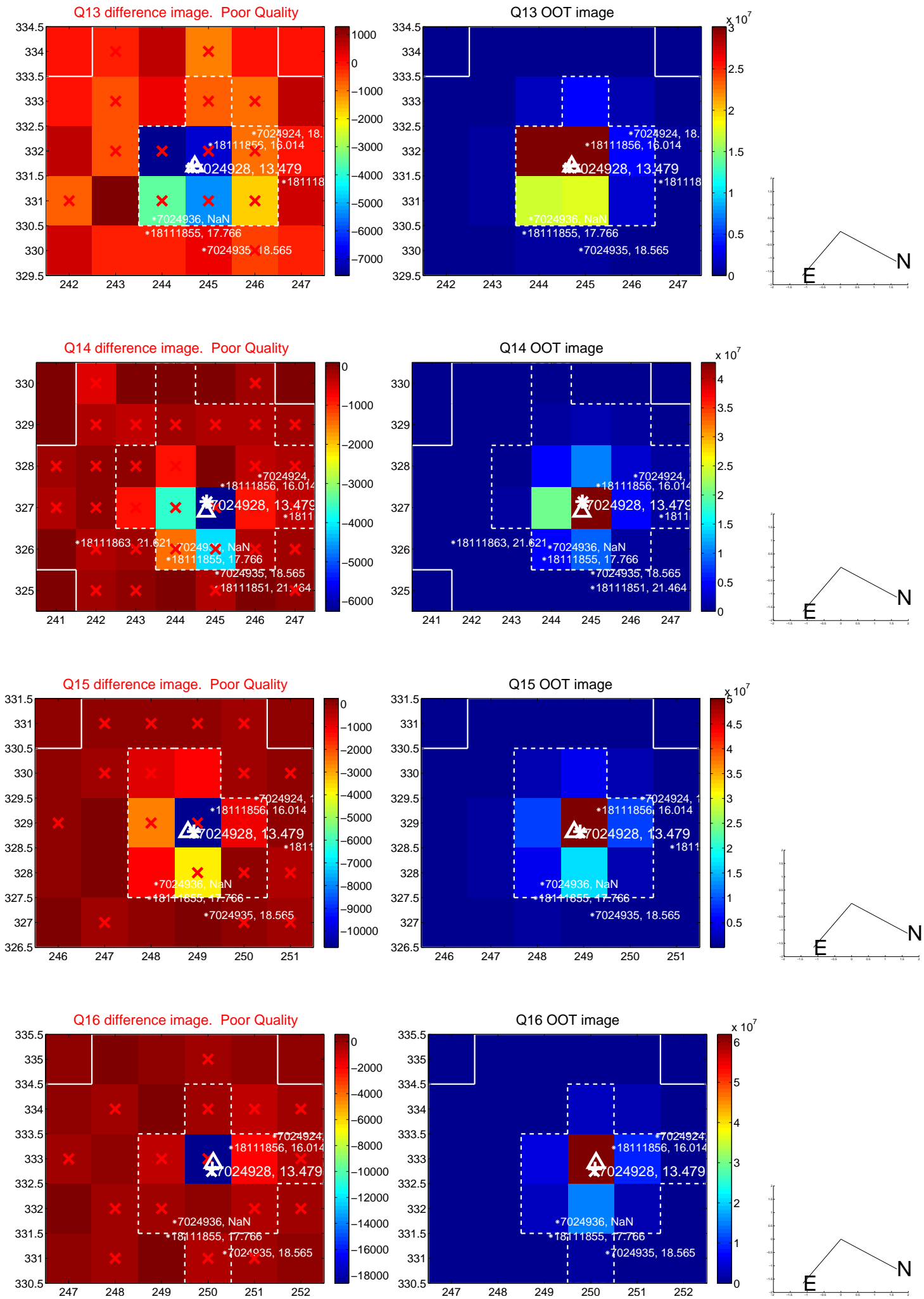
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



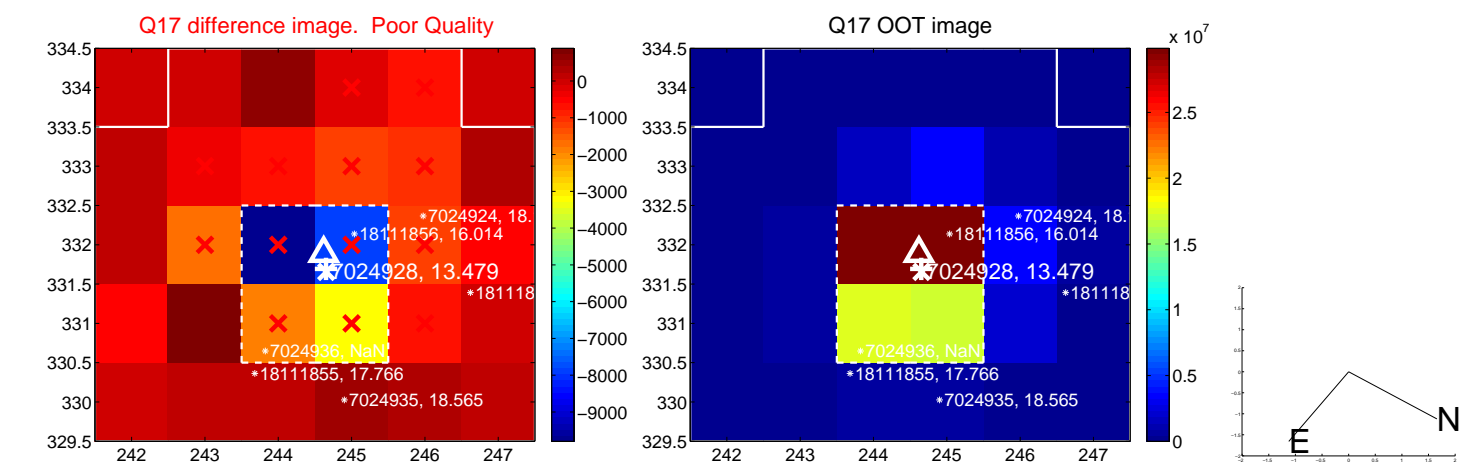
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



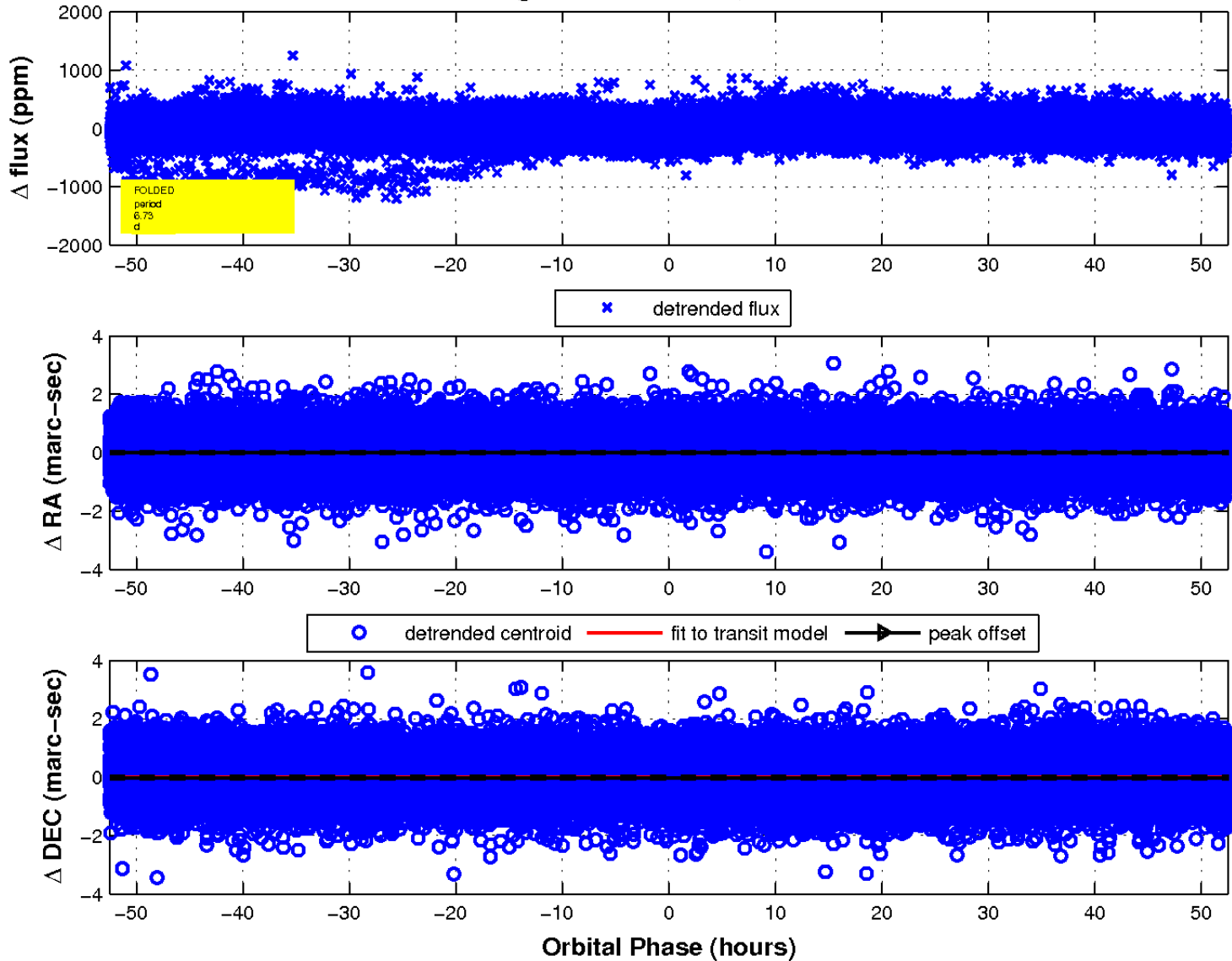
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

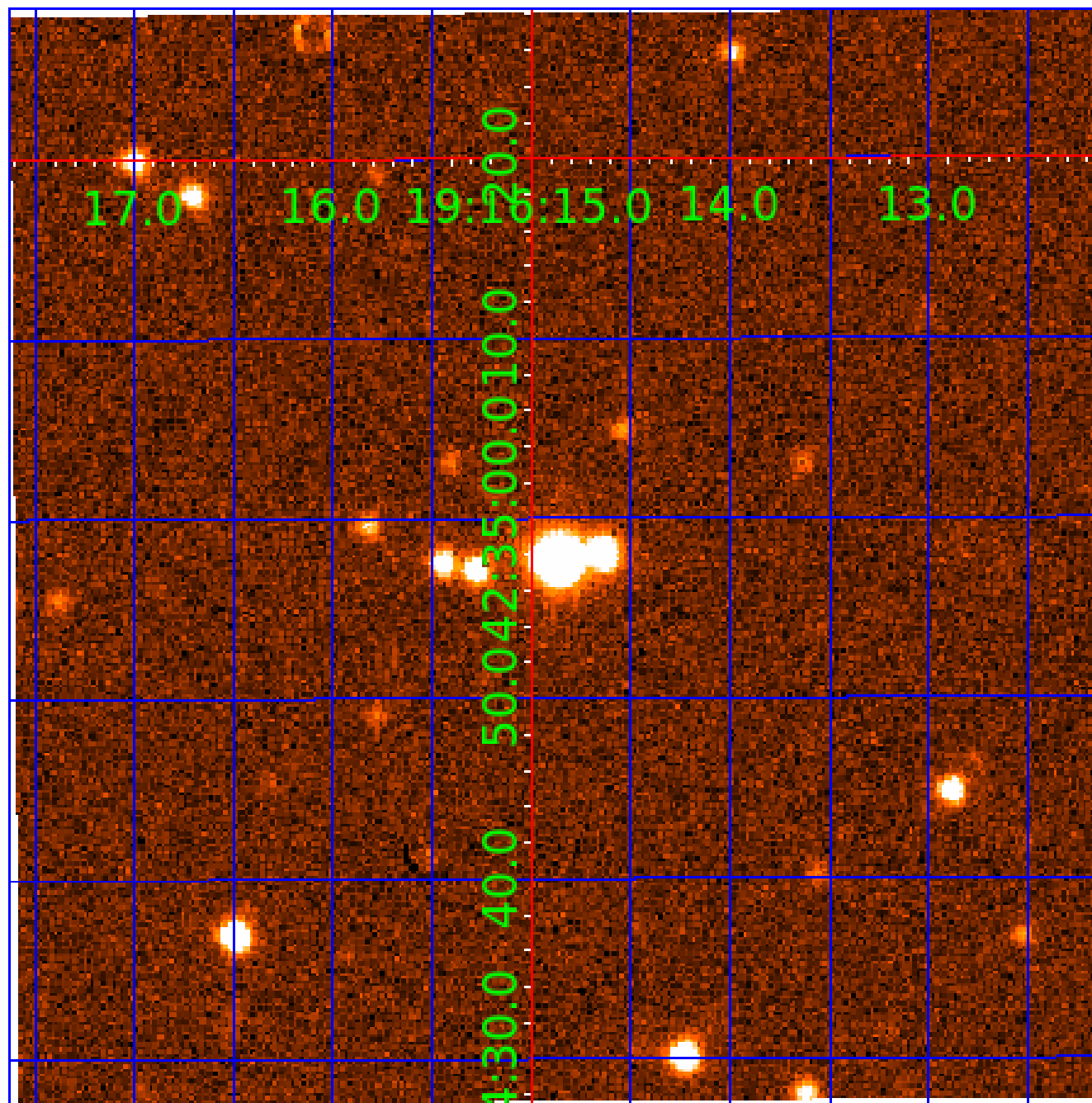


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 007024928

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})
007024928-01	OBS	No	6.729282	132.952530	71.2	17.509	11.5	11.7	1.54	6828	2.42	760.87
007024928-02	OBS	No	6.727327	137.843057	21.8	60.317	9.4	5.8	1.54	6828	0.85	761.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007024928-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
007024928-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

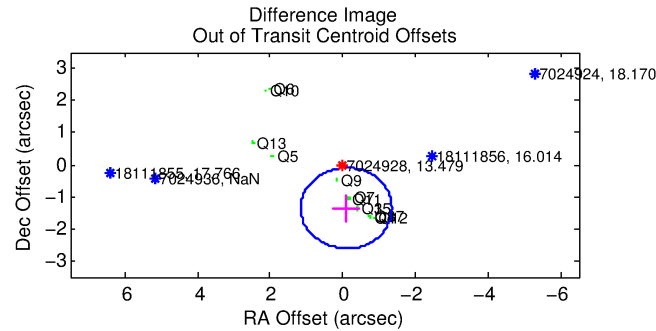
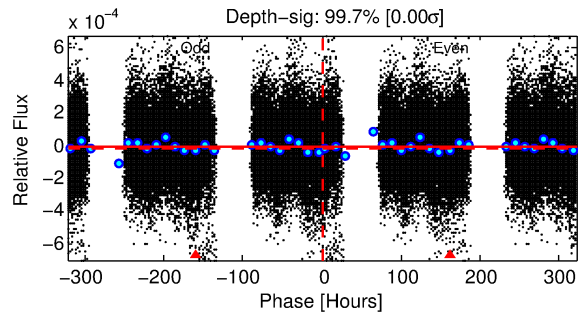
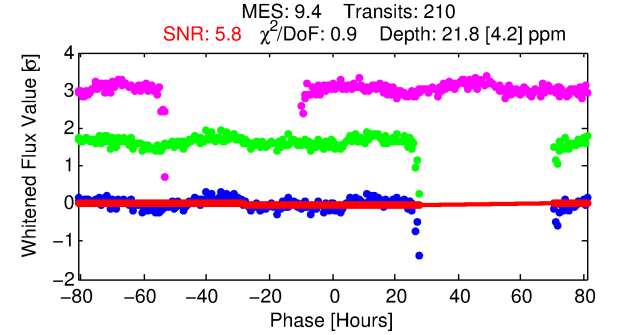
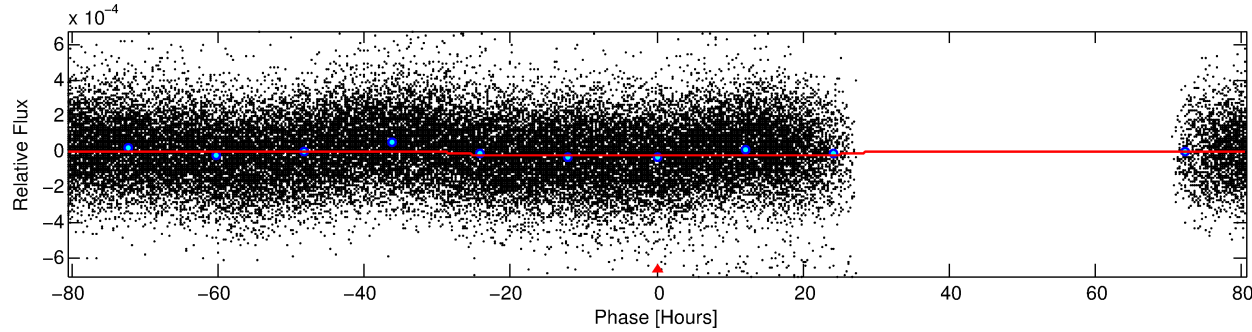
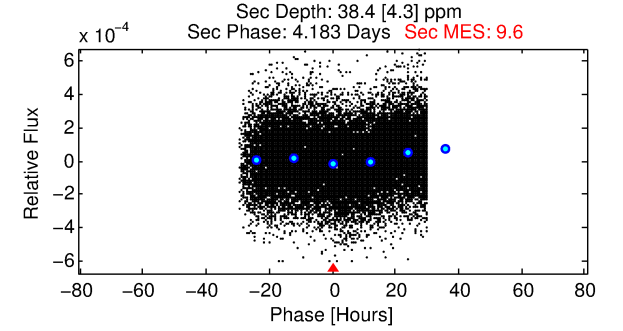
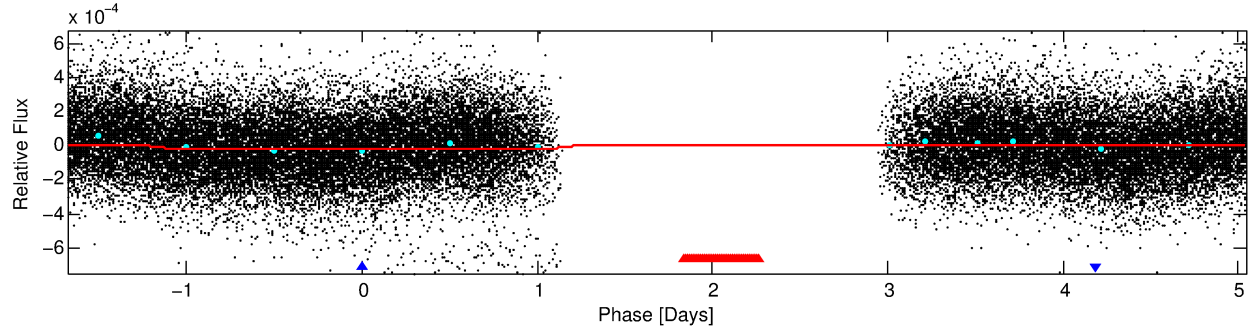
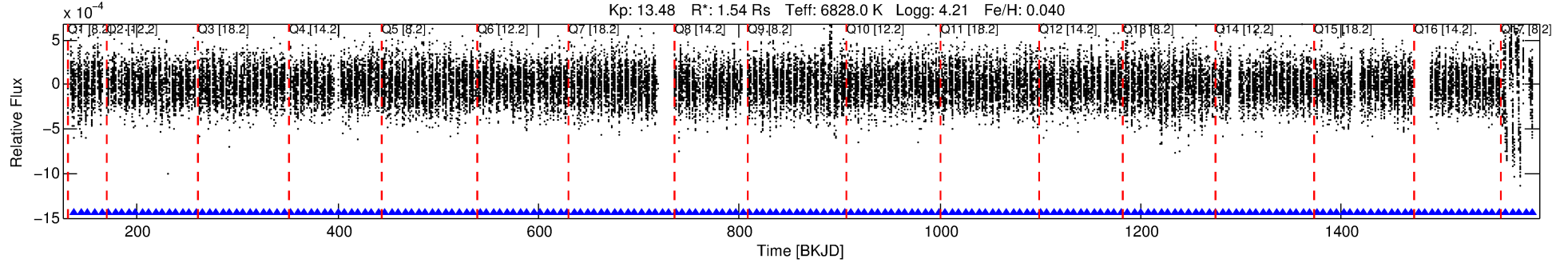
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007024928-02

No Significant Match Found

DV One-Page Summary

KIC: 7024928 Candidate: 2 of 2 Period: 6.727 d



DV Fit Results:

Period = 6.72733 [0.00076] d
Epoch = 137.8431 [0.3161] BKJD
Rp/R* = 0.0050 [0.0007]
a/R* = 1.02 [0.03]
b = 0.92 [0.15]
Seff = 761.17 [148.70]
Teq = 1339 [65] K
Rp = 0.85 [0.18] Re
a = 0.0779 [0.0101] AU
Ag = 178.27 [65.68] [2.70σ]
Teffp = 7567 [604] K [10.24σ]

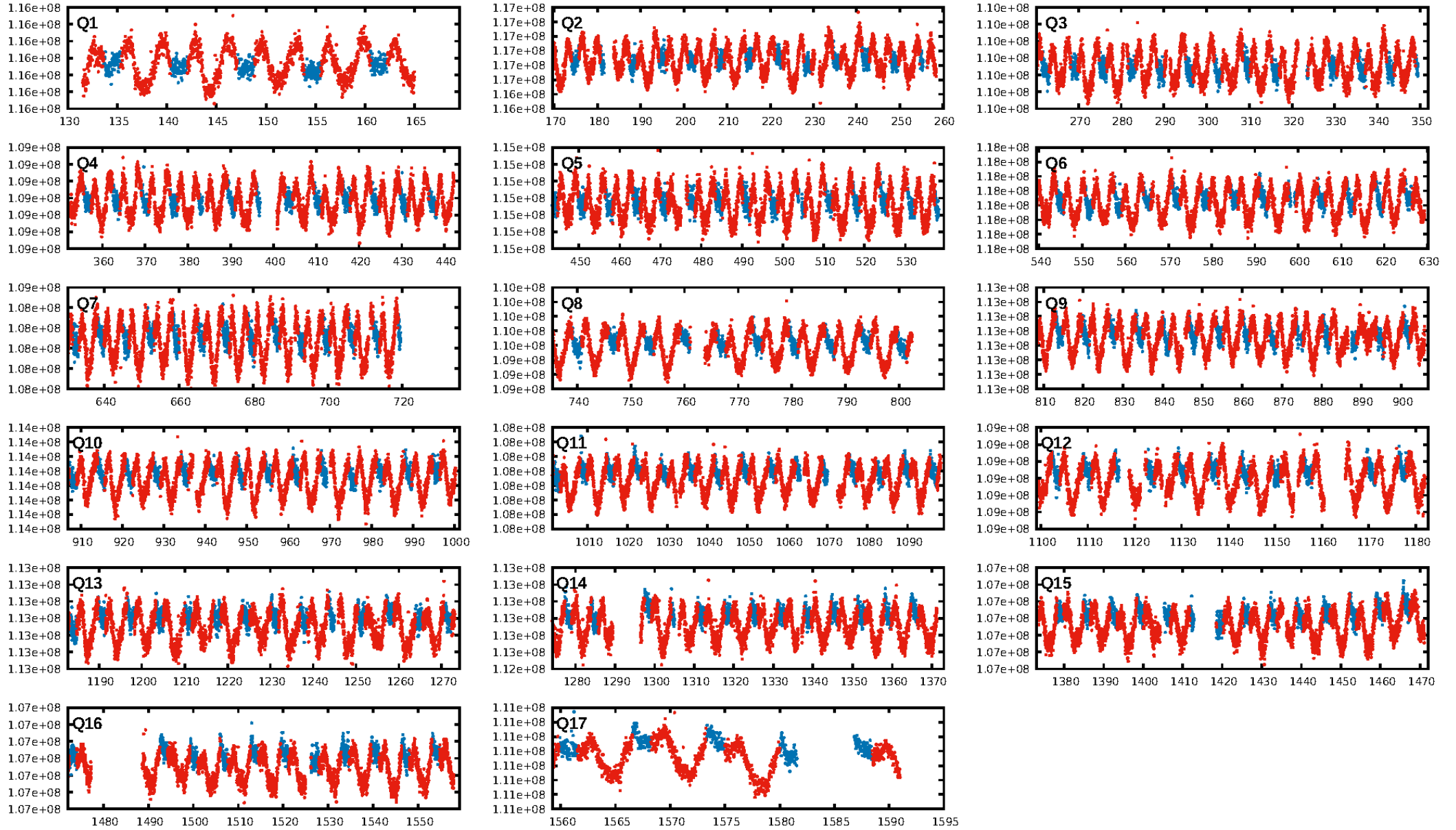
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [200/200]
GhostDiagnostic-chr: 0.8986
Centroid-sig: 0.0%
Centroid-so: 2.644 arcsec [3.44σ]
OotOffset-rm: 1.358 arcsec [3.24σ]
KicOffset-rm: 1.410 arcsec [3.20σ]
OotOffset-st: 2/4/3/4 [13]
KicOffset-st: 2/4/3/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 0.00 [0/16]

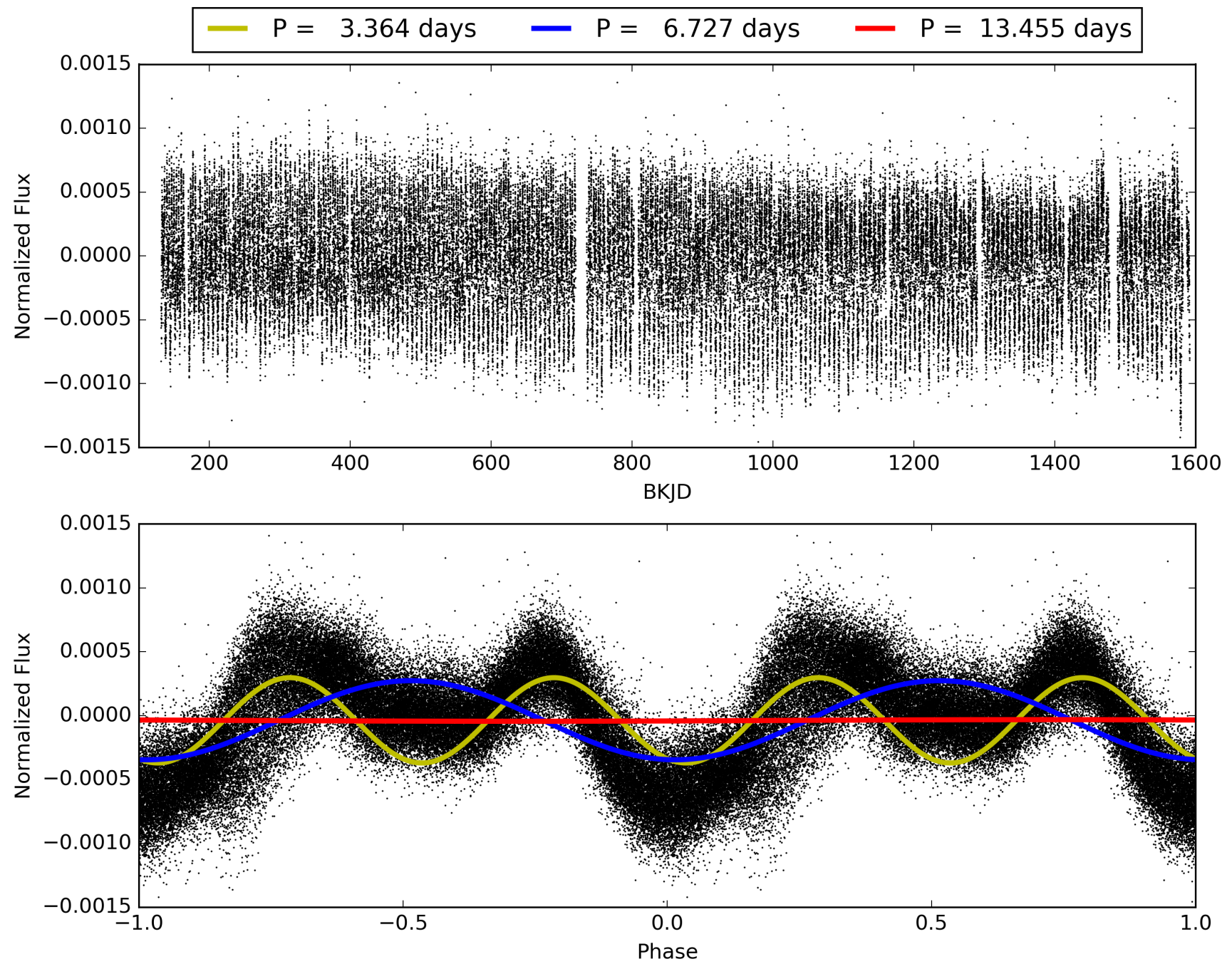
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 007024928-02, PDC Light Curves

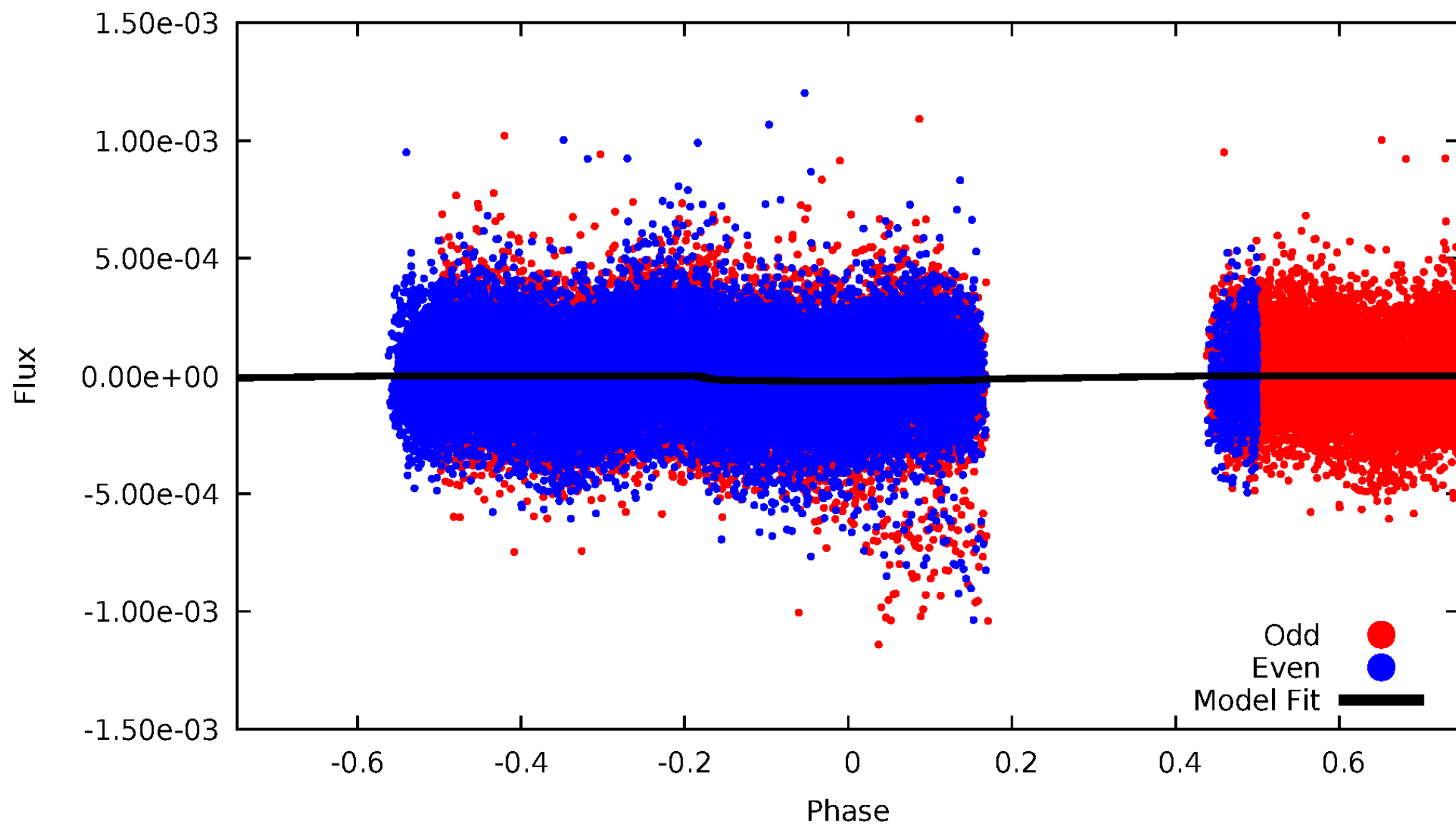


TCE 007024928-02



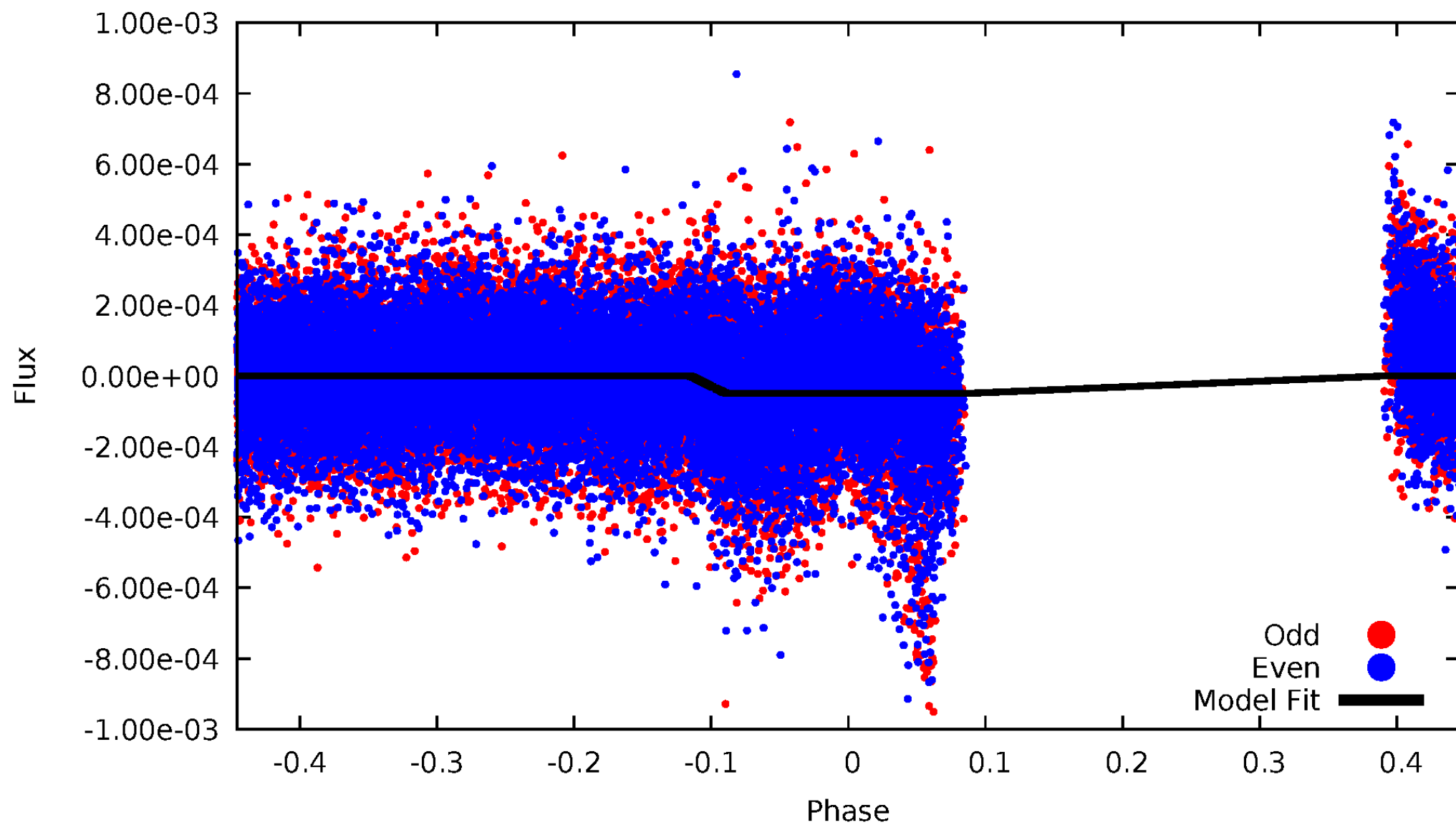
DV Odd/Even

TCE 007024928-02



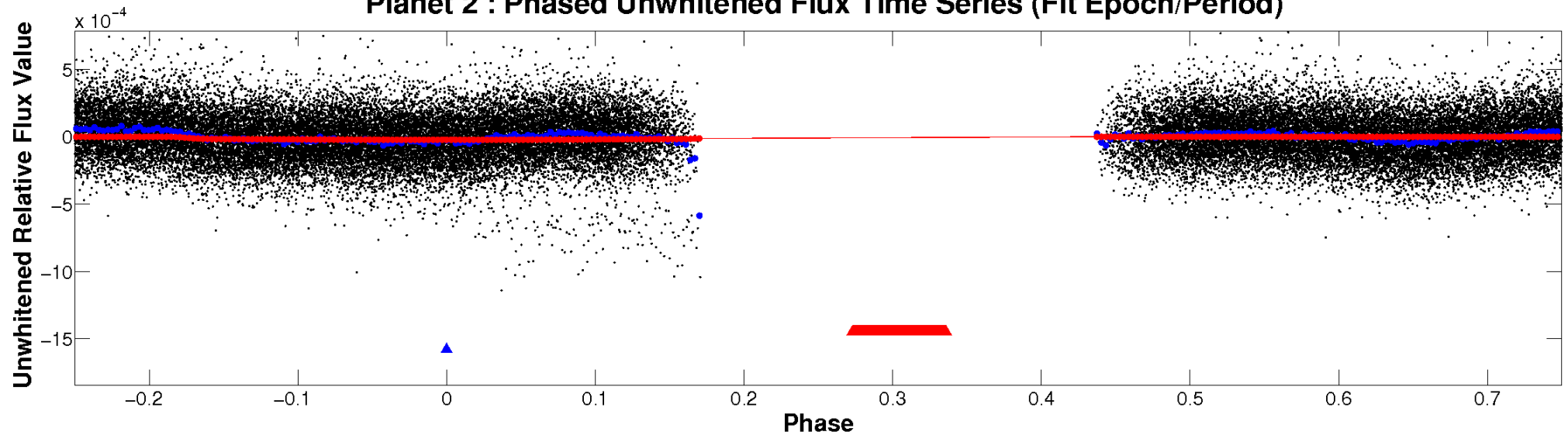
ALT Odd/Even

TCE 007024928-02

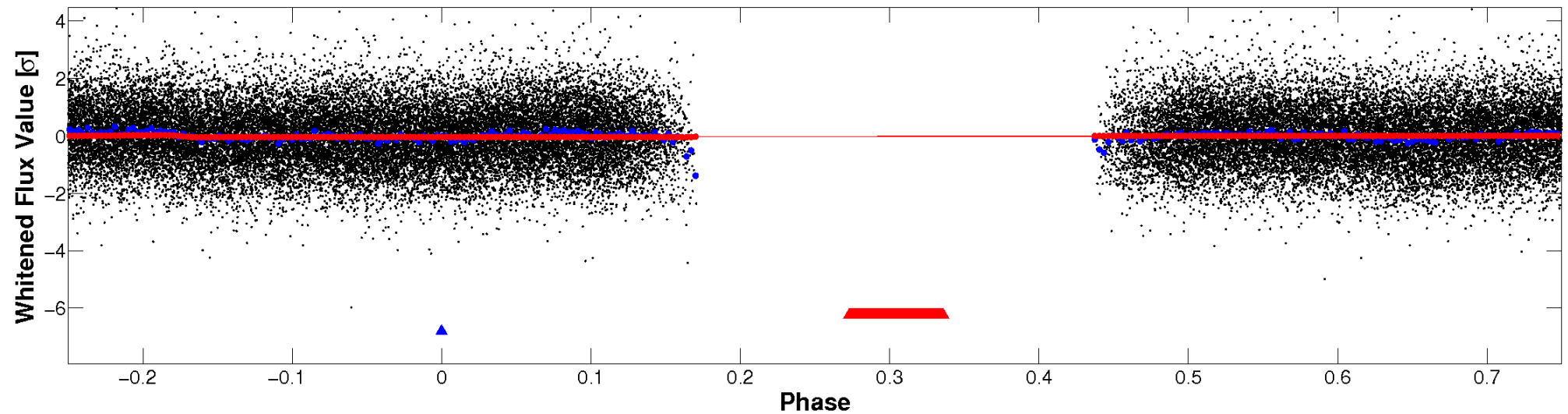


Non-Whitened Vs. Whitened Light Curve

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

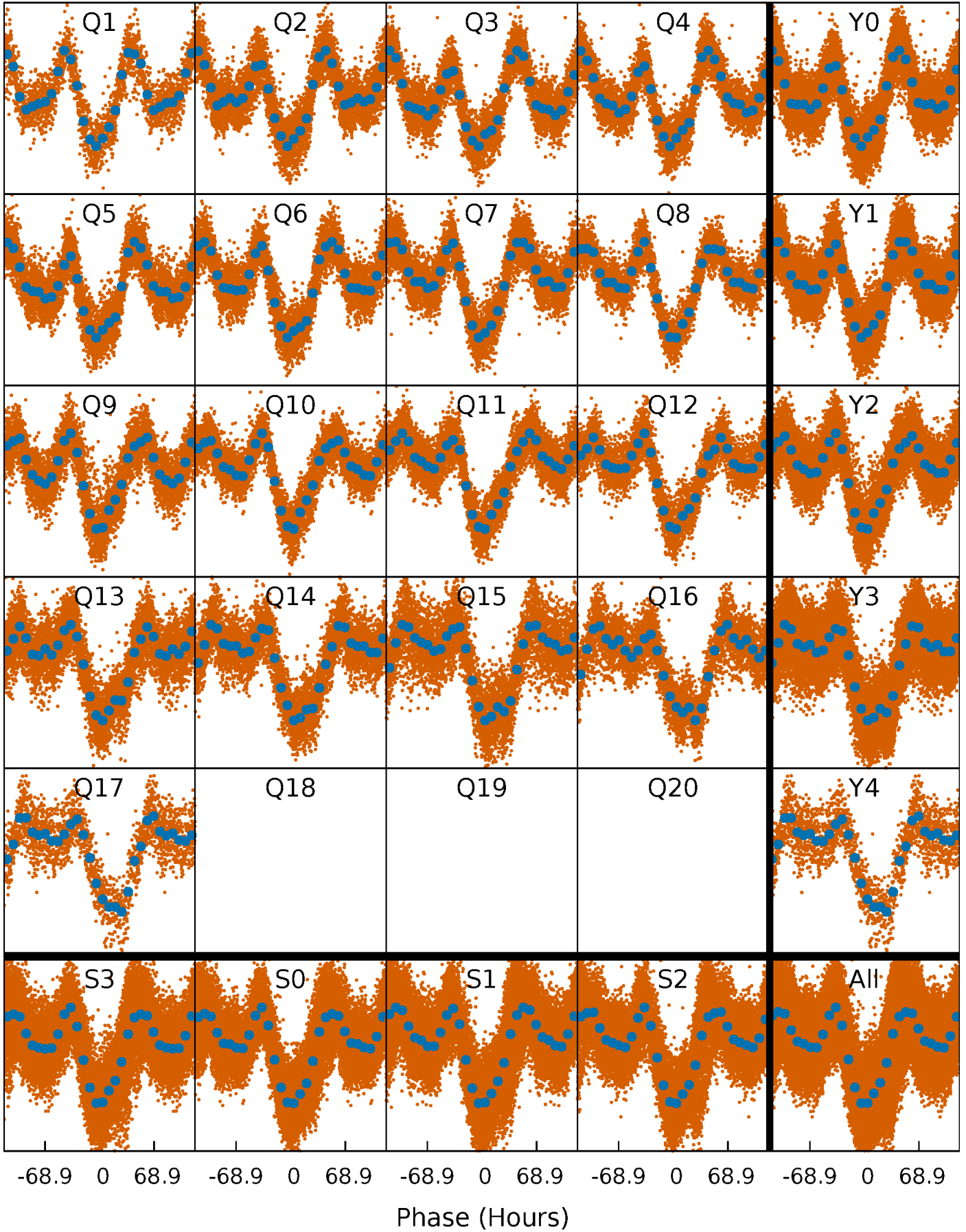


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



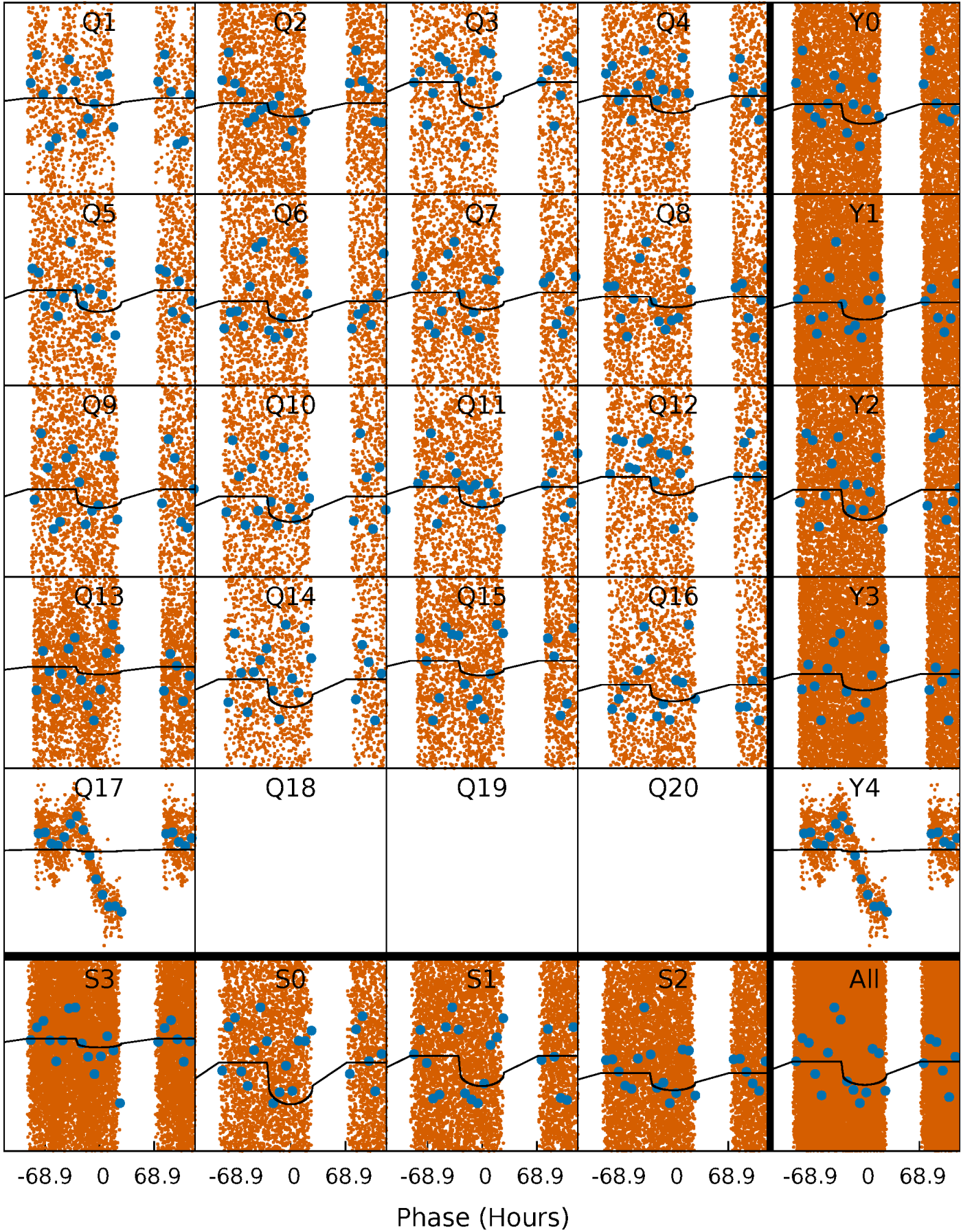
PDC Quarter-Phased Transit Curves

TCE 007024928-02 P= 6.727327 Days $T_0=137.843057$ (BKJD)



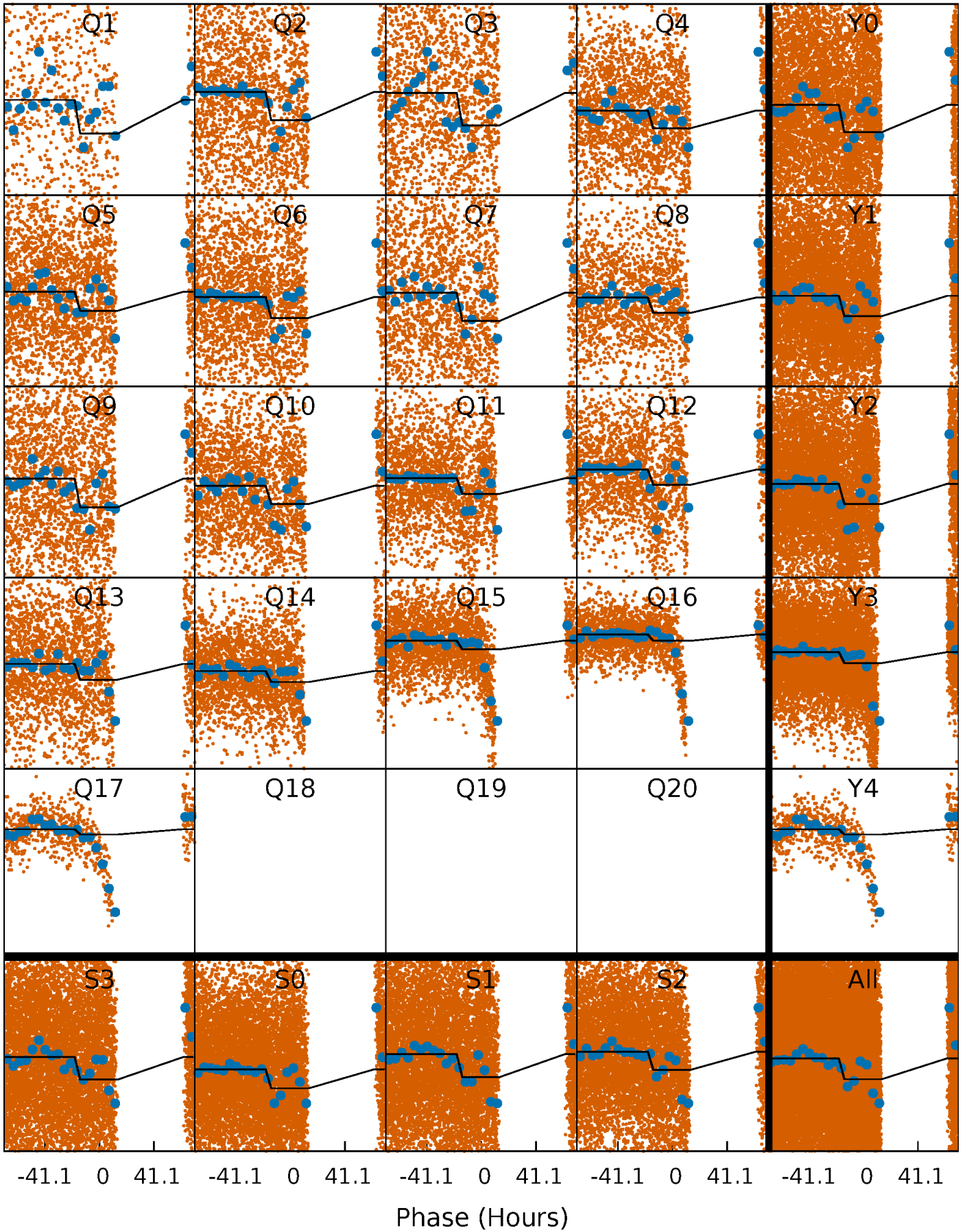
DV Quarter-Phased Transit Curves

TCE 007024928-02 P= 6.727327 Days $T_0=137.843057$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

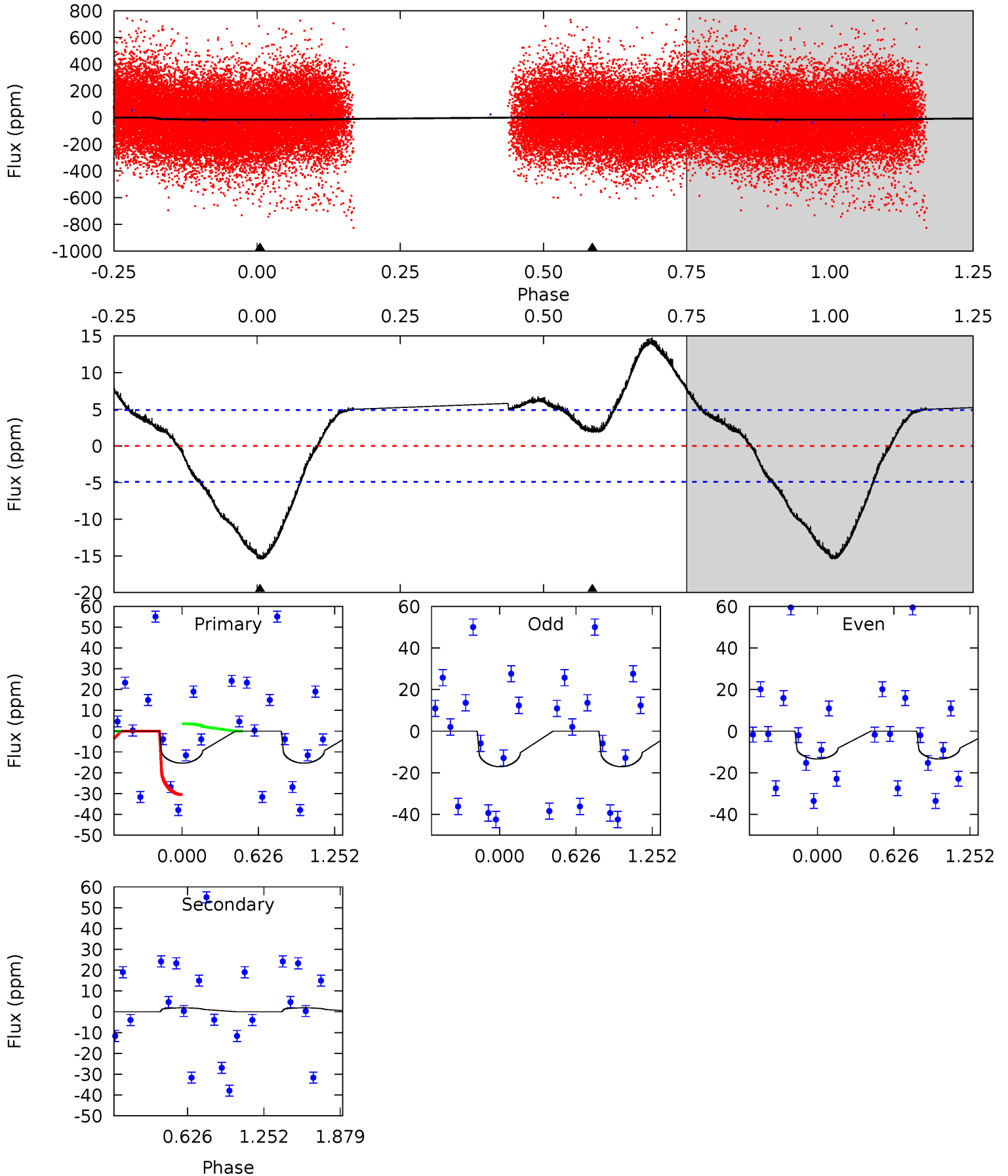
TCE 007024928-02 P= 6.730053 Days $T_0=138.000261$ (BKJD)



DV Model-Shift Uniqueness Test

007024928-02, P = 6.727327 Days, E = 131.115730 Days

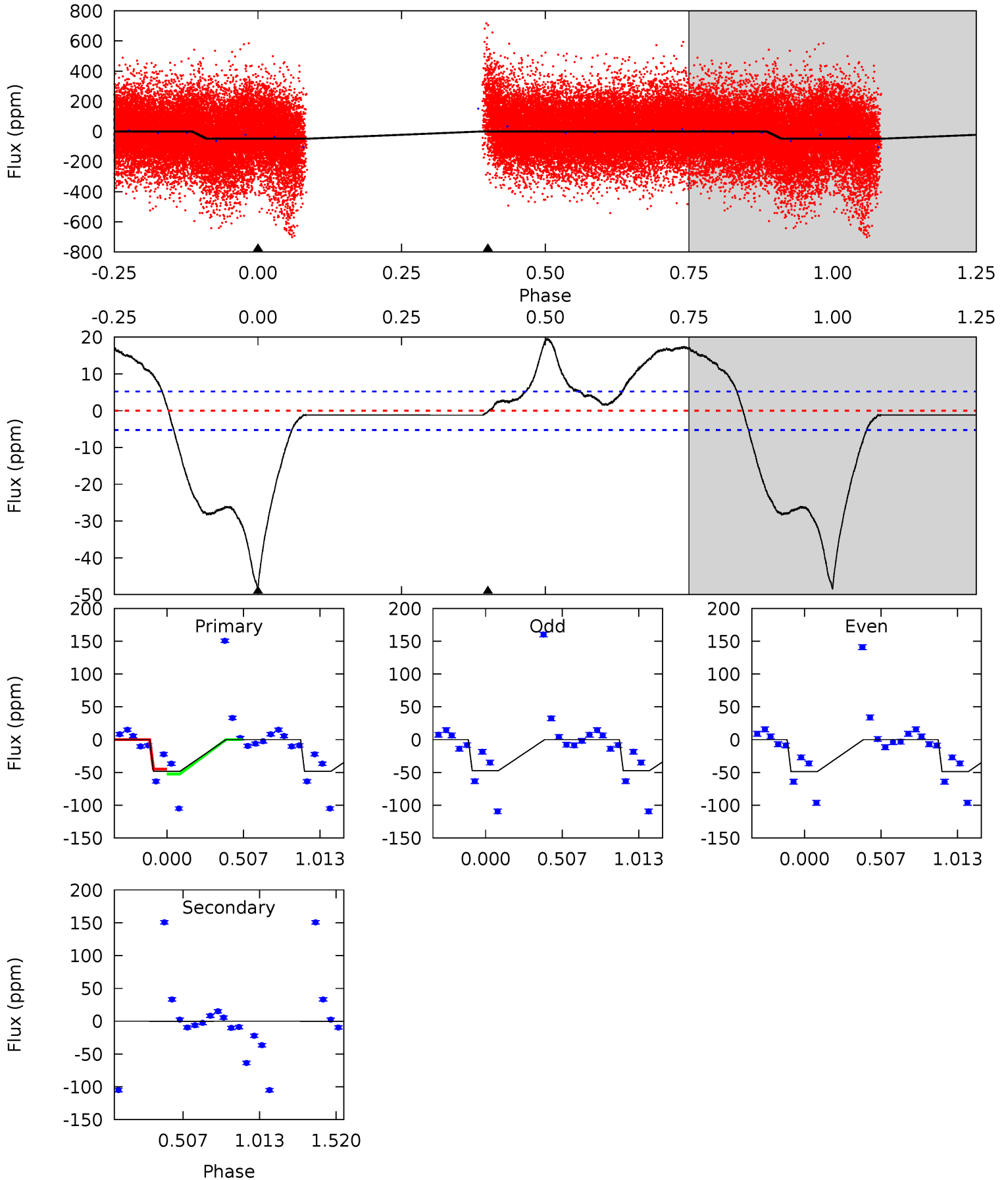
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	-1.59	0	0	4.16	0.49	2.74	13.1	13.1	-1.59	-1.59	1.58	1.57	0.49	11.0



Alt Model-Shift Uniqueness Test

007024928-02, P = 6.730053 Days, E = 131.270208 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.9	0.26	0	0	4.21	0.66	7.49	38.9	38.9	0.26	0.26	0.59	1.29	0.29	2.24



Stellar Parameters For KIC 007024928

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	6828^{+71}_{-81}	$4.207^{+0.064}_{-0.104}$	$0.040^{+0.150}_{-0.150}$	$1.541^{+0.236}_{-0.138}$	$1.395^{+0.099}_{-0.079}$	$0.537^{+0.151}_{-0.167}$
	+1%/-1%	+2%/-2%	+375%/-375%	+15%/-9%	+7%/-6%	+28%/-31%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 007024928-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	2 ± 1	$0.87^{+0.14}_{-0.14}$	1874^{+83}_{-51}	-3942^{+500}_{-419}	$-8.624^{+5.095}_{-6.740}$
Alt.	-0 ± 1	$1.19^{+0.16}_{-0.15}$	1876^{+70}_{-50}	2611^{+736}_{-5823}	$0.858^{+2.763}_{-3.063}$

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 $A_{obs} \gg 1.0$

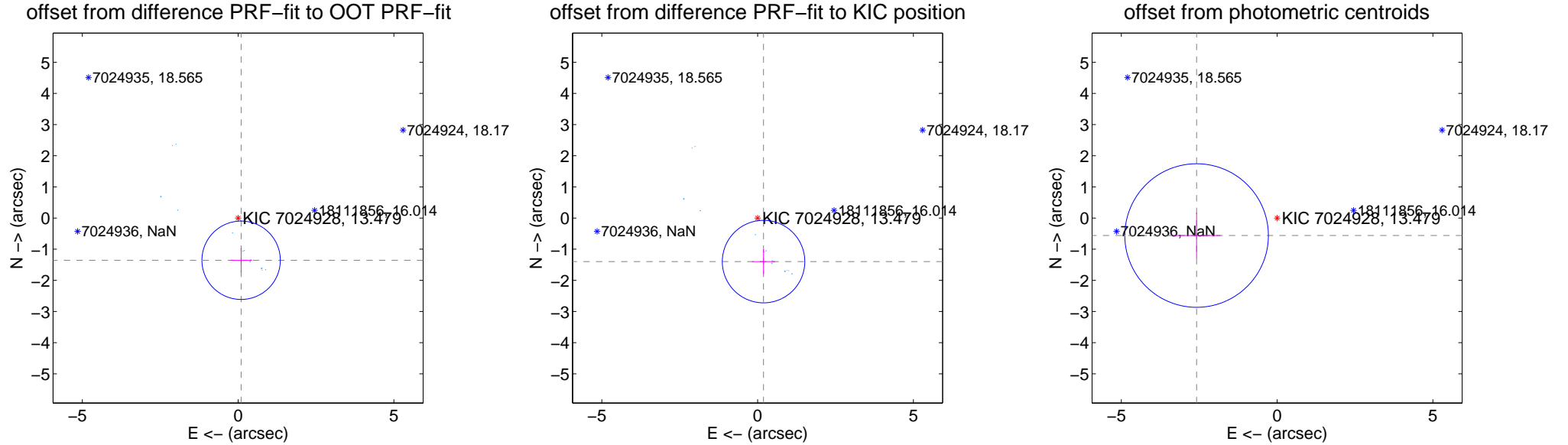
DV Centroid Data

Supplemental centroid analysis for 007024928-02. Kepler magnitude: 13.48. Transit SNR 5.77

There are 13 quarters with good PRF difference image offsets

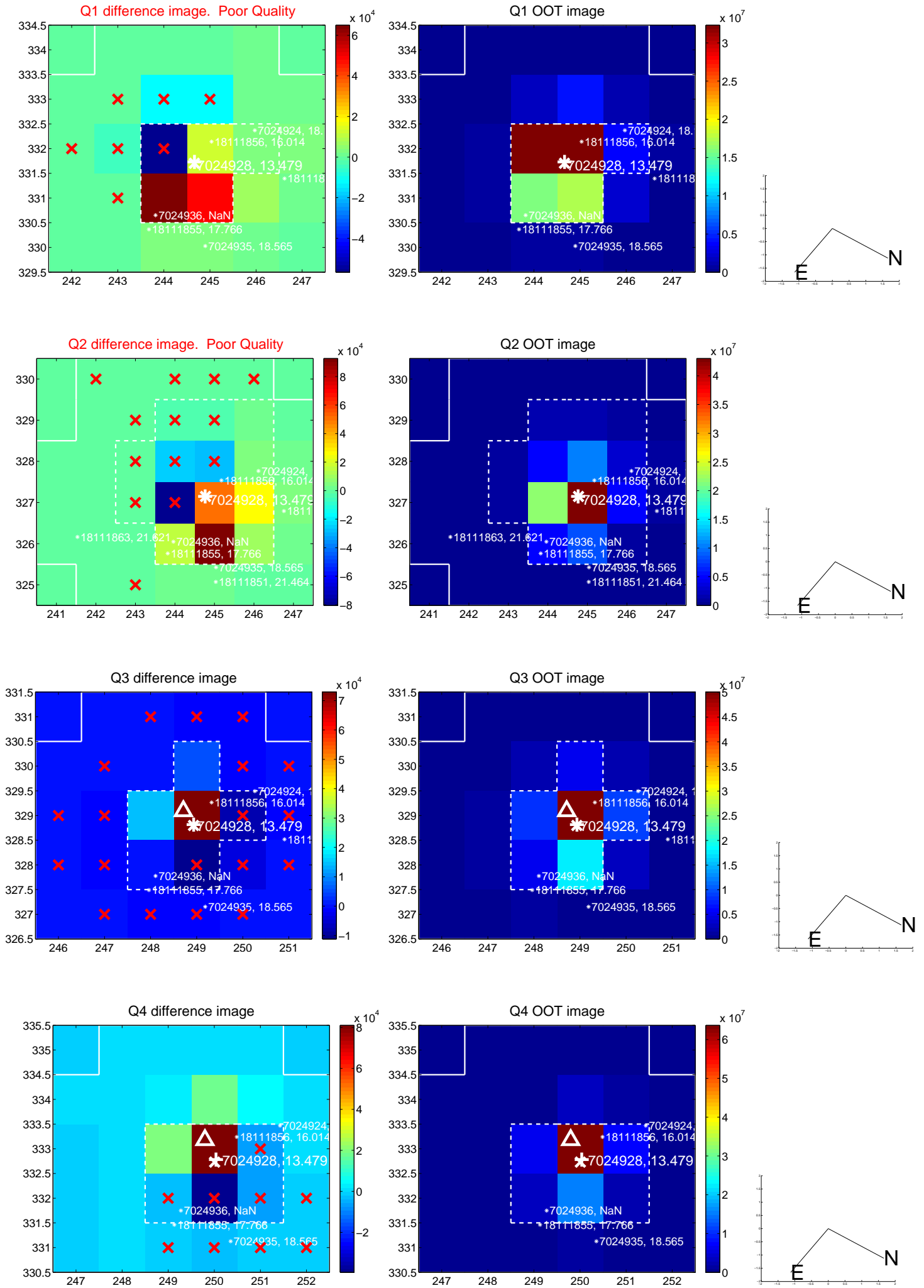
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.358 ± 0.419	3.24	-0.097 ± 0.349	-1.355 ± 0.398
PRF-fit source offset from KIC position	1.410 ± 0.441	3.20	-0.191 ± 0.369	-1.397 ± 0.400
photometric centroid source offset	2.64 ± 0.77	3.44	2.58 ± 0.77	-0.56 ± 0.73

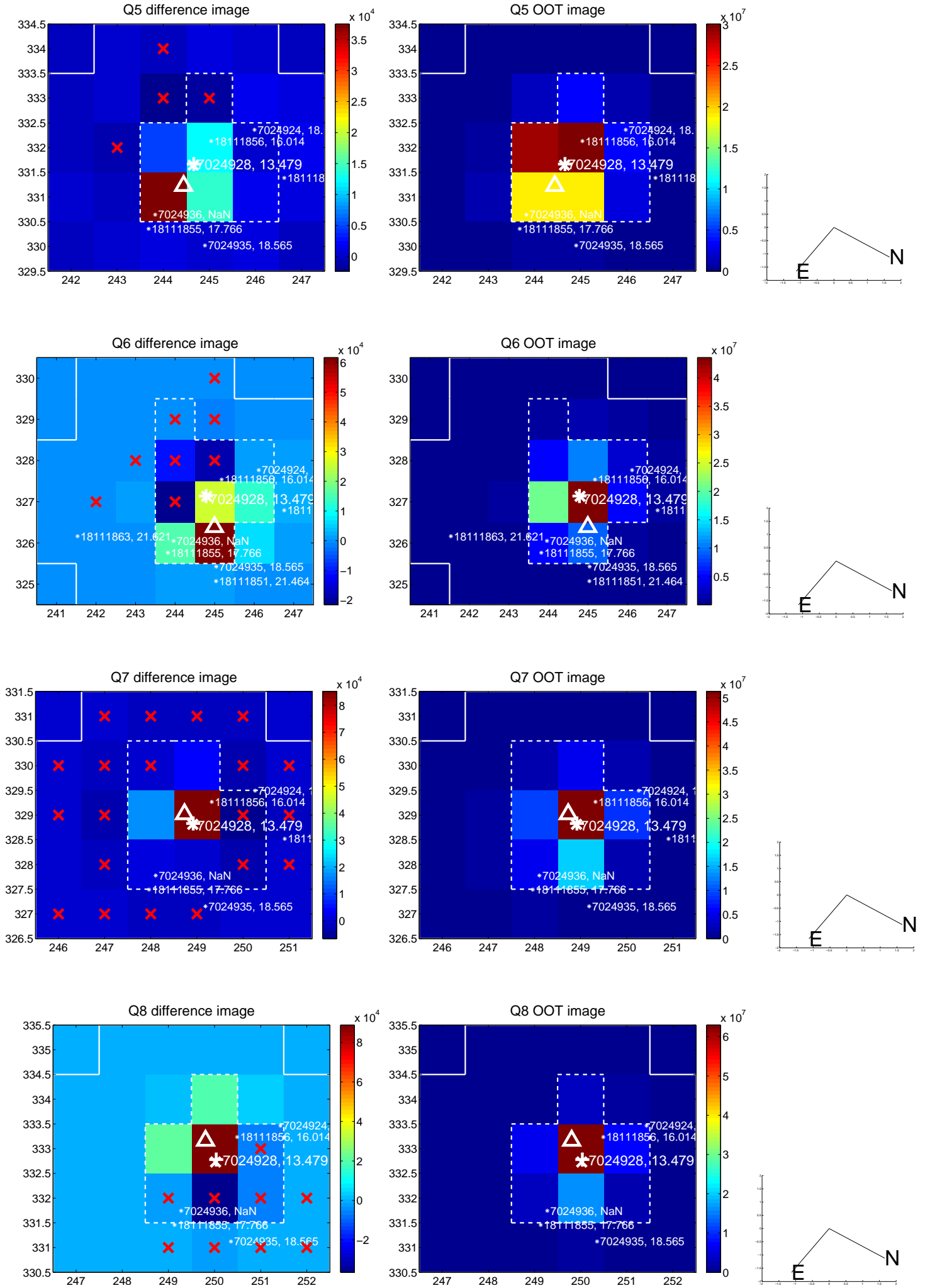


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

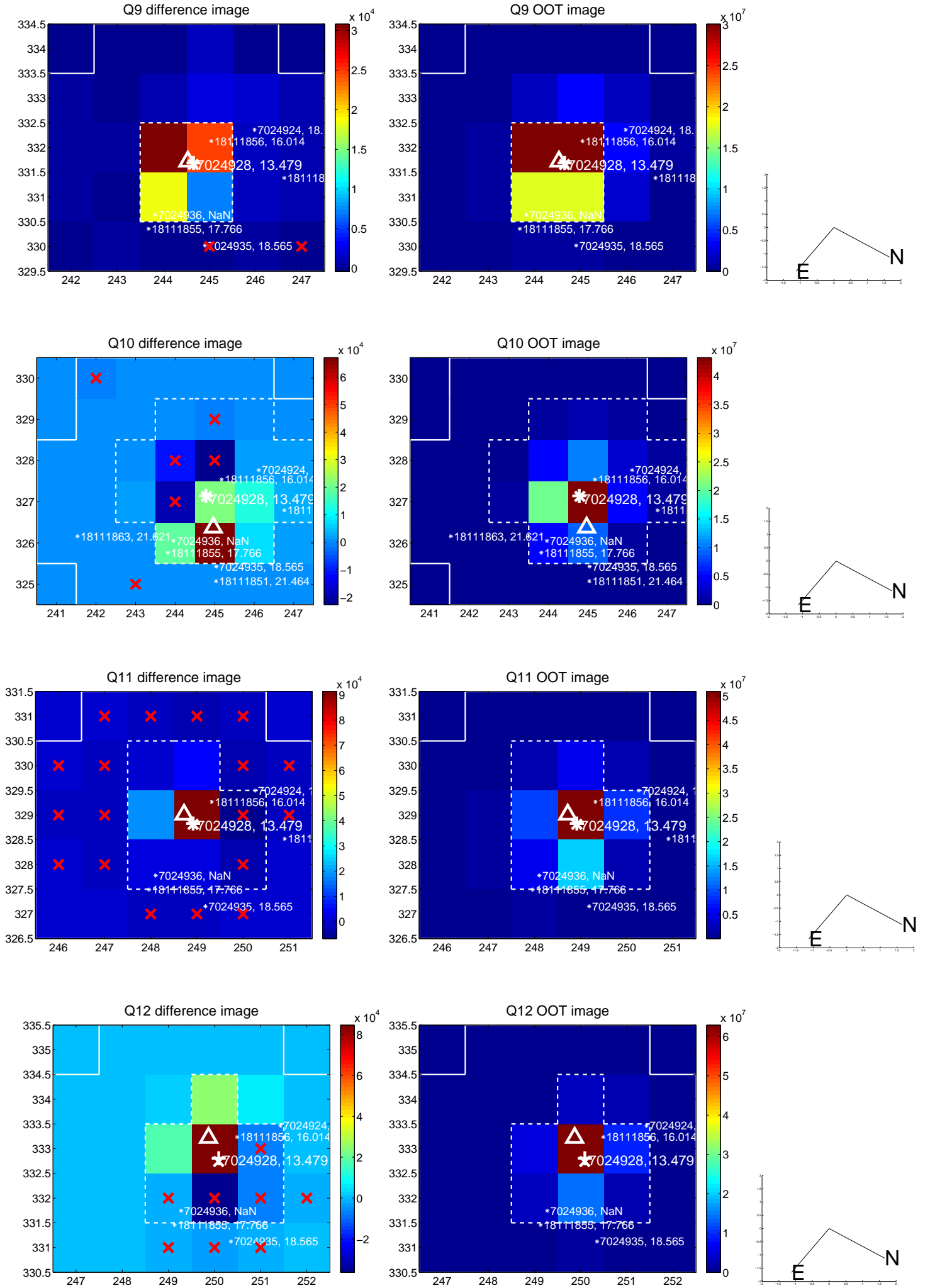
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



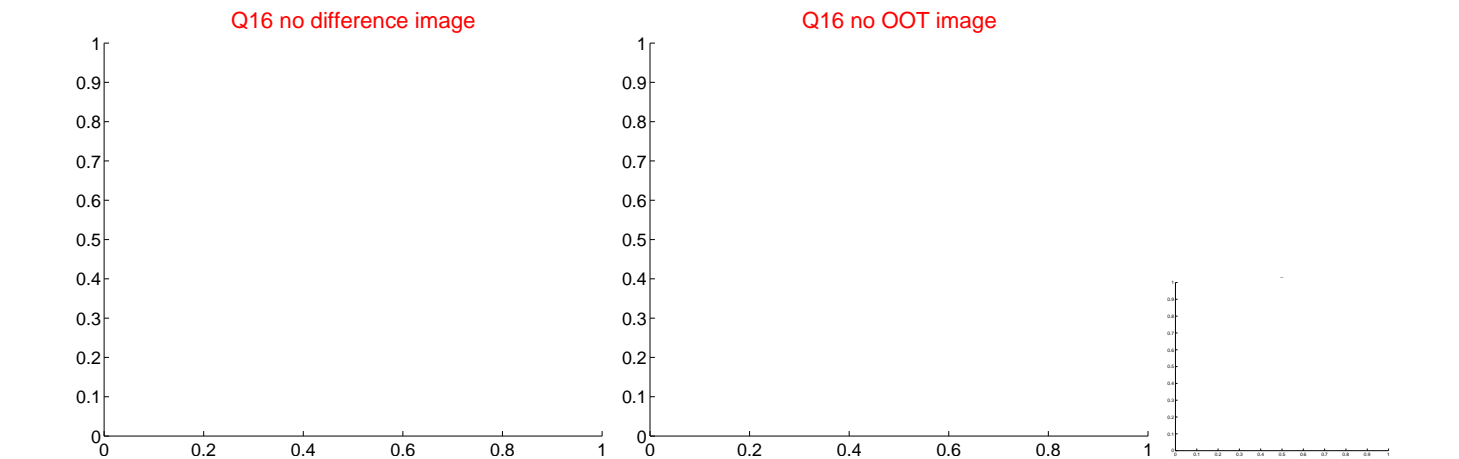
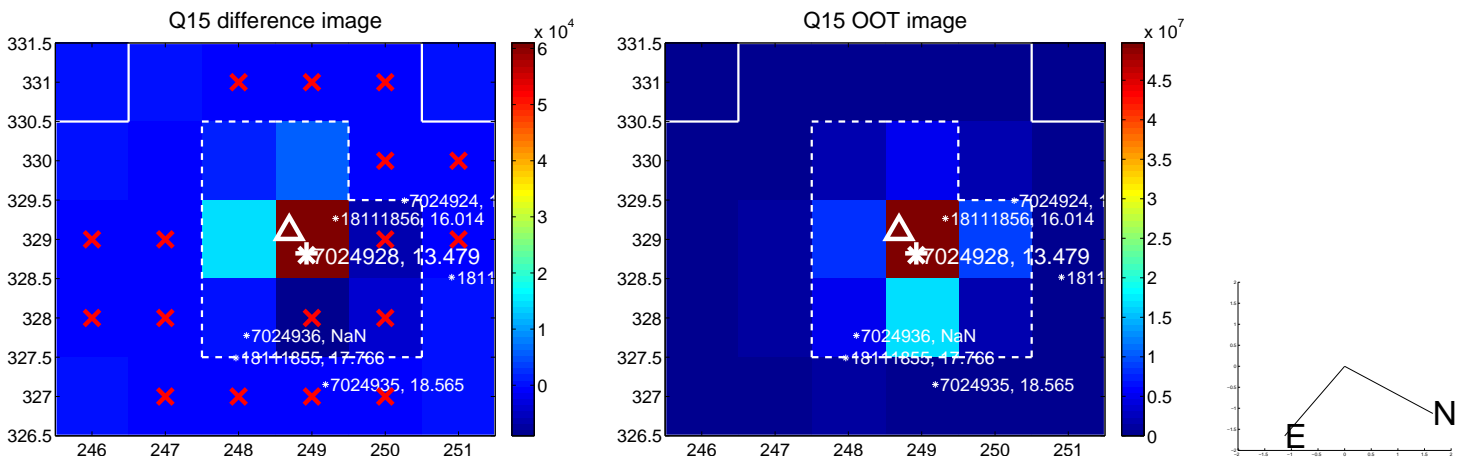
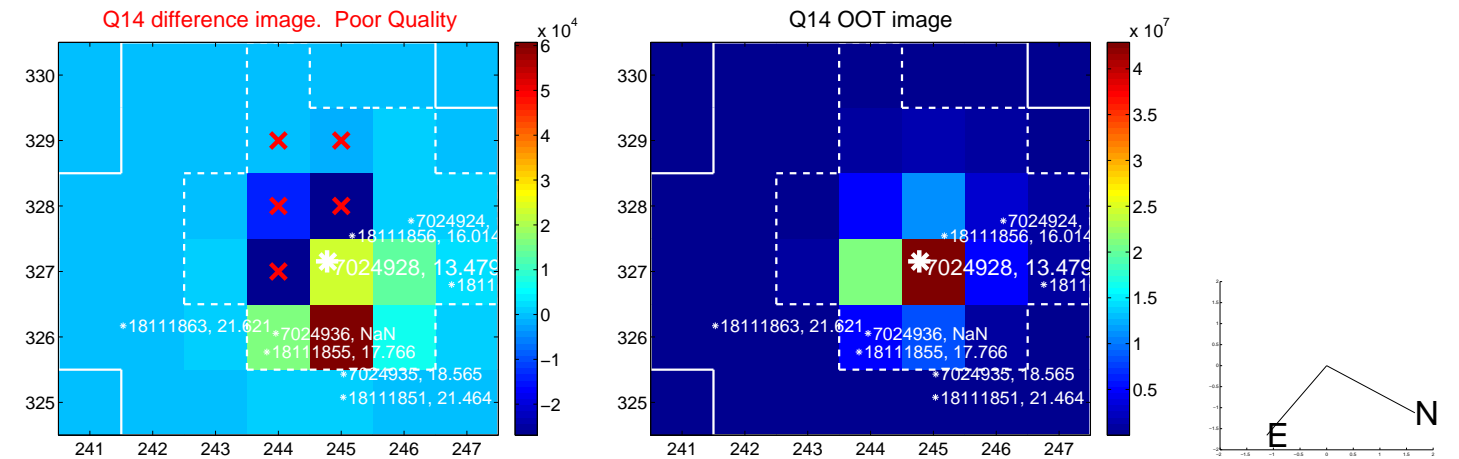
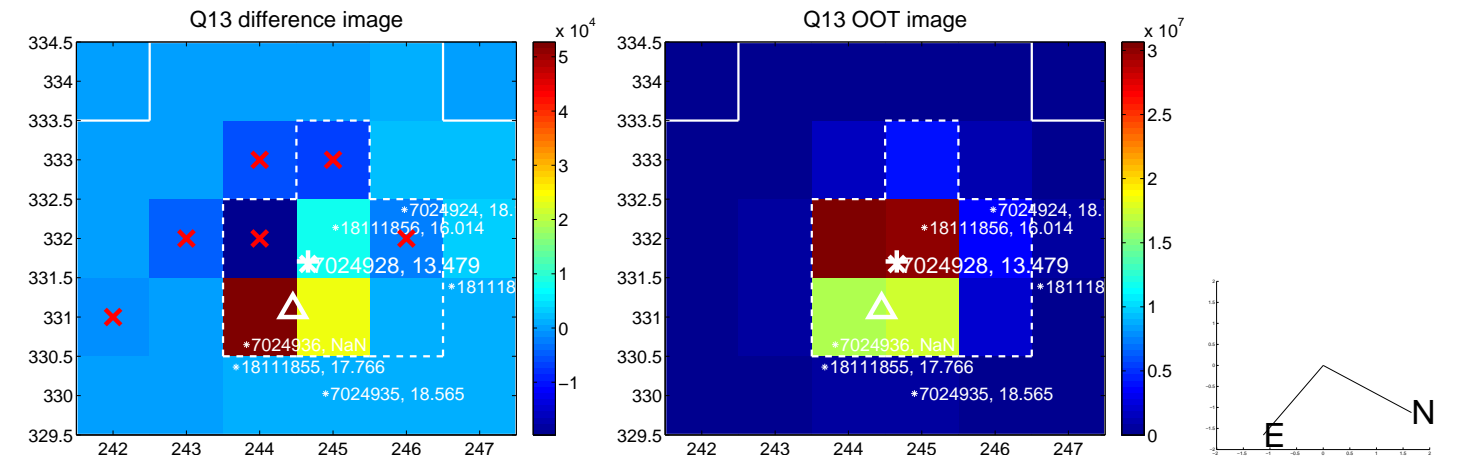
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



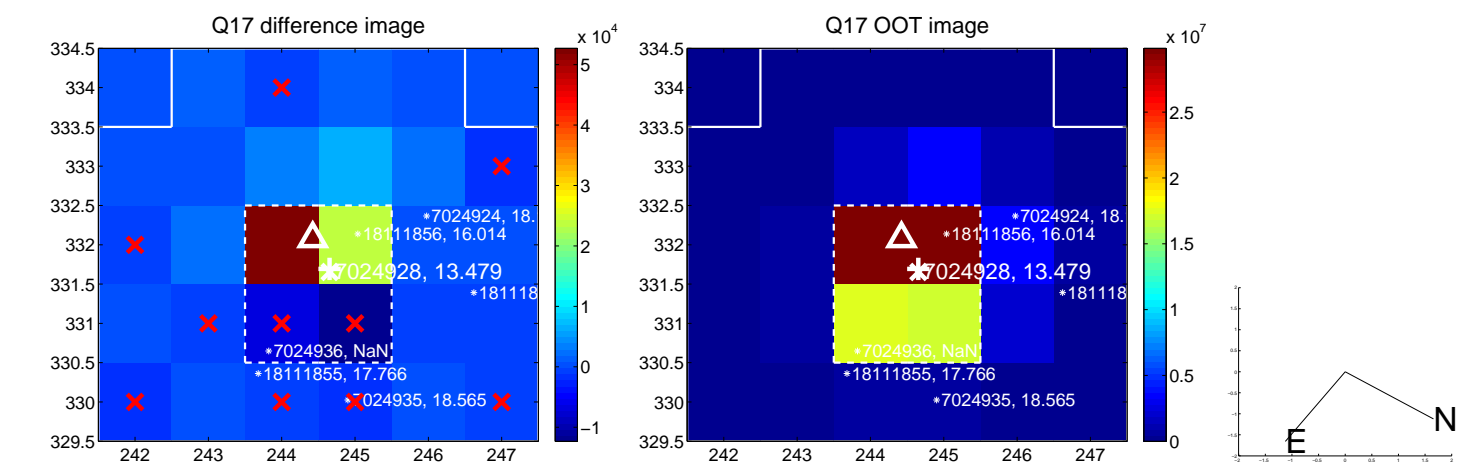
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



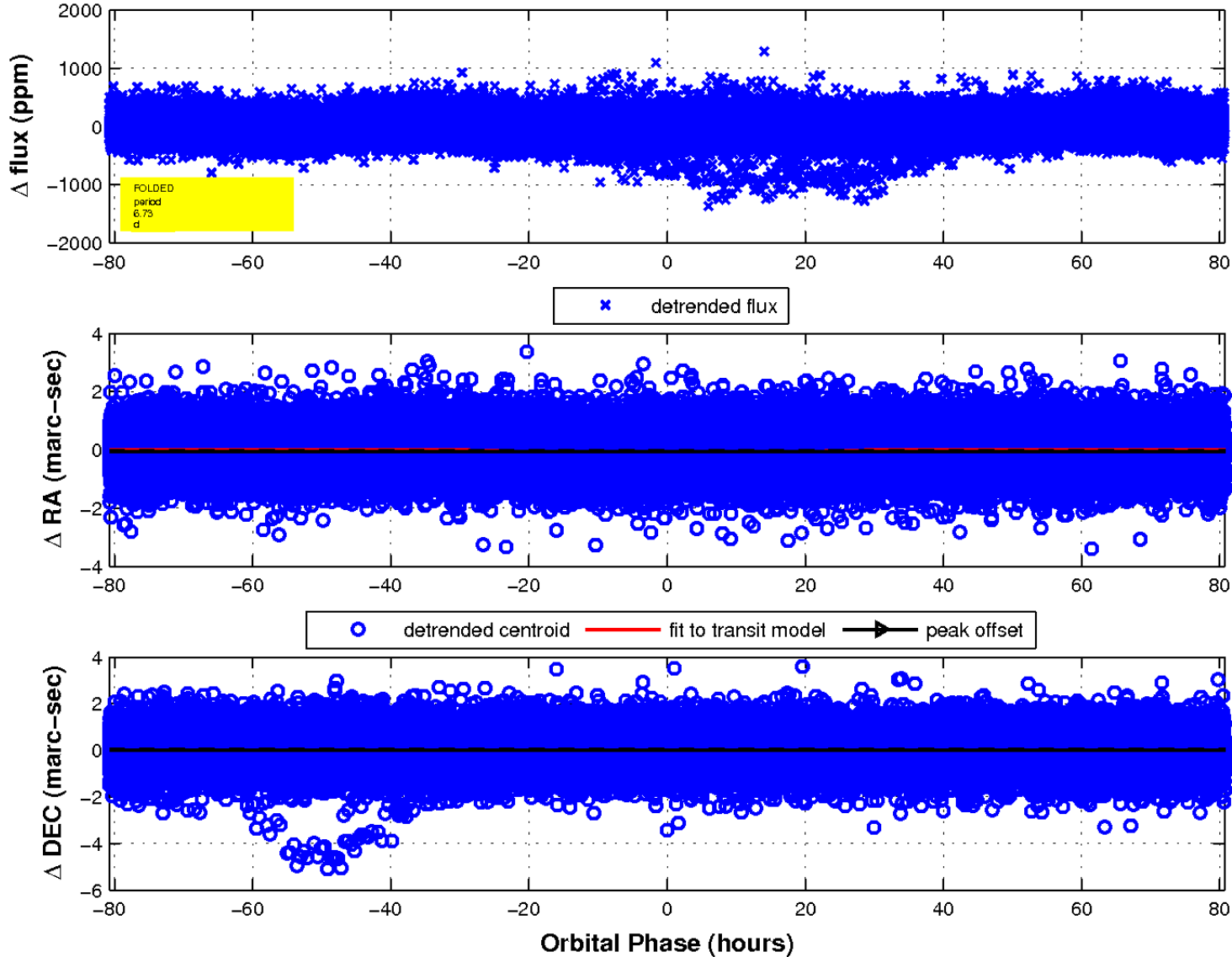
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

