

KIC 008398303

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})
008398303-01	OBS	No	1.584931	132.756990	19.5	11.352	7.9	8.7	2.58	6267	1.17	10224.57
008398303-03	OBS	No	108.171832	200.748075	466.2	7.958	12.2	11.5	2.58	6267	6.02	36.66
008398303-04	OBS	No	25.306363	133.957577	304.2	1.588	11.5	10.2	2.58	6267	5.22	254.30
008398303-05	OBS	No	19.344654	132.936177	360.9	0.962	11.9	10.4	2.58	6267	4.97	363.84
008398303-06	OBS	No	40.620767	147.619778	351.5	2.553	12.5	9.8	2.58	6267	5.16	135.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008398303-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
008398303-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008398303-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008398303-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
008398303-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

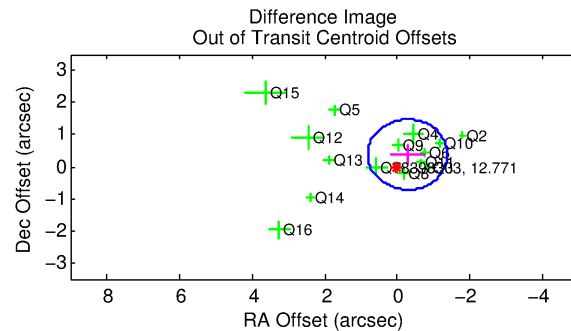
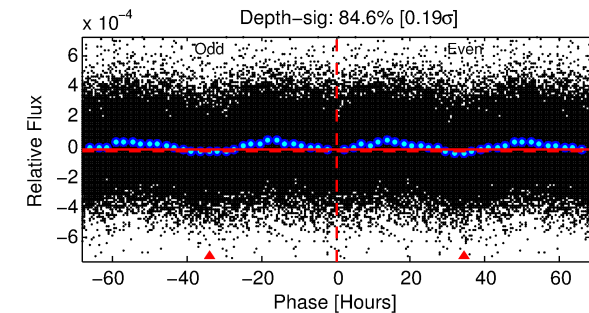
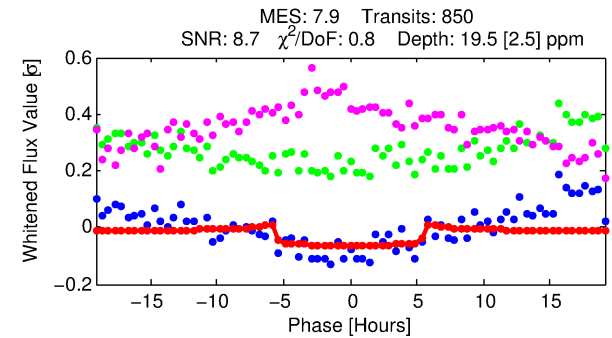
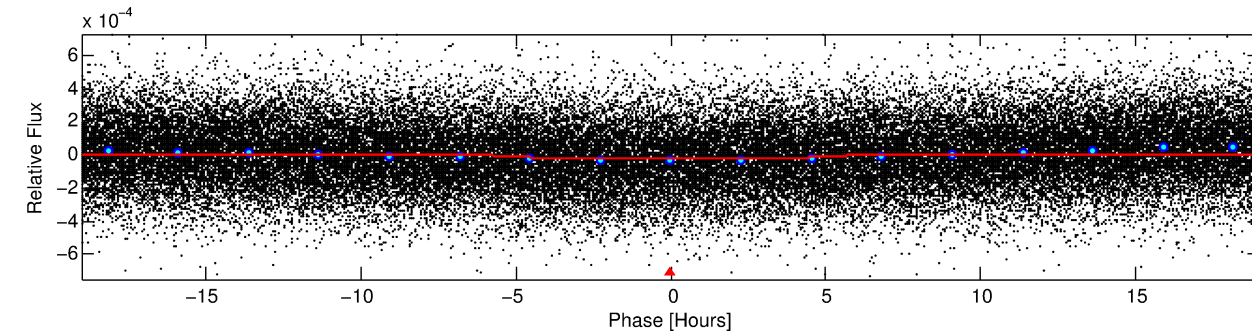
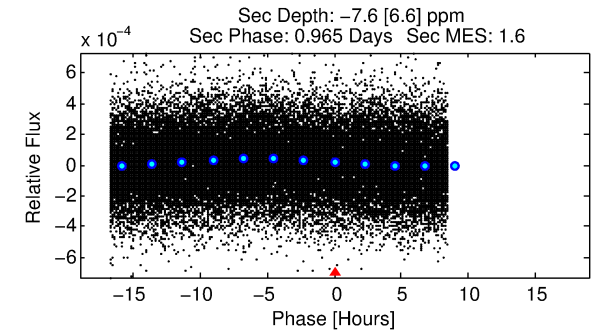
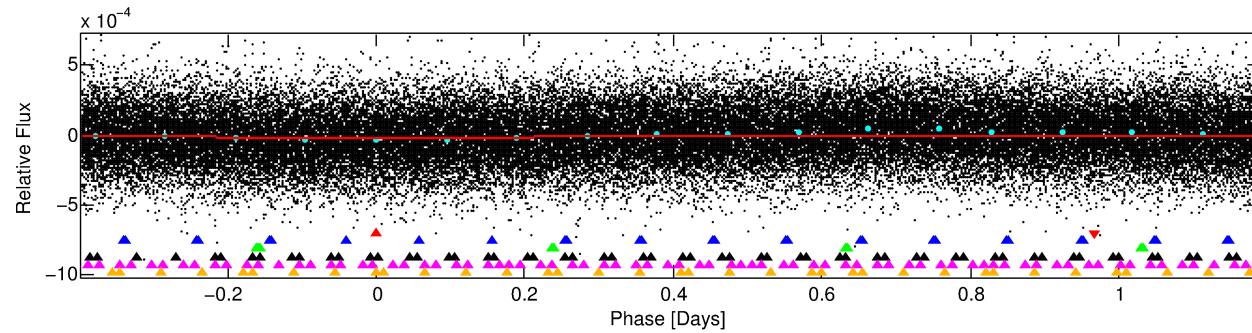
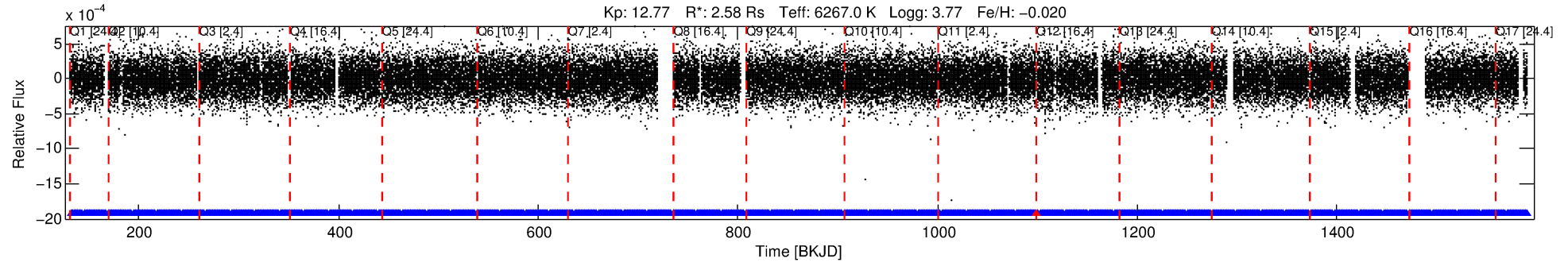
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008398303-01

No Significant Match Found

DV One-Page Summary

KIC: 8398303 Candidate: 1 of 6 Period: 1.585 d



DV Fit Results:

Period = 1.58493 [0.00003] d
Epoch = 132.7570 [0.0084] BKJD
Rp/R* = 0.0041 [0.0037]
a/R* = 1.20 [1.66]
b = 0.47 [7.67]
Seff = 10224.56 [8878.49]
Teq = 2564 [557] K
Rp = 1.17 [1.21] Re
a = 0.0300 [0.0157] AU
Ag = N/A
Teffp = N/A

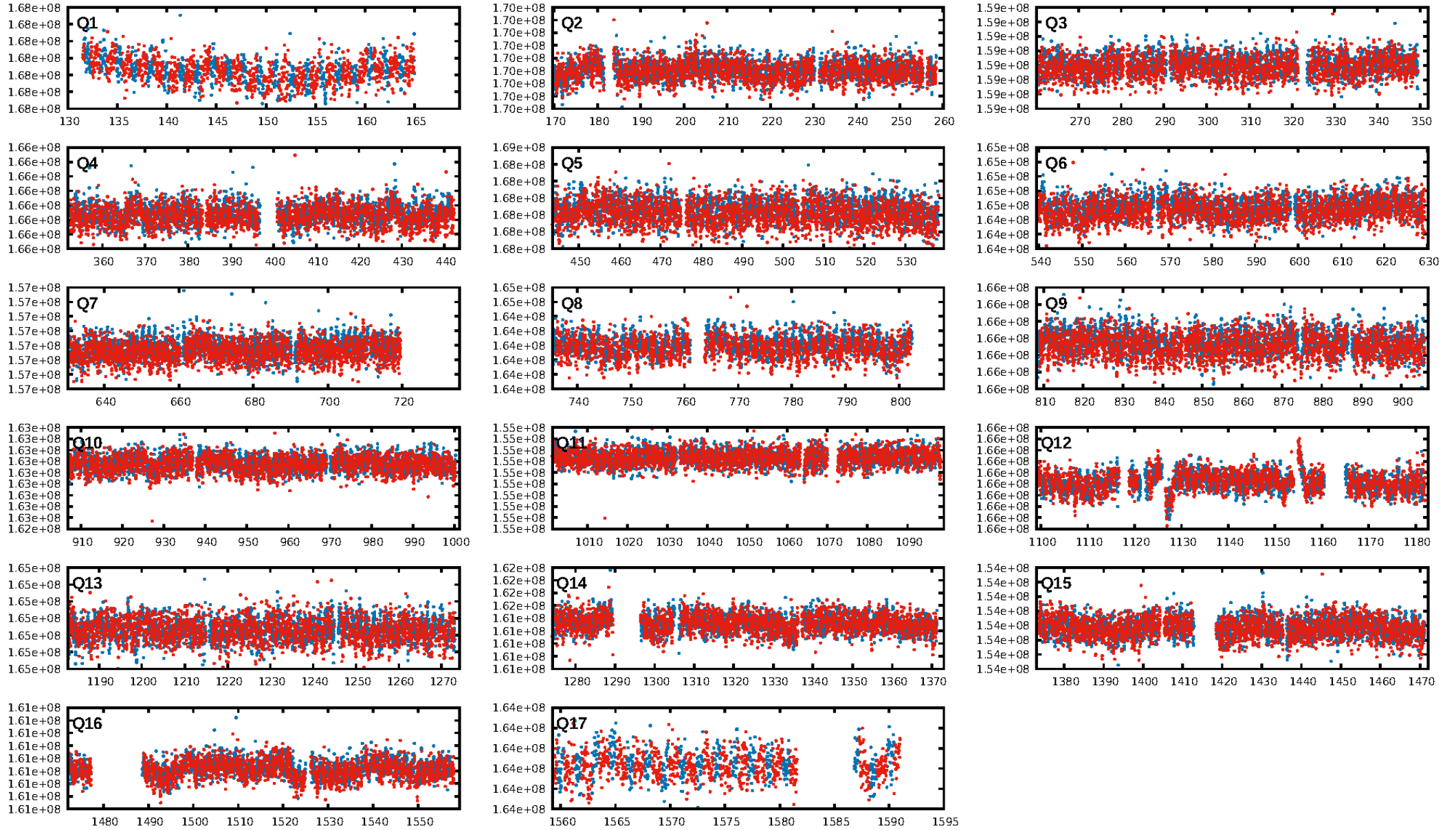
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [37.41σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.18e-25
RollingBand-fgt: 1.00 [810/811]
GhostDiagnostic-chr: 1.701
Centroid-sig: 87.4%
Centroid-so: 0.686 arcsec [0.72σ]
OotOffset-rm: 0.472 arcsec [1.29σ]
KicOffset-rm: 0.469 arcsec [1.76σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 1.00 [17/17]

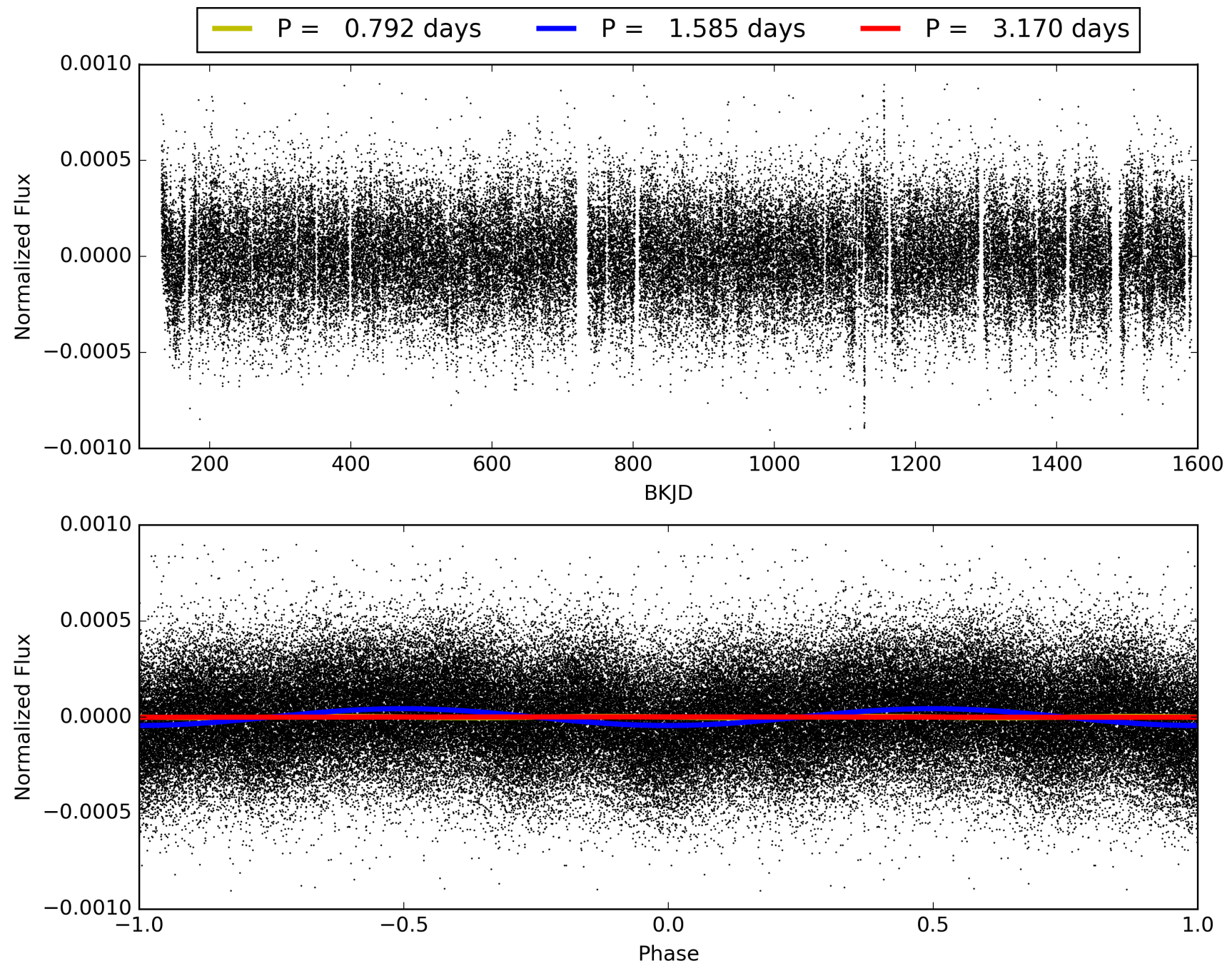
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:36:08 Z

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

TCE 008398303-01, PDC Light Curves

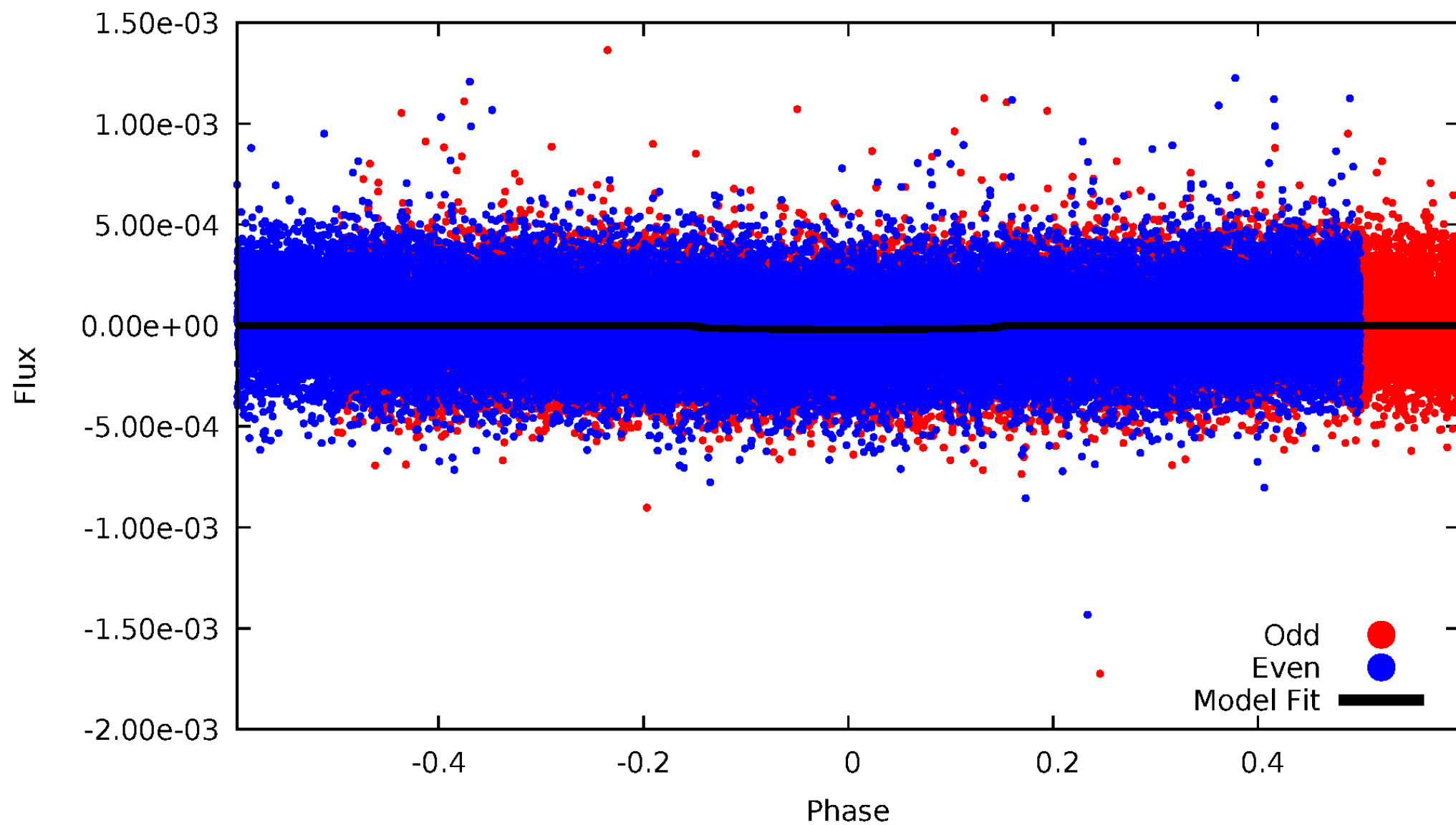


TCE 008398303-01



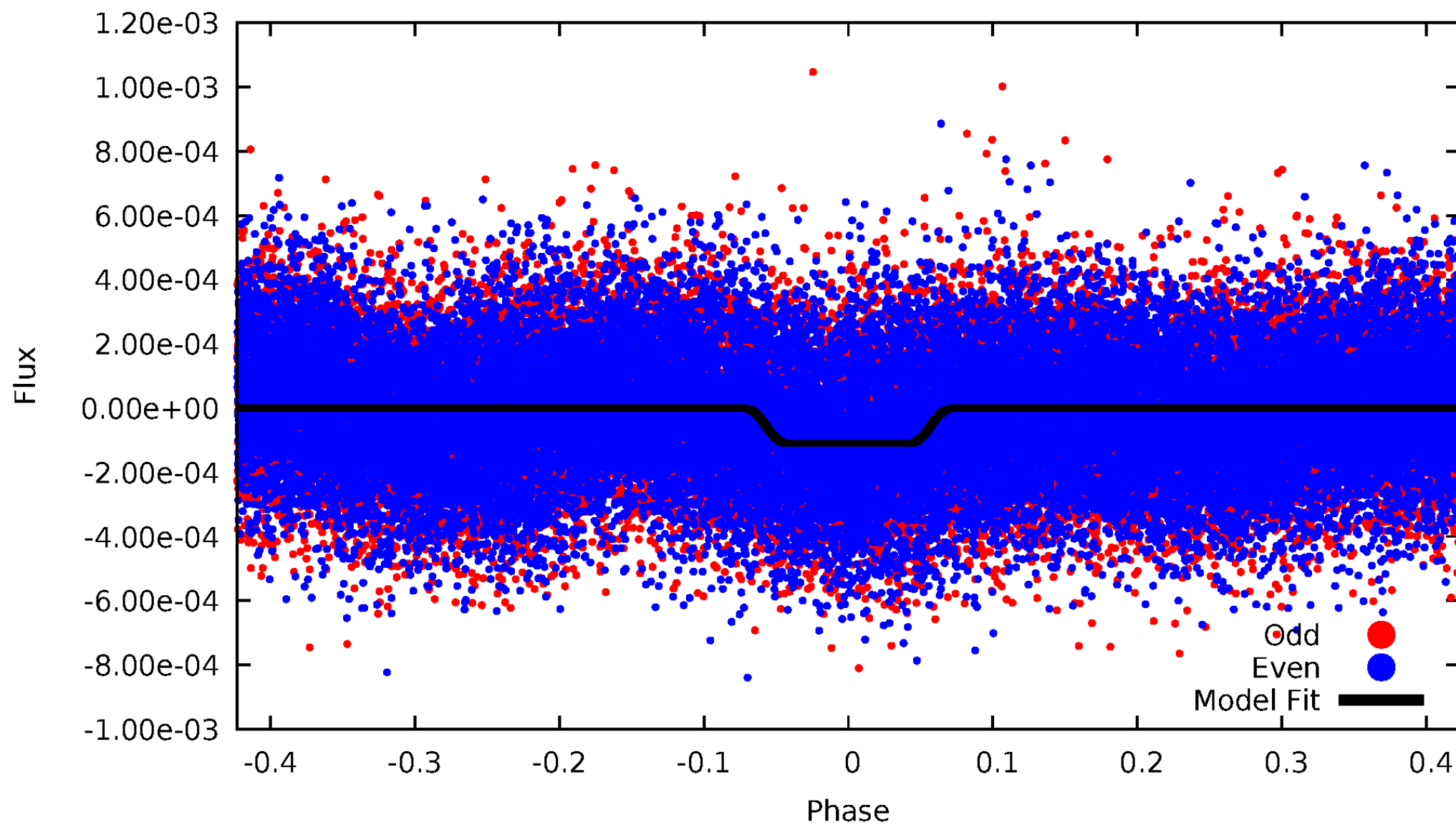
DV Odd/Even

TCE 008398303-01

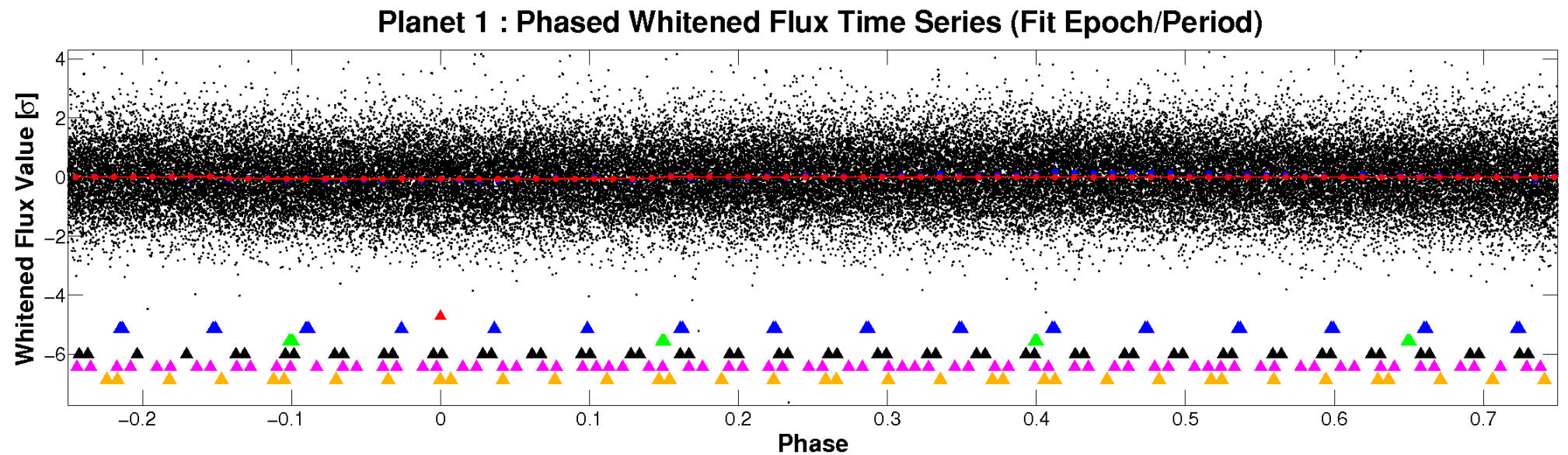
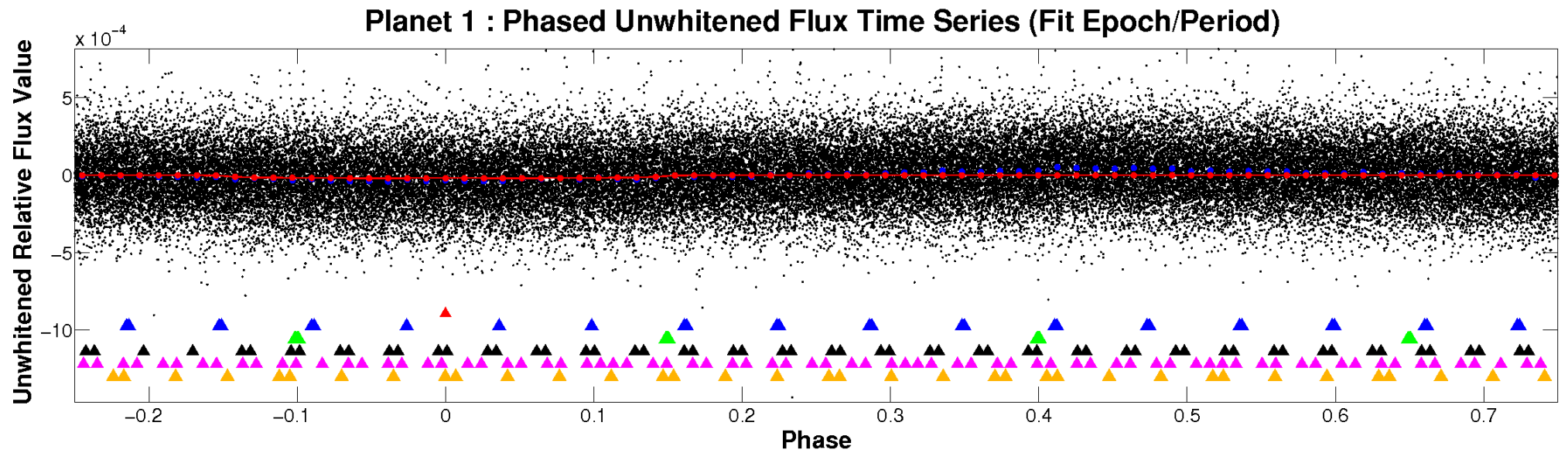


ALT Odd/Even

TCE 008398303-01

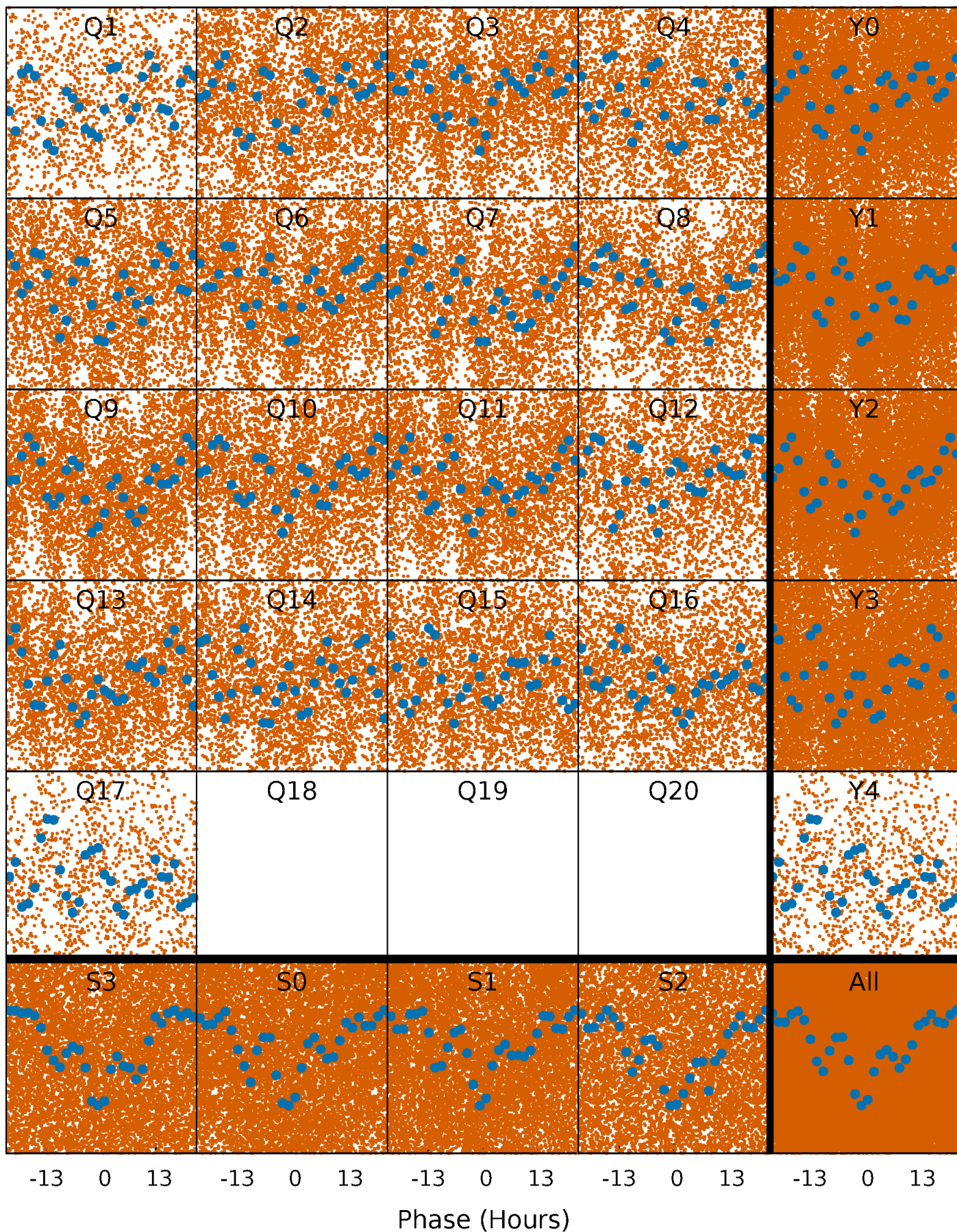


Non-Whitened Vs. Whitened Light Curve



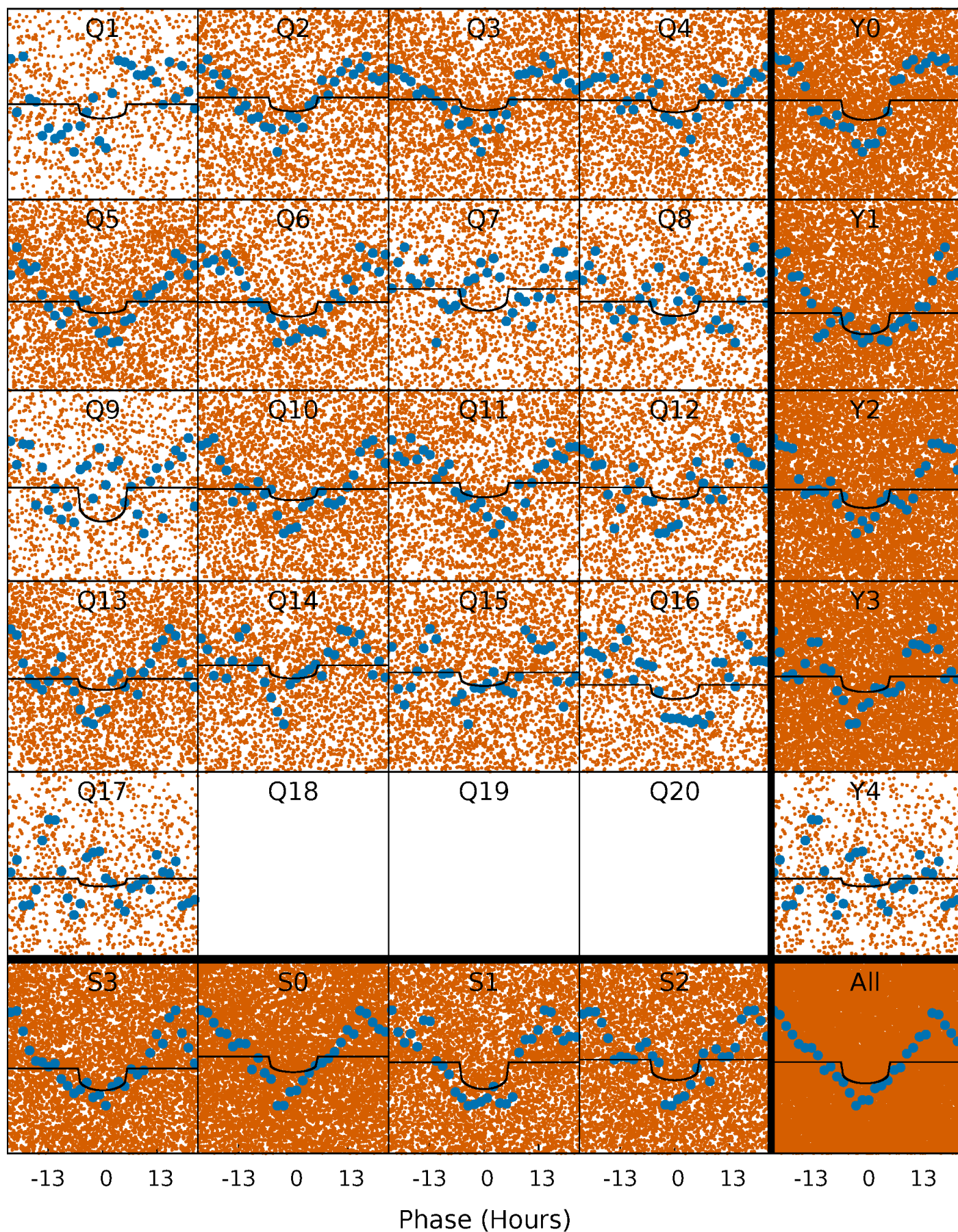
PDC Quarter-Phased Transit Curves

TCE 008398303-01 P= 1.584931 Days $T_0=132.756990$ (BKJD)



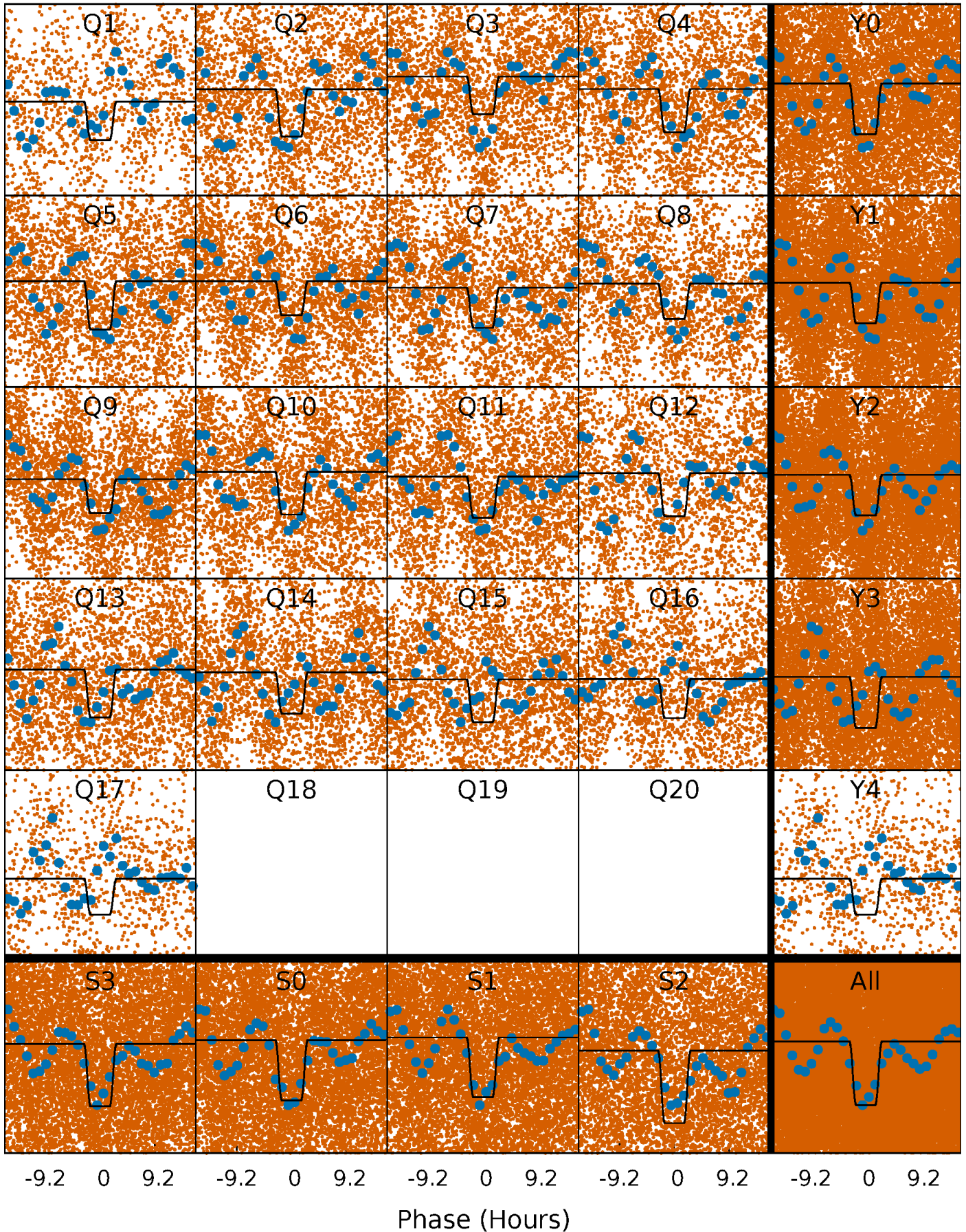
DV Quarter-Phased Transit Curves

TCE 008398303-01 P= 1.584931 Days $T_0=132.756990$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

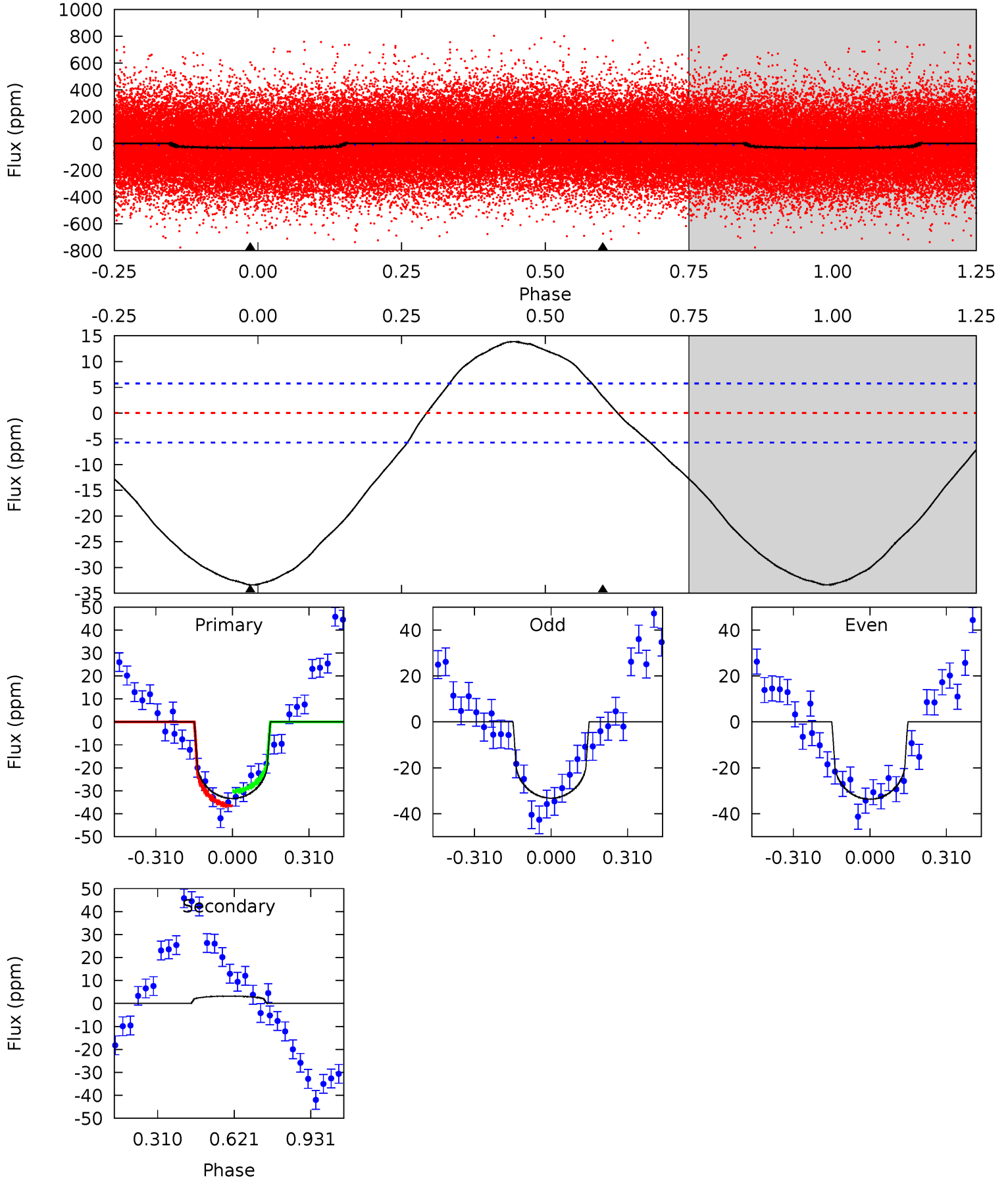
TCE 008398303-01 P= 1.584752 Days $T_0=132.763687$ (BKJD)



DV Model-Shift Uniqueness Test

008398303-01, P = 1.584931 Days, E = 131.172059 Days

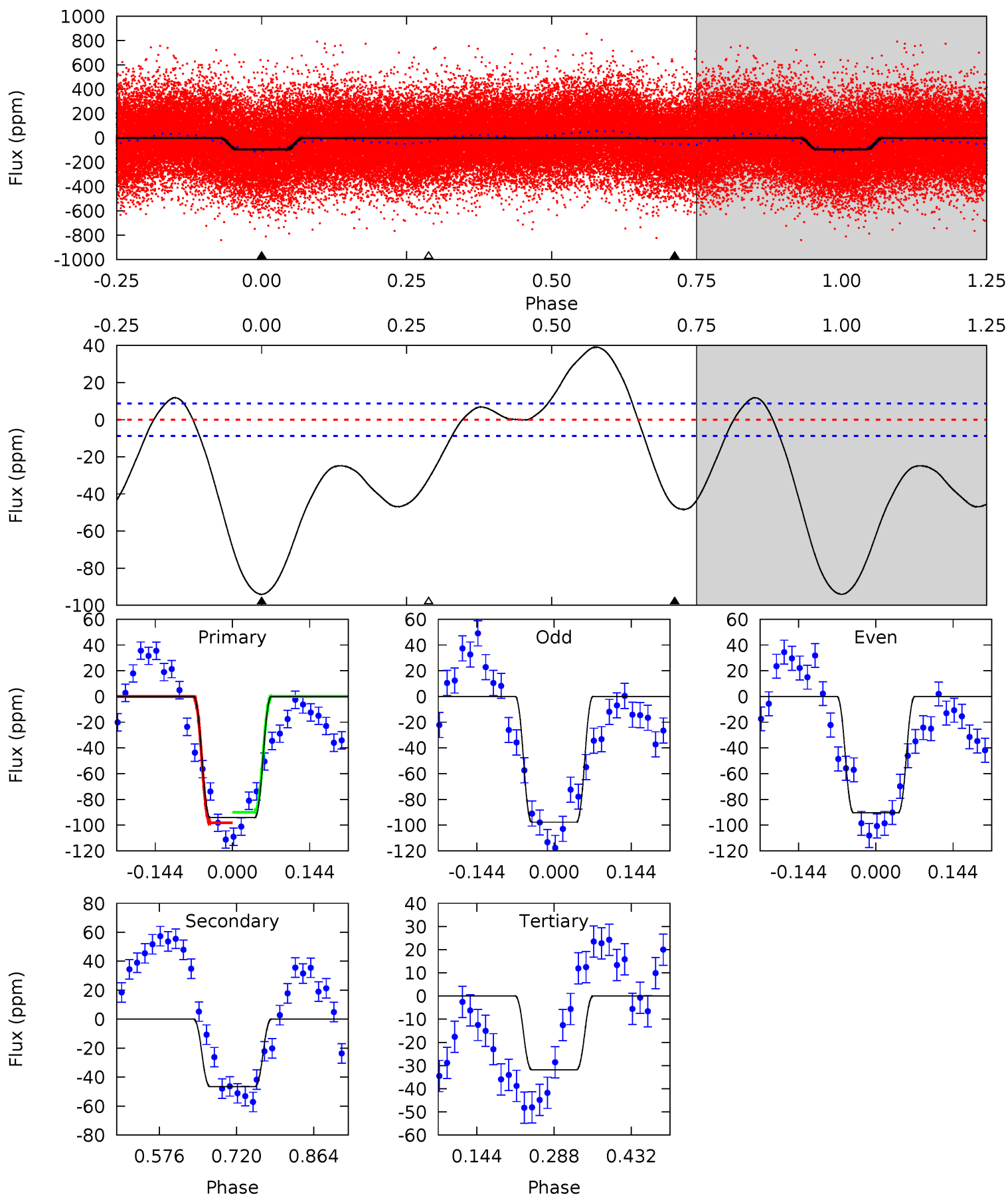
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.2	-2.42	0	0	4.32	1.01	3.42	25.2	25.2	-2.42	-2.42	0.17	0.96	0.29	2.38



Alt Model-Shift Uniqueness Test

008398303-01, P = 1.584752 Days, E = 131.178935 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
48.2	23.9	16.3	0	4.49	1.46	12.6	31.9	48.2	7.59	23.9	1.90	0.93	0.29	2.07



Stellar Parameters For KIC 008398303

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6267^{+176}_{-220}	$3.771^{+0.510}_{-0.090}$	$-0.020^{+0.250}_{-0.300}$	$2.581^{+0.540}_{-1.349}$	$1.432^{+0.195}_{-0.362}$	$0.117^{+0.674}_{-0.042}$
	+3%/-4%	+14%/-2%	+1250%/-1500%	+21%/-52%	+14%/-25%	+574%/-35%
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 008398303-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	3 ± 1	$1.08^{+0.98}_{-0.71}$	3444^{+269}_{-485}	-4306^{+568}_{-2359}	$-1.242^{+0.955}_{-10.162}$
Alt.	-47 ± 2	$2.60^{+1.20}_{-1.01}$	3443^{+256}_{-457}	5003^{+1089}_{-680}	$3.423^{+5.621}_{-1.813}$

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

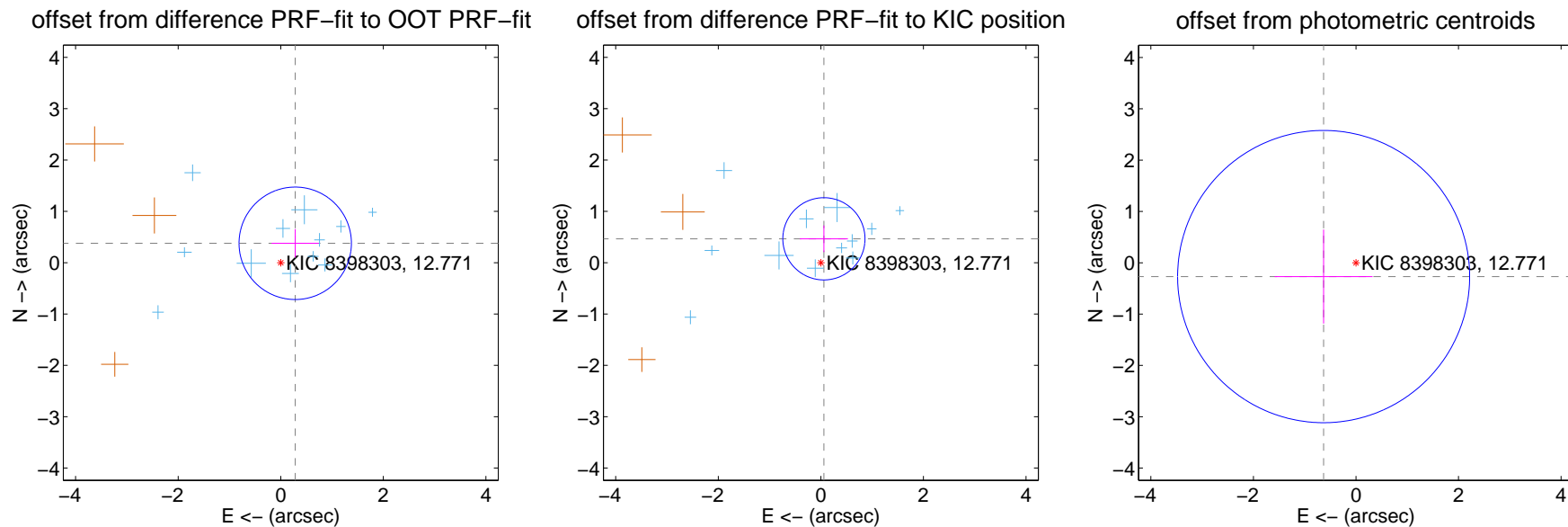
DV Centroid Data

Supplemental centroid analysis for 008398303-01. Kepler magnitude: 12.77. Transit SNR 8.65

There are 12 quarters with good PRF difference image offsets

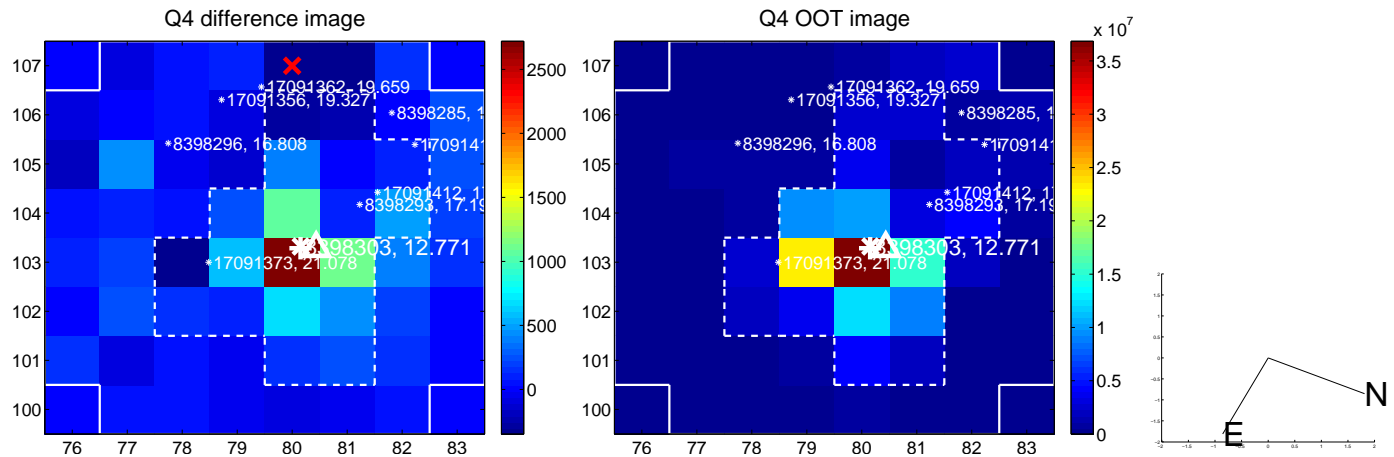
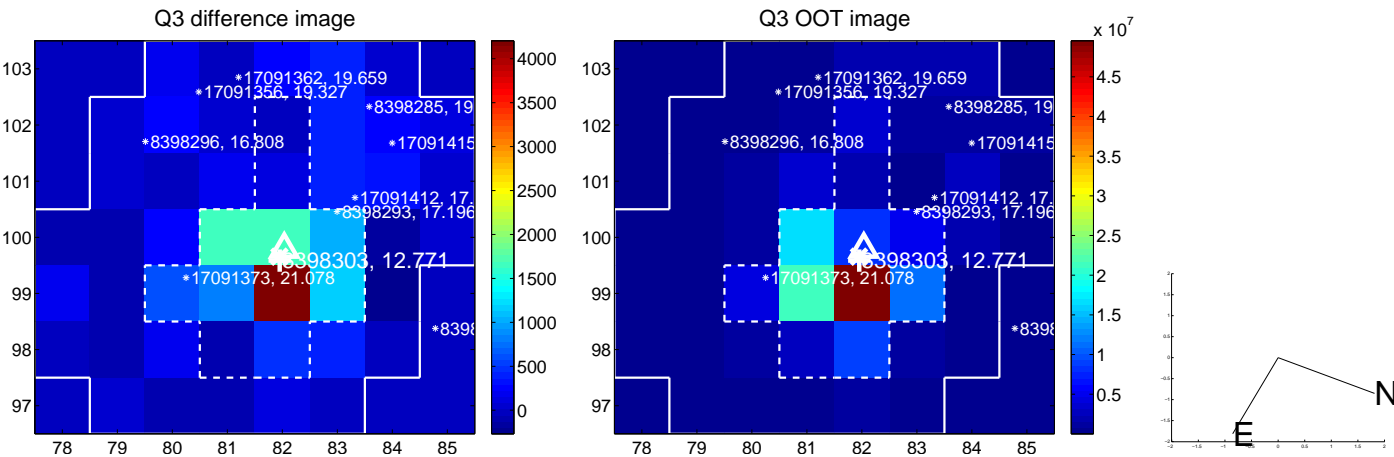
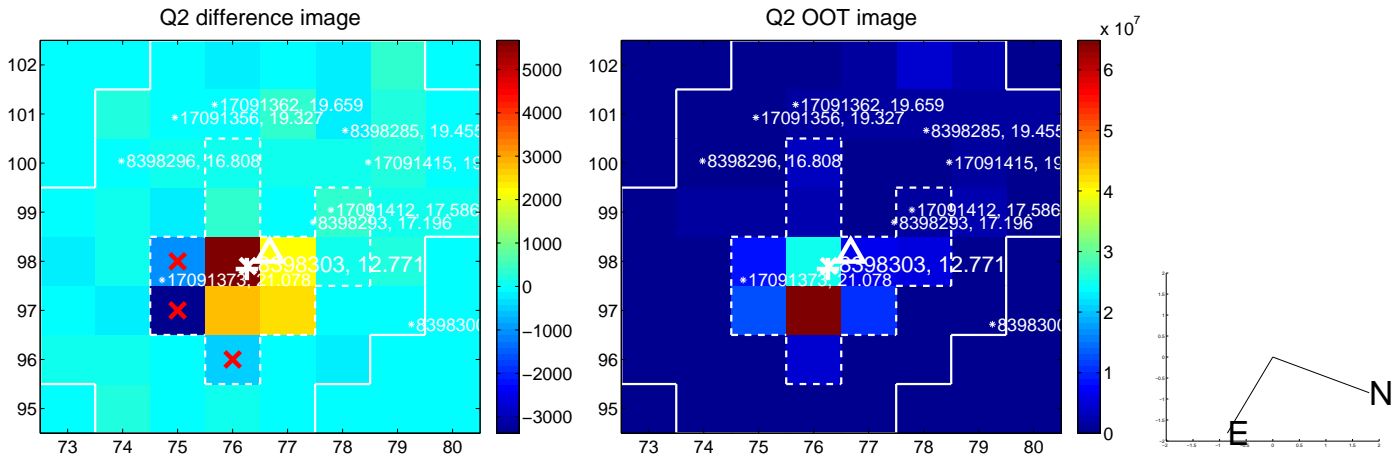
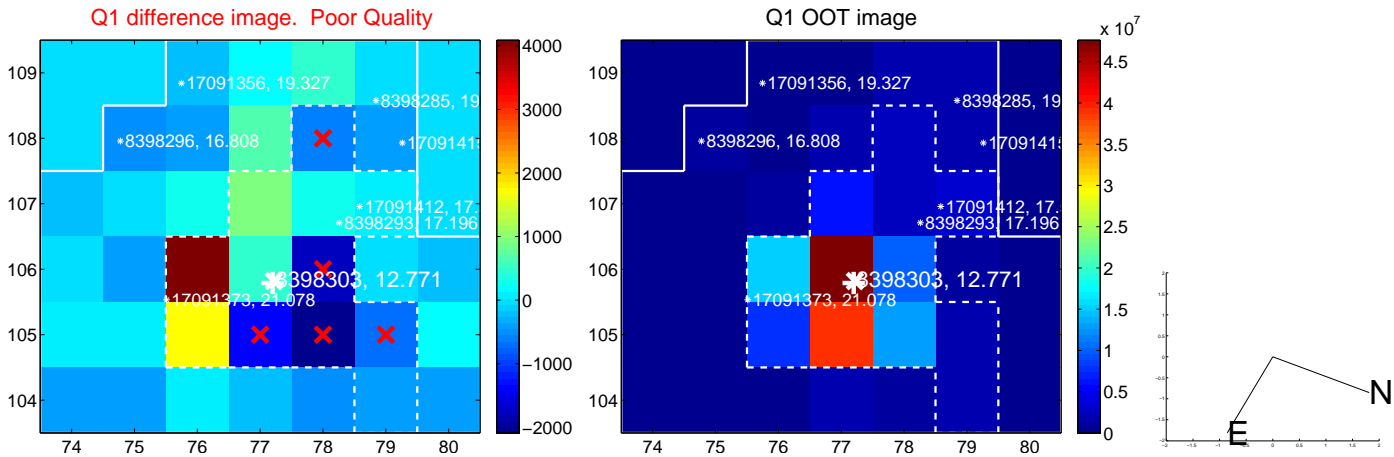
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.472 ± 0.365	1.29	-0.282 ± 0.459	0.378 ± 0.277
PRF-fit source offset from KIC position	0.469 ± 0.267	1.76	-0.059 ± 0.468	0.465 ± 0.259
photometric centroid source offset	0.69 ± 0.95	0.72	0.63 ± 0.95	-0.27 ± 0.92

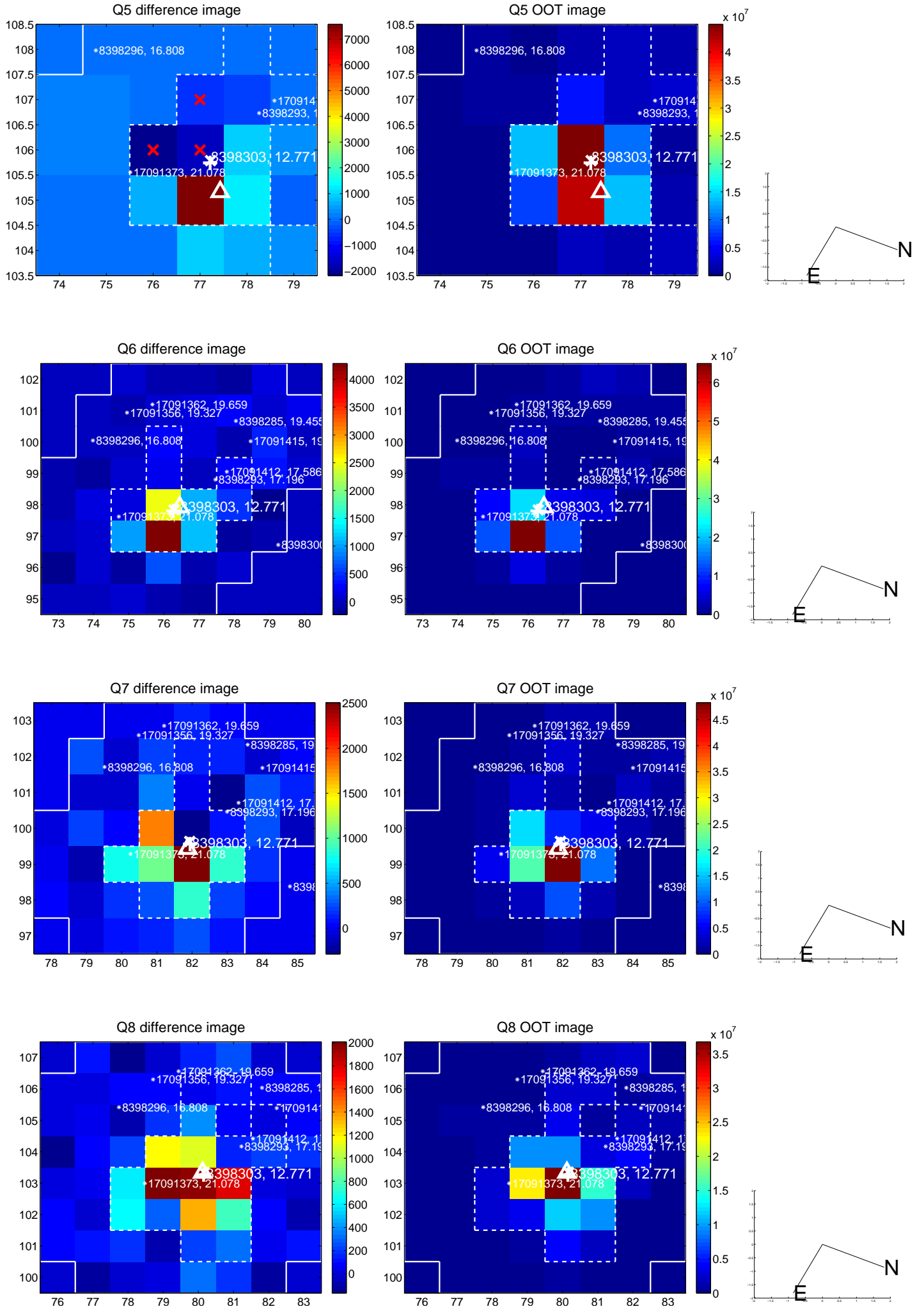


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

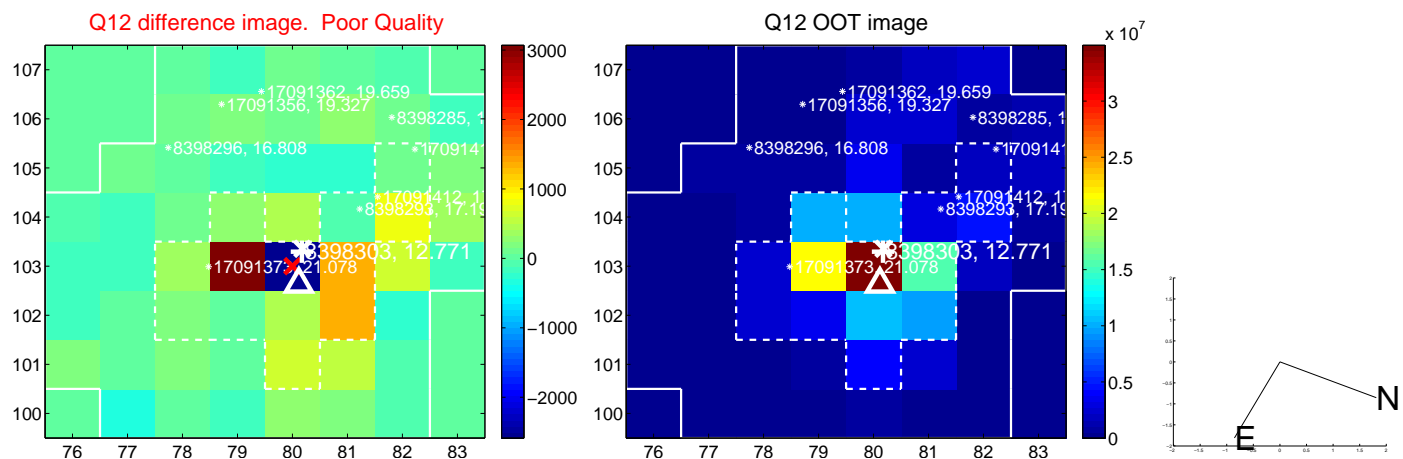
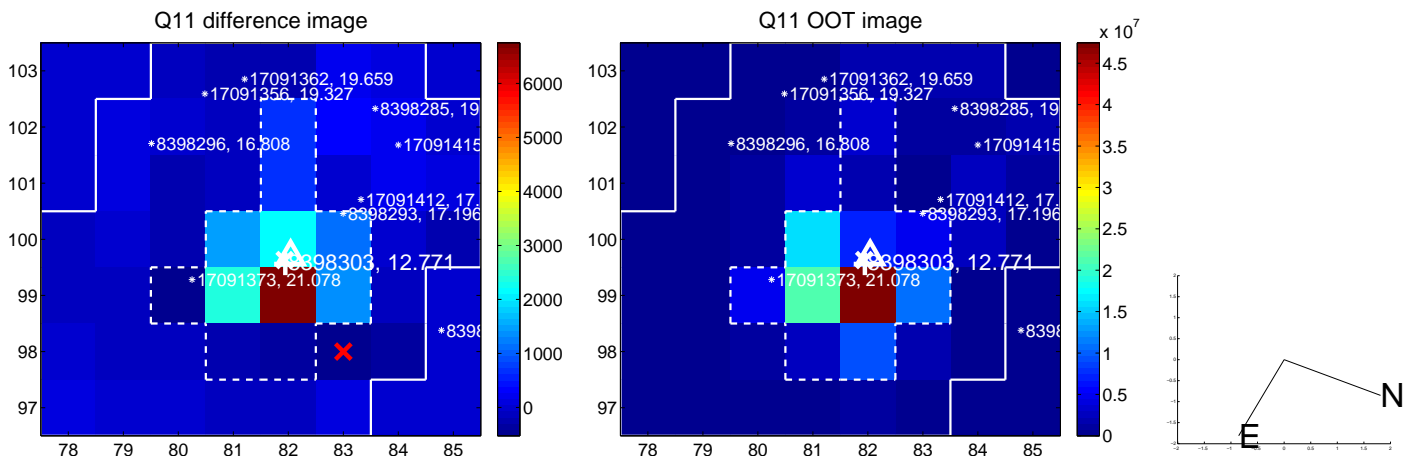
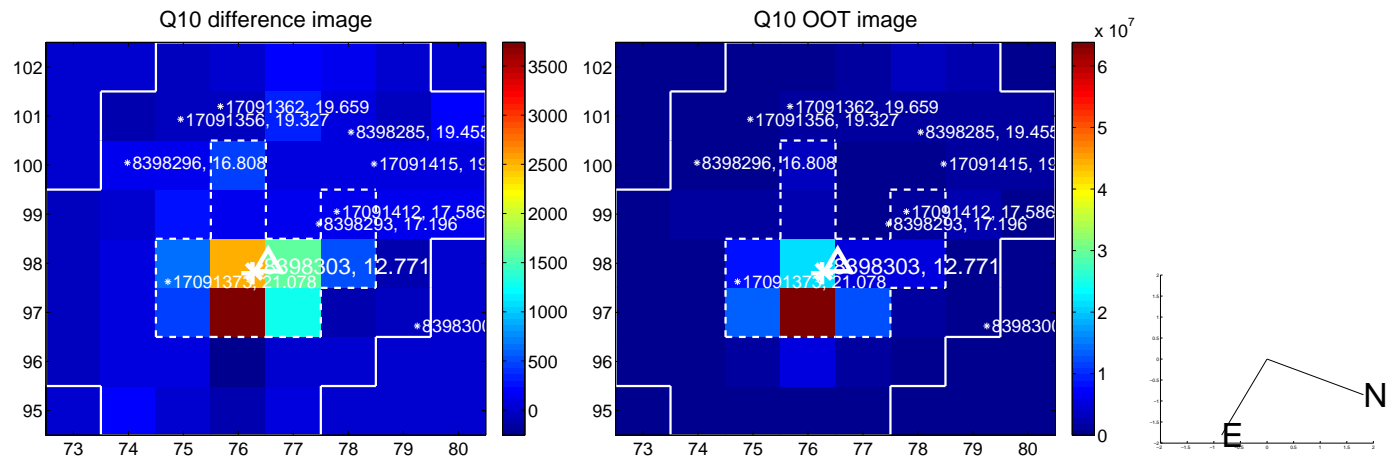
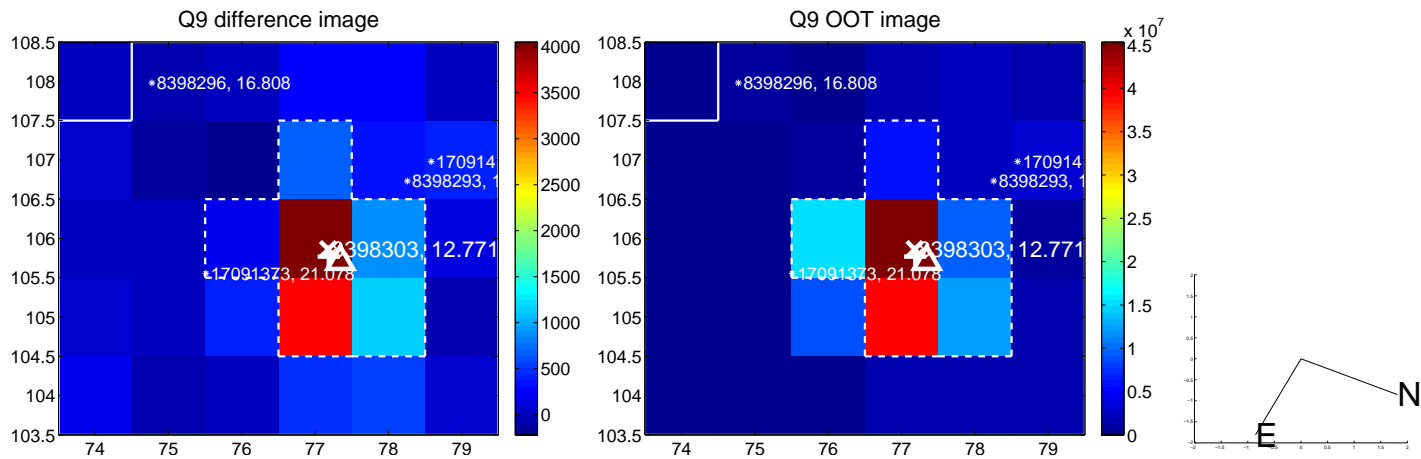
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



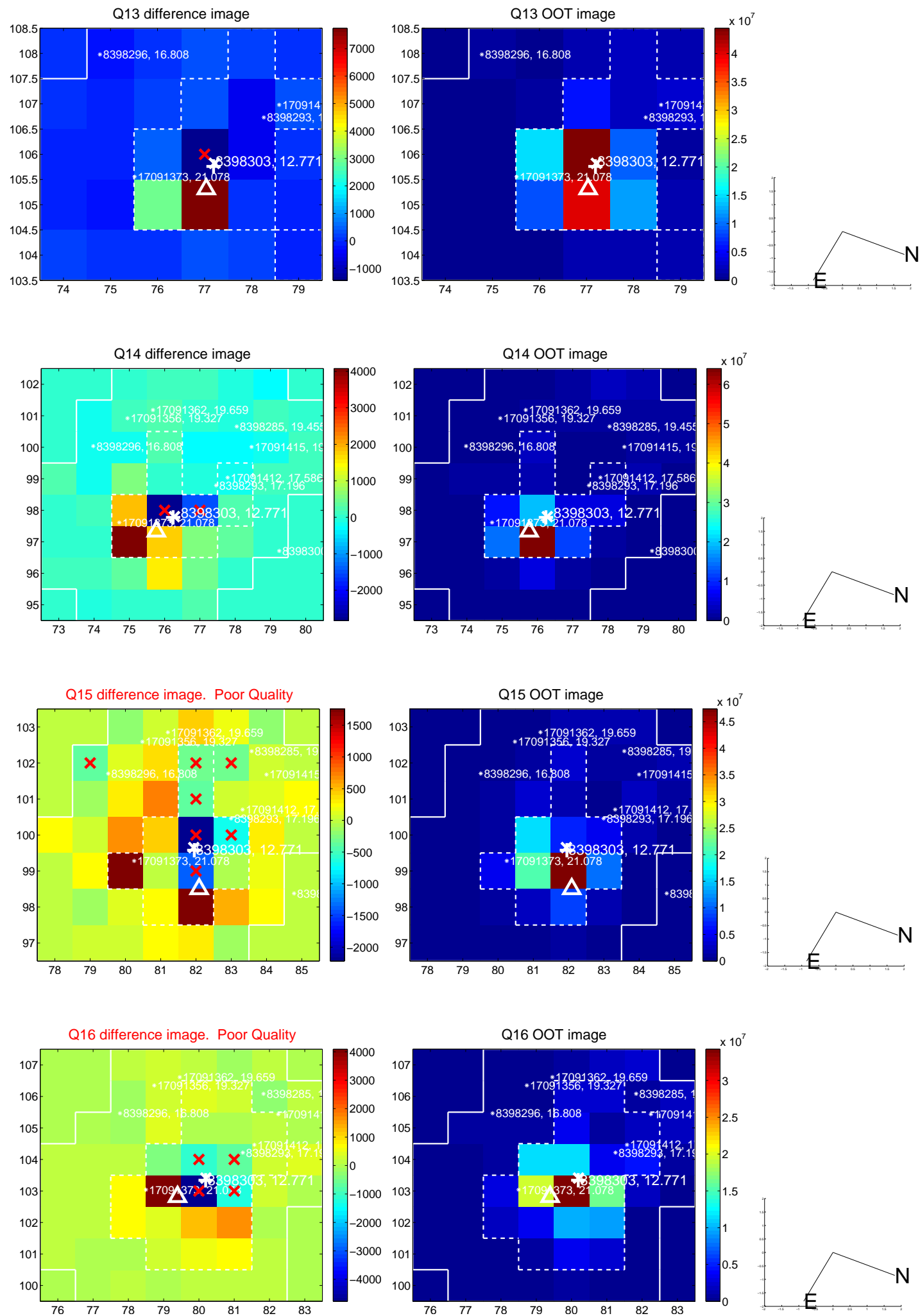
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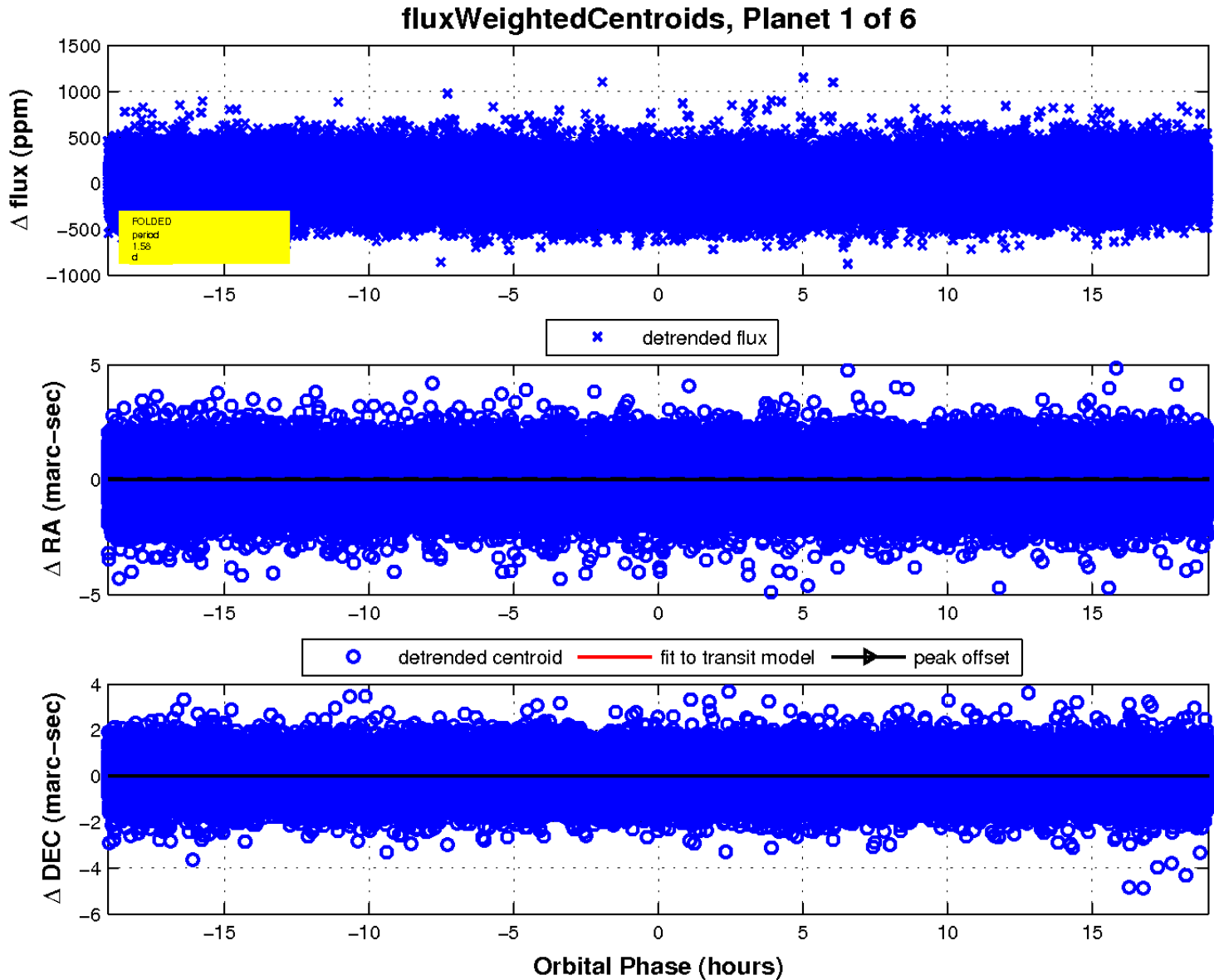
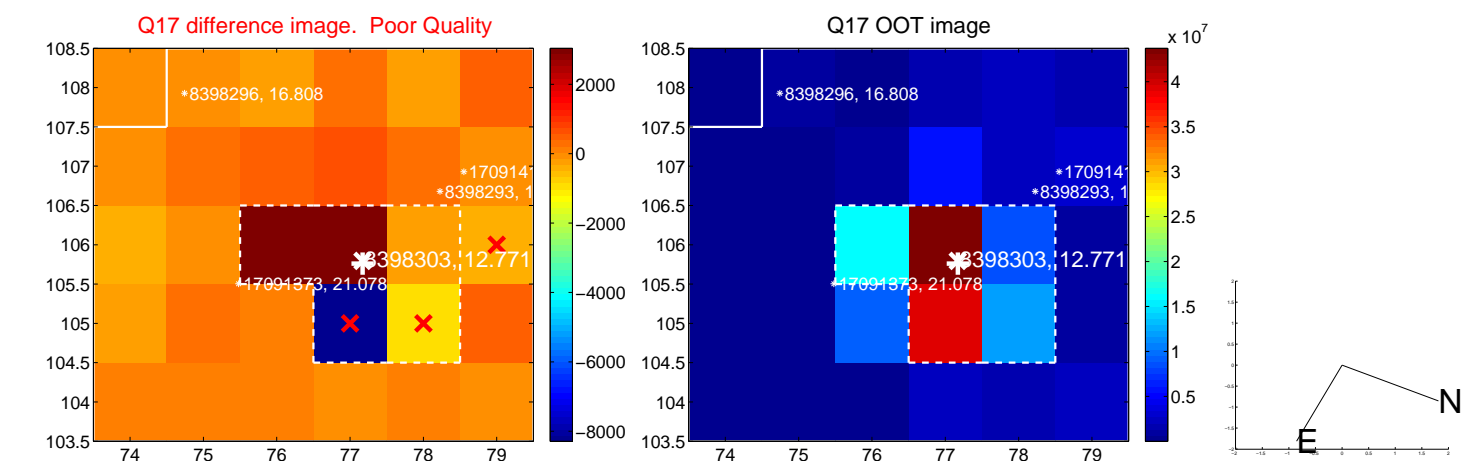
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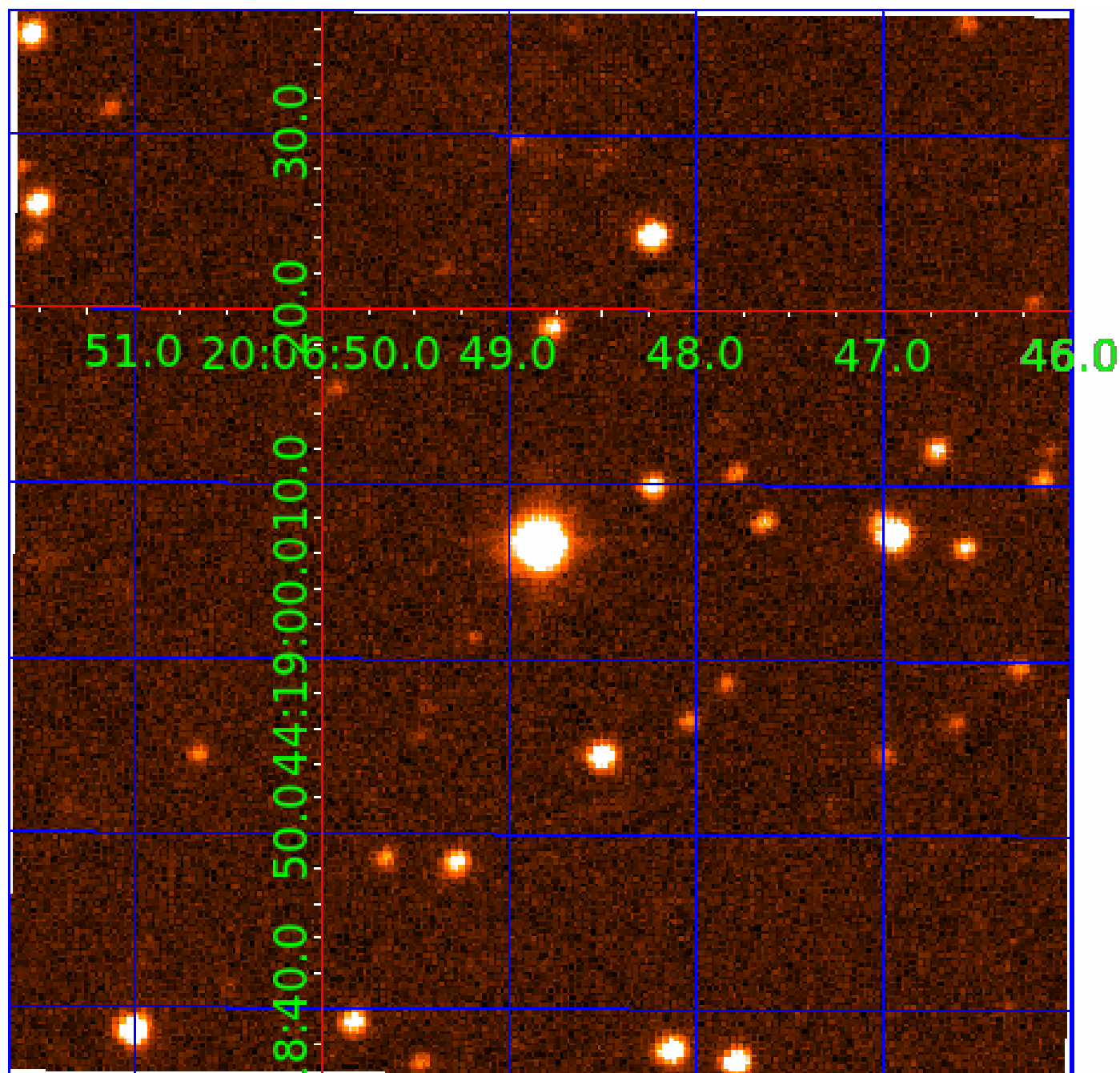


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008398303

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})
008398303-01	OBS	No	1.584931	132.756990	19.5	11.352	7.9	8.7	2.58	6267	1.17	10224.57
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Robovetter Results

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008398303-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
008398303-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008398303-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008398303-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
008398303-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

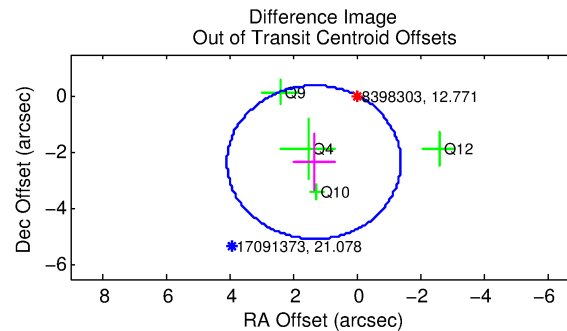
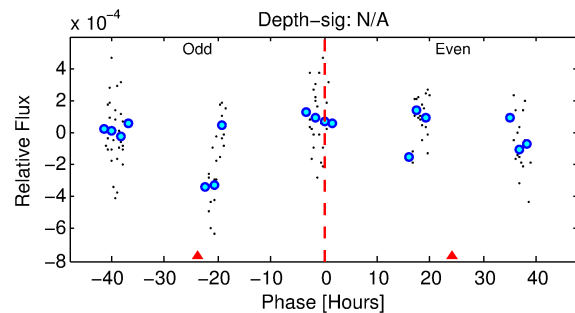
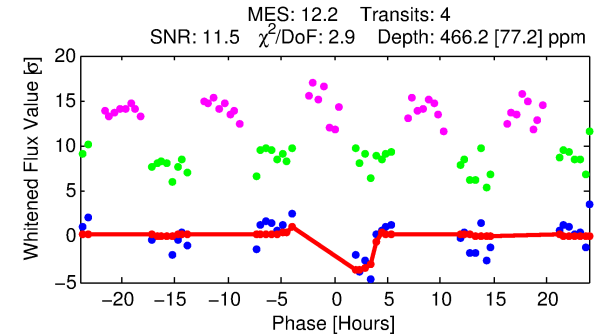
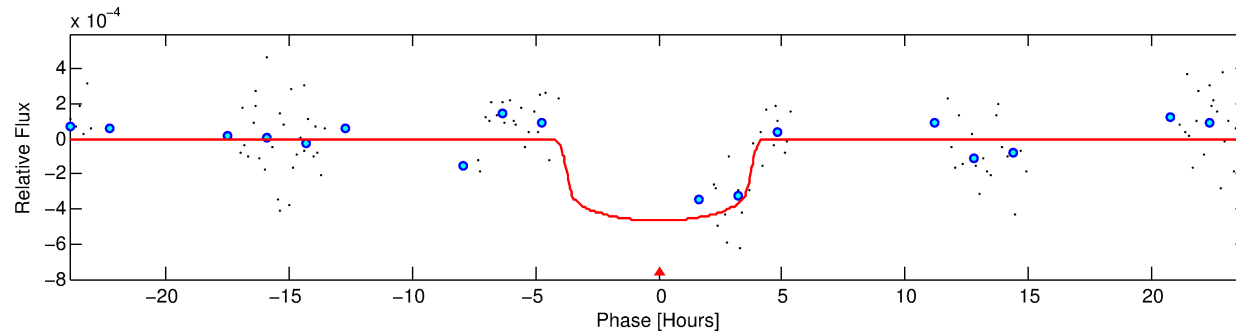
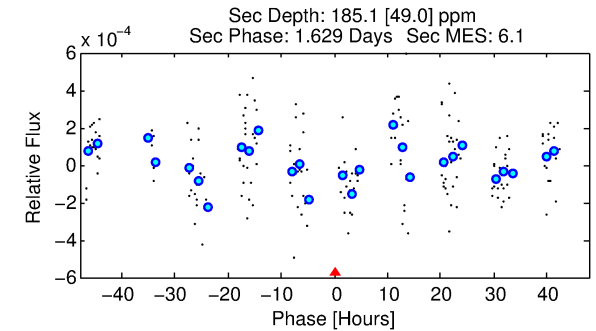
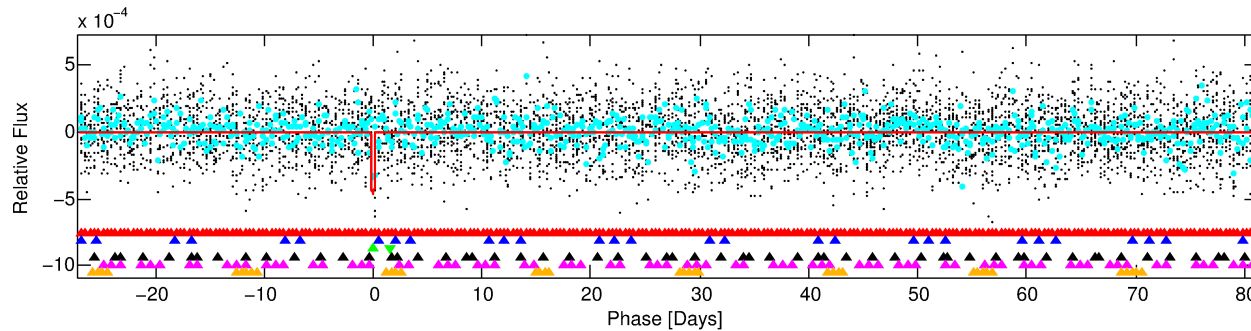
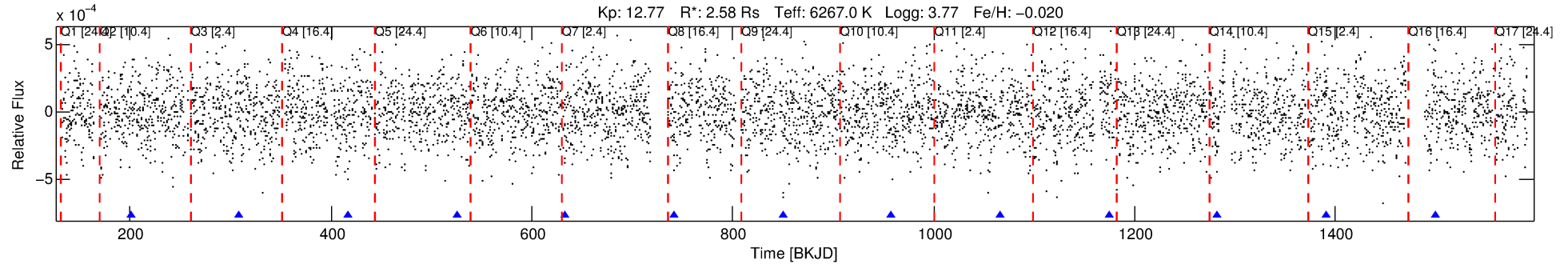
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008398303-03

No Significant Match Found

DV One-Page Summary

KIC: 8398303 Candidate: 3 of 6 Period: 108.172 d



DV Fit Results:

Period = 108.17183 [0.00191] d
Epoch = 200.7481 [0.0194] BKJD
Rp/R* = 0.0214 [0.0149]
a/R* = 73.45 [267.26]
b = 0.74 [2.31]
Seff = 36.66 [31.83]
Teq = 627 [136] K
Rp = 6.02 [5.26] Re
a = 0.5011 [0.2626] AU
Ag = 704.87 [1170.61] [0.60σ]
Teffp = 4998 [1786] K [2.44σ]

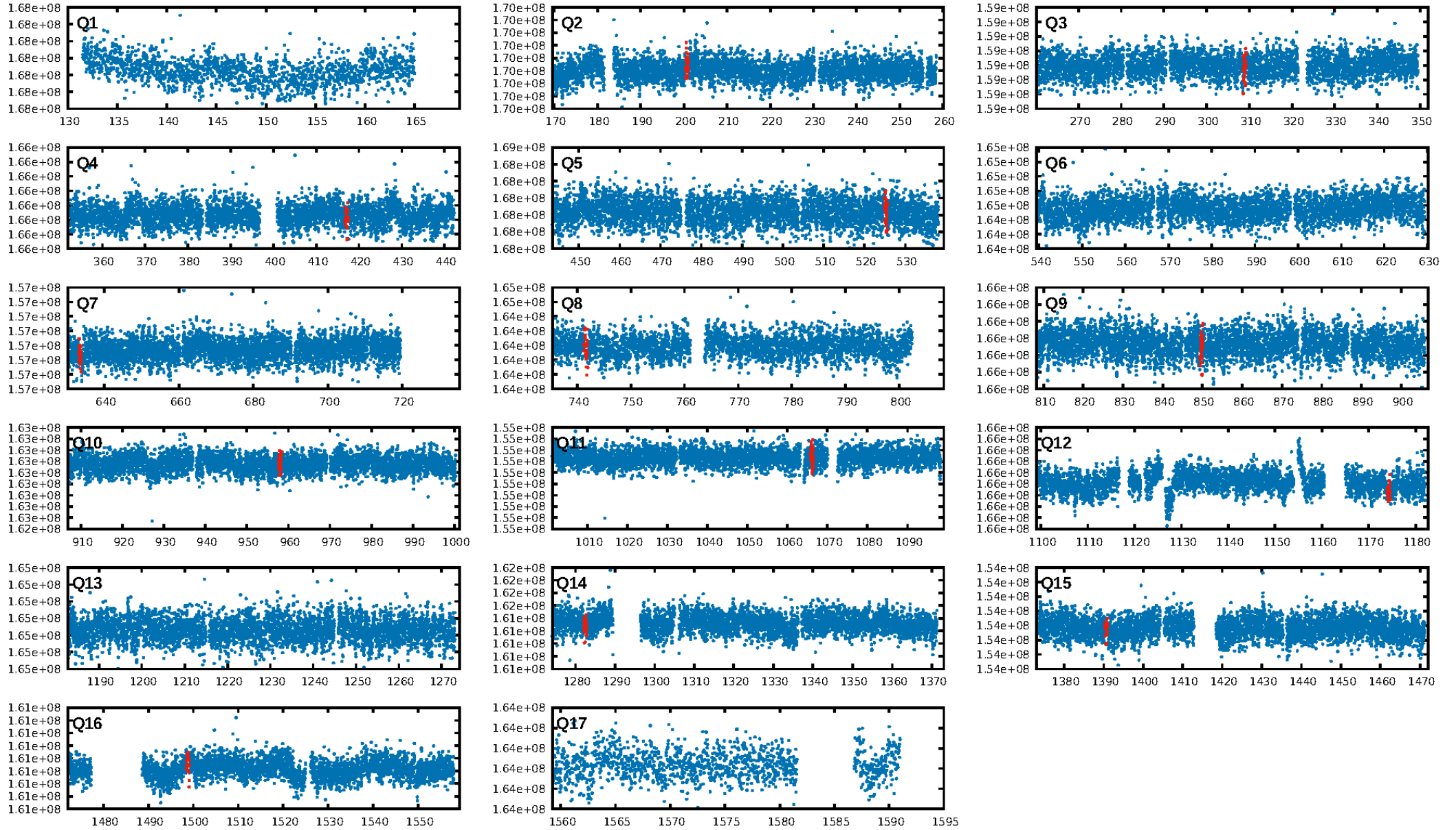
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [169.68σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 26.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.95e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.3963
Centroid-sig: 3.4%
Centroid-so: 1.089 arcsec [2.61σ]
OotOffset-rm: 2.697 arcsec [2.96σ]
KicOffset-rm: 2.791 arcsec [3.01σ]
OotOffset-st: 1/0/2/1 [4]
KicOffset-st: 1/0/2/1 [4]
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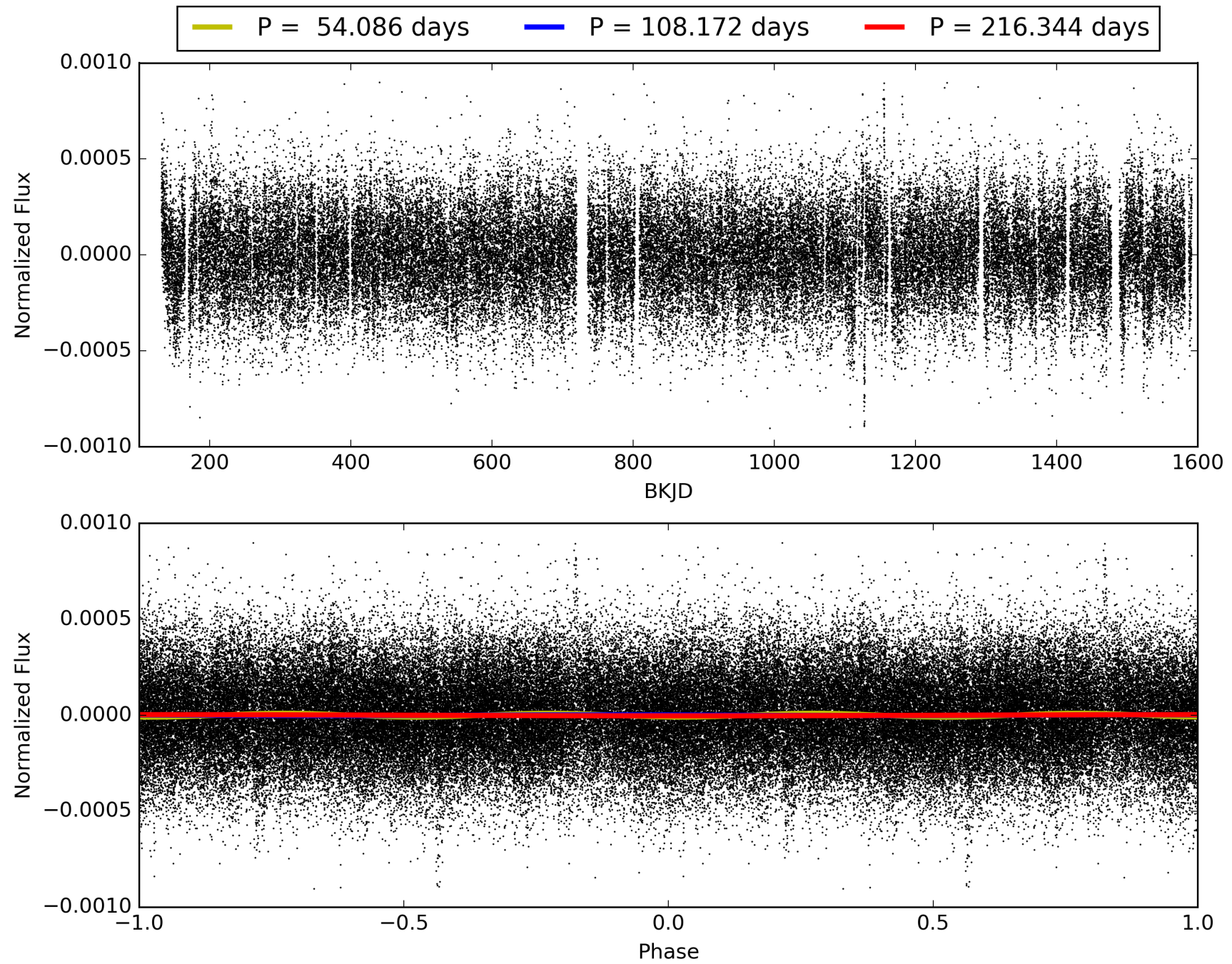
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:36:23 Z

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

TCE 008398303-03, PDC Light Curves

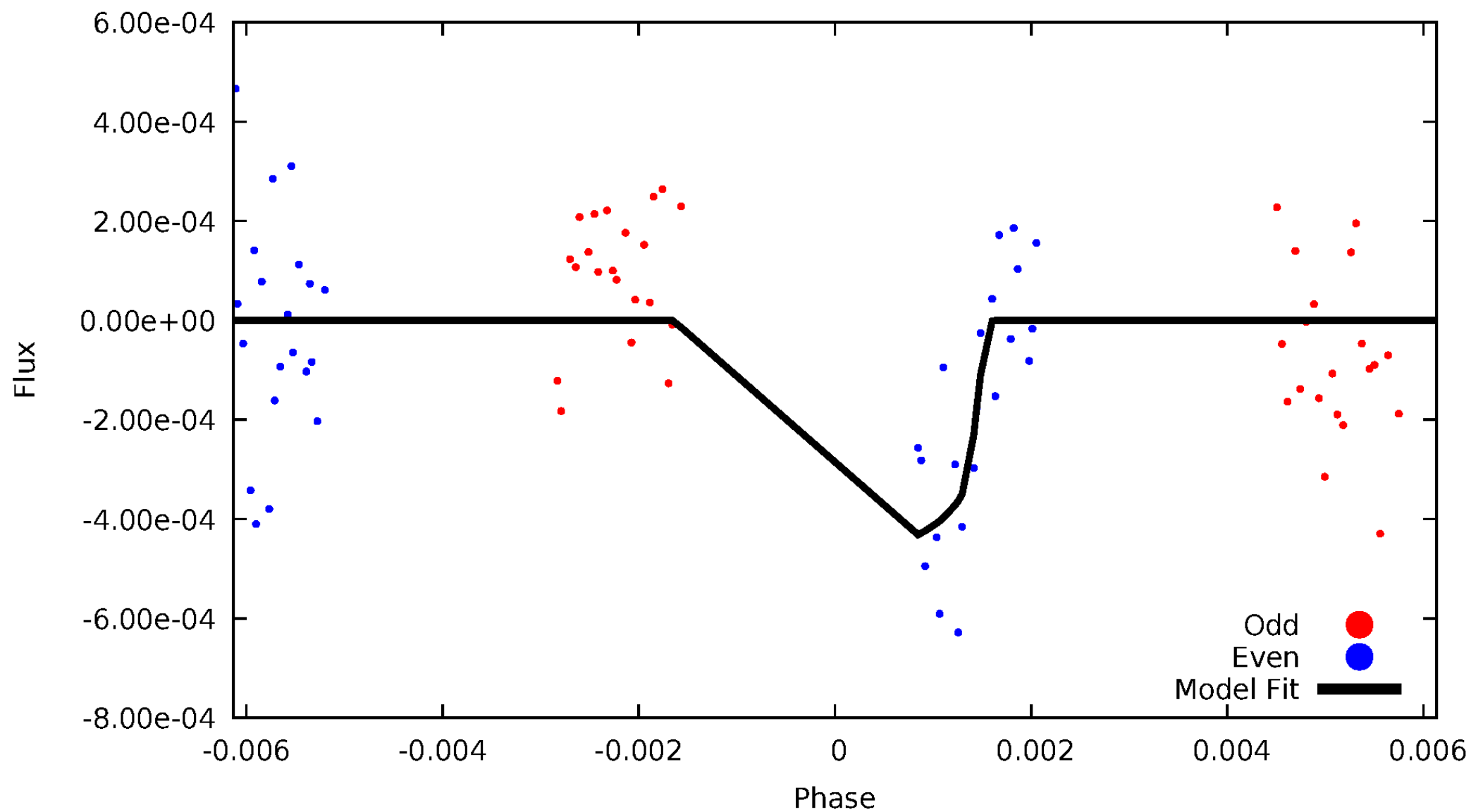


TCE 008398303-03



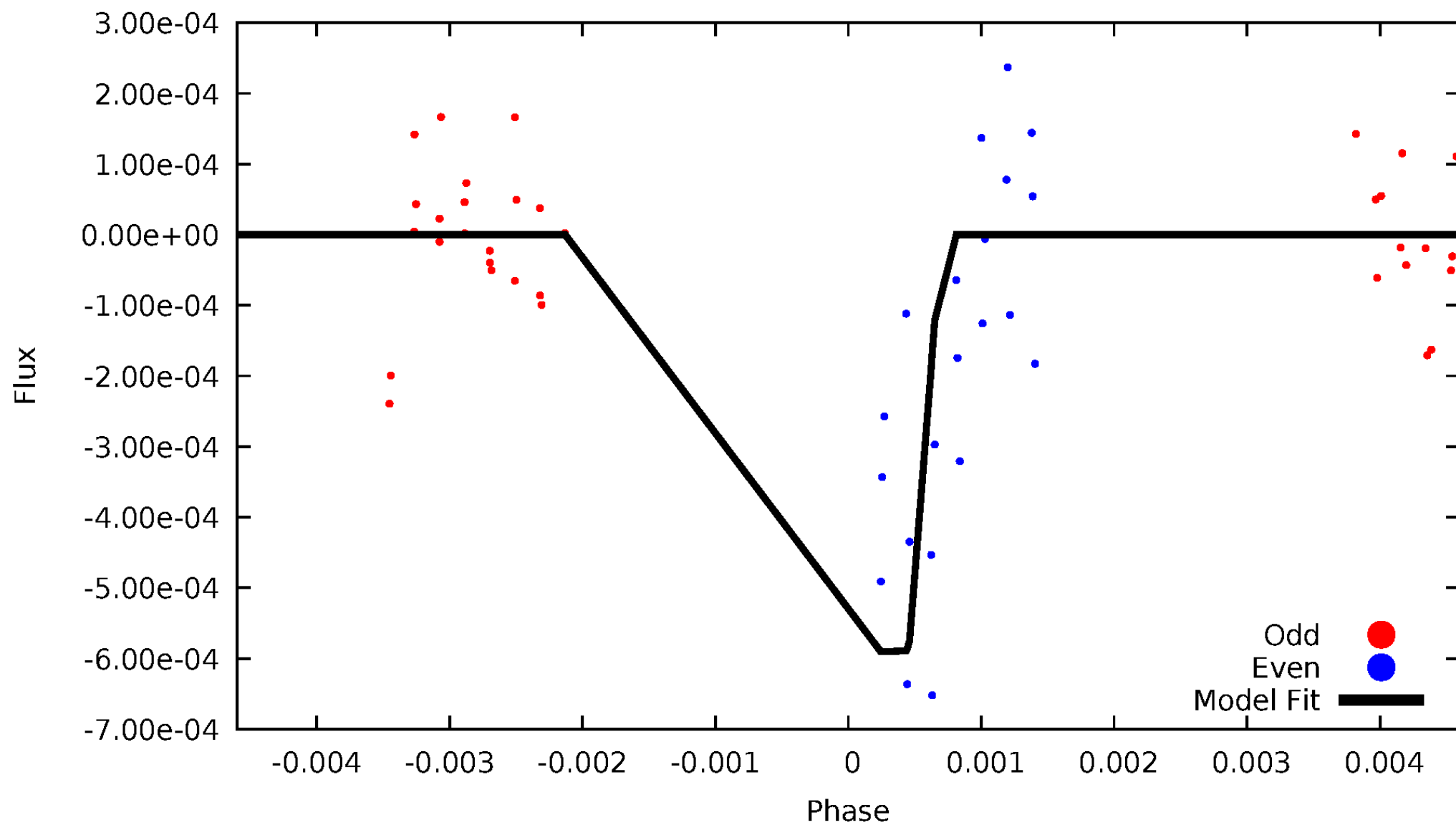
DV Odd/Even

TCE 008398303-03



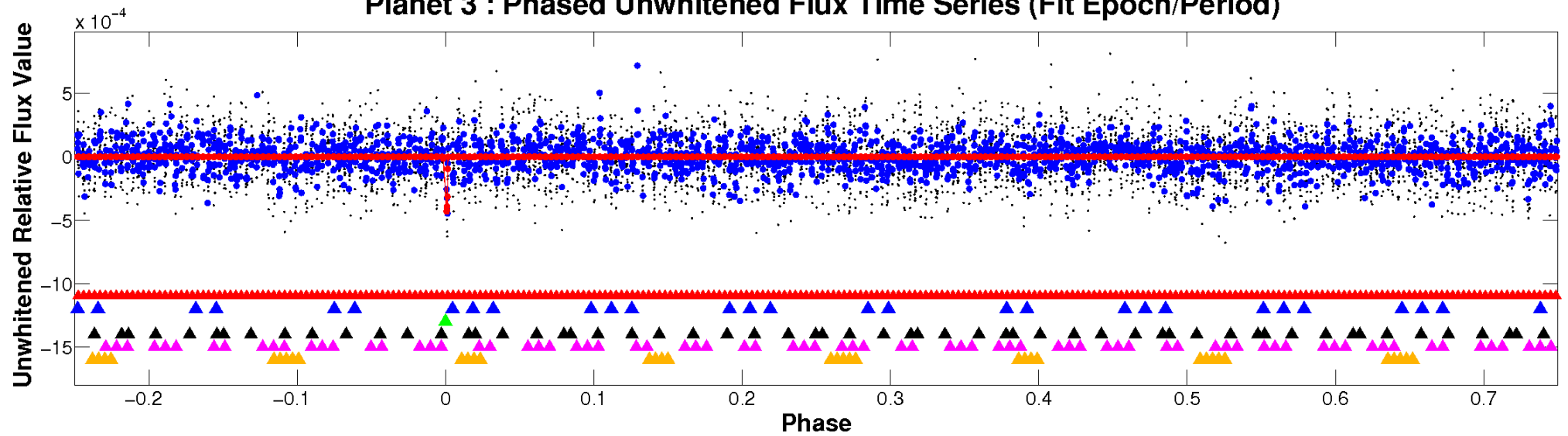
ALT Odd/Even

TCE 008398303-03

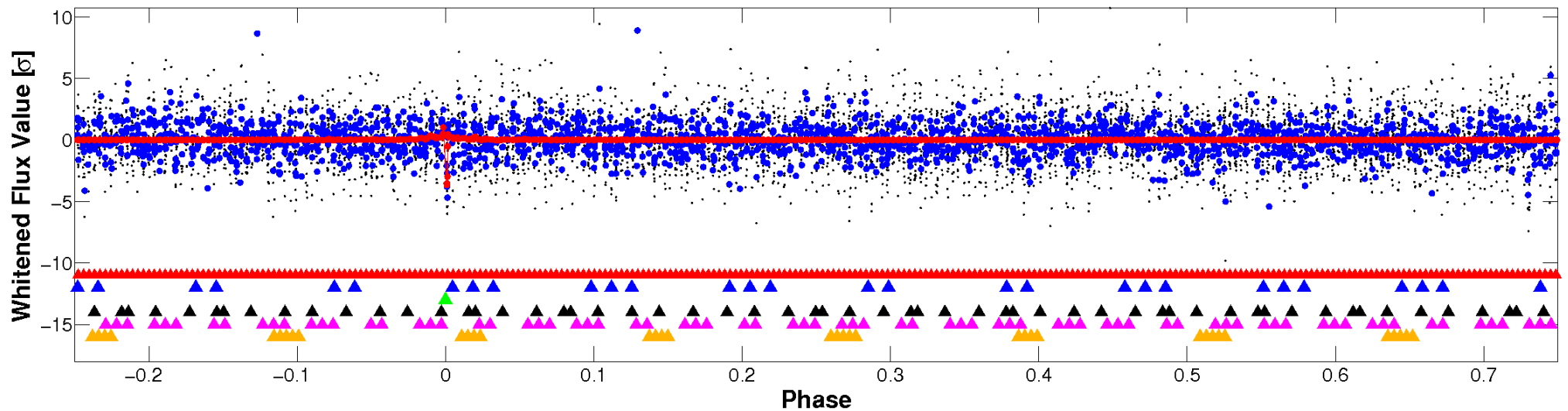


Non-Whitened Vs. Whitened Light Curve

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

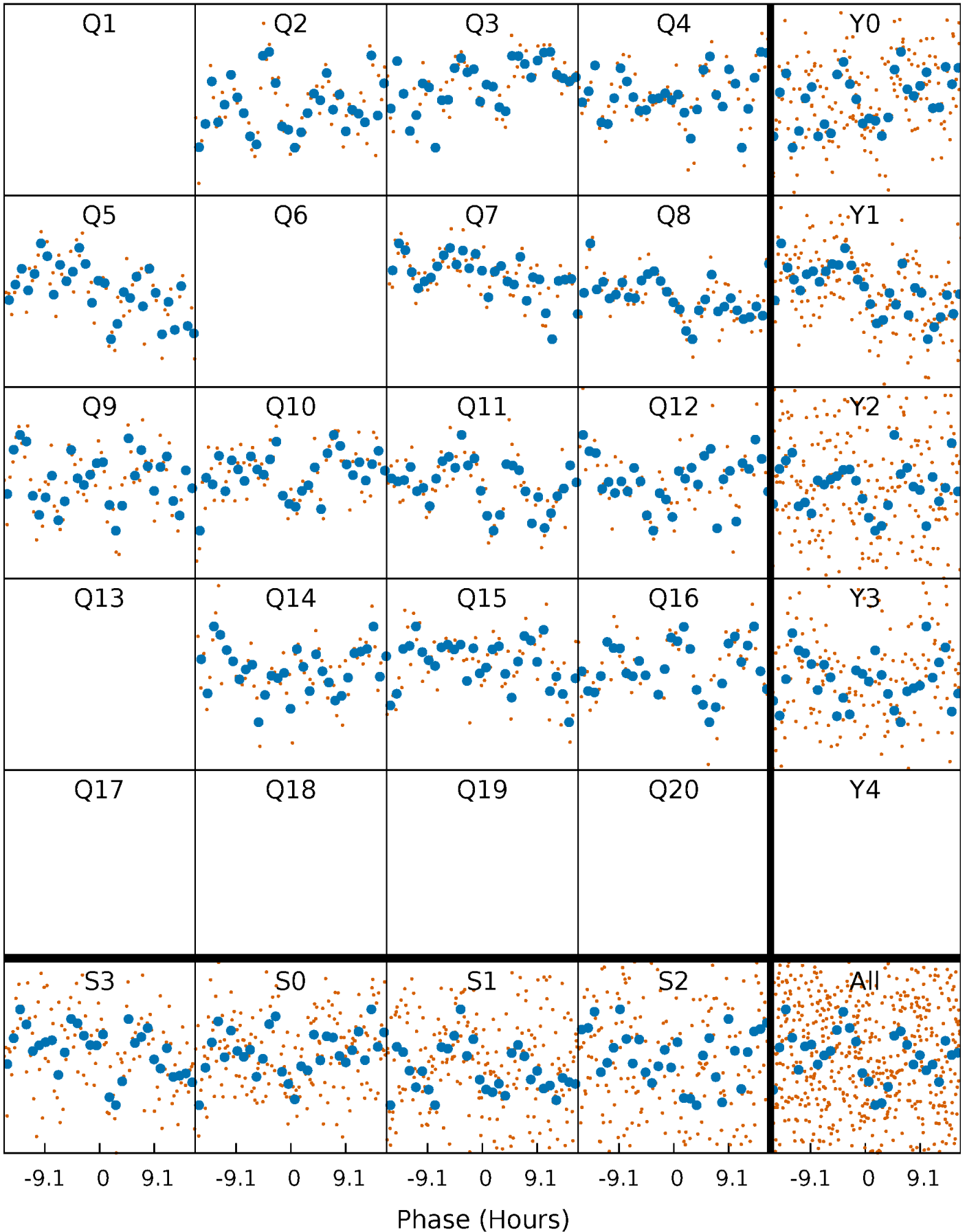


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



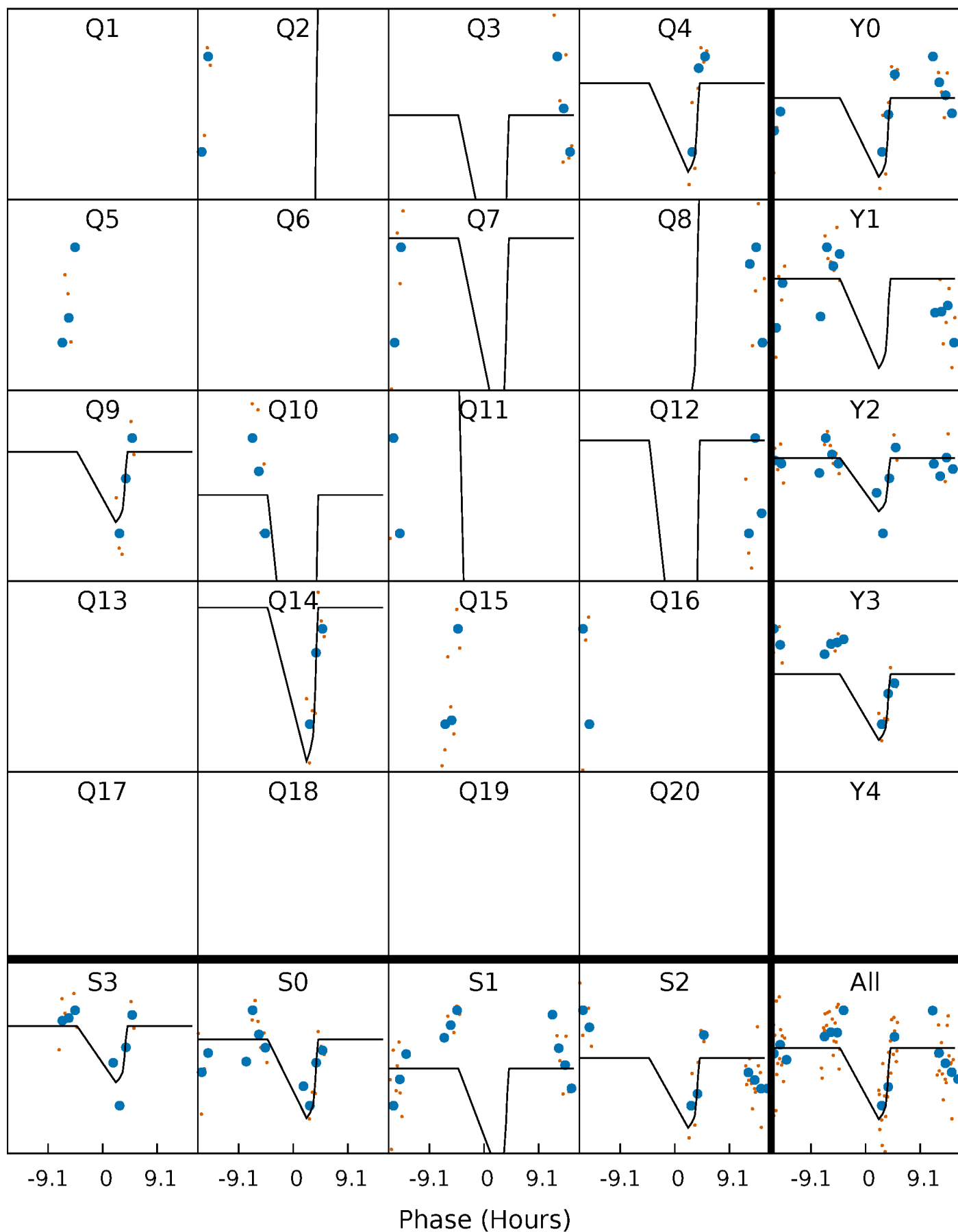
PDC Quarter-Phased Transit Curves

TCE 008398303-03 $P=108.171832$ Days $T_0=200.748075$ (BKJD)



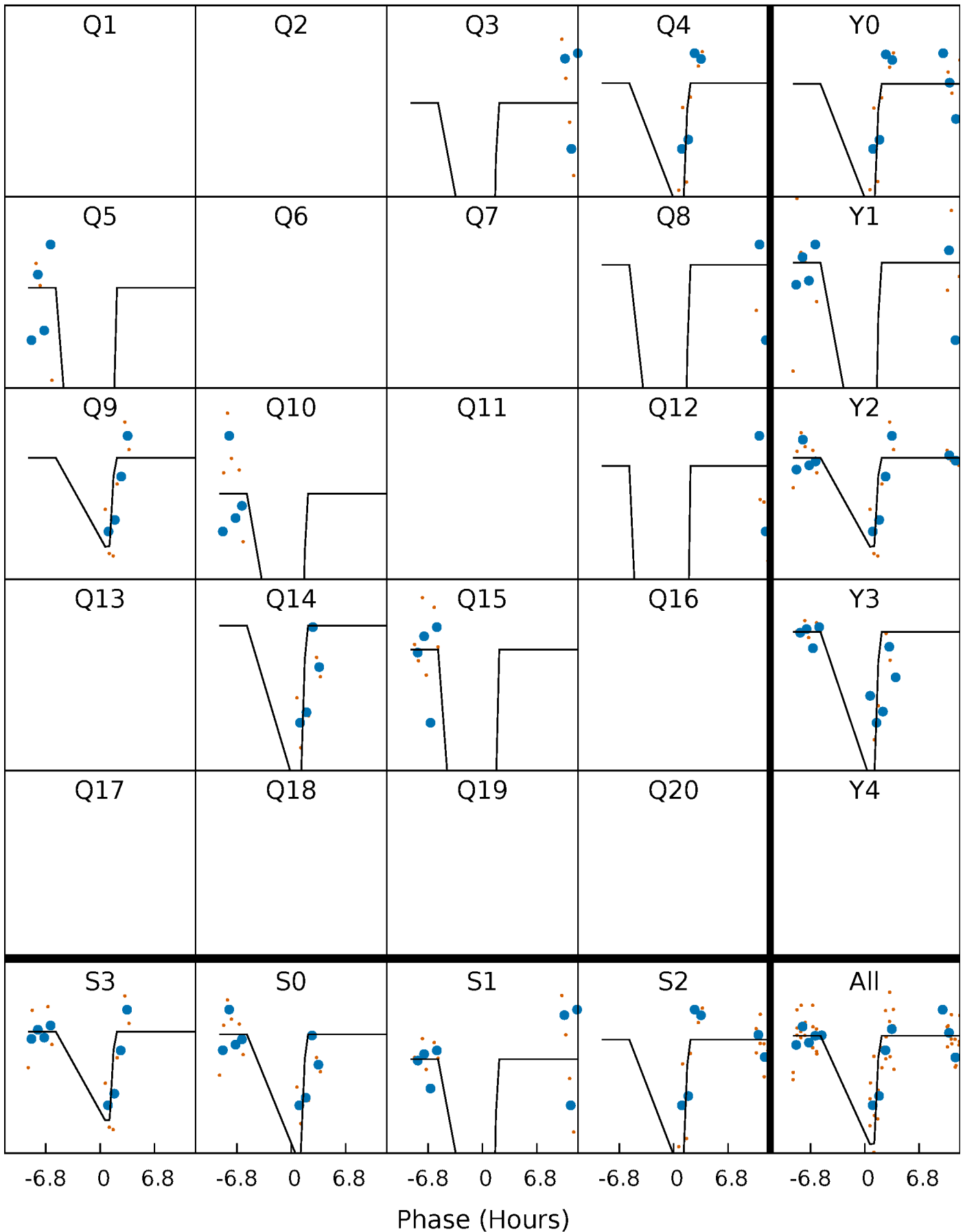
DV Quarter-Phased Transit Curves

TCE 008398303-03 $P=108.171832$ Days $T_0=200.748075$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

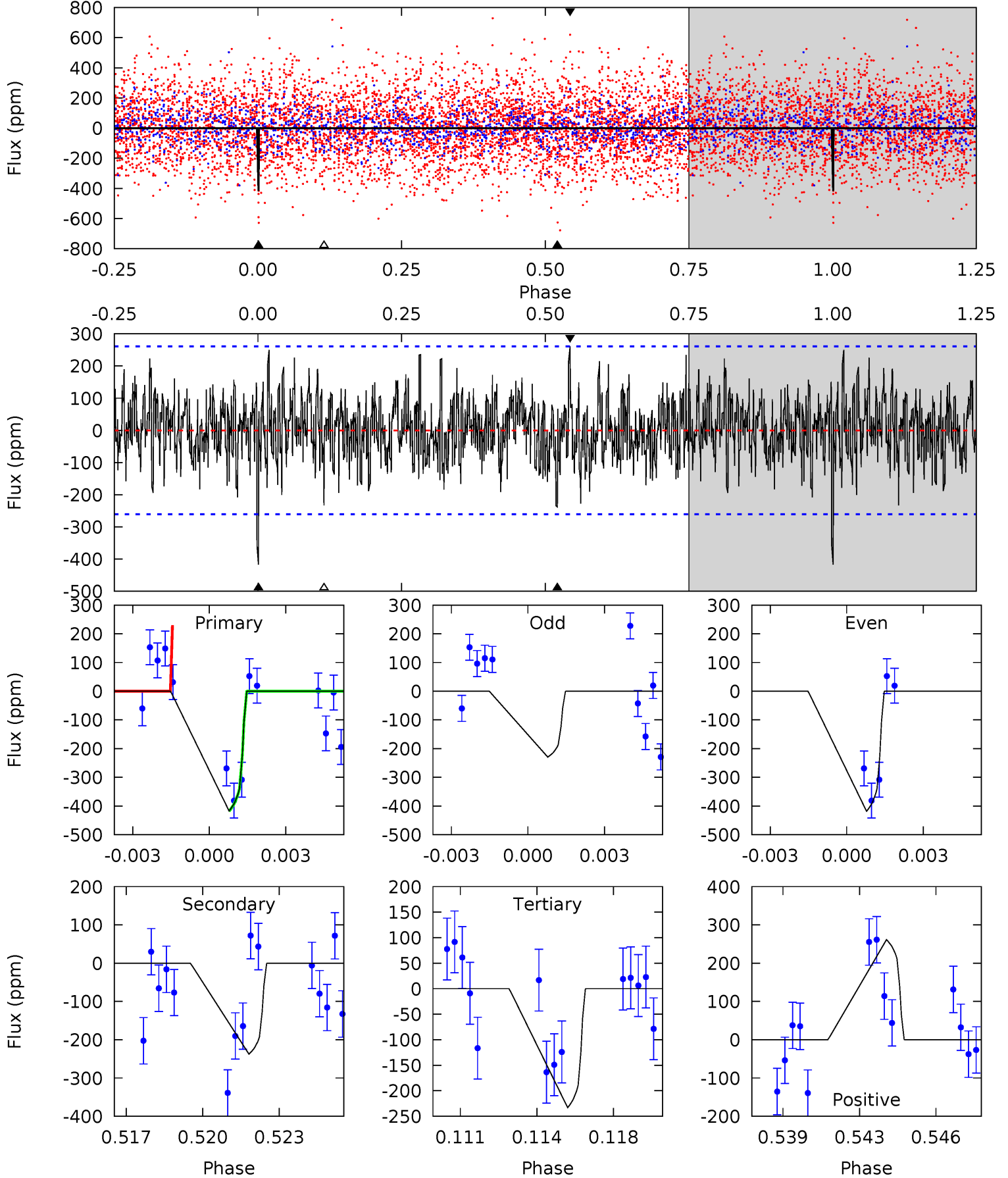
TCE 008398303-03 $P=108.170520$ Days $T_0=200.823550$ (BKJD)



DV Model-Shift Uniqueness Test

008398303-03, P = 108.171832 Days, E = 92.576243 Days

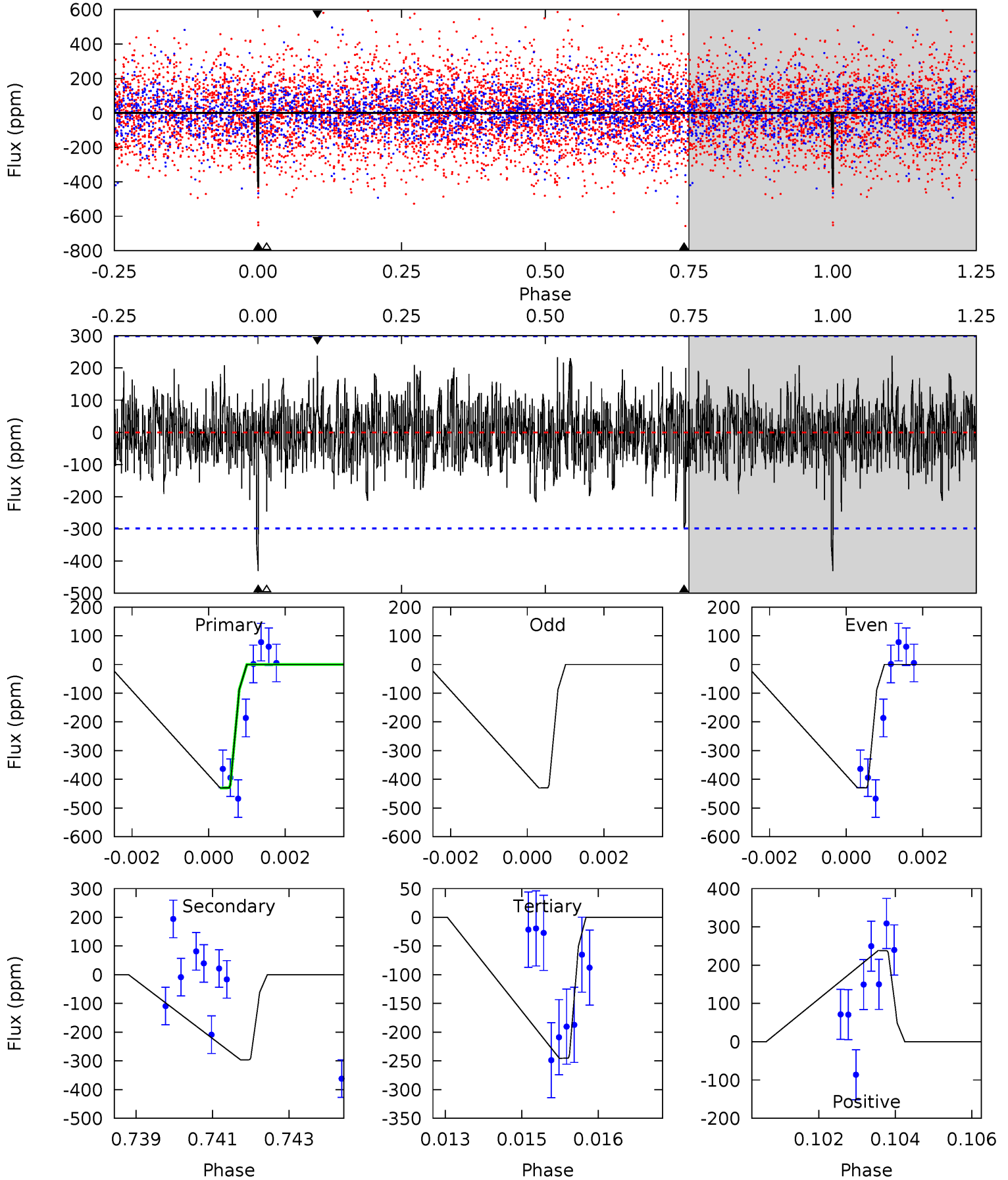
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.37	4.77	4.68	5.24	5.24	2.94	1.49	3.70	3.13	0.09	-0.48	0.98	1.13	0.39	0.98



Alt Model-Shift Uniqueness Test

008398303-03, P = 108.170520 Days, E = 92.653030 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.74	5.33	4.42	4.28	5.36	3.15	1.22	3.32	3.45	0.92	1.05	0	1.15	0.36	0



Stellar Parameters For KIC 008398303

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6267^{+176}_{-220}	$3.771^{+0.510}_{-0.090}$	$-0.020^{+0.250}_{-0.300}$	$2.581^{+0.540}_{-1.349}$	$1.432^{+0.195}_{-0.362}$	$0.117^{+0.674}_{-0.042}$
	+3%/-4%	+14%/-2%	+1250%/-1500%	+21%/-52%	+14%/-25%	+574%/-35%
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 008398303-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-238 ± 50	$5.40^{+4.07}_{-3.17}$	839^{+63}_{-107}	5171^{+3282}_{-879}	1123^{+5738}_{-759}
Alt.	-297 ± 56	$6.10^{+4.14}_{-3.50}$	845^{+59}_{-119}	5265^{+2386}_{-966}	1057^{+4238}_{-684}

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

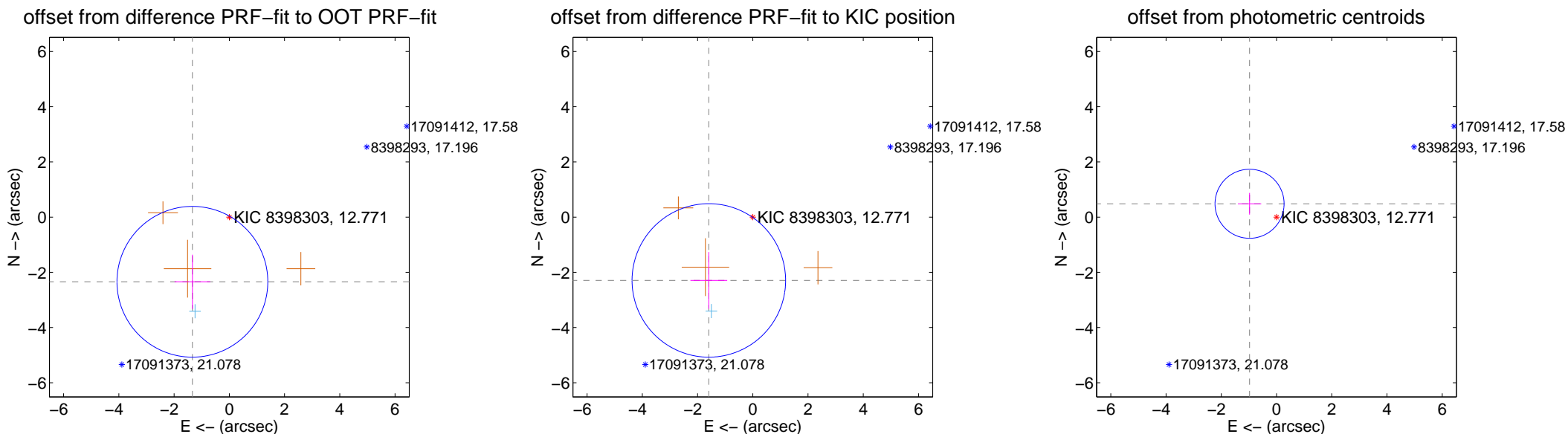
DV Centroid Data

Supplemental centroid analysis for 008398303-03. Kepler magnitude: 12.77. Transit SNR 11.46

There are 1 quarters with good PRF difference image offsets

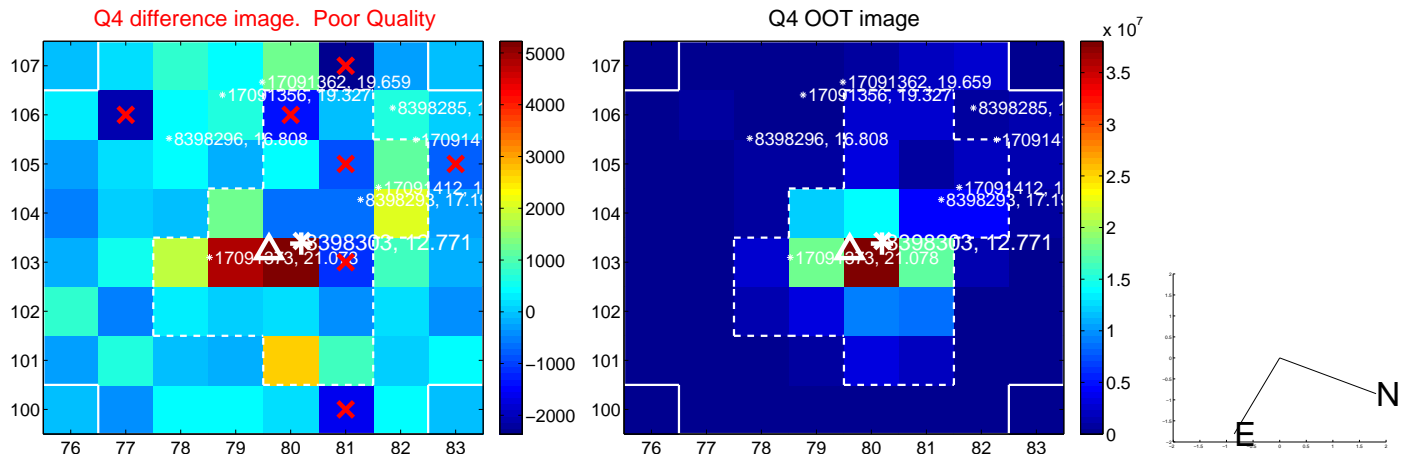
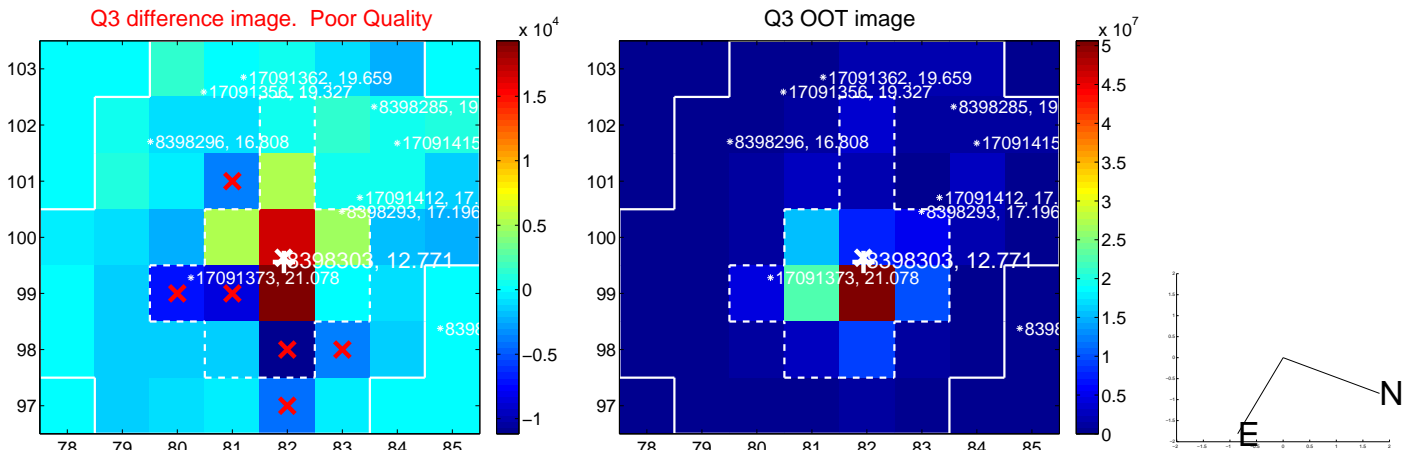
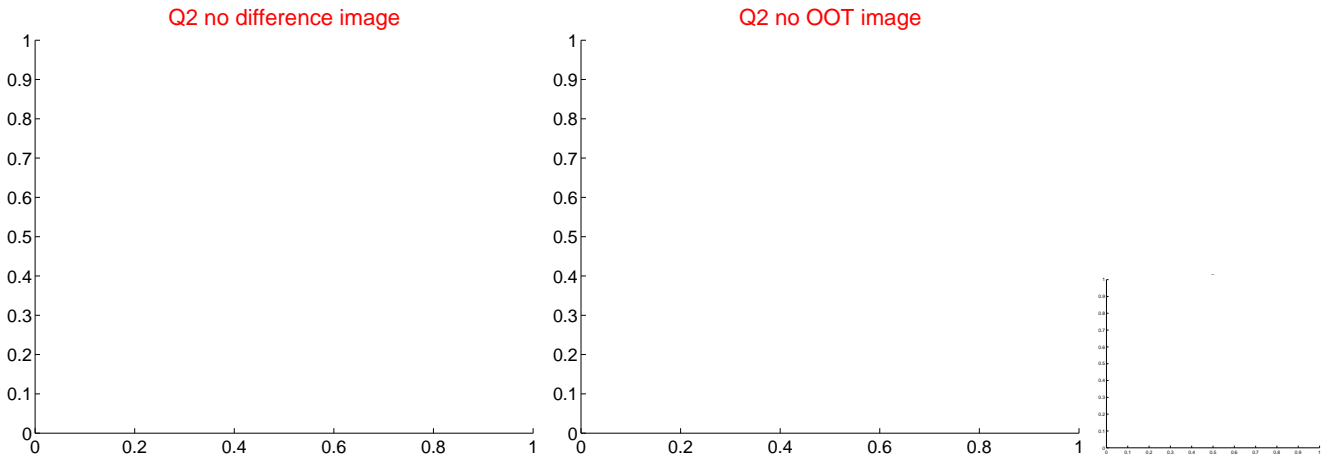
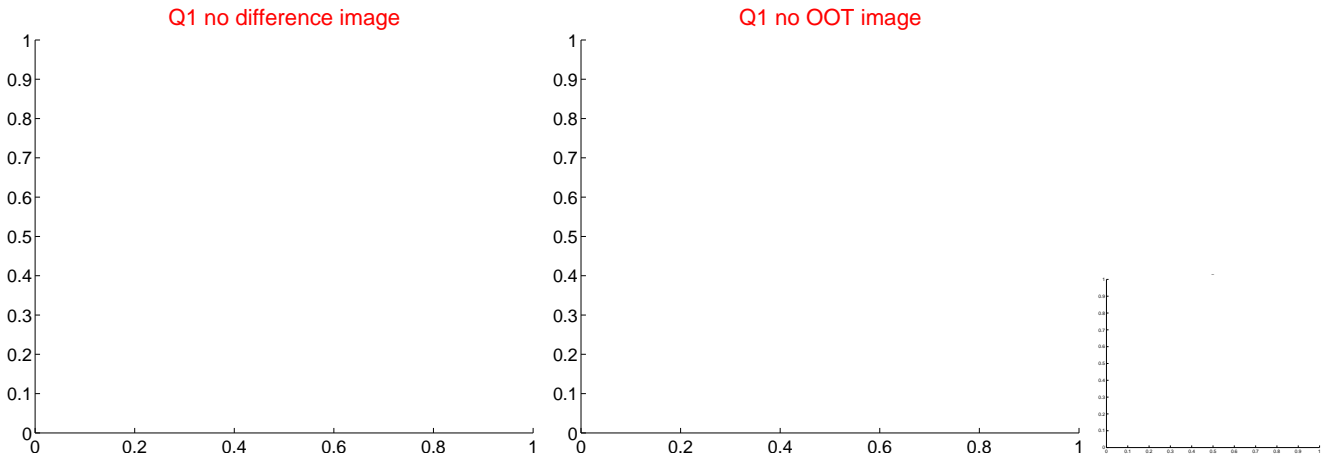
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.697 ± 0.910	2.96	1.337 ± 0.645	-2.342 ± 0.981
PRF-fit source offset from KIC position	2.791 ± 0.927	3.01	1.591 ± 0.665	-2.293 ± 1.029
photometric centroid source offset	1.09 ± 0.42	2.61	0.98 ± 0.42	0.48 ± 0.39

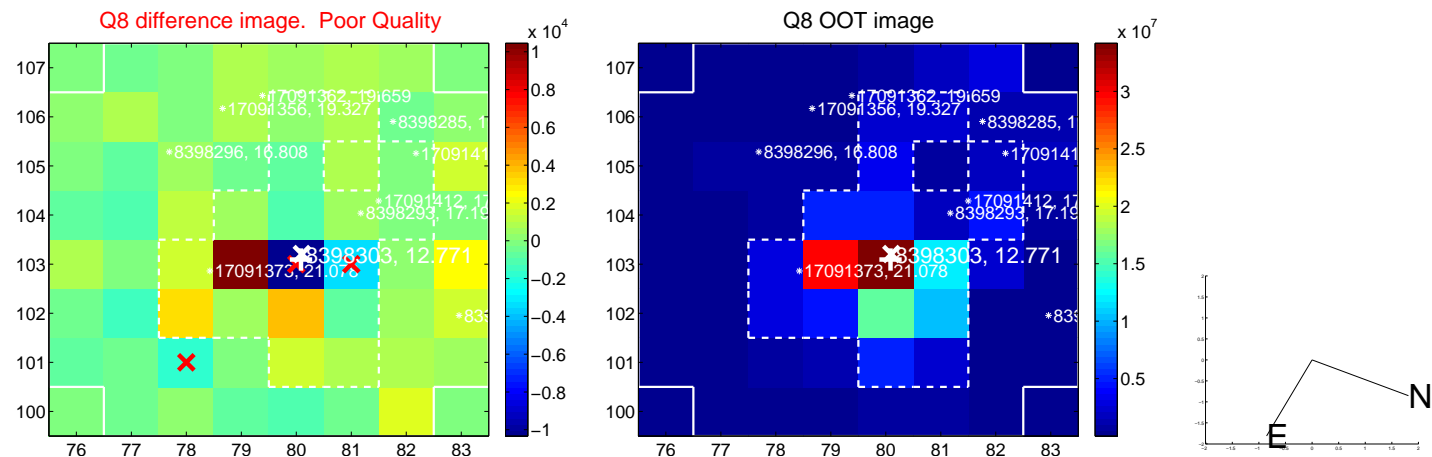
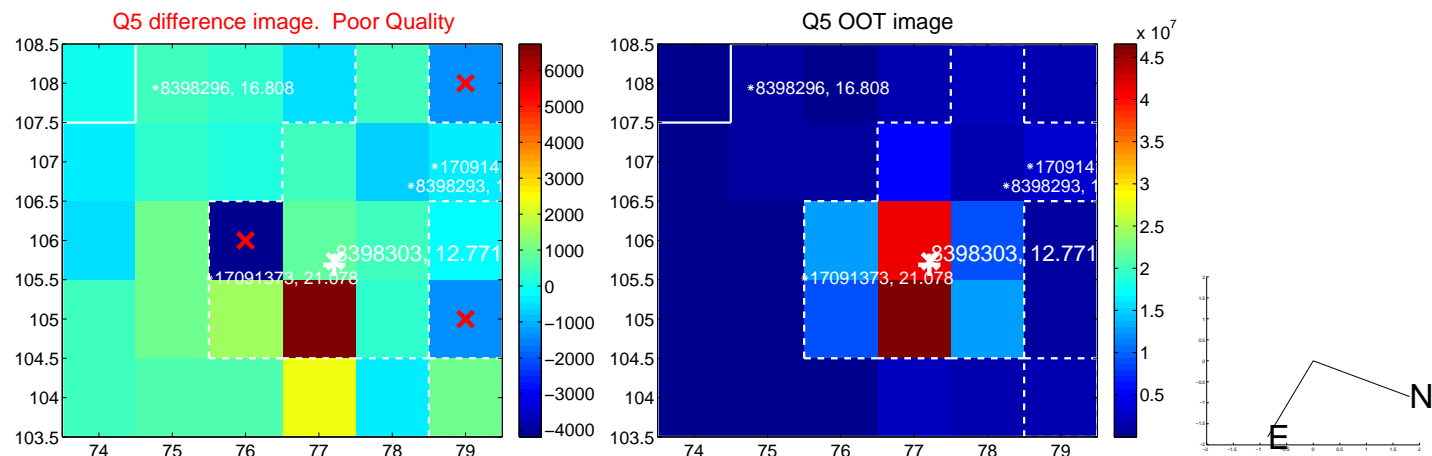


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

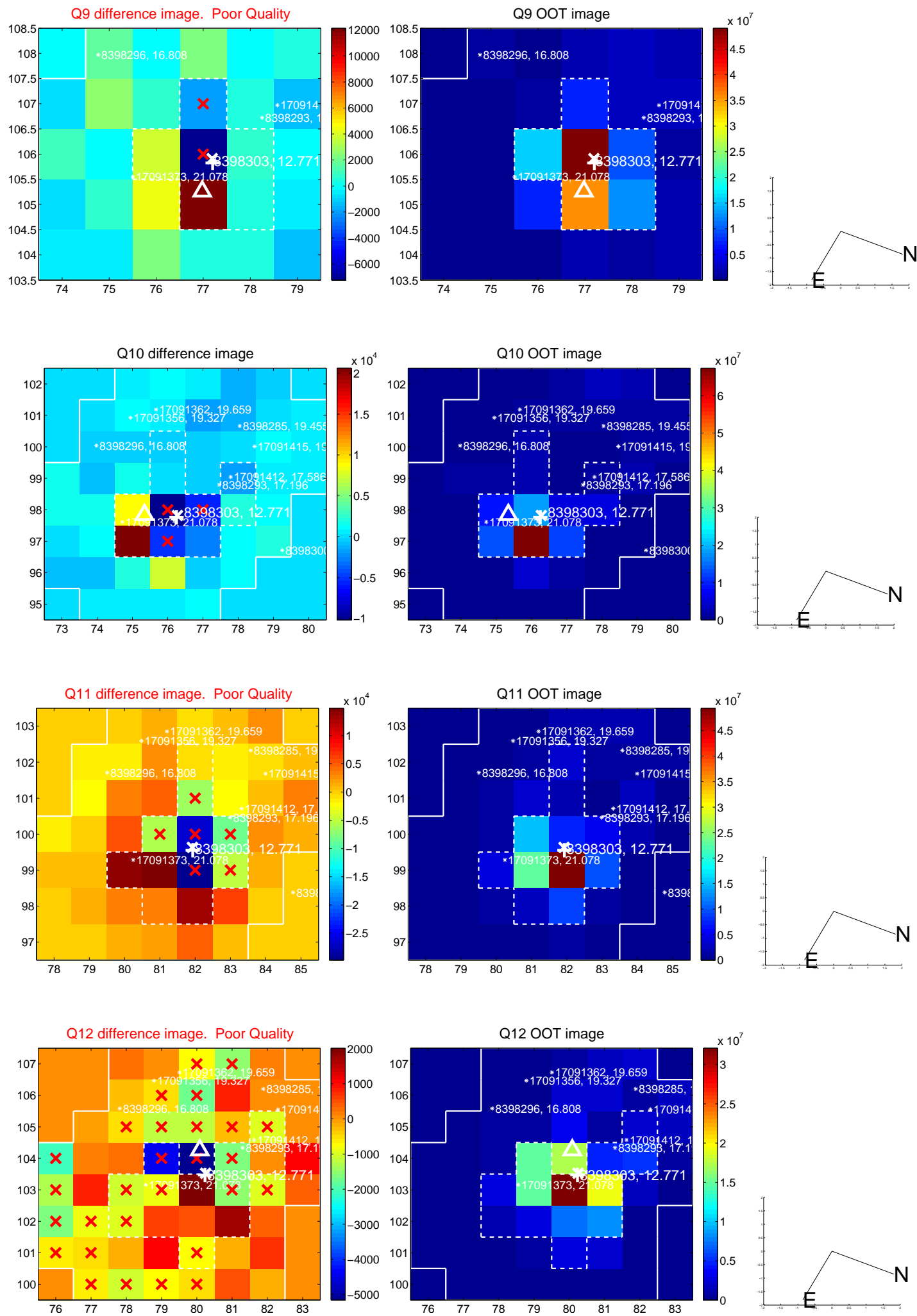
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



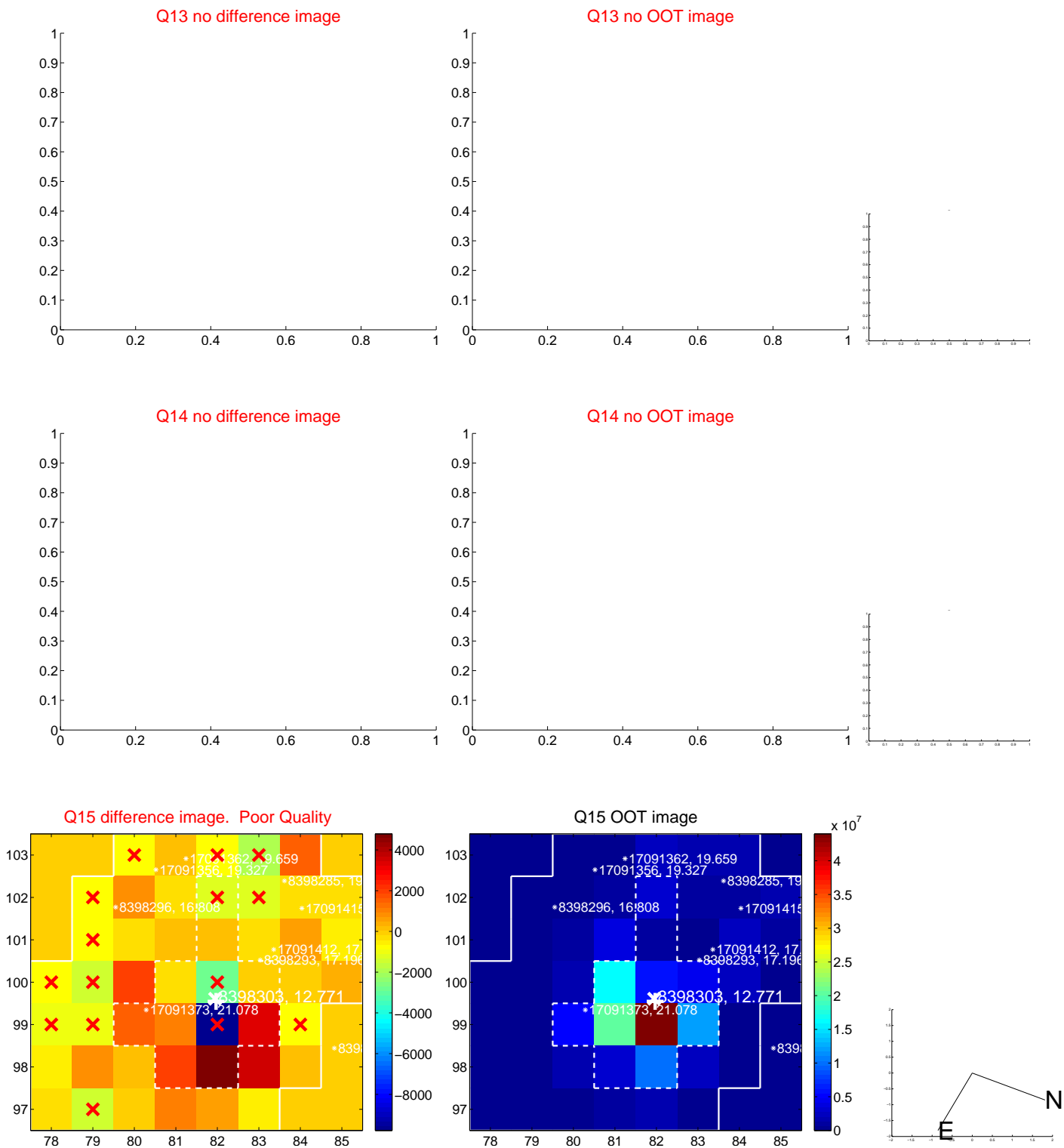
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



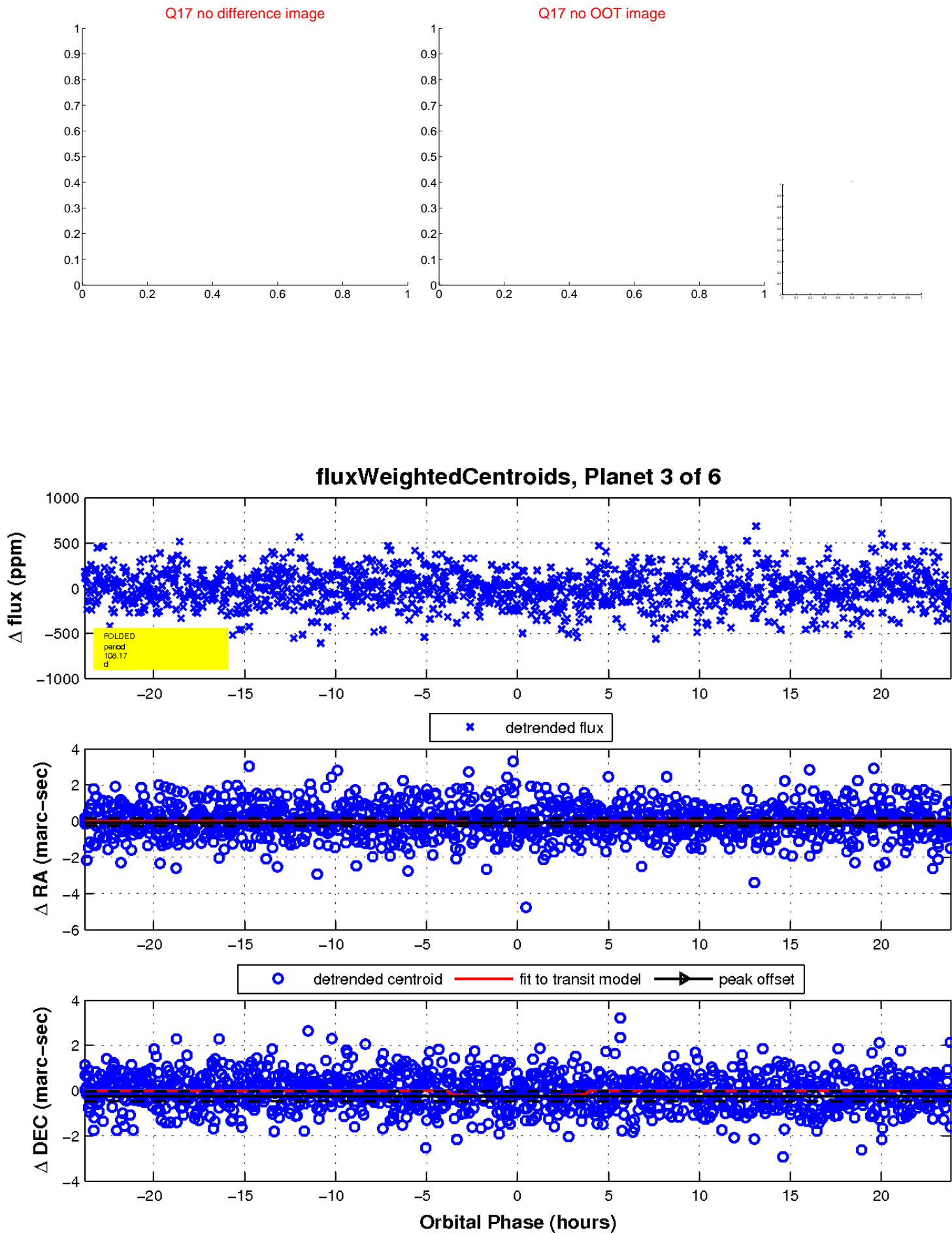
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

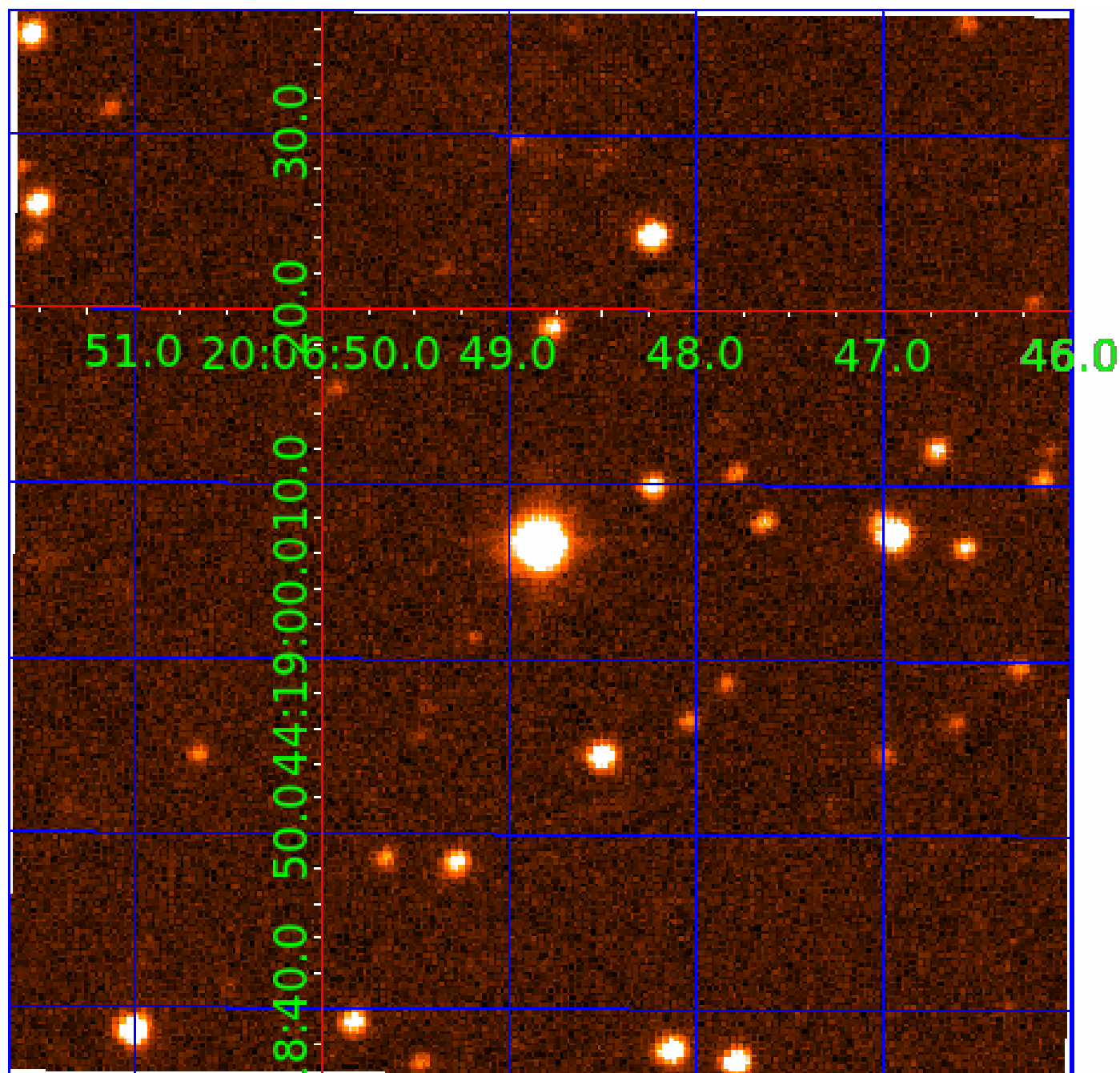


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008398303

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})
008398303-01	OBS	No	1.584931	132.756990	19.5	11.352	7.9	8.7	2.58	6267	1.17	10224.57
008398303-03	OBS	No	108.171832	200.748075	466.2	7.958	12.2	11.5	2.58	6267	6.02	36.66
008398303-04	OBS	No	25.306363	133.957577	304.2	1.588	11.5	10.2	2.58	6267	5.22	254.30
008398303-05	OBS	No	19.344654	132.936177	360.9	0.962	11.9	10.4	2.58	6267	4.97	363.84
008398303-06	OBS	No	40.620767	147.619778	351.5	2.553	12.5	9.8	2.58	6267	5.16	135.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008398303-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
008398303-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008398303-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008398303-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
008398303-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

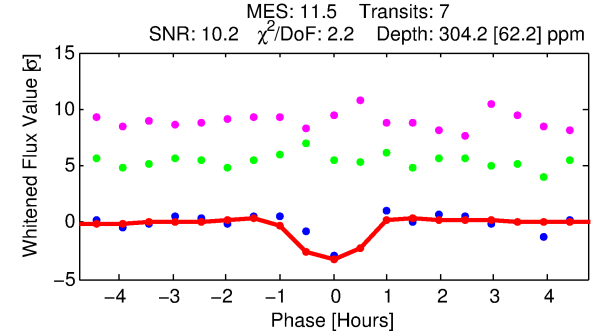
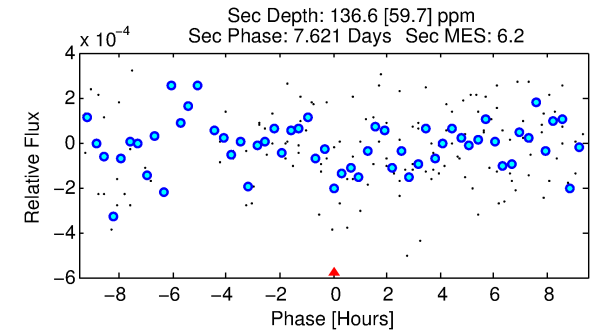
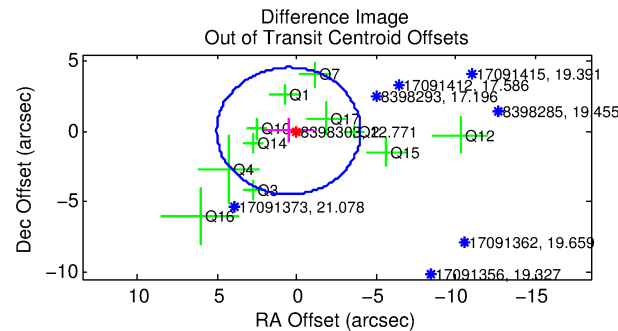
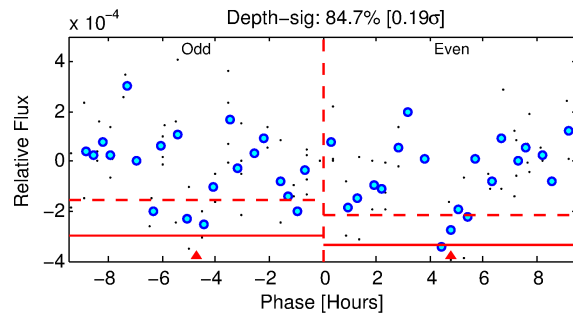
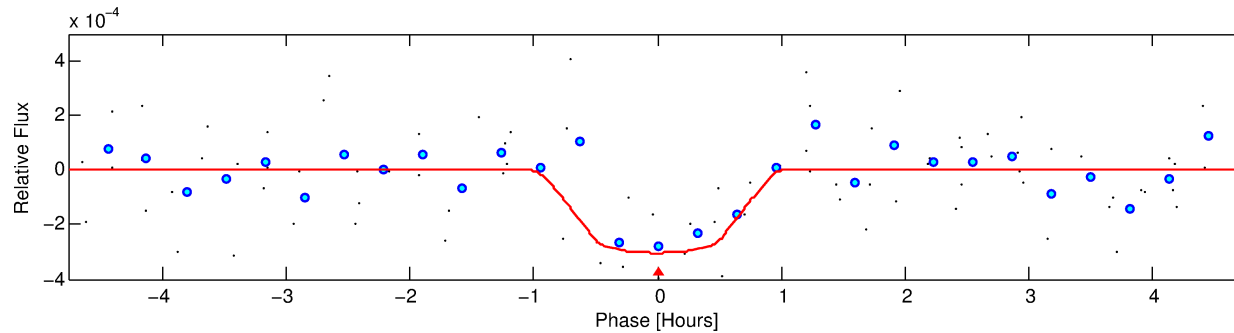
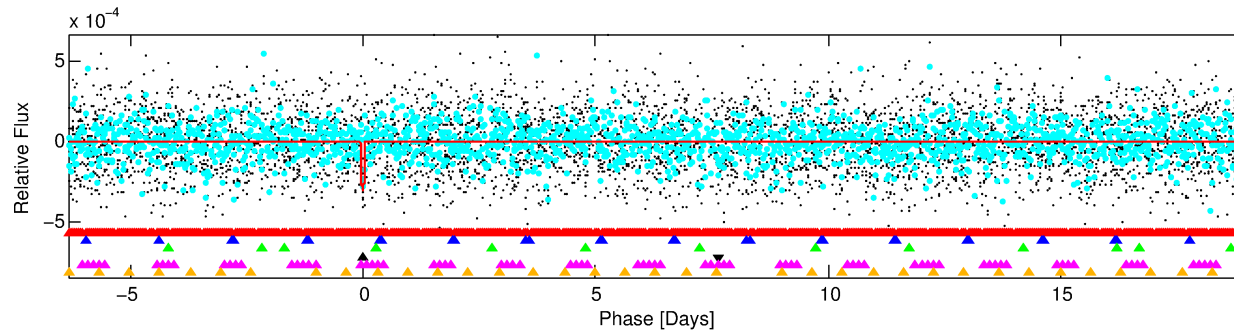
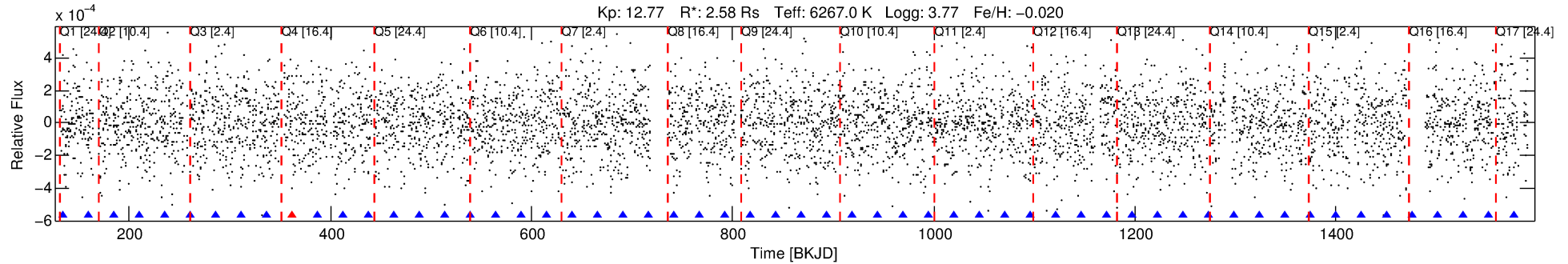
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008398303-04

No Significant Match Found

DV One-Page Summary

KIC: 8398303 Candidate: 4 of 6 Period: 25.306 d



DV Fit Results:

Period = 25.30636 [0.00025] d
Epoch = 133.9576 [0.0069] BKJD
Rp/R* = 0.0185 [0.0209]
a/R* = 62.33 [367.53]
b = 0.88 [1.54]
Seff = 254.30 [220.82]
Teq = 1018 [221] K
Rp = 5.22 [6.49] Re
a = 0.1903 [0.0997] AU
Ag = 99.97 [245.19] [0.40 σ]
Teffp = 4978 [2865] K [1.38 σ]

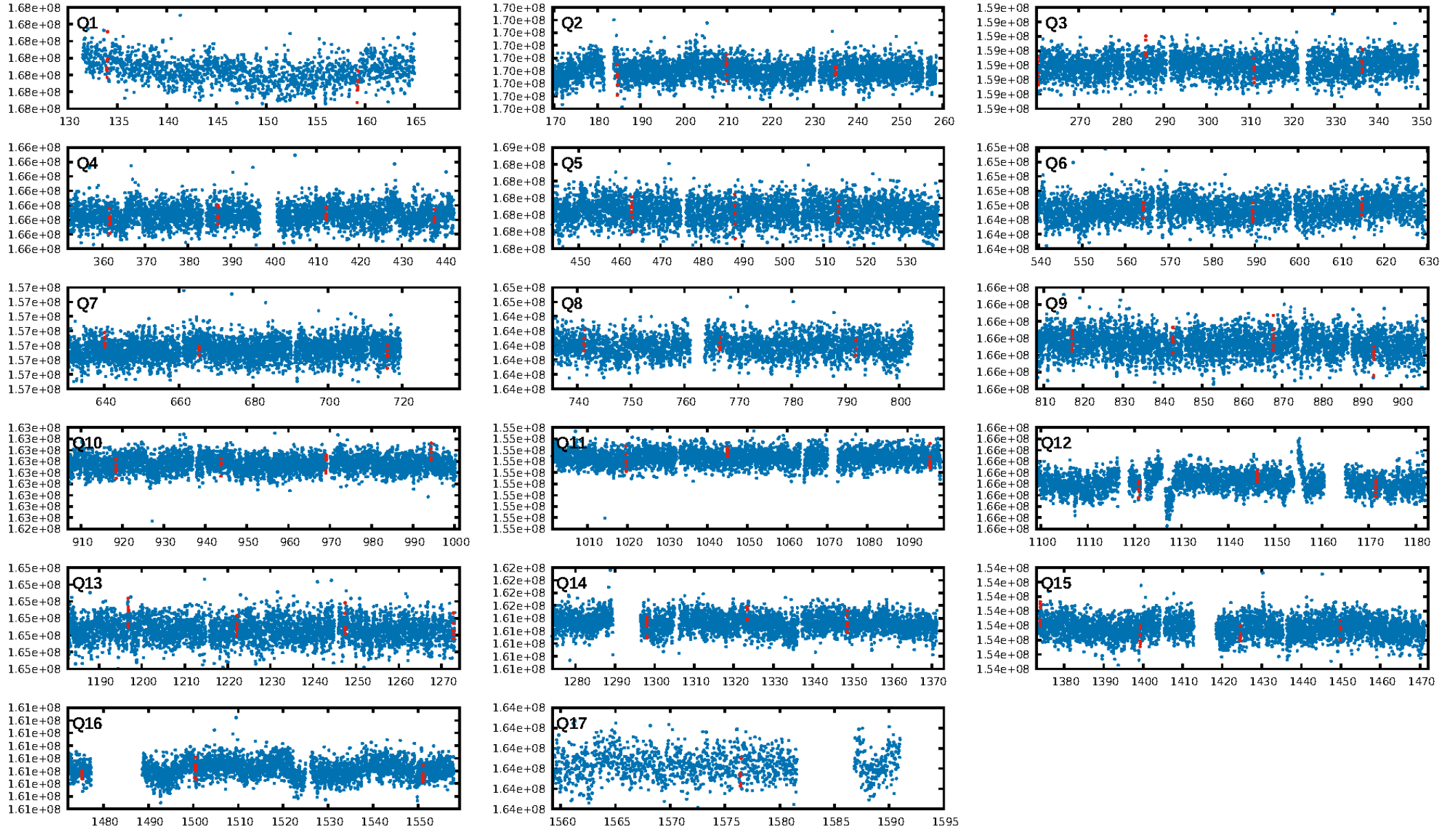
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [77.07 σ]
LongPeriod-sig: 100.0% [122.25 σ]
ModelChiSquare2-sig: 3.8%
ModelChiSquareGof-sig: 97.2%
Bootstrap-pfa: 1.81e-08
RollingBand-fgt: 0.86 [6/7]
GhostDiagnostic-chr: -0.6339
Centroid-sig: 26.5%
Centroid-so: 1.401 arcsec [2.33 σ]
OotOffset-rm: 0.513 arcsec [0.34 σ]
KicOffset-rm: 0.708 arcsec [0.47 σ]
OotOffset-st: 3/3/3/2 [11]
KicOffset-st: 3/3/3/2 [11]
DiffImageQuality-fgm: 0.18 [2/11]
DiffImageOverlap-fno: 0.47 [8/17]

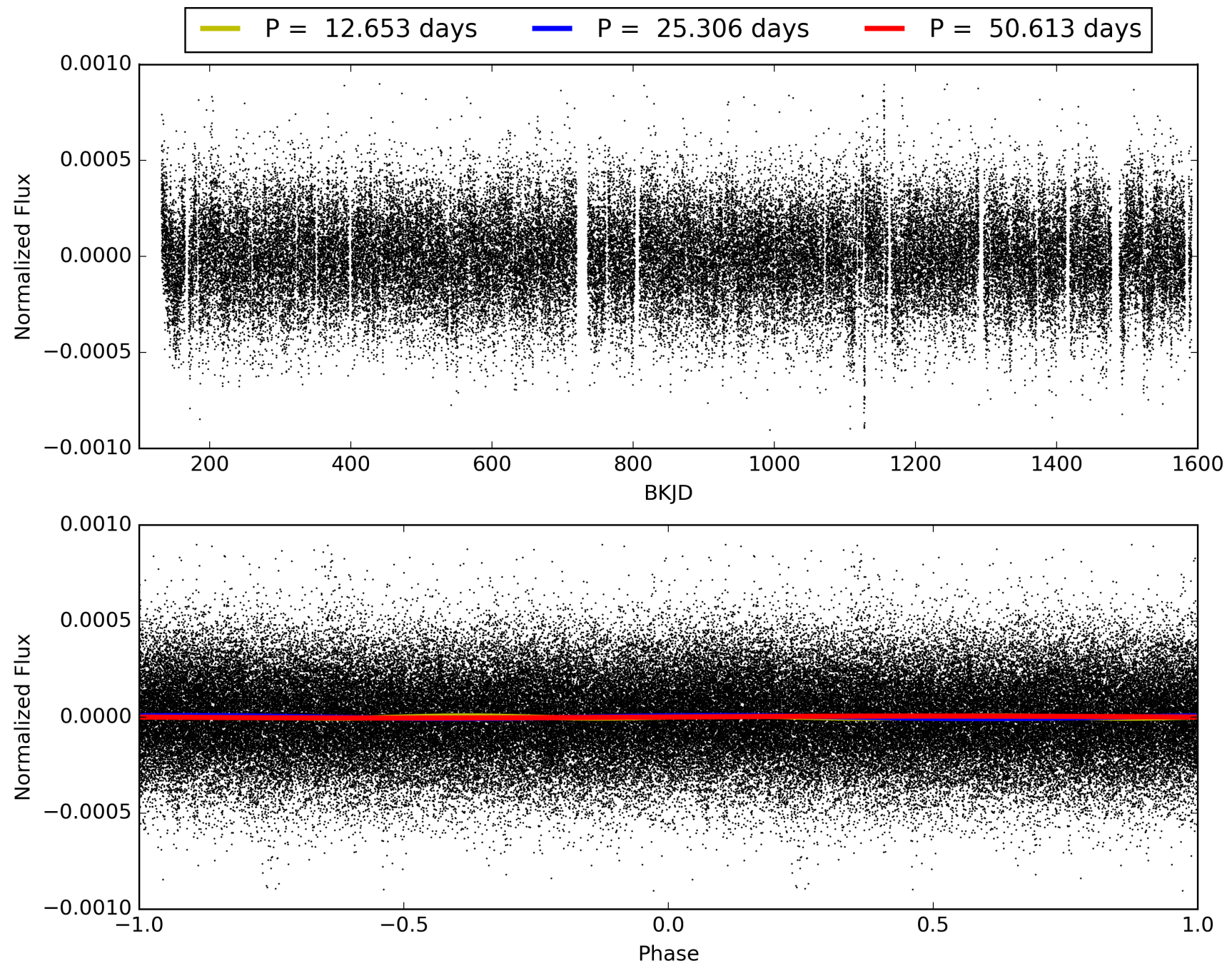
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:36:26 Z

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

TCE 008398303-04, PDC Light Curves

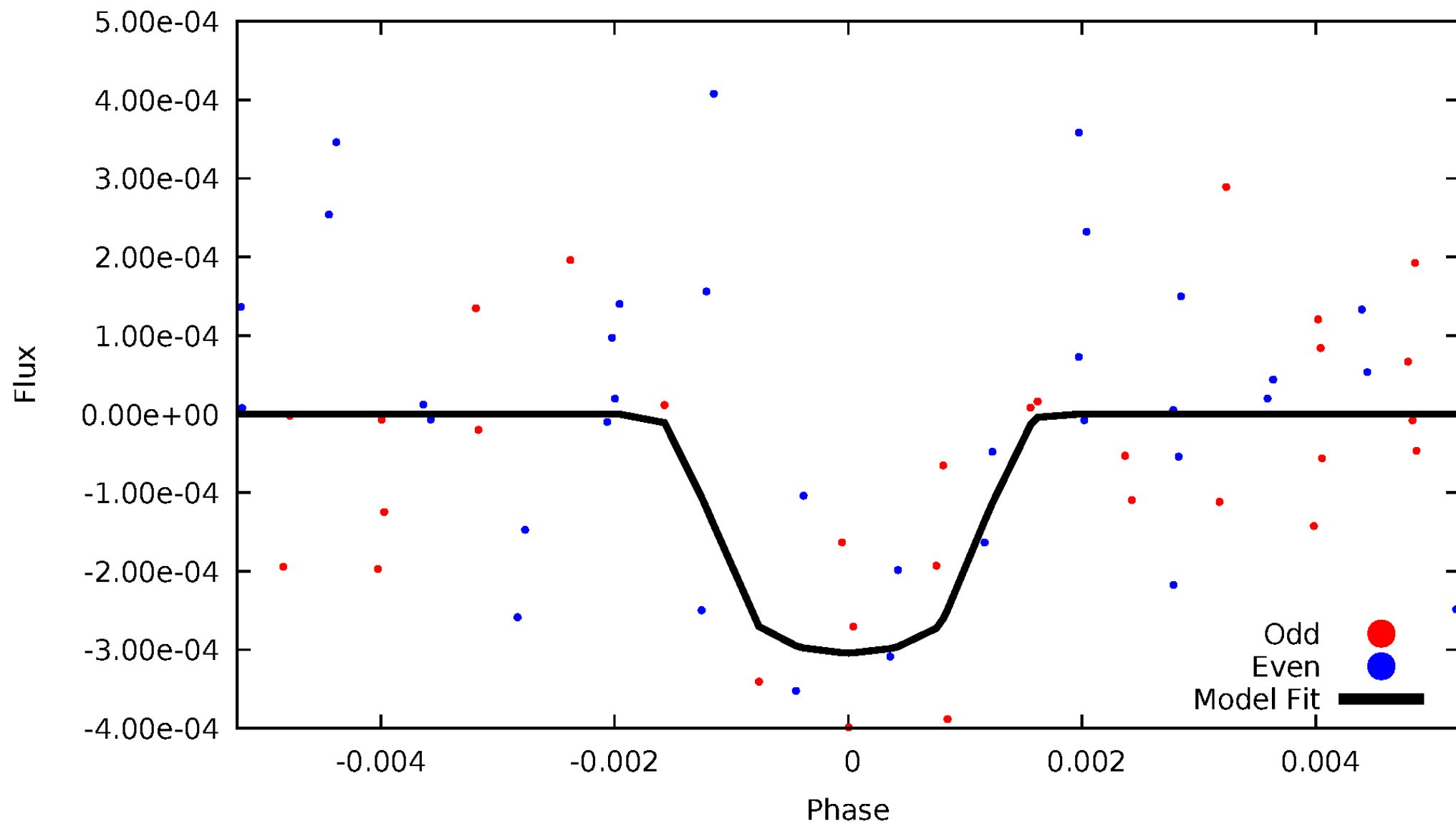


TCE 008398303-04



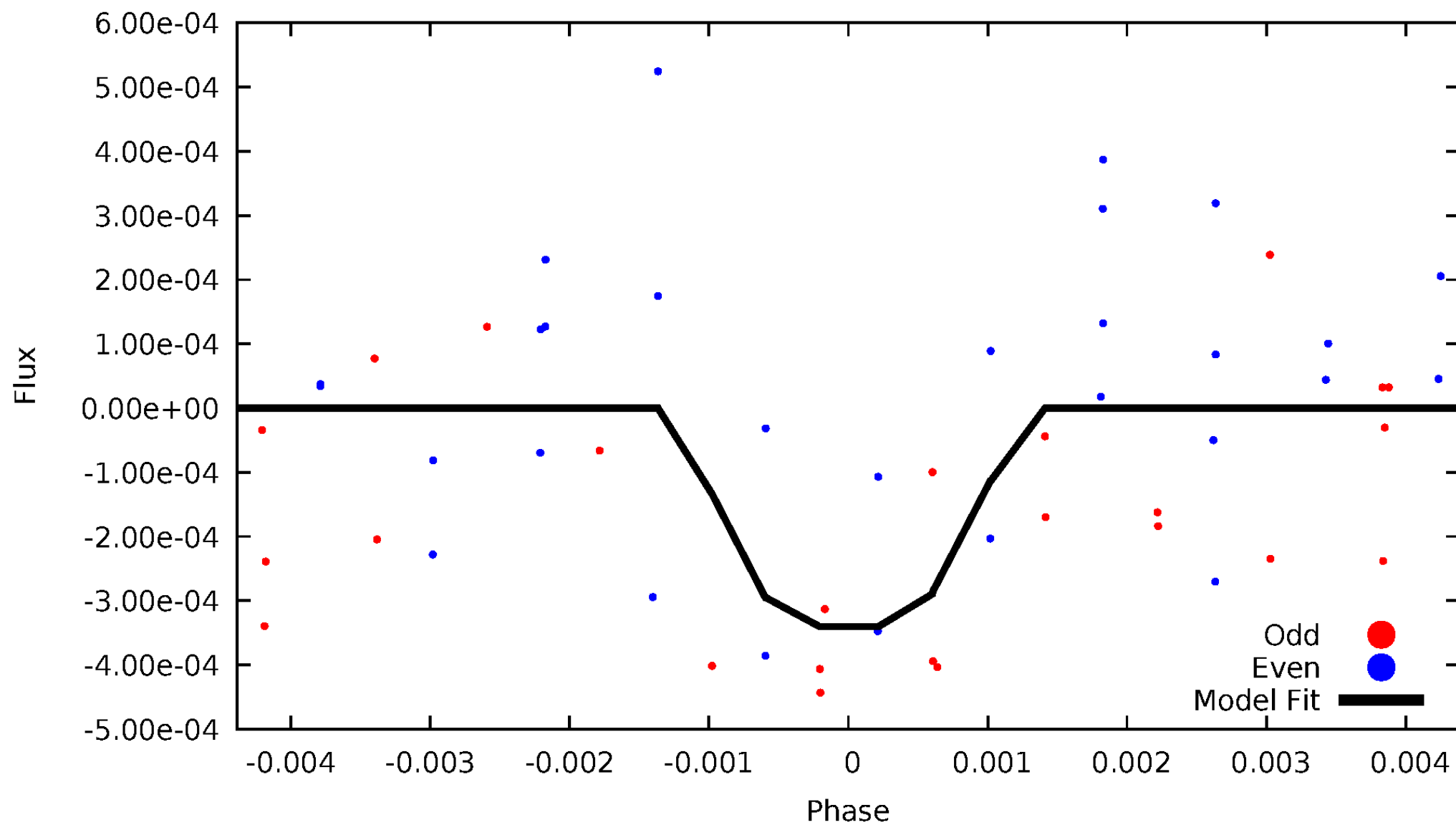
DV Odd/Even

TCE 008398303-04



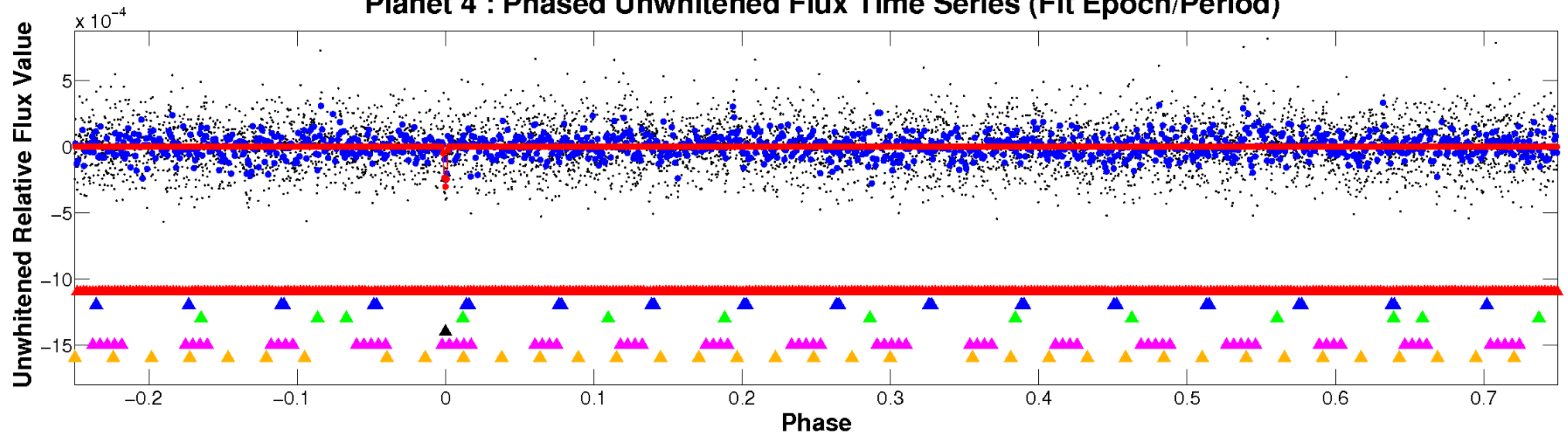
ALT Odd/Even

TCE 008398303-04

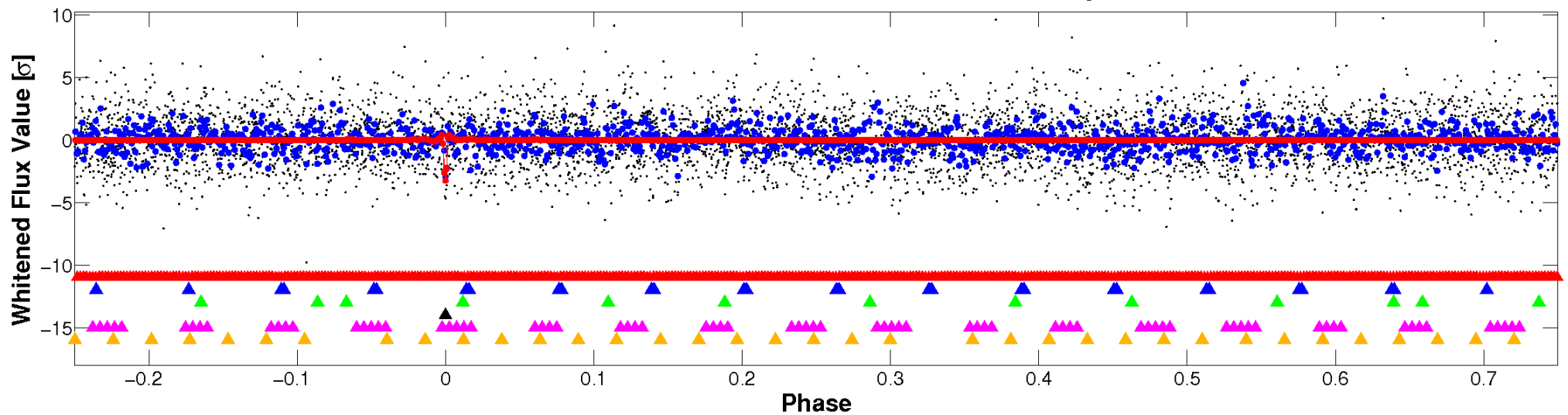


Non-Whitened Vs. Whitened Light Curve

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

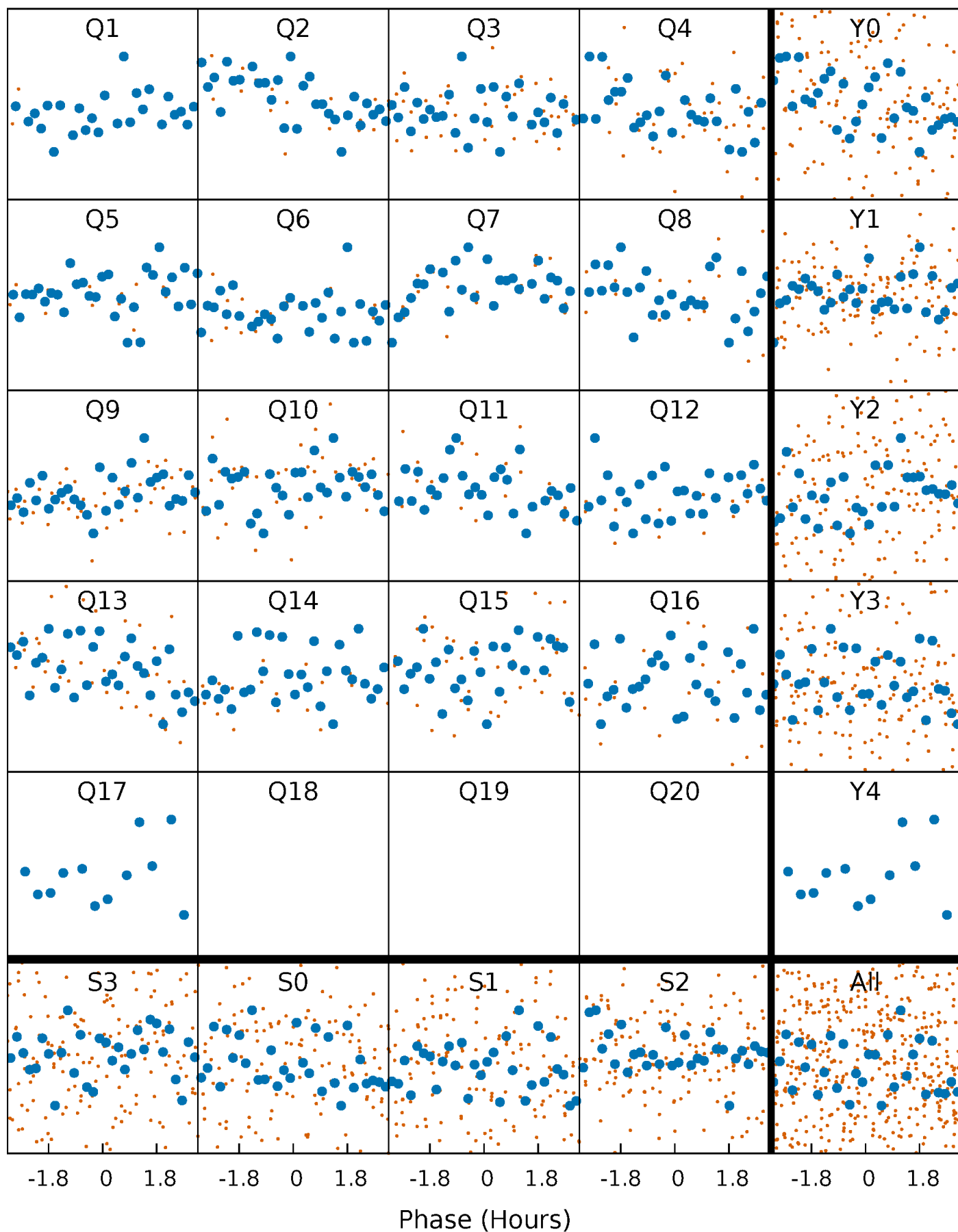


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



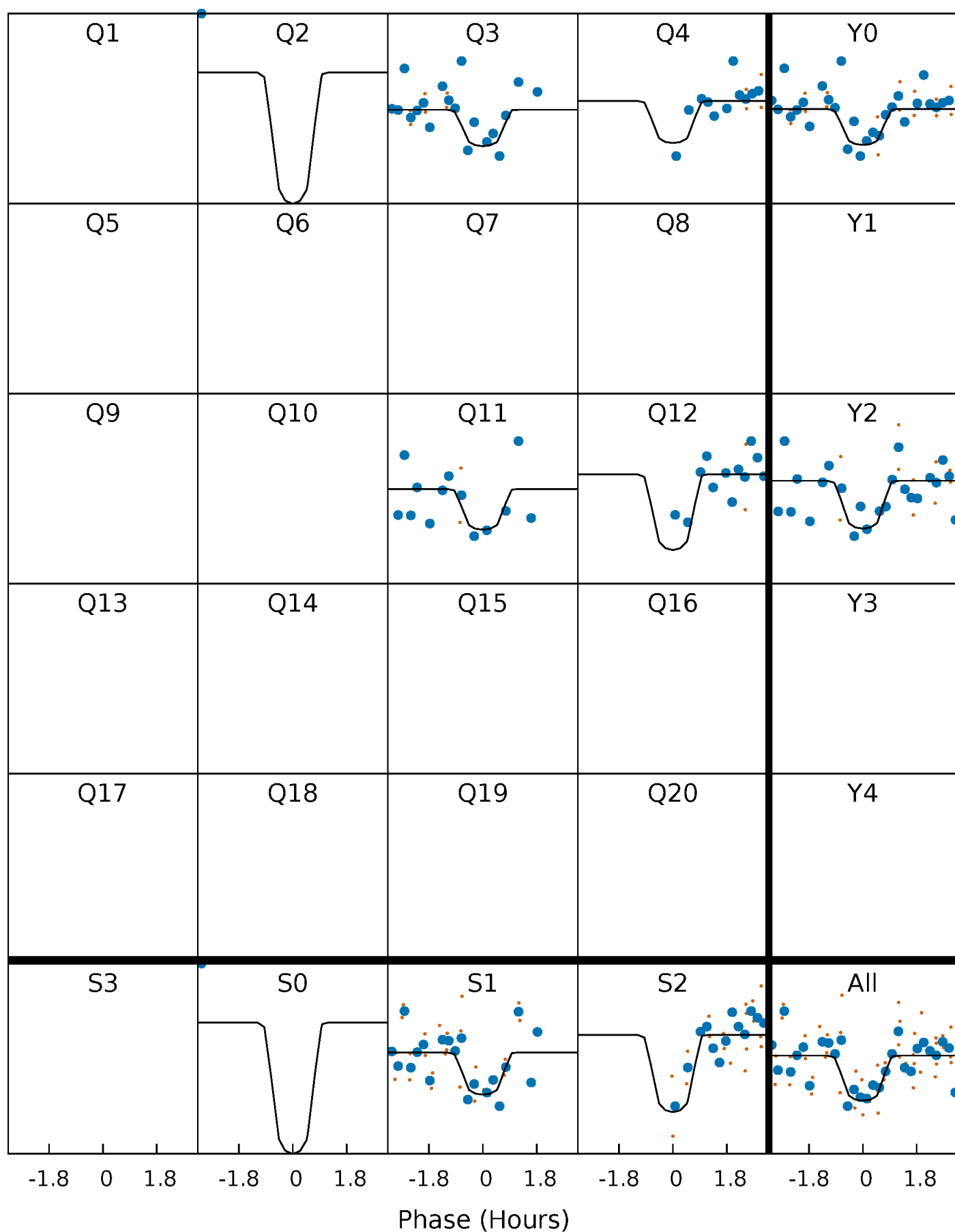
PDC Quarter-Phased Transit Curves

TCE 008398303-04 P= 25.306363 Days $T_0=133.957577$ (BKJD)



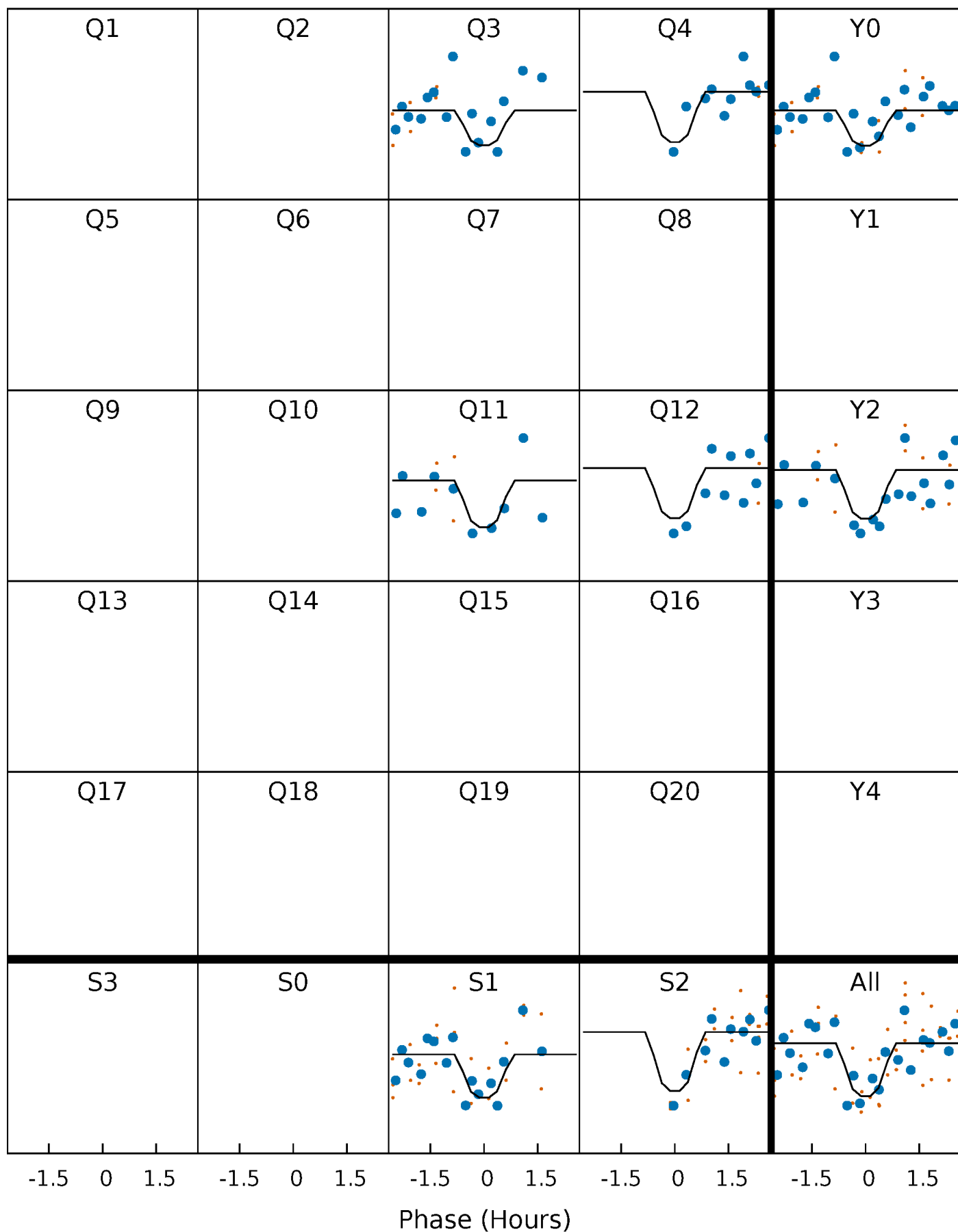
DV Quarter-Phased Transit Curves

TCE 008398303-04 P= 25.306363 Days $T_0=133.957577$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

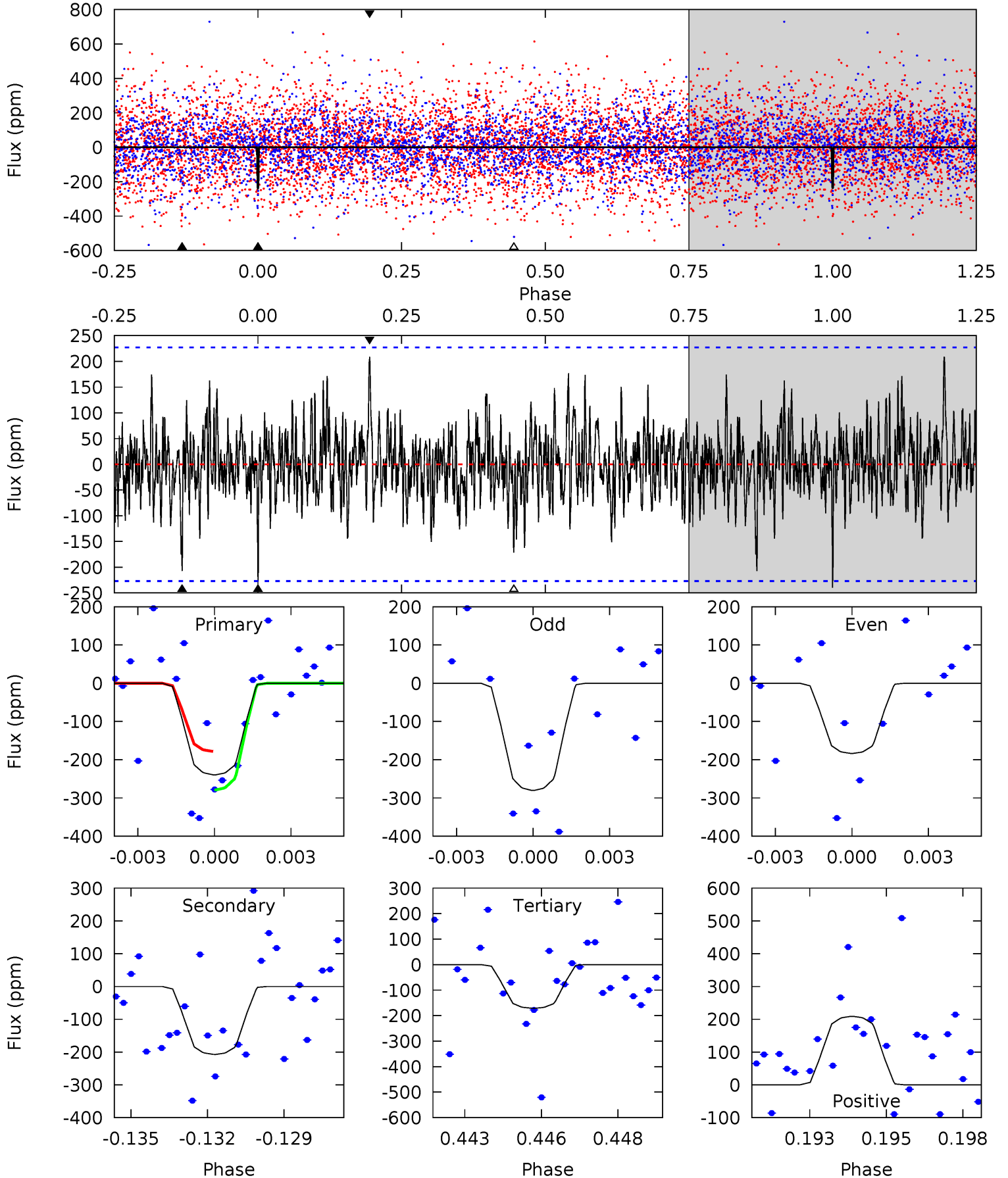
TCE 008398303-04 $P = 25.306311$ Days $T_0 = 133.963319$ (BKJD)



DV Model-Shift Uniqueness Test

008398303-04, P = 25.306363 Days, E = 108.651214 Days

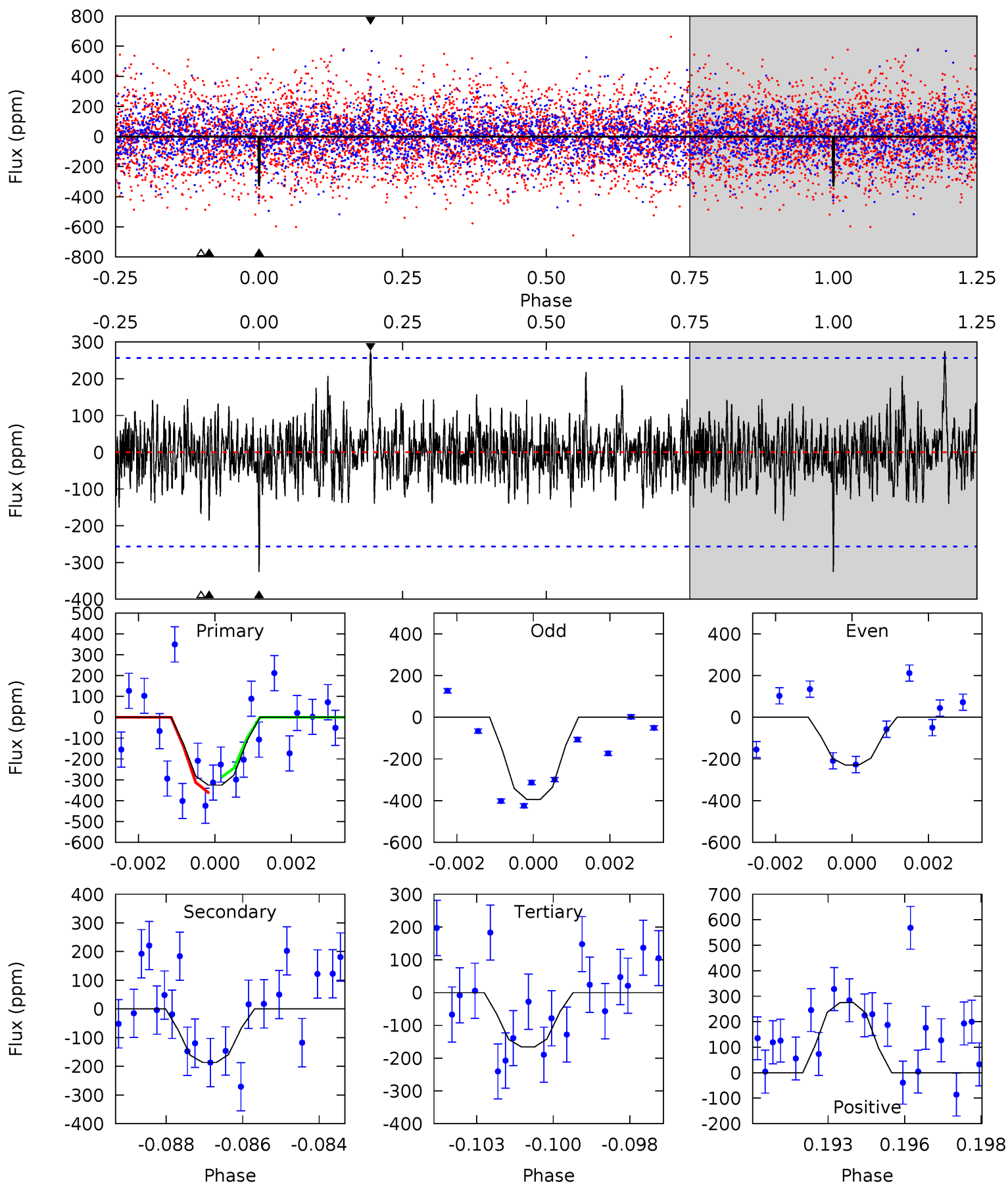
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.55	4.80	3.97	4.84	5.26	2.98	1.28	1.58	0.71	0.83	-0.04	1.12	1.01	0.47	1.14



Alt Model-Shift Uniqueness Test

008398303-04, P = 25.306311 Days, E = 108.657008 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.72	3.85	3.42	5.67	5.29	3.04	1.17	3.30	1.05	0.44	-1.82	1.70	0.82	0.46	0.76



Stellar Parameters For KIC 008398303

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6267^{+176}_{-220}	$3.771^{+0.510}_{-0.090}$	$-0.020^{+0.250}_{-0.300}$	$2.581^{+0.540}_{-1.349}$	$1.432^{+0.195}_{-0.362}$	$0.117^{+0.674}_{-0.042}$
	+3%/-4%	+14%/-2%	+1250%/-1500%	+21%/-52%	+14%/-25%	+574%/-35%
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 008398303-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-207 ± 43	$5.87^{+5.24}_{-3.89}$	1374^{+103}_{-192}	4921^{+3197}_{-1027}	116^{+907}_{-83}
Alt.	-187 ± 48	$5.73^{+4.81}_{-3.91}$	1370^{+109}_{-174}	4825^{+3505}_{-918}	111^{+858}_{-79}

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

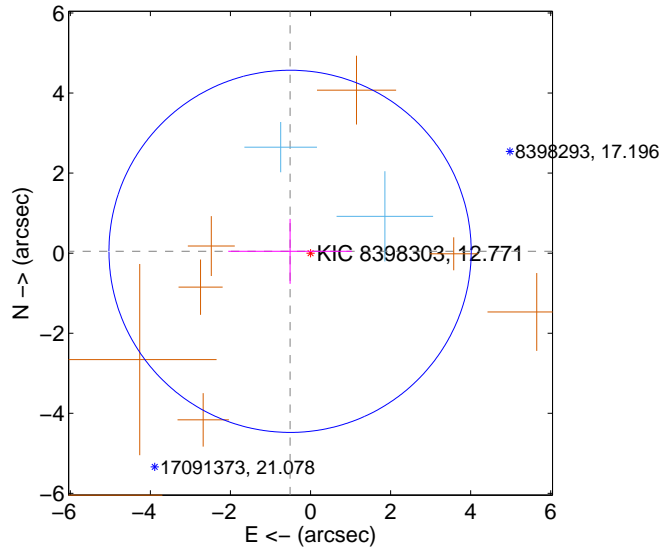
Supplemental centroid analysis for 008398303-04. Kepler magnitude: 12.77. Transit SNR 10.22

There are 2 quarters with good PRF difference image offsets

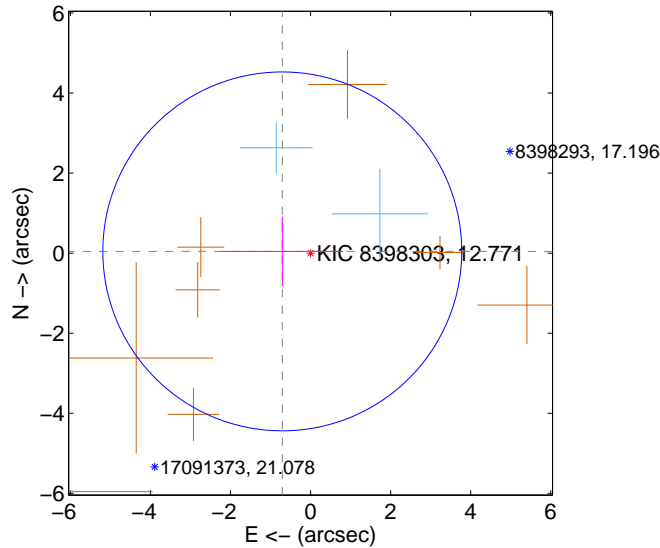
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.513 ± 1.508	0.34	0.511 ± 1.545	0.046 ± 0.811
PRF-fit source offset from KIC position	0.708 ± 1.494	0.47	0.706 ± 1.521	0.044 ± 0.866
photometric centroid source offset	1.40 ± 0.60	2.33	1.37 ± 0.60	0.32 ± 0.57

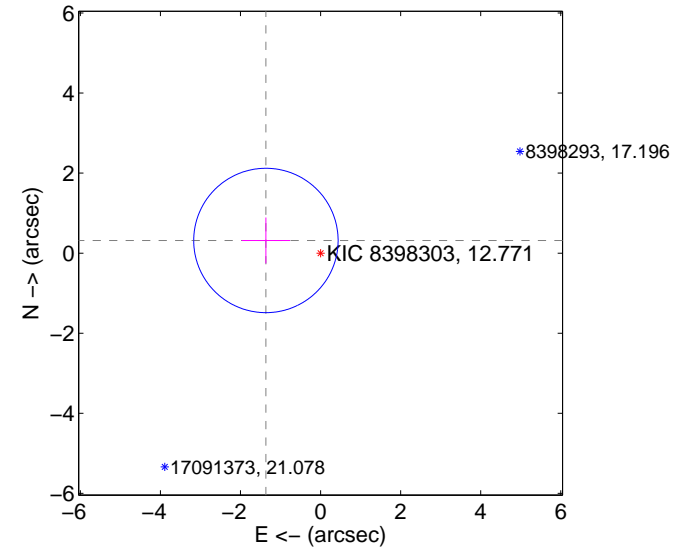
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

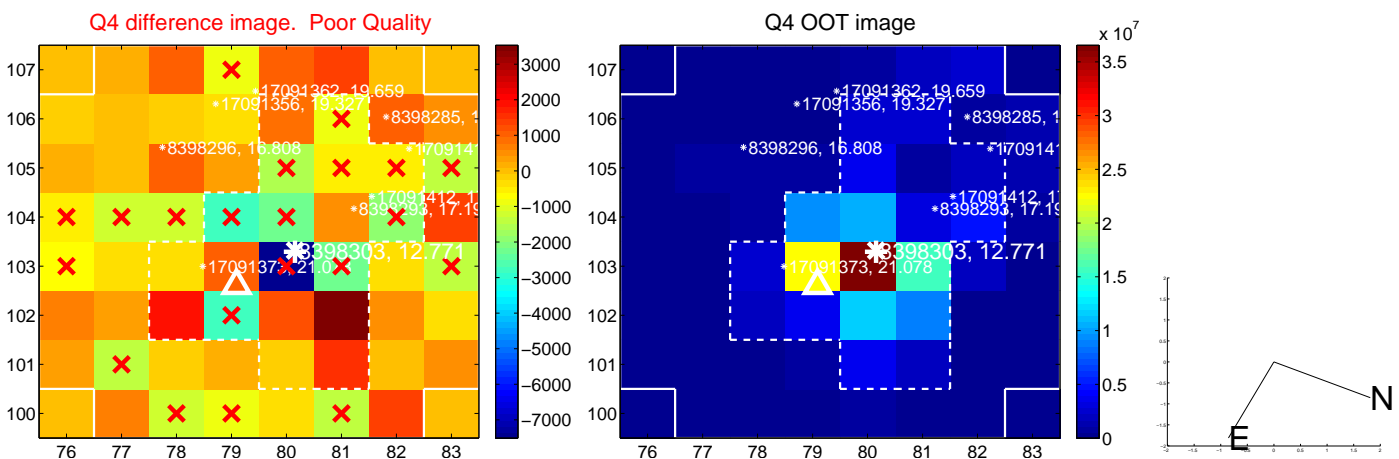
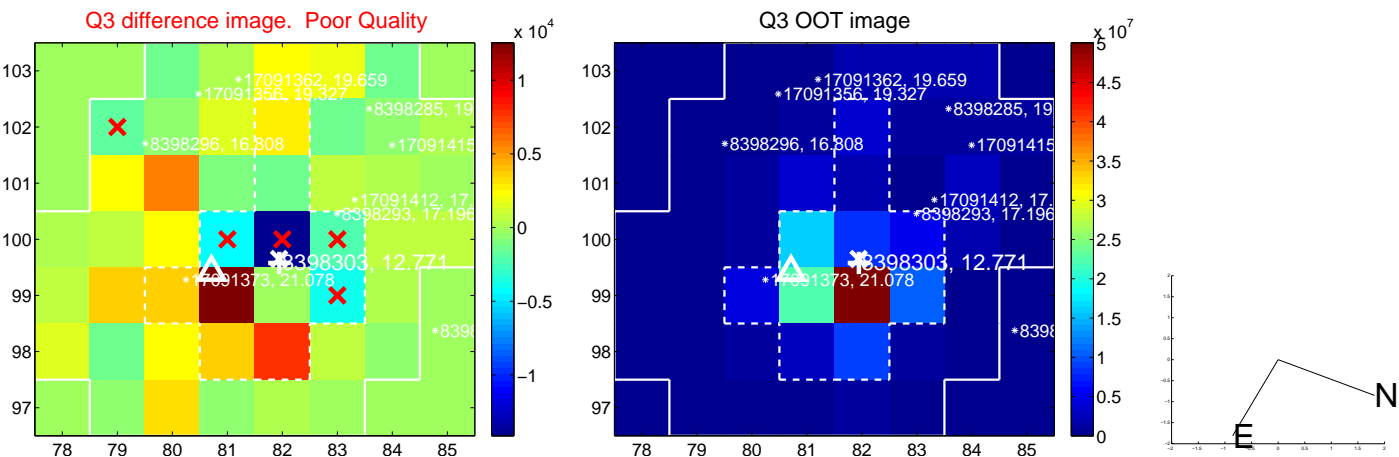
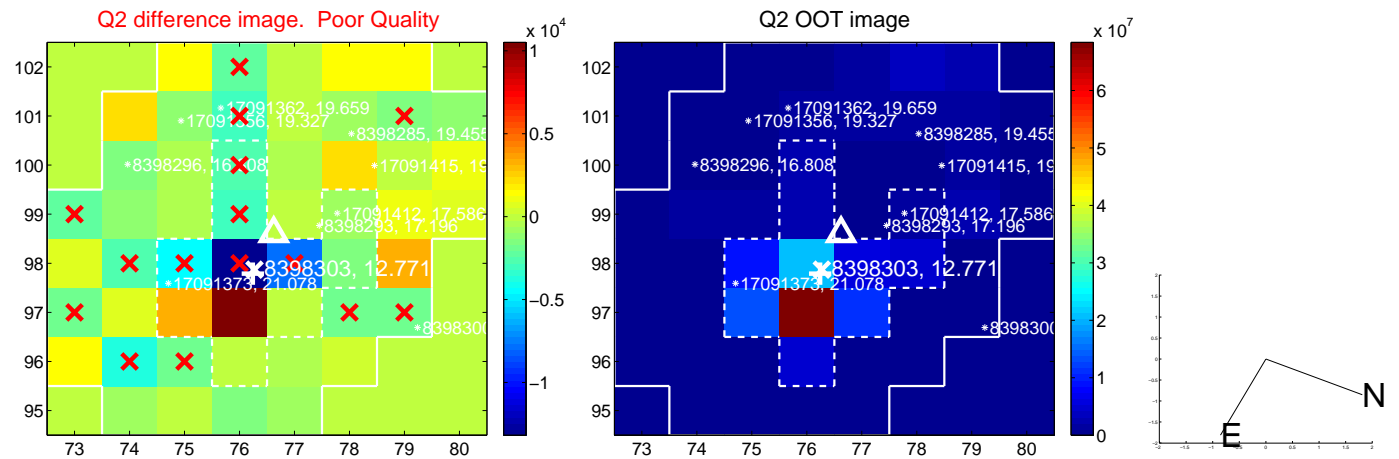
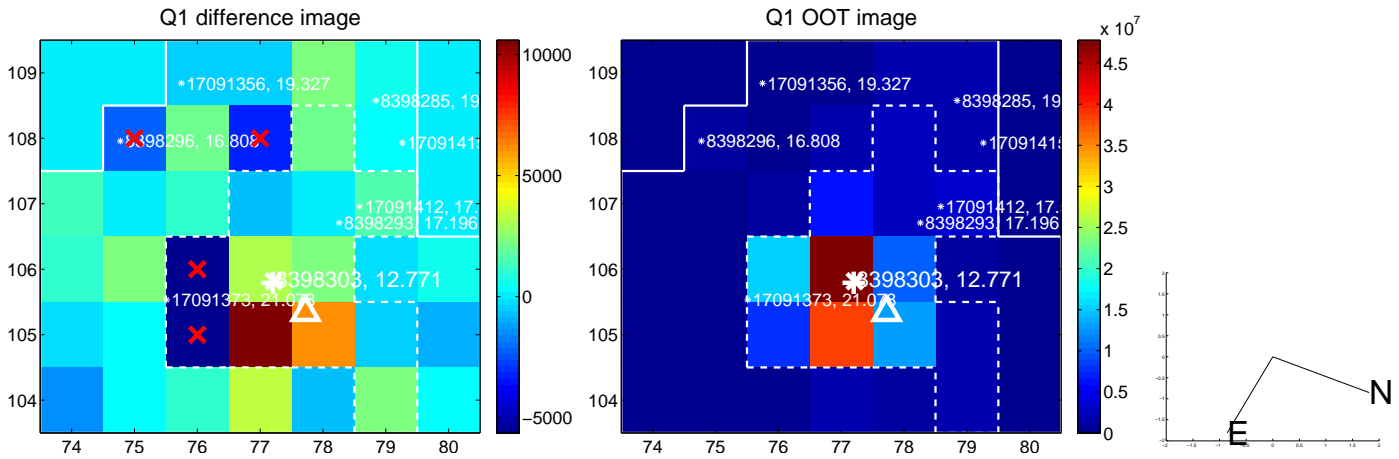


offset from photometric centroids

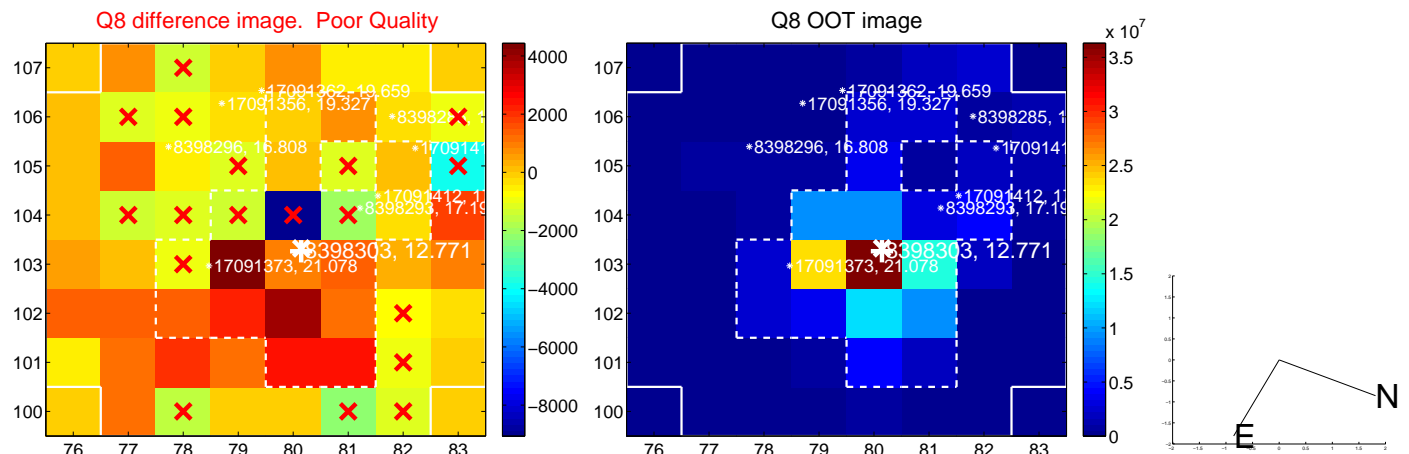
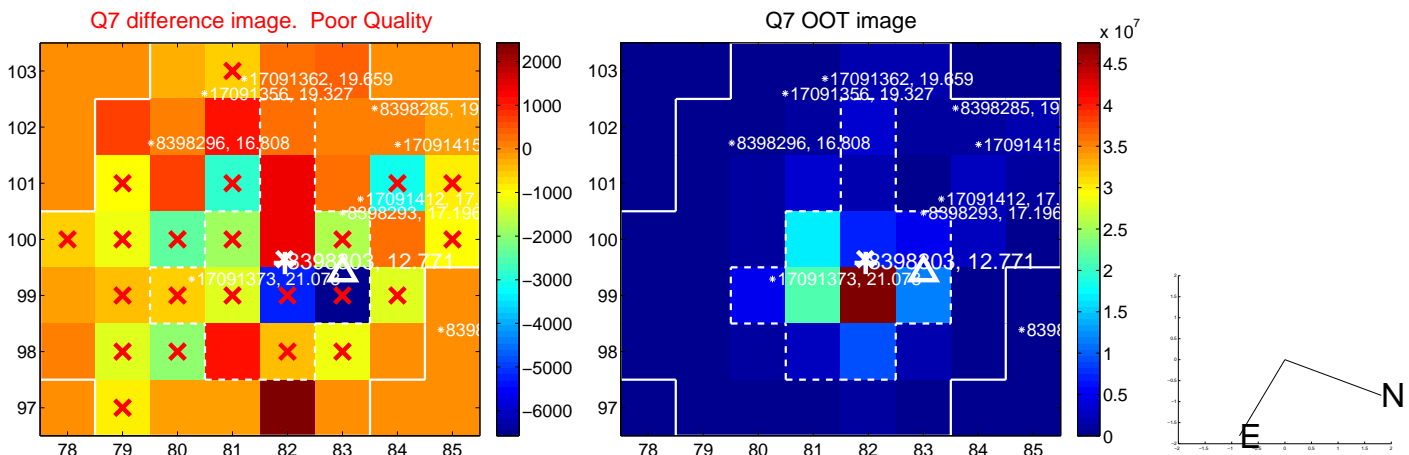
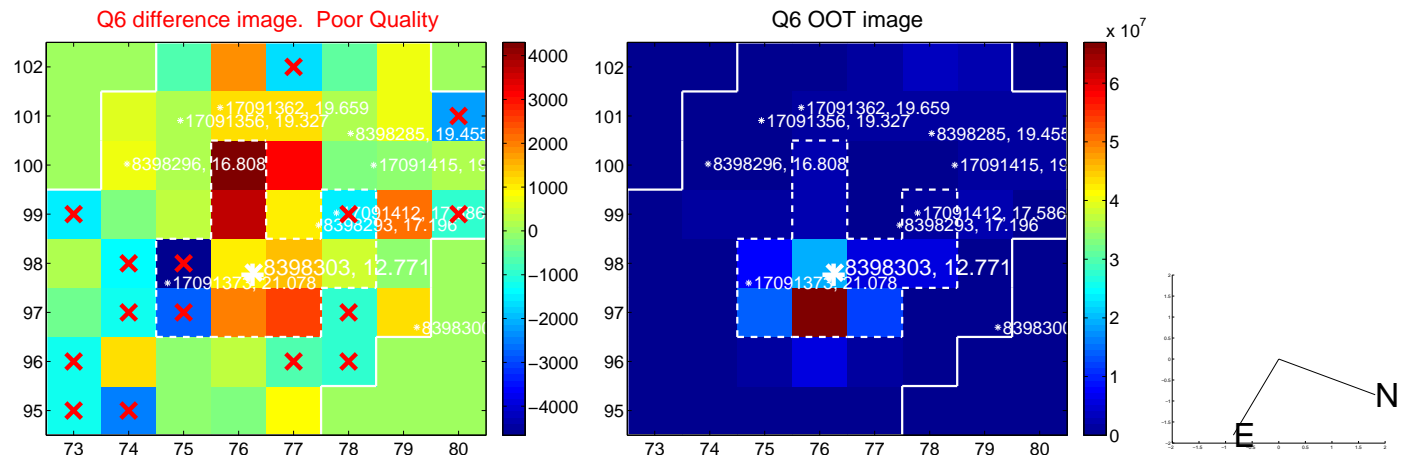
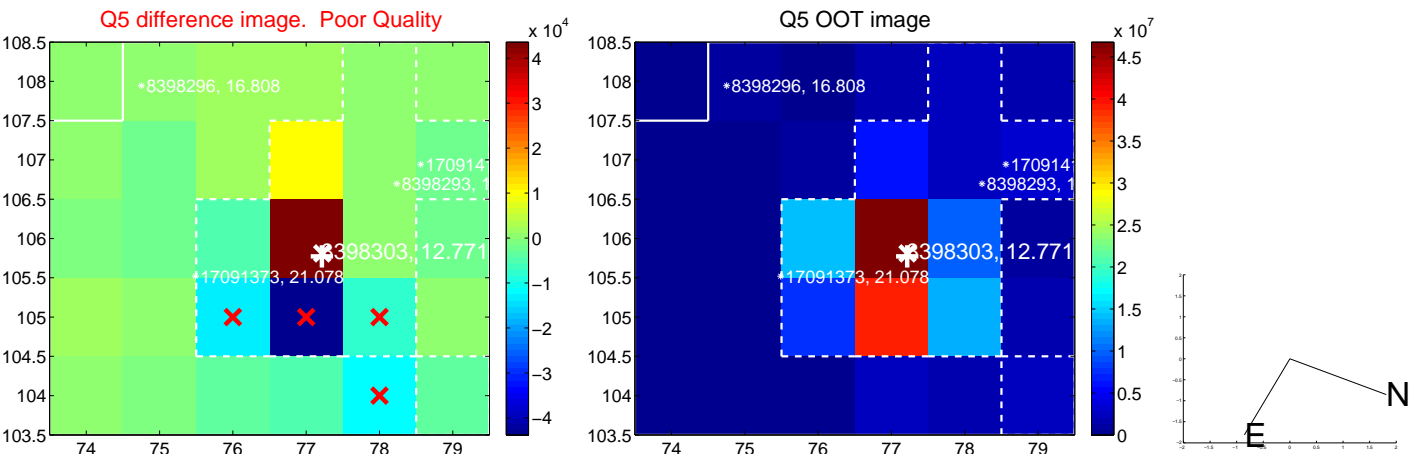


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

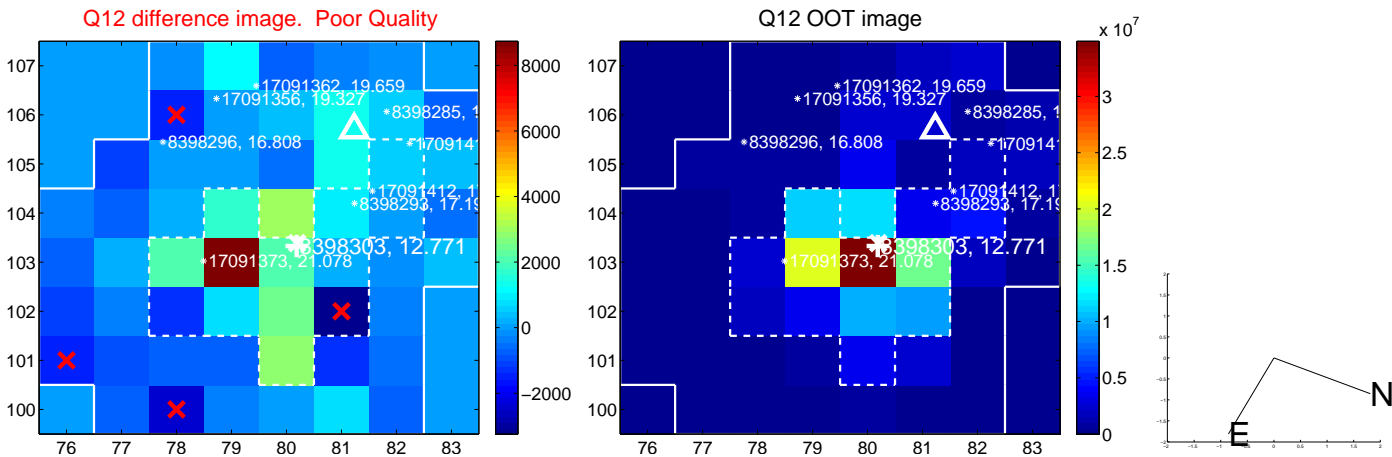
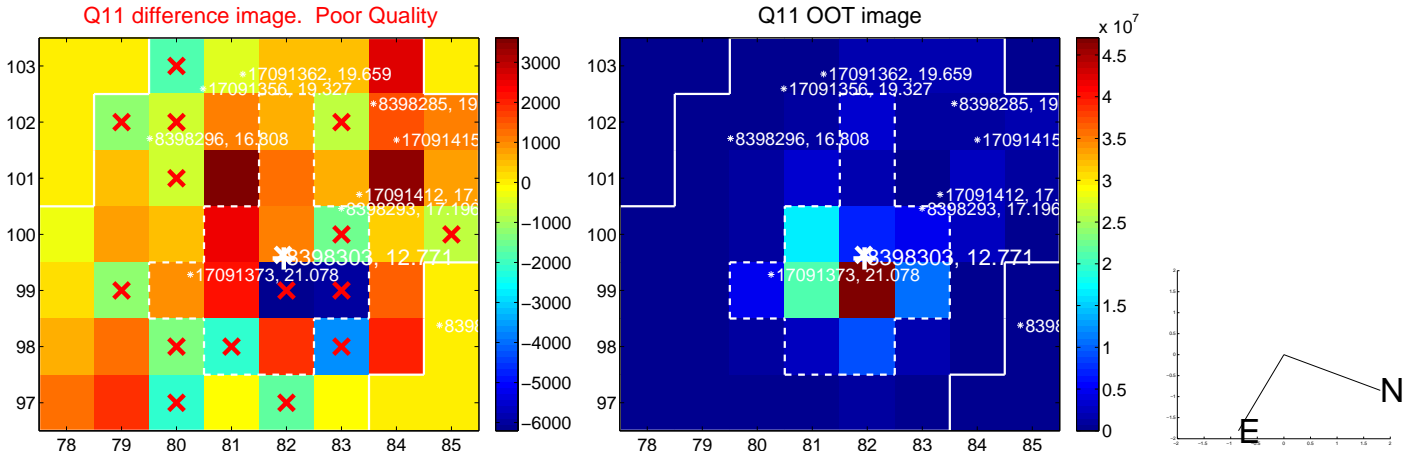
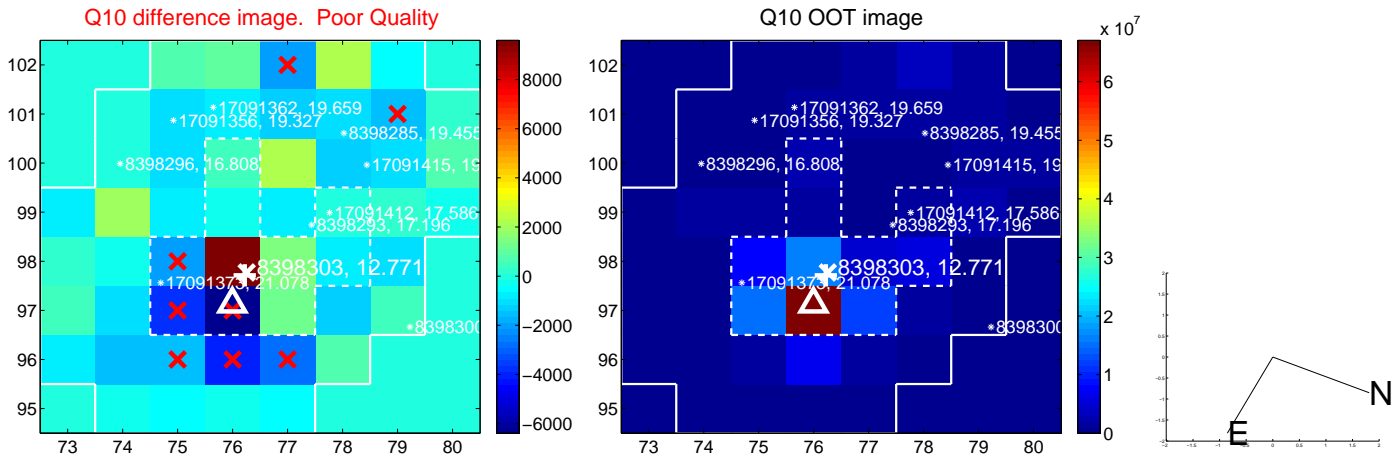
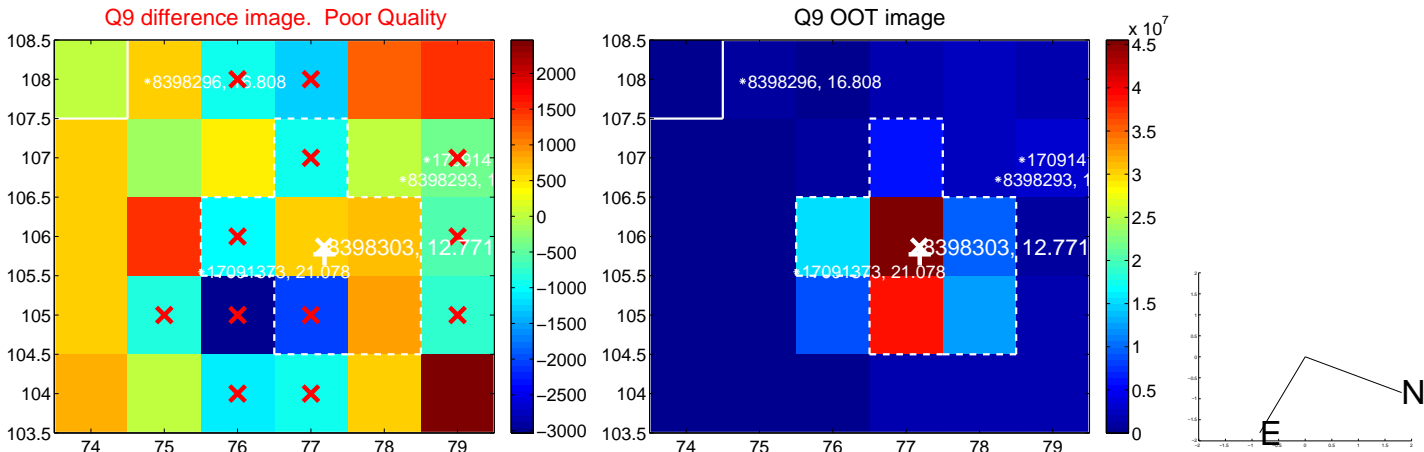
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



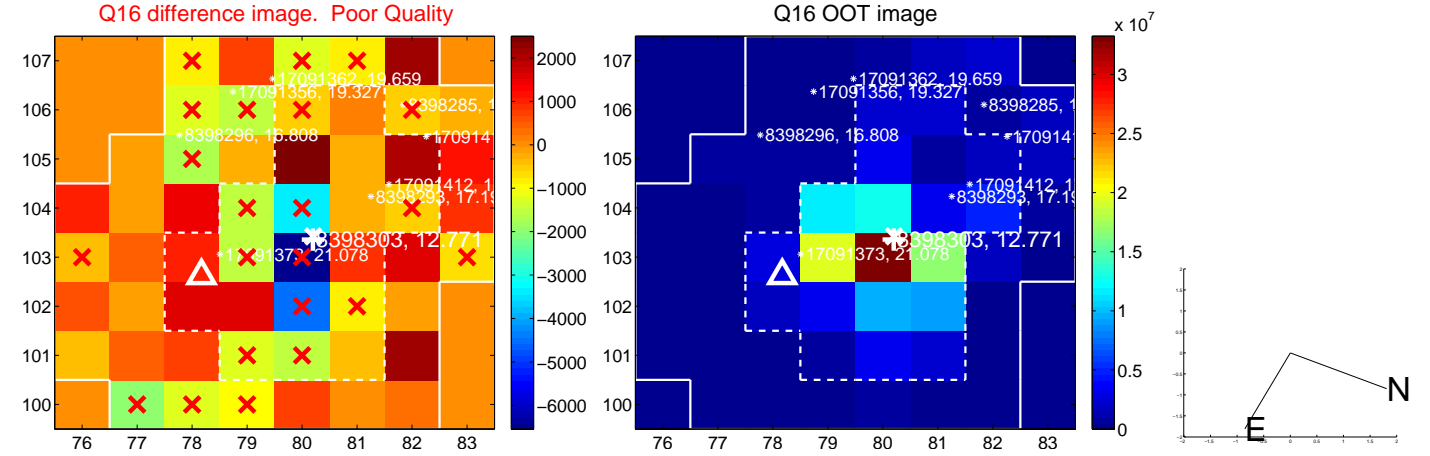
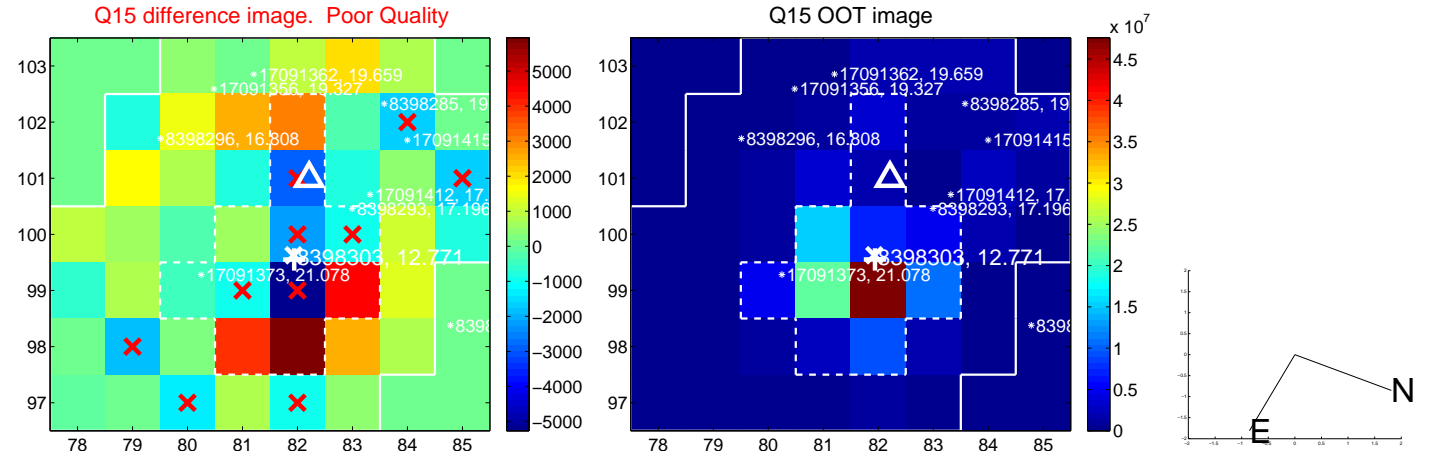
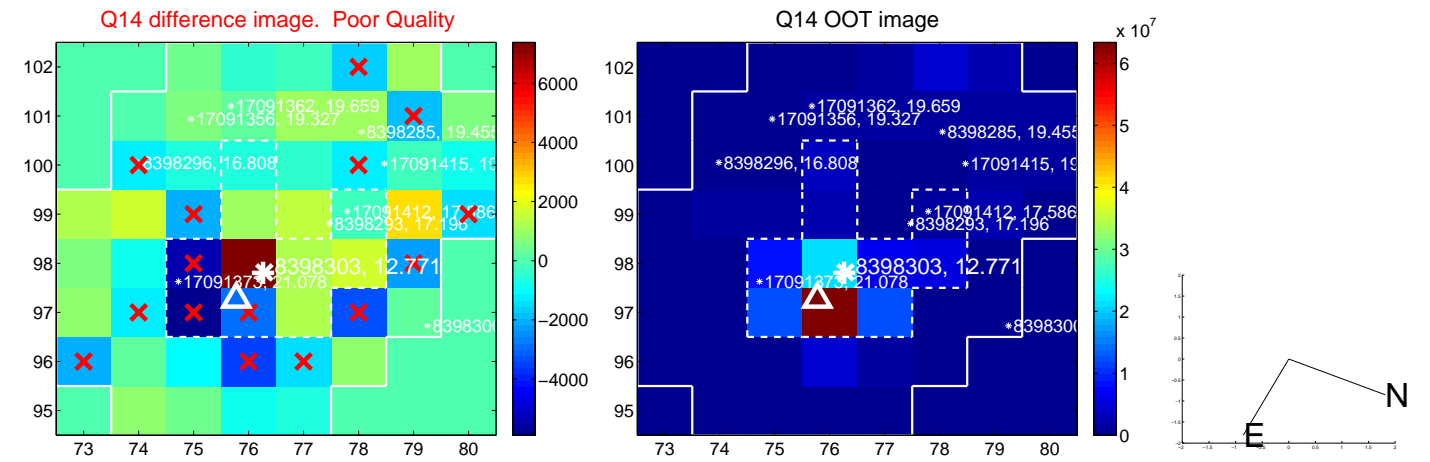
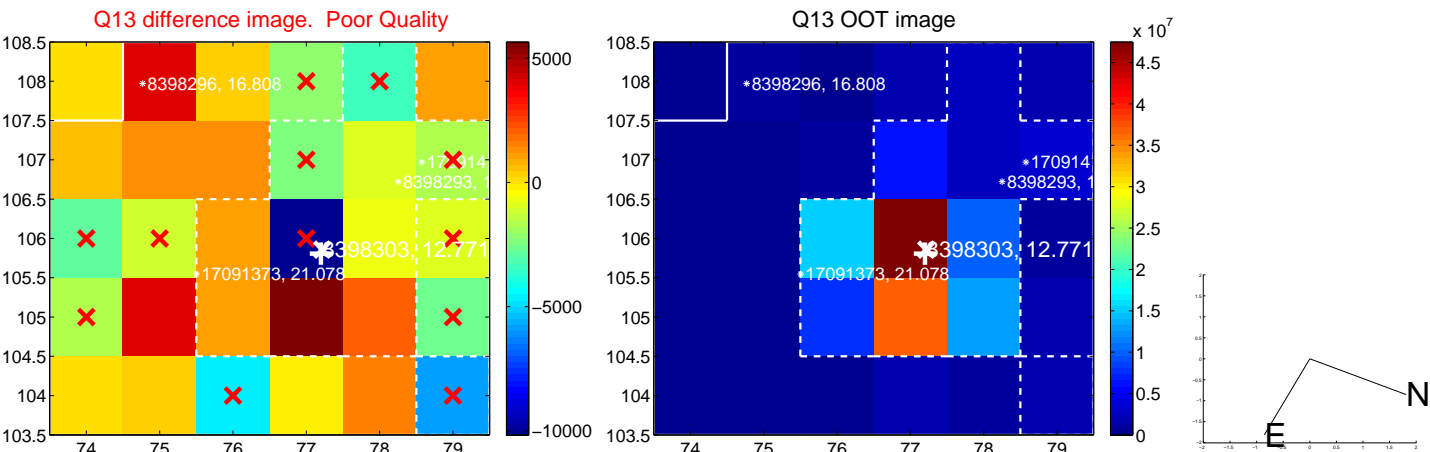
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



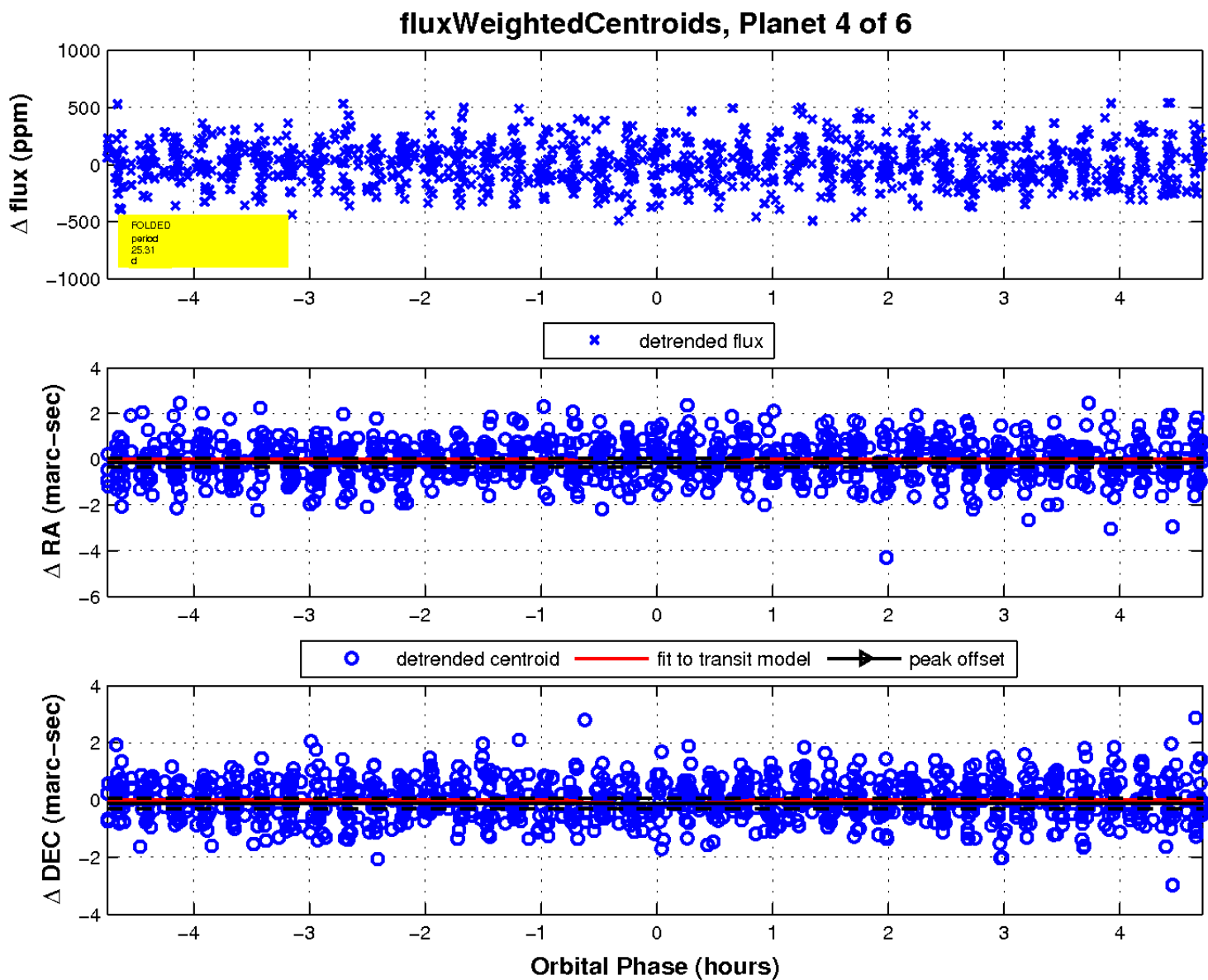
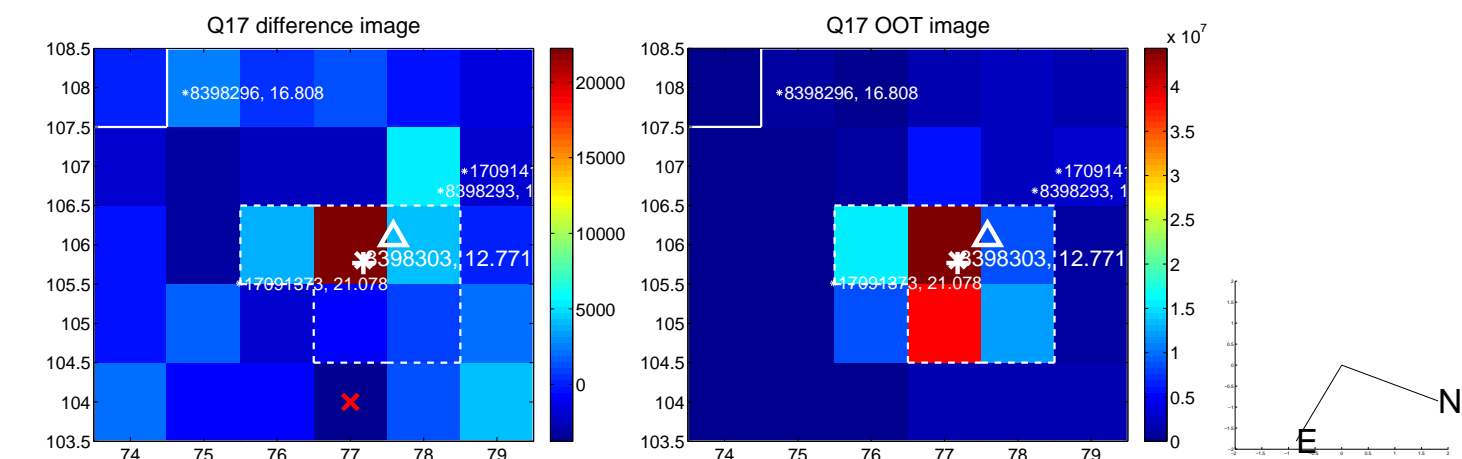
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

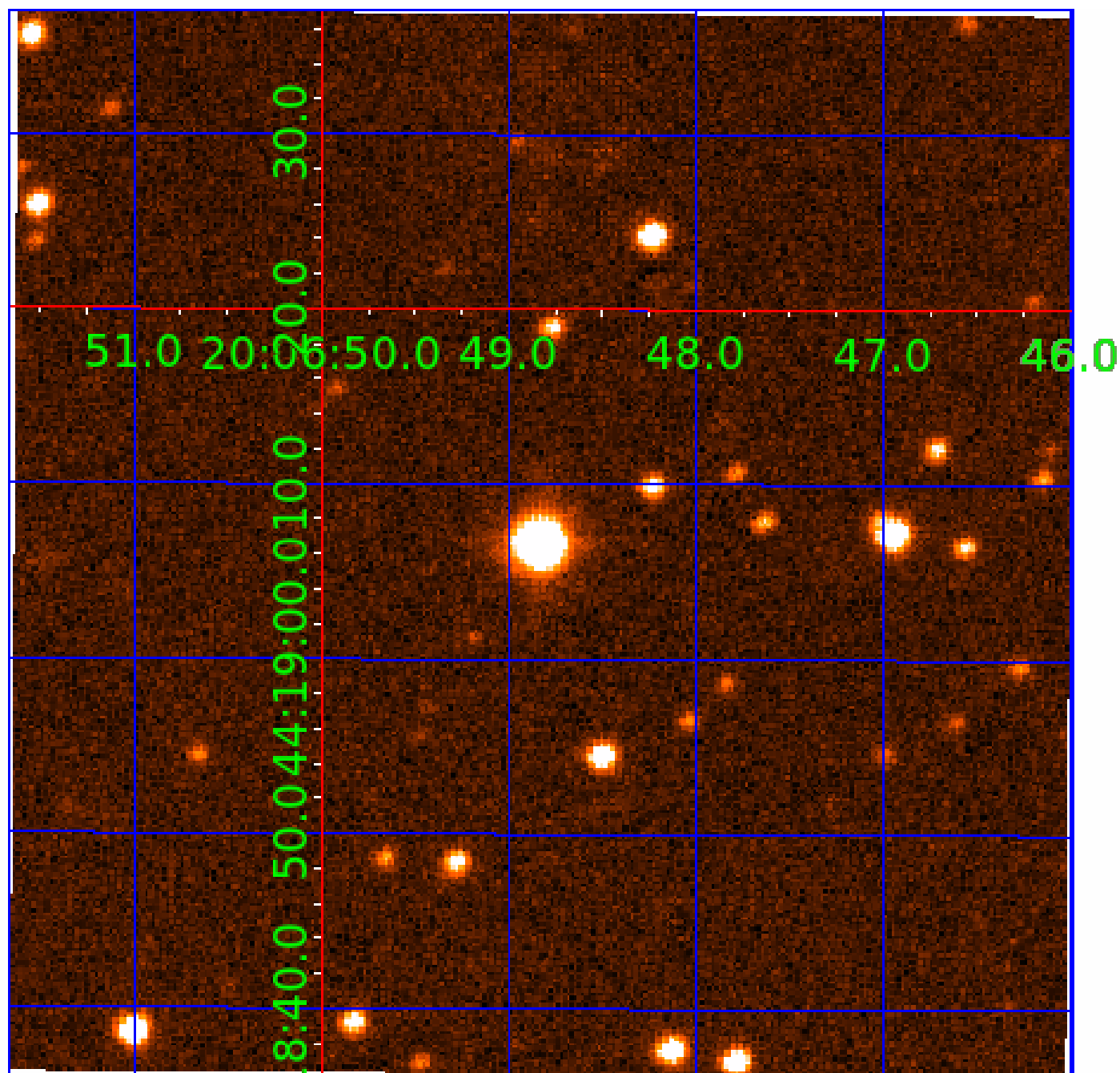


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008398303

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})
008398303-01	OBS	No	1.584931	132.756990	19.5	11.352	7.9	8.7	2.58	6267	1.17	10224.57
008398303-03	OBS	No	108.171832	200.748075	466.2	7.958	12.2	11.5	2.58	6267	6.02	36.66
008398303-04	OBS	No	25.306363	133.957577	304.2	1.588	11.5	10.2	2.58	6267	5.22	254.30
008398303-05	OBS	No	19.344654	132.936177	360.9	0.962	11.9	10.4	2.58	6267	4.97	363.84
008398303-06	OBS	No	40.620767	147.619778	351.5	2.553	12.5	9.8	2.58	6267	5.16	135.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008398303-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
008398303-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008398303-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008398303-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
008398303-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

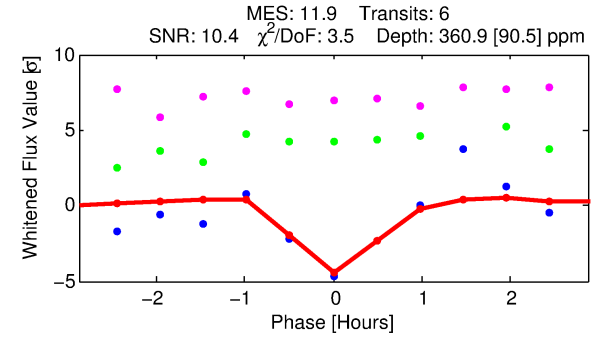
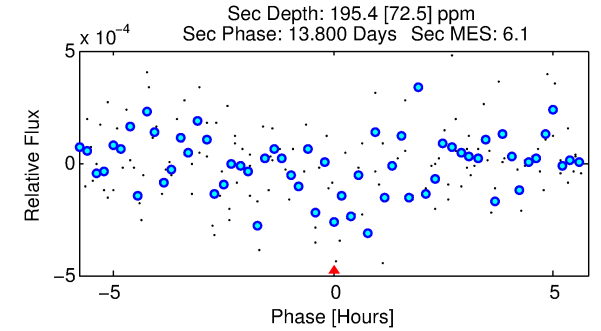
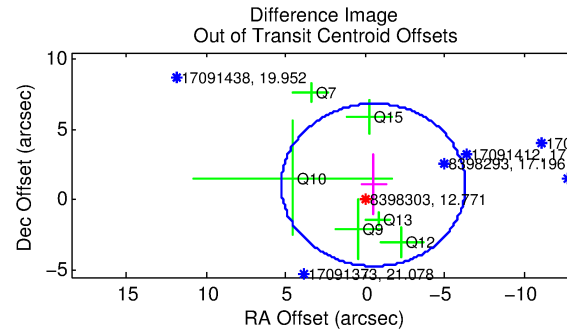
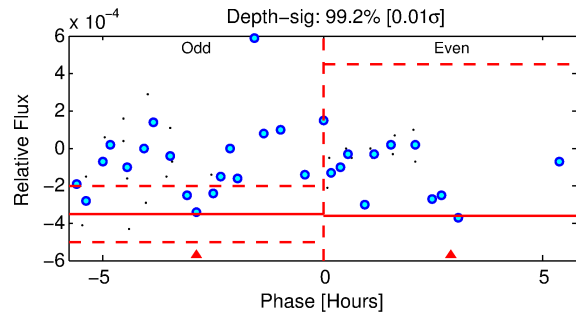
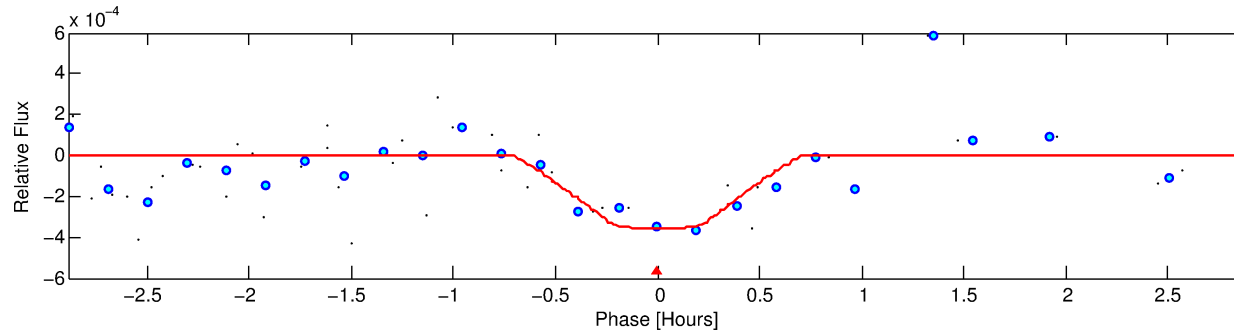
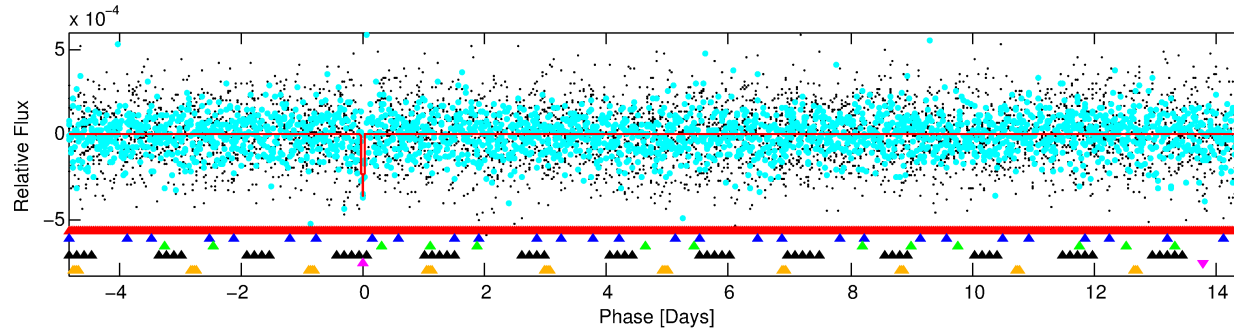
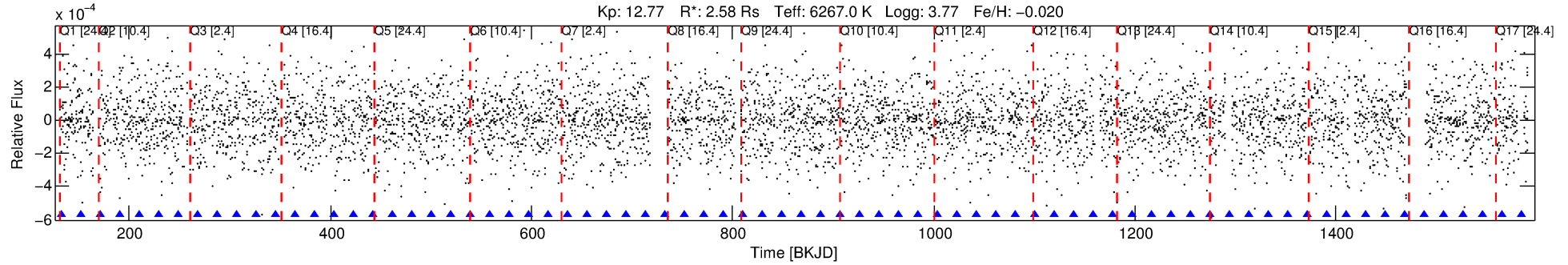
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008398303-05

No Significant Match Found

DV One-Page Summary

KIC: 8398303 Candidate: 5 of 6 Period: 19.345 d



DV Fit Results:

Period = 19.34465 [0.00022] d
Epoch = 132.9362 [0.0065] BKJD
Rp/R* = 0.0176 [0.0466]
a/R* = 154.40 [2075.94]
b = 0.16 [81.39]
Seff = 363.84 [315.94]
Teq = 1114 [242] K
Rp = 4.97 [13.38] Re
a = 0.1591 [0.0834] AU
Ag = 110.32 [592.38] [0.18σ]
Teffp = 5580 [7398] K [0.60σ]

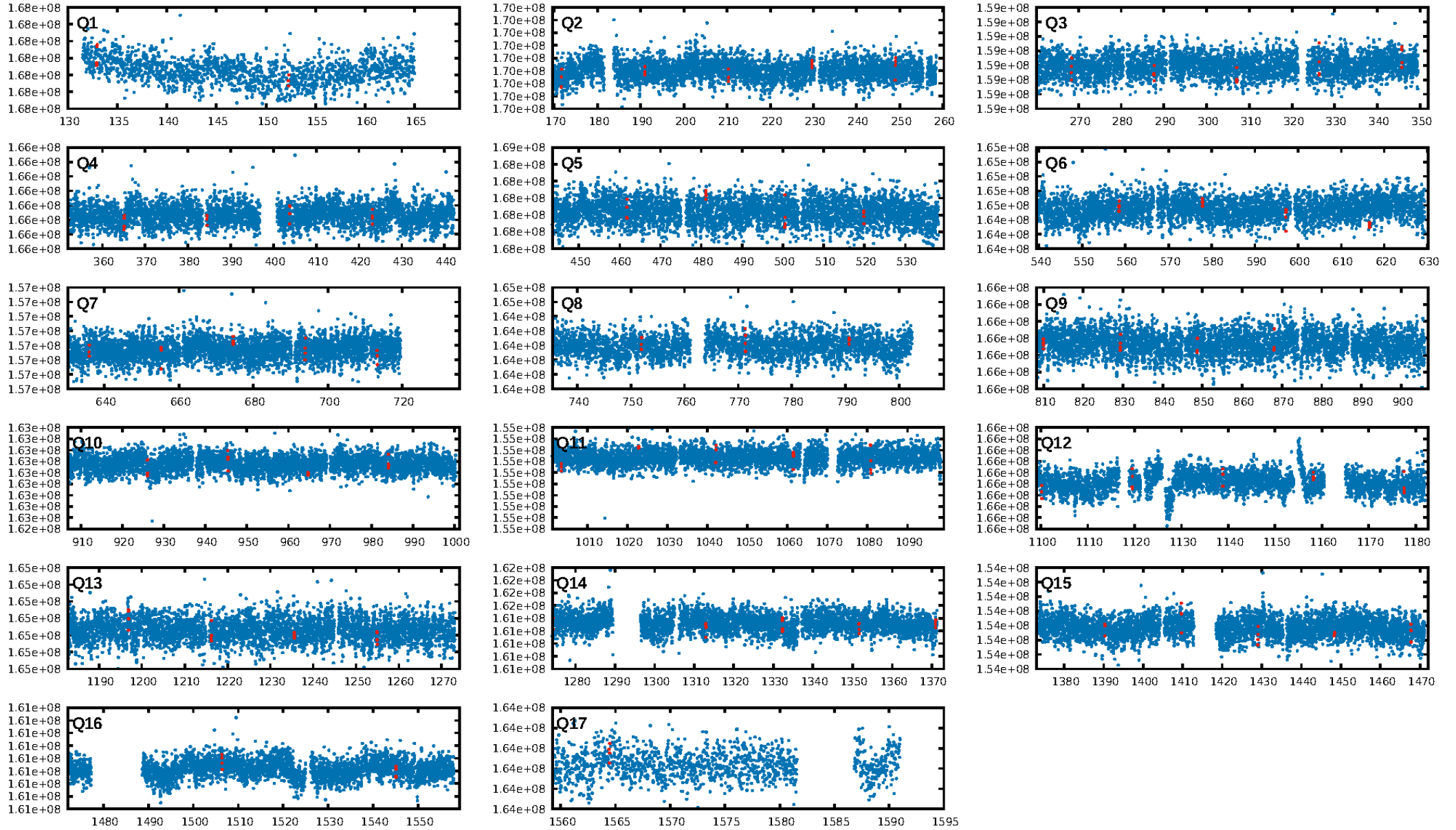
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [37.41σ]
LongPeriod-sig: 100.0% [77.07σ]
ModelChiSquare2-sig: 10.7%
ModelChiSquareGof-sig: 65.4%
Bootstrap-pfa: 2.77e-09
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -0.2522
Centroid-sig: 98.1%
Centroid-so: 0.920 arcsec [1.57σ]
OotOffset-rm: 1.172 arcsec [0.61σ]
OotOffset-st: 1/2/1/2 [6]
KicOffset-rm: 1.171 arcsec [0.56σ]
KicOffset-st: 1/2/1/2 [6]
DiffImageQuality-fgm: 0.17 [1/6]
DiffImageOverlap-fno: 0.88 [15/17]

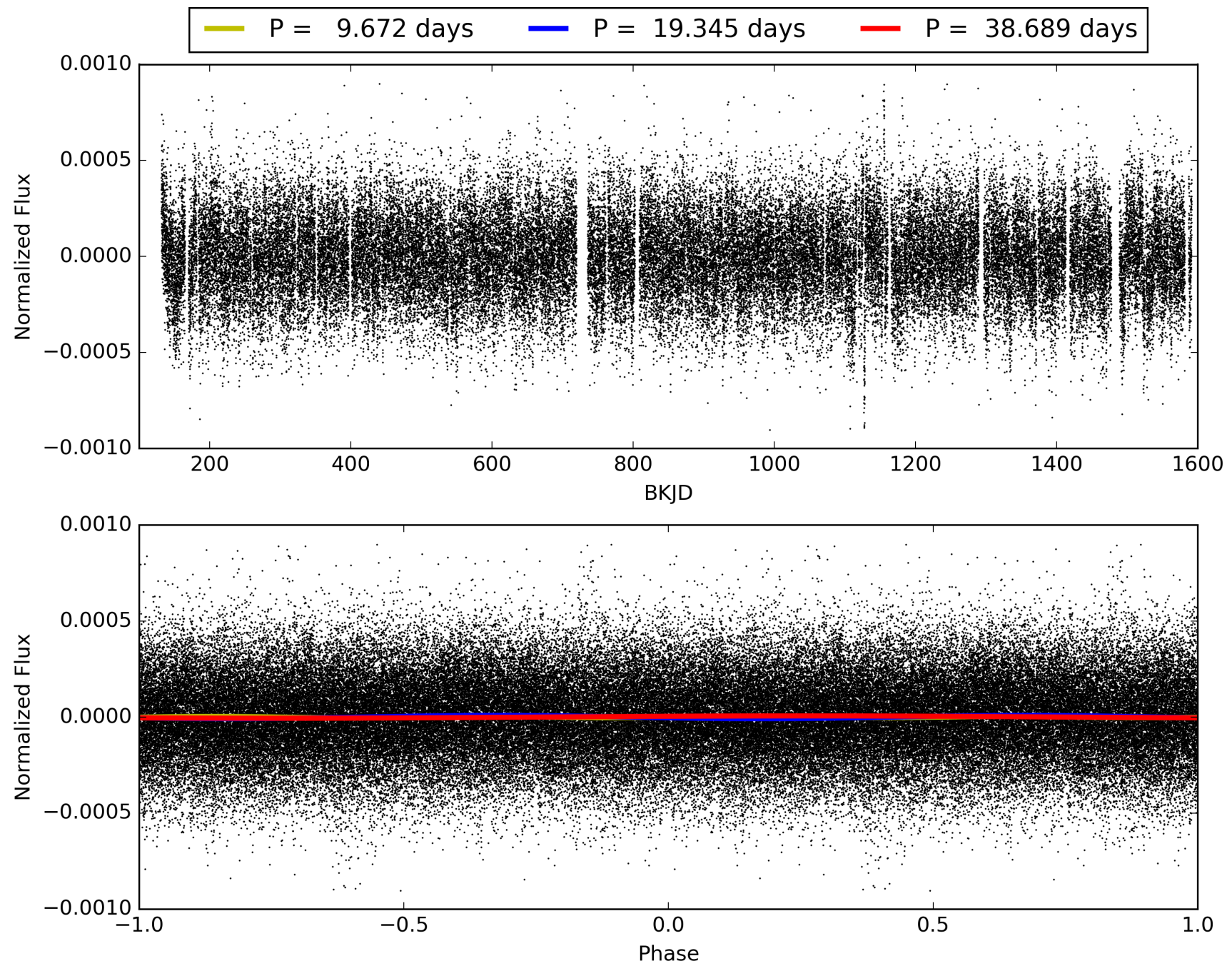
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:36:29 Z

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

TCE 008398303-05, PDC Light Curves

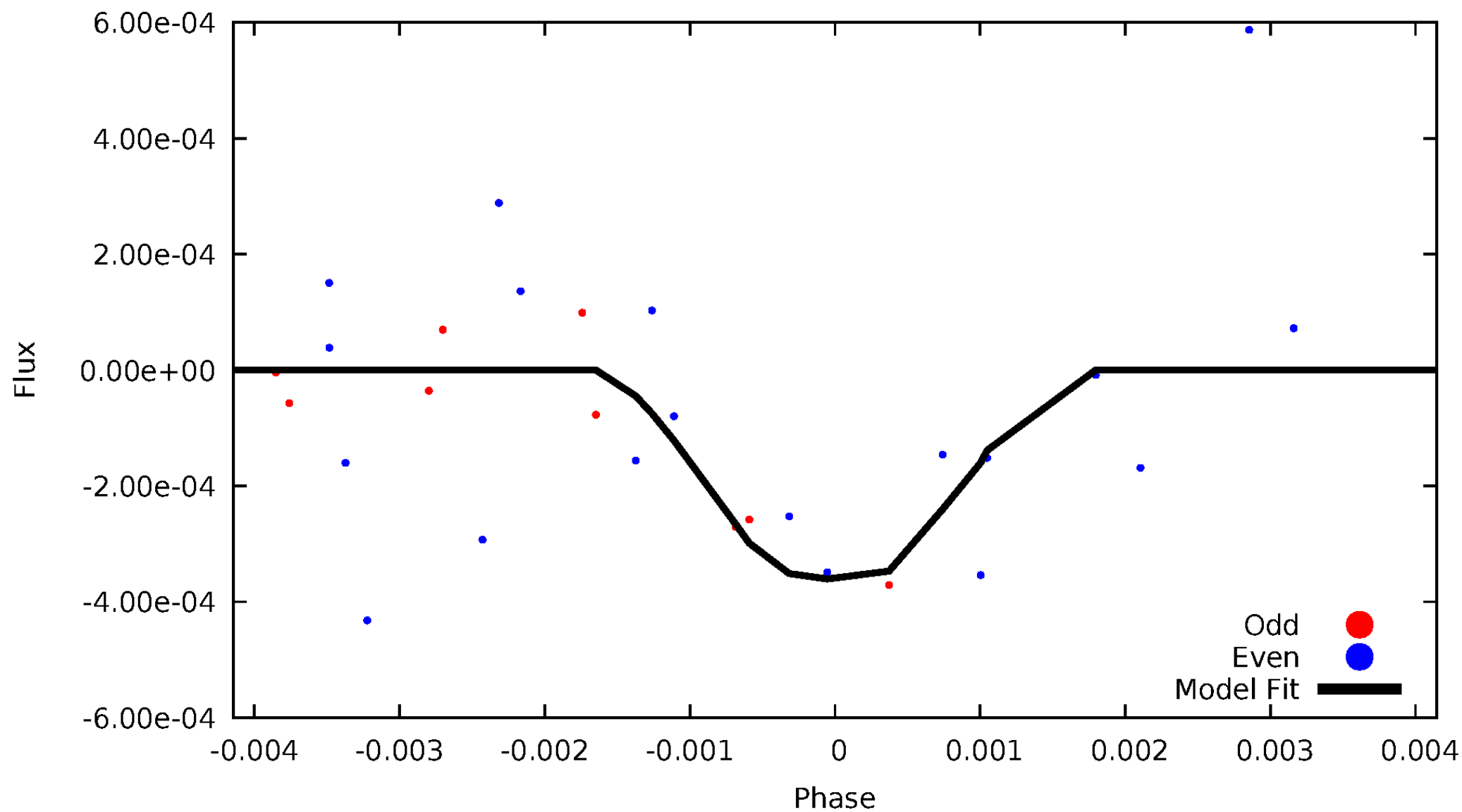


TCE 008398303-05



DV Odd/Even

TCE 008398303-05

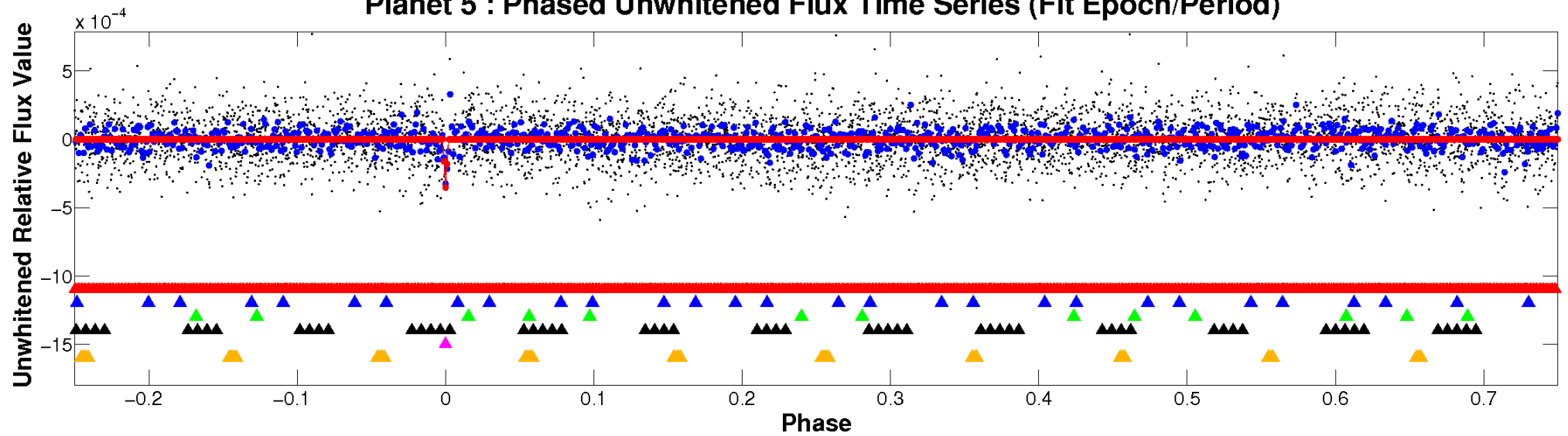


ALT Odd/Even

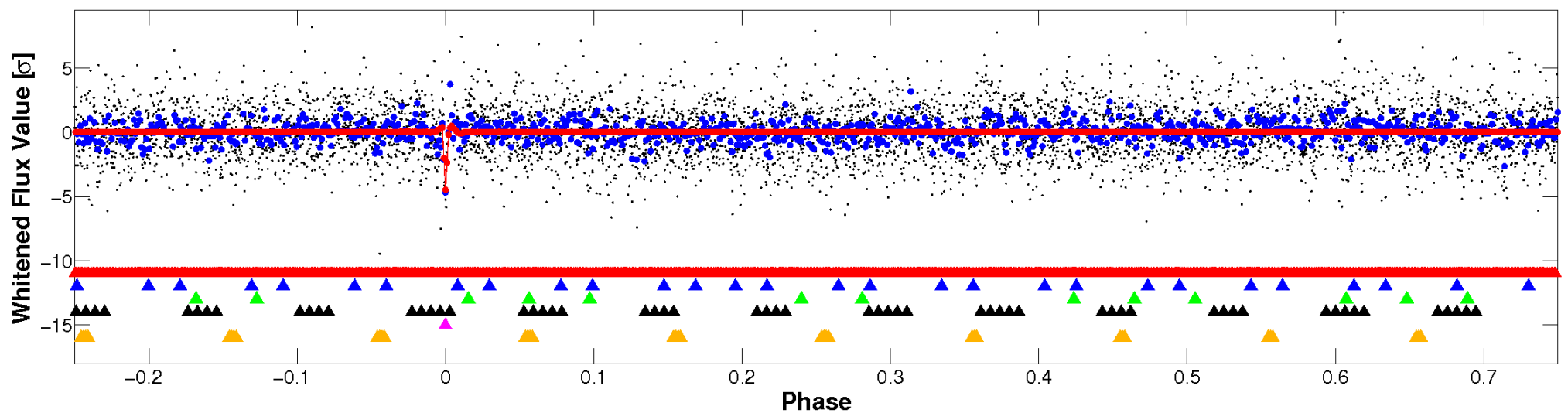
This plot does not exist for this TCE.

Non-Whitened Vs. Whitened Light Curve

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

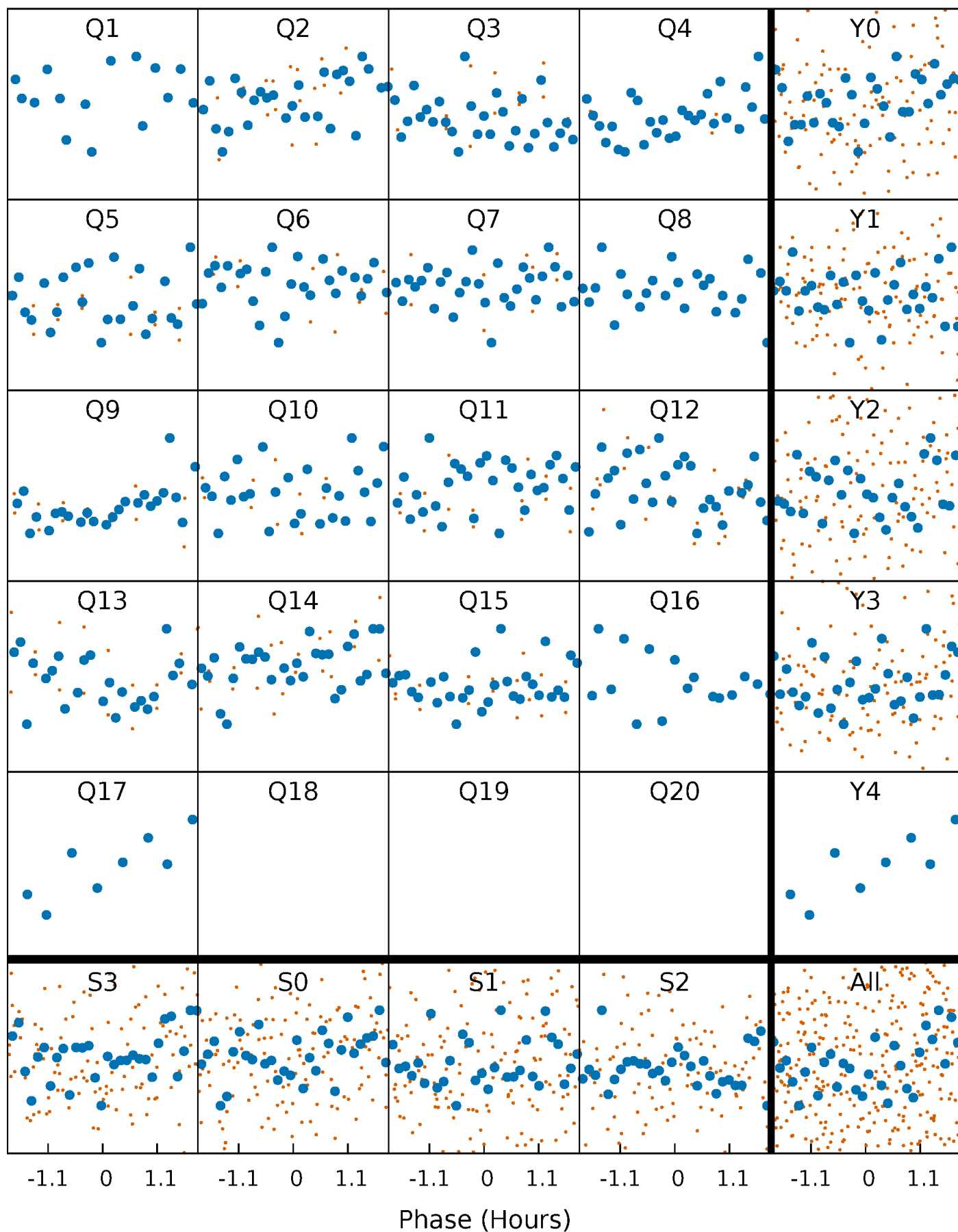


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



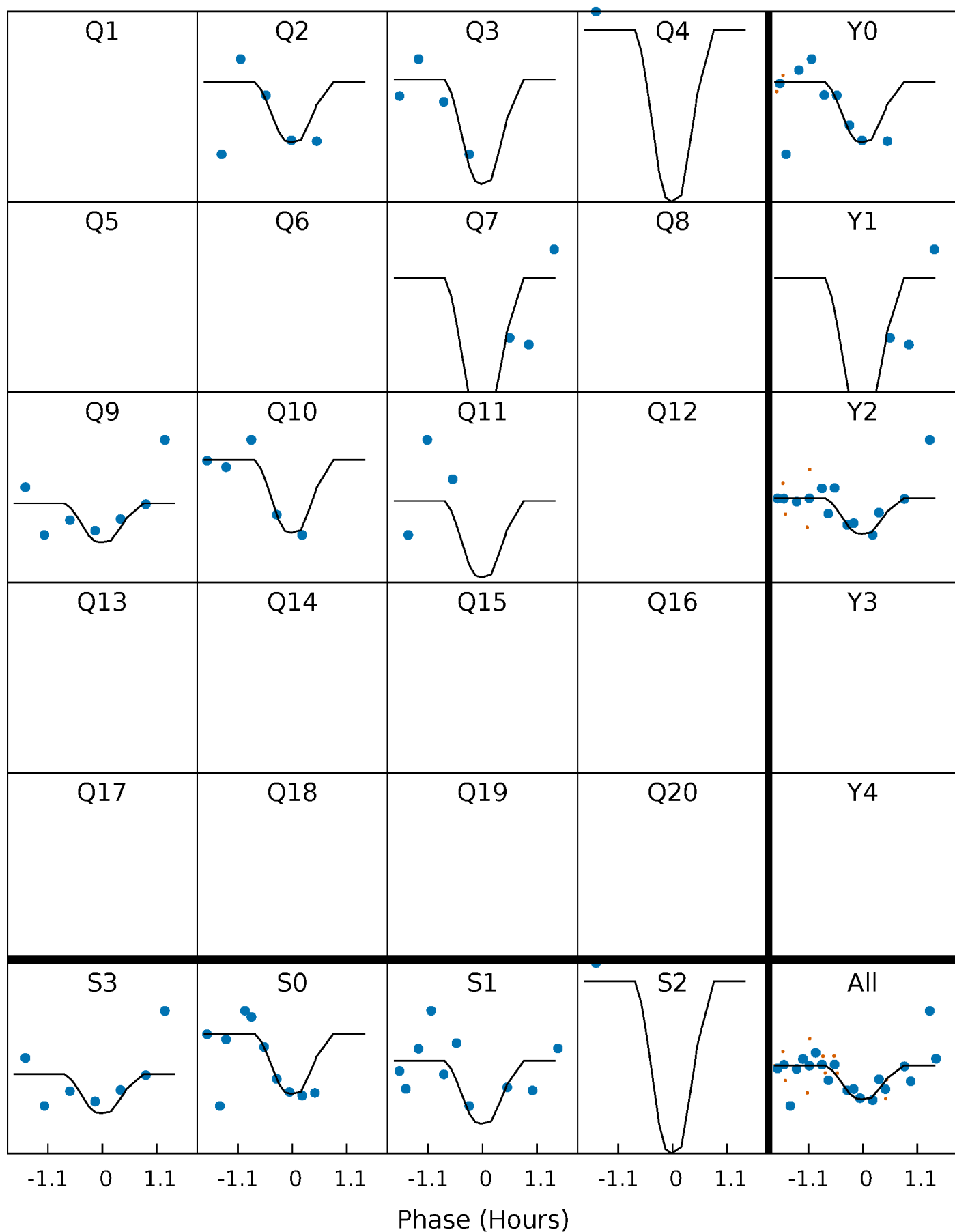
PDC Quarter-Phased Transit Curves

TCE 008398303-05 $P = 19.344654$ Days $T_0 = 132.936177$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008398303-05 $P = 19.344654$ Days $T_0 = 132.936177$ (BKJD)

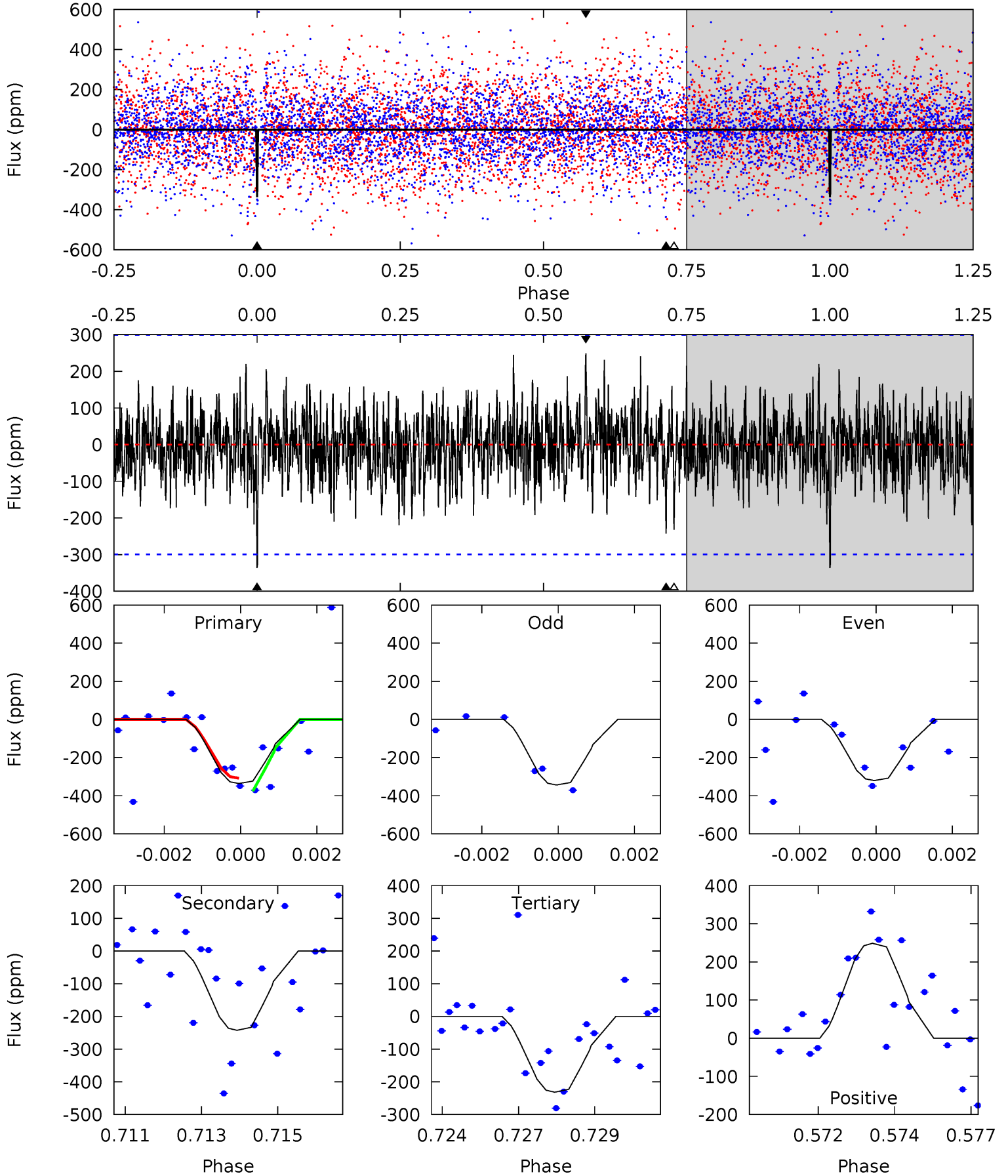


This plot does not exist for this TCE.

DV Model-Shift Uniqueness Test

008398303-05, $P = 19.344654$ Days, $E = 113.591523$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.95	4.29	4.10	4.41	5.30	3.05	1.29	1.85	1.54	0.19	-0.11	0.20	0.92	0.43	0.58



Alt Model-Shift Uniqueness Test

This plot does not exist for this TCE.

Stellar Parameters For KIC 008398303

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6267^{+176}_{-220}	$3.771^{+0.510}_{-0.090}$	$-0.020^{+0.250}_{-0.300}$	$2.581^{+0.540}_{-1.349}$	$1.432^{+0.195}_{-0.362}$	$0.117^{+0.674}_{-0.042}$
	+3%/-4%	+14%/-2%	+1250%/-1500%	+21%/-52%	+14%/-25%	+574%/-35%
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 008398303-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-243 ± 56	$9.31^{+10.29}_{-6.39}$	1488^{+120}_{-207}	4192^{+2679}_{-877}	39^{+351}_{-31}
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 $A_{obs} \gg 1.0$

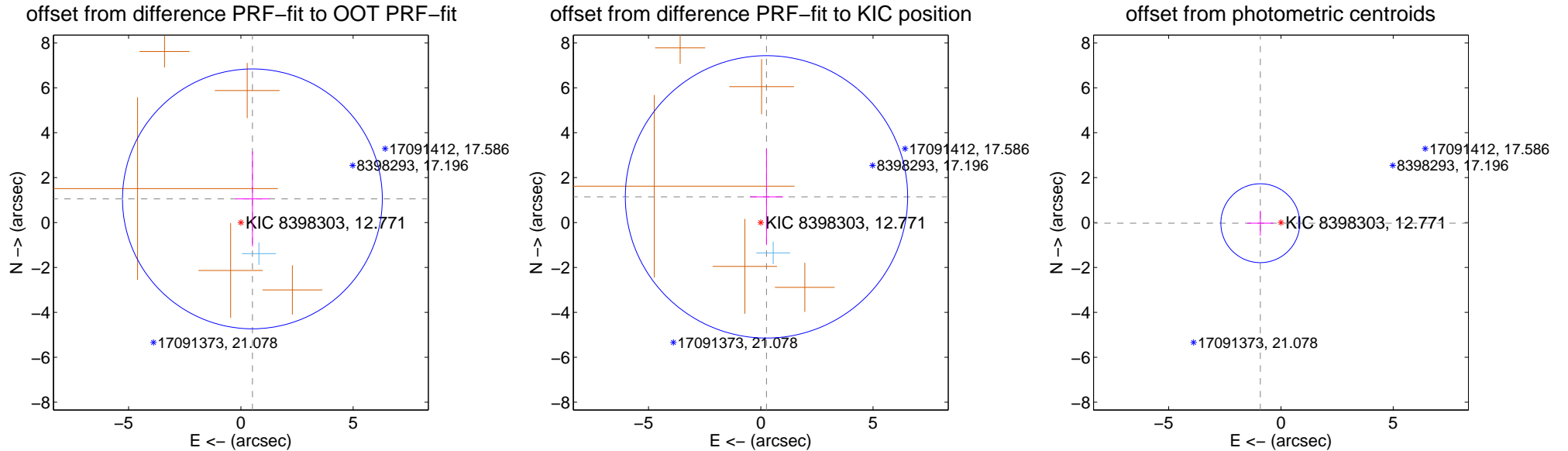
DV Centroid Data

Supplemental centroid analysis for 008398303-05. Kepler magnitude: 12.77. Transit SNR 10.40

There are 1 quarters with good PRF difference image offsets

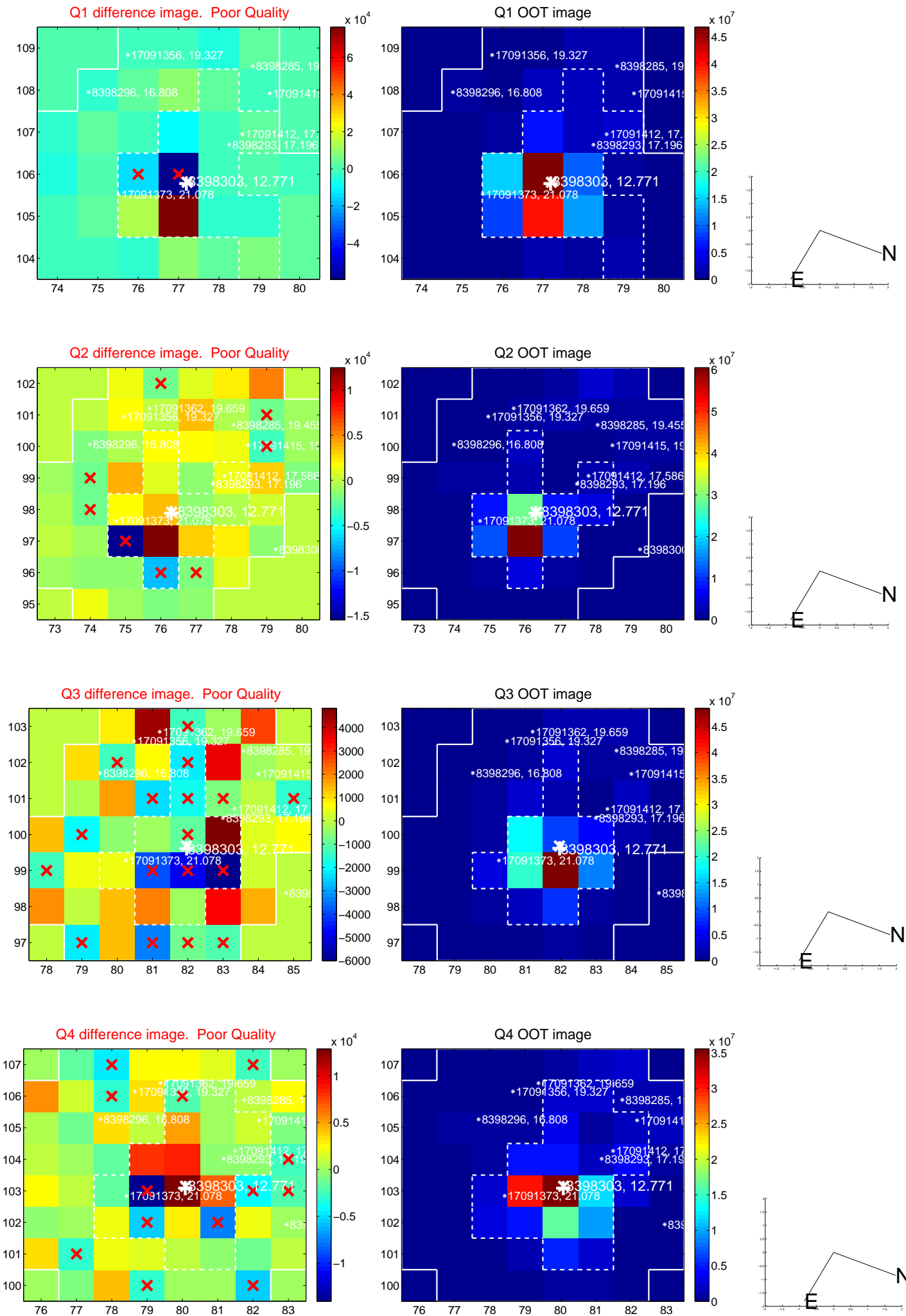
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.172 ± 1.929	0.61	-0.514 ± 0.758	1.053 ± 2.114
PRF-fit source offset from KIC position	1.171 ± 2.096	0.56	-0.255 ± 0.738	1.143 ± 2.141
photometric centroid source offset	0.92 ± 0.59	1.57	0.92 ± 0.59	-0.03 ± 0.55

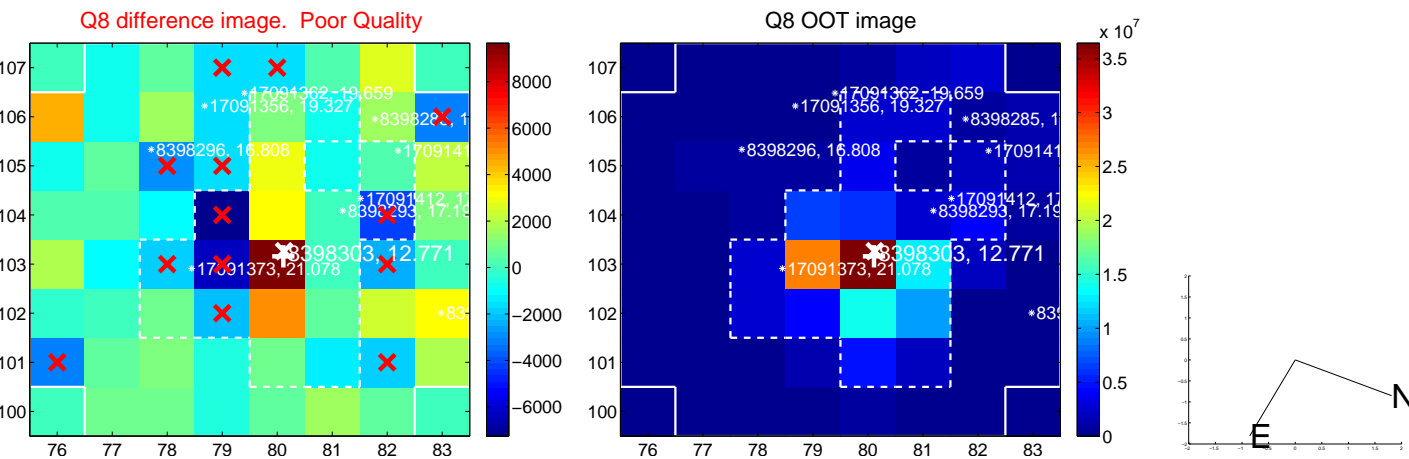
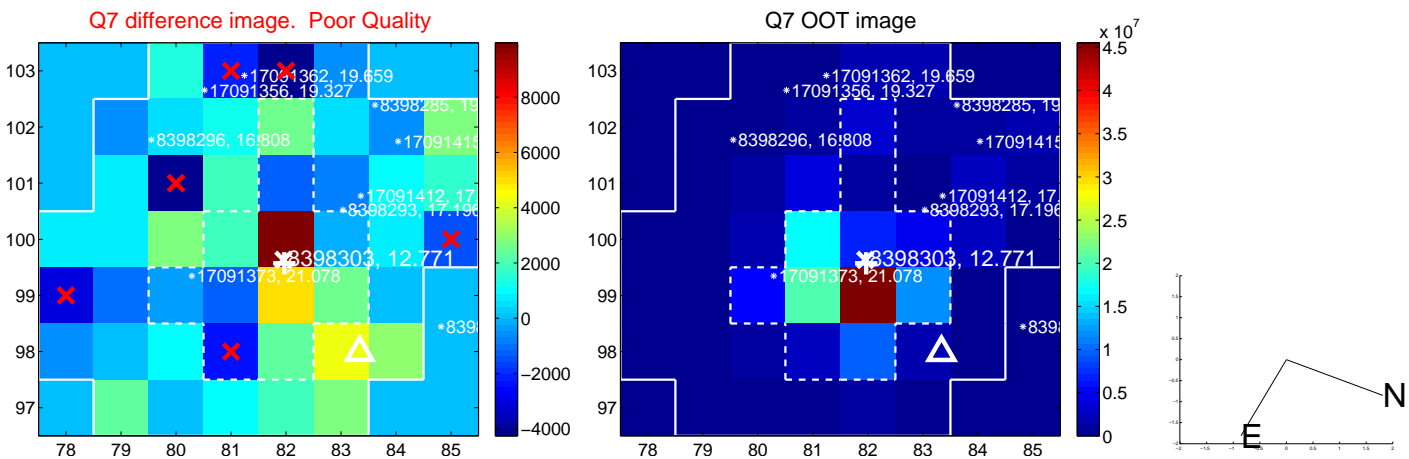
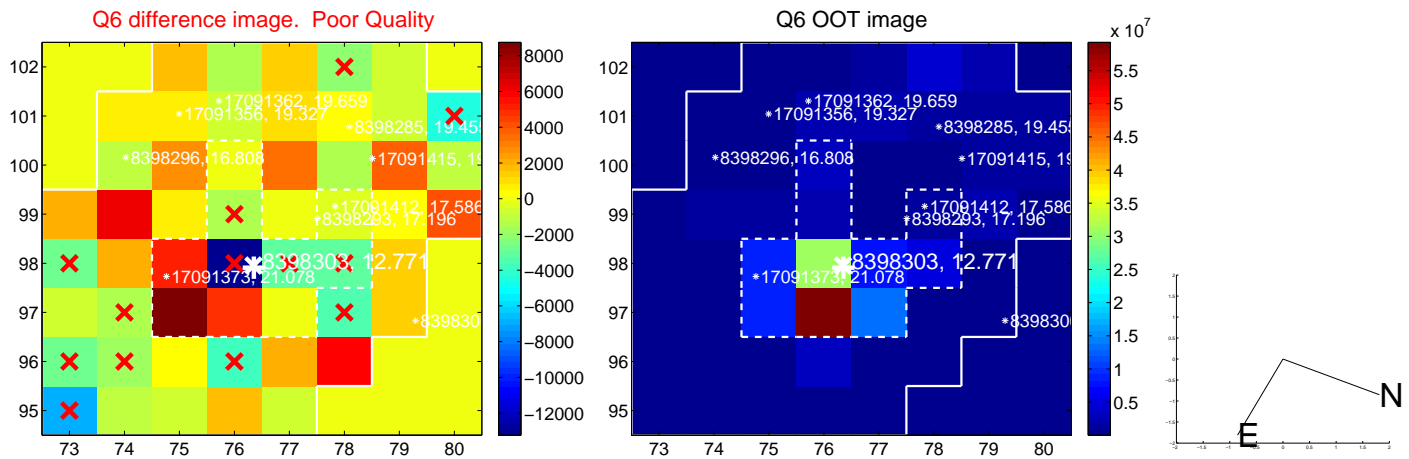
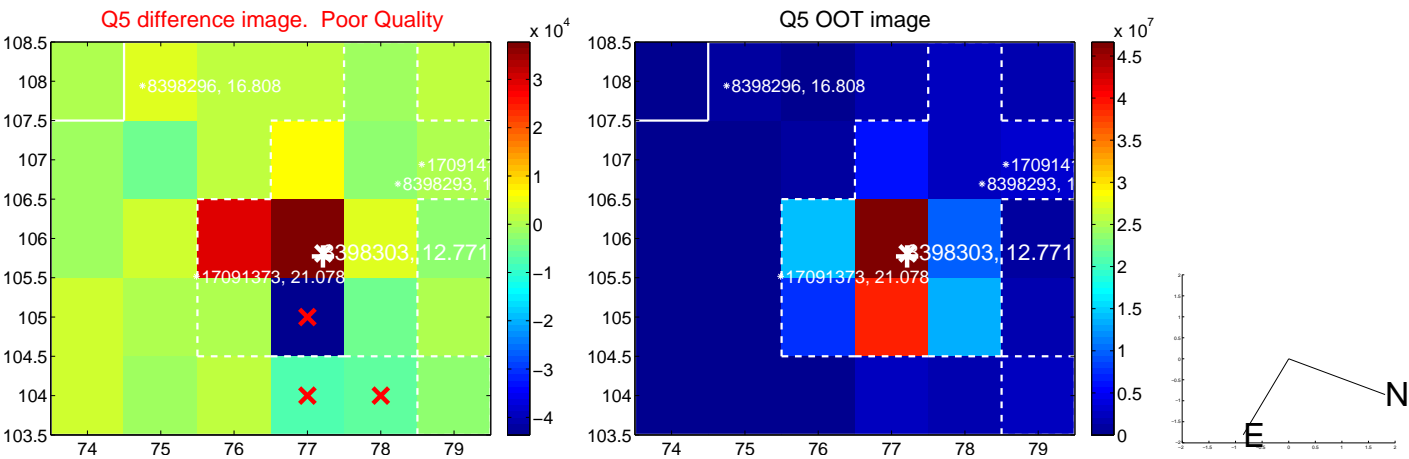


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

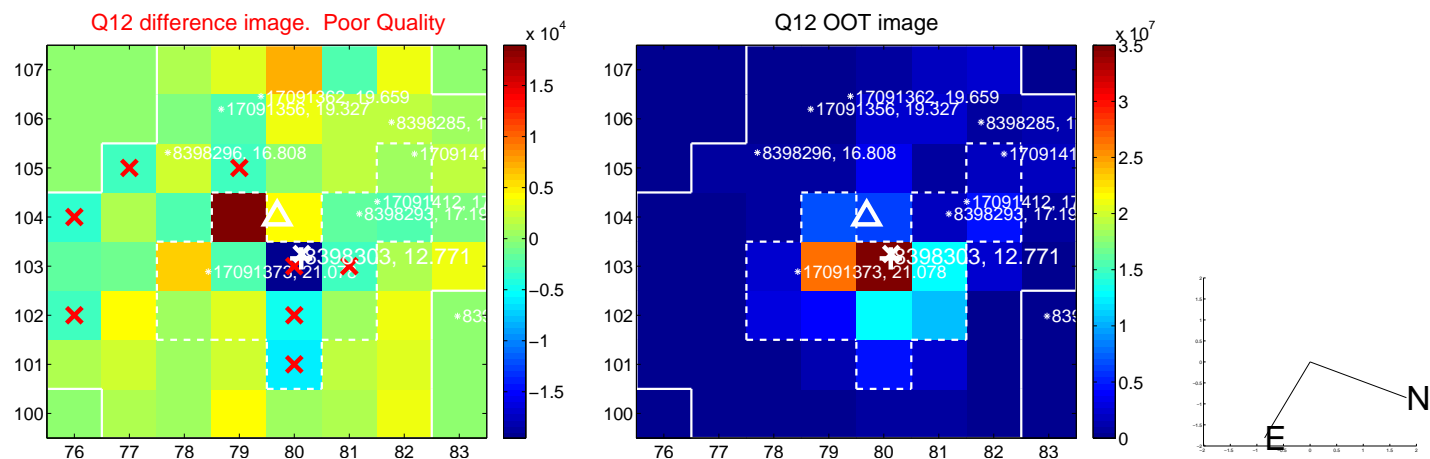
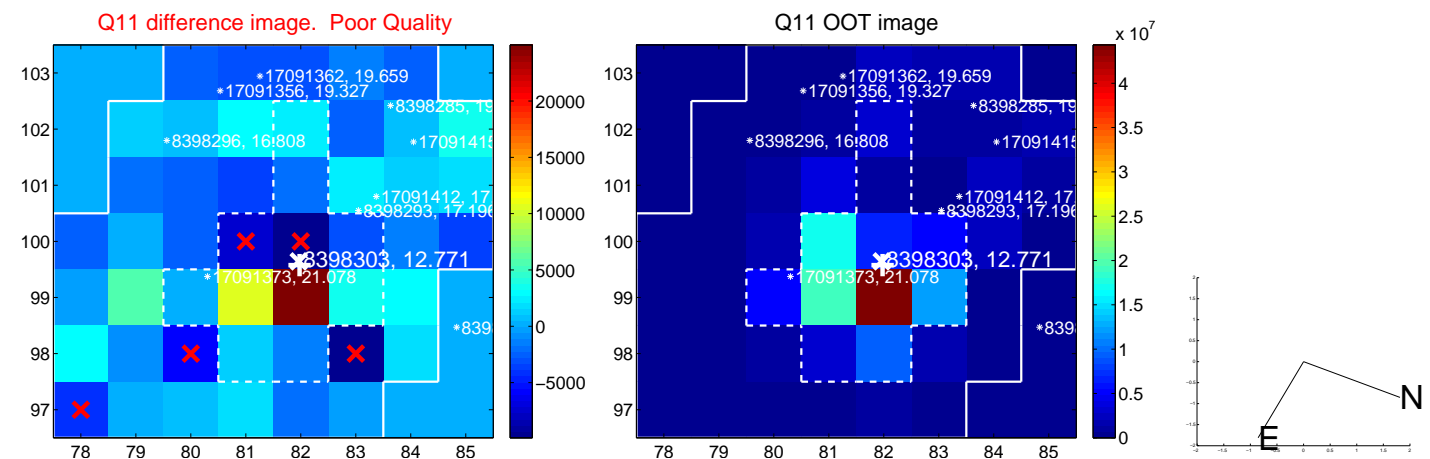
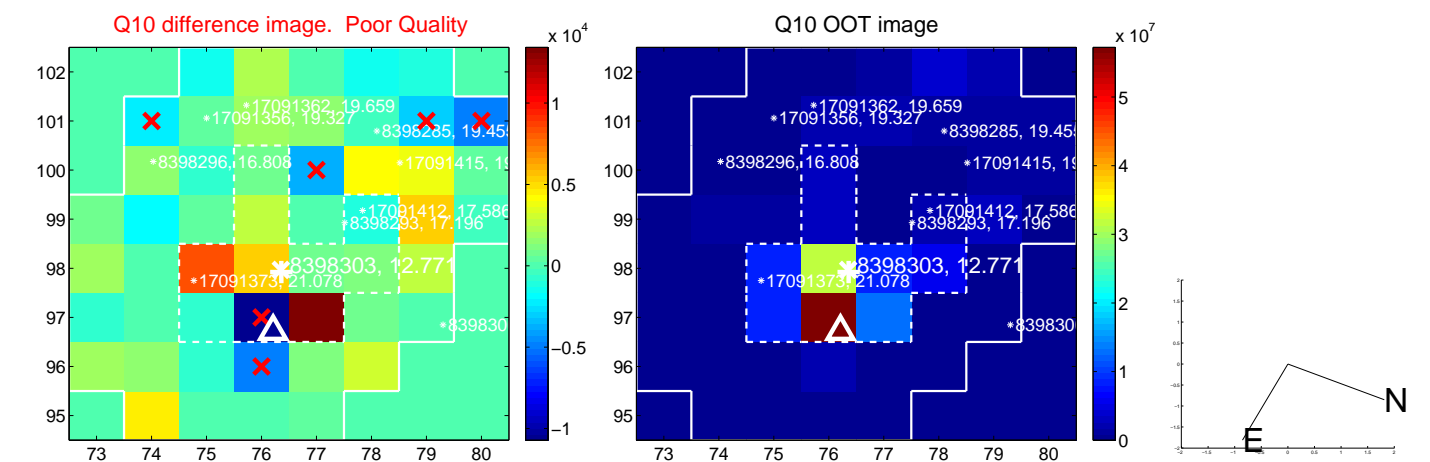
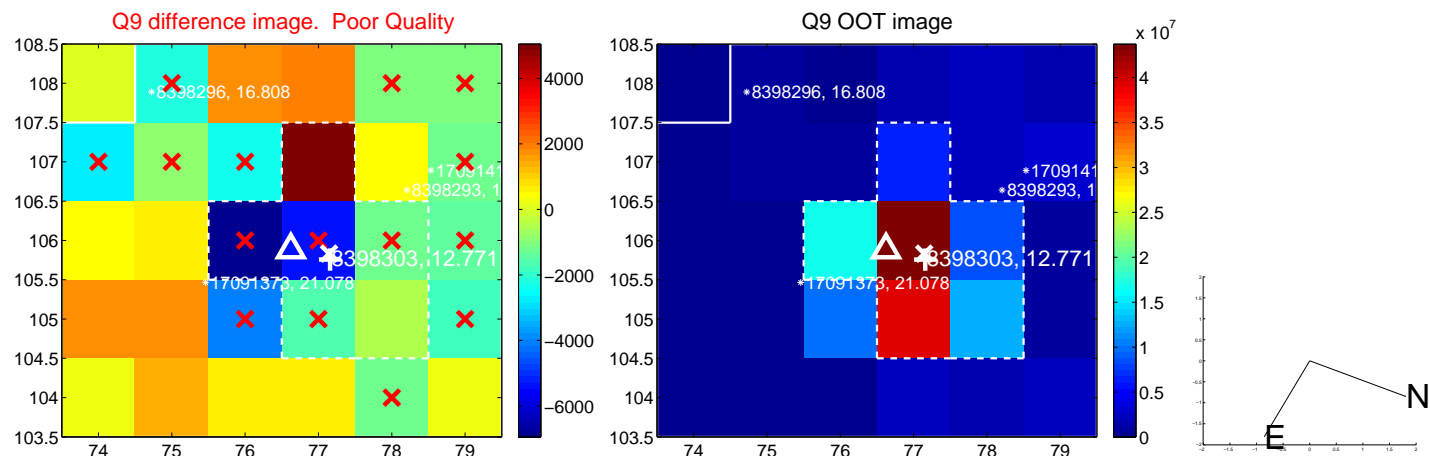
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



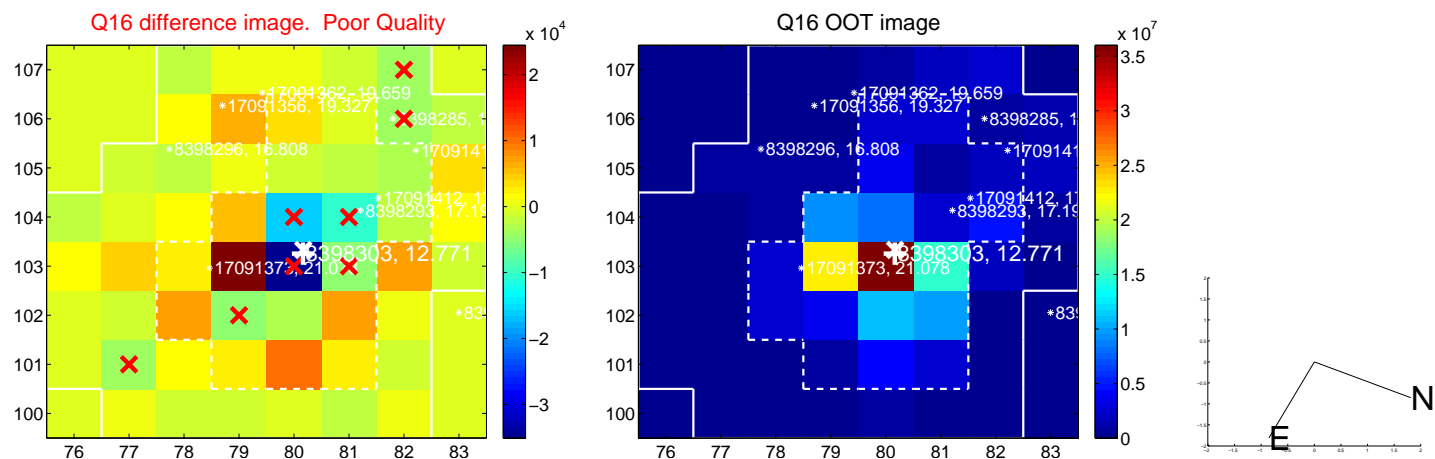
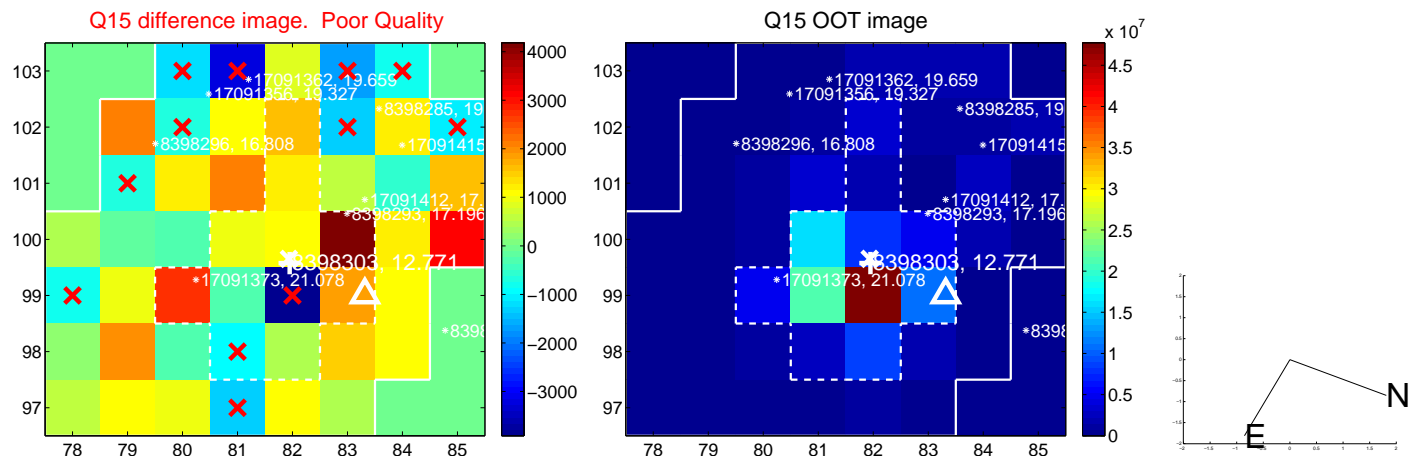
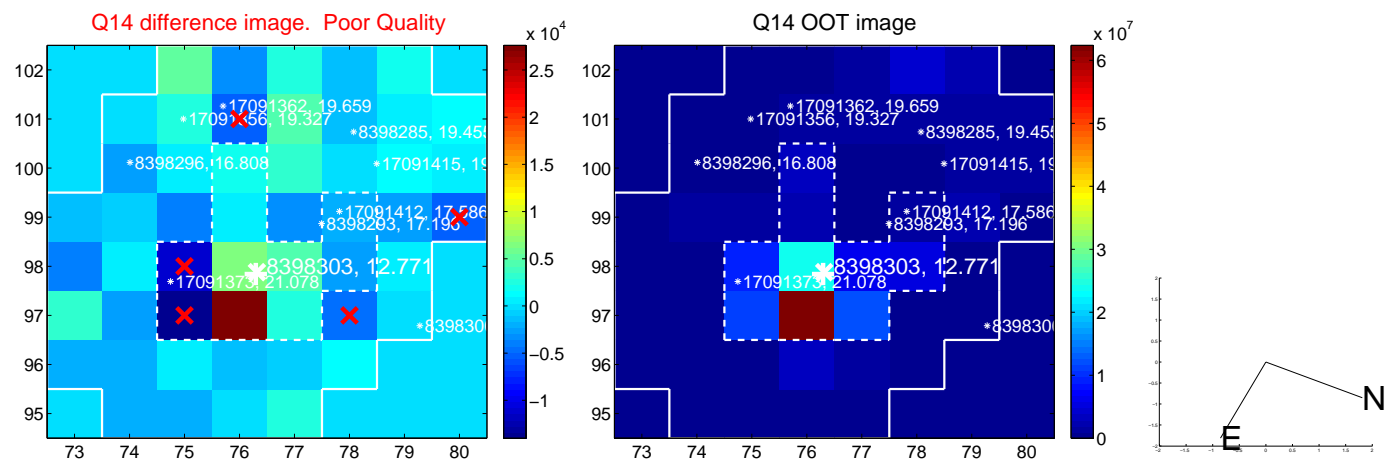
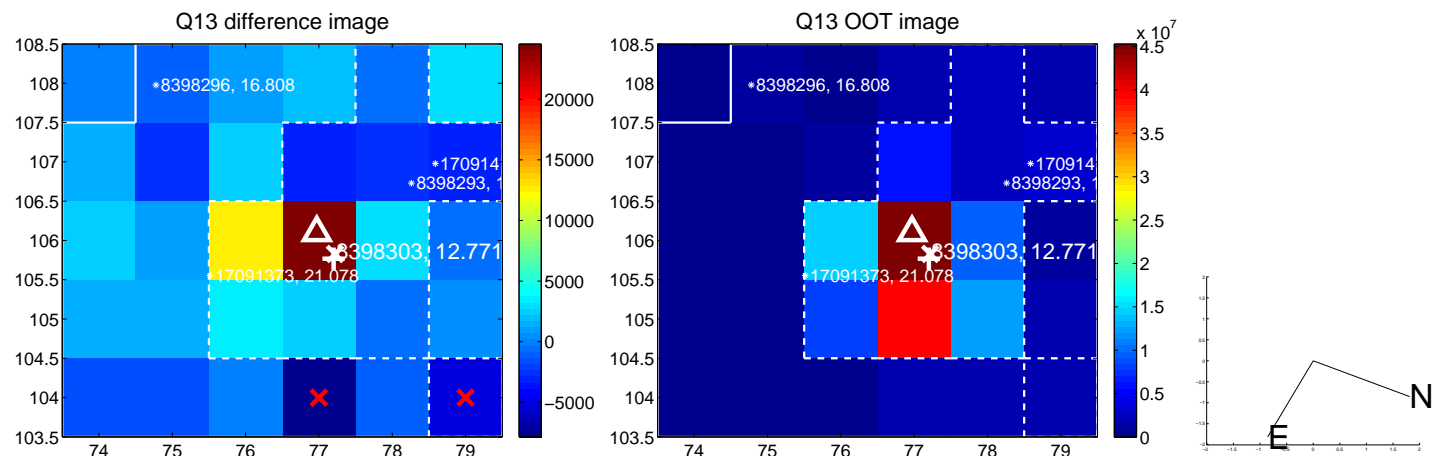
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



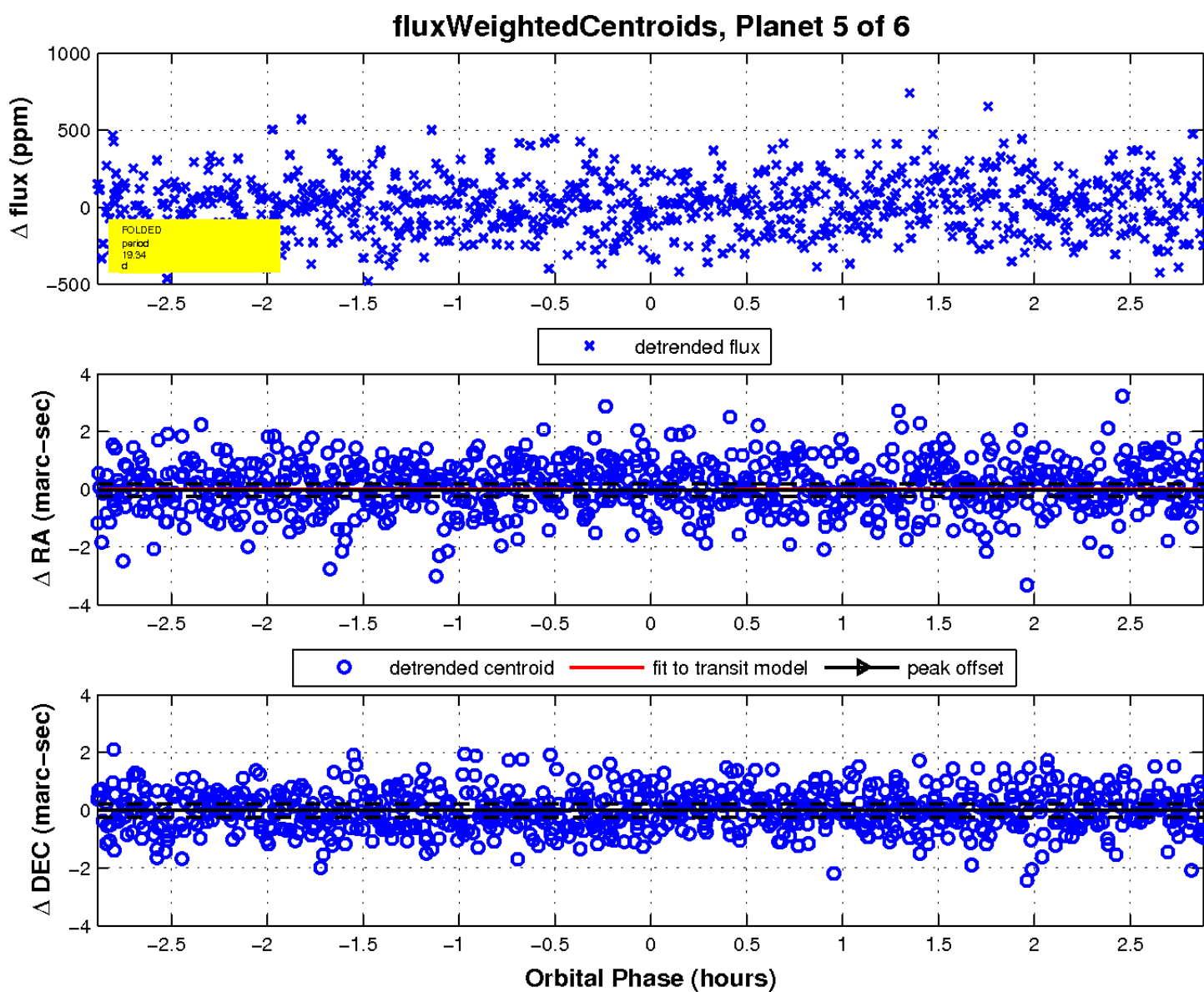
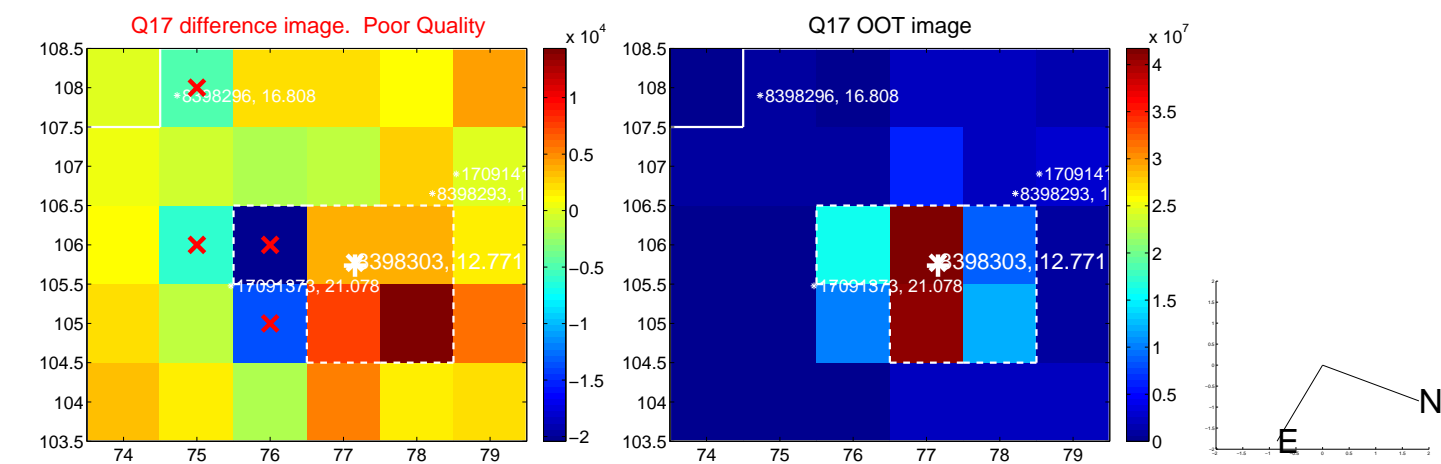
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

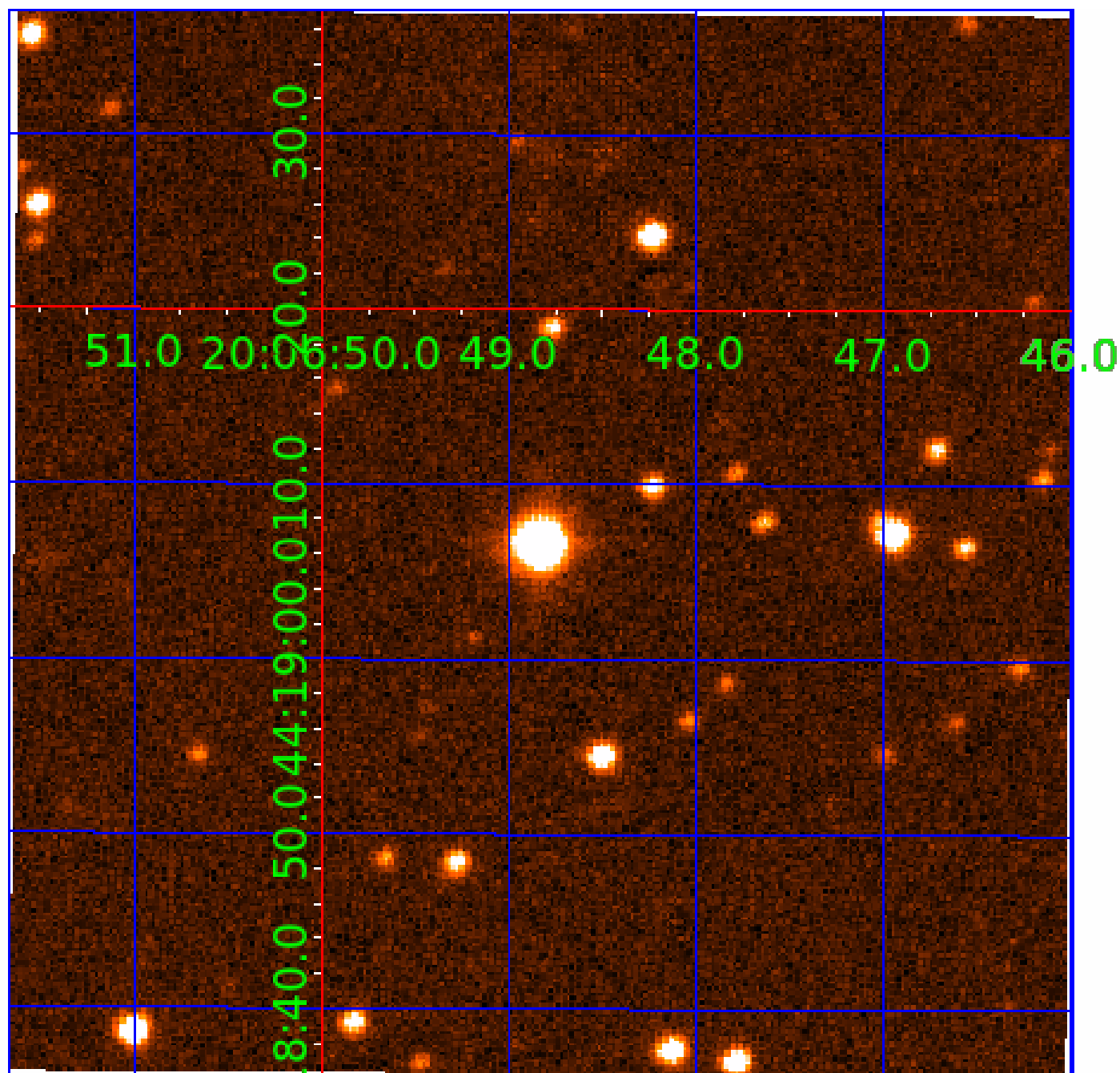


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008398303

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})
008398303-01	OBS	No	1.584931	132.756990	19.5	11.352	7.9	8.7	2.58	6267	1.17	10224.57
008398303-03	OBS	No	108.171832	200.748075	466.2	7.958	12.2	11.5	2.58	6267	6.02	36.66
008398303-04	OBS	No	25.306363	133.957577	304.2	1.588	11.5	10.2	2.58	6267	5.22	254.30
008398303-05	OBS	No	19.344654	132.936177	360.9	0.962	11.9	10.4	2.58	6267	4.97	363.84
008398303-06	OBS	No	40.620767	147.619778	351.5	2.553	12.5	9.8	2.58	6267	5.16	135.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008398303-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT
008398303-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
008398303-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_RESOLVED_OFFSET
008398303-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—CENT_FEW_DIFFS
008398303-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

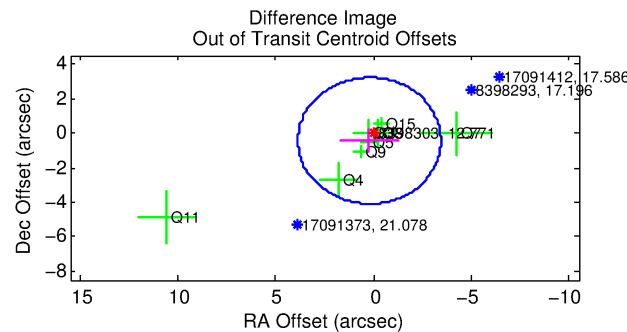
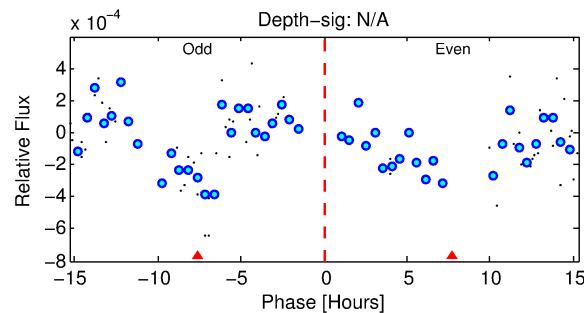
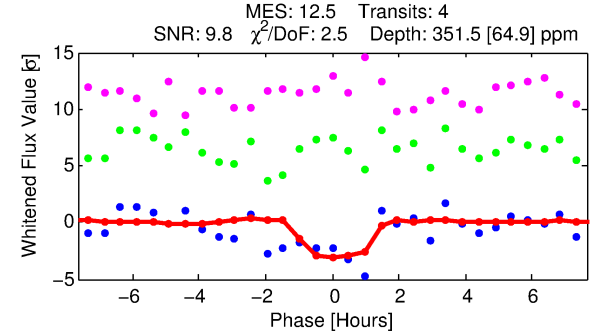
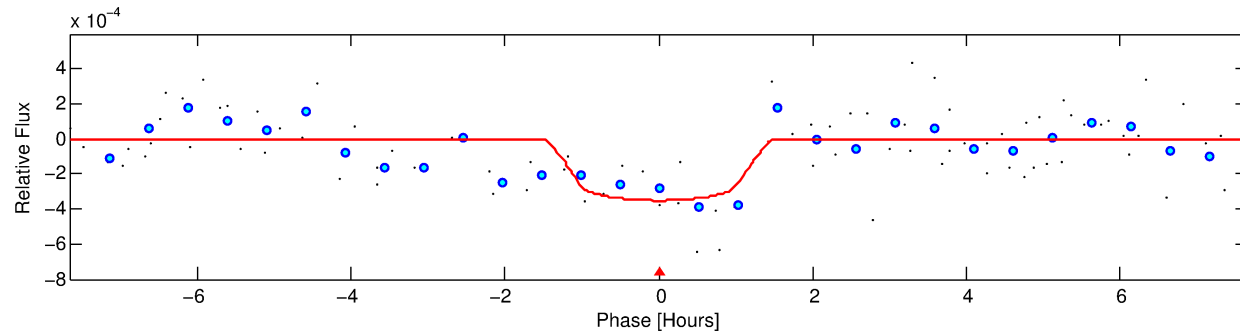
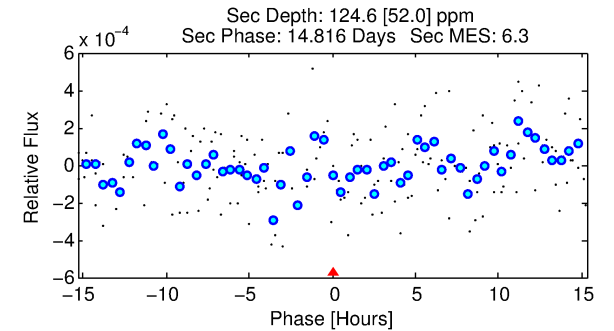
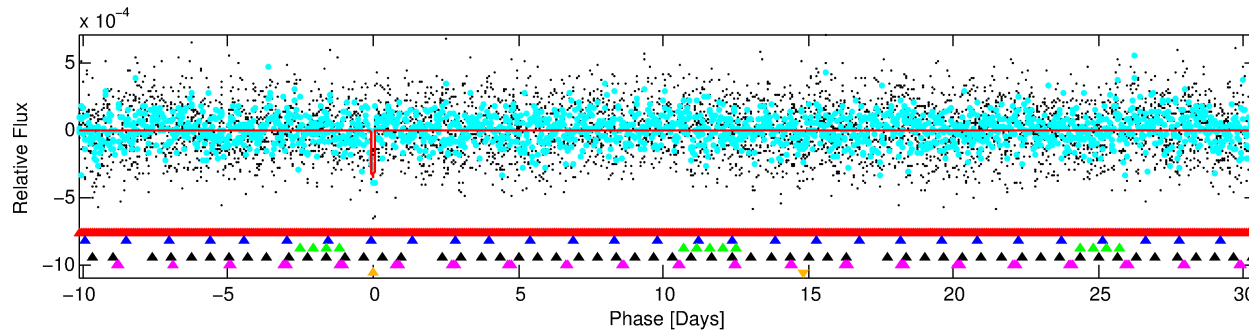
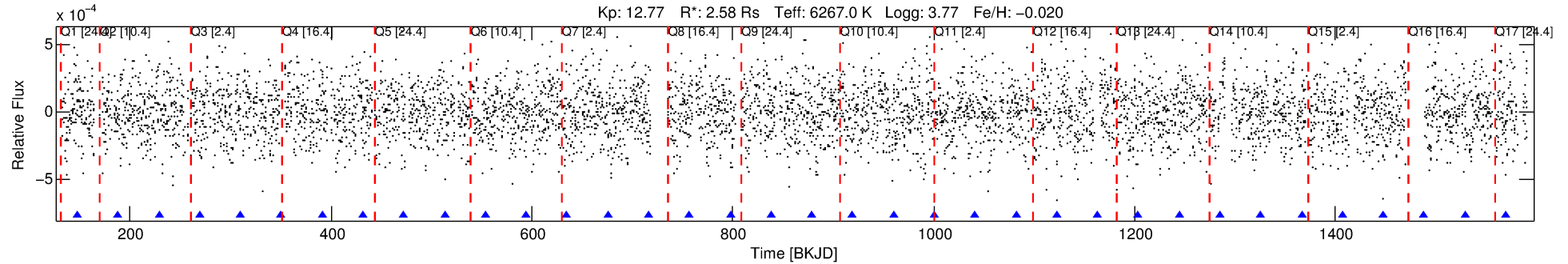
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008398303-06

No Significant Match Found

DV One-Page Summary

KIC: 8398303 Candidate: 6 of 6 Period: 40.621 d



DV Fit Results:

Period = 40.62077 [0.00078] d
Epoch = 147.6198 [0.0175] BKJD
Rp/R* = 0.0183 [0.0252]
a/R* = 91.73 [648.07]
b = 0.68 [5.54]
Seff = 135.31 [117.50]
Teq = 870 [189] K
Rp = 5.16 [7.59] Re
a = 0.2608 [0.1367] AU
Ag = 175.19 [509.65] [0.34σ]
Teffp = 4892 [3404] K [1.18σ]

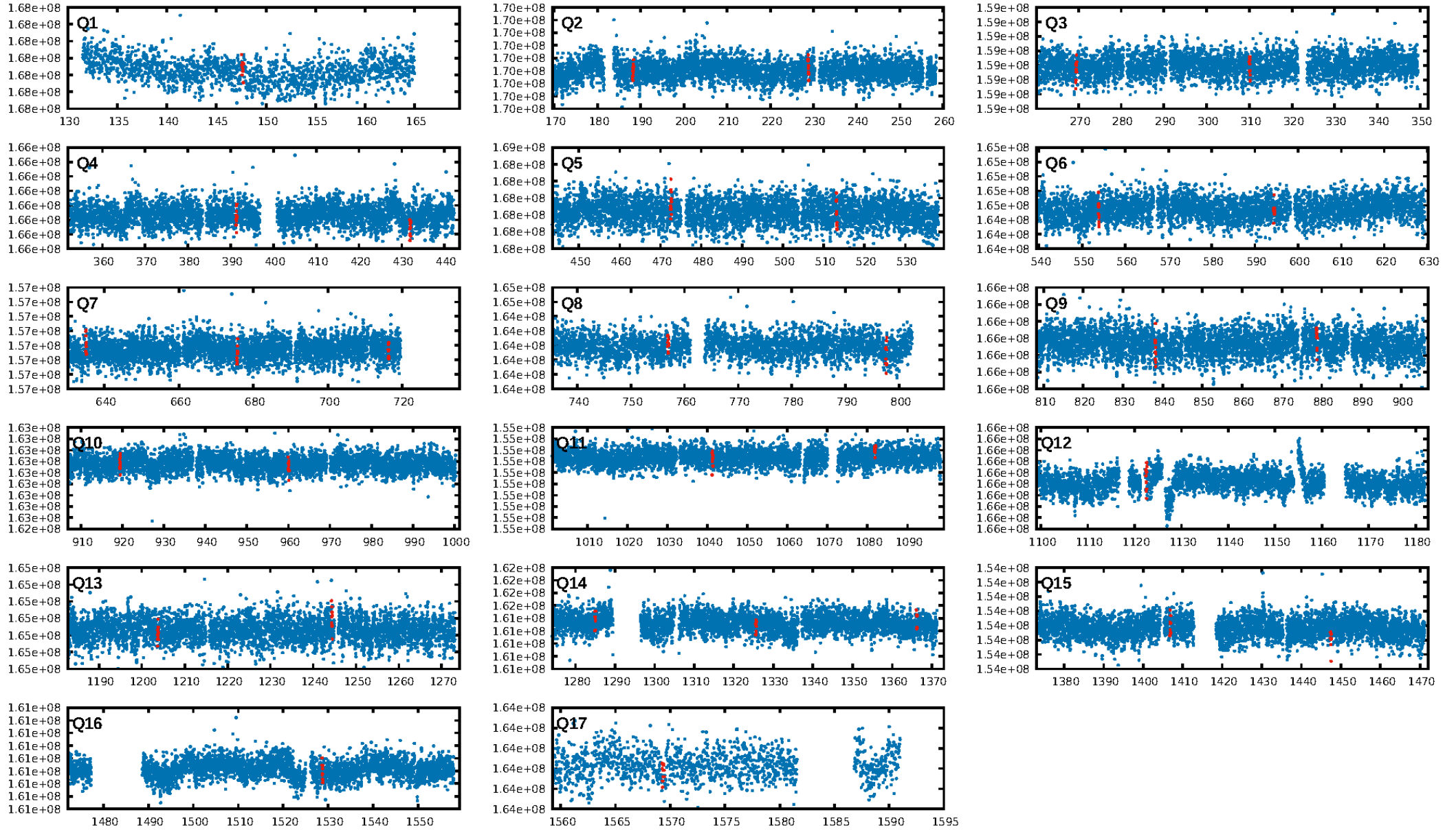
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [122.25σ]
LongPeriod-sig: 100.0% [55.69σ]
ModelChiSquare2-sig: 73.6%
ModelChiSquareGof-sig: 78.8%
Bootstrap-pfa: 1.13e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.028
Centroid-sig: 0.3%
Centroid-so: 0.762 arcsec [1.50σ]
OotOffset-rm: 0.490 arcsec [0.40σ]
KicOffset-rm: 0.598 arcsec [0.53σ]
OotOffset-st: 0/4/2/2 [8]
KicOffset-st: 0/4/2/2 [8]
DiffImageQuality-fgm: 0.25 [2/8]
DiffImageOverlap-fno: 0.65 [11/17]

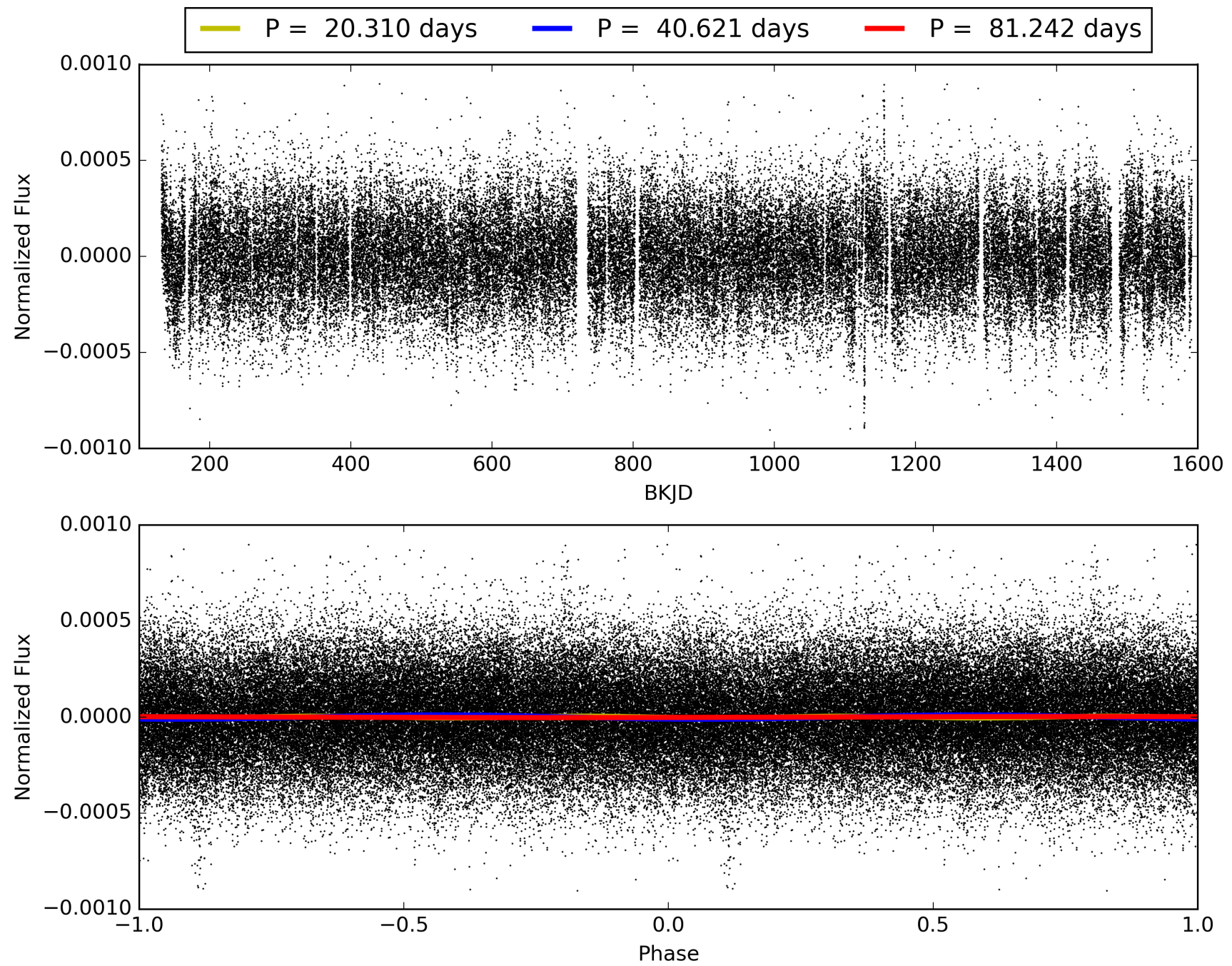
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:36:32 Z

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

TCE 008398303-06, PDC Light Curves

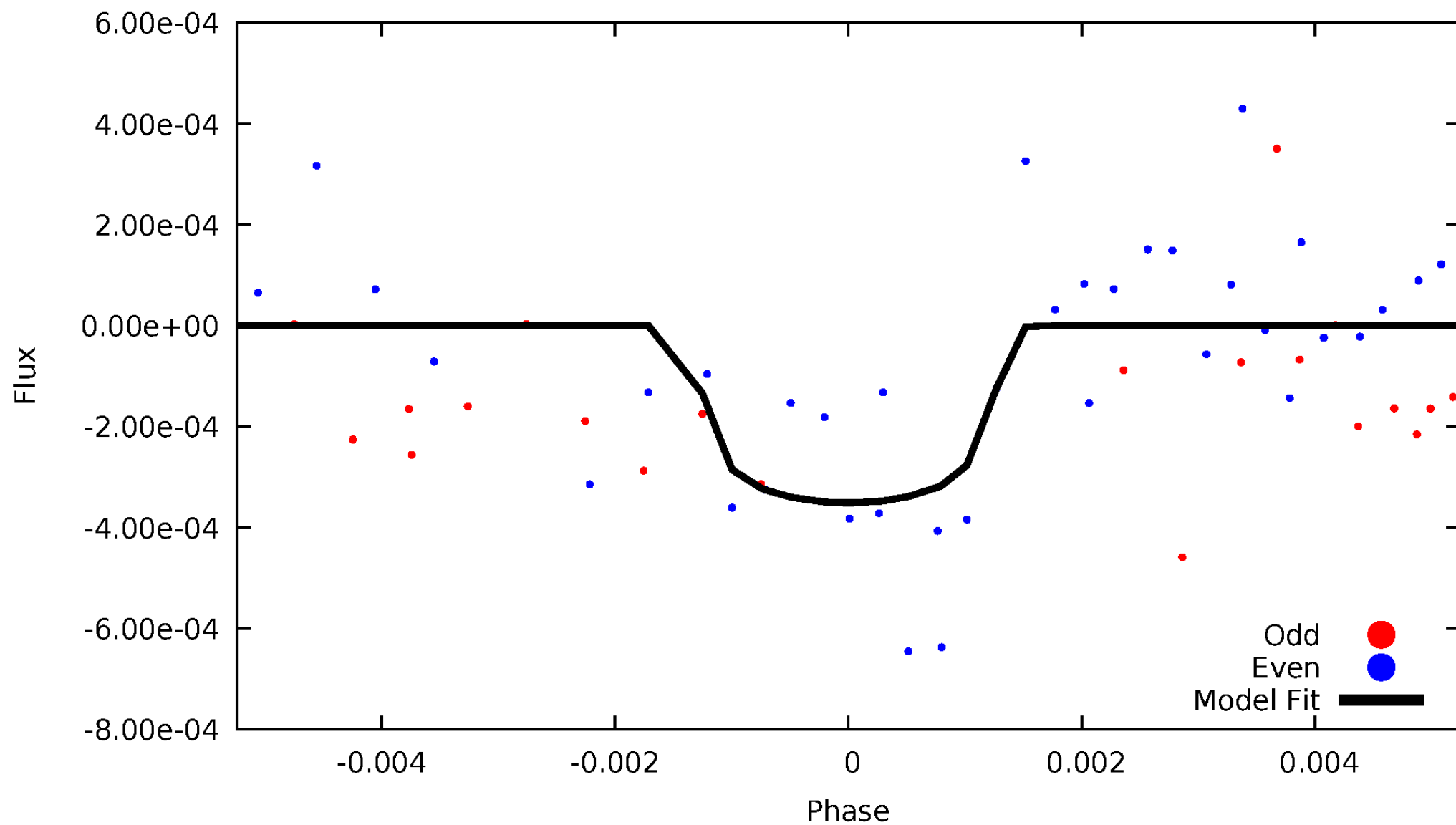


TCE 008398303-06



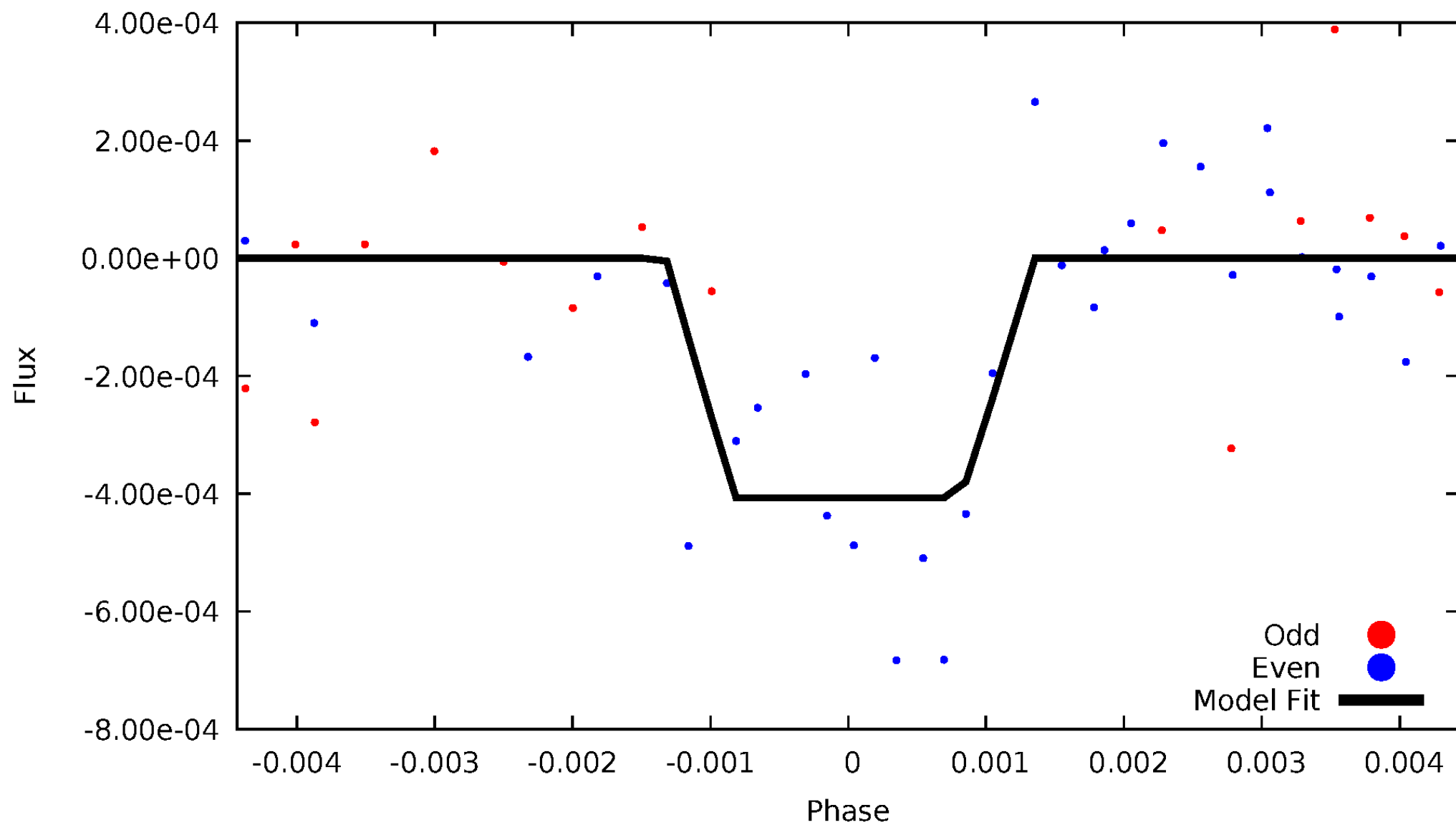
DV Odd/Even

TCE 008398303-06



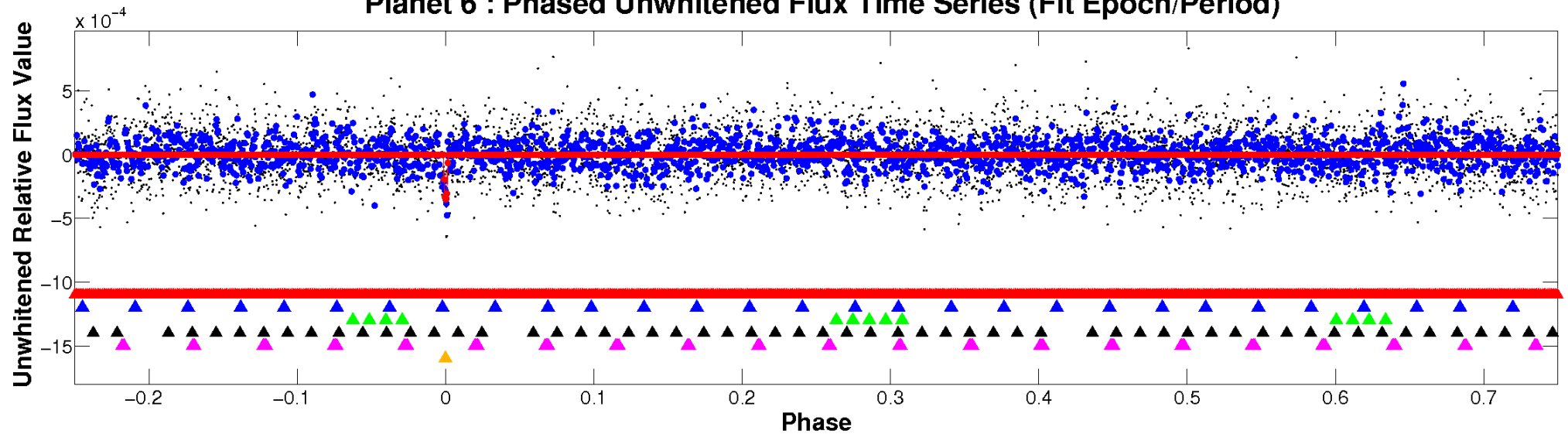
ALT Odd/Even

TCE 008398303-06

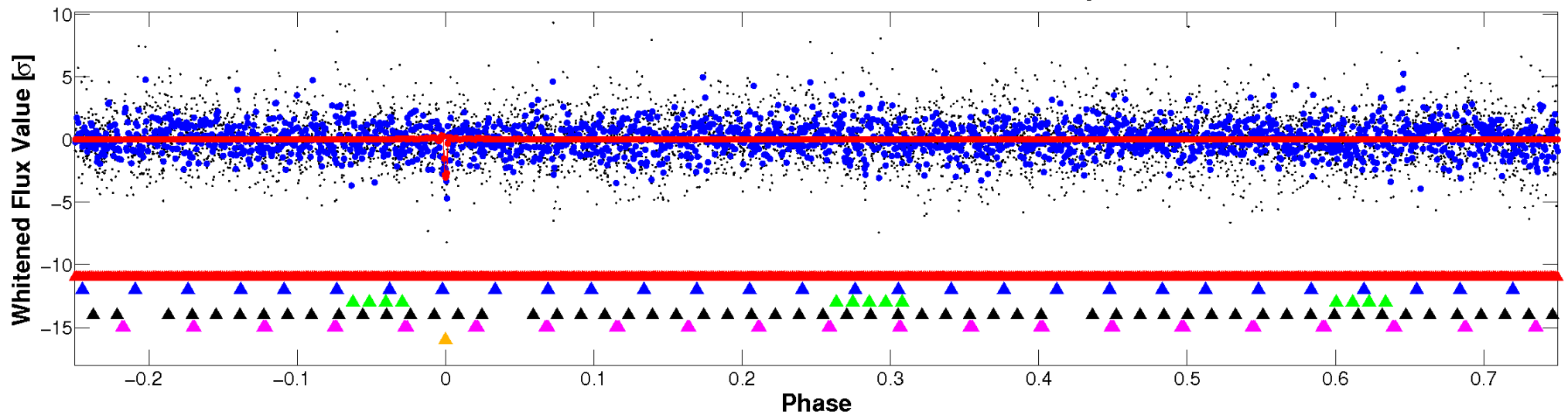


Non-Whitened Vs. Whitened Light Curve

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

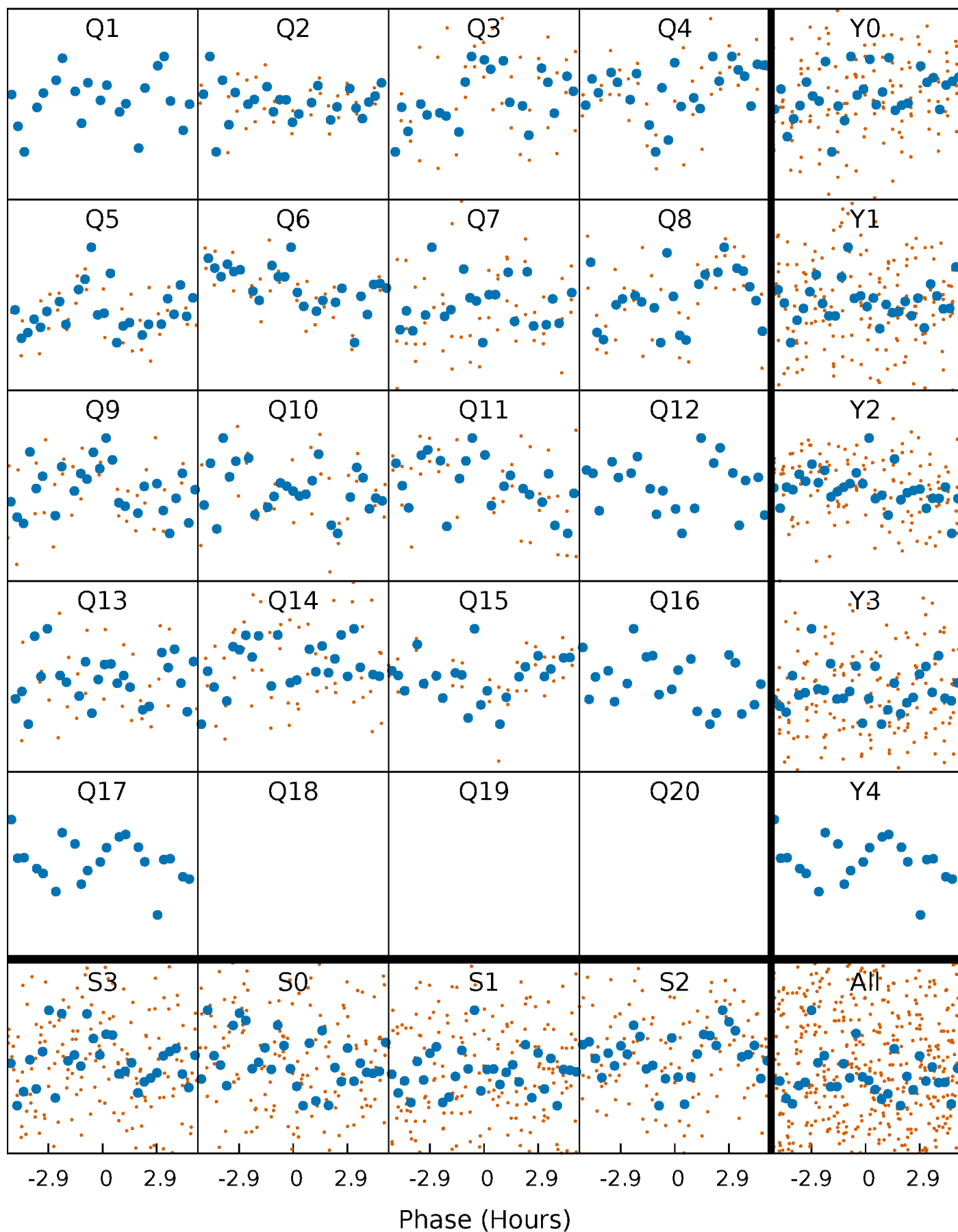


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



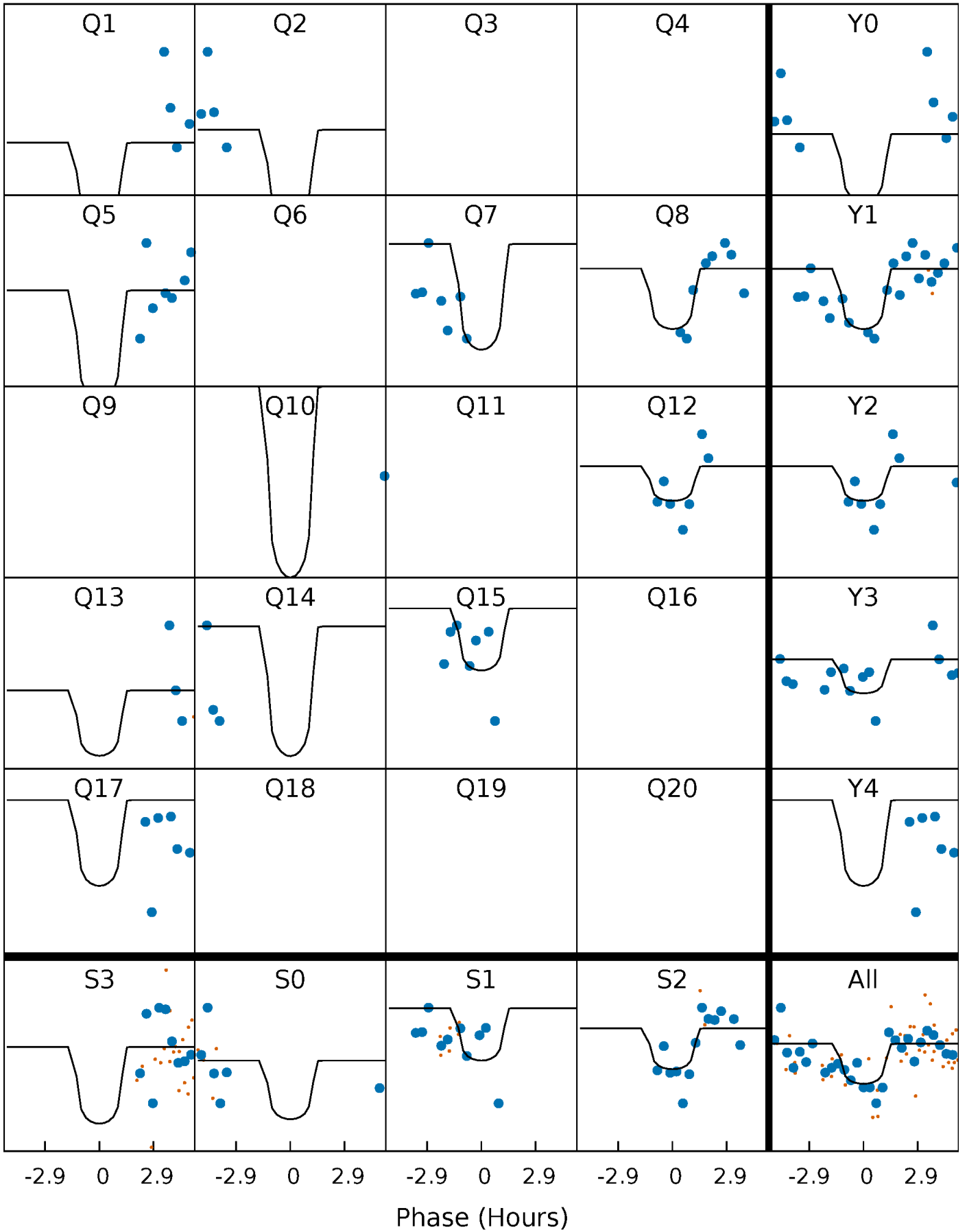
PDC Quarter-Phased Transit Curves

TCE 008398303-06 $P = 40.620767$ Days $T_0 = 147.619777$ (BKJD)



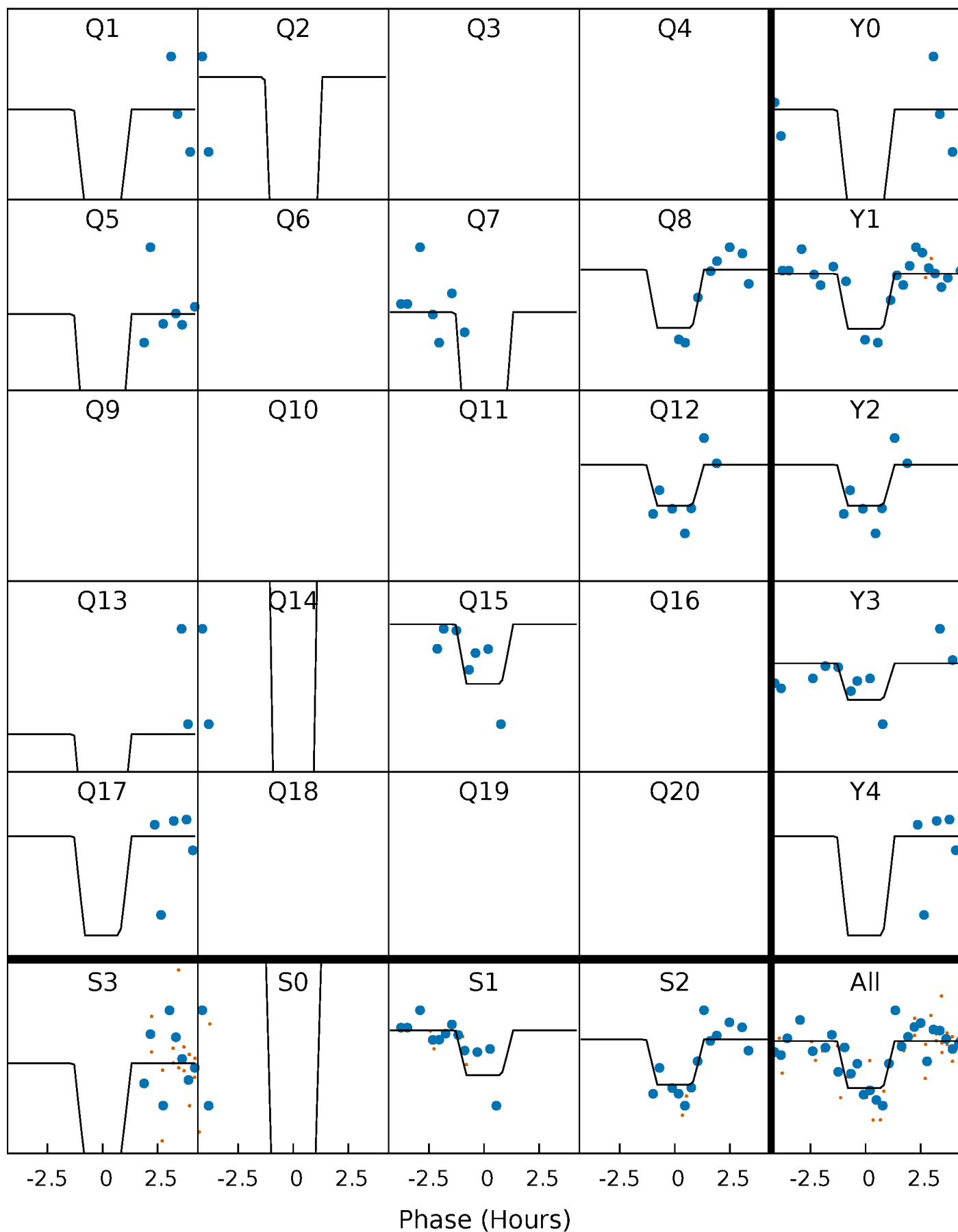
DV Quarter-Phased Transit Curves

TCE 008398303-06 P= 40.620767 Days $T_0=147.619777$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

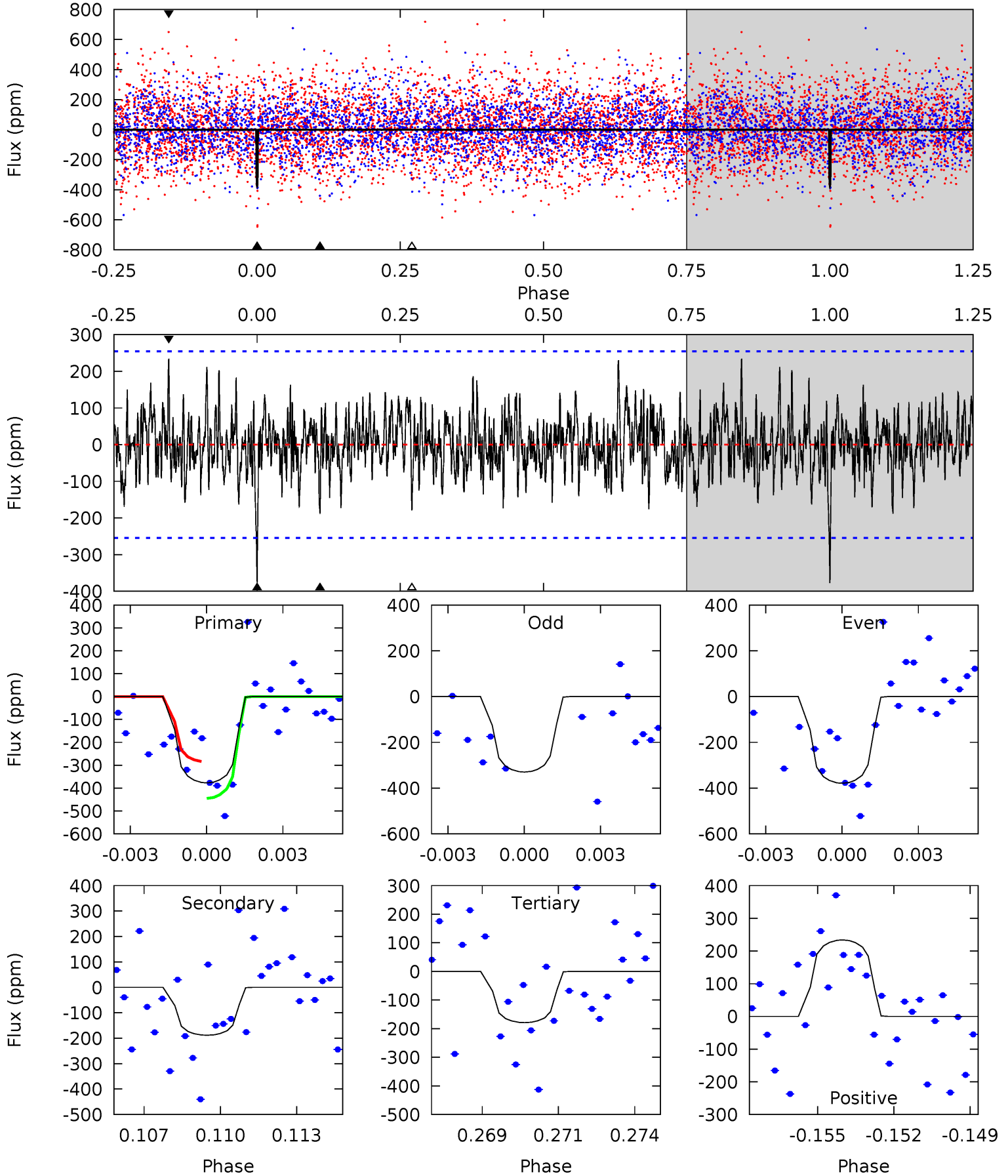
TCE 008398303-06 P= 40.620470 Days $T_0=147.633559$ (BKJD)



DV Model-Shift Uniqueness Test

008398303-06, P = 40.620767 Days, E = 106.999010 Days

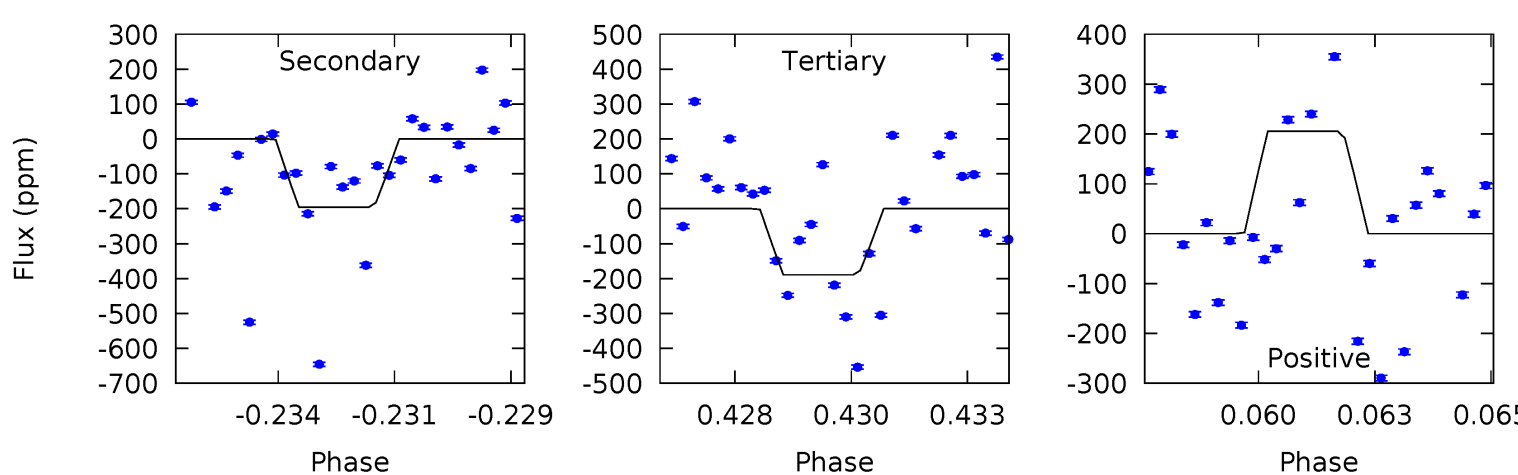
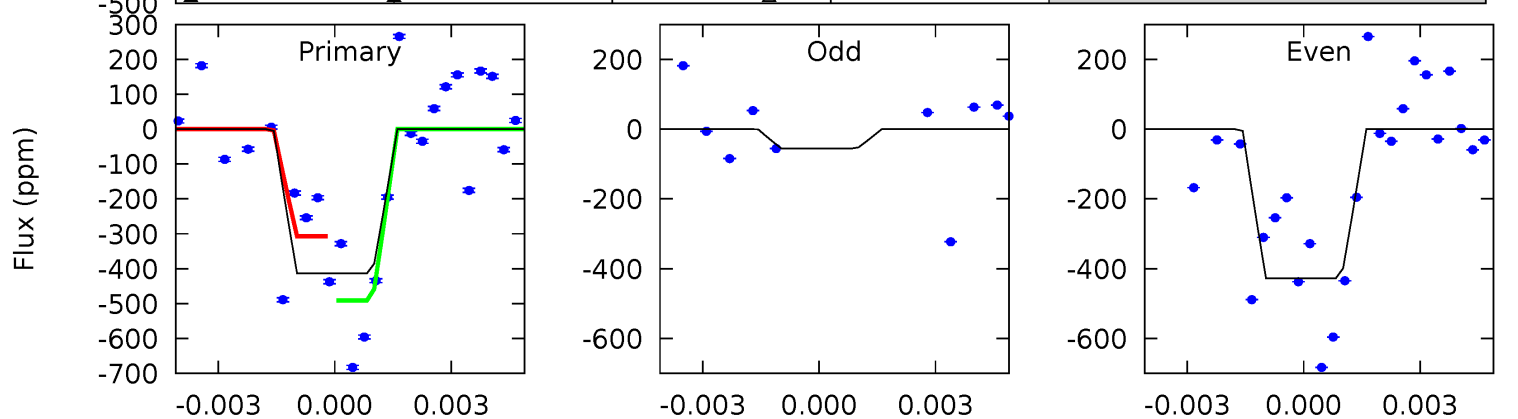
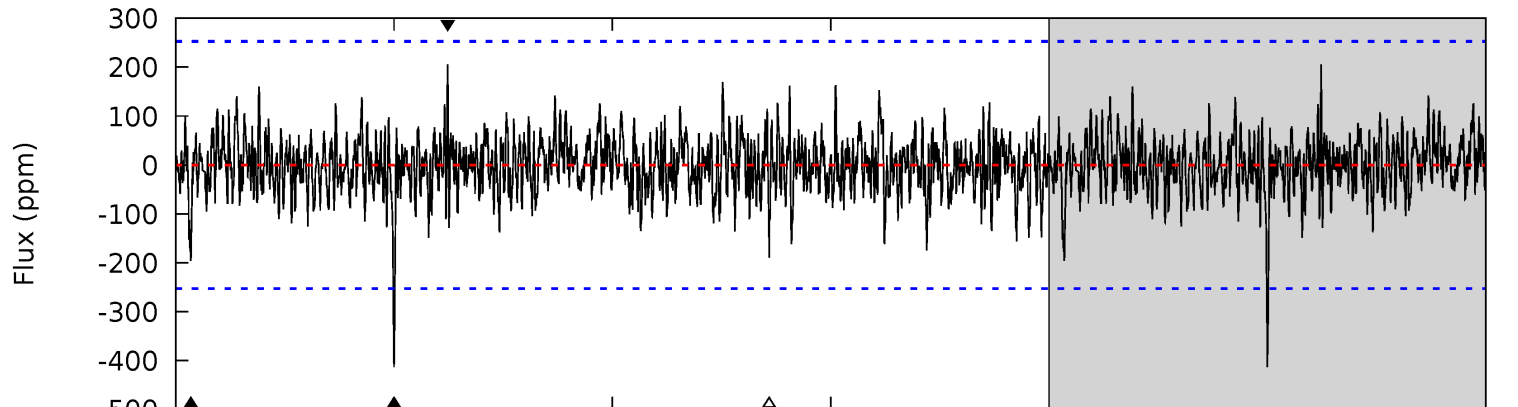
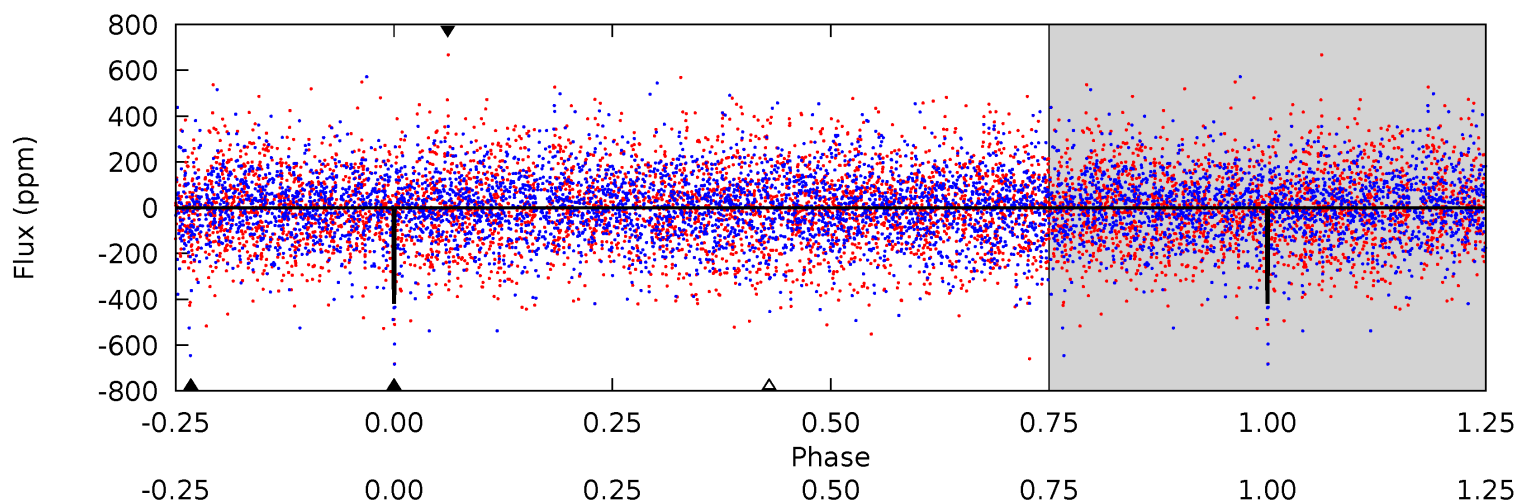
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.79	3.89	3.70	4.83	5.25	2.97	1.35	4.10	2.96	0.20	-0.94	0.26	0.99	0.38	1.60



Alt Model-Shift Uniqueness Test

008398303-06, P = 40.620470 Days, E = 107.013089 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.65	4.09	3.96	4.30	5.28	3.02	1.08	4.68	4.35	0.13	-0.21	2.16	0.91	0.33	1.91



Stellar Parameters For KIC 008398303

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6267^{+176}_{-220}	$3.771^{+0.510}_{-0.090}$	$-0.020^{+0.250}_{-0.300}$	$2.581^{+0.540}_{-1.349}$	$1.432^{+0.195}_{-0.362}$	$0.117^{+0.674}_{-0.042}$
	+3%/-4%	+14%/-2%	+1250%/-1500%	+21%/-52%	+14%/-25%	+574%/-35%
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 008398303-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-188 ± 48	$6.49^{+5.56}_{-4.41}$	1166^{+91}_{-156}	4616^{+3388}_{-908}	166^{+1296}_{-121}
Alt.	-196 ± 48	$6.64^{+5.78}_{-4.52}$	1157^{+96}_{-139}	4623^{+3133}_{-939}	165^{+1355}_{-121}

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

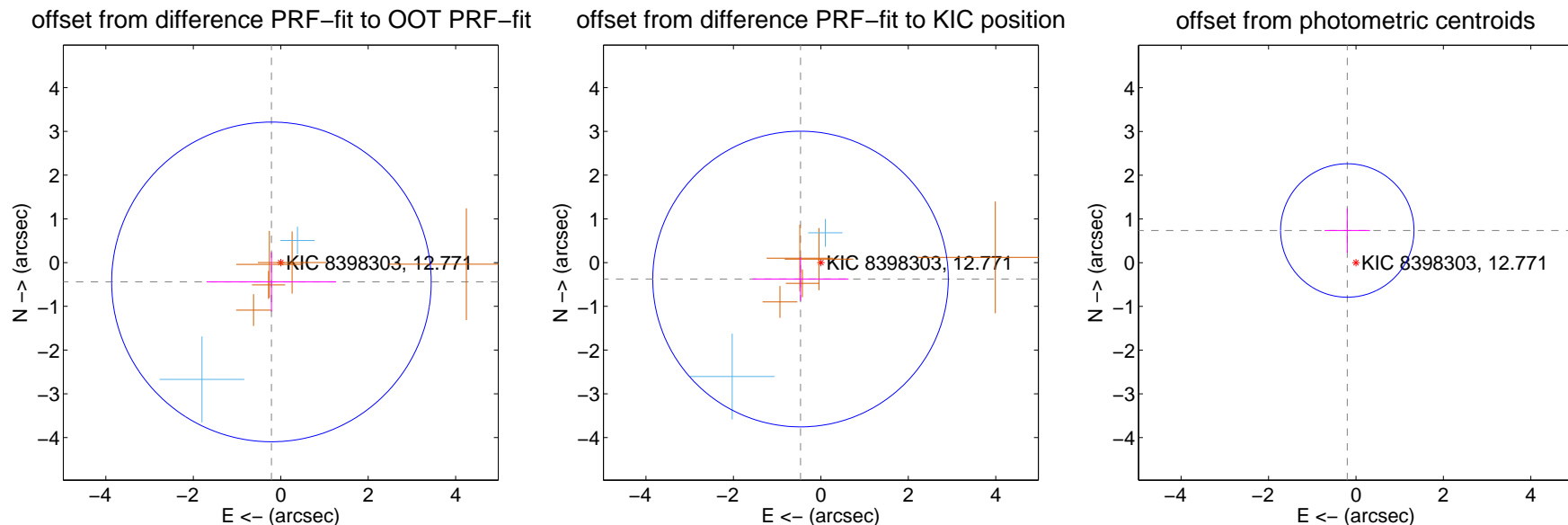
DV Centroid Data

Supplemental centroid analysis for 008398303-06. Kepler magnitude: 12.77. Transit SNR 9.76

There are 2 quarters with good PRF difference image offsets

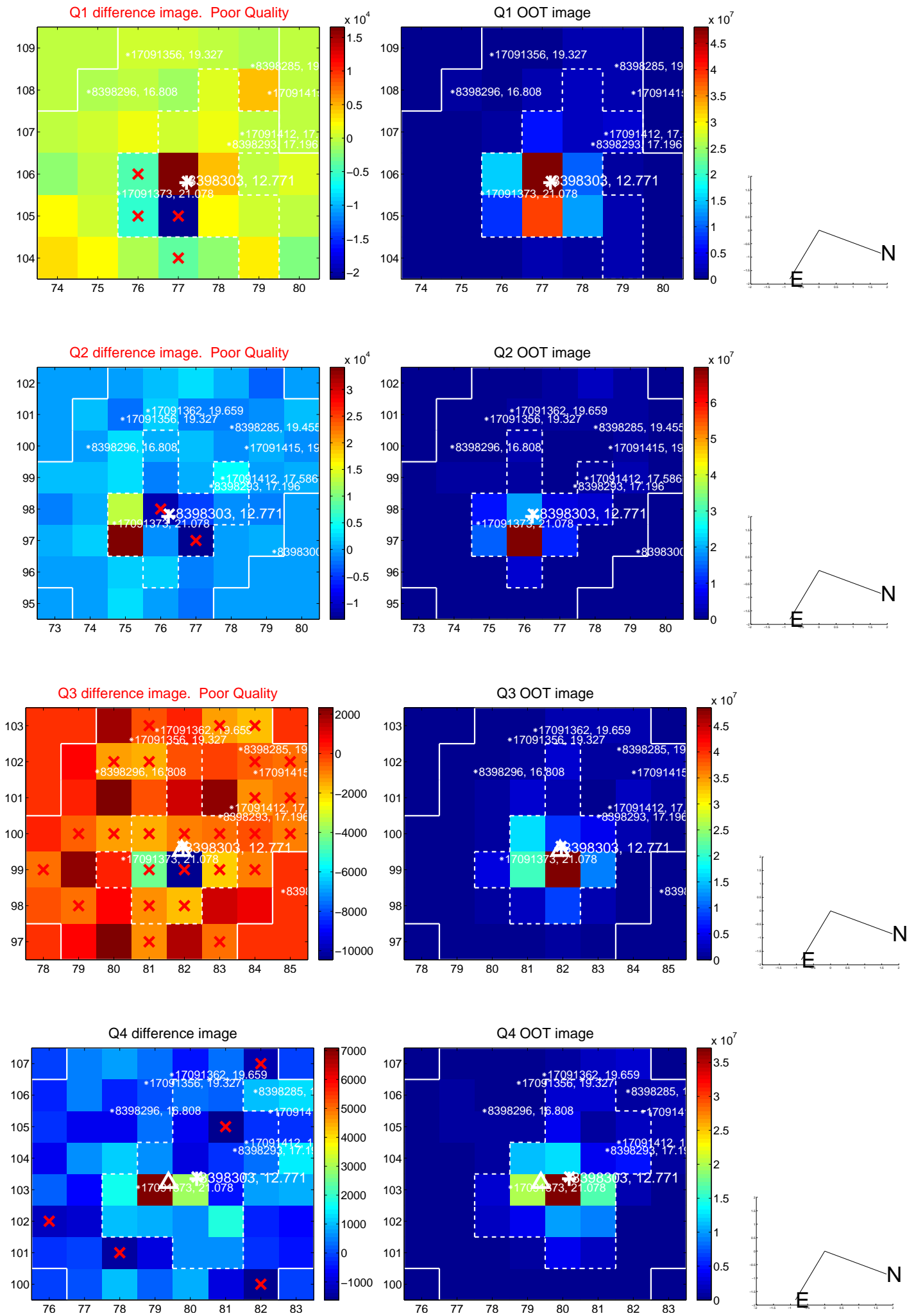
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.490 ± 1.218	0.40	0.213 ± 1.482	-0.442 ± 0.680
PRF-fit source offset from KIC position	0.598 ± 1.126	0.53	0.465 ± 1.099	-0.376 ± 0.500
photometric centroid source offset	0.76 ± 0.51	1.50	0.20 ± 0.52	0.74 ± 0.51

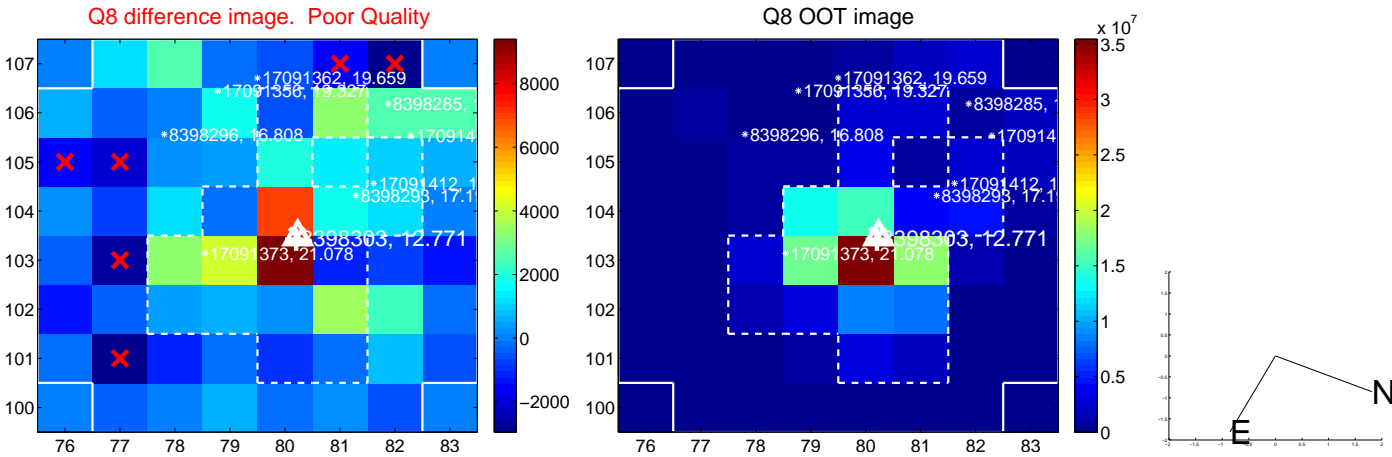
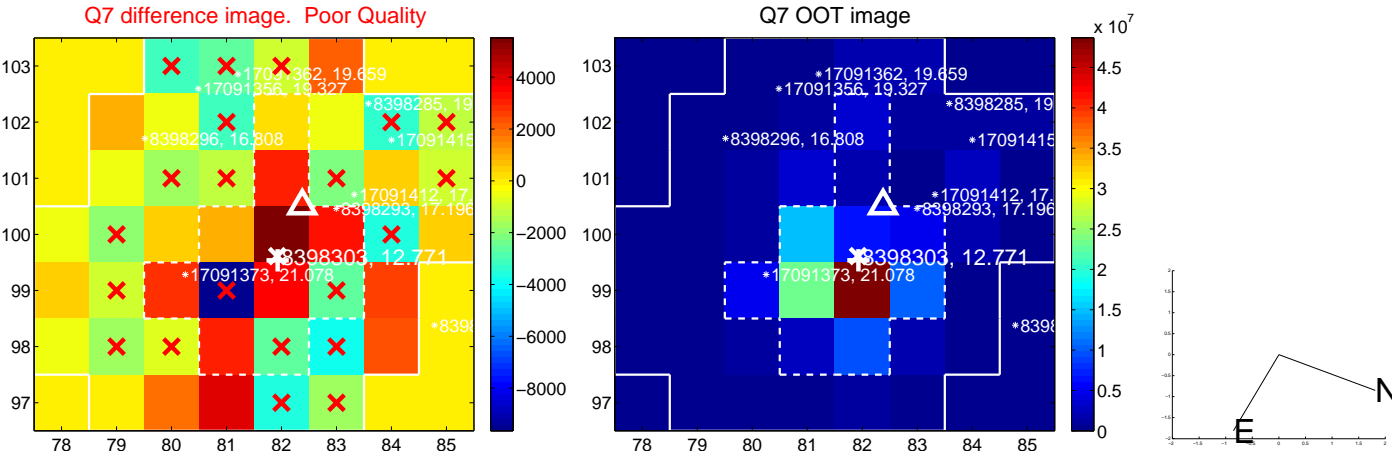
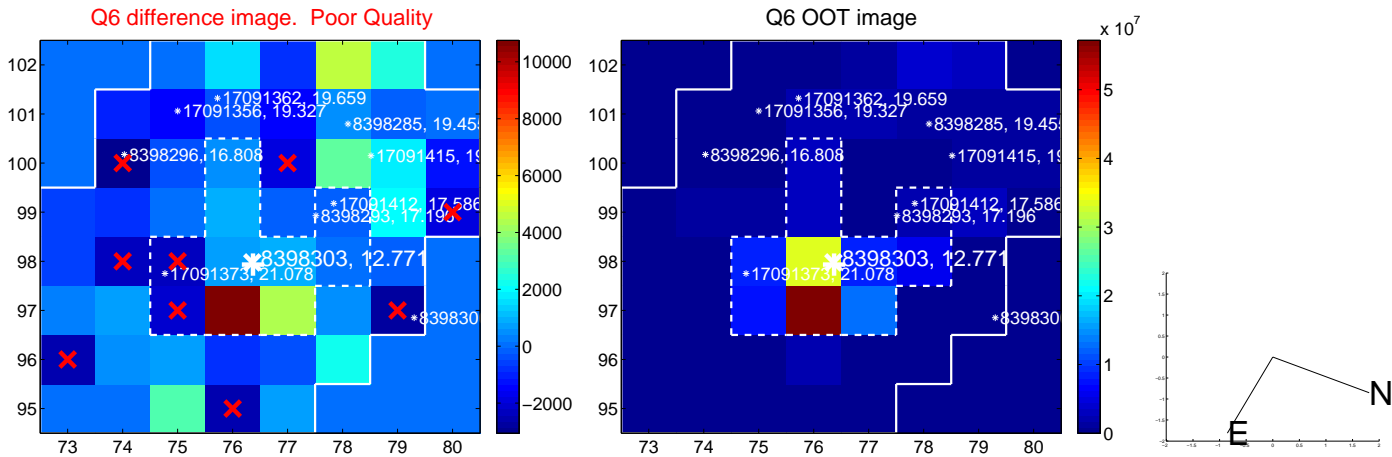
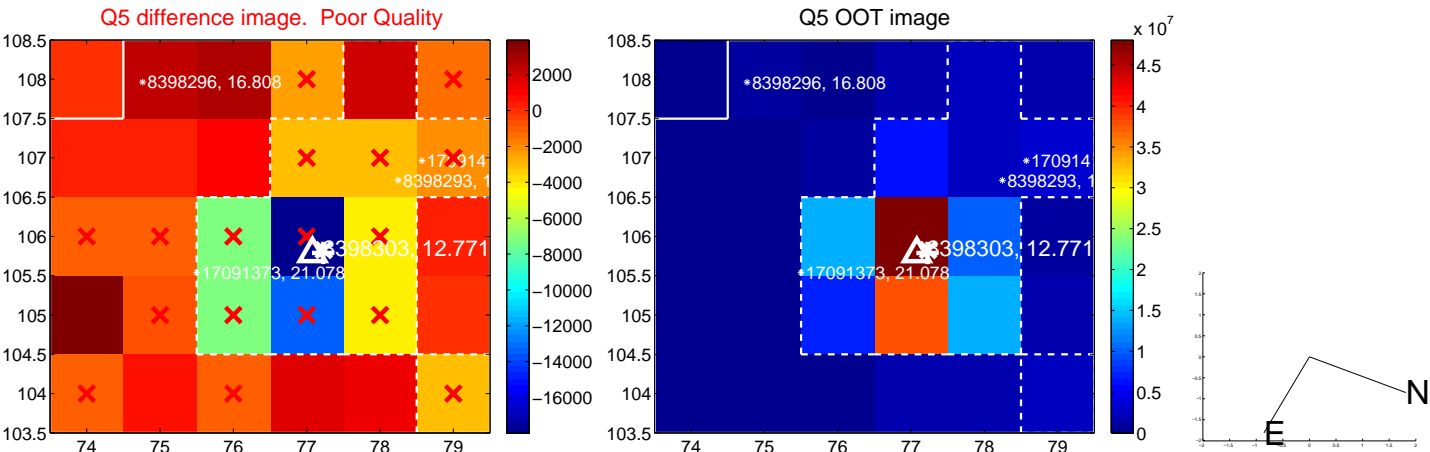


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

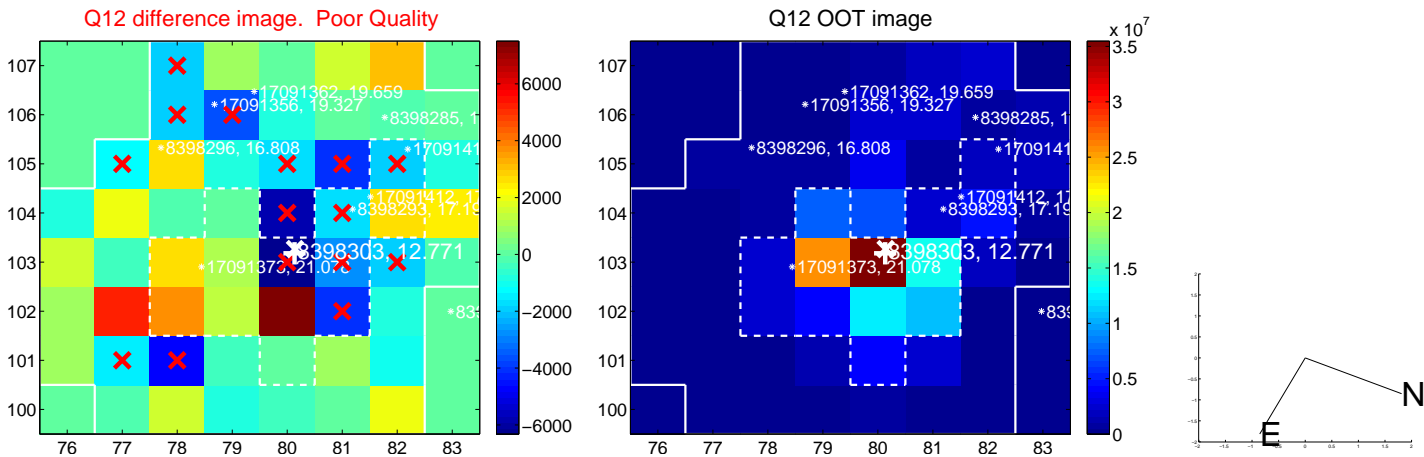
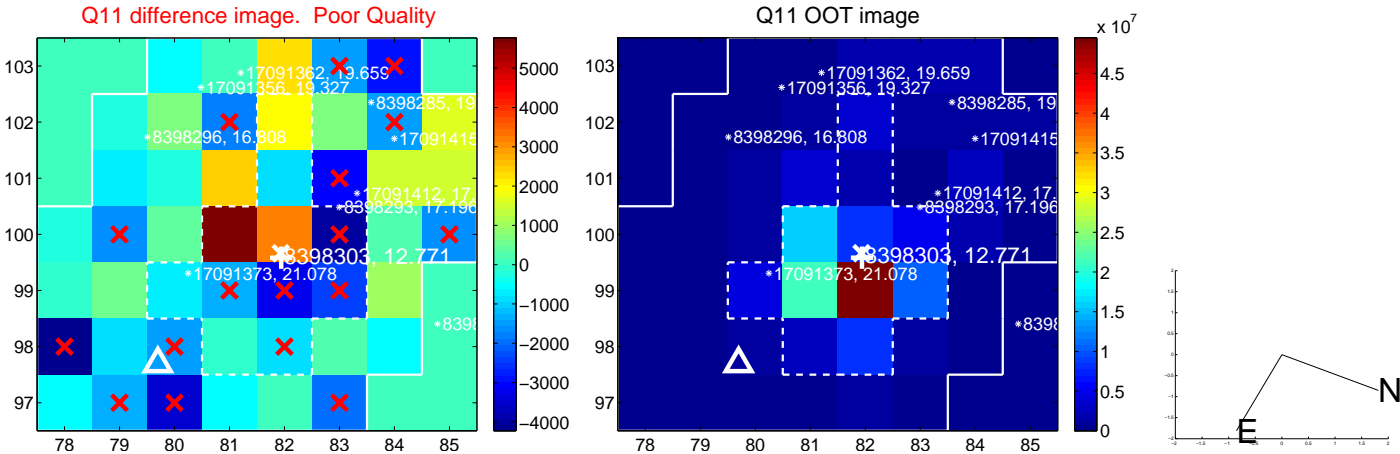
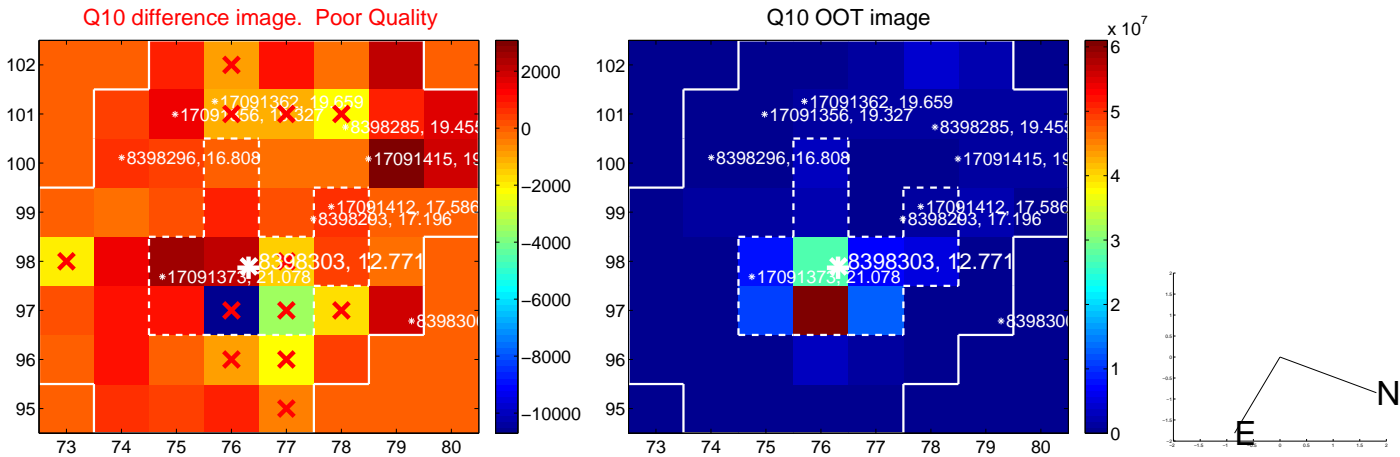
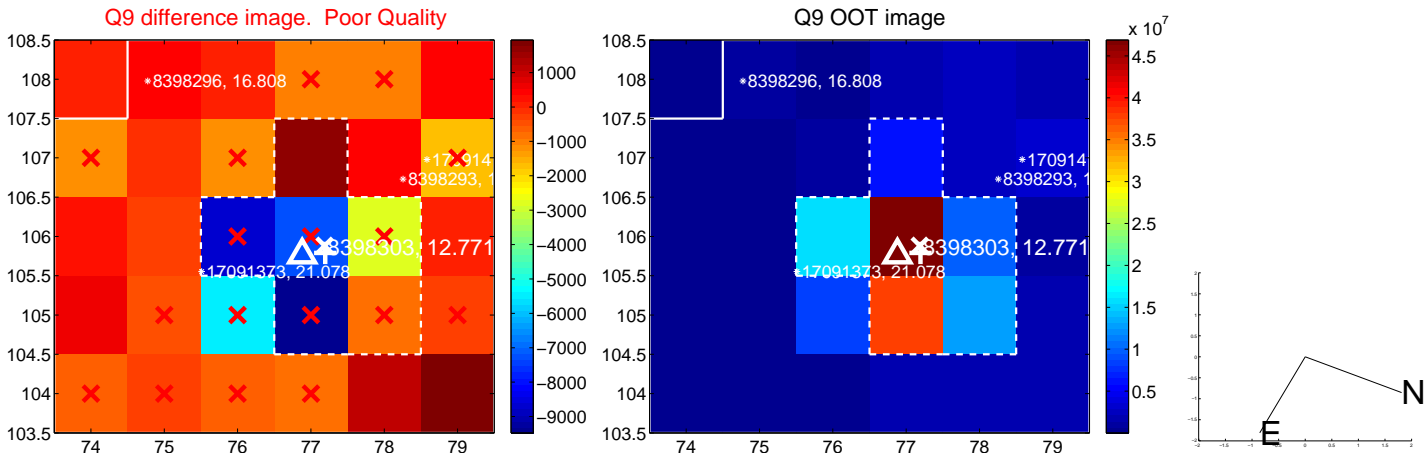
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



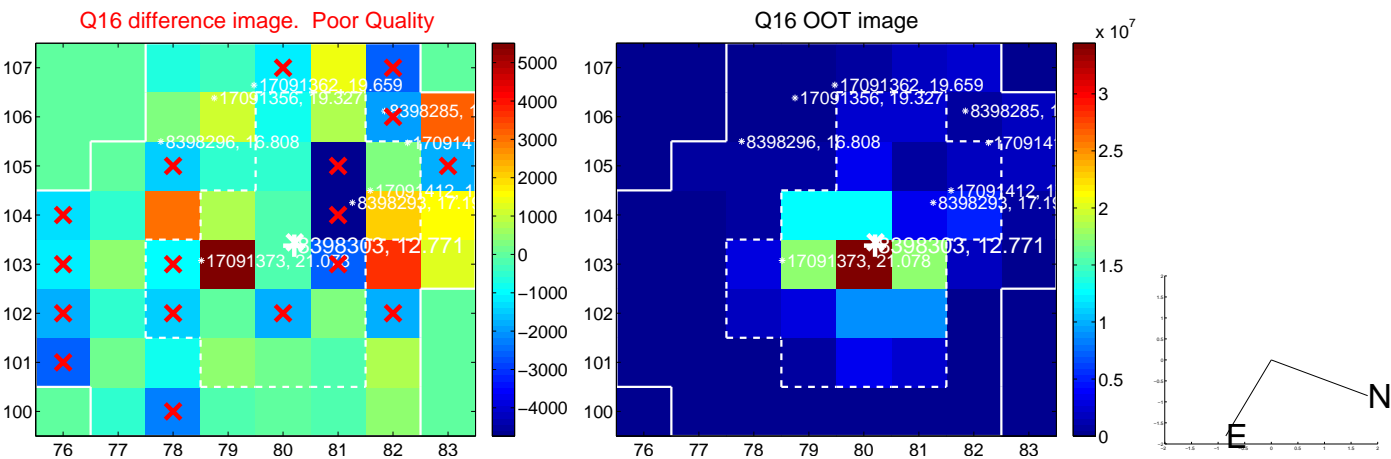
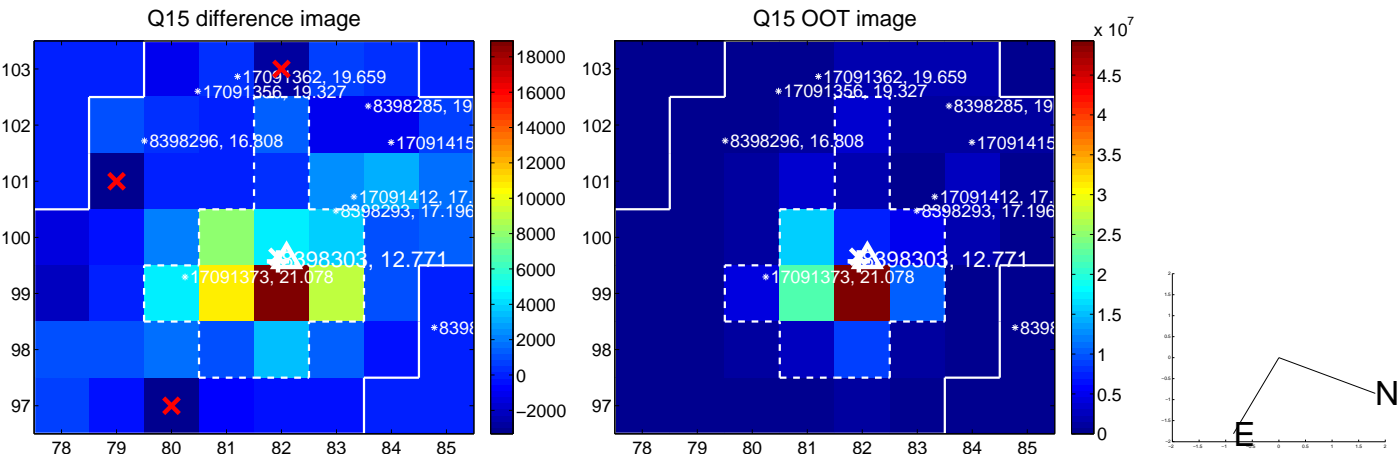
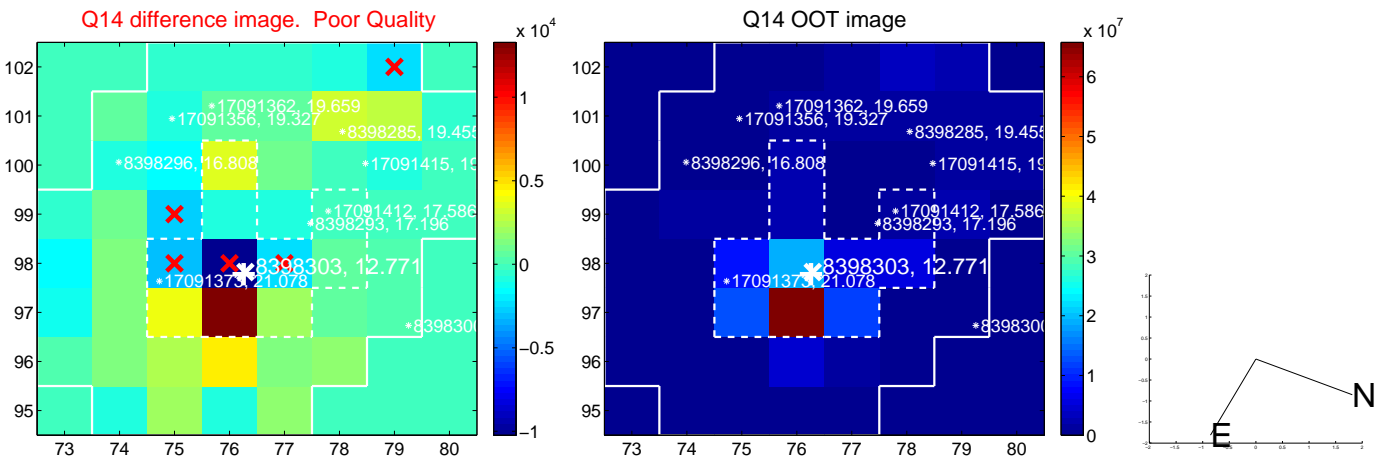
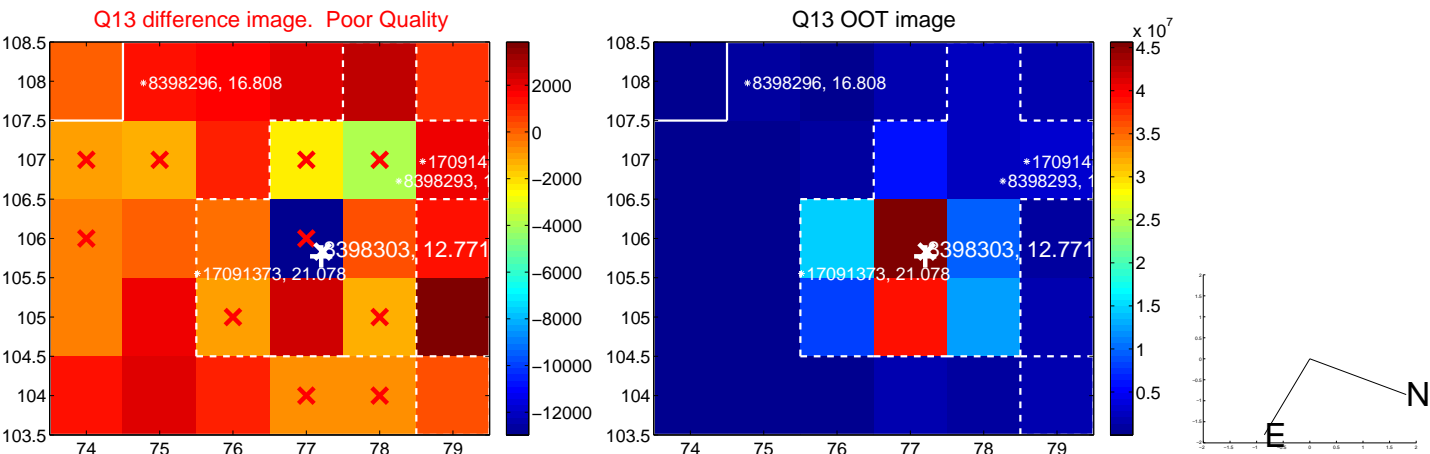
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



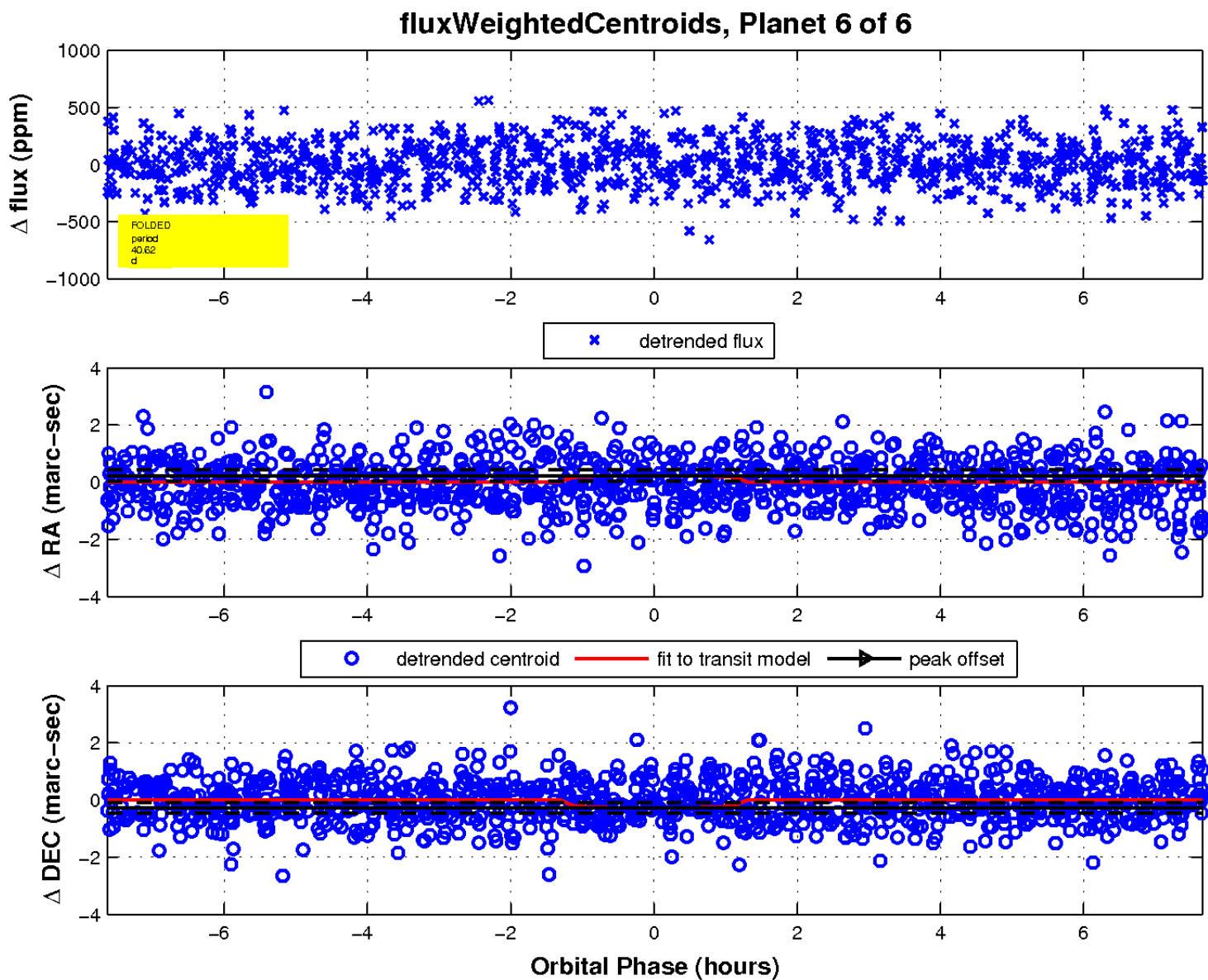
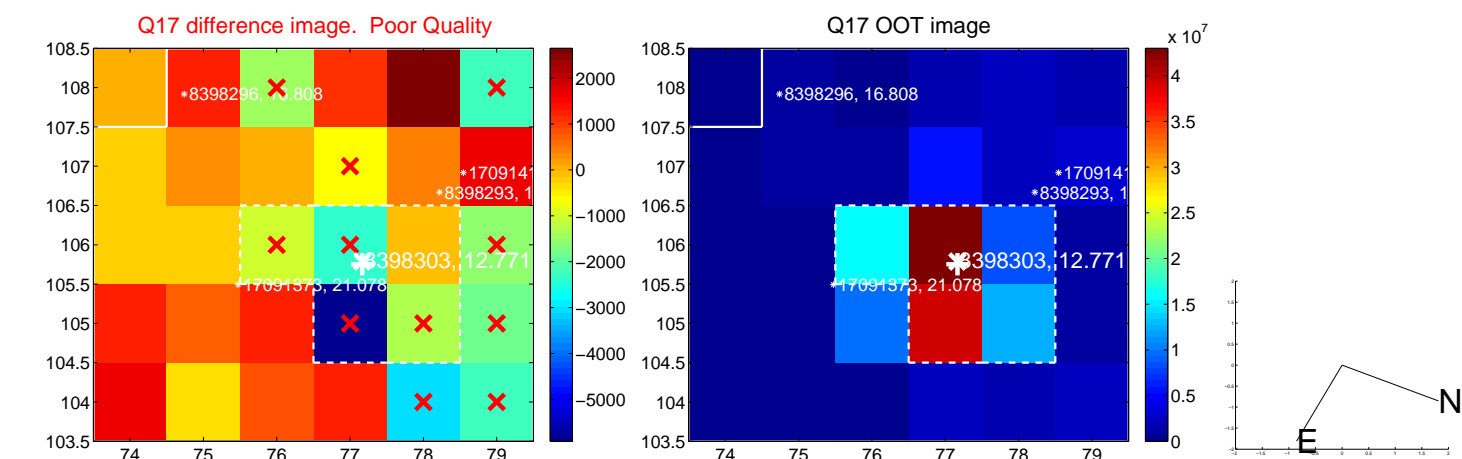
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

