

KIC 008766619

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})
008766619-01	OBS	No	0.585600	131.649198	3.1	0.999	9.0	0.9	3.73	6569	0.77	0.00
008766619-02	OBS	No	0.553785	131.740232	62.2	1.660	9.1	9.8	3.73	6569	3.45	0.00
008766619-03	OBS	No	0.808622	132.000348	90.8	3.294	9.8	7.2	3.73	6569	4.16	51112.29
008766619-05	OBS	No	71.432459	195.850030	831.8	4.029	10.0	9.4	3.73	6569	13.80	129.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008766619-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008766619-02	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_SATURATED—HALO_GHOST
008766619-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
008766619-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

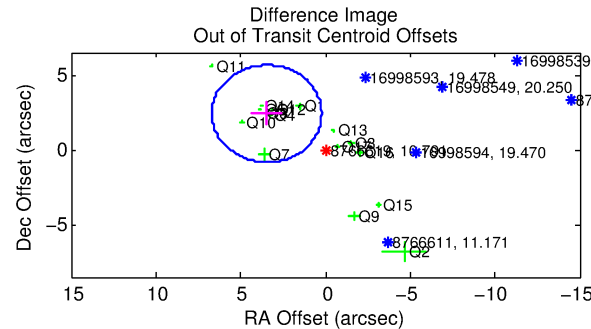
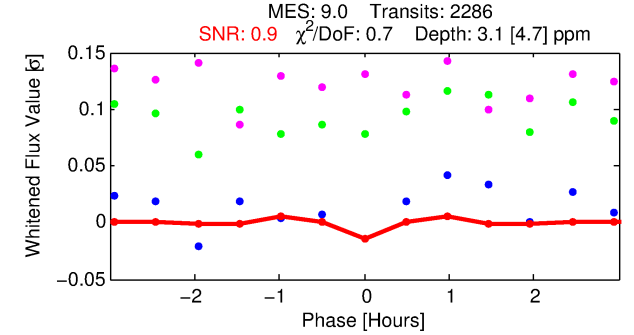
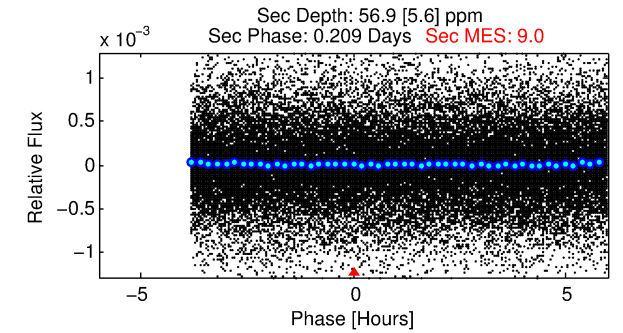
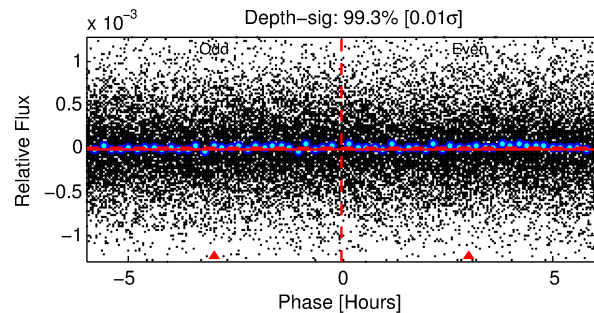
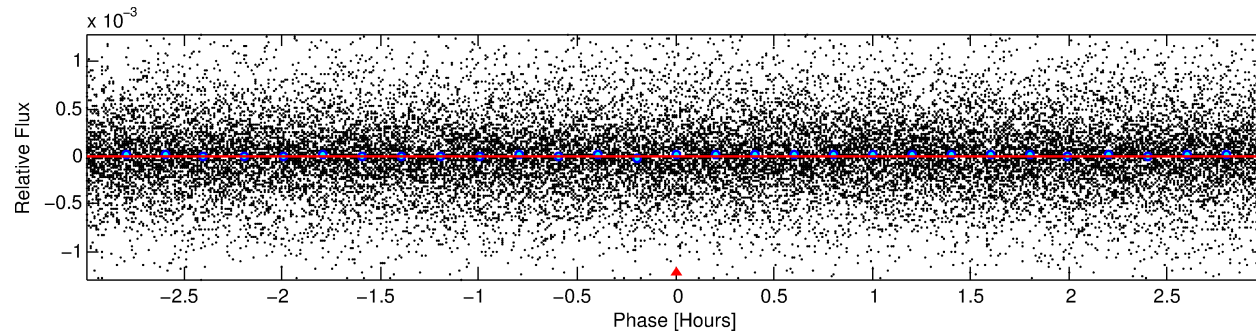
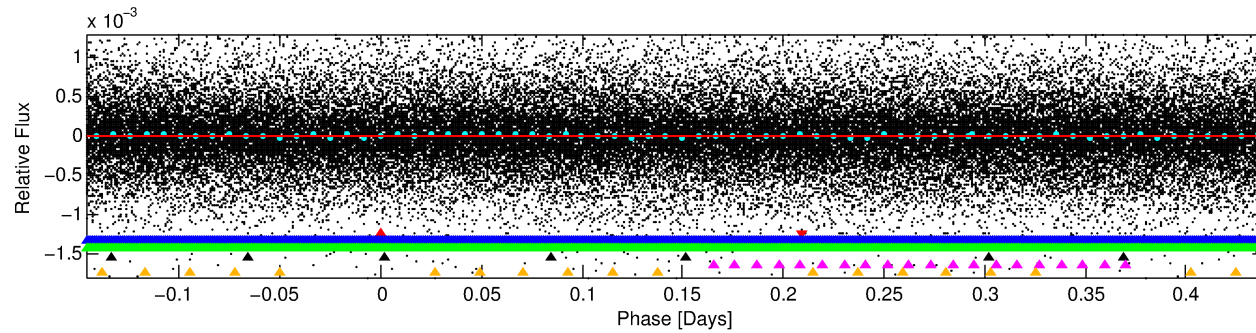
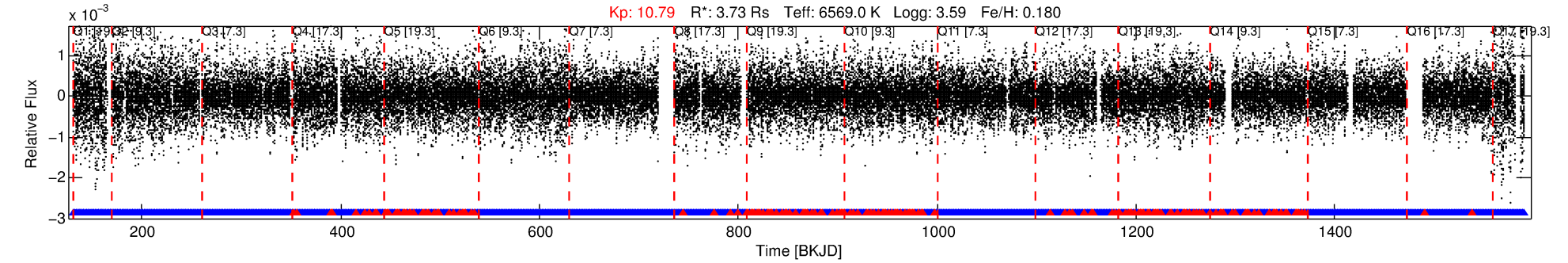
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008766619-01

No Significant Match Found

DV One-Page Summary

KIC: 8766619 Candidate: 1 of 6 Period: 0.586 d



DV Fit Results:

Period = 0.58560 [0.00012] d
Epoch = 131.6492 [0.0103] BKJD
 R_p/R^* = 0.0019 [0.0016]
 a/R^* = 2.21 [3.96]
 b = 0.90 [0.50]
 Seff = N/A
 Teq = N/A
 R_p = 0.77 [0.69] R_e
 a = N/A
 Ag = N/A
 Teffp = N/A

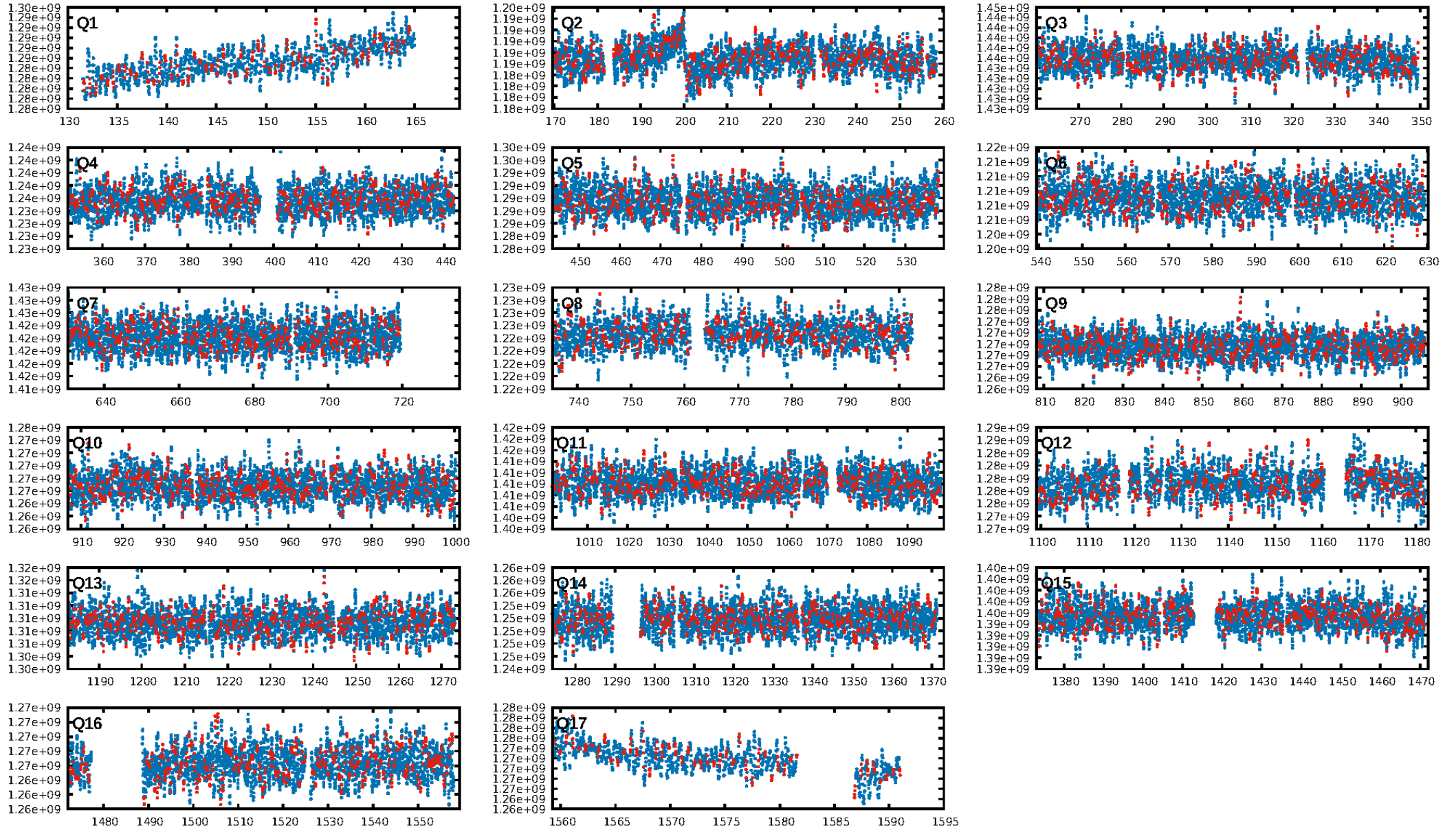
DV Diagnostic Results:

ShortPeriod-sig: 30.7% [0.39 σ]
LongPeriod-sig: 88.0% [1.56 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.91 [1994/2182]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 4.210 arcsec [3.89 σ]
KicOffset-rm: 3.515 arcsec [3.21 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.31 [5/16]
DiffImageOverlap-fno: 0.88 [15/17]

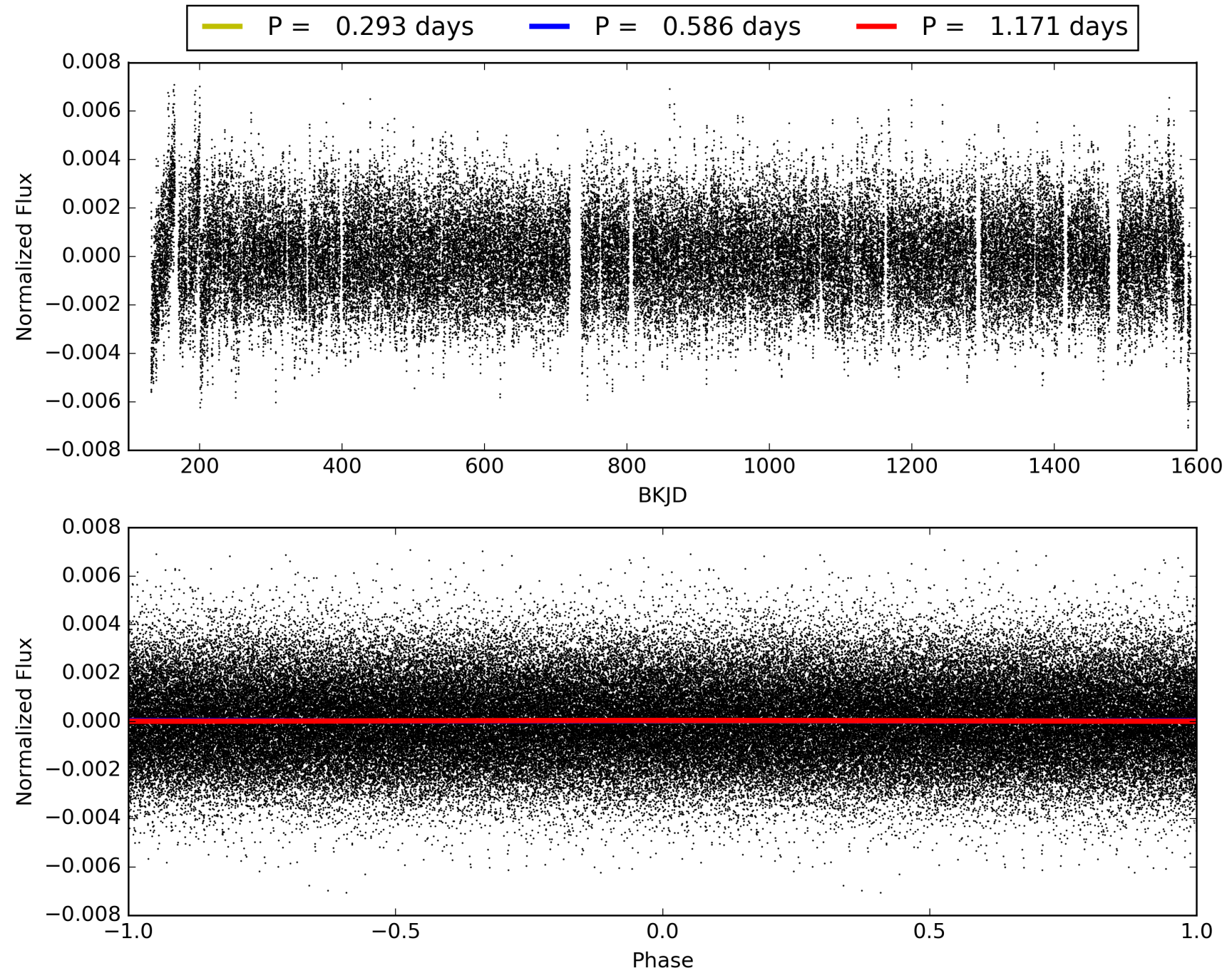
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:43:17 Z

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

TCE 008766619-01, PDC Light Curves

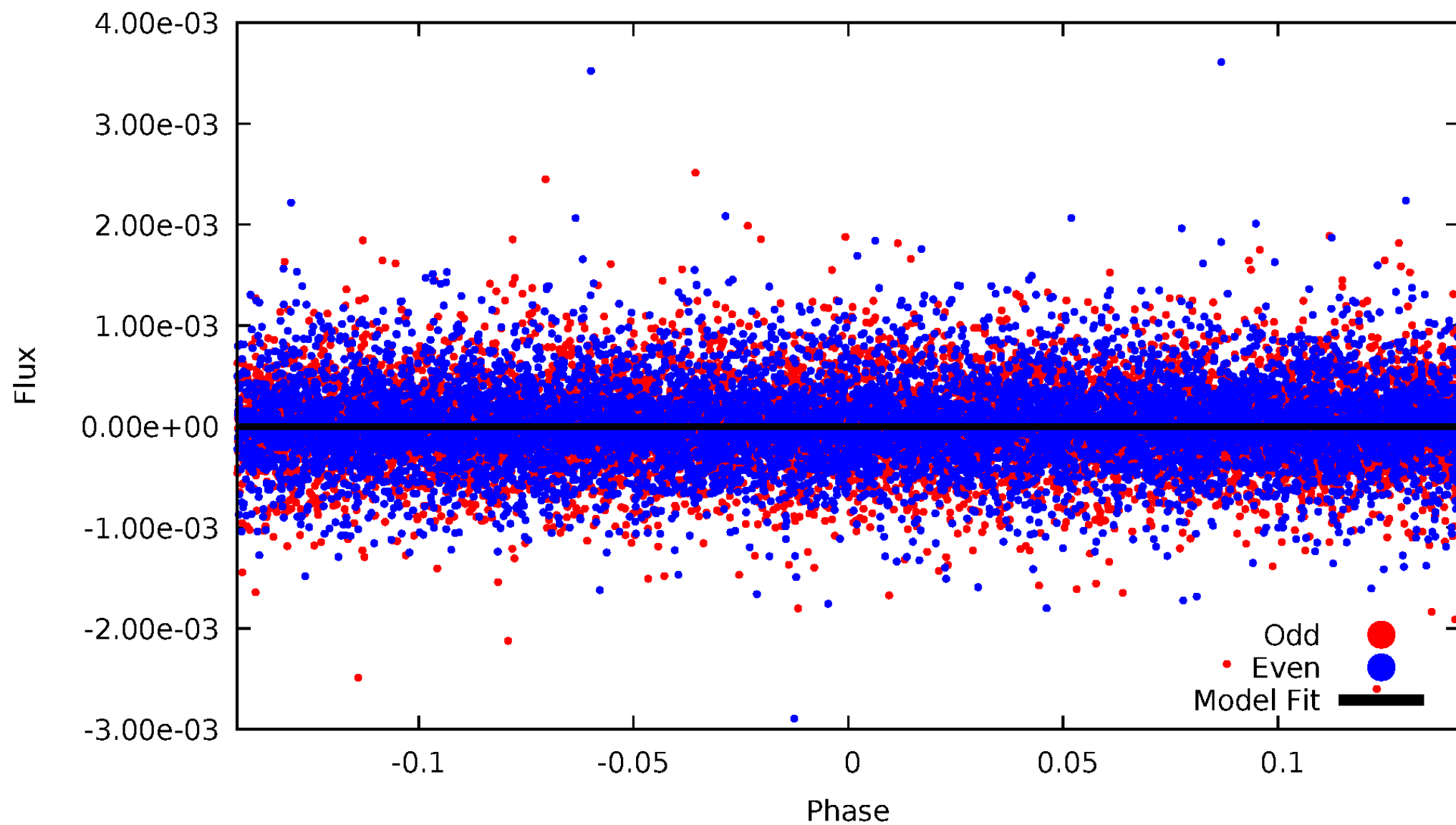


TCE 008766619-01



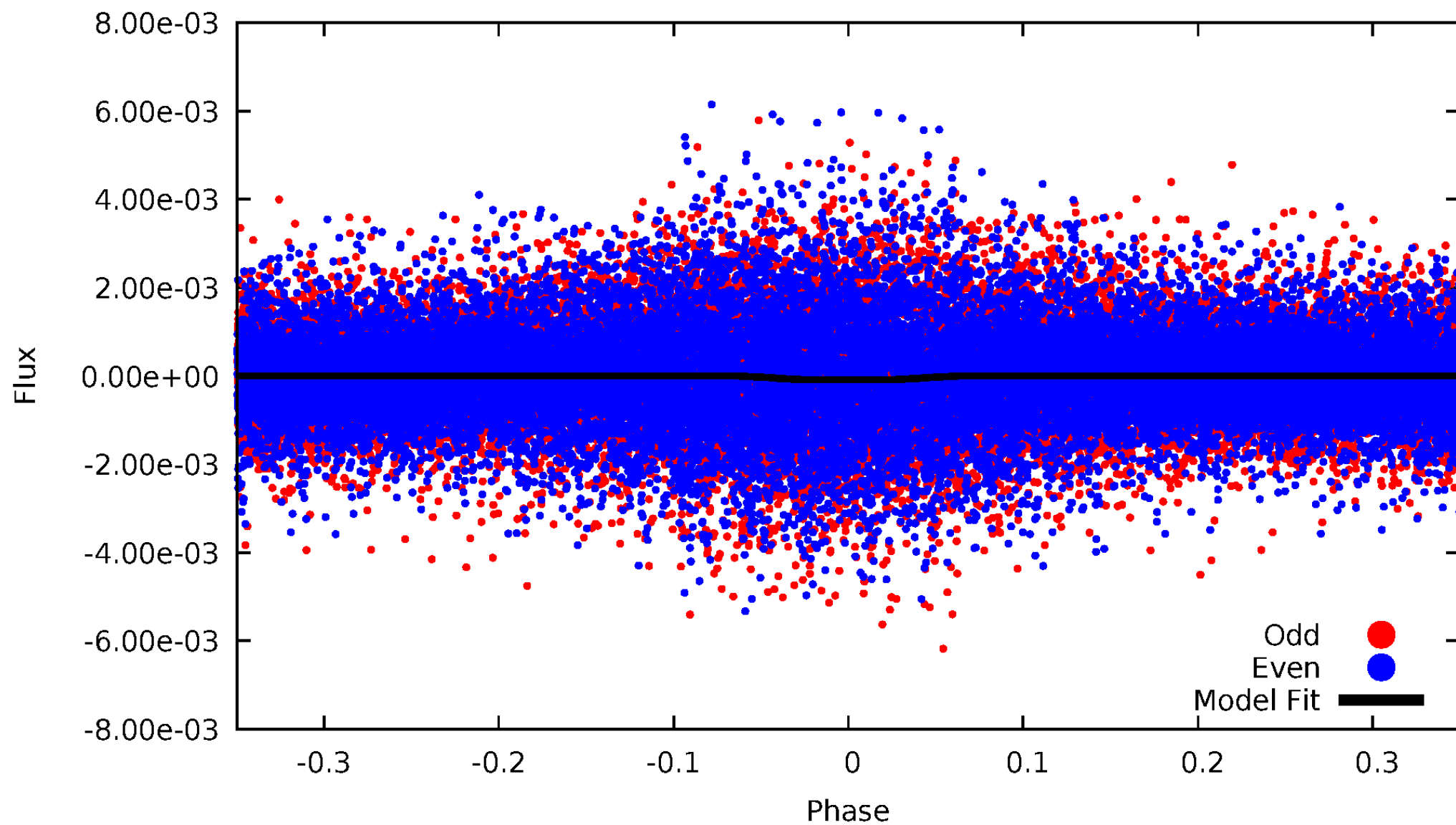
DV Odd/Even

TCE 008766619-01



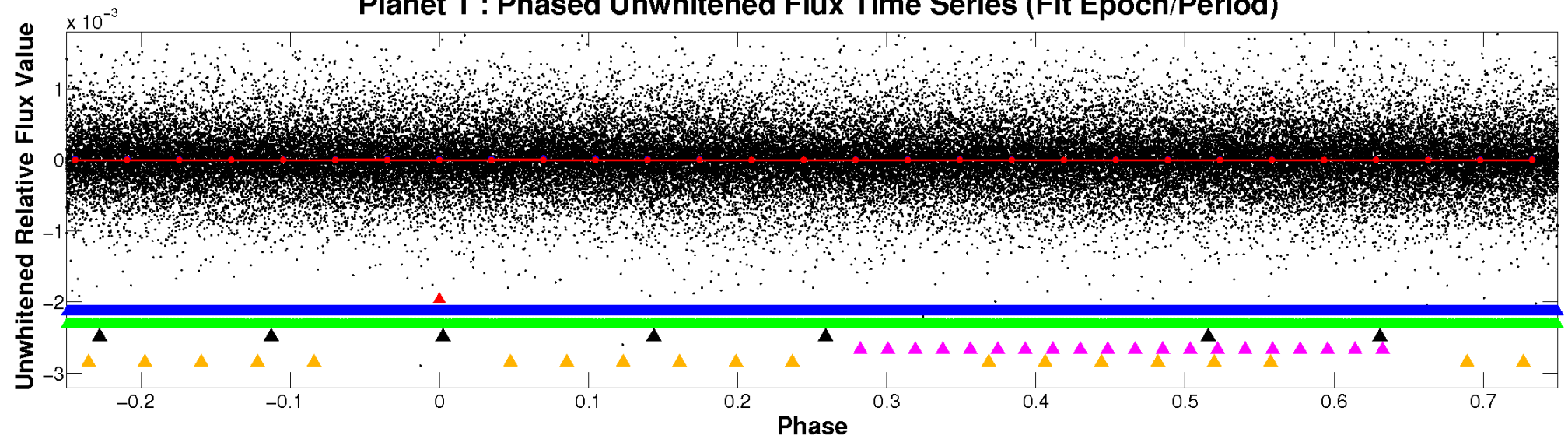
ALT Odd/Even

TCE 008766619-01

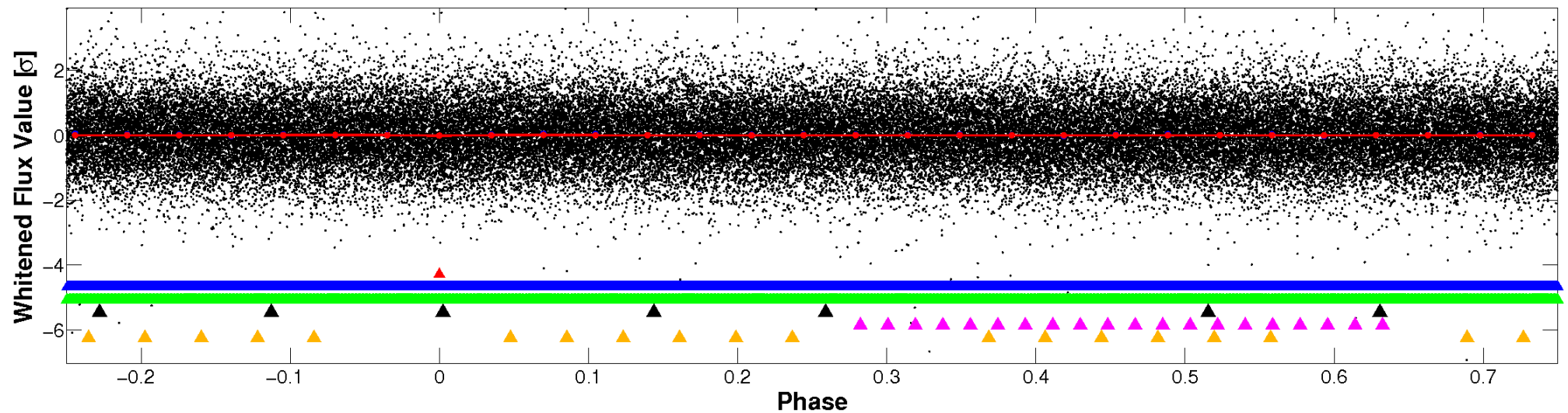


Non-Whitened Vs. Whitened Light Curve

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

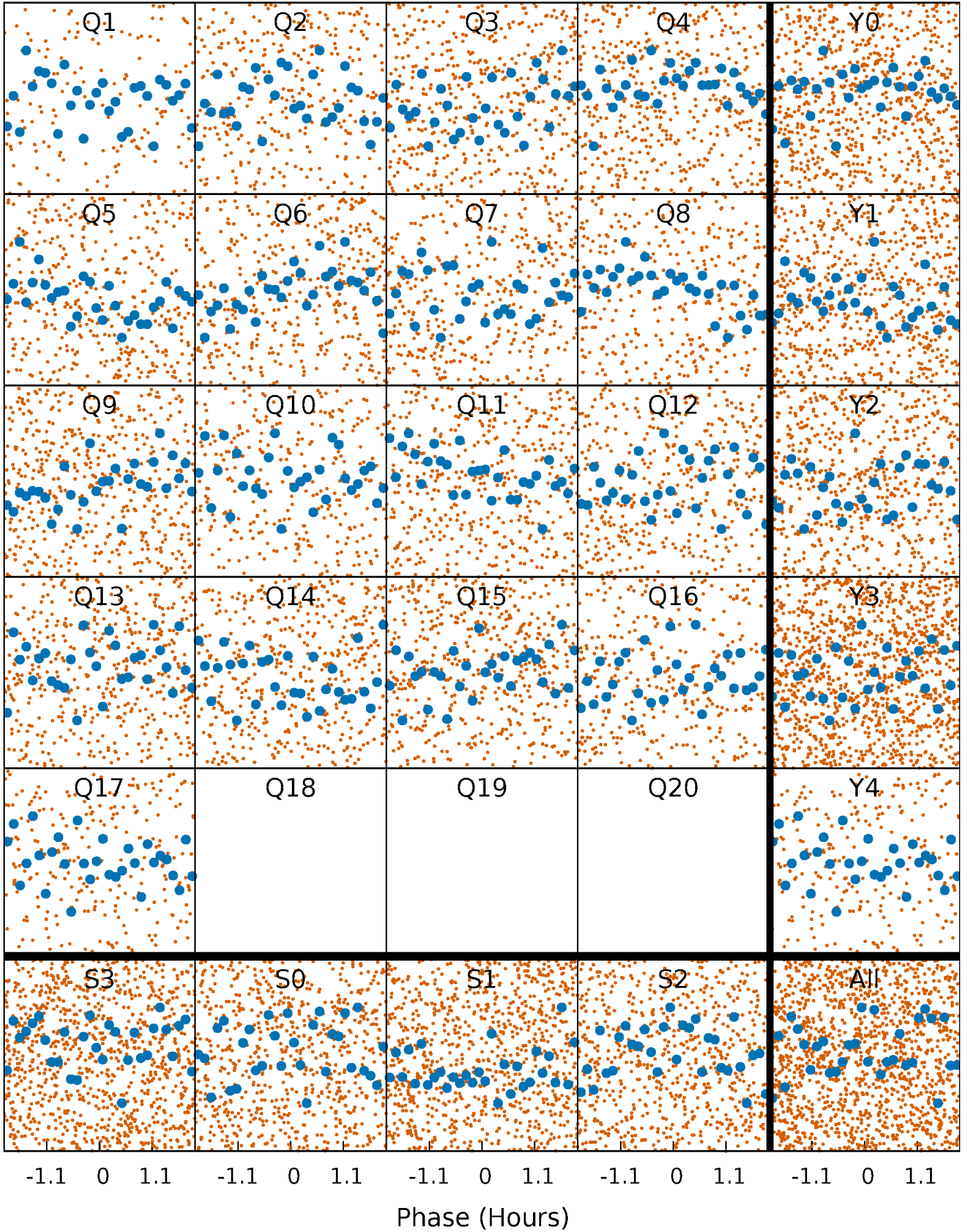


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



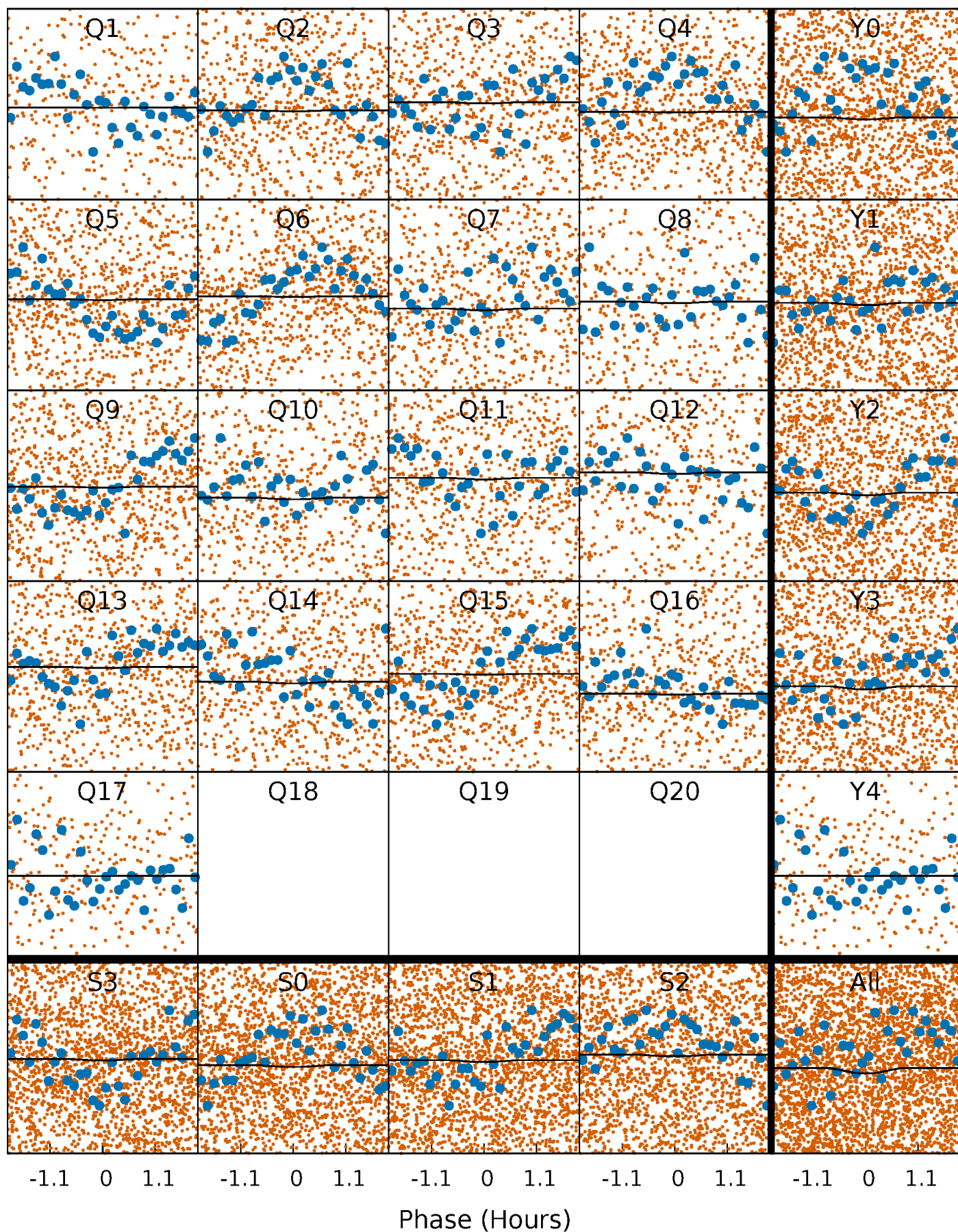
PDC Quarter-Phased Transit Curves

TCE 008766619-01 P= 0.585600 Days $T_0=131.649198$ (BKJD)



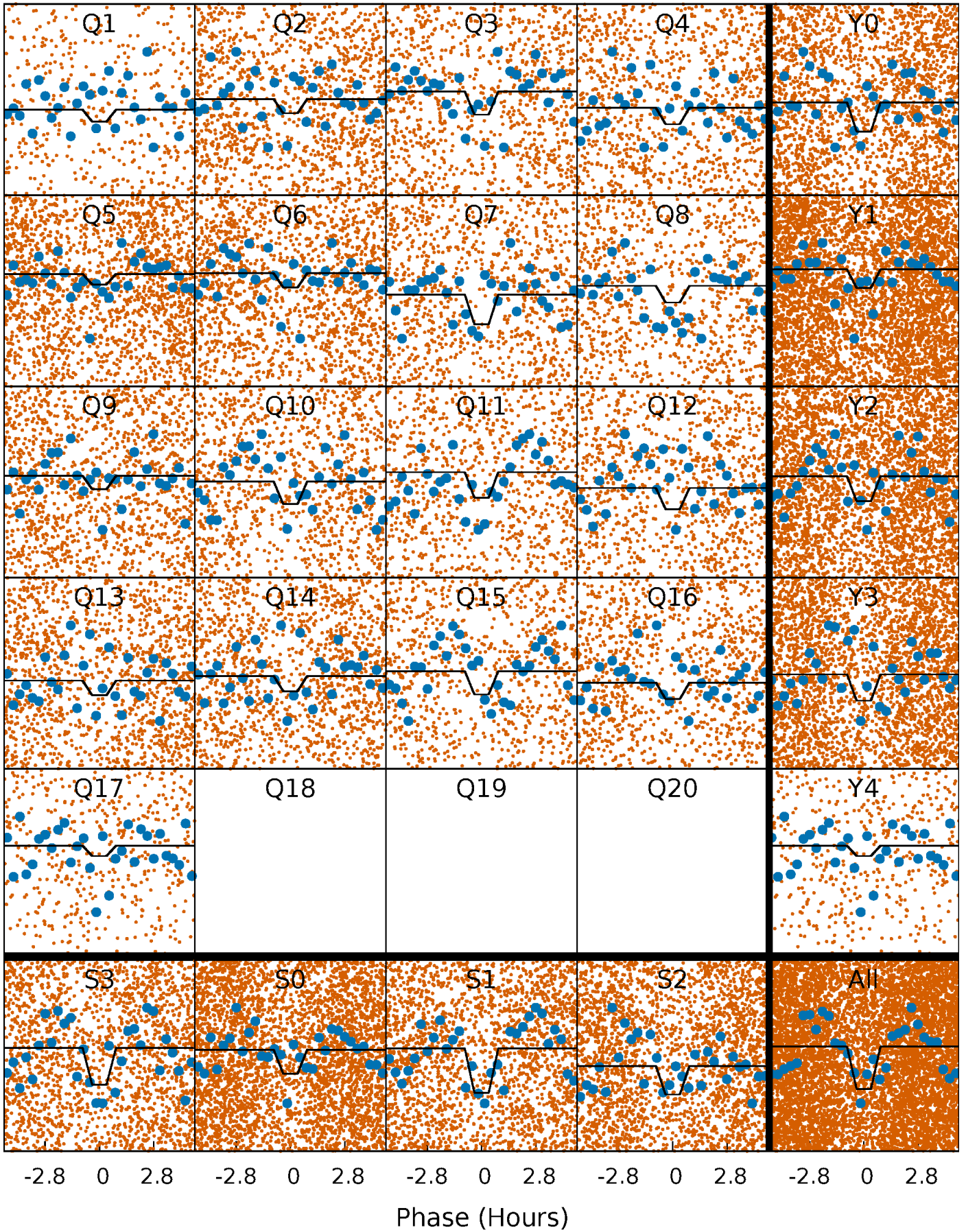
DV Quarter-Phased Transit Curves

TCE 008766619-01 P= 0.585600 Days $T_0=131.649198$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

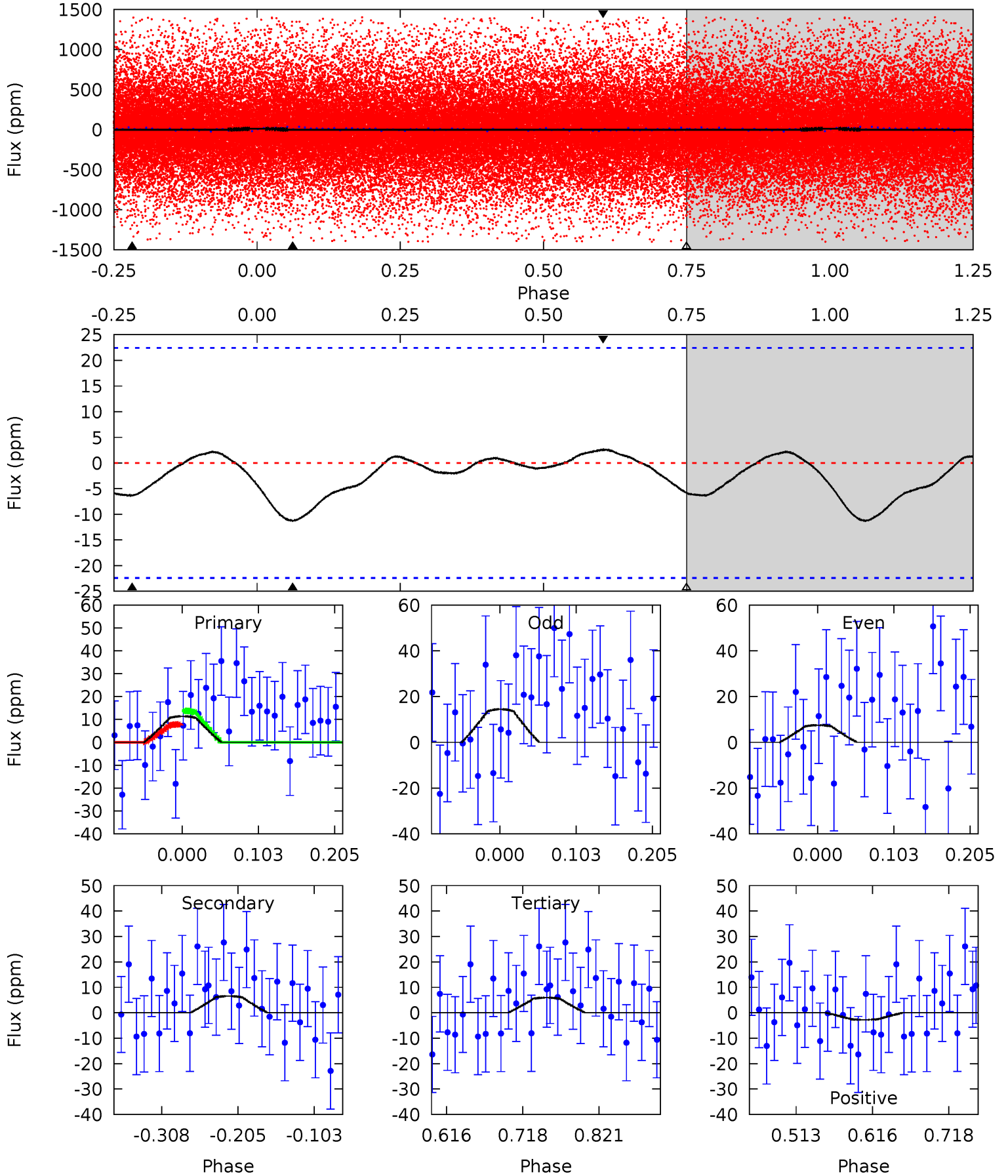
TCE 008766619-01 P= 0.586172 Days $T_0=131.705595$ (BKJD)



DV Model-Shift Uniqueness Test

008766619-01, P = 0.585600 Days, E = 131.063598 Days

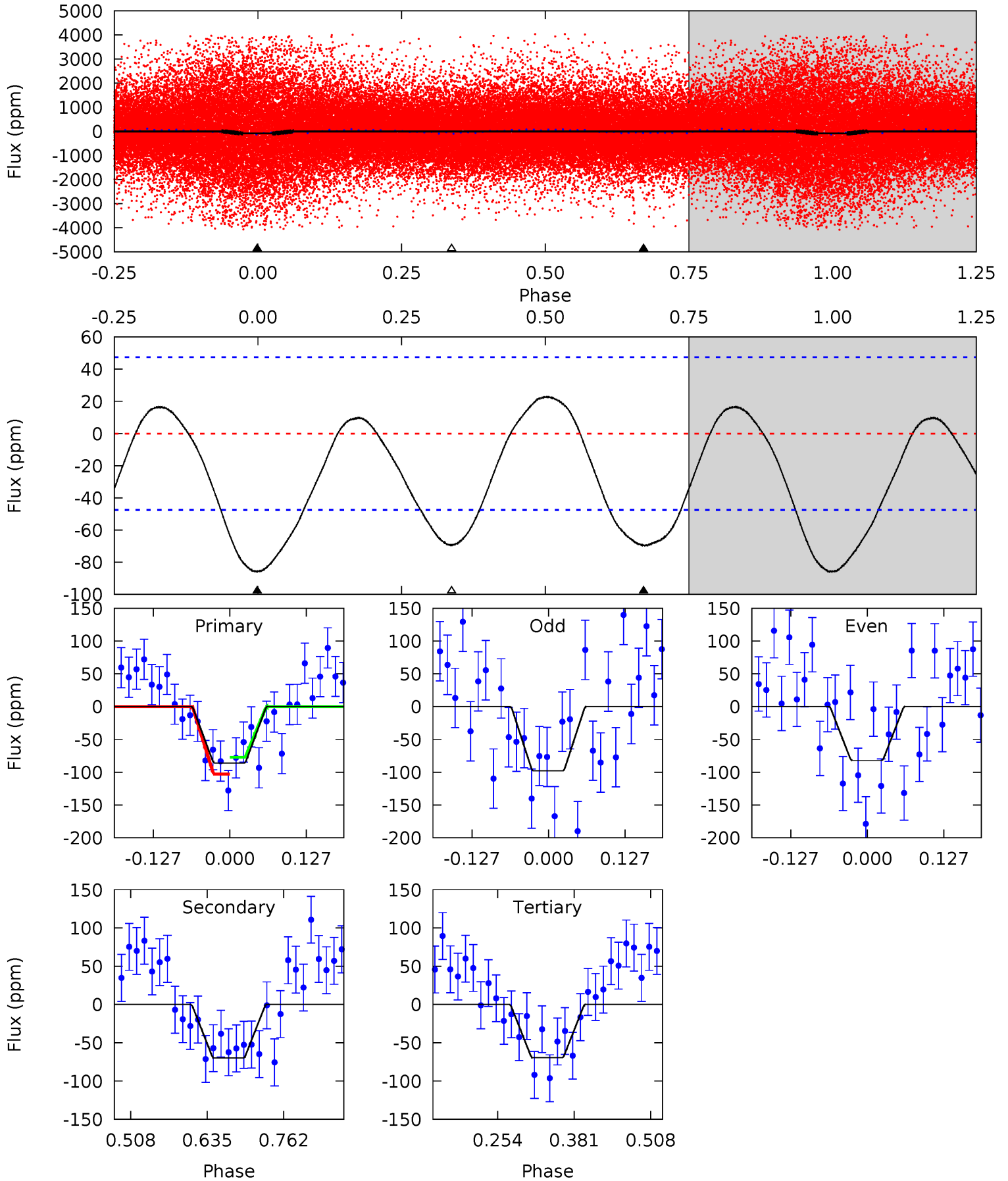
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.32	1.33	1.21	0.56	4.56	1.63	0.38	1.11	1.76	0.12	0.77	0.71	-2.35	0.19	0.60



Alt Model-Shift Uniqueness Test

008766619-01, P = 0.586172 Days, E = 131.119423 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.19	6.64	6.61	0	4.51	1.53	2.90	1.58	8.19	0.03	6.64	0.74	0.98	0.21	1.20



Stellar Parameters For KIC 008766619

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6569^{+117}_{-130}	$3.590^{+0.192}_{-0.036}$	$0.180^{+0.150}_{-0.150}$	$3.732^{+0.299}_{-0.957}$	$1.974^{+0.156}_{-0.253}$	$0.053^{+0.058}_{-0.009}$
	+2%/-2%	+5%/-1%	+83%/-83%	+8%/-26%	+8%/-13%	+108%/-17%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 008766619-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-7 ± 5	$0.76^{+0.66}_{-0.44}$	5865^{+219}_{-361}	6762^{+6342}_{-10768}	$1.507^{+7.029}_{-1.298}$
Alt.	-70 ± 11	$3.60^{+0.72}_{-0.74}$	5843^{+228}_{-336}	5581^{+902}_{-733}	$0.869^{+0.533}_{-0.293}$

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 $A_{obs} \gg 1.0$

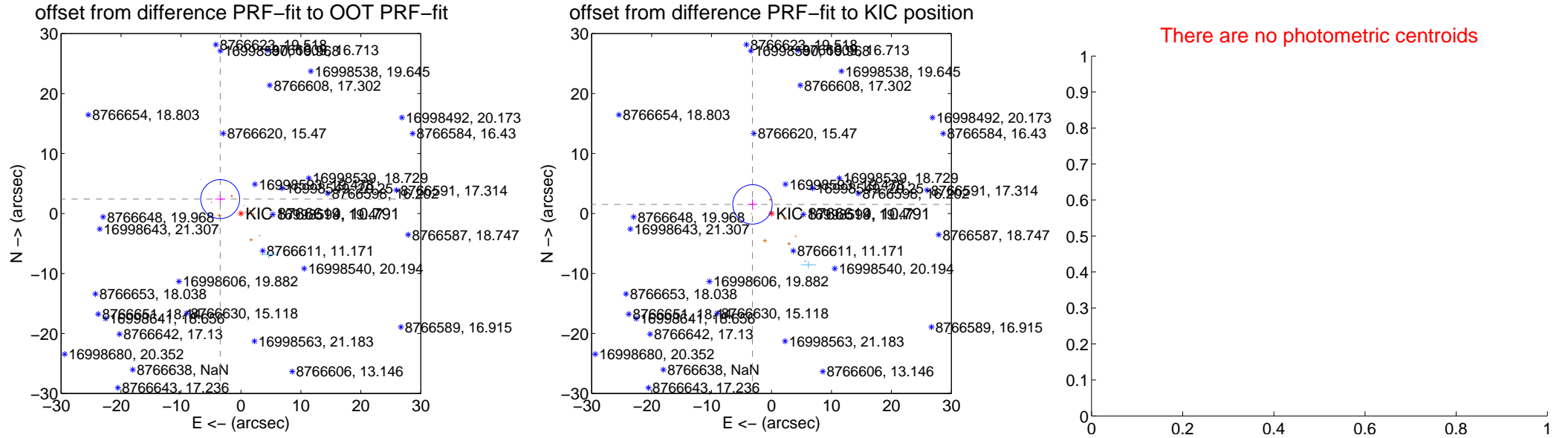
DV Centroid Data

Supplemental centroid analysis for 008766619-01. **Kepler magnitude: 10.79**. Transit SNR 0.94

There are 5 quarters with good PRF difference image offsets

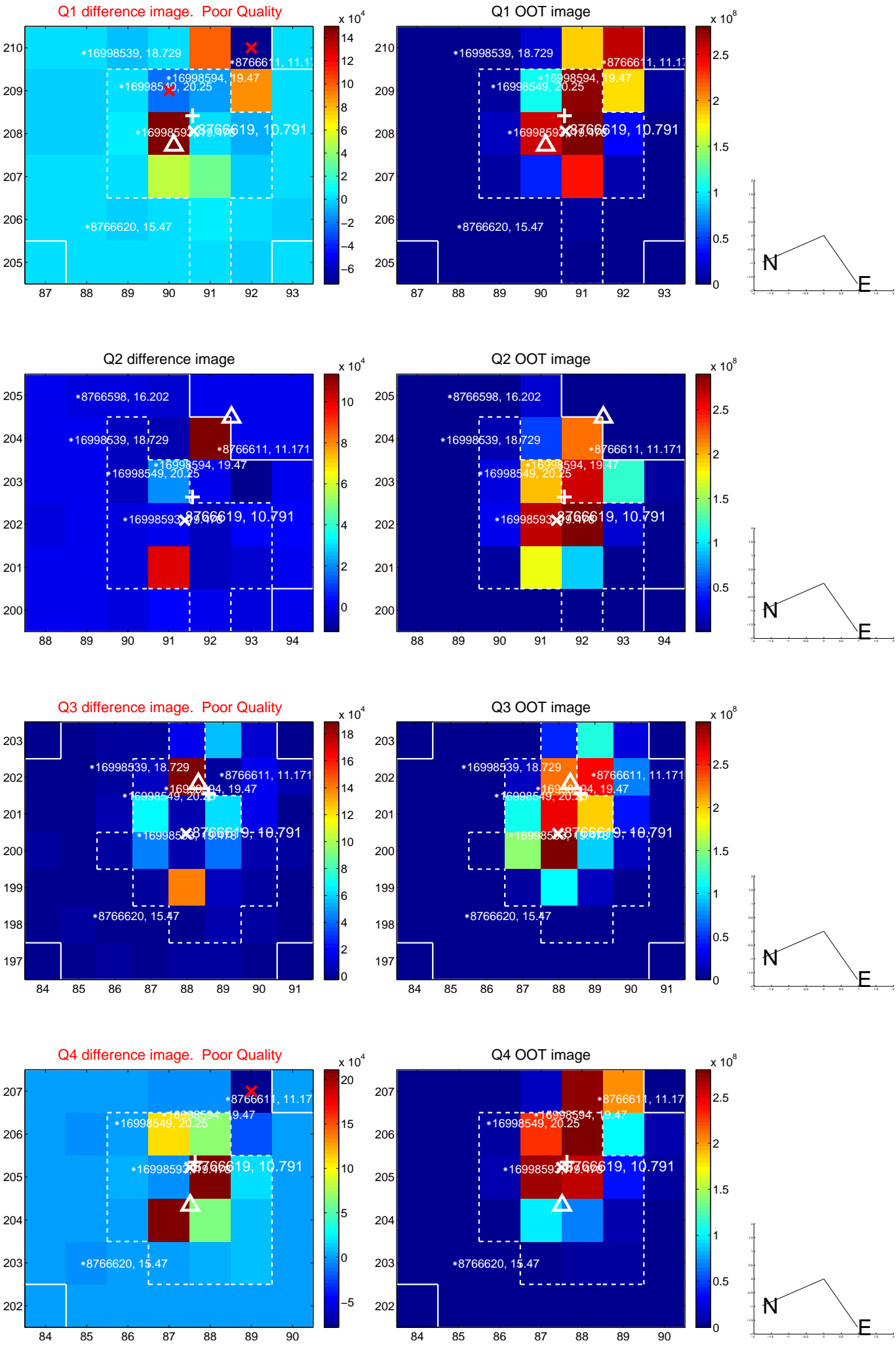
The direct PRF centroid is offset from the target star catalog position by about 1.44 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.210 ± 1.082	3.89	3.458 ± 0.843	2.401 ± 0.769
PRF-fit source offset from KIC position	3.515 ± 1.095	3.21	3.172 ± 0.843	1.516 ± 0.878
photometric centroid source offset	—	—	—	—

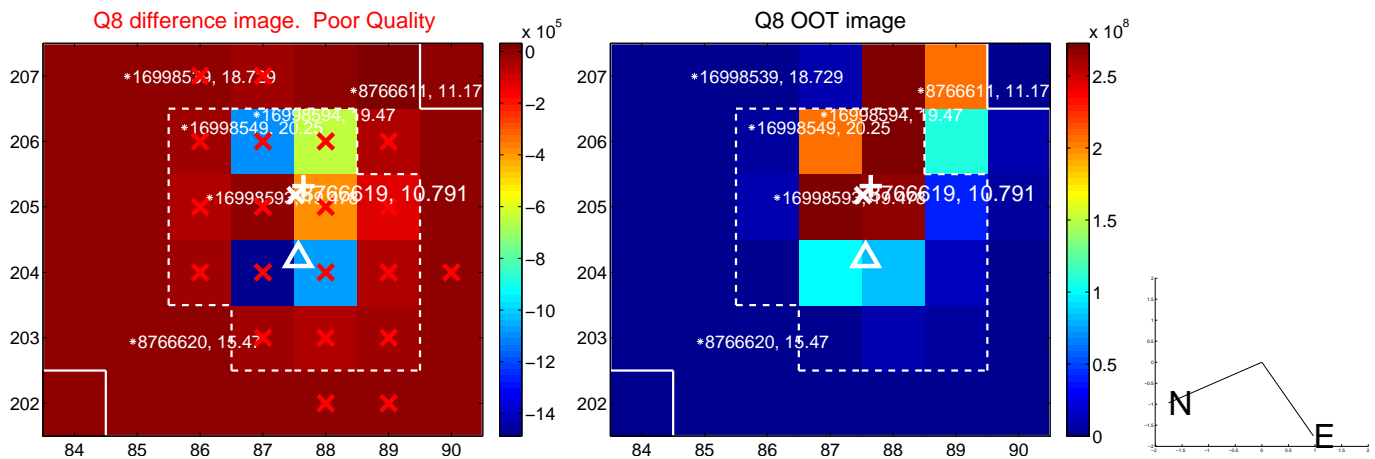
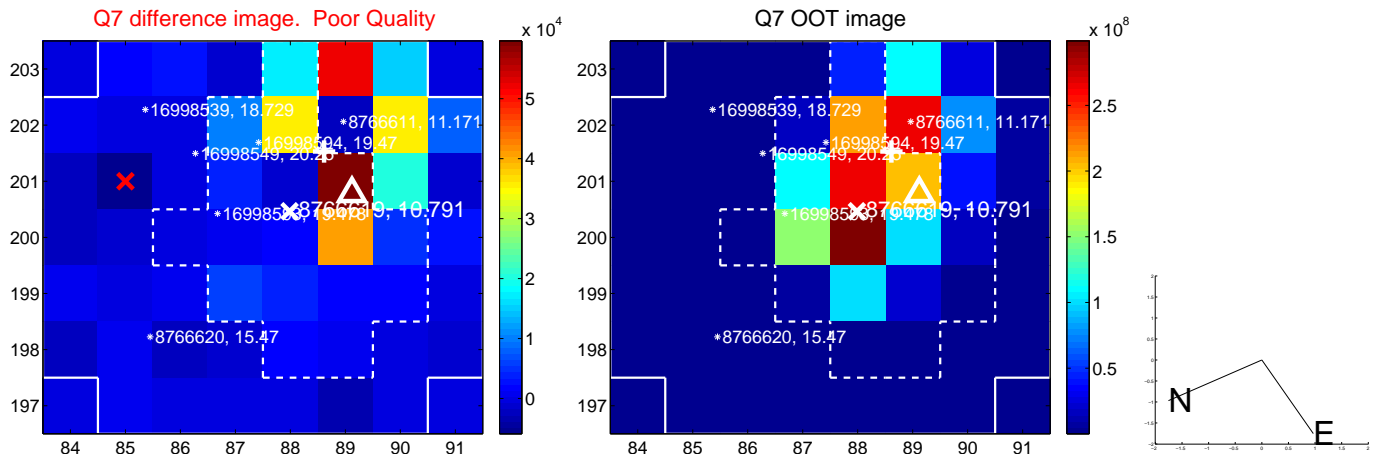
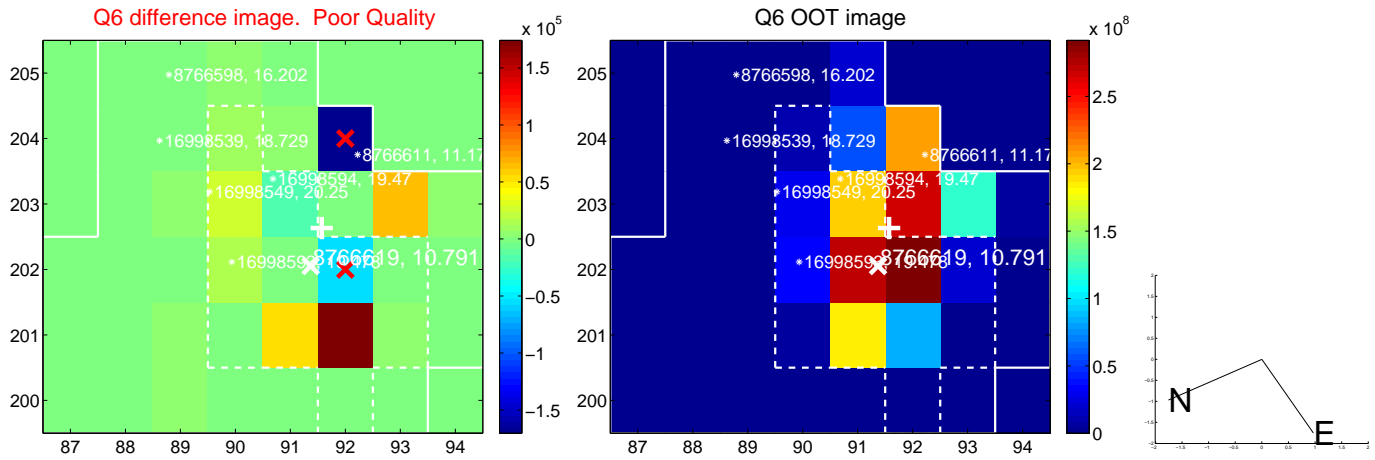
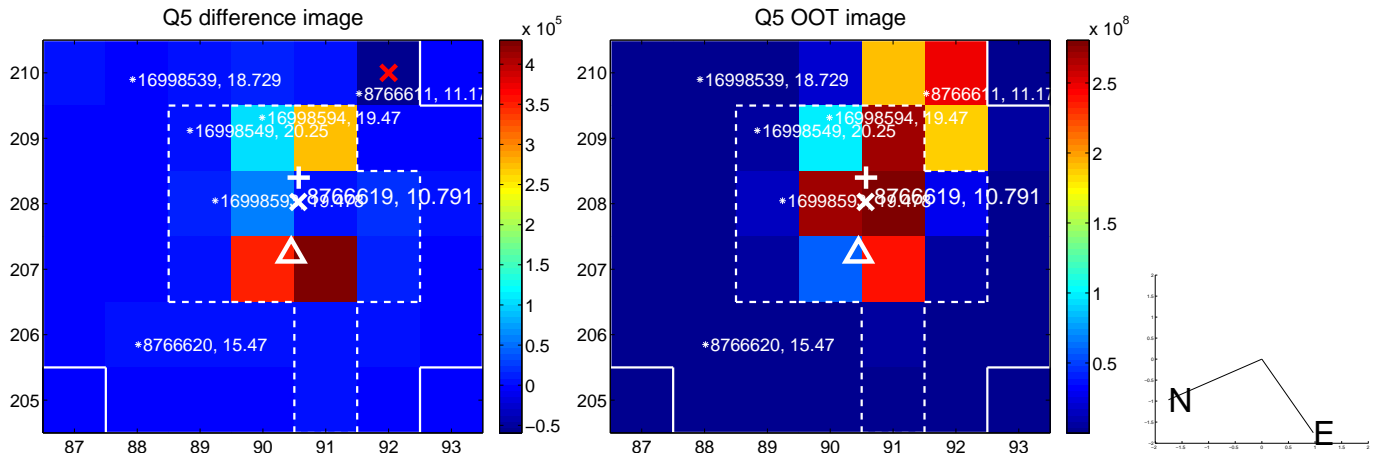


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

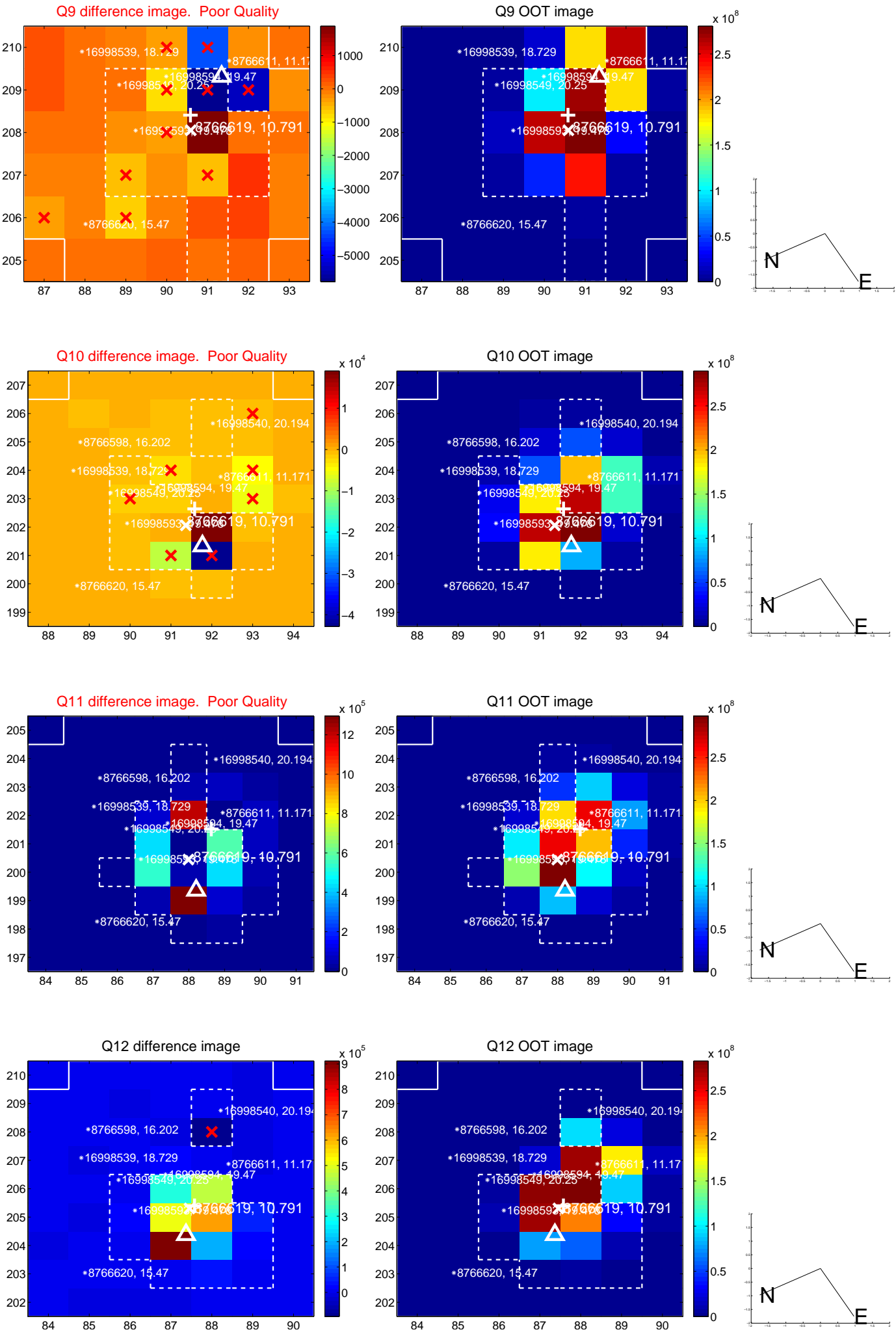
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



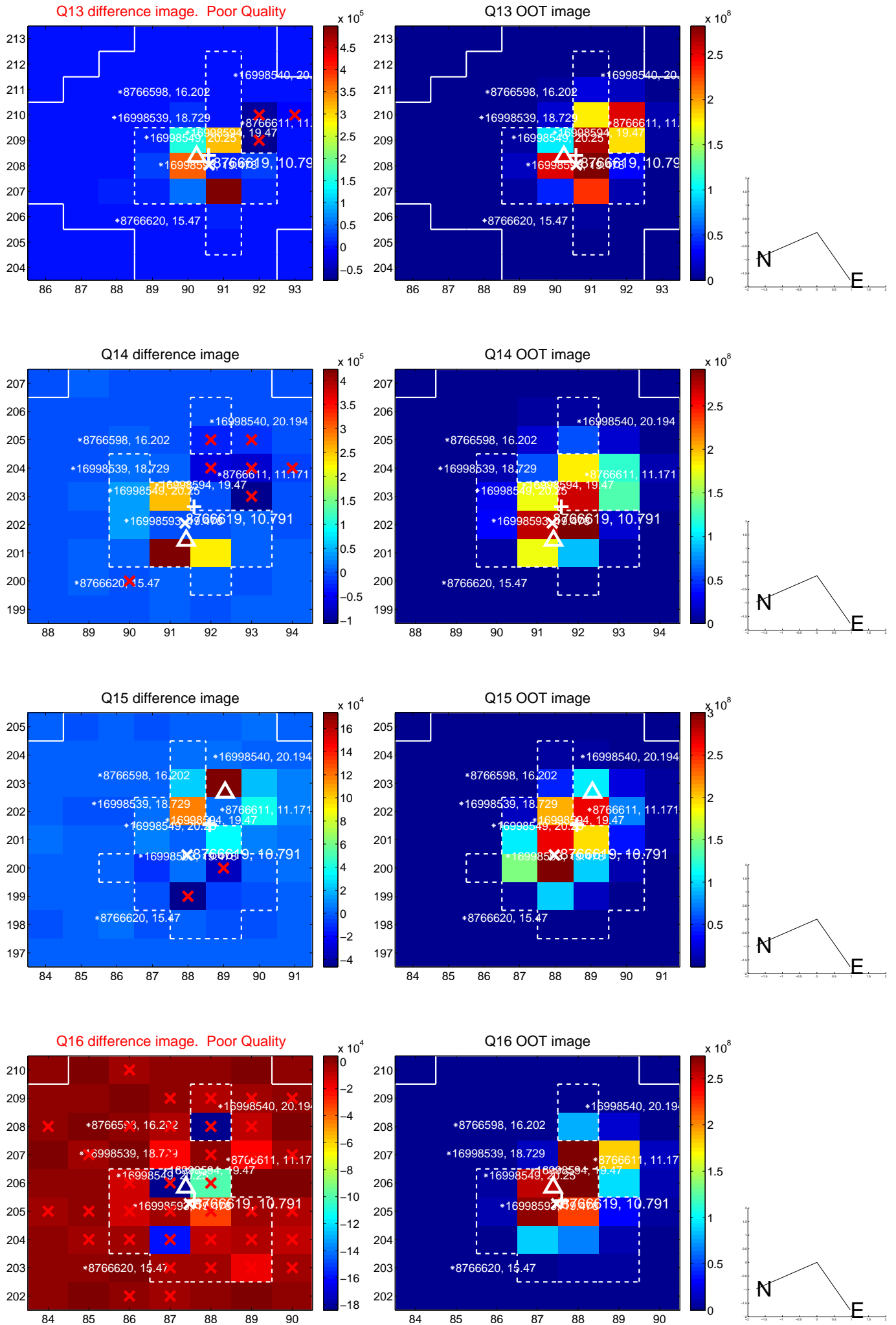
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



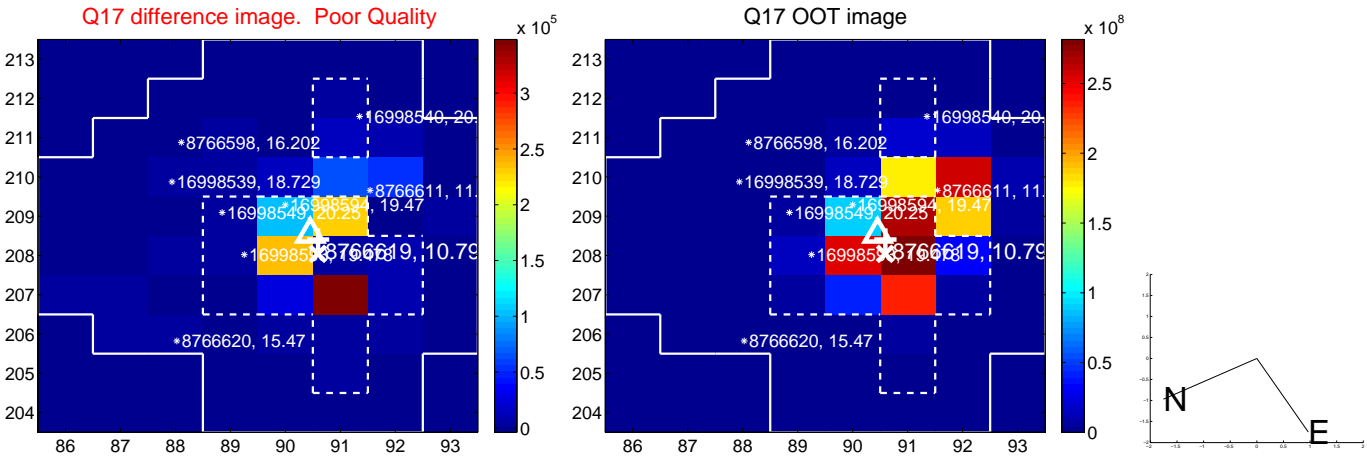
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

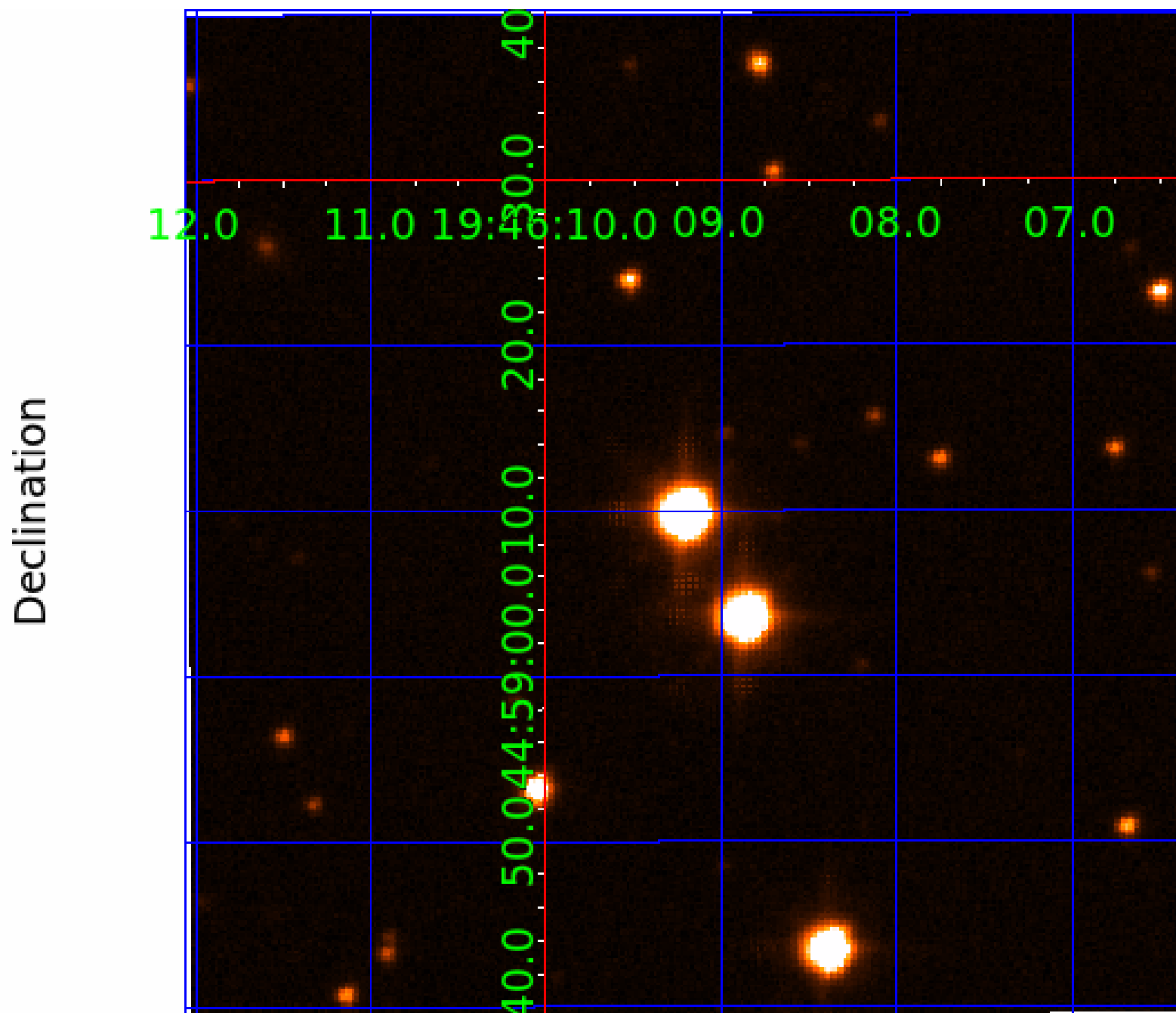


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image



KIC 008766619

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})
008766619-01	OBS	No	0.585600	131.649198	3.1	0.999	9.0	0.9	3.73	6569	0.77	0.00
008766619-02	OBS	No	0.553785	131.740232	62.2	1.660	9.1	9.8	3.73	6569	3.45	0.00
008766619-03	OBS	No	0.808622	132.000348	90.8	3.294	9.8	7.2	3.73	6569	4.16	51112.29
008766619-05	OBS	No	71.432459	195.850030	831.8	4.029	10.0	9.4	3.73	6569	13.80	129.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008766619-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008766619-02	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_SATURATED—HALO_GHOST
008766619-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
008766619-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

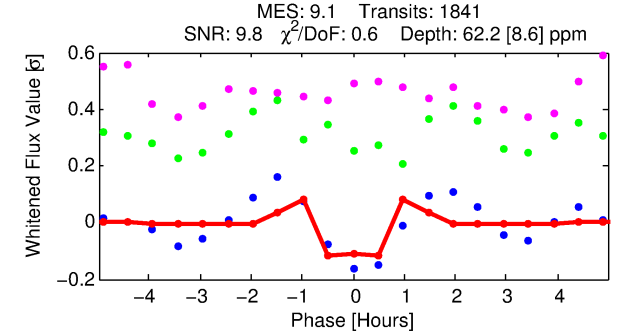
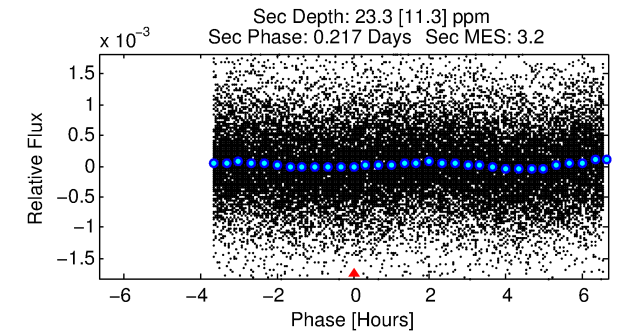
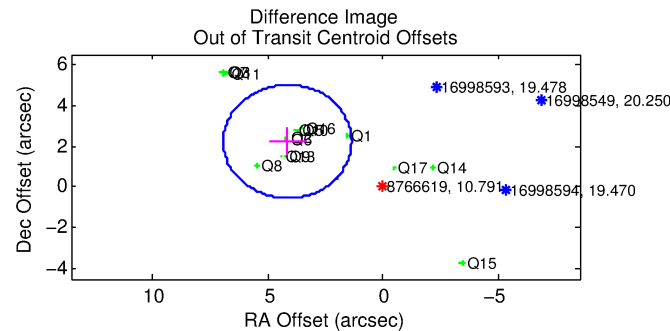
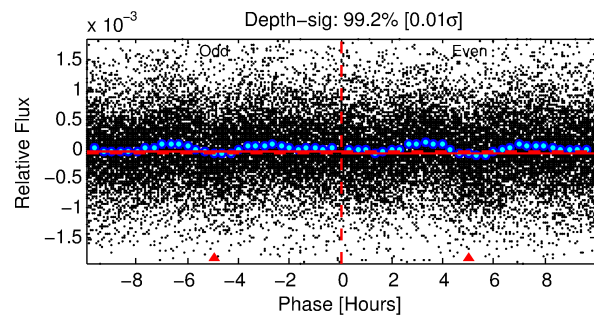
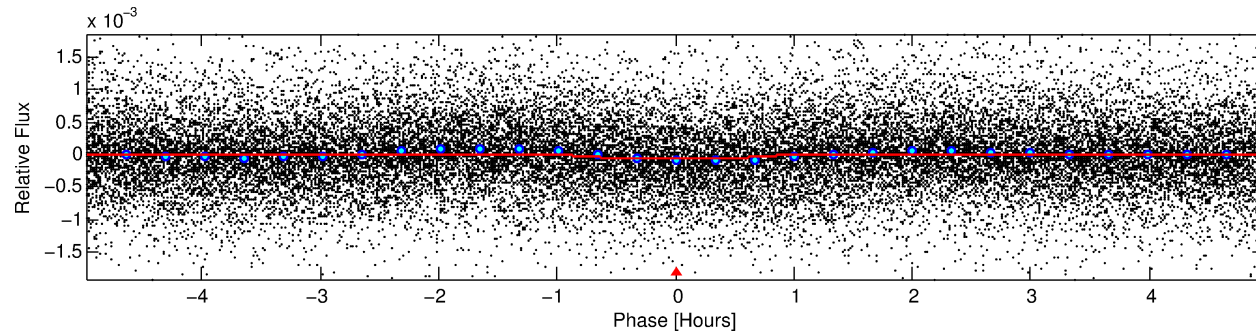
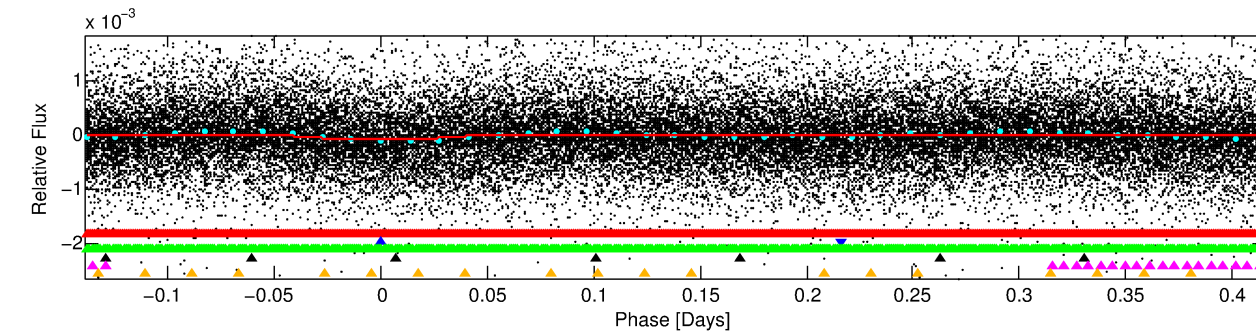
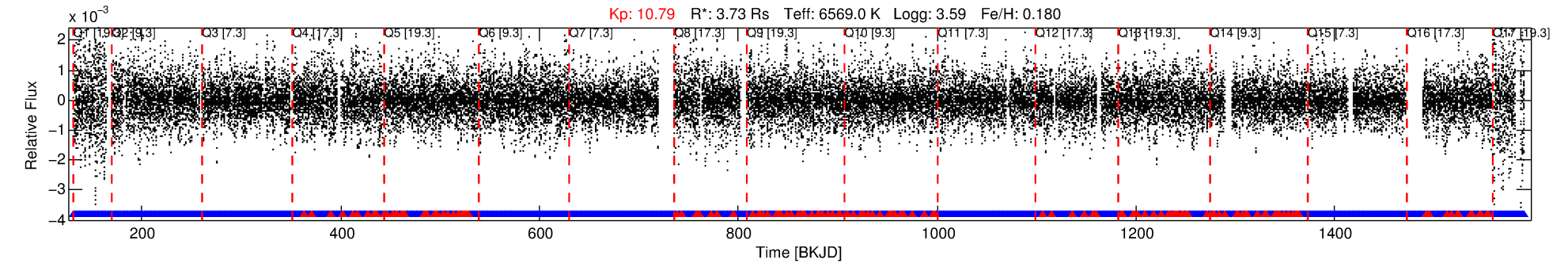
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008766619-02

No Significant Match Found

DV One-Page Summary

KIC: 8766619 Candidate: 2 of 6 Period: 0.554 d



DV Fit Results:

Period = 0.55378 [0.00001] d
Epoch = 131.7402 [0.0010] BKJD
 $R_p/R^* = 0.0085$ [0.0020]
 $a/R^* = 1.49$ [1.05]
 $b = 0.90$ [0.27]
 $\text{Seff} = \text{N/A}$
 $\text{Teq} = \text{N/A}$
 $R_p = 3.45$ [1.19] R_e
 $a = \text{N/A}$
 $\text{Ag} = \text{N/A}$
 $\text{Teffp} = \text{N/A}$

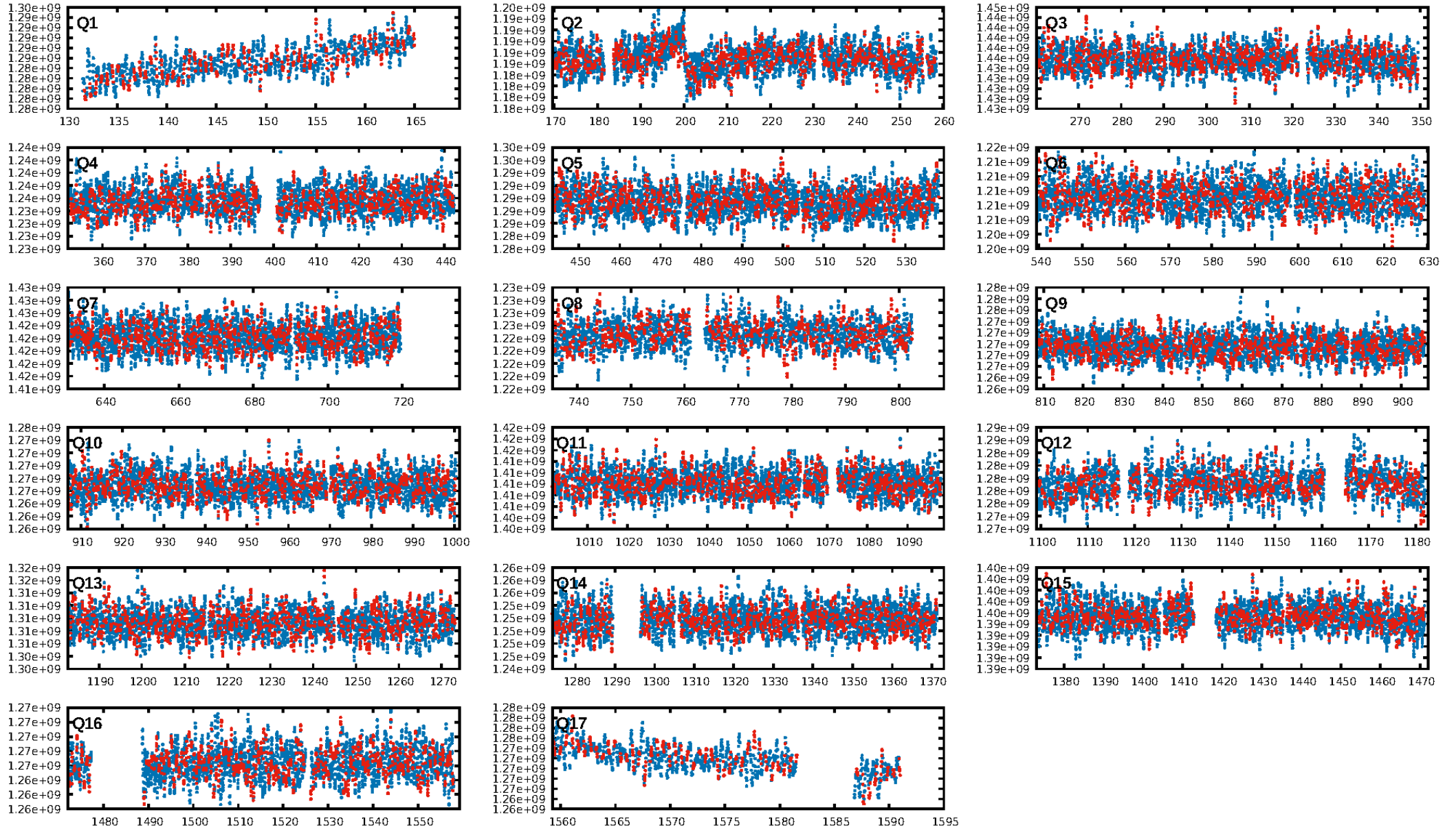
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 30.7% [0.39 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.91 [1601/1766]
GhostDiagnostic-chr: -0.1523
Centroid-sig: 0.0%
Centroid-so: 1.137 arcsec [1.84 σ]
OotOffset-rm: 4.704 arcsec [5.09 σ]
KicOffset-rm: 2.993 arcsec [3.33 σ]
OotOffset-st: 4/4/2/5 [15]
KicOffset-st: 4/4/2/5 [15]
DiffImageQuality-fgm: 0.40 [6/15]
DiffImageOverlap-fno: 0.59 [10/17]

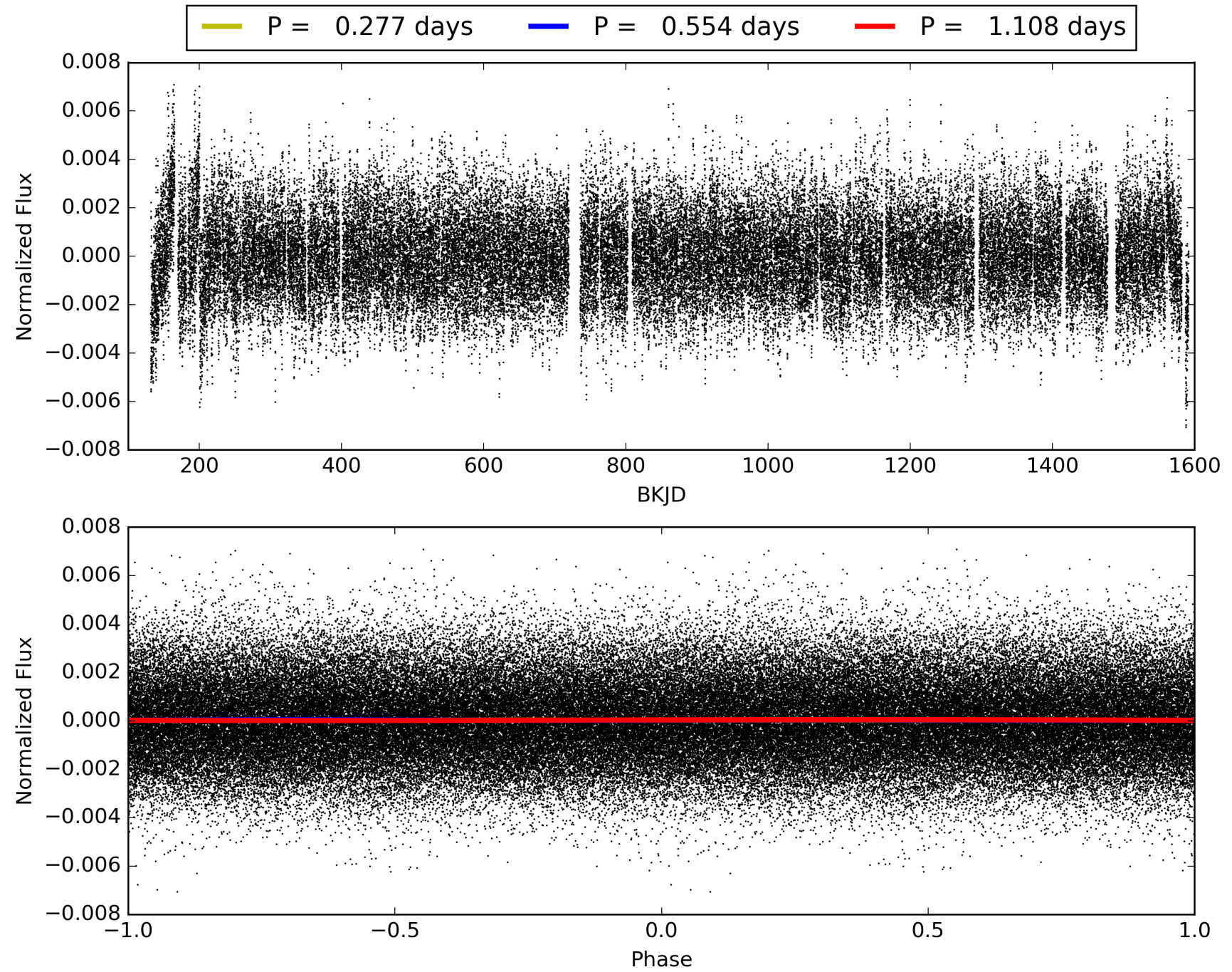
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:43:29 Z

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

TCE 008766619-02, PDC Light Curves

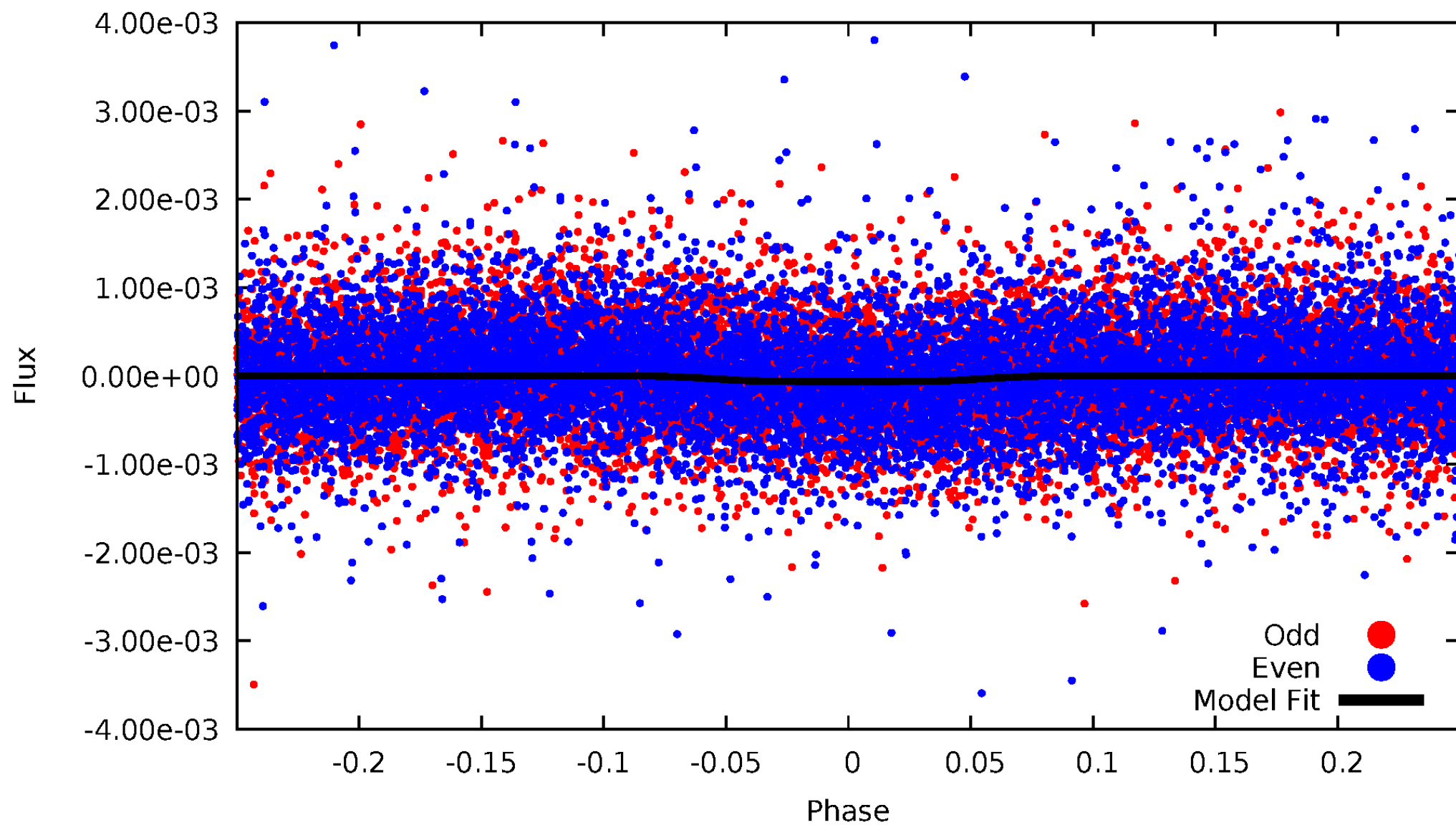


TCE 008766619-02



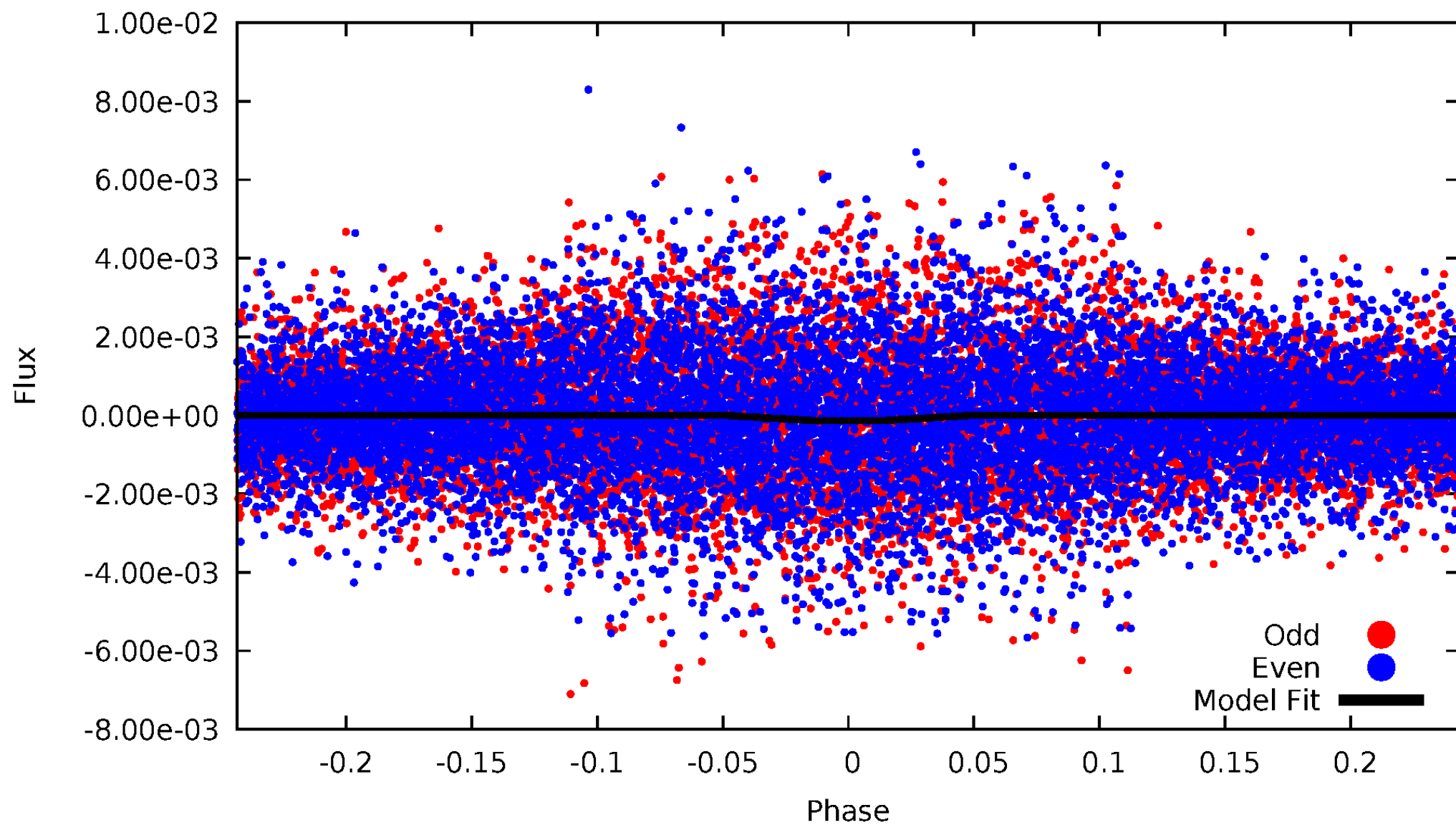
DV Odd/Even

TCE 008766619-02



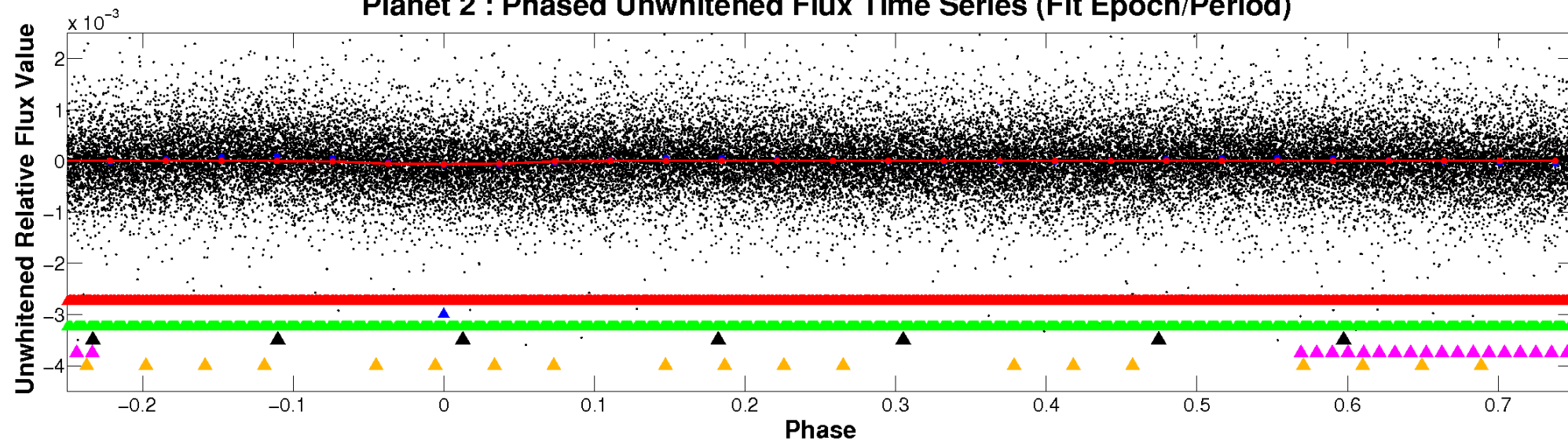
ALT Odd/Even

TCE 008766619-02

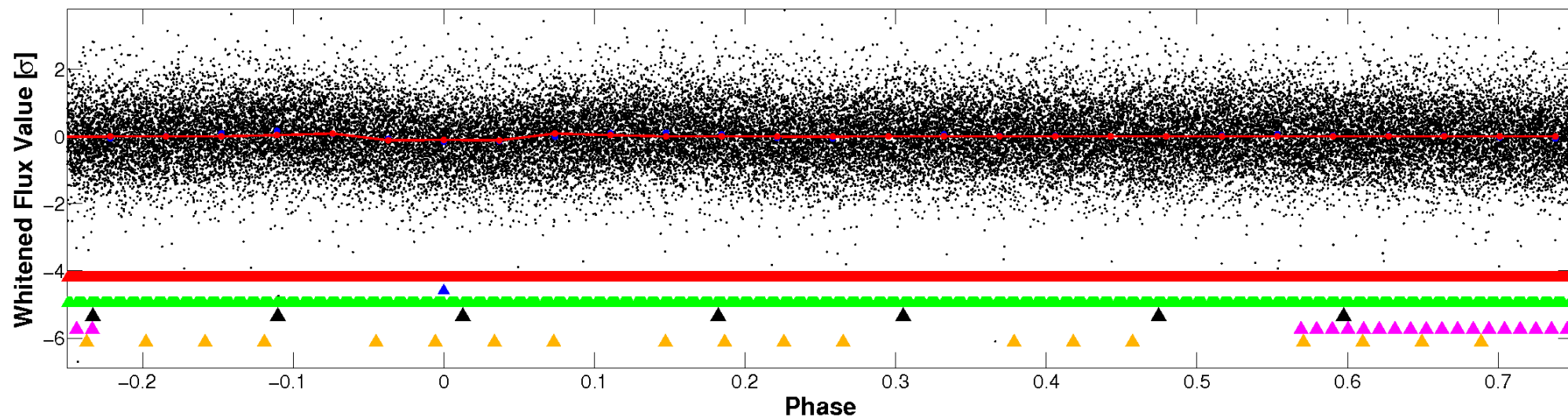


Non-Whitened Vs. Whitened Light Curve

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

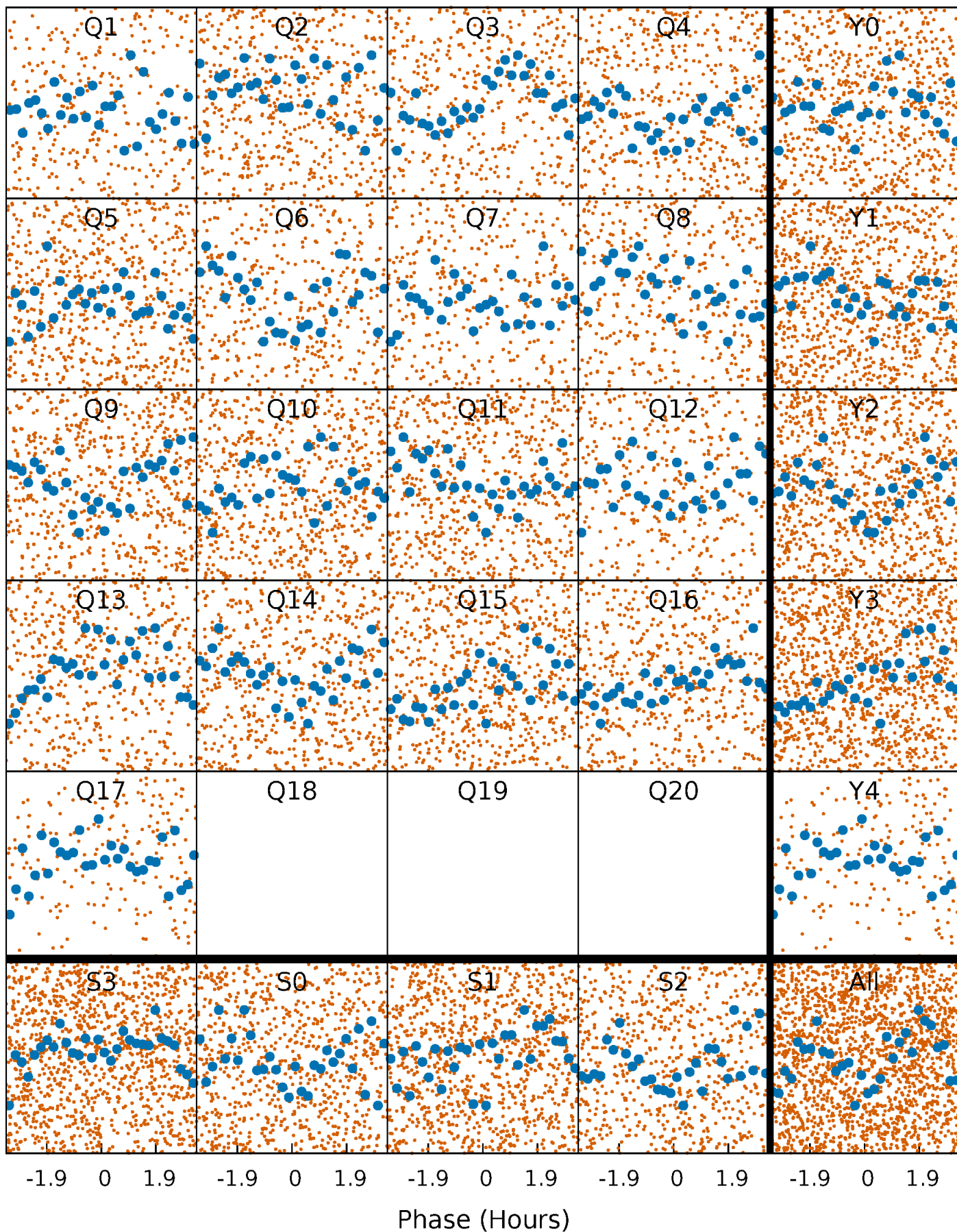


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



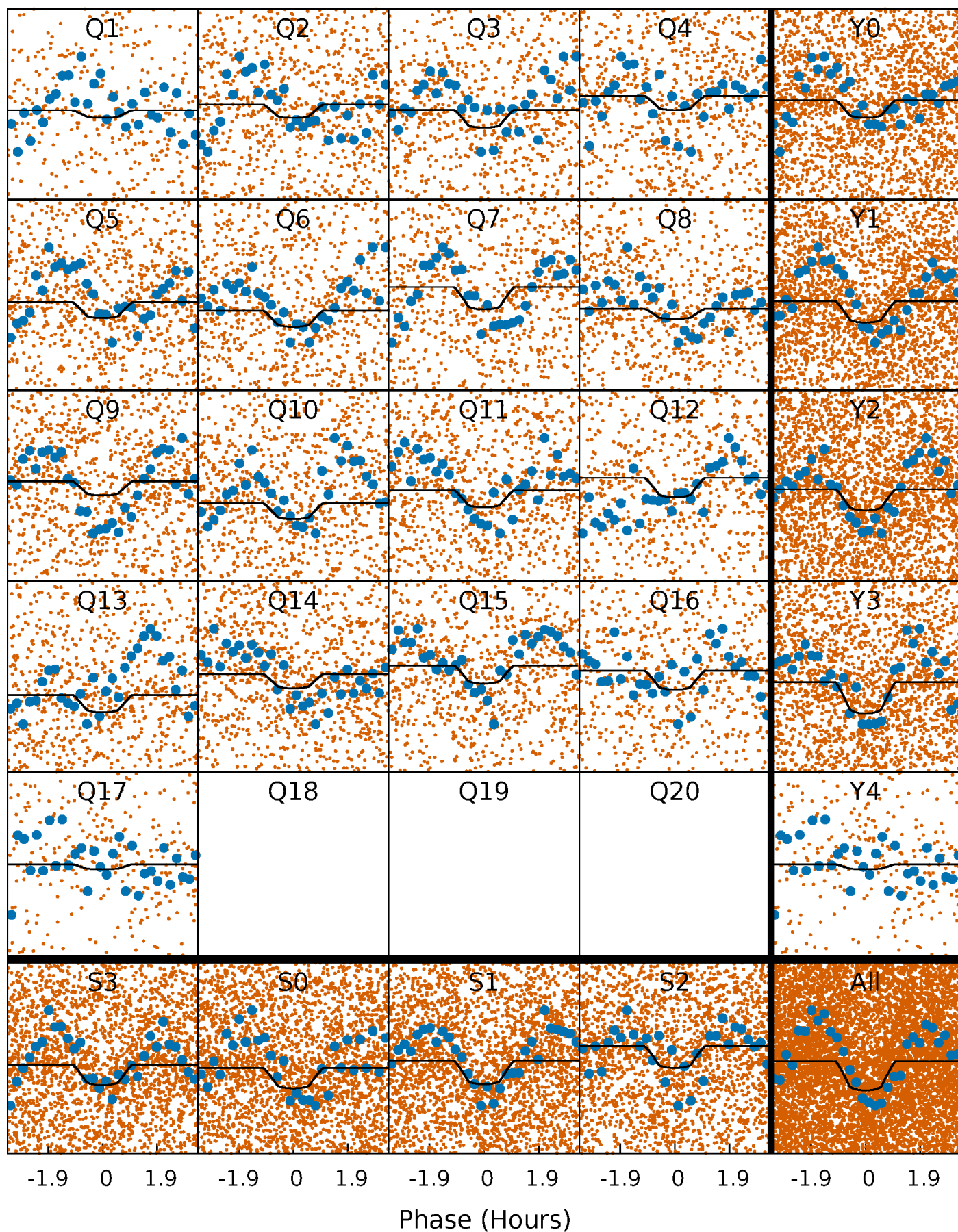
PDC Quarter-Phased Transit Curves

TCE 008766619-02 P= 0.553785 Days $T_0=131.740232$ (BKJD)



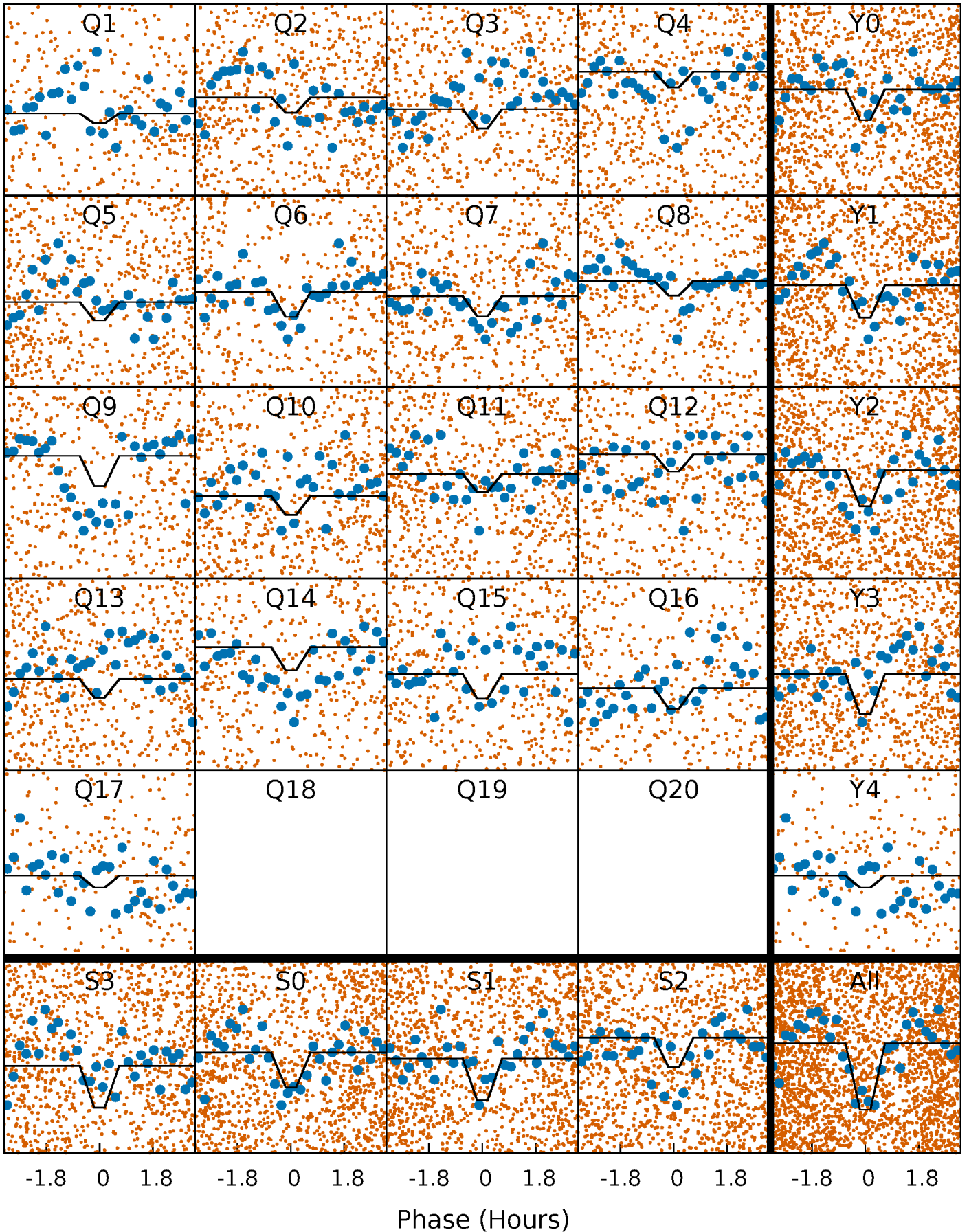
DV Quarter-Phased Transit Curves

TCE 008766619-02 P= 0.553785 Days $T_0=131.740232$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

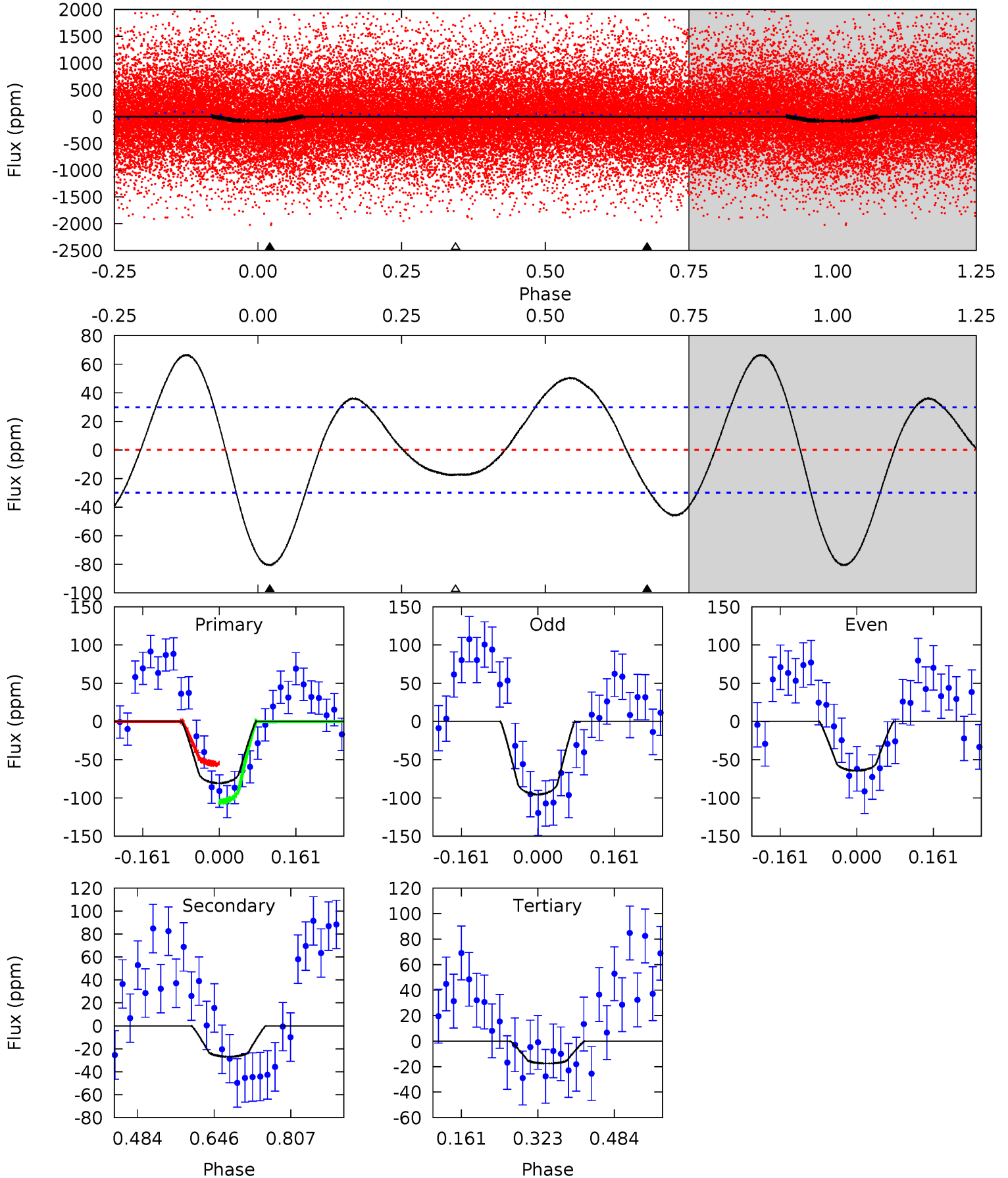
TCE 008766619-02 P= 0.553790 Days $T_0=131.736903$ (BKJD)



DV Model-Shift Uniqueness Test

008766619-02, P = 0.553785 Days, E = 131.186447 Days

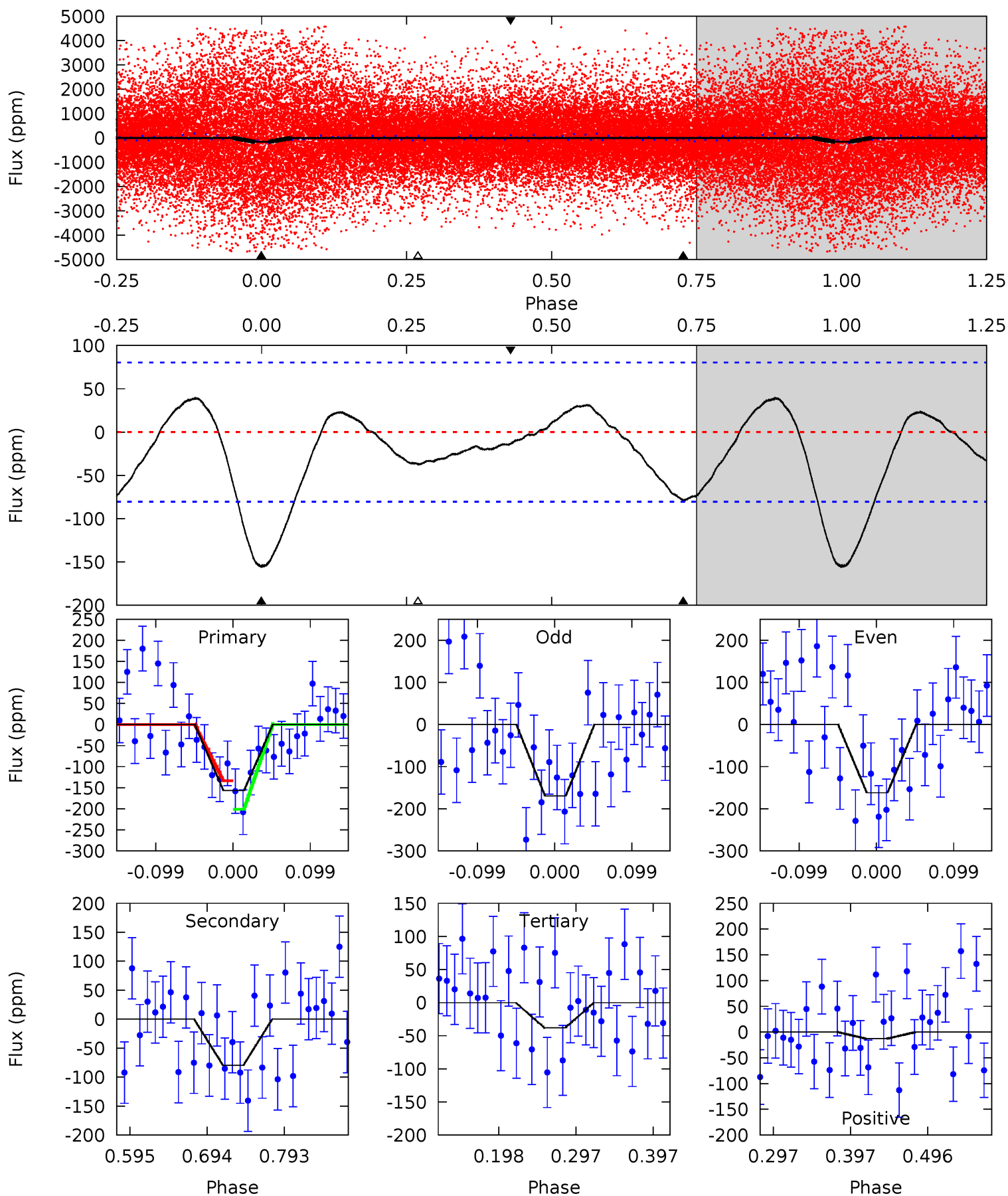
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	4.01	2.62	0	4.46	1.40	3.32	9.42	12.0	1.40	4.01	2.38	0.79	0.45	3.75



Alt Model-Shift Uniqueness Test

008766619-02, P = 0.553790 Days, E = 131.183113 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.91	4.52	2.17	-0.73	4.57	1.65	1.26	6.74	9.64	2.35	5.25	0.22	0.83	0.21	1.90



Stellar Parameters For KIC 008766619

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6569^{+117}_{-130}	$3.590^{+0.192}_{-0.036}$	$0.180^{+0.150}_{-0.150}$	$3.732^{+0.299}_{-0.957}$	$1.974^{+0.156}_{-0.253}$	$0.053^{+0.058}_{-0.009}$
	+2%/-2%	+5%/-1%	+83%/-83%	+8%/-26%	+8%/-13%	+108%/-17%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 008766619-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-27 ± 7	$3.30^{+0.89}_{-0.85}$	5968^{+210}_{-364}	3773^{+1354}_{-7702}	$0.374^{+0.328}_{-0.159}$
Alt.	-79 ± 18	$4.61^{+0.89}_{-0.92}$	5984^{+205}_{-323}	4832^{+851}_{-1074}	$0.561^{+0.342}_{-0.195}$

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

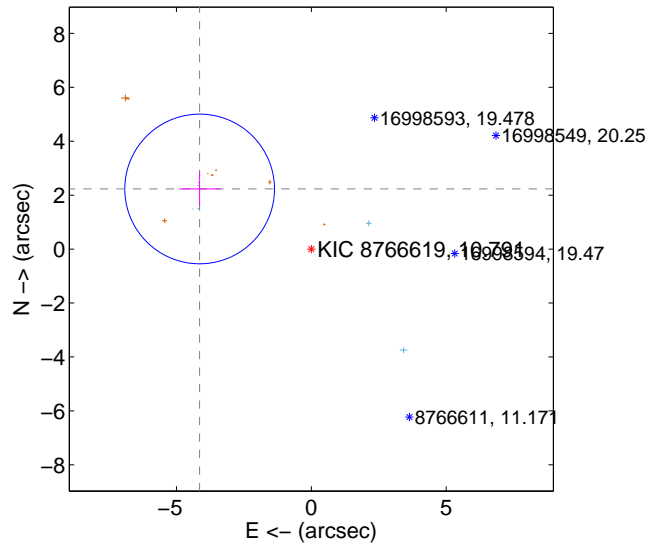
Supplemental centroid analysis for 008766619-02. **Kepler magnitude: 10.79.** Transit SNR 9.78

There are 6 quarters with good PRF difference image offsets

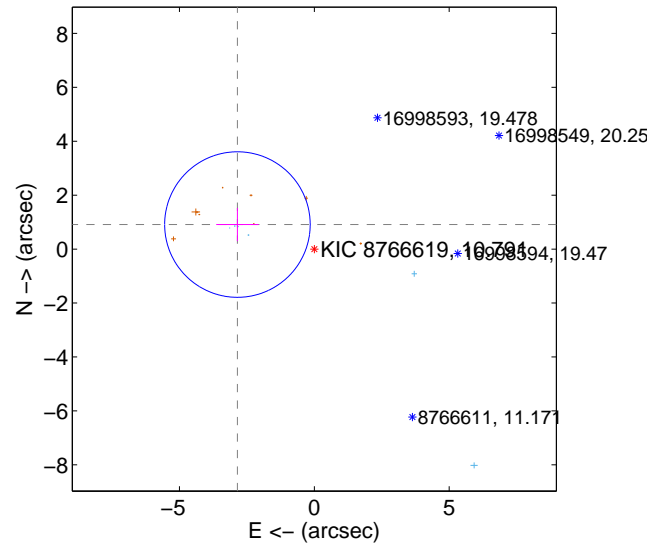
The direct PRF centroid is offset from the target star catalog position by about 1.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.704 ± 0.925	5.09	4.142 ± 0.762	2.230 ± 0.627
PRF-fit source offset from KIC position	2.993 ± 0.899	3.33	2.851 ± 0.787	0.910 ± 0.616
photometric centroid source offset	1.14 ± 0.62	1.84	-0.38 ± 0.44	-1.07 ± 0.64

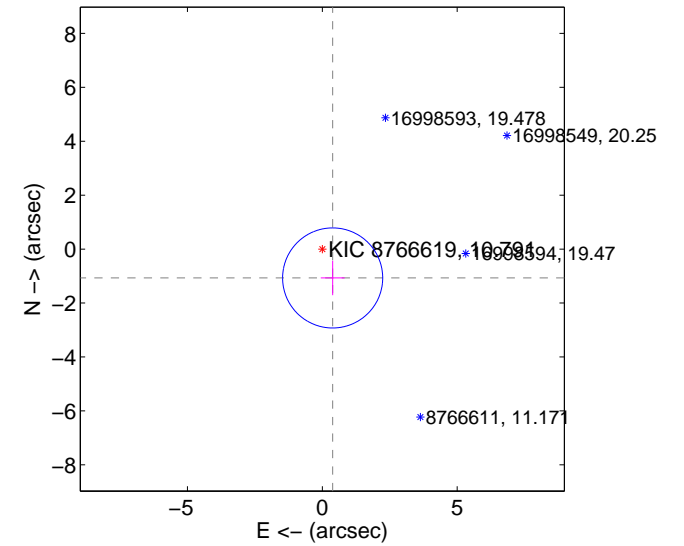
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

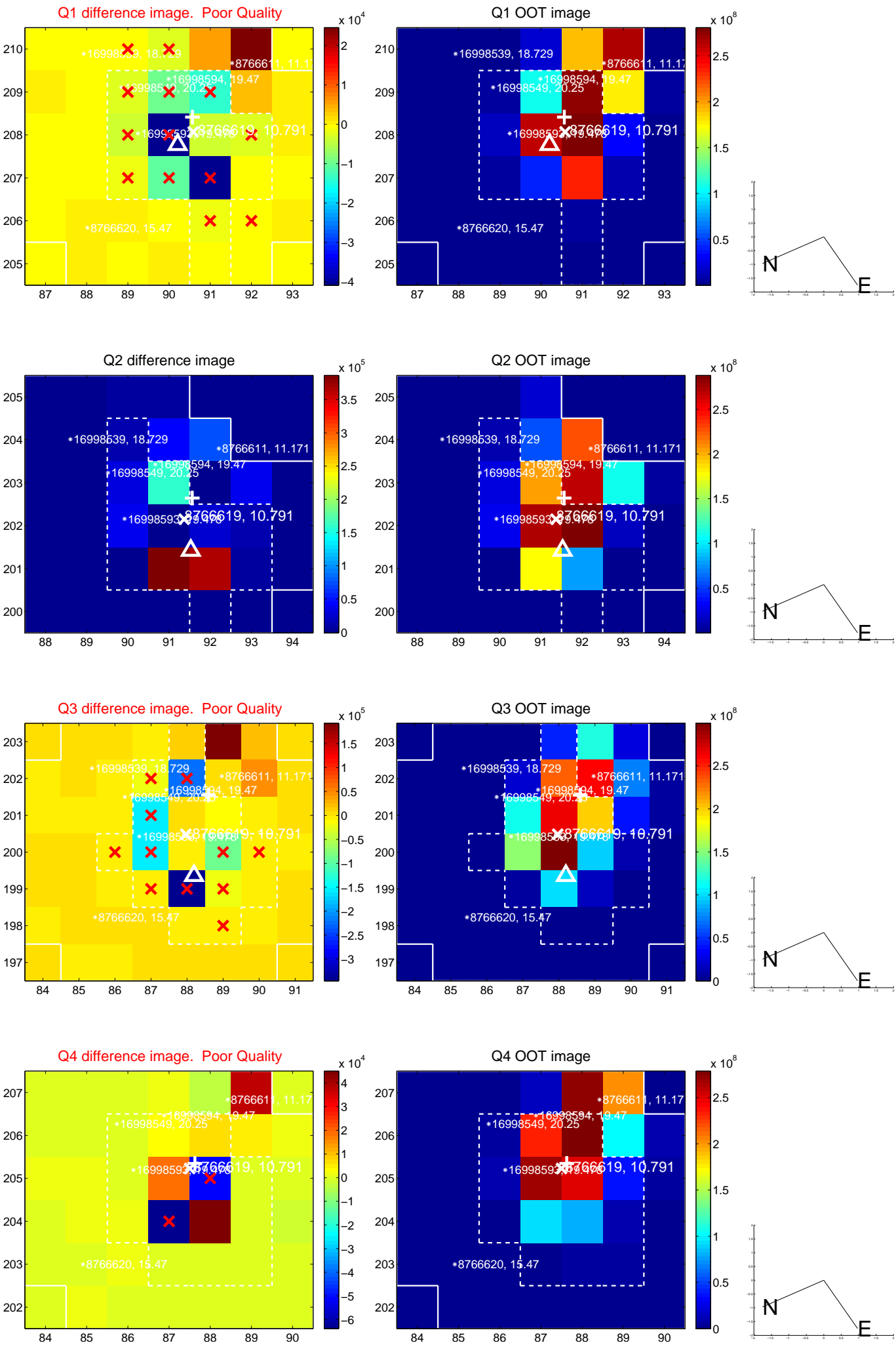


offset from photometric centroids

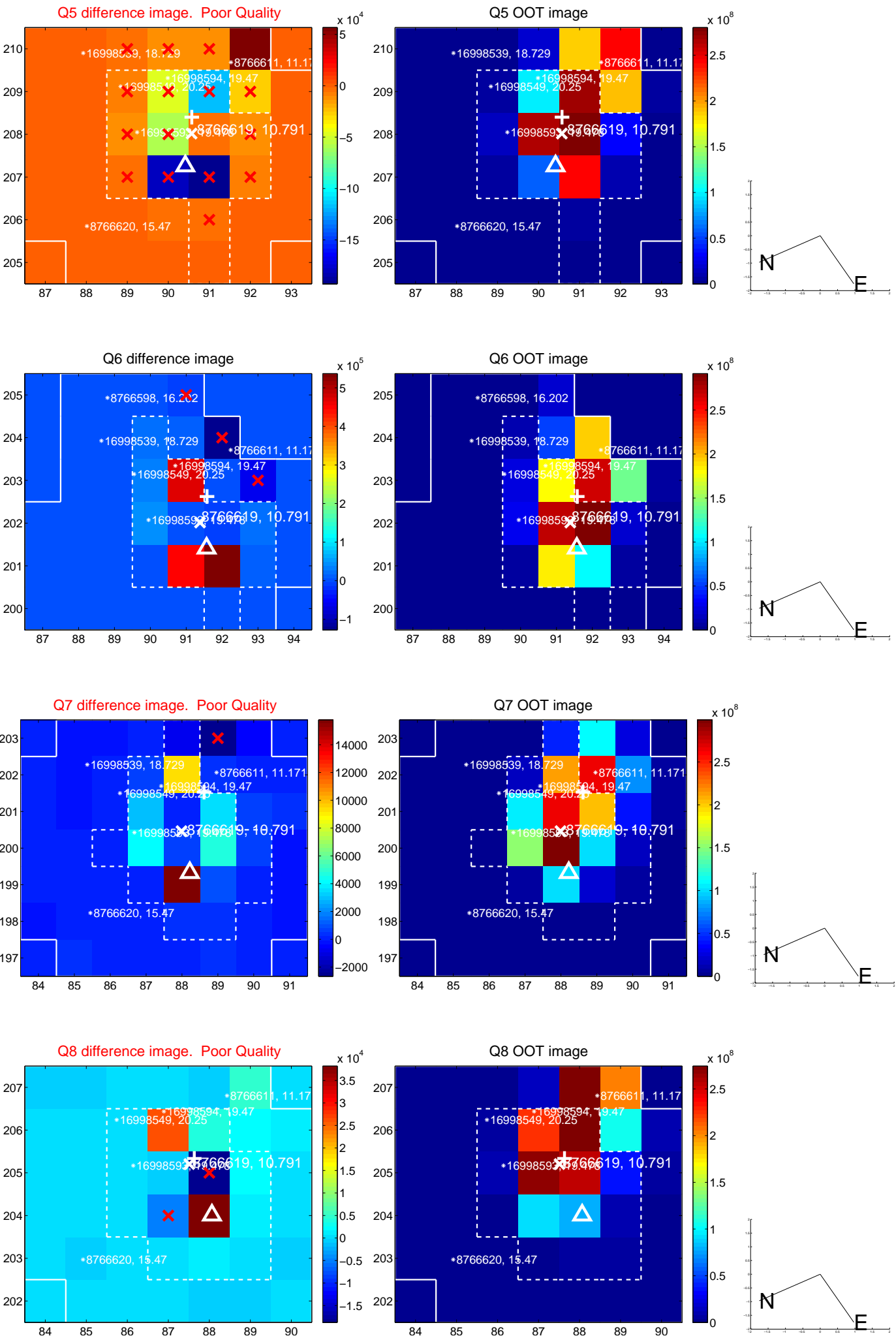


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

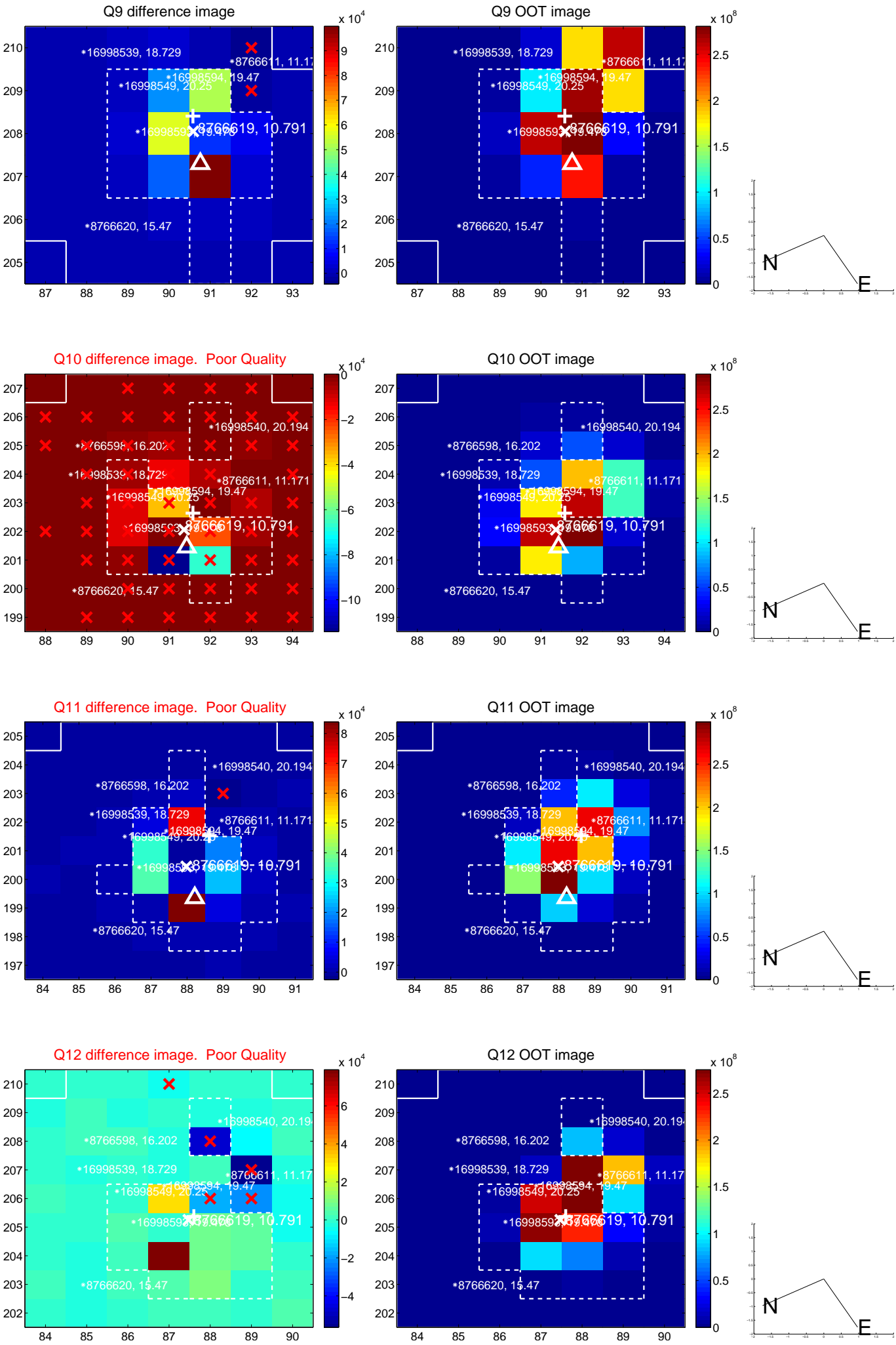
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



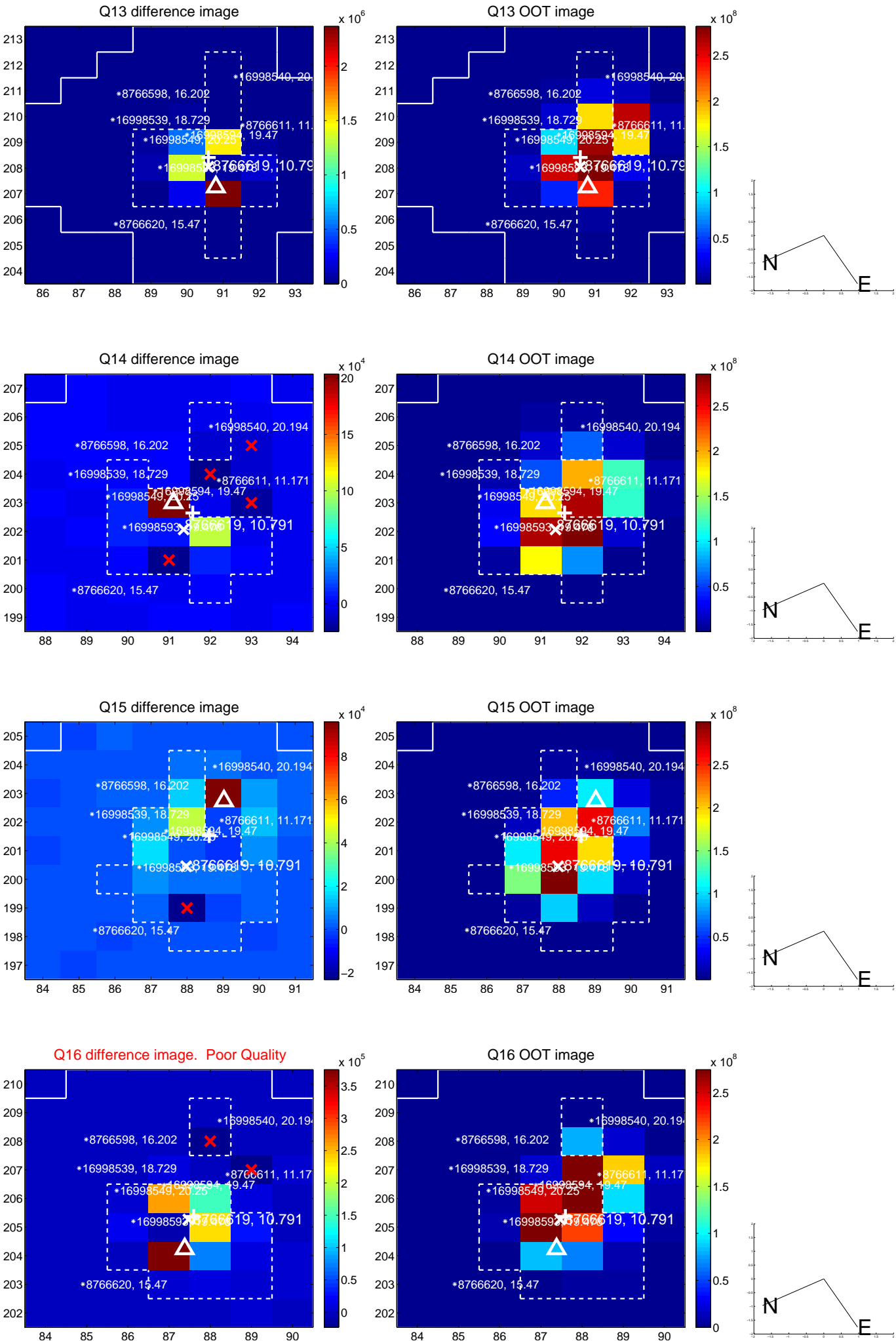
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



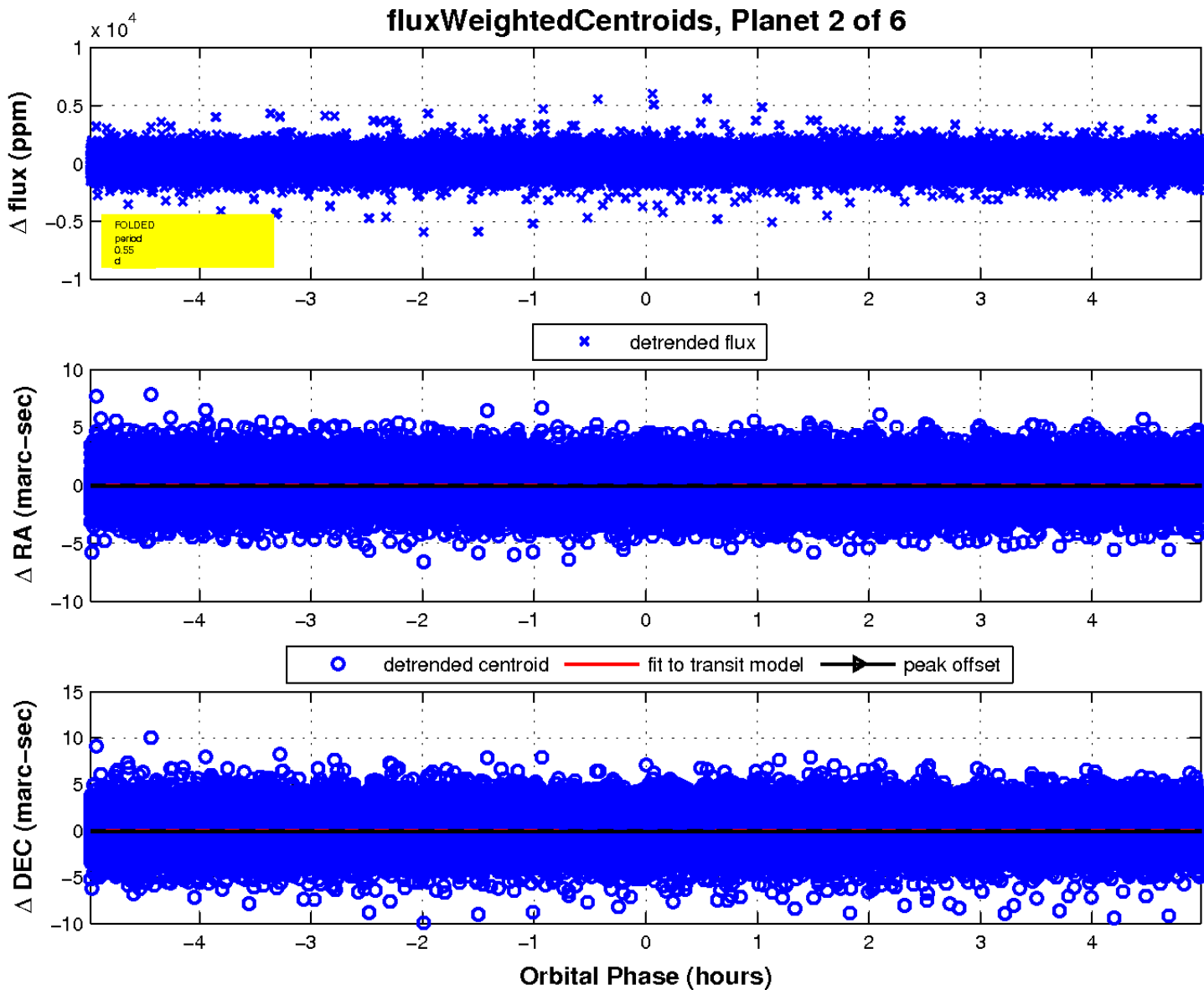
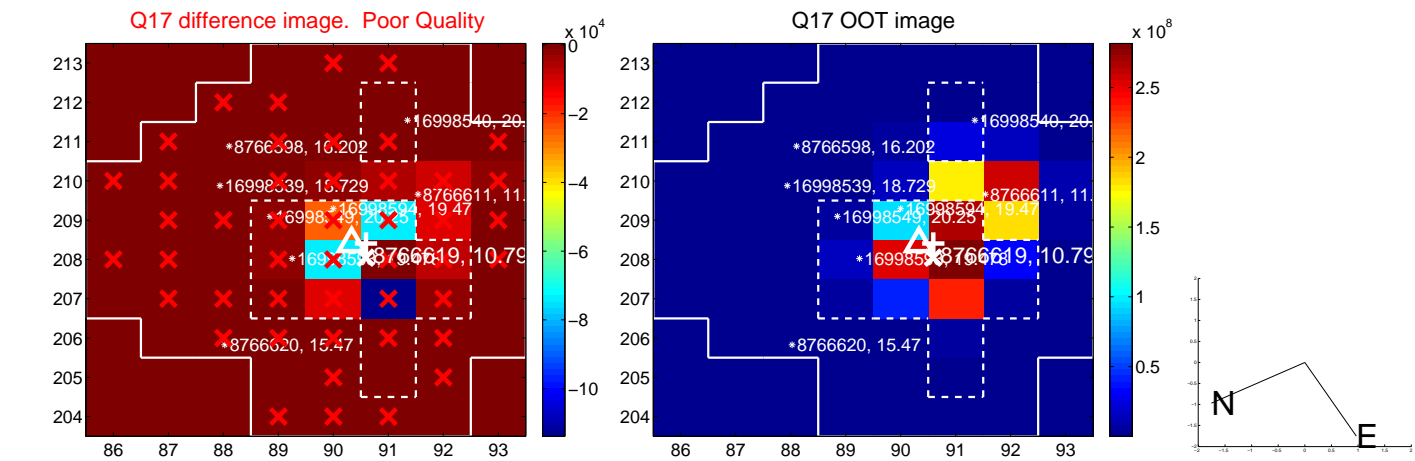
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



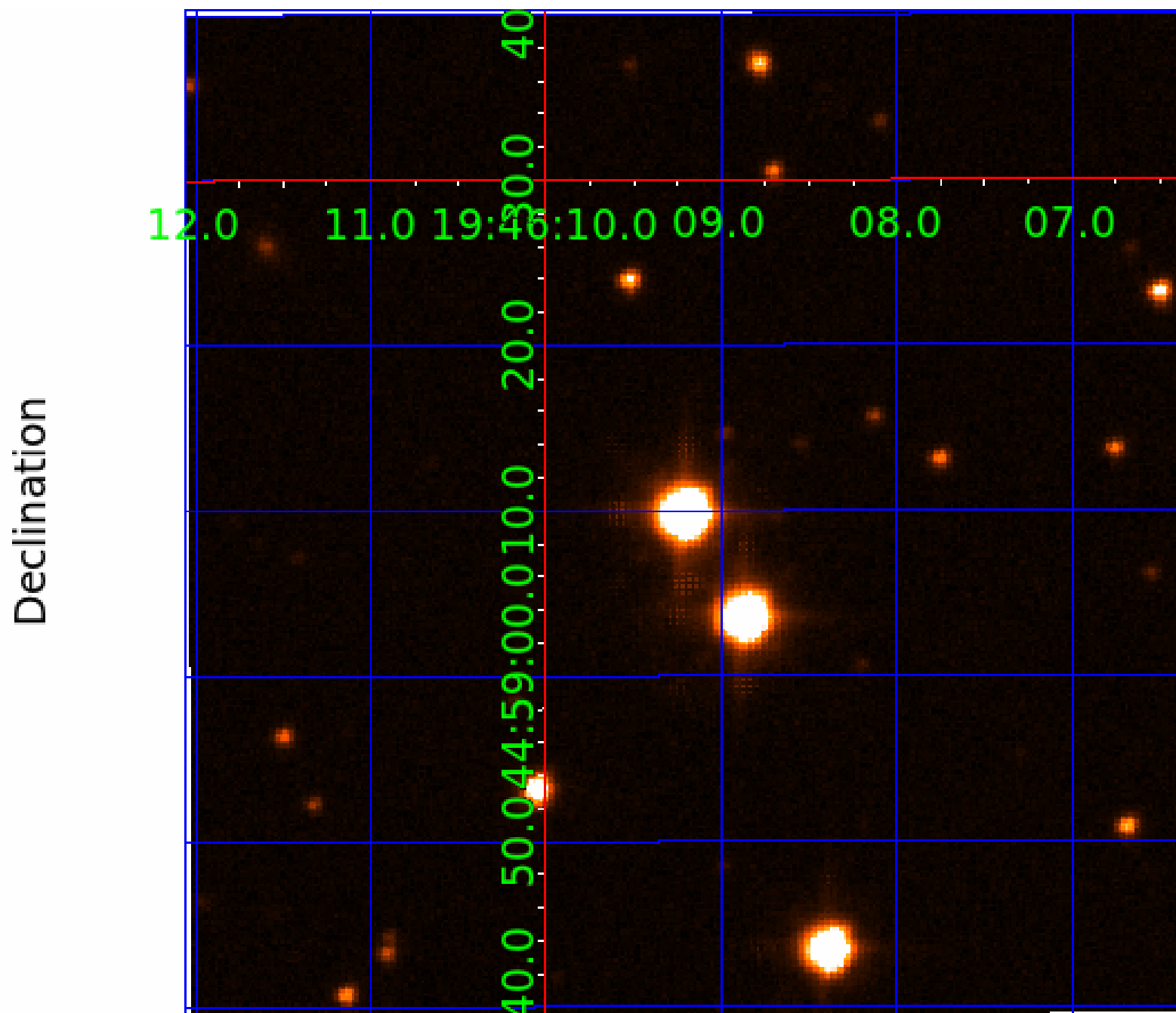
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008766619

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})
008766619-01	OBS	No	0.585600	131.649198	3.1	0.999	9.0	0.9	3.73	6569	0.77	0.00
008766619-02	OBS	No	0.553785	131.740232	62.2	1.660	9.1	9.8	3.73	6569	3.45	0.00
008766619-03	OBS	No	0.808622	132.000348	90.8	3.294	9.8	7.2	3.73	6569	4.16	51112.29
008766619-05	OBS	No	71.432459	195.850030	831.8	4.029	10.0	9.4	3.73	6569	13.80	129.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008766619-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008766619-02	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_SATURATED—HALO_GHOST
008766619-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
008766619-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

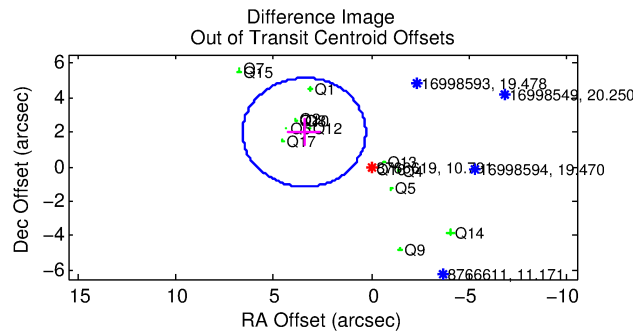
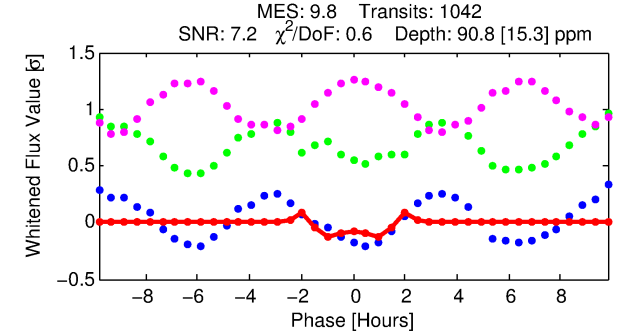
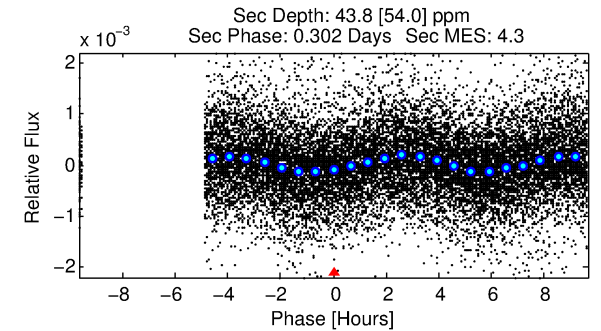
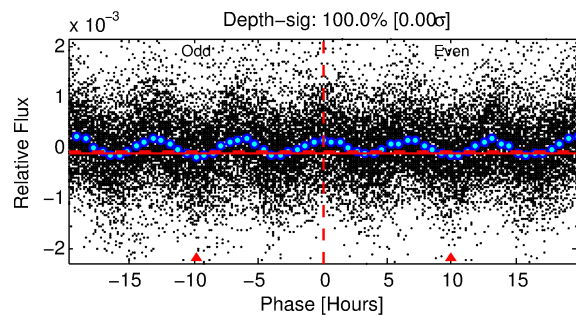
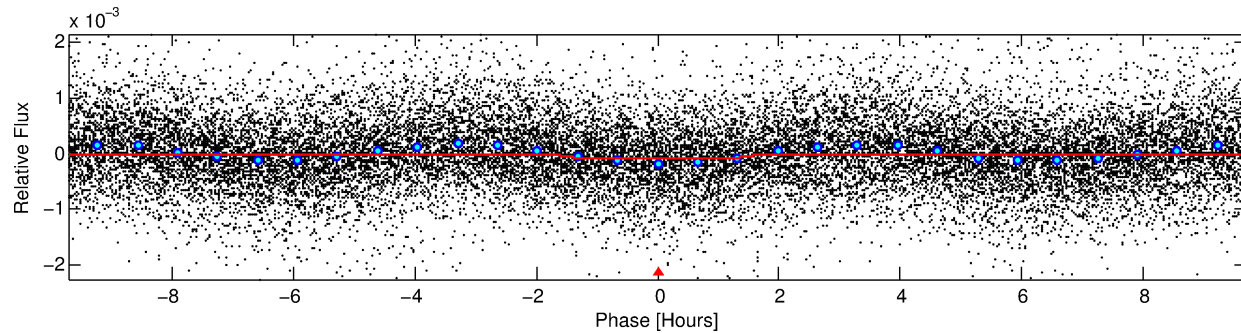
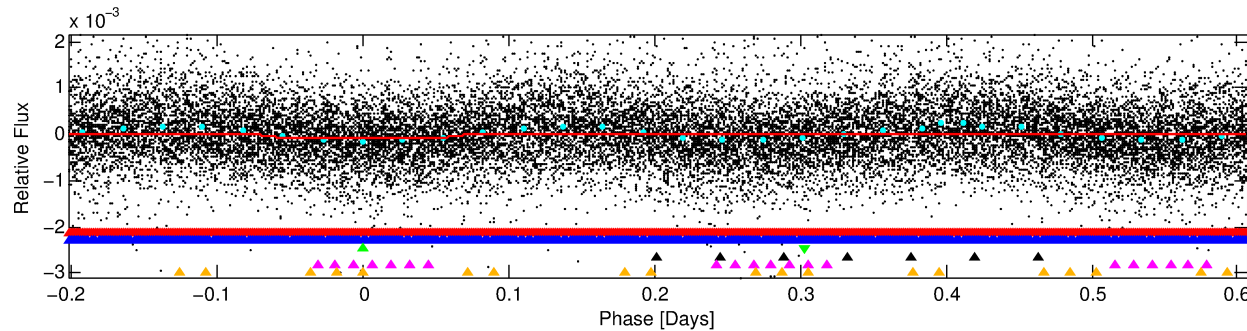
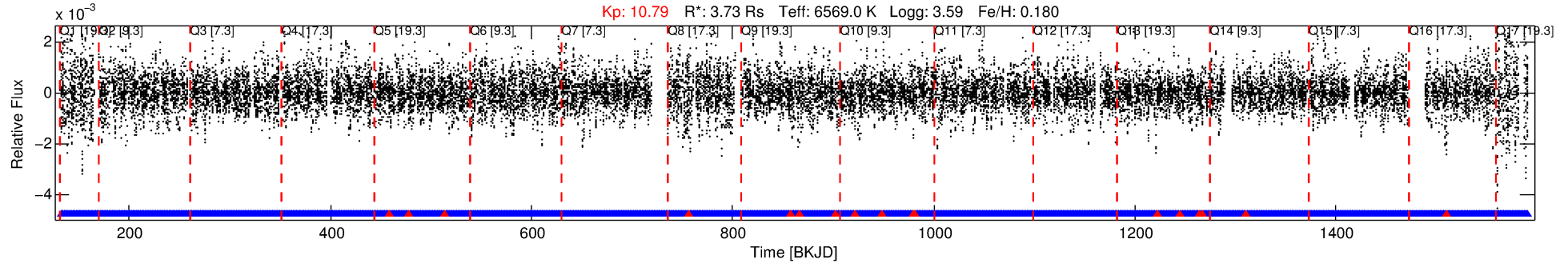
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008766619-03

No Significant Match Found

DV One-Page Summary

KIC: 8766619 Candidate: 3 of 6 Period: 0.809 d



DV Fit Results:

Period = 0.80862 [0.00001] d
Epoch = 132.0003 [0.0019] BKJD
Rp/R* = 0.0102 [0.0026]
a/R* = 1.27 [0.64]
b = 0.90 [0.28]
Seff = 51112.29 [17878.92]
Teq = 3834 [335] K
Rp = 4.16 [1.49] Re
a = 0.0213 [0.0048] AU
Ag = 0.63 [0.87] [-0.42 σ]
Teffp = 5290 [1765] K [0.81 σ]

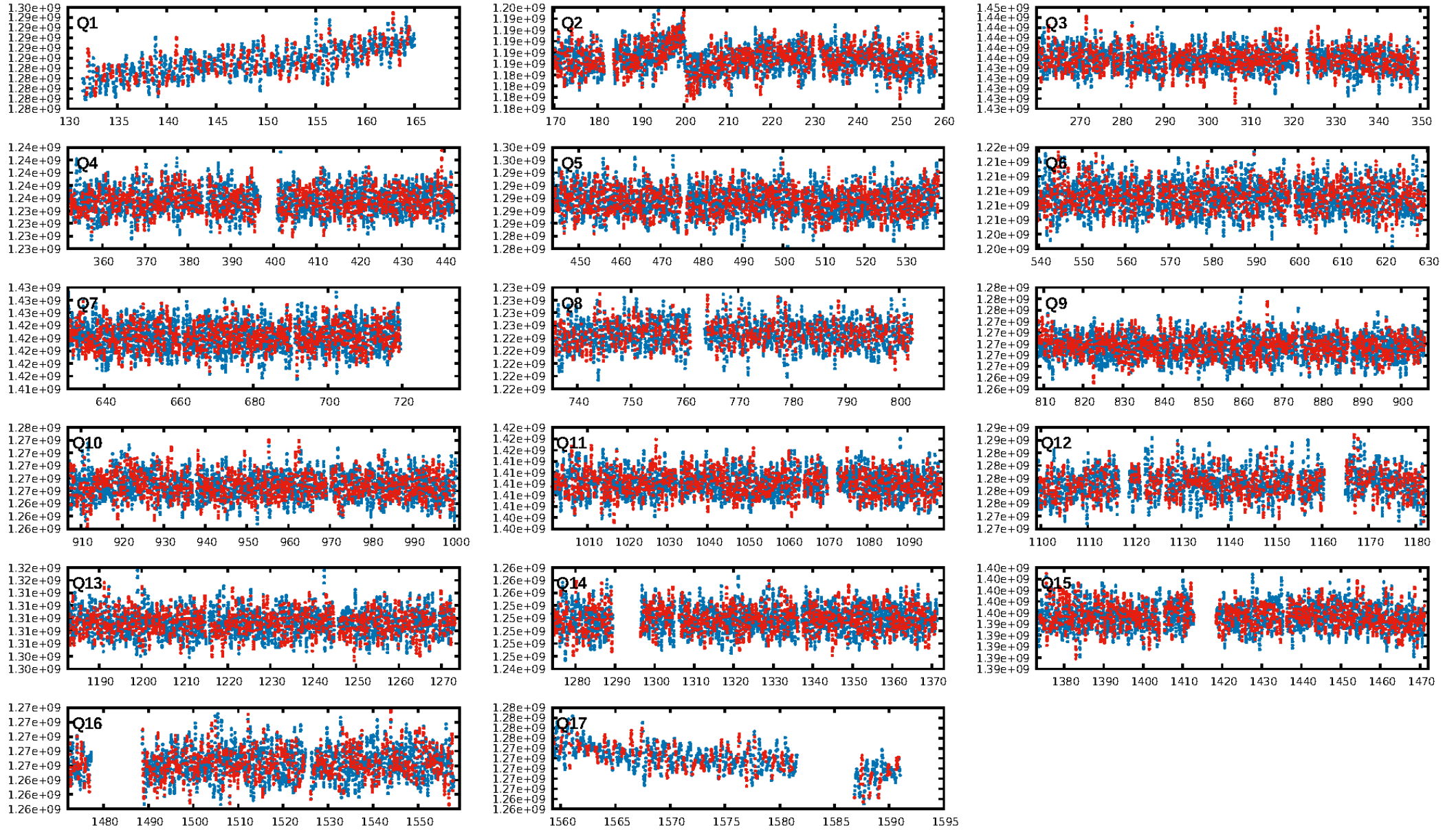
DV Diagnostic Results:

ShortPeriod-sig: 88.0% [1.56 σ]
LongPeriod-sig: 100.0% [325.70 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [976/993]
GhostDiagnostic-chr: 8.433
Centroid-sig: 0.0%
Centroid-so: 1.662 arcsec [2.79 σ]
OotOffset-rm: 3.968 arcsec [3.78 σ]
KicOffset-rm: 2.116 arcsec [2.55 σ]
OotOffset-st: 4/2/4/5 [15]
KicOffset-st: 4/2/4/5 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 0.00 [0/17]

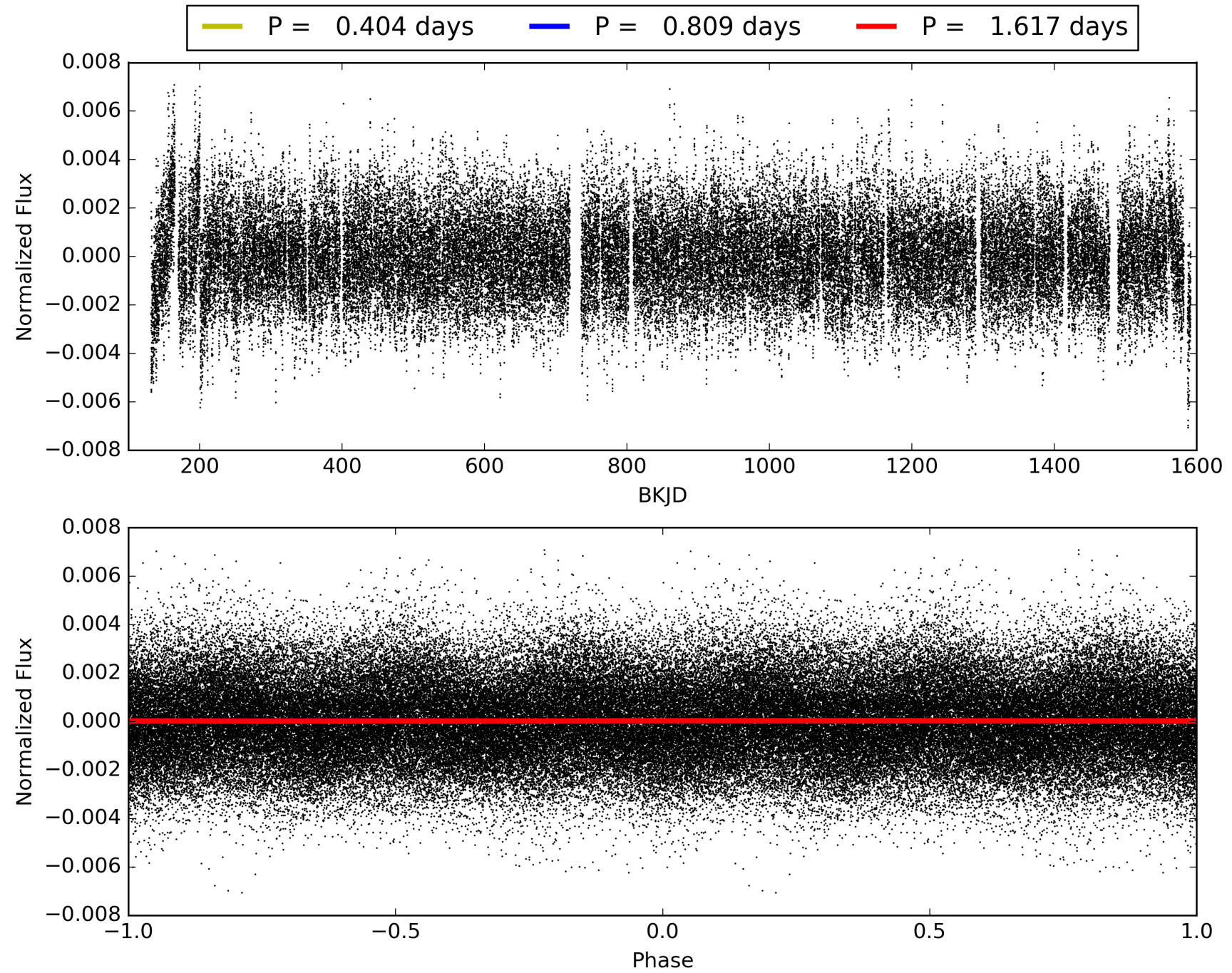
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:43:40 Z

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

TCE 008766619-03, PDC Light Curves

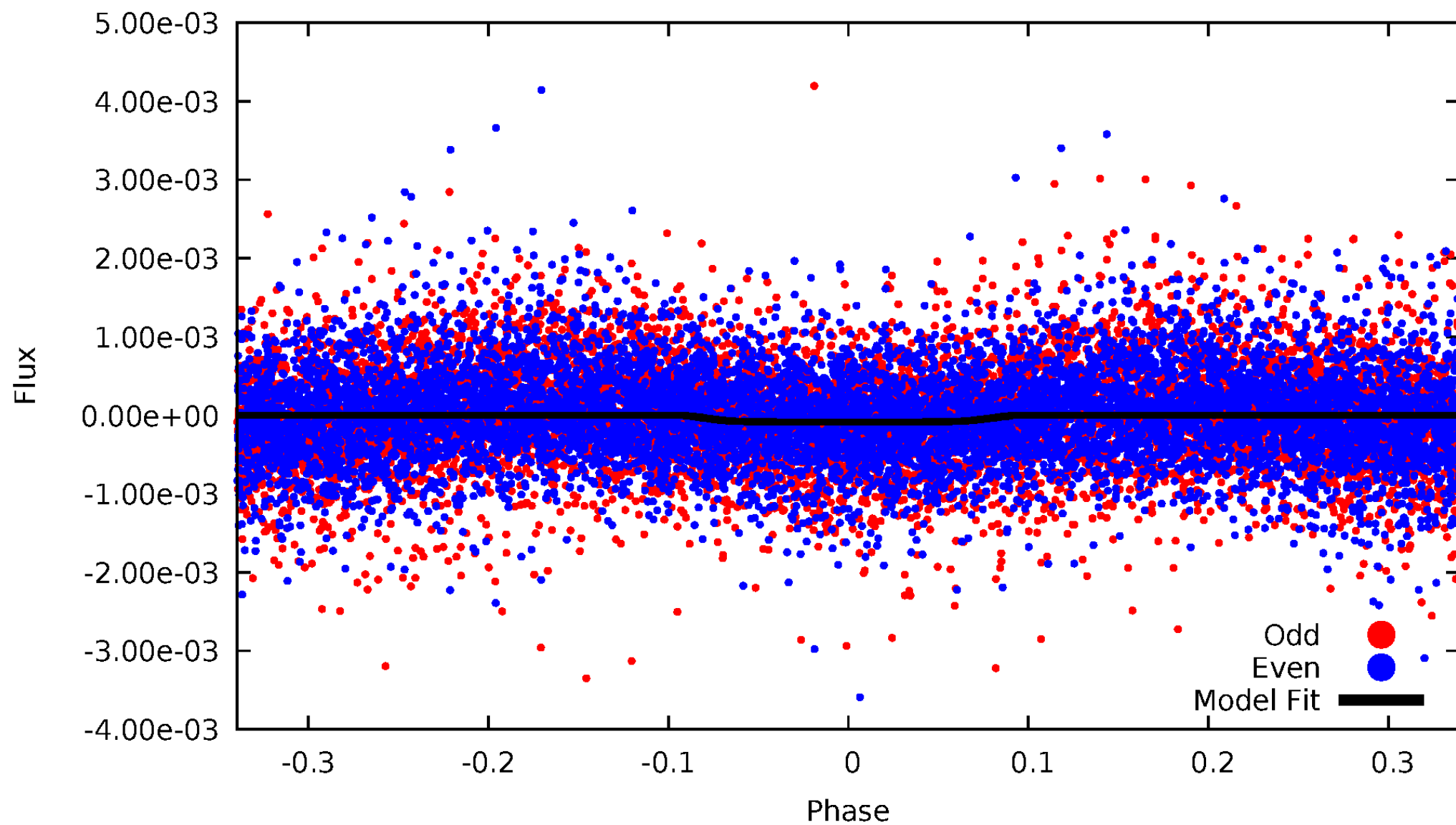


TCE 008766619-03



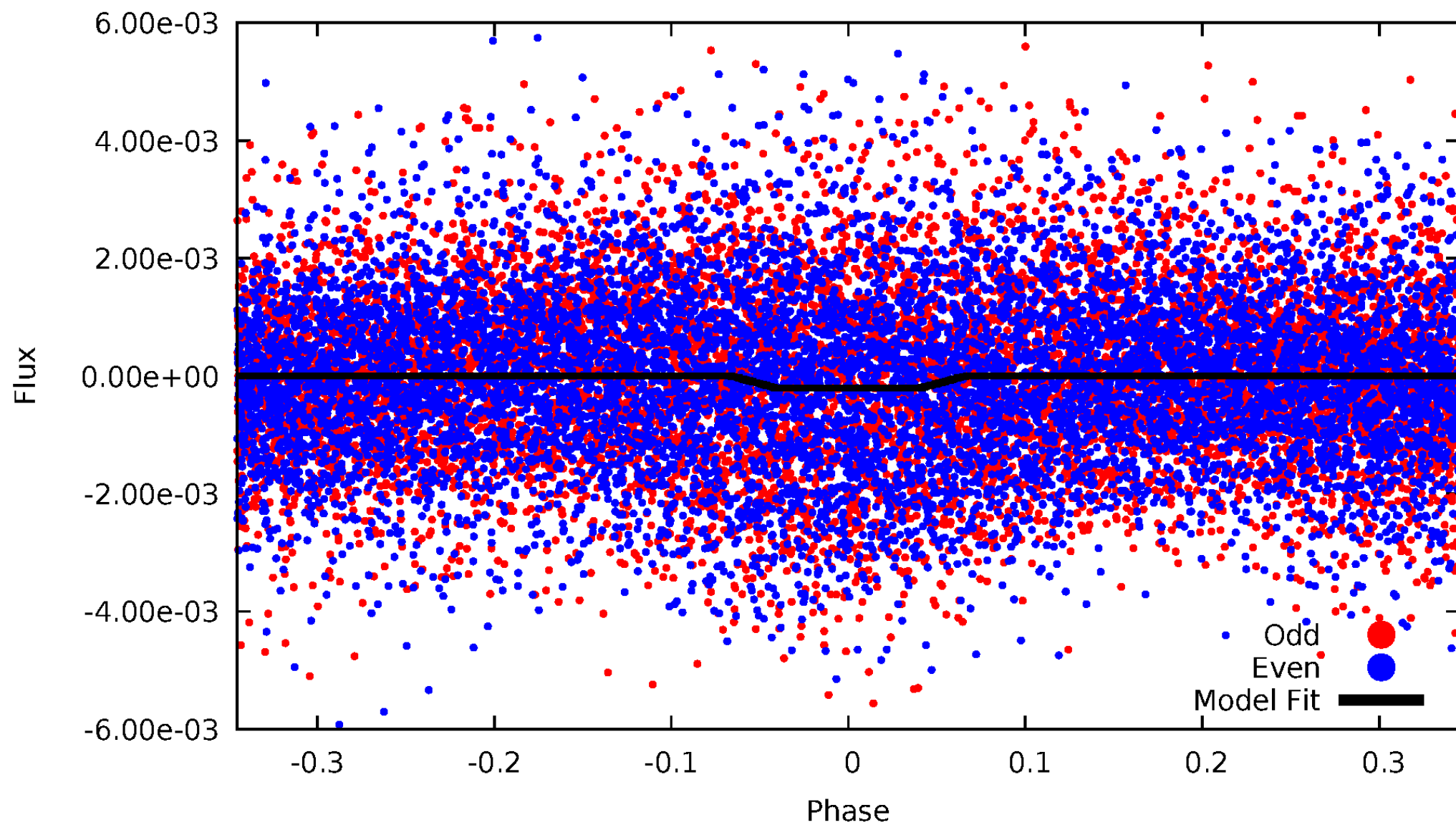
DV Odd/Even

TCE 008766619-03



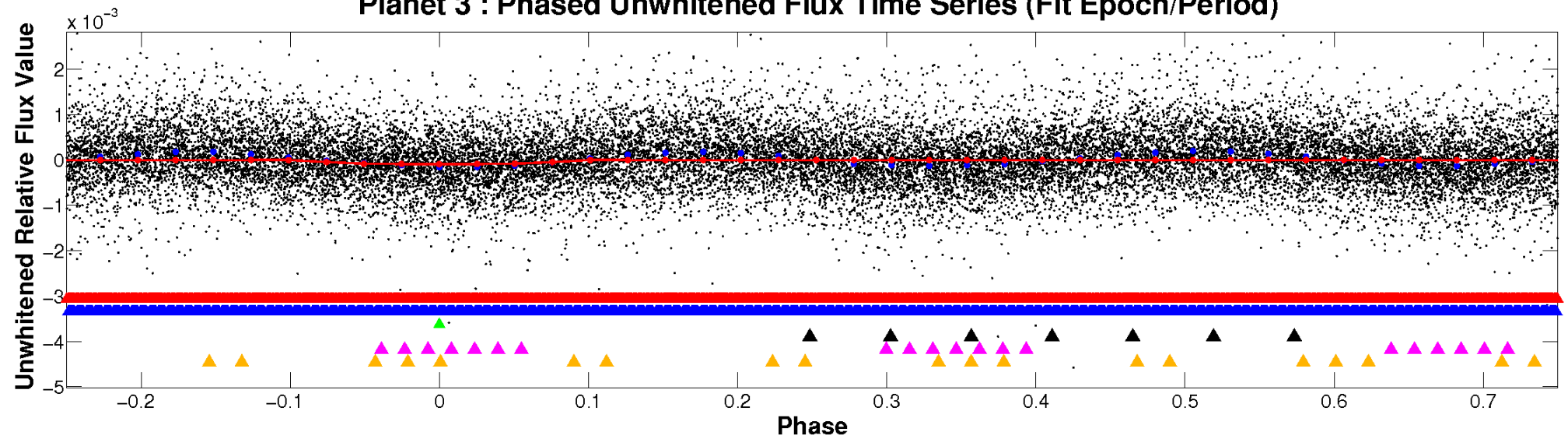
ALT Odd/Even

TCE 008766619-03

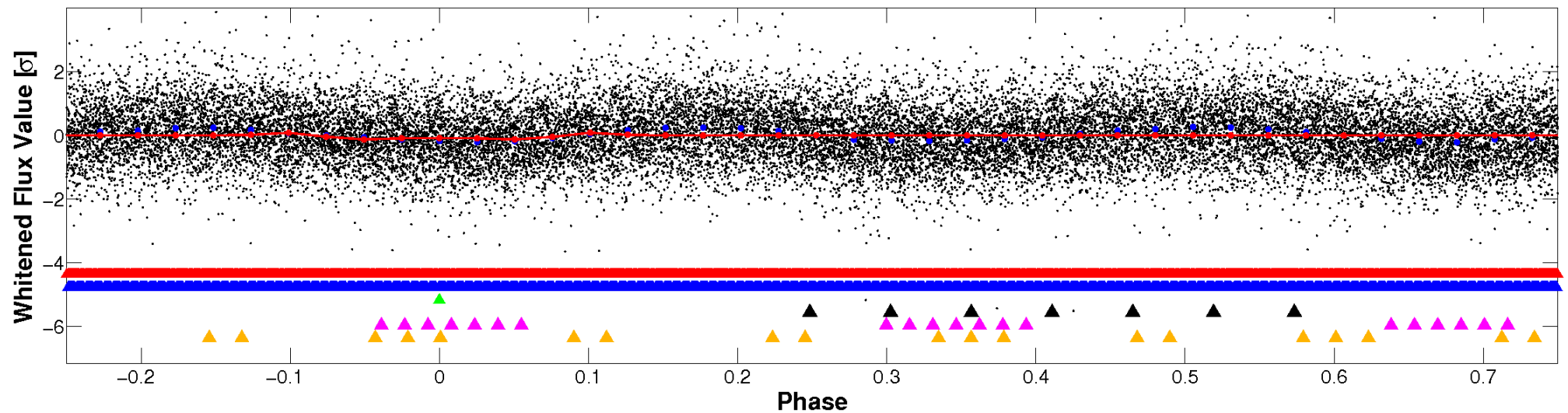


Non-Whitened Vs. Whitened Light Curve

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

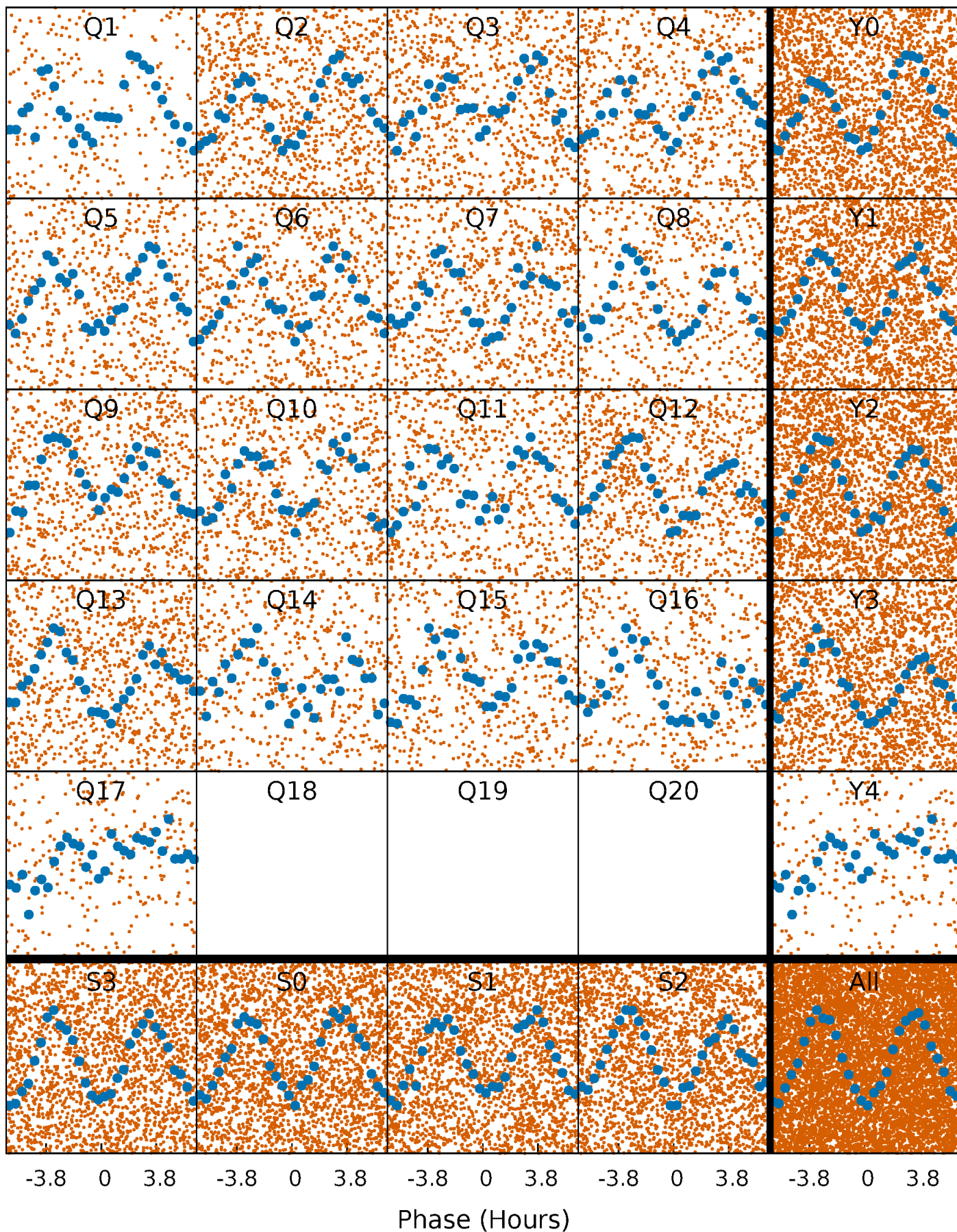


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



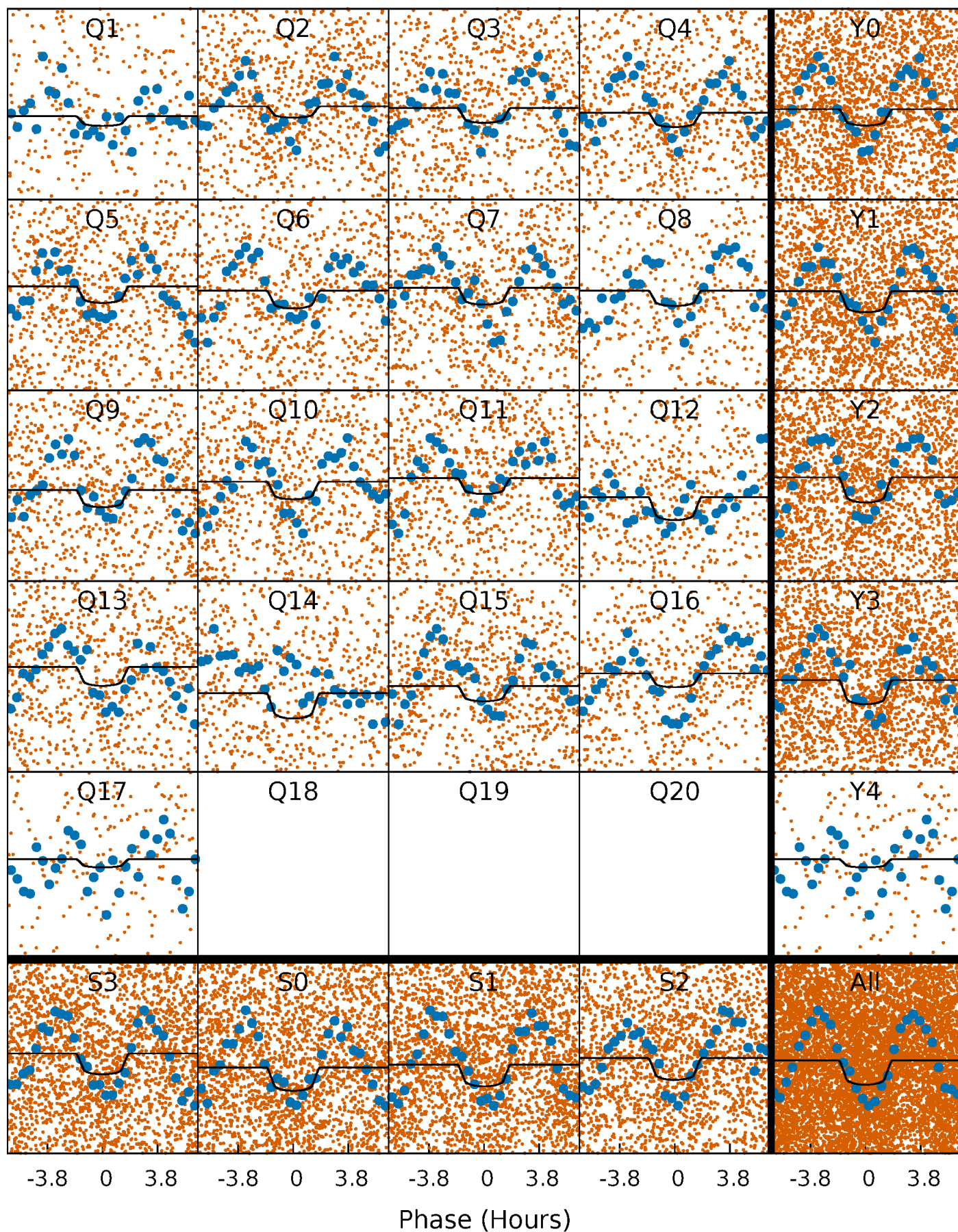
PDC Quarter-Phased Transit Curves

TCE 008766619-03 P= 0.808622 Days $T_0=132.000348$ (BKJD)



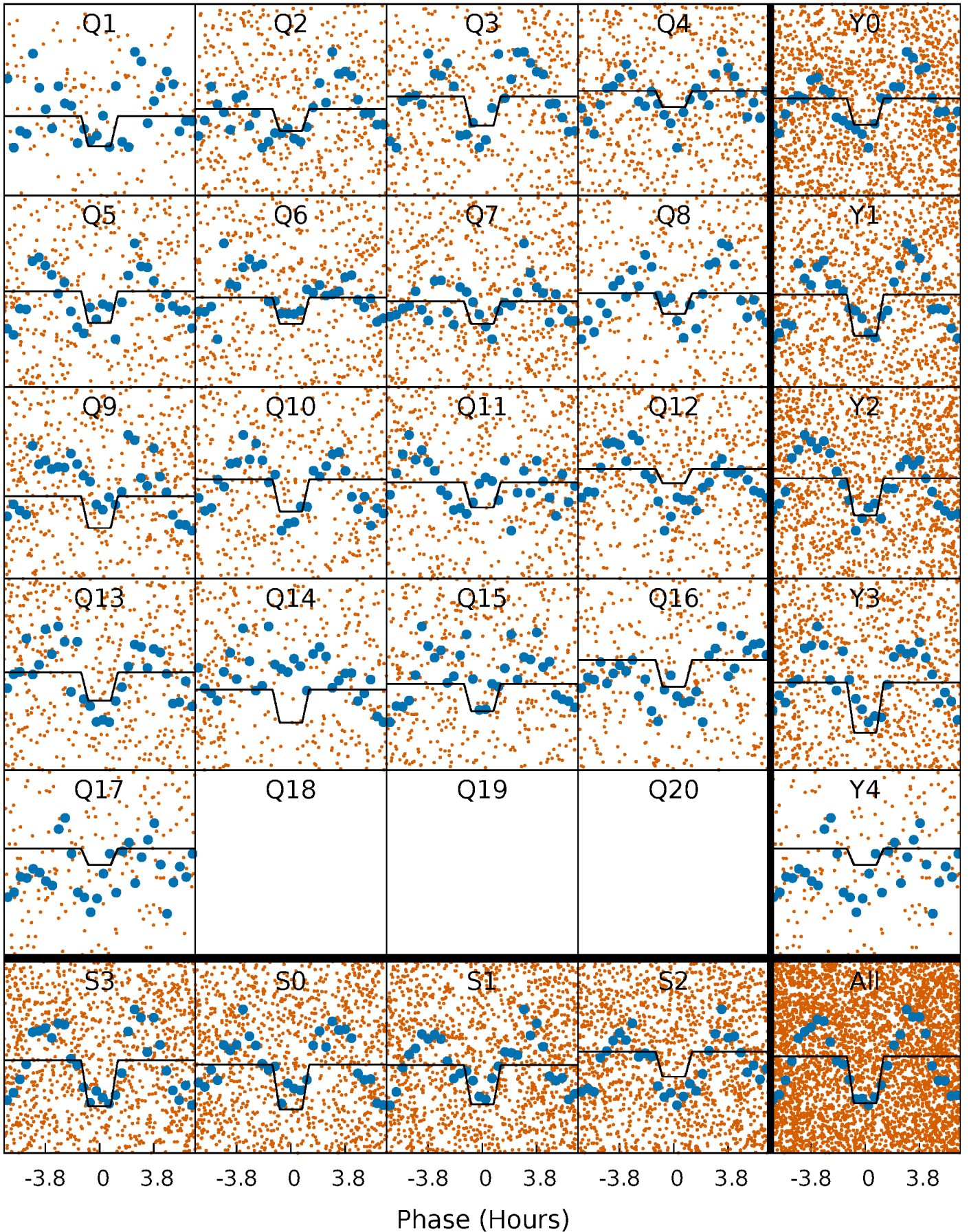
DV Quarter-Phased Transit Curves

TCE 008766619-03 P= 0.808622 Days $T_0=132.000348$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

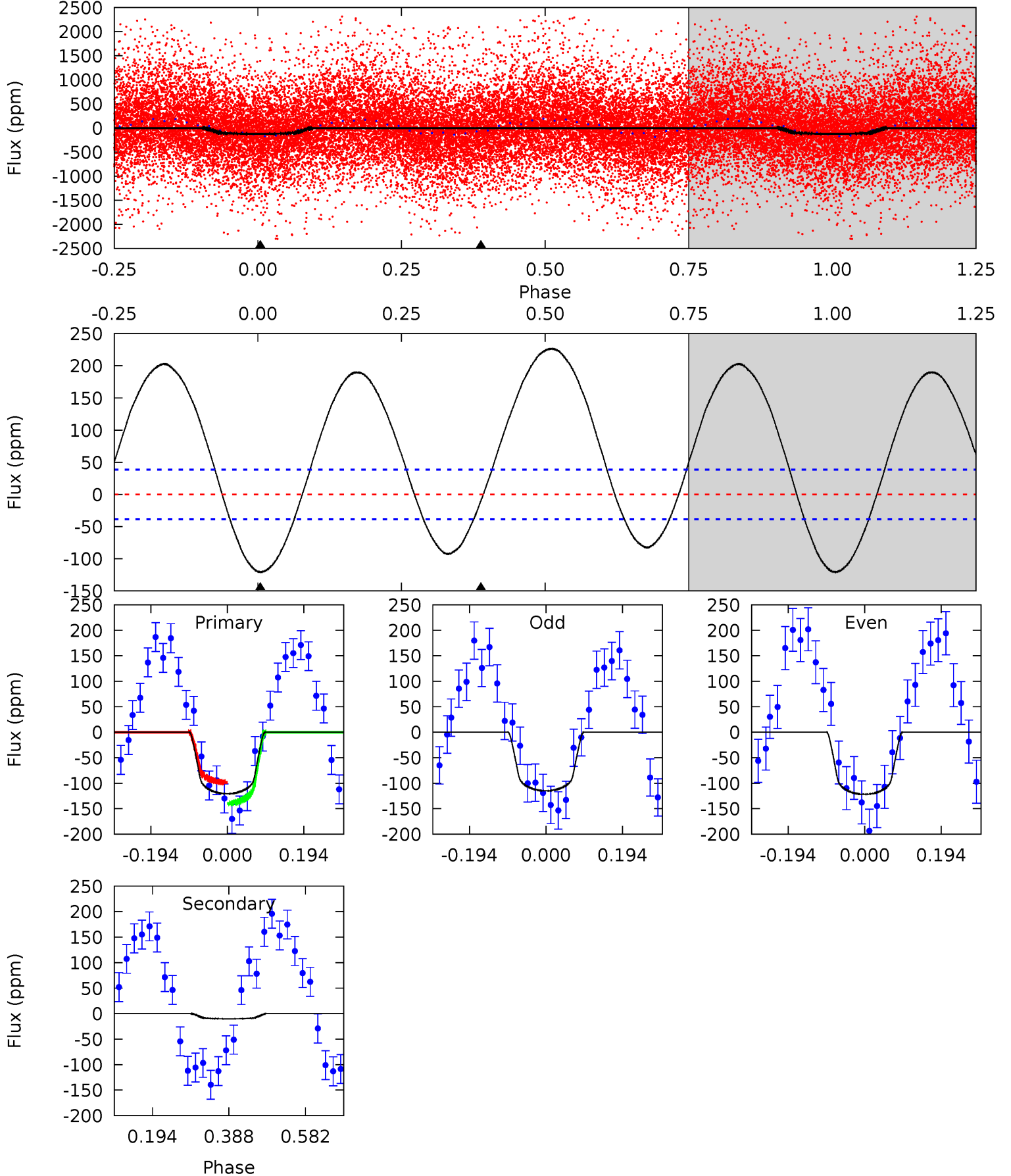
TCE 008766619-03 P= 0.808636 Days $T_0=131.999503$ (BKJD)



DV Model-Shift Uniqueness Test

008766619-03, P = 0.808622 Days, E = 131.191726 Days

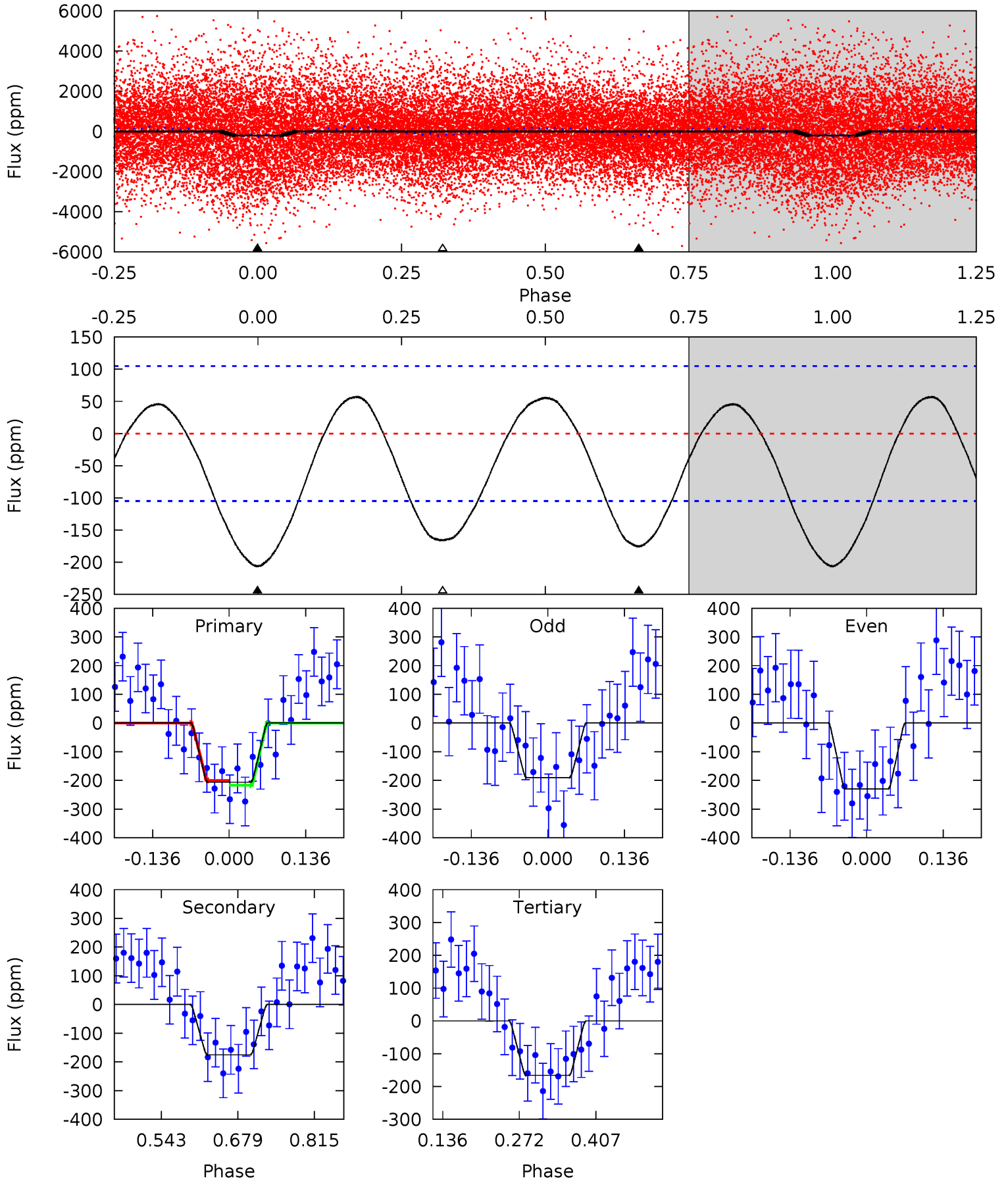
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	1.16	0	0	4.42	1.30	9.35	13.8	13.8	1.16	1.16	0.40	1.47	0.65	2.44



Alt Model-Shift Uniqueness Test

008766619-03, P = 0.808636 Days, E = 131.190867 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.85	7.53	7.12	0	4.50	1.49	3.51	1.73	8.85	0.41	7.53	0.85	1.23	0.22	0.36



Stellar Parameters For KIC 008766619

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6569^{+117}_{-130}	$3.590^{+0.192}_{-0.036}$	$0.180^{+0.150}_{-0.150}$	$3.732^{+0.299}_{-0.957}$	$1.974^{+0.156}_{-0.253}$	$0.053^{+0.058}_{-0.009}$
	+2%/-2%	+5%/-1%	+83%/-83%	+8%/-26%	+8%/-13%	+108%/-17%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 008766619-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10 ± 9	$3.92^{+1.06}_{-1.05}$	5268^{+180}_{-317}	-3914^{+7310}_{-538}	$0.158^{+0.220}_{-0.137}$
Alt.	-175 ± 23	$5.58^{+1.15}_{-1.12}$	5264^{+182}_{-300}	5915^{+814}_{-645}	$1.400^{+0.875}_{-0.432}$

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

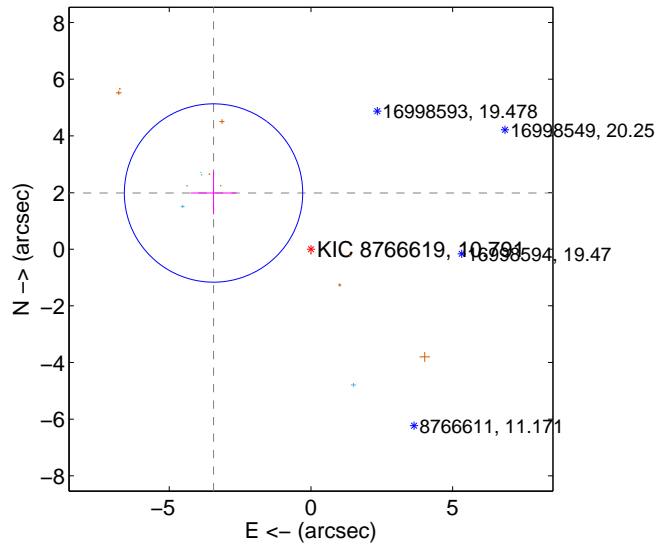
Supplemental centroid analysis for 008766619-03. **Kepler magnitude: 10.79**. Transit SNR 7.20

There are 5 quarters with good PRF difference image offsets

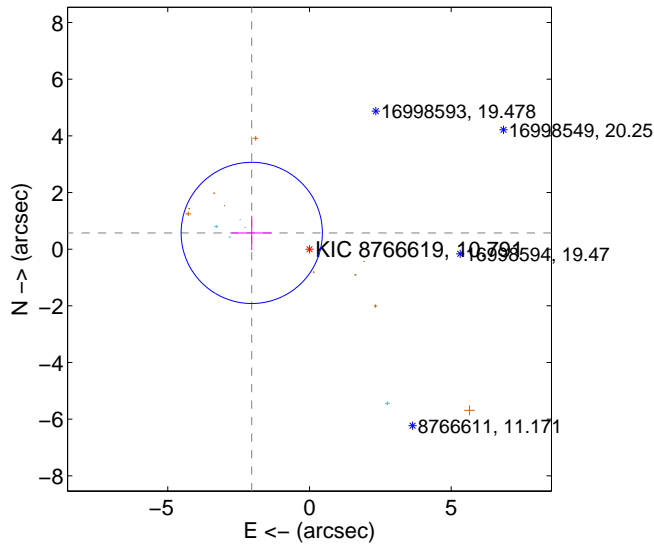
The direct PRF centroid is offset from the target star catalog position by about 1.43 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.968 \pm 1.049	3.78	3.438 \pm 0.806	1.982 \pm 0.751
PRF-fit source offset from KIC position	2.116 \pm 0.830	2.55	2.037 \pm 0.714	0.573 \pm 0.608
photometric centroid source offset	1.66 \pm 0.59	2.79	-0.09 \pm 0.41	-1.66 \pm 0.60

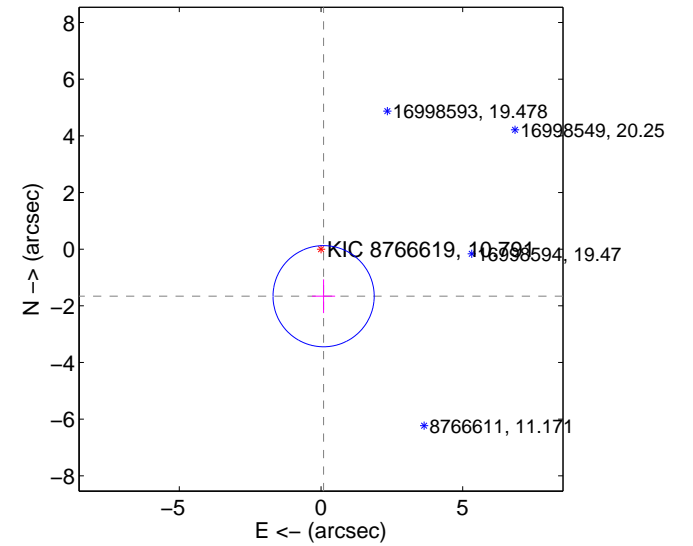
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

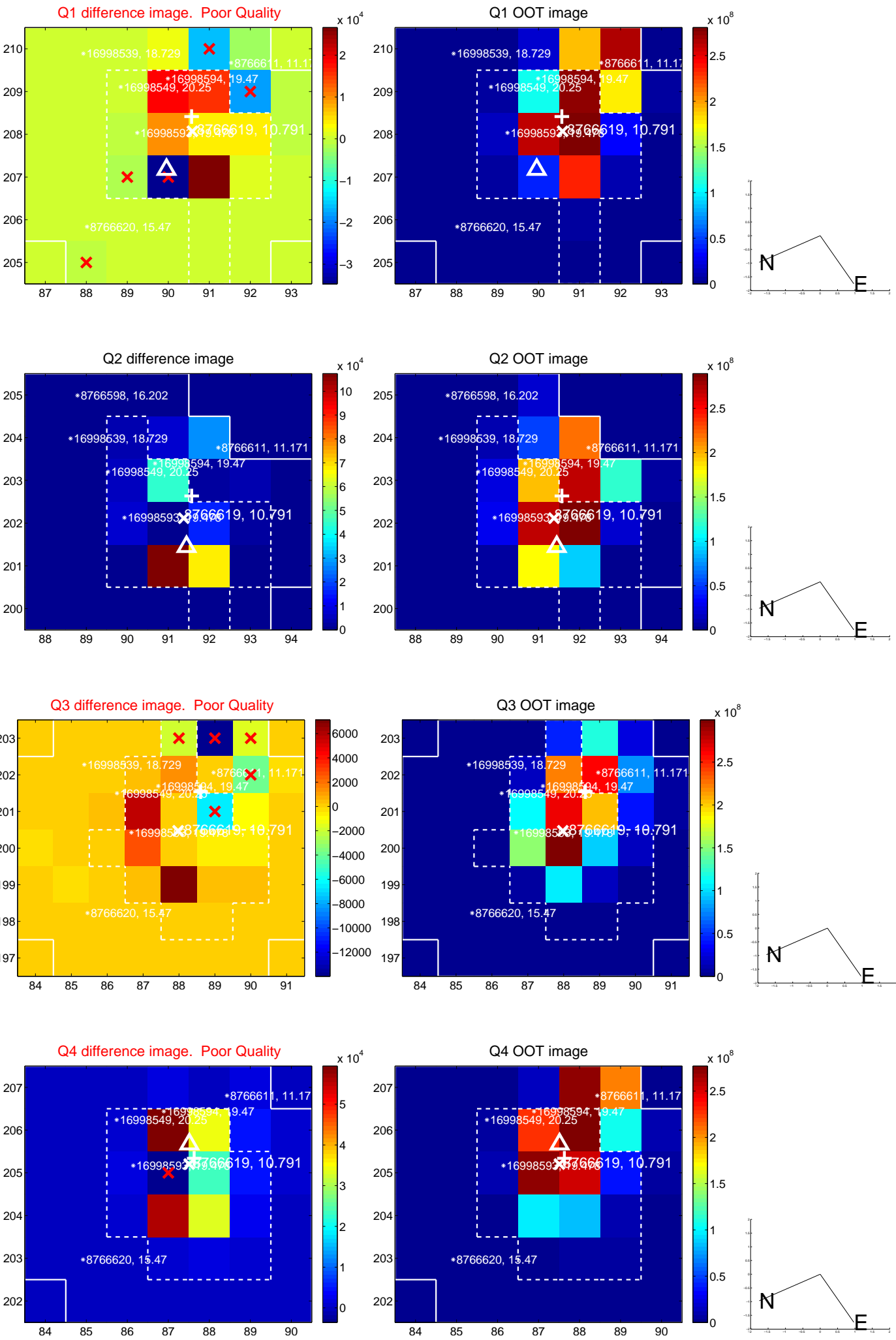


offset from photometric centroids

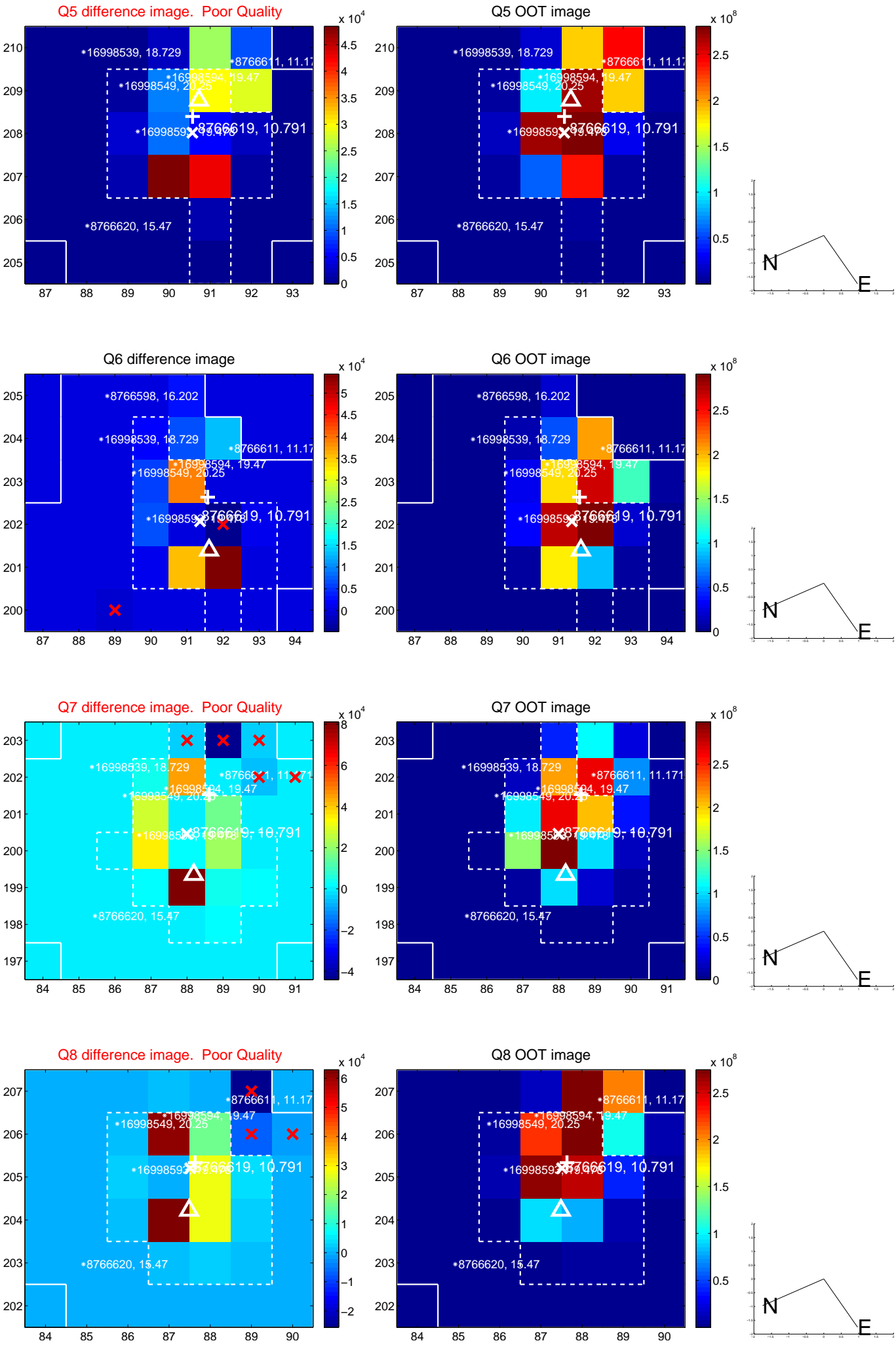


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

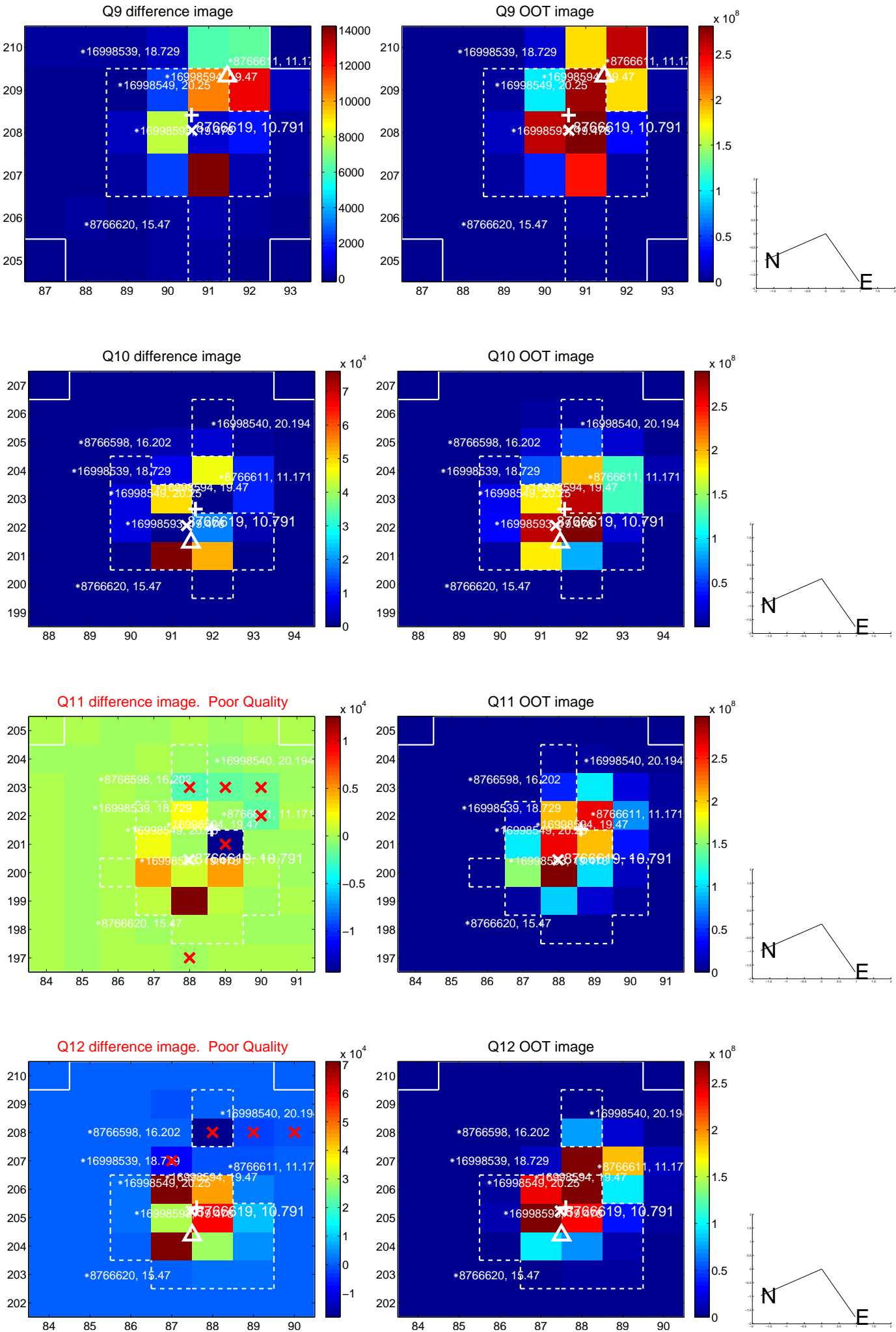
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



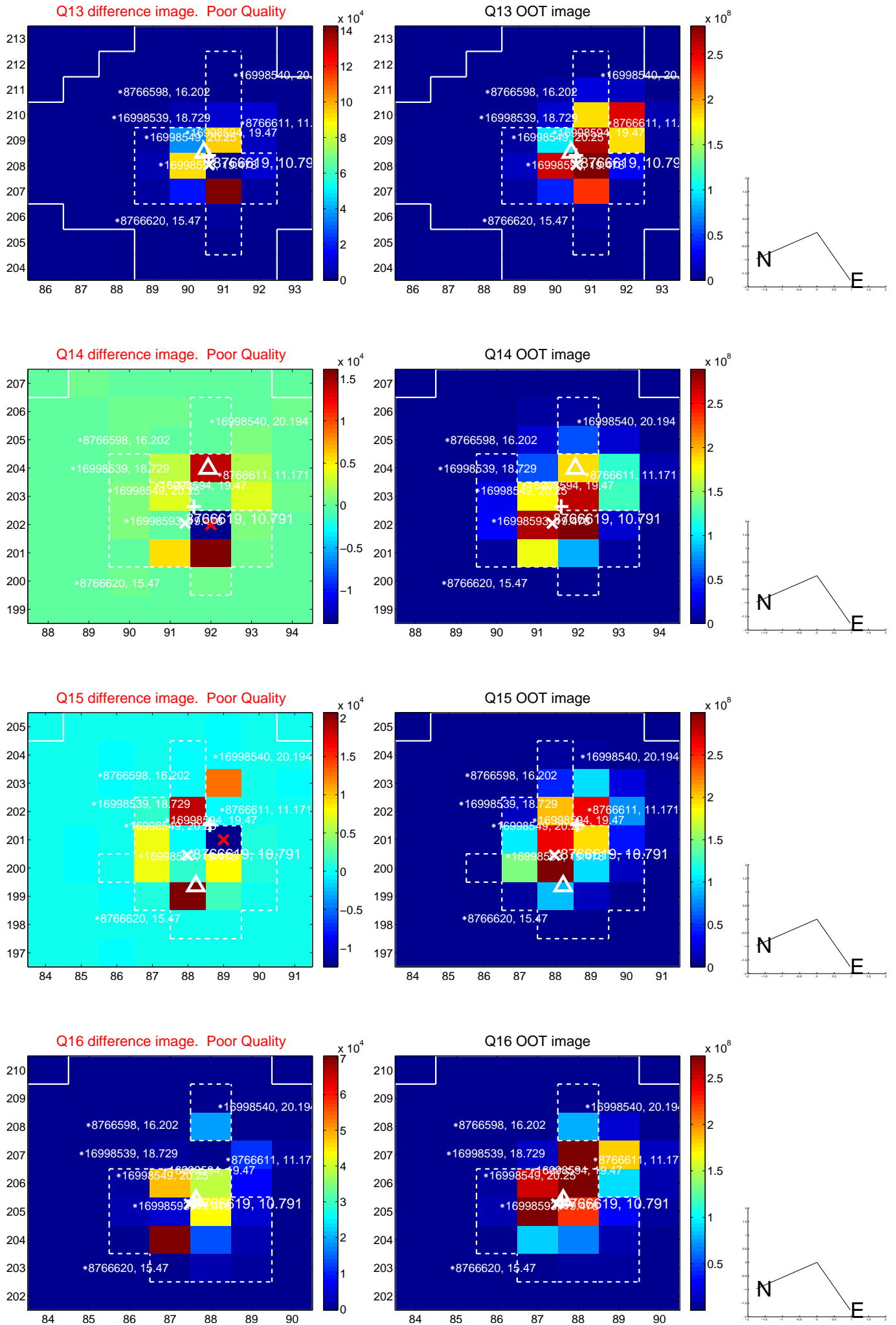
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



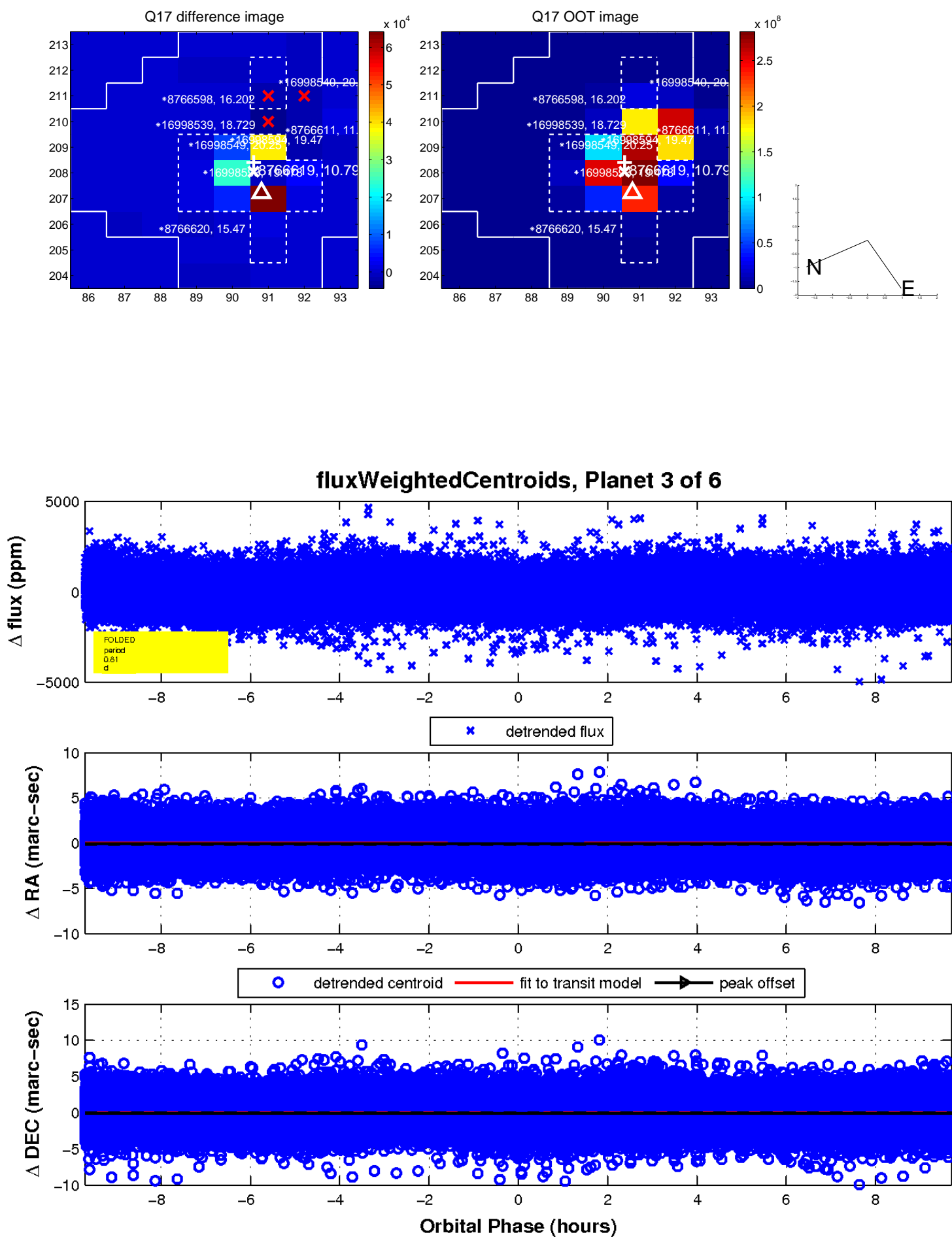
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



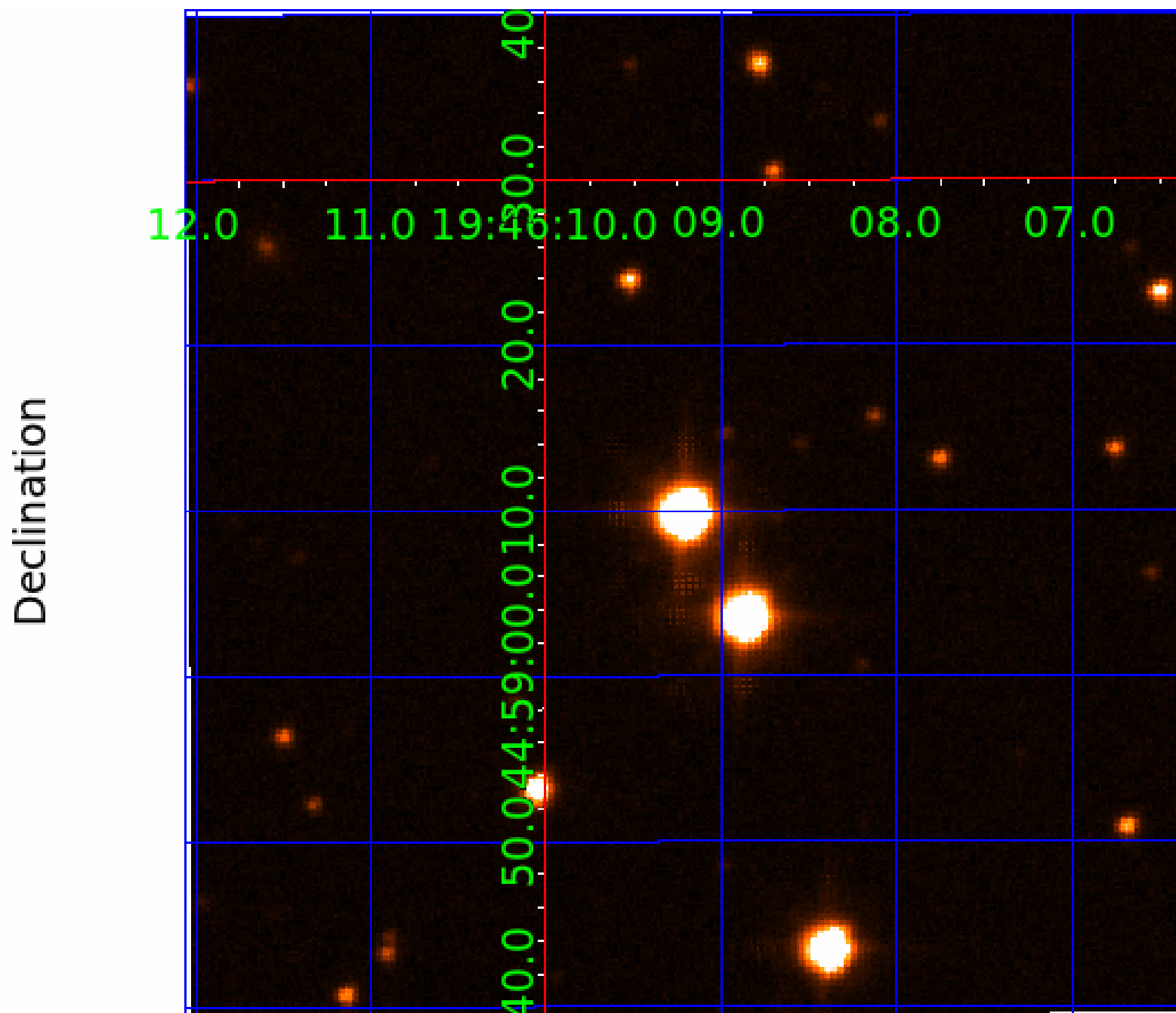
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008766619

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})
008766619-01	OBS	No	0.585600	131.649198	3.1	0.999	9.0	0.9	3.73	6569	0.77	0.00
008766619-02	OBS	No	0.553785	131.740232	62.2	1.660	9.1	9.8	3.73	6569	3.45	0.00
008766619-03	OBS	No	0.808622	132.000348	90.8	3.294	9.8	7.2	3.73	6569	4.16	51112.29
008766619-05	OBS	No	71.432459	195.850030	831.8	4.029	10.0	9.4	3.73	6569	13.80	129.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008766619-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008766619-02	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_SATURATED—HALO_GHOST
008766619-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
008766619-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

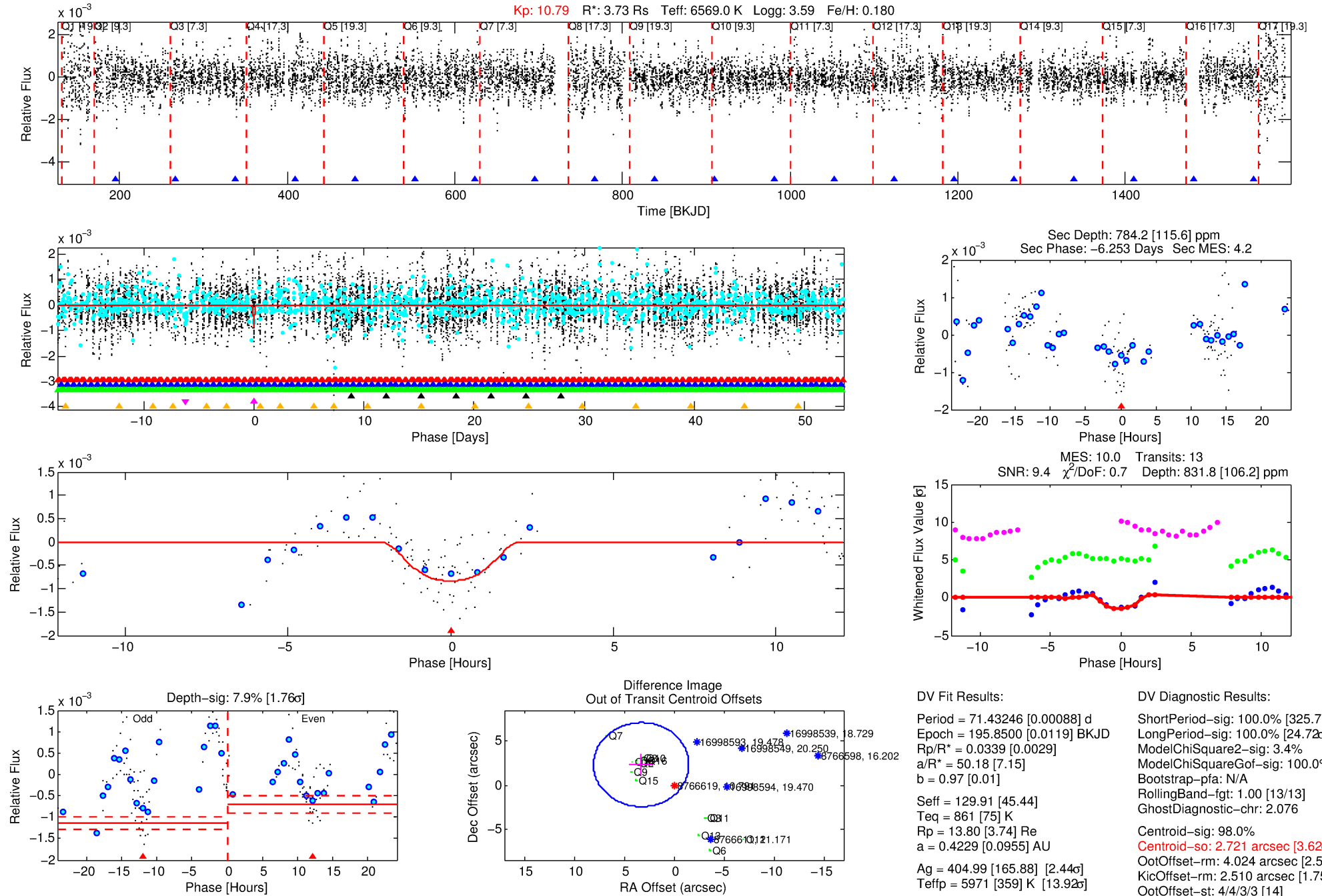
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008766619-05

No Significant Match Found

DV One-Page Summary

KIC: 8766619 Candidate: 5 of 6 Period: 71.432 d



DV Fit Results:

Period = 71.43246 [0.00088] d
Epoch = 195.8500 [0.0119] BKJD
Rp/R* = 0.0339 [0.0029]
a/R* = 50.18 [7.15]
b = 0.97 [0.01]
Seff = 129.91 [45.44]
Teff = 861 [75] K
Rp = 13.80 [3.74] Re
a = 0.4229 [0.0955] AU
Ag = 404.99 [165.88] [2.44σ]
Teffp = 5971 [359] K [13.92σ]

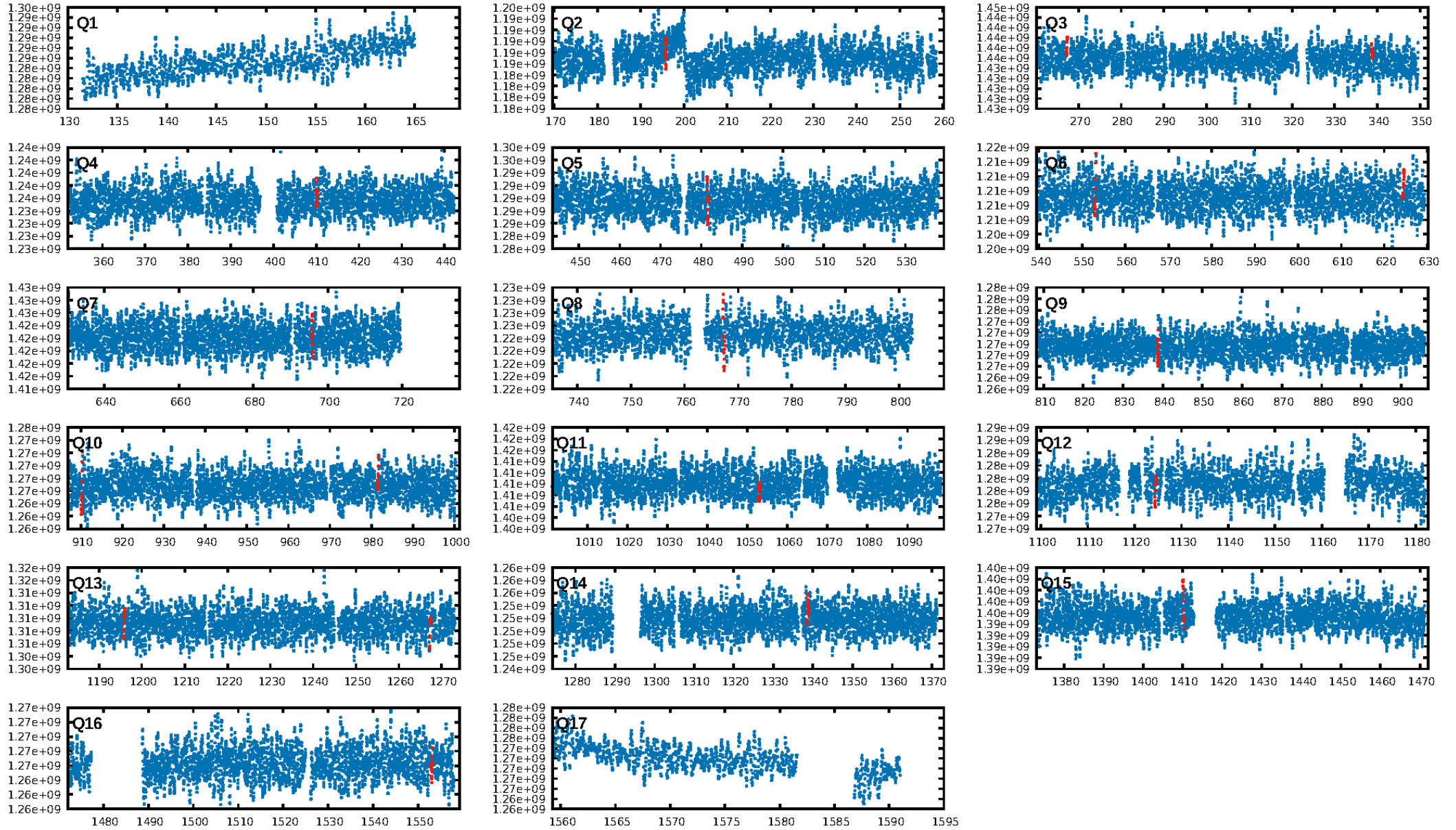
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [325.70σ]
LongPeriod-sig: 100.0% [24.72σ]
ModelChiSquare2-sig: 3.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [13/13]
GhostDiagnostic-chr: 2.076
Centroid-sig: 98.0%
Centroid-so: 2.721 arcsec [3.62σ]
OotOffset-rm: 4.024 arcsec [2.53σ]
KicOffset-rm: 2.510 arcsec [1.75σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 0.00 [0/15]

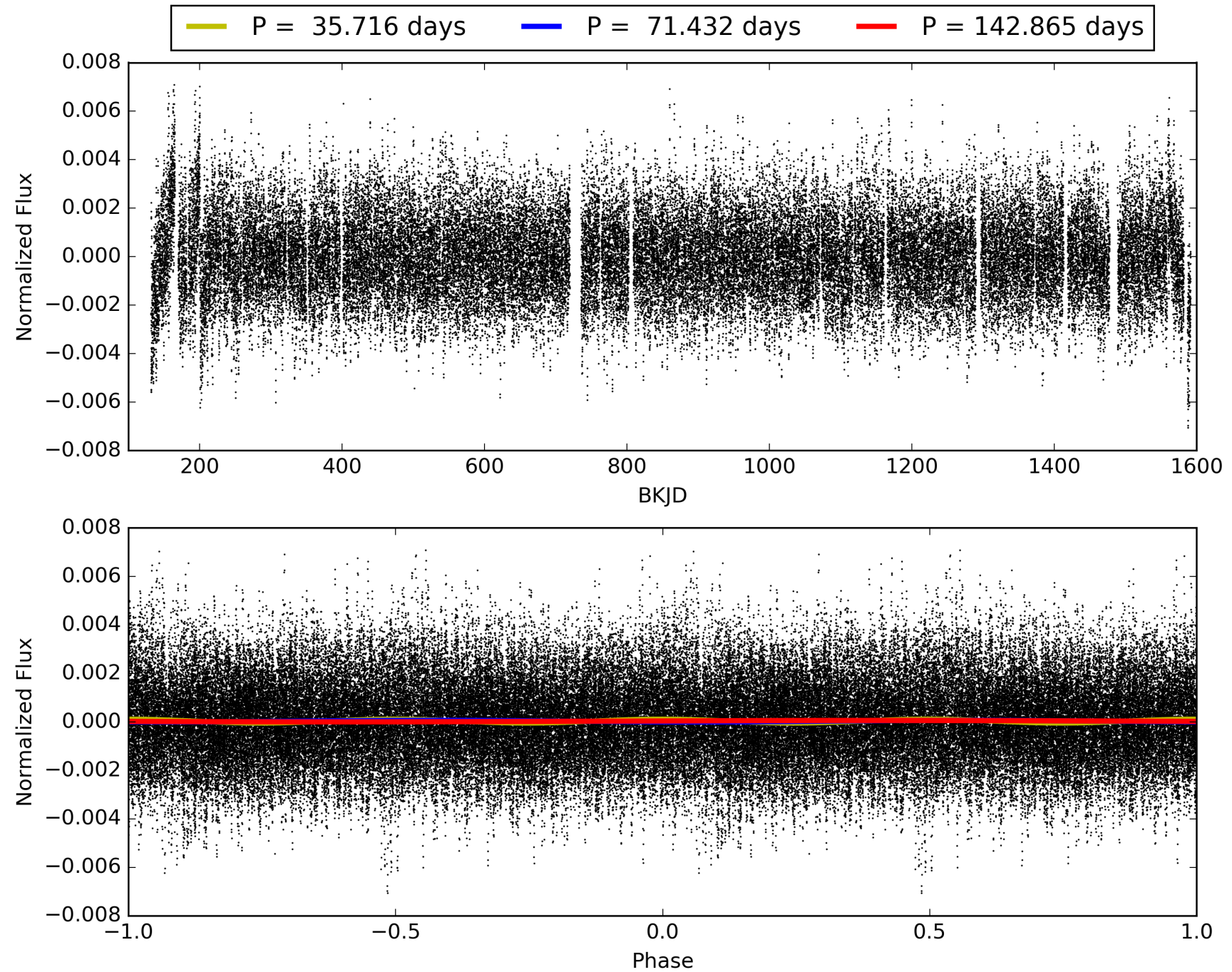
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:43:51 Z

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

TCE 008766619-05, PDC Light Curves

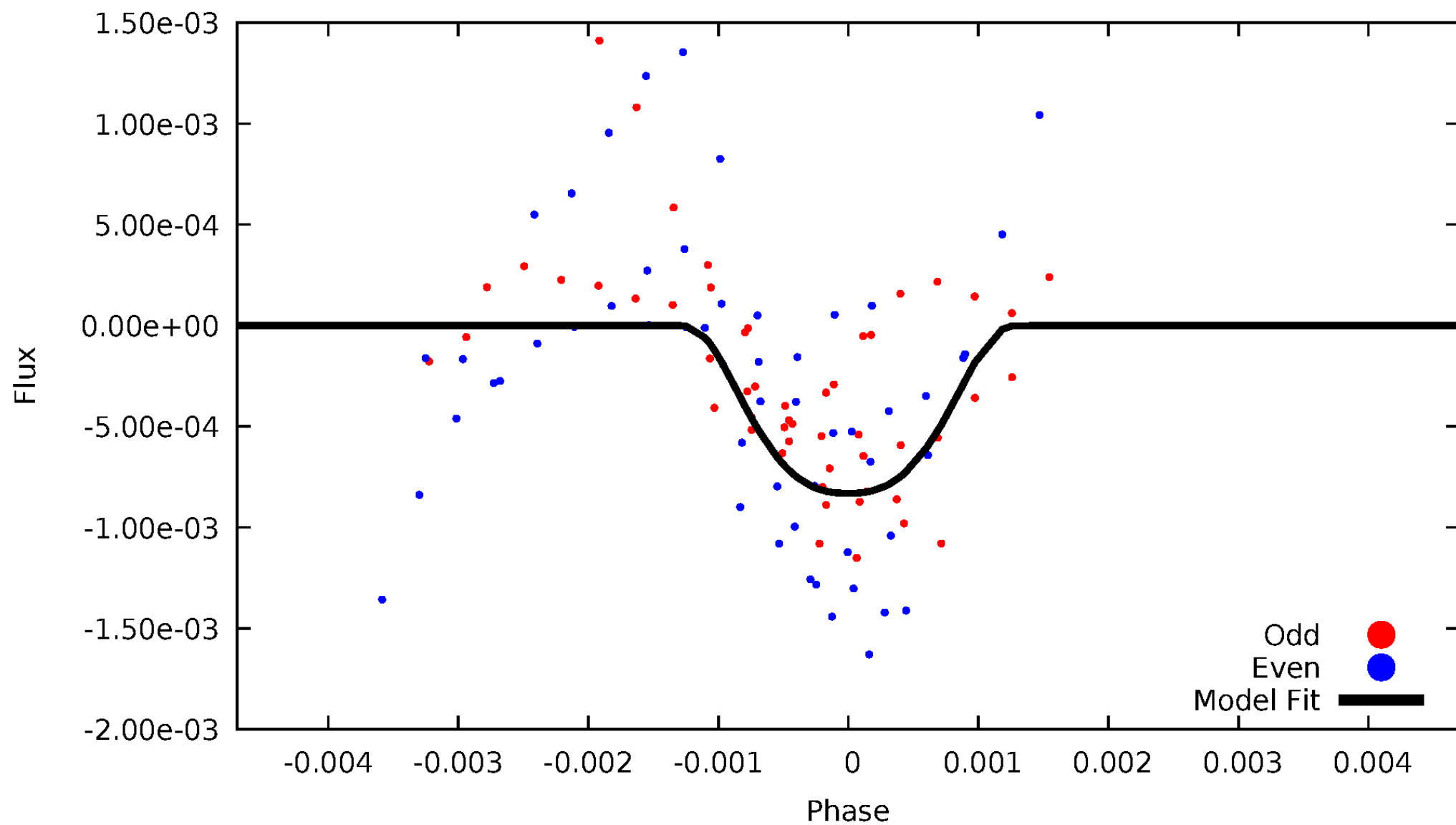


TCE 008766619-05



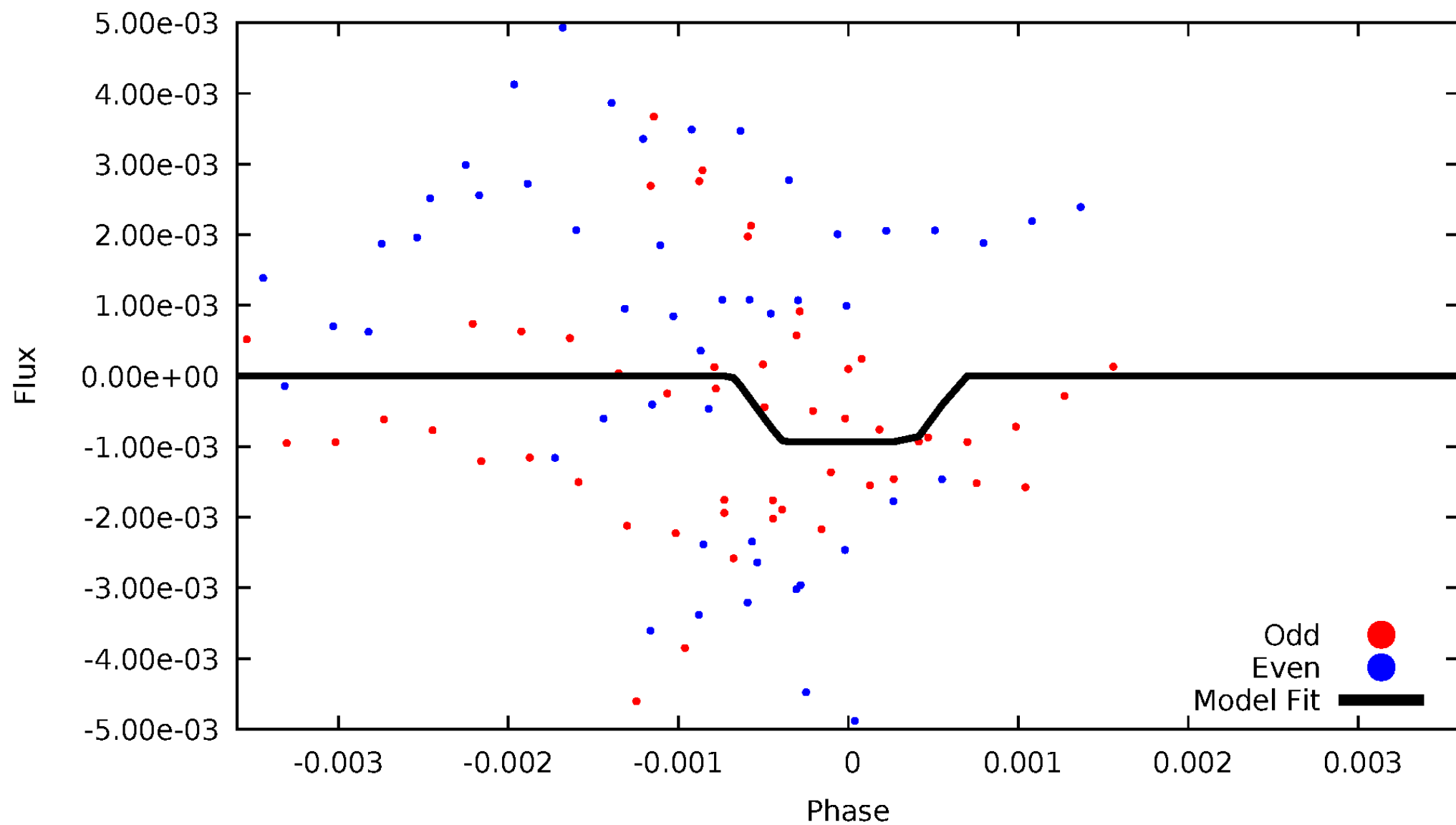
DV Odd/Even

TCE 008766619-05



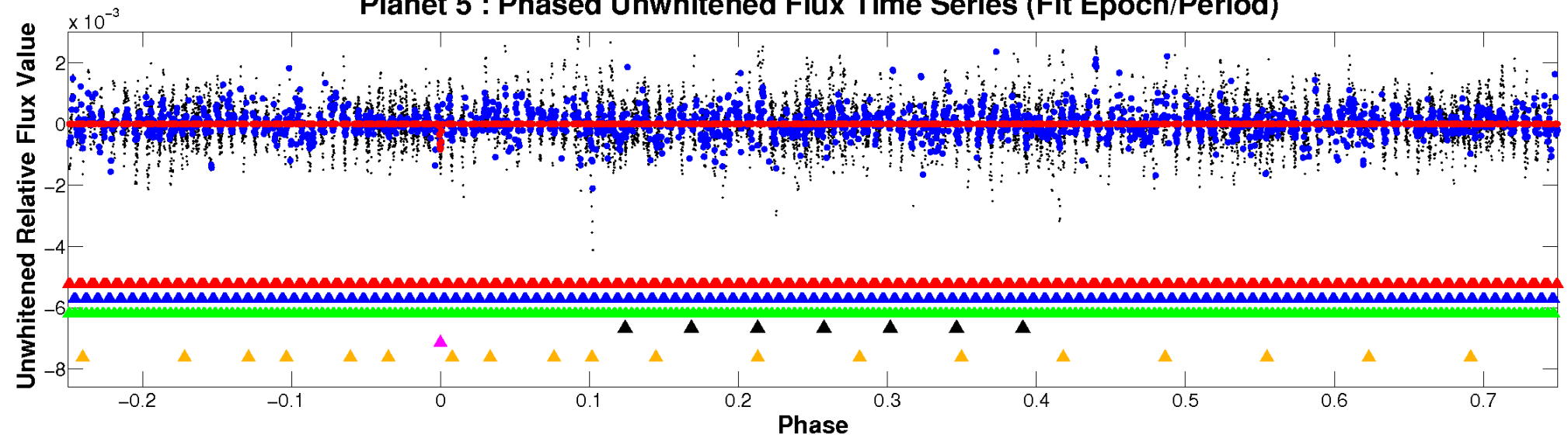
ALT Odd/Even

TCE 008766619-05

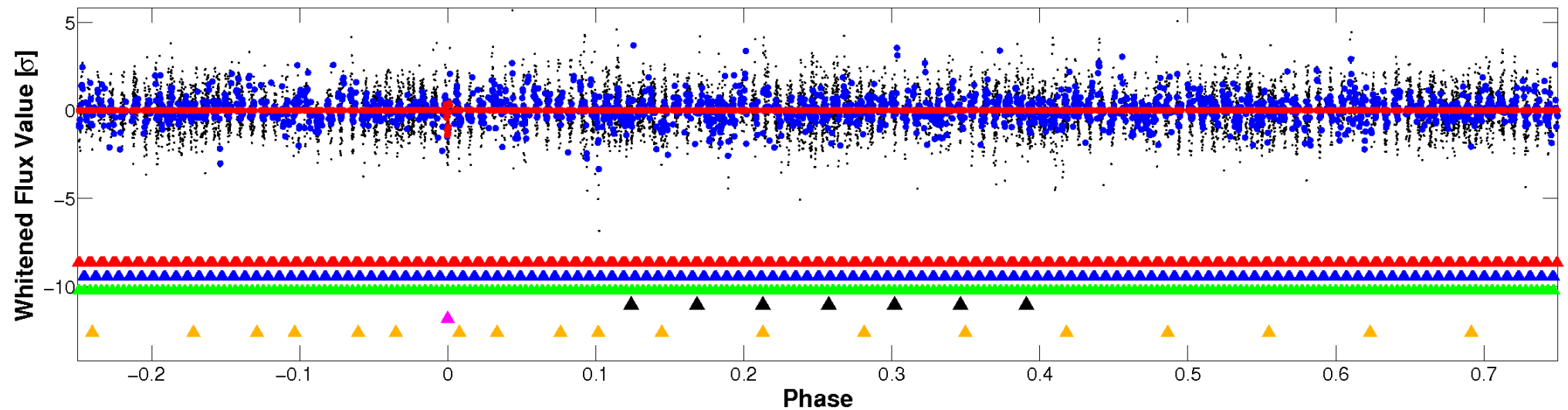


Non-Whitened Vs. Whitened Light Curve

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

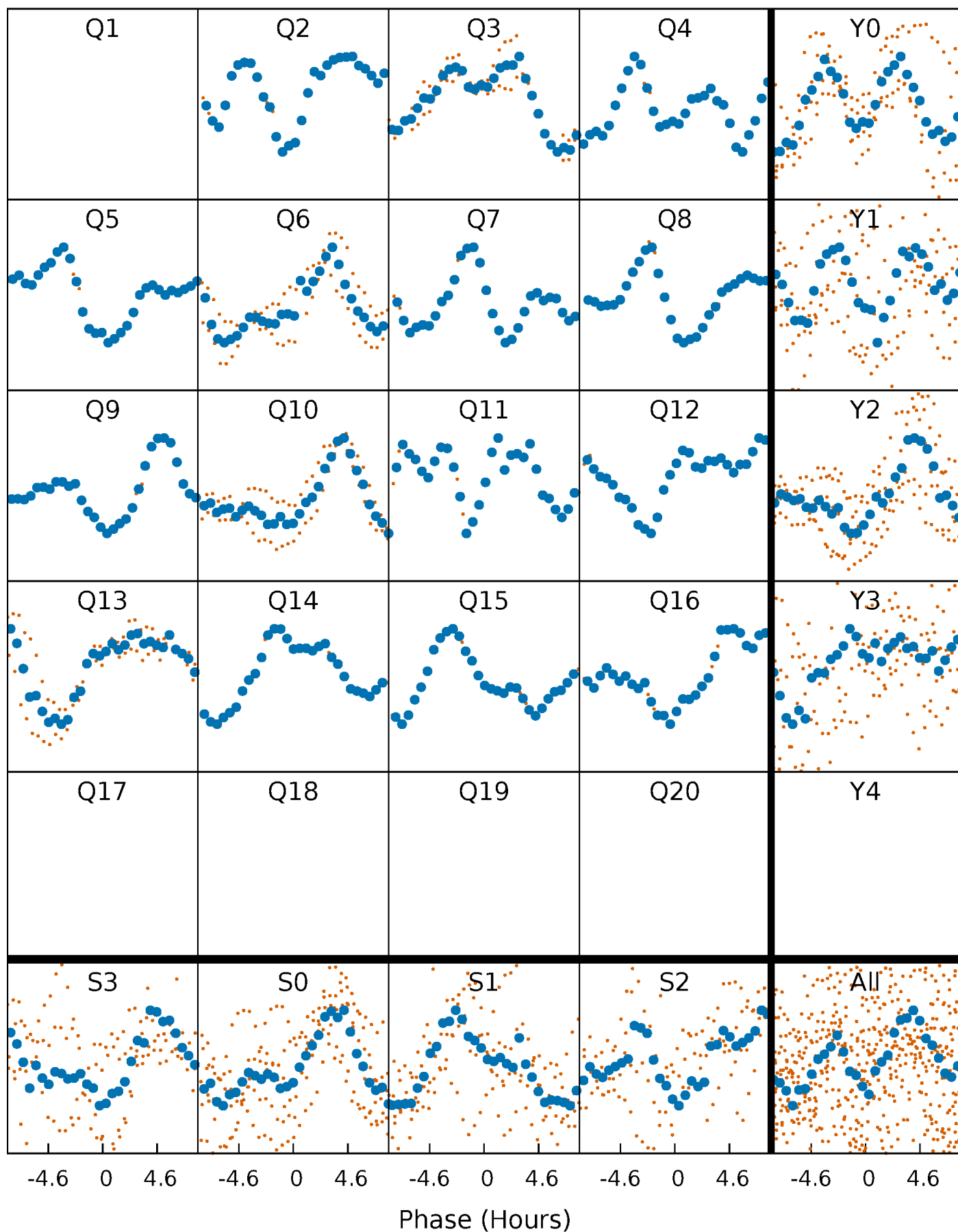


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



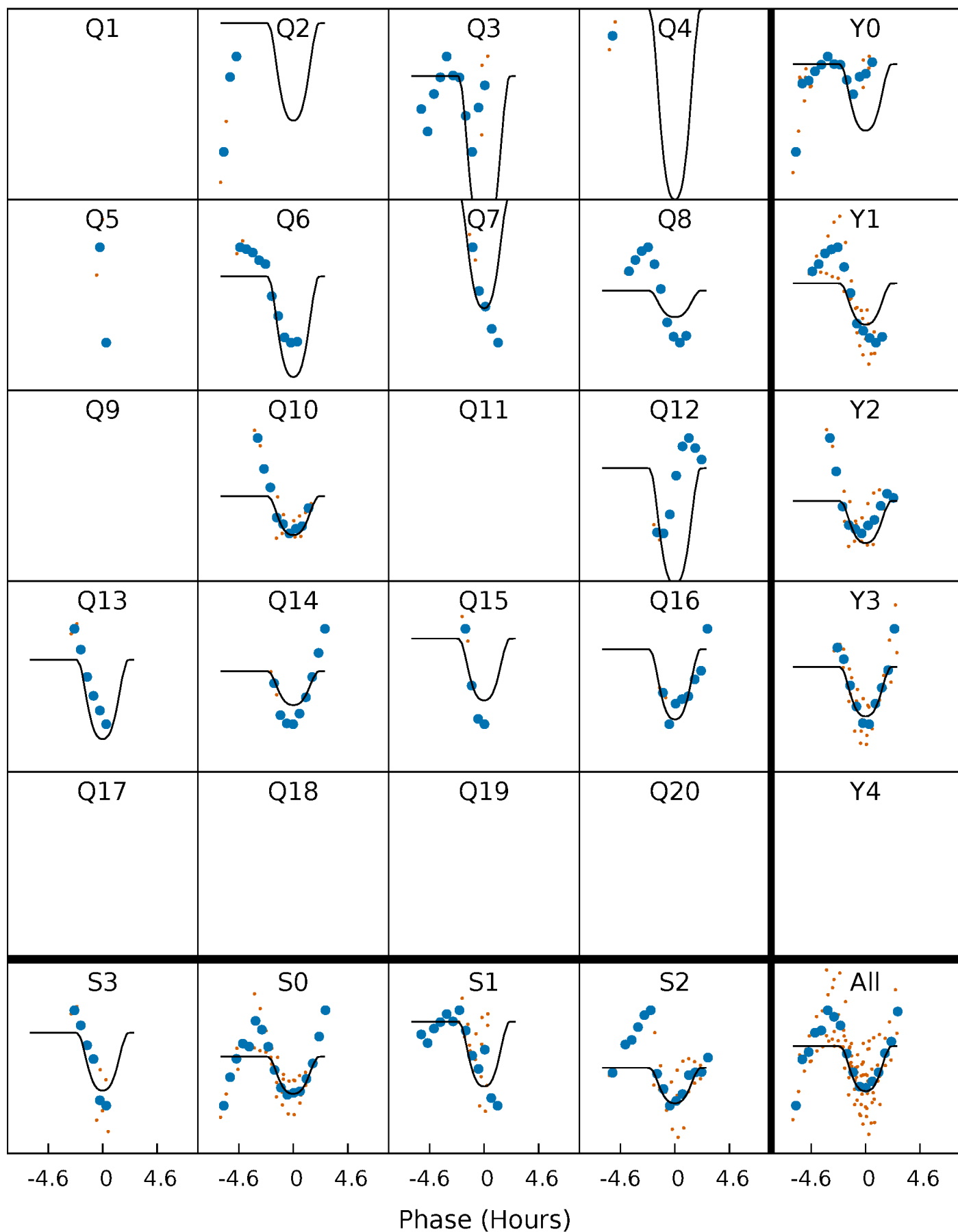
PDC Quarter-Phased Transit Curves

TCE 008766619-05 P= 71.432459 Days $T_0=195.850030$ (BKJD)



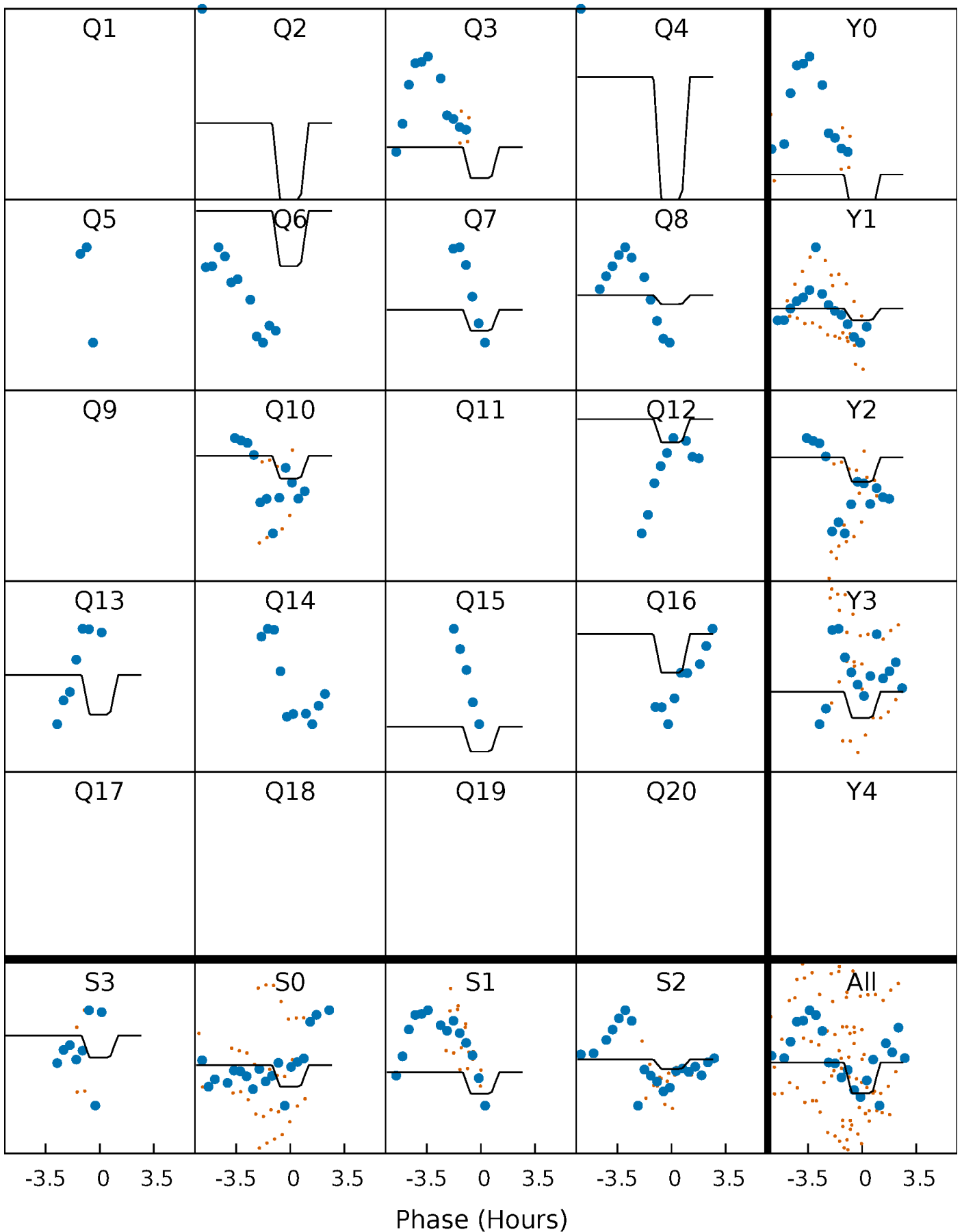
DV Quarter-Phased Transit Curves

TCE 008766619-05 P= 71.432459 Days $T_0=195.850030$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

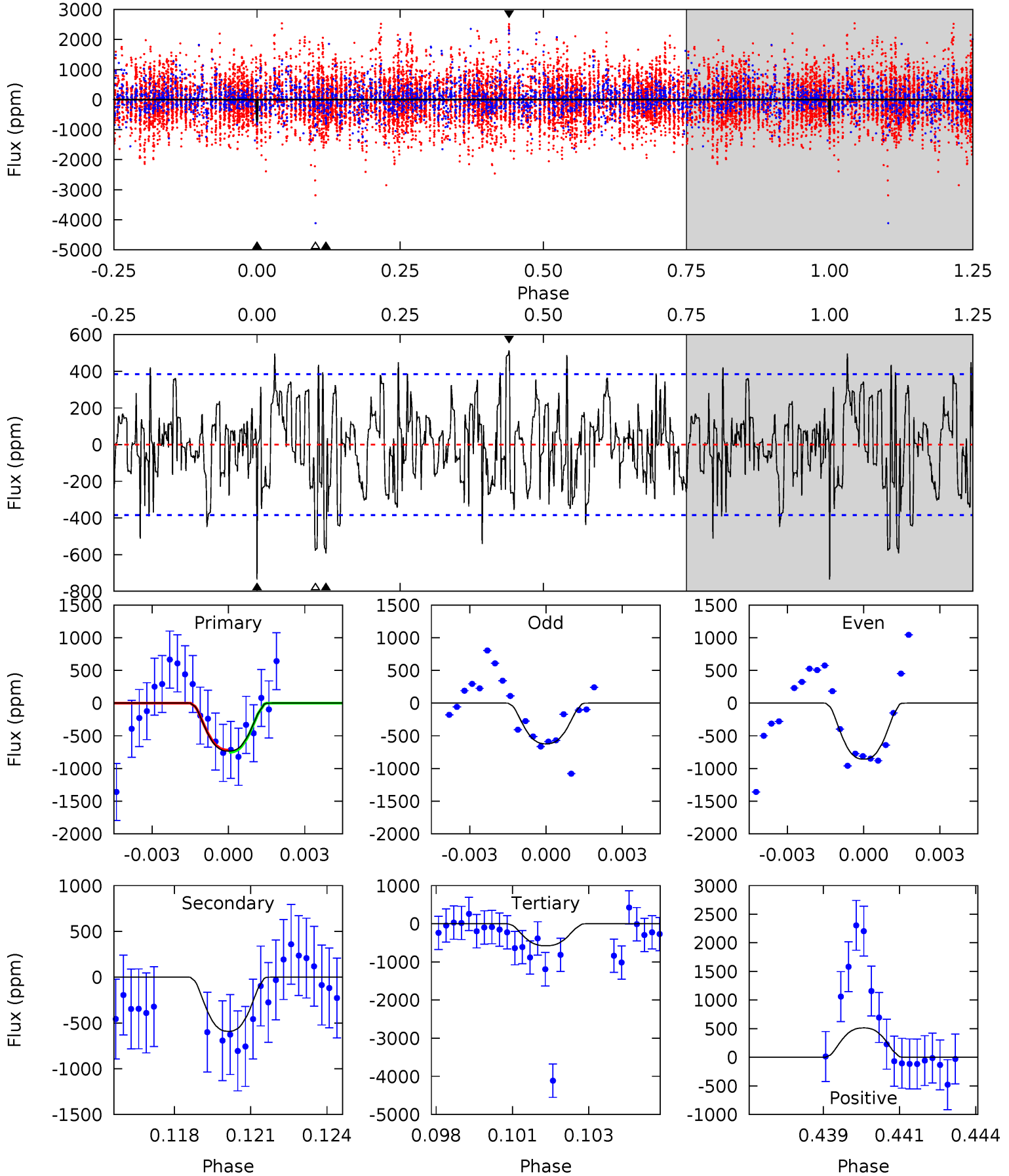
TCE 008766619-05 P= 71.429729 Days $T_0=195.901065$ (BKJD)



DV Model-Shift Uniqueness Test

008766619-05, P = 71.432459 Days, E = 124.417571 Days

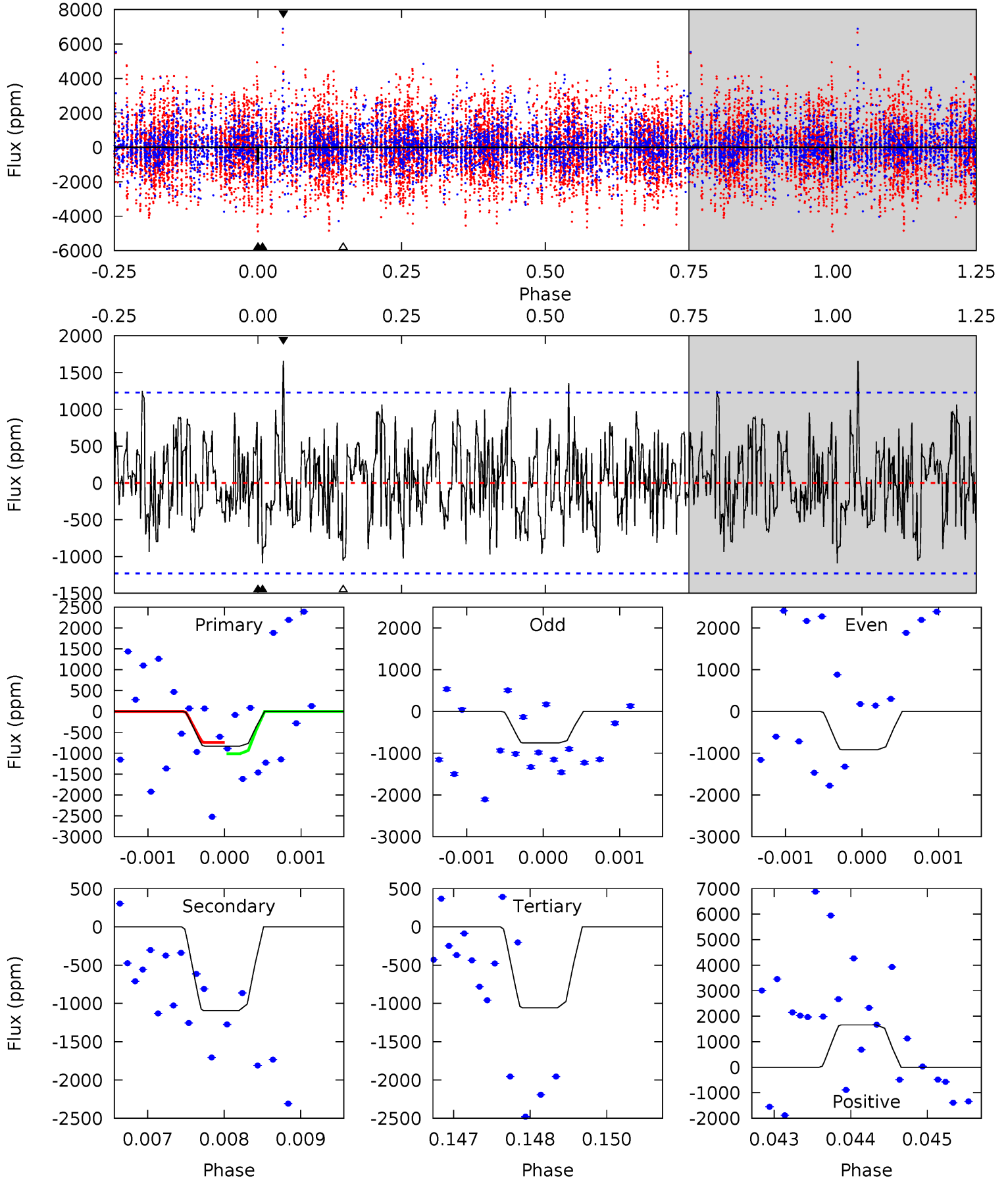
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	8.15	7.94	7.06	5.28	3.02	2.52	2.18	3.05	0.21	1.09	1.62	0.98	0.41	0.22



Alt Model-Shift Uniqueness Test

008766619-05, P = 71.429729 Days, E = 124.471336 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.64	4.81	4.64	7.28	5.40	3.21	1.82	-1.00	-3.64	0.16	-2.48	0.36	1.21	0.60	0.53



Stellar Parameters For KIC 008766619

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6569^{+117}_{-130}	$3.590^{+0.192}_{-0.036}$	$0.180^{+0.150}_{-0.150}$	$3.732^{+0.299}_{-0.957}$	$1.974^{+0.156}_{-0.253}$	$0.053^{+0.058}_{-0.009}$
	+2%/-2%	+5%/-1%	+83%/-83%	+8%/-26%	+8%/-13%	+108%/-17%
Source	SPE4	SPE4	SPE4	DSEP		

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

Secondary Eclipse Parameters for KIC 008766619-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-592 ± 73	$13.14^{+1.66}_{-1.80}$	1179^{+45}_{-72}	5578^{+310}_{-276}	339^{+118}_{-74}
Alt.	-1094 ± 228	$11.83^{+1.54}_{-1.62}$	1181^{+43}_{-67}	6870^{+658}_{-555}	773^{+330}_{-216}

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

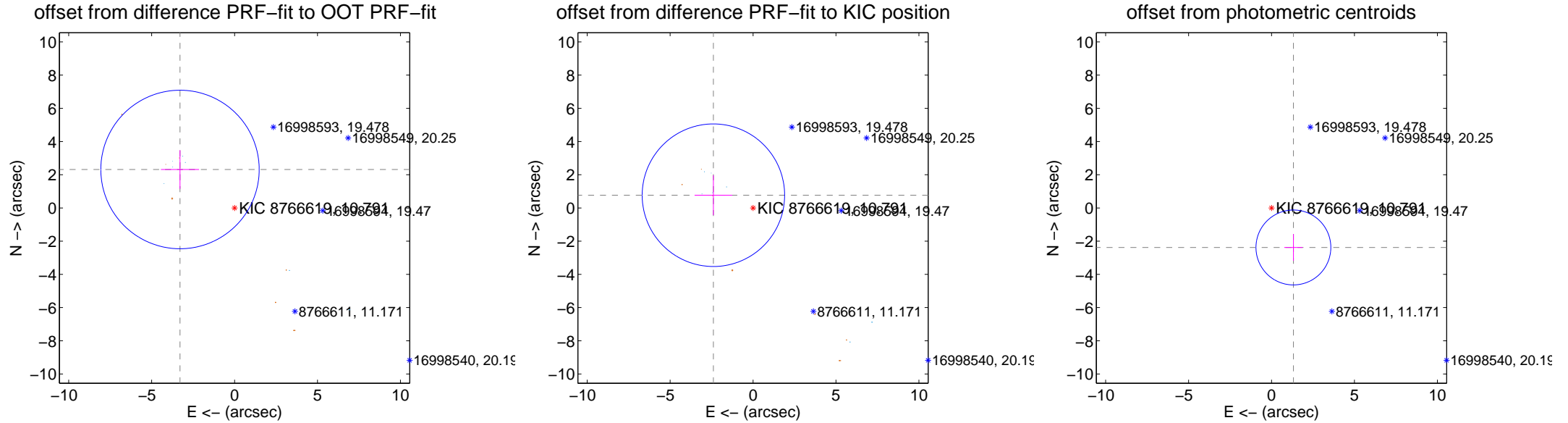
DV Centroid Data

Supplemental centroid analysis for 008766619-05. **Kepler magnitude: 10.79.** Transit SNR 9.37

There are 7 quarters with good PRF difference image offsets

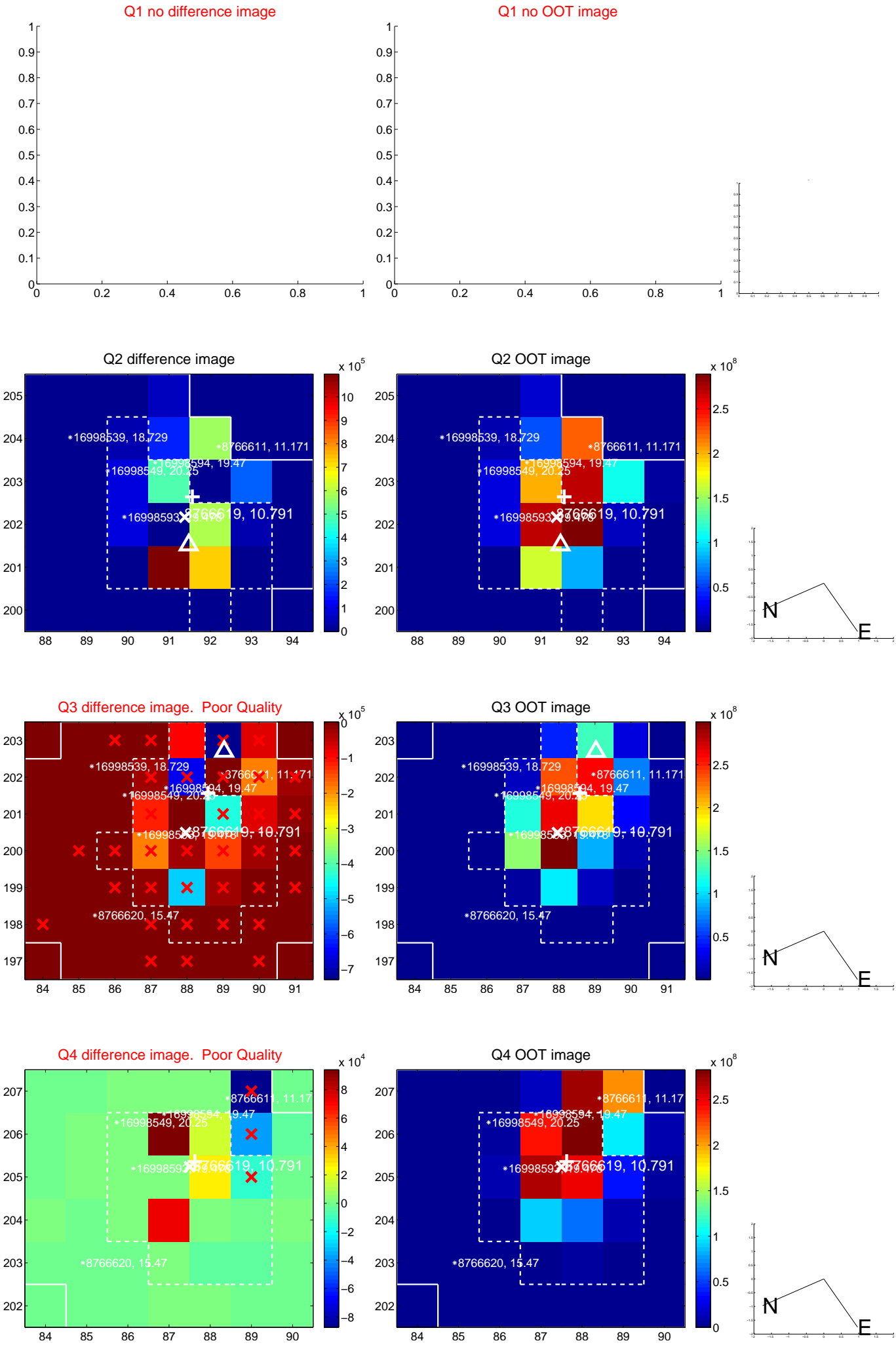
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.024 ± 1.591	2.53	3.290 ± 1.151	2.317 ± 1.164
PRF-fit source offset from KIC position	2.510 ± 1.431	1.75	2.390 ± 1.132	0.767 ± 1.197
photometric centroid source offset	2.72 ± 0.75	3.62	-1.32 ± 0.55	-2.38 ± 0.80

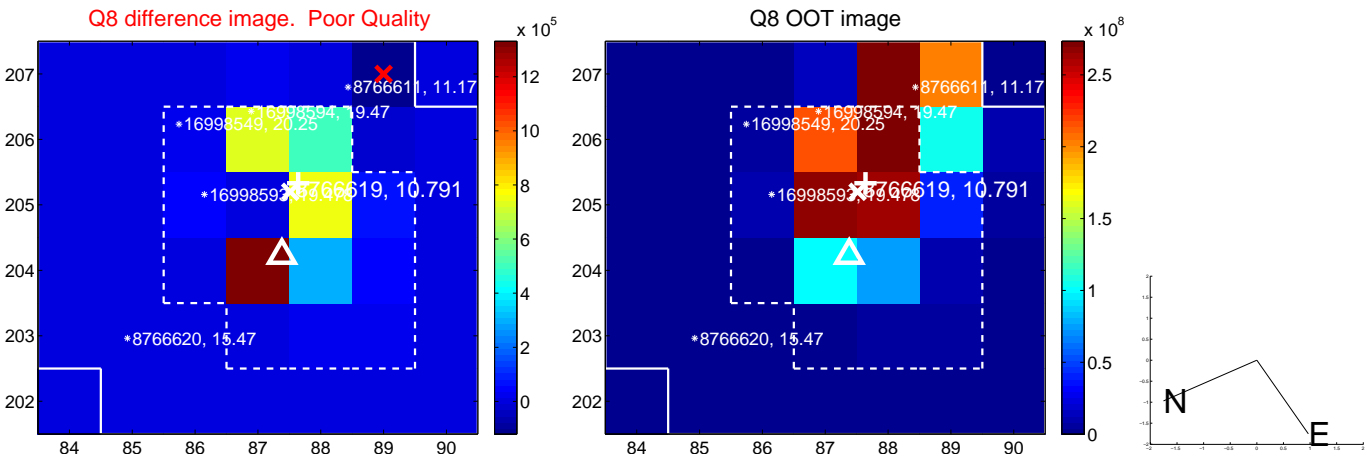
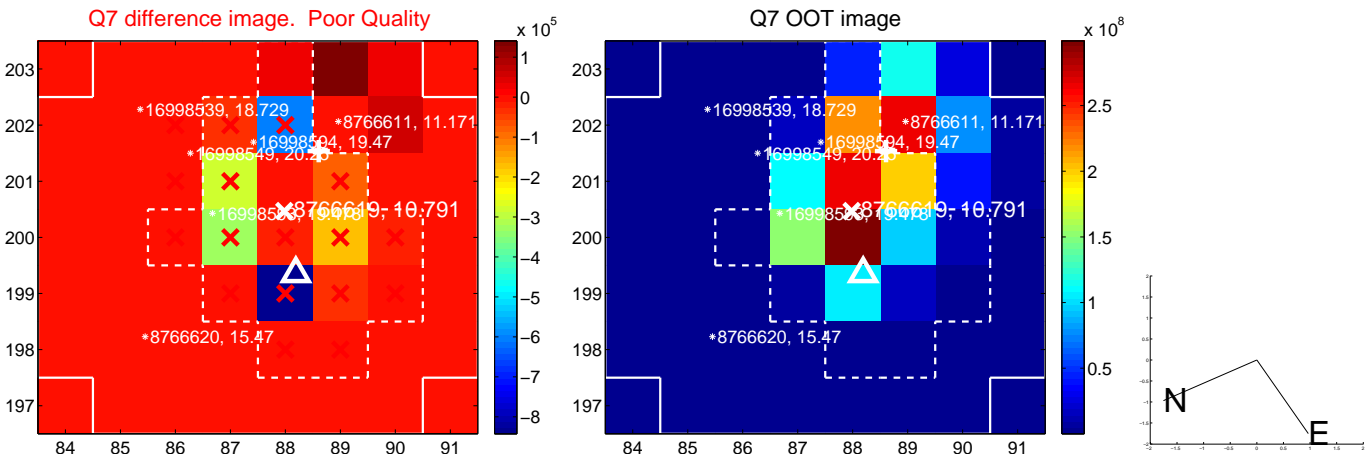
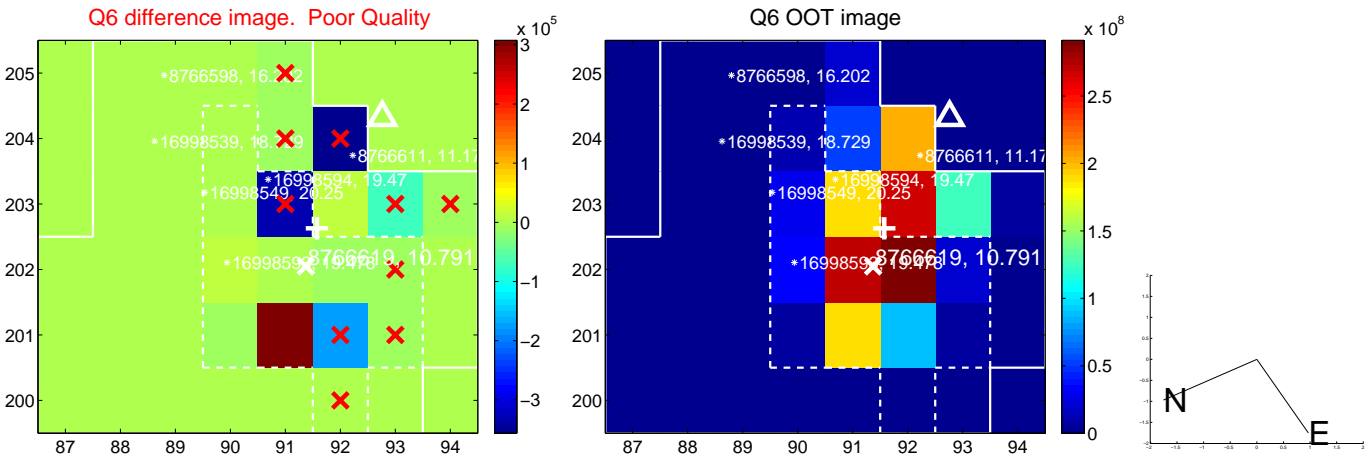
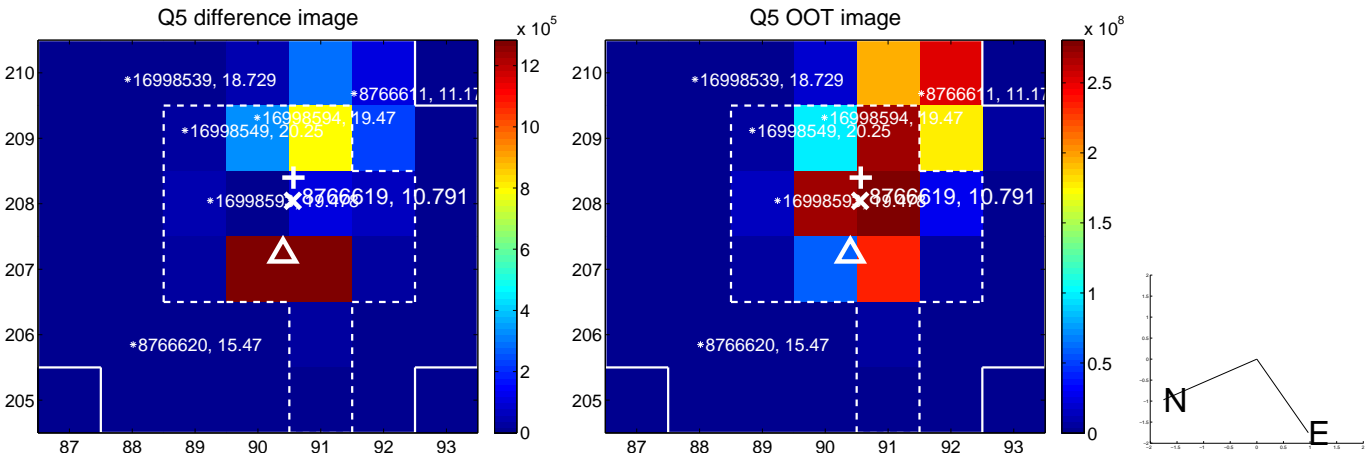


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

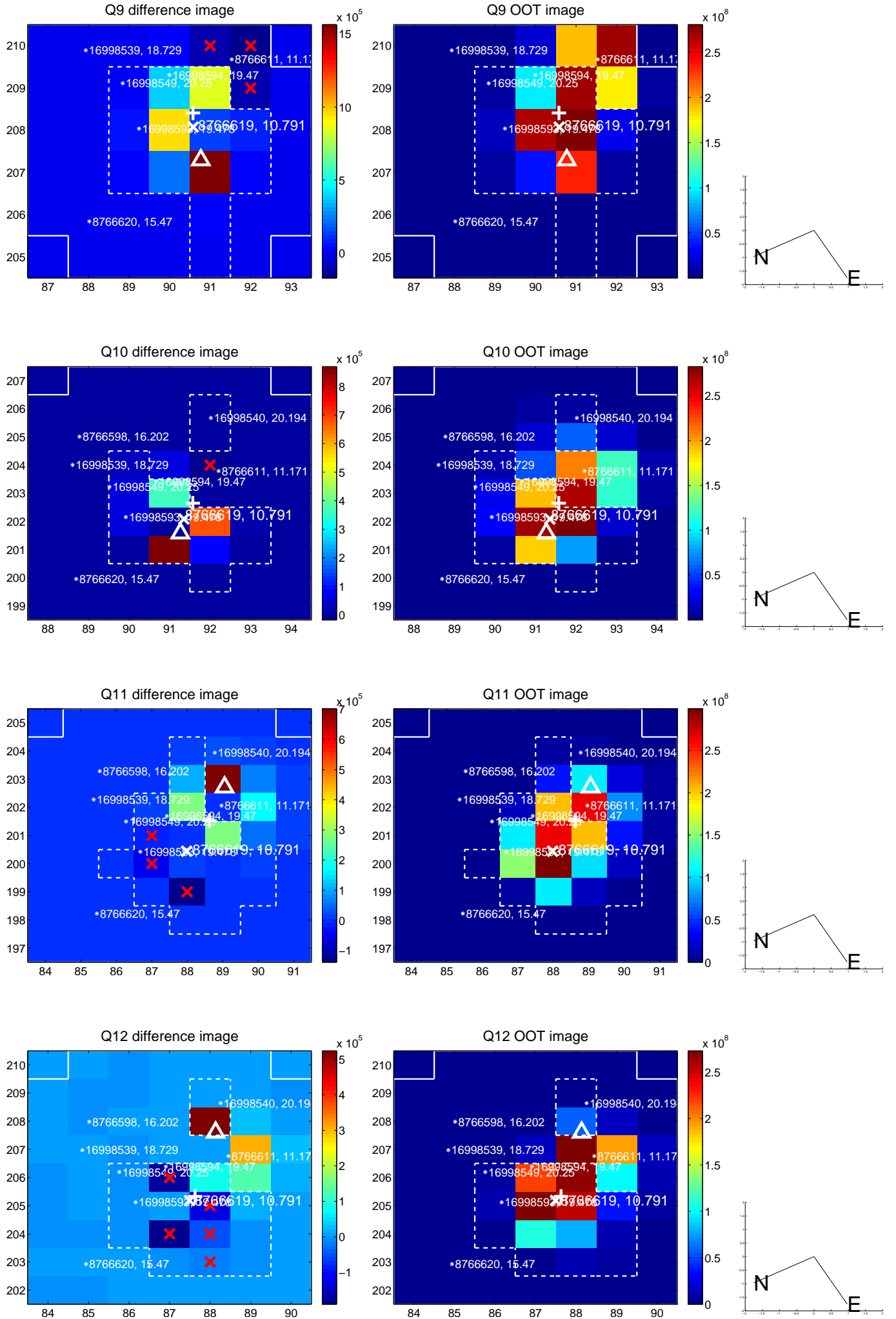
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



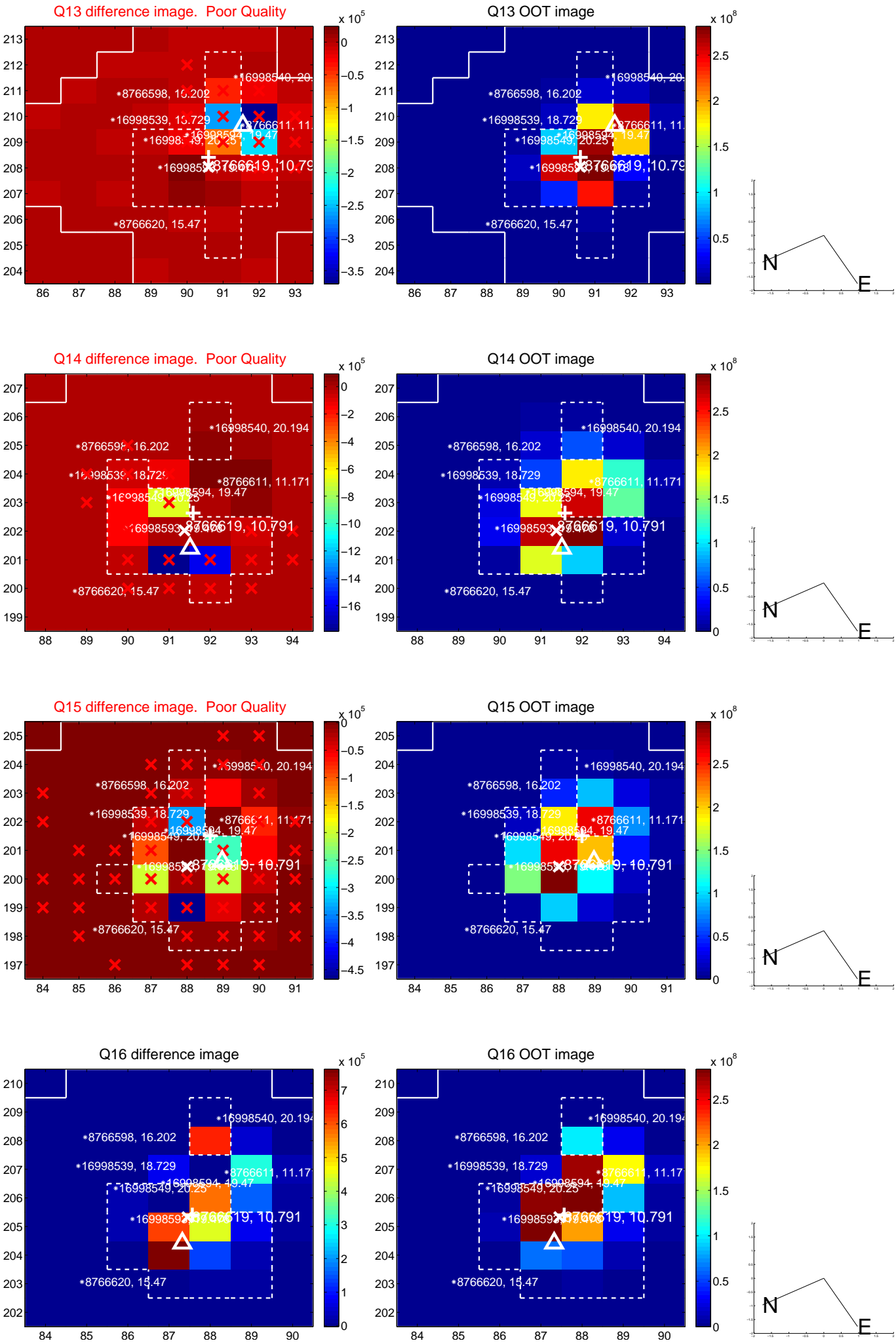
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



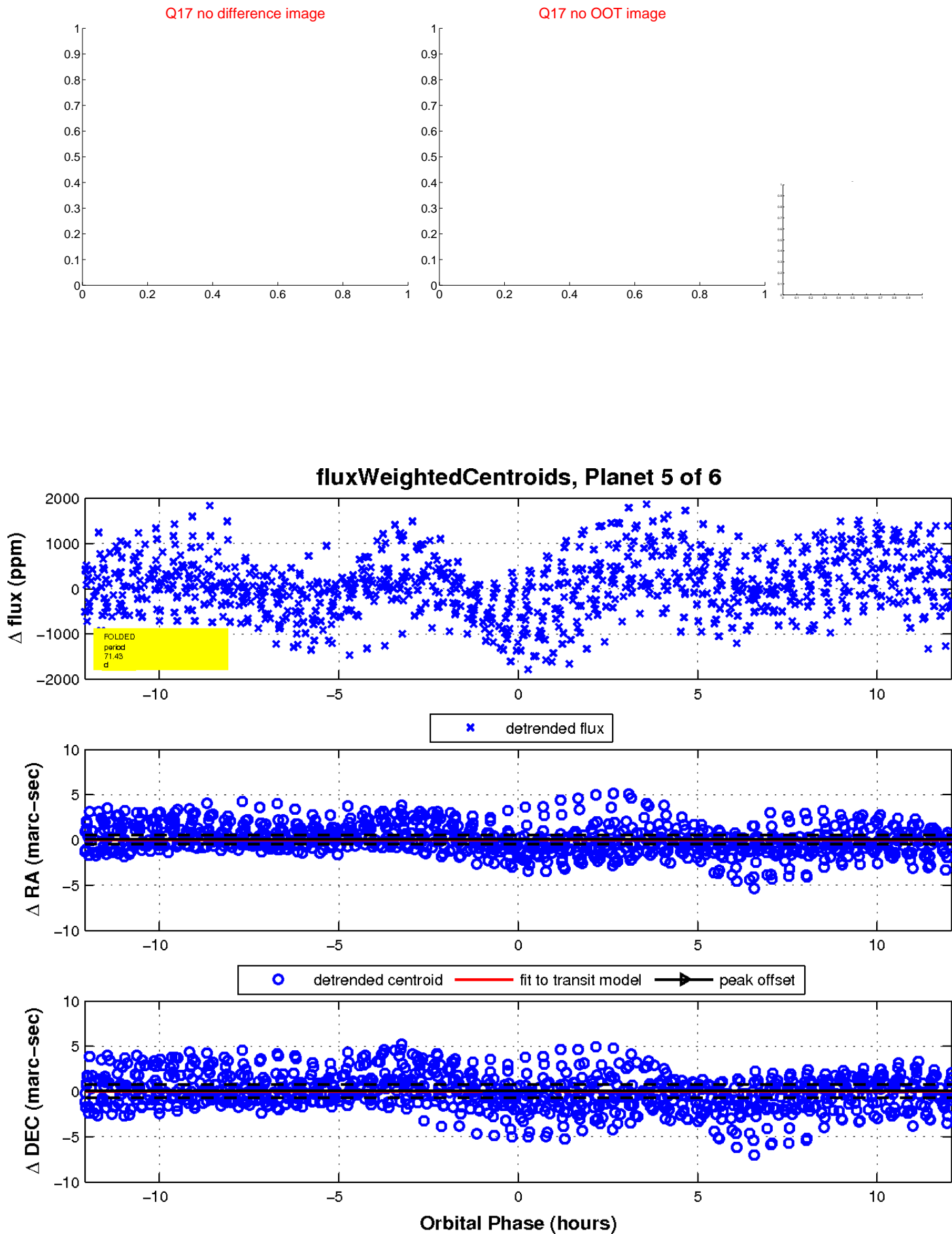
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

