

KIC 003427727

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})
003427727-01	OBS	No	0.565123	132.051981	67.7	2.522	13.9	14.5	1.51	6769	1.45	20944.49
003427727-02	OBS	No	1.020166	132.419958	145.4	12.242	12.0	21.9	1.51	6769	2.30	9528.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003427727-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003427727-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—CENT_SATURATED

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

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

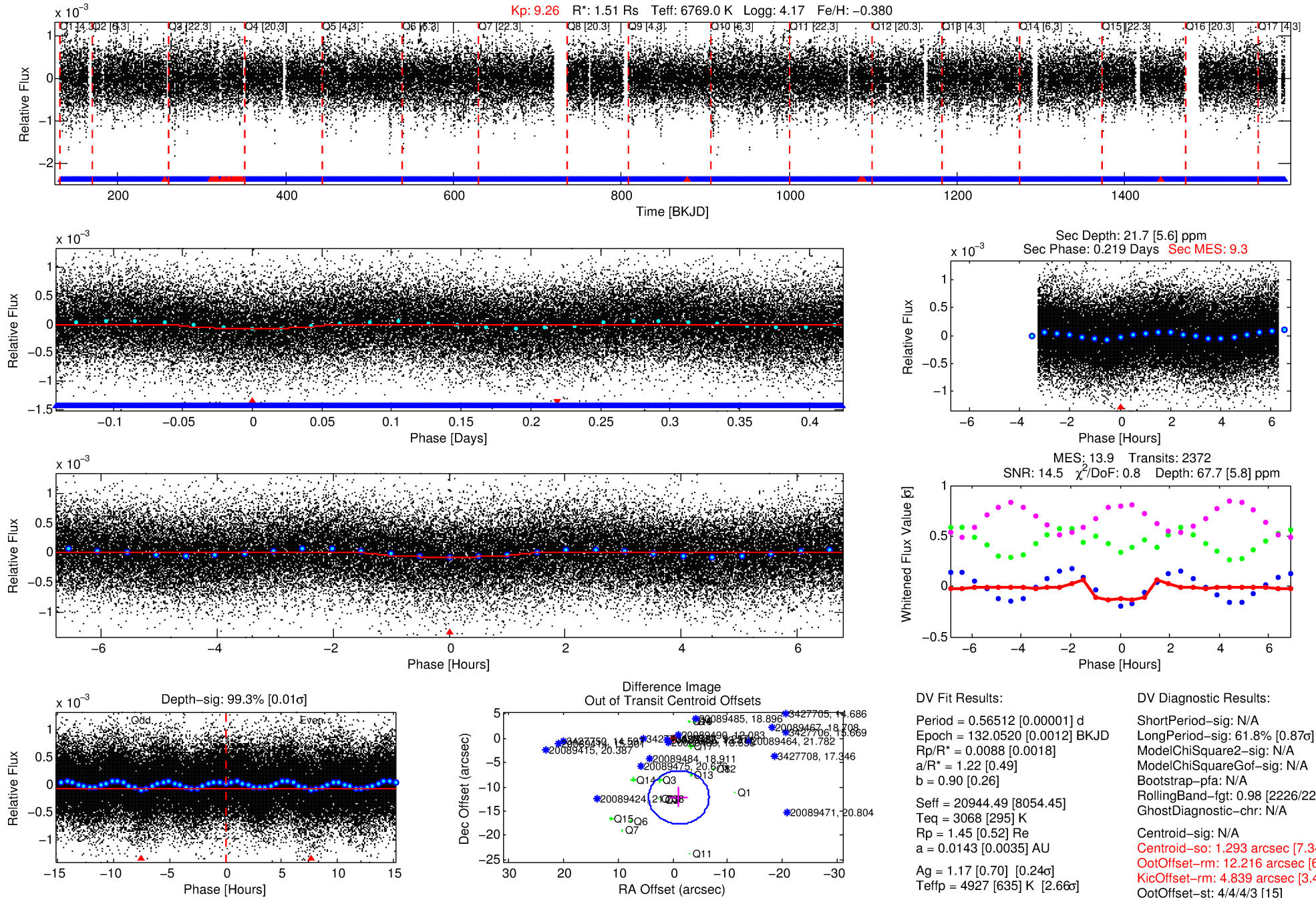
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003427727-01

No Significant Match Found

DV One-Page Summary

KIC: 3427727 Candidate: 1 of 2 Period: 0.565 d



DV Fit Results:

Period = 0.56512 [0.00001] d
Epoch = 132.0520 [0.0012] BKJD
Rp/R* = 0.0088 [0.0018]
a/R* = 1.22 [0.49]
b = 0.90 [0.26]
Seff = 20944.49 [8054.45]
Teq = 3068 [295] K
Rp = 1.45 [0.52] Re
a = 0.0143 [0.0035] AU
Ag = 1.17 [0.70] [0.24 σ]
Teff = 4927 [635] K [2.66 σ]

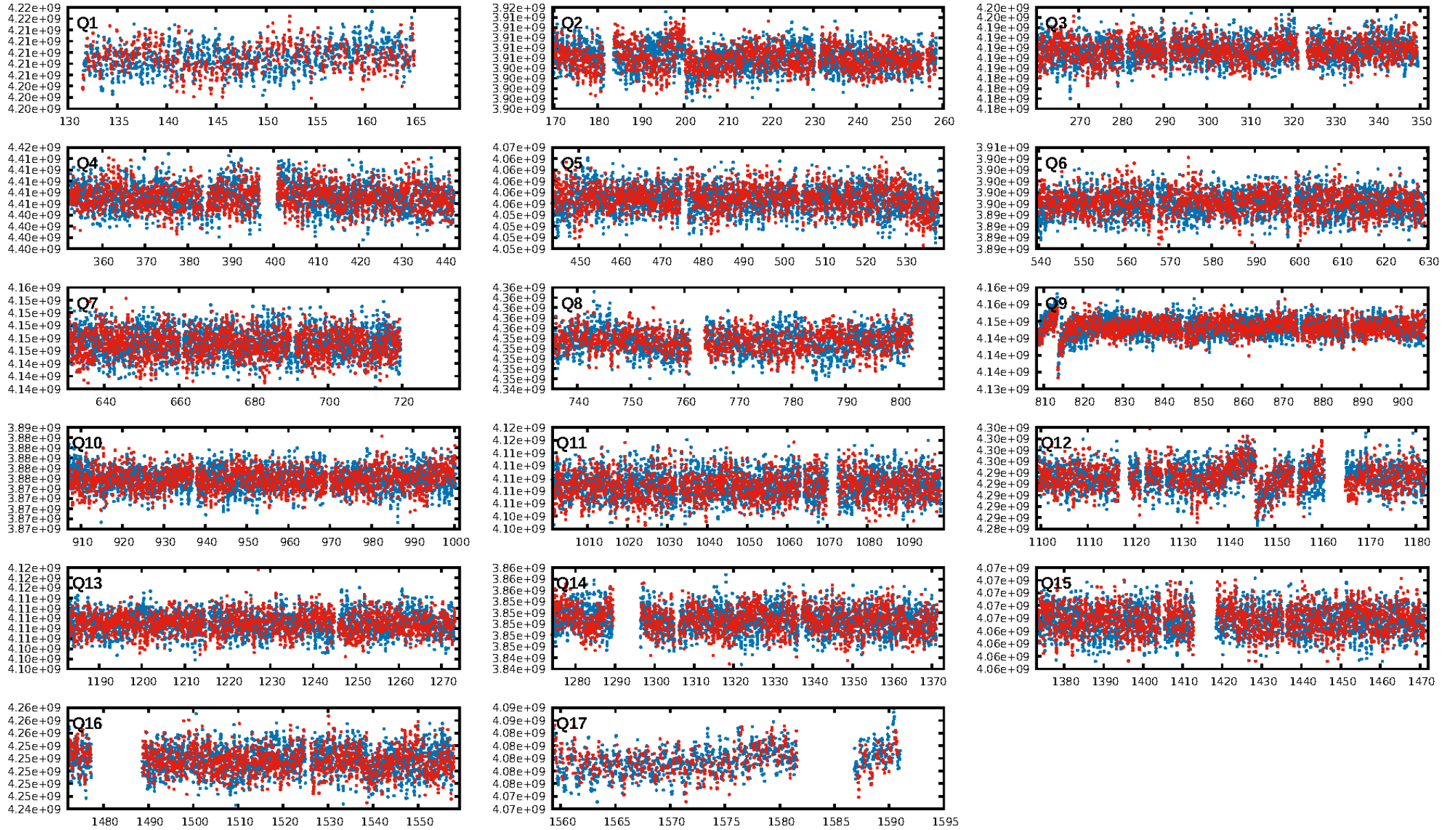
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 61.8% [0.87 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [2226/2265]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 1.293 arcsec [7.34 σ]
OotOffset-rm: 12.216 arcsec [6.65 σ]
KicOffset-rm: 4.839 arcsec [3.49 σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.00 [0/15]
DiffImageOverlap-fno: 0.00 [0/17]

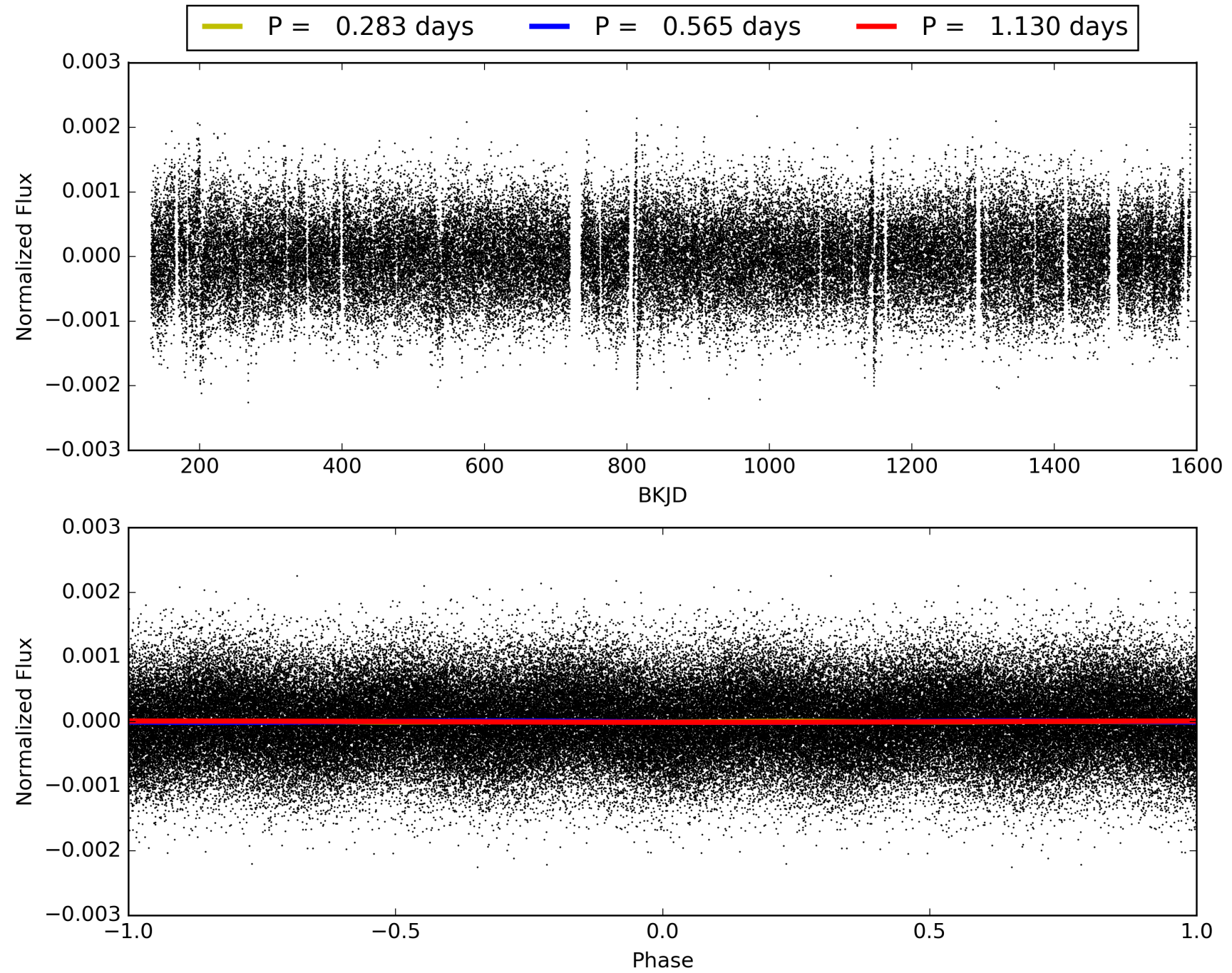
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:57:01 Z

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

TCE 003427727-01, PDC Light Curves

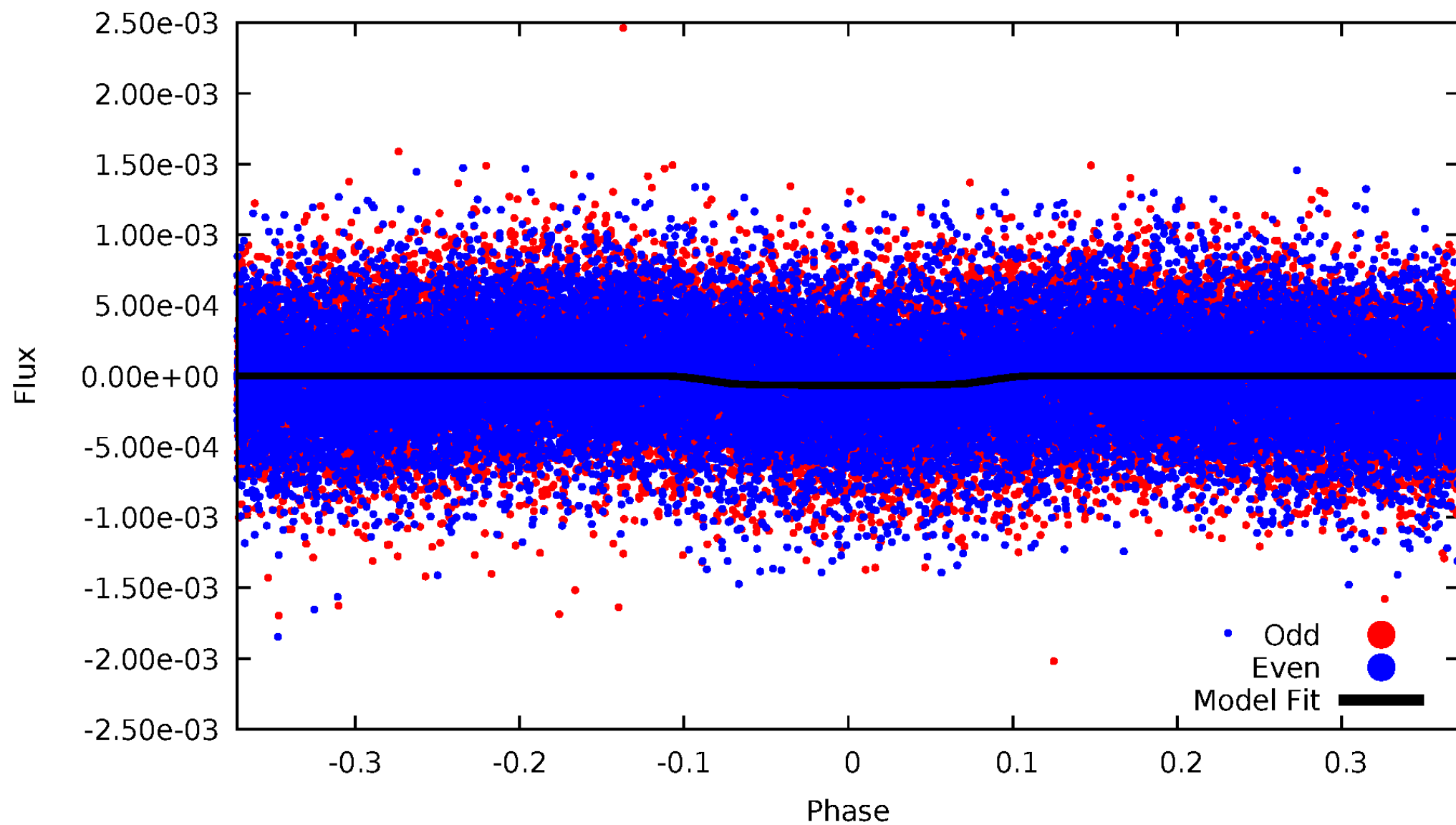


TCE 003427727-01



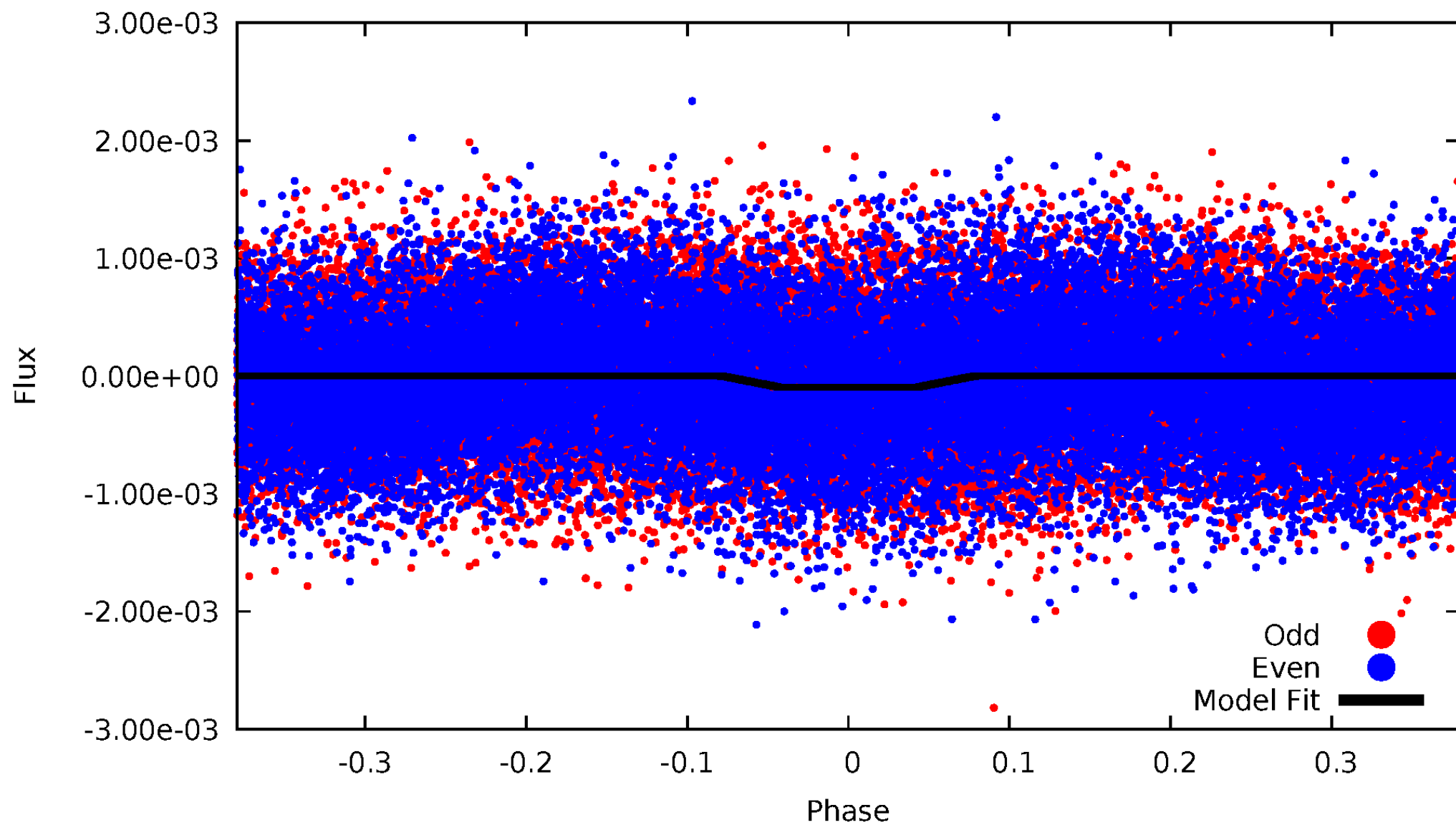
DV Odd/Even

TCE 003427727-01



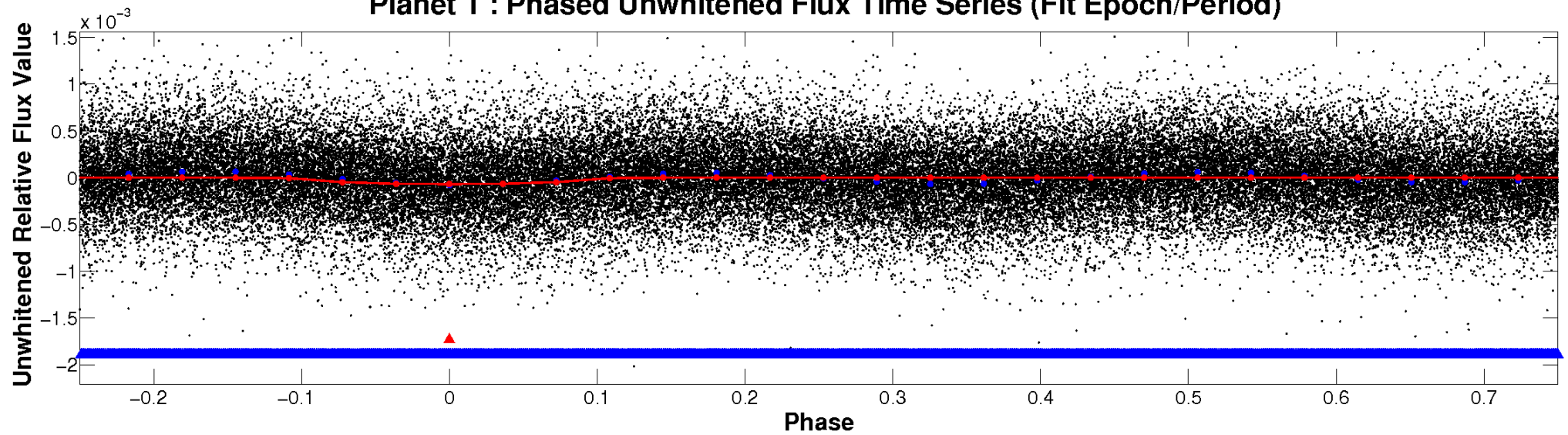
ALT Odd/Even

TCE 003427727-01

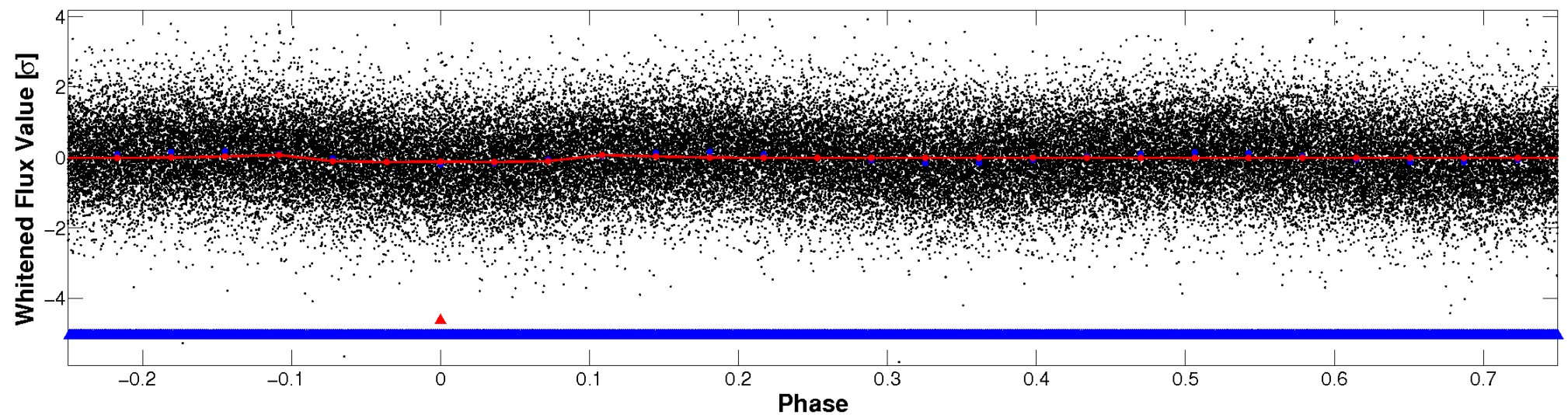


Non-Whitened Vs. Whitened Light Curve

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

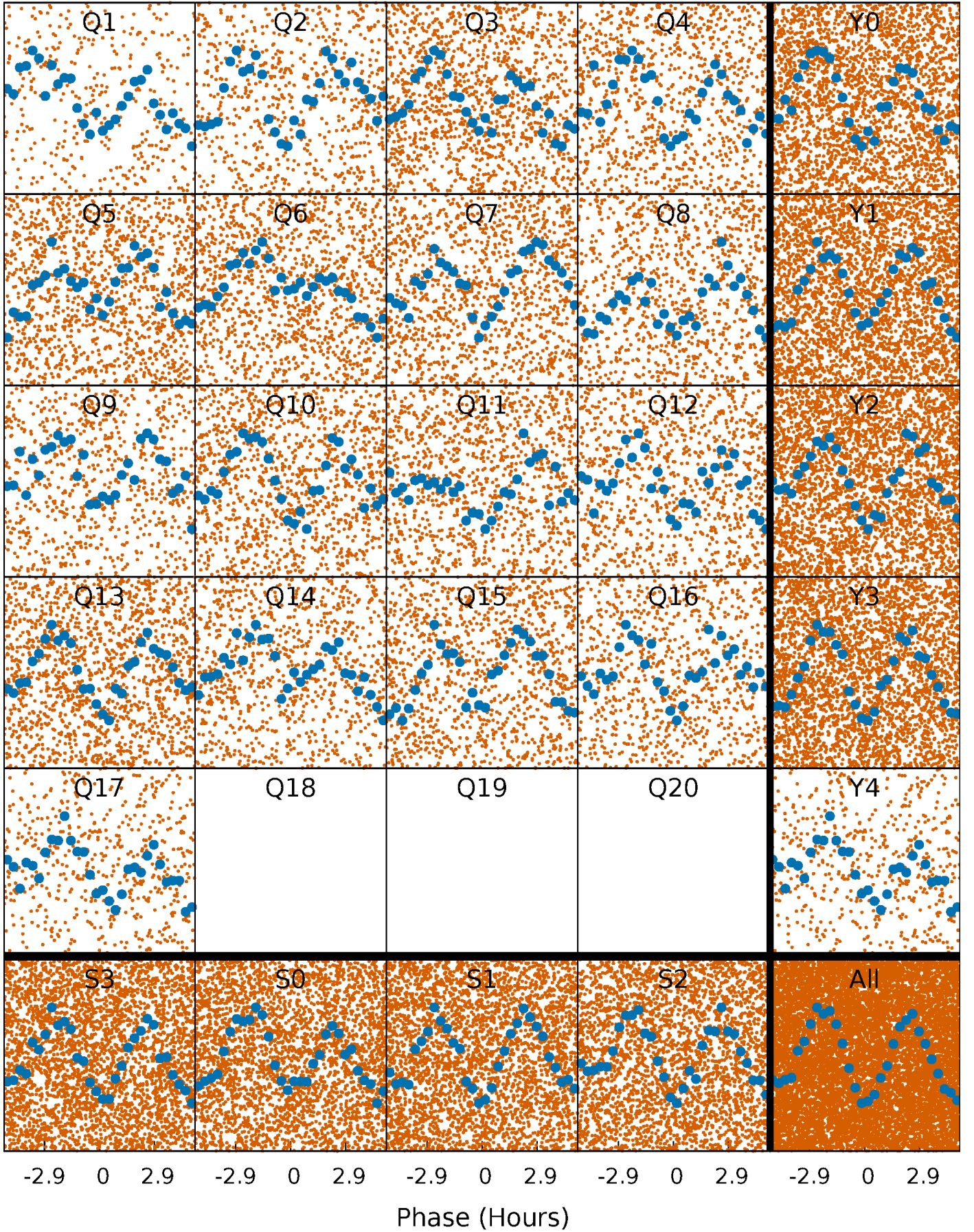


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



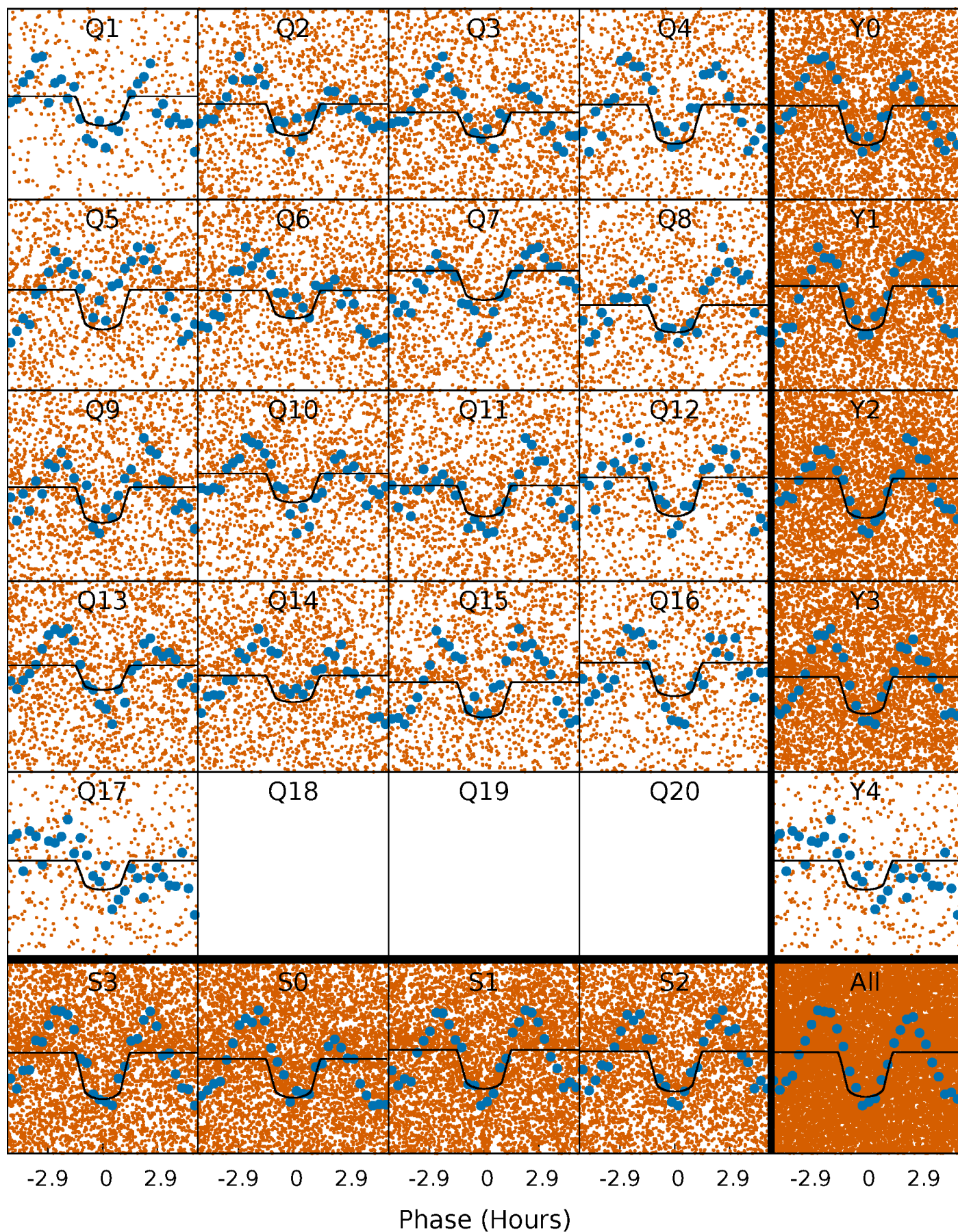
PDC Quarter-Phased Transit Curves

TCE 003427727-01 P= 0.565123 Days $T_0=132.051981$ (BKJD)



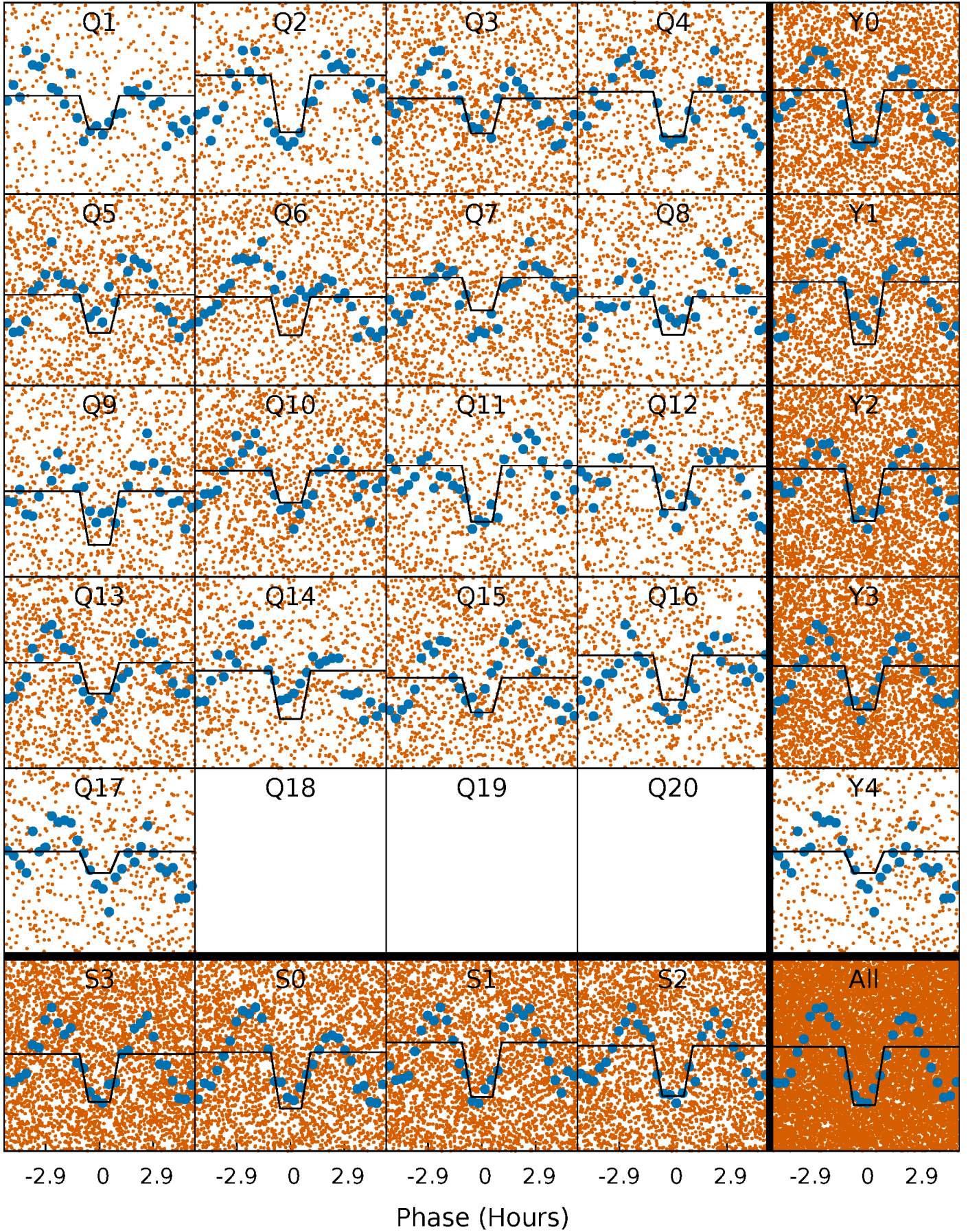
DV Quarter-Phased Transit Curves

TCE 003427727-01 P= 0.565123 Days $T_0=132.051981$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

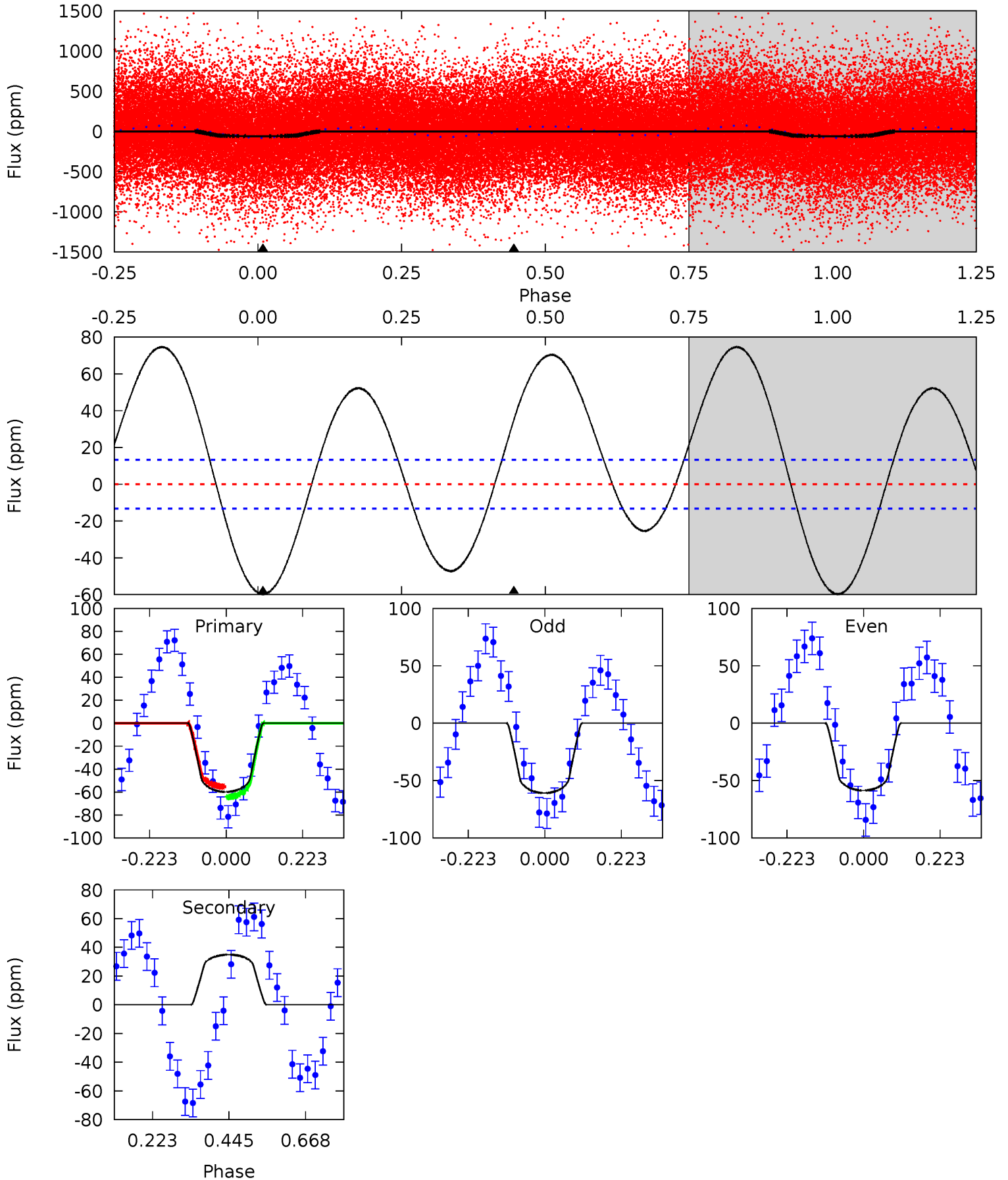
TCE 003427727-01 P= 0.565128 Days $T_0=132.050030$ (BKJD)



DV Model-Shift Uniqueness Test

003427727-01, P = 0.565123 Days, E = 131.486858 Days

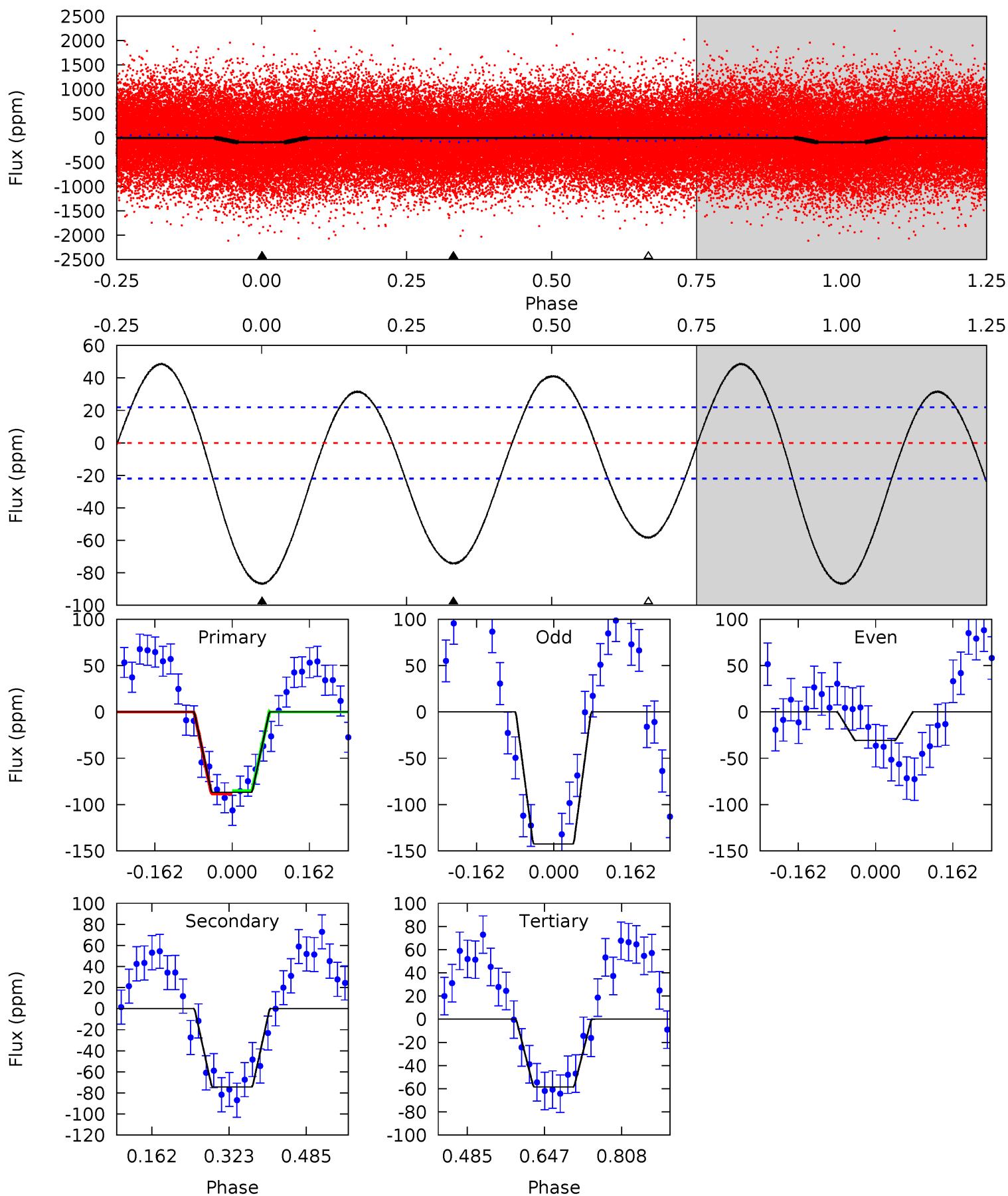
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.8	-11.5	0	0	4.39	1.22	8.50	19.8	19.8	-11.5	-11.5	0.37	1.07	0.56	1.48



Alt Model-Shift Uniqueness Test

003427727-01, P = 0.565128 Days, E = 131.484902 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.6	15.1	11.9	0	4.46	1.40	7.60	5.77	17.6	3.25	15.1	11.2	1.09	0.36	0.31



Stellar Parameters For KIC 003427727

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6769^{+190}_{-285}	$4.167^{+0.185}_{-0.185}$	$-0.380^{+0.250}_{-0.300}$	$1.508^{+0.446}_{-0.365}$	$1.224^{+0.182}_{-0.203}$	$0.502^{+0.514}_{-0.258}$
	+3%/-4%	+4%/-4%	+66%/-79%	+30%/-24%	+15%/-17%	+102%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003427727-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	35 ± 3	$1.46^{+0.39}_{-0.34}$	4289^{+328}_{-332}	-5716^{+437}_{-678}	$-1.836^{+0.683}_{-1.320}$
Alt.	-74 ± 5	$1.65^{+0.39}_{-0.38}$	4263^{+356}_{-311}	6054^{+788}_{-543}	$3.095^{+2.051}_{-1.087}$

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 $A_{obs} \gg 1.0$

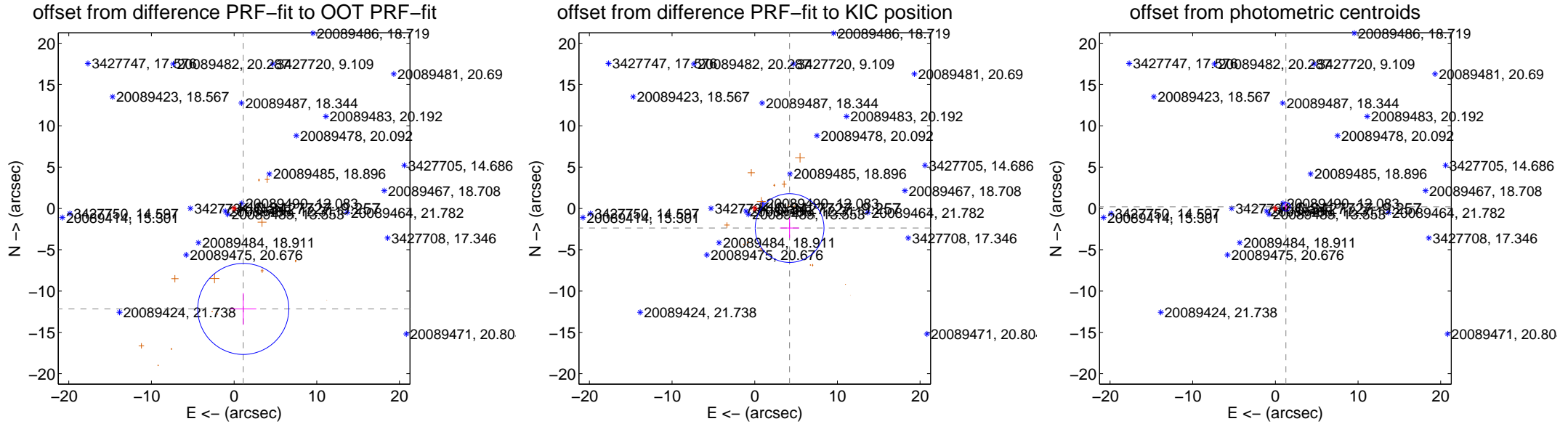
DV Centroid Data

Supplemental centroid analysis for 003427727-01. **Kepler magnitude: 9.26.** Transit SNR 14.47

There are 0 quarters with good PRF difference image offsets

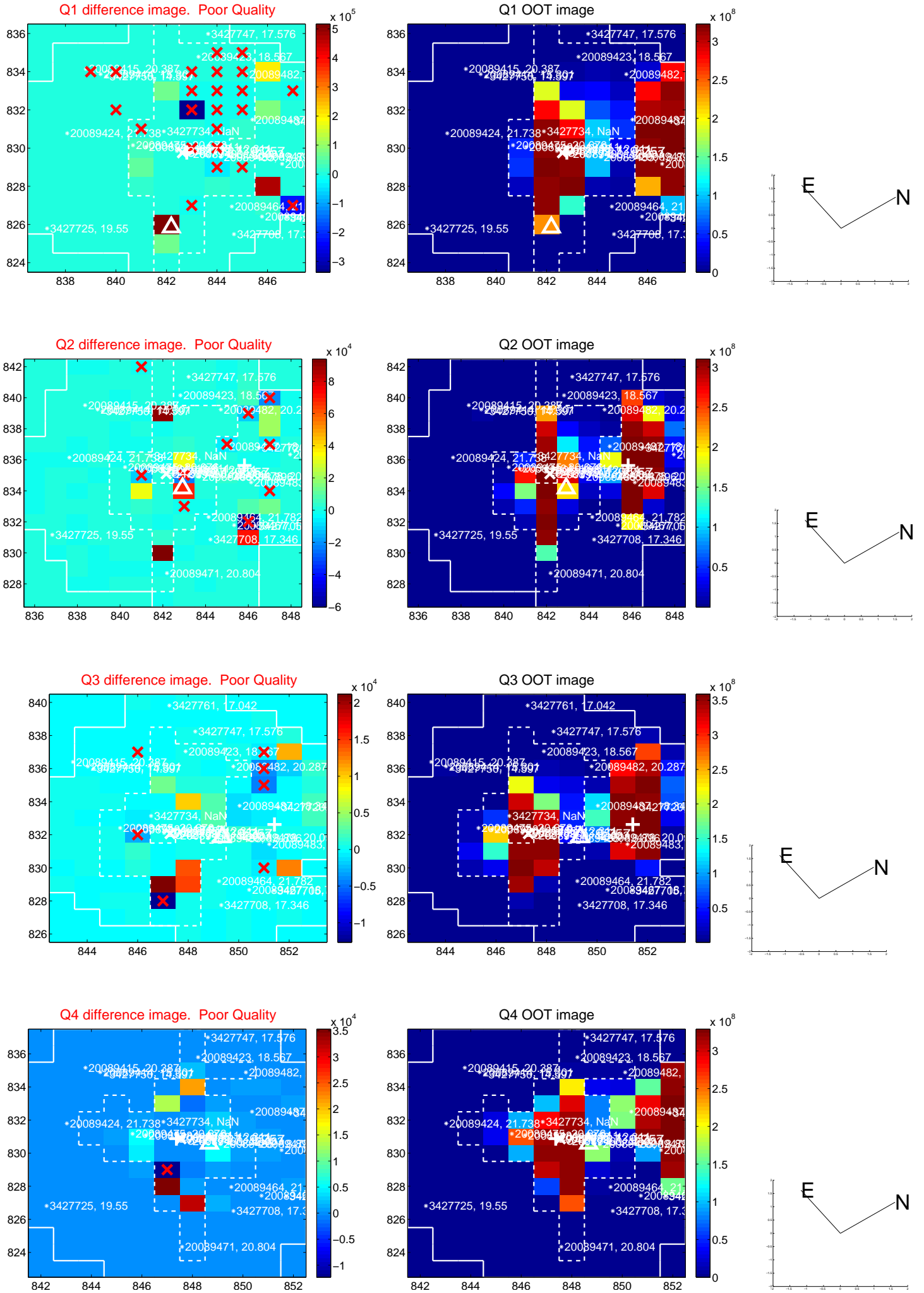
The OOT PRF centroid is offset from the target star catalog position by about 3.60 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	12.216 ± 1.837	6.65	-1.109 ± 1.569	-12.165 ± 1.912
PRF-fit source offset from KIC position	4.839 ± 1.387	3.49	-4.217 ± 1.168	-2.374 ± 1.217
photometric centroid source offset	1.29 ± 0.18	7.34	-1.28 ± 0.16	0.20 ± 0.55

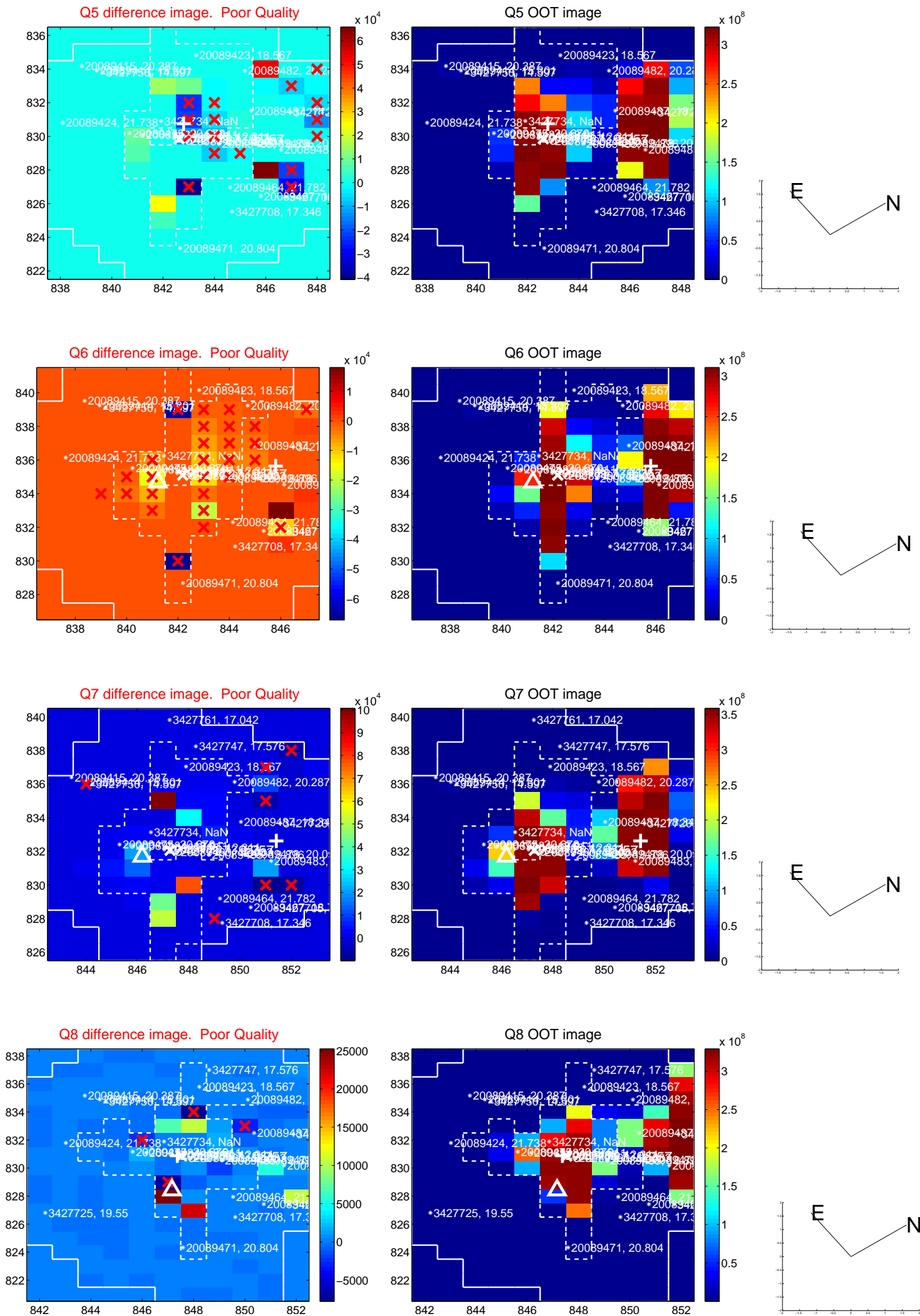


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

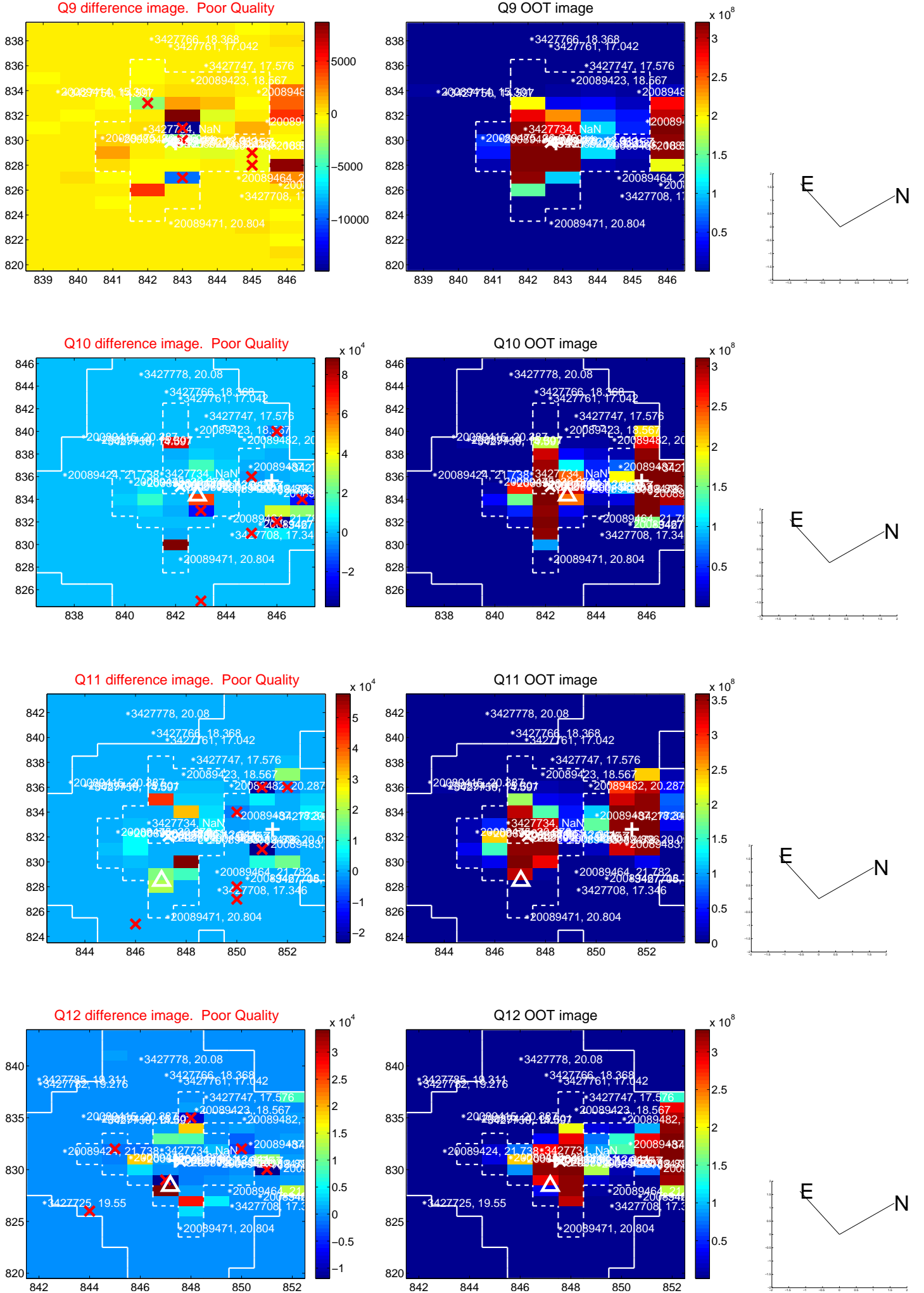
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



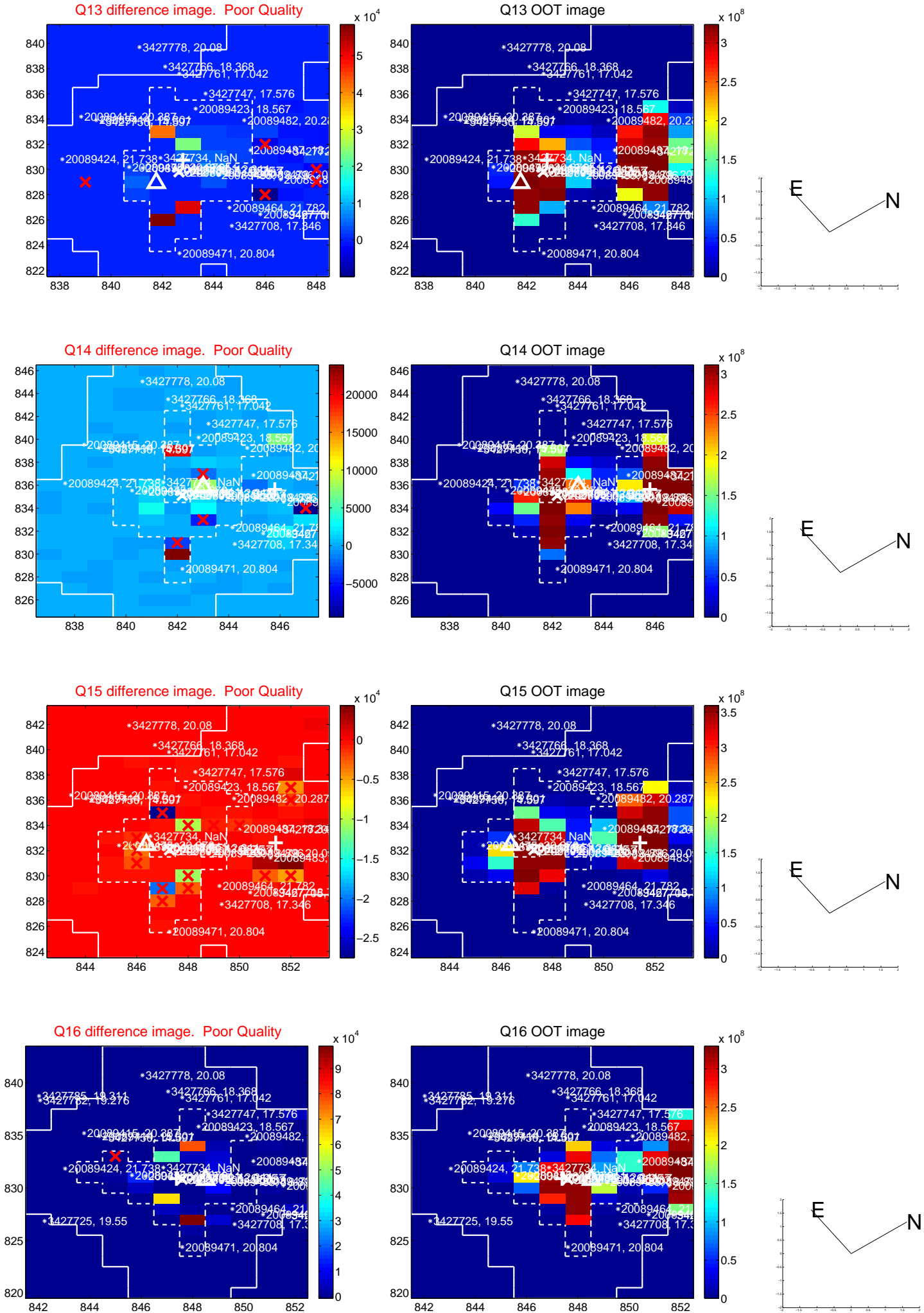
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



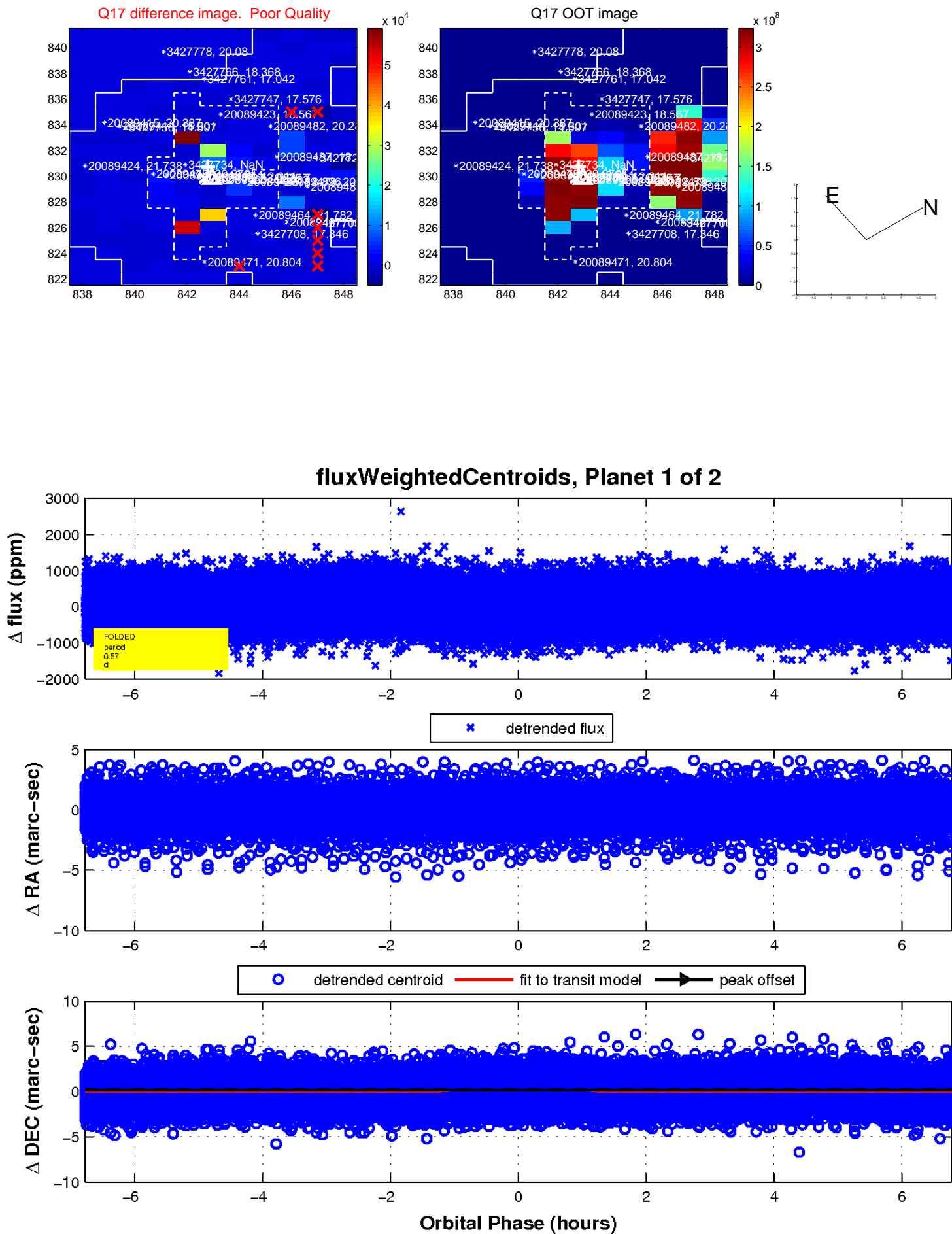
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

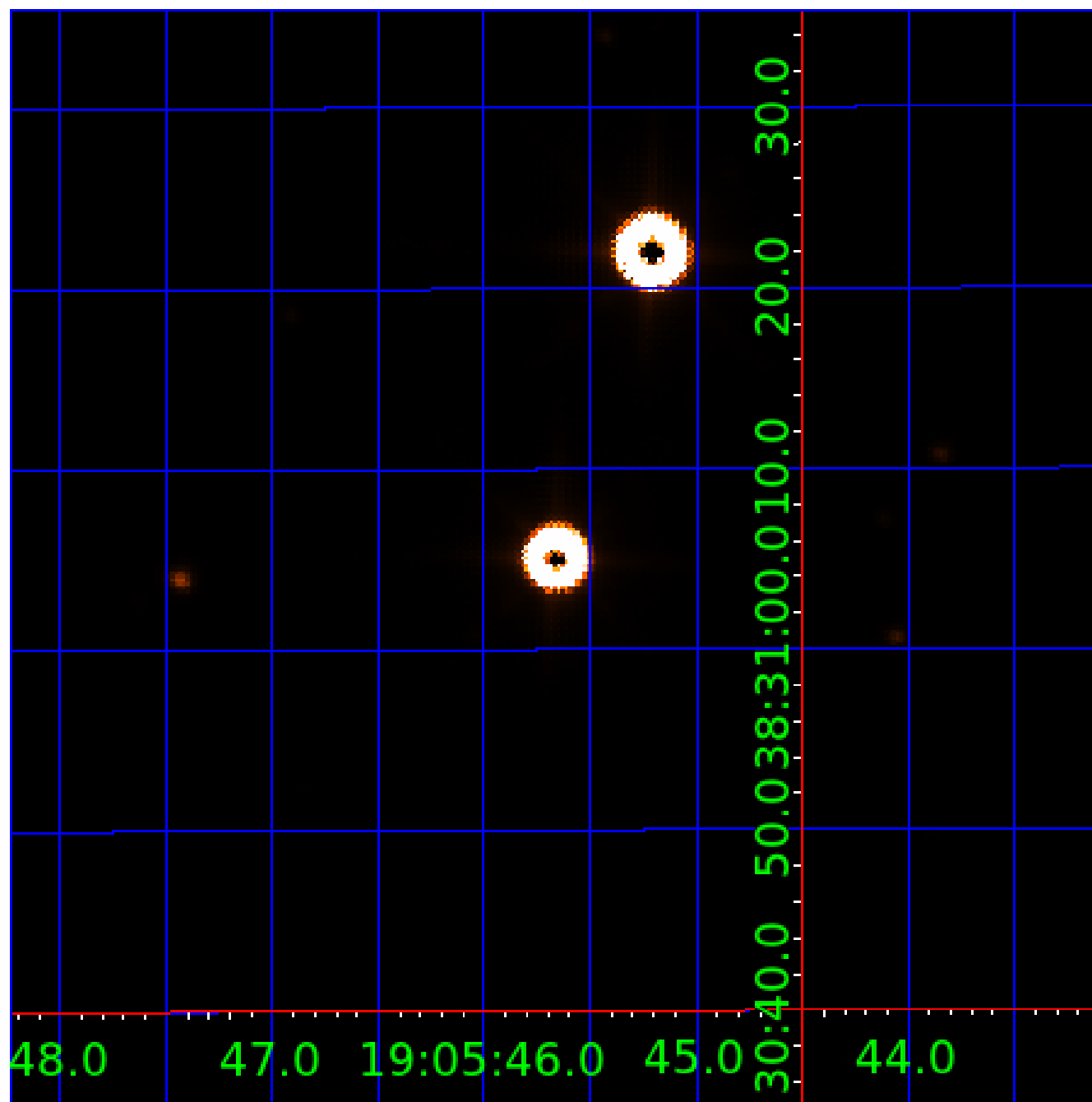


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003427727

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})
003427727-01	OBS	No	0.565123	132.051981	67.7	2.522	13.9	14.5	1.51	6769	1.45	20944.49
003427727-02	OBS	No	1.020166	132.419958	145.4	12.242	12.0	21.9	1.51	6769	2.30	9528.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003427727-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
003427727-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—CENT_SATURATED

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

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

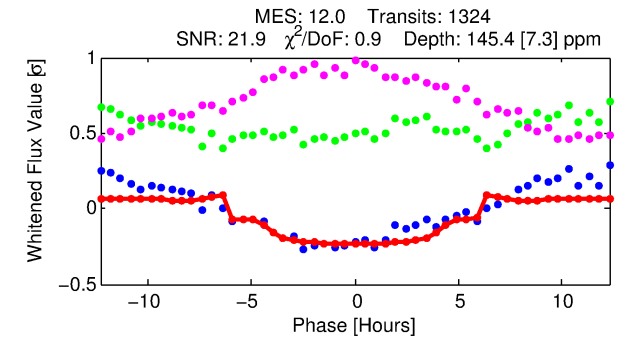
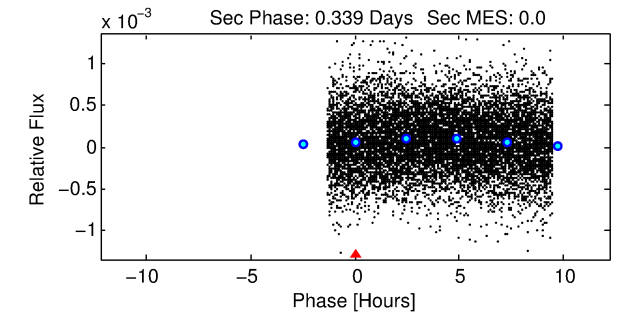
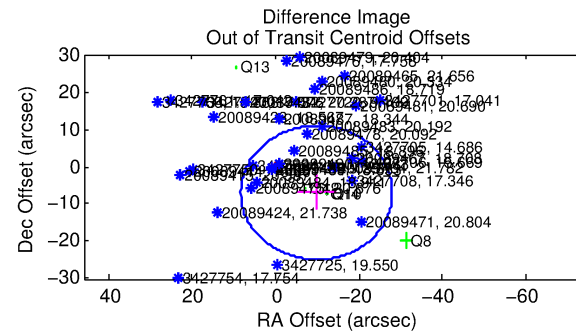
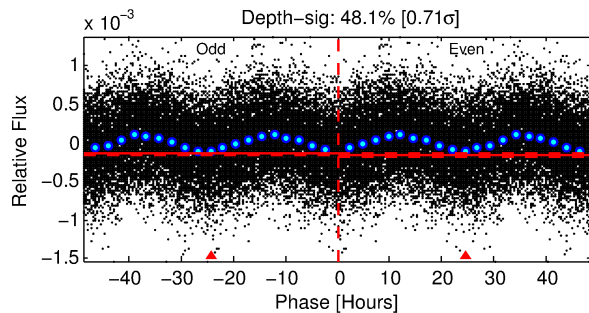
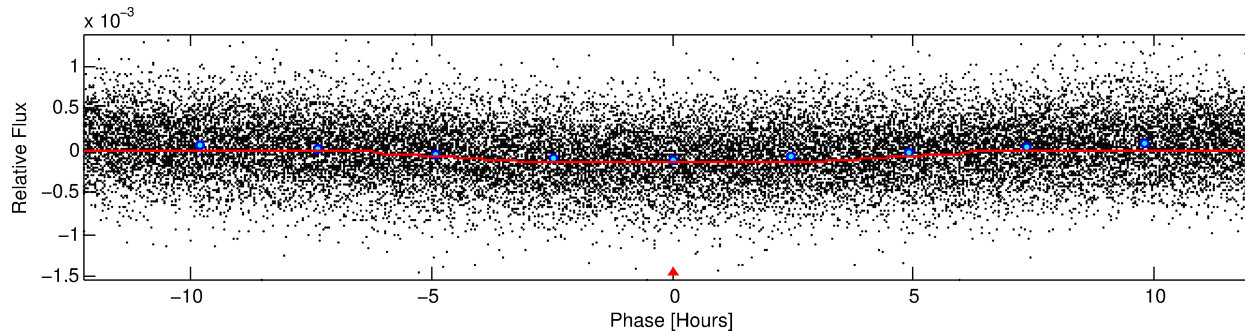
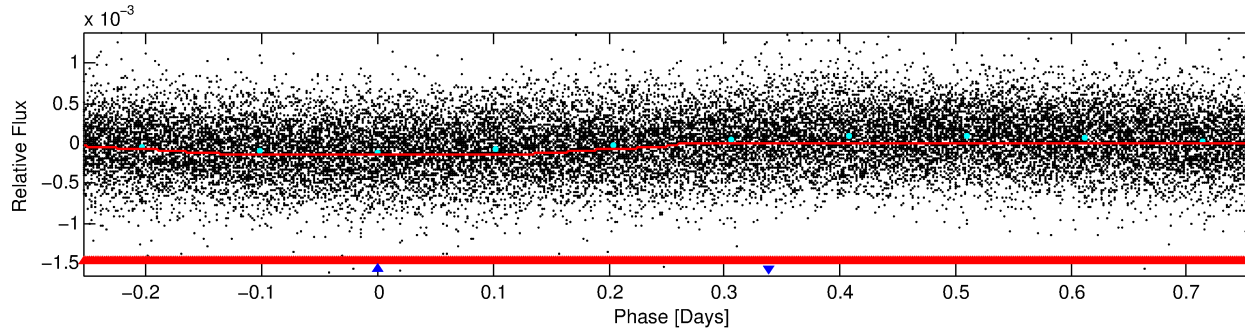
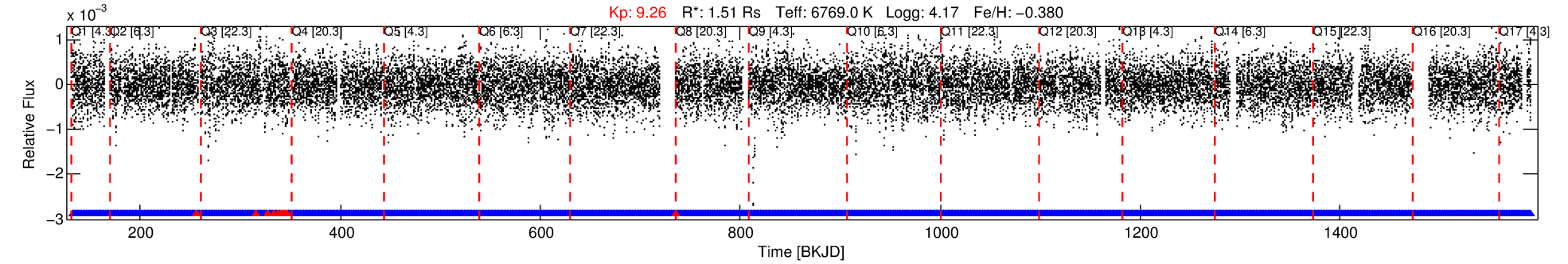
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003427727-02

No Significant Match Found

DV One-Page Summary

KIC: 3427727 Candidate: 2 of 2 Period: 1.020 d



DV Fit Results:

Period = 1.02017 [0.00001] d
Epoch = 132.4200 [0.0031] BKJD
Rp/R* = 0.0140 [0.0004]
a/R* = 1.00 [0.00]
b = 0.97 [0.01]
Seff = 9528.66 [3664.36]
Teq = 2519 [242] K
Rp = 2.30 [0.68] Re
a = 0.0212 [0.0051] AU
Ag = N/A
Teffp = N/A

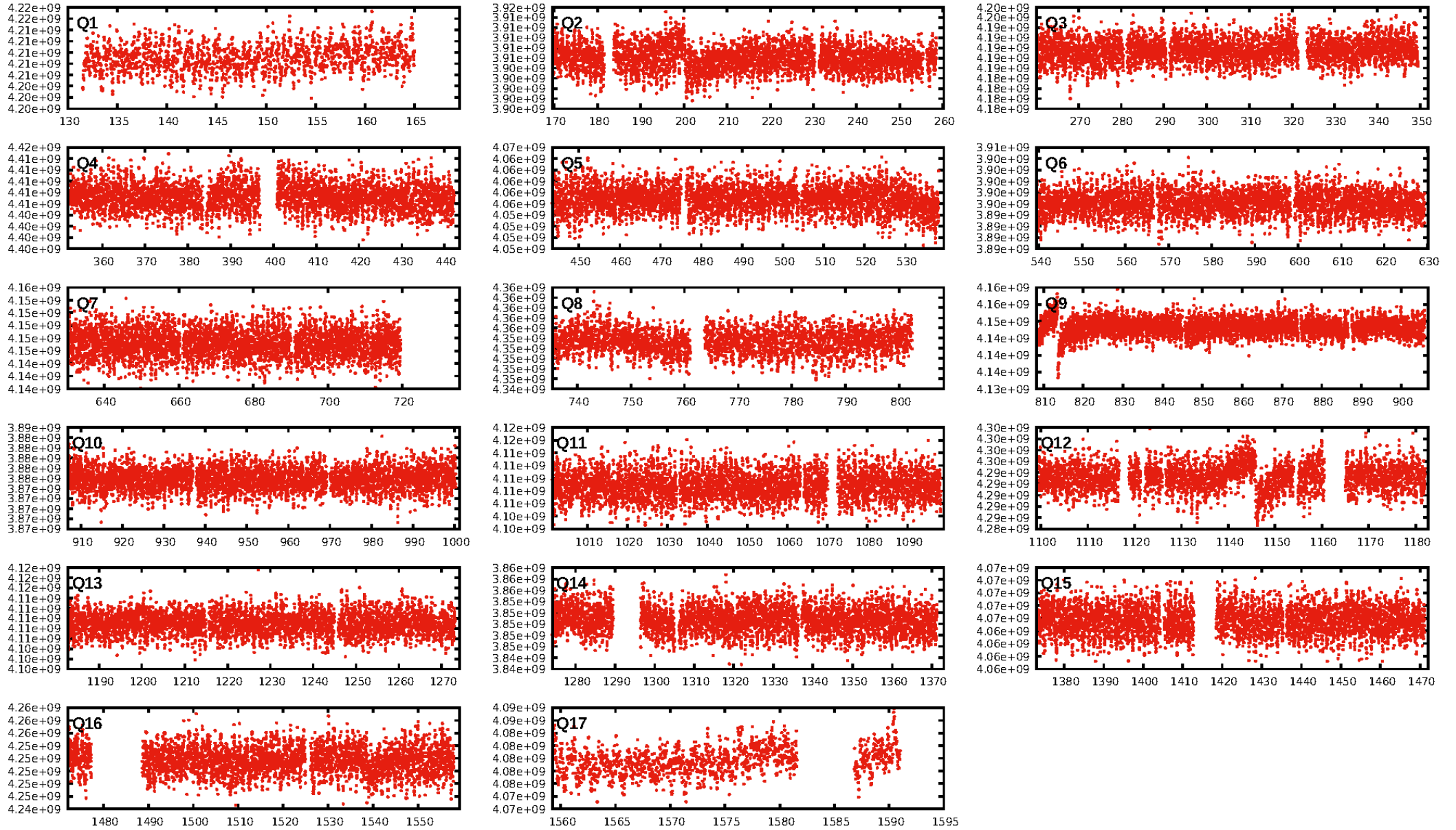
DV Diagnostic Results:

ShortPeriod-sig: 61.8% [0.87σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1250/1264]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 1.203 arcsec [11.88σ]
OotOffset-rm: 12.092 arcsec [1.99σ]
KicOffset-rm: 13.304 arcsec [2.81σ]
OotOffset-st: 2/0/3/1 [6]
KicOffset-st: 2/0/3/1 [6]
DiffImageQuality-fgm: 0.00 [0/6]
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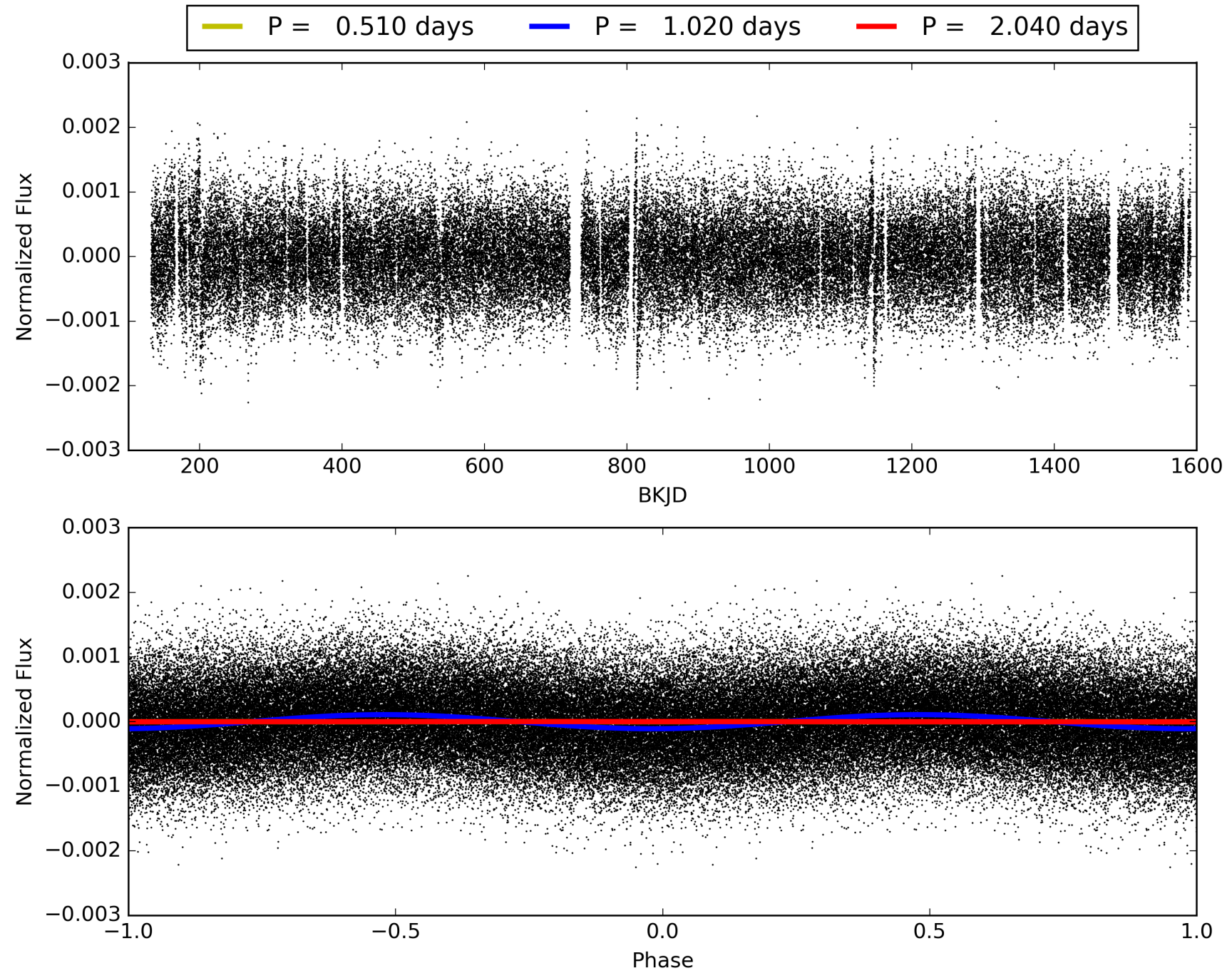
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003427727-02, PDC Light Curves

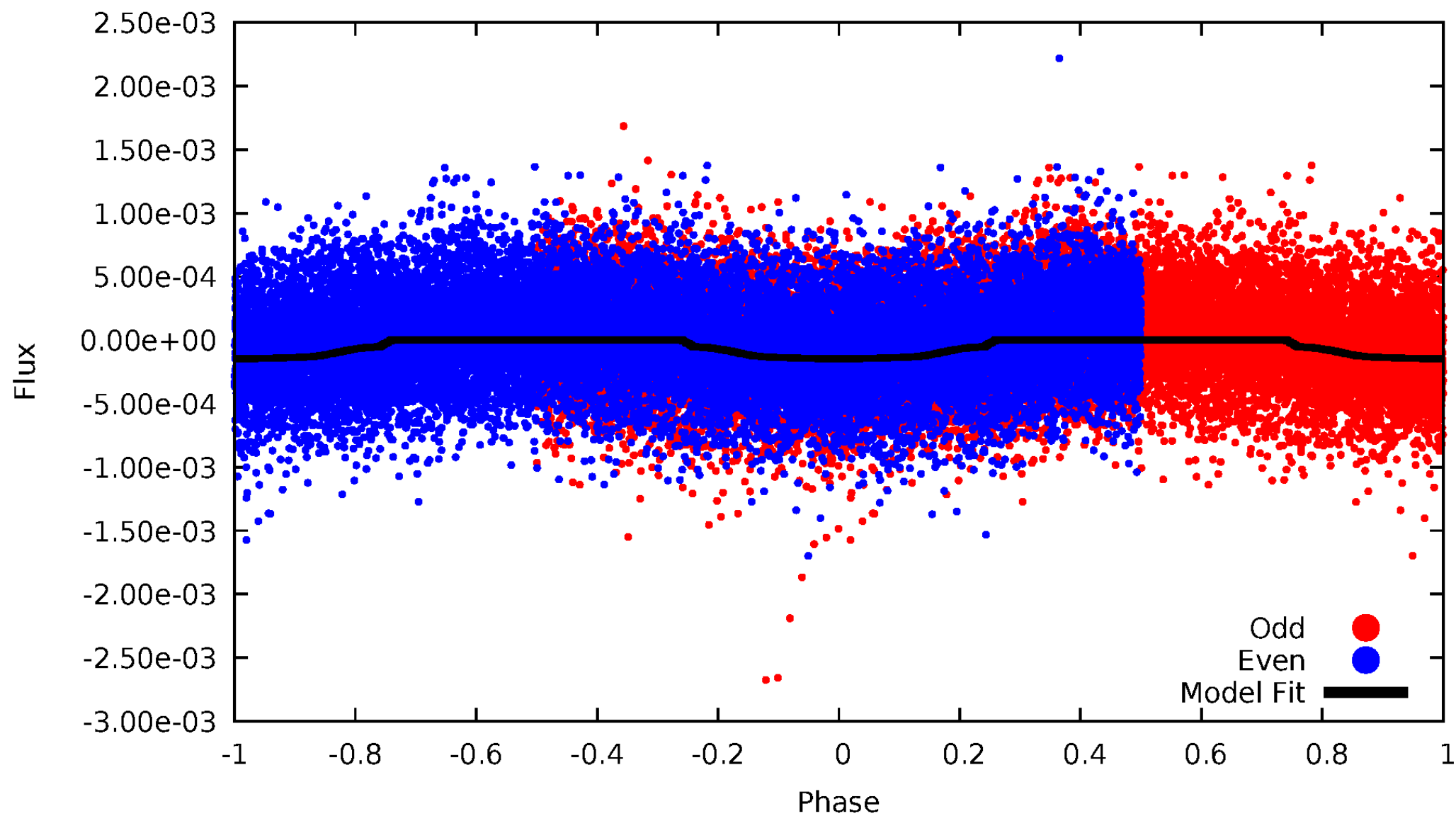


TCE 003427727-02



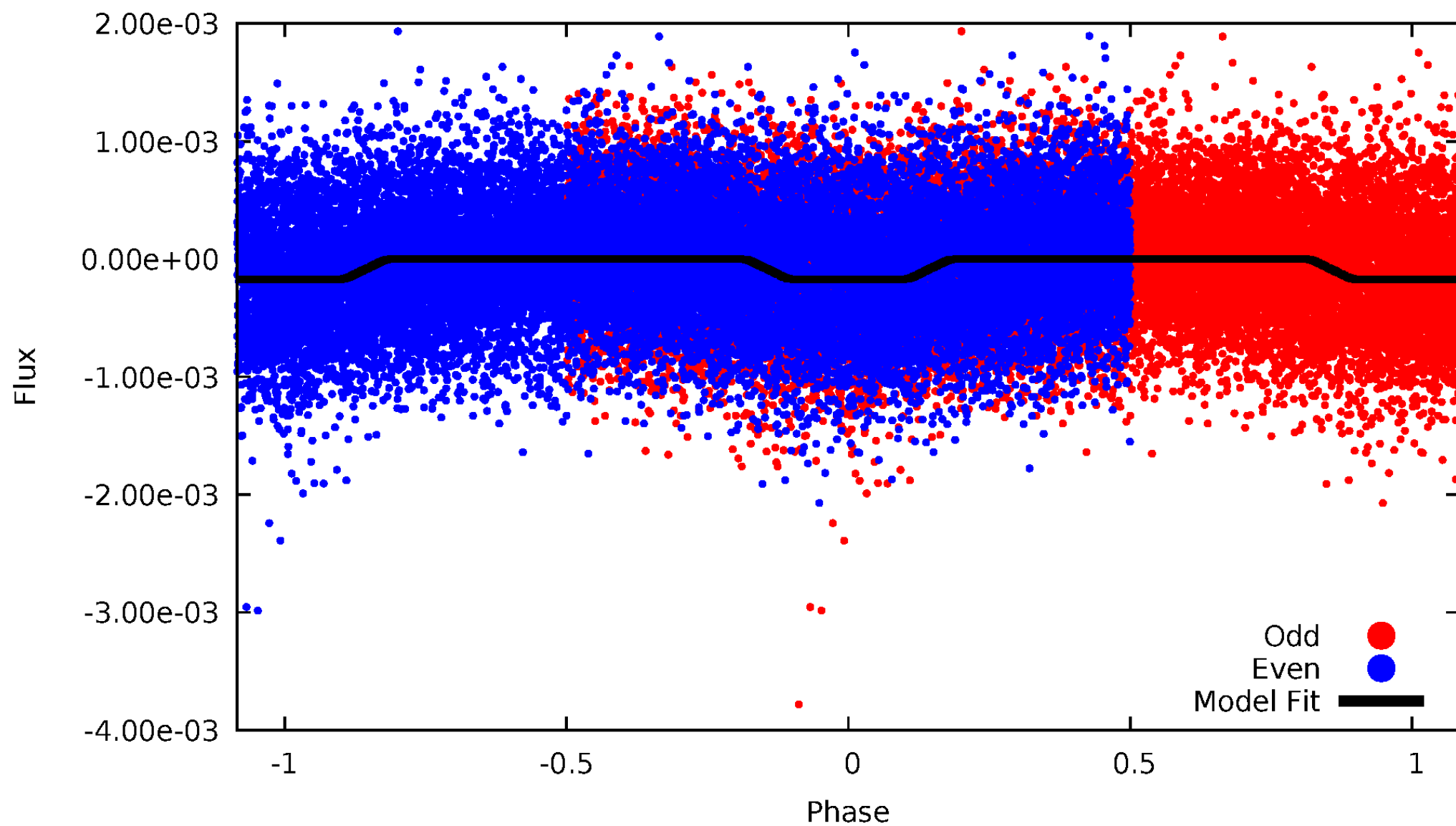
DV Odd/Even

TCE 003427727-02



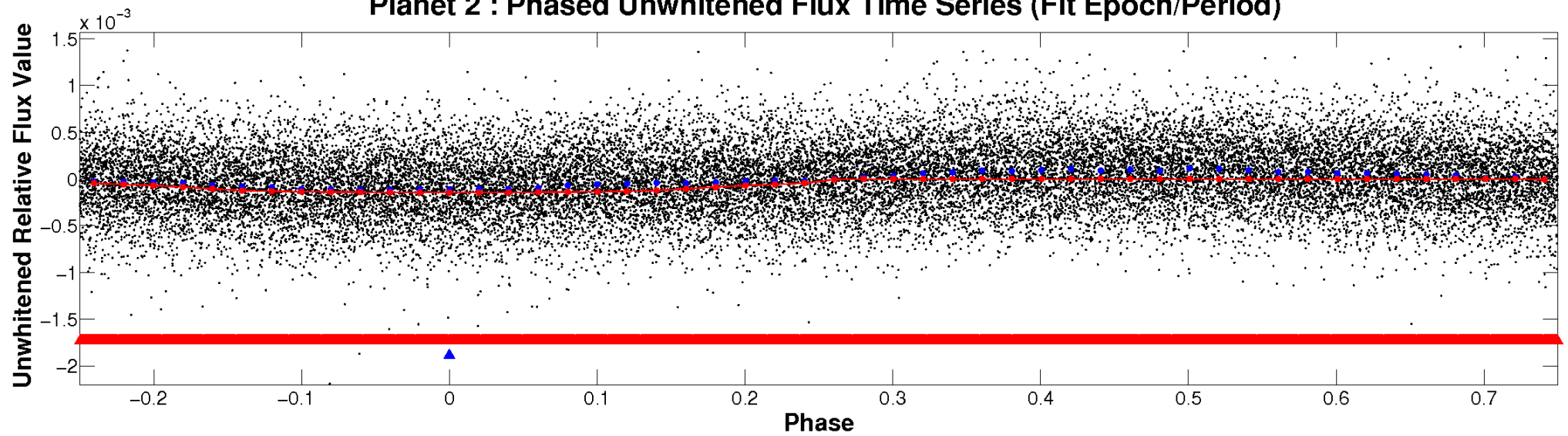
ALT Odd/Even

TCE 003427727-02

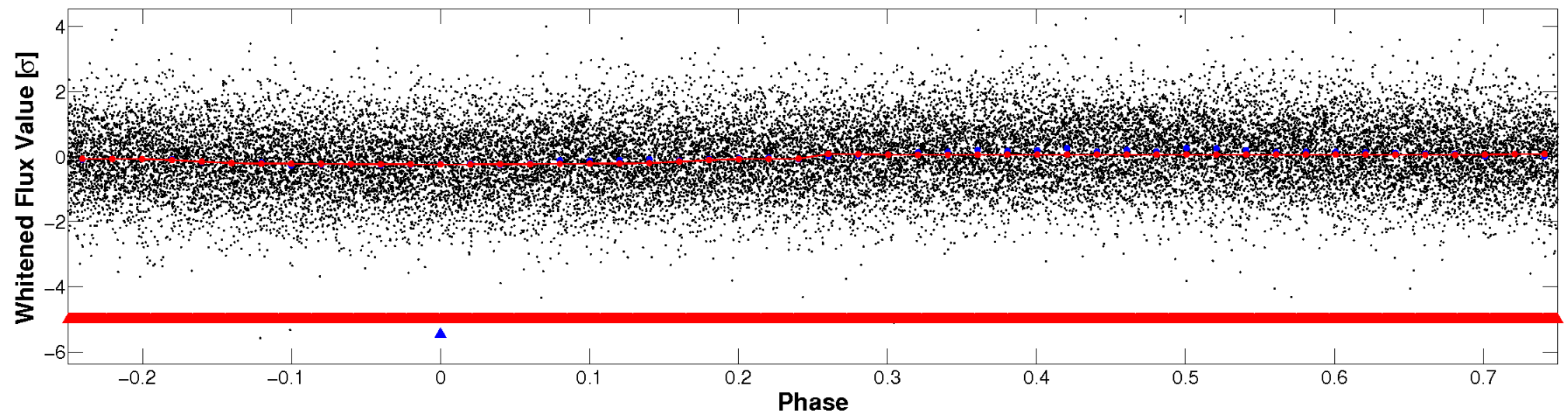


Non-Whitened Vs. Whitened Light Curve

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

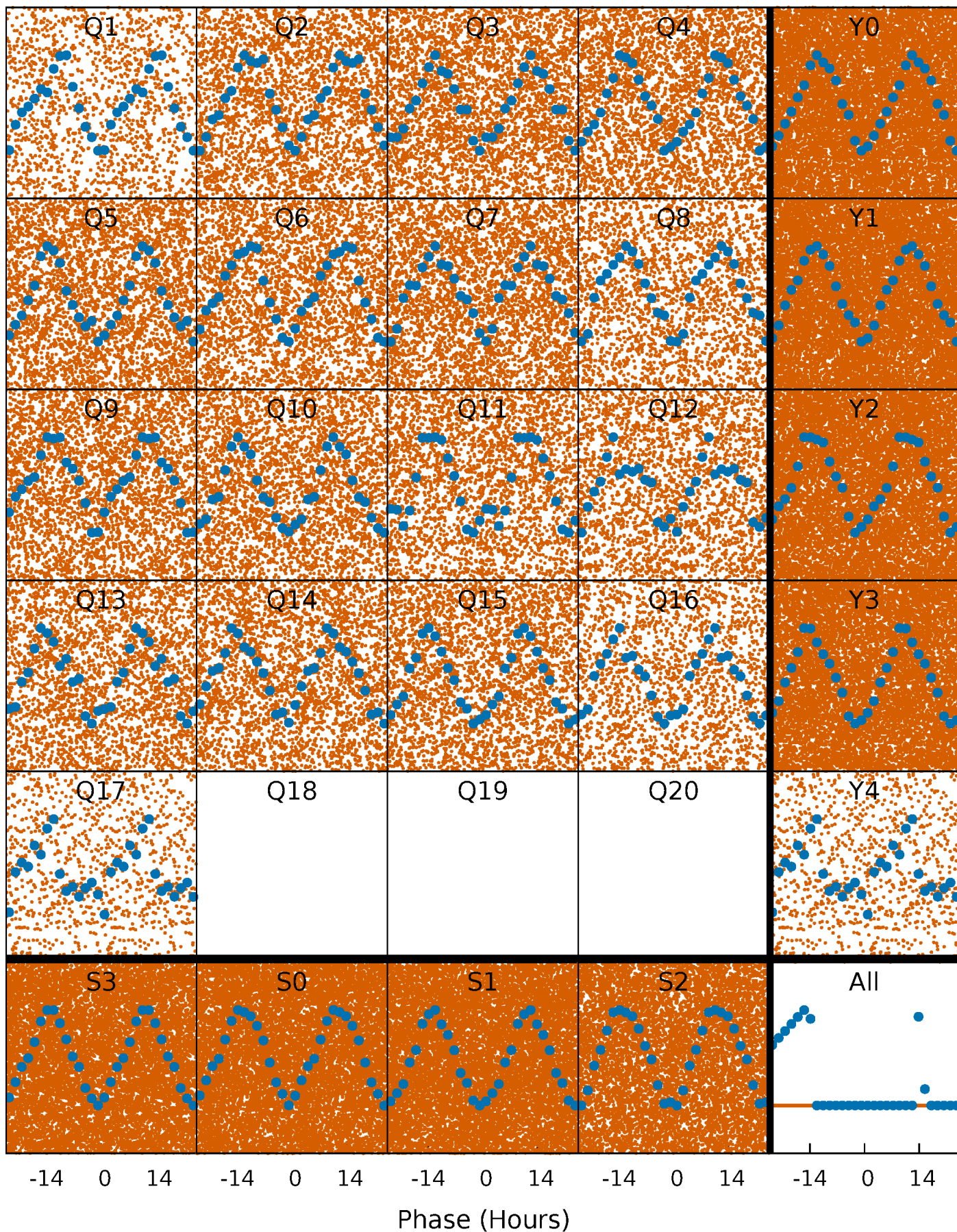


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



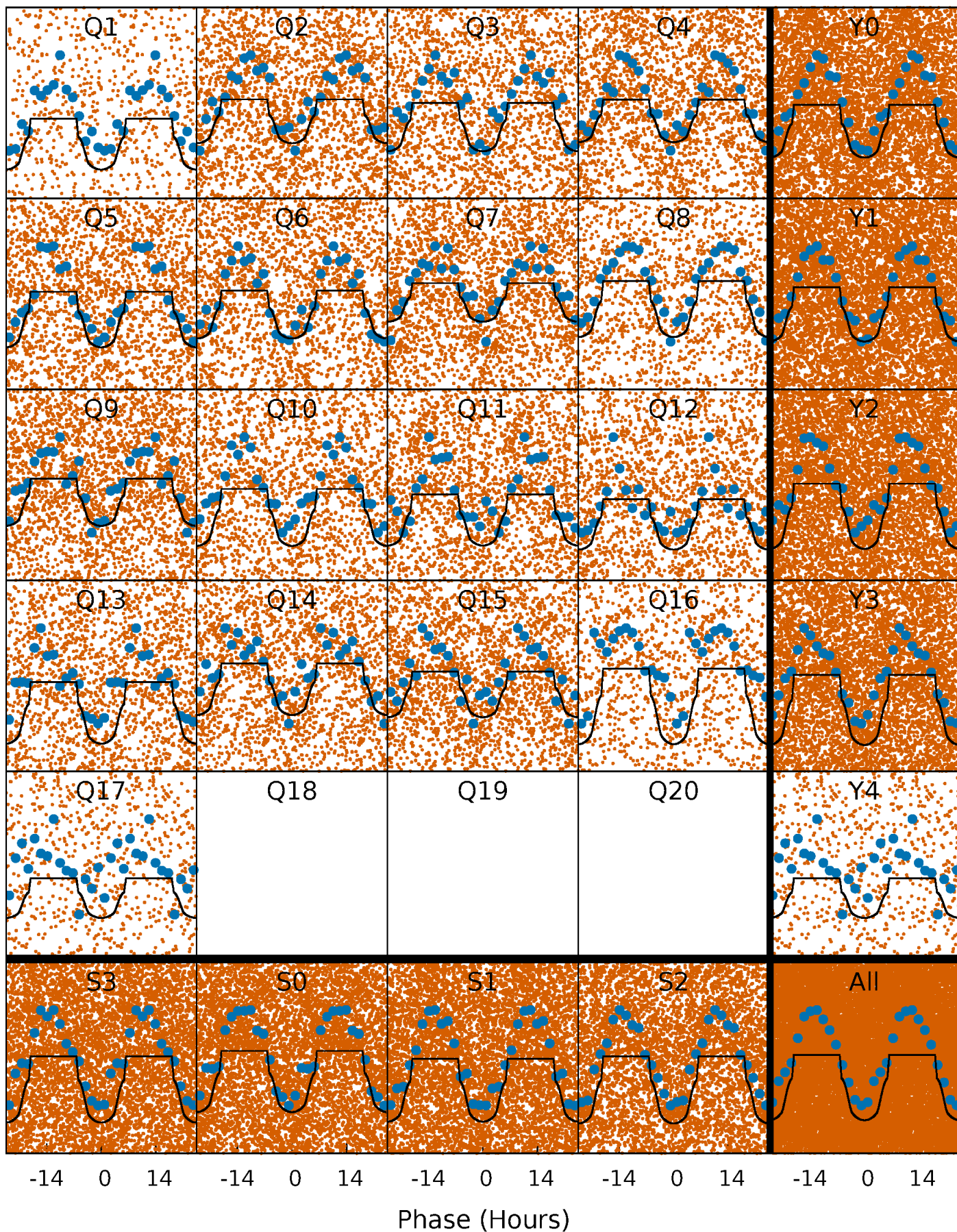
PDC Quarter-Phased Transit Curves

TCE 003427727-02 P= 1.020166 Days $T_0=132.419958$ (BKJD)



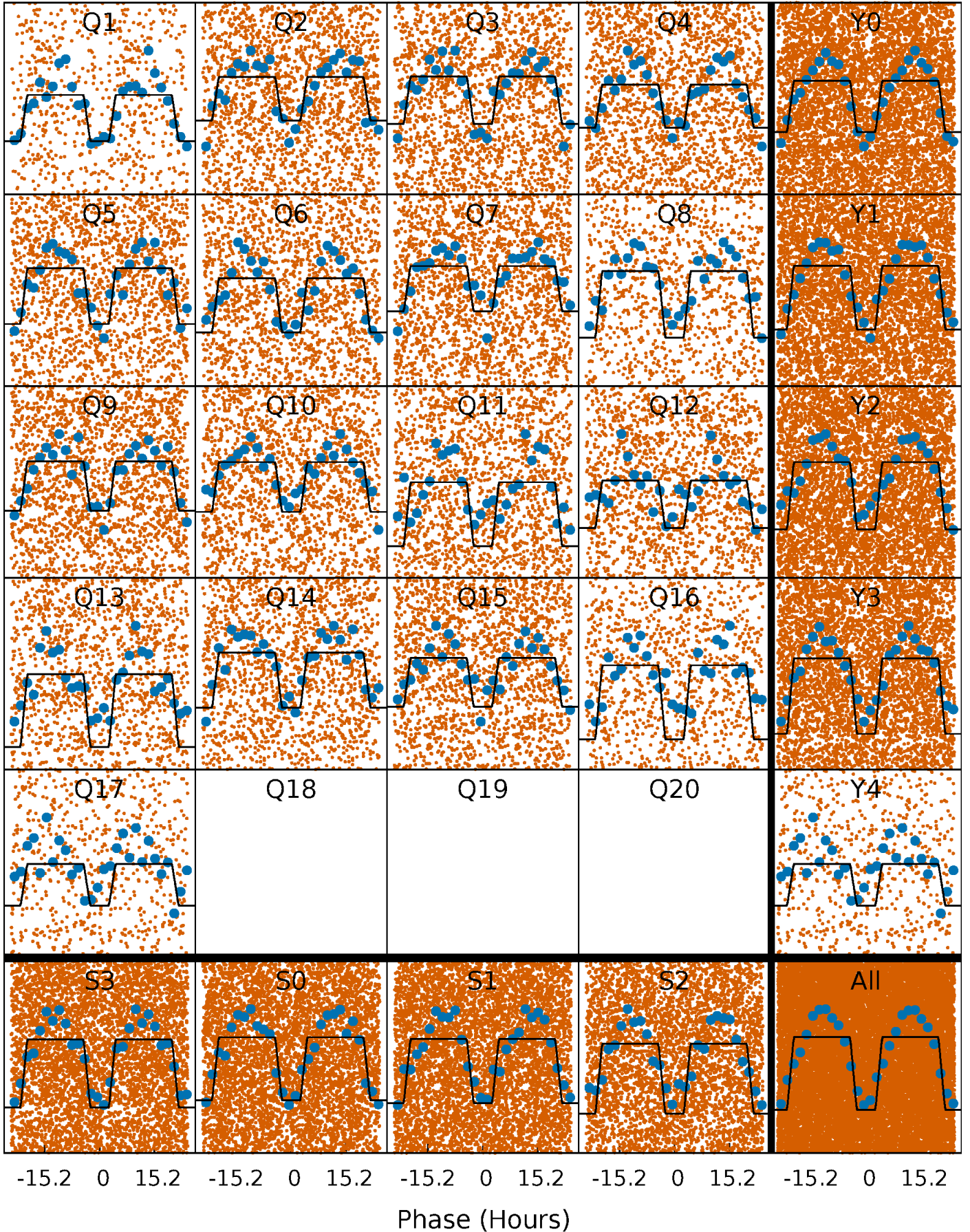
DV Quarter-Phased Transit Curves

TCE 003427727-02 P= 1.020166 Days $T_0=132.419958$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

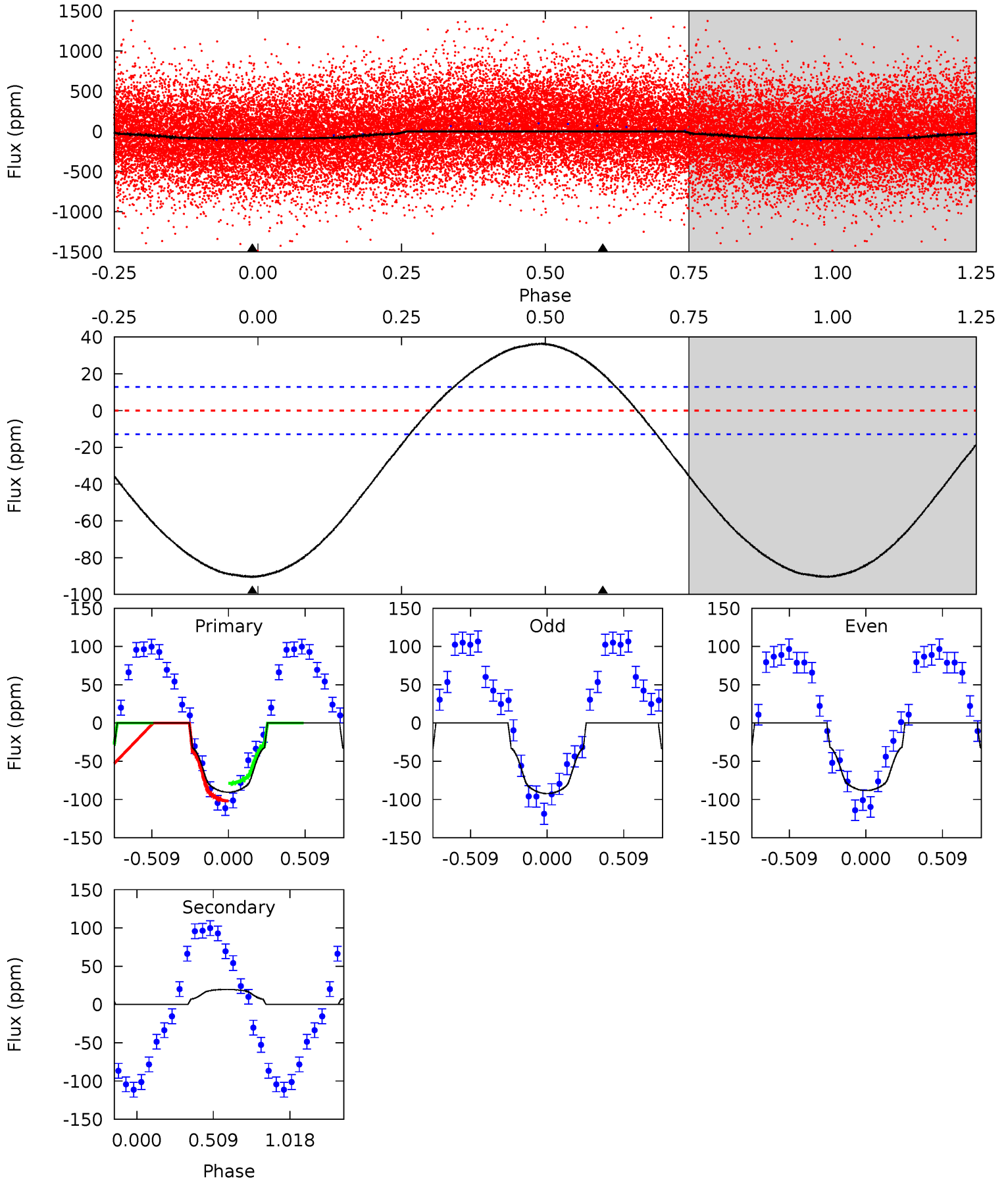
TCE 003427727-02 P= 1.020101 Days $T_0=132.429578$ (BKJD)



DV Model-Shift Uniqueness Test

003427727-02, P = 1.020166 Days, E = 131.399792 Days

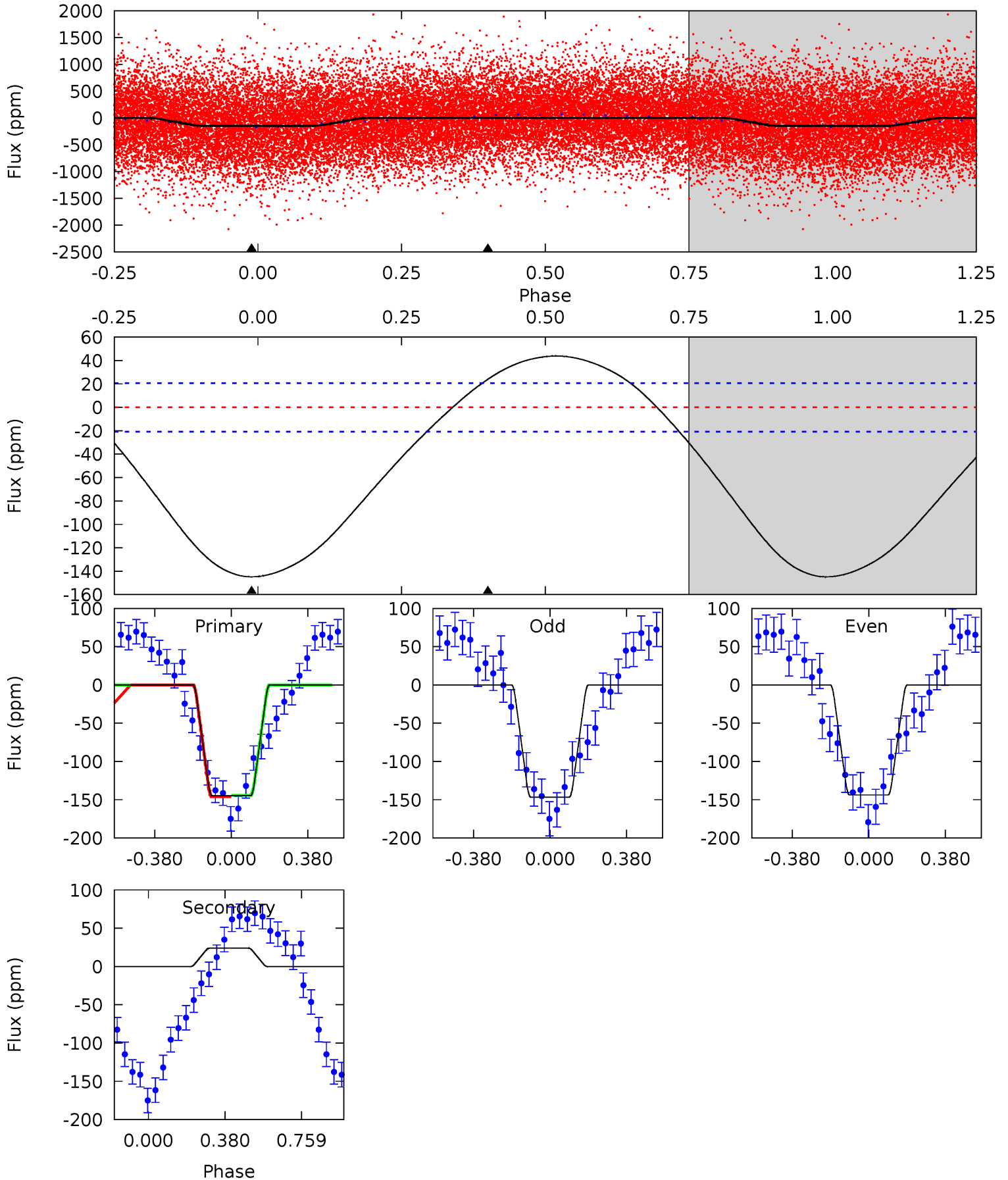
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.6	-6.45	0	0	4.21	0.66	3.39	29.6	29.6	-6.45	-6.45	0.64	0.98	0.29	3.83



Alt Model-Shift Uniqueness Test

003427727-02, P = 1.020101 Days, E = 131.409477 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.9	-4.94	0	0	4.28	0.88	3.06	29.9	29.9	-4.94	-4.94	0.29	1.12	0.23	0.22



Stellar Parameters For KIC 003427727

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6769^{+190}_{-285}	$4.167^{+0.185}_{-0.185}$	$-0.380^{+0.250}_{-0.300}$	$1.508^{+0.446}_{-0.365}$	$1.224^{+0.182}_{-0.203}$	$0.502^{+0.514}_{-0.258}$
	+3%/-4%	+4%/-4%	+66%/-79%	+30%/-24%	+15%/-17%	+102%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003427727-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	20 ± 3	$2.28^{+0.41}_{-0.31}$	3507^{+270}_{-270}	-4313^{+160}_{-149}	$-0.922^{+0.263}_{-0.330}$
Alt.	24 ± 5	$2.18^{+0.35}_{-0.31}$	3518^{+265}_{-263}	-4510^{+201}_{-207}	$-1.231^{+0.377}_{-0.478}$

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

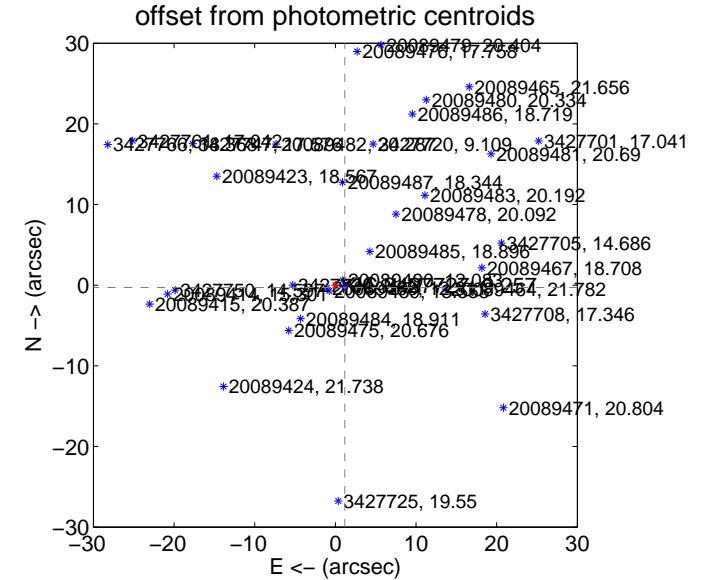
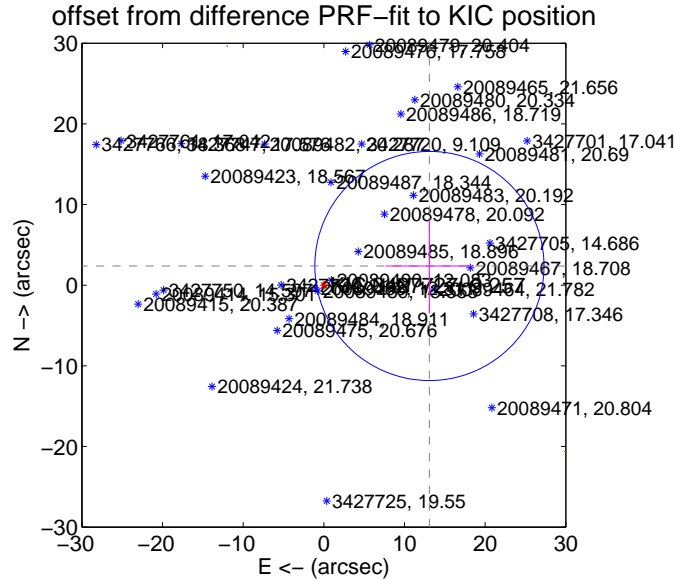
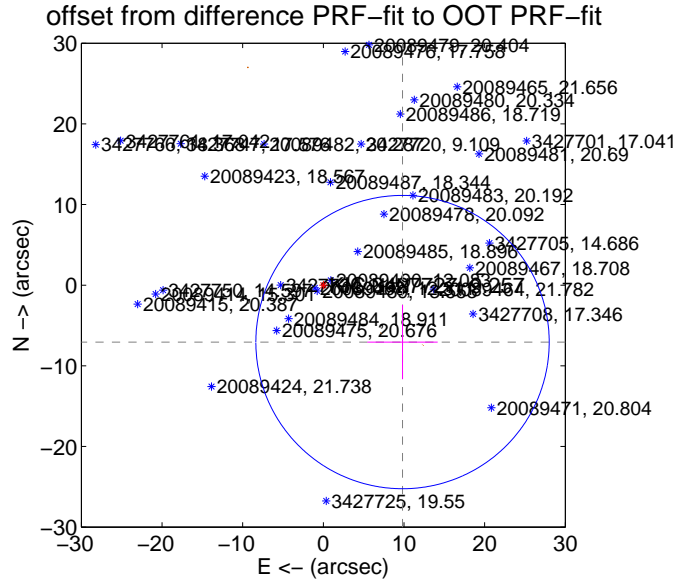
DV Centroid Data

Supplemental centroid analysis for 003427727-02. **Kepler magnitude: 9.26.** Transit SNR 21.92

There are 0 quarters with good PRF difference image offsets

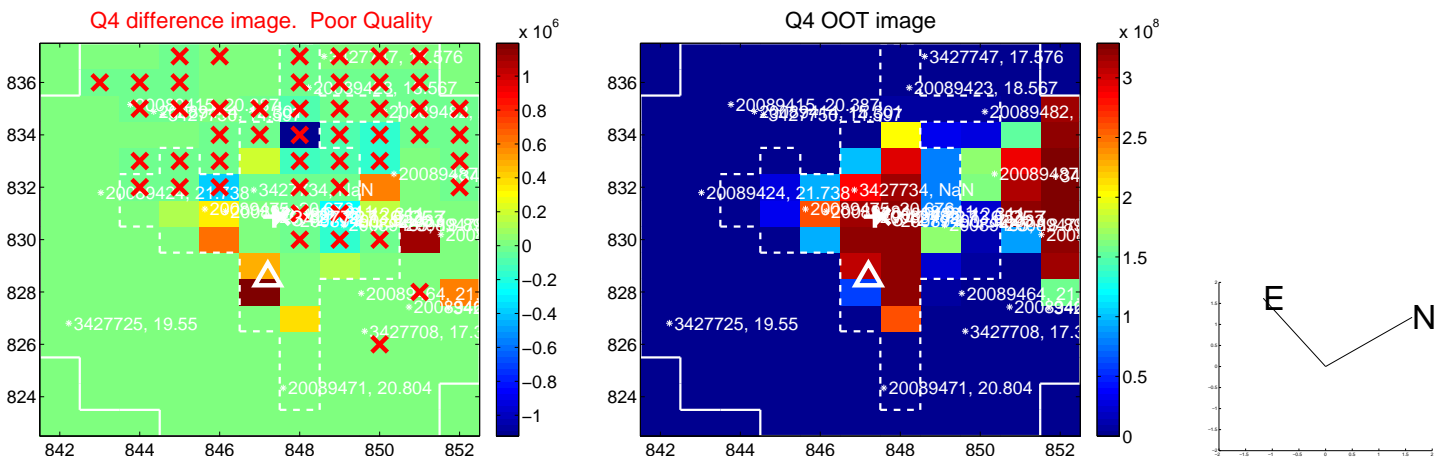
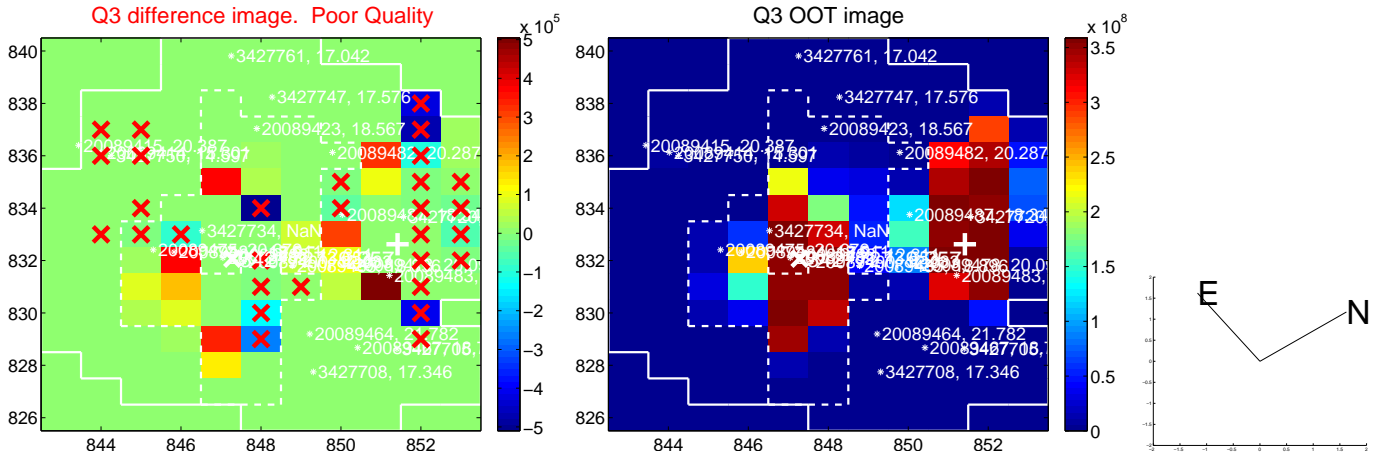
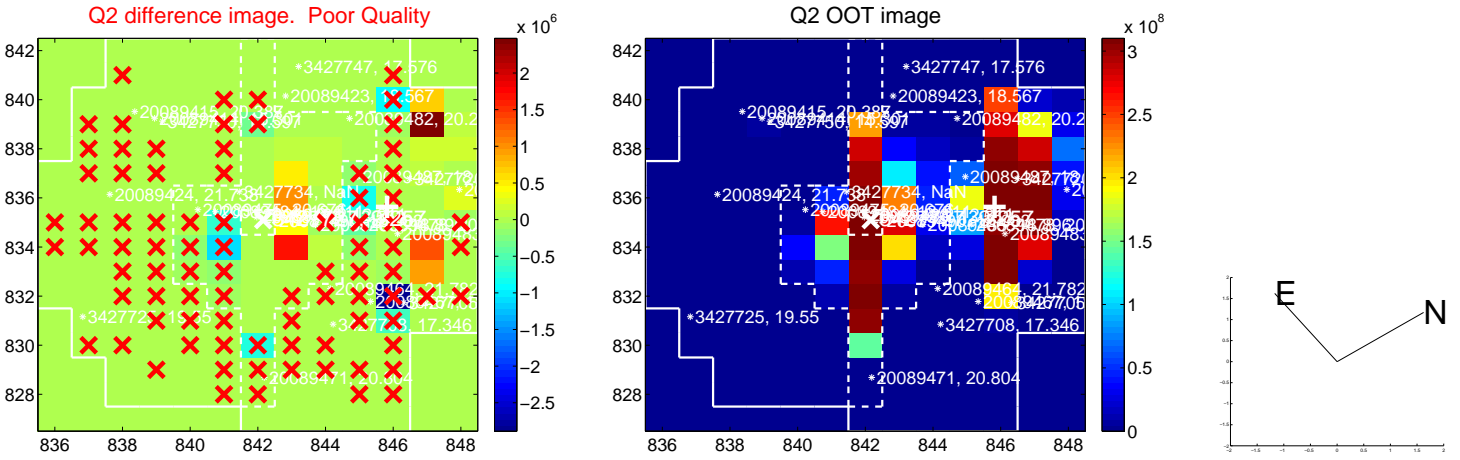
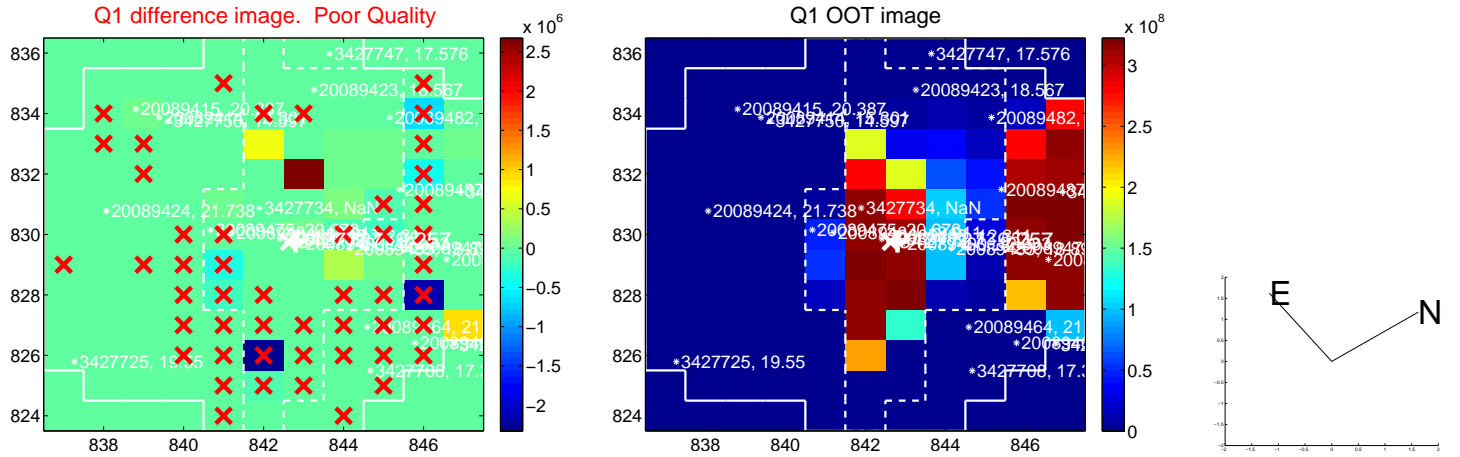
The OOT PRF centroid is offset from the target star catalog position by about 14.50 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	12.092 ± 6.062	1.99	-9.819 ± 4.355	-7.057 ± 4.607
PRF-fit source offset from KIC position	13.304 ± 4.734	2.81	-13.090 ± 5.447	2.380 ± 5.823
photometric centroid source offset	1.20 ± 0.10	11.88	-1.17 ± 0.09	-0.29 ± 0.20

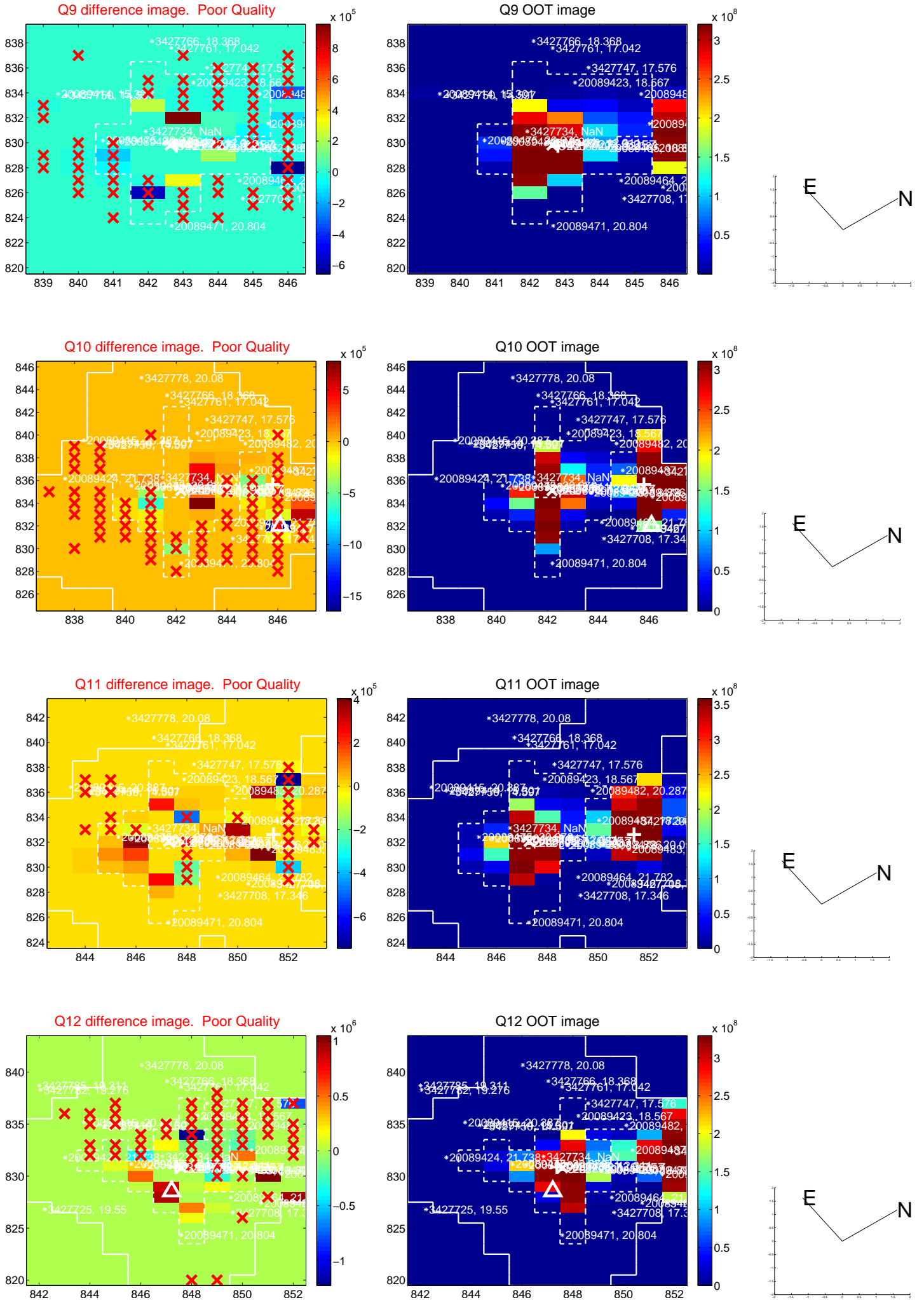


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

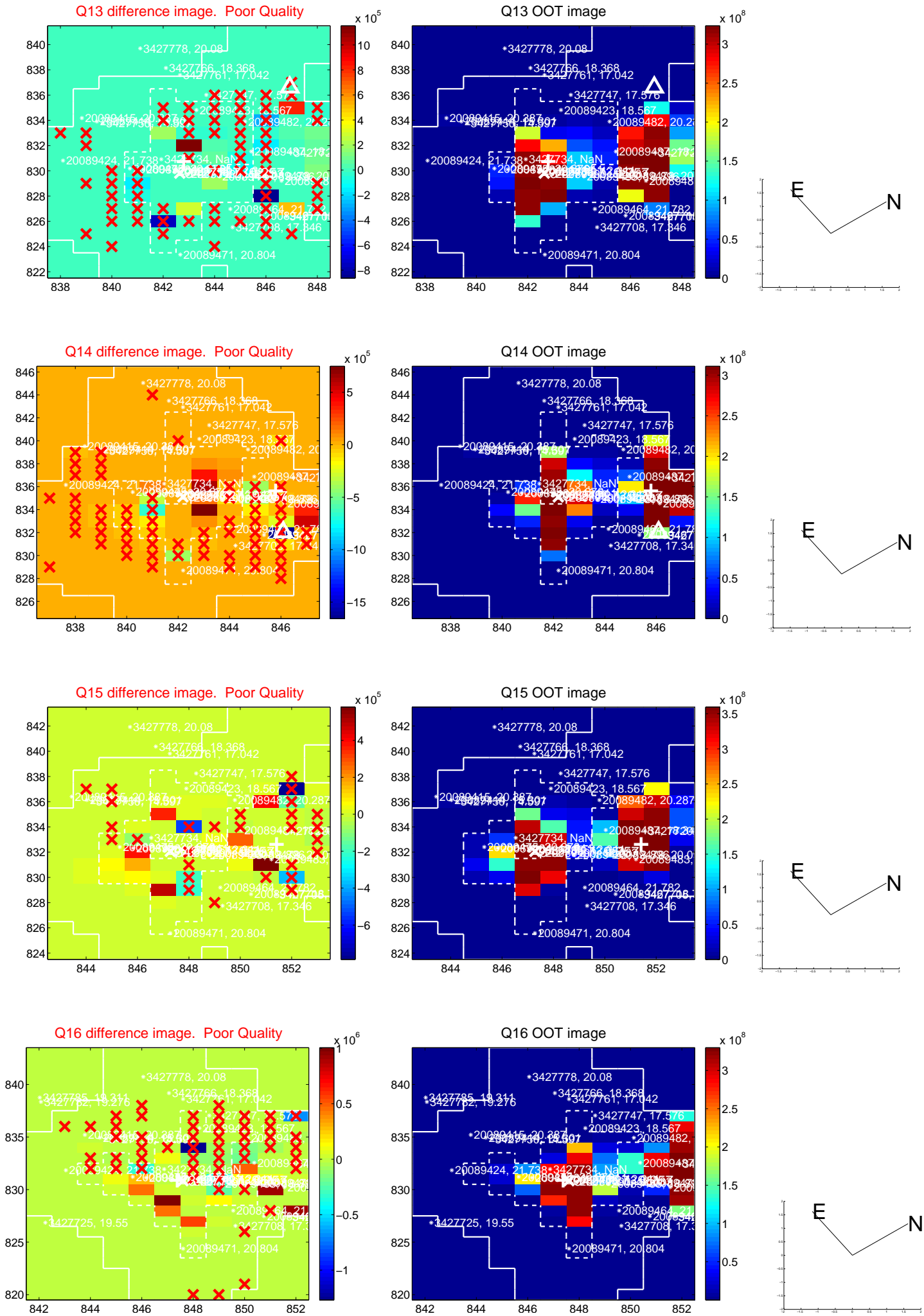
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



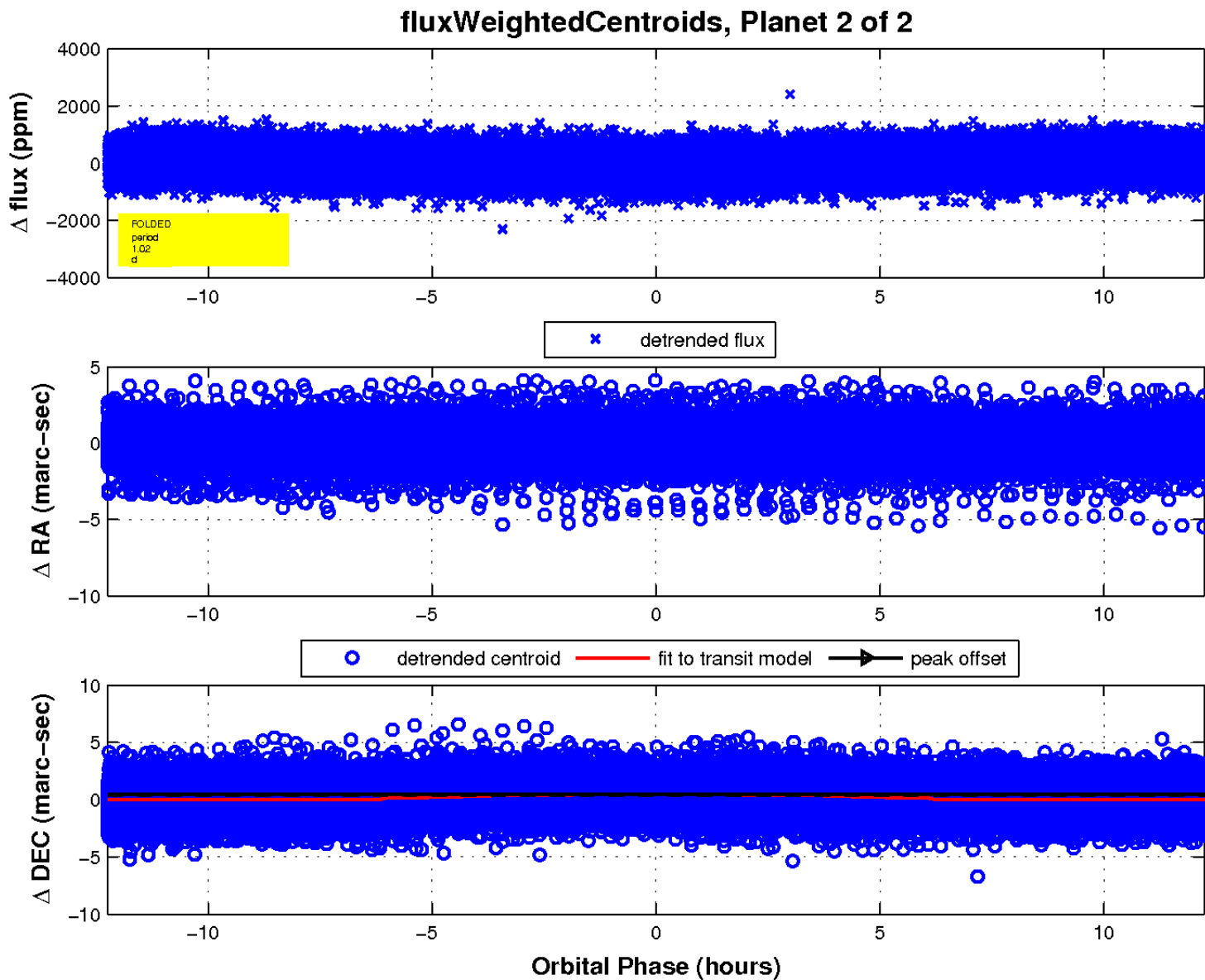
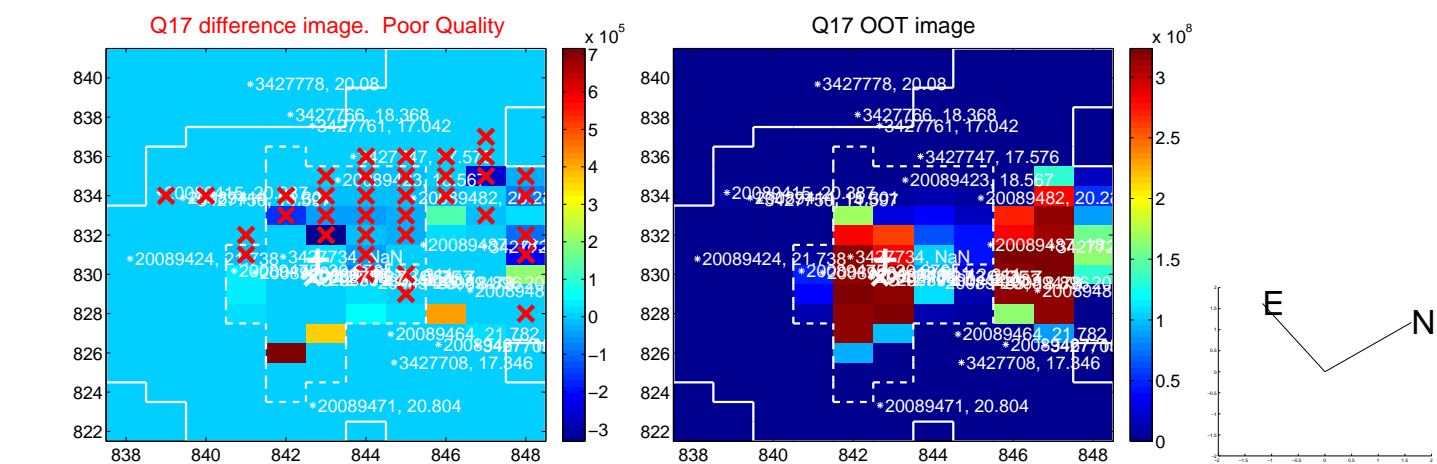
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

