

KIC 003831746

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})
003831746-01	OBS	No	1.860586	133.016963	22.6	12.998	9.1	7.7	2.62	6141	1.25	8648.97
003831746-03	OBS	No	50.839972	156.996285	86.8	59.463	17.0	4.3	2.62	6141	2.60	105.09
003831746-04	OBS	No	62.374582	143.257891	255.3	3.941	11.3	9.7	2.62	6141	4.78	80.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003831746-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003831746-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
003831746-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET

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

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

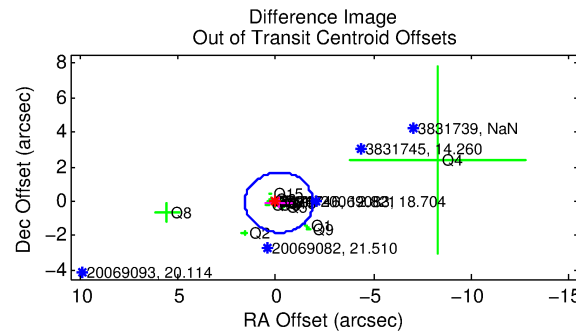
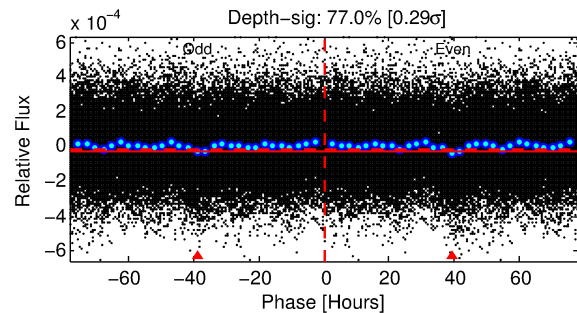
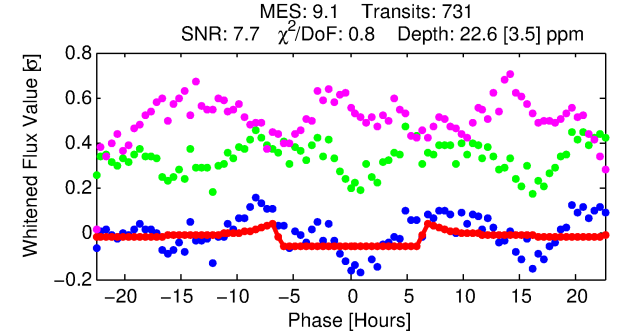
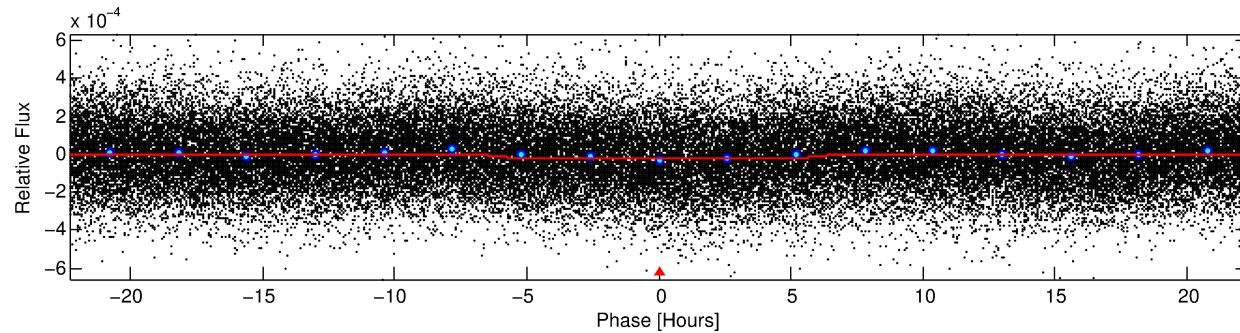
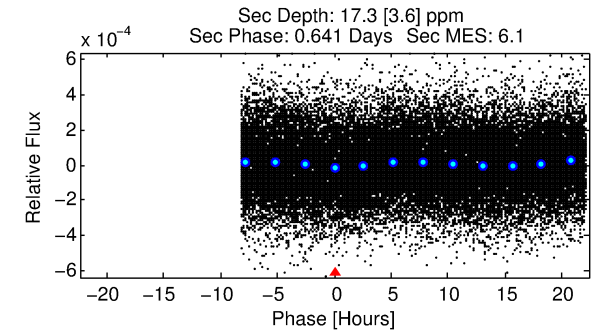
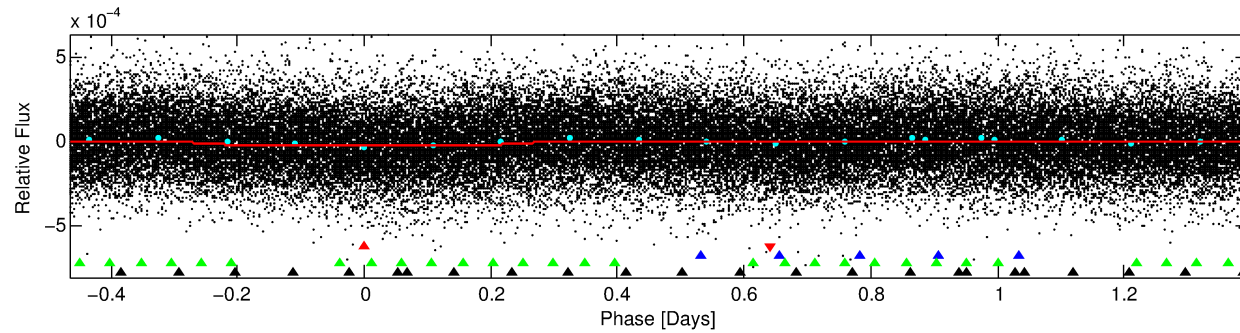
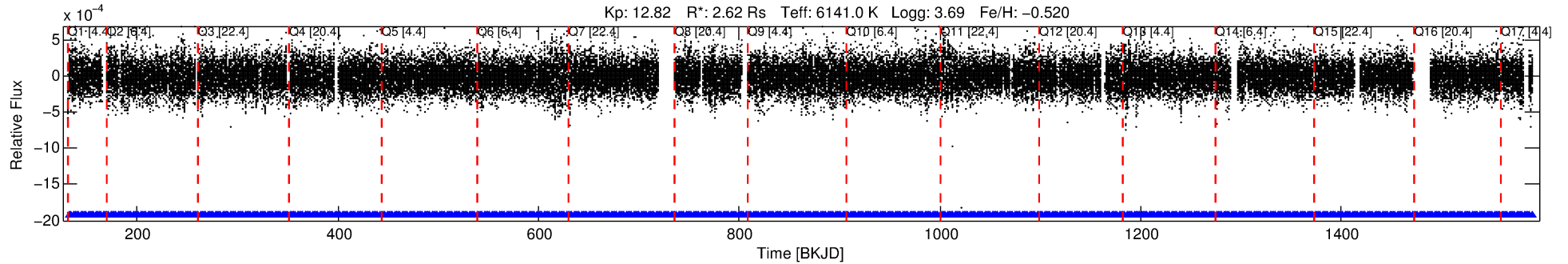
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003831746-01

No Significant Match Found

DV One-Page Summary

KIC: 3831746 Candidate: 1 of 4 Period: 1.861 d



DV Fit Results:

Period = 1.86059 [0.00003] d
Epoch = 133.0170 [0.0061] BKJD
Rp/R* = 0.0044 [0.0031]
a/R* = 1.27 [1.75]
b = 0.01 [454.36]
Seff = 8648.97 [5039.49]
Teq = 2459 [358] K
Rp = 1.25 [1.01] Re
a = 0.0318 [0.0116] AU
Ag = 6.19 [9.60] [0.54σ]
Teffp = 5997 [2169] K [1.61σ]

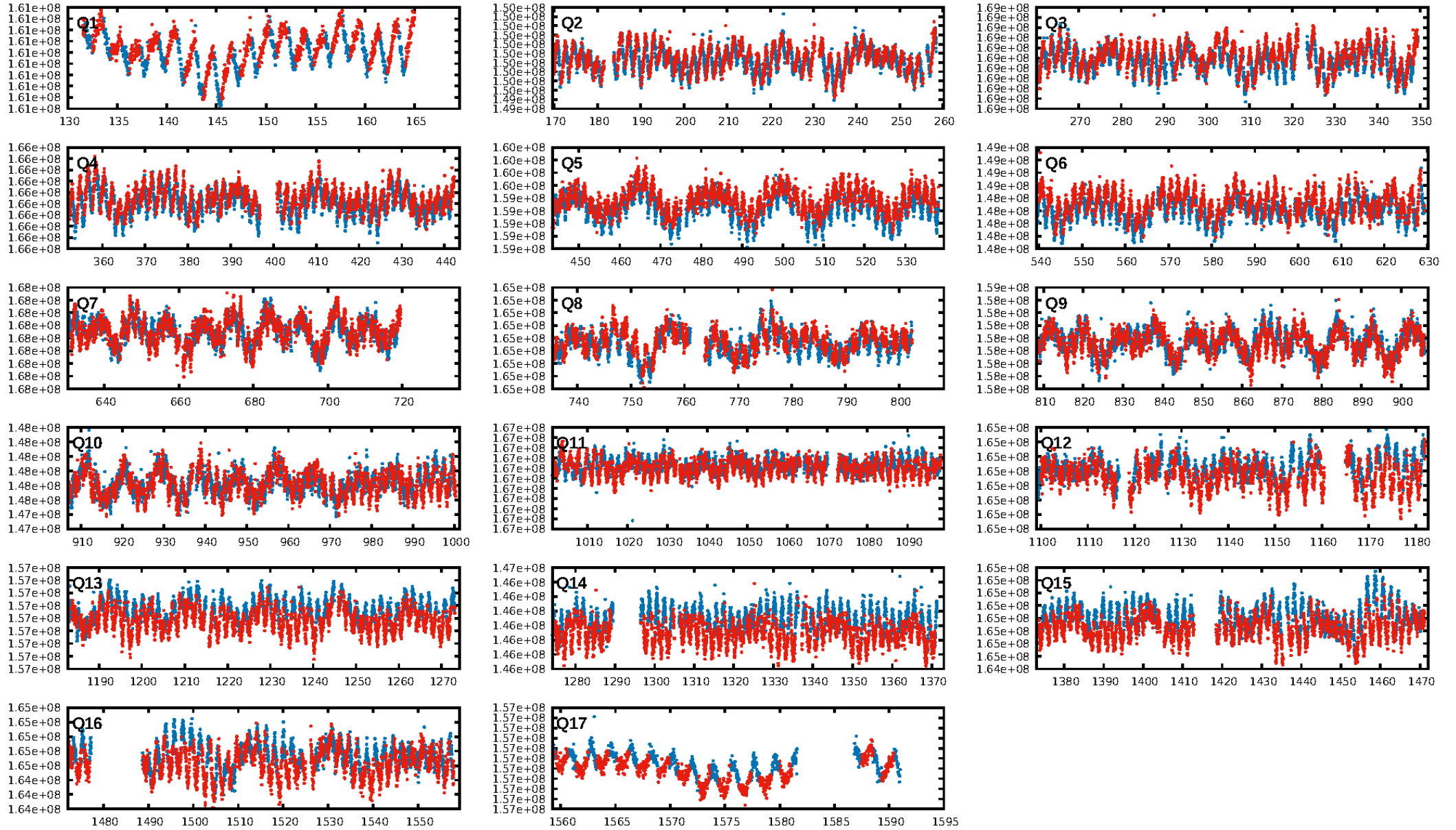
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [19.31σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.63e-08
RollingBand-fgt: 1.00 [699/699]
GhostDiagnostic-chr: 4.092
Centroid-sig: 0.0%
Centroid-so: 2.974 arcsec [2.25σ]
OotOffset-rm: 0.184 arcsec [0.32σ]
KicOffset-rm: 0.119 arcsec [0.18σ]
OotOffset-st: 4/3/4/5 [16]
KicOffset-st: 4/3/4/5 [16]
DiffImageQuality-fgm: 0.56 [9/16]
DiffImageOverlap-fno: 1.00 [17/17]

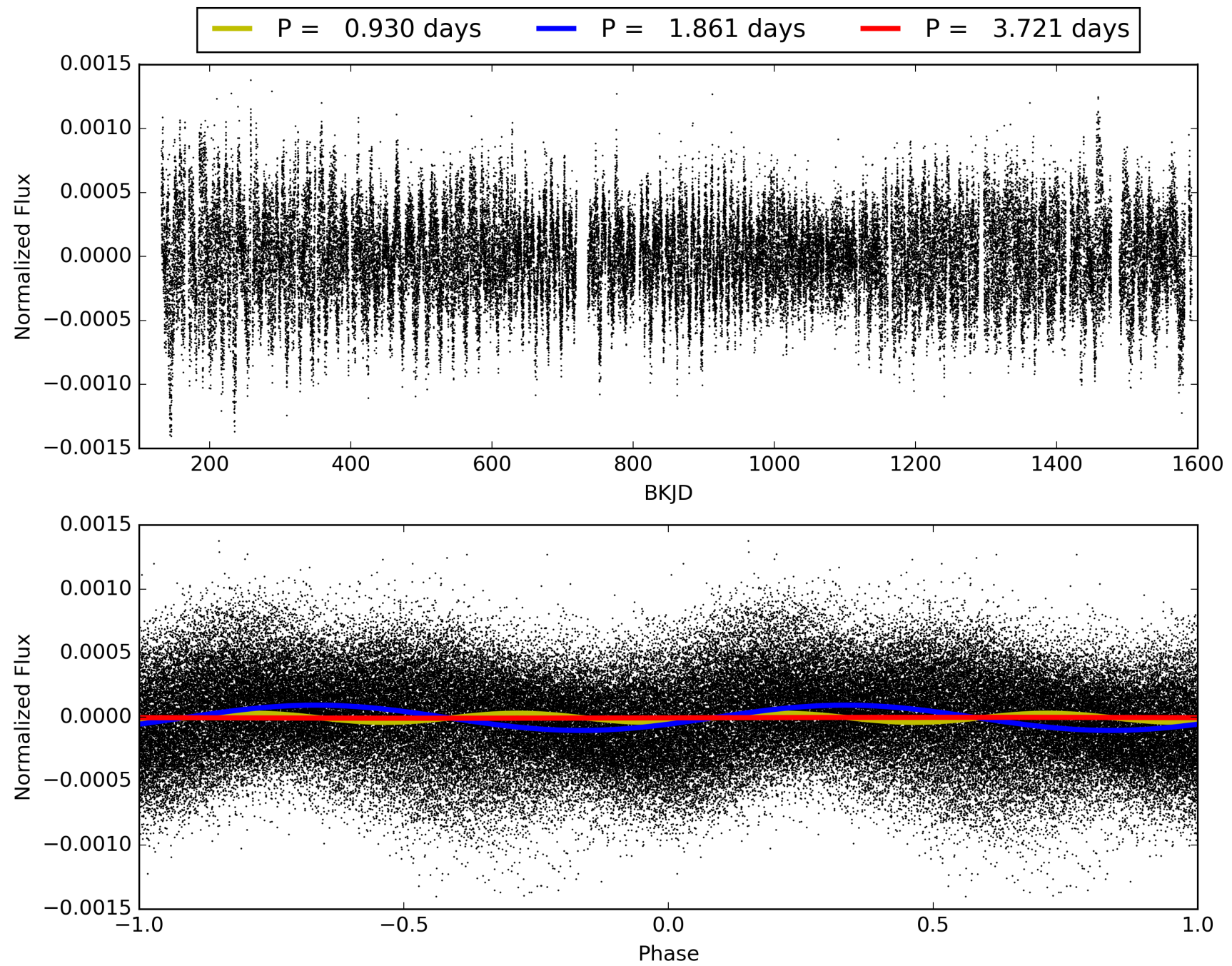
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 15:17:34 Z

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

TCE 003831746-01, PDC Light Curves

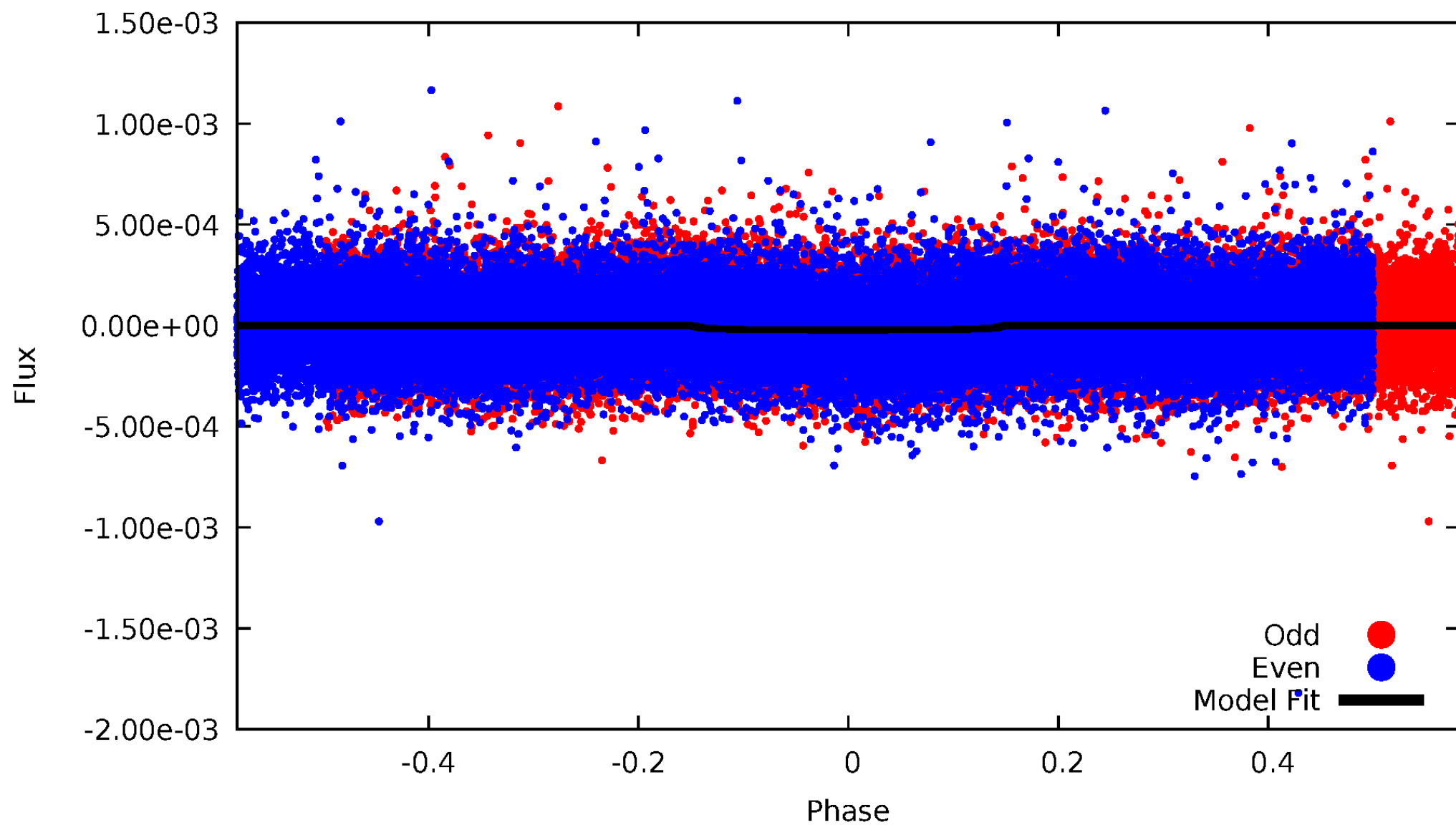


TCE 003831746-01



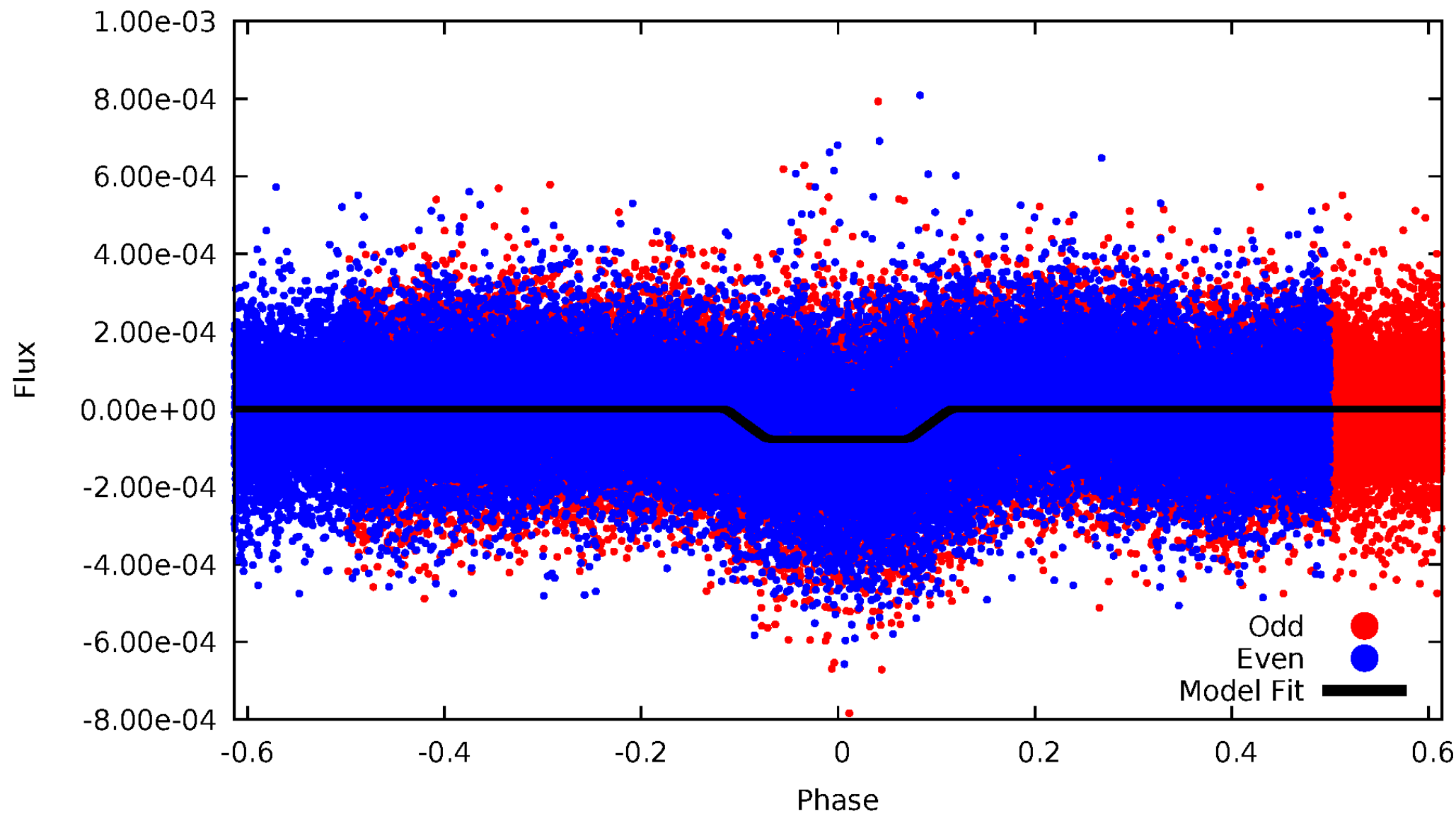
DV Odd/Even

TCE 003831746-01



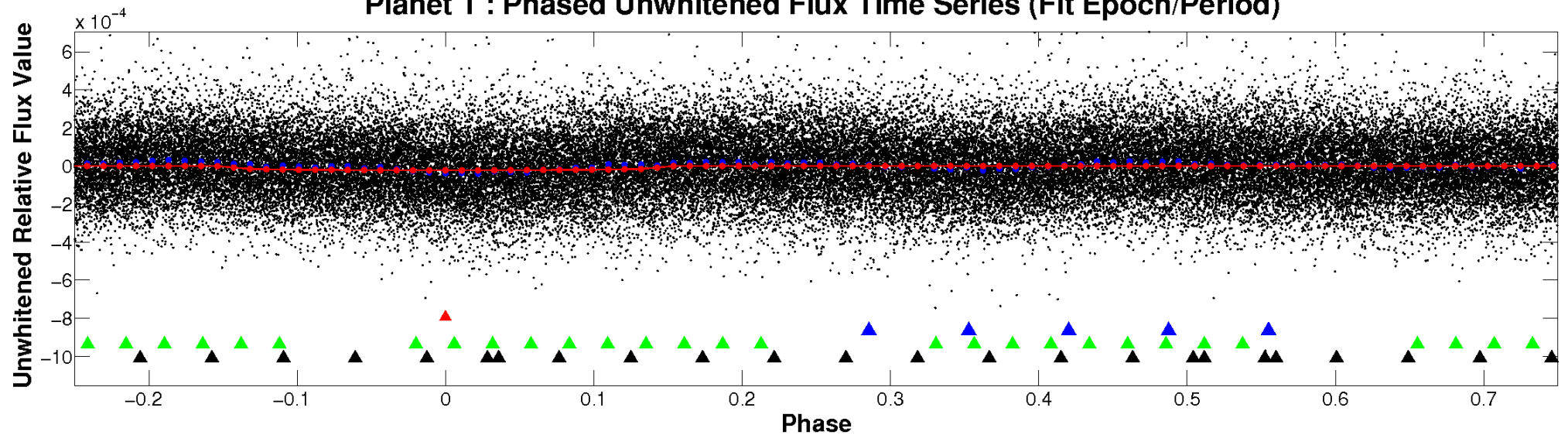
ALT Odd/Even

TCE 003831746-01

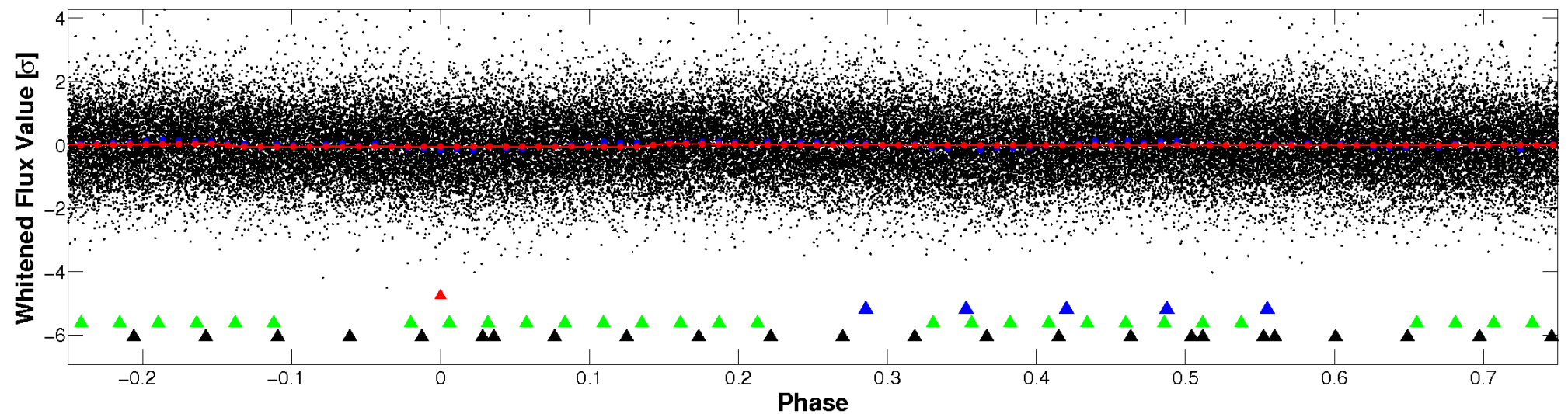


Non-Whitened Vs. Whitened Light Curve

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

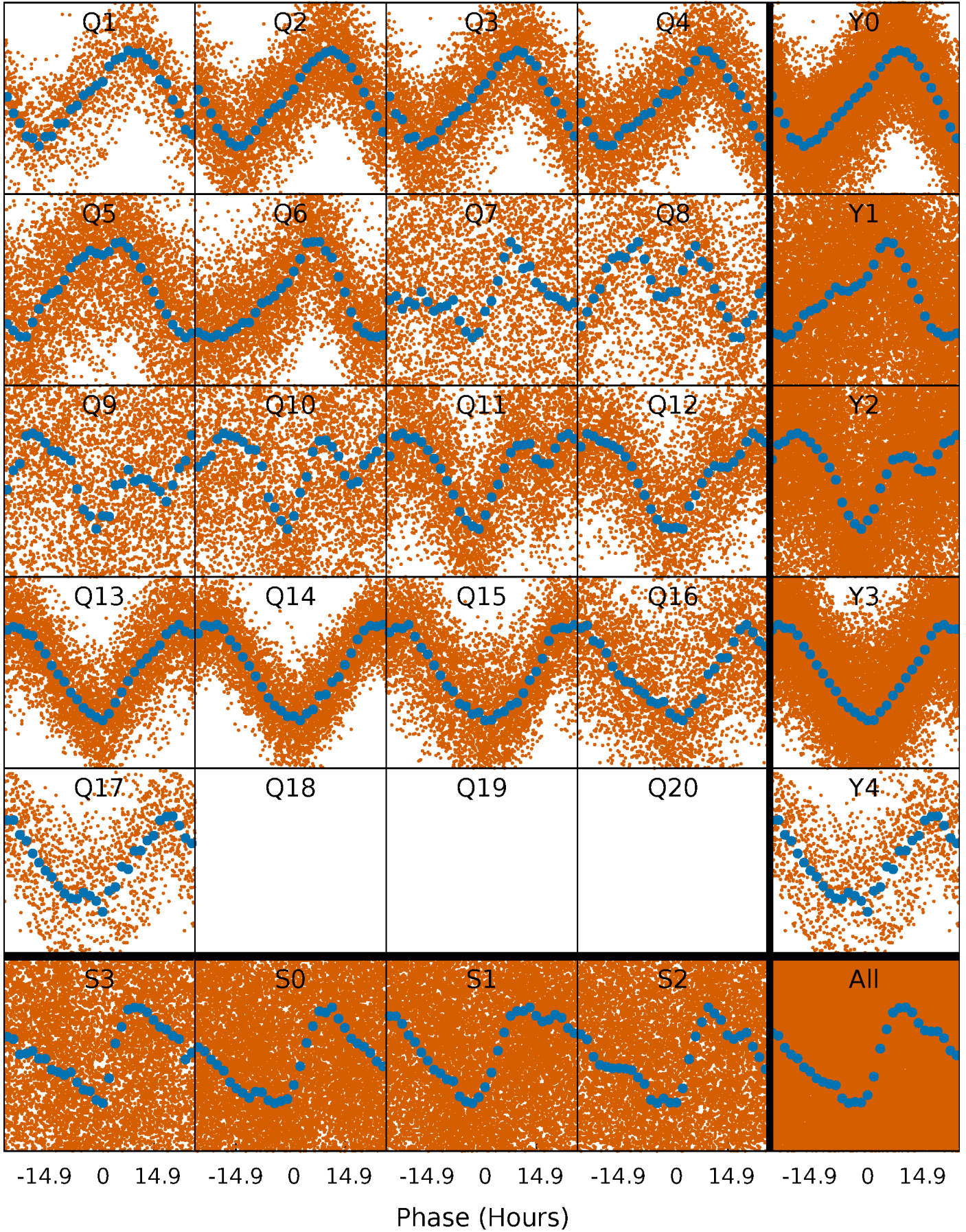


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



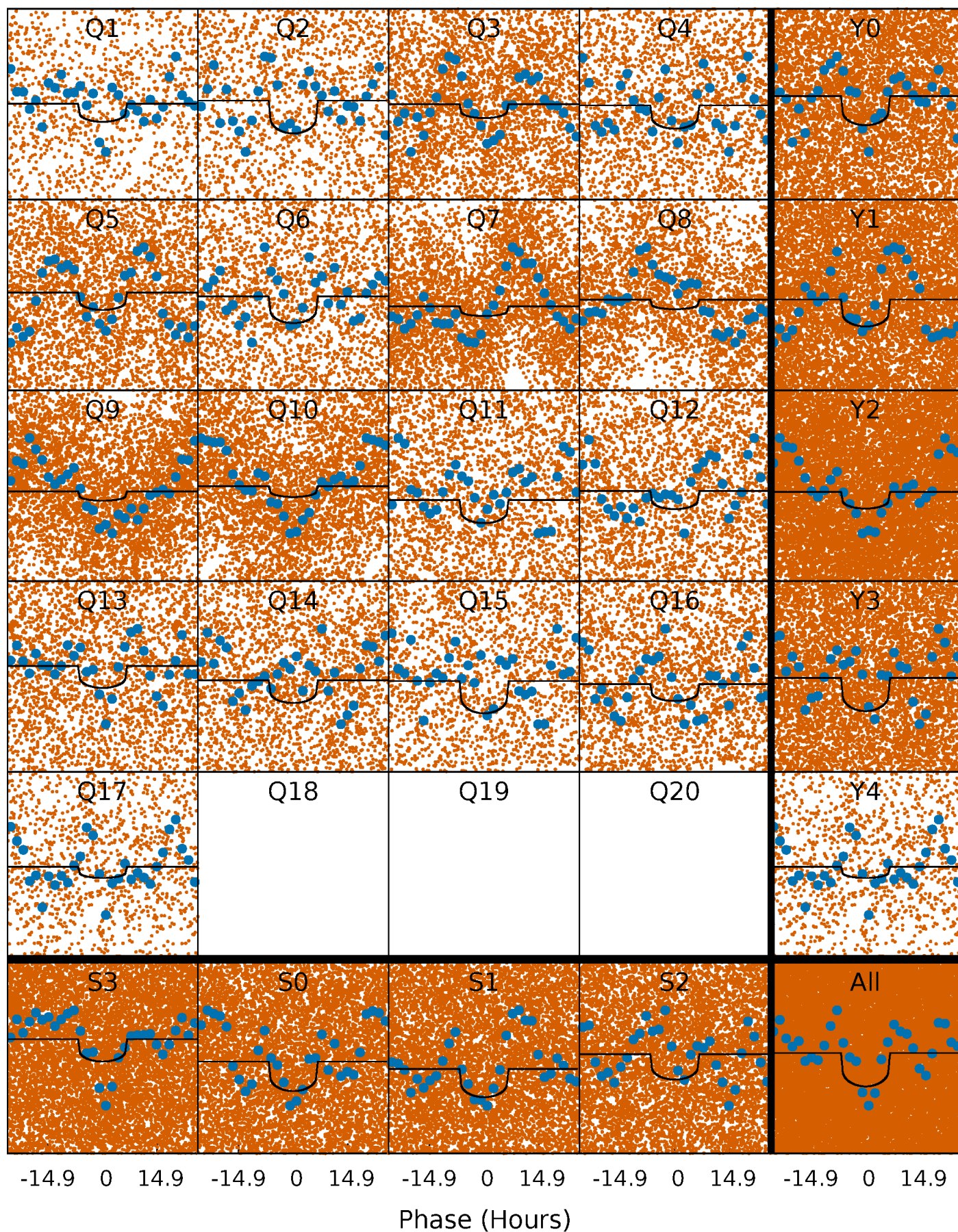
PDC Quarter-Phased Transit Curves

TCE 003831746-01 P= 1.860586 Days $T_0=133.016963$ (BKJD)



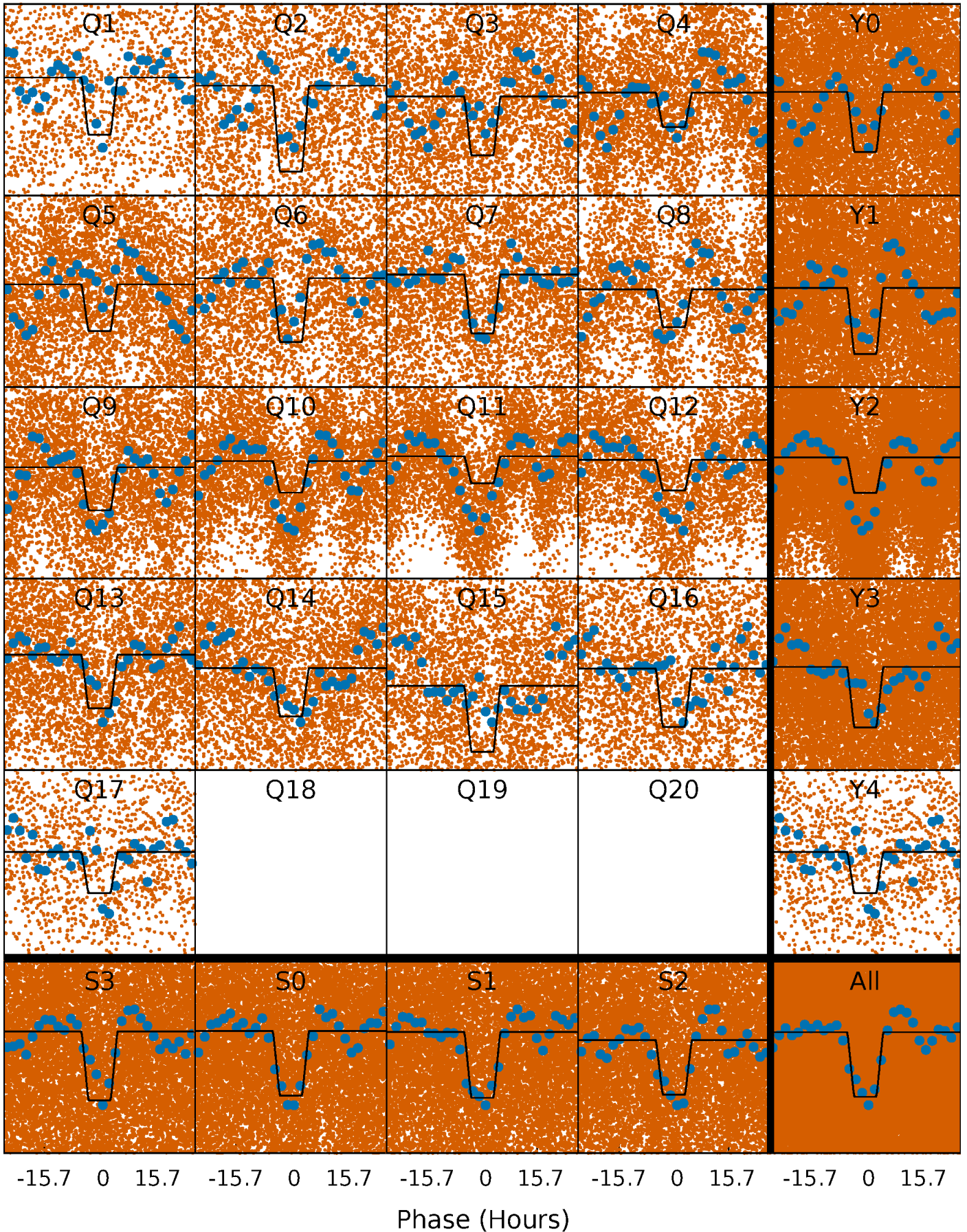
DV Quarter-Phased Transit Curves

TCE 003831746-01 P= 1.860586 Days $T_0=133.016963$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

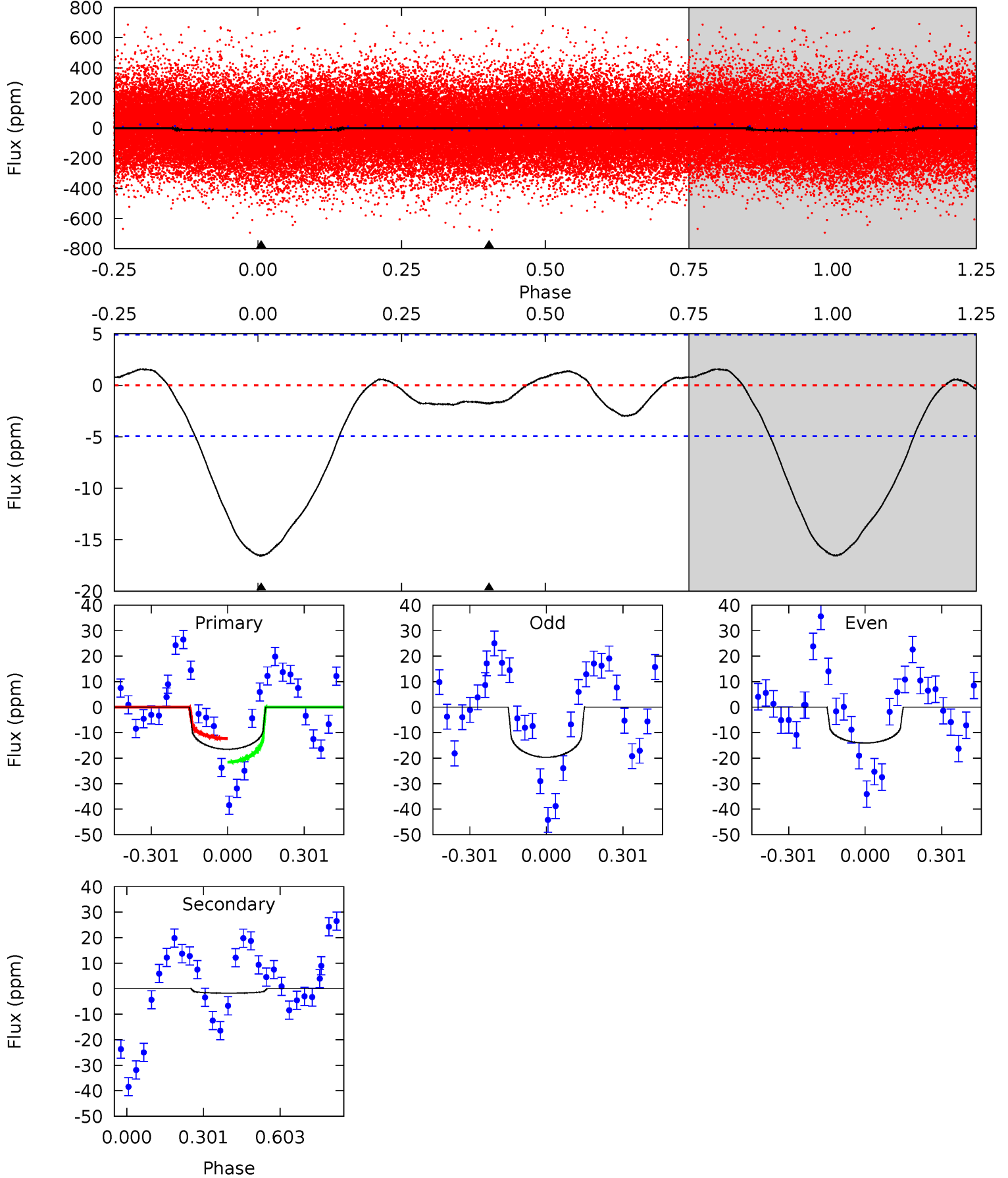
TCE 003831746-01 P= 1.860535 Days $T_0=133.008137$ (BKJD)



DV Model-Shift Uniqueness Test

003831746-01, P = 1.860586 Days, E = 131.156377 Days

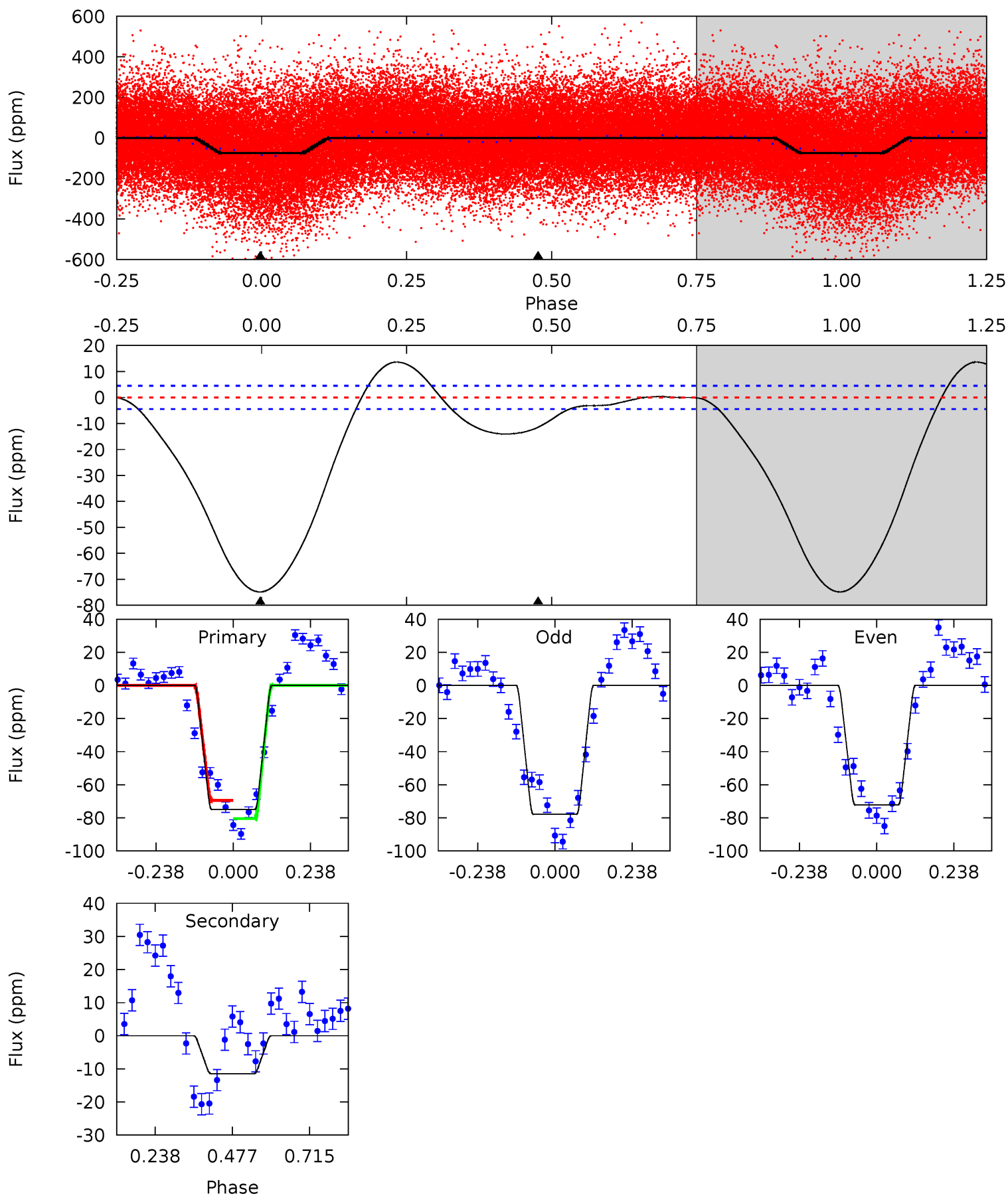
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	1.55	0	0	4.33	1.03	1.08	14.5	14.5	1.55	1.55	2.37	1.02	0.09	3.94



Alt Model-Shift Uniqueness Test

003831746-01, P = 1.860535 Days, E = 131.147602 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.4	11.2	0	0	4.38	1.18	6.13	73.4	73.4	11.2	11.2	2.81	1.08	0.15	5.36



Stellar Parameters For KIC 003831746

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6141^{+184}_{-166}	$3.694^{+0.330}_{-0.110}$	$-0.520^{+0.350}_{-0.300}$	$2.618^{+0.441}_{-1.028}$	$1.235^{+0.192}_{-0.287}$	$0.097^{+0.241}_{-0.033}$
	+3%/-3%	+9%/-3%	+67%/-58%	+17%/-39%	+16%/-23%	+249%/-34%
Source	PHO1	FLK73	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 003831746-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2 ± 1	$1.32^{+0.80}_{-0.82}$	3385^{+217}_{-320}	3120^{+1792}_{-6233}	$0.509^{+3.018}_{-0.398}$
Alt.	-11 ± 1	$2.35^{+1.05}_{-0.88}$	3377^{+233}_{-308}	3860^{+849}_{-599}	$1.138^{+1.764}_{-0.578}$

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

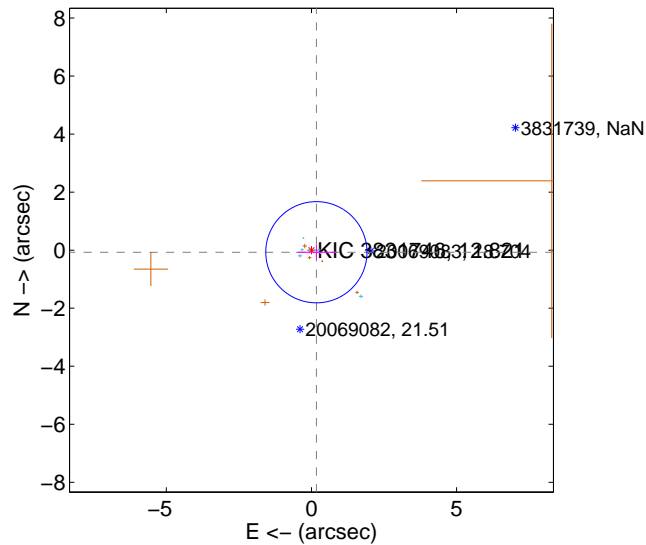
Supplemental centroid analysis for 003831746-01. Kepler magnitude: 12.82. Transit SNR 7.69

There are 9 quarters with good PRF difference image offsets

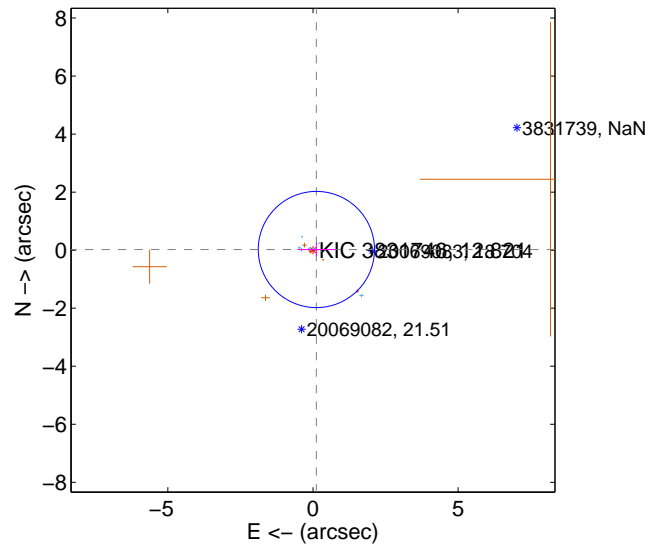
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.184 ± 0.581	0.32	-0.170 ± 0.692	-0.071 ± 0.251
PRF-fit source offset from KIC position	0.119 ± 0.667	0.18	-0.117 ± 0.654	0.023 ± 0.239
photometric centroid source offset	2.97 ± 1.32	2.25	-1.98 ± 1.60	2.22 ± 1.06

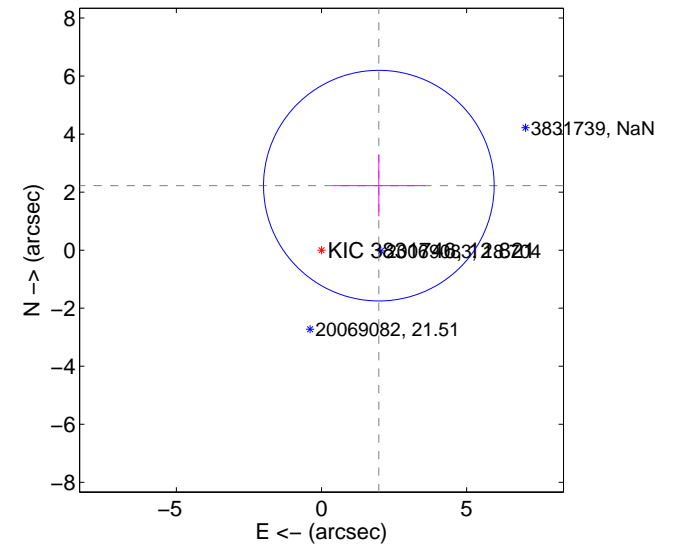
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

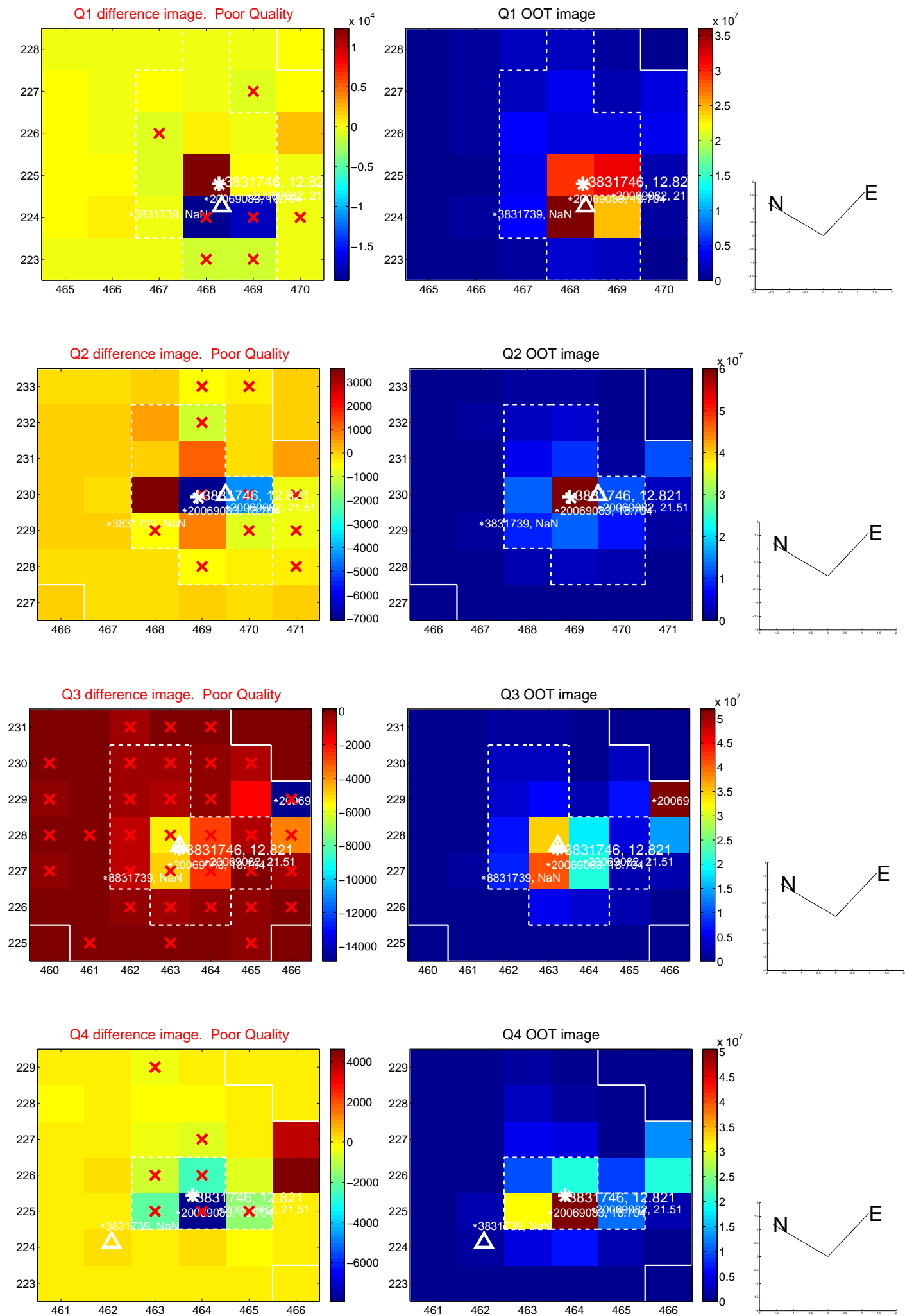


offset from photometric centroids

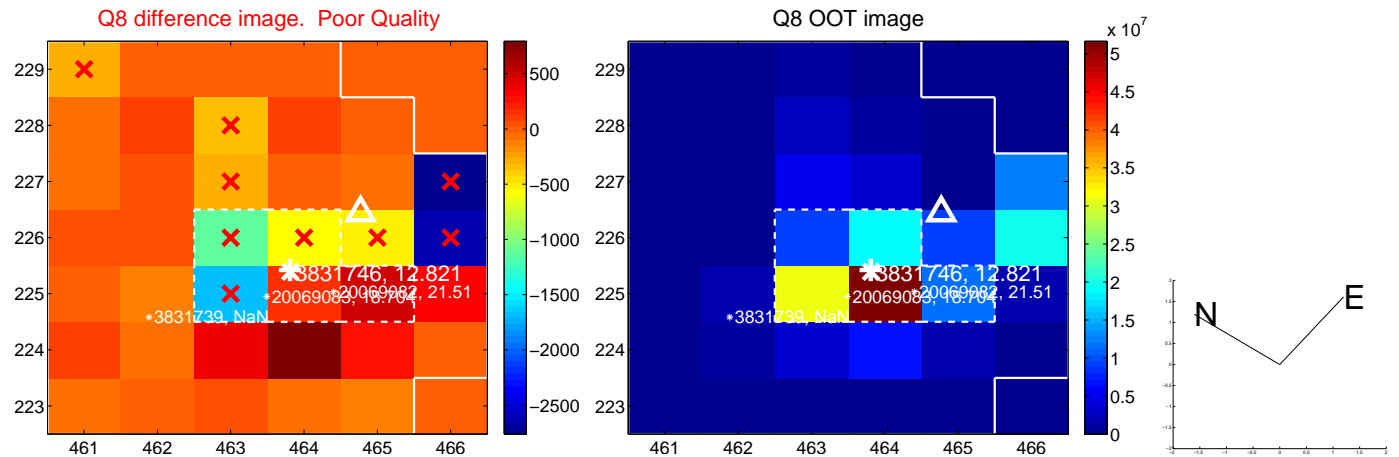
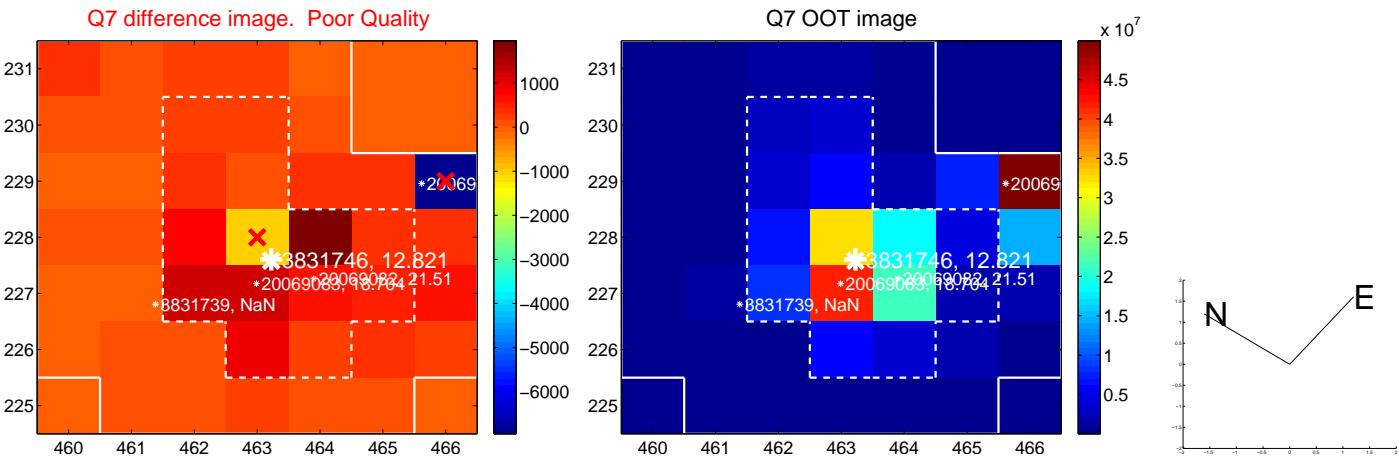
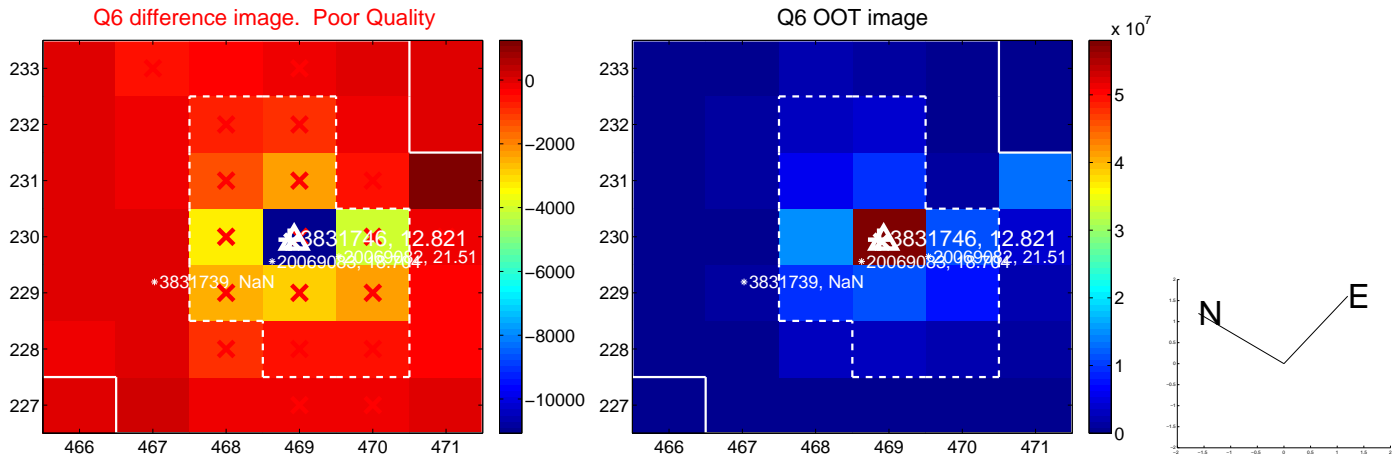
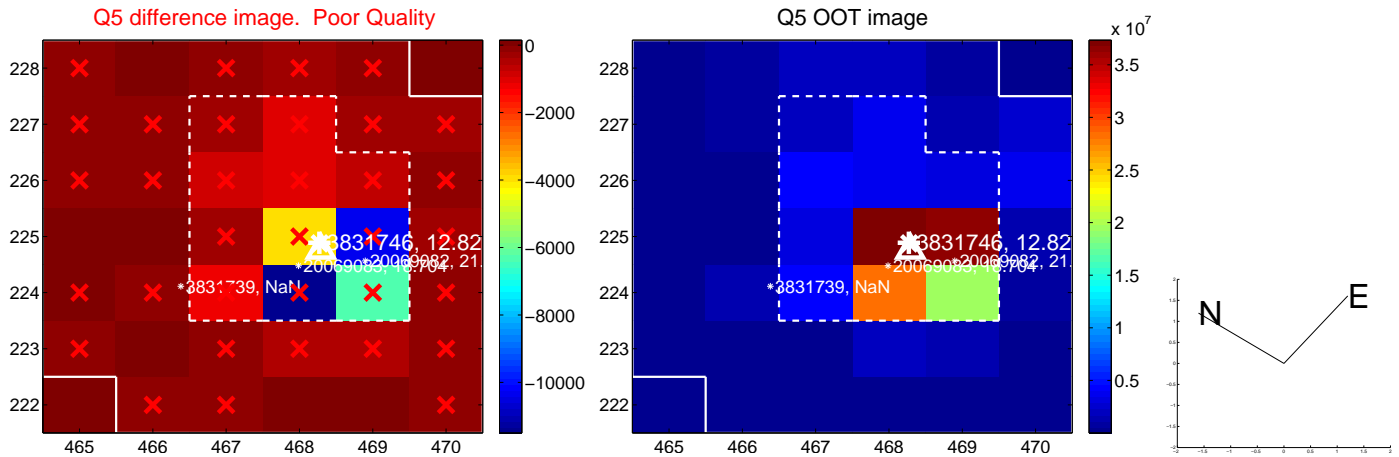


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

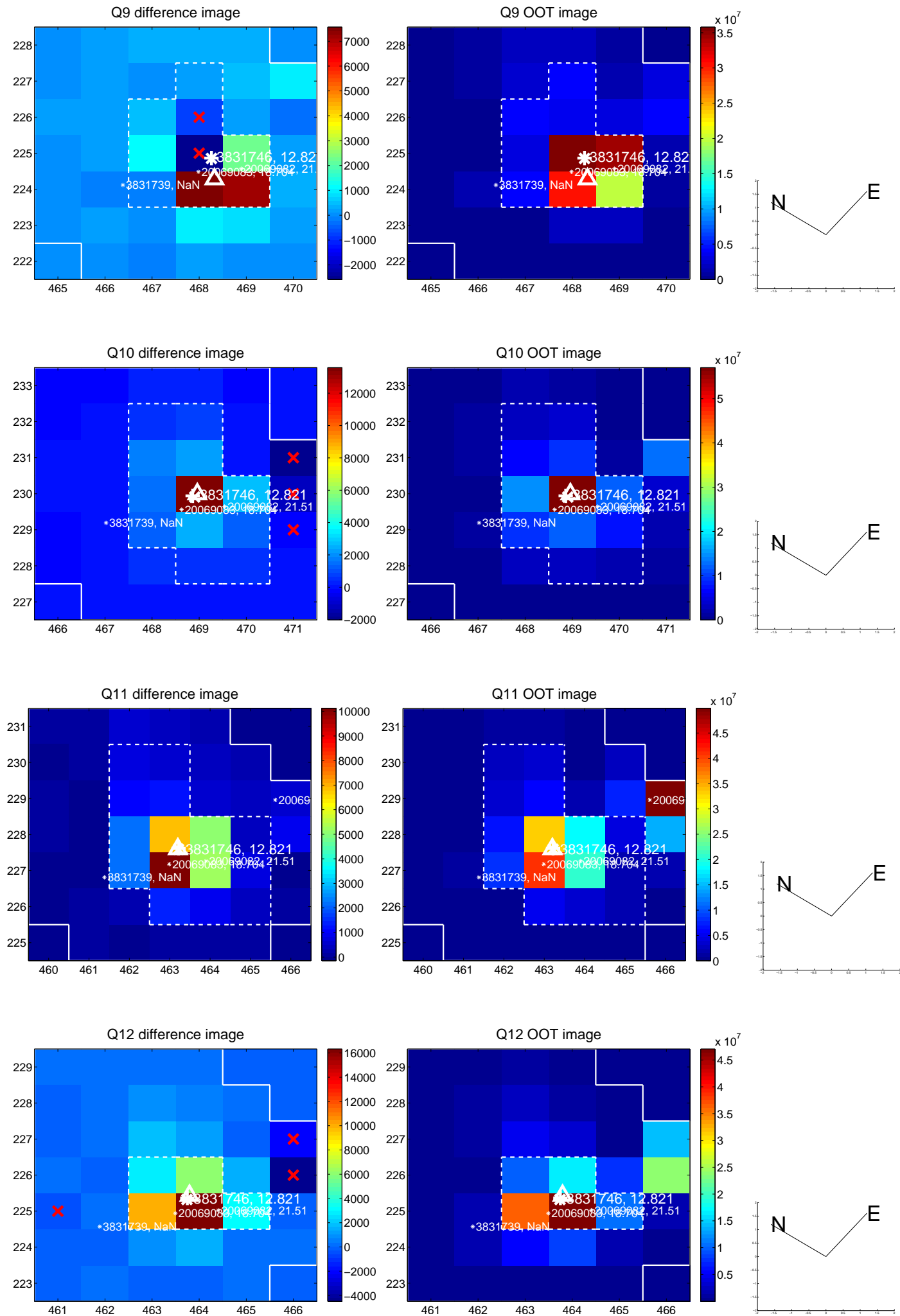
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



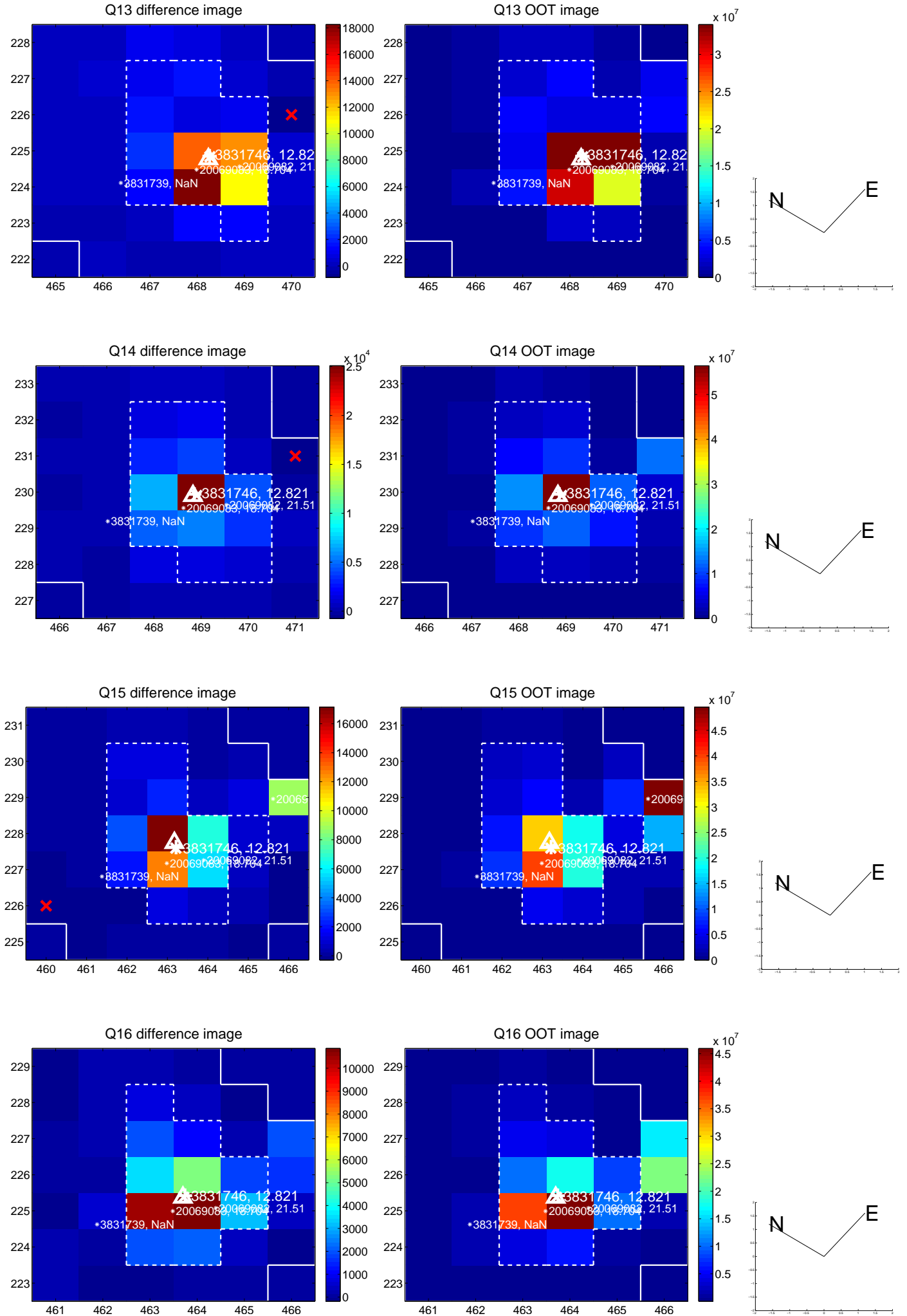
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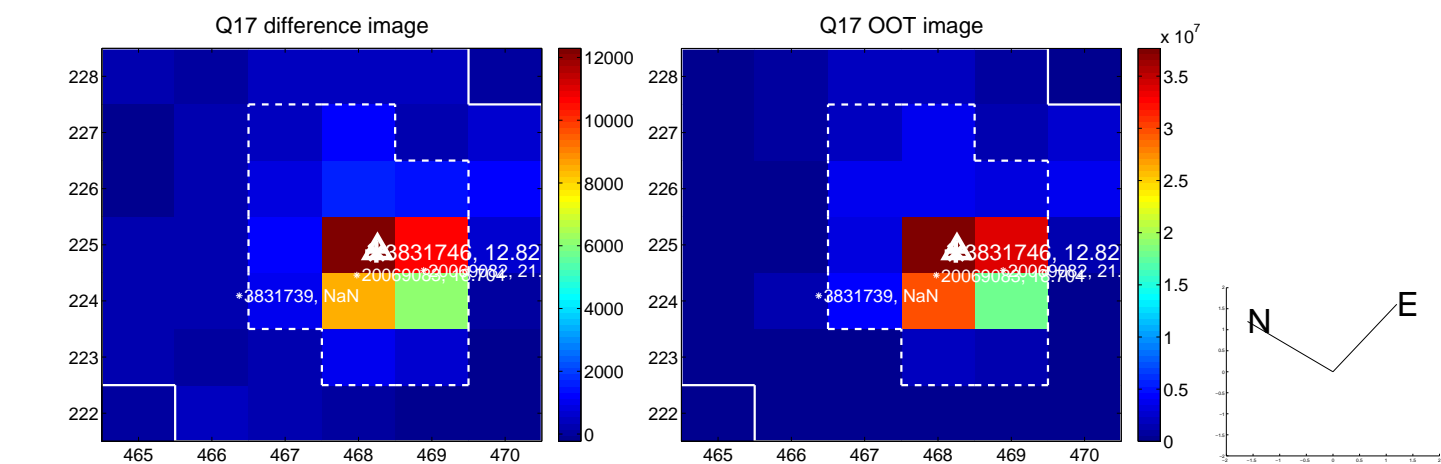
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



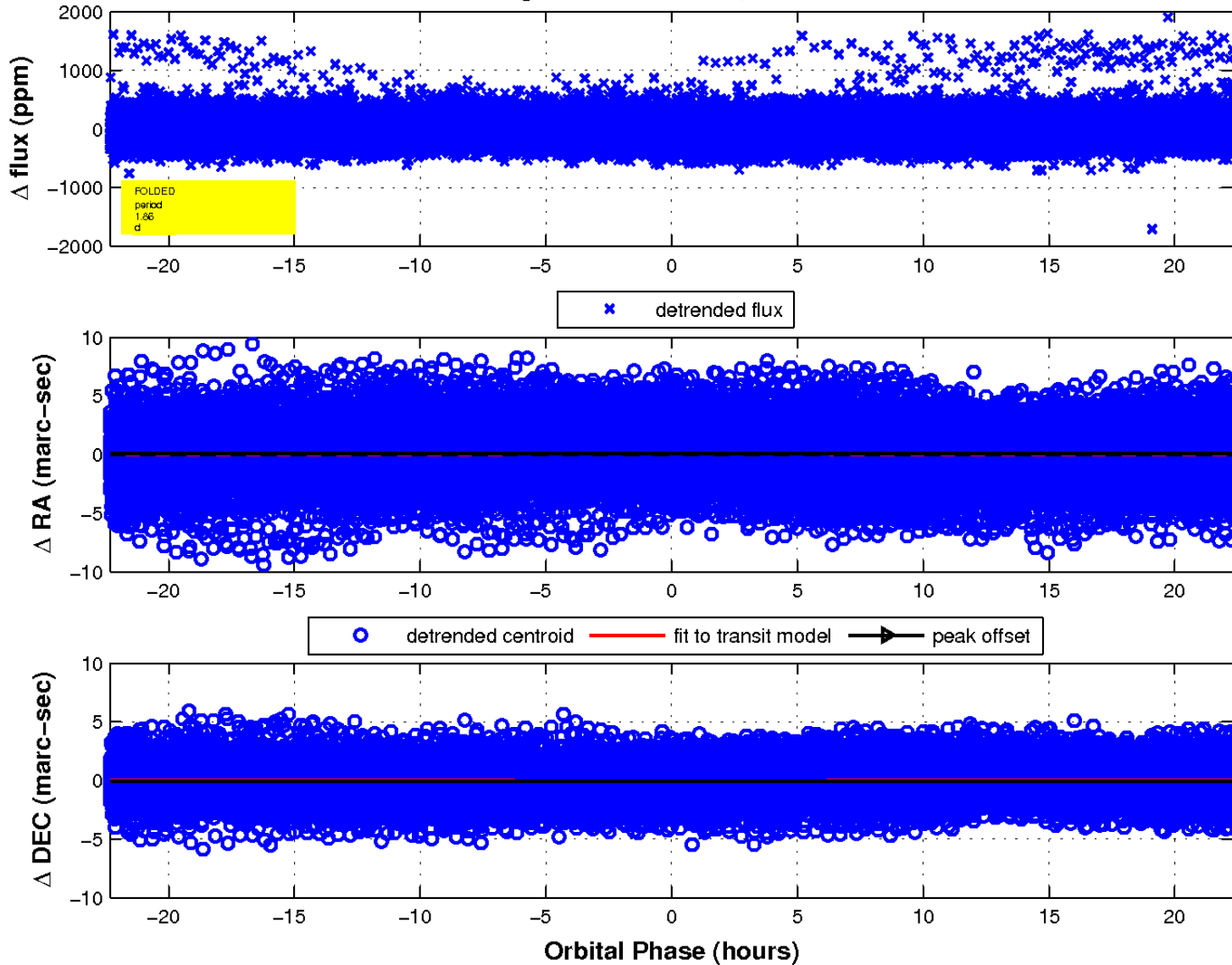
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

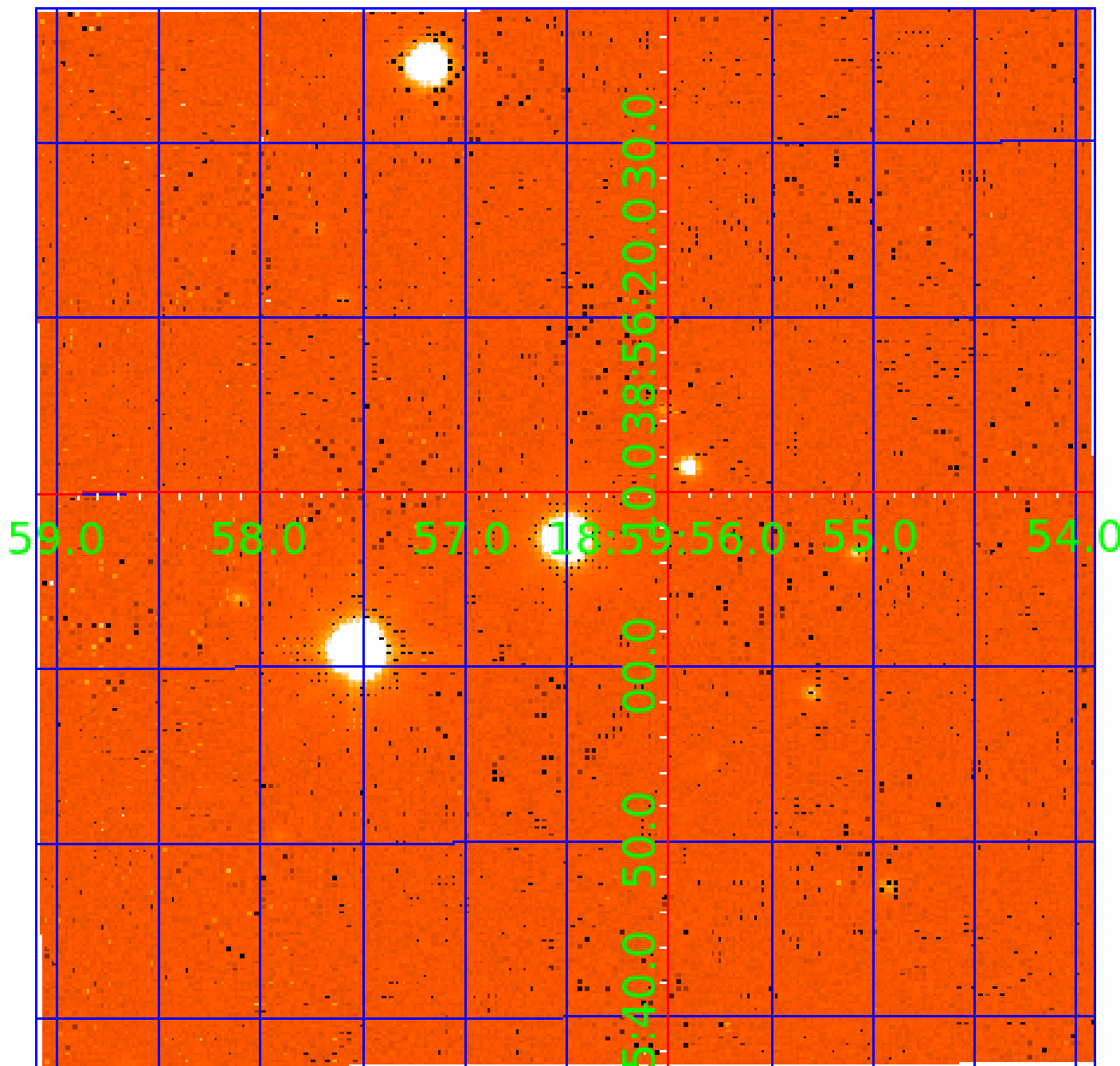


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 003831746

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})
003831746-01	OBS	No	1.860586	133.016963	22.6	12.998	9.1	7.7	2.62	6141	1.25	8648.97
003831746-03	OBS	No	50.839972	156.996285	86.8	59.463	17.0	4.3	2.62	6141	2.60	105.09
003831746-04	OBS	No	62.374582	143.257891	255.3	3.941	11.3	9.7	2.62	6141	4.78	80.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003831746-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003831746-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
003831746-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET

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

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

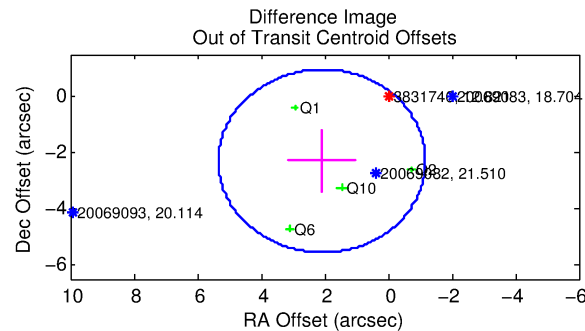
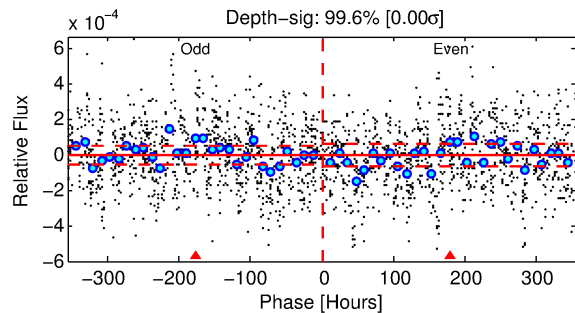
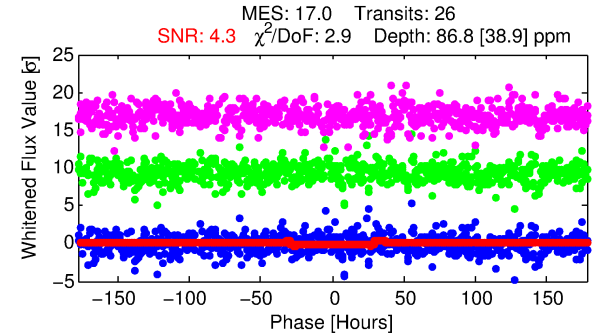
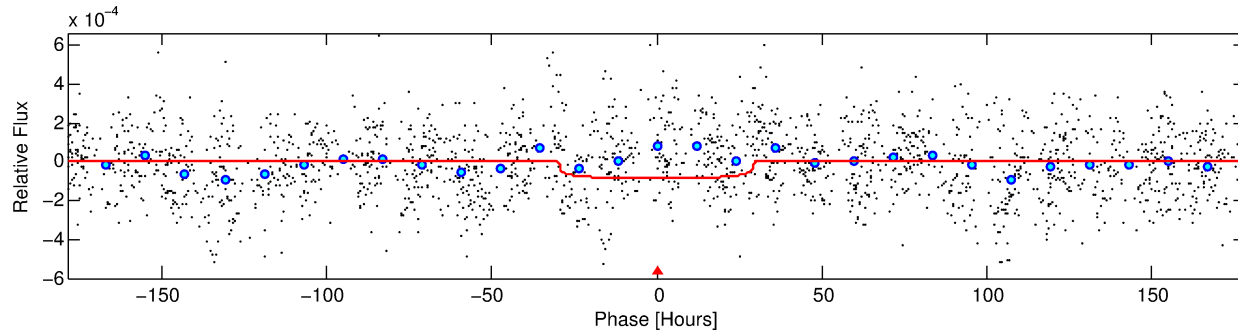
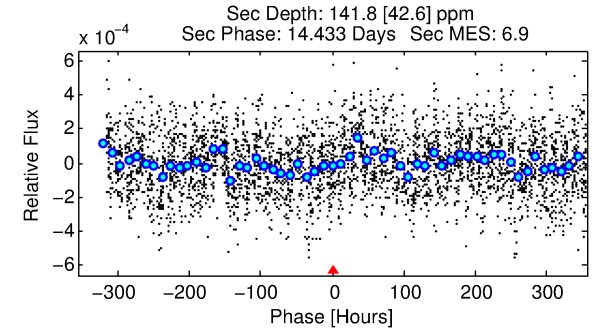
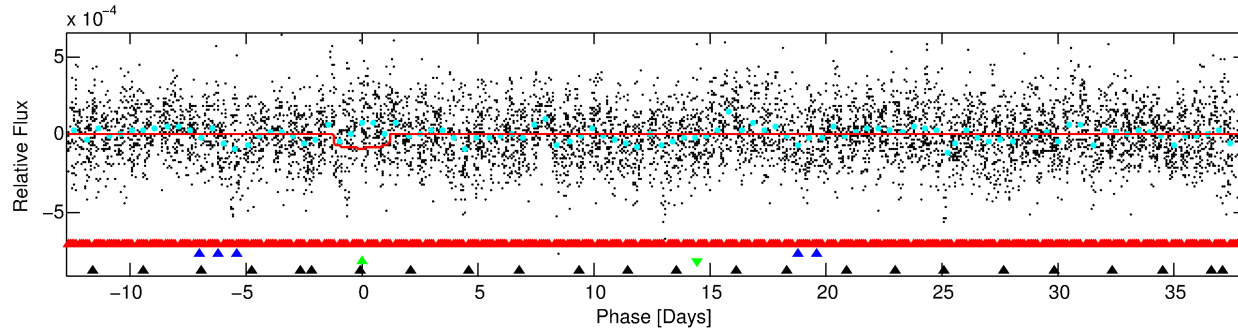
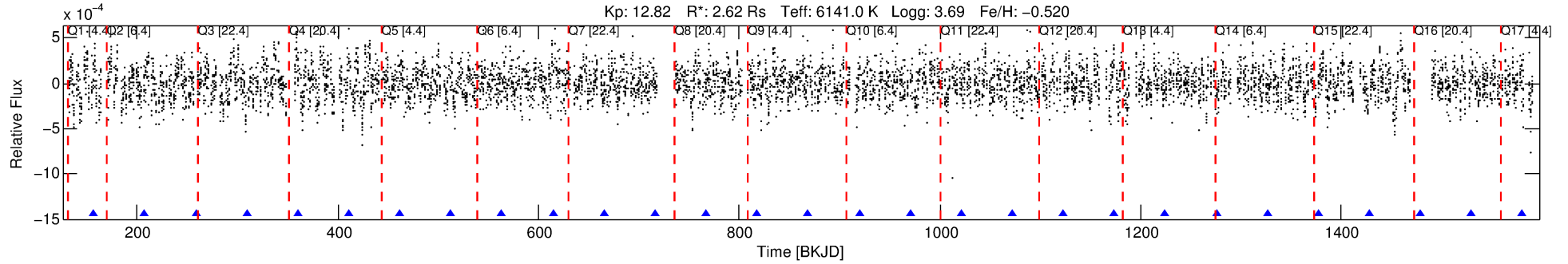
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003831746-03

No Significant Match Found

DV One-Page Summary

KIC: 3831746 Candidate: 3 of 4 Period: 50.840 d



DV Fit Results:

Period = 50.83997 [0.00761] d
Epoch = 156.9963 [0.0620] BKJD
Rp/R* = 0.0091 [0.0027]
a/R* = 4.91 [3.76]
b = 0.69 [0.62]
Seff = 105.09 [61.23]
Teq = 816 [119] K
Rp = 2.60 [1.27] Re
a = 0.2883 [0.1050] AU
Ag = 959.85 [835.13] [1.15σ]
Teffp = 7026 [1173] K [5.27σ]

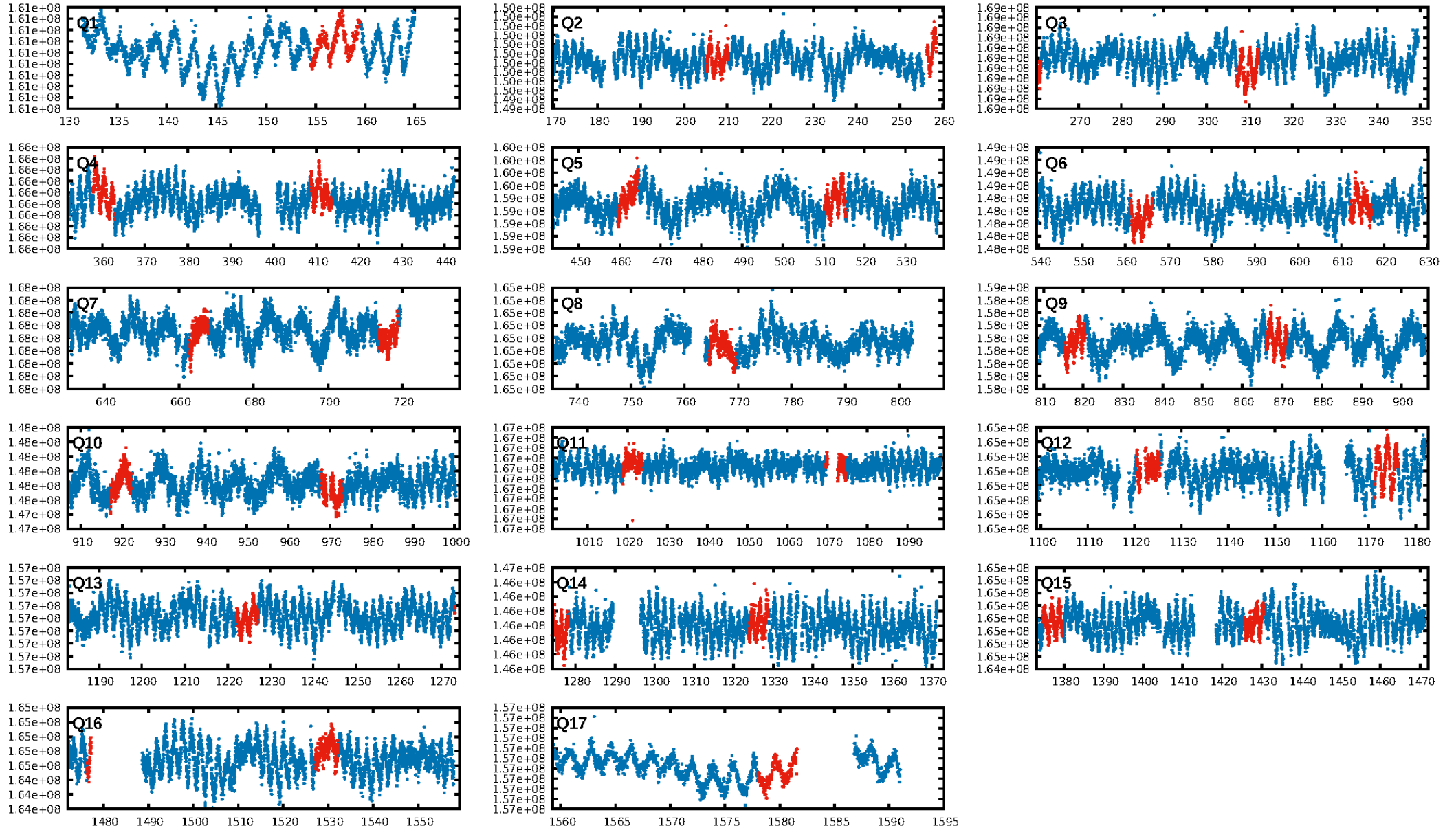
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.31σ]
LongPeriod-sig: 100.0% [4.65σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.16e-51
RollingBand-fgt: 1.00 [24/24]
GhostDiagnostic-chr: 0.239
Centroid-sig: 56.3%
Centroid-so: 1.706 arcsec [1.80σ]
OotOffset-rm: 3.103 arcsec [2.86σ]
KicOffset-rm: 3.014 arcsec [2.86σ]
OotOffset-st: 3/0/0/1 [4]
KicOffset-st: 3/0/0/1 [4]
DiffImageQuality-fgm: 0.00 [0/4]
DiffImageOverlap-fno: 0.00 [0/10]

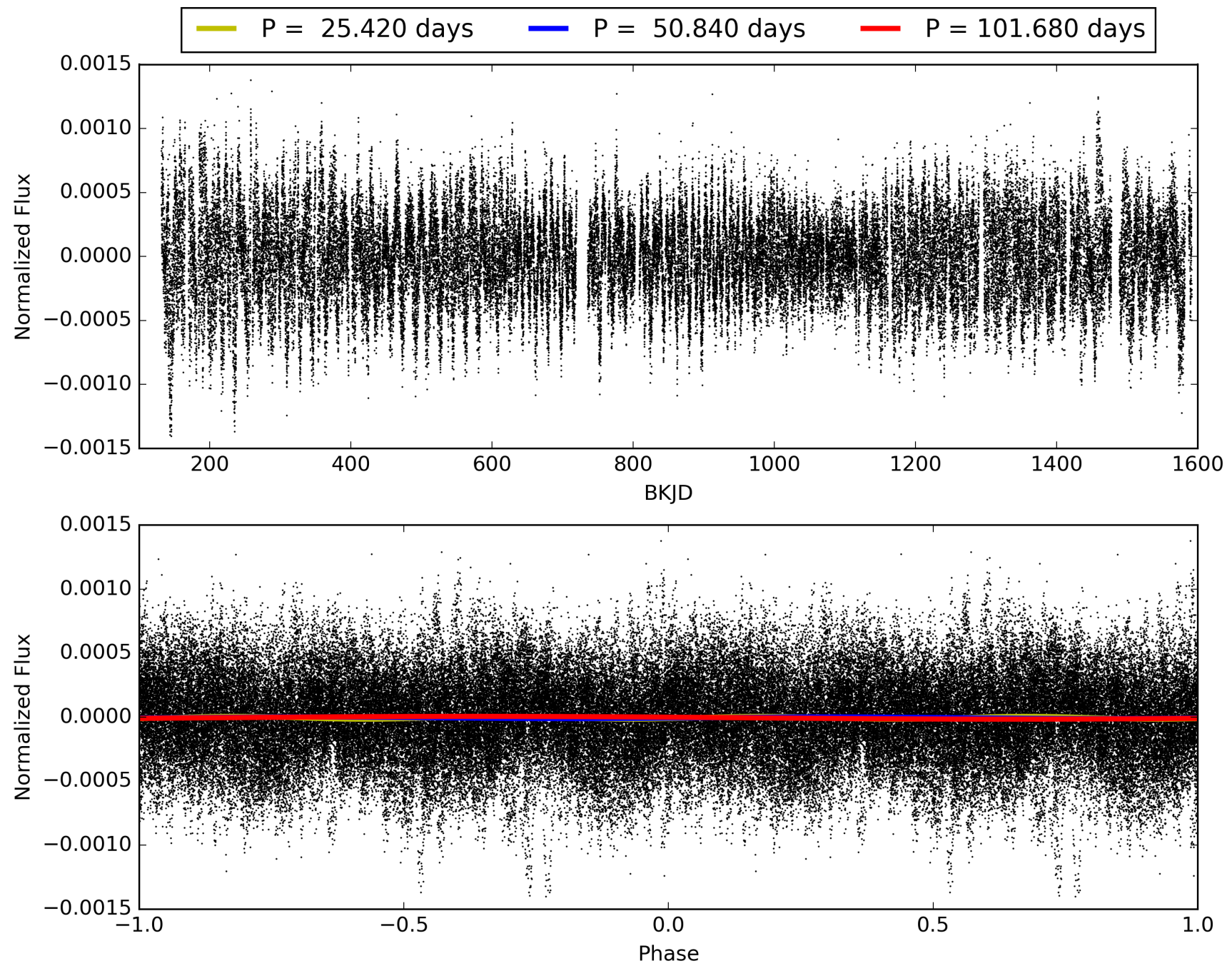
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 15:17:51 Z

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

TCE 003831746-03, PDC Light Curves

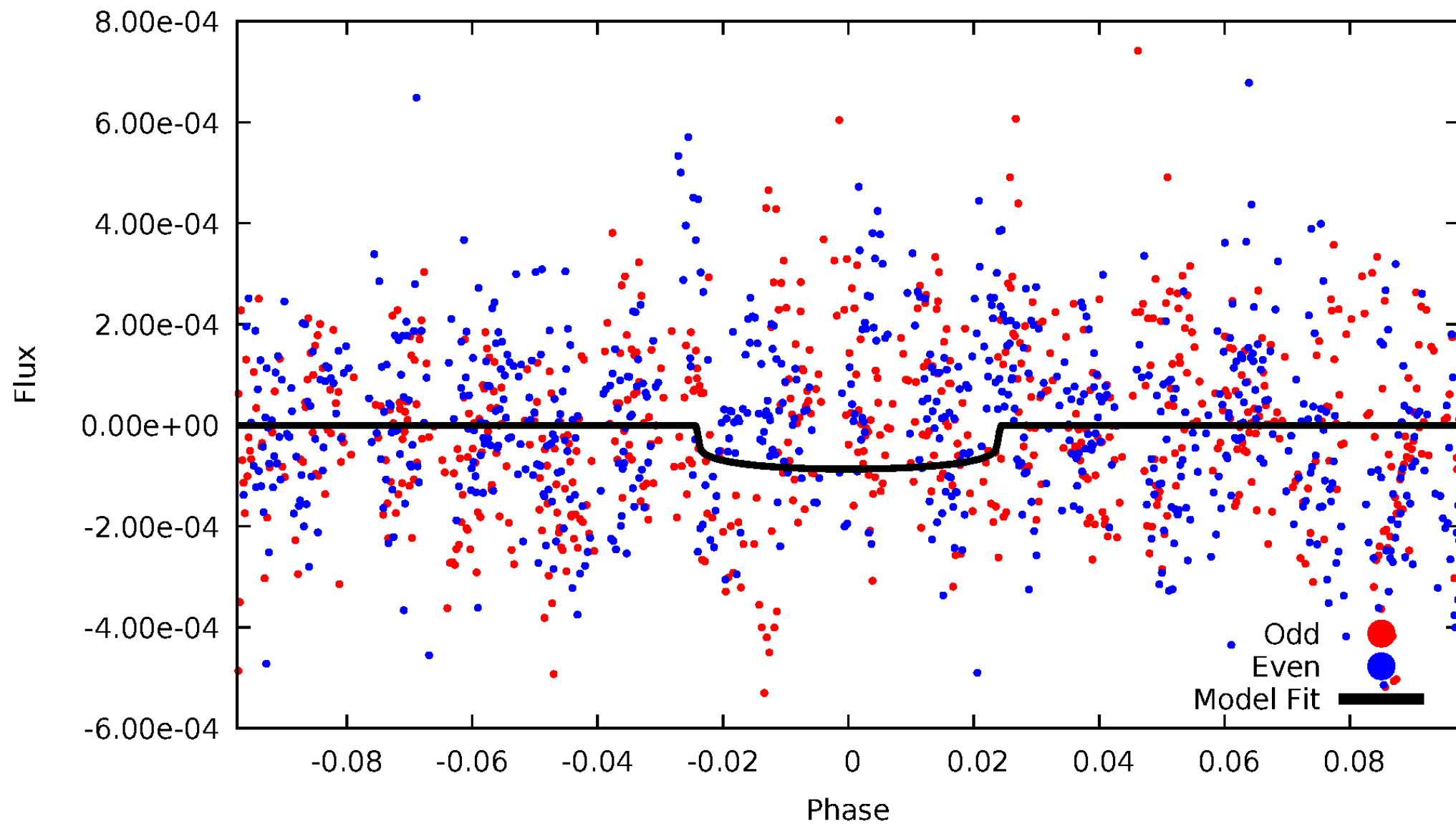


TCE 003831746-03



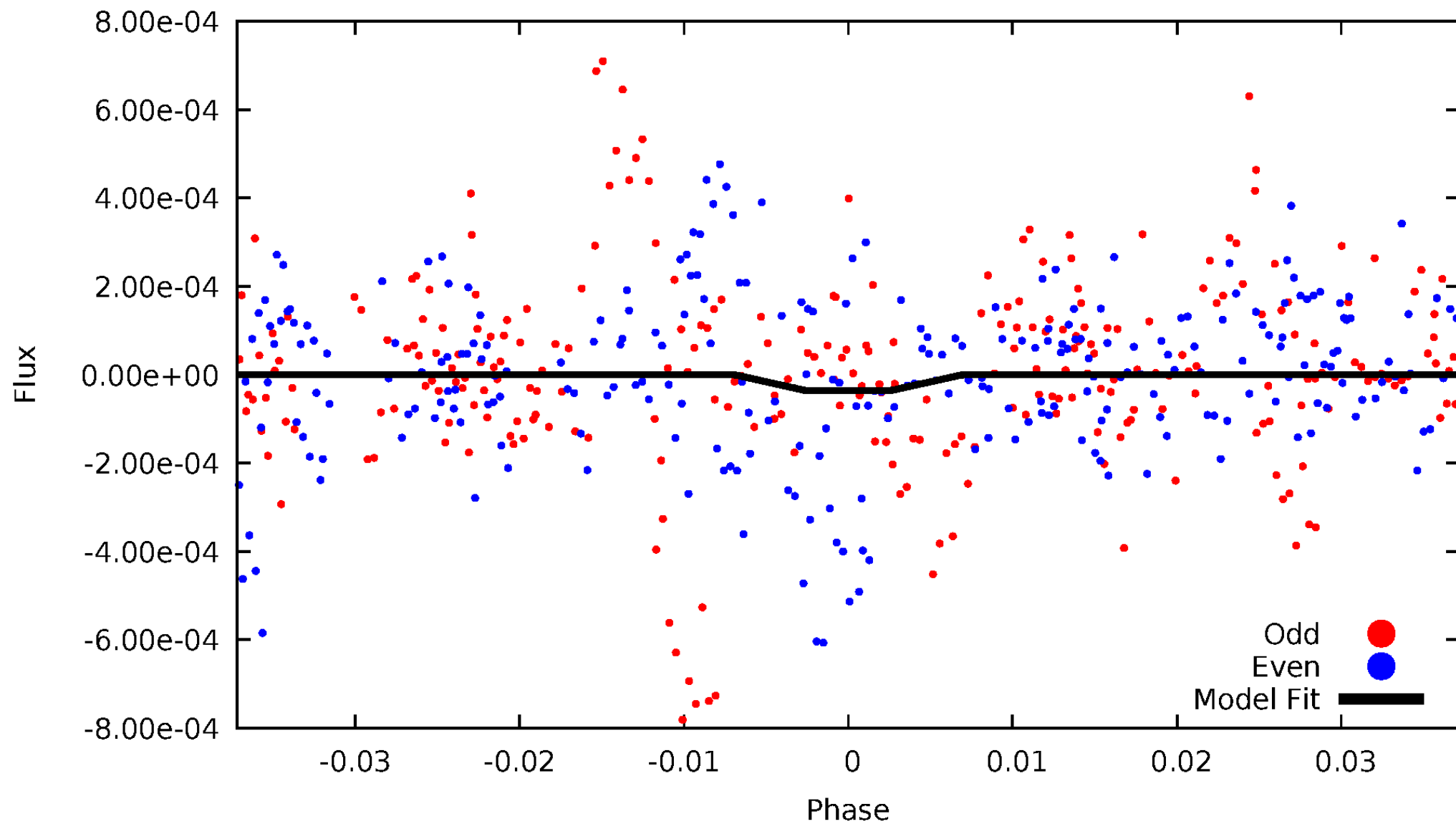
DV Odd/Even

TCE 003831746-03

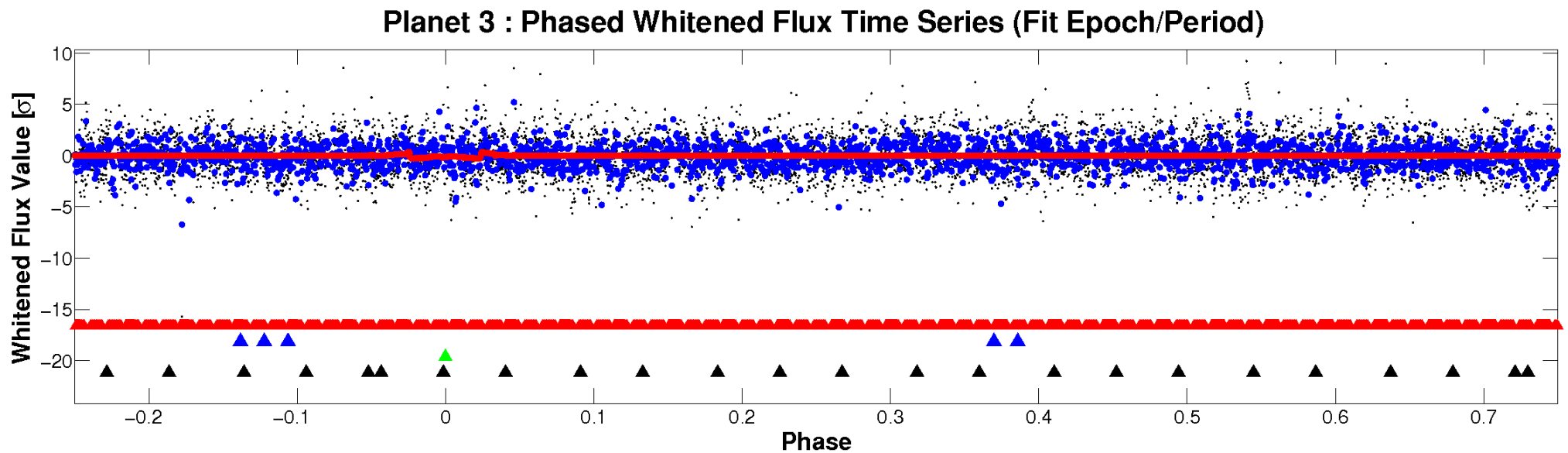
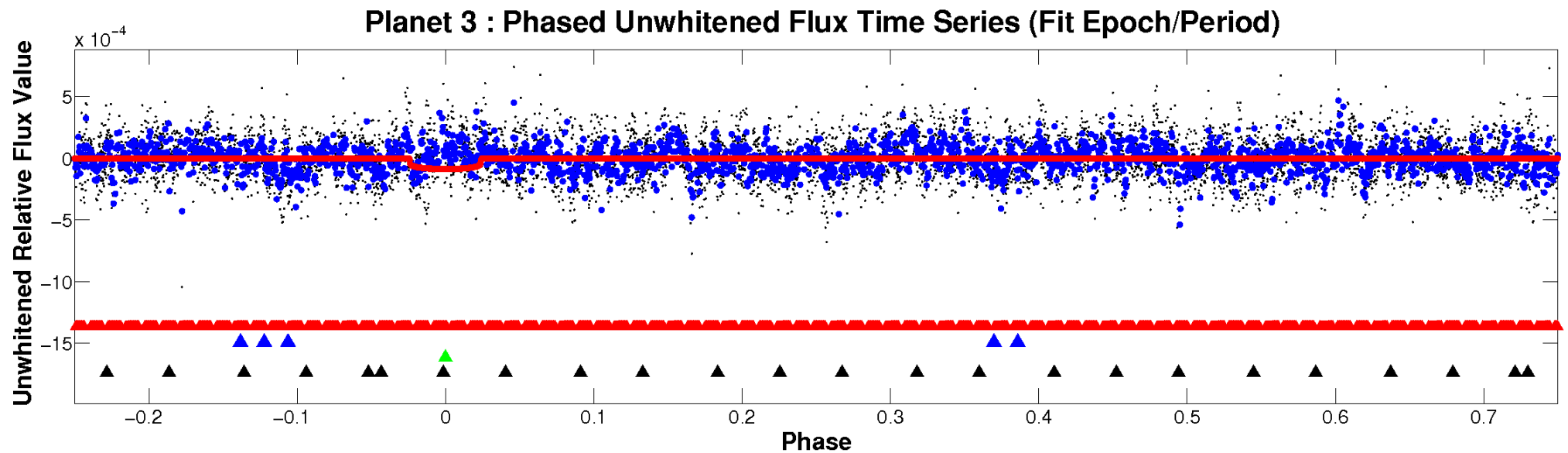


ALT Odd/Even

TCE 003831746-03

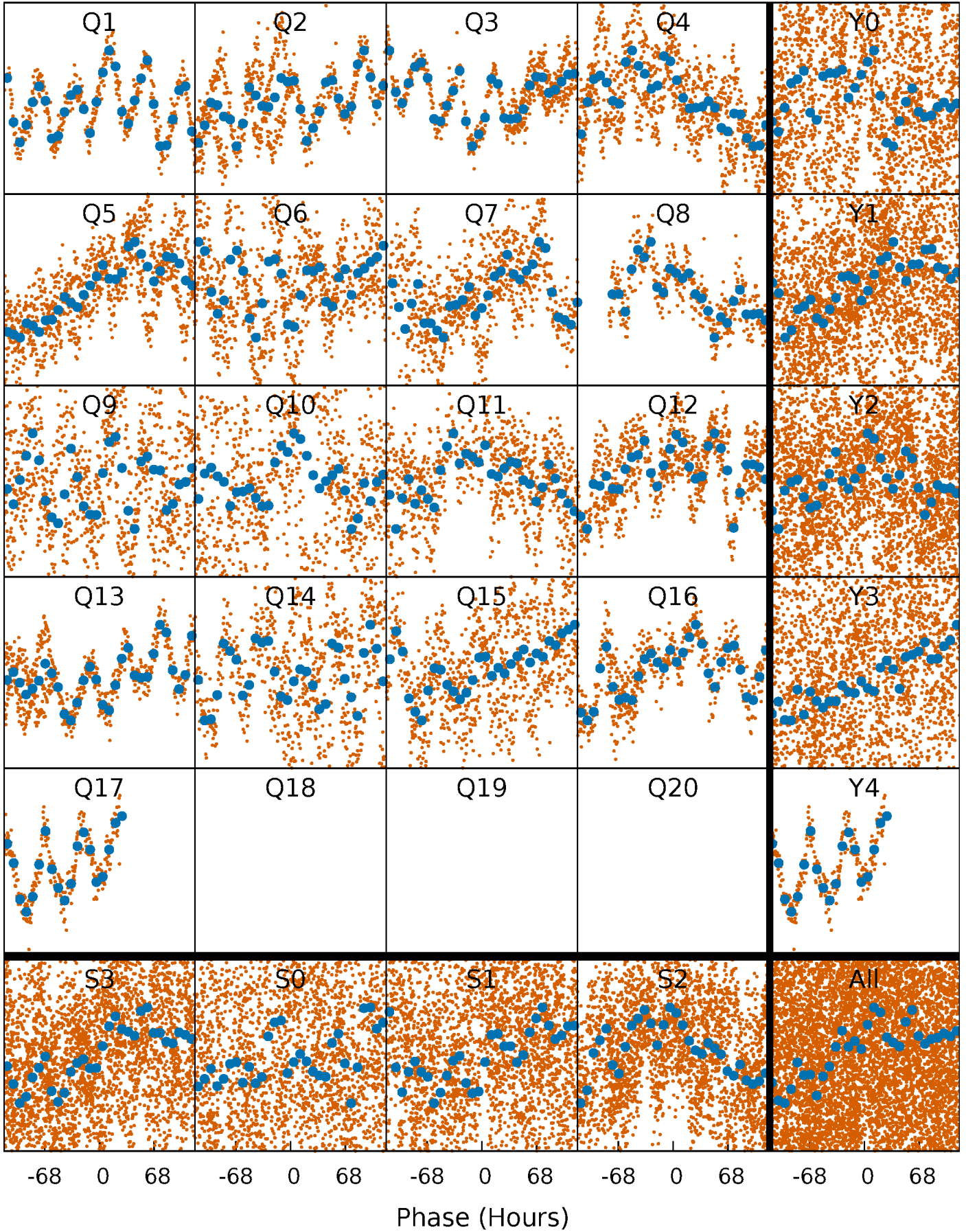


Non-Whitened Vs. Whitened Light Curve



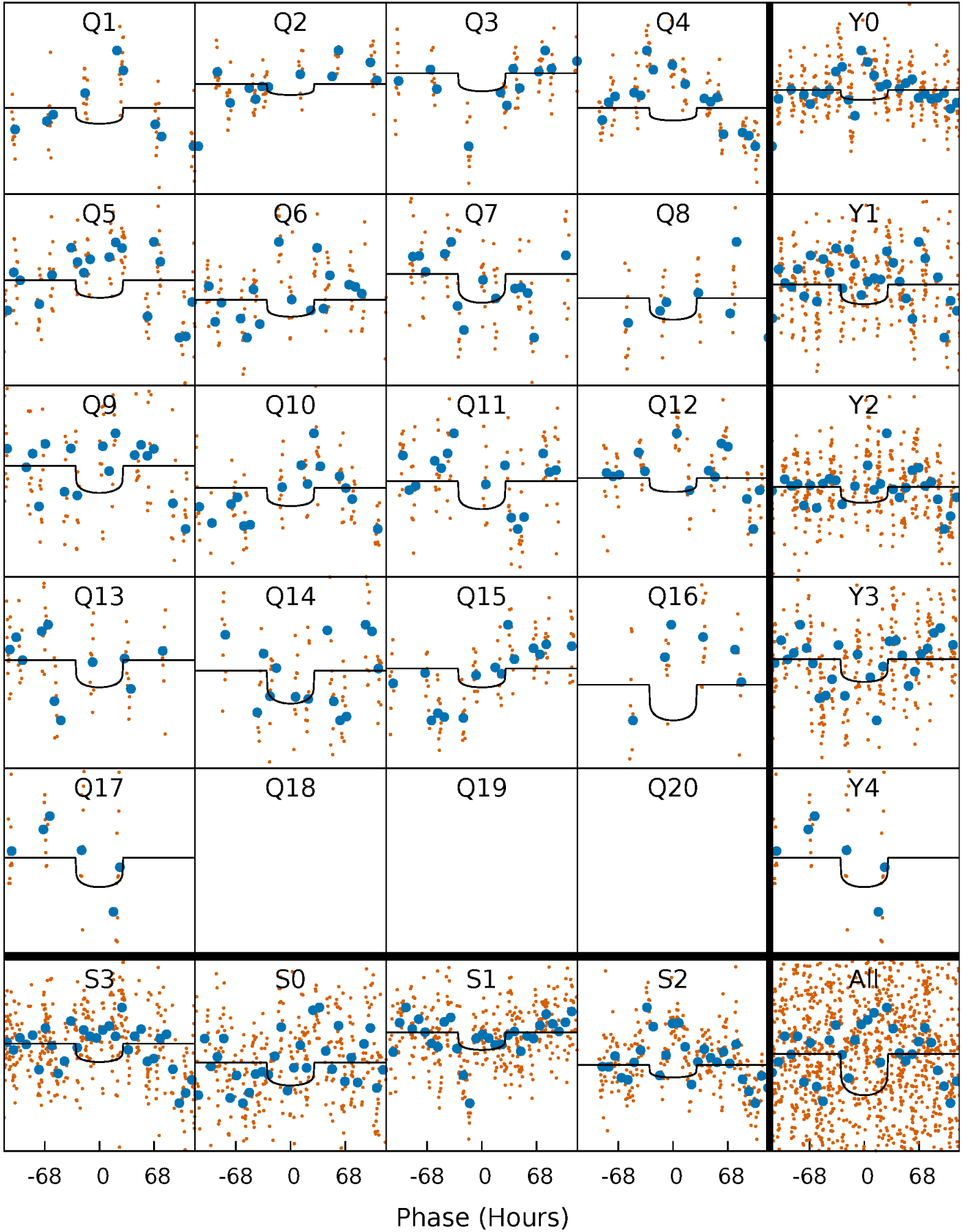
PDC Quarter-Phased Transit Curves

TCE 003831746-03 P= 50.839972 Days $T_0=156.996285$ (BKJD)



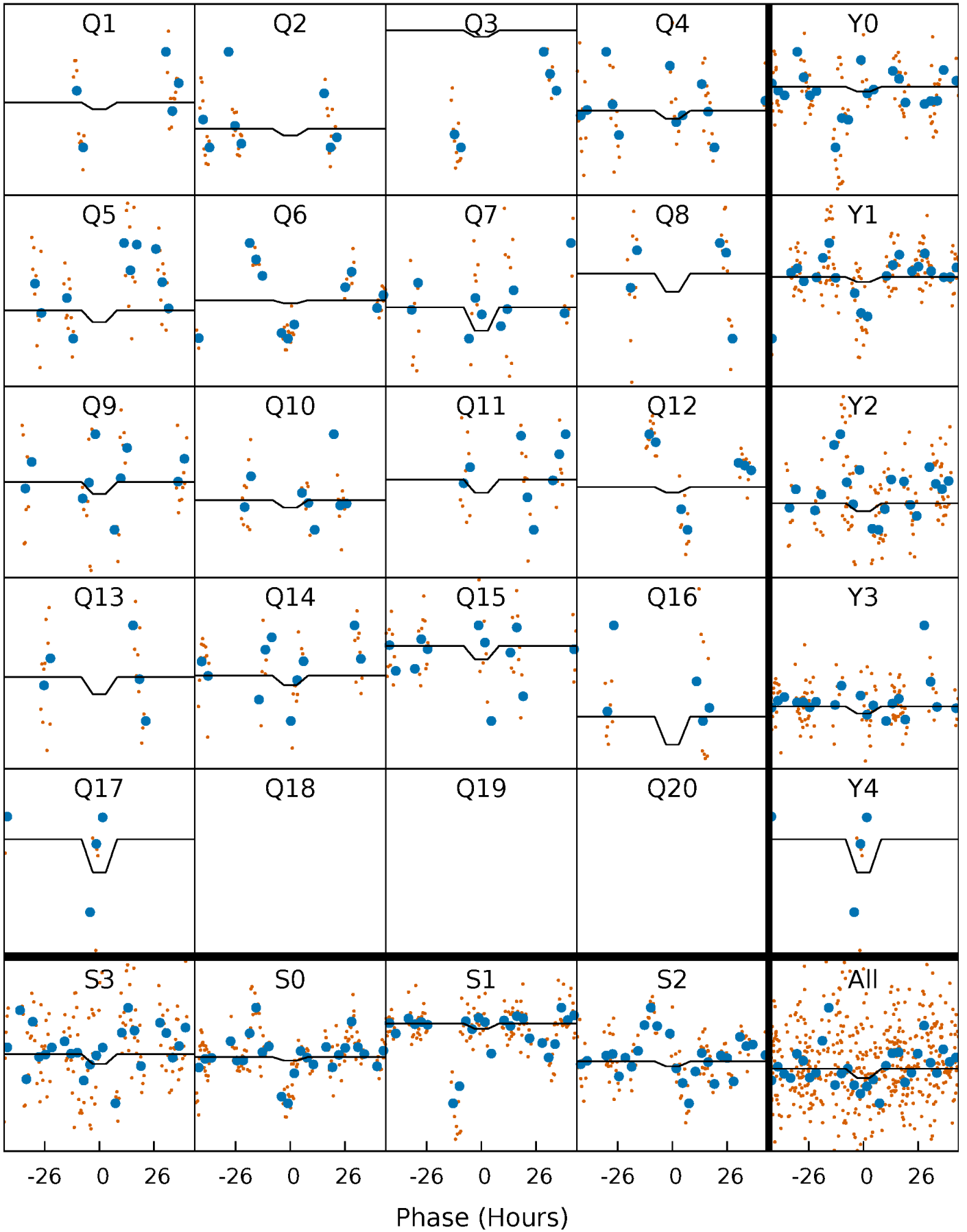
DV Quarter-Phased Transit Curves

TCE 003831746-03 P= 50.839972 Days $T_0=156.996285$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

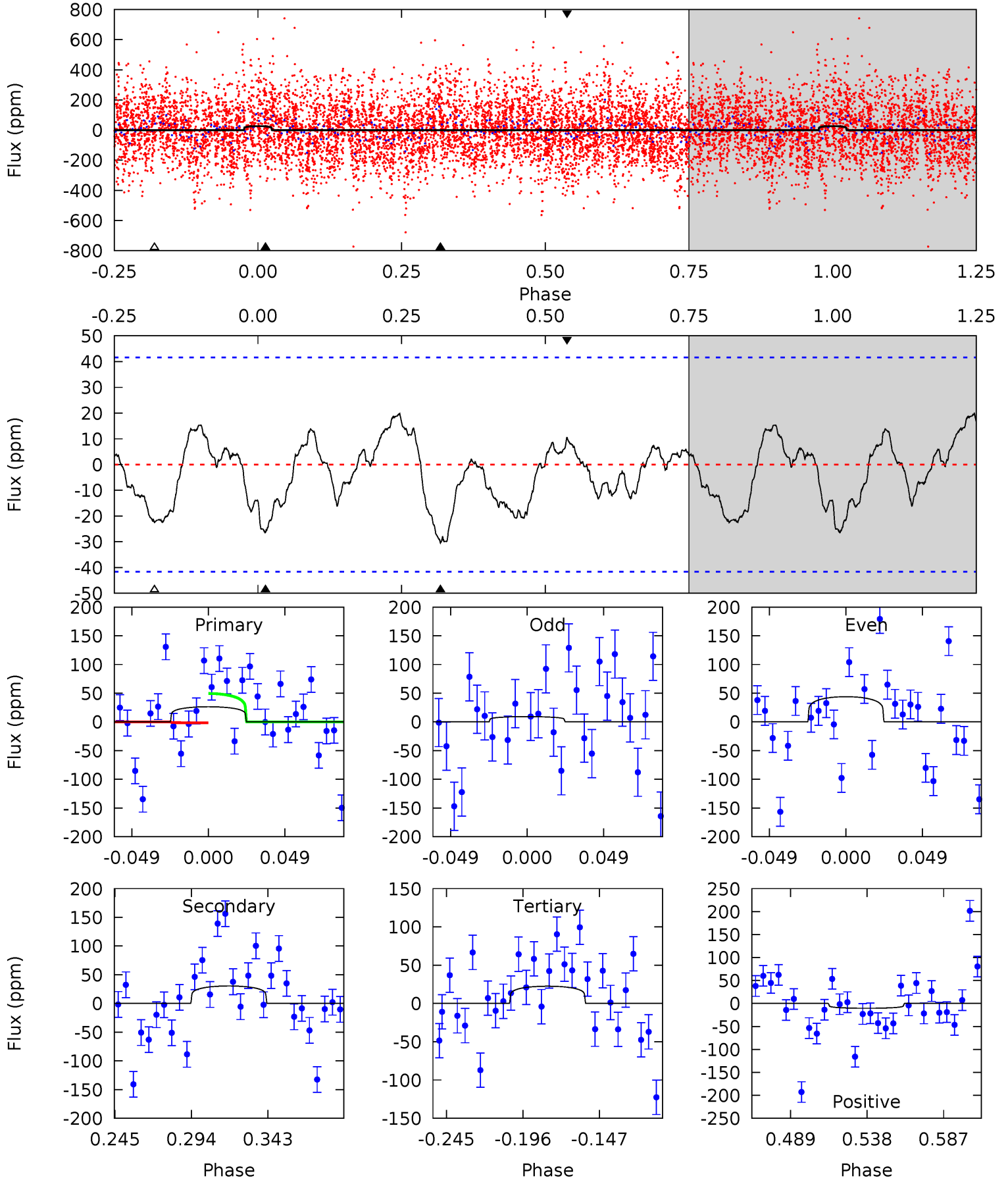
TCE 003831746-03 $P = 50.887223$ Days $T_0 = 156.685525$ (BKJD)



DV Model-Shift Uniqueness Test

003831746-03, P = 50.839972 Days, E = 106.156313 Days

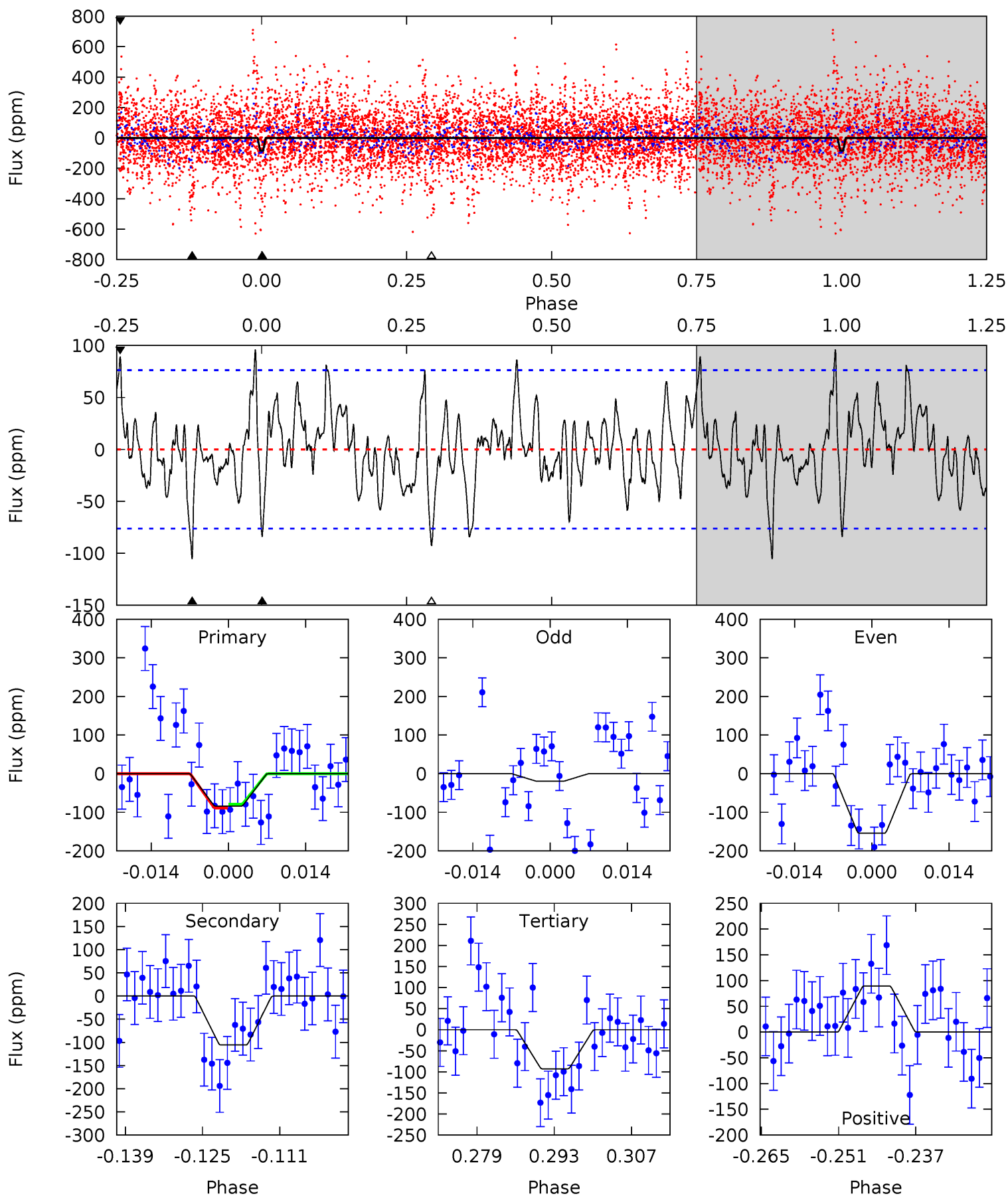
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.99	3.45	2.55	1.19	4.71	1.97	1.15	0.43	1.80	0.90	2.26	1.98	12.2	0.39	2.69



Alt Model-Shift Uniqueness Test

003831746-03, P = 50.887223 Days, E = 105.798302 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.47	6.87	6.05	5.81	4.96	2.46	1.96	-0.58	-0.34	0.82	1.06	4.39	52.4	0.48	0.32



Stellar Parameters For KIC 003831746

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6141^{+184}_{-166}	$3.694^{+0.330}_{-0.110}$	$-0.520^{+0.350}_{-0.300}$	$2.618^{+0.441}_{-1.028}$	$1.235^{+0.192}_{-0.287}$	$0.097^{+0.241}_{-0.033}$
	+3%/-3%	+9%/-3%	+67%/-58%	+17%/-39%	+16%/-23%	+249%/-34%
Source	PHO1	FLK73	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 003831746-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-30 ± 9	$2.43^{+0.98}_{-0.84}$	1126^{+72}_{-114}	4869^{+910}_{-586}	230^{+295}_{-119}
Alt.	-105 ± 15	$1.66^{+0.79}_{-0.73}$	1123^{+76}_{-108}	8182^{+4047}_{-1619}	1748^{+3832}_{-961}

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

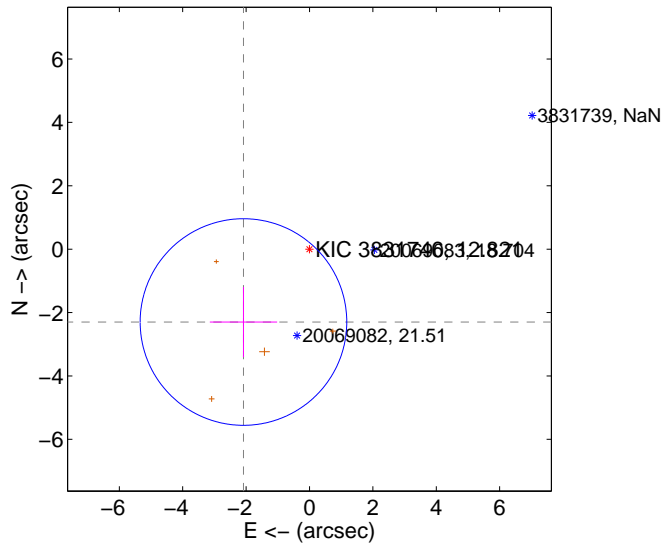
Supplemental centroid analysis for 003831746-03. Kepler magnitude: 12.82. Transit SNR 4.31

There are 0 quarters with good PRF difference image offsets

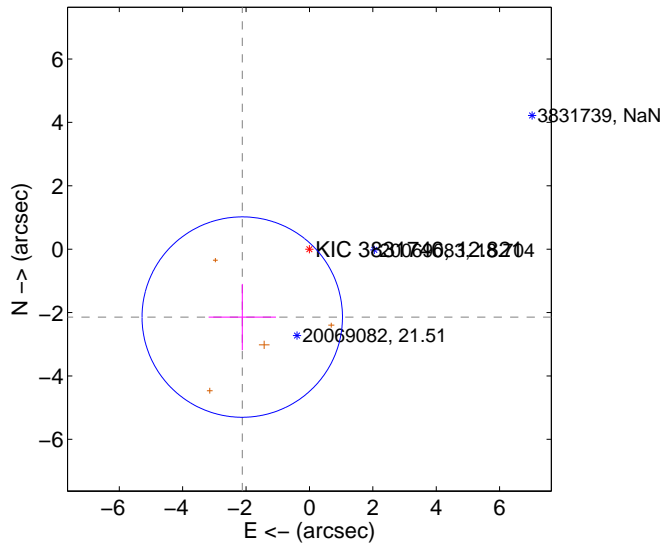
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.103 ± 1.086	2.86	2.084 ± 1.063	-2.299 ± 1.106
PRF-fit source offset from KIC position	3.014 ± 1.054	2.86	2.120 ± 1.063	-2.143 ± 1.046
photometric centroid source offset	1.71 ± 0.95	1.80	1.28 ± 1.06	-1.13 ± 0.79

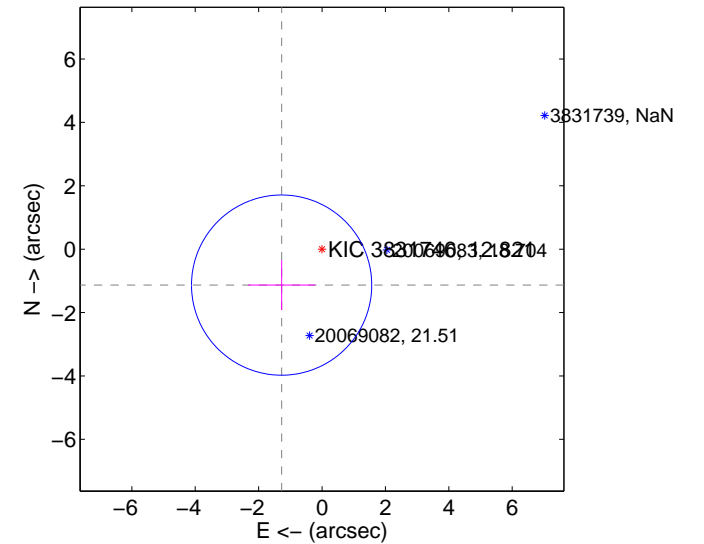
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

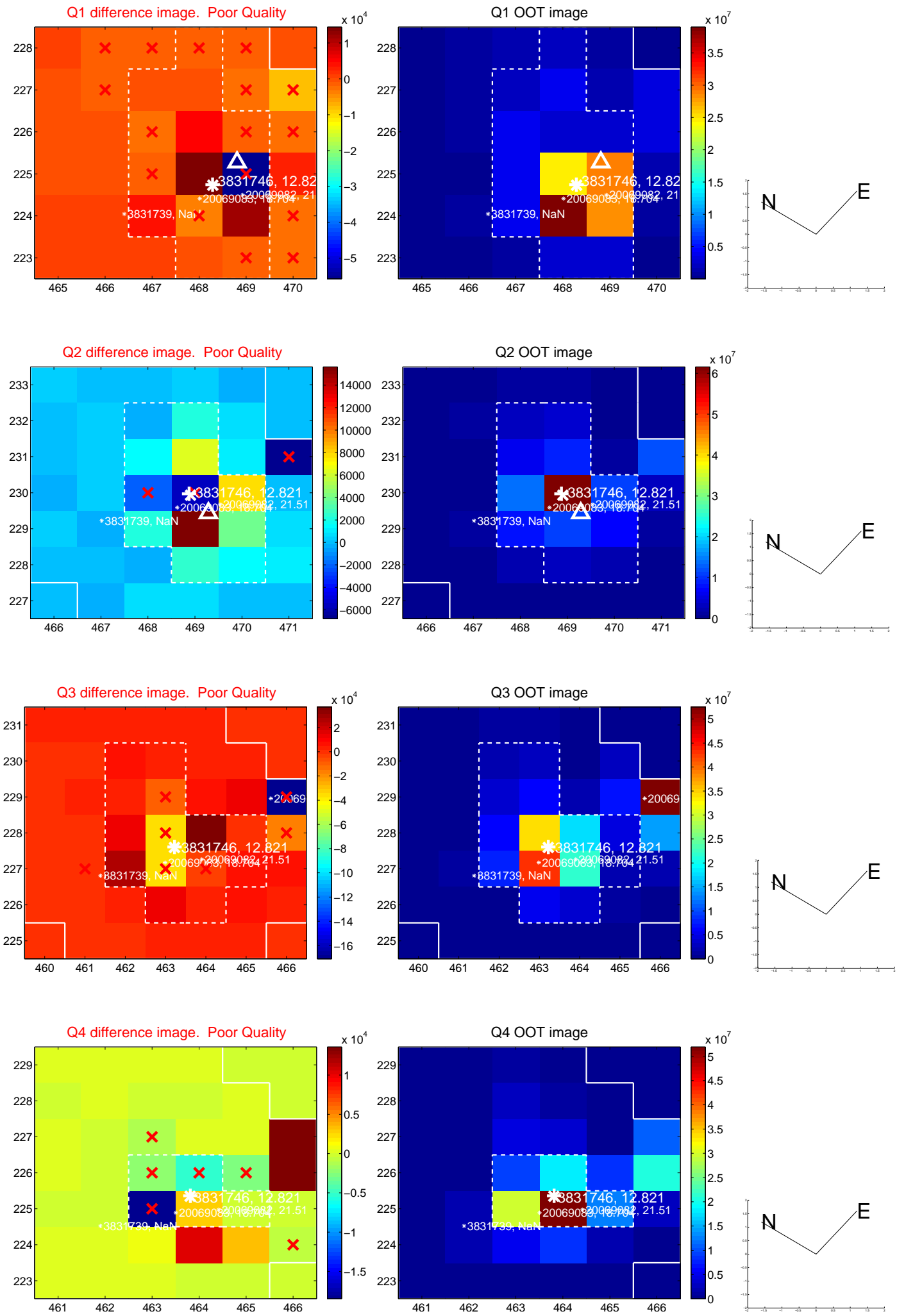


offset from photometric centroids

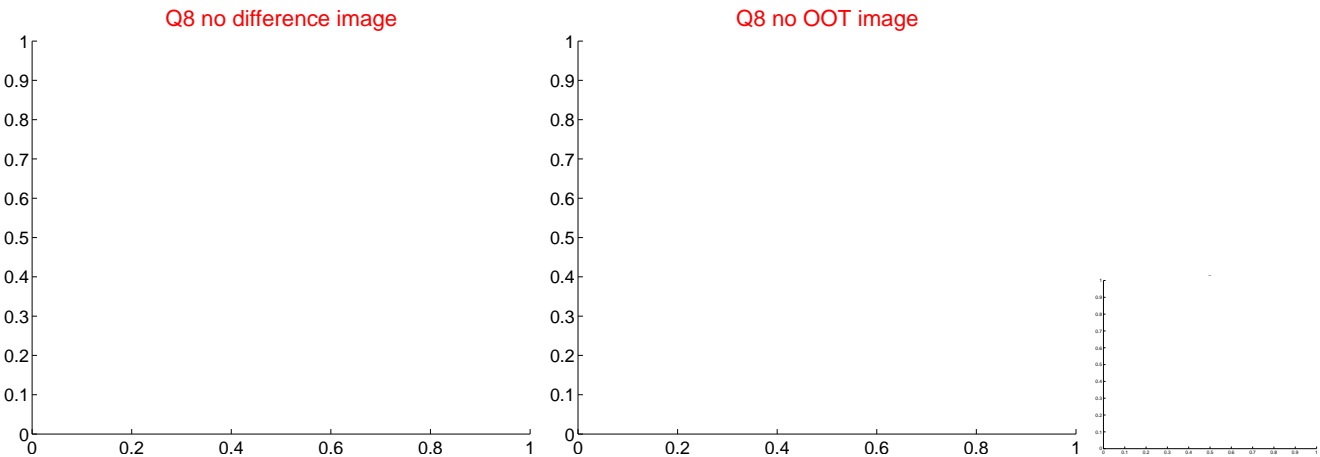
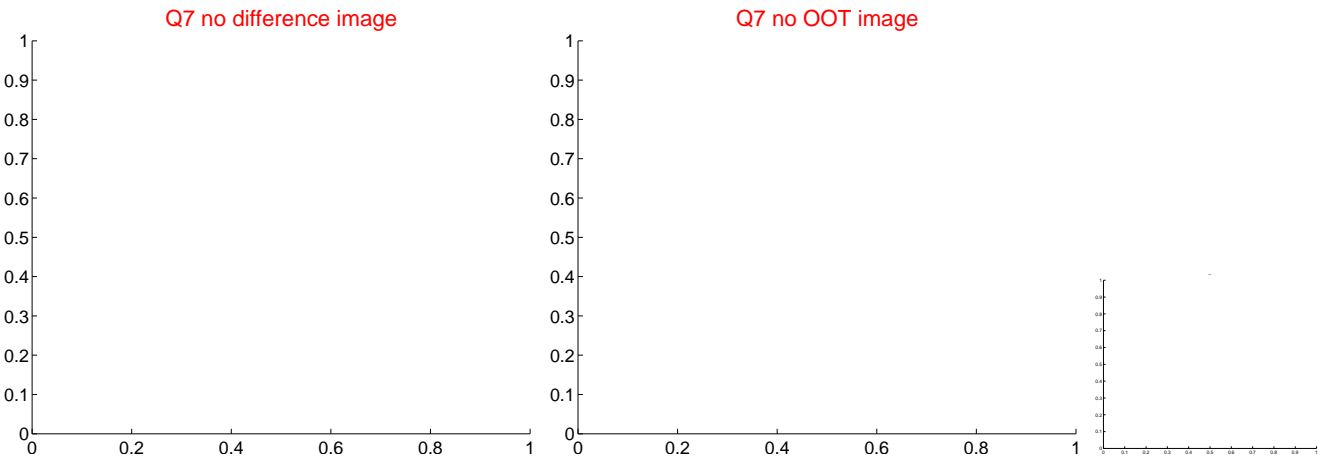
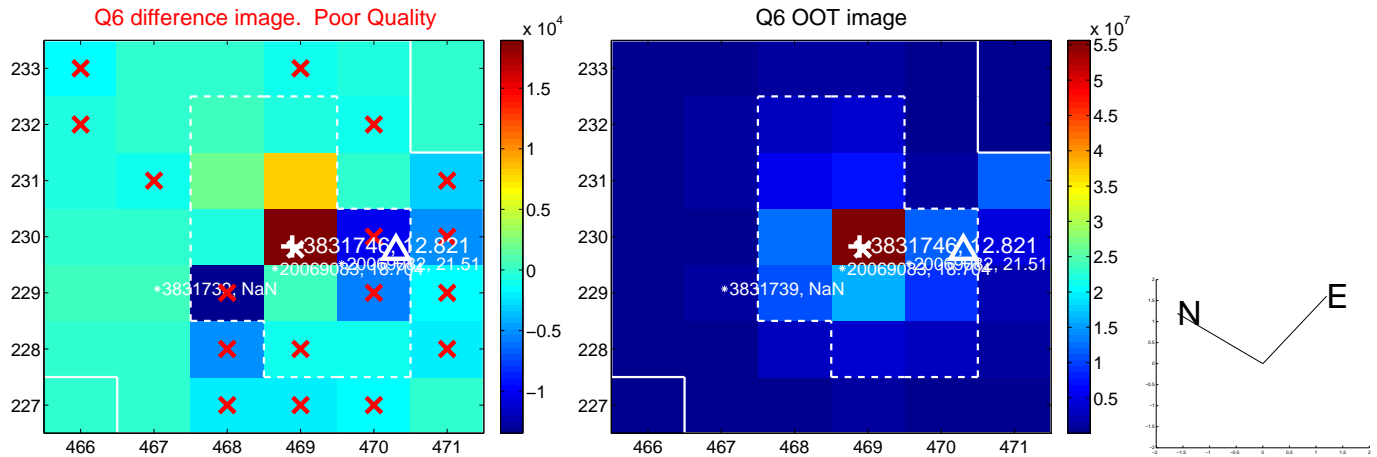
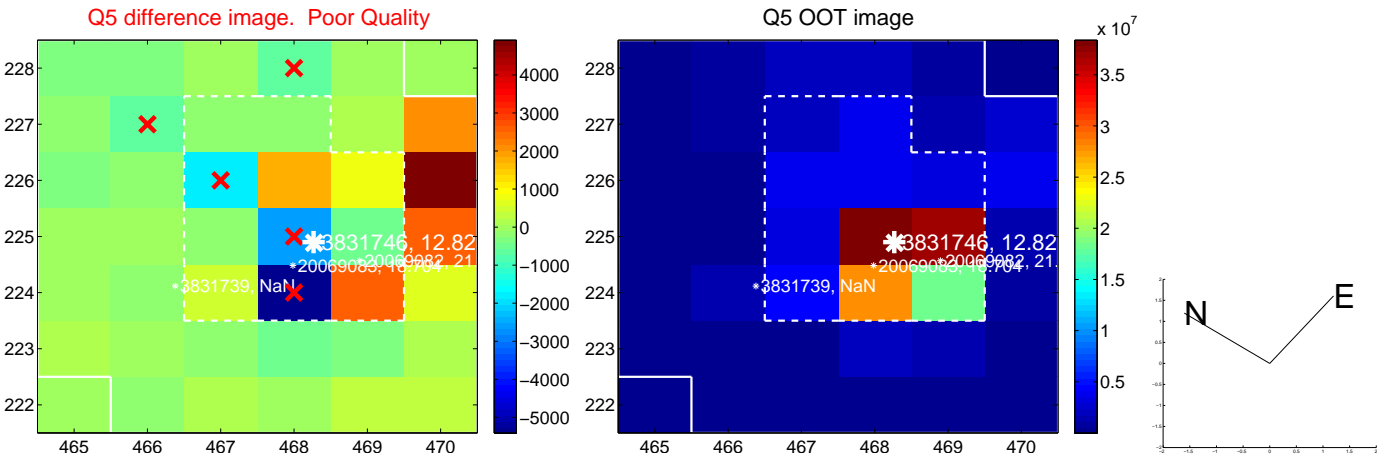


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

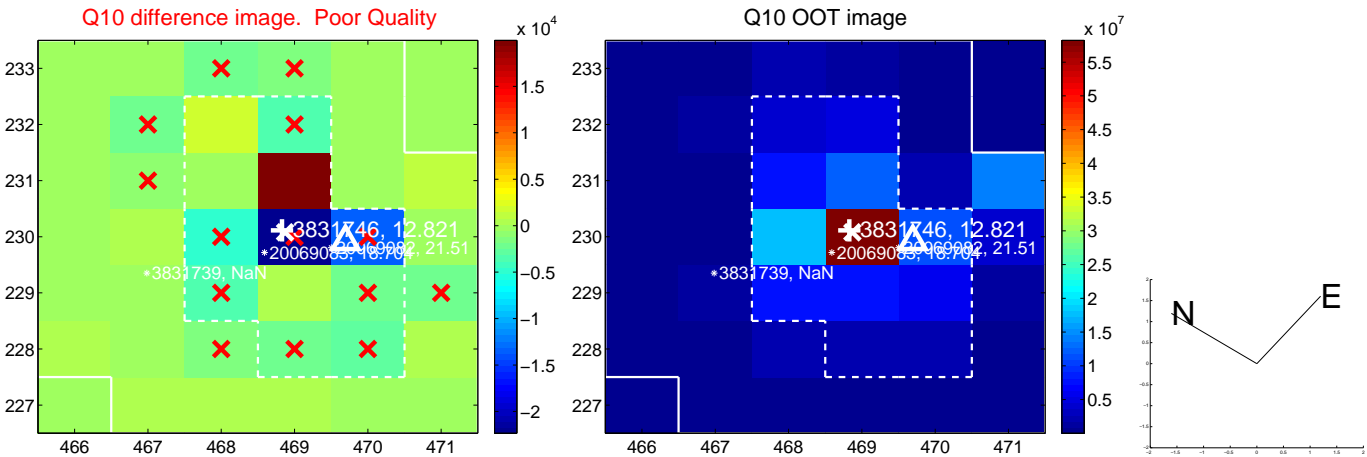
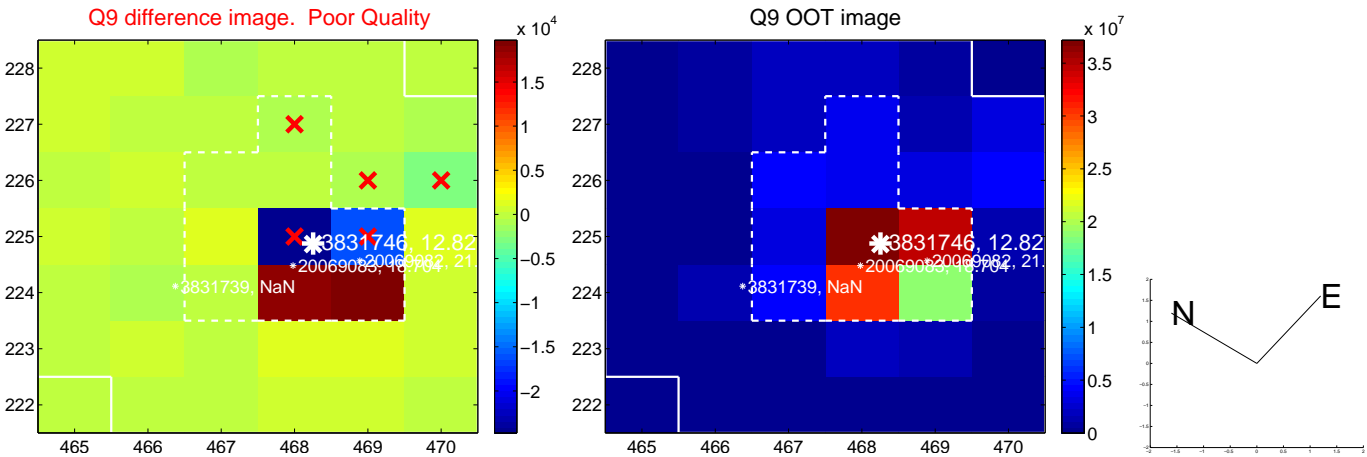
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



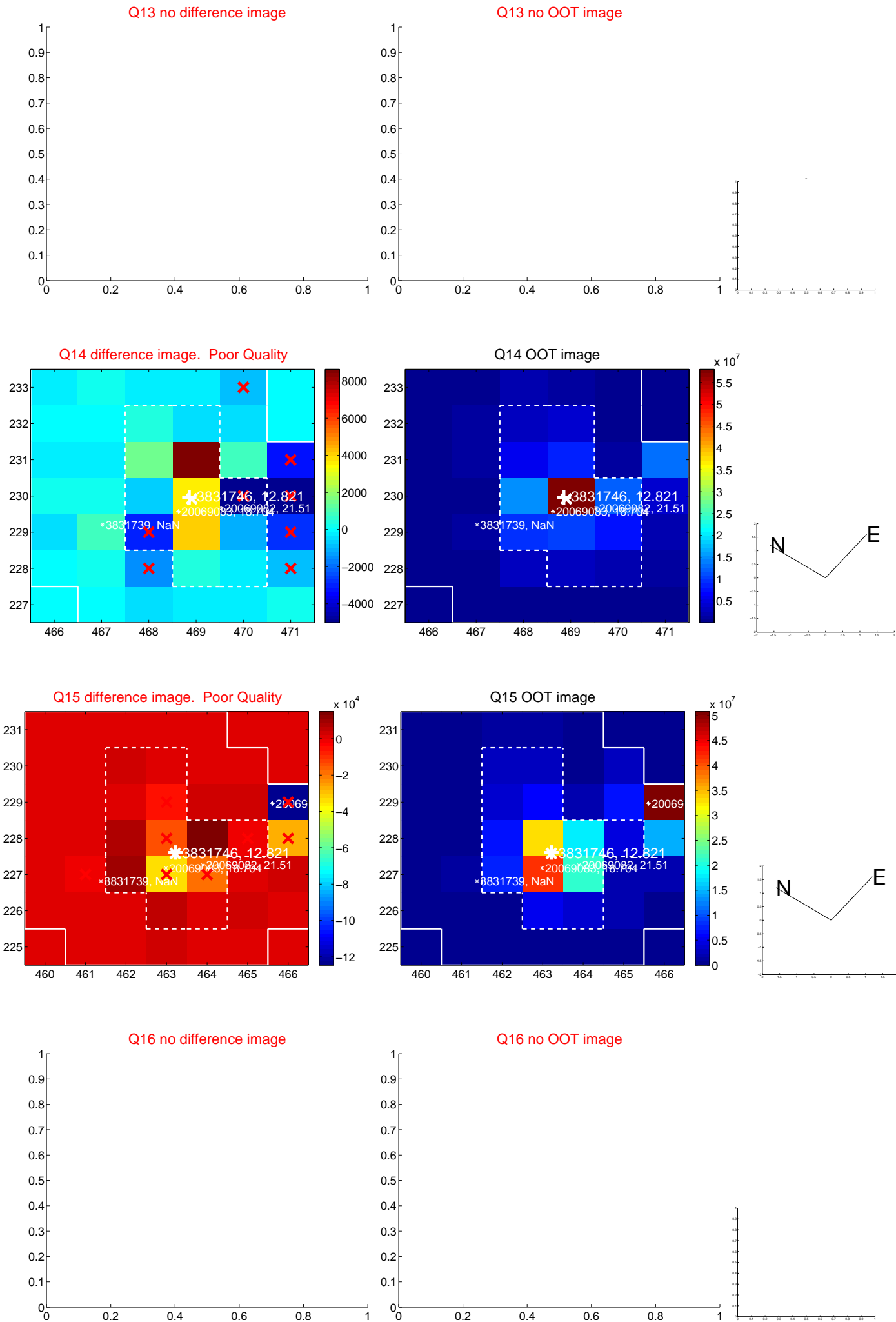
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



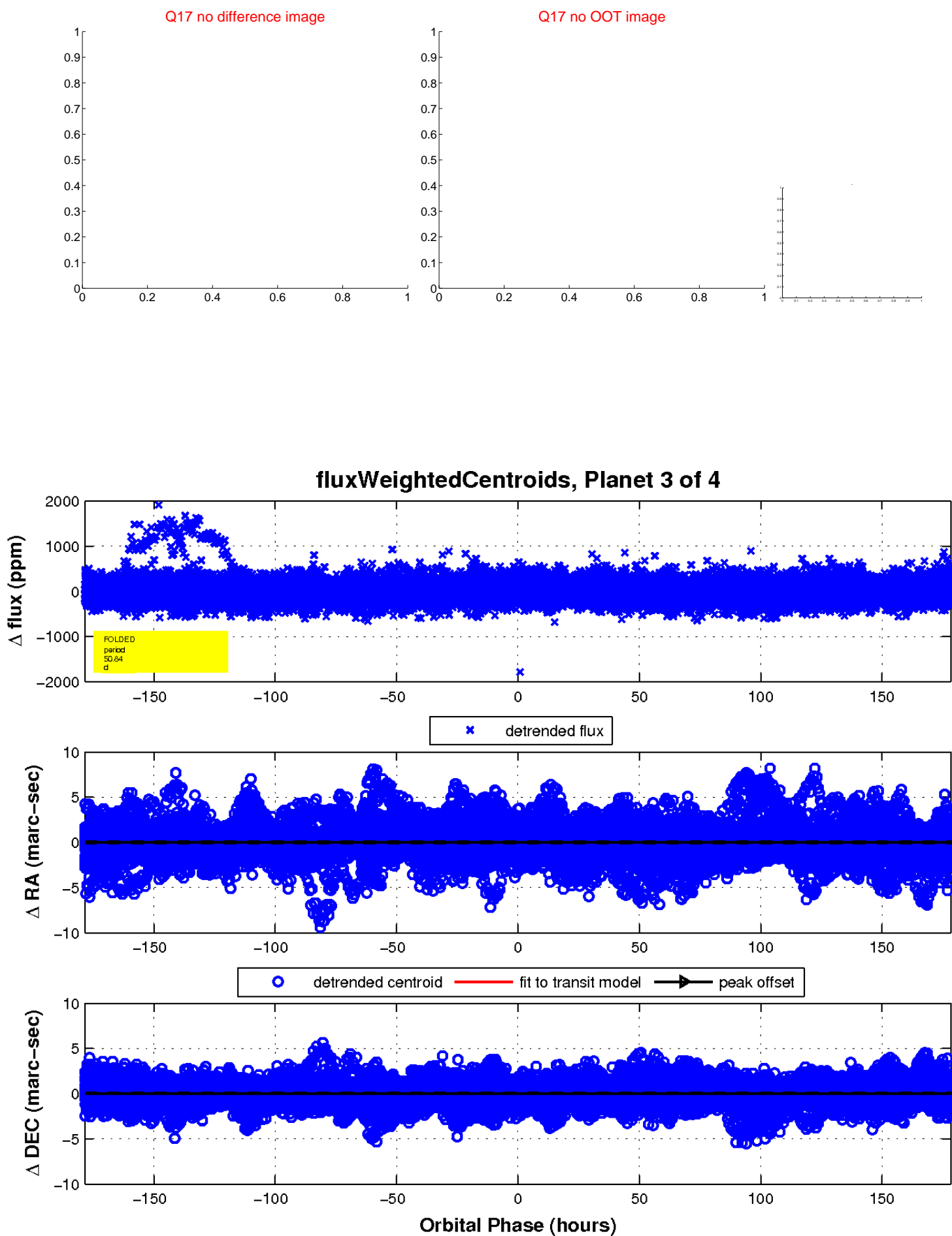
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

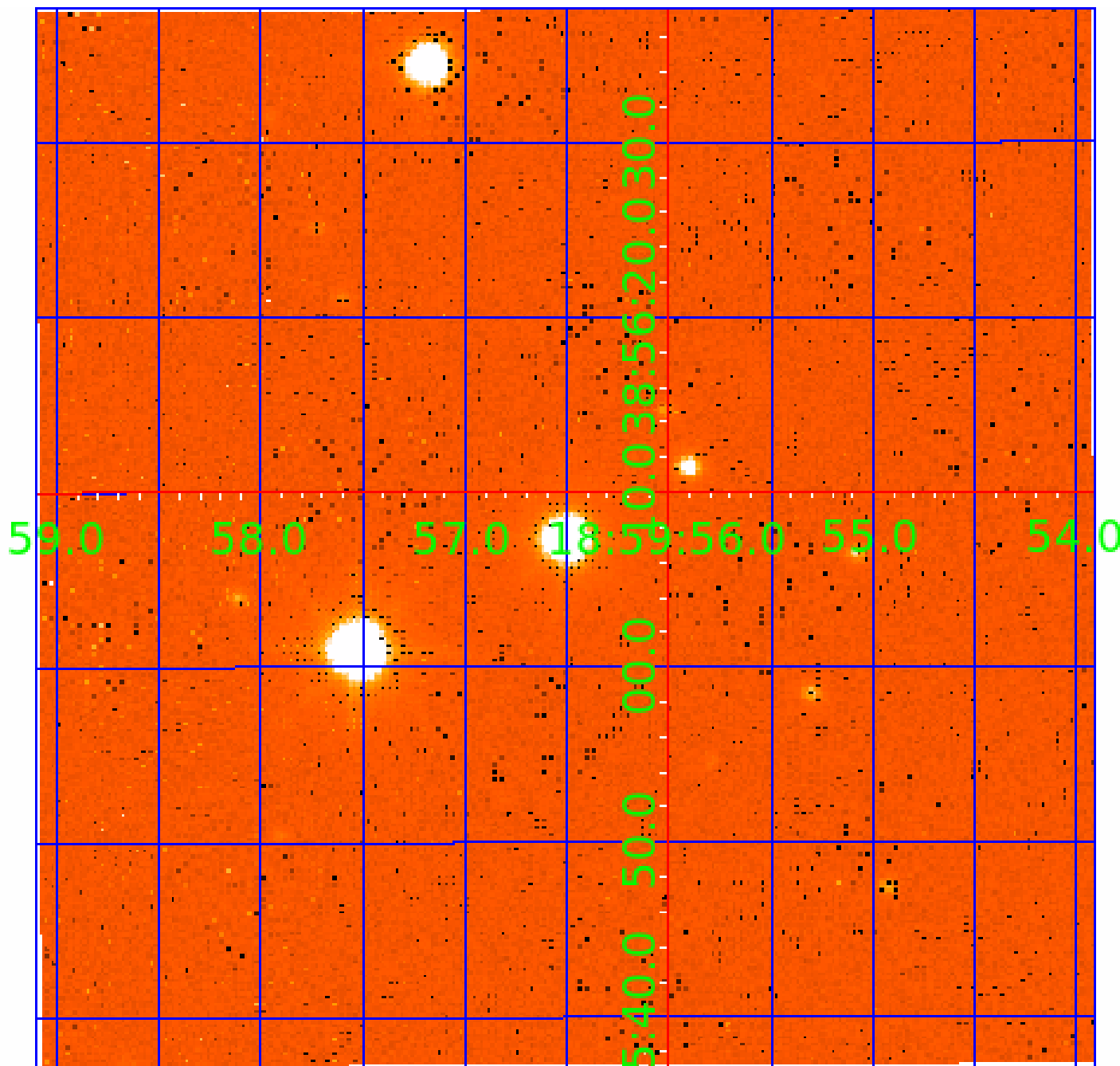


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003831746

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})
003831746-01	OBS	No	1.860586	133.016963	22.6	12.998	9.1	7.7	2.62	6141	1.25	8648.97
003831746-03	OBS	No	50.839972	156.996285	86.8	59.463	17.0	4.3	2.62	6141	2.60	105.09
003831746-04	OBS	No	62.374582	143.257891	255.3	3.941	11.3	9.7	2.62	6141	4.78	80.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003831746-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003831746-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS—HALO_GHOST
003831746-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET

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

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

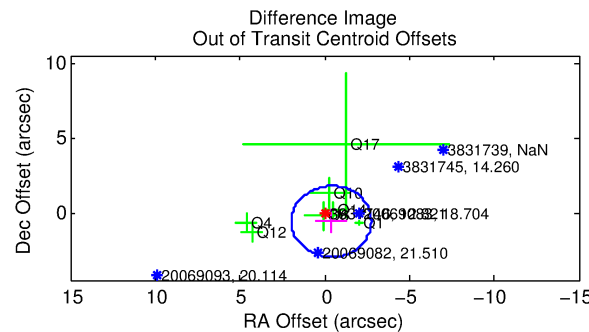
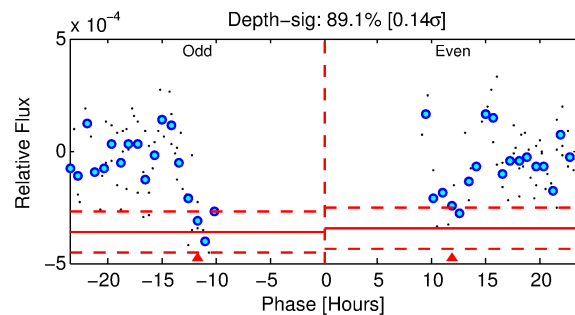
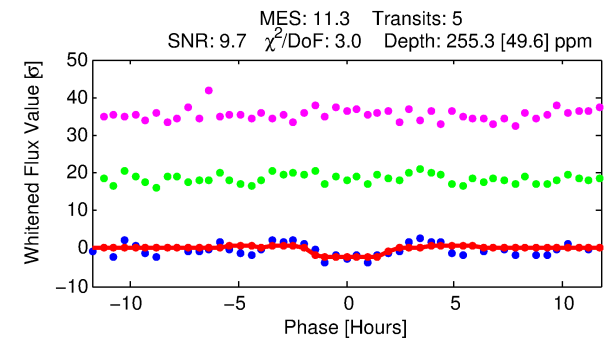
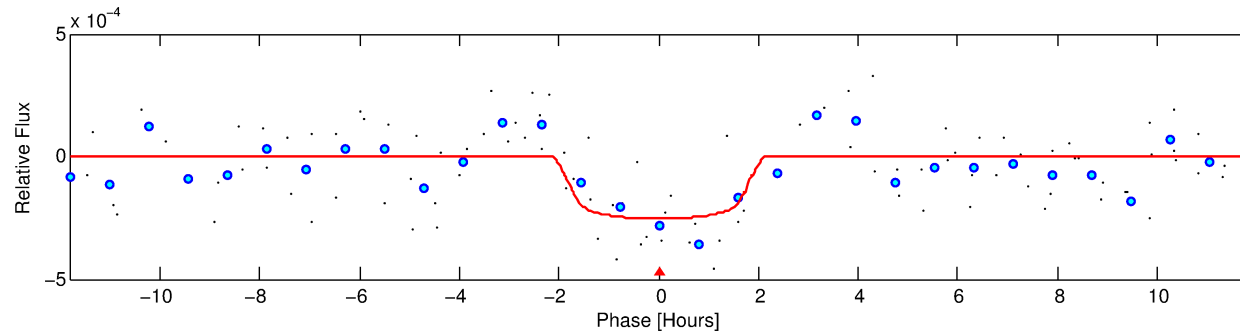
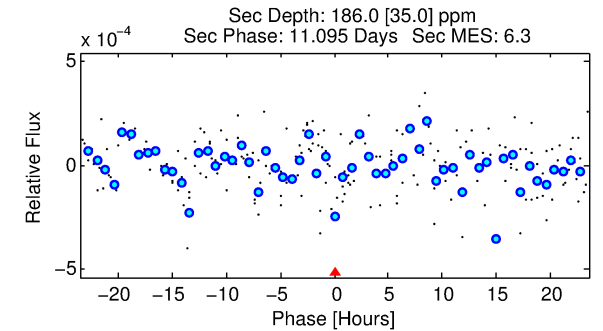
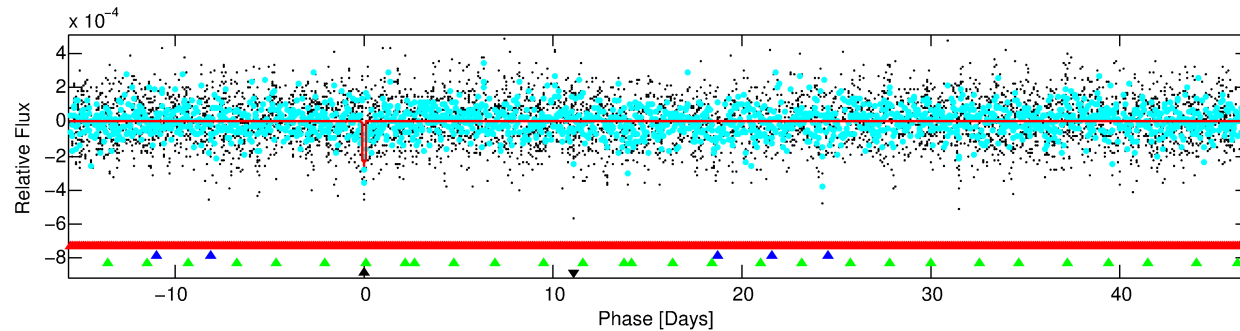
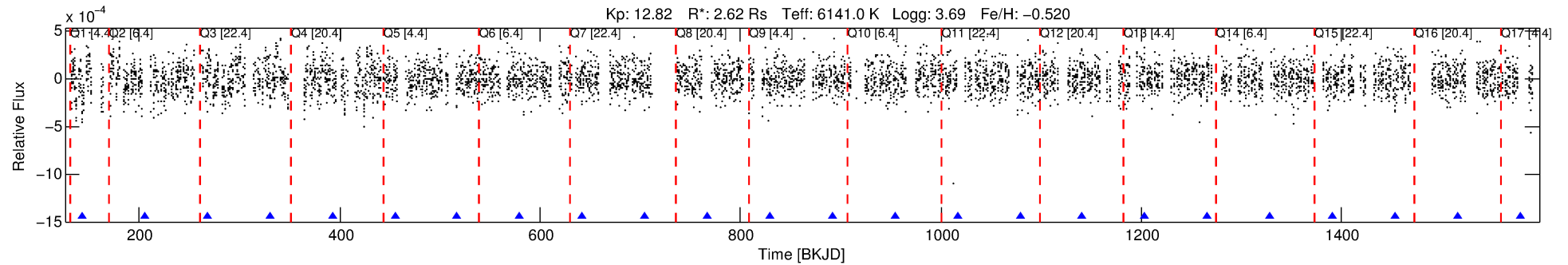
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003831746-04

No Significant Match Found

DV One-Page Summary

KIC: 3831746 Candidate: 4 of 4 Period: 62.375 d



DV Fit Results:

Period = 62.37458 [0.00074] d
Epoch = 143.2579 [0.0121] BKJD
Rp/R* = 0.0167 [0.0116]
a/R* = 64.50 [246.56]
b = 0.87 [1.11]
Seff = 80.01 [46.62]
Teq = 763 [111] K
Rp = 4.78 [3.82] Re
a = 0.3304 [0.1203] AU
Ag = 488.75 [739.95] [0.66 σ]
Teffp = 5544 [1951] K [2.45 σ]

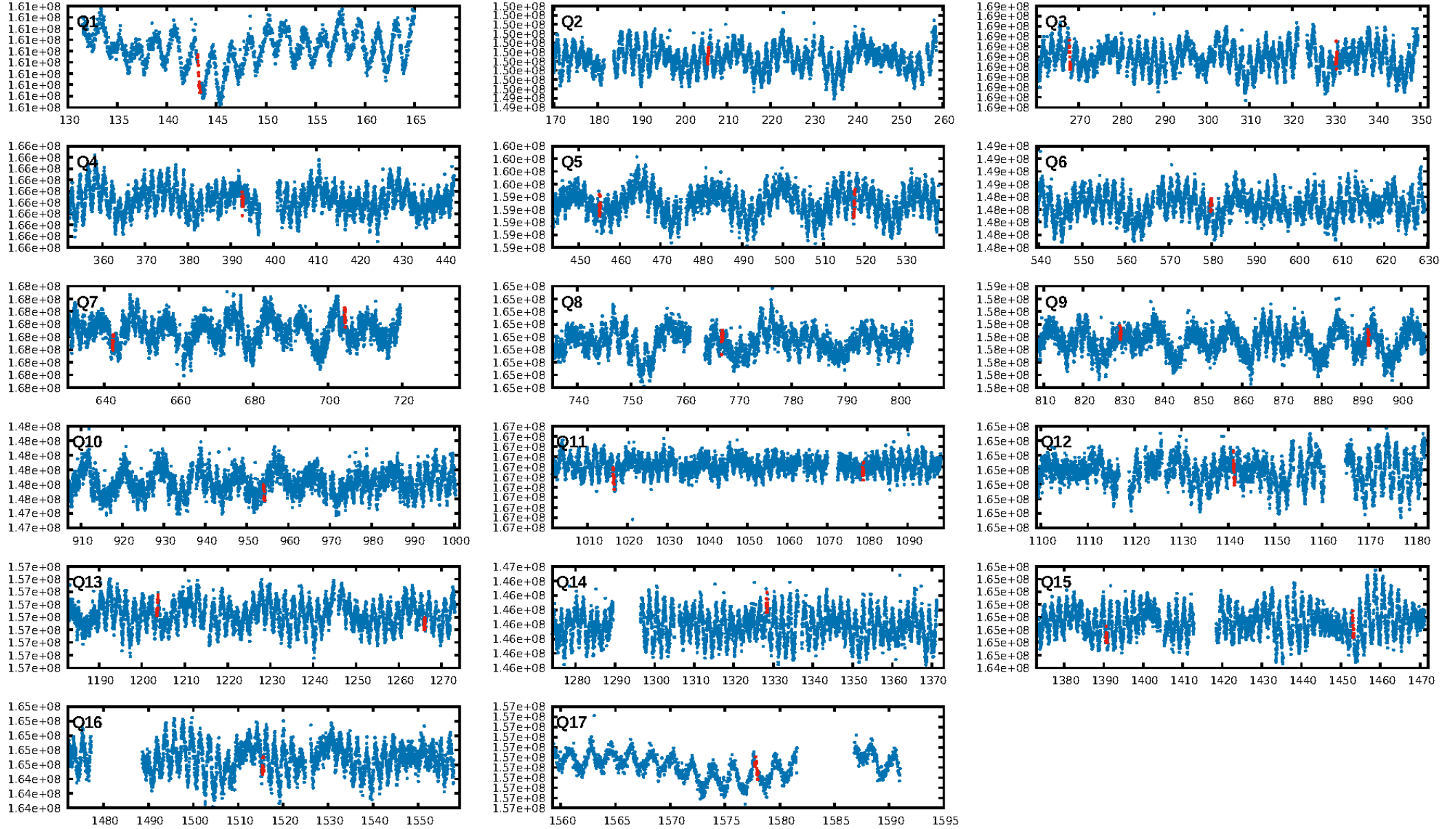
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.65 σ]
LongPeriod-sig: 100.0% [156.50 σ]
ModelChiSquare2-sig: 1.0%
ModelChiSquareGof-sig: 36.4%
Bootstrap-pfa: 1.64e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -2.661
Centroid-sig: 81.5%
Centroid-so: 1.720 arcsec [1.99 σ]
OotOffset-rm: 0.714 arcsec [0.90 σ]
OotOffset-st: 3/0/2/2 [7]
KicOffset-rm: 0.647 arcsec [0.82 σ]
KicOffset-st: 3/0/2/2 [7]
DiffImageQuality-fgm: 0.14 [1/7]
DiffImageOverlap-fno: 0.53 [9/17]

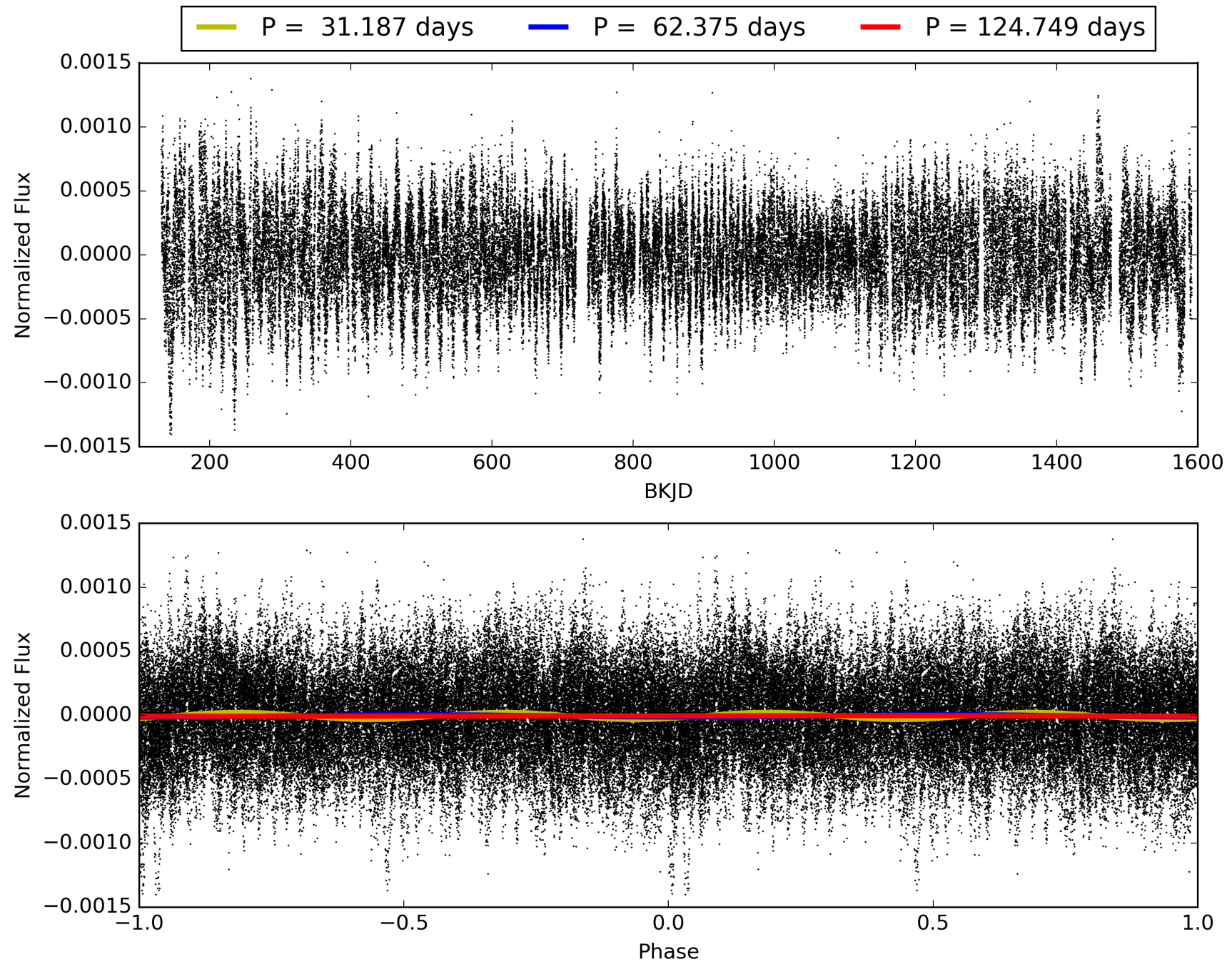
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 15:17:54 Z

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

TCE 003831746-04, PDC Light Curves

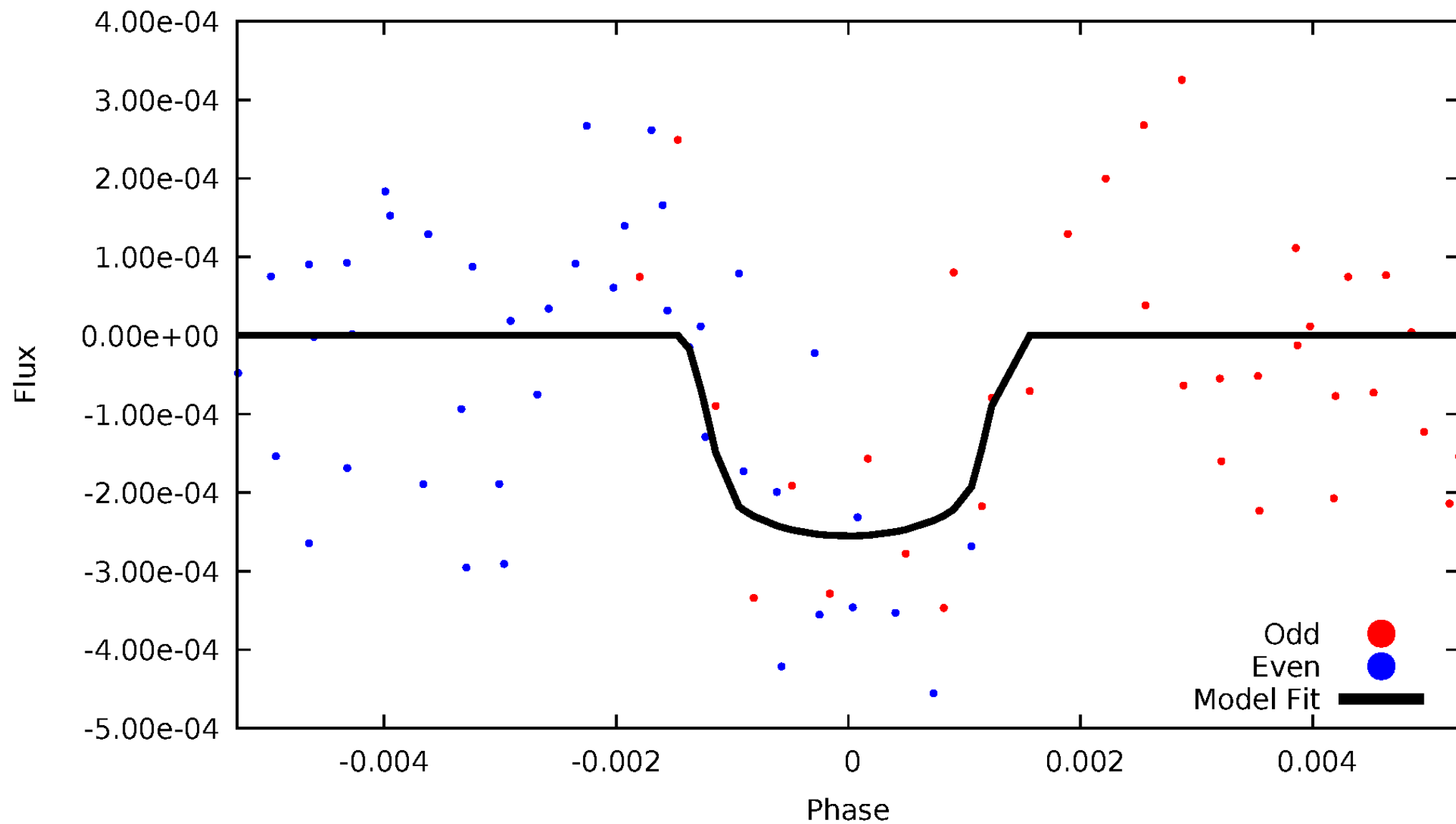


TCE 003831746-04



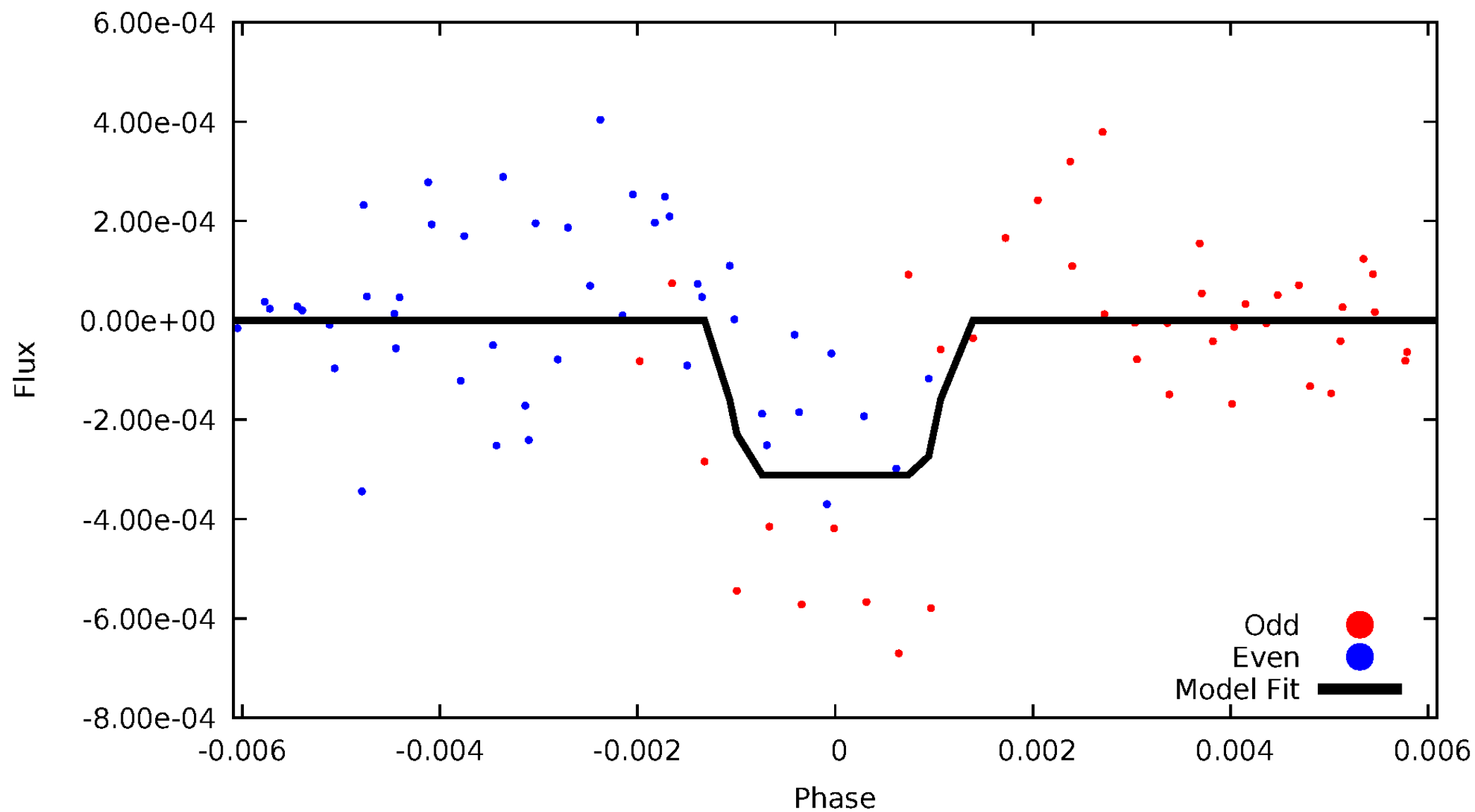
DV Odd/Even

TCE 003831746-04



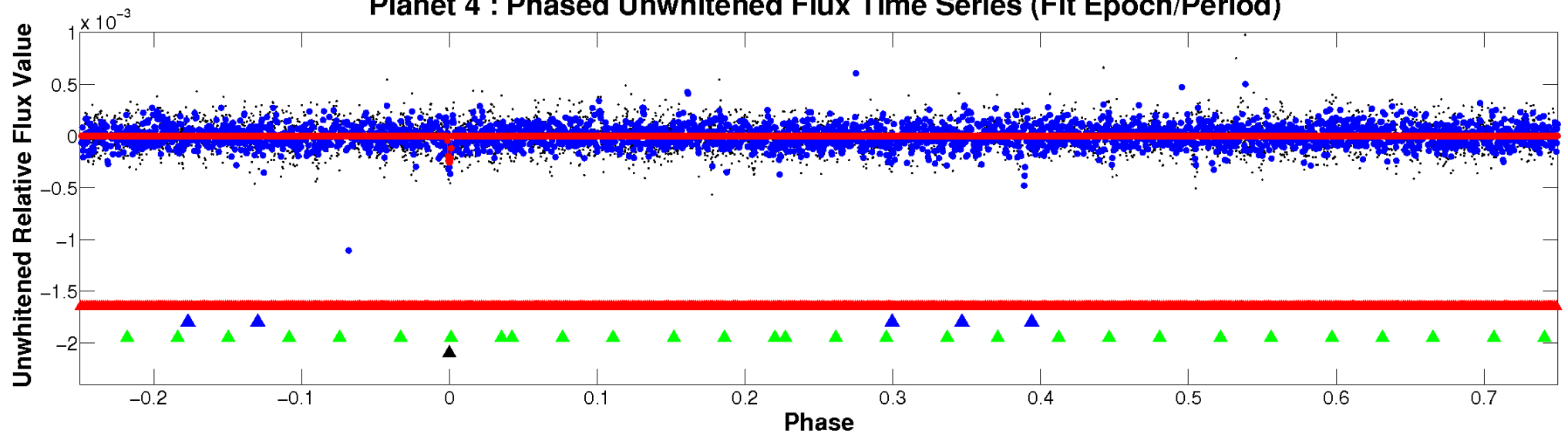
ALT Odd/Even

TCE 003831746-04

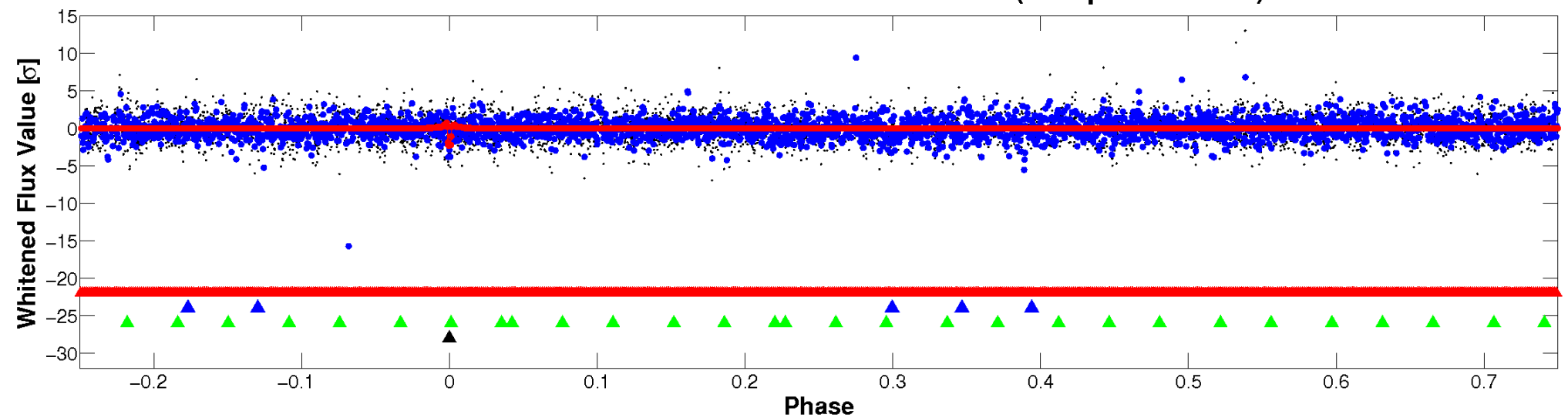


Non-Whitened Vs. Whitened Light Curve

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

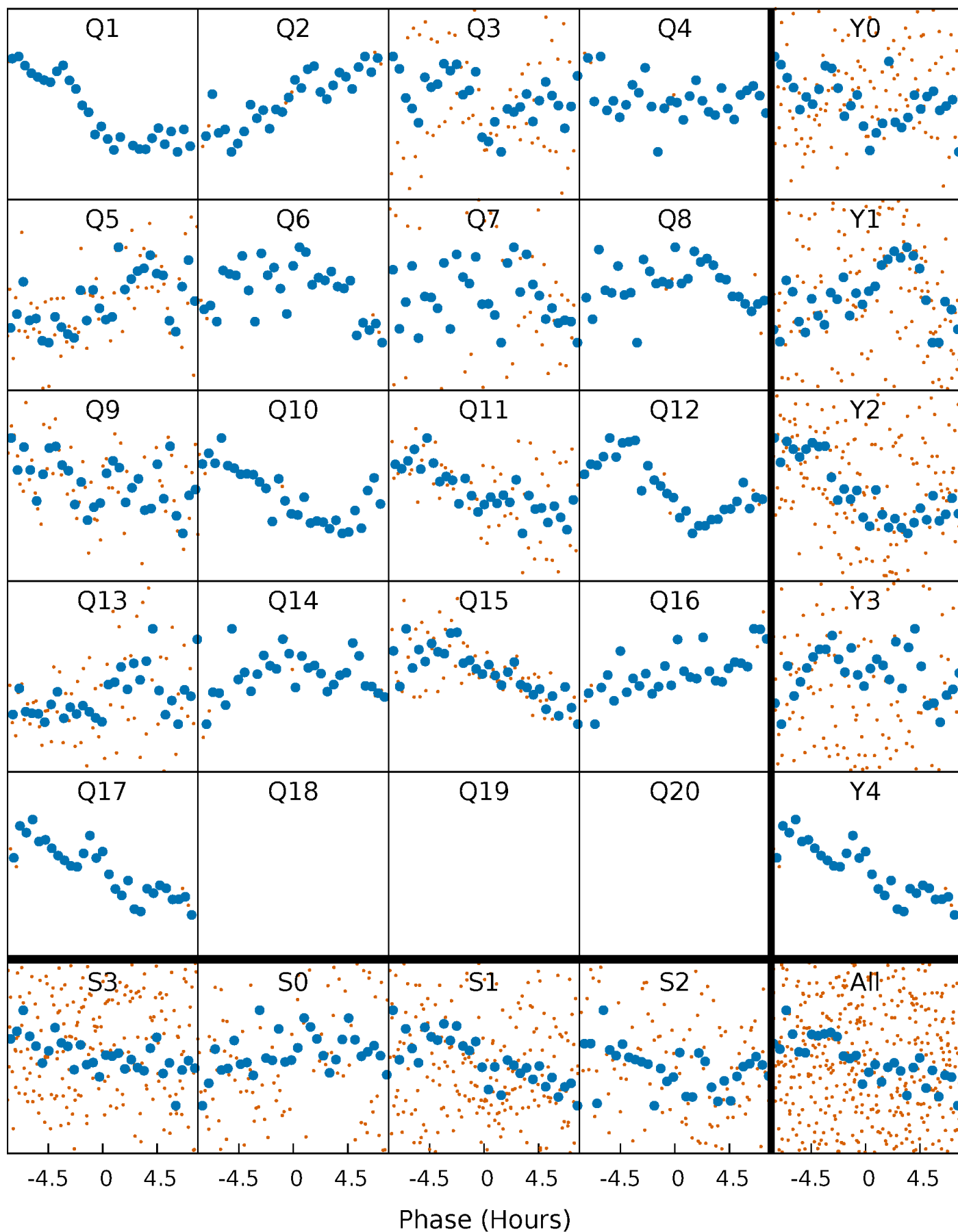


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



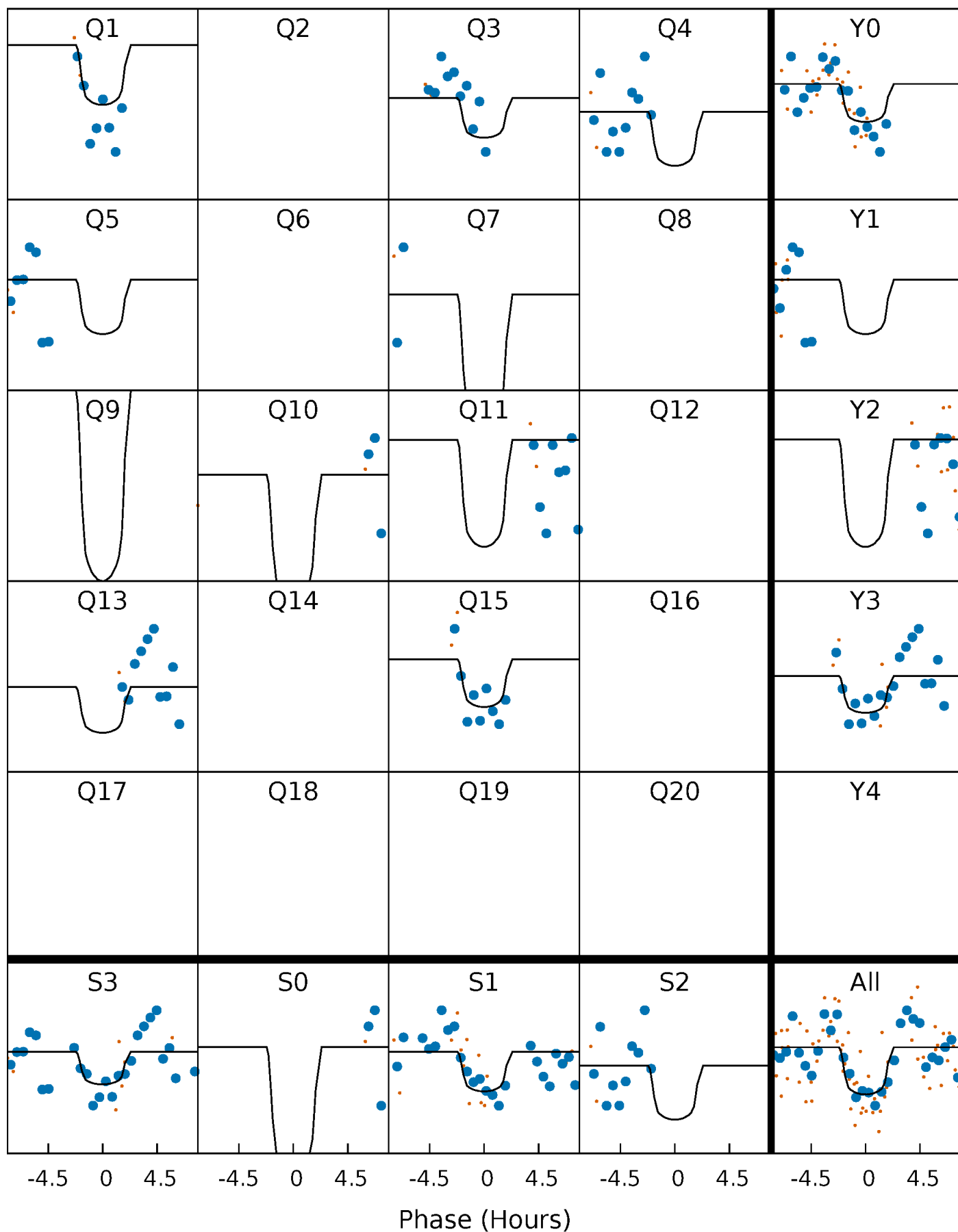
PDC Quarter-Phased Transit Curves

TCE 003831746-04 P= 62.374582 Days $T_0=143.257891$ (BKJD)



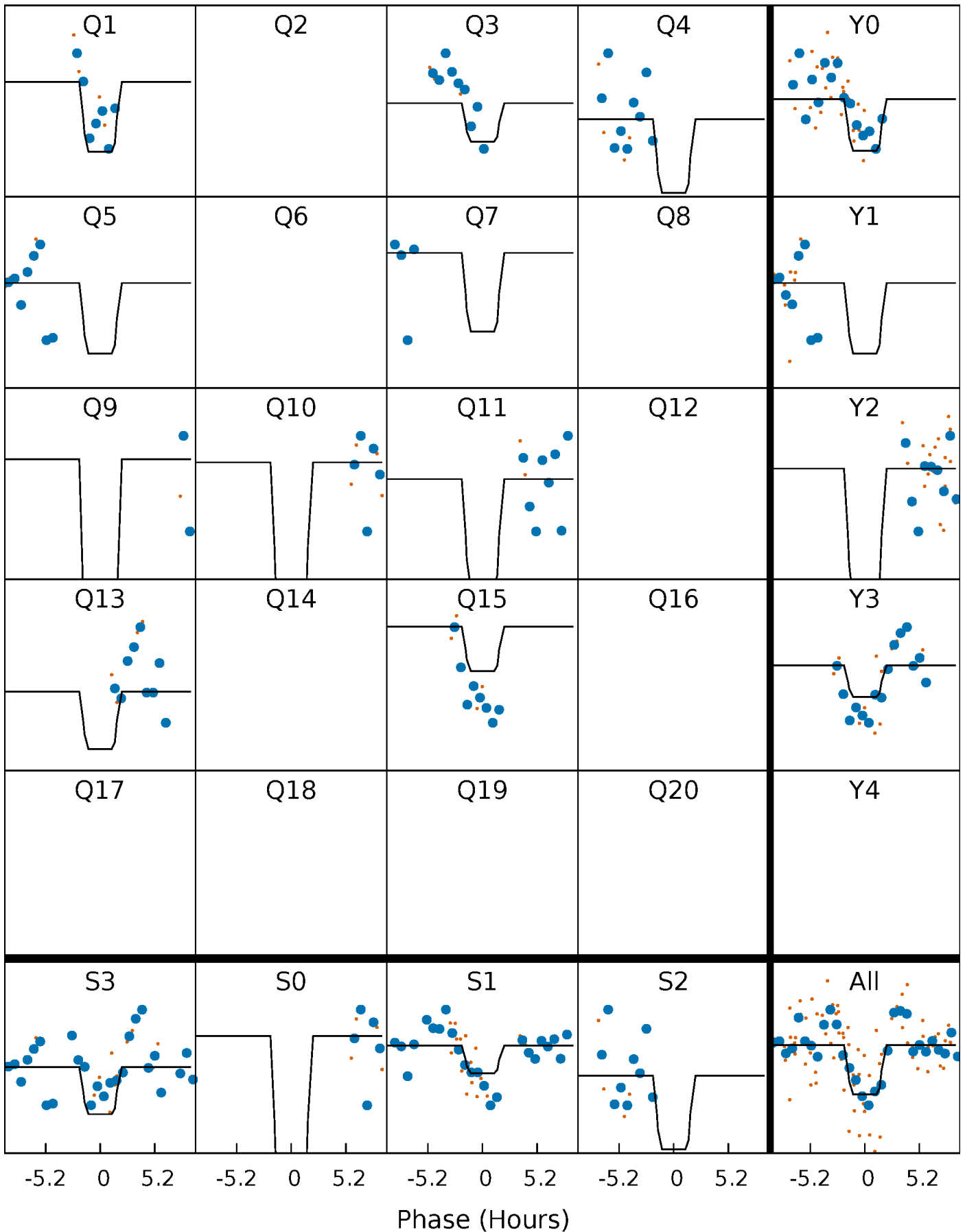
DV Quarter-Phased Transit Curves

TCE 003831746-04 P= 62.374582 Days $T_0=143.257891$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

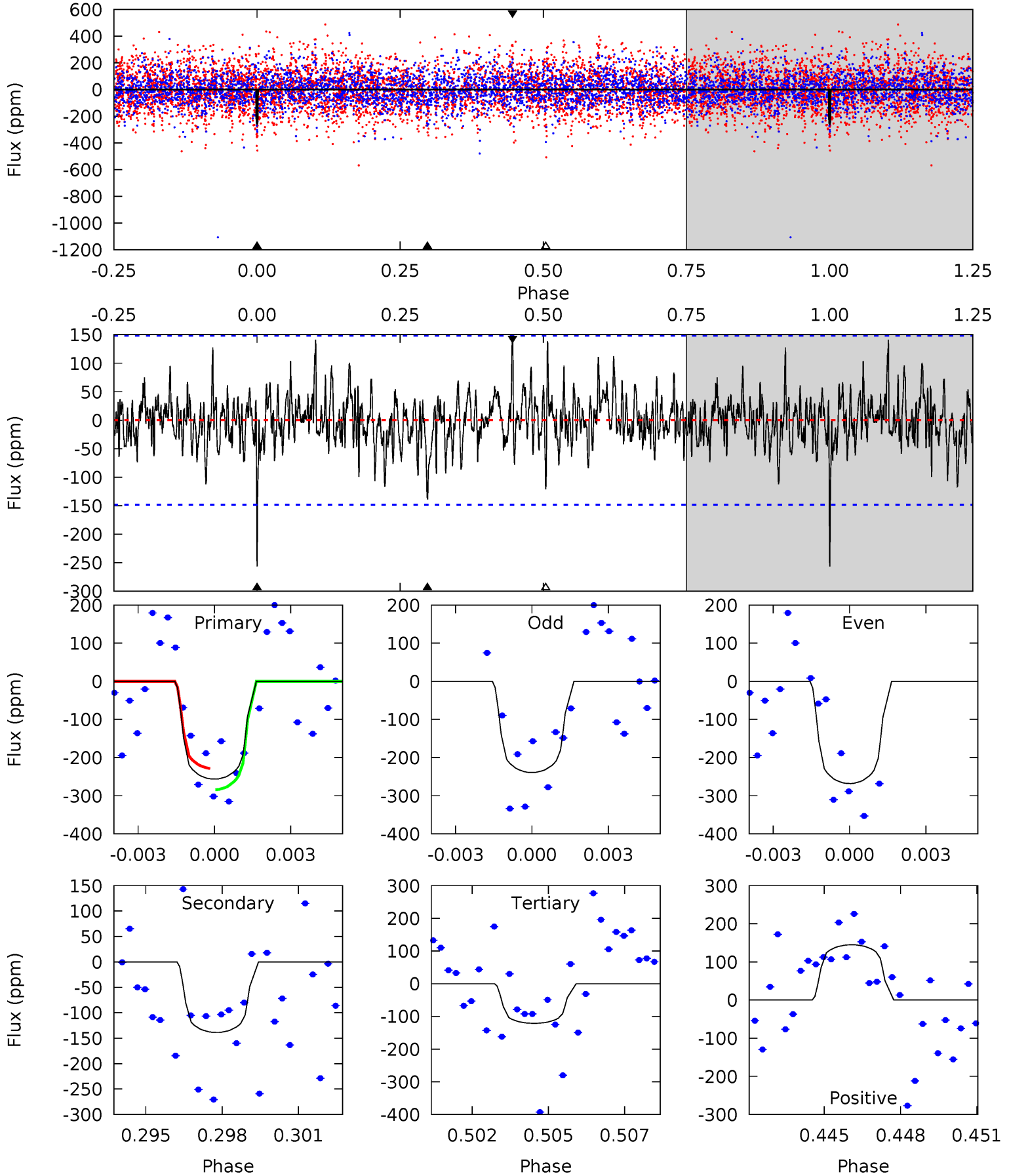
TCE 003831746-04 $P = 62.374771$ Days $T_0 = 143.265112$ (BKJD)



DV Model-Shift Uniqueness Test

003831746-04, P = 62.374582 Days, E = 80.883309 Days

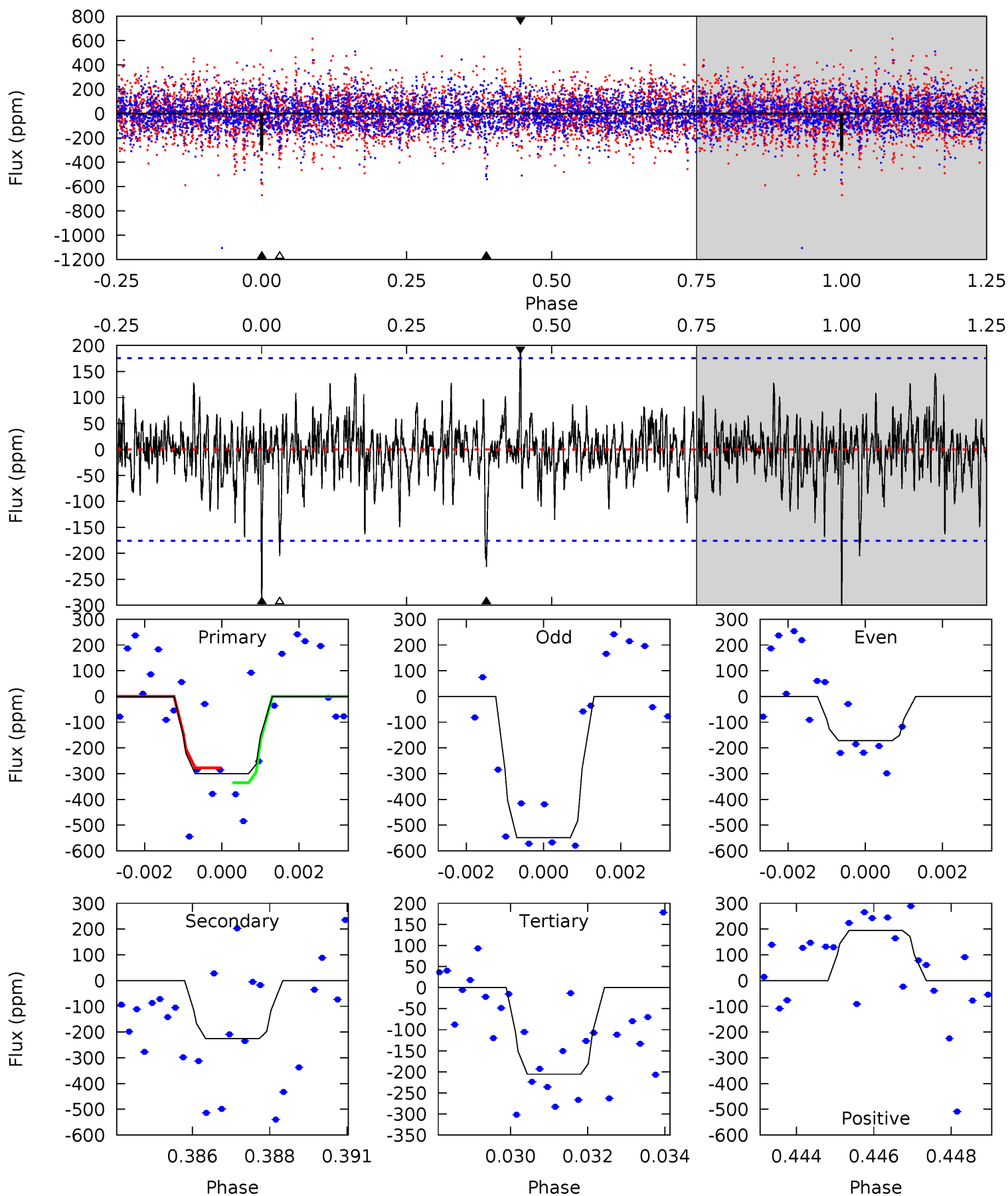
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.11	4.93	4.31	5.15	5.26	2.99	1.35	4.80	3.96	0.62	-0.22	0.51	0.86	0.36	0.99



Alt Model-Shift Uniqueness Test

003831746-04, P = 62.374771 Days, E = 80.890341 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.07	6.83	6.21	5.88	5.31	3.07	1.35	2.86	3.19	0.62	0.95	5.52	1.26	0.39	0.85



Stellar Parameters For KIC 003831746

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6141^{+184}_{-166}	$3.694^{+0.330}_{-0.110}$	$-0.520^{+0.350}_{-0.300}$	$2.618^{+0.441}_{-1.028}$	$1.235^{+0.192}_{-0.287}$	$0.097^{+0.241}_{-0.033}$
	+3%/-3%	+9%/-3%	+67%/-58%	+17%/-39%	+16%/-23%	+249%/-34%
Source	PHO1	FLK73	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 003831746-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-139 ± 28	$4.79^{+3.49}_{-2.88}$	1051^{+66}_{-96}	5037^{+2688}_{-861}	379^{+1773}_{-253}
Alt.	-226 ± 33	$4.92^{+3.58}_{-2.82}$	1049^{+67}_{-95}	5558^{+3114}_{-1072}	567^{+2377}_{-376}

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

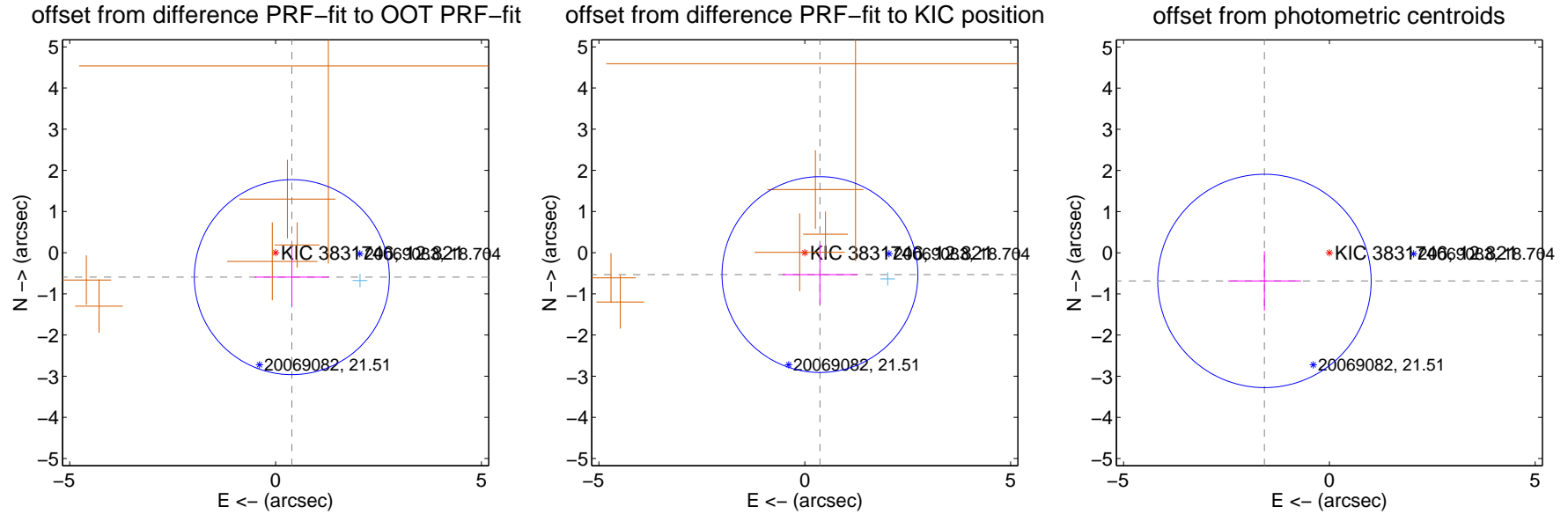
DV Centroid Data

Supplemental centroid analysis for 003831746-04. Kepler magnitude: 12.82. Transit SNR 9.72

There are 1 quarters with good PRF difference image offsets

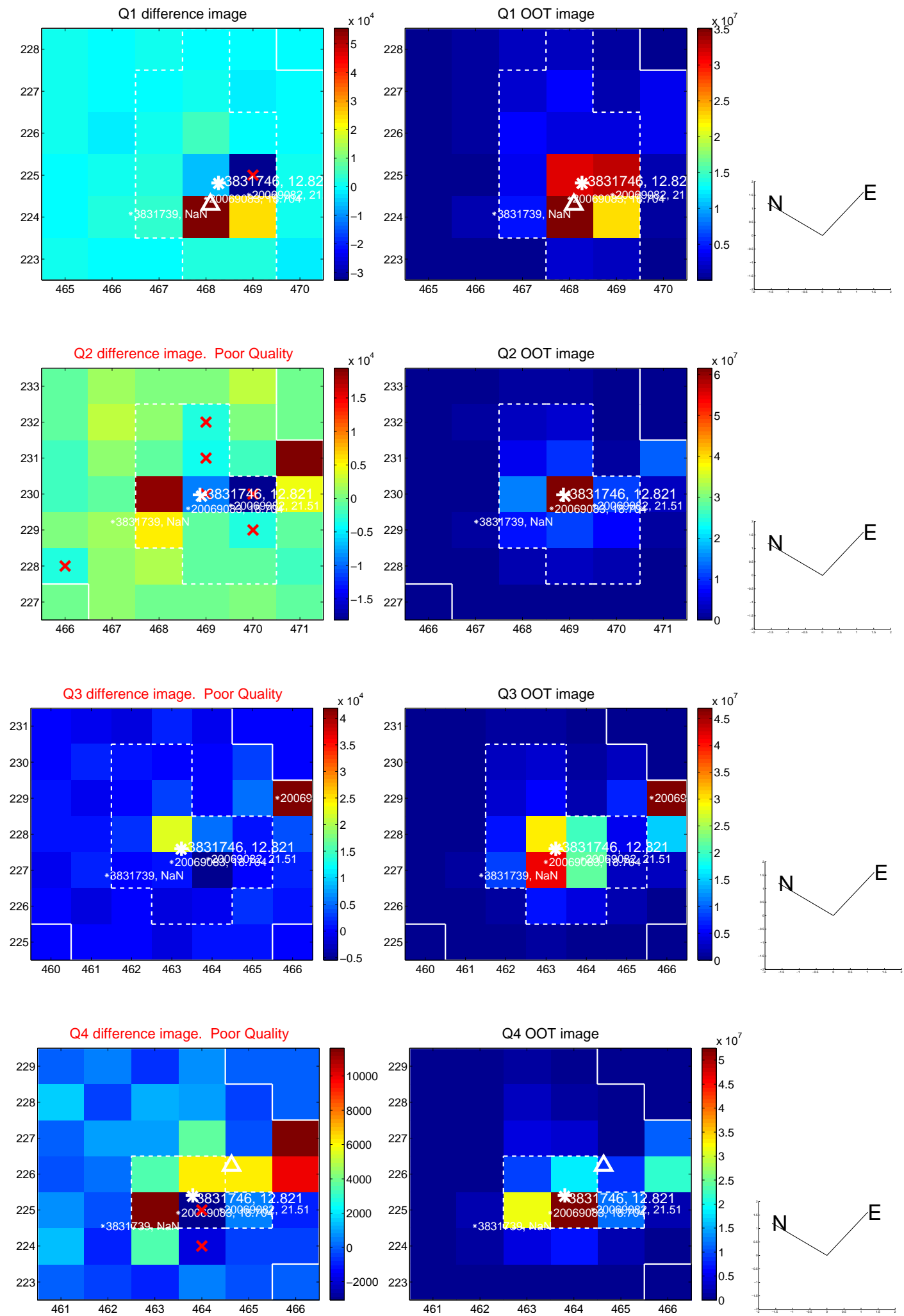
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.714 ± 0.789	0.90	-0.395 ± 0.909	-0.594 ± 0.731
PRF-fit source offset from KIC position	0.647 ± 0.793	0.82	-0.369 ± 0.909	-0.532 ± 0.731
photometric centroid source offset	1.72 ± 0.86	1.99	1.58 ± 0.89	-0.68 ± 0.72

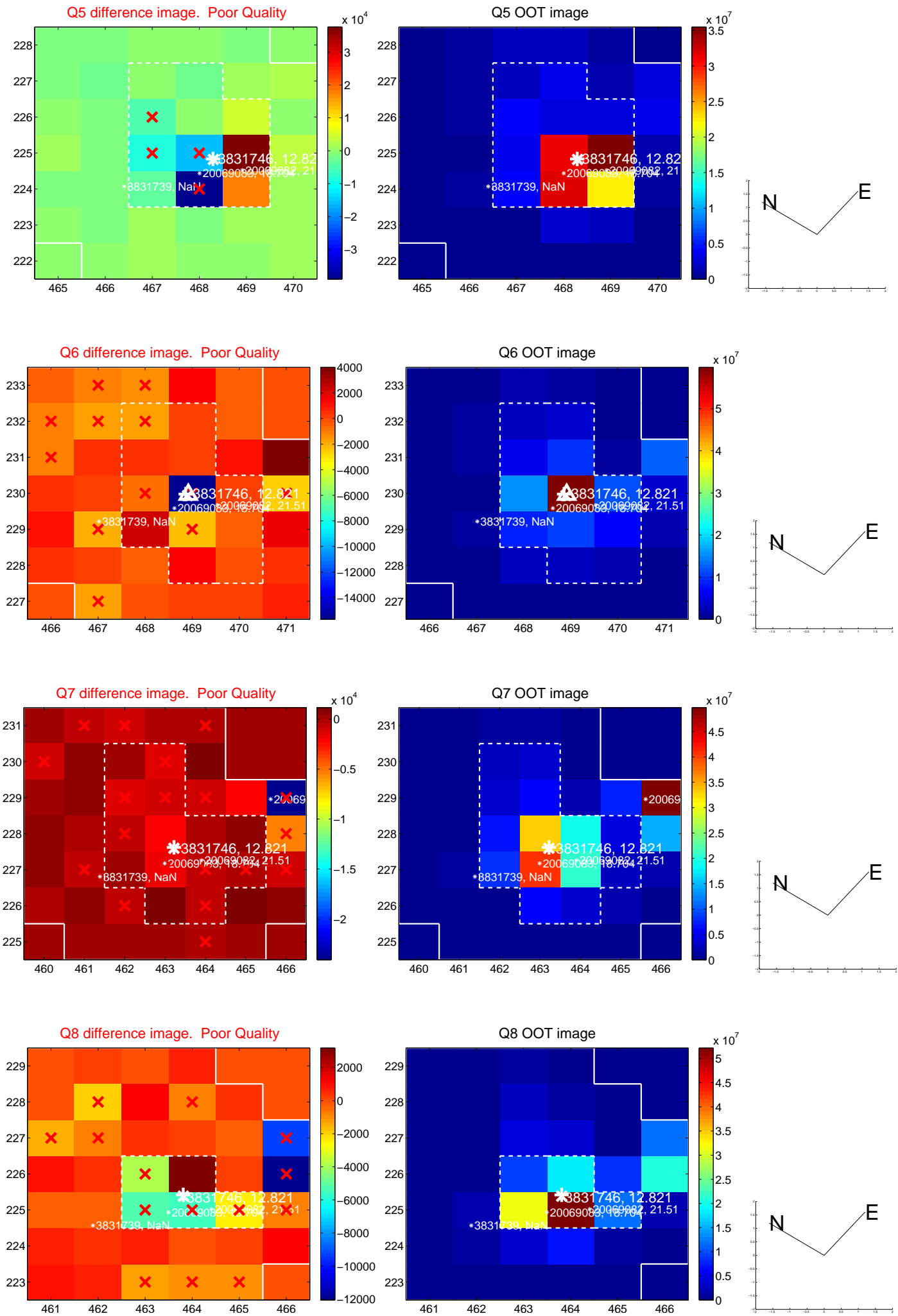


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

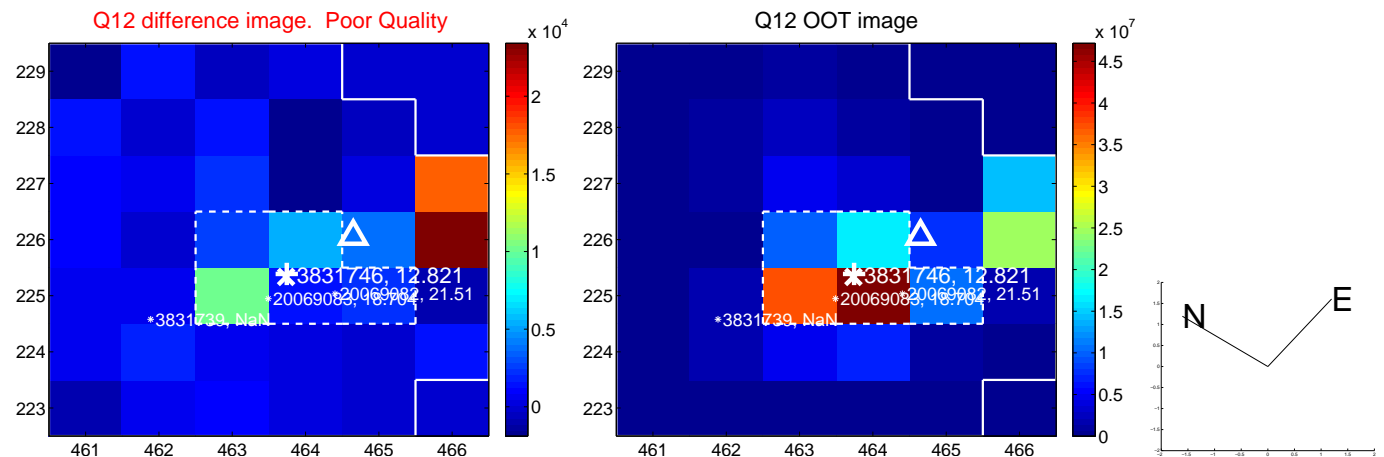
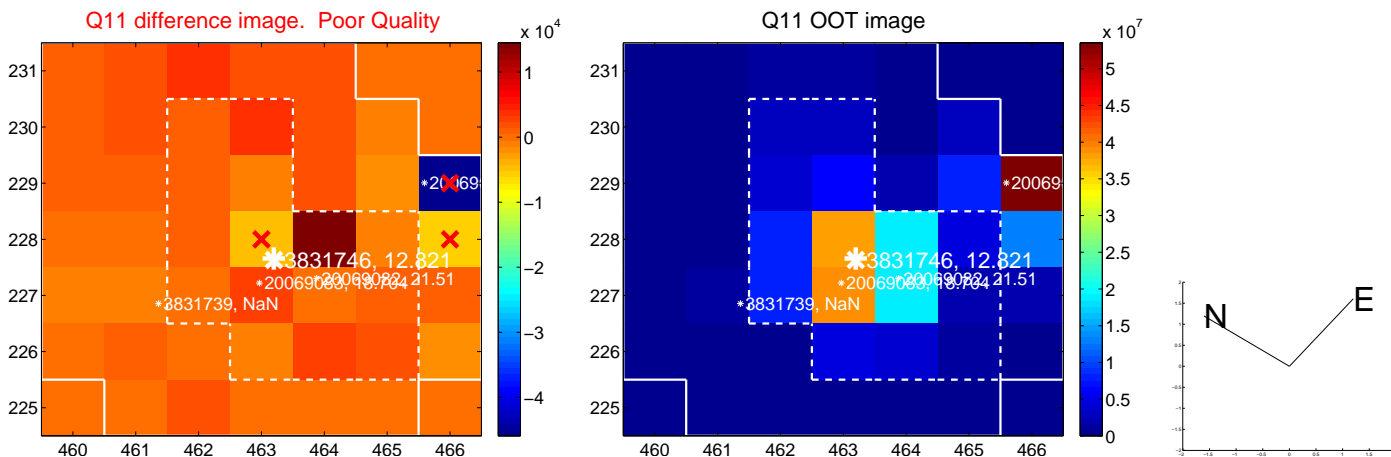
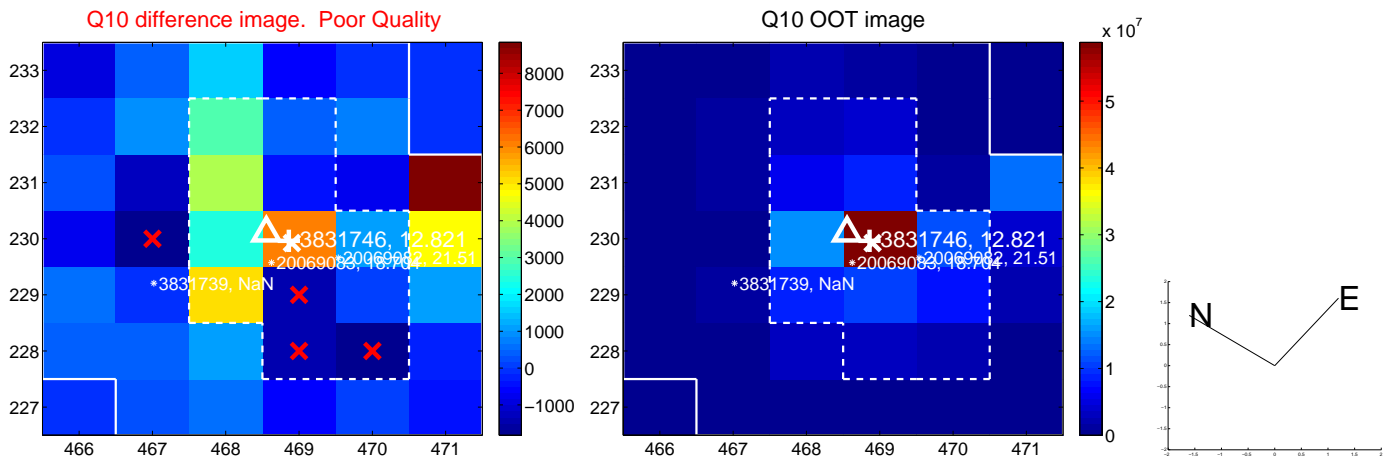
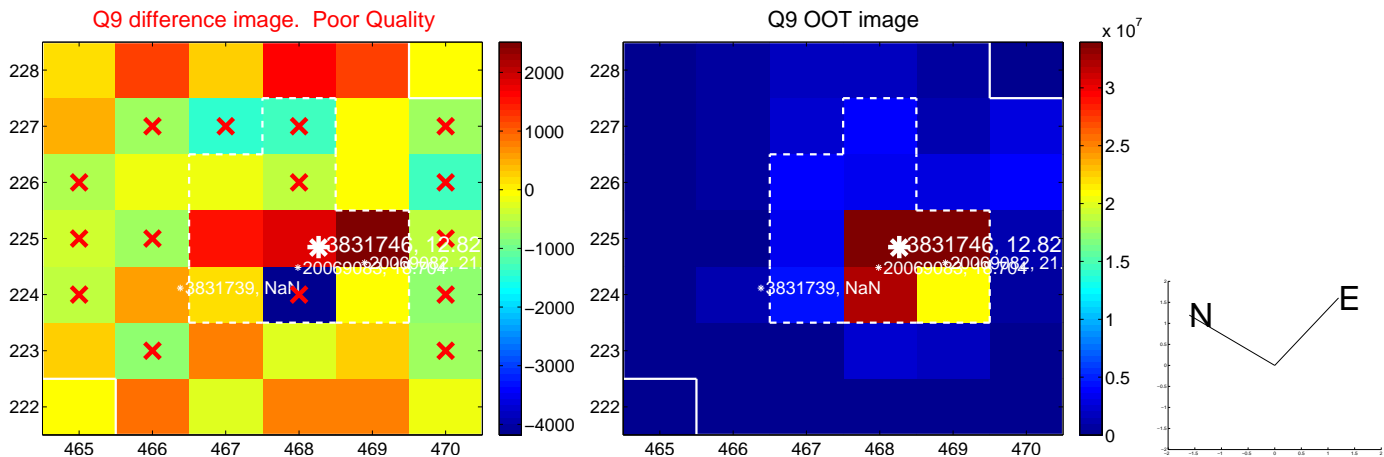
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



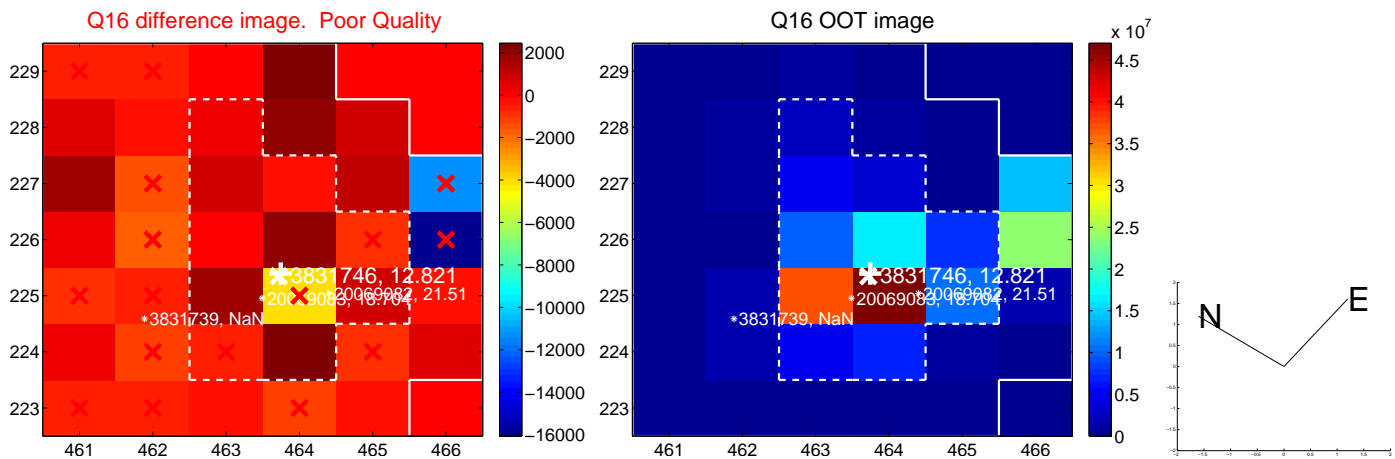
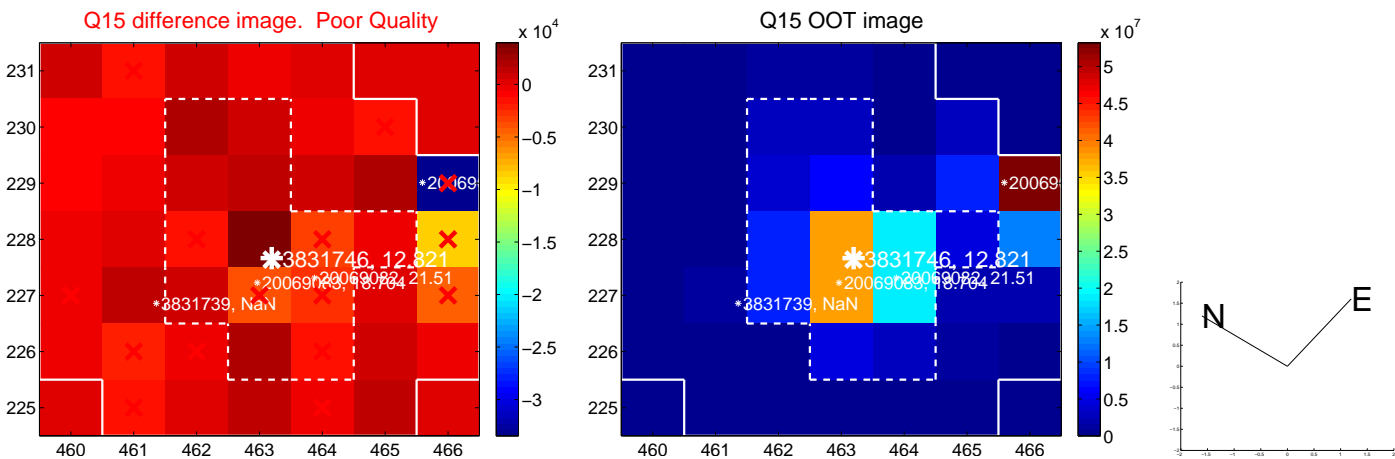
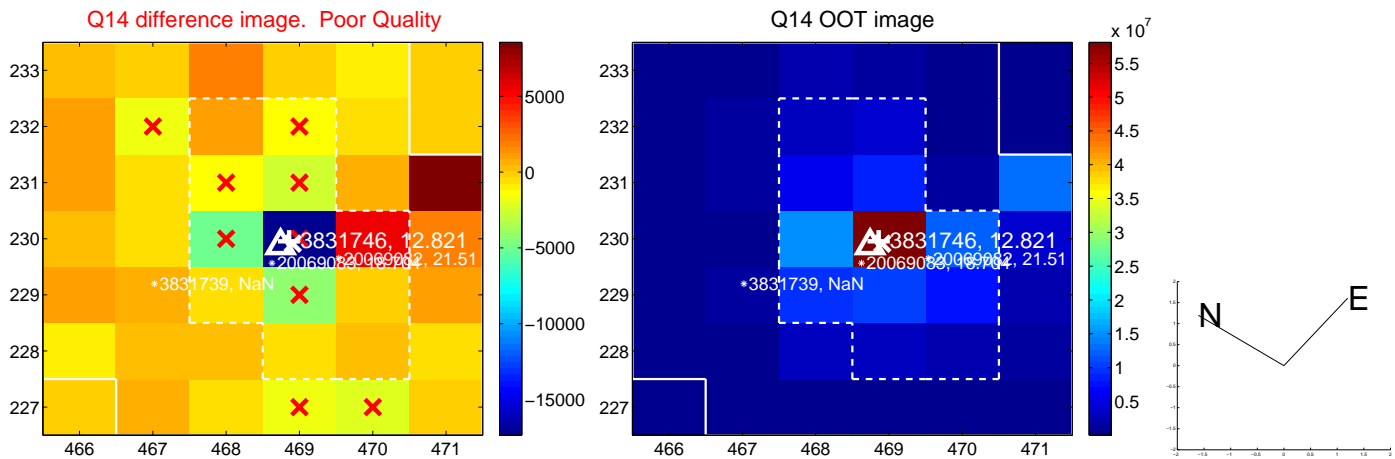
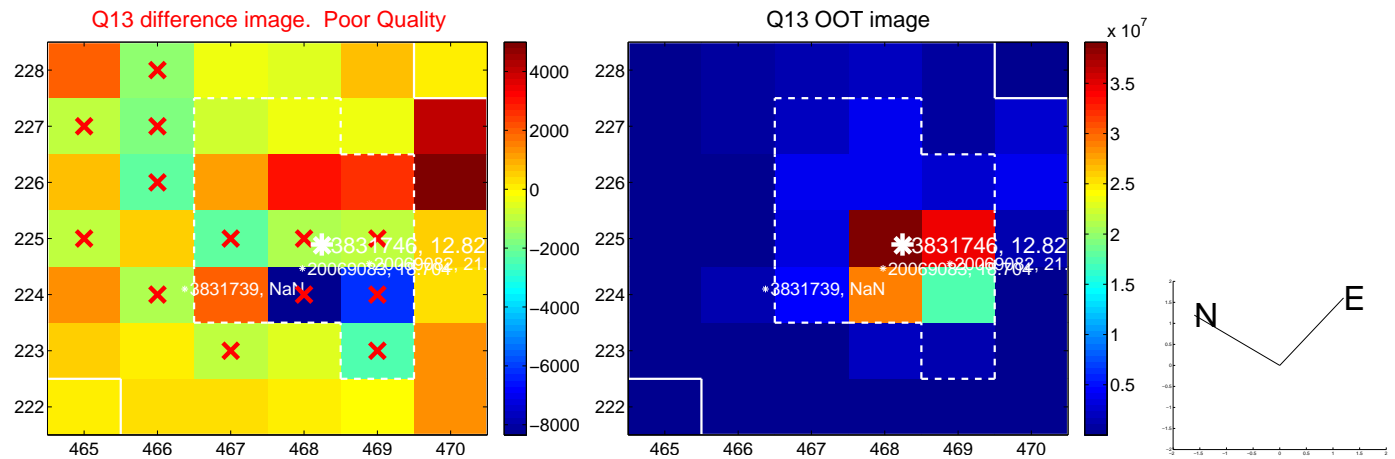
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



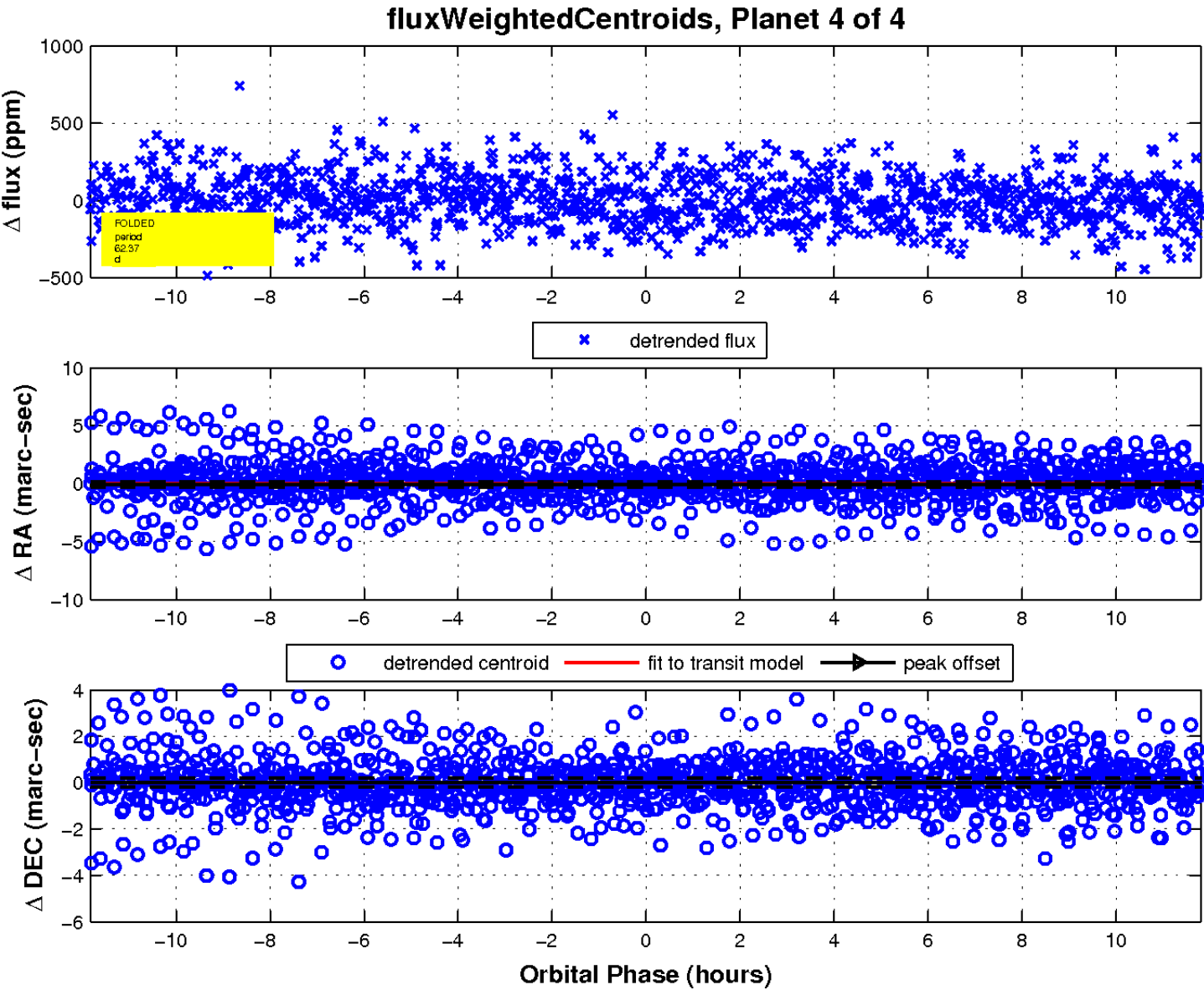
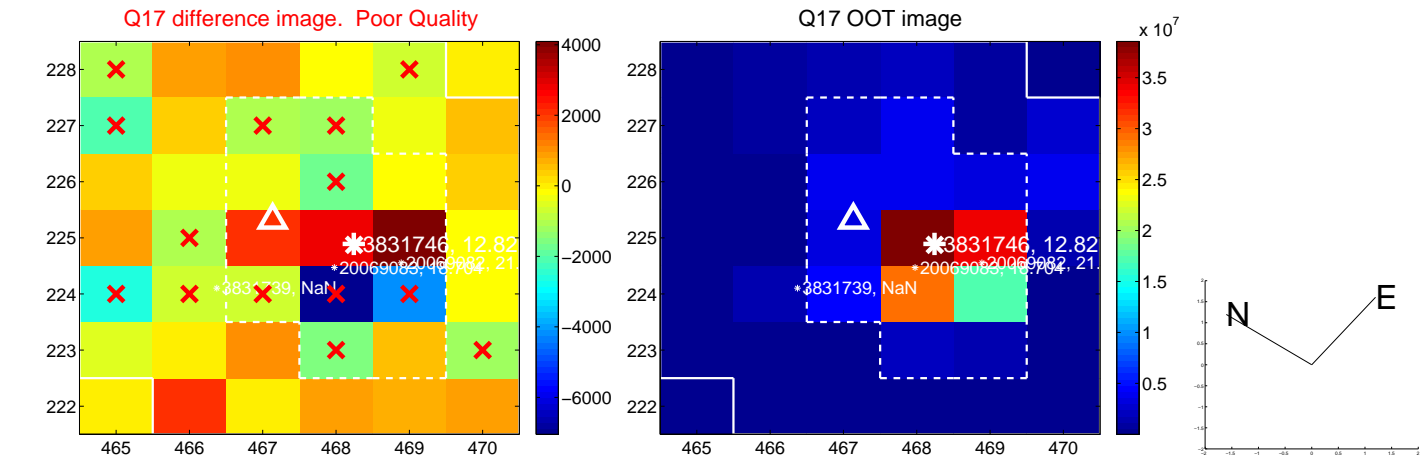
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

