

KIC 005991936

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})
005991936-01	OBS	No	0.807660	132.174605	66.5	2.337	9.0	7.9	1.83	8827	1.72	38994.29
005991936-02	OBS	No	0.807635	131.797098	53.8	2.414	9.1	6.7	1.83	8827	1.55	38995.90
005991936-03	OBS	No	9.335643	138.063870	379.4	3.672	8.4	6.9	1.83	8827	4.16	1492.04
005991936-04	OBS	No	34.558269	137.647558	775.1	1.632	7.4	7.0	1.83	8827	5.23	260.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005991936-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005991936-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST
005991936-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005991936-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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 005991936-01

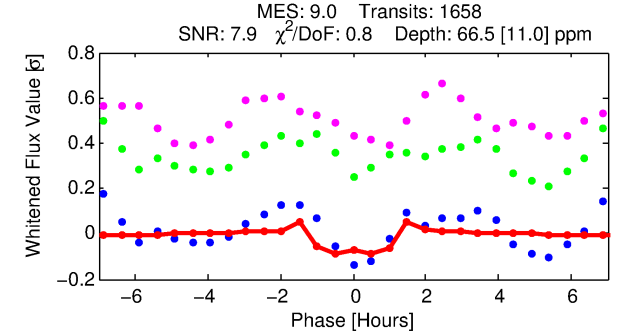
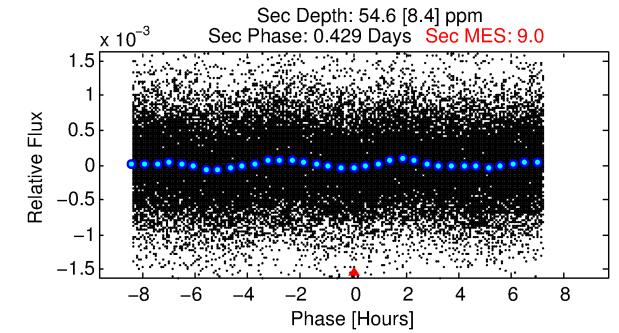
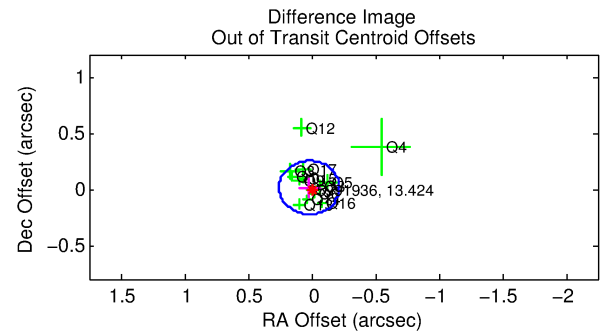
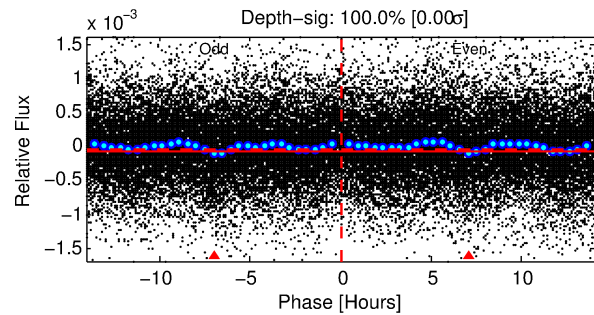
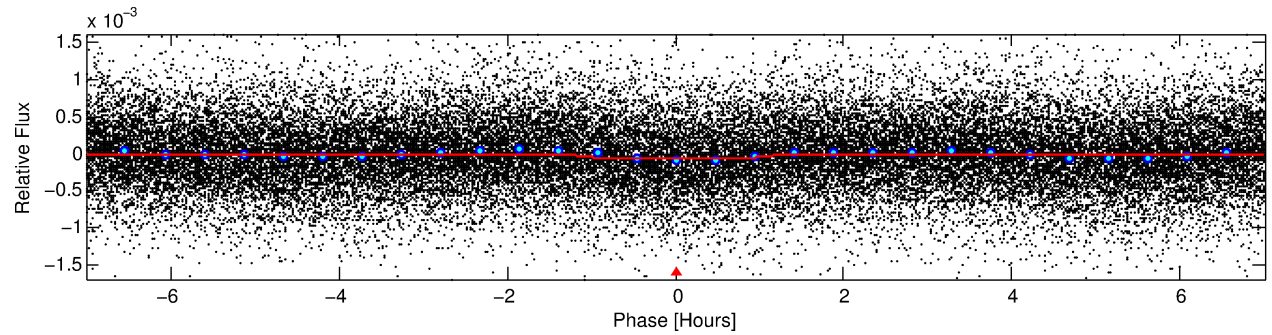
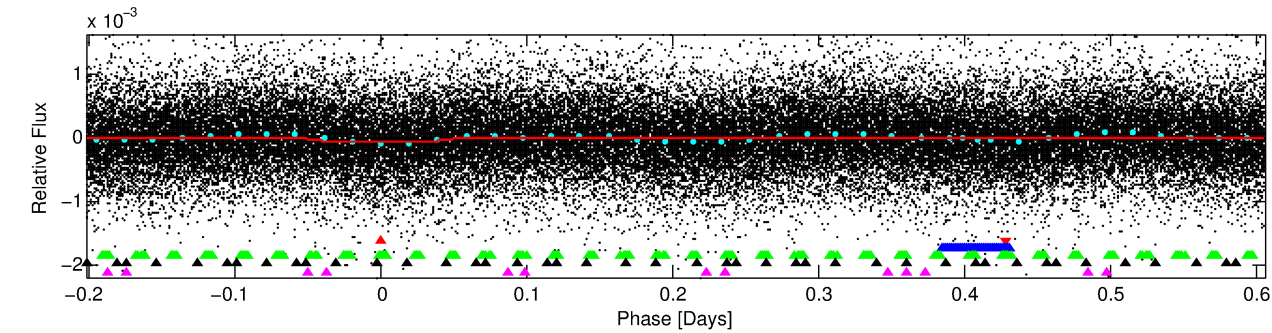
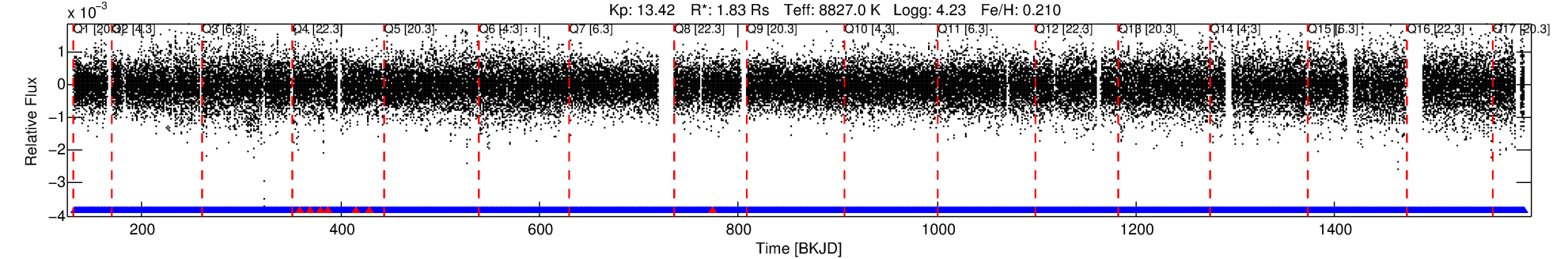
No Significant Match Found

DV One-Page Summary

KIC: 5991936 Candidate: 1 of 5 Period: 0.808 d

KOI: K02606 Corr: No Ephemeris Match

Kp: 13.42 R*: 1.83 Rs Teff: 8827.0 K Logg: 4.23 Fe/H: 0.210



DV Fit Results:

Period = 0.80766 [0.00001] d
Epoch = 132.1746 [0.0019] BKJD
Rp/R* = 0.0086 [0.0024]
a/R* = 1.53 [1.63]
b = 0.90 [0.40]
Seff = 38994.29 [18458.18]
Teff = 3583 [424] K
Rp = 1.72 [0.87] Re
a = 0.0216 [0.0071] AU
Ag = 4.72 [3.45] [1.08σ]
Teffp = 8164 [1238] K [3.50σ]

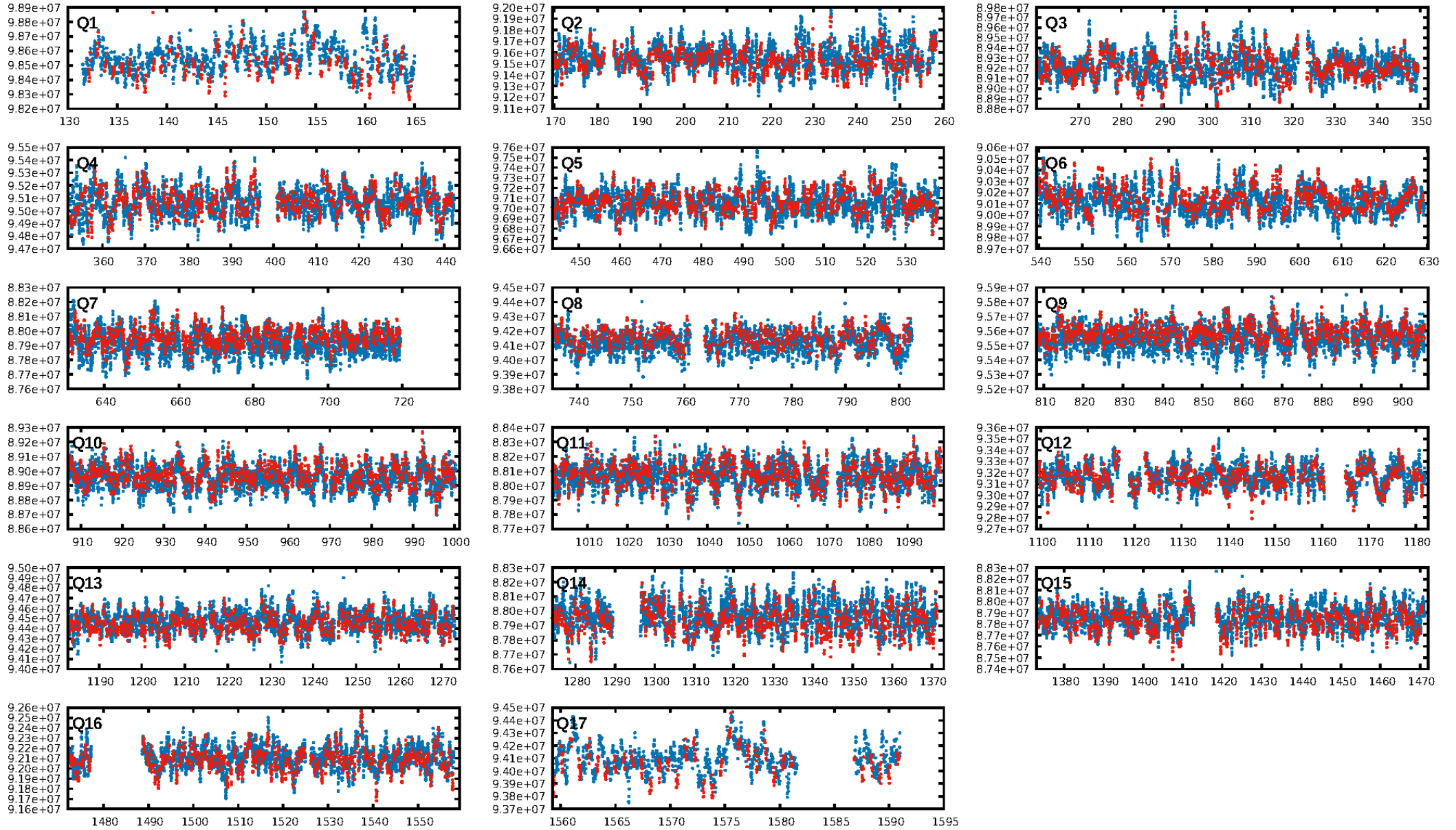
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [47.02σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.20e-11
RollingBand-fgt: 0.99 [1576/1584]
GhostDiagnostic-chr: 0.1766
Centroid-sig: N/A
Centroid-so: 3.510 arcsec [6.38σ]
OotOffset-rm: 0.024 arcsec [0.31σ]
KicOffset-rm: 0.046 arcsec [0.59σ]
OotOffset-st: 2/3/4/5 [14]
KicOffset-st: 2/3/4/5 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 1.00 [17/17]

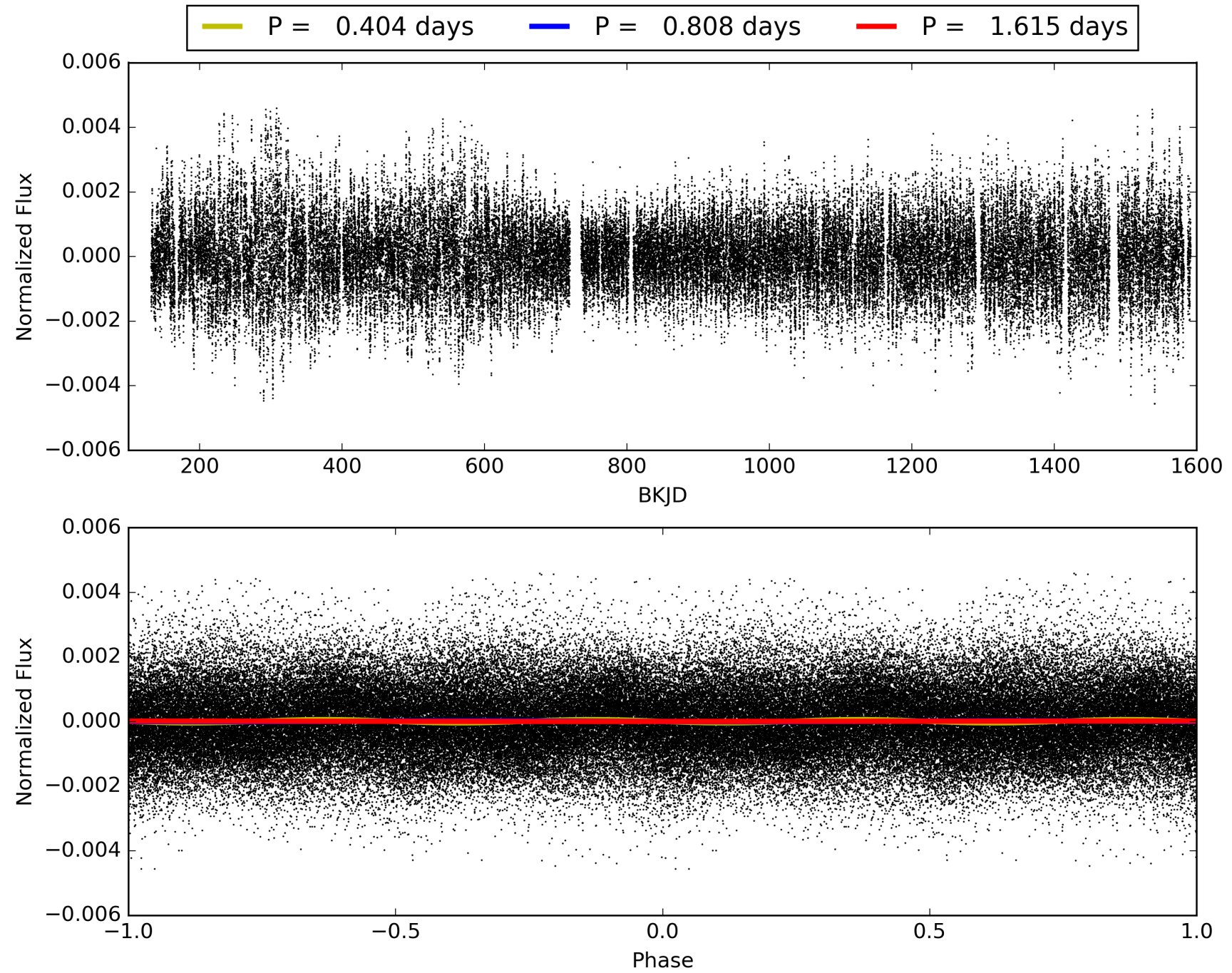
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005991936-01, PDC Light Curves

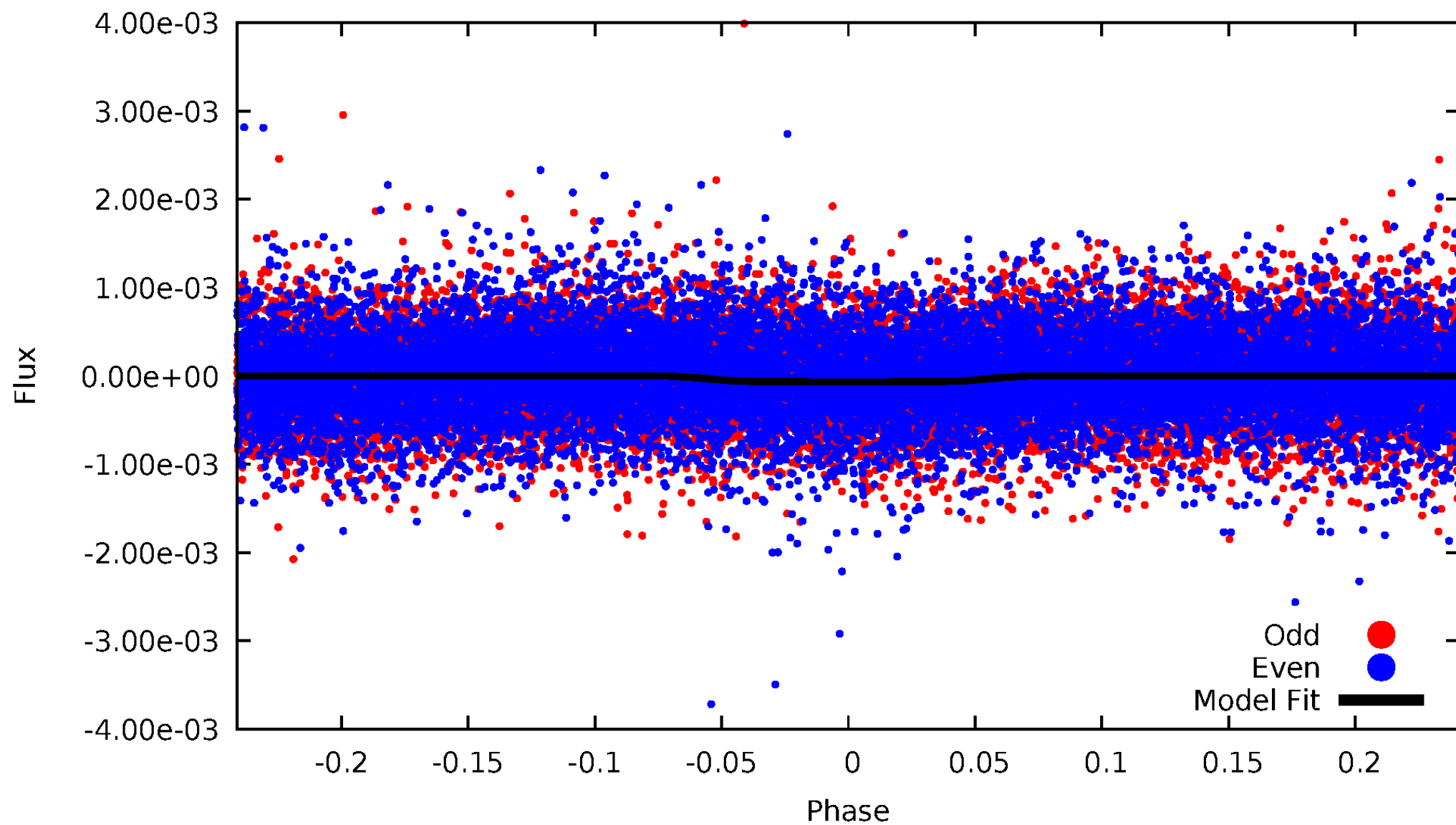


TCE 005991936-01



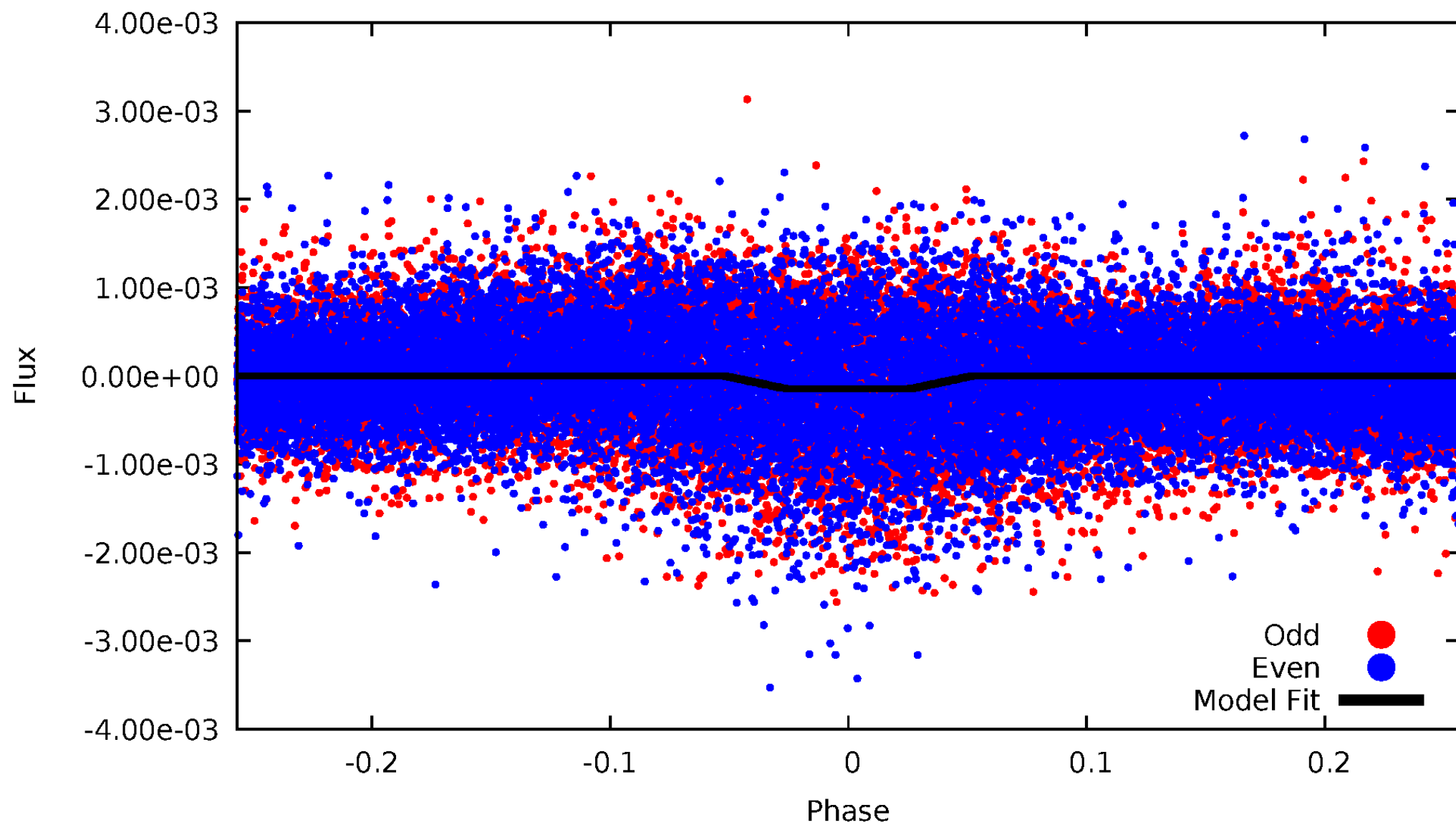
DV Odd/Even

TCE 005991936-01



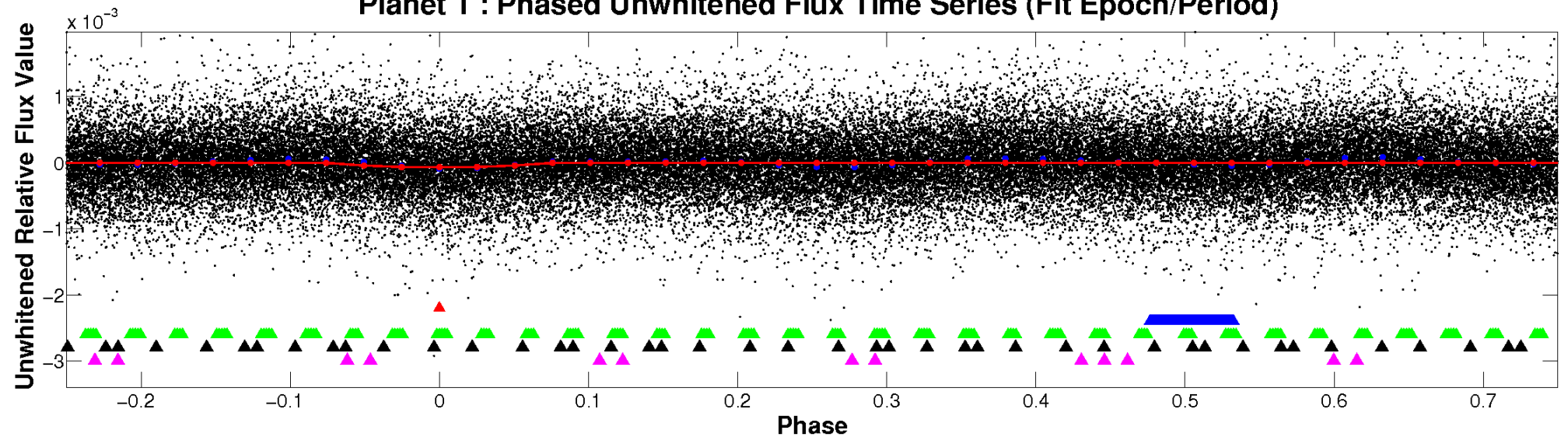
ALT Odd/Even

TCE 005991936-01

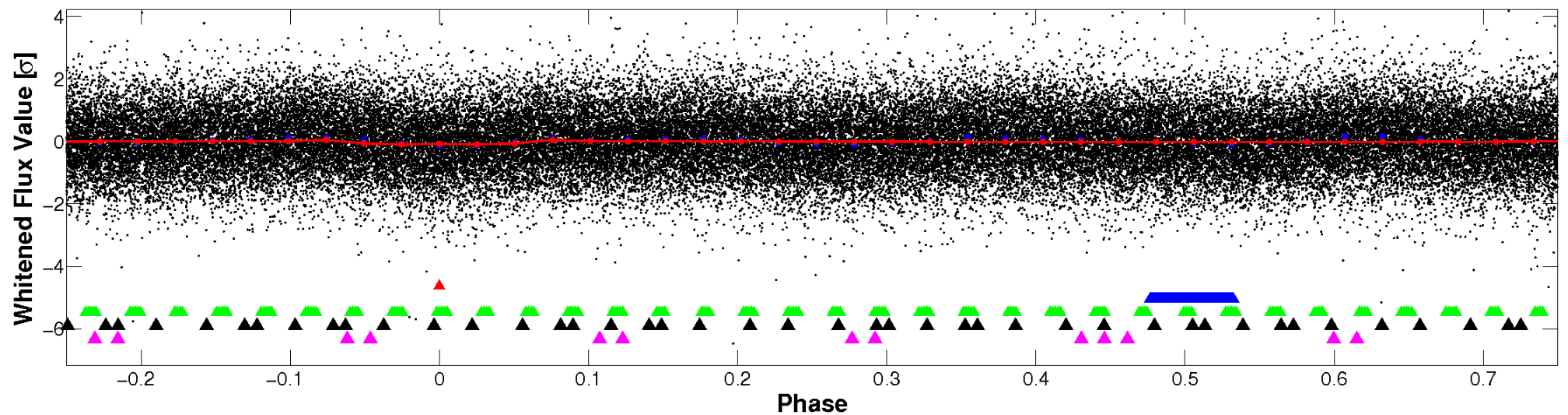


Non-Whitened Vs. Whitened Light Curve

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

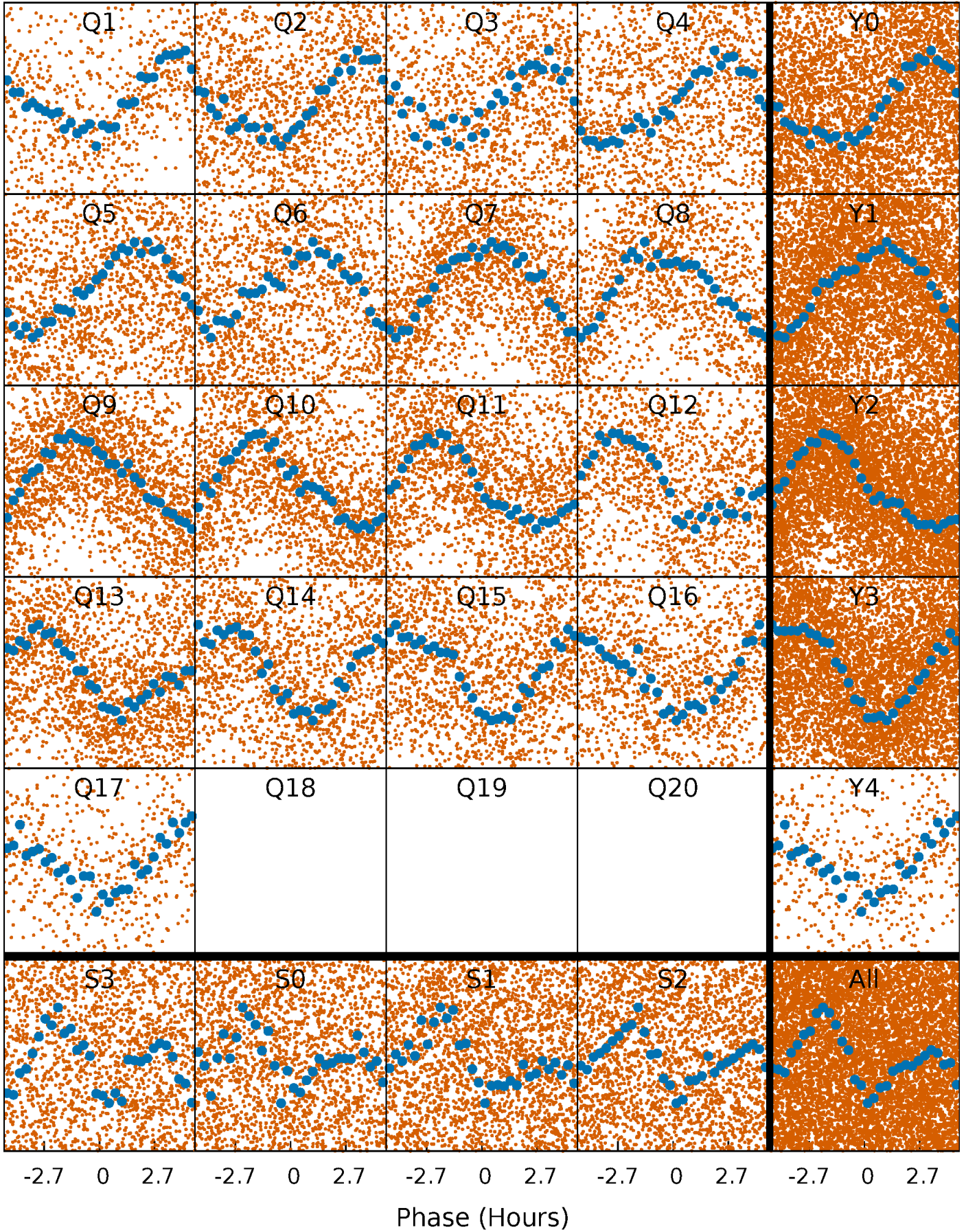


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



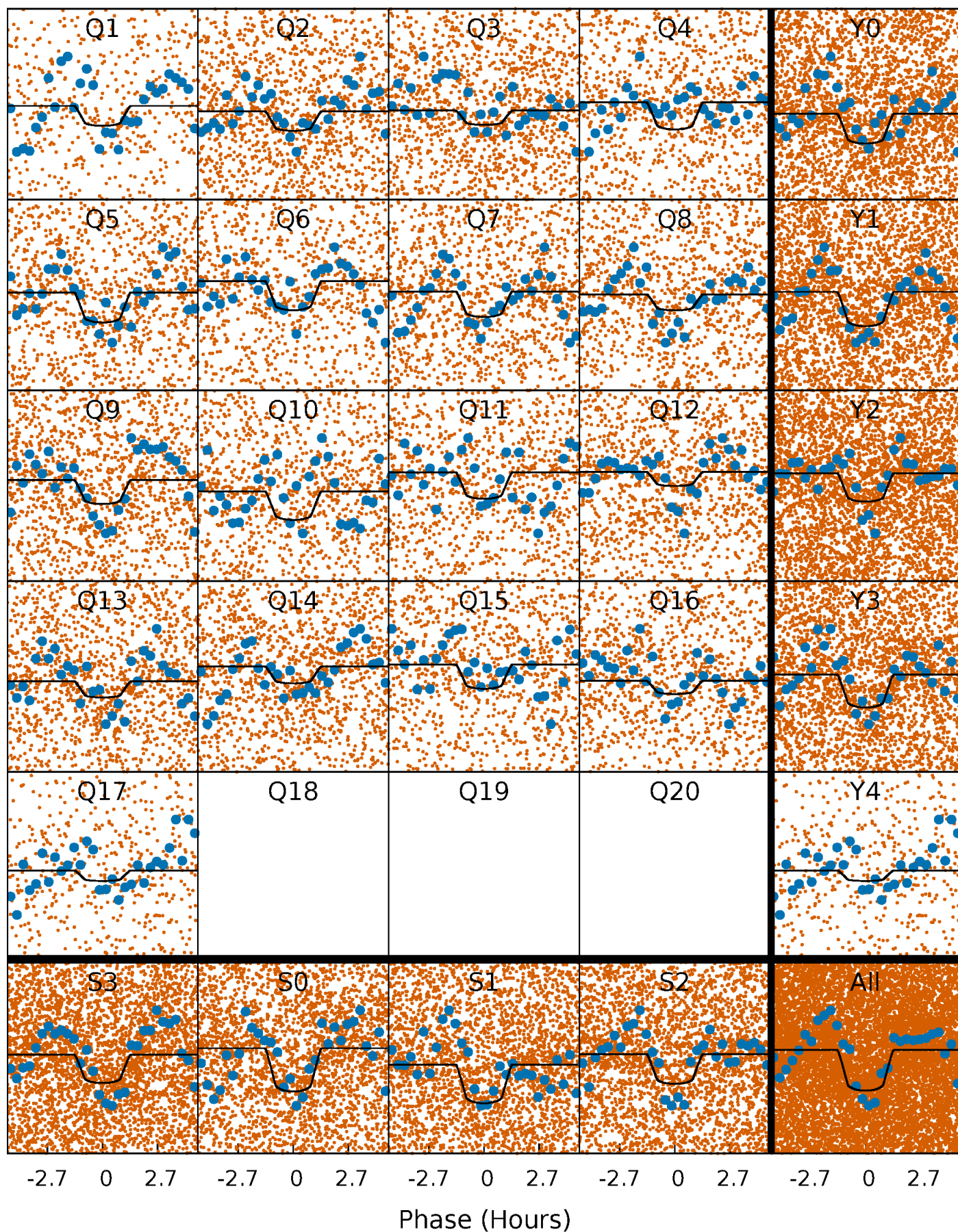
PDC Quarter-Phased Transit Curves

TCE 005991936-01 P= 0.807660 Days $T_0=132.174605$ (BKJD)



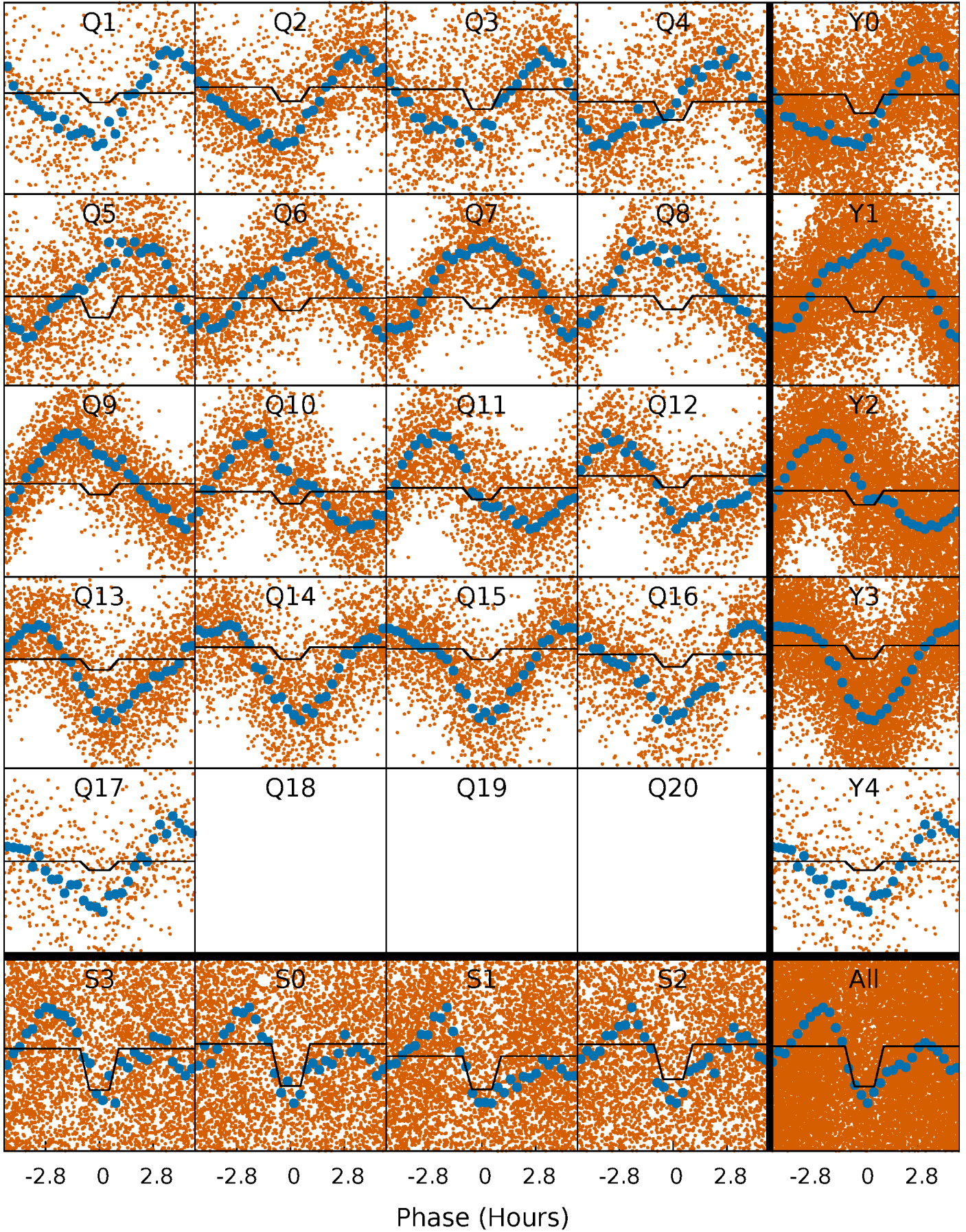
DV Quarter-Phased Transit Curves

TCE 005991936-01 P= 0.807660 Days $T_0=132.174605$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

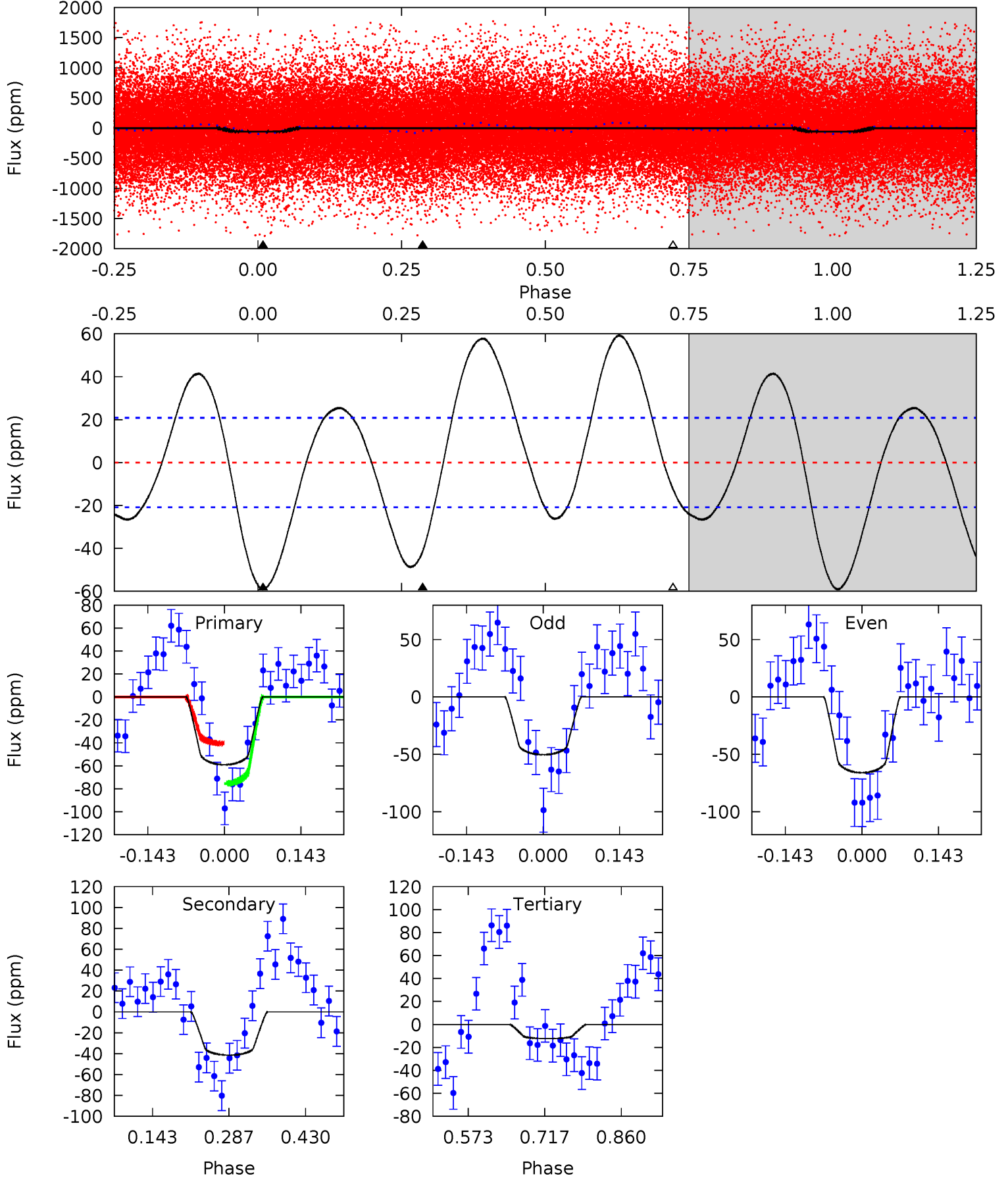
TCE 005991936-01 P= 0.807670 Days $T_0=132.175670$ (BKJD)



DV Model-Shift Uniqueness Test

005991936-01, P = 0.807660 Days, E = 131.366945 Days

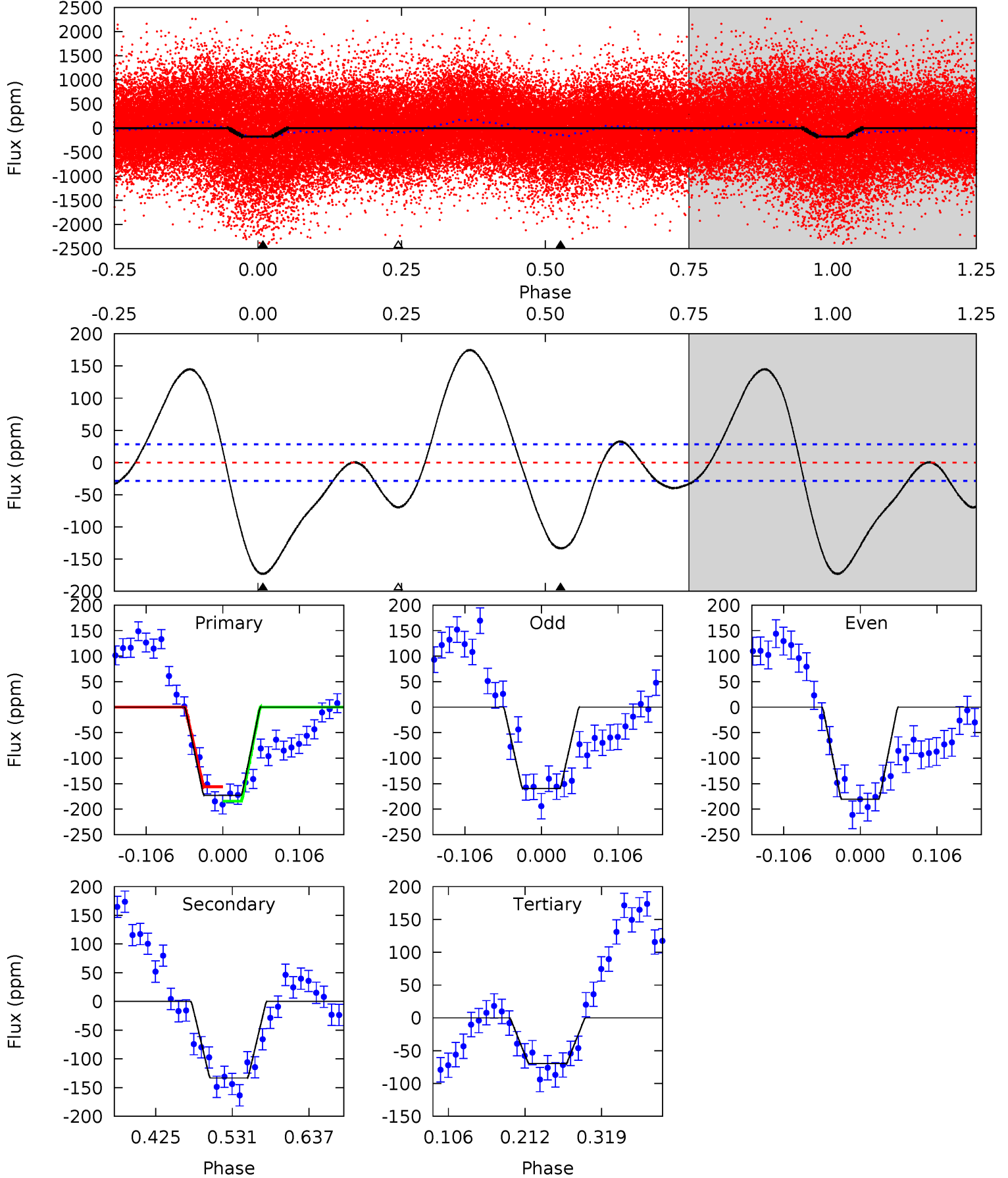
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	8.91	2.66	0	4.49	1.46	5.91	10.1	12.7	6.25	8.91	1.70	0.99	0.50	3.74



Alt Model-Shift Uniqueness Test

005991936-01, P = 0.807670 Days, E = 131.368000 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.8	21.4	11.2	0	4.55	1.62	12.2	16.6	27.8	10.2	21.4	1.68	1.35	0.50	2.29



Stellar Parameters For KIC 005991936

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8827^{+277}_{-370}	$4.227^{+0.056}_{-0.224}$	$0.210^{+0.150}_{-0.550}$	$1.827^{+0.764}_{-0.191}$	$2.052^{+0.377}_{-0.377}$	$0.474^{+0.116}_{-0.278}$
	+3%/-4%	+1%/-5%	+71%/-262%	+42%/-10%	+18%/-18%	+25%/-59%
Source	KIC0	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 005991936-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-41 ± 5	$1.80^{+0.62}_{-0.53}$	5115^{+392}_{-279}	7112^{+1653}_{-1030}	$3.131^{+3.154}_{-1.364}$
Alt.	-133 ± 6	$2.48^{+0.73}_{-0.54}$	5130^{+385}_{-295}	8468^{+1462}_{-1074}	$5.360^{+3.121}_{-2.105}$

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 $A_{obs} \gg 1.0$

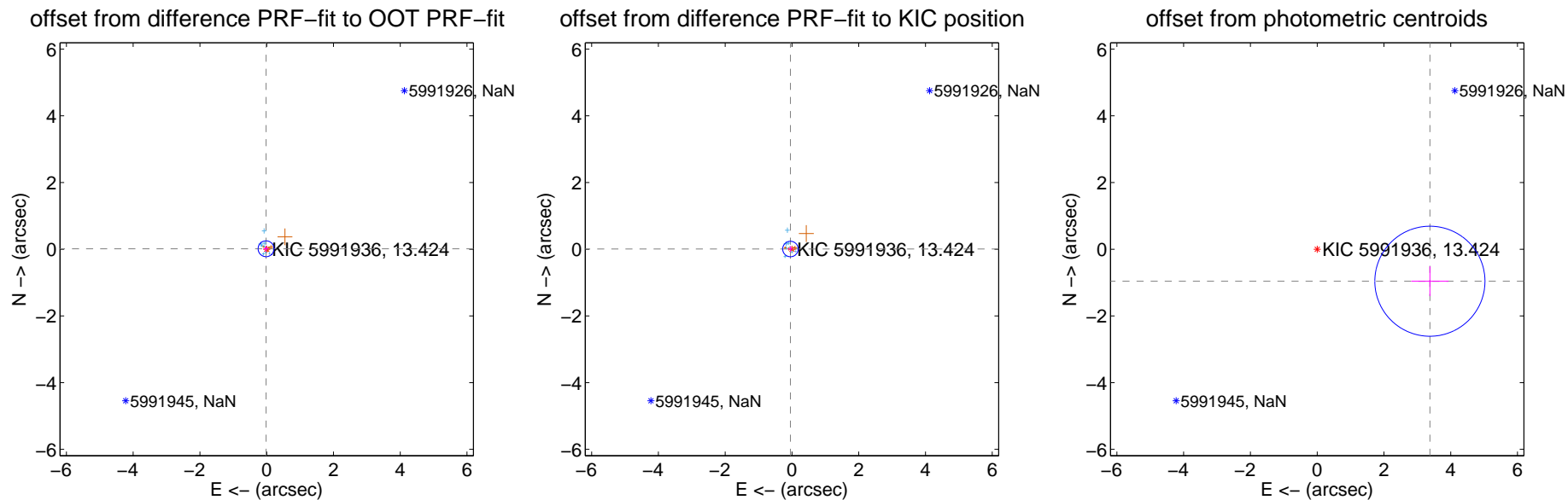
DV Centroid Data

Supplemental centroid analysis for 005991936-01. Kepler magnitude: 13.42. Transit SNR 7.94

There are 8 quarters with good PRF difference image offsets

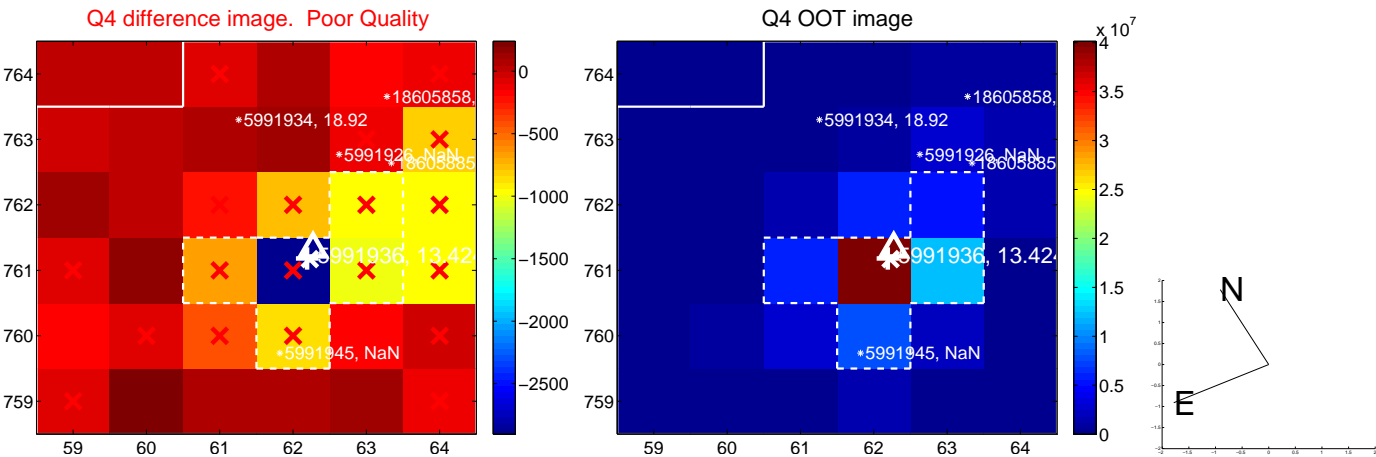
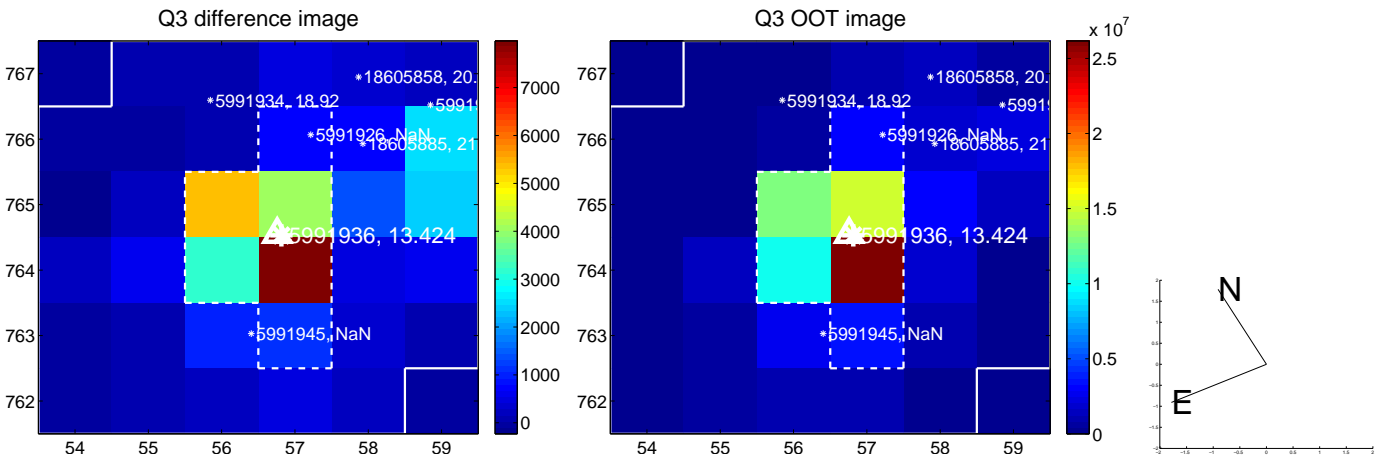
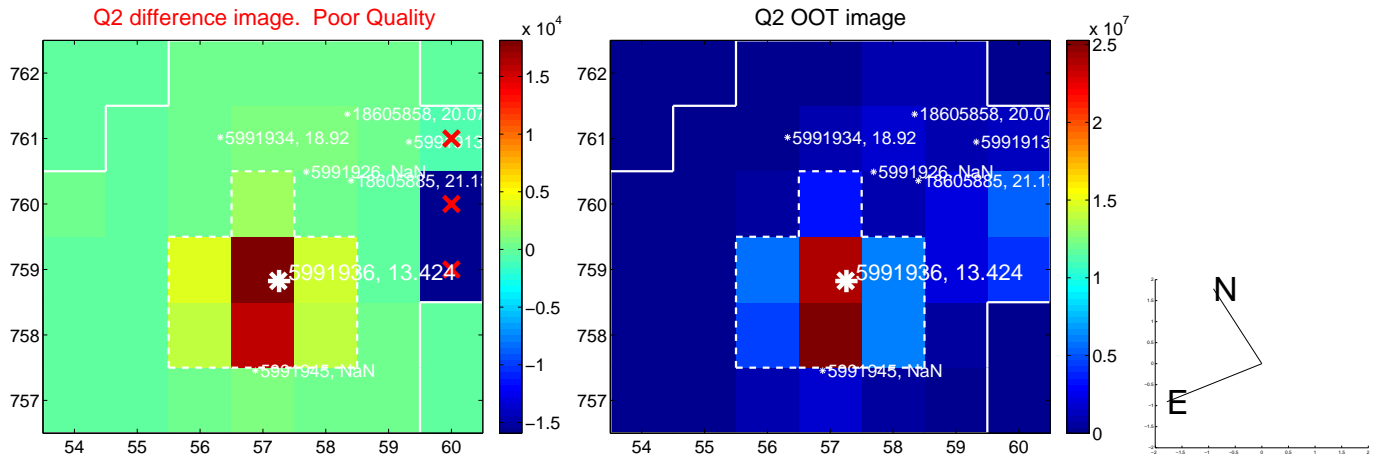
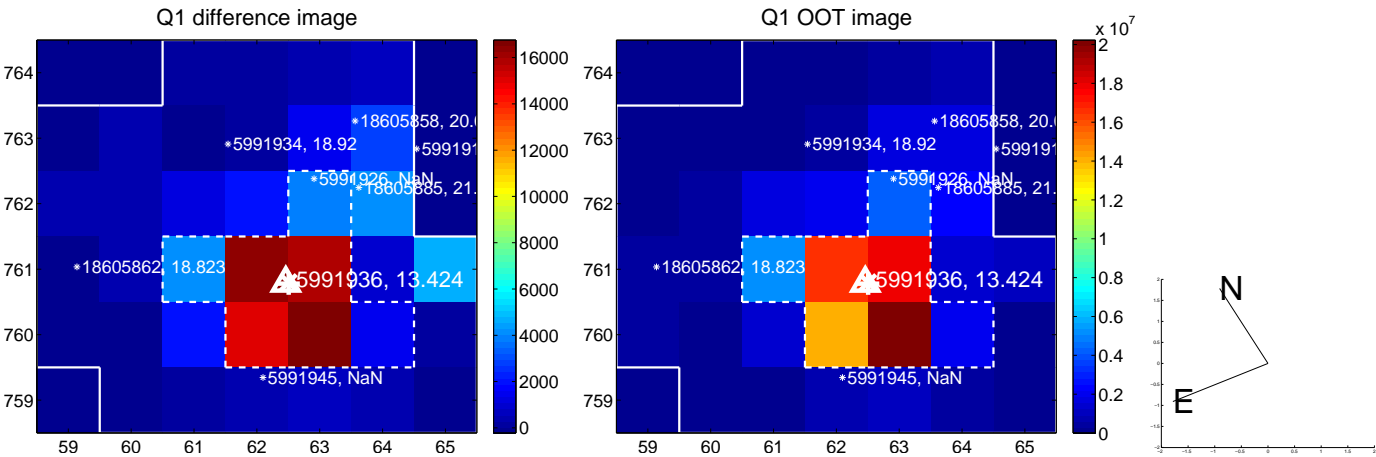
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.024 ± 0.079	0.31	0.020 ± 0.080	0.014 ± 0.082
PRF-fit source offset from KIC position	0.046 ± 0.077	0.59	0.045 ± 0.078	0.006 ± 0.086
photometric centroid source offset	3.51 ± 0.55	6.38	-3.38 ± 0.56	-0.96 ± 0.45

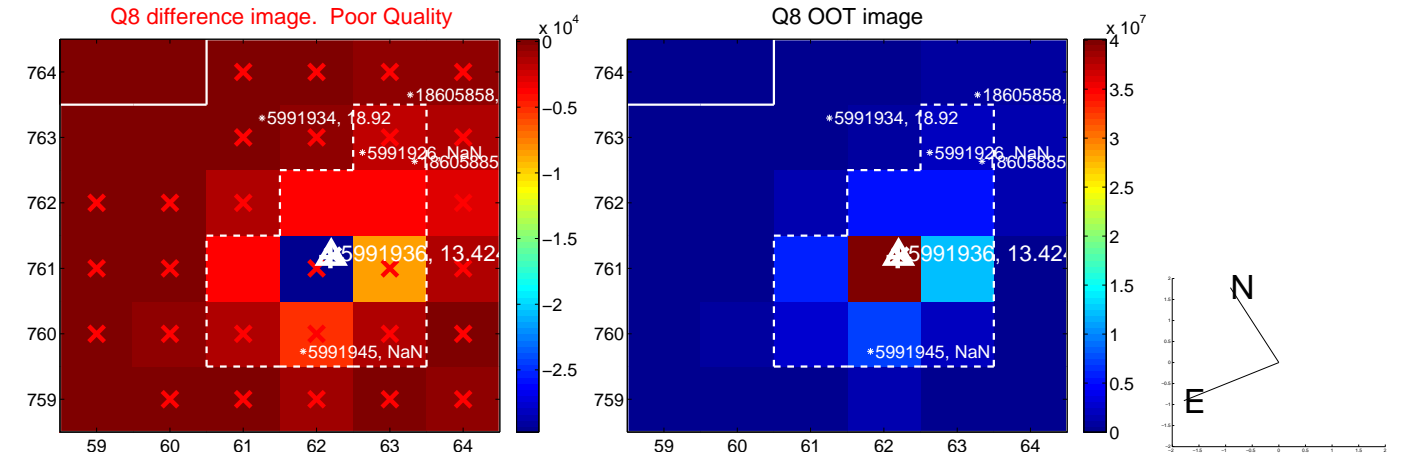
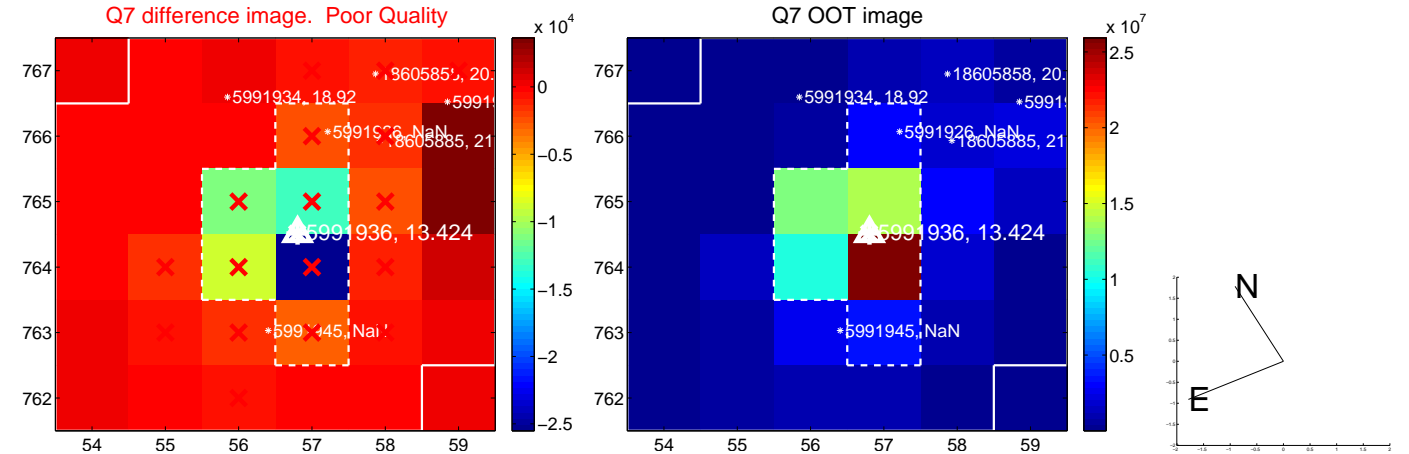
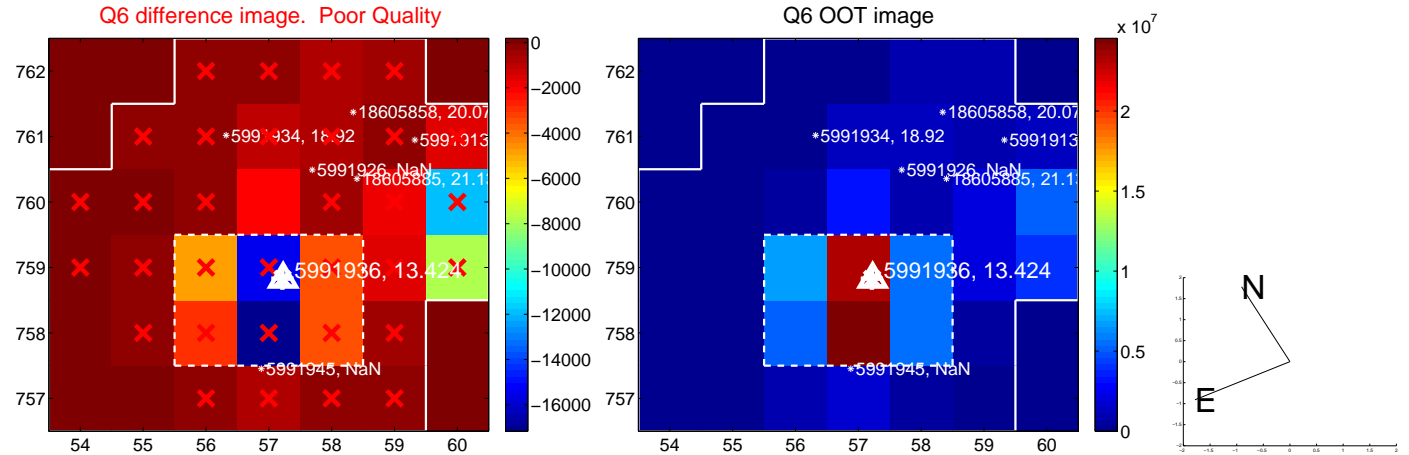
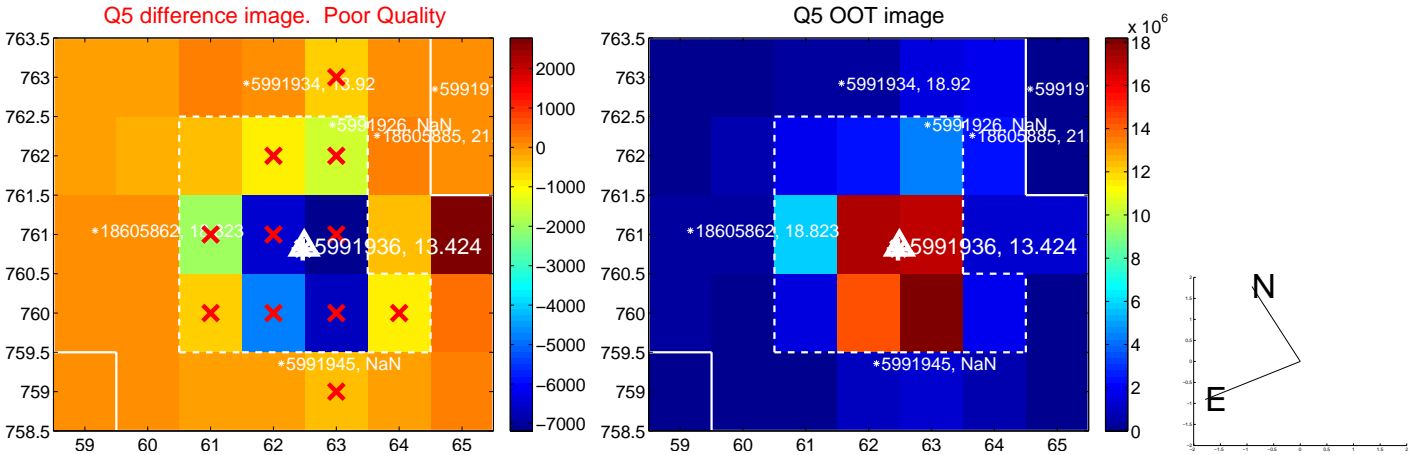


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

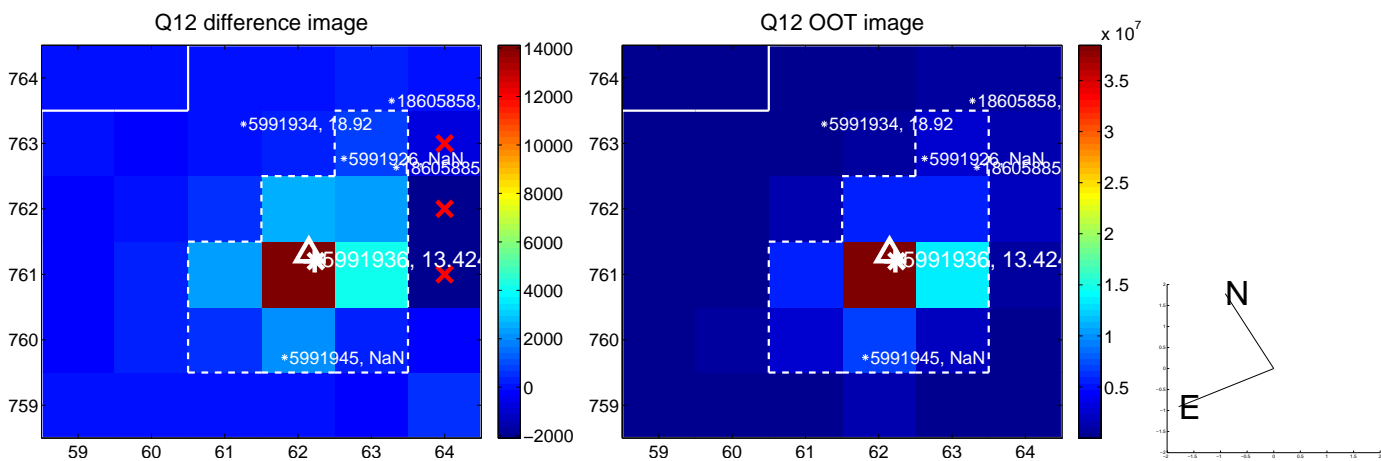
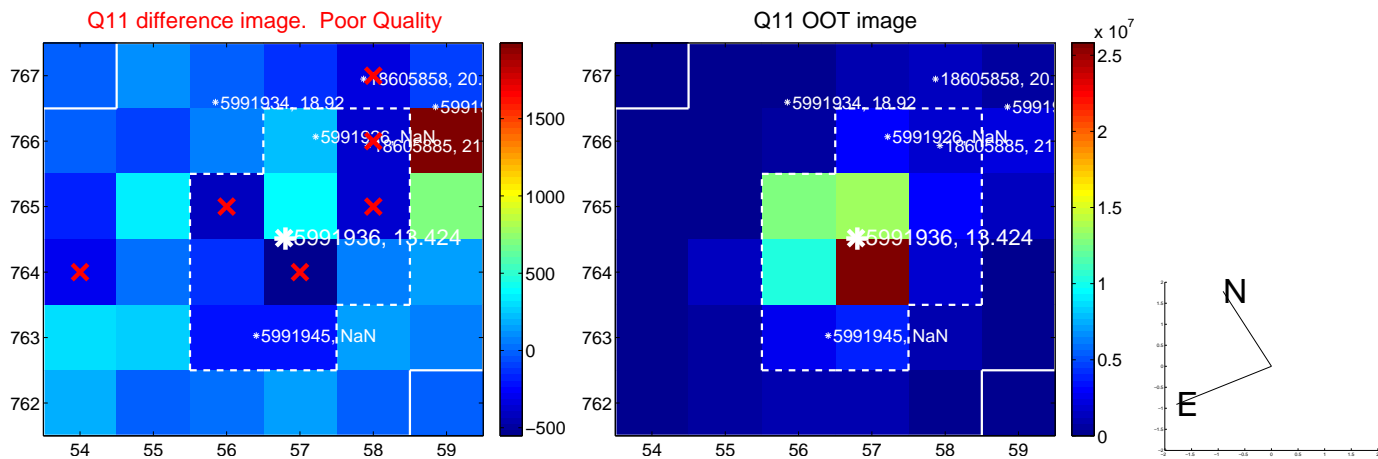
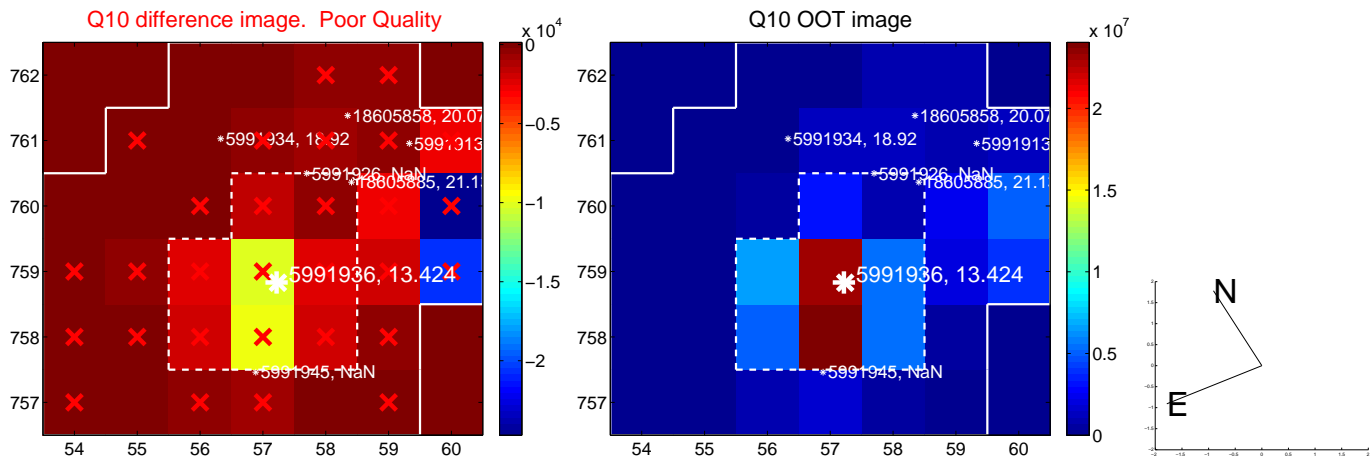
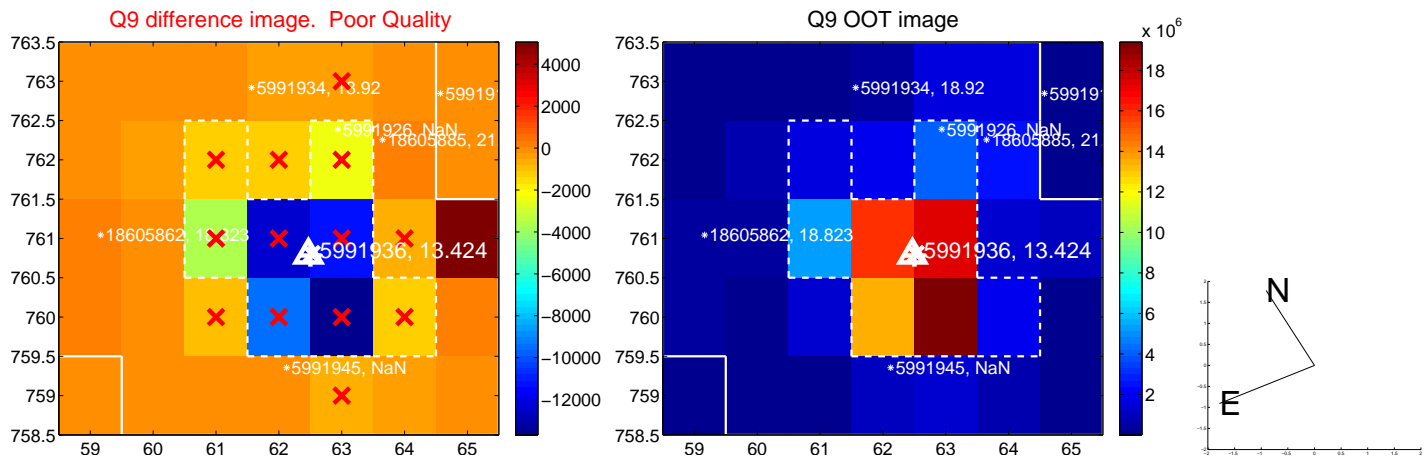
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



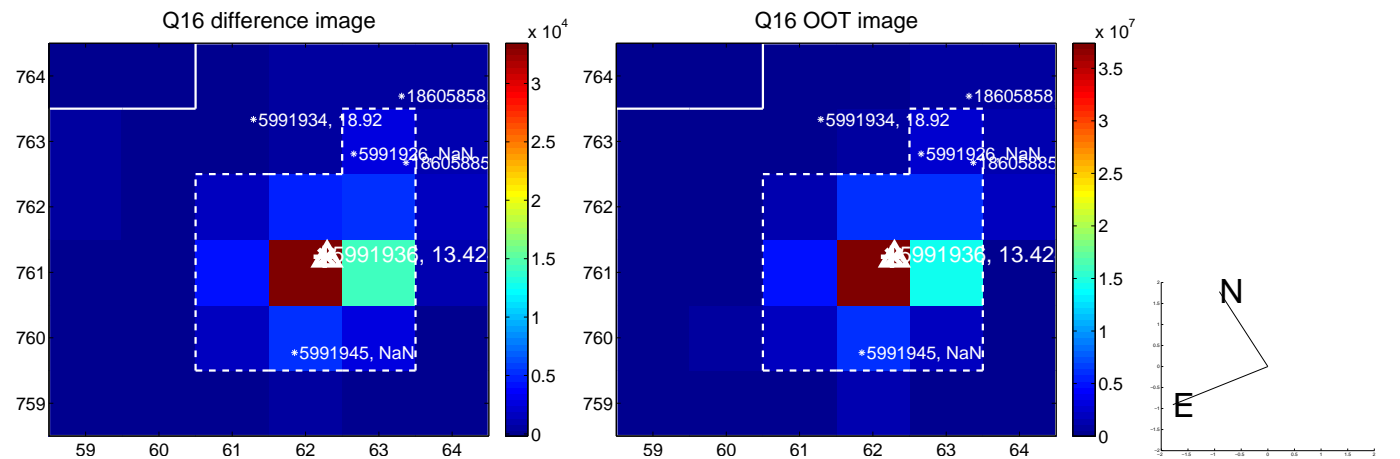
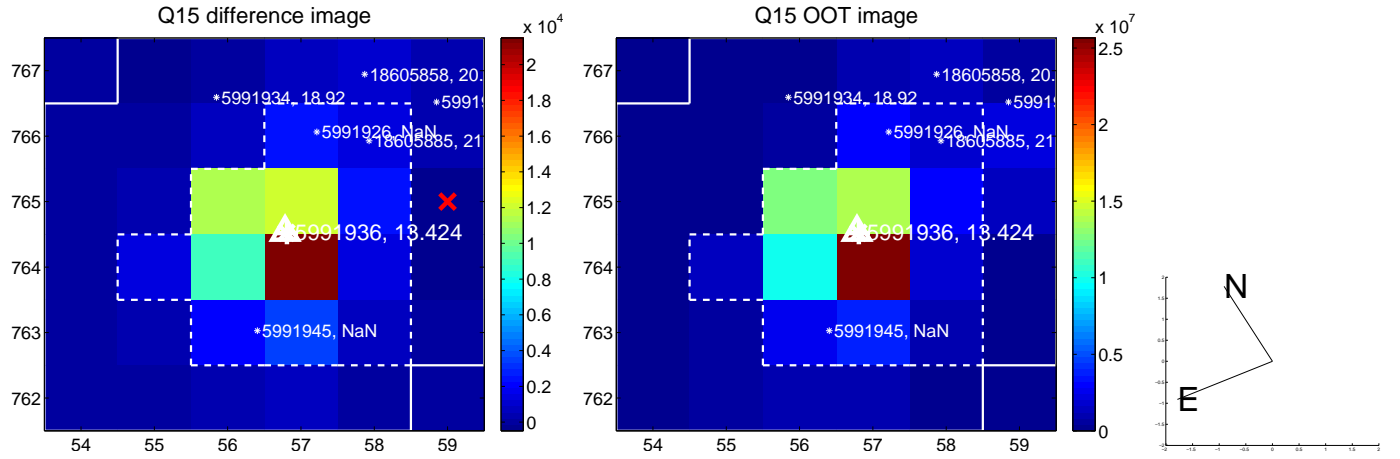
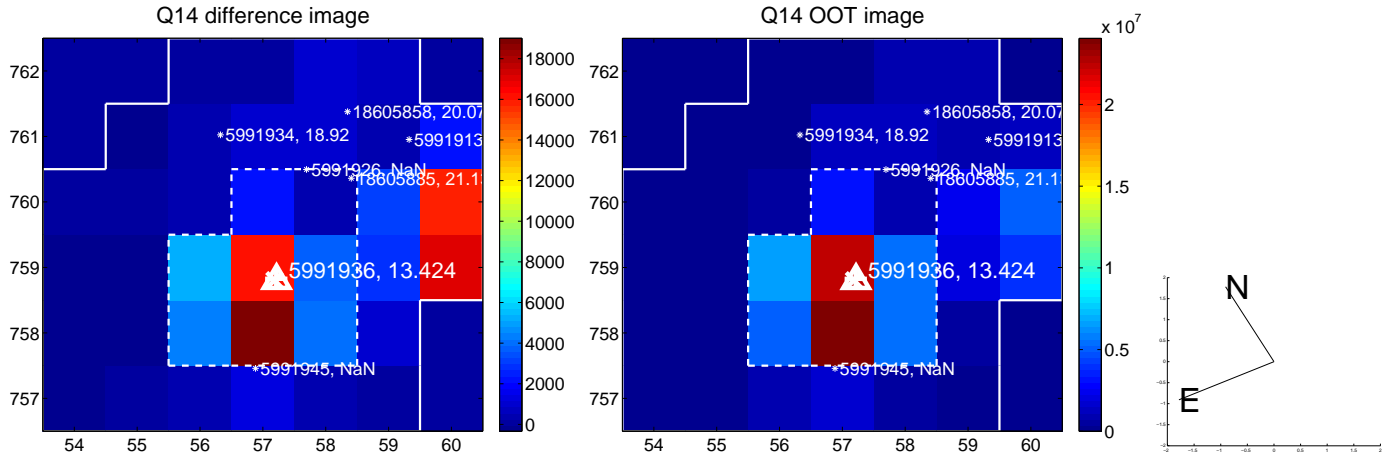
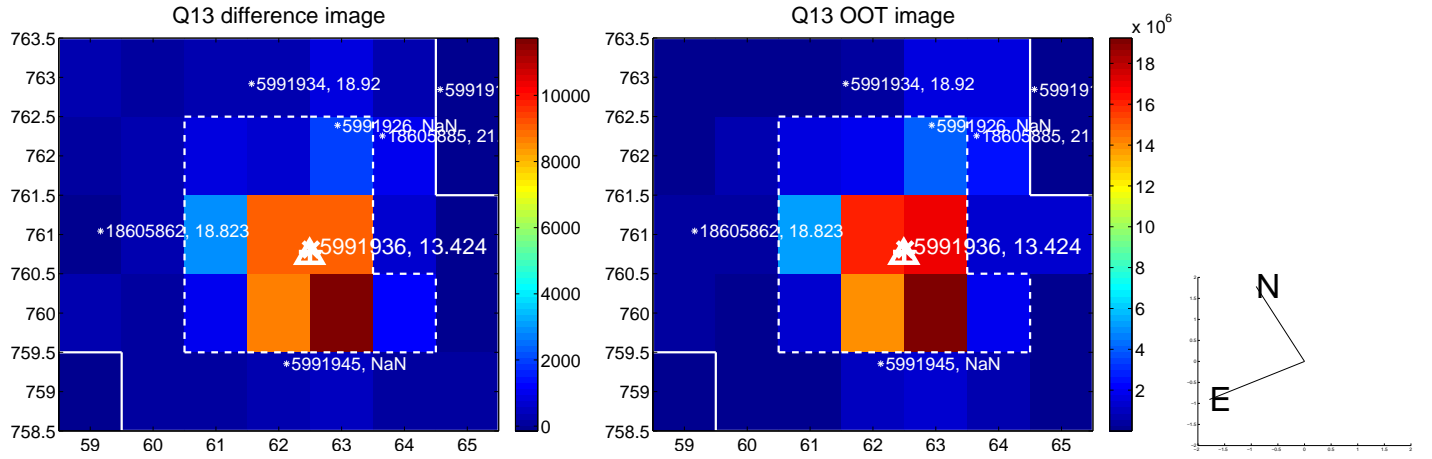
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



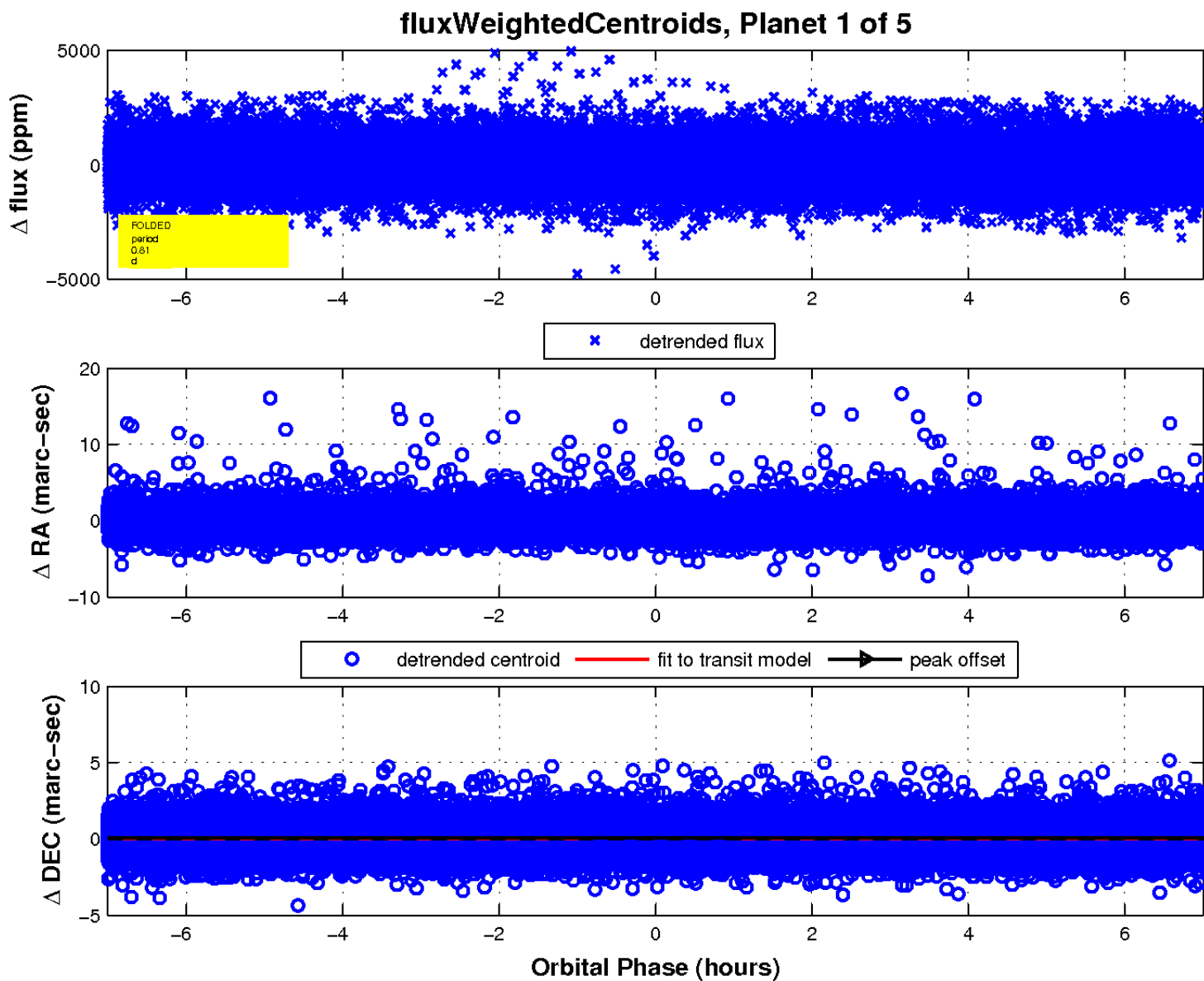
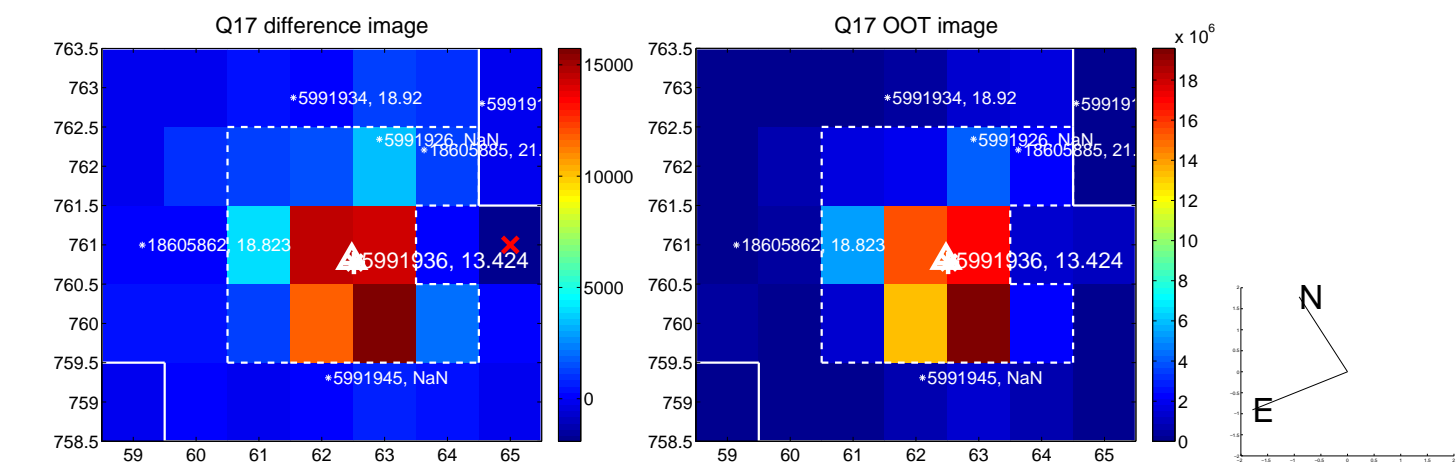
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white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

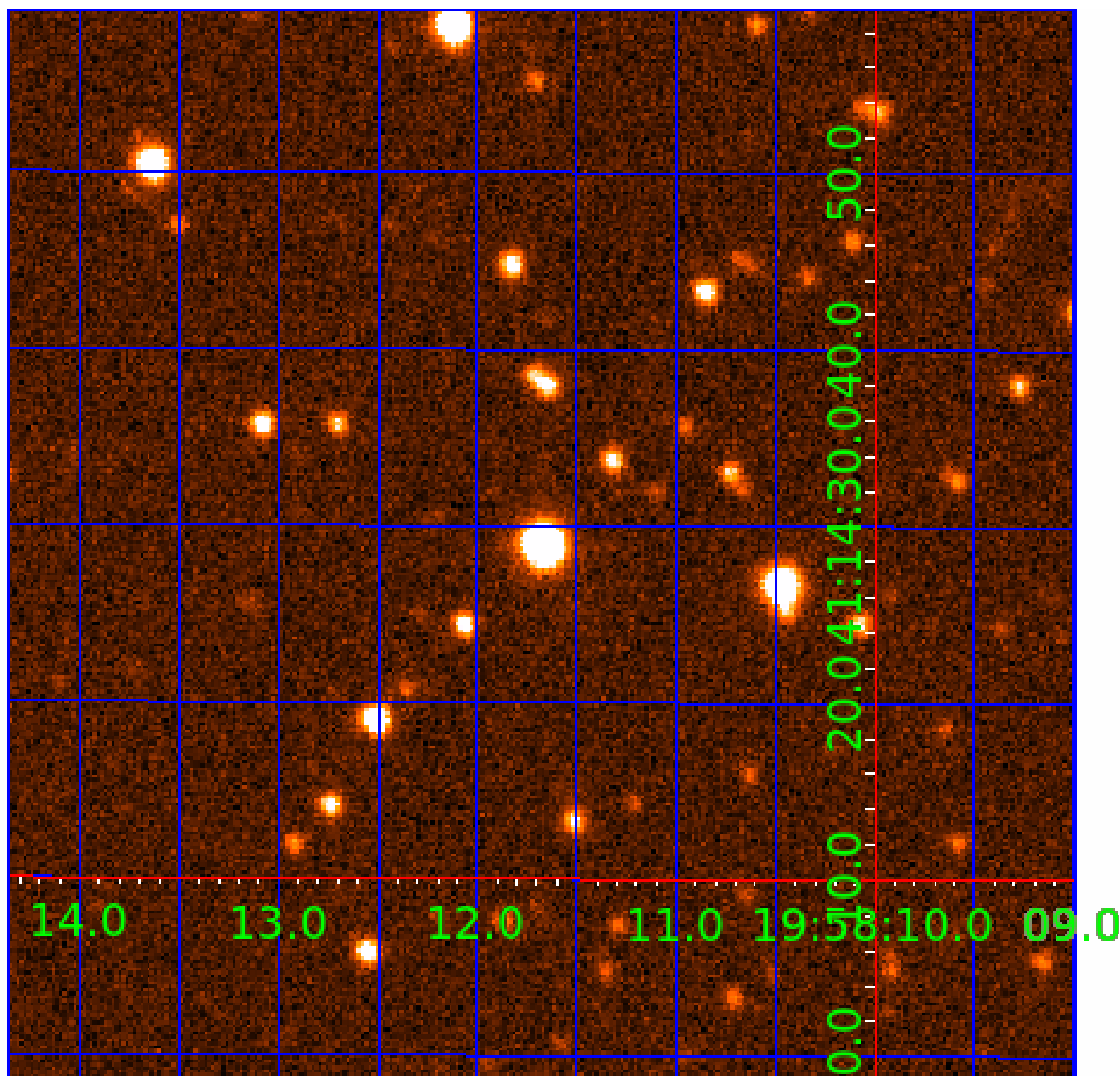


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005991936

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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Robovetter Results

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005991936-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST
005991936-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005991936-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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.

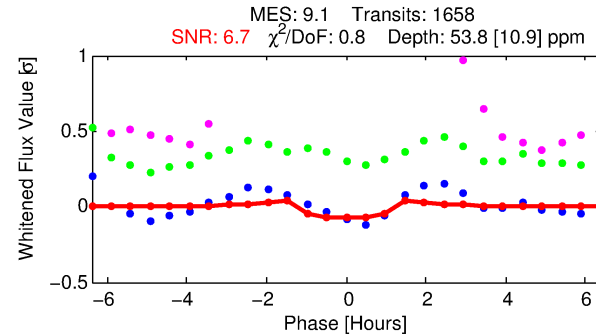
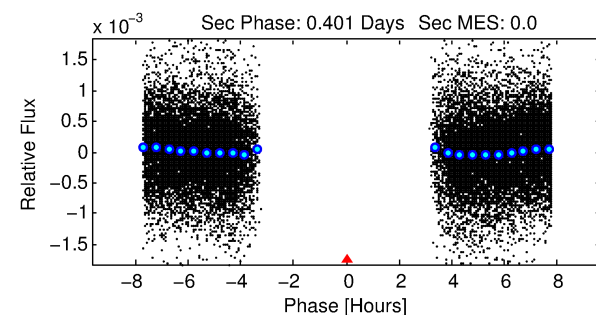
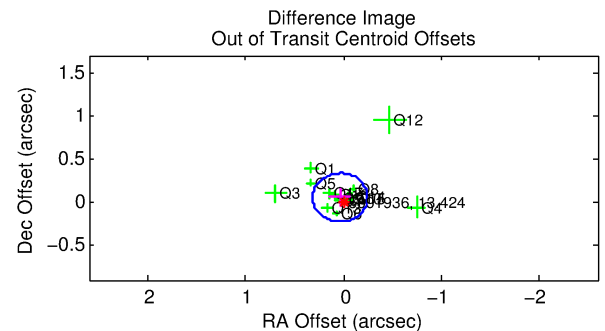
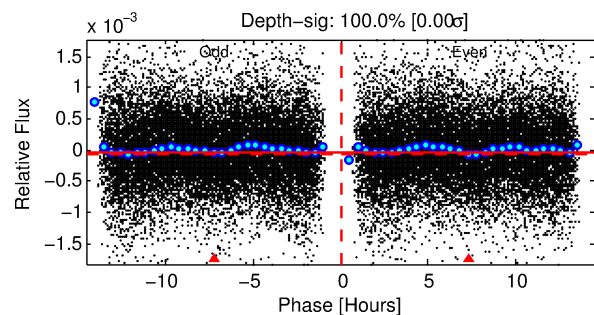
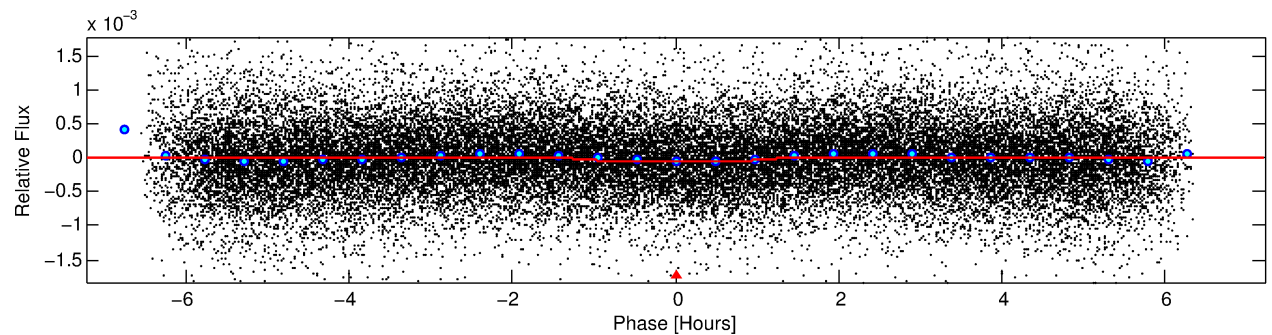
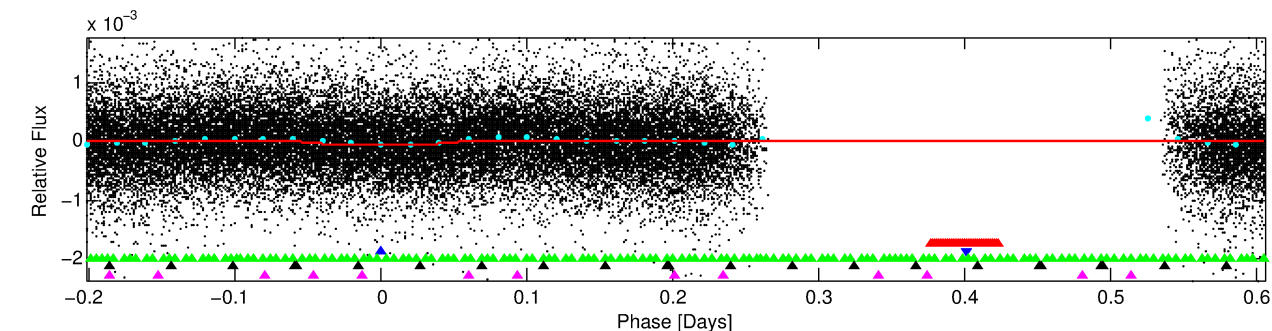
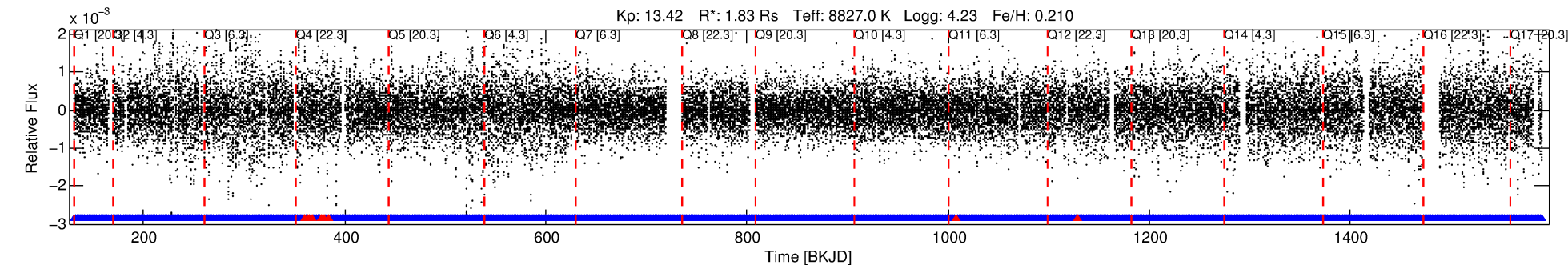
Ephemeris Match Information For 005991936-02

No Significant Match Found

DV One-Page Summary

KIC: 5991936 Candidate: 2 of 5 Period: 0.808 d
KOI: K02606 Corr: No Ephemeris Match

Kp: 13.42 R*: 1.83 Rs Teff: 8827.0 K Logg: 4.23 Fe/H: 0.210



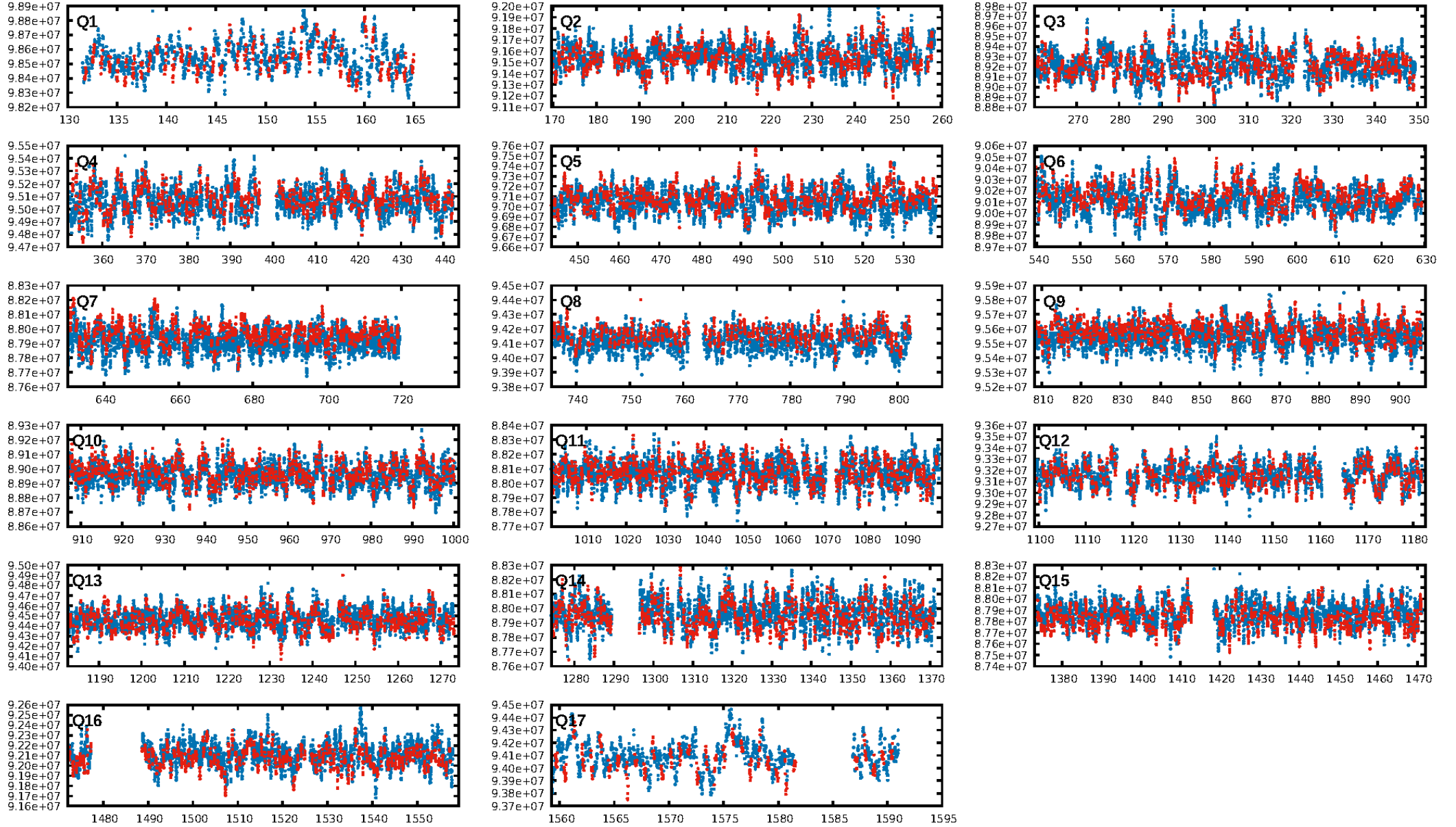
DV Fit Results:

Period = 0.80764 [0.00001] d
Epoch = 131.7971 [0.0026] BKJD
Rp/R* = 0.0078 [0.0029]
a/R* = 1.49 [2.04]
b = 0.90 [0.53]
Seff = 38995.90 [18458.95]
Teq = 3583 [424] K
Rp = 1.55 [0.86] Re
a = 0.0216 [0.0071] AU
Ag = N/A
Teffp = N/A

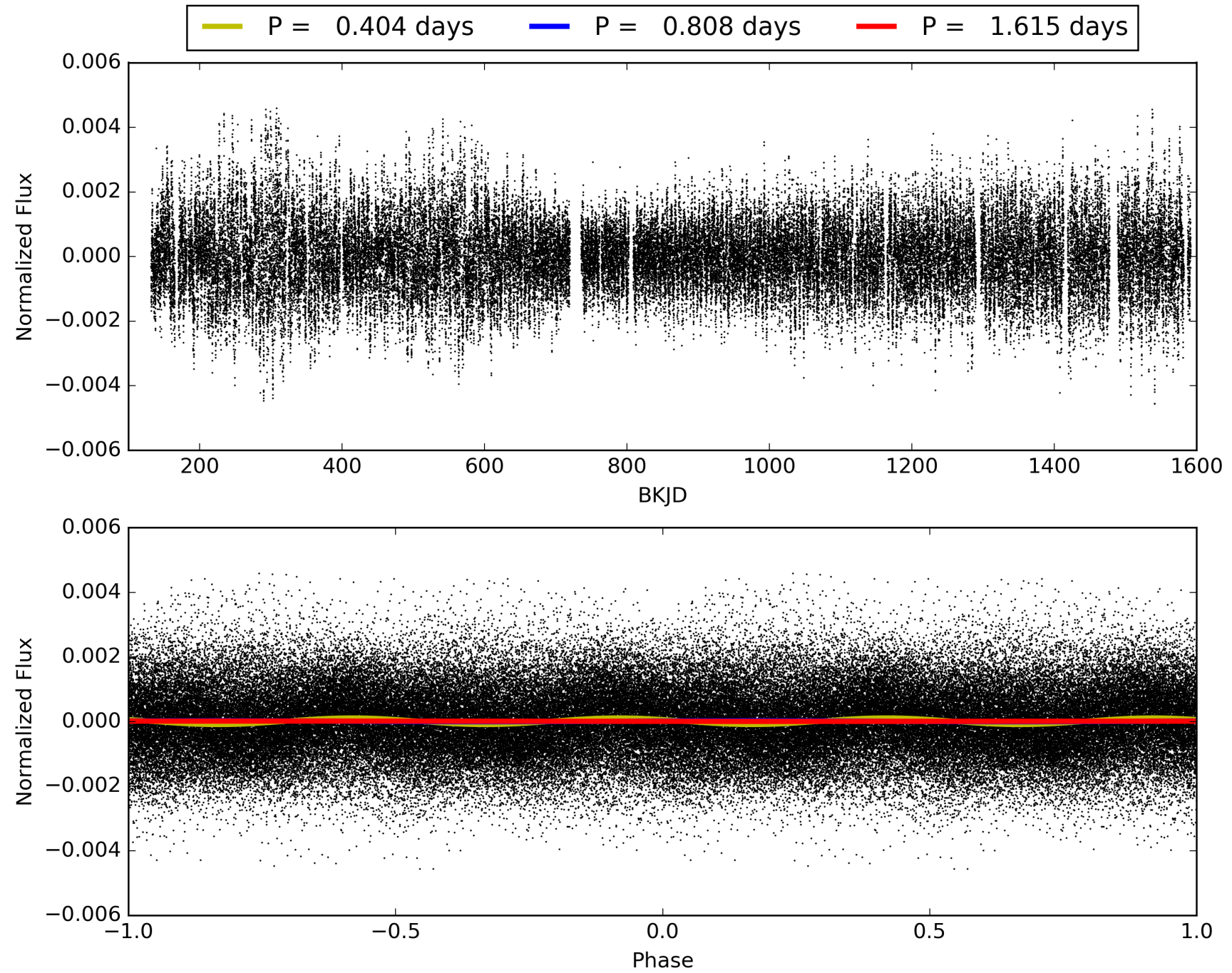
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.74e-10
RollingBand-fgt: 0.99 [1571/1583]
GhostDiagnostic-chr: 0.225
Centroid-sig: N/A
Centroid-so: 4.041 arcsec [5.95σ]
OotOffset-rm: 0.064 arcsec [0.68σ]
KicOffset-rm: 0.098 arcsec [1.04σ]
OotOffset-st: 3/3/4/5 [15]
KicOffset-st: 3/3/4/5 [15]
DiffImageQuality-fgm: 0.53 [8/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005991936-02, PDC Light Curves

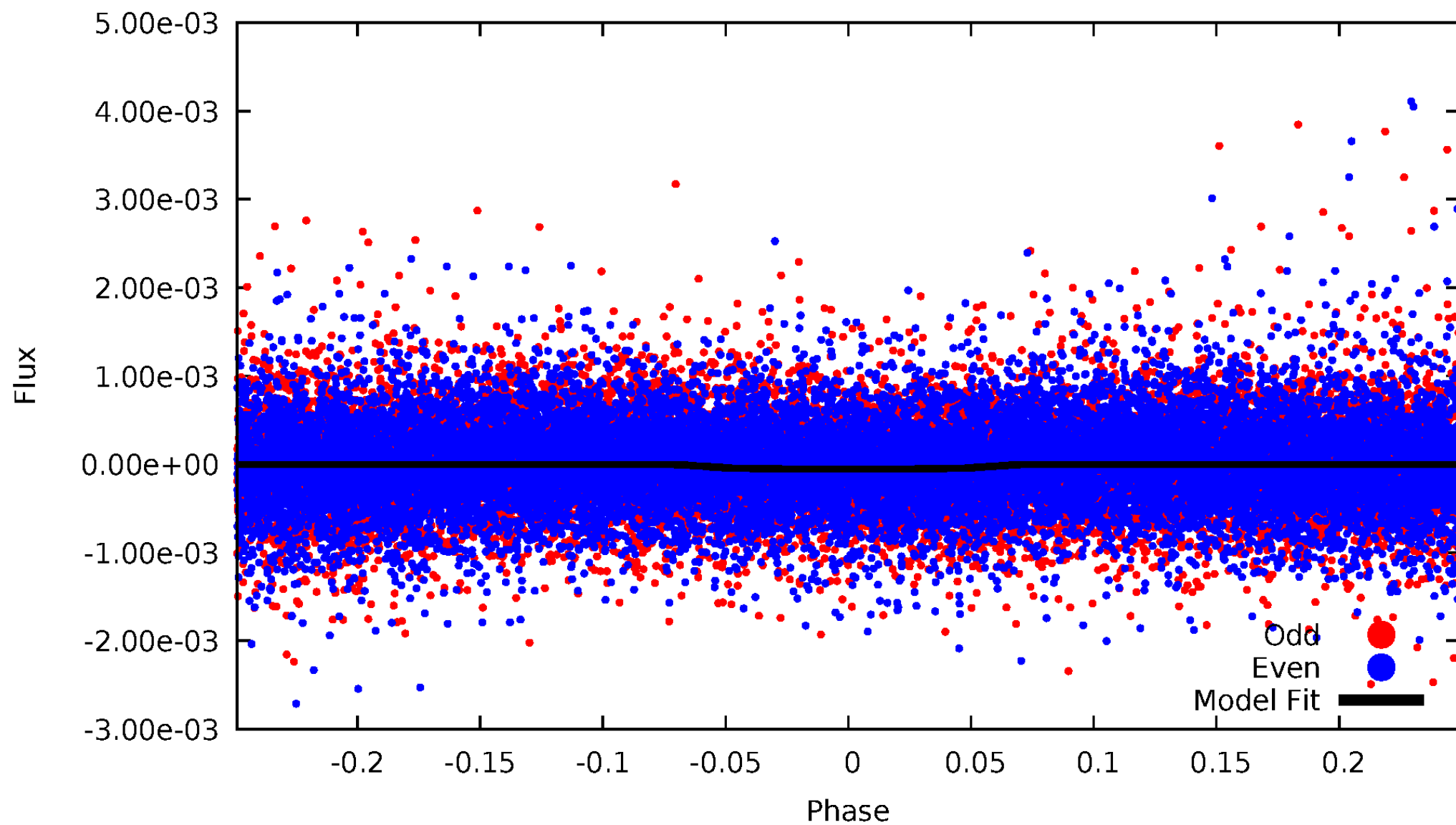


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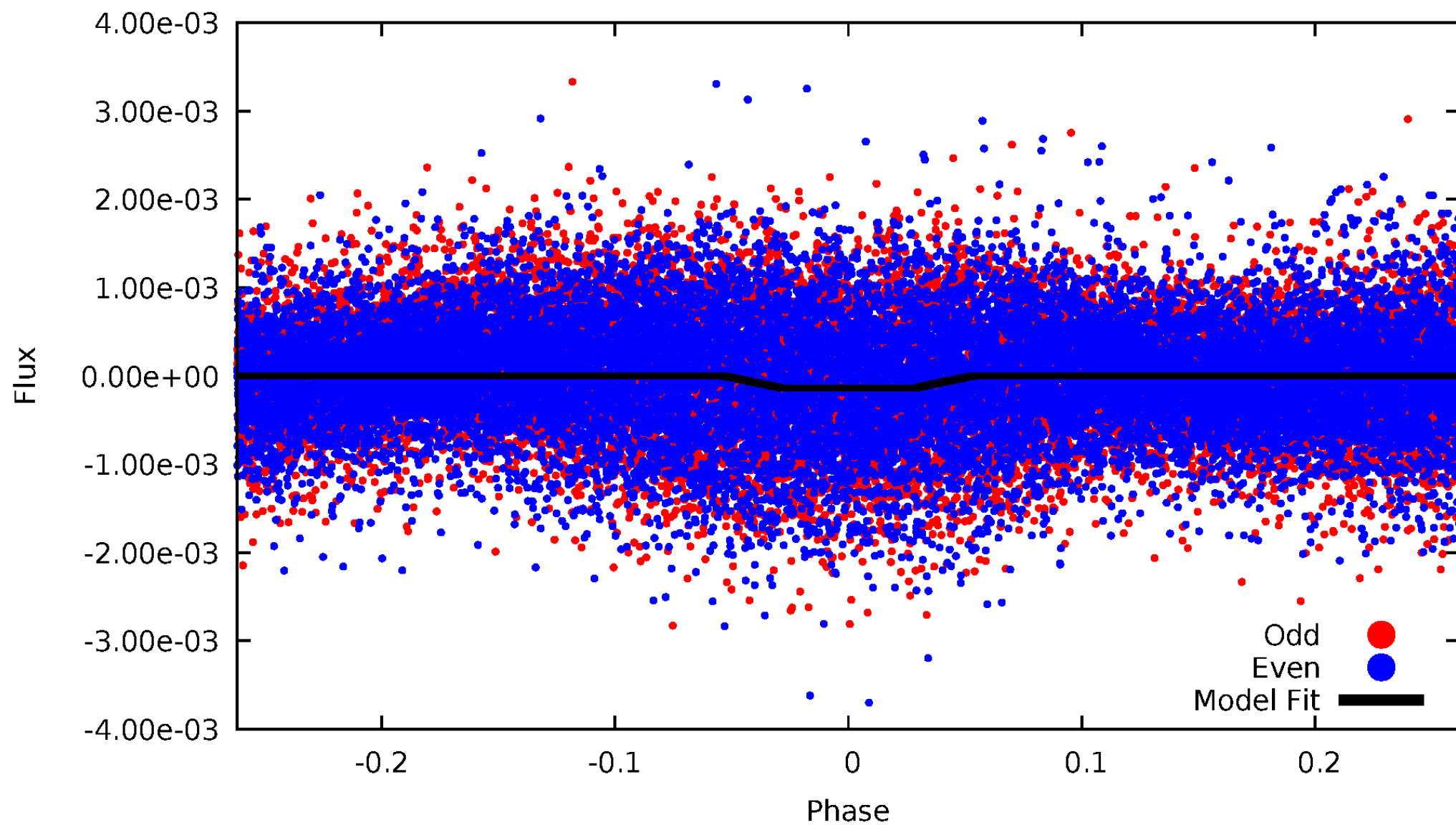
DV Odd/Even

TCE 005991936-02



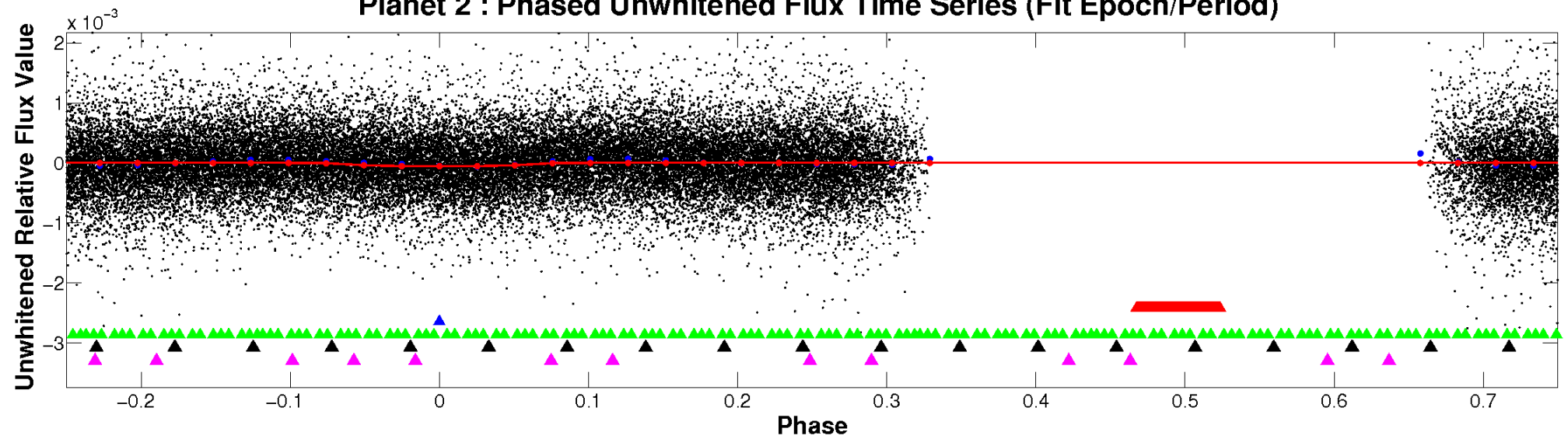
ALT Odd/Even

TCE 005991936-02

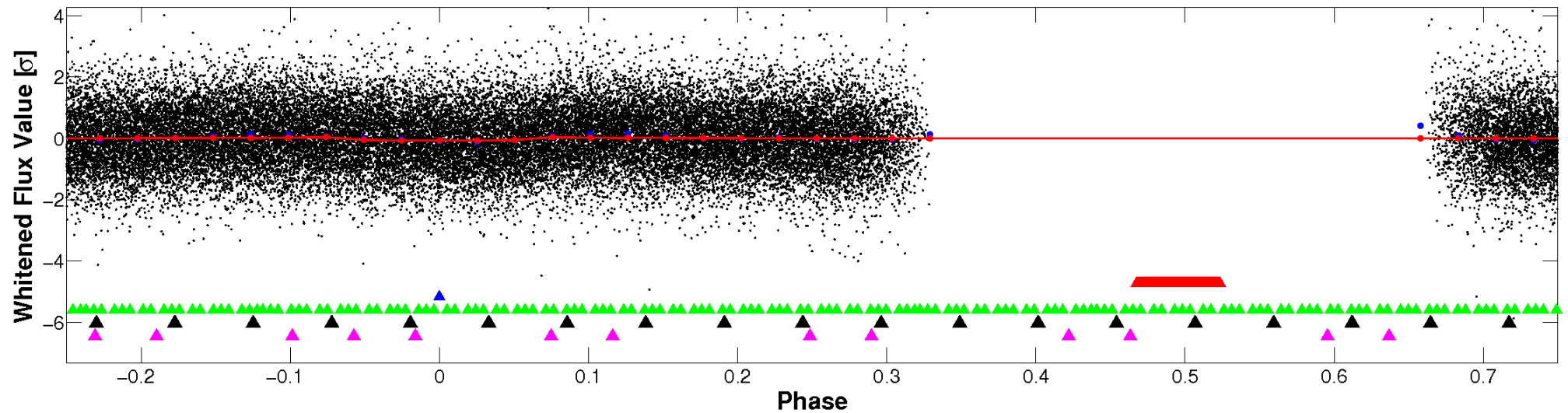


Non-Whitened Vs. Whitened Light Curve

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

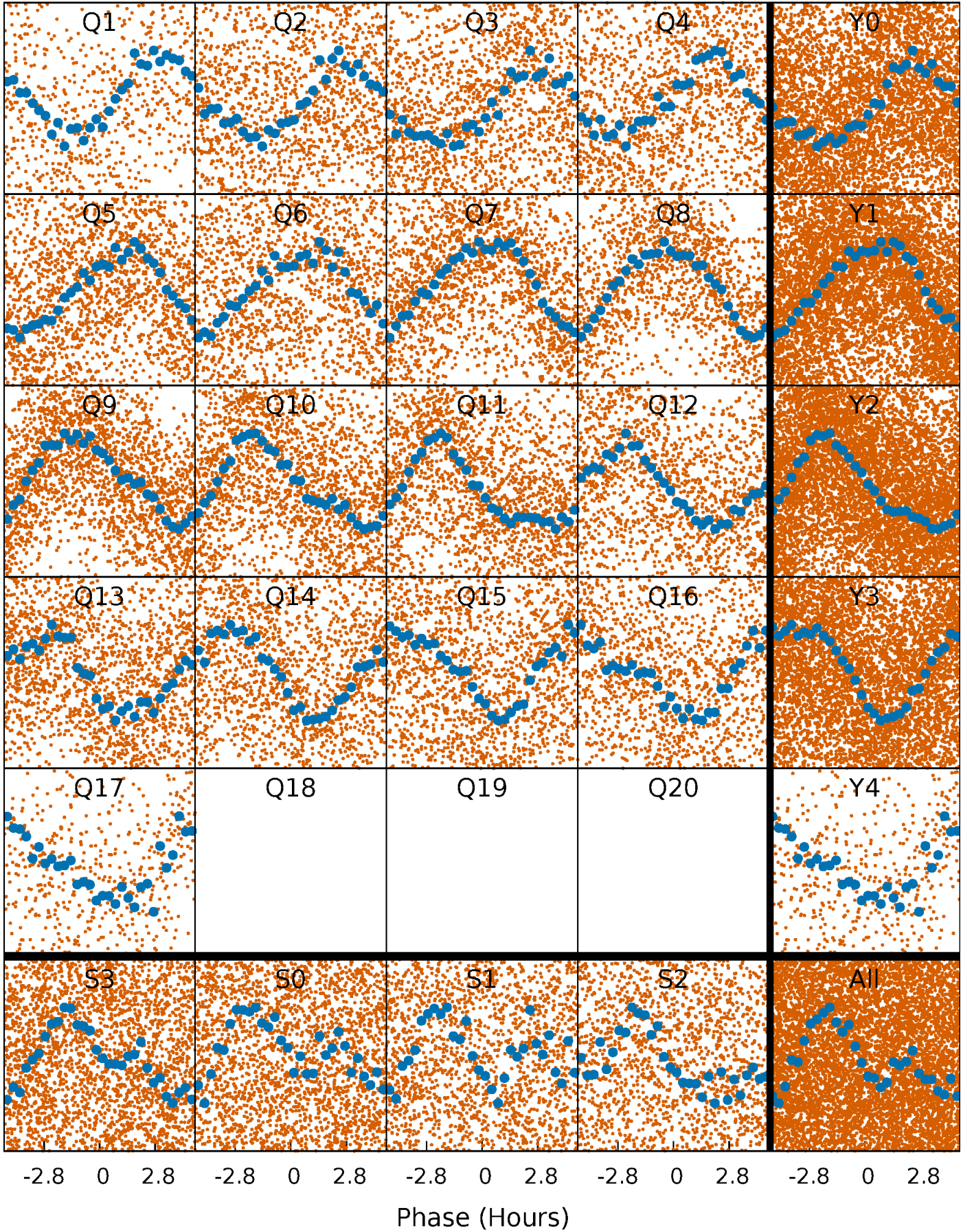


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



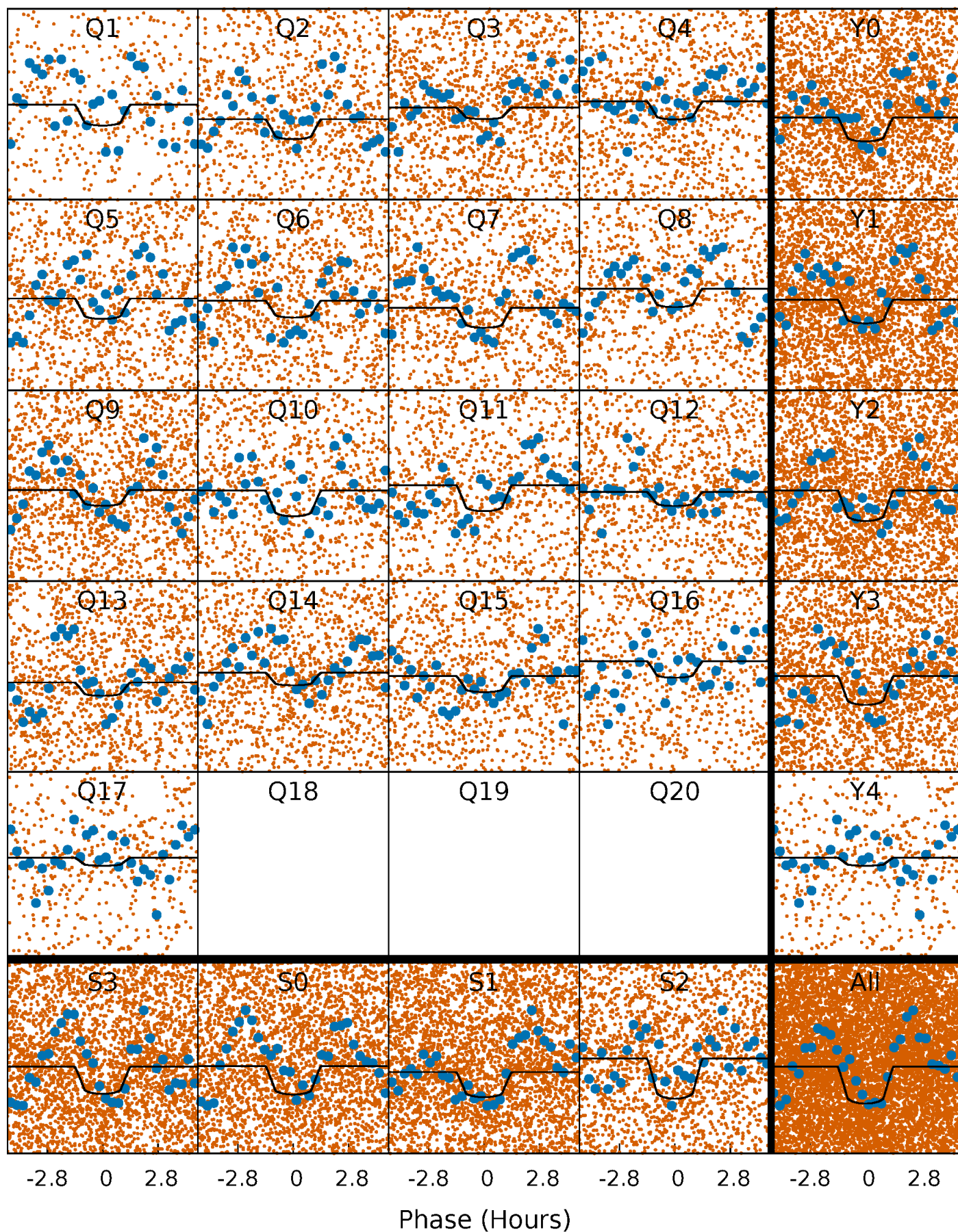
PDC Quarter-Phased Transit Curves

TCE 005991936-02 P= 0.807635 Days $T_0=131.797098$ (BKJD)



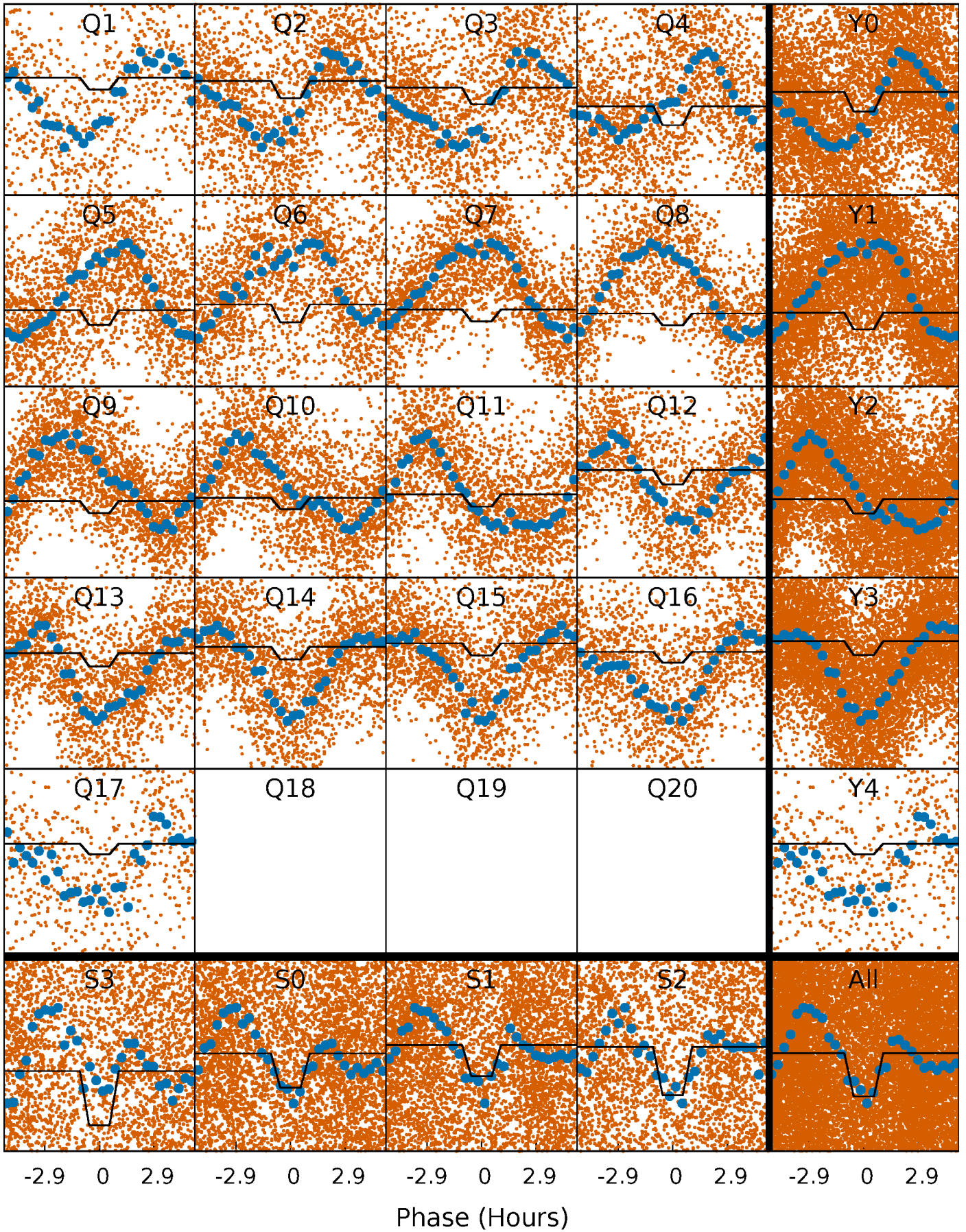
DV Quarter-Phased Transit Curves

TCE 005991936-02 P= 0.807635 Days $T_0=131.797098$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

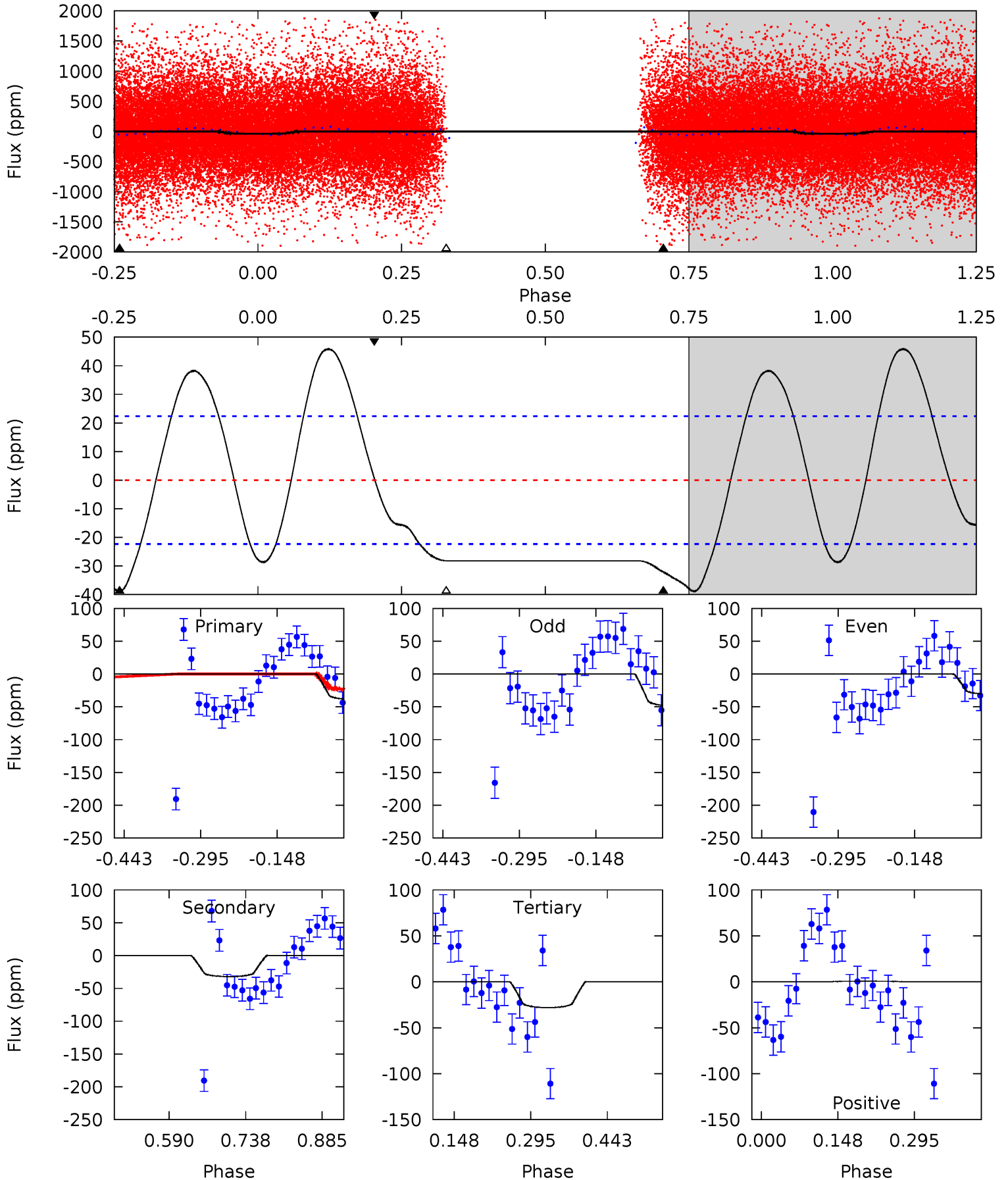
TCE 005991936-02 P= 0.807663 Days $T_0=131.797145$ (BKJD)



DV Model-Shift Uniqueness Test

005991936-02, P = 0.807635 Days, E = 130.989463 Days

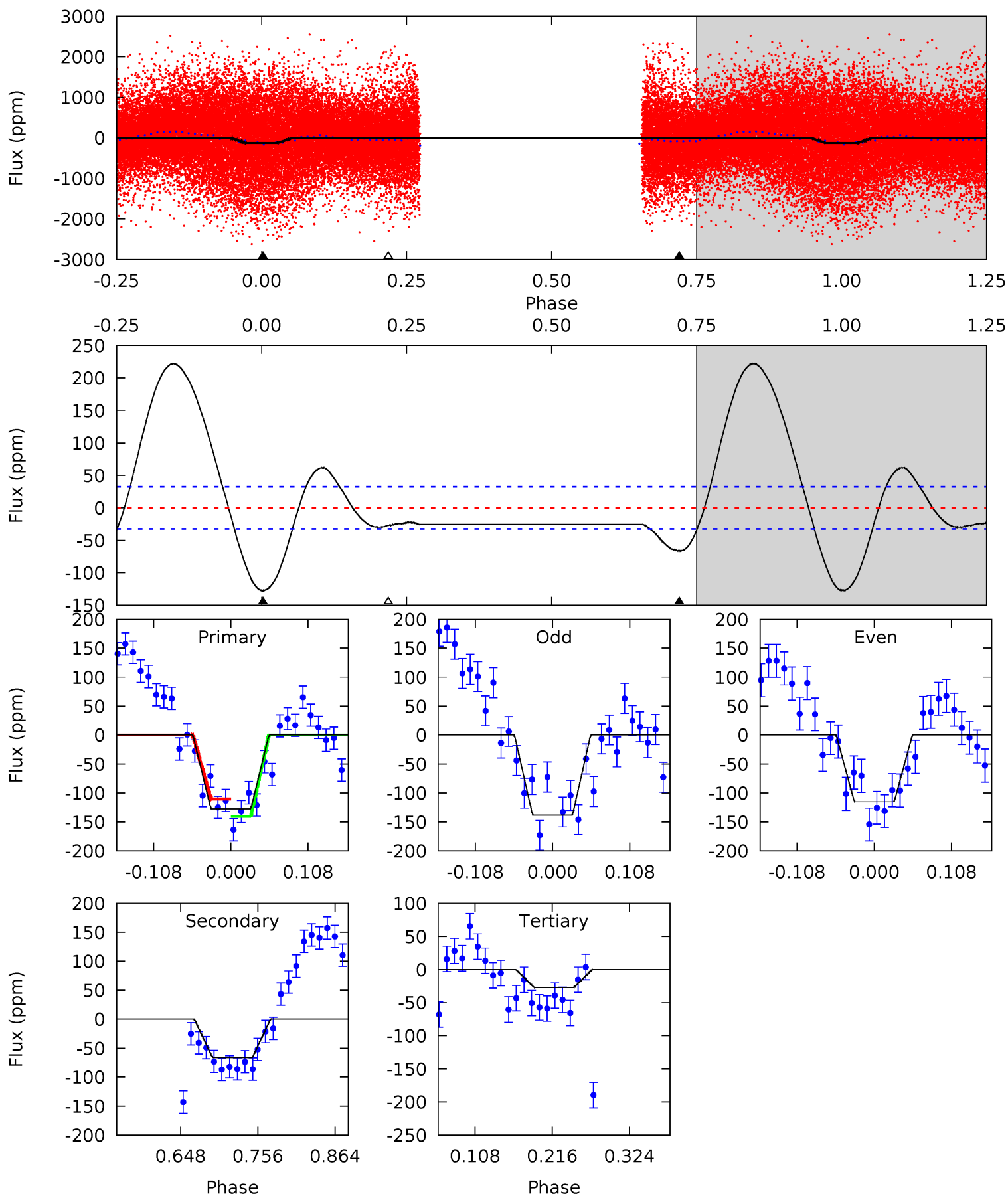
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.79	6.44	5.65	0.12	4.48	1.45	4.92	2.14	7.67	0.79	6.32	1.77	0.68	0.54	3.30



Alt Model-Shift Uniqueness Test

005991936-02, P = 0.807663 Days, E = 130.989482 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	9.30	3.81	0	4.55	1.61	13.9	14.1	17.9	5.49	9.30	1.64	1.26	0.64	2.32



Stellar Parameters For KIC 005991936

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8827^{+277}_{-370}	$4.227^{+0.056}_{-0.224}$	$0.210^{+0.150}_{-0.550}$	$1.827^{+0.764}_{-0.191}$	$2.052^{+0.377}_{-0.377}$	$0.474^{+0.116}_{-0.278}$
	+3%/-4%	+1%/-5%	+71%/-262%	+42%/-10%	+18%/-18%	+25%/-59%
Source	KIC0	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 005991936-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-32 ± 5	$1.62^{+0.69}_{-0.60}$	5111^{+436}_{-282}	7004^{+2592}_{-1255}	$3.017^{+4.637}_{-1.548}$
Alt.	-66 ± 7	$2.52^{+0.72}_{-0.72}$	5113^{+397}_{-281}	6713^{+1389}_{-875}	$2.642^{+2.319}_{-1.075}$

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

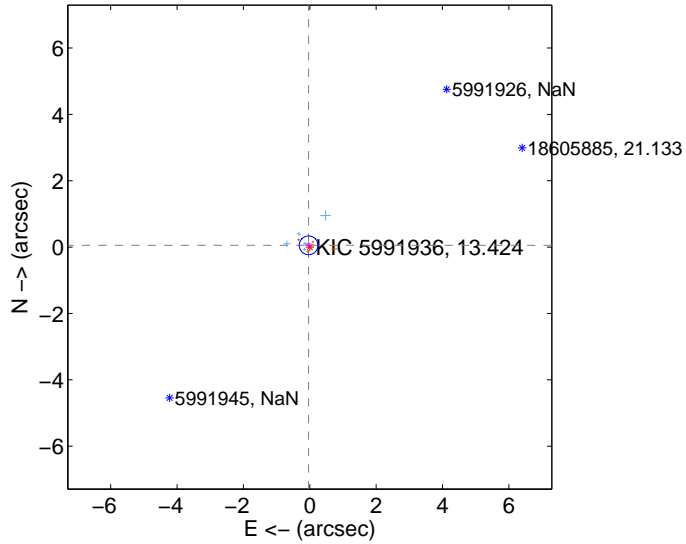
Supplemental centroid analysis for 005991936-02. Kepler magnitude: 13.42. Transit SNR 6.73

There are 8 quarters with good PRF difference image offsets

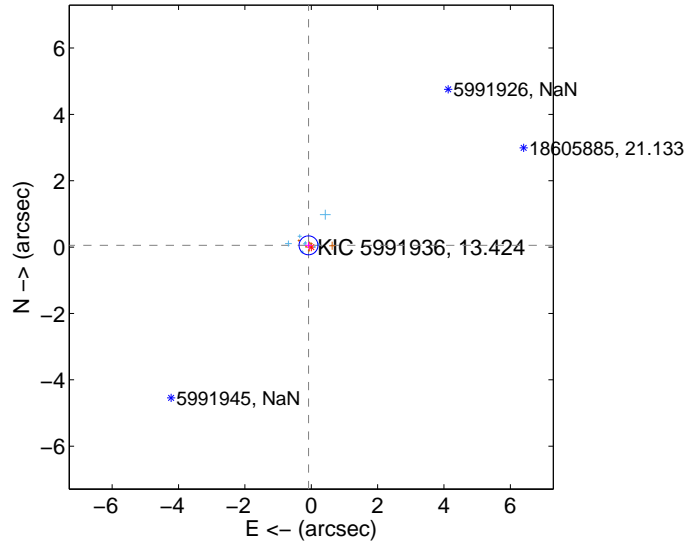
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.064 ± 0.094	0.68	0.035 ± 0.106	0.054 ± 0.096
PRF-fit source offset from KIC position	0.098 ± 0.095	1.04	0.083 ± 0.105	0.053 ± 0.096
photometric centroid source offset	4.04 ± 0.68	5.95	-4.04 ± 0.68	0.05 ± 0.54

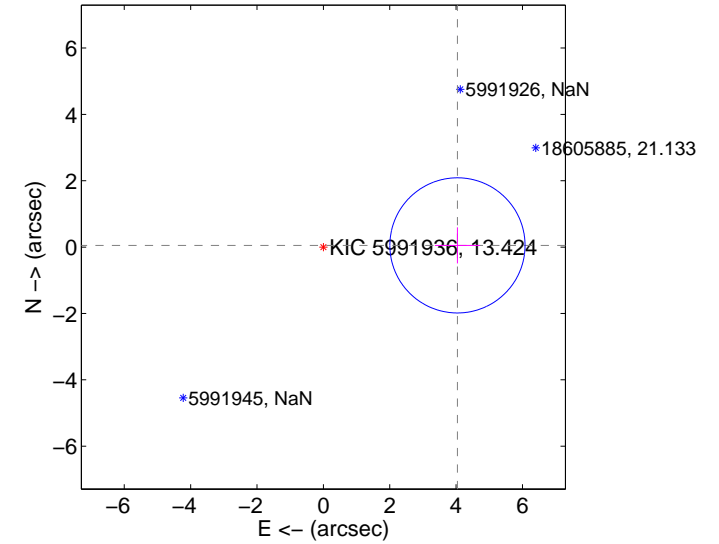
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

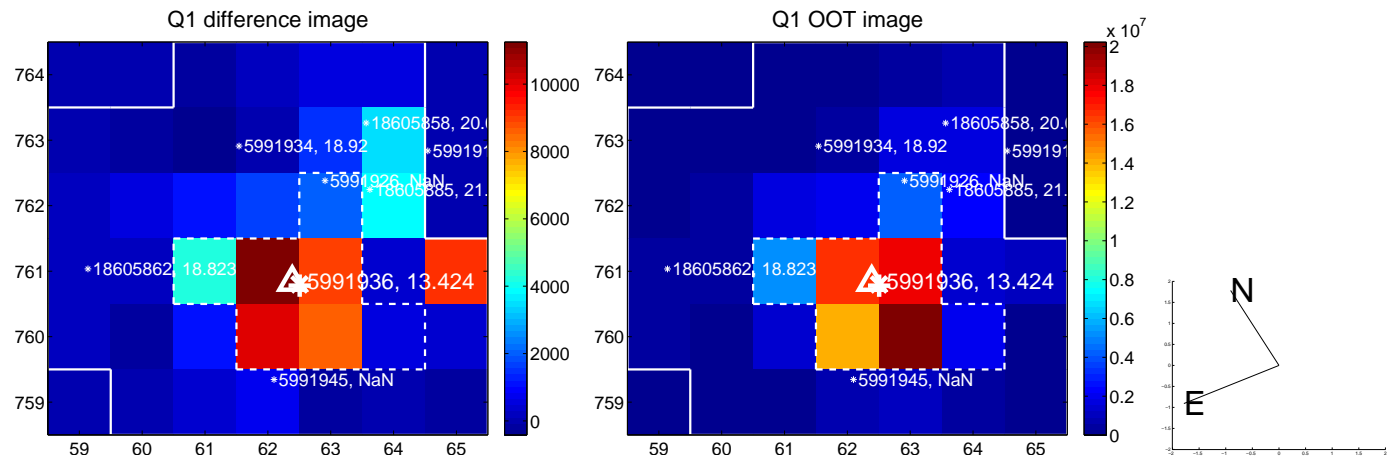


offset from photometric centroids

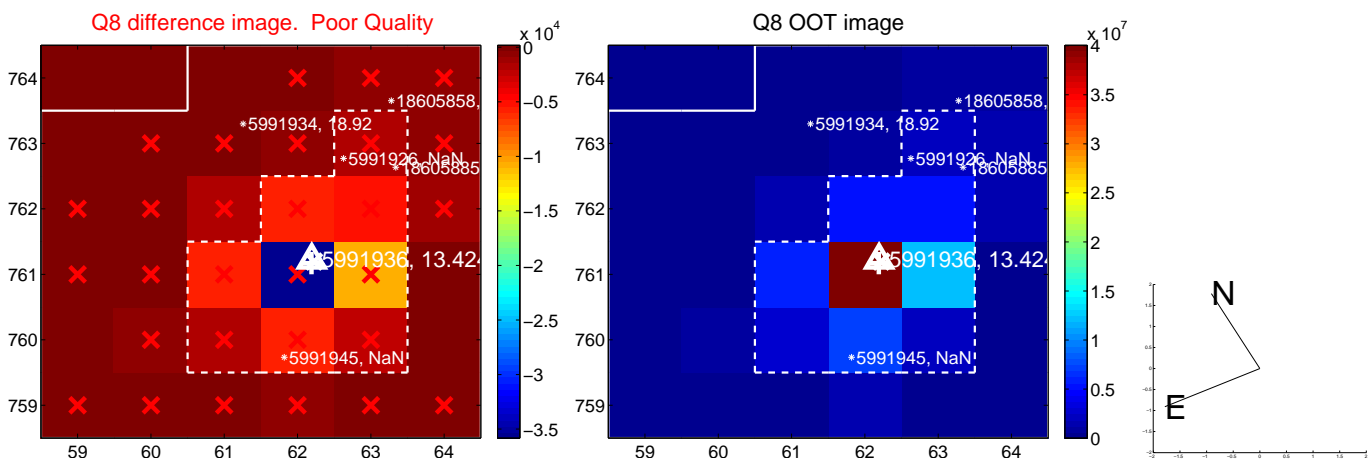
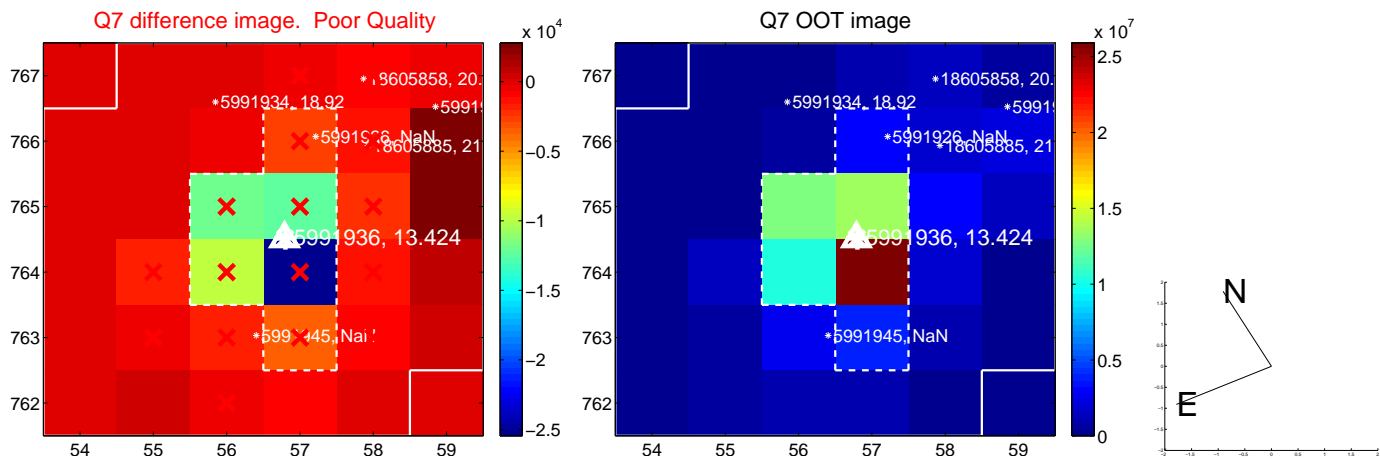
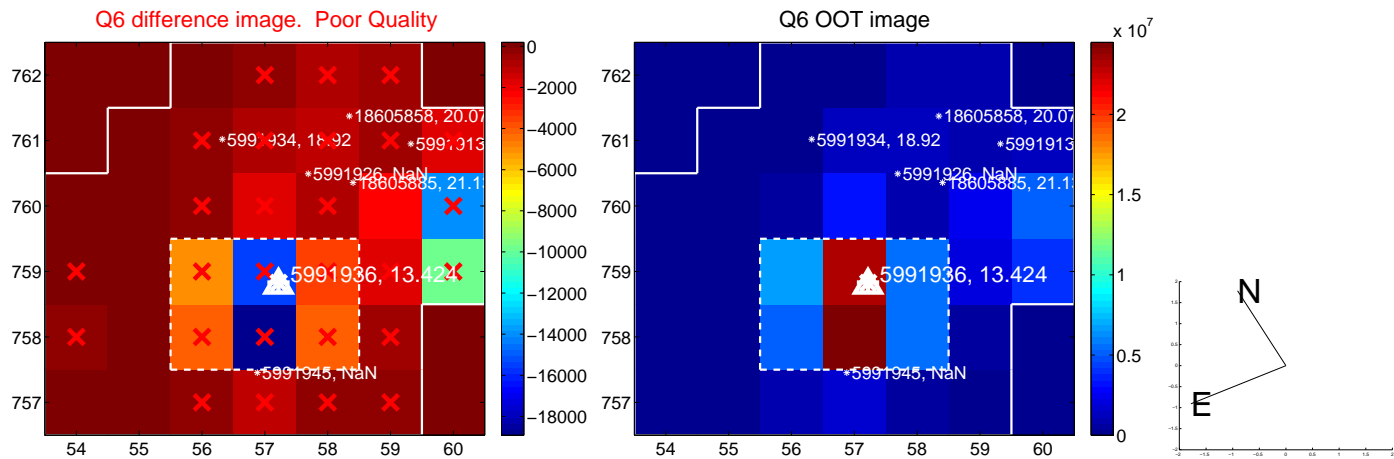
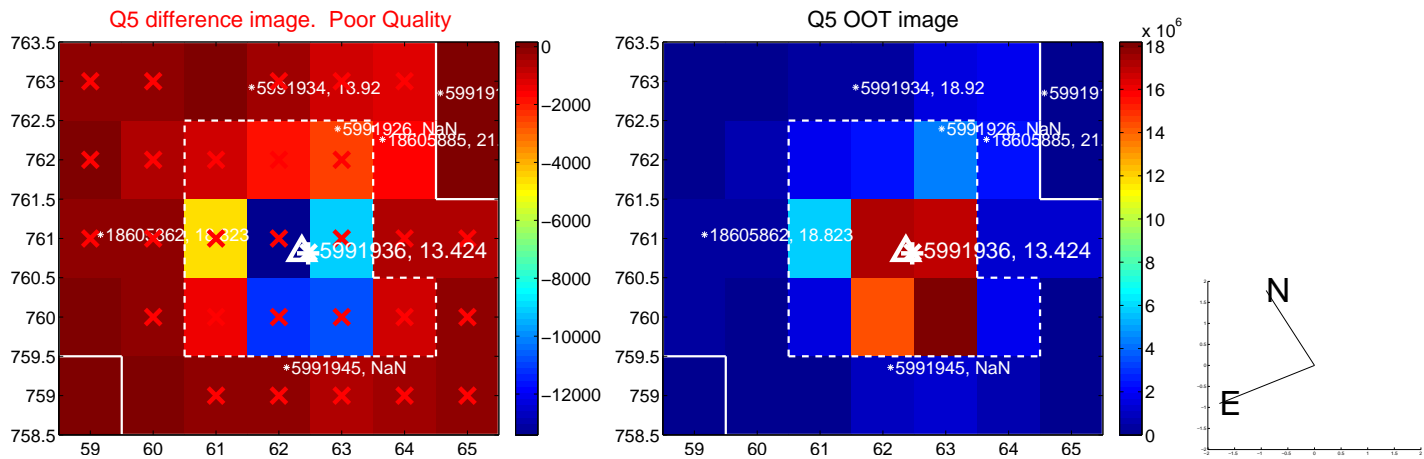


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

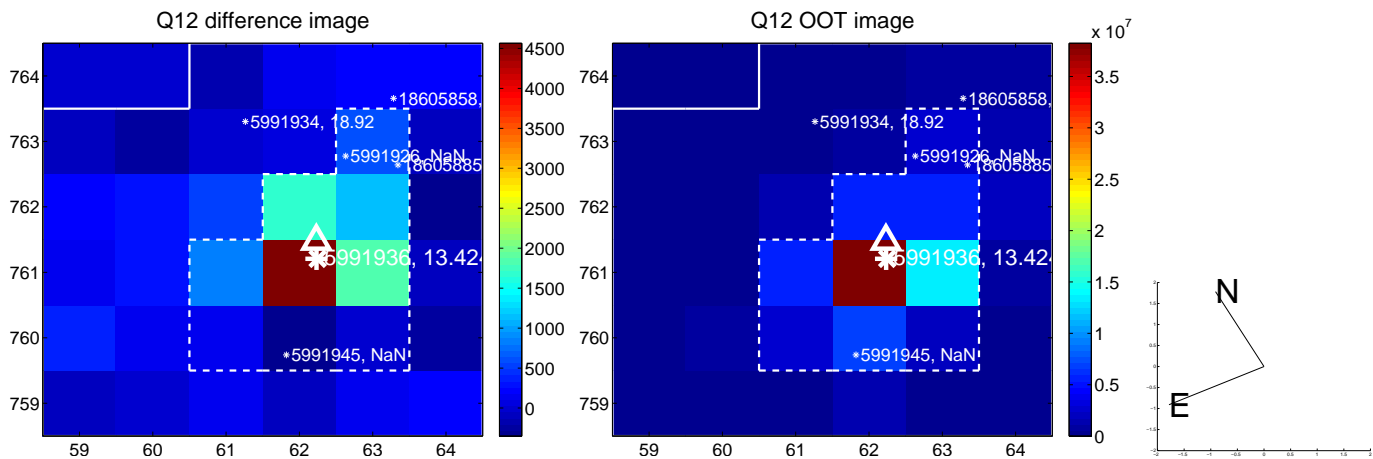
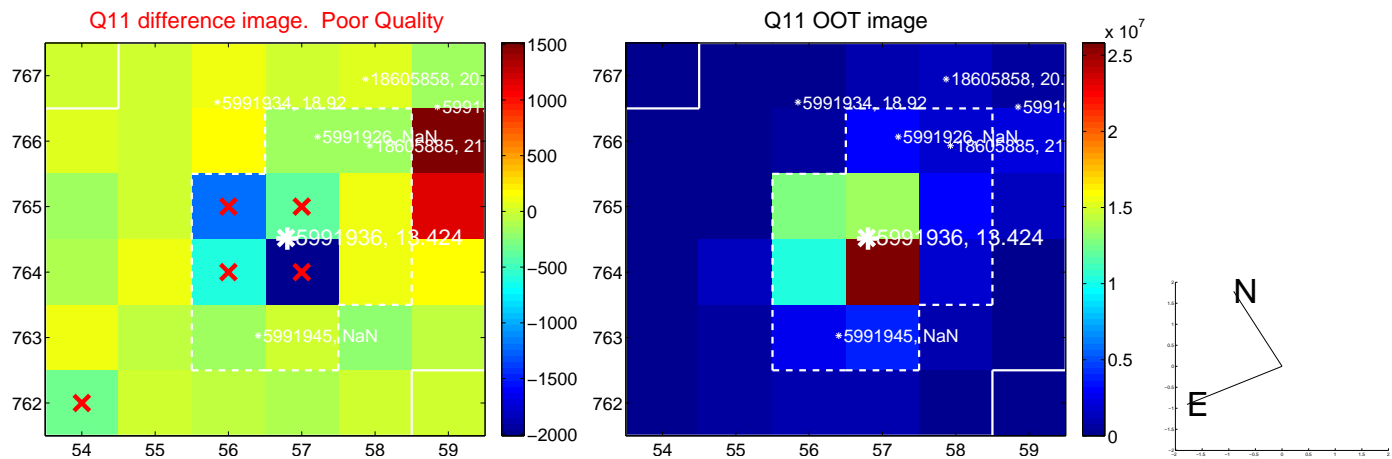
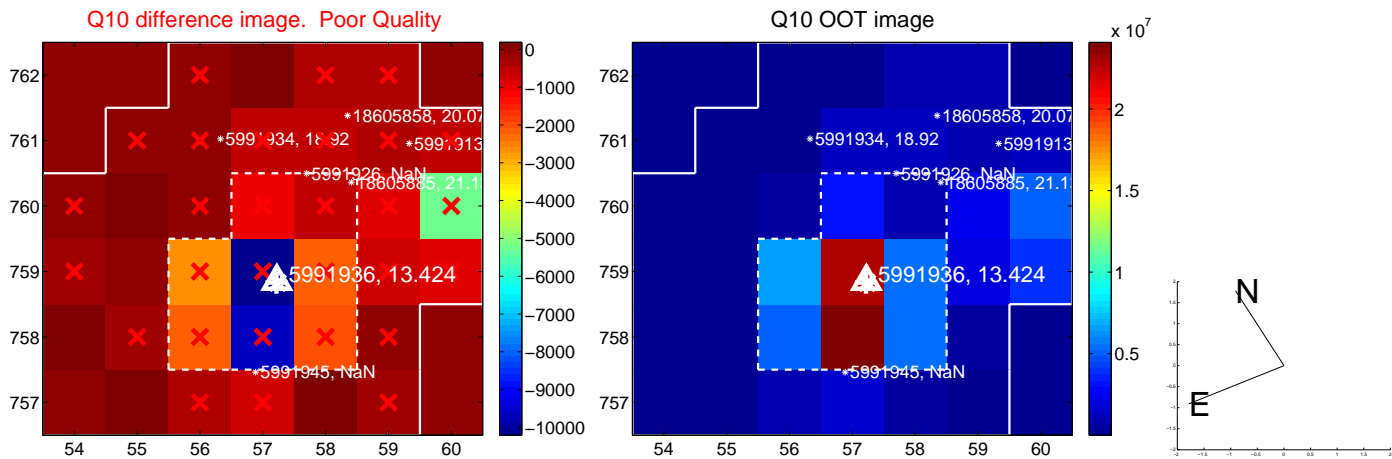
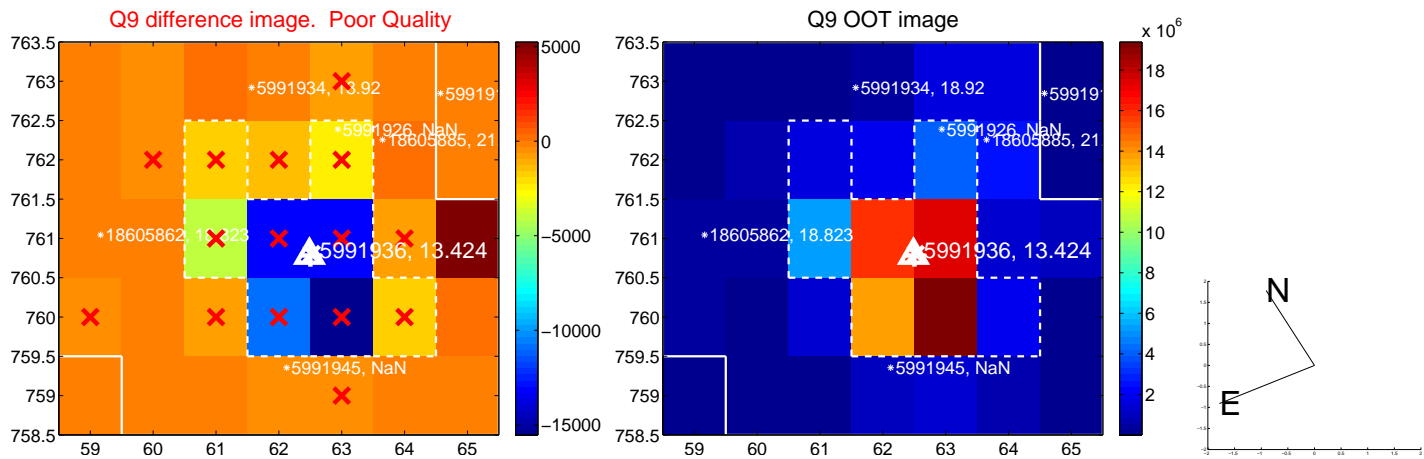
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



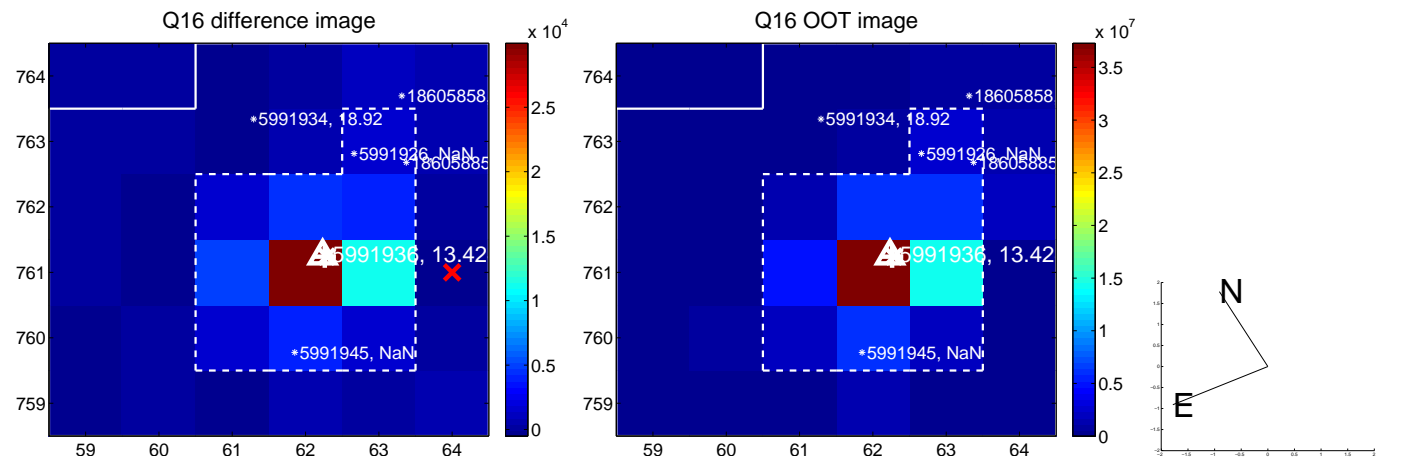
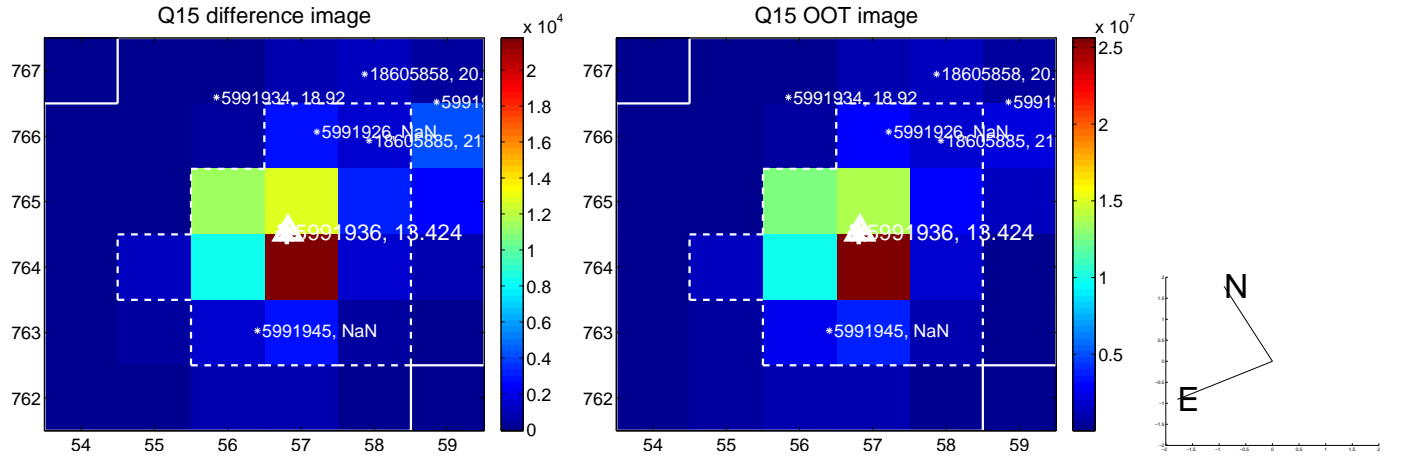
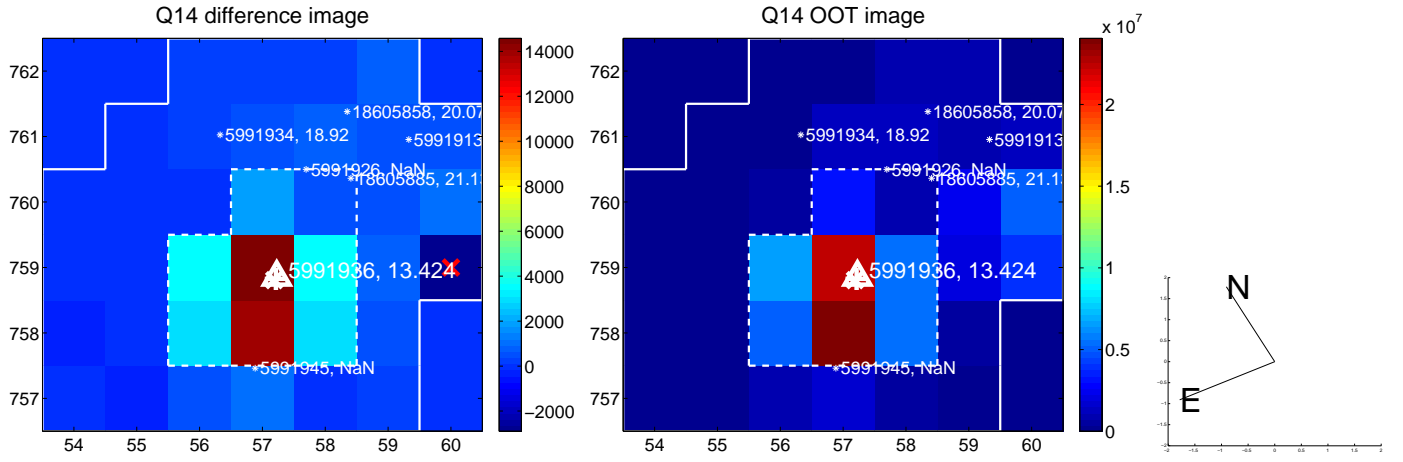
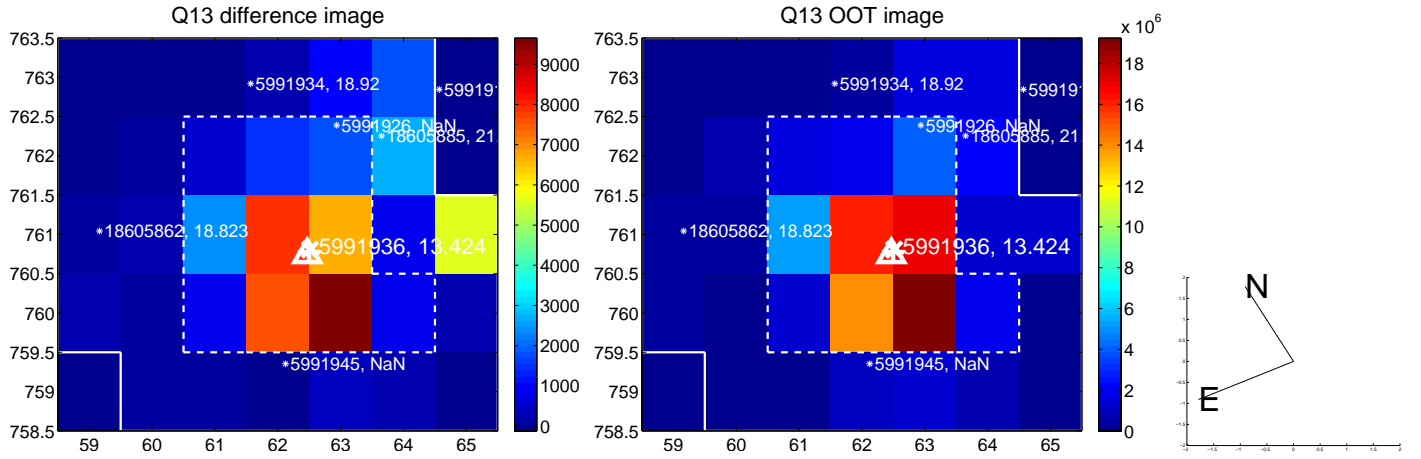
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



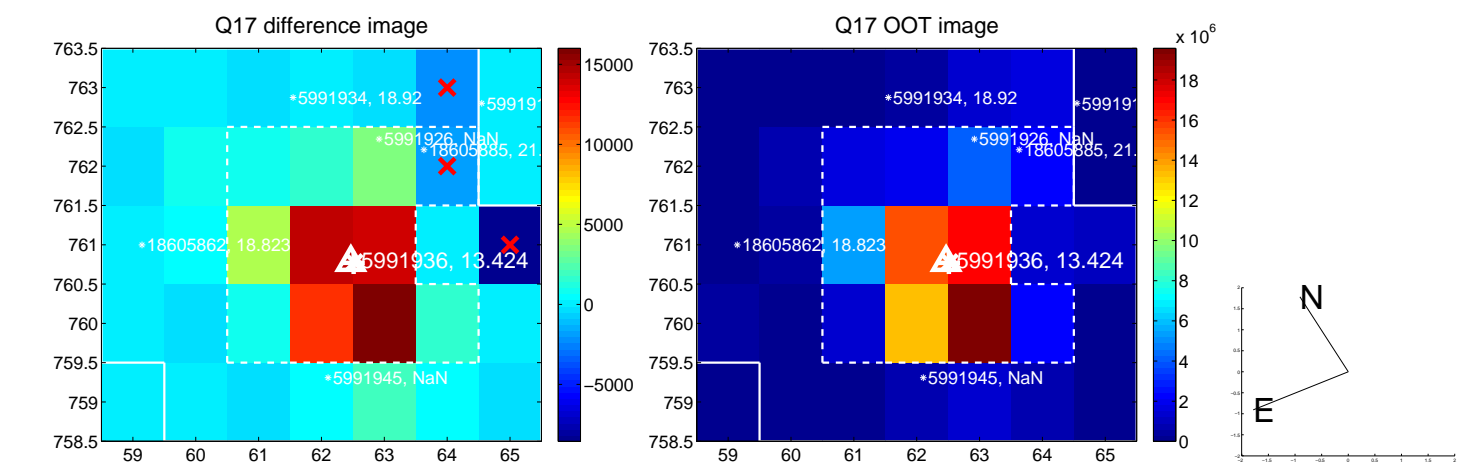
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



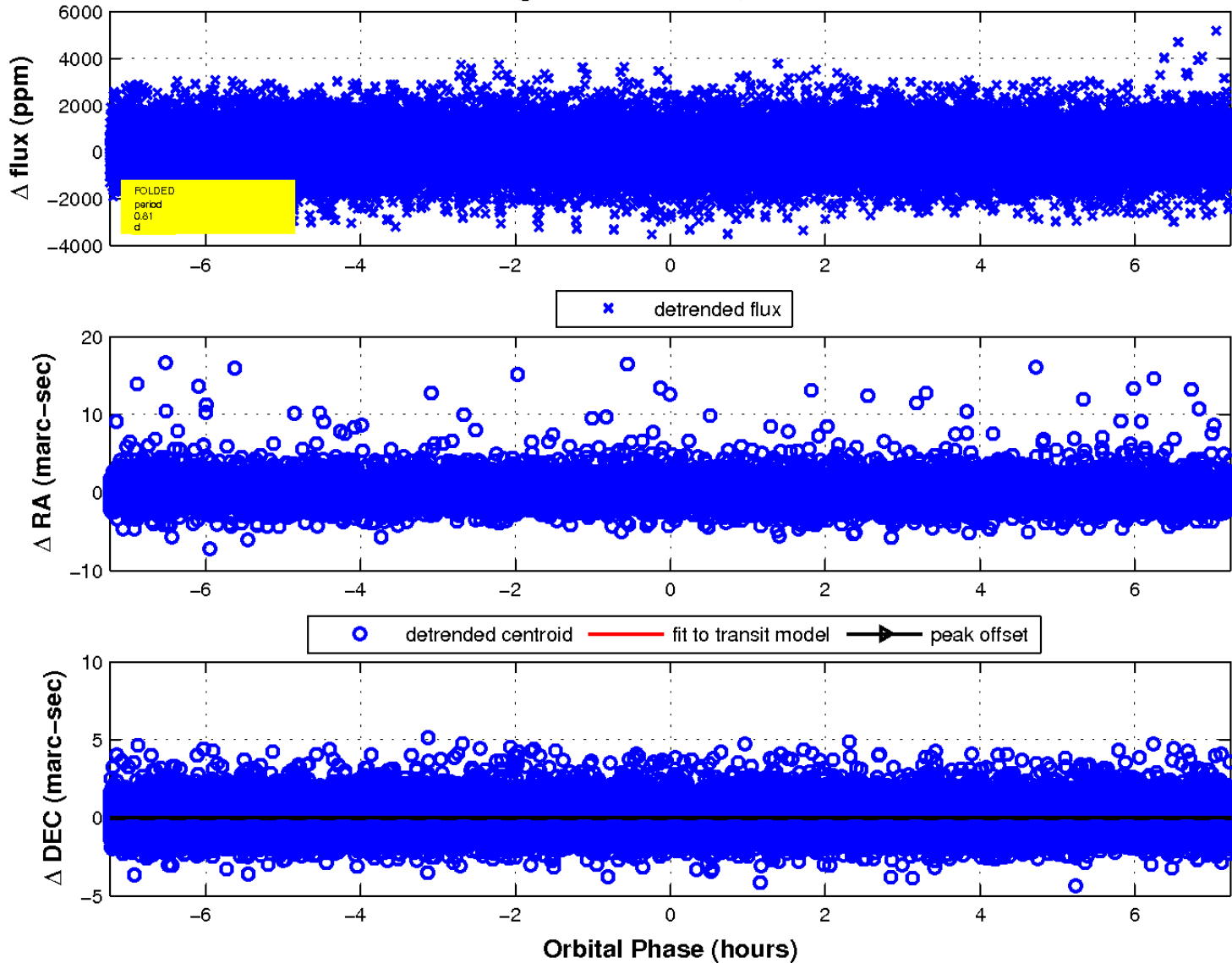
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

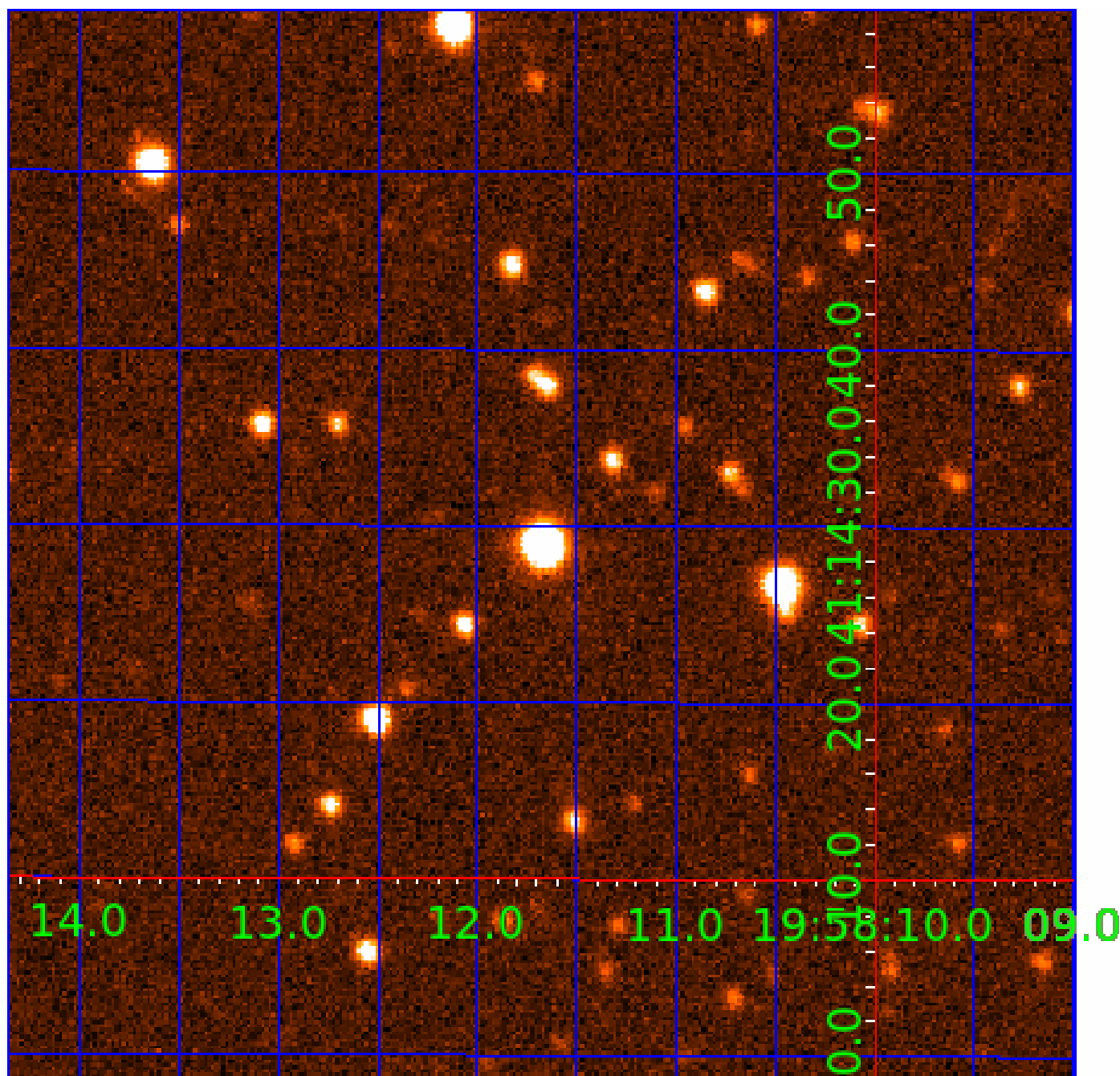


fluxWeightedCentroids, Planet 2 of 5



UKIRT Image

Declination



KIC 005991936

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})
005991936-01	OBS	No	0.807660	132.174605	66.5	2.337	9.0	7.9	1.83	8827	1.72	38994.29
005991936-02	OBS	No	0.807635	131.797098	53.8	2.414	9.1	6.7	1.83	8827	1.55	38995.90
005991936-03	OBS	No	9.335643	138.063870	379.4	3.672	8.4	6.9	1.83	8827	4.16	1492.04
005991936-04	OBS	No	34.558269	137.647558	775.1	1.632	7.4	7.0	1.83	8827	5.23	260.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005991936-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005991936-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST
005991936-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005991936-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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.

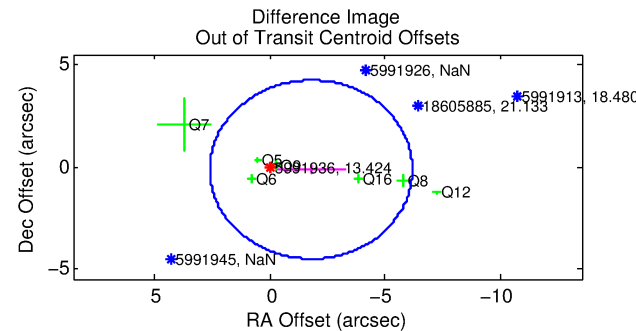
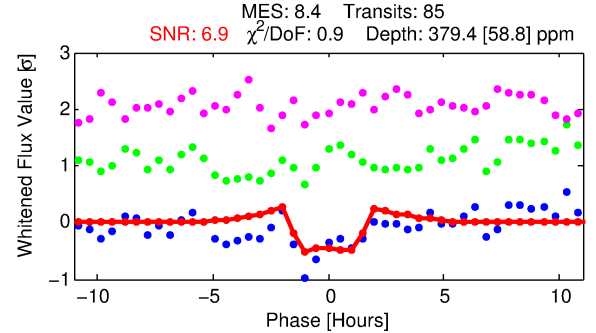
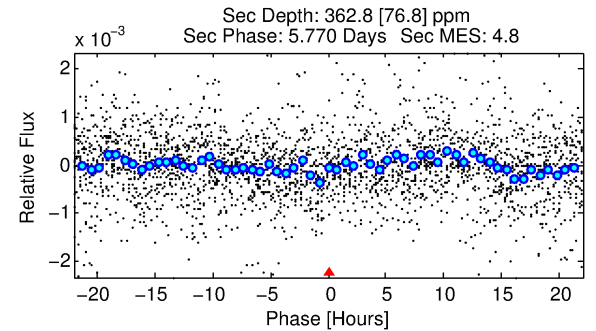
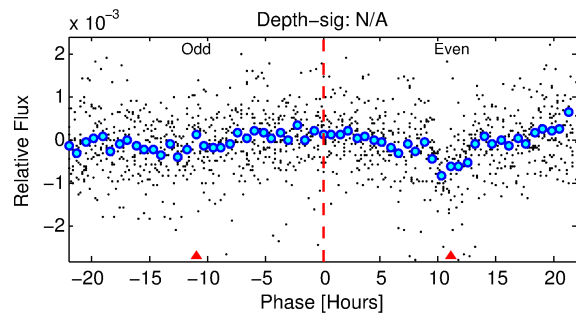
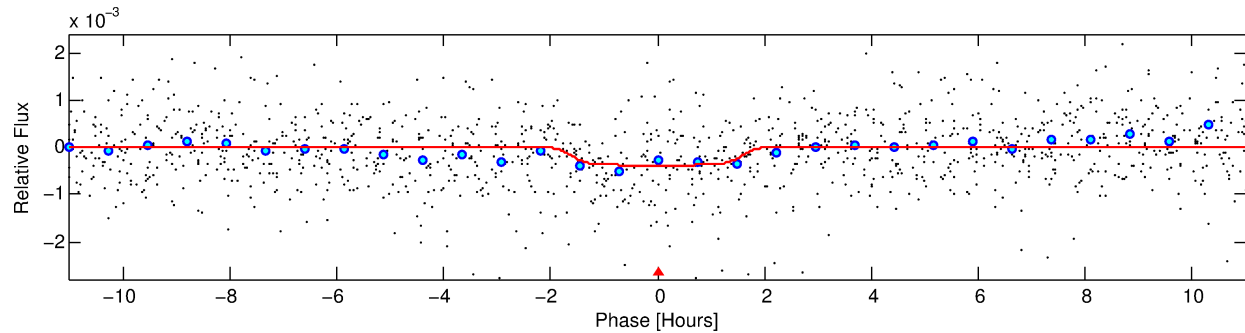
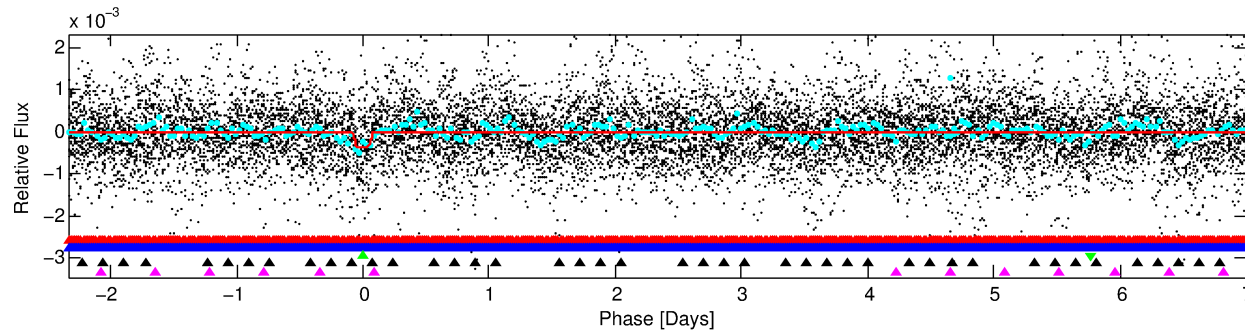
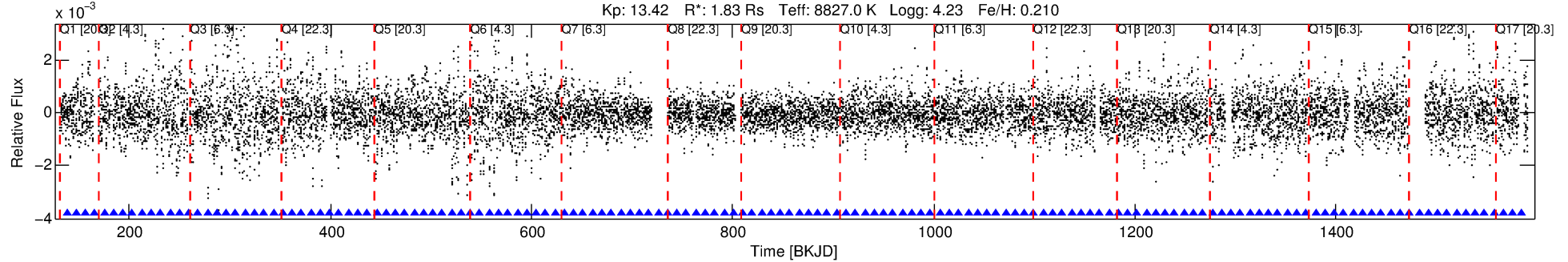
Ephemeris Match Information For 005991936-03

No Significant Match Found

DV One-Page Summary

KIC: 5991936 Candidate: 3 of 5 Period: 9.336 d
KOI: K02606 Corr: No Ephemeris Match

Kp: 13.42 R*: 1.83 Rs Teff: 8827.0 K Logg: 4.23 Fe/H: 0.210



DV Fit Results:

Period = 9.33564 [0.00010] d
Epoch = 138.0639 [0.0077] BKJD
Rp/R* = 0.0209 [0.0042]
a/R* = 8.77 [10.36]
b = 0.92 [0.21]
Seff = 1492.04 [706.27]
Teq = 1585 [188] K
Rp = 4.16 [1.93] Re
a = 0.1103 [0.0361] AU
Ag = 140.07 [88.54] [1.57σ]
Teffp = 8429 [1014] K [6.64σ]

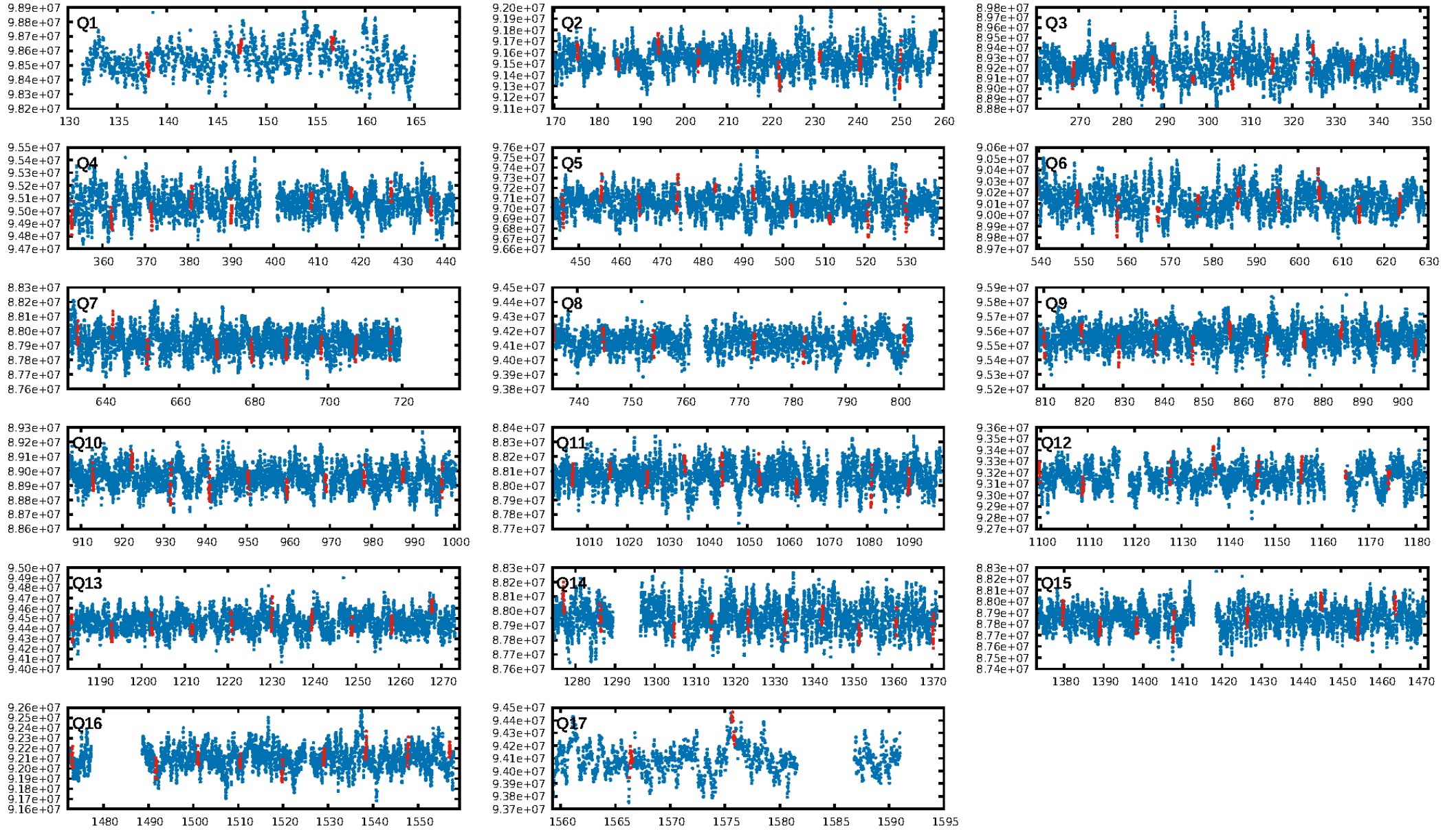
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [47.02σ]
LongPeriod-sig: 100.0% [150.65σ]
ModelChiSquare2-sig: 29.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.06e-12
RollingBand-fgt: 1.00 [80/80]
GhostDiagnostic-chr: 0.06976
Centroid-sig: N/A
Centroid-so: 0.349 arcsec [1.19σ]
OotOffset-rm: 1.796 arcsec [1.23σ]
OotOffset-st: 1/1/3/2 [7]
KicOffset-rm: 1.742 arcsec [1.05σ]
KicOffset-st: 1/1/3/2 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 0.00 [0/17]

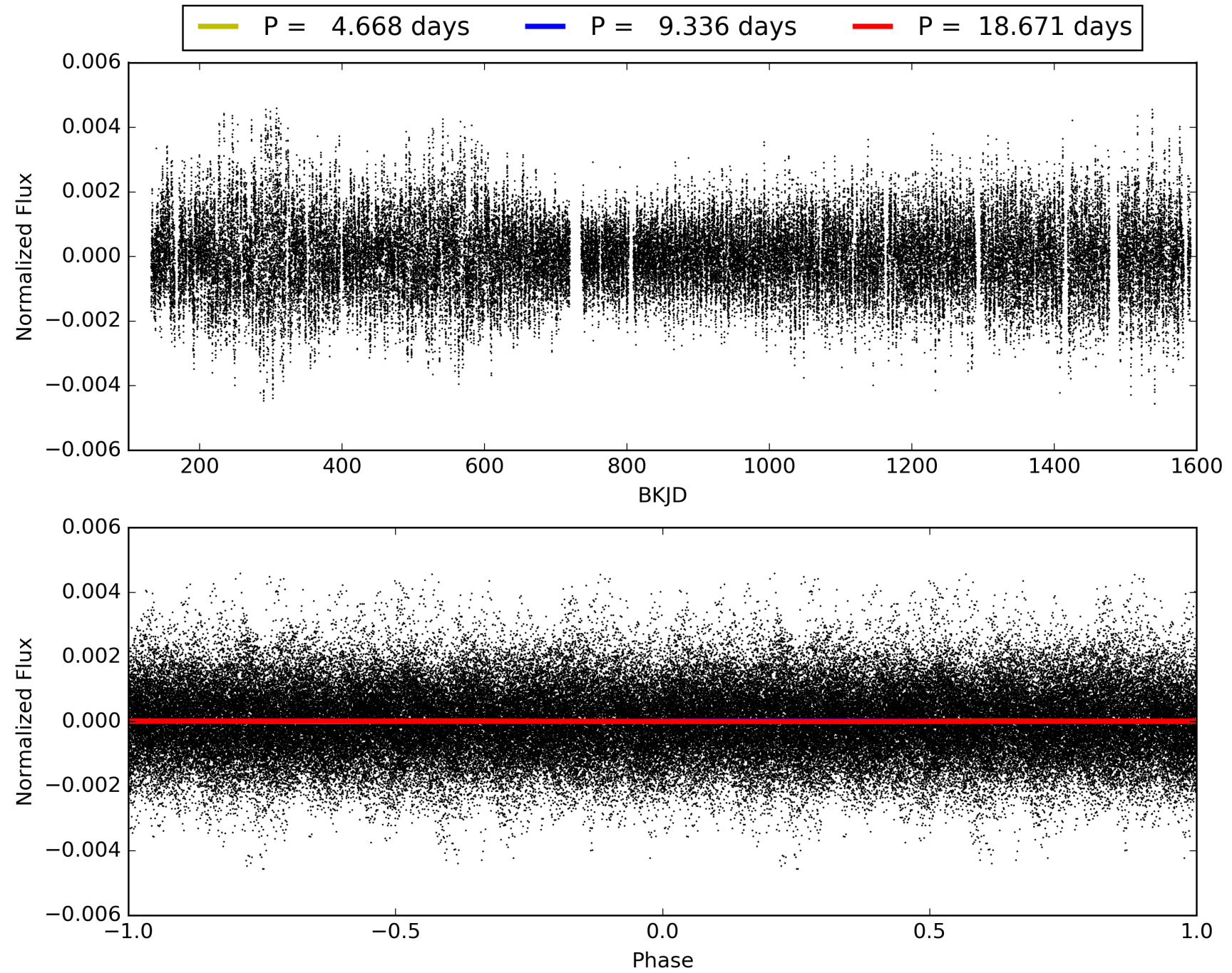
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:53:52 Z

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

TCE 005991936-03, PDC Light Curves

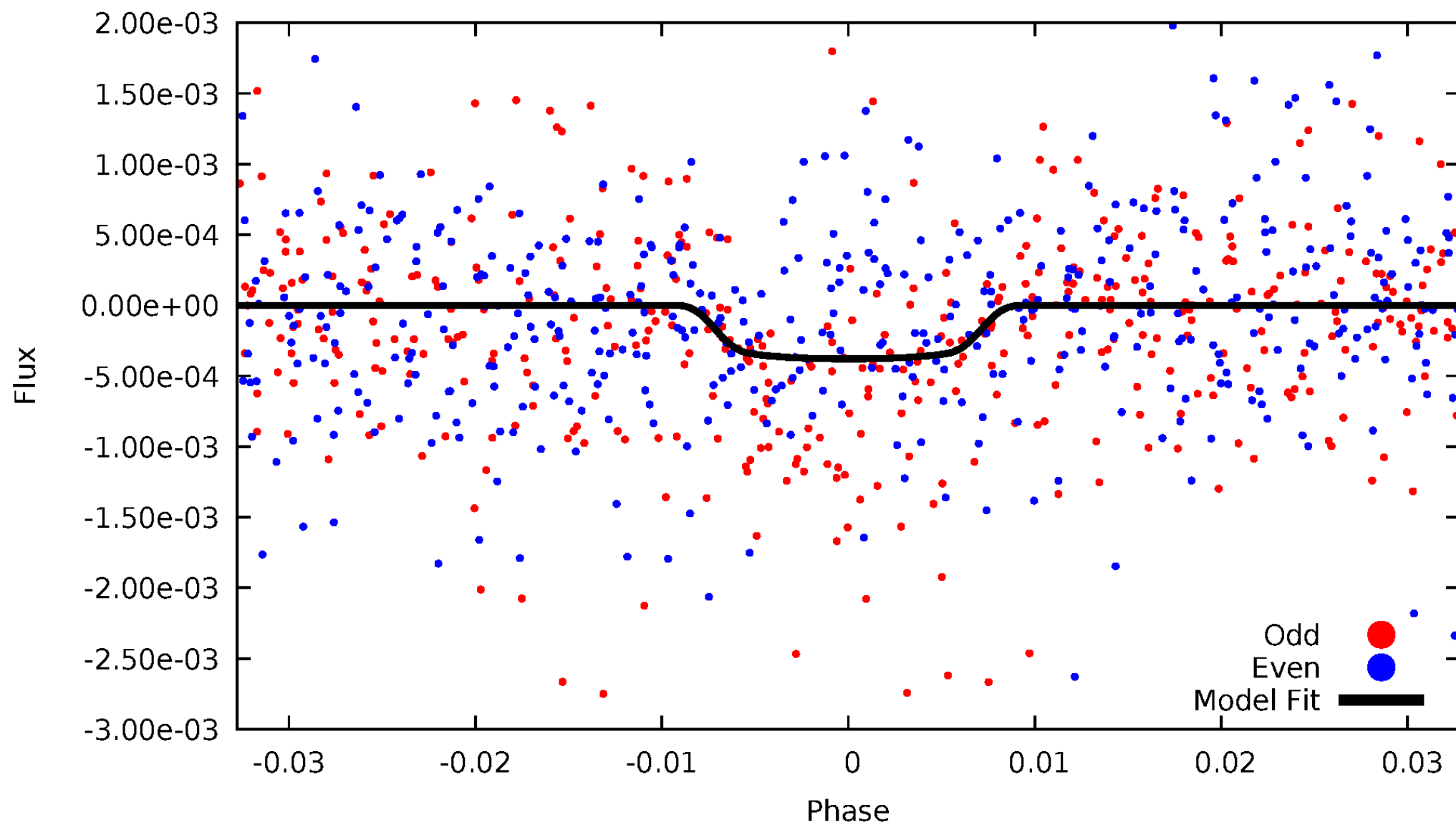


TCE 005991936-03



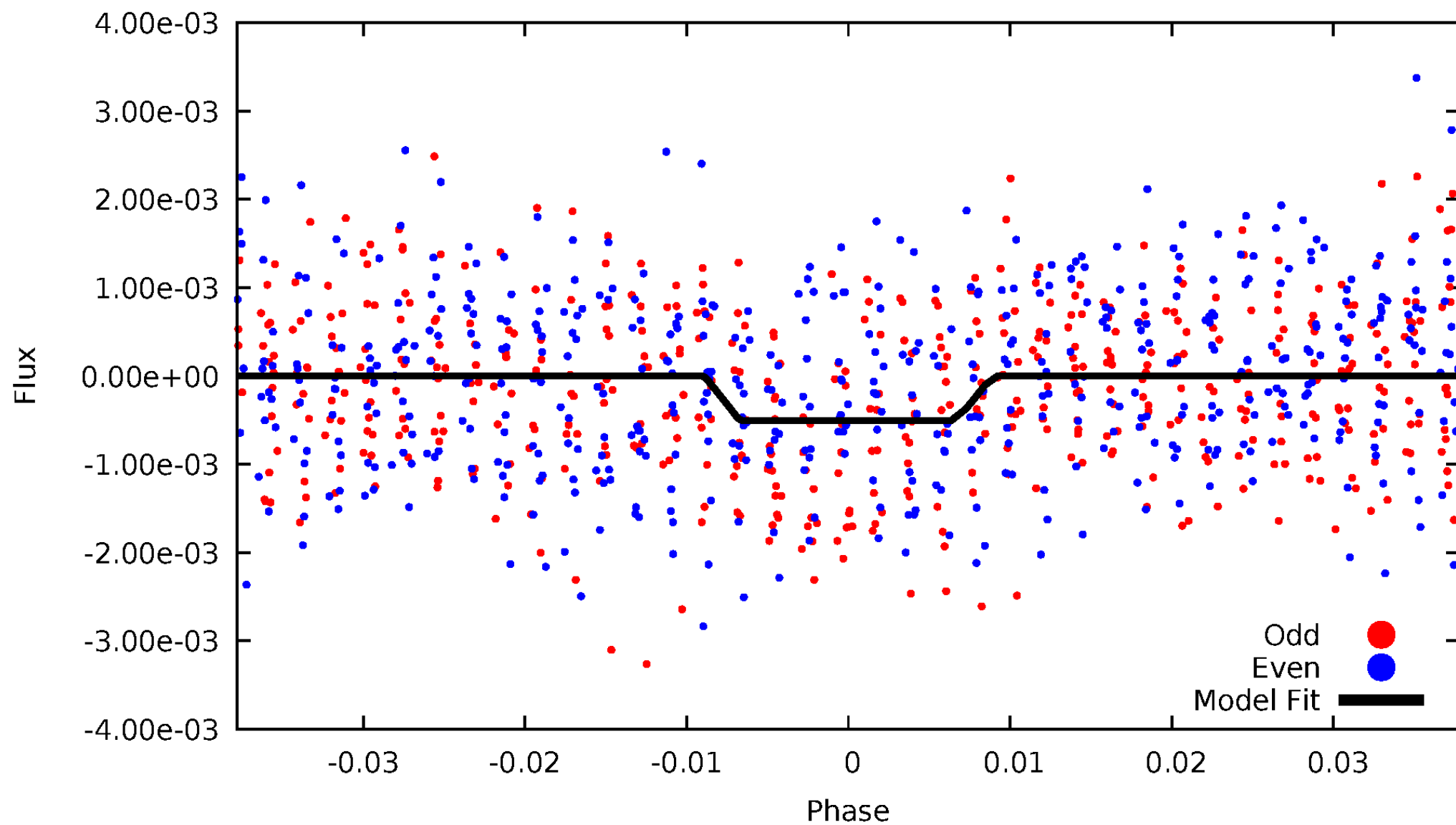
DV Odd/Even

TCE 005991936-03



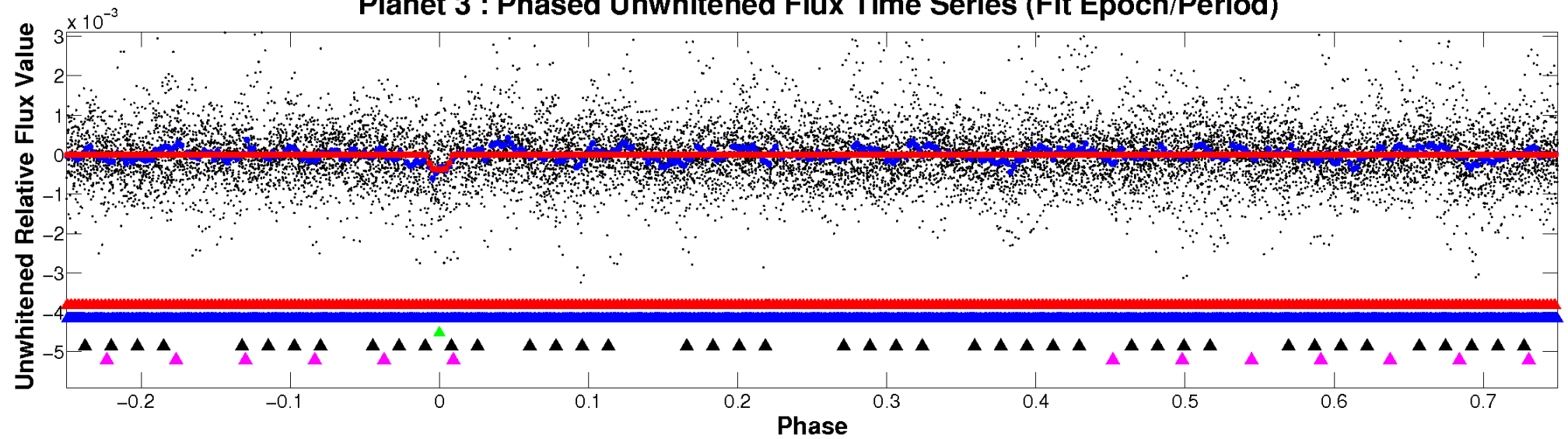
ALT Odd/Even

TCE 005991936-03

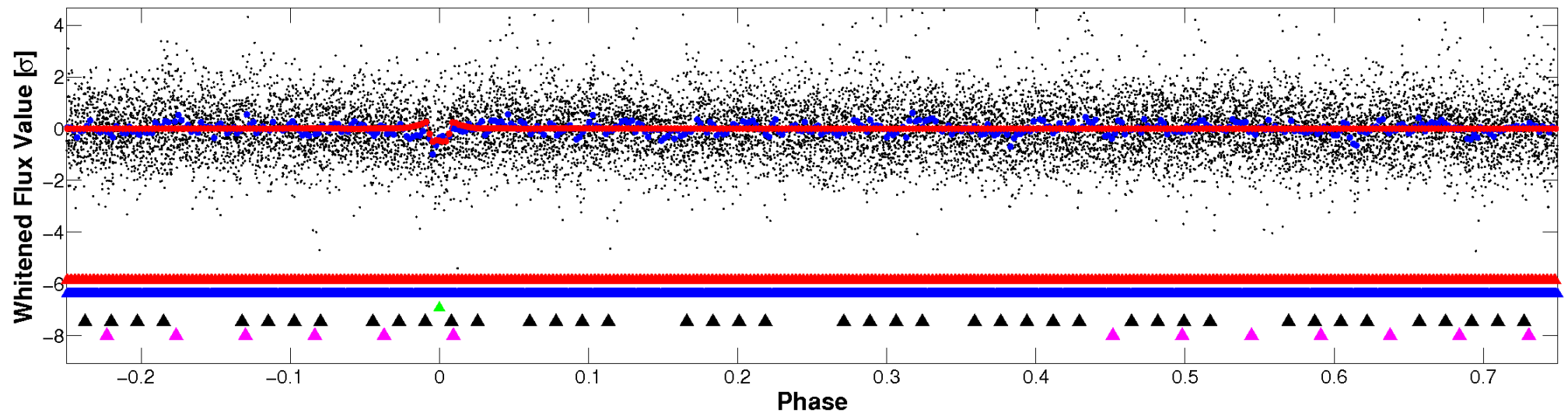


Non-Whitened Vs. Whitened Light Curve

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

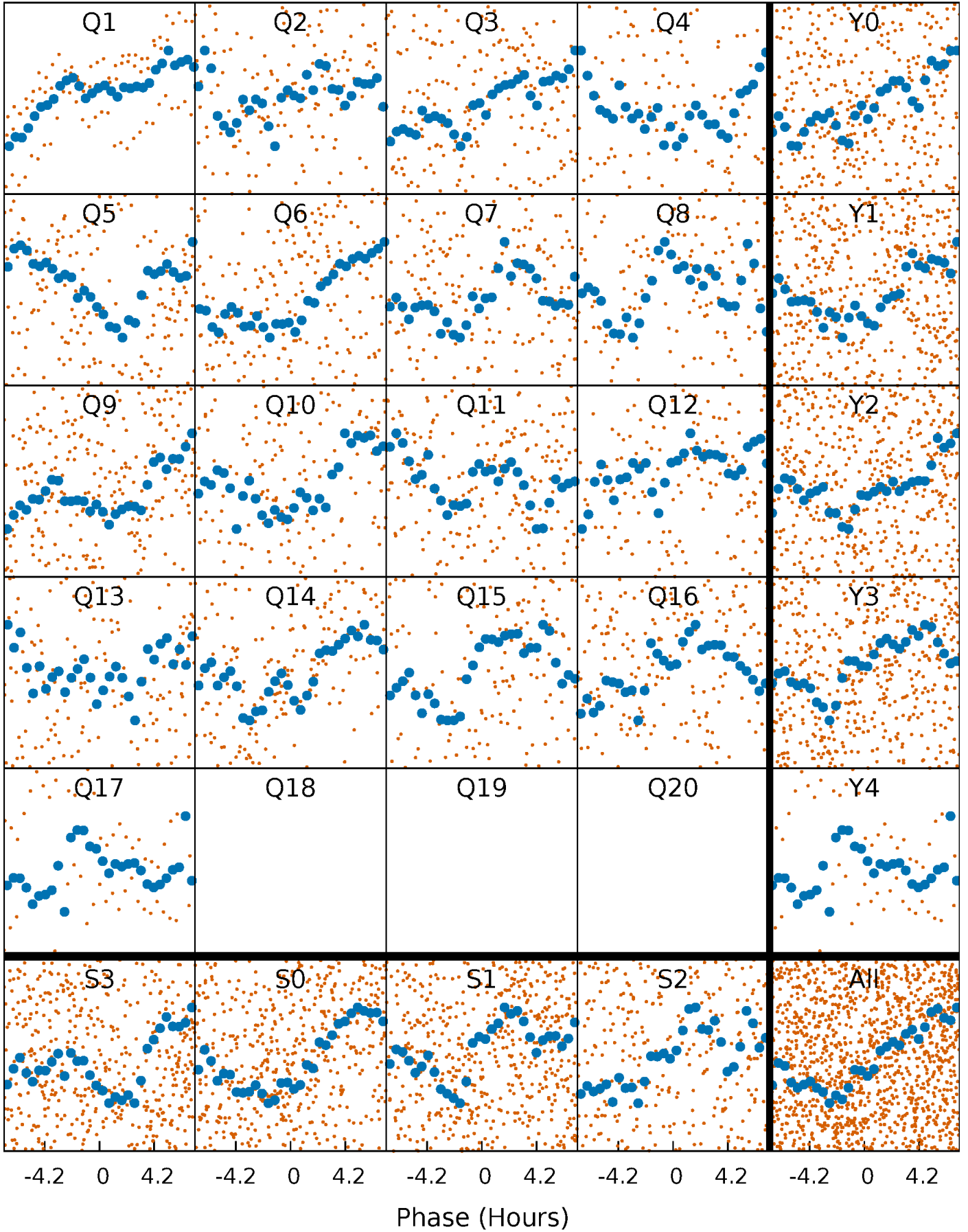


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



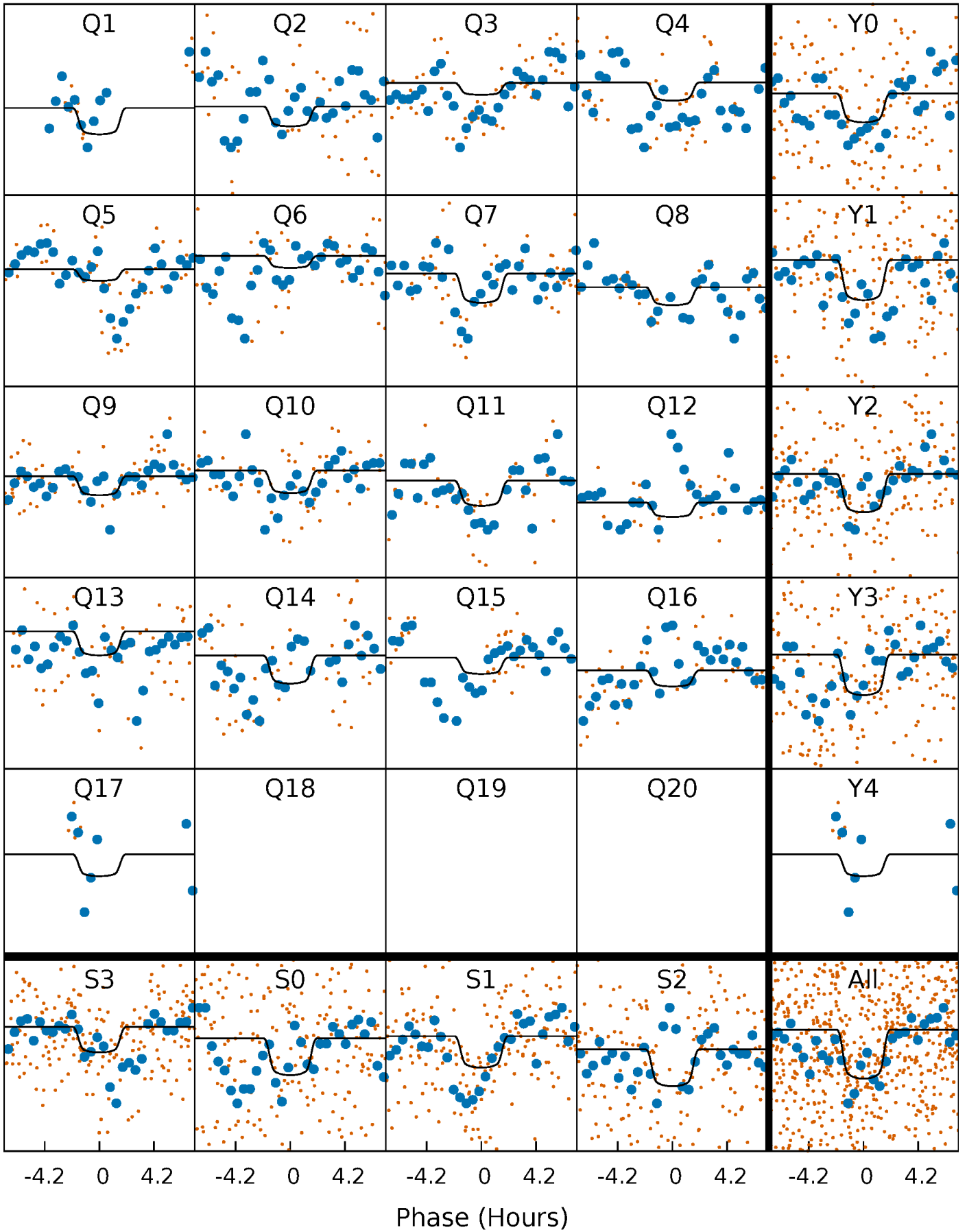
PDC Quarter-Phased Transit Curves

TCE 005991936-03 P= 9.335643 Days $T_0=138.063870$ (BKJD)



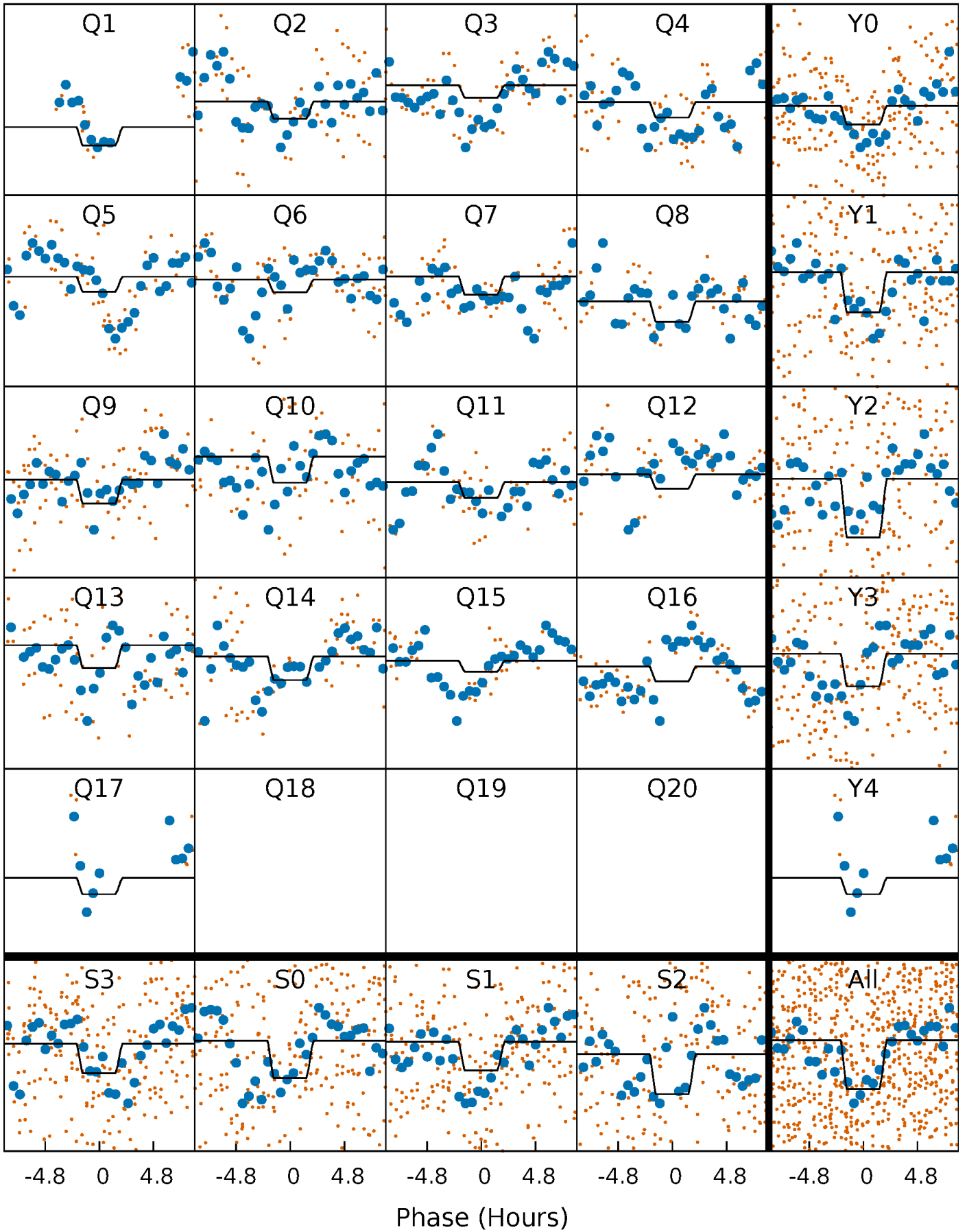
DV Quarter-Phased Transit Curves

TCE 005991936-03 P= 9.335643 Days $T_0=138.063870$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

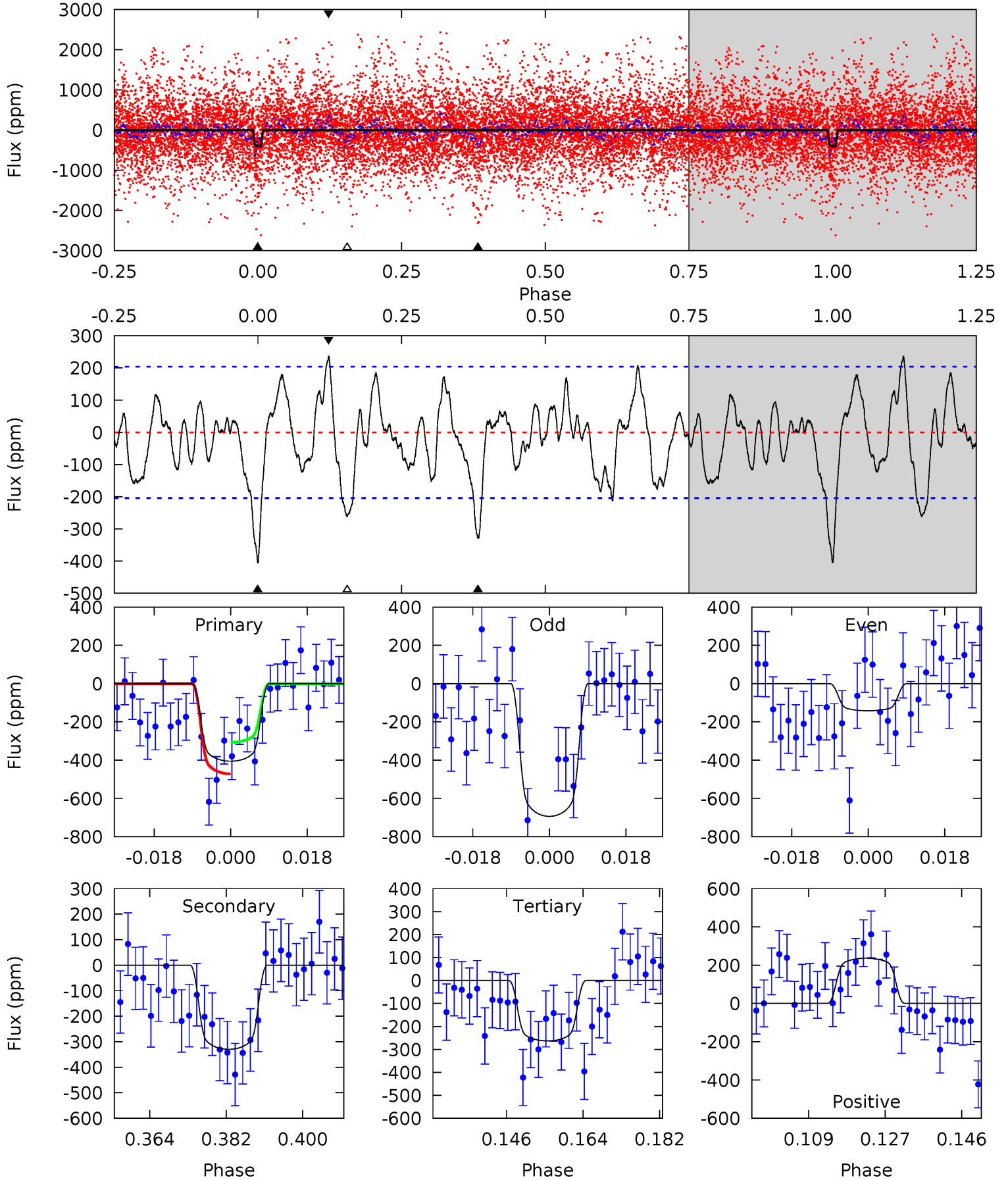
TCE 005991936-03 P= 9.335762 Days $T_0=138.052275$ (BKJD)



DV Model-Shift Uniqueness Test

005991936-03, P = 9.335643 Days, E = 128.728227 Days

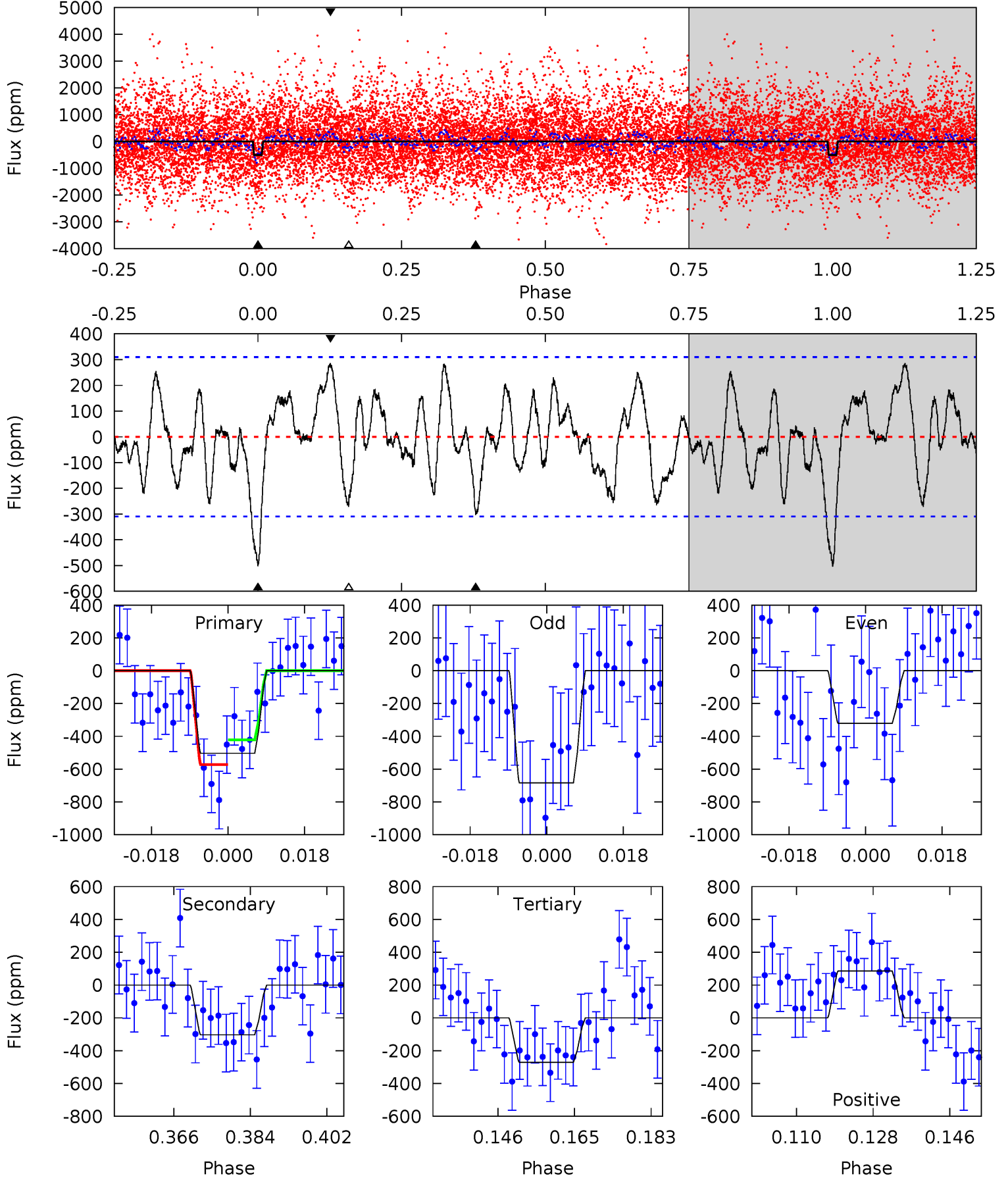
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.76	7.93	6.33	5.69	4.91	2.36	2.26	3.43	4.07	1.61	2.25	6.67	1.09	0.37	2.00



Alt Model-Shift Uniqueness Test

005991936-03, P = 9.335762 Days, E = 128.716513 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.99	4.81	4.30	4.53	4.91	2.36	1.94	3.68	3.46	0.51	0.28	2.90	1.02	0.36	1.20



Stellar Parameters For KIC 005991936

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8827^{+277}_{-370}	$4.227^{+0.056}_{-0.224}$	$0.210^{+0.150}_{-0.550}$	$1.827^{+0.764}_{-0.191}$	$2.052^{+0.377}_{-0.377}$	$0.474^{+0.116}_{-0.278}$
	+3%/-4%	+1%/-5%	+71%/-262%	+42%/-10%	+18%/-18%	+25%/-59%
Source	KIC0	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 005991936-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-330 ± 42	$4.30^{+1.06}_{-0.90}$	2268^{+170}_{-136}	8058^{+1256}_{-862}	115^{+69}_{-40}
Alt.	-303 ± 63	$4.70^{+1.19}_{-0.99}$	2257^{+193}_{-121}	7473^{+1187}_{-902}	89^{+59}_{-35}

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 $A_{obs} \gg 1.0$

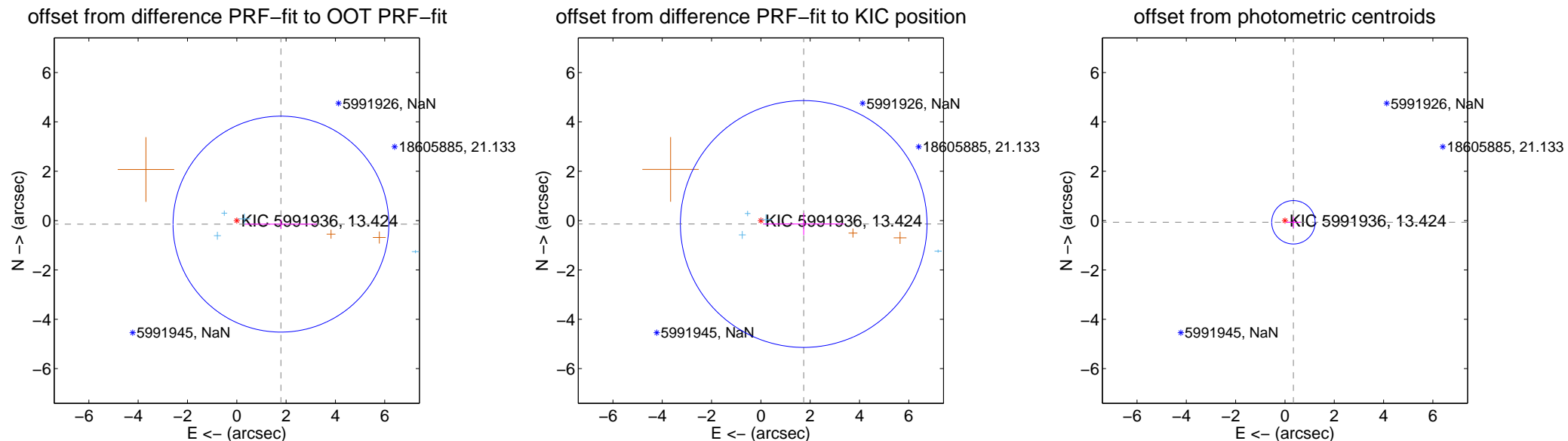
DV Centroid Data

Supplemental centroid analysis for 005991936-03. Kepler magnitude: 13.42. Transit SNR 6.90

There are 4 quarters with good PRF difference image offsets

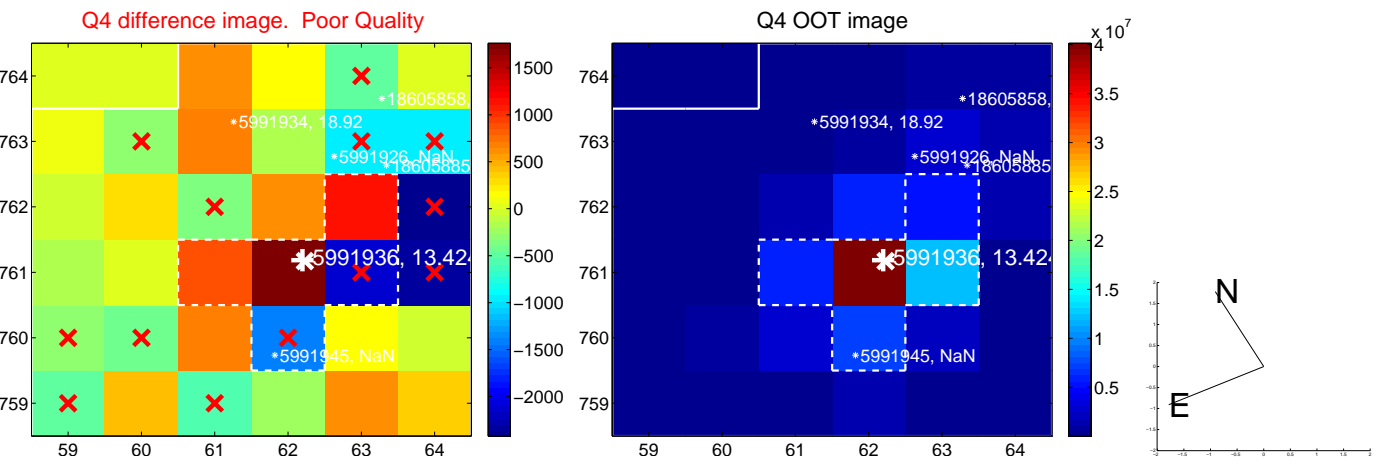
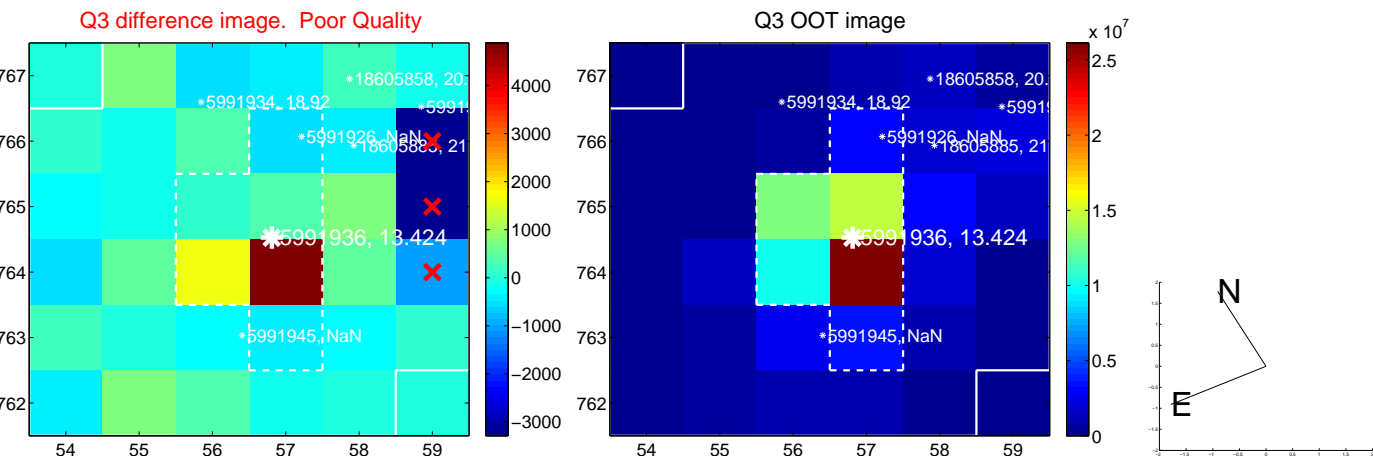
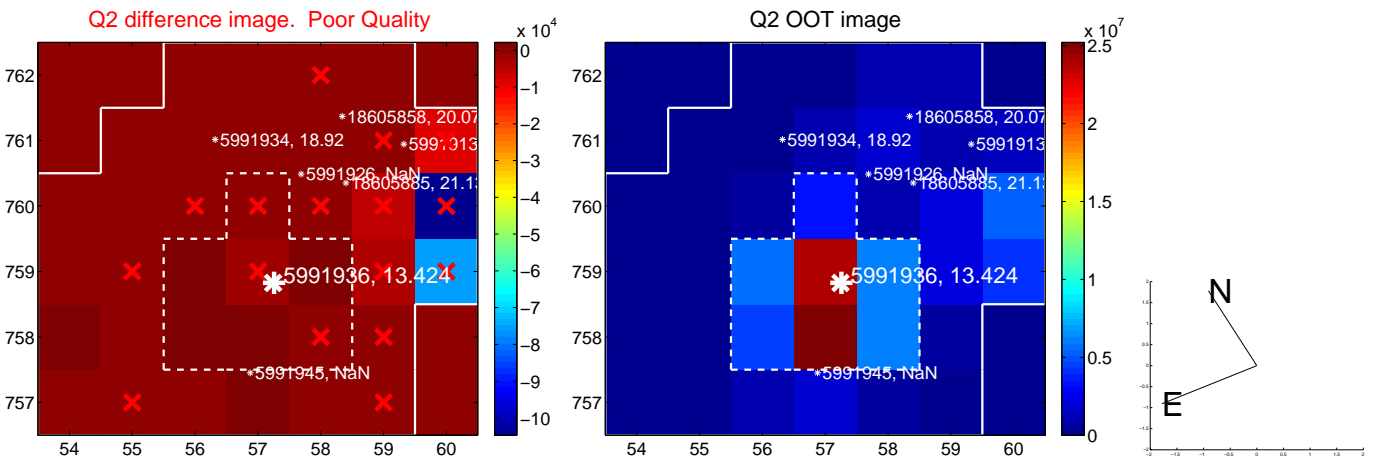
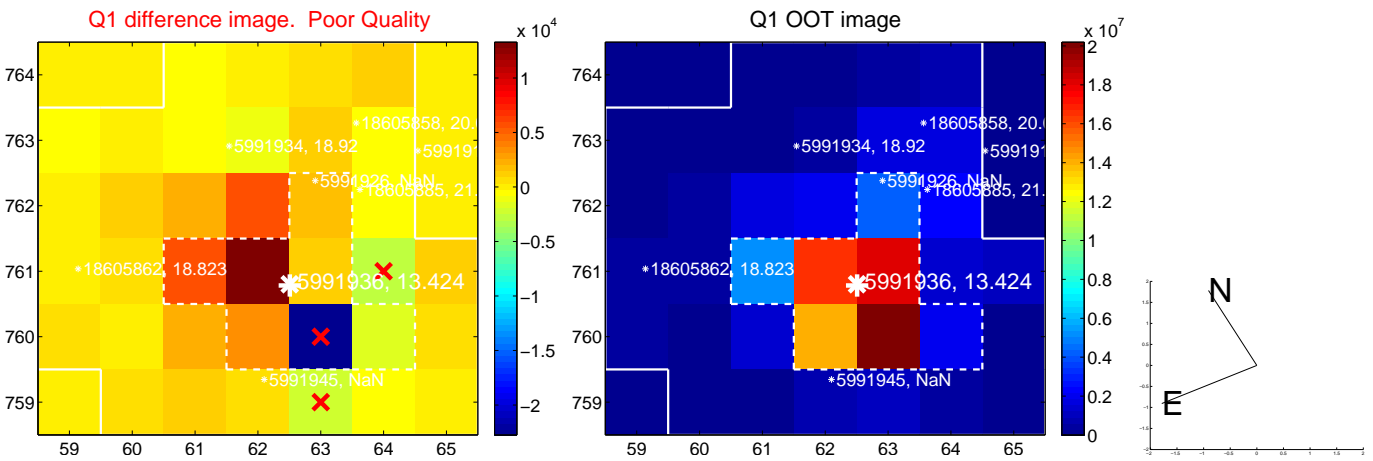
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.796 ± 1.459	1.23	-1.790 ± 1.463	-0.144 ± 0.190
PRF-fit source offset from KIC position	1.742 ± 1.667	1.05	-1.737 ± 1.643	-0.139 ± 0.441
photometric centroid source offset	0.35 ± 0.29	1.19	-0.34 ± 0.30	-0.07 ± 0.23

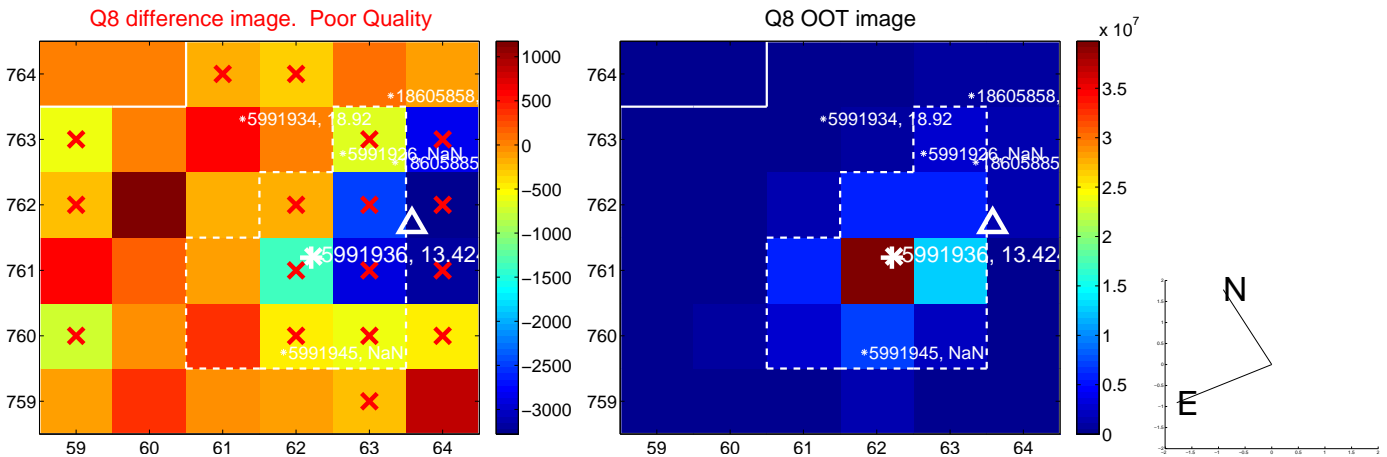
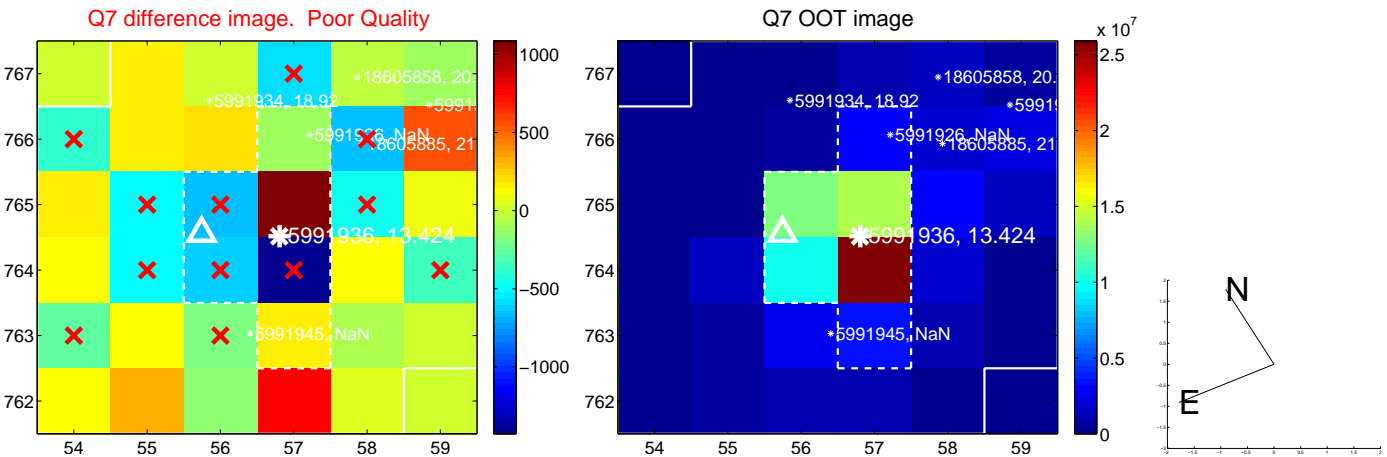
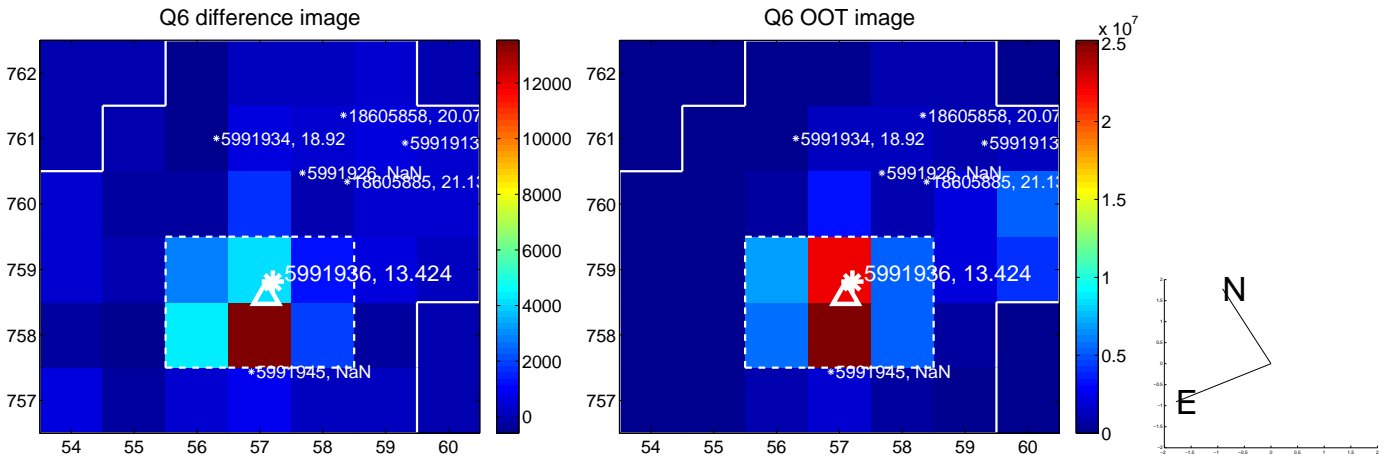
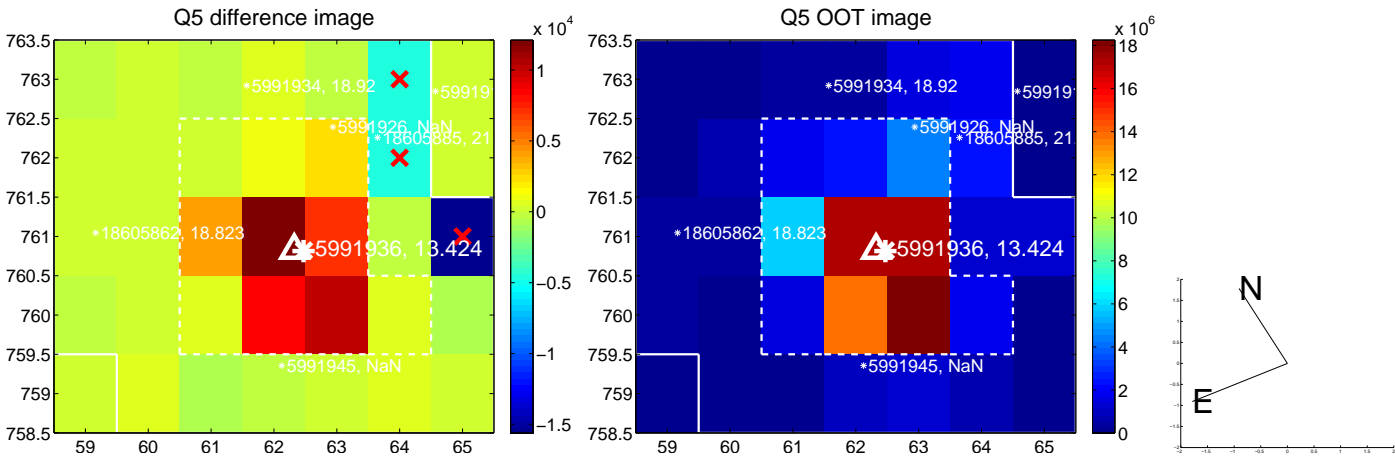


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

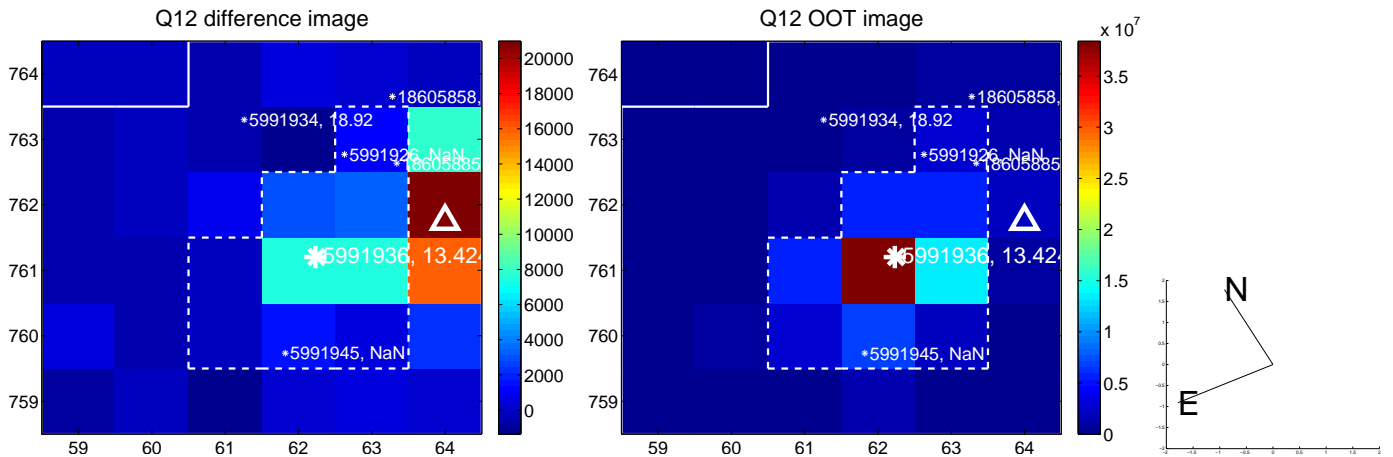
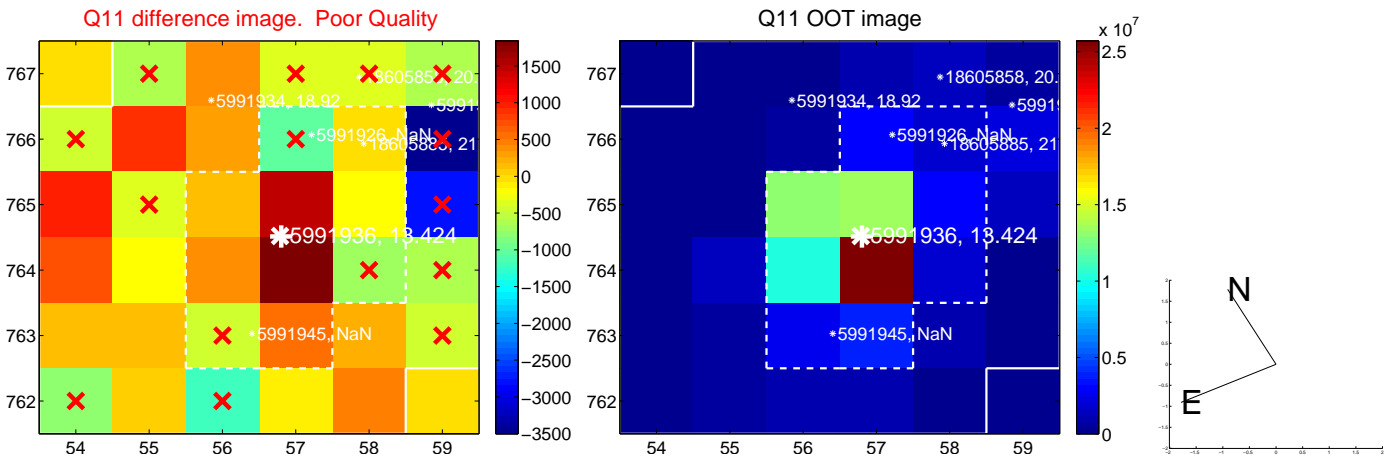
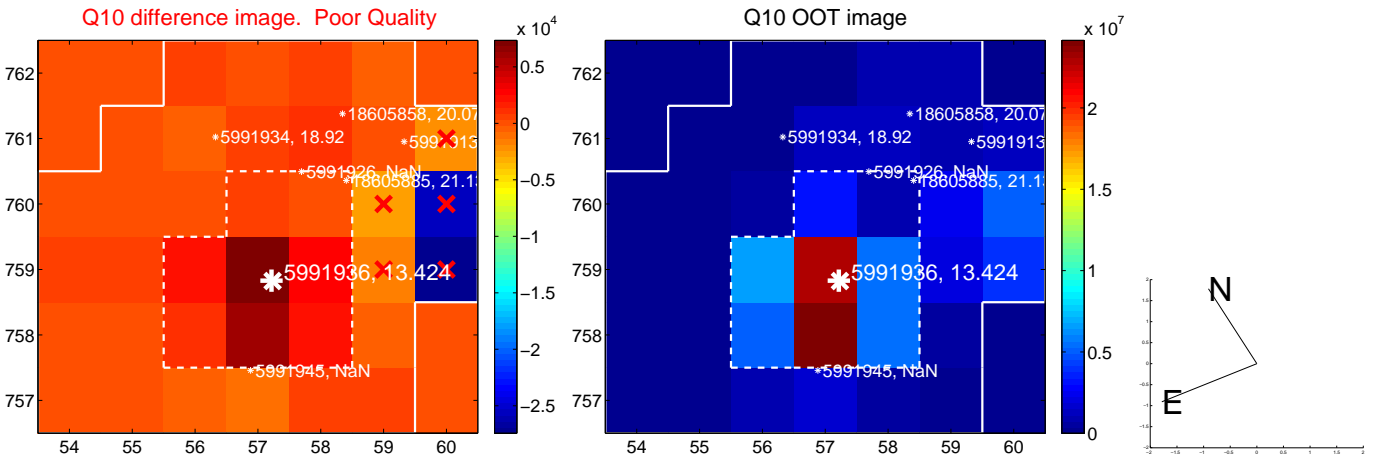
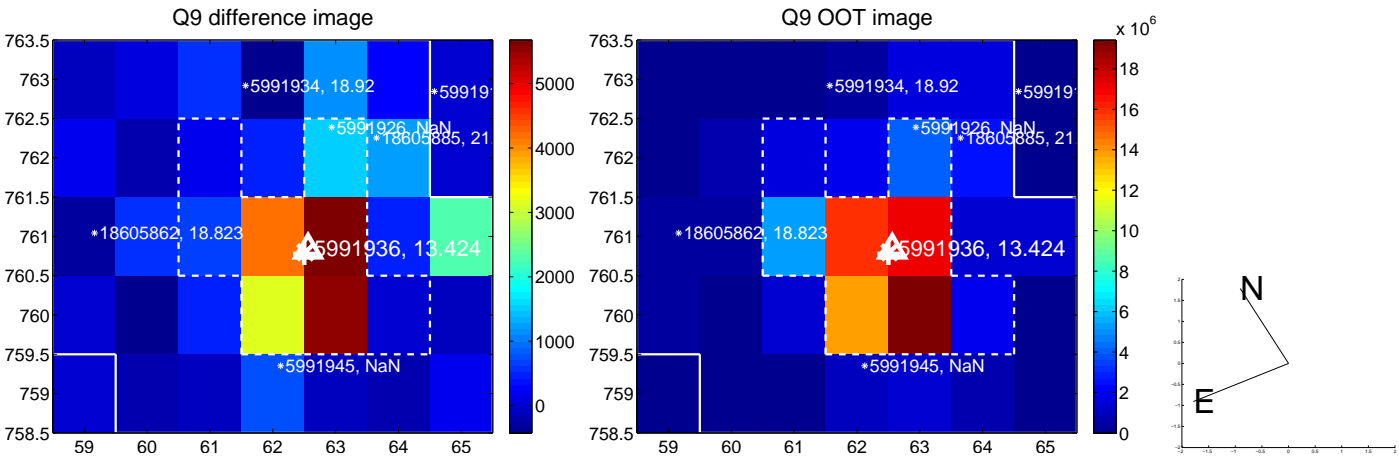
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



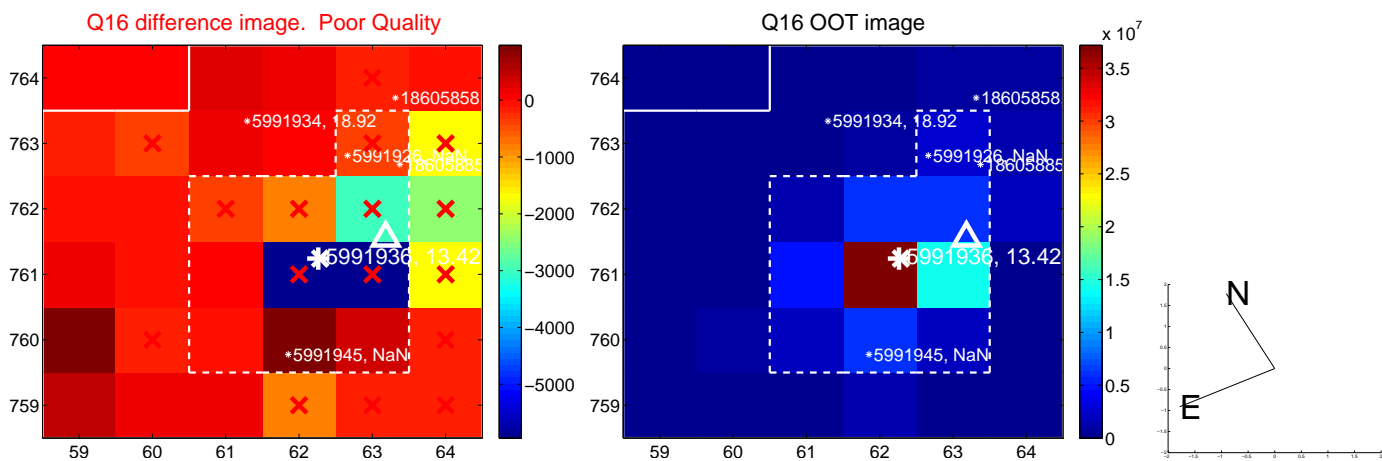
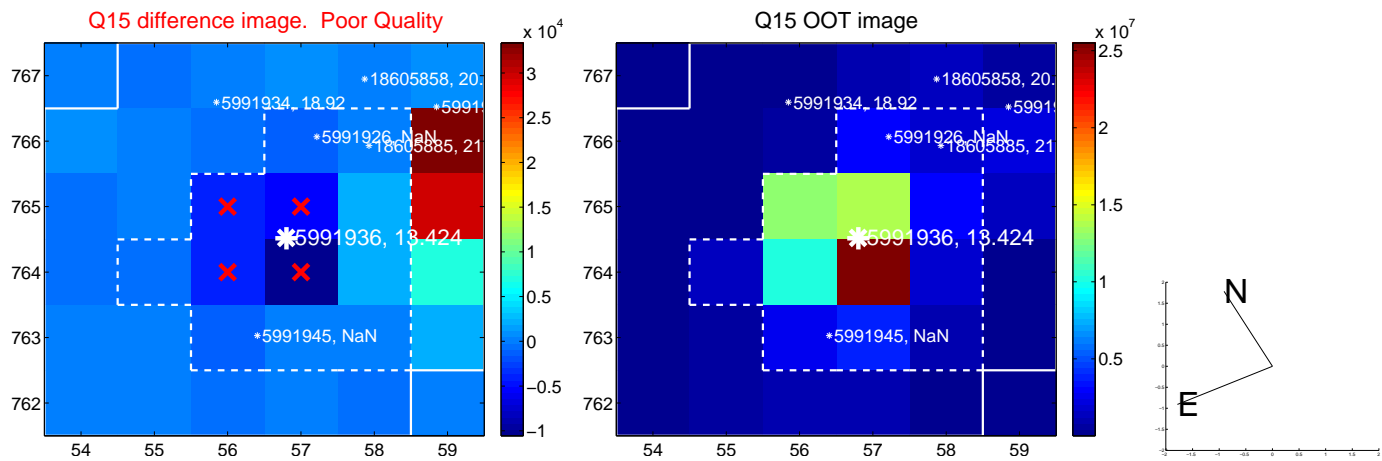
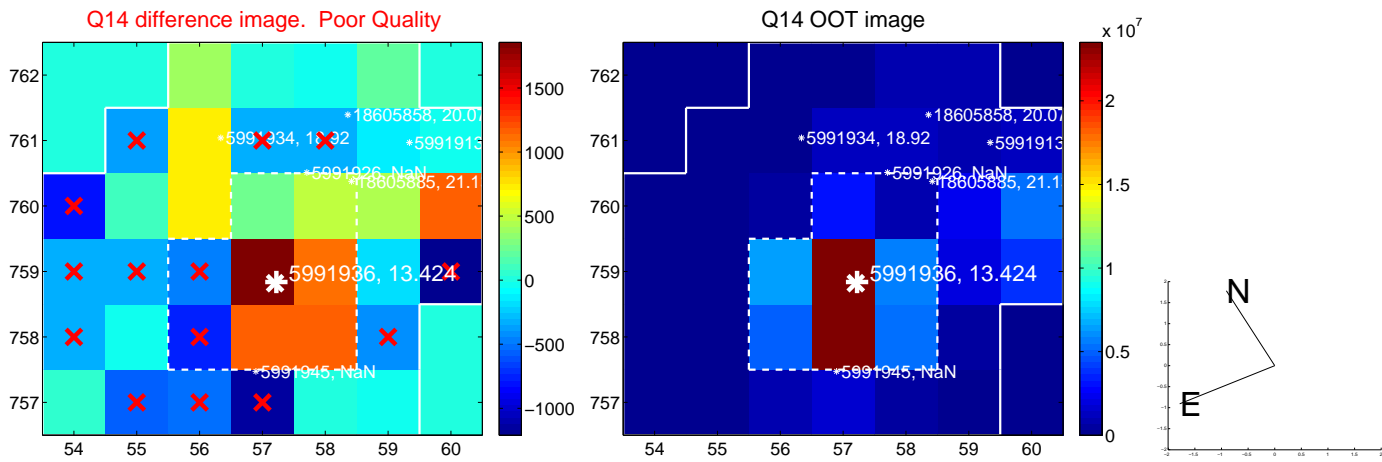
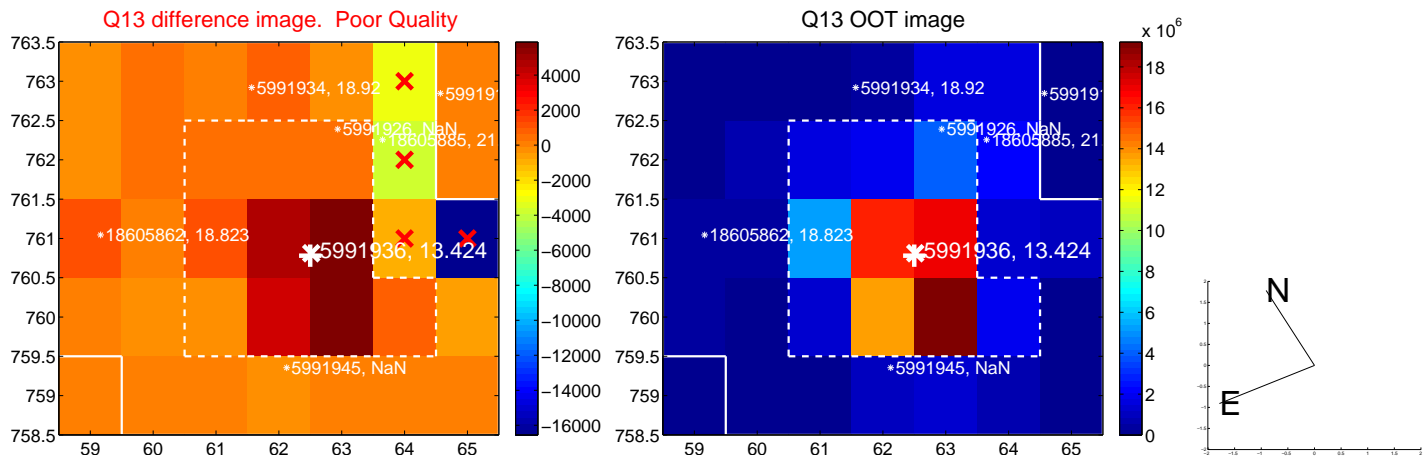
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



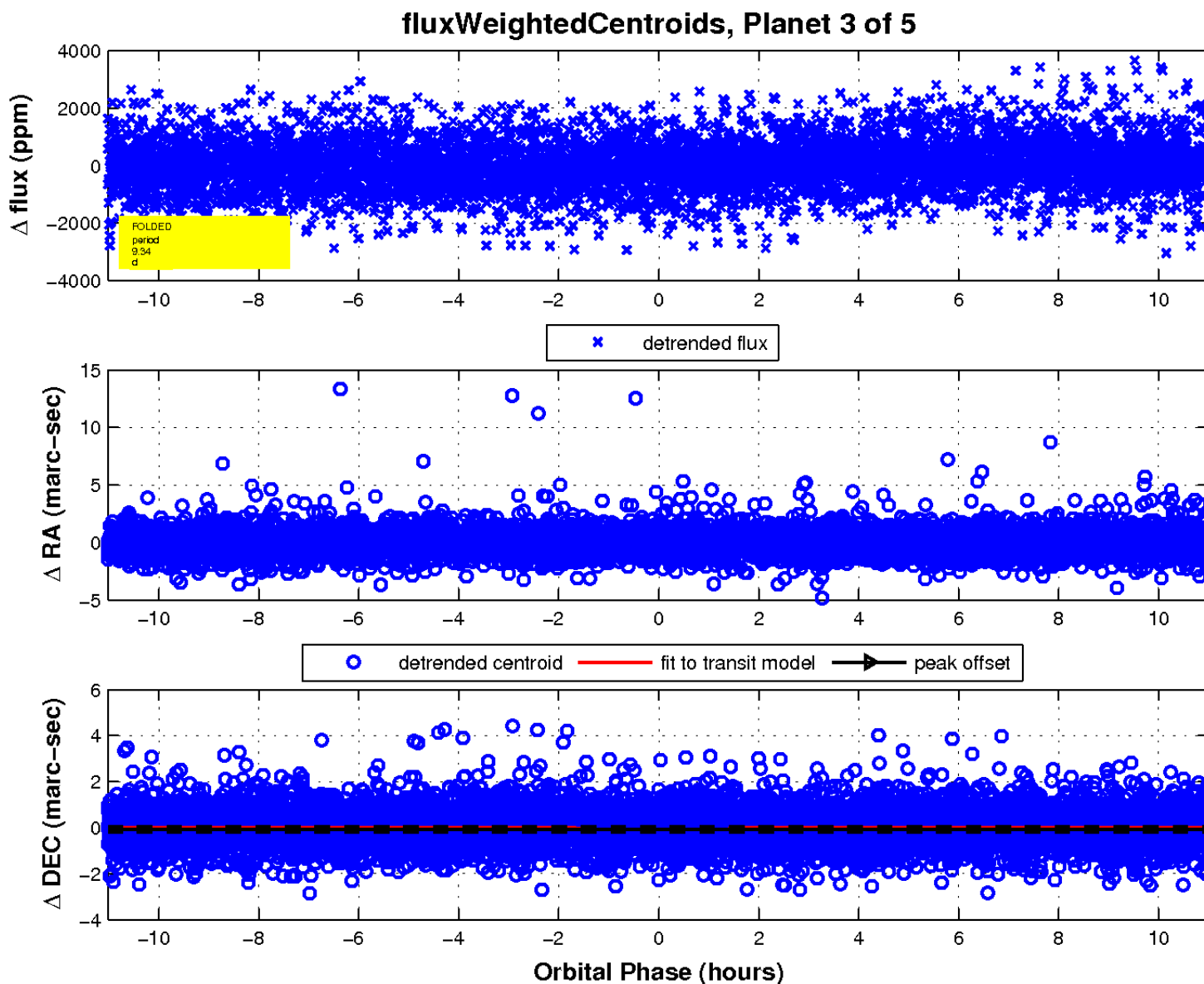
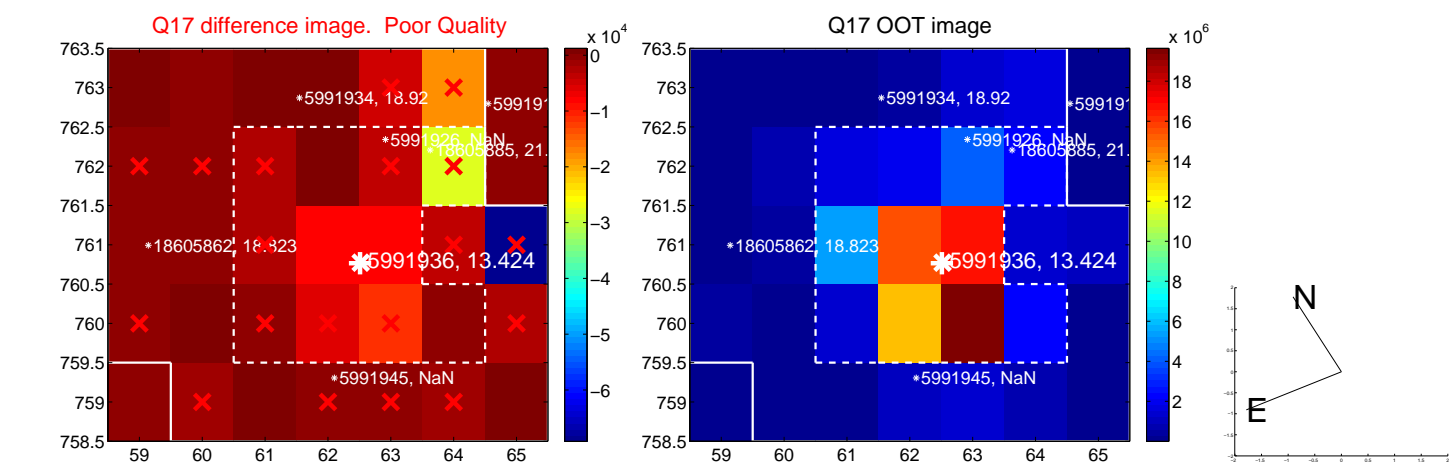
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

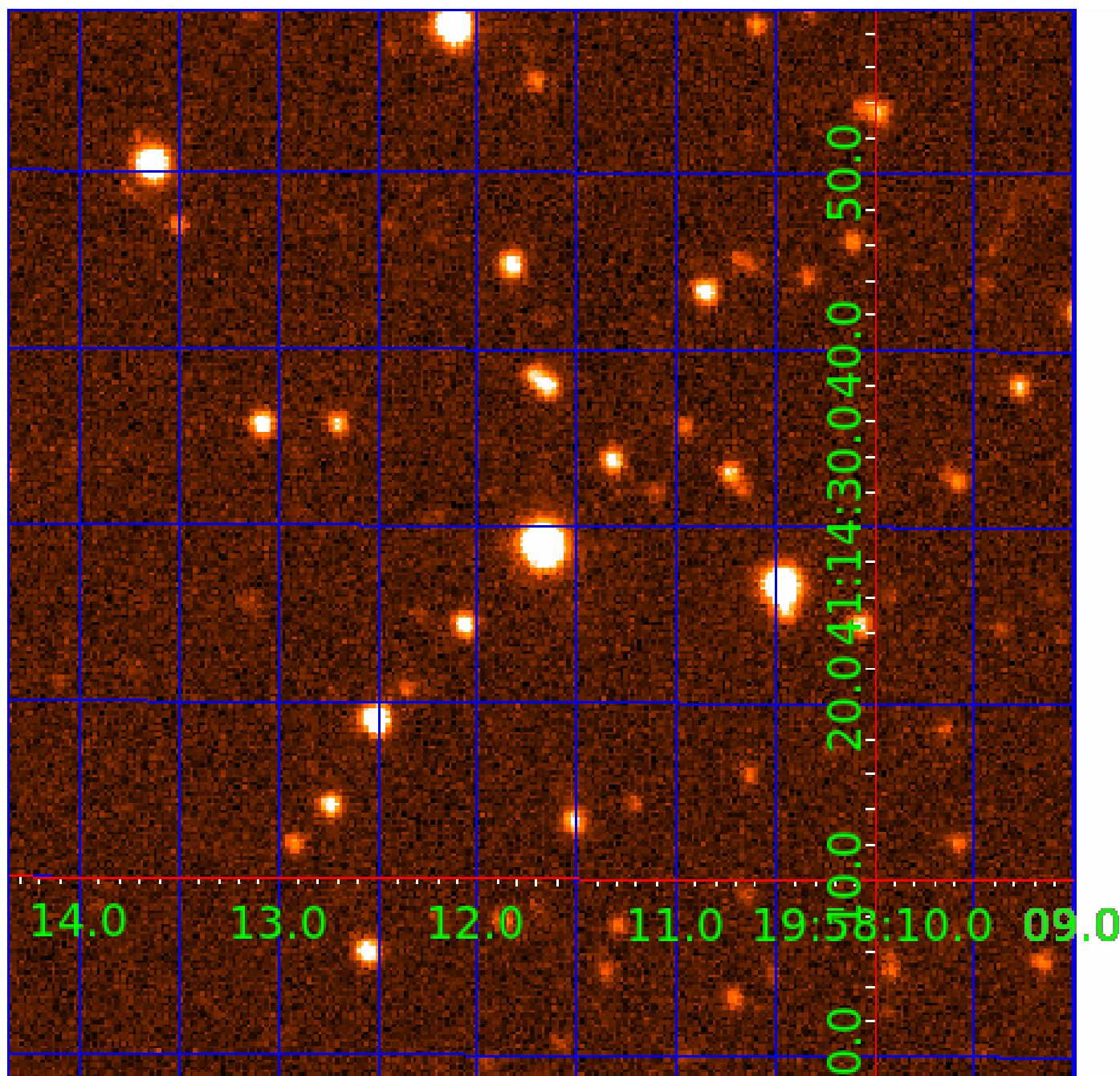


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005991936

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})
005991936-01	OBS	No	0.807660	132.174605	66.5	2.337	9.0	7.9	1.83	8827	1.72	38994.29
005991936-02	OBS	No	0.807635	131.797098	53.8	2.414	9.1	6.7	1.83	8827	1.55	38995.90
005991936-03	OBS	No	9.335643	138.063870	379.4	3.672	8.4	6.9	1.83	8827	4.16	1492.04
005991936-04	OBS	No	34.558269	137.647558	775.1	1.632	7.4	7.0	1.83	8827	5.23	260.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005991936-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005991936-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—HALO_GHOST
005991936-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—HALO_GHOST
005991936-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED

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.

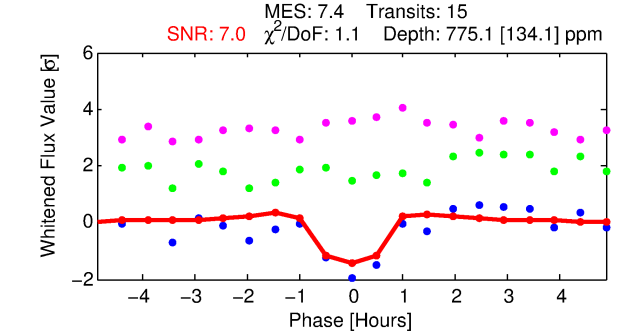
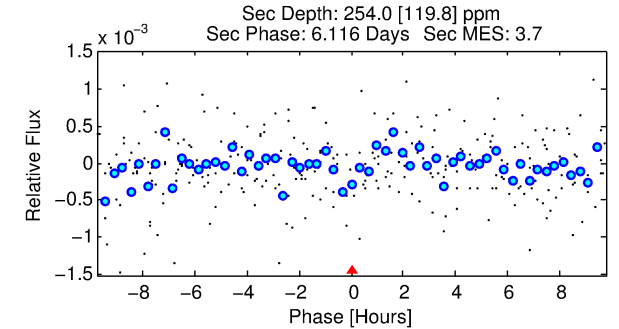
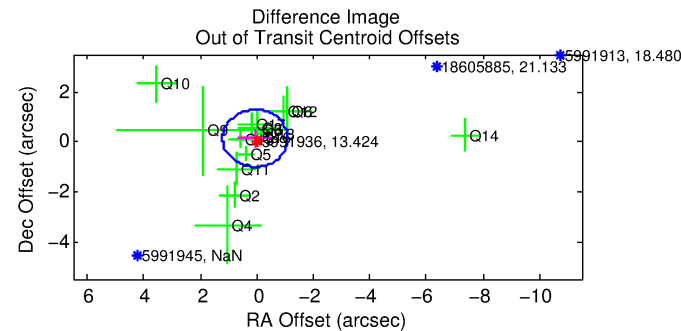
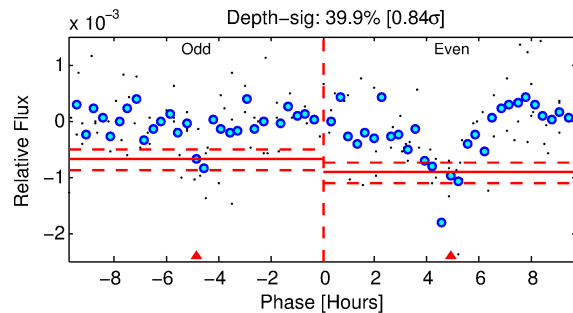
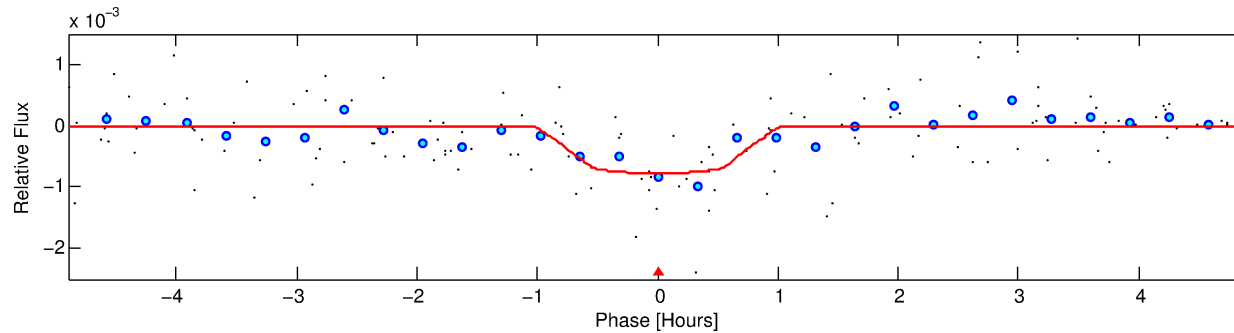
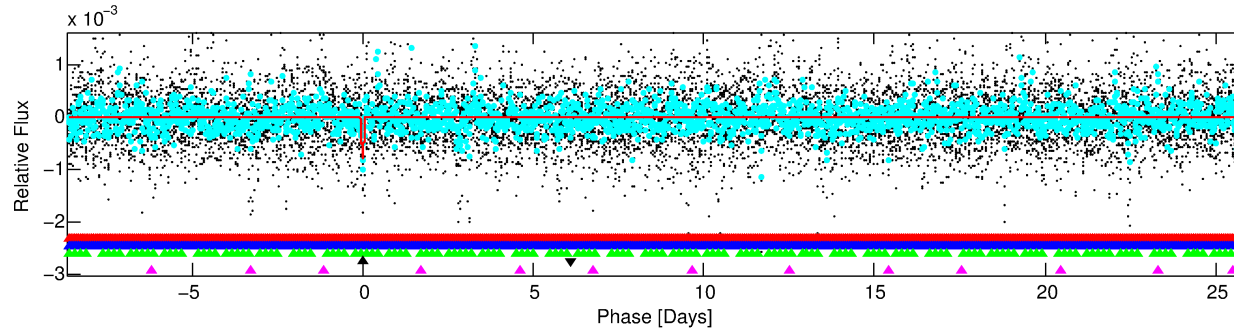
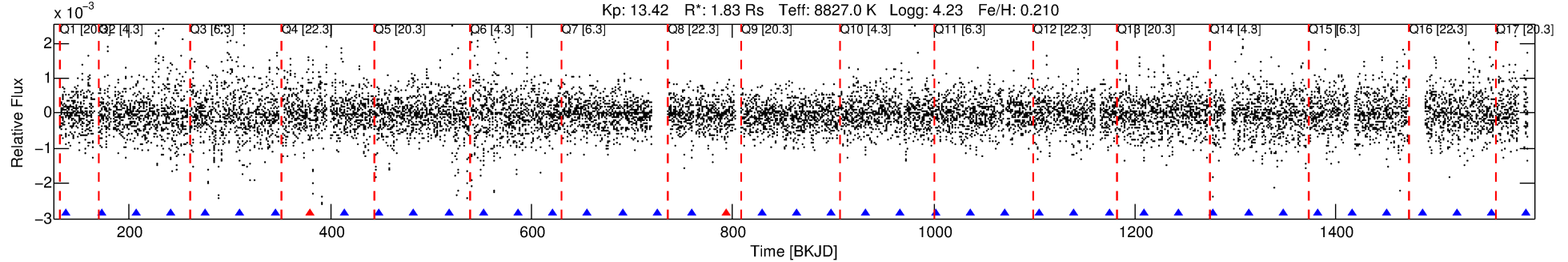
Ephemeris Match Information For 005991936-04

No Significant Match Found

DV One-Page Summary

KIC: 5991936 Candidate: 4 of 5 Period: 34.558 d
KOI: K02606 Corr: No Ephemeris Match

Kp: 13.42 R*: 1.83 Rs Teff: 8827.0 K Logg: 4.23 Fe/H: 0.210



DV Fit Results:

Period = 34.55827 [0.00029] d
Epoch = 137.6476 [0.0068] BKJD
Rp/R* = 0.0262 [0.0234]
a/R* = 158.17 [863.63]
b = 0.31 [15.97]
Seff = 260.56 [123.34]
Teq = 1024 [121] K
Rp = 5.23 [5.16] Re
a = 0.2640 [0.0865] AU
Ag = 356.12 [676.57] [0.52σ]
Teffp = 6881 [3191] K [1.83σ]

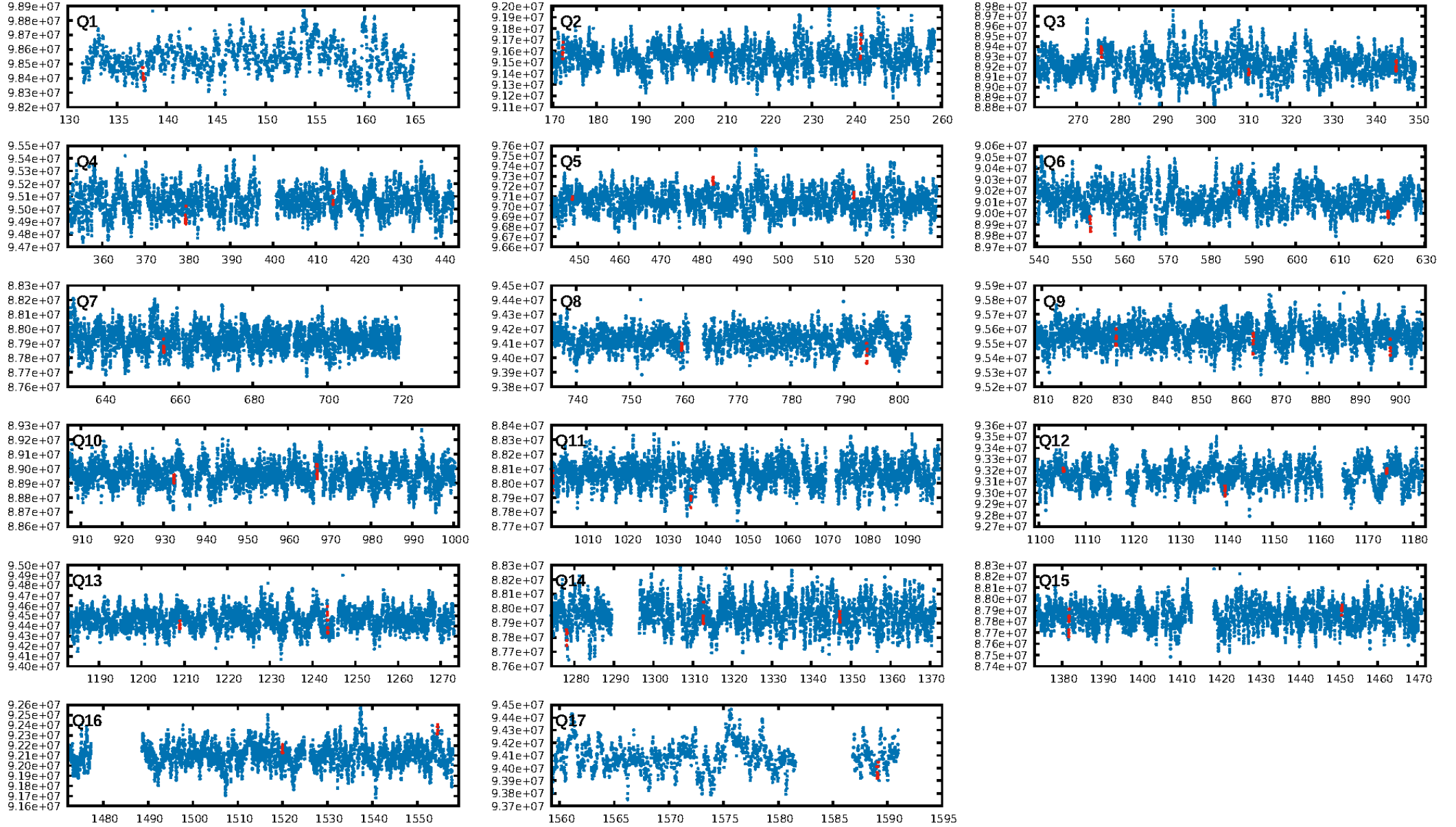
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [150.65σ]
LongPeriod-sig: 100.0% [692.37σ]
ModelChiSquare2-sig: 49.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.23e-09
RollingBand-fgt: 0.86 [12/14]
GhostDiagnostic-chr: 0.7828
Centroid-sig: N/A
Centroid-so: 0.884 arcsec [2.38σ]
OotOffset-rm: 0.149 arcsec [0.39σ]
KicOffset-rm: 0.187 arcsec [0.39σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.40 [6/15]
DiffImageOverlap-fno: 0.00 [0/17]

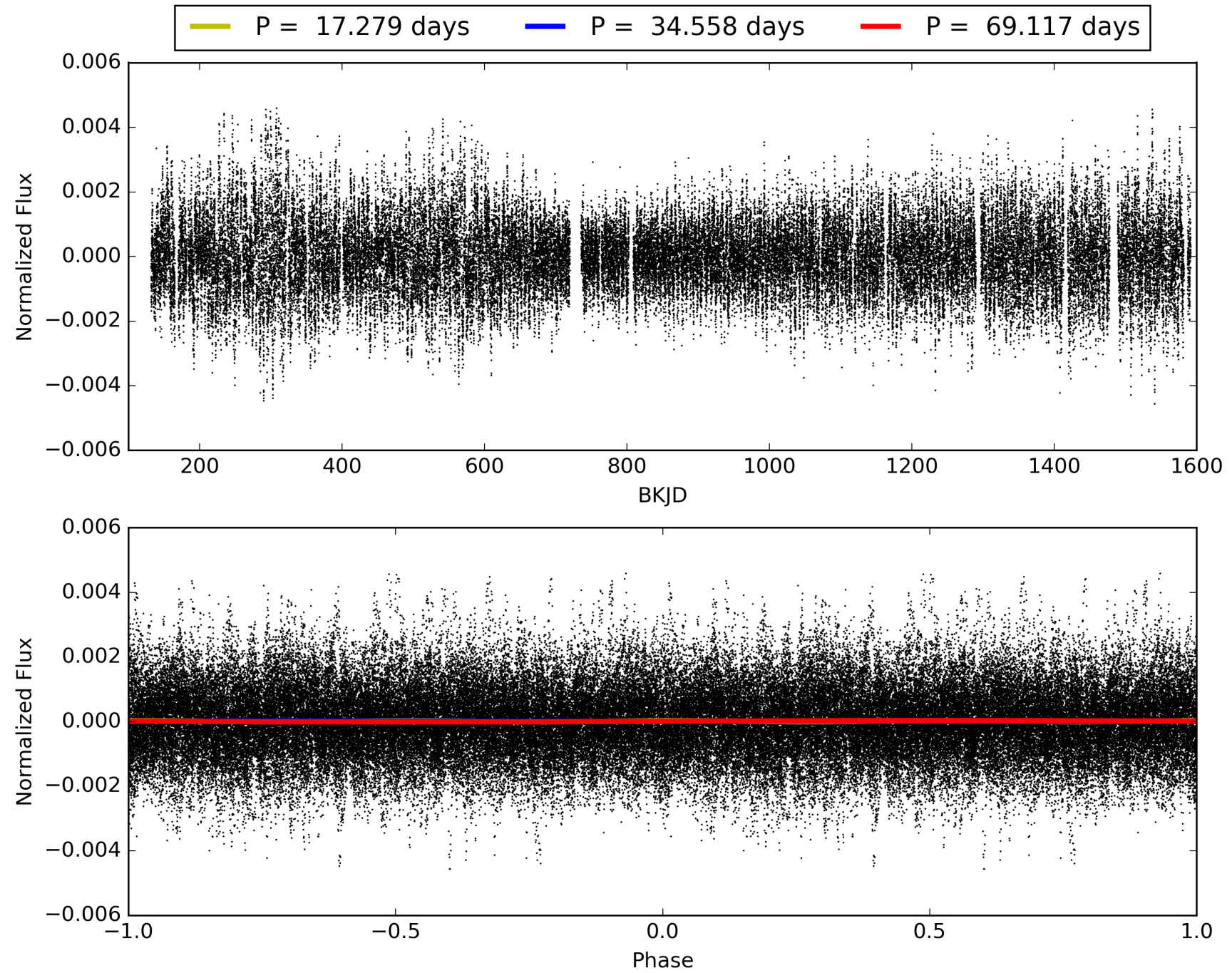
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:53:56 Z

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

TCE 005991936-04, PDC Light Curves

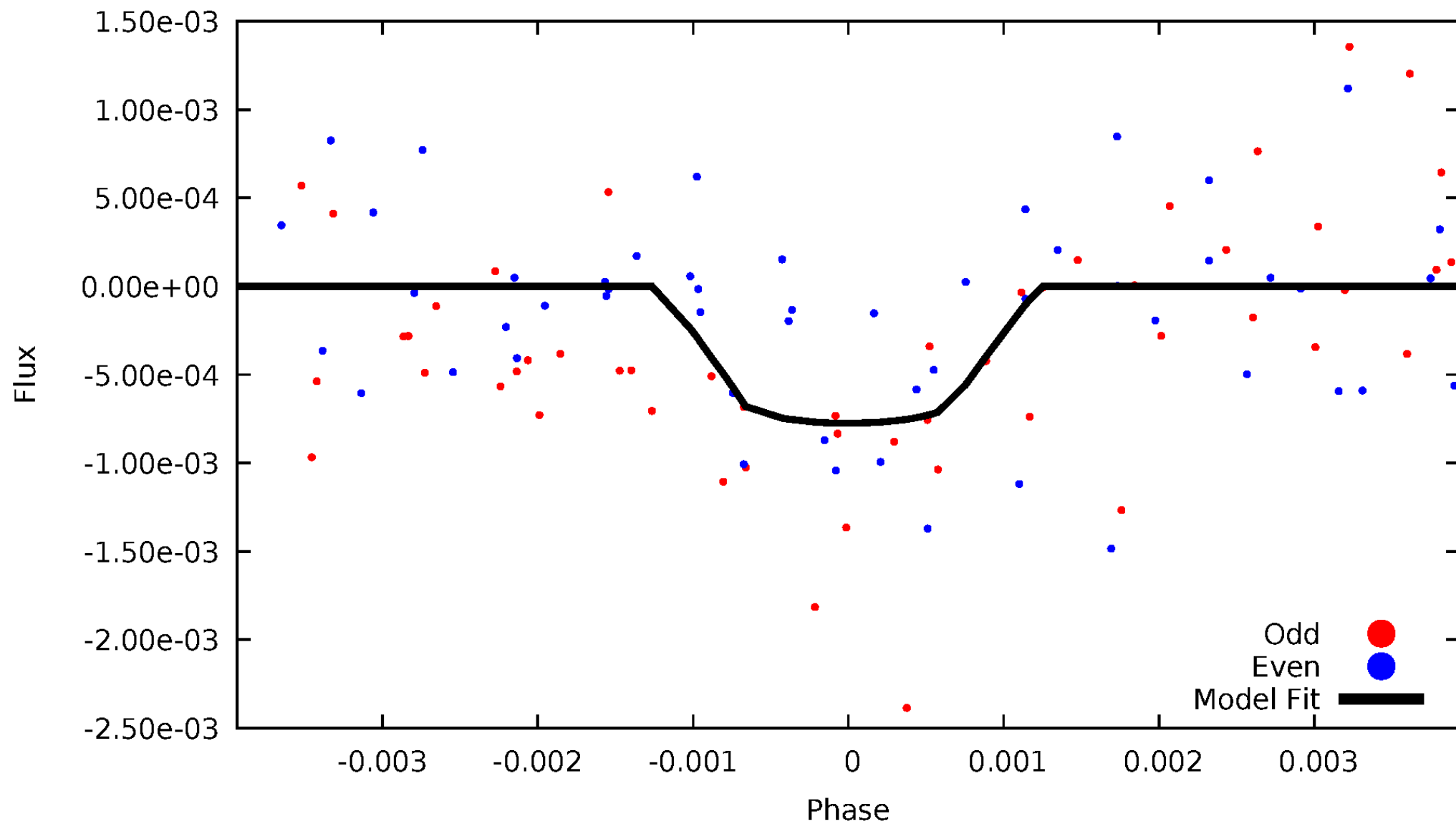


TCE 005991936-04



DV Odd/Even

TCE 005991936-04

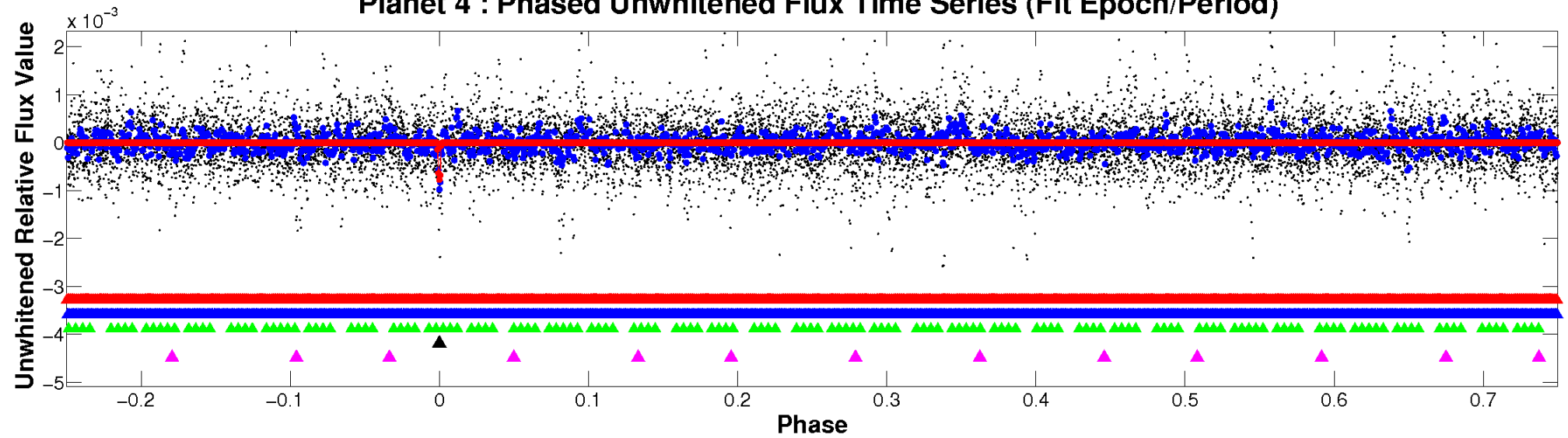


ALT Odd/Even

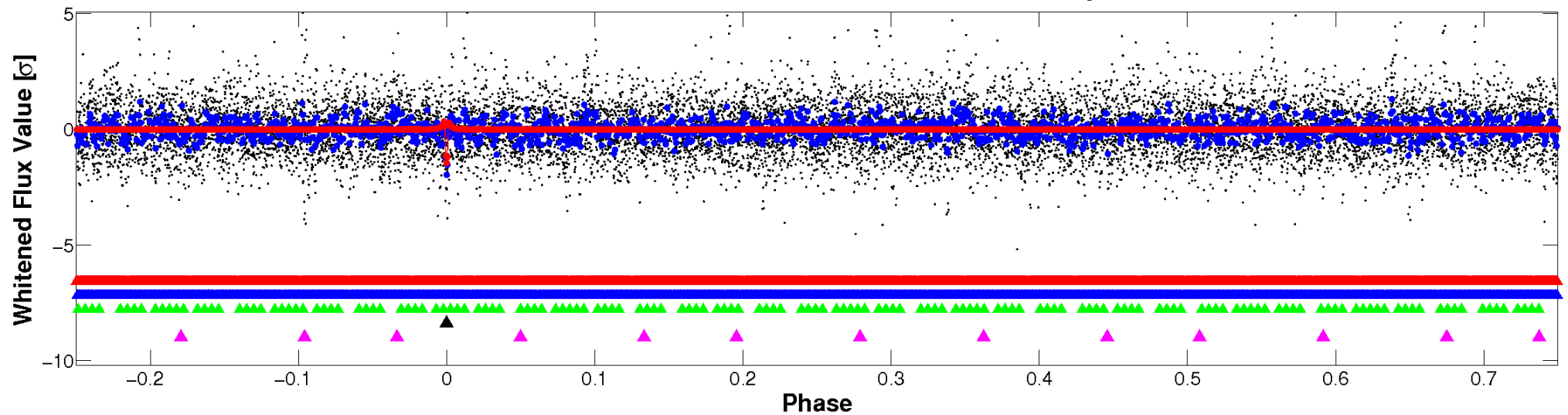
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

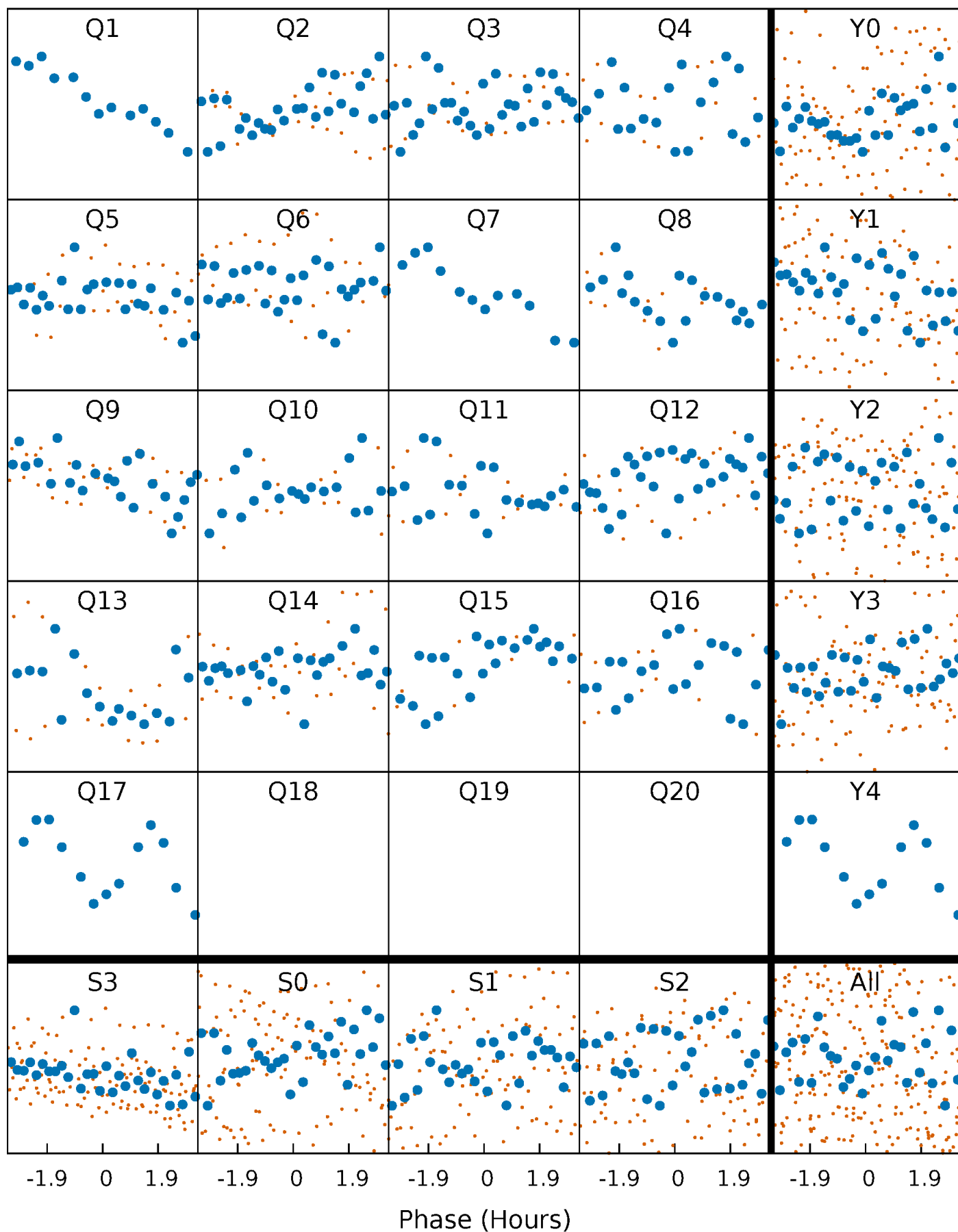


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



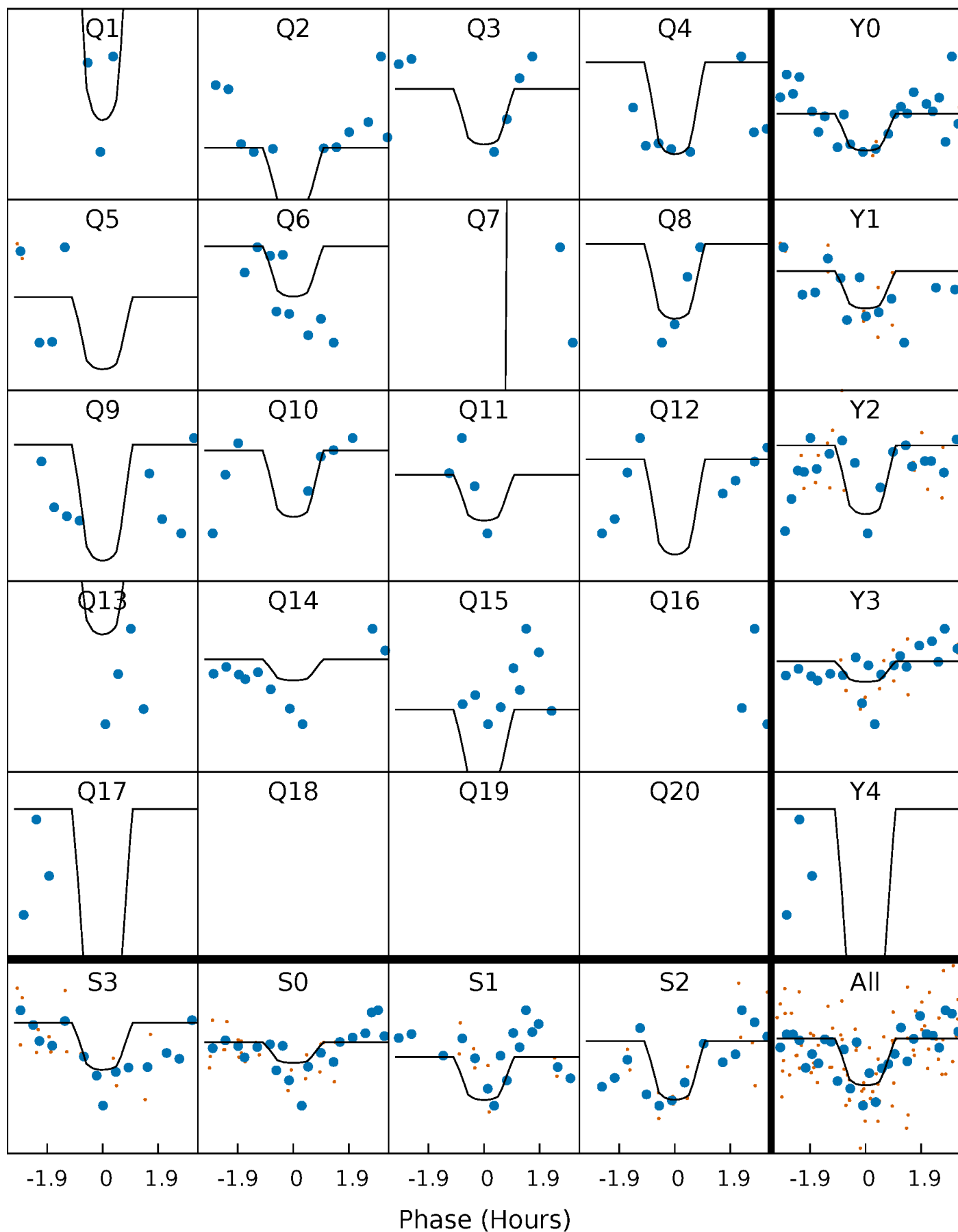
PDC Quarter-Phased Transit Curves

TCE 005991936-04 P= 34.558269 Days $T_0=137.647558$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005991936-04 P= 34.558269 Days $T_0=137.647558$ (BKJD)

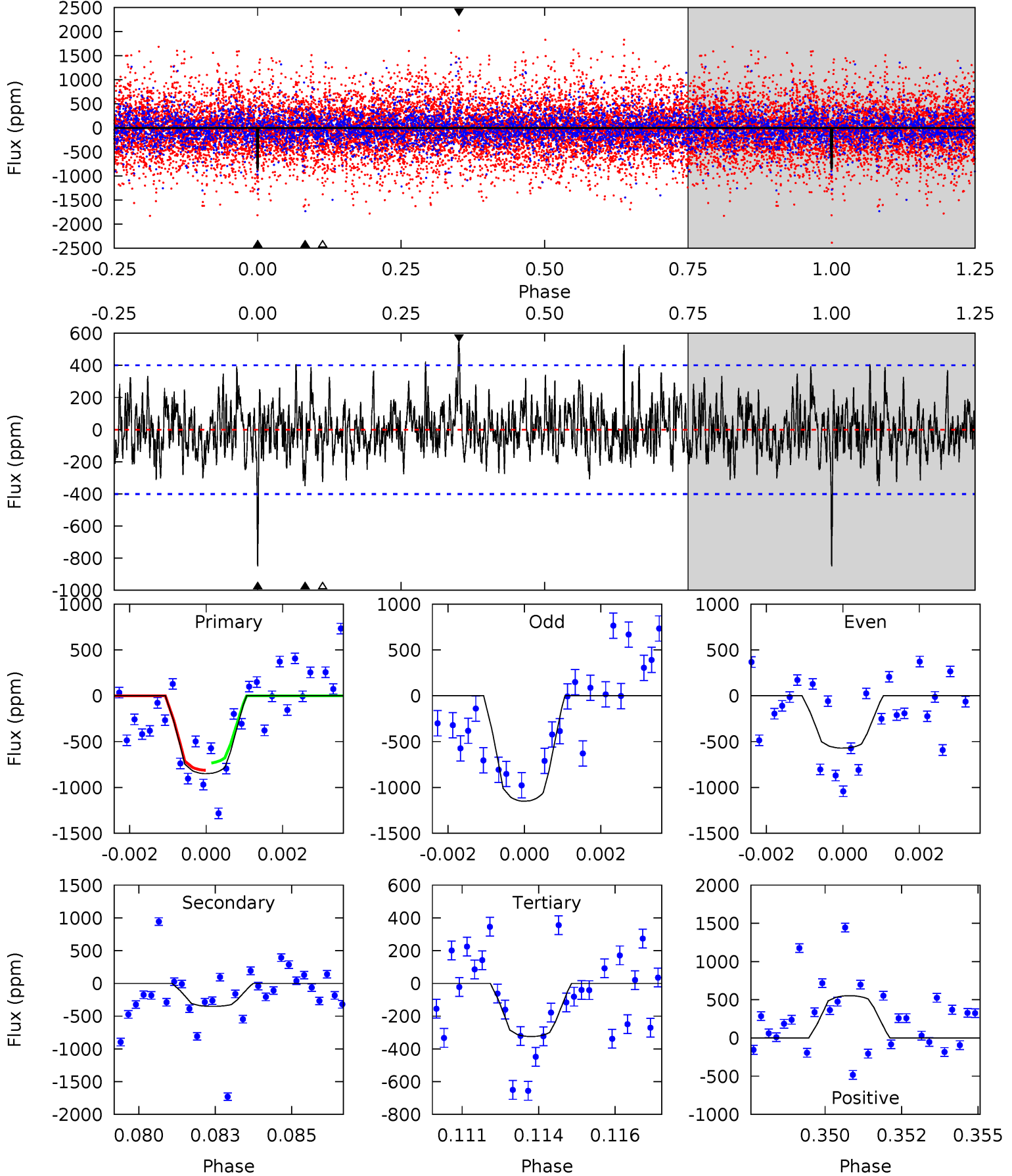


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

005991936-04, P = 34.558269 Days, E = 103.089289 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	4.63	4.29	7.30	5.30	3.04	1.69	6.94	3.92	0.34	-2.67	3.80	1.06	0.39	0.52



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 005991936

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8827^{+277}_{-370}	$4.227^{+0.056}_{-0.224}$	$0.210^{+0.150}_{-0.550}$	$1.827^{+0.764}_{-0.191}$	$2.052^{+0.377}_{-0.377}$	$0.474^{+0.116}_{-0.278}$
	+3%/-4%	+1%/-5%	+71%/-262%	+42%/-10%	+18%/-18%	+25%/-59%
Source	KIC0	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 005991936-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-351 ± 76	$6.23^{+5.08}_{-3.89}$	1458^{+104}_{-83}	6589^{+6482}_{-1521}	338^{+2108}_{-233}
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 $A_{obs} \gg 1.0$

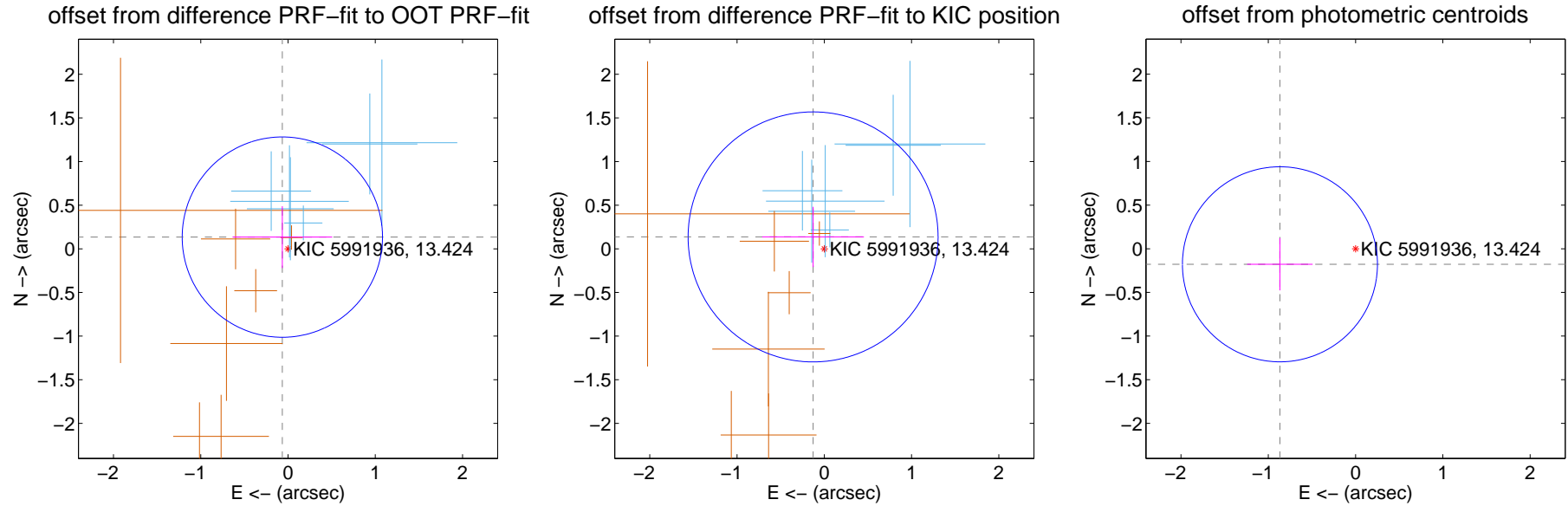
DV Centroid Data

Supplemental centroid analysis for 005991936-04. Kepler magnitude: 13.42. Transit SNR 6.96

There are 6 quarters with good PRF difference image offsets

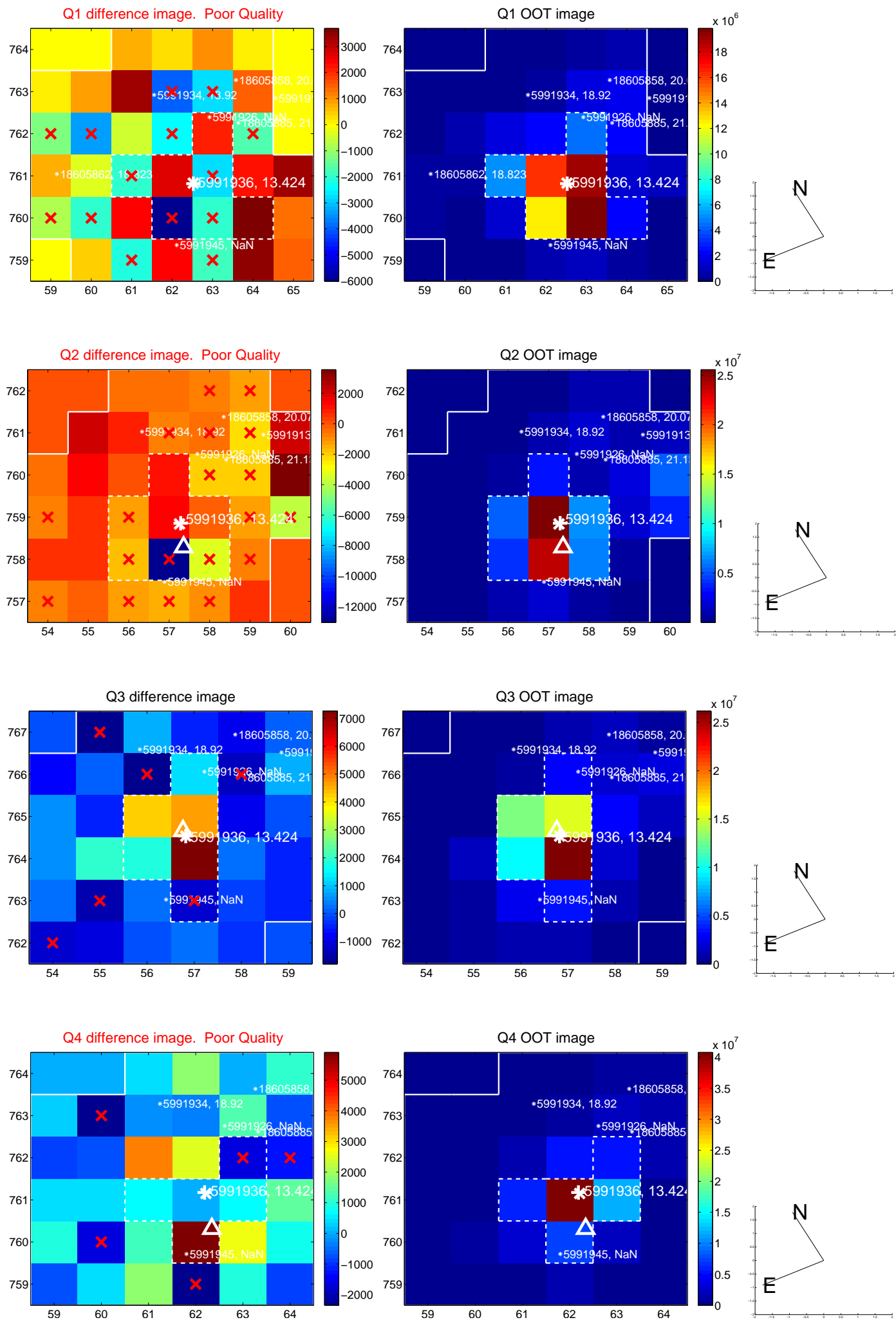
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.149 ± 0.382	0.39	0.065 ± 0.571	0.134 ± 0.354
PRF-fit source offset from KIC position	0.187 ± 0.477	0.39	0.128 ± 0.582	0.136 ± 0.345
photometric centroid source offset	0.88 ± 0.37	2.38	0.87 ± 0.38	-0.18 ± 0.30

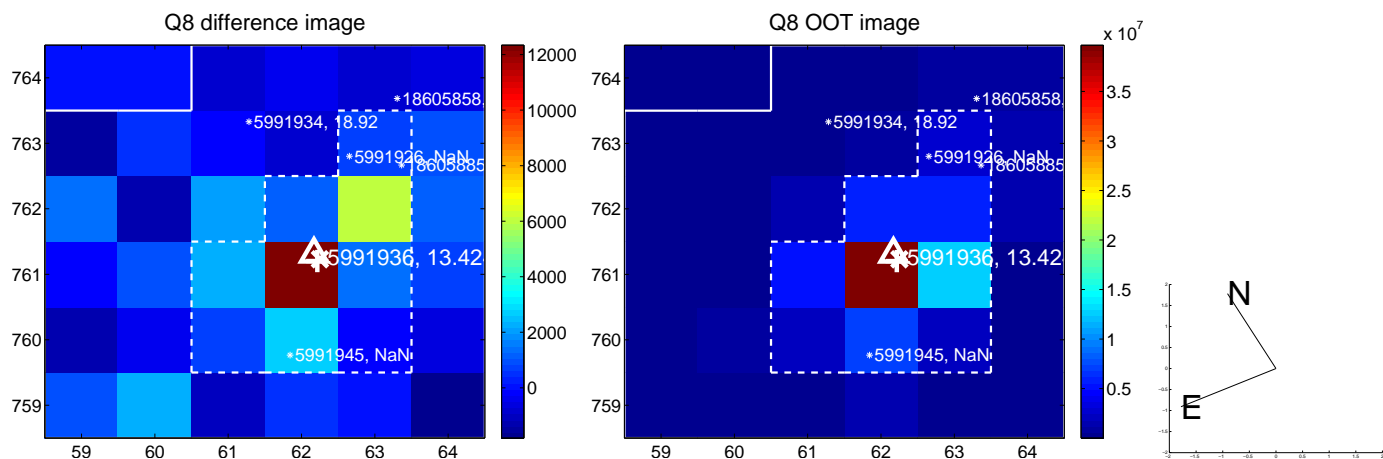
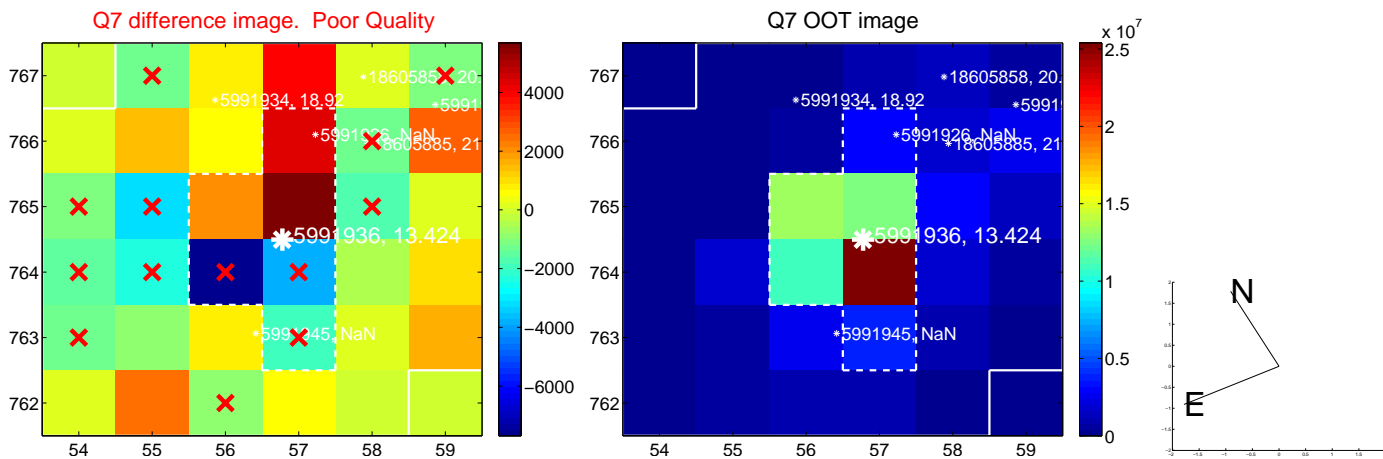
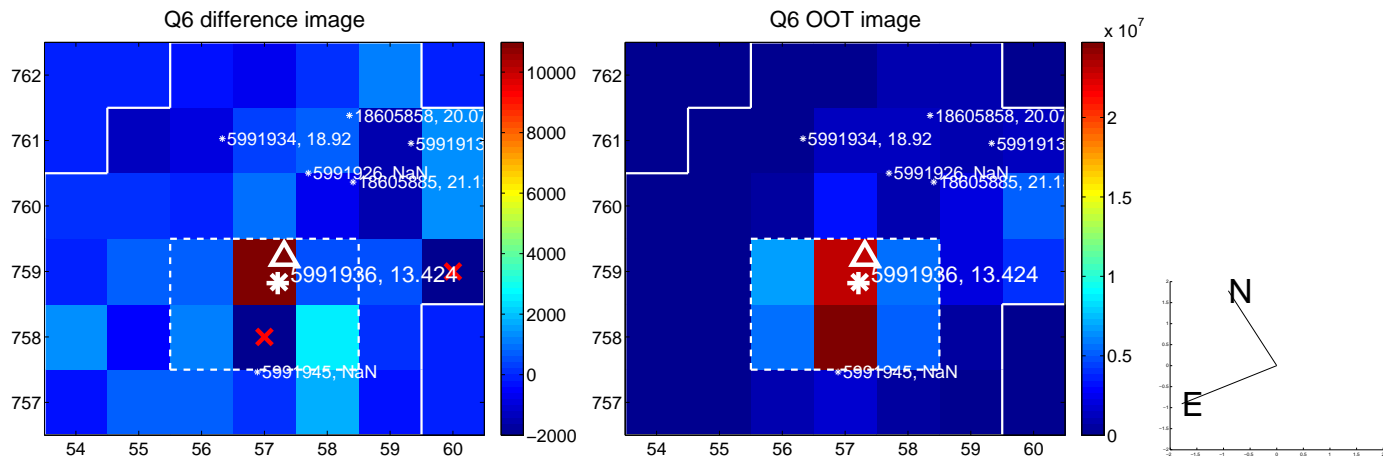
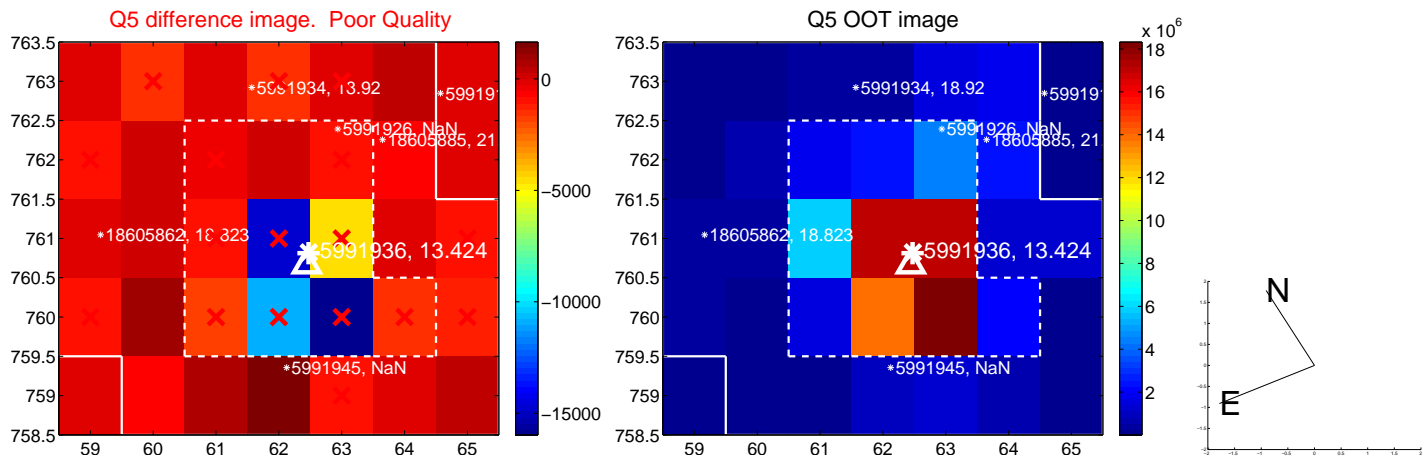


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

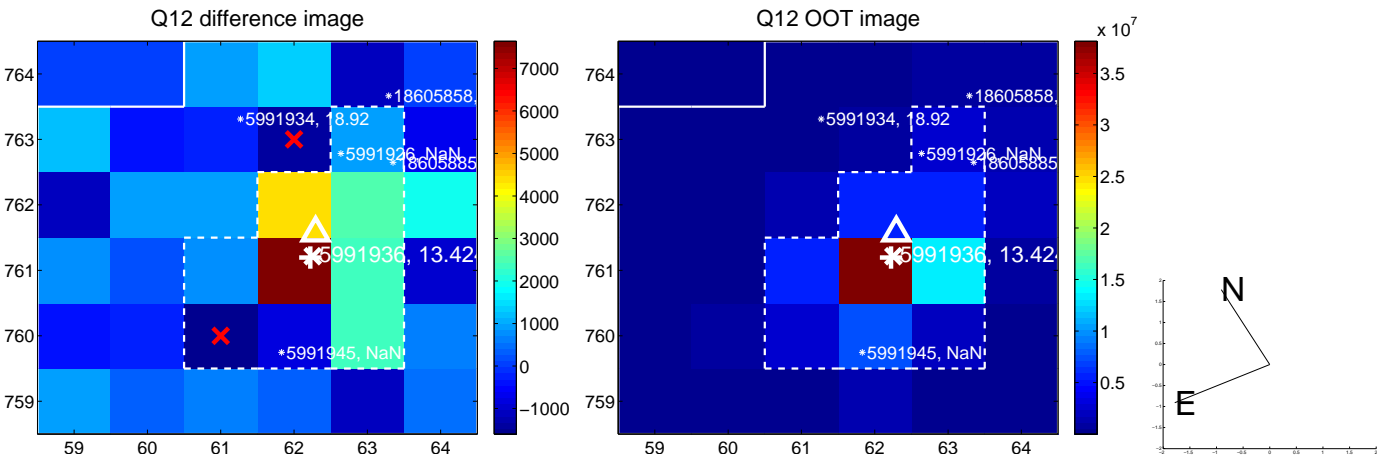
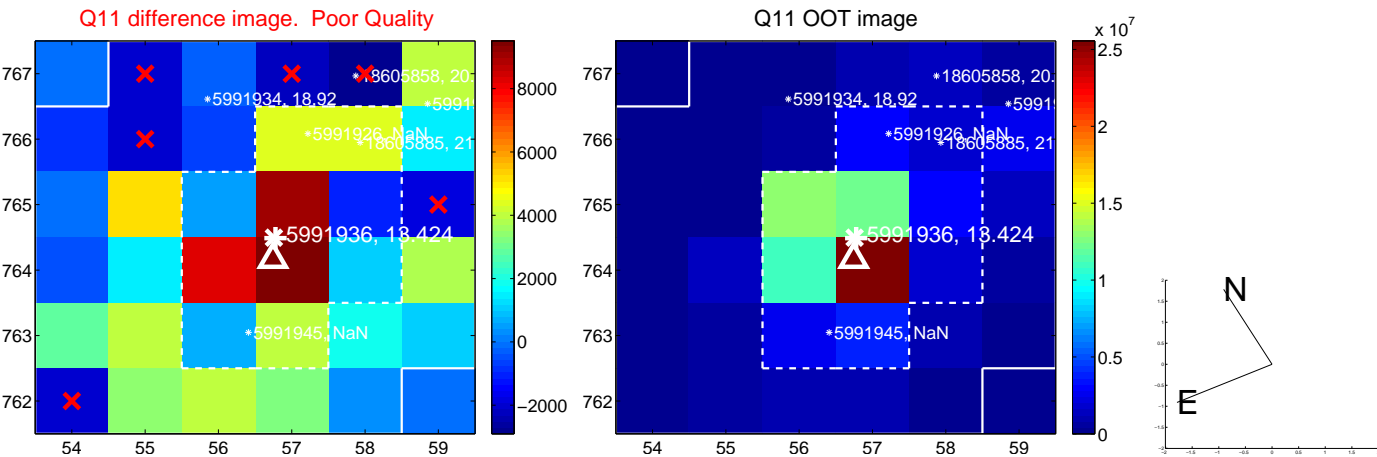
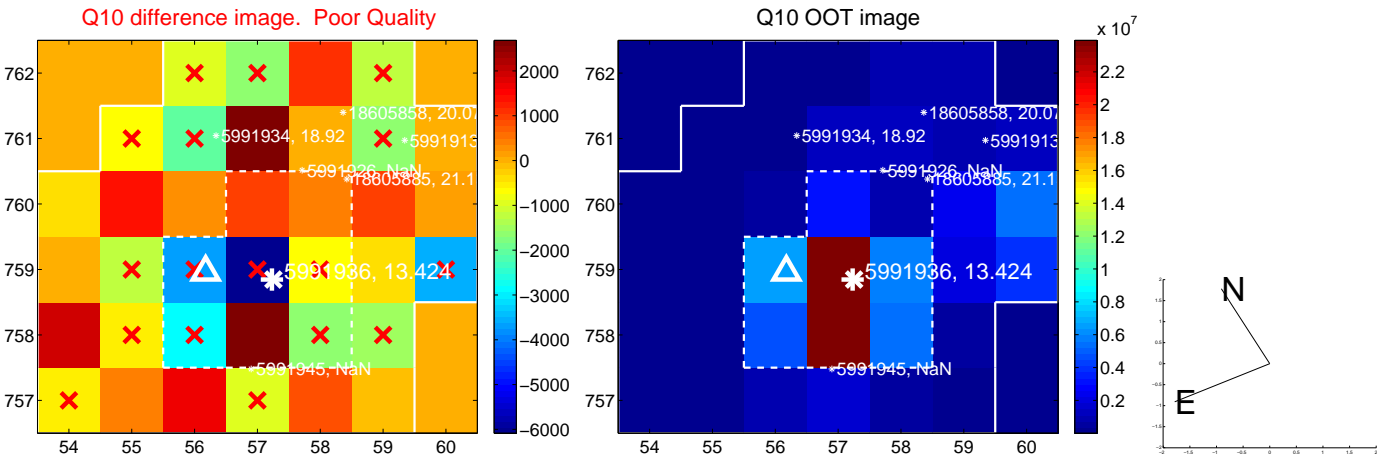
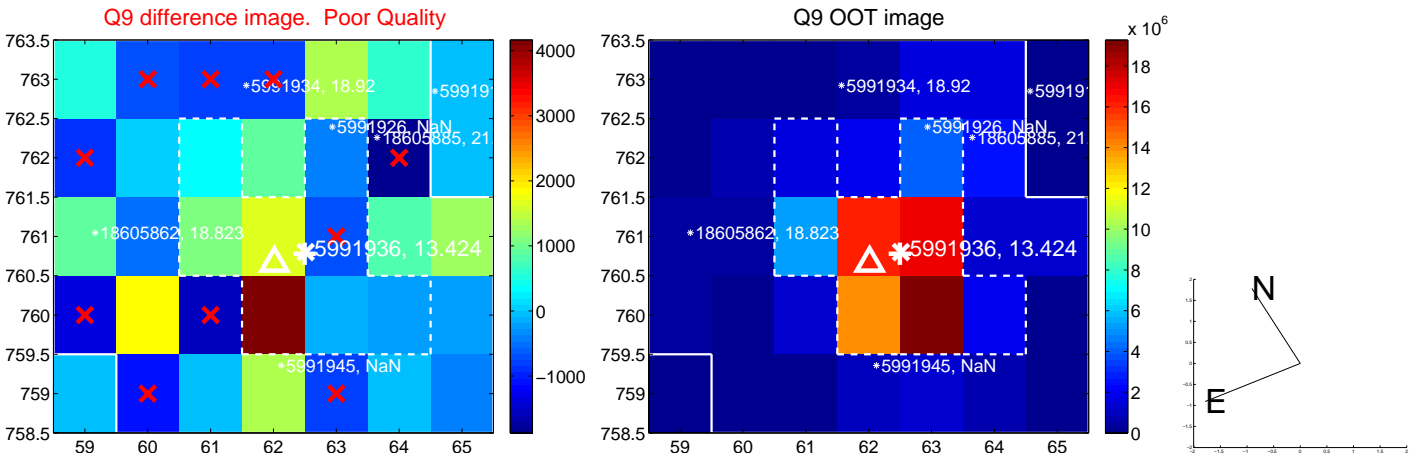
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



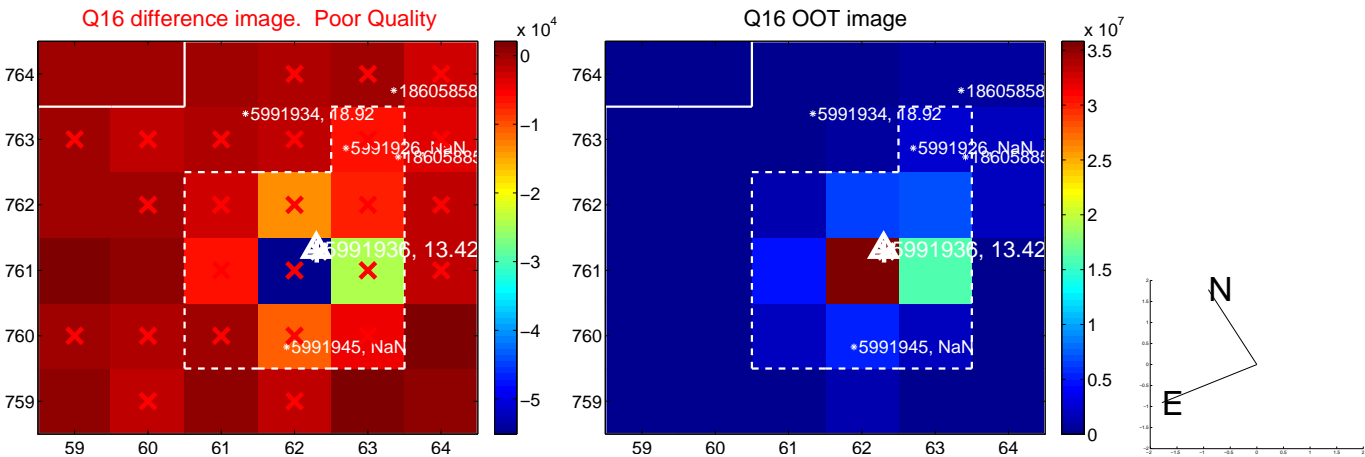
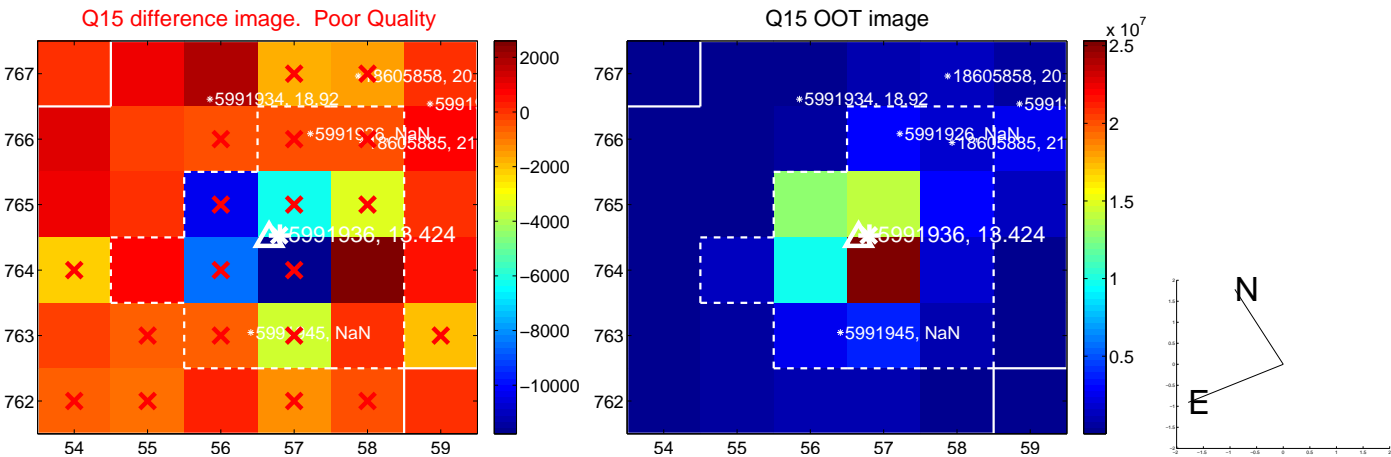
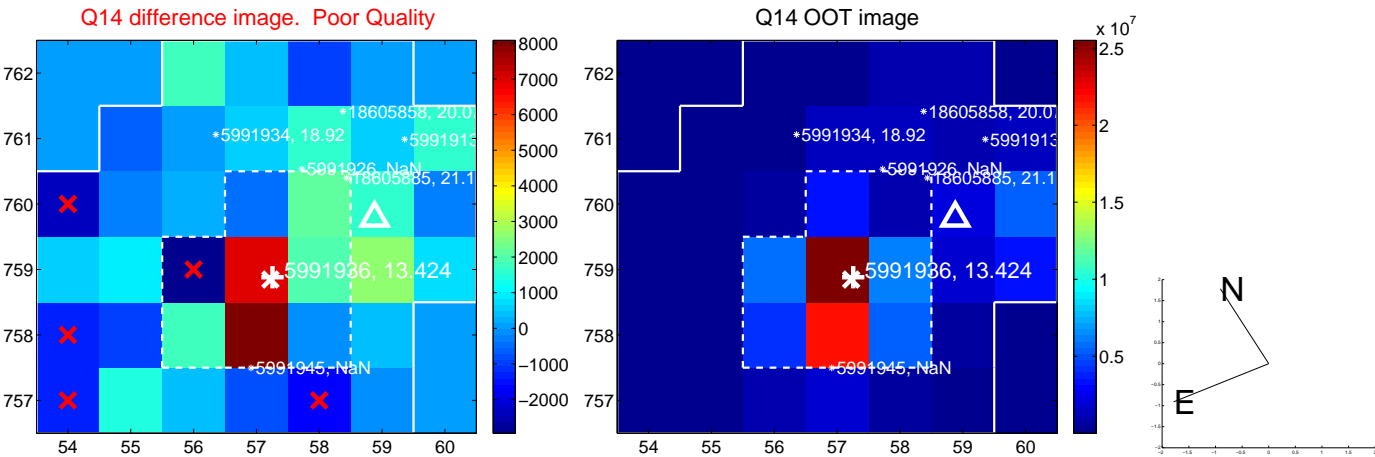
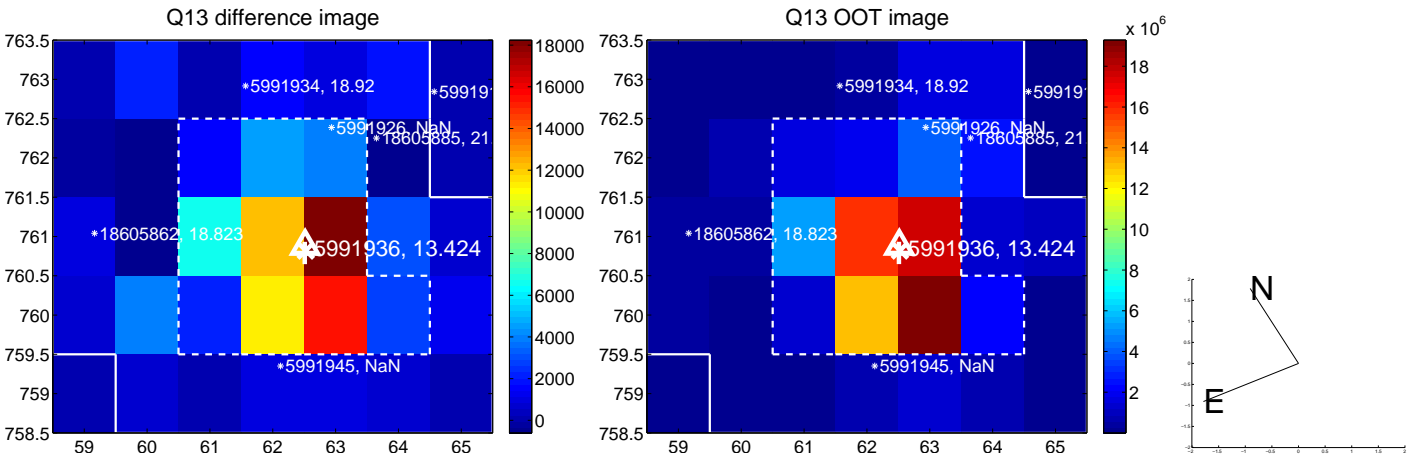
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



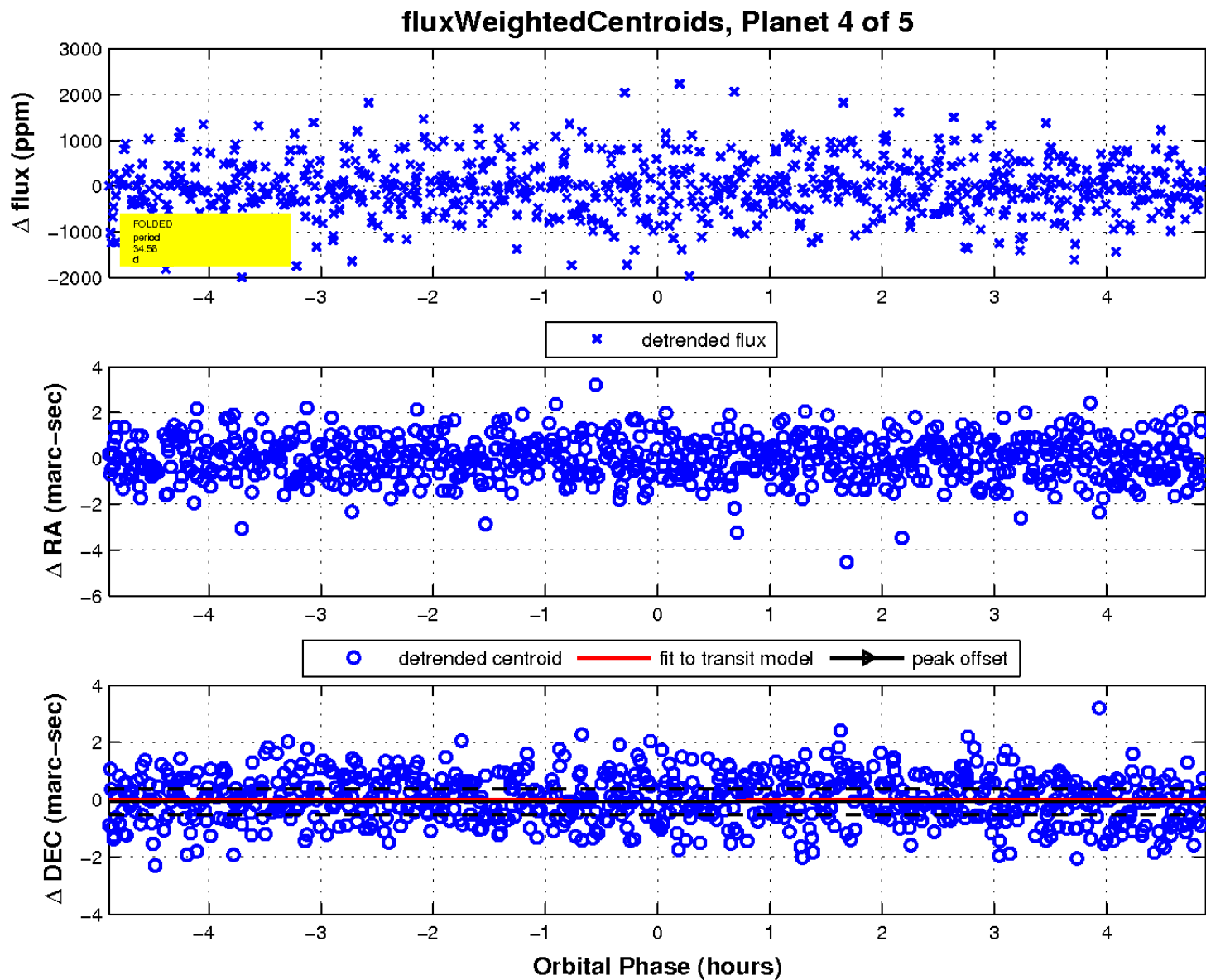
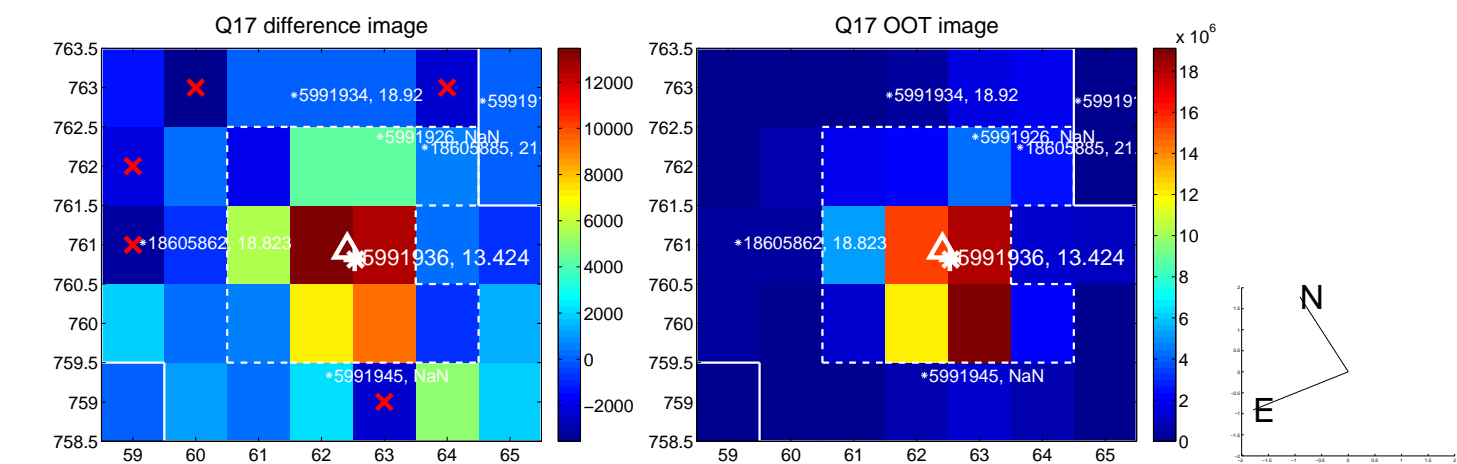
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

