

KIC 003858086

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})
003858086-01	OBS	No	379.382779	437.860834	1936.9	7.096	18.3	5.7	0.56	4880	2.43	0.22
003858086-02	OBS	No	524.579395	493.468491	2756.3	3.947	16.8	9.2	0.56	4880	2.88	0.14
003858086-03	OBS	No	548.779879	467.388411	1897.7	4.368	19.0	4.8	0.56	4880	2.47	0.13
003858086-04	OBS	No	507.837945	240.751426	2781.2	3.533	13.8	7.7	0.56	4880	2.89	0.15
003858086-05	OBS	No	153.146668	281.240196	782.8	2.500	11.7	-1.0	0.56	4880	1.54	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858086-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003858086-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003858086-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003858086-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003858086-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—CENT_NOFITS

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

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

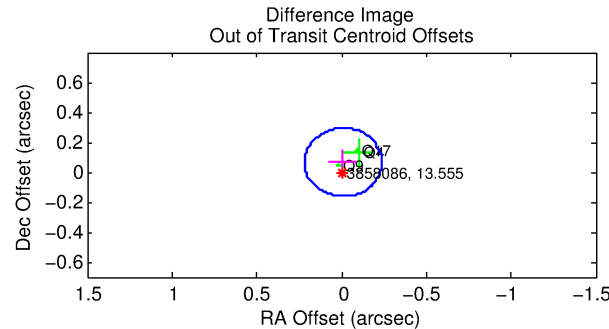
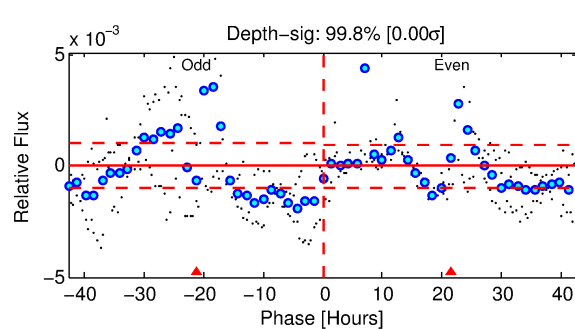
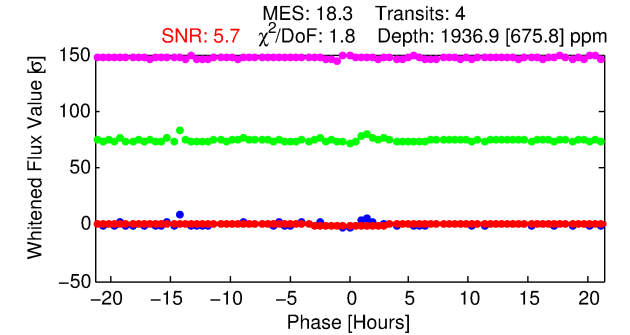
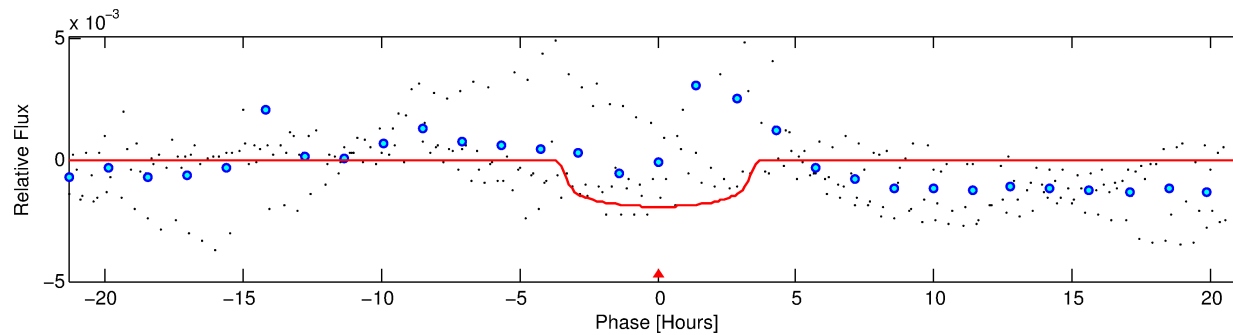
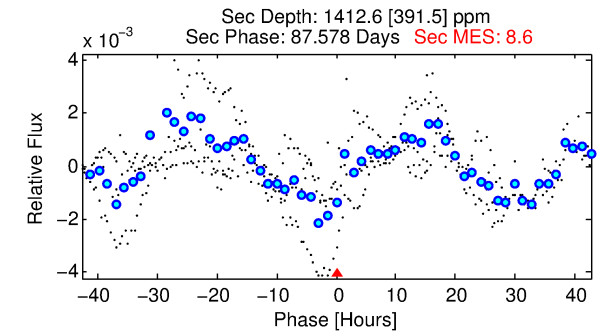
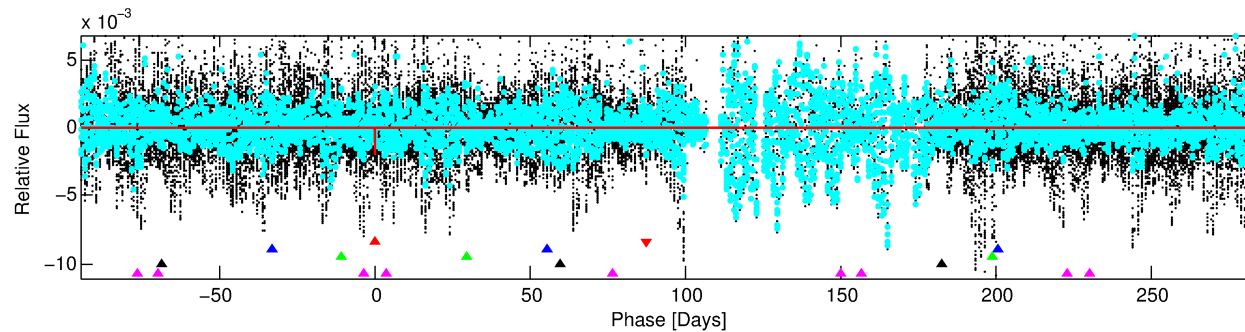
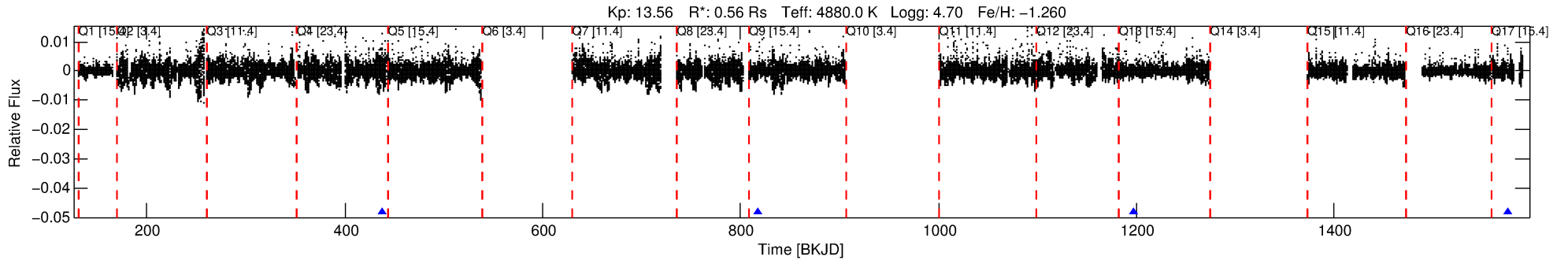
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003858086-01

No Significant Match Found

DV One-Page Summary

KIC: 3858086 Candidate: 1 of 5 Period: 379.383 d



DV Fit Results:

Period = 379.38278 [0.00510] d
Epoch = 437.8608 [0.0108] BKJD
Rp/R* = 0.0399 [0.0315]
a/R* = 414.48 [1215.66]
b = 0.23 [12.31]
Seff = 0.22 [0.03]
Teff = 175 [6] K
Rp = 2.43 [1.92] Re
a = 0.8465 [0.0457] AU
Ag = 94585.53 [151887.46] [0.62σ]
Teffp = 4735 [1904] K [2.40σ]

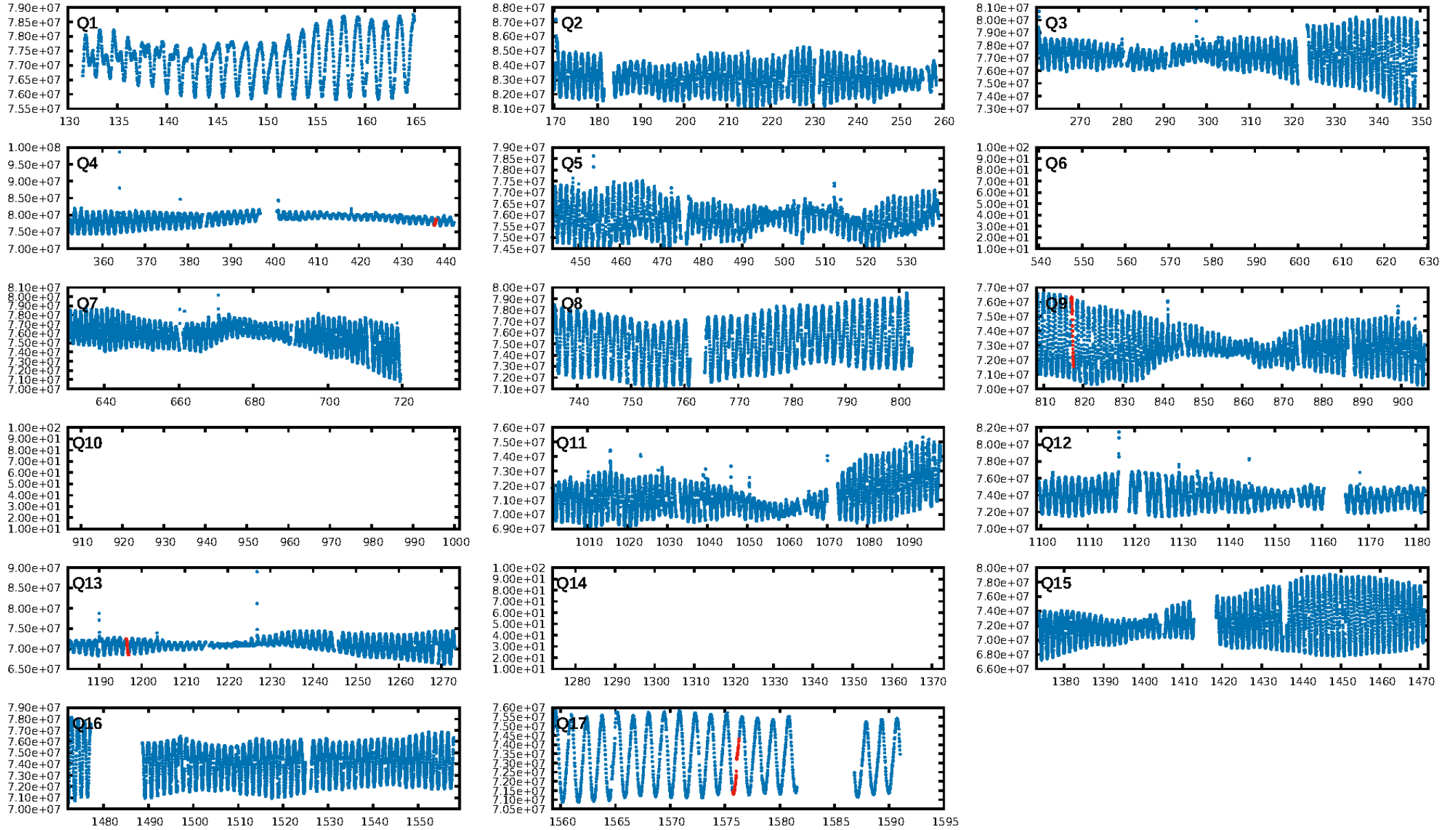
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [721.70σ]
LongPeriod-sig: 100.0% [388.92σ]
ModelChiSquare2-sig: 74.4%
ModelChiSquareGof-sig: 40.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.3023
Centroid-sig: 35.1%
Centroid-so: 0.704 arcsec [1.56σ]
OotOffset-rm: 0.067 arcsec [0.88σ]
KicOffset-rm: 0.068 arcsec [0.93σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

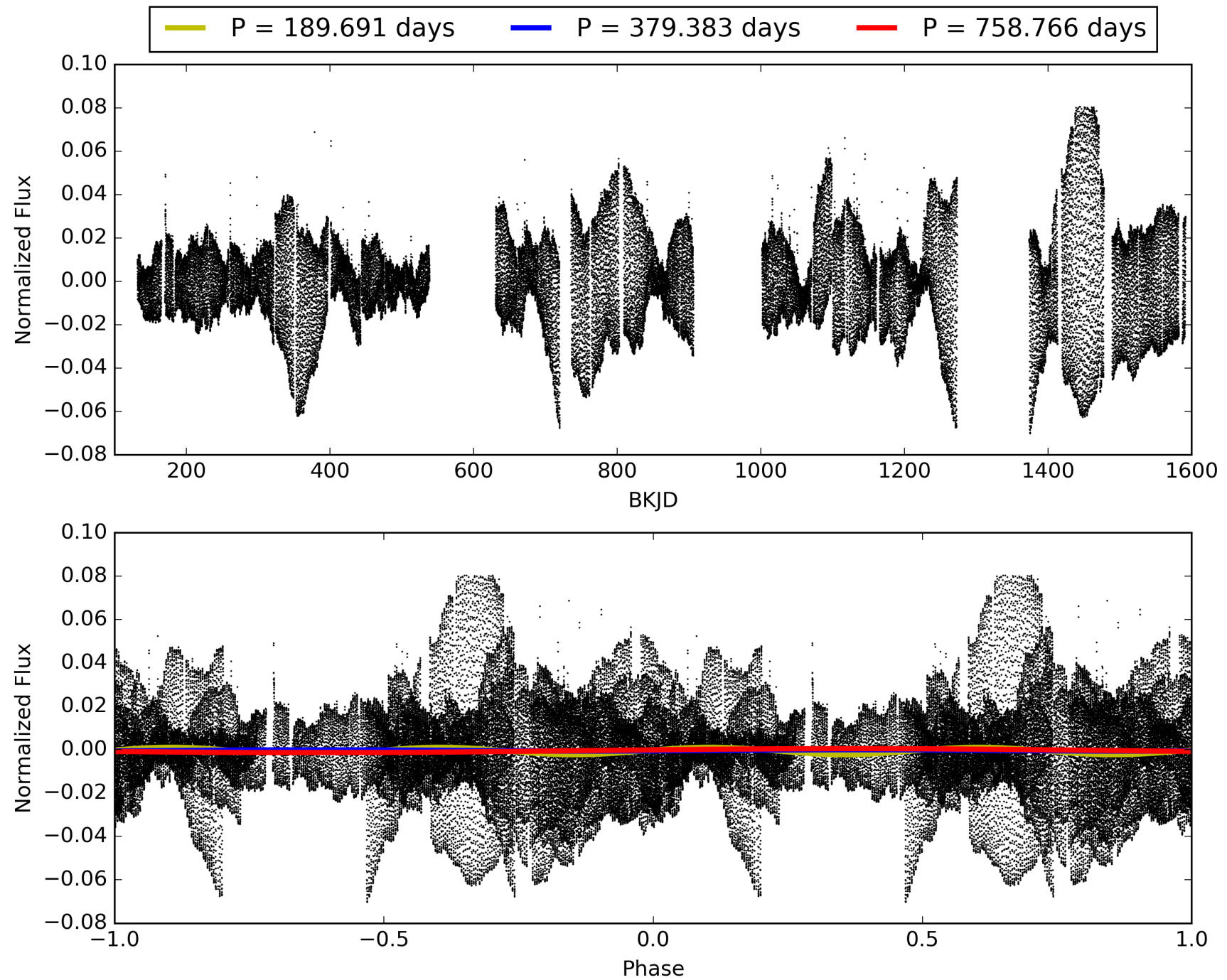
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:04:50 Z

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

TCE 003858086-01, PDC Light Curves

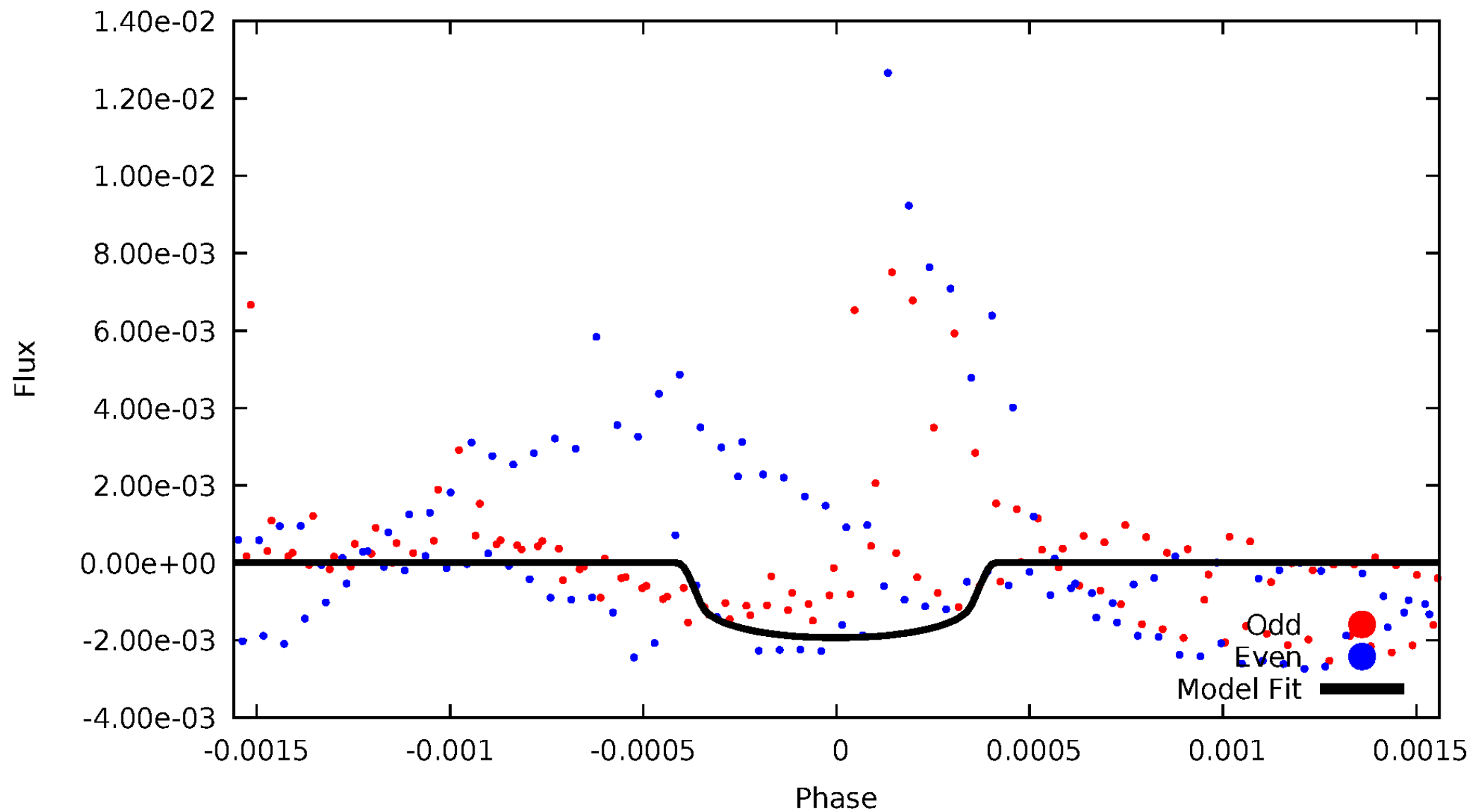


TCE 003858086-01



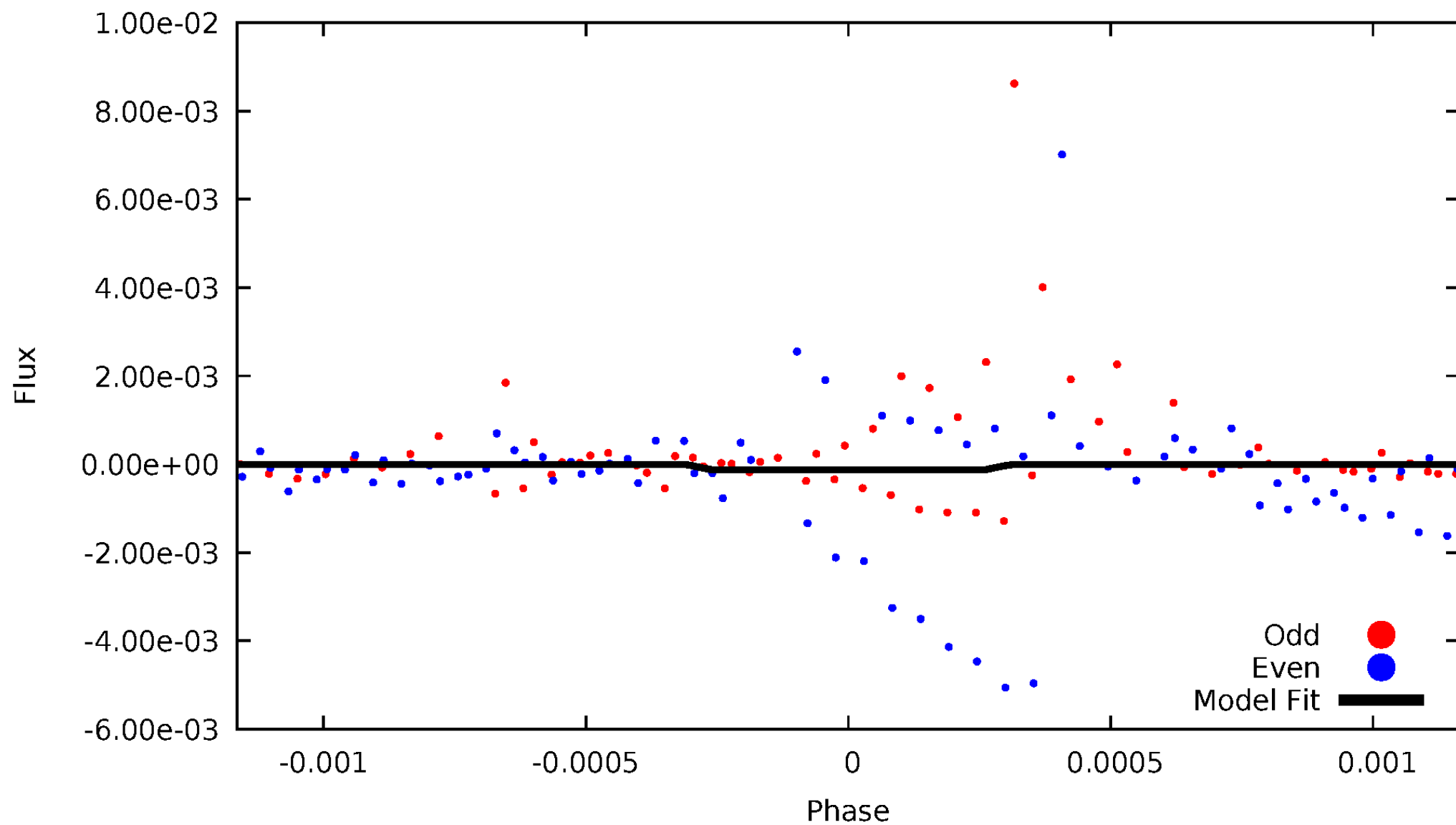
DV Odd/Even

TCE 003858086-01



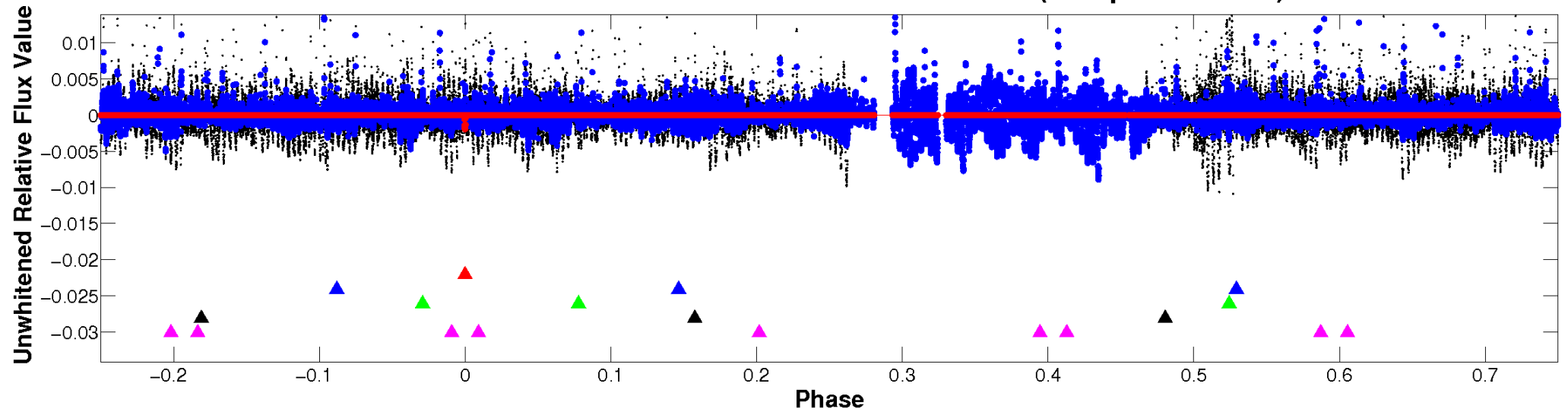
ALT Odd/Even

TCE 003858086-01

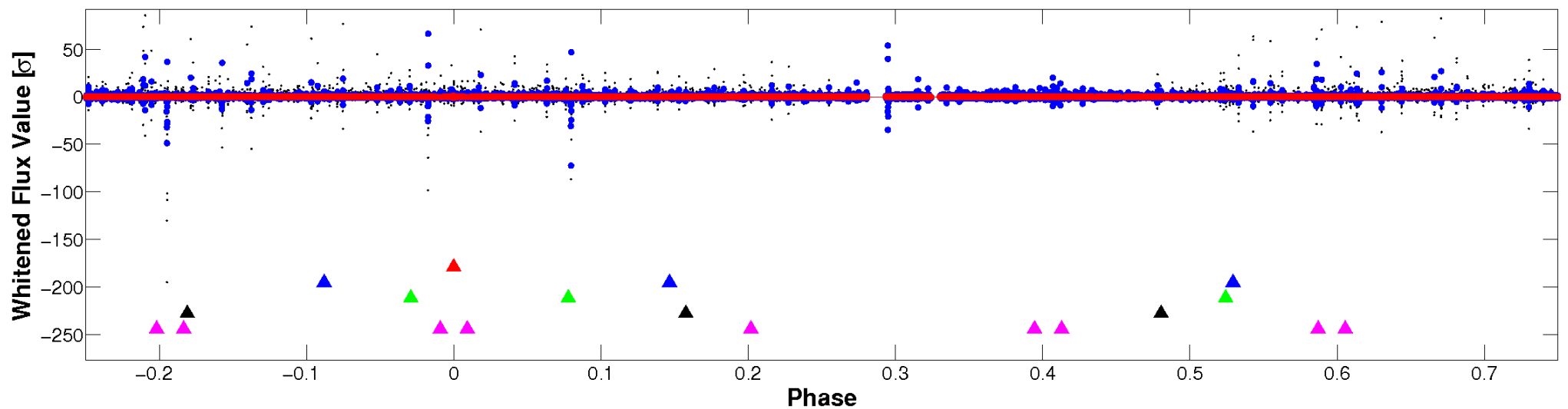


Non-Whitened Vs. Whitened Light Curve

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

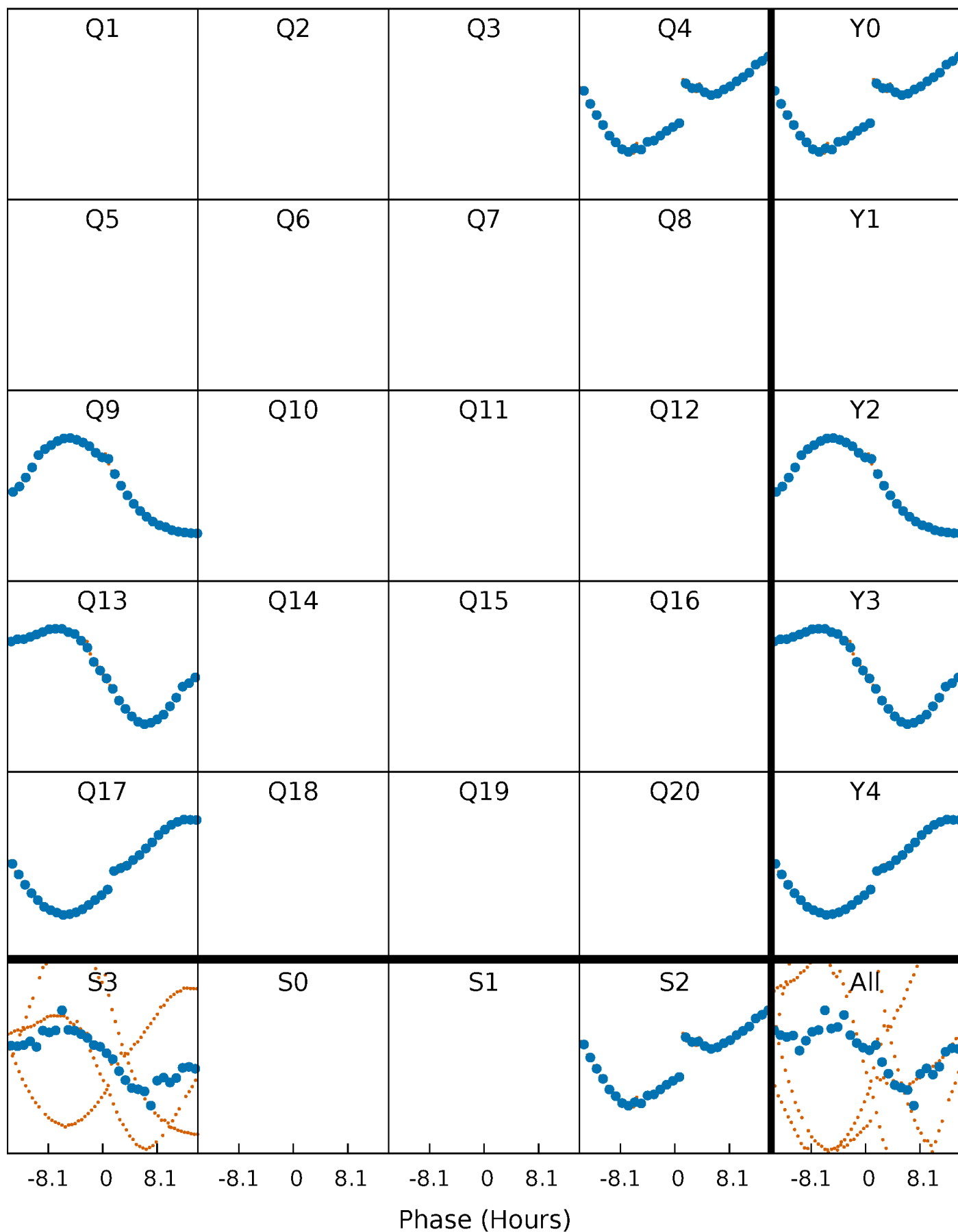


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



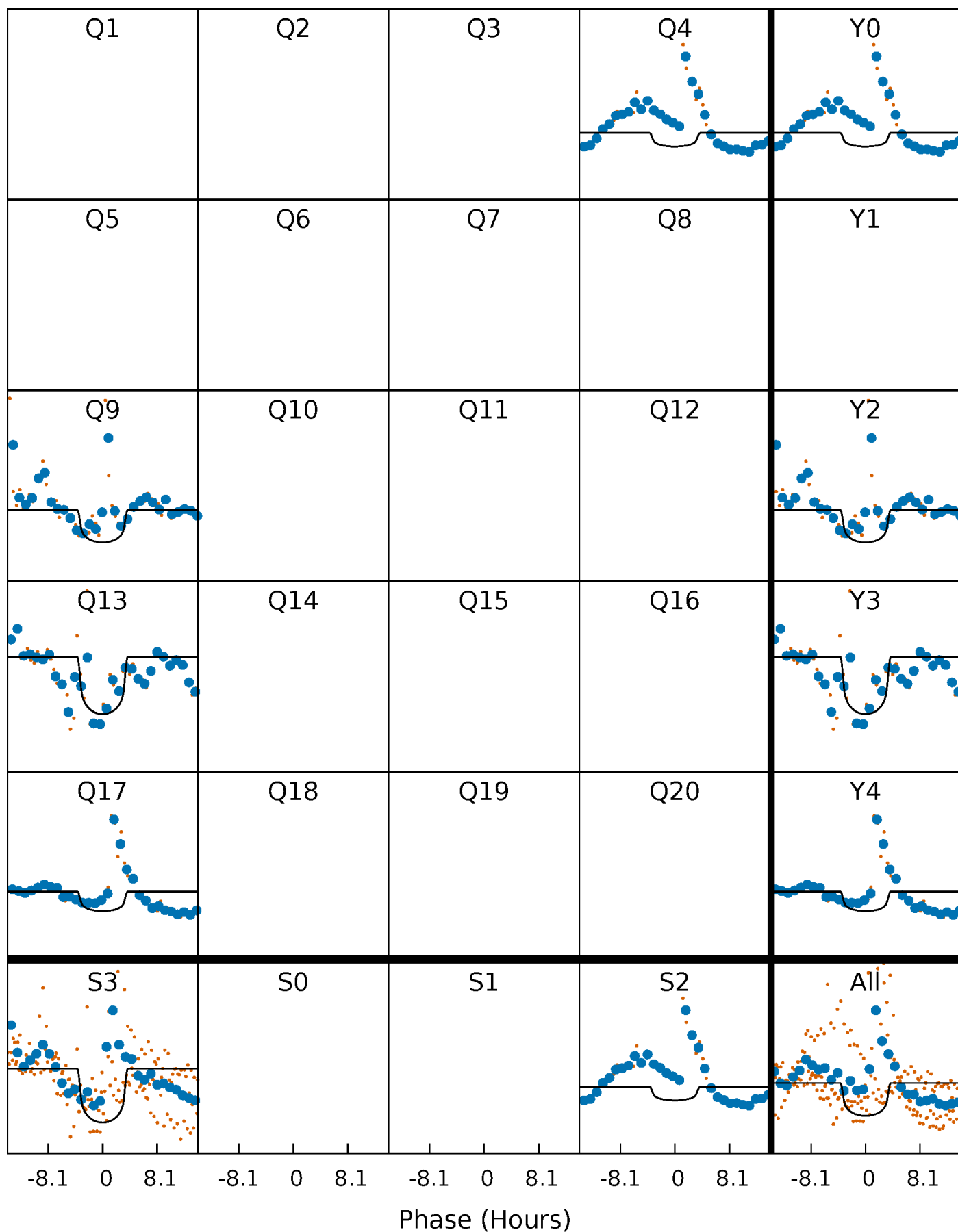
PDC Quarter-Phased Transit Curves

TCE 003858086-01 P=379.382779 Days $T_0=437.860834$ (BKJD)



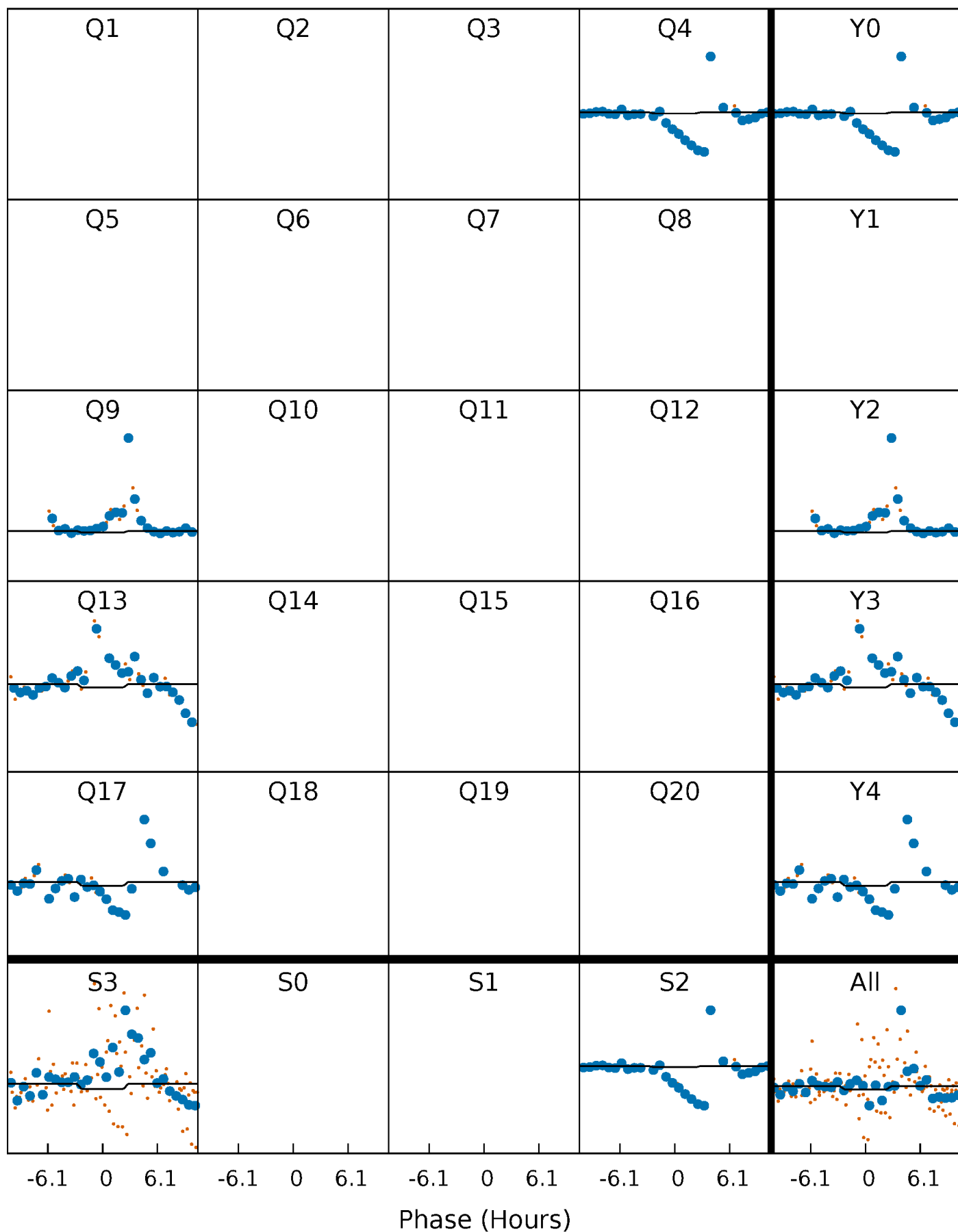
DV Quarter-Phased Transit Curves

TCE 003858086-01 P=379.382779 Days $T_0=437.860834$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

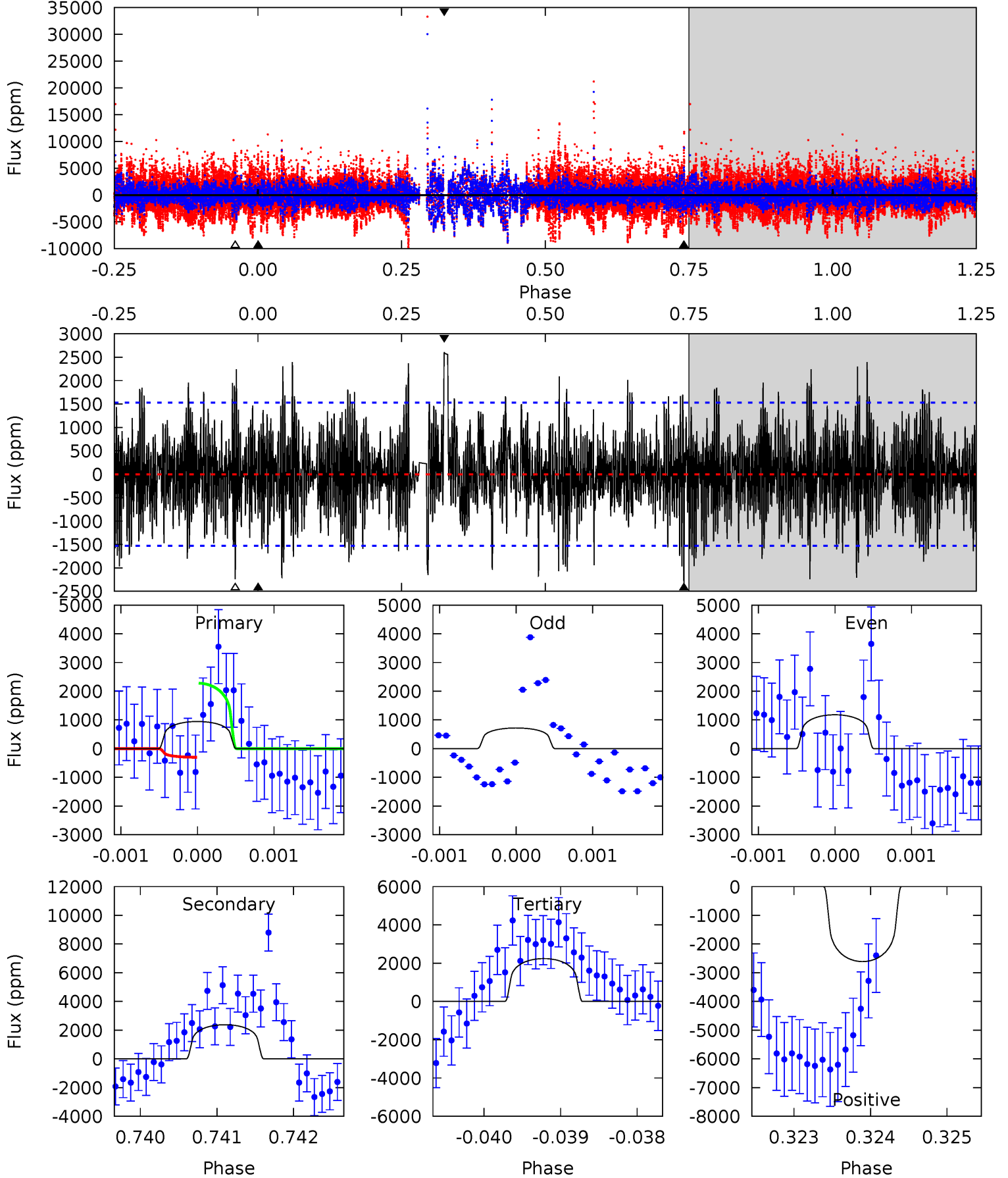
TCE 003858086-01 P=379.384440 Days $T_0=437.756942$ (BKJD)



DV Model-Shift Uniqueness Test

003858086-01, $P = 379.382779$ Days, $E = 58.478055$ Days

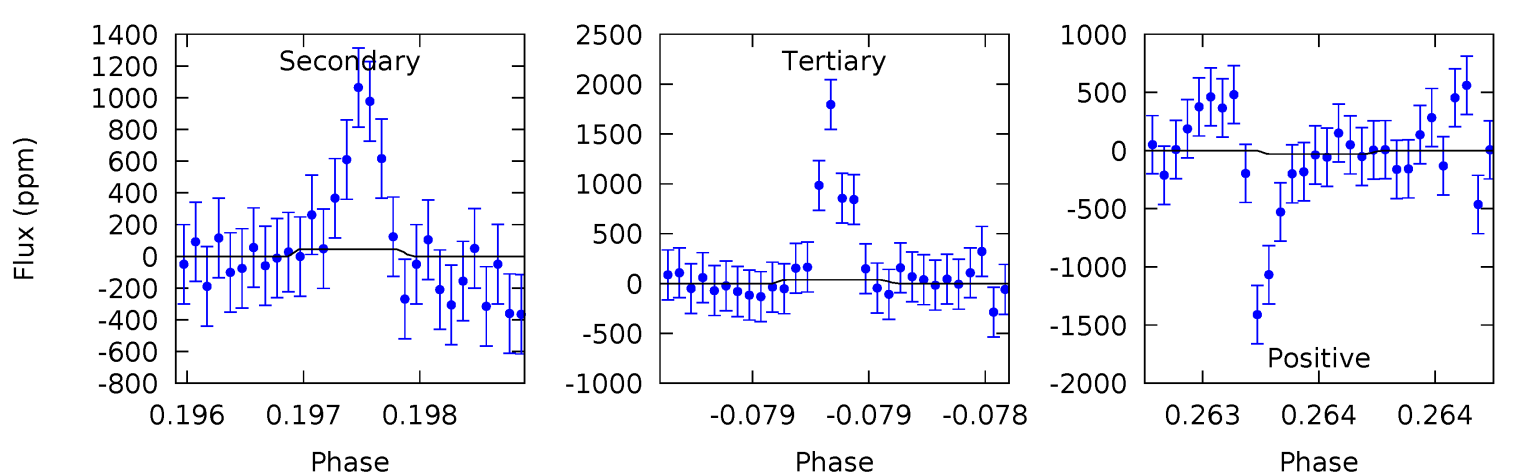
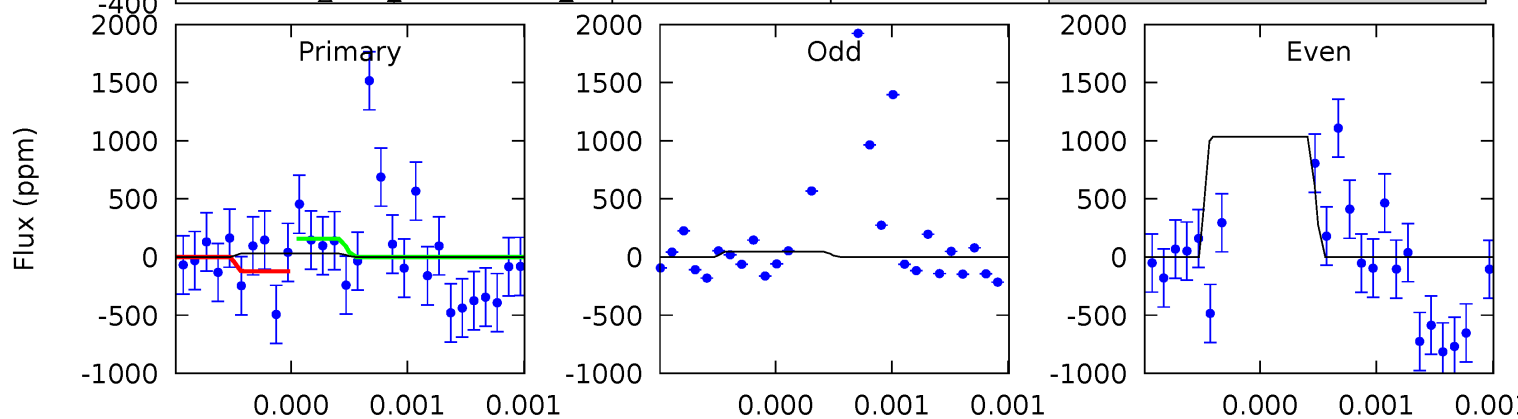
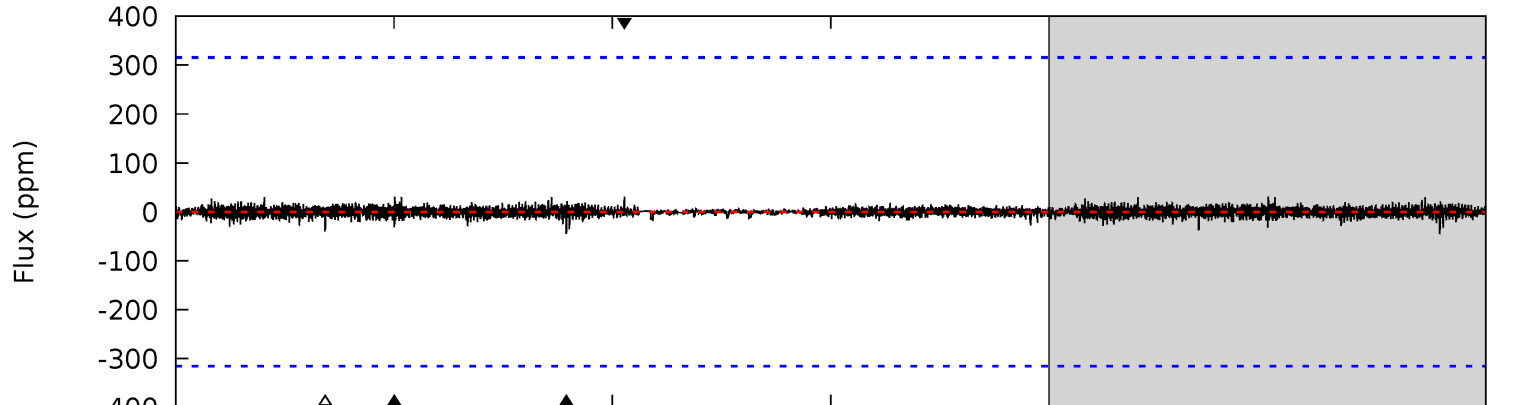
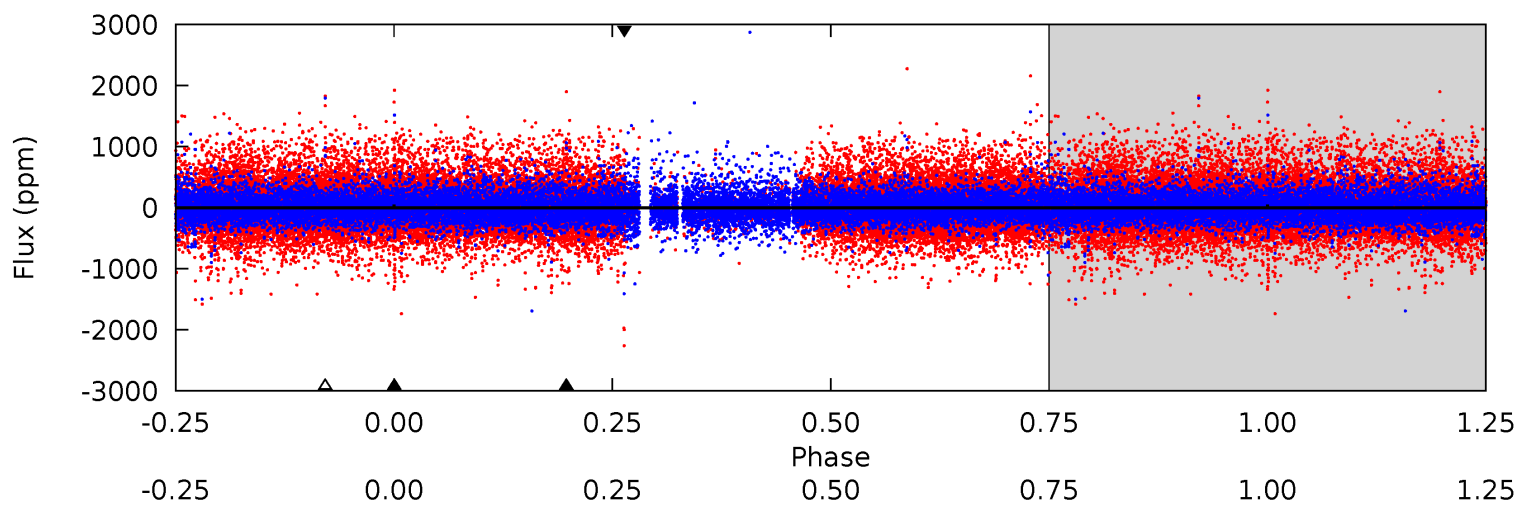
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.39	8.53	8.04	9.37	5.49	3.35	2.50	-4.66	-5.98	0.49	-0.84	0.78	1.68	0.52	3.58



Alt Model-Shift Uniqueness Test

003858086-01, P = 379.384440 Days, E = 58.372502 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.54	0.80	0.66	0.54	5.54	3.43	0.11	-0.11	0.00	0.14	0.26	8.65	-1.49	0.41	0.31



Stellar Parameters For KIC 003858086

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4880^{+147}_{-147}	$4.696^{+0.048}_{-0.028}$	$-1.260^{+0.300}_{-0.300}$	$0.557^{+0.033}_{-0.033}$	$0.562^{+0.041}_{-0.021}$	$4.576^{+0.823}_{-0.519}$
	+3%/-3%	+1%/-1%	+24%/-24%	+6%/-6%	+7%/-4%	+18%/-11%
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 003858086-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2377 ± 279	$2.64^{+1.72}_{-1.50}$	244^{+8}_{-8}	5109^{+2733}_{-945}	$134555^{+607721}_{-85023}$
Alt.	-45 ± 57	$1.63^{+1.43}_{-1.14}$	243^{+8}_{-8}	2887^{+1504}_{-5257}	4552^{+57988}_{-5559}

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

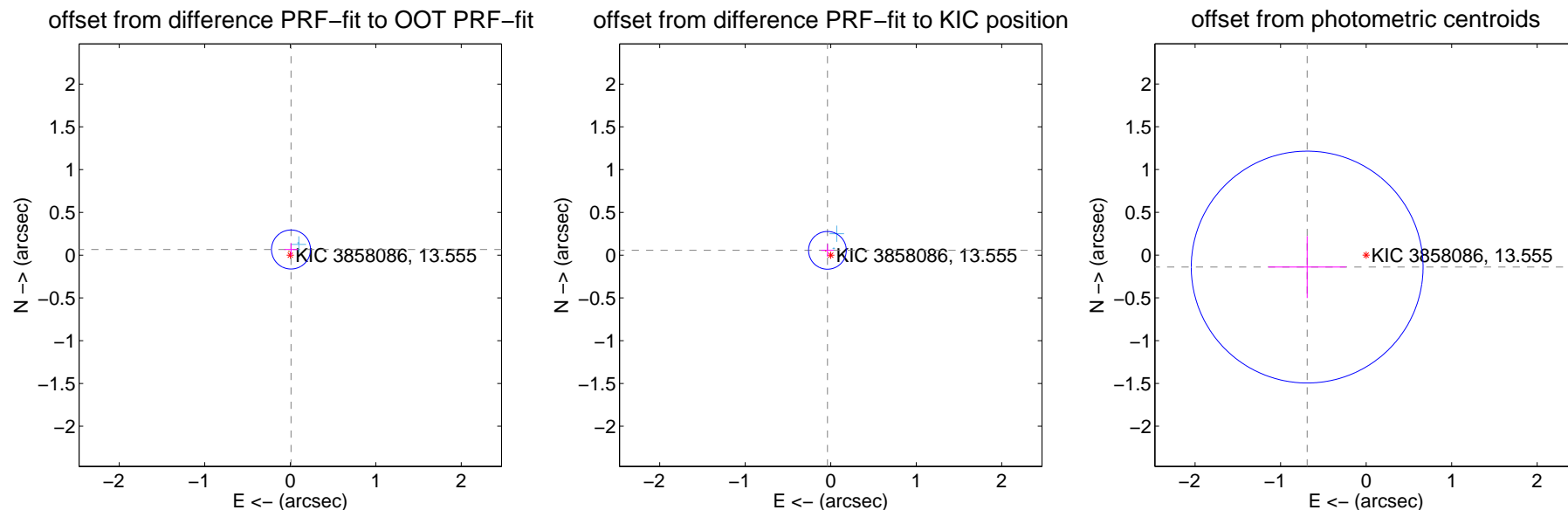
DV Centroid Data

Supplemental centroid analysis for 003858086-01. Kepler magnitude: 13.55. Transit SNR 5.75

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.067 ± 0.076	0.88	-0.009 ± 0.077	0.066 ± 0.074
PRF-fit source offset from KIC position	0.068 ± 0.074	0.93	0.038 ± 0.073	0.056 ± 0.074
photometric centroid source offset	0.70 ± 0.45	1.56	0.69 ± 0.46	-0.14 ± 0.36



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



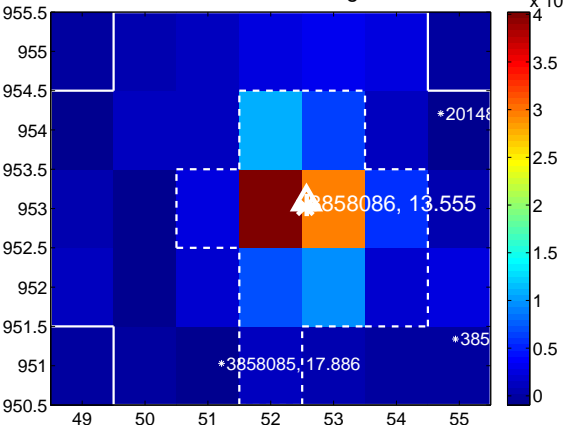
Q3 no difference image



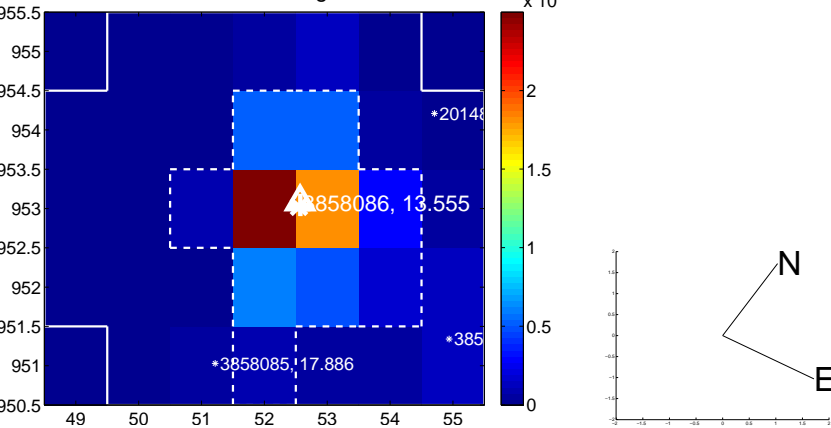
Q3 no OOT image



Q4 difference image



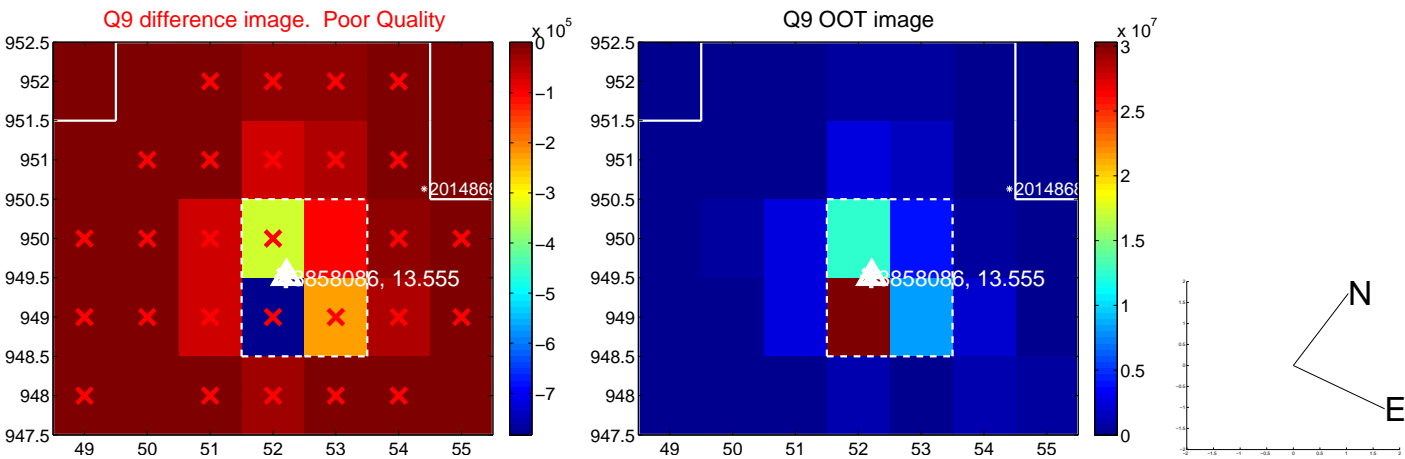
Q4 OOT image



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



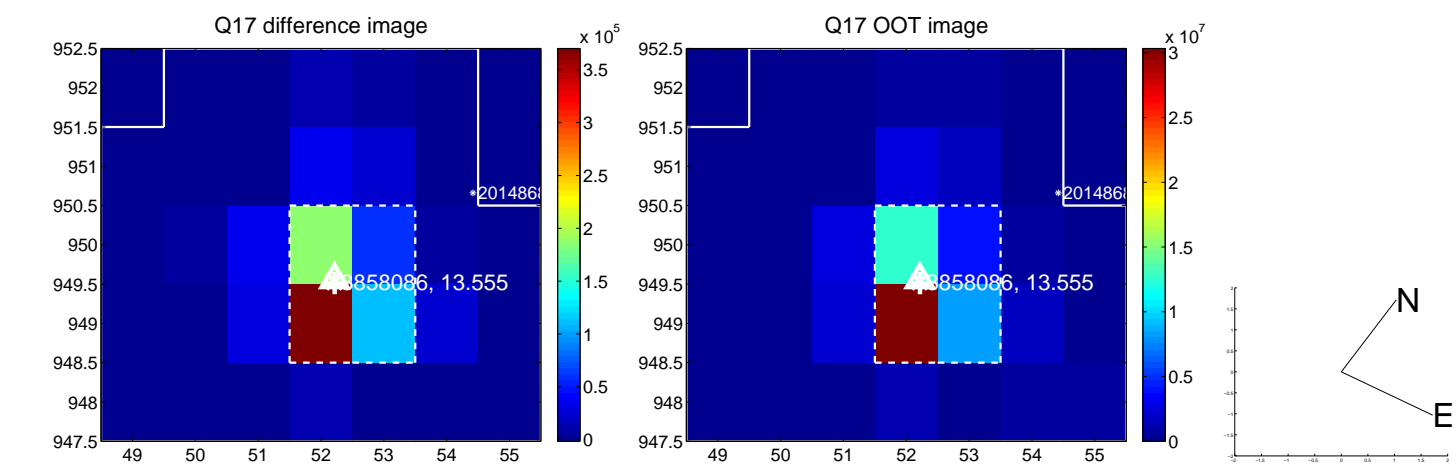
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



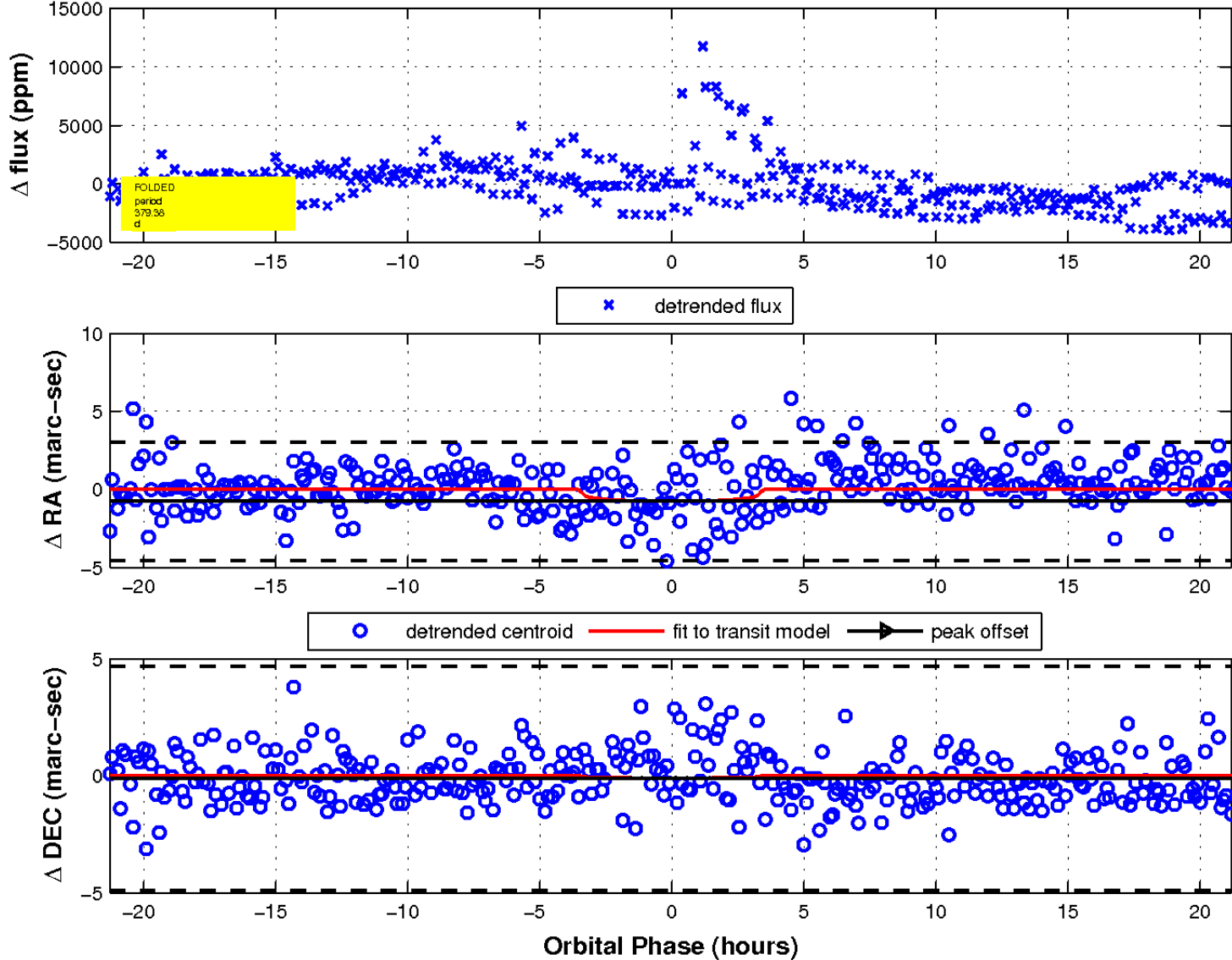
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

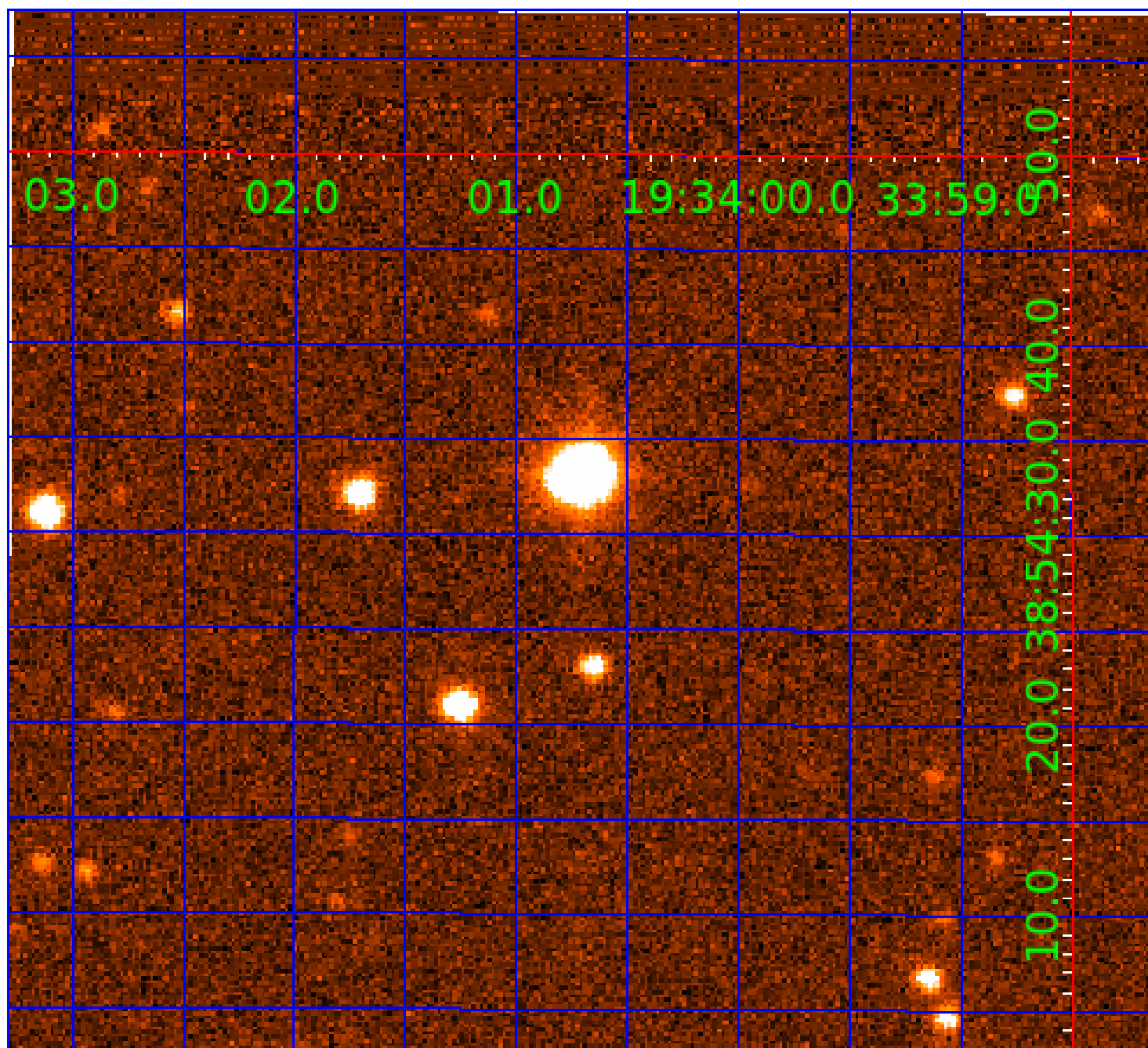


fluxWeightedCentroids, Planet 1 of 5



UKIRT Image

Declination



KIC 003858086

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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003858086-04	OBS	No	507.837945	240.751426	2781.2	3.533	13.8	7.7	0.56	4880	2.89	0.15
003858086-05	OBS	No	153.146668	281.240196	782.8	2.500	11.7	-1.0	0.56	4880	1.54	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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003858086-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003858086-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003858086-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003858086-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—CENT_NOFITS

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

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

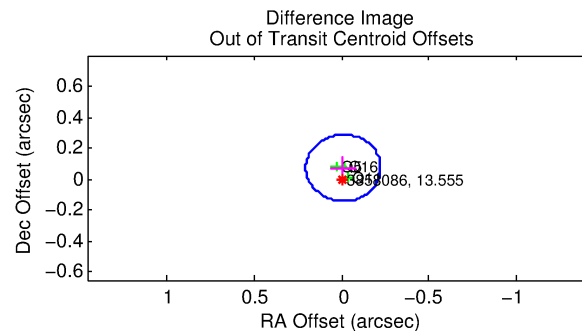
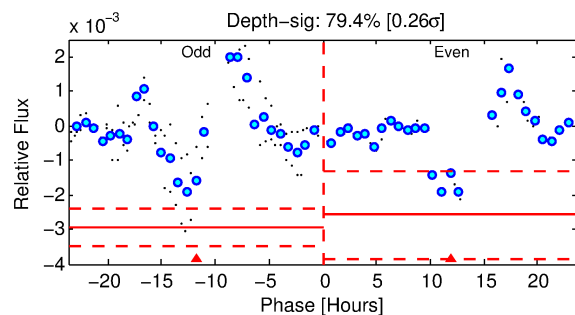
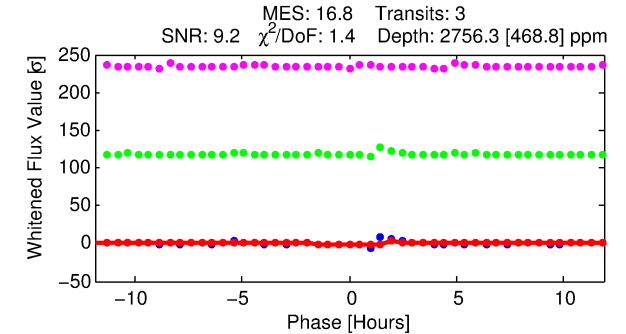
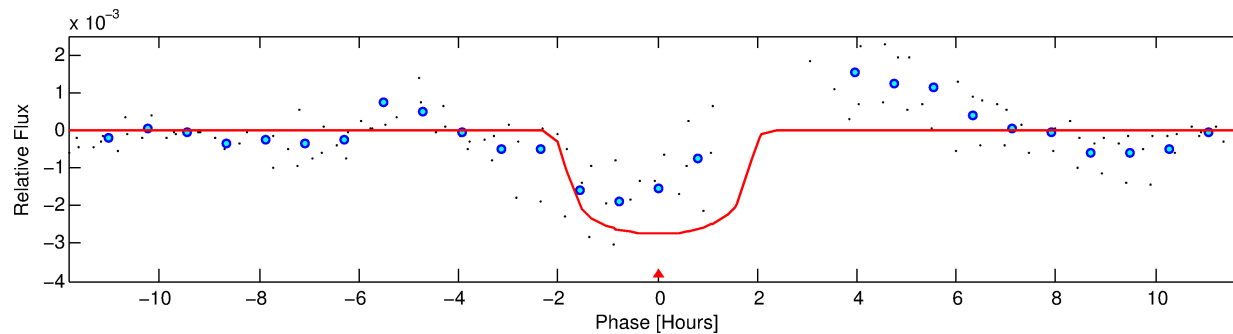
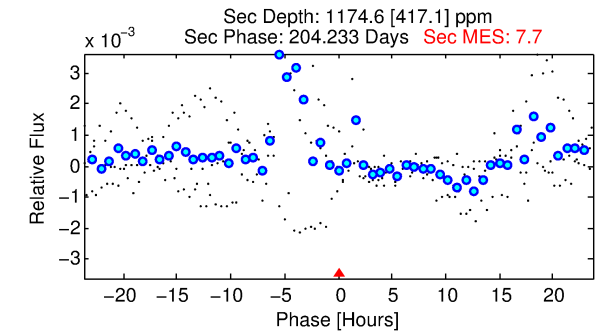
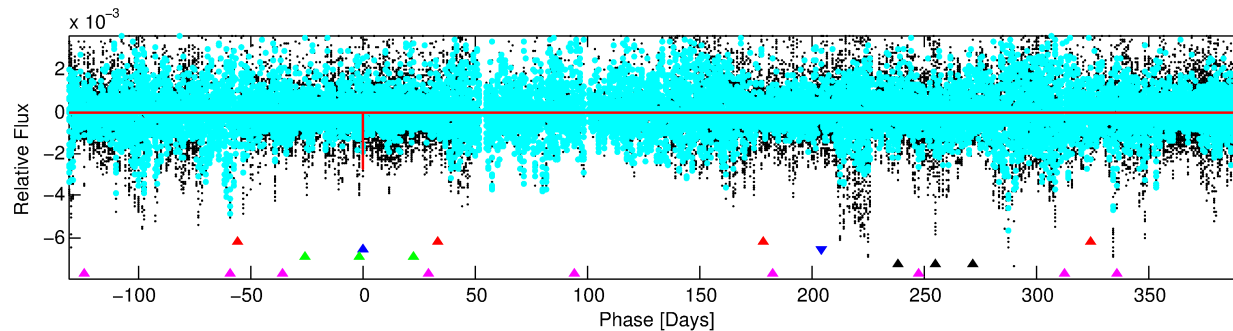
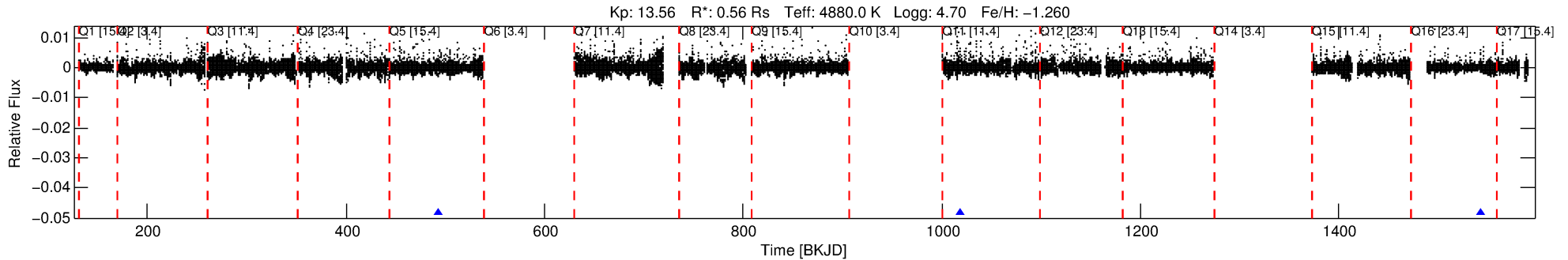
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003858086-02

No Significant Match Found

DV One-Page Summary

KIC: 3858086 Candidate: 2 of 5 Period: 524.579 d



DV Fit Results:

Period = 524.57940 [0.00334] d
Epoch = 493.4685 [0.0052] BKJD
Rp/R* = 0.0474 [0.0351]
a/R* = 1063.31 [3112.13]
b = 0.00 [8446.43]
Seff = 0.14 [0.02]
Teq = 157 [6] K
Rp = 2.88 [2.14] Re
a = 1.0507 [0.0568] AU
Ag = 86125.78 [131515.32] [0.65σ]
Teffp = 4152 [1588] K [2.52σ]

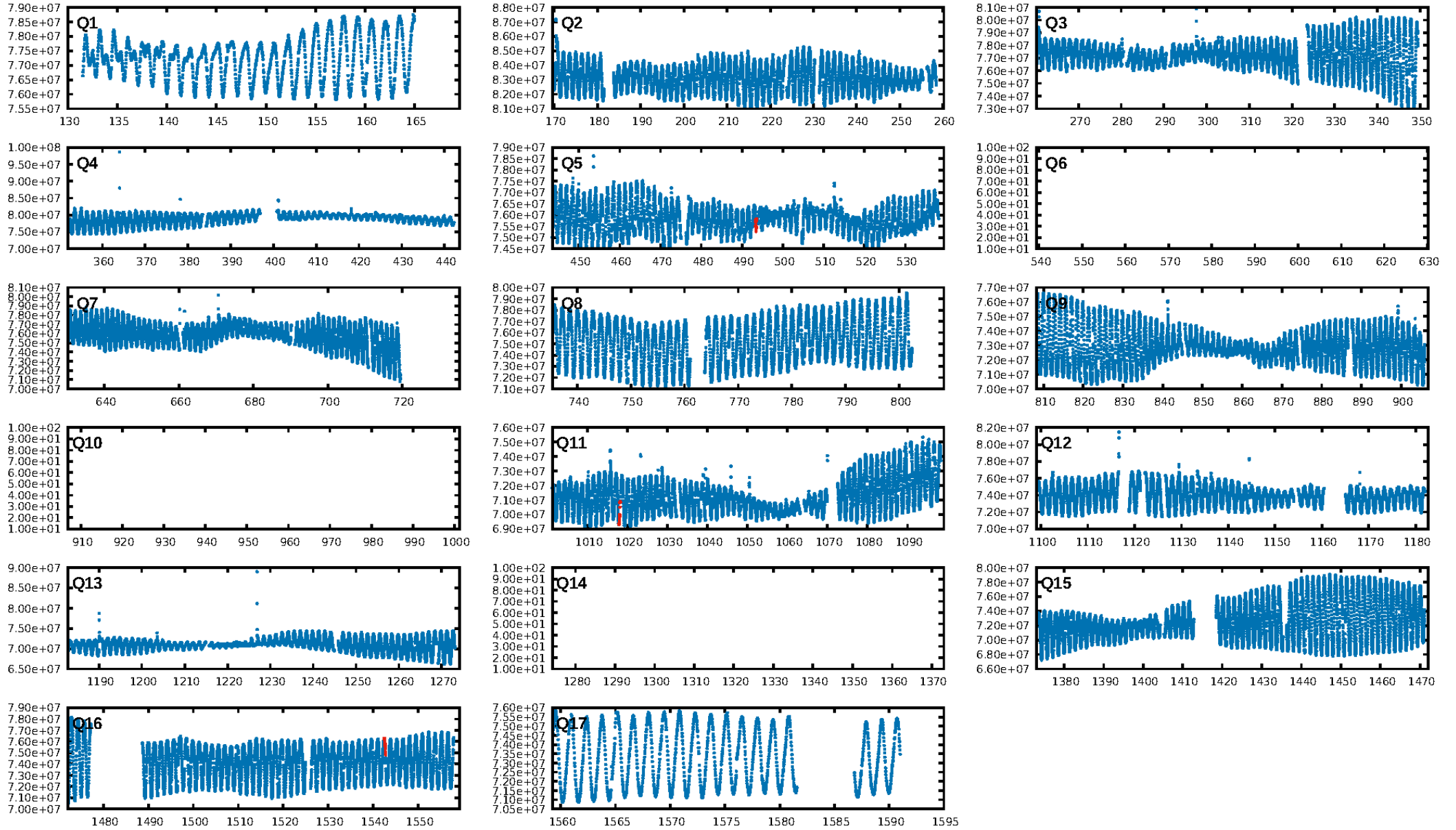
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [75.84σ]
LongPeriod-sig: 100.0% [98.65σ]
ModelChiSquare2-sig: 20.2%
ModelChiSquareGof-sig: 76.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.5735
Centroid-sig: 94.3%
Centroid-so: 0.377 arcsec [0.84σ]
OotOffset-rm: 0.074 arcsec [1.04σ]
KicOffset-rm: 0.217 arcsec [2.01σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

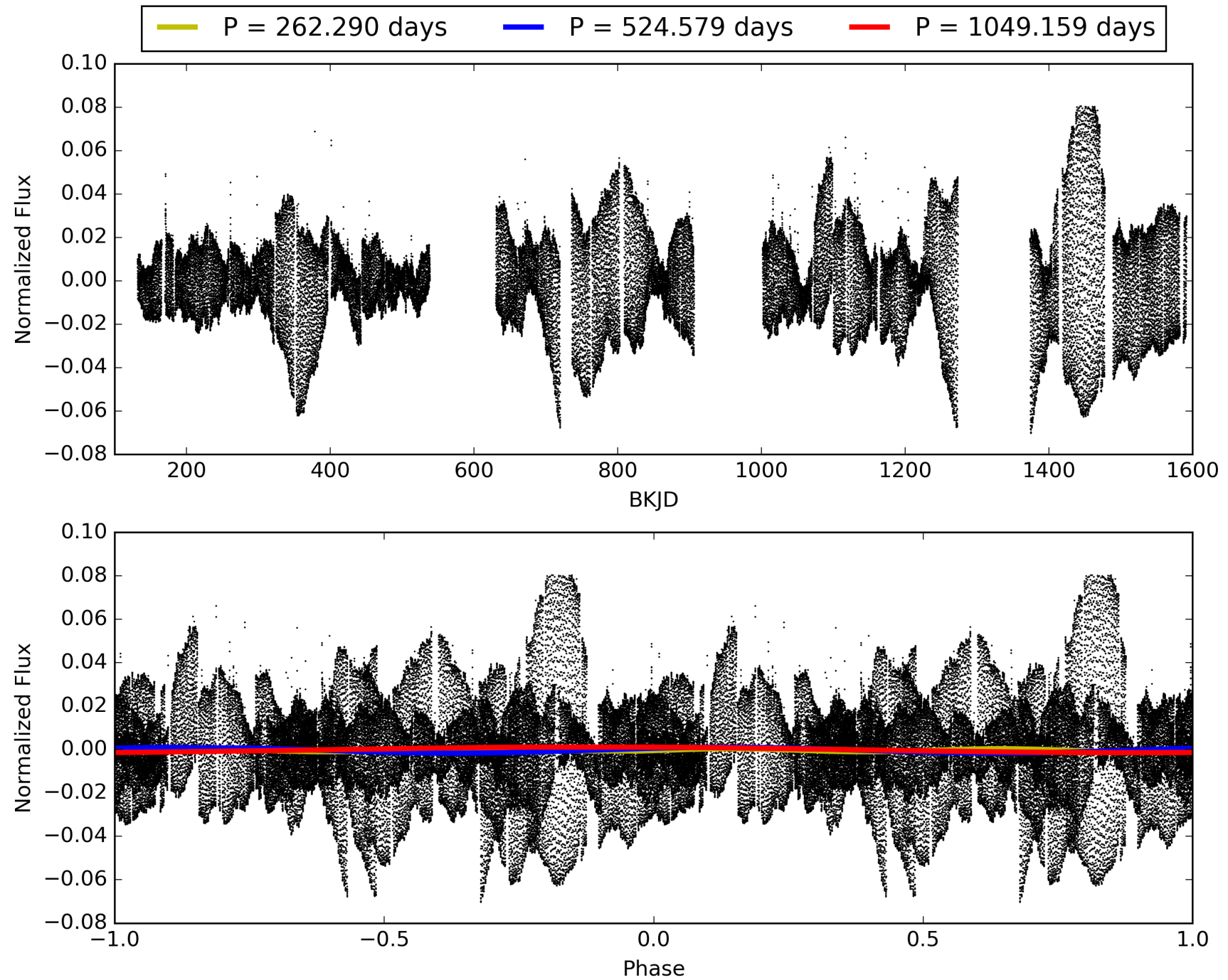
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:05:05 Z

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

TCE 003858086-02, PDC Light Curves

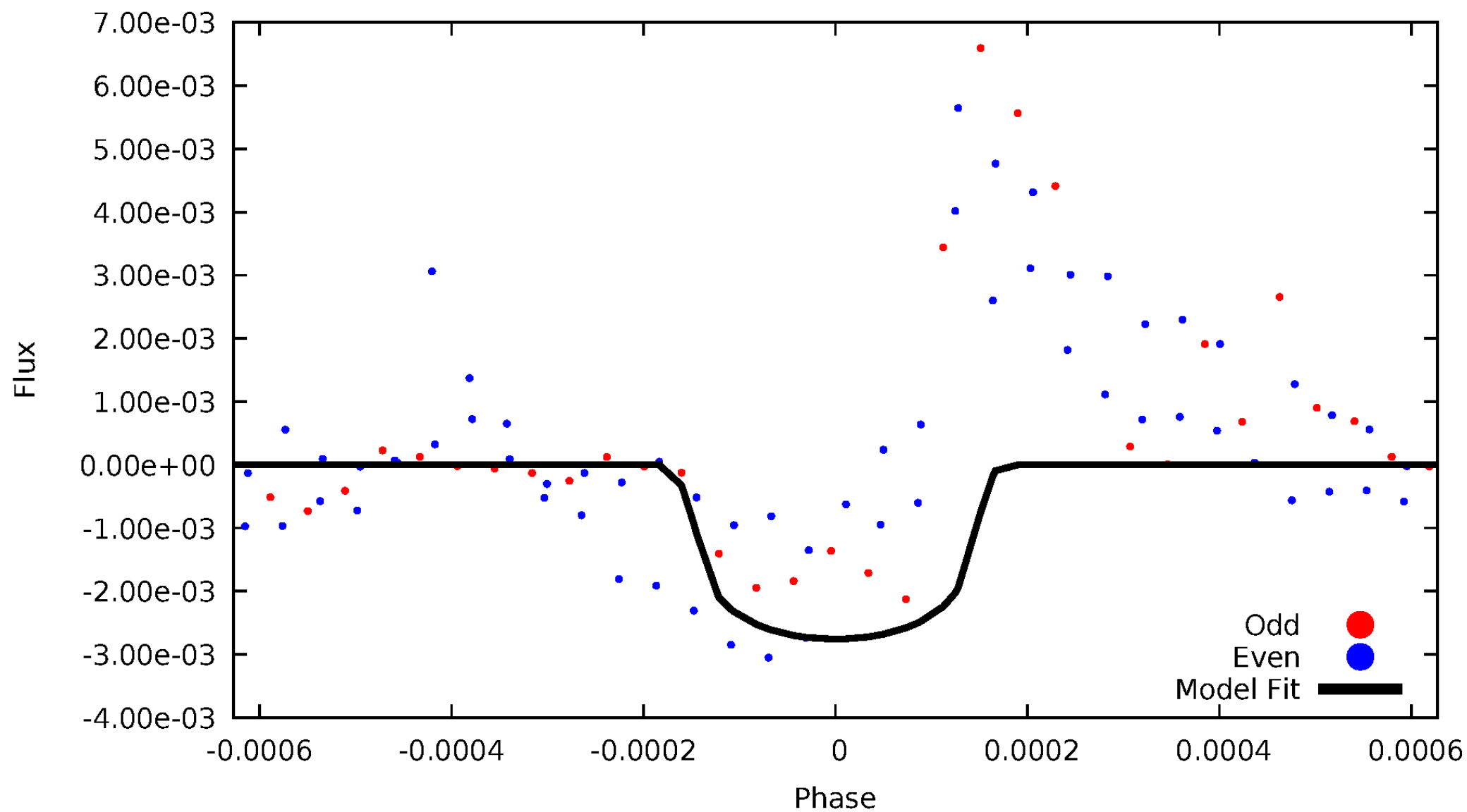


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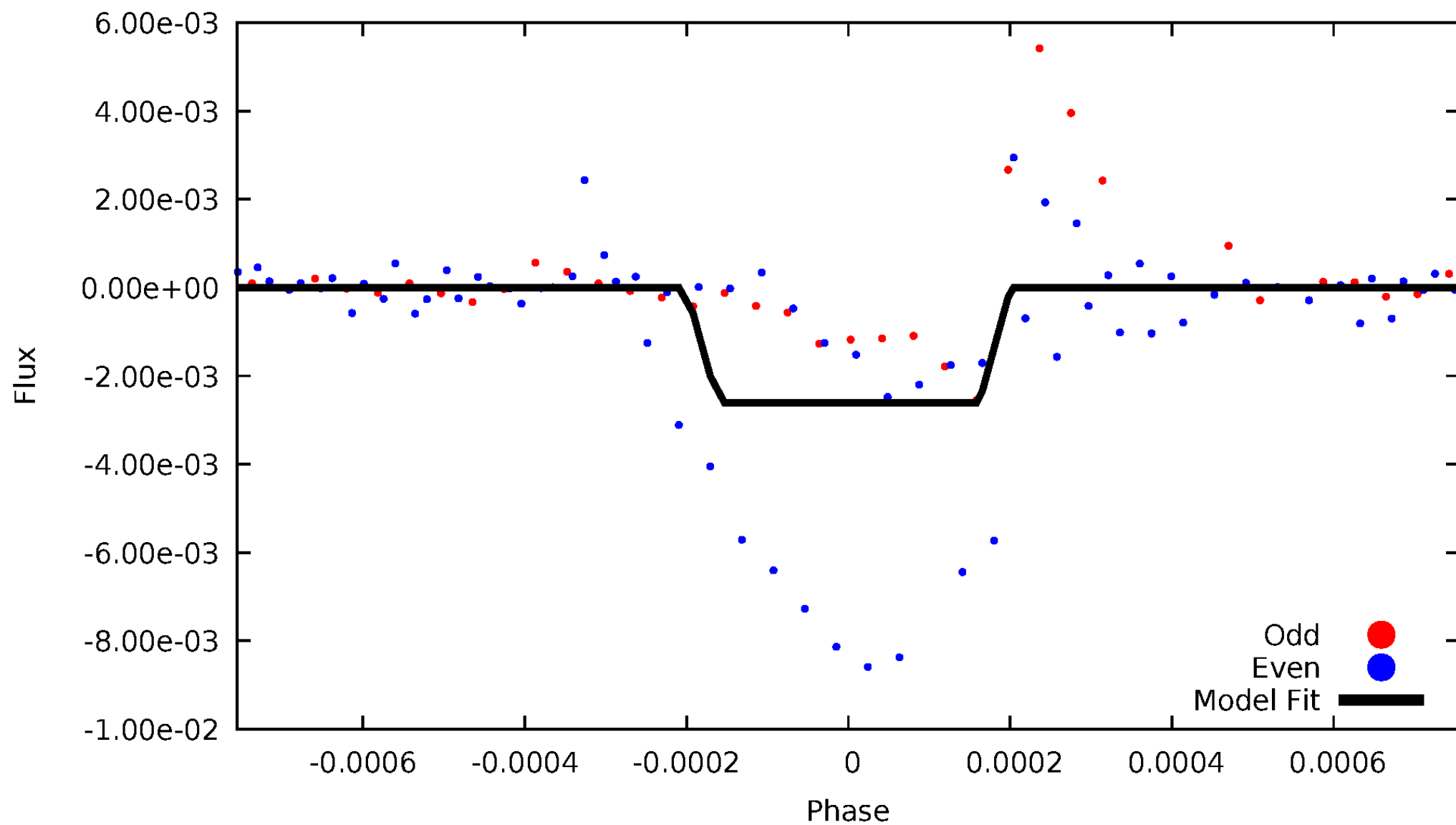
DV Odd/Even

TCE 003858086-02



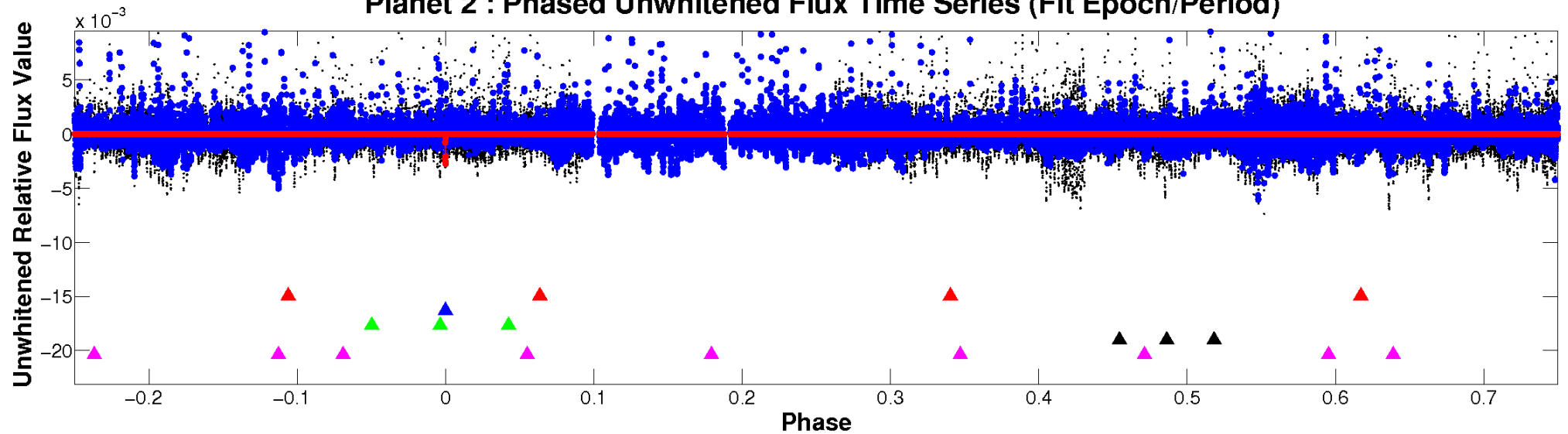
ALT Odd/Even

TCE 003858086-02

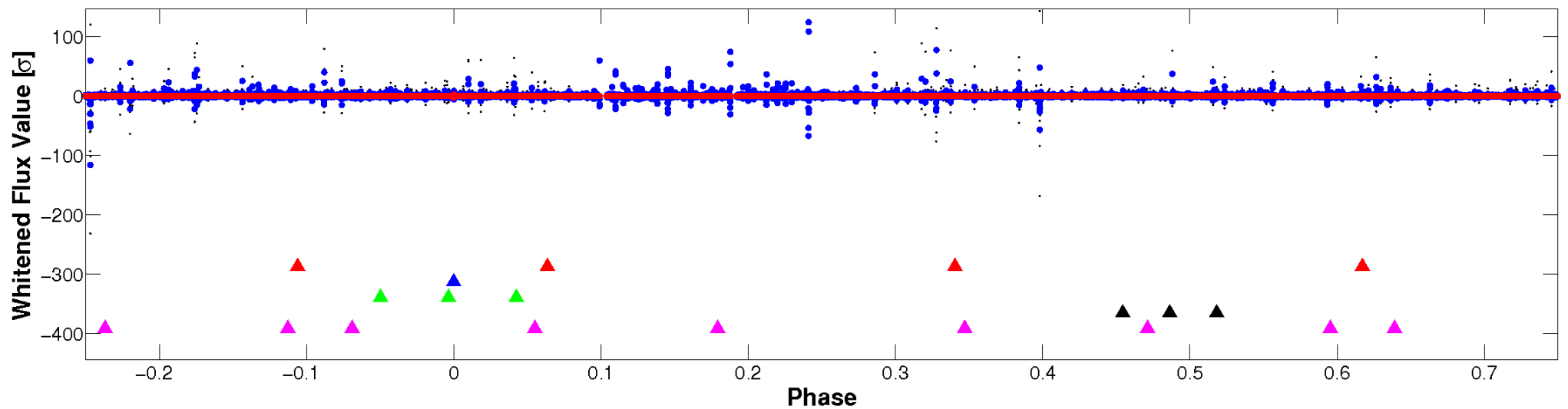


Non-Whitened Vs. Whitened Light Curve

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

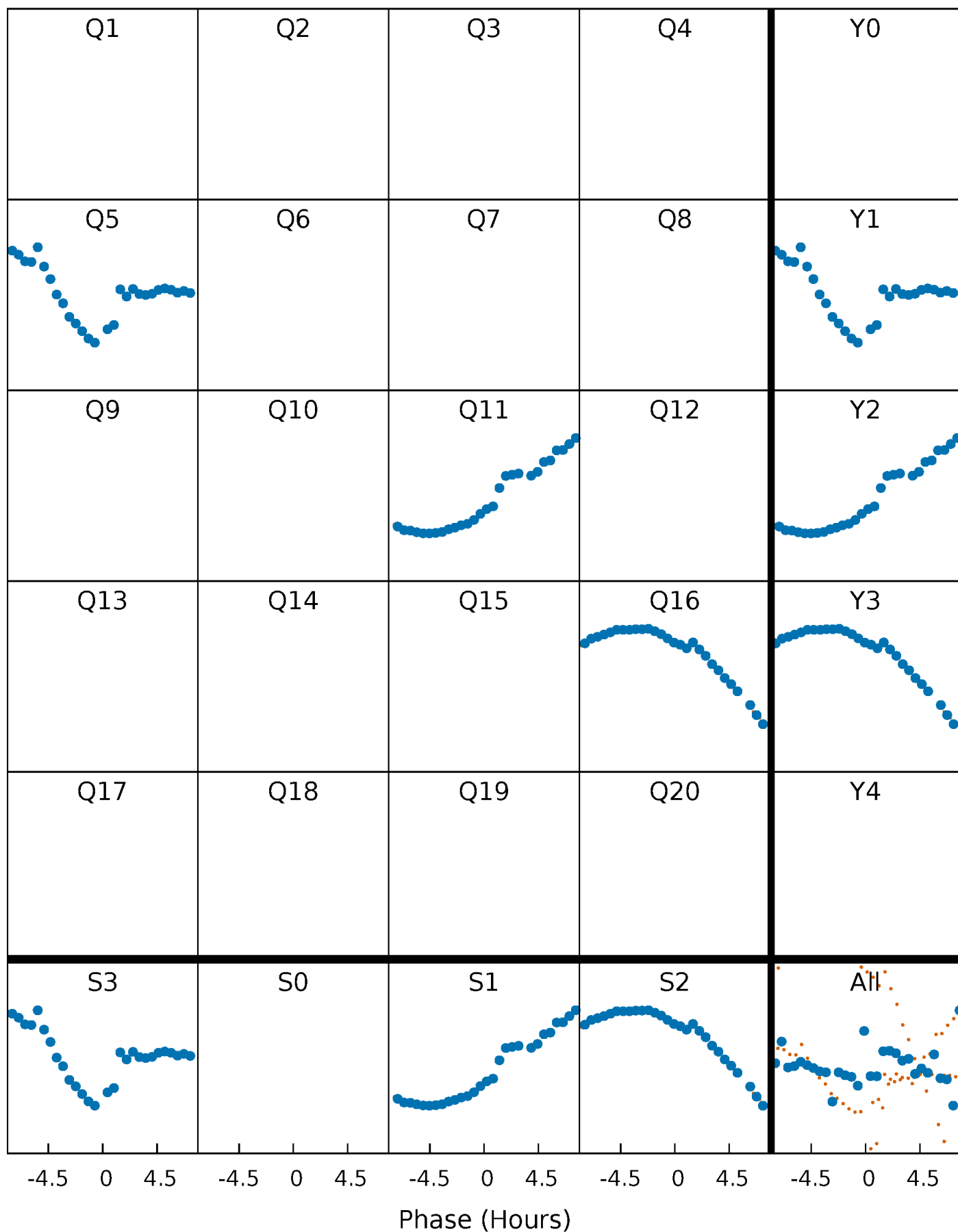


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



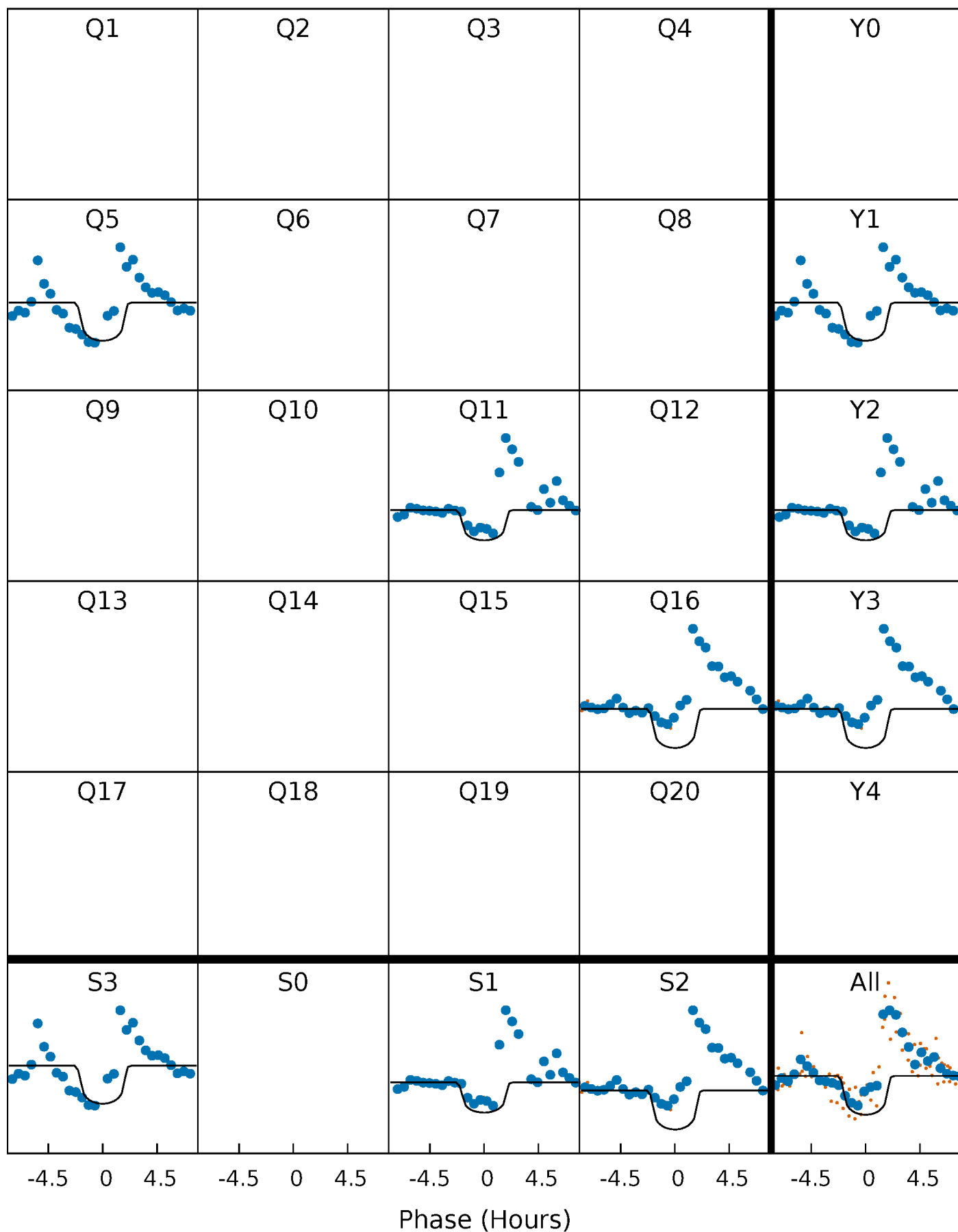
PDC Quarter-Phased Transit Curves

TCE 003858086-02 P=524.579395 Days $T_0=493.468491$ (BKJD)



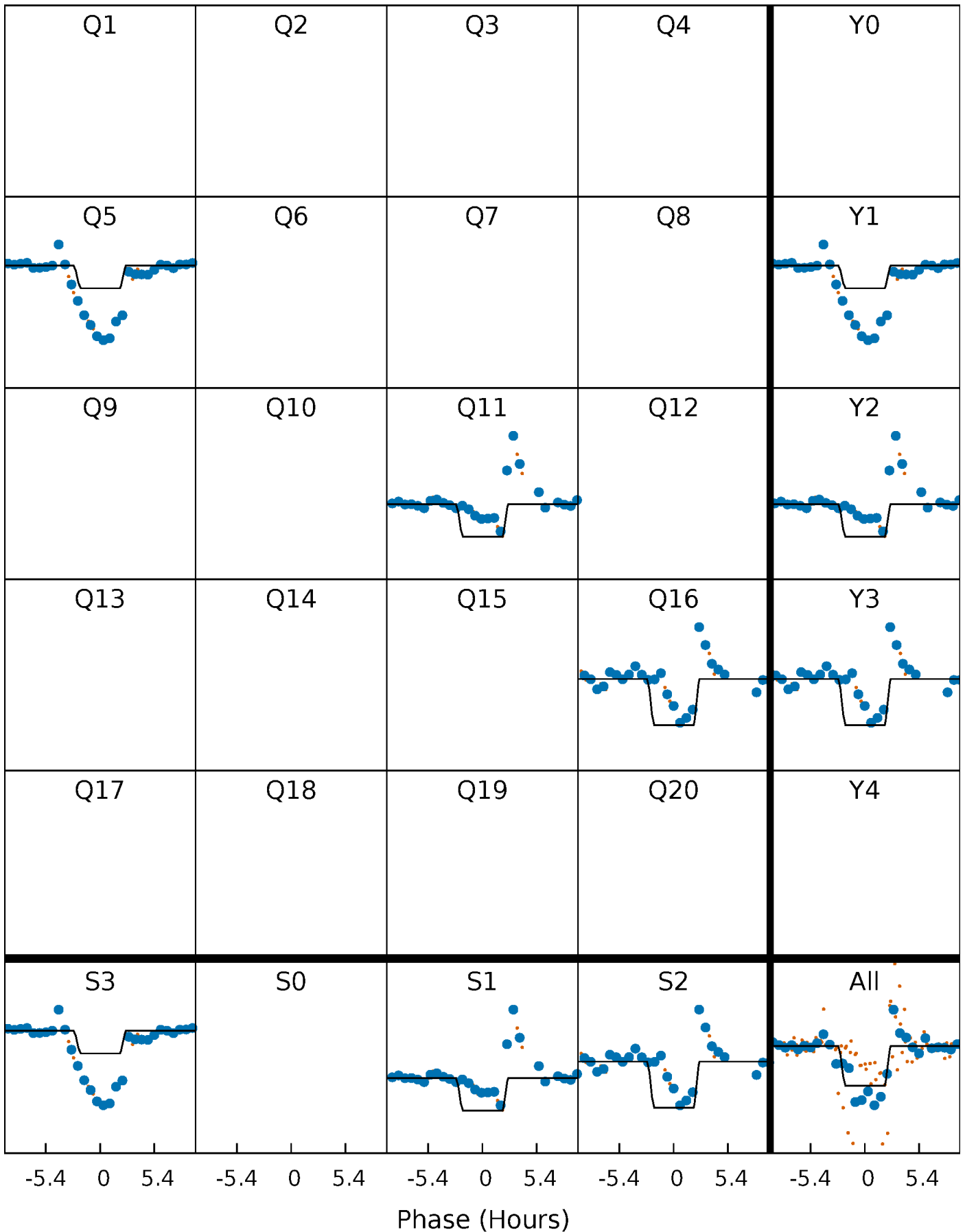
DV Quarter-Phased Transit Curves

TCE 003858086-02 $P=524.579395$ Days $T_0=493.468491$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

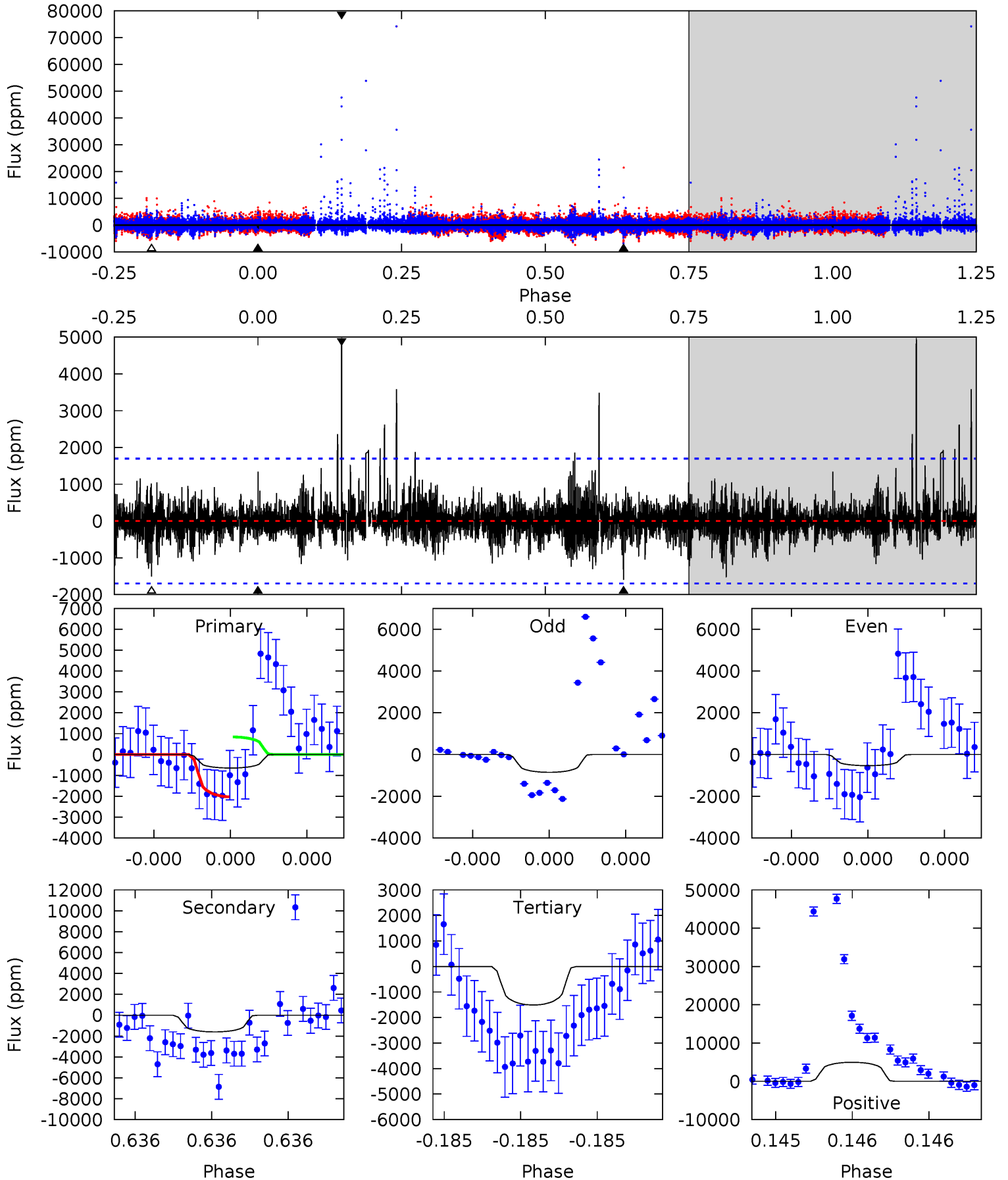
TCE 003858086-02 P=524.583975 Days $T_0=493.419192$ (BKJD)



DV Model-Shift Uniqueness Test

003858086-02, P = 524.579395 Days, E = 493.468491 Days

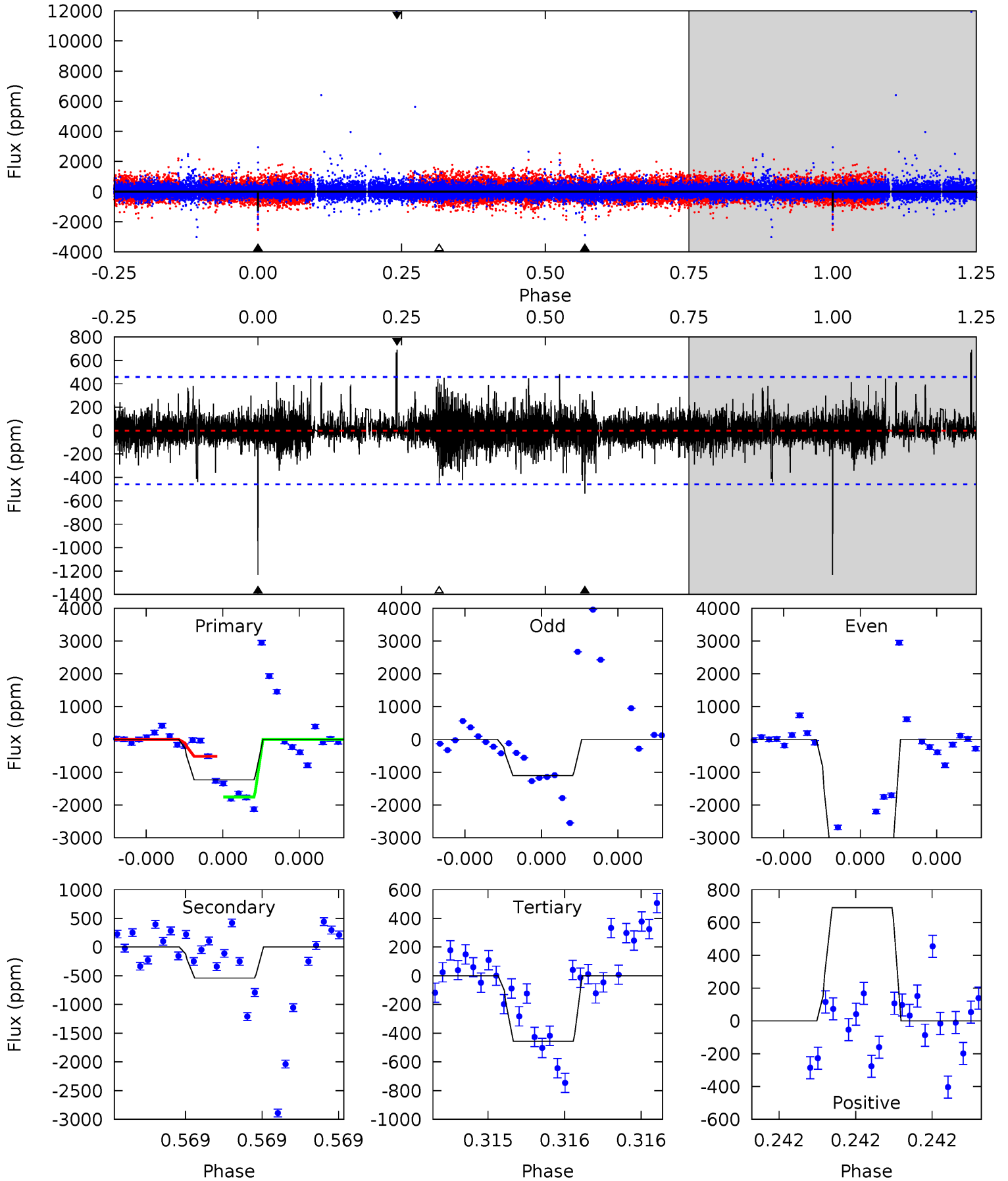
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.15	5.31	5.03	16.6	5.64	3.58	1.24	-2.87	-14.4	0.29	-11.2	0.42	0.81	0.76	2.03



Alt Model-Shift Uniqueness Test

003858086-02, P = 524.583975 Days, E = 493.419192 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	6.61	5.60	8.46	5.62	3.55	1.09	9.50	6.63	1.01	-1.85	16.4	2.63	0.36	0



Stellar Parameters For KIC 003858086

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4880^{+147}_{-147}	$4.696^{+0.048}_{-0.028}$	$-1.260^{+0.300}_{-0.300}$	$0.557^{+0.033}_{-0.033}$	$0.562^{+0.041}_{-0.021}$	$4.576^{+0.823}_{-0.519}$
	+3%/-3%	+1%/-1%	+24%/-24%	+6%/-6%	+7%/-4%	+18%/-11%
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 003858086-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1598 ± 301	$2.99^{+2.04}_{-1.78}$	219^{+7}_{-8}	4471^{+2281}_{-793}	$110239^{+529426}_{-73625}$
Alt.	-539 ± 82	$3.22^{+2.15}_{-1.76}$	218^{+7}_{-7}	3607^{+1213}_{-540}	$31349^{+127557}_{-20101}$

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

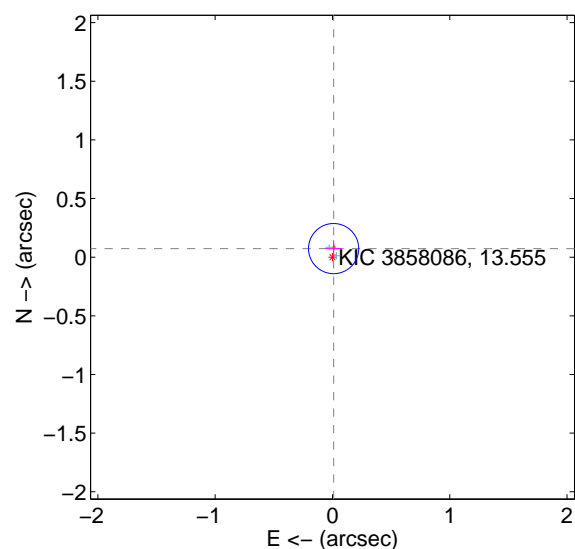
Supplemental centroid analysis for 003858086-02. Kepler magnitude: 13.55. Transit SNR 9.16

There are 2 quarters with good PRF difference image offsets

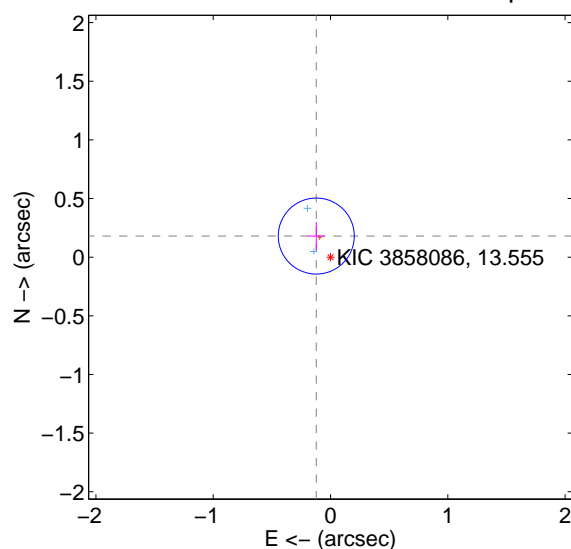
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.074 ± 0.071	1.04	-0.010 ± 0.069	0.073 ± 0.071
PRF-fit source offset from KIC position	0.217 ± 0.108	2.01	0.121 ± 0.074	0.180 ± 0.120
photometric centroid source offset	0.38 ± 0.45	0.84	0.35 ± 0.45	-0.14 ± 0.45

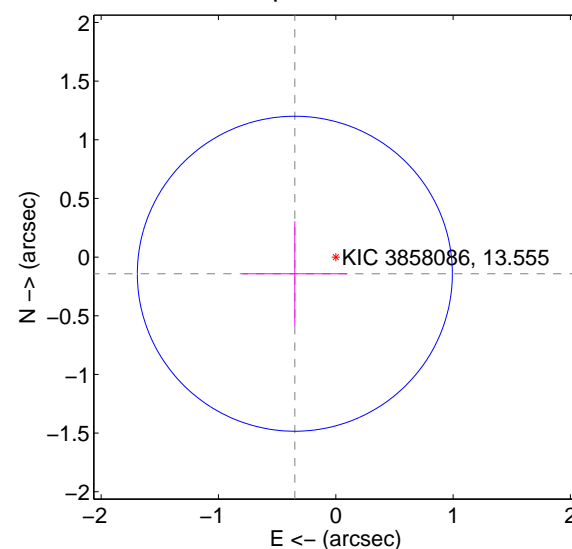
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

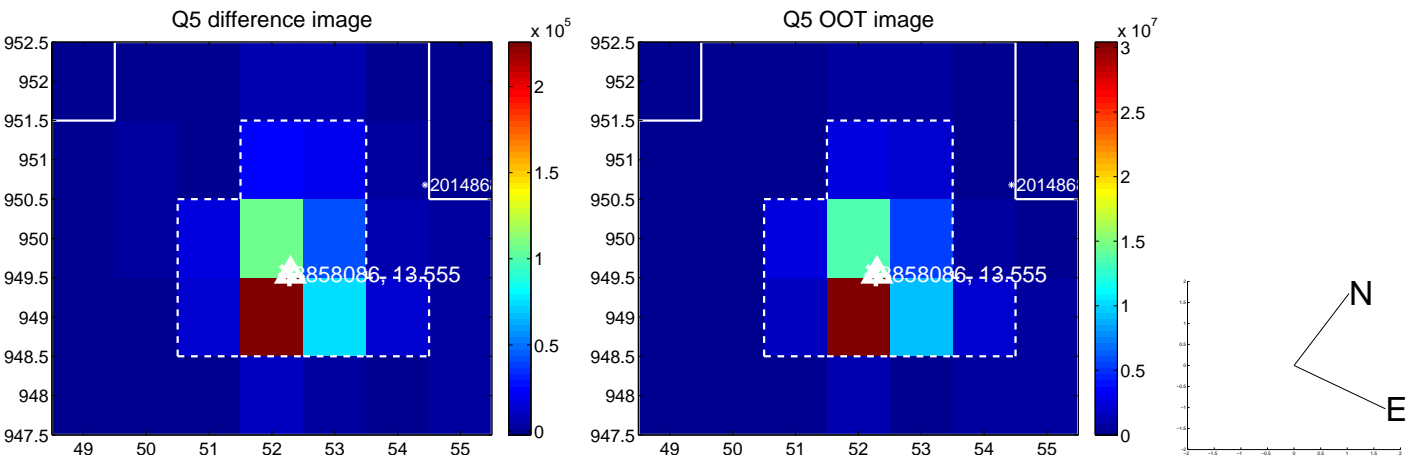


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

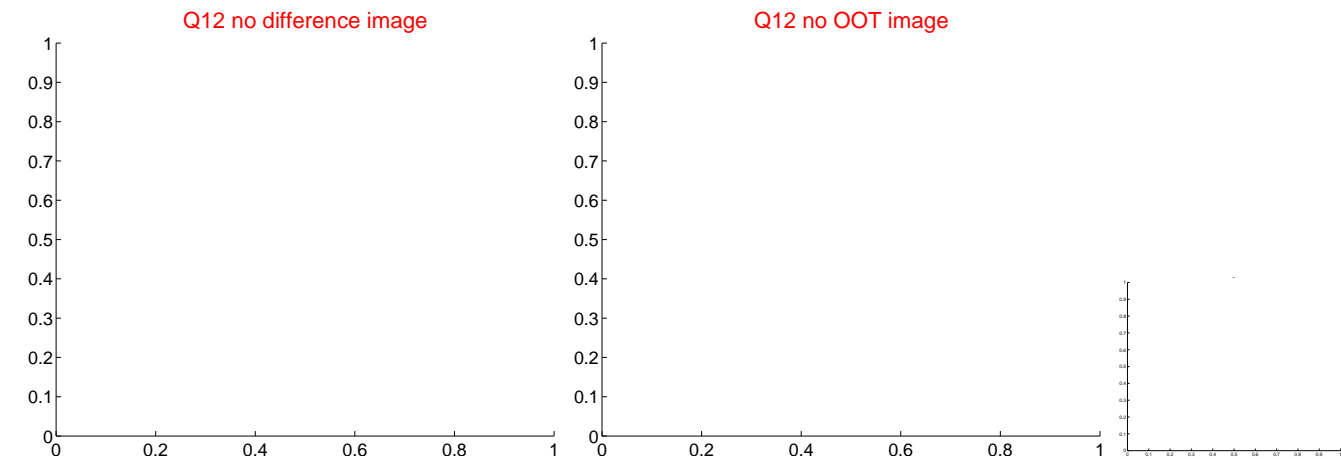
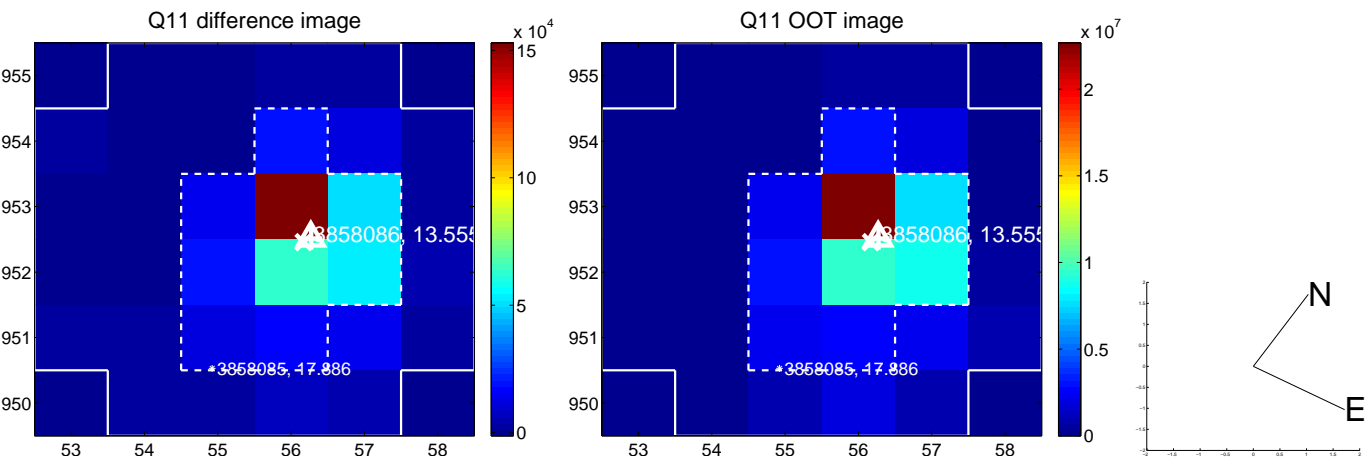
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



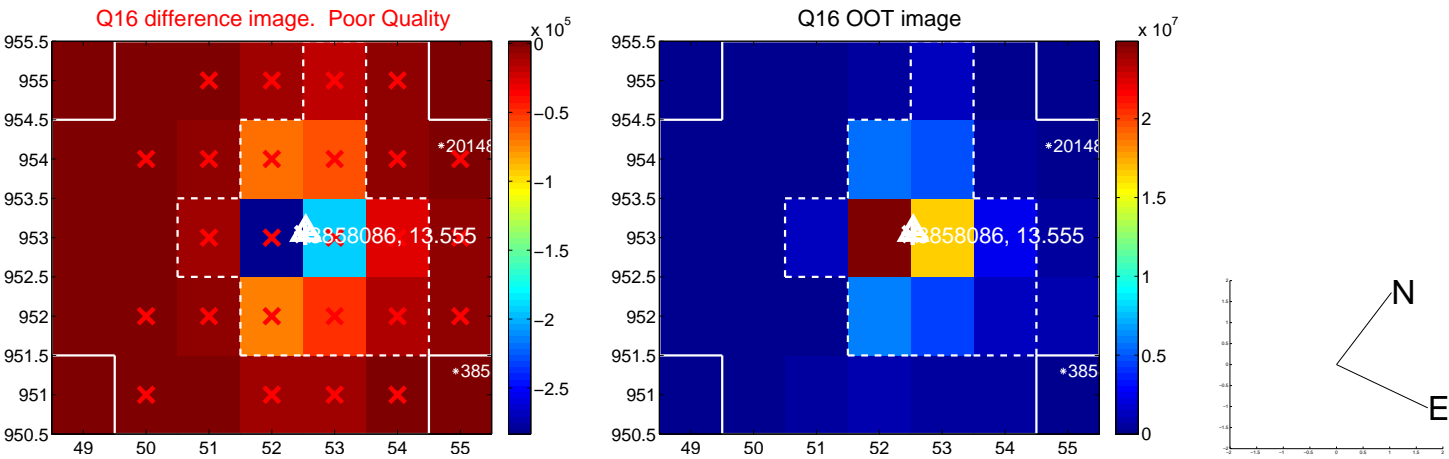
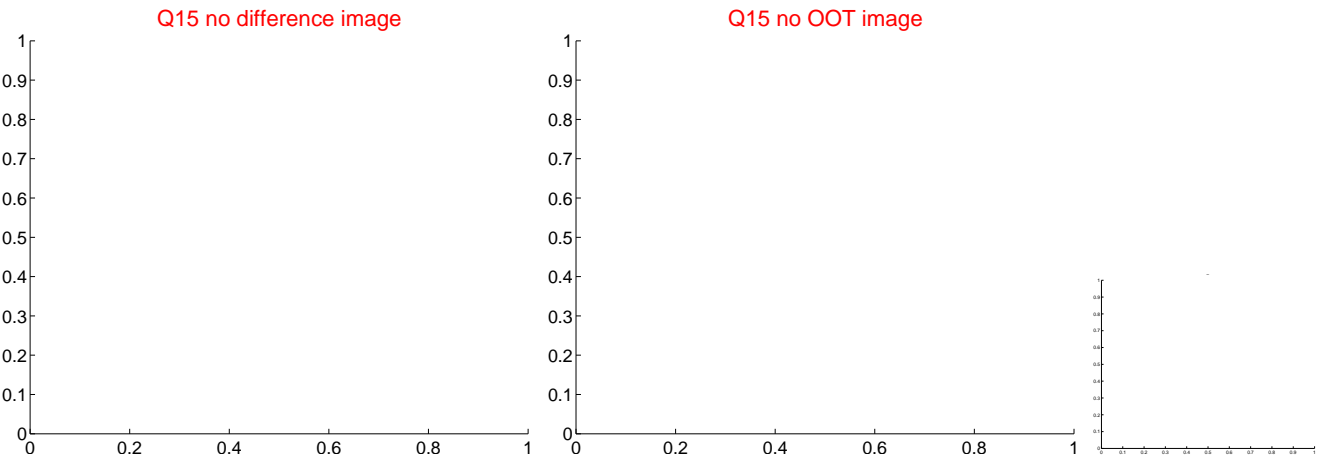
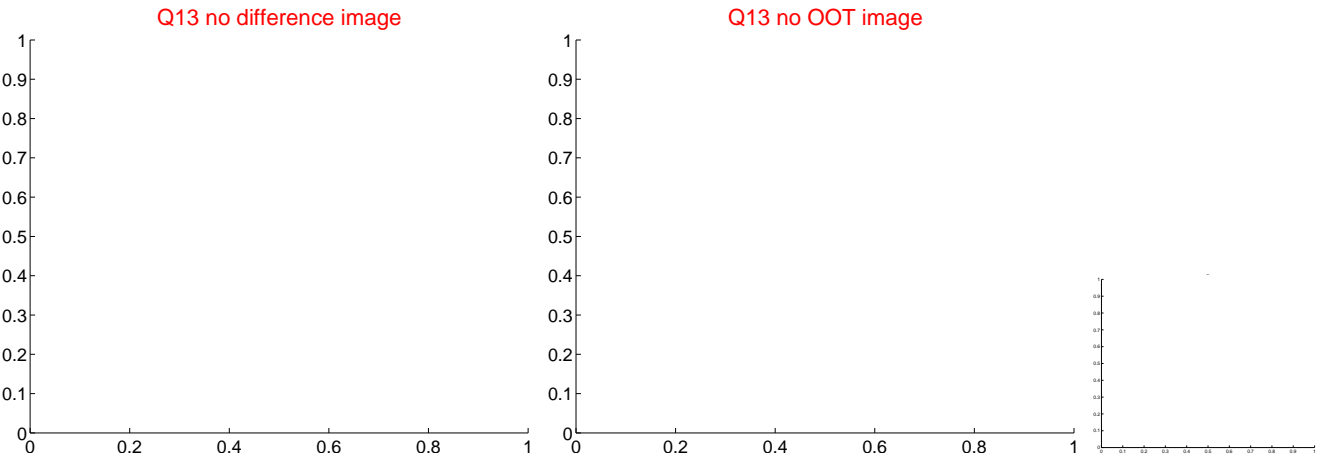
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



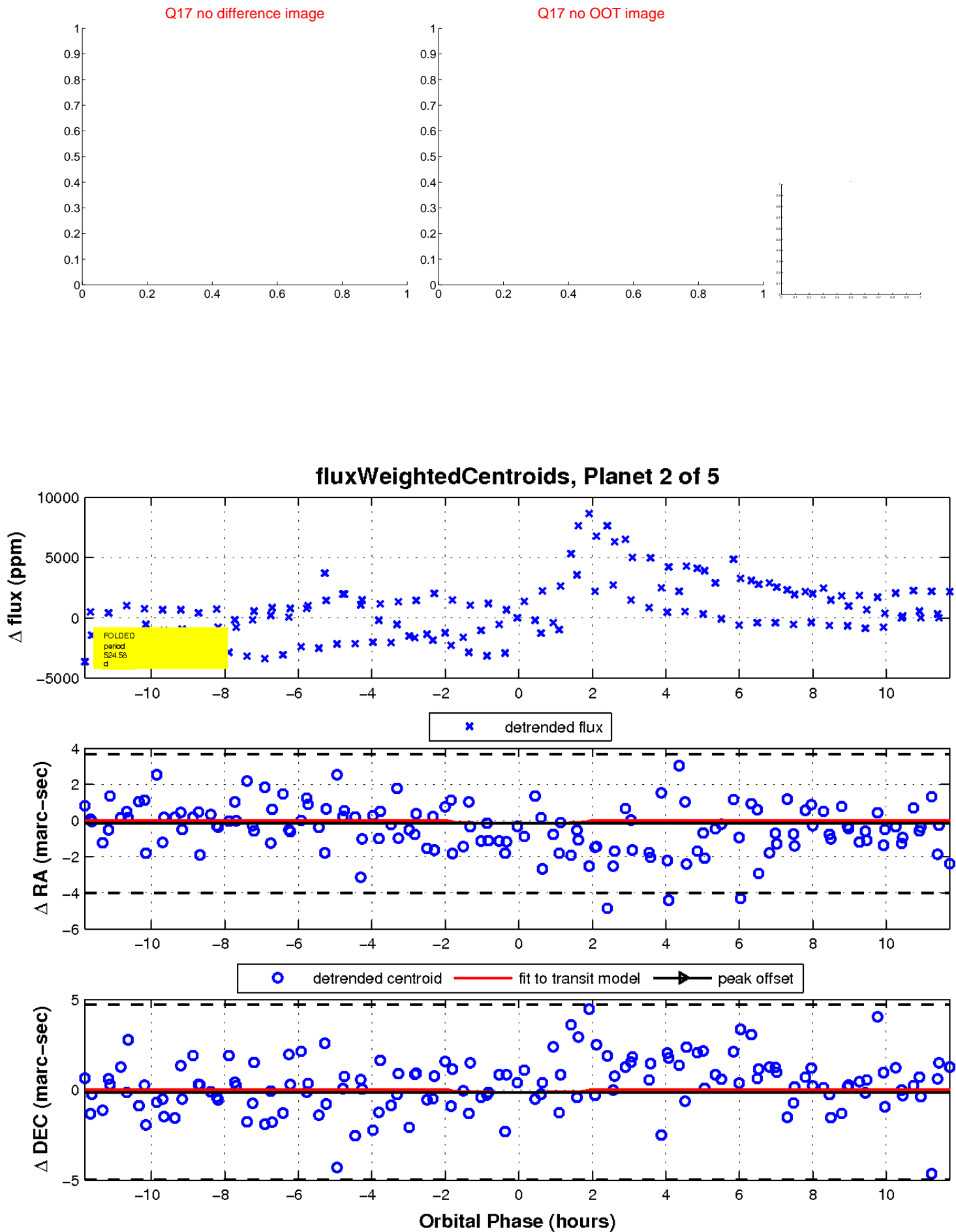
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

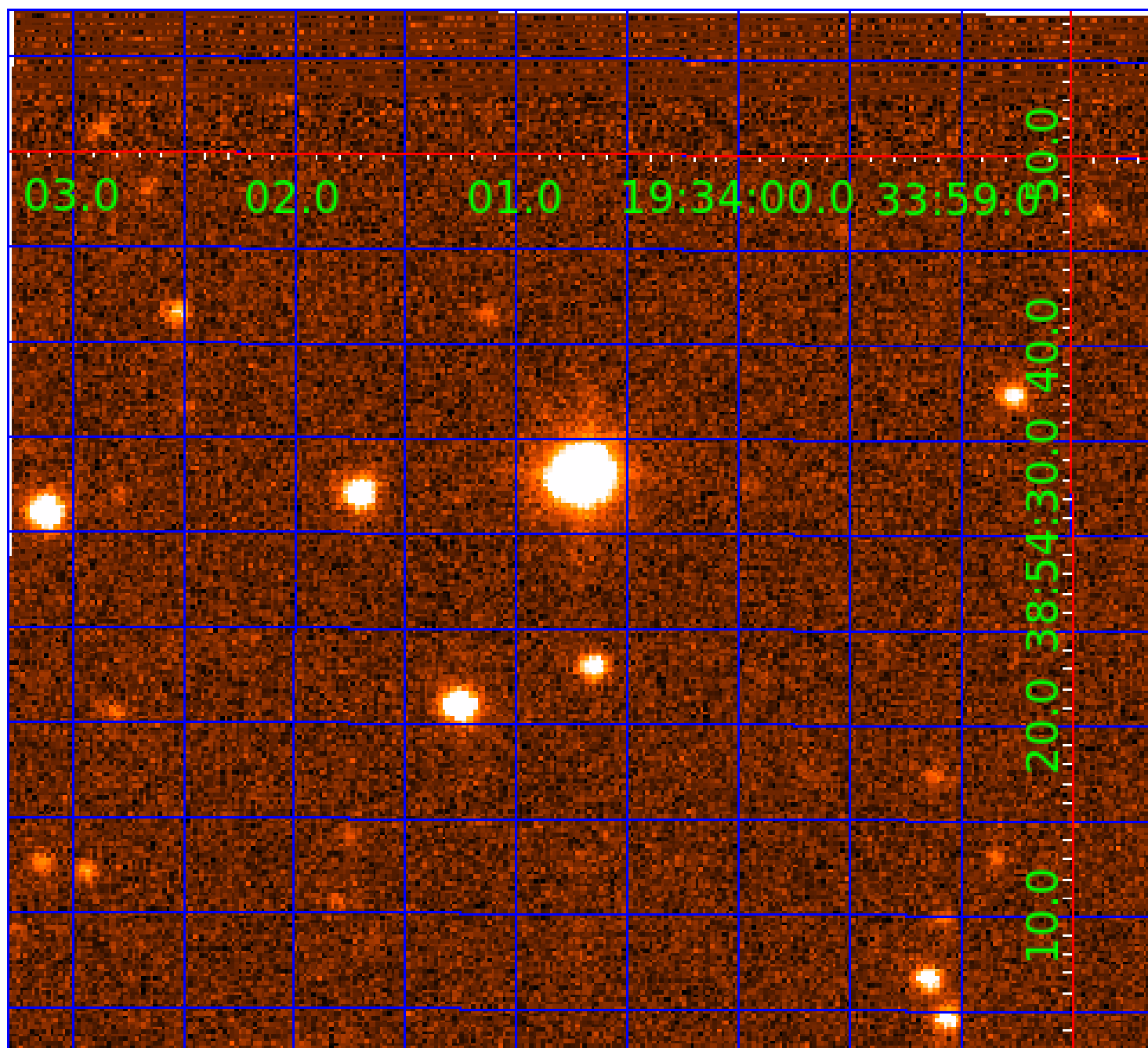


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003858086

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})
003858086-01	OBS	No	379.382779	437.860834	1936.9	7.096	18.3	5.7	0.56	4880	2.43	0.22
003858086-02	OBS	No	524.579395	493.468491	2756.3	3.947	16.8	9.2	0.56	4880	2.88	0.14
003858086-03	OBS	No	548.779879	467.388411	1897.7	4.368	19.0	4.8	0.56	4880	2.47	0.13
003858086-04	OBS	No	507.837945	240.751426	2781.2	3.533	13.8	7.7	0.56	4880	2.89	0.15
003858086-05	OBS	No	153.146668	281.240196	782.8	2.500	11.7	-1.0	0.56	4880	1.54	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858086-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003858086-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003858086-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003858086-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003858086-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—CENT_NOFITS

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

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

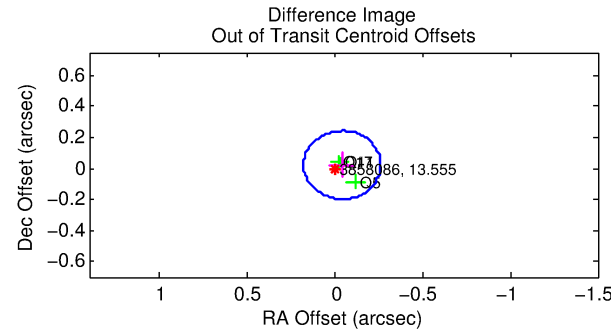
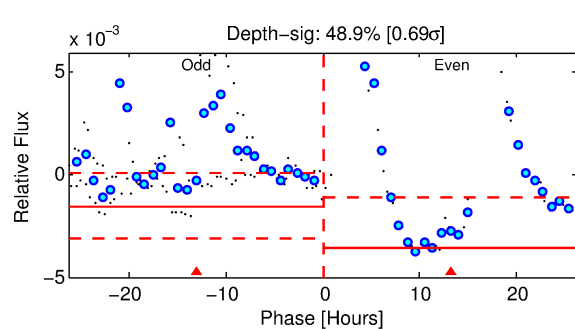
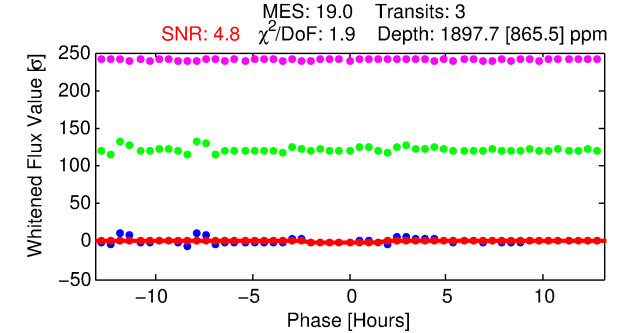
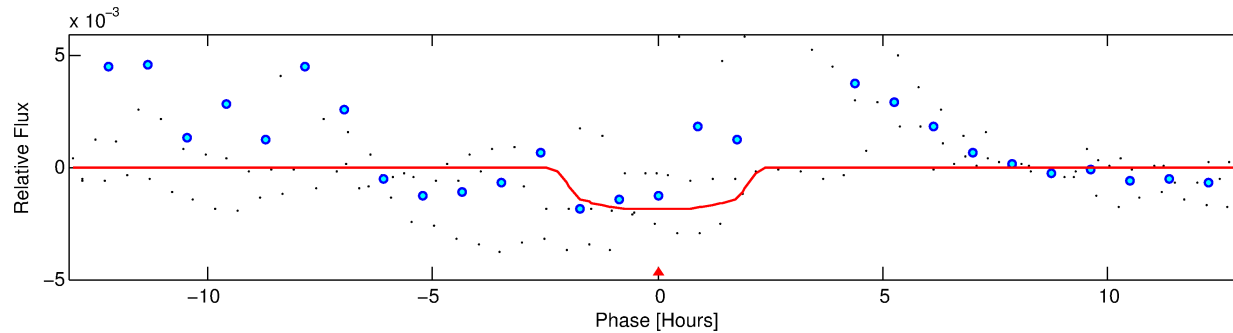
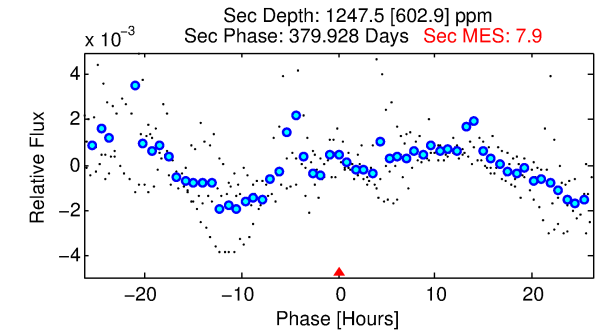
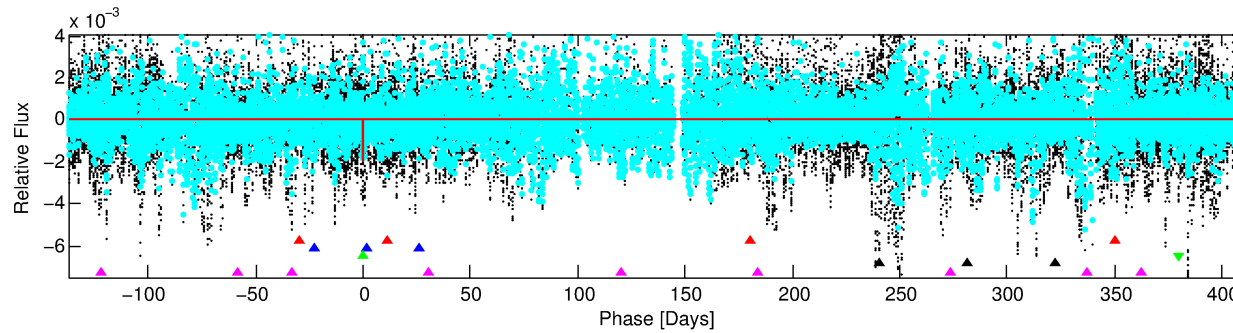
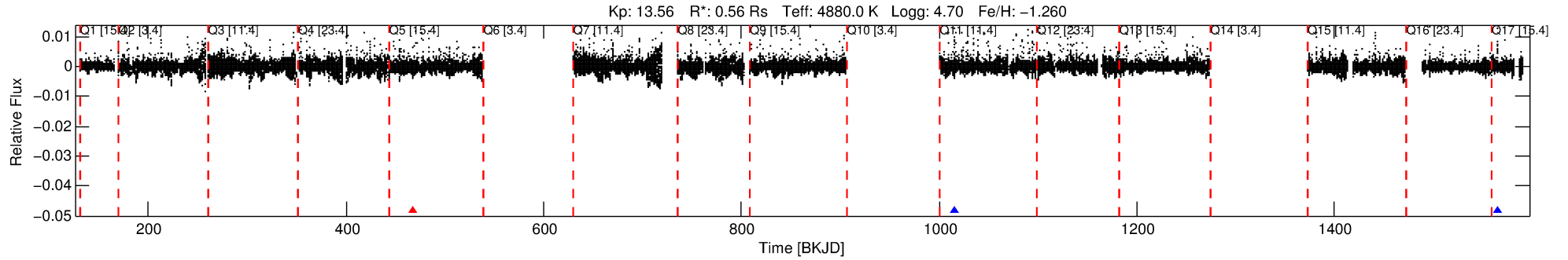
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003858086-03

No Significant Match Found

DV One-Page Summary

KIC: 3858086 Candidate: 3 of 5 Period: 548.780 d



DV Fit Results:

Period = 548.77988 [0.00752] d
Epoch = 467.3884 [0.0130] BKJD
Rp/R* = 0.0406 [0.1550]
a/R* = 880.32 [13561.75]
b = 0.49 [24.03]
Seff = 0.13 [0.02]
Teq = 154 [6] K
Rp = 2.47 [9.42] Re
a = 1.0828 [0.0585] AU
Ag = 132136.71 [1010880.19] [0.13σ]
Teffp = 4552 [8706] K [0.51σ]

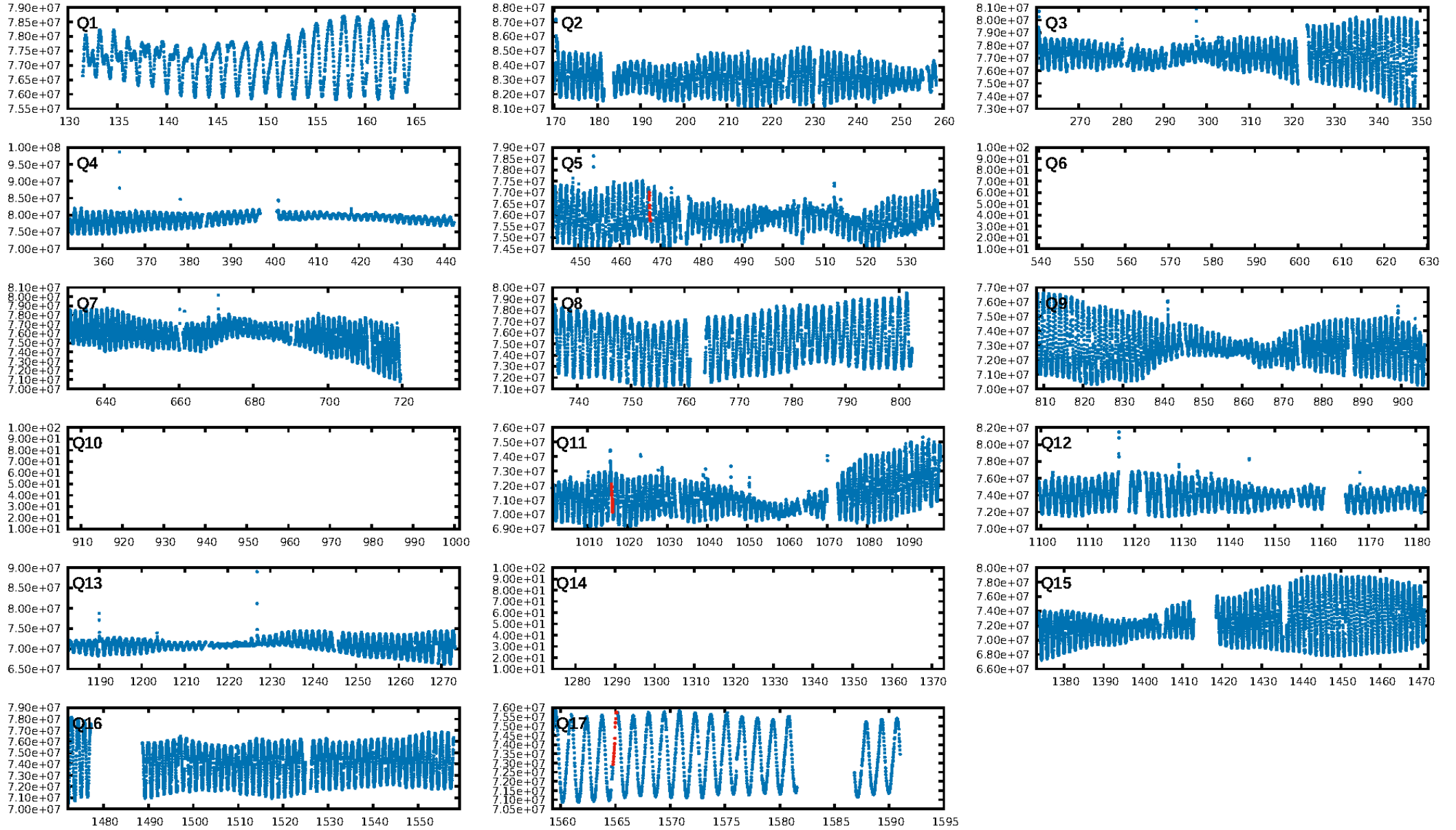
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [98.65σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.8%
ModelChiSquareGof-sig: 36.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.50 [1/2]
GhostDiagnostic-chr: 0.8362
Centroid-sig: 41.2%
Centroid-so: 0.511 arcsec [0.83σ]
OotOffset-rm: 0.047 arcsec [0.65σ]
KicOffset-rm: 0.268 arcsec [1.33σ]
OotOffset-st: 0/1/0/2 [3]
KicOffset-st: 0/1/0/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

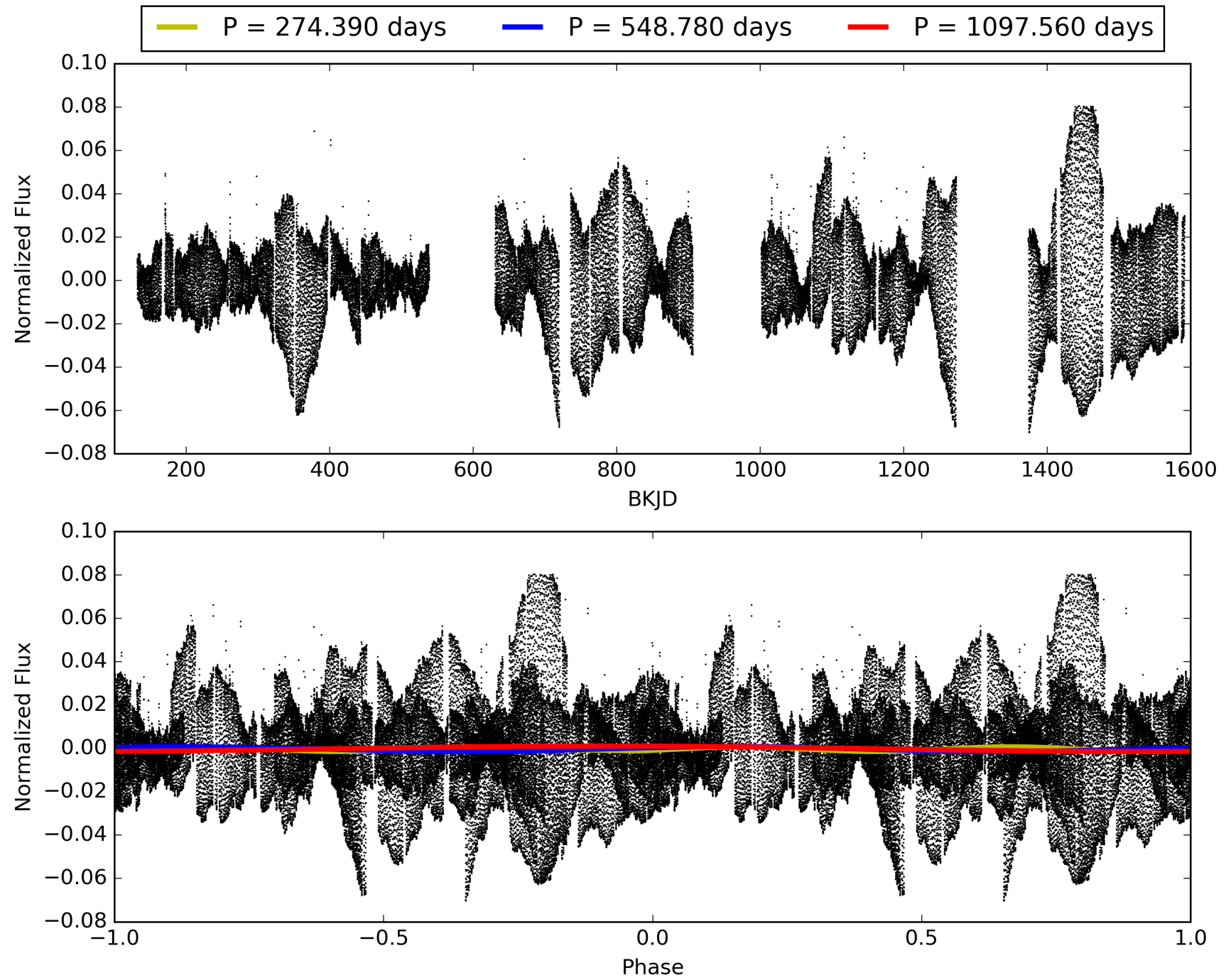
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:05:20 Z

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

TCE 003858086-03, PDC Light Curves

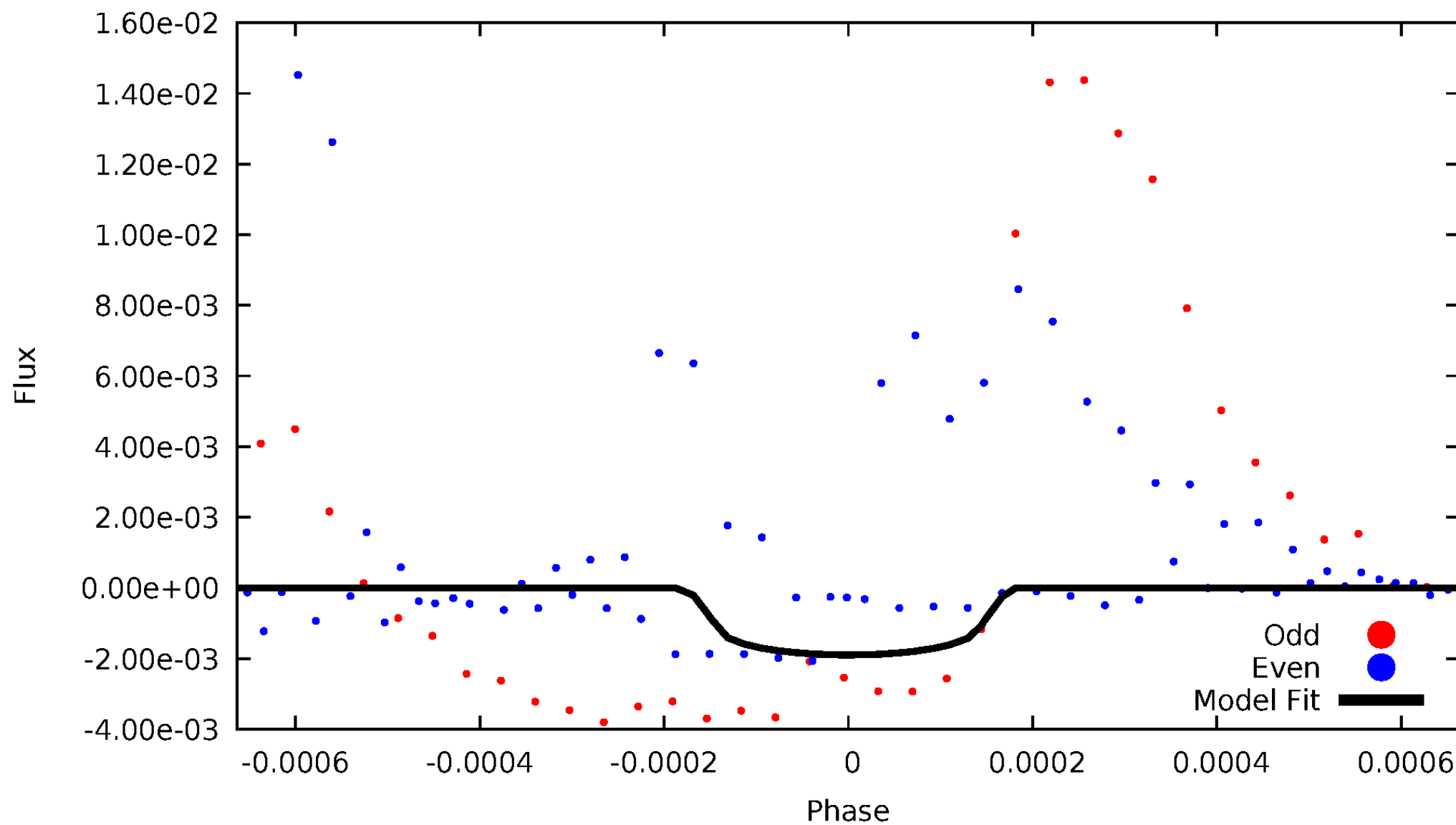


TCE 003858086-03



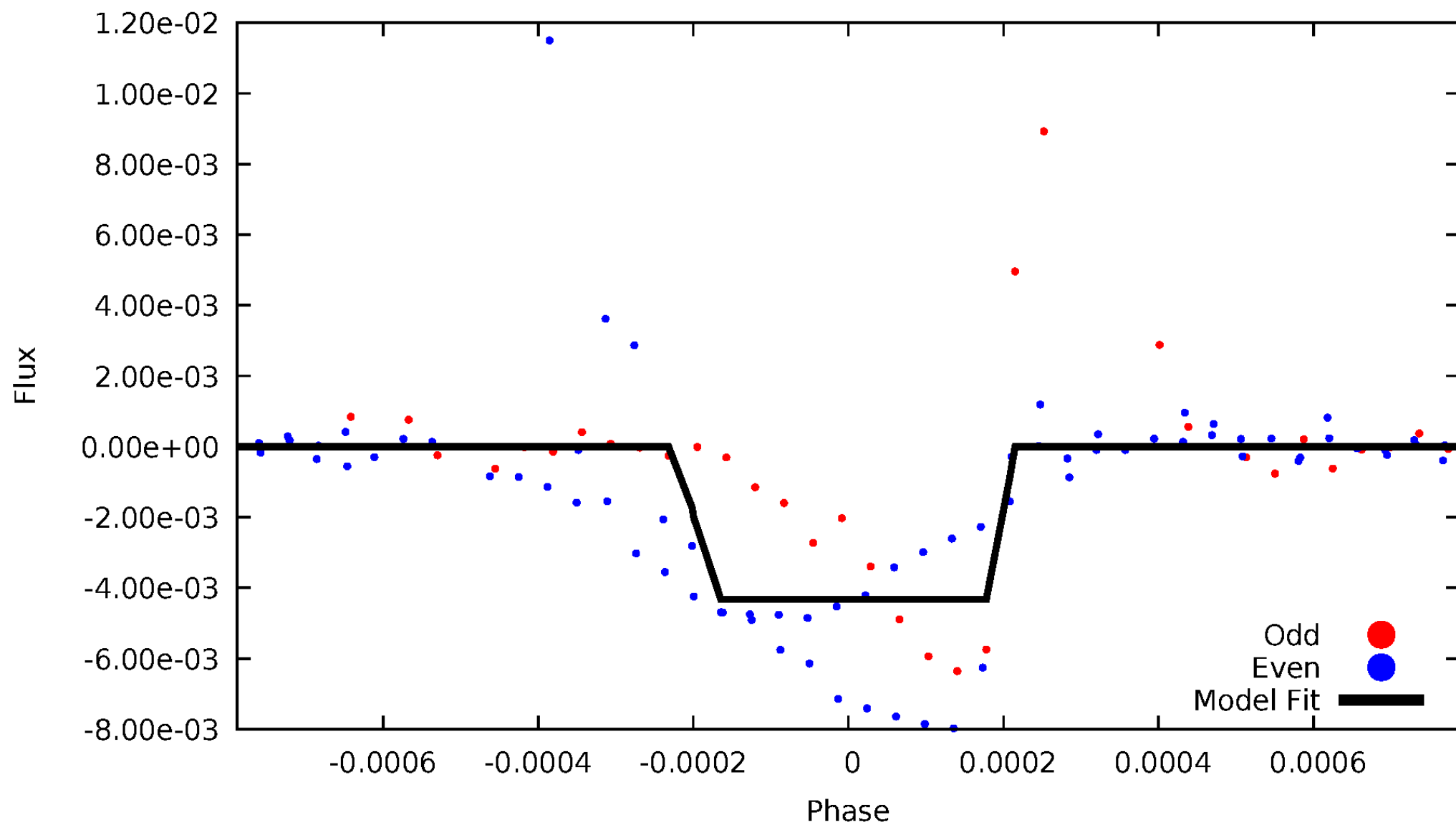
DV Odd/Even

TCE 003858086-03



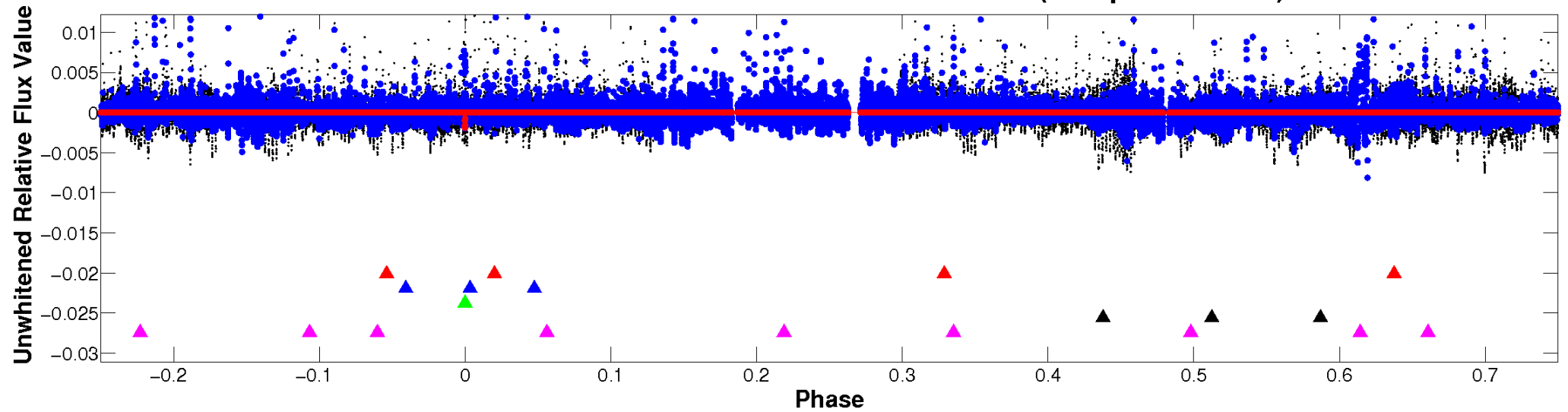
ALT Odd/Even

TCE 003858086-03

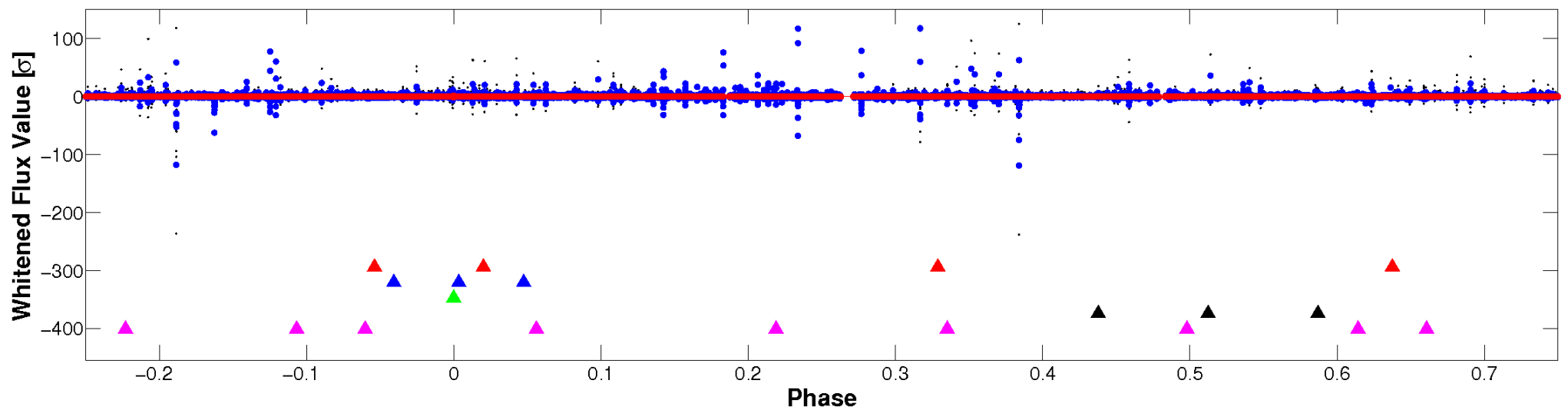


Non-Whitened Vs. Whitened Light Curve

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

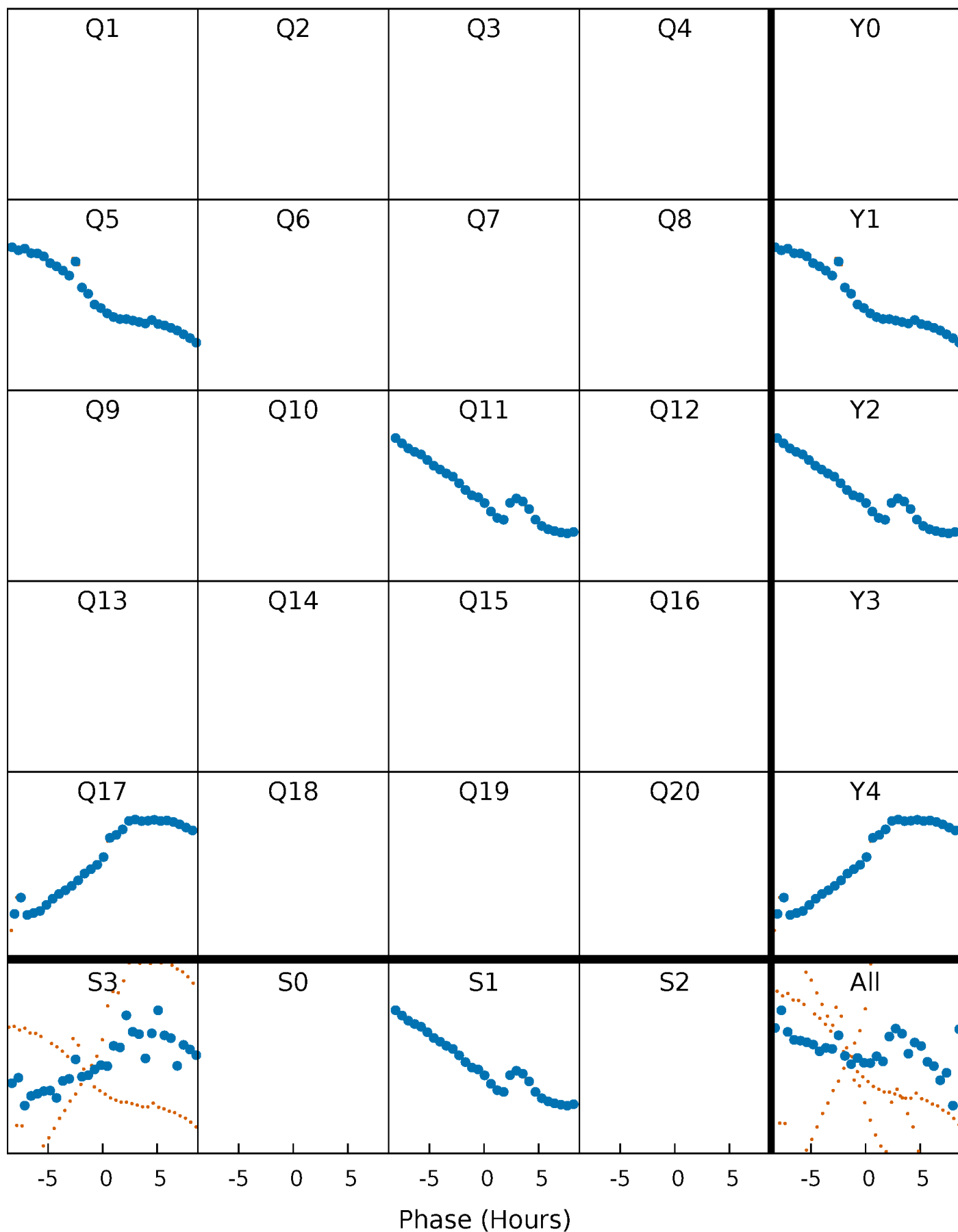


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



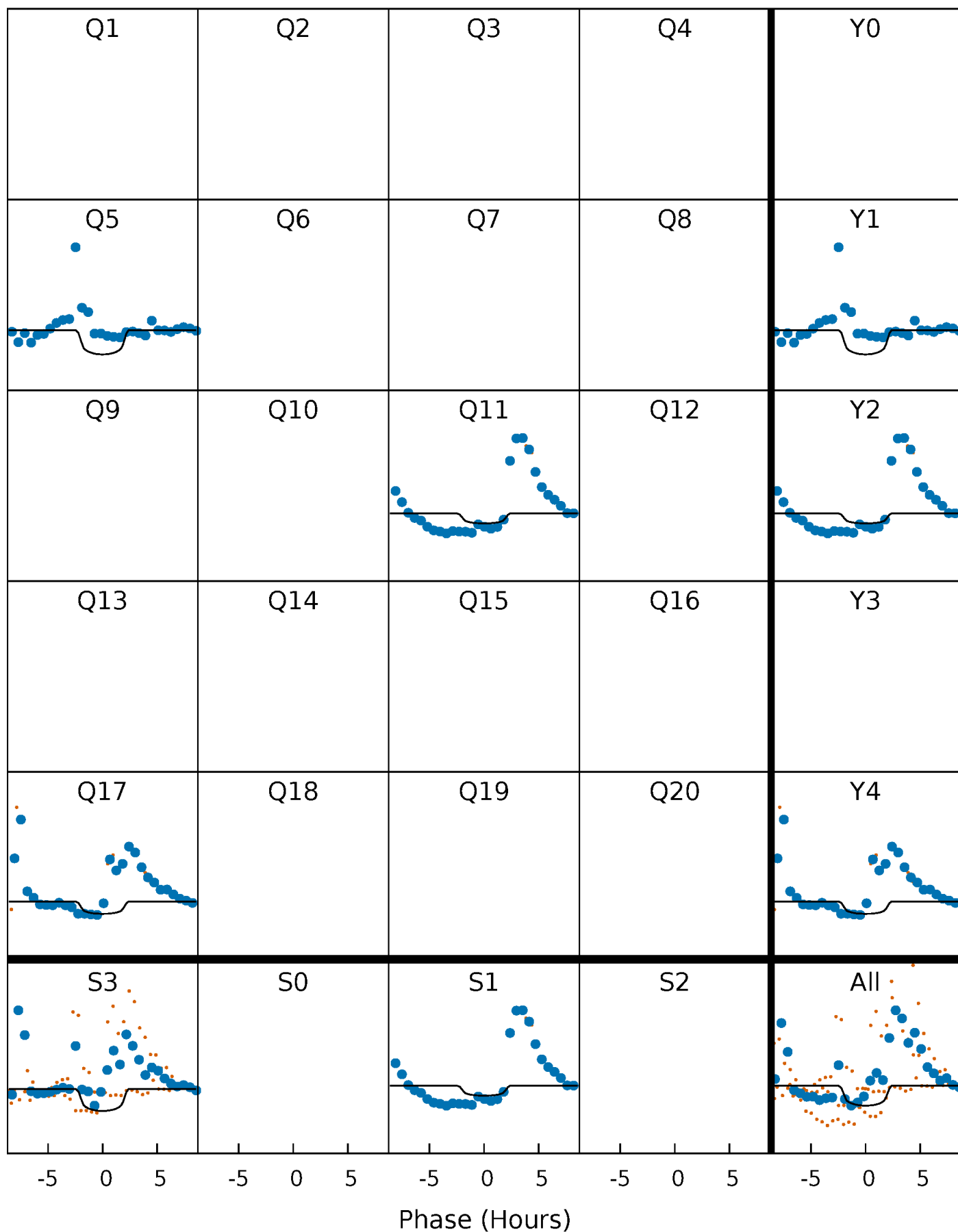
PDC Quarter-Phased Transit Curves

TCE 003858086-03 $P=548.779879$ Days $T_0=467.388411$ (BKJD)



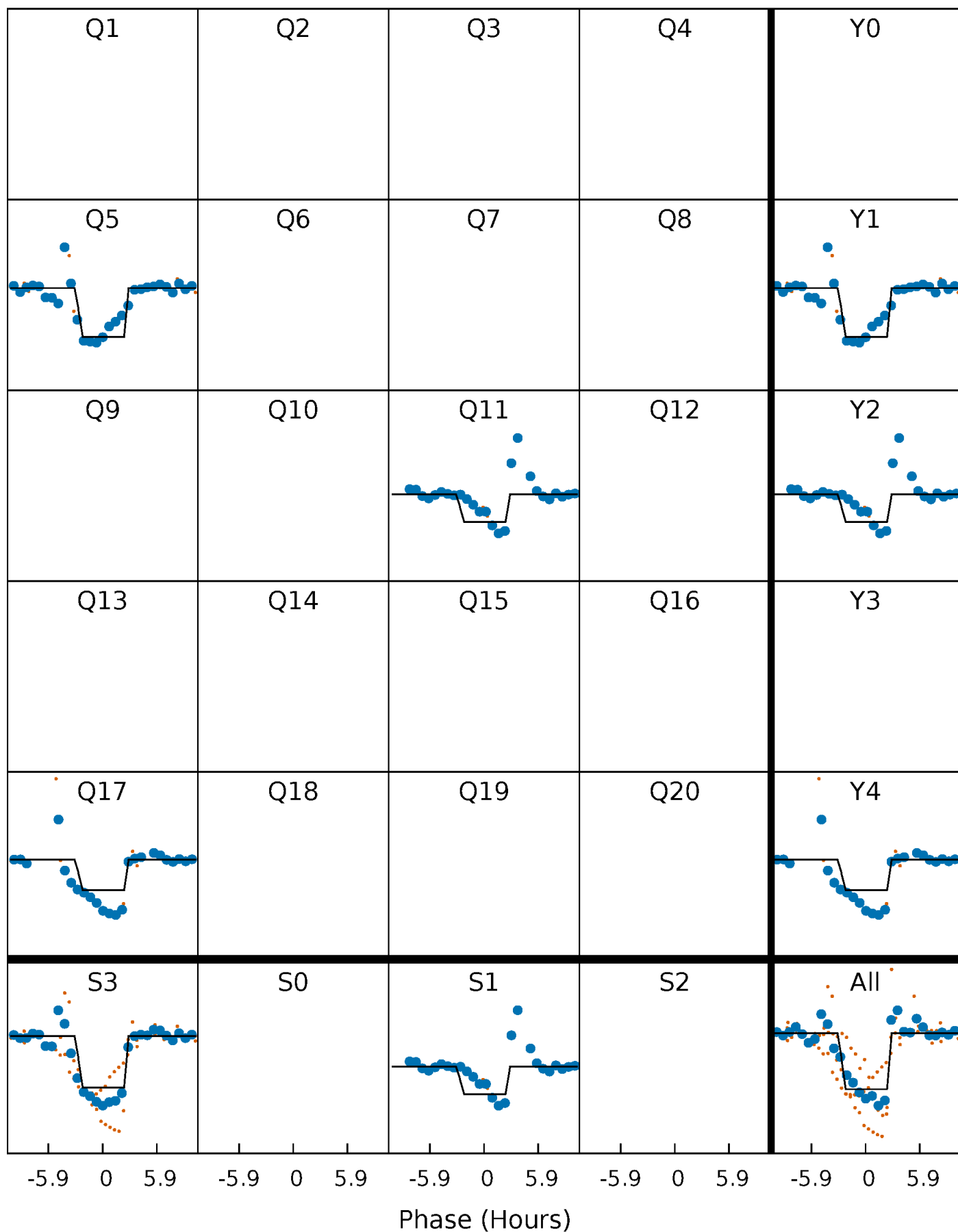
DV Quarter-Phased Transit Curves

TCE 003858086-03 $P=548.779879$ Days $T_0=467.388411$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

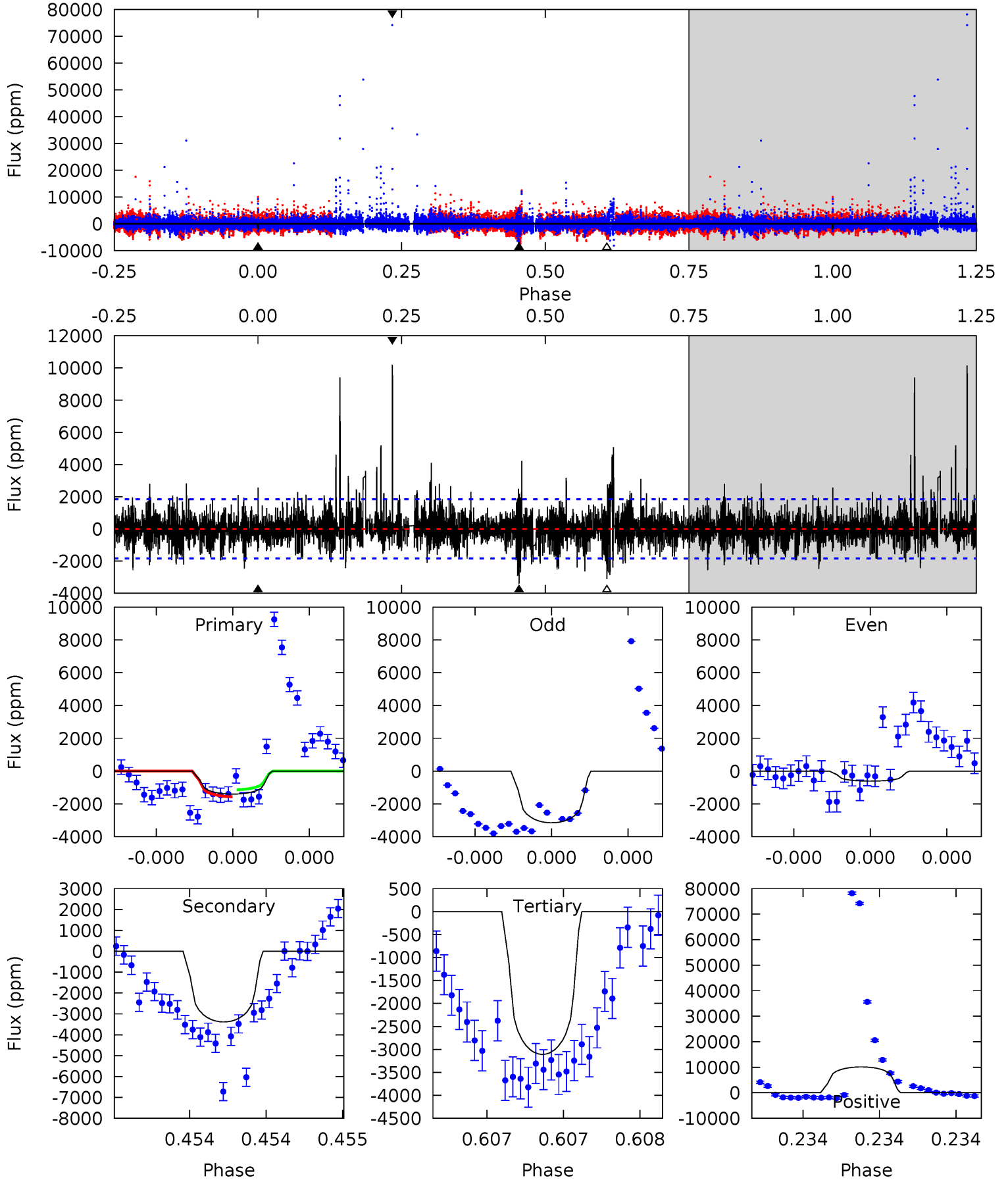
TCE 003858086-03 $P=548.702387$ Days $T_0=467.447471$ (BKJD)



DV Model-Shift Uniqueness Test

003858086-03, P = 548.779879 Days, E = 467.388411 Days

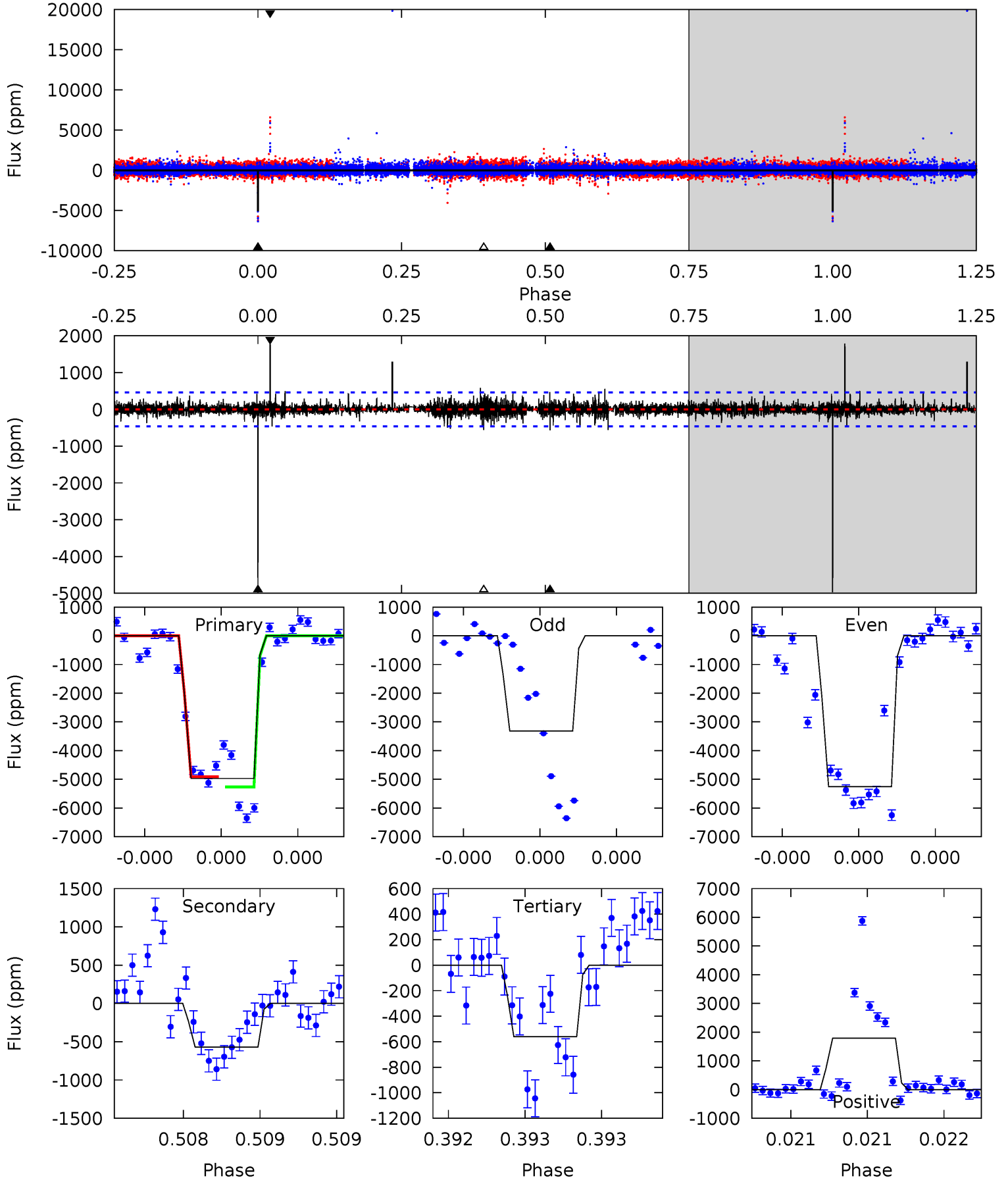
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.28	10.3	9.50	31.0	5.63	3.57	2.39	-5.22	-26.7	0.85	-20.6	3.16	-2.32	0.75	0.64



Alt Model-Shift Uniqueness Test

003858086-03, P = 548.702387 Days, E = 467.447471 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.4	6.92	6.81	21.7	5.61	3.53	1.20	53.6	38.7	0.11	-14.8	12.6	1.17	0.26	0



Stellar Parameters For KIC 003858086

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4880^{+147}_{-147}	$4.696^{+0.048}_{-0.028}$	$-1.260^{+0.300}_{-0.300}$	$0.557^{+0.033}_{-0.033}$	$0.562^{+0.041}_{-0.021}$	$4.576^{+0.823}_{-0.519}$
	+3%/-3%	+1%/-1%	+24%/-24%	+6%/-6%	+7%/-4%	+18%/-11%
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 003858086-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3387 ± 327	$7.36^{+7.29}_{-5.19}$	215^{+7}_{-7}	3723^{+2324}_{-718}	$42357^{+432926}_{-32073}$
Alt.	-570 ± 82	$7.90^{+7.67}_{-5.32}$	214^{+8}_{-7}	2789^{+1089}_{-447}	6024^{+46525}_{-4564}

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

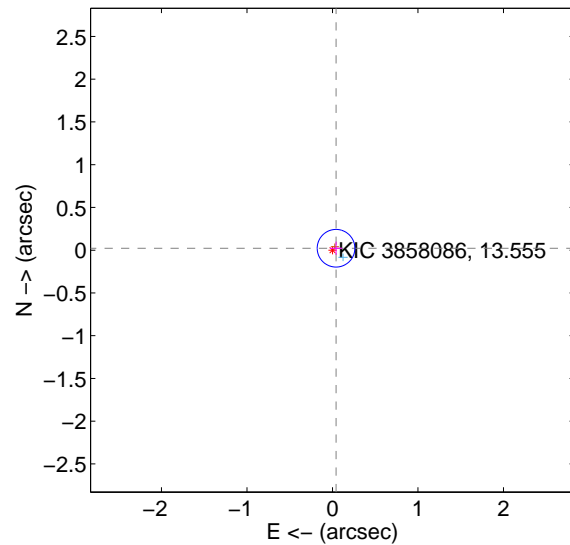
Supplemental centroid analysis for 003858086-03. Kepler magnitude: 13.55. Transit SNR 4.76

There are 2 quarters with good PRF difference image offsets

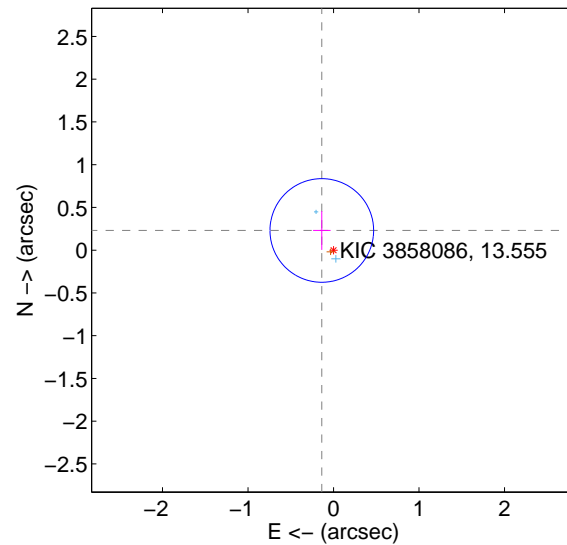
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.047 ± 0.073	0.65	-0.042 ± 0.072	0.023 ± 0.078
PRF-fit source offset from KIC position	0.268 ± 0.202	1.33	0.137 ± 0.102	0.231 ± 0.227
photometric centroid source offset	0.51 ± 0.62	0.83	0.02 ± 0.61	-0.51 ± 0.62

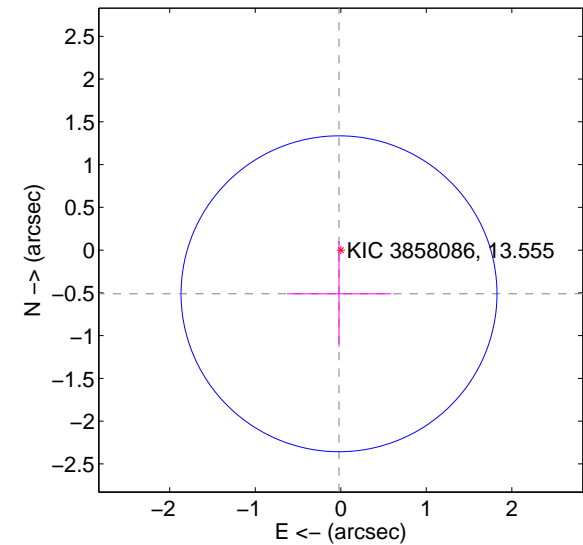
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

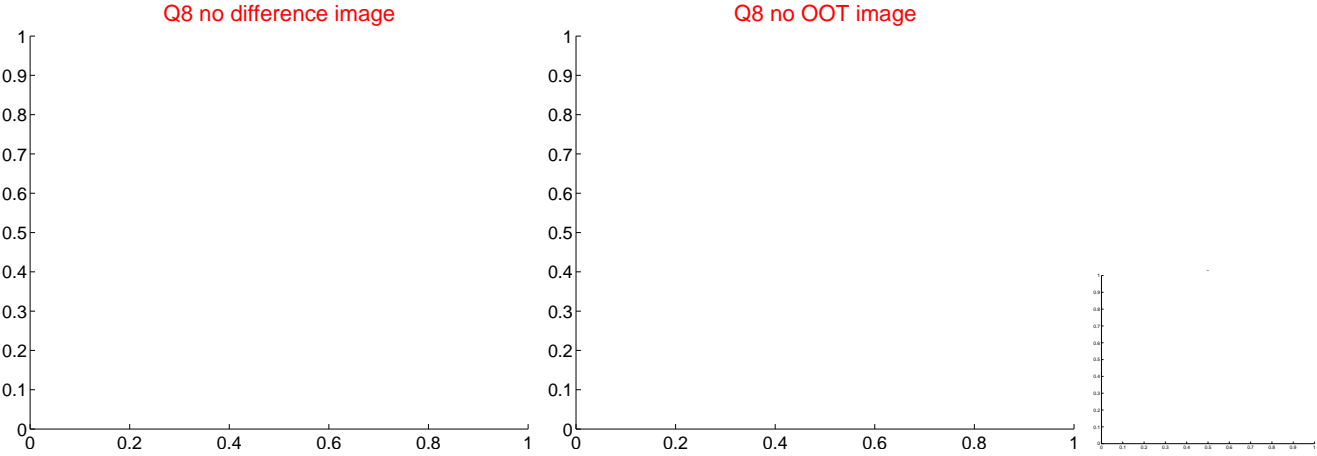
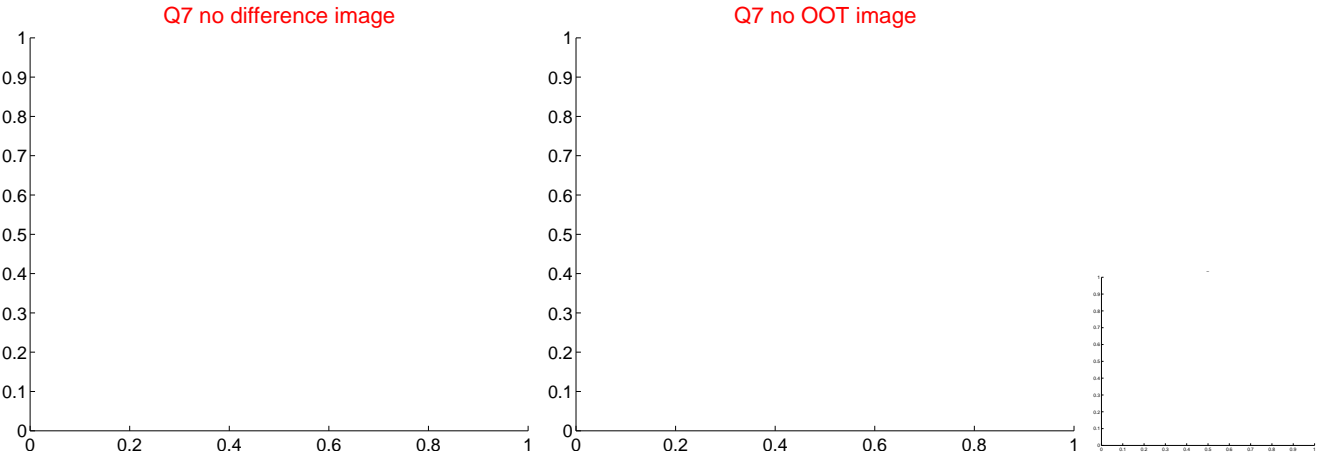
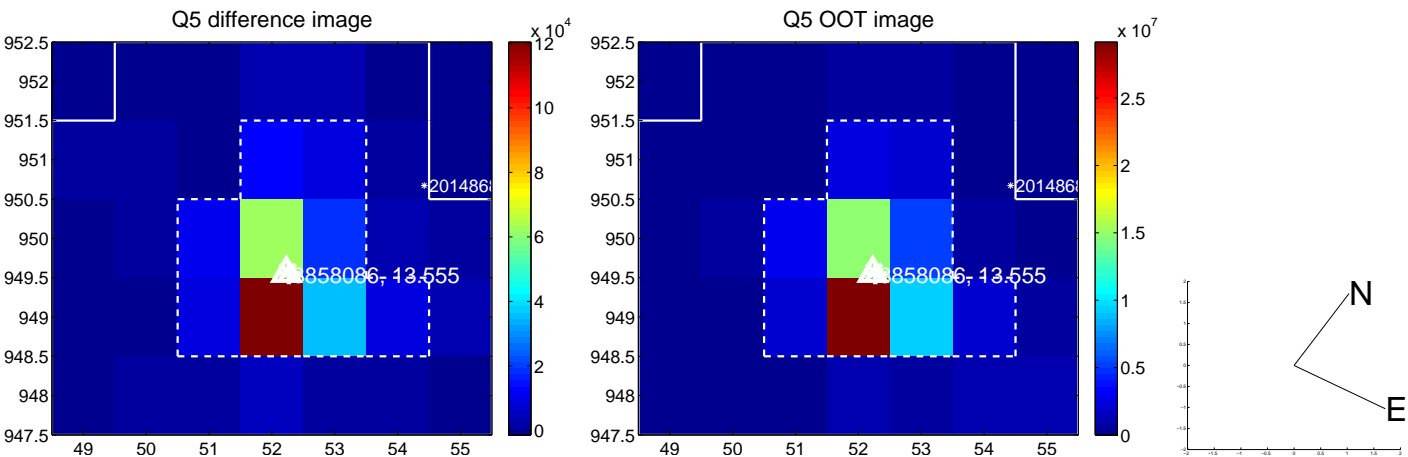


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

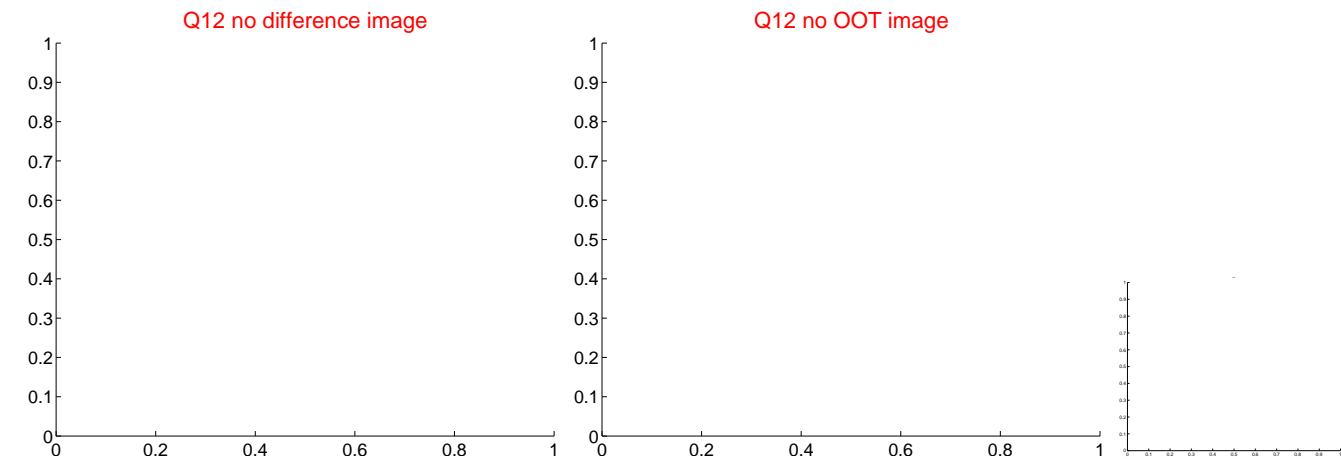
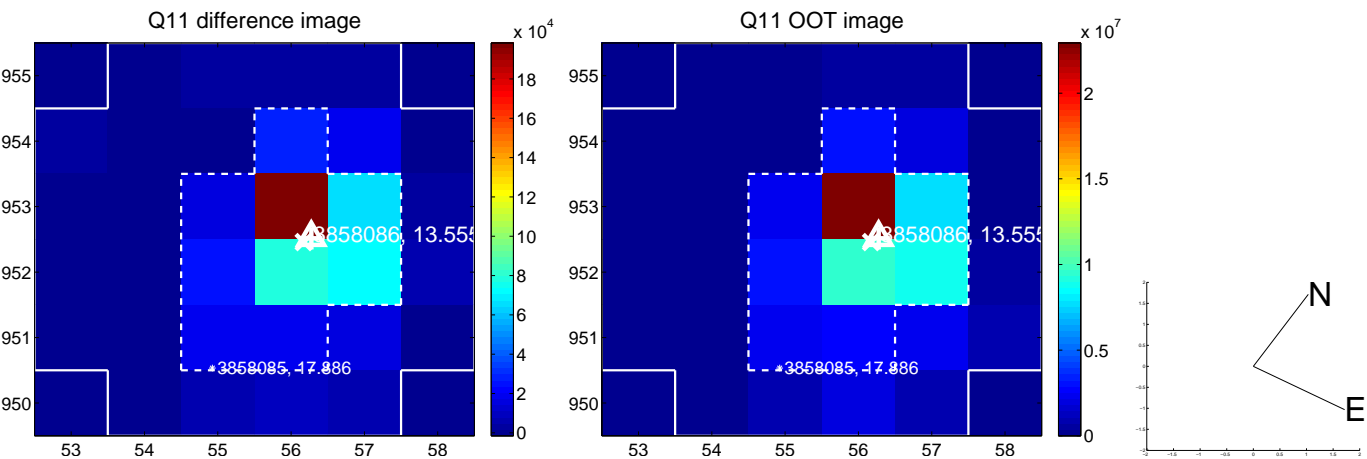
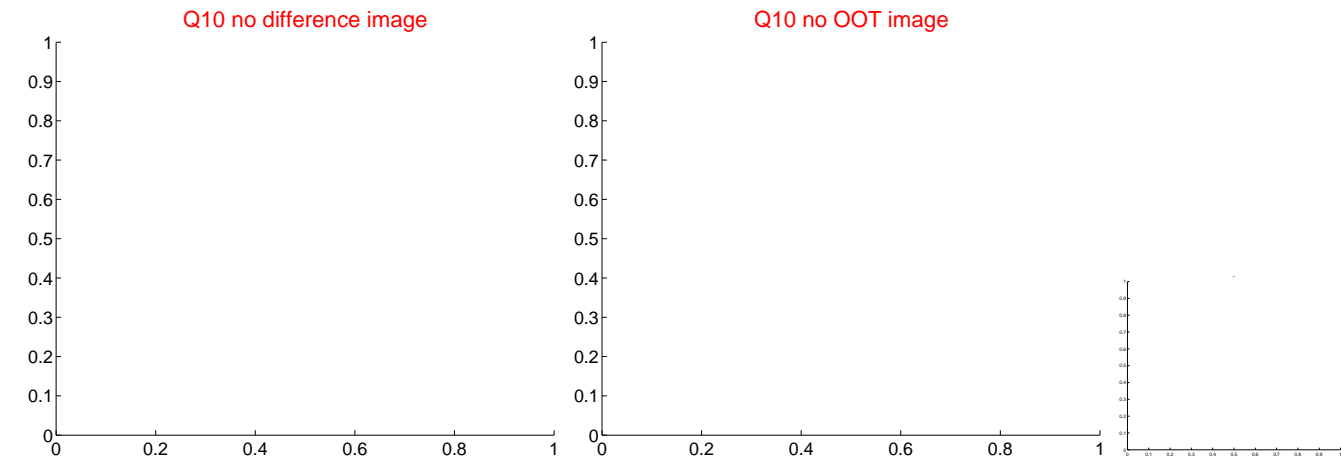
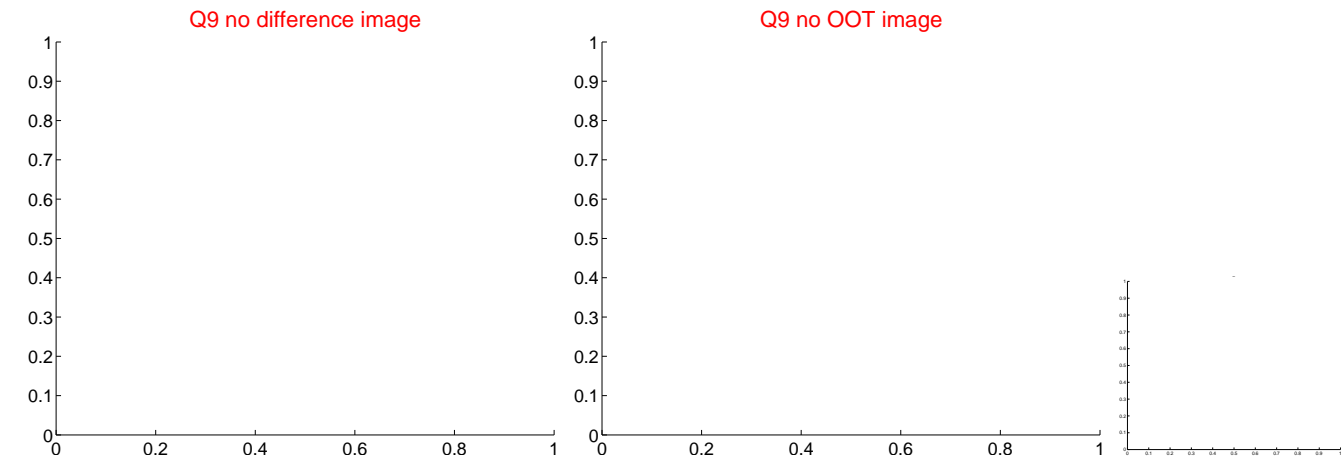
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



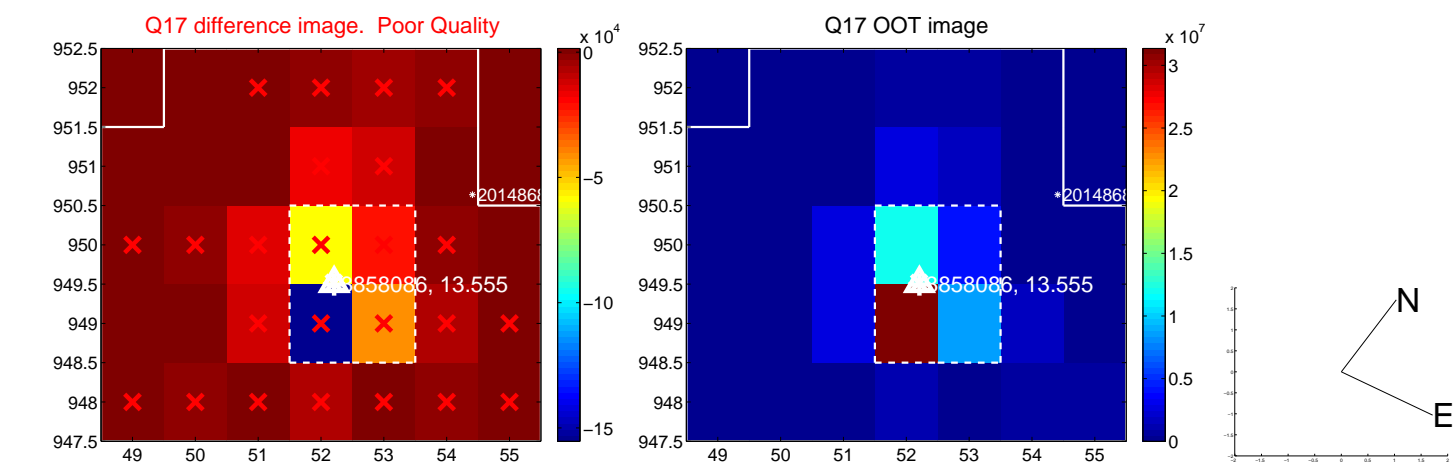
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



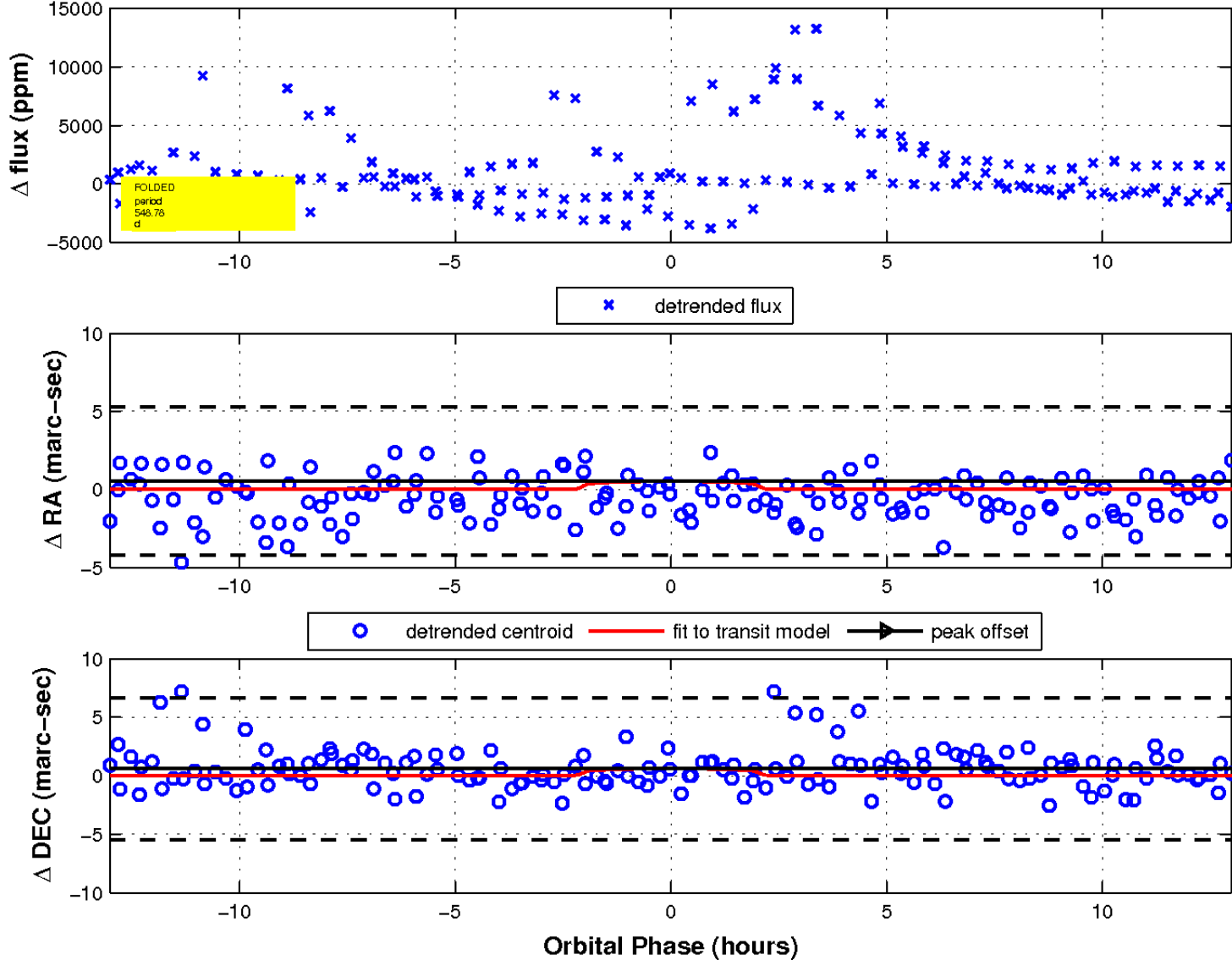
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

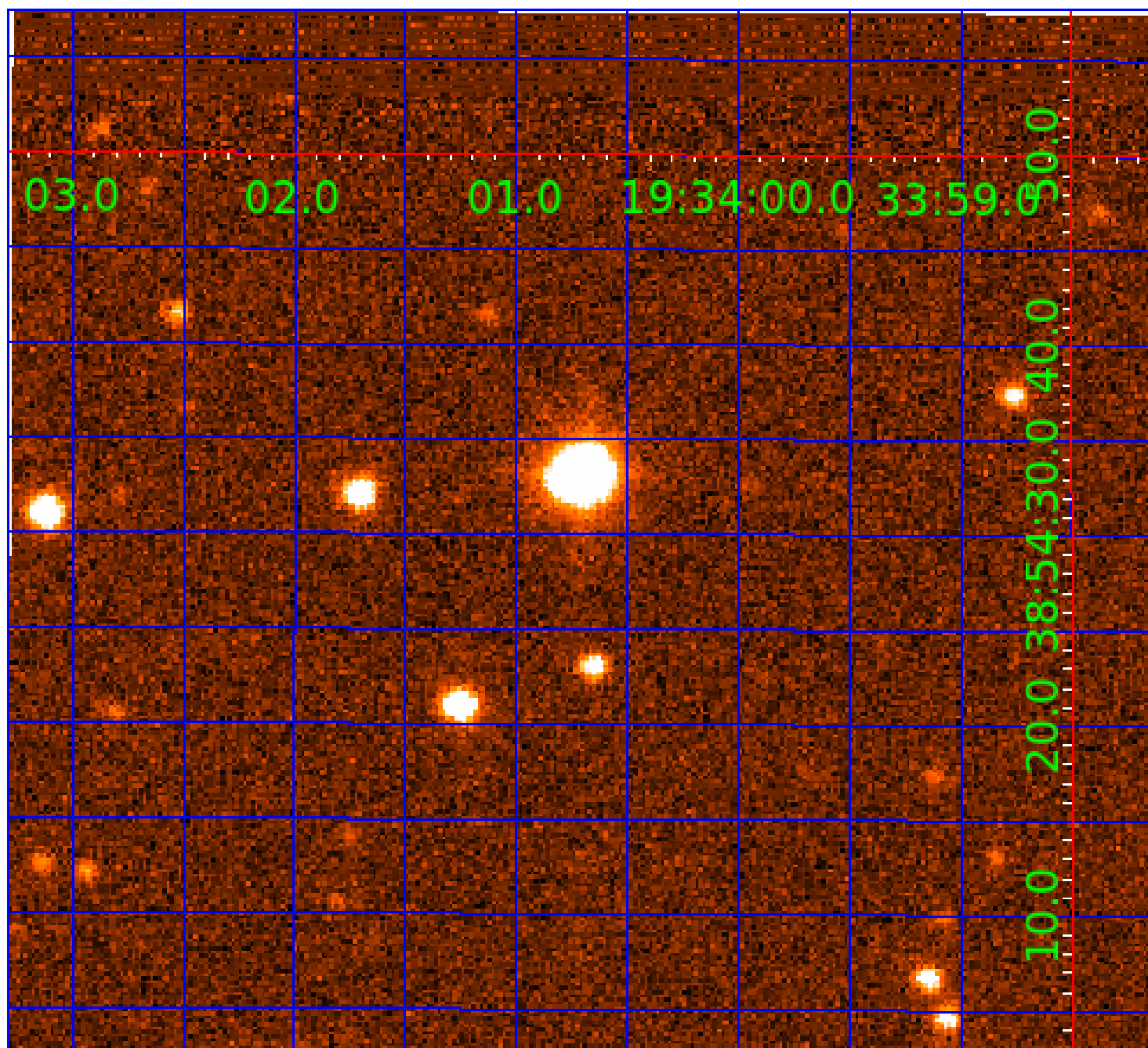


fluxWeightedCentroids, Planet 3 of 5



UKIRT Image

Declination



KIC 003858086

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})
003858086-01	OBS	No	379.382779	437.860834	1936.9	7.096	18.3	5.7	0.56	4880	2.43	0.22
003858086-02	OBS	No	524.579395	493.468491	2756.3	3.947	16.8	9.2	0.56	4880	2.88	0.14
003858086-03	OBS	No	548.779879	467.388411	1897.7	4.368	19.0	4.8	0.56	4880	2.47	0.13
003858086-04	OBS	No	507.837945	240.751426	2781.2	3.533	13.8	7.7	0.56	4880	2.89	0.15
003858086-05	OBS	No	153.146668	281.240196	782.8	2.500	11.7	-1.0	0.56	4880	1.54	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858086-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003858086-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003858086-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003858086-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003858086-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—CENT_NOFITS

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

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

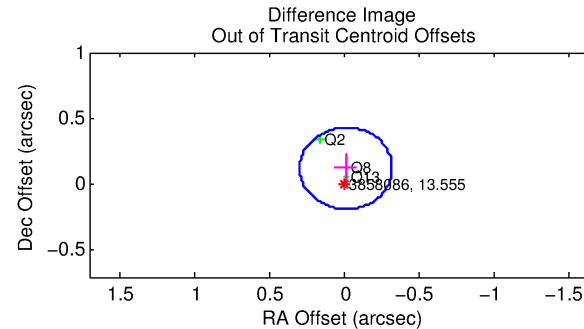
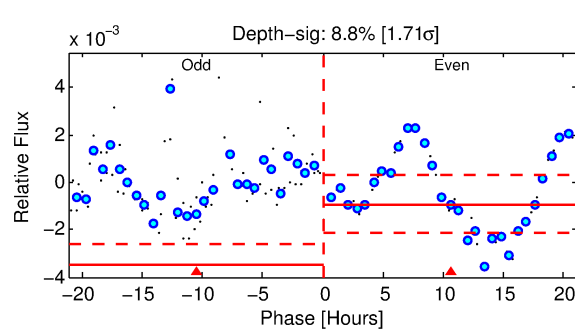
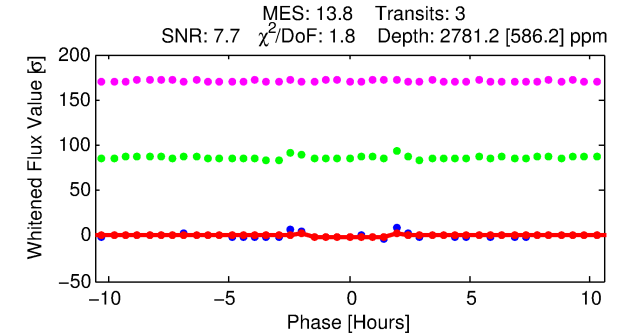
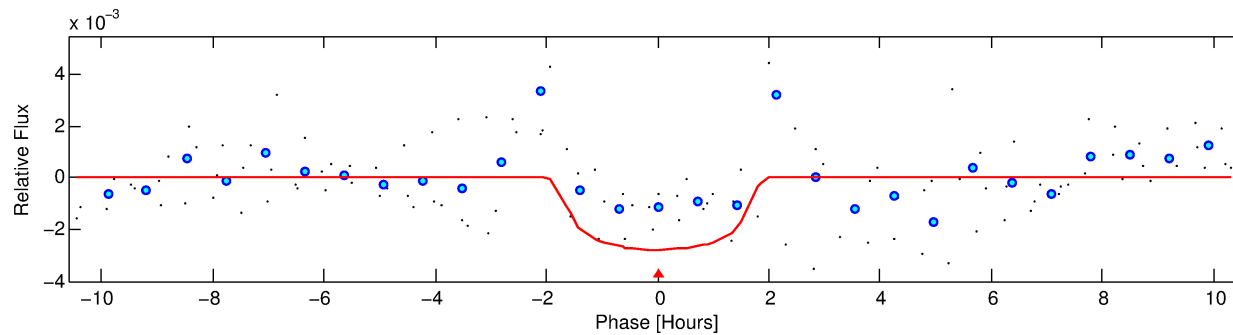
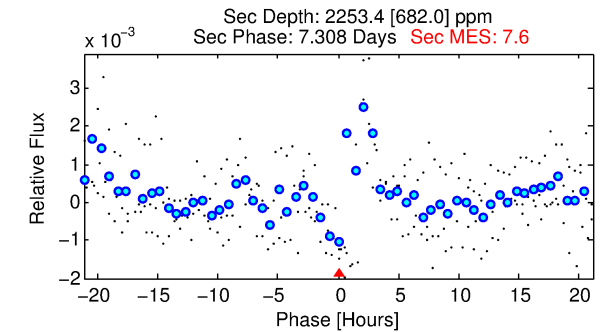
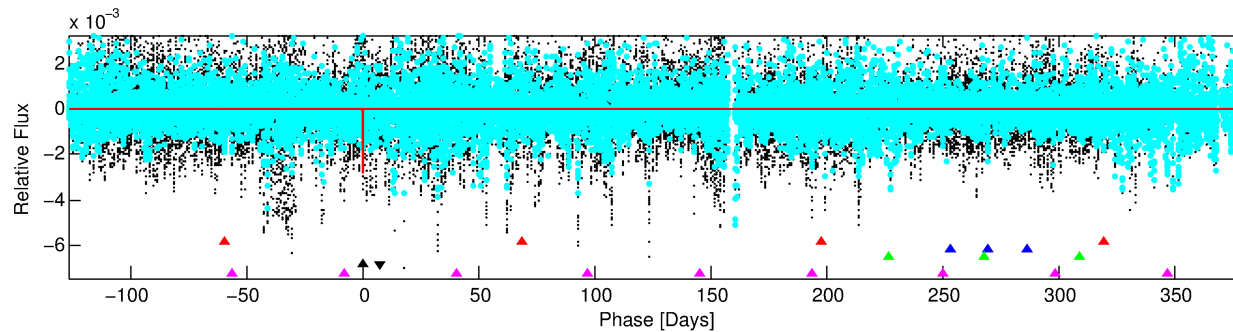
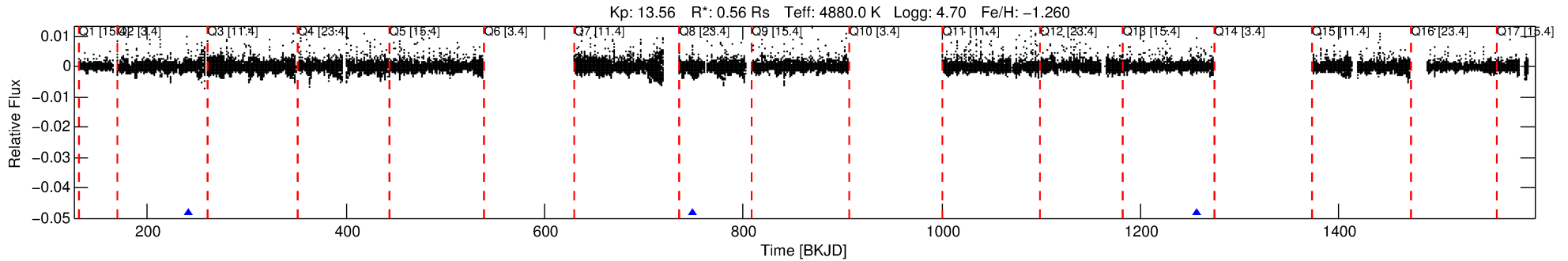
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003858086-04

No Significant Match Found

DV One-Page Summary

KIC: 3858086 Candidate: 4 of 5 Period: 507.838 d



DV Fit Results:

Period = 507.83795 [0.00561] d
Epoch = 240.7514 [0.0077] BKJD
Rp/R* = 0.0476 [0.0355]
a/R* = 1150.25 [3528.61]
b = 0.00 [81650.40]
Seff = 0.15 [0.02]
Teq = 158 [6] K
Rp = 2.89 [2.16] Re
a = 1.0282 [0.0555] AU
Ag = 156781.64 [239025.77] [0.66σ]
Teffp = 4875 [1861] K [2.53σ]

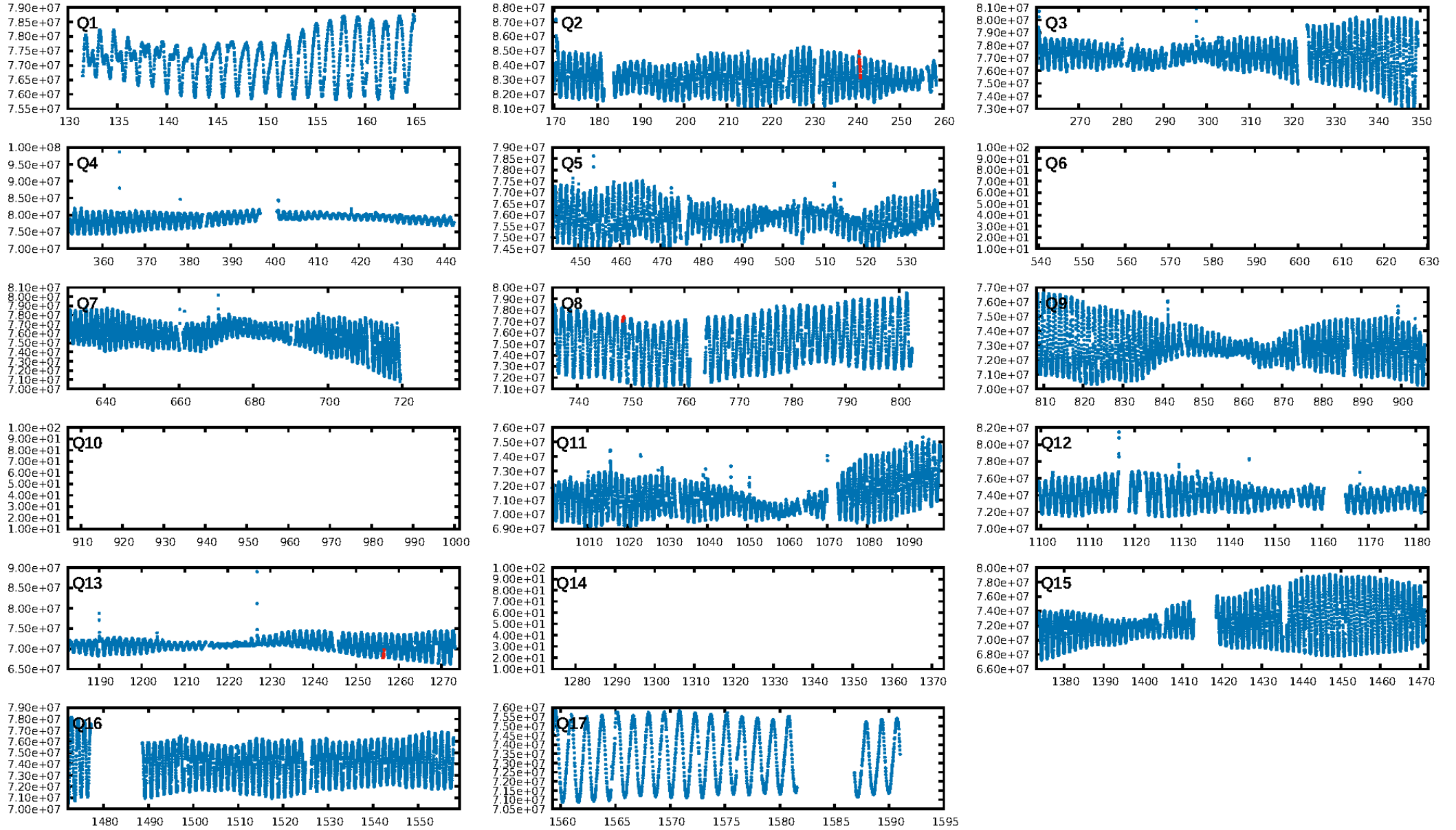
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [388.92σ]
LongPeriod-sig: 100.0% [75.84σ]
ModelChiSquare2-sig: 8.6%
ModelChiSquareGof-sig: 79.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.076
Centroid-sig: 44.2%
Centroid-so: 0.653 arcsec [1.59σ]
OotOffset-rm: 0.123 arcsec [1.20σ]
KicOffset-rm: 0.157 arcsec [1.08σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

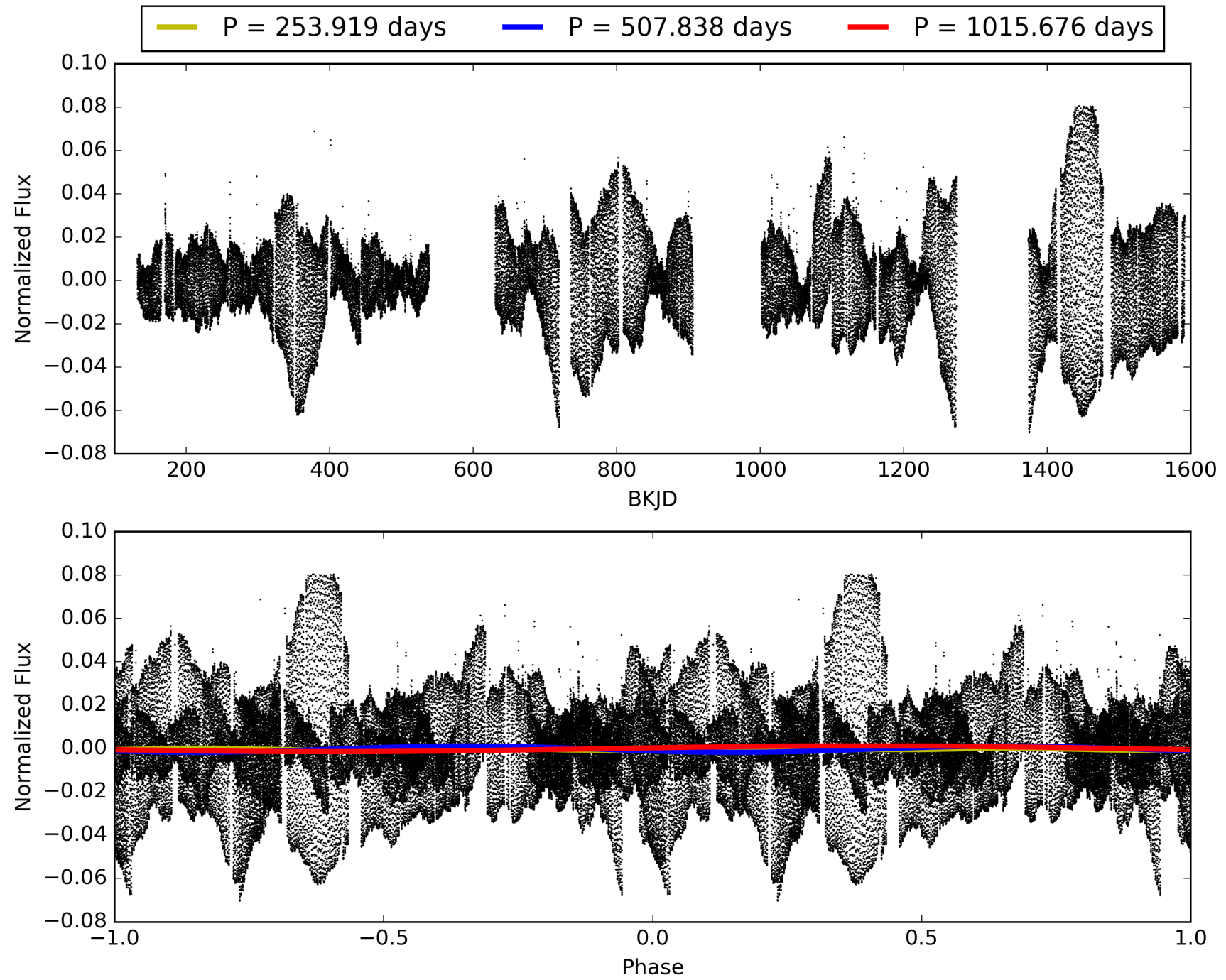
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:05:37 Z

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

TCE 003858086-04, PDC Light Curves

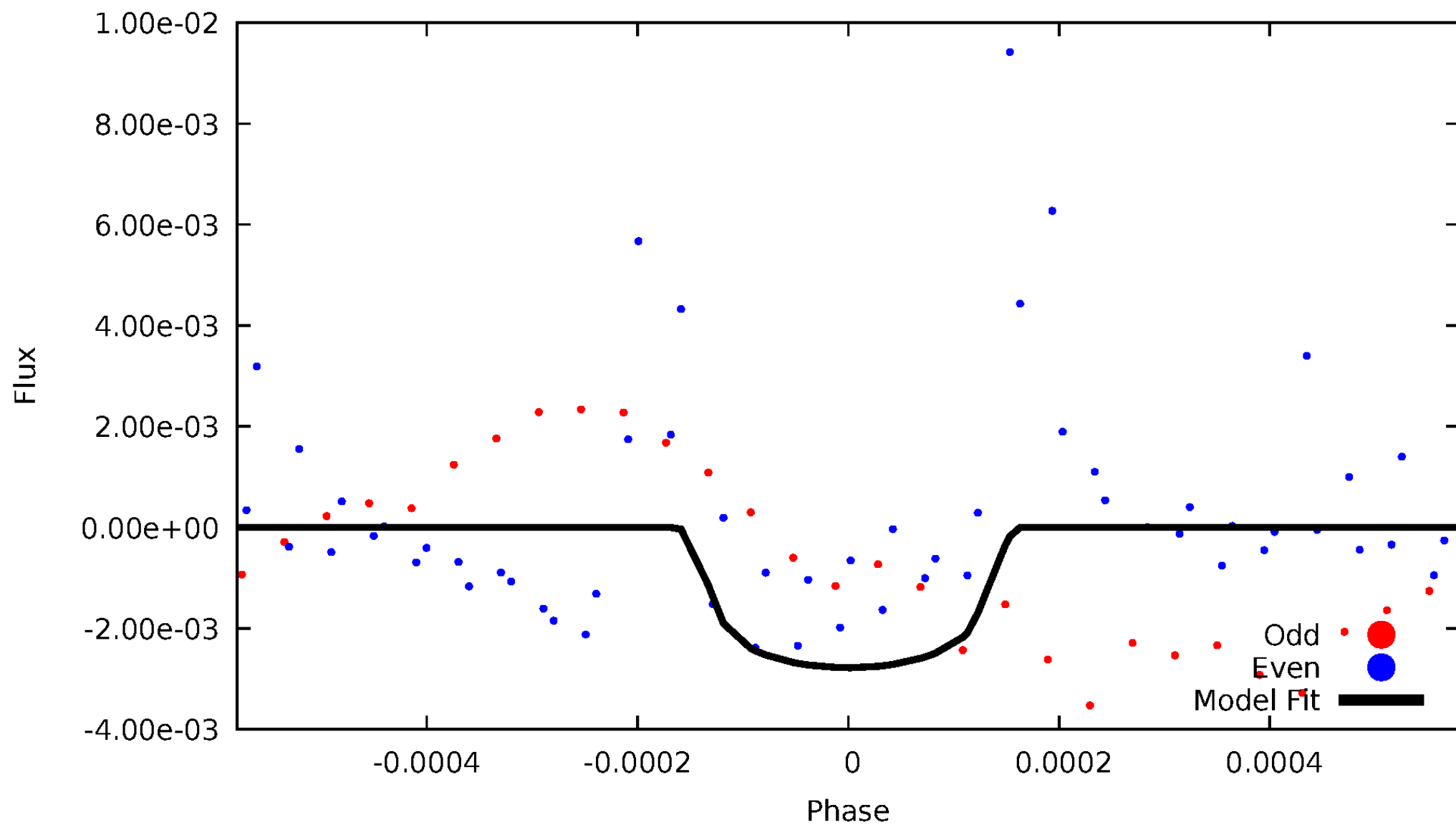


TCE 003858086-04



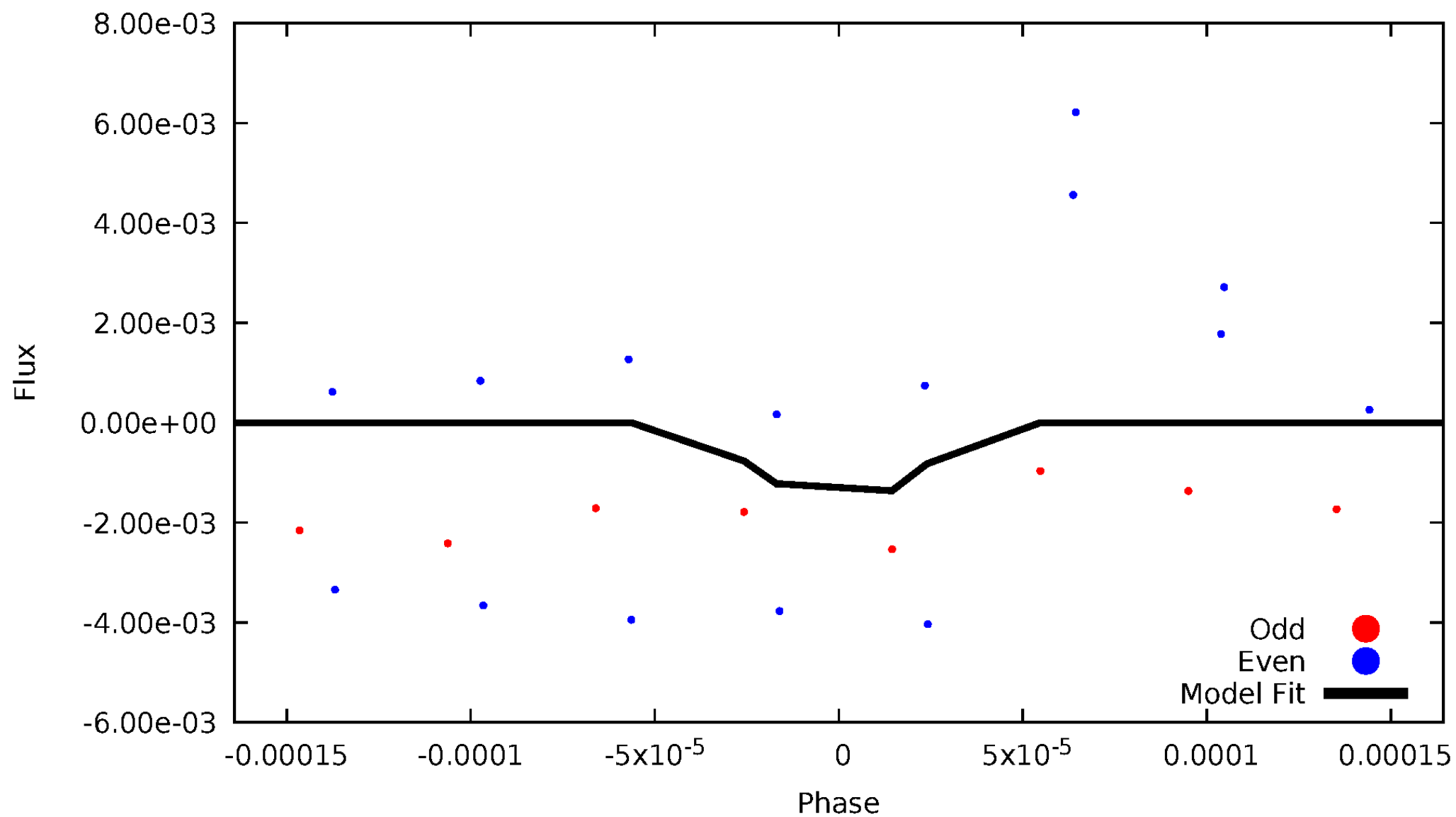
DV Odd/Even

TCE 003858086-04



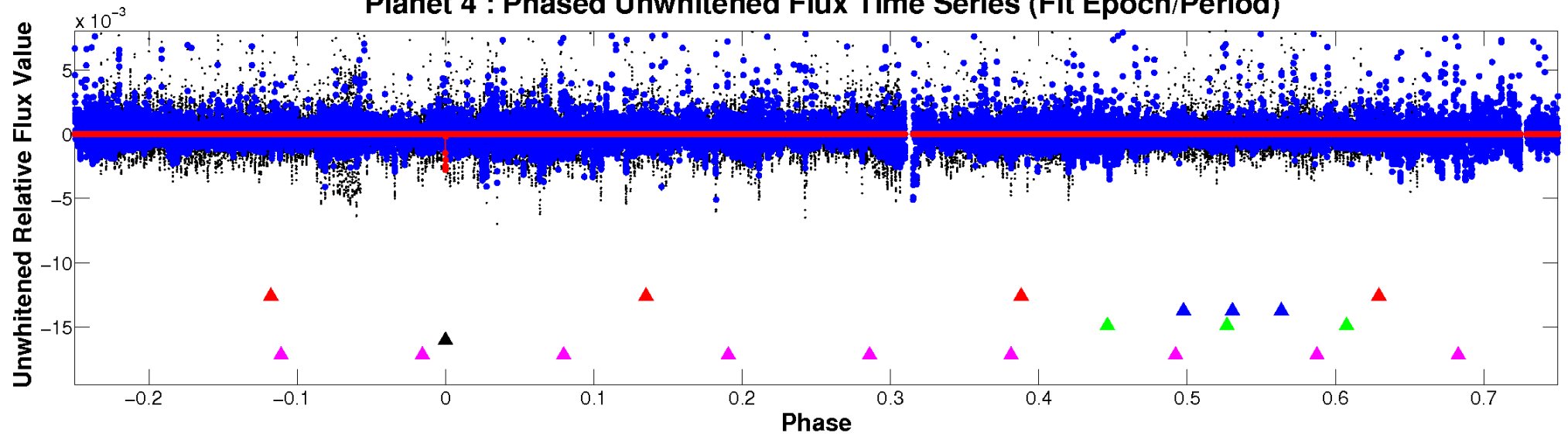
ALT Odd/Even

TCE 003858086-04

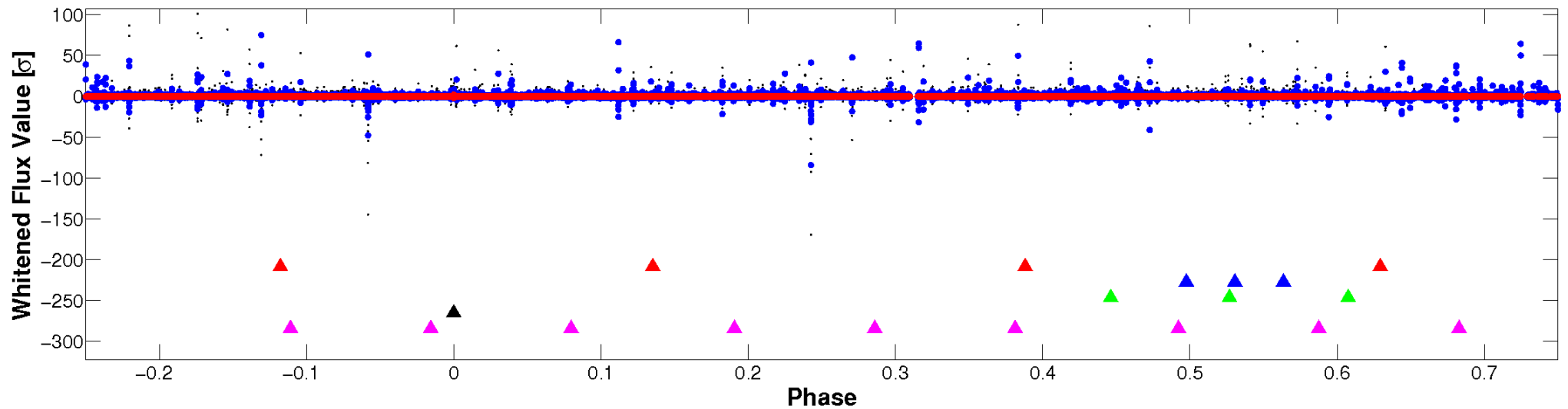


Non-Whitened Vs. Whitened Light Curve

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

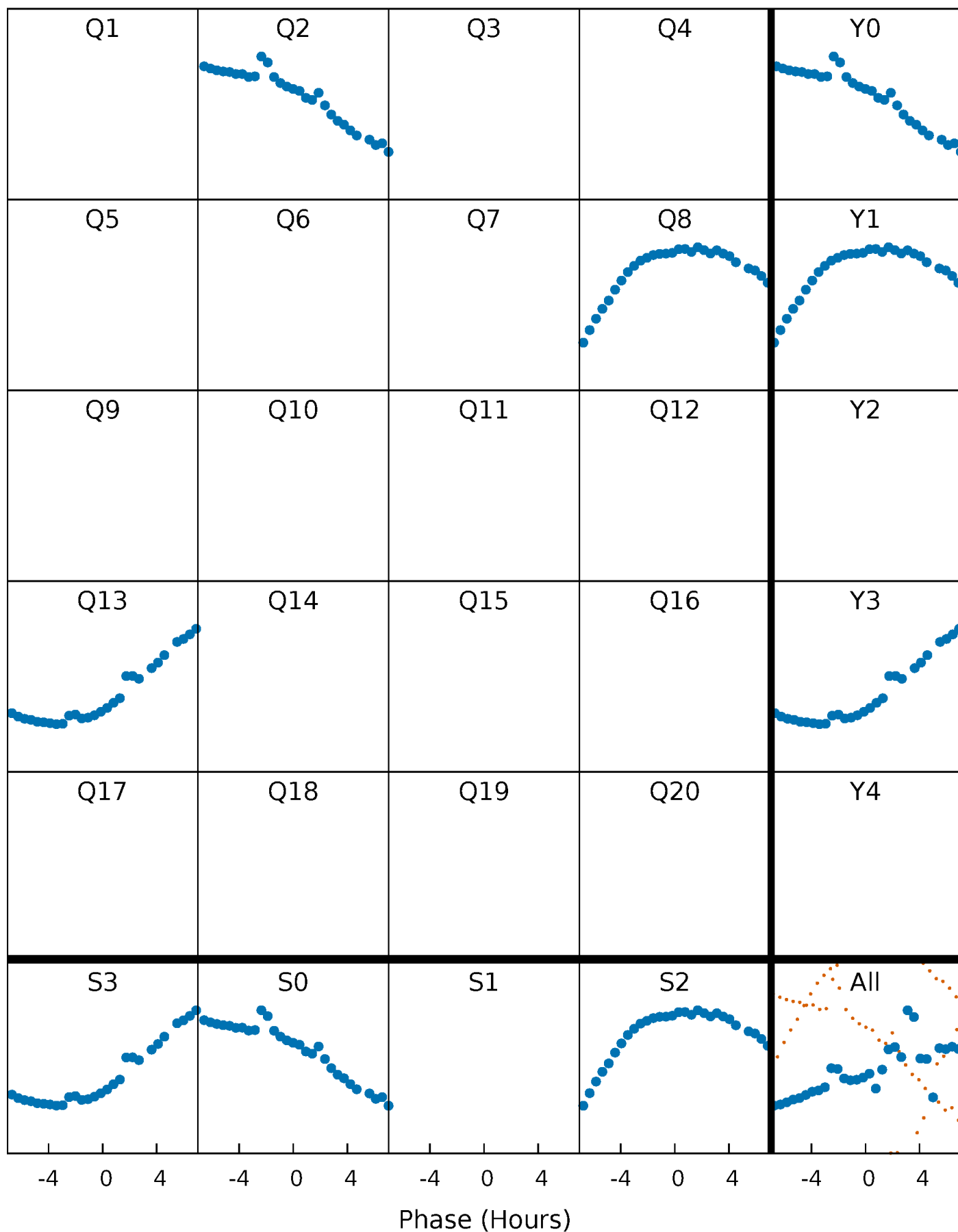


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



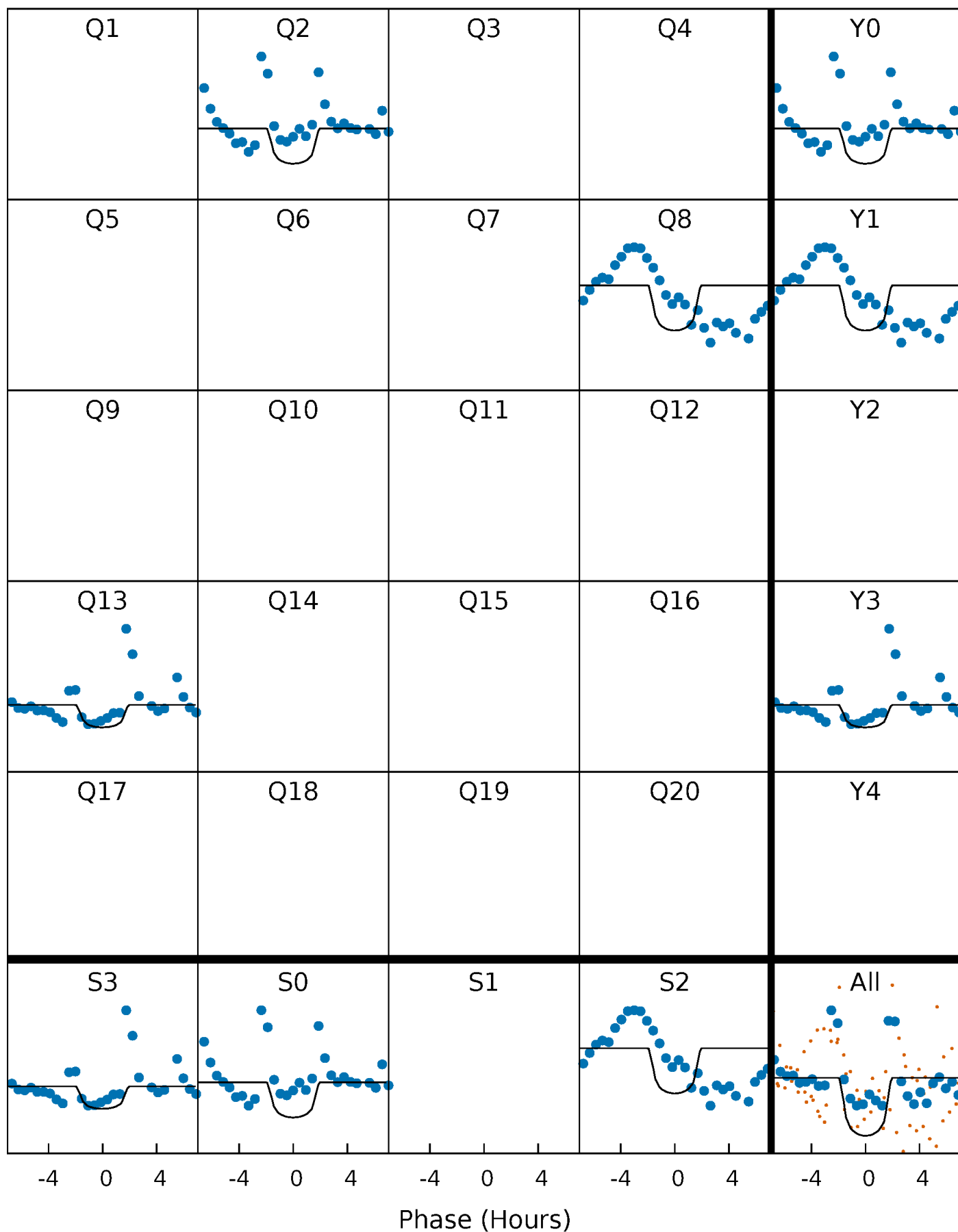
PDC Quarter-Phased Transit Curves

TCE 003858086-04 $P=507.837945$ Days $T_0=240.751426$ (BKJD)



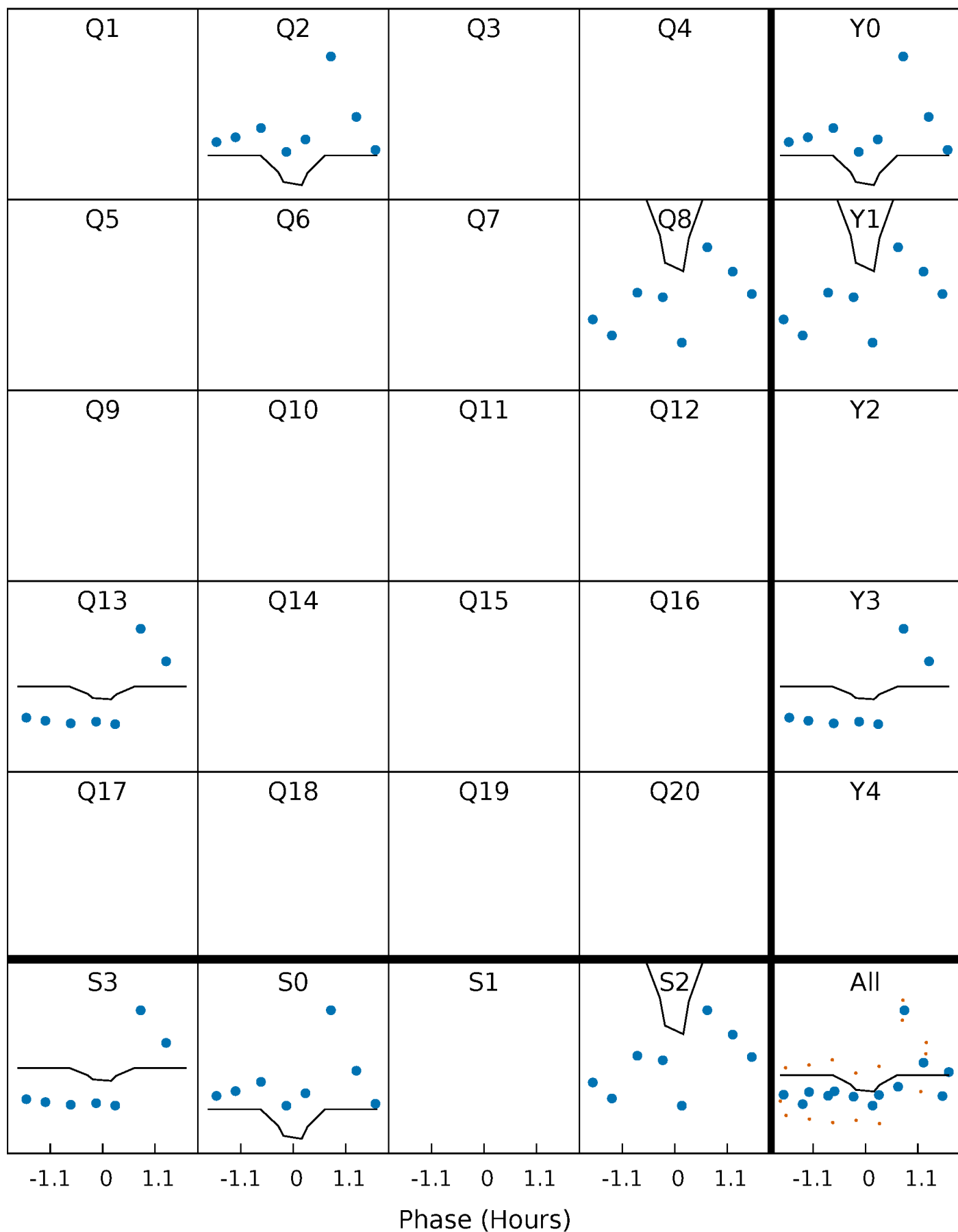
DV Quarter-Phased Transit Curves

TCE 003858086-04 P=507.837945 Days $T_0=240.751426$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

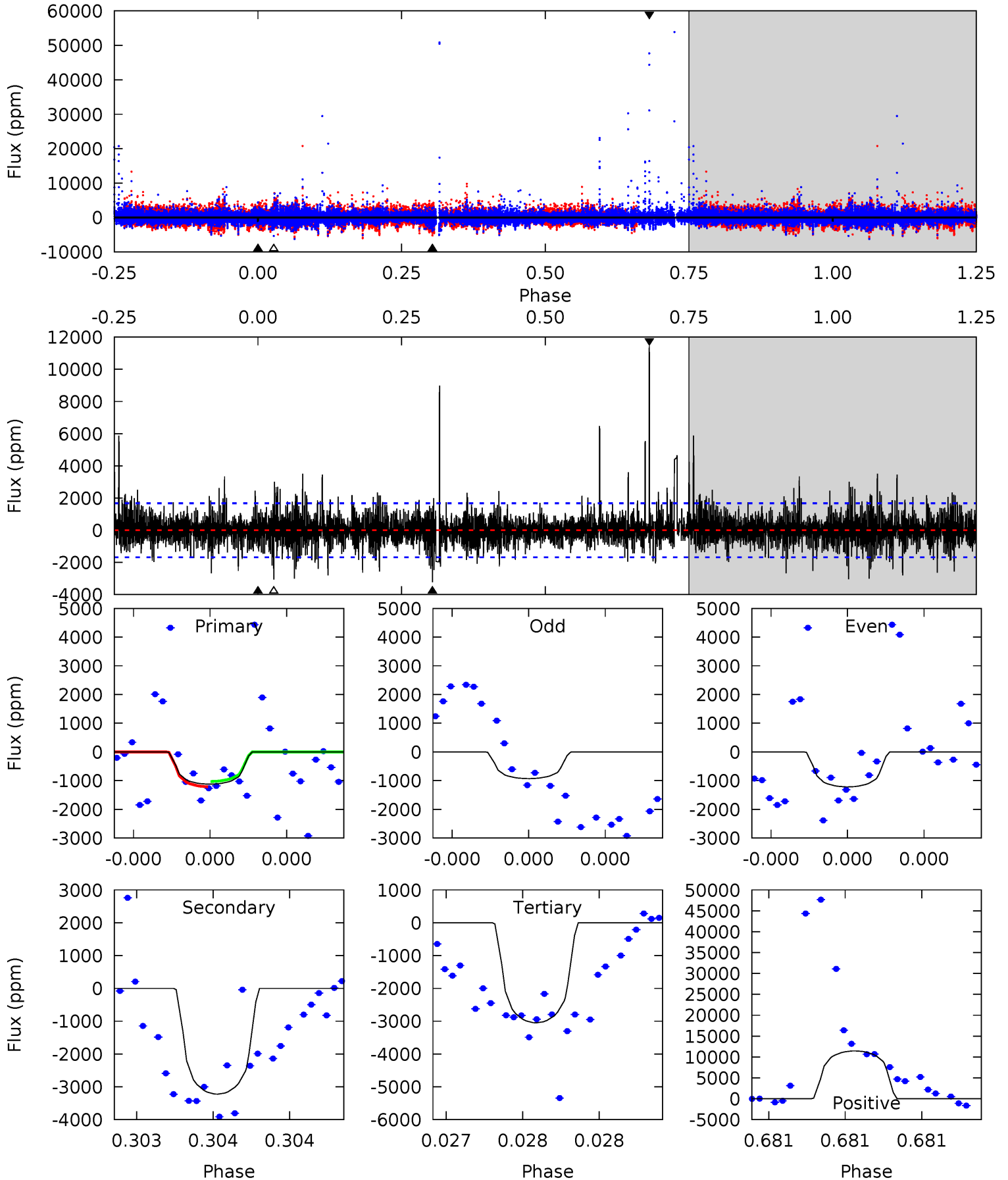
TCE 003858086-04 P=507.835267 Days $T_0=240.801917$ (BKJD)



DV Model-Shift Uniqueness Test

003858086-04, P = 507.837945 Days, E = 240.751426 Days

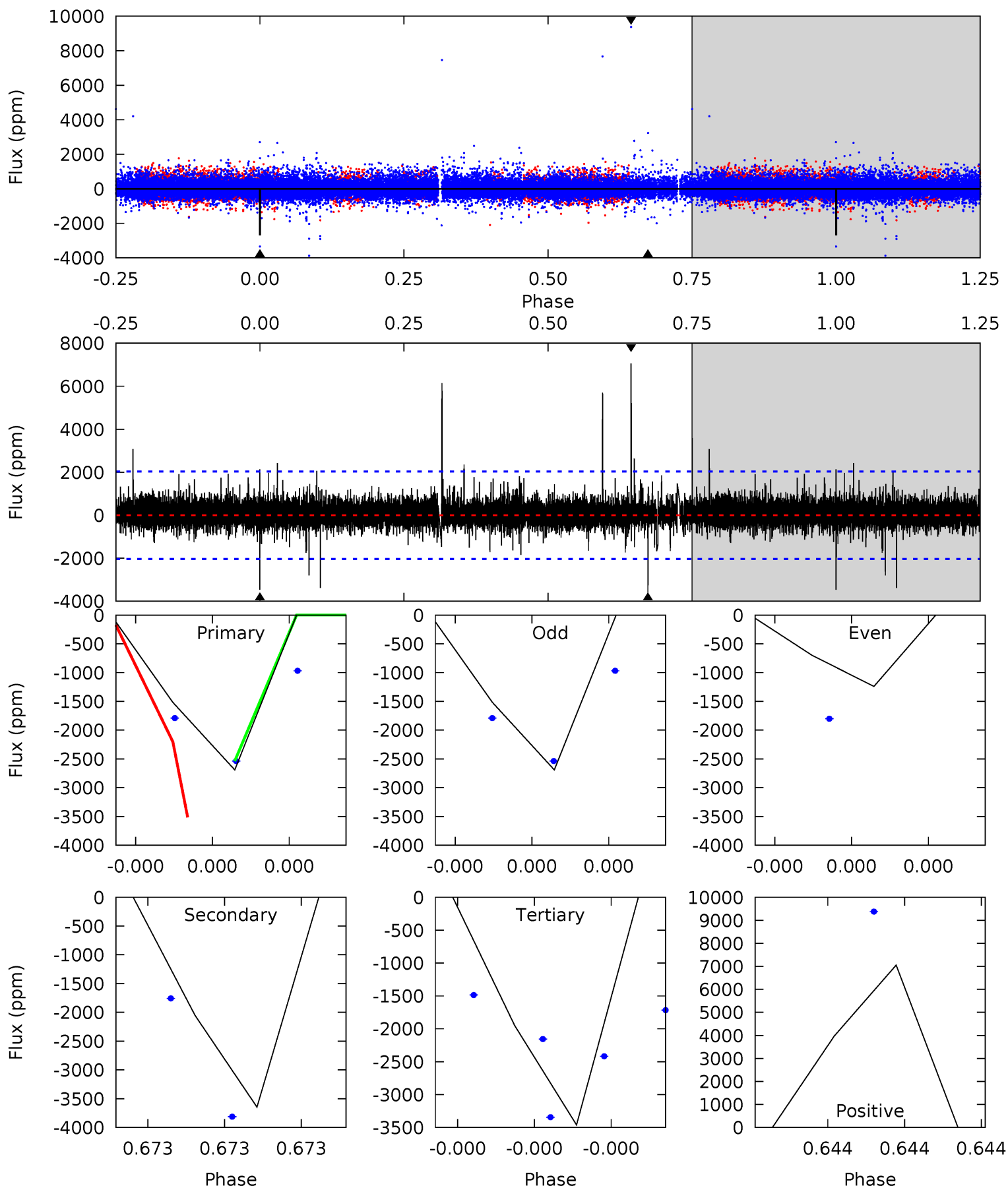
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.80	10.9	10.3	38.7	5.66	3.62	2.50	-6.50	-34.9	0.59	-27.8	0.42	1.17	0.78	0.32



Alt Model-Shift Uniqueness Test

003858086-04, P = 507.835267 Days, E = 240.801917 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.89	10.7	10.1	20.7	5.96	4.06	0.89	-2.26	-12.8	0.54	-9.98	3.30	0.89	0.66	2.05



Stellar Parameters For KIC 003858086

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4880^{+147}_{-147}	$4.696^{+0.048}_{-0.028}$	$-1.260^{+0.300}_{-0.300}$	$0.557^{+0.033}_{-0.033}$	$0.562^{+0.041}_{-0.021}$	$4.576^{+0.823}_{-0.519}$
	+3%/-3%	+1%/-1%	+24%/-24%	+6%/-6%	+7%/-4%	+18%/-11%
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 003858086-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3225 ± 296	$3.21^{+2.04}_{-1.85}$	220^{+8}_{-7}	4988^{+2667}_{-859}	$182509^{+847378}_{-113705}$
Alt.	-3645 ± 341	$2.94^{+2.15}_{-1.79}$	220^{+8}_{-7}	5364^{+3702}_{-1069}	$249264^{+1453860}_{-166420}$

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 $A_{obs} \gg 1.0$

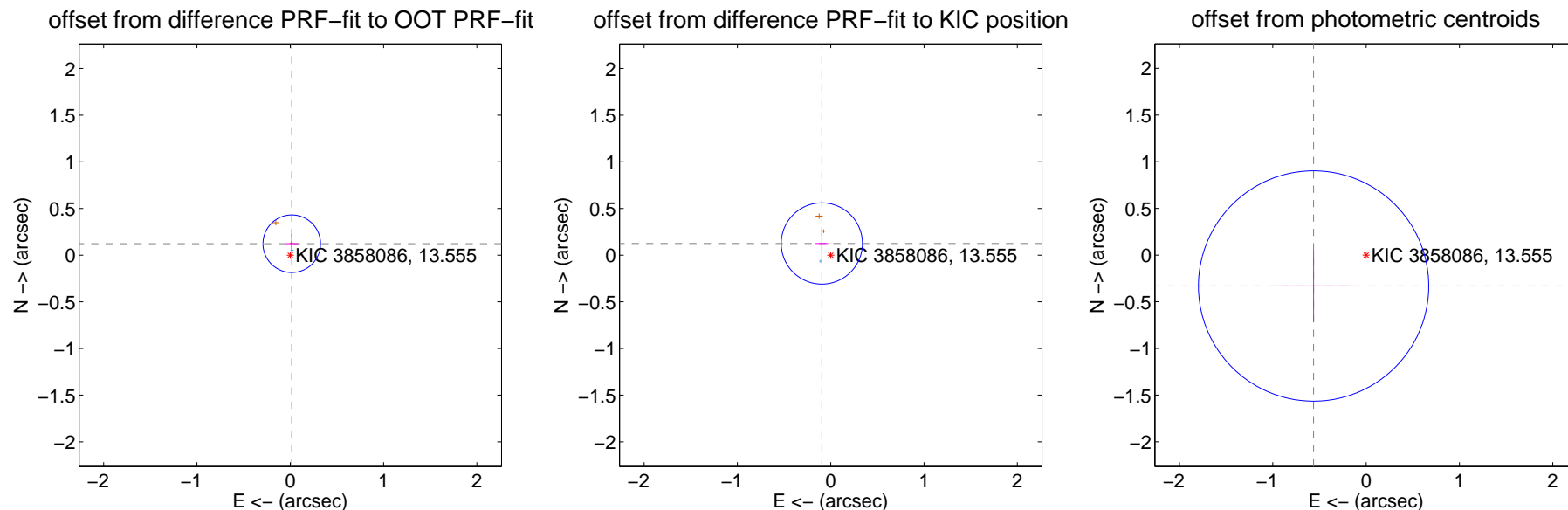
DV Centroid Data

Supplemental centroid analysis for 003858086-04. Kepler magnitude: 13.55. Transit SNR 7.73

There are 1 quarters with good PRF difference image offsets

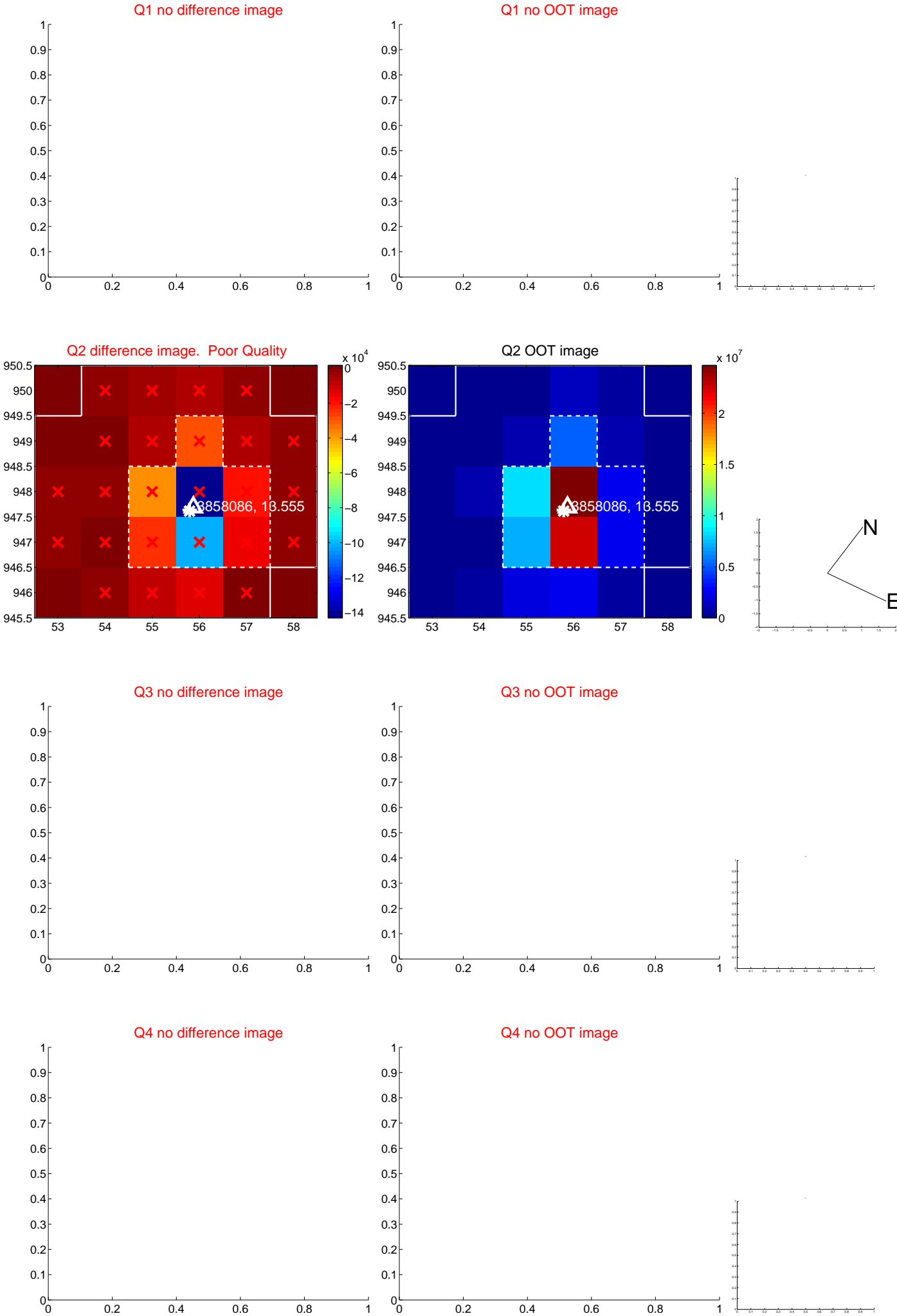
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.123 ± 0.103	1.20	-0.016 ± 0.069	0.122 ± 0.103
PRF-fit source offset from KIC position	0.157 ± 0.145	1.08	0.095 ± 0.068	0.125 ± 0.175
photometric centroid source offset	0.65 ± 0.41	1.59	0.56 ± 0.42	-0.33 ± 0.38

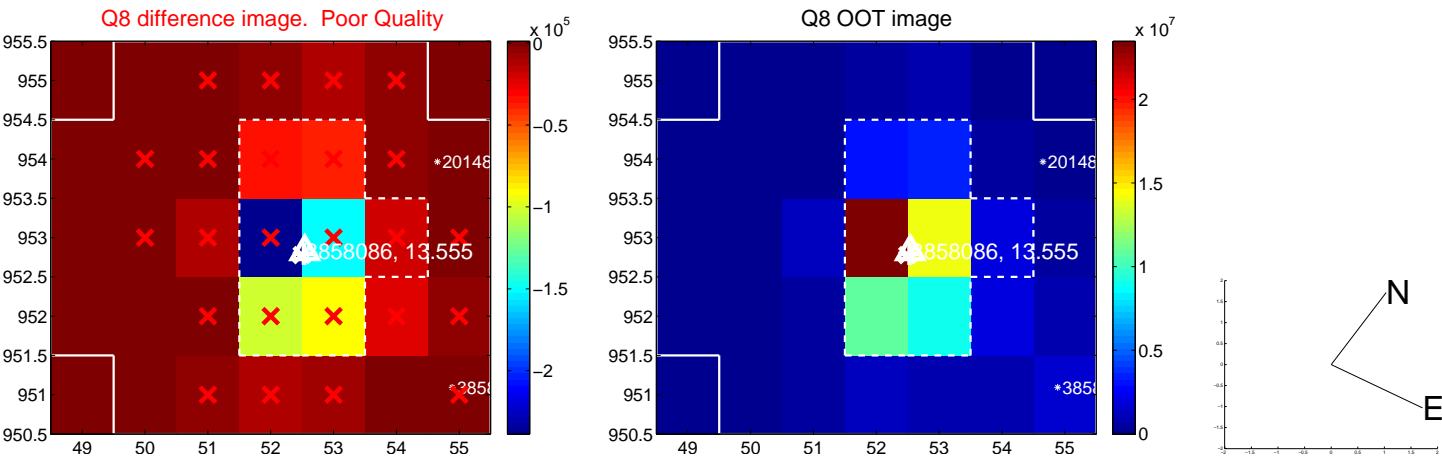


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



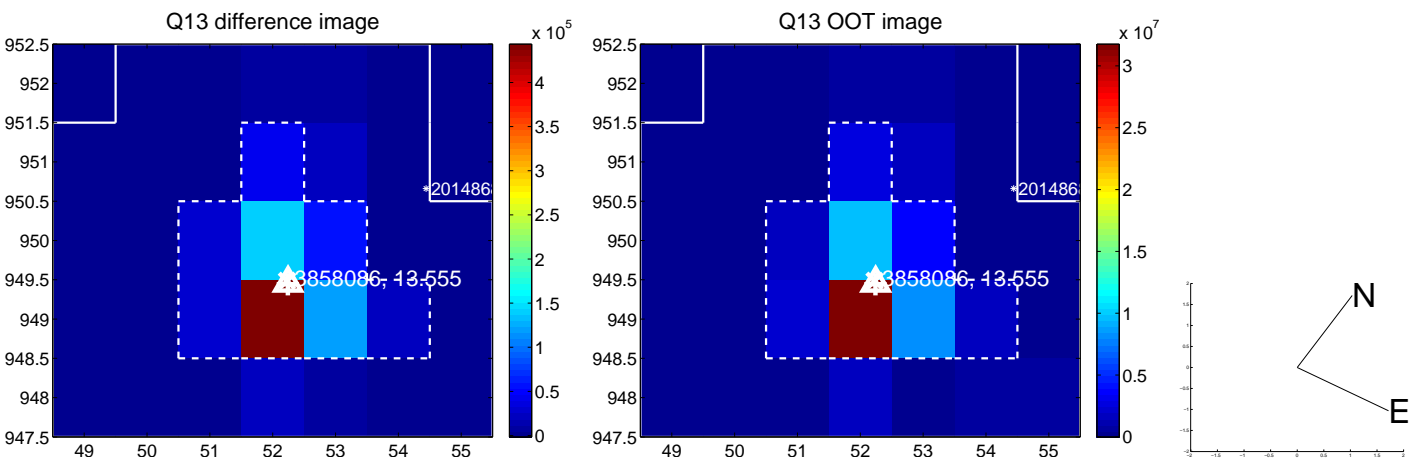
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



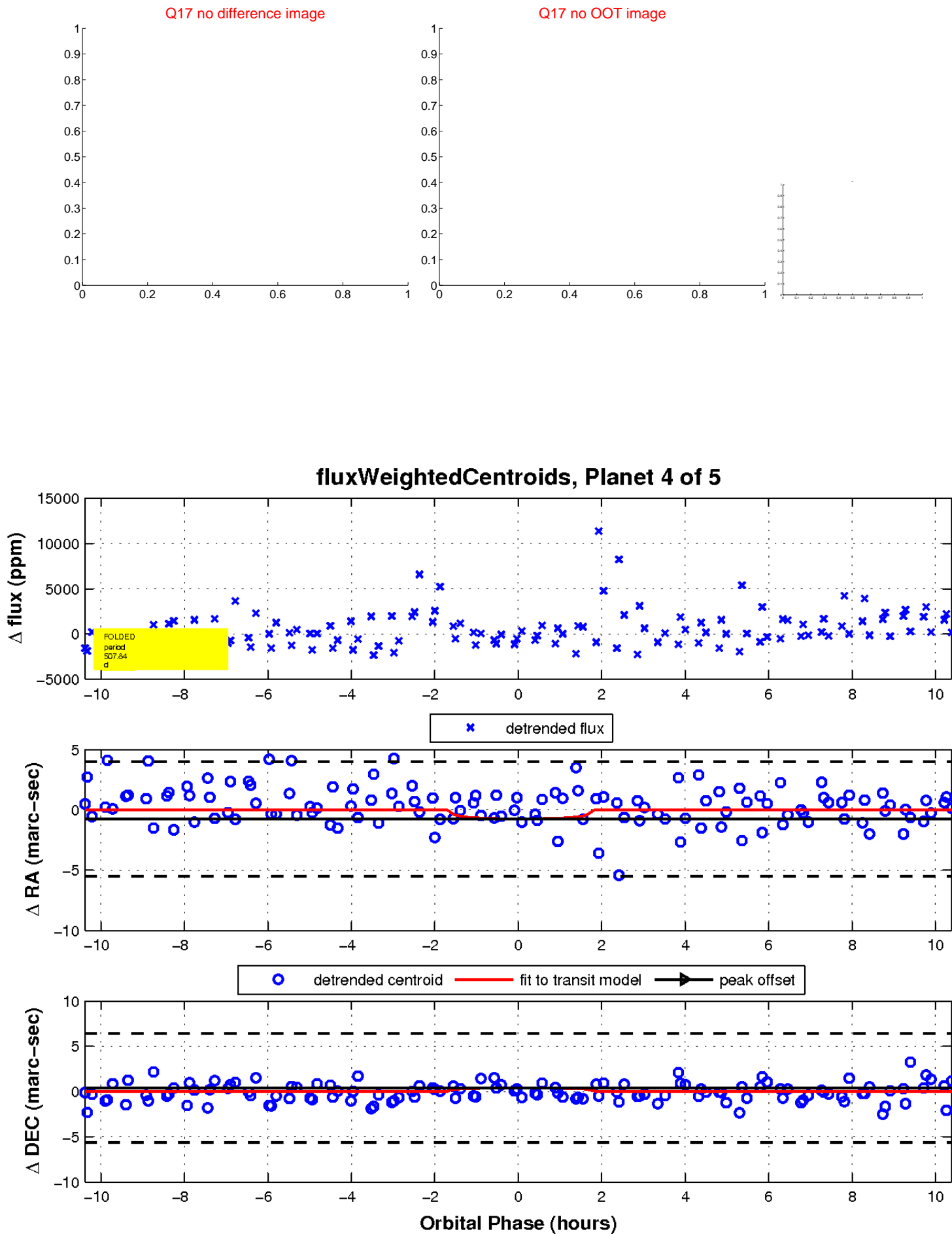
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

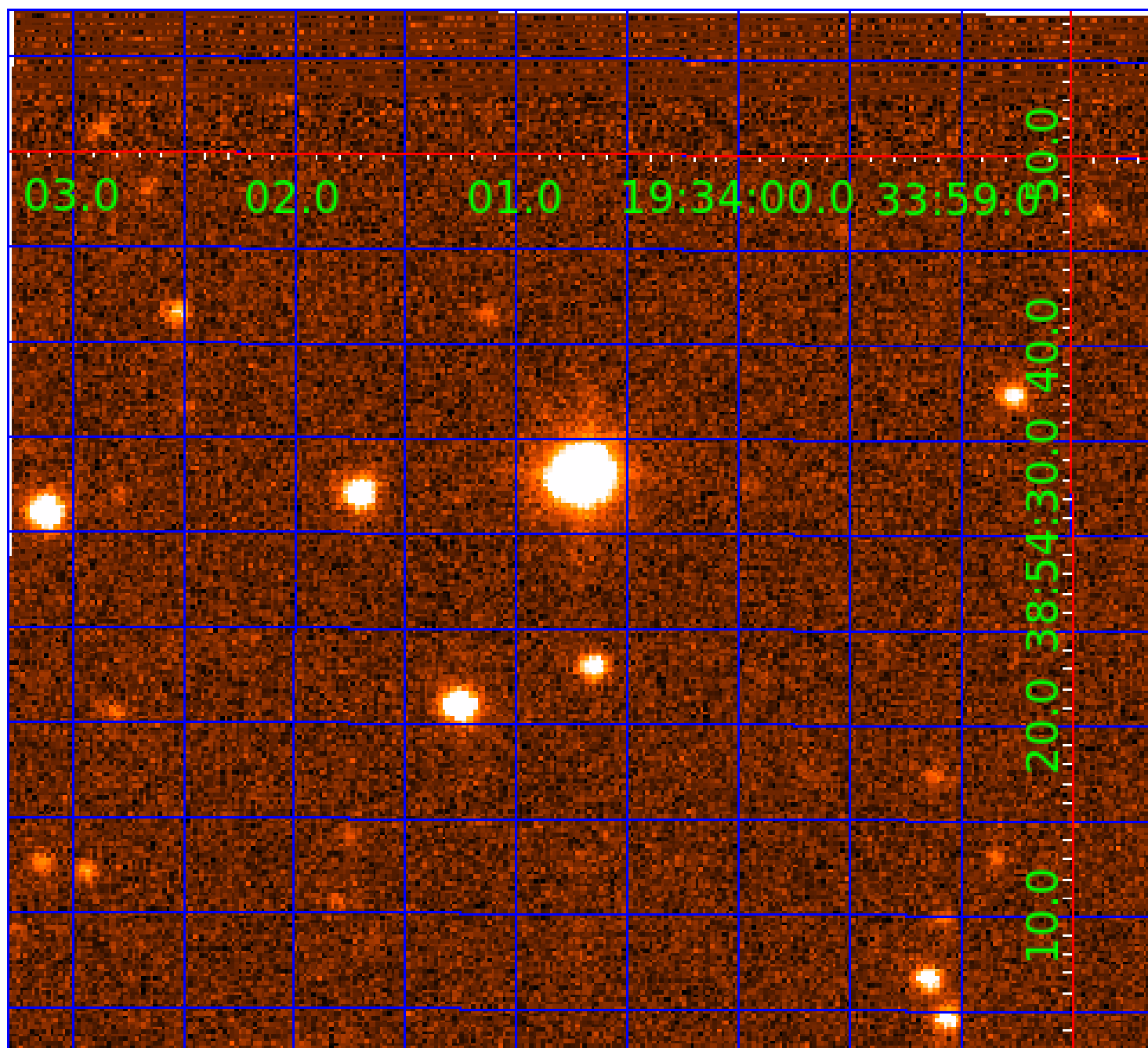


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003858086

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})
003858086-01	OBS	No	379.382779	437.860834	1936.9	7.096	18.3	5.7	0.56	4880	2.43	0.22
003858086-02	OBS	No	524.579395	493.468491	2756.3	3.947	16.8	9.2	0.56	4880	2.88	0.14
003858086-03	OBS	No	548.779879	467.388411	1897.7	4.368	19.0	4.8	0.56	4880	2.47	0.13
003858086-04	OBS	No	507.837945	240.751426	2781.2	3.533	13.8	7.7	0.56	4880	2.89	0.15
003858086-05	OBS	No	153.146668	281.240196	782.8	2.500	11.7	-1.0	0.56	4880	1.54	0.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858086-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
003858086-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003858086-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003858086-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003858086-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—CENT_NOFITS

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

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

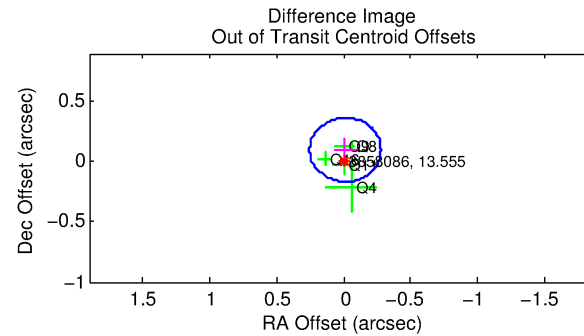
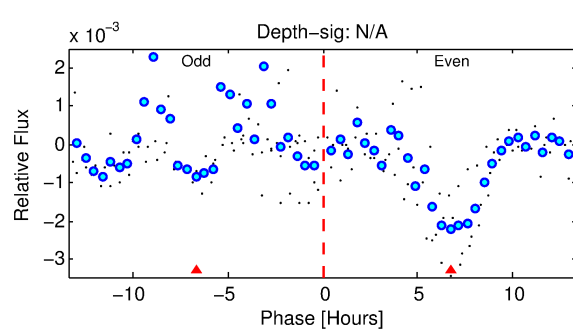
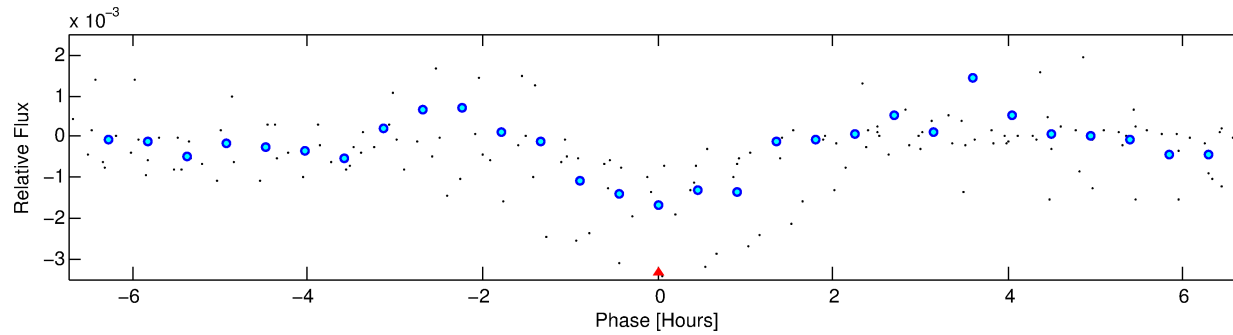
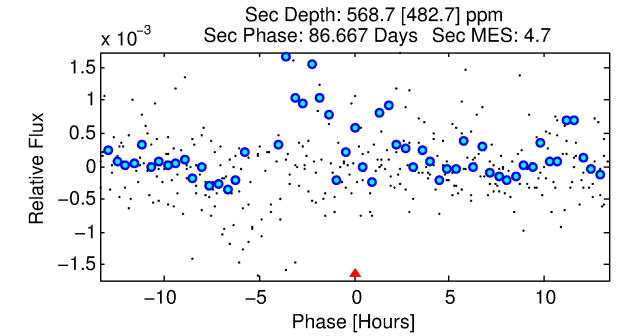
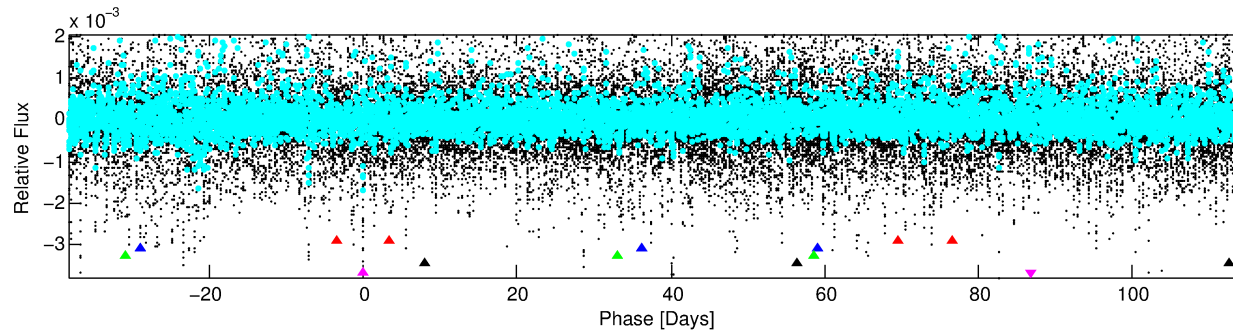
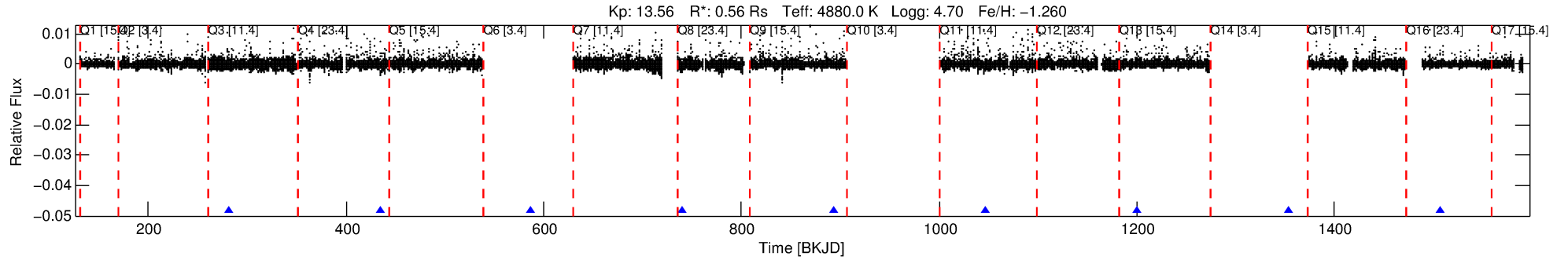
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003858086-05

No Significant Match Found

DV One-Page Summary

KIC: 3858086 Candidate: 5 of 5 Period: 153.147 d



TPS TCE Results:

Period = 153.14667 d
Epoch = 281.2402 BKJD

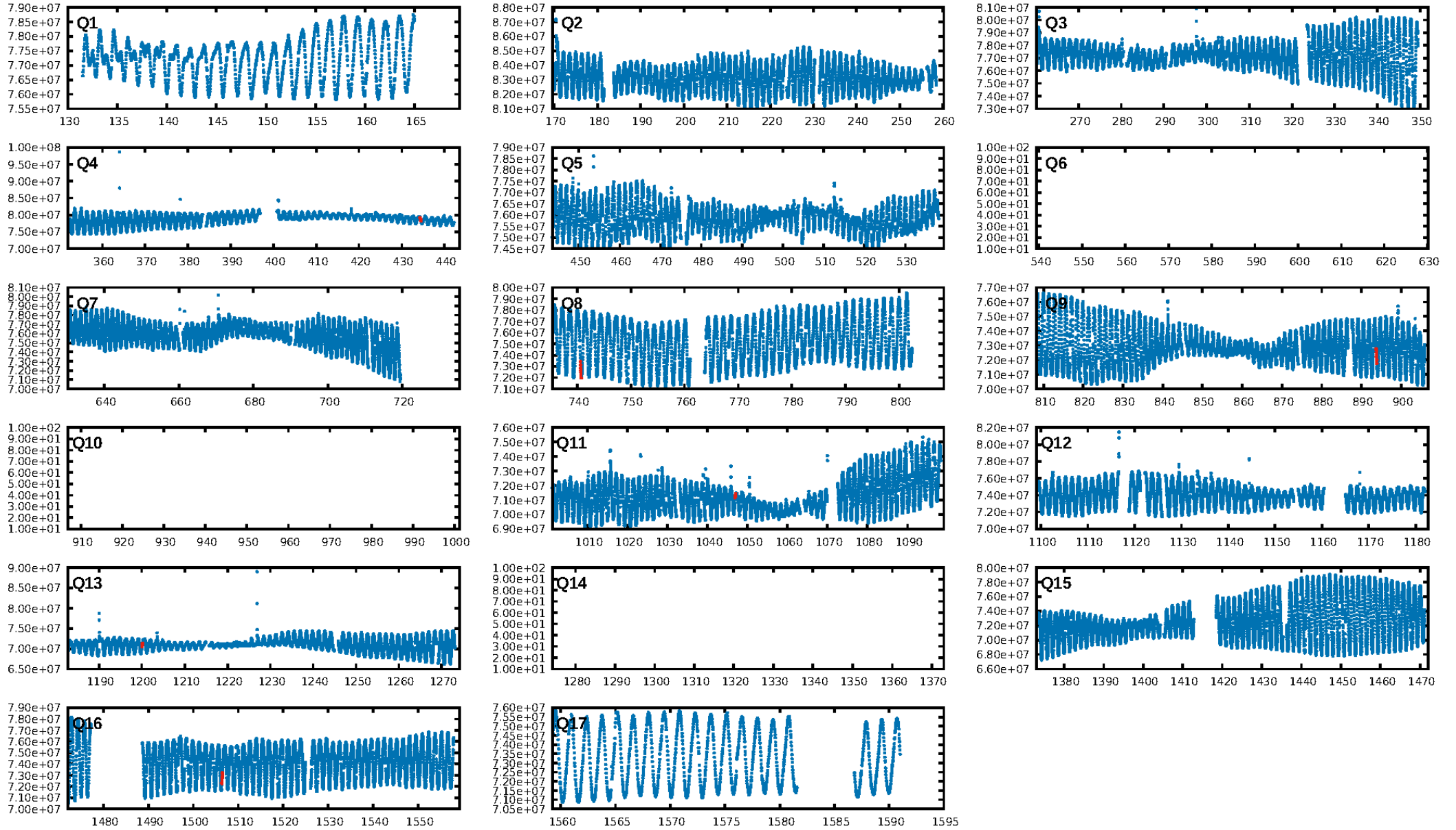
DV fit results are unavailable

DV Diagnostic Results:

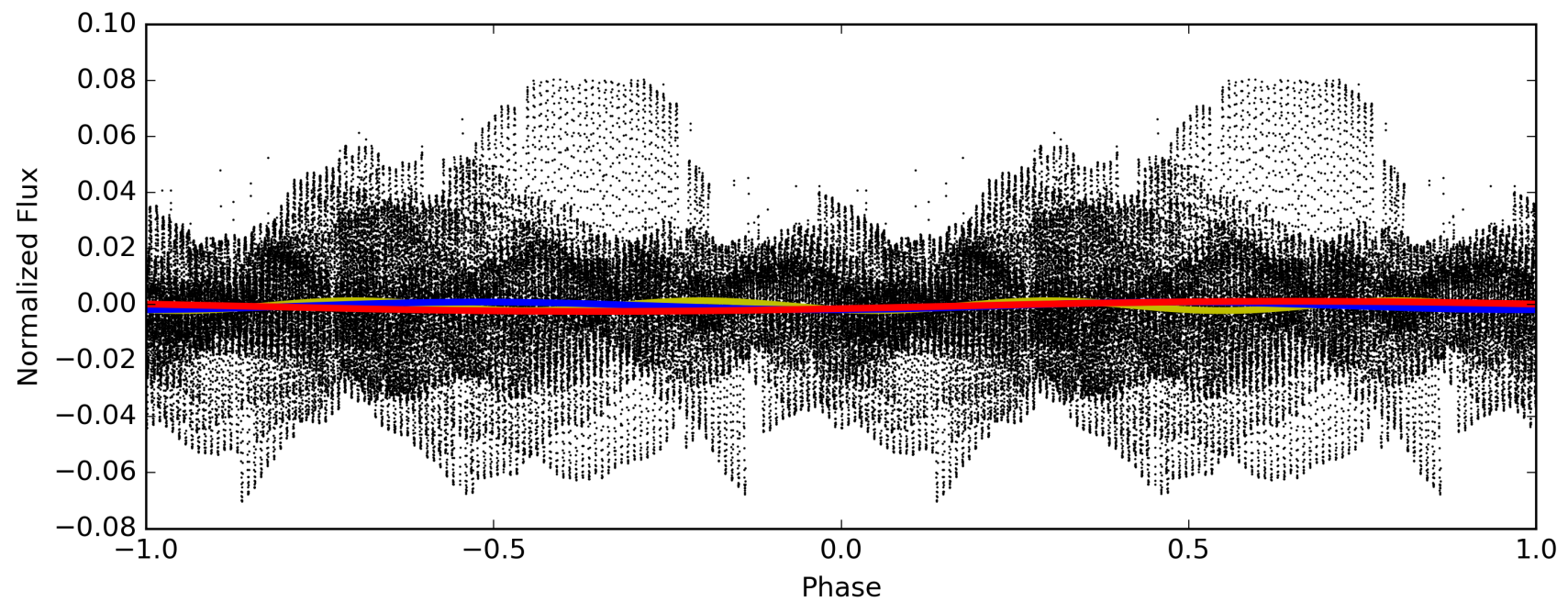
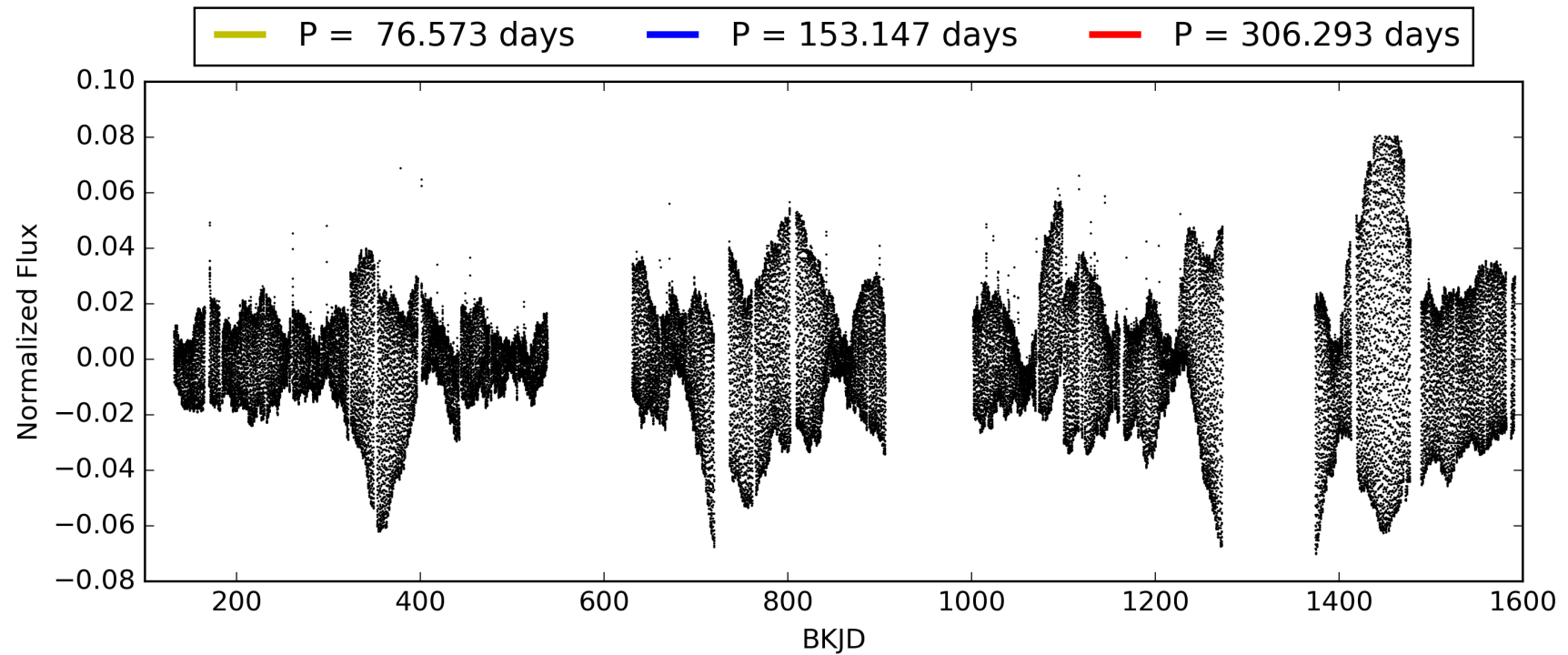
ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [721.70 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -7.898

Centroid-sig: 41.8%
Centroid-so: 1.094 arcsec [1.23 σ]
OotOffset-rm: 0.099 arcsec [1.12 σ]
KicOffset-rm: 0.224 arcsec [2.70 σ]
OotOffset-st: 0/1/3/1 [5]
KicOffset-st: 0/1/3/1 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 1.00 [5/5]

TCE 003858086-05, PDC Light Curves

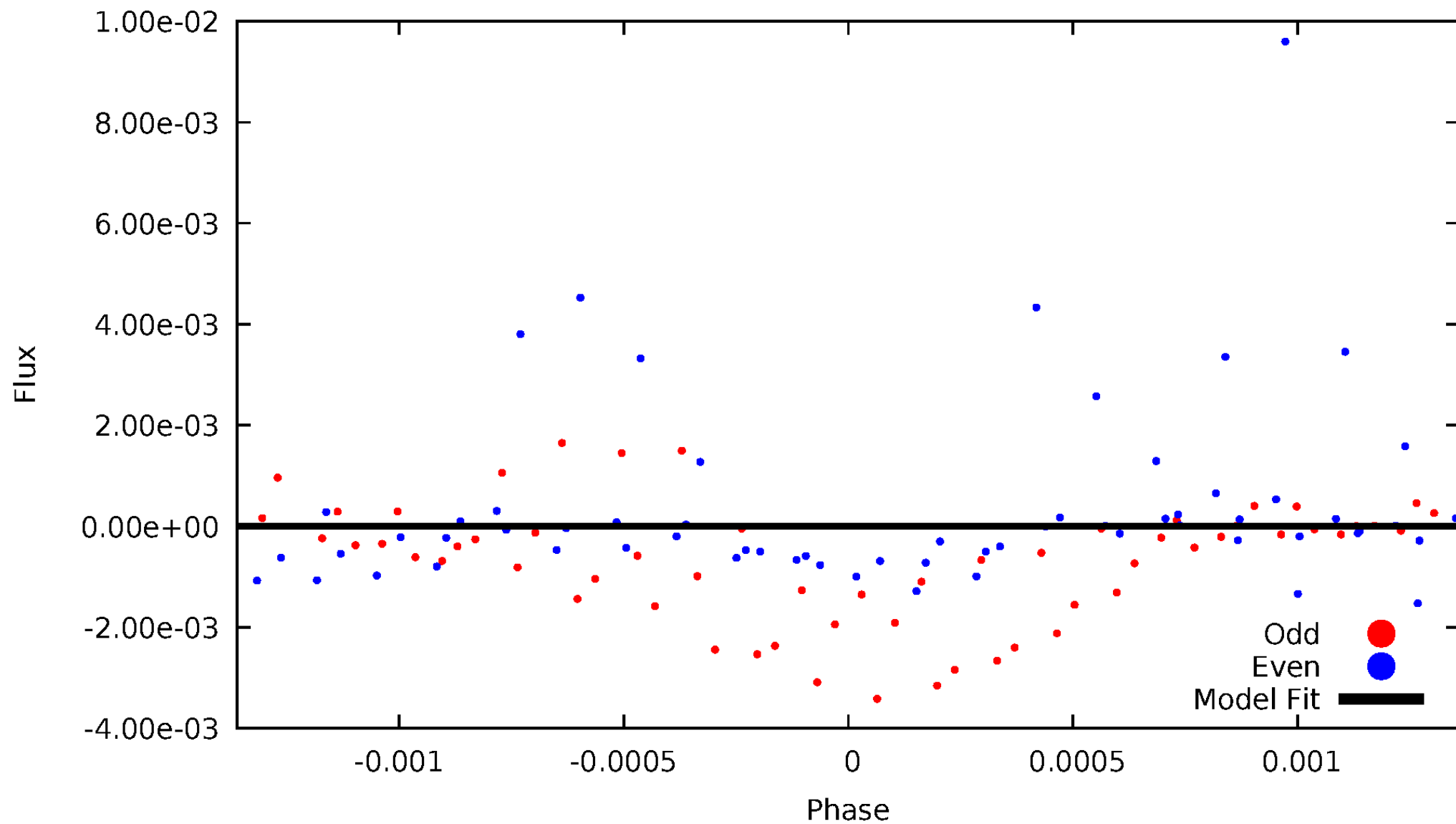


TCE 003858086-05



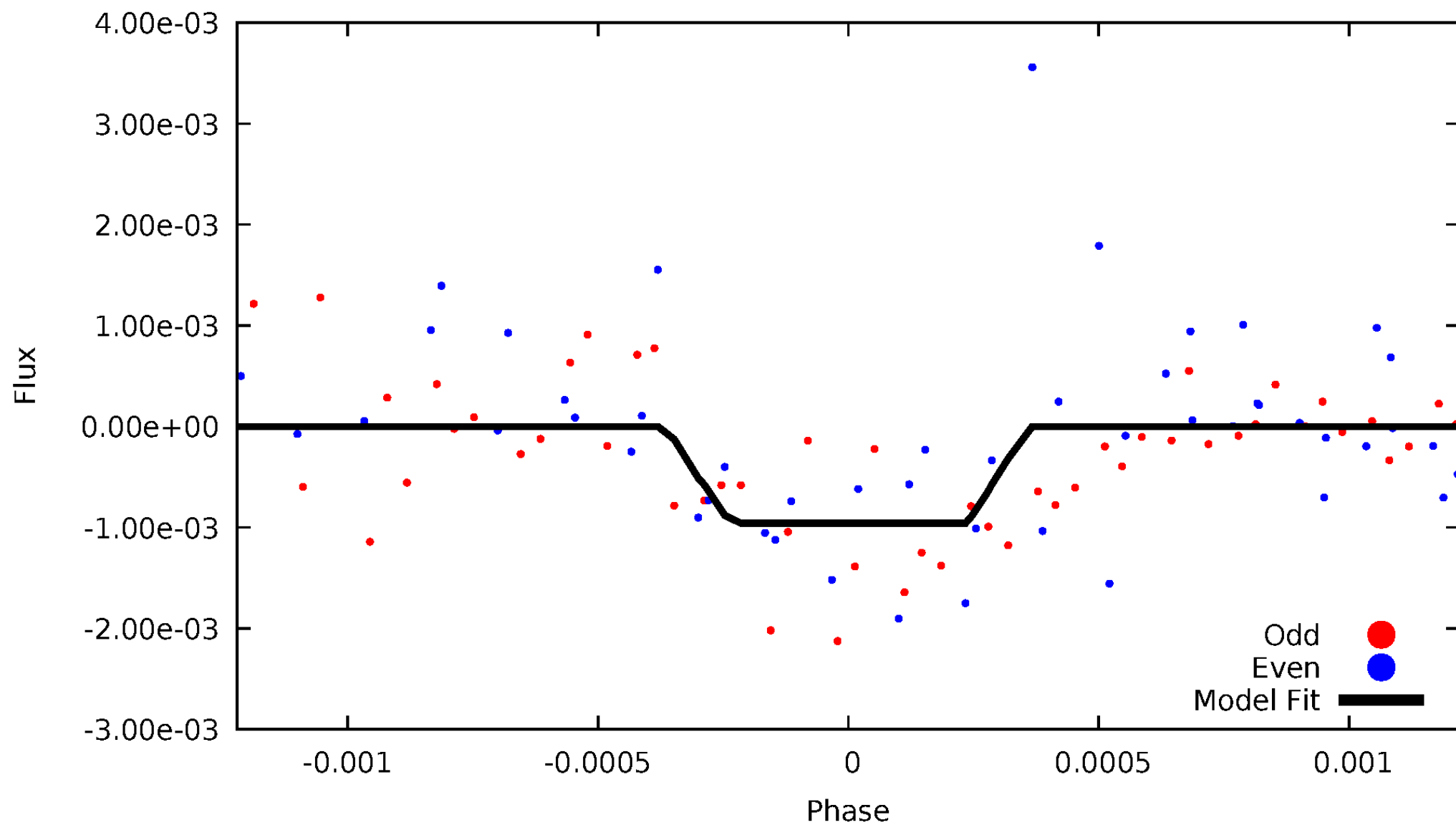
DV Odd/Even

TCE 003858086-05

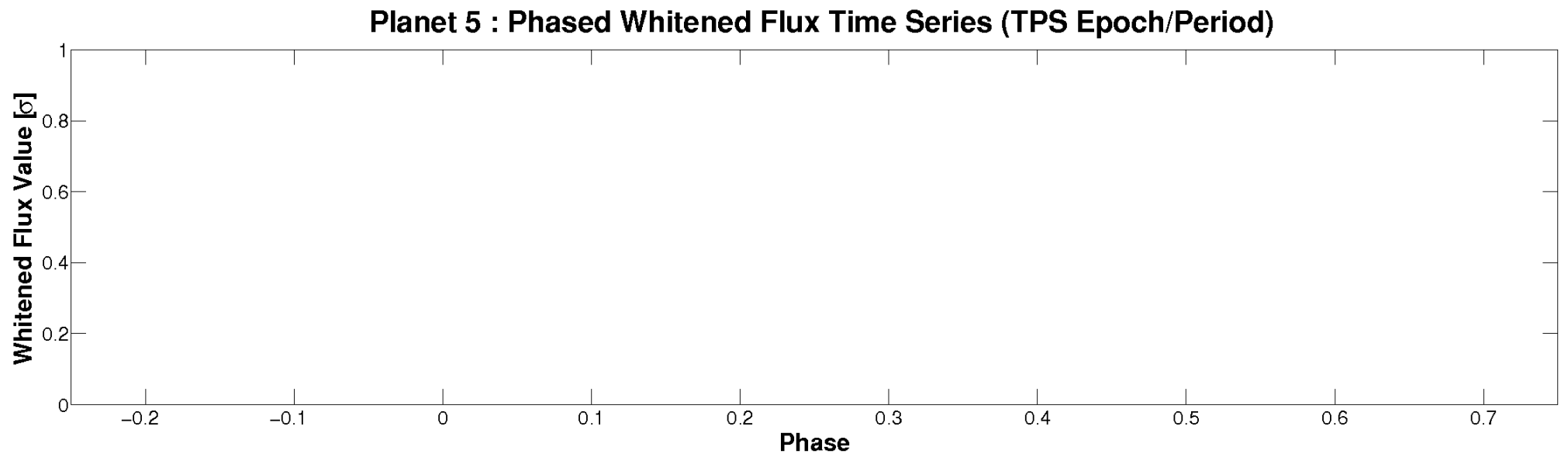
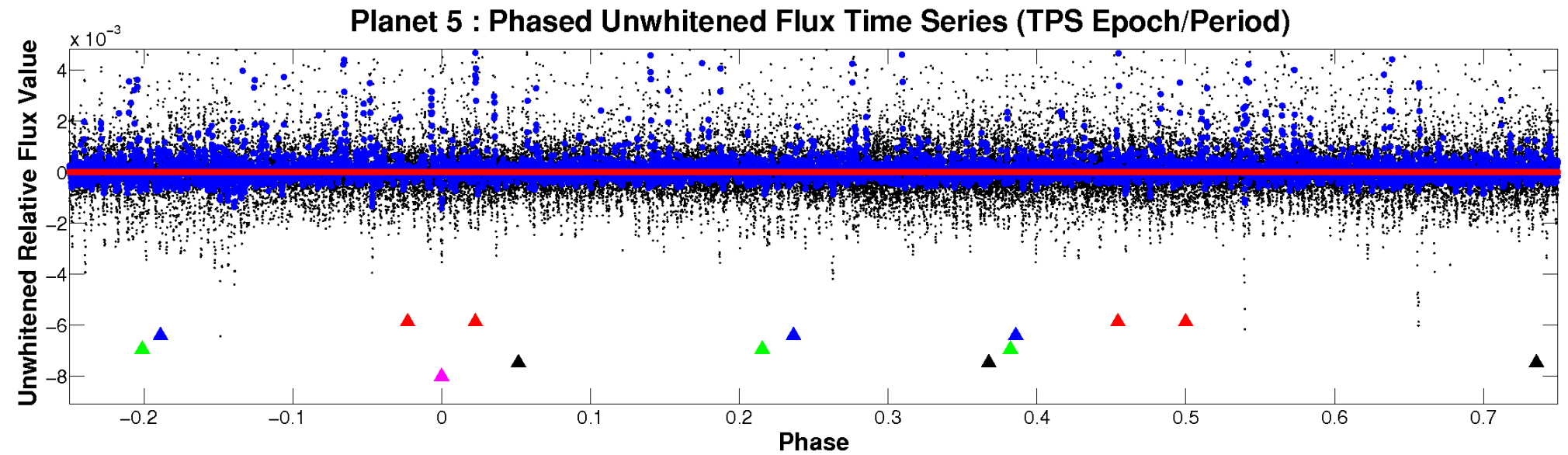


ALT Odd/Even

TCE 003858086-05

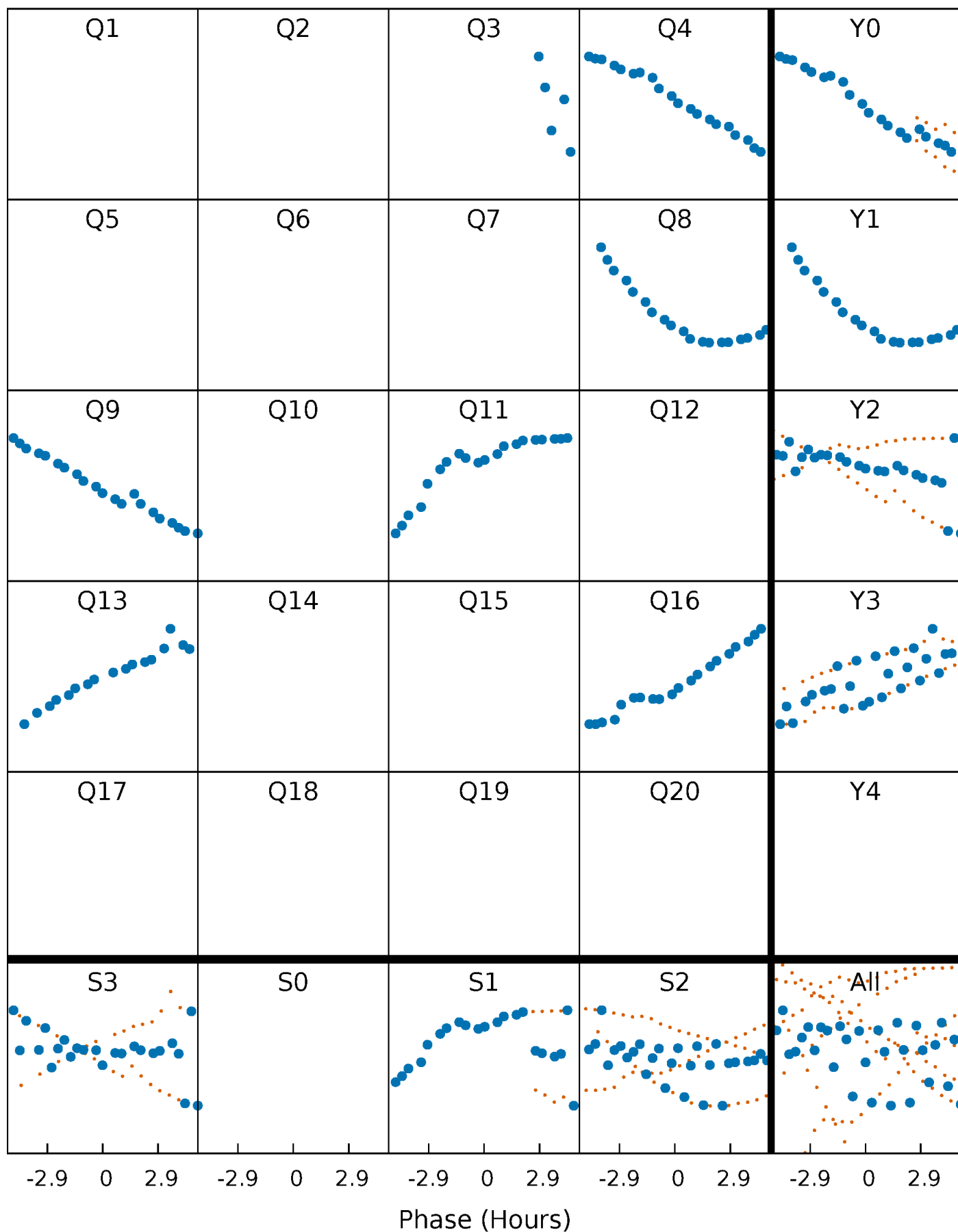


Non-Whitened Vs. Whitened Light Curve



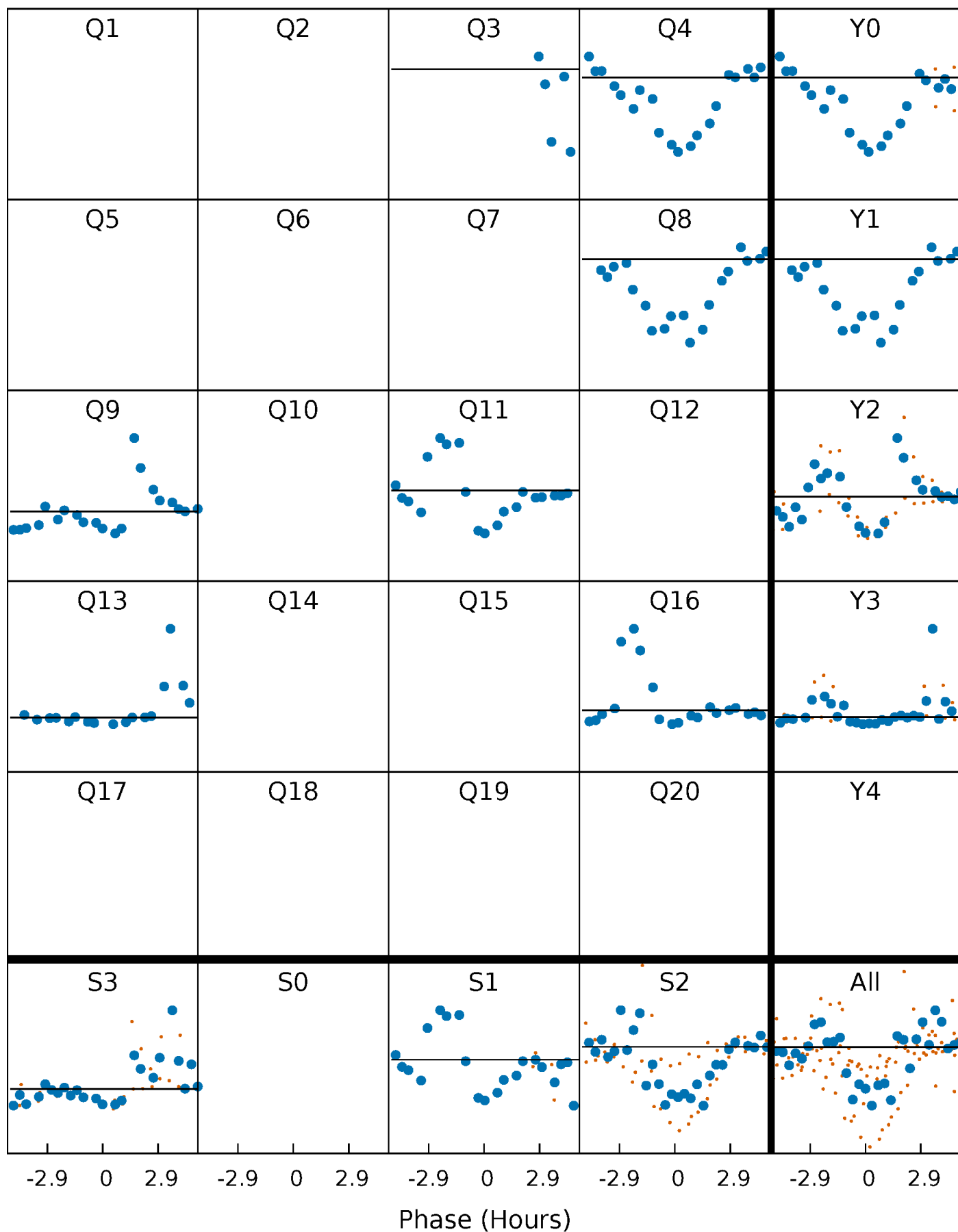
PDC Quarter-Phased Transit Curves

TCE 003858086-05 $P=153.146668$ Days $T_0=281.240196$ (BKJD)



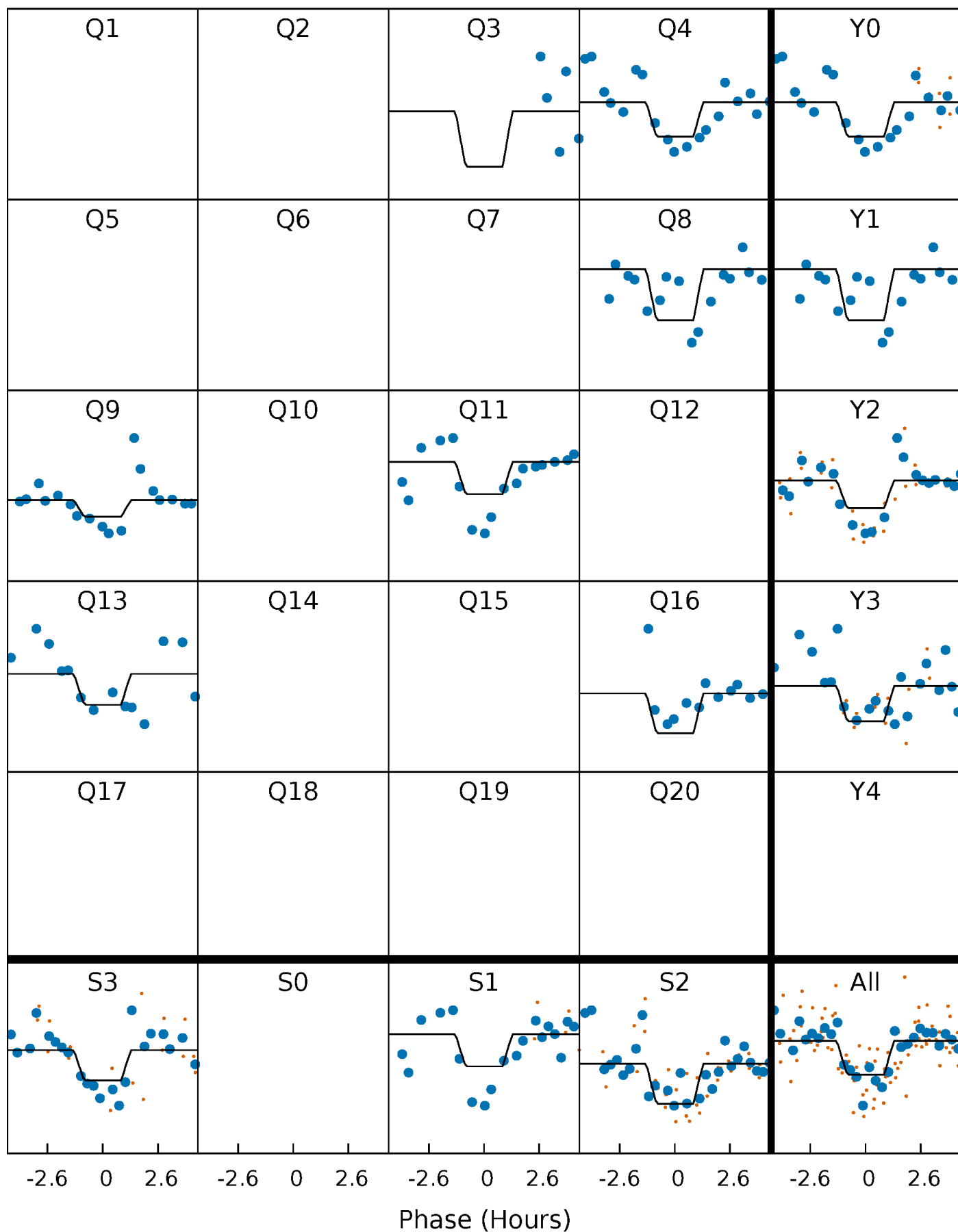
DV Quarter-Phased Transit Curves

TCE 003858086-05 $P=153.146668$ Days $T_0=281.240196$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

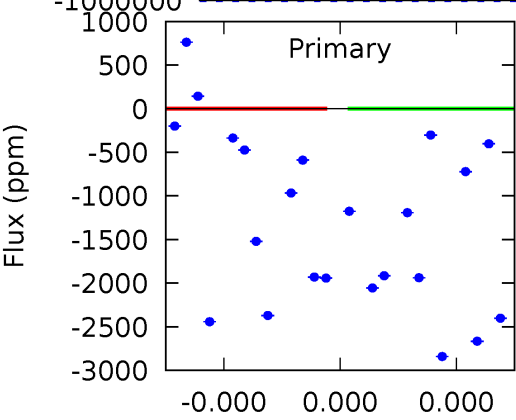
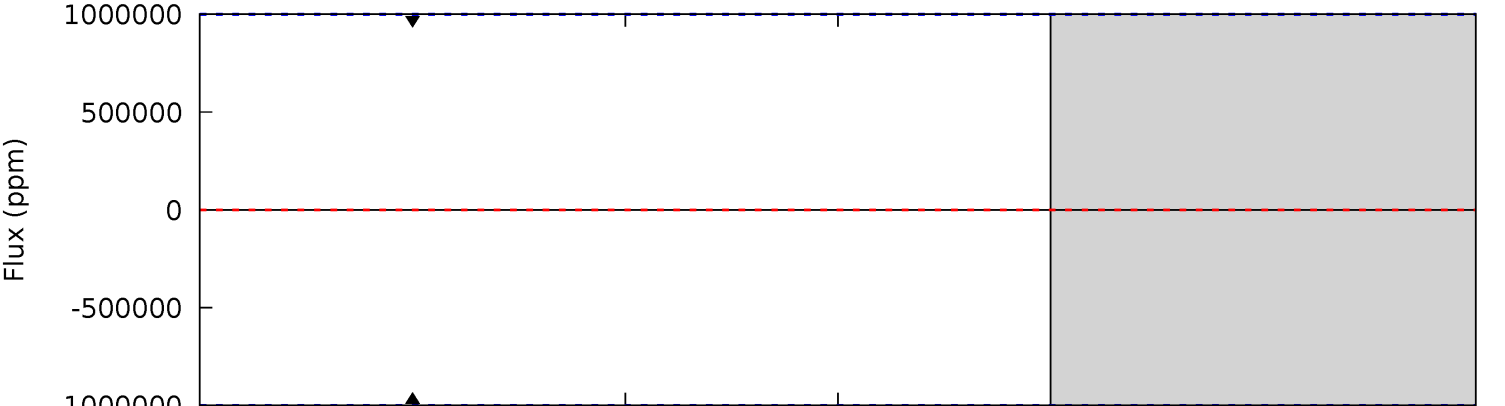
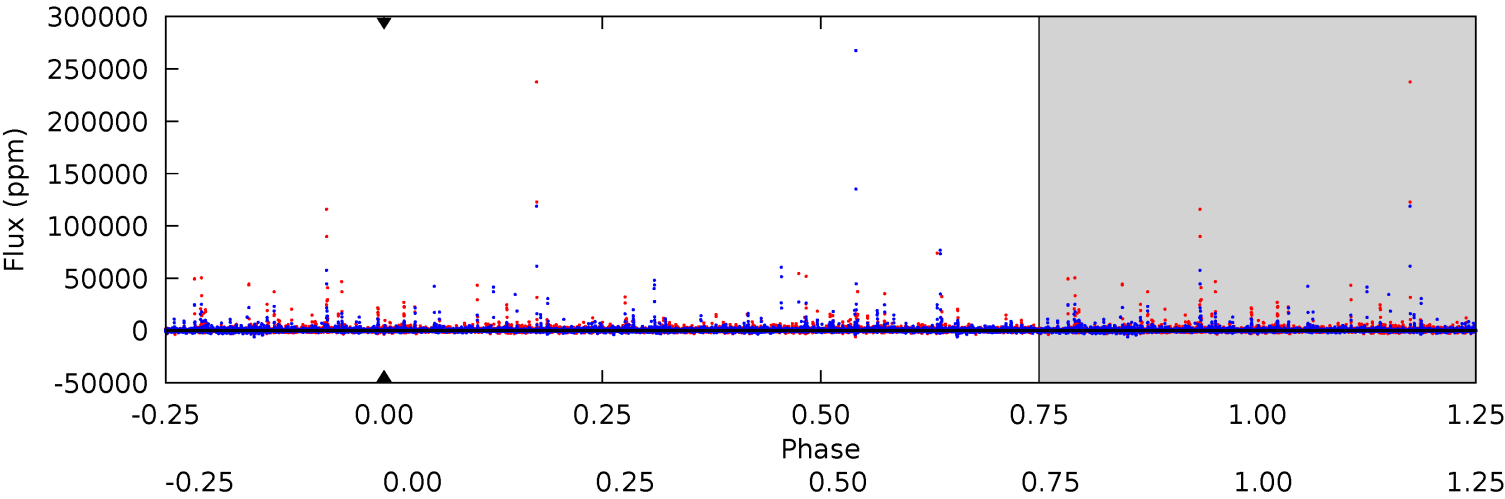
TCE 003858086-05 $P=153.146668$ Days $T_0=281.248001$ (BKJD)



DV Model-Shift Uniqueness Test

003858086-05, P = 153.146668 Days, E = 128.093528 Days

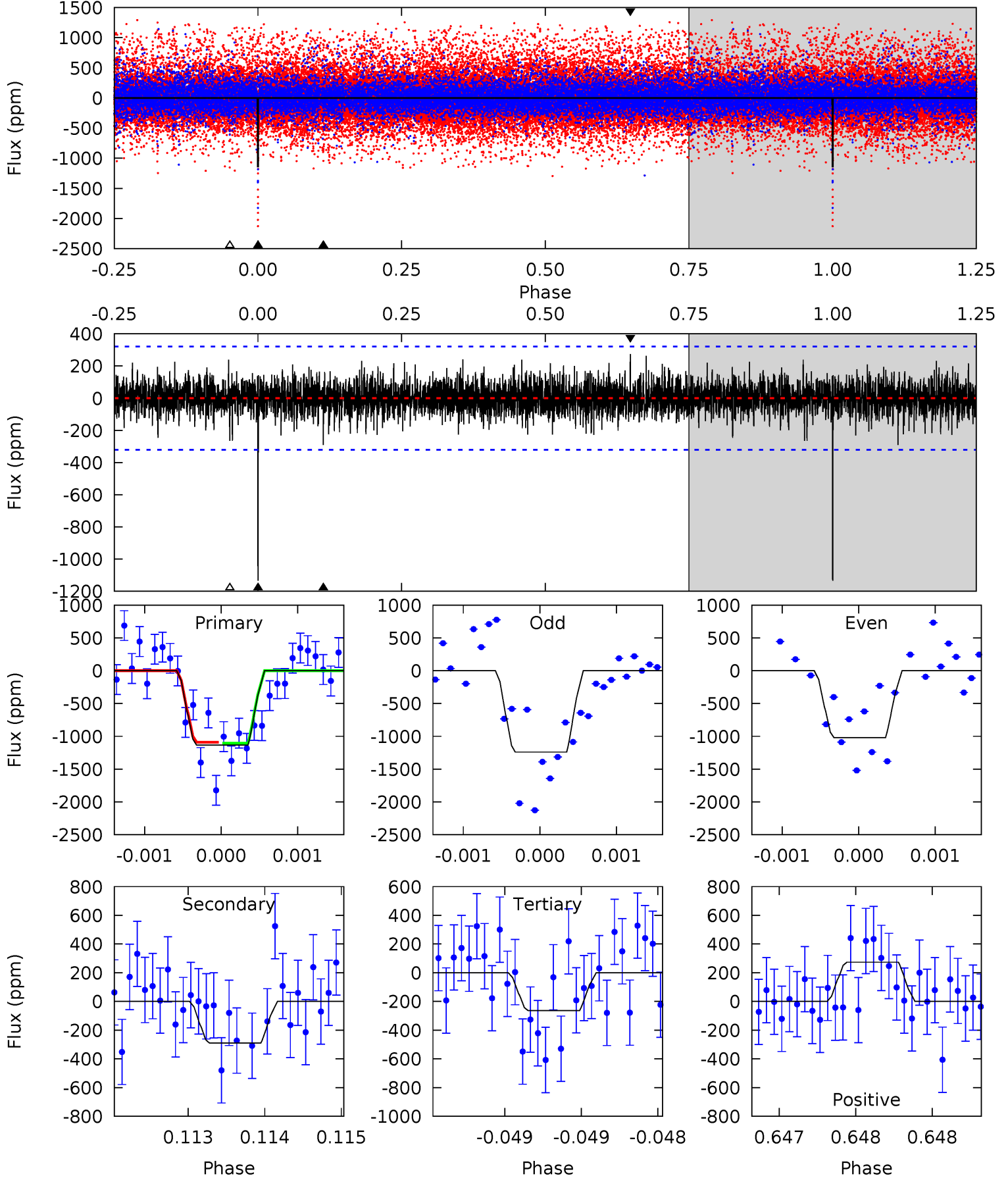
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003858086-05, P = 153.146668 Days, E = 128.101333 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	4.98	4.54	4.71	5.52	3.40	1.17	15.0	14.8	0.44	0.27	1.86	1.03	0.19	0.13



Stellar Parameters For KIC 003858086

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4880^{+147}_{-147}	$4.696^{+0.048}_{-0.028}$	$-1.260^{+0.300}_{-0.300}$	$0.557^{+0.033}_{-0.033}$	$0.562^{+0.041}_{-0.021}$	$4.576^{+0.823}_{-0.519}$
	+3%/-3%	+1%/-1%	+24%/-24%	+6%/-6%	+7%/-4%	+18%/-11%
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 003858086-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$4.77^{+4.69}_{-3.17}$	329^{+11}_{-10}	3150^{+10999}_{-15461}	$3481^{+999314}_{-749315}$
Alt.	-289 ± 58	$4.68^{+4.89}_{-3.24}$	330^{+10}_{-12}	2940^{+1291}_{-508}	1543^{+14847}_{-1176}

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

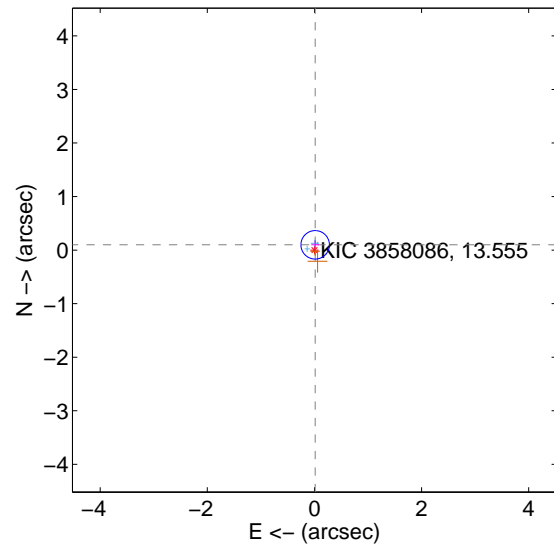
Supplemental centroid analysis for 003858086-05. Kepler magnitude: 13.55. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

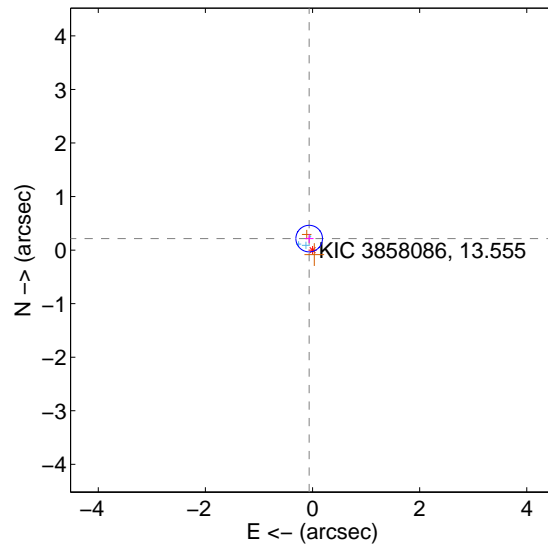
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.099 ± 0.089	1.12	-0.014 ± 0.073	0.098 ± 0.088
PRF-fit source offset from KIC position	0.224 ± 0.083	2.70	0.063 ± 0.080	0.215 ± 0.083
photometric centroid source offset	1.09 ± 0.89	1.23	0.96 ± 0.91	-0.53 ± 0.81

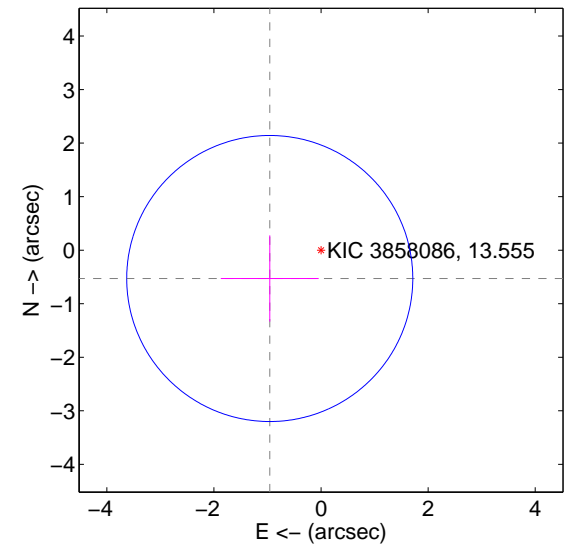
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

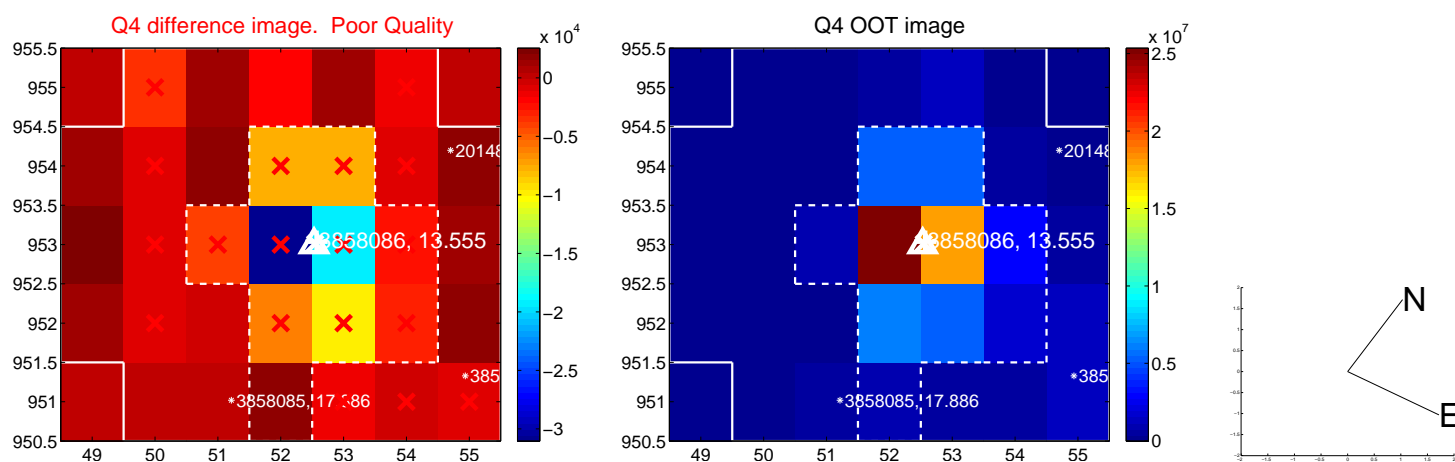
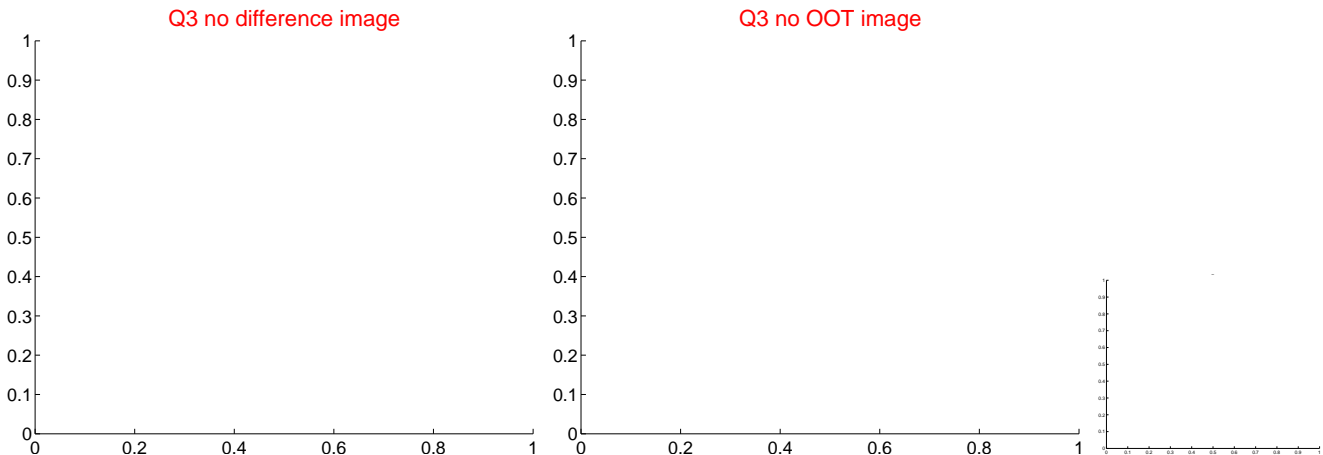
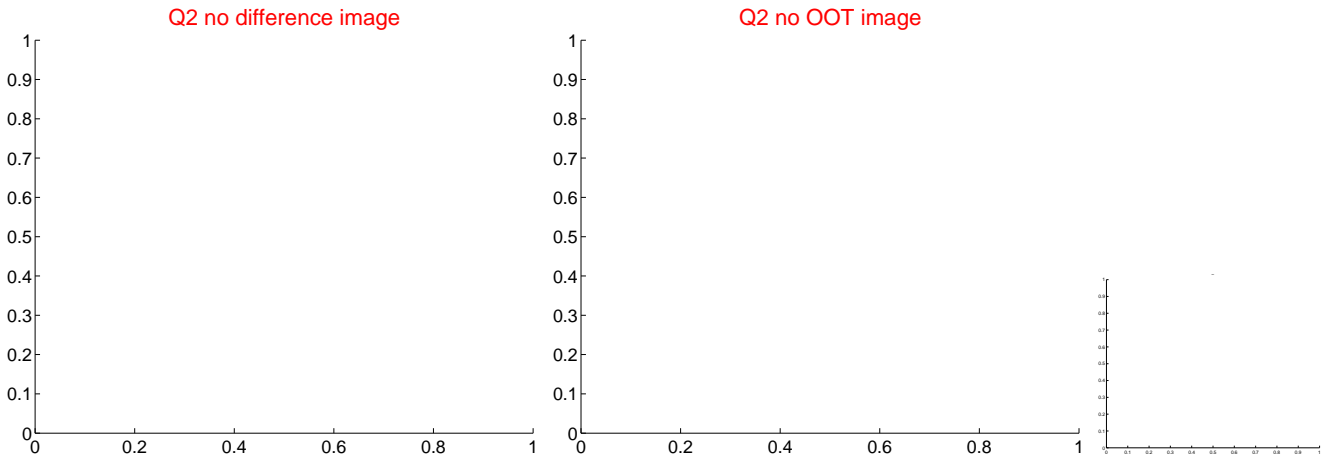
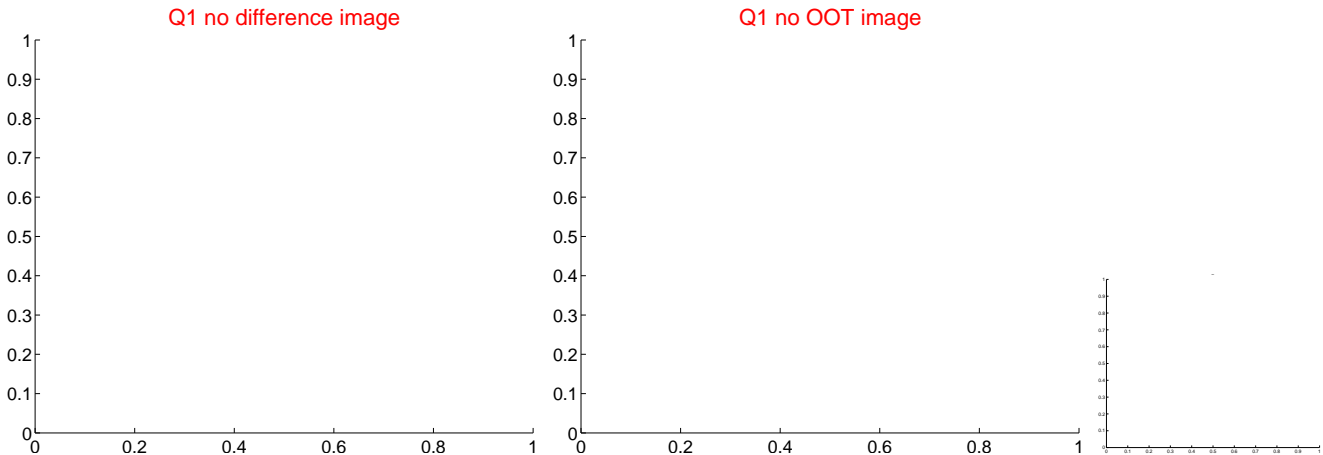


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



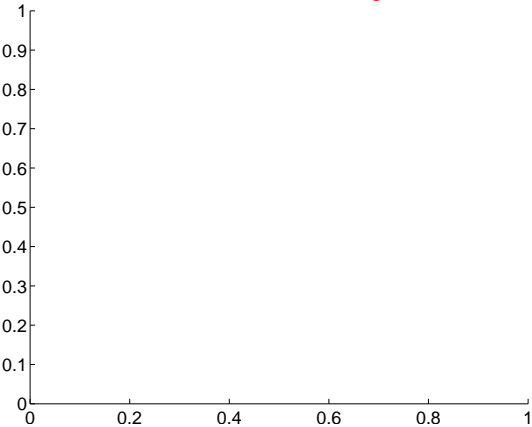
Q6 no difference image



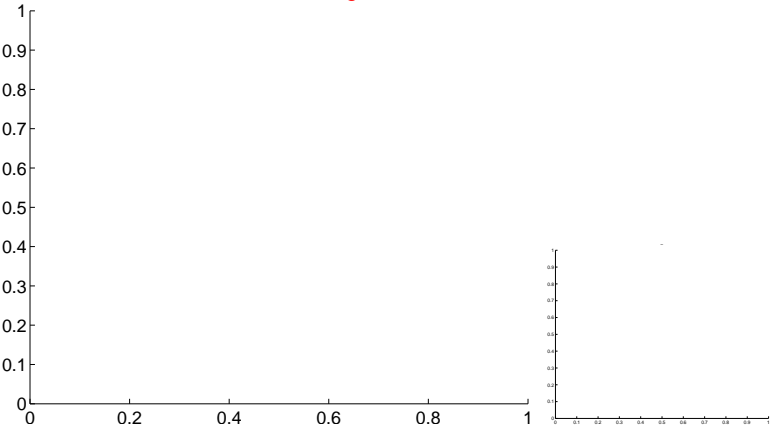
Q6 no OOT image



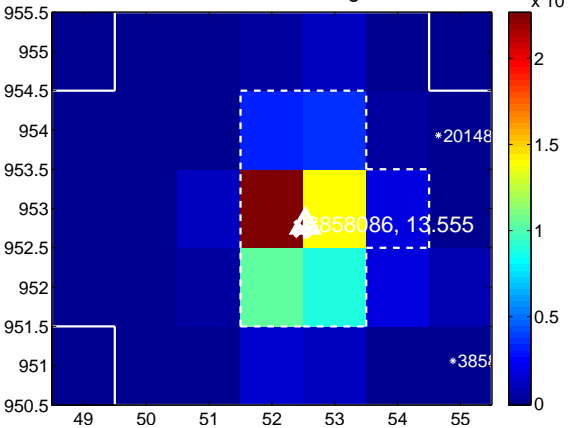
Q7 no difference image



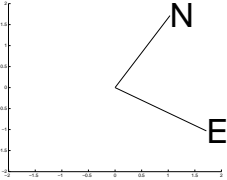
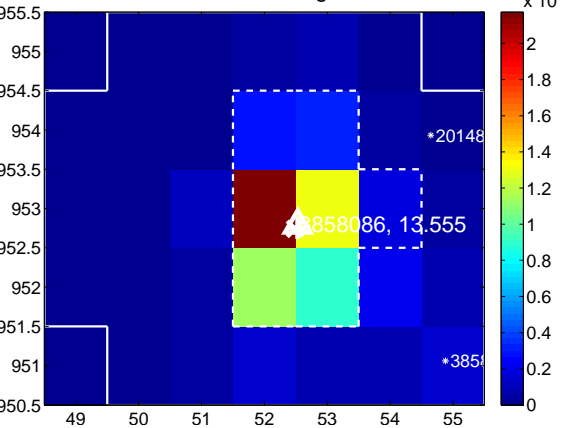
Q7 no OOT image



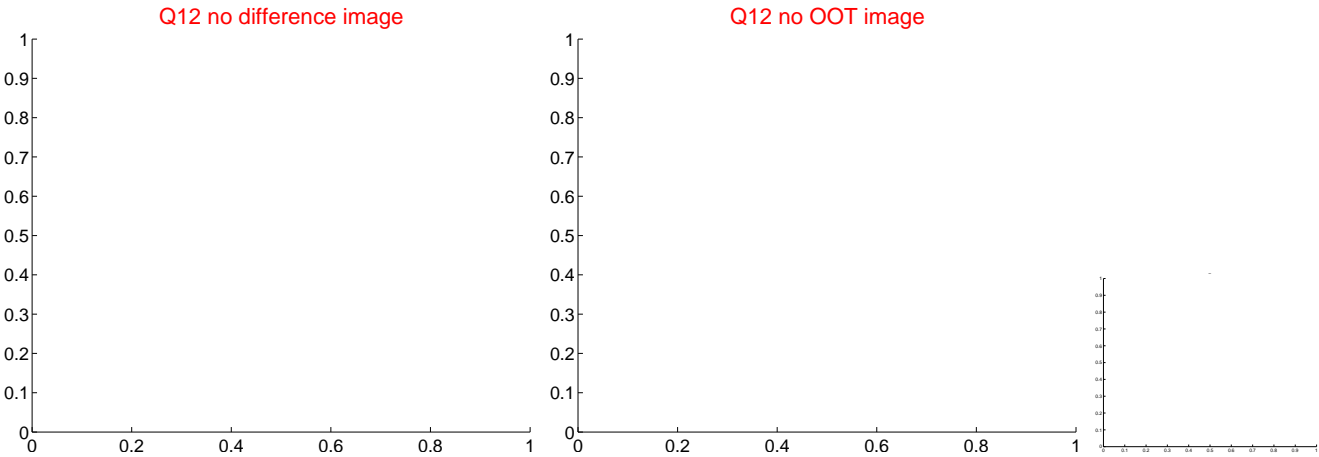
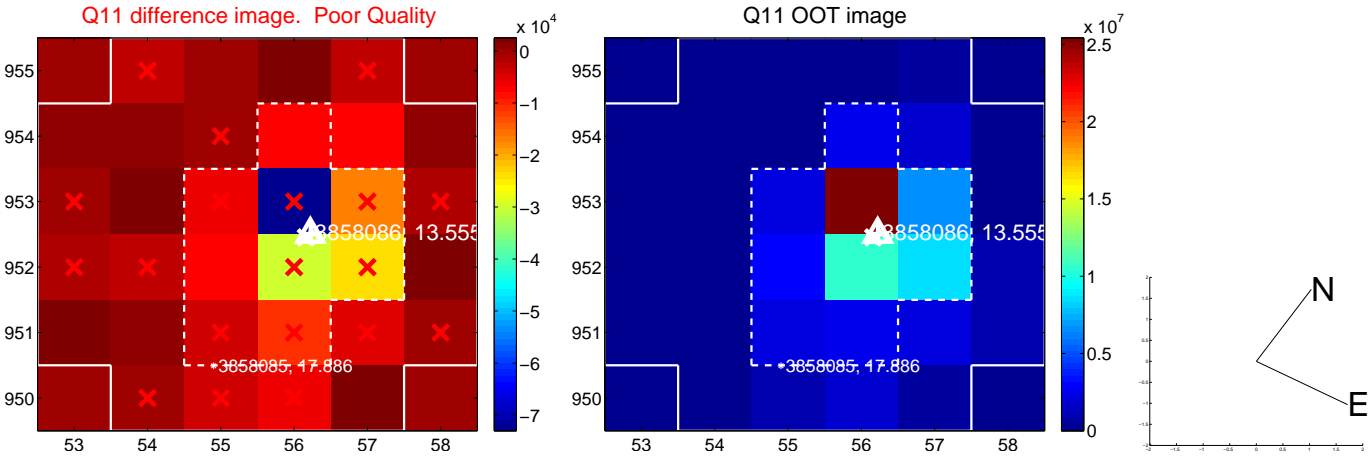
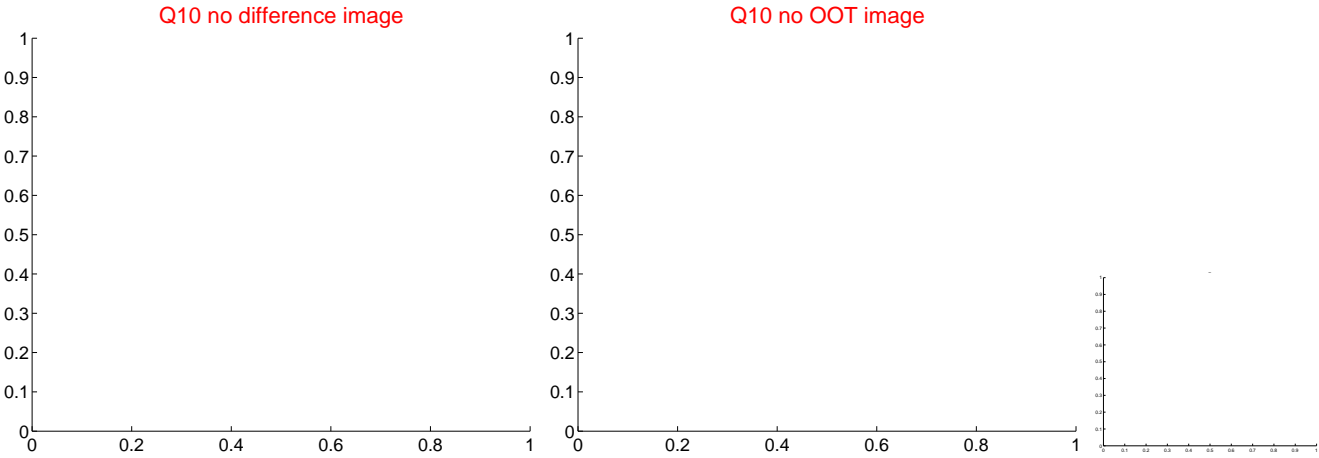
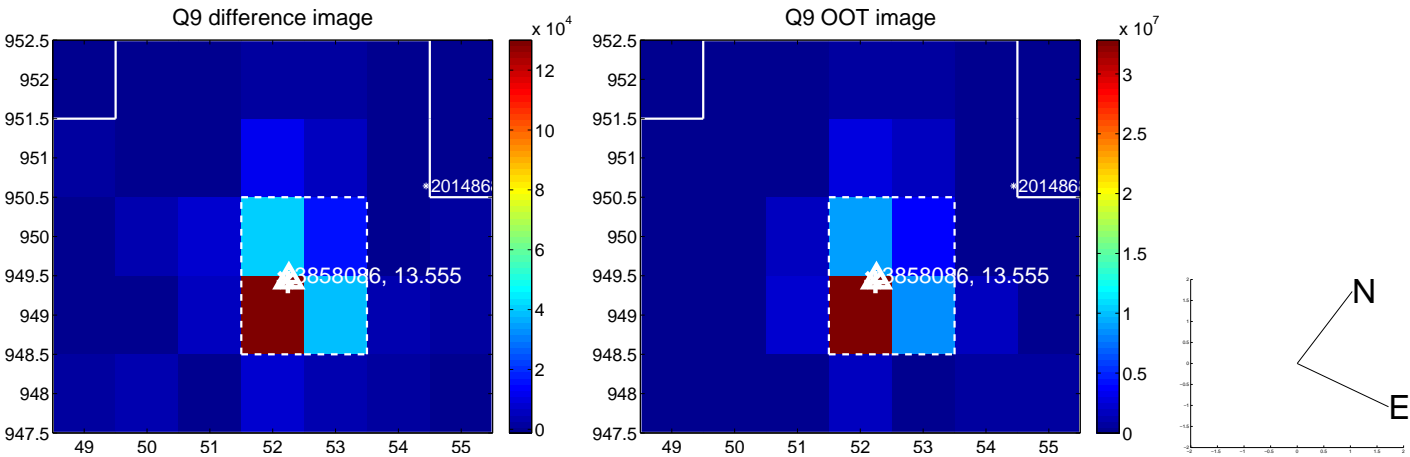
Q8 difference image



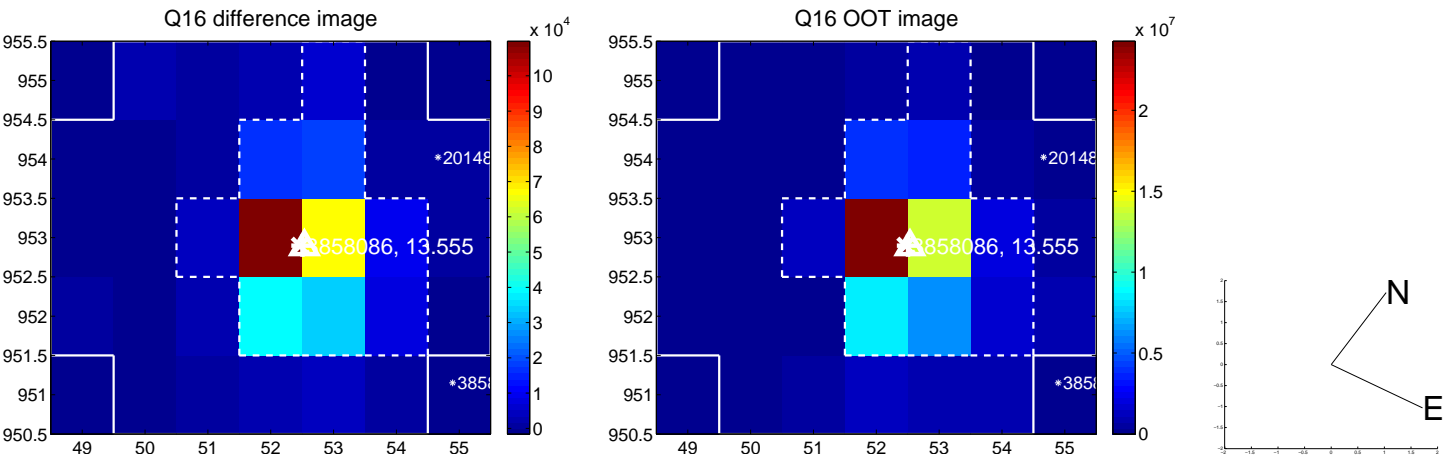
Q8 OOT image



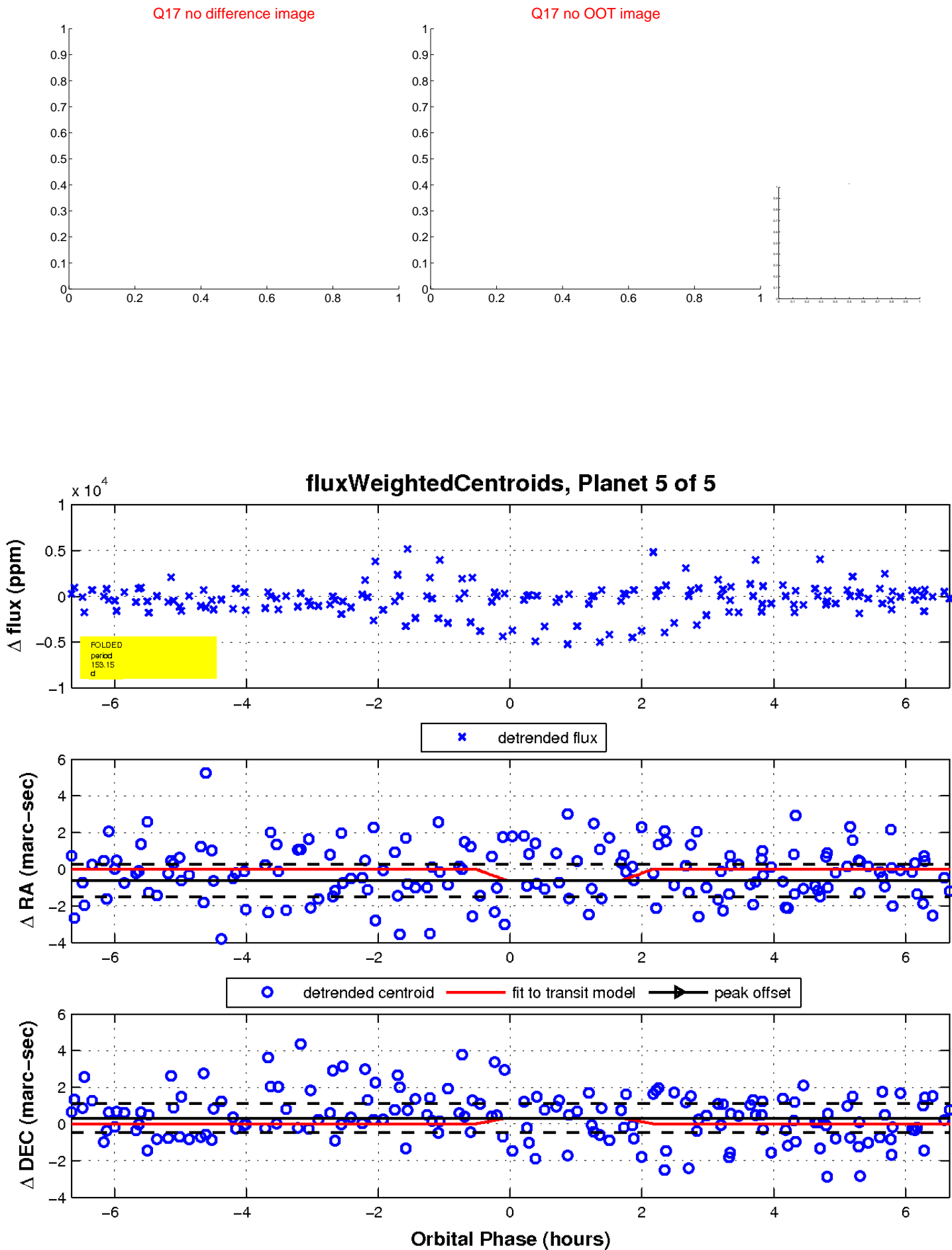
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

