

KIC 008389052

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})
008389052-01	OBS	No	0.684041	132.058620	6.6	5.083	8.5	3.2	1.62	5986	0.44	13509.86
008389052-02	OBS	No	8.899631	138.231103	236.3	1.465	11.3	14.5	1.62	5986	2.51	441.50
008389052-03	OBS	No	19.440513	148.848163	338.0	1.364	11.5	12.3	1.62	5986	3.01	155.77
008389052-04	OBS	No	7.468513	136.650798	407.1	0.937	13.4	15.8	1.62	5986	3.40	557.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008389052-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
008389052-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008389052-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS
008389052-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—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.

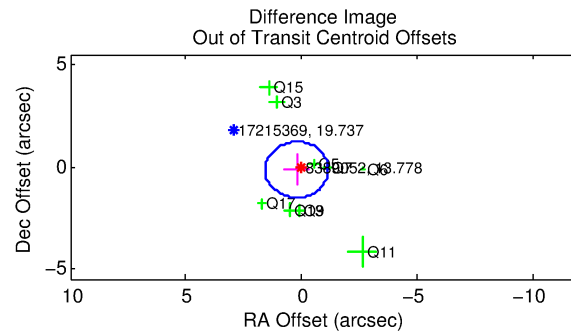
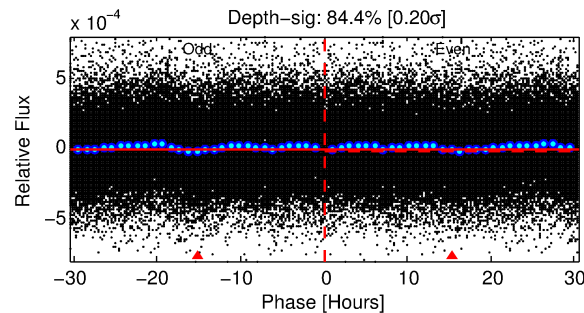
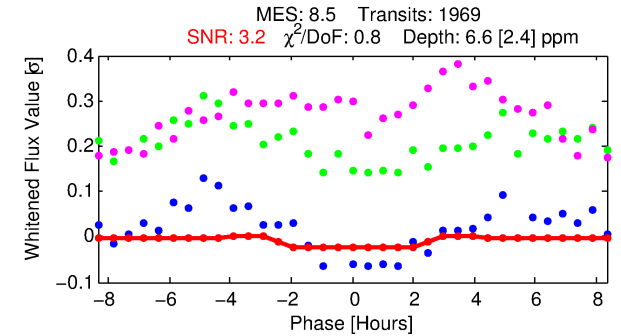
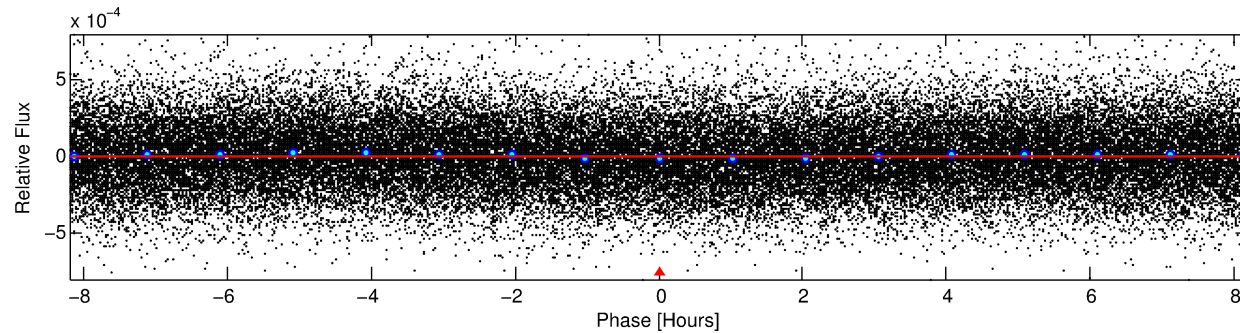
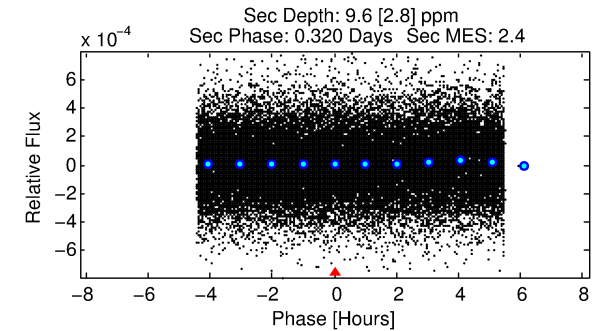
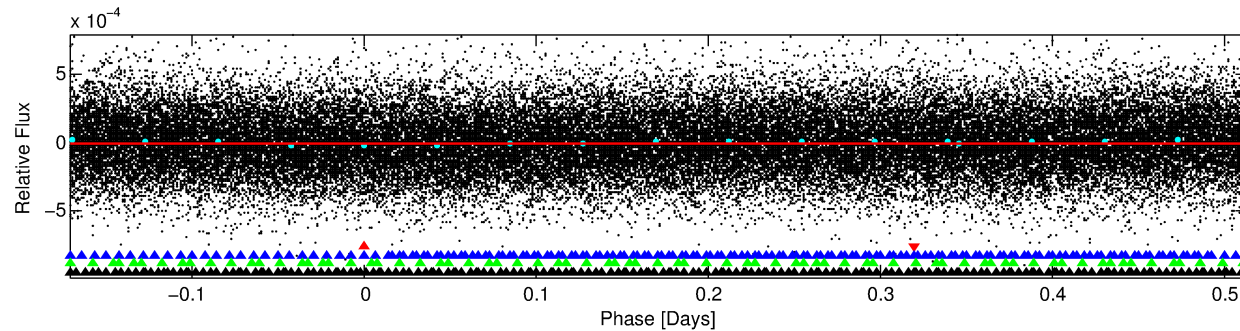
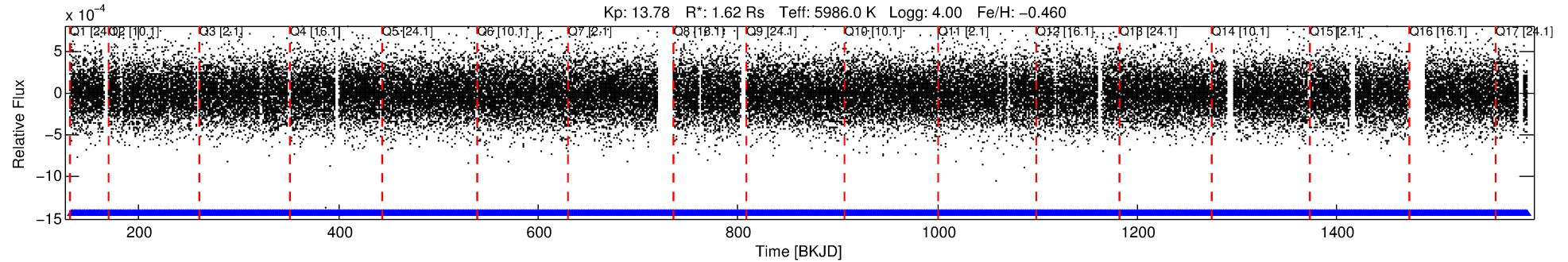
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008389052-01

No Significant Match Found

DV One-Page Summary

KIC: 8389052 Candidate: 1 of 4 Period: 0.684 d



DV Fit Results:

Period = 0.68404 [0.00004] d
Epoch = 132.0586 [0.0154] BKJD
Rp/R* = 0.0025 [0.0035]
a/R* = 1.12 [1.54]
b = 0.70 [5.21]
Seff = 13509.86 [10339.39]
Teq = 2749 [526] K
Rp = 0.44 [0.64] Re
a = 0.0149 [0.0067] AU
Ag = 5.97 [17.18] [0.29σ]
Teffp = 6643 [4618] K [0.84σ]

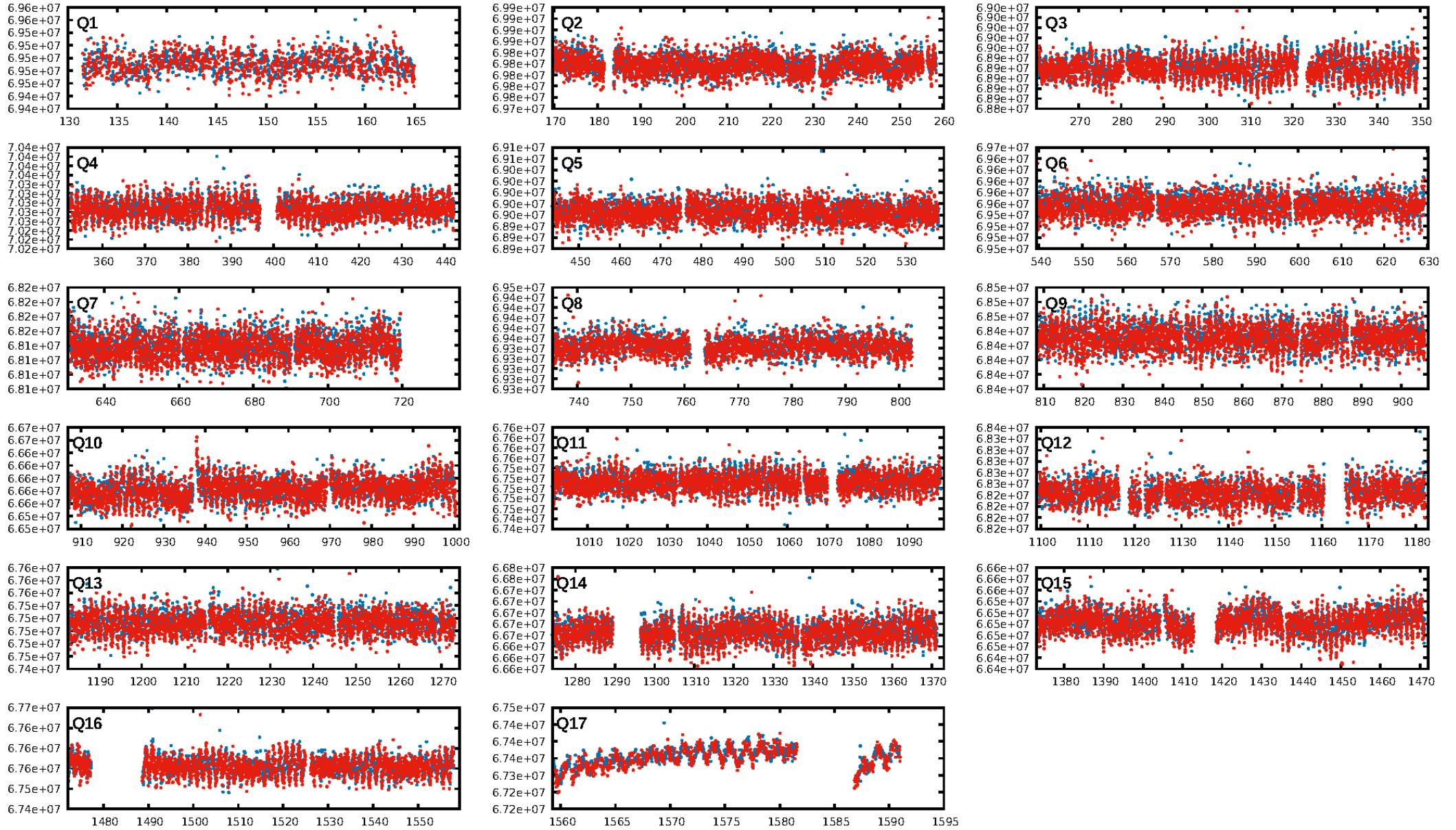
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [31.50σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.96e-01
RollingBand-fgt: 1.00 [1881/1881]
GhostDiagnostic-chr: 1.859
Centroid-sig: 0.7%
Centroid-so: 5.362 arcsec [1.77σ]
OotOffset-rm: 0.255 arcsec [0.56σ]
KicOffset-rm: 0.184 arcsec [0.46σ]
OotOffset-st: 1/4/0/4 [9]
KicOffset-st: 1/4/0/4 [9]
DiffImageQuality-fgm: 0.56 [5/9]
DiffImageOverlap-fno: 1.00 [17/17]

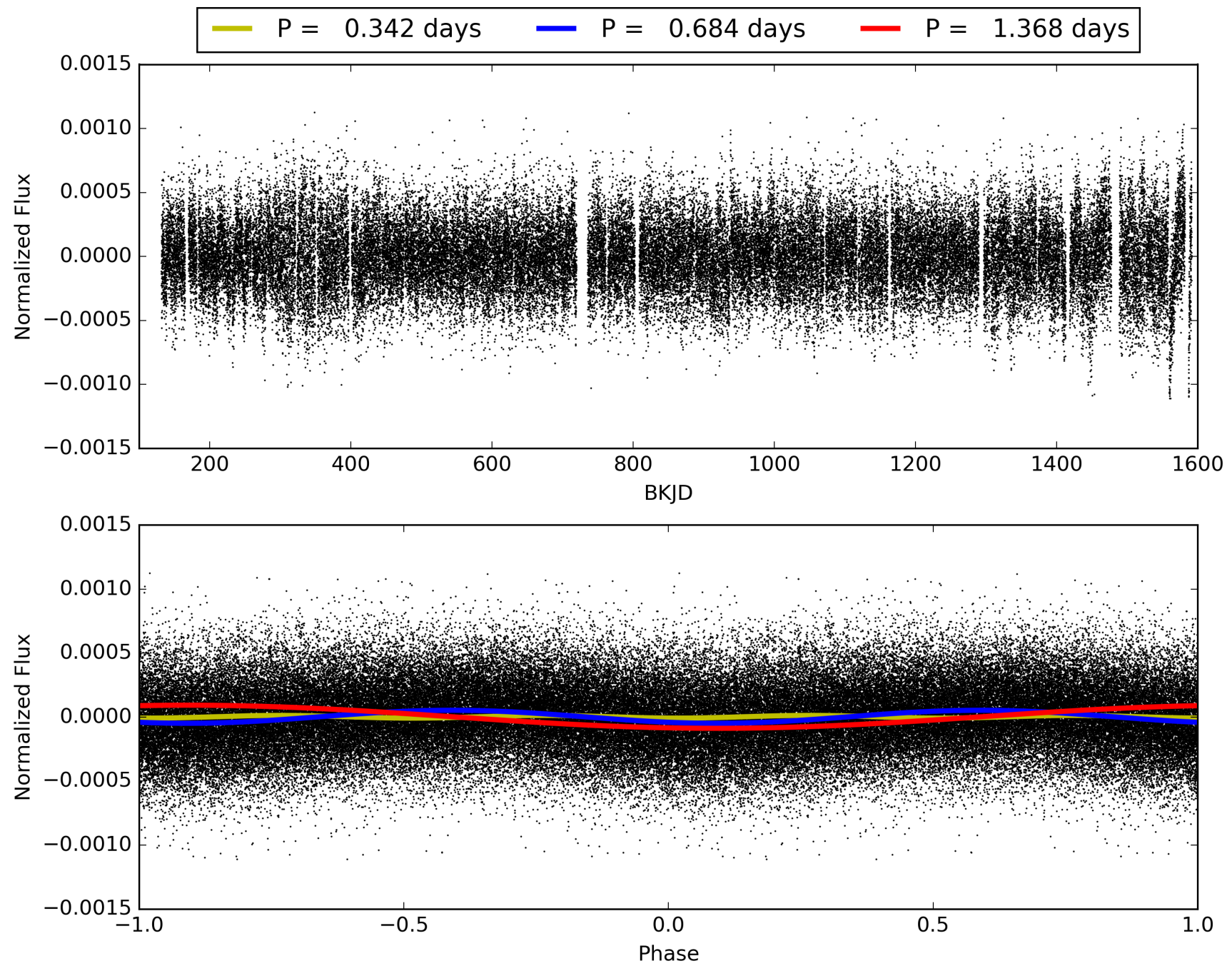
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:02:33 Z

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

TCE 008389052-01, PDC Light Curves

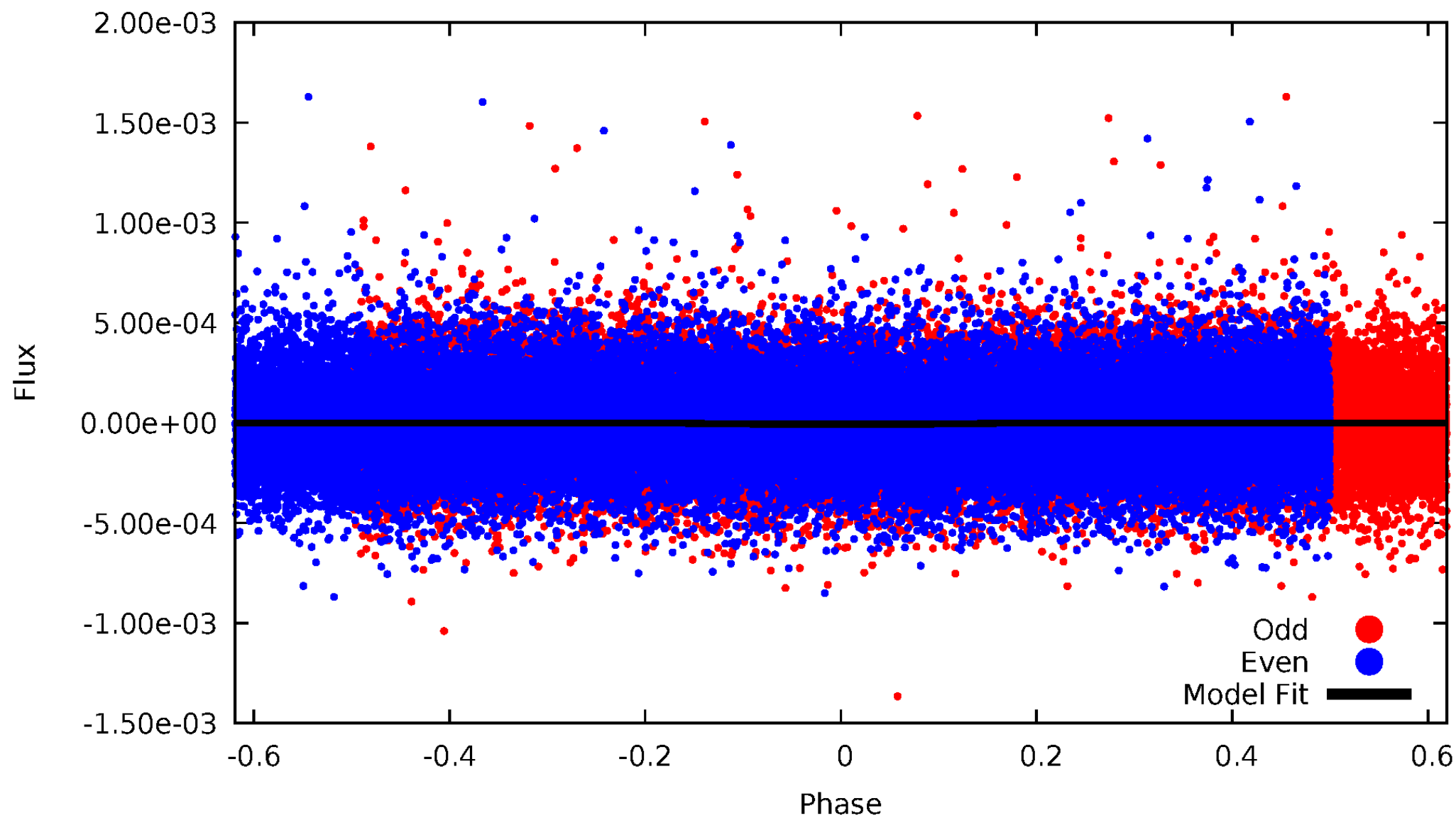


TCE 008389052-01



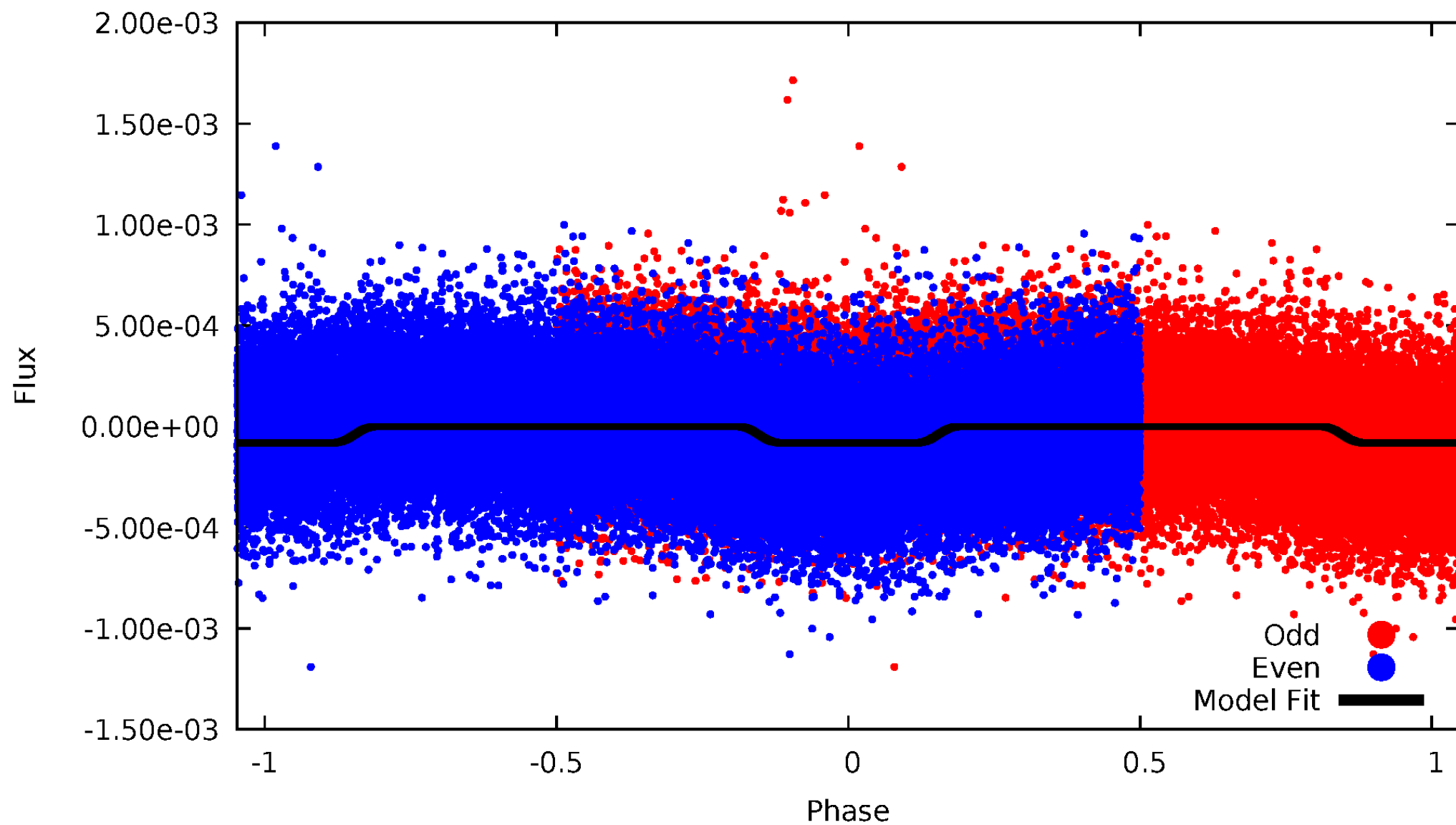
DV Odd/Even

TCE 008389052-01

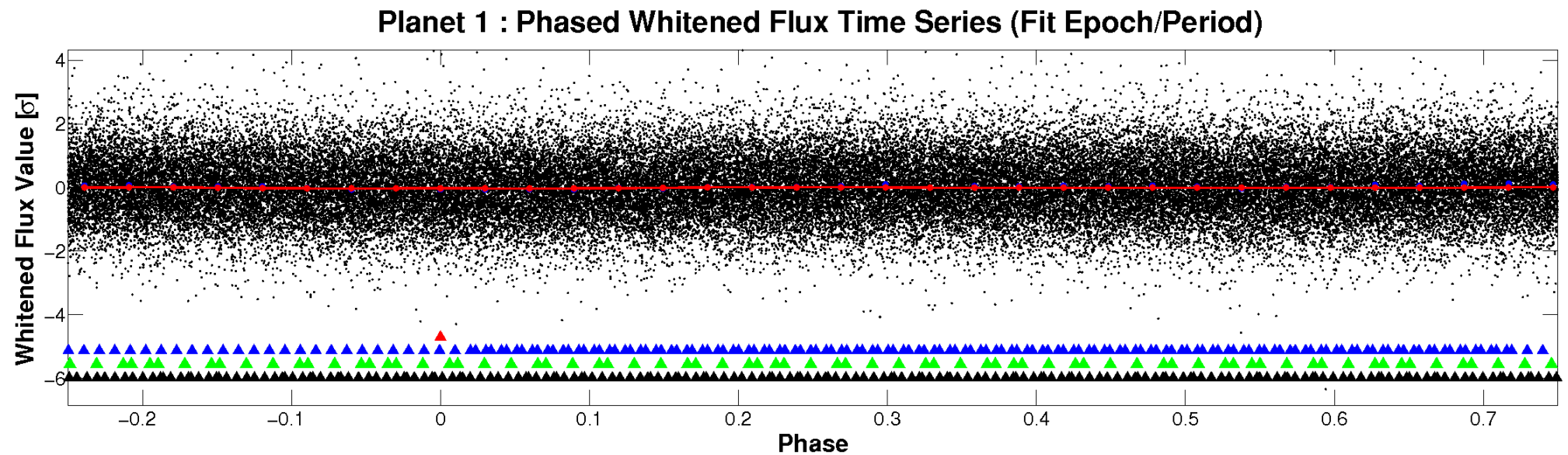
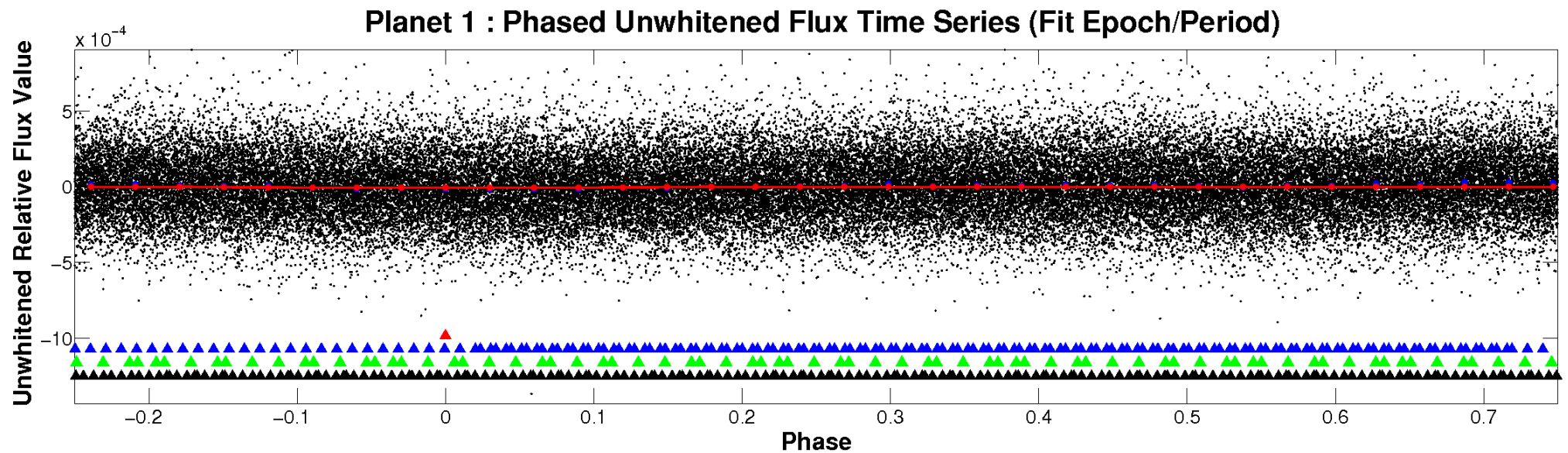


ALT Odd/Even

TCE 008389052-01

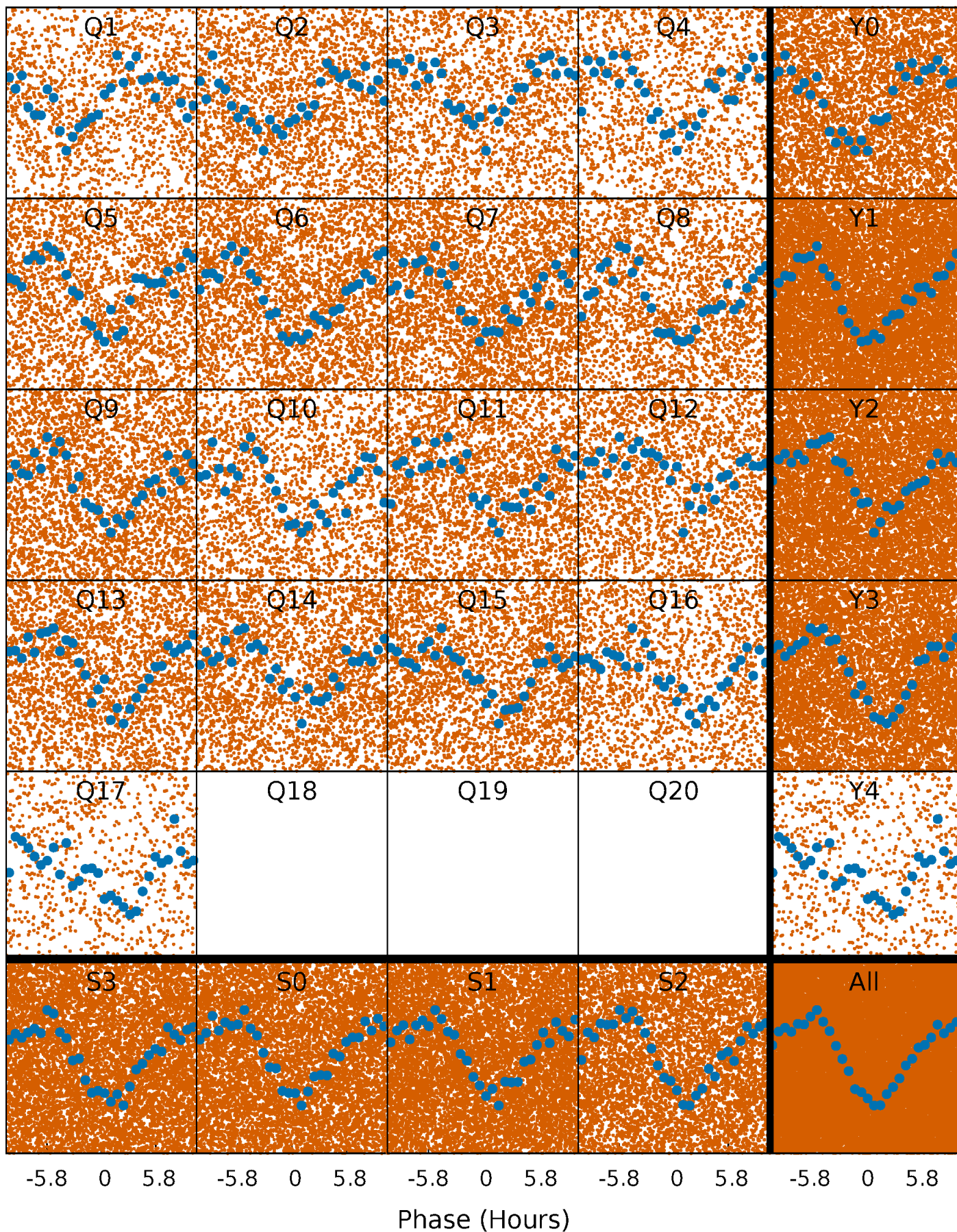


Non-Whitened Vs. Whitened Light Curve



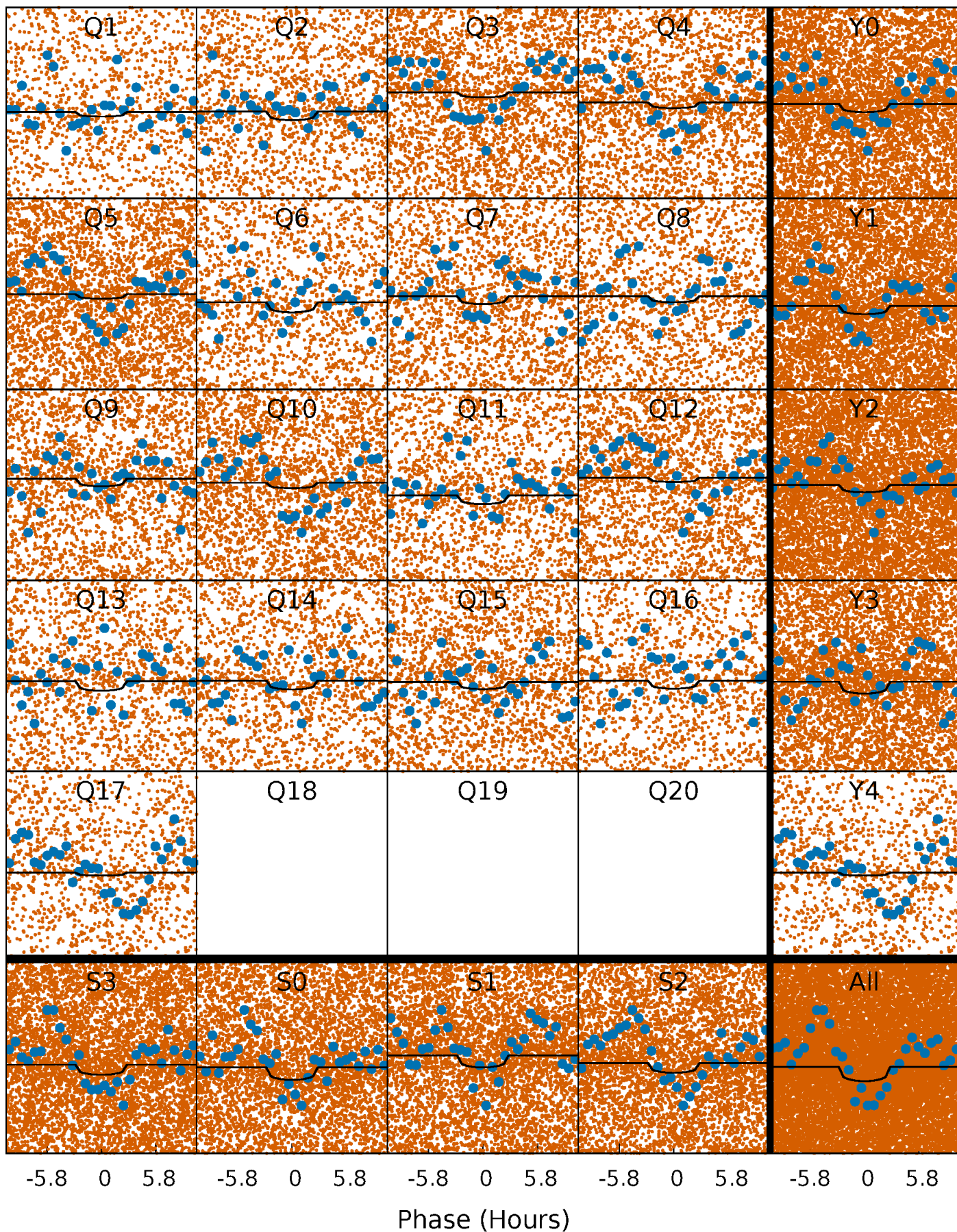
PDC Quarter-Phased Transit Curves

TCE 008389052-01 P= 0.684041 Days $T_0=132.058620$ (BKJD)



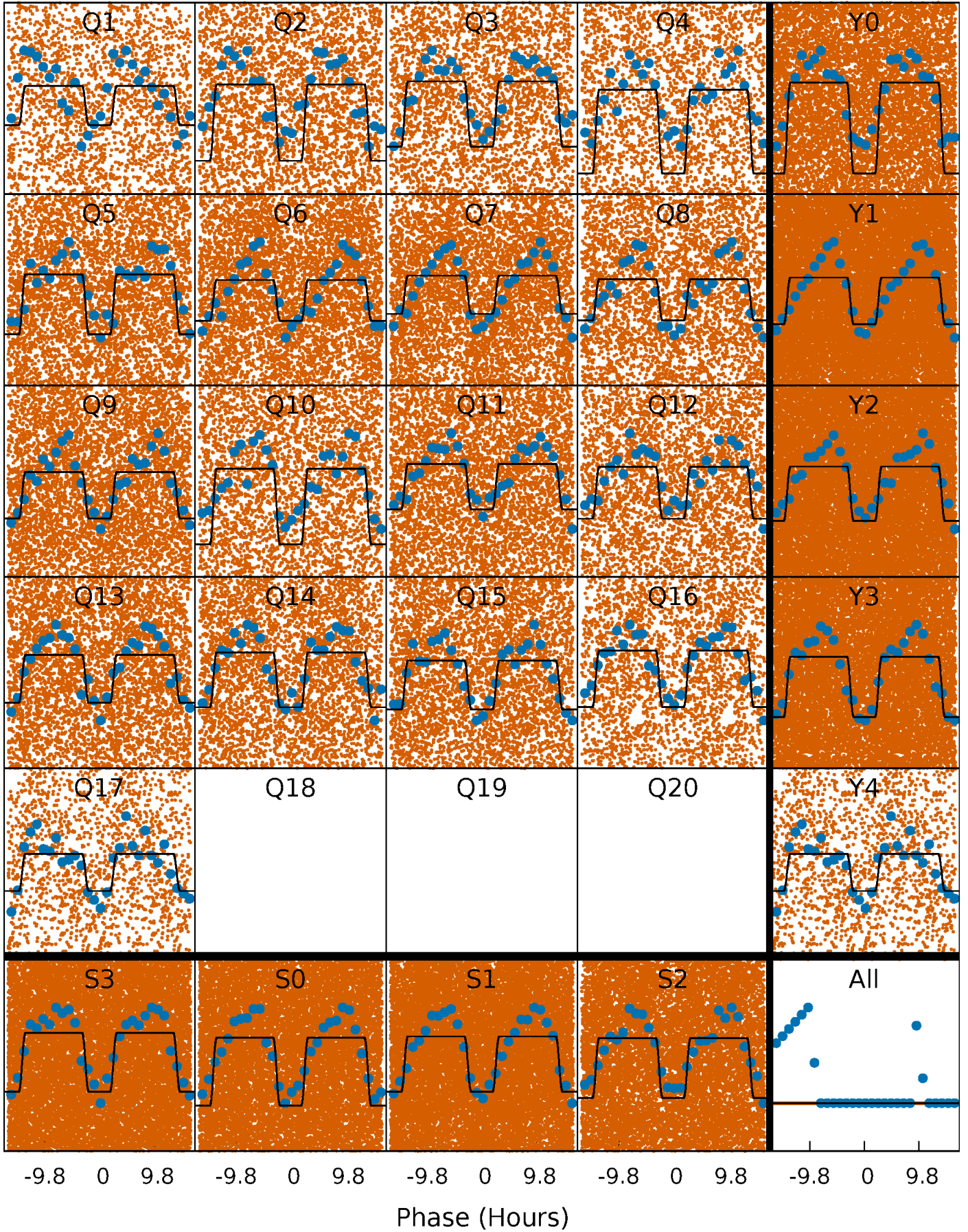
DV Quarter-Phased Transit Curves

TCE 008389052-01 P= 0.684041 Days $T_0=132.058620$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

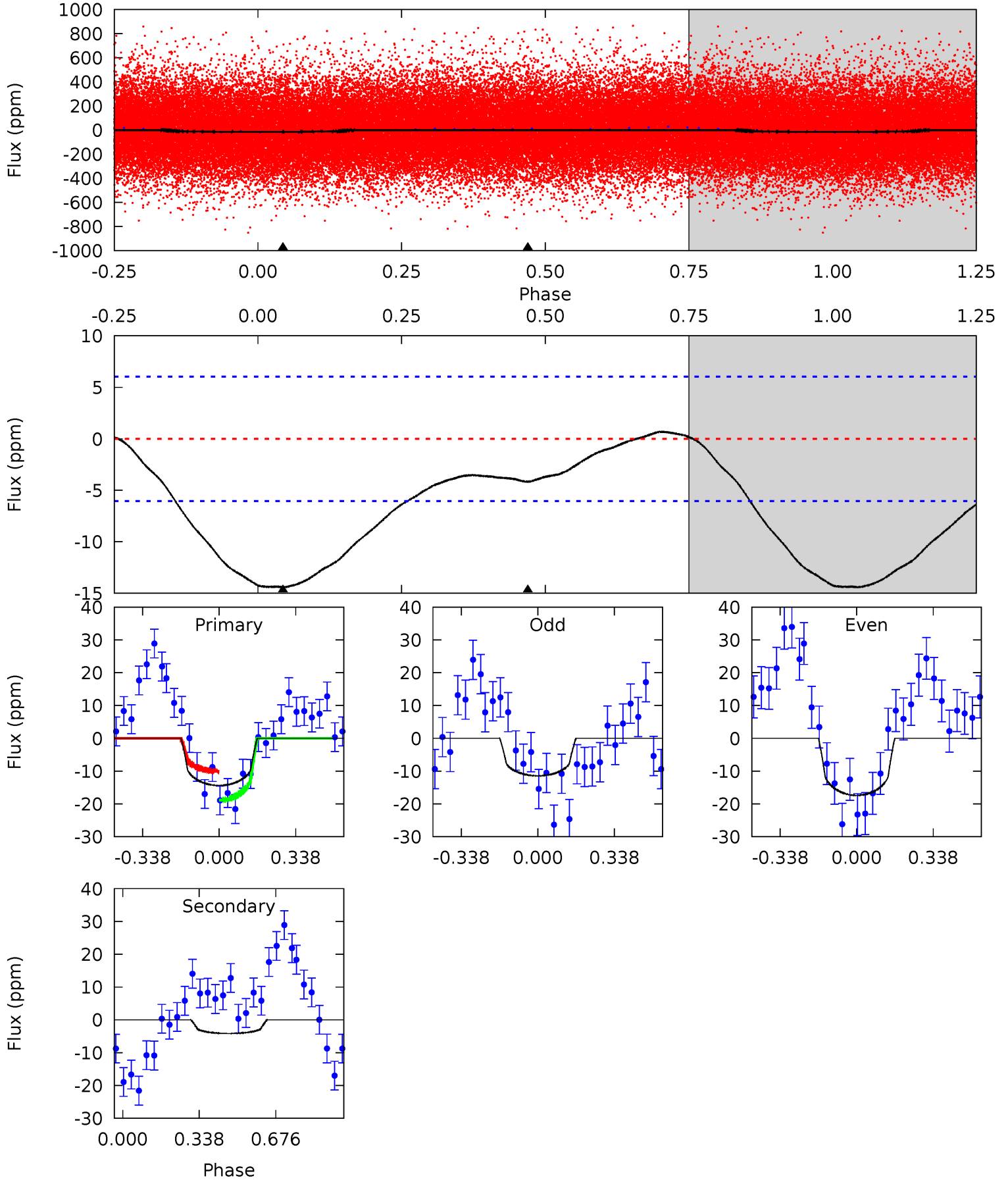
TCE 008389052-01 P= 0.684122 Days $T_0=132.014145$ (BKJD)



DV Model-Shift Uniqueness Test

008389052-01, P = 0.684041 Days, E = 131.374579 Days

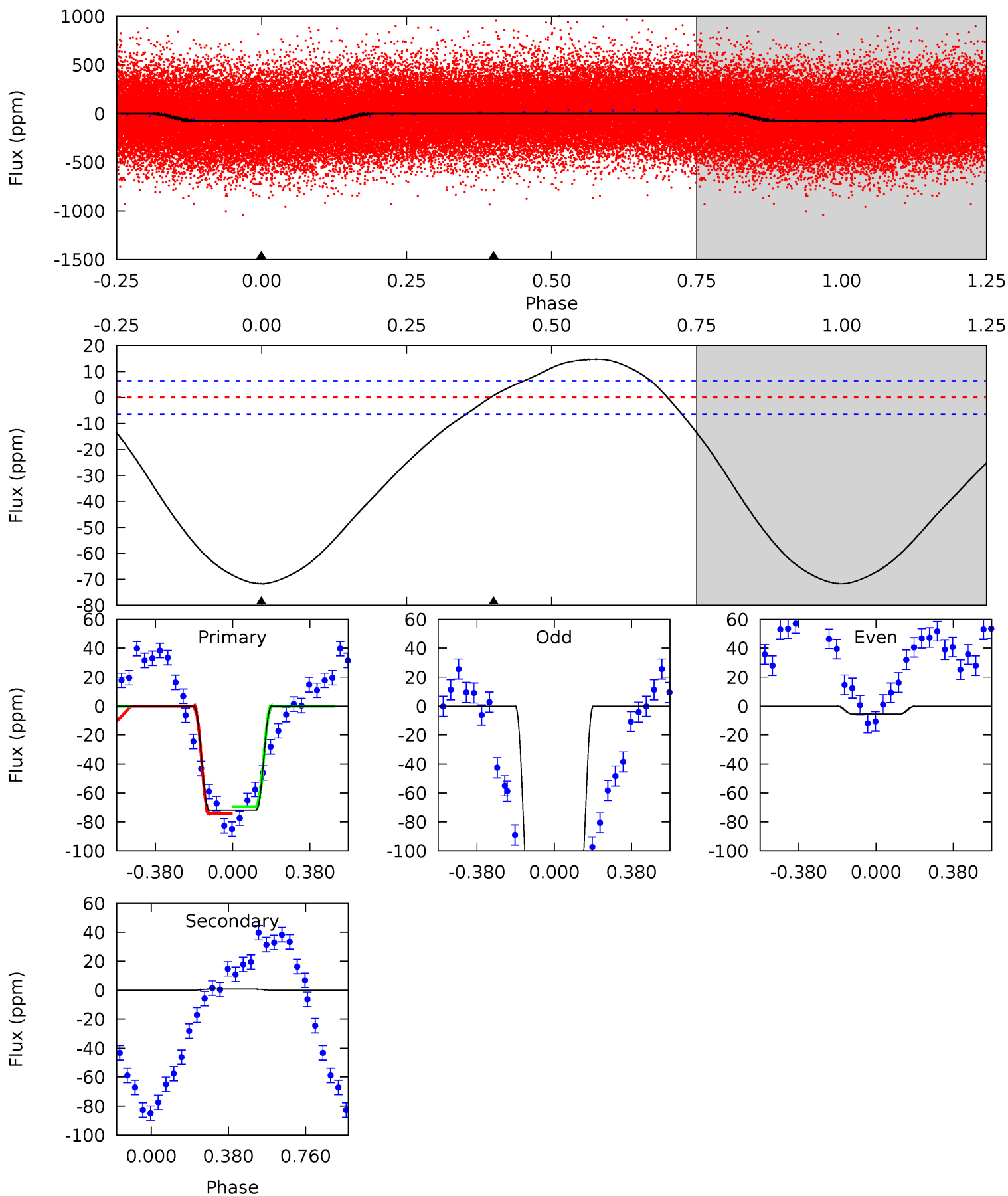
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	2.97	0	0	4.30	0.96	0.72	10.3	10.3	2.97	2.97	2.16	0.92	0.04	3.16



Alt Model-Shift Uniqueness Test

008389052-01, P = 0.684122 Days, E = 131.330023 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.8	-0.48	0	0	4.28	0.88	4.64	47.8	47.8	-0.48	-0.48	48.5	0.99	0.17	1.52



Stellar Parameters For KIC 008389052

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5986^{+179}_{-179}	$3.997^{+0.458}_{-0.153}$	$-0.460^{+0.300}_{-0.250}$	$1.618^{+0.449}_{-0.674}$	$0.949^{+0.127}_{-0.127}$	$0.315^{+1.179}_{-0.137}$
	+3%/-3%	+11%/-4%	+65%/-54%	+28%/-42%	+13%/-13%	+374%/-43%
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 008389052-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4 ± 1	$0.59^{+0.52}_{-0.39}$	3767^{+304}_{-422}	4402^{+3342}_{-1522}	$1.380^{+13.669}_{-1.003}$
Alt.	1 ± 2	$1.47^{+0.66}_{-0.64}$	3724^{+338}_{-444}	-3605^{+320}_{-292}	$-0.035^{+0.076}_{-0.154}$

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 $A_{obs} \gg 1.0$

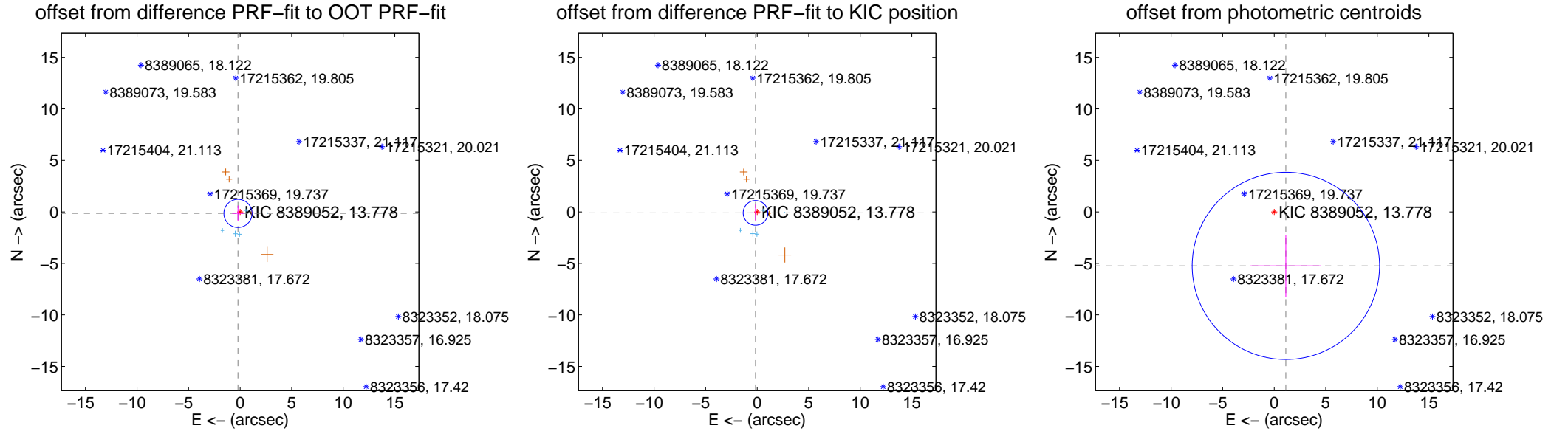
DV Centroid Data

Supplemental centroid analysis for 008389052-01. Kepler magnitude: 13.78. Transit SNR 3.25

There are 5 quarters with good PRF difference image offsets

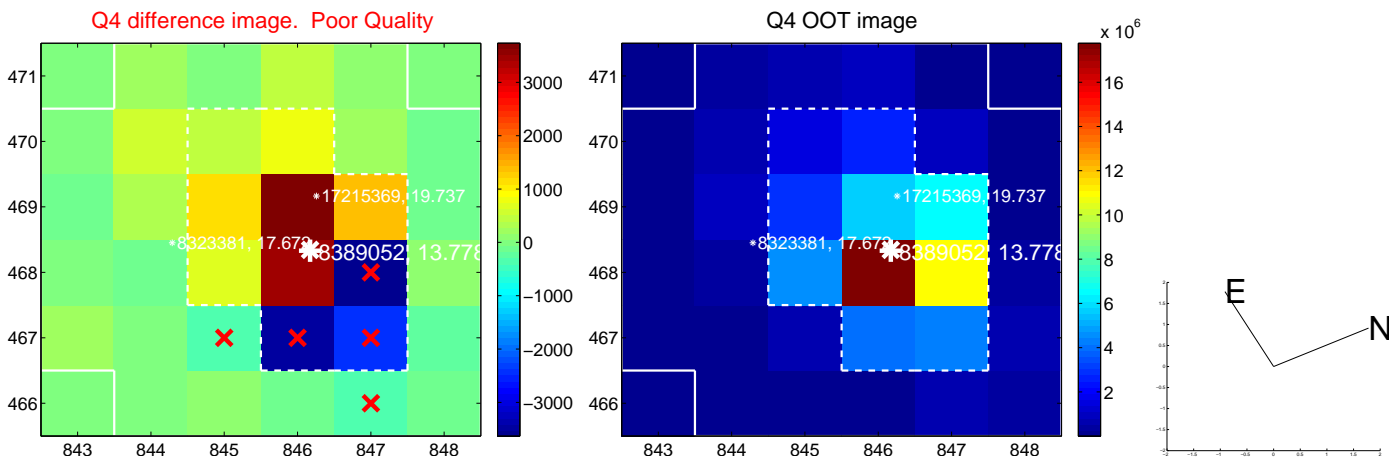
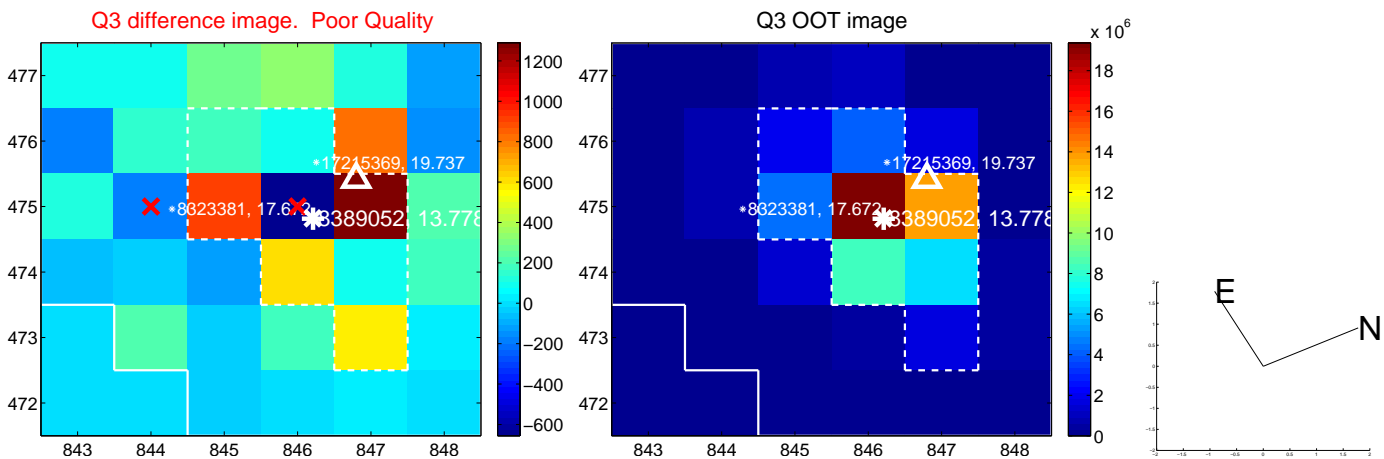
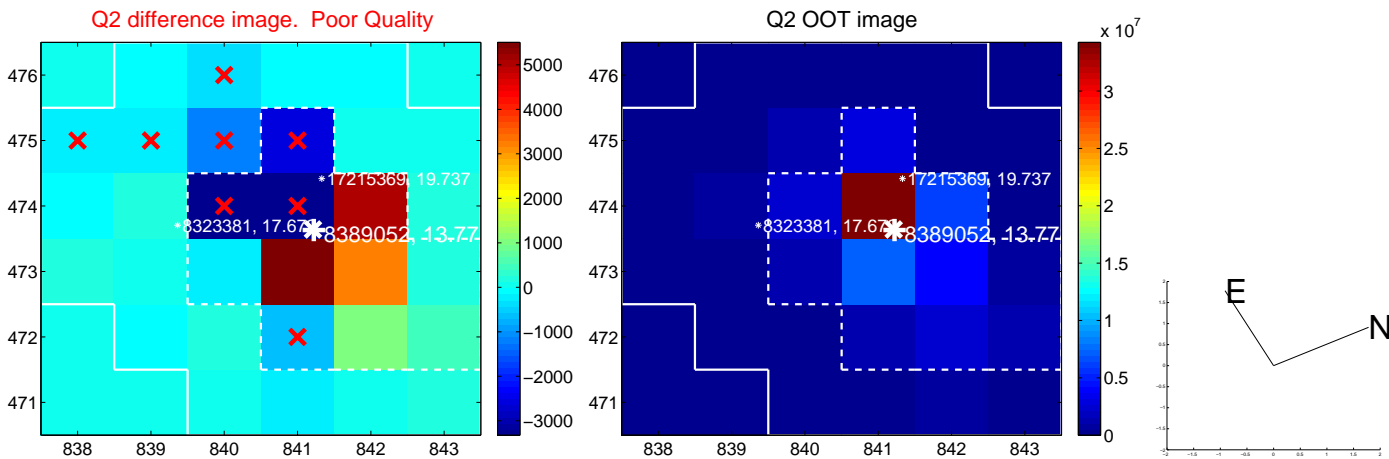
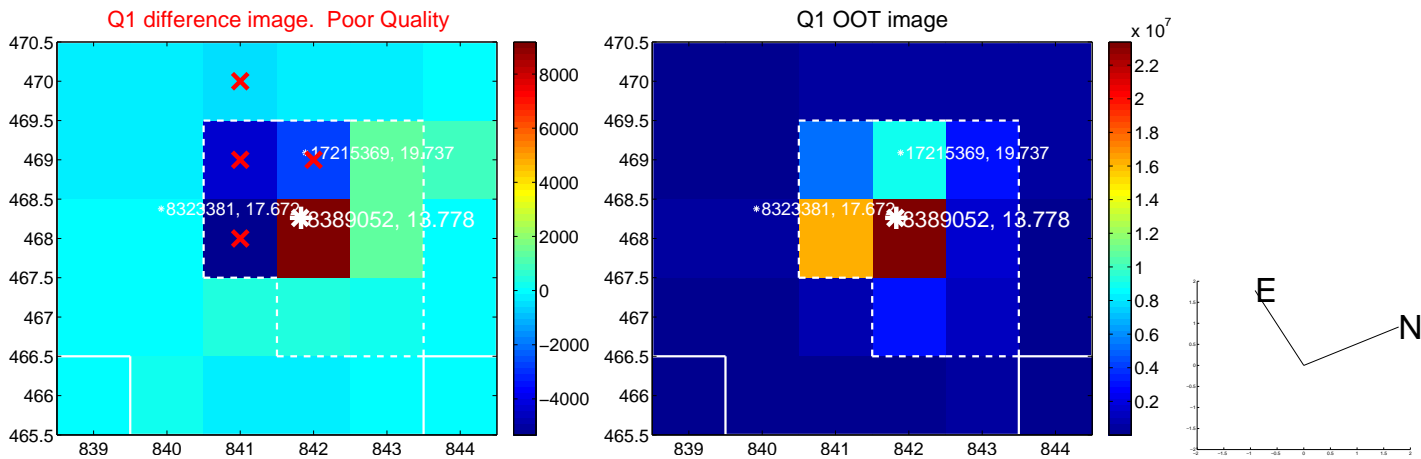
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.255 ± 0.456	0.56	0.209 ± 0.557	-0.146 ± 0.758
PRF-fit source offset from KIC position	0.184 ± 0.400	0.46	0.158 ± 0.475	-0.096 ± 0.806
photometric centroid source offset	5.36 ± 3.03	1.77	-1.13 ± 3.42	-5.24 ± 3.01

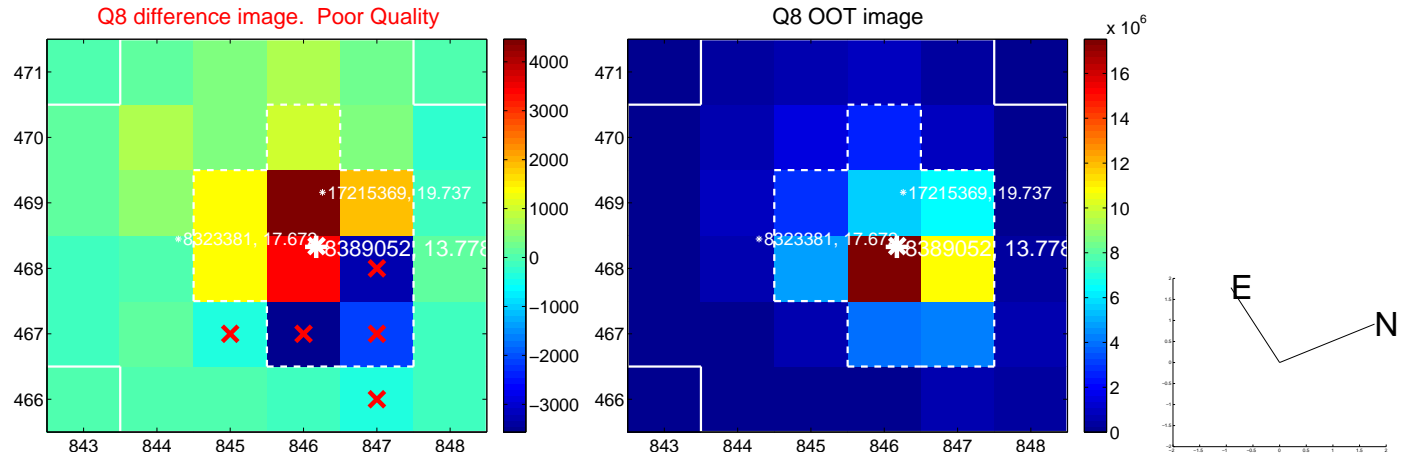
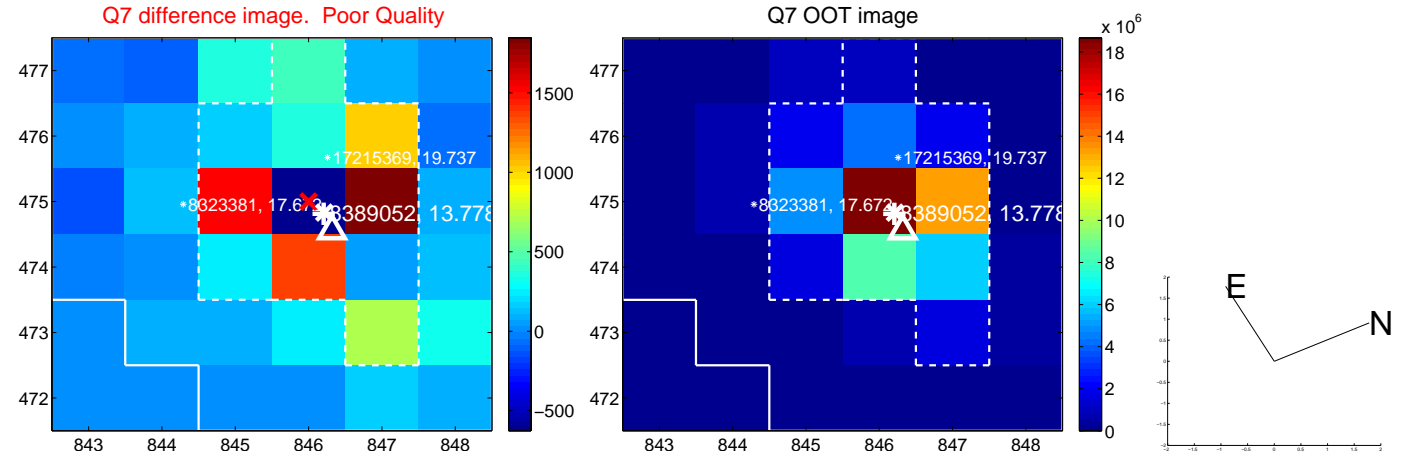
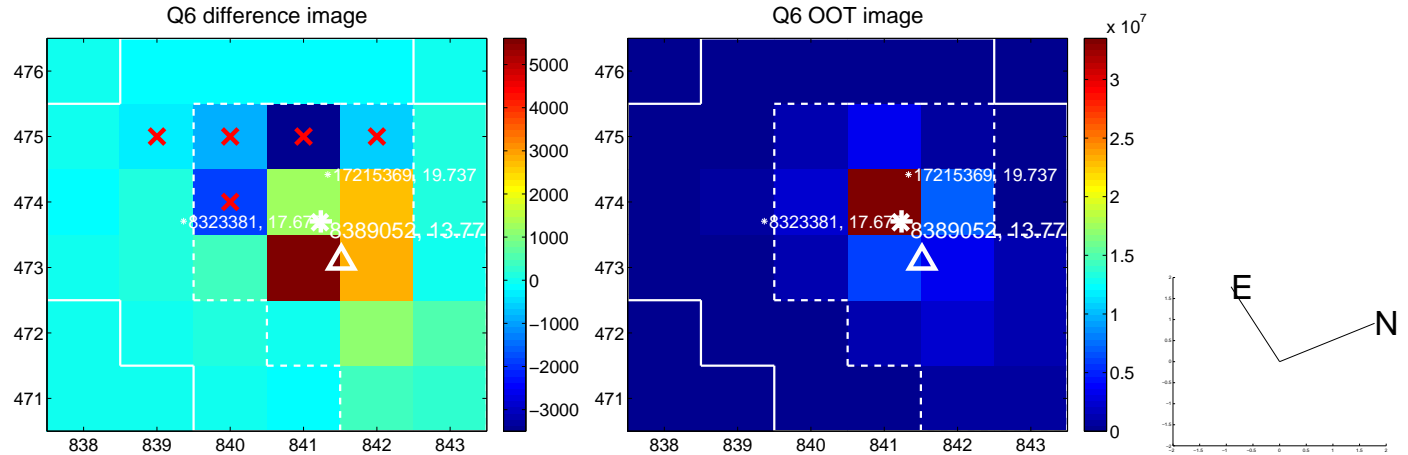
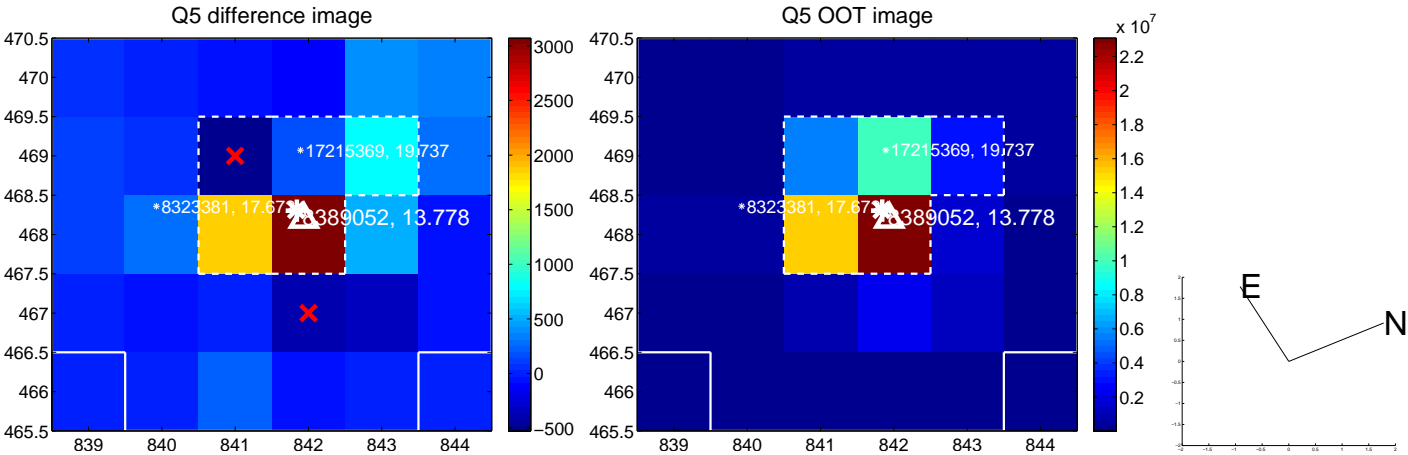


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

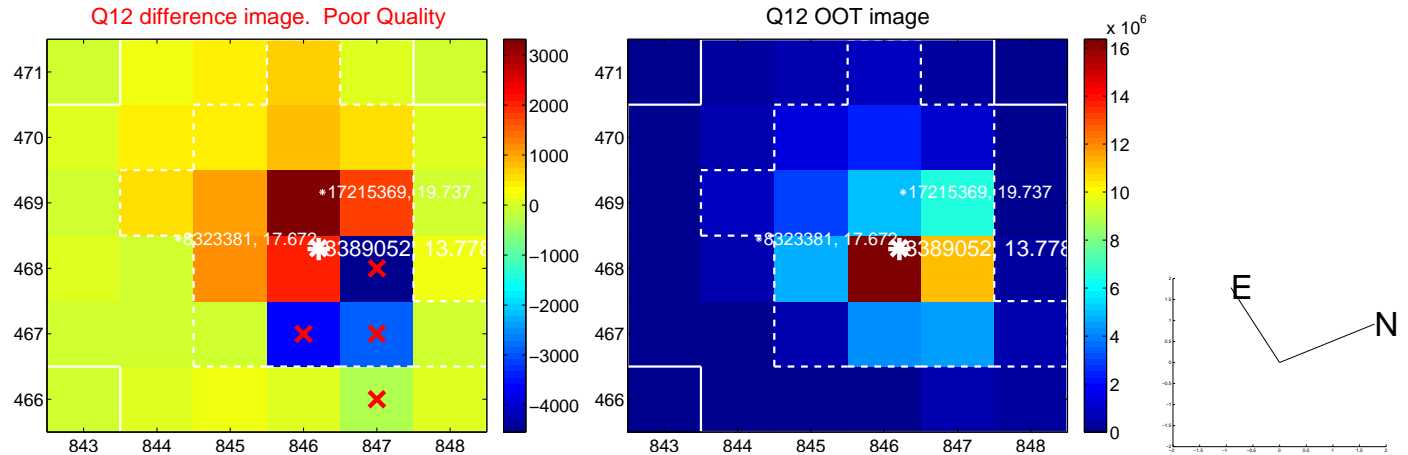
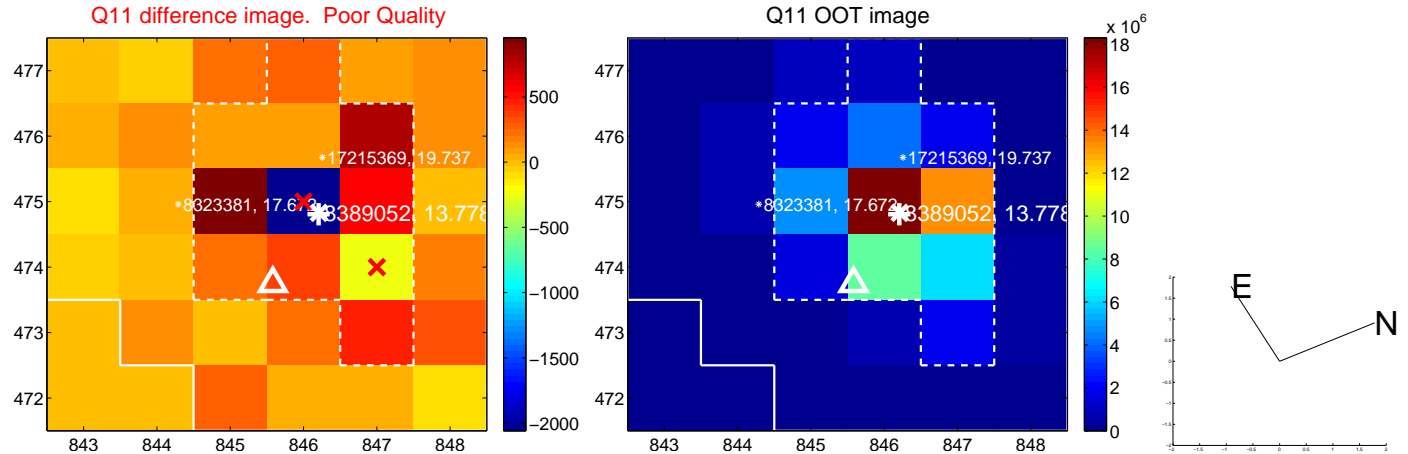
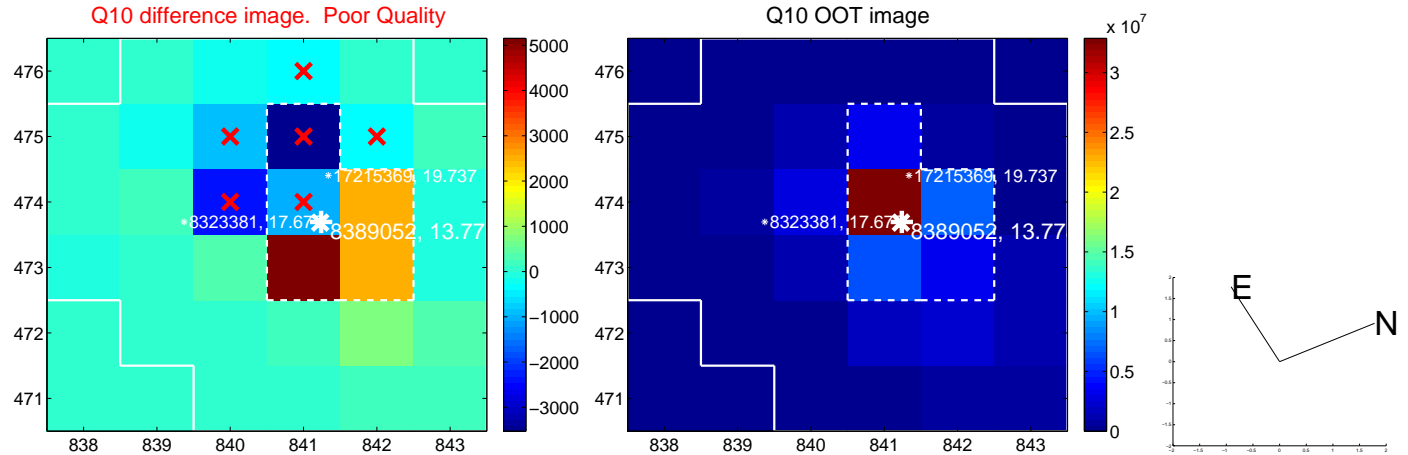
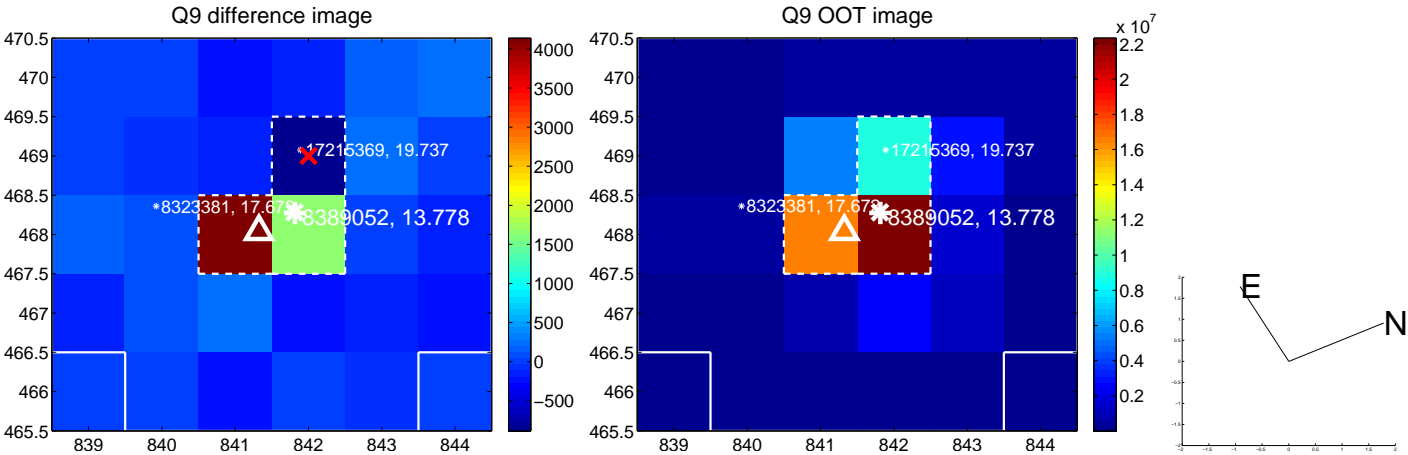
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



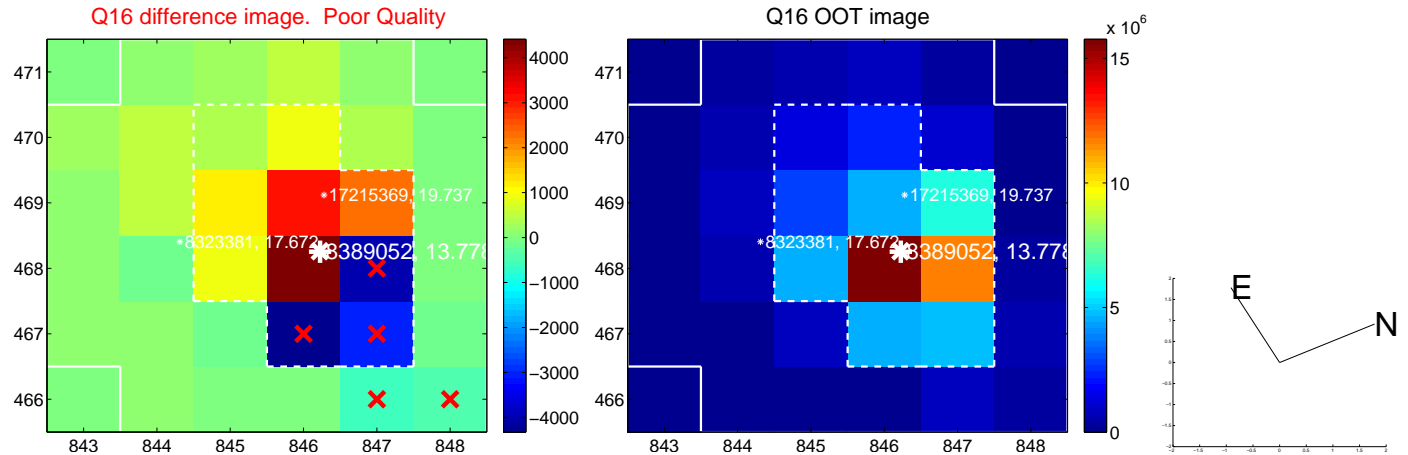
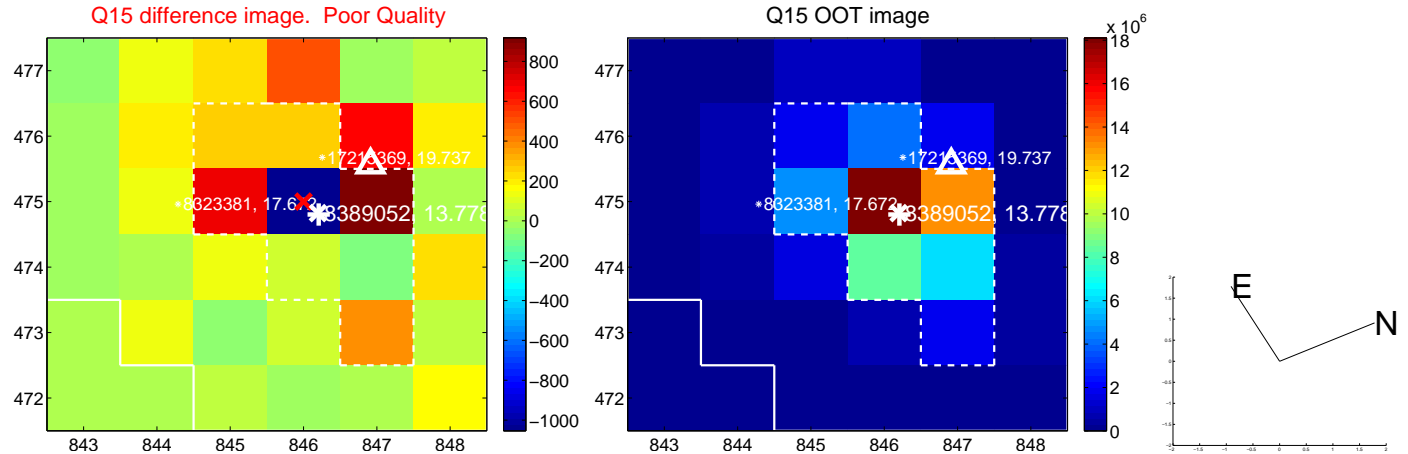
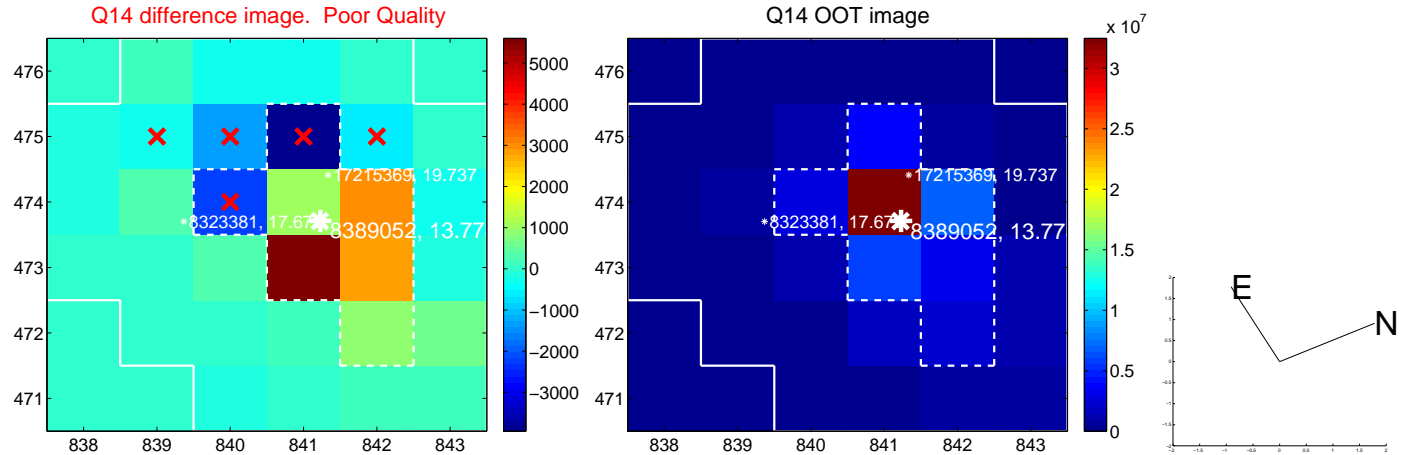
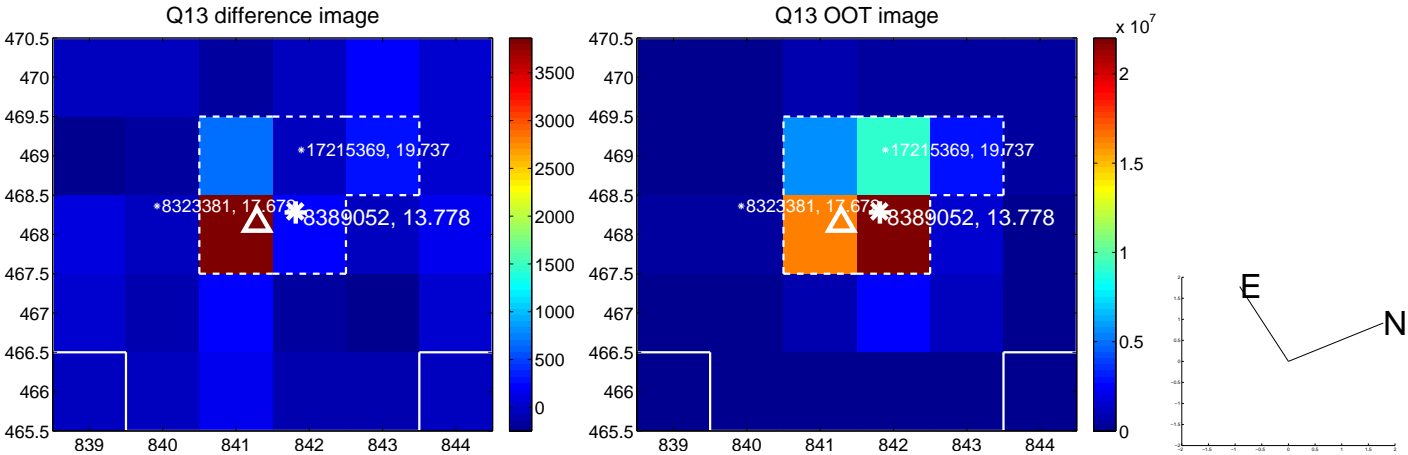
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



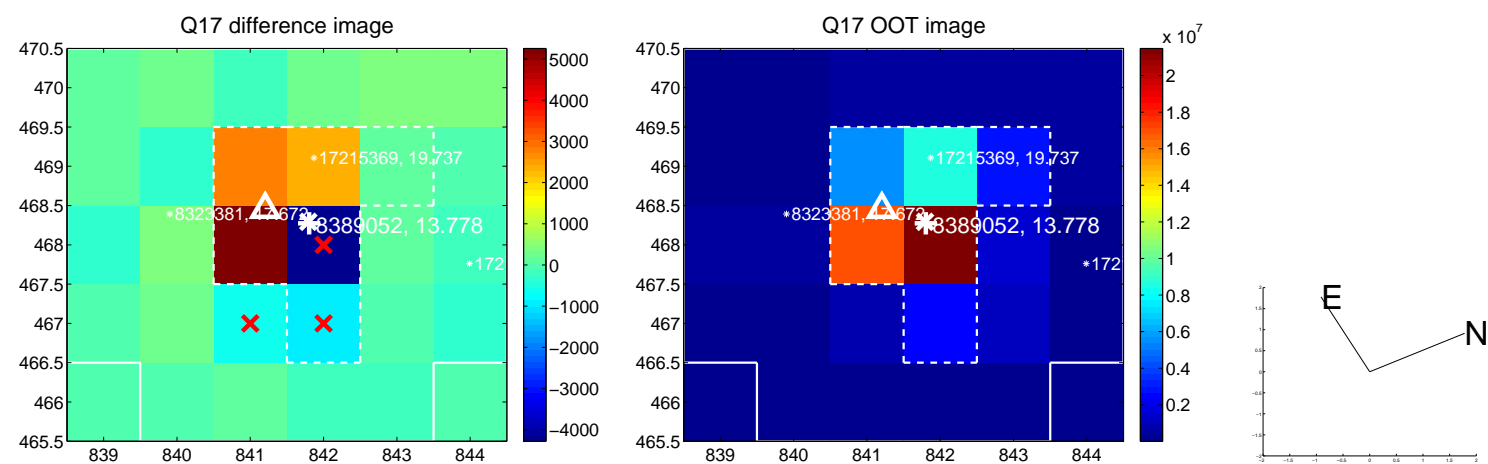
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



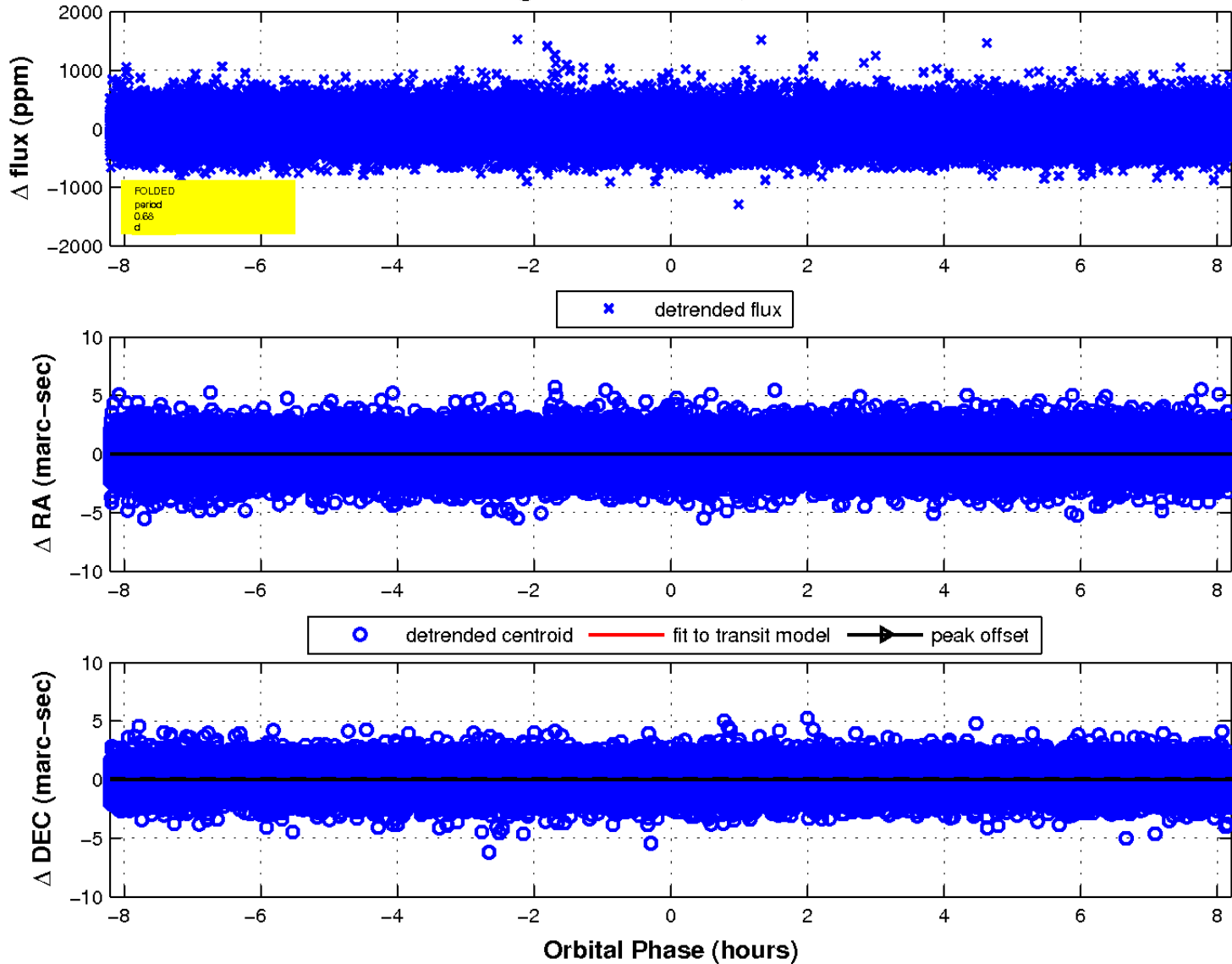
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

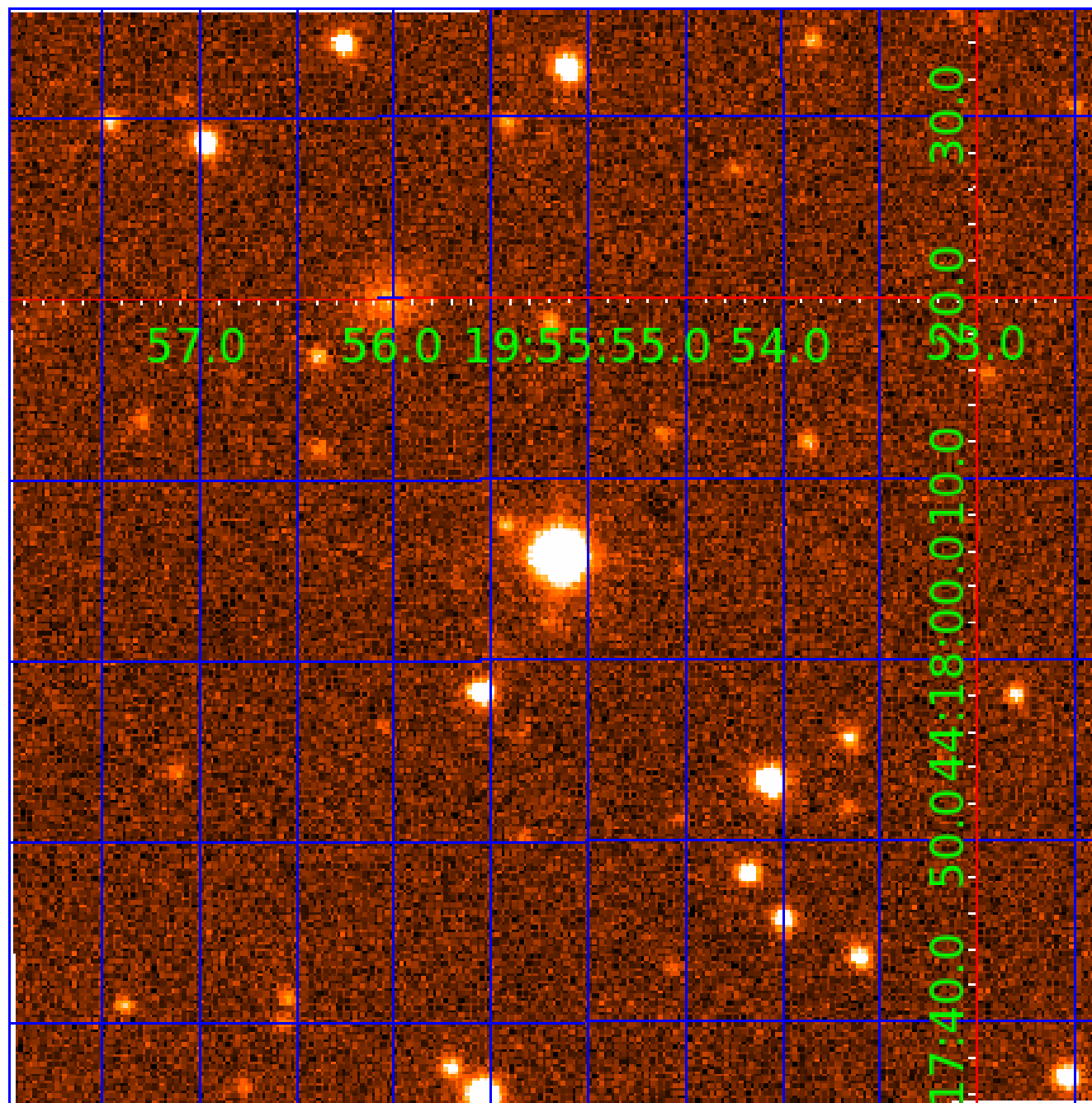


fluxWeightedCentroids, Planet 1 of 4



UKIRT Image

Declination



KIC 008389052

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})
008389052-01	OBS	No	0.684041	132.058620	6.6	5.083	8.5	3.2	1.62	5986	0.44	13509.86
008389052-02	OBS	No	8.899631	138.231103	236.3	1.465	11.3	14.5	1.62	5986	2.51	441.50
008389052-03	OBS	No	19.440513	148.848163	338.0	1.364	11.5	12.3	1.62	5986	3.01	155.77
008389052-04	OBS	No	7.468513	136.650798	407.1	0.937	13.4	15.8	1.62	5986	3.40	557.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008389052-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
008389052-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008389052-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS
008389052-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—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.

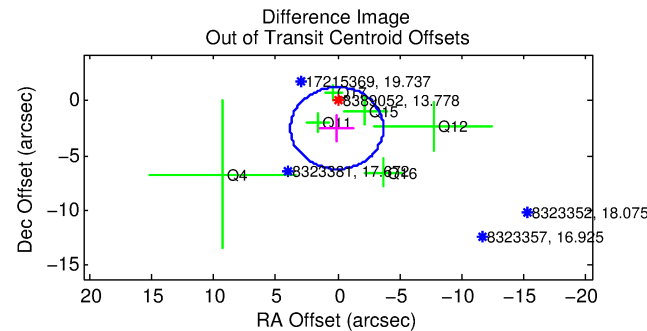
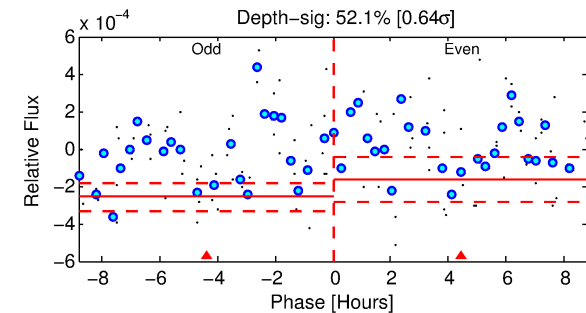
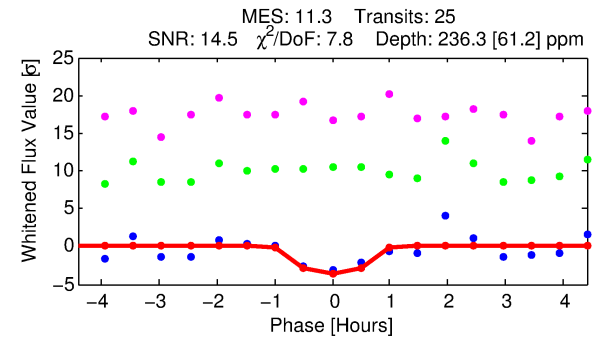
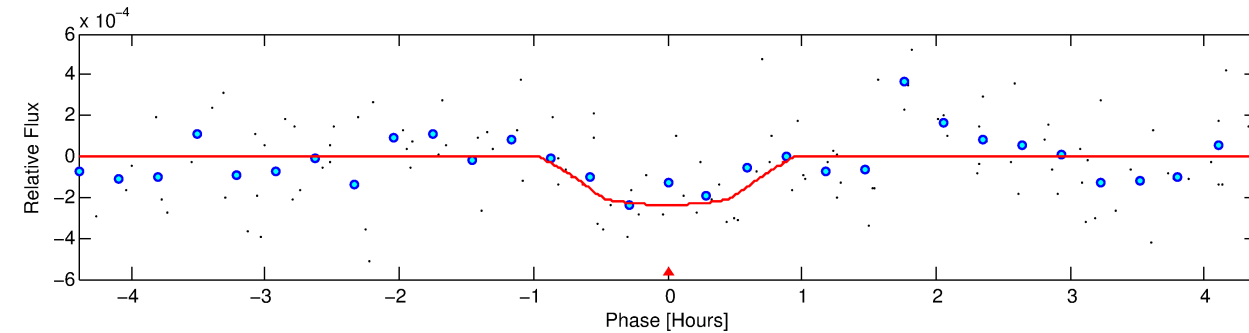
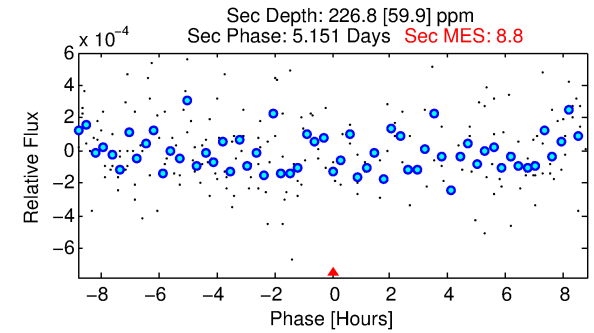
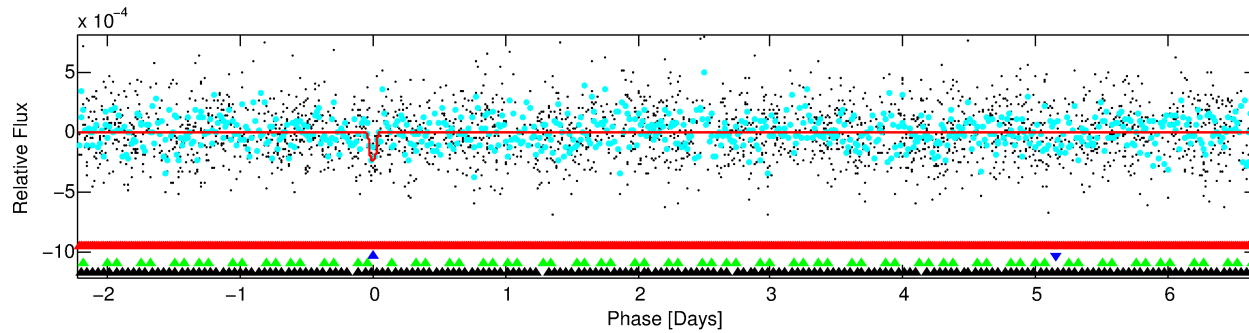
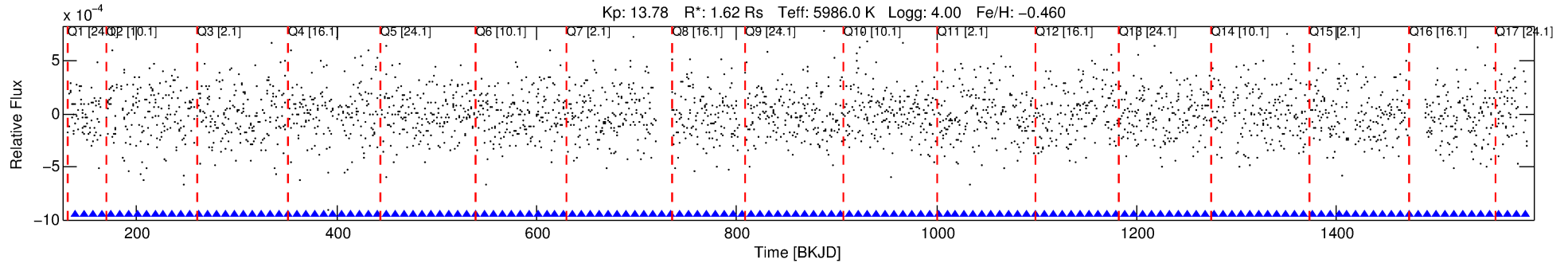
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008389052-02

No Significant Match Found

DV One-Page Summary

KIC: 8389052 Candidate: 2 of 4 Period: 8.900 d



DV Fit Results:

Period = 8.89963 [0.00011] d
Epoch = 138.2311 [0.0107] BKJD
Rp/R* = 0.0142 [0.0403]
a/R* = 45.94 [641.97]
b = 0.22 [60.85]
Seff = 441.50 [337.89]
Teq = 1169 [224] K
Rp = 2.51 [7.19] Re
a = 0.0826 [0.0370] AU
Ag = 135.37 [775.94] [0.17 σ]
Teffp = 6164 [8758] K [0.57 σ]

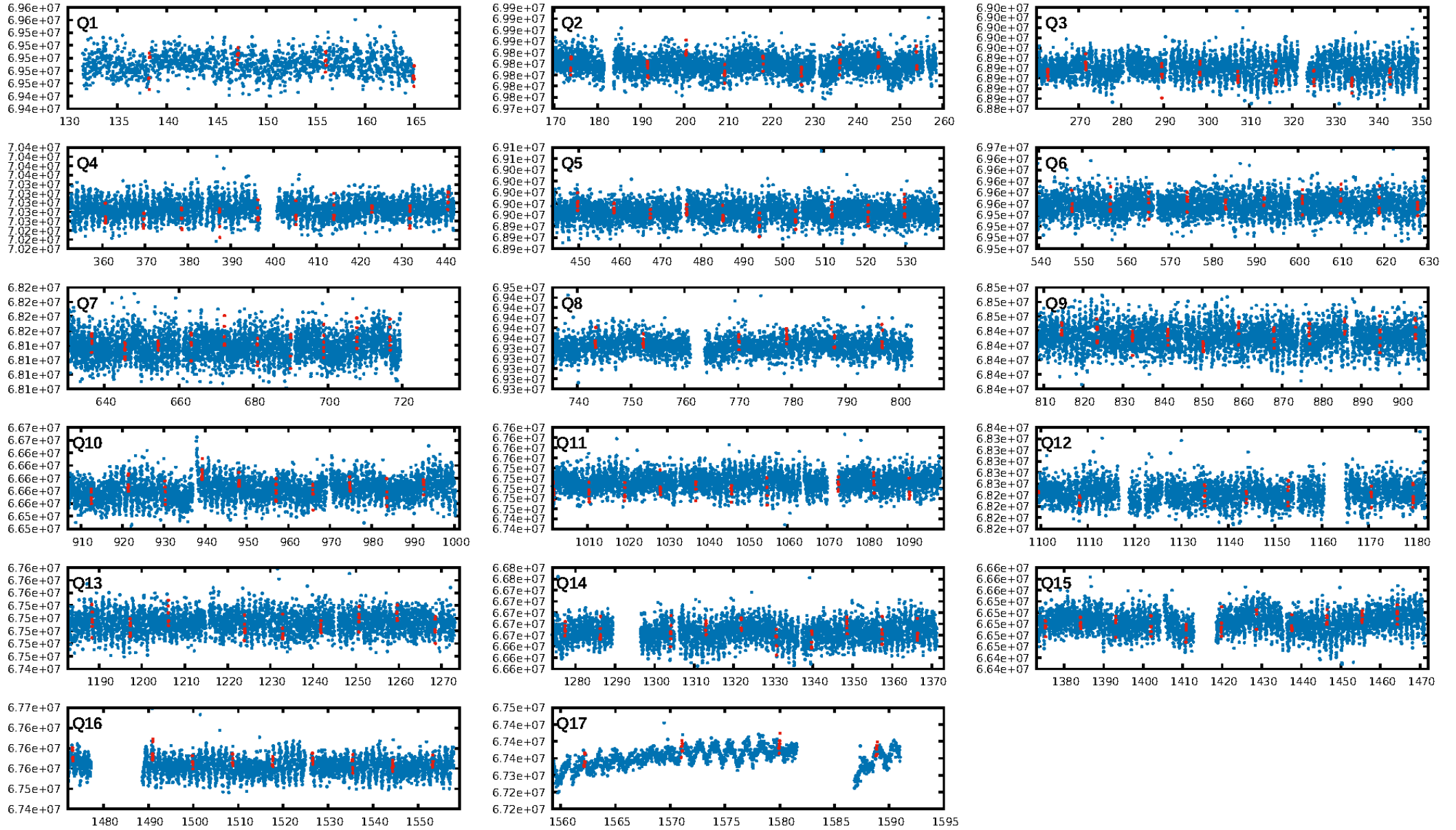
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [19.75 σ]
LongPeriod-sig: 100.0% [126.37 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 18.2%
Bootstrap-pfa: 2.09e-08
RollingBand-fgt: 1.00 [25/25]
GhostDiagnostic-chr: 0.5155
Centroid-sig: 92.7%
Centroid-so: 0.183 arcsec [0.28 σ]
OotOffset-rm: 2.483 arcsec [1.99 σ]
OotOffset-st: 0.2/3/1 [6]
KicOffset-rm: 2.541 arcsec [2.04 σ]
KicOffset-st: 0.2/3/1 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 0.06 [1/17]

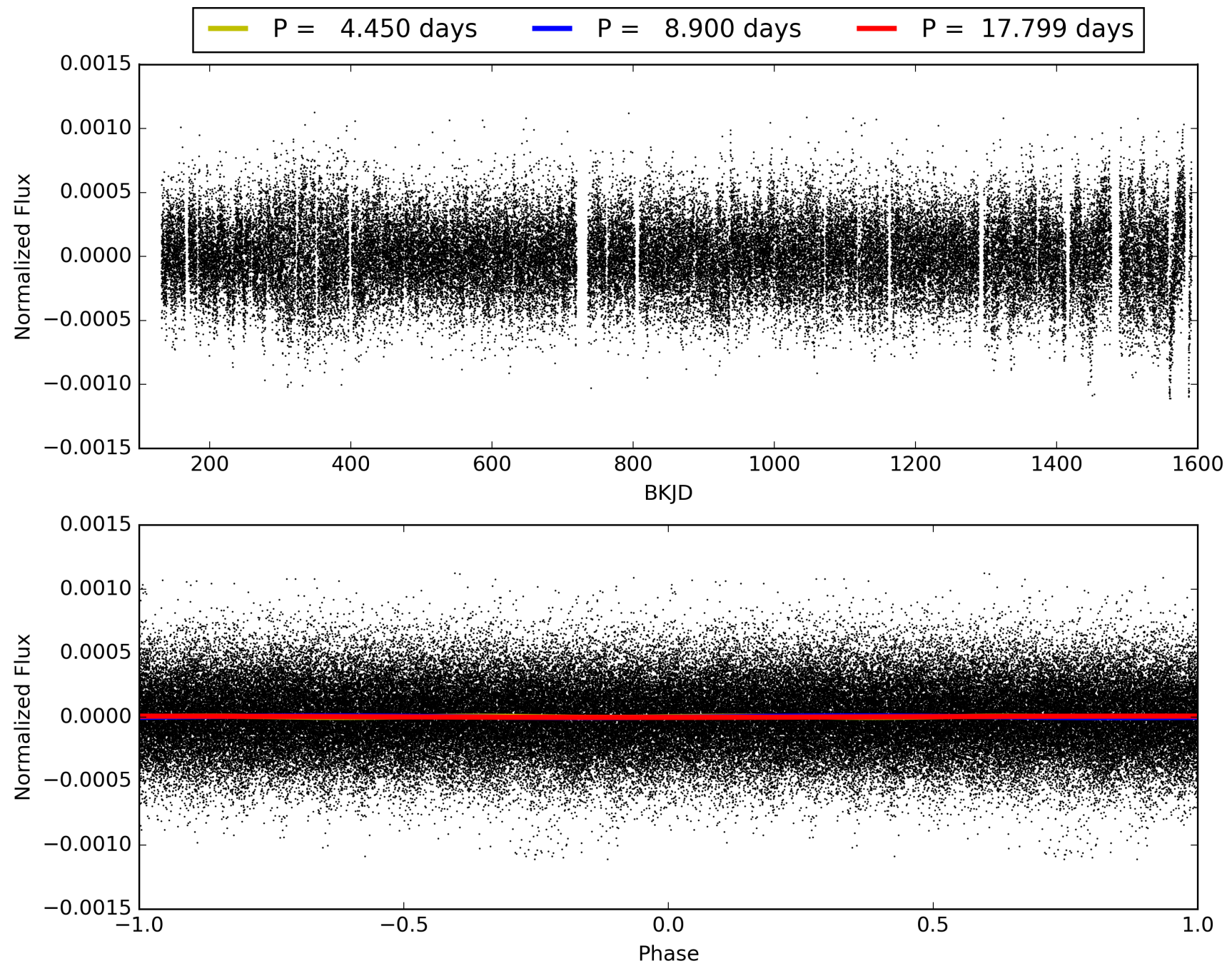
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:02:44 Z

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

TCE 008389052-02, PDC Light Curves

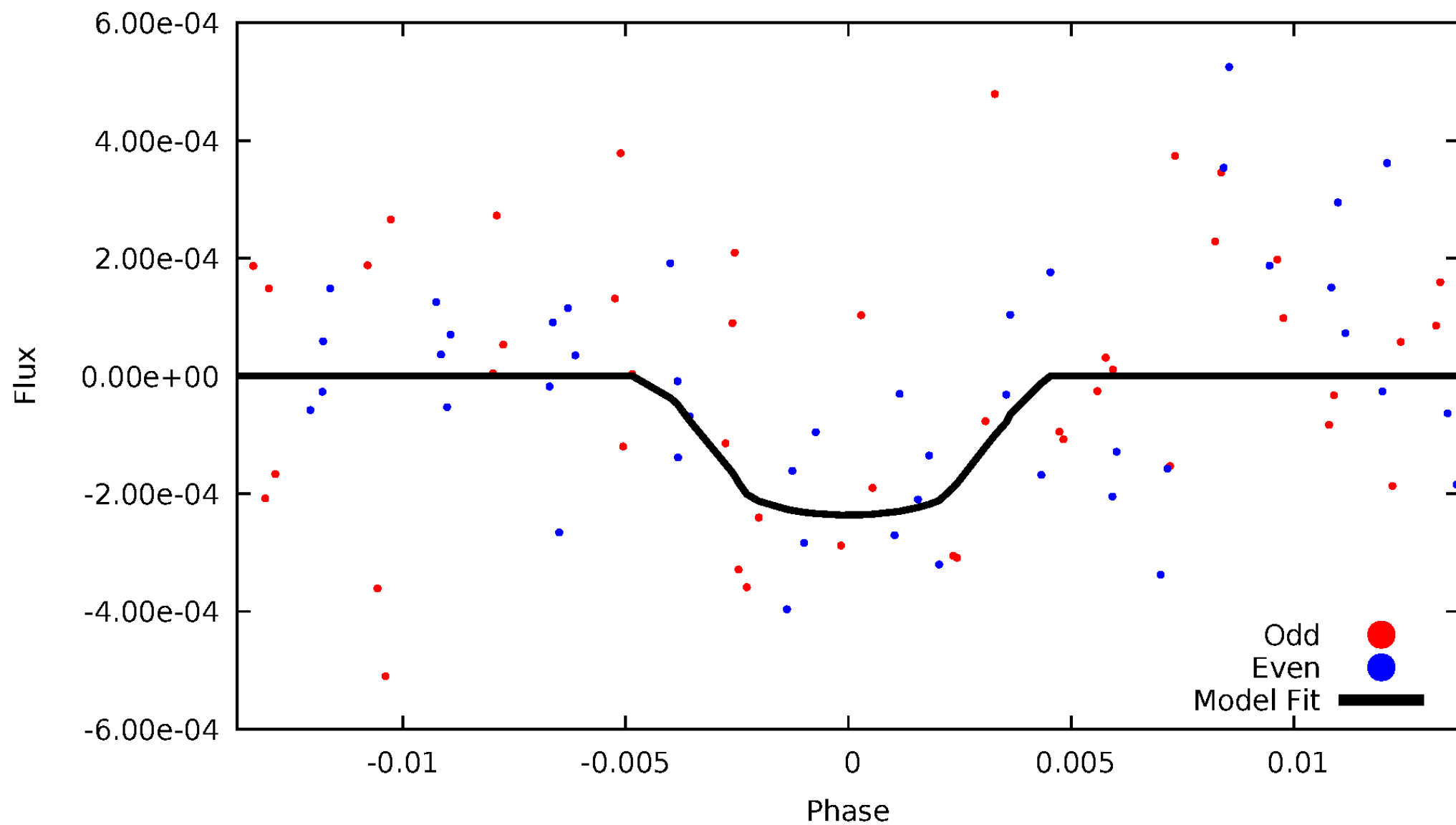


TCE 008389052-02



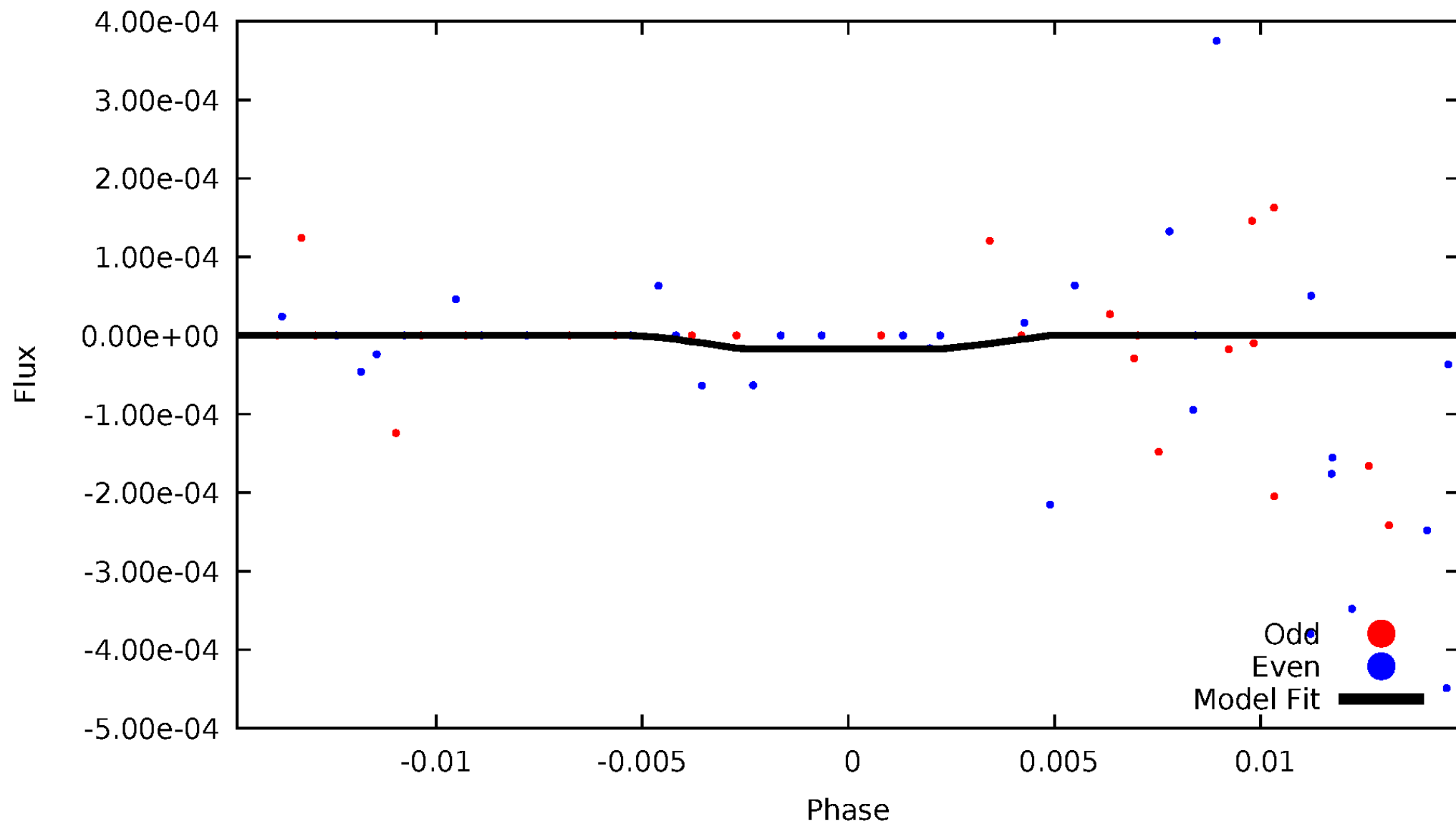
DV Odd/Even

TCE 008389052-02



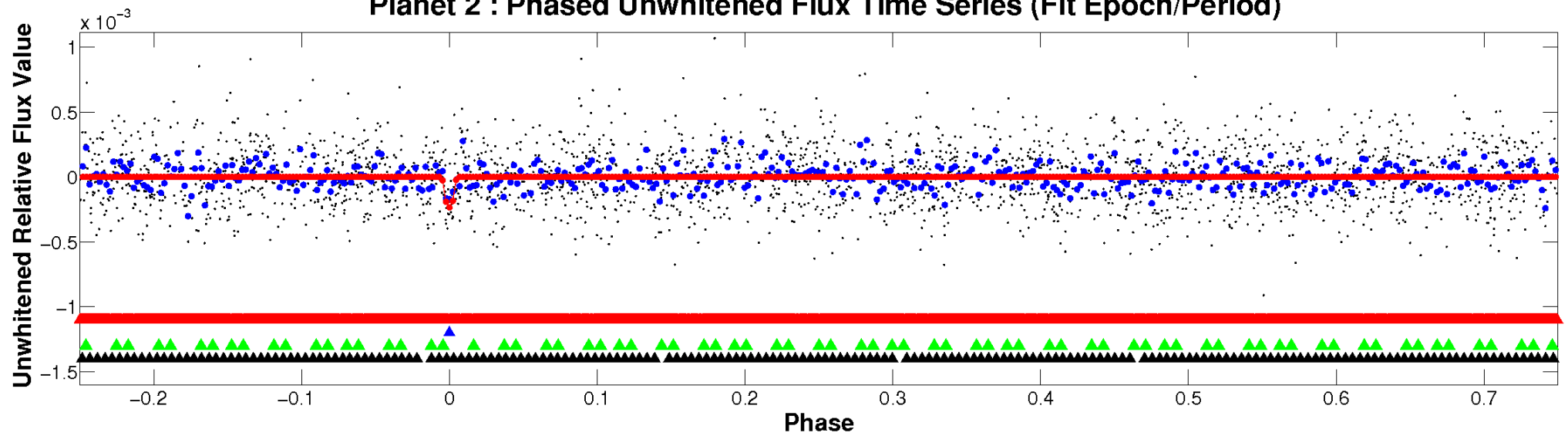
ALT Odd/Even

TCE 008389052-02

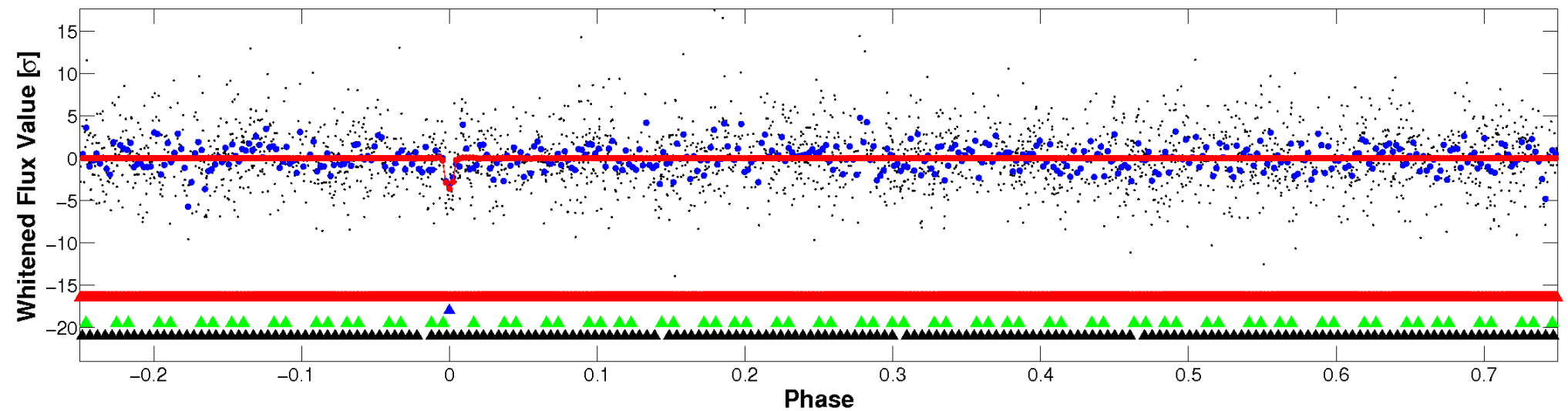


Non-Whitened Vs. Whitened Light Curve

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

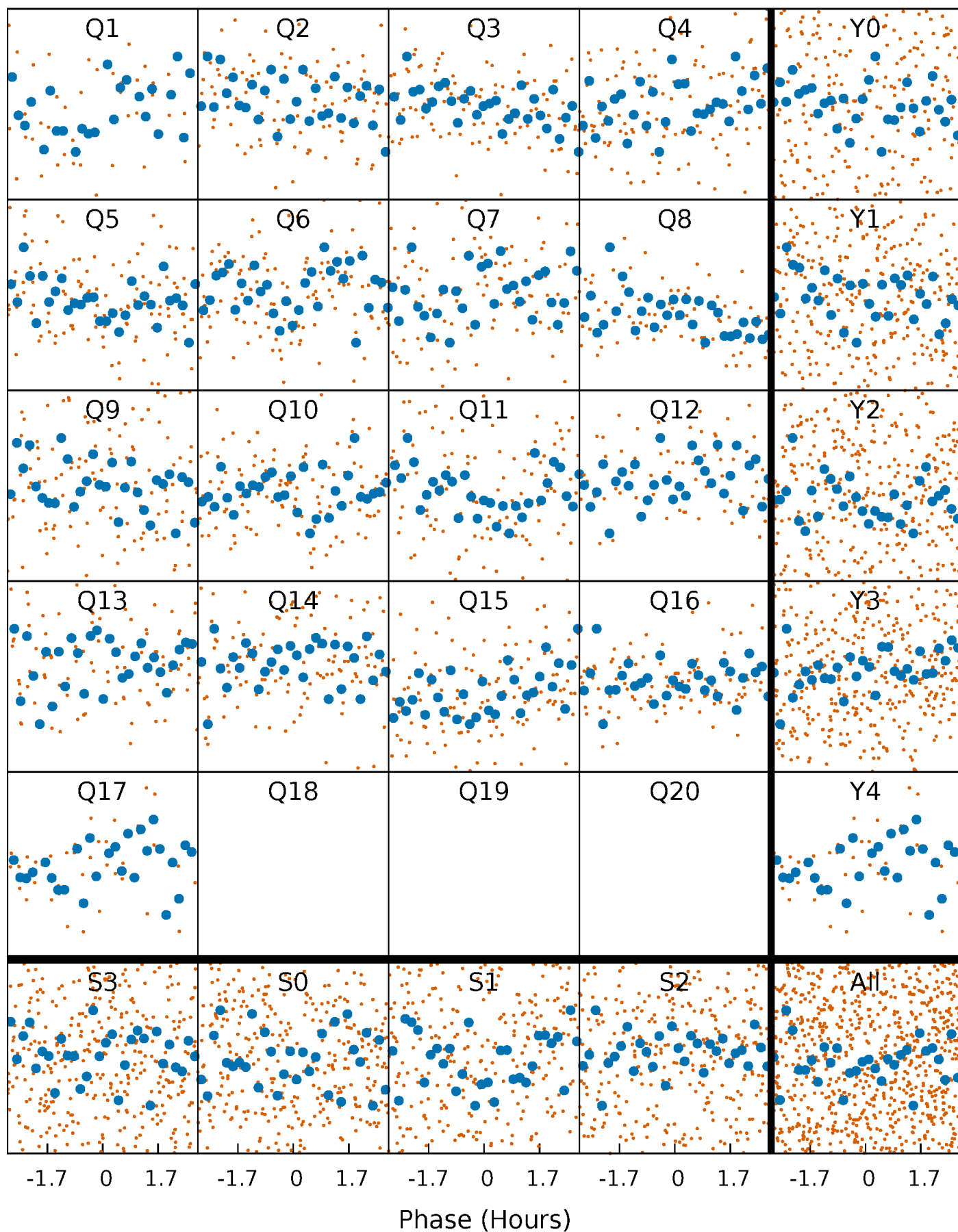


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



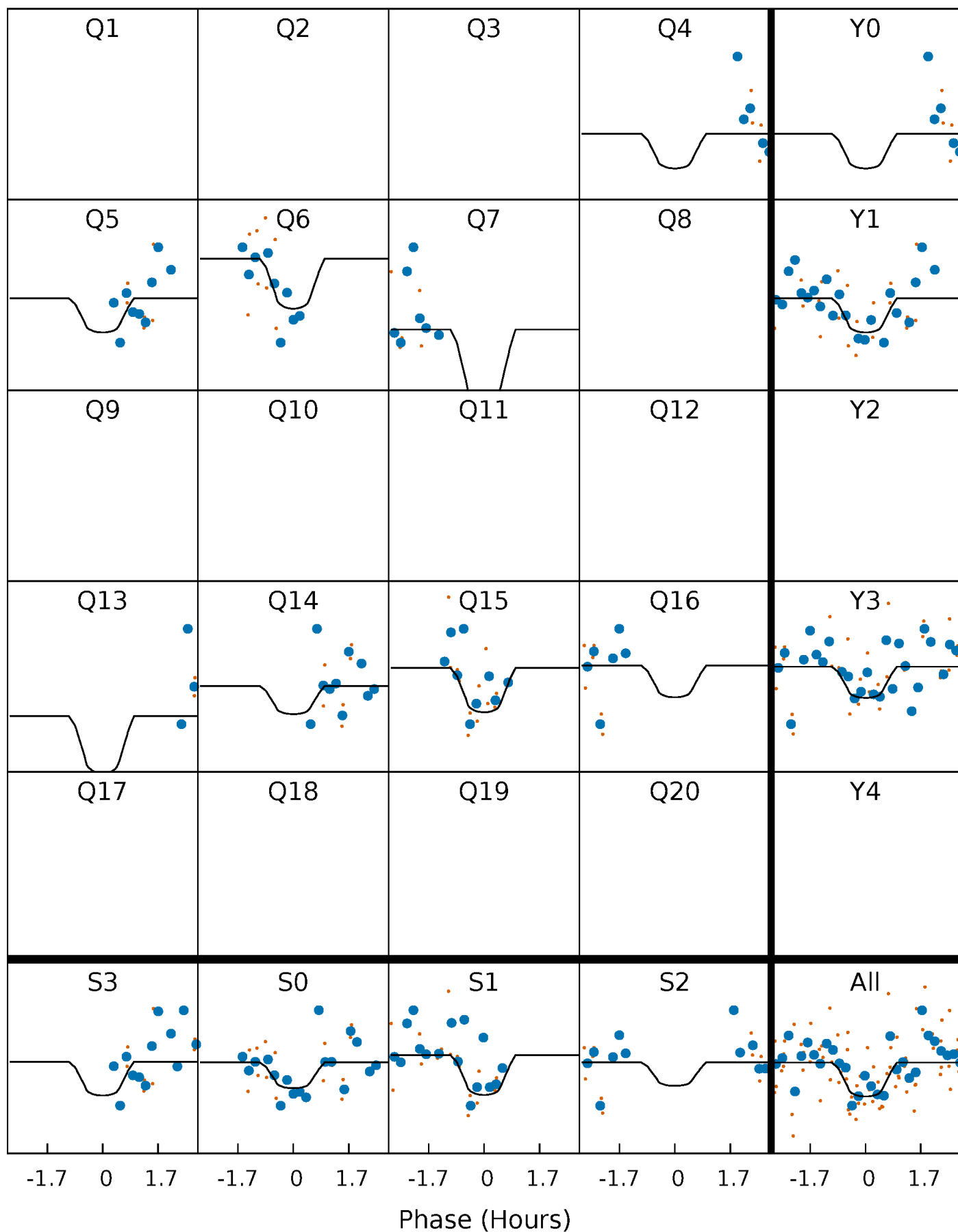
PDC Quarter-Phased Transit Curves

TCE 008389052-02 P= 8.899631 Days $T_0=138.231103$ (BKJD)



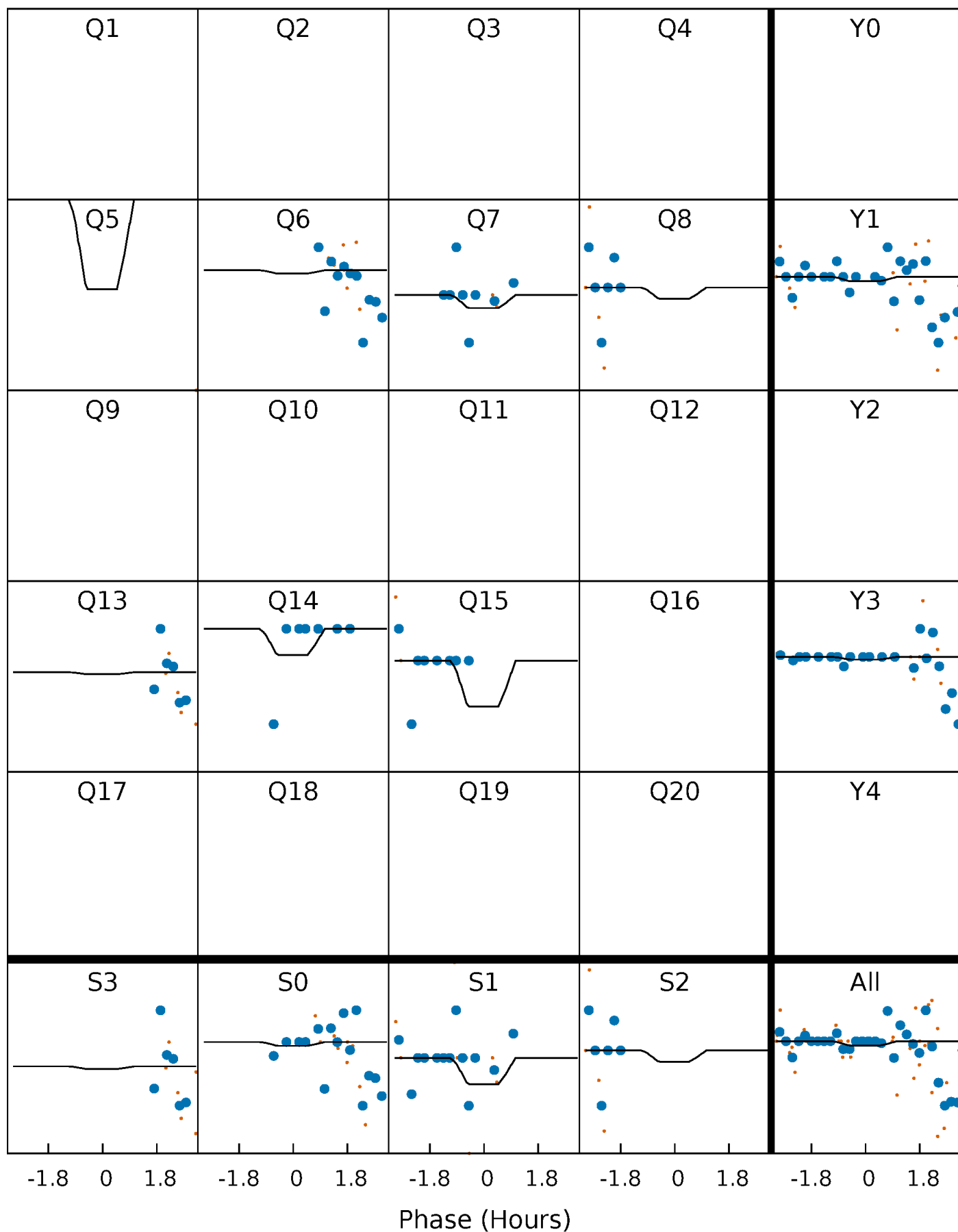
DV Quarter-Phased Transit Curves

TCE 008389052-02 P= 8.899631 Days $T_0=138.231103$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

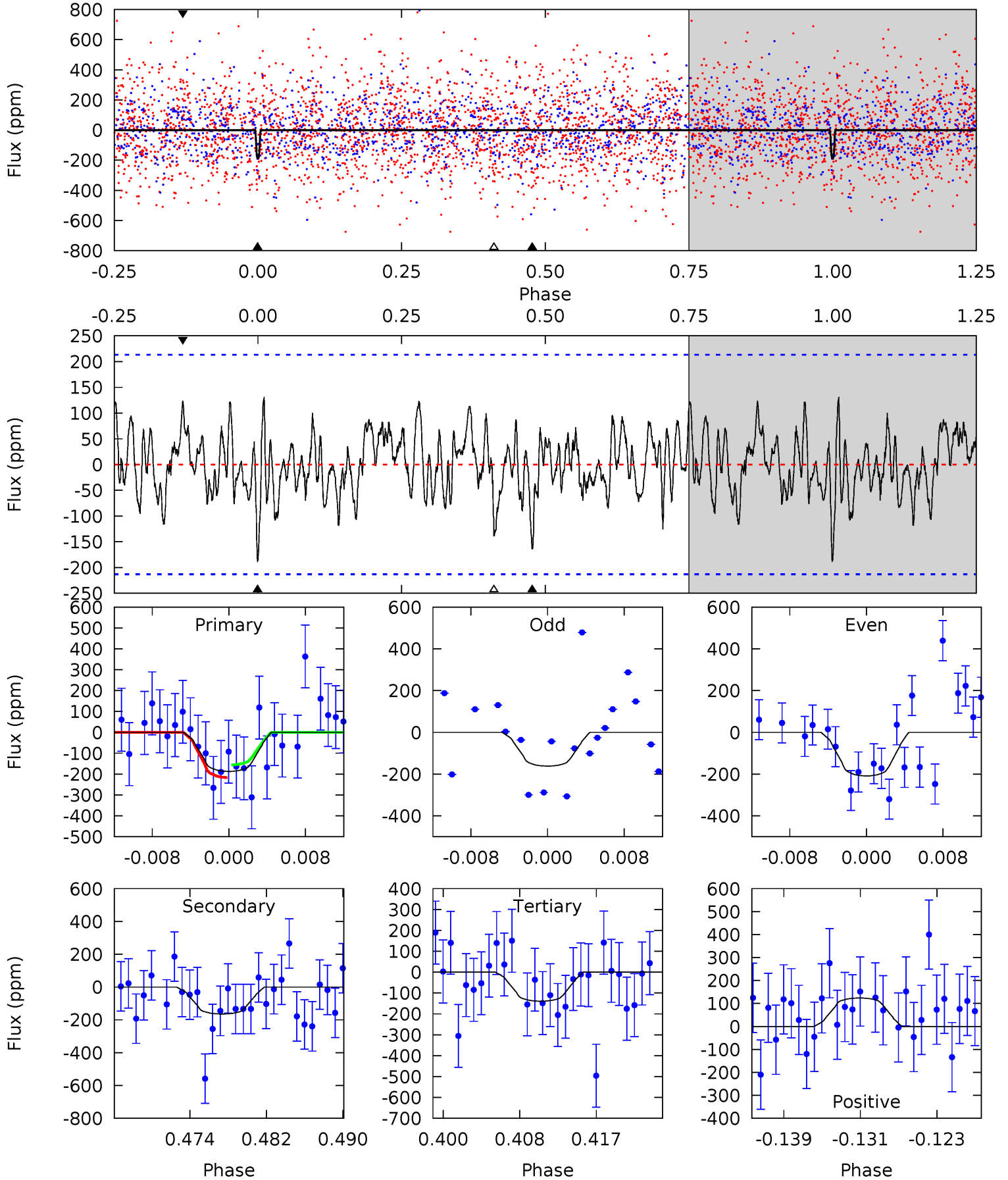
TCE 008389052-02 $P = 8.901429$ Days $T_0 = 138.032698$ (BKJD)



DV Model-Shift Uniqueness Test

008389052-02, P = 8.899631 Days, E = 129.331472 Days

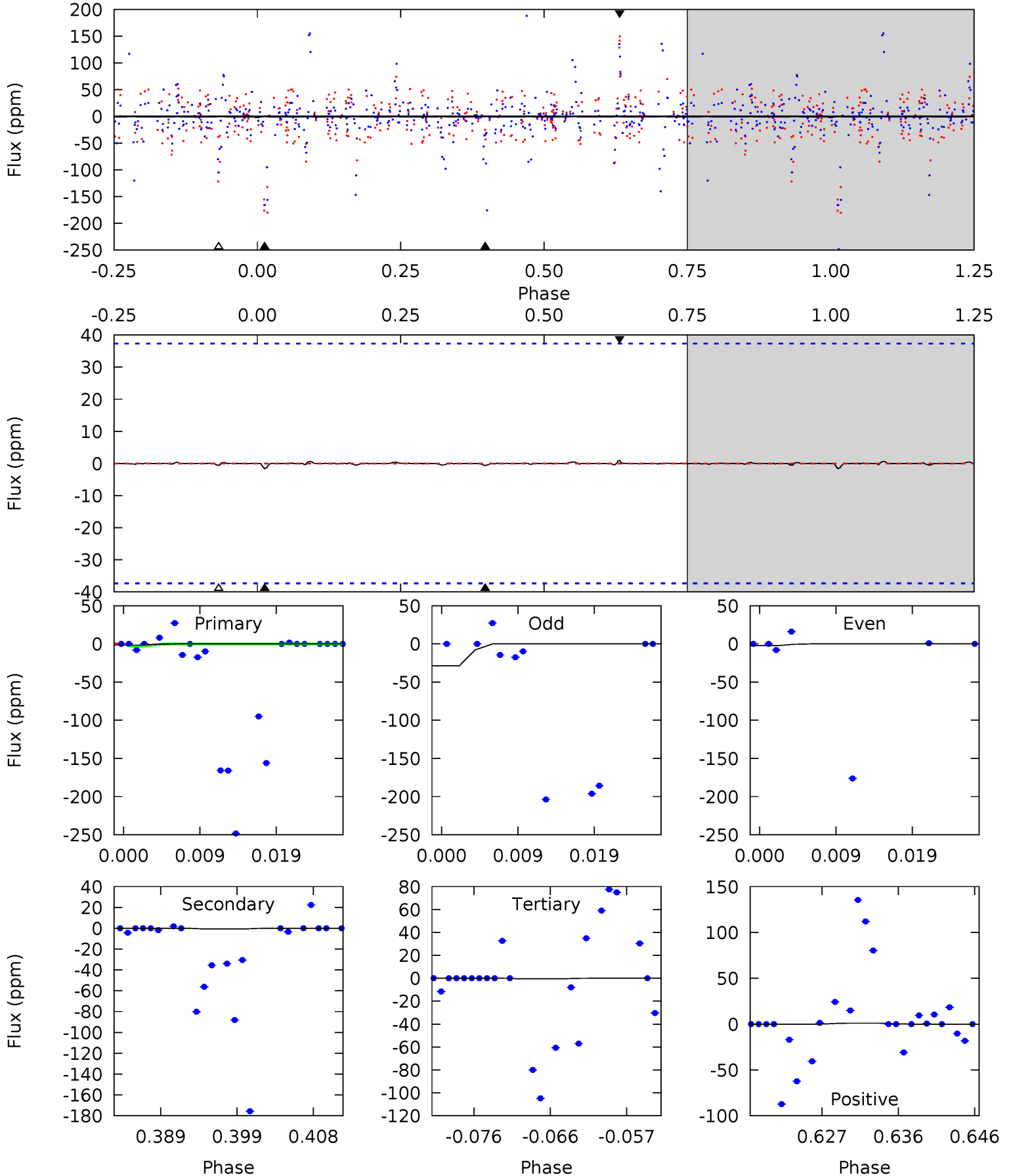
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.45	3.90	3.31	2.94	5.06	2.65	1.22	1.14	1.50	0.60	0.96	0.56	1.03	0.41	0.73



Alt Model-Shift Uniqueness Test

008389052-02, P = 8.901429 Days, E = 129.131269 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.22	0.09	0.08	0.13	5.04	2.59	0.02	0.14	0.09	0.02	-0.04	1.11	1.00	0.37	0



Stellar Parameters For KIC 008389052

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5986^{+179}_{-179}	$3.997^{+0.458}_{-0.153}$	$-0.460^{+0.300}_{-0.250}$	$1.618^{+0.449}_{-0.674}$	$0.949^{+0.127}_{-0.127}$	$0.315^{+1.179}_{-0.137}$
	+3%/-3%	+11%/-4%	+65%/-54%	+28%/-42%	+13%/-13%	+374%/-43%
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 008389052-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-164±42	$5.53^{+6.10}_{-3.82}$	1597^{+148}_{-201}	3973^{+2322}_{-804}	21^{+184}_{-16}
Alt.	-1±7	$4.77^{+5.66}_{-3.46}$	1601^{+126}_{-188}	-2215^{+5066}_{-650}	$0.040^{+2.851}_{-1.956}$

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

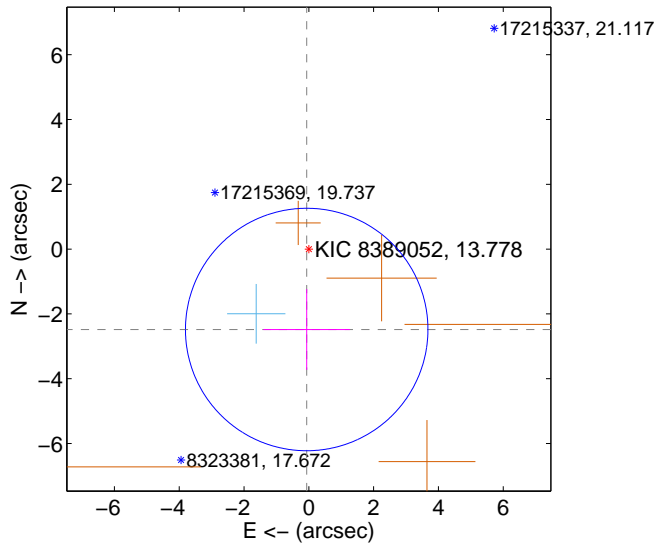
Supplemental centroid analysis for 008389052-02. Kepler magnitude: 13.78. Transit SNR 14.51

There are 1 quarters with good PRF difference image offsets

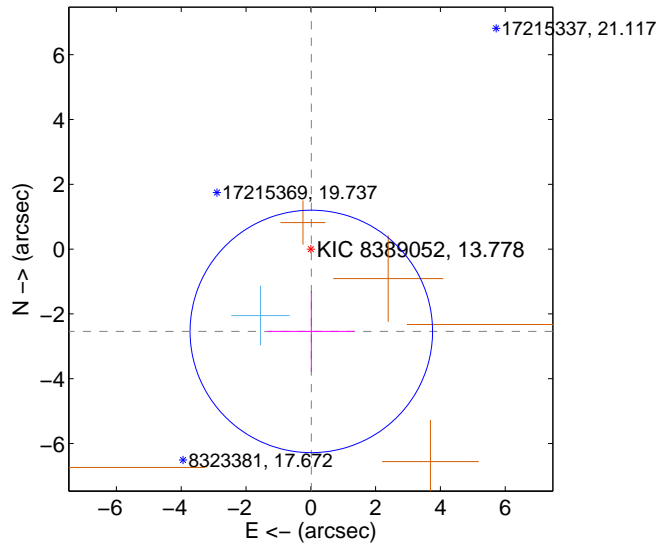
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.483 ± 1.247	1.99	0.066 ± 1.332	-2.482 ± 1.247
PRF-fit source offset from KIC position	2.541 ± 1.247	2.04	-0.016 ± 1.332	-2.541 ± 1.247
photometric centroid source offset	0.18 ± 0.66	0.28	0.18 ± 0.67	-0.05 ± 0.56

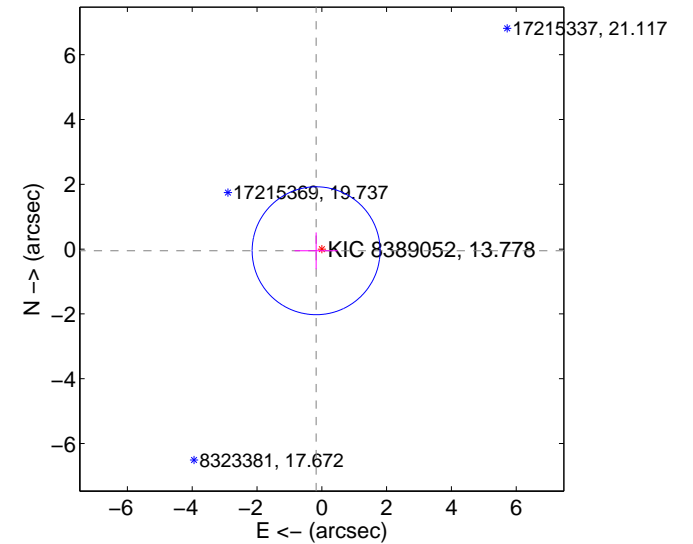
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

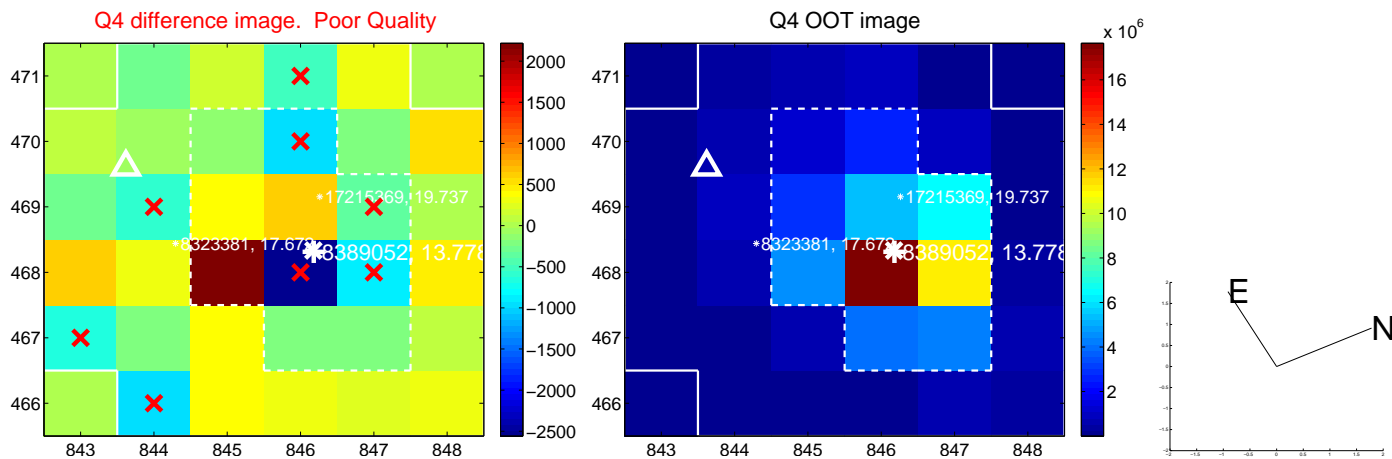
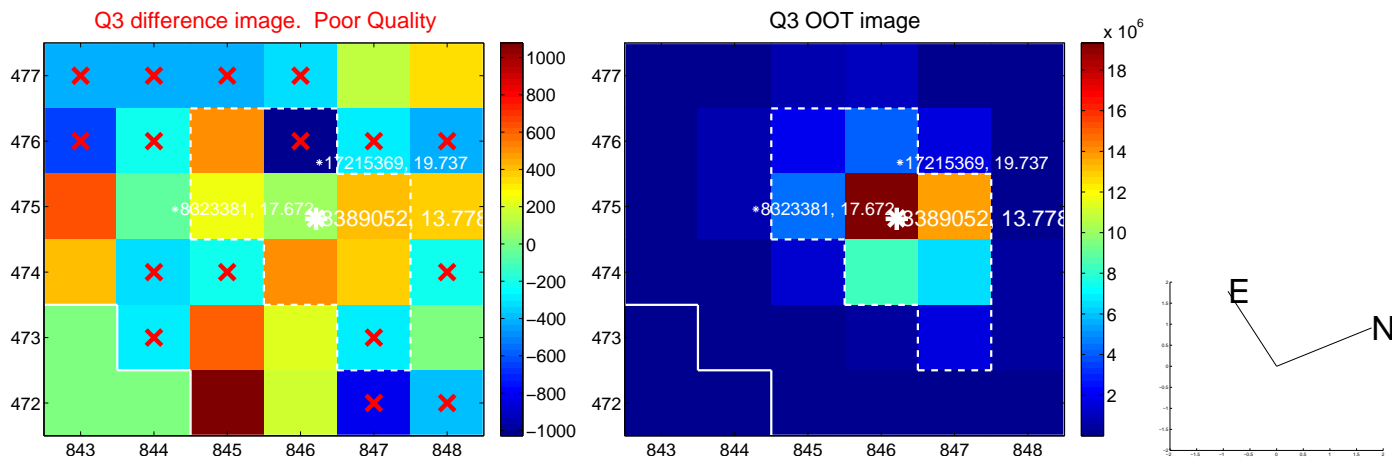
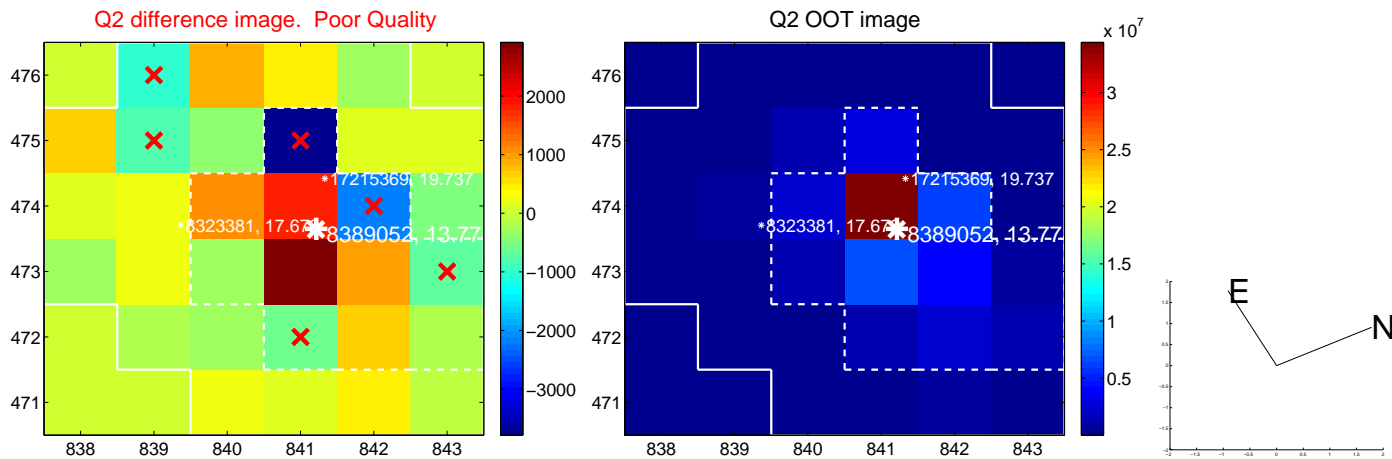
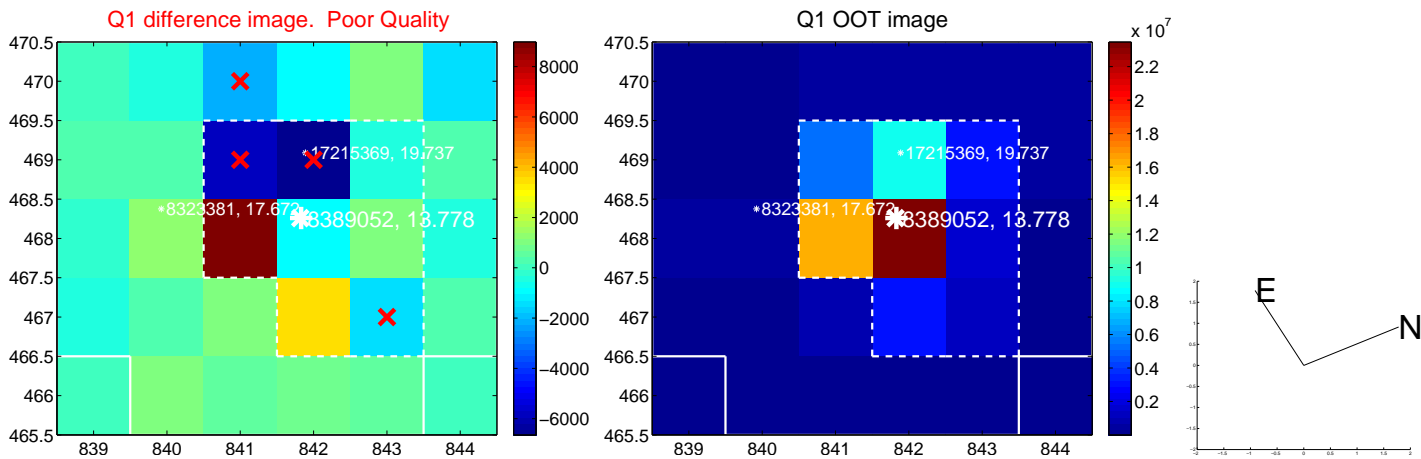


offset from photometric centroids

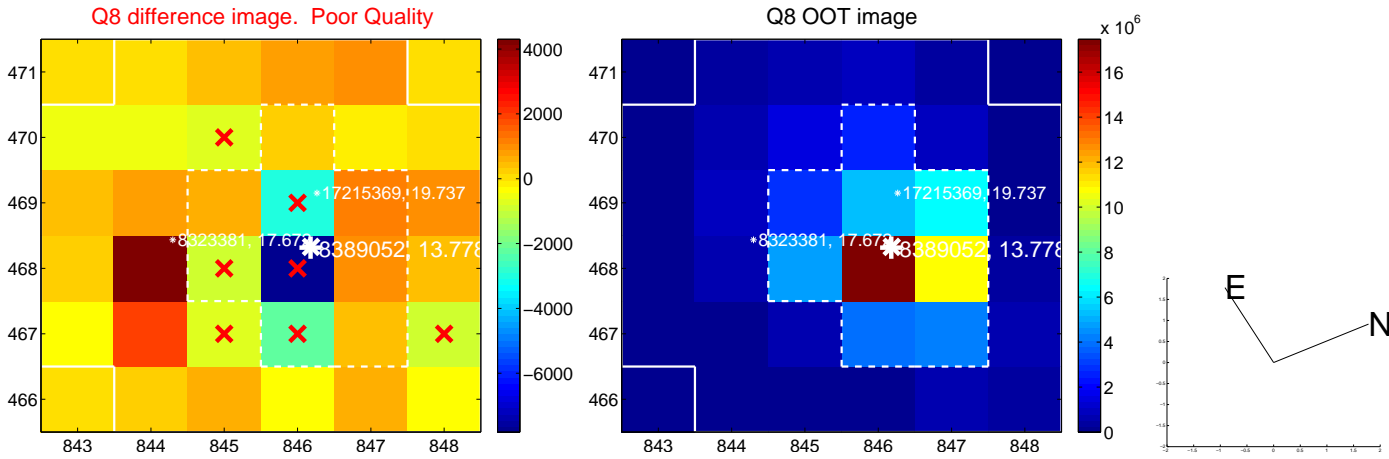
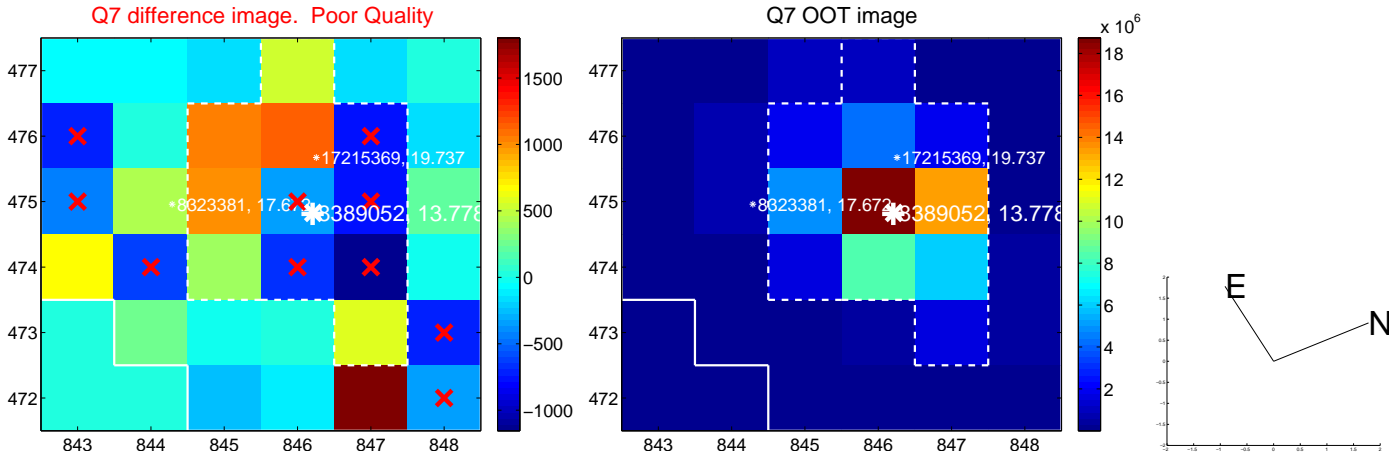
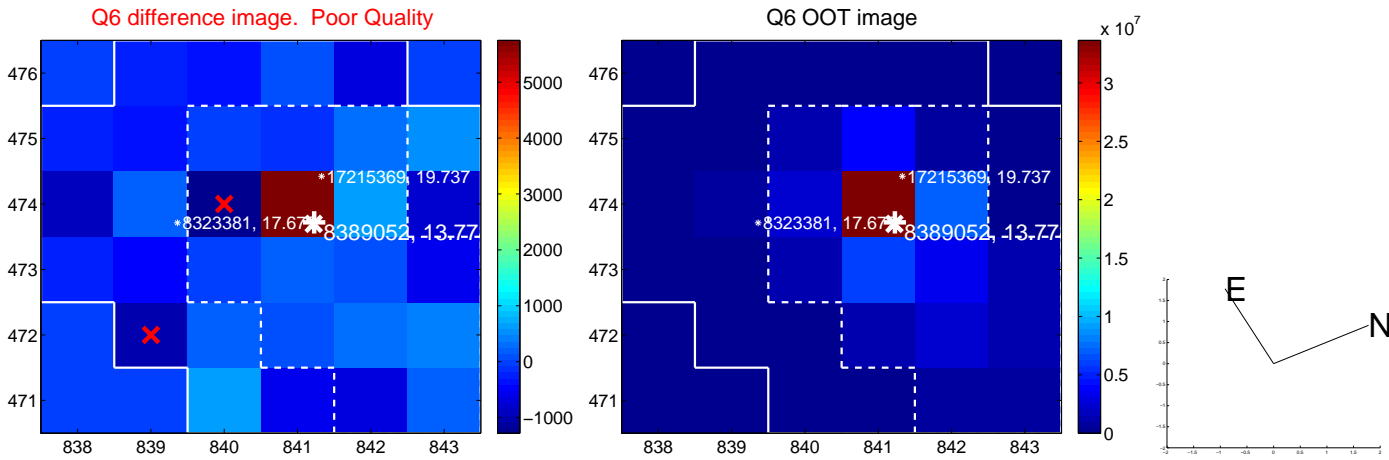
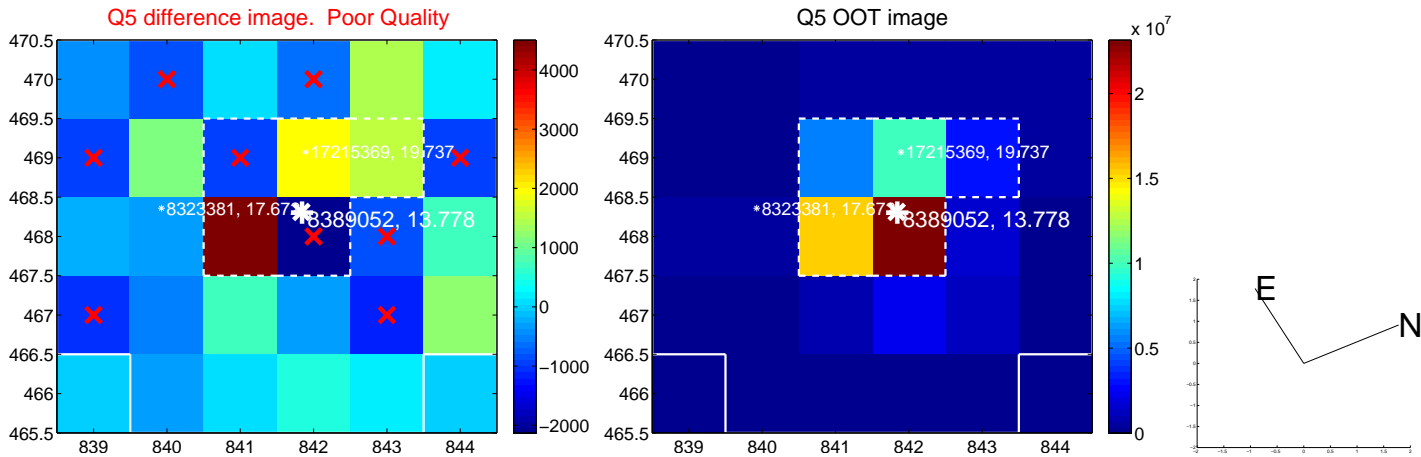


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

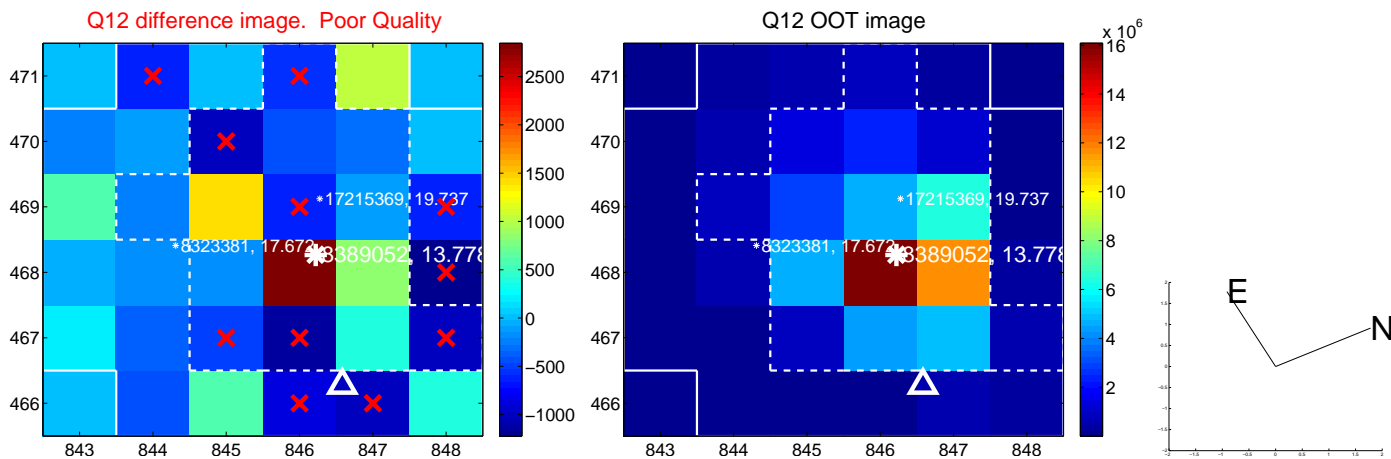
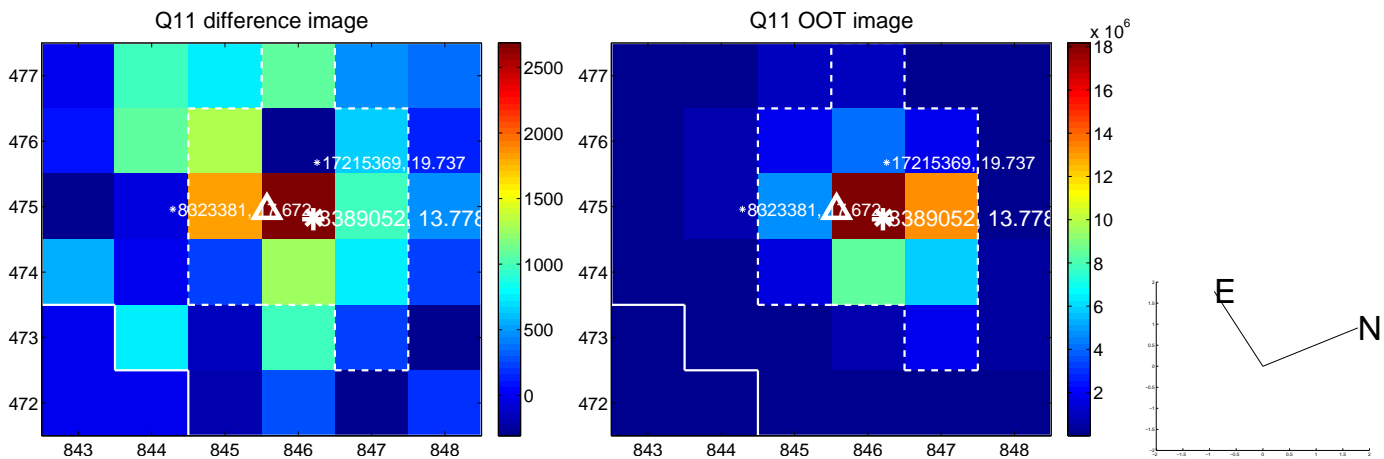
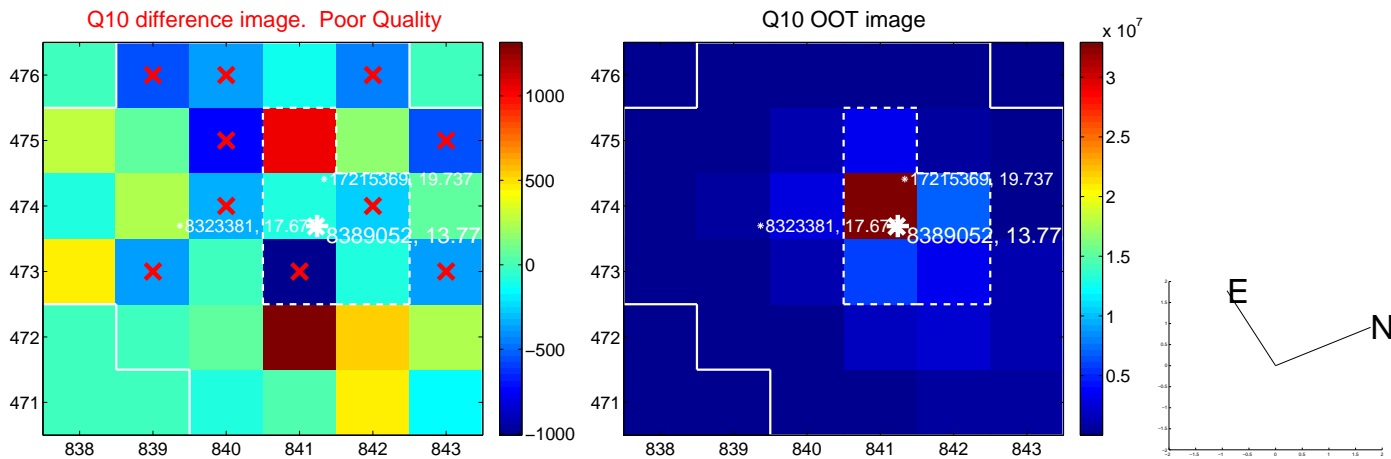
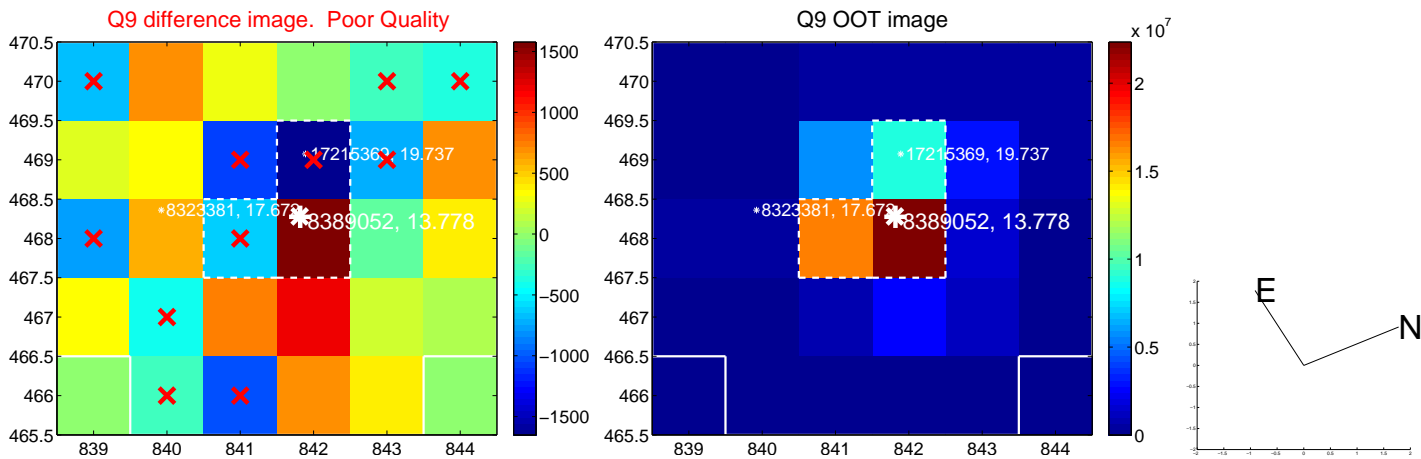
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



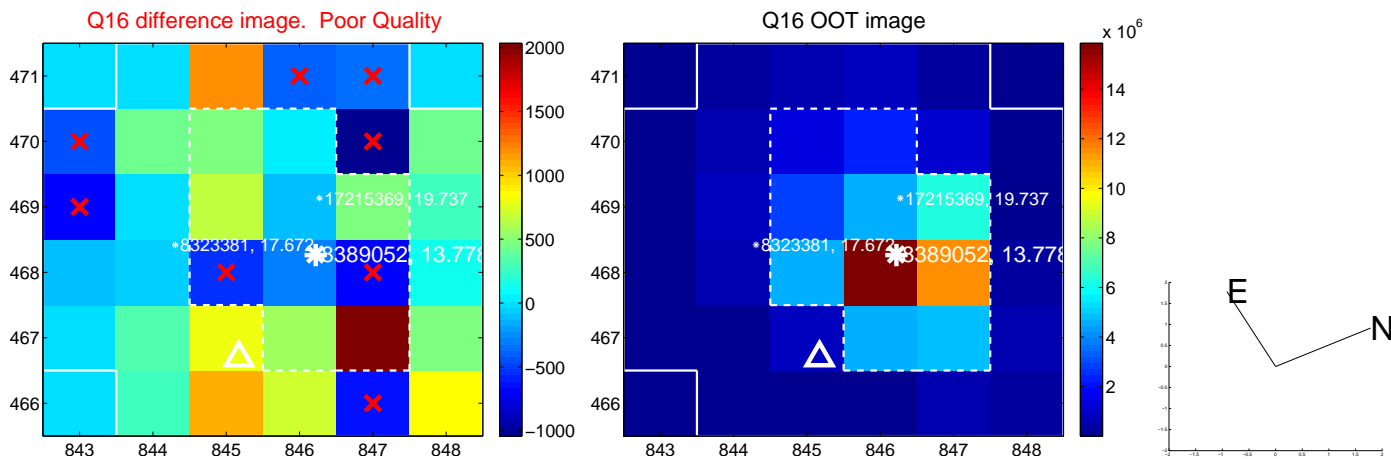
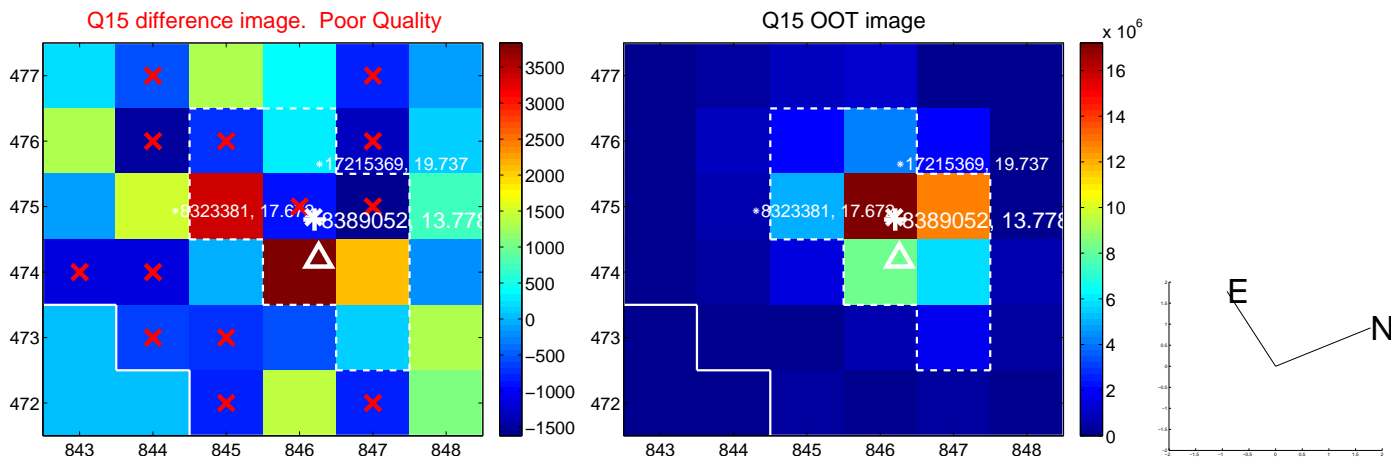
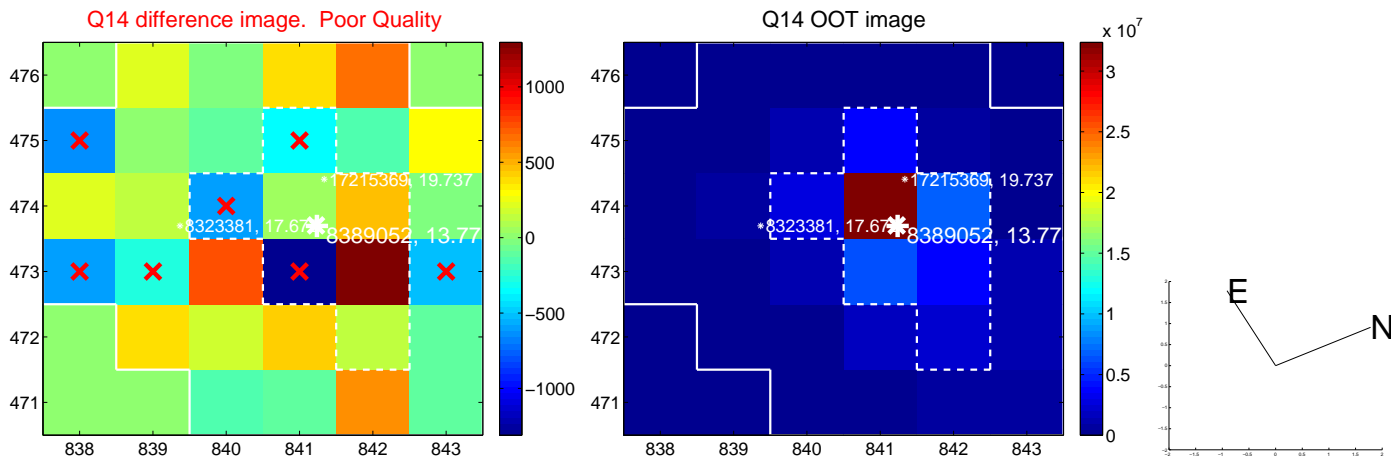
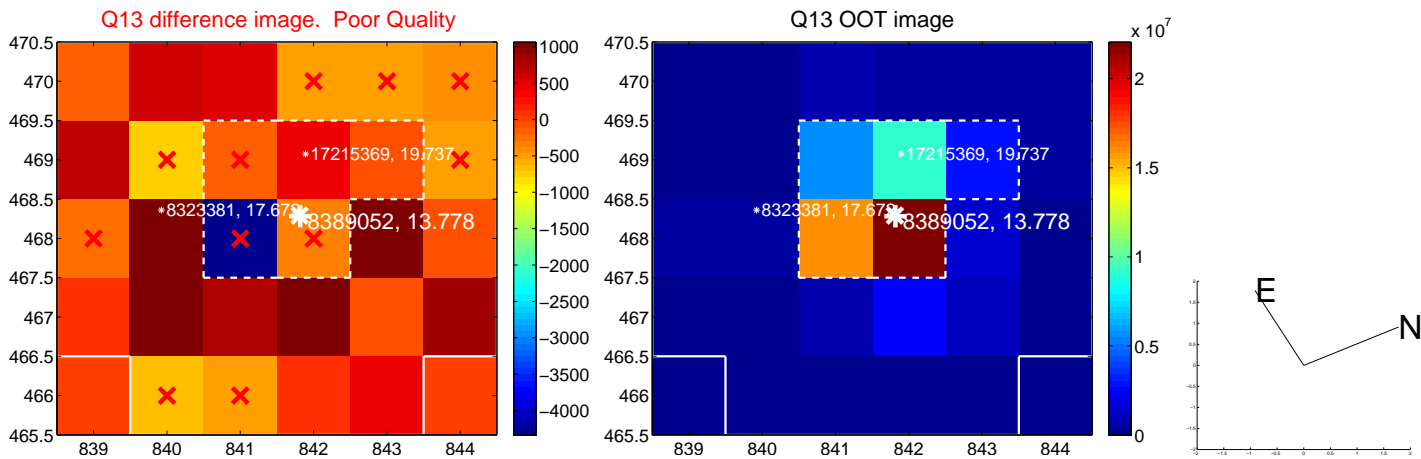
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



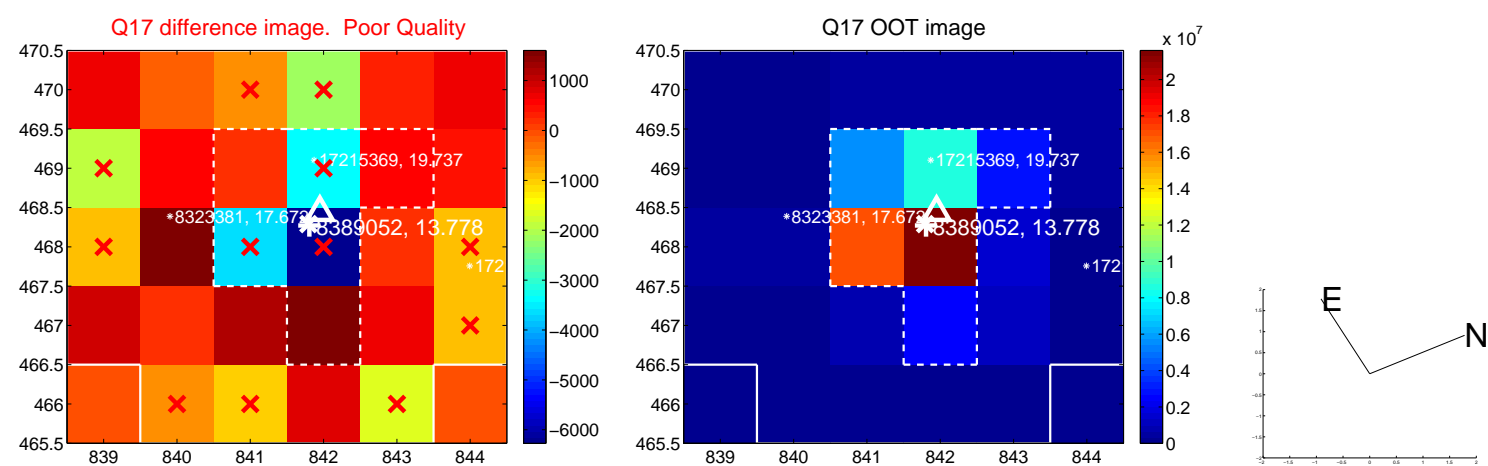
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



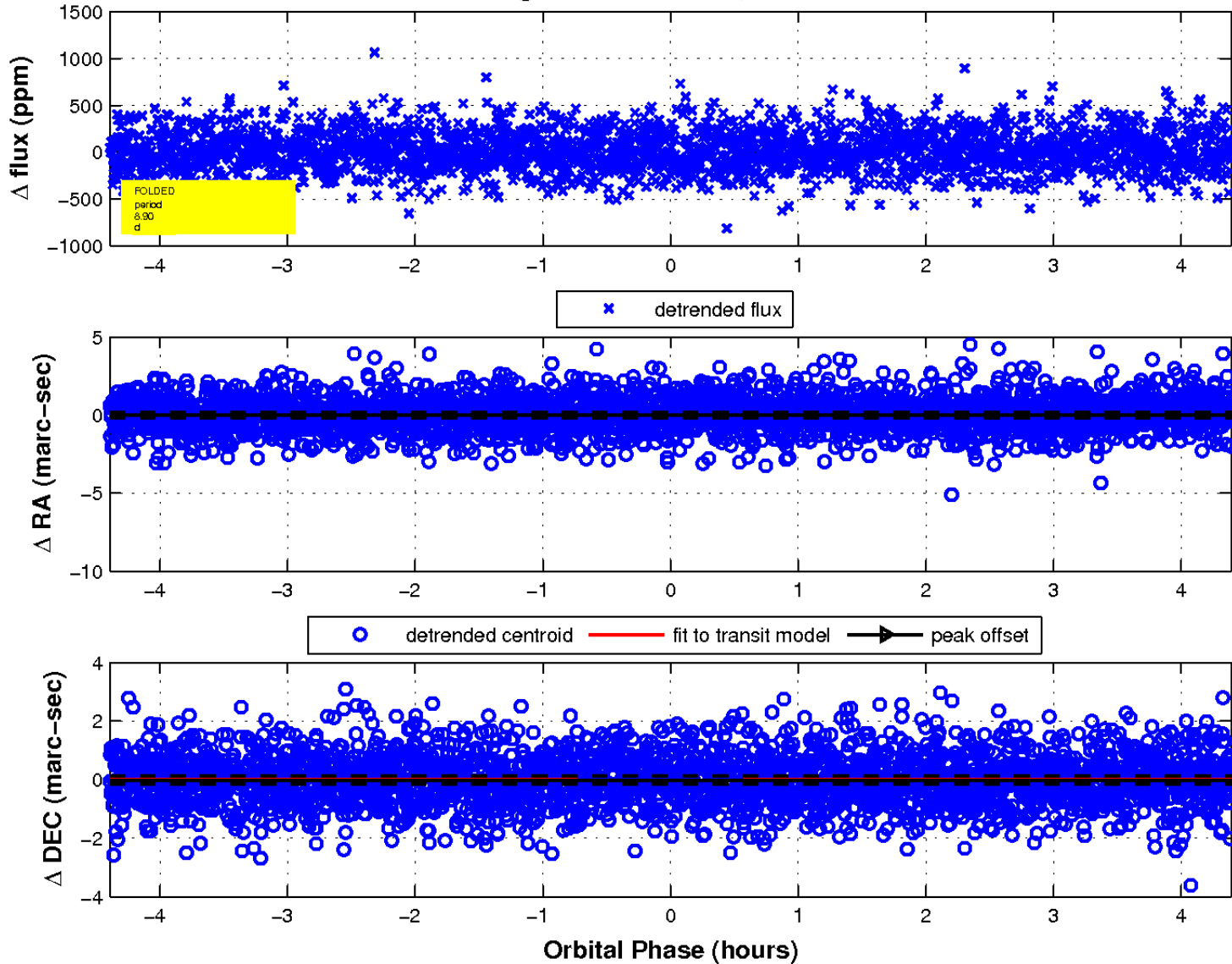
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

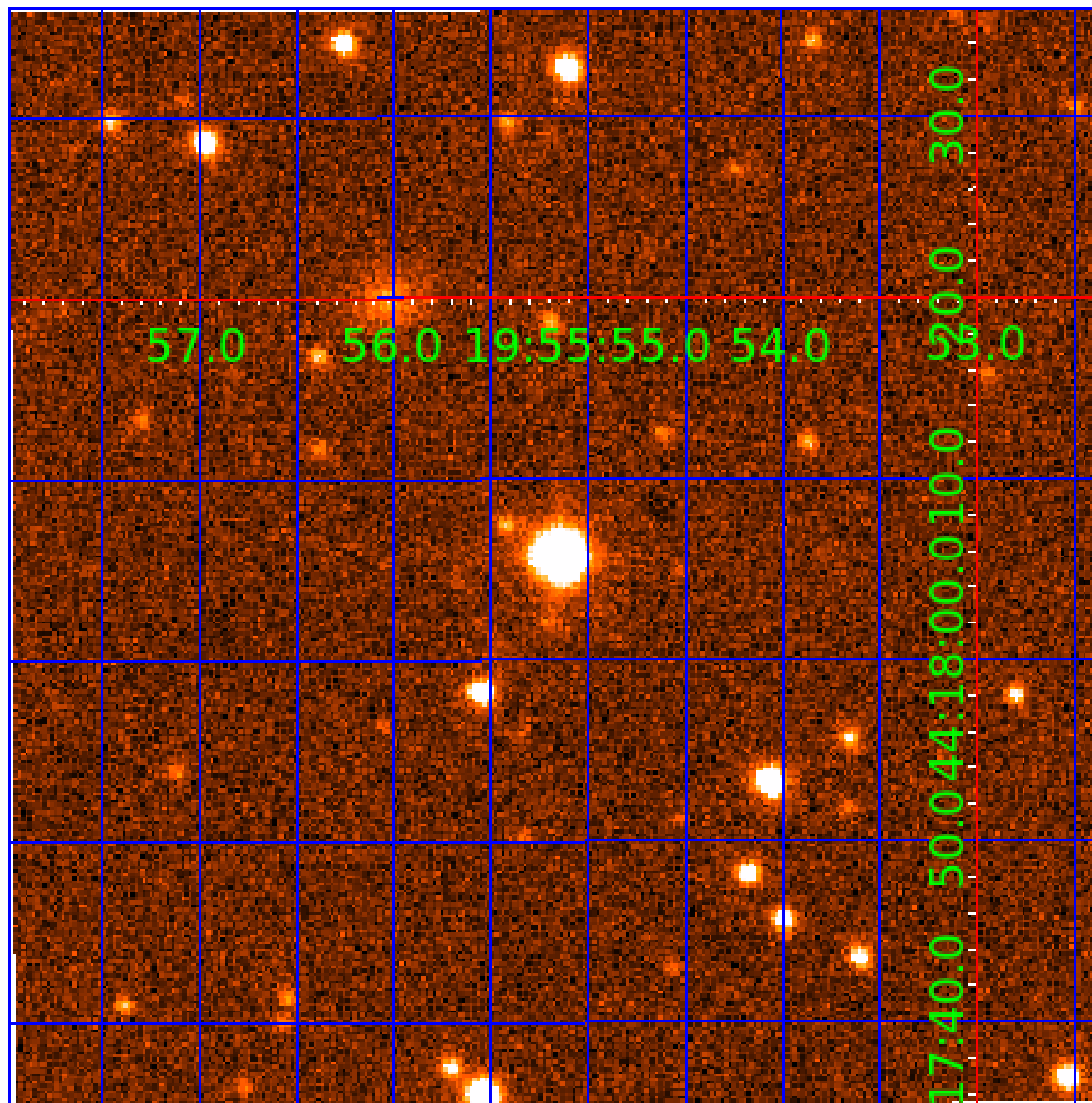


fluxWeightedCentroids, Planet 2 of 4



UKIRT Image

Declination



KIC 008389052

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})
008389052-01	OBS	No	0.684041	132.058620	6.6	5.083	8.5	3.2	1.62	5986	0.44	13509.86
008389052-02	OBS	No	8.899631	138.231103	236.3	1.465	11.3	14.5	1.62	5986	2.51	441.50
008389052-03	OBS	No	19.440513	148.848163	338.0	1.364	11.5	12.3	1.62	5986	3.01	155.77
008389052-04	OBS	No	7.468513	136.650798	407.1	0.937	13.4	15.8	1.62	5986	3.40	557.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008389052-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
008389052-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008389052-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS
008389052-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—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.

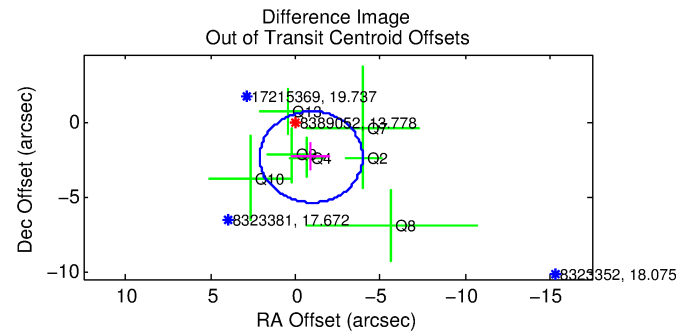
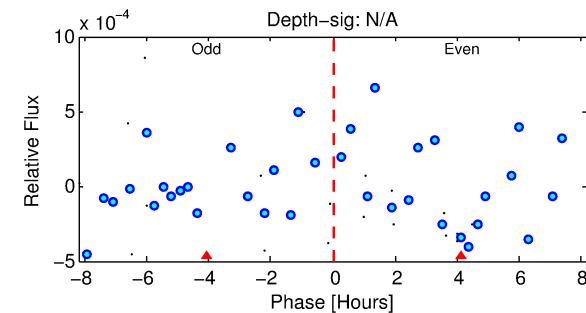
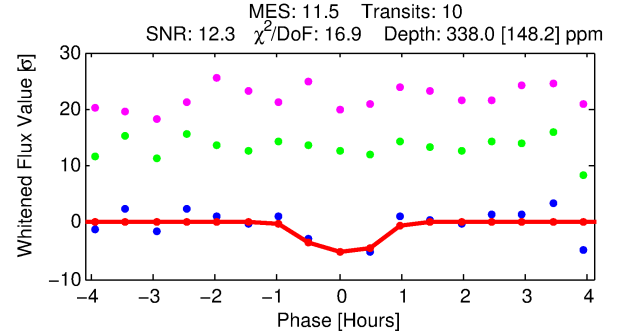
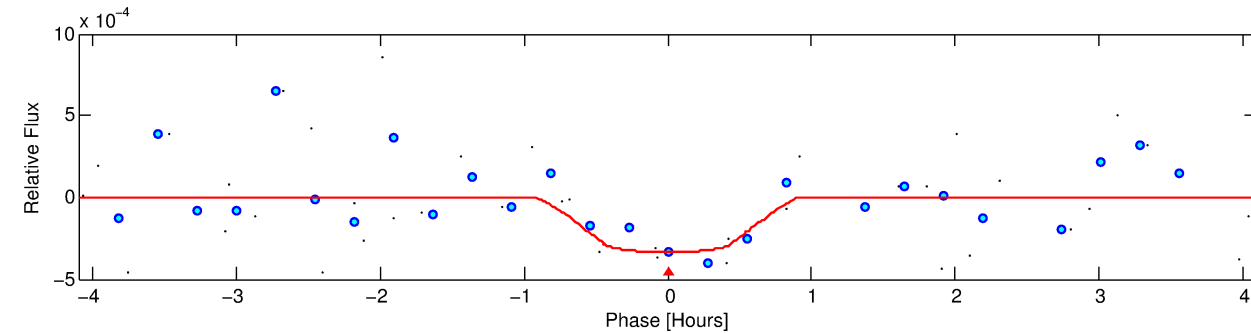
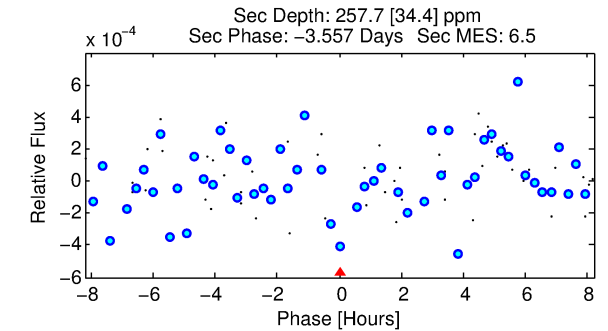
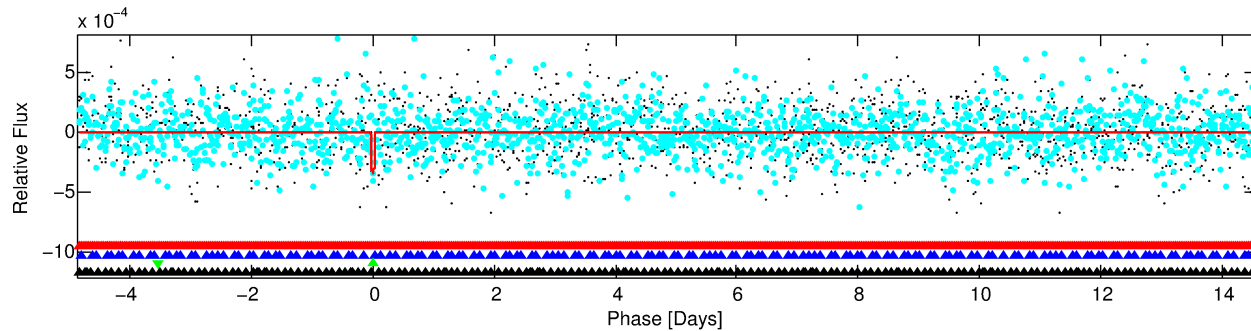
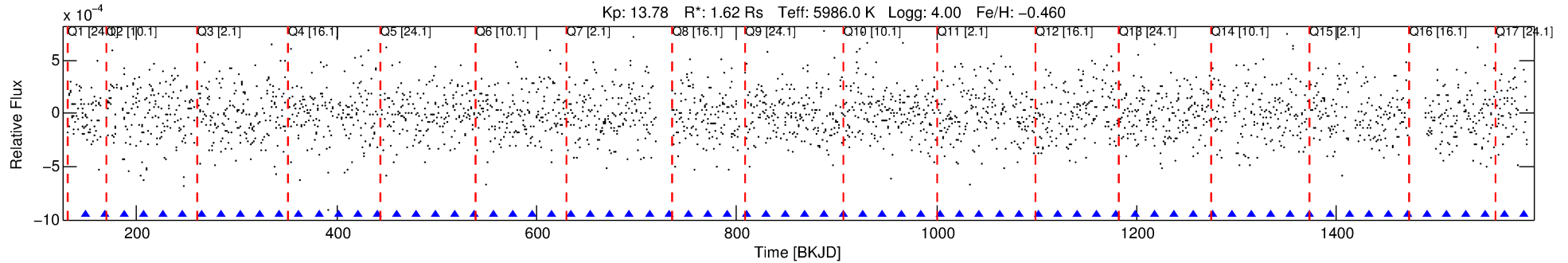
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008389052-03

No Significant Match Found

DV One-Page Summary

KIC: 8389052 Candidate: 3 of 4 Period: 19.441 d



DV Fit Results:

Period = 19.44051 [0.00041] d
Epoch = 148.8482 [0.0188] BKJD
Rp/R* = 0.0171 [0.0811]
a/R* = 105.83 [2449.65]
b = 0.30 [71.33]
Seff = 155.77 [119.21]
Teq = 901 [172] K
Rp = 3.01 [14.37] Re
a = 0.1390 [0.0623] AU
Ag = 301.64 [2873.32] [0.10 σ]
Teffp = 5804 [13780] K [0.36 σ]

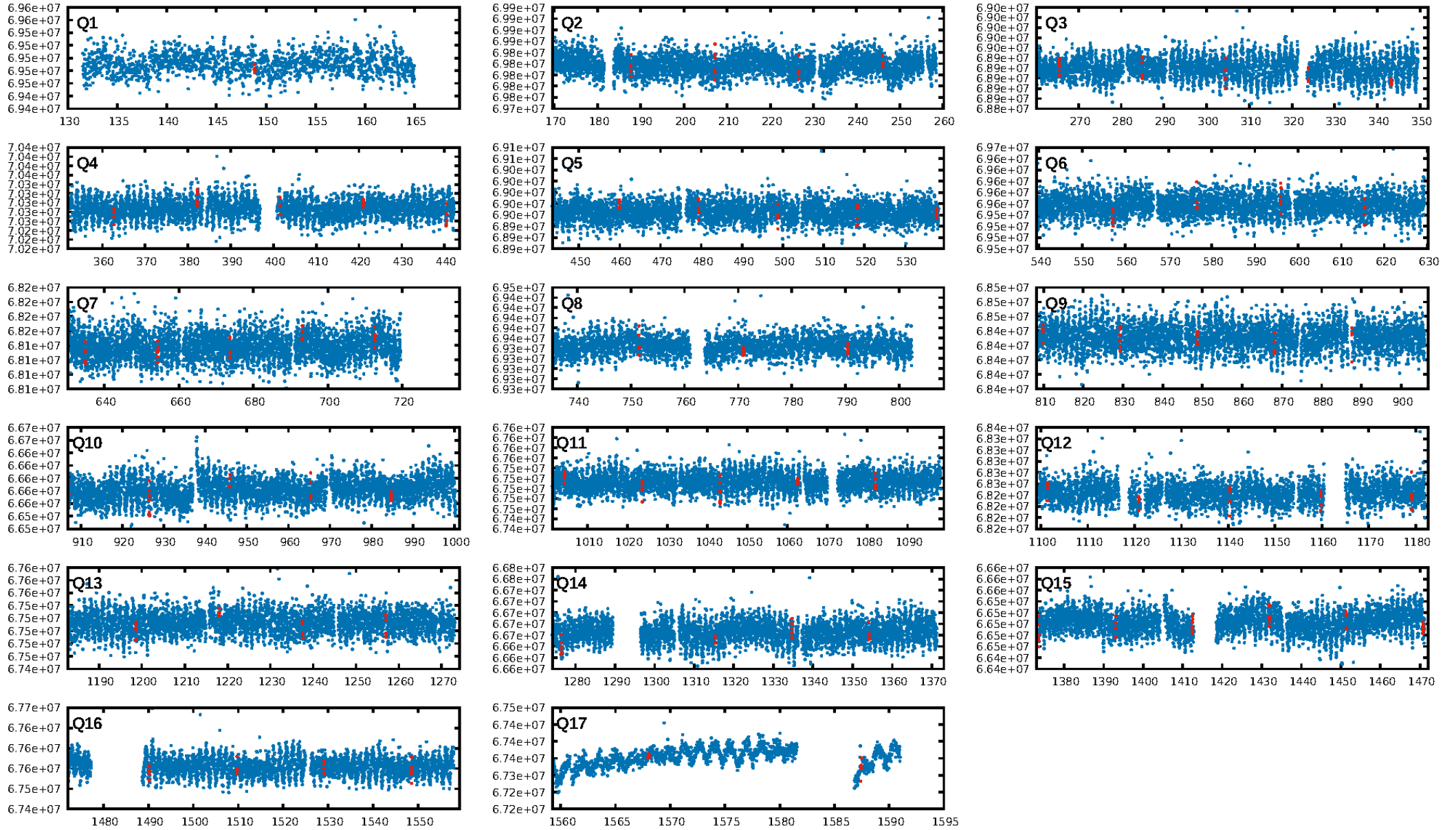
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [126.37 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 5.5%
ModelChiSquareGof-sig: 96.9%
Bootstrap-pfa: 6.63e-10
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 0.9099
Centroid-sig: 62.7%
Centroid-so: 0.472 arcsec [0.78 σ]
OotOffset-rm: 2.536 arcsec [2.50 σ]
OotOffset-st: 2/1/2/2 [7]
KicOffset-rm: 2.565 arcsec [2.57 σ]
KicOffset-st: 2/1/2/2 [7]
DiffImageQuality-fgm: 0.14 [1/7]
DiffImageOverlap-fno: 0.06 [1/17]

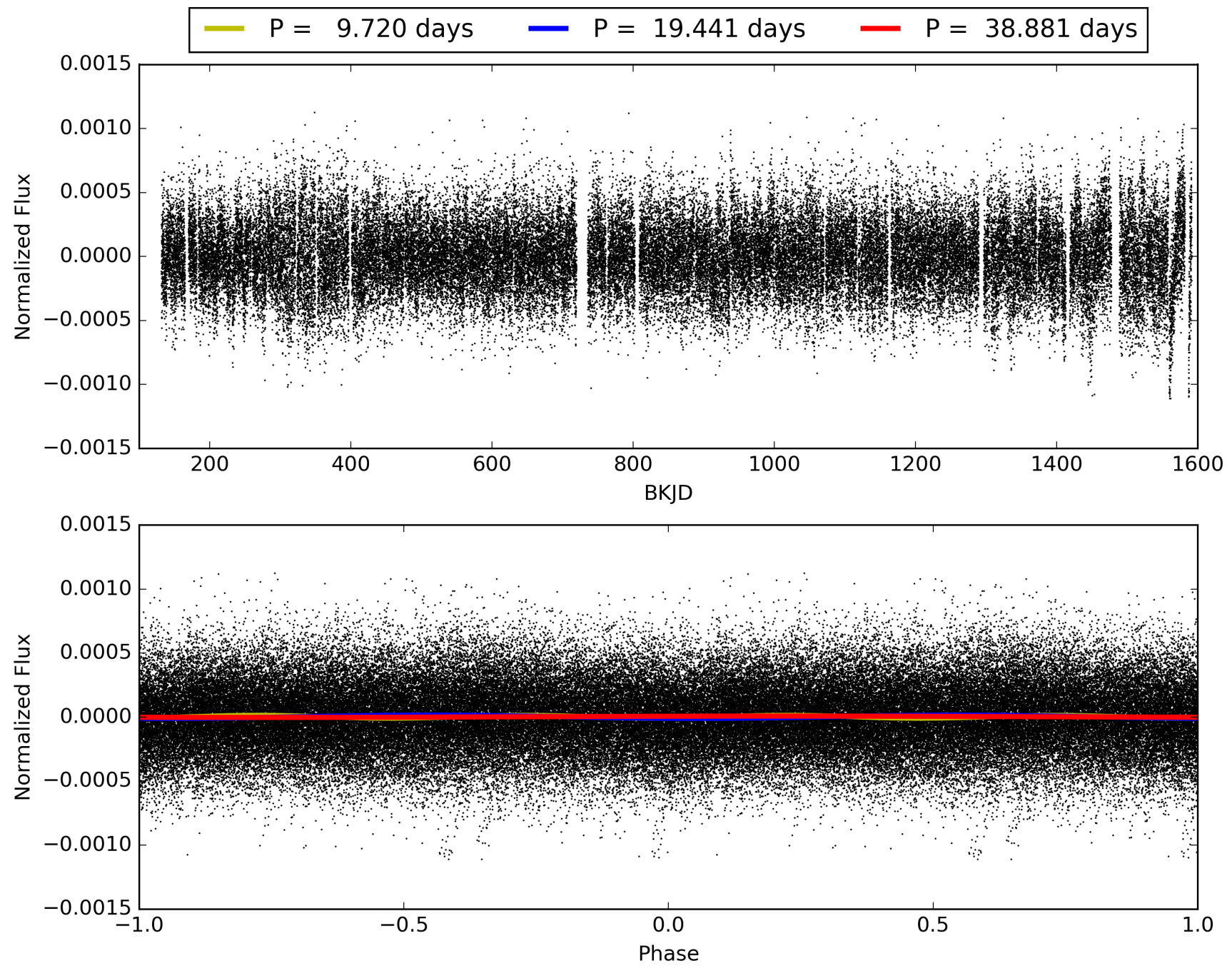
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:02:47 Z

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

TCE 008389052-03, PDC Light Curves

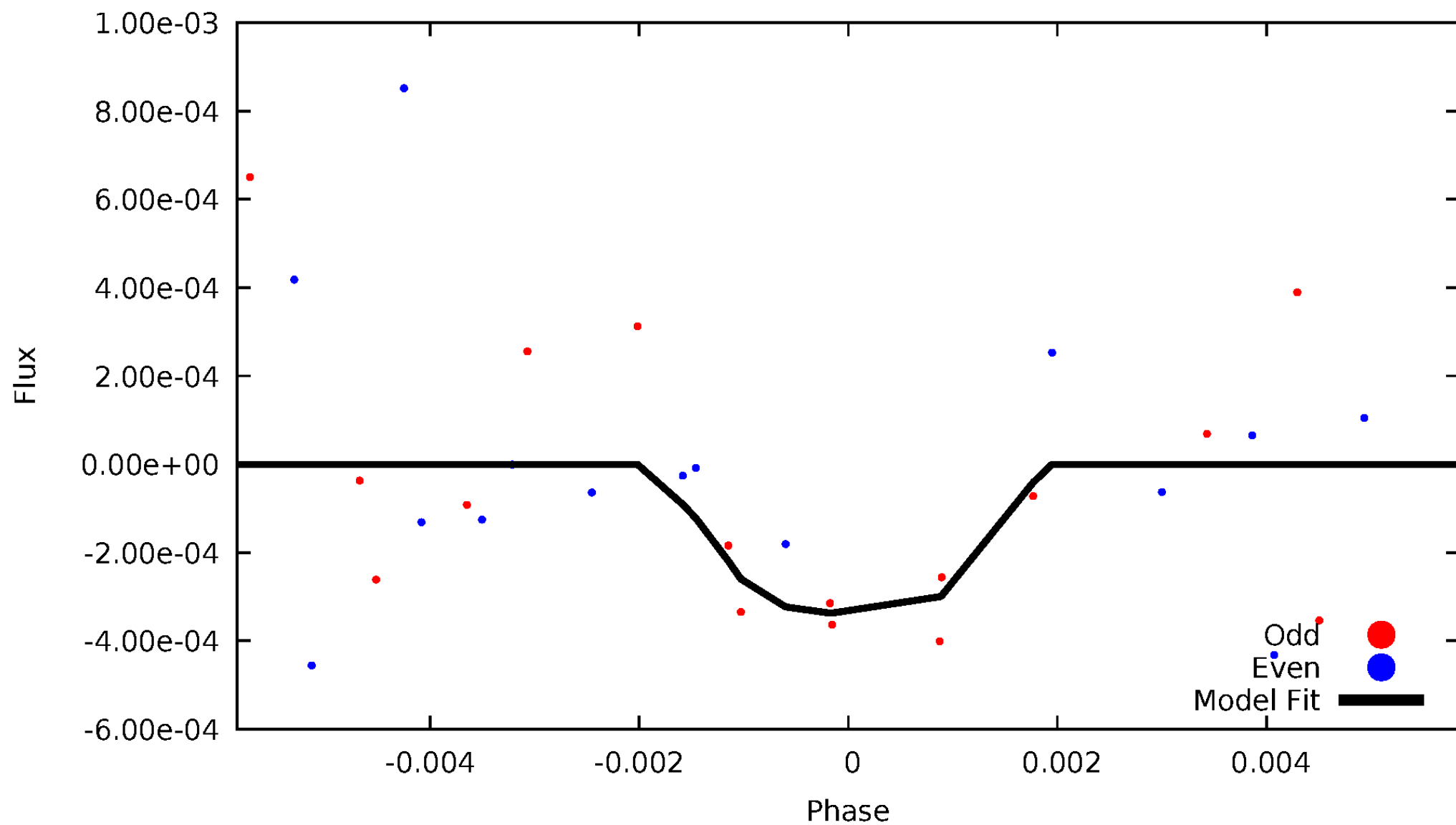


TCE 008389052-03



DV Odd/Even

TCE 008389052-03

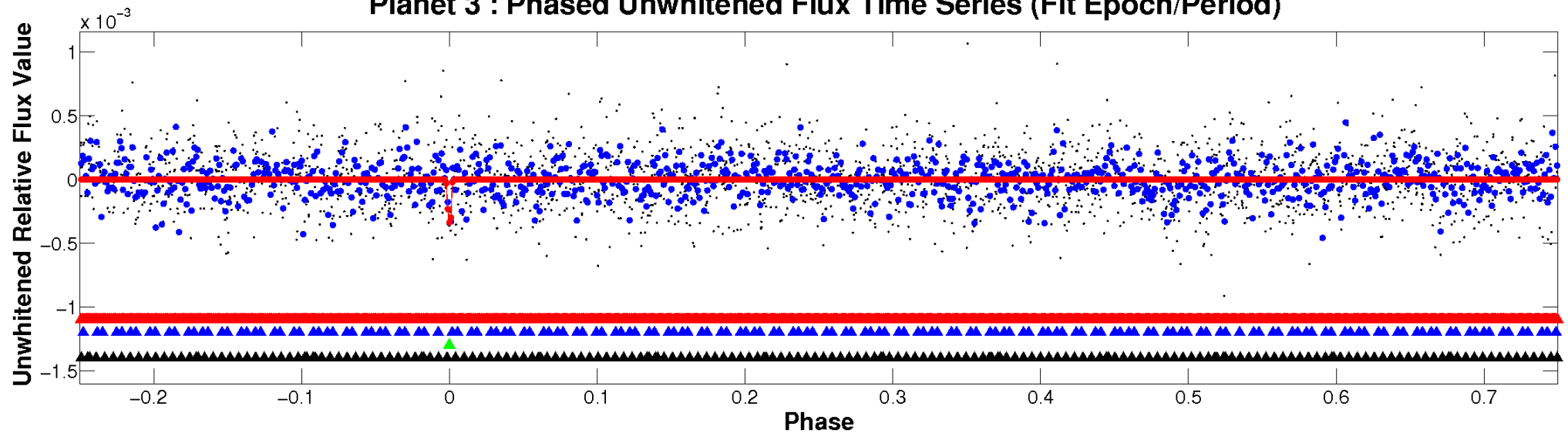


ALT Odd/Even

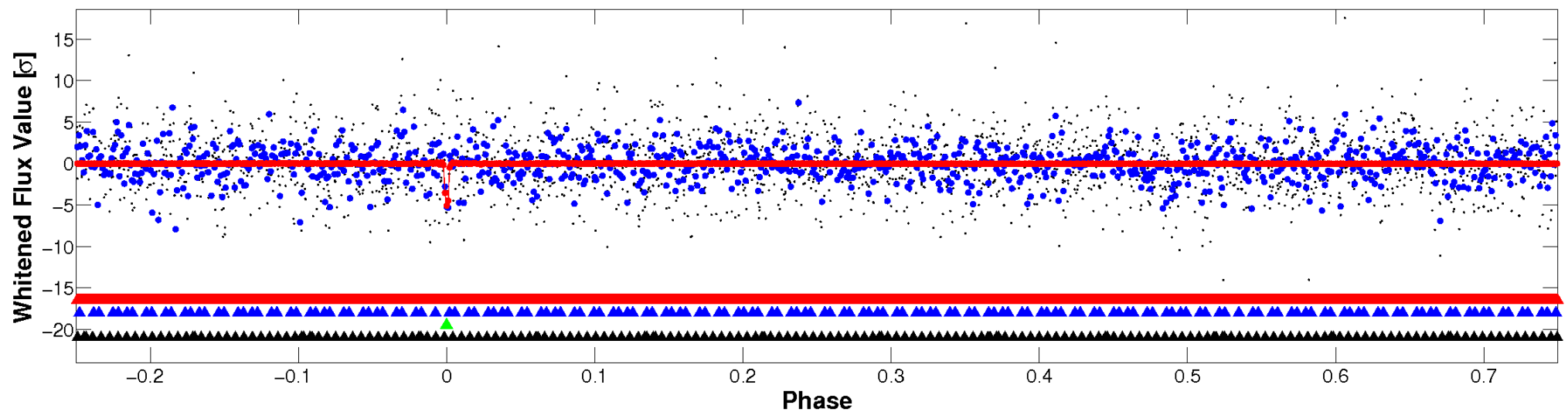
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

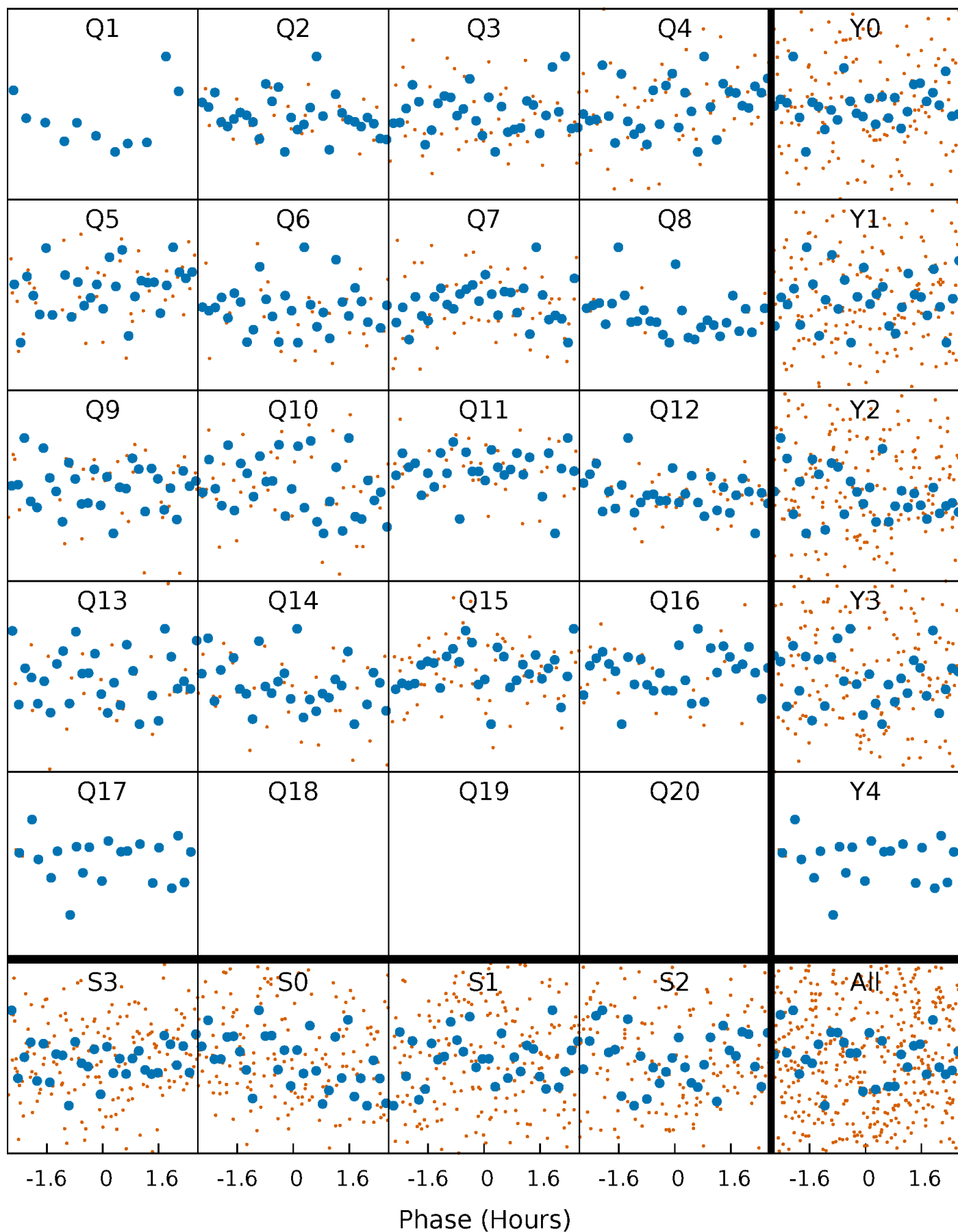


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



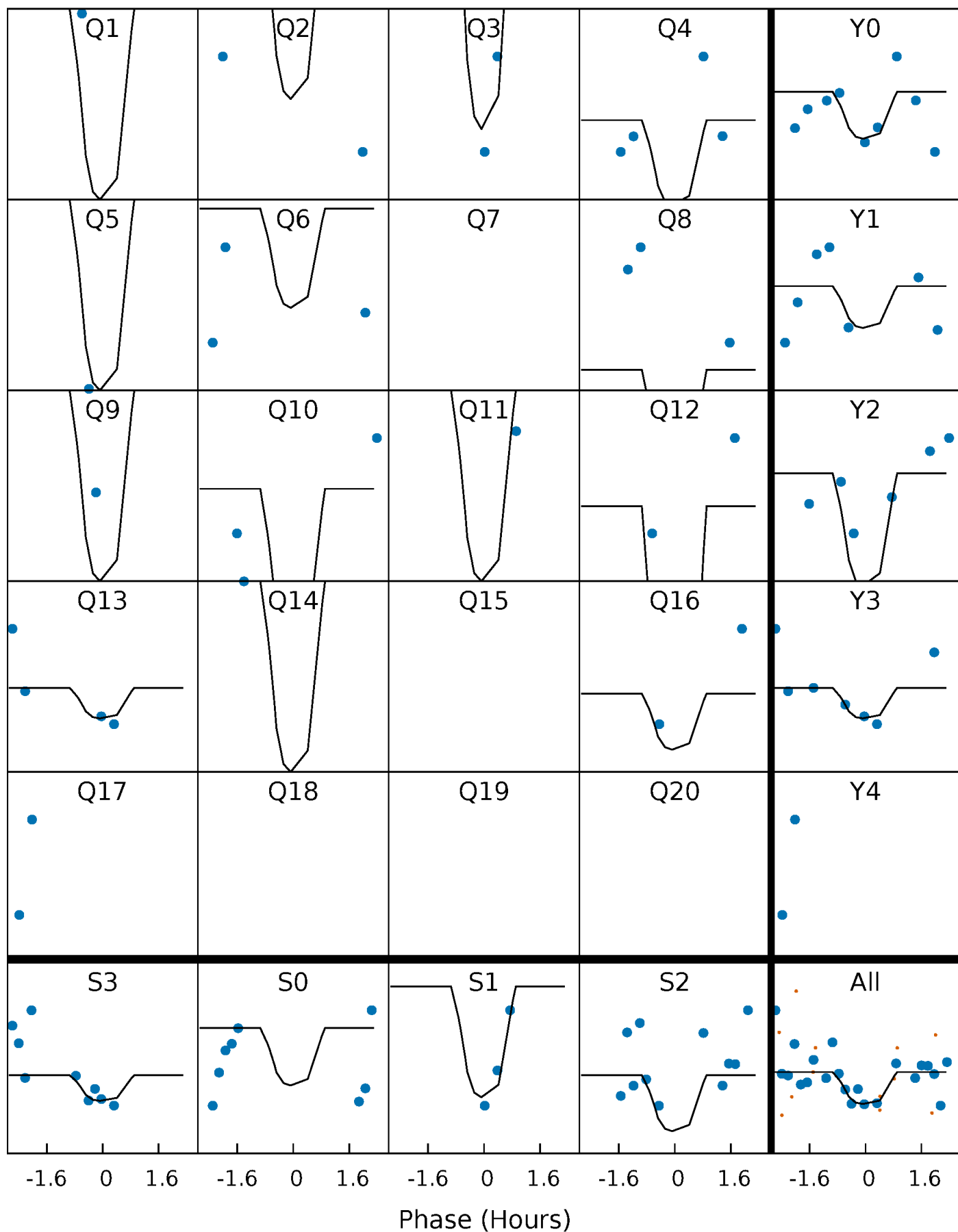
PDC Quarter-Phased Transit Curves

TCE 008389052-03 P= 19.440513 Days $T_0=148.848163$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008389052-03 P= 19.440513 Days $T_0=148.848163$ (BKJD)

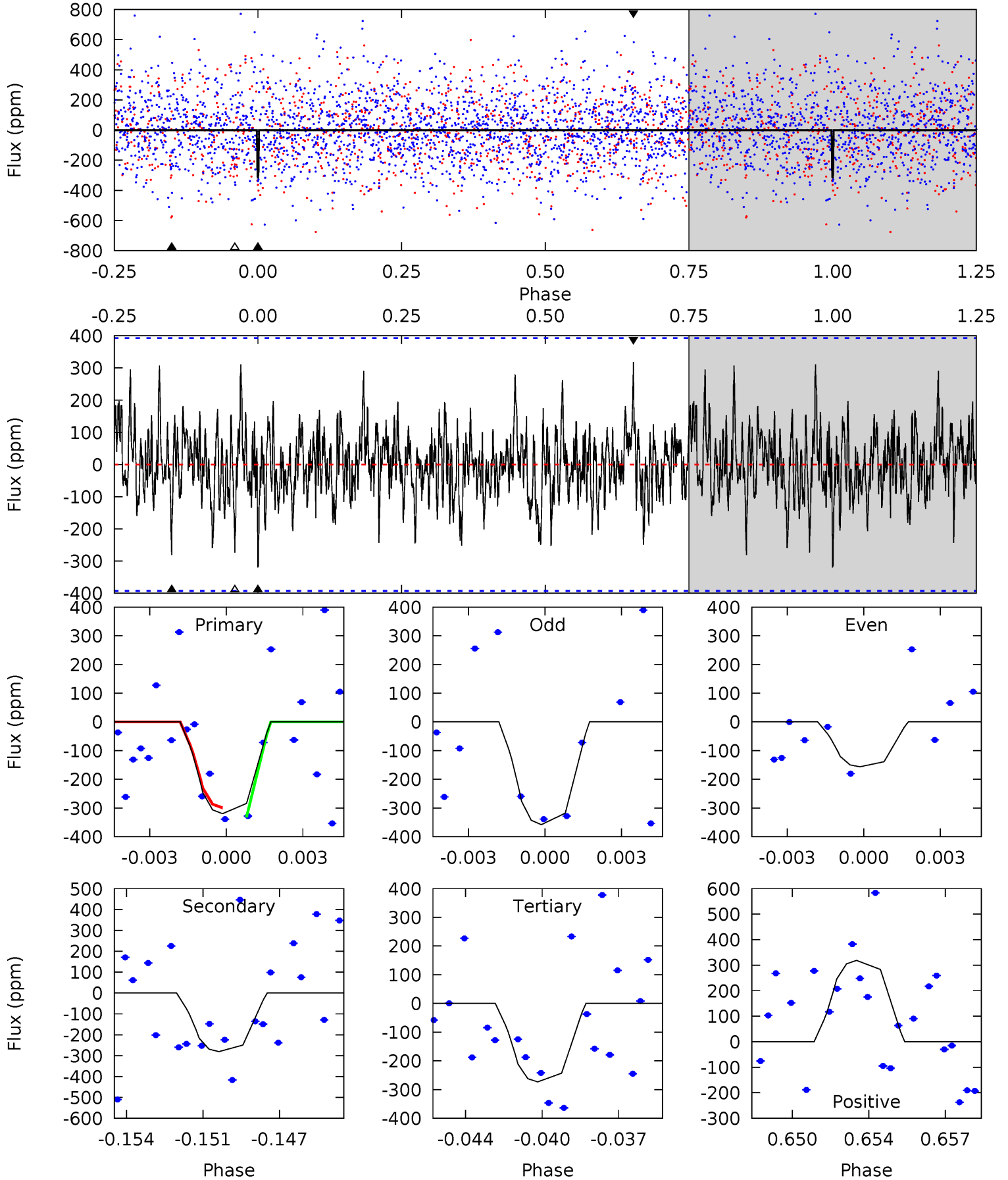


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

008389052-03, P = 19.440513 Days, E = 129.407650 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.26	3.74	3.64	4.24	5.23	2.93	1.22	0.62	0.01	0.10	-0.51	1.16	1.00	0.50	0.19



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 008389052

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5986^{+179}_{-179}	$3.997^{+0.458}_{-0.153}$	$-0.460^{+0.300}_{-0.250}$	$1.618^{+0.449}_{-0.674}$	$0.949^{+0.127}_{-0.127}$	$0.315^{+1.179}_{-0.137}$
	+3%/-3%	+11%/-4%	+65%/-54%	+28%/-42%	+13%/-13%	+374%/-43%
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 008389052-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-281 ± 75	$10.04^{+10.67}_{-6.90}$	1233^{+99}_{-156}	3566^{+2022}_{-702}	30^{+291}_{-24}
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 $A_{\text{obs}} \gg 1.0$

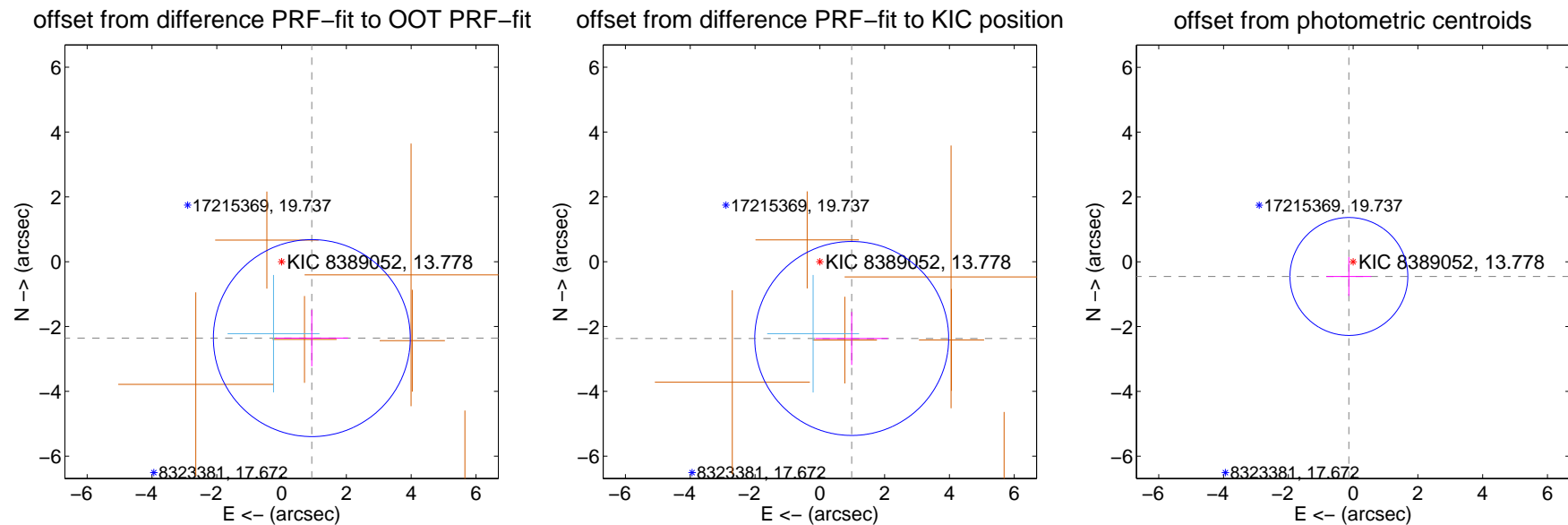
DV Centroid Data

Supplemental centroid analysis for 008389052-03. Kepler magnitude: 13.78. Transit SNR 12.32

There are 1 quarters with good PRF difference image offsets

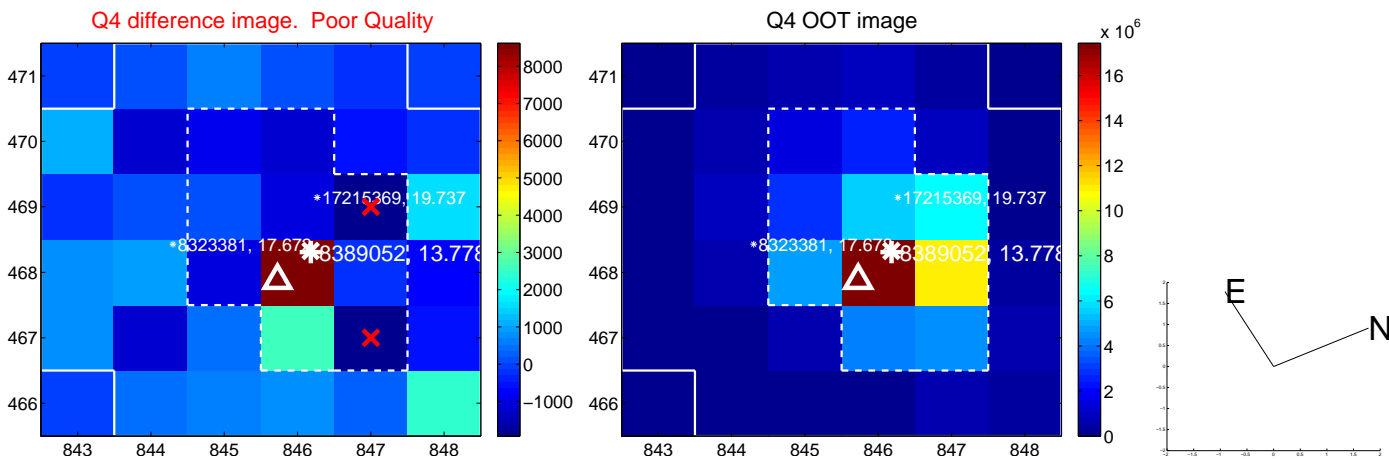
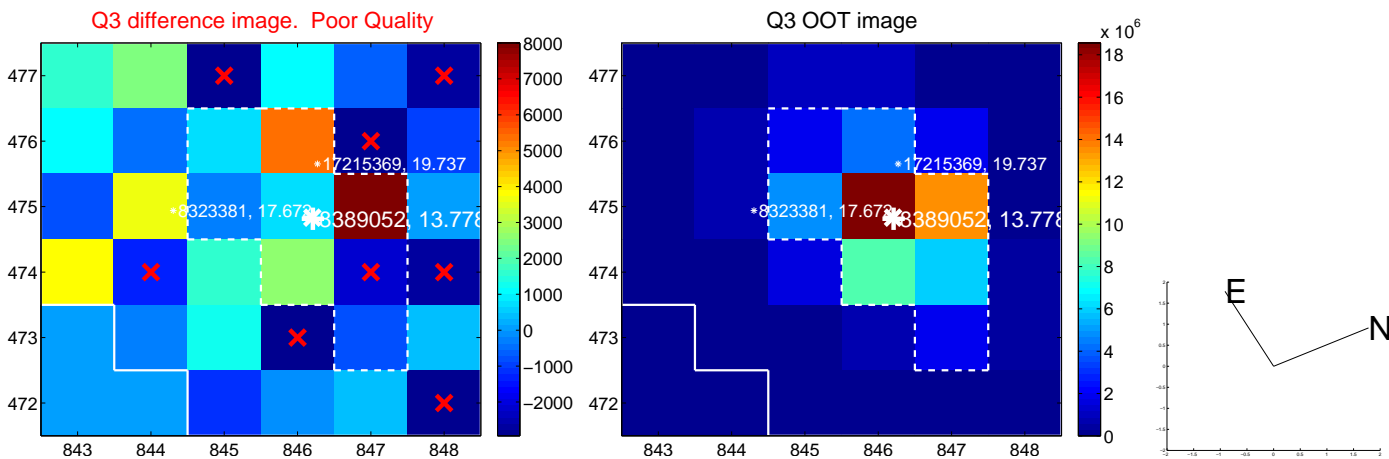
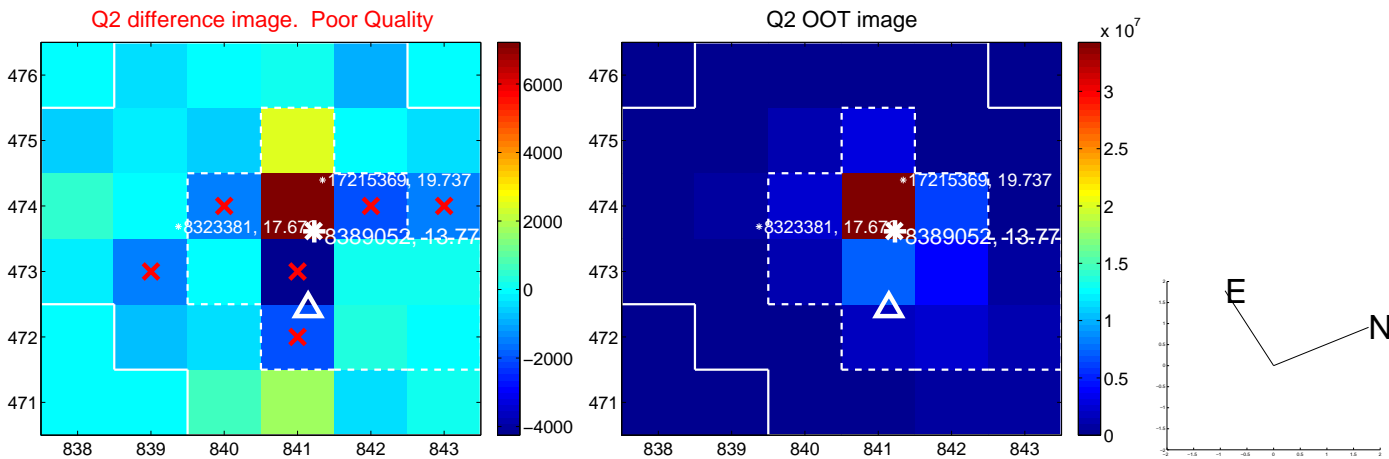
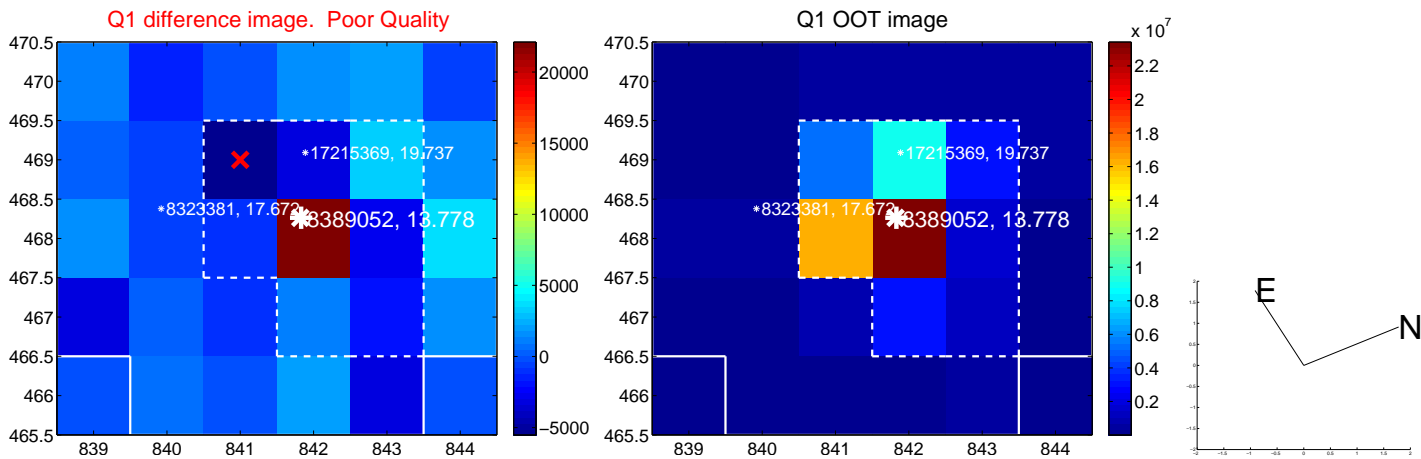
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.536 ± 1.013	2.50	-0.934 ± 1.118	-2.358 ± 0.869
PRF-fit source offset from KIC position	2.565 ± 0.997	2.57	-0.984 ± 1.121	-2.368 ± 0.817
photometric centroid source offset	0.47 ± 0.61	0.78	0.13 ± 0.69	-0.45 ± 0.60

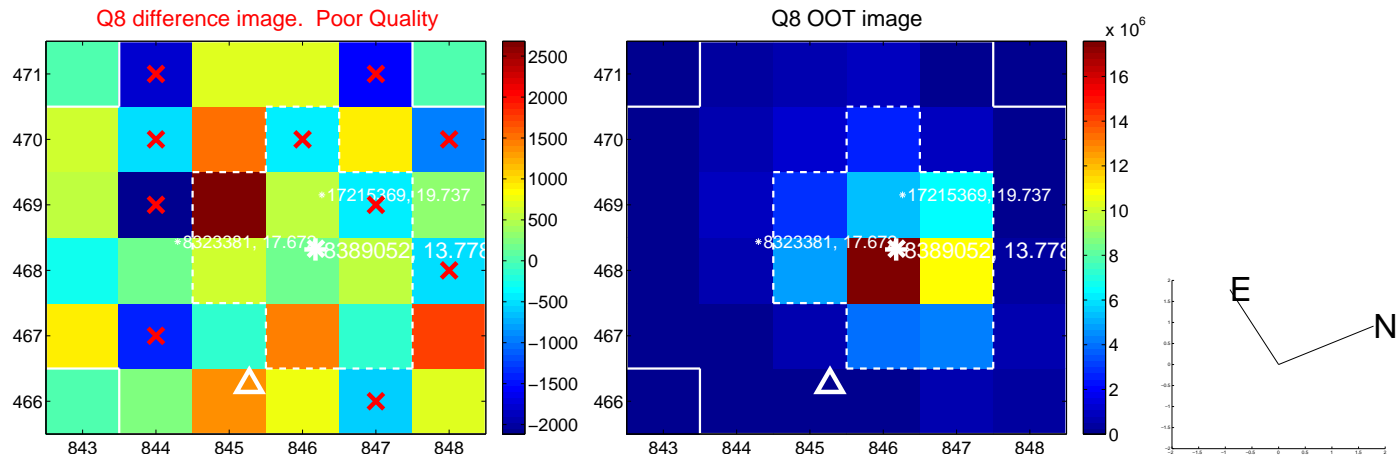
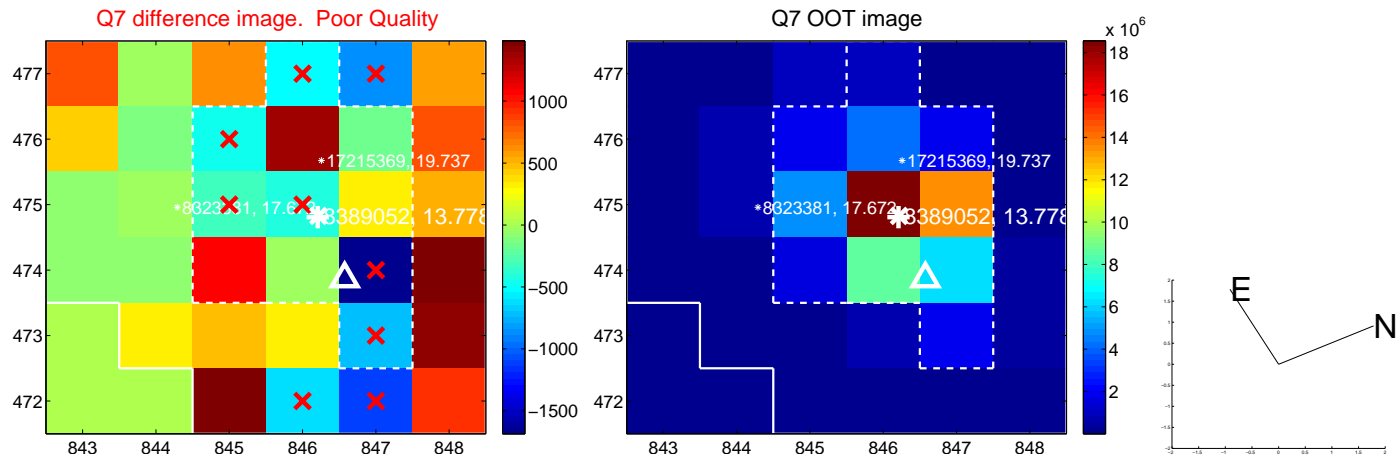
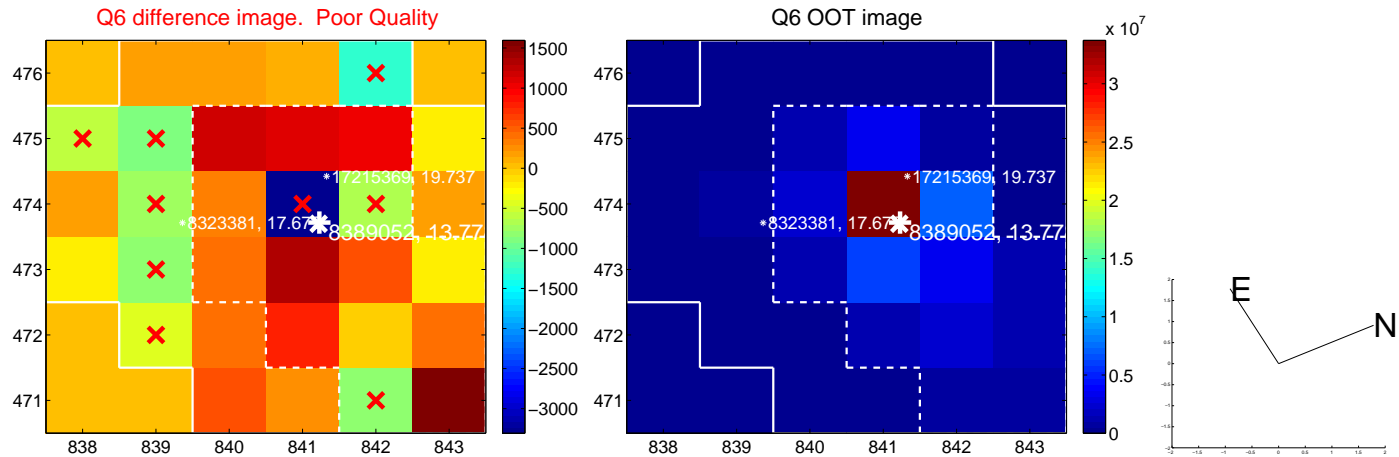
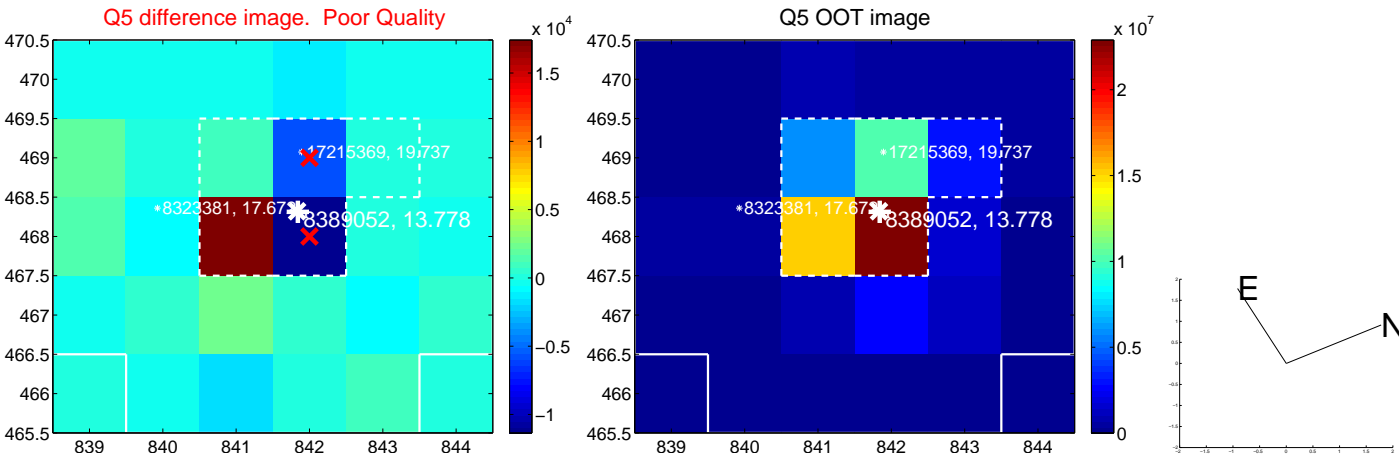


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

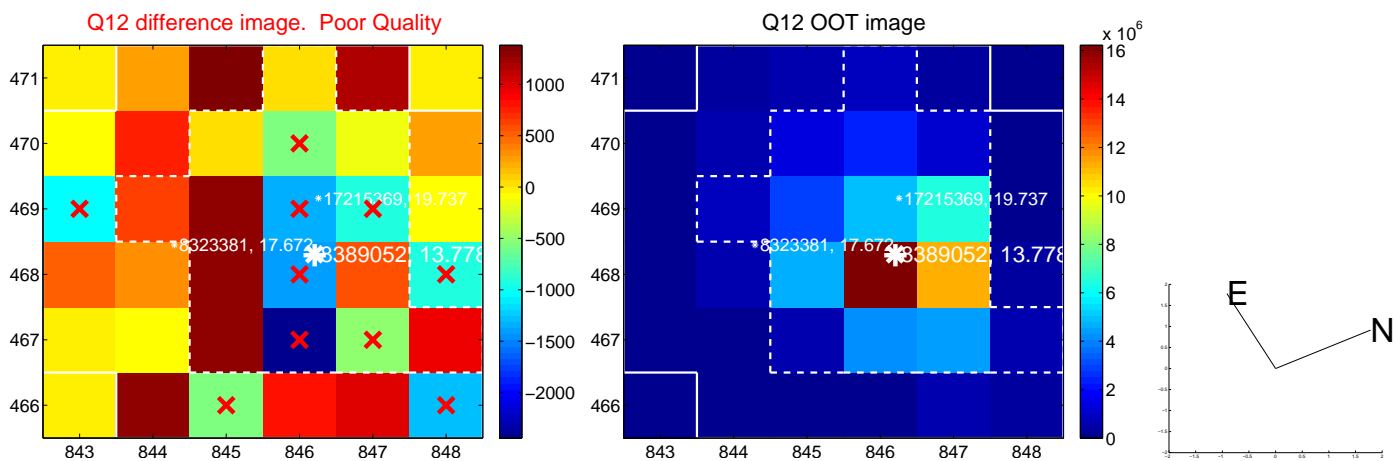
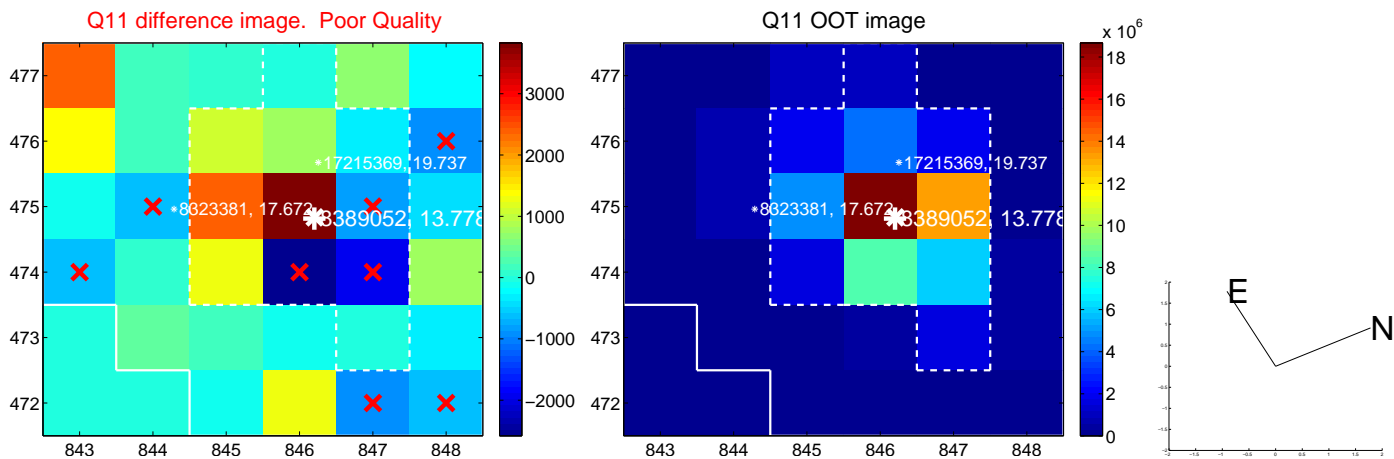
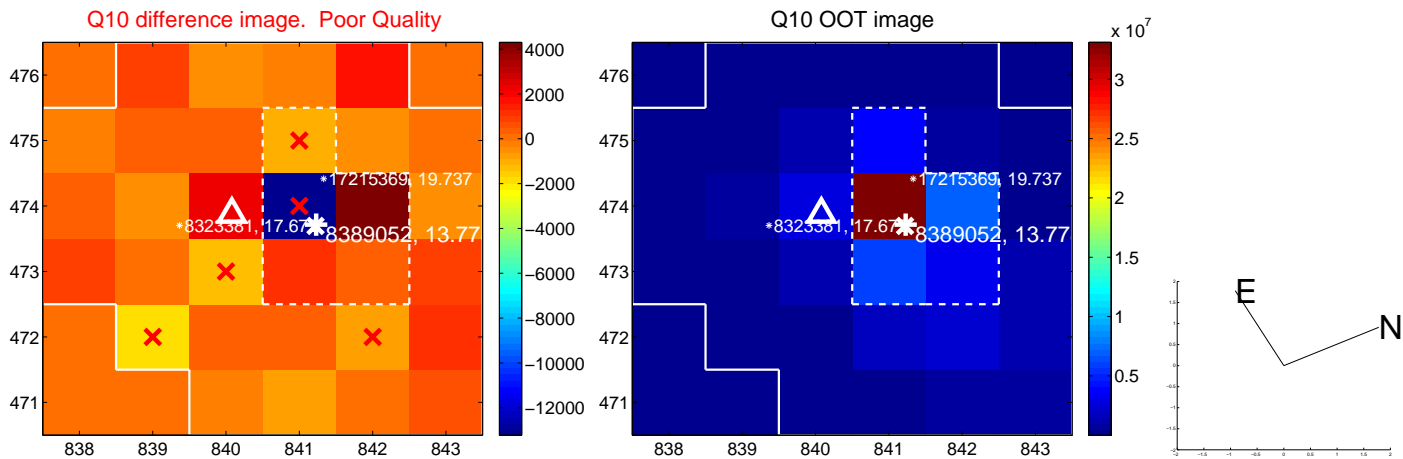
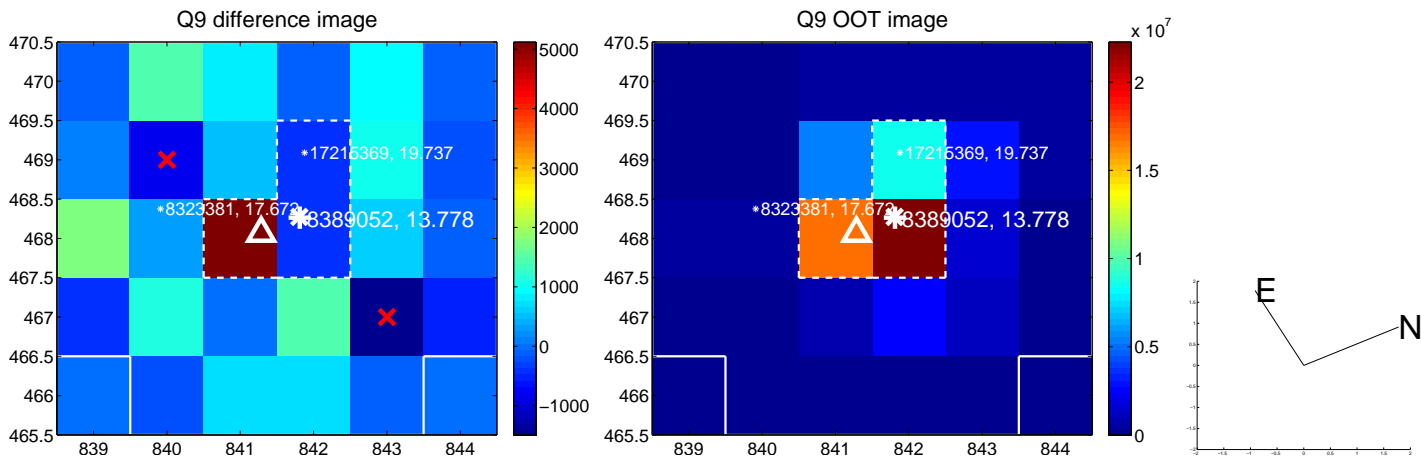
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



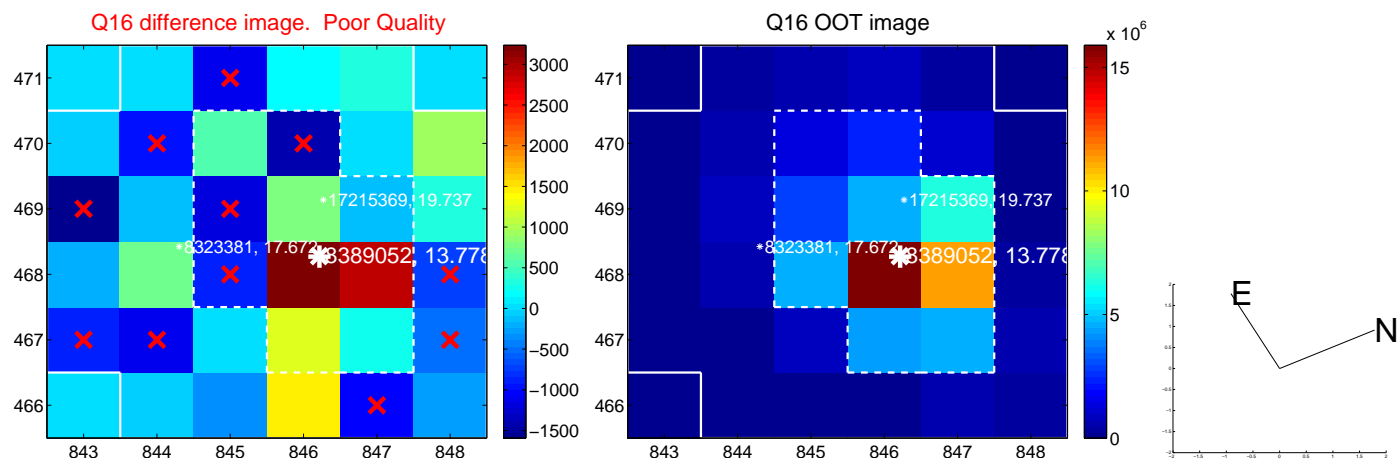
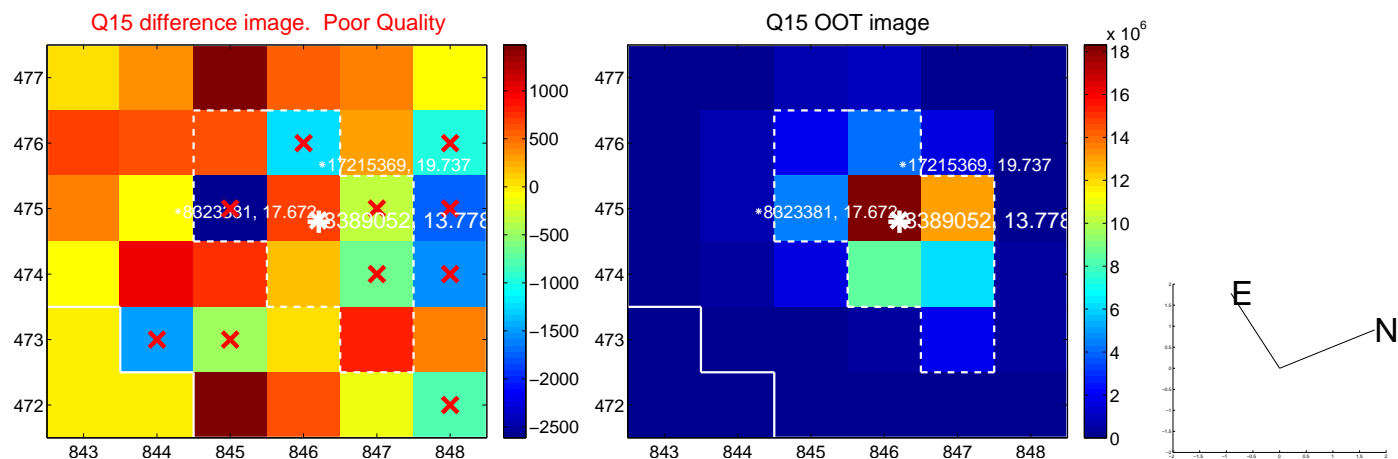
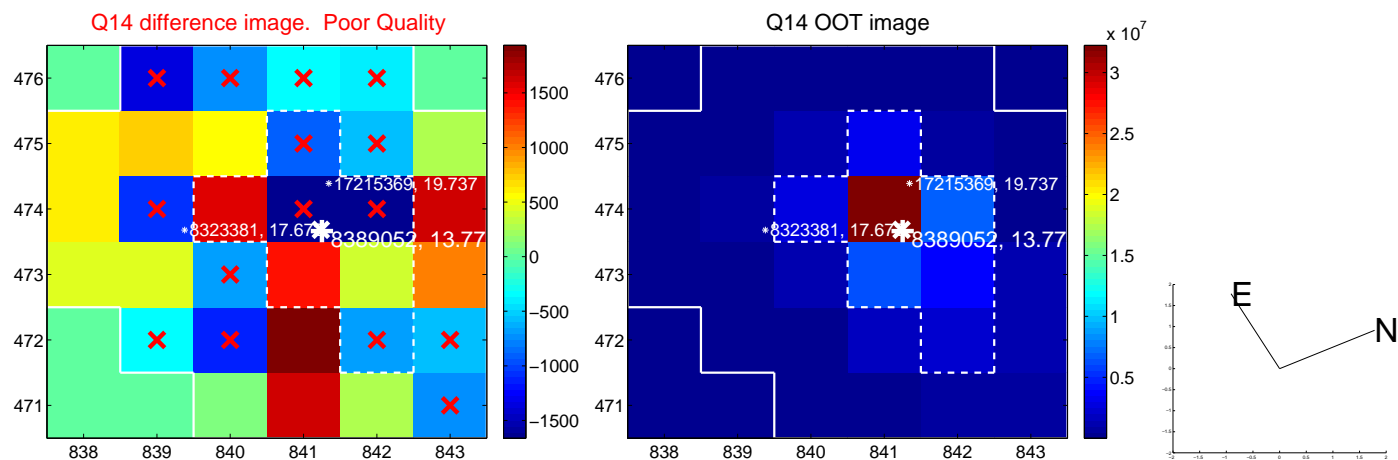
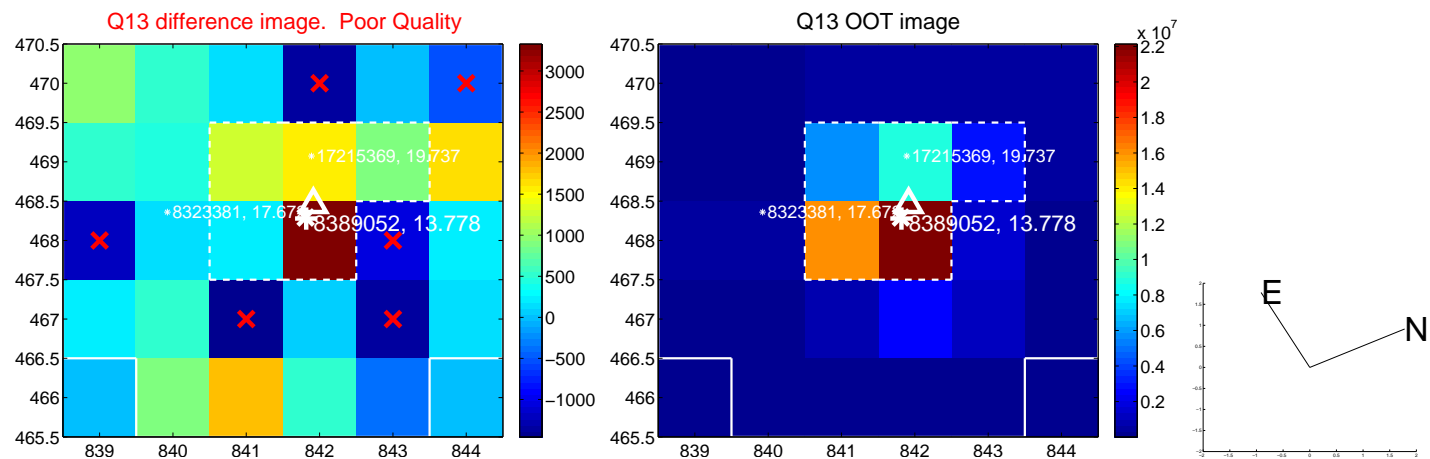
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



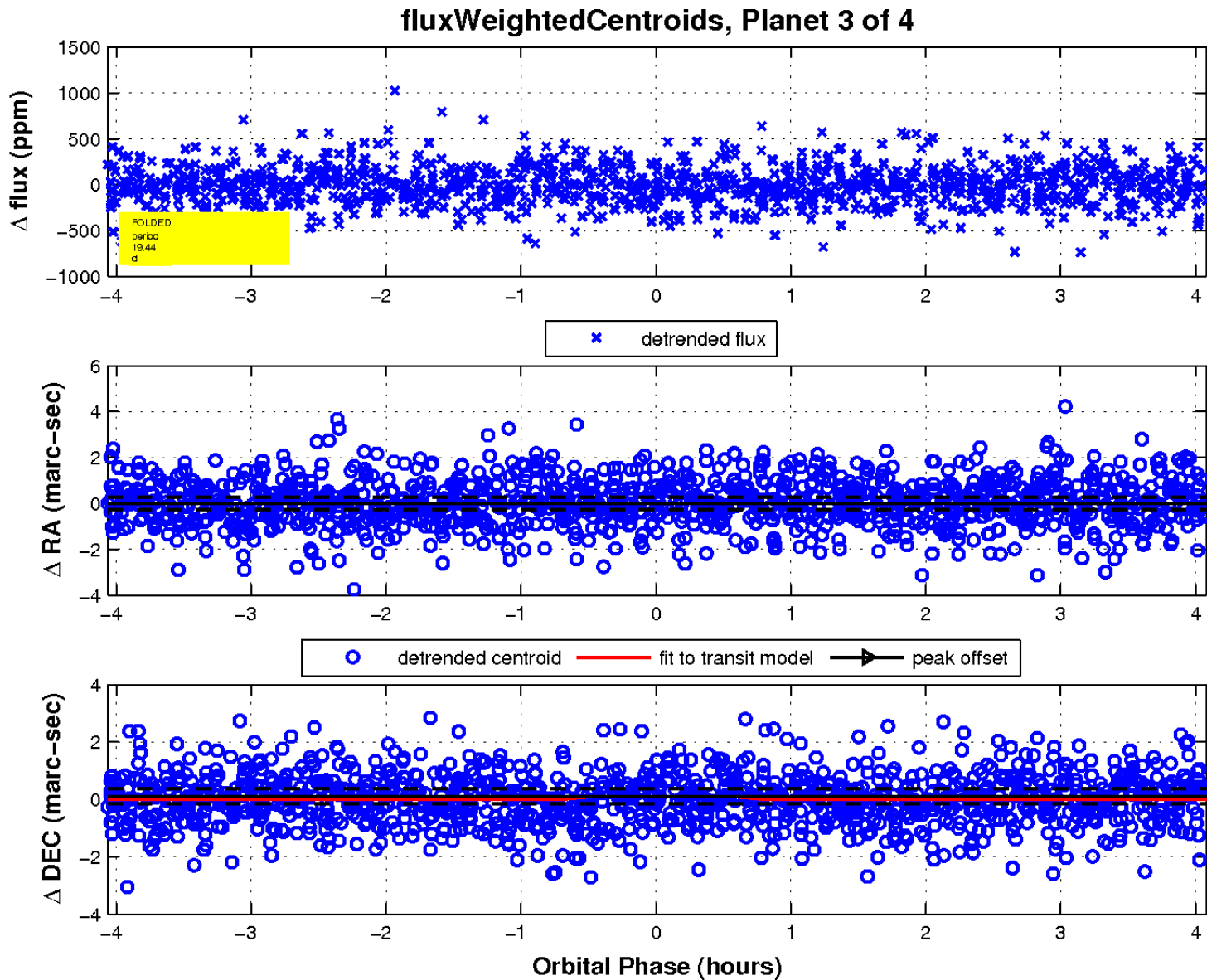
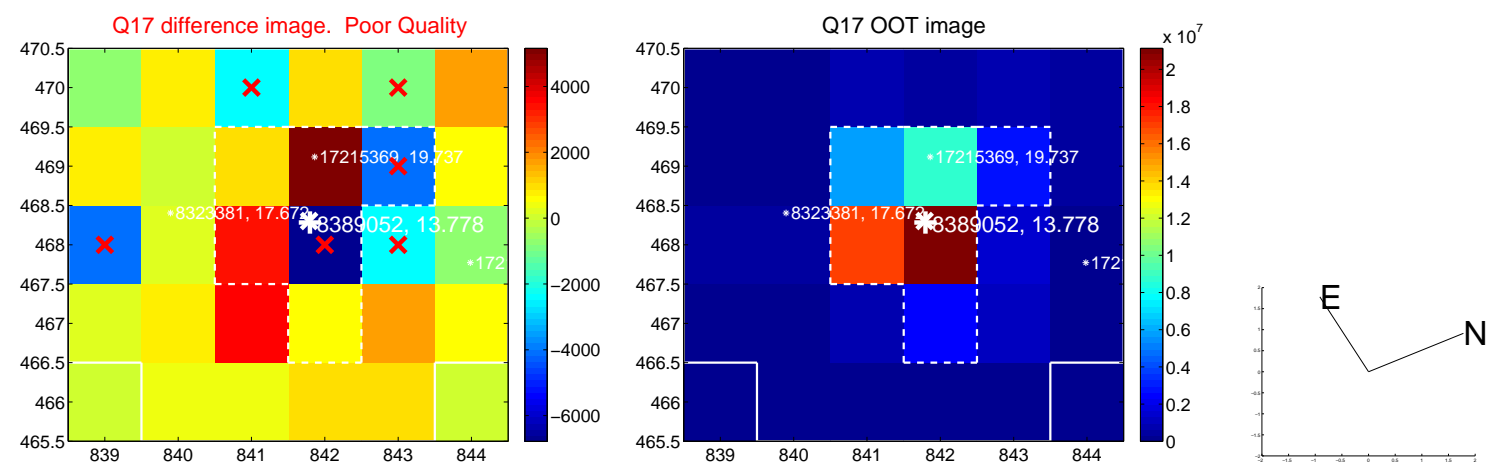
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

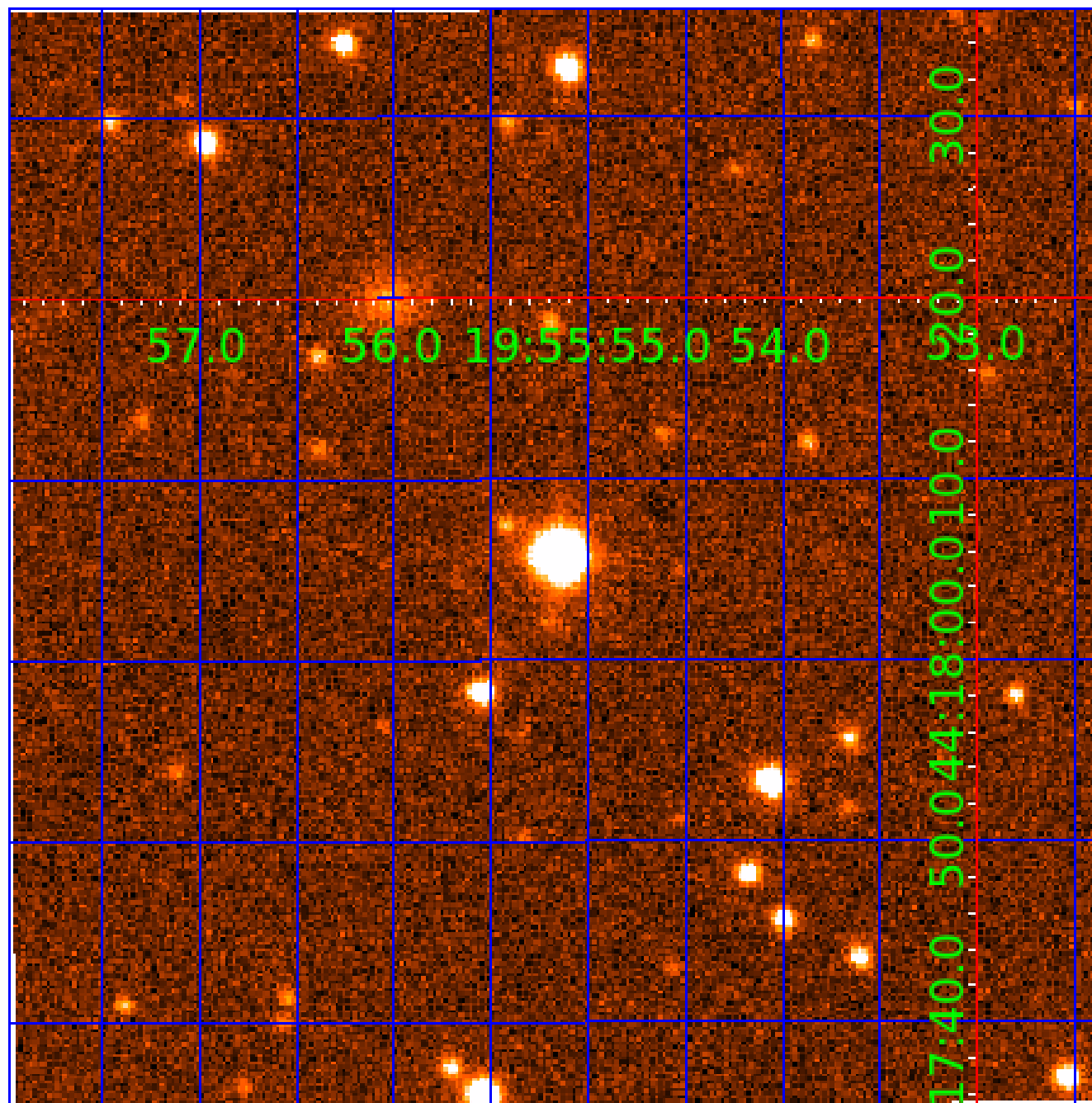


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008389052

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})
008389052-01	OBS	No	0.684041	132.058620	6.6	5.083	8.5	3.2	1.62	5986	0.44	13509.86
008389052-02	OBS	No	8.899631	138.231103	236.3	1.465	11.3	14.5	1.62	5986	2.51	441.50
008389052-03	OBS	No	19.440513	148.848163	338.0	1.364	11.5	12.3	1.62	5986	3.01	155.77
008389052-04	OBS	No	7.468513	136.650798	407.1	0.937	13.4	15.8	1.62	5986	3.40	557.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008389052-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
008389052-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
008389052-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_MEAS
008389052-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—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.

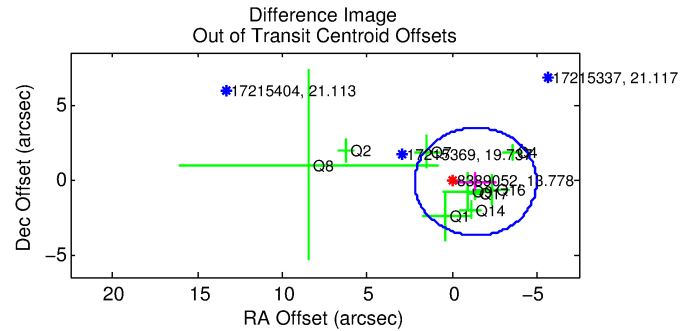
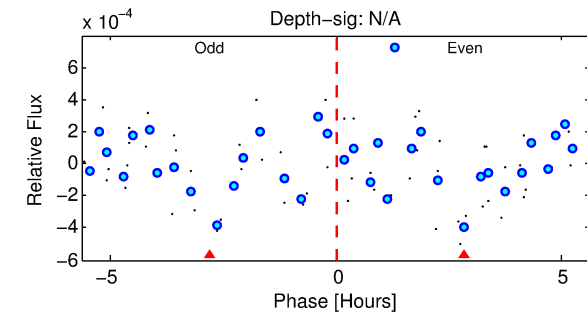
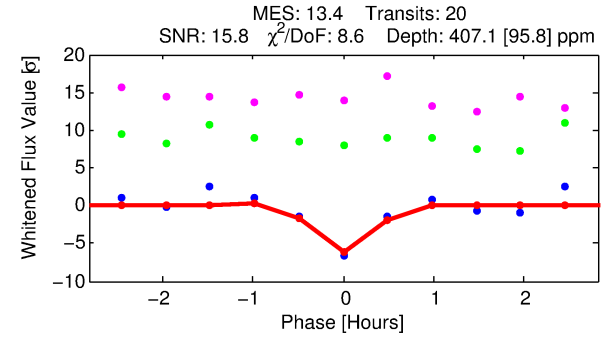
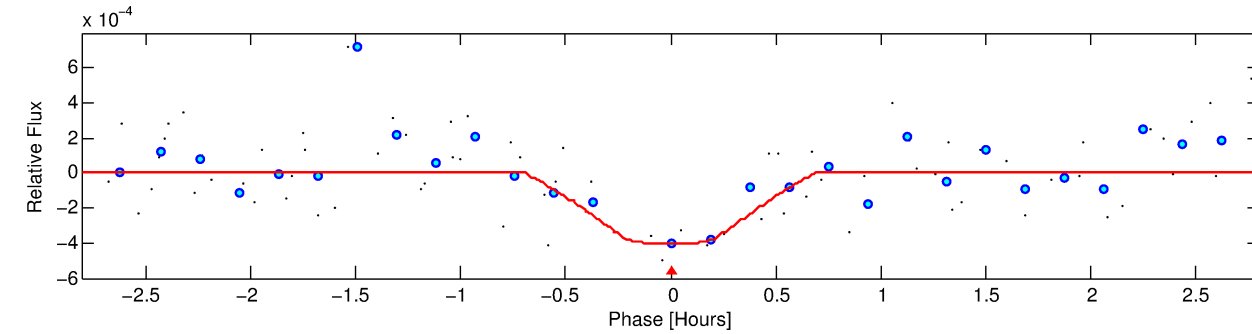
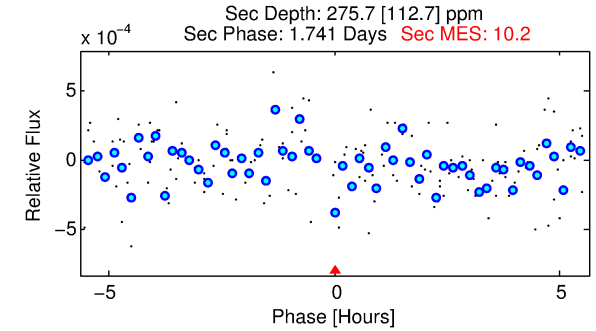
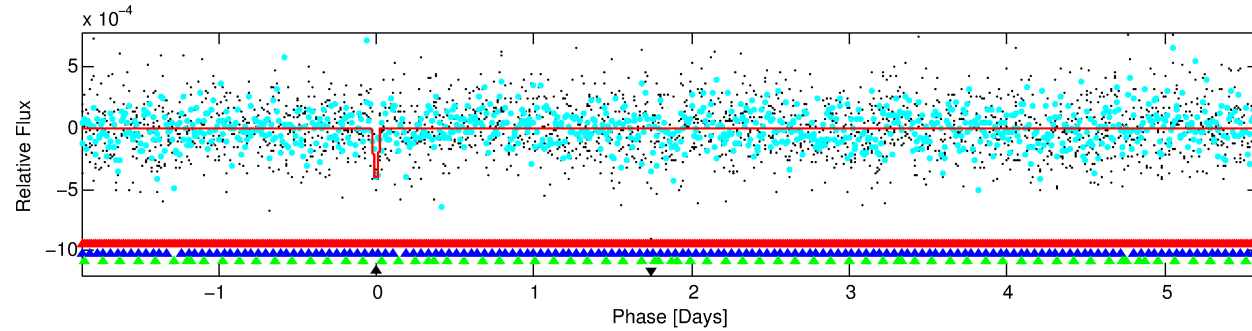
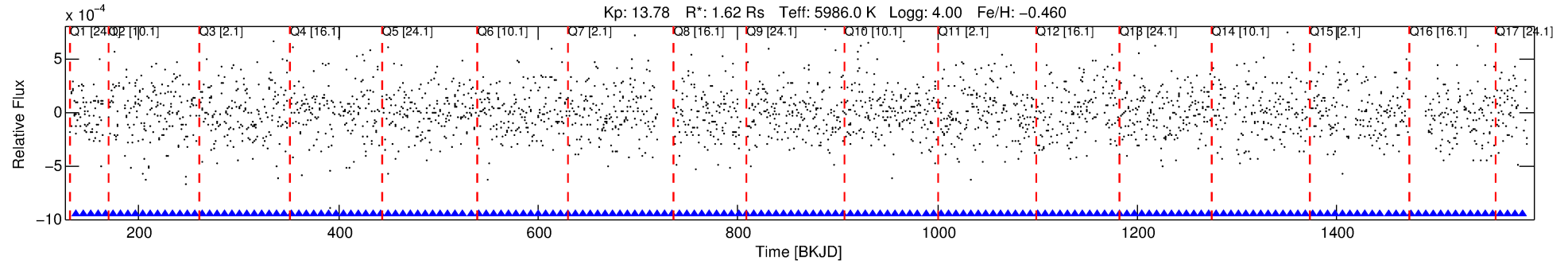
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008389052-04

No Significant Match Found

DV One-Page Summary

KIC: 8389052 Candidate: 4 of 4 Period: 7.469 d



DV Fit Results:

Period = 7.46851 [0.00007] d
Epoch = 136.6508 [0.0053] BKJD
Rp/R* = 0.0193 [0.0221]
a/R* = 53.34 [306.69]
b = 0.52 [8.04]
Seff = 557.76 [426.87]
Teq = 1239 [237] K
Rp = 3.40 [4.15] Re
a = 0.0735 [0.0329] AU
Ag = 70.70 [173.28] [0.40 σ]
Teffp = 5556 [3242] K [1.33 σ]

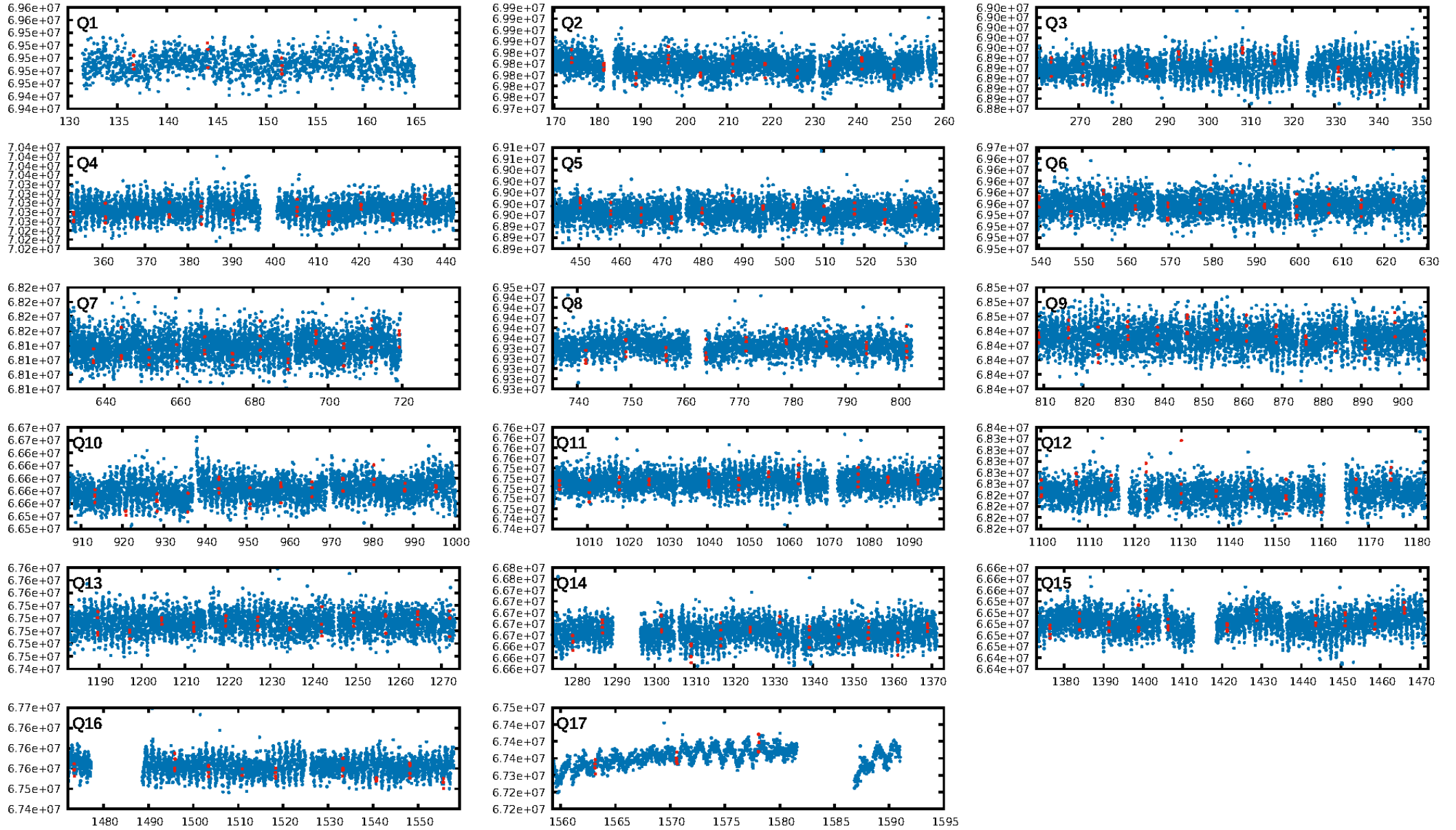
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [31.50 σ]
LongPeriod-sig: 100.0% [19.75 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 3.00e-13
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: -0.9601
Centroid-sig: 46.6%
Centroid-so: 0.502 arcsec [1.19 σ]
OotOffset-rm: 1.402 arcsec [1.17 σ]
OotOffset-st: 2/1/3/3 [9]
KicOffset-rm: 1.462 arcsec [1.32 σ]
KicOffset-st: 2/1/3/3 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 0.12 [2/17]

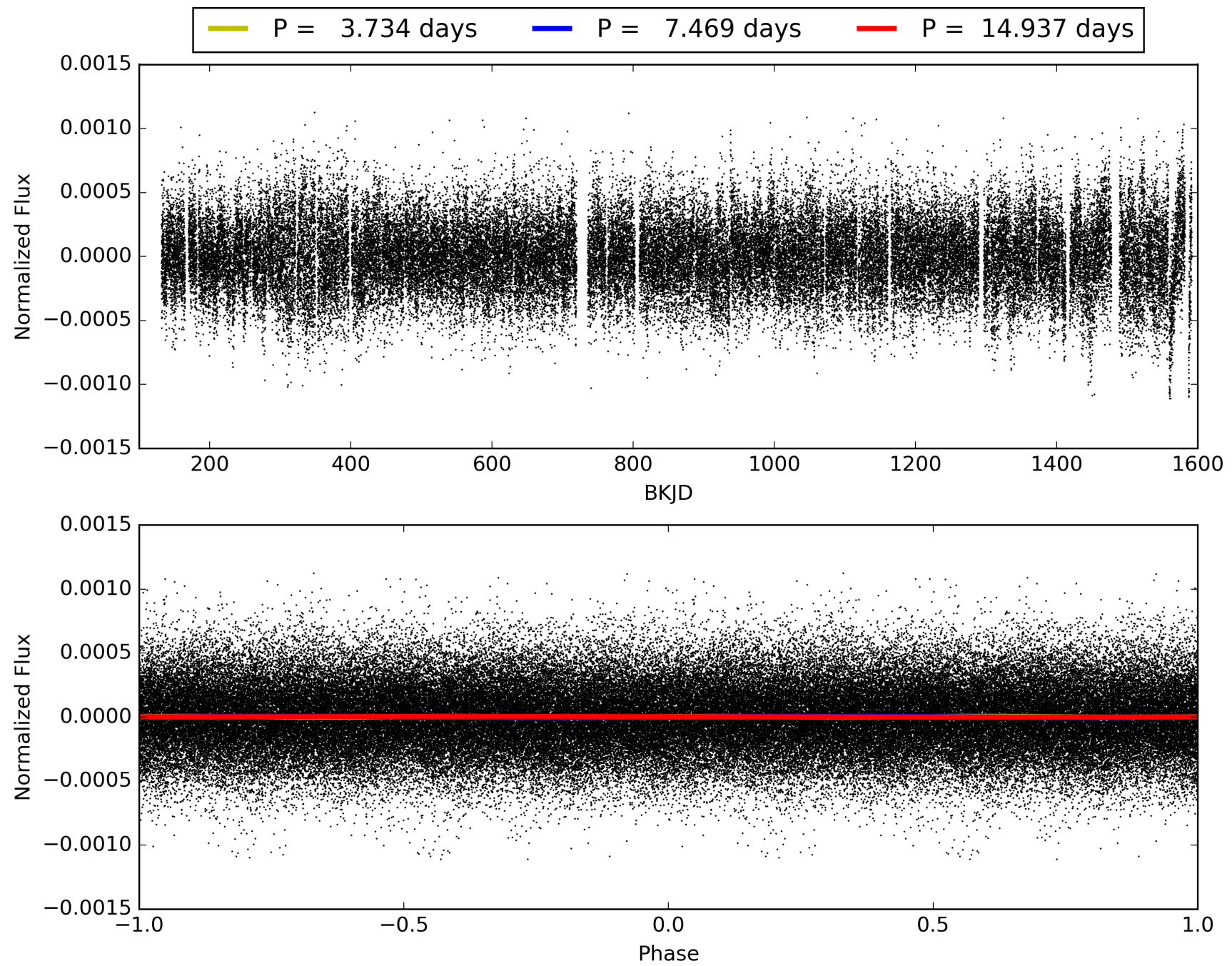
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:02:50 Z

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

TCE 008389052-04, PDC Light Curves

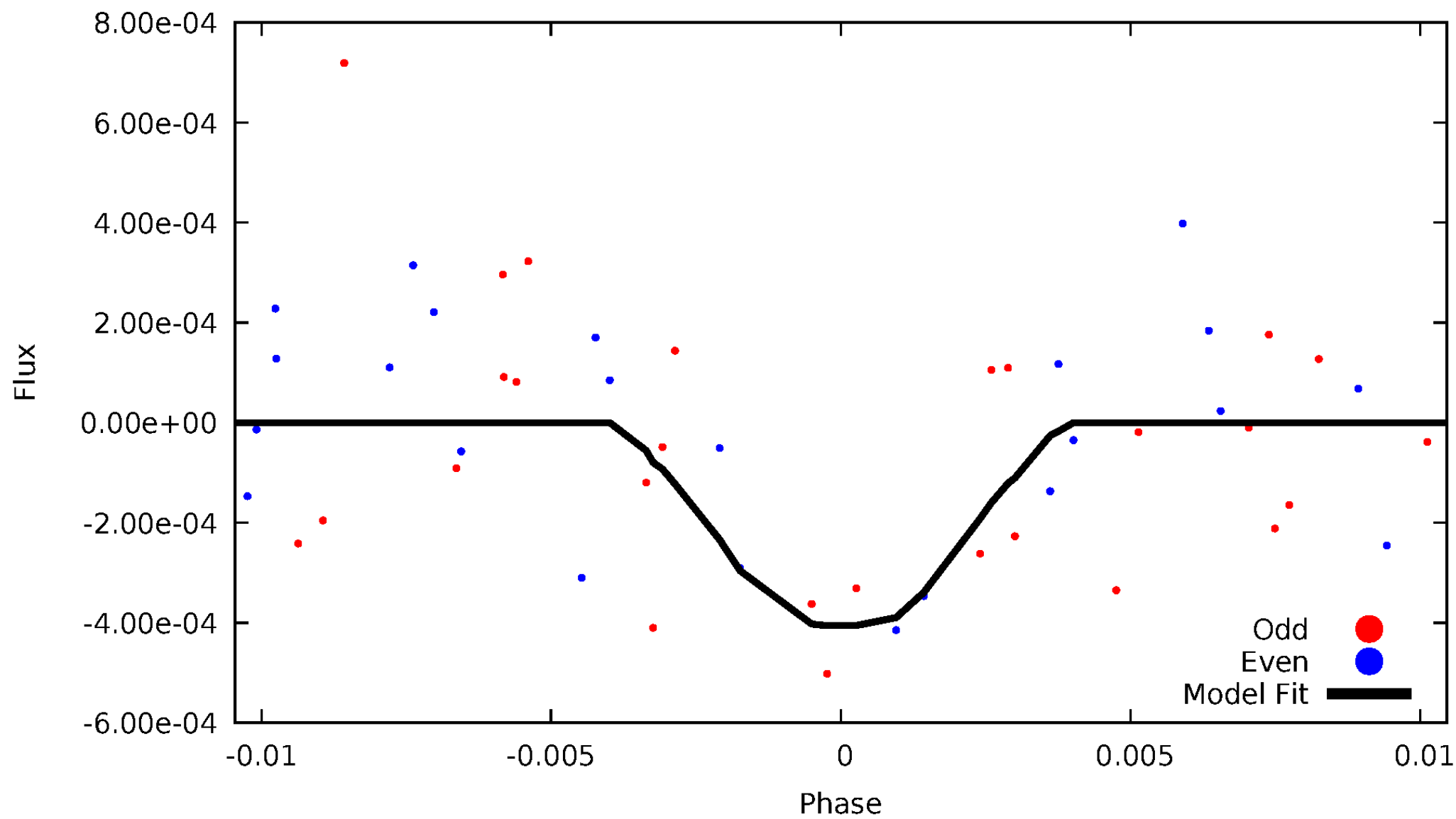


TCE 008389052-04



DV Odd/Even

TCE 008389052-04

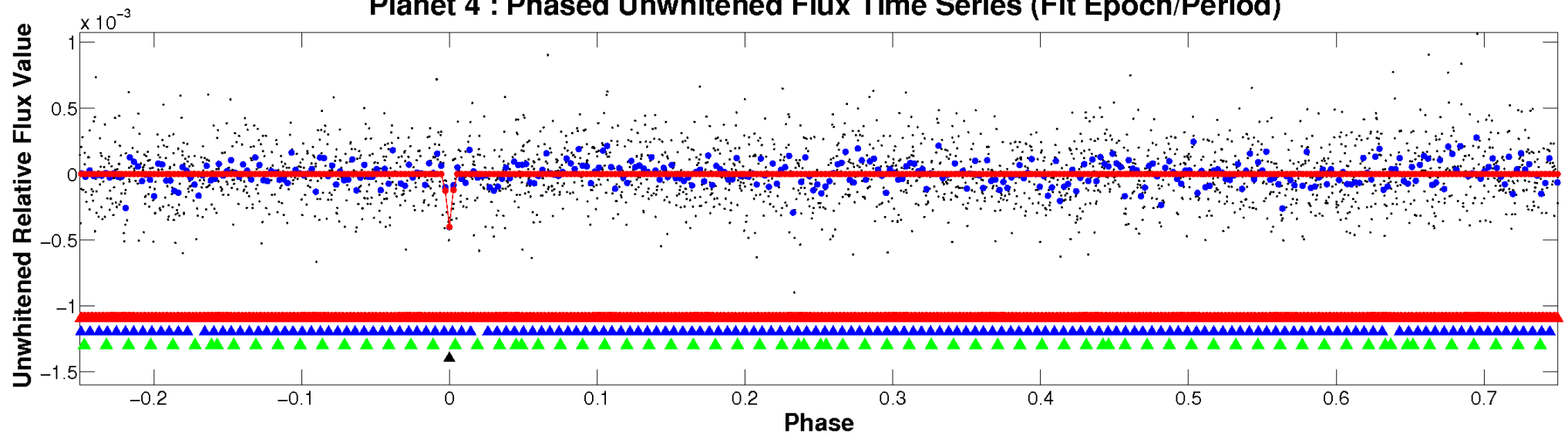


ALT Odd/Even

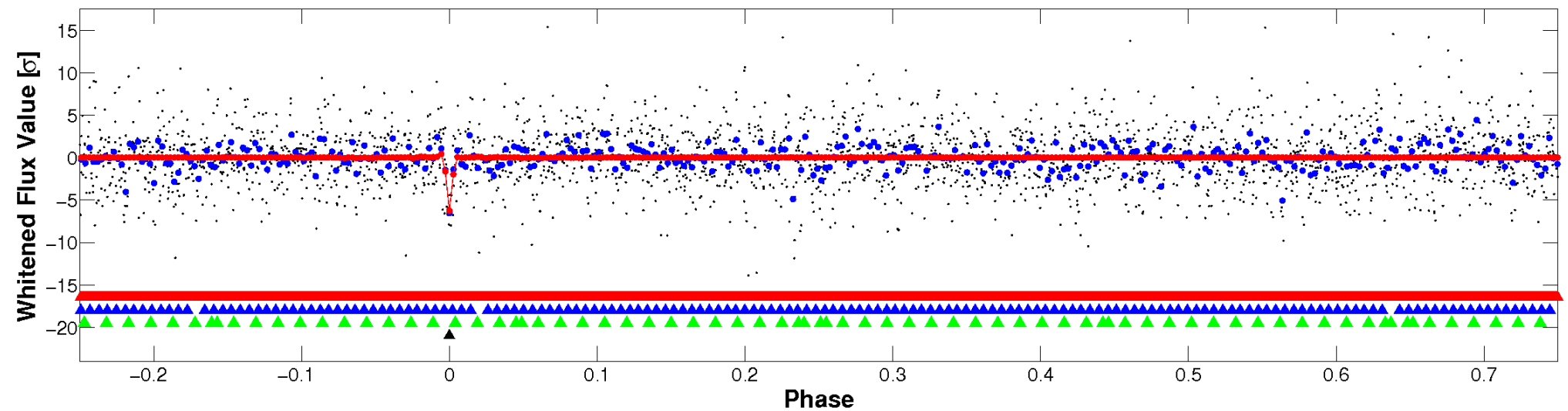
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

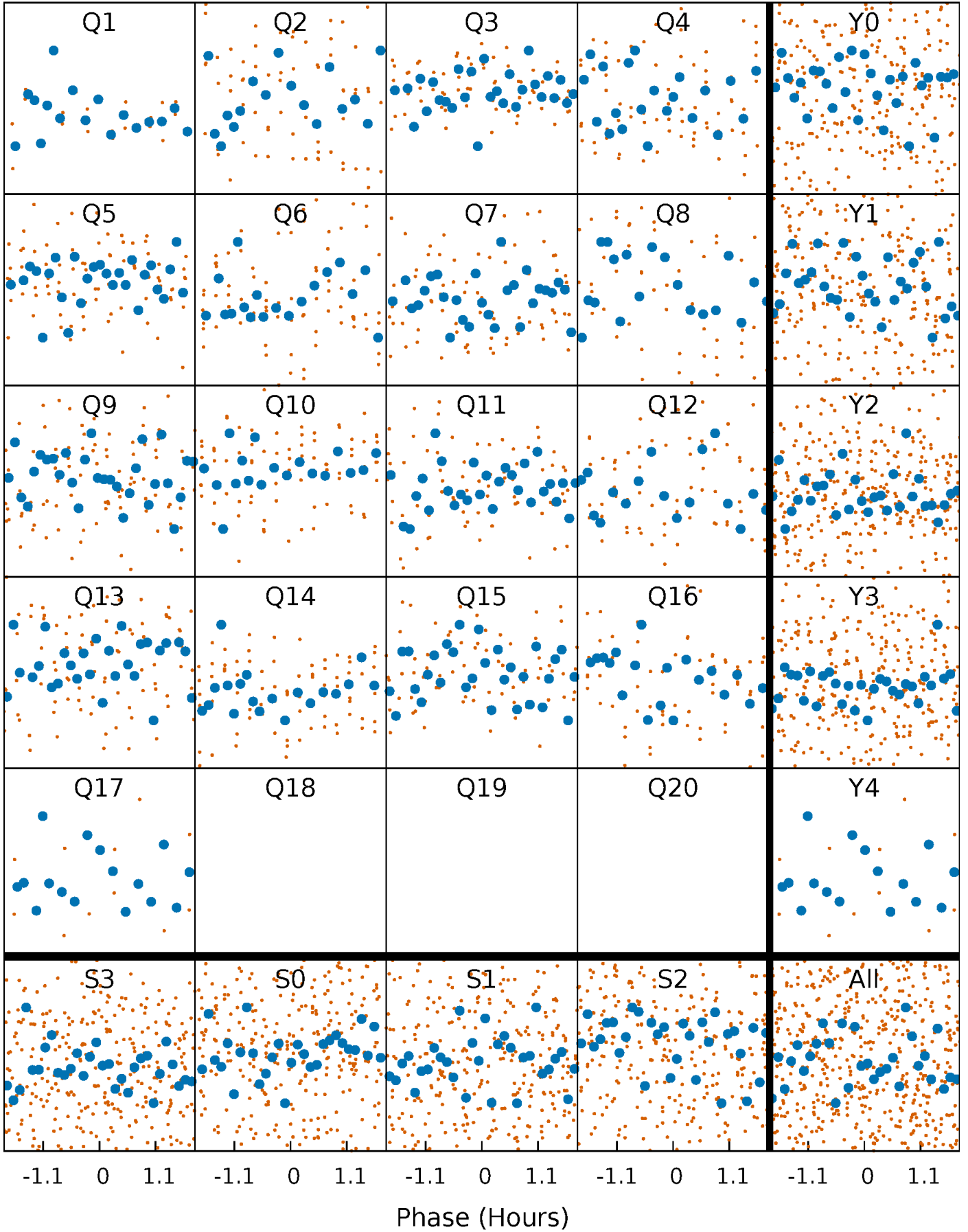


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



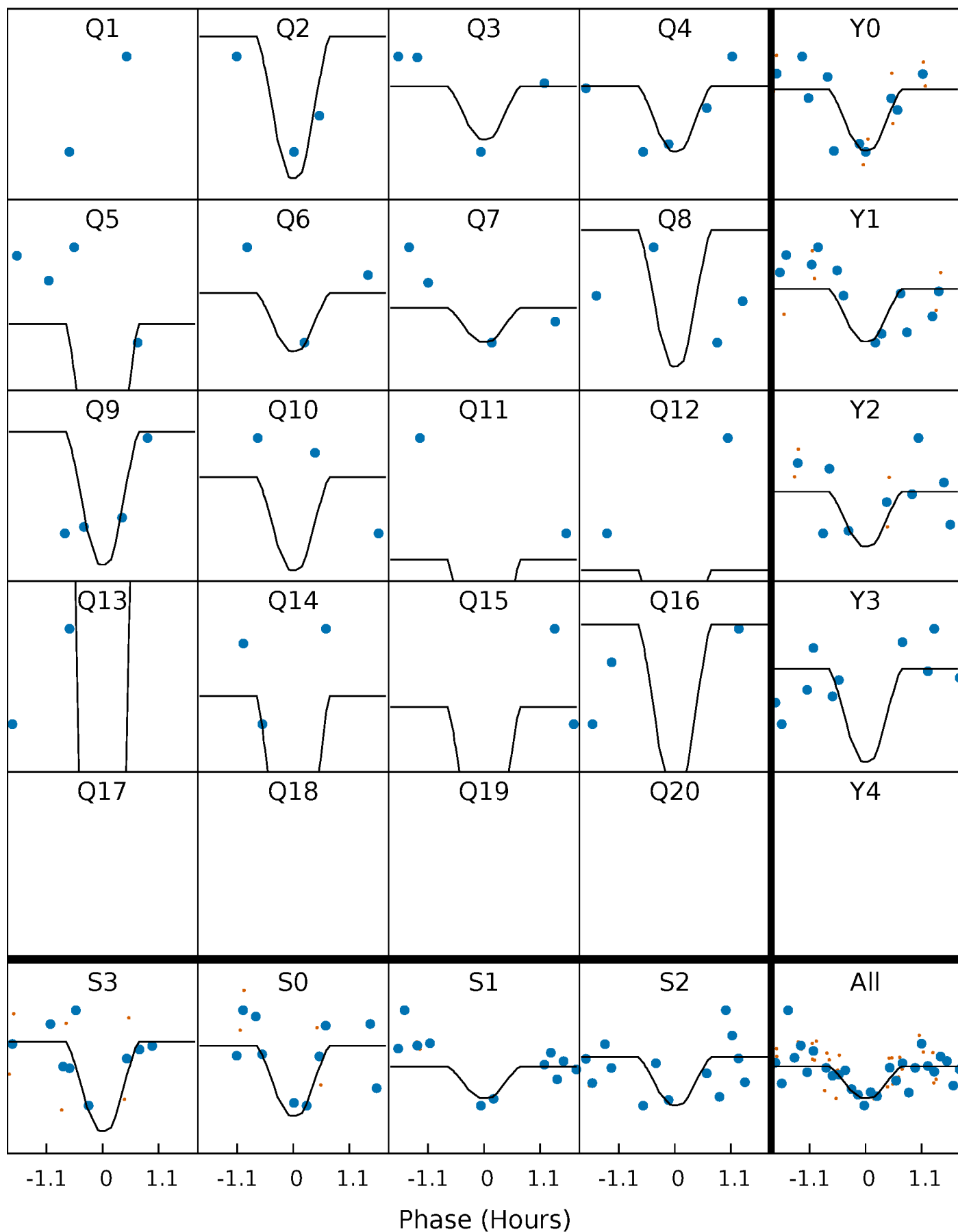
PDC Quarter-Phased Transit Curves

TCE 008389052-04 P= 7.468513 Days $T_0=136.650798$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008389052-04 P= 7.468513 Days $T_0=136.650798$ (BKJD)

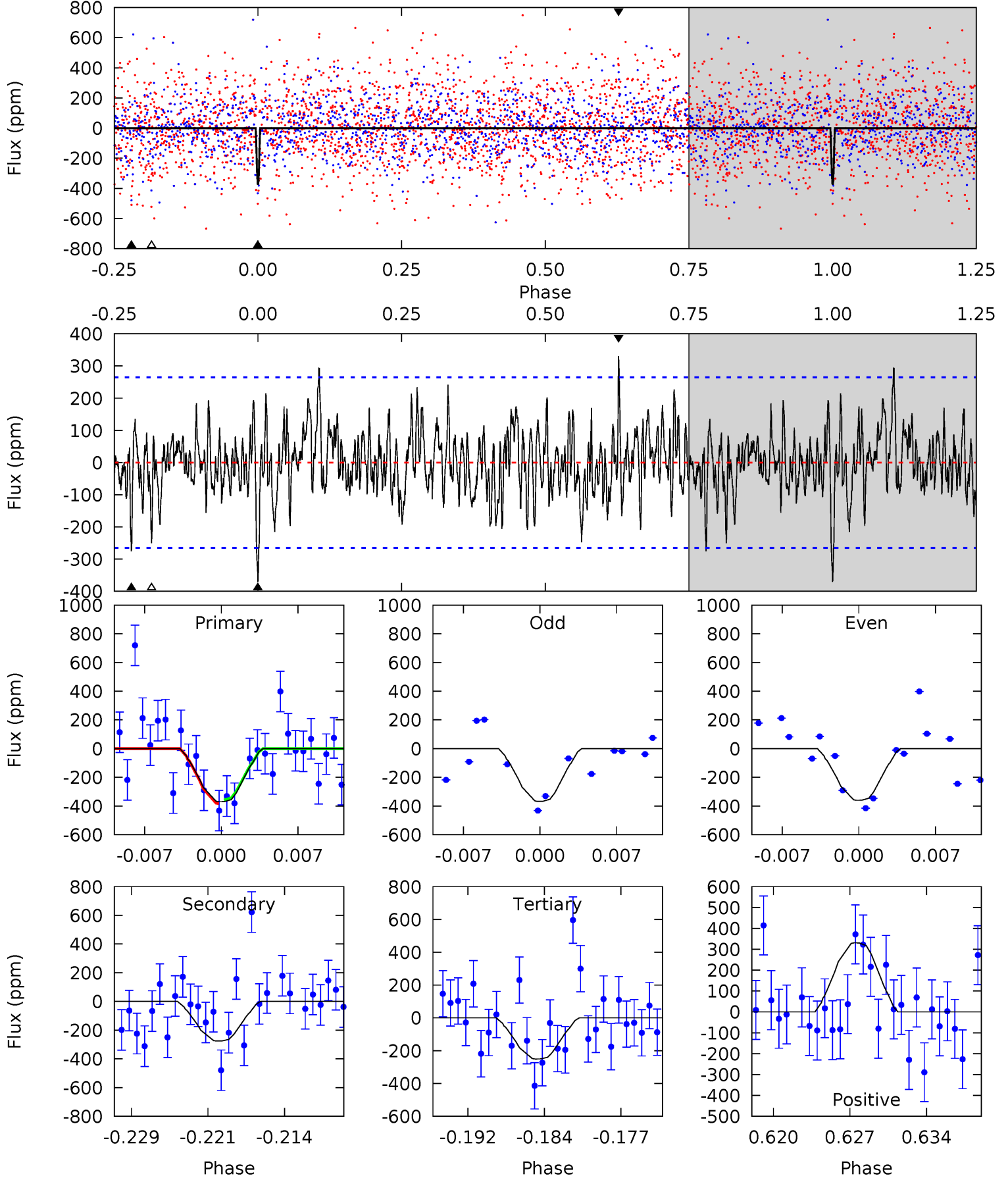


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

008389052-04, P = 7.468513 Days, E = 129.182285 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.11	5.28	4.81	6.34	5.08	2.68	1.66	2.30	0.77	0.48	-1.06	0.07	1.00	0.47	0.24



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 008389052

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5986^{+179}_{-179}	$3.997^{+0.458}_{-0.153}$	$-0.460^{+0.300}_{-0.250}$	$1.618^{+0.449}_{-0.674}$	$0.949^{+0.127}_{-0.127}$	$0.315^{+1.179}_{-0.137}$
	+3%/-3%	+11%/-4%	+65%/-54%	+28%/-42%	+13%/-13%	+374%/-43%
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 008389052-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-275 ± 52	$4.06^{+3.52}_{-2.65}$	1696^{+152}_{-209}	5014^{+3150}_{-1059}	52^{+368}_{-37}
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

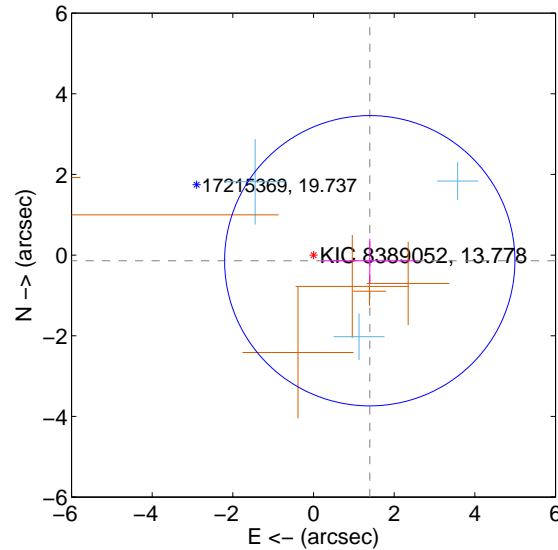
Supplemental centroid analysis for 008389052-04. Kepler magnitude: 13.78. Transit SNR 15.76

There are 3 quarters with good PRF difference image offsets

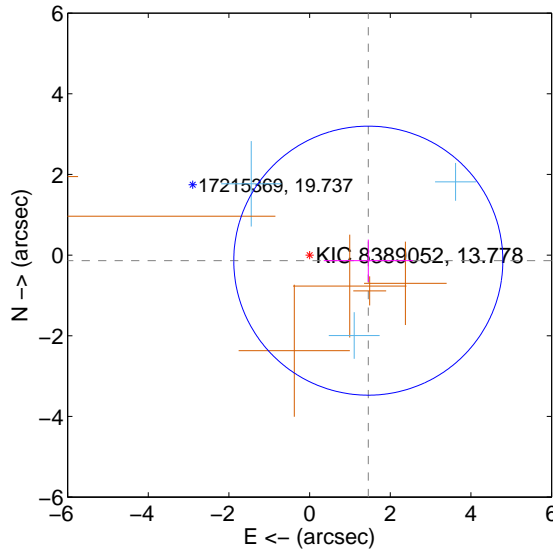
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.402 ± 1.200	1.17	-1.395 ± 1.186	-0.140 ± 0.544
PRF-fit source offset from KIC position	1.462 ± 1.112	1.32	-1.456 ± 1.106	-0.138 ± 0.524
photometric centroid source offset	0.50 ± 0.42	1.19	0.38 ± 0.44	-0.32 ± 0.39

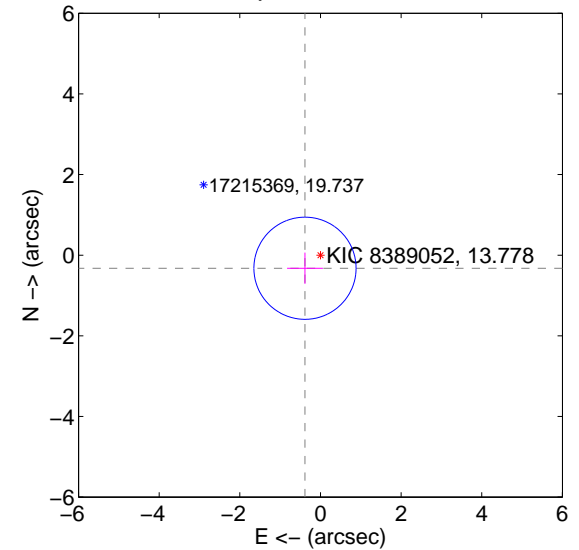
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

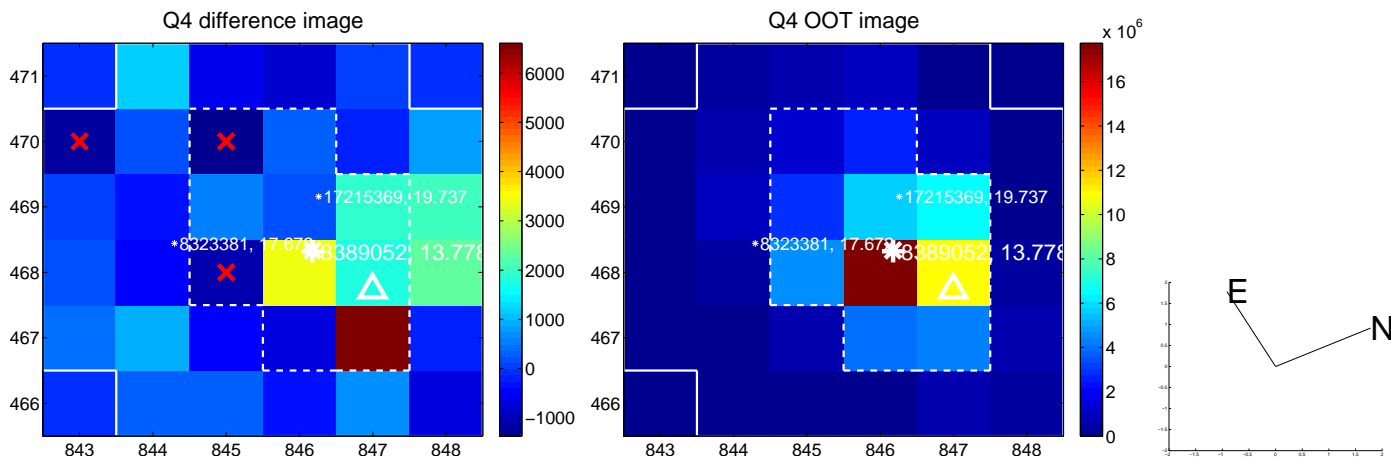
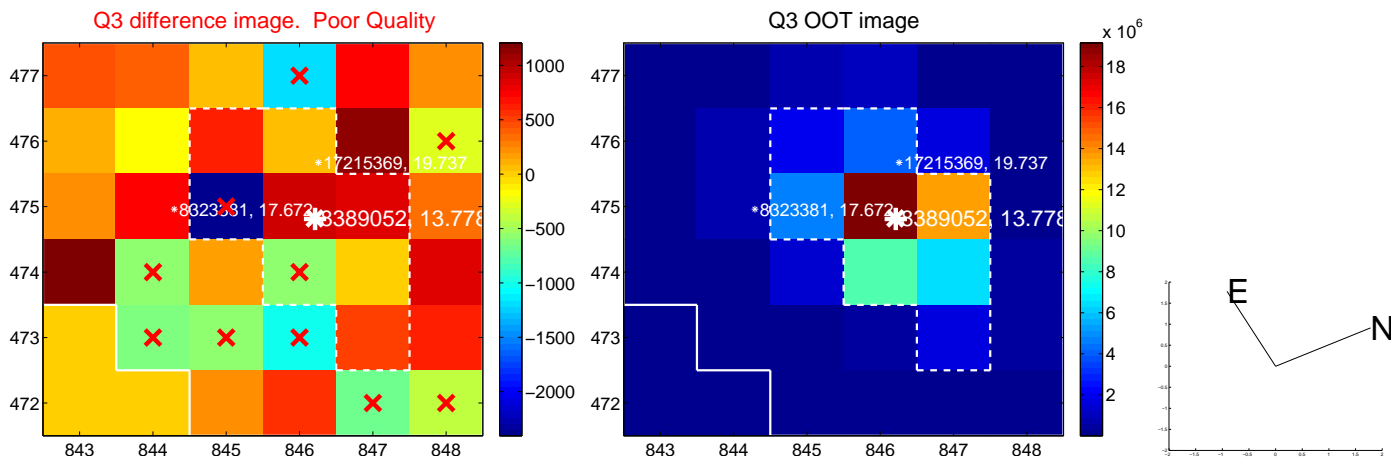
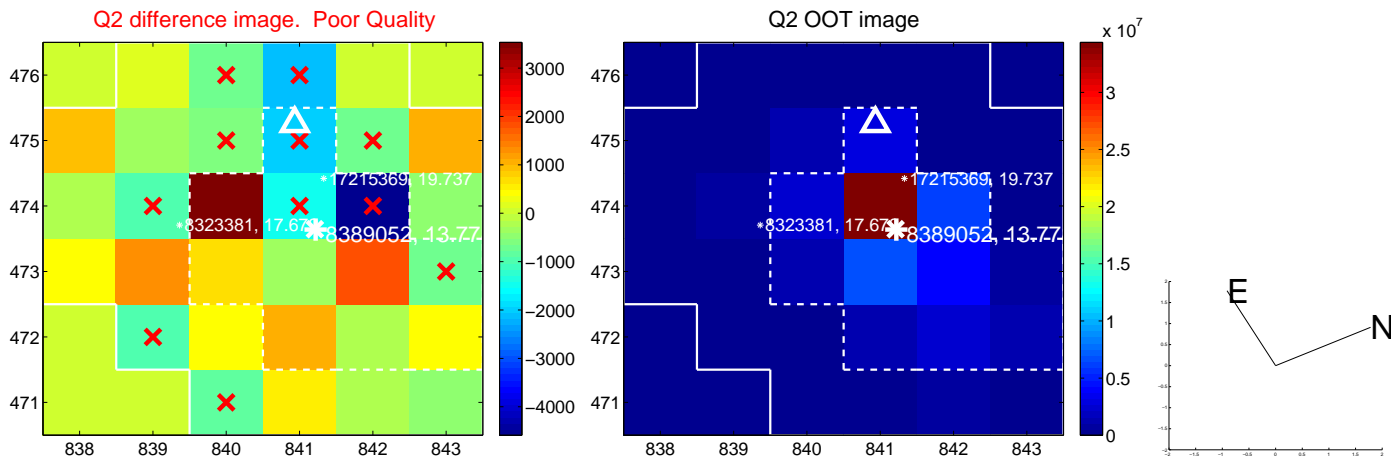
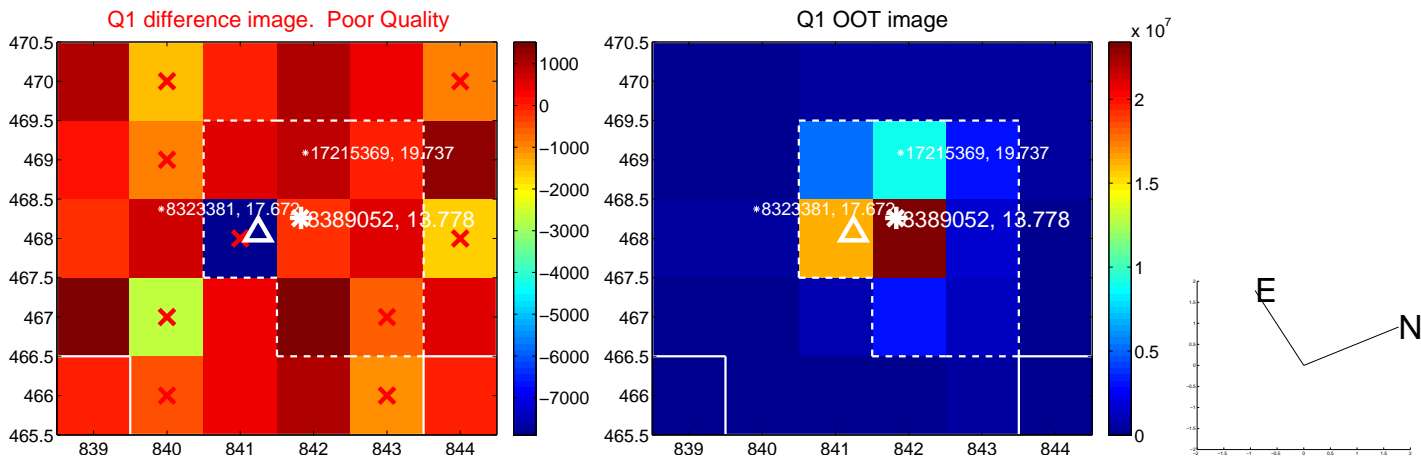


offset from photometric centroids

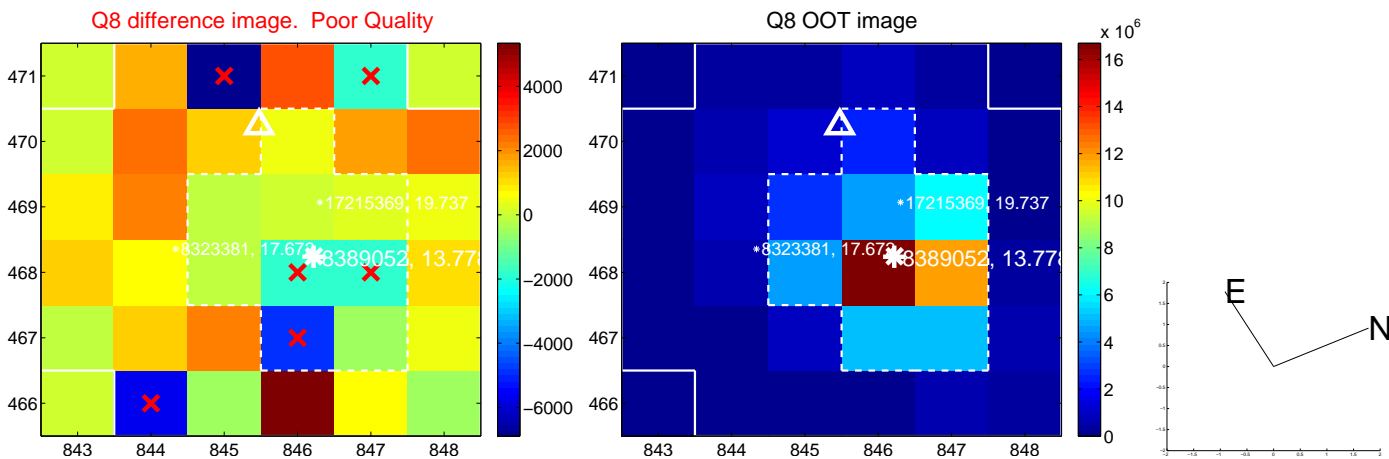
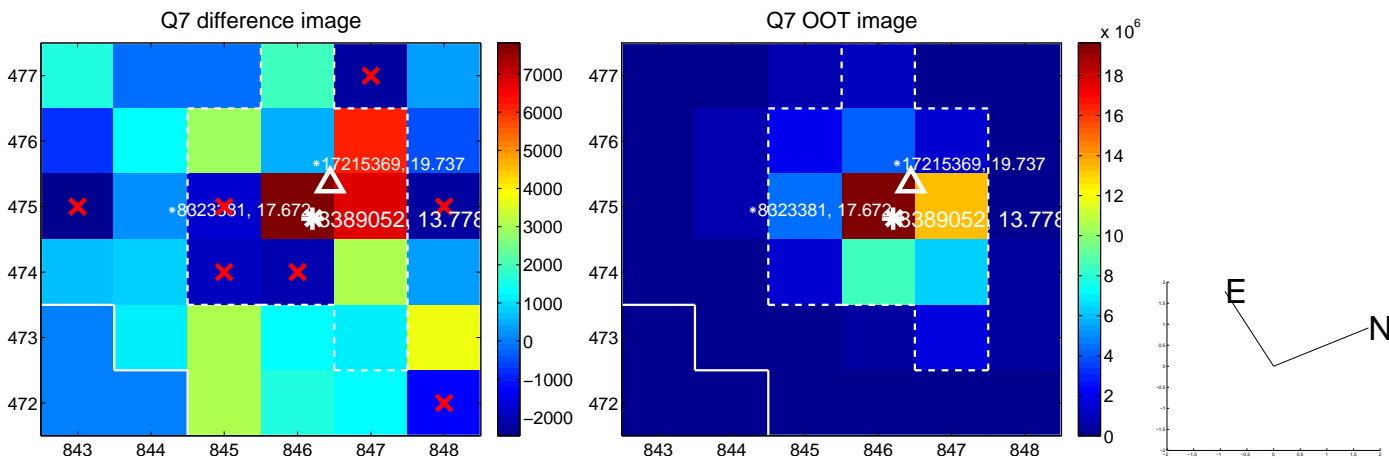
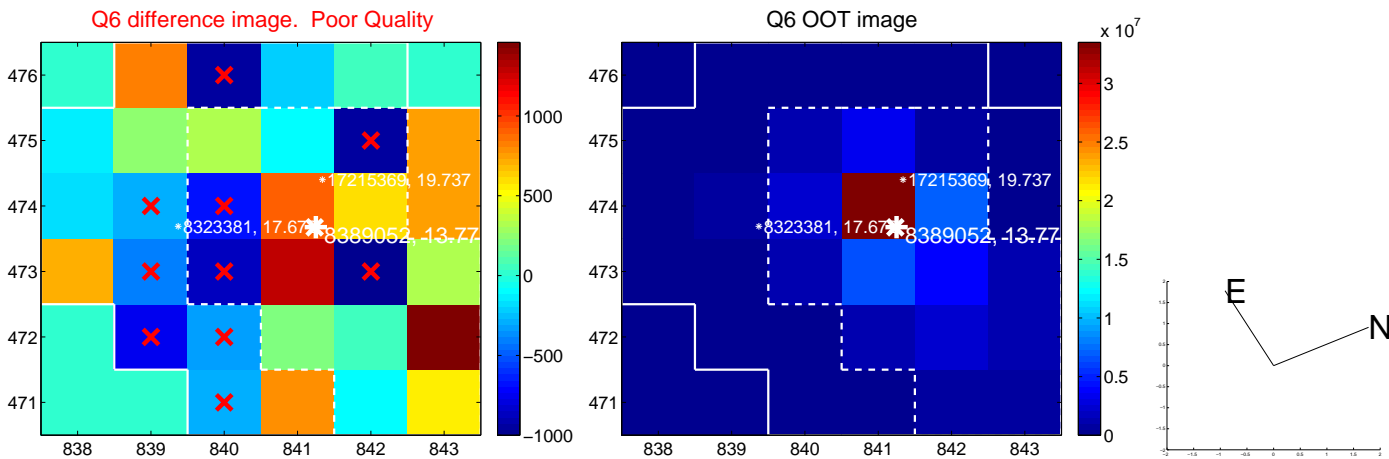
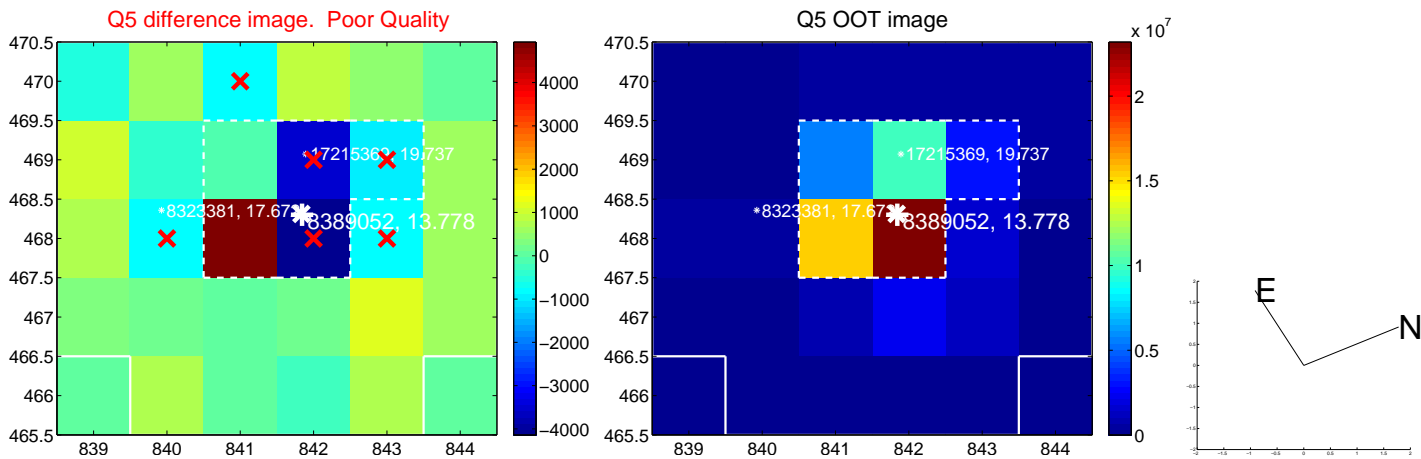


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

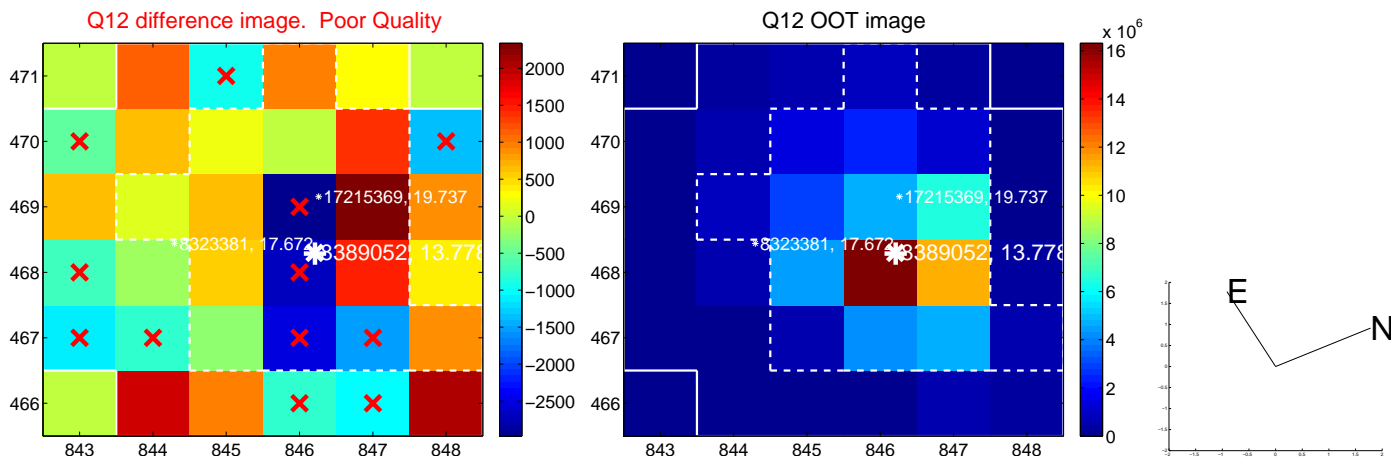
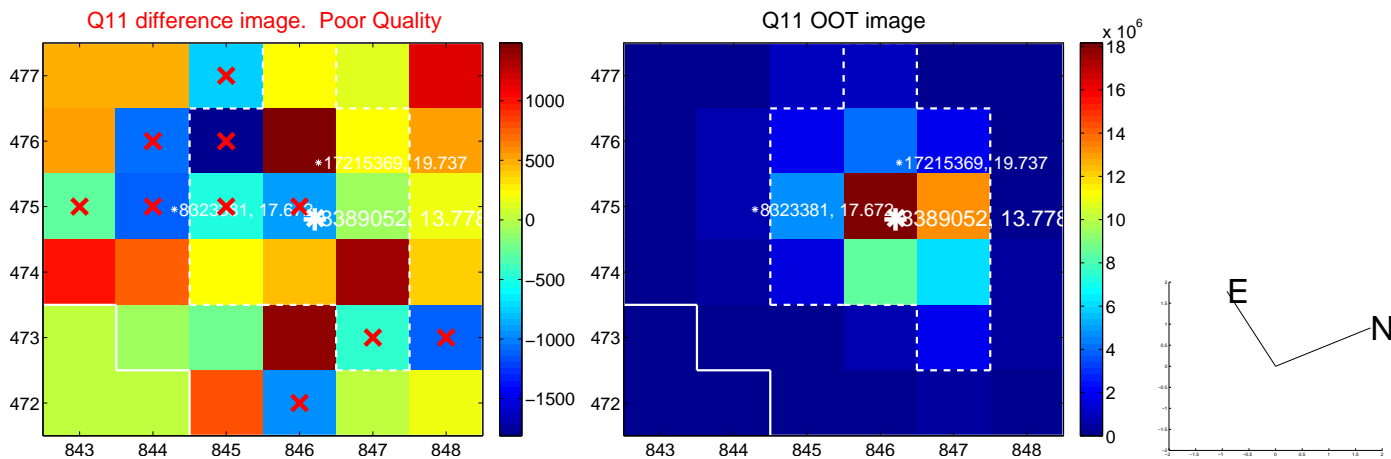
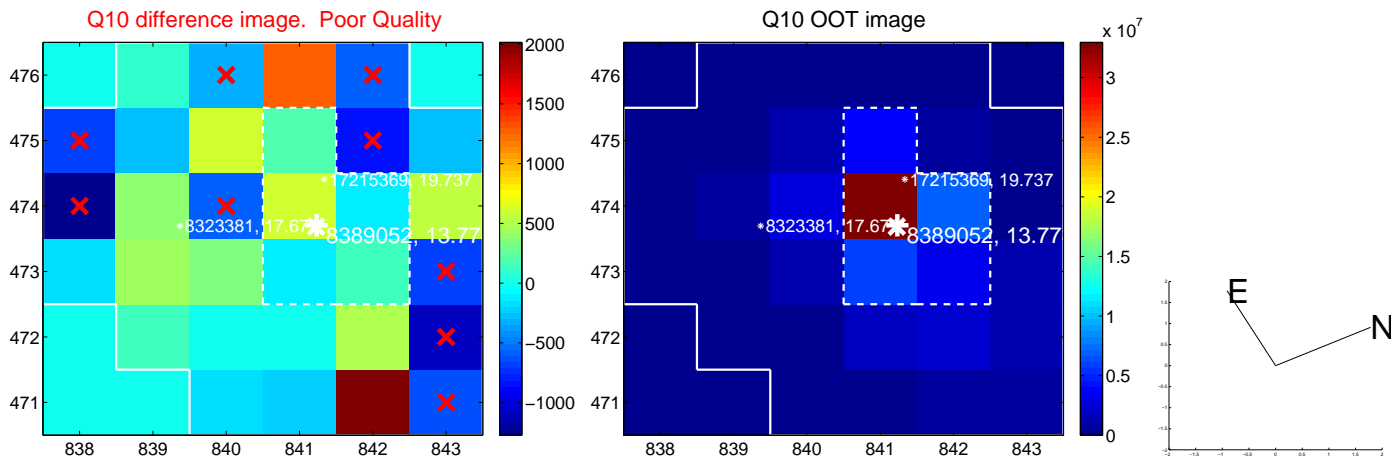
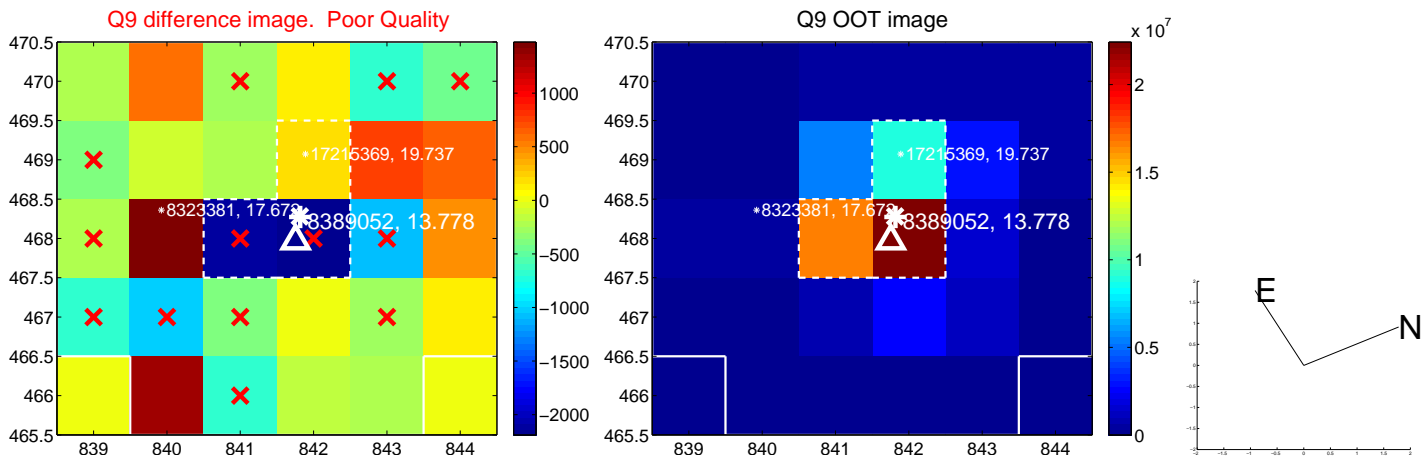
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



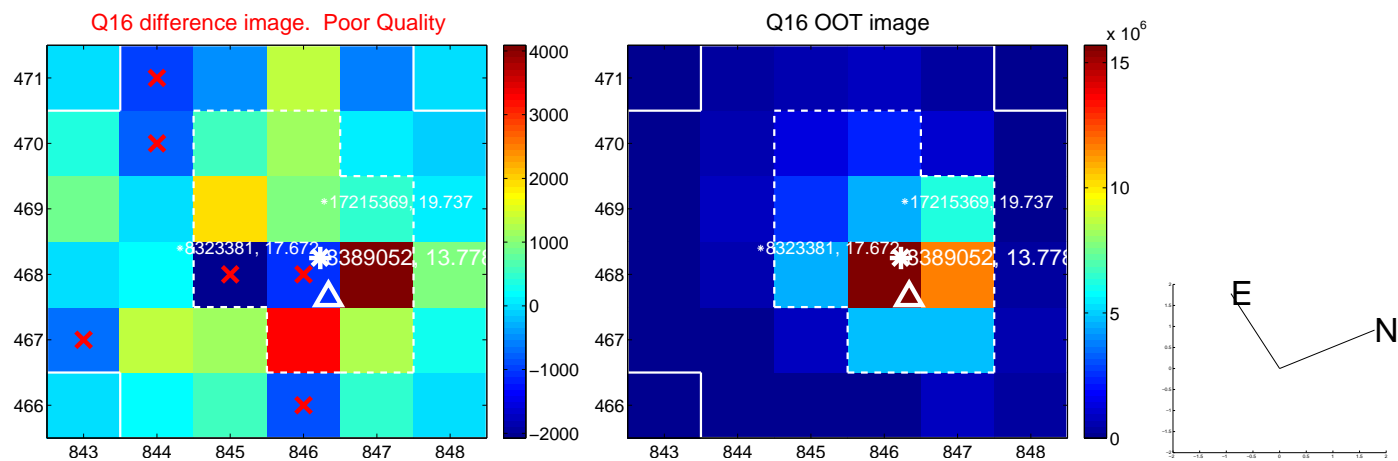
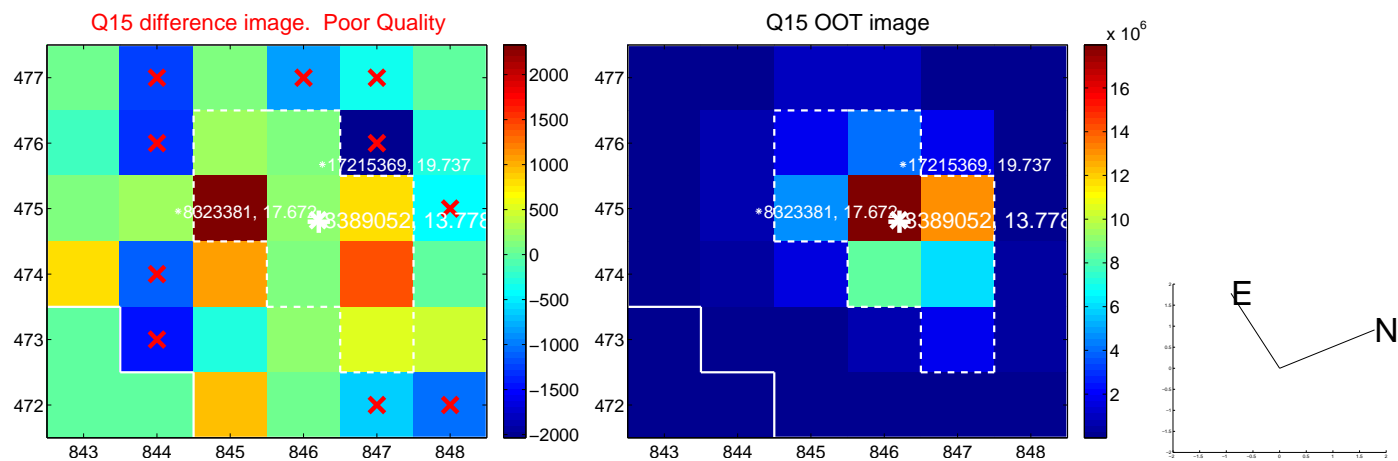
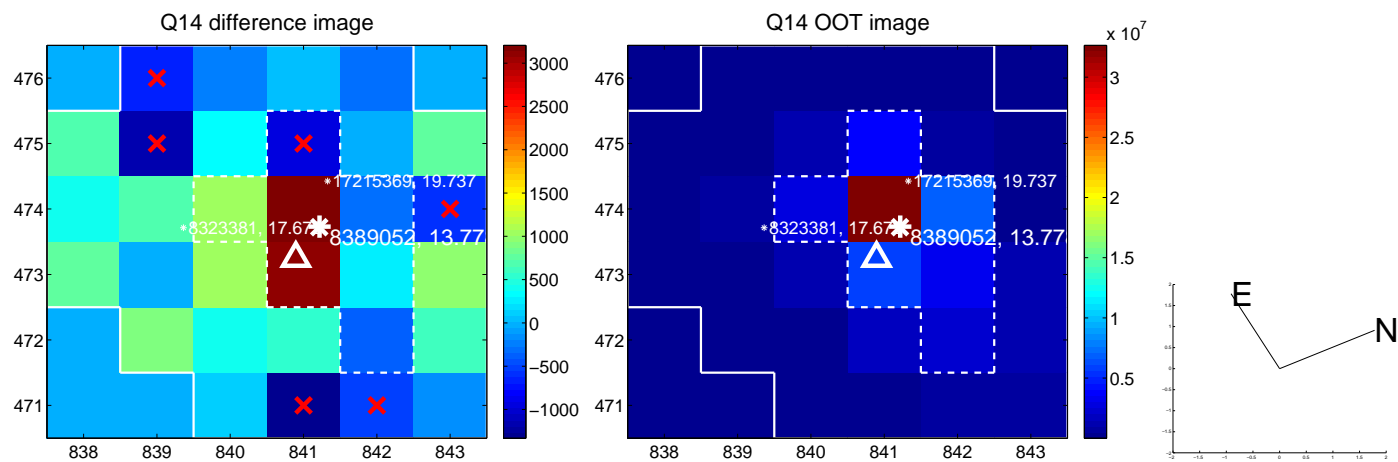
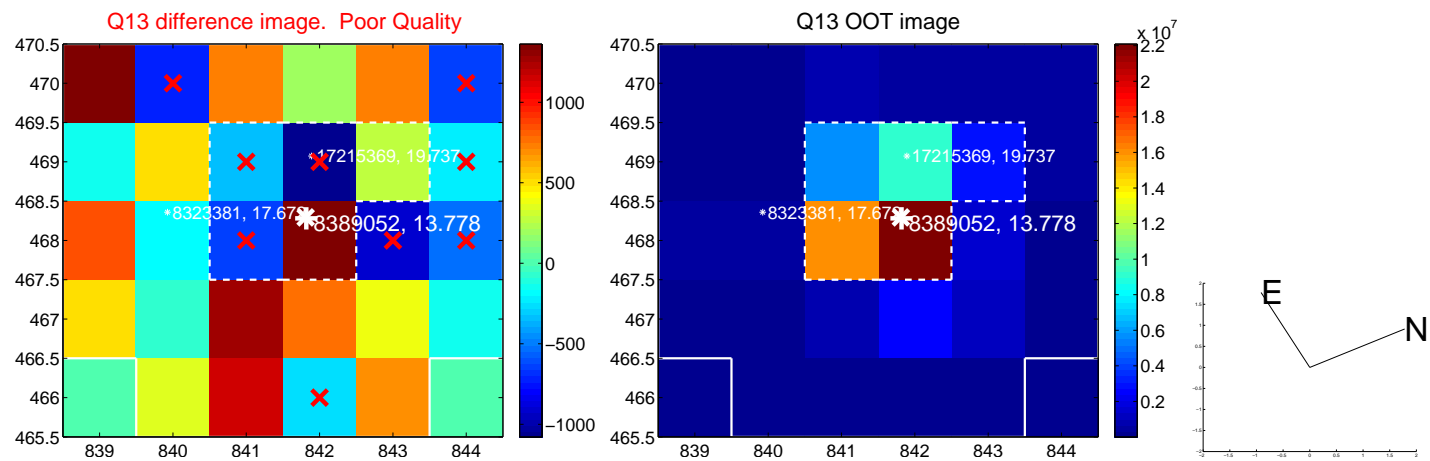
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



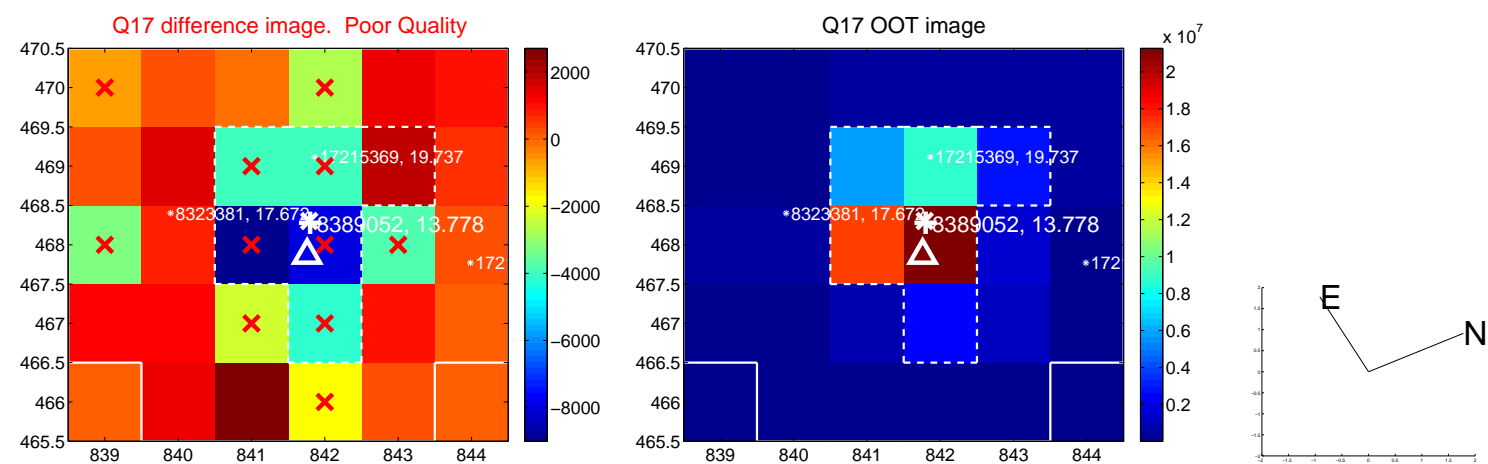
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



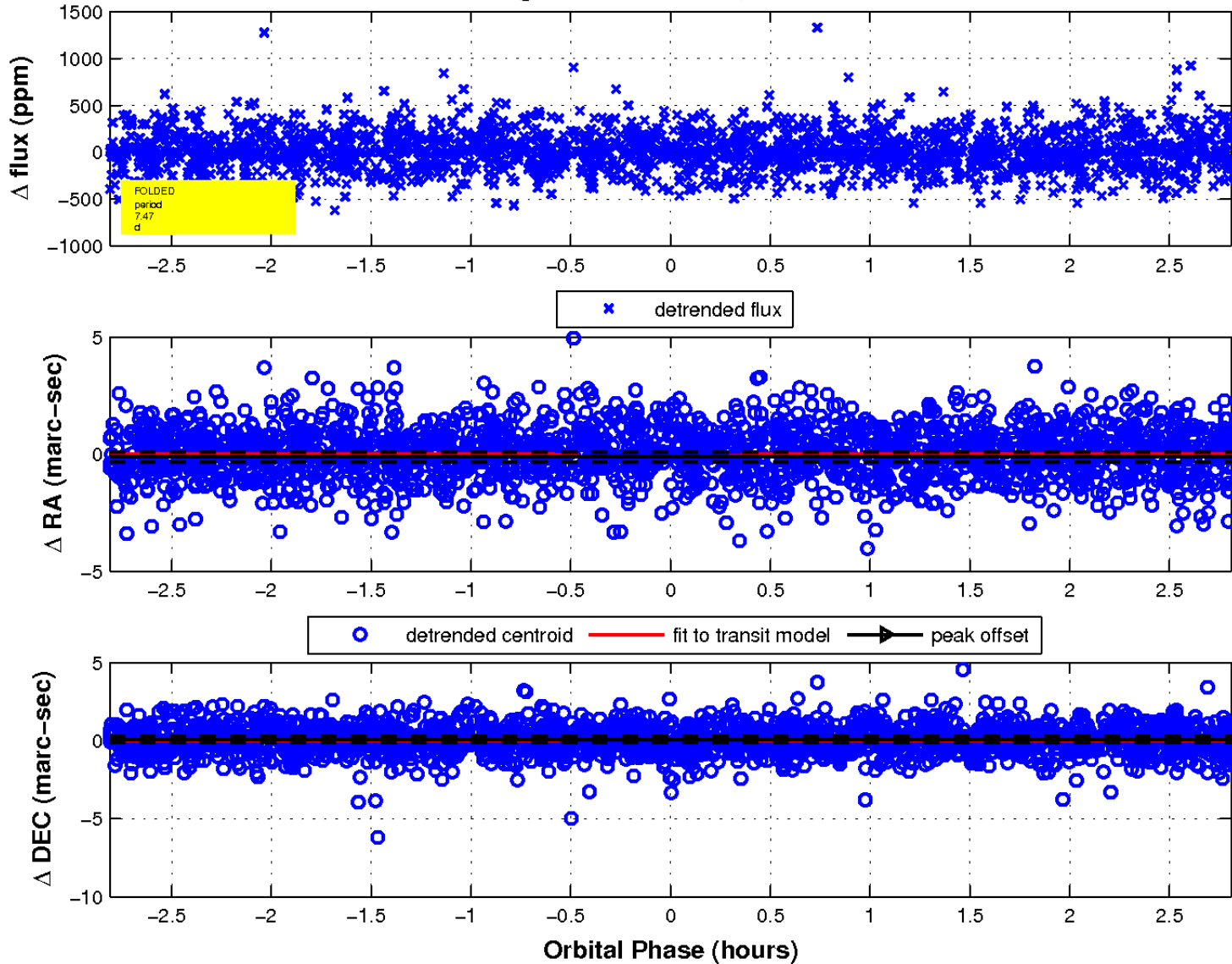
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 4 of 4



UKIRT Image

Declination

