

KIC 009673009

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})
009673009-01	OBS	No	1.721726	132.966391	15.9	10.520	8.9	7.3	2.10	4980	0.81	3347.30
009673009-02	OBS	No	108.723993	157.600626	406.6	1.921	9.2	10.1	2.10	4980	5.16	13.31
009673009-03	OBS	No	53.789312	175.657282	196.2	3.546	8.4	9.0	2.10	4980	3.26	34.02
009673009-04	OBS	No	72.042103	196.805170	313.6	2.777	8.2	8.9	2.10	4980	7.11	23.04
009673009-05	OBS	No	79.499201	169.162431	324.7	2.116	7.9	9.2	2.10	4980	4.36	20.21
009673009-06	OBS	No	33.976012	156.889378	188.7	2.332	8.2	8.5	2.10	4980	3.83	62.77
009673009-07	OBS	No	36.715684	151.364416	250.6	1.628	7.9	8.6	2.10	4980	3.25	56.60
009673009-08	OBS	No	58.636647	147.578702	184.5	3.207	7.5	8.0	2.10	4980	3.48	30.32
009673009-09	OBS	No	43.354274	153.079658	220.9	1.415	7.4	8.1	2.10	4980	3.34	45.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009673009-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET
009673009-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009673009-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009673009-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009673009-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

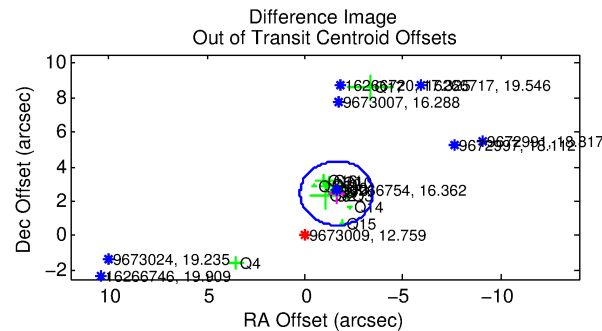
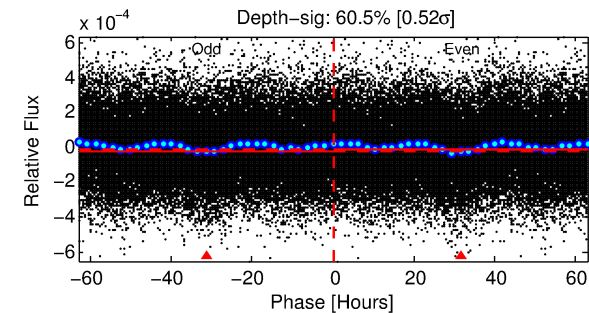
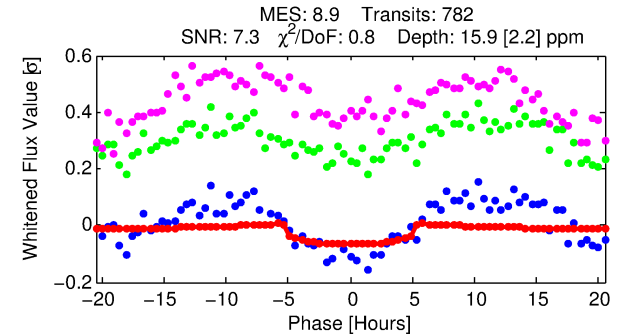
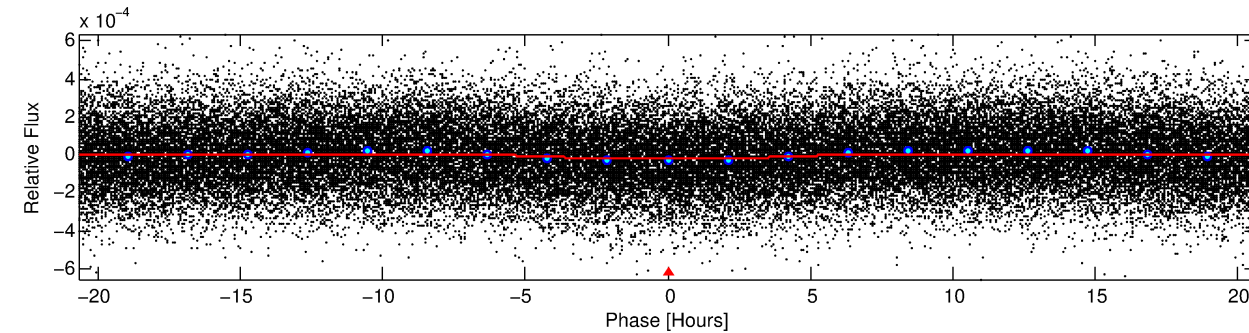
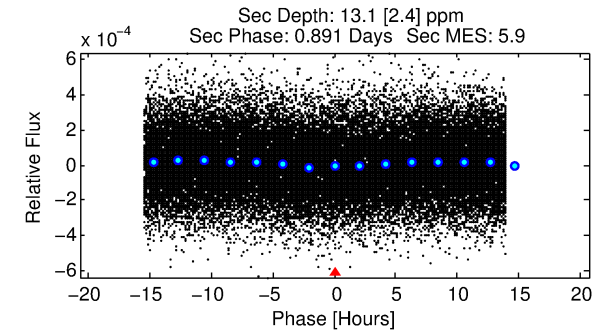
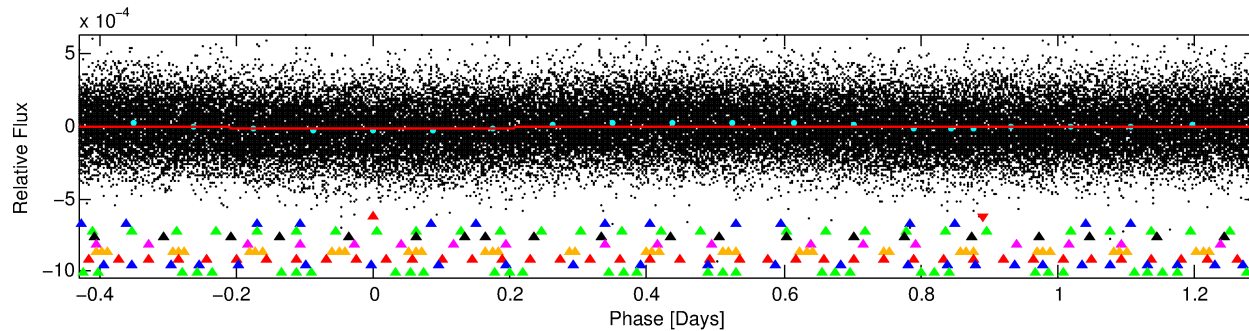
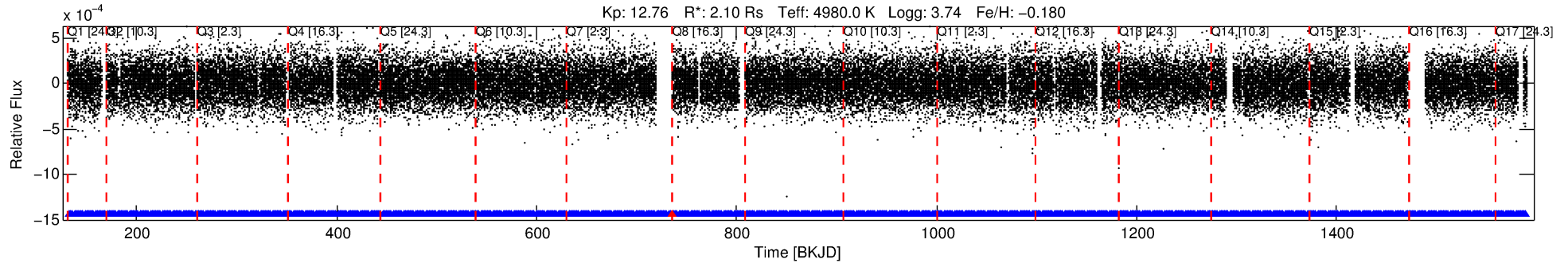
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009673009-01

No Significant Match Found

DV One-Page Summary

KIC: 9673009 Candidate: 1 of 9 Period: 1.722 d



DV Fit Results:

Period = 1.72173 [0.00004] d
Epoch = 132.9664 [0.0115] BKJD
Rp/R* = 0.0035 [0.0045]
a/R* = 1.40 [3.00]
b = 0.04 [107.70]
Seff = 3347.30 [4562.26]
Teq = 1940 [661] K
Rp = 0.81 [1.15] Re
a = 0.0270 [0.0209] AU
Ag = 7.91 [22.67] [0.30σ]
Teffp = 5029 [3177] K [0.95σ]

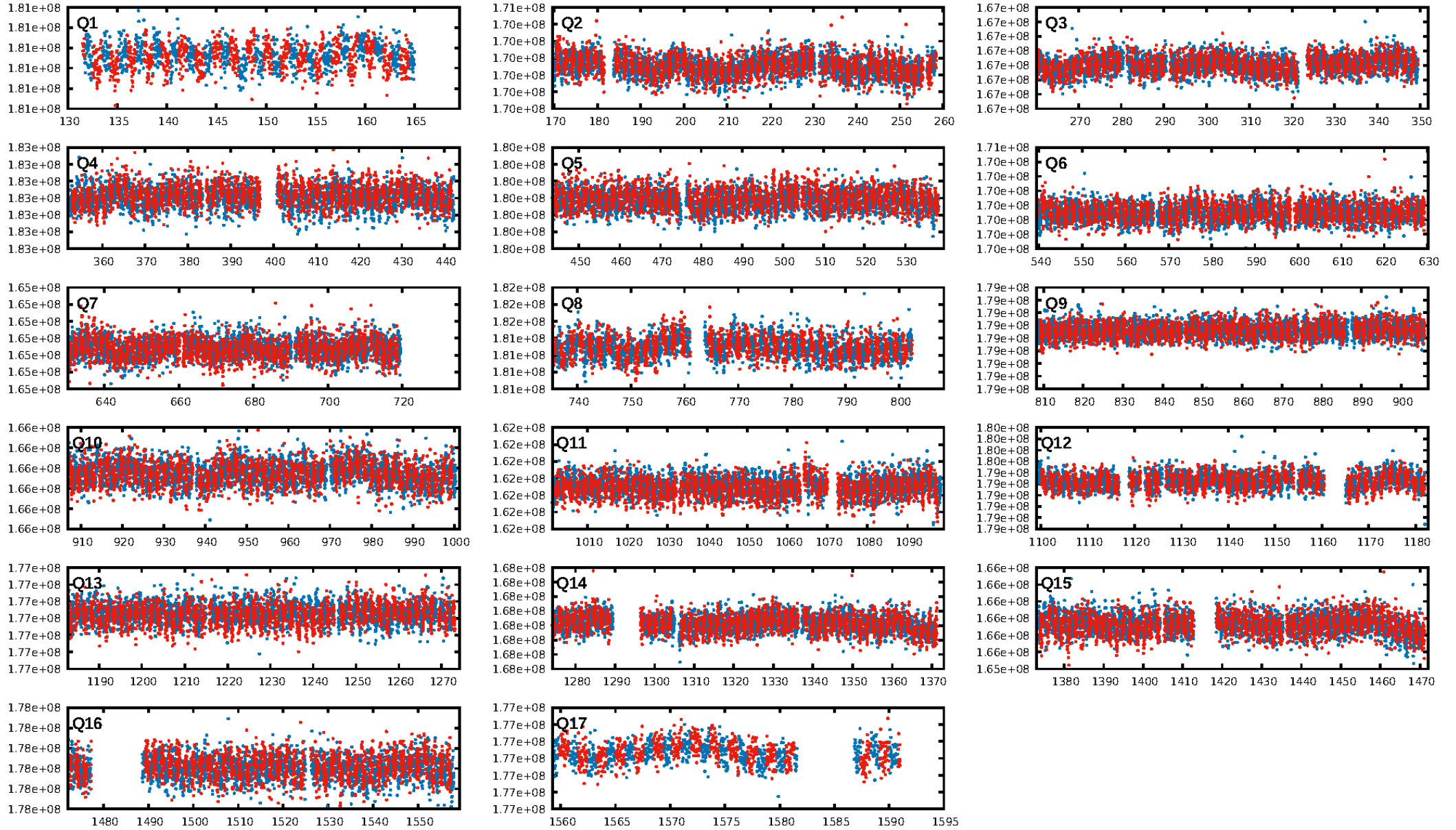
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [71.84σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.07e-11
RollingBand-fgt: 1.00 [747/748]
GhostDiagnostic-chr: 3.308
Centroid-sig: 0.0%
Centroid-so: 6.641 arcsec [5.14σ]
OotOffset-rm: 2.932 arcsec [4.74σ]
KicOffset-rm: 2.972 arcsec [5.52σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

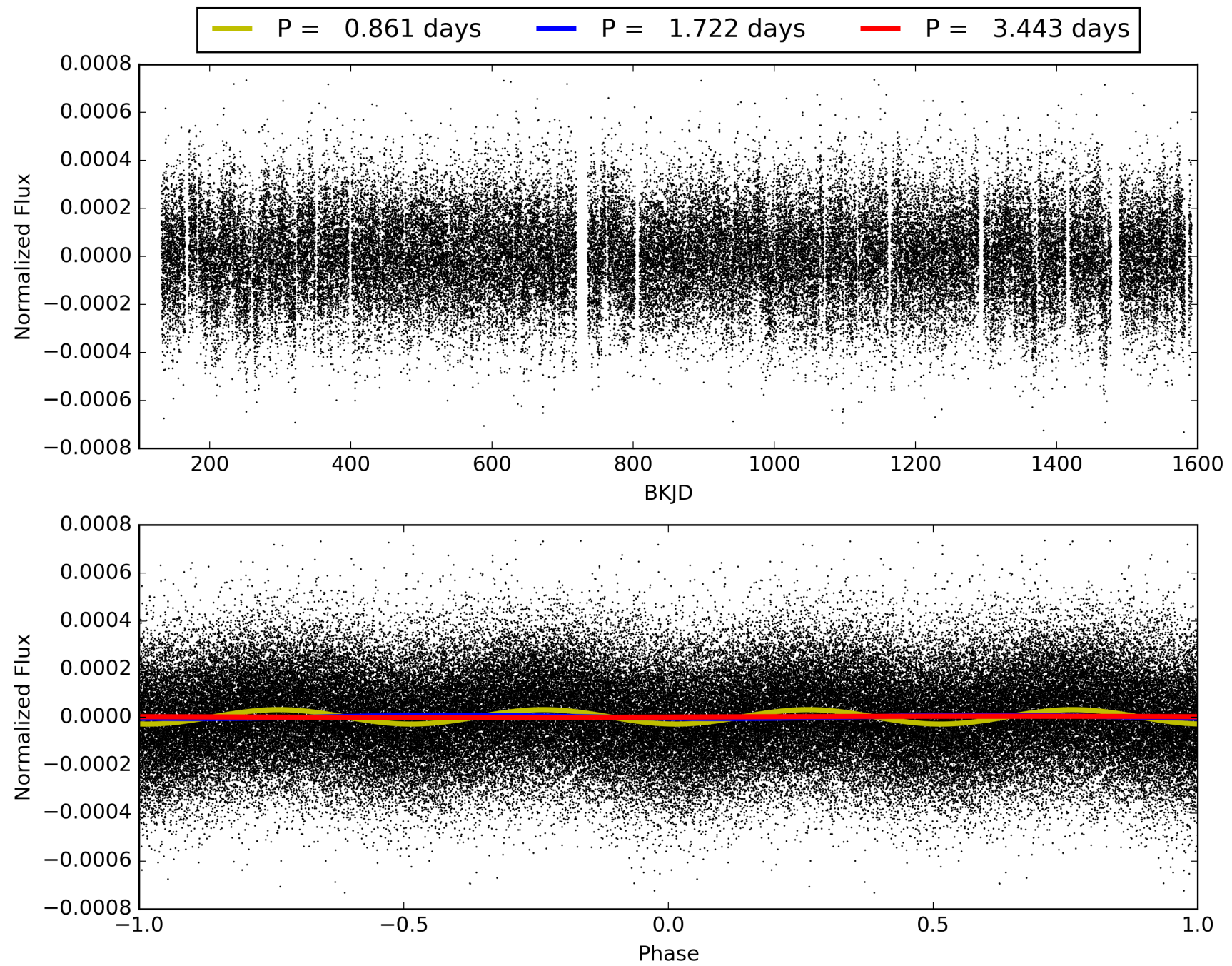
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:40:51 Z

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

TCE 009673009-01, PDC Light Curves

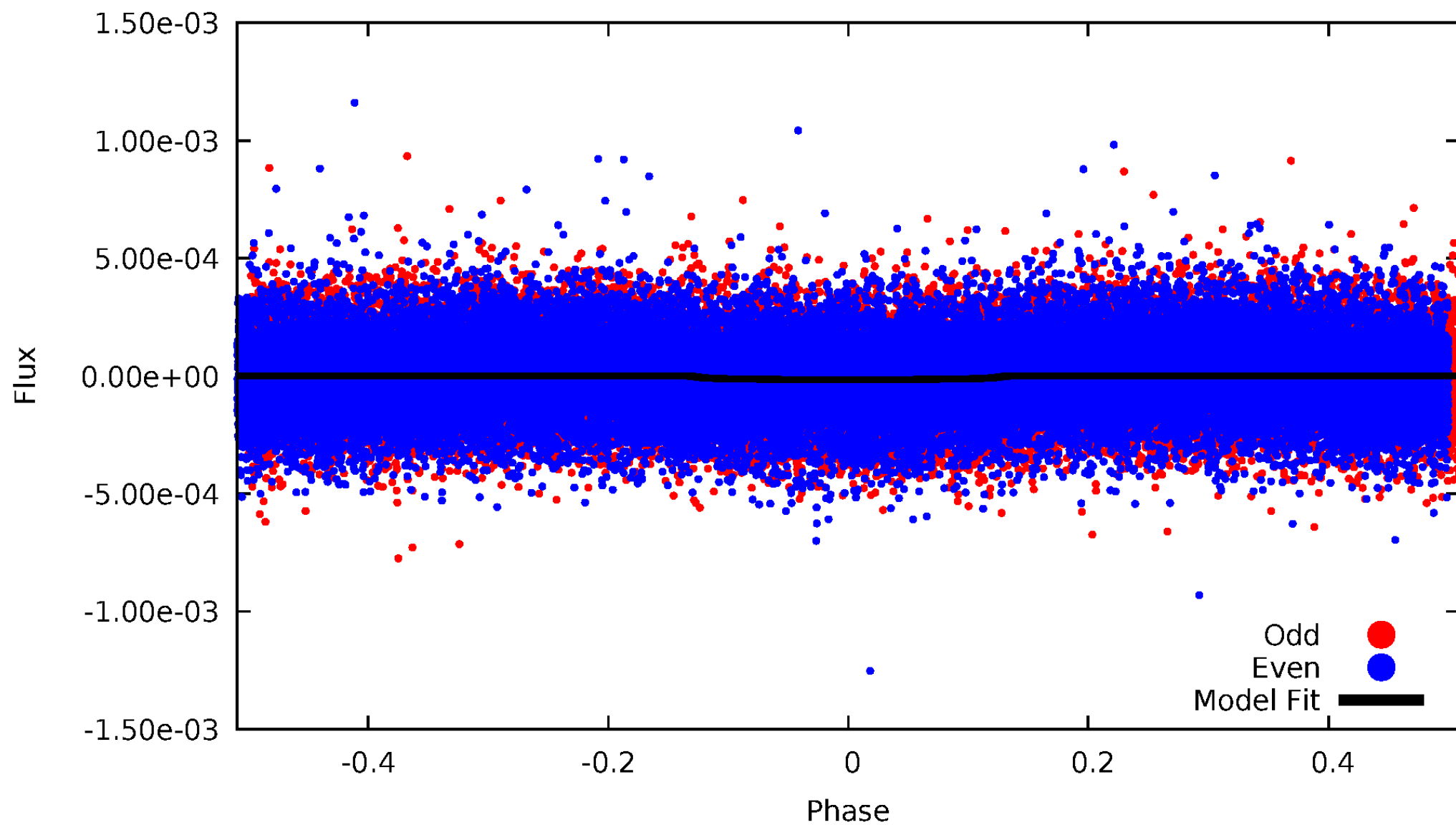


TCE 009673009-01



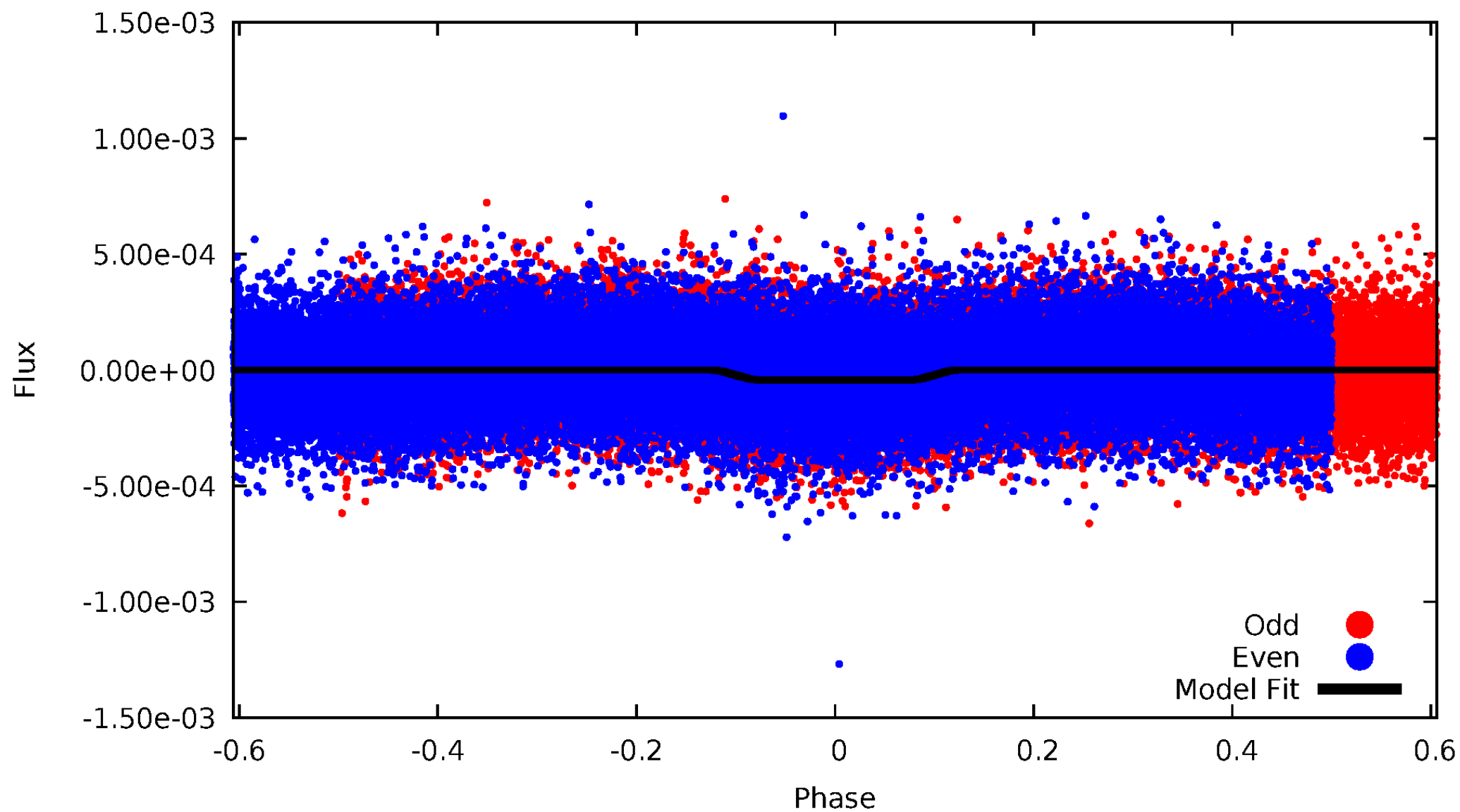
DV Odd/Even

TCE 009673009-01



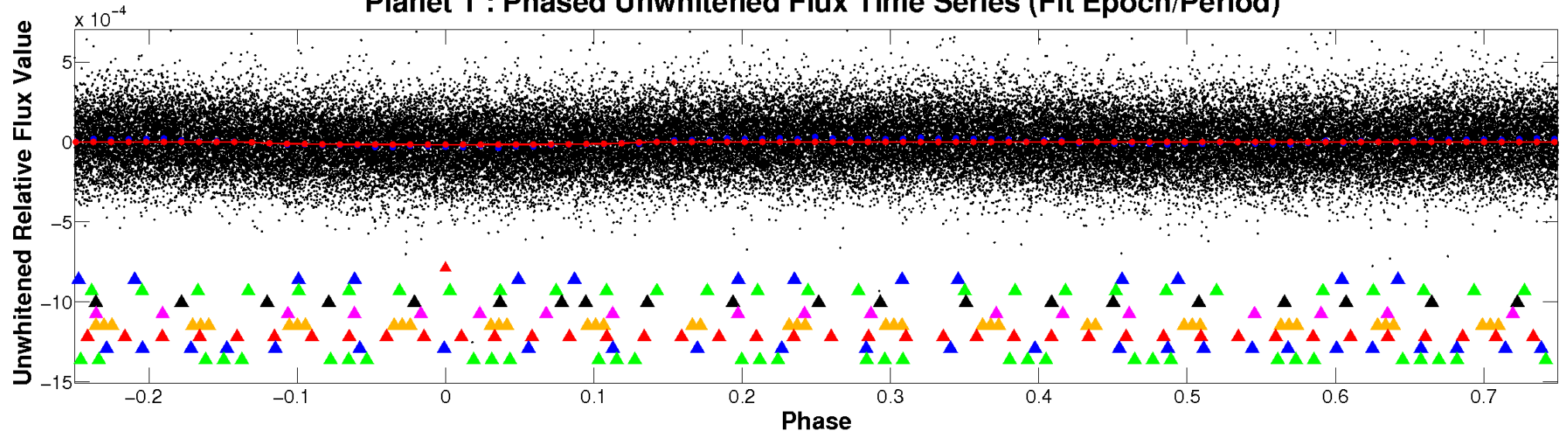
ALT Odd/Even

TCE 009673009-01

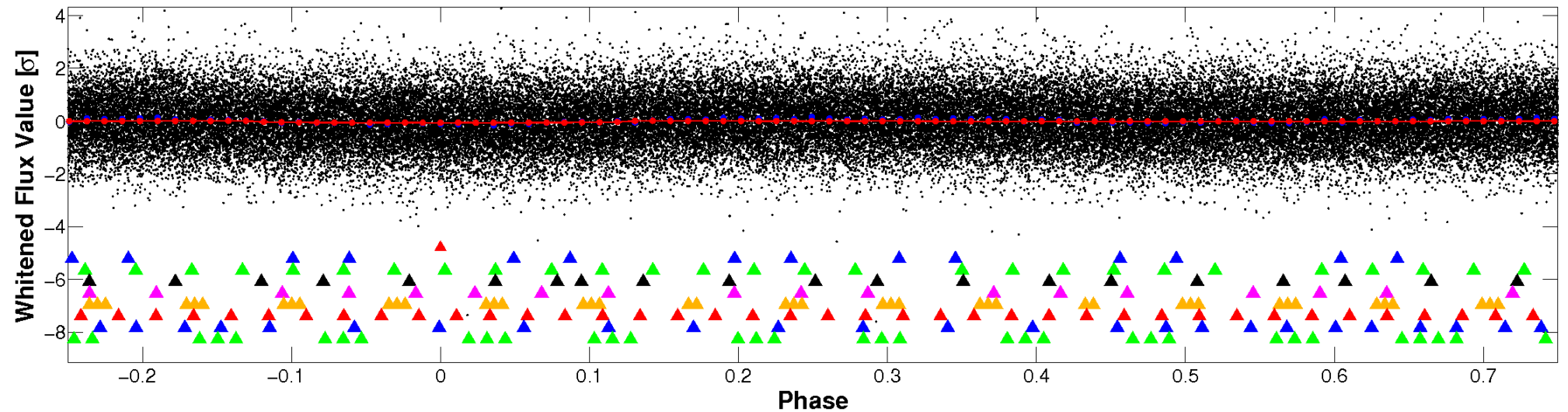


Non-Whitened Vs. Whitened Light Curve

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

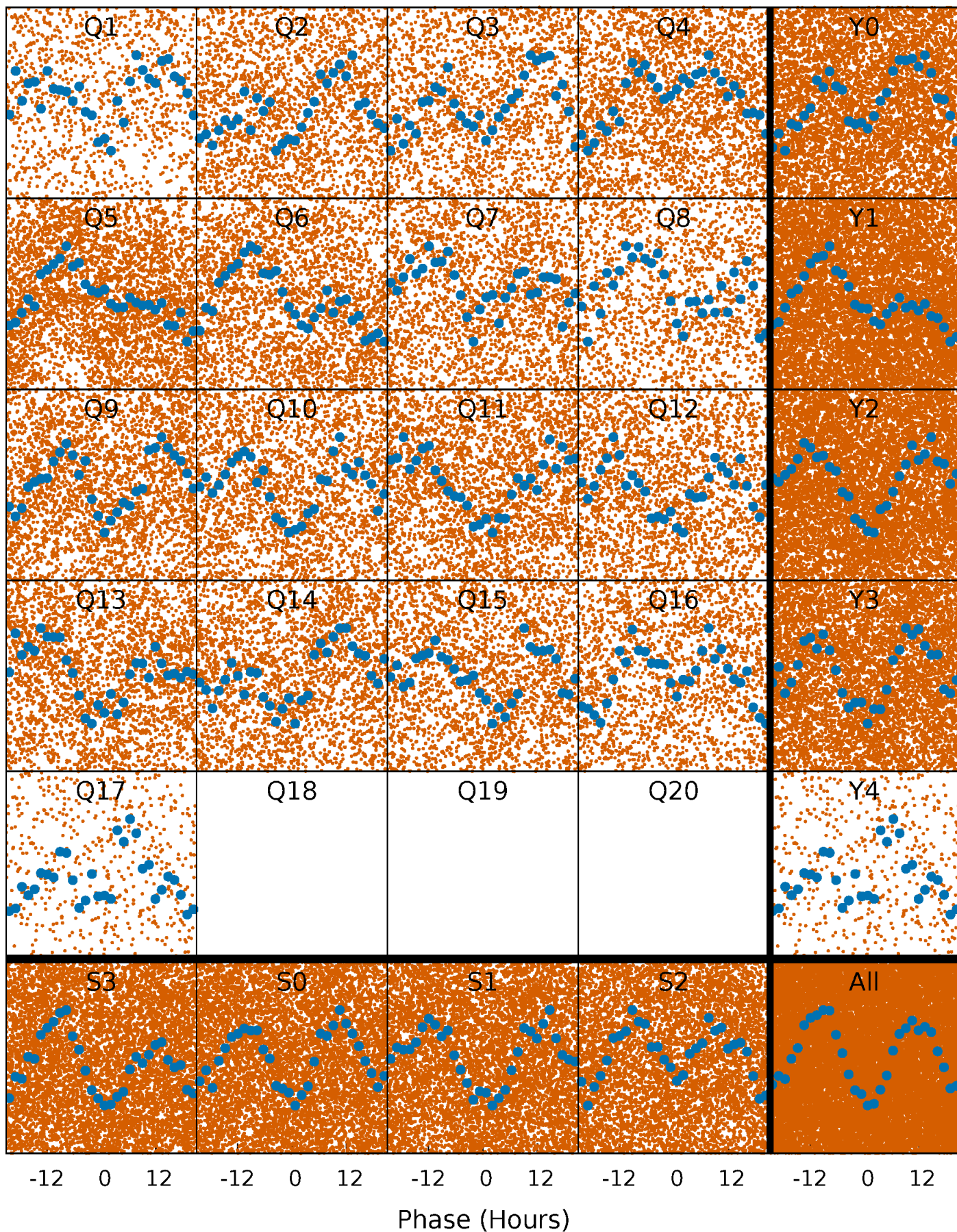


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



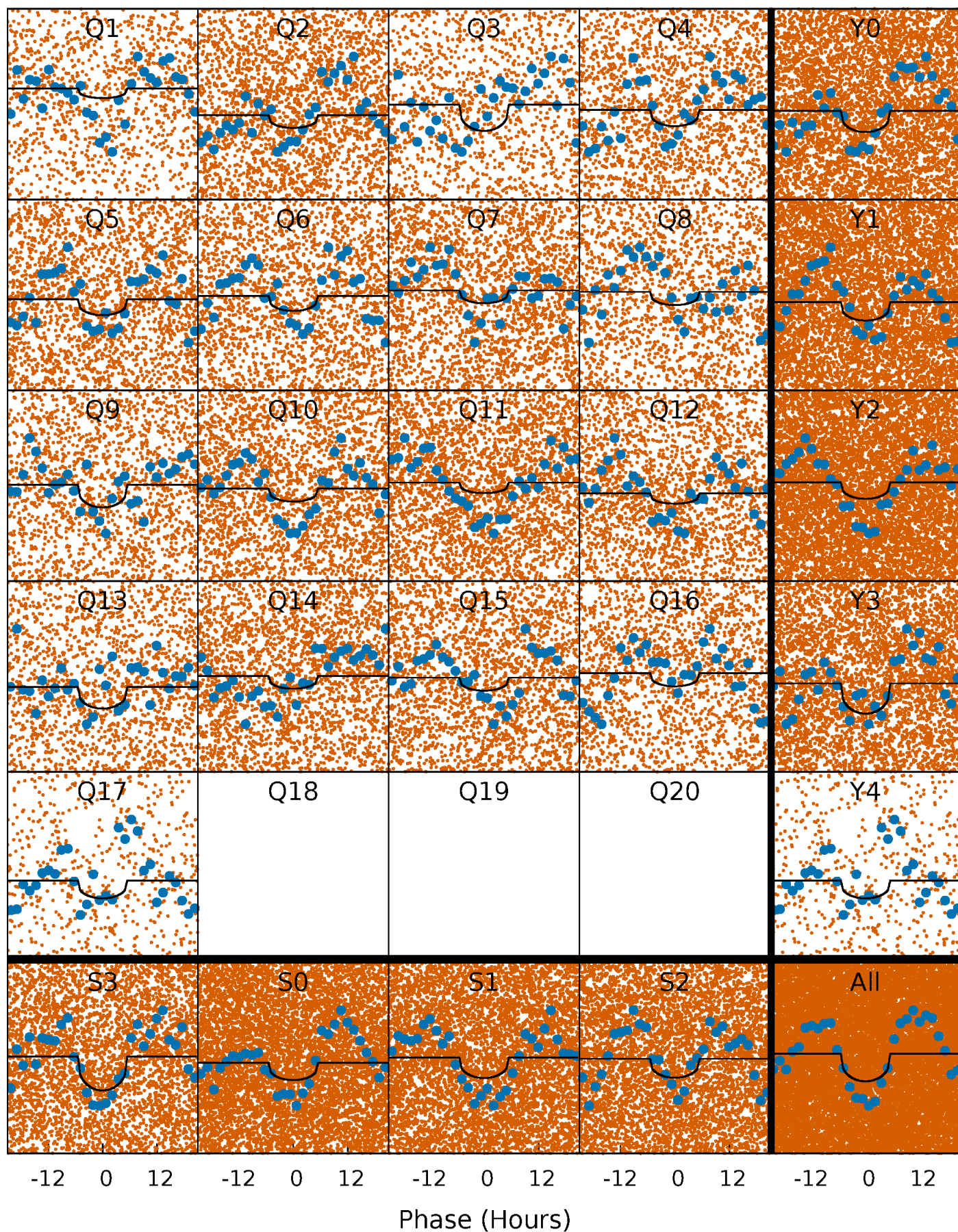
PDC Quarter-Phased Transit Curves

TCE 009673009-01 P= 1.721726 Days $T_0=132.966391$ (BKJD)



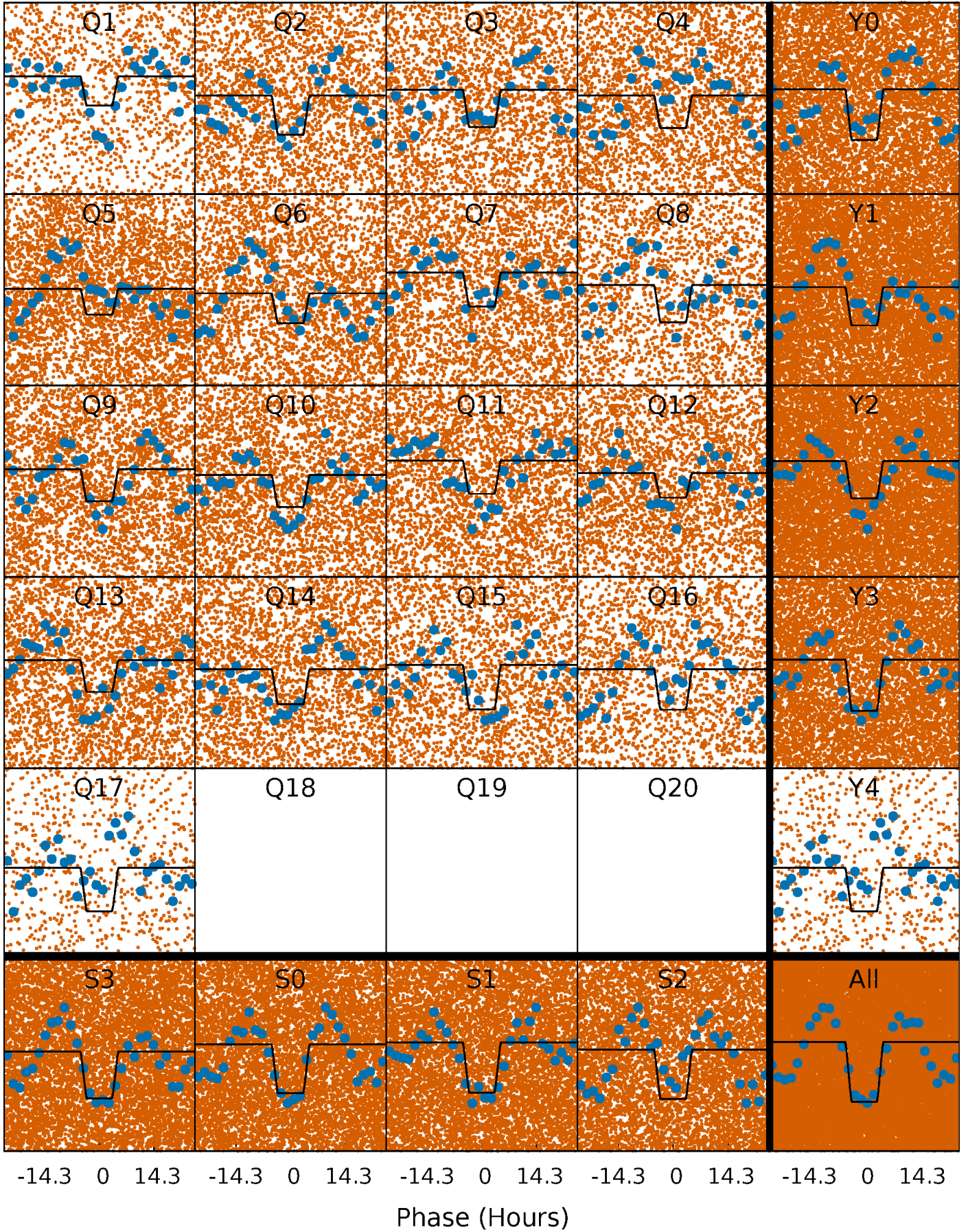
DV Quarter-Phased Transit Curves

TCE 009673009-01 P= 1.721726 Days $T_0=132.966391$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

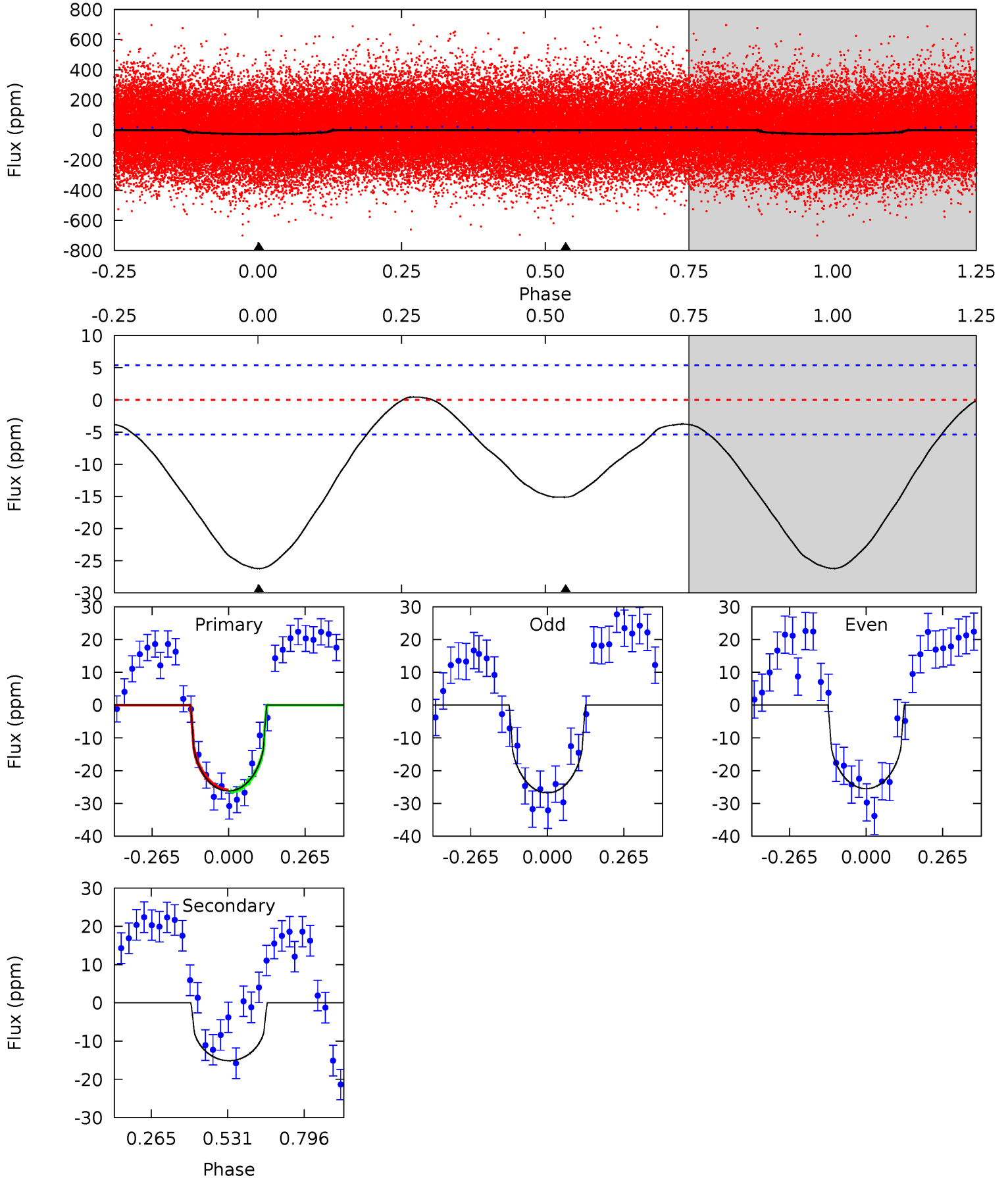
TCE 009673009-01 P= 1.721770 Days $T_0=132.972024$ (BKJD)



DV Model-Shift Uniqueness Test

009673009-01, P = 1.721726 Days, E = 131.244665 Days

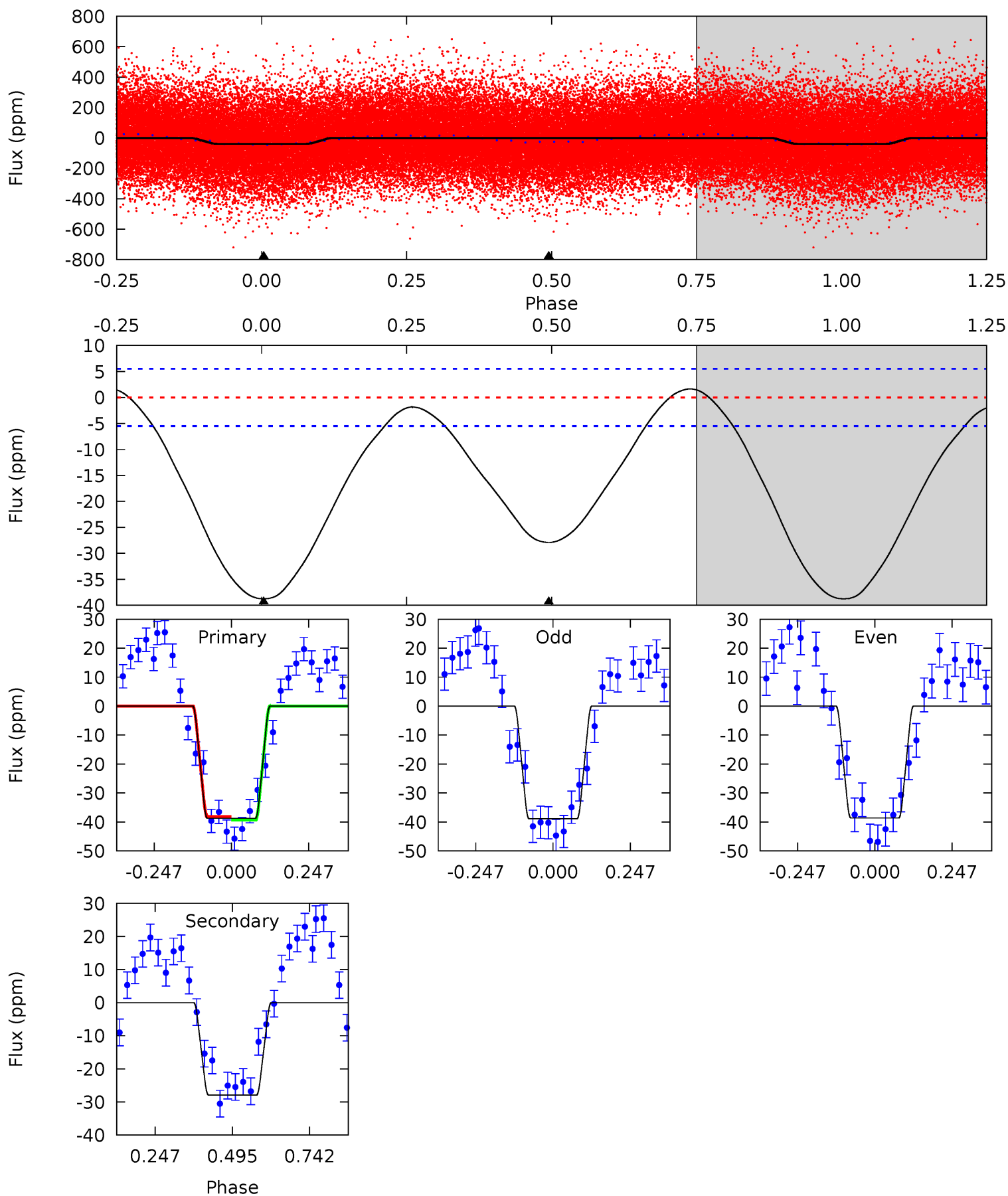
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	12.2	0	0	4.36	1.11	1.39	21.2	21.2	12.2	12.2	0.52	0.99	0.02	0.22



Alt Model-Shift Uniqueness Test

009673009-01, P = 1.721770 Days, E = 131.250254 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.7	22.1	0	0	4.37	1.16	1.39	30.7	30.7	22.1	22.1	0.11	0.97	0.04	0.46



Stellar Parameters For KIC 009673009

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4980^{+136}_{-121}	$3.739^{+0.840}_{-0.360}$	$-0.180^{+0.300}_{-0.200}$	$2.105^{+1.351}_{-1.351}$	$0.887^{+0.278}_{-0.149}$	$0.134^{+2.597}_{-0.097}$
	+3%/-2%	+22%/-10%	+167%/-111%	+64%/-64%	+31%/-17%	+1941%/-73%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009673009-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 1	$0.98^{+1.16}_{-0.67}$	2654^{+430}_{-496}	4510^{+3174}_{-941}	$6.781^{+54.137}_{-5.301}$
Alt.	-28 ± 1	$1.46^{+1.37}_{-0.91}$	2688^{+461}_{-503}	4387^{+2214}_{-832}	$5.417^{+31.418}_{-3.939}$

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

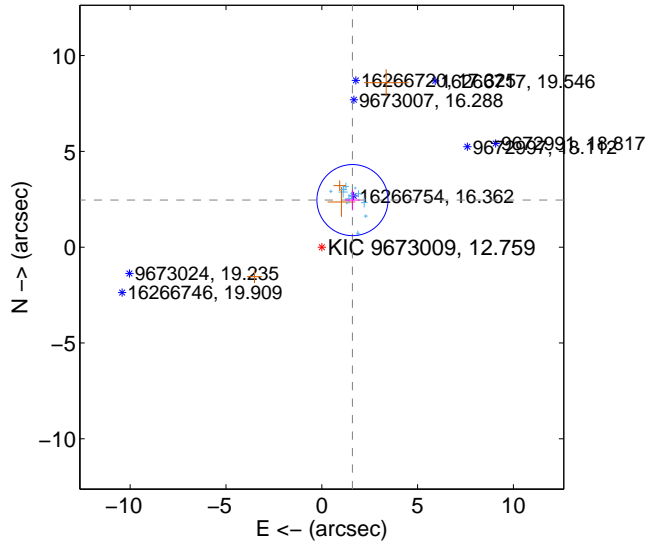
Supplemental centroid analysis for 009673009-01. Kepler magnitude: 12.76. Transit SNR 7.29

There are 12 quarters with good PRF difference image offsets

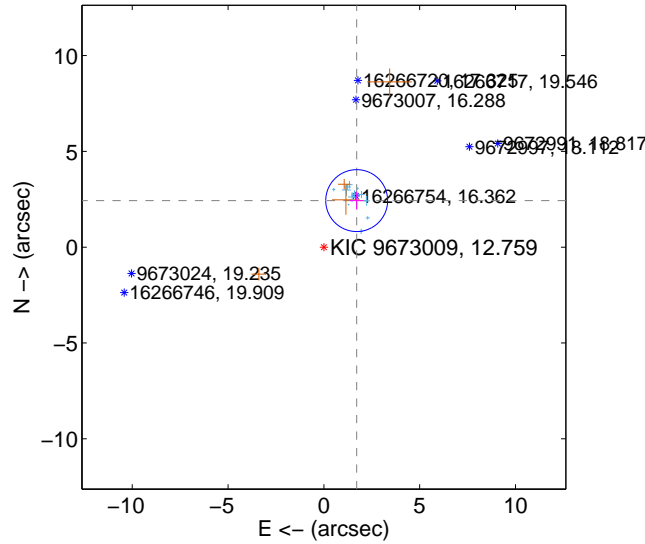
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.932 ± 0.618	4.74	-1.601 ± 0.383	2.456 ± 0.535
PRF-fit source offset from KIC position	2.972 ± 0.538	5.52	-1.712 ± 0.348	2.430 ± 0.467
photometric centroid source offset	6.64 ± 1.29	5.14	-3.54 ± 1.50	5.62 ± 1.20

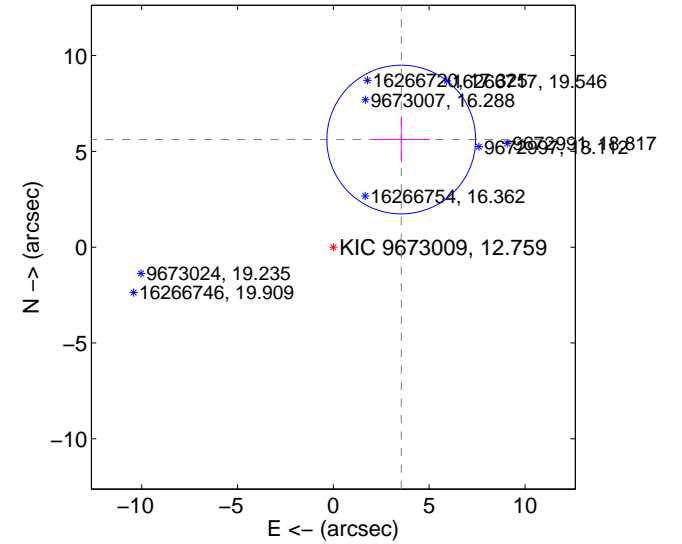
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

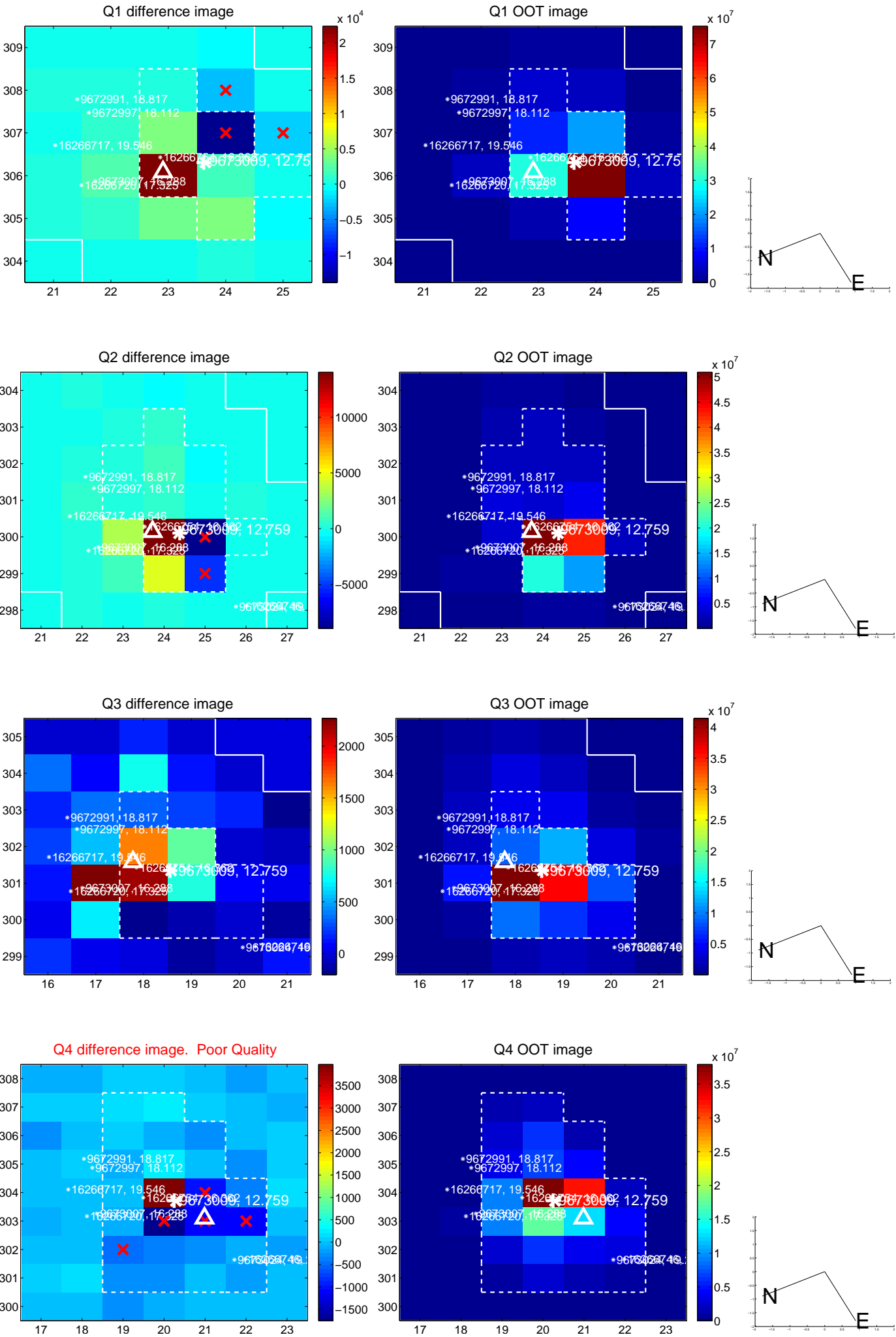


offset from photometric centroids

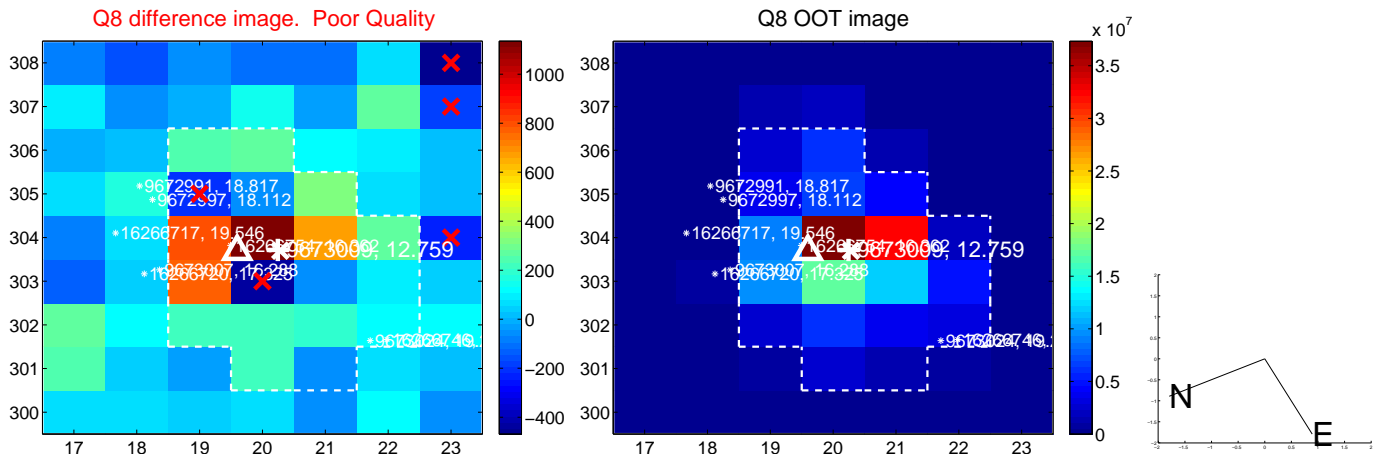
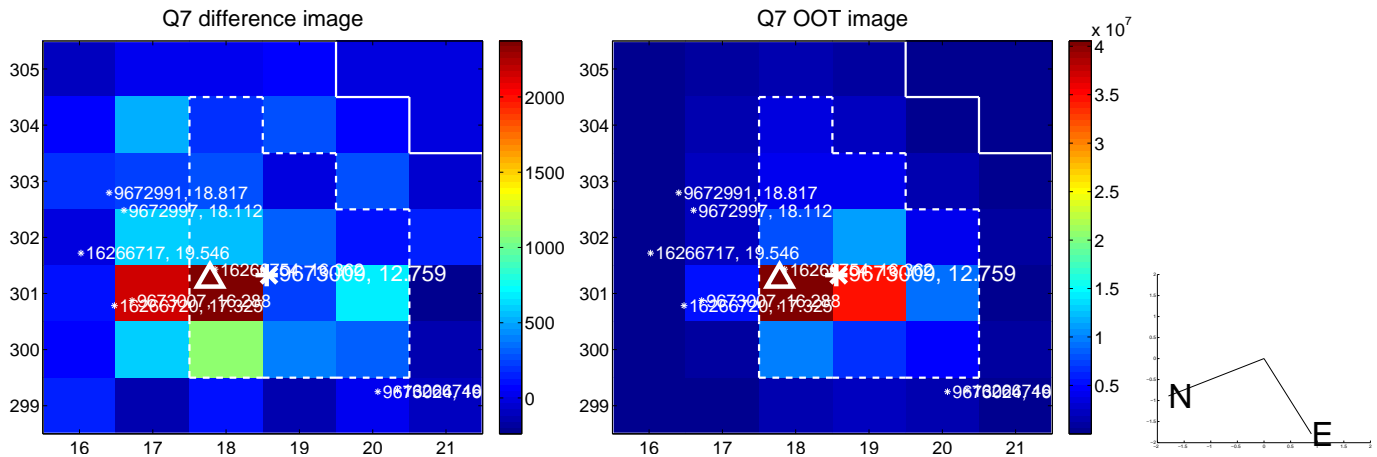
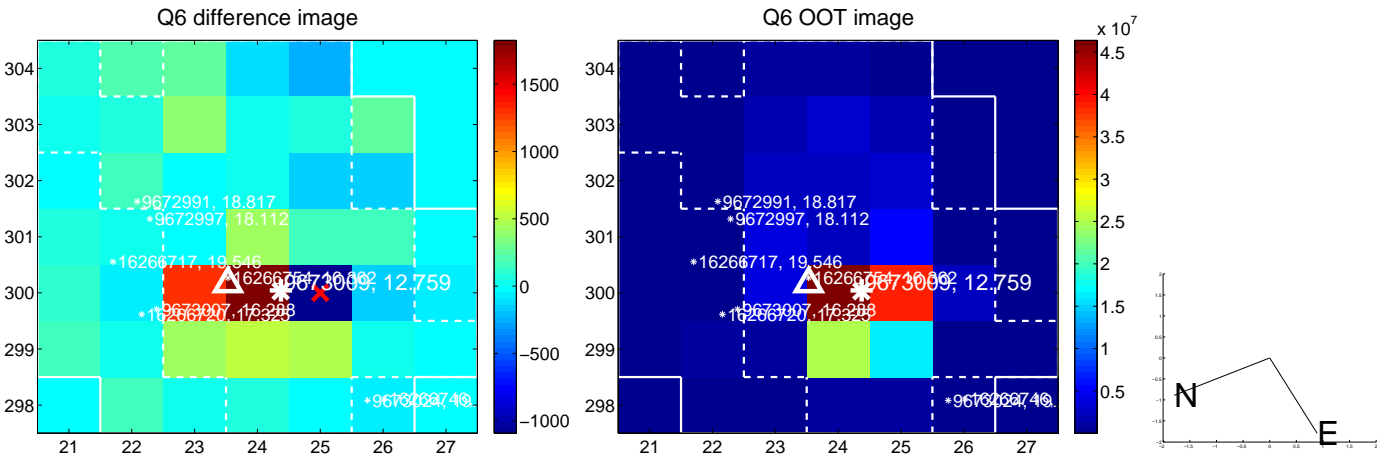
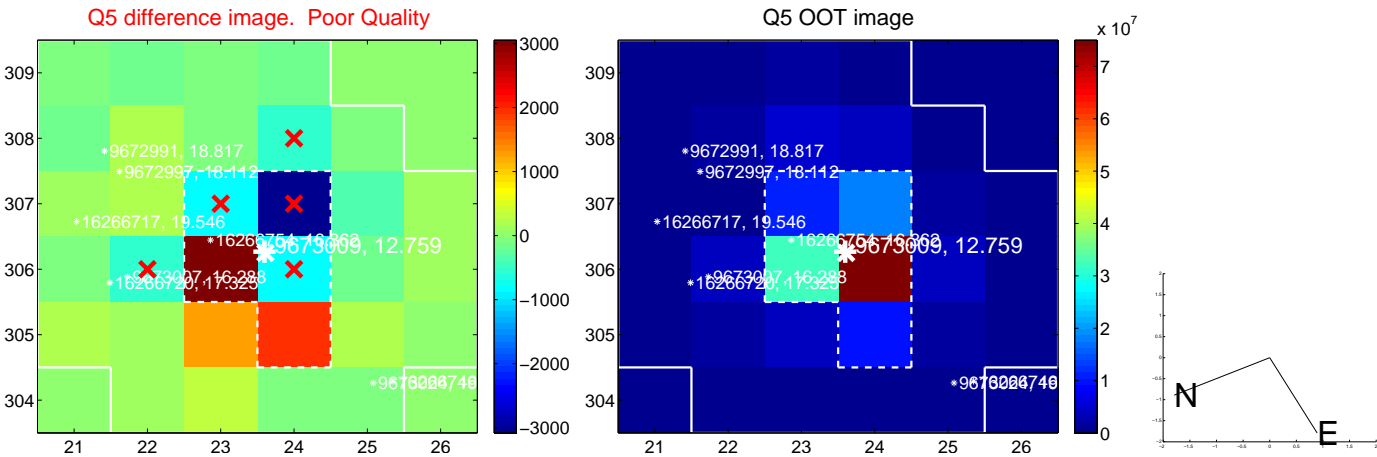


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

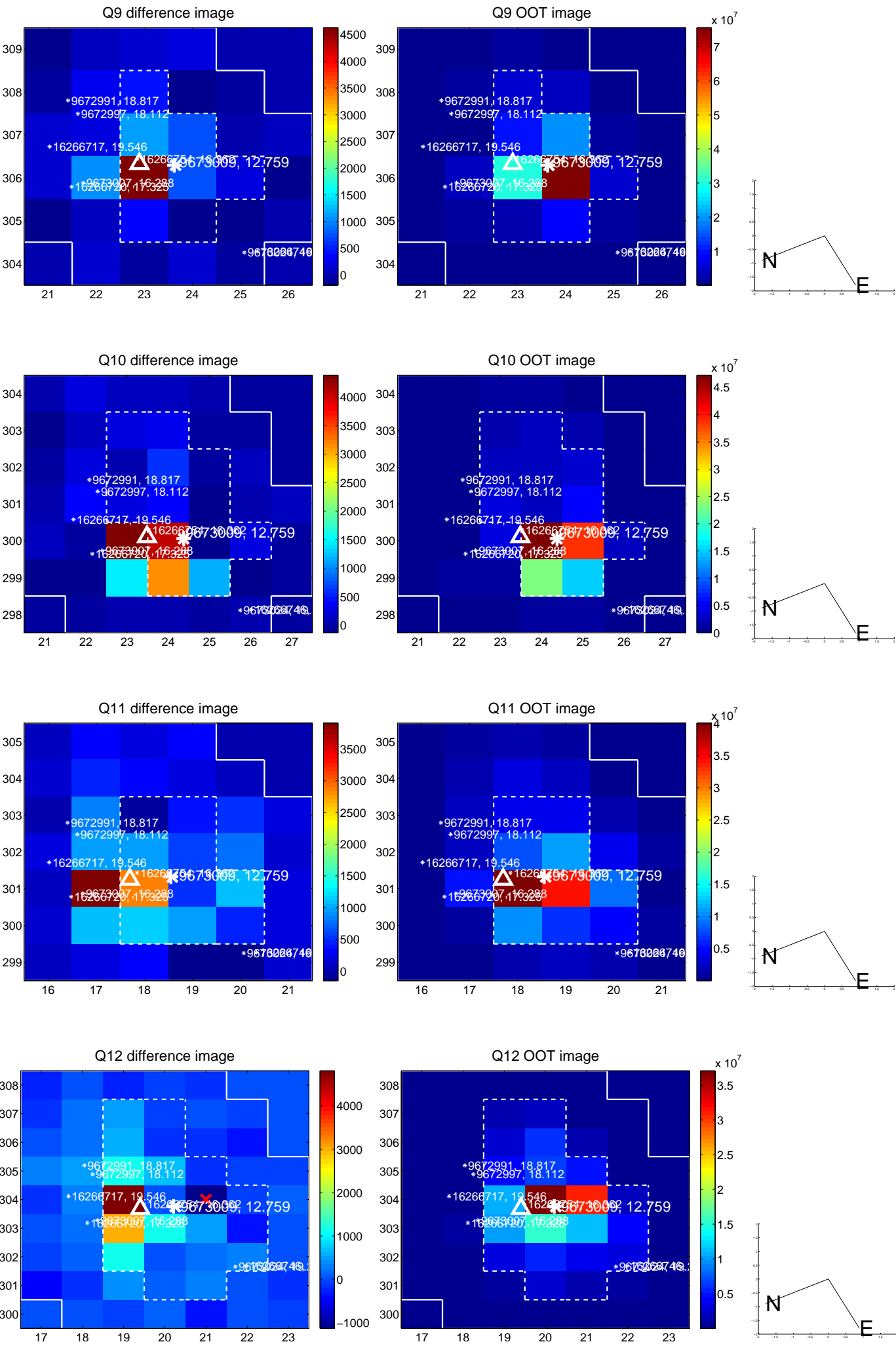
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



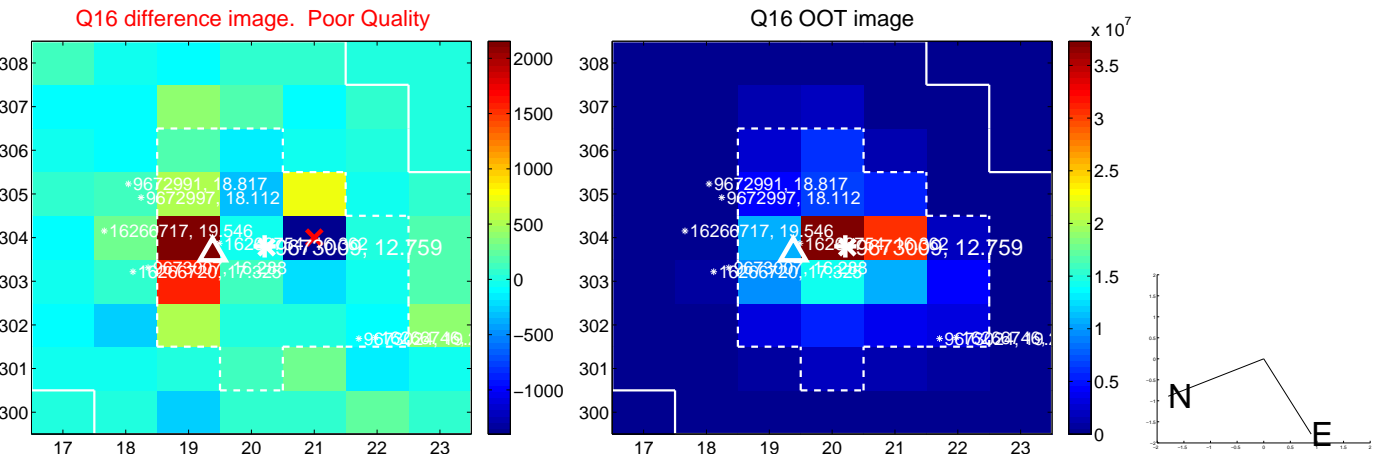
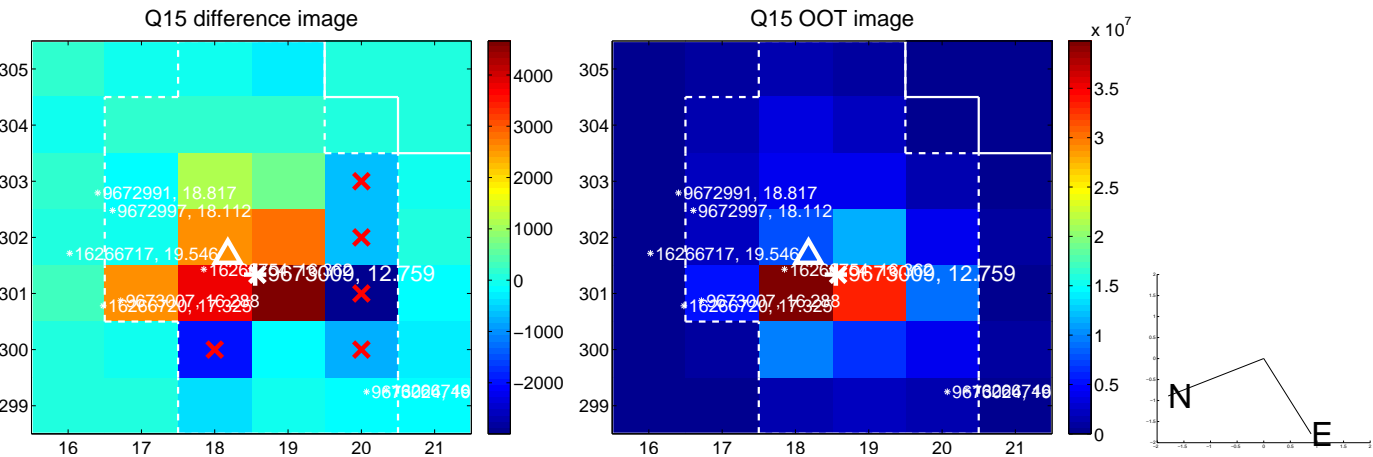
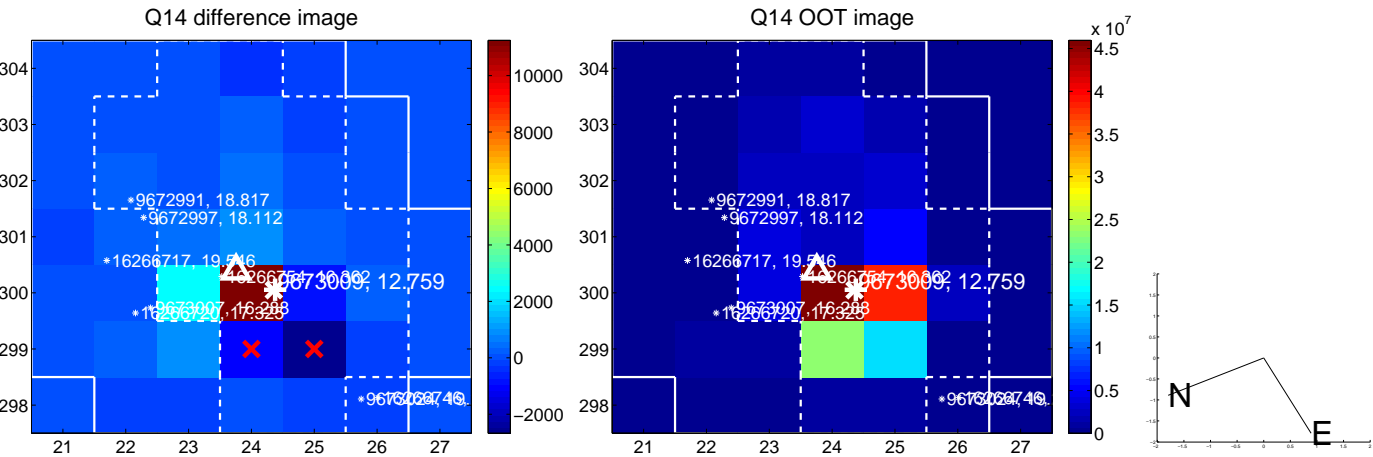
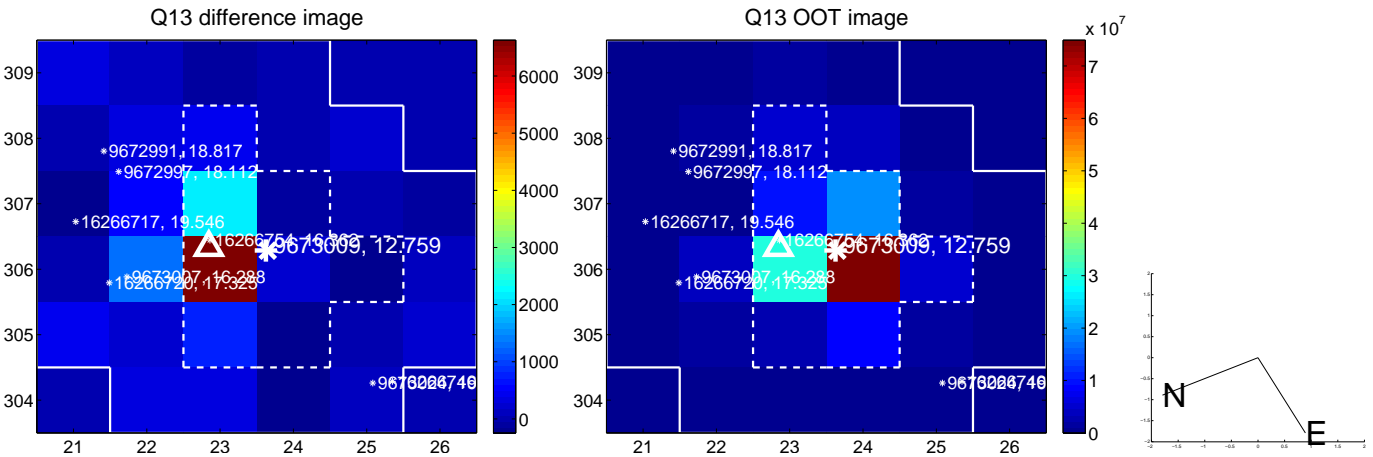
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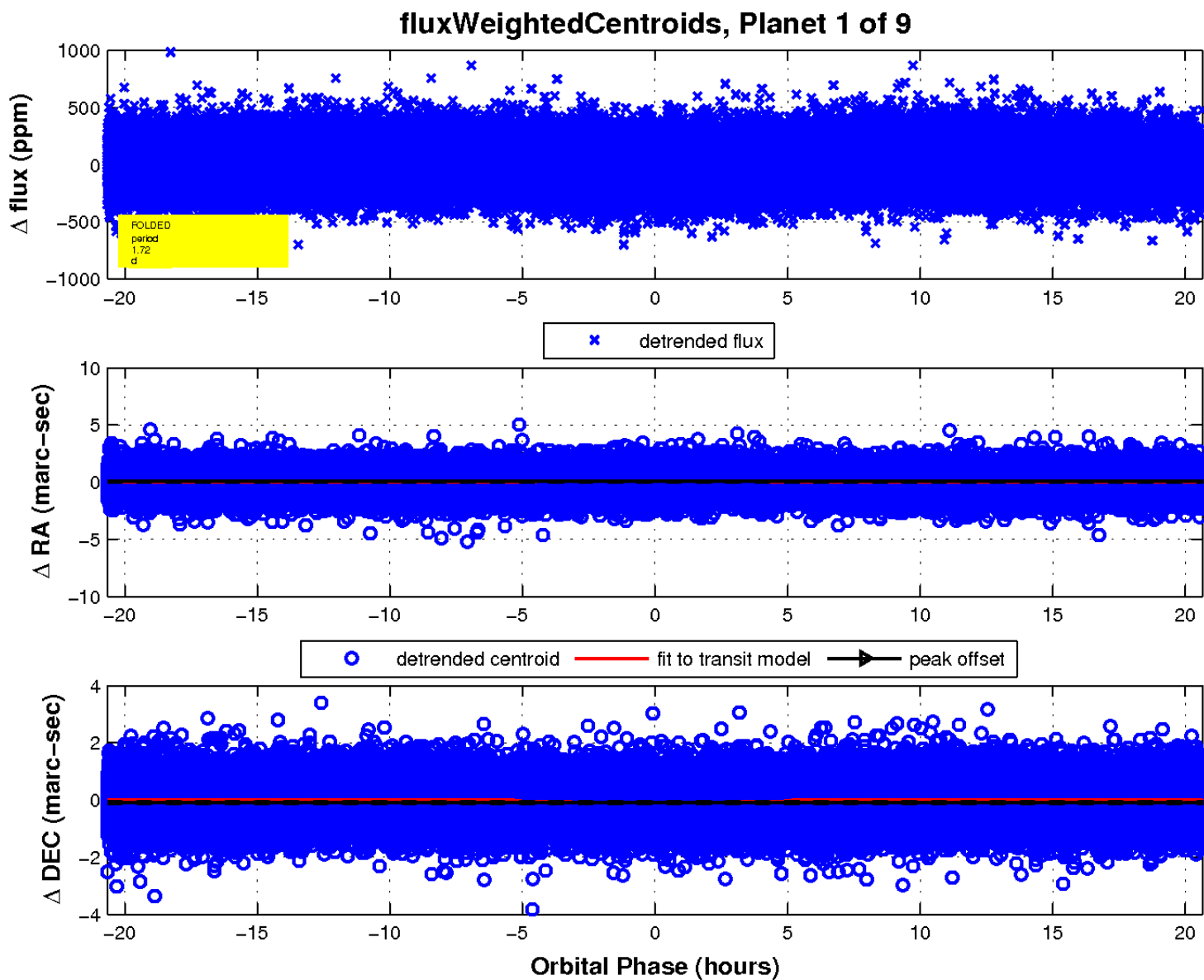
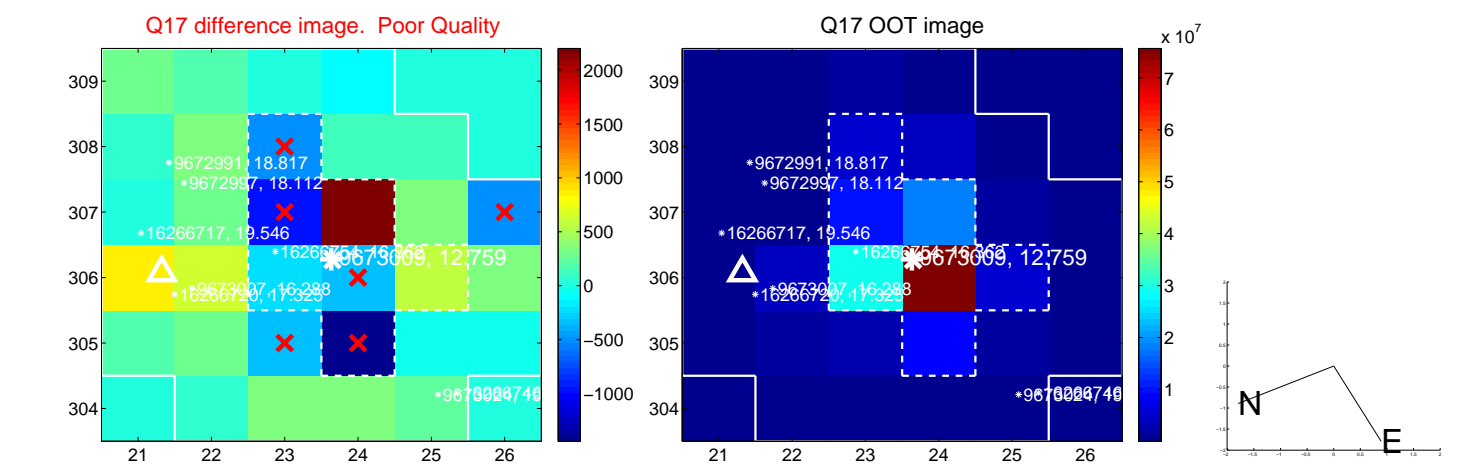
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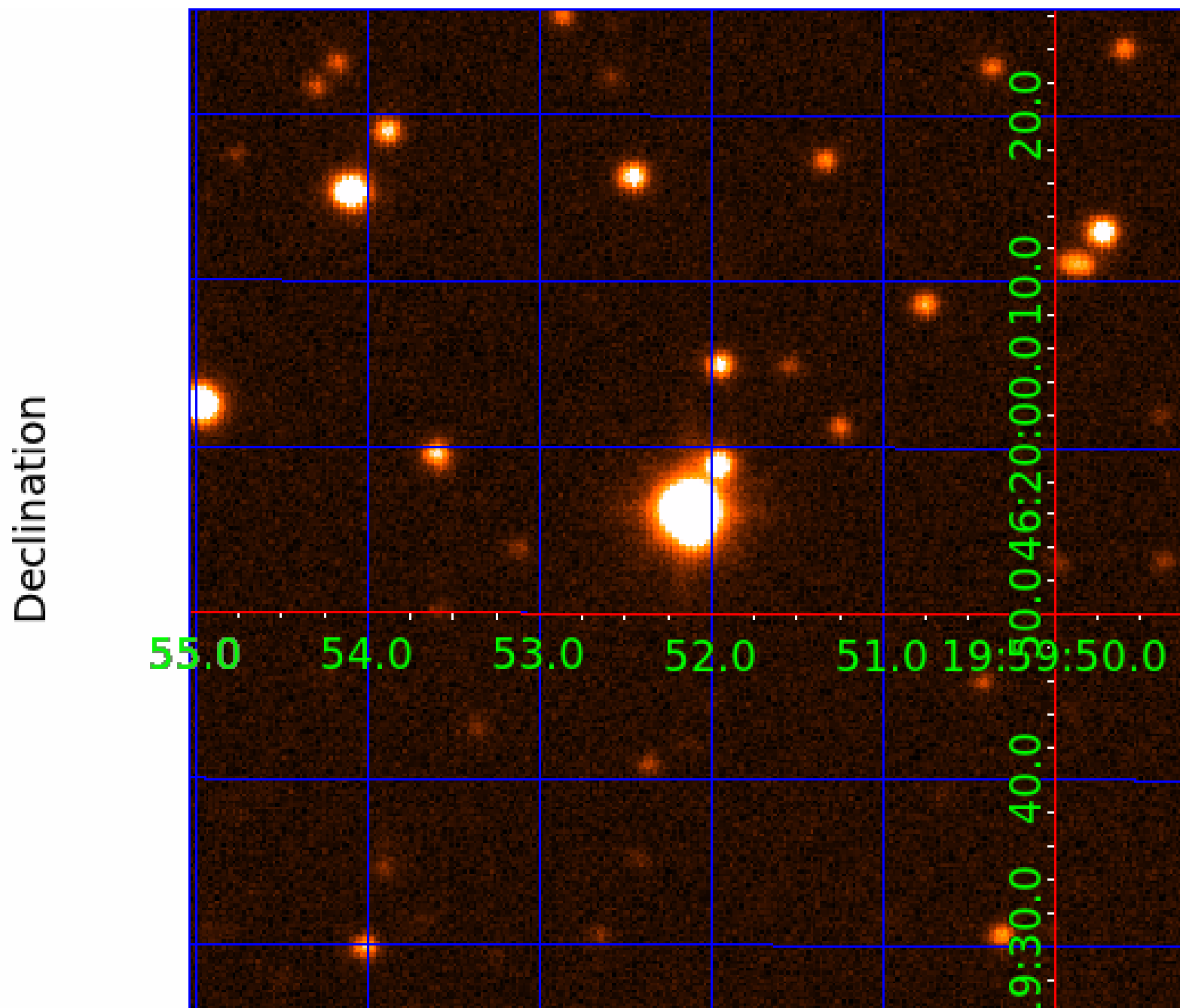
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UKIRT Image



KIC 009673009

Q1-17 DR25 TCE Parameters

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Robovetter Results

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009673009-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009673009-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009673009-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

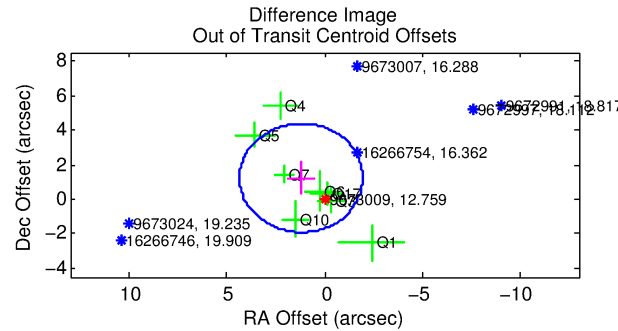
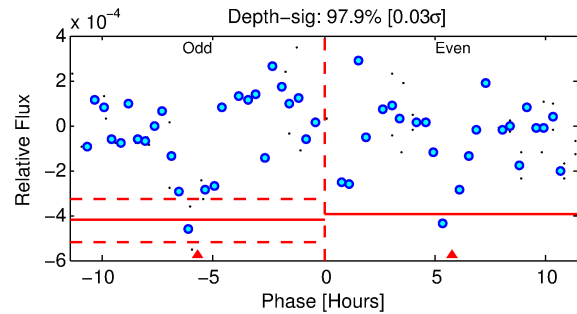
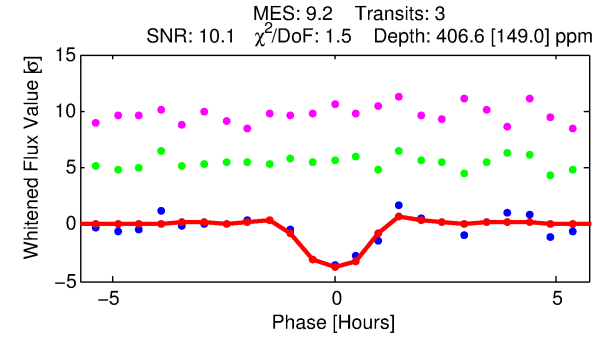
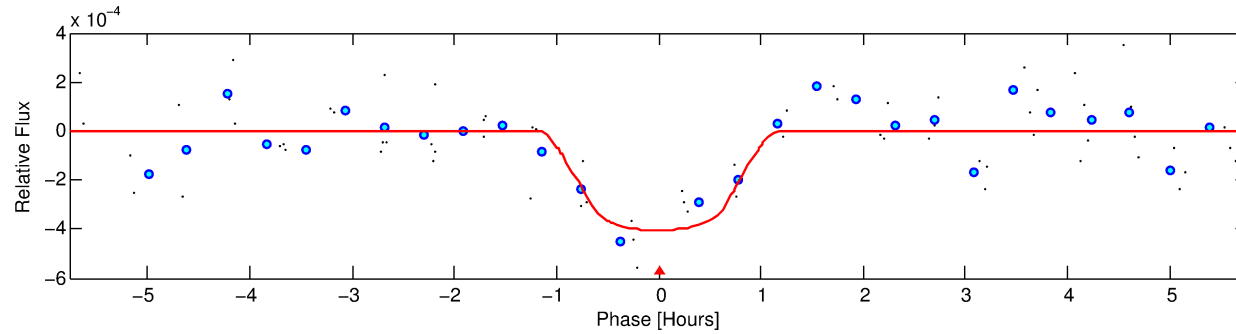
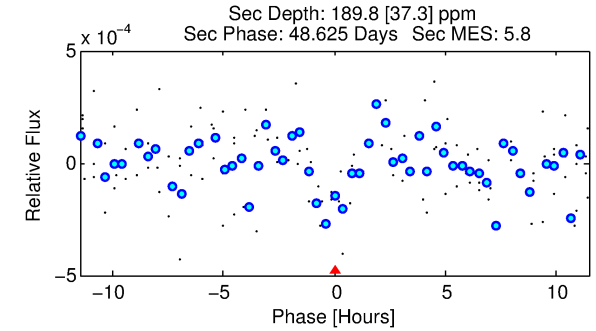
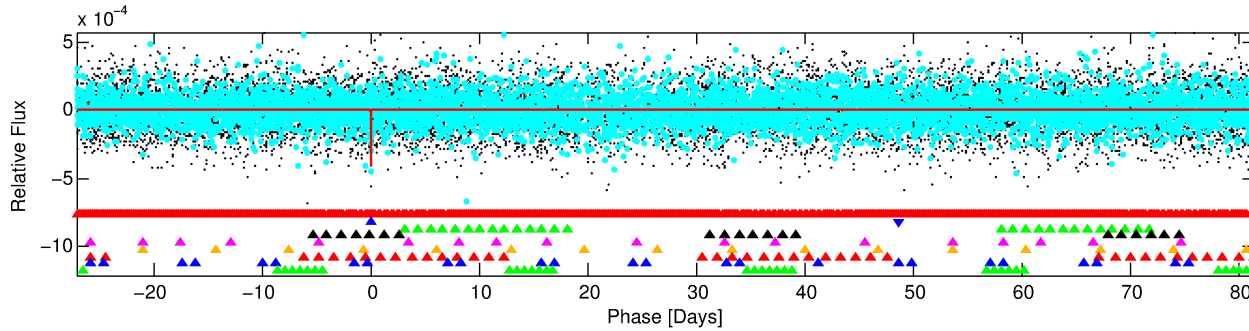
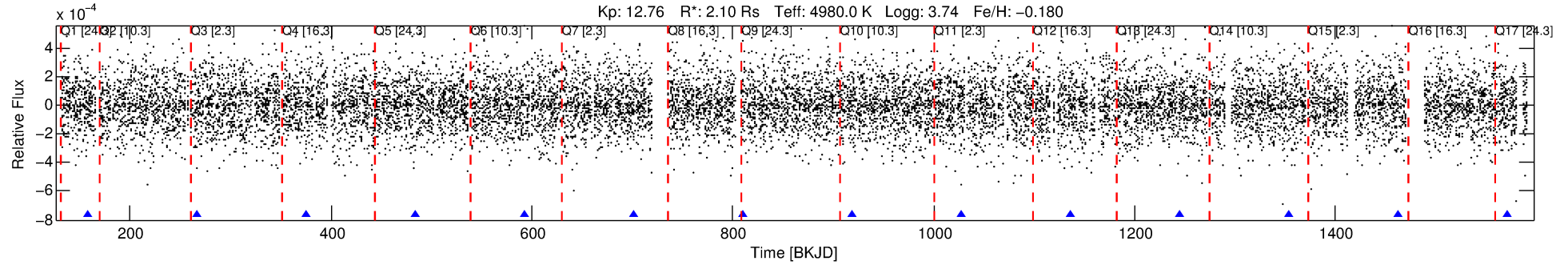
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009673009-02

No Significant Match Found

DV One-Page Summary

KIC: 9673009 Candidate: 2 of 9 Period: 108.724 d



DV Fit Results:

Period = 108.72399 [0.00215] d
Epoch = 157.6006 [0.0121] BKJD
Rp/R* = 0.0225 [0.2771]
a/R* = 211.50 [10336.56]
b = 0.90 [10.94]
Seff = 13.31 [18.14]
Teq = 487 [166] K
Rp = 5.16 [63.73] Re
a = 0.4283 [0.3314] AU
Ag = 719.26 [17765.47] [0.04σ]
Teffp = 3900 [24045] K [0.14σ]

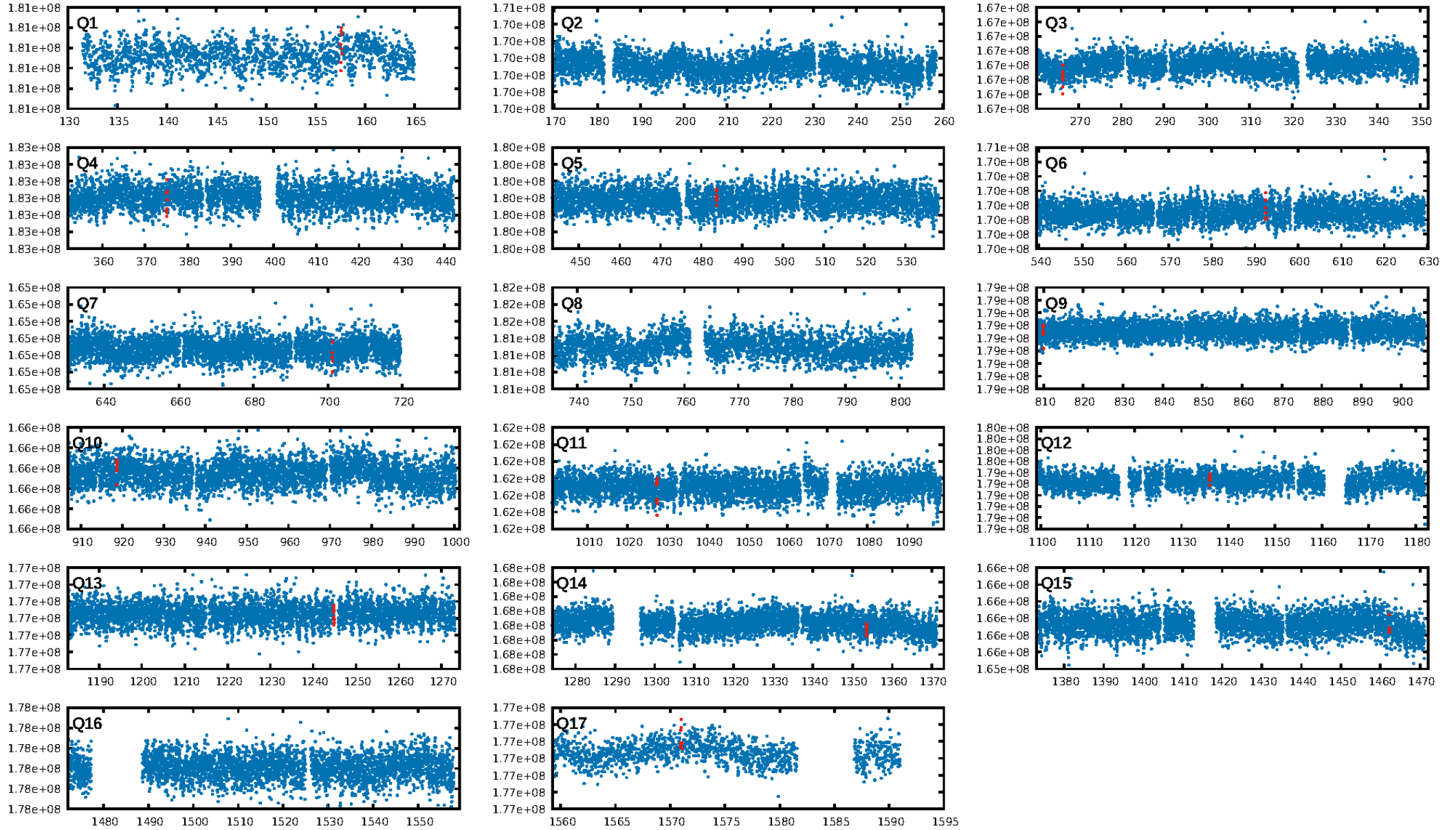
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [245.46σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 23.6%
ModelChiSquareGof-sig: 81.5%
Bootstrap-pfa: 2.18e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.561
Centroid-sig: 16.0%
Centroid-so: 0.729 arcsec [0.96σ]
OotOffset-rm: 1.720 arcsec [1.64σ]
KicOffset-rm: 1.721 arcsec [1.76σ]
OotOffset-st: 2/2/1/3 [8]
KicOffset-st: 2/2/1/3 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.42 [5/12]

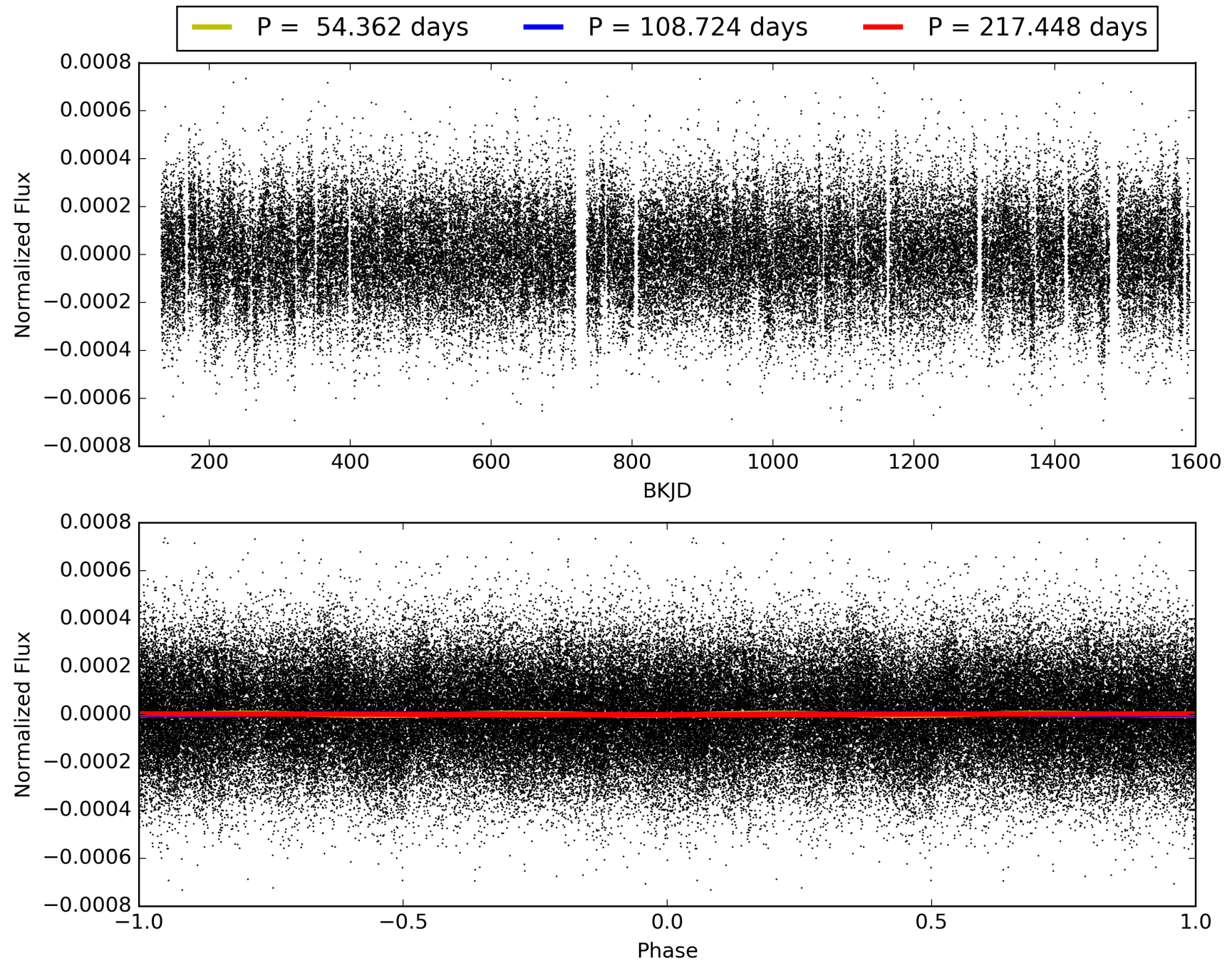
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:41:03 Z

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

TCE 009673009-02, PDC Light Curves

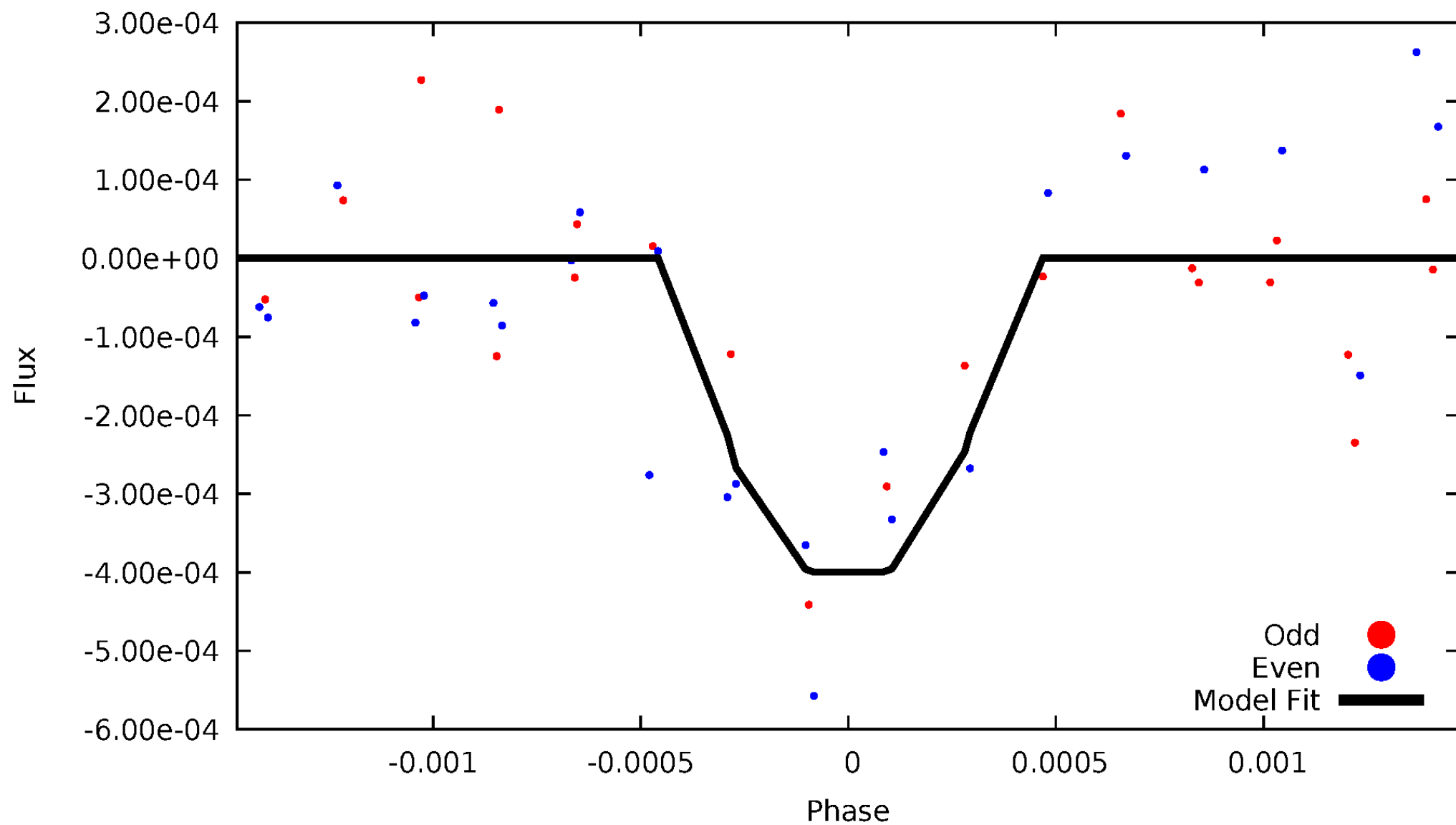


TCE 009673009-02



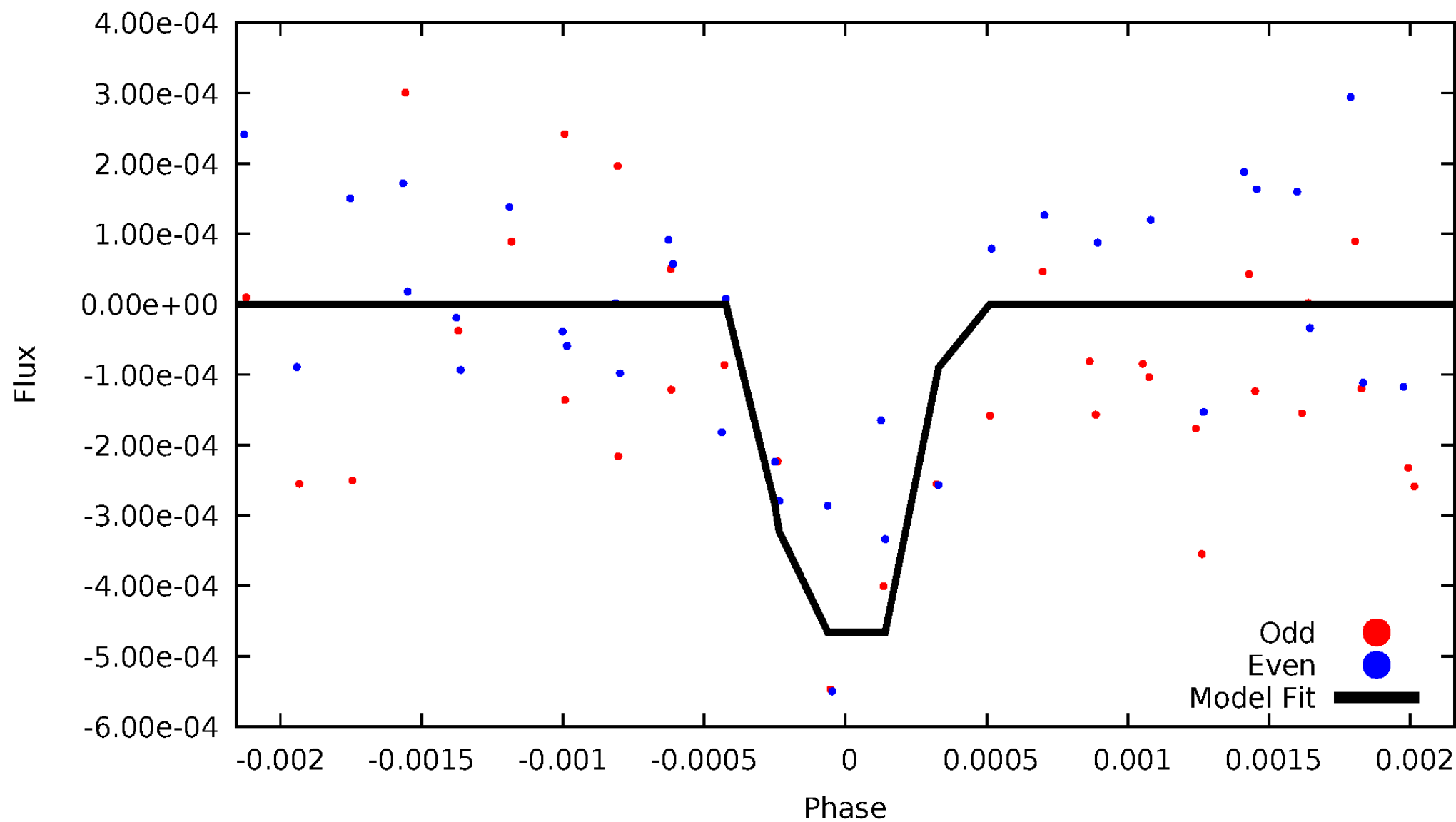
DV Odd/Even

TCE 009673009-02



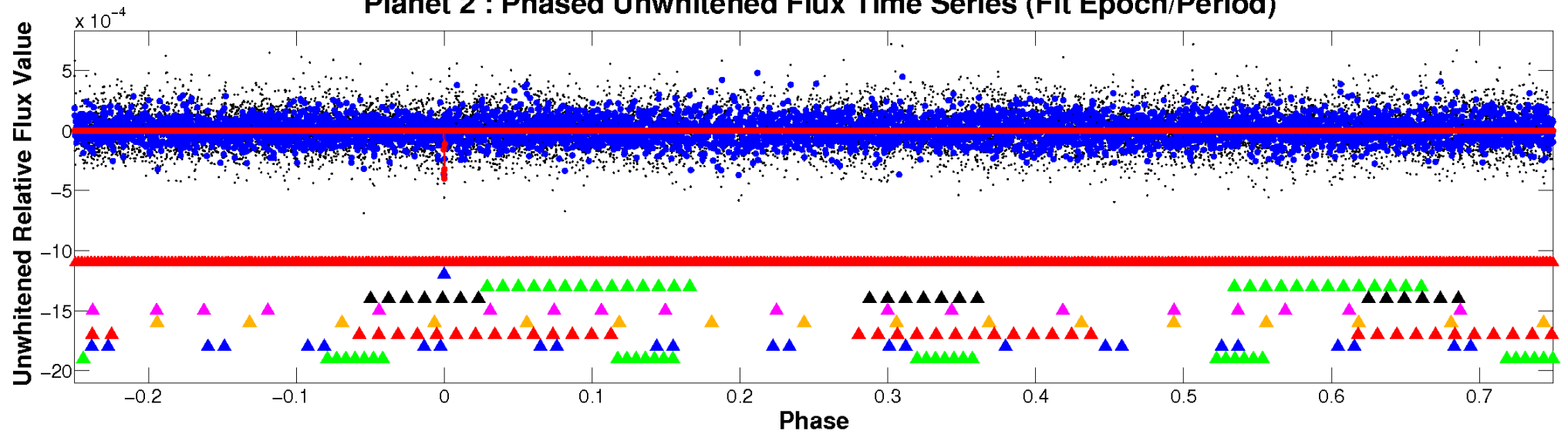
ALT Odd/Even

TCE 009673009-02

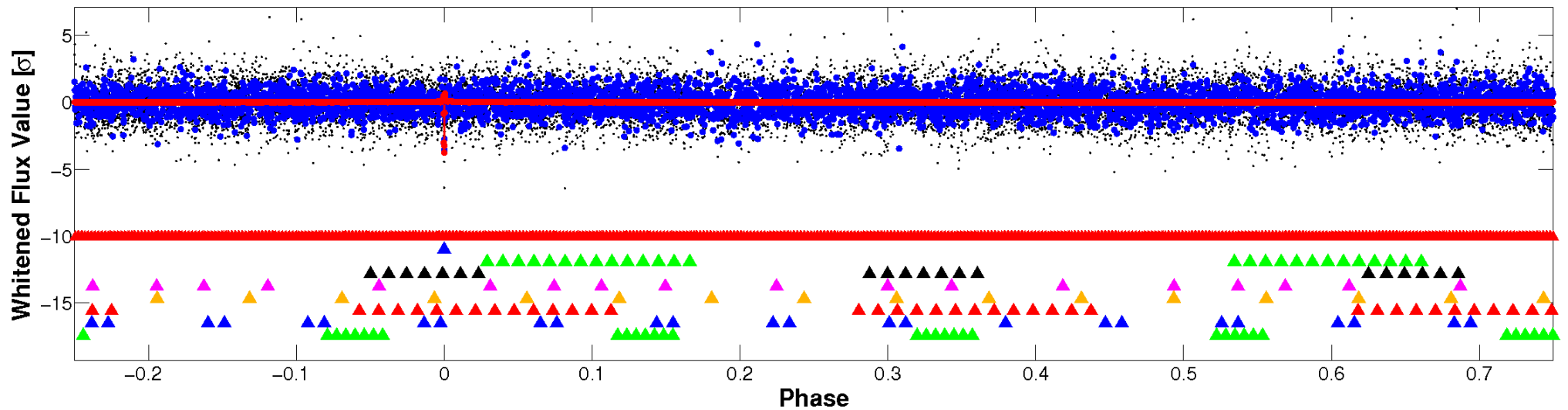


Non-Whitened Vs. Whitened Light Curve

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

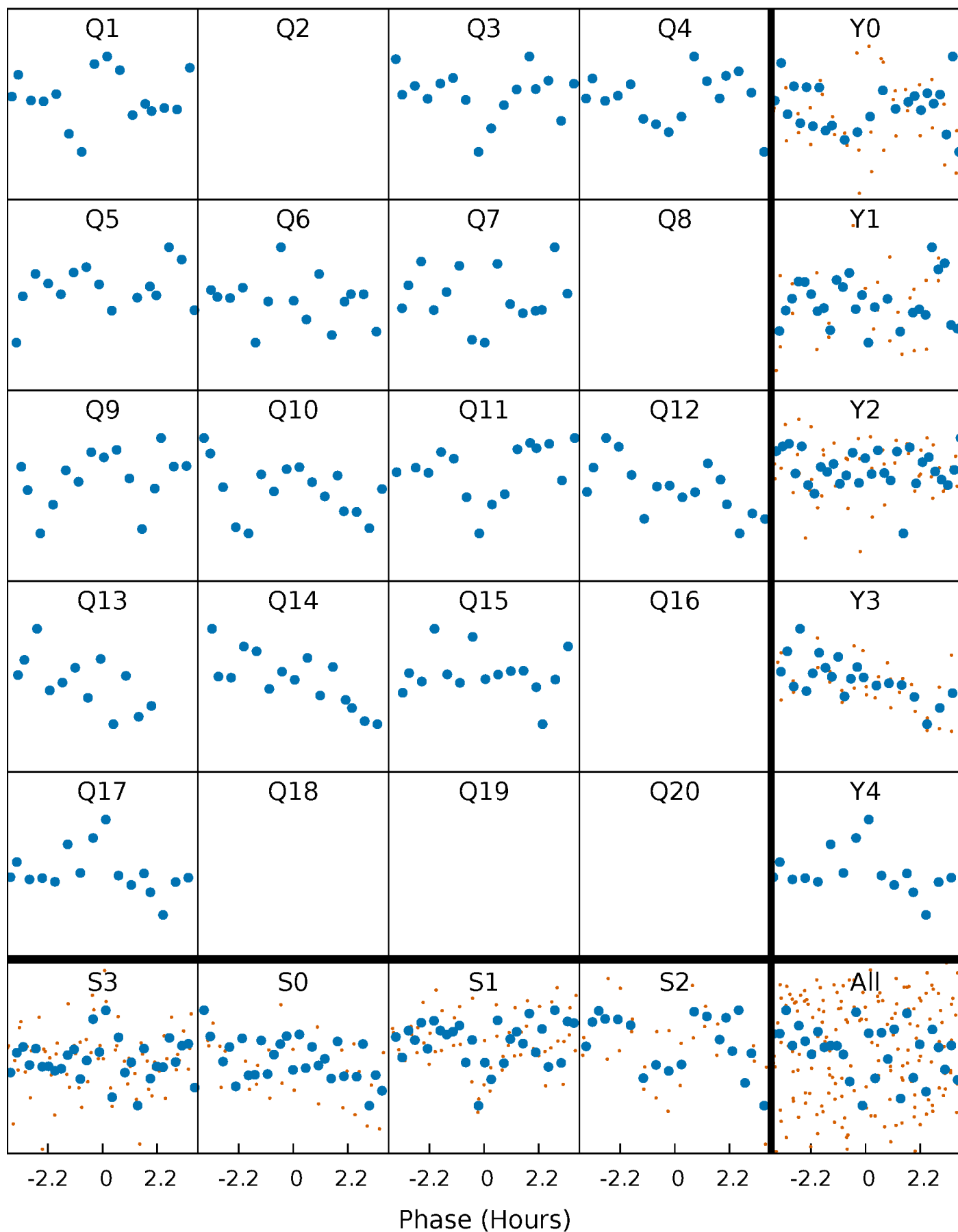


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



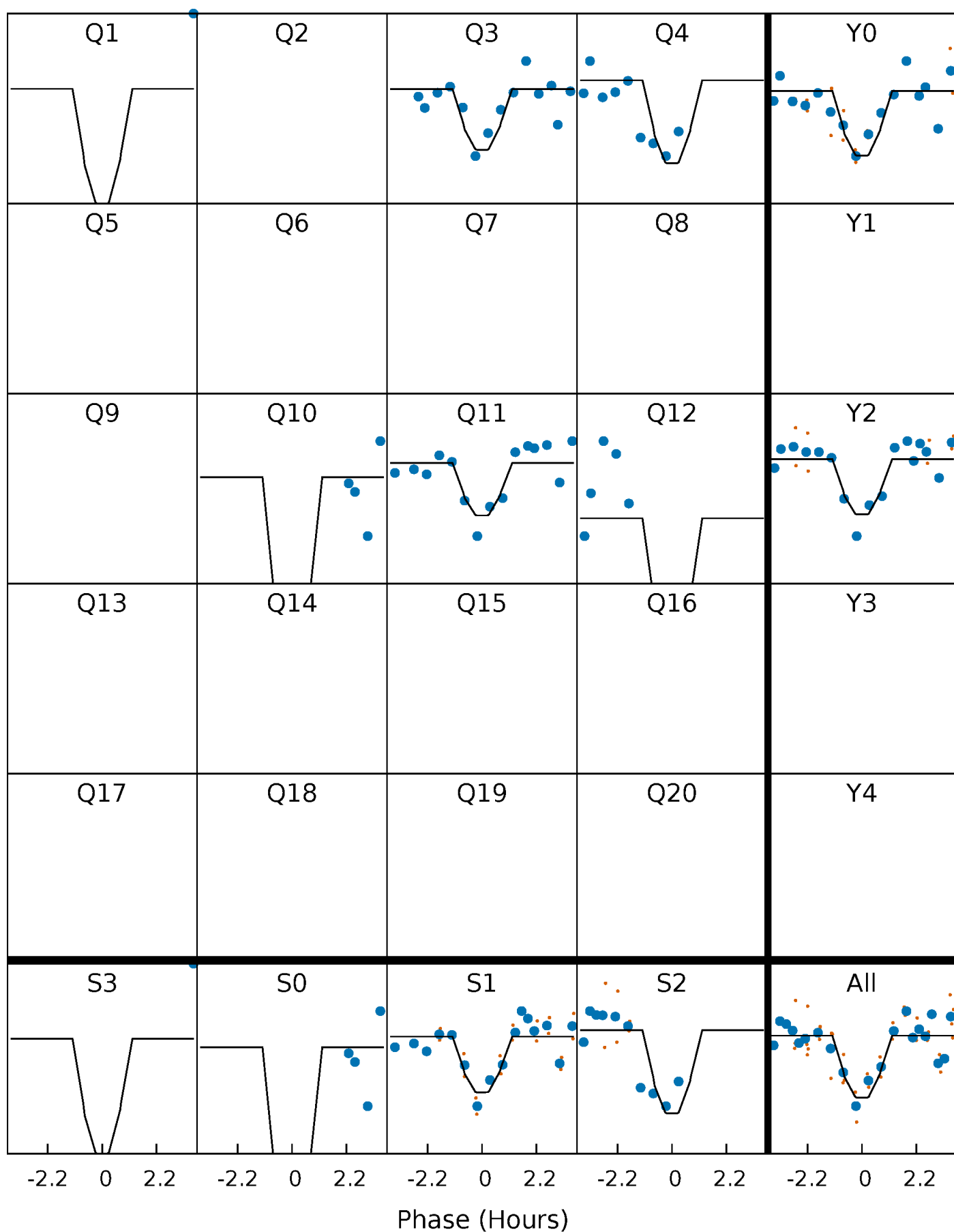
PDC Quarter-Phased Transit Curves

TCE 009673009-02 P=108.723993 Days $T_0=157.600626$ (BKJD)



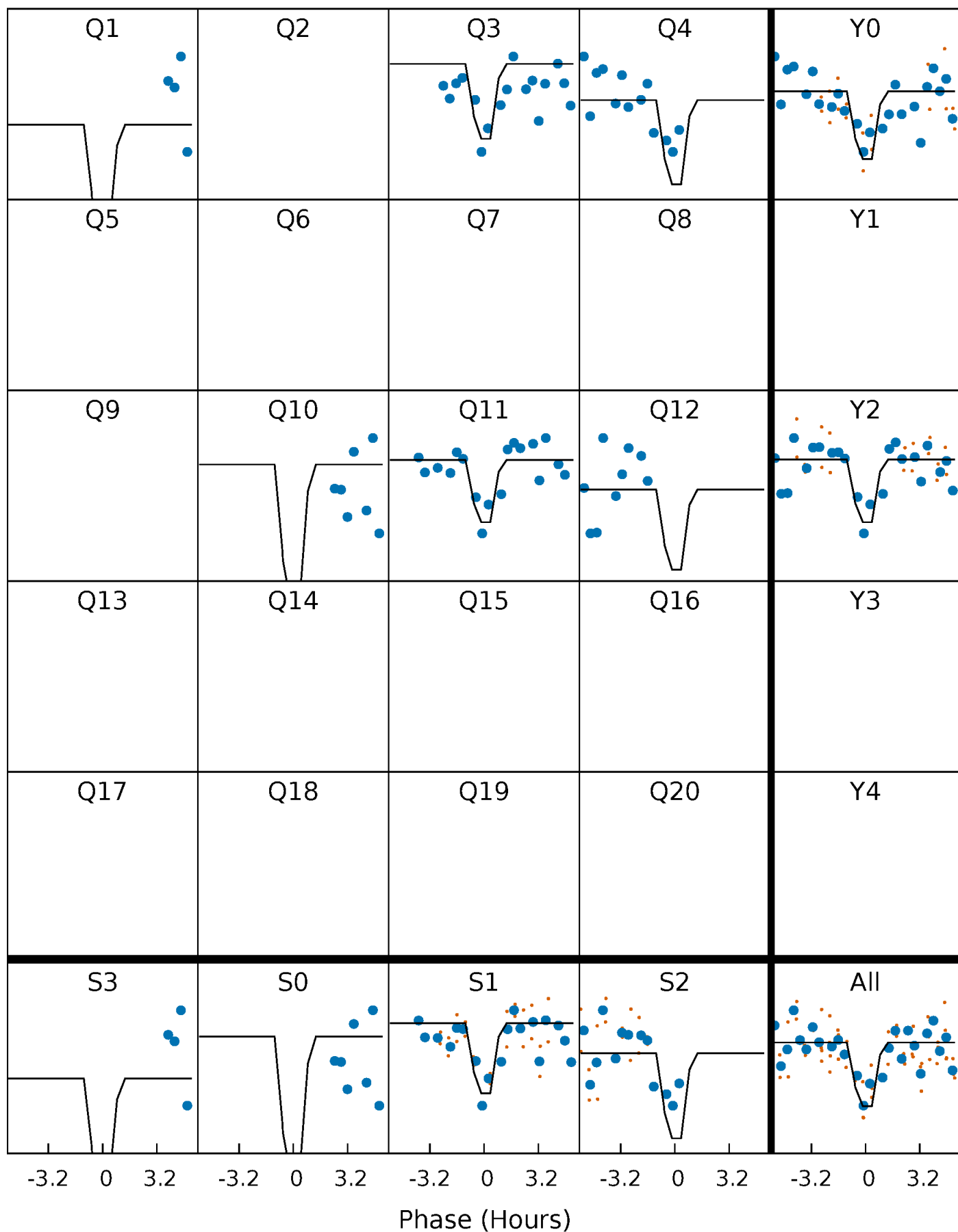
DV Quarter-Phased Transit Curves

TCE 009673009-02 P=108.723993 Days $T_0=157.600626$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

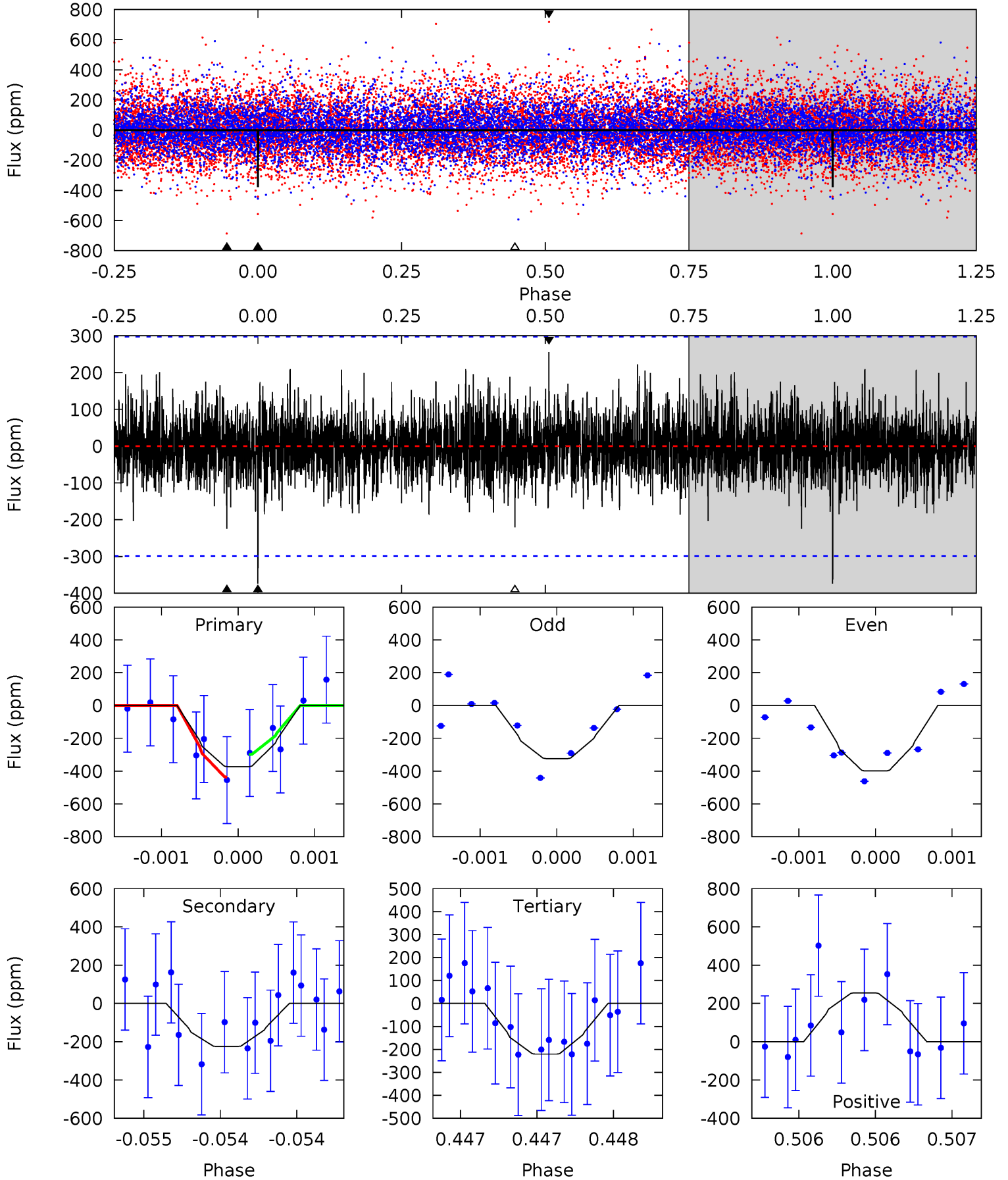
TCE 009673009-02 P=108.724092 Days $T_0=157.595930$ (BKJD)



DV Model-Shift Uniqueness Test

009673009-02, P = 108.723993 Days, E = 48.876633 Days

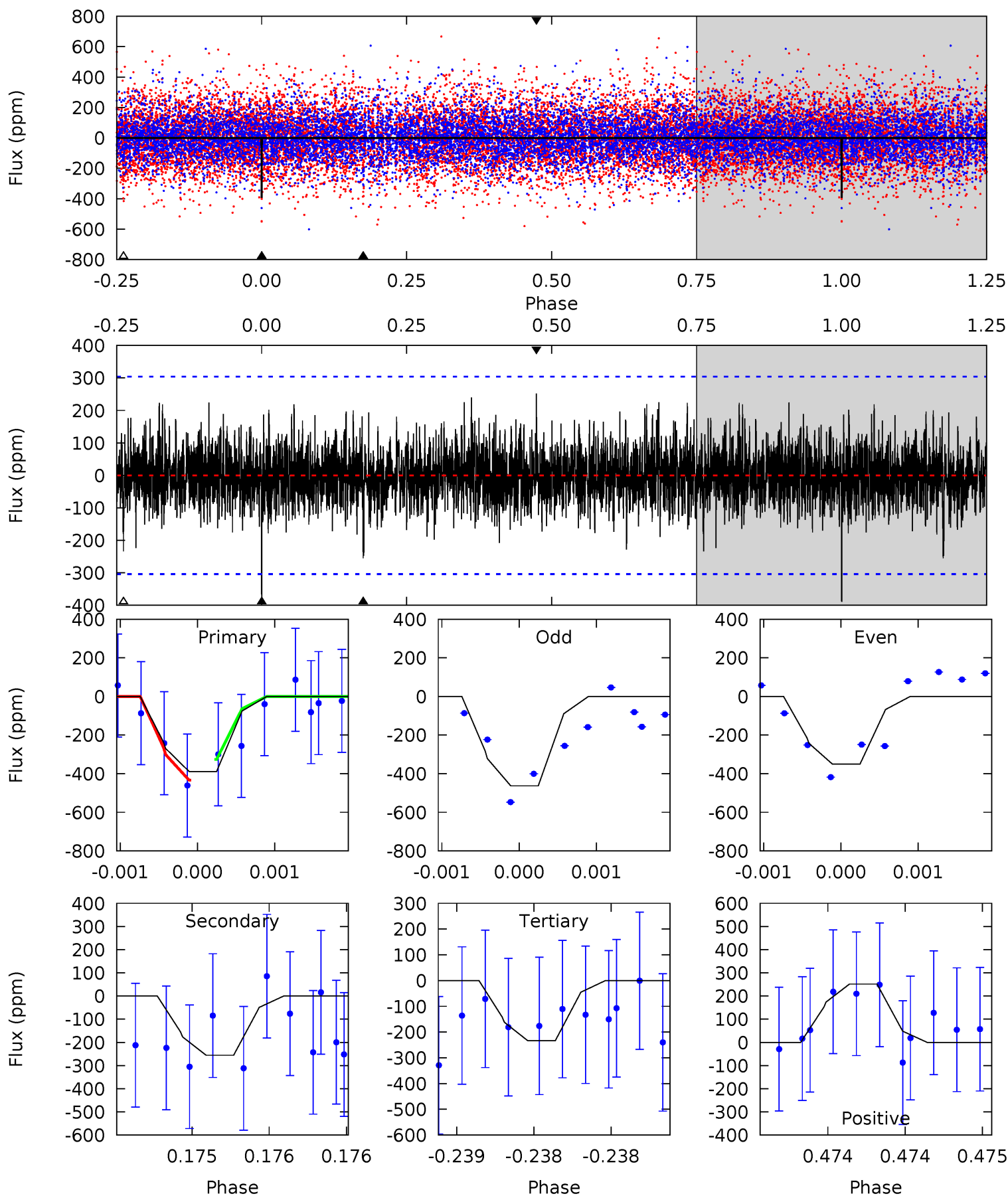
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.94	4.18	4.10	4.74	5.55	3.44	1.14	2.84	2.20	0.08	-0.56	0.70	1.09	0.41	1.28



Alt Model-Shift Uniqueness Test

009673009-02, $P = 108.724092$ Days, $E = 48.871838$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.10	4.66	4.27	4.59	5.55	3.45	1.18	2.83	2.50	0.40	0.07	1.03	0.86	0.39	0.99



Stellar Parameters For KIC 009673009

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4980^{+136}_{-121}	$3.739^{+0.840}_{-0.360}$	$-0.180^{+0.300}_{-0.200}$	$2.105^{+1.351}_{-1.351}$	$0.887^{+0.278}_{-0.149}$	$0.134^{+2.597}_{-0.097}$
	+3%/-2%	+22%/-10%	+167%/-111%	+64%/-64%	+31%/-17%	+1941%/-73%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009673009-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-225 ± 54	$41.68^{+52.53}_{-29.48}$	675^{+112}_{-131}	2263^{+852}_{-345}	13^{+147}_{-11}
Alt.	-255 ± 55	$42.84^{+53.24}_{-32.35}$	671^{+105}_{-128}	2274^{+1020}_{-330}	15^{+206}_{-12}

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

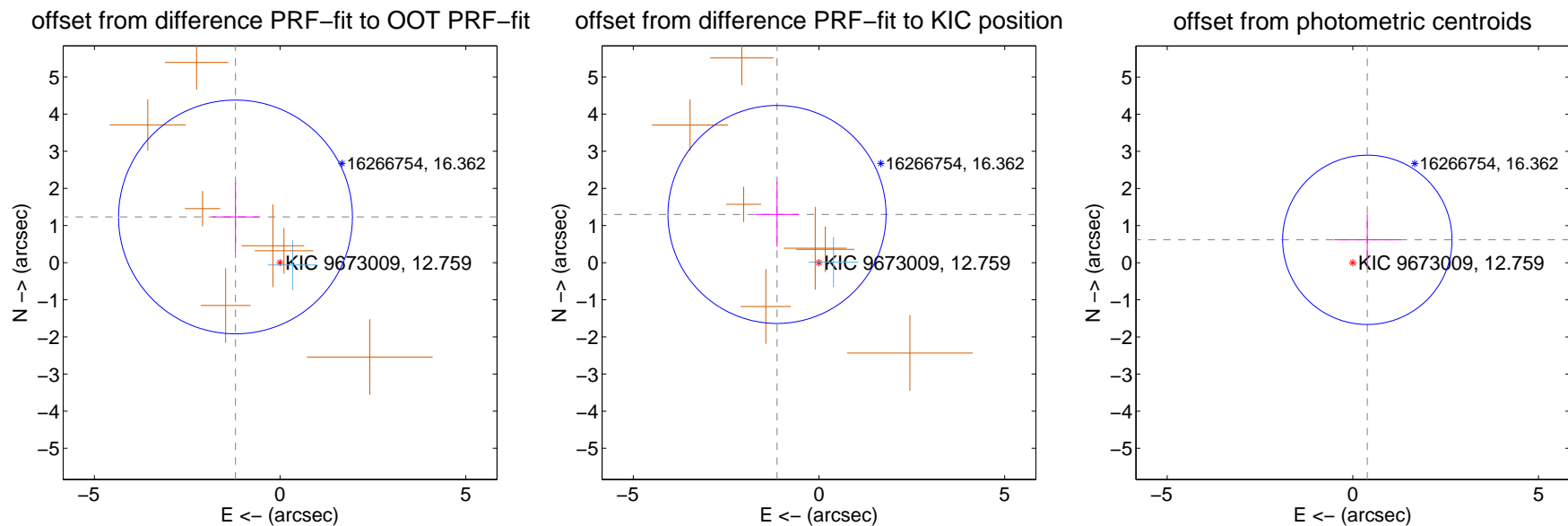
DV Centroid Data

Supplemental centroid analysis for 009673009-02. Kepler magnitude: 12.76. Transit SNR 10.08

There are 1 quarters with good PRF difference image offsets

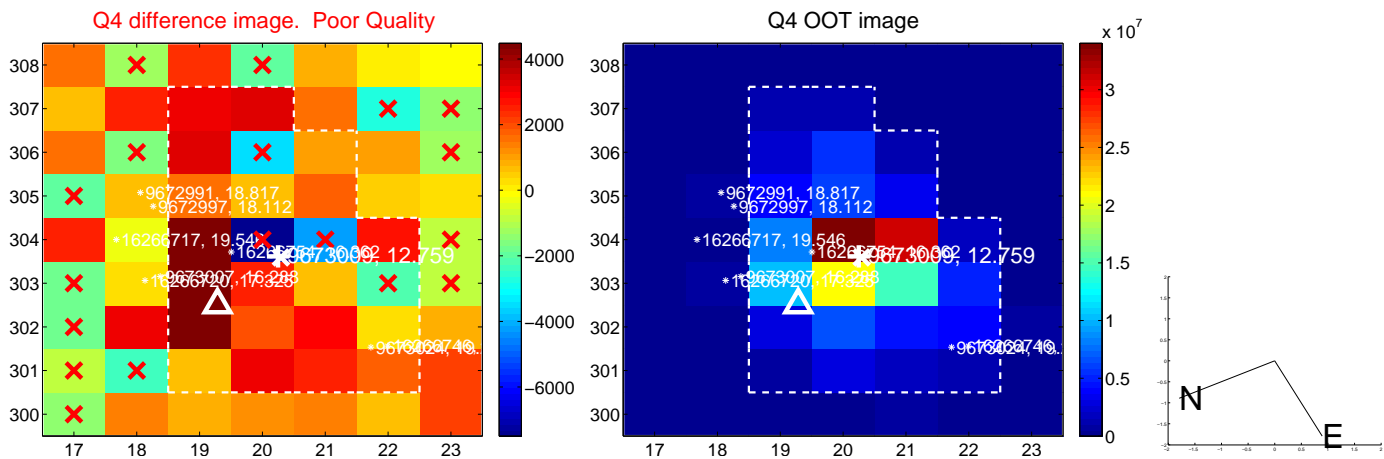
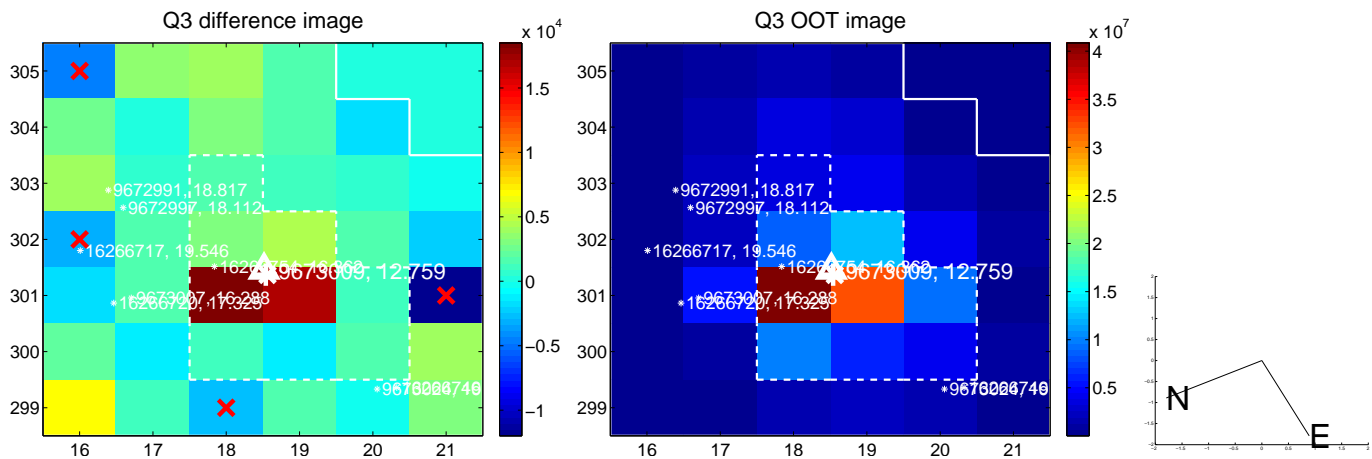
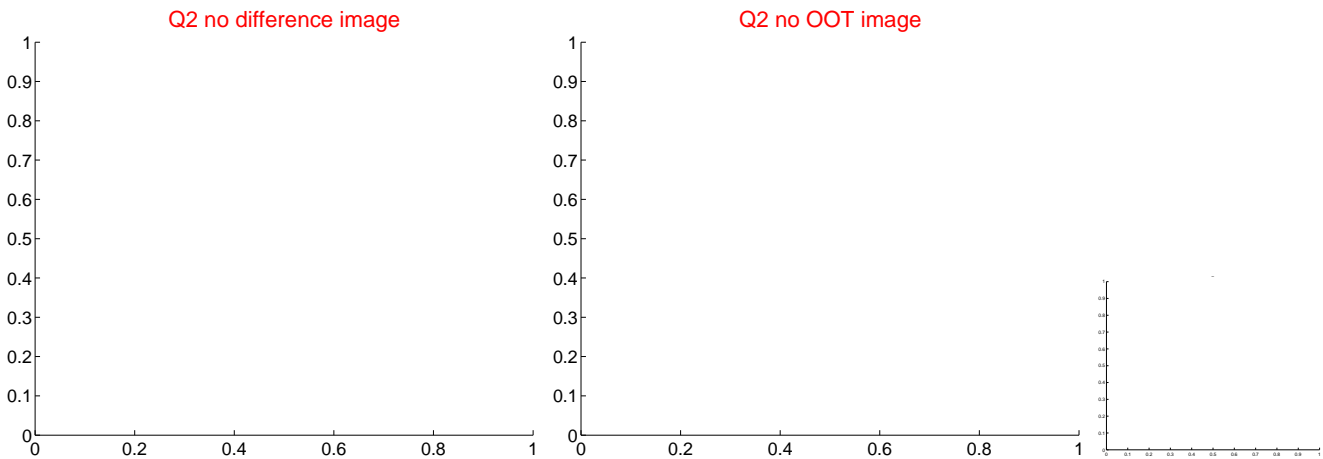
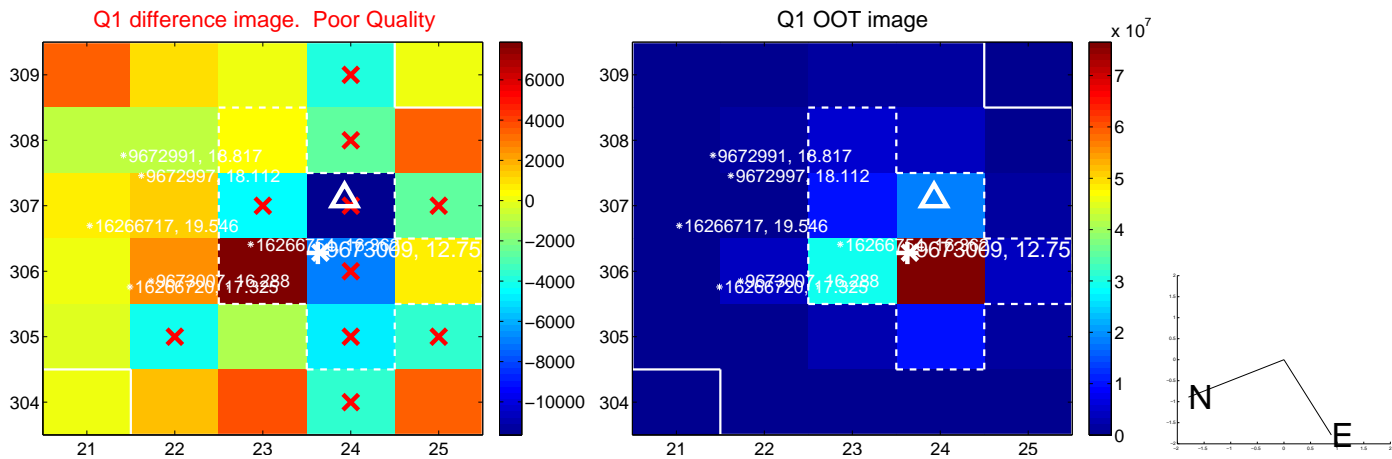
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.720 ± 1.049	1.64	1.201 ± 0.630	1.230 ± 0.922
PRF-fit source offset from KIC position	1.721 ± 0.978	1.76	1.130 ± 0.583	1.298 ± 0.873
photometric centroid source offset	0.73 ± 0.76	0.96	-0.39 ± 0.90	0.62 ± 0.70

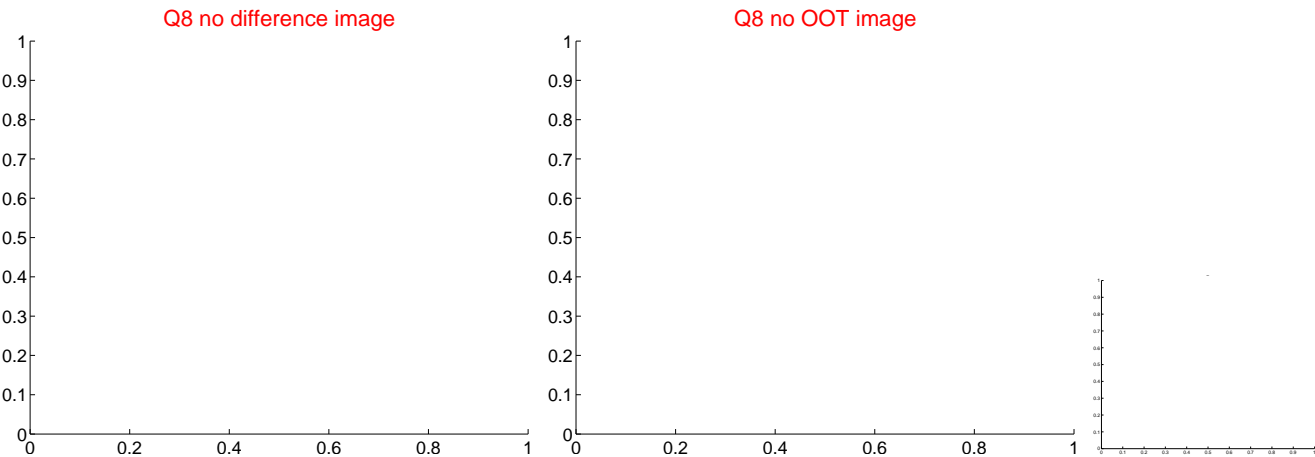
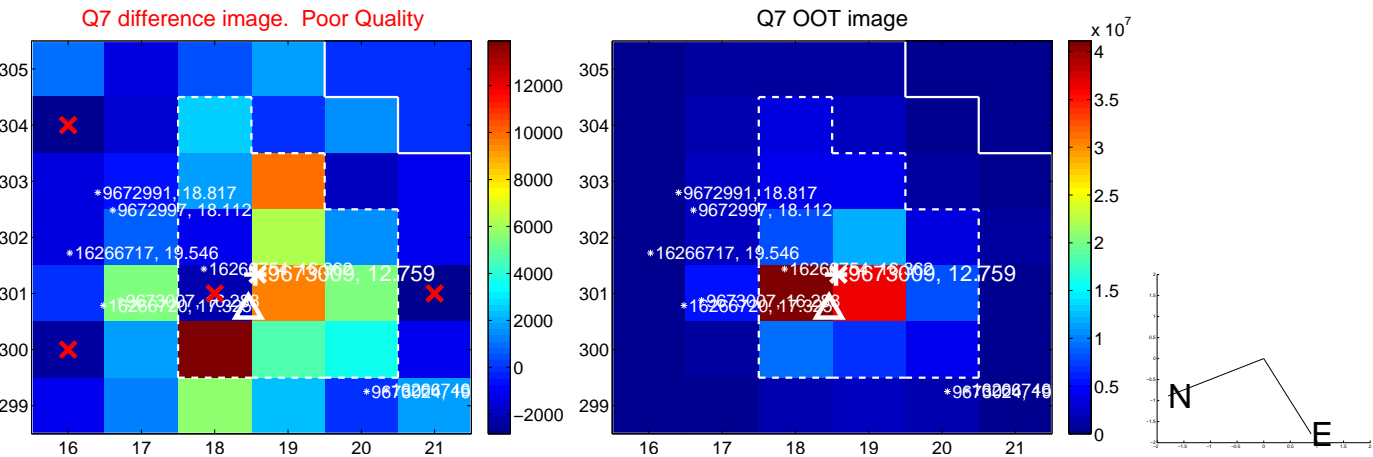
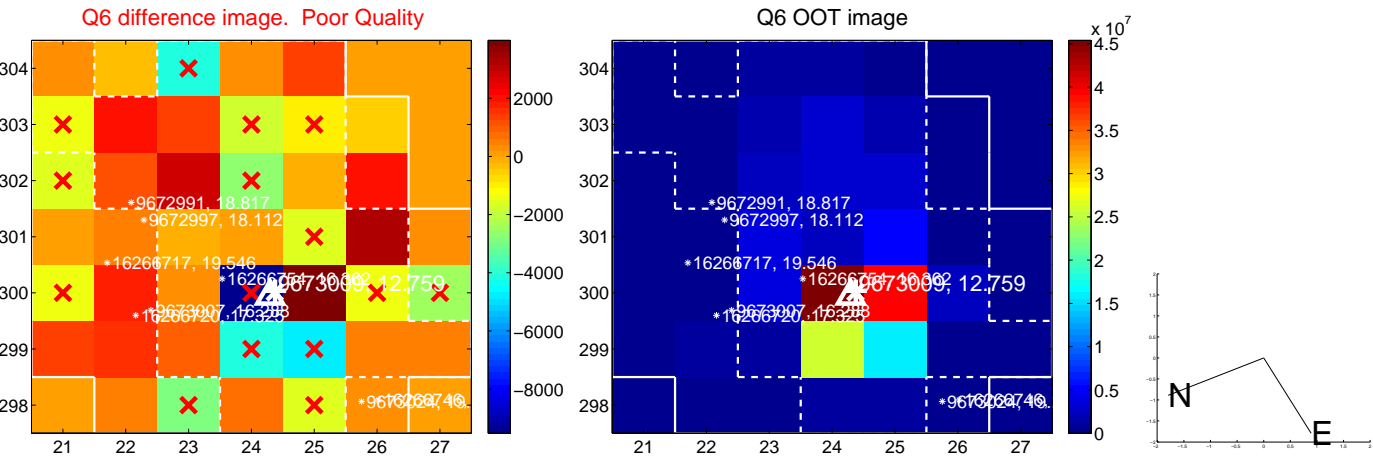
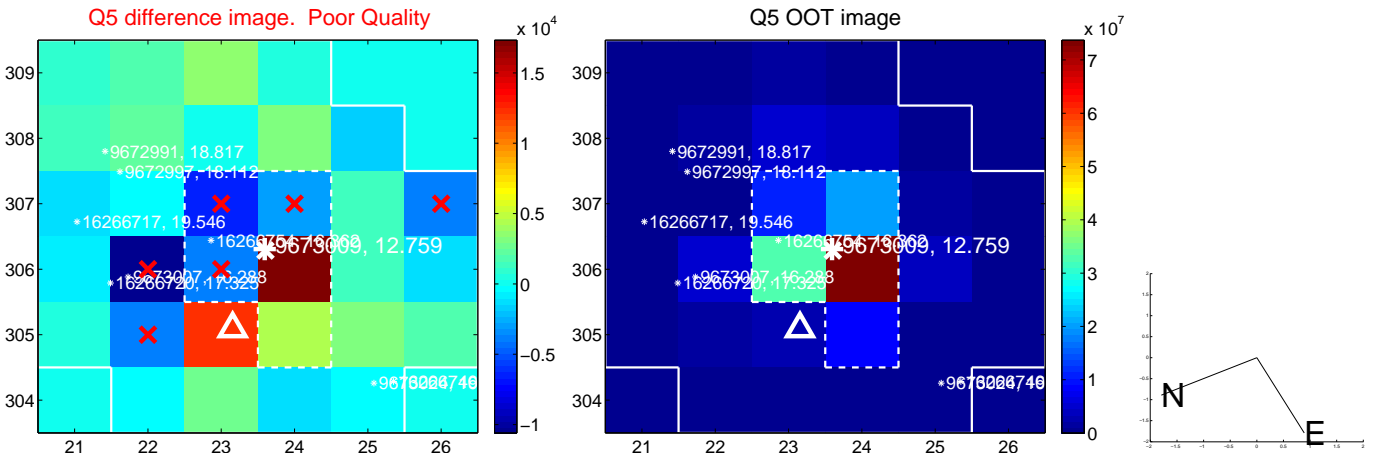


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

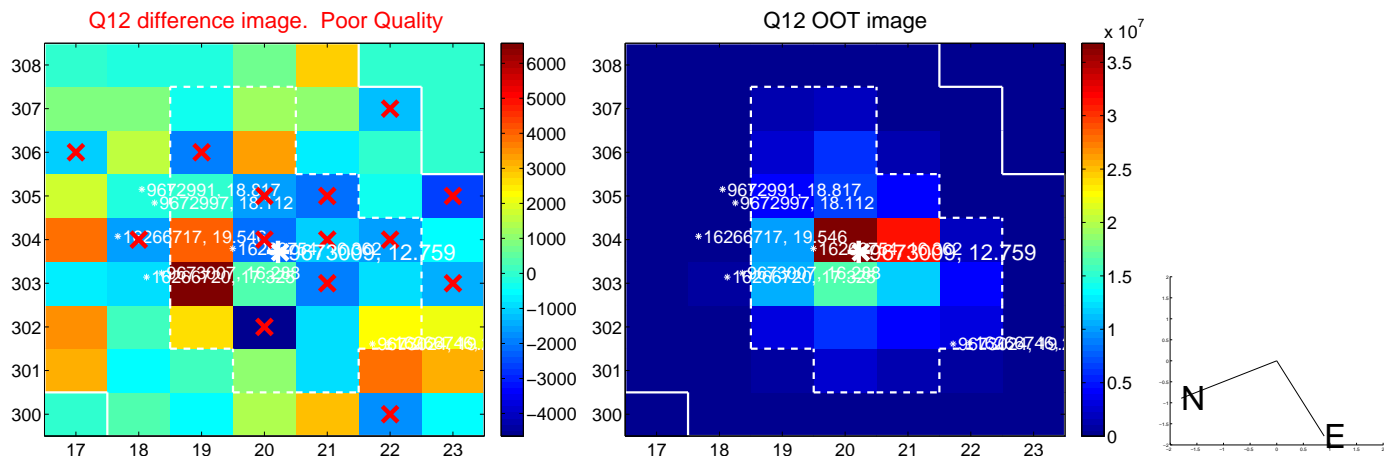
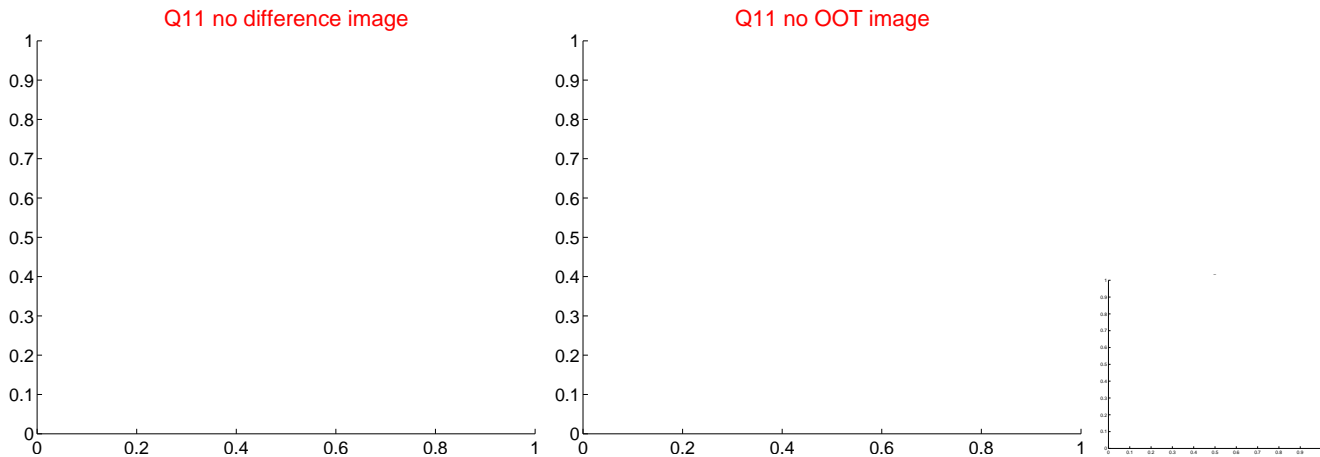
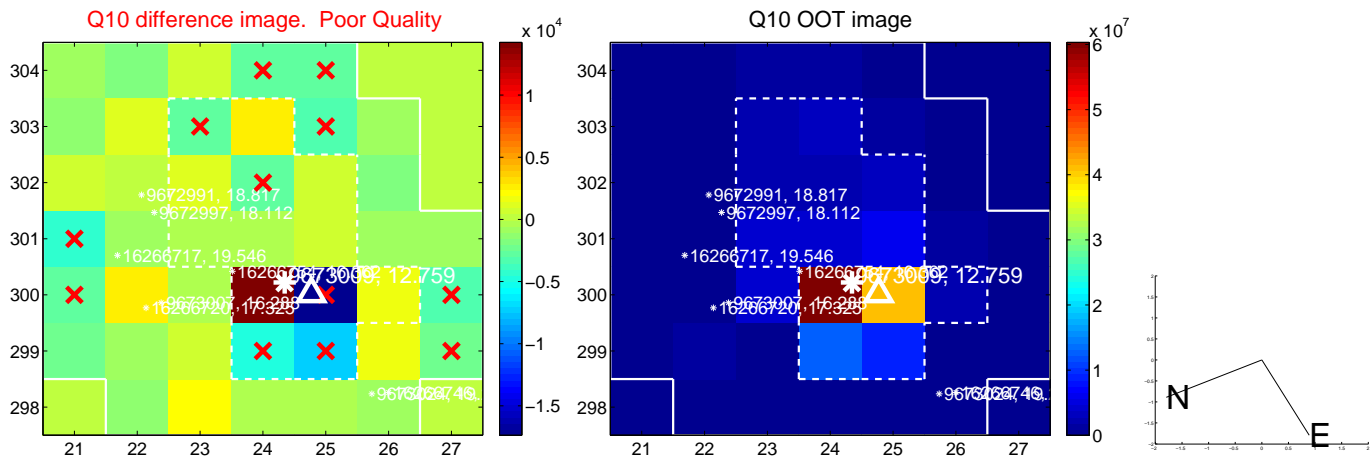
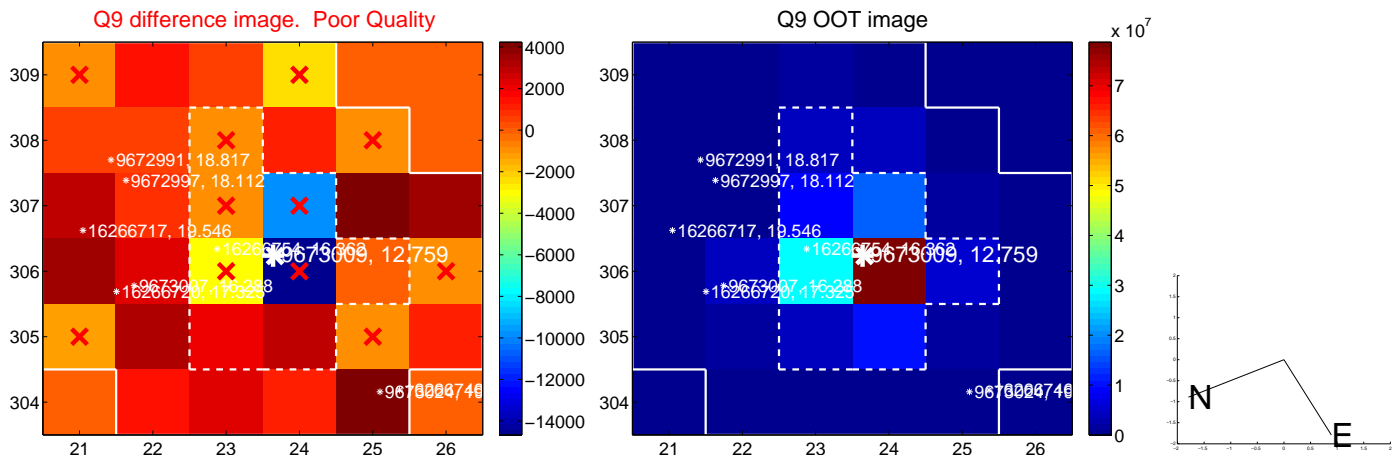
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



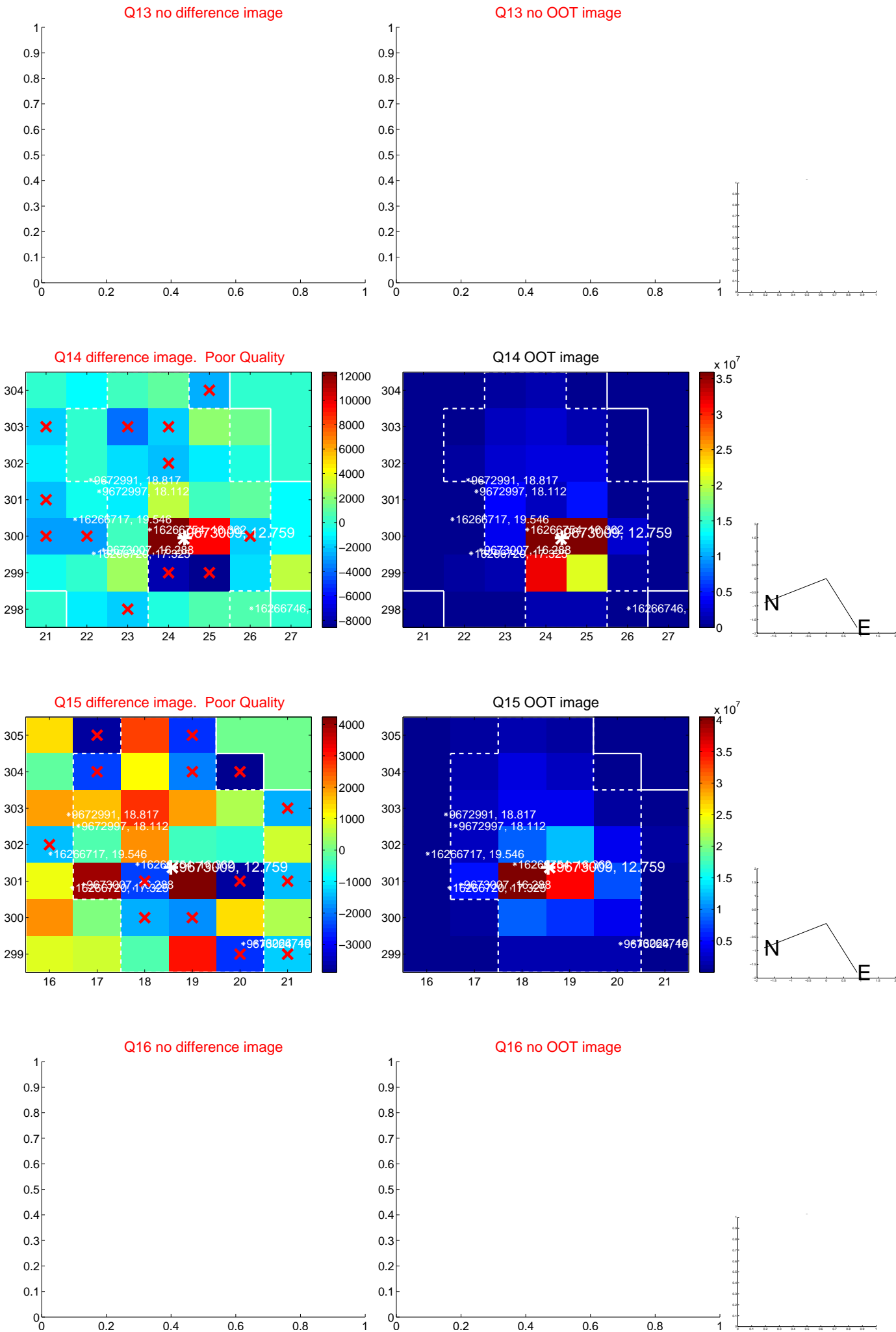
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



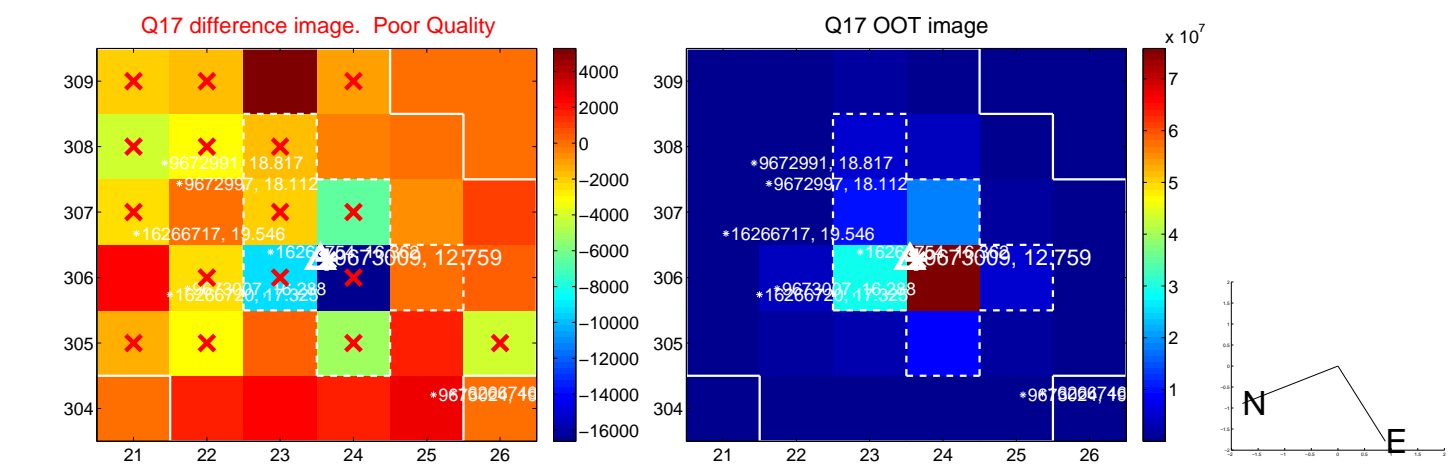
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



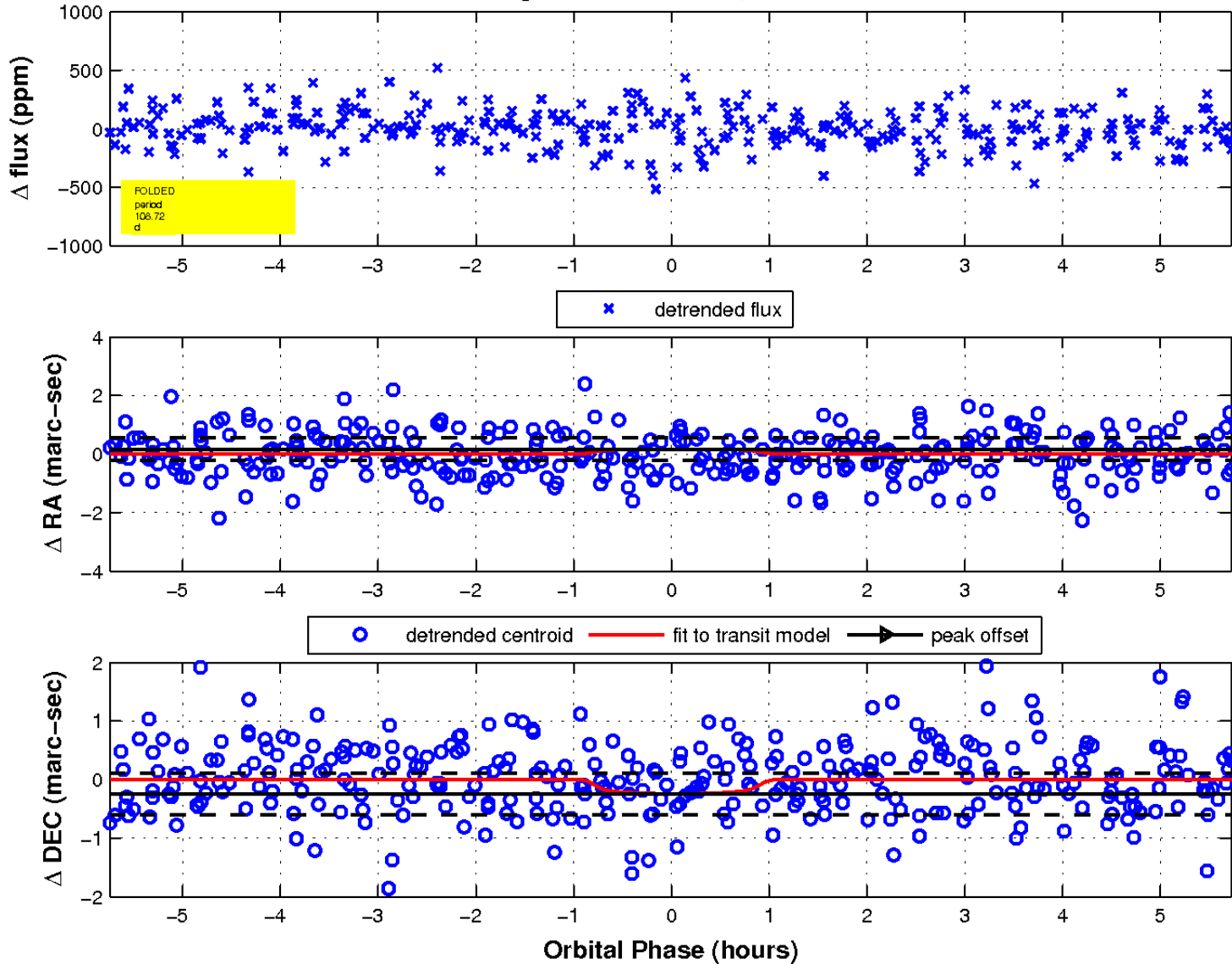
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



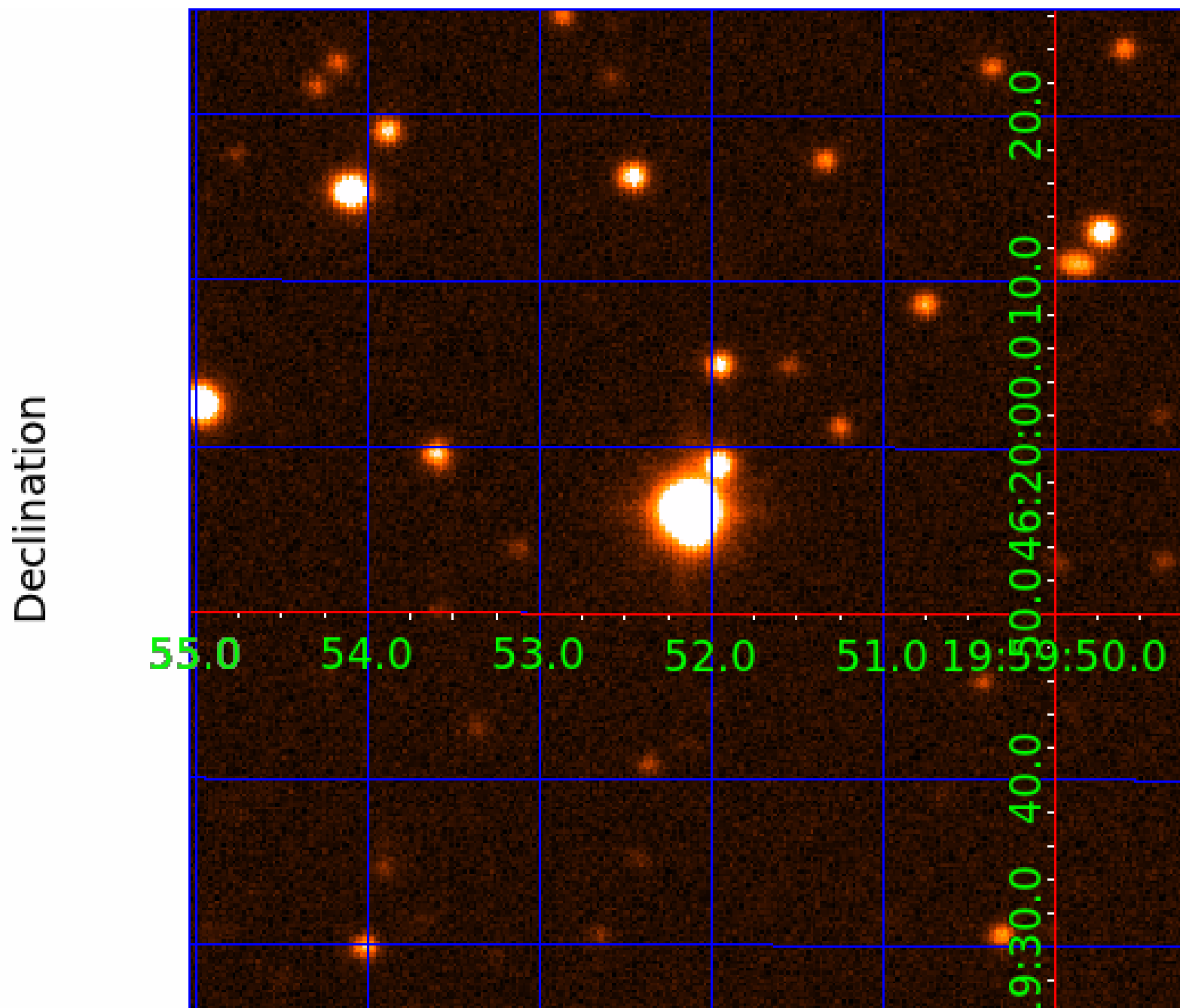
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 9



UKIRT Image



KIC 009673009

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})
009673009-01	OBS	No	1.721726	132.966391	15.9	10.520	8.9	7.3	2.10	4980	0.81	3347.30
009673009-02	OBS	No	108.723993	157.600626	406.6	1.921	9.2	10.1	2.10	4980	5.16	13.31
009673009-03	OBS	No	53.789312	175.657282	196.2	3.546	8.4	9.0	2.10	4980	3.26	34.02
009673009-04	OBS	No	72.042103	196.805170	313.6	2.777	8.2	8.9	2.10	4980	7.11	23.04
009673009-05	OBS	No	79.499201	169.162431	324.7	2.116	7.9	9.2	2.10	4980	4.36	20.21
009673009-06	OBS	No	33.976012	156.889378	188.7	2.332	8.2	8.5	2.10	4980	3.83	62.77
009673009-07	OBS	No	36.715684	151.364416	250.6	1.628	7.9	8.6	2.10	4980	3.25	56.60
009673009-08	OBS	No	58.636647	147.578702	184.5	3.207	7.5	8.0	2.10	4980	3.48	30.32
009673009-09	OBS	No	43.354274	153.079658	220.9	1.415	7.4	8.1	2.10	4980	3.34	45.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009673009-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET
009673009-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009673009-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009673009-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009673009-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

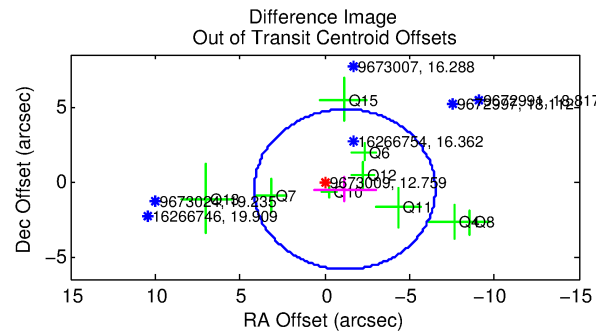
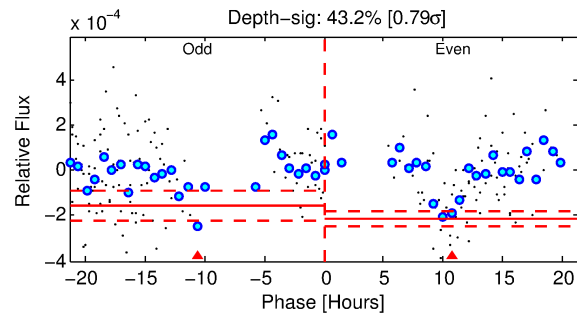
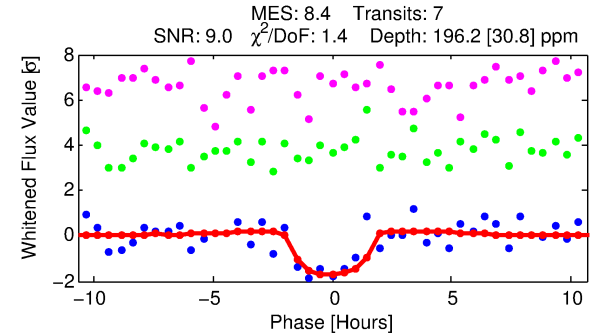
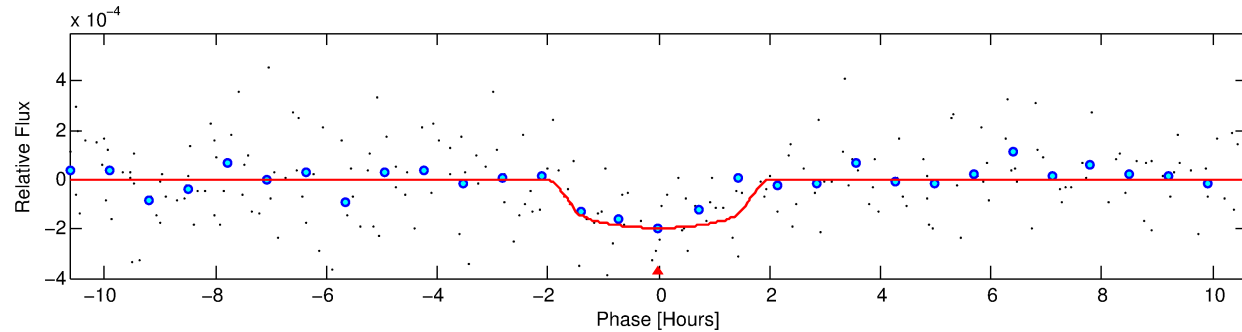
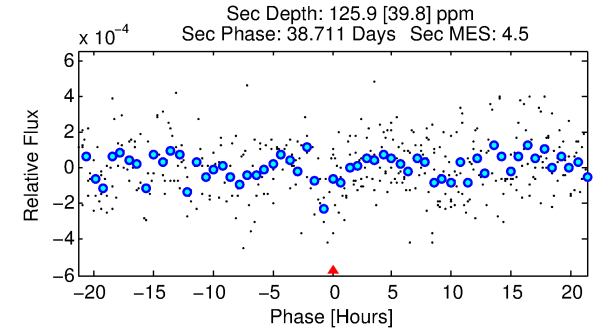
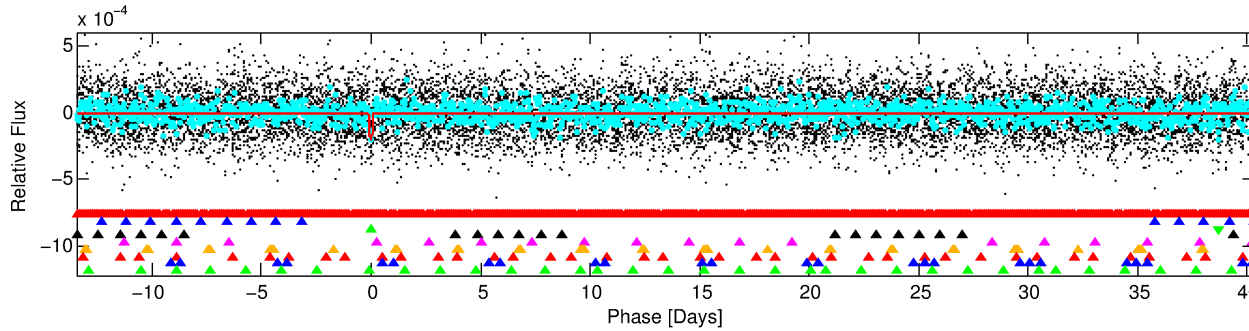
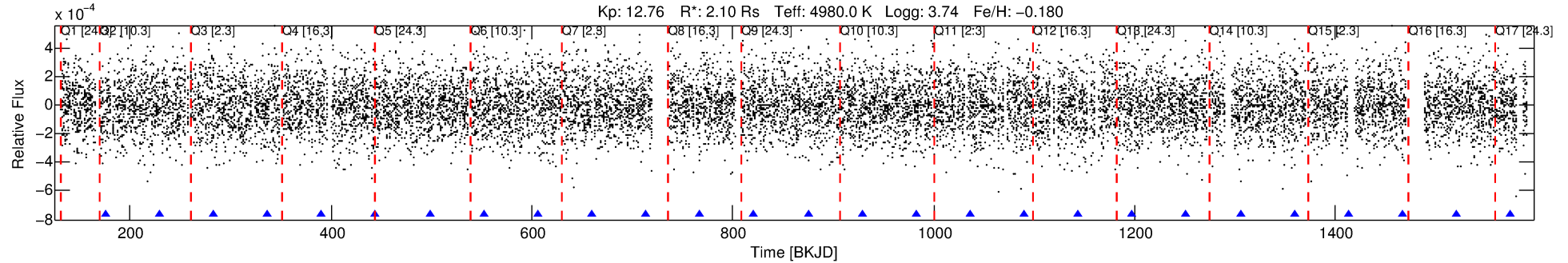
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009673009-03

No Significant Match Found

DV One-Page Summary

KIC: 9673009 Candidate: 3 of 9 Period: 53.789 d



DV Fit Results:

Period = 53.78931 [0.00094] d
Epoch = 175.6573 [0.0119] BKJD
Rp/R* = 0.0142 [0.0231]
a/R* = 75.05 [445.84]
b = 0.78 [3.04]
Seff = 34.02 [46.37]
Teq = 616 [210] K
Rp = 3.26 [5.70] Re
a = 0.2679 [0.2073] AU
Ag = 466.85 [1650.71] [0.28σ]
Teffp = 4426 [3614] K [1.05σ]

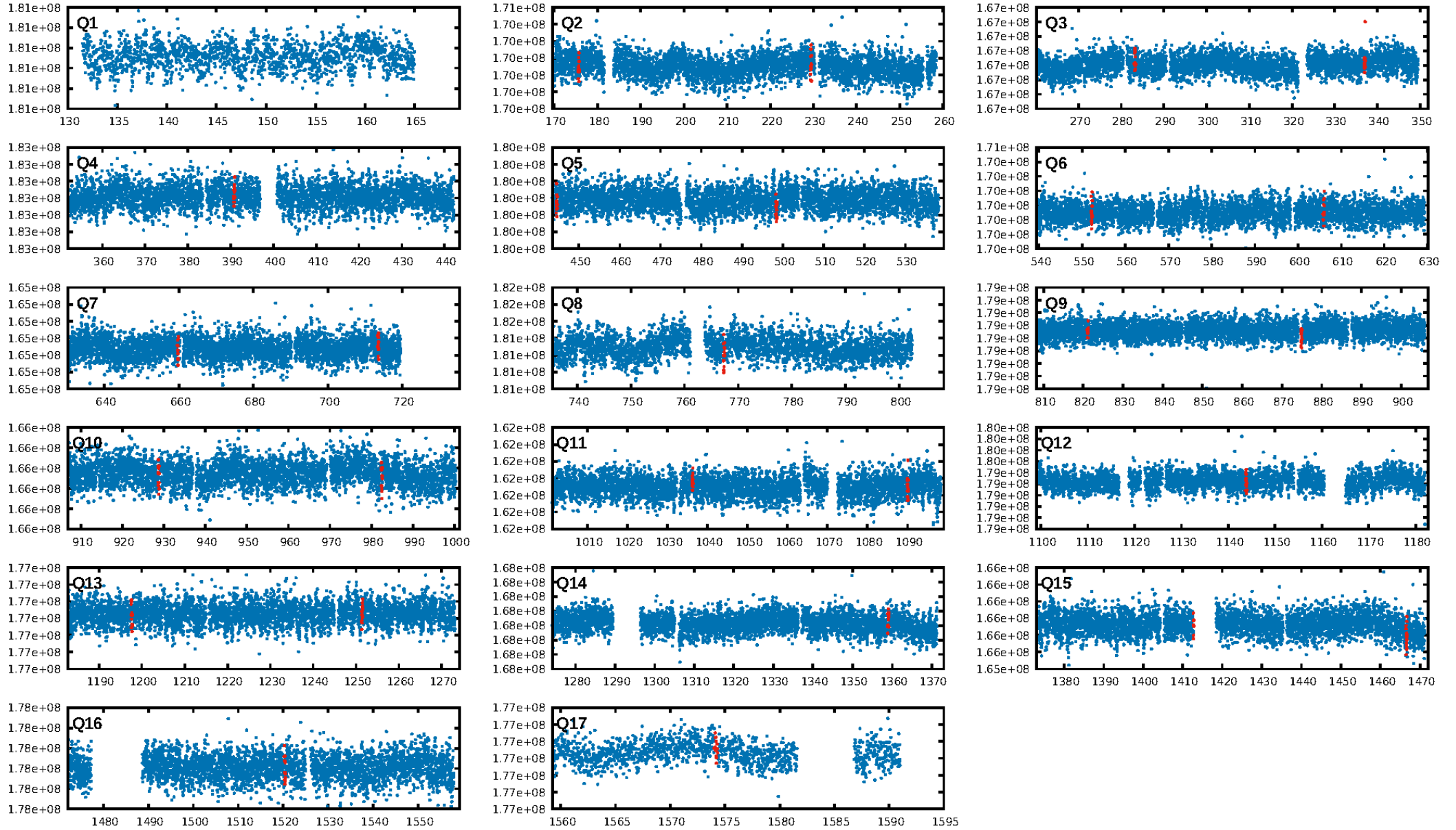
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [65.60σ]
LongPeriod-sig: 100.0% [24.33σ]
ModelChiSquare2-sig: 79.2%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.54e-08
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -2.007
Centroid-sig: 65.1%
Centroid-so: 0.442 arcsec [0.50σ]
OotOffset-rm: 1.297 arcsec [0.73σ]
KicOffset-rm: 1.360 arcsec [0.90σ]
OotOffset-st: 2/3/3/1 [9]
KicOffset-st: 2/3/3/1 [9]
DiffImageQuality-fgm: 0.11 [1/9]
DiffImageOverlap-fno: 0.44 [7/16]

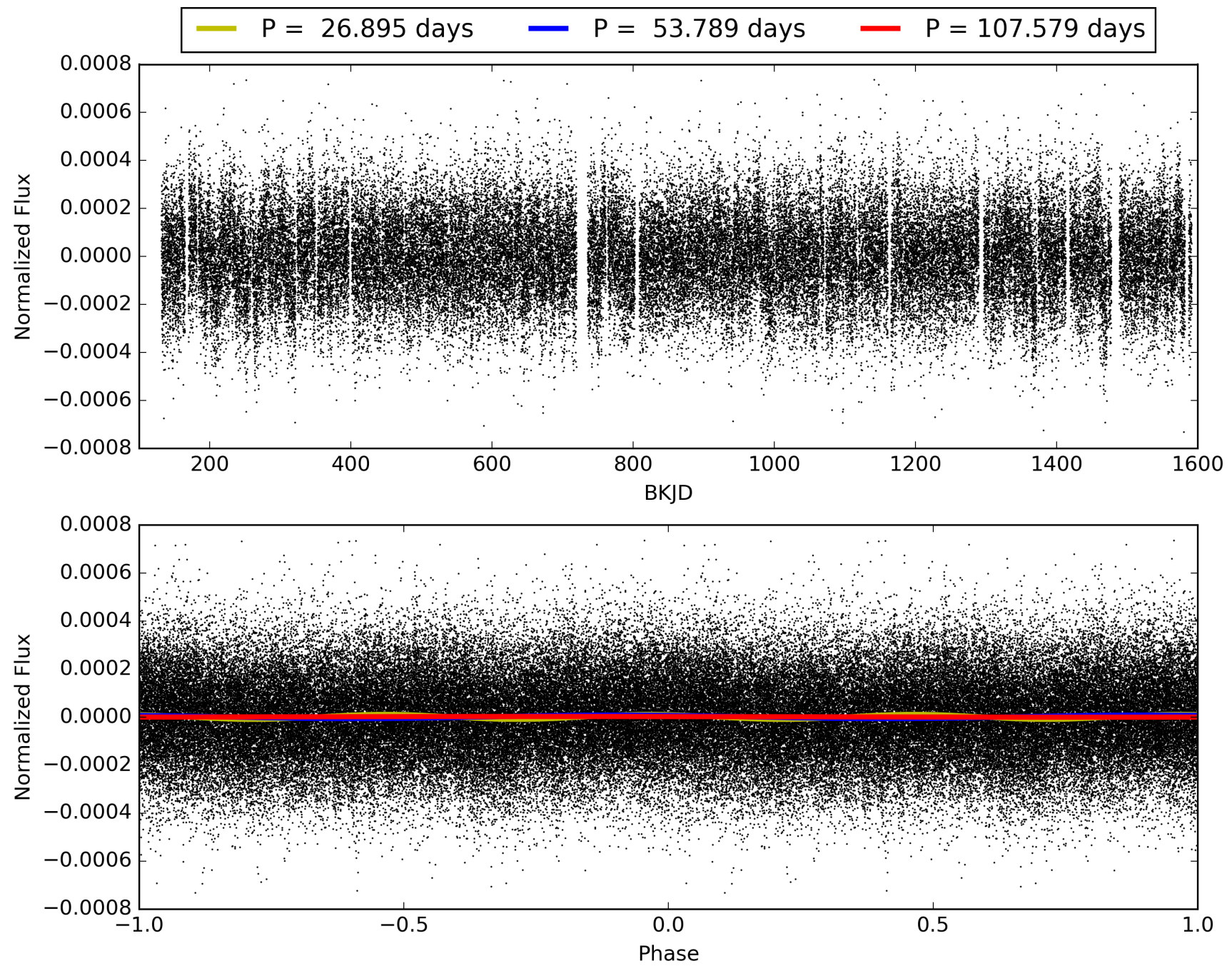
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:41:07 Z

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

TCE 009673009-03, PDC Light Curves

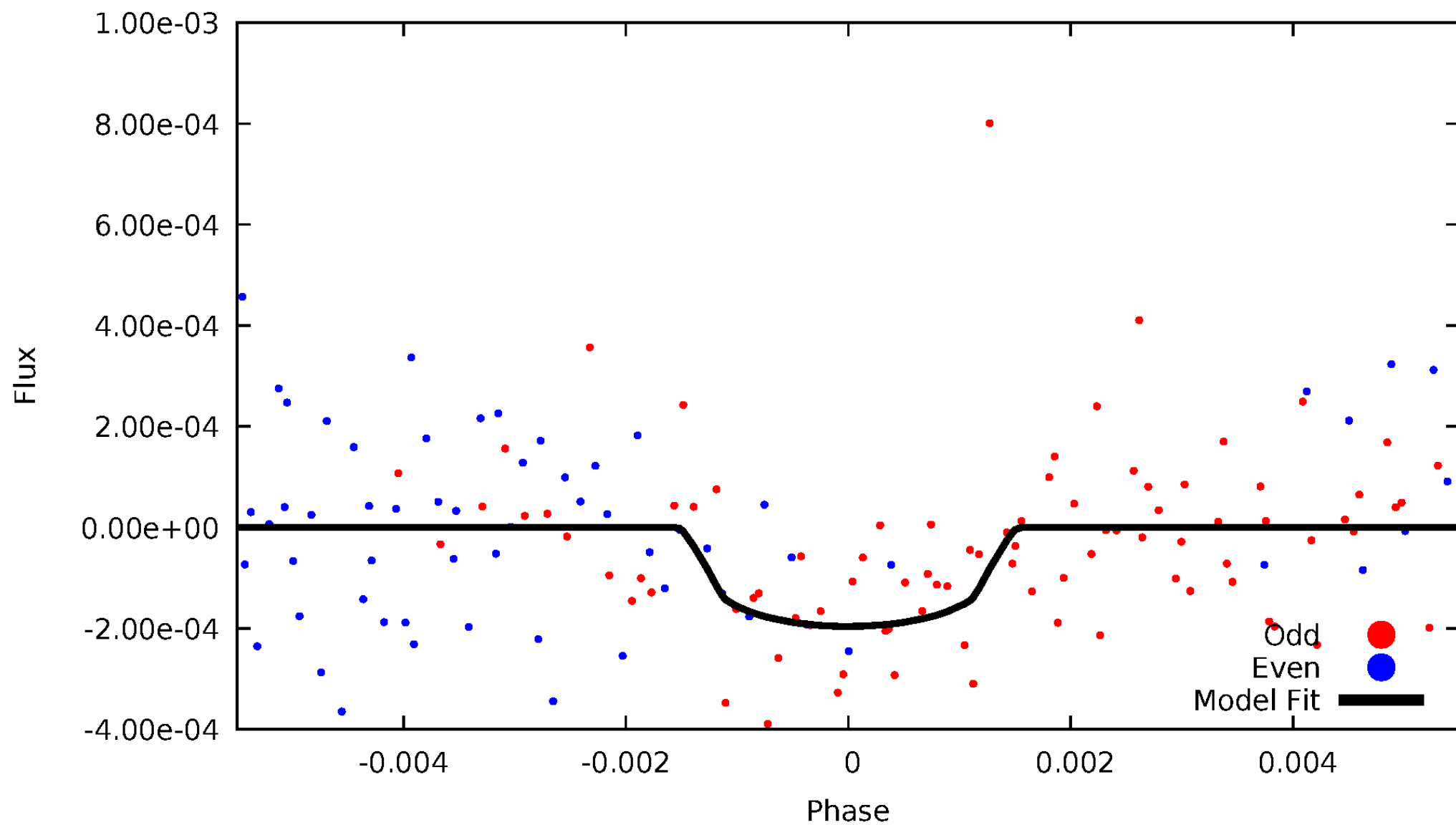


TCE 009673009-03



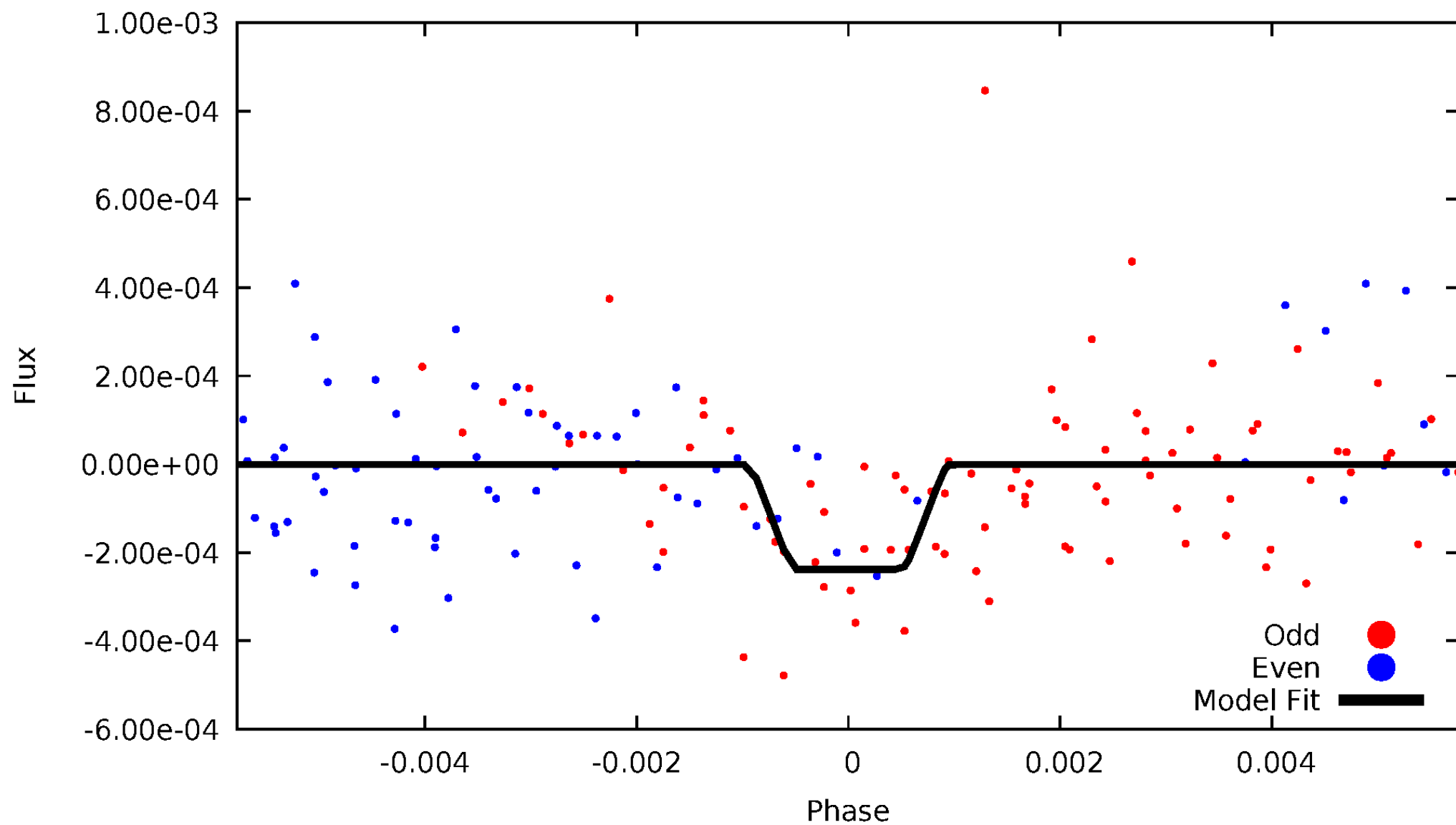
DV Odd/Even

TCE 009673009-03



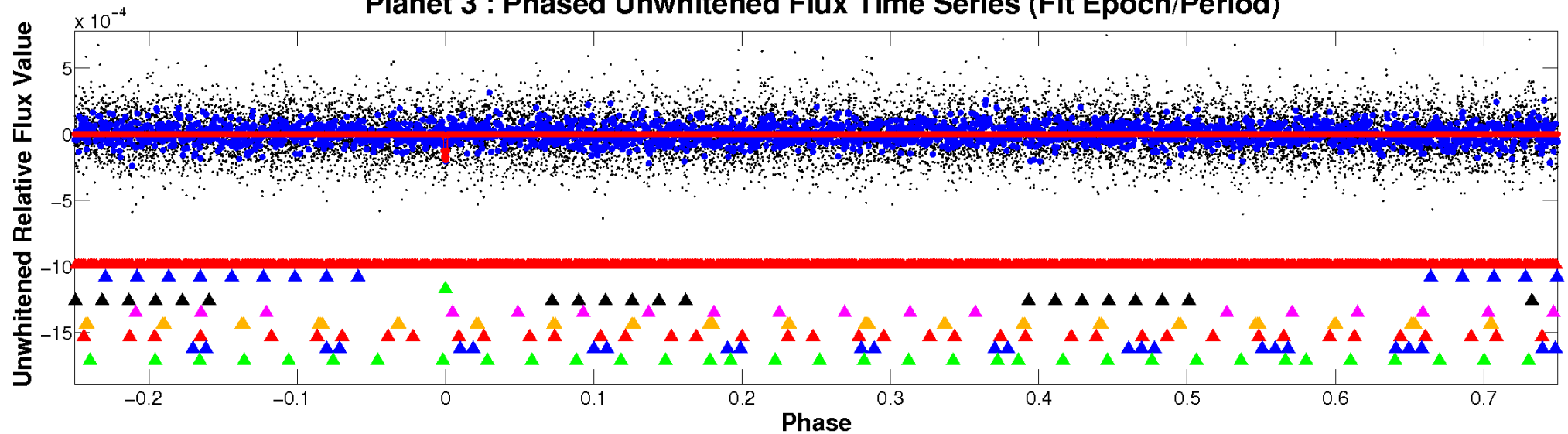
ALT Odd/Even

TCE 009673009-03

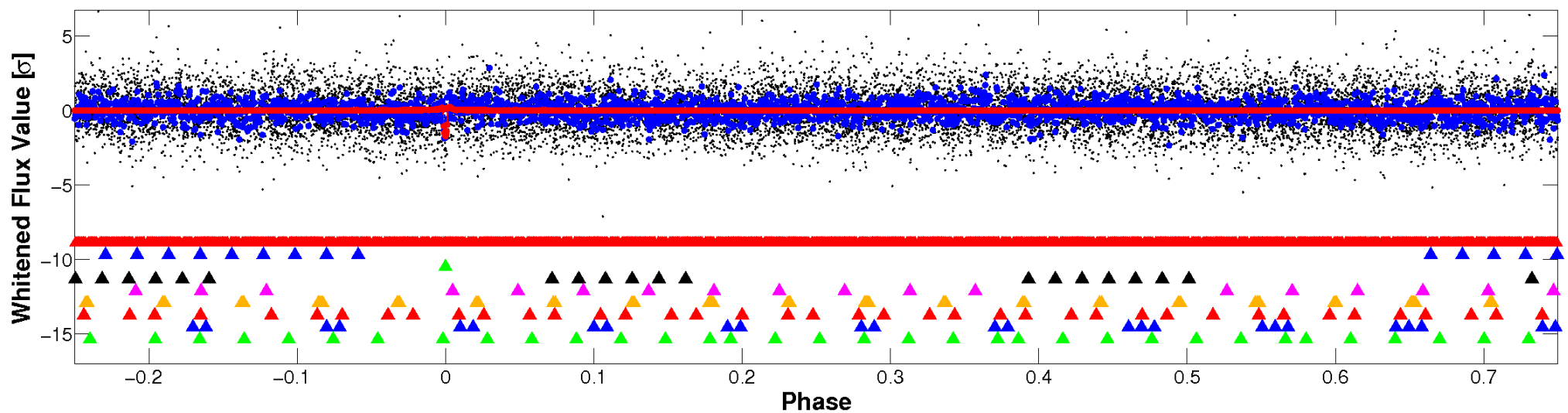


Non-Whitened Vs. Whitened Light Curve

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

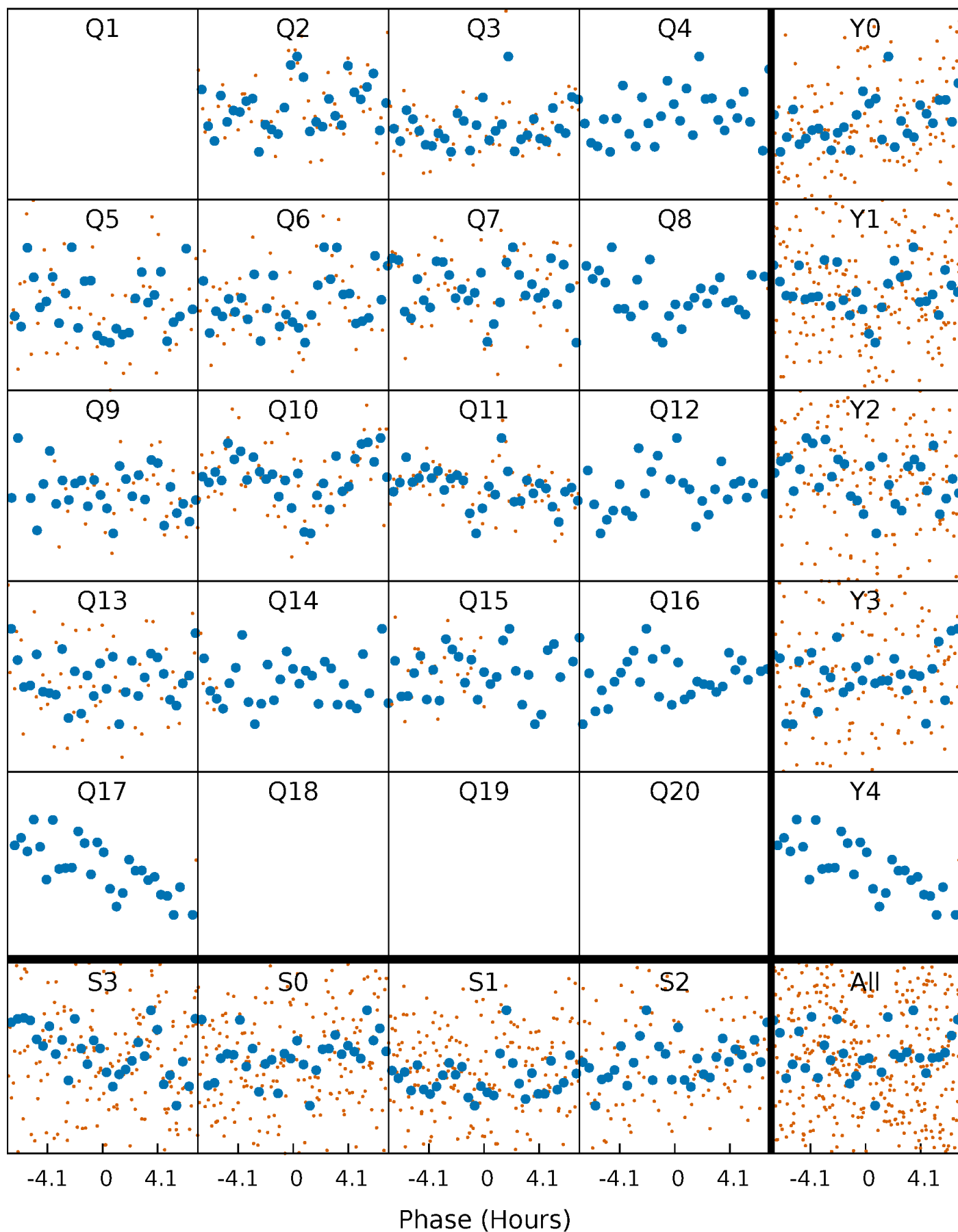


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



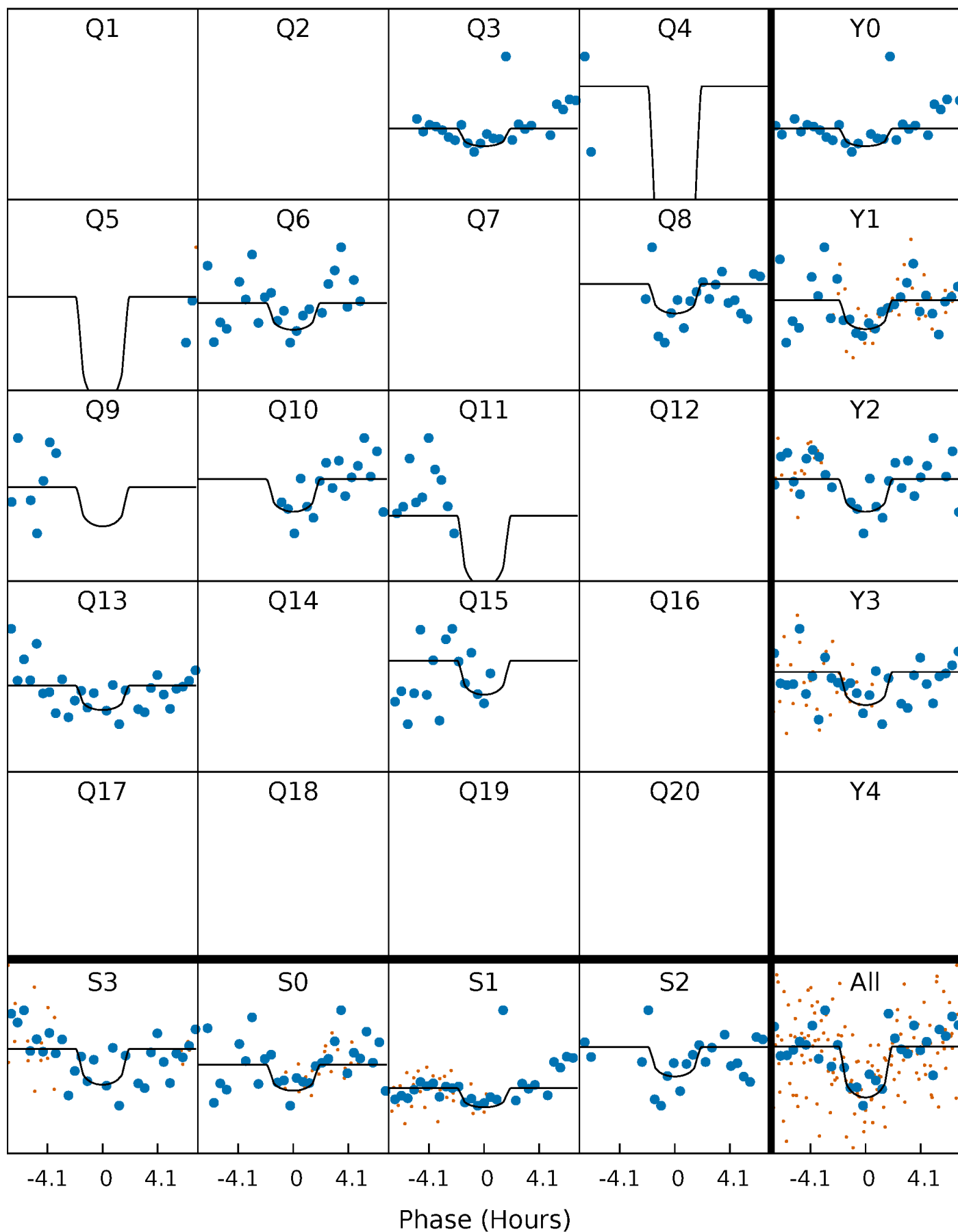
PDC Quarter-Phased Transit Curves

TCE 009673009-03 P= 53.789312 Days $T_0=175.657282$ (BKJD)



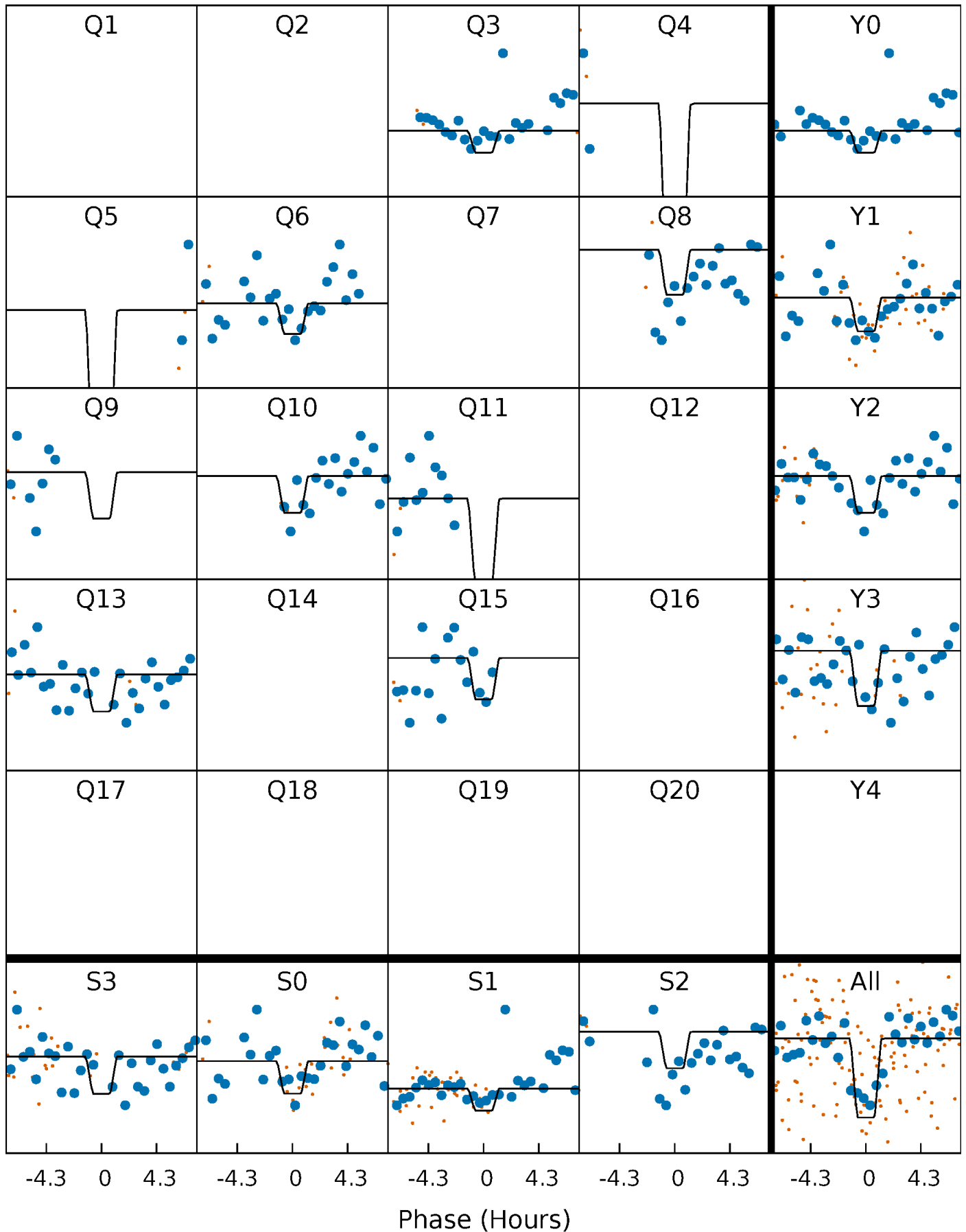
DV Quarter-Phased Transit Curves

TCE 009673009-03 $P = 53.789312$ Days $T_0 = 175.657282$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

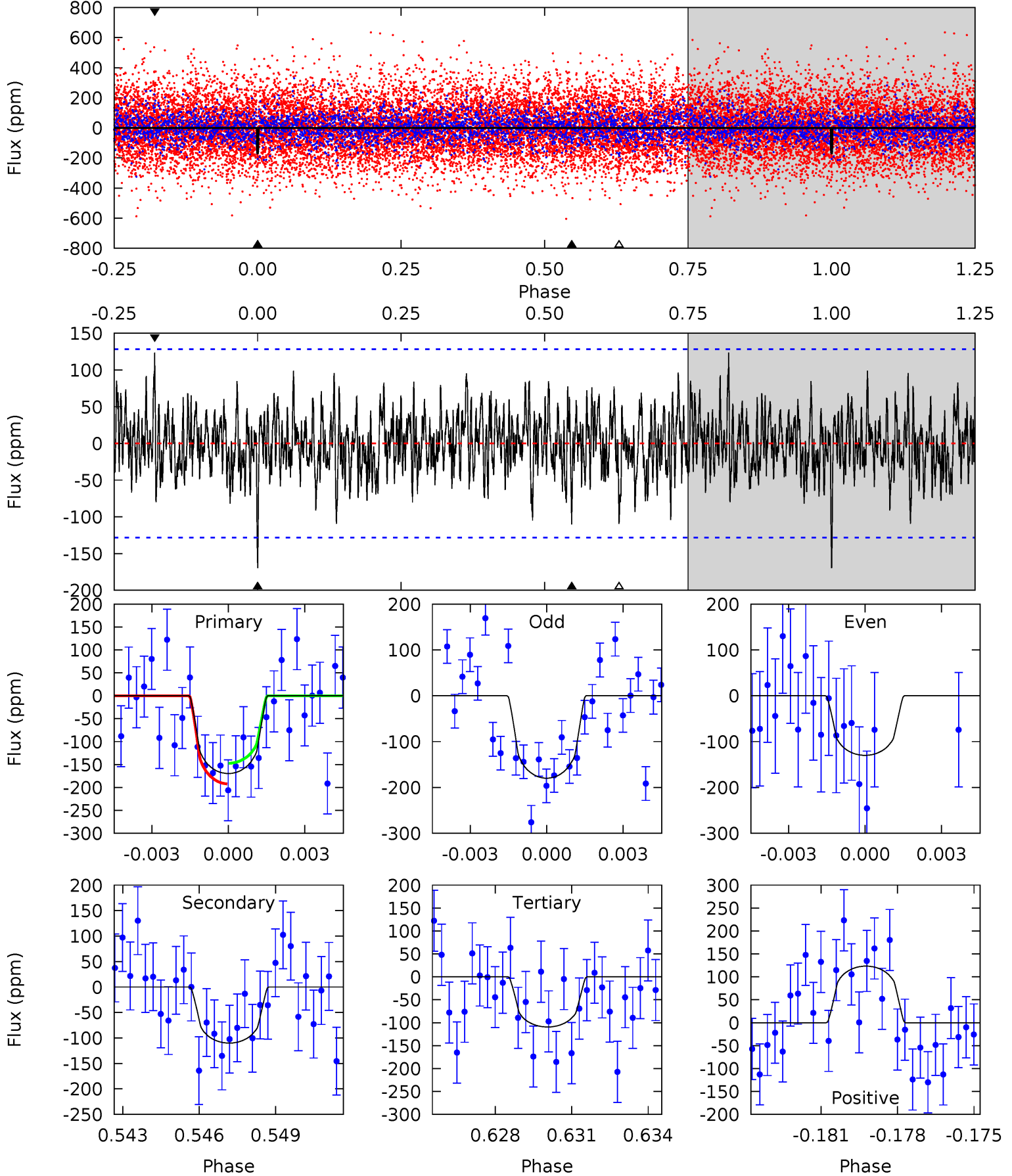
TCE 009673009-03 P= 53.788684 Days $T_0=175.658027$ (BKJD)



DV Model-Shift Uniqueness Test

009673009-03, P = 53.789312 Days, E = 121.867970 Days

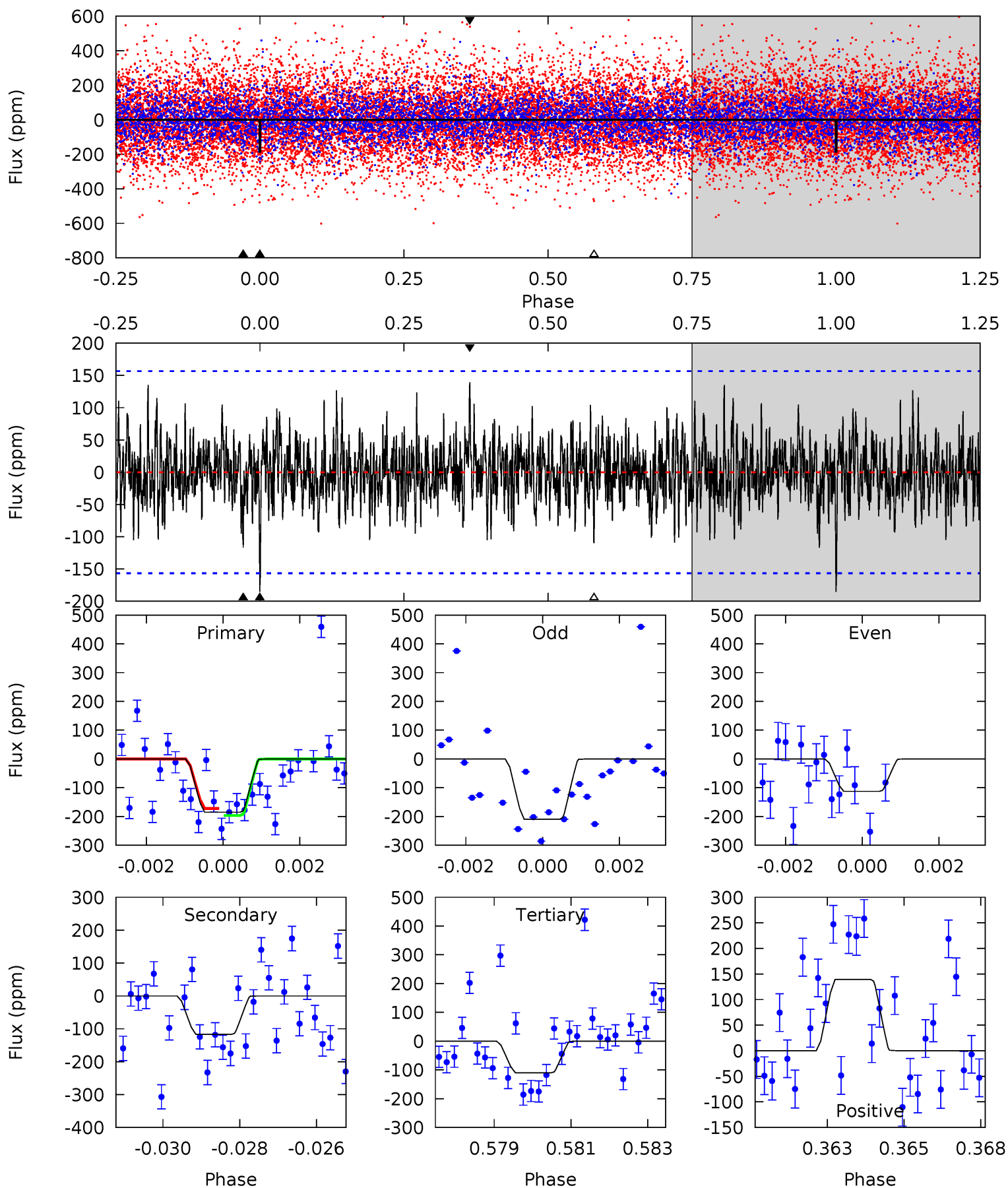
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.95	4.51	4.48	5.05	5.25	2.97	1.44	2.47	1.89	0.03	-0.55	0.85	1.14	0.42	0.92



Alt Model-Shift Uniqueness Test

009673009-03, P = 53.788684 Days, E = 121.869343 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.29	3.97	3.74	4.74	5.32	3.09	1.30	2.56	1.55	0.24	-0.76	1.43	0.98	0.43	0.41



Stellar Parameters For KIC 009673009

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4980^{+136}_{-121}	$3.739^{+0.840}_{-0.360}$	$-0.180^{+0.300}_{-0.200}$	$2.105^{+1.351}_{-1.351}$	$0.887^{+0.278}_{-0.149}$	$0.134^{+2.597}_{-0.097}$
	+3%/-2%	+22%/-10%	+167%/-111%	+64%/-64%	+31%/-17%	+1941%/-73%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009673009-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-110 ± 24	$4.48^{+5.40}_{-2.93}$	847^{+141}_{-165}	3781^{+1972}_{-756}	225^{+1688}_{-181}
Alt.	-117 ± 29	$5.08^{+5.40}_{-3.53}$	849^{+150}_{-157}	3686^{+1898}_{-637}	176^{+1707}_{-131}

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

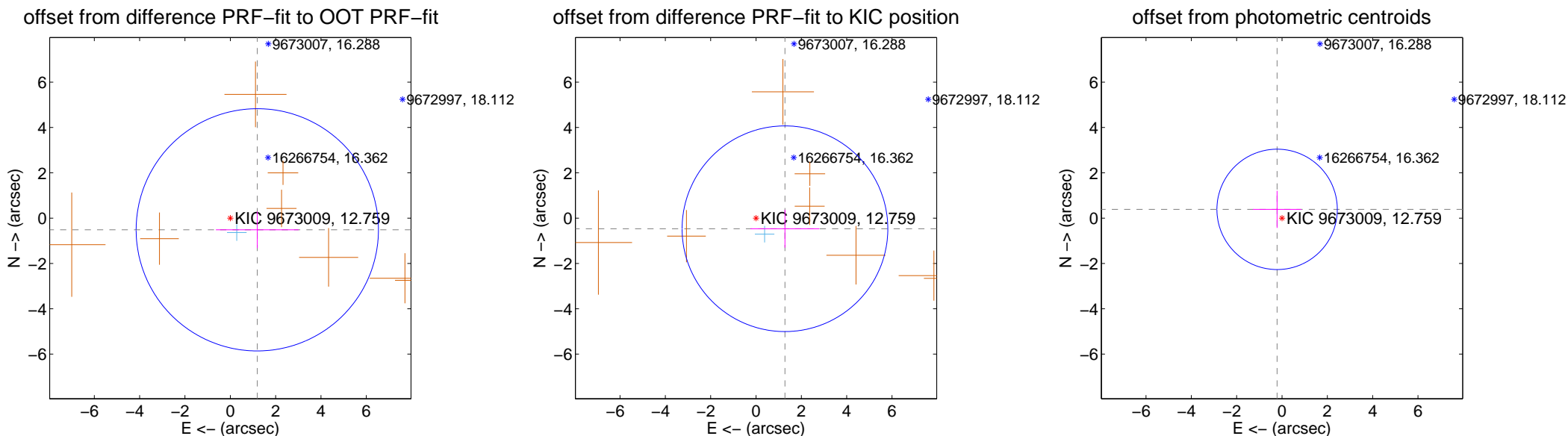
DV Centroid Data

Supplemental centroid analysis for 009673009-03. Kepler magnitude: 12.76. Transit SNR 9.00

There are 1 quarters with good PRF difference image offsets

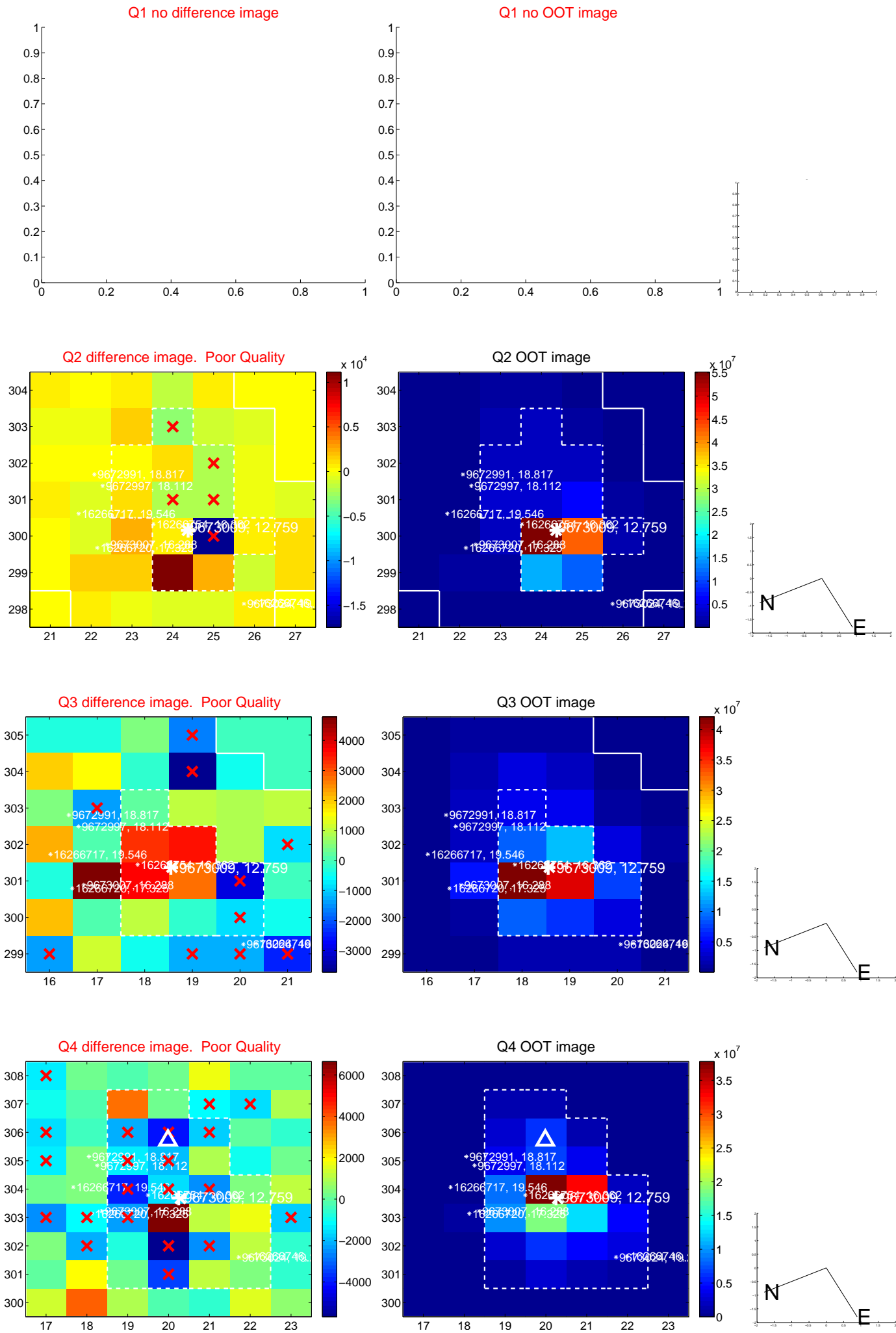
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.297 ± 1.781	0.73	-1.190 ± 1.825	-0.516 ± 0.809
PRF-fit source offset from KIC position	1.360 ± 1.512	0.90	-1.277 ± 1.522	-0.468 ± 0.834
photometric centroid source offset	0.44 ± 0.89	0.50	0.22 ± 1.07	0.39 ± 0.82

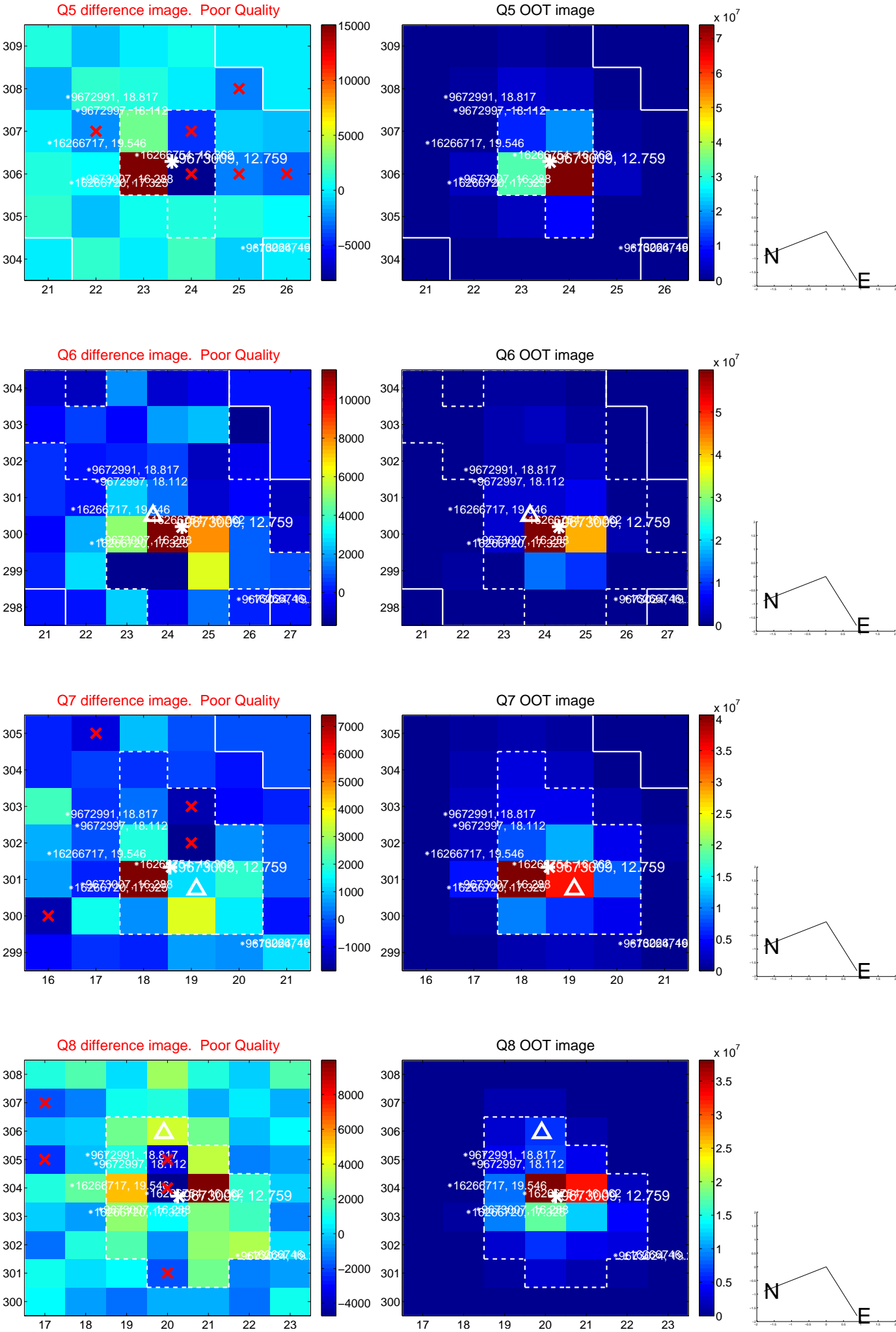


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

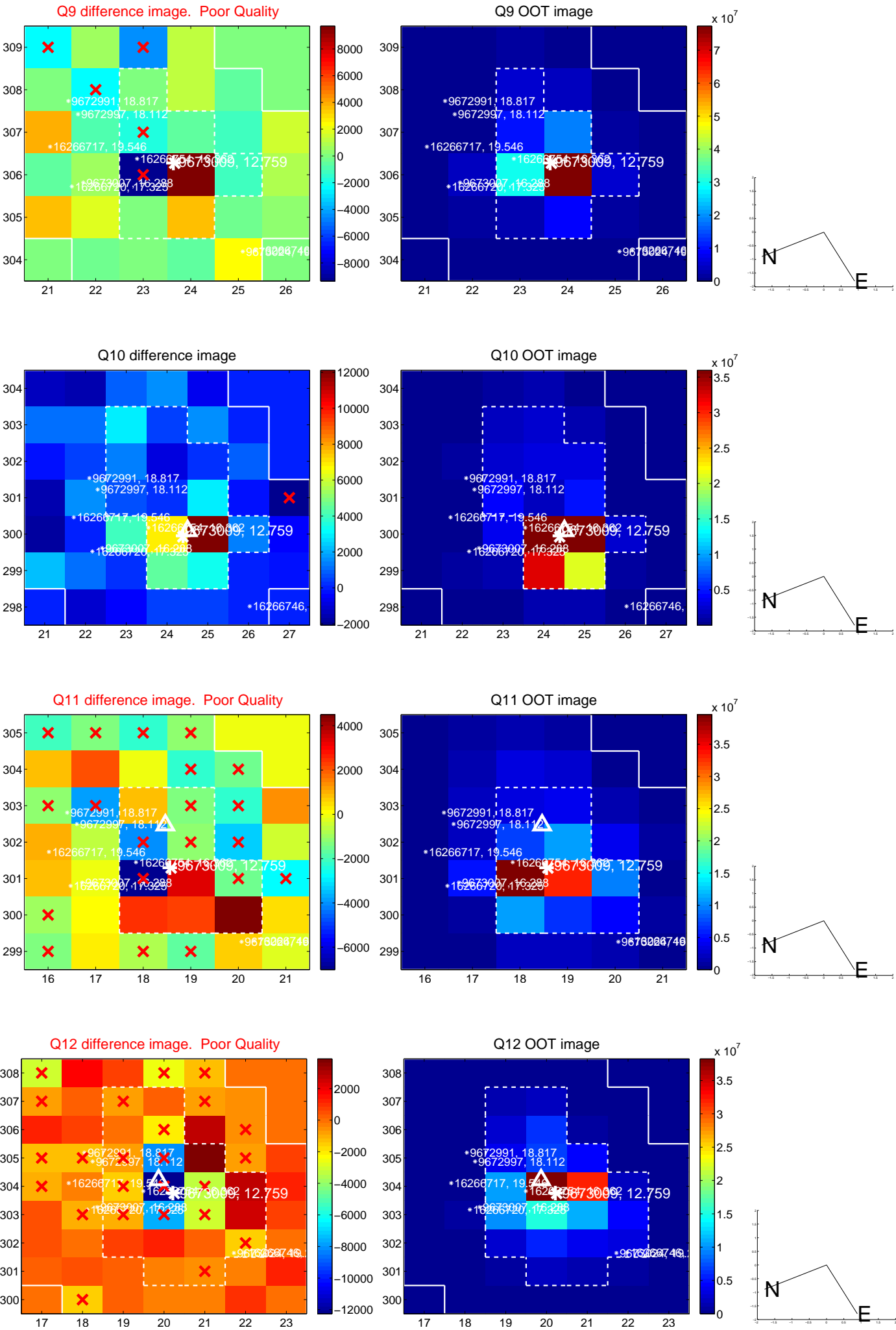
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



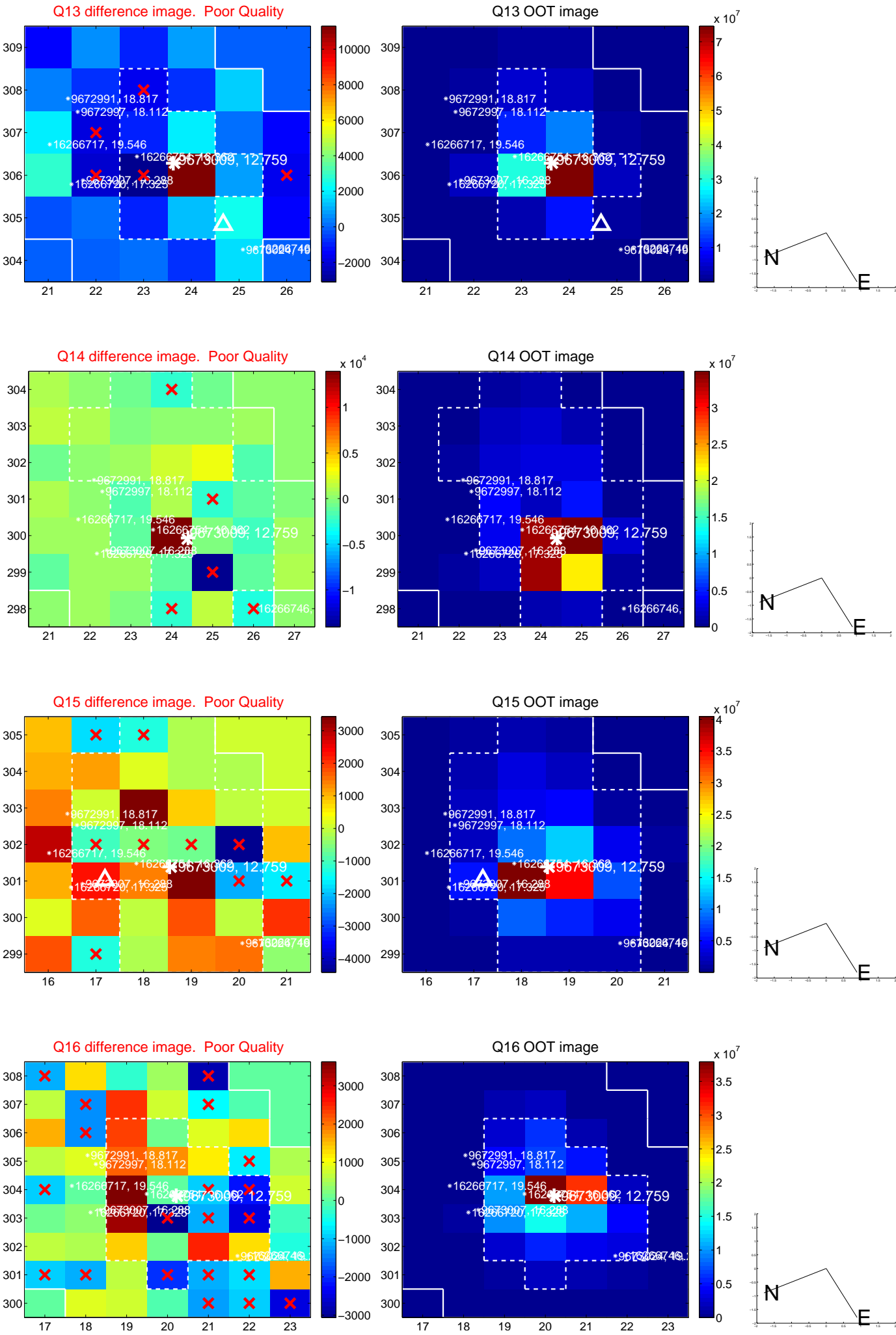
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



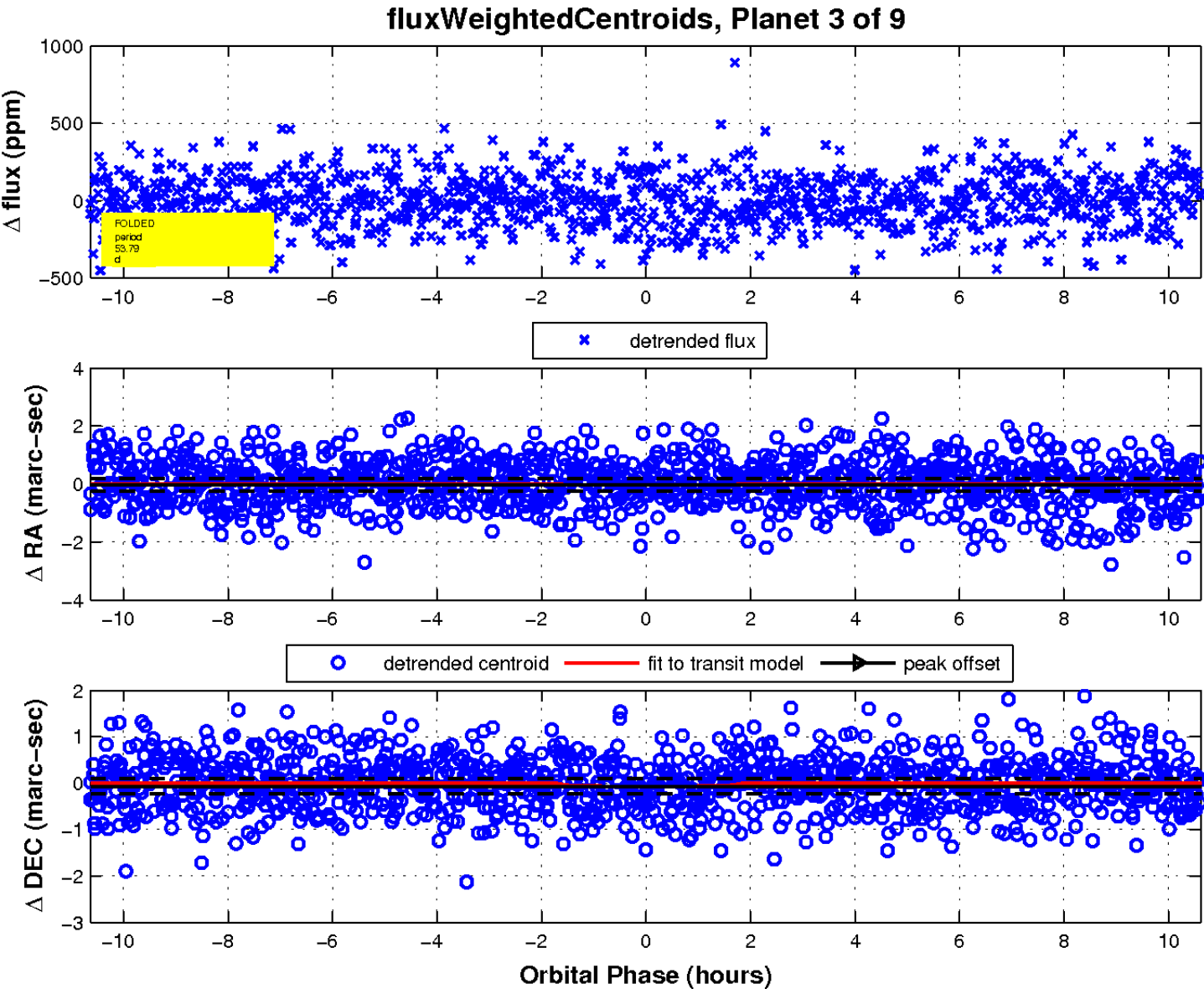
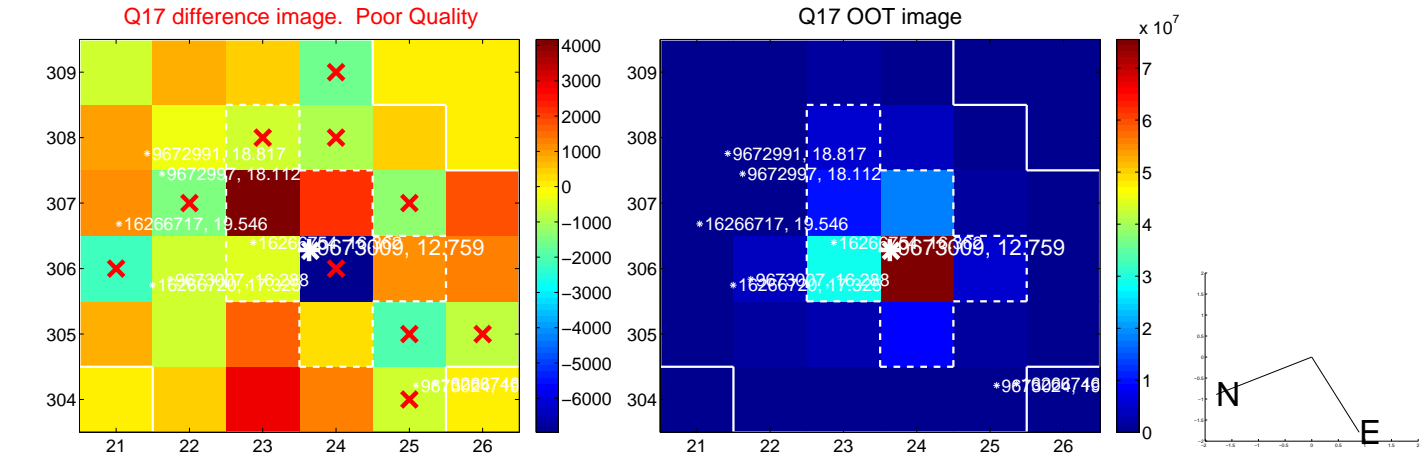
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



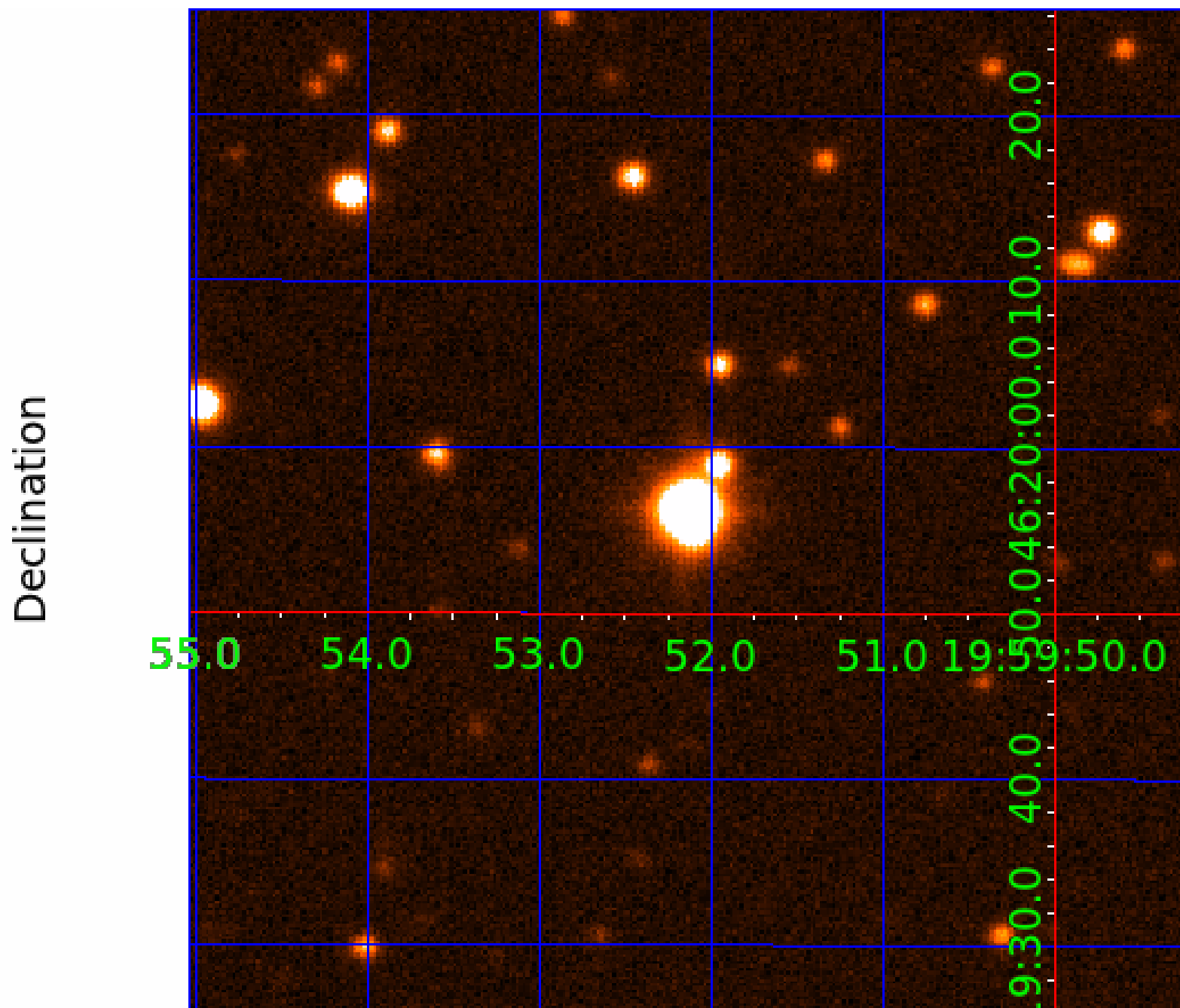
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009673009

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})
009673009-01	OBS	No	1.721726	132.966391	15.9	10.520	8.9	7.3	2.10	4980	0.81	3347.30
009673009-02	OBS	No	108.723993	157.600626	406.6	1.921	9.2	10.1	2.10	4980	5.16	13.31
009673009-03	OBS	No	53.789312	175.657282	196.2	3.546	8.4	9.0	2.10	4980	3.26	34.02
009673009-04	OBS	No	72.042103	196.805170	313.6	2.777	8.2	8.9	2.10	4980	7.11	23.04
009673009-05	OBS	No	79.499201	169.162431	324.7	2.116	7.9	9.2	2.10	4980	4.36	20.21
009673009-06	OBS	No	33.976012	156.889378	188.7	2.332	8.2	8.5	2.10	4980	3.83	62.77
009673009-07	OBS	No	36.715684	151.364416	250.6	1.628	7.9	8.6	2.10	4980	3.25	56.60
009673009-08	OBS	No	58.636647	147.578702	184.5	3.207	7.5	8.0	2.10	4980	3.48	30.32
009673009-09	OBS	No	43.354274	153.079658	220.9	1.415	7.4	8.1	2.10	4980	3.34	45.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009673009-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET
009673009-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009673009-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009673009-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009673009-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

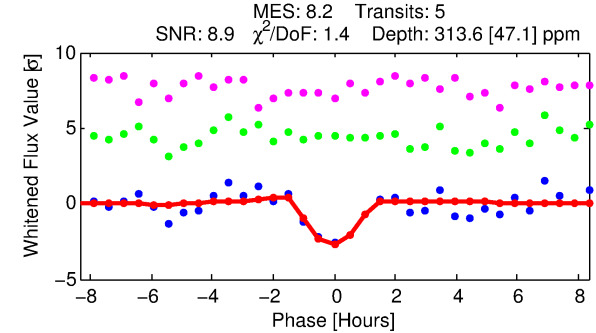
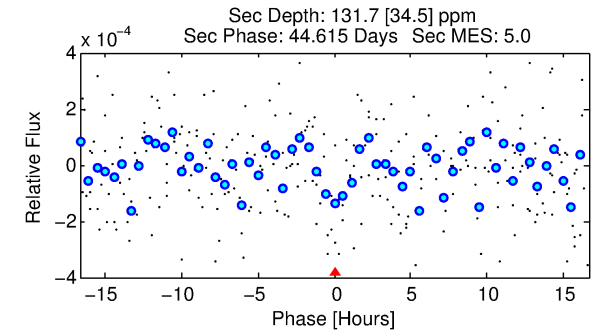
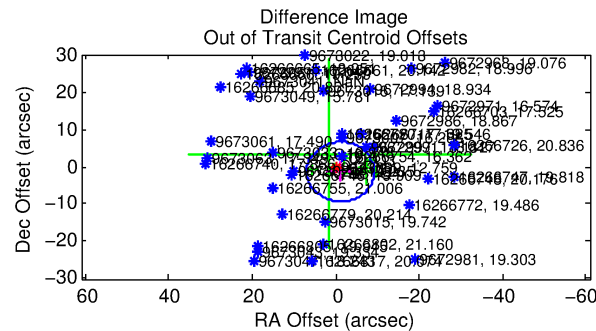
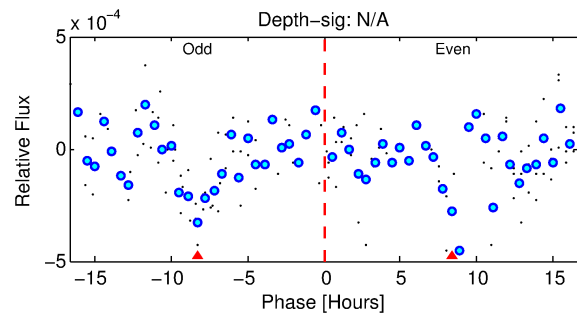
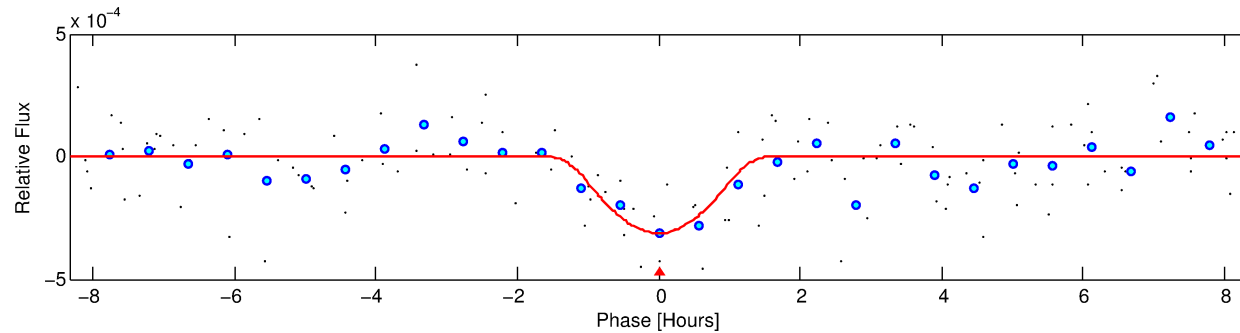
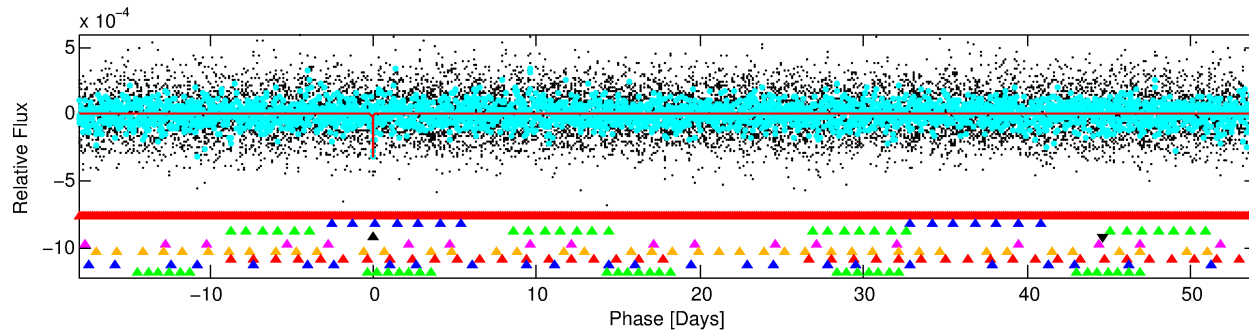
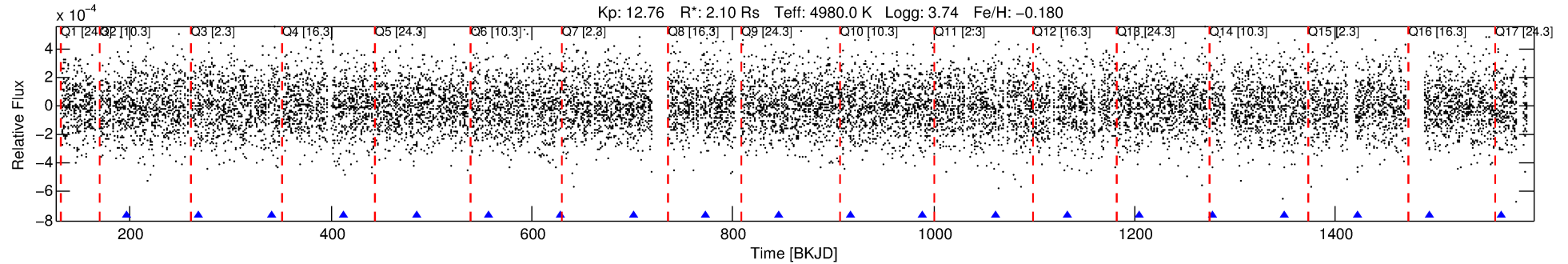
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009673009-04

No Significant Match Found

DV One-Page Summary

KIC: 9673009 Candidate: 4 of 9 Period: 72.042 d



DV Fit Results:

Period = 72.04210 [0.00085] d
Epoch = 196.8052 [0.0101] BKJD
Rp/R* = 0.0309 [0.1503]
a/R* = 53.87 [80.04]
b = 0.99 [0.24]
Seff = 23.04 [31.41]
Teq = 559 [190] K
Rp = 7.11 [34.82] Re
a = 0.3255 [0.2519] AU
Ag = 152.05 [1492.47] [0.10σ]
Teffp = 3033 [7372] K [0.34σ]

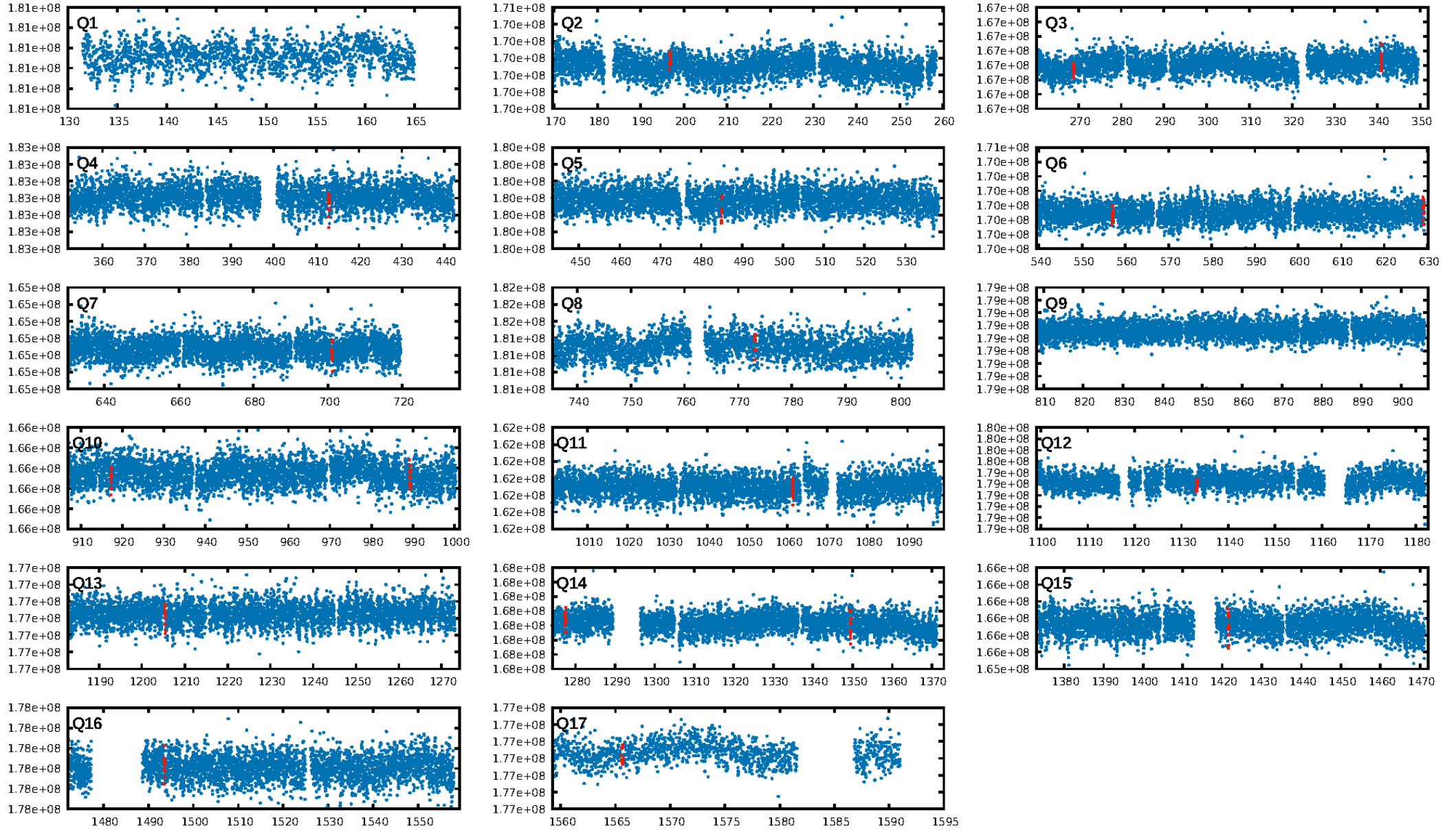
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [75.84σ]
LongPeriod-sig: 100.0% [51.26σ]
ModelChiSquare2-sig: 39.4%
ModelChiSquareGof-sig: 77.7%
Bootstrap-pfa: 3.25e-08
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.7267
Centroid-sig: 4.1%
Centroid-so: 0.986 arcsec [1.17σ]
OotOffset-rm: 1.758 arcsec [0.65σ]
KicOffset-rm: 1.722 arcsec [0.62σ]
OotOffset-st: 3/3/4/1 [11]
KicOffset-st: 3/3/4/1 [11]
DiffImageQuality-fgm: 0.18 [2/11]
DiffImageOverlap-fno: 0.27 [4/15]

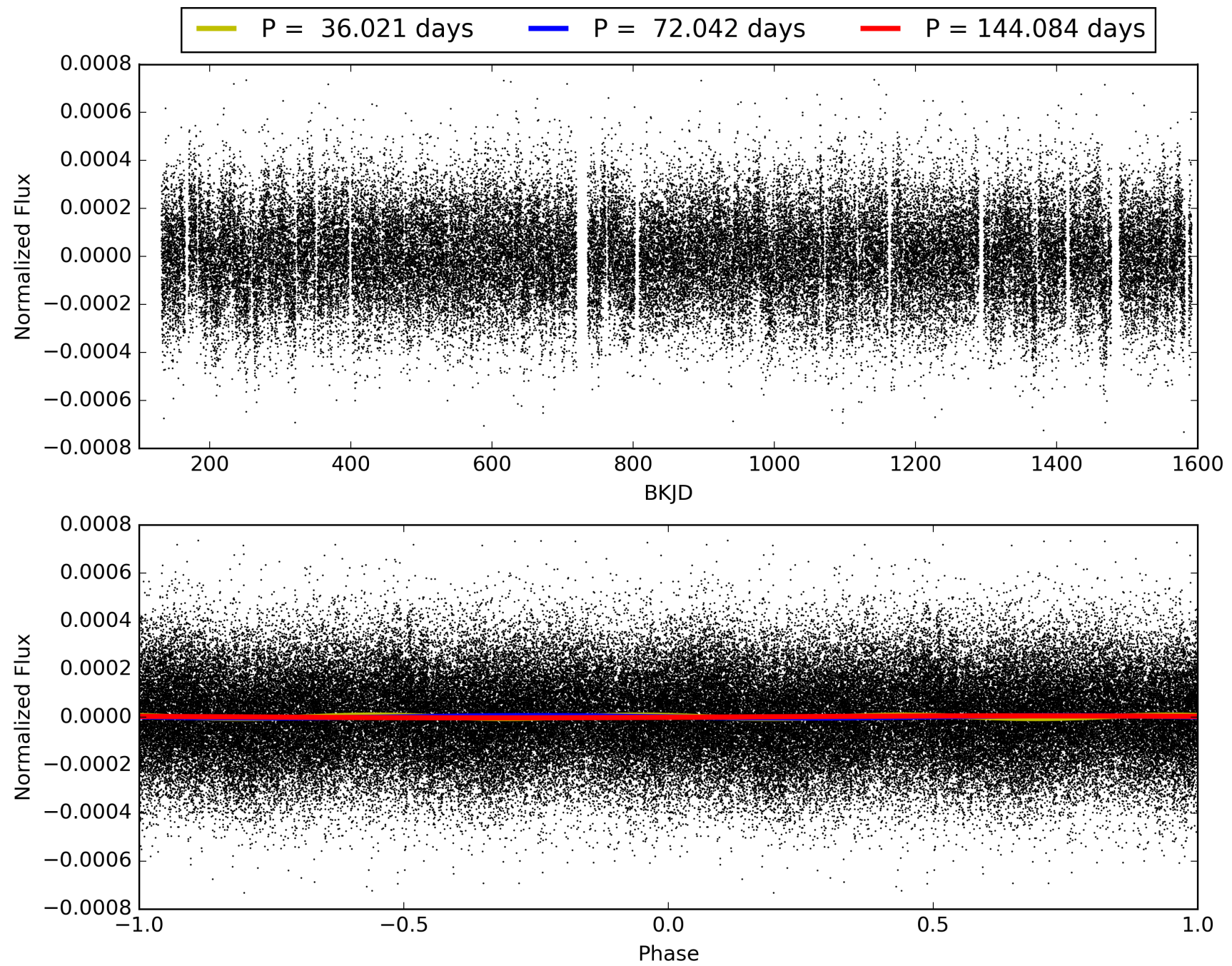
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:41:12 Z

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

TCE 009673009-04, PDC Light Curves

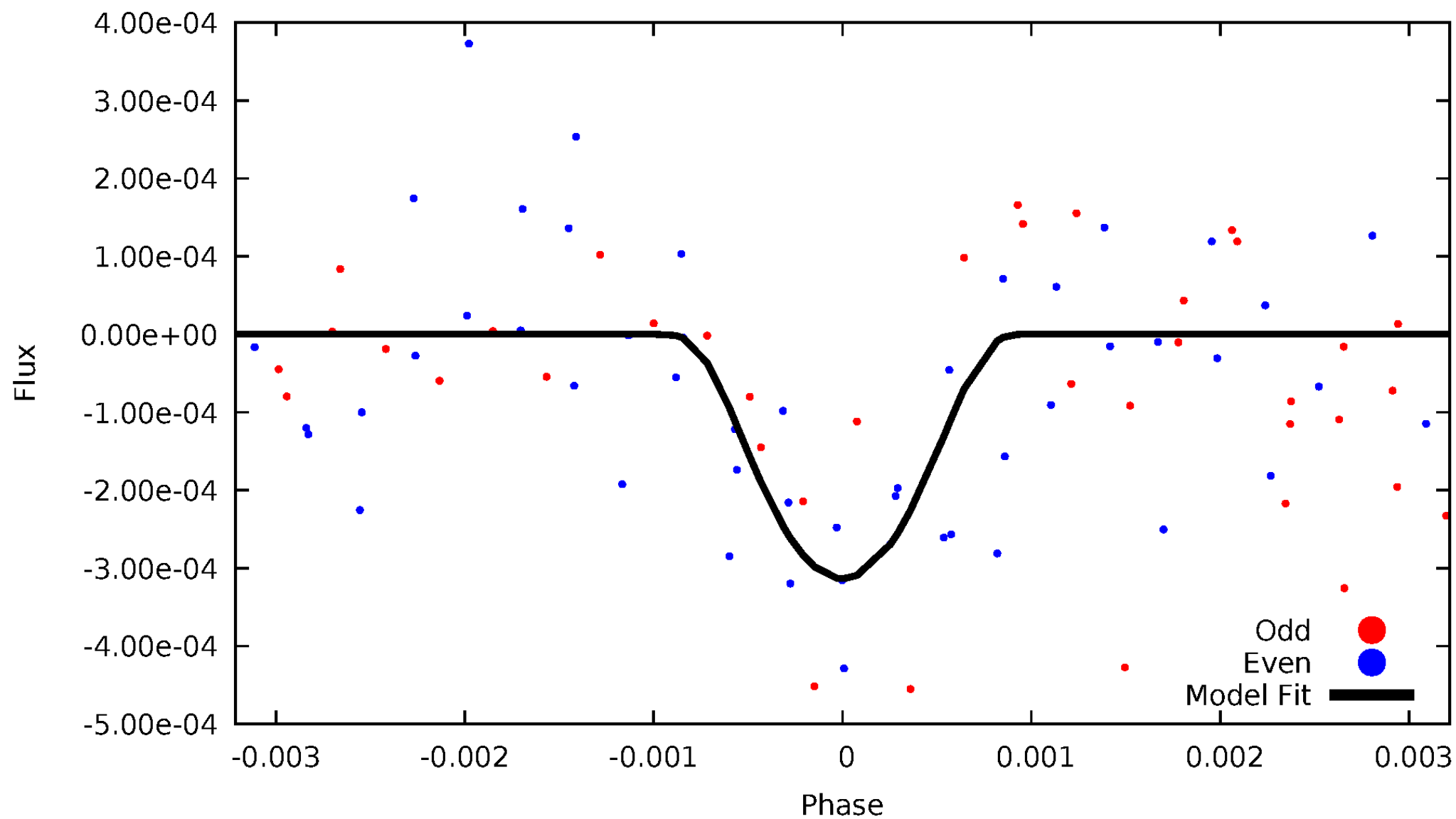


TCE 009673009-04



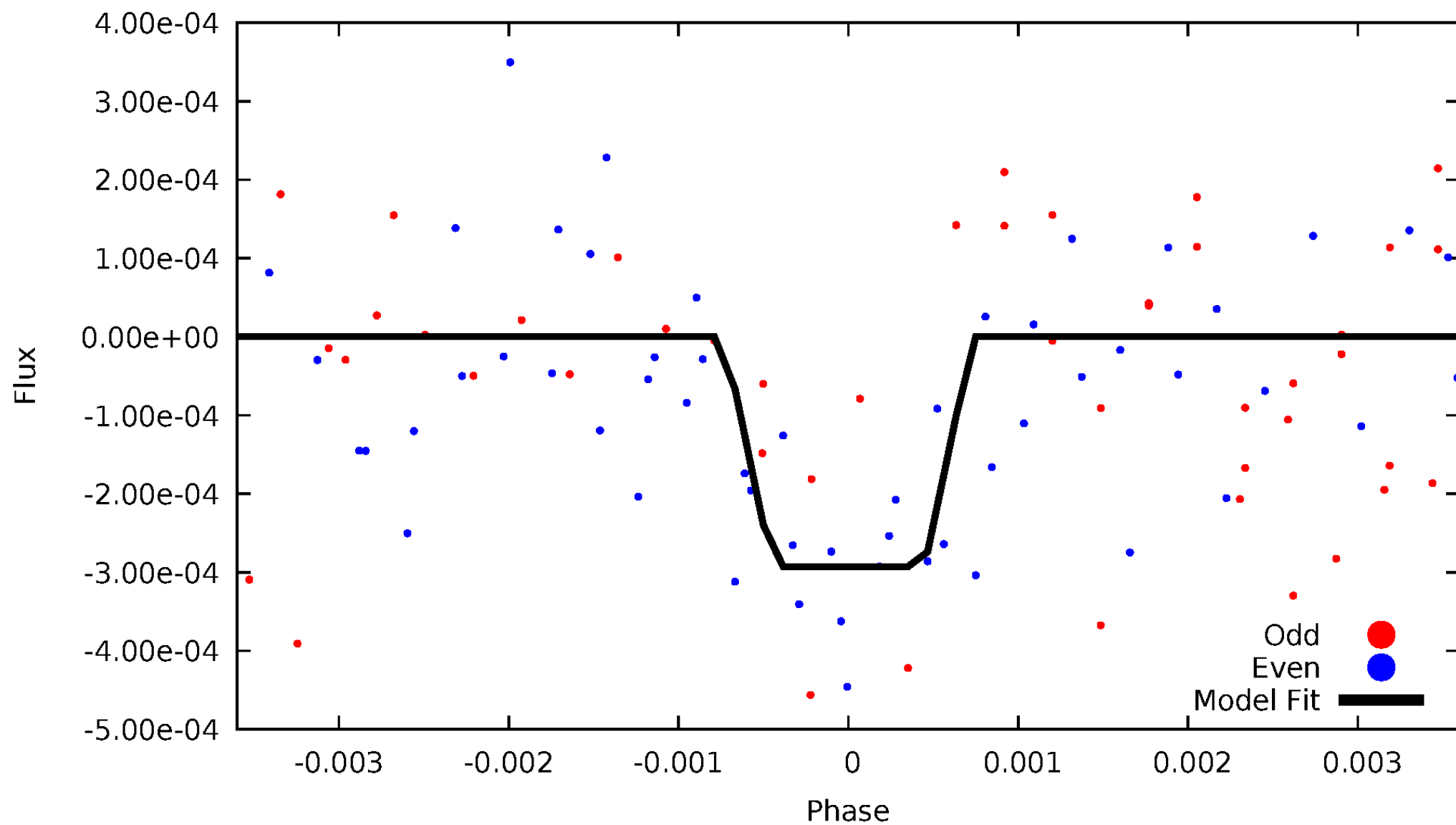
DV Odd/Even

TCE 009673009-04



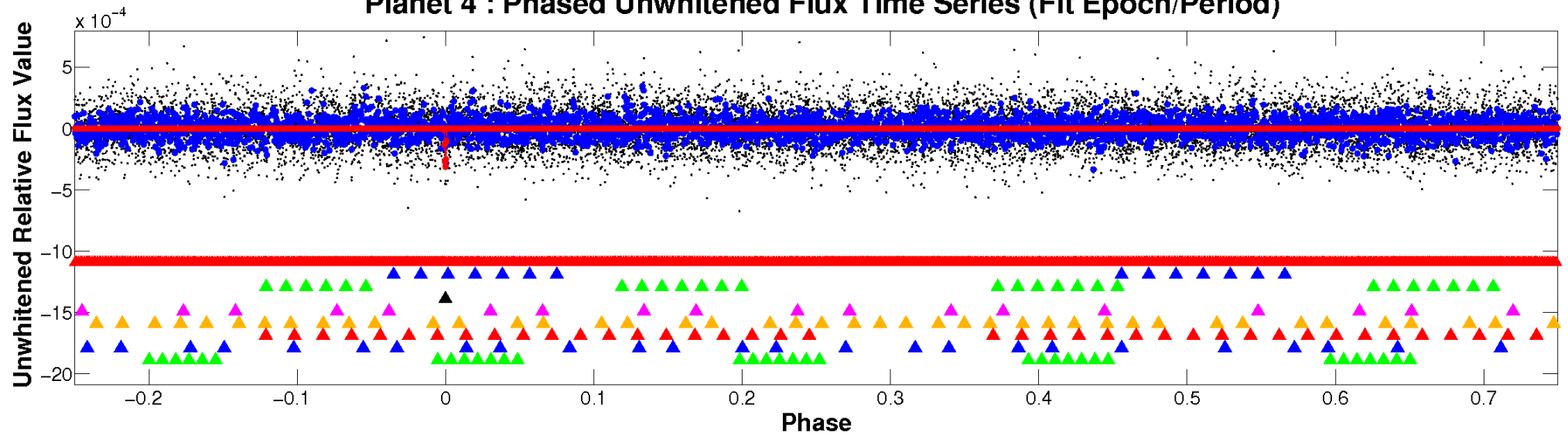
ALT Odd/Even

TCE 009673009-04

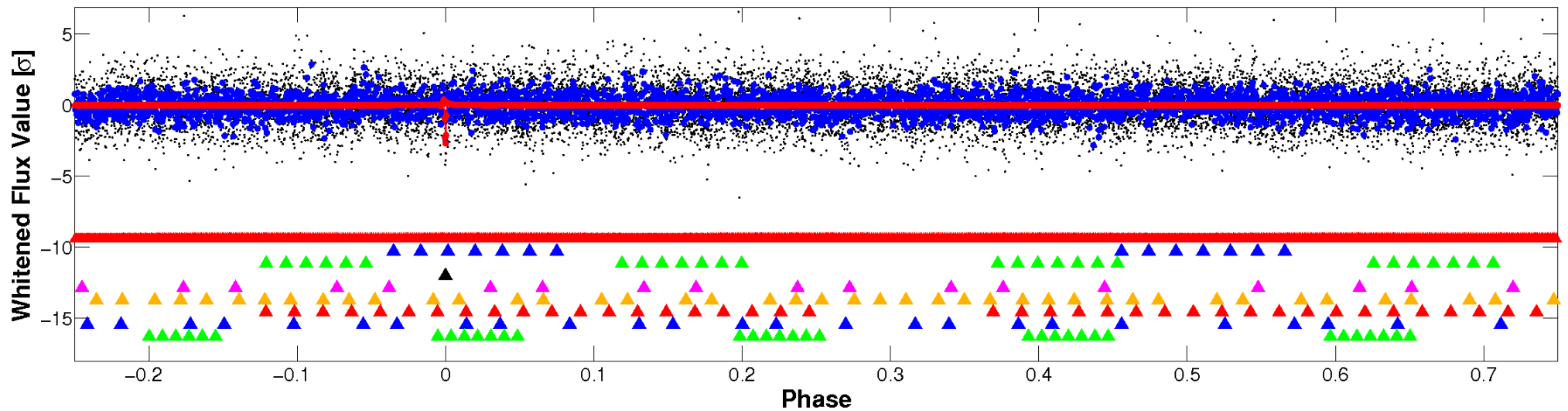


Non-Whitened Vs. Whitened Light Curve

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

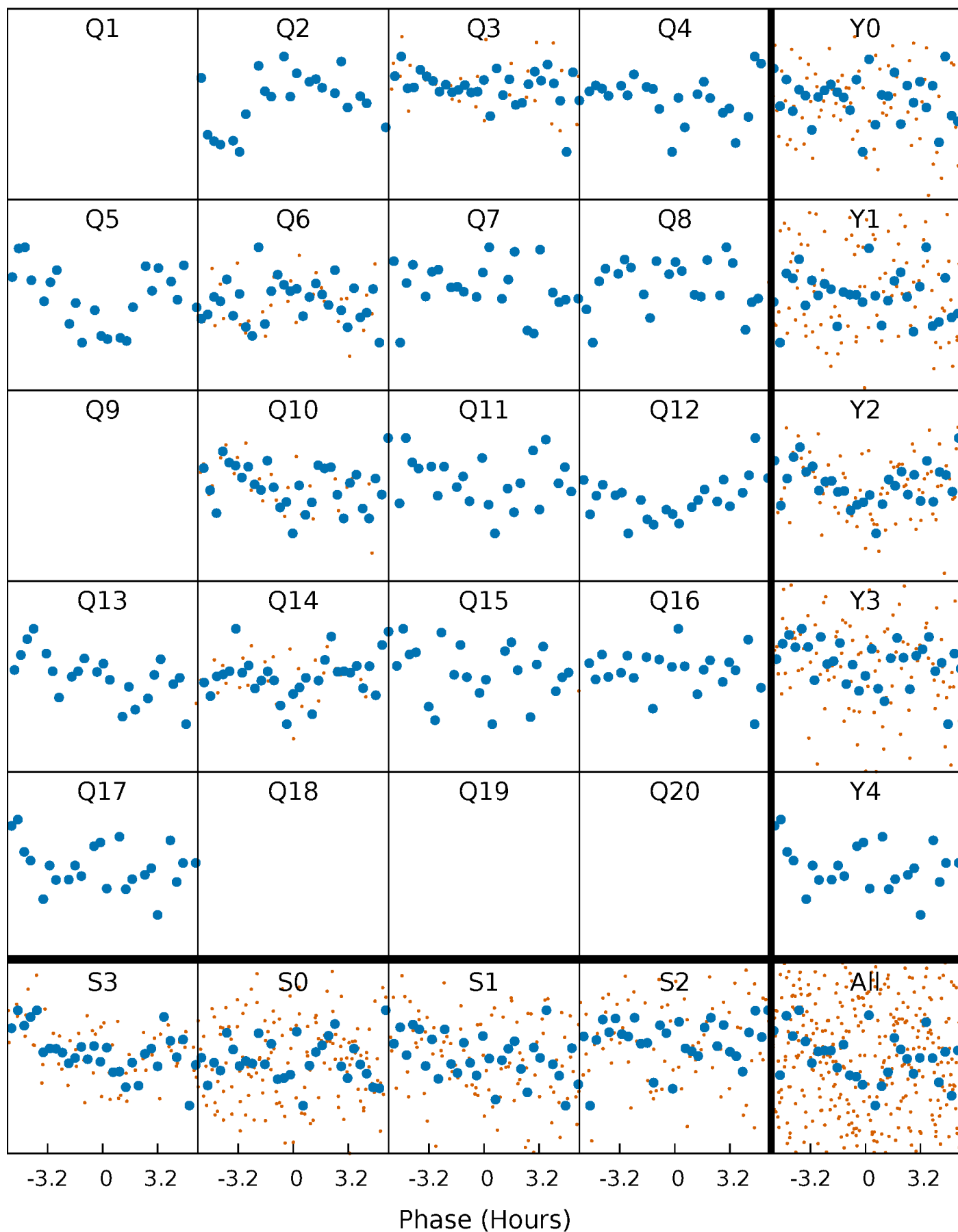


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



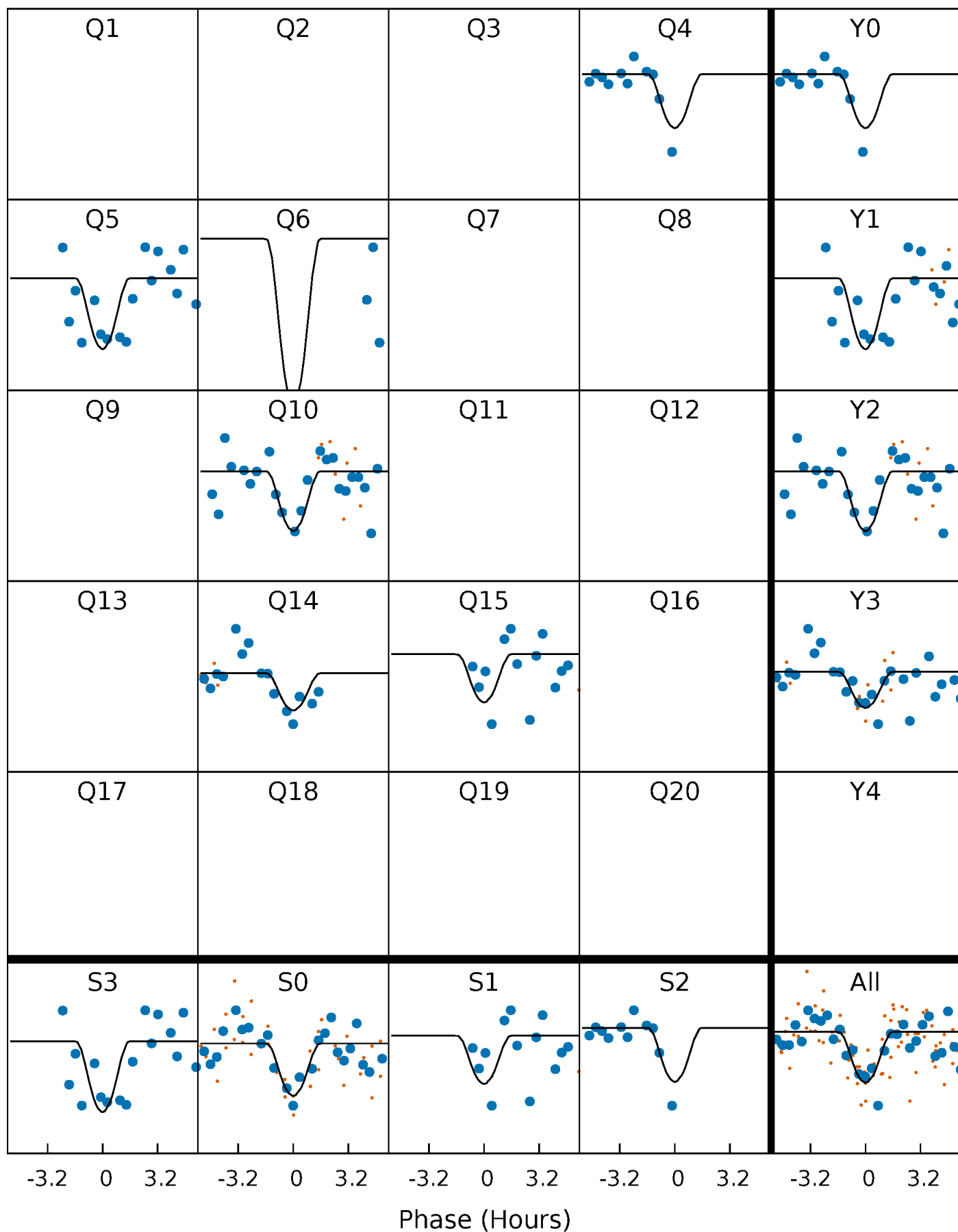
PDC Quarter-Phased Transit Curves

TCE 009673009-04 P= 72.042103 Days $T_0=196.805170$ (BKJD)



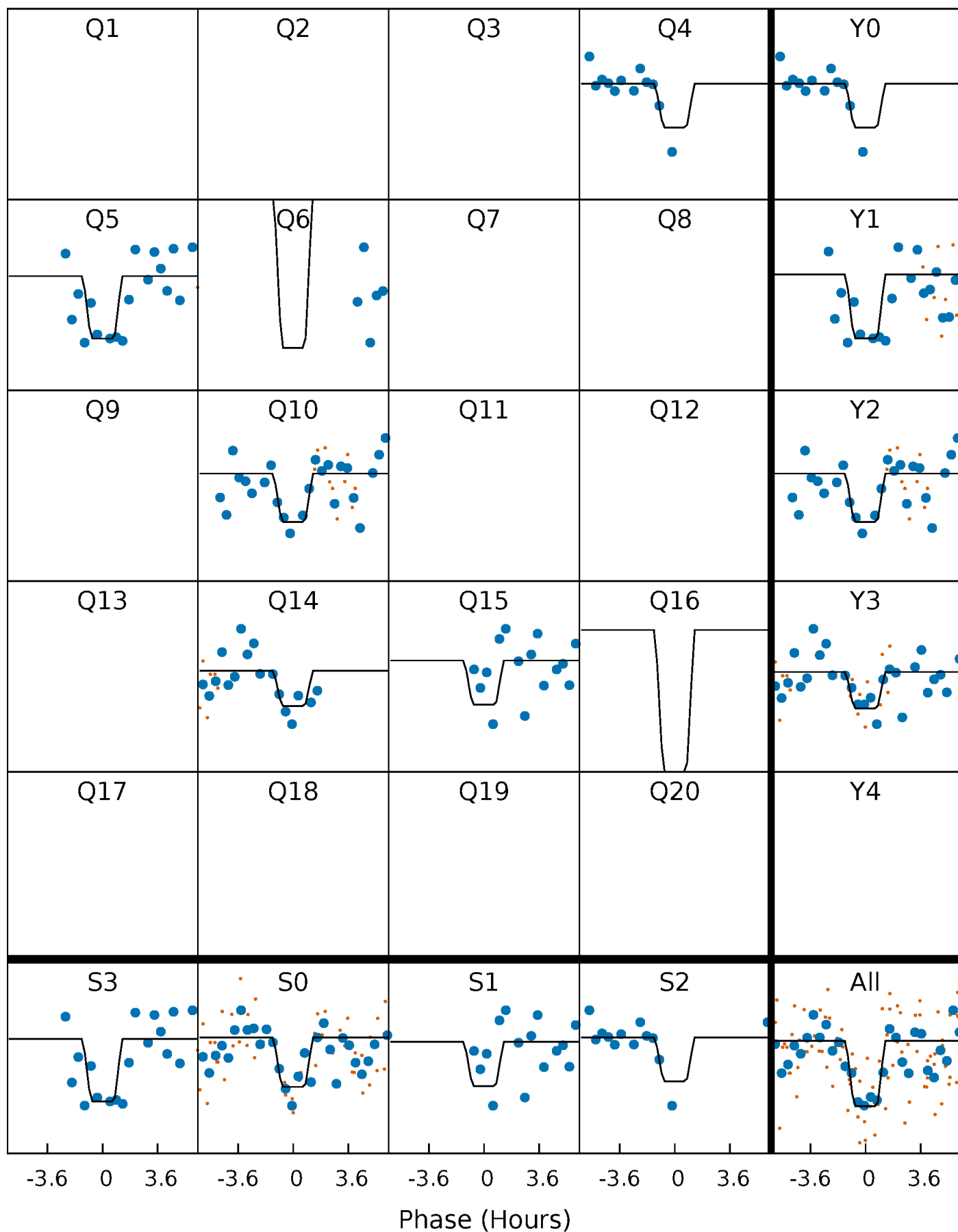
DV Quarter-Phased Transit Curves

TCE 009673009-04 P= 72.042103 Days $T_0=196.805170$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

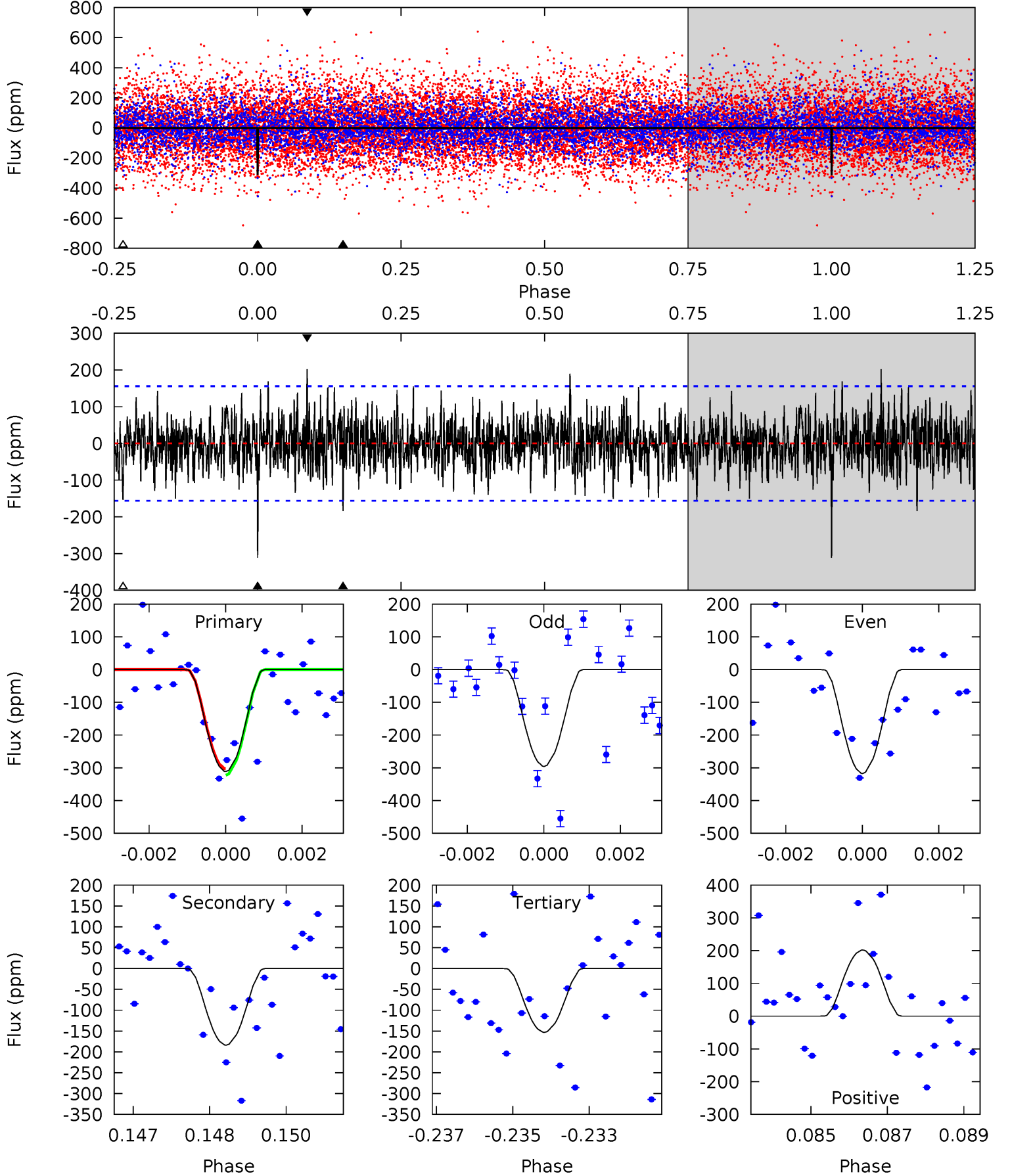
TCE 009673009-04 P= 72.041768 Days $T_0=196.811500$ (BKJD)



DV Model-Shift Uniqueness Test

009673009-04, P = 72.042103 Days, E = 124.763067 Days

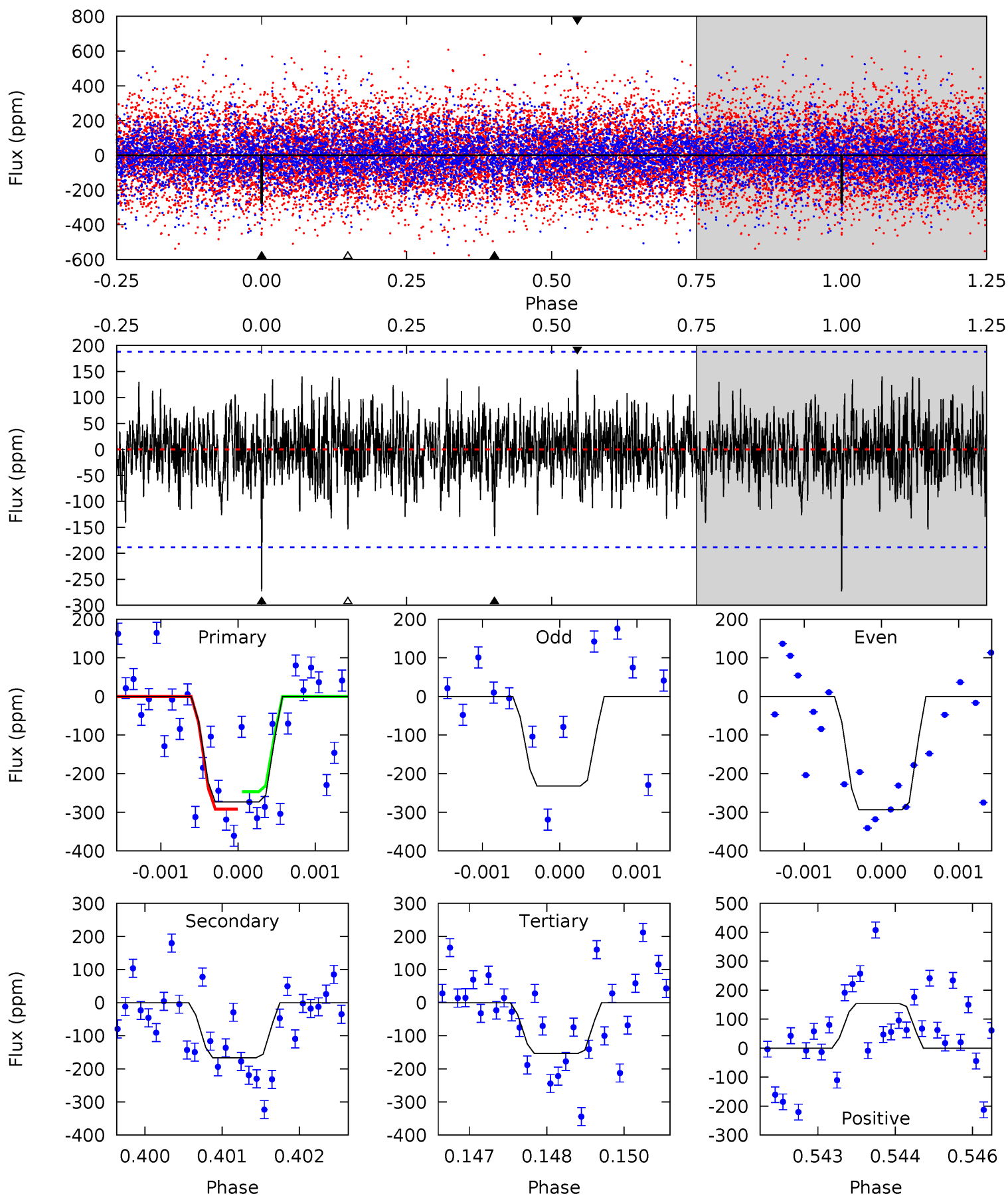
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	6.30	5.25	6.92	5.34	3.12	1.74	5.42	3.75	1.05	-0.62	0.34	1.11	0.39	0.33



Alt Model-Shift Uniqueness Test

009673009-04, $P = 72.041768$ Days, $E = 124.769732$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.84	4.78	4.41	4.42	5.40	3.22	1.26	3.43	3.43	0.37	0.36	0.80	1.03	0.36	0.63



Stellar Parameters For KIC 009673009

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4980^{+136}_{-121}	$3.739^{+0.840}_{-0.360}$	$-0.180^{+0.300}_{-0.200}$	$2.105^{+1.351}_{-1.351}$	$0.887^{+0.278}_{-0.149}$	$0.134^{+2.597}_{-0.097}$
	+3%/-2%	+22%/-10%	+167%/-111%	+64%/-64%	+31%/-17%	+1941%/-73%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009673009-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-184 ± 29	$24.04^{+29.24}_{-17.17}$	775^{+122}_{-143}	2519^{+1053}_{-371}	20^{+205}_{-16}
Alt.	-166 ± 35	$22.47^{+28.68}_{-15.54}$	770^{+134}_{-147}	2544^{+898}_{-412}	21^{+177}_{-17}

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

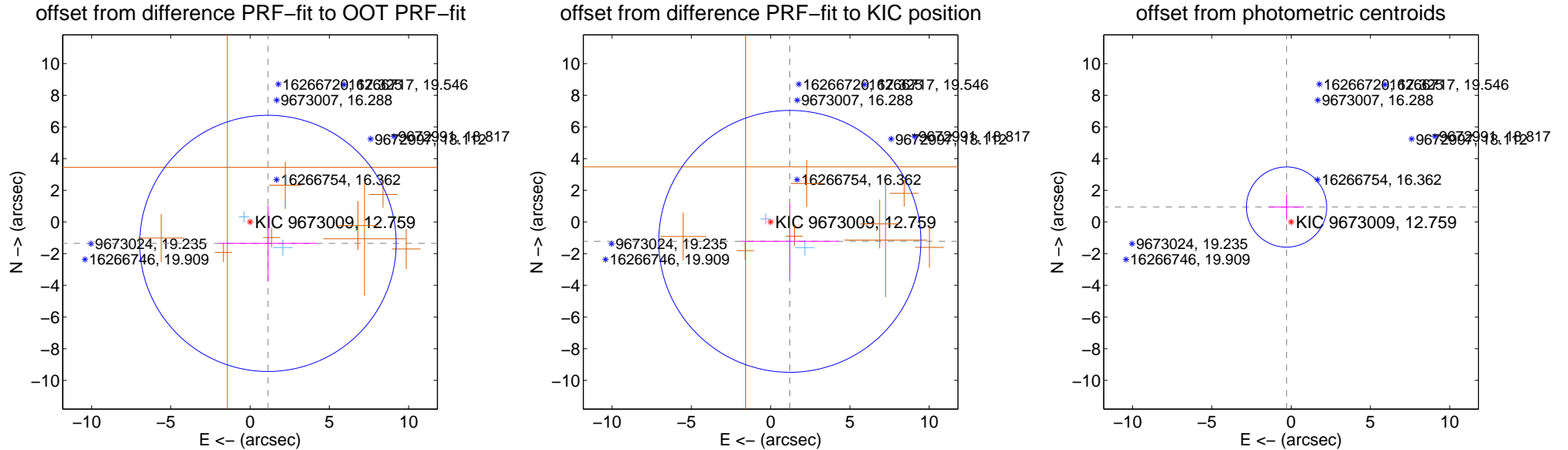
DV Centroid Data

Supplemental centroid analysis for 009673009-04. Kepler magnitude: 12.76. Transit SNR 8.92

There are 2 quarters with good PRF difference image offsets

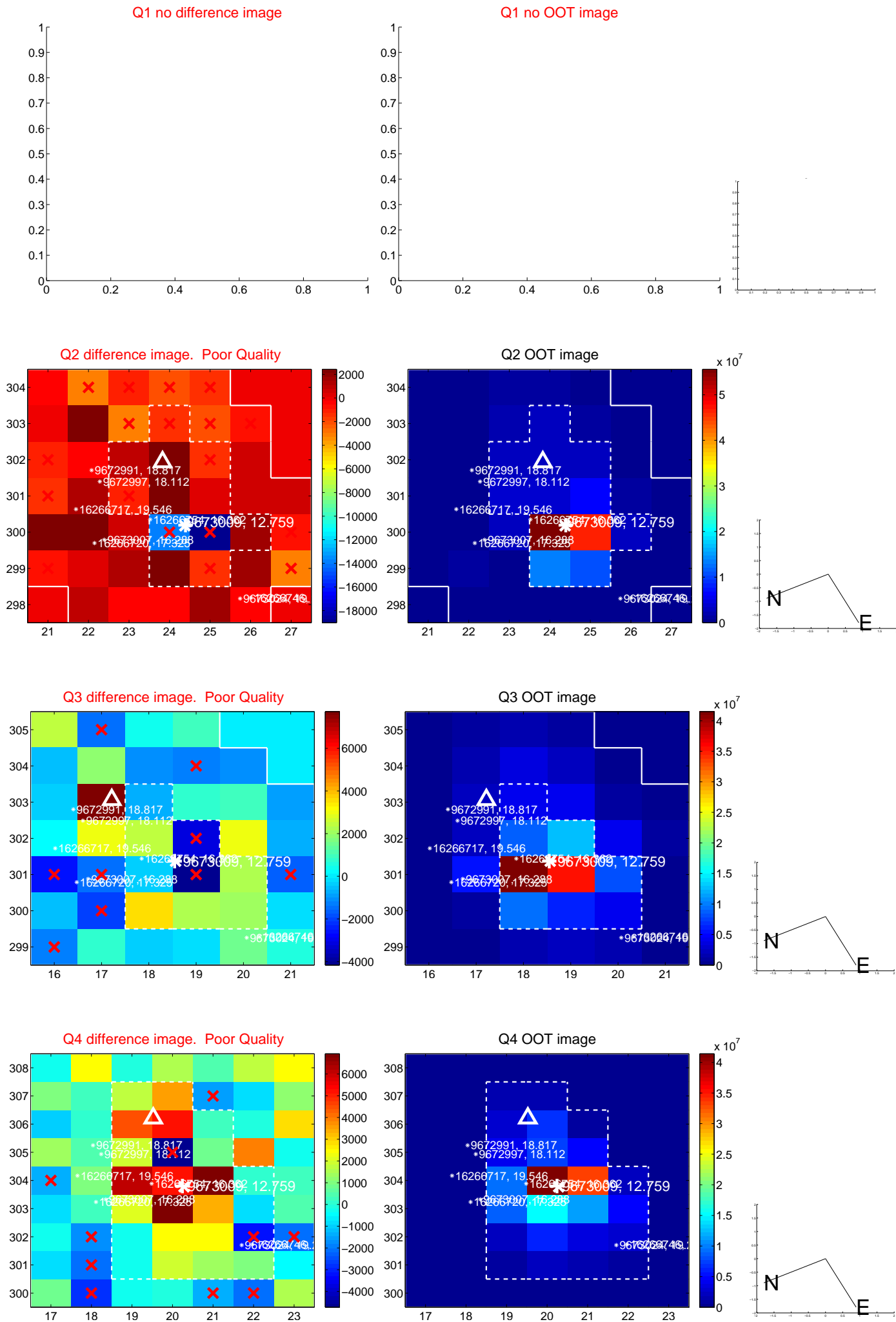
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.758 ± 2.696	0.65	-1.125 ± 3.086	-1.350 ± 2.388
PRF-fit source offset from KIC position	1.722 ± 2.756	0.62	-1.211 ± 3.086	-1.223 ± 2.388
photometric centroid source offset	0.99 ± 0.84	1.17	0.29 ± 1.10	0.94 ± 0.82

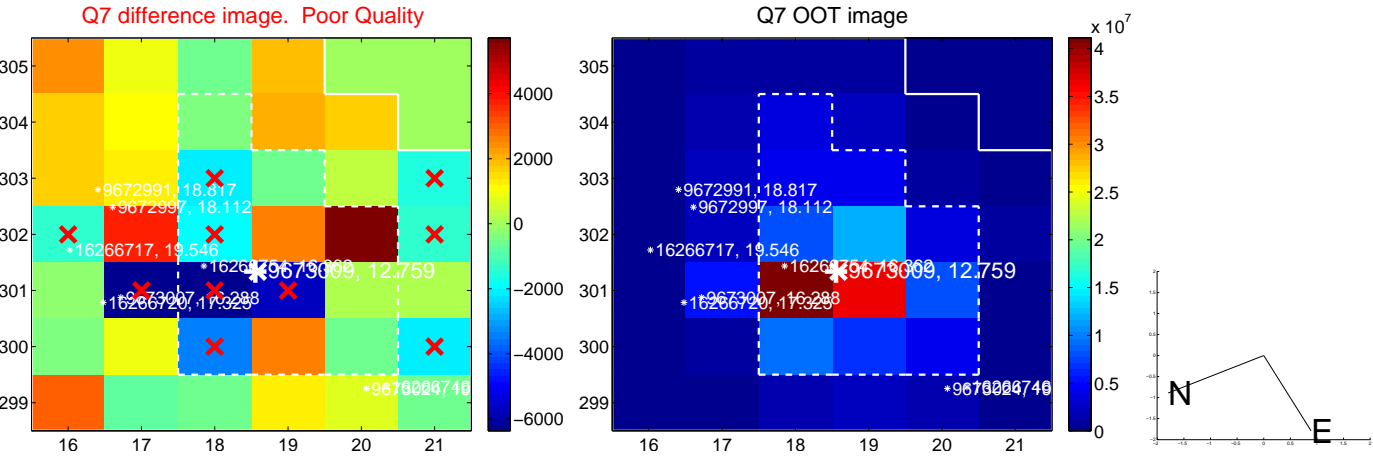
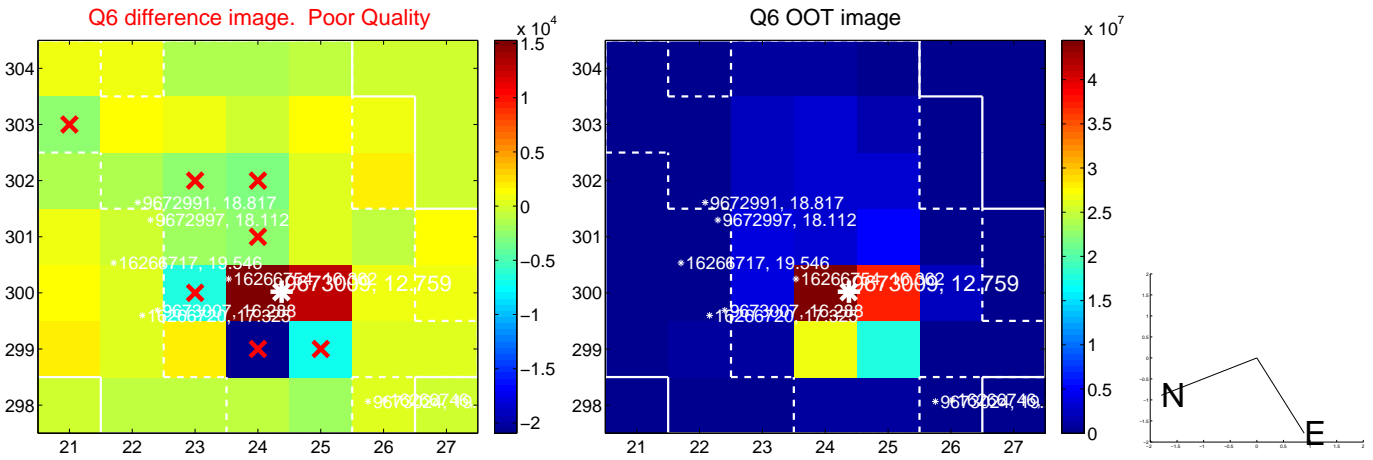
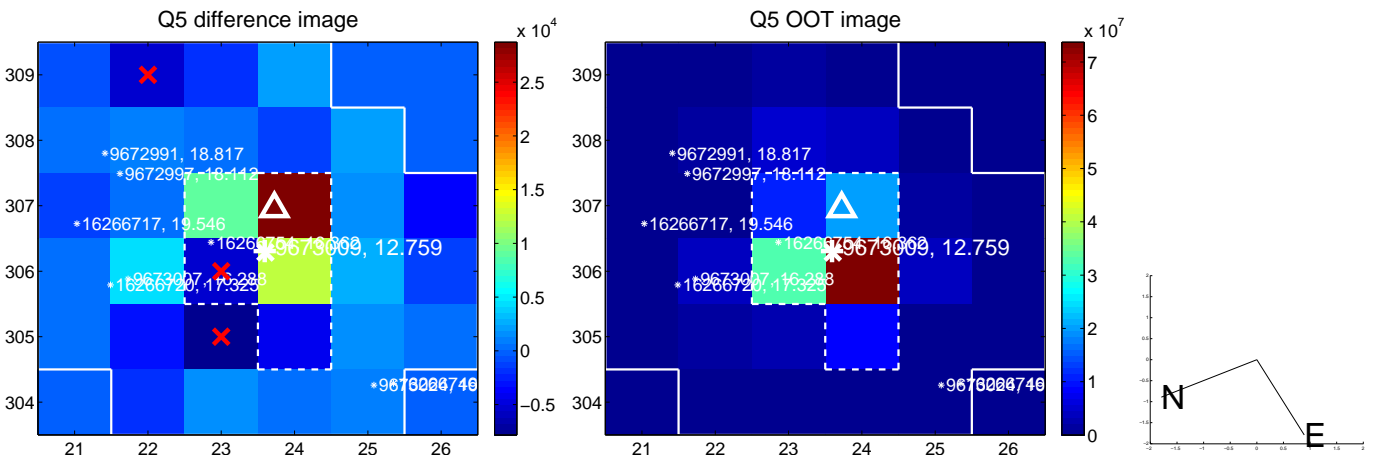


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

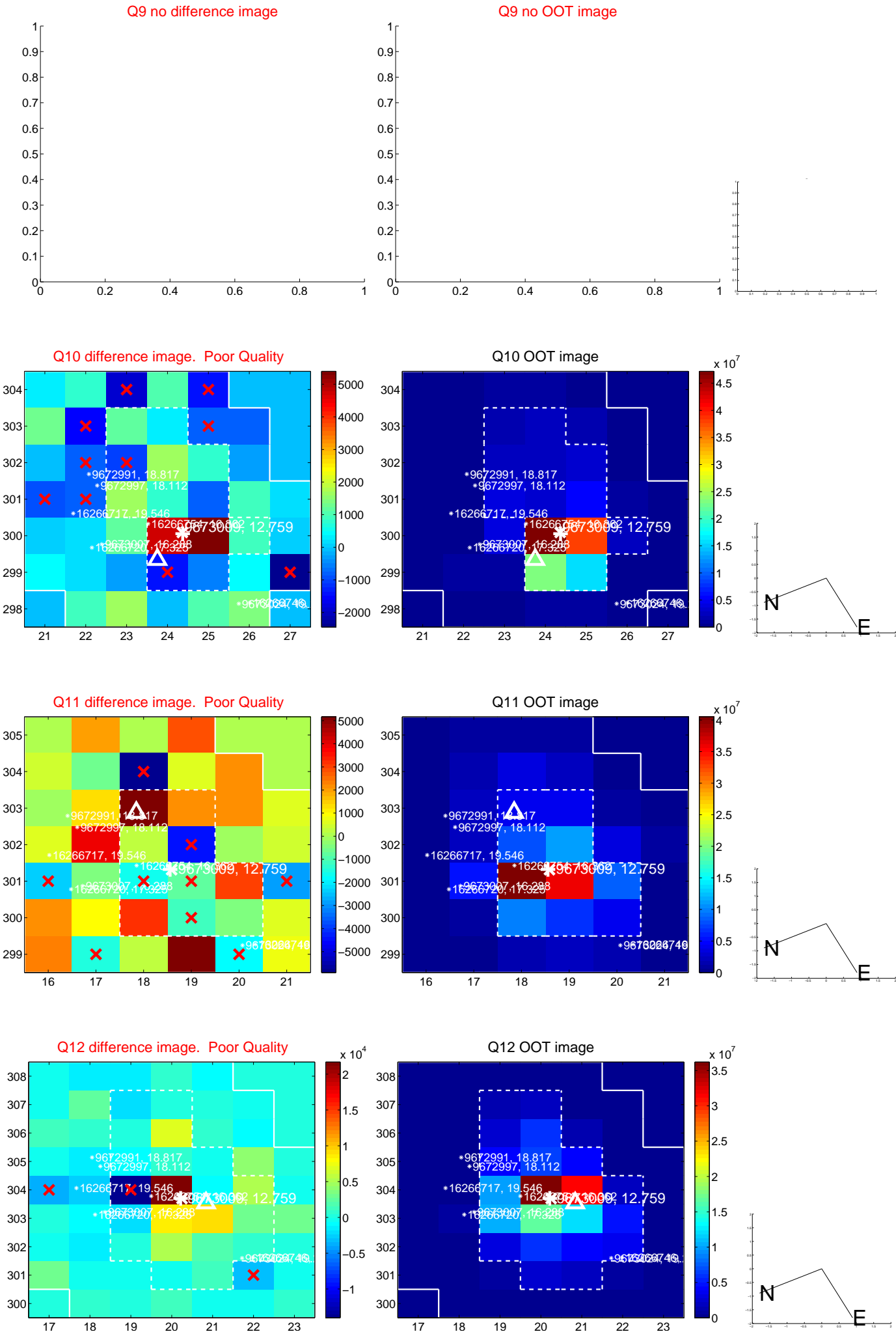
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



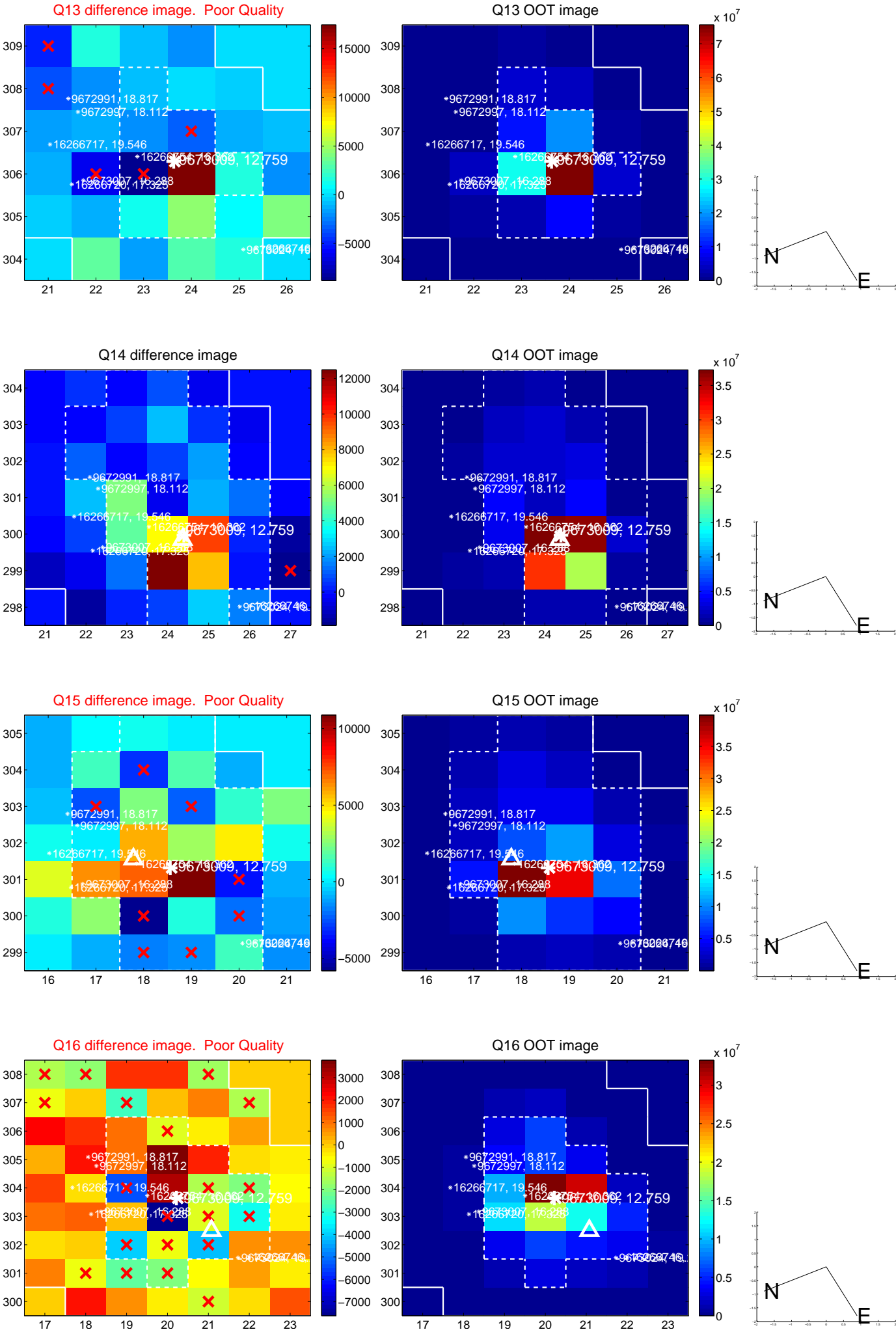
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



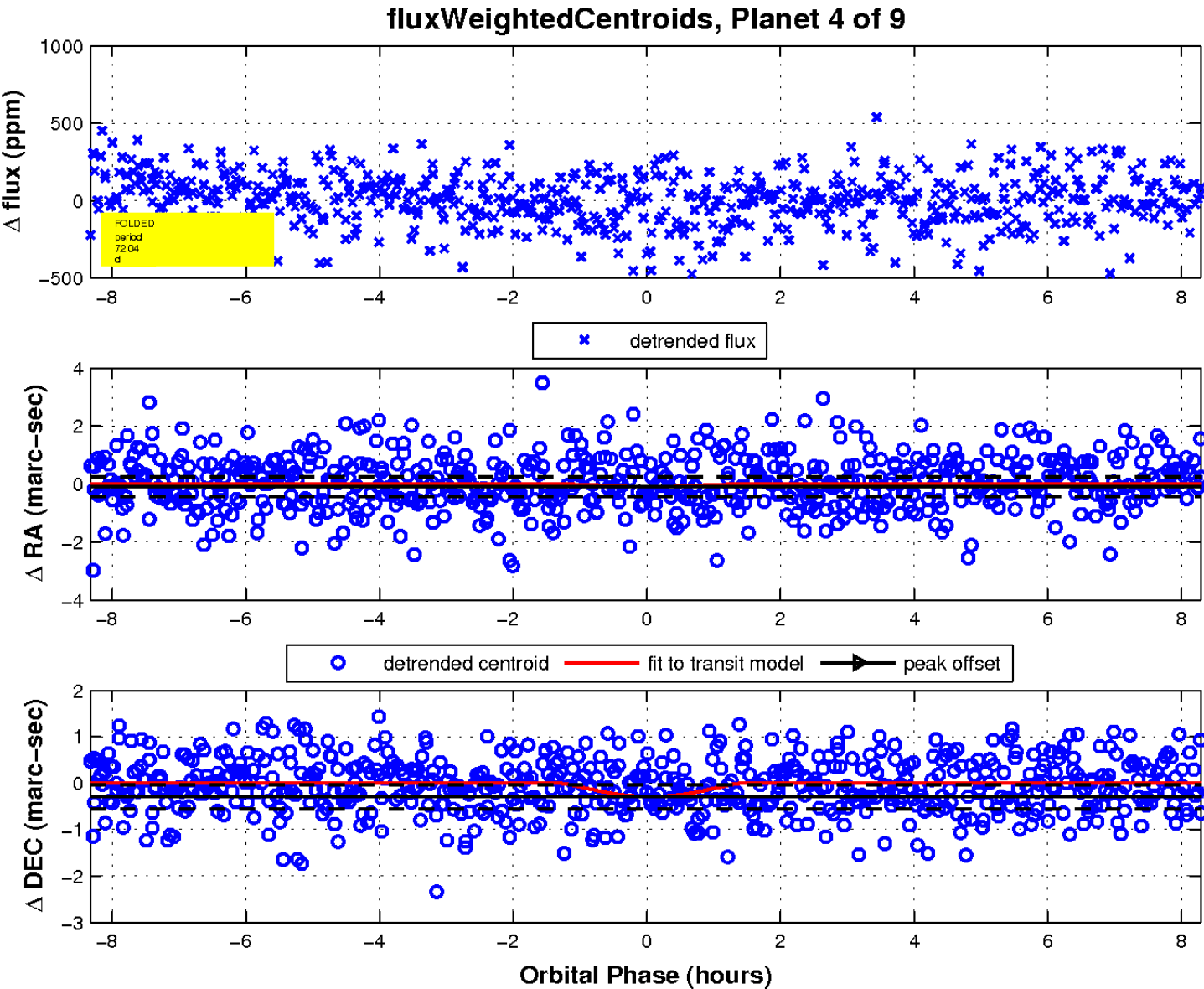
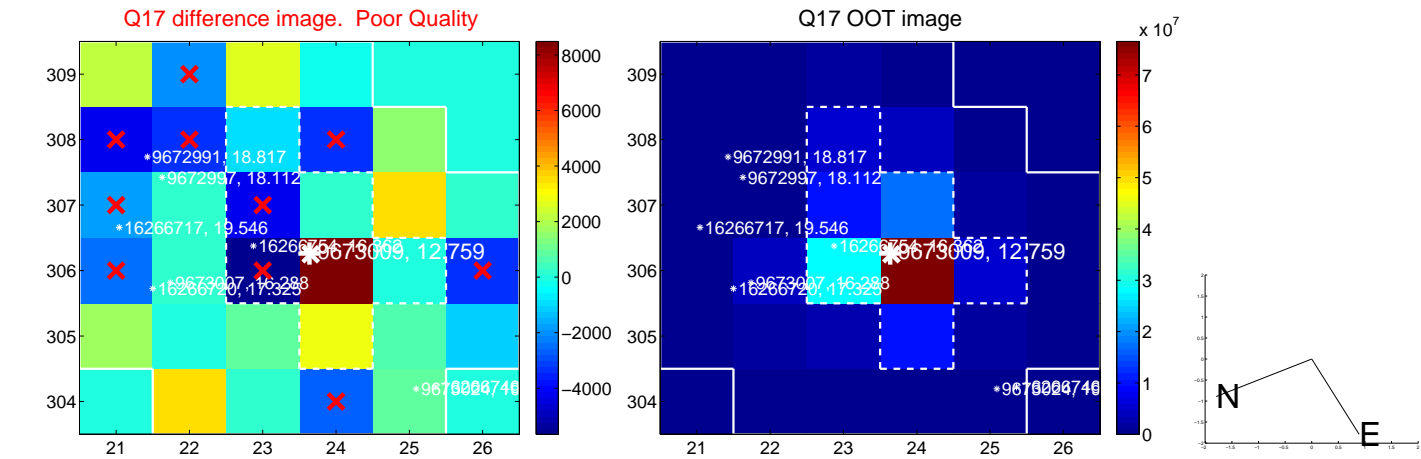
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



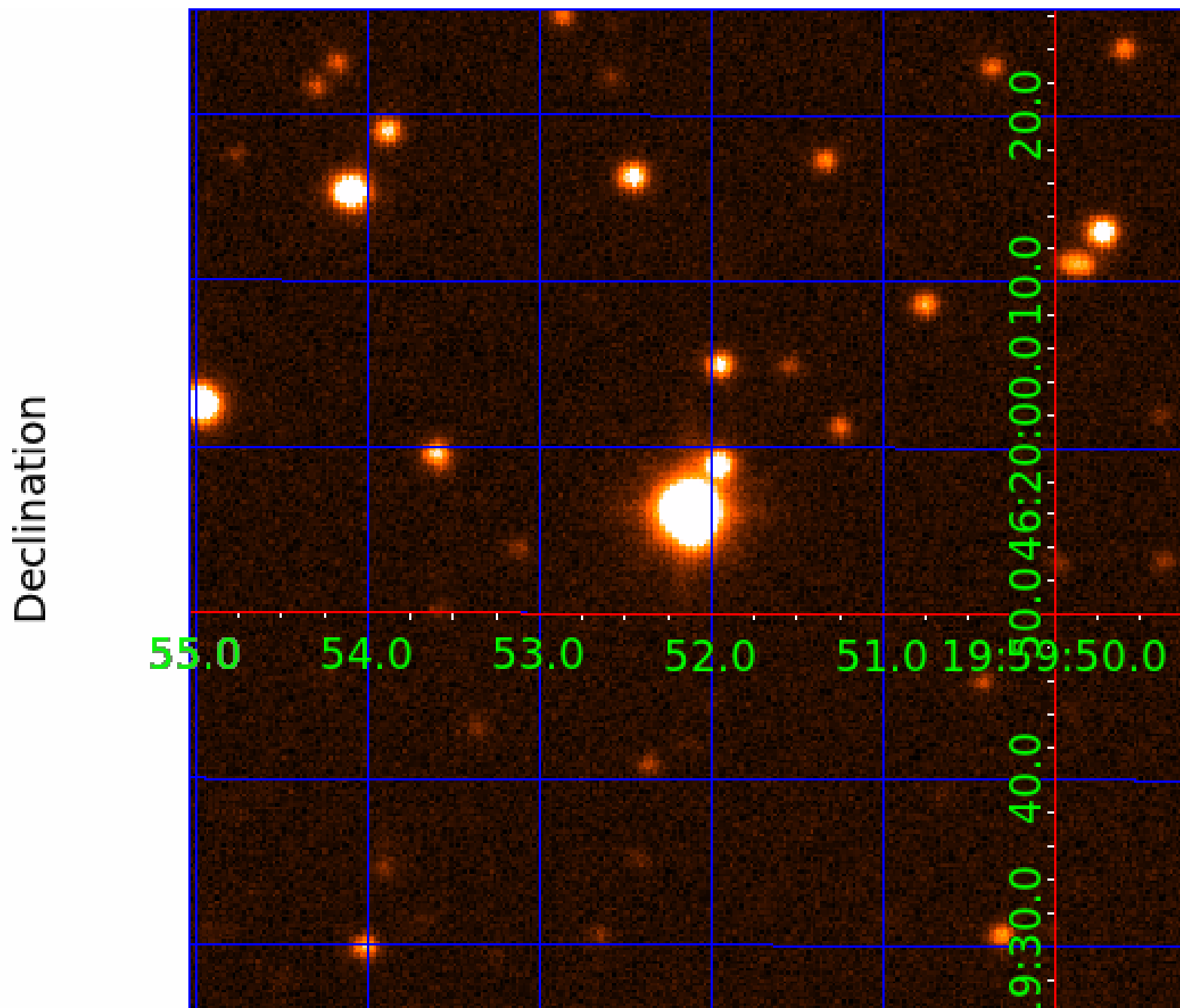
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009673009

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})
009673009-01	OBS	No	1.721726	132.966391	15.9	10.520	8.9	7.3	2.10	4980	0.81	3347.30
009673009-02	OBS	No	108.723993	157.600626	406.6	1.921	9.2	10.1	2.10	4980	5.16	13.31
009673009-03	OBS	No	53.789312	175.657282	196.2	3.546	8.4	9.0	2.10	4980	3.26	34.02
009673009-04	OBS	No	72.042103	196.805170	313.6	2.777	8.2	8.9	2.10	4980	7.11	23.04
009673009-05	OBS	No	79.499201	169.162431	324.7	2.116	7.9	9.2	2.10	4980	4.36	20.21
009673009-06	OBS	No	33.976012	156.889378	188.7	2.332	8.2	8.5	2.10	4980	3.83	62.77
009673009-07	OBS	No	36.715684	151.364416	250.6	1.628	7.9	8.6	2.10	4980	3.25	56.60
009673009-08	OBS	No	58.636647	147.578702	184.5	3.207	7.5	8.0	2.10	4980	3.48	30.32
009673009-09	OBS	No	43.354274	153.079658	220.9	1.415	7.4	8.1	2.10	4980	3.34	45.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009673009-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET
009673009-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009673009-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009673009-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009673009-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

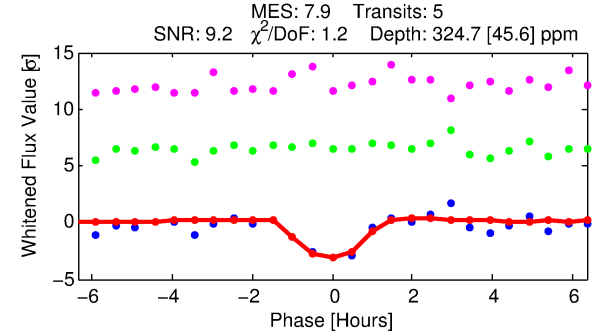
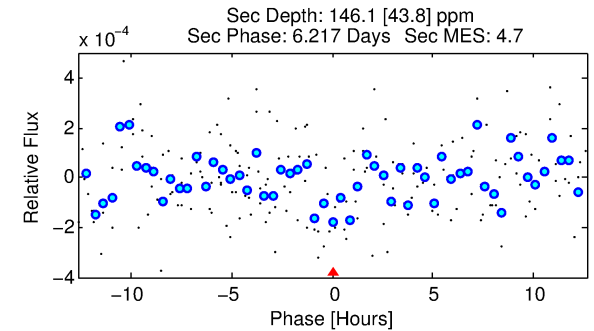
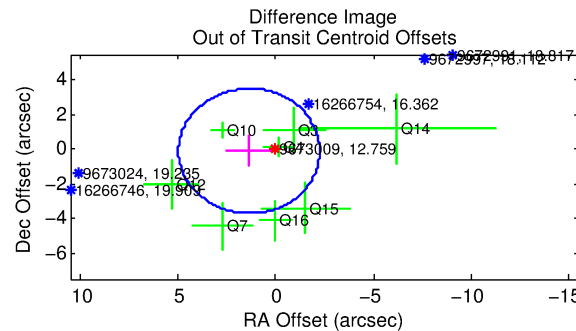
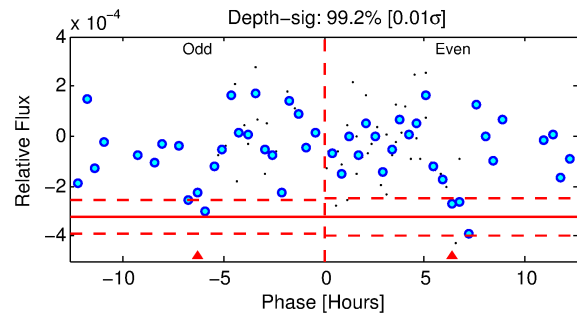
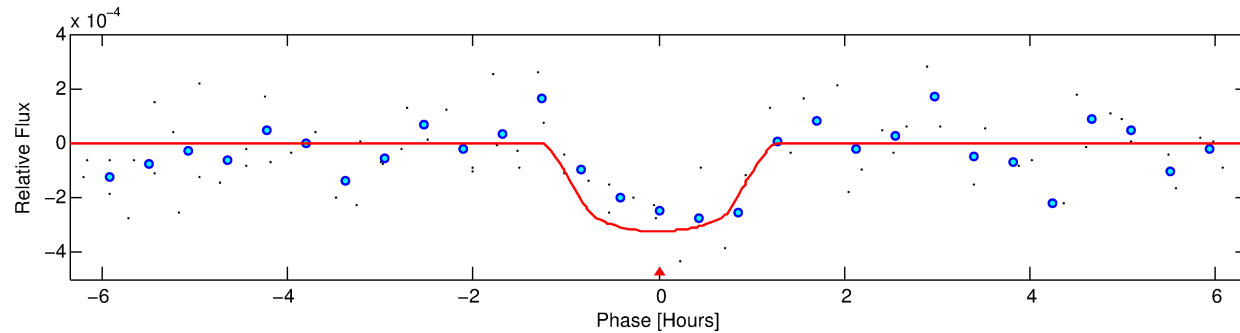
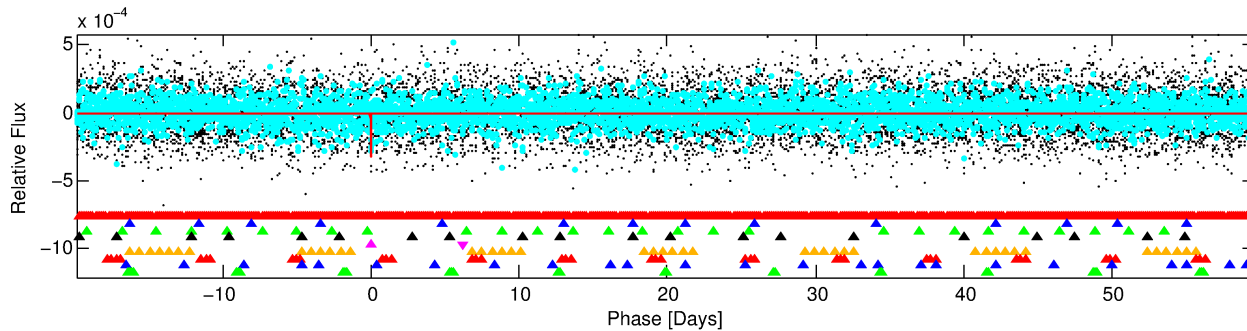
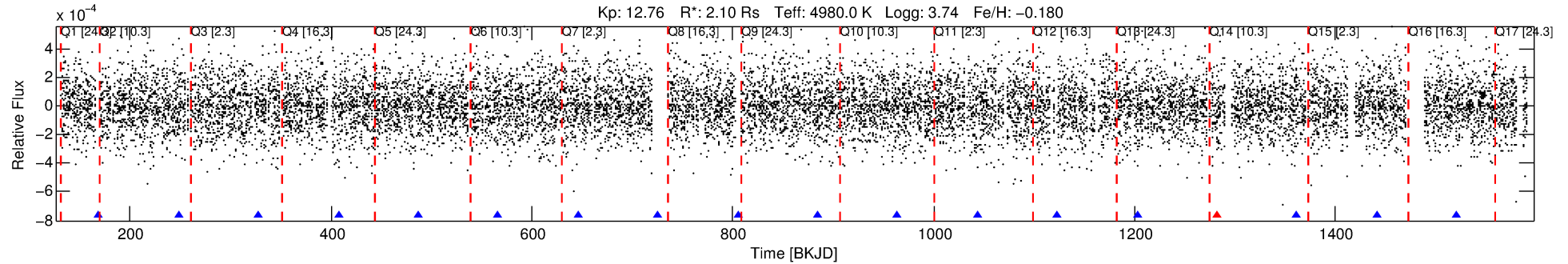
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009673009-05

No Significant Match Found

DV One-Page Summary

KIC: 9673009 Candidate: 5 of 9 Period: 79.499 d



DV Fit Results:

Period = 79.49920 [0.00068] d
Epoch = 169.1624 [0.0071] BKJD
Rp/R* = 0.0190 [0.0371]
a/R* = 166.99 [1236.22]
b = 0.84 [2.71]
Seff = 20.21 [27.54]
Teff = 541 [184] K
Rp = 4.36 [8.98] Re
a = 0.3476 [0.2690] AU
Ag = 511.48 [2125.17] [0.24σ]
Teffp = 3975 [3904] K [0.88σ]

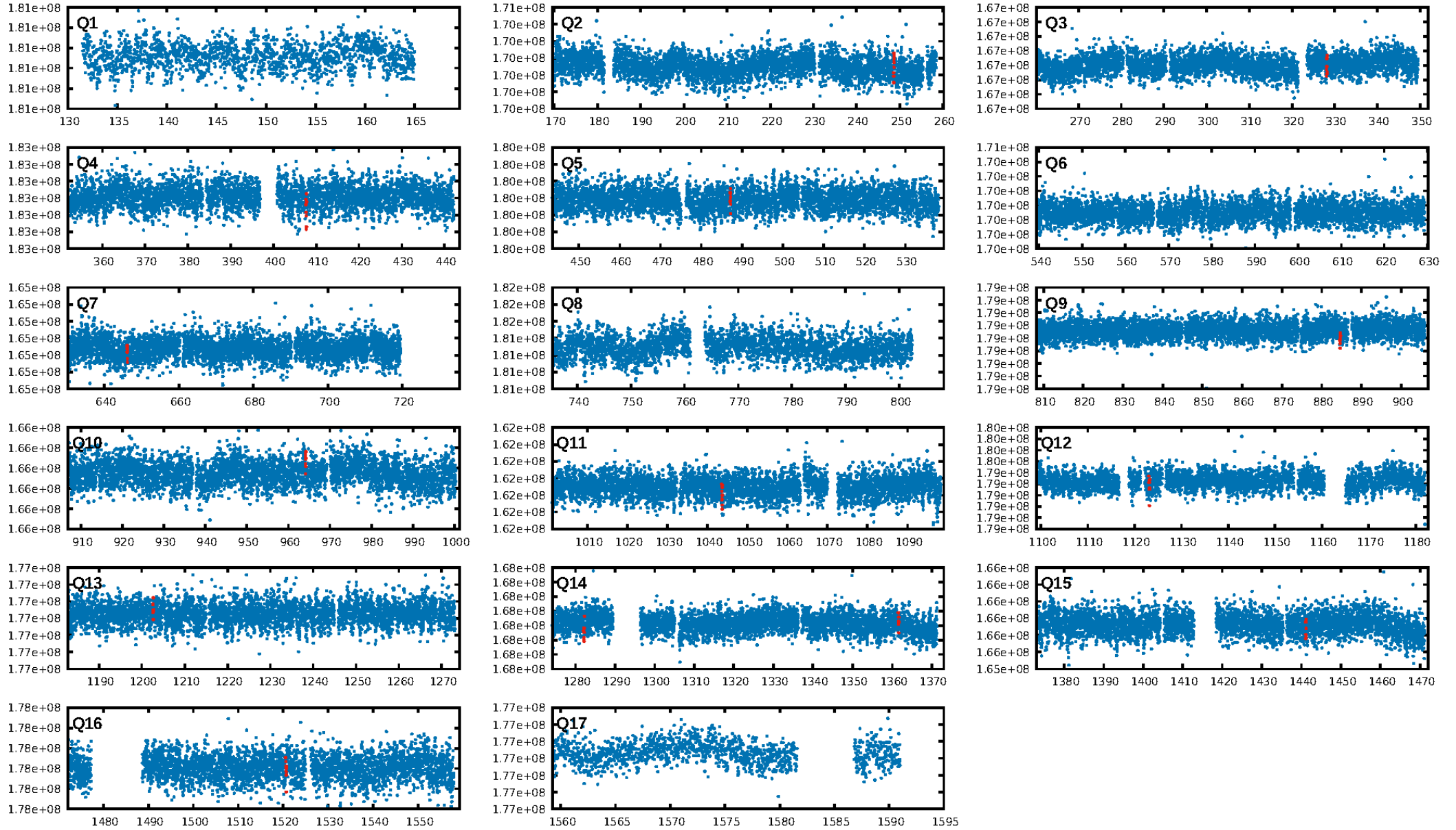
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [51.26σ]
LongPeriod-sig: 100.0% [245.46σ]
ModelChiSquare2-sig: 89.8%
ModelChiSquareGo-sig: 99.7%
Bootstrap-pfa: 4.45e-08
RollingBand-fgt: 0.80 [4/5]
GhostDiagnostic-chr: 4.238
Centroid-sig: 21.1%
Centroid-so: 0.753 arcsec [0.90σ]
OotOffset-rm: 1.365 arcsec [1.14σ]
KicOffset-rm: 1.260 arcsec [1.06σ]
OotOffset-st: 2/3/3/0 [8]
KicOffset-st: 2/3/3/0 [8]
DiffImageQuality-fgm: 0.12 [1/8]
DiffImageOverlap-fno: 0.38 [5/13]

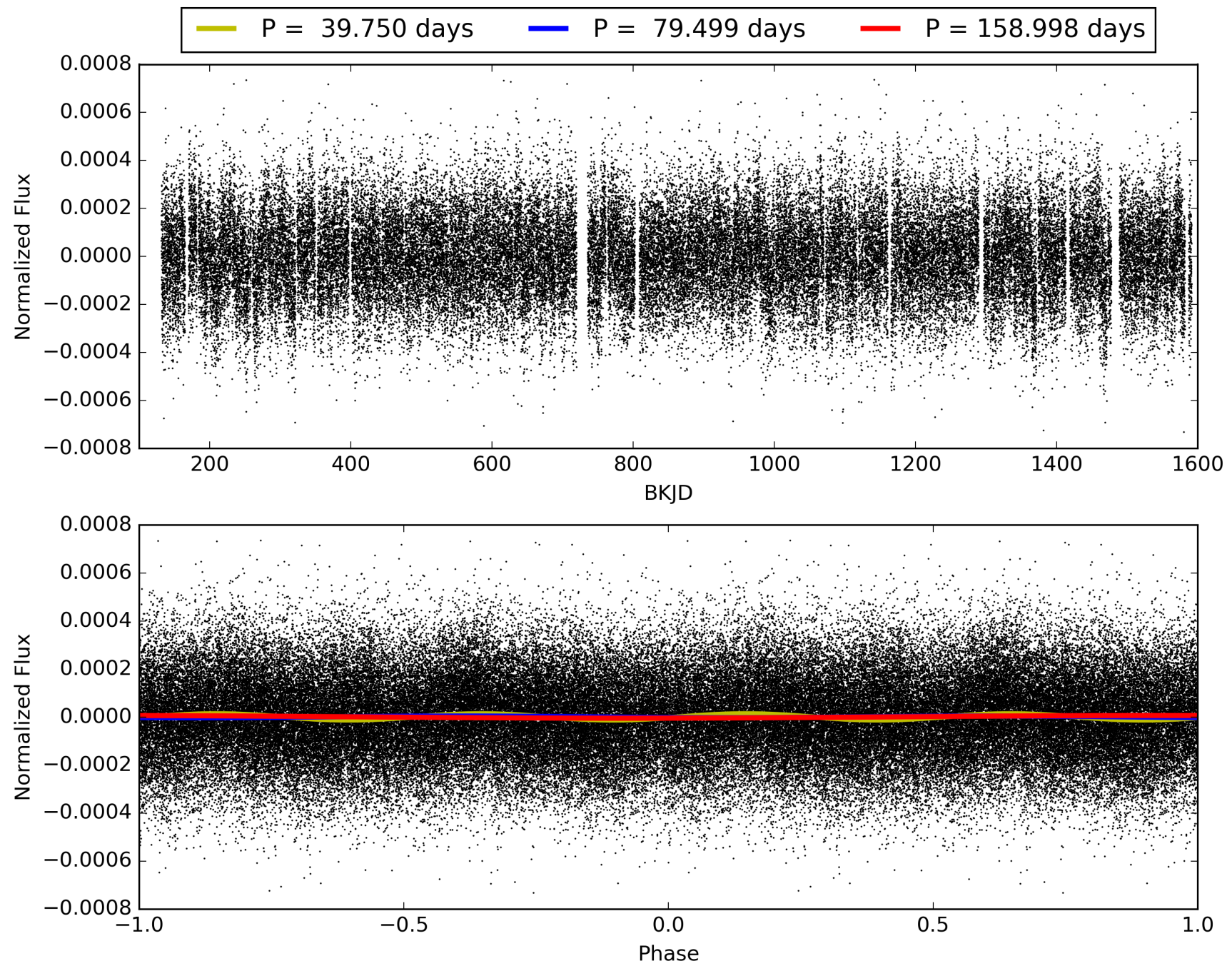
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:41:17 Z

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

TCE 009673009-05, PDC Light Curves

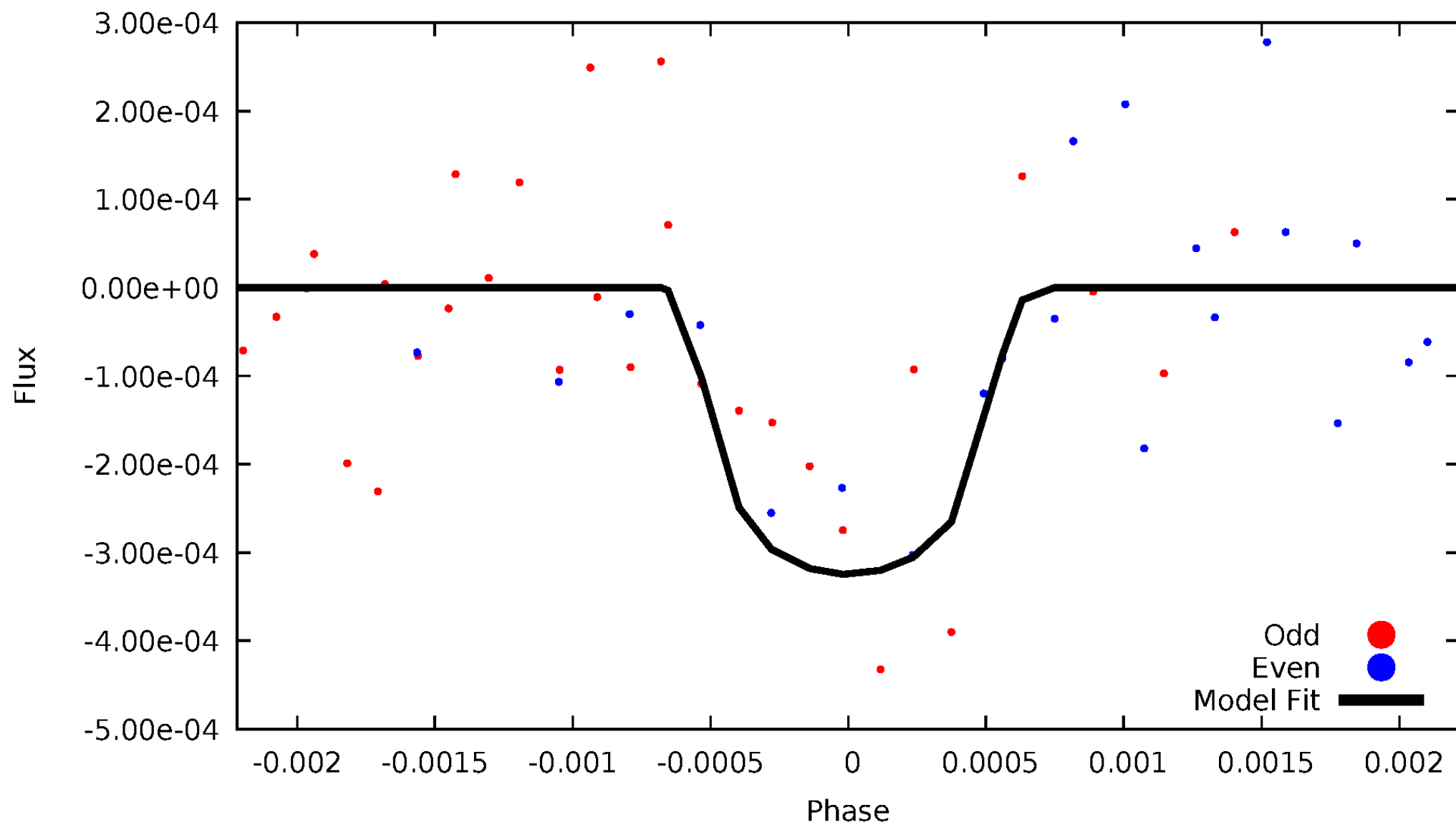


TCE 009673009-05



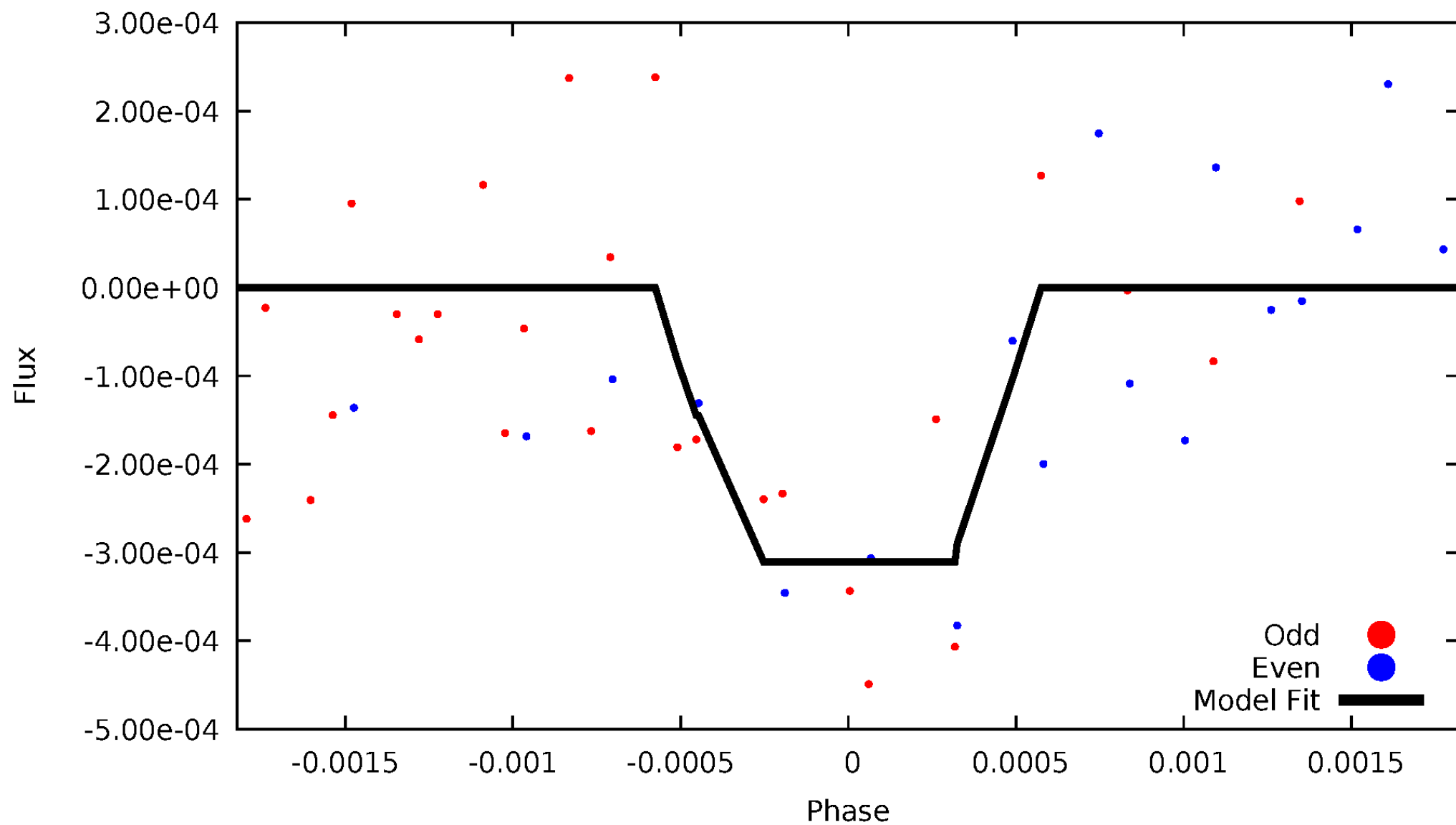
DV Odd/Even

TCE 009673009-05



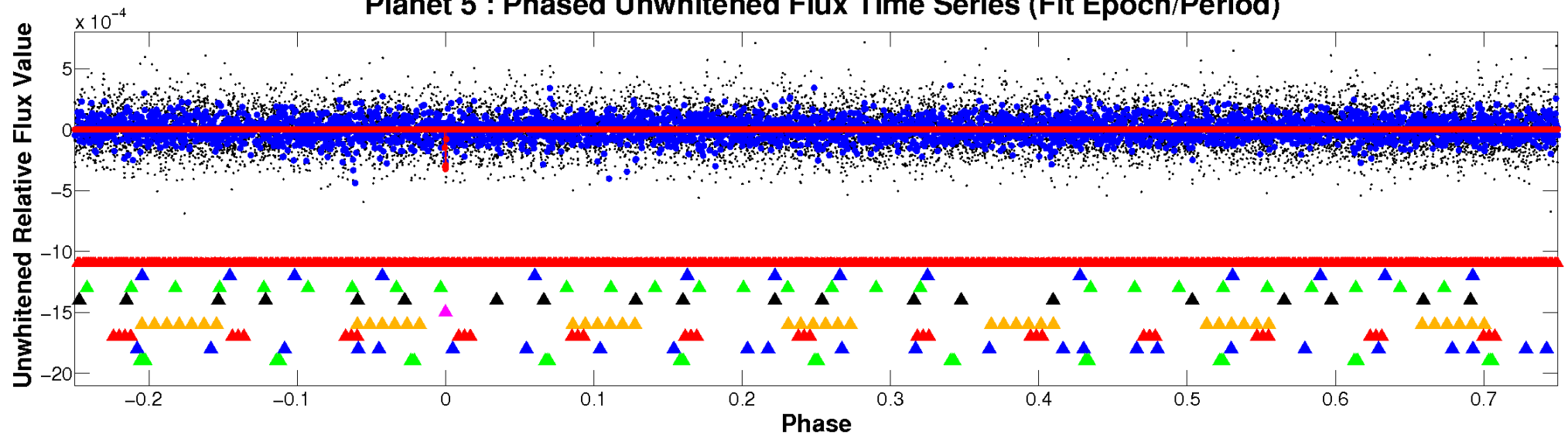
ALT Odd/Even

TCE 009673009-05

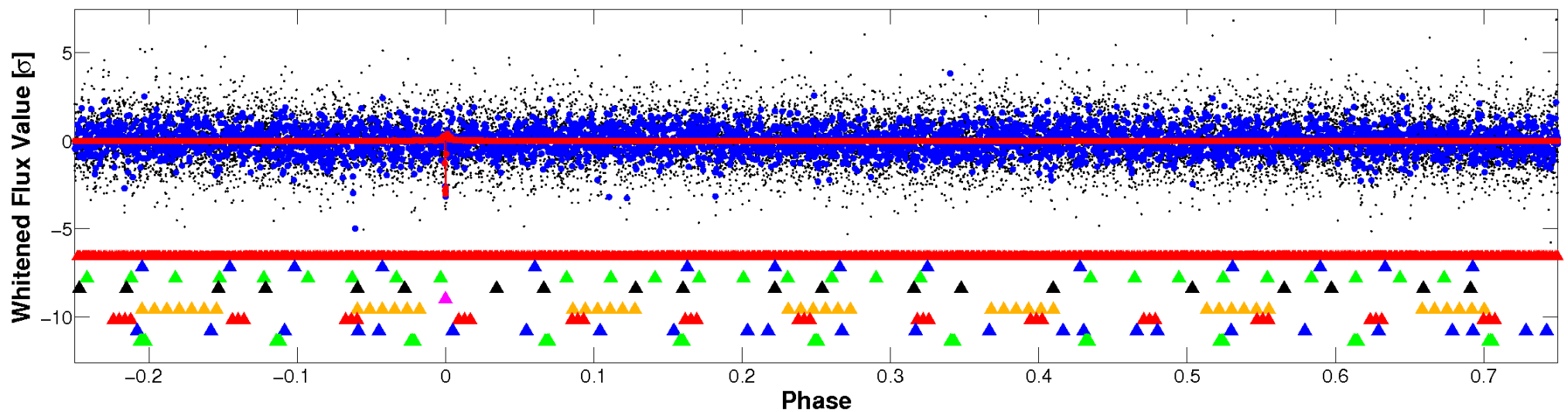


Non-Whitened Vs. Whitened Light Curve

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

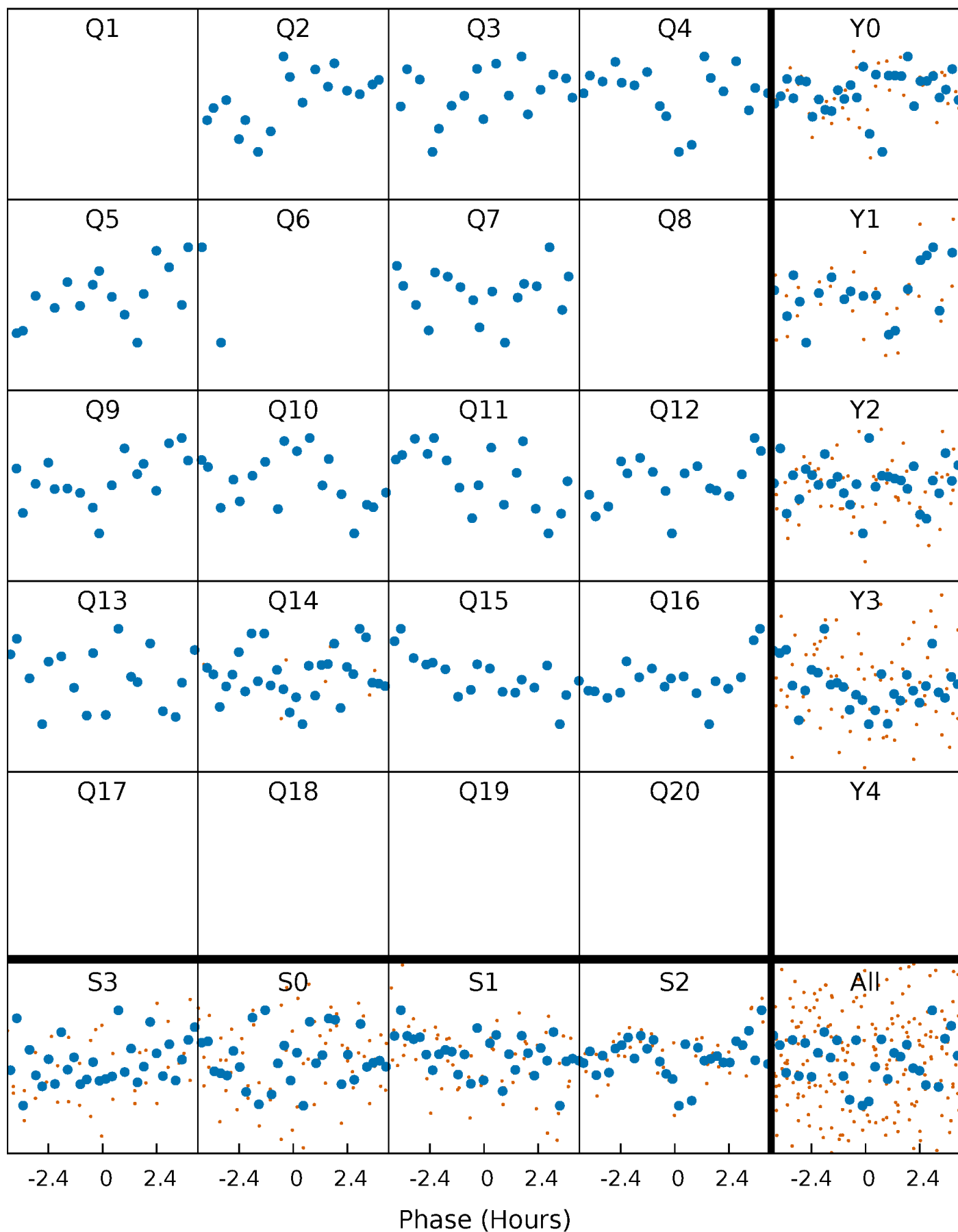


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



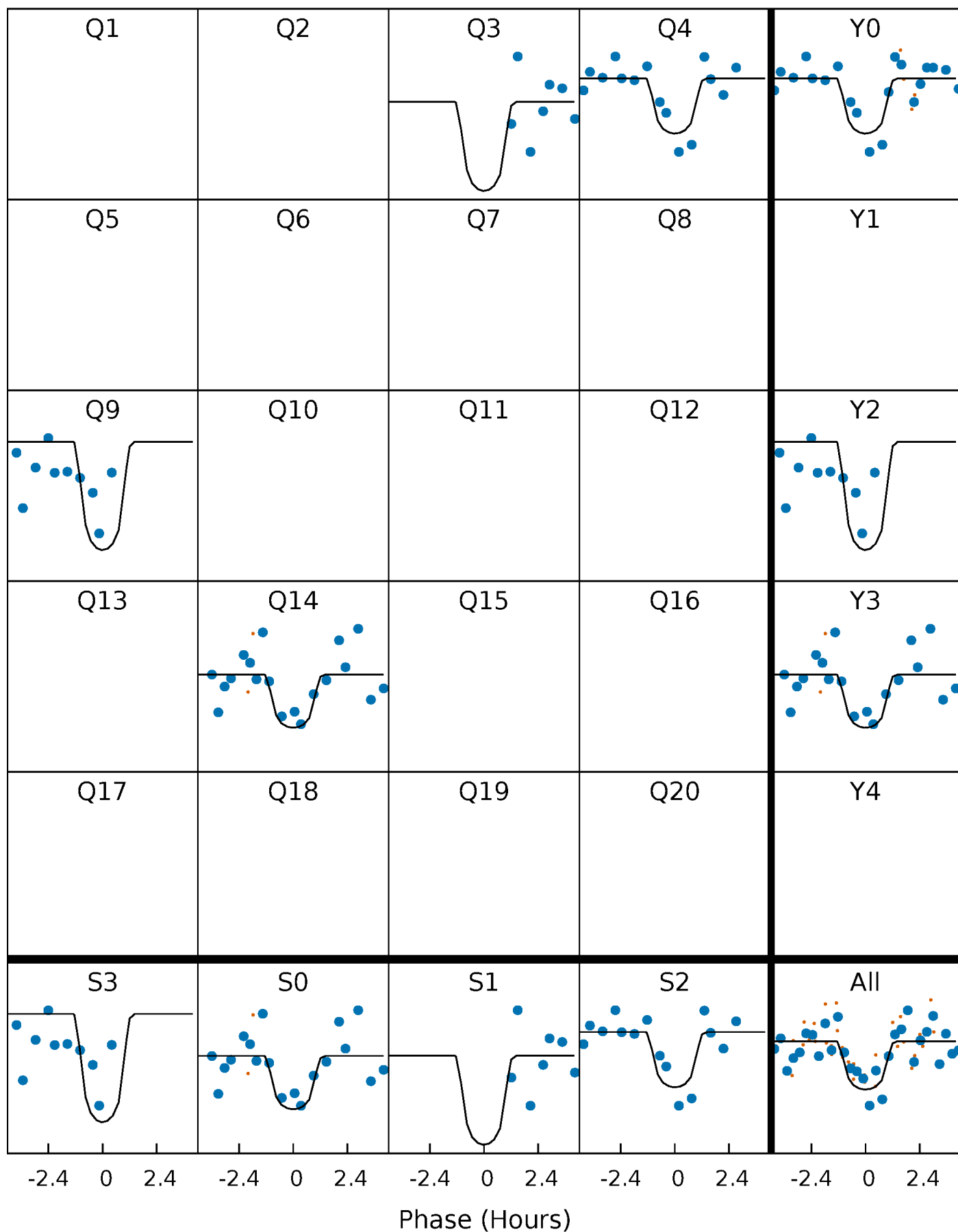
PDC Quarter-Phased Transit Curves

TCE 009673009-05 $P = 79.499201$ Days $T_0 = 169.162431$ (BKJD)



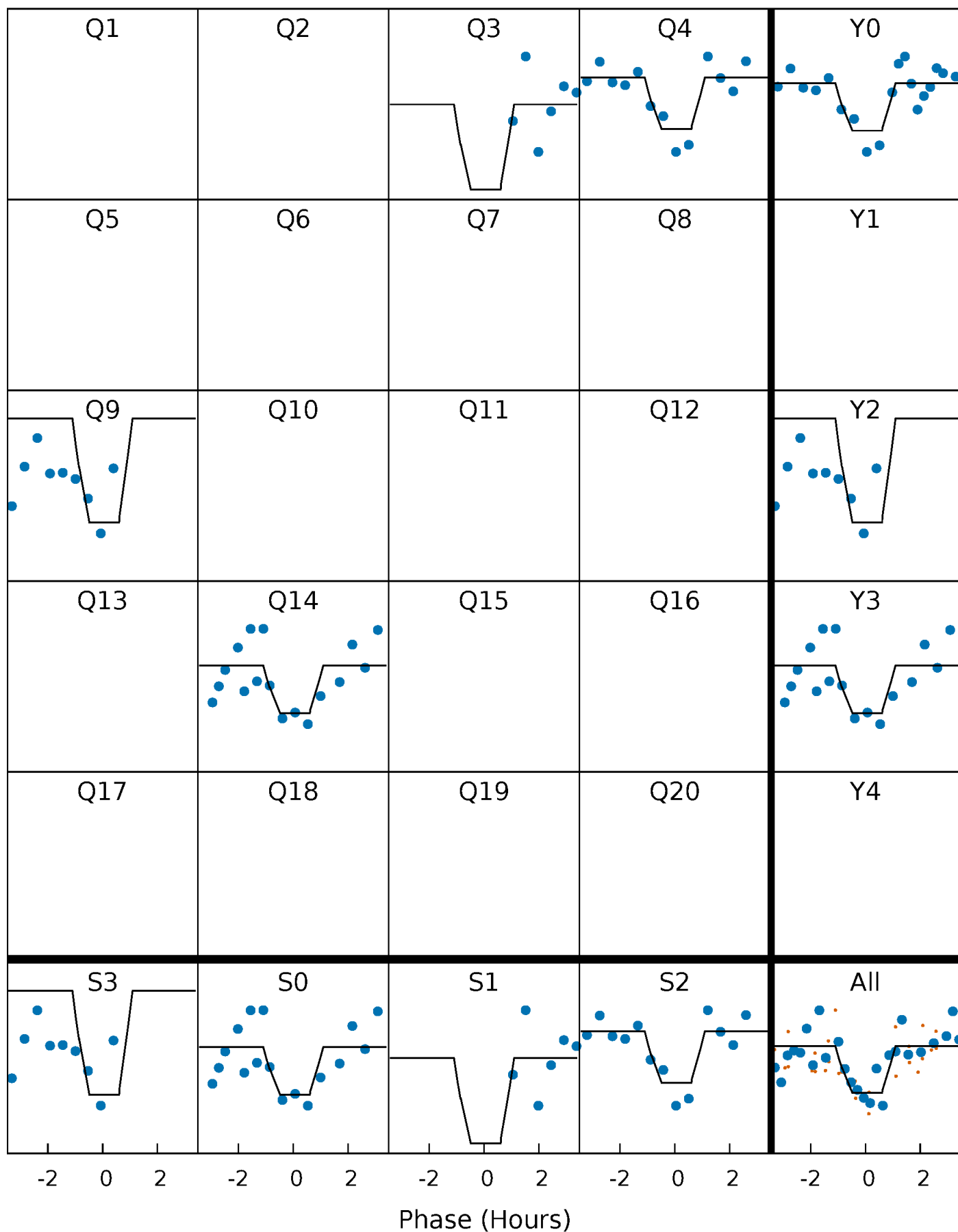
DV Quarter-Phased Transit Curves

TCE 009673009-05 P= 79.499201 Days $T_0=169.162431$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

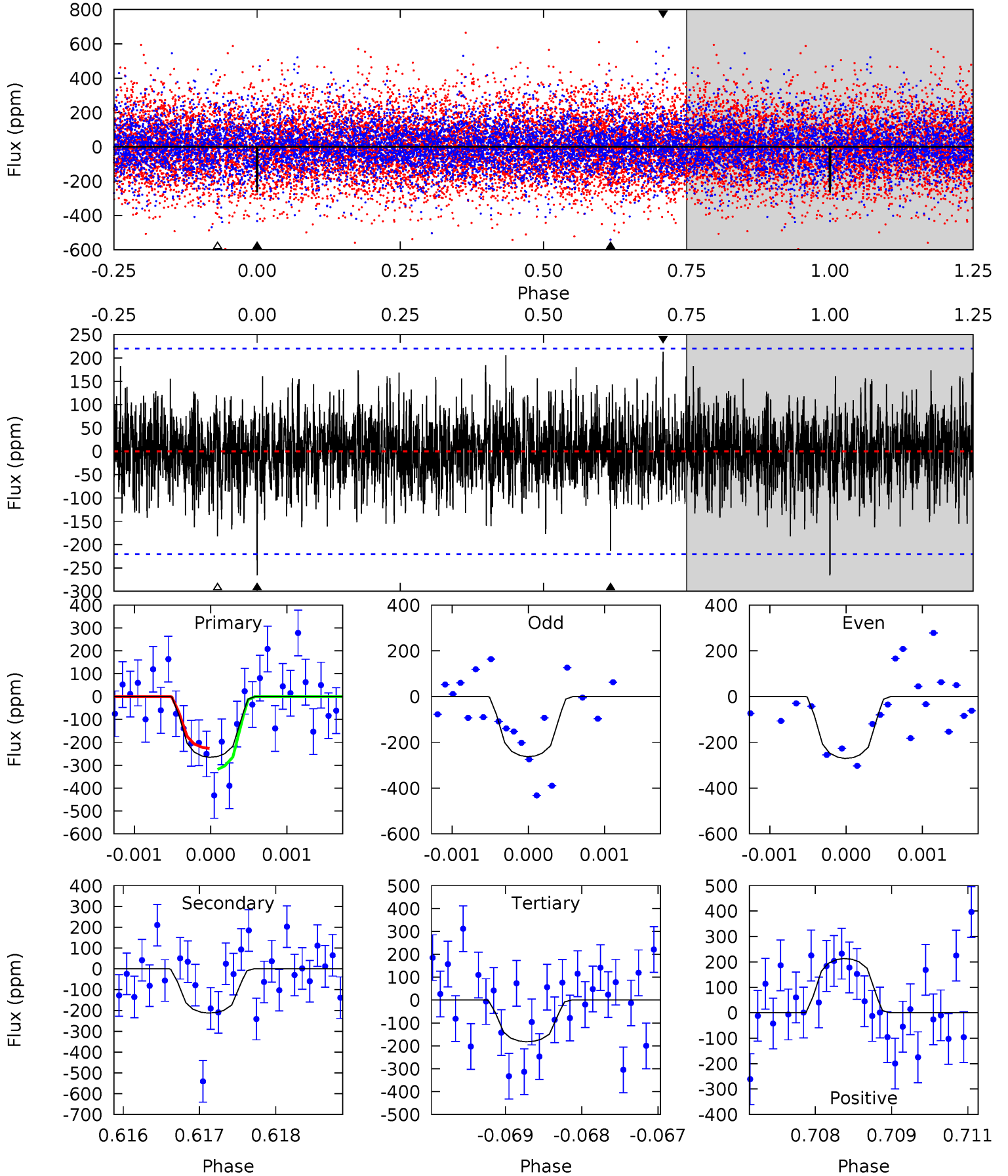
TCE 009673009-05 $P = 79.498140$ Days $T_0 = 169.170076$ (BKJD)



DV Model-Shift Uniqueness Test

009673009-05, P = 79.499201 Days, E = 89.663230 Days

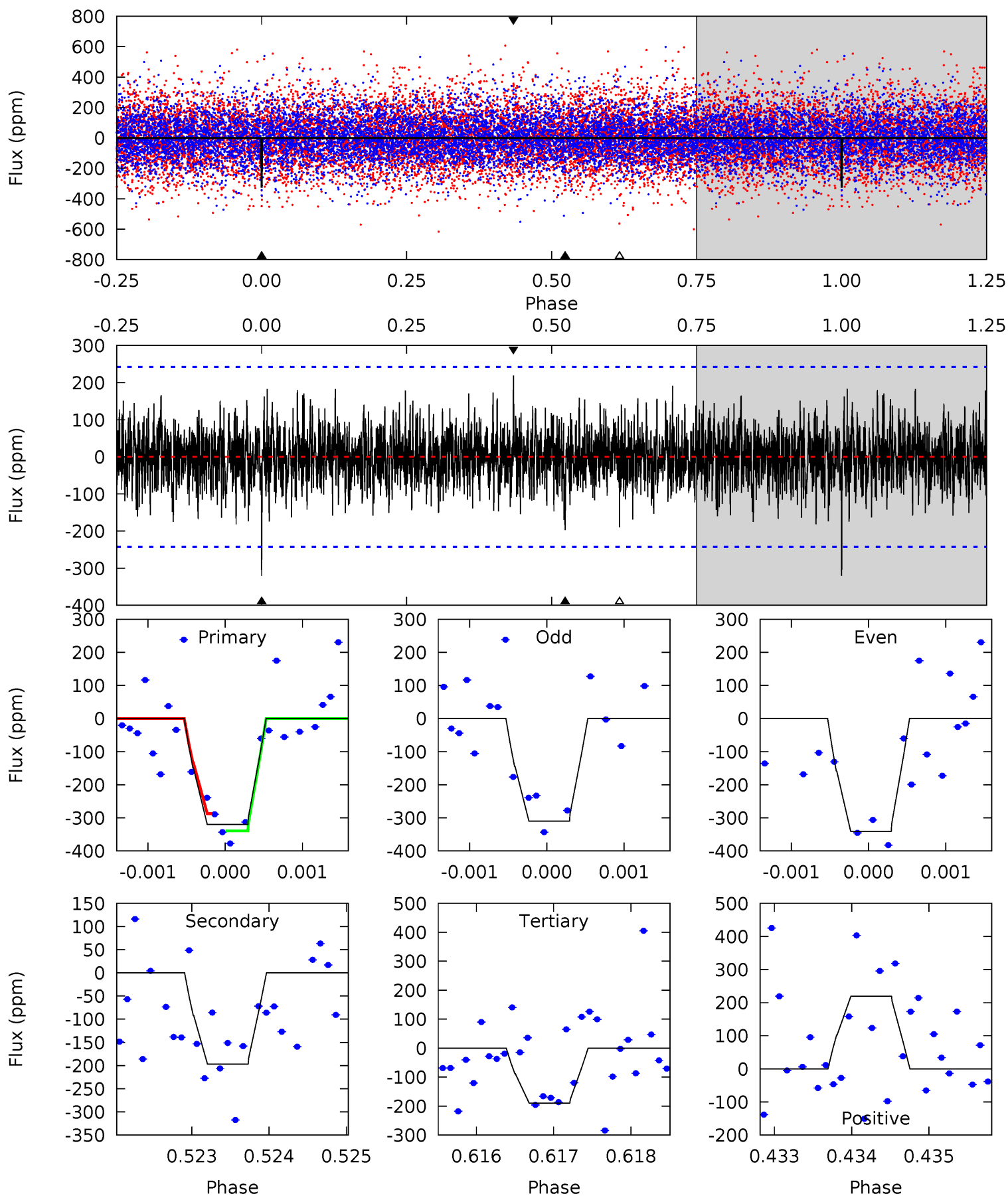
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.52	5.22	4.47	5.23	5.41	3.22	1.37	2.05	1.28	0.75	-0.01	0.10	0.97	0.45	1.13



Alt Model-Shift Uniqueness Test

009673009-05, P = 79.498140 Days, E = 89.671936 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.19	4.43	4.26	4.92	5.44	3.27	1.26	2.93	2.27	0.17	-0.49	0.34	0.93	0.41	0.58



Stellar Parameters For KIC 009673009

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4980^{+136}_{-121}	$3.739^{+0.840}_{-0.360}$	$-0.180^{+0.300}_{-0.200}$	$2.105^{+1.351}_{-1.351}$	$0.887^{+0.278}_{-0.149}$	$0.134^{+2.597}_{-0.097}$
	+3%/-2%	+22%/-10%	+167%/-111%	+64%/-64%	+31%/-17%	+1941%/-73%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009673009-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-213 ± 41	$7.28^{+7.77}_{-4.98}$	733^{+130}_{-138}	3593^{+1876}_{-624}	265^{+2388}_{-204}
Alt.	-197 ± 45	$6.65^{+7.65}_{-4.74}$	740^{+129}_{-132}	3647^{+2053}_{-652}	308^{+3323}_{-249}

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

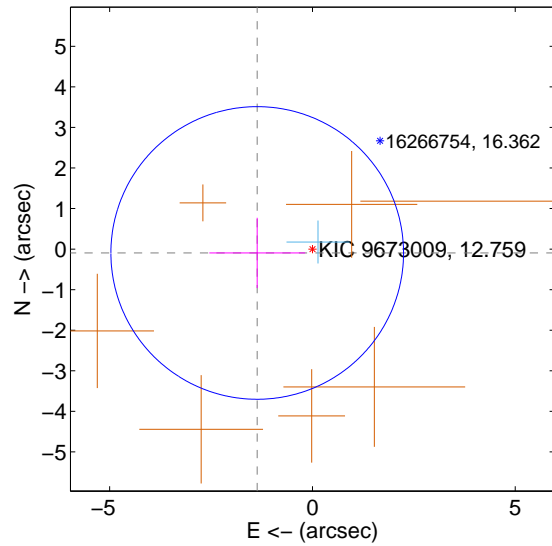
Supplemental centroid analysis for 009673009-05. Kepler magnitude: 12.76. Transit SNR 9.23

There are 1 quarters with good PRF difference image offsets

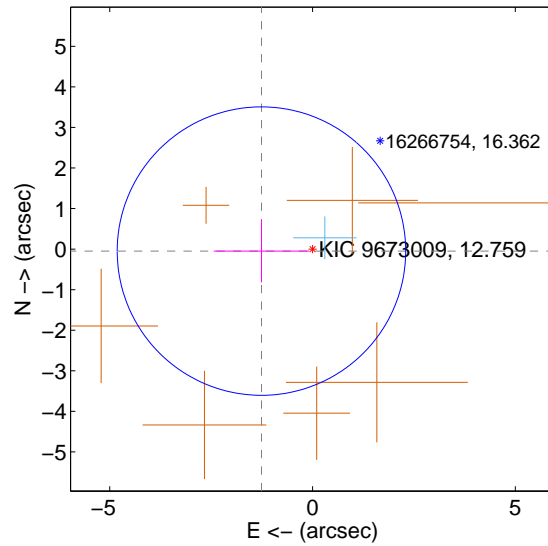
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.365 ± 1.203	1.14	1.362 ± 1.182	-0.095 ± 0.866
PRF-fit source offset from KIC position	1.260 ± 1.186	1.06	1.259 ± 1.176	-0.049 ± 0.770
photometric centroid source offset	0.75 ± 0.84	0.90	-0.02 ± 1.14	-0.75 ± 0.84

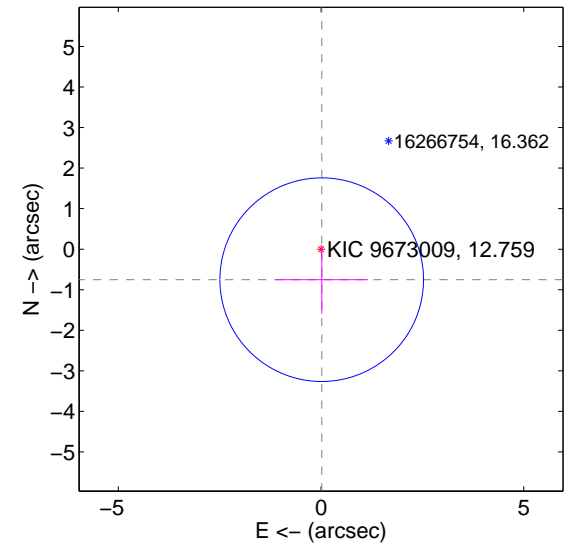
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

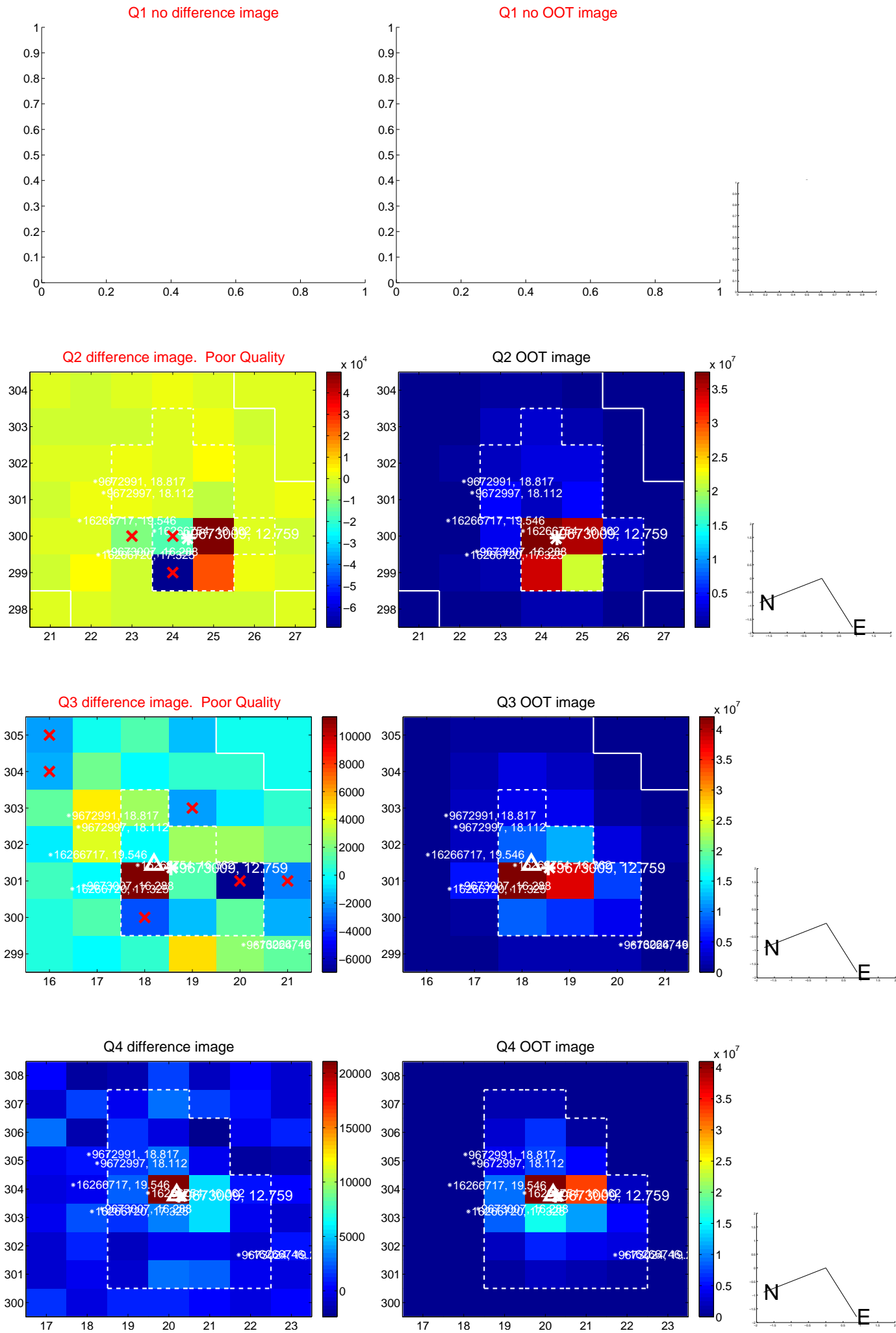


offset from photometric centroids

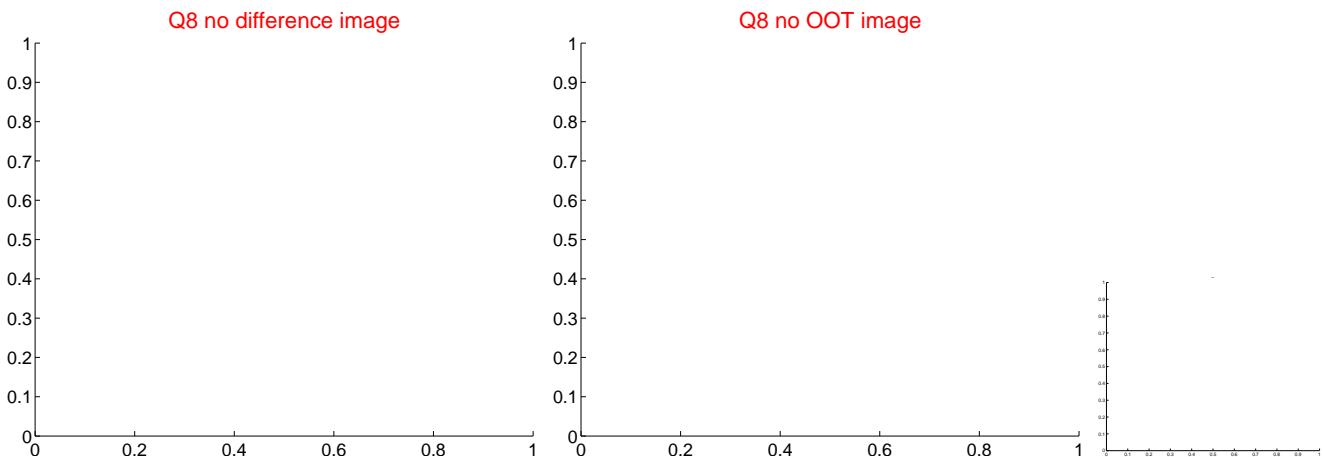
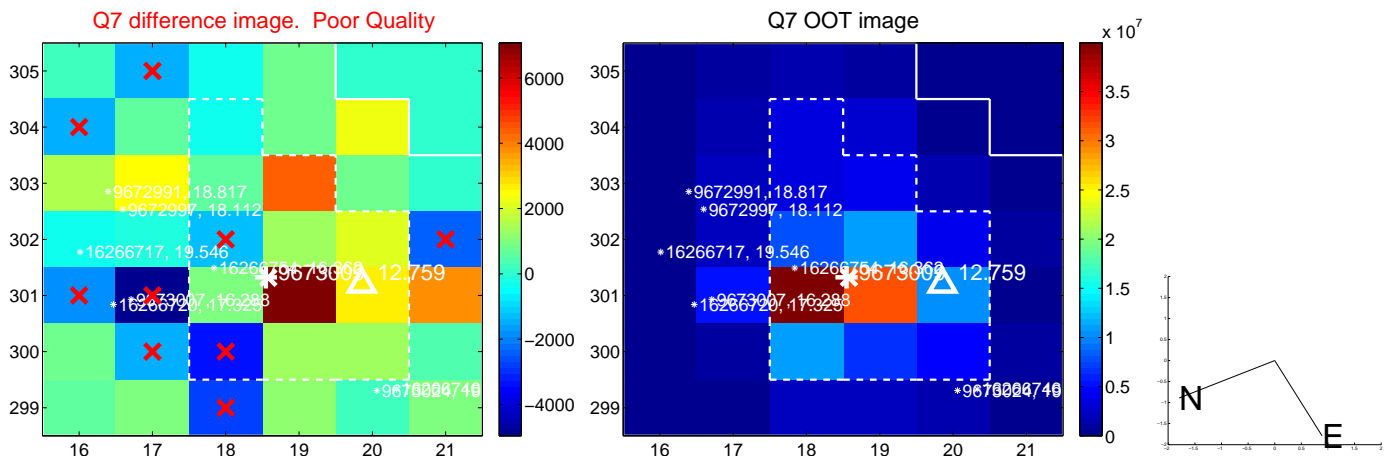
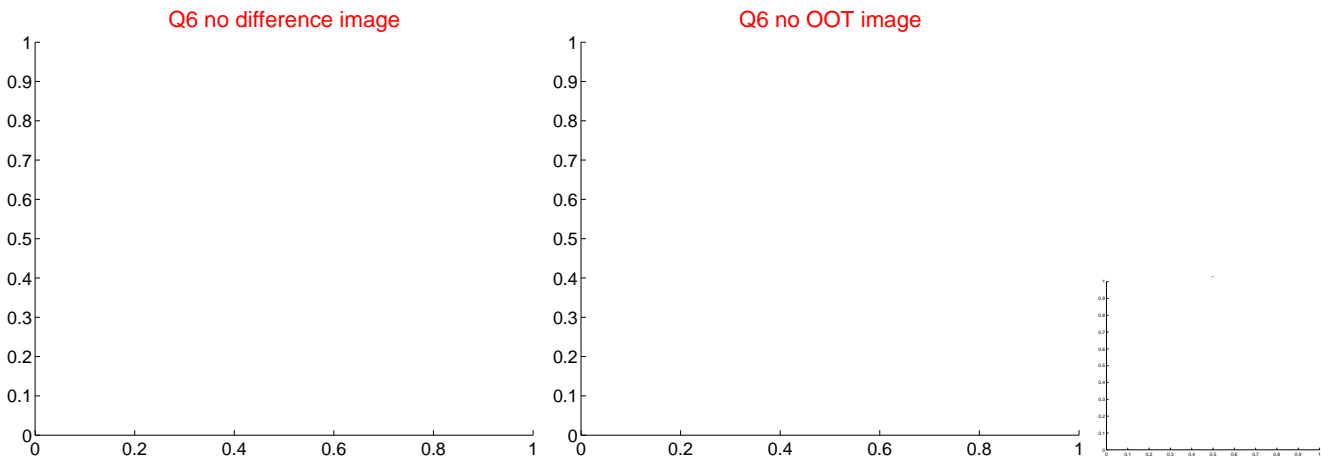
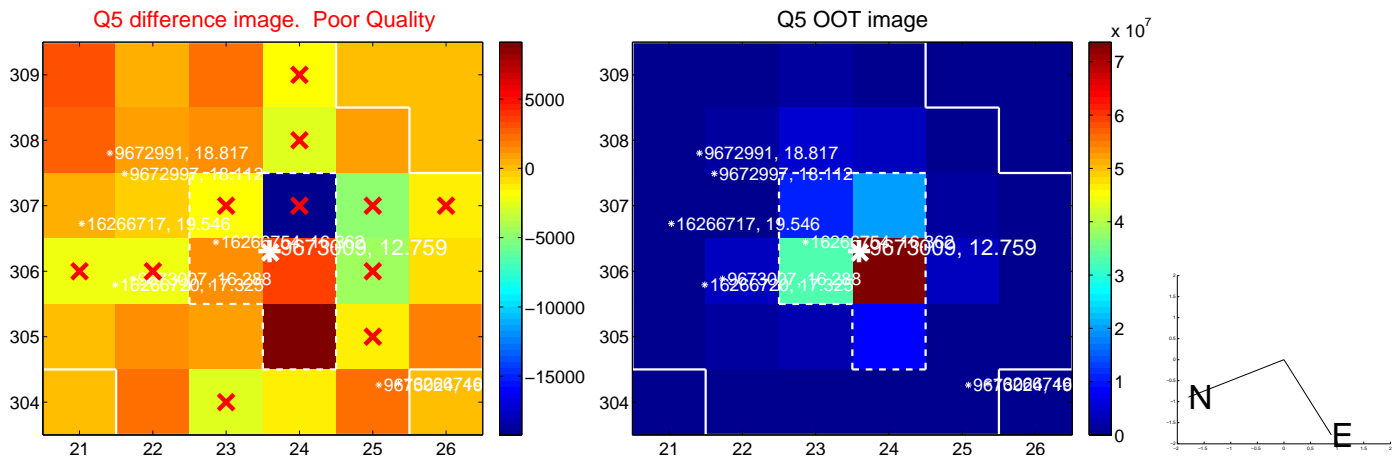


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

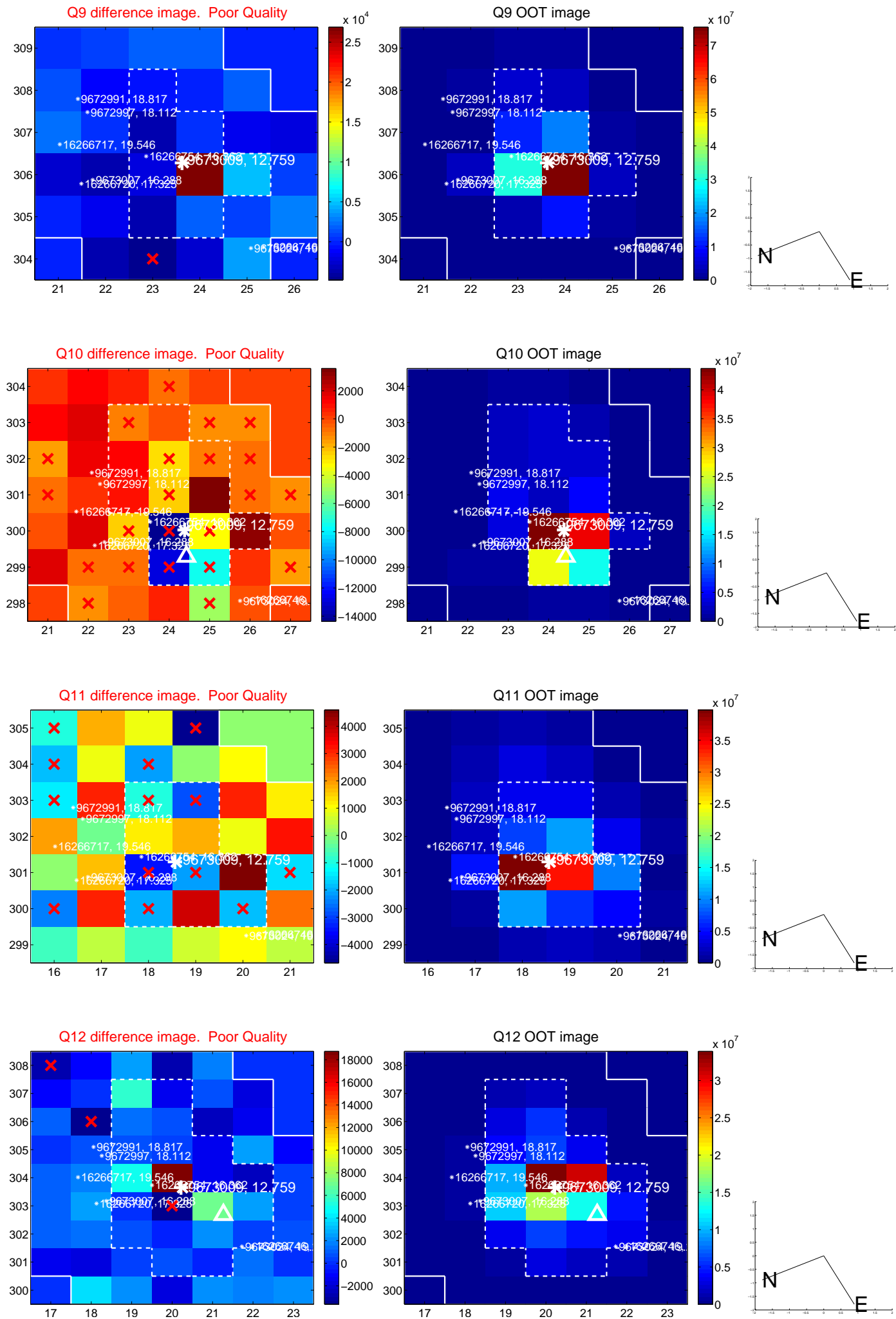
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



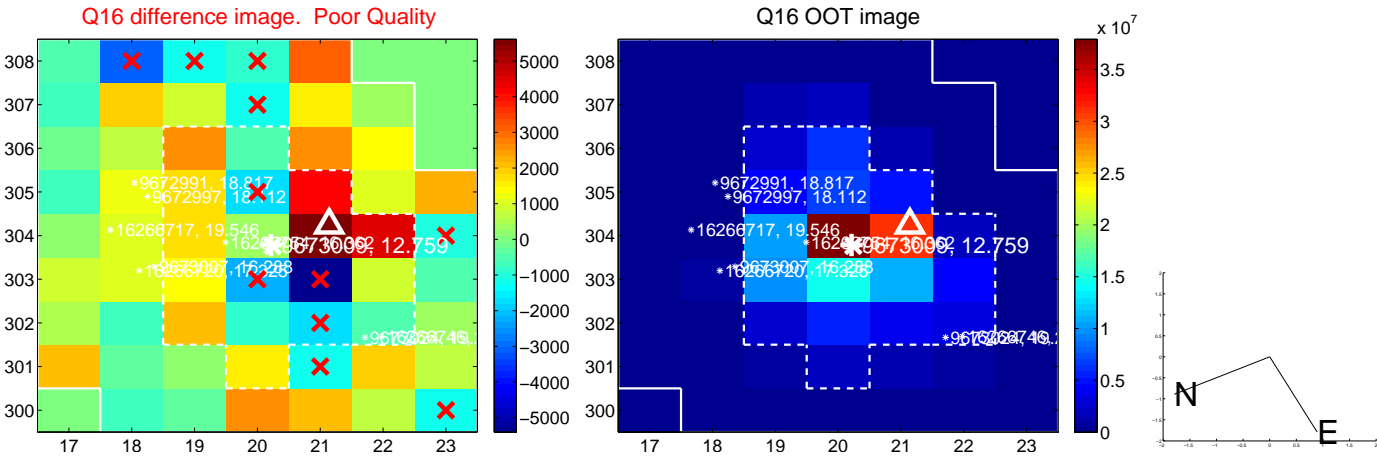
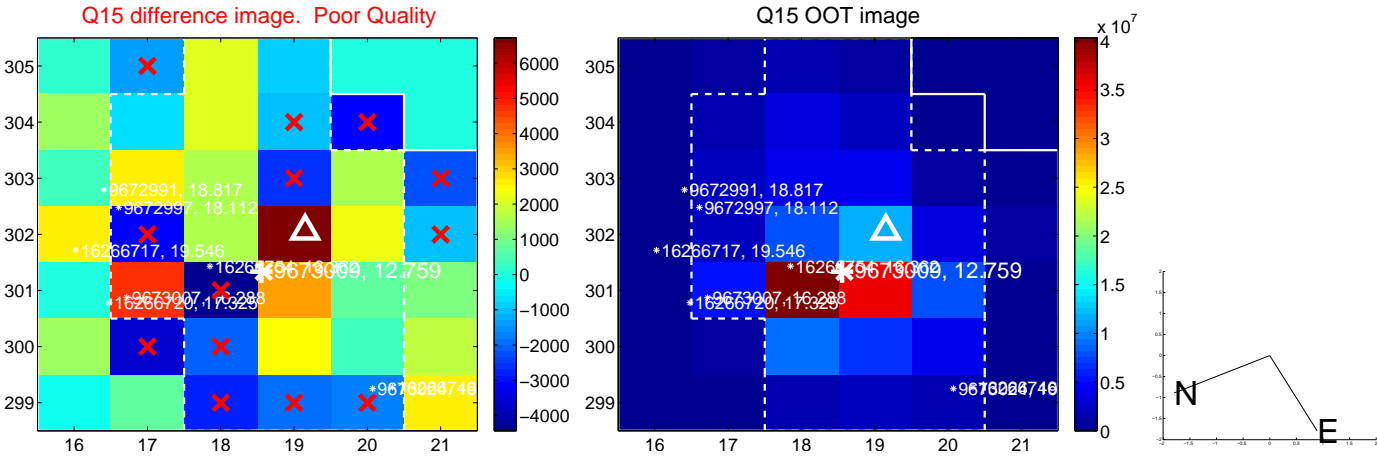
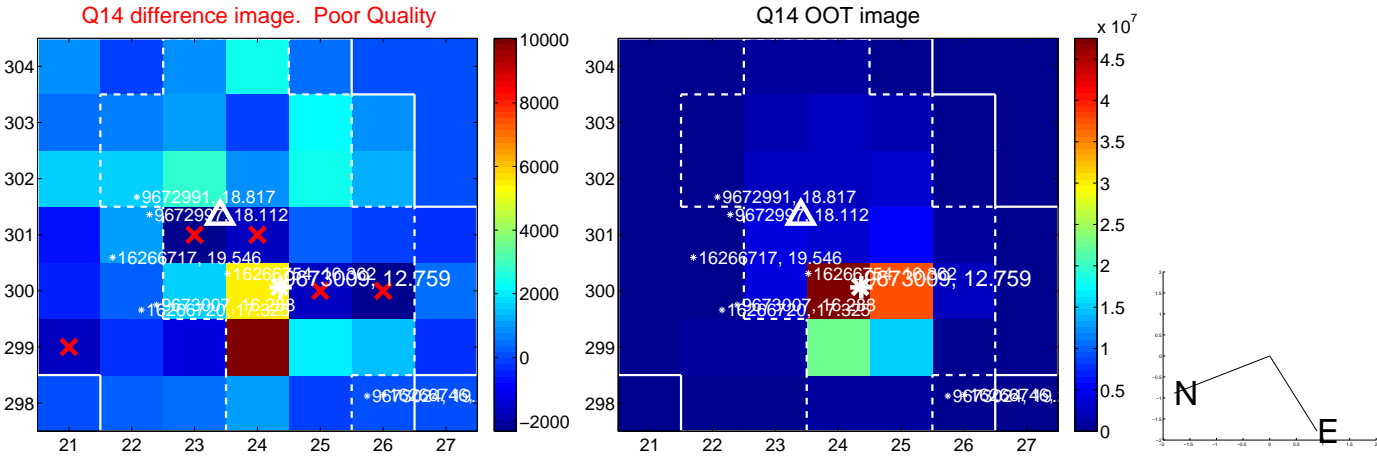
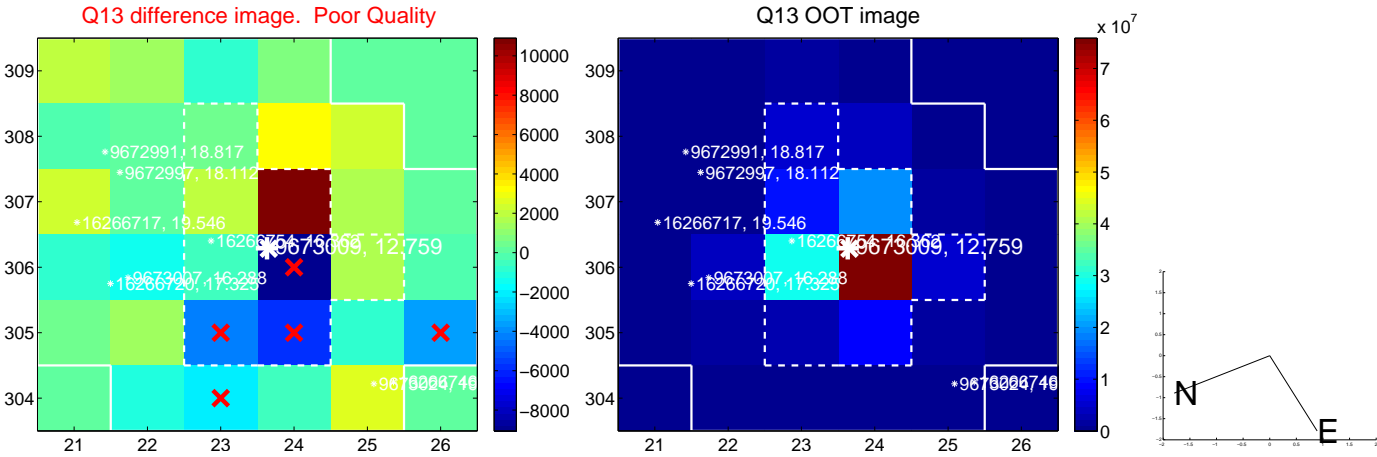
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



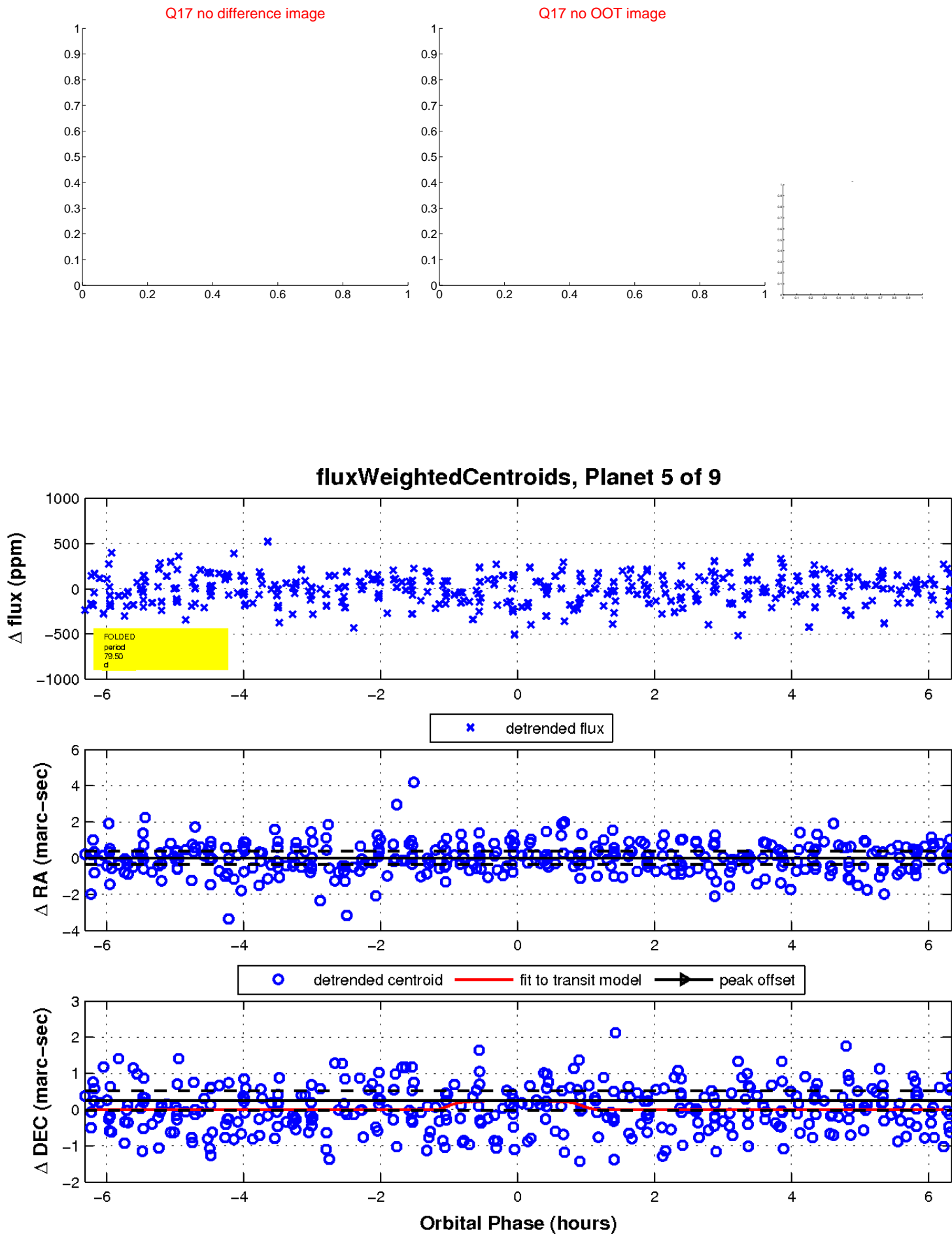
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



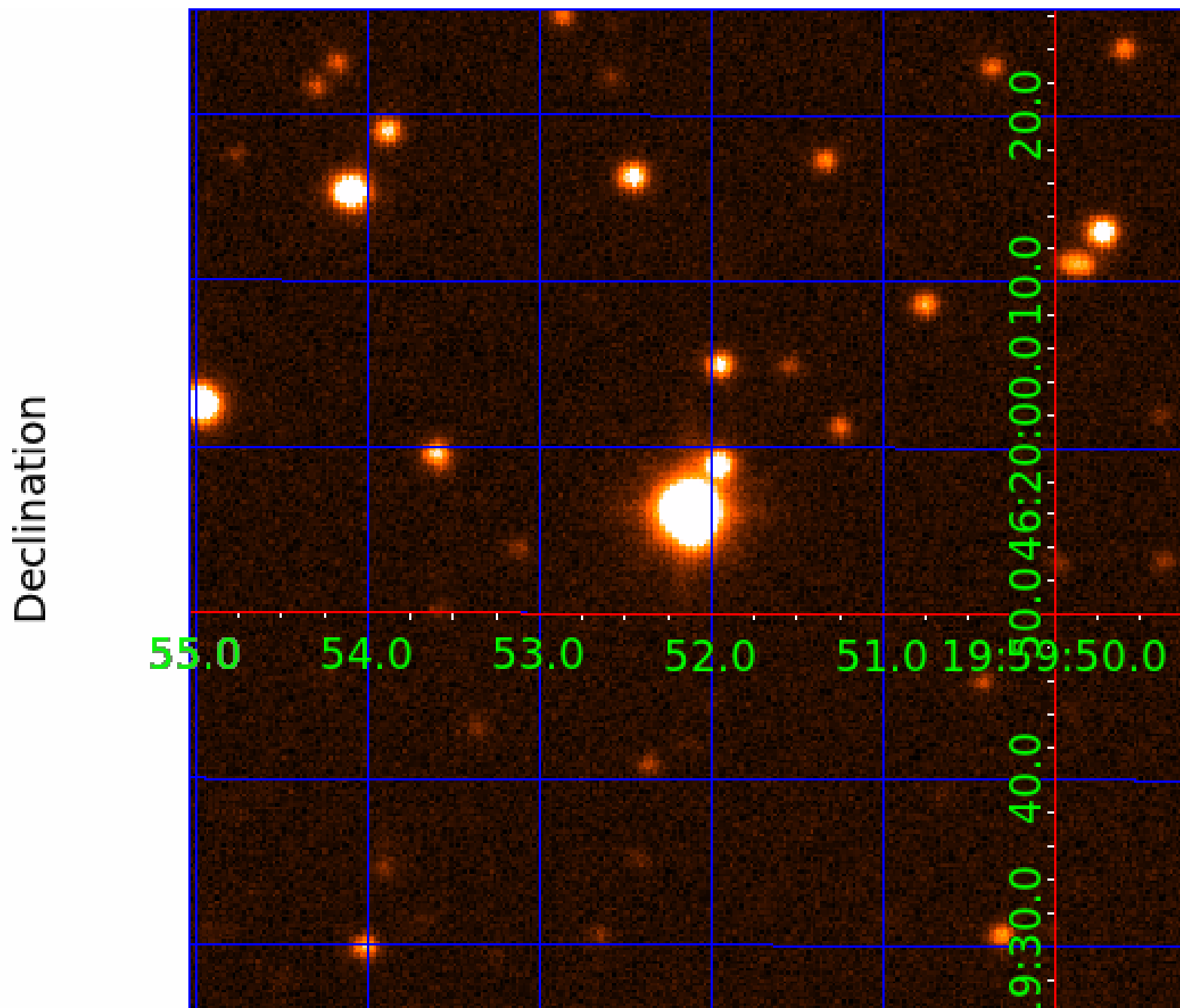
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009673009

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})
009673009-01	OBS	No	1.721726	132.966391	15.9	10.520	8.9	7.3	2.10	4980	0.81	3347.30
009673009-02	OBS	No	108.723993	157.600626	406.6	1.921	9.2	10.1	2.10	4980	5.16	13.31
009673009-03	OBS	No	53.789312	175.657282	196.2	3.546	8.4	9.0	2.10	4980	3.26	34.02
009673009-04	OBS	No	72.042103	196.805170	313.6	2.777	8.2	8.9	2.10	4980	7.11	23.04
009673009-05	OBS	No	79.499201	169.162431	324.7	2.116	7.9	9.2	2.10	4980	4.36	20.21
009673009-06	OBS	No	33.976012	156.889378	188.7	2.332	8.2	8.5	2.10	4980	3.83	62.77
009673009-07	OBS	No	36.715684	151.364416	250.6	1.628	7.9	8.6	2.10	4980	3.25	56.60
009673009-08	OBS	No	58.636647	147.578702	184.5	3.207	7.5	8.0	2.10	4980	3.48	30.32
009673009-09	OBS	No	43.354274	153.079658	220.9	1.415	7.4	8.1	2.10	4980	3.34	45.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009673009-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET
009673009-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009673009-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009673009-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009673009-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

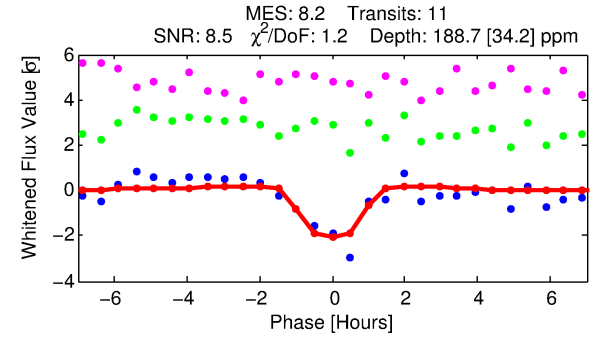
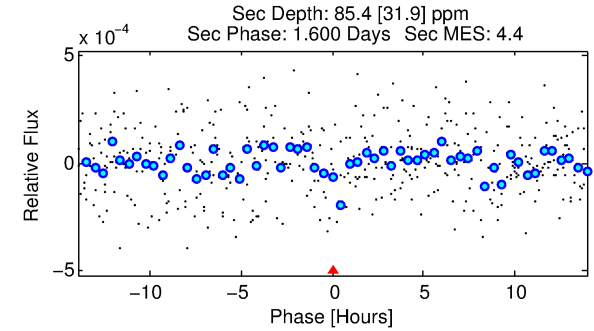
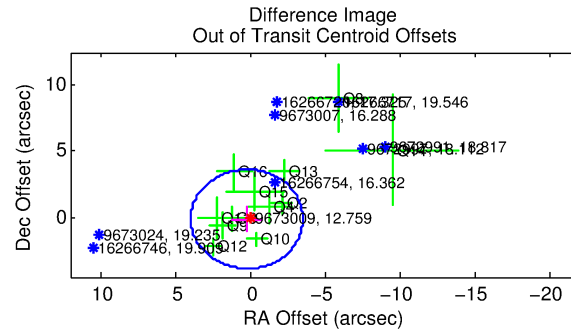
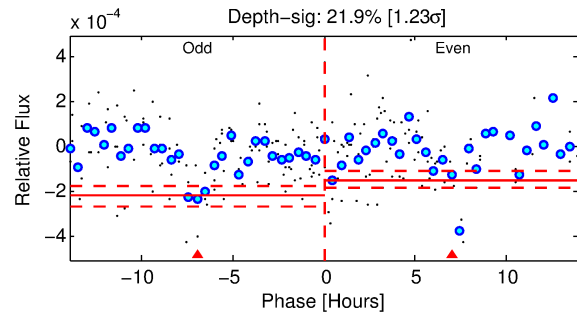
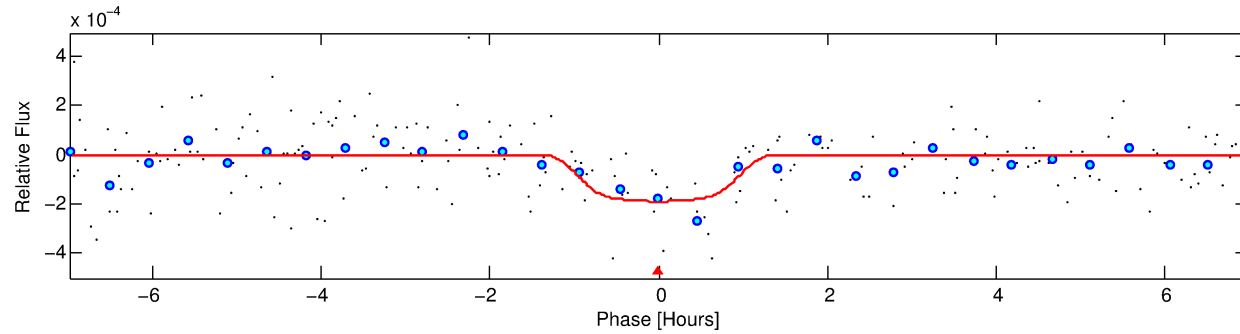
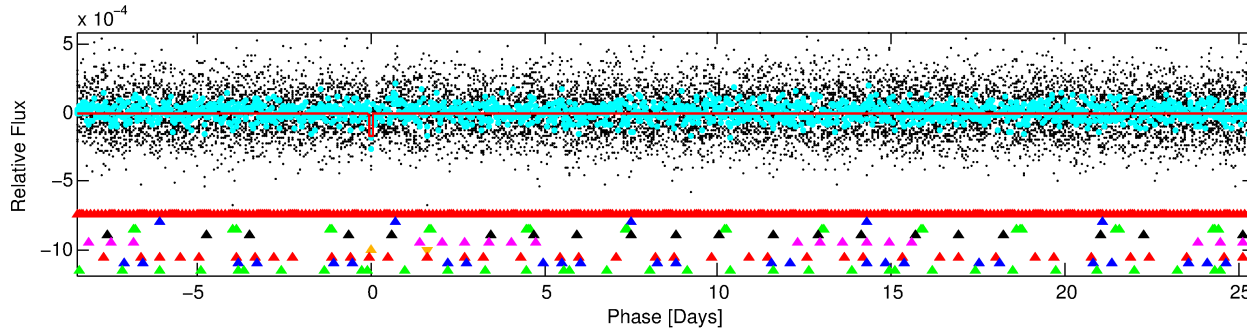
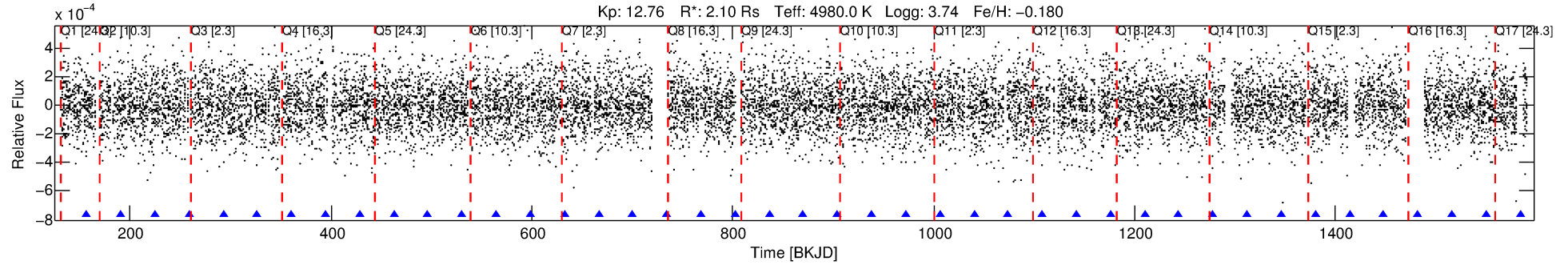
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009673009-06

No Significant Match Found

DV One-Page Summary

KIC: 9673009 Candidate: 6 of 9 Period: 33.976 d



DV Fit Results:

Period = 33.97601 [0.00041] d
Epoch = 156.8894 [0.0086] BKJD
Rp/R* = 0.0167 [0.0124]
a/R* = 39.44 [130.59]
b = 0.95 [0.33]
Seff = 62.77 [85.55]
Teq = 718 [245] K
Rp = 3.82 [3.77] Re
a = 0.1972 [0.1526] AU
Ag = 124.99 [256.73] [0.48 σ]
Teffp = 3710 [1432] K [2.06 σ]

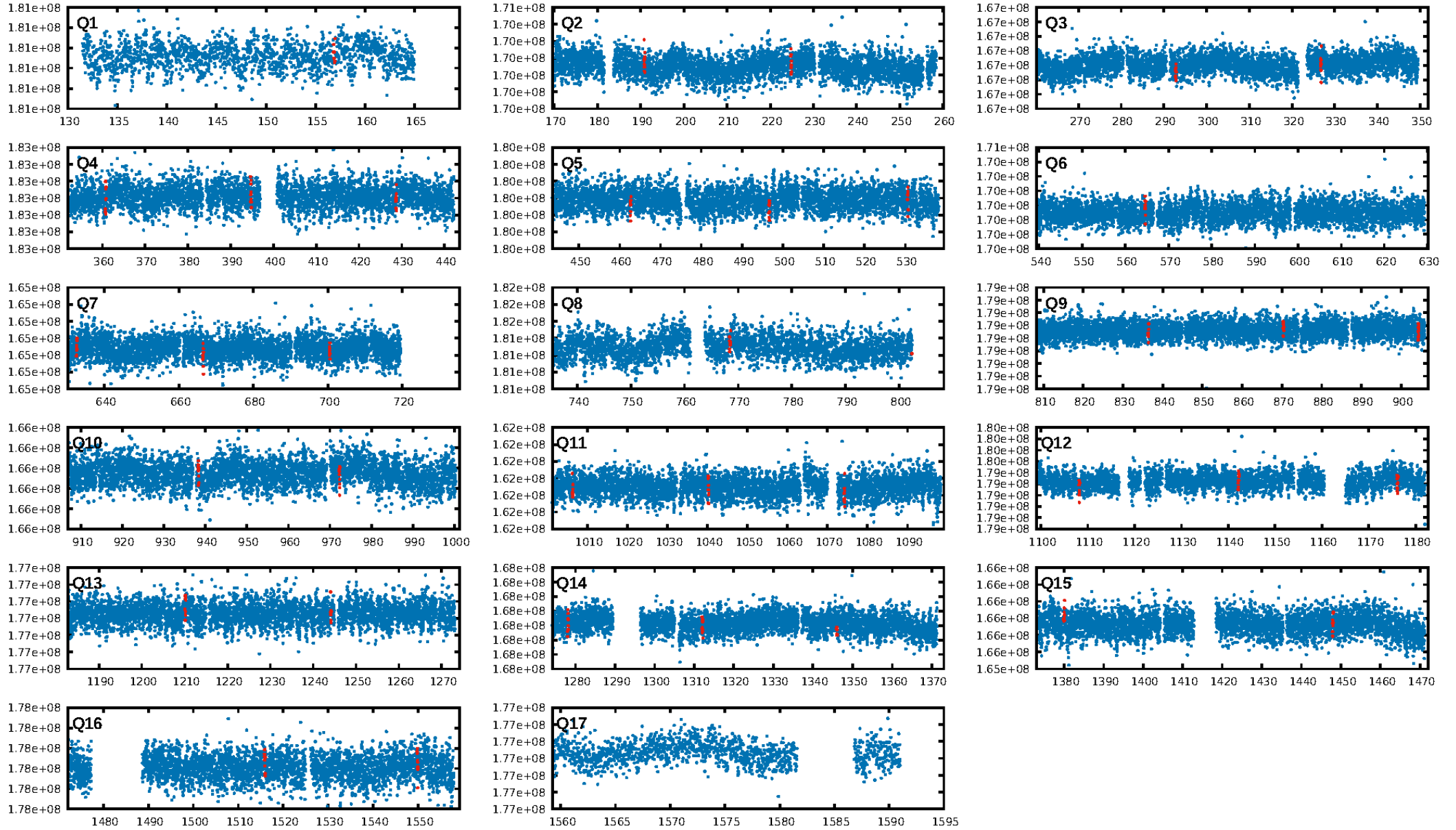
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [71.84 σ]
LongPeriod-sig: 100.0% [23.12 σ]
ModelChiSquare2-sig: 62.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.58e-08
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: -7.479
Centroid-sig: 7.0%
Centroid-so: 1.522 arcsec [1.40 σ]
OotOffset-rm: 0.237 arcsec [0.19 σ]
KicOffset-rm: 0.153 arcsec [0.12 σ]
OotOffset-st: 3/3/4/2 [12]
KicOffset-st: 3/3/4/2 [12]
DiffImageQuality-fgm: 0.25 [3/12]
DiffImageOverlap-fno: 0.75 [12/16]

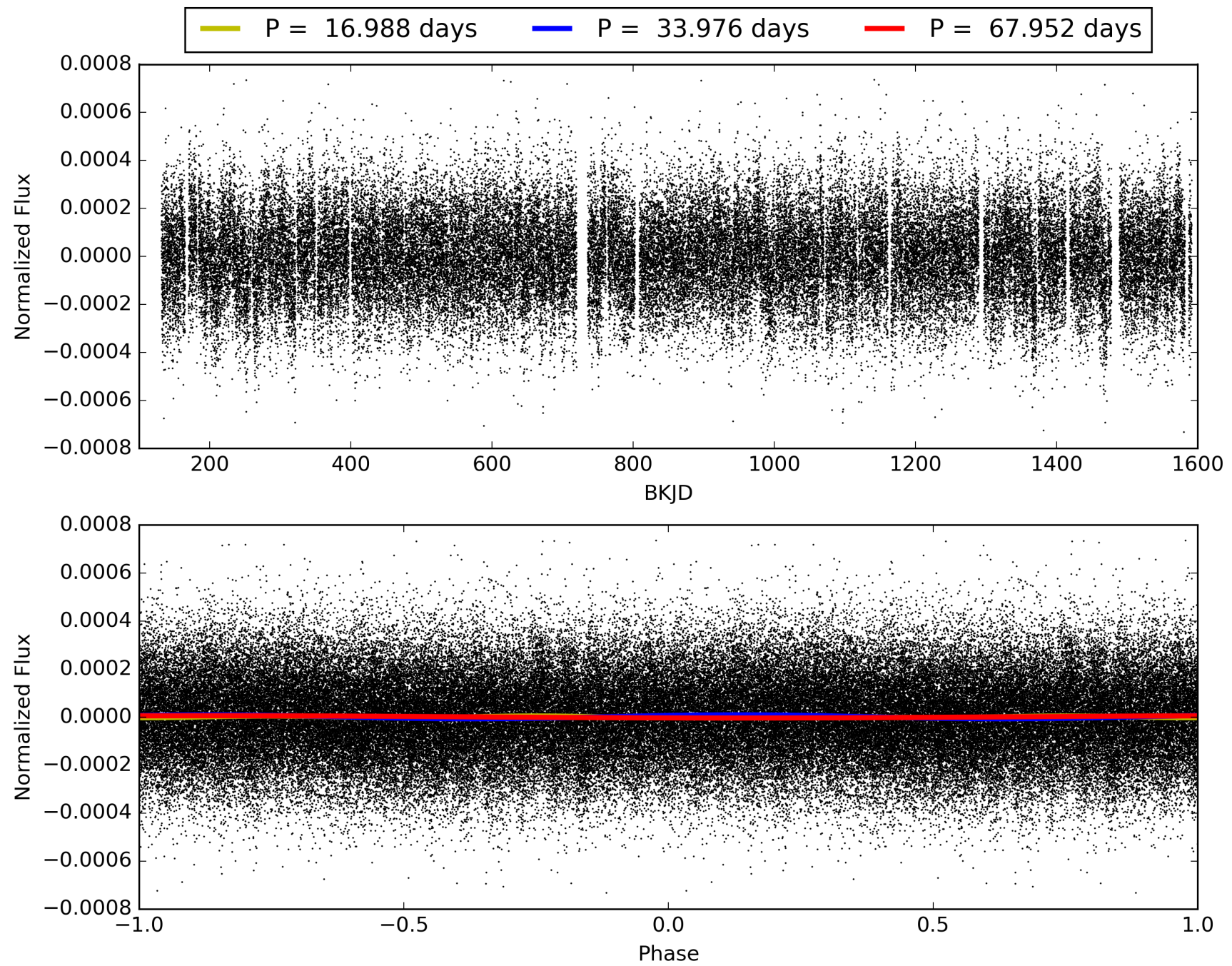
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:41:21 Z

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

TCE 009673009-06, PDC Light Curves

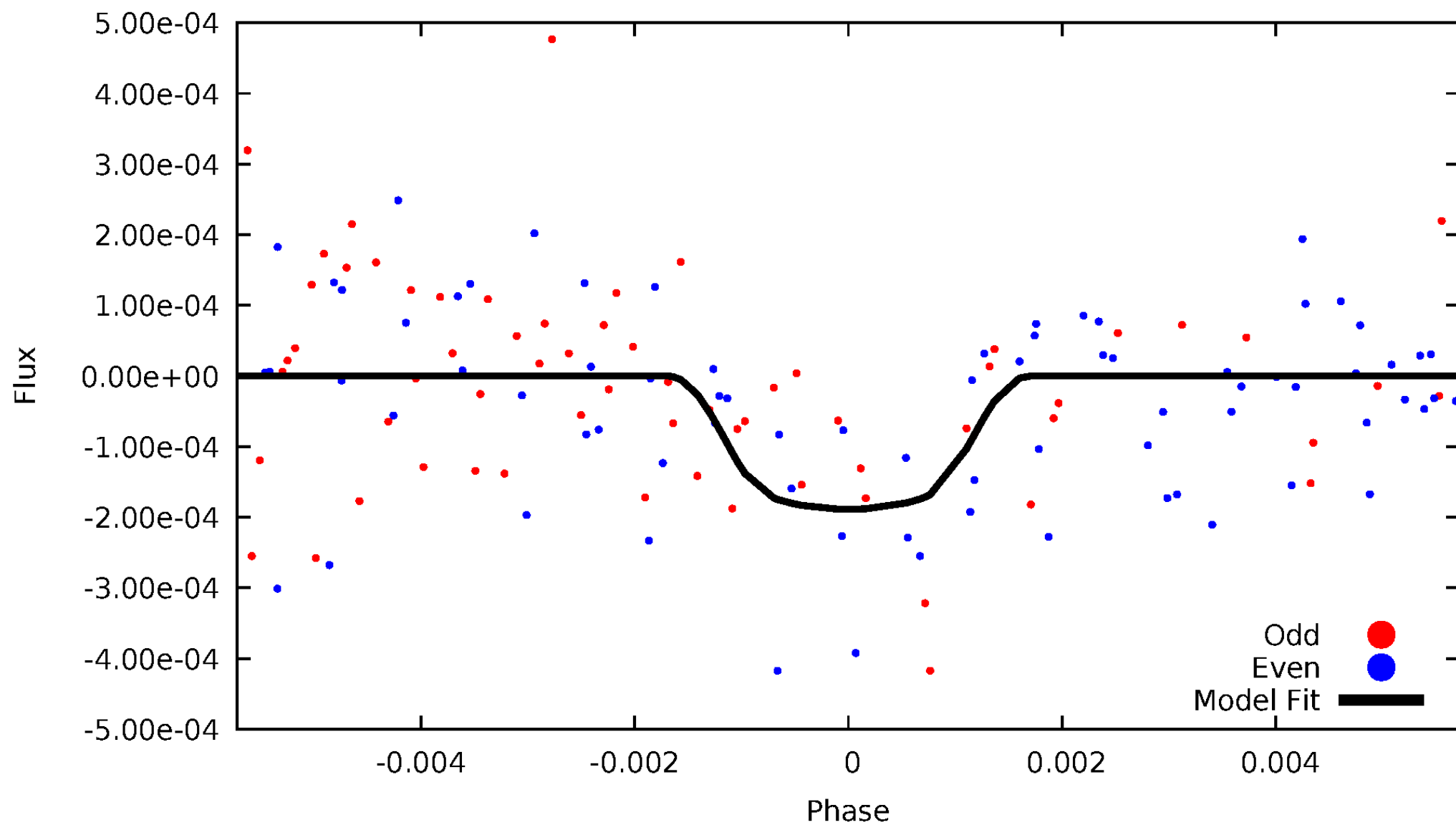


TCE 009673009-06



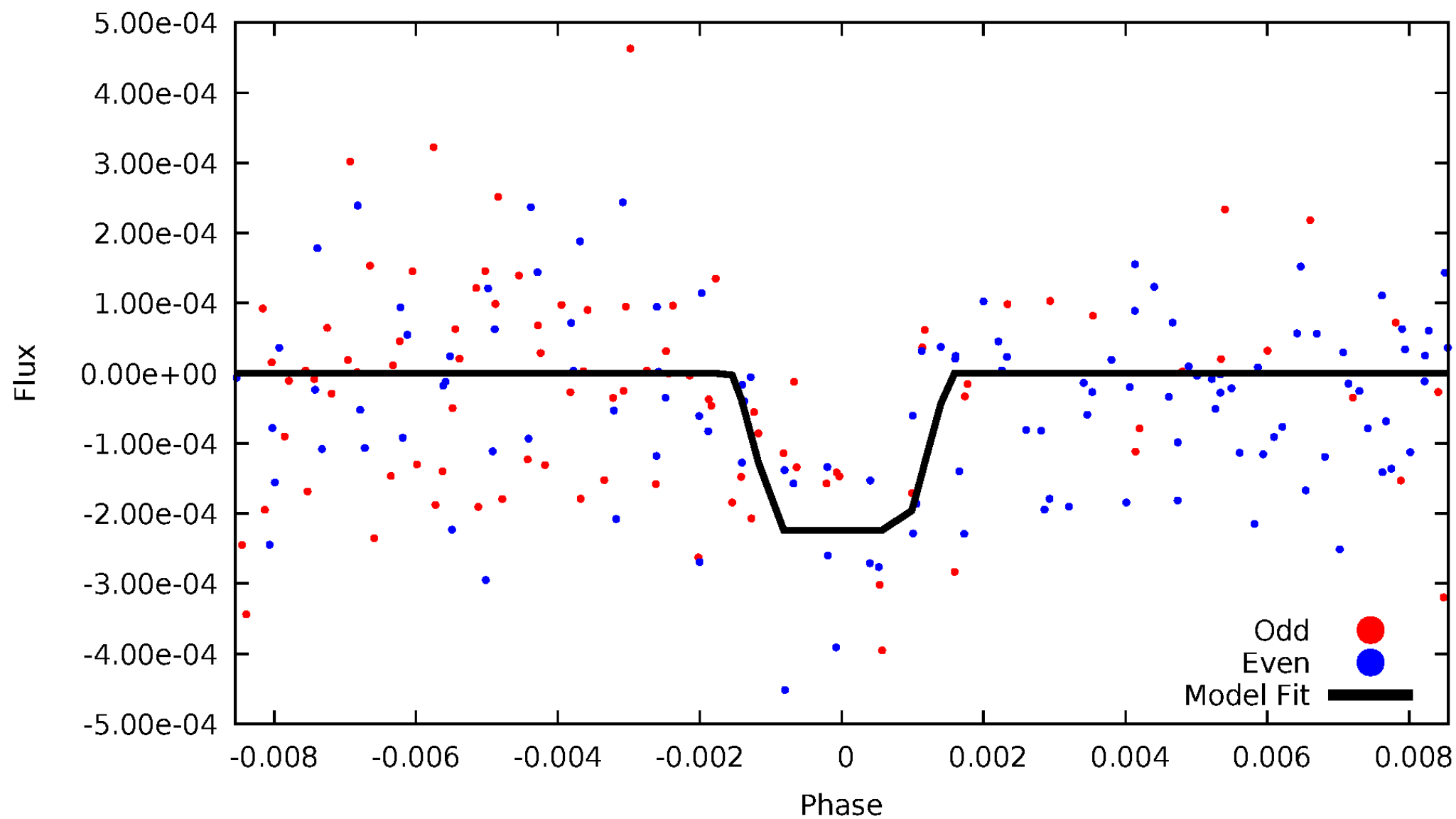
DV Odd/Even

TCE 009673009-06



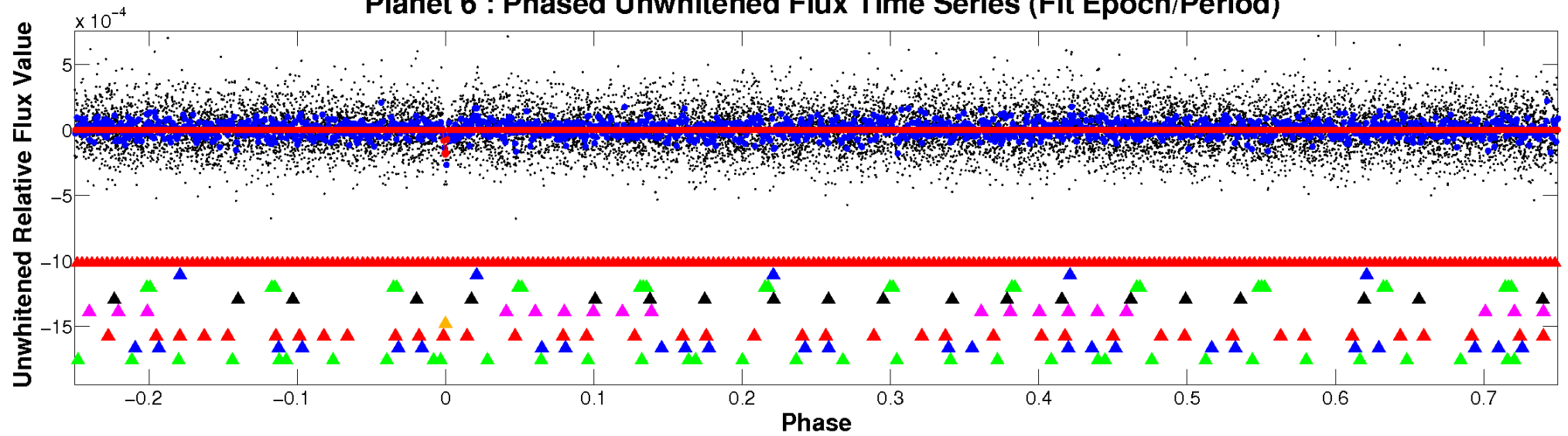
ALT Odd/Even

TCE 009673009-06

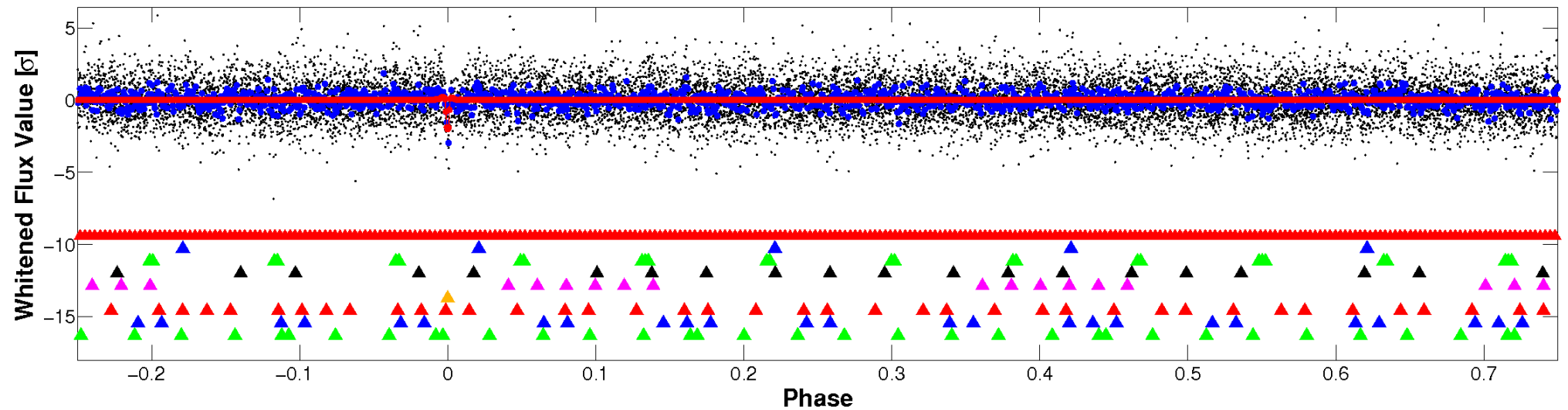


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

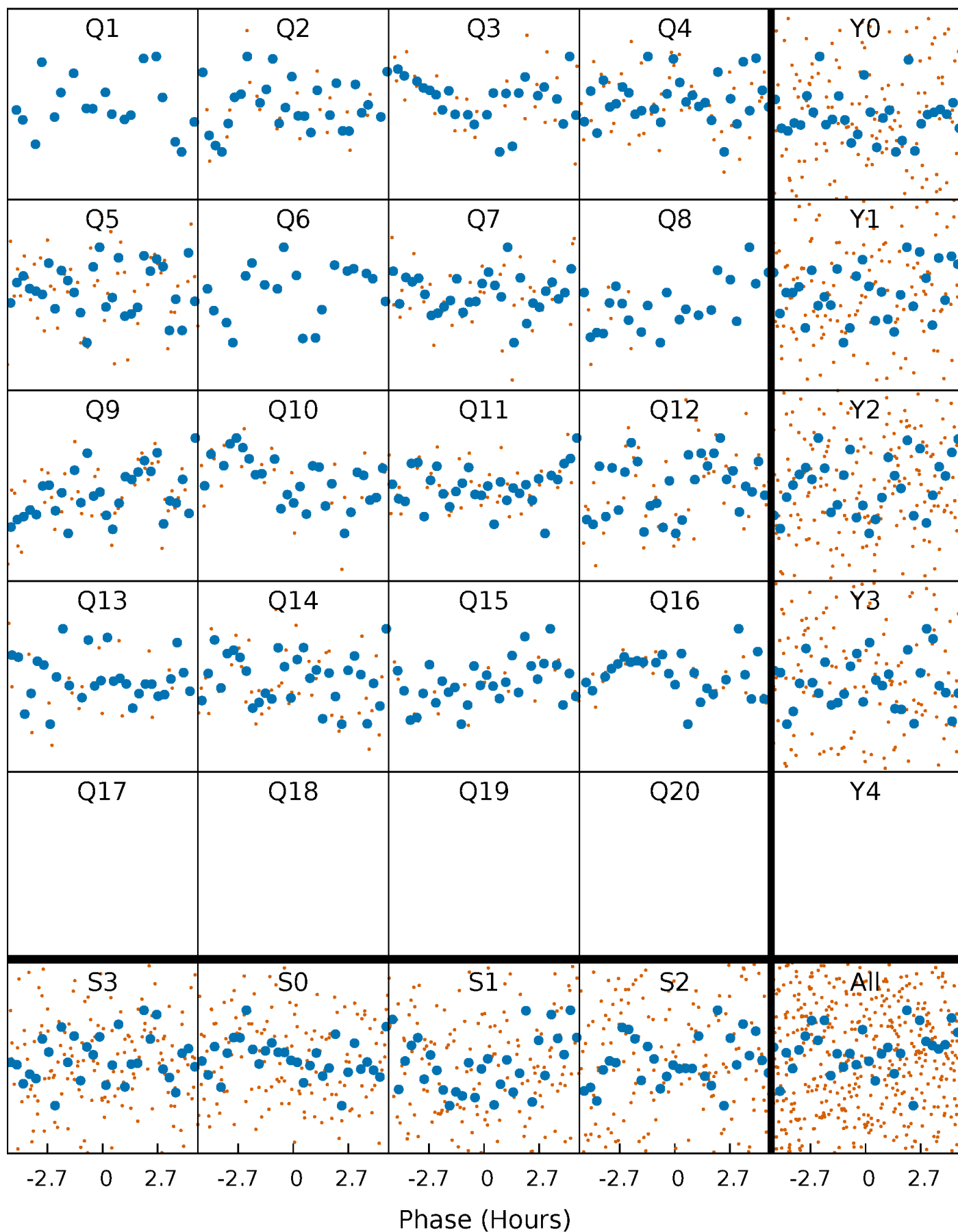


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



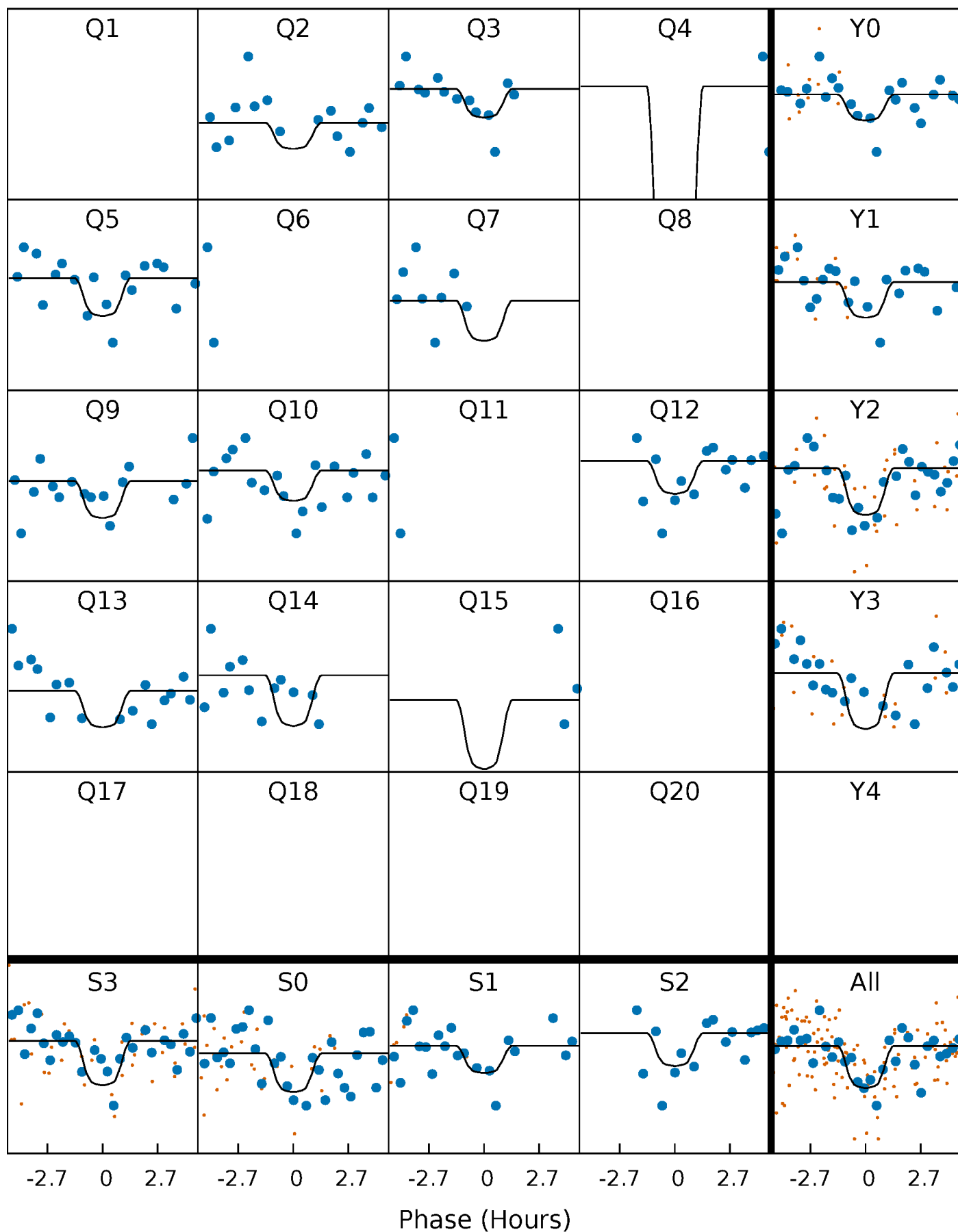
PDC Quarter-Phased Transit Curves

TCE 009673009-06 P= 33.976012 Days $T_0=156.889378$ (BKJD)



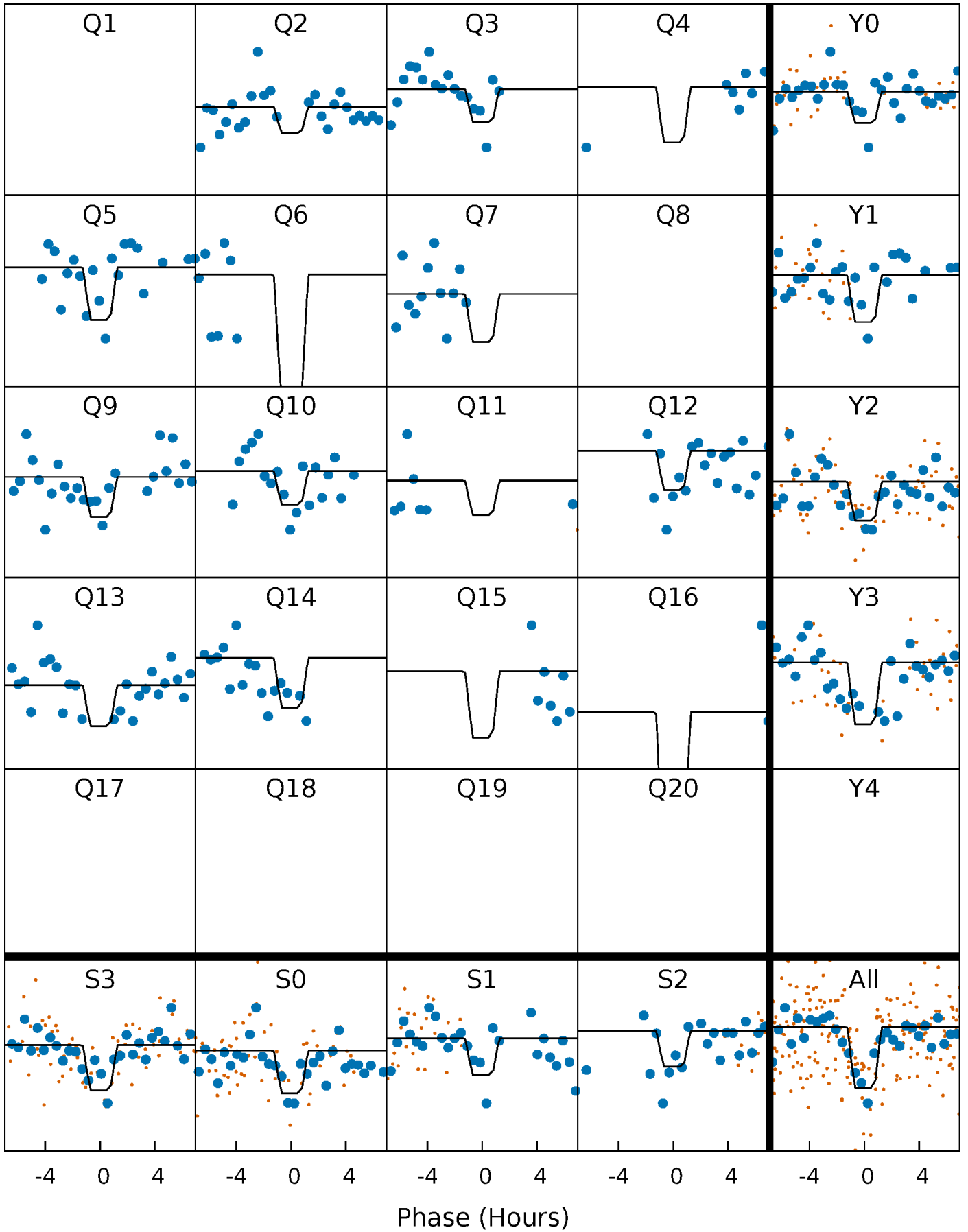
DV Quarter-Phased Transit Curves

TCE 009673009-06 P= 33.976012 Days $T_0=156.889378$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

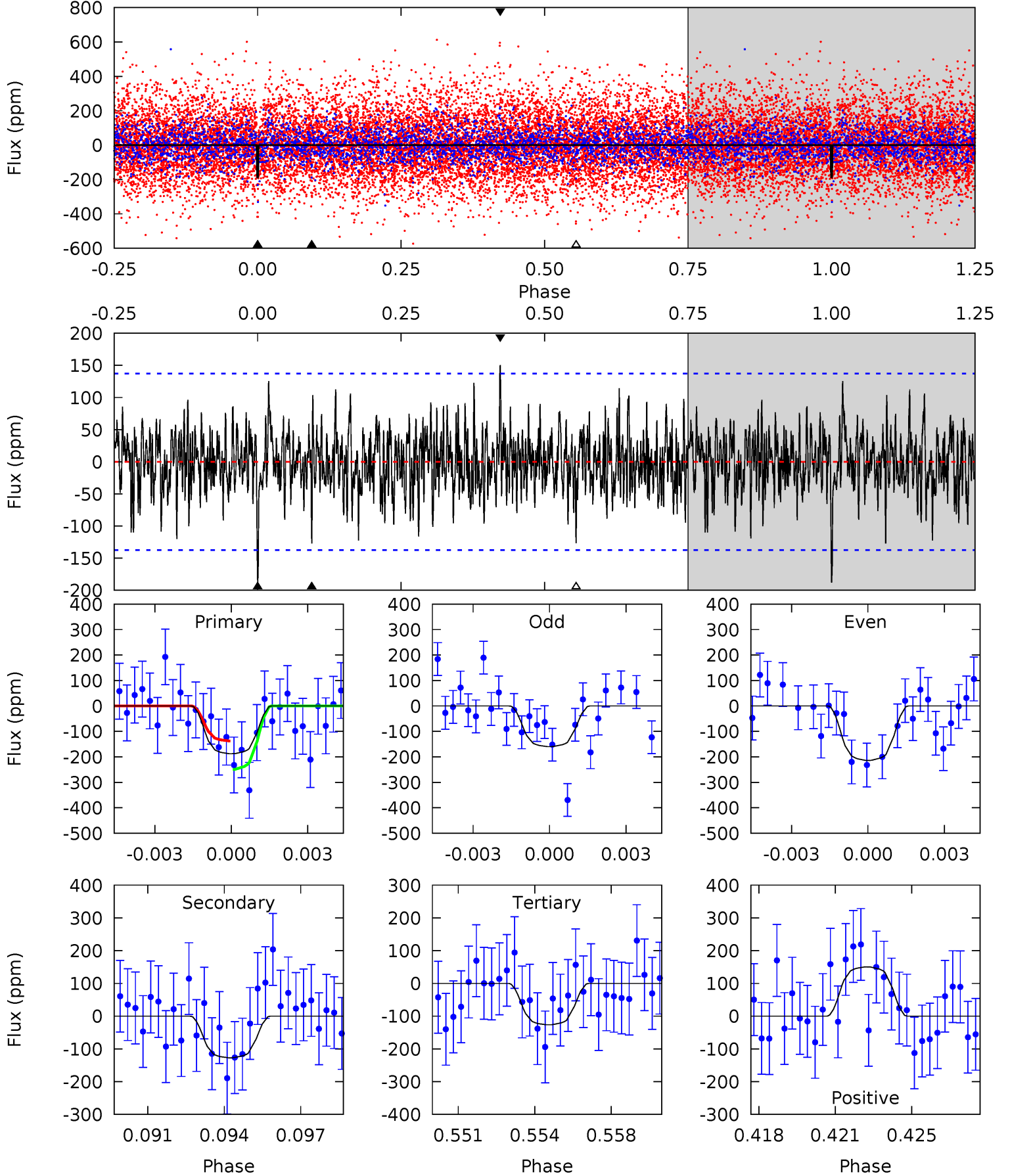
TCE 009673009-06 P= 33.975924 Days $T_0=156.896497$ (BKJD)



DV Model-Shift Uniqueness Test

009673009-06, P = 33.976012 Days, E = 122.913366 Days

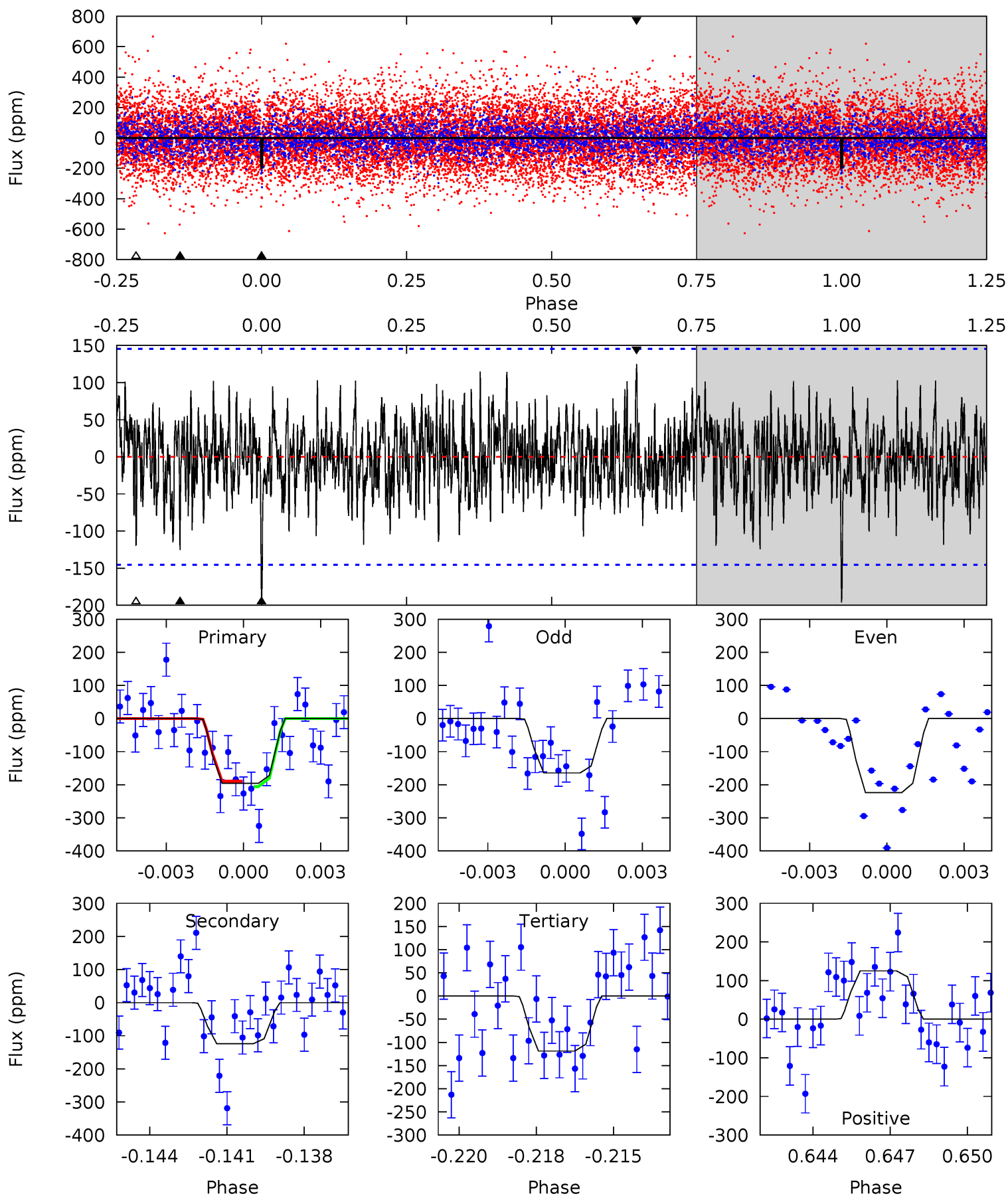
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.16	4.85	4.82	5.74	5.24	2.94	1.49	2.34	1.43	0.03	-0.89	1.03	1.01	0.44	2.13



Alt Model-Shift Uniqueness Test

009673009-06, $P = 33.975924$ Days, $E = 122.920573$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.08	4.49	4.29	4.52	5.26	2.97	1.38	2.79	2.56	0.20	-0.02	1.08	1.10	0.39	0.29



Stellar Parameters For KIC 009673009

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4980^{+136}_{-121}	$3.739^{+0.840}_{-0.360}$	$-0.180^{+0.300}_{-0.200}$	$2.105^{+1.351}_{-1.351}$	$0.887^{+0.278}_{-0.149}$	$0.134^{+2.597}_{-0.097}$
	+3%/-2%	+22%/-10%	+167%/-111%	+64%/-64%	+31%/-17%	+1941%/-73%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009673009-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-127 ± 26	$3.77^{+3.39}_{-2.31}$	989^{+168}_{-202}	4135^{+1937}_{-657}	194^{+1168}_{-140}
Alt.	-124 ± 28	$3.46^{+3.45}_{-2.19}$	988^{+148}_{-181}	4253^{+2131}_{-733}	231^{+1442}_{-175}

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

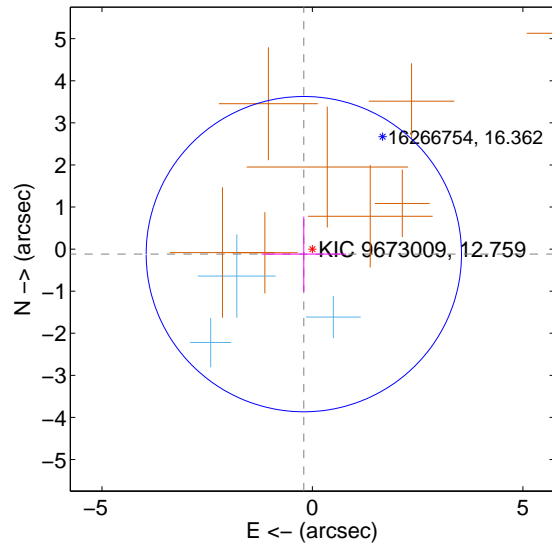
Supplemental centroid analysis for 009673009-06. Kepler magnitude: 12.76. Transit SNR 8.55

There are 3 quarters with good PRF difference image offsets

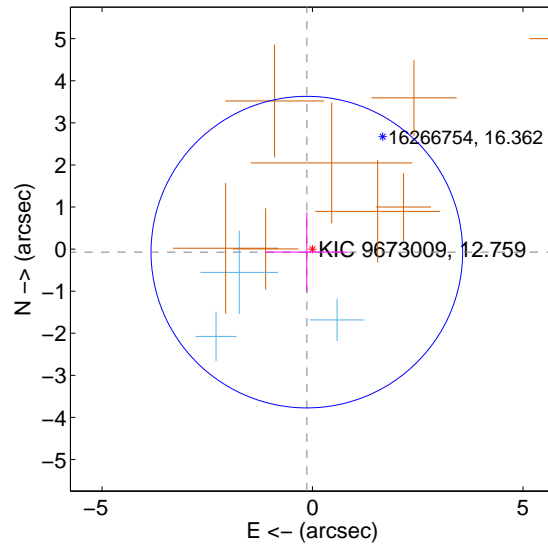
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.237 ± 1.249	0.19	0.205 ± 1.004	-0.120 ± 0.892
PRF-fit source offset from KIC position	0.153 ± 1.234	0.12	0.135 ± 0.973	-0.072 ± 0.944
photometric centroid source offset	1.52 ± 1.09	1.40	1.26 ± 1.17	0.86 ± 0.89

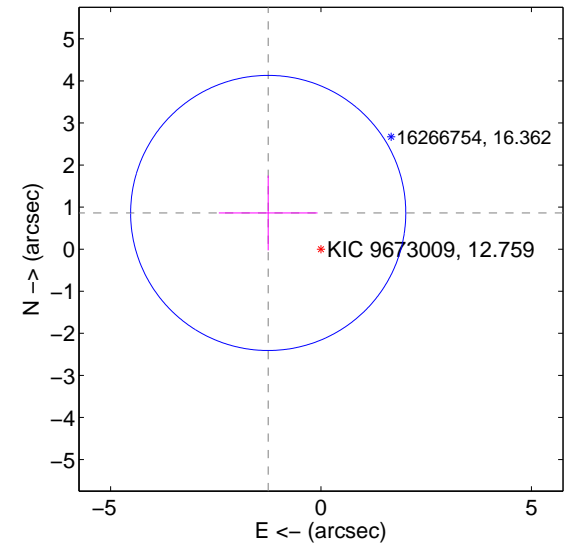
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

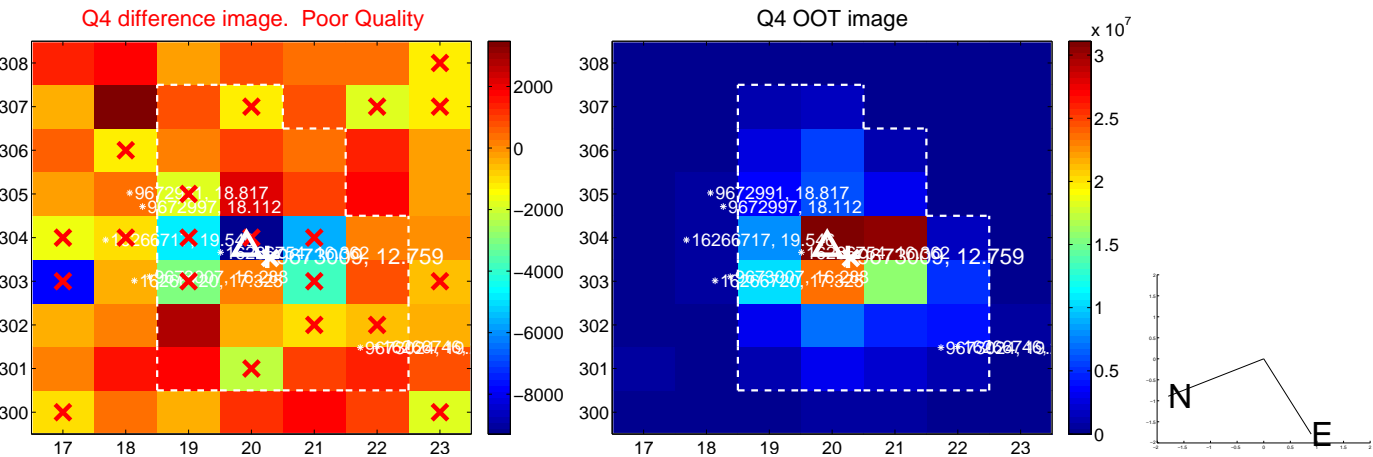
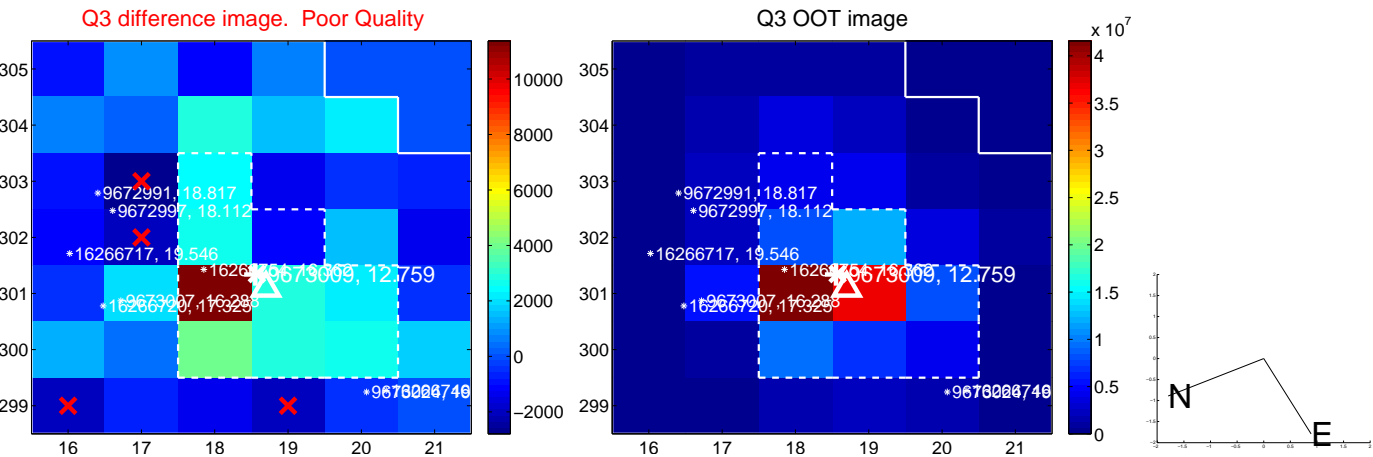
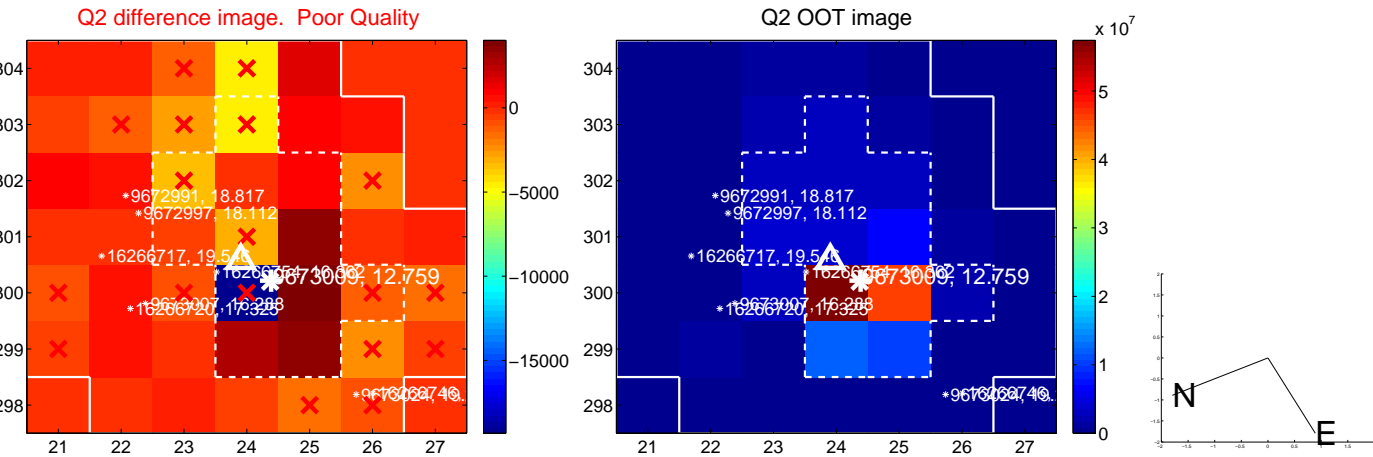
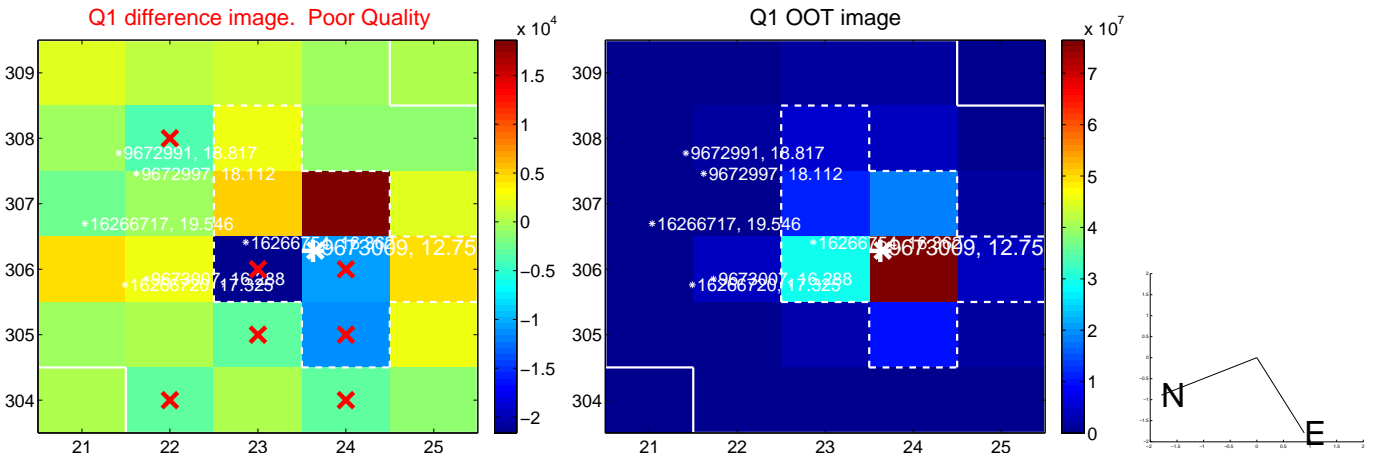


offset from photometric centroids

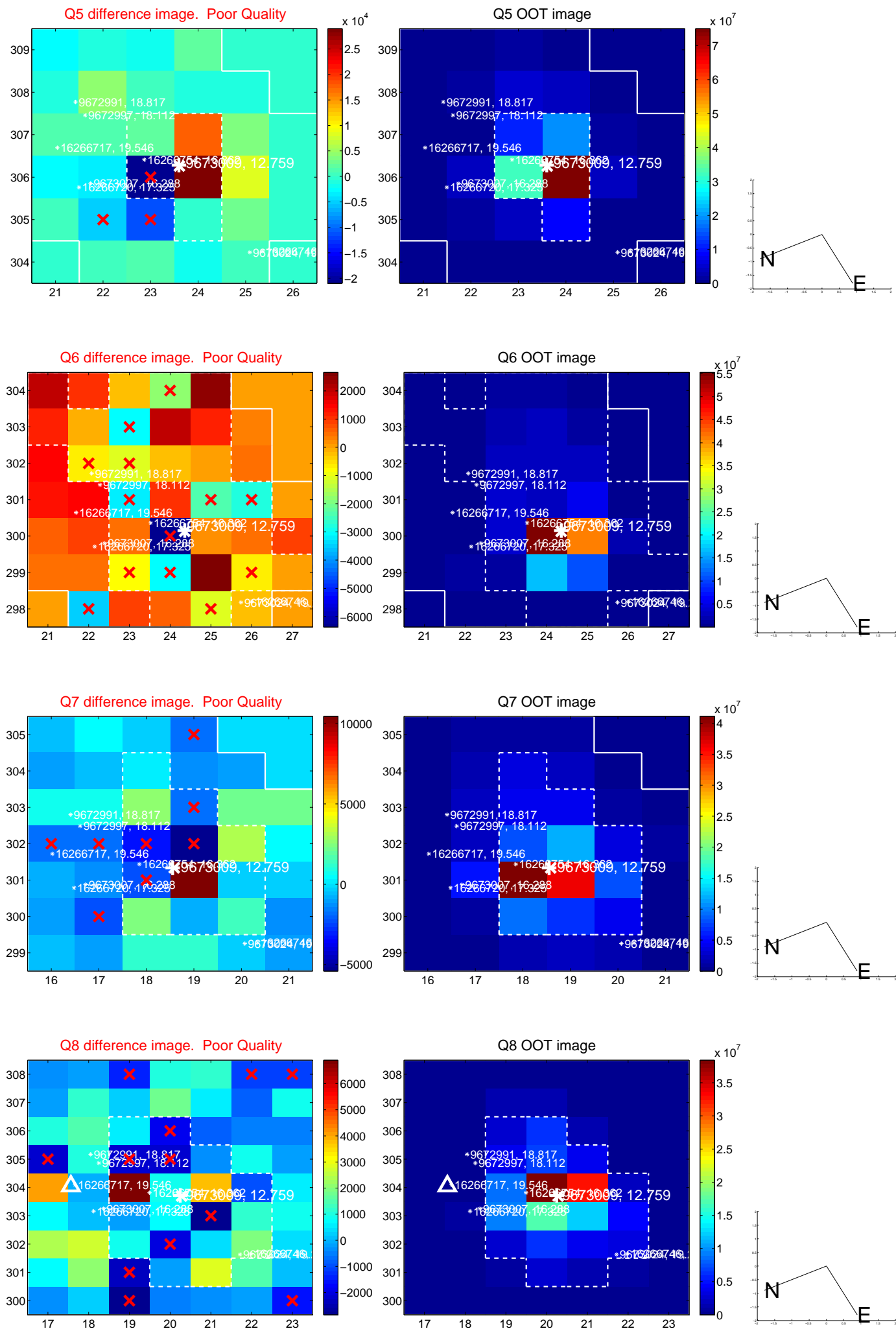


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

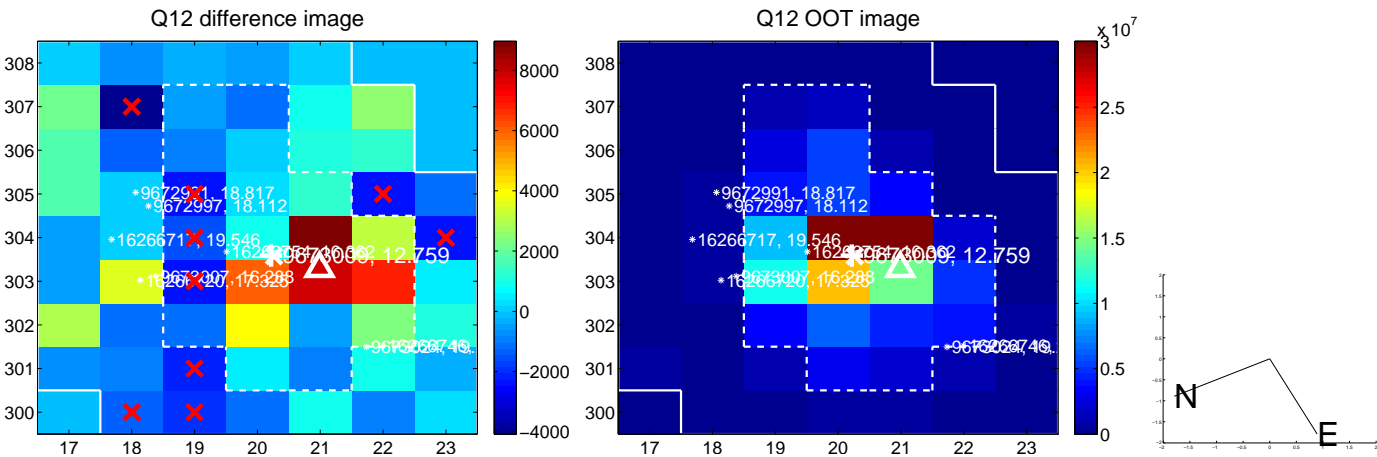
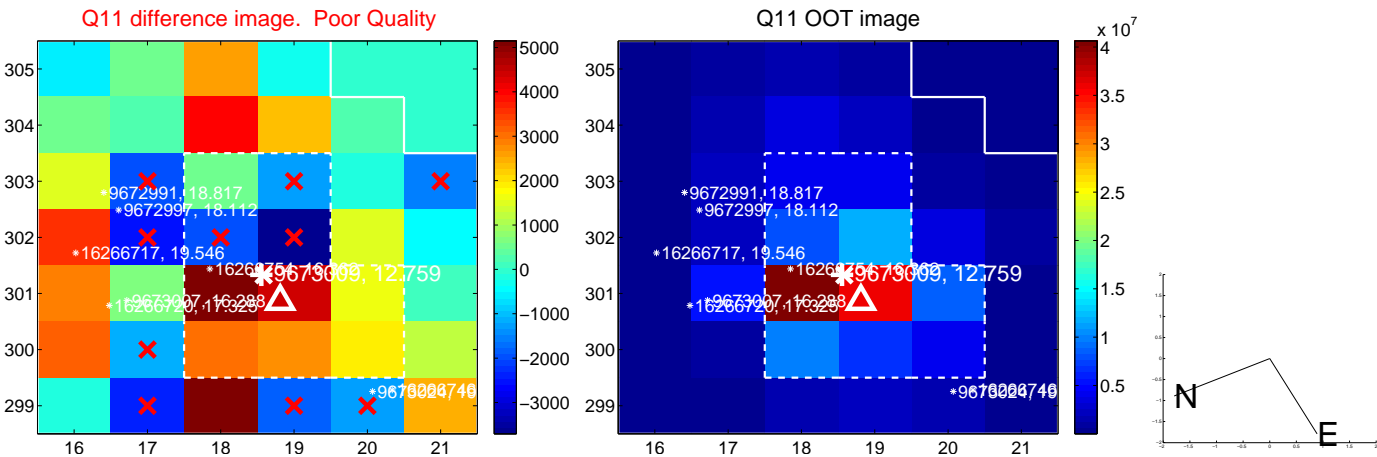
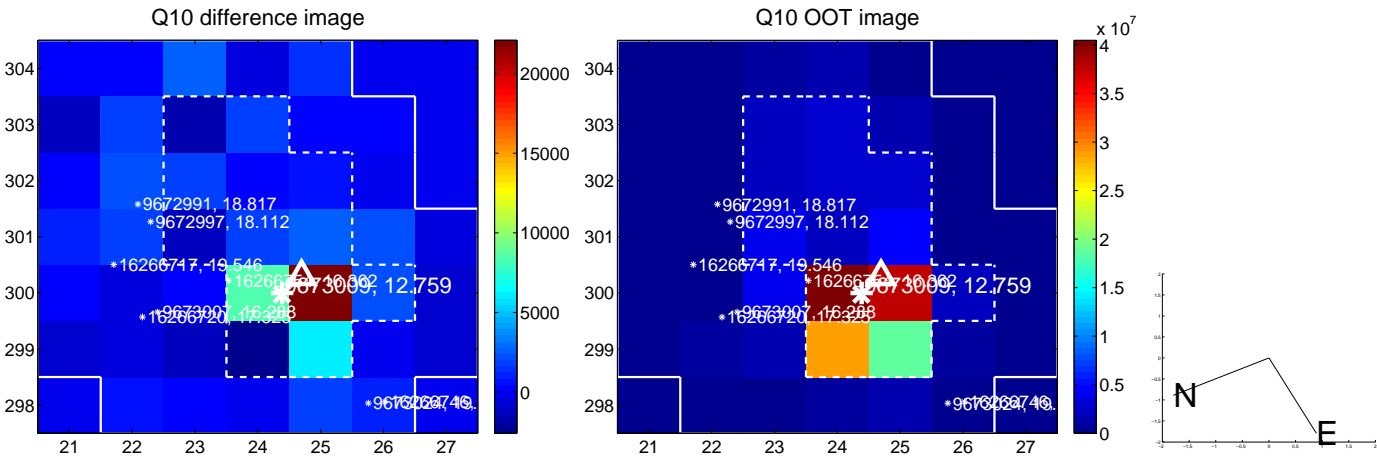
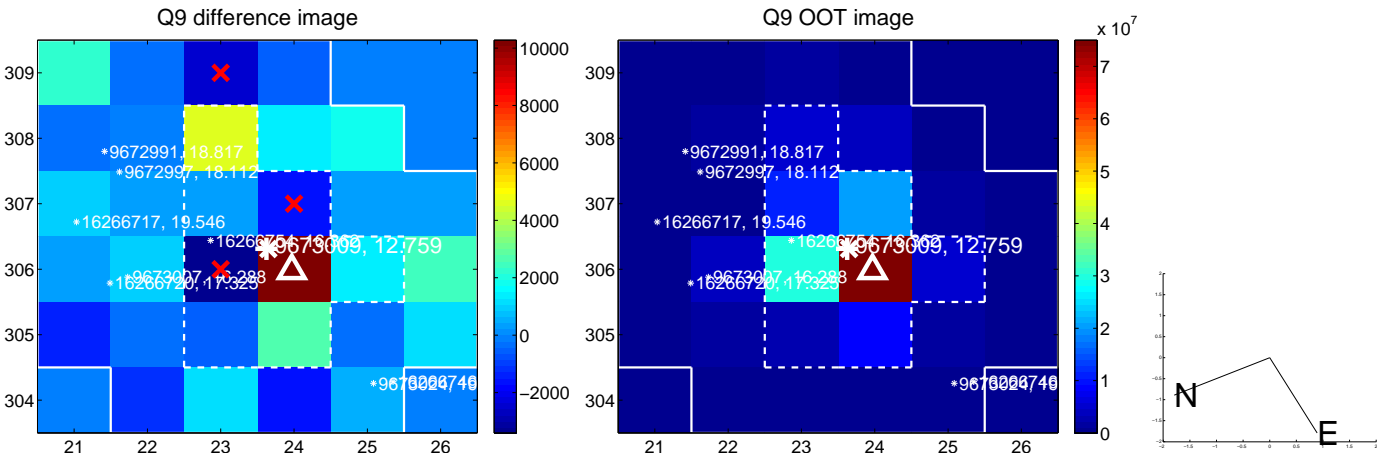
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



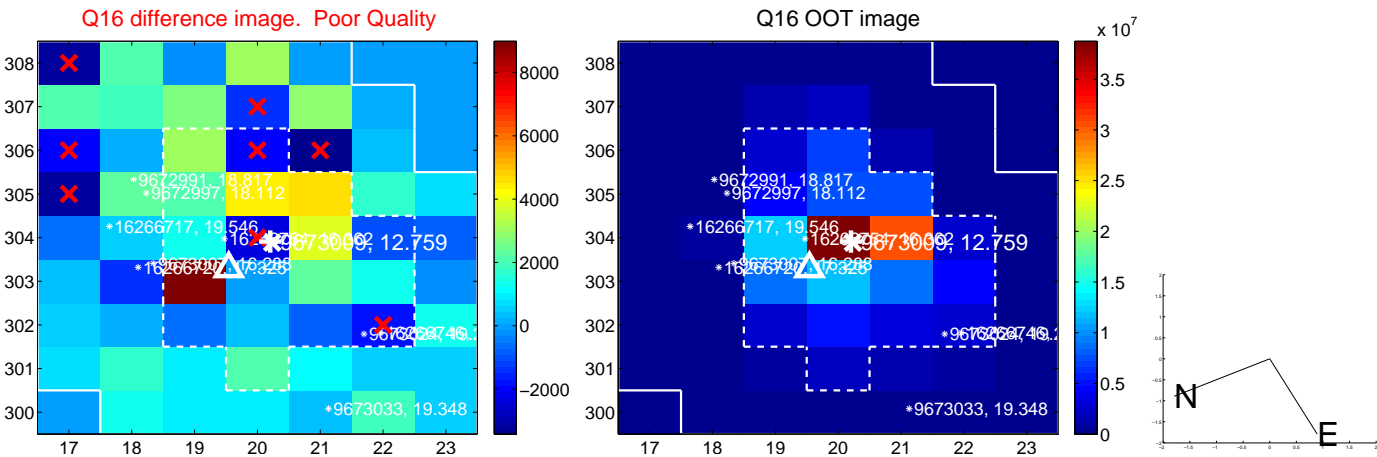
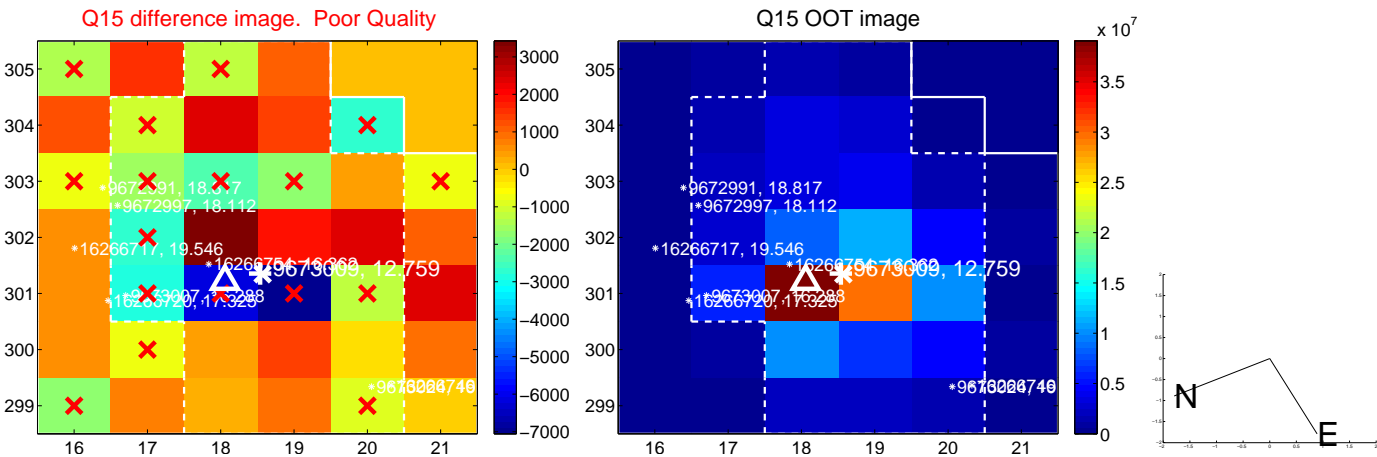
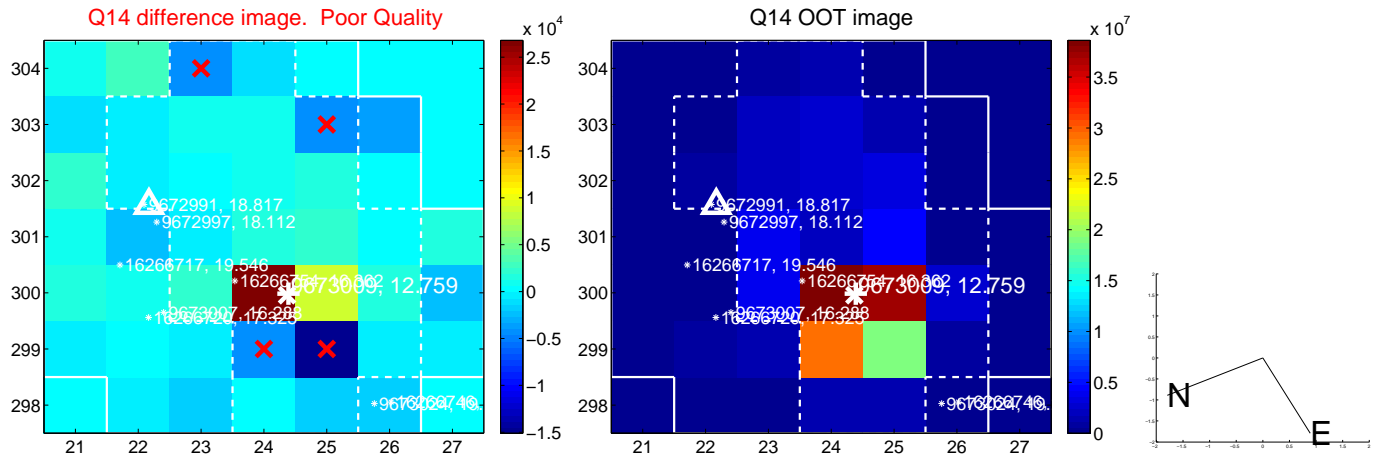
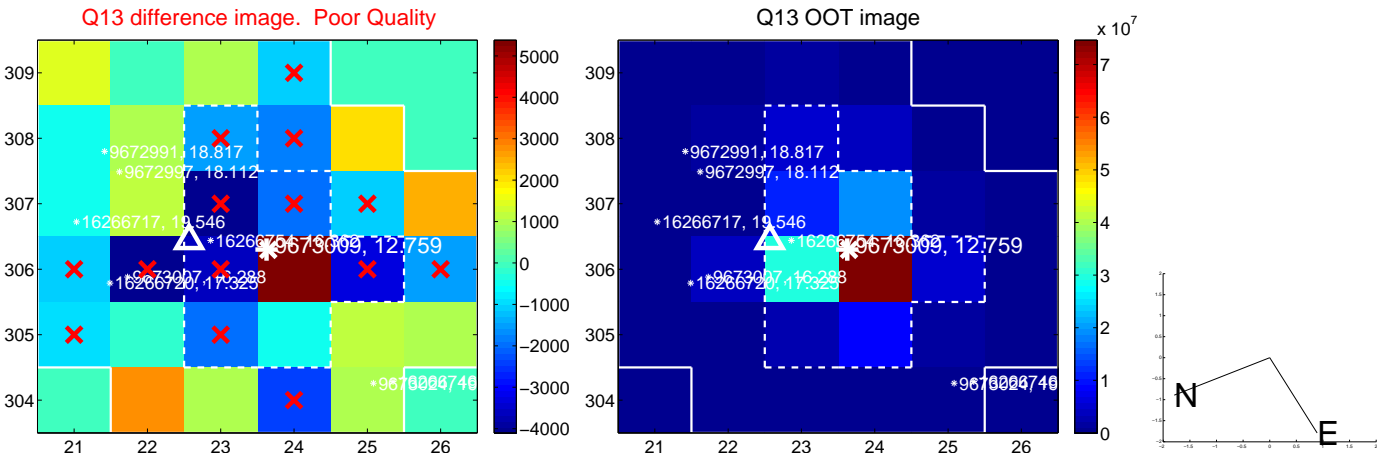
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



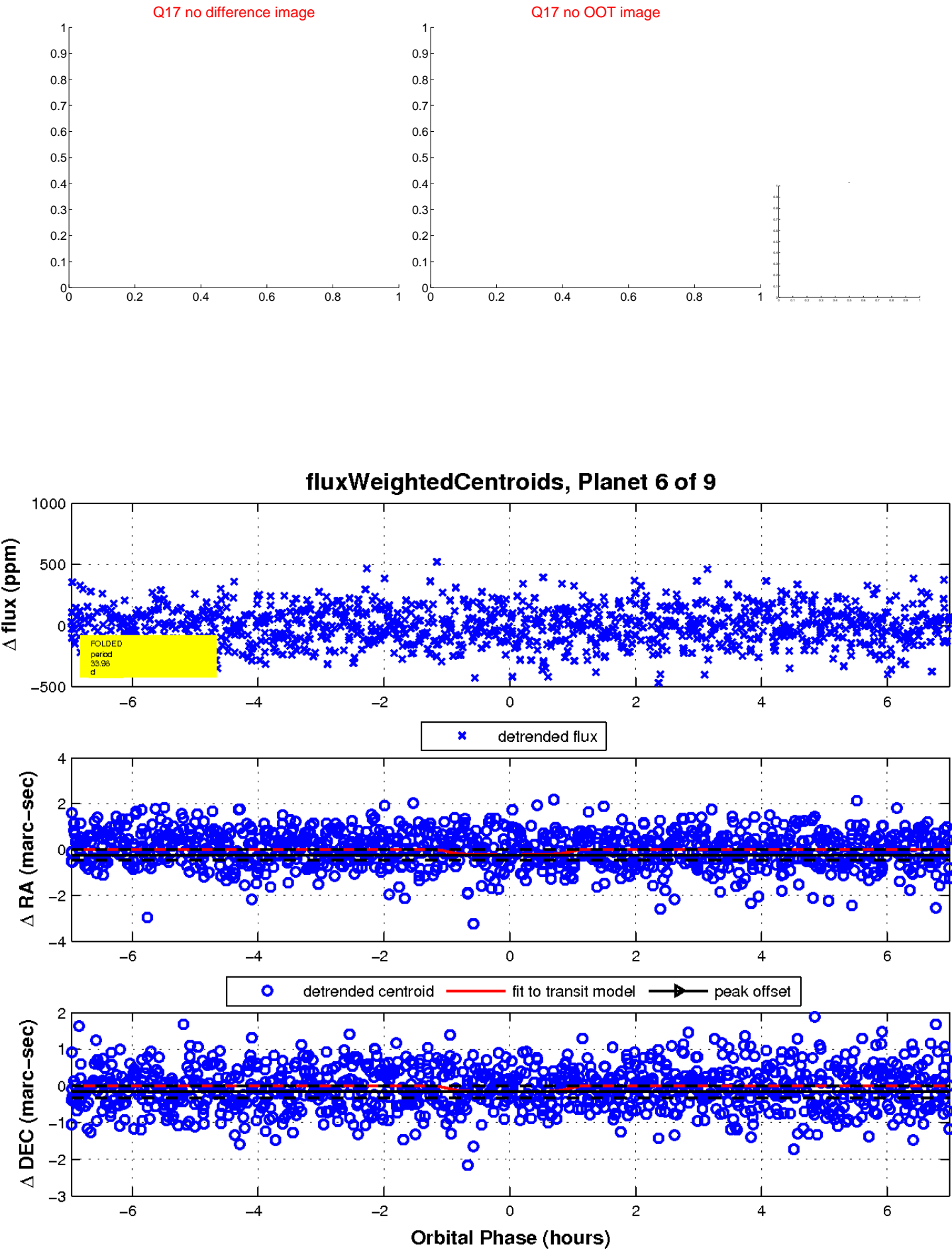
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



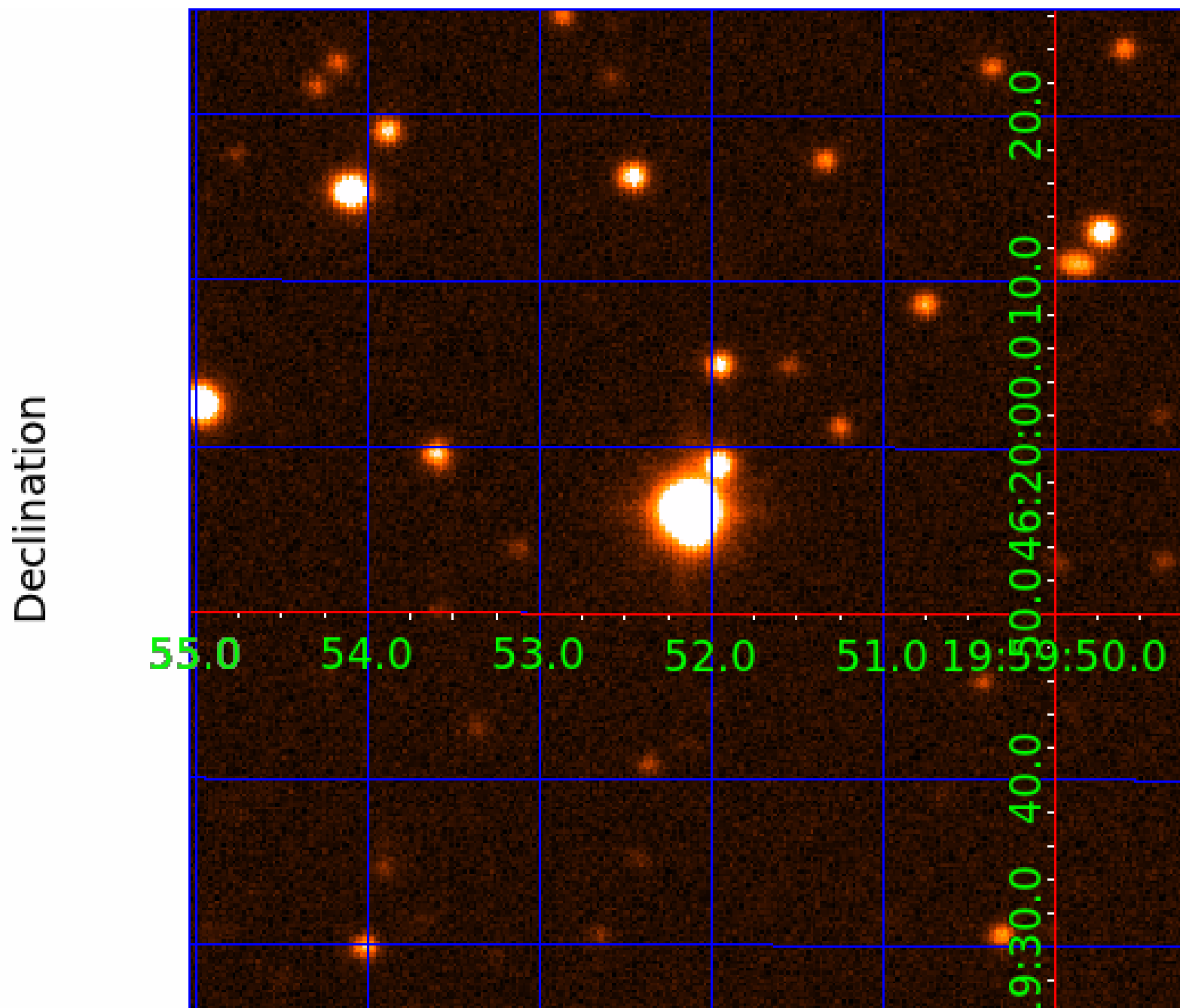
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009673009

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})
009673009-01	OBS	No	1.721726	132.966391	15.9	10.520	8.9	7.3	2.10	4980	0.81	3347.30
009673009-02	OBS	No	108.723993	157.600626	406.6	1.921	9.2	10.1	2.10	4980	5.16	13.31
009673009-03	OBS	No	53.789312	175.657282	196.2	3.546	8.4	9.0	2.10	4980	3.26	34.02
009673009-04	OBS	No	72.042103	196.805170	313.6	2.777	8.2	8.9	2.10	4980	7.11	23.04
009673009-05	OBS	No	79.499201	169.162431	324.7	2.116	7.9	9.2	2.10	4980	4.36	20.21
009673009-06	OBS	No	33.976012	156.889378	188.7	2.332	8.2	8.5	2.10	4980	3.83	62.77
009673009-07	OBS	No	36.715684	151.364416	250.6	1.628	7.9	8.6	2.10	4980	3.25	56.60
009673009-08	OBS	No	58.636647	147.578702	184.5	3.207	7.5	8.0	2.10	4980	3.48	30.32
009673009-09	OBS	No	43.354274	153.079658	220.9	1.415	7.4	8.1	2.10	4980	3.34	45.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009673009-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET
009673009-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009673009-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009673009-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009673009-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

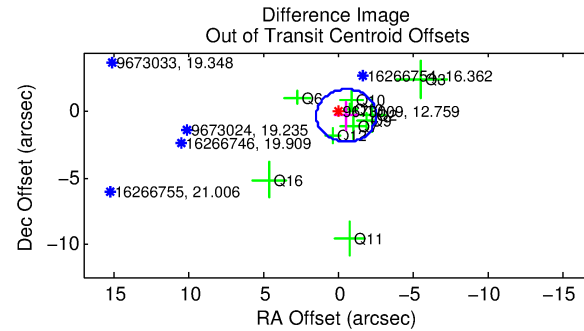
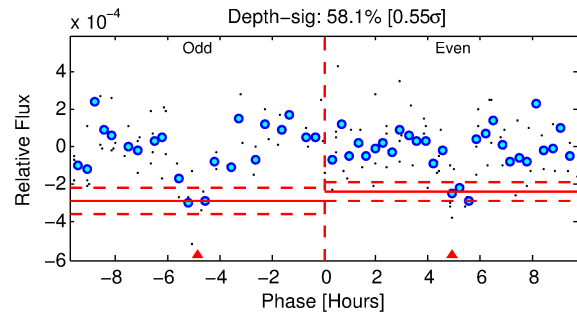
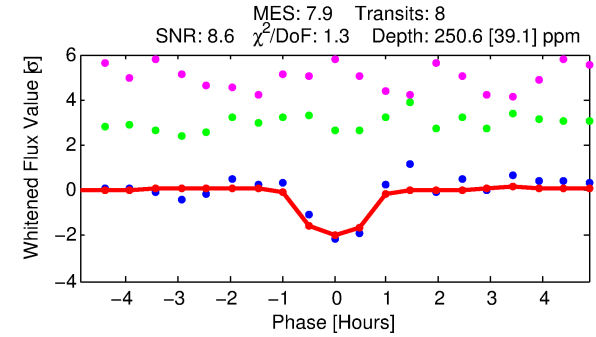
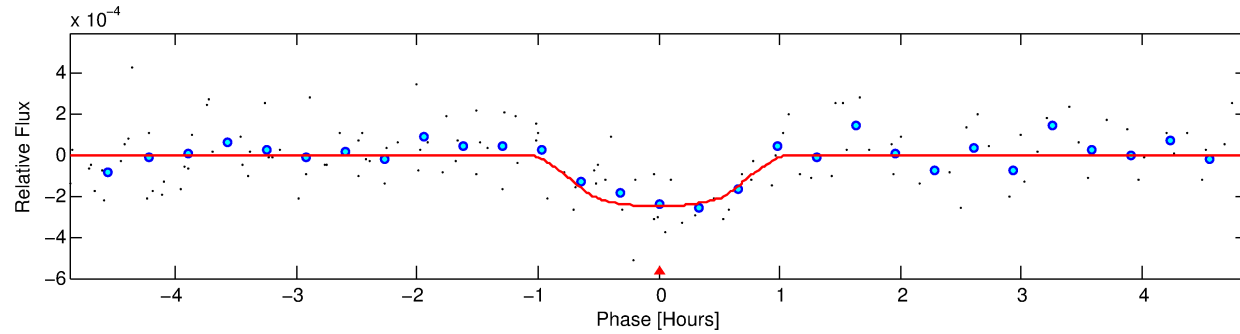
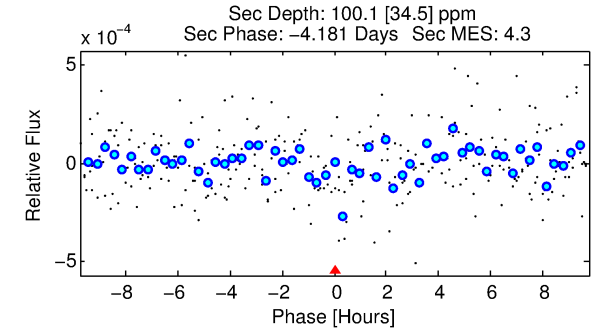
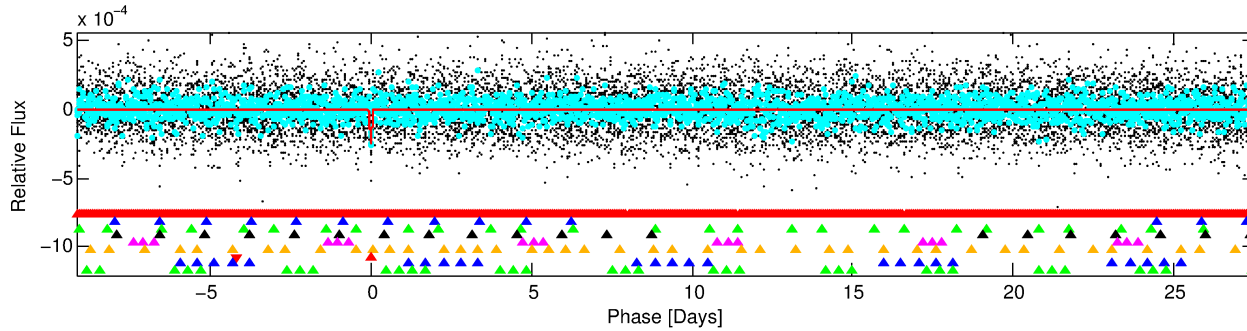
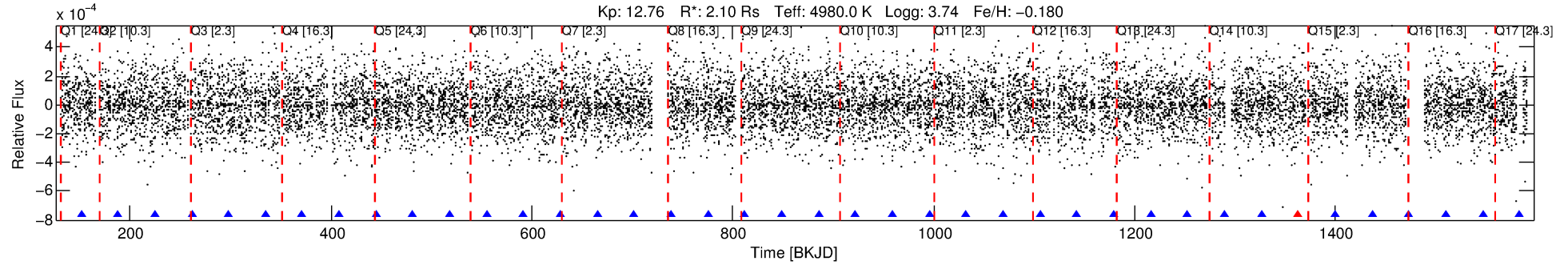
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009673009-07

No Significant Match Found

DV One-Page Summary

KIC: 9673009 Candidate: 7 of 9 Period: 36.716 d



DV Fit Results:

Period = 36.71568 [0.00049] d
Epoch = 151.3644 [0.0100] BKJD
Rp/R* = 0.0141 [0.0405]
a/R* = 173.73 [1742.03]
b = 0.11 [90.62]
Seff = 56.60 [77.15]
Teq = 699 [238] K
Rp = 3.25 [9.54] Re
a = 0.2077 [0.1607] AU
Ag = 225.18 [1329.68] [0.17σ]
Teffp = 4189 [6019] K [0.58σ]

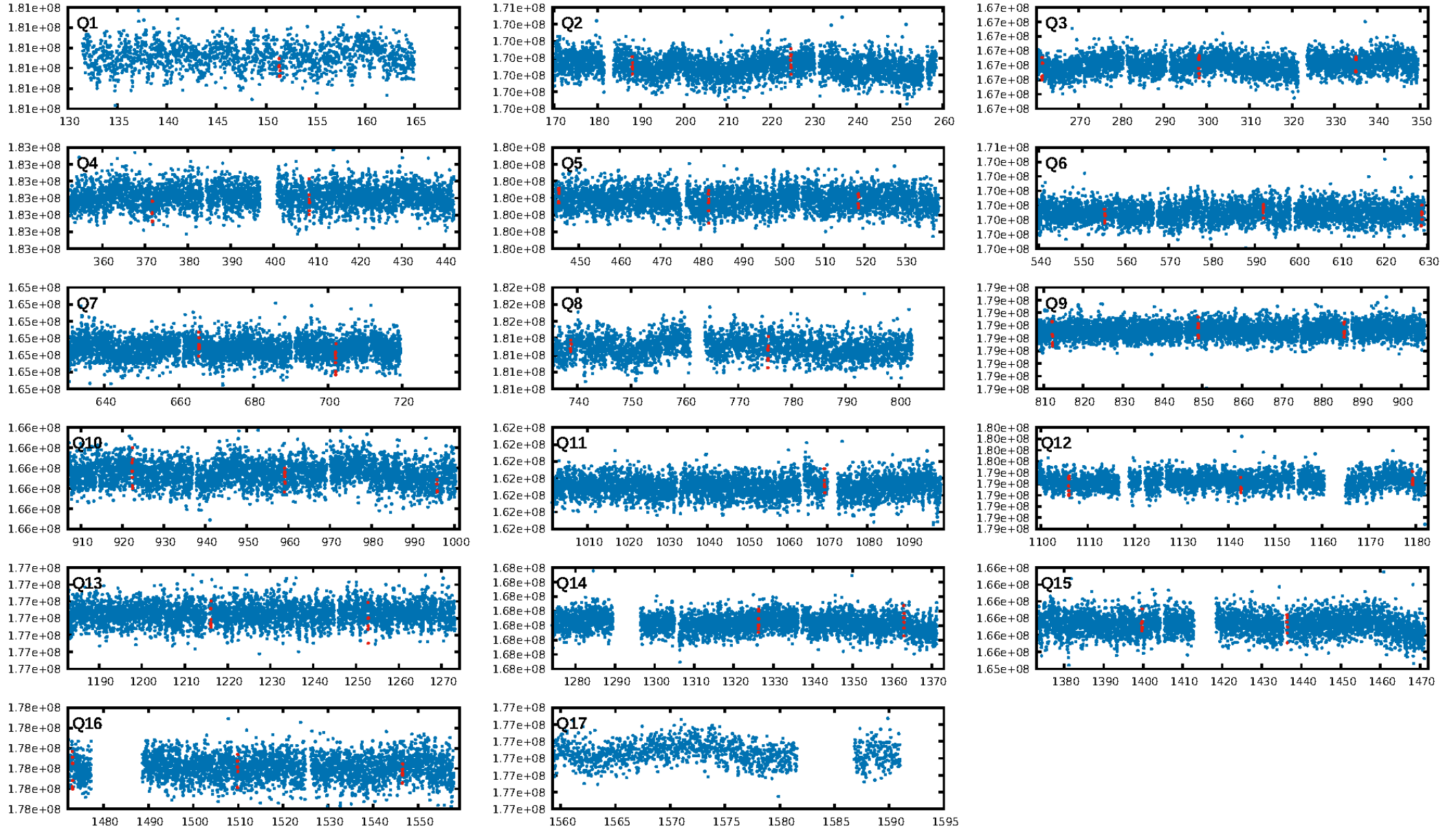
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [23.12σ]
LongPeriod-sig: 100.0% [73.87σ]
ModelChiSquare2-sig: 72.7%
ModelChiSquareGof-sig: 93.7%
Bootstrap-pfa: 1.25e-08
RollingBand-fgt: 0.88 [7/8]
GhostDiagnostic-chr: 2.431
Centroid-sig: 0.0%
Centroid-so: 2.051 arcsec [2.46σ]
OotOffset-rm: 0.630 arcsec [0.95σ]
KicOffset-rm: 0.666 arcsec [0.87σ]
OotOffset-st: 3/3/2/2 [10]
KicOffset-st: 3/3/2/2 [10]
DiffImageQuality-fgm: 0.60 [6/10]
DiffImageOverlap-fno: 0.75 [12/16]

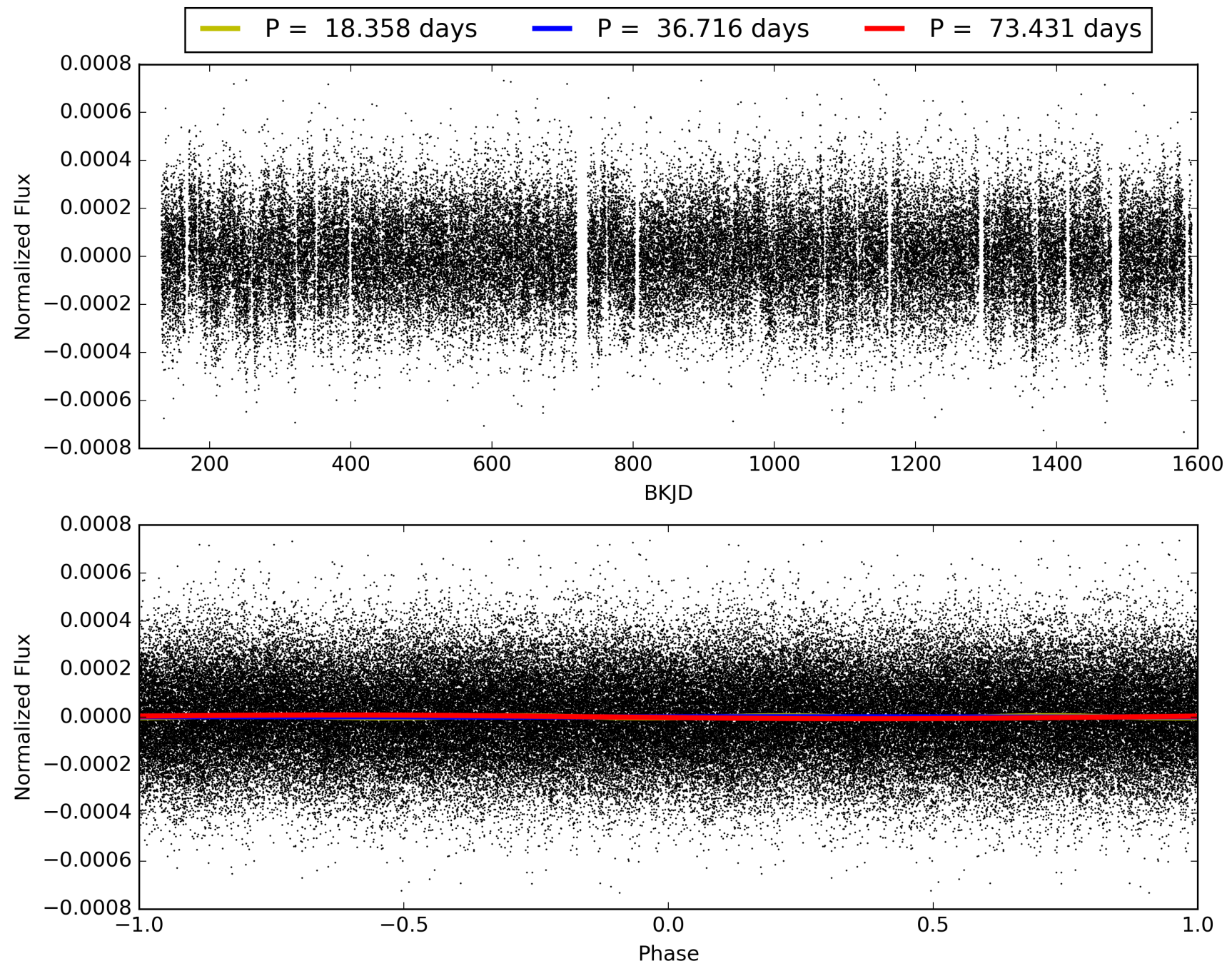
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:41:25 Z

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

TCE 009673009-07, PDC Light Curves

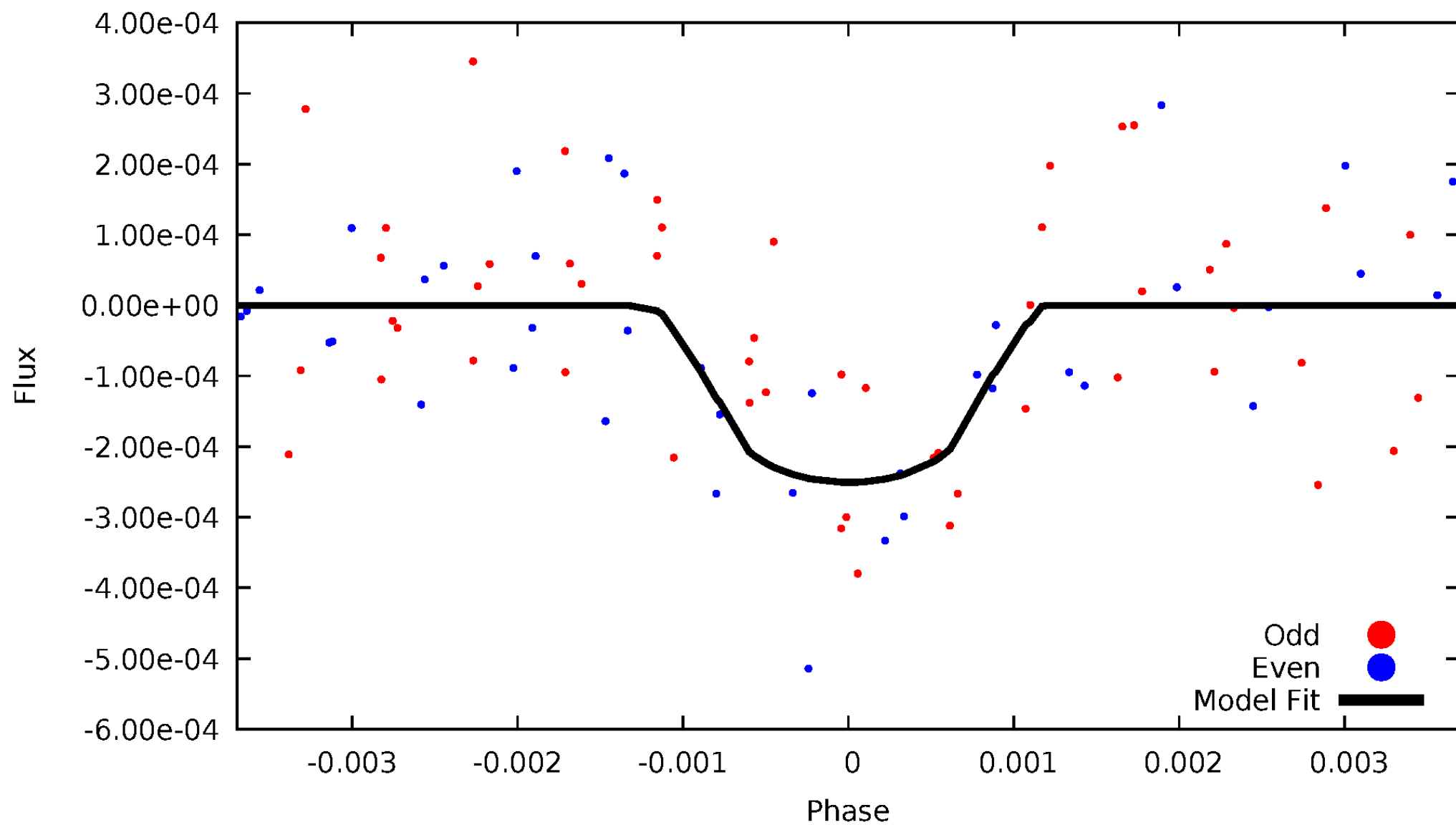


TCE 009673009-07



DV Odd/Even

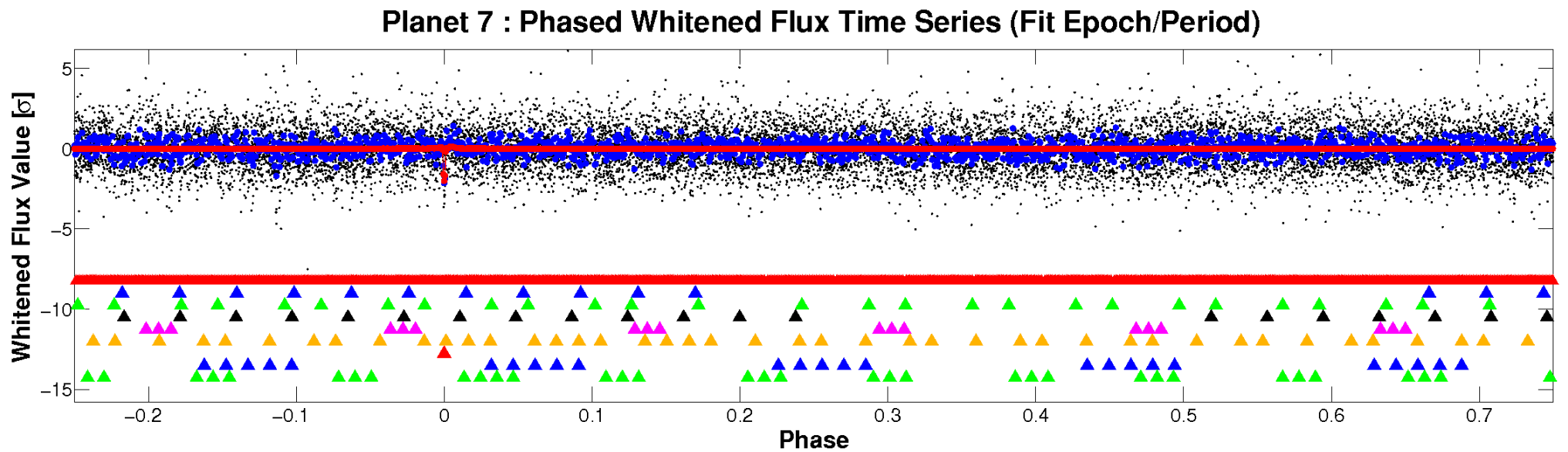
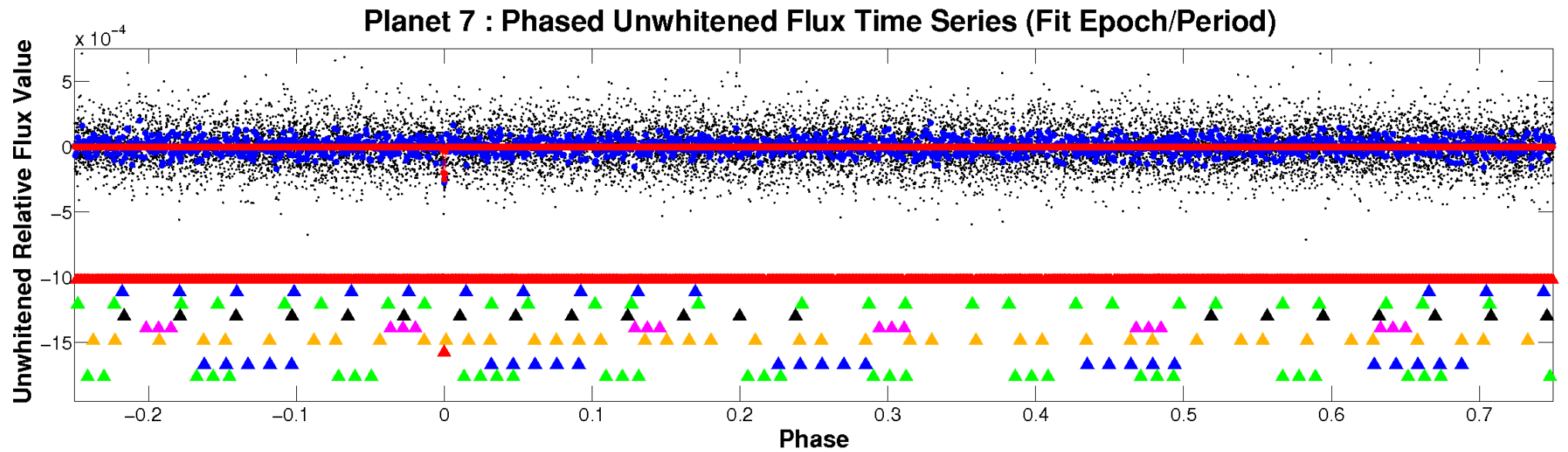
TCE 009673009-07



ALT Odd/Even

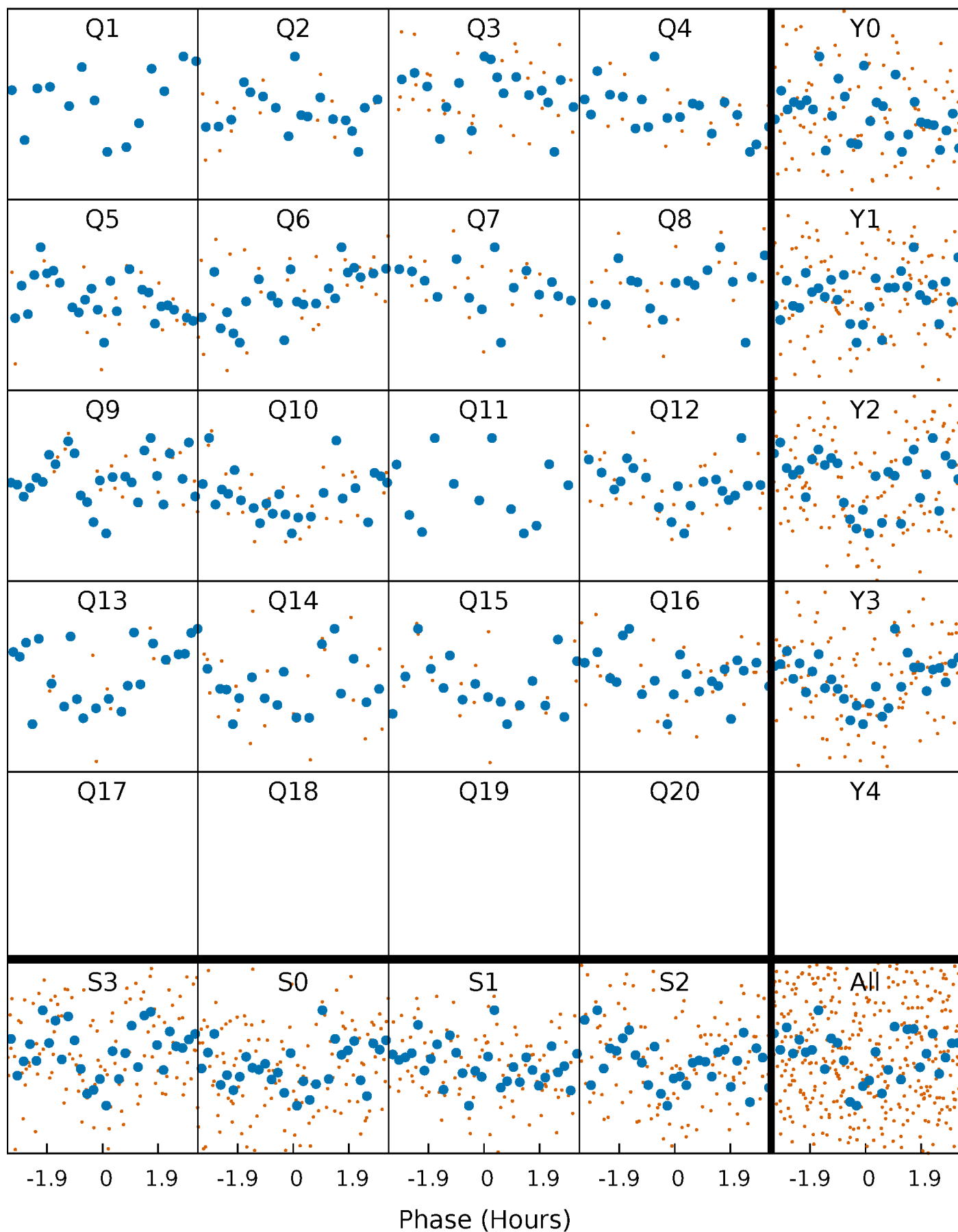
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve



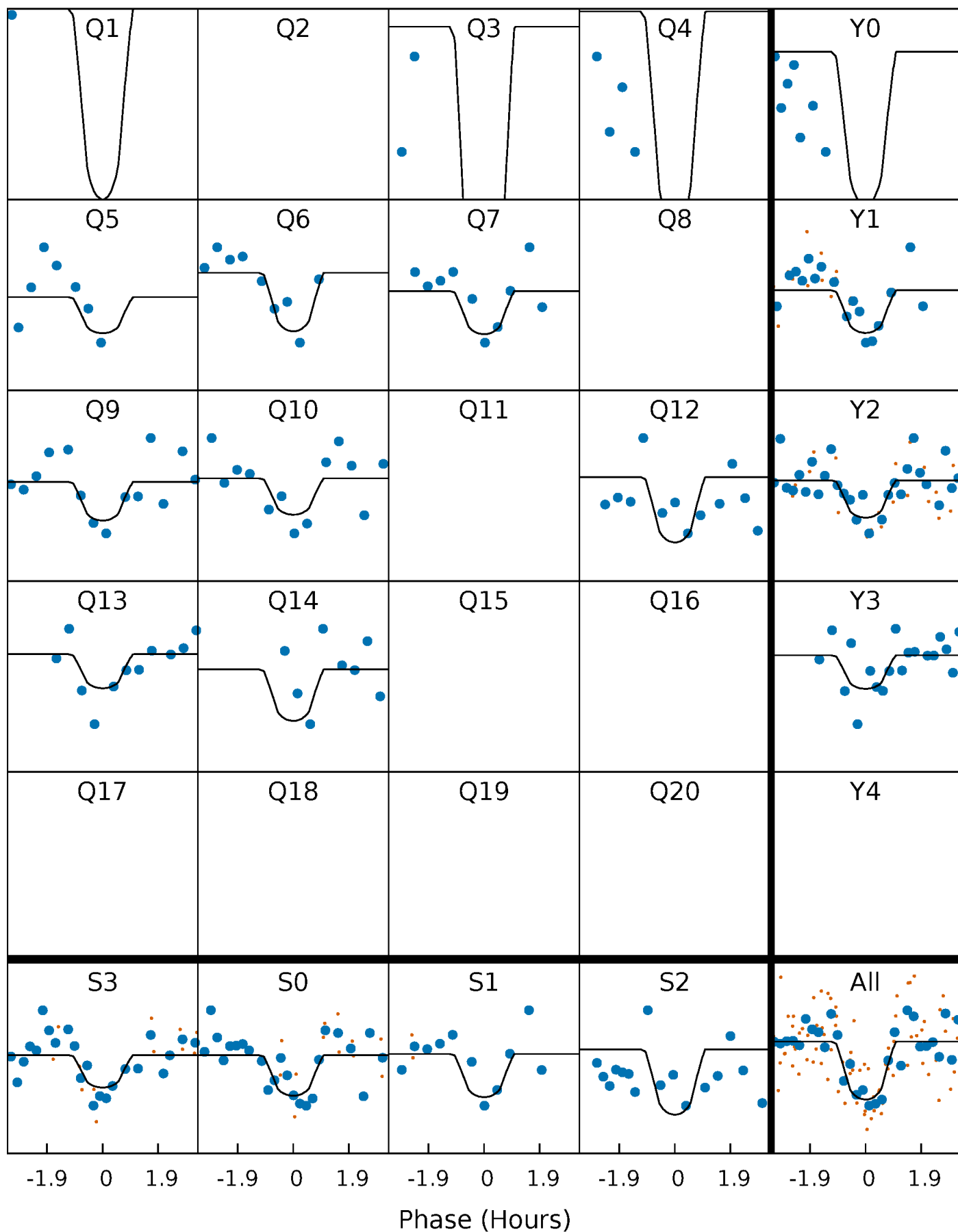
PDC Quarter-Phased Transit Curves

TCE 009673009-07 $P = 36.715684$ Days $T_0 = 151.364416$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009673009-07 $P = 36.715684$ Days $T_0 = 151.364416$ (BKJD)

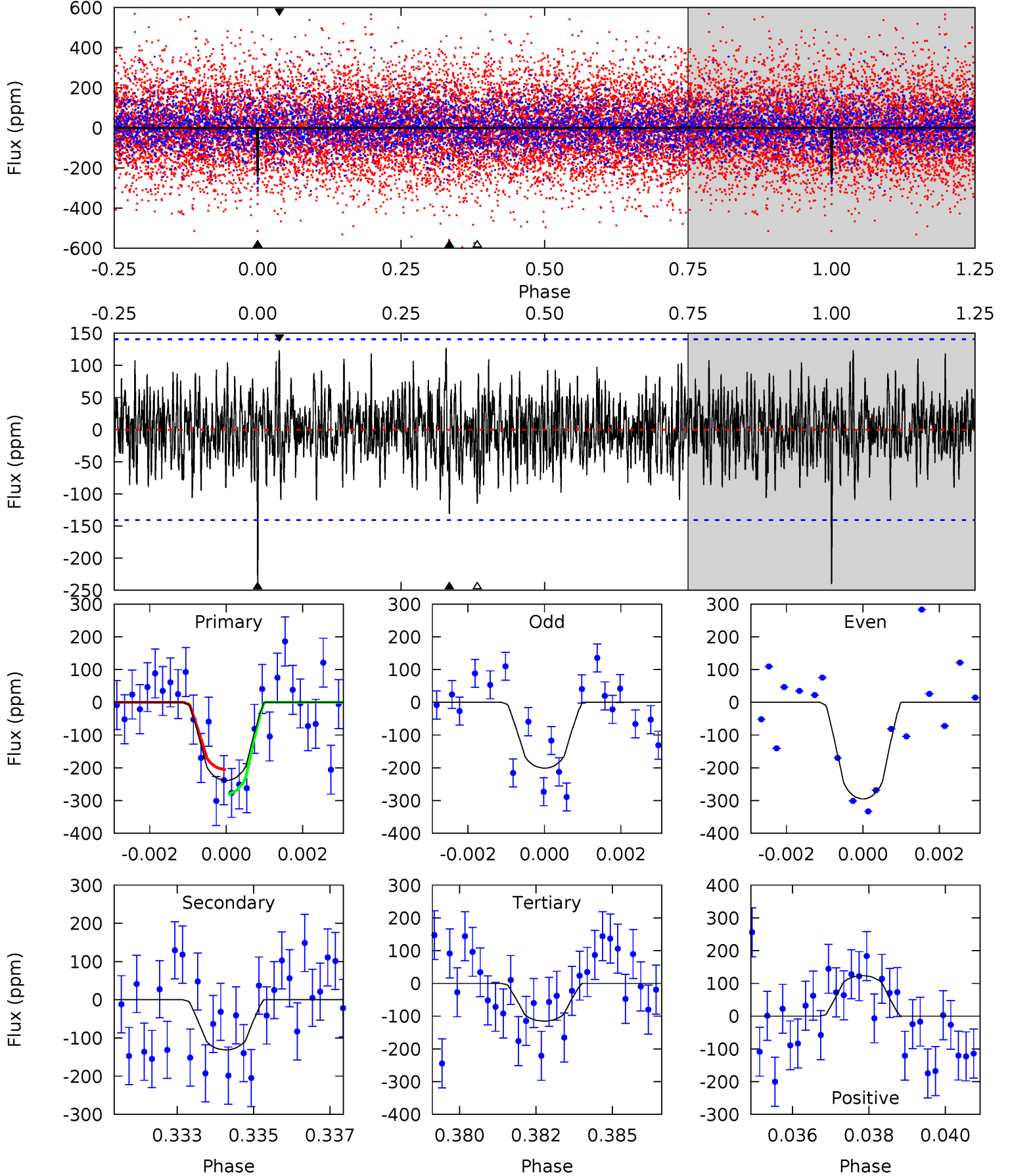


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009673009-07, P = 36.715684 Days, E = 114.648732 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.98	4.94	4.33	4.65	5.30	3.04	1.46	4.64	4.33	0.60	0.29	1.71	1.08	0.35	1.41



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 009673009

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4980^{+136}_{-121}	$3.739^{+0.840}_{-0.360}$	$-0.180^{+0.300}_{-0.200}$	$2.105^{+1.351}_{-1.351}$	$0.887^{+0.278}_{-0.149}$	$0.134^{+2.597}_{-0.097}$
	+3%/-2%	+22%/-10%	+167%/-111%	+64%/-64%	+31%/-17%	+1941%/-73%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009673009-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-131 ± 27	$7.04^{+8.97}_{-4.98}$	973^{+150}_{-177}	3445^{+1724}_{-701}	62^{+688}_{-49}
Alt.	N/A	N/A	N/A	N/A	N/A

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

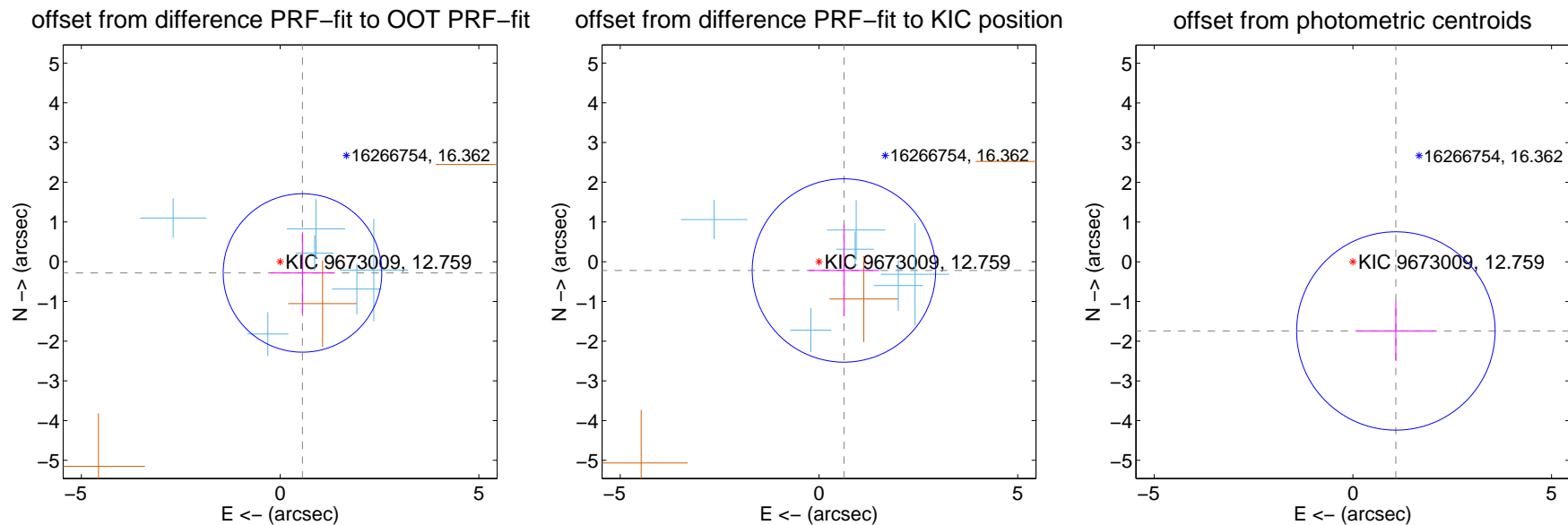
DV Centroid Data

Supplemental centroid analysis for 009673009-07. Kepler magnitude: 12.76. Transit SNR 8.57

There are 6 quarters with good PRF difference image offsets

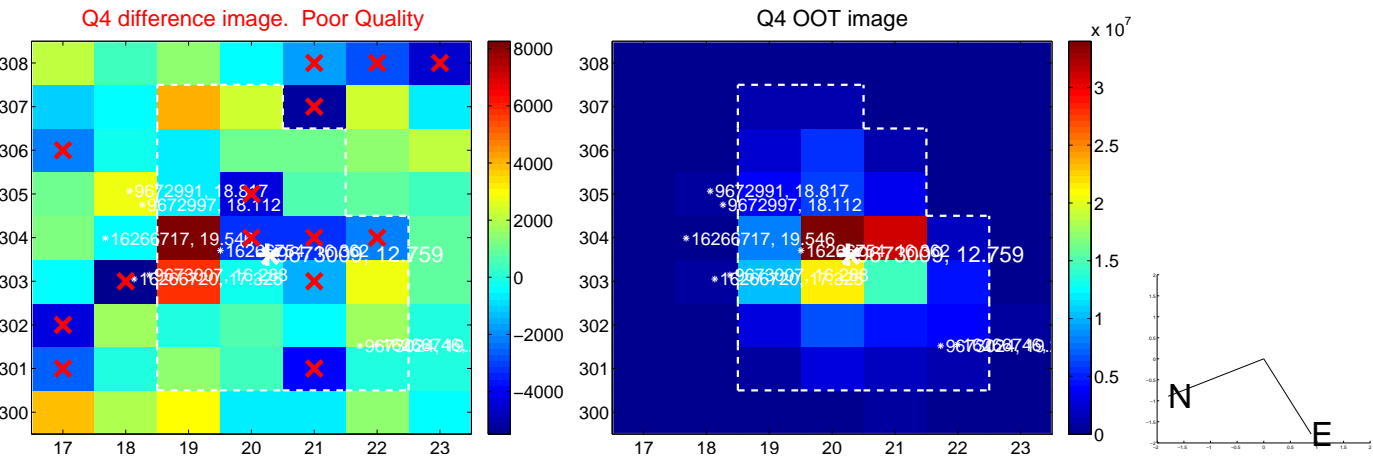
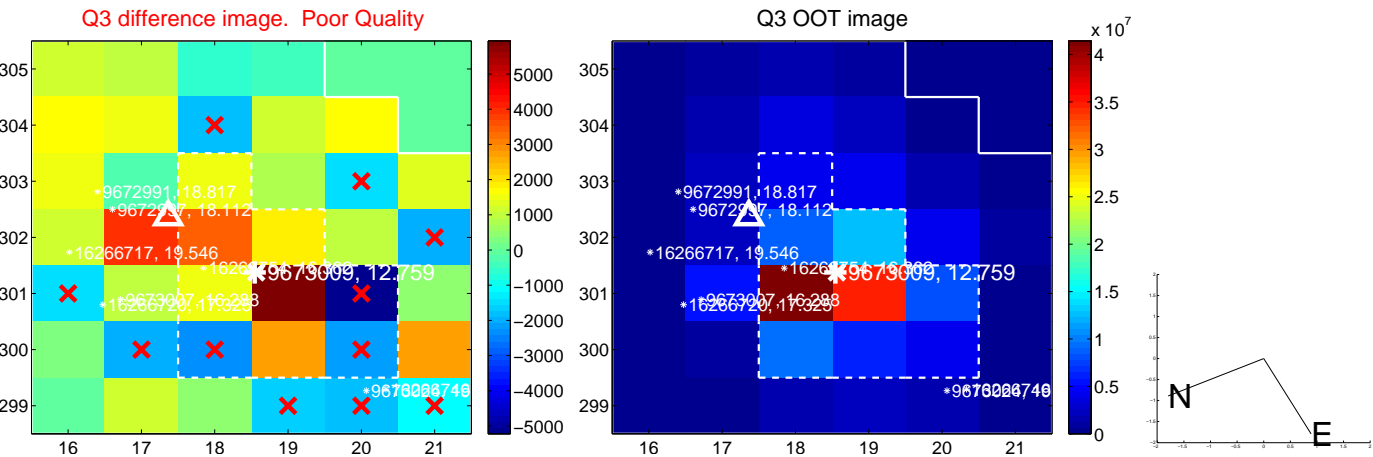
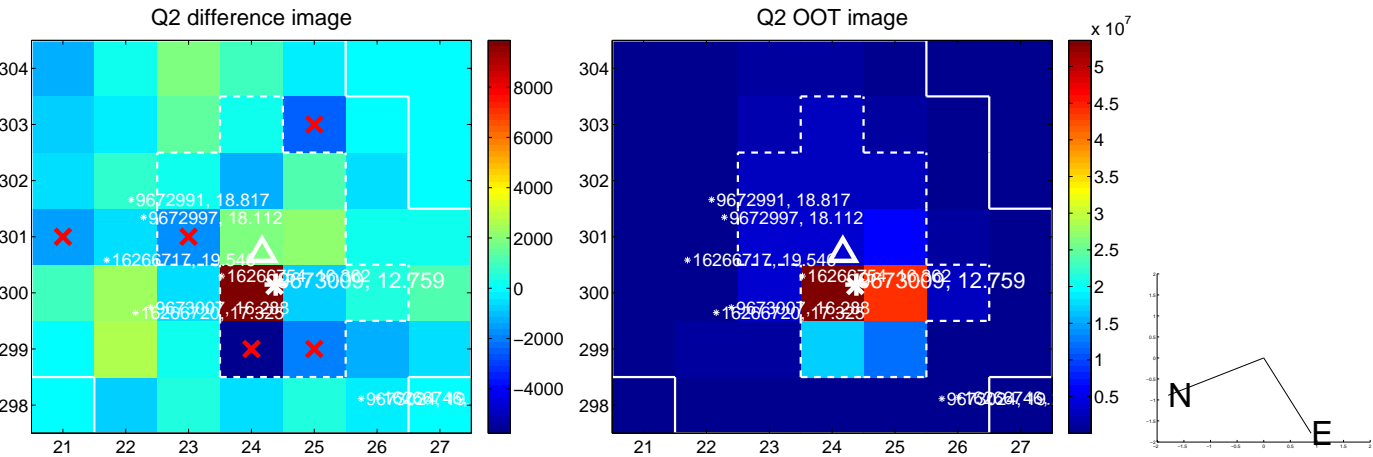
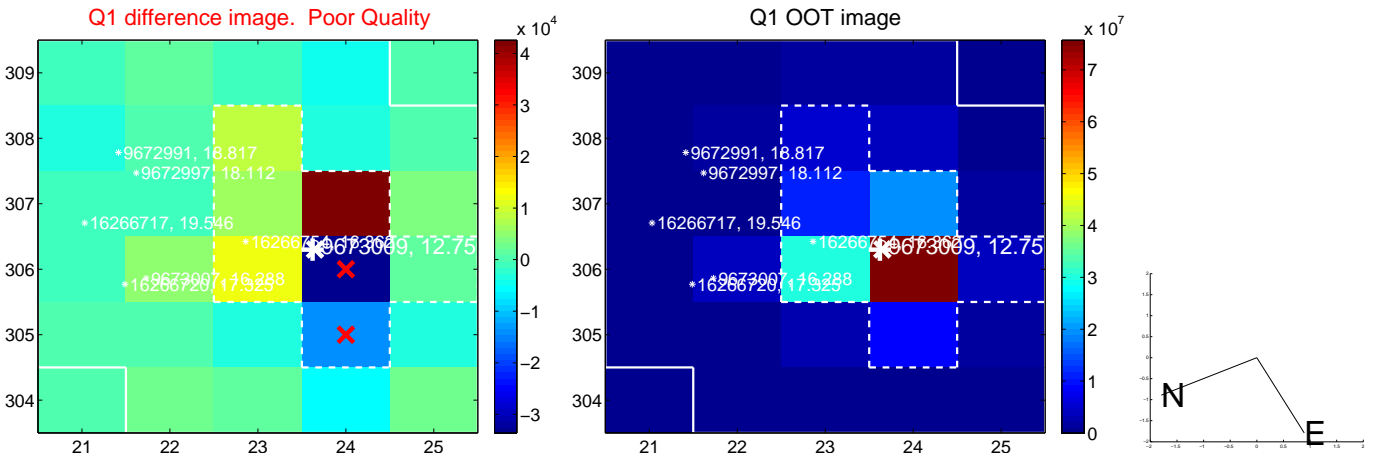
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.630 ± 0.665	0.95	-0.563 ± 0.809	-0.283 ± 1.026
PRF-fit source offset from KIC position	0.666 ± 0.769	0.87	-0.628 ± 0.885	-0.222 ± 1.151
photometric centroid source offset	2.05 ± 0.83	2.46	-1.08 ± 1.01	-1.74 ± 0.75

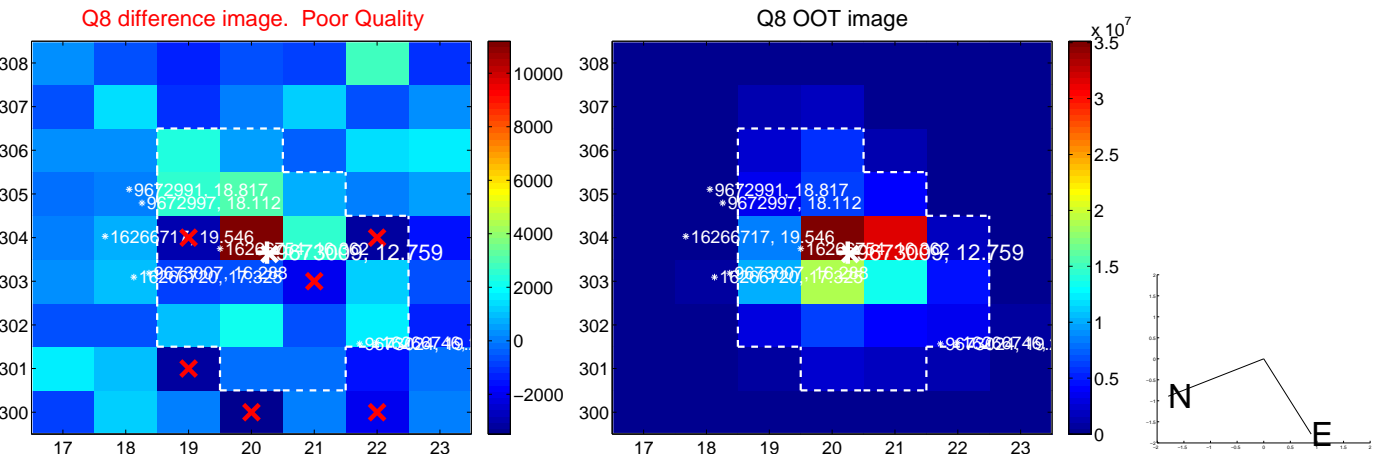
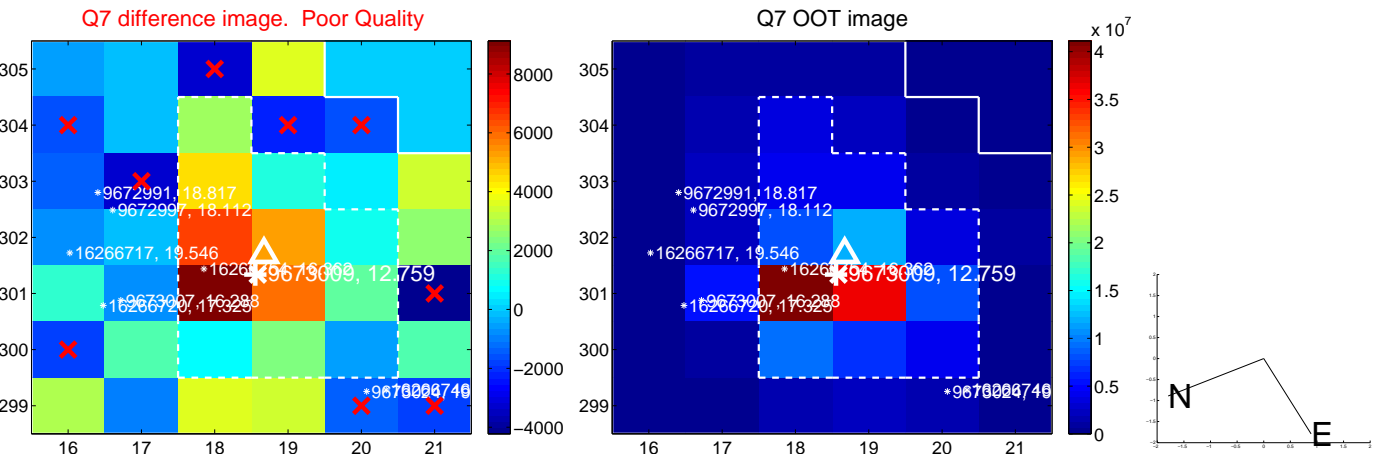
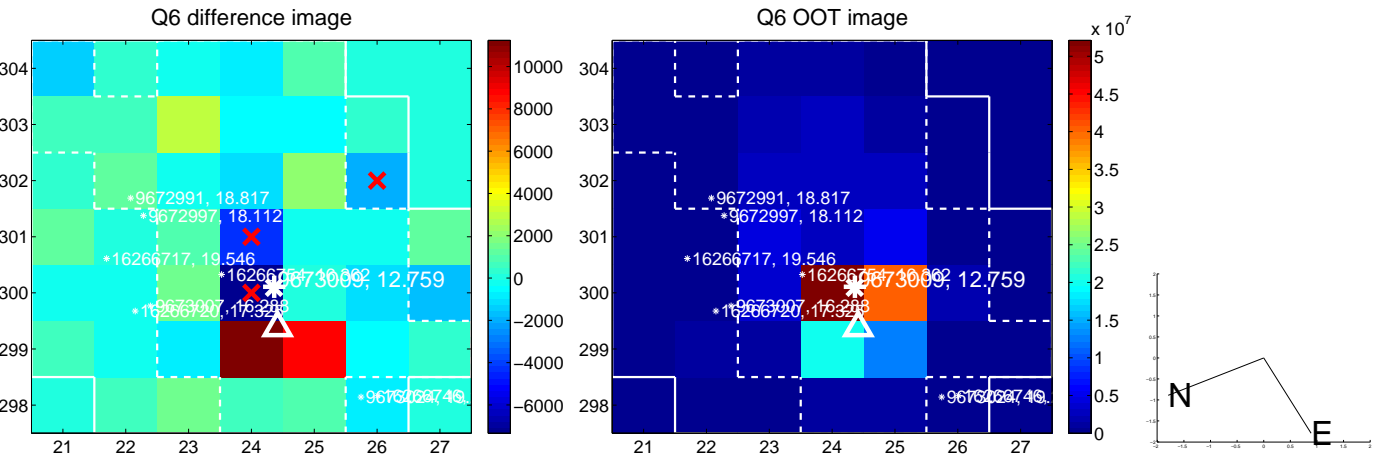
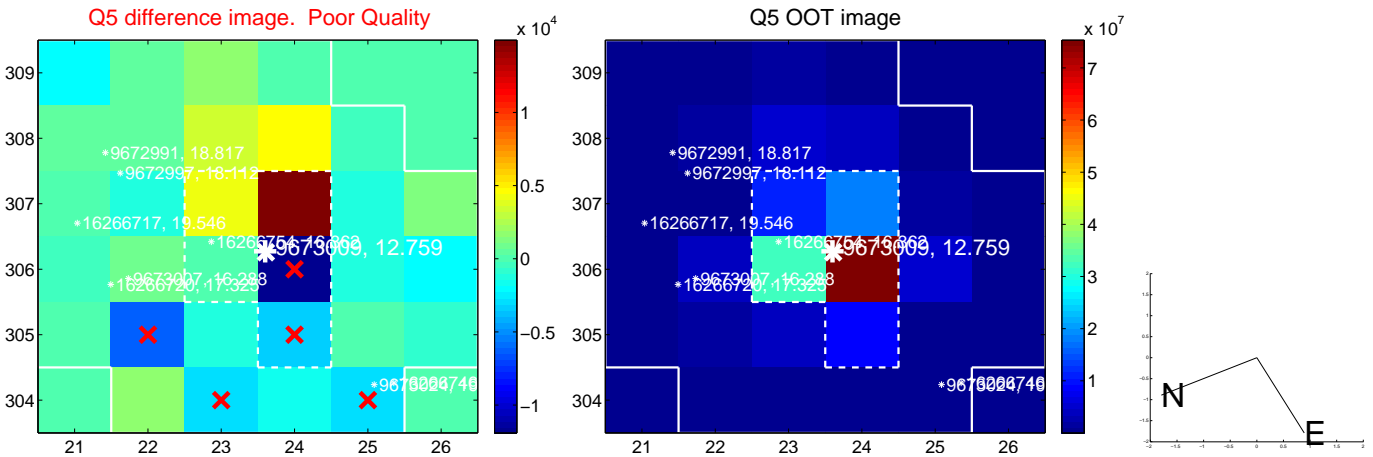


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

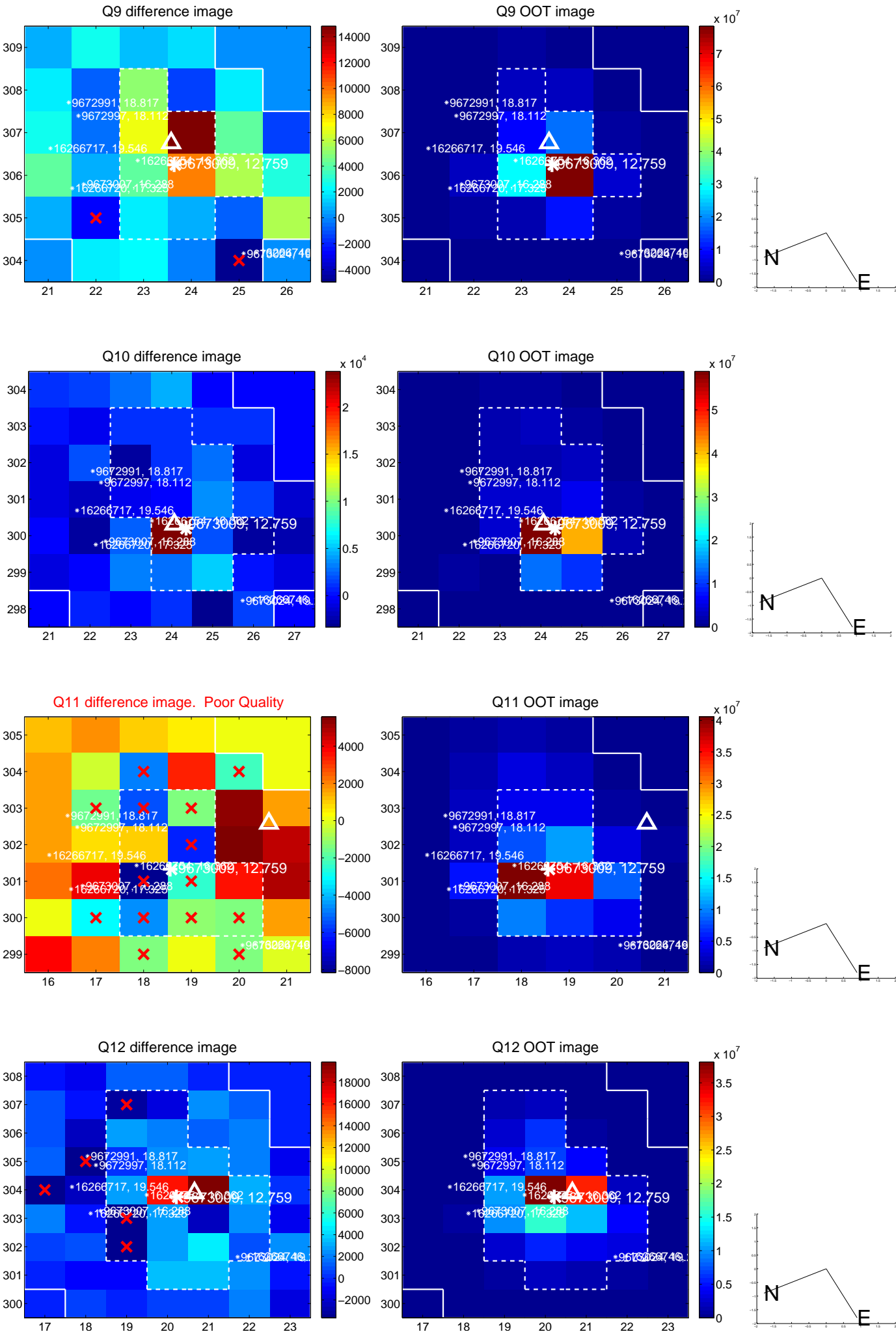
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



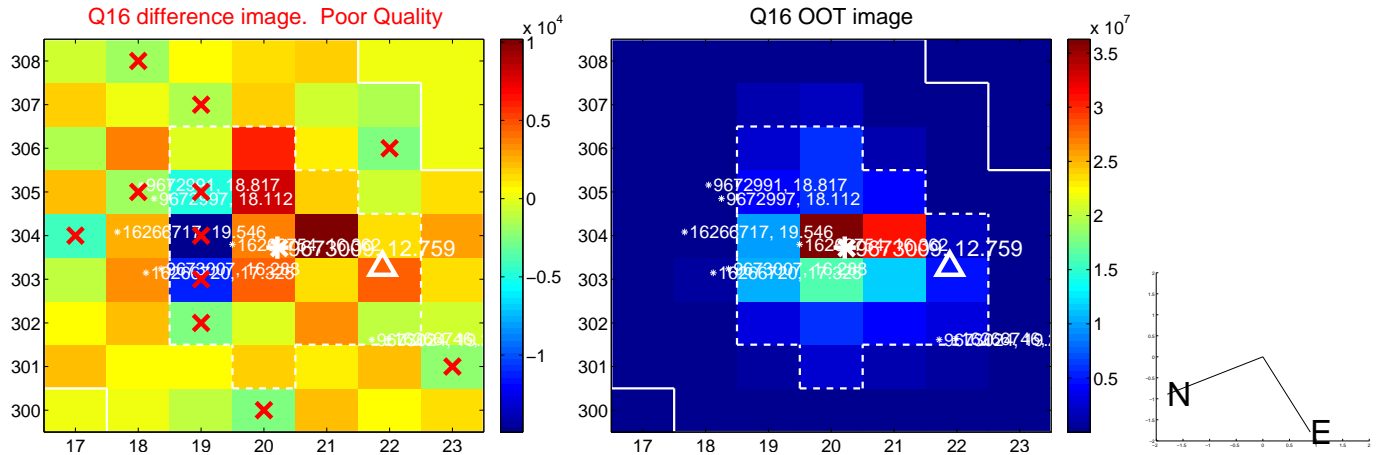
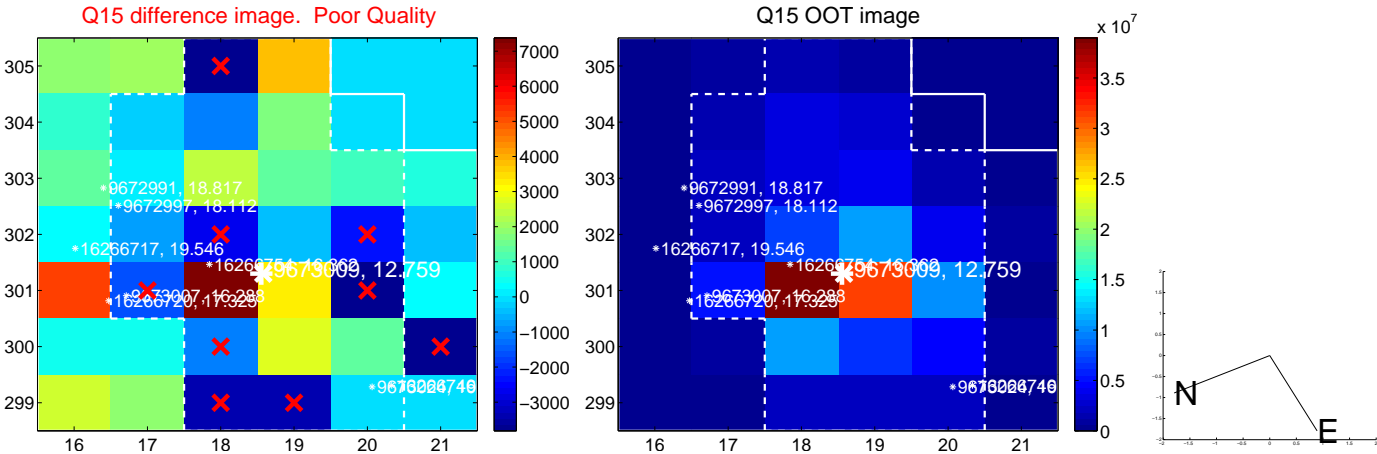
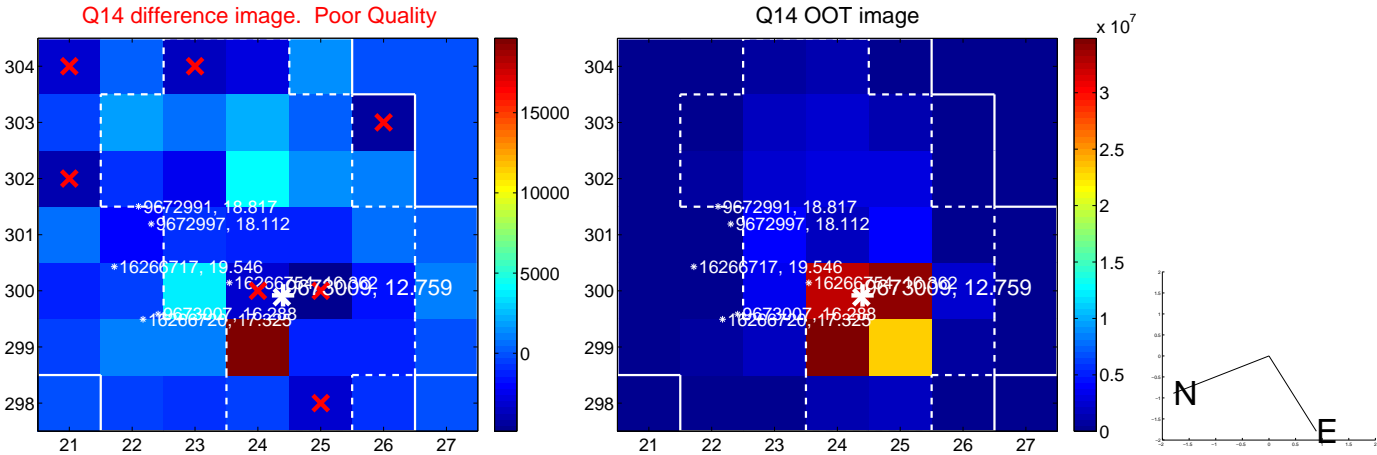
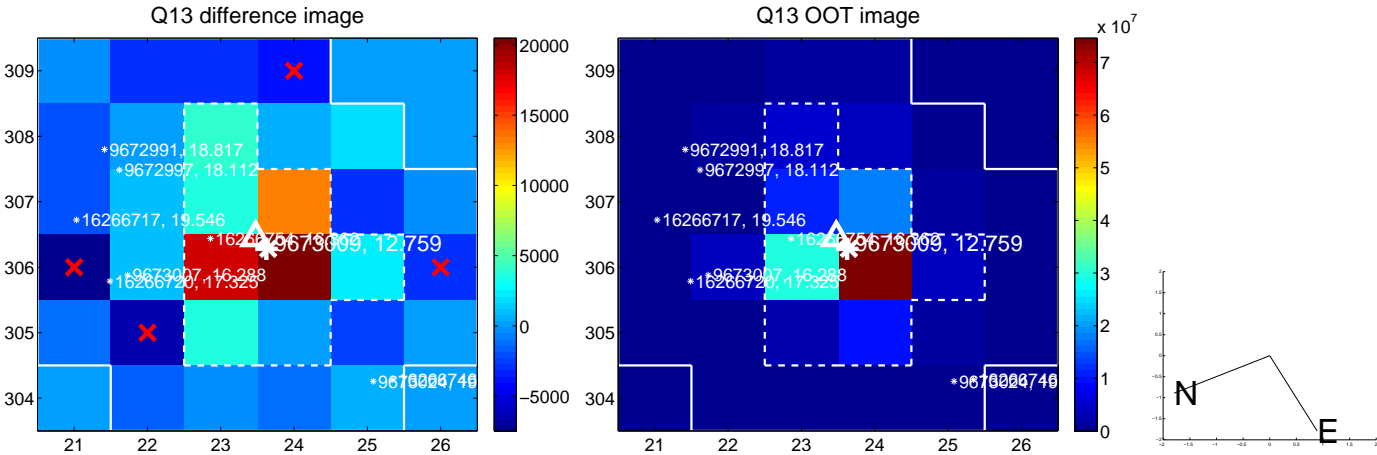
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



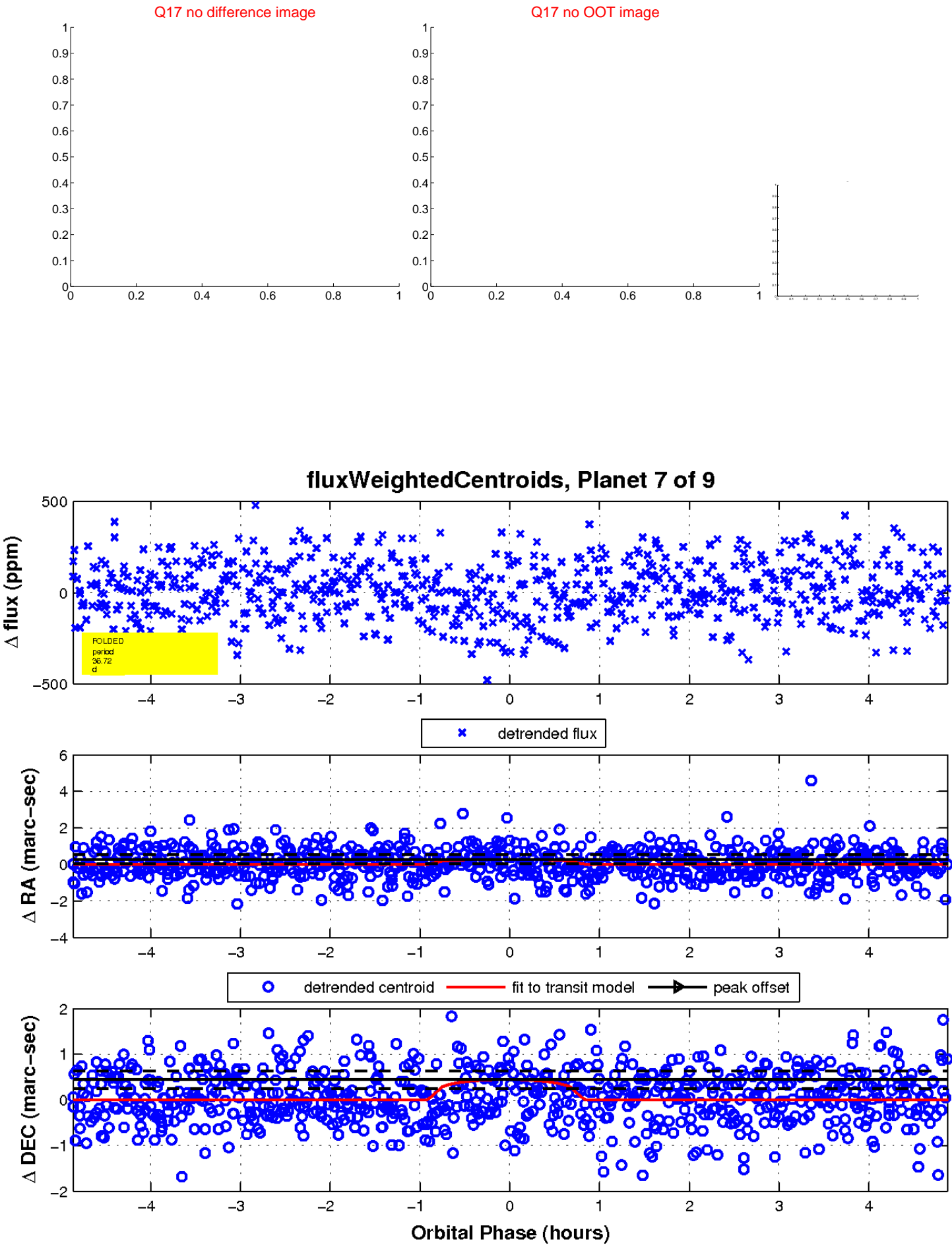
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



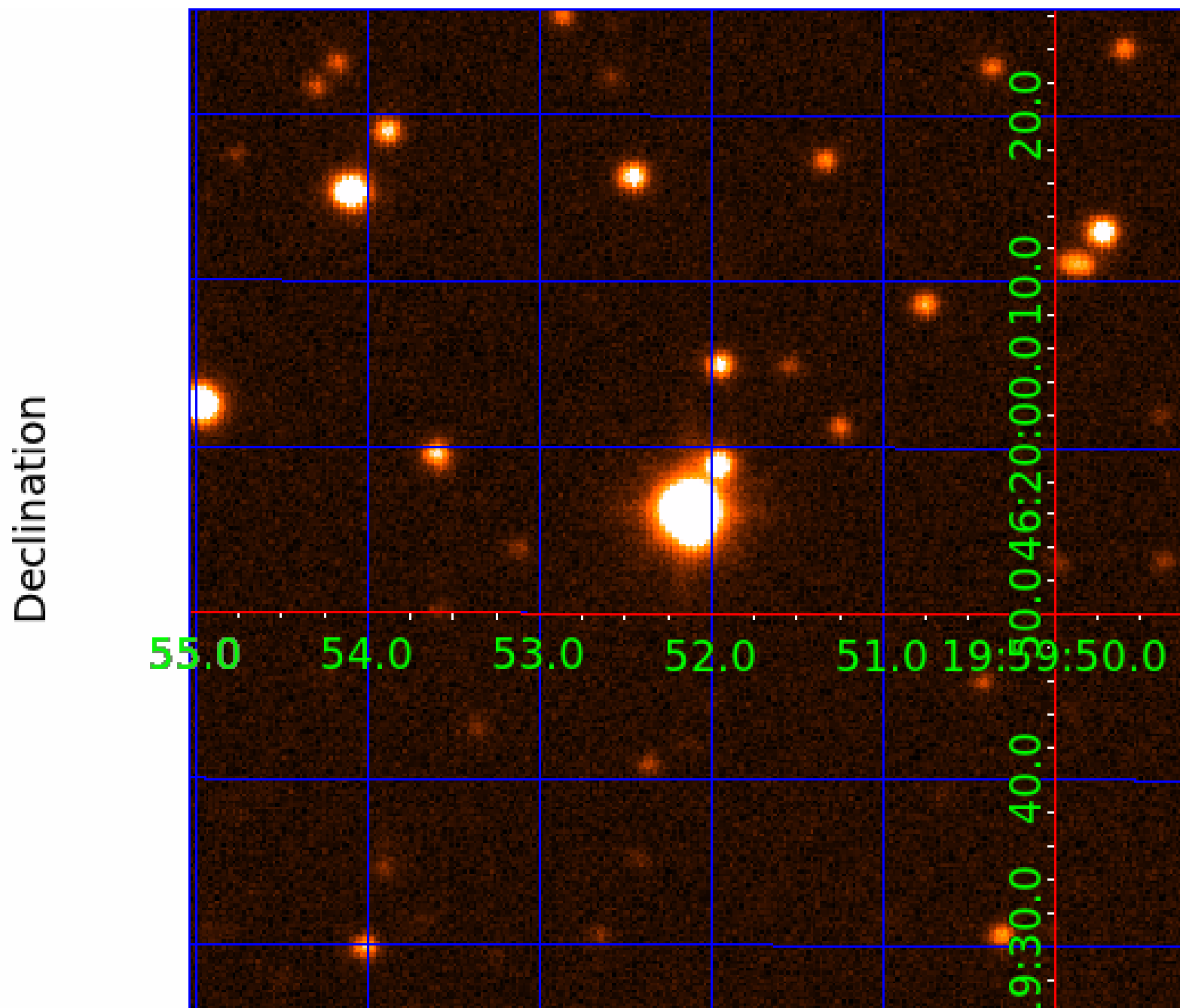
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009673009

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})
009673009-01	OBS	No	1.721726	132.966391	15.9	10.520	8.9	7.3	2.10	4980	0.81	3347.30
009673009-02	OBS	No	108.723993	157.600626	406.6	1.921	9.2	10.1	2.10	4980	5.16	13.31
009673009-03	OBS	No	53.789312	175.657282	196.2	3.546	8.4	9.0	2.10	4980	3.26	34.02
009673009-04	OBS	No	72.042103	196.805170	313.6	2.777	8.2	8.9	2.10	4980	7.11	23.04
009673009-05	OBS	No	79.499201	169.162431	324.7	2.116	7.9	9.2	2.10	4980	4.36	20.21
009673009-06	OBS	No	33.976012	156.889378	188.7	2.332	8.2	8.5	2.10	4980	3.83	62.77
009673009-07	OBS	No	36.715684	151.364416	250.6	1.628	7.9	8.6	2.10	4980	3.25	56.60
009673009-08	OBS	No	58.636647	147.578702	184.5	3.207	7.5	8.0	2.10	4980	3.48	30.32
009673009-09	OBS	No	43.354274	153.079658	220.9	1.415	7.4	8.1	2.10	4980	3.34	45.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009673009-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET
009673009-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009673009-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009673009-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009673009-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

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

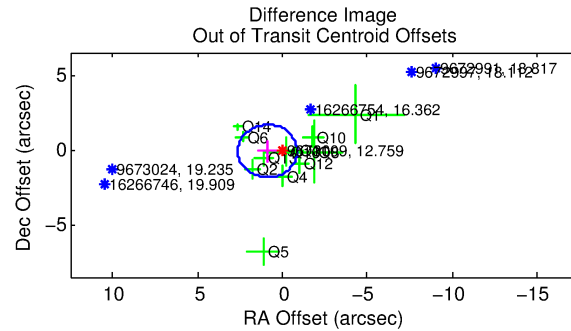
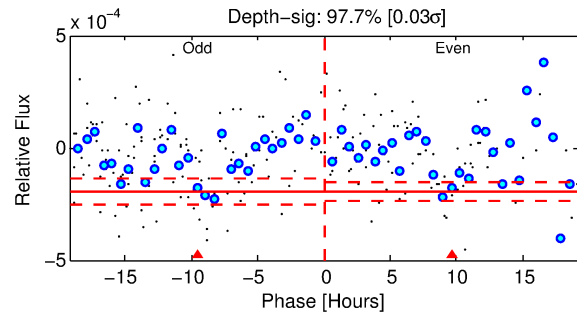
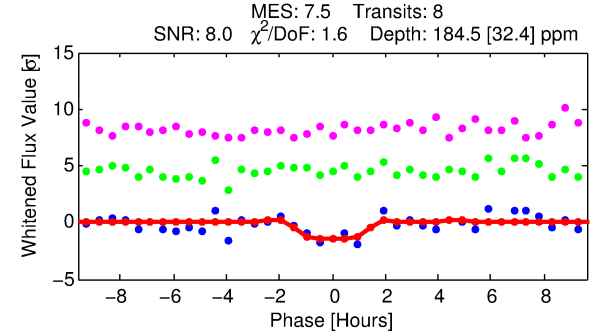
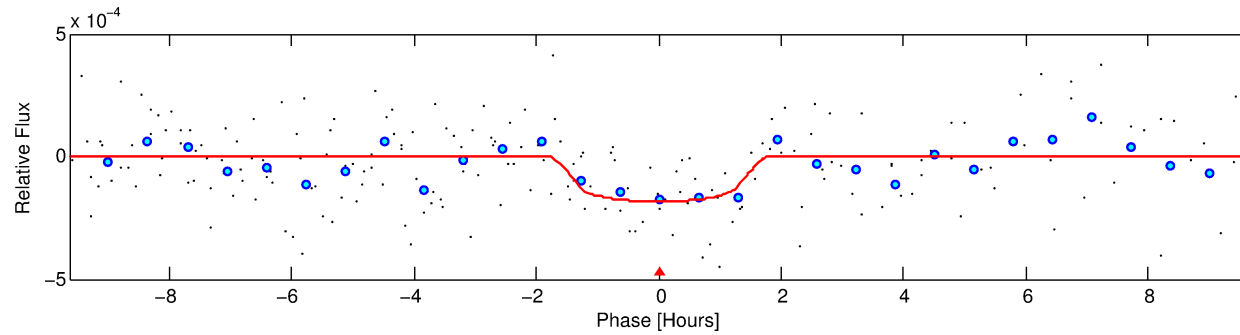
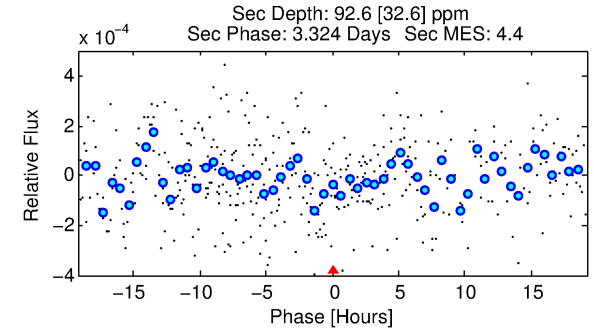
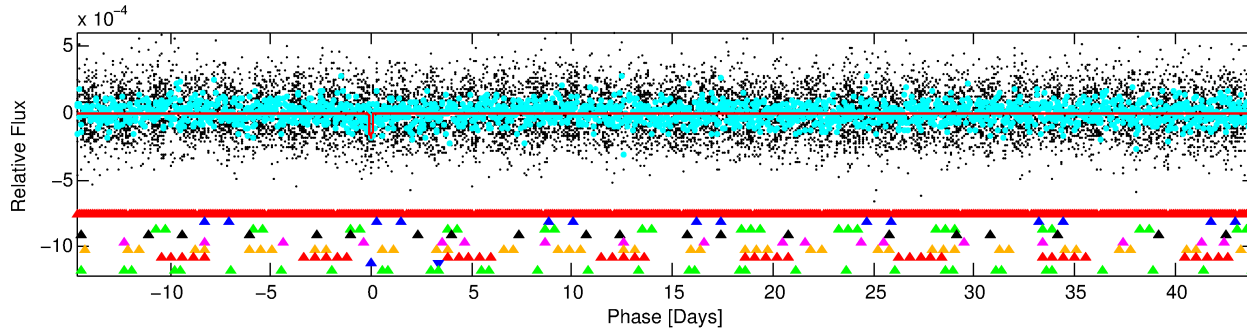
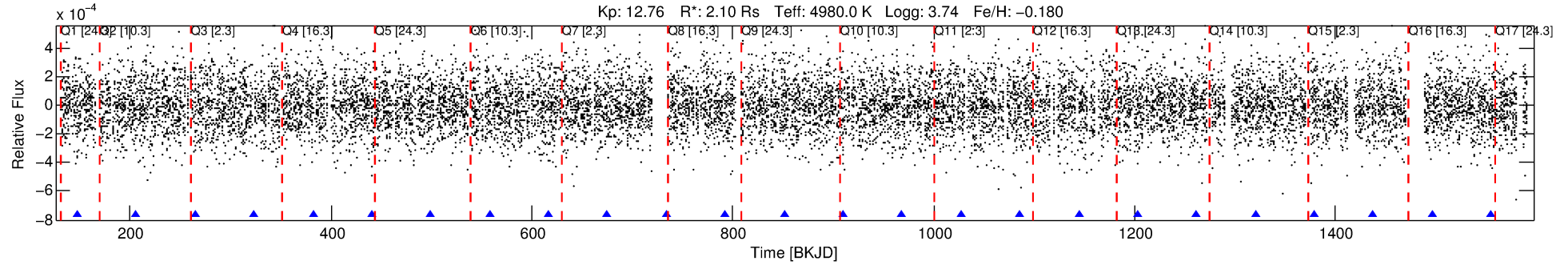
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009673009-08

No Significant Match Found

DV One-Page Summary

KIC: 9673009 Candidate: 8 of 9 Period: 58.637 d



DV Fit Results:

Period = 58.63665 [0.00077] d
Epoch = 147.5787 [0.0117] BKJD
Rp/R* = 0.0151 [0.0161]
a/R* = 65.66 [282.67]
b = 0.90 [0.94]
Seff = 30.32 [41.33]
Teq = 598 [204] K
Rp = 3.47 [4.32] Re
a = 0.2838 [0.2196] AU
Ag = 339.71 [866.46] [0.39σ]
Teffp = 3972 [2146] K [1.56σ]

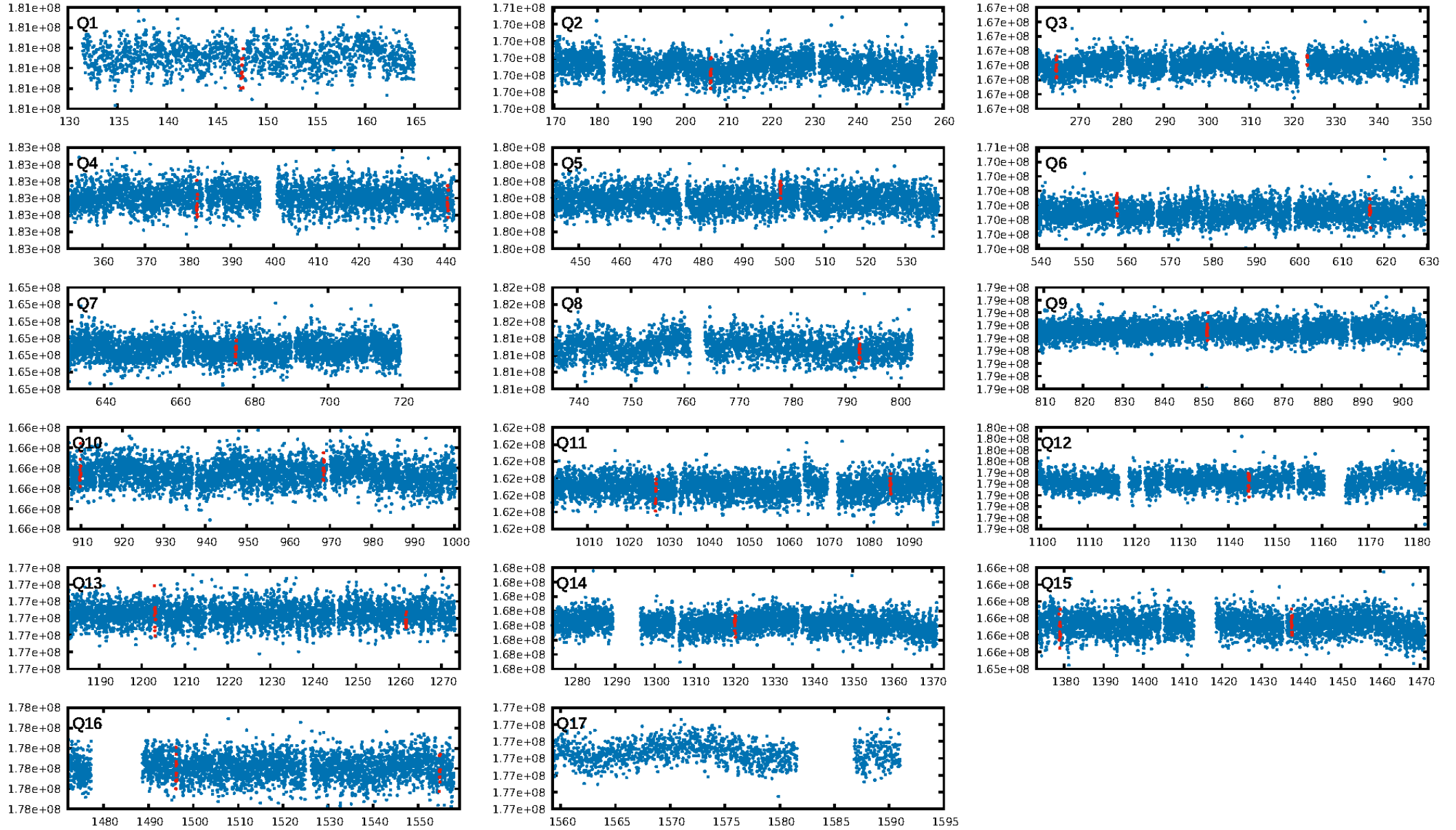
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [24.33σ]
LongPeriod-sig: 100.0% [75.84σ]
ModelChiSquare2-sig: 57.6%
ModelChiSquareGof-sig: 98.8%
Bootstrap-pfa: 2.40e-07
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -2.771
Centroid-sig: 6.6%
Centroid-so: 1.220 arcsec [1.18σ]
OotOffset-rm: 0.877 arcsec [1.50σ]
KicOffset-rm: 0.805 arcsec [1.42σ]
OotOffset-st: 4/1/4/3 [12]
KicOffset-st: 4/1/4/3 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 0.44 [7/16]

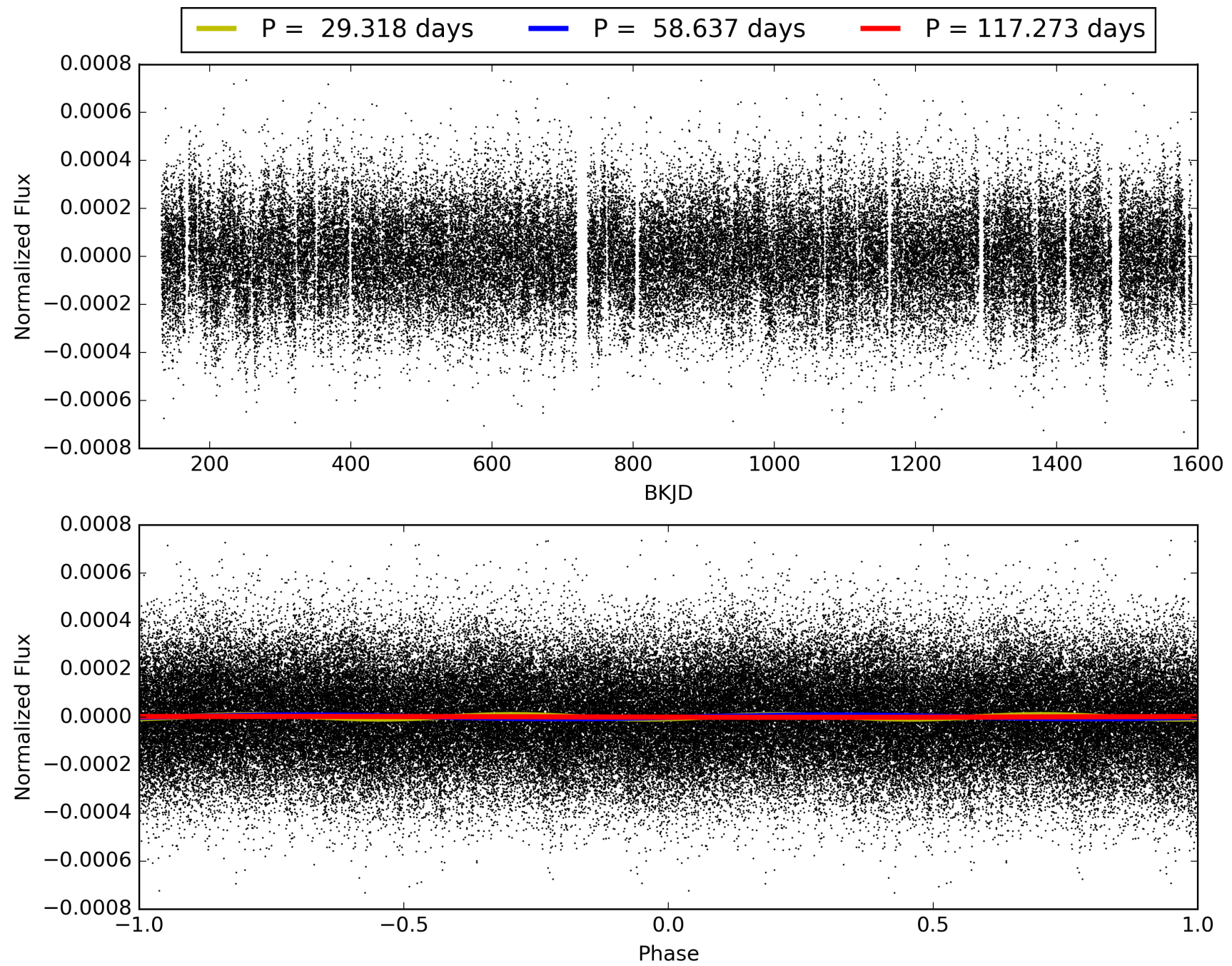
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:41:29 Z

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

TCE 009673009-08, PDC Light Curves

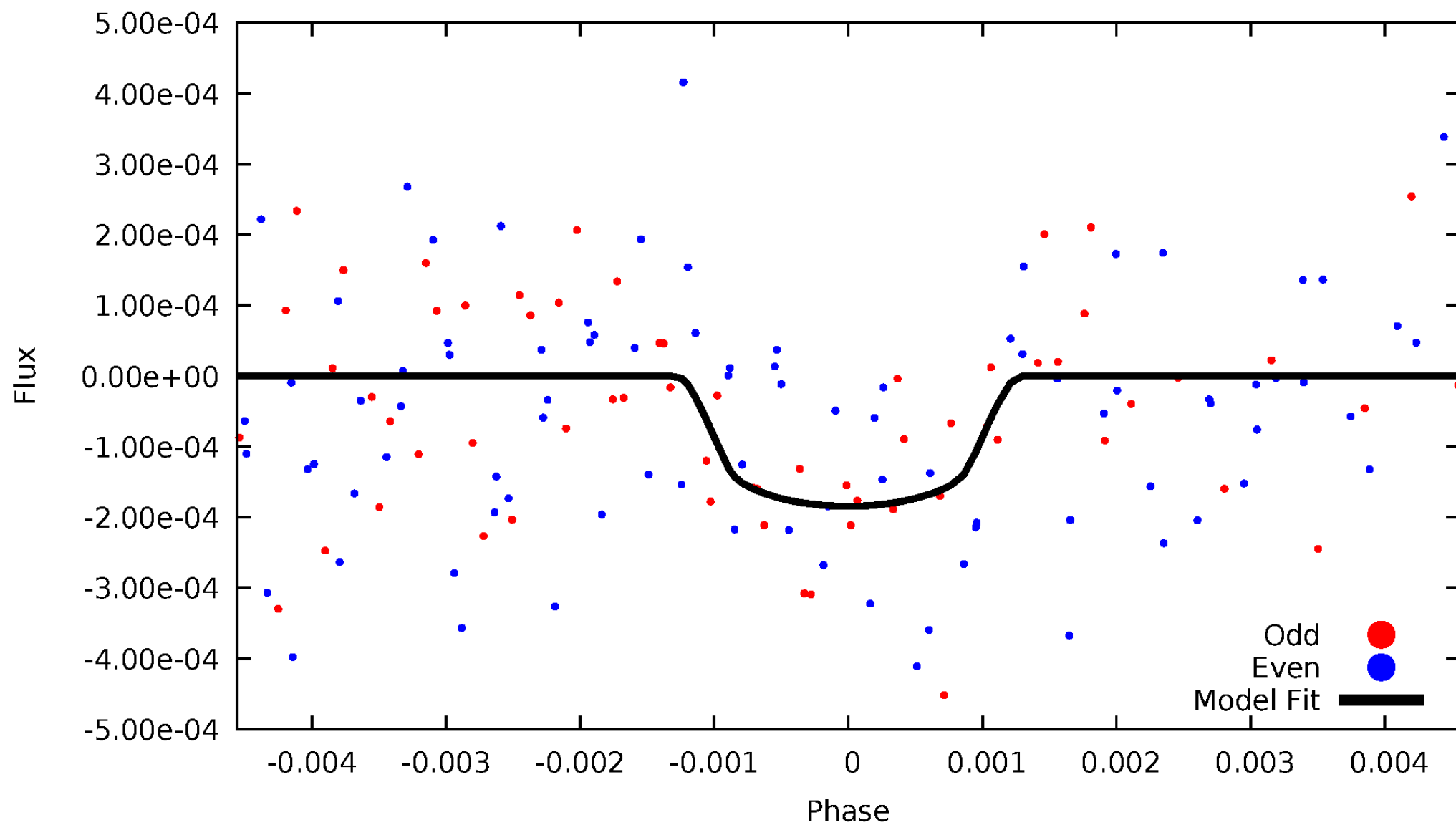


TCE 009673009-08



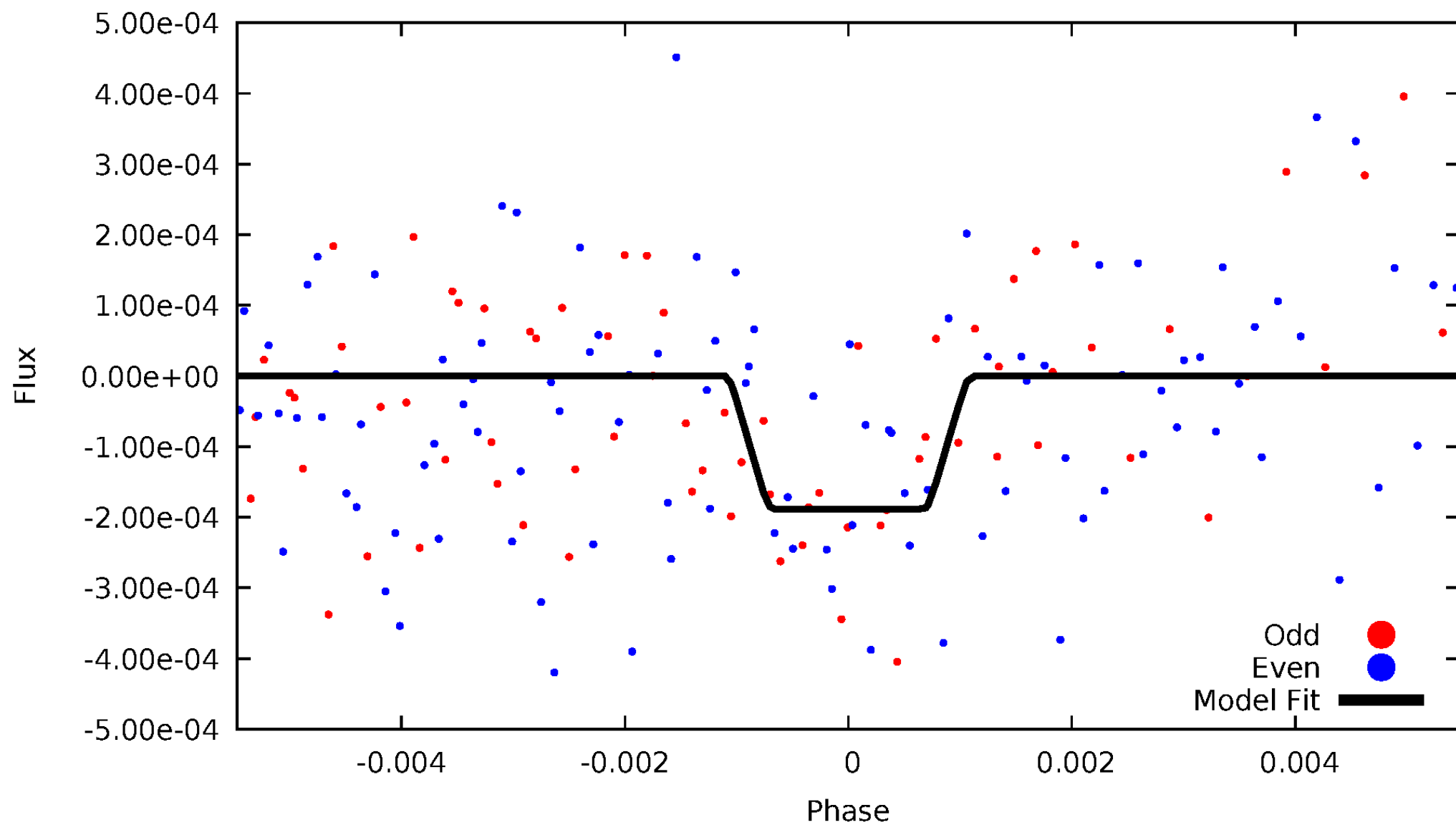
DV Odd/Even

TCE 009673009-08



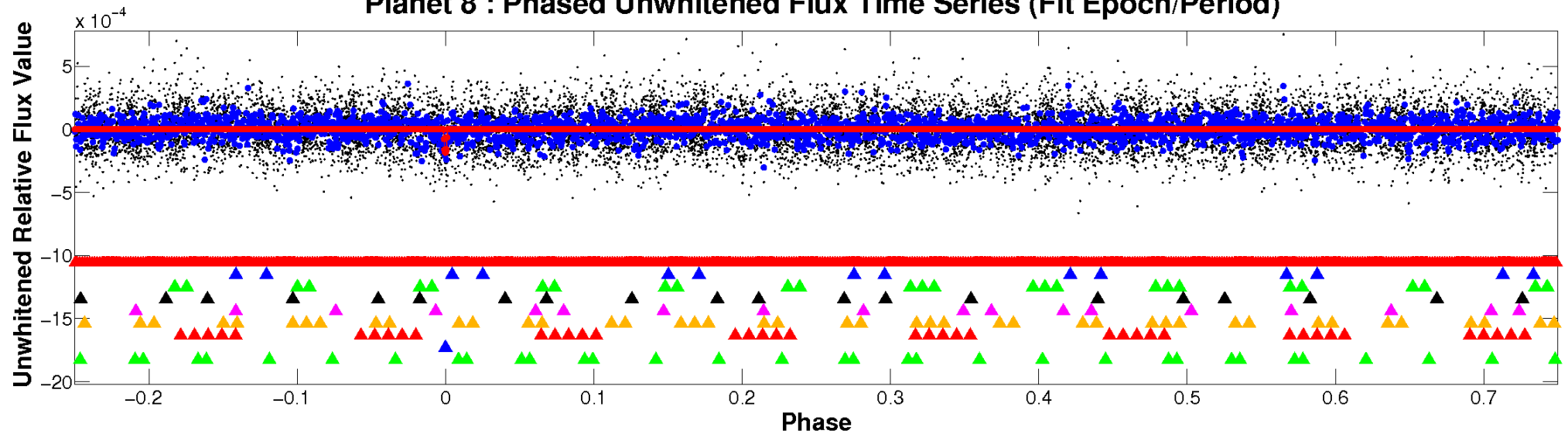
ALT Odd/Even

TCE 009673009-08

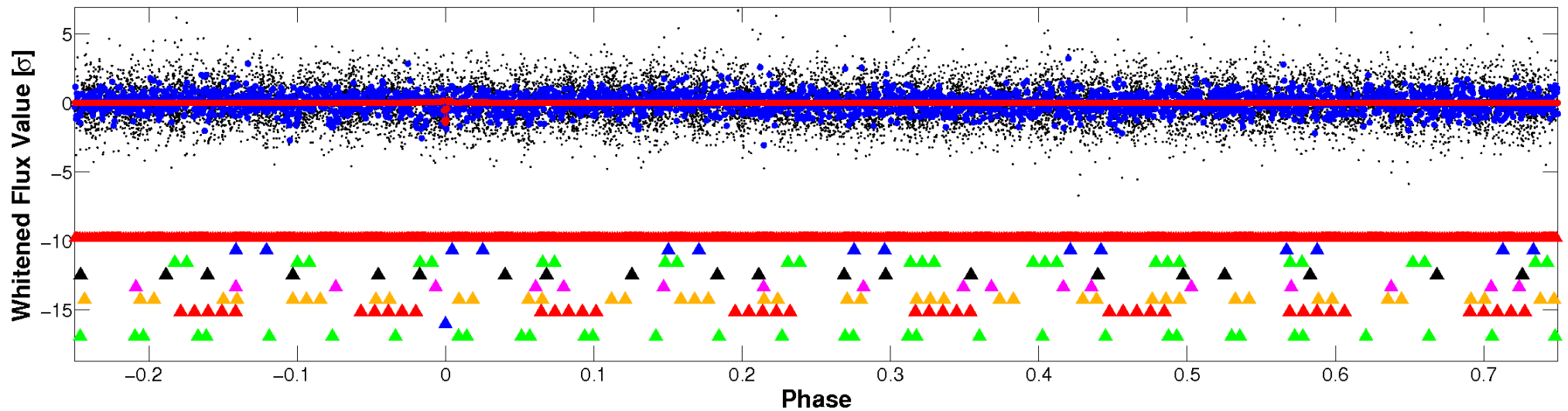


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

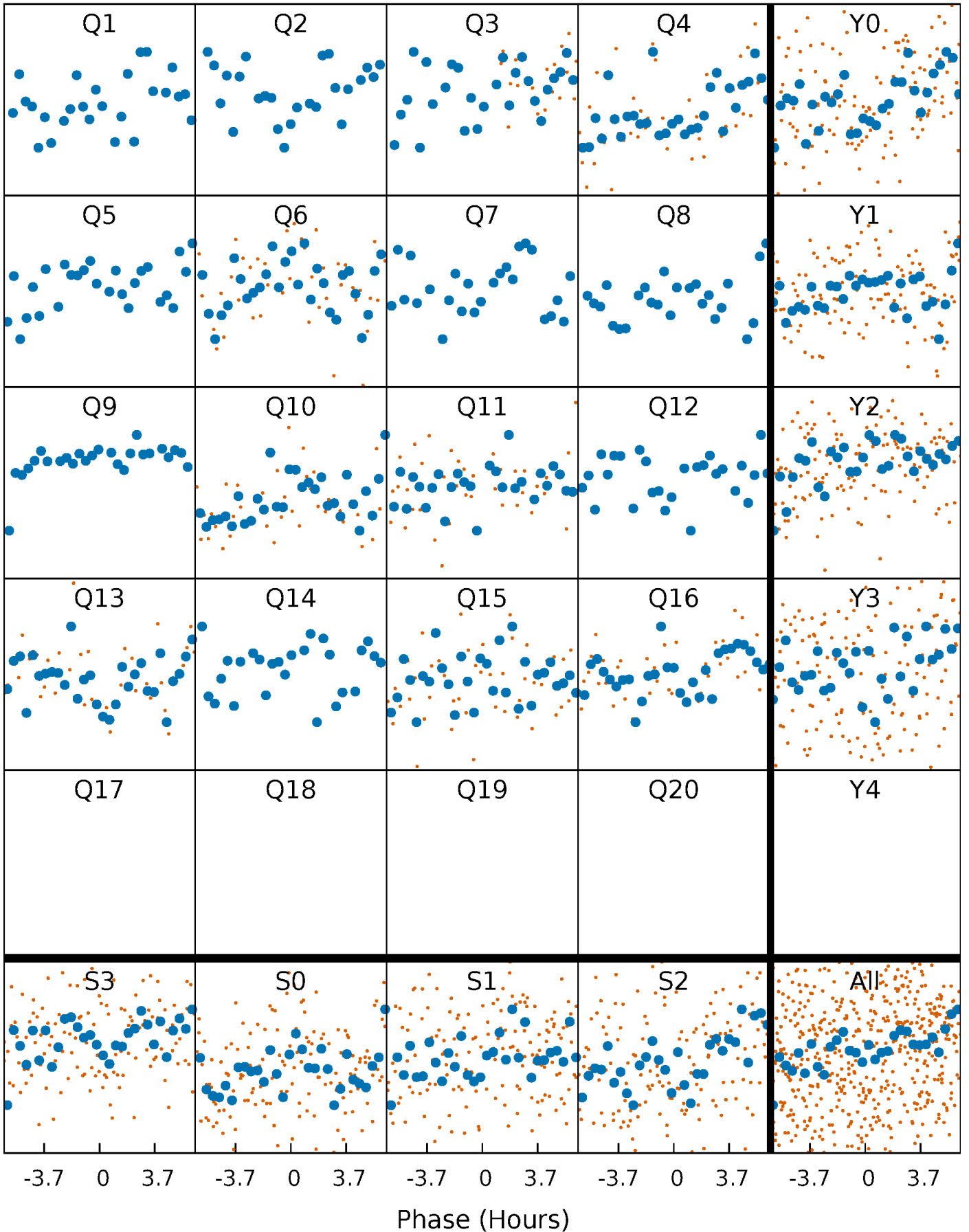


Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



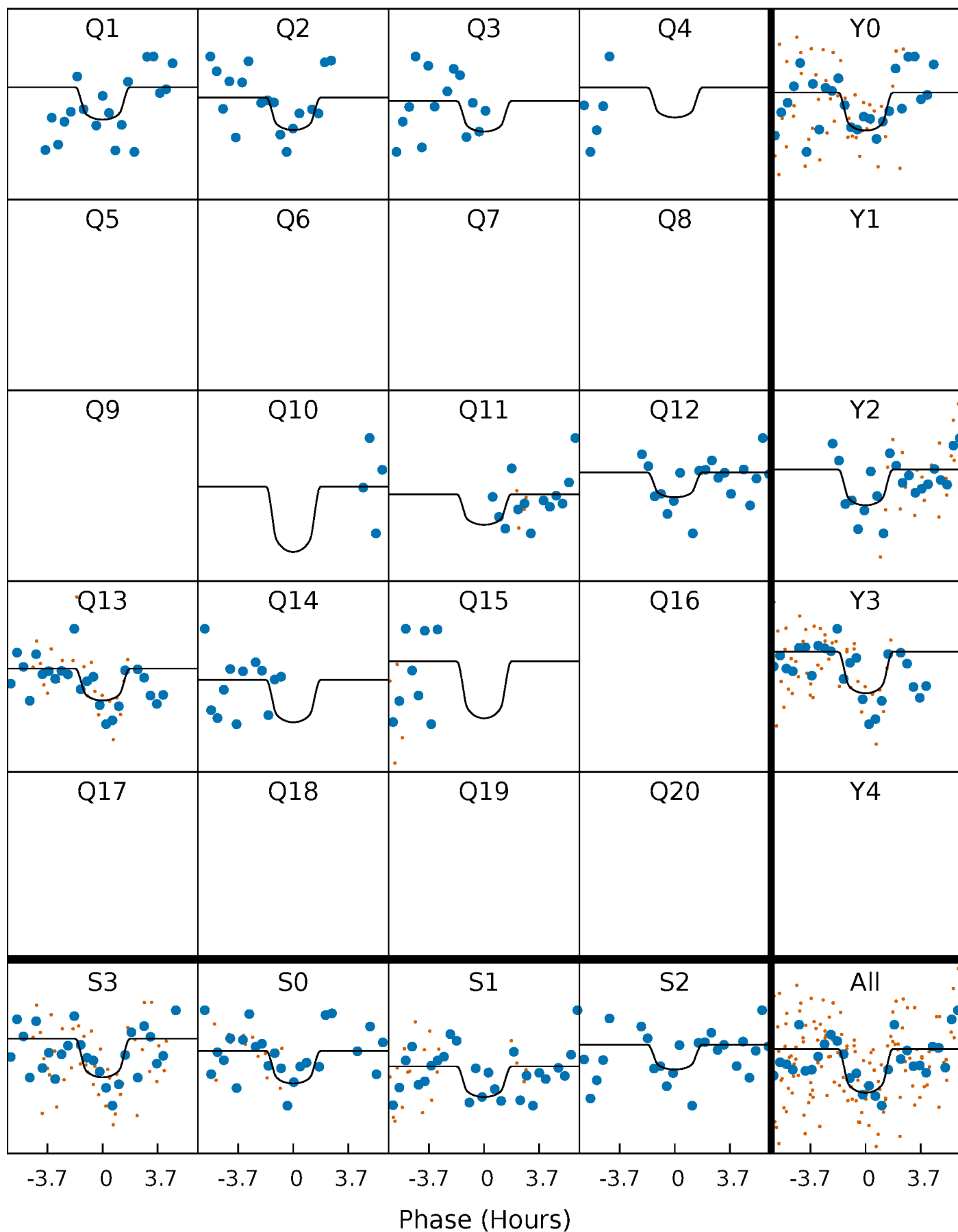
PDC Quarter-Phased Transit Curves

TCE 009673009-08 P= 58.636647 Days $T_0=147.578702$ (BKJD)



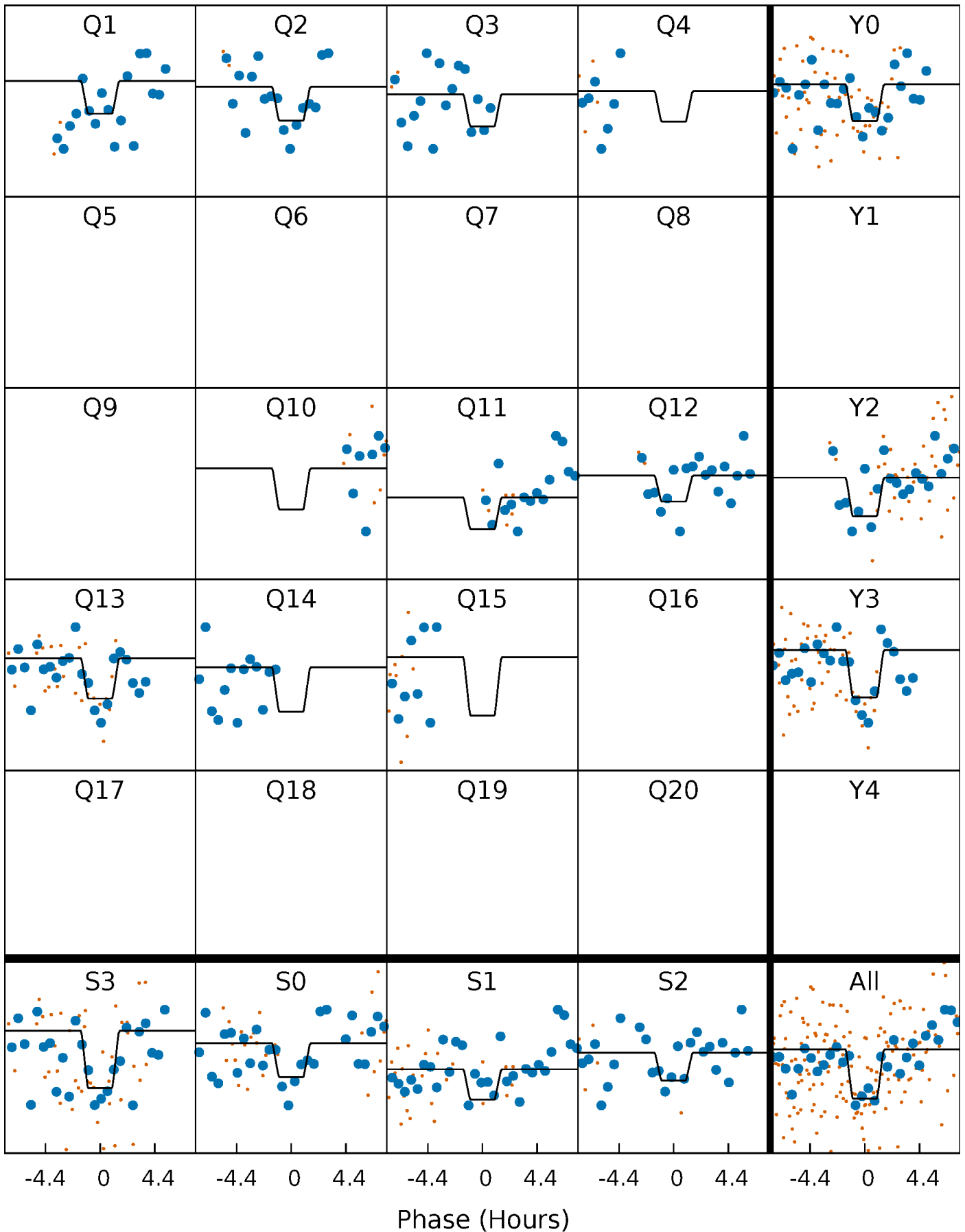
DV Quarter-Phased Transit Curves

TCE 009673009-08 P= 58.636647 Days $T_0=147.578702$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

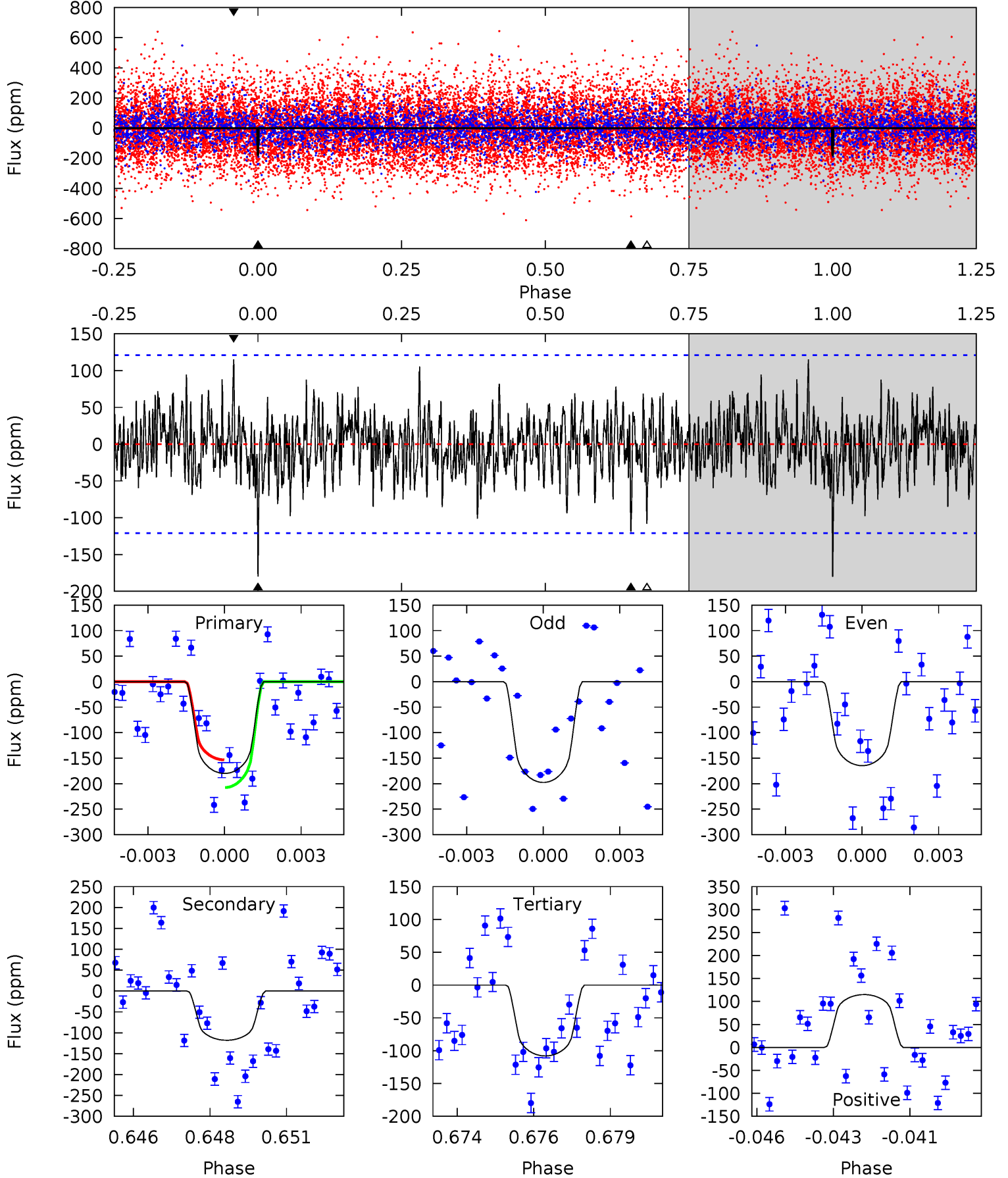
TCE 009673009-08 P= 58.638472 Days $T_0=147.564012$ (BKJD)



DV Model-Shift Uniqueness Test

009673009-08, P = 58.636647 Days, E = 88.942055 Days

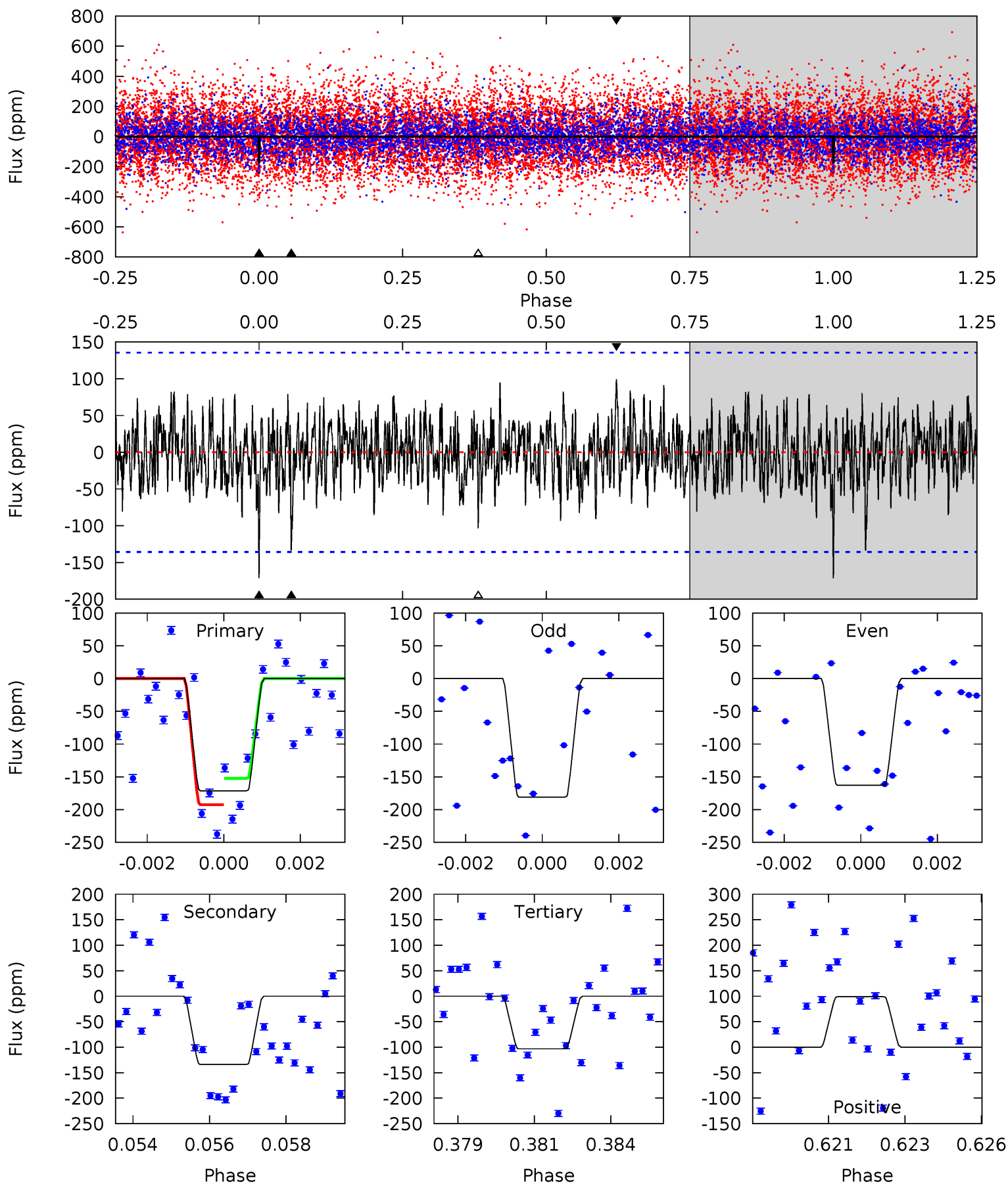
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.86	5.15	4.72	5.02	5.28	3.02	1.43	3.14	2.84	0.43	0.13	0.72	0.89	0.39	1.19



Alt Model-Shift Uniqueness Test

009673009-08, P = 58.638472 Days, E = 88.925540 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.71	5.24	4.05	3.88	5.31	3.07	1.30	2.67	2.83	1.20	1.36	0.35	0.96	0.37	0.79



Stellar Parameters For KIC 009673009

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4980^{+136}_{-121}	$3.739^{+0.840}_{-0.360}$	$-0.180^{+0.300}_{-0.200}$	$2.105^{+1.351}_{-1.351}$	$0.887^{+0.278}_{-0.149}$	$0.134^{+2.597}_{-0.097}$
	+3%/-2%	+22%/-10%	+167%/-111%	+64%/-64%	+31%/-17%	+1941%/-73%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009673009-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-118 ± 23	$3.98^{+4.07}_{-2.55}$	827^{+142}_{-163}	4017^{+1835}_{-706}	340^{+2317}_{-261}
Alt.	-134 ± 26	$3.96^{+3.82}_{-2.69}$	823^{+139}_{-164}	4116^{+2220}_{-693}	385^{+3069}_{-286}

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

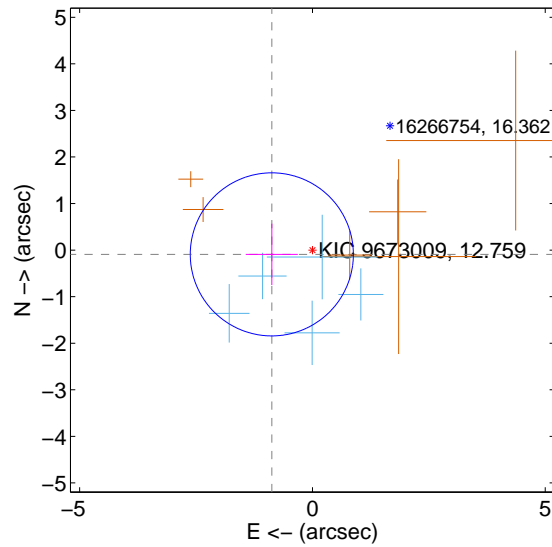
Supplemental centroid analysis for 009673009-08. Kepler magnitude: 12.76. Transit SNR 8.03

There are 5 quarters with good PRF difference image offsets

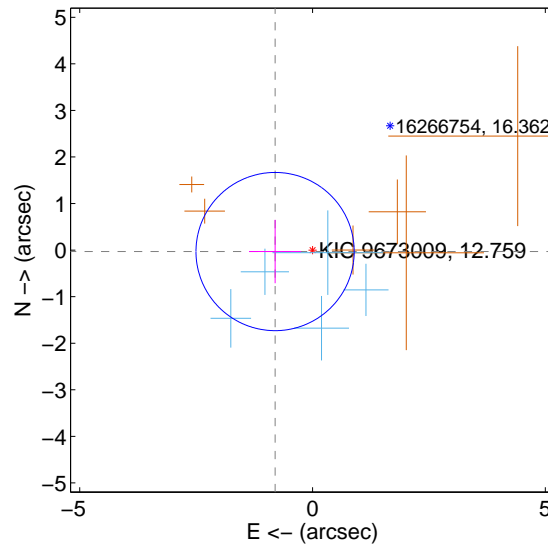
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.877 ± 0.584	1.50	0.873 ± 0.559	-0.092 ± 0.659
PRF-fit source offset from KIC position	0.805 ± 0.566	1.42	0.804 ± 0.559	-0.031 ± 0.681
photometric centroid source offset	1.22 ± 1.04	1.18	-0.59 ± 1.28	1.07 ± 0.95

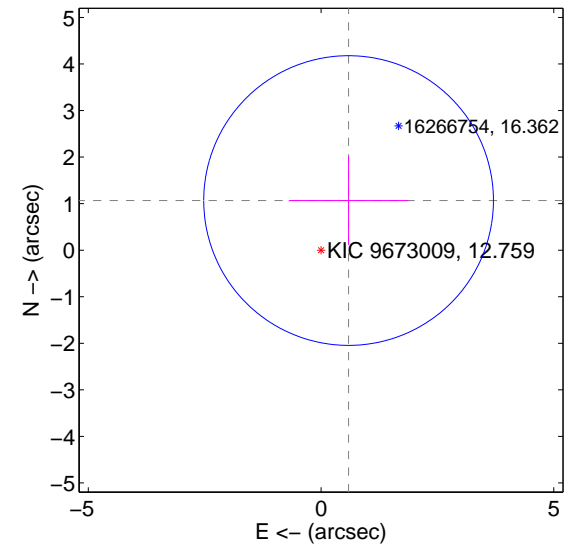
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

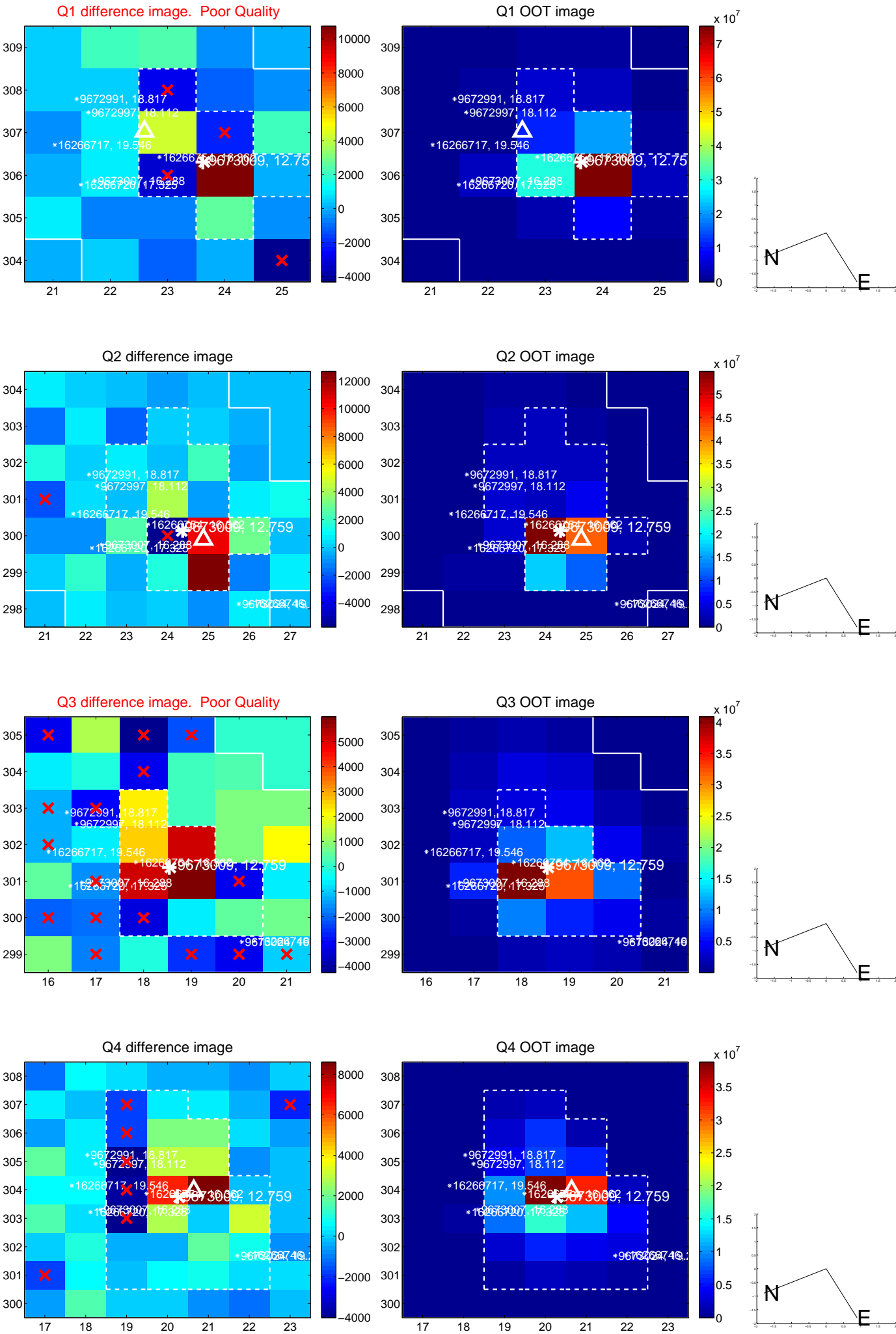


offset from photometric centroids

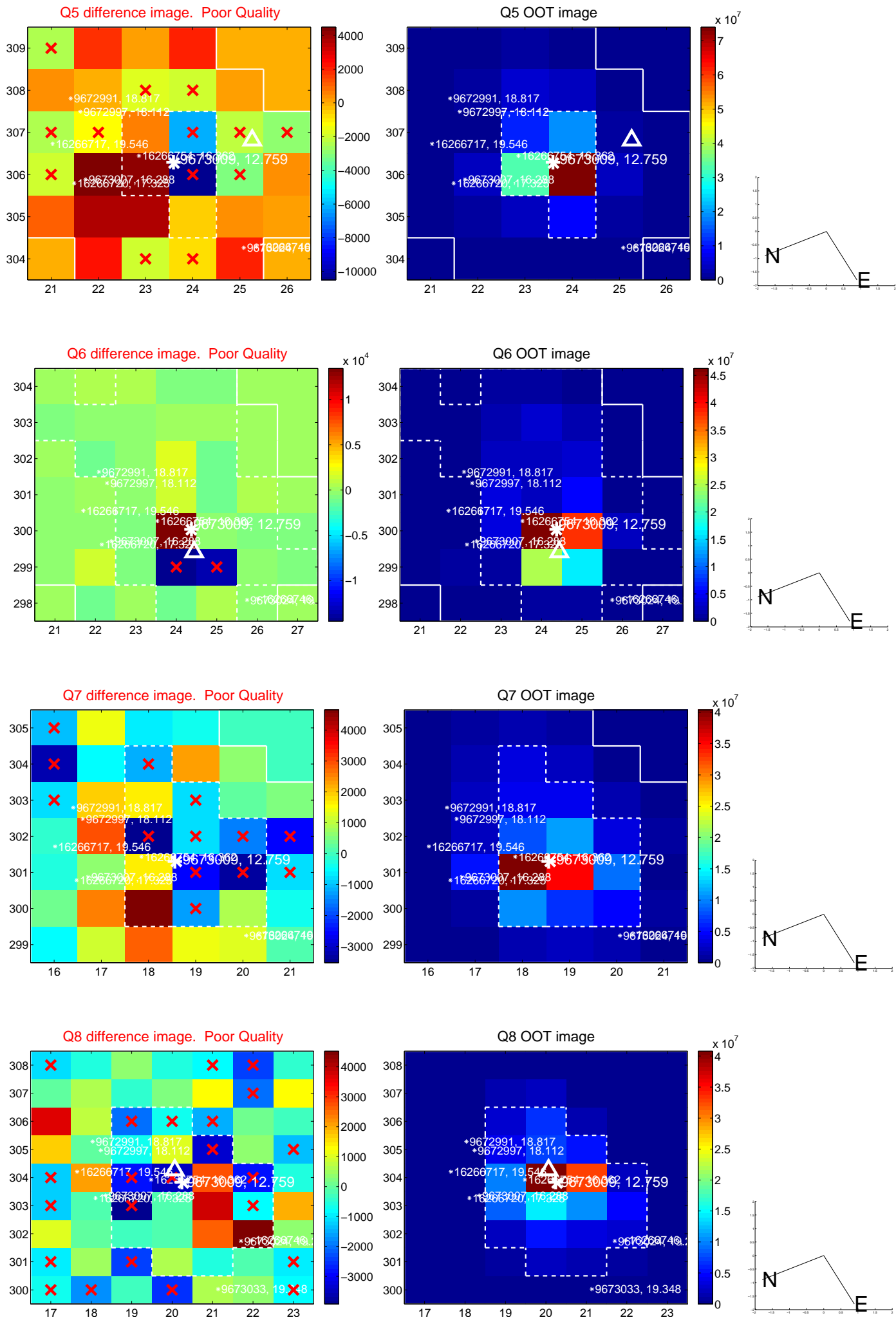


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

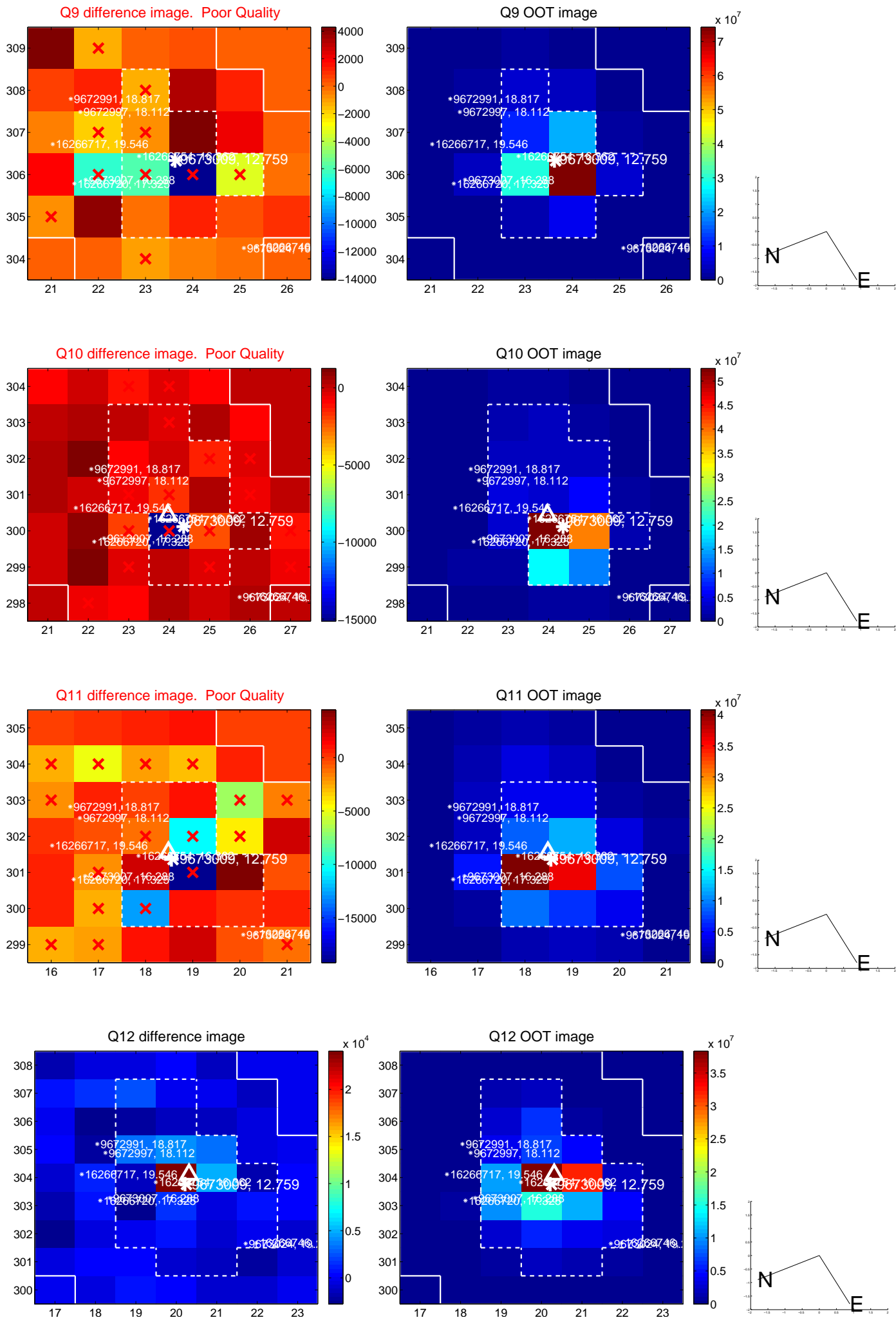
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



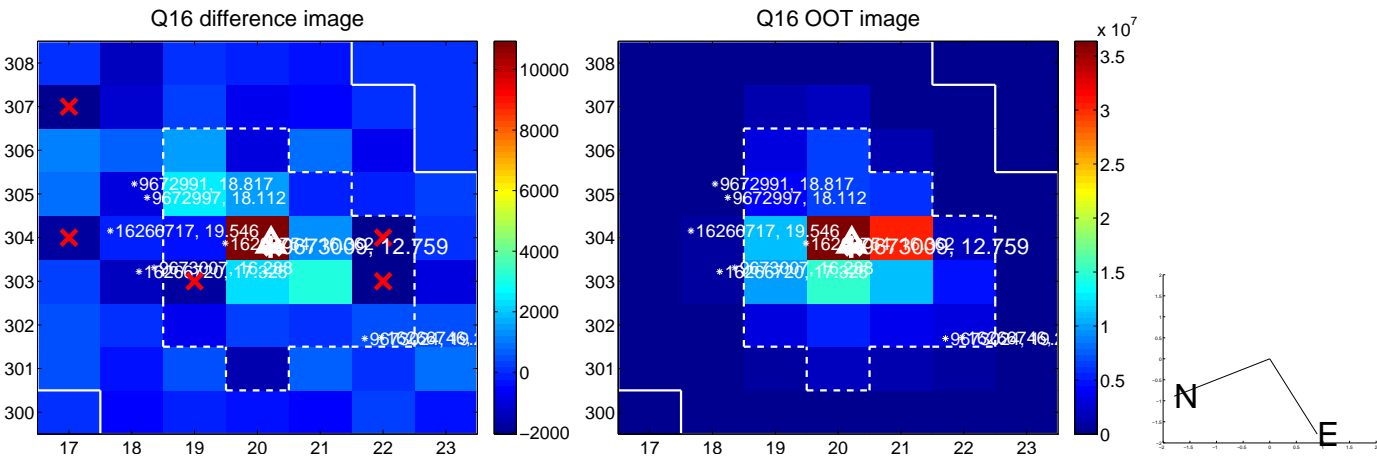
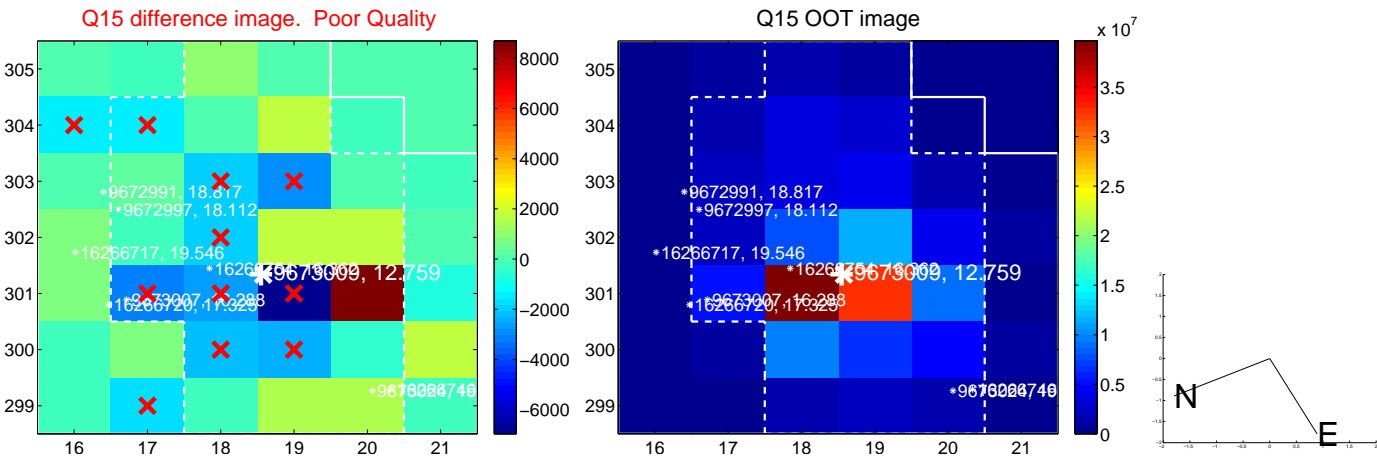
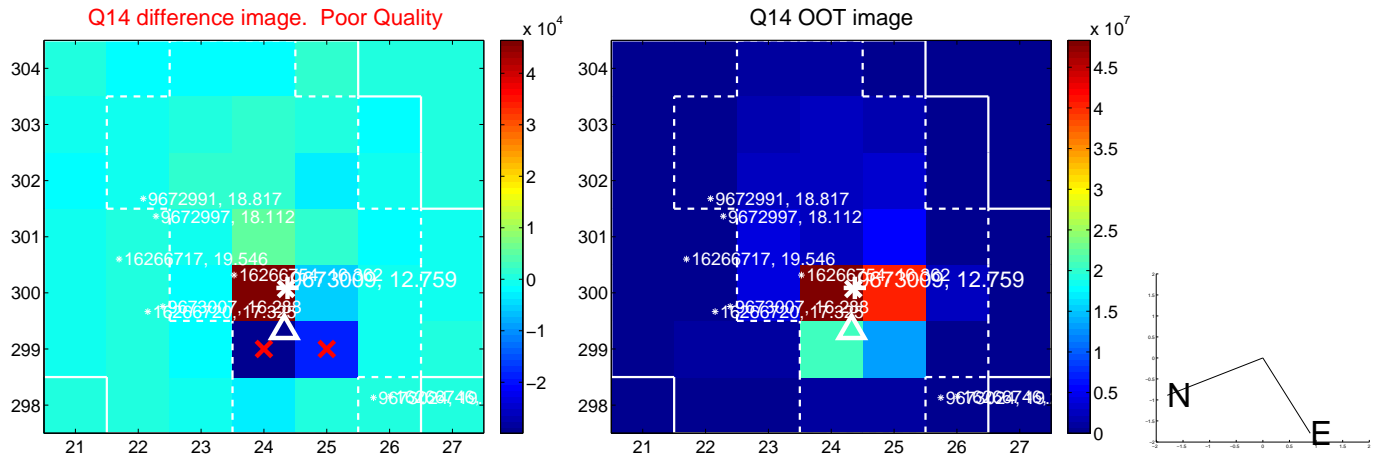
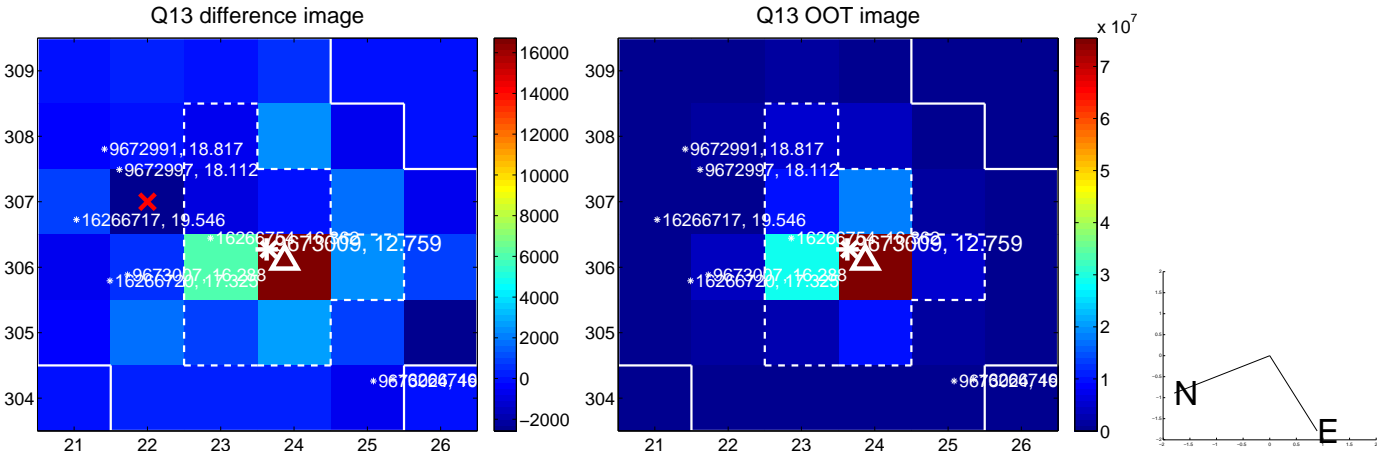
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



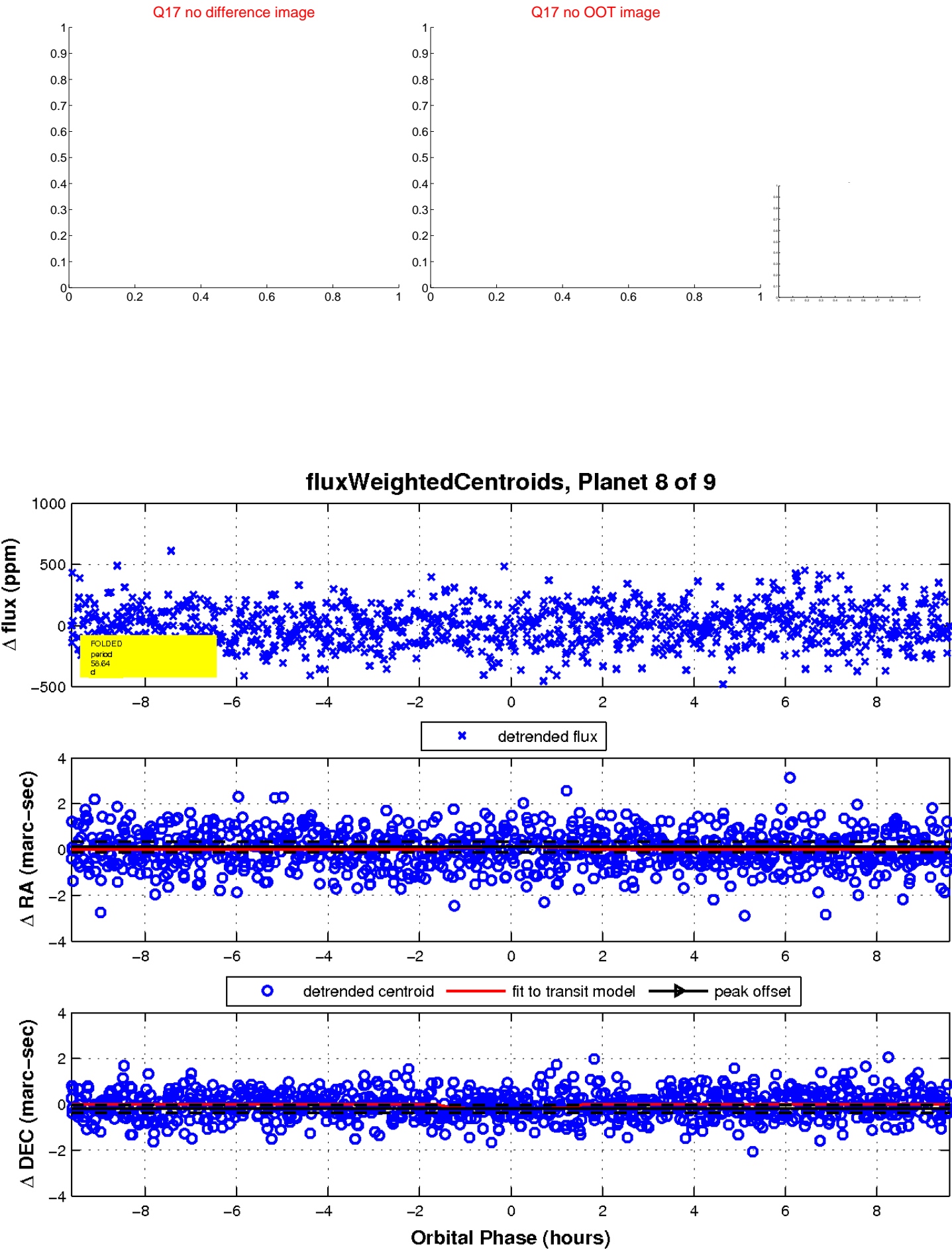
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



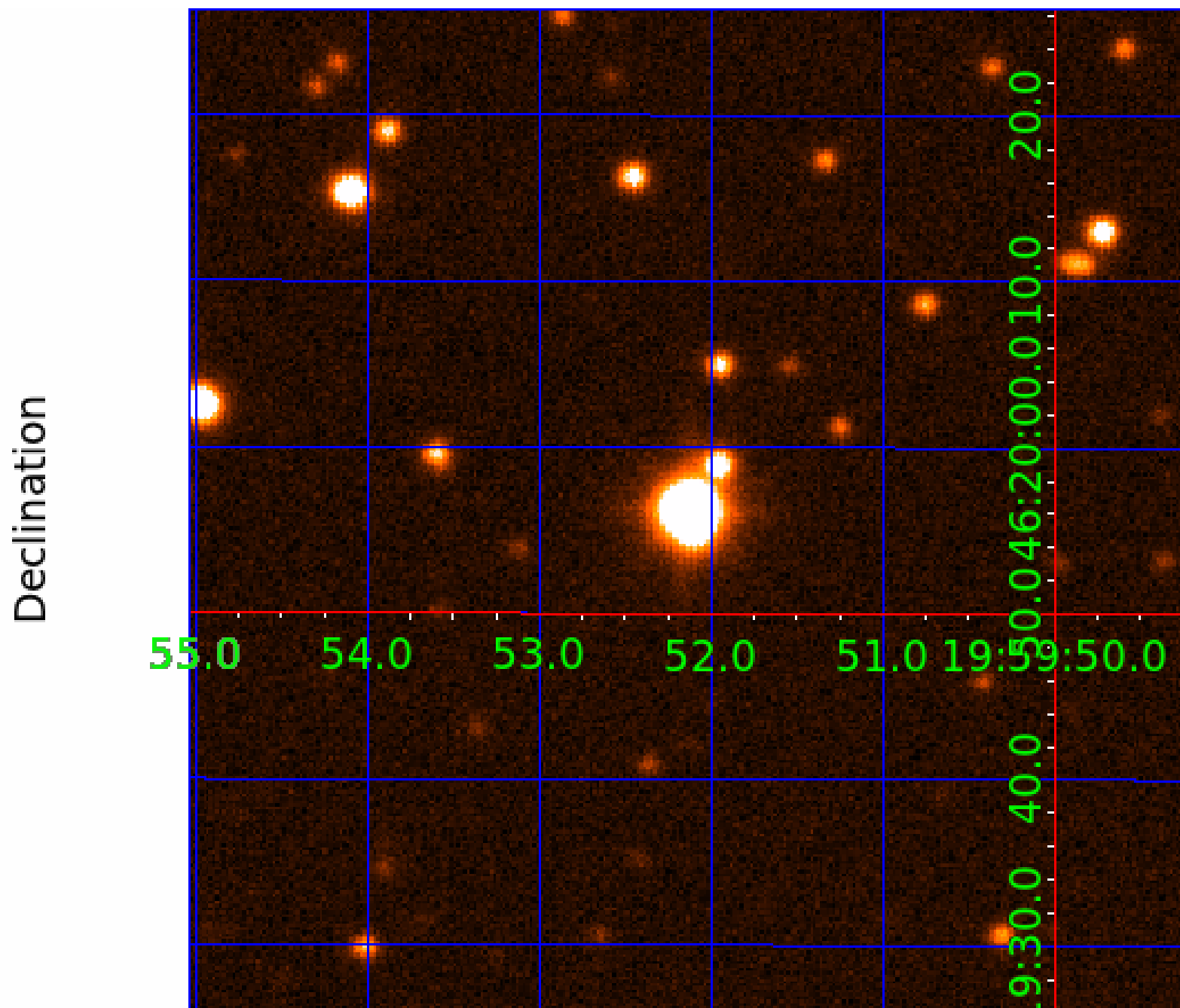
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009673009

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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009673009-02	OBS	No	108.723993	157.600626	406.6	1.921	9.2	10.1	2.10	4980	5.16	13.31
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009673009-04	OBS	No	72.042103	196.805170	313.6	2.777	8.2	8.9	2.10	4980	7.11	23.04
009673009-05	OBS	No	79.499201	169.162431	324.7	2.116	7.9	9.2	2.10	4980	4.36	20.21
009673009-06	OBS	No	33.976012	156.889378	188.7	2.332	8.2	8.5	2.10	4980	3.83	62.77
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009673009-08	OBS	No	58.636647	147.578702	184.5	3.207	7.5	8.0	2.10	4980	3.48	30.32
009673009-09	OBS	No	43.354274	153.079658	220.9	1.415	7.4	8.1	2.10	4980	3.34	45.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009673009-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET
009673009-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009673009-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT
009673009-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-06	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV
009673009-08	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009673009-09	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV

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

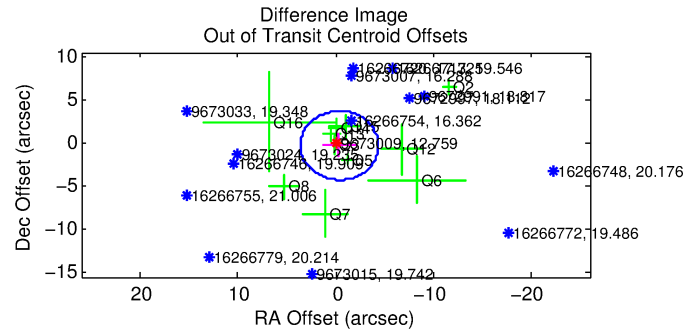
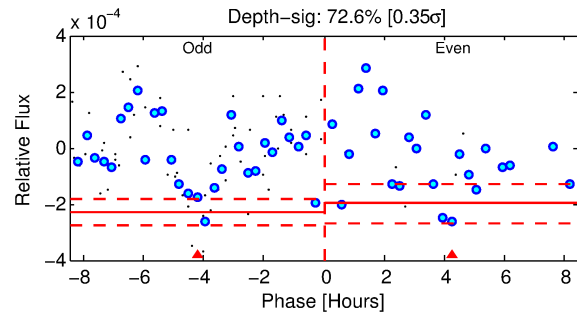
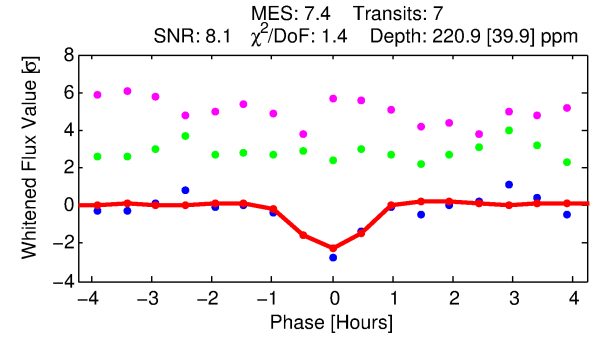
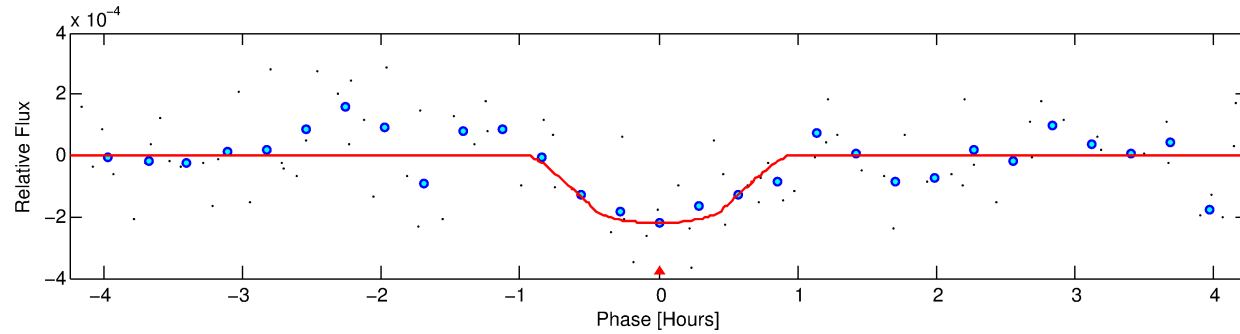
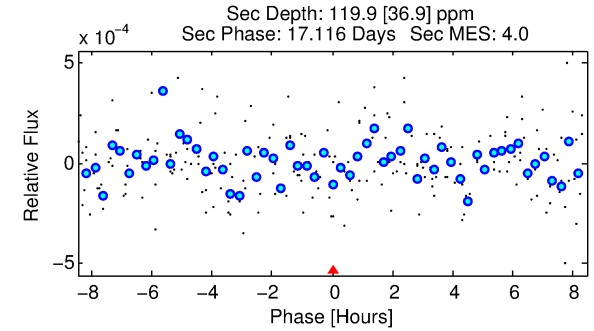
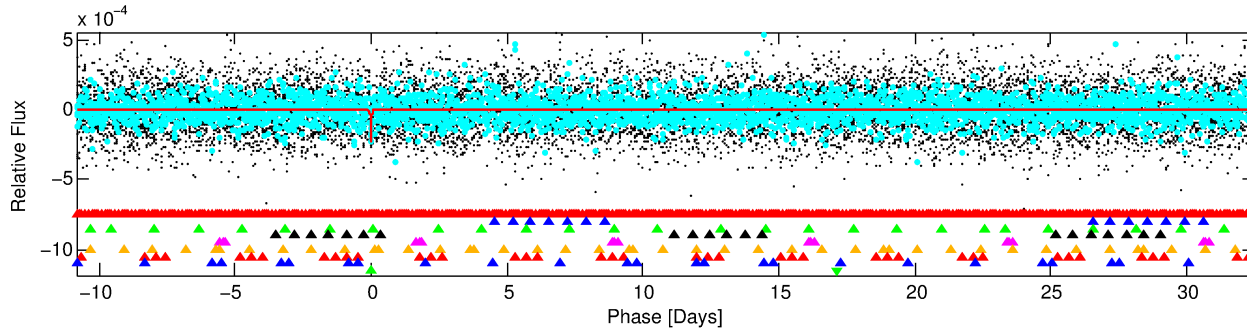
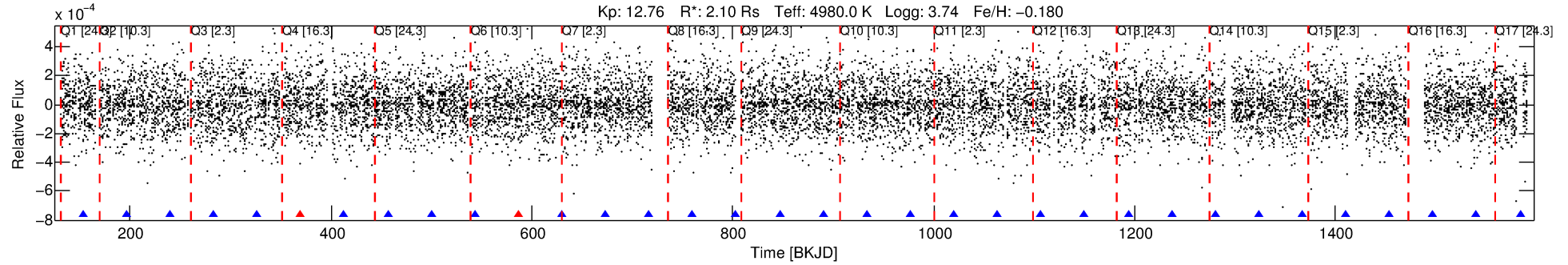
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009673009-09

No Significant Match Found

DV One-Page Summary

KIC: 9673009 Candidate: 9 of 9 Period: 43.354 d



DV Fit Results:

Period = 43.35427 [0.00038] d
Epoch = 153.0797 [0.0067] BKJD
Rp/R* = 0.0145 [0.0205]
a/R* = 175.19 [873.20]
b = 0.68 [3.95]
Seff = 45.35 [61.81]
Teq = 662 [225] K
Rp = 3.34 [5.18] Re
a = 0.2320 [0.1795] AU
Ag = 319.09 [1006.13] [0.32σ]
Teffp = 4324 [3078] K [1.19σ]

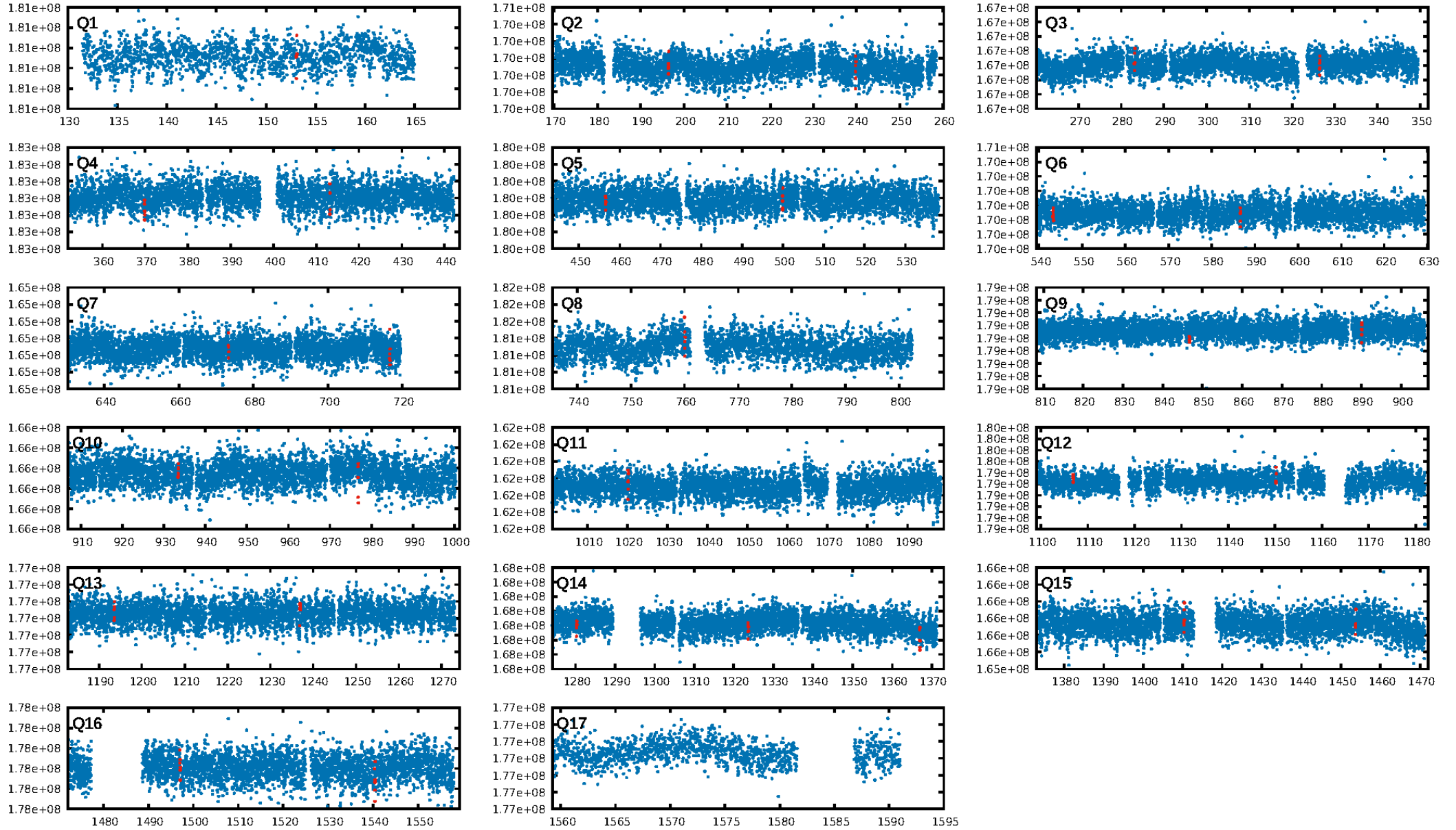
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [73.87σ]
LongPeriod-sig: 100.0% [65.60σ]
ModelChiSquare2-sig: 35.7%
ModelChiSquareGof-sig: 80.2%
Bootstrap-pfa: 7.56e-08
RollingBand-fgt: 0.71 [5/7]
GhostDiagnostic-chr: 1.99
Centroid-sig: 56.6%
Centroid-so: 0.938 arcsec [0.70σ]
OotOffset-rm: 0.464 arcsec [0.35σ]
KicOffset-rm: 0.460 arcsec [0.33σ]
OotOffset-st: 3/3/3/2 [11]
KicOffset-st: 3/3/3/2 [11]
DiffImageQuality-fgm: 0.18 [2/11]
DiffImageOverlap-fno: 0.44 [7/16]

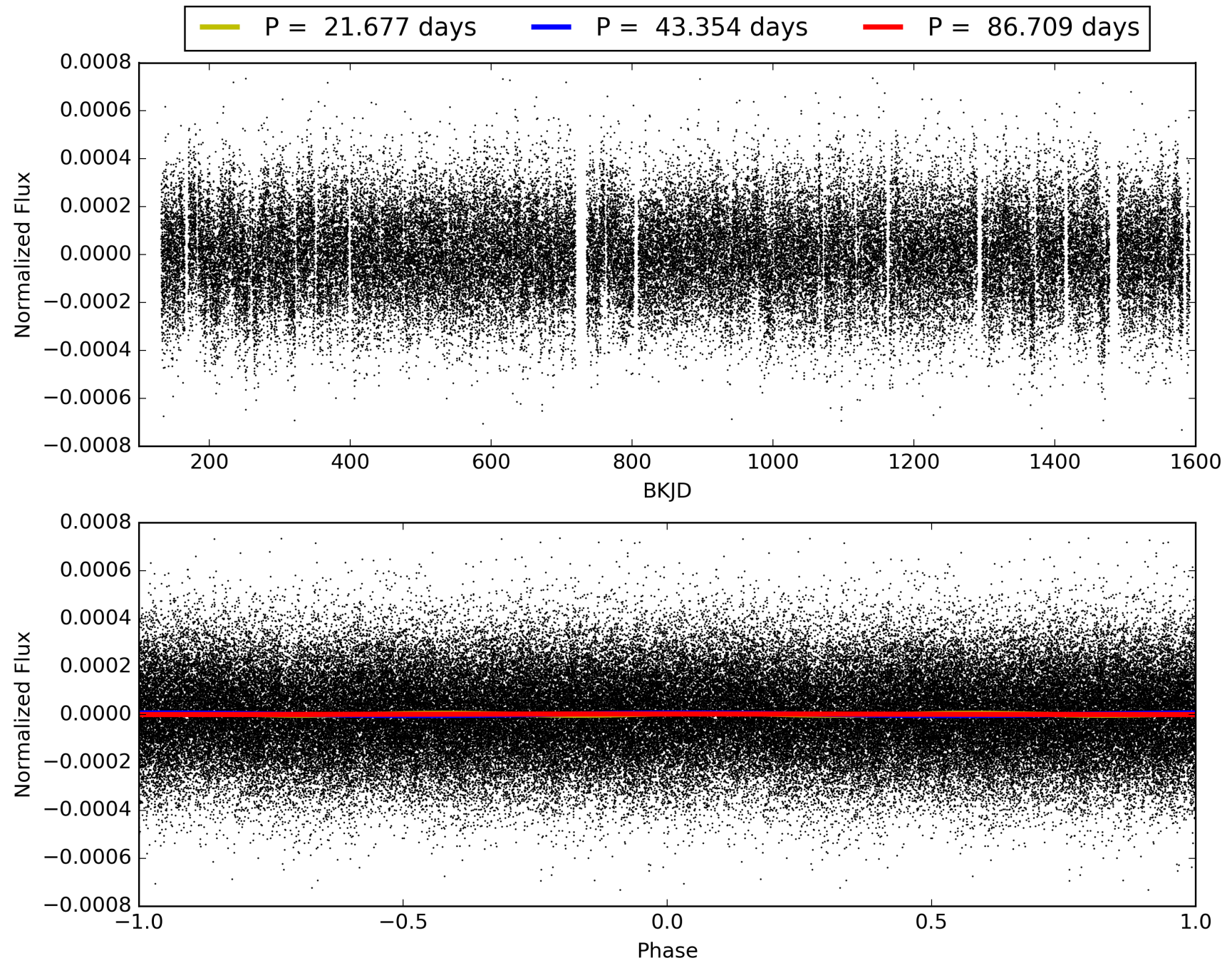
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:41:34 Z

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

TCE 009673009-09, PDC Light Curves

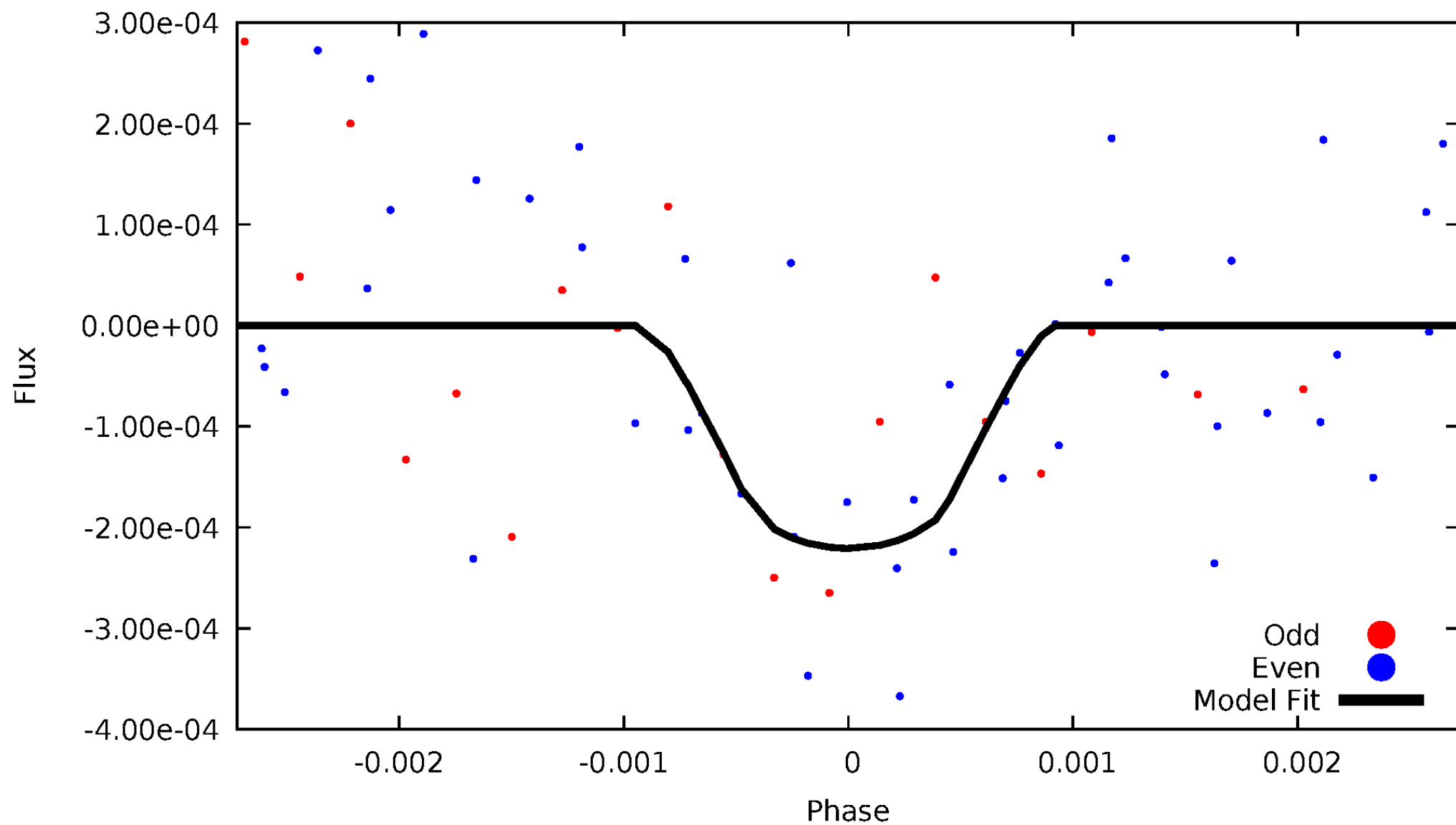


TCE 009673009-09



DV Odd/Even

TCE 009673009-09

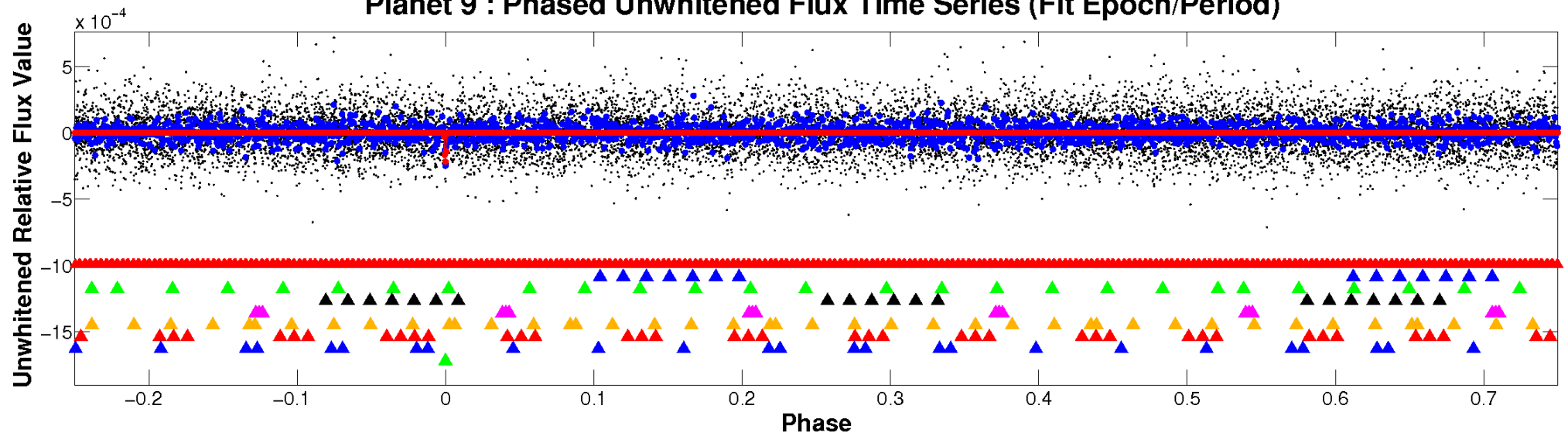


ALT Odd/Even

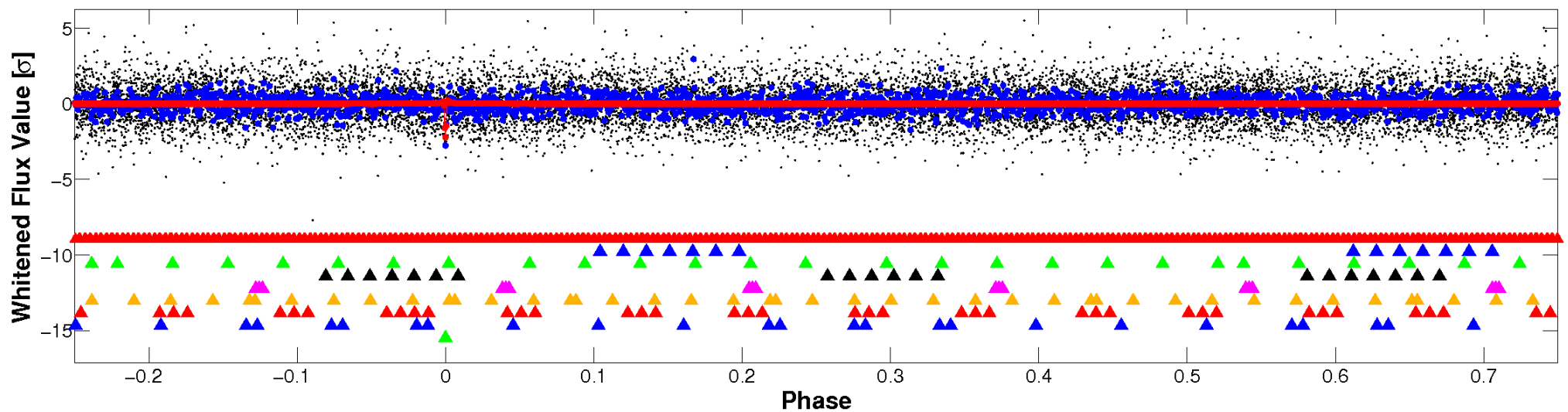
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

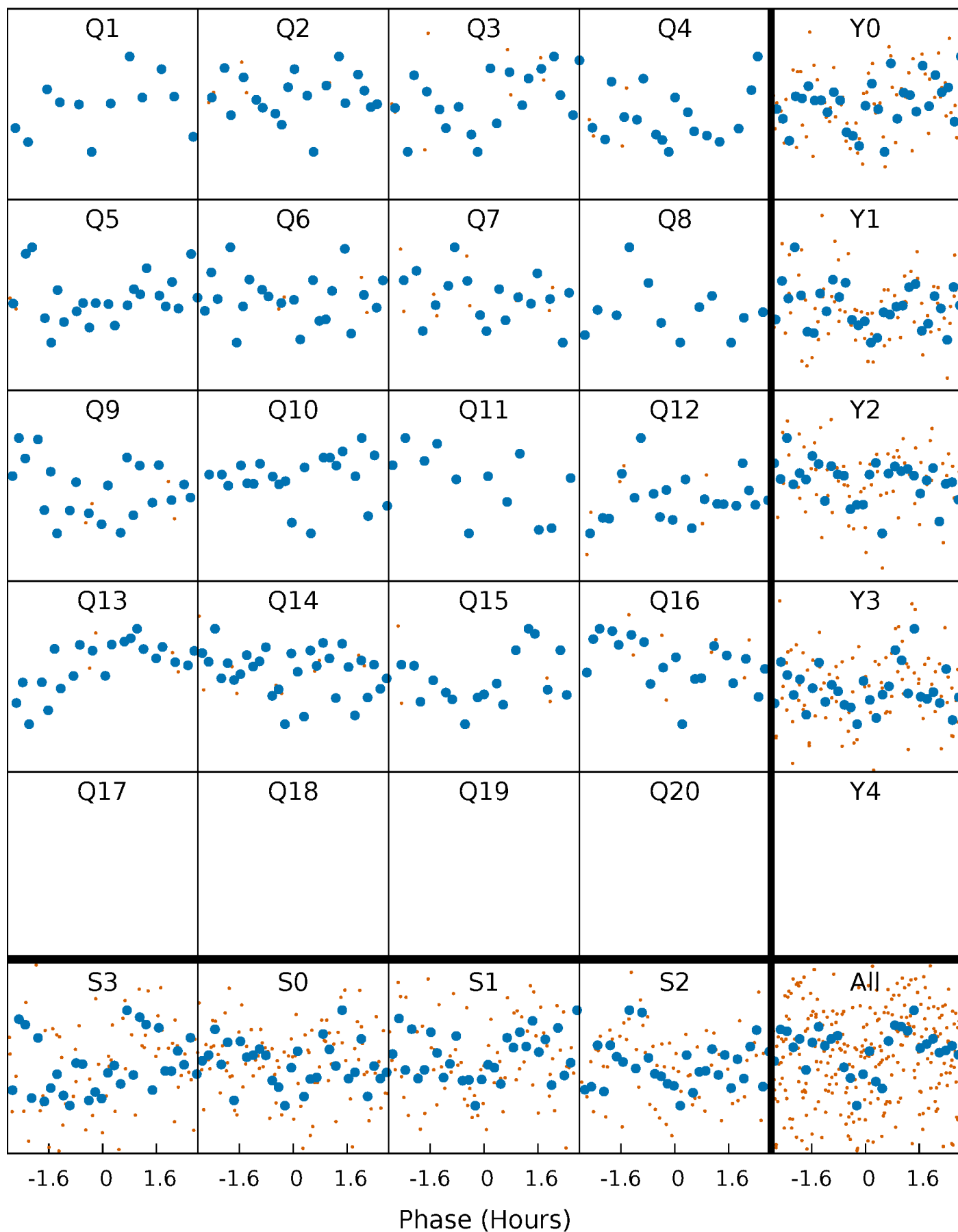


Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



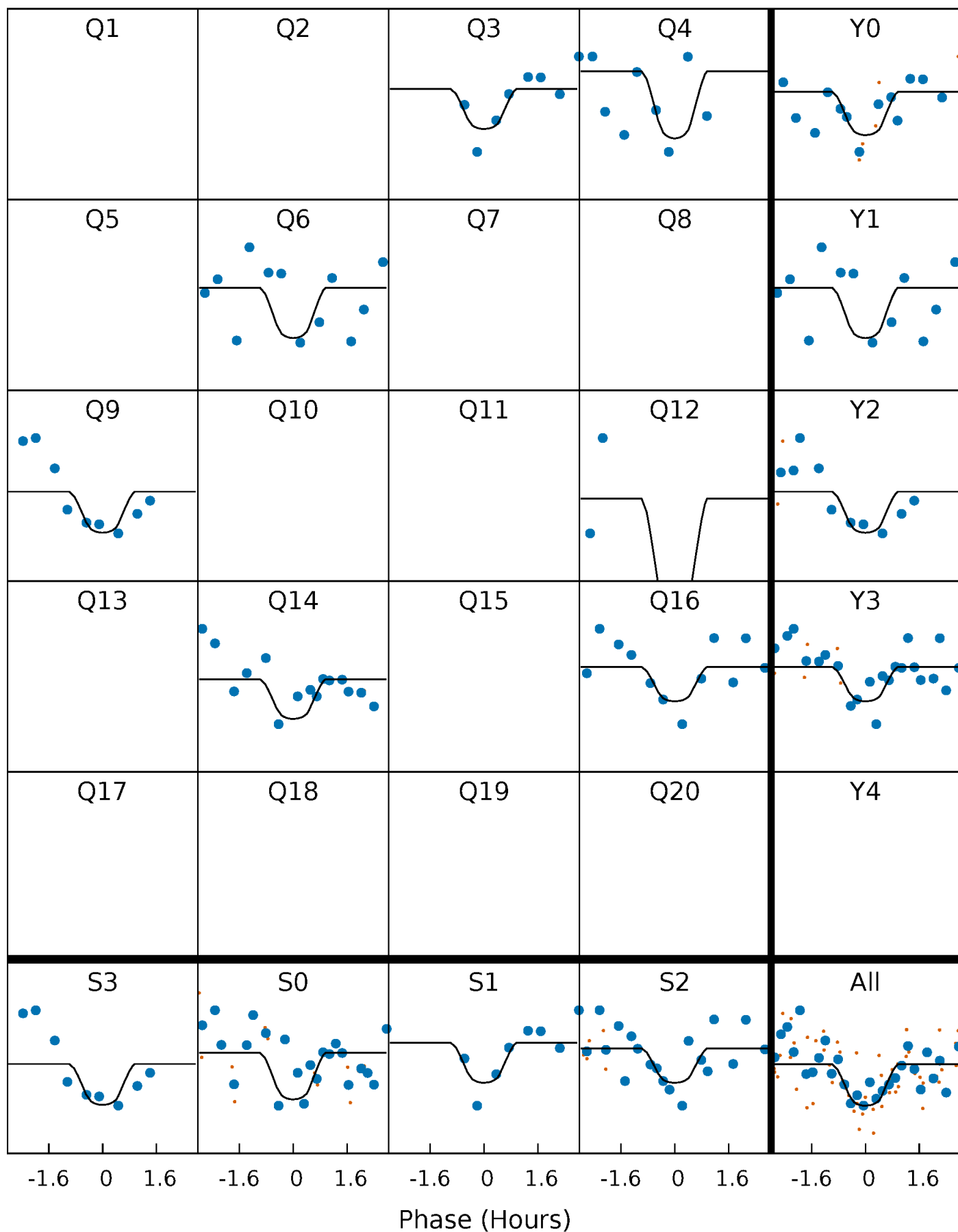
PDC Quarter-Phased Transit Curves

TCE 009673009-09 $P = 43.354274$ Days $T_0 = 153.079658$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009673009-09 $P = 43.354274$ Days $T_0 = 153.079658$ (BKJD)

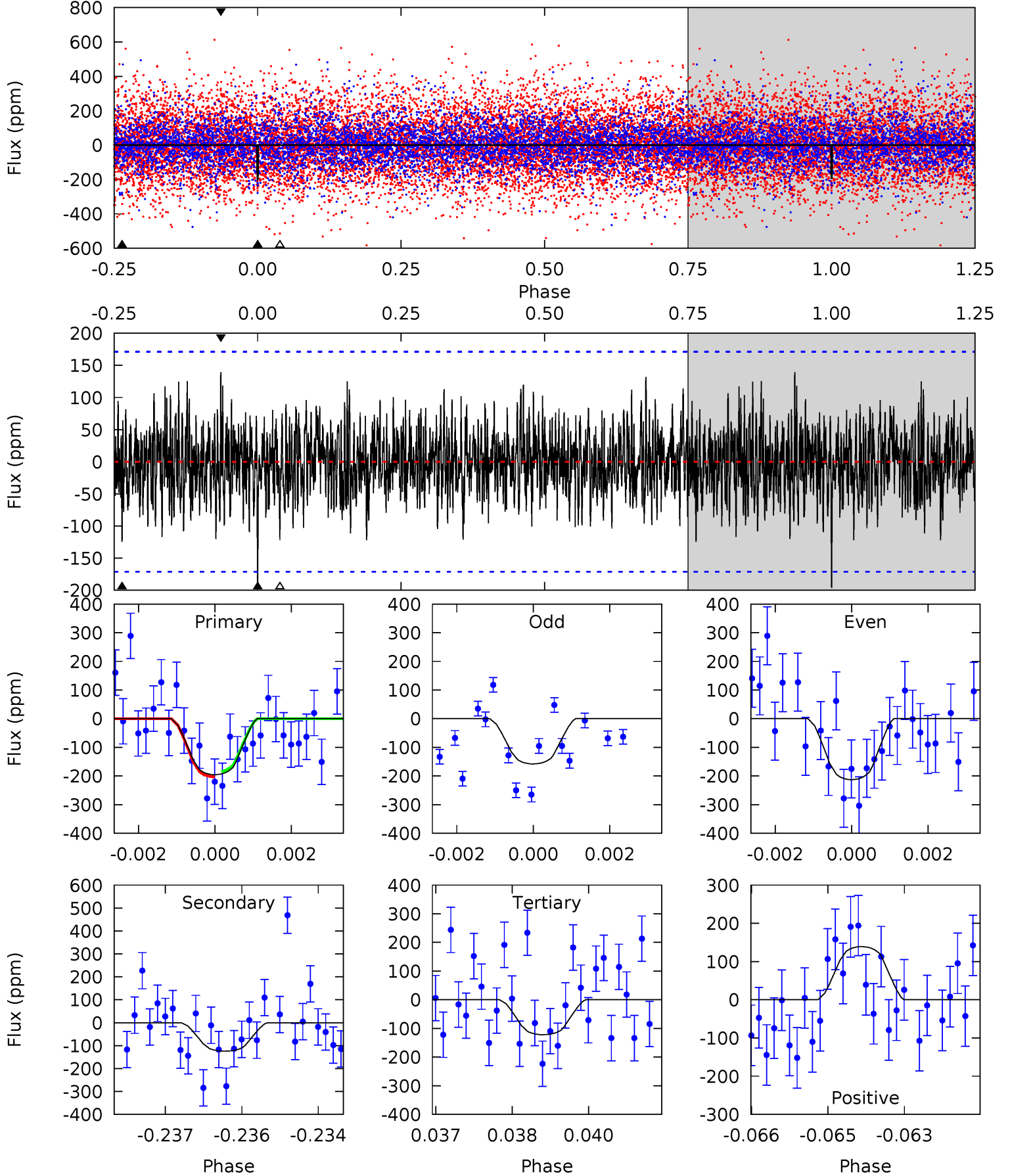


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

009673009-09, P = 43.354274 Days, E = 109.725384 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.13	3.89	3.82	4.36	5.36	3.15	1.34	2.31	1.77	0.07	-0.47	0.77	1.02	0.42	0.29



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 009673009

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4980^{+136}_{-121}	$3.739^{+0.840}_{-0.360}$	$-0.180^{+0.300}_{-0.200}$	$2.105^{+1.351}_{-1.351}$	$0.887^{+0.278}_{-0.149}$	$0.134^{+2.597}_{-0.097}$
	+3%/-2%	+22%/-10%	+167%/-111%	+64%/-64%	+31%/-17%	+1941%/-73%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 009673009-09 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-124 ± 32	$4.58^{+4.69}_{-3.03}$	910^{+166}_{-173}	3869^{+1783}_{-716}	172^{+1378}_{-131}
Alt.	N/A	N/A	N/A	N/A	N/A

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 $A_{obs} \gg 1.0$

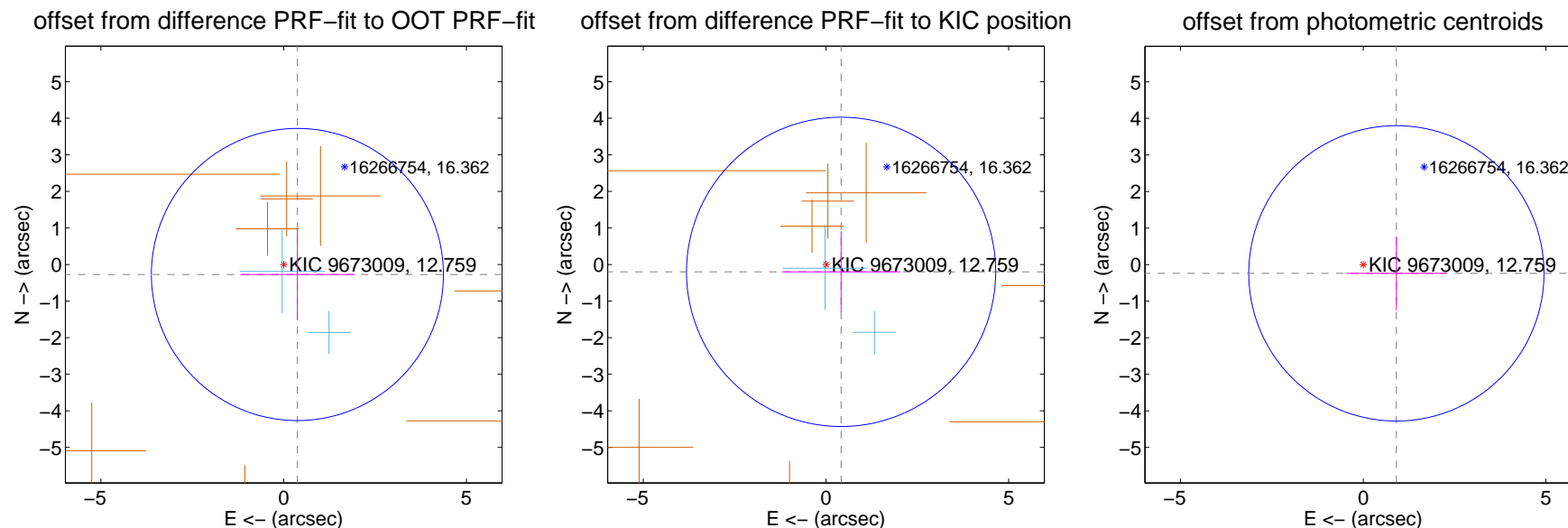
DV Centroid Data

Supplemental centroid analysis for 009673009-09. Kepler magnitude: 12.76. Transit SNR 8.12

There are 2 quarters with good PRF difference image offsets

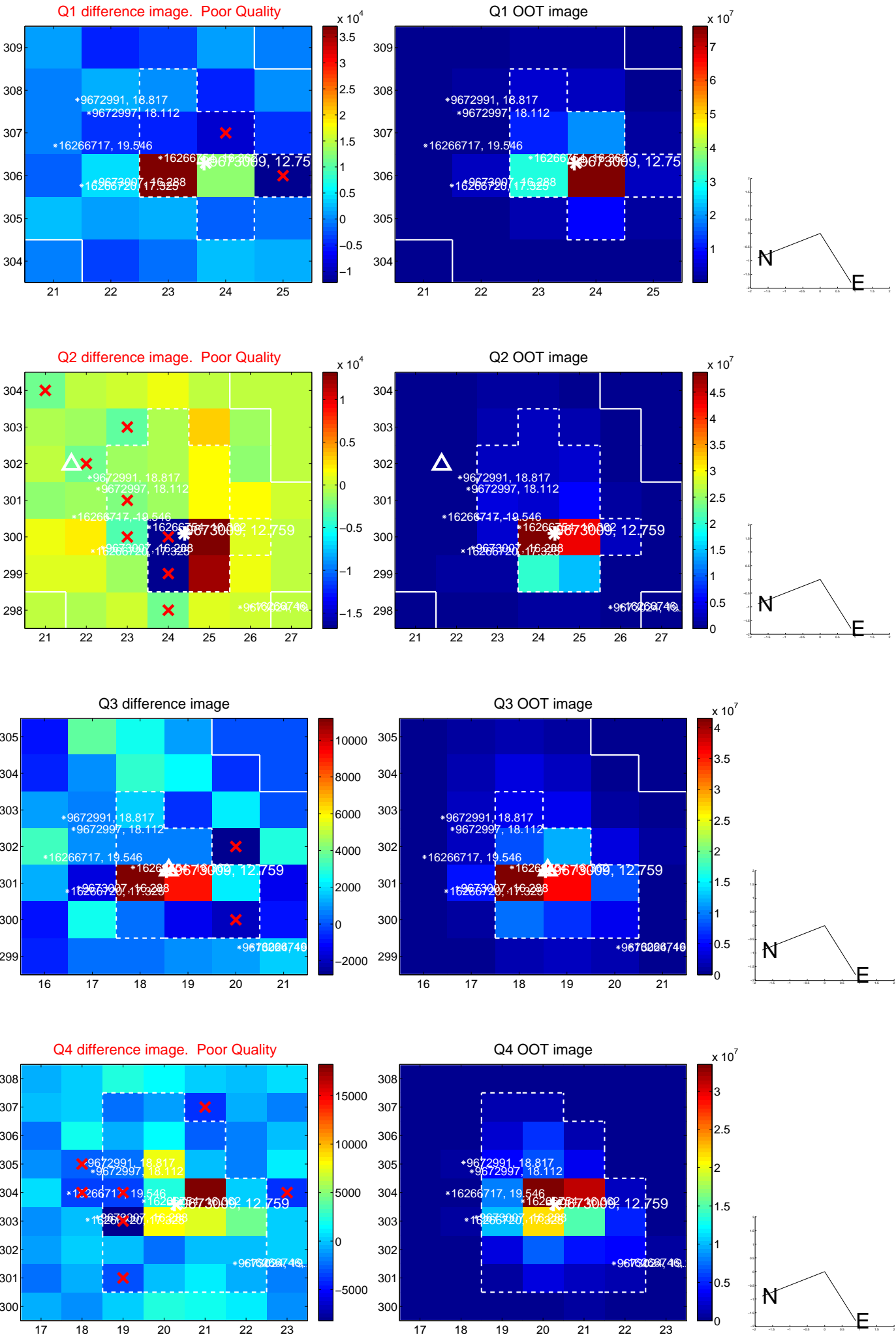
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.464 ± 1.331	0.35	-0.375 ± 1.568	-0.272 ± 1.252
PRF-fit source offset from KIC position	0.460 ± 1.410	0.33	-0.414 ± 1.617	-0.200 ± 1.107
photometric centroid source offset	0.94 ± 1.35	0.70	-0.91 ± 1.37	-0.24 ± 1.01

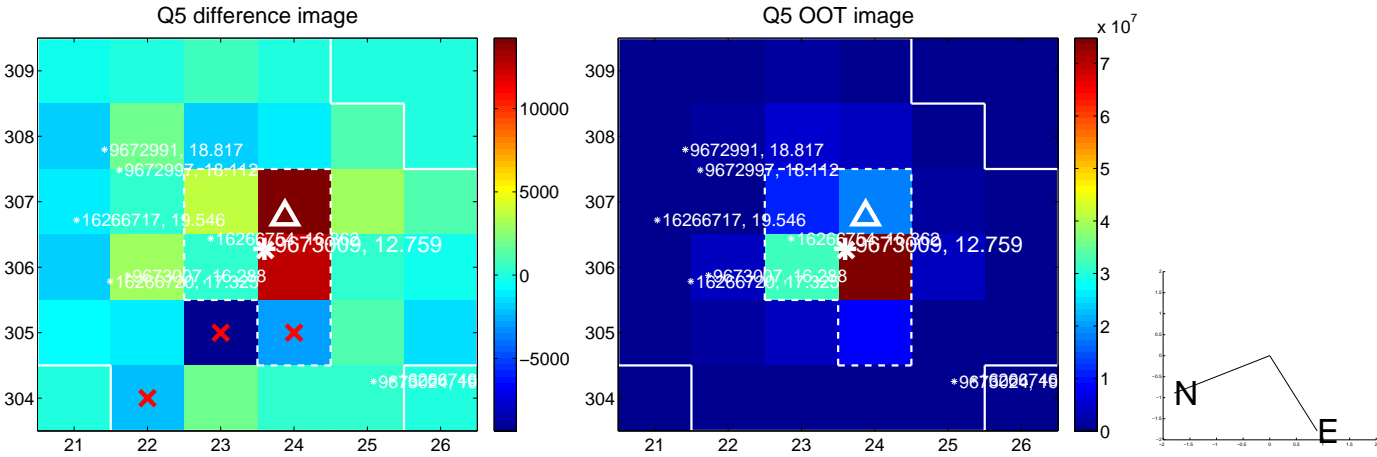


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

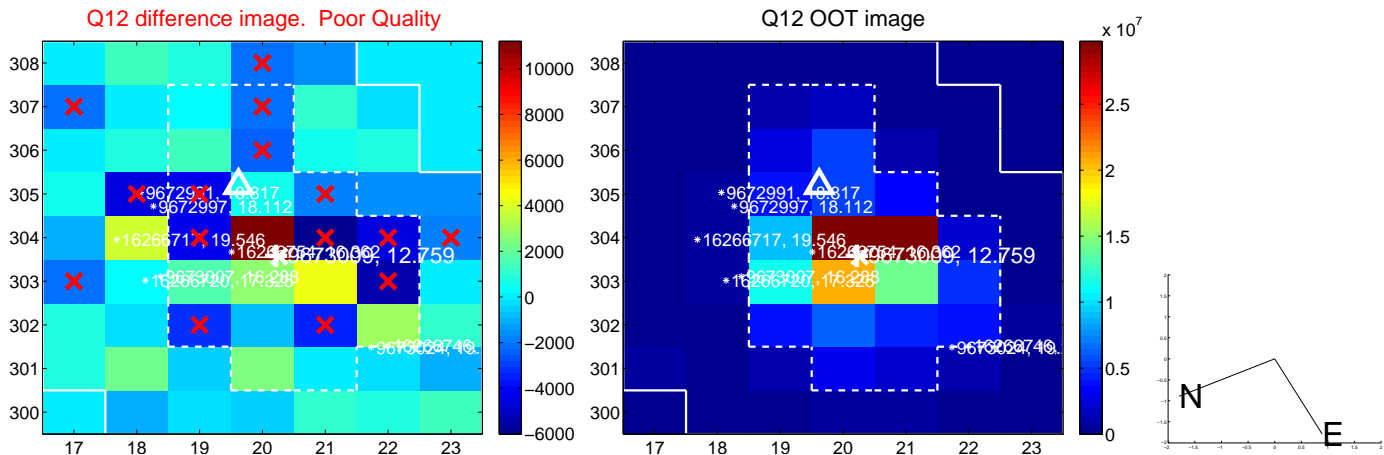
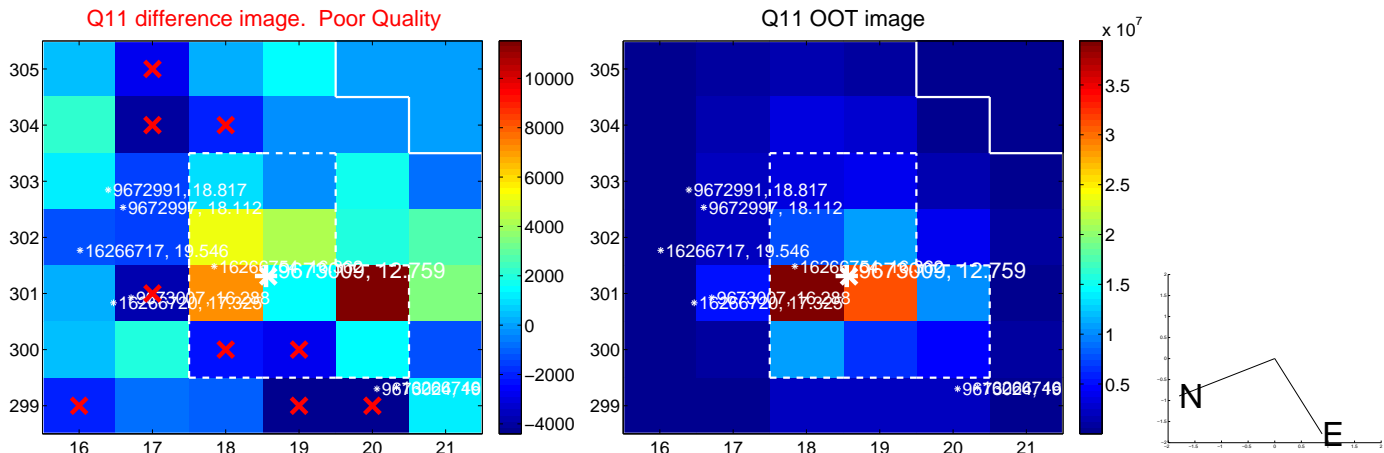
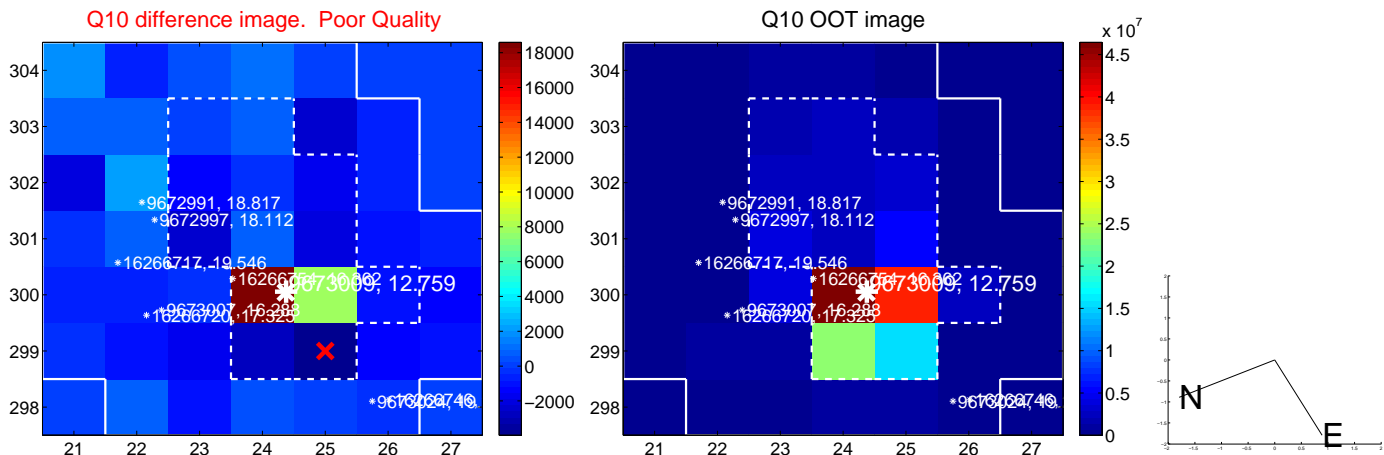
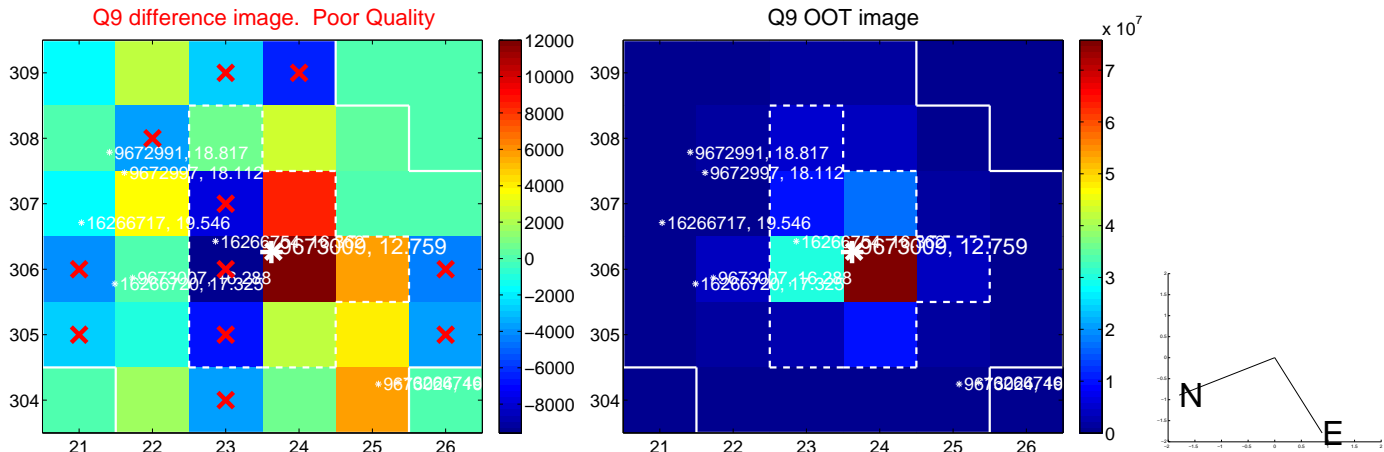
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



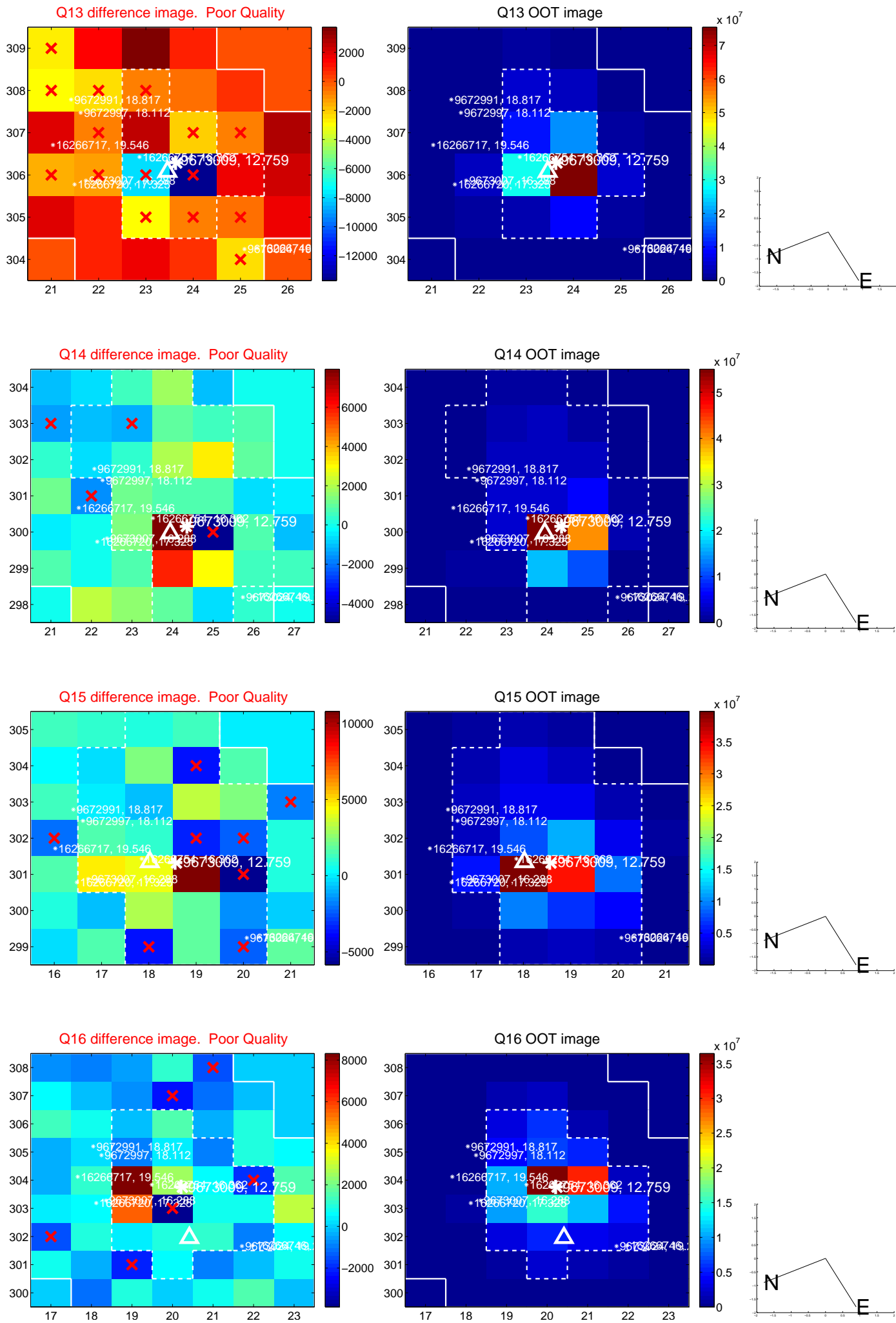
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



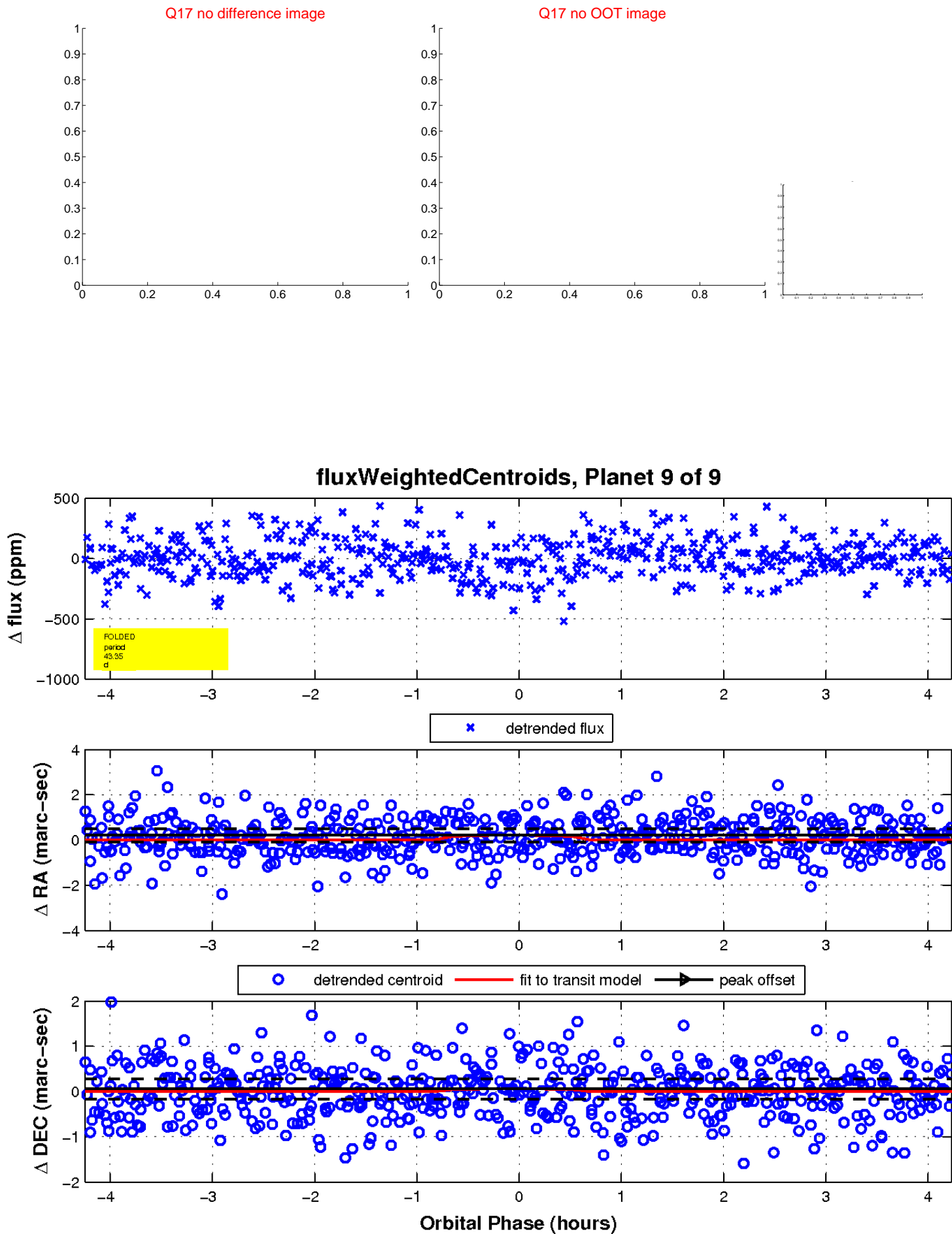
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

