

KIC 005730867

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})
005730867-01	OBS	No	0.870349	132.130336	69.1	3.749	9.4	11.1	1.58	7063	1.53	14488.77
005730867-02	OBS	No	3.823157	134.719999	258.1	10.362	9.7	11.8	1.58	7063	4.90	2014.00
005730867-03	OBS	No	103.984017	190.665842	830.3	8.312	9.3	7.1	1.58	7063	5.60	24.62
005730867-04	OBS	No	44.223679	168.334265	249.0	6.809	9.8	3.7	1.58	7063	2.64	76.99
005730867-05	OBS	No	4.239356	134.242280	146.2	12.500	9.0	-1.0	1.58	7063	1.93	1754.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005730867-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005730867-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

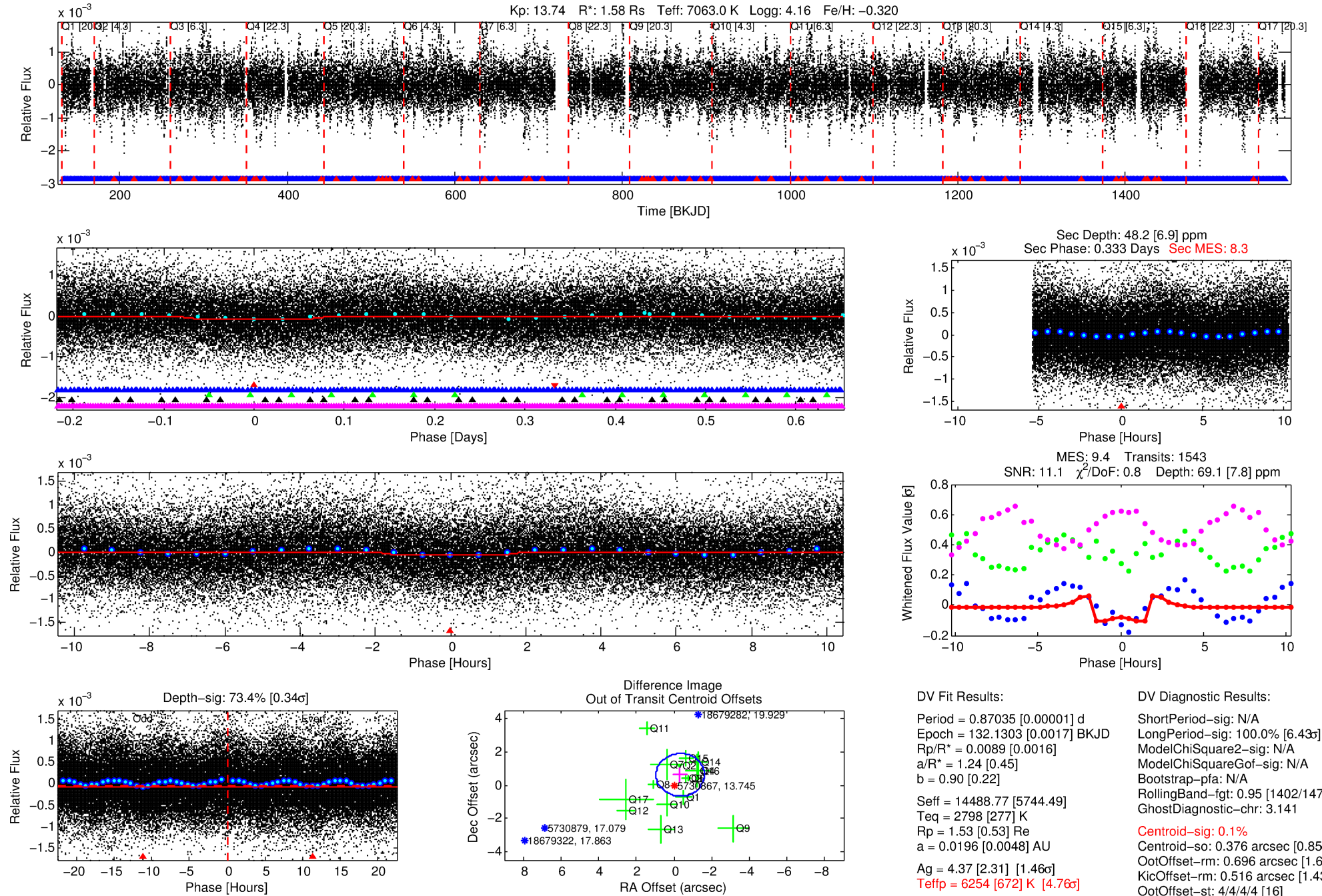
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005730867-01

No Significant Match Found

DV One-Page Summary

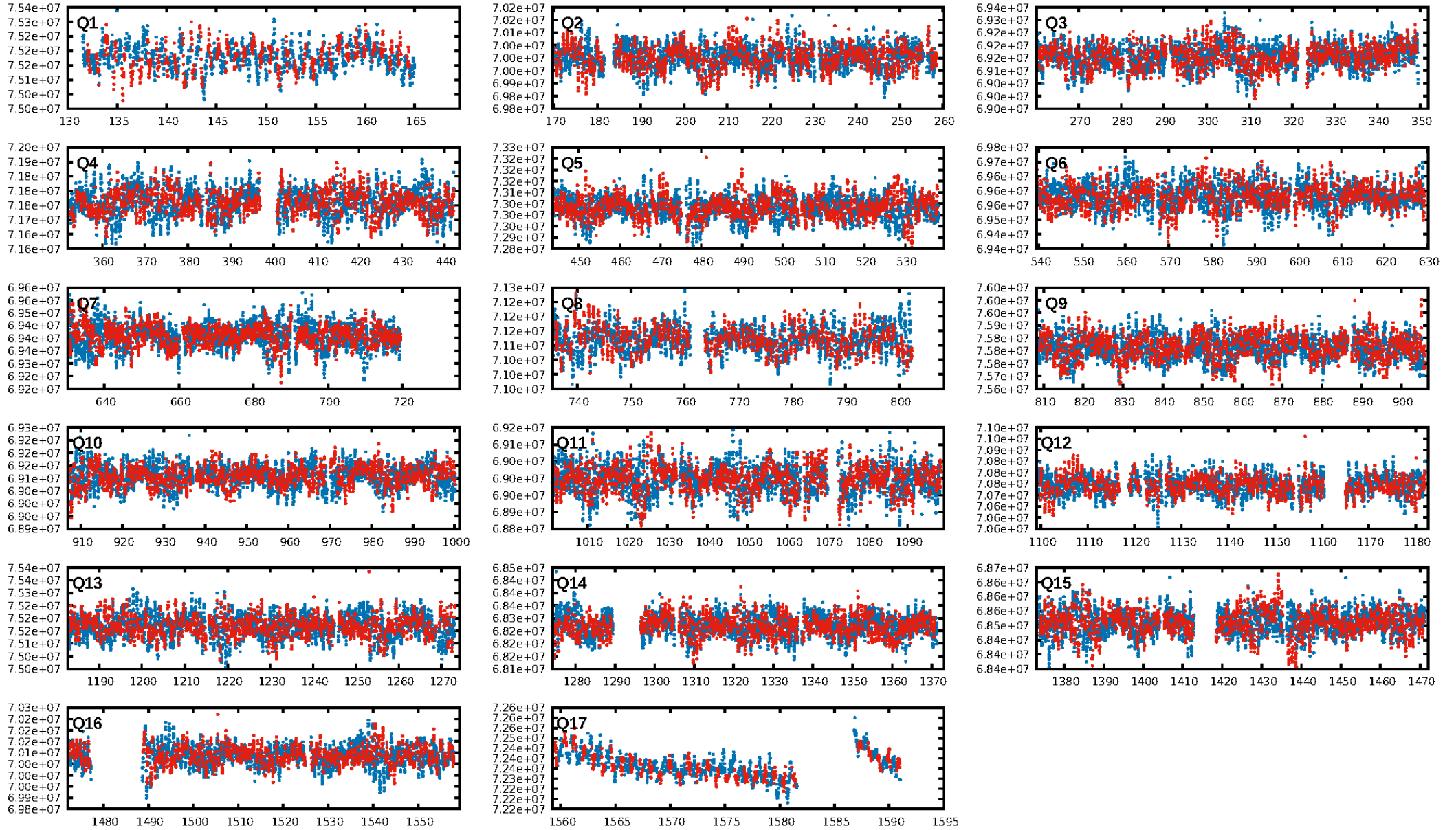
KIC: 5730867 Candidate: 1 of 5 Period: 0.870 d



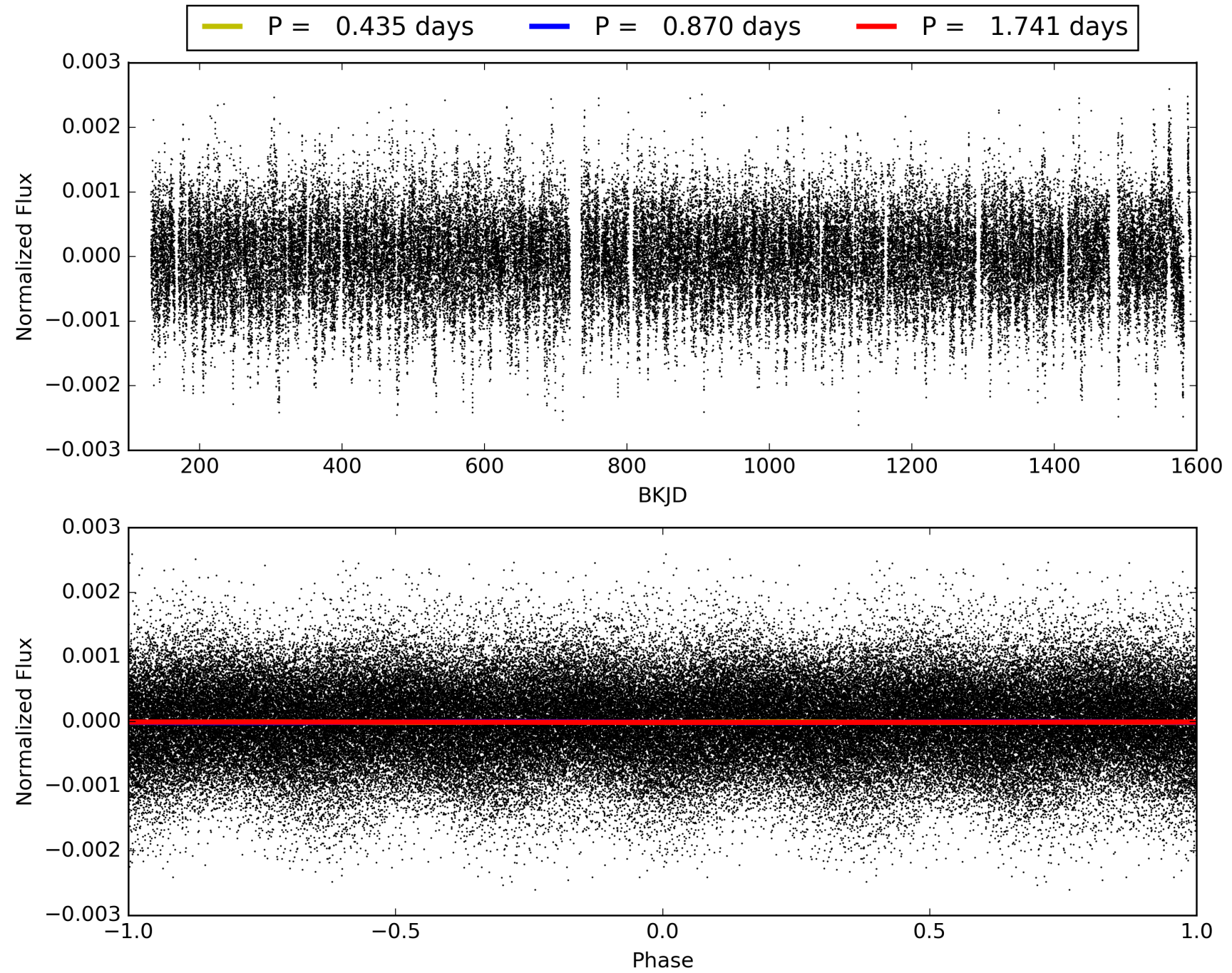
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:02:00 Z

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

TCE 005730867-01, PDC Light Curves

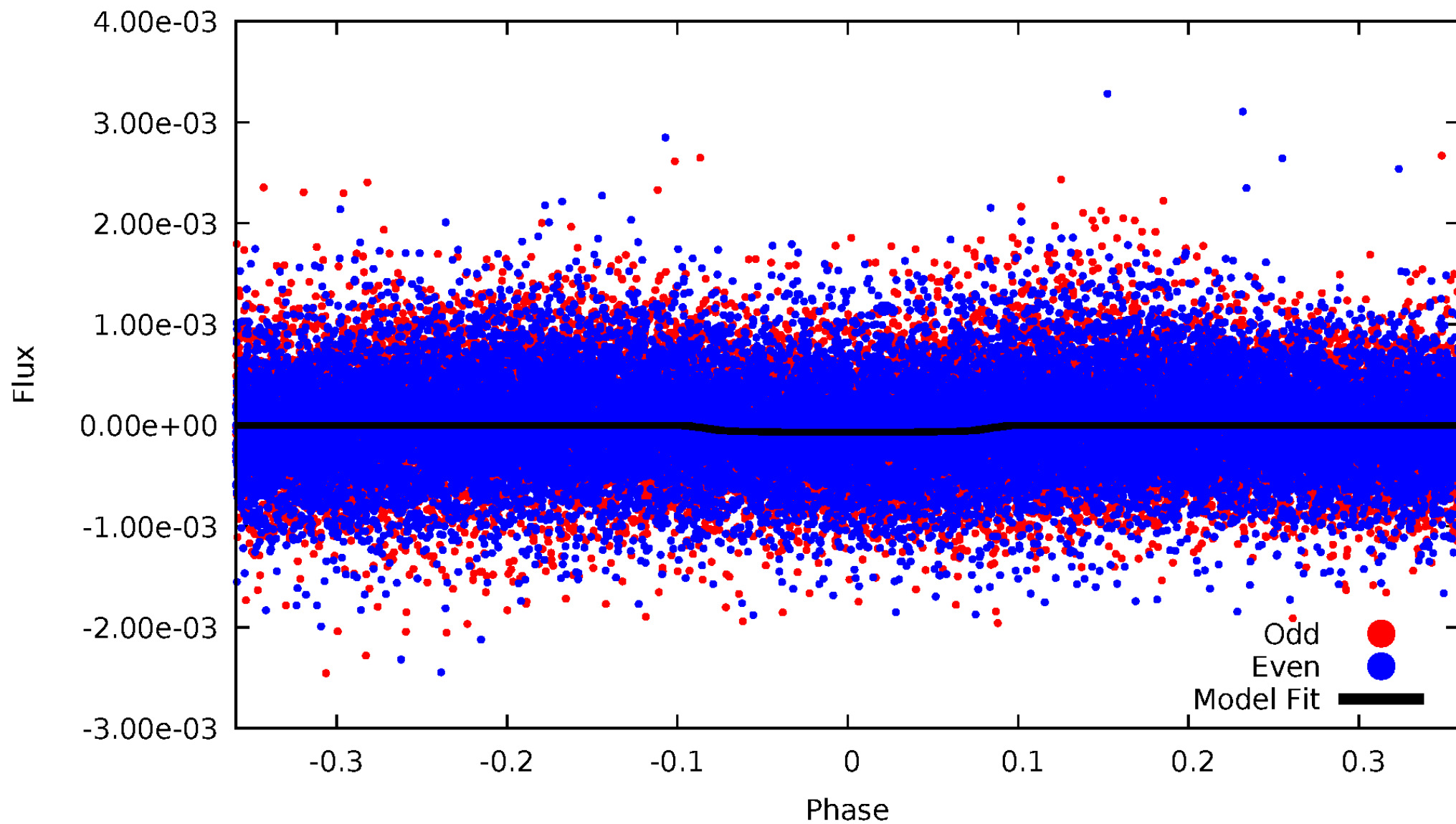


TCE 005730867-01



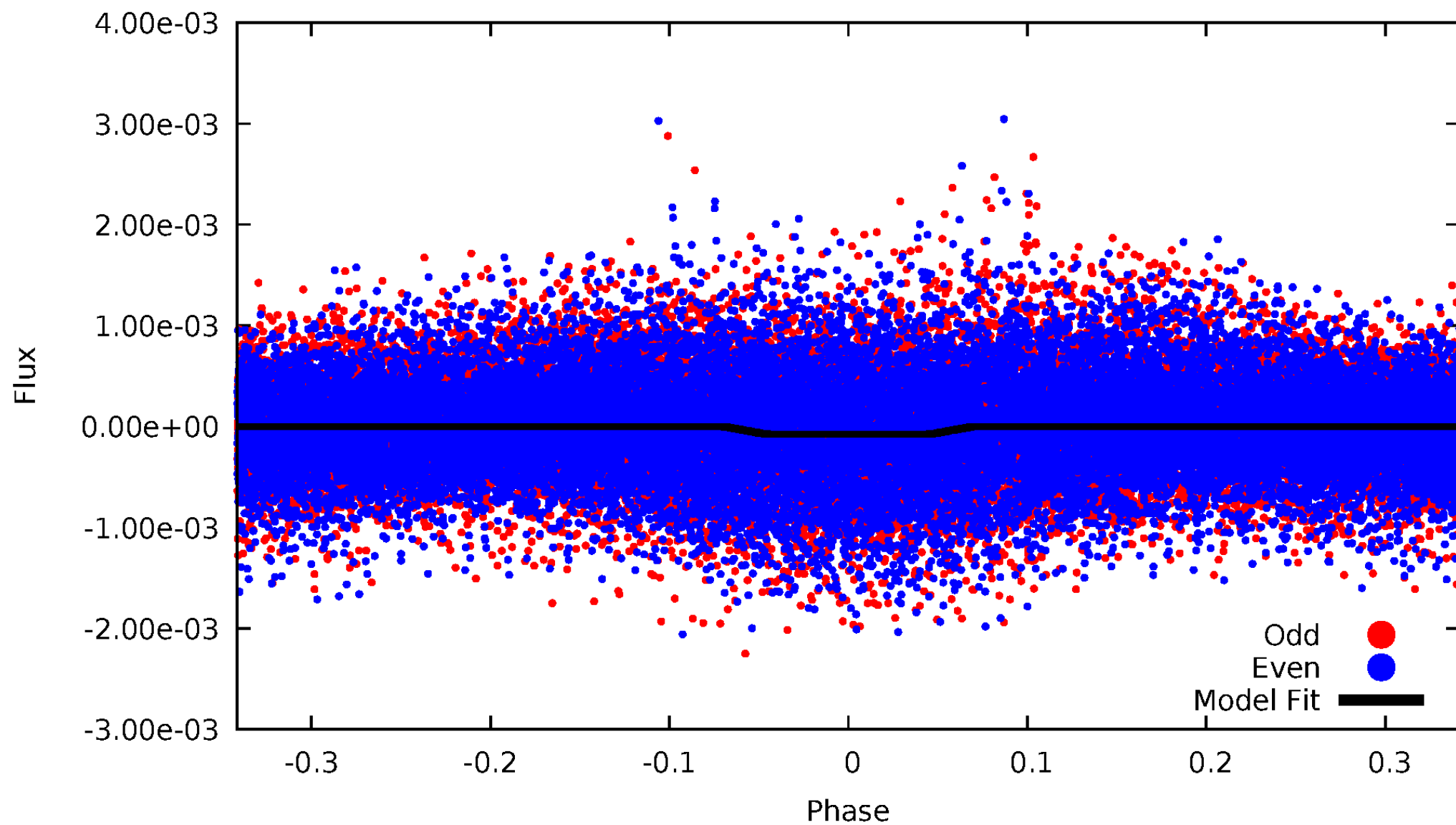
DV Odd/Even

TCE 005730867-01

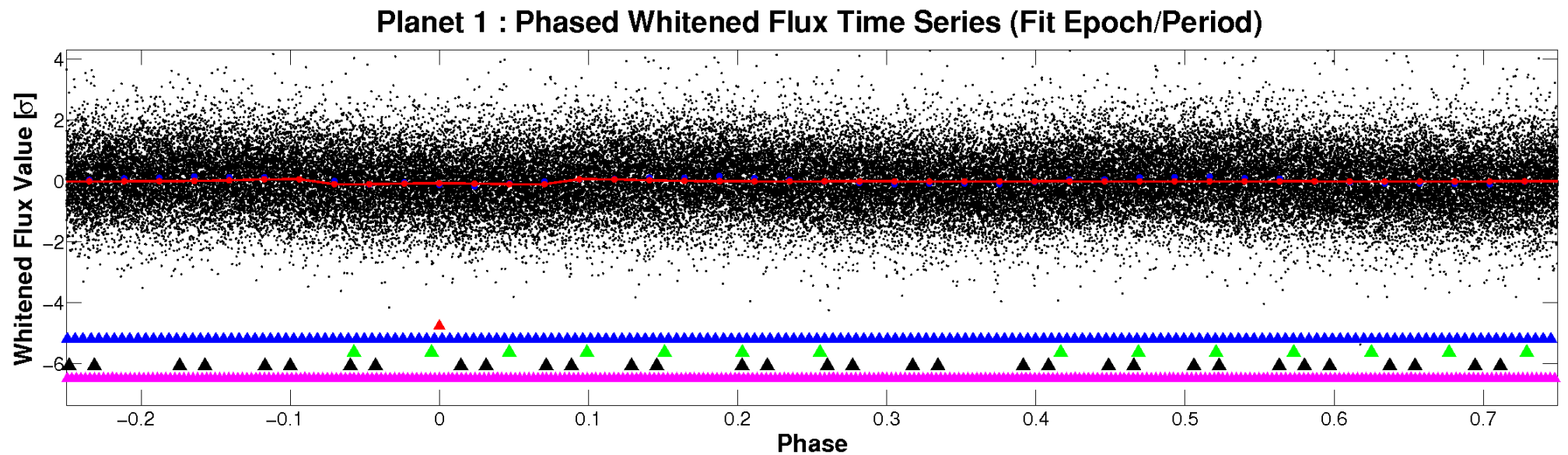
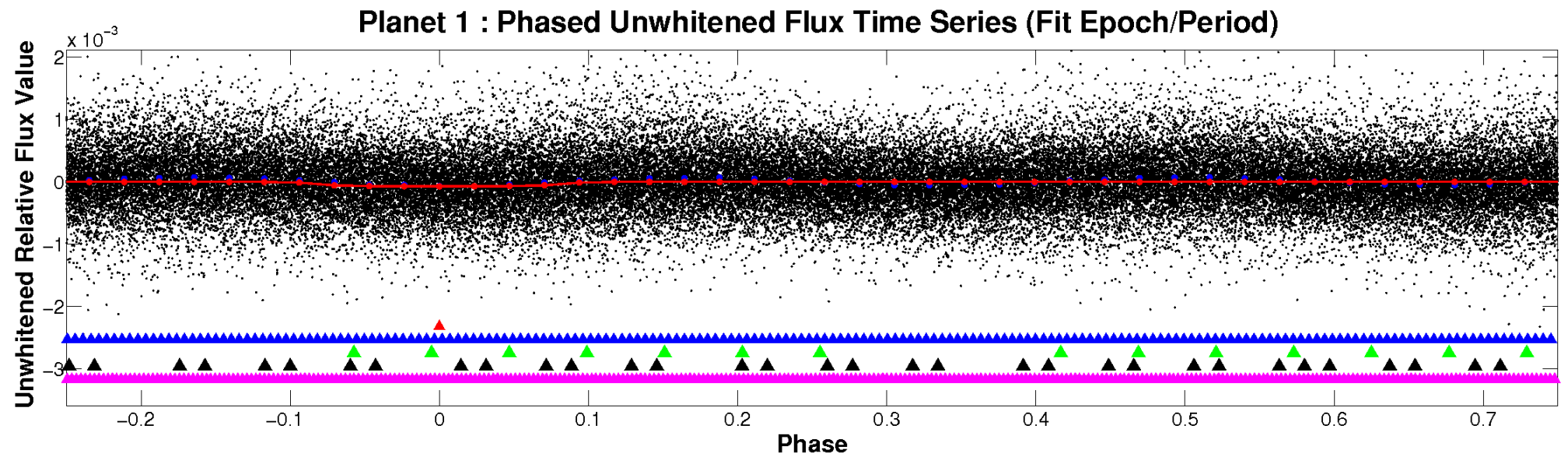


ALT Odd/Even

TCE 005730867-01

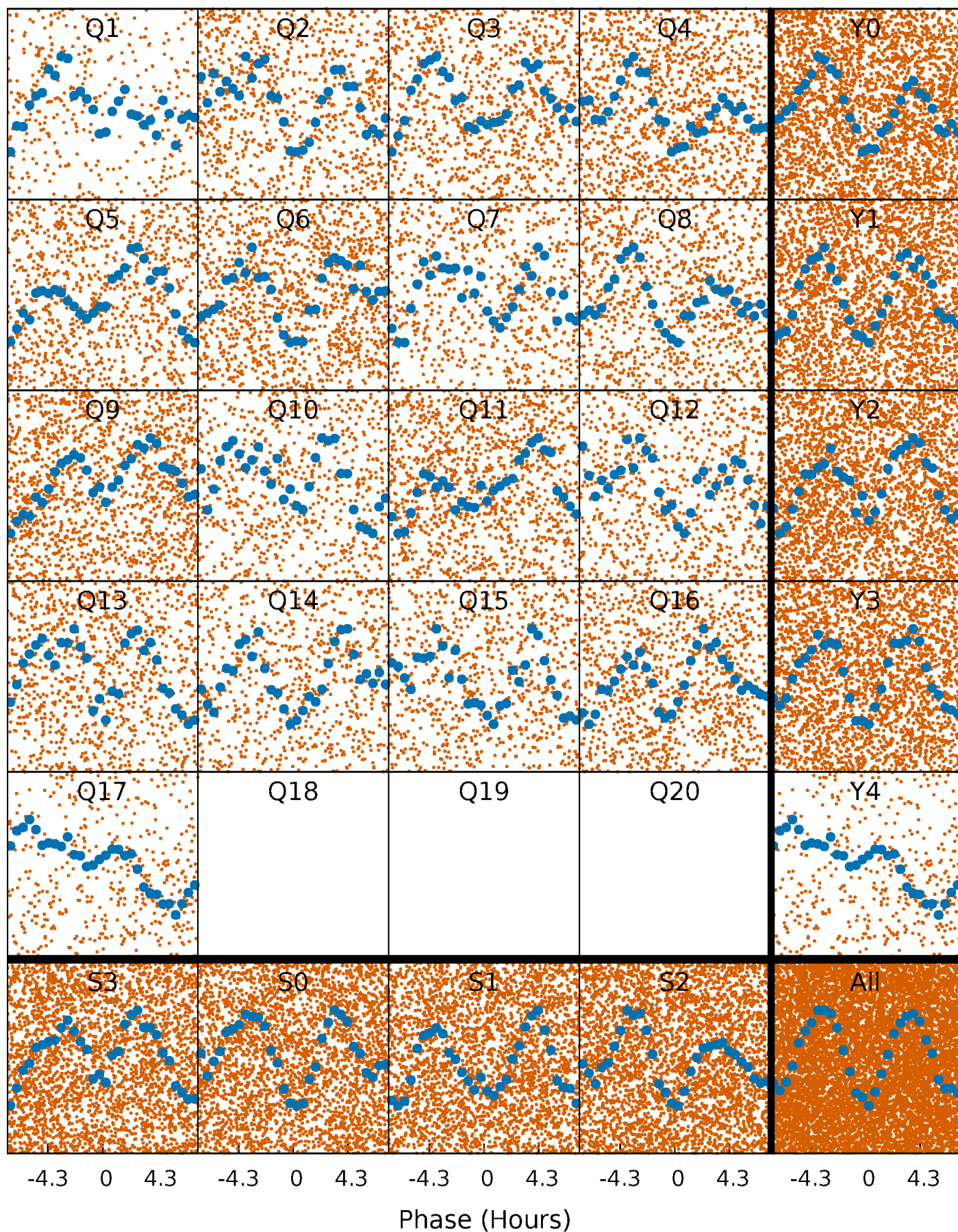


Non-Whitened Vs. Whitened Light Curve



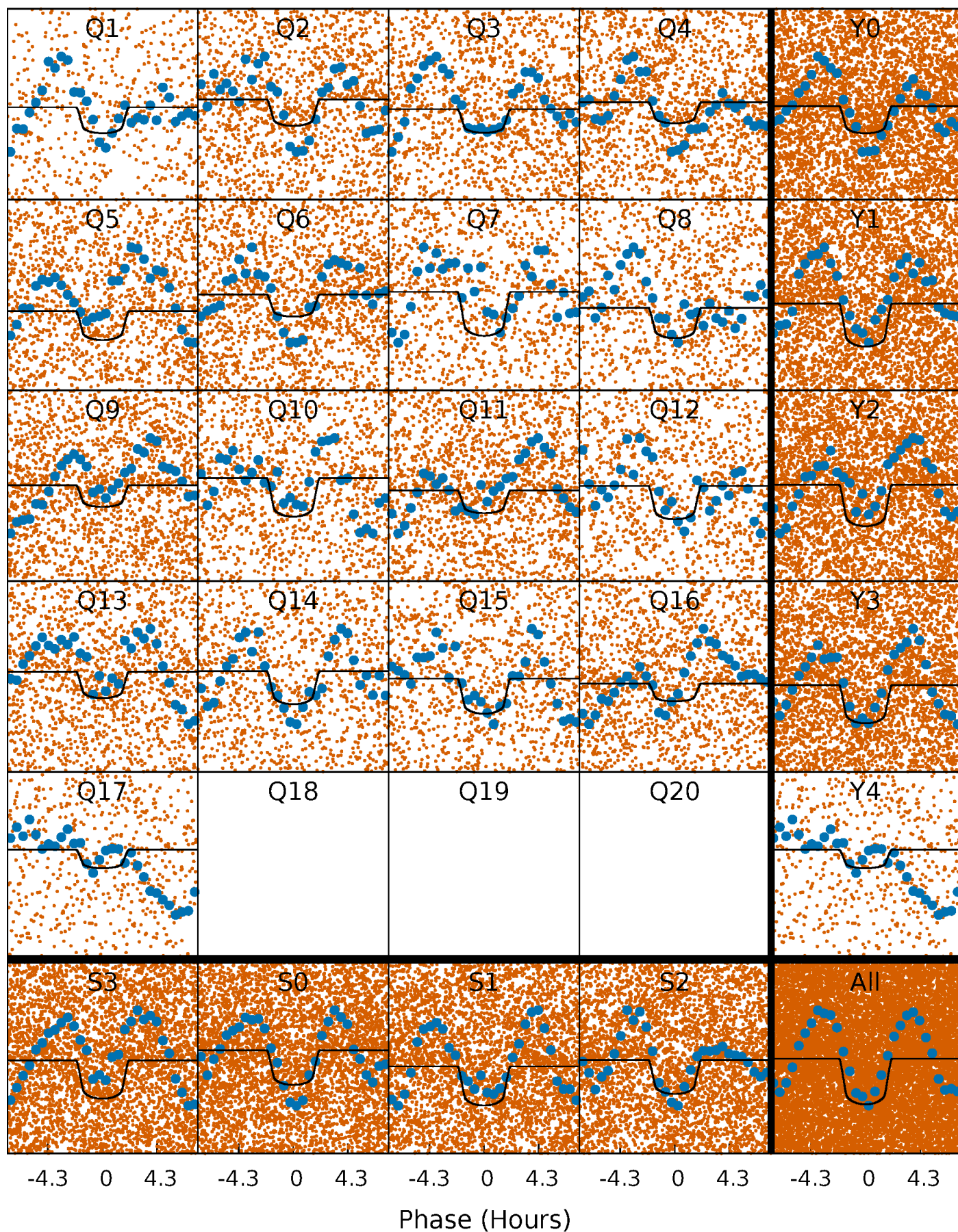
PDC Quarter-Phased Transit Curves

TCE 005730867-01 P= 0.870349 Days $T_0=132.130336$ (BKJD)



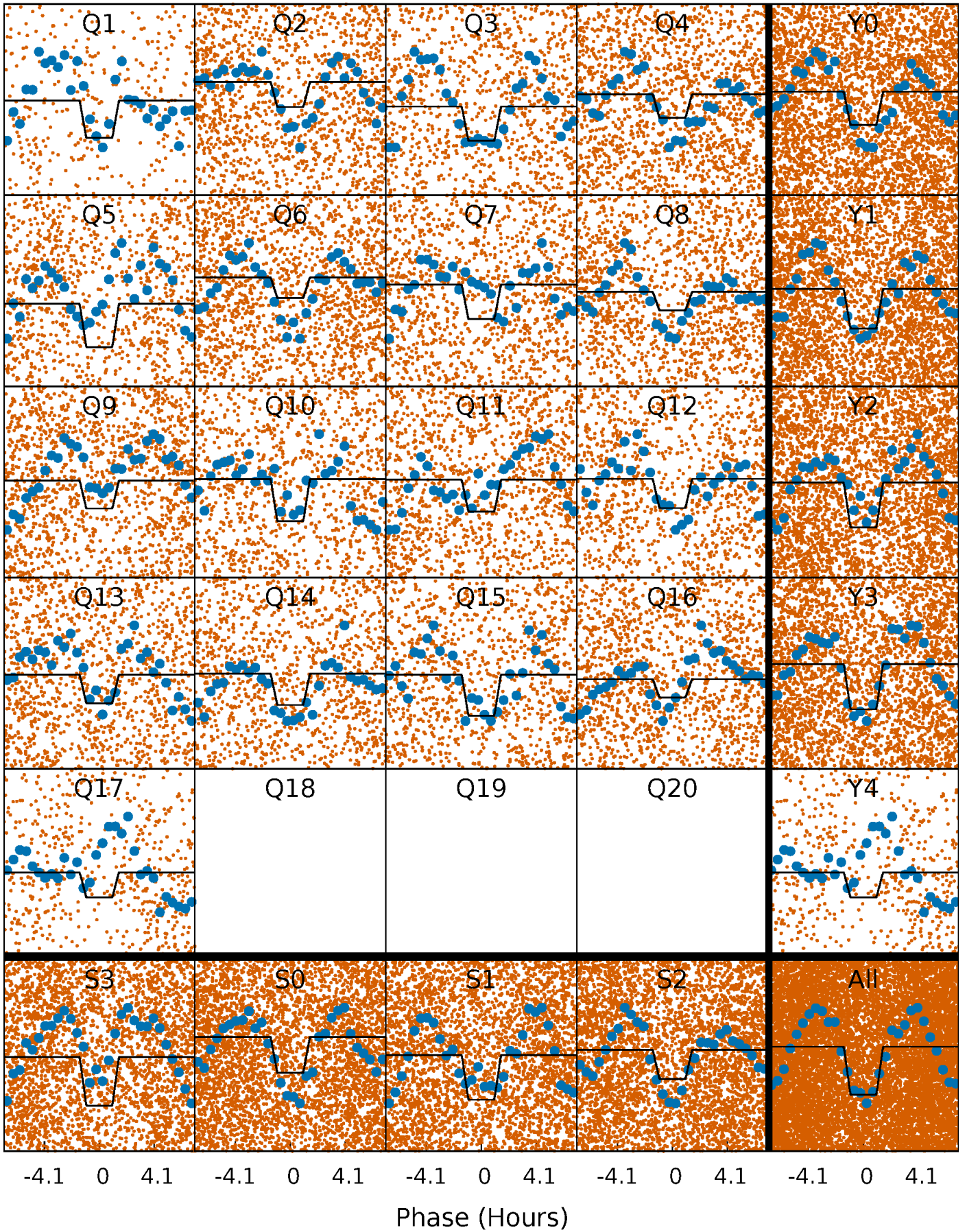
DV Quarter-Phased Transit Curves

TCE 005730867-01 P= 0.870349 Days $T_0=132.130336$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

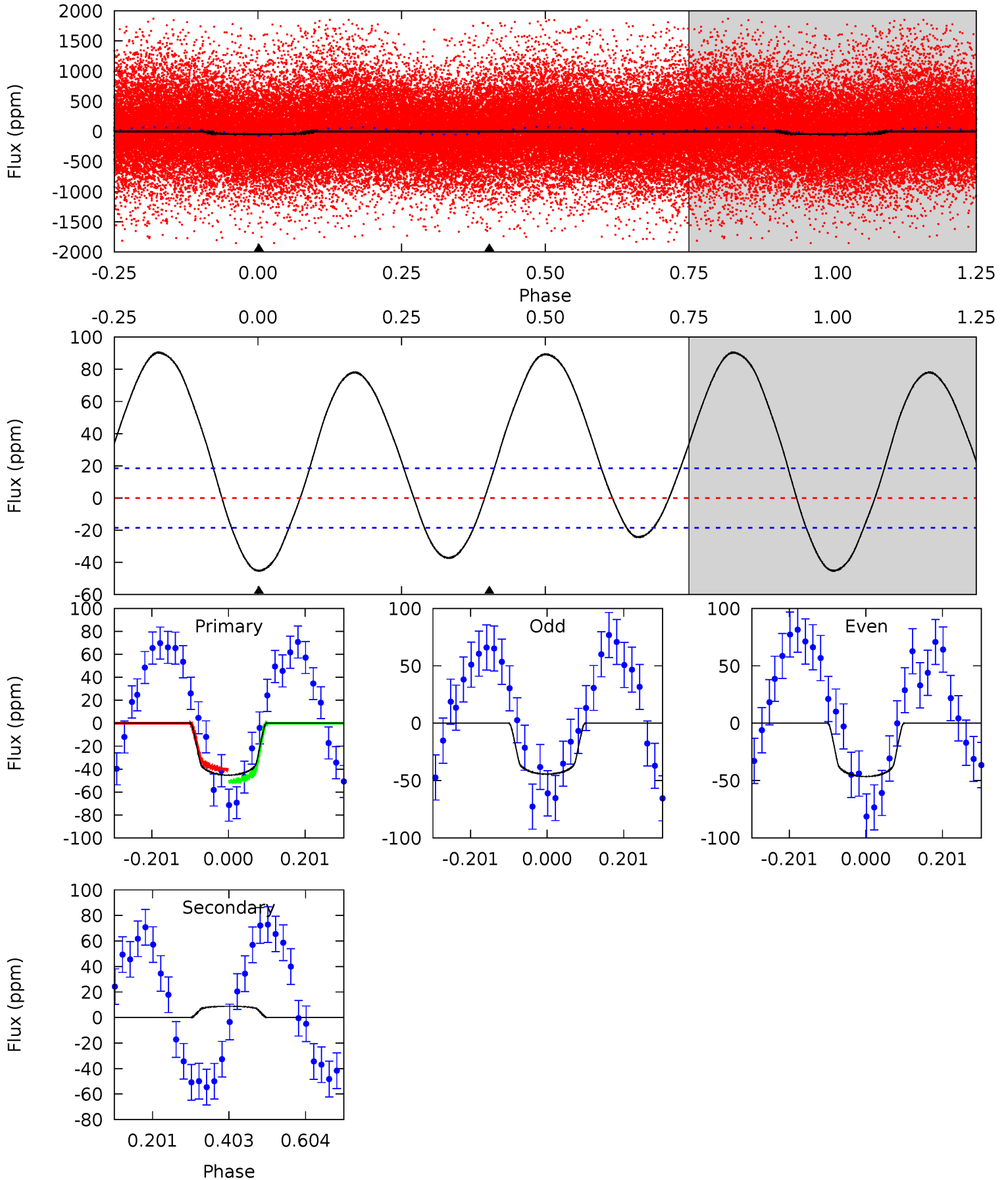
TCE 005730867-01 P= 0.870351 Days $T_0=132.126768$ (BKJD)



DV Model-Shift Uniqueness Test

005730867-01, P = 0.870349 Days, E = 131.259987 Days

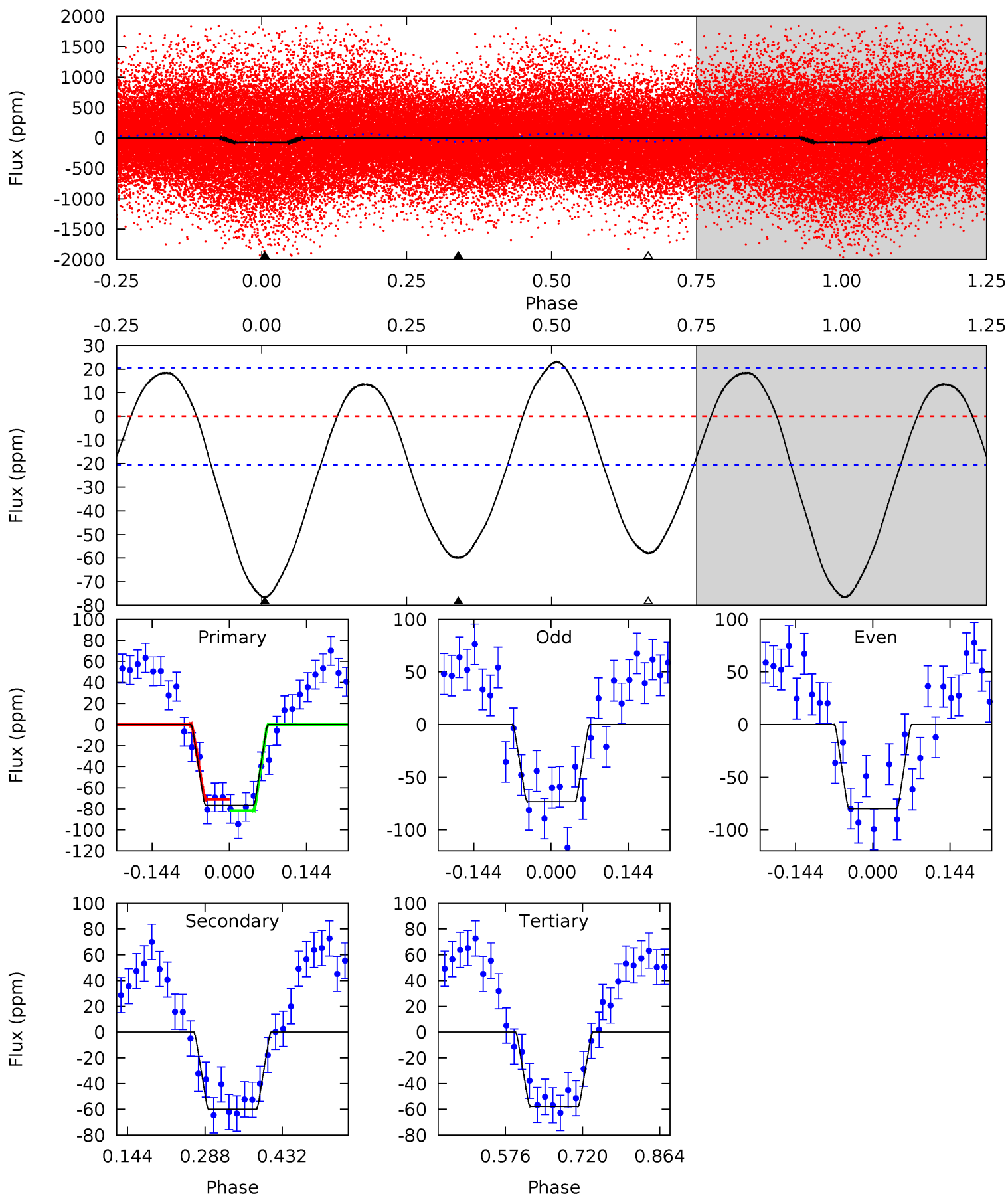
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	-2.11	0	0	4.42	1.28	7.76	10.8	10.8	-2.11	-2.11	0.25	0.96	0.67	1.28



Alt Model-Shift Uniqueness Test

005730867-01, P = 0.870351 Days, E = 131.256417 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	13.0	12.6	0	4.49	1.46	6.13	4.08	16.7	0.45	13.0	0.70	1.45	0.23	1.17



Stellar Parameters For KIC 005730867

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7063^{+228}_{-313}	$4.163^{+0.158}_{-0.193}$	$-0.320^{+0.300}_{-0.300}$	$1.580^{+0.462}_{-0.378}$	$1.331^{+0.193}_{-0.214}$	$0.475^{+0.442}_{-0.230}$
	+3%/-4%	+4%/-5%	+94%/-94%	+29%/-24%	+15%/-16%	+93%/-48%
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 005730867-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	9 ± 4	$1.56^{+0.36}_{-0.36}$	3919^{+343}_{-265}	-4574^{+423}_{-486}	$-0.765^{+0.404}_{-0.682}$
Alt.	-60 ± 5	$1.51^{+0.44}_{-0.34}$	3934^{+326}_{-286}	6520^{+906}_{-688}	$5.529^{+3.799}_{-2.140}$

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

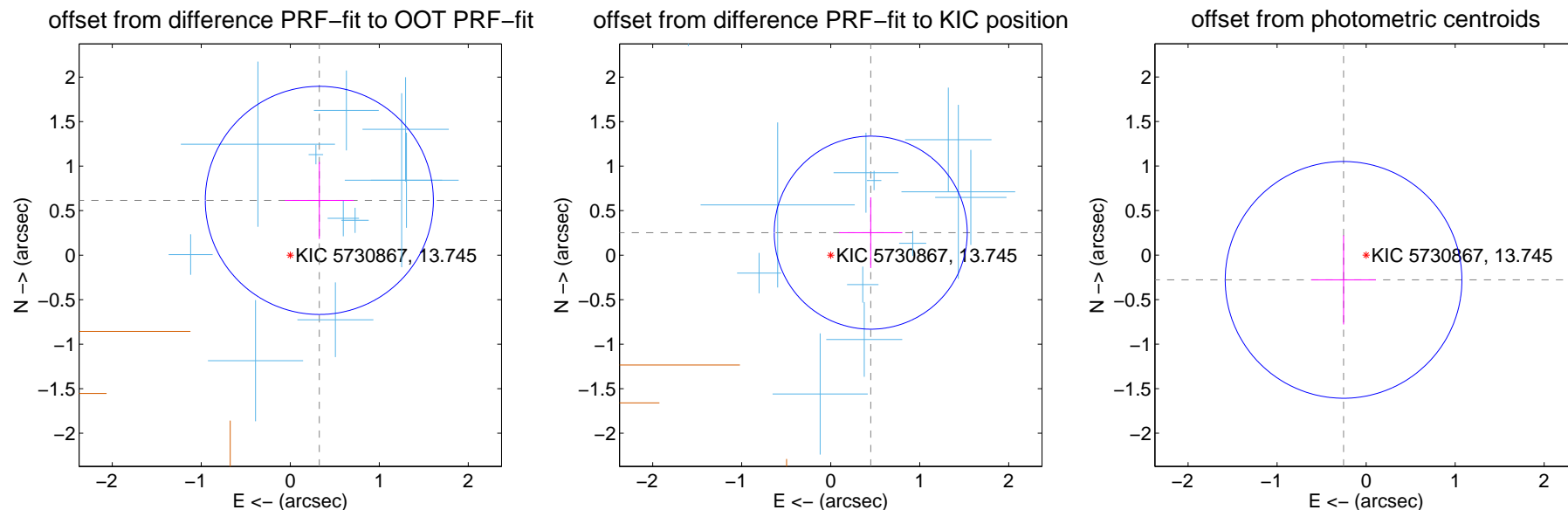
DV Centroid Data

Supplemental centroid analysis for 005730867-01. Kepler magnitude: 13.74. Transit SNR 11.09

There are 12 quarters with good PRF difference image offsets

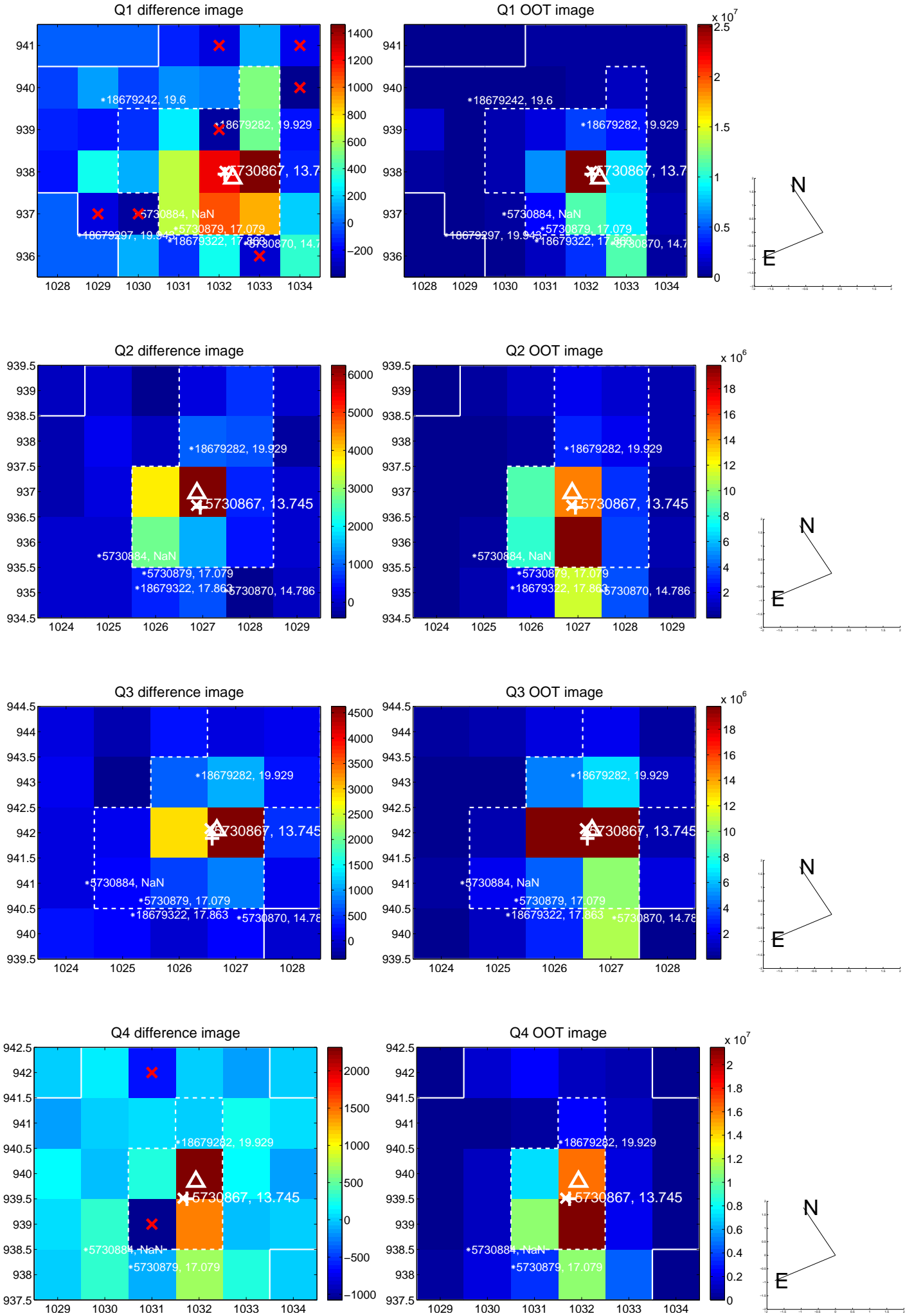
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.696 ± 0.427	1.63	-0.327 ± 0.386	0.615 ± 0.433
PRF-fit source offset from KIC position	0.516 ± 0.361	1.43	-0.449 ± 0.356	0.253 ± 0.397
photometric centroid source offset	0.38 ± 0.44	0.85	0.25 ± 0.36	-0.28 ± 0.50

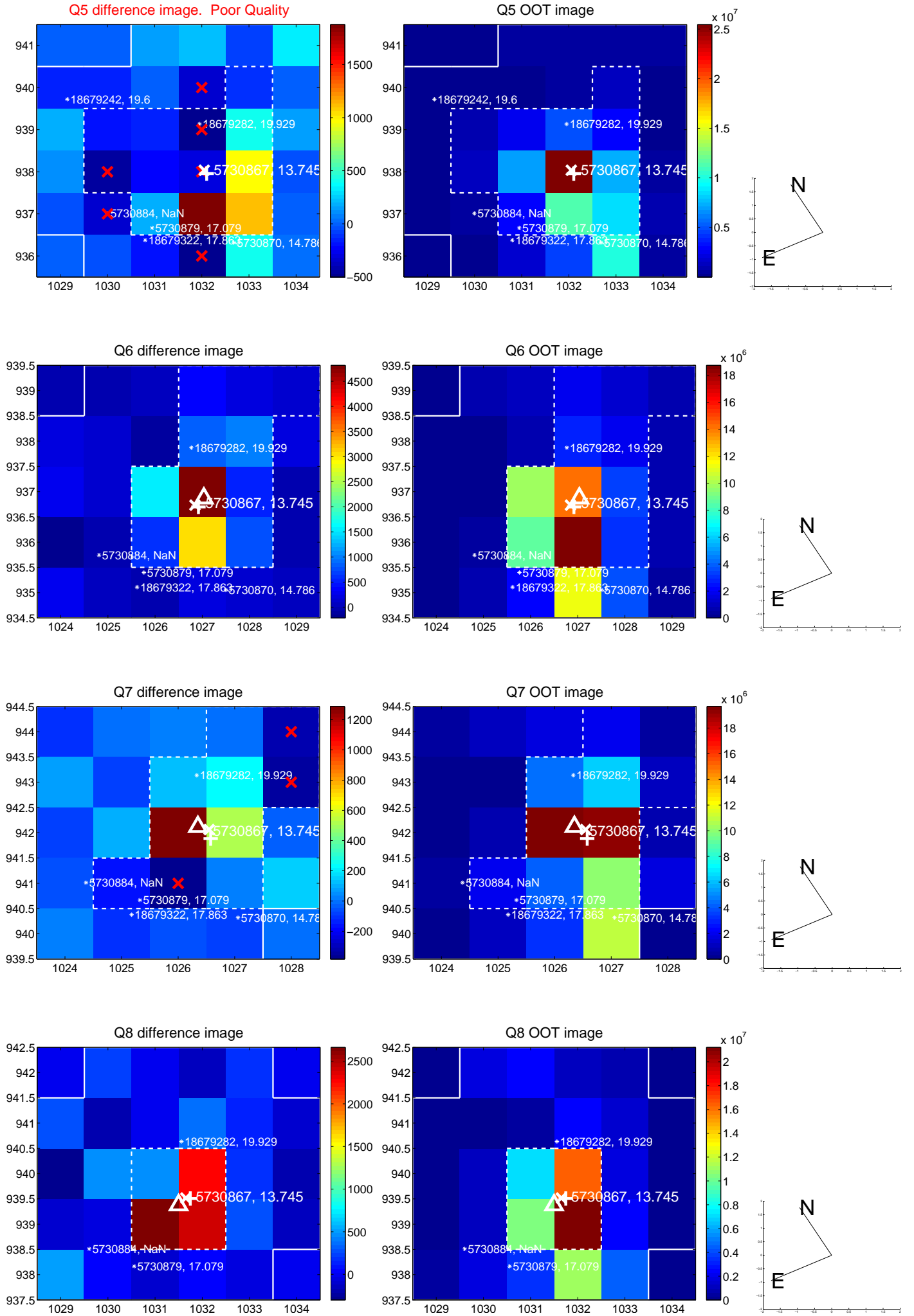


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

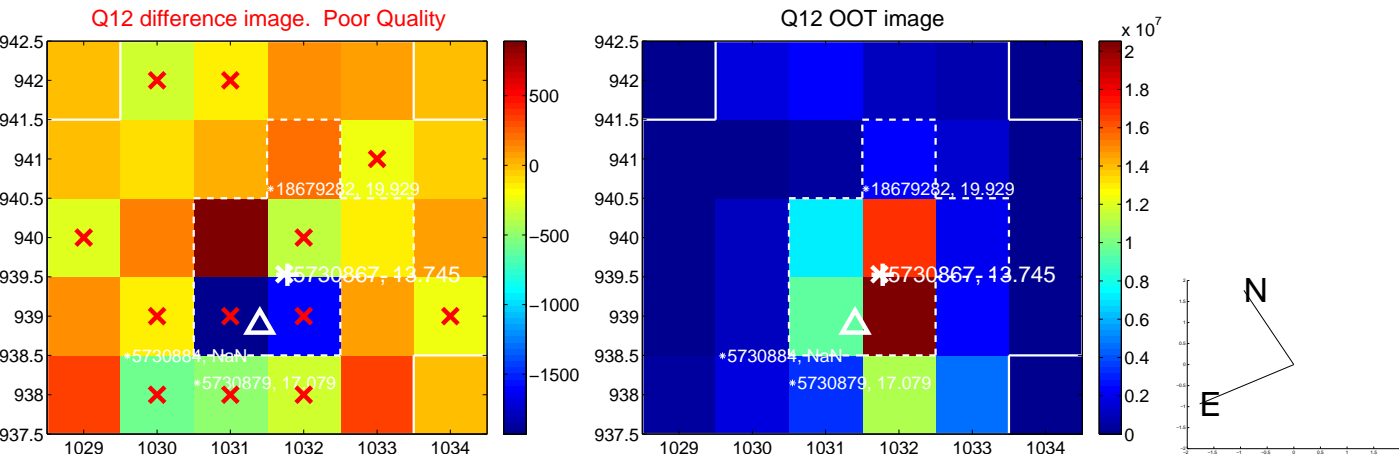
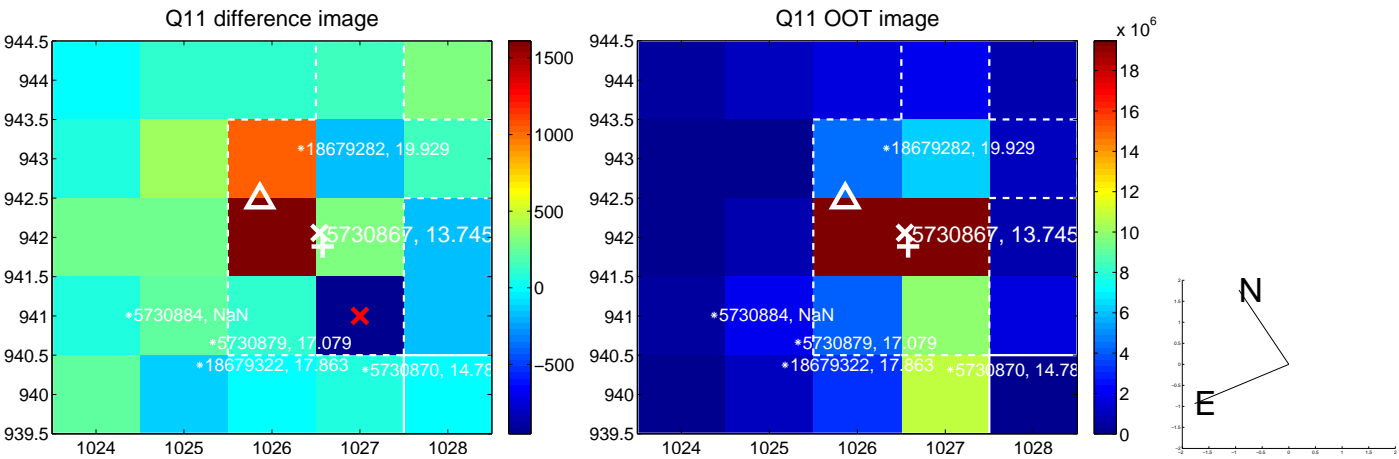
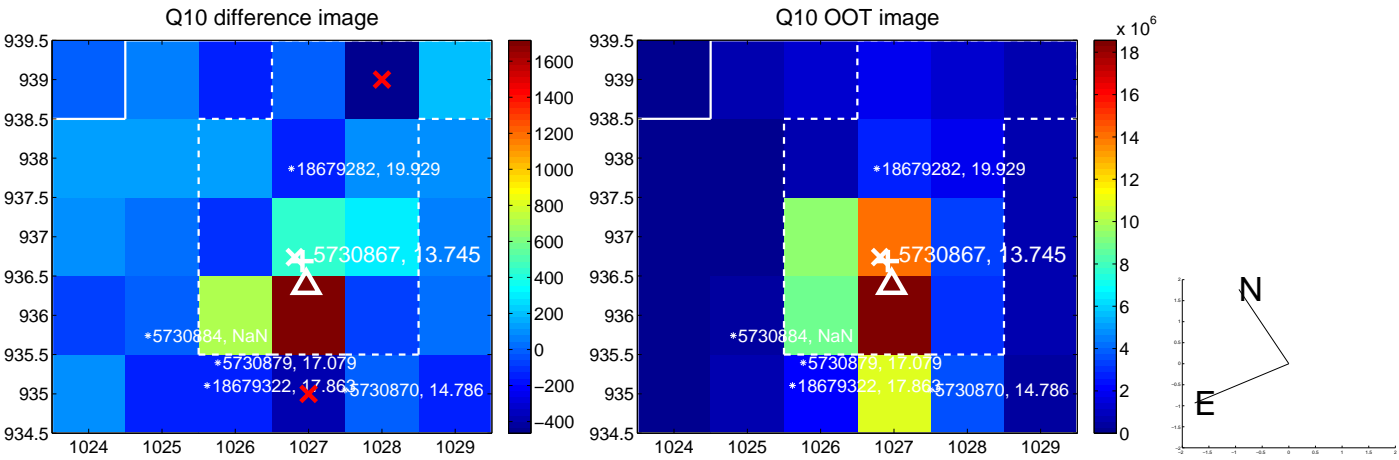
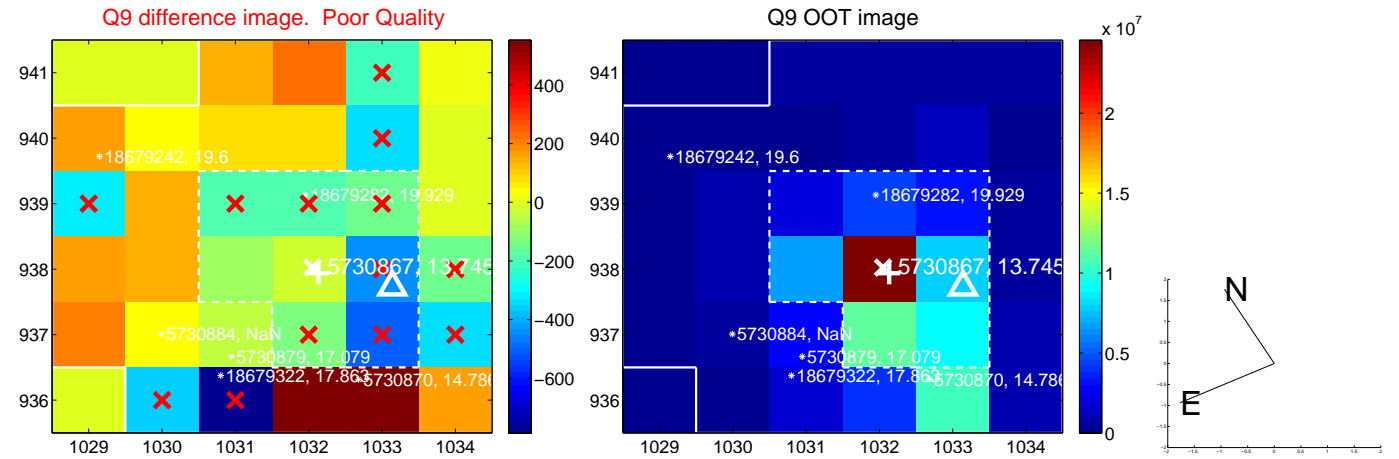
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



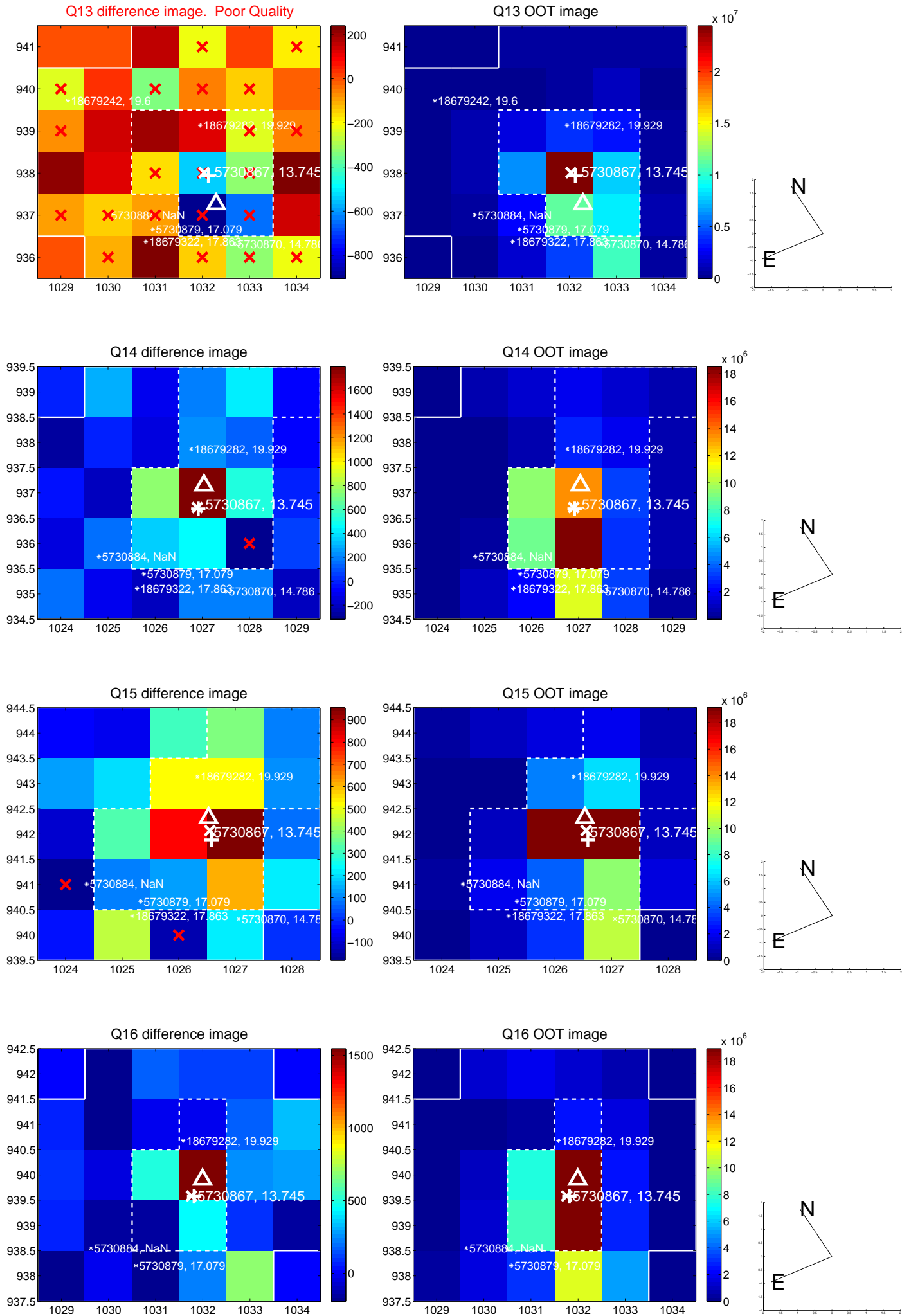
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



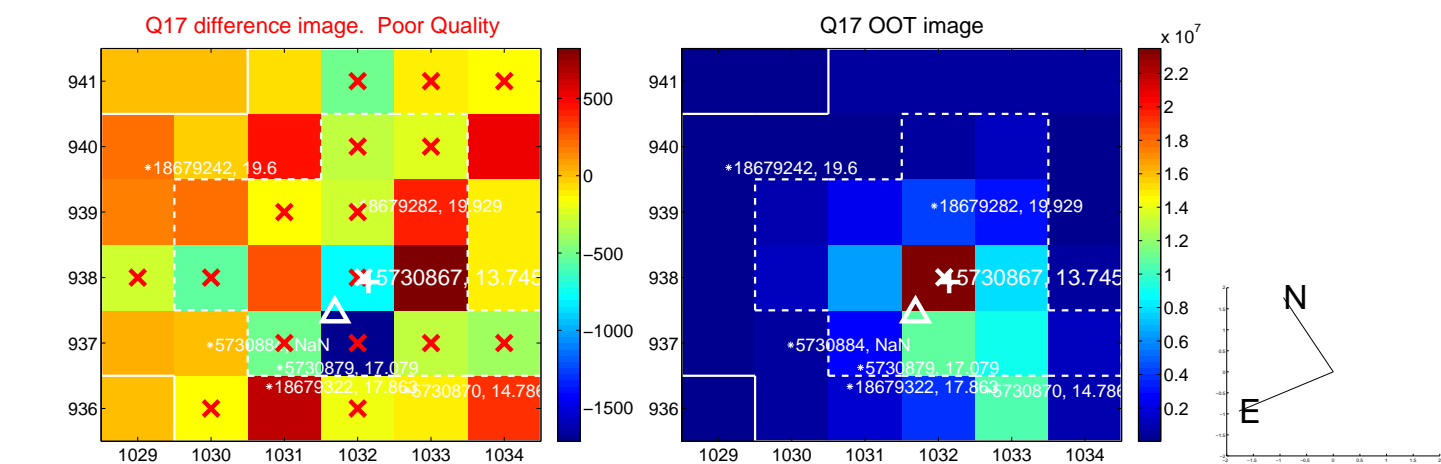
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



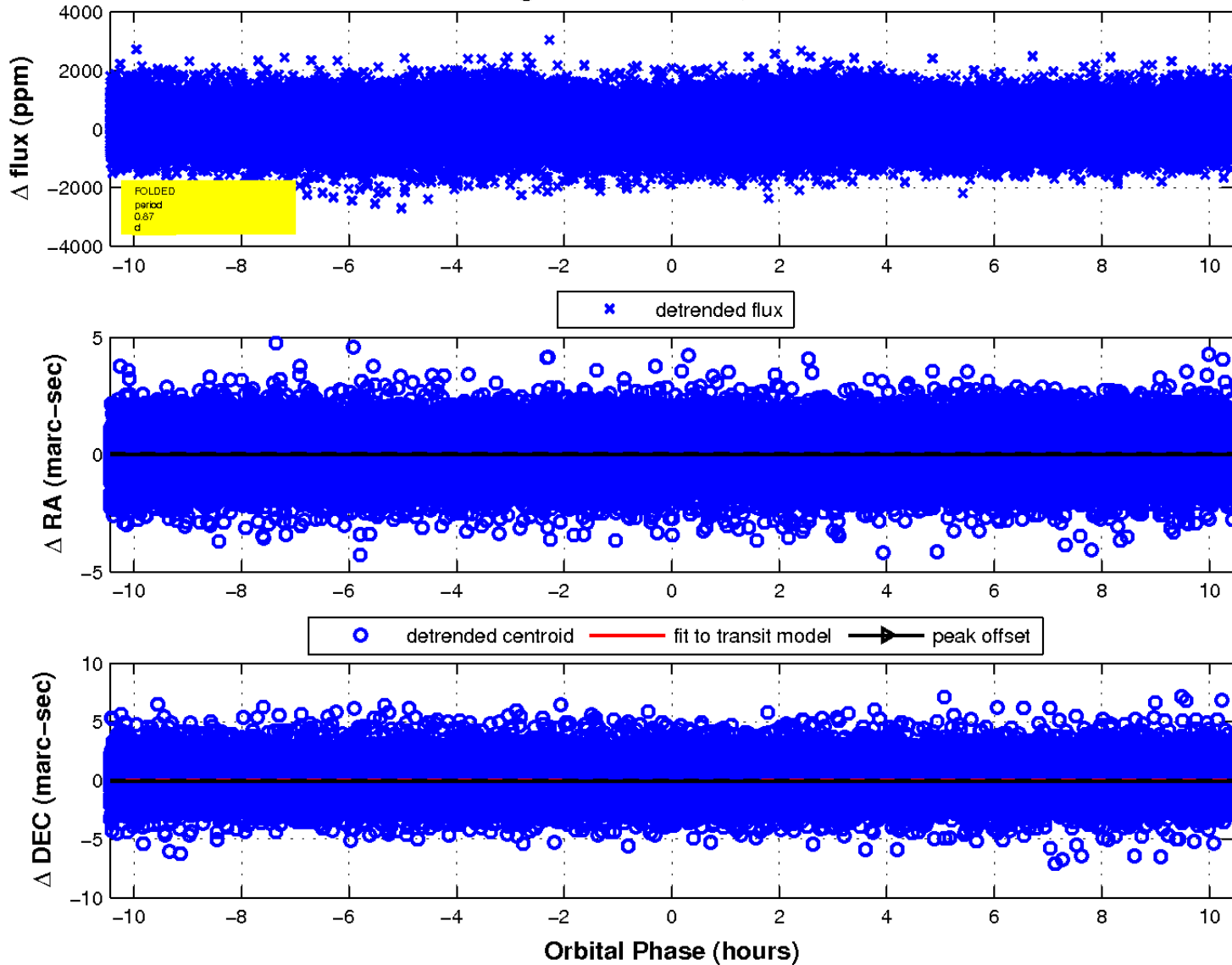
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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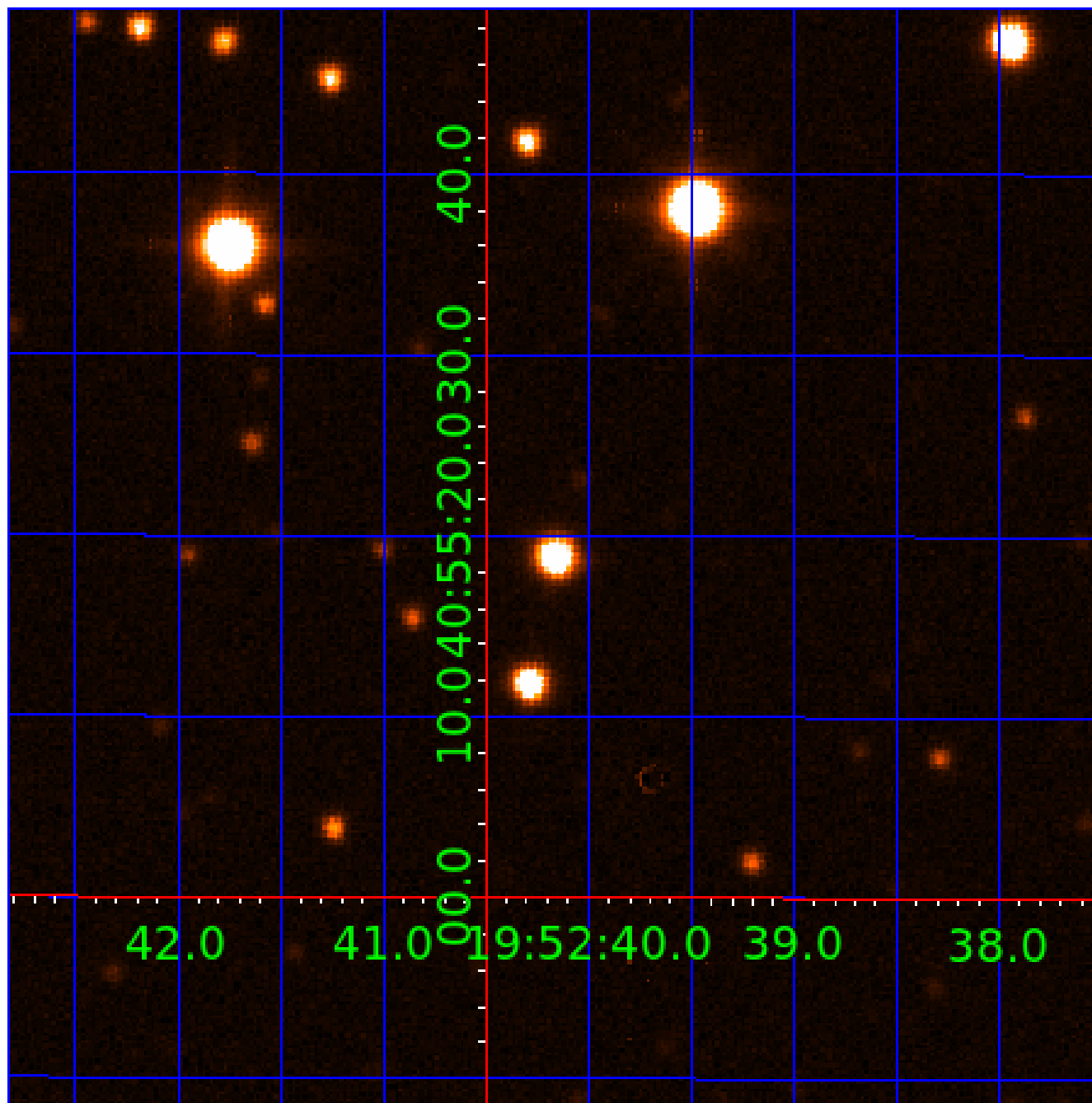


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 005730867

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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005730867-04	OBS	No	44.223679	168.334265	249.0	6.809	9.8	3.7	1.58	7063	2.64	76.99
005730867-05	OBS	No	4.239356	134.242280	146.2	12.500	9.0	-1.0	1.58	7063	1.93	1754.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005730867-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— MOD_TER_ALT—MOD_POS_ALT
005730867-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

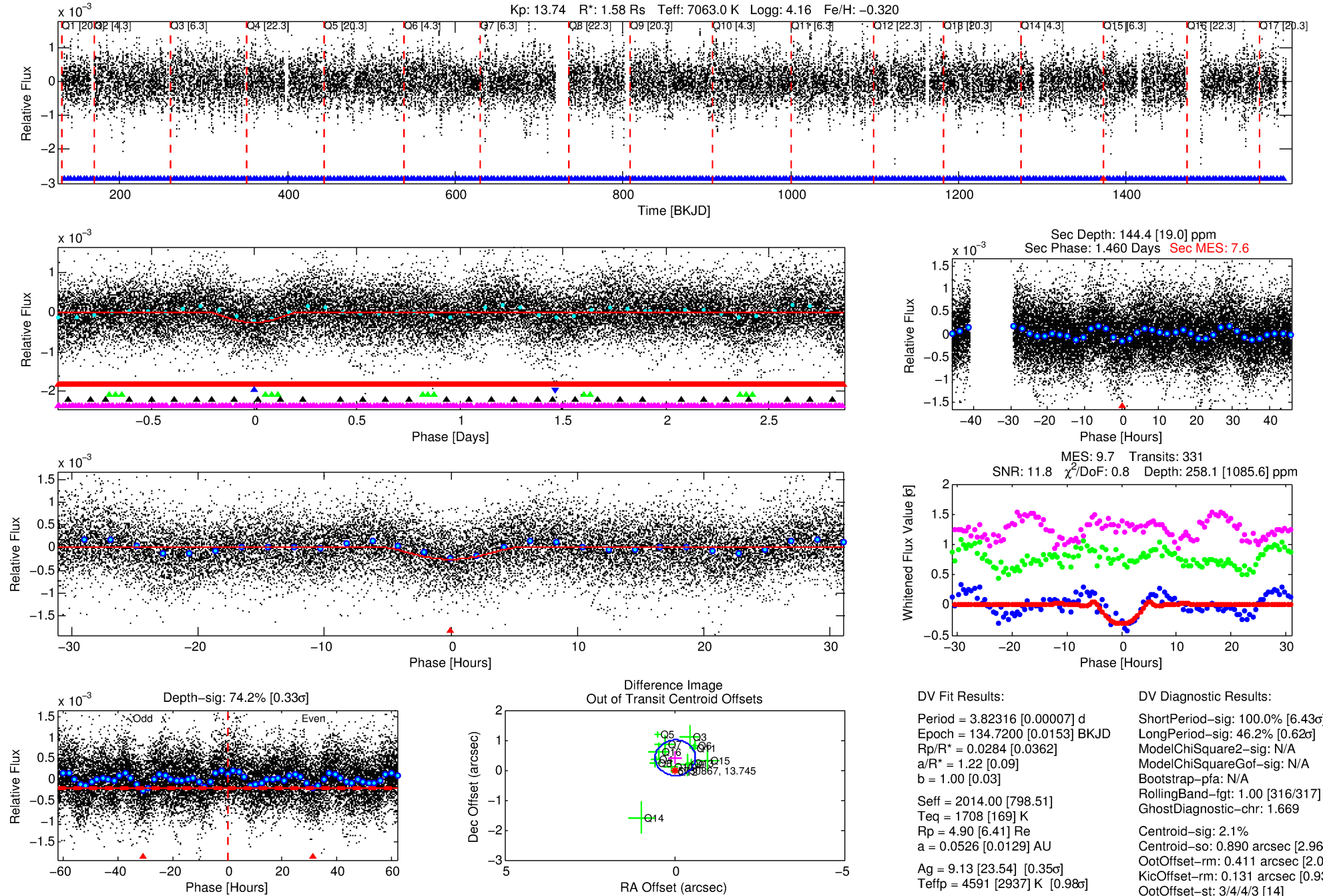
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005730867-02

No Significant Match Found

DV One-Page Summary

KIC: 5730867 Candidate: 2 of 5 Period: 3.823 d



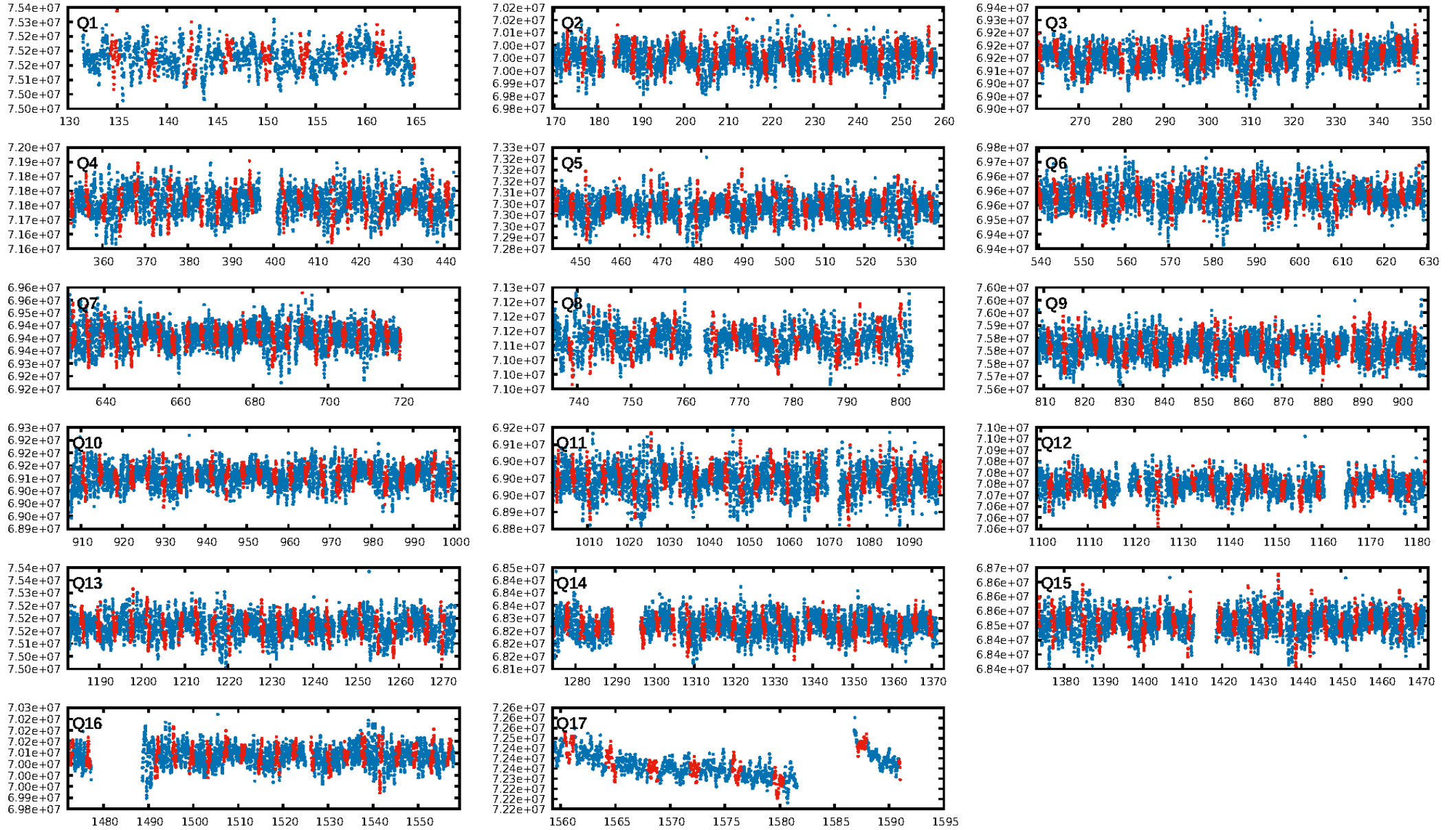
DV Fit Results:

Period = 3.82316 [0.00007] d
Epoch = 134.7200 [0.0153] BKJD
Rp/R* = 0.0284 [0.0362]
a/R* = 1.22 [0.09]
b = 1.00 [0.03]
Seff = 2014.00 [798.51]
Teff = 1708 [169] K
Rp = 4.90 [6.41] Re
a = 0.0526 [0.0129] AU
Ag = 9.13 [23.54] [0.35 σ]
Teffp = 4591 [2937] K [0.98 σ]

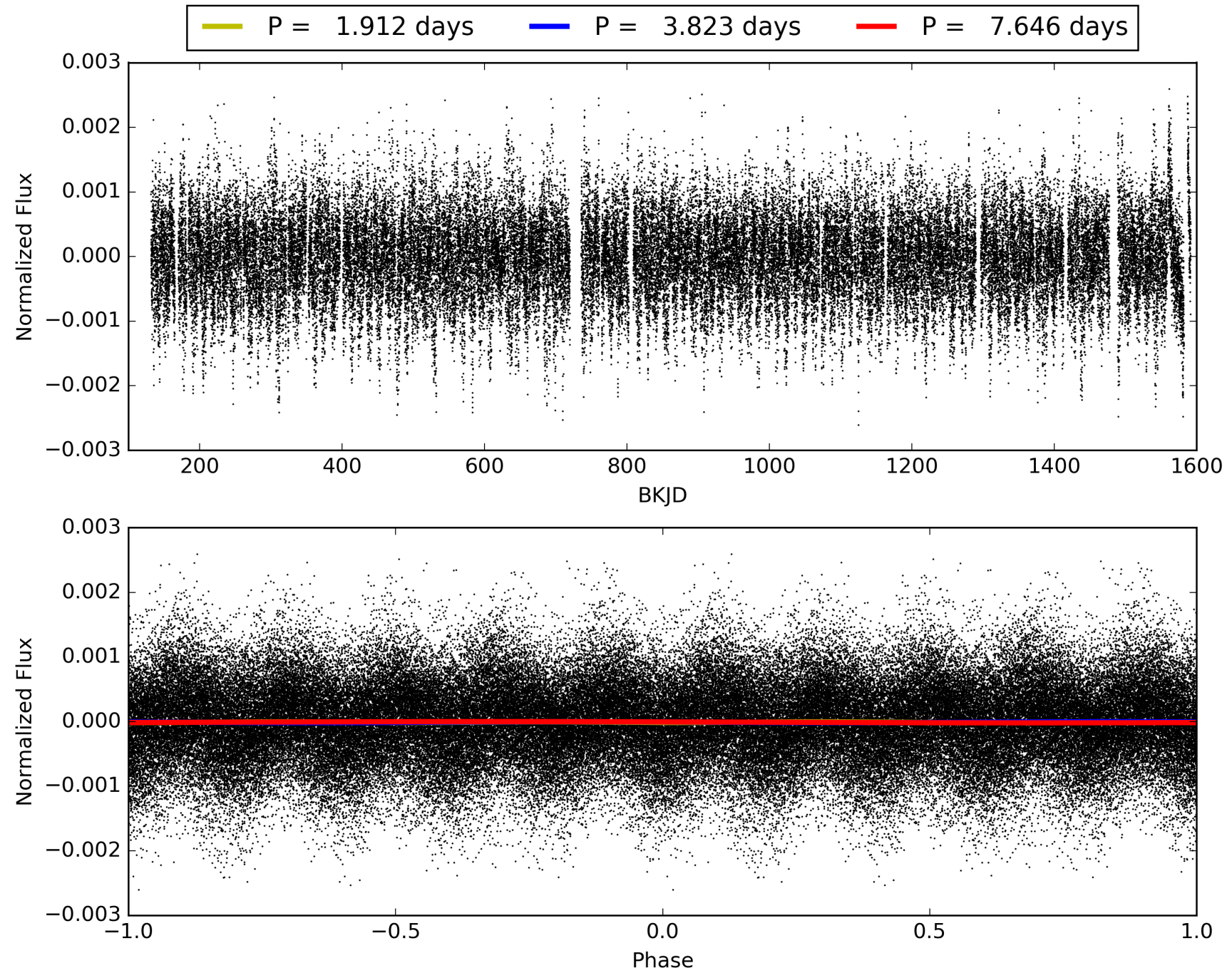
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [6.43 σ]
LongPeriod-sig: 46.2% [0.62 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [316/317]
GhostDiagnostic-chr: 1.669
Centroid-sig: 2.1%
Centroid-so: 0.890 arcsec [2.96 σ]
OotOffset-rm: 0.411 arcsec [2.08 σ]
KicOffset-rm: 0.131 arcsec [0.93 σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 005730867-02, PDC Light Curves

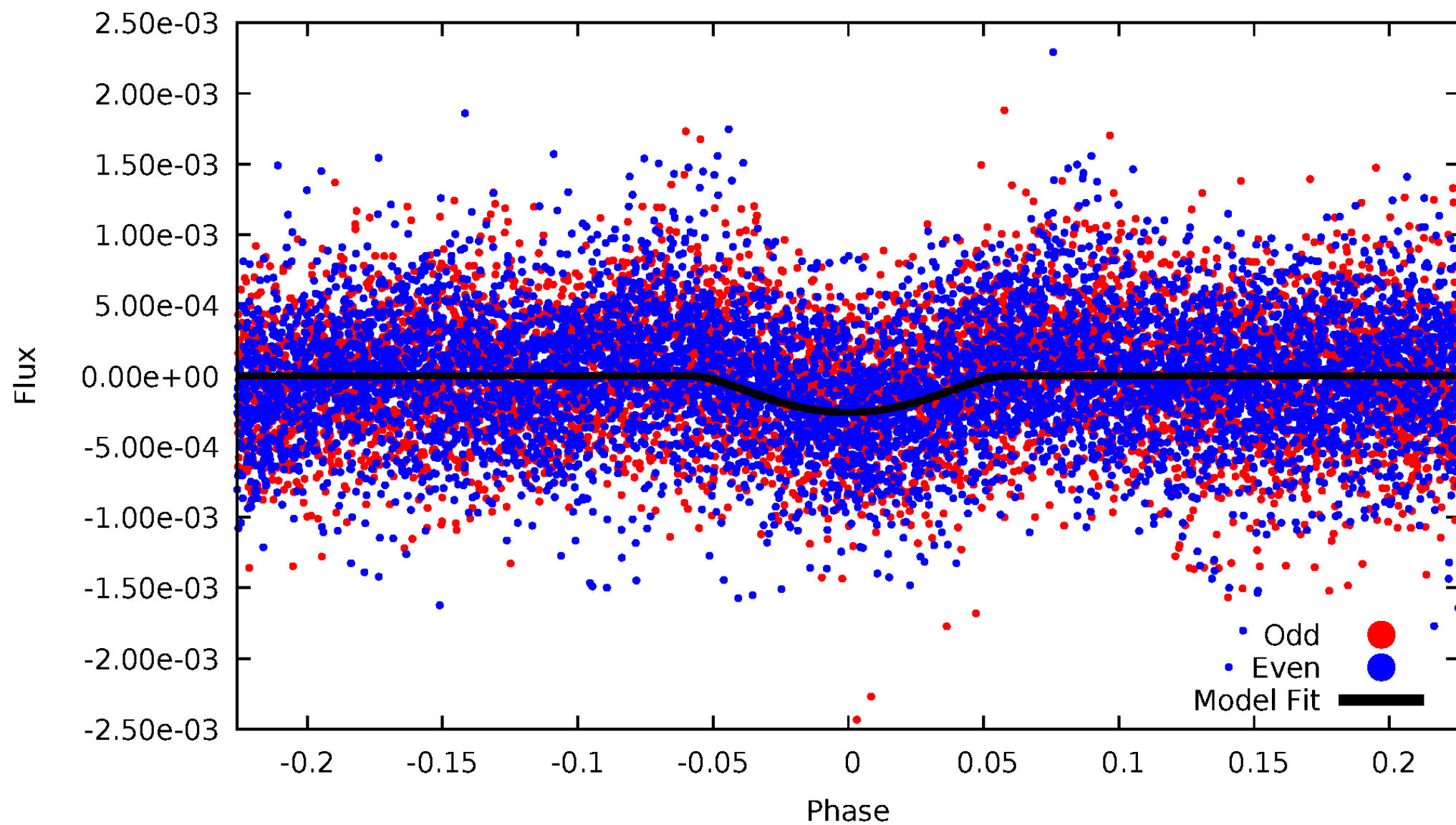


TCE 005730867-02



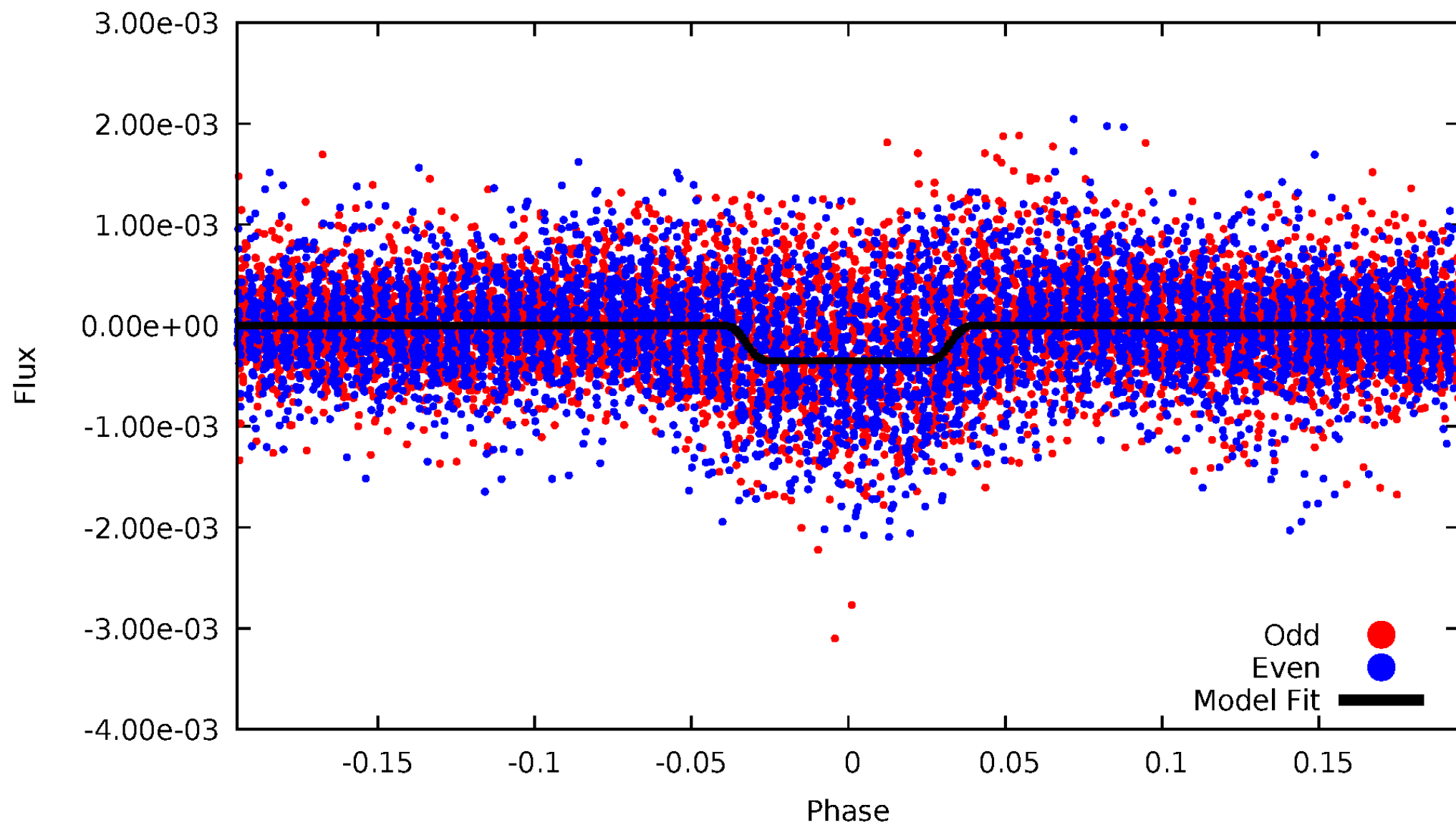
DV Odd/Even

TCE 005730867-02



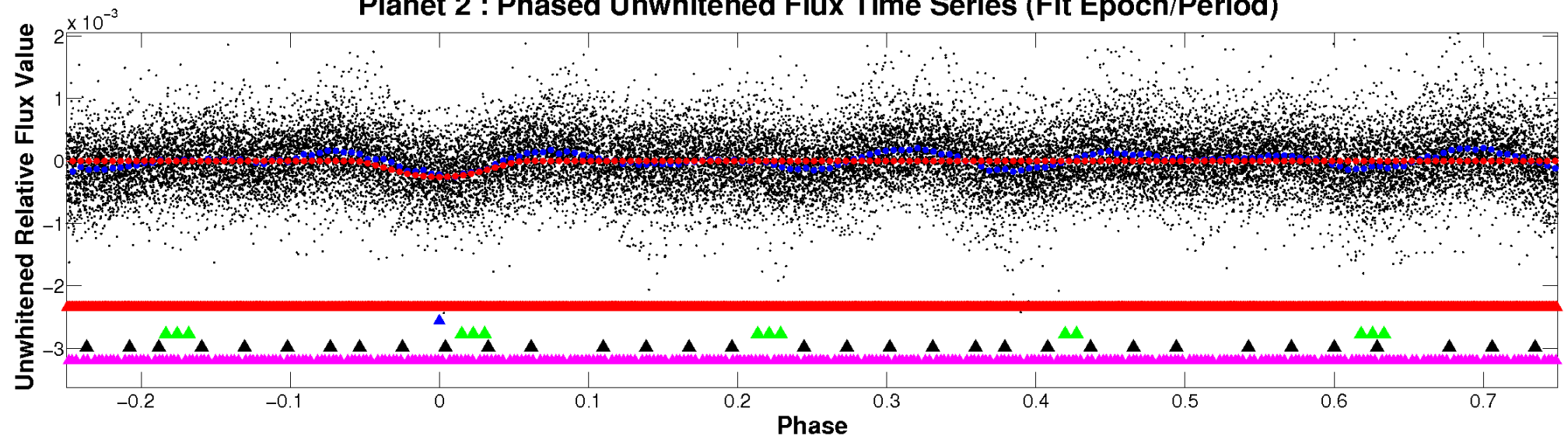
ALT Odd/Even

TCE 005730867-02

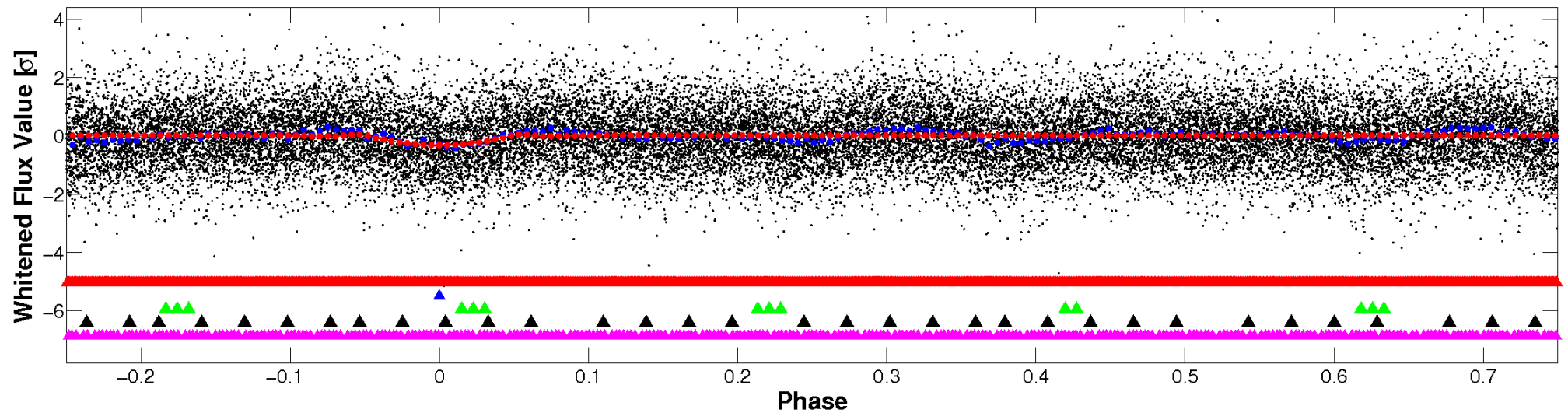


Non-Whitened Vs. Whitened Light Curve

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

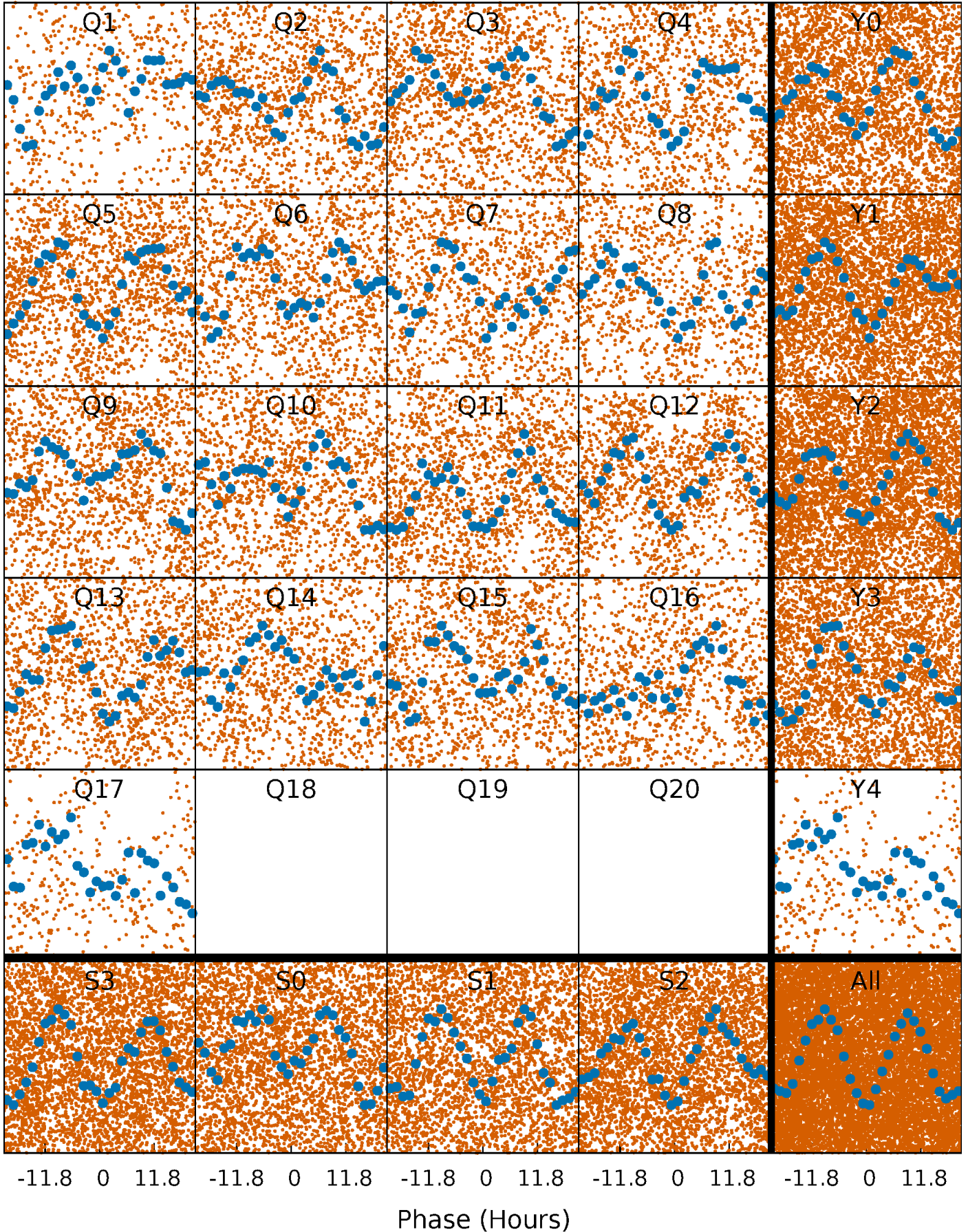


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



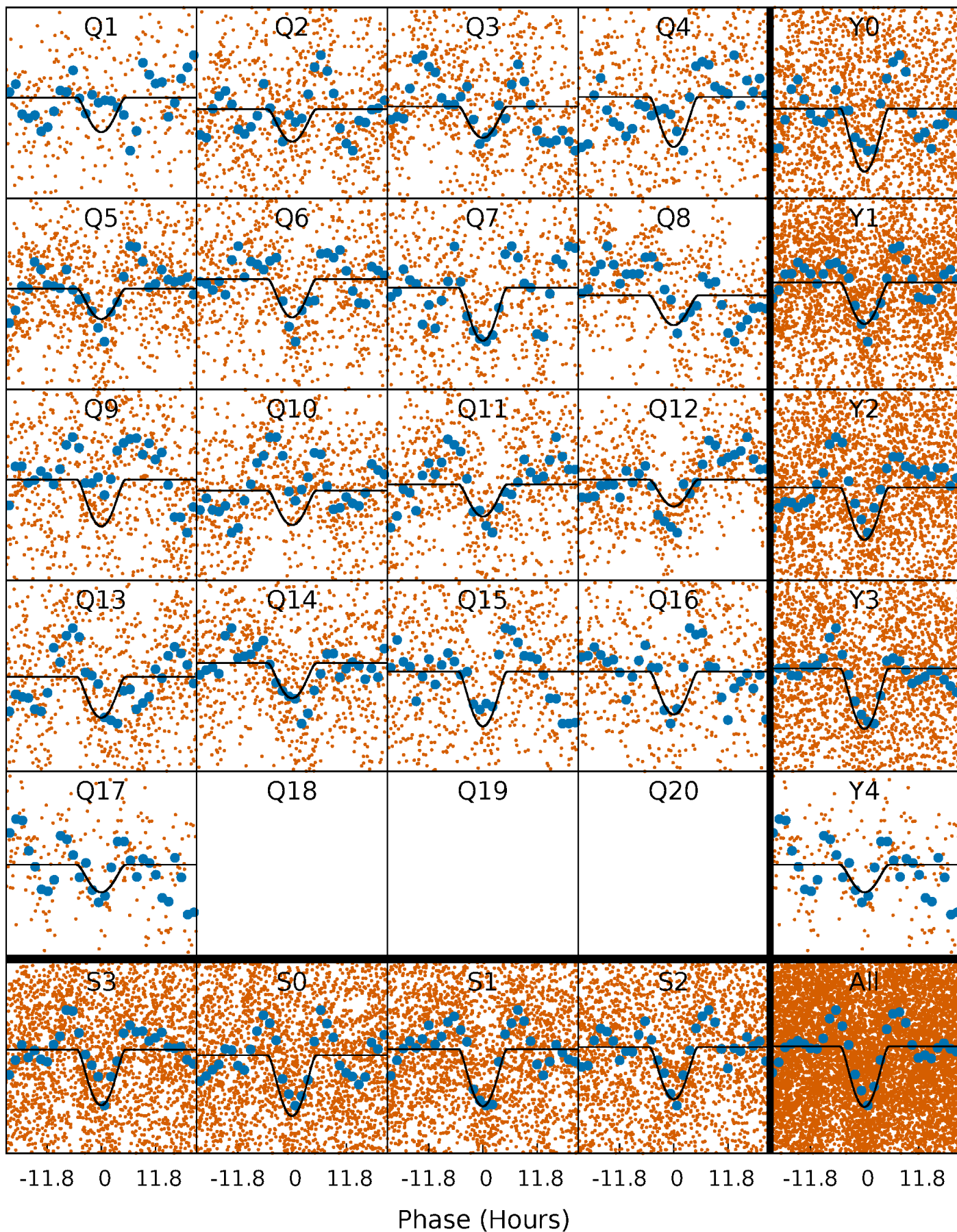
PDC Quarter-Phased Transit Curves

TCE 005730867-02 P= 3.823157 Days $T_0=134.719999$ (BKJD)



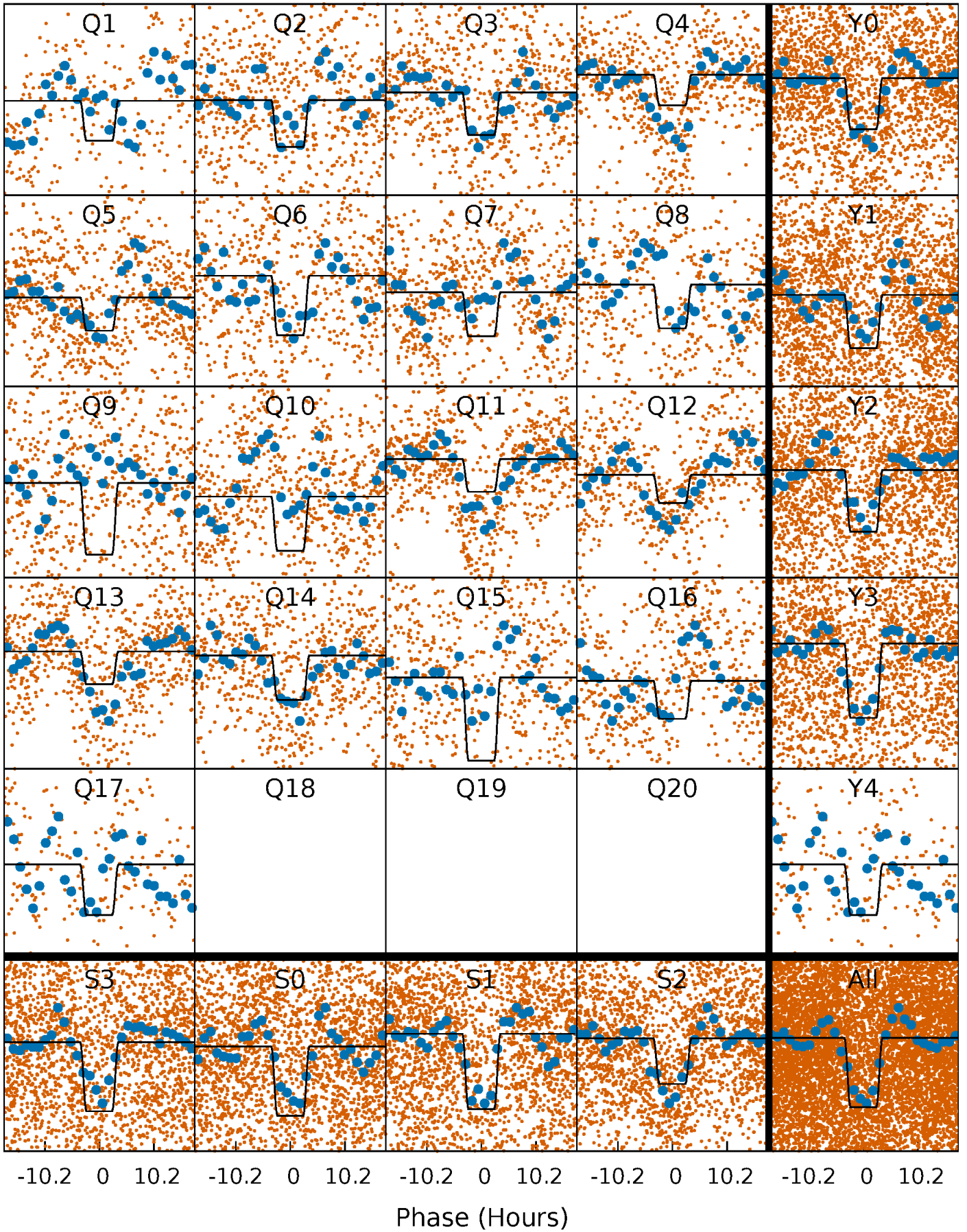
DV Quarter-Phased Transit Curves

TCE 005730867-02 P= 3.823157 Days $T_0=134.719999$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

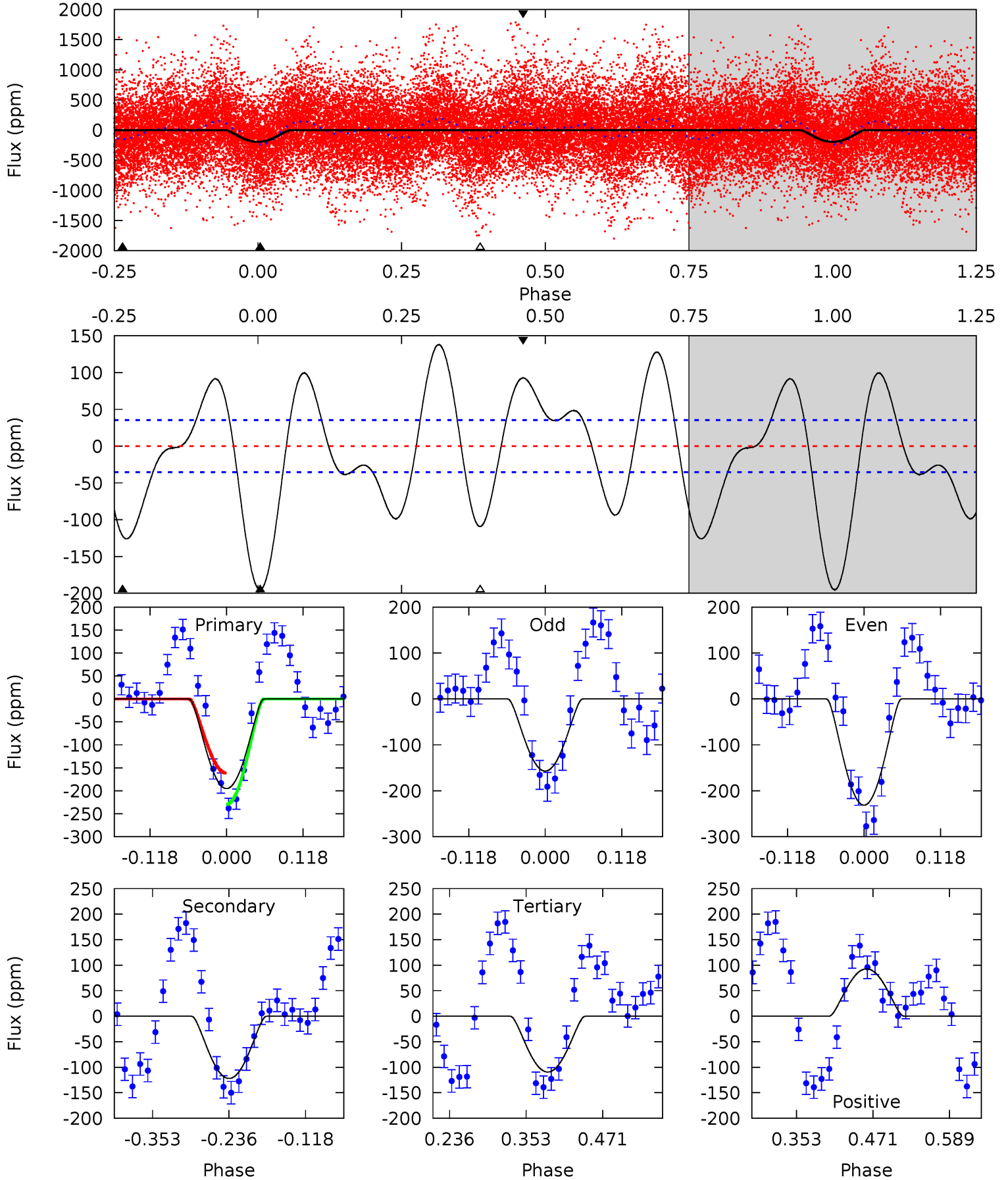
TCE 005730867-02 $P = 3.823276$ Days $T_0 = 134.717201$ (BKJD)



DV Model-Shift Uniqueness Test

005730867-02, P = 3.823157 Days, E = 130.896842 Days

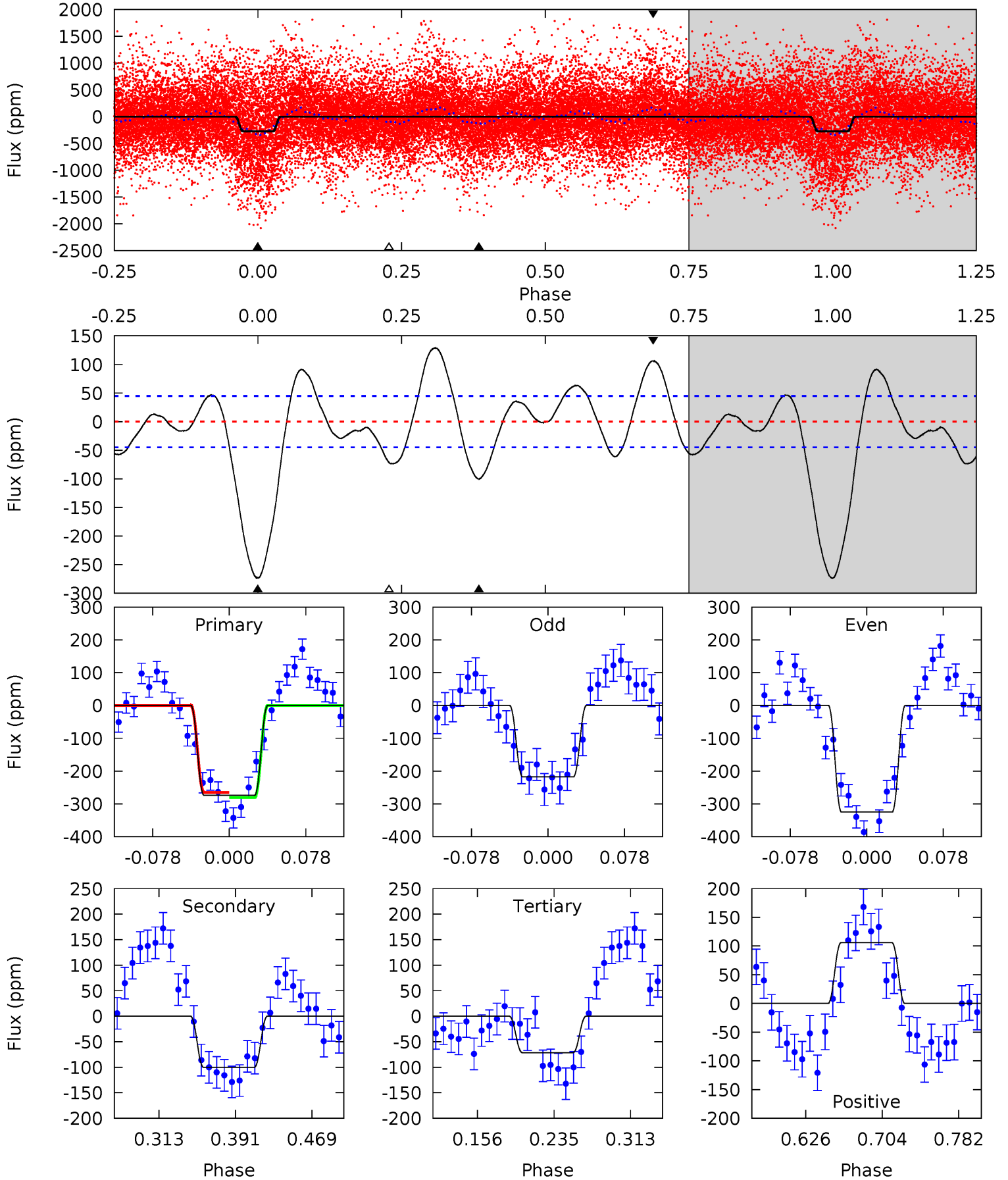
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.0	15.6	14.0	11.9	4.53	1.56	8.89	11.0	13.1	1.62	3.74	4.83	1.29	0.41	4.32



Alt Model-Shift Uniqueness Test

005730867-02, P = 3.823276 Days, E = 130.893925 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.1	10.3	7.34	10.9	4.62	1.76	4.79	20.8	17.2	2.96	-0.61	5.53	0.98	0.32	0.77



Stellar Parameters For KIC 005730867

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7063^{+228}_{-313}	$4.163^{+0.158}_{-0.193}$	$-0.320^{+0.300}_{-0.300}$	$1.580^{+0.462}_{-0.378}$	$1.331^{+0.193}_{-0.214}$	$0.475^{+0.442}_{-0.230}$
	+3%/-4%	+4%/-5%	+94%/-94%	+29%/-24%	+15%/-16%	+93%/-48%
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 005730867-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-122 ± 8	$6.81^{+5.34}_{-4.51}$	2403^{+188}_{-174}	4022^{+2326}_{-848}	$4.027^{+29.378}_{-2.816}$
Alt.	-100 ± 10	$5.96^{+5.43}_{-3.97}$	2397^{+202}_{-175}	3992^{+2570}_{-830}	$4.001^{+34.031}_{-2.871}$

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

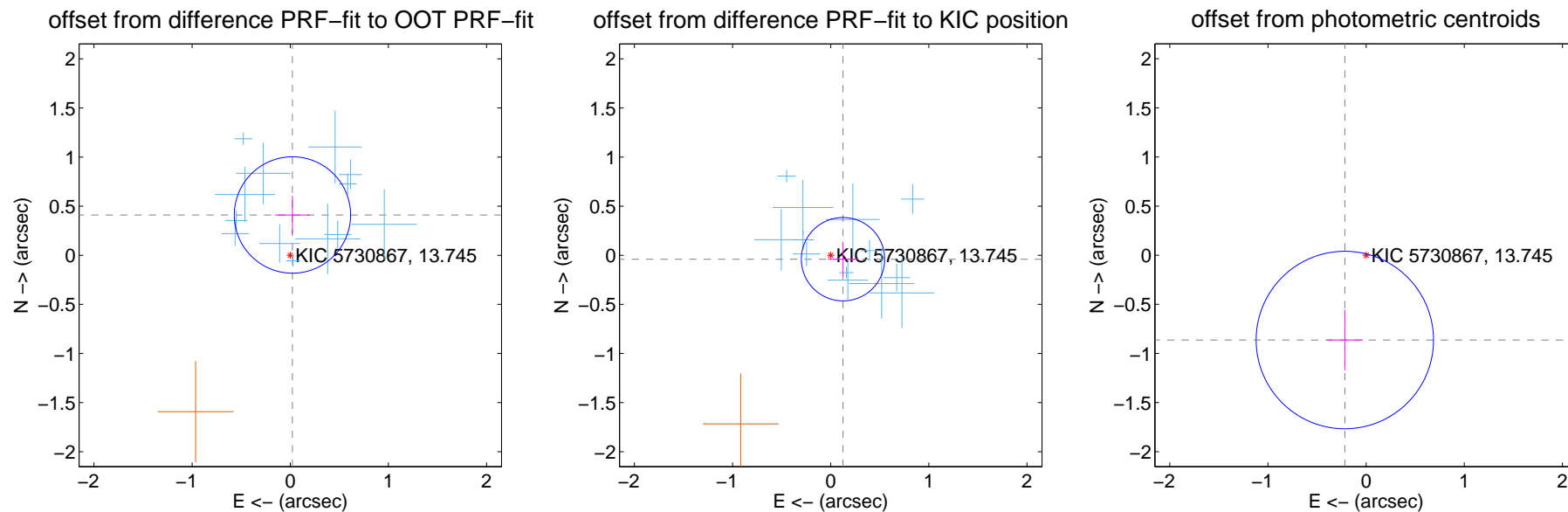
DV Centroid Data

Supplemental centroid analysis for 005730867-02. Kepler magnitude: 13.74. Transit SNR 11.78

There are 13 quarters with good PRF difference image offsets

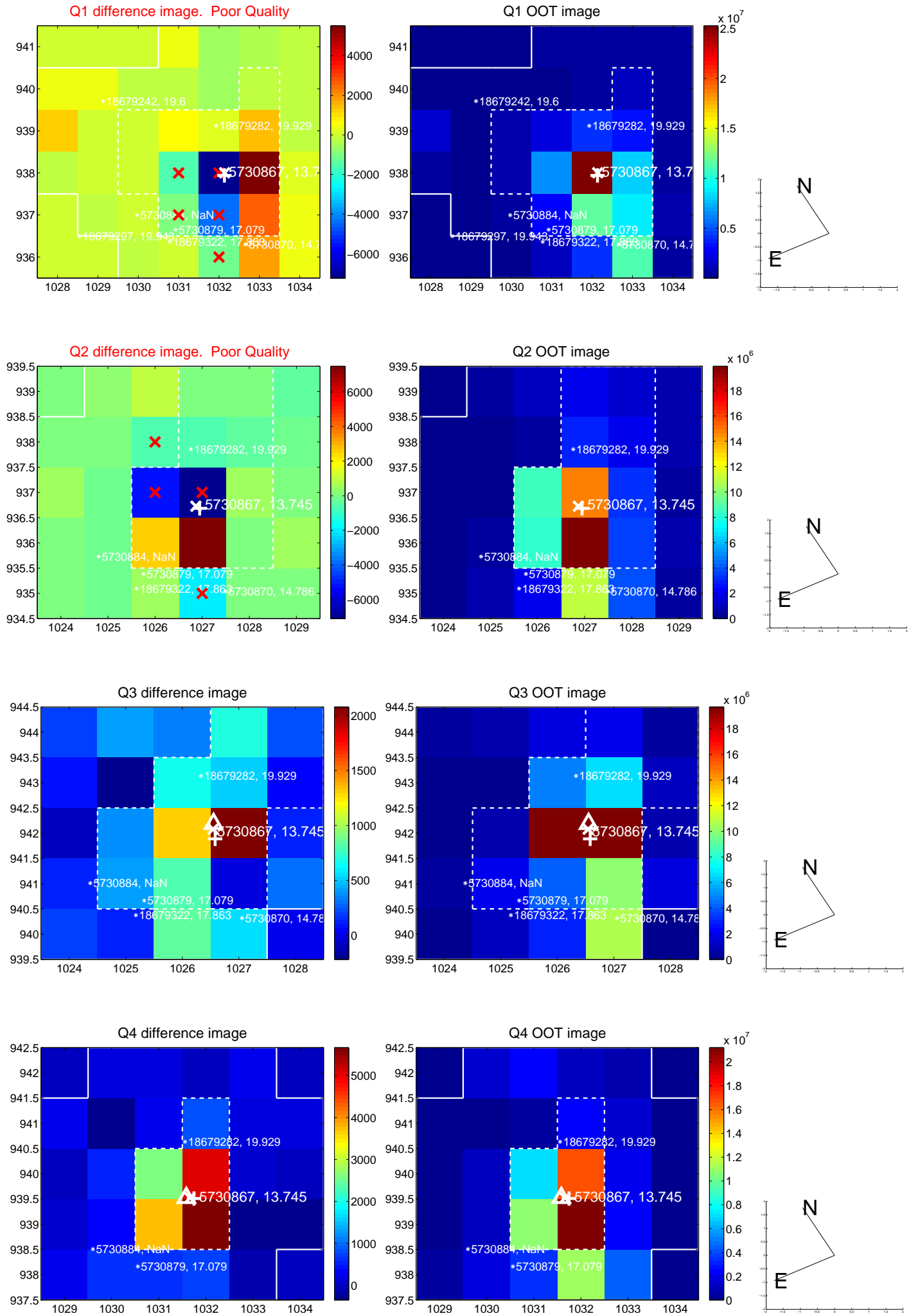
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.411 ± 0.198	2.08	-0.022 ± 0.176	0.410 ± 0.194
PRF-fit source offset from KIC position	0.131 ± 0.142	0.93	-0.125 ± 0.153	-0.040 ± 0.175
photometric centroid source offset	0.89 ± 0.30	2.96	0.22 ± 0.18	-0.86 ± 0.31

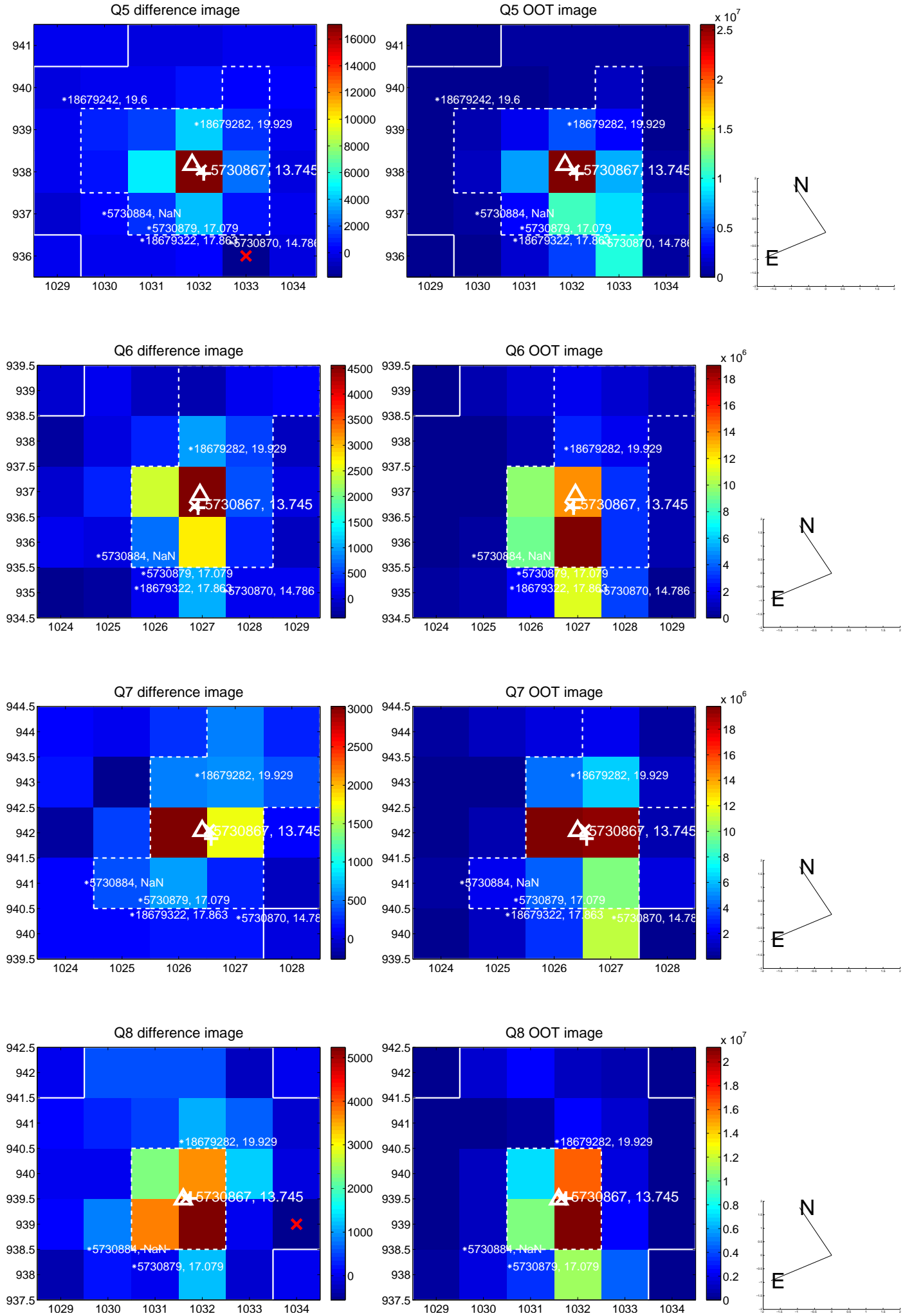


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

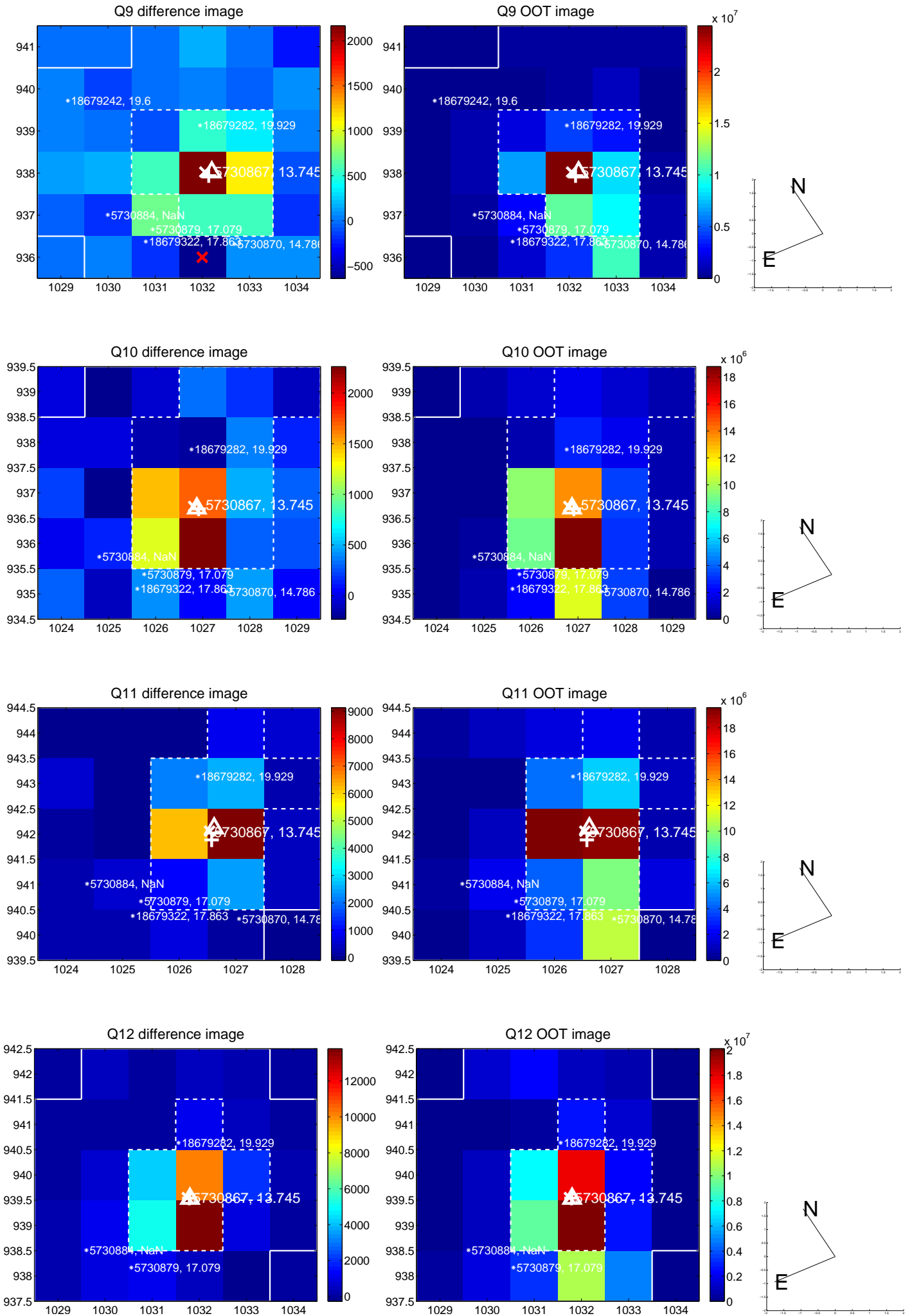
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



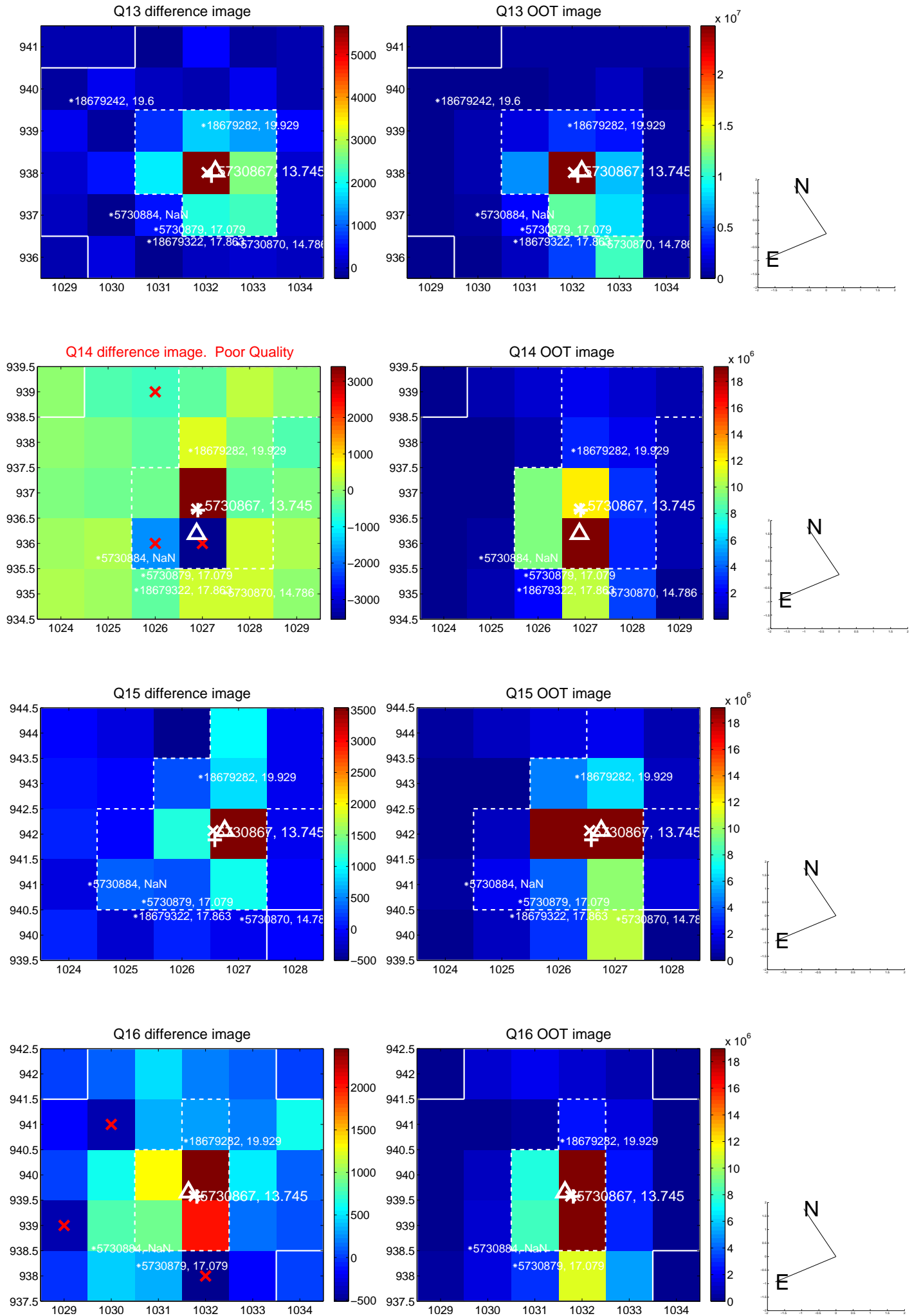
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



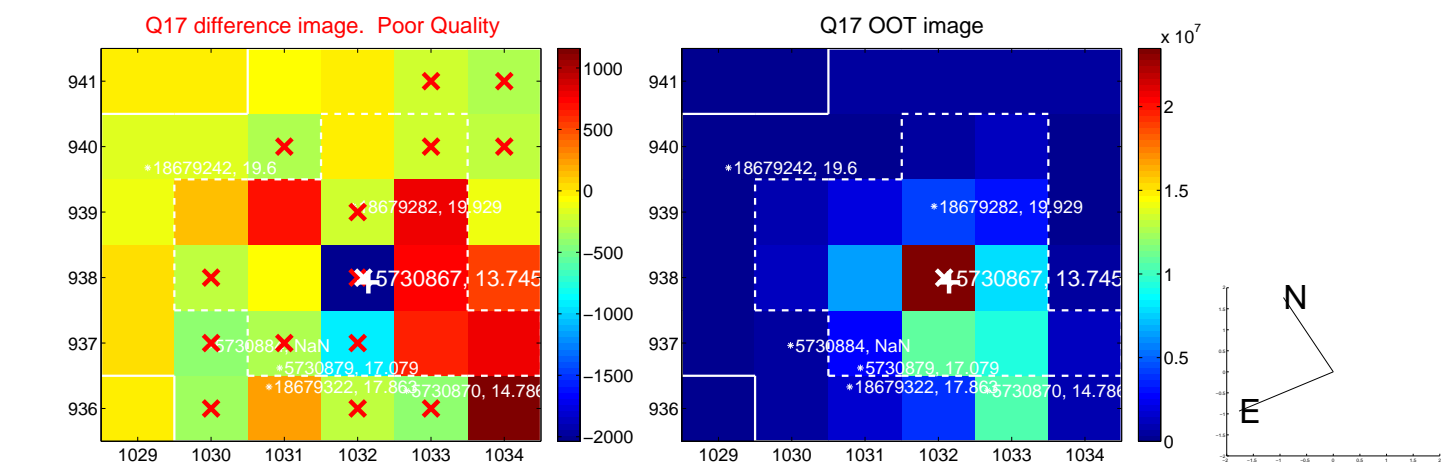
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



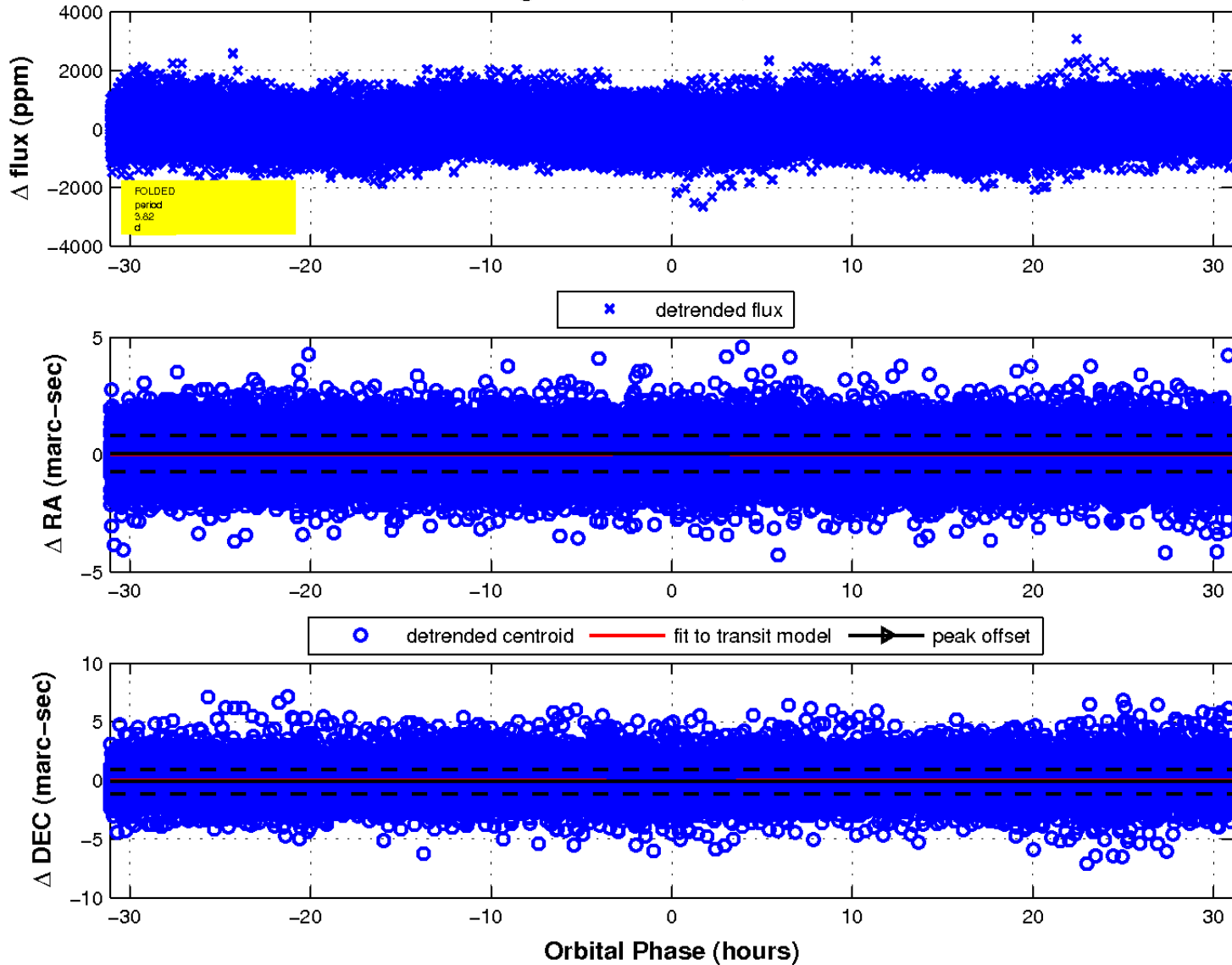
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

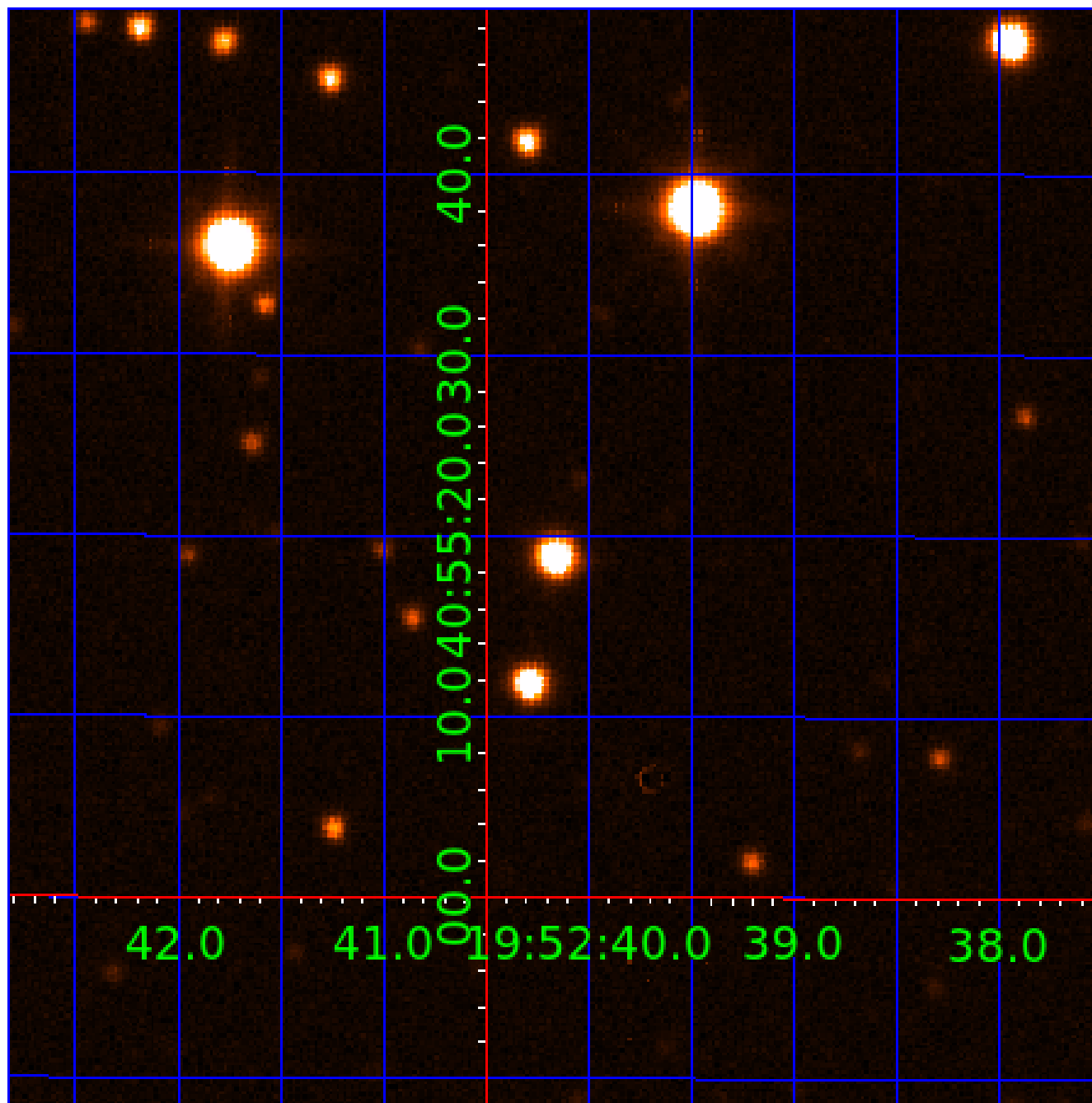


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 005730867

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})
005730867-01	OBS	No	0.870349	132.130336	69.1	3.749	9.4	11.1	1.58	7063	1.53	14488.77
005730867-02	OBS	No	3.823157	134.719999	258.1	10.362	9.7	11.8	1.58	7063	4.90	2014.00
005730867-03	OBS	No	103.984017	190.665842	830.3	8.312	9.3	7.1	1.58	7063	5.60	24.62
005730867-04	OBS	No	44.223679	168.334265	249.0	6.809	9.8	3.7	1.58	7063	2.64	76.99
005730867-05	OBS	No	4.239356	134.242280	146.2	12.500	9.0	-1.0	1.58	7063	1.93	1754.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005730867-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005730867-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

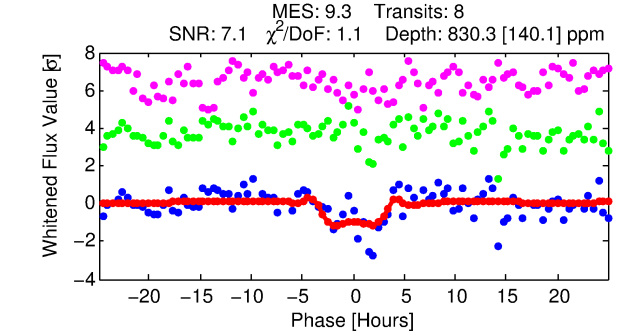
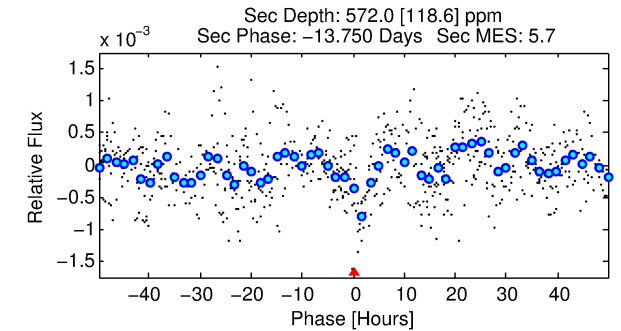
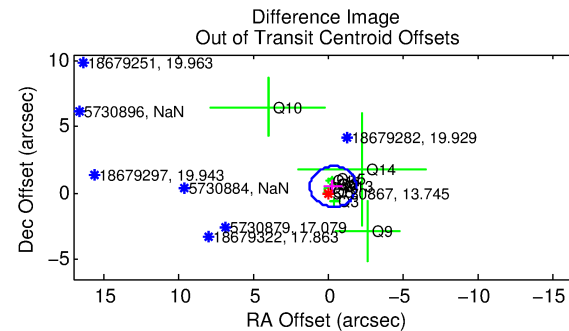
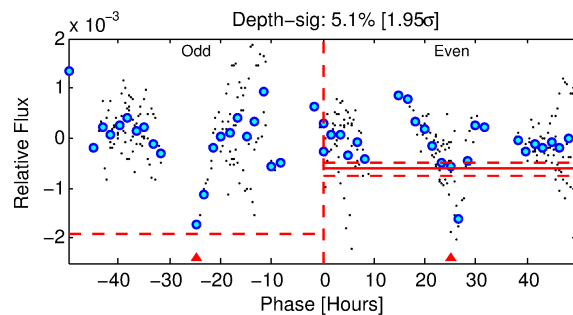
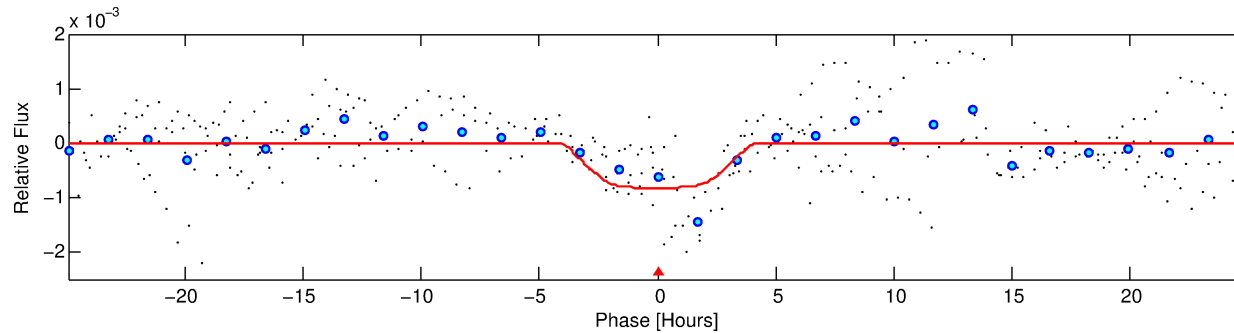
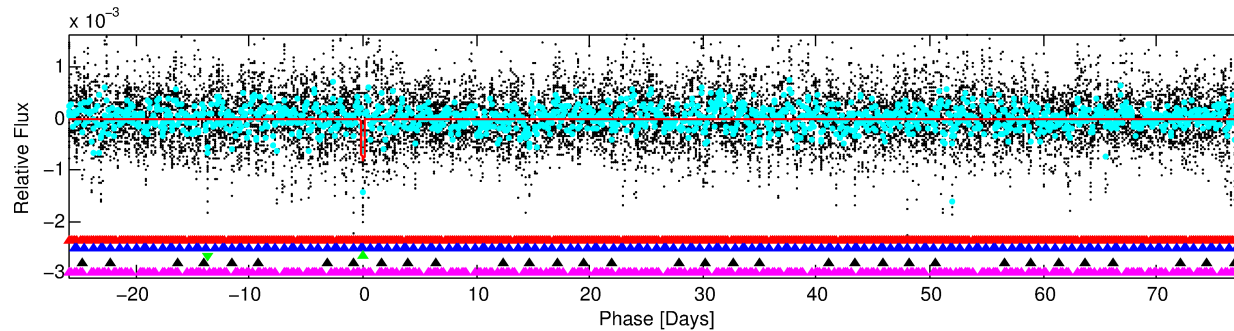
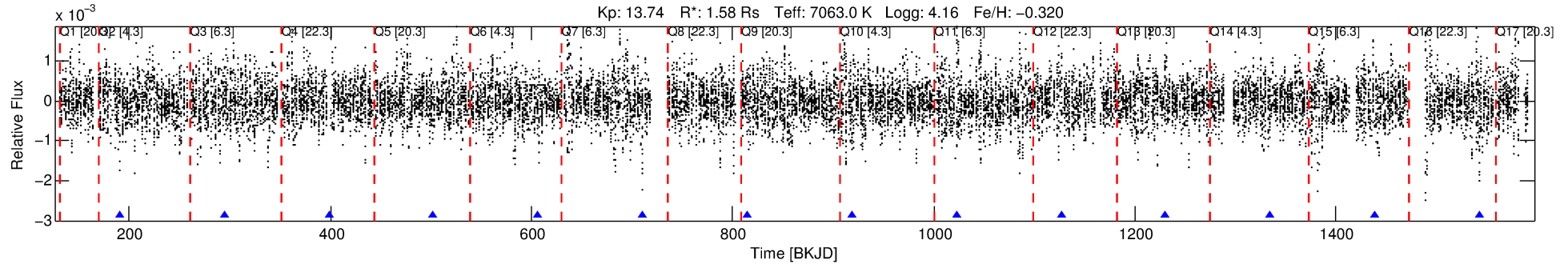
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005730867-03

No Significant Match Found

DV One-Page Summary

KIC: 5730867 Candidate: 3 of 5 Period: 103.984 d



DV Fit Results:

Period = 103.98402 [0.00225] d
Epoch = 190.6658 [0.0176] BKJD
Rp/R* = 0.0325 [0.0031]
a/R* = 38.05 [6.68]
b = 0.95 [0.02]
Seff = 24.62 [9.76]
Teq = 568 [56] K
Rp = 5.60 [1.72] Re
a = 0.4755 [0.1164] AU
Ag = 2265.77 [1026.80] [2.21σ]
Teffp = 6059 [505] K [10.81σ]

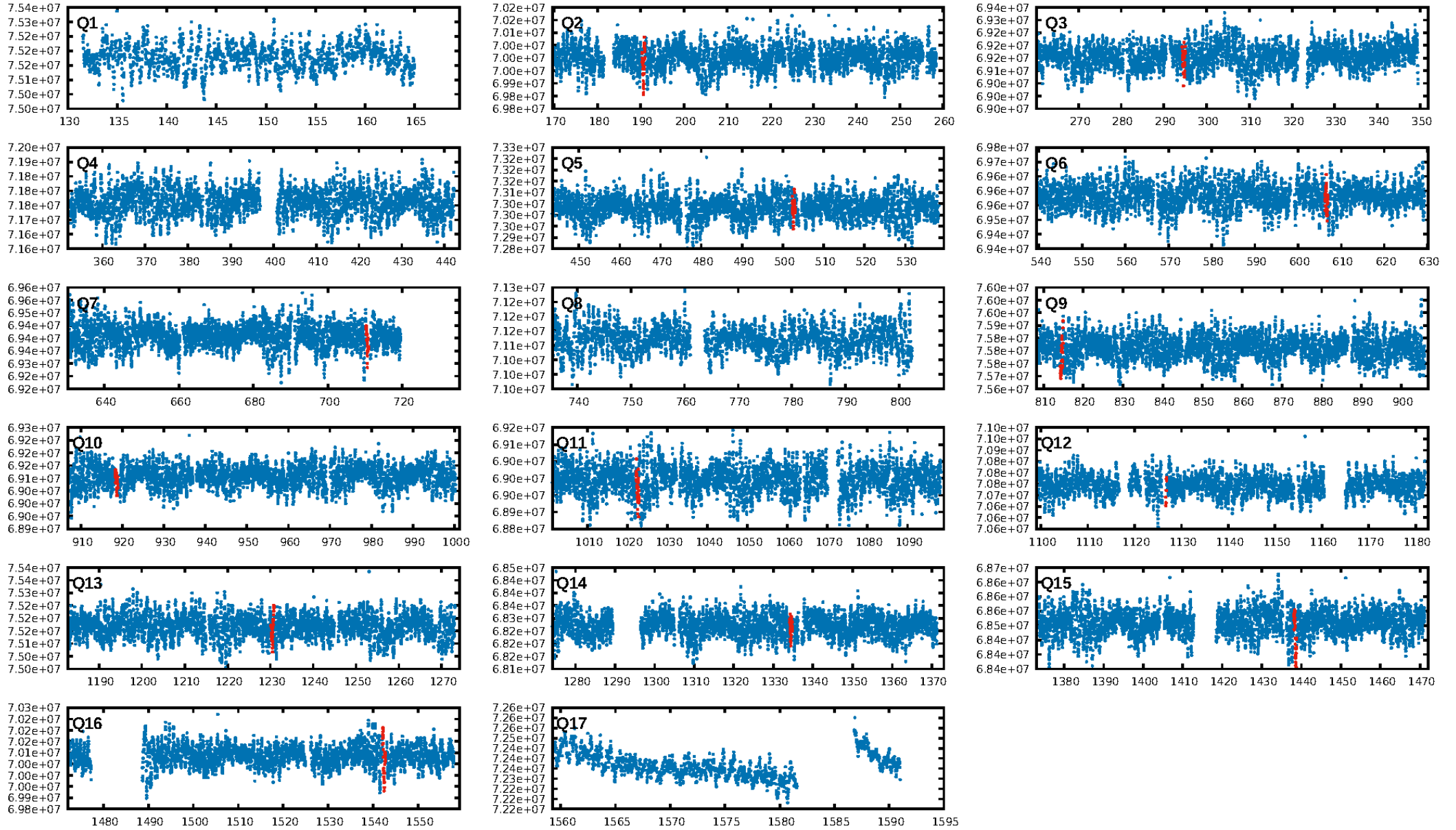
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [133.48σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 35.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: -0.2902
Centroid-sig: 0.2%
Centroid-so: 0.346 arcsec [0.70σ]
OotOffset-rm: 0.616 arcsec [1.20σ]
KicOffset-rm: 0.360 arcsec [0.67σ]
OotOffset-st: 4/3/1/3 [11]
KicOffset-st: 4/3/1/3 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 0.00 [0/11]

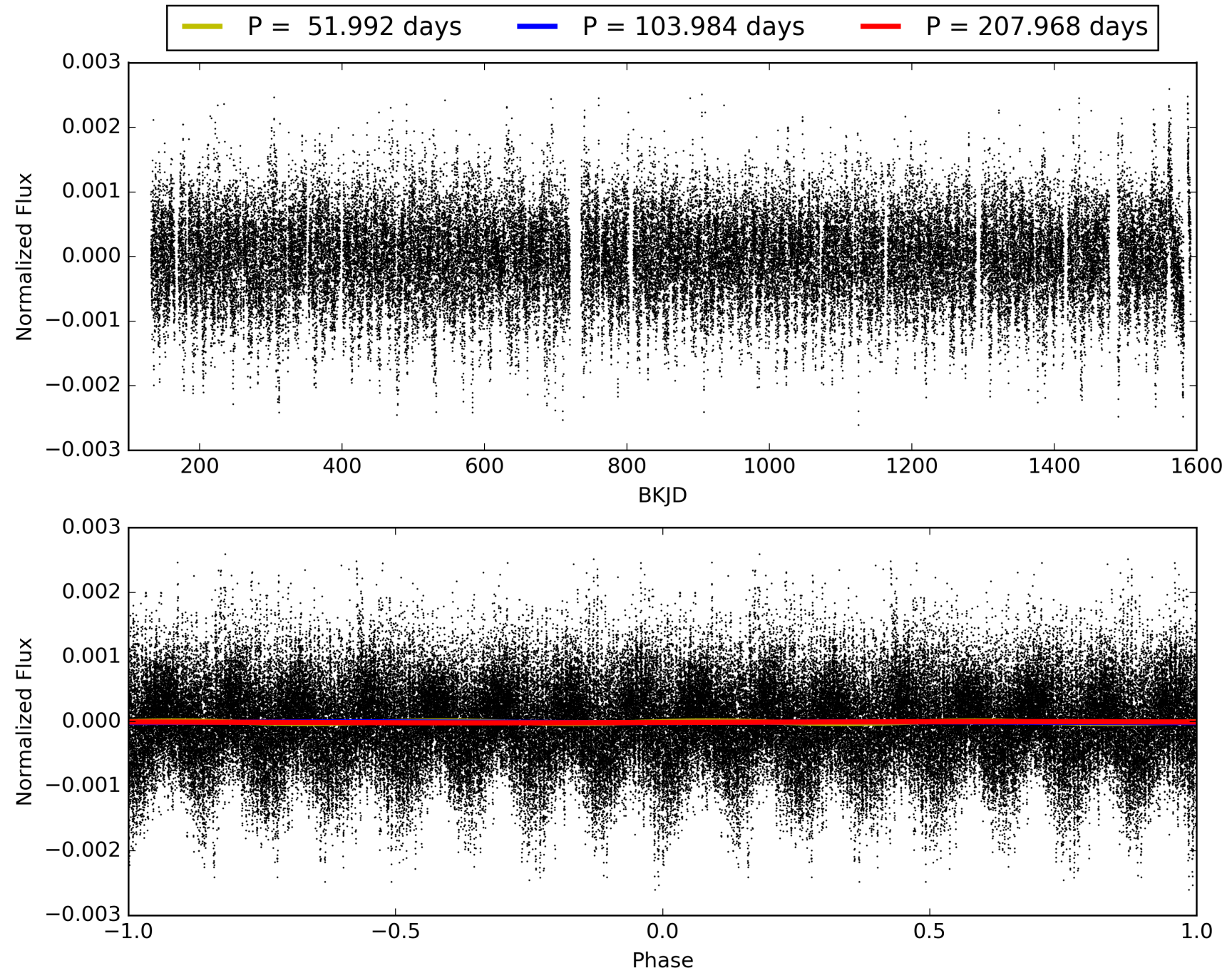
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:02:18 Z

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

TCE 005730867-03, PDC Light Curves

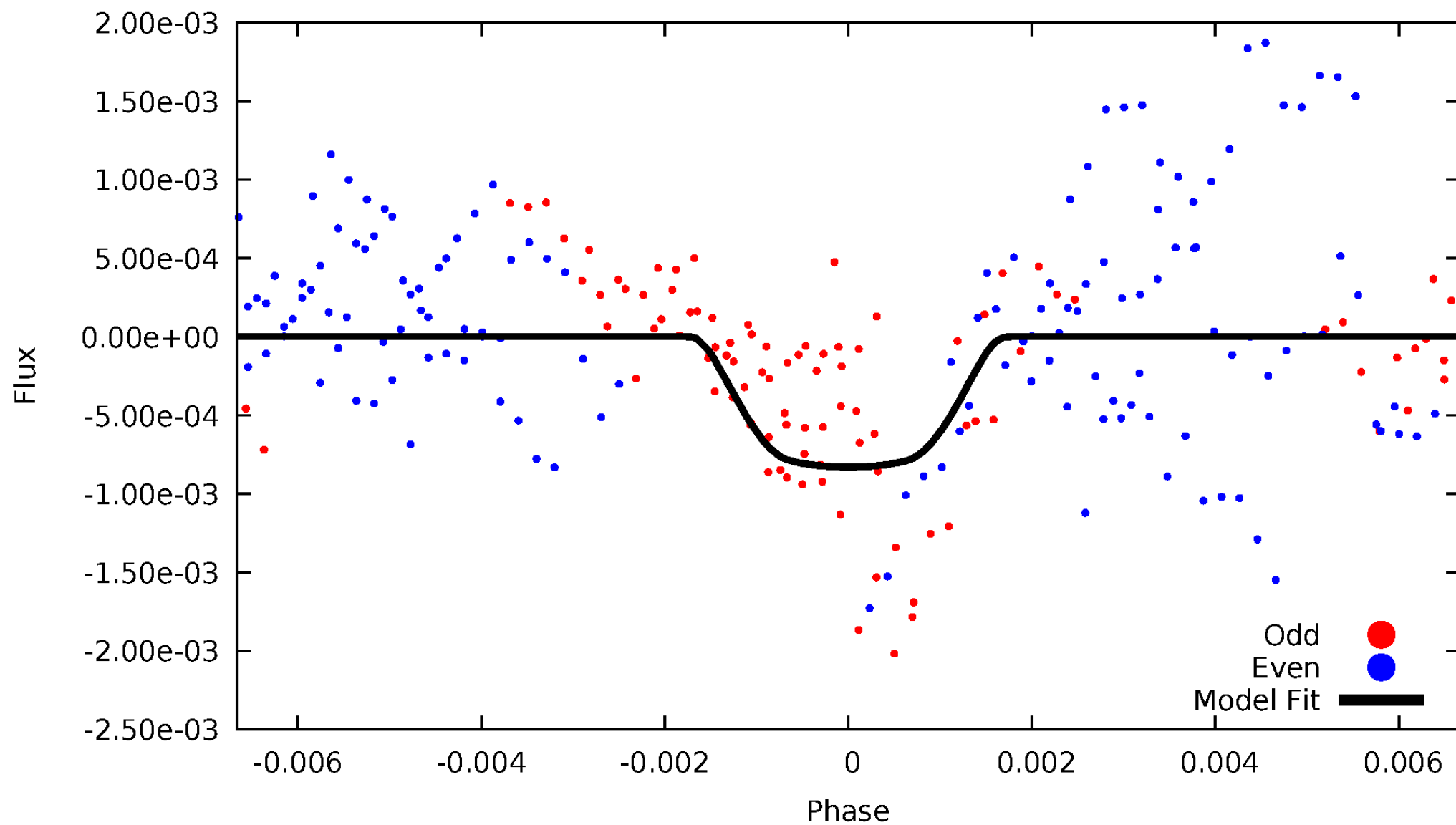


TCE 005730867-03



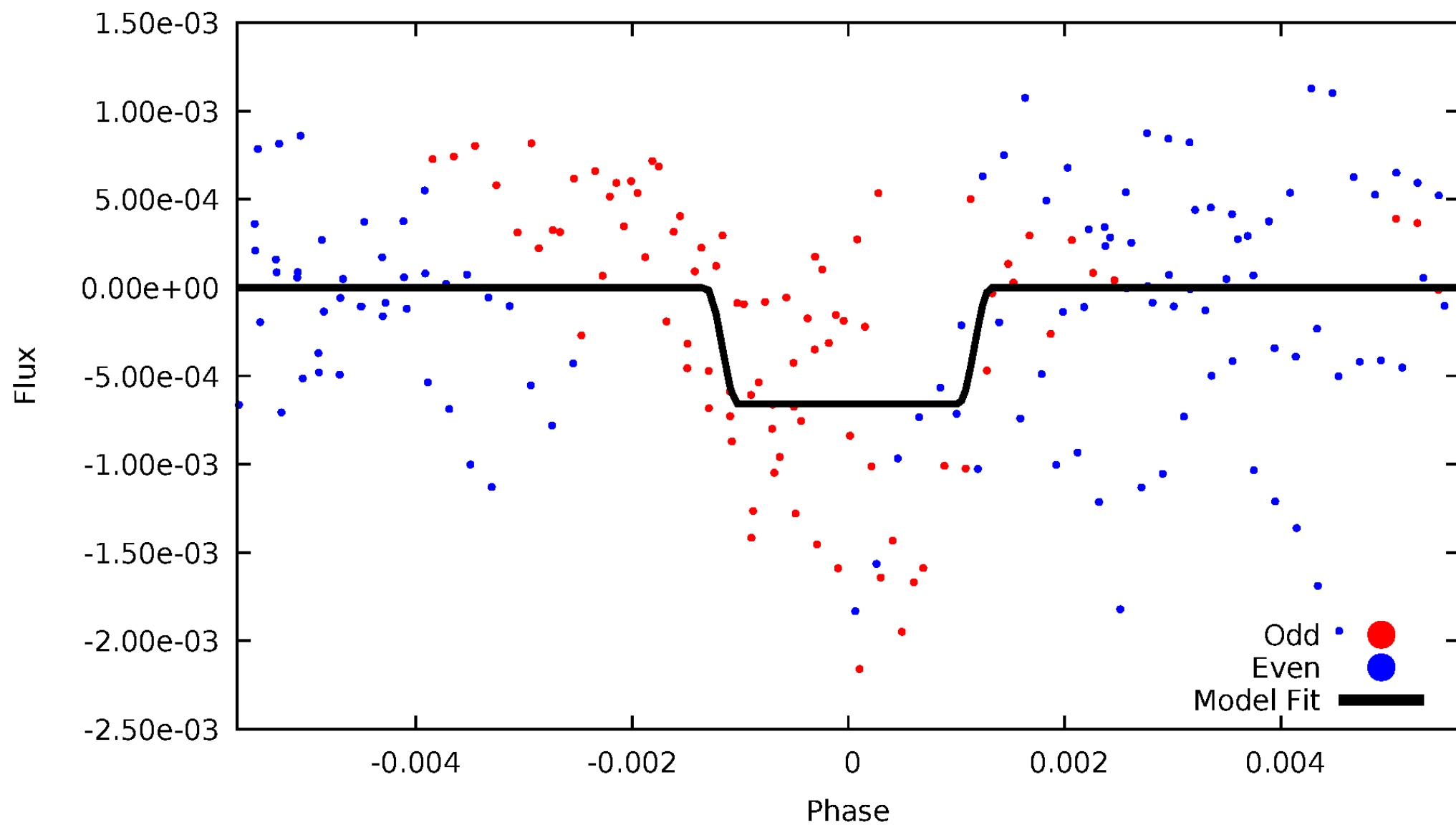
DV Odd/Even

TCE 005730867-03



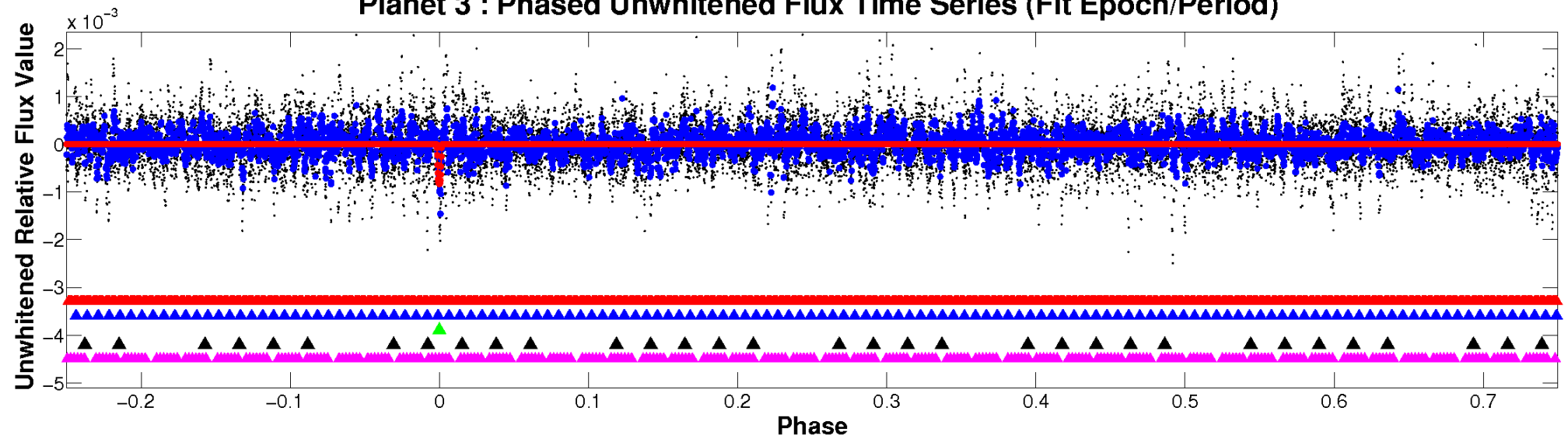
ALT Odd/Even

TCE 005730867-03

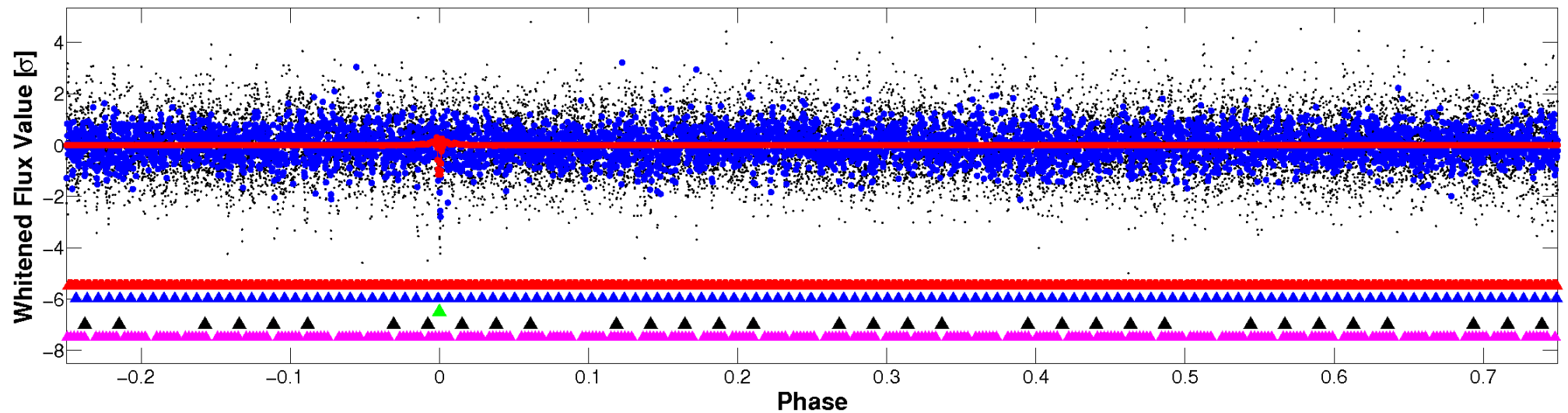


Non-Whitened Vs. Whitened Light Curve

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

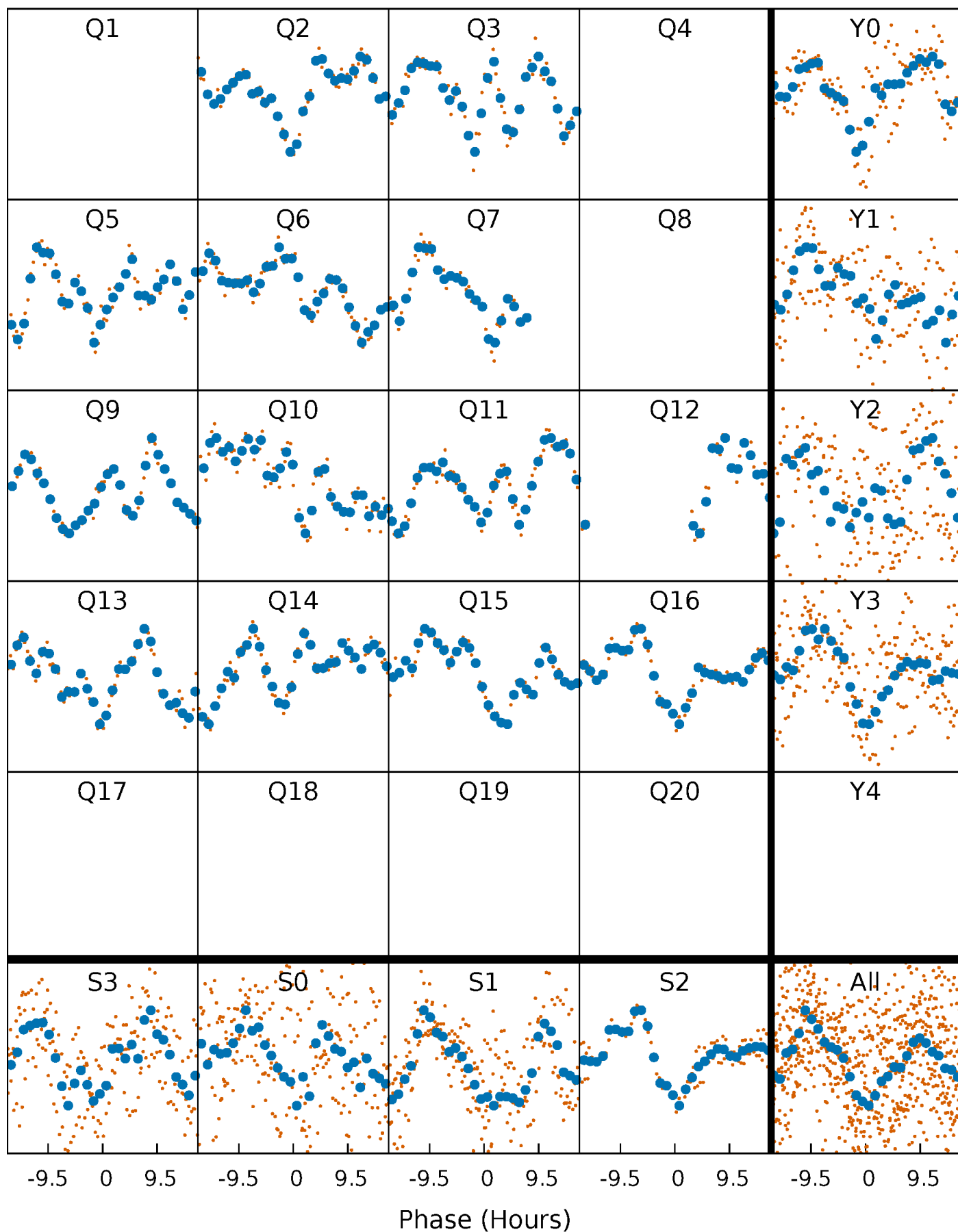


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



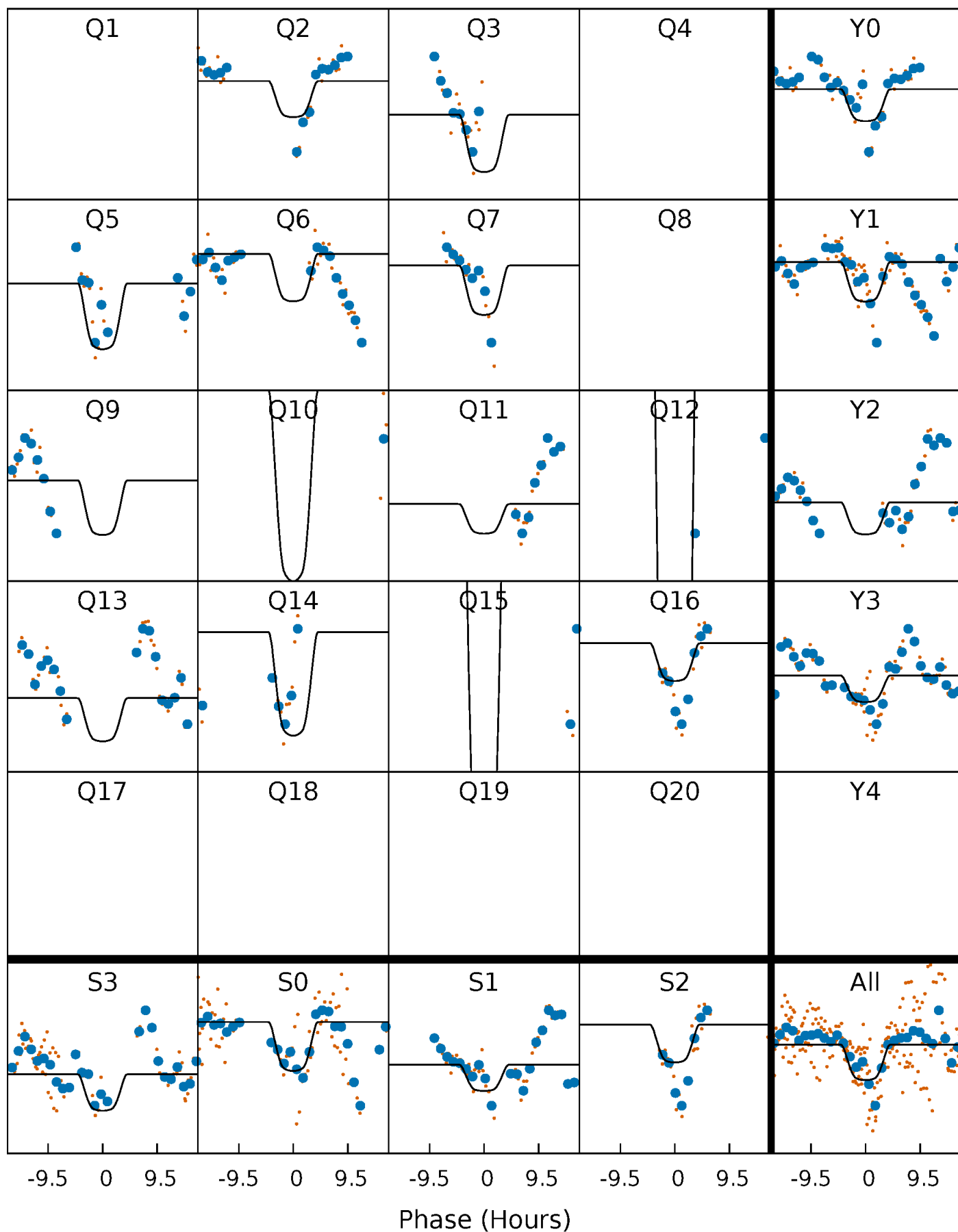
PDC Quarter-Phased Transit Curves

TCE 005730867-03 $P=103.984016$ Days $T_0=190.665842$ (BKJD)



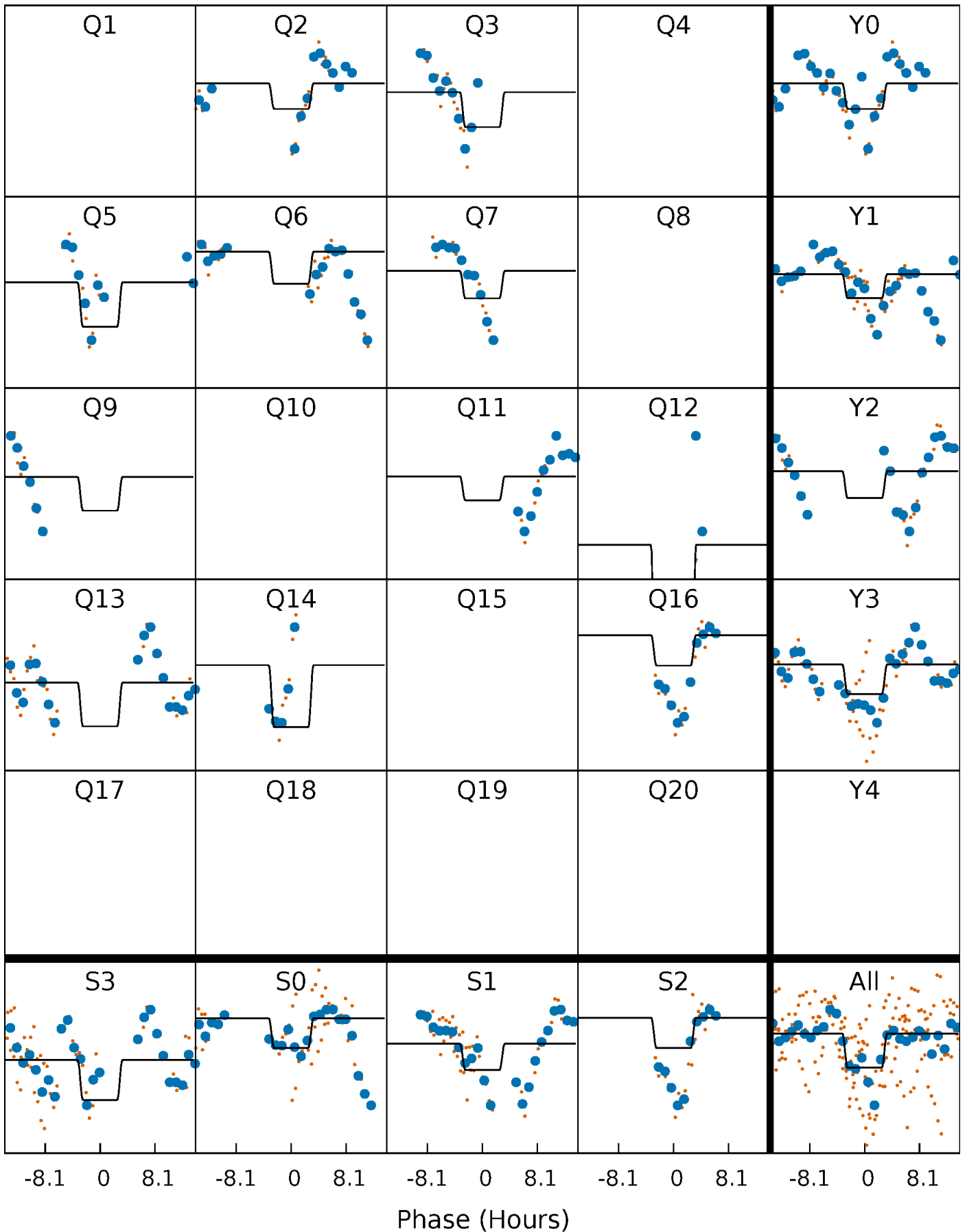
DV Quarter-Phased Transit Curves

TCE 005730867-03 $P=103.984016$ Days $T_0=190.665842$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

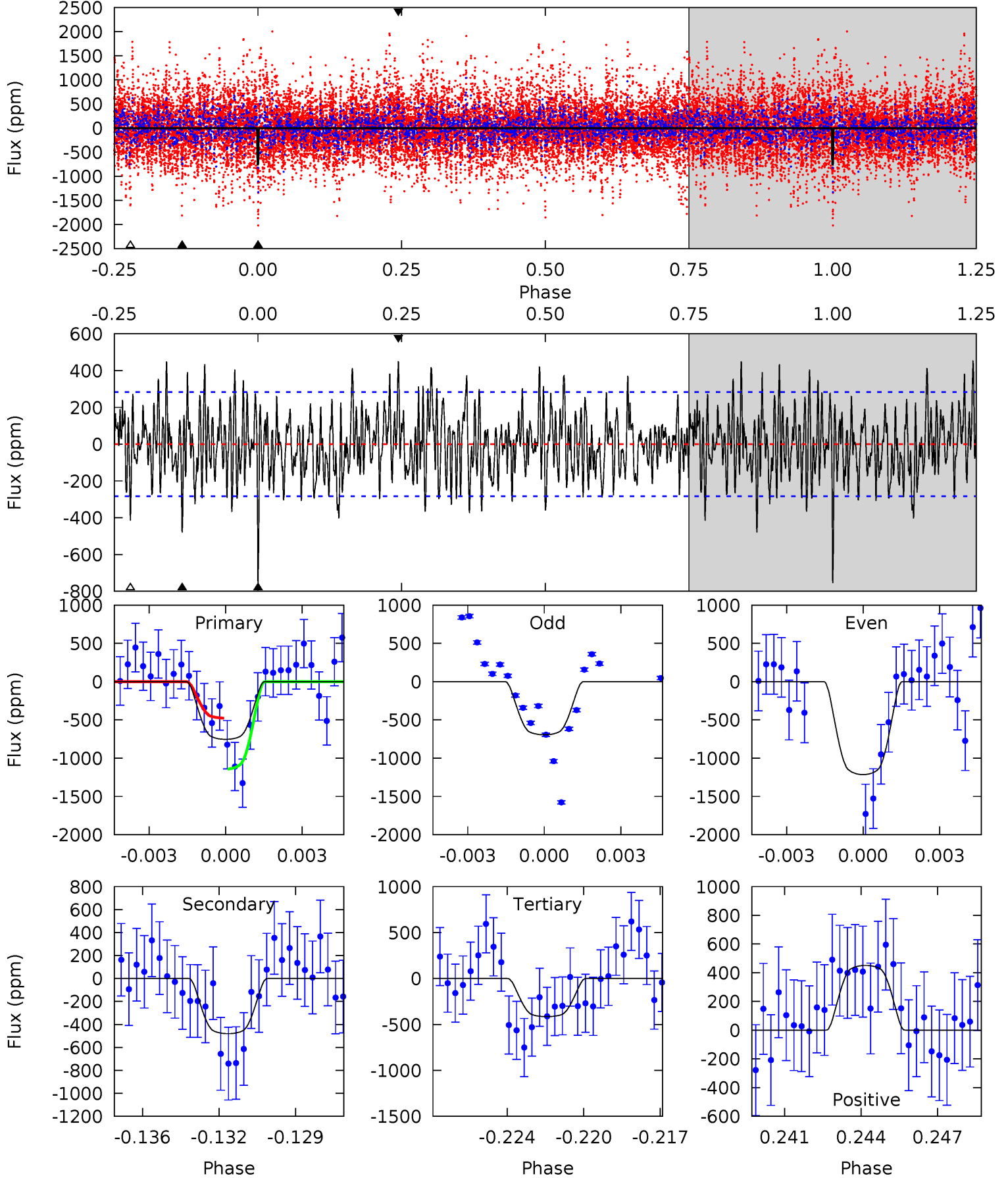
TCE 005730867-03 P=103.982725 Days $T_0=190.683431$ (BKJD)



DV Model-Shift Uniqueness Test

005730867-03, P = 103.984016 Days, E = 86.681826 Days

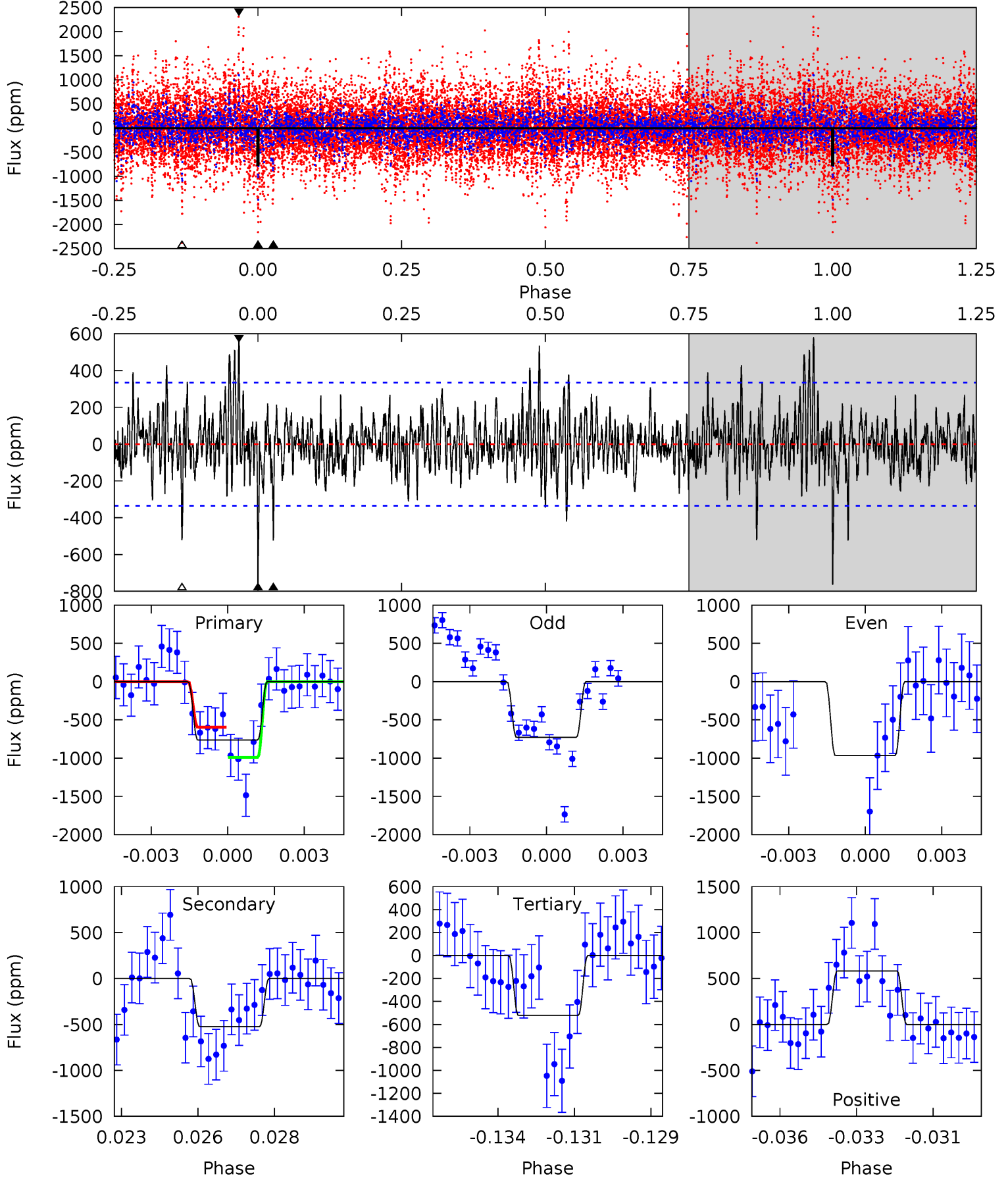
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.9	8.88	7.67	8.33	5.23	2.93	2.77	6.26	5.61	1.21	0.55	3.53	1.30	0.37	6.14



Alt Model-Shift Uniqueness Test

005730867-03, P = 103.982725 Days, E = 86.700706 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	8.27	8.23	9.19	5.28	3.01	2.02	3.82	2.86	0.04	-0.92	1.45	1.11	0.43	3.10



Stellar Parameters For KIC 005730867

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7063^{+228}_{-313}	$4.163^{+0.158}_{-0.193}$	$-0.320^{+0.300}_{-0.300}$	$1.580^{+0.462}_{-0.378}$	$1.331^{+0.193}_{-0.214}$	$0.475^{+0.442}_{-0.230}$
	+3%/-4%	+4%/-5%	+94%/-94%	+29%/-24%	+15%/-16%	+93%/-48%
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 005730867-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-480 ± 54	$5.71^{+1.07}_{-0.91}$	801^{+58}_{-60}	5738^{+373}_{-341}	1847^{+664}_{-540}
Alt.	-524 ± 63	$4.50^{+0.88}_{-0.73}$	798^{+65}_{-59}	6600^{+591}_{-487}	3237^{+1363}_{-1009}

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

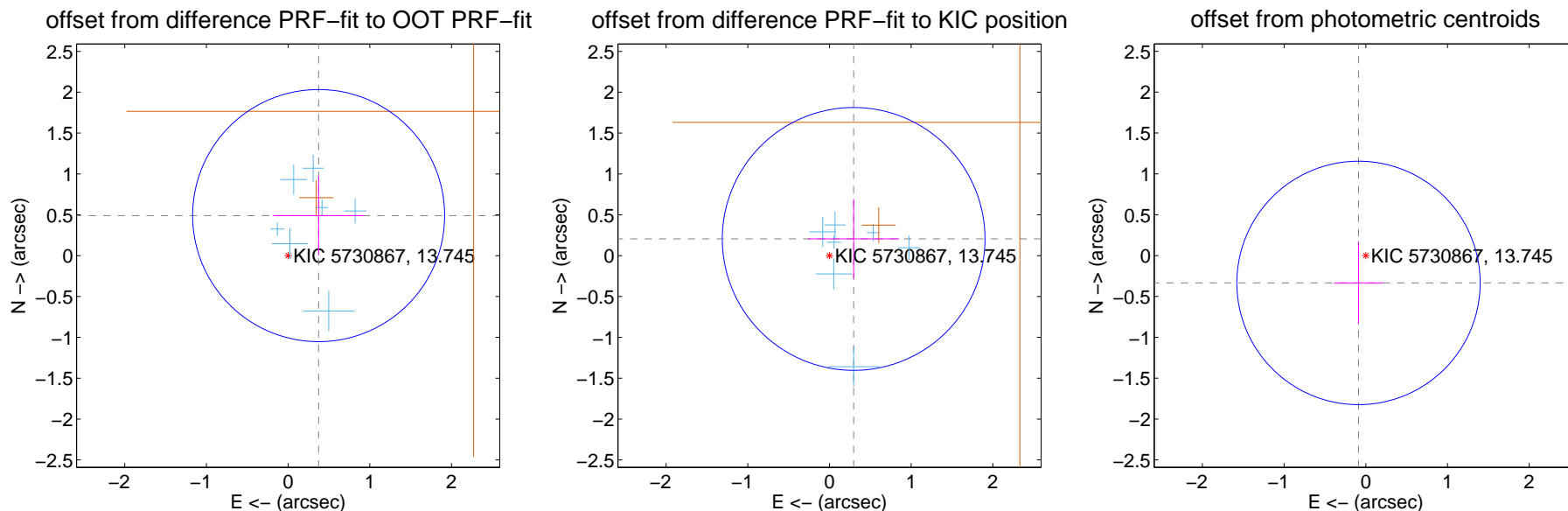
DV Centroid Data

Supplemental centroid analysis for 005730867-03. Kepler magnitude: 13.74. Transit SNR 7.11

There are 7 quarters with good PRF difference image offsets

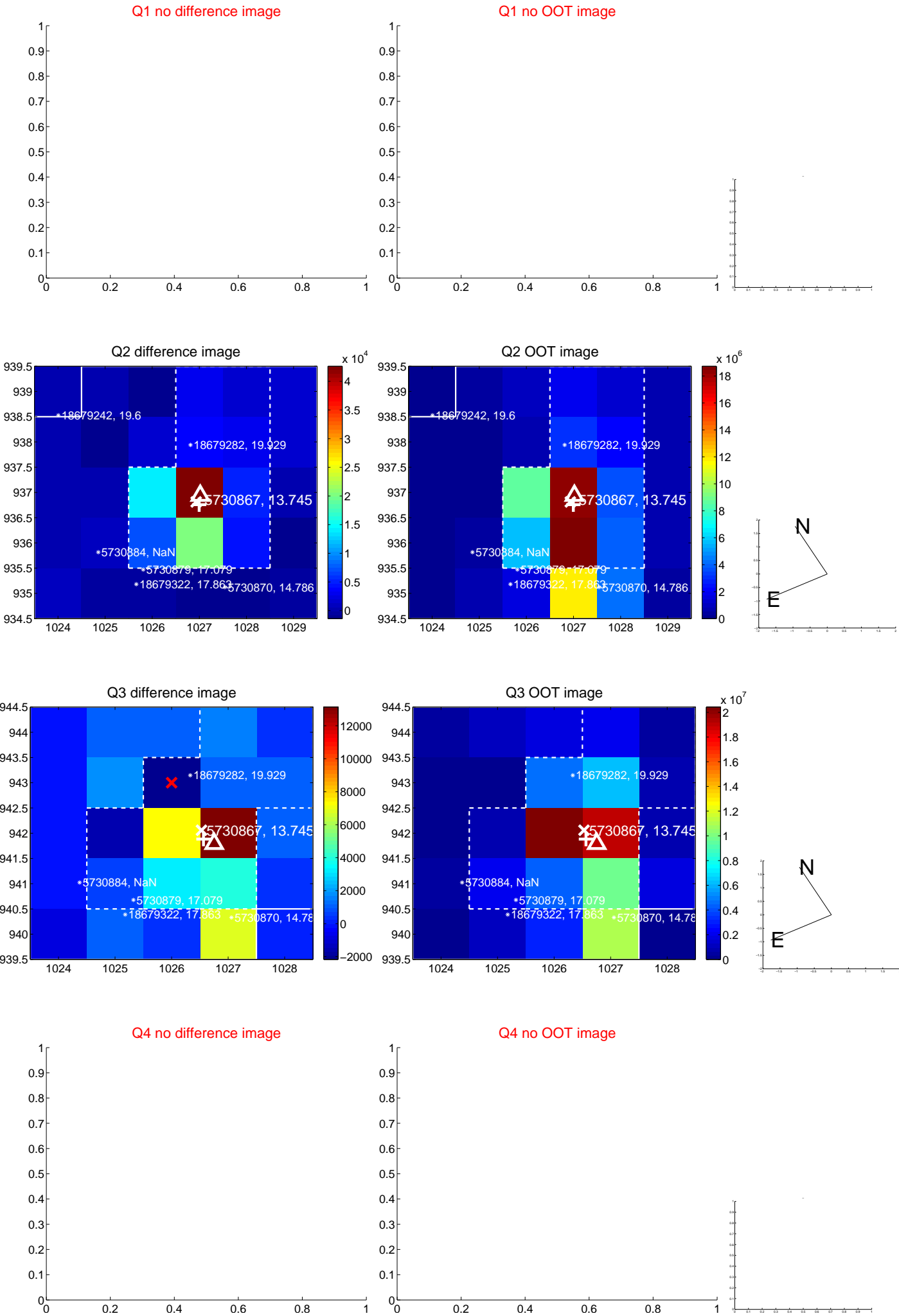
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.616 ± 0.514	1.20	-0.374 ± 0.558	0.490 ± 0.487
PRF-fit source offset from KIC position	0.360 ± 0.536	0.67	-0.296 ± 0.558	0.205 ± 0.487
photometric centroid source offset	0.35 ± 0.50	0.70	0.09 ± 0.30	-0.33 ± 0.51

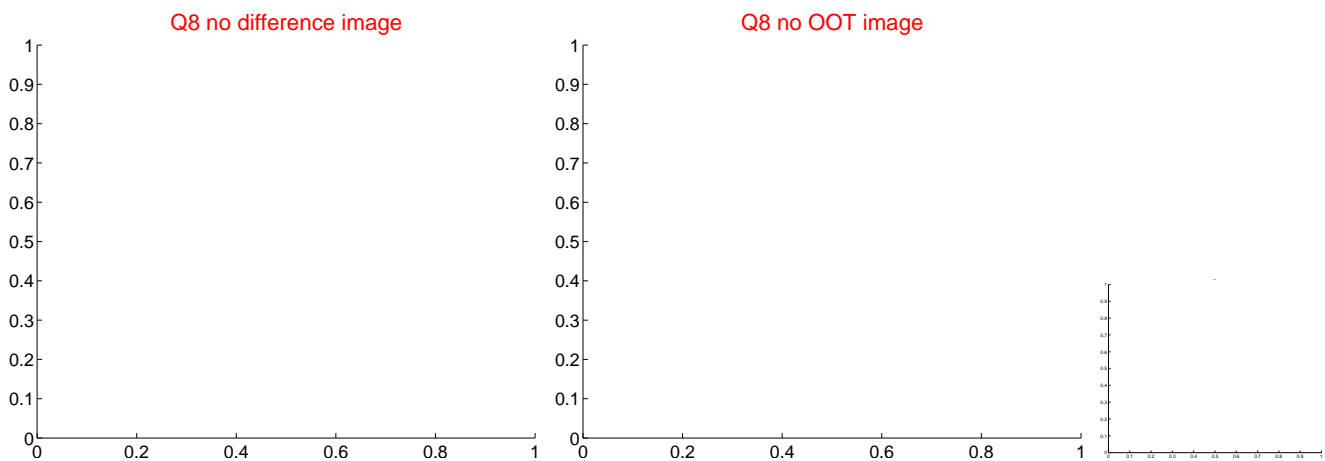
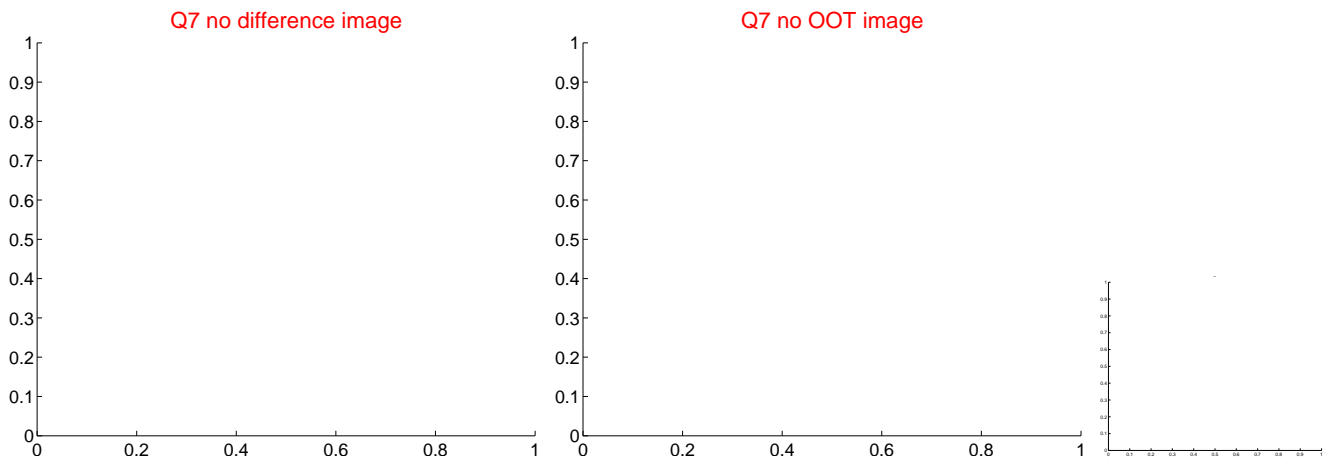
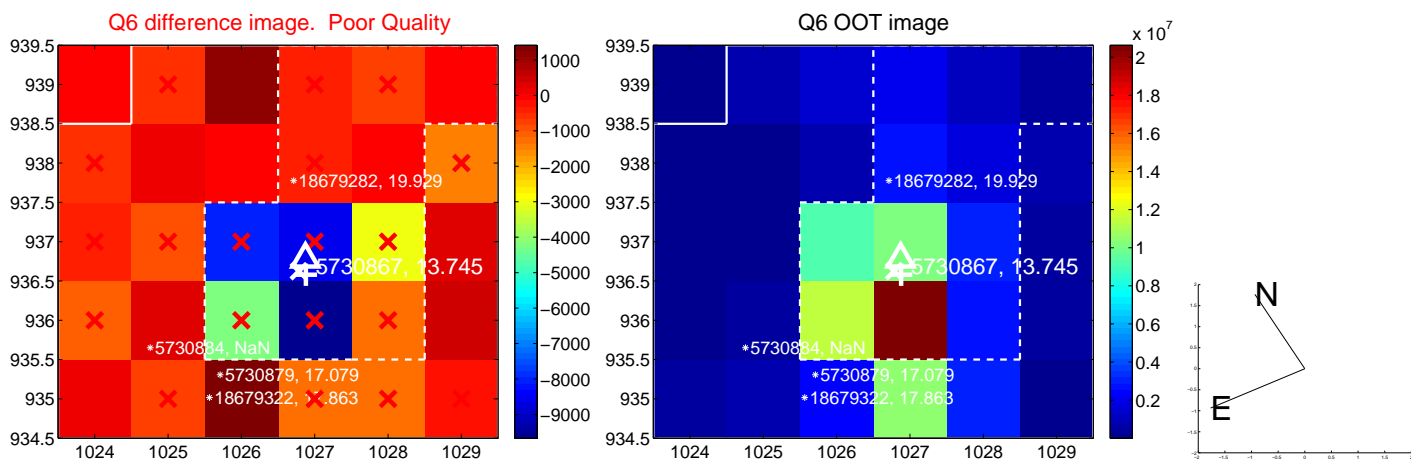
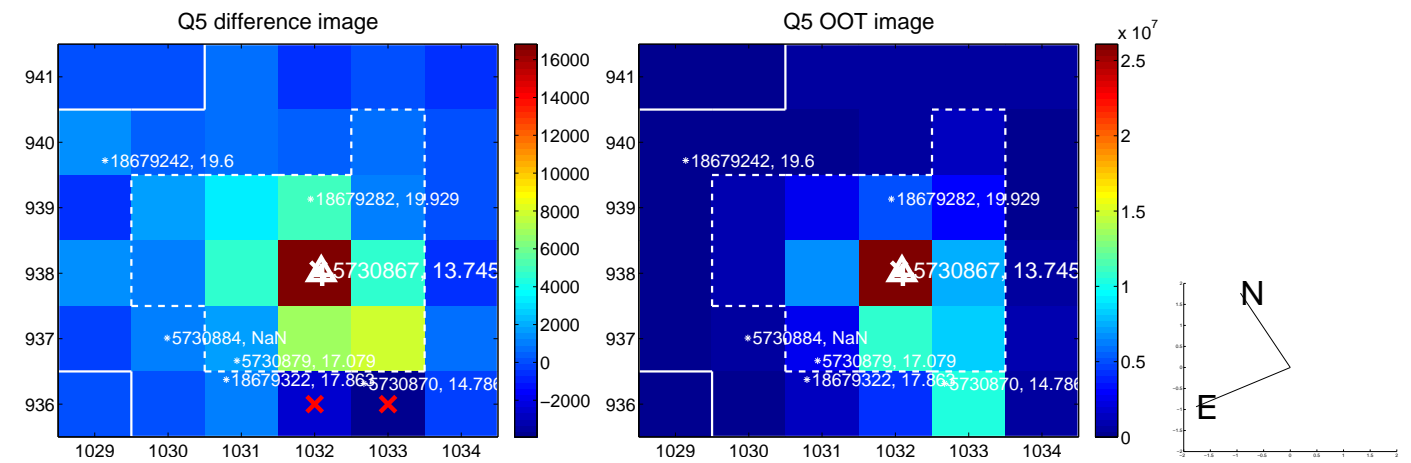


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

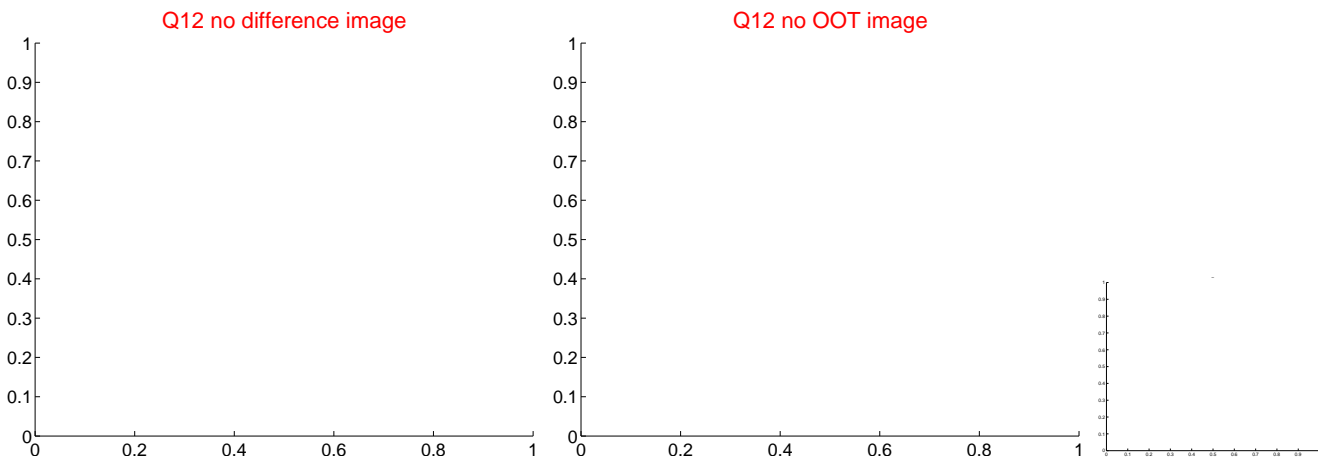
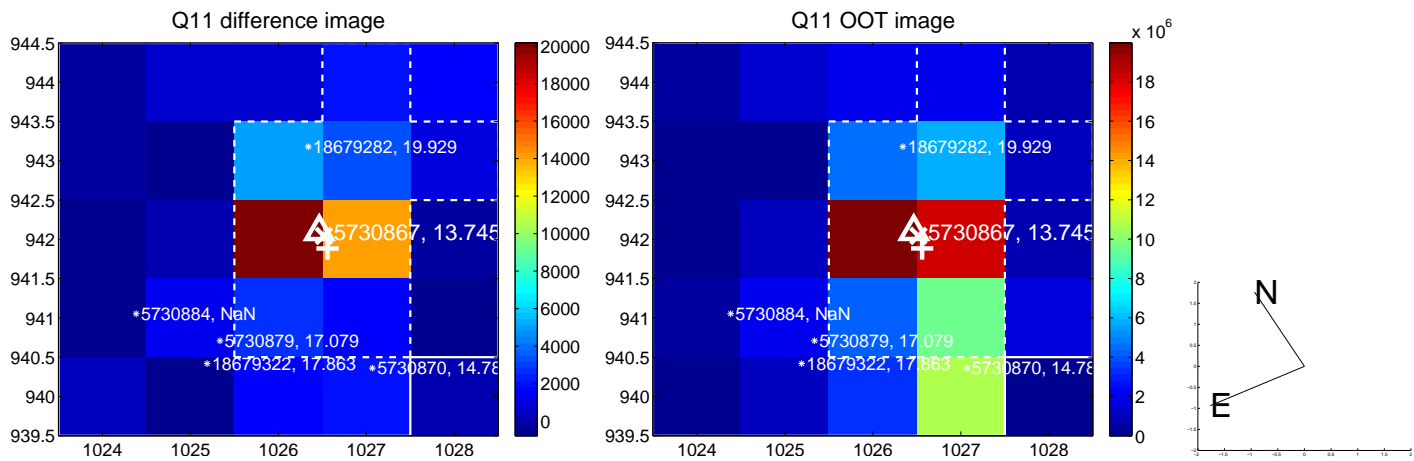
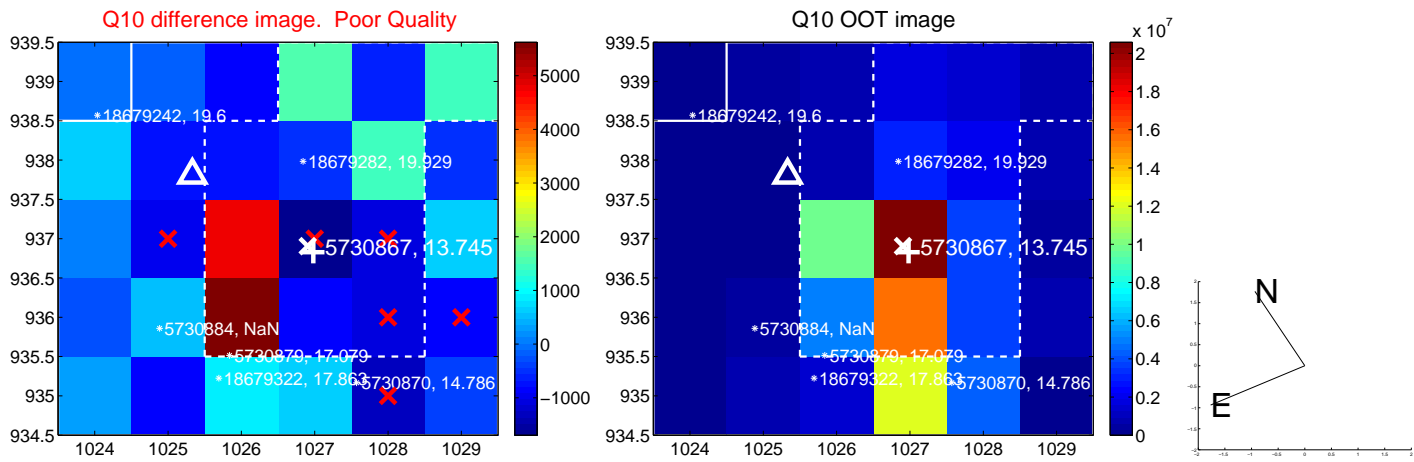
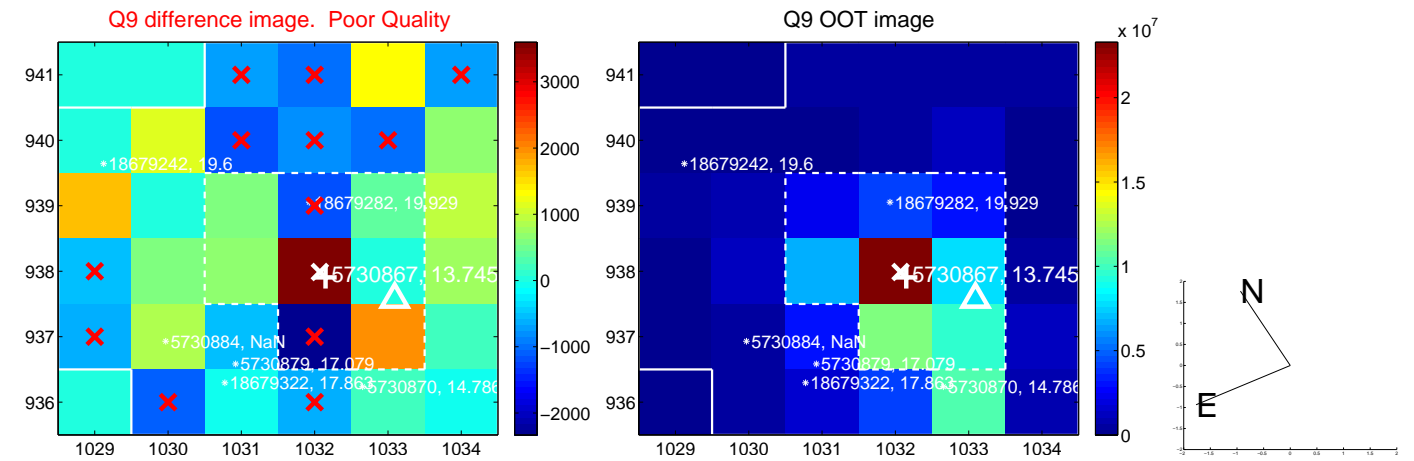
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



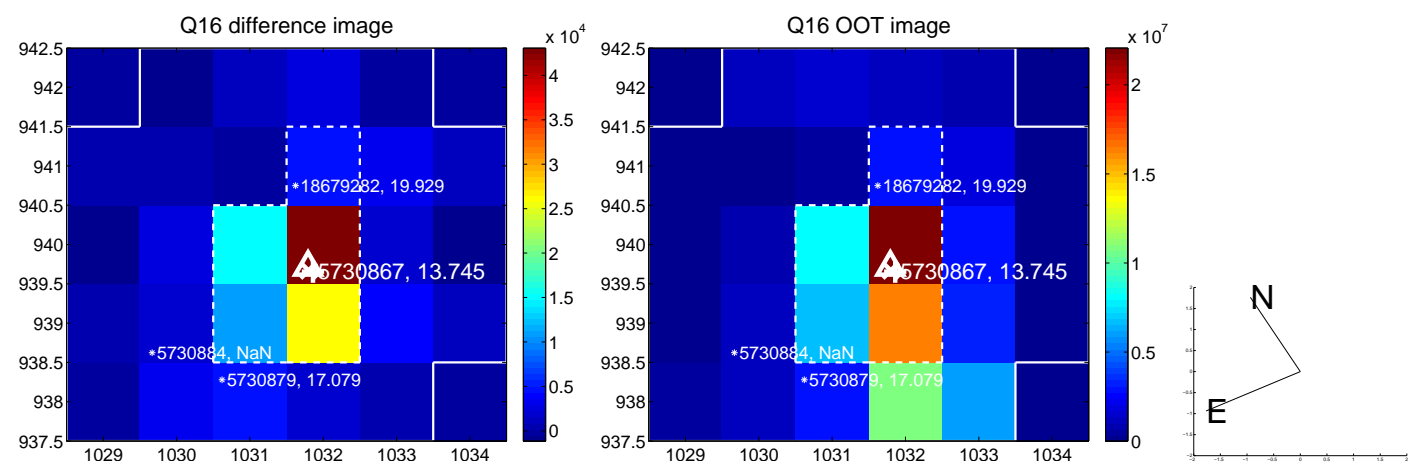
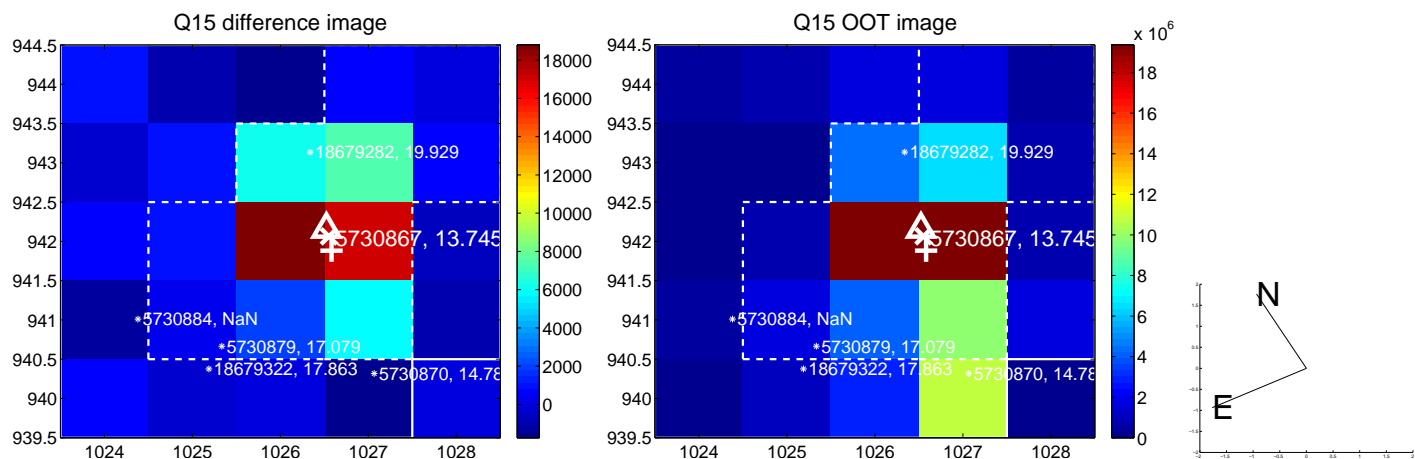
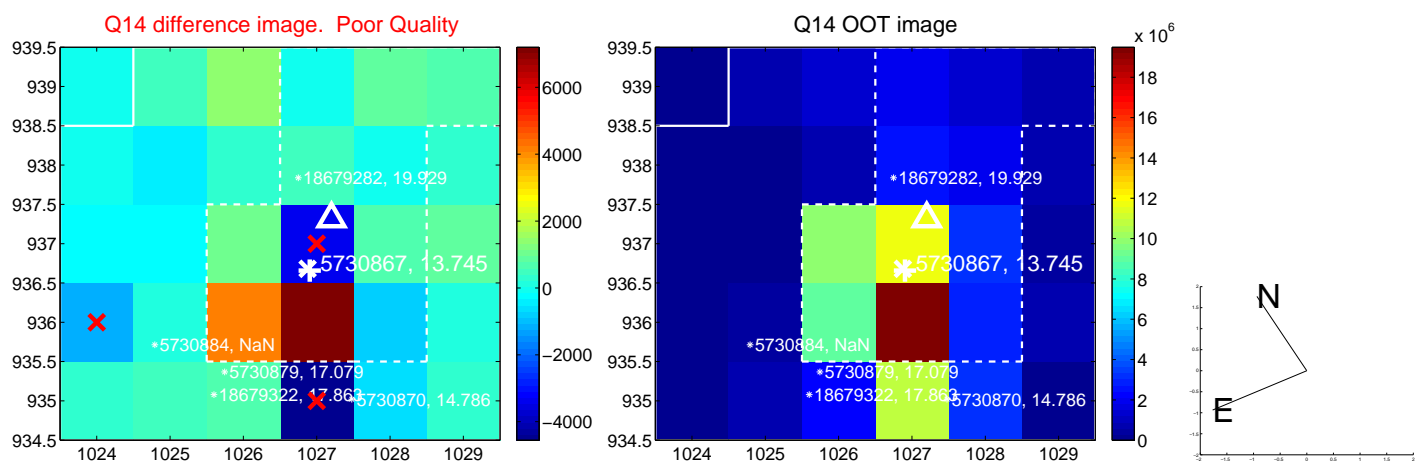
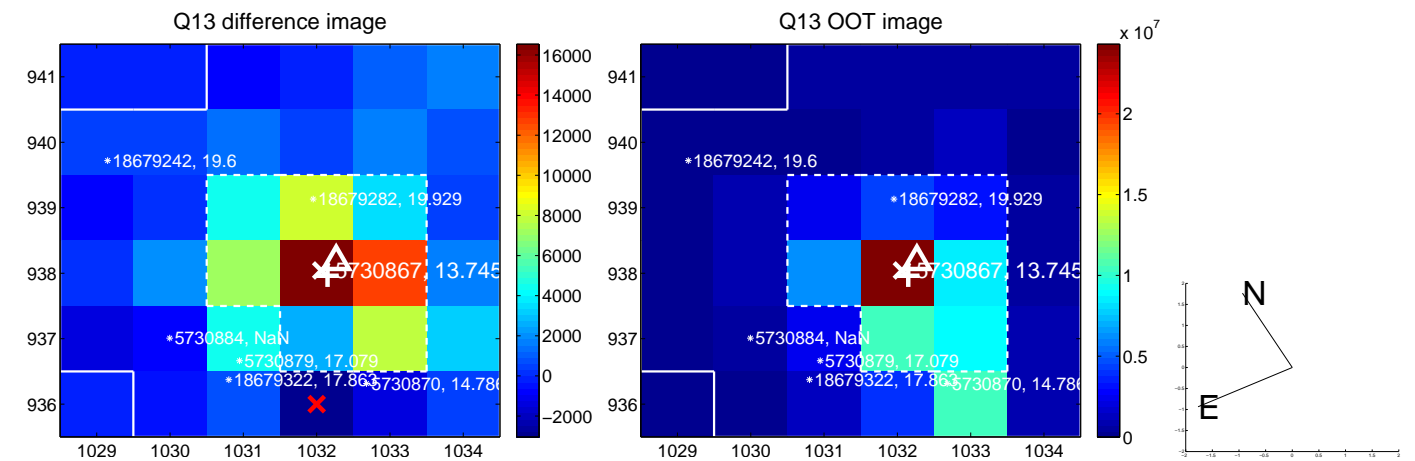
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



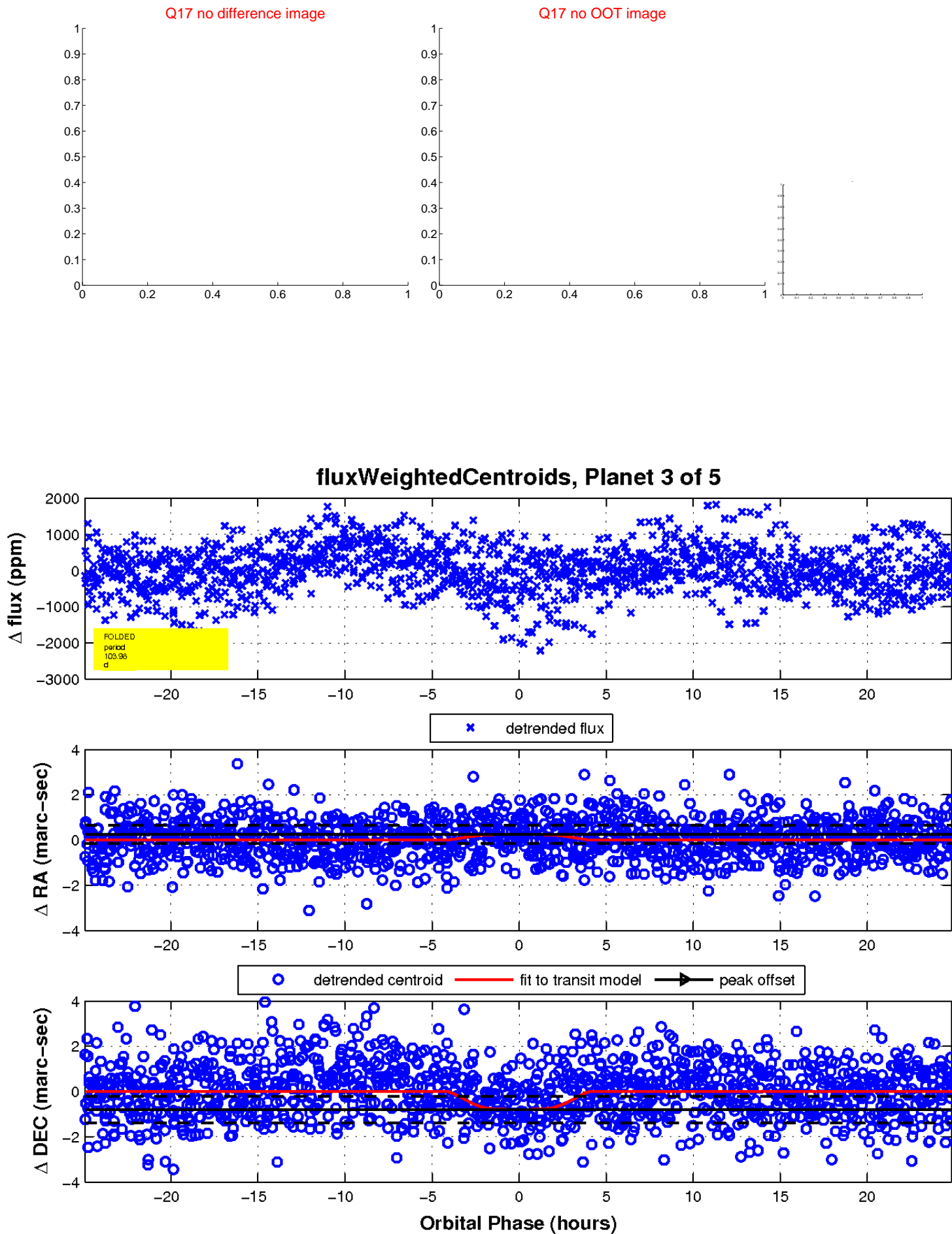
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

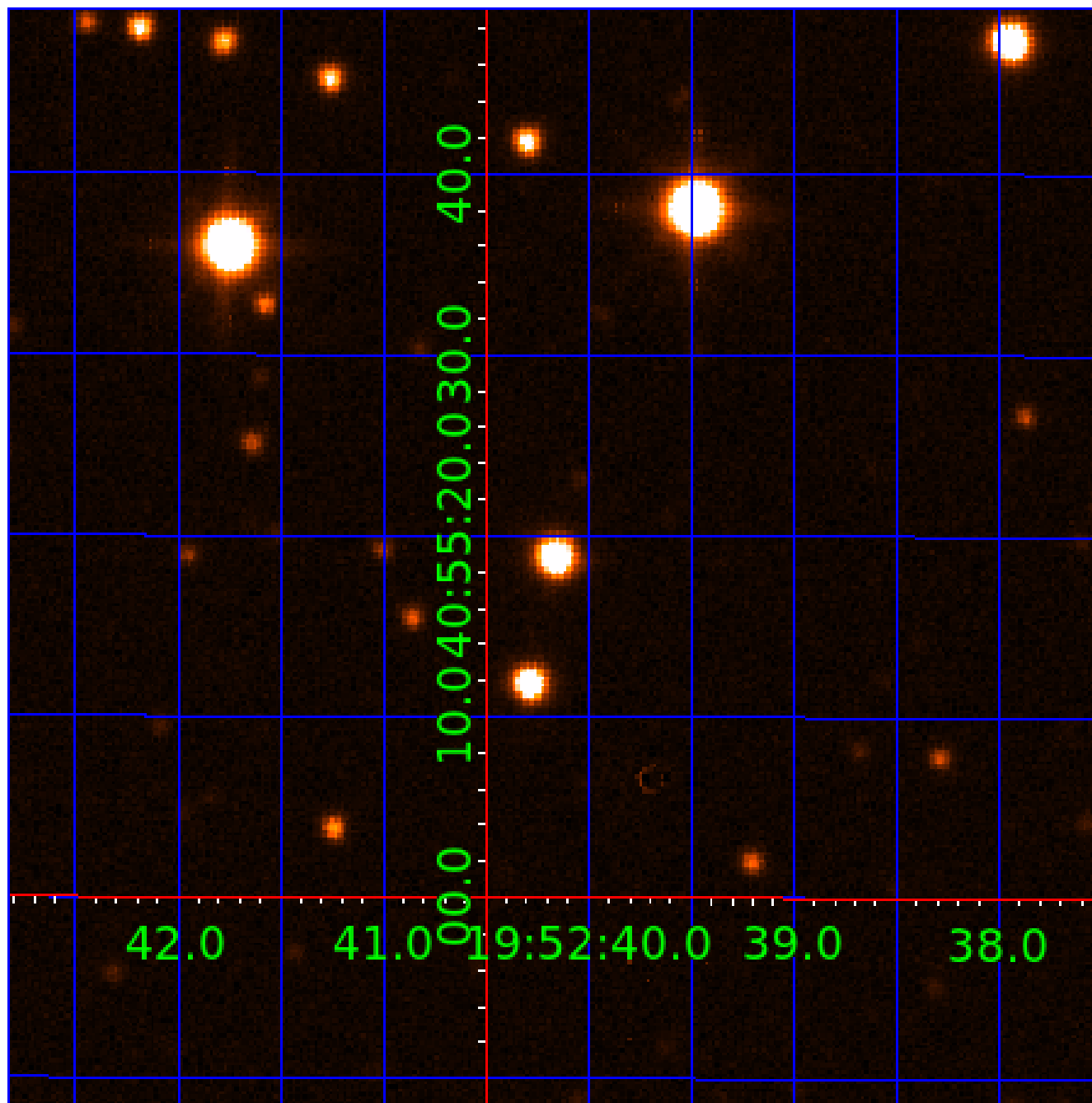


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005730867

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})
005730867-01	OBS	No	0.870349	132.130336	69.1	3.749	9.4	11.1	1.58	7063	1.53	14488.77
005730867-02	OBS	No	3.823157	134.719999	258.1	10.362	9.7	11.8	1.58	7063	4.90	2014.00
005730867-03	OBS	No	103.984017	190.665842	830.3	8.312	9.3	7.1	1.58	7063	5.60	24.62
005730867-04	OBS	No	44.223679	168.334265	249.0	6.809	9.8	3.7	1.58	7063	2.64	76.99
005730867-05	OBS	No	4.239356	134.242280	146.2	12.500	9.0	-1.0	1.58	7063	1.93	1754.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005730867-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
005730867-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

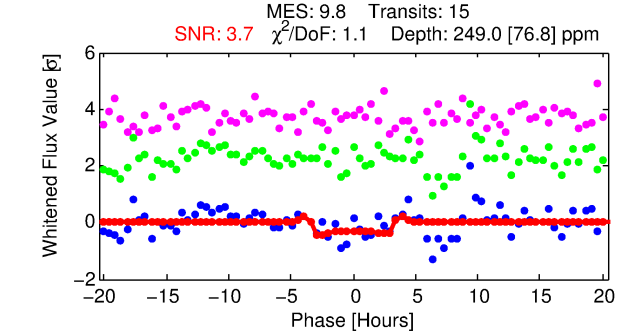
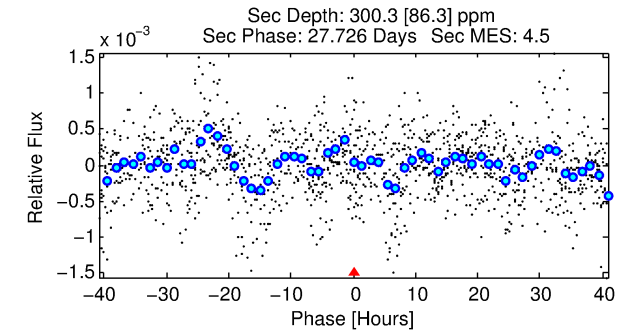
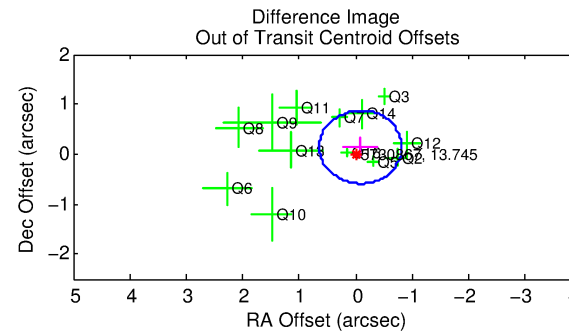
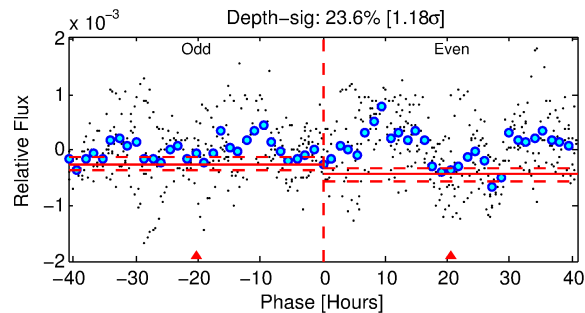
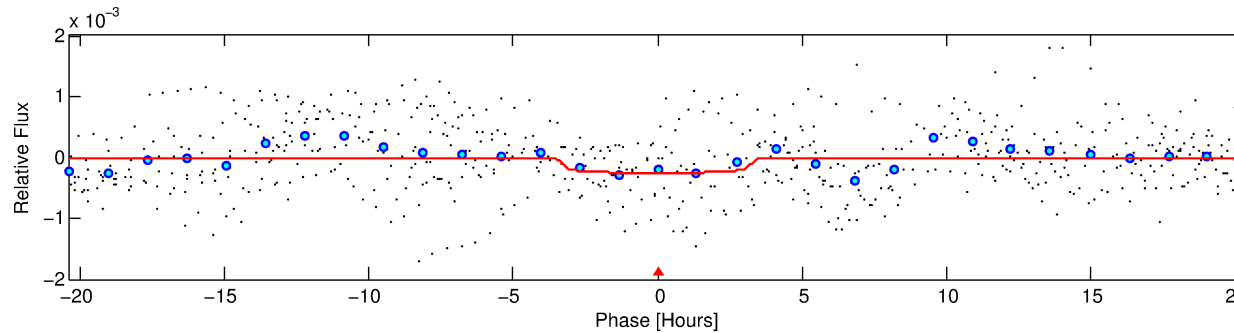
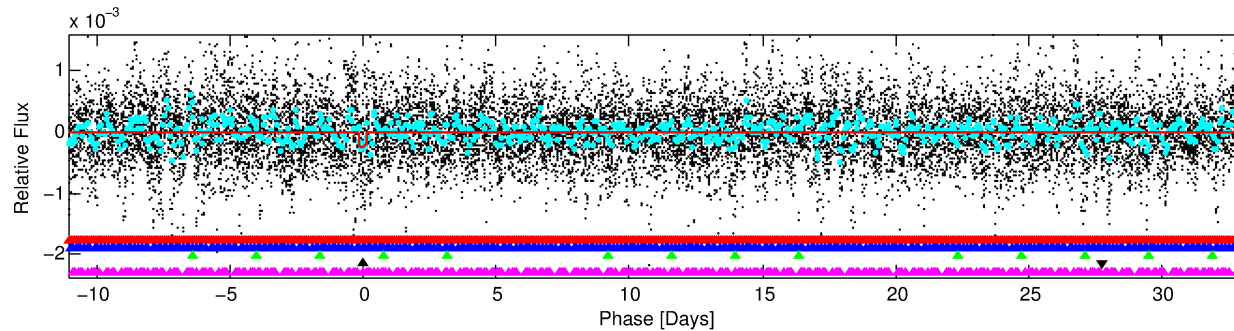
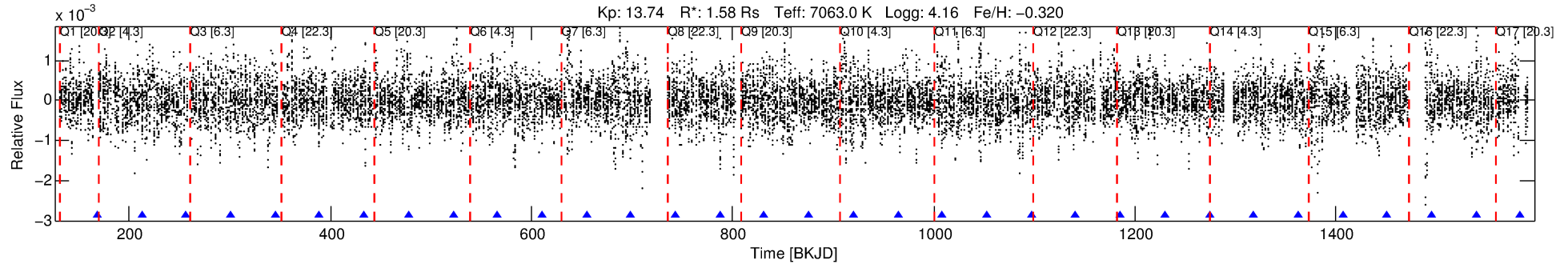
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005730867-04

No Significant Match Found

DV One-Page Summary

KIC: 5730867 Candidate: 4 of 5 Period: 44.224 d



DV Fit Results:

Period = 44.22368 [0.00102] d
Epoch = 168.3343 [0.0194] BKJD
Rp/R* = 0.0153 [0.0160]
a/R* = 39.34 [243.55]
b = 0.63 [5.88]
Seff = 76.99 [30.52]
Teff = 755 [75] K
Rp = 2.64 [2.87] Re
a = 0.2689 [0.0658] AU
Ag = 1719.73 [3691.20] [0.47 σ]
Teffp = 7520 [3994] K [1.69 σ]

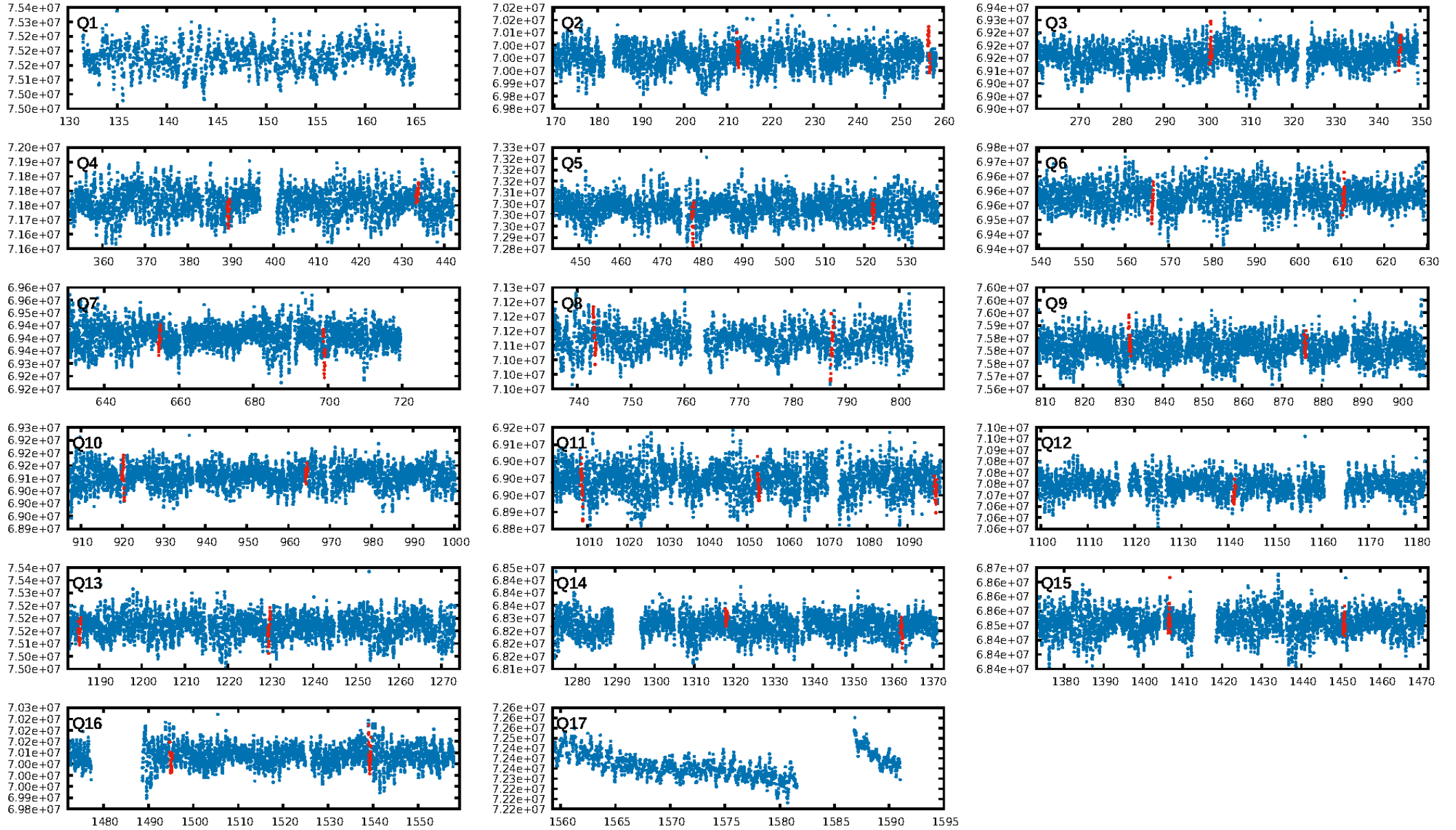
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [67.42 σ]
LongPeriod-sig: 100.0% [133.48 σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [15/15]
GhostDiagnostic-chr: 1.495
Centroid-sig: 10.8%
Centroid-so: 0.554 arcsec [0.62 σ]
OotOffset-rm: 0.163 arcsec [0.67 σ]
KicOffset-rm: 0.103 arcsec [0.38 σ]
OotOffset-st: 4/3/3/3 [13]
KicOffset-st: 4/3/3/3 [13]
DiffImageQuality-fgm: 0.62 [8/13]
DiffImageOverlap-fno: 0.00 [0/14]

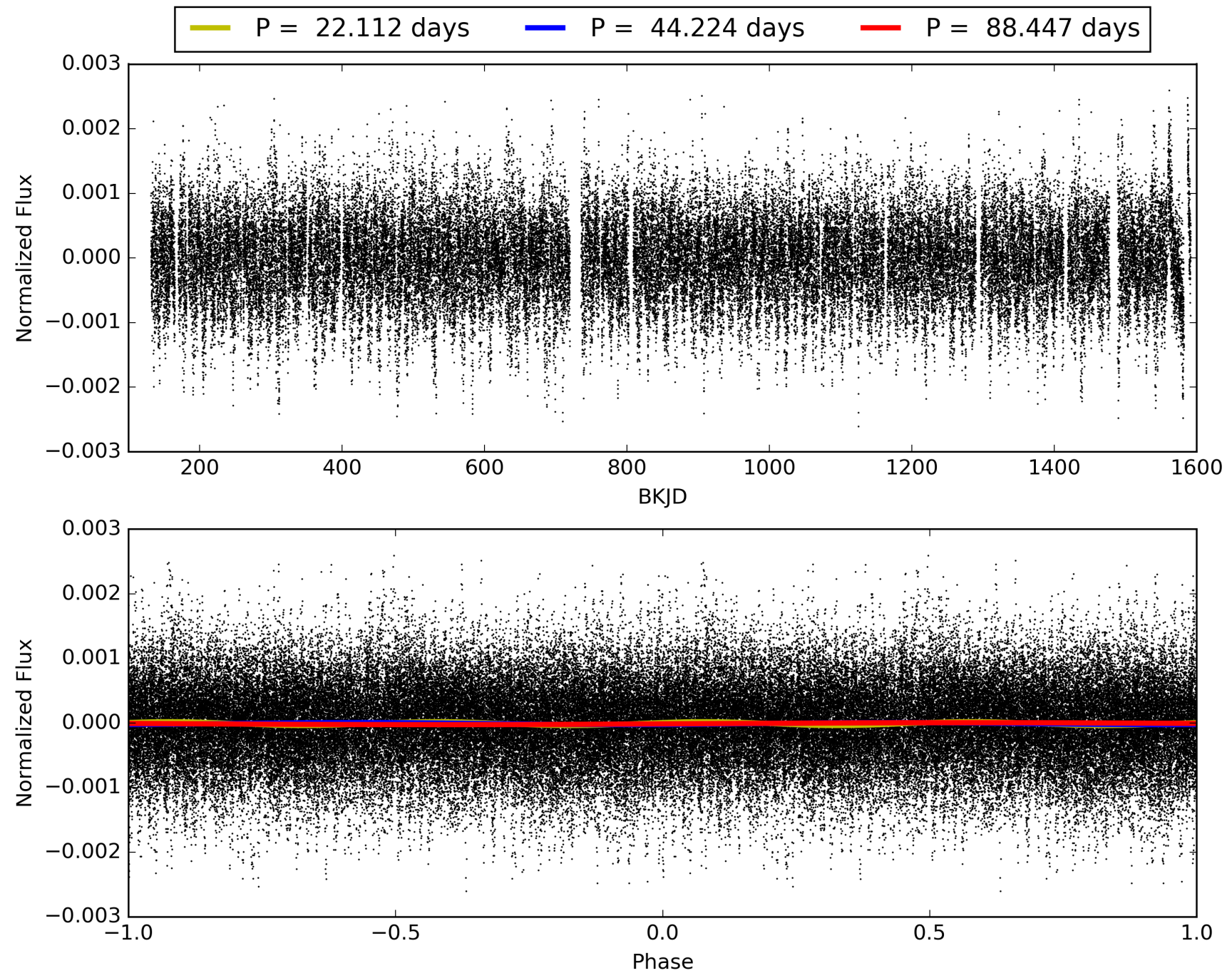
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:02:22 Z

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

TCE 005730867-04, PDC Light Curves

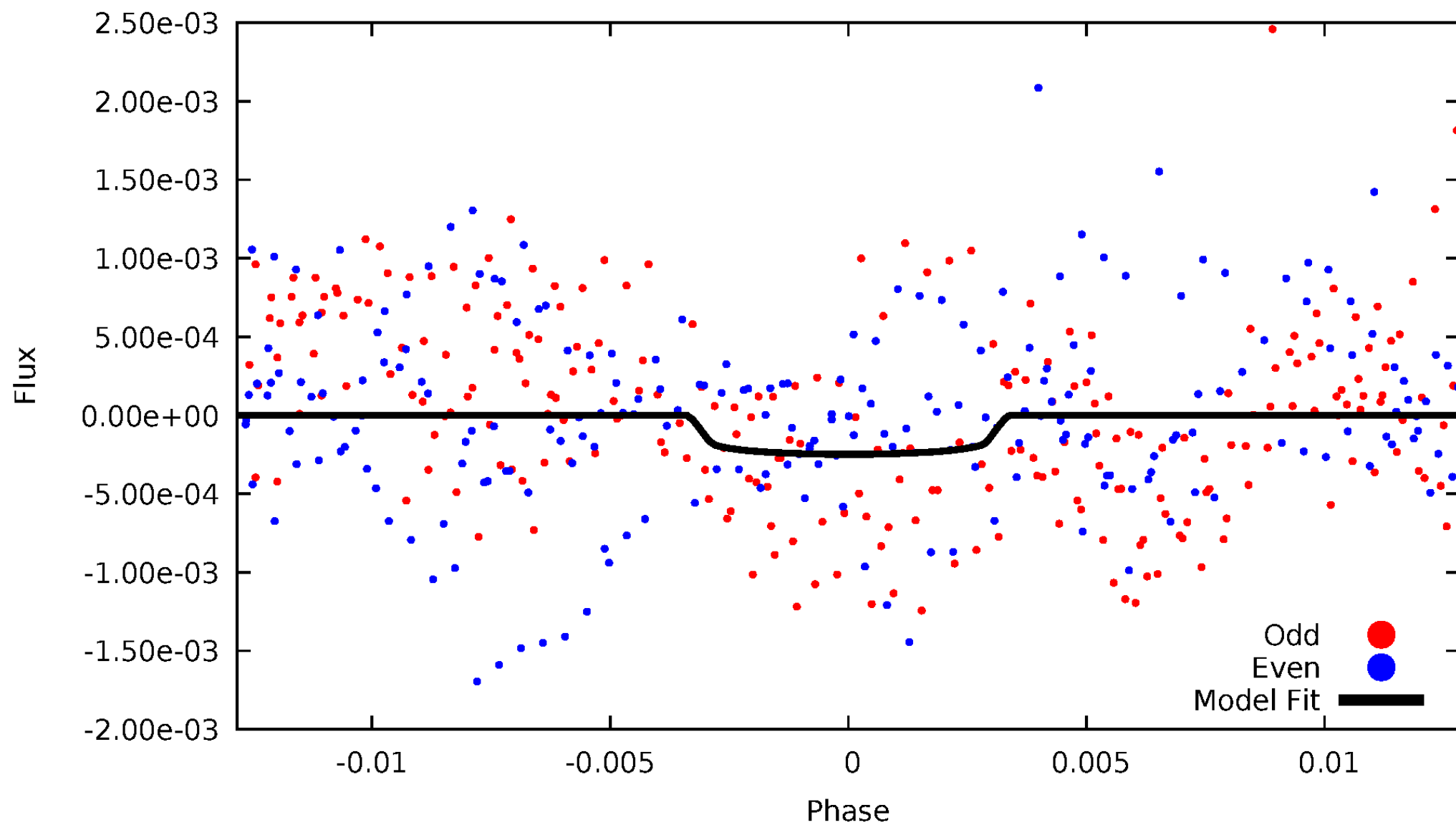


TCE 005730867-04



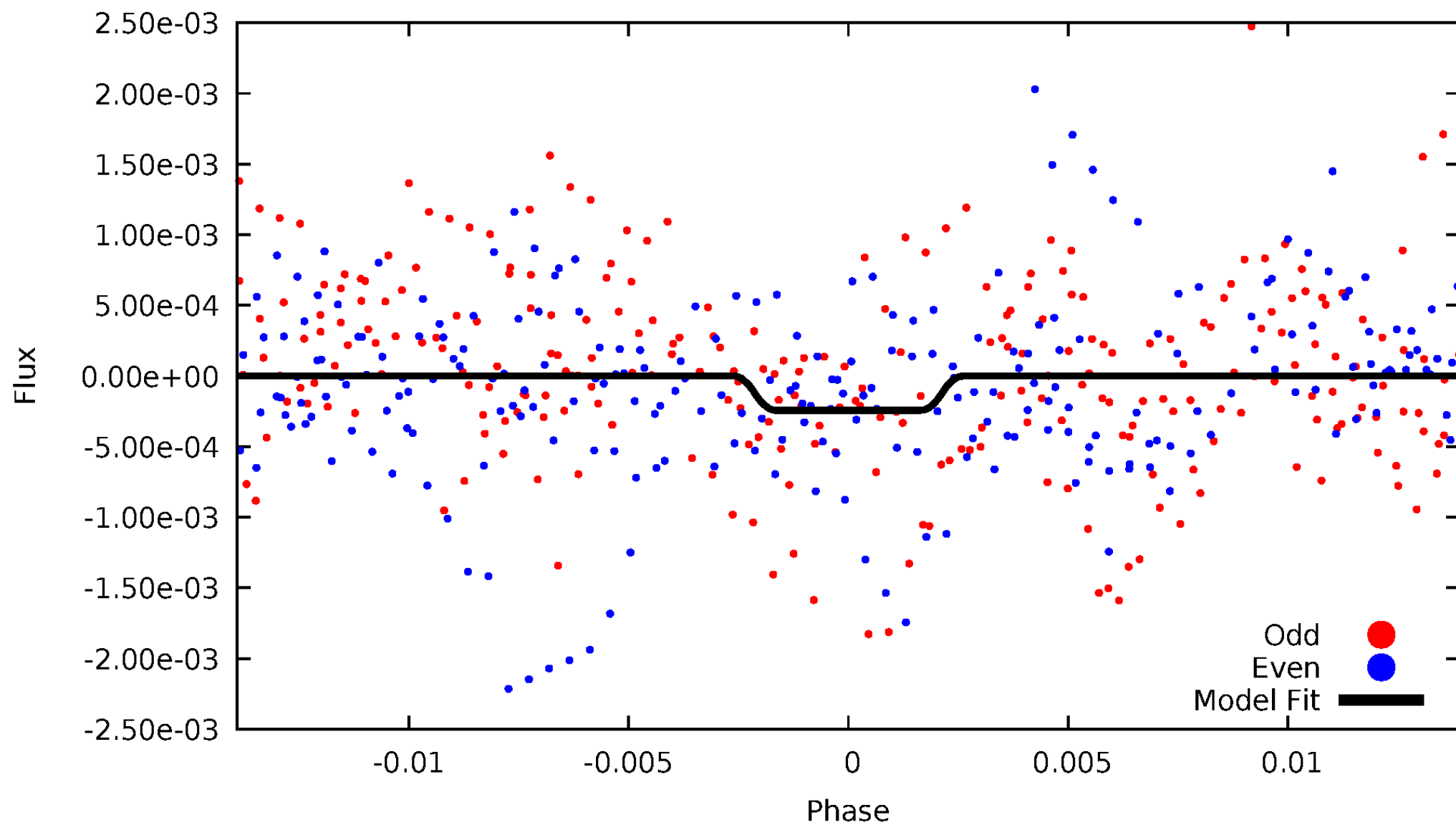
DV Odd/Even

TCE 005730867-04



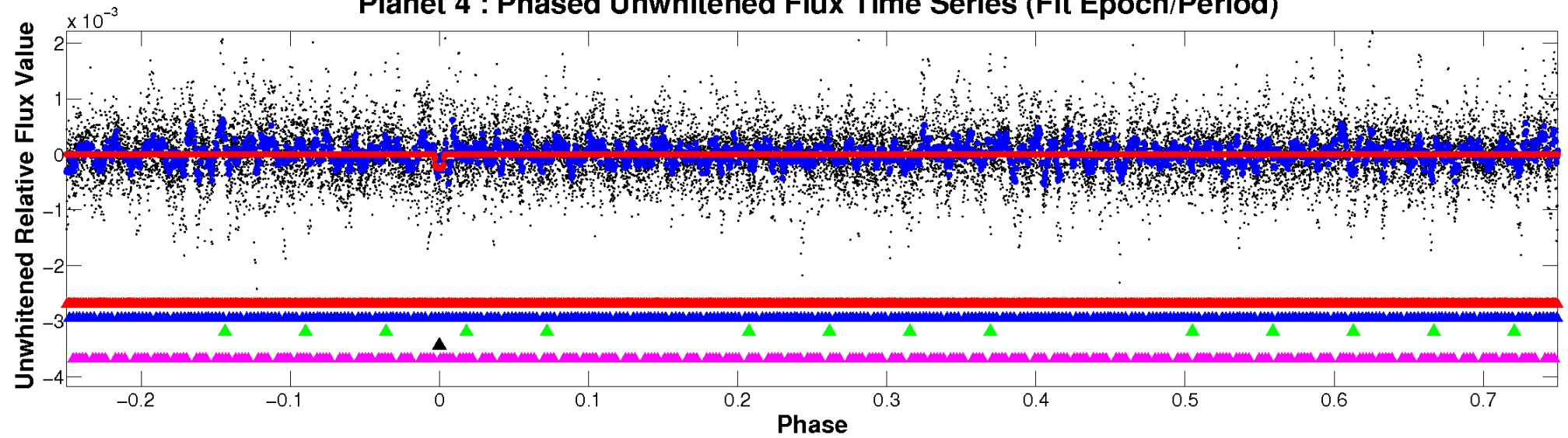
ALT Odd/Even

TCE 005730867-04

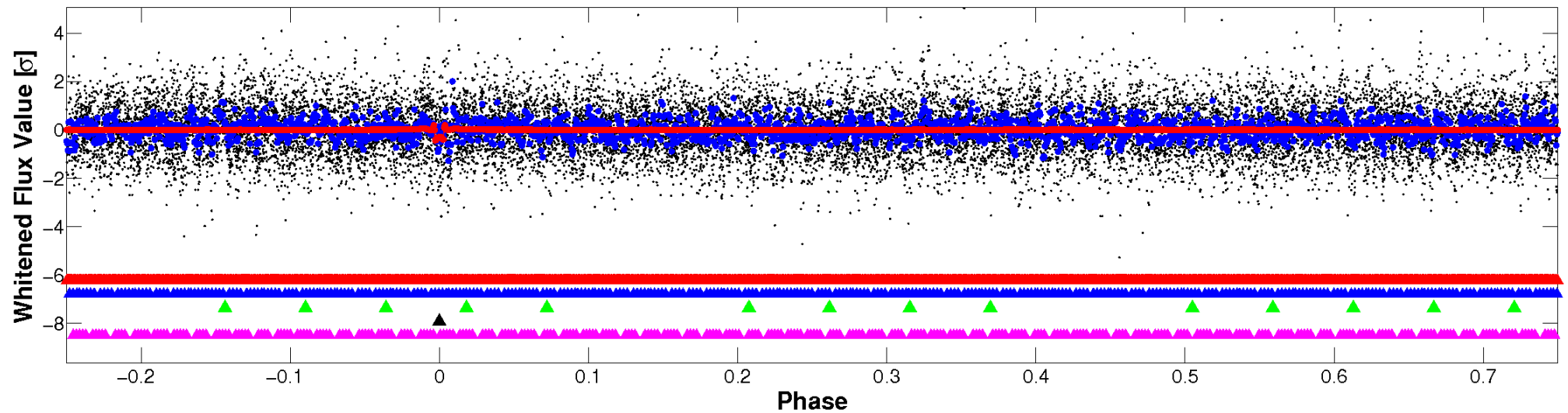


Non-Whitened Vs. Whitened Light Curve

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

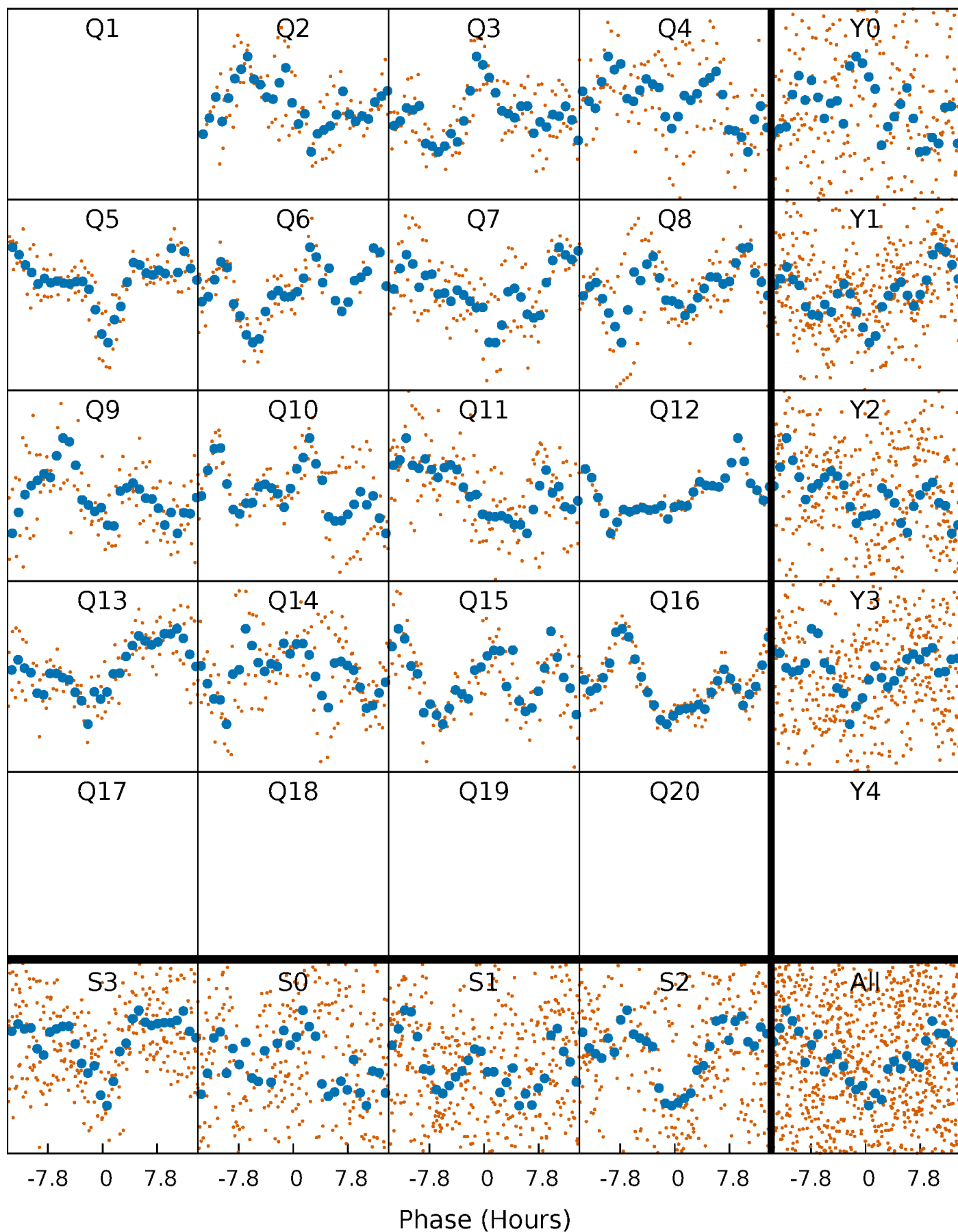


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 005730867-04 P= 44.223679 Days $T_0=168.334265$ (BKJD)



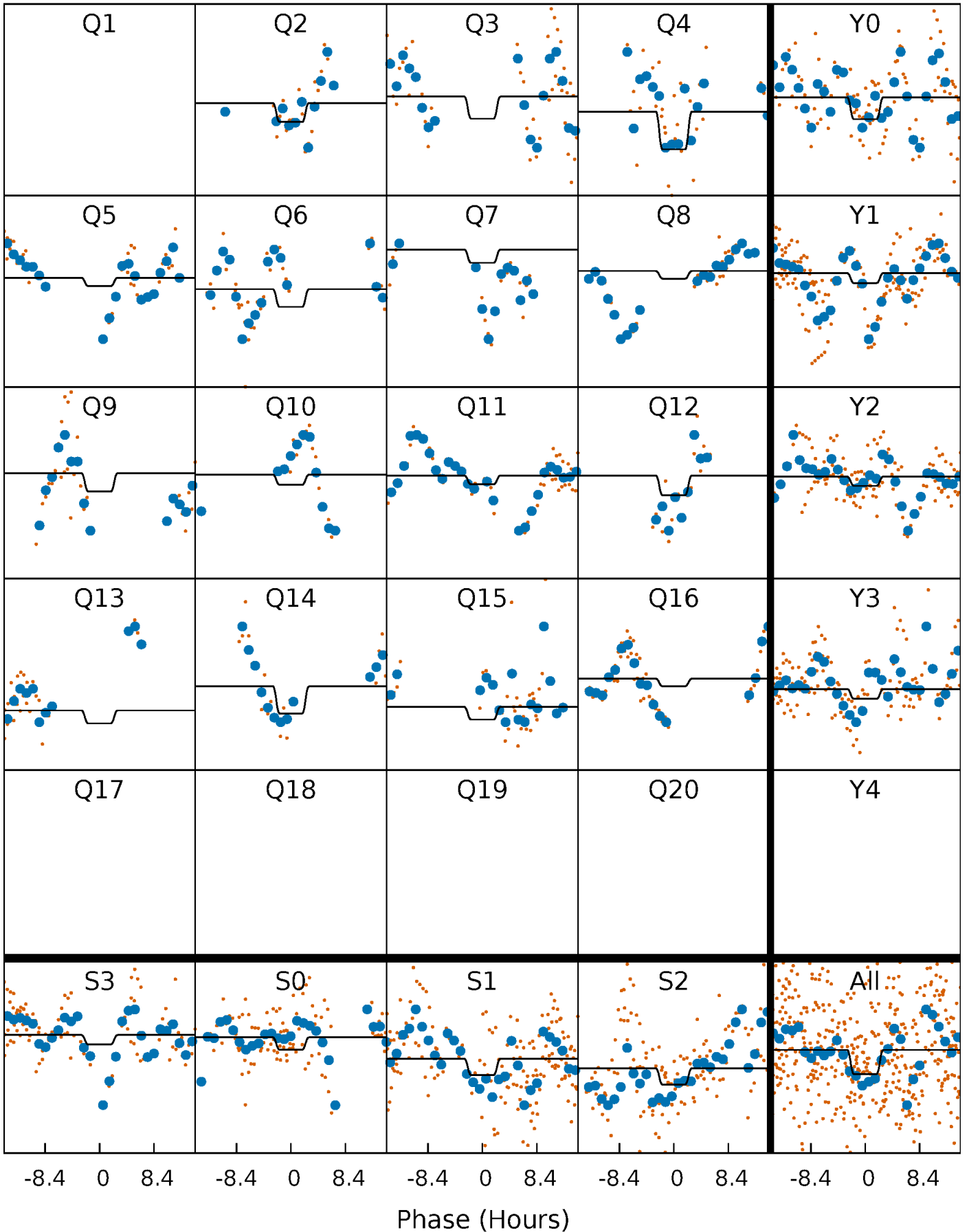
DV Quarter-Phased Transit Curves

TCE 005730867-04 P= 44.223679 Days $T_0=168.334265$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

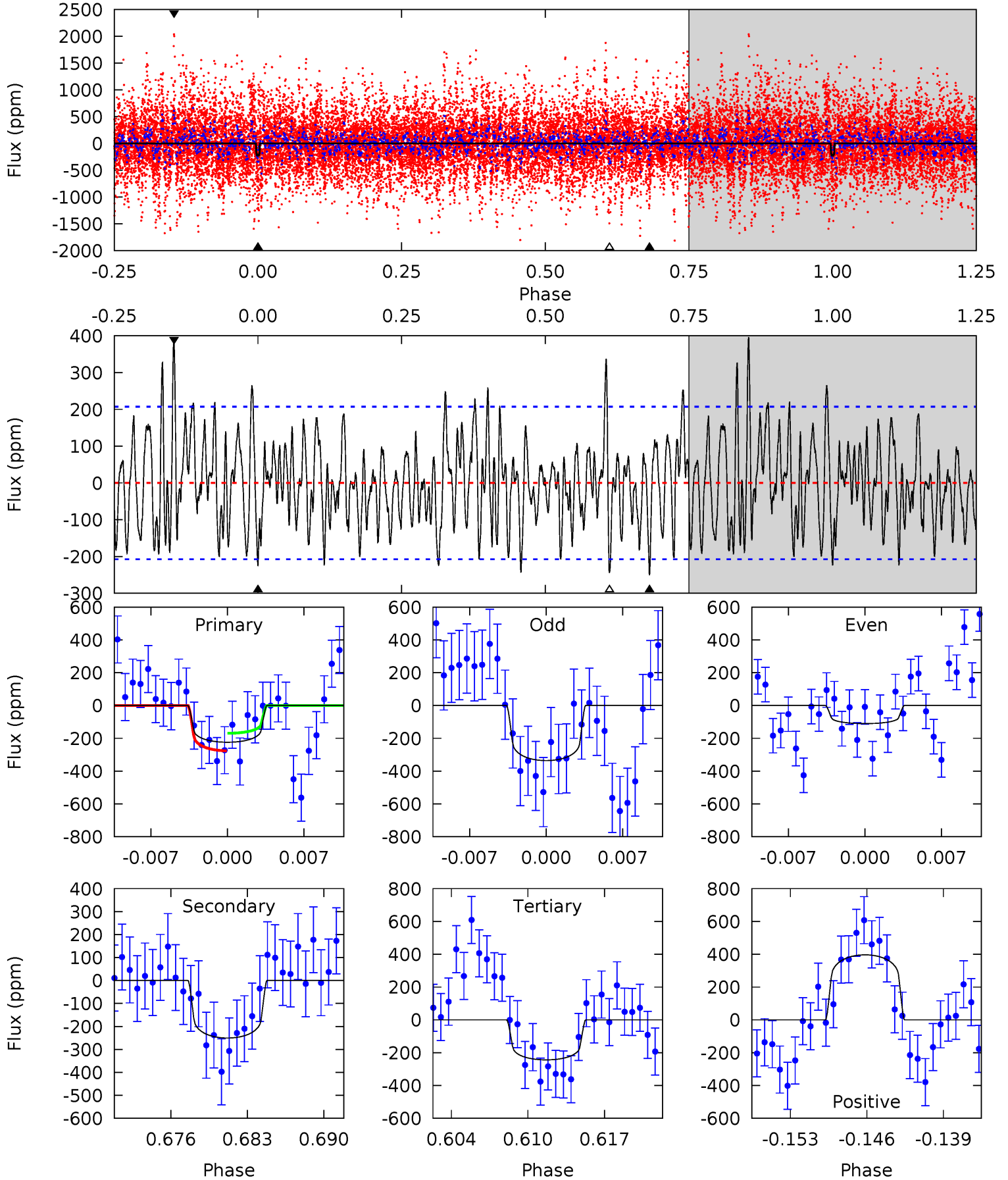
TCE 005730867-04 $P = 44.223071$ Days $T_0 = 168.339911$ (BKJD)



DV Model-Shift Uniqueness Test

005730867-04, P = 44.223679 Days, E = 124.110586 Days

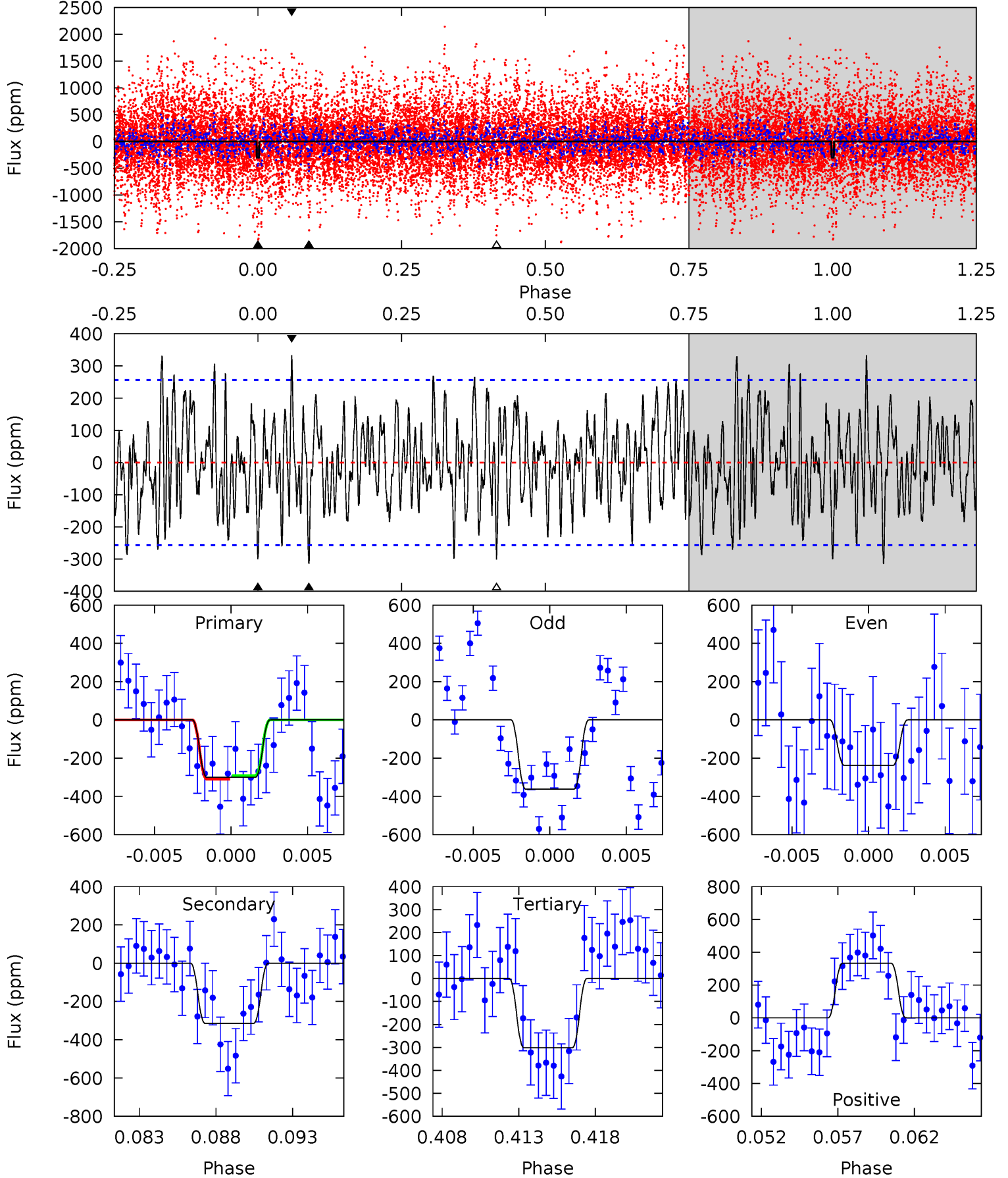
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.52	6.17	6.00	9.75	5.10	2.71	2.59	-0.49	-4.24	0.16	-3.59	2.79	2.02	0.61	1.32



Alt Model-Shift Uniqueness Test

005730867-04, P = 44.223071 Days, E = 124.116840 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.02	6.32	6.05	6.69	5.15	2.80	2.28	-0.02	-0.66	0.27	-0.37	1.25	1.41	0.51	0.19



Stellar Parameters For KIC 005730867

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7063^{+228}_{-313}	$4.163^{+0.158}_{-0.193}$	$-0.320^{+0.300}_{-0.300}$	$1.580^{+0.462}_{-0.378}$	$1.331^{+0.193}_{-0.214}$	$0.475^{+0.442}_{-0.230}$
	+3%/-4%	+4%/-5%	+94%/-94%	+29%/-24%	+15%/-16%	+93%/-48%
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 005730867-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-251 ± 41	$3.11^{+2.49}_{-1.92}$	1058^{+92}_{-80}	6624^{+5988}_{-1676}	970^{+6054}_{-660}
Alt.	-315 ± 50	$3.23^{+2.71}_{-2.08}$	1058^{+87}_{-78}	6881^{+7154}_{-1746}	1204^{+7749}_{-857}

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

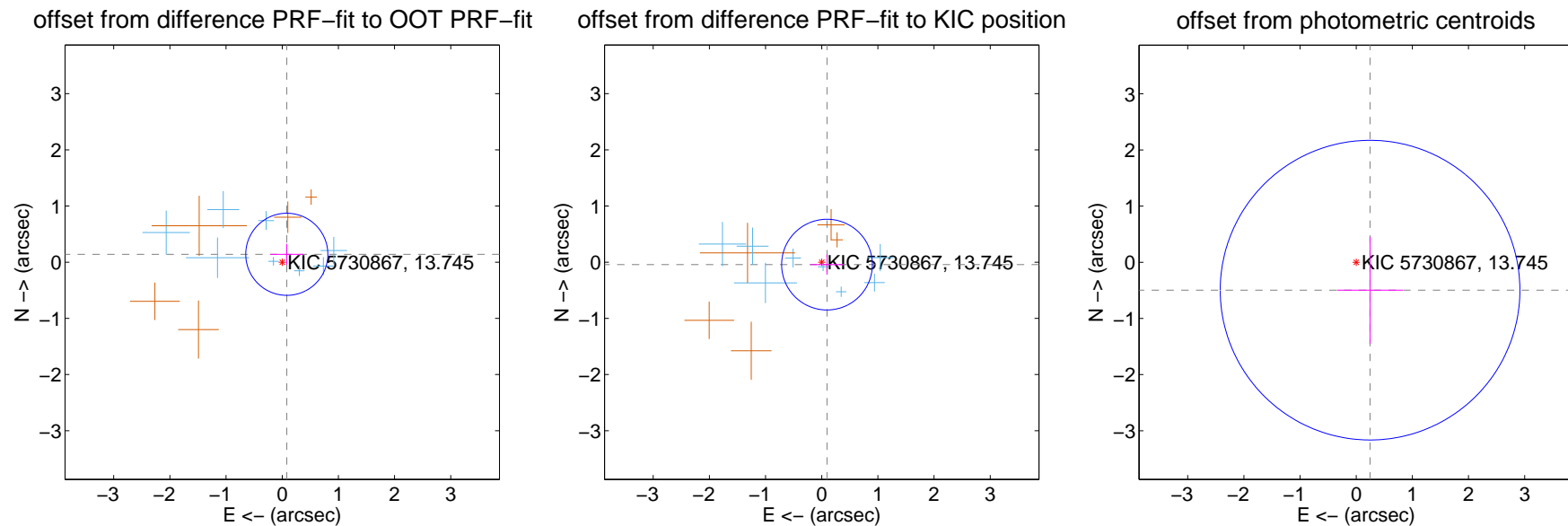
DV Centroid Data

Supplemental centroid analysis for 005730867-04. Kepler magnitude: 13.74. Transit SNR 3.68

There are 8 quarters with good PRF difference image offsets

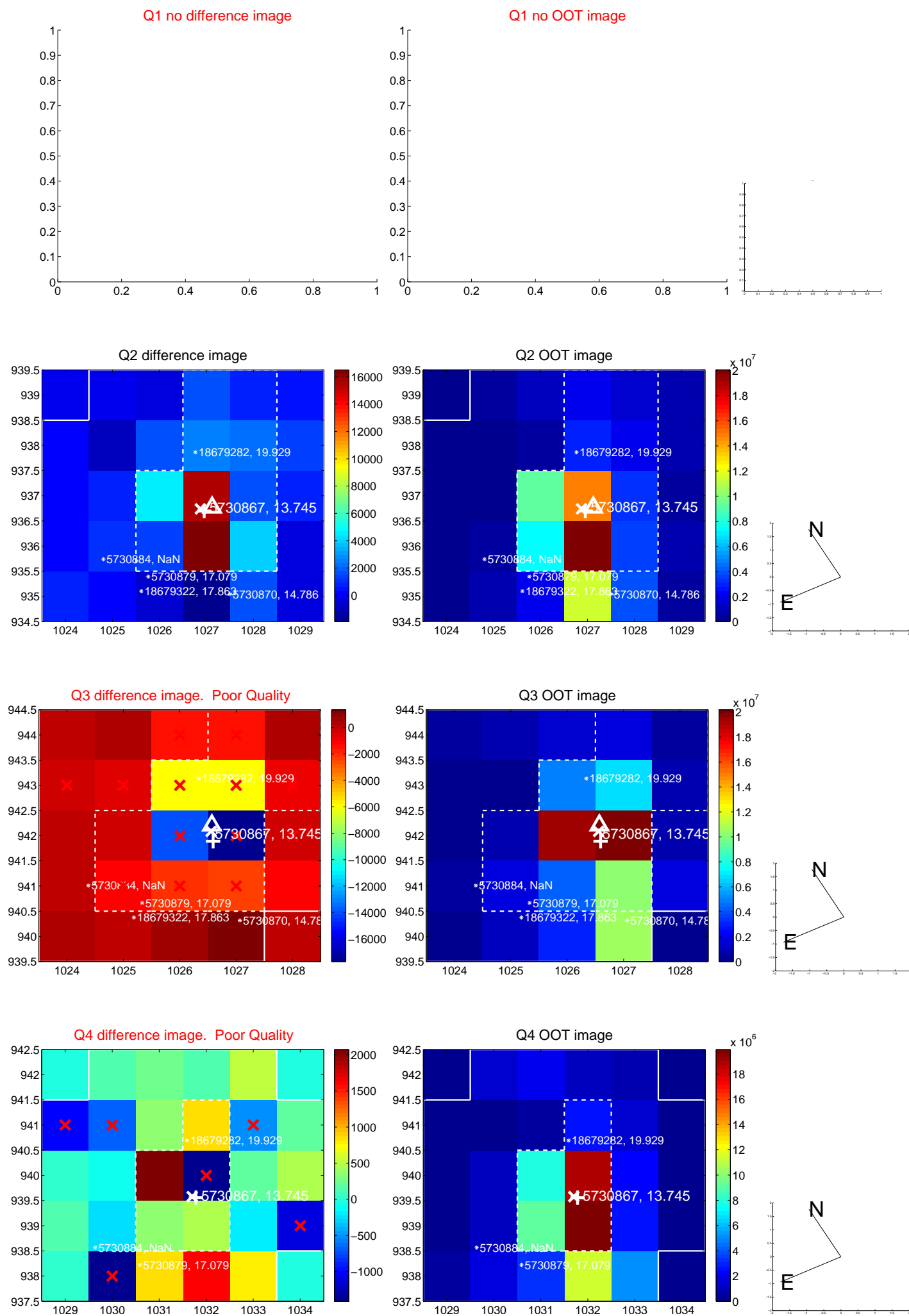
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.163 ± 0.244	0.67	-0.082 ± 0.293	0.141 ± 0.187
PRF-fit source offset from KIC position	0.103 ± 0.269	0.38	-0.094 ± 0.297	-0.043 ± 0.180
photometric centroid source offset	0.55 ± 0.89	0.62	-0.25 ± 0.59	-0.50 ± 0.95

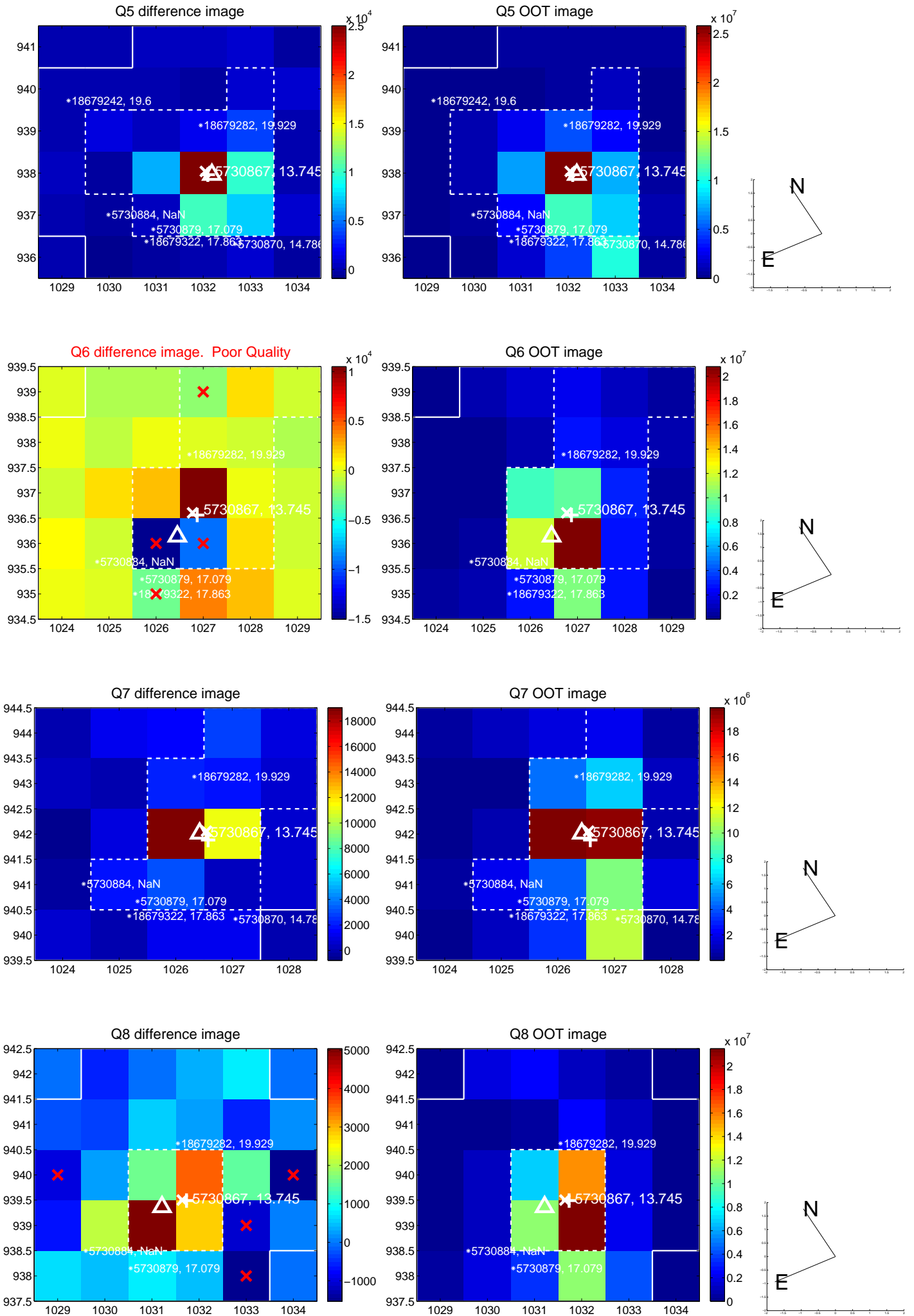


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

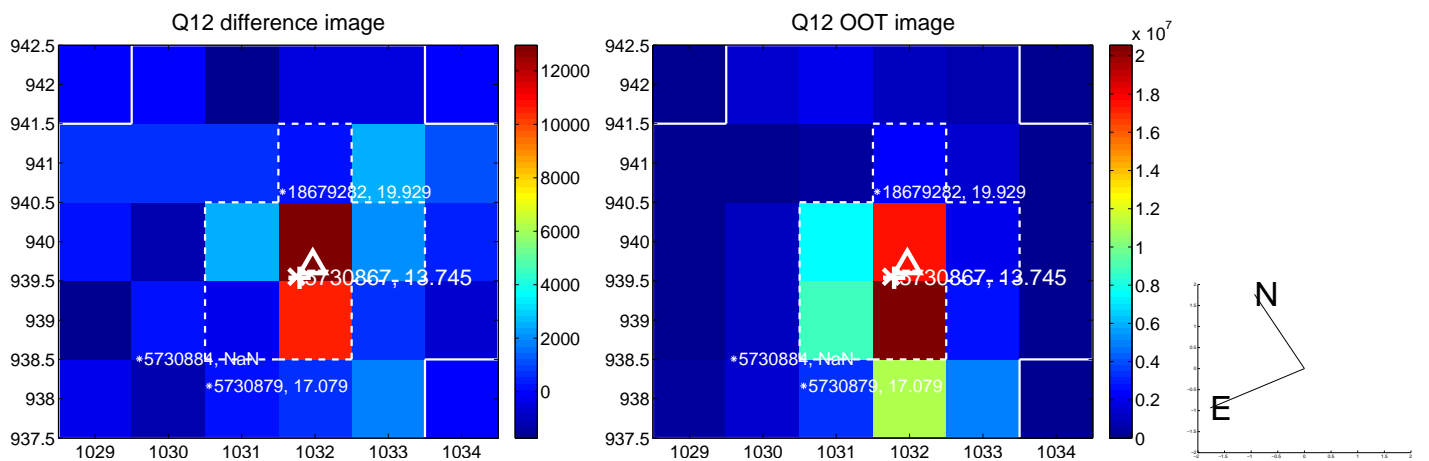
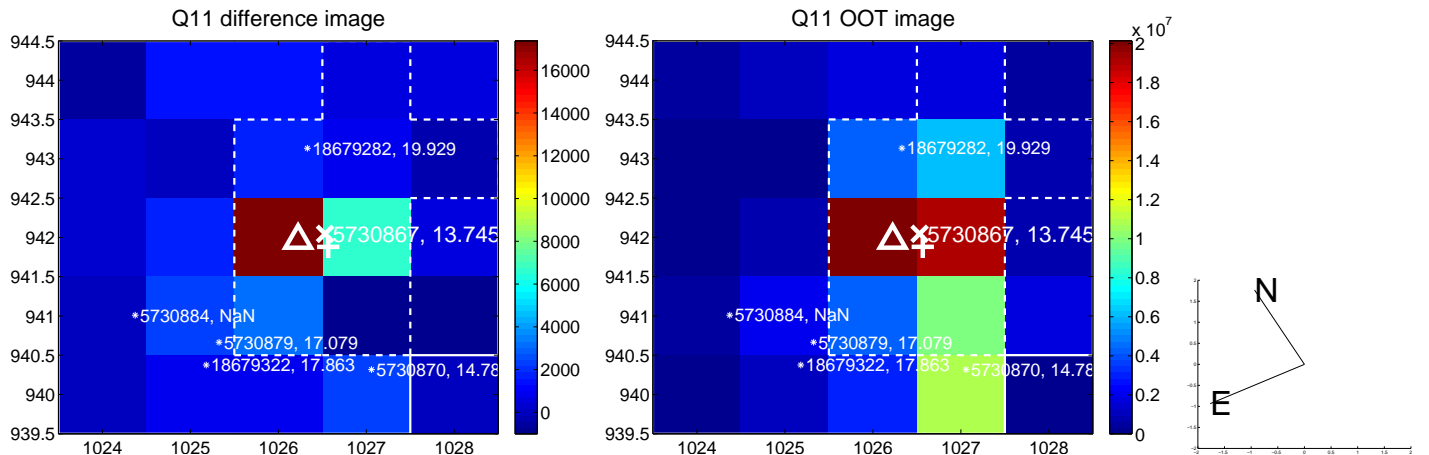
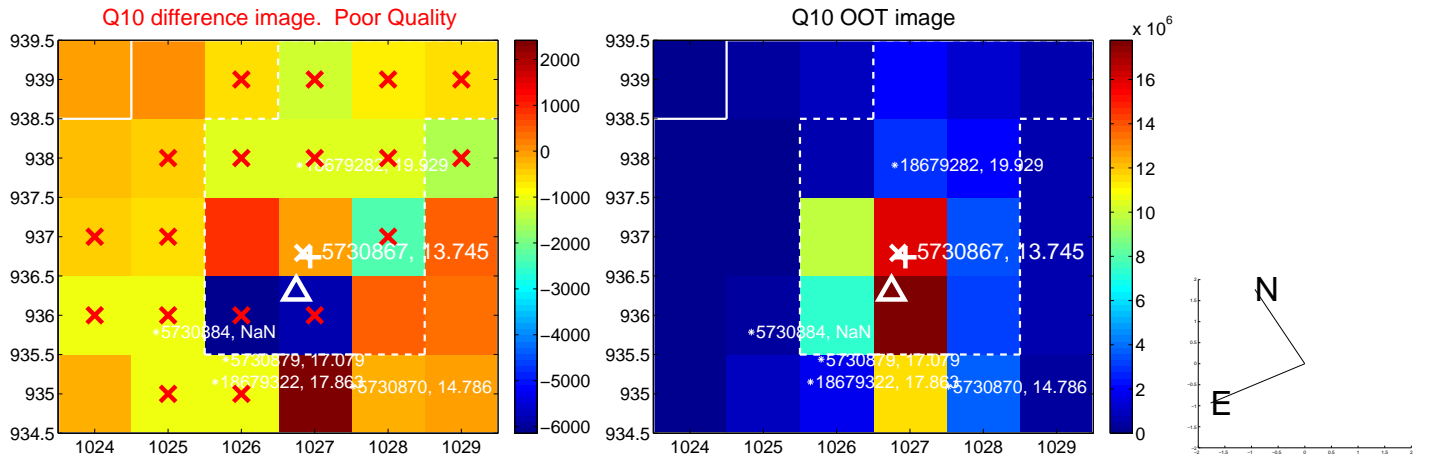
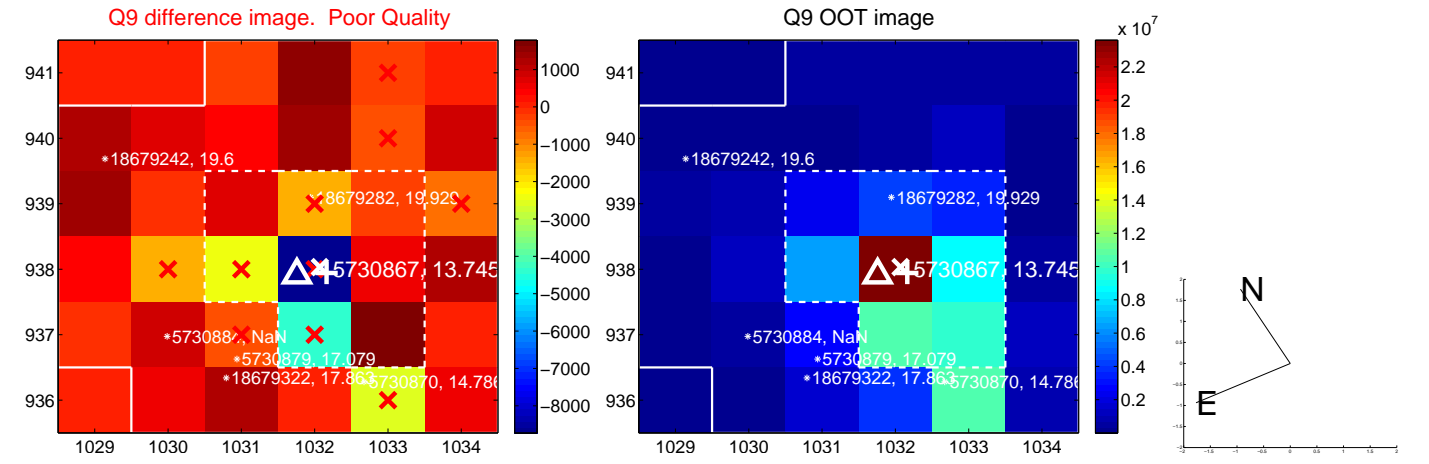
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



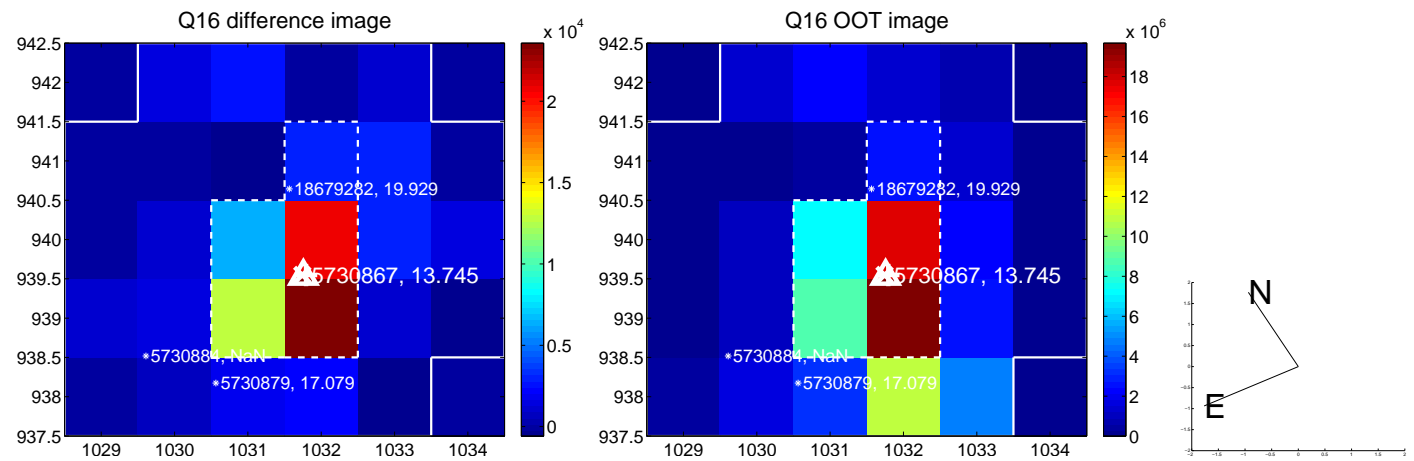
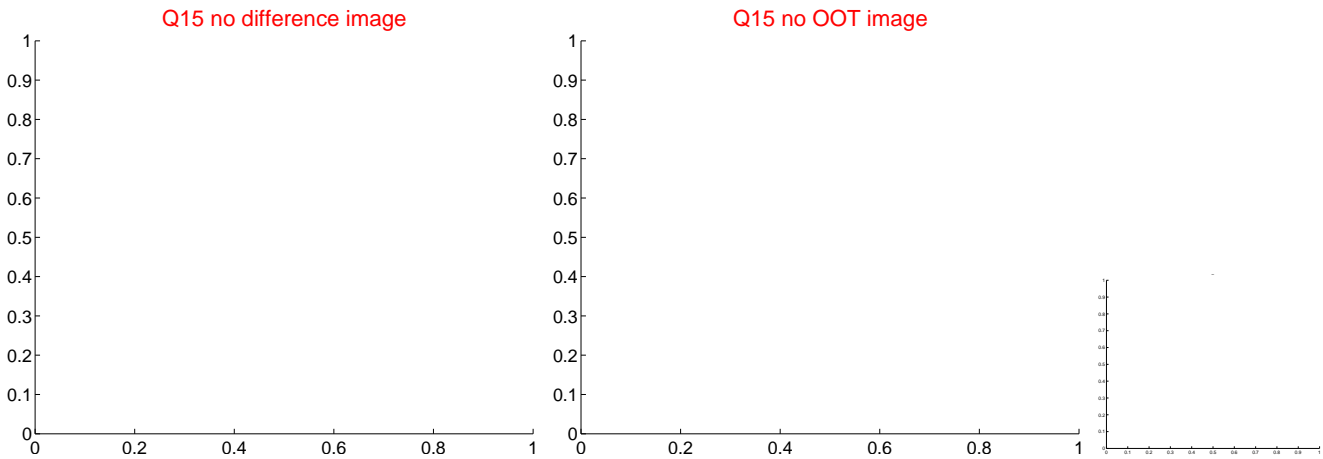
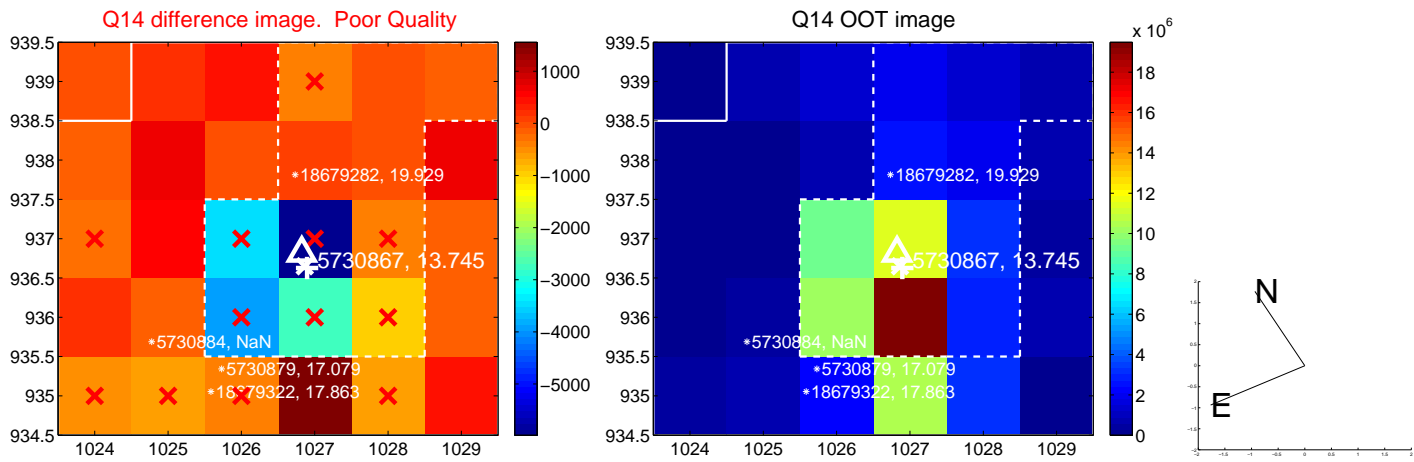
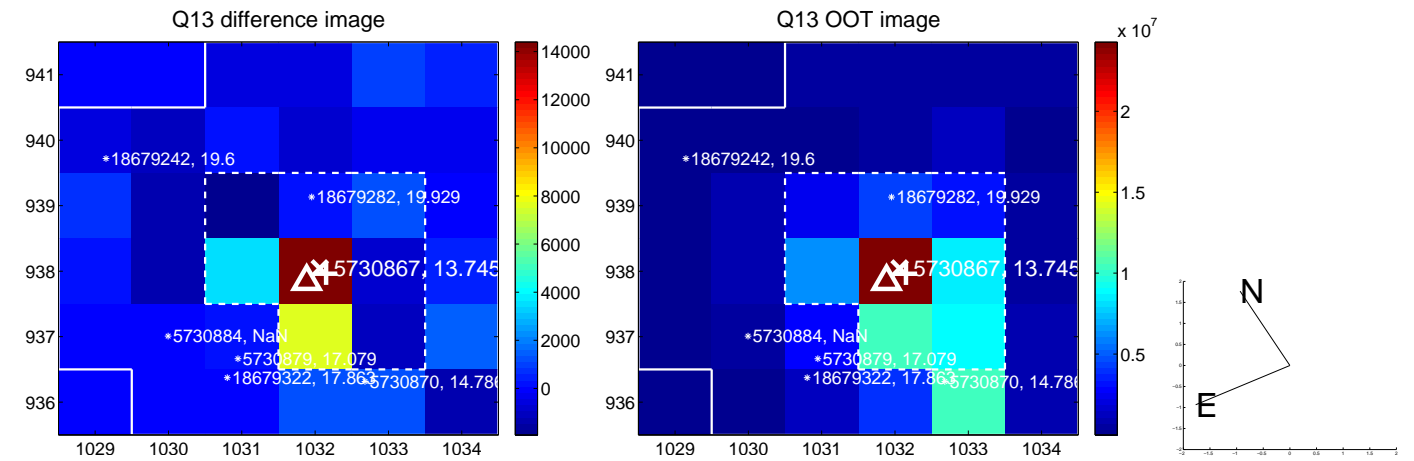
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



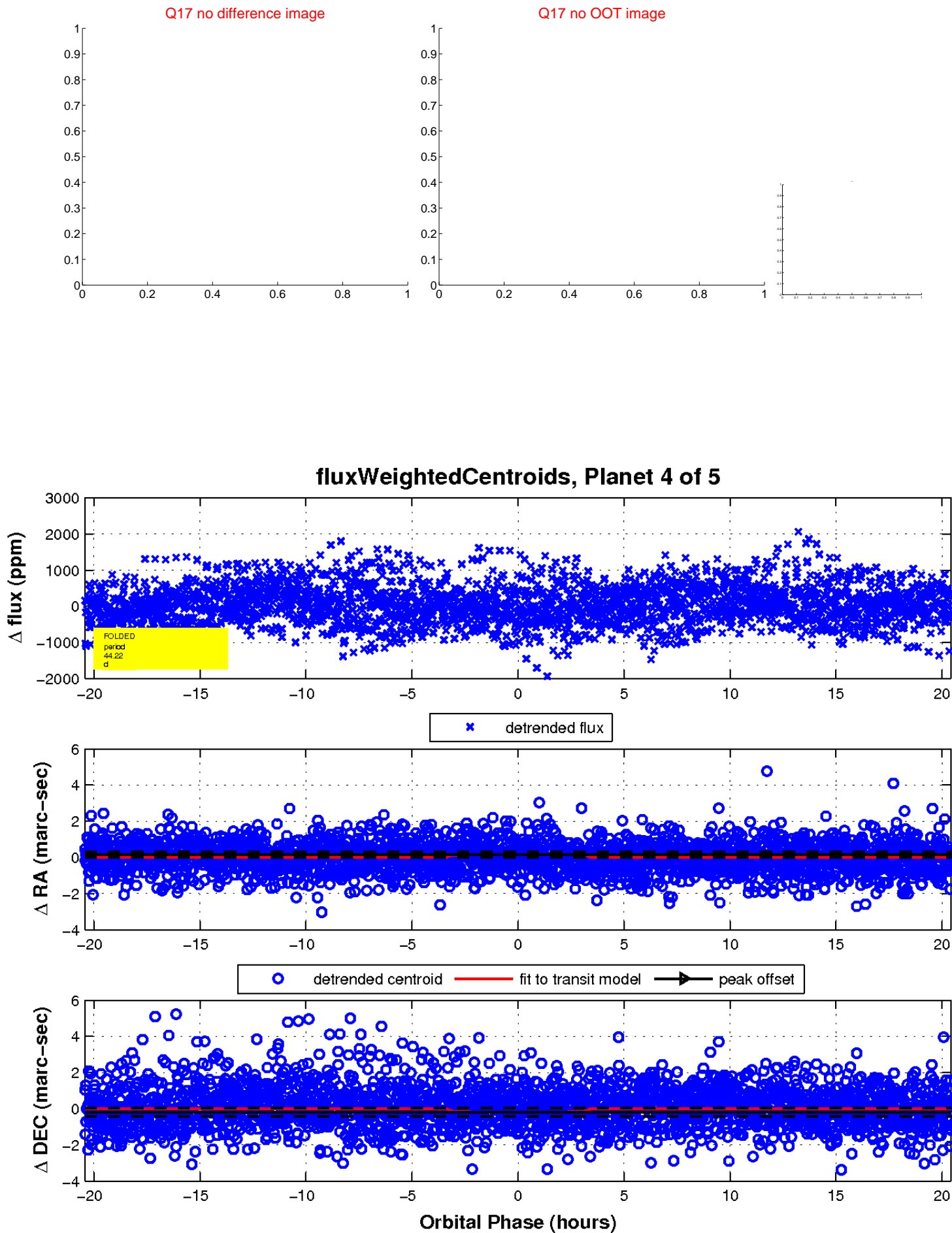
white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



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

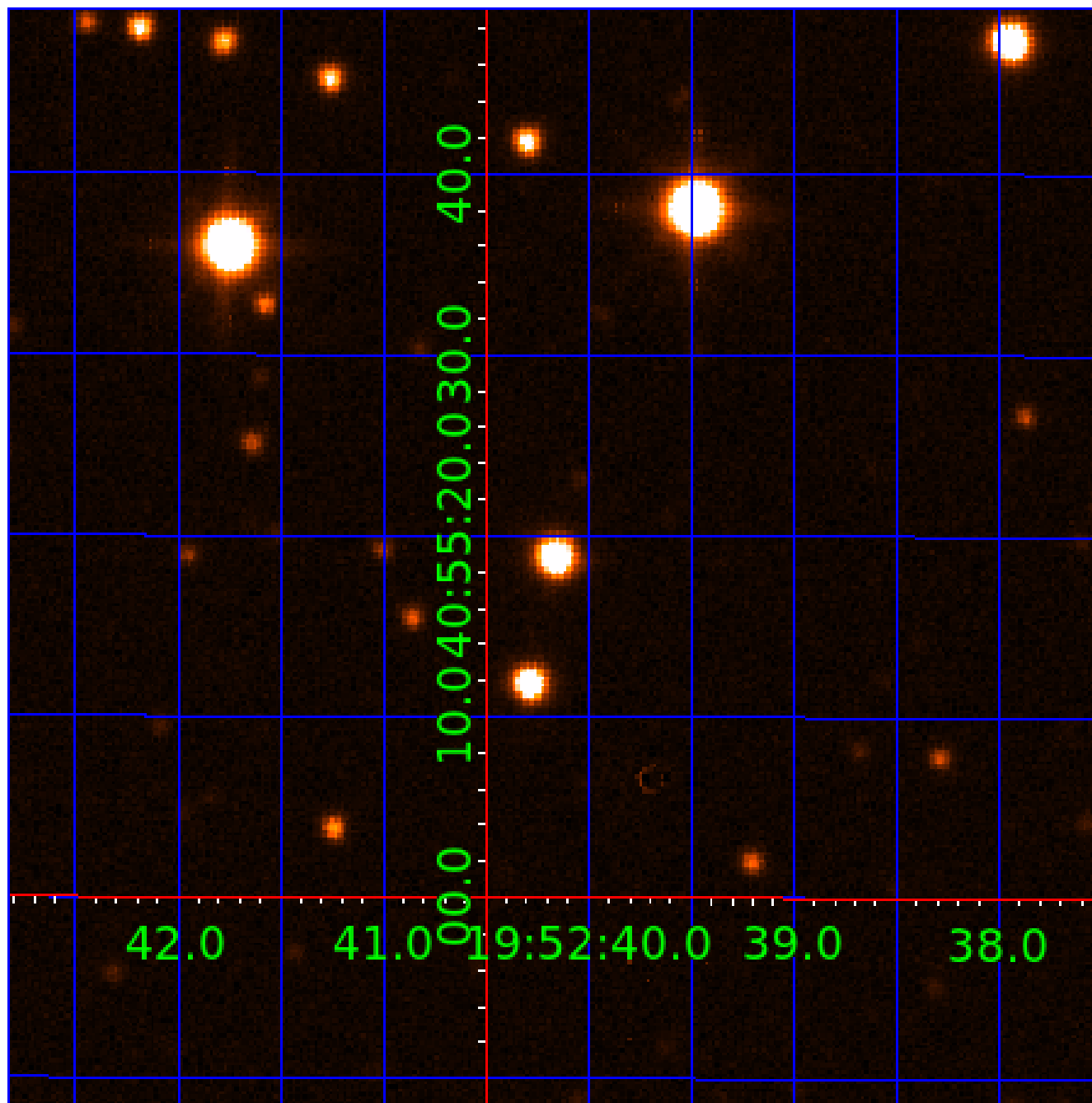


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005730867

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})
005730867-01	OBS	No	0.870349	132.130336	69.1	3.749	9.4	11.1	1.58	7063	1.53	14488.77
005730867-02	OBS	No	3.823157	134.719999	258.1	10.362	9.7	11.8	1.58	7063	4.90	2014.00
005730867-03	OBS	No	103.984017	190.665842	830.3	8.312	9.3	7.1	1.58	7063	5.60	24.62
005730867-04	OBS	No	44.223679	168.334265	249.0	6.809	9.8	3.7	1.58	7063	2.64	76.99
005730867-05	OBS	No	4.239356	134.242280	146.2	12.500	9.0	-1.0	1.58	7063	1.93	1754.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005730867-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005730867-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— MOD_TER_ALT—MOD_POS_ALT
005730867-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_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.

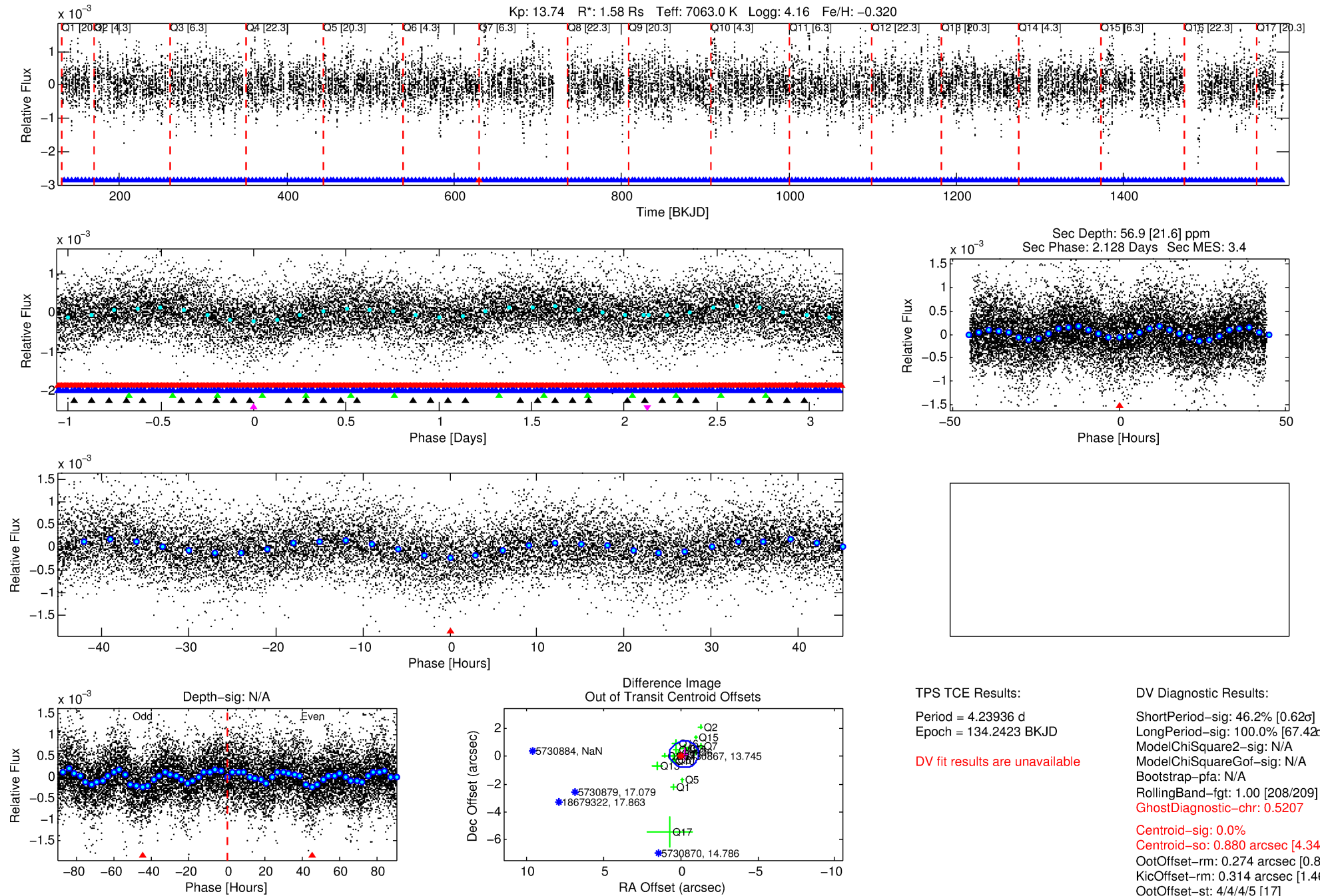
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005730867-05

No Significant Match Found

DV One-Page Summary

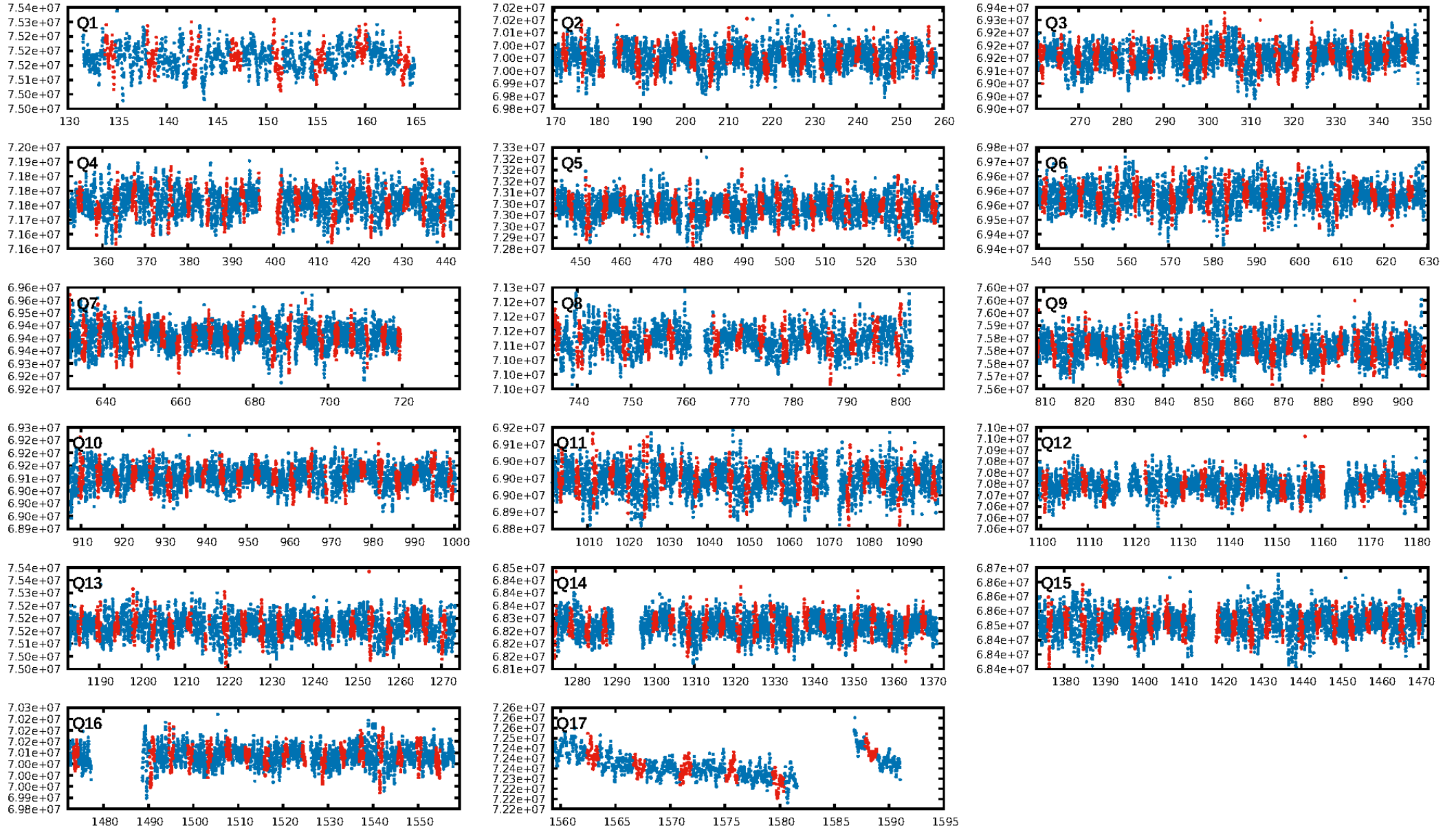
KIC: 5730867 Candidate: 5 of 5 Period: 4.239 d



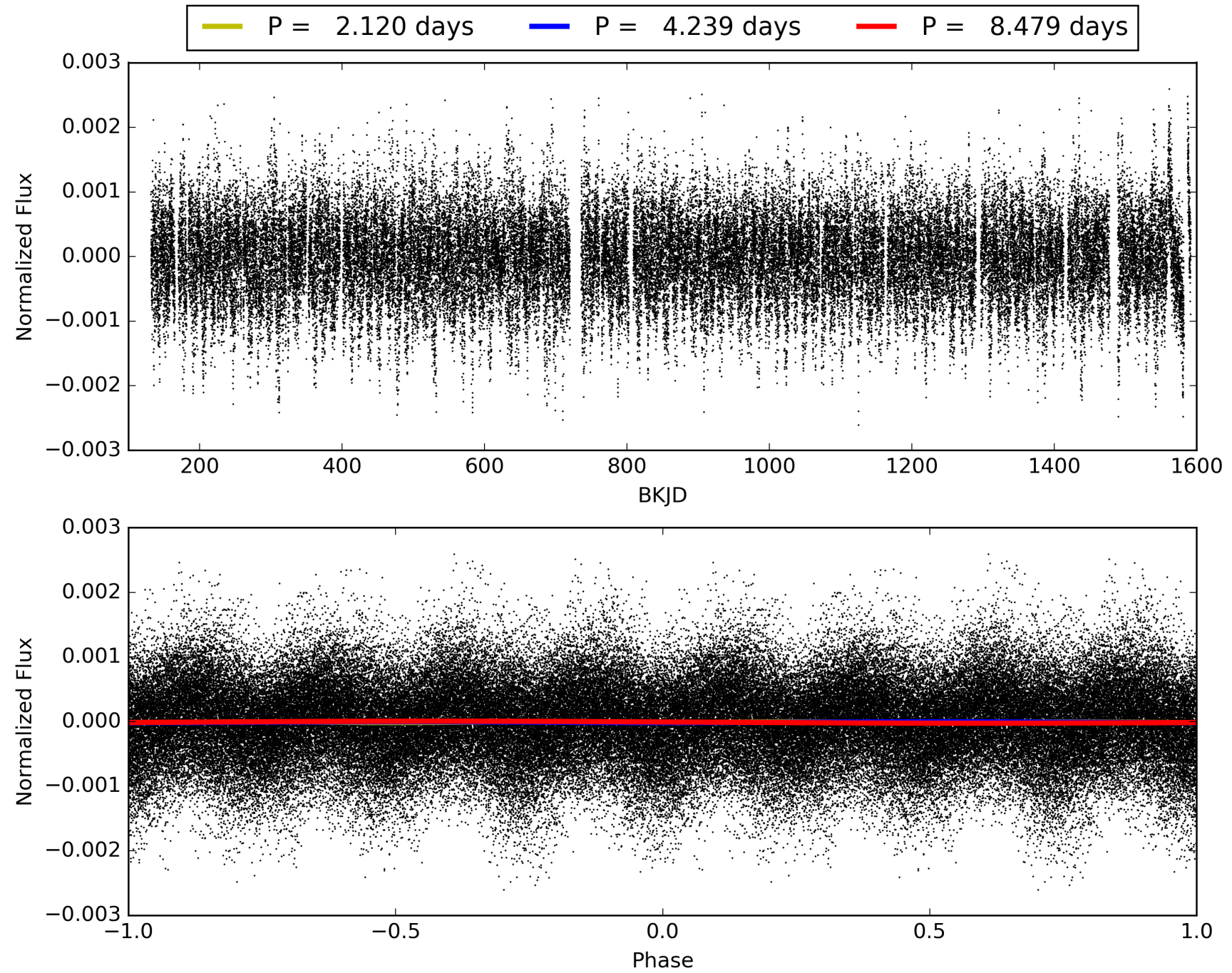
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:02:28 Z

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

TCE 005730867-05, PDC Light Curves

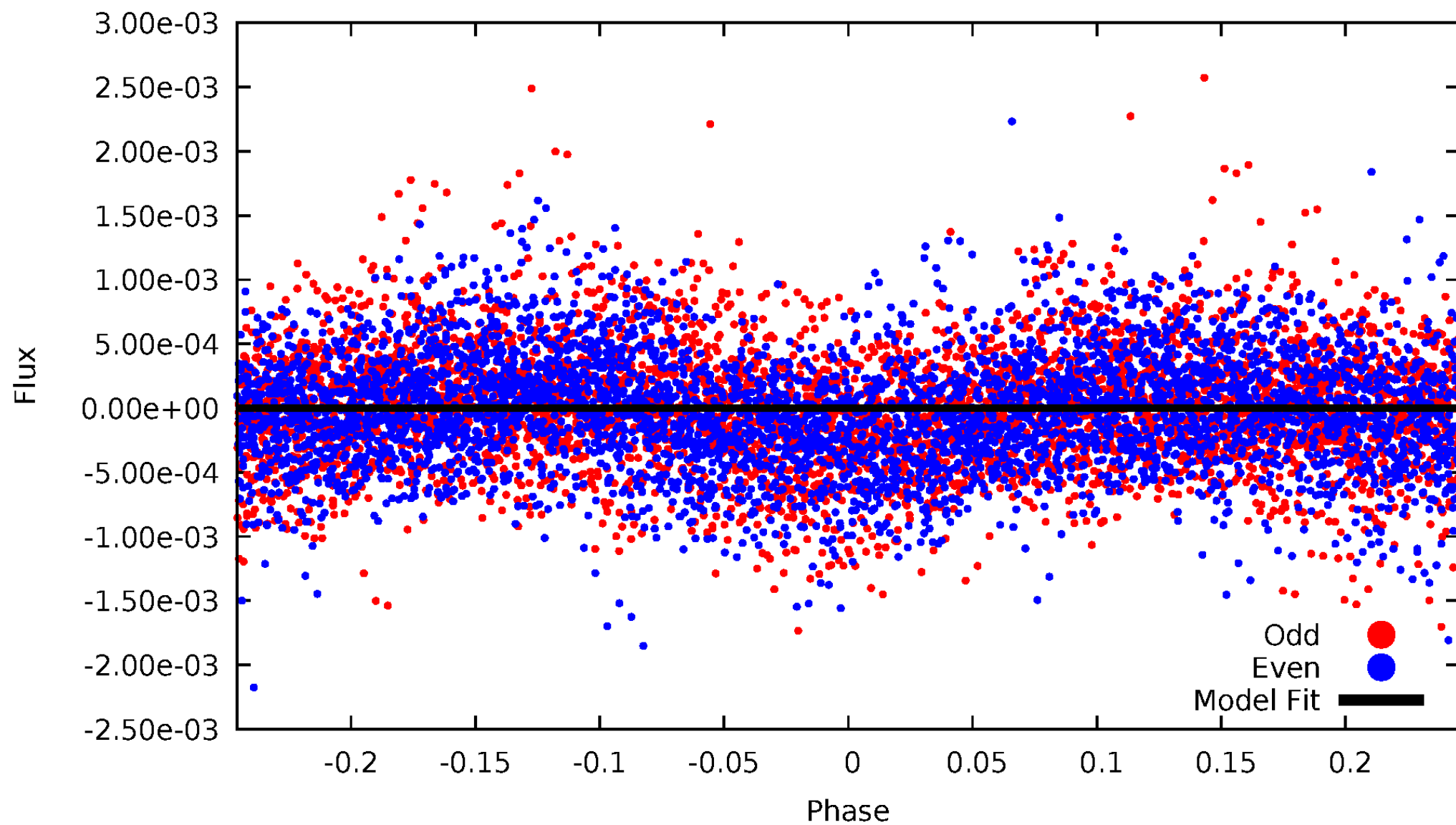


TCE 005730867-05



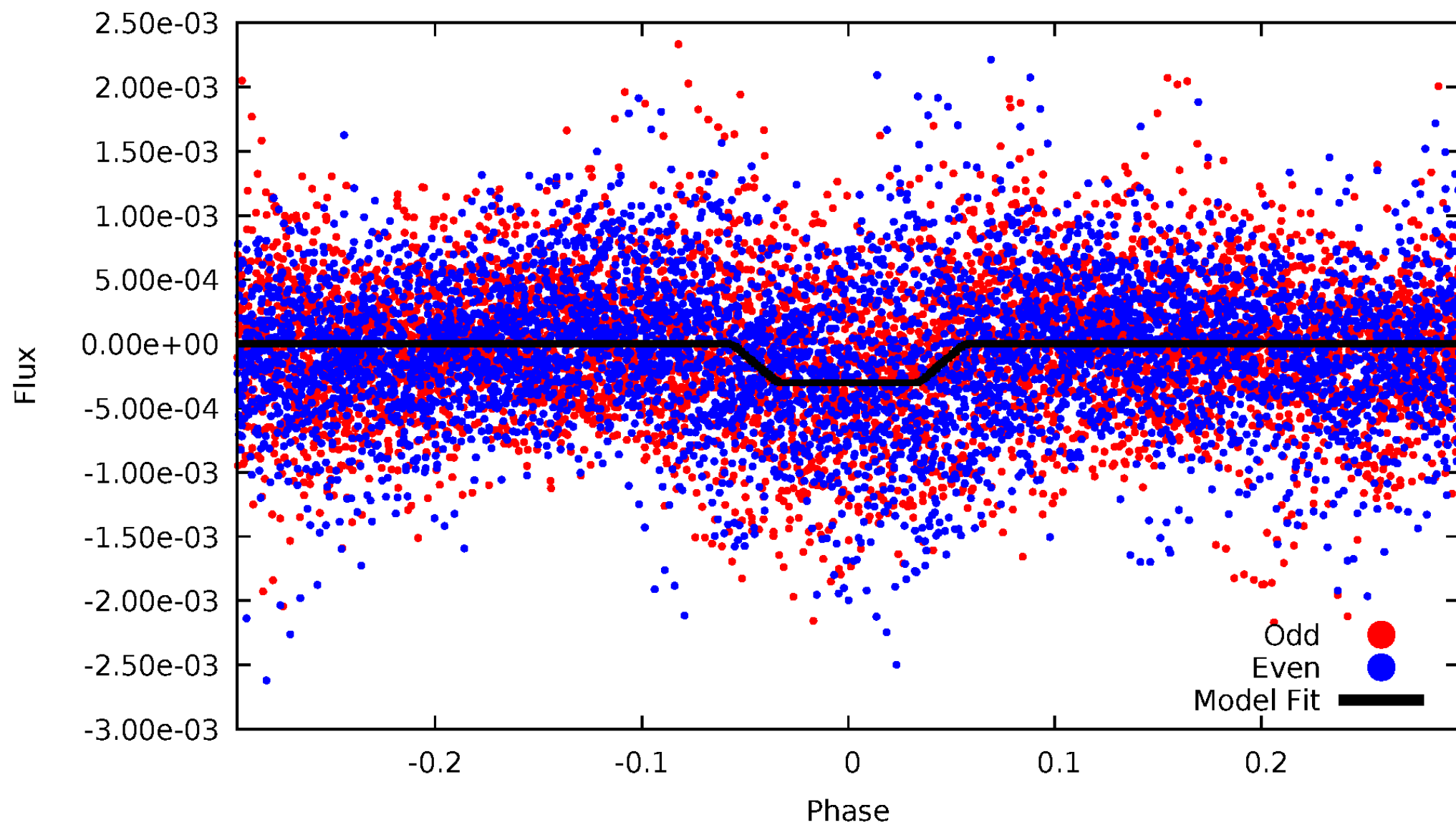
DV Odd/Even

TCE 005730867-05



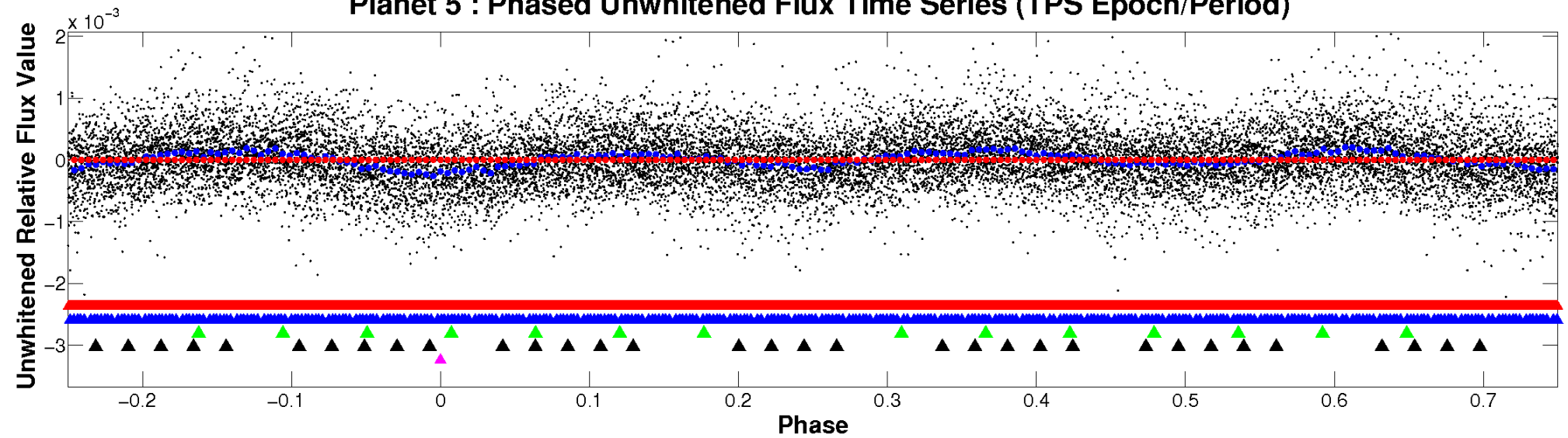
ALT Odd/Even

TCE 005730867-05

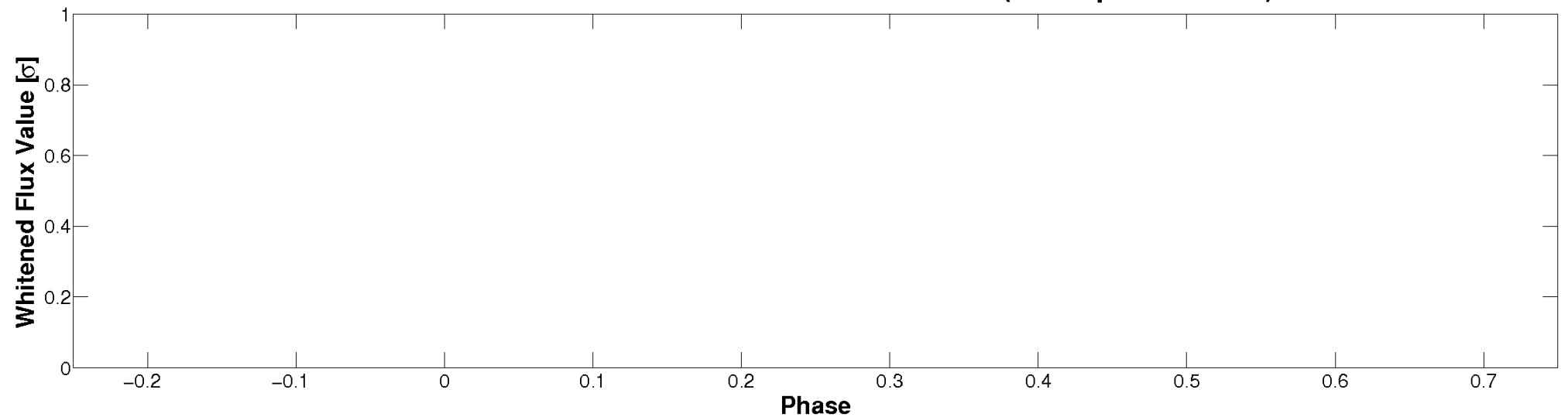


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

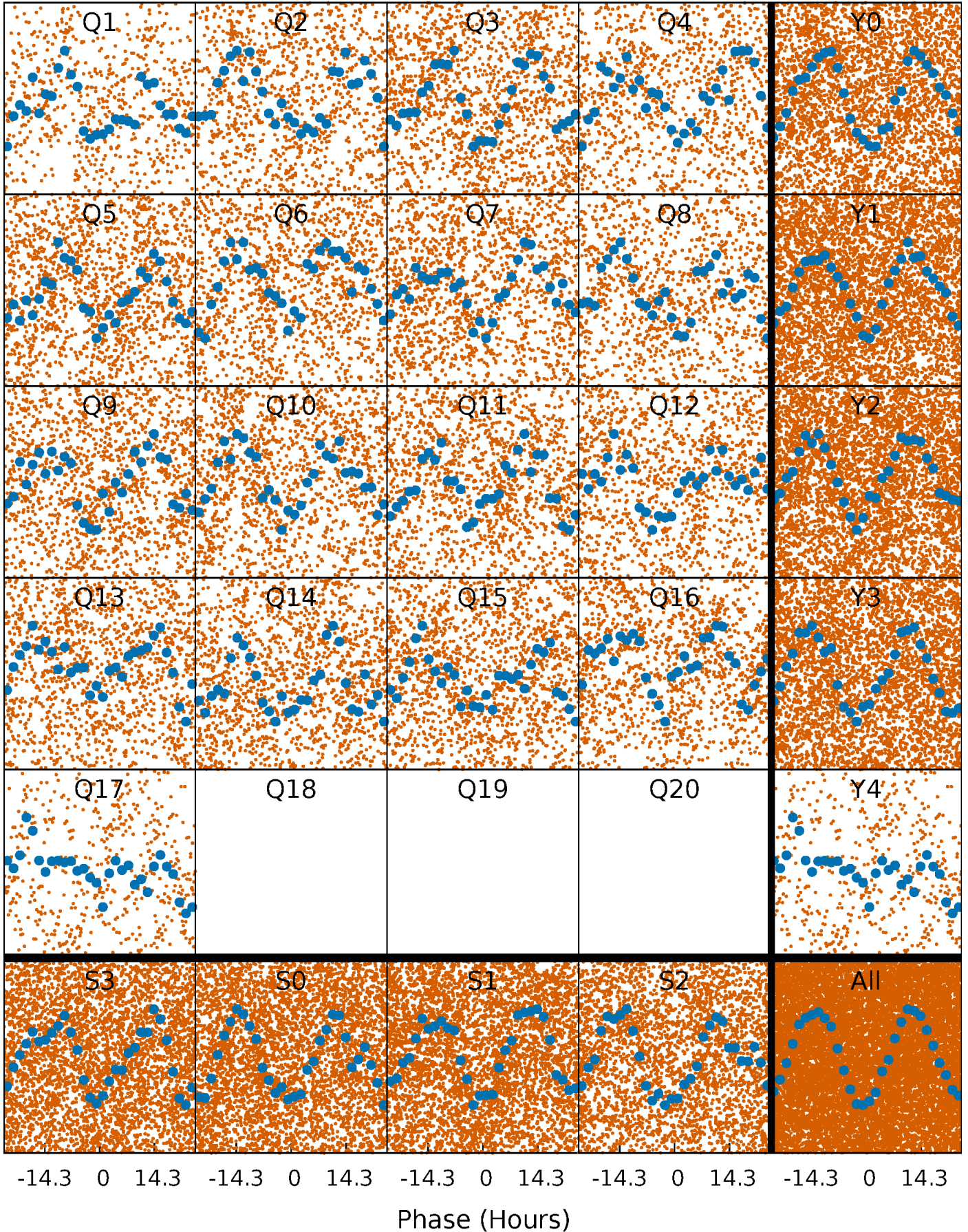


Planet 5 : Phased Whitened Flux Time Series (TPS Epoch/Period)



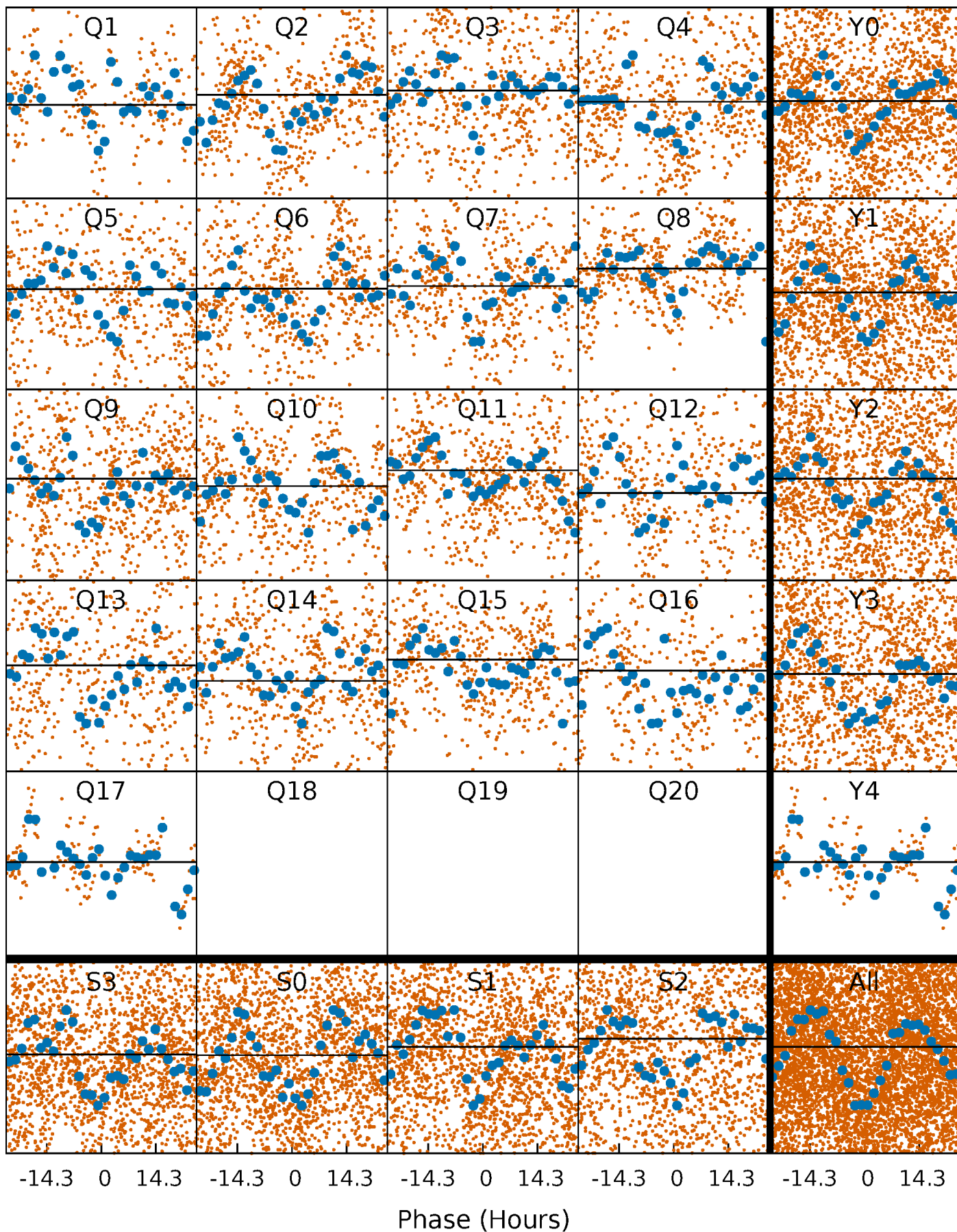
PDC Quarter-Phased Transit Curves

TCE 005730867-05 P= 4.239356 Days $T_0=134.242280$ (BKJD)



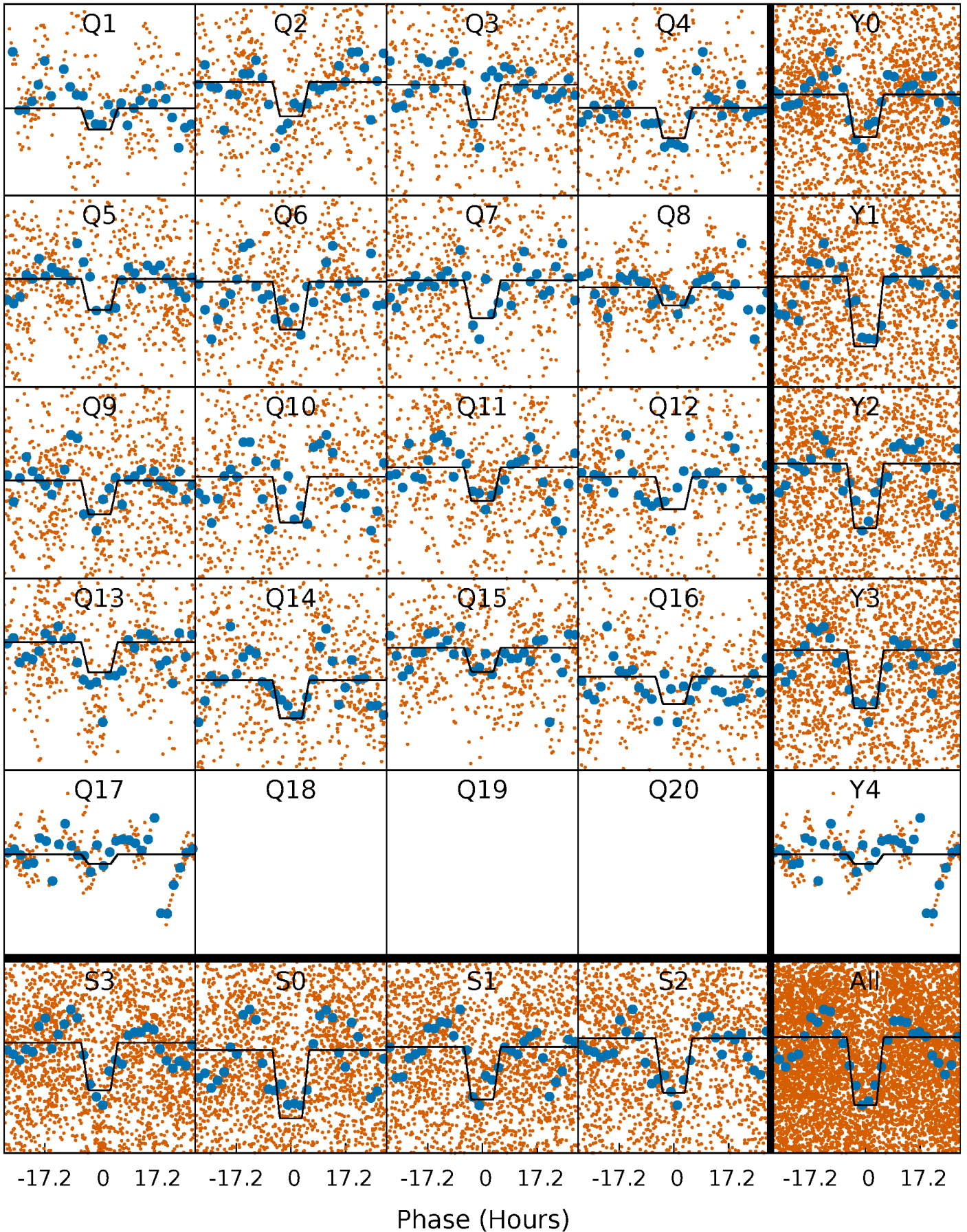
DV Quarter-Phased Transit Curves

TCE 005730867-05 $P = 4.239356$ Days $T_0 = 134.242280$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

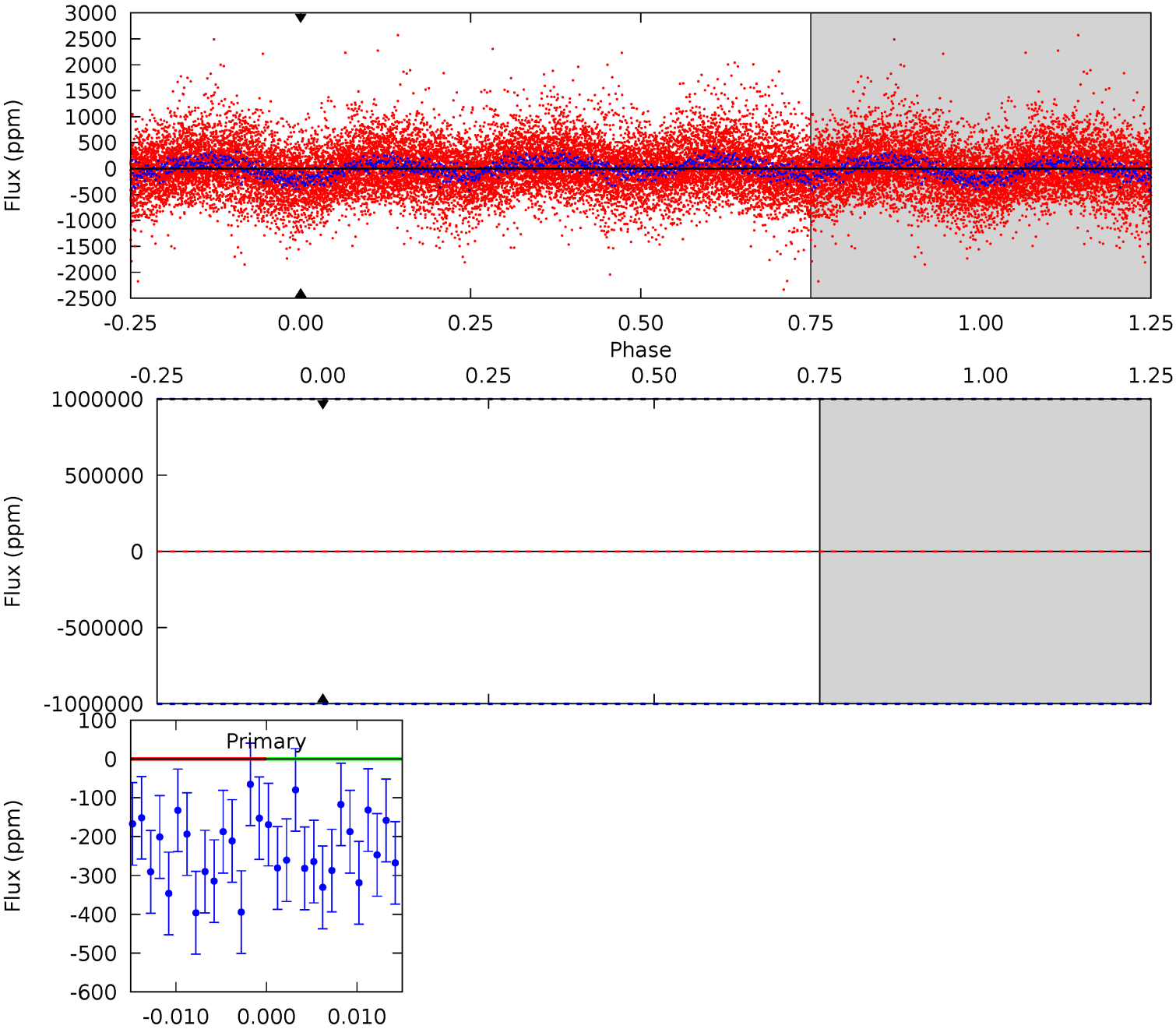
TCE 005730867-05 $P = 4.239356$ Days $T_0 = 134.228705$ (BKJD)



DV Model-Shift Uniqueness Test

005730867-05, P = 4.239356 Days, E = 130.002924 Days

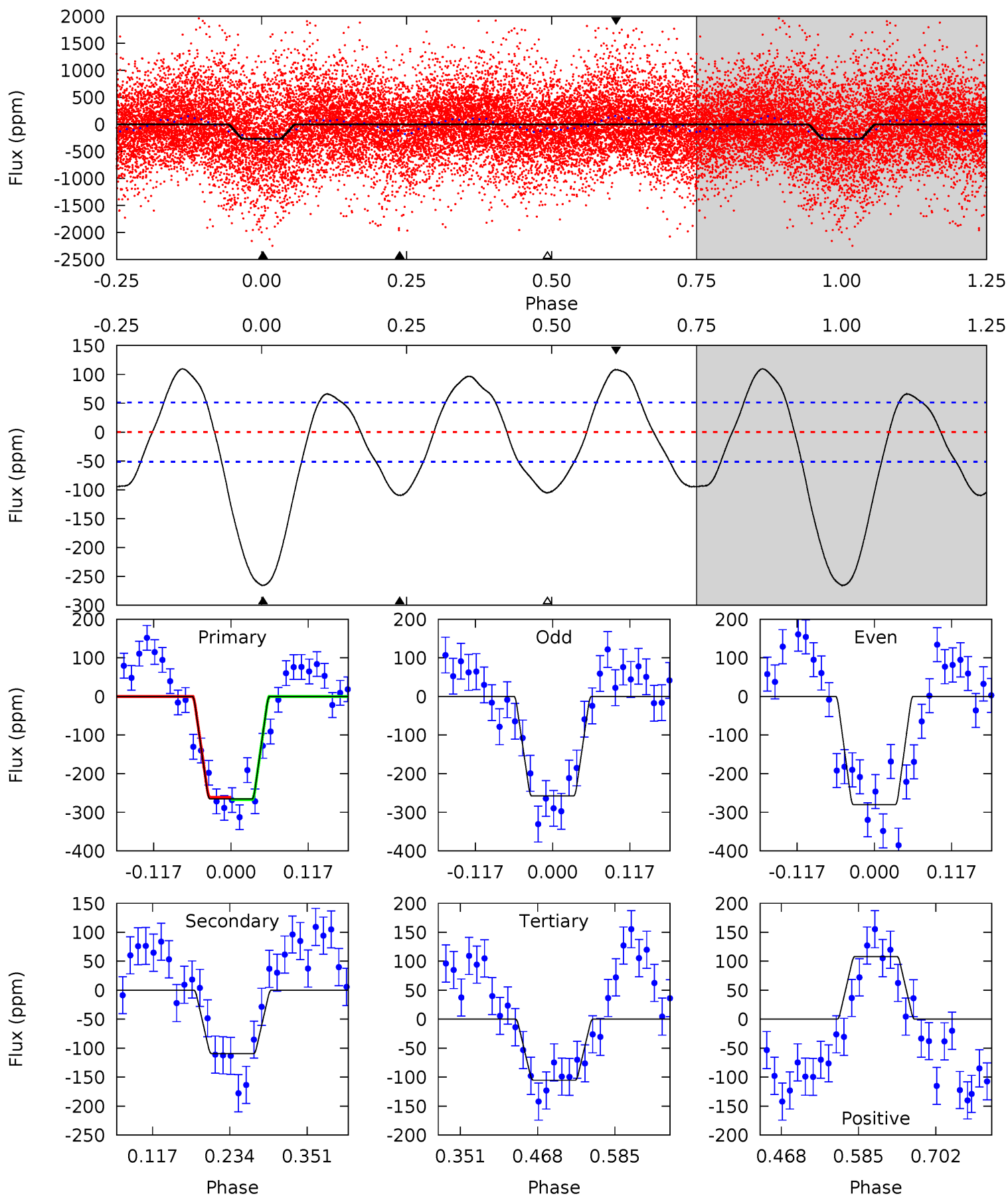
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

005730867-05, P = 4.239356 Days, E = 129.989349 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.4	9.65	9.27	9.53	4.53	1.57	6.51	14.1	13.9	0.38	0.12	0.99	1.10	0.29	0.25



Stellar Parameters For KIC 005730867

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7063^{+228}_{-313}	$4.163^{+0.158}_{-0.193}$	$-0.320^{+0.300}_{-0.300}$	$1.580^{+0.462}_{-0.378}$	$1.331^{+0.193}_{-0.214}$	$0.475^{+0.442}_{-0.230}$
	+3%/-4%	+4%/-5%	+94%/-94%	+29%/-24%	+15%/-16%	+93%/-48%
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 005730867-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$13.11^{+13.07}_{-8.95}$	2311^{+193}_{-176}	3390^{+30059}_{-35068}	$1.655^{+1813.504}_{-1627.501}$
Alt.	-110 ± 11	$12.32^{+12.91}_{-8.30}$	2316^{+173}_{-160}	3102^{+1673}_{-5051}	$1.262^{+10.146}_{-0.977}$

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

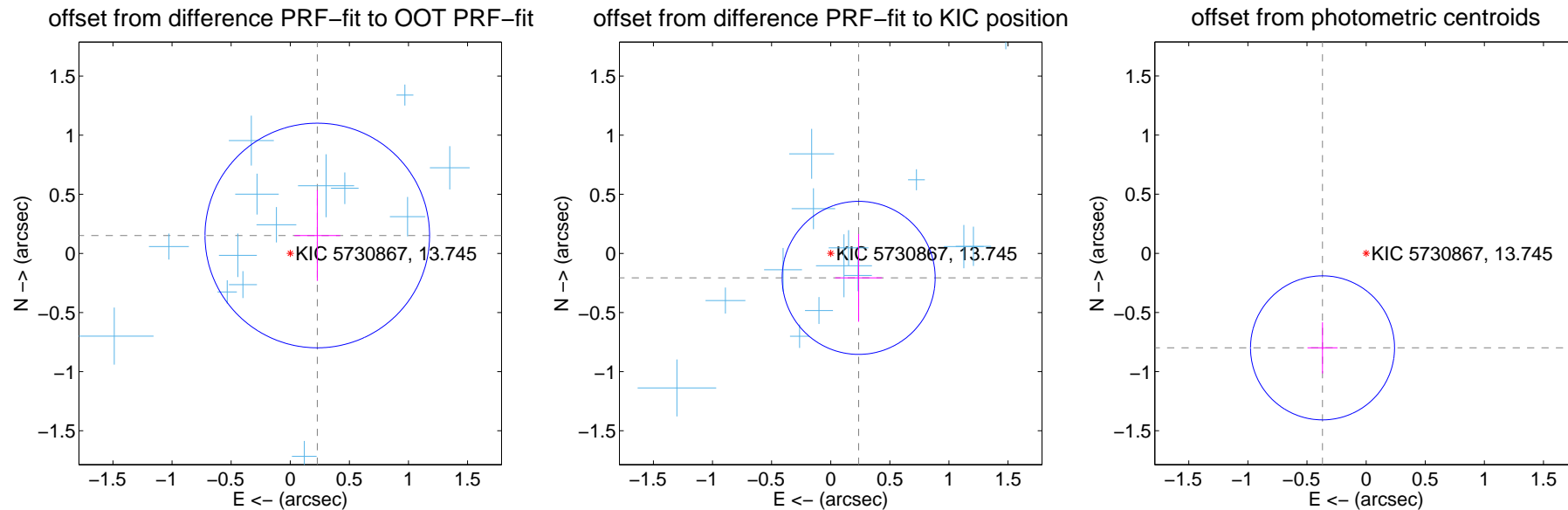
DV Centroid Data

Supplemental centroid analysis for 005730867-05. Kepler magnitude: 13.74. Transit SNR -1.00

There are 16 quarters with good PRF difference image offsets

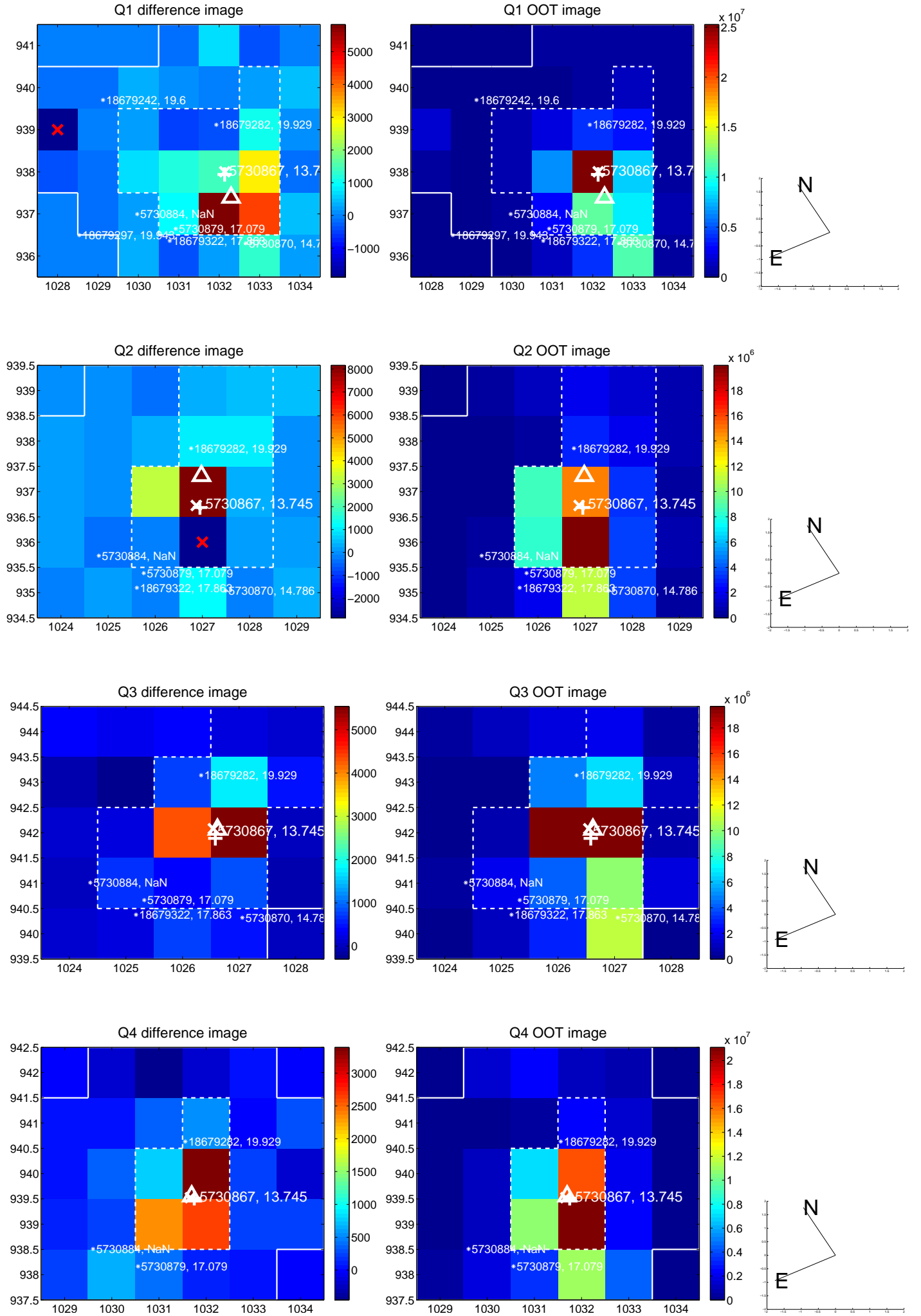
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.274 ± 0.317	0.87	-0.229 ± 0.193	0.151 ± 0.384
PRF-fit source offset from KIC position	0.314 ± 0.216	1.46	-0.236 ± 0.198	-0.207 ± 0.371
photometric centroid source offset	0.88 ± 0.20	4.34	0.37 ± 0.13	-0.80 ± 0.22

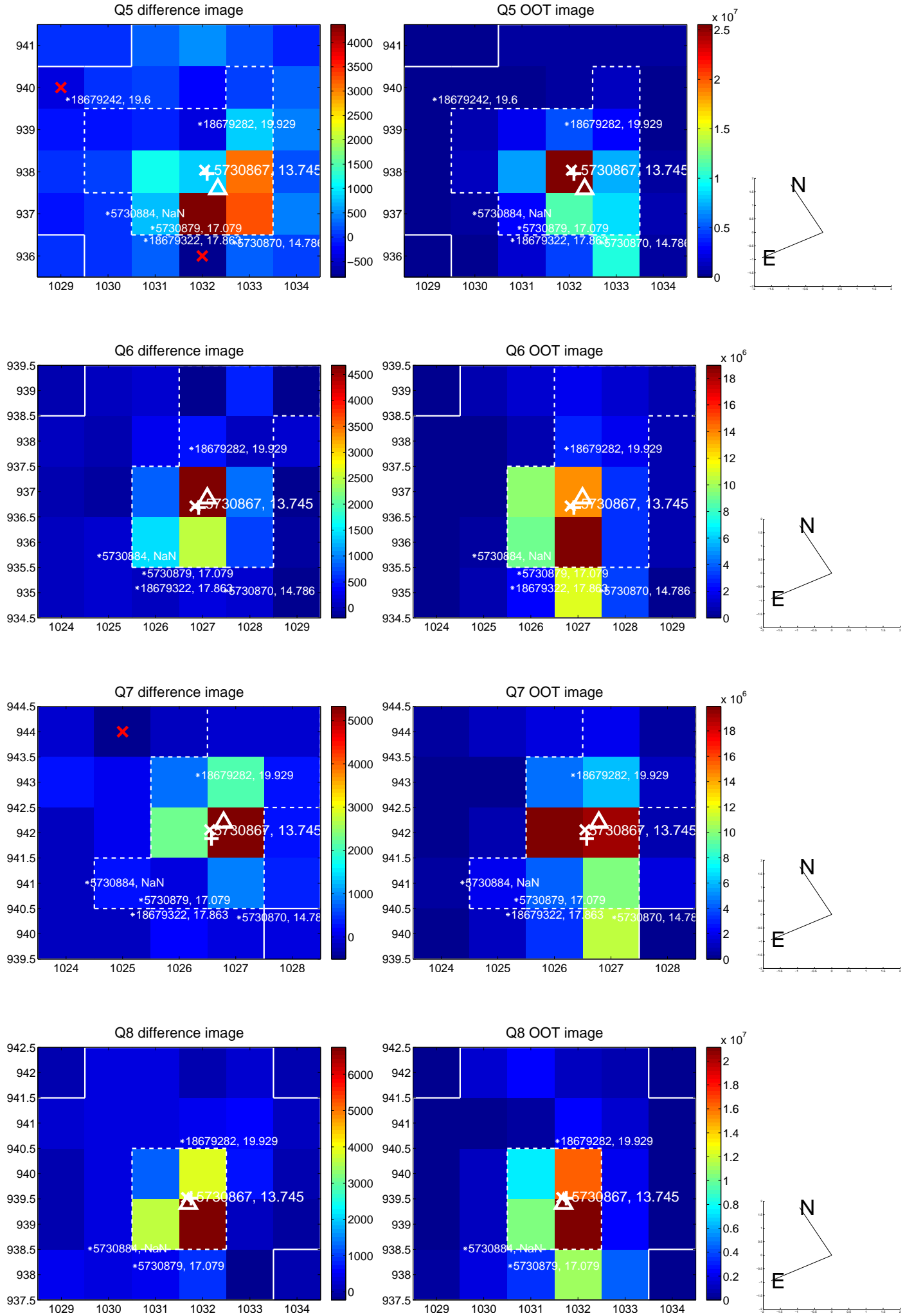


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

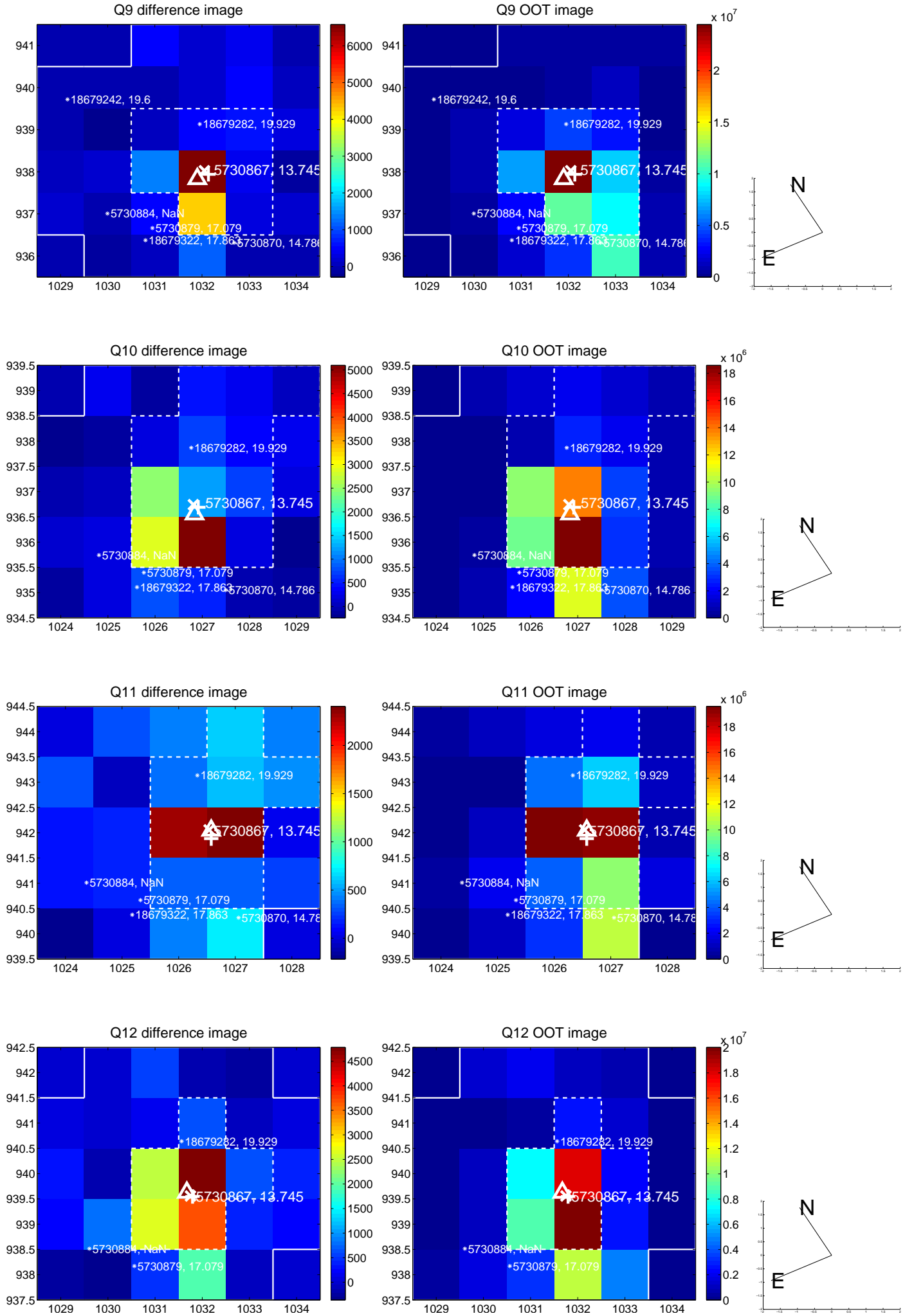
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



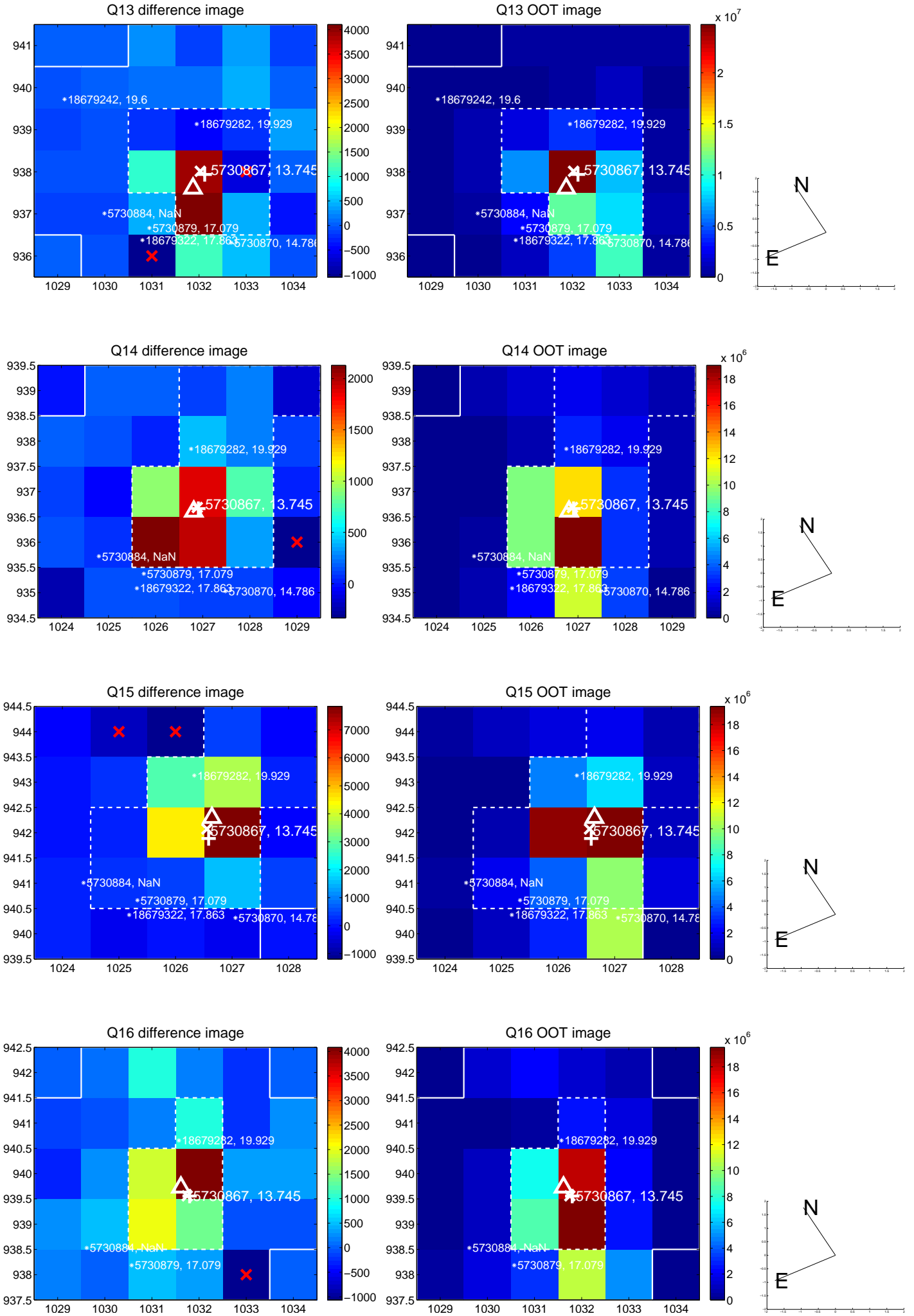
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



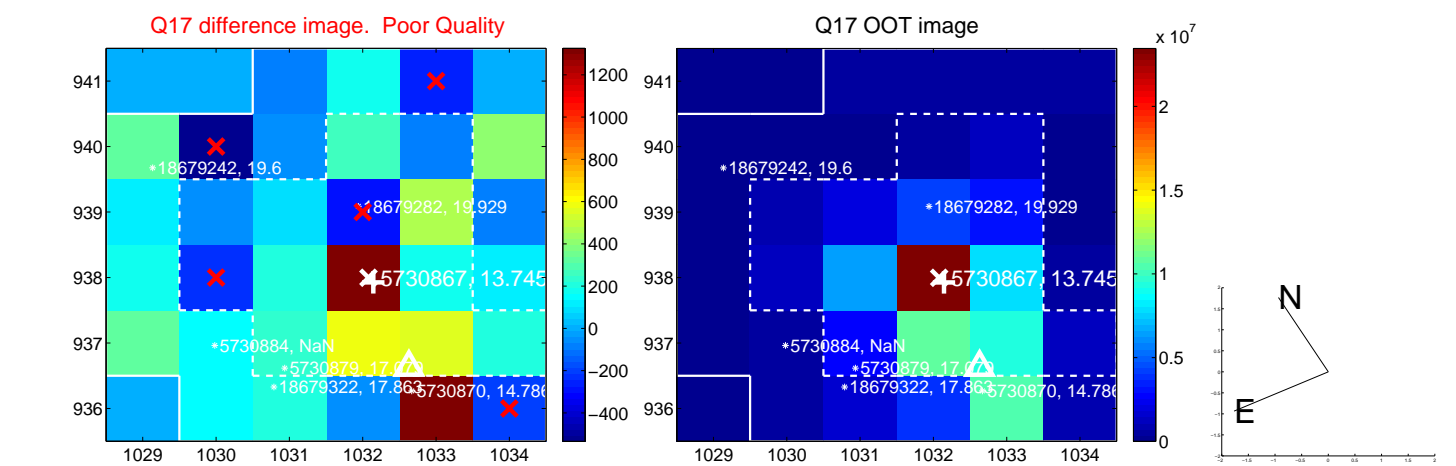
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



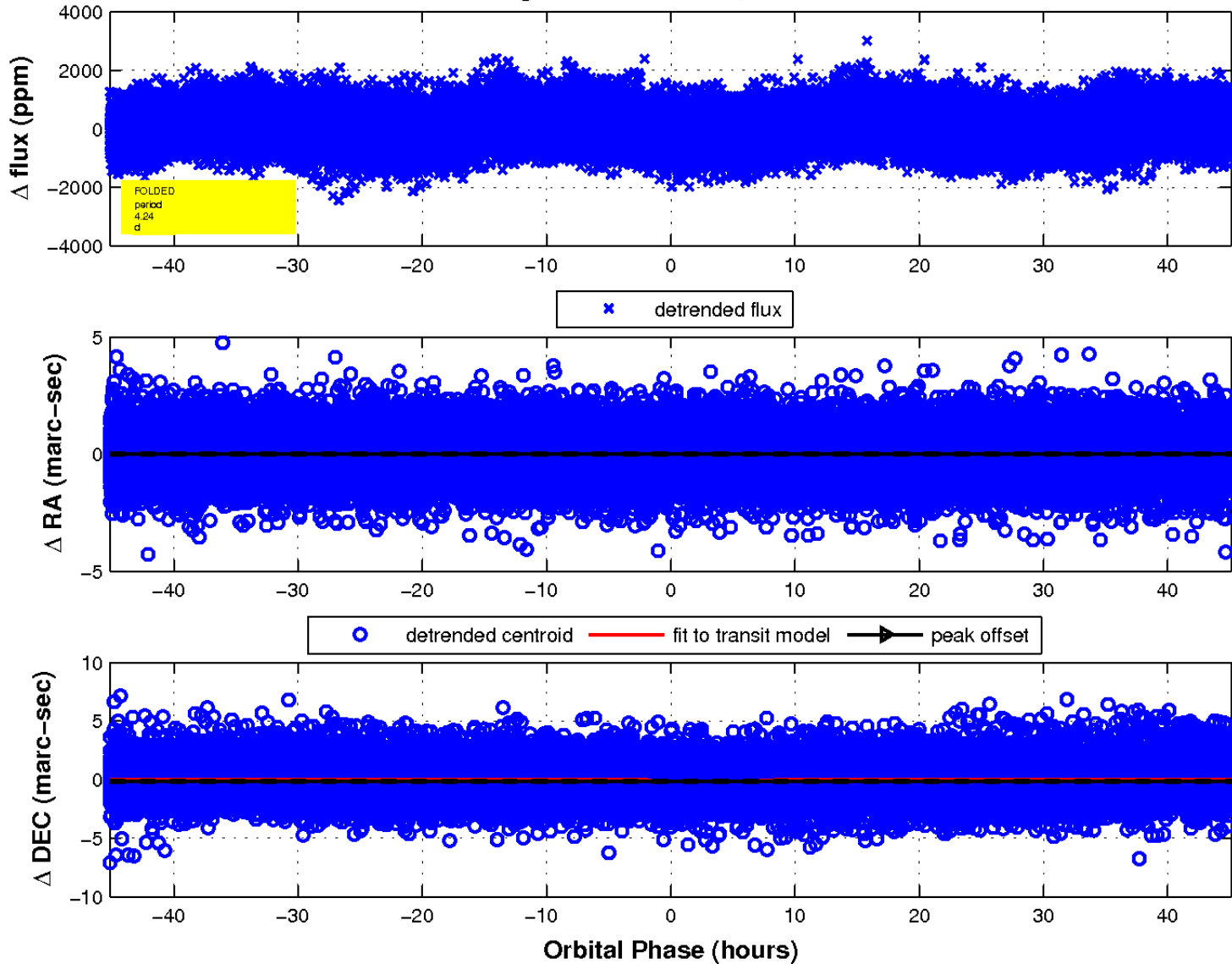
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 5 of 5



UKIRT Image

Declination

