

KIC 004476186

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})
004476186-01	OBS	No	1.109392	132.061263	137.6	4.562	10.9	9.7	2.53	7693	3.44	29711.22
004476186-02	OBS	No	159.865937	159.834064	3022.4	3.300	10.6	10.9	2.53	7693	25.17	39.33
004476186-03	OBS	No	243.733544	161.633217	2644.5	4.454	8.8	9.1	2.53	7693	23.42	22.41
004476186-05	OBS	No	103.023102	140.132505	1855.0	4.168	7.5	7.9	2.53	7693	18.36	70.65
004476186-06	OBS	No	164.036445	172.897624	831.8	22.160	7.4	8.9	2.53	7693	7.48	38.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004476186-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004476186-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004476186-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004476186-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
004476186-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

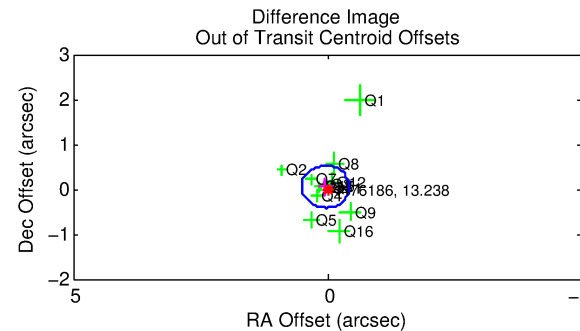
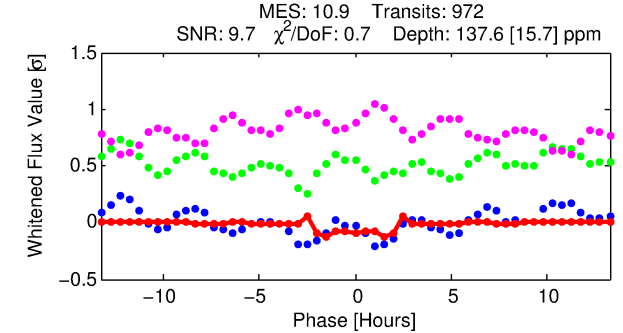
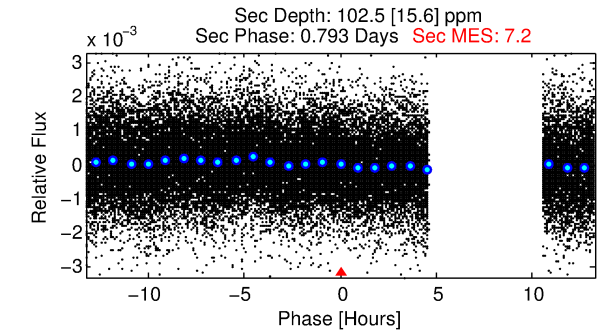
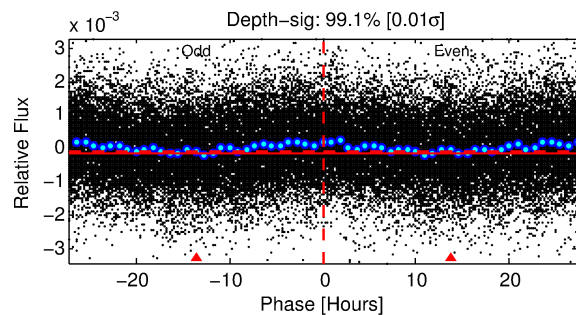
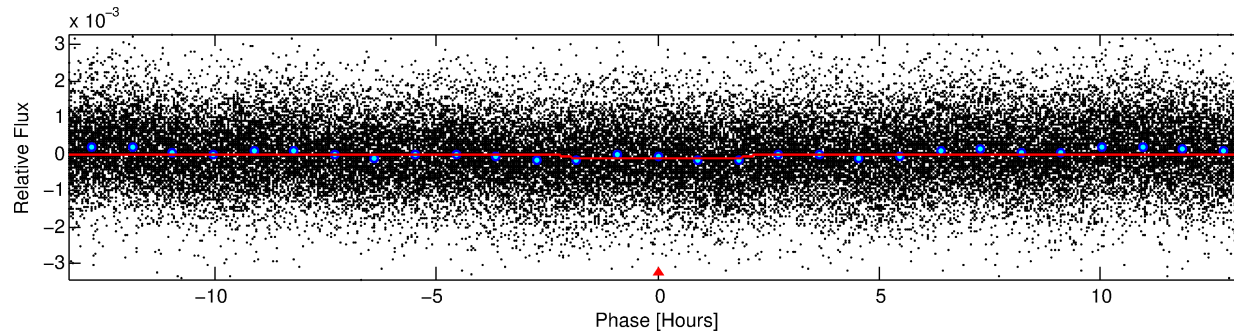
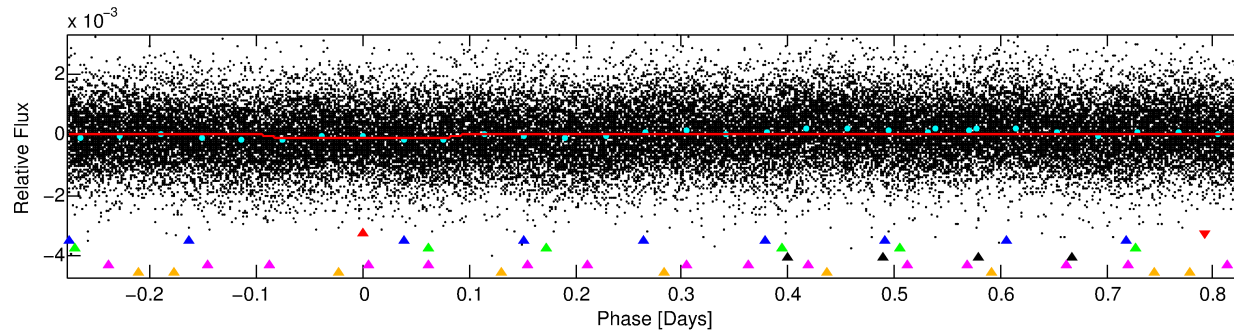
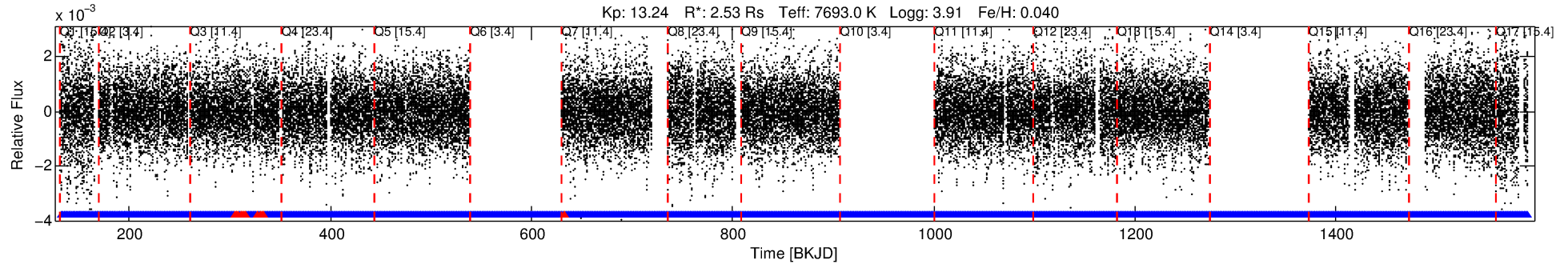
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004476186-01

No Significant Match Found

DV One-Page Summary

KIC: 4476186 Candidate: 1 of 6 Period: 1.109 d



DV Fit Results:

Period = 1.10939 [0.00001] d
Epoch = 132.0613 [0.0018] BKJD
Rp/R* = 0.0124 [0.0014]
a/R* = 1.28 [0.27]
b = 0.90 [0.12]
Seff = 29711.22 [14233.51]
Teff = 3348 [401] K
Rp = 3.44 [1.22] Re
a = 0.0260 [0.0077] AU
Ag = 3.23 [1.68] [1.32 σ]
Teffp = 6937 [547] K [5.30 σ]

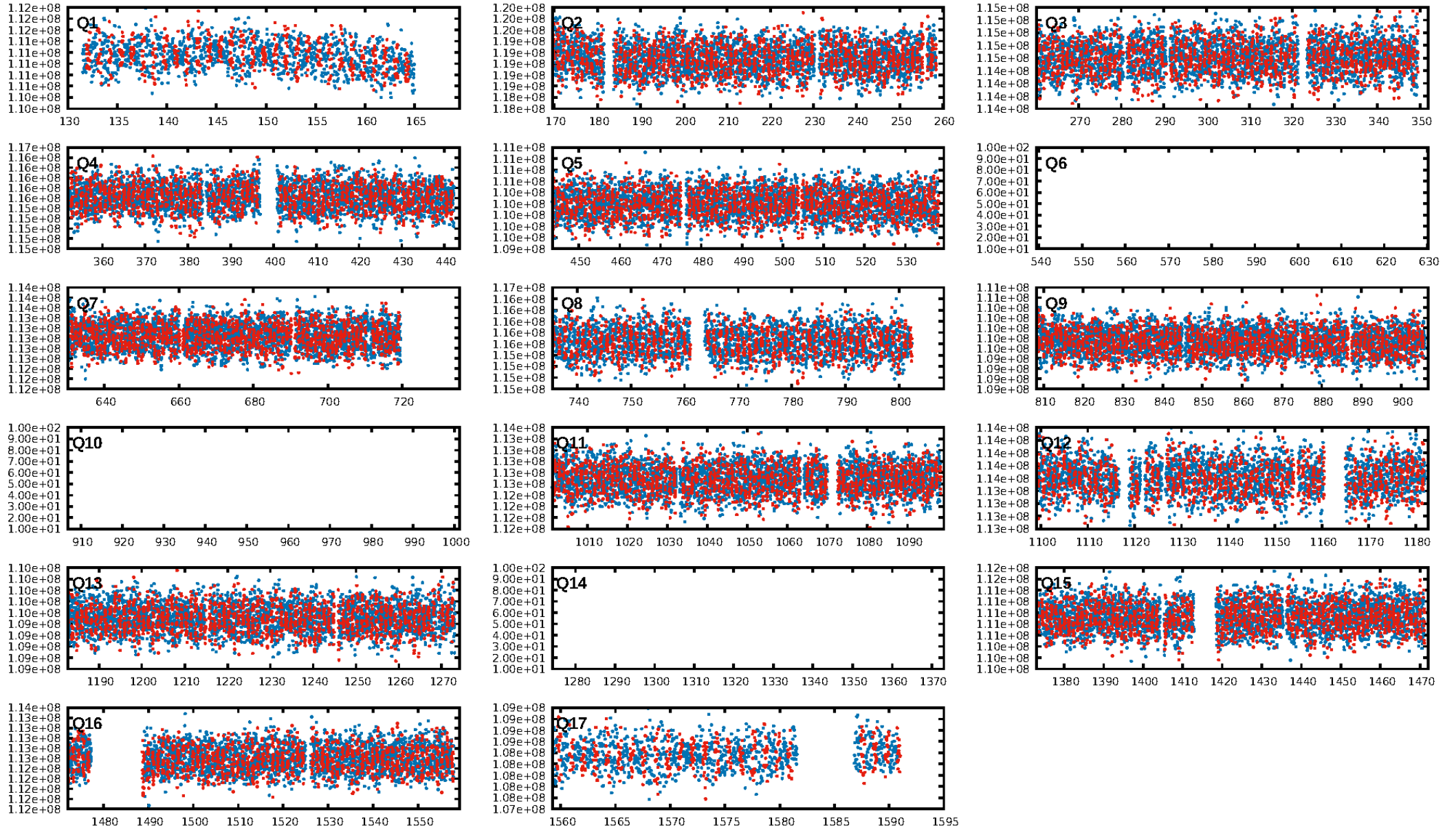
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [395.85 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.12e-19
RollingBand-fgt: 0.99 [906/918]
GhostDiagnostic-chr: 1.514
Centroid-sig: 2.9%
Centroid-so: 0.217 arcsec [1.22 σ]
OotOffset-rm: 0.066 arcsec [0.42 σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-rm: 0.153 arcsec [0.89 σ]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [14/14]

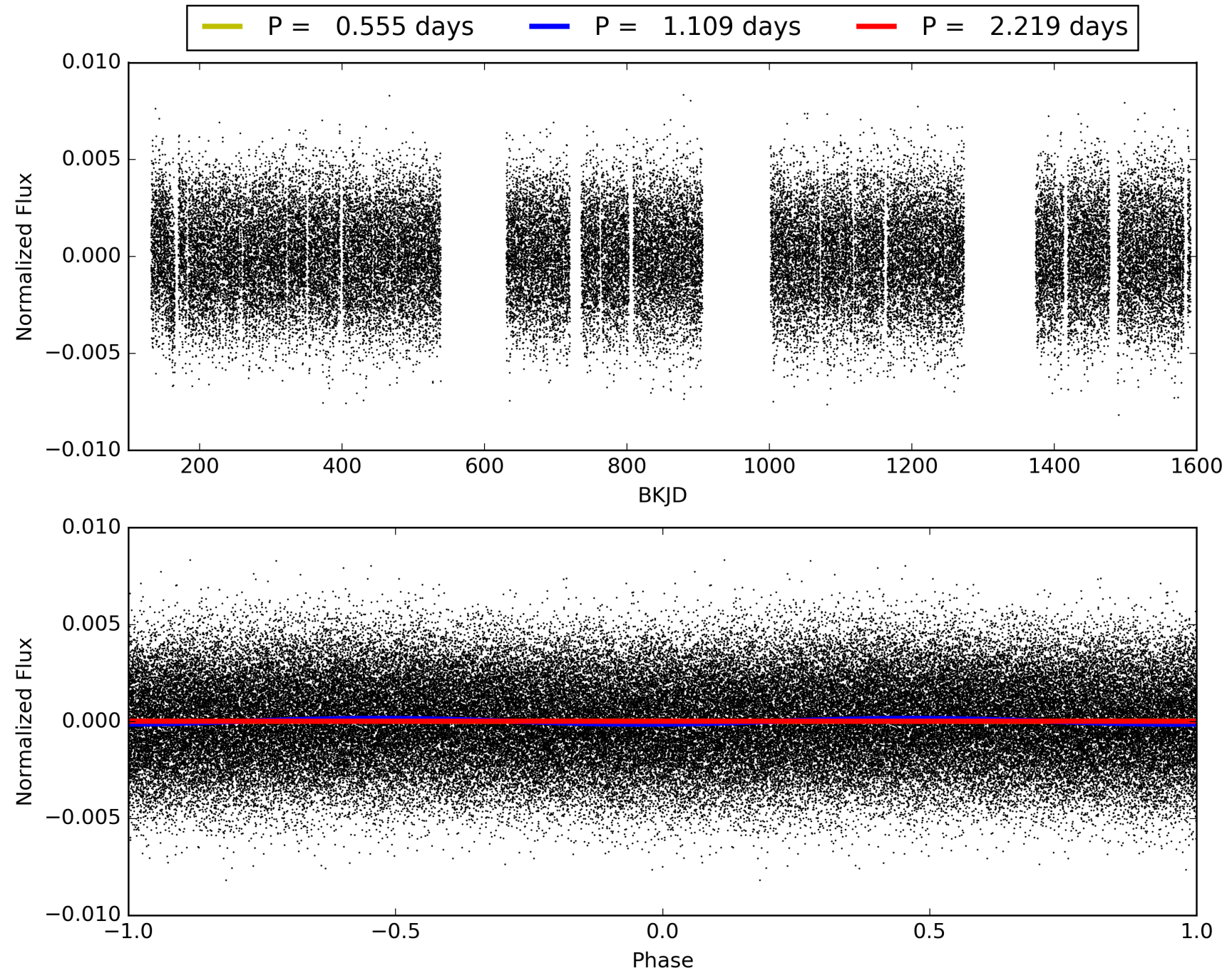
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004476186-01, PDC Light Curves

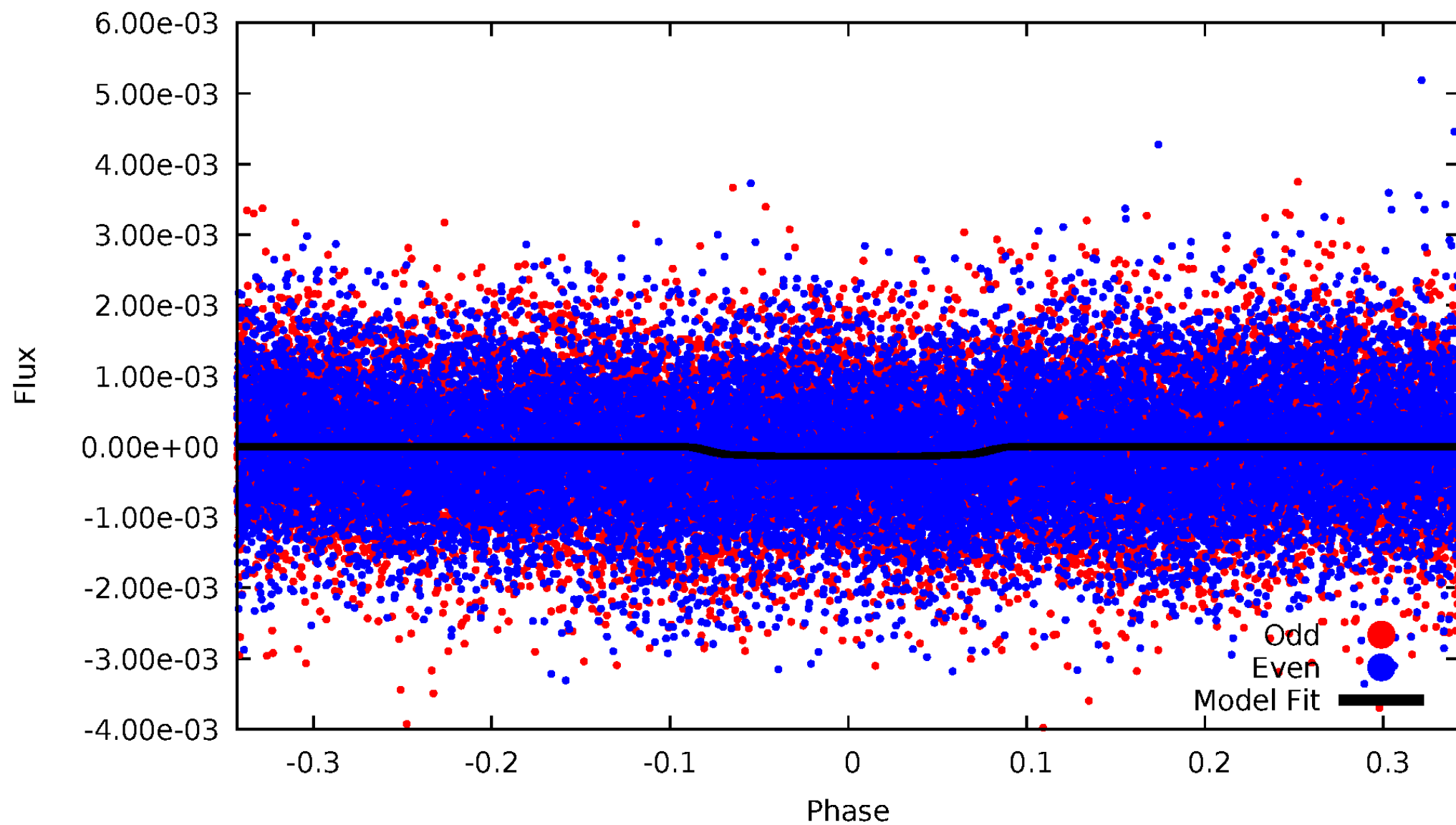


TCE 004476186-01



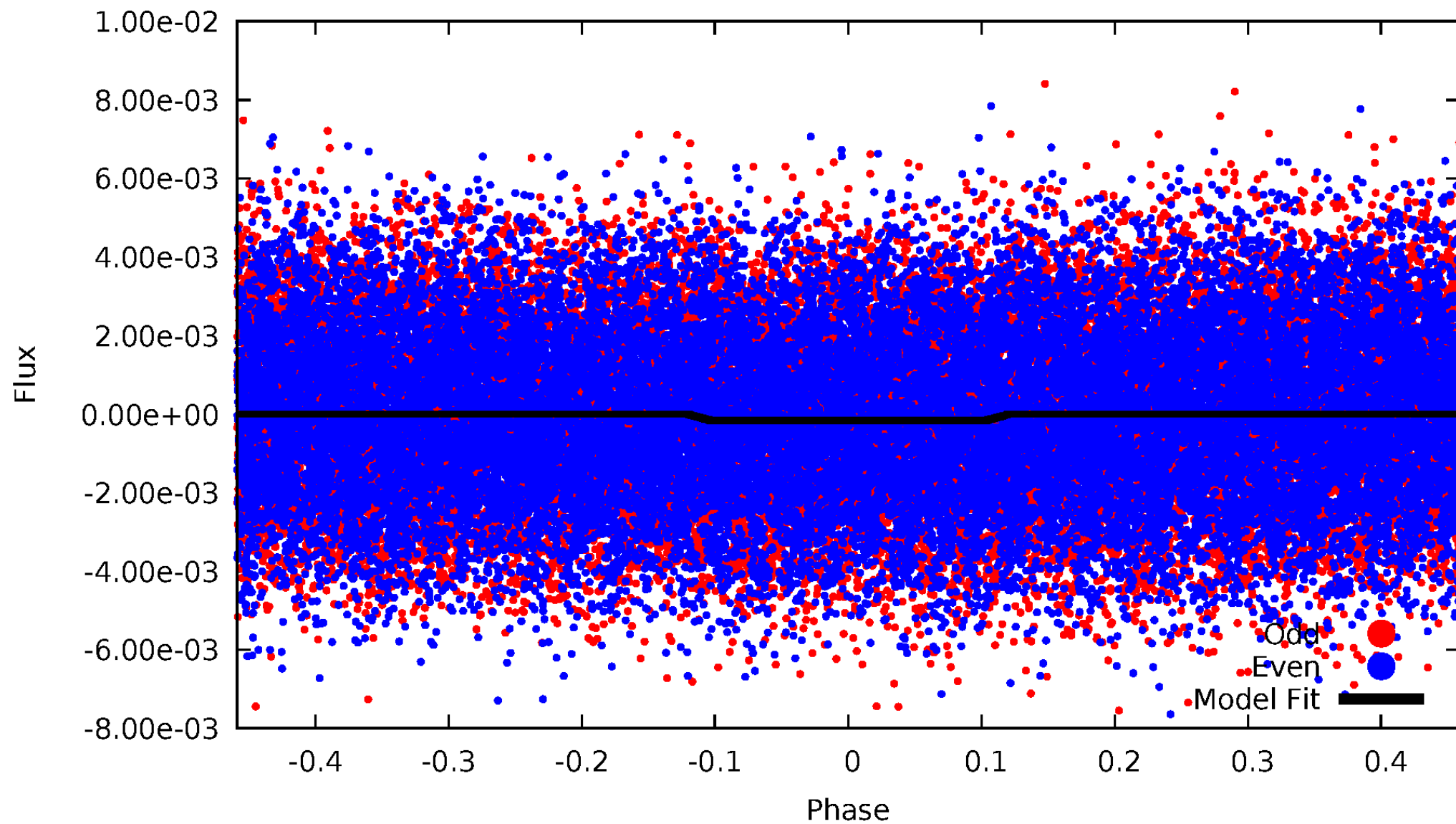
DV Odd/Even

TCE 004476186-01

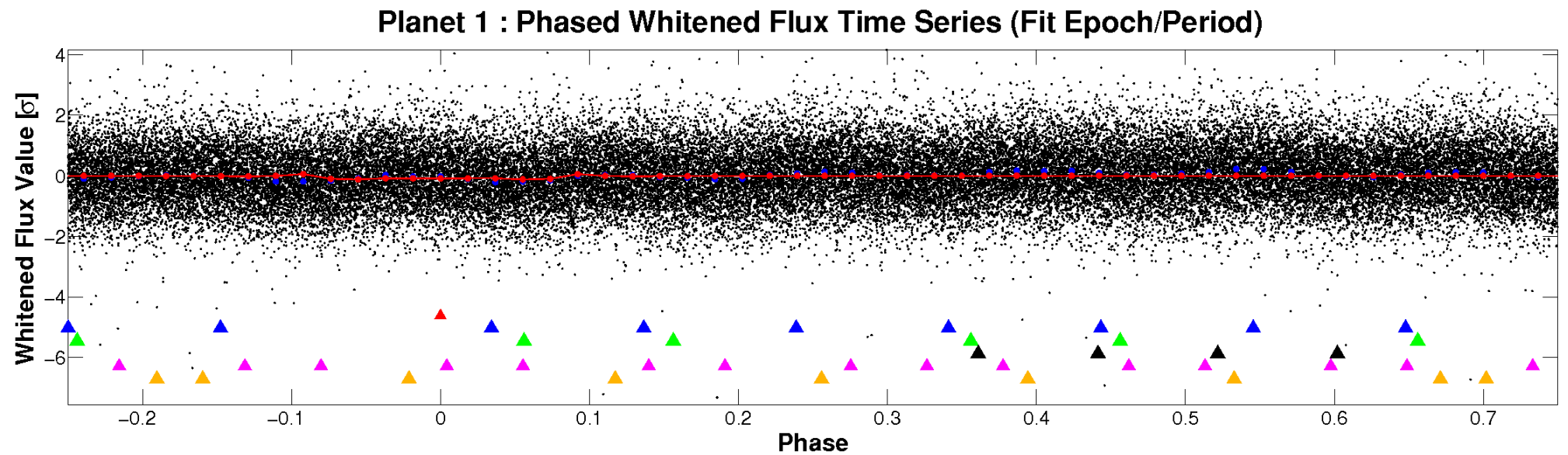
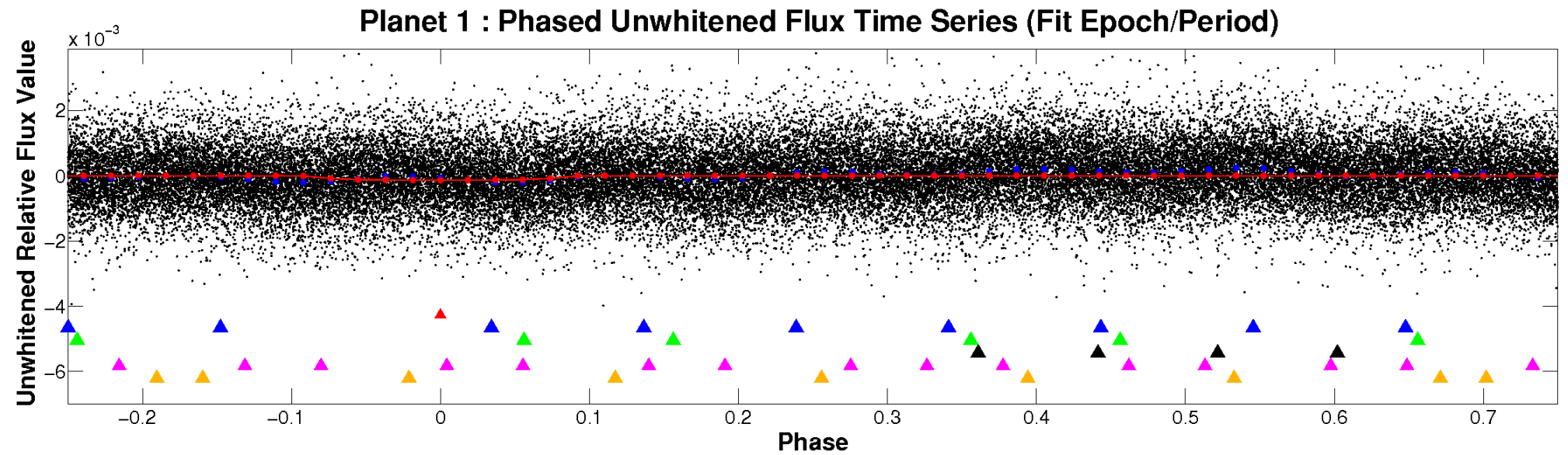


ALT Odd/Even

TCE 004476186-01

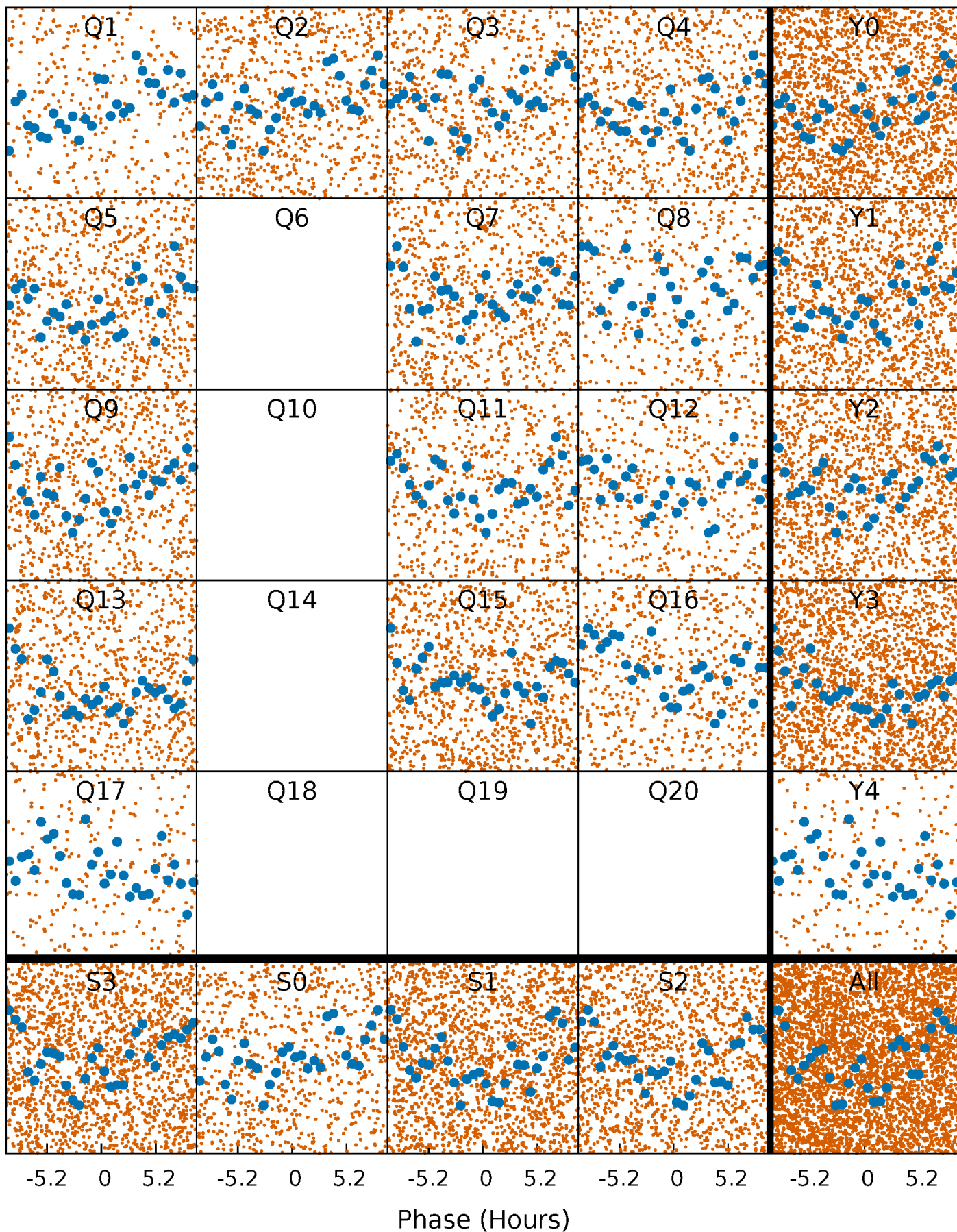


Non-Whitened Vs. Whitened Light Curve



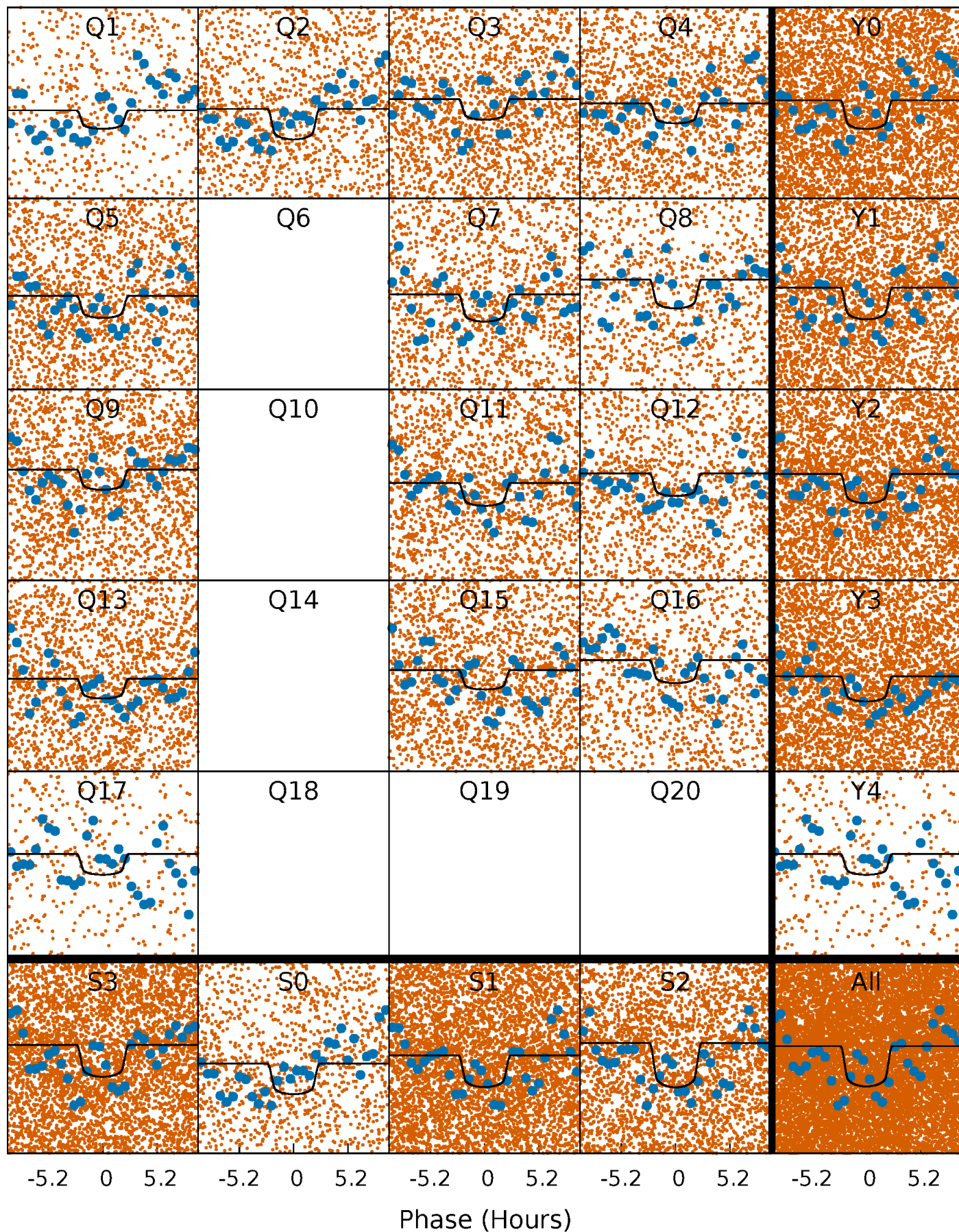
PDC Quarter-Phased Transit Curves

TCE 004476186-01 P= 1.109392 Days $T_0=132.061263$ (BKJD)



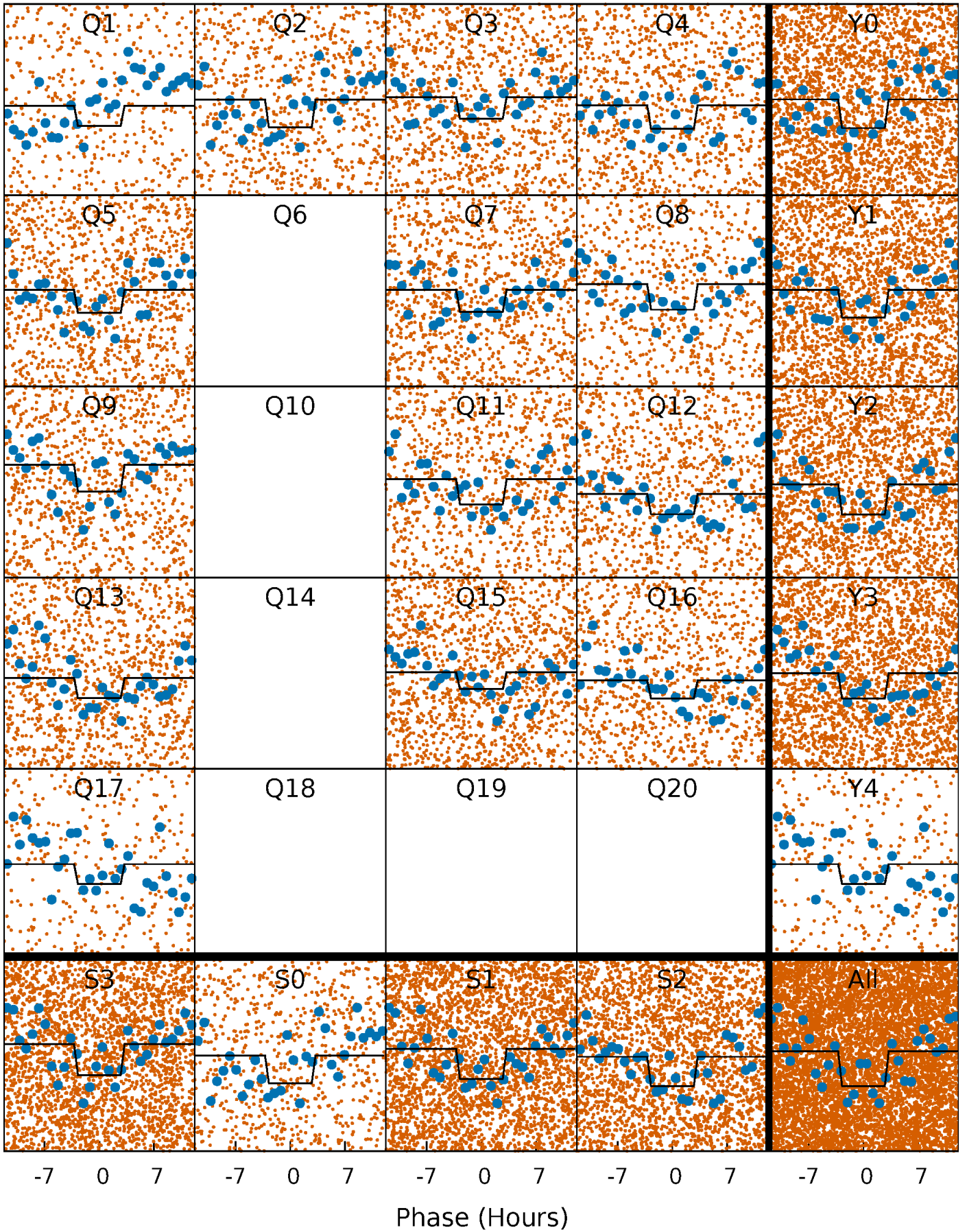
DV Quarter-Phased Transit Curves

TCE 004476186-01 P= 1.109392 Days $T_0=132.061263$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

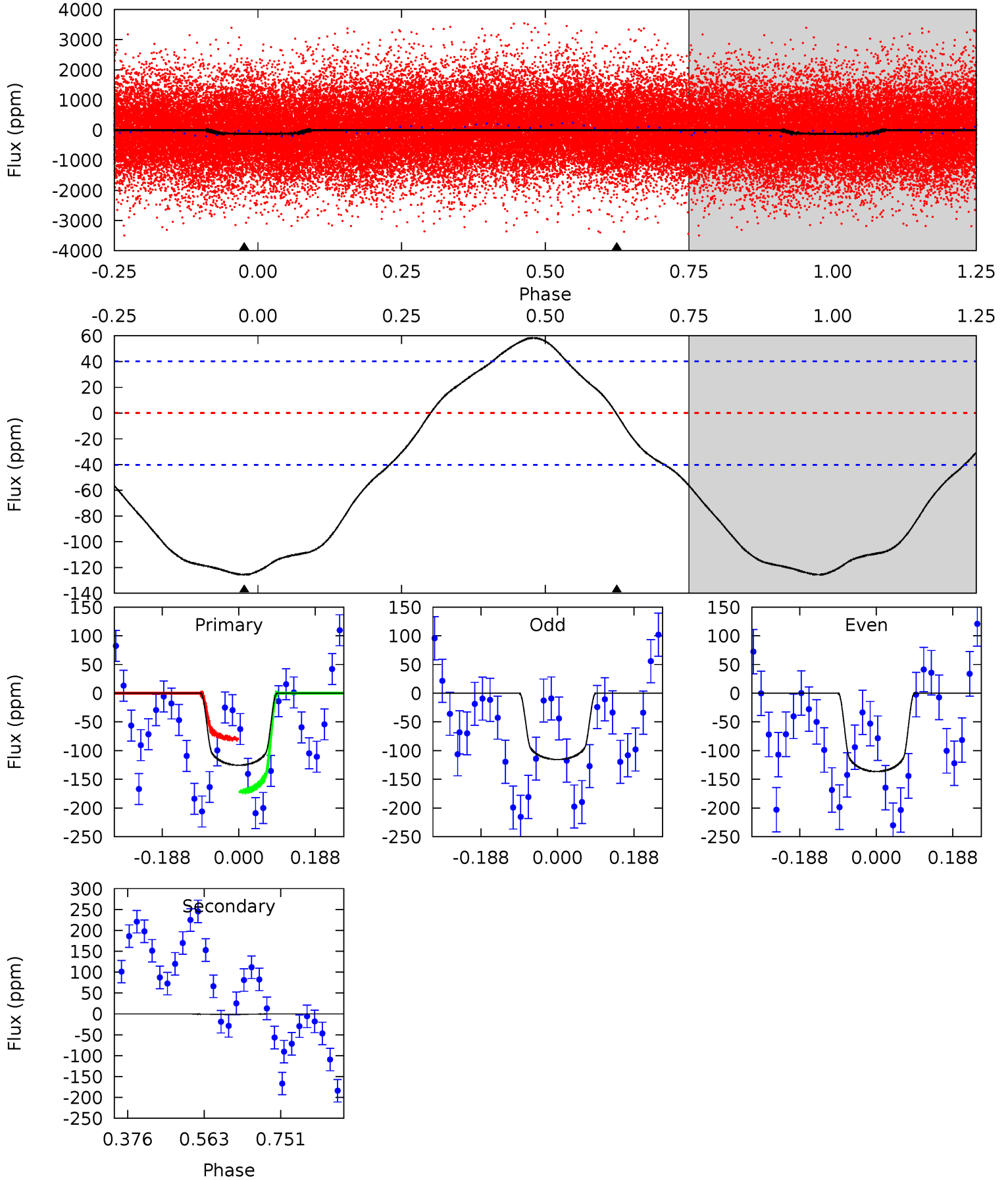
TCE 004476186-01 P= 1.109337 Days $T_0=132.062318$ (BKJD)



DV Model-Shift Uniqueness Test

004476186-01, P = 1.109392 Days, E = 130.951871 Days

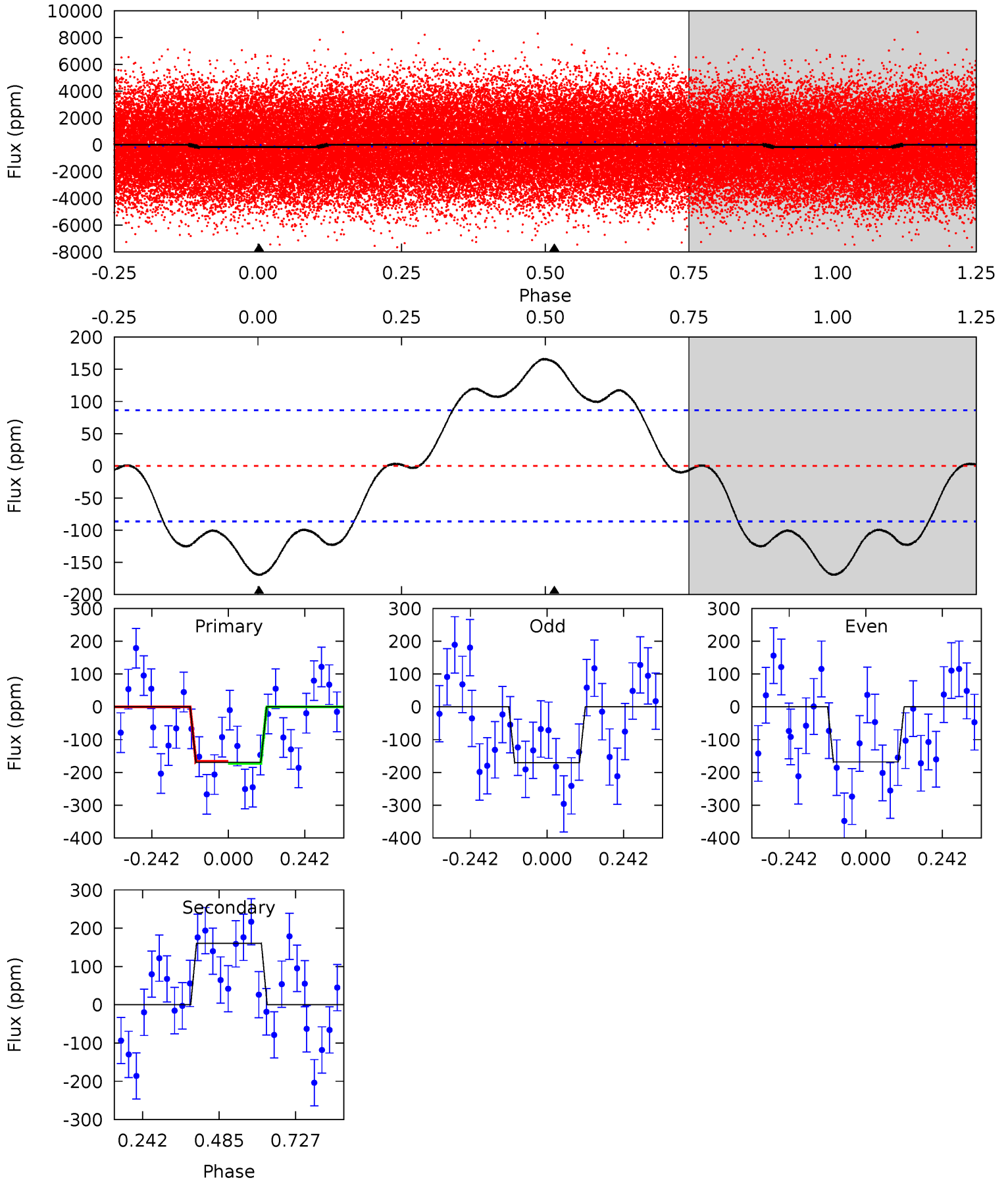
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	0.10	0	0	4.43	1.32	4.00	13.8	13.8	0.10	0.10	1.16	0.96	0.32	5.29



Alt Model-Shift Uniqueness Test

004476186-01, P = 1.109337 Days, E = 130.952981 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.57	-8.14	0	0	4.38	1.17	0.19	8.57	8.57	-8.14	-8.14	0.06	1.10	0.49	0.14



Stellar Parameters For KIC 004476186

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7693^{+214}_{-322}	$3.912^{+0.253}_{-0.136}$	$0.040^{+0.200}_{-0.350}$	$2.533^{+0.460}_{-0.855}$	$1.910^{+0.103}_{-0.414}$	$0.166^{+0.284}_{-0.057}$
	+3%/-4%	+6%/-3%	+500%/-875%	+18%/-34%	+5%/-22%	+171%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004476186-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1 ± 9	$3.34^{+0.62}_{-0.64}$	4619^{+321}_{-348}	-3968^{+6962}_{-618}	$0.027^{+0.319}_{-0.308}$
Alt.	161 ± 20	$3.44^{+0.67}_{-0.66}$	4602^{+328}_{-390}	-7628^{+522}_{-666}	$-4.828^{+1.476}_{-2.532}$

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 $A_{obs} \gg 1.0$

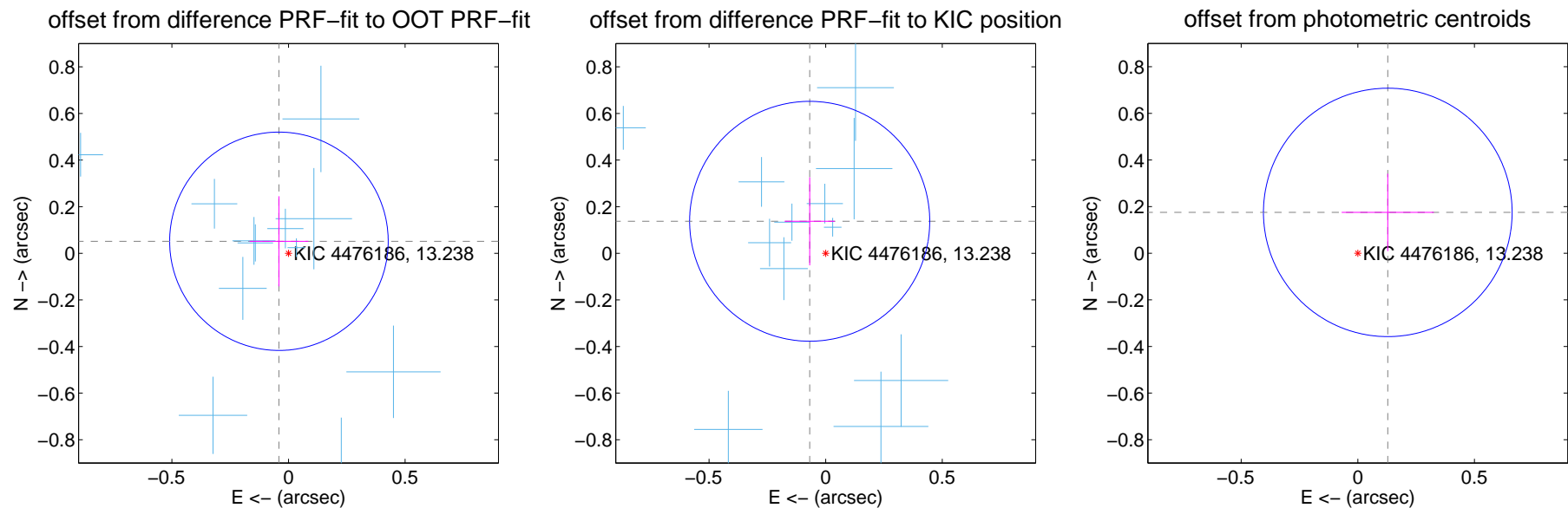
DV Centroid Data

Supplemental centroid analysis for 004476186-01. Kepler magnitude: 13.24. Transit SNR 9.72

There are 13 quarters with good PRF difference image offsets

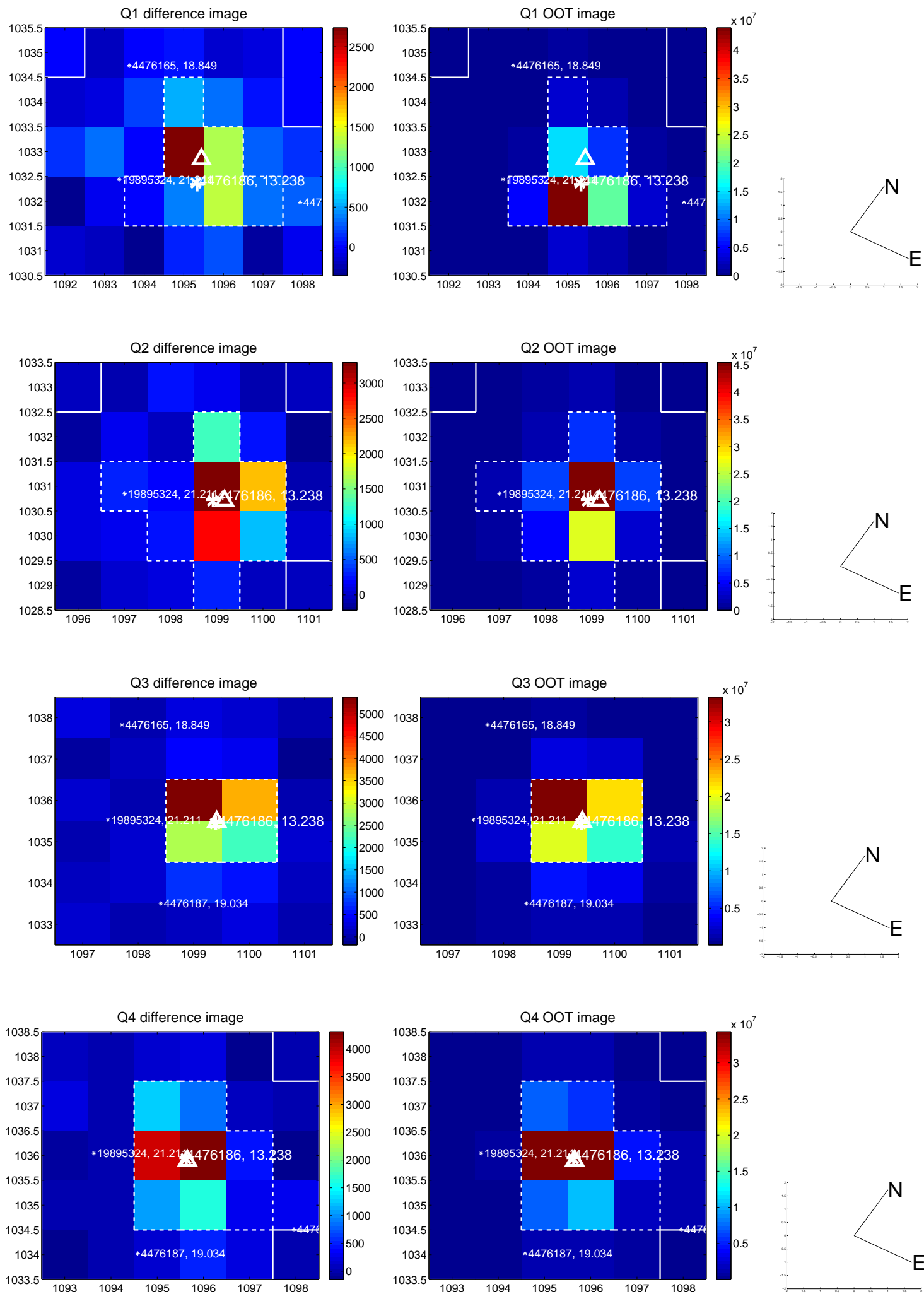
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.066 ± 0.156	0.42	0.041 ± 0.126	0.052 ± 0.193
PRF-fit source offset from KIC position	0.153 ± 0.172	0.89	0.069 ± 0.107	0.137 ± 0.189
photometric centroid source offset	0.22 ± 0.18	1.22	-0.13 ± 0.20	0.18 ± 0.17

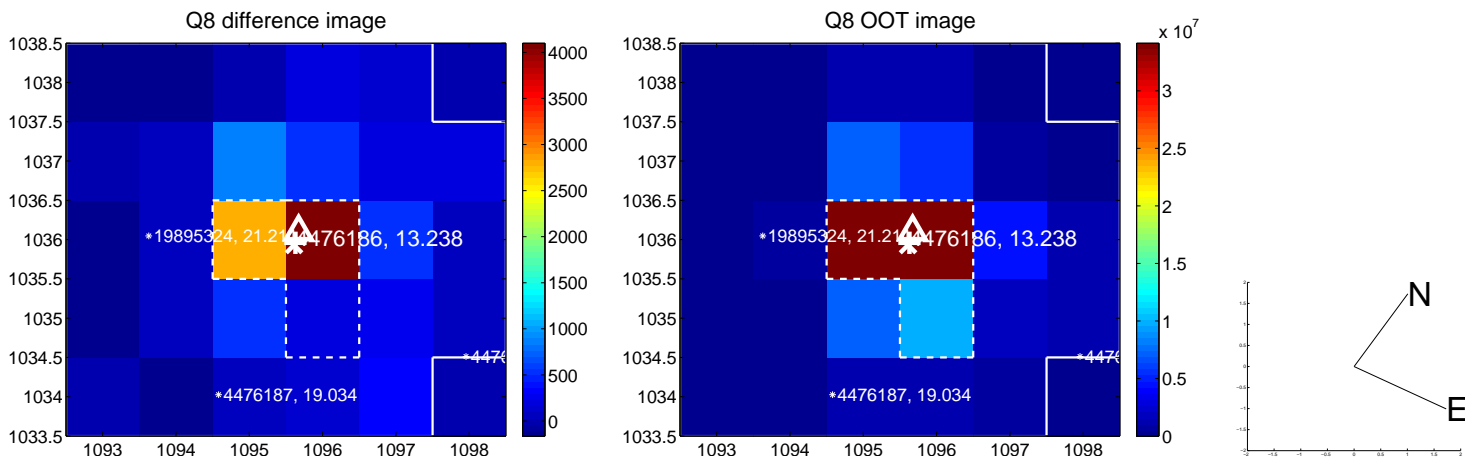
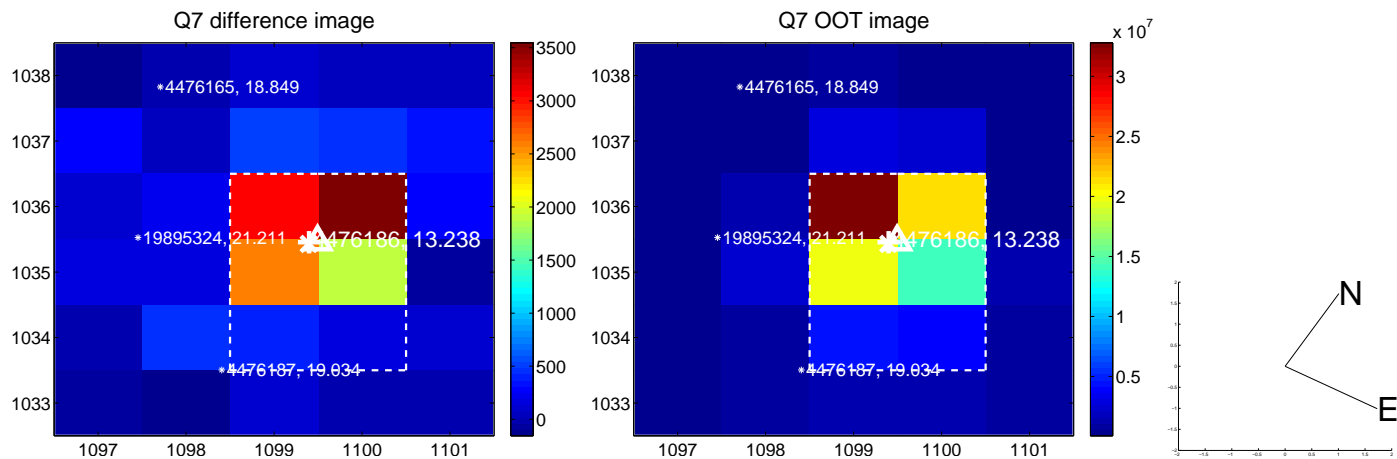
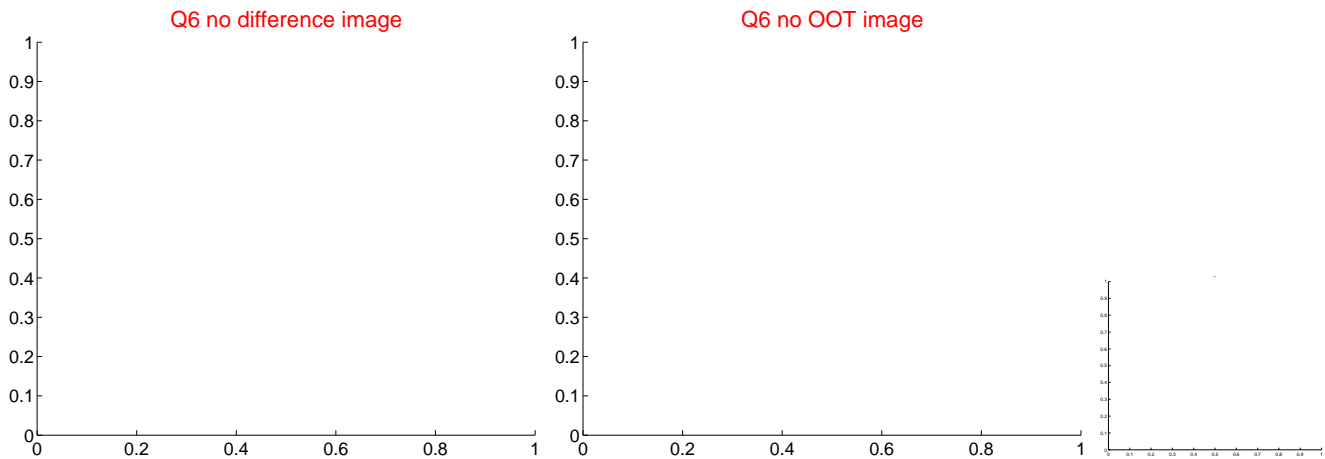
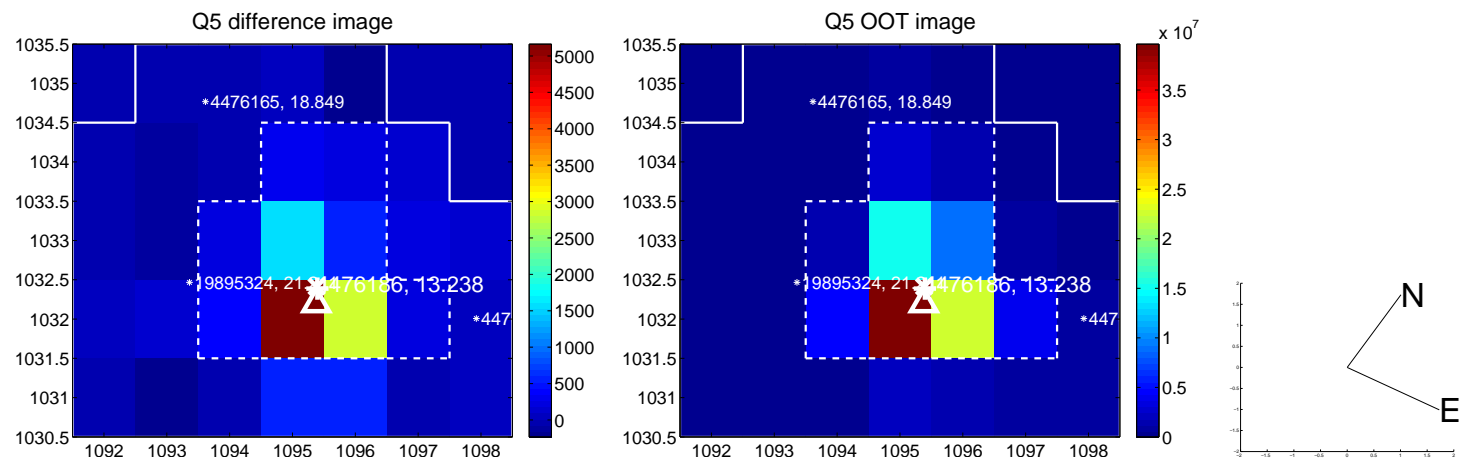


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

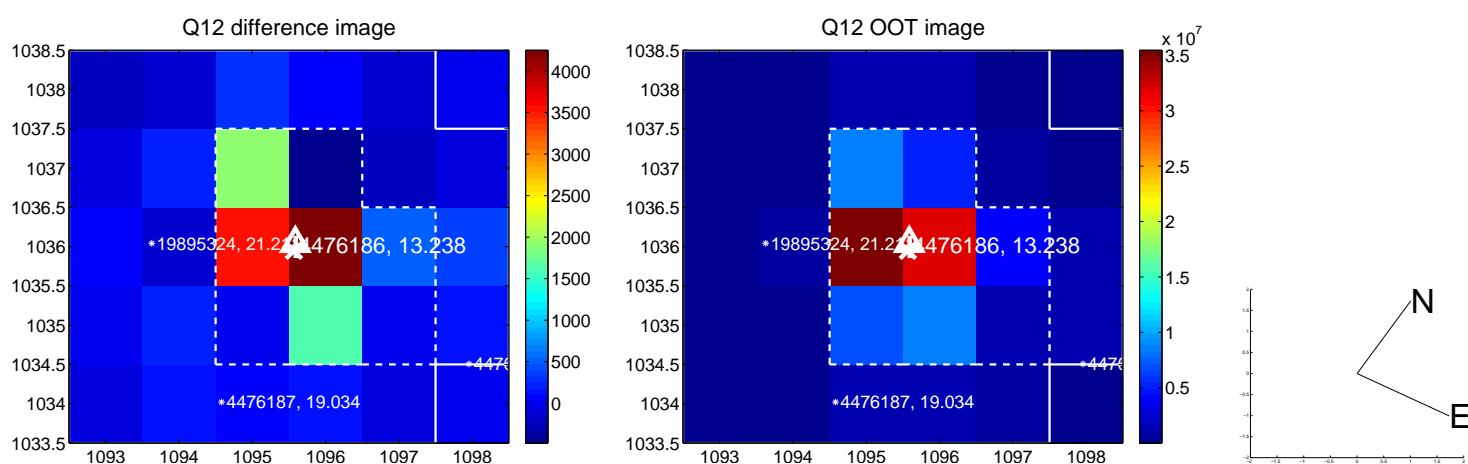
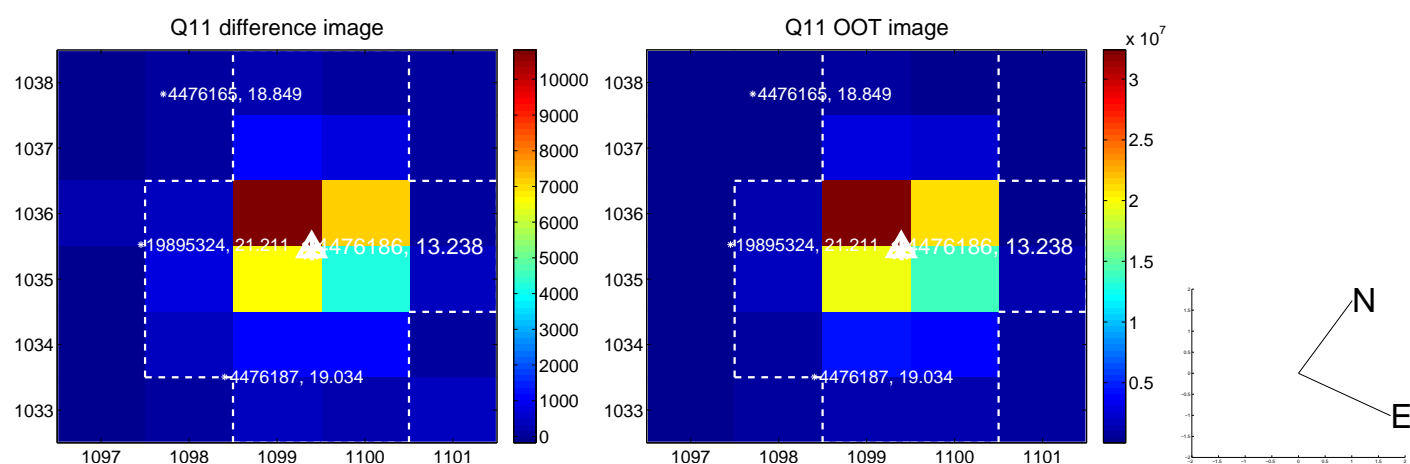
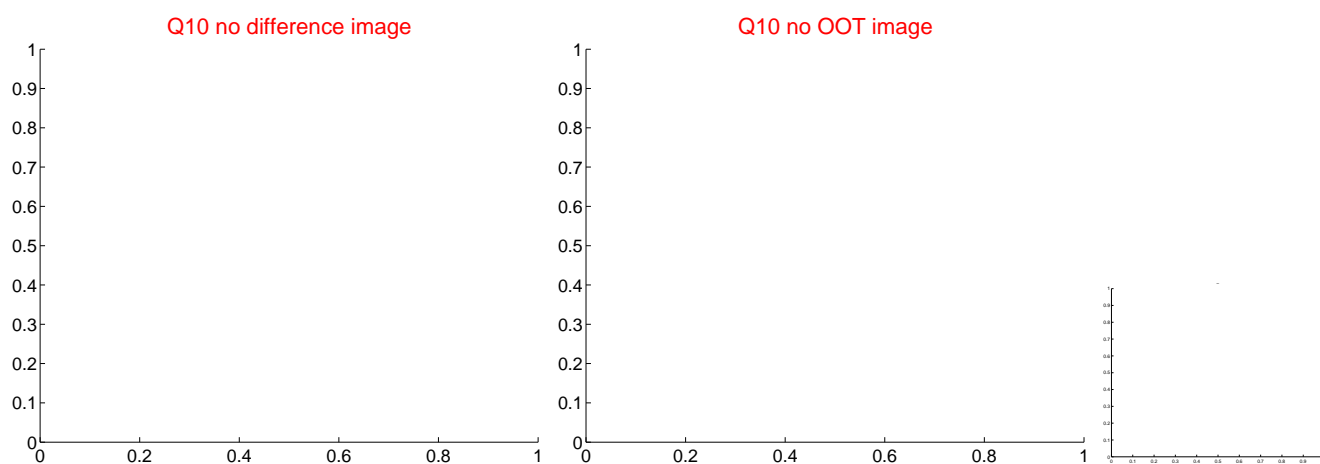
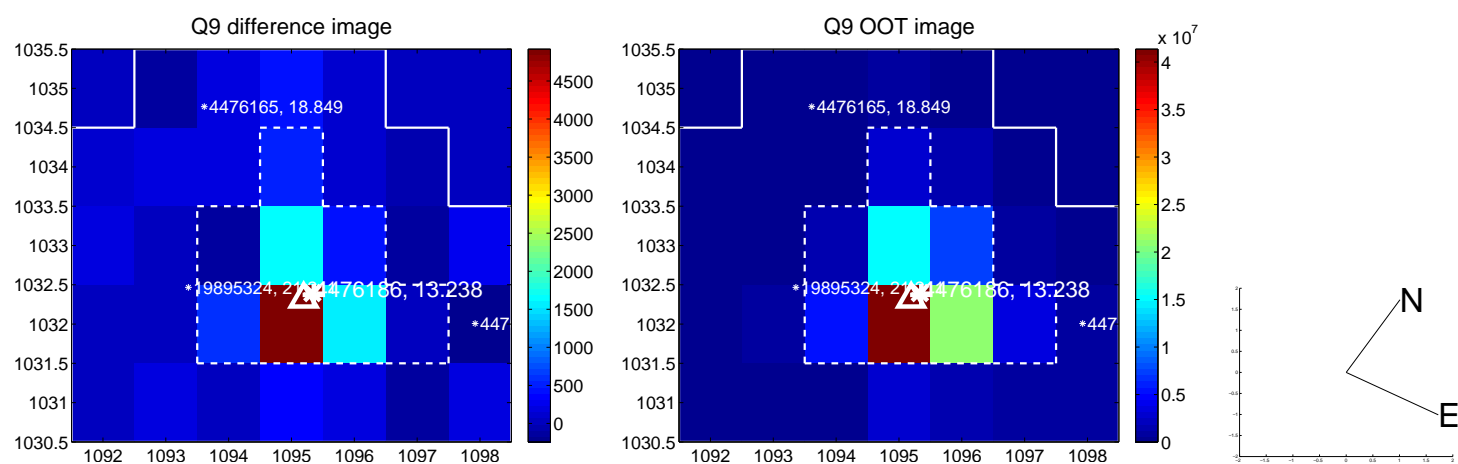
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



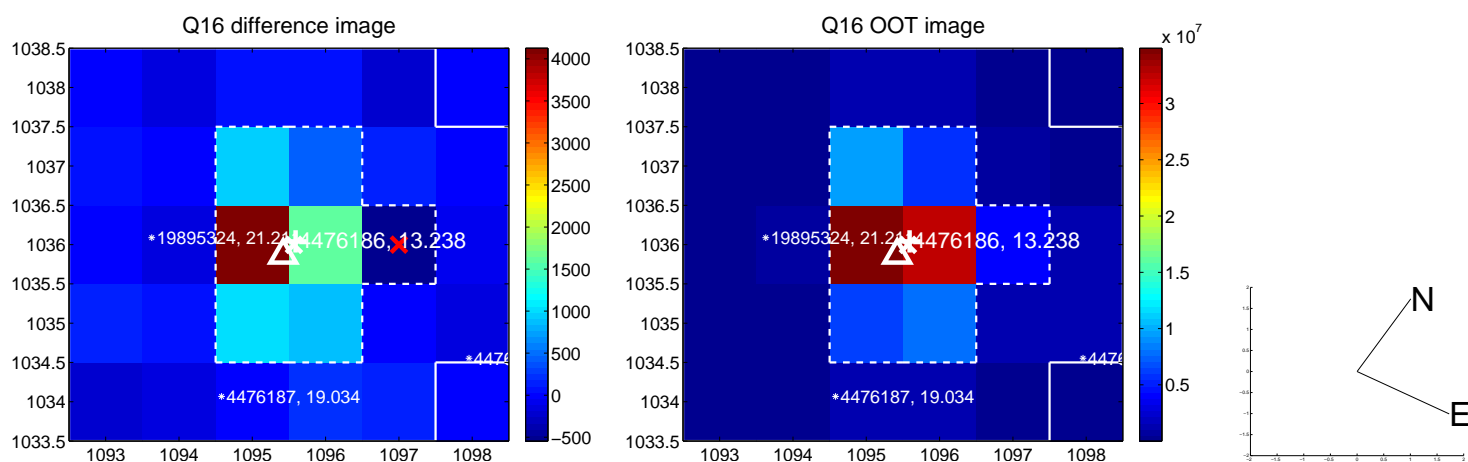
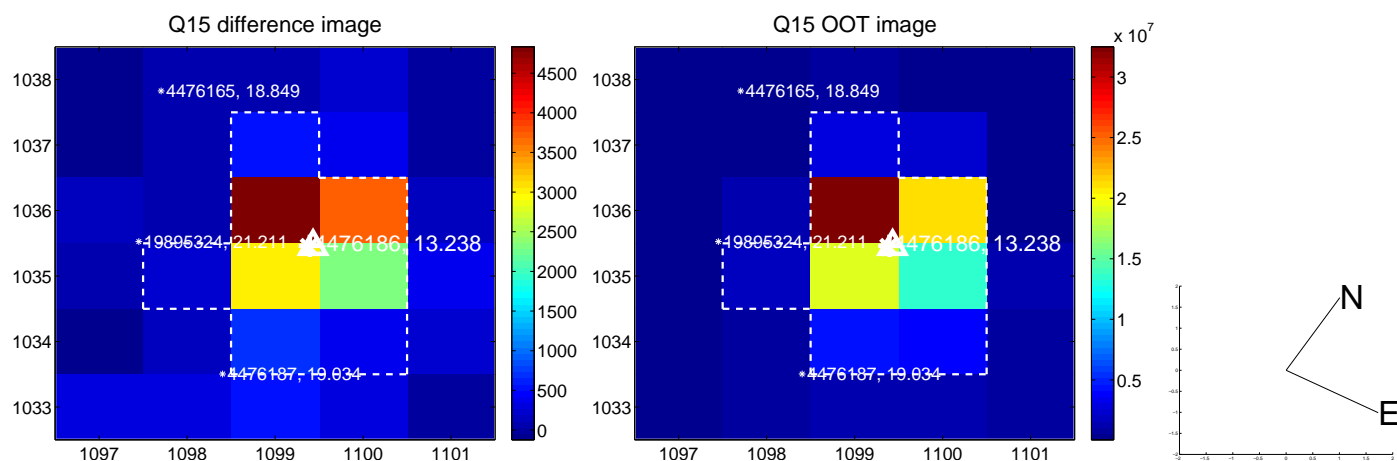
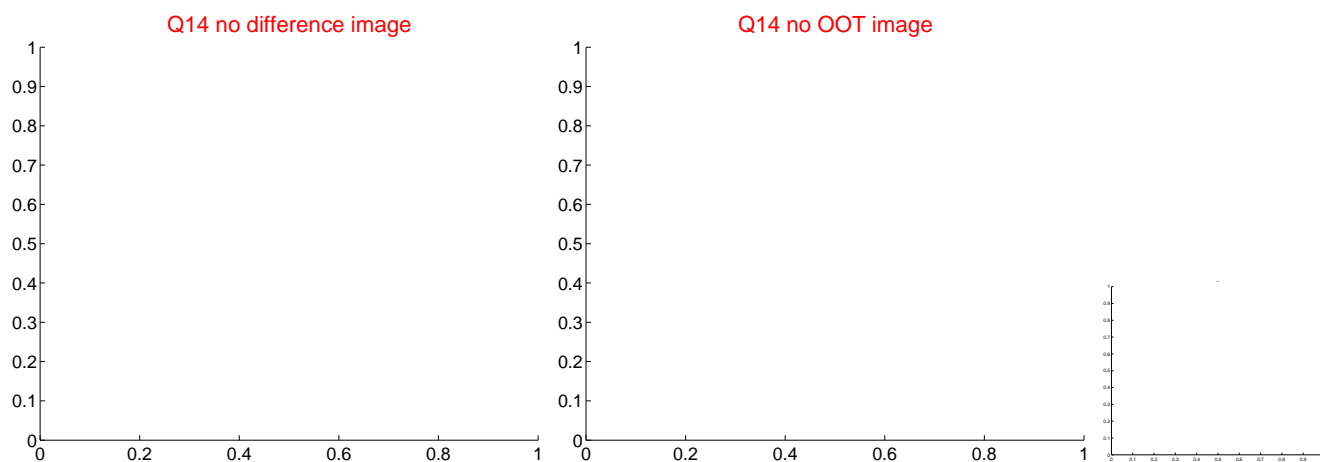
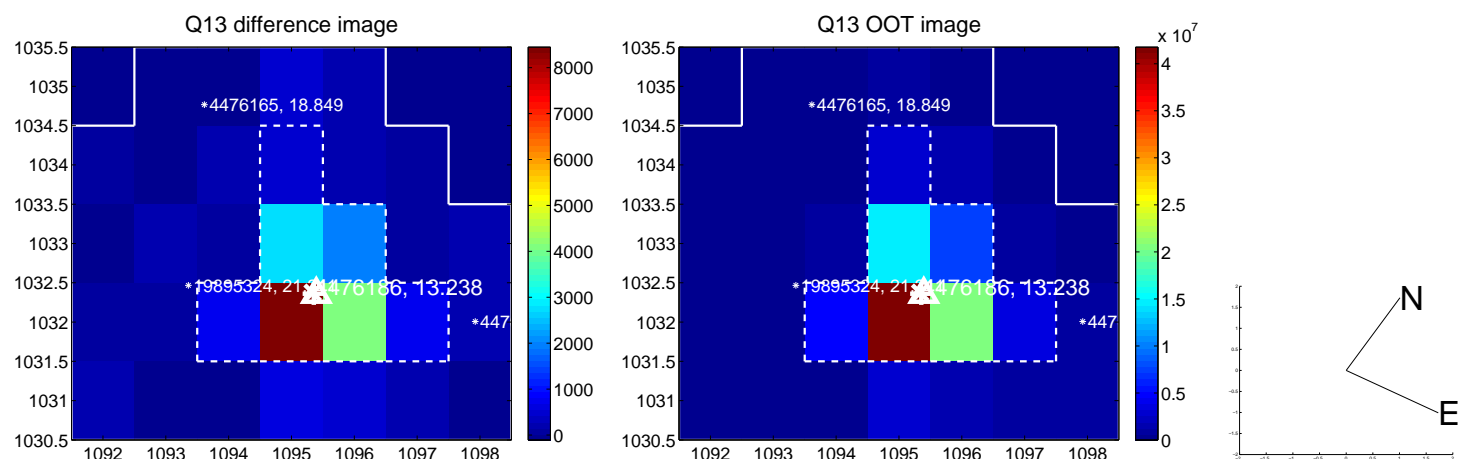
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



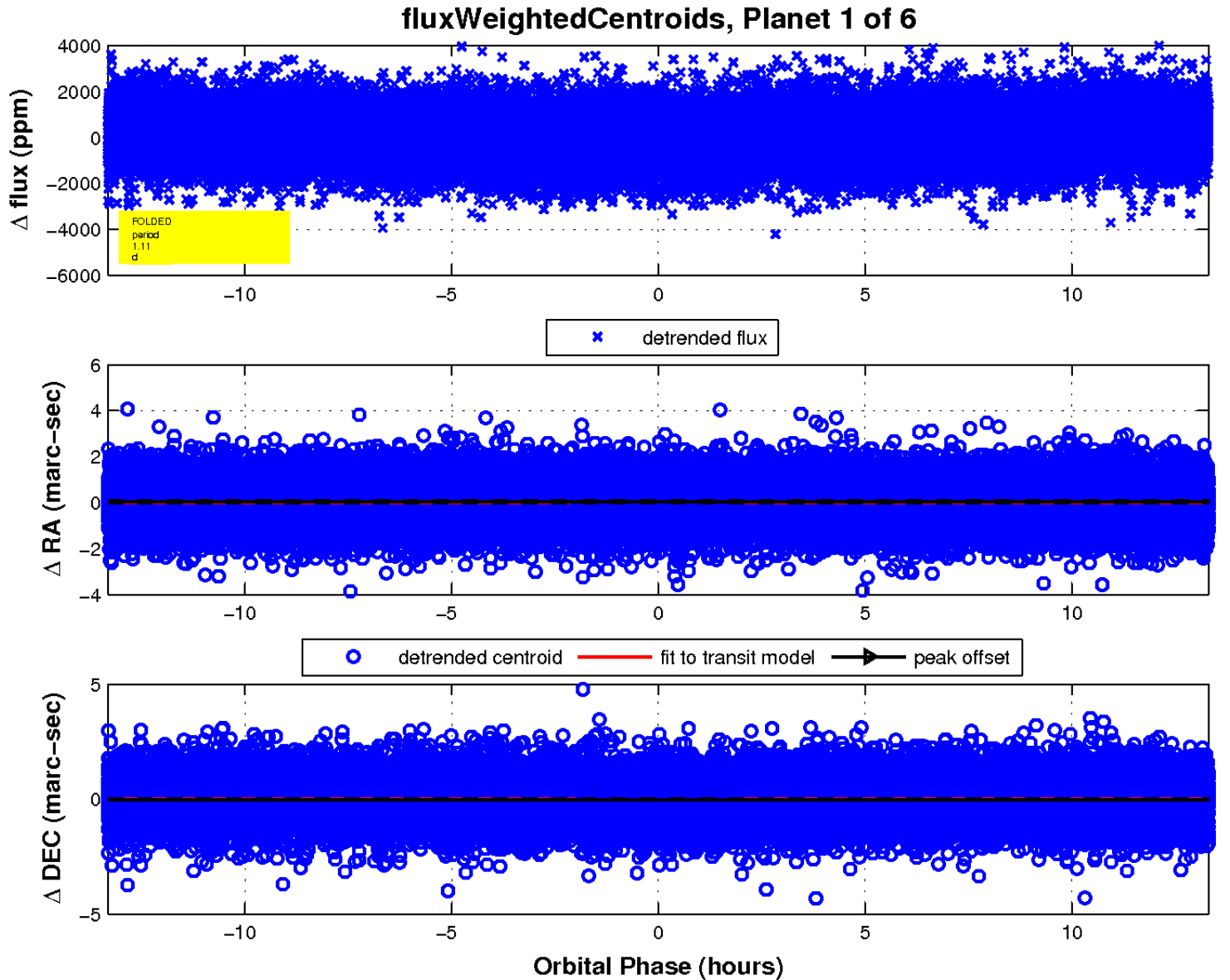
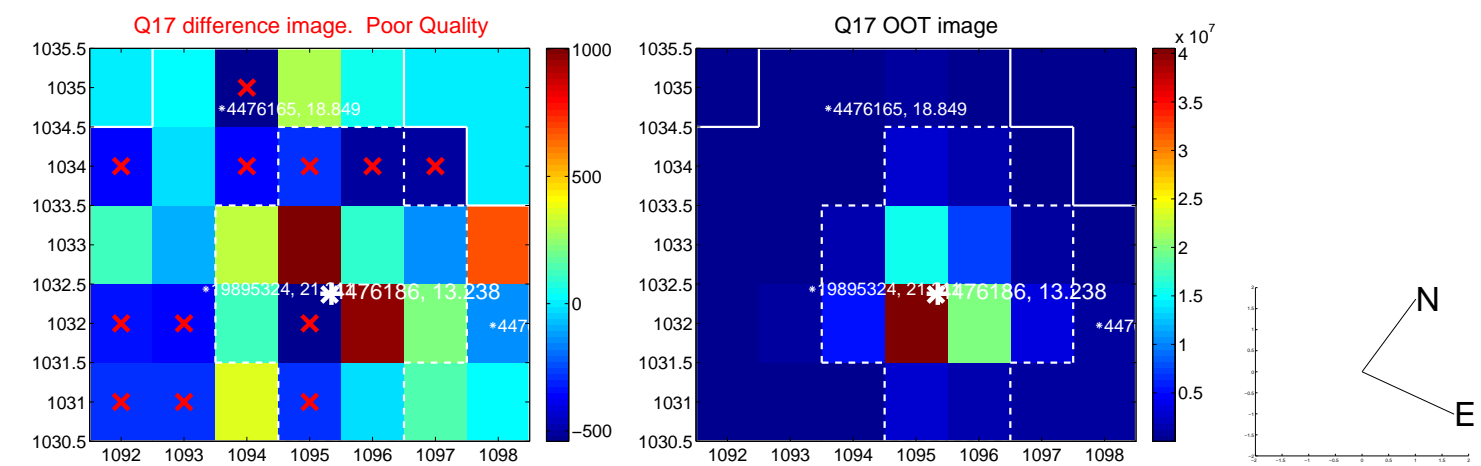
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



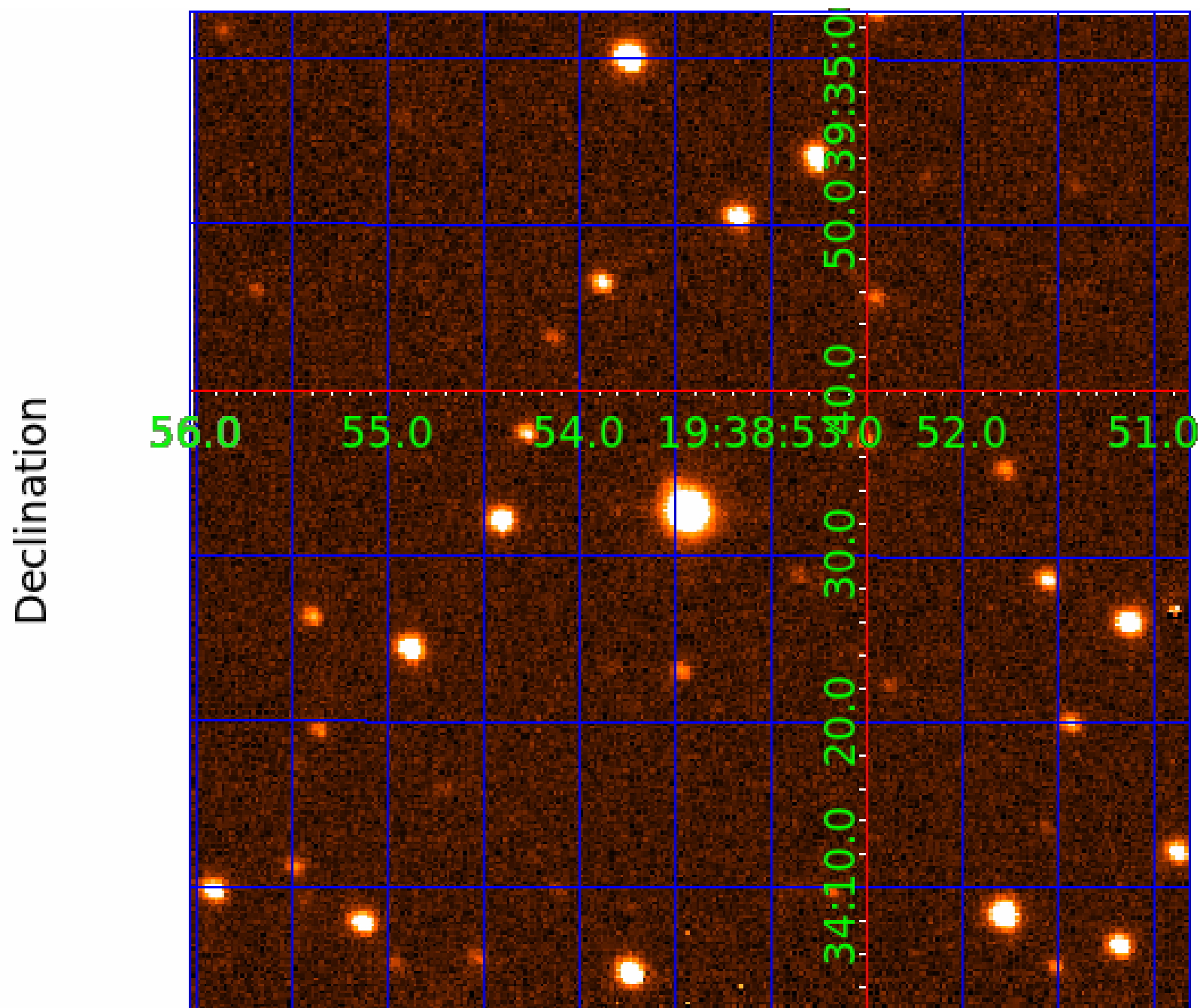
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004476186

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})
004476186-01	OBS	No	1.109392	132.061263	137.6	4.562	10.9	9.7	2.53	7693	3.44	29711.22
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004476186-03	OBS	No	243.733544	161.633217	2644.5	4.454	8.8	9.1	2.53	7693	23.42	22.41
004476186-05	OBS	No	103.023102	140.132505	1855.0	4.168	7.5	7.9	2.53	7693	18.36	70.65
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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004476186-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004476186-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004476186-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
004476186-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

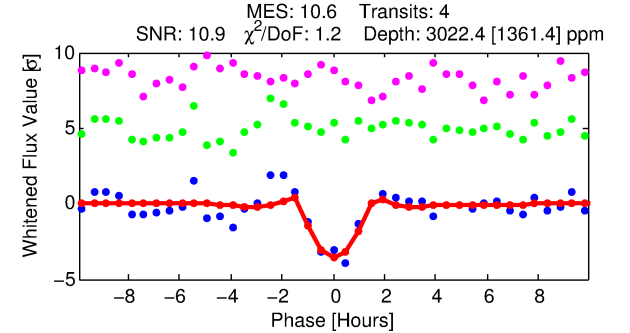
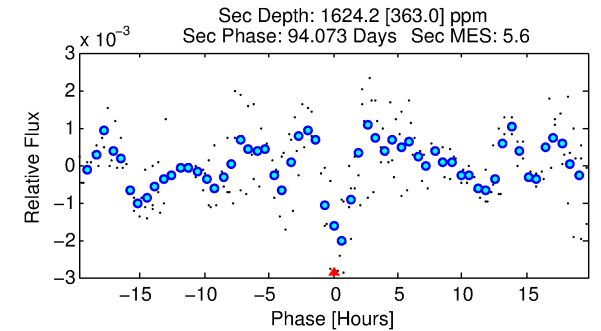
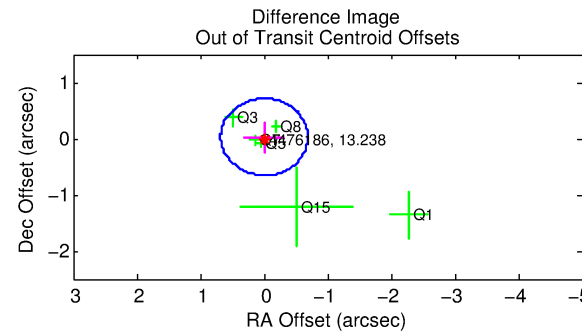
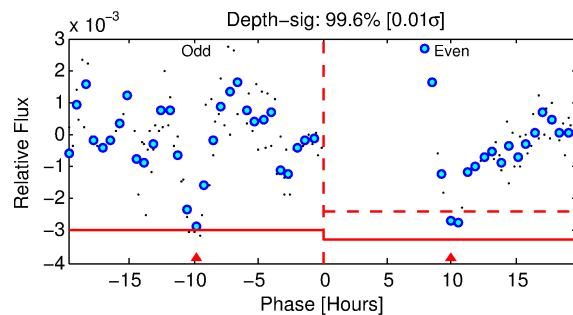
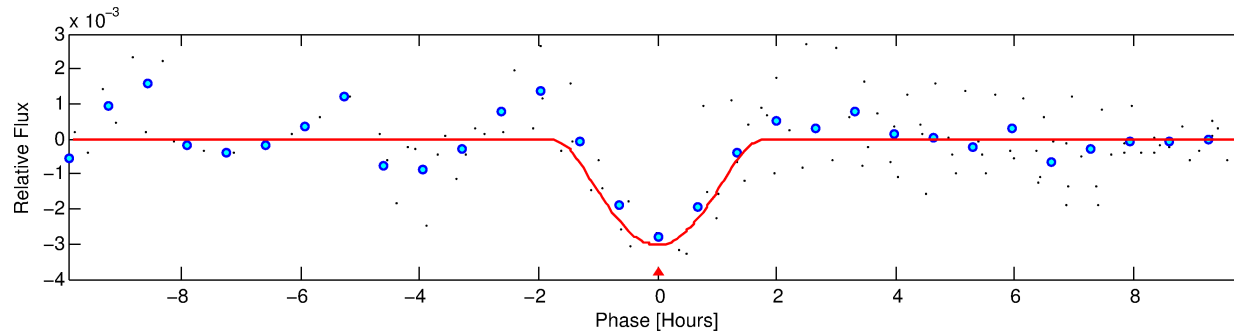
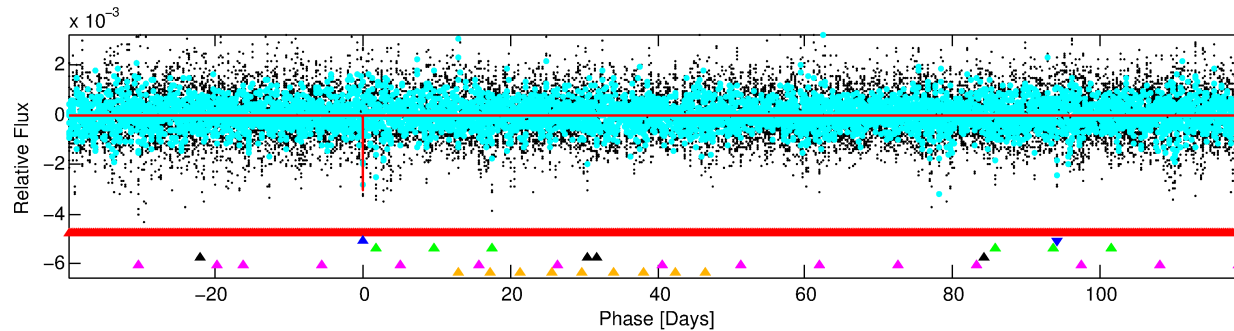
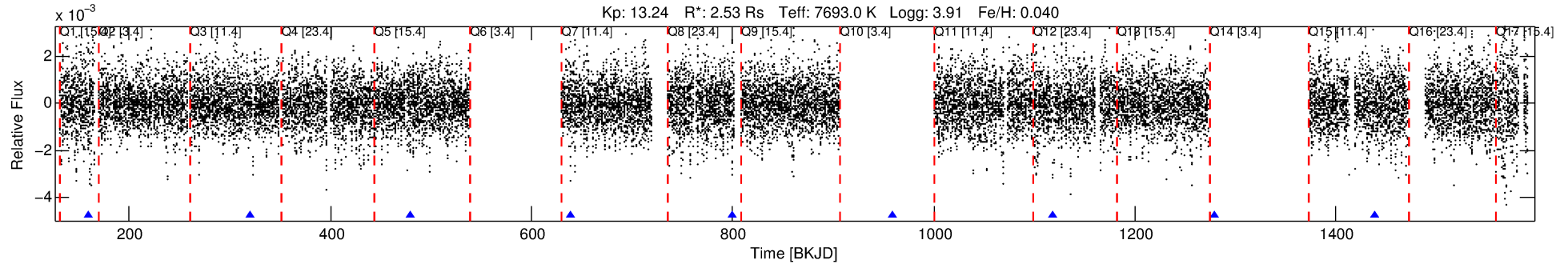
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004476186-02

No Significant Match Found

DV One-Page Summary

KIC: 4476186 Candidate: 2 of 6 Period: 159.866 d



DV Fit Results:

Period = 159.86594 [0.00236] d
Epoch = 159.8341 [0.0110] BKJD
Rp/R* = 0.0911 [0.2261]
a/R* = 161.52 [85.40]
b = 1.00 [0.35]
Seff = 39.33 [18.84]
Teq = 639 [76] K
Rp = 25.17 [63.06] Re
a = 0.7155 [0.2127] AU
Ag = 722.20 [3604.29] [0.20σ]
Teffp = 5118 [6363] K [0.70σ]

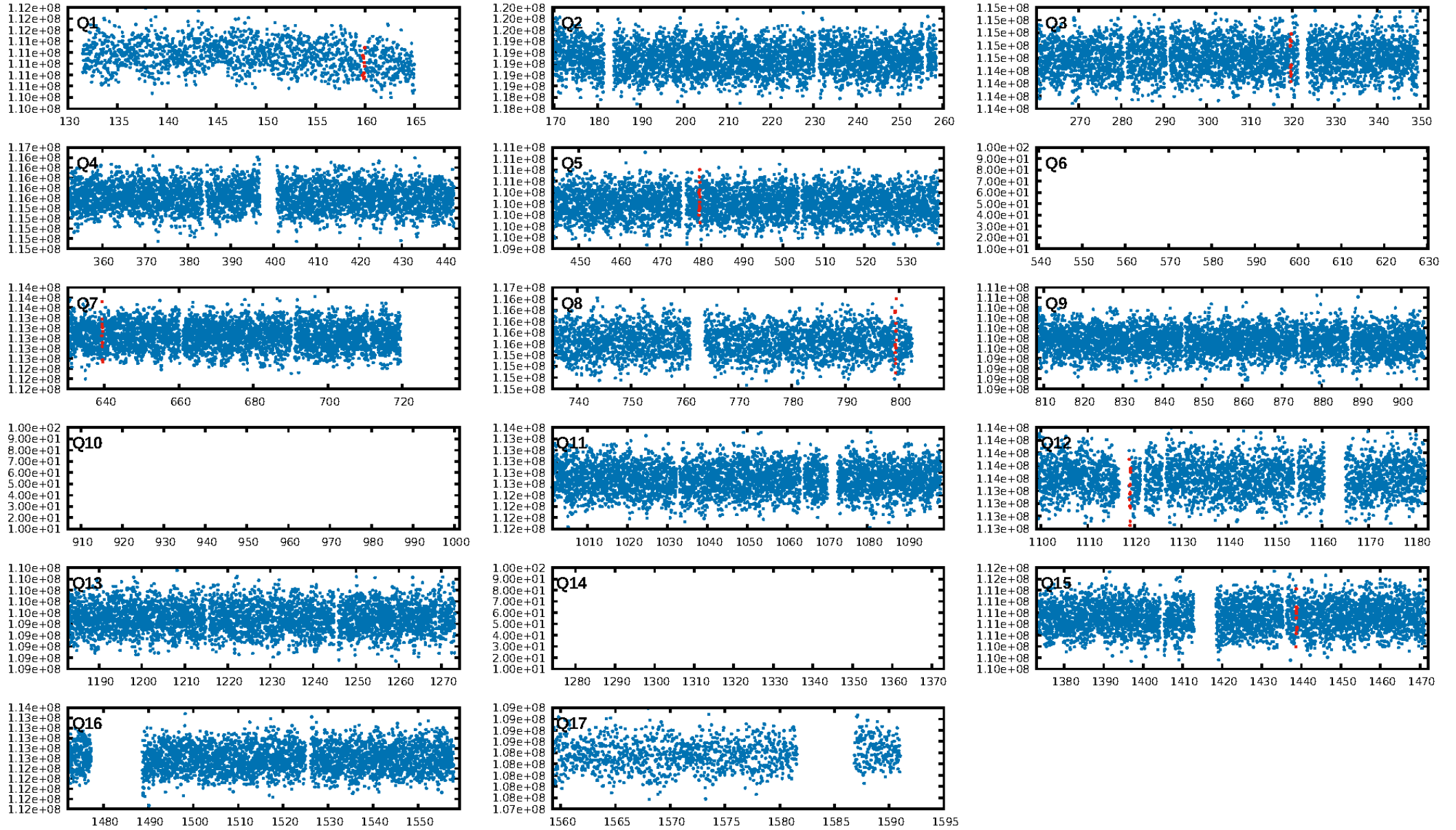
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [256.62σ]
LongPeriod-sig: 100.0% [4.47σ]
ModelChiSquare2-sig: 23.9%
ModelChiSquareGof-sig: 98.2%
Bootstrap-pfa: 1.31e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.8129
Centroid-sig: 1.5%
Centroid-so: 0.201 arcsec [1.38σ]
OotOffset-rm: 0.028 arcsec [0.12σ]
KicOffset-rm: 0.100 arcsec [0.29σ]
OotOffset-st: 0/3/1/2 [6]
KicOffset-st: 0/3/1/2 [6]
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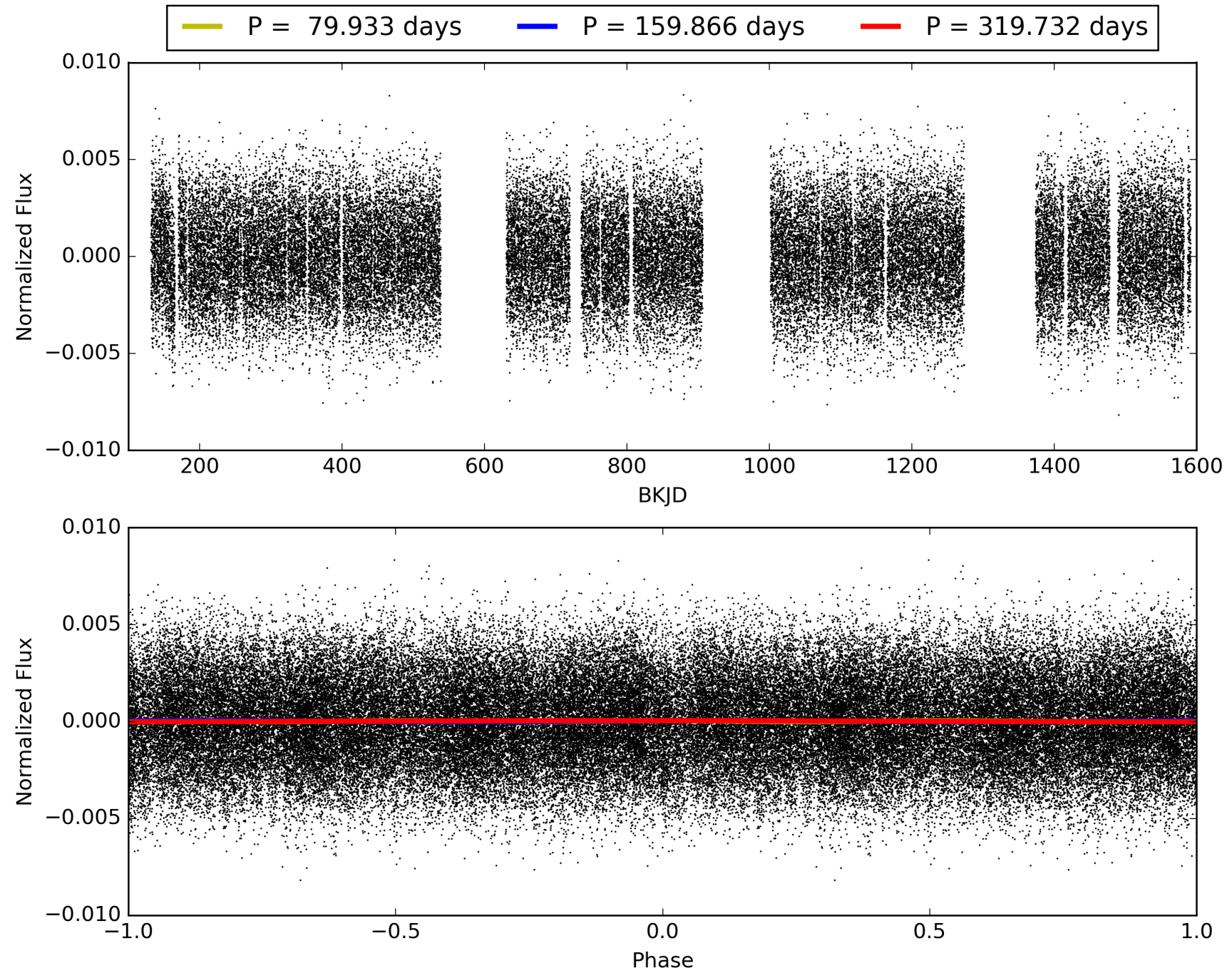
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004476186-02, PDC Light Curves

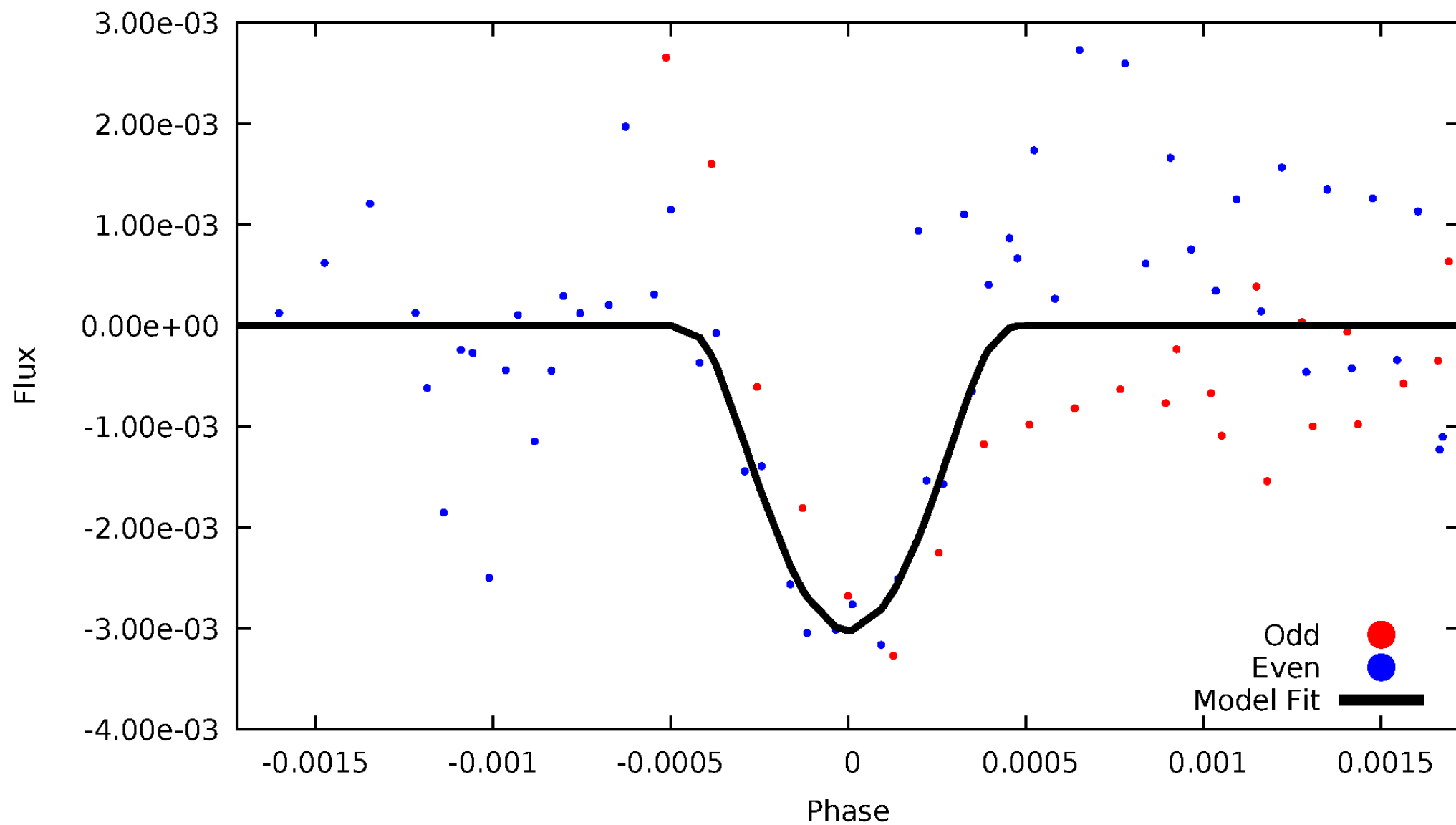


TCE 004476186-02



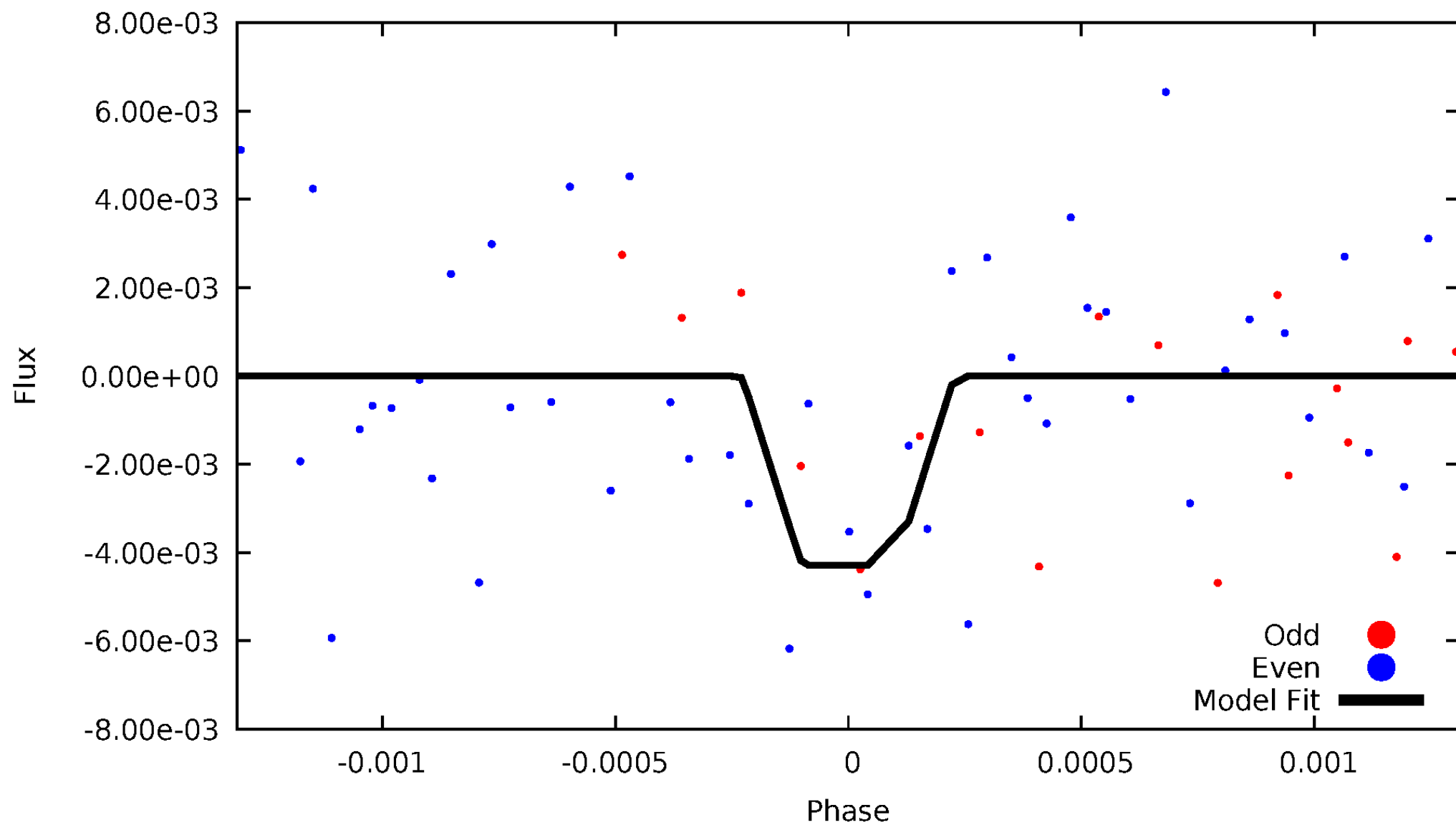
DV Odd/Even

TCE 004476186-02



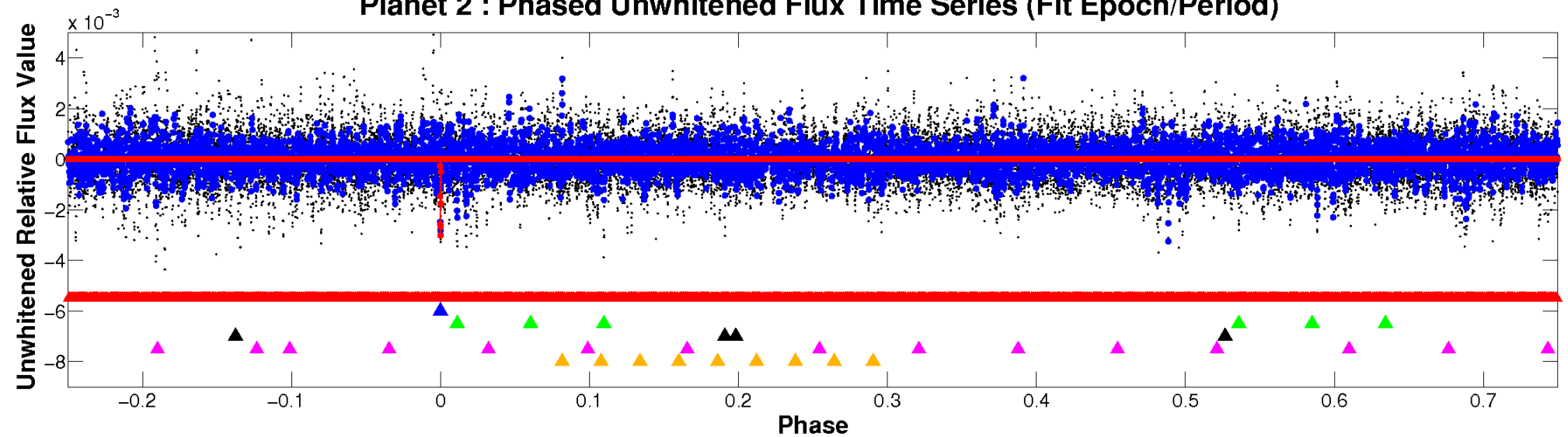
ALT Odd/Even

TCE 004476186-02

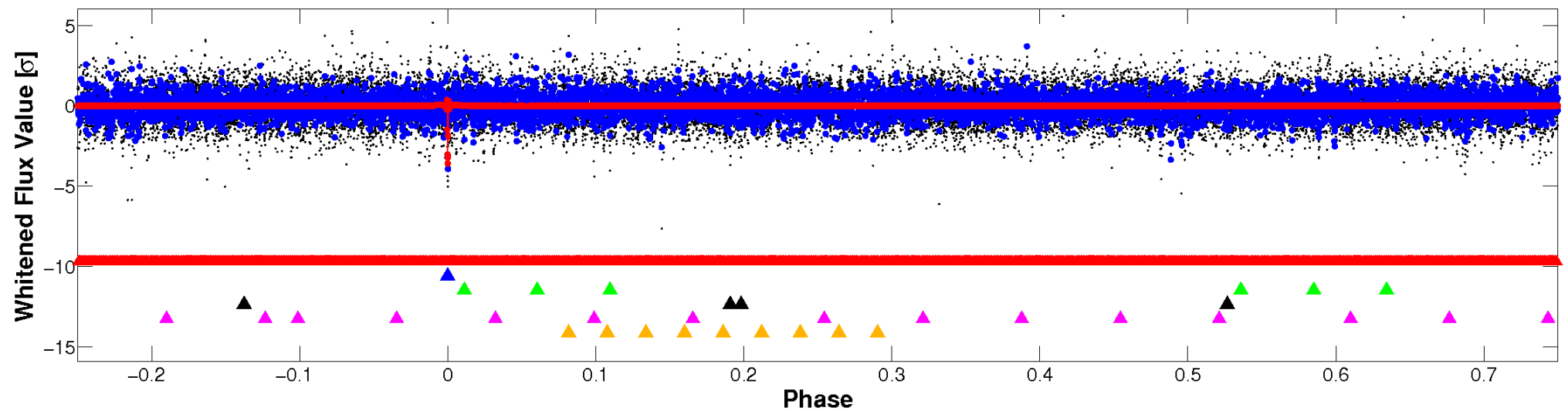


Non-Whitened Vs. Whitened Light Curve

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

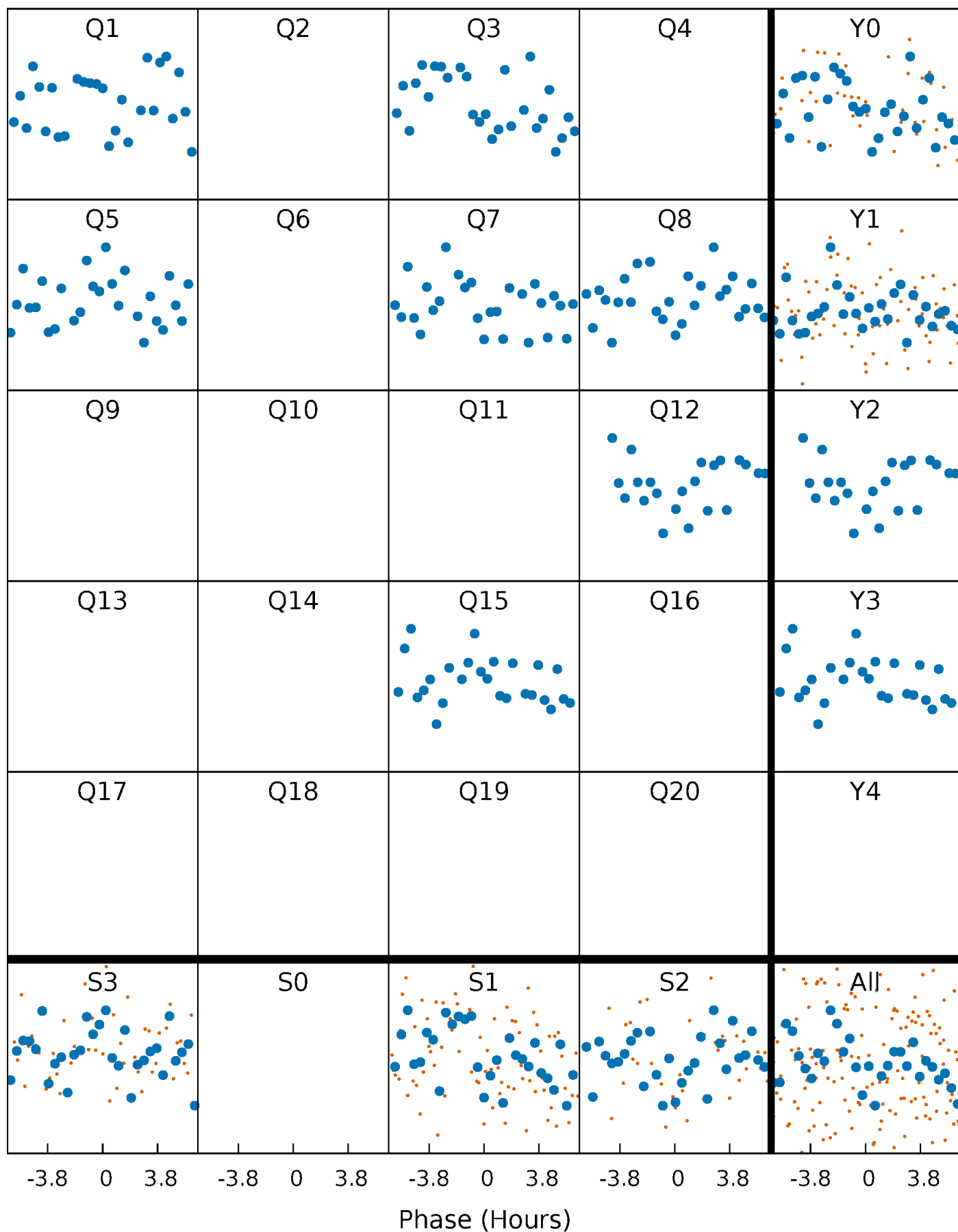


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



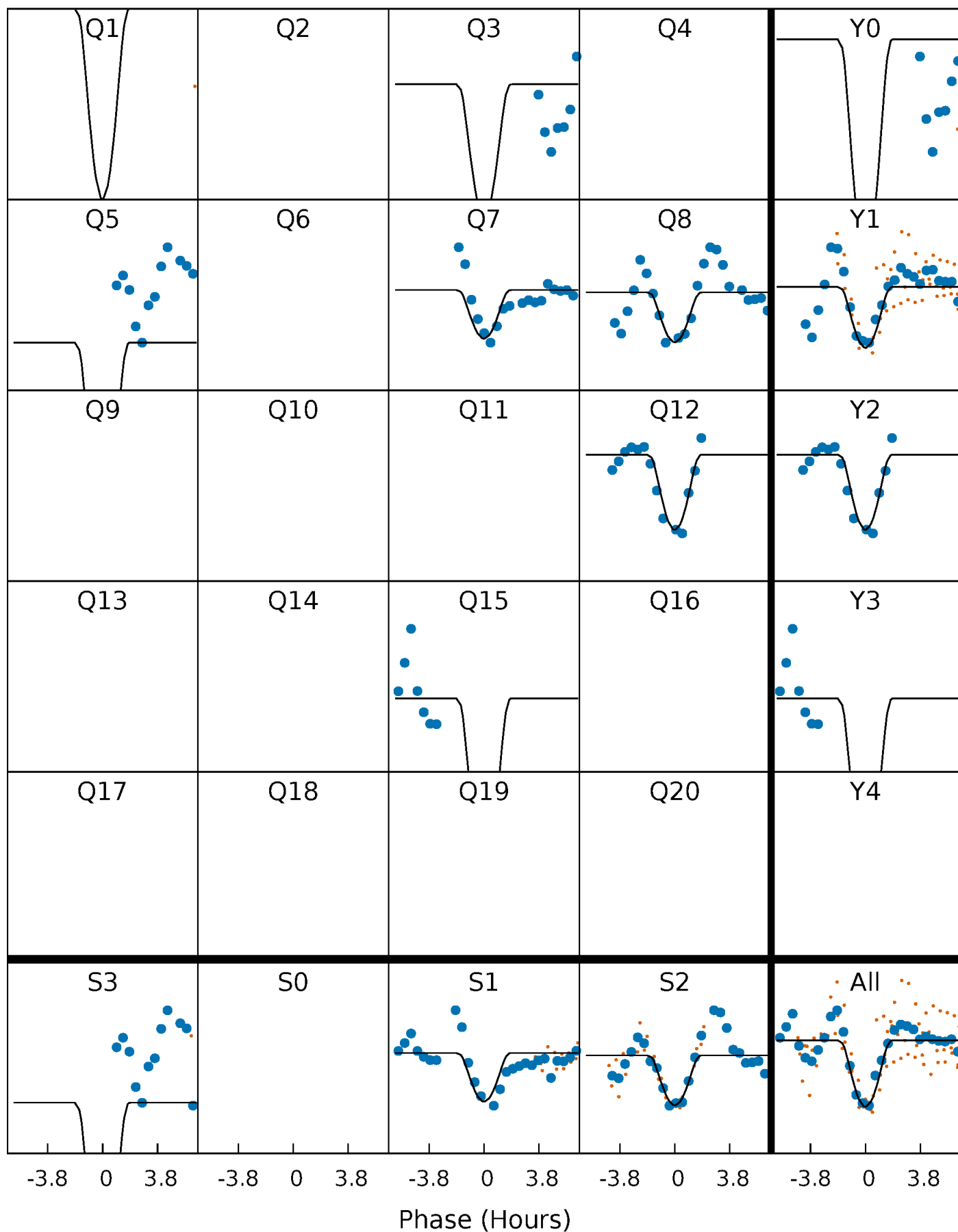
PDC Quarter-Phased Transit Curves

TCE 004476186-02 P=159.865937 Days $T_0=159.834064$ (BKJD)



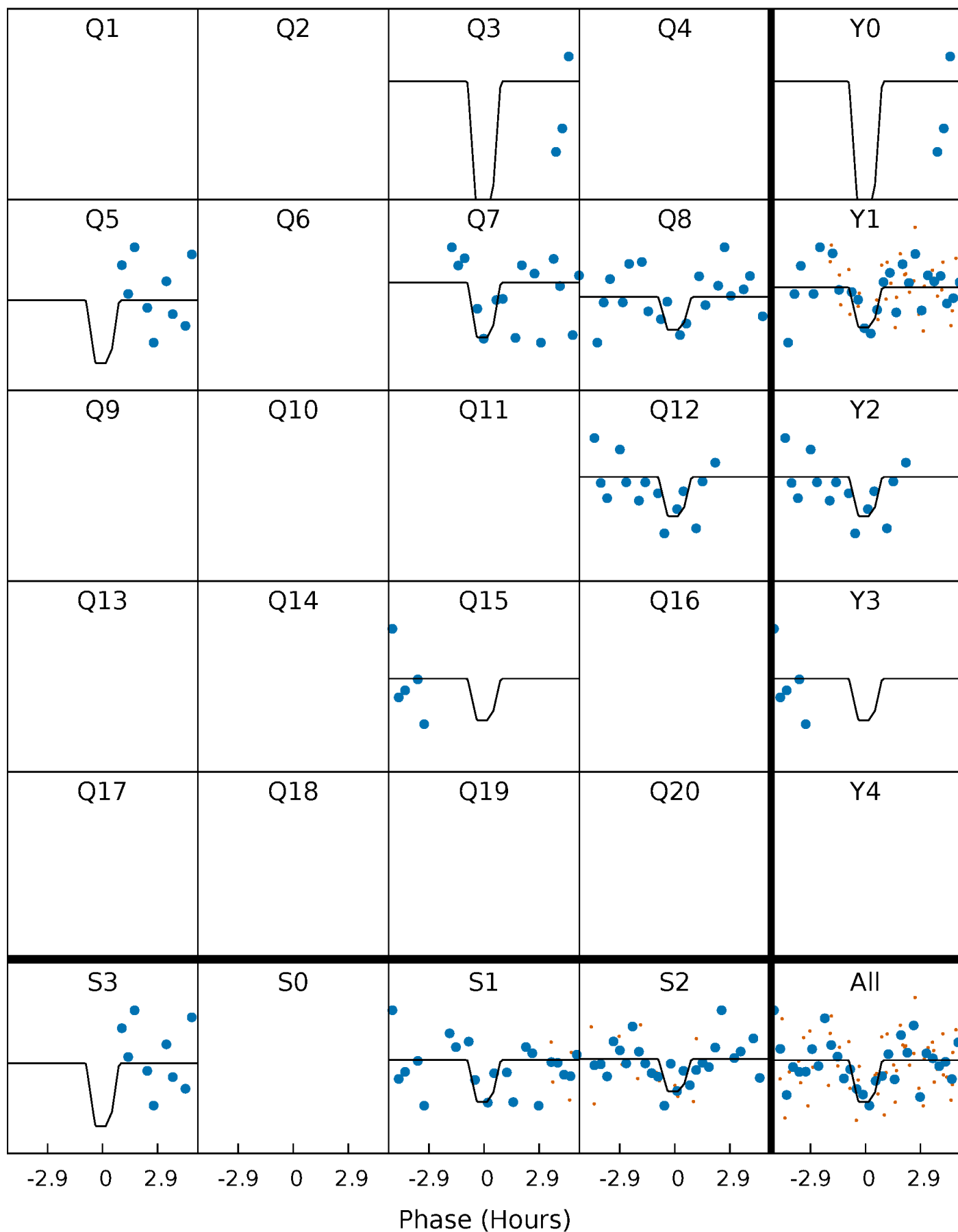
DV Quarter-Phased Transit Curves

TCE 004476186-02 P=159.865937 Days $T_0=159.834064$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

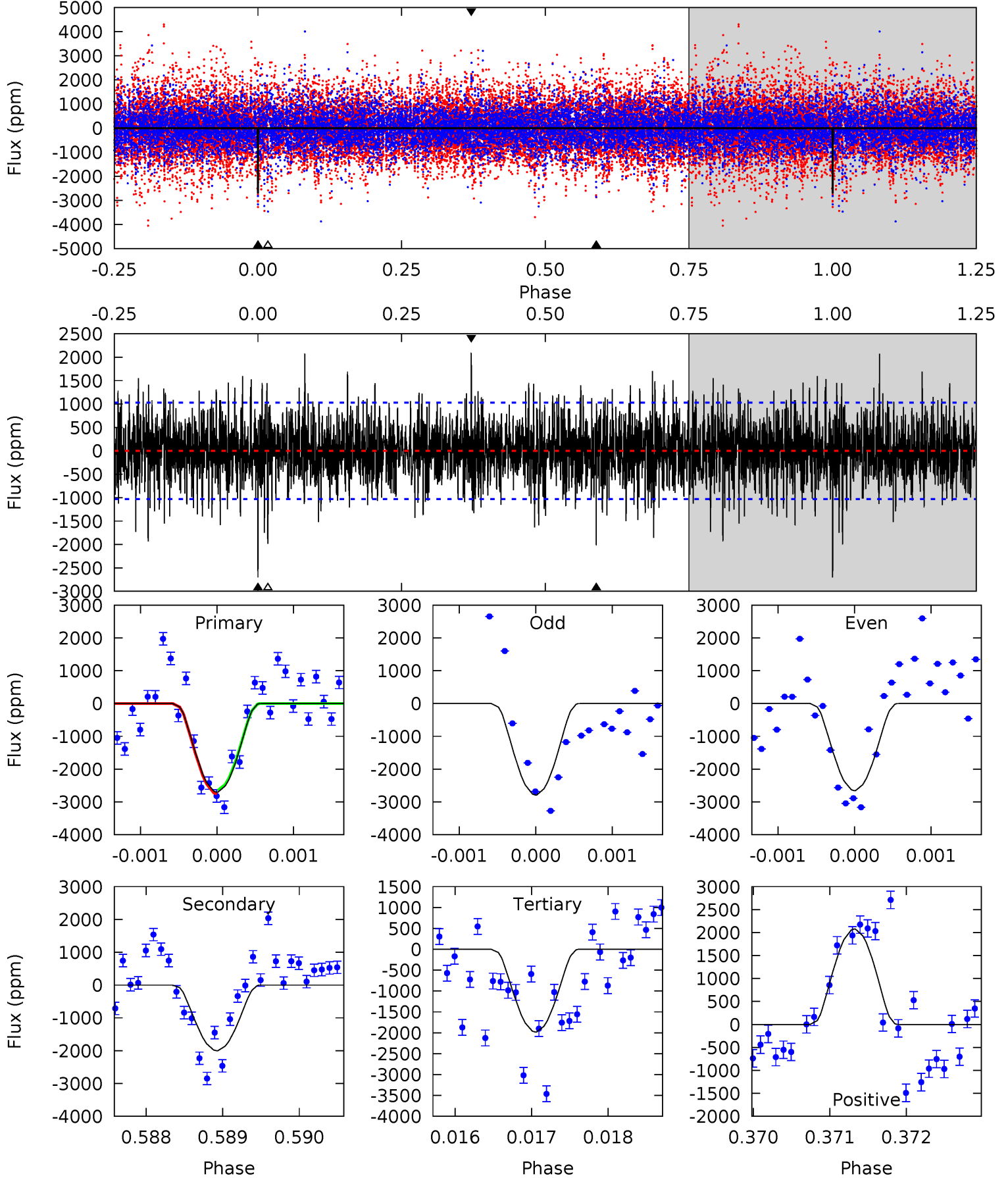
TCE 004476186-02 P=159.865419 Days $T_0=159.831262$ (BKJD)



DV Model-Shift Uniqueness Test

004476186-02, P = 159.865937 Days, E = 159.834064 Days

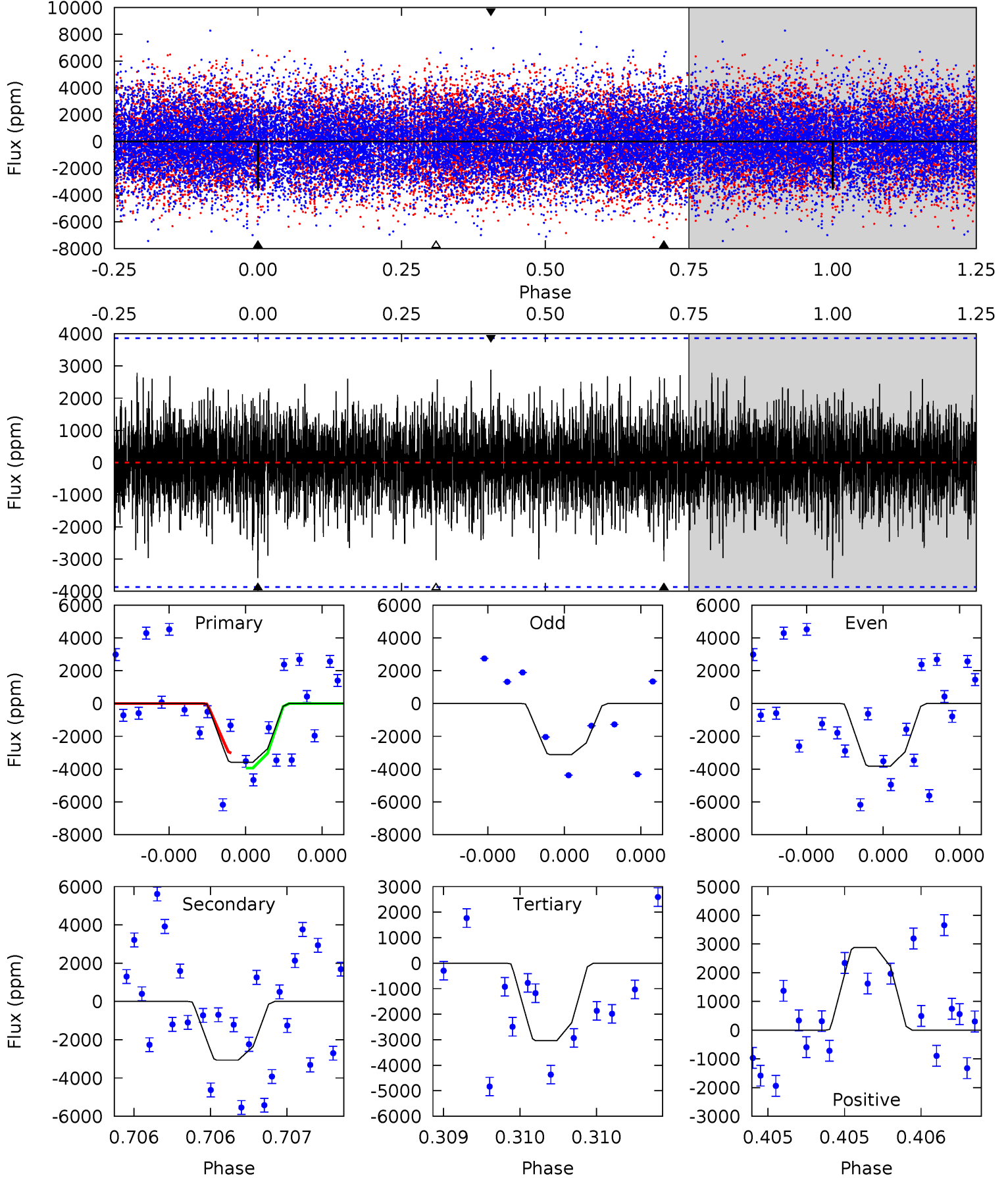
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	10.6	10.5	11.0	5.48	3.33	2.65	3.83	3.33	0.10	-0.39	0.32	0.62	0.43	0.28



Alt Model-Shift Uniqueness Test

004476186-02, P = 159.865419 Days, E = 159.831262 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.19	4.43	4.38	4.17	5.59	3.51	1.17	0.80	1.02	0.05	0.27	0.47	1.07	0.45	0.66



Stellar Parameters For KIC 004476186

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7693^{+214}_{-322}	$3.912^{+0.253}_{-0.136}$	$0.040^{+0.200}_{-0.350}$	$2.533^{+0.460}_{-0.855}$	$1.910^{+0.103}_{-0.414}$	$0.166^{+0.284}_{-0.057}$
	+3%/-4%	+6%/-3%	+500%/-875%	+18%/-34%	+5%/-22%	+171%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004476186-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2002 ± 188	$48.93^{+48.95}_{-33.64}$	884^{+63}_{-71}	4011^{+2599}_{-810}	230^{+2120}_{-171}
Alt.	-3066 ± 691	$44.96^{+48.97}_{-28.55}$	883^{+57}_{-71}	4469^{+2665}_{-1068}	416^{+2634}_{-328}

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

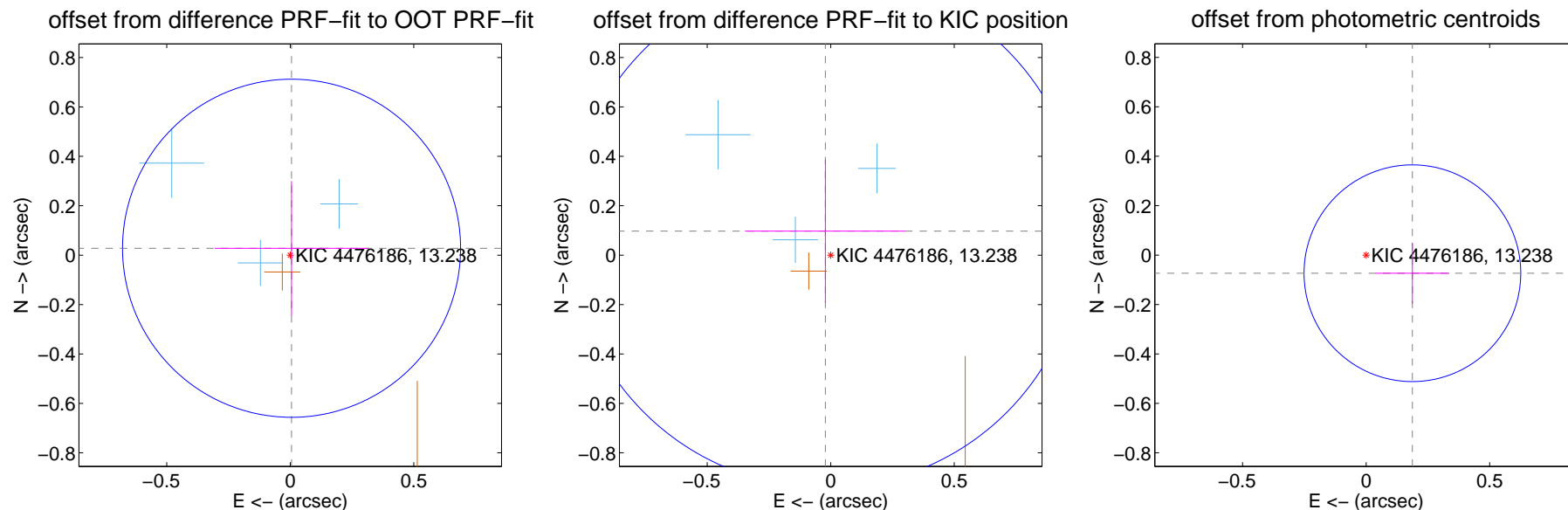
DV Centroid Data

Supplemental centroid analysis for 004476186-02. Kepler magnitude: 13.24. Transit SNR 10.87

There are 4 quarters with good PRF difference image offsets

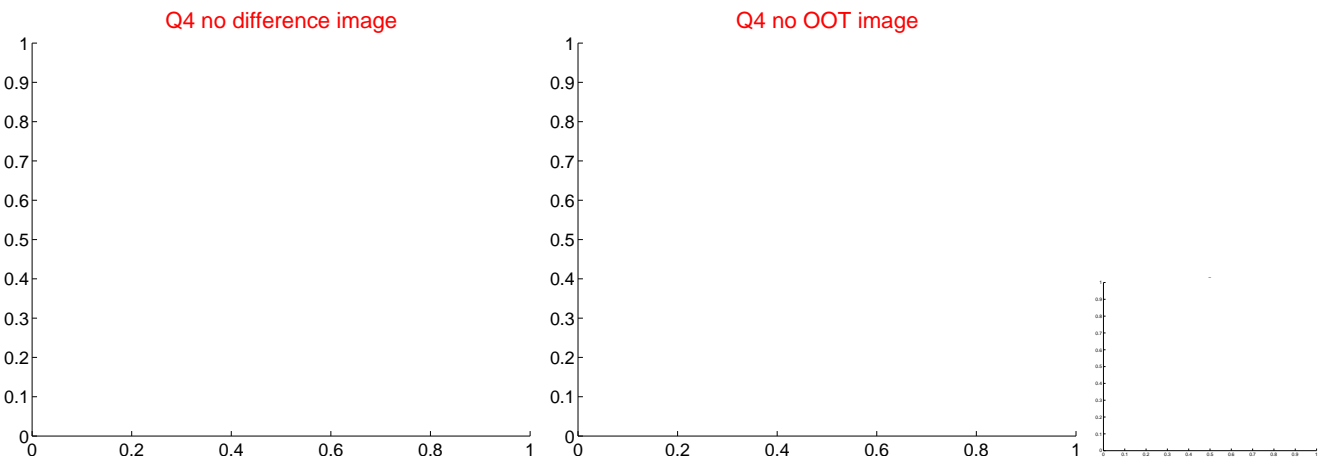
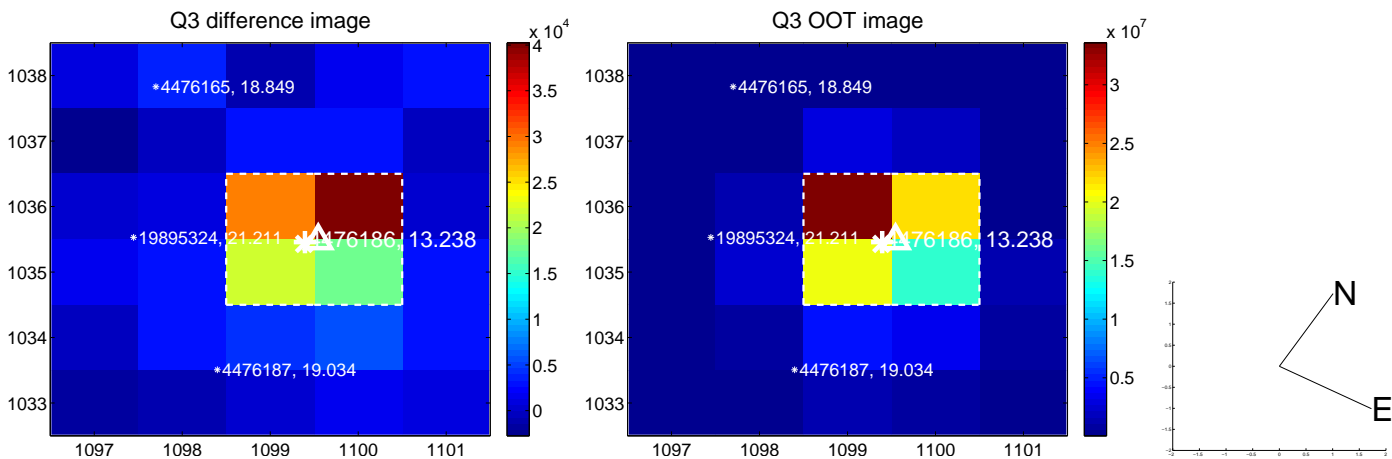
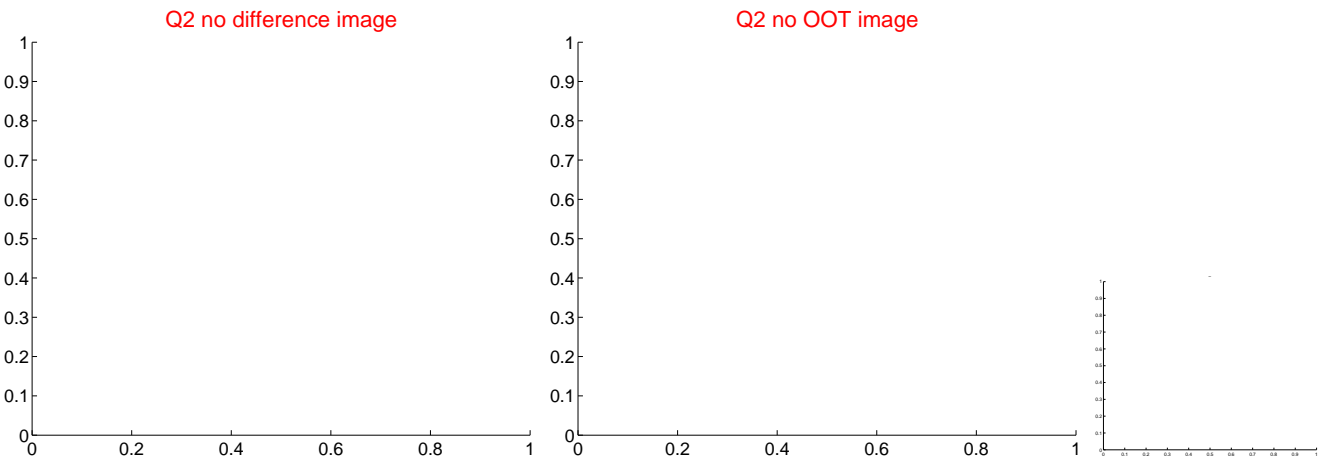
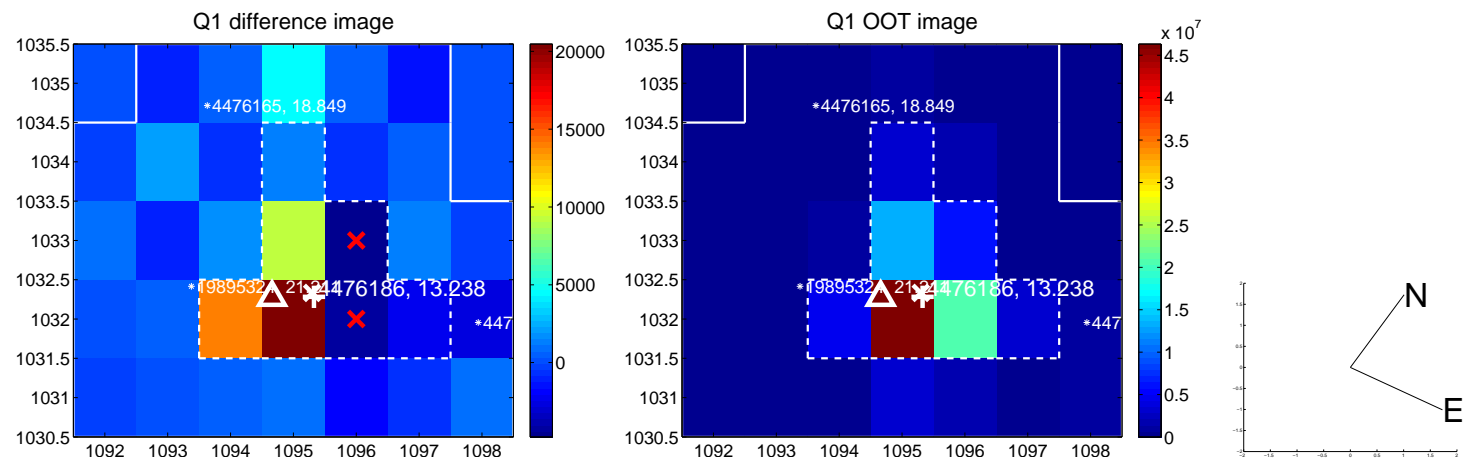
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.028 ± 0.228	0.12	-0.005 ± 0.311	0.028 ± 0.272
PRF-fit source offset from KIC position	0.100 ± 0.346	0.29	0.022 ± 0.326	0.098 ± 0.290
photometric centroid source offset	0.20 ± 0.15	1.38	-0.19 ± 0.15	-0.07 ± 0.12

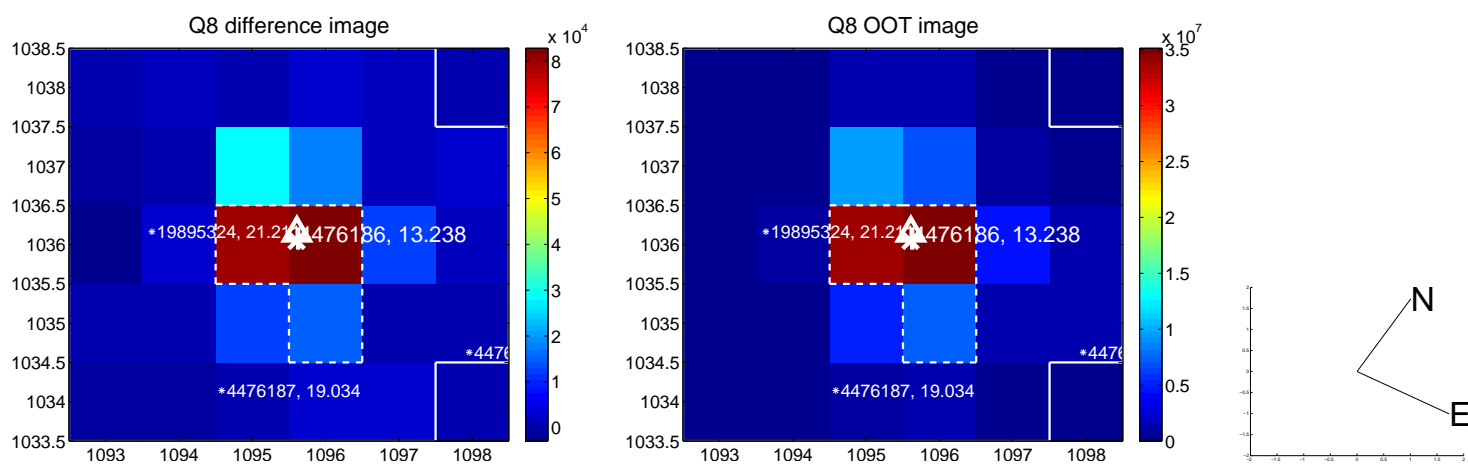
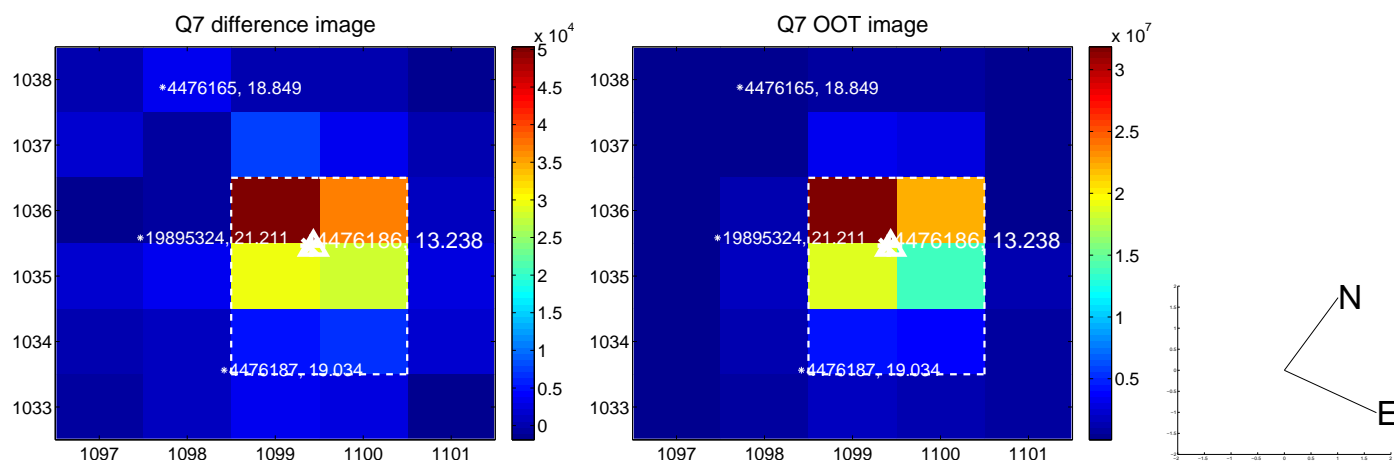
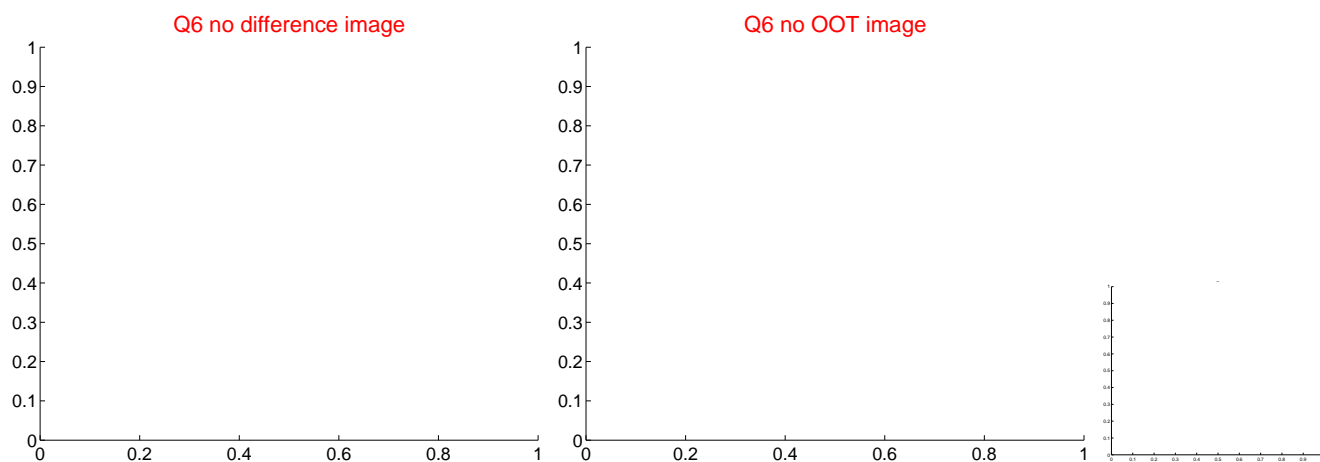
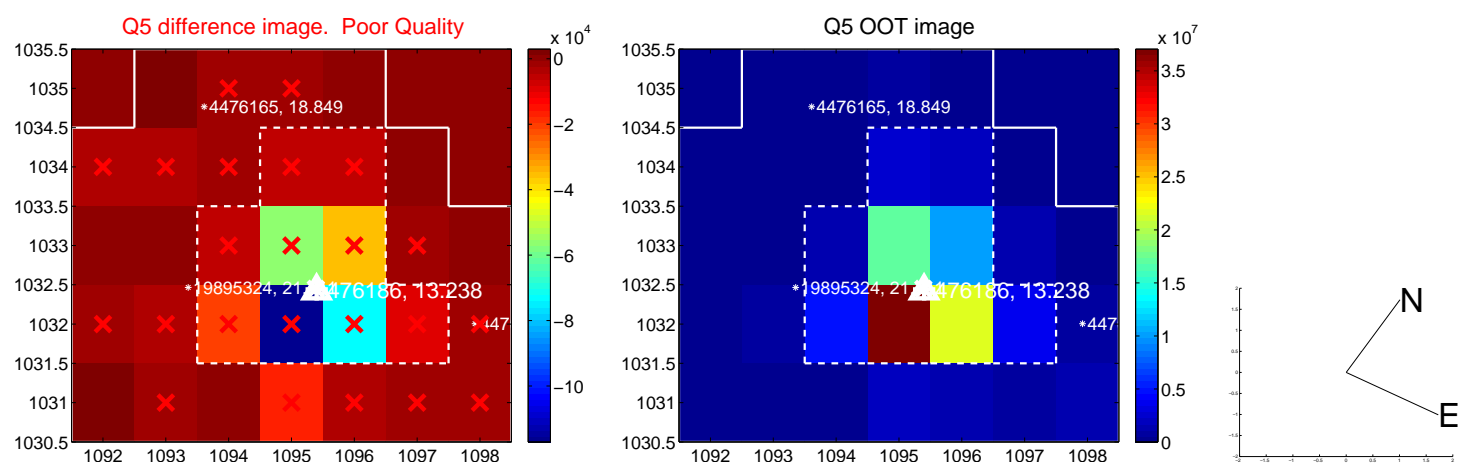


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

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



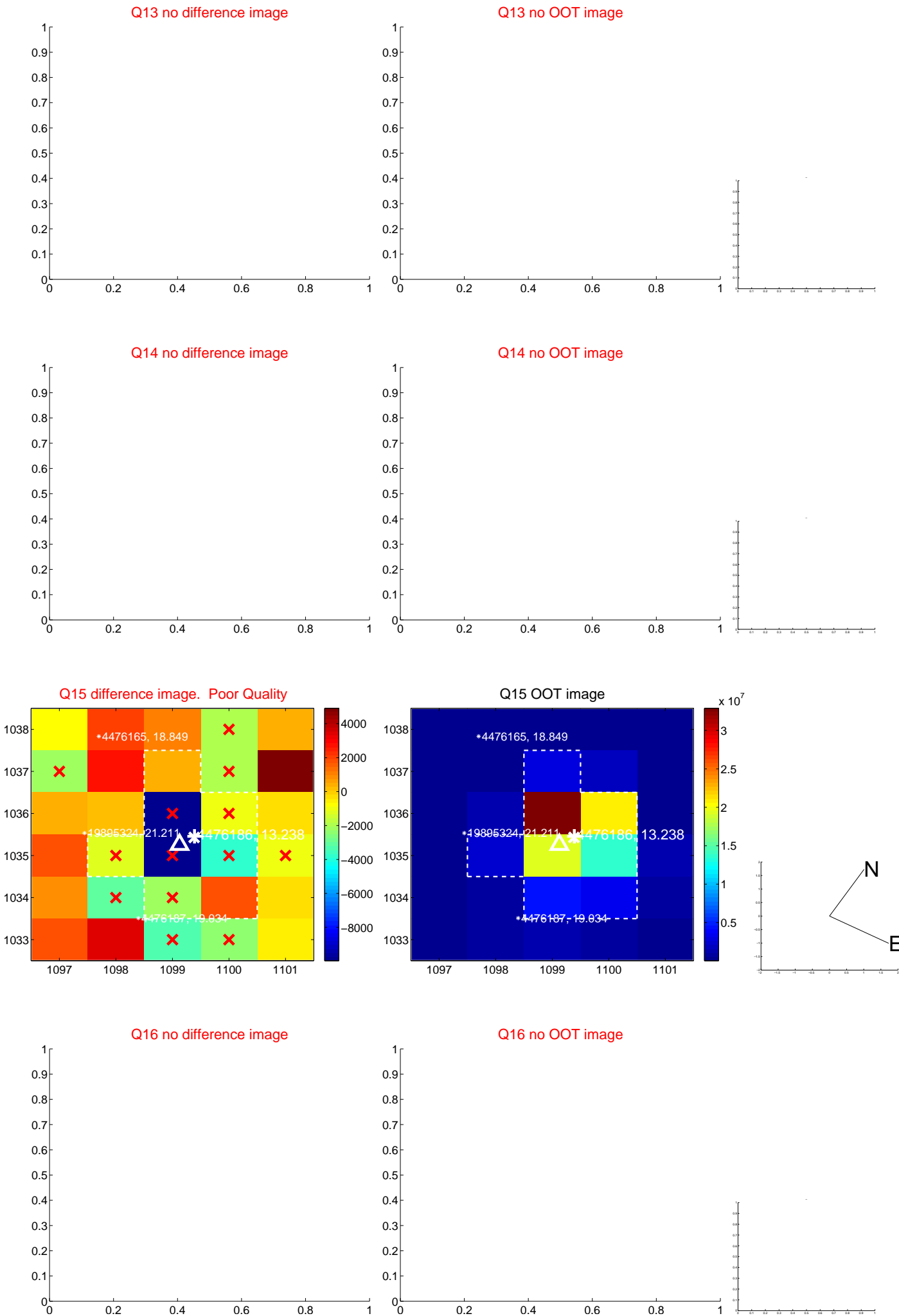
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



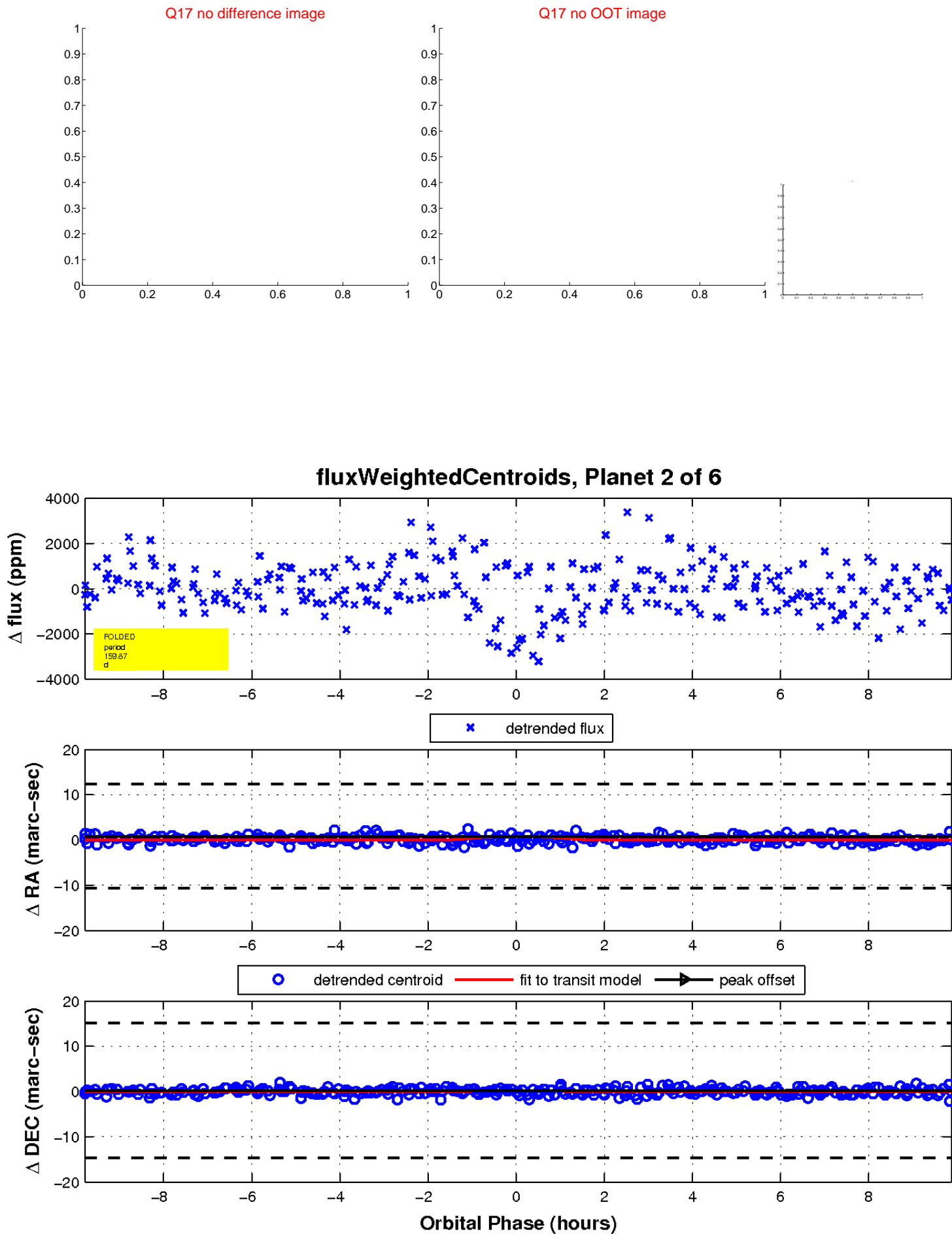
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



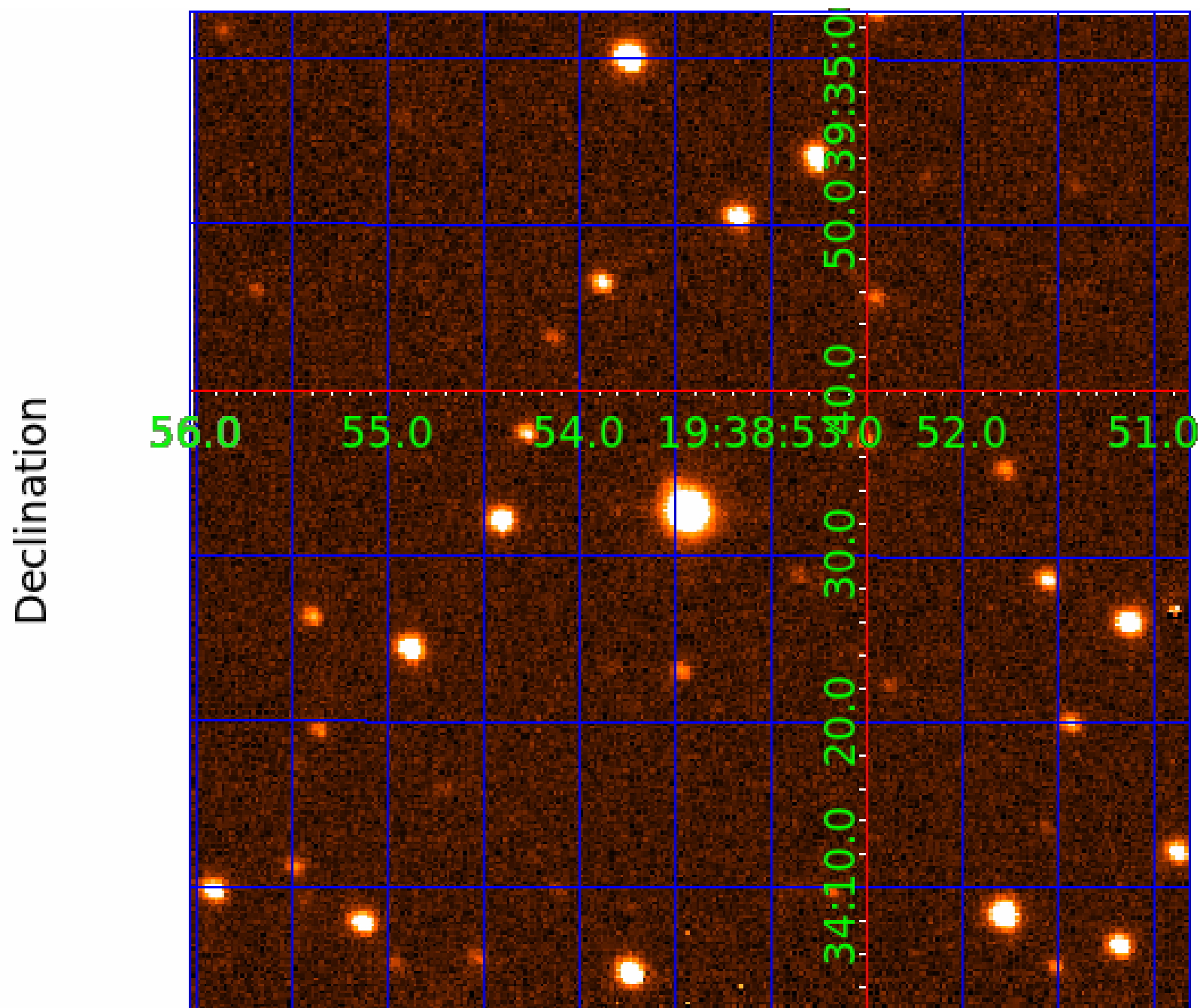
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004476186

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})
004476186-01	OBS	No	1.109392	132.061263	137.6	4.562	10.9	9.7	2.53	7693	3.44	29711.22
004476186-02	OBS	No	159.865937	159.834064	3022.4	3.300	10.6	10.9	2.53	7693	25.17	39.33
004476186-03	OBS	No	243.733544	161.633217	2644.5	4.454	8.8	9.1	2.53	7693	23.42	22.41
004476186-05	OBS	No	103.023102	140.132505	1855.0	4.168	7.5	7.9	2.53	7693	18.36	70.65
004476186-06	OBS	No	164.036445	172.897624	831.8	22.160	7.4	8.9	2.53	7693	7.48	38.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004476186-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004476186-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004476186-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004476186-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
004476186-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

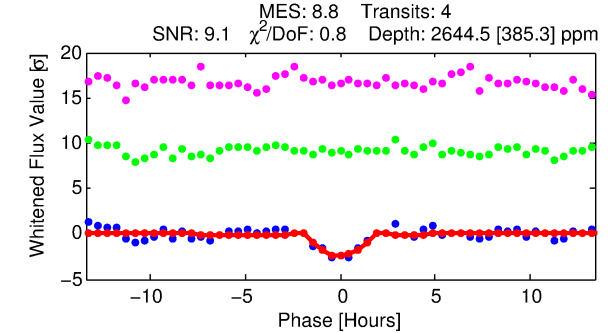
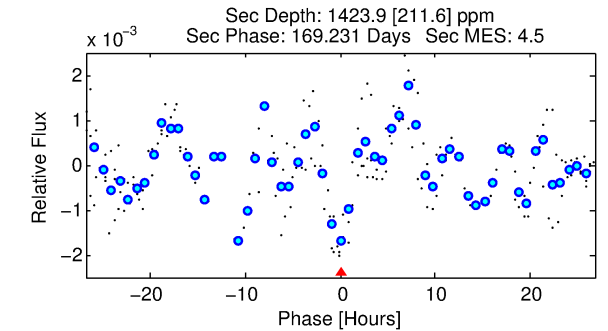
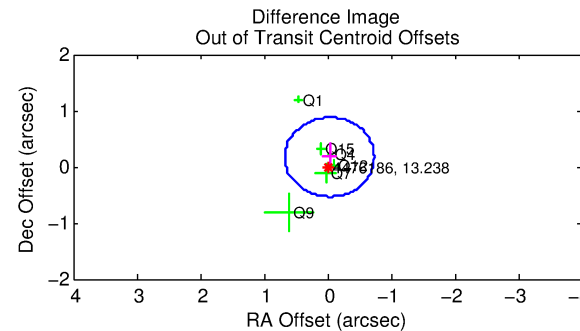
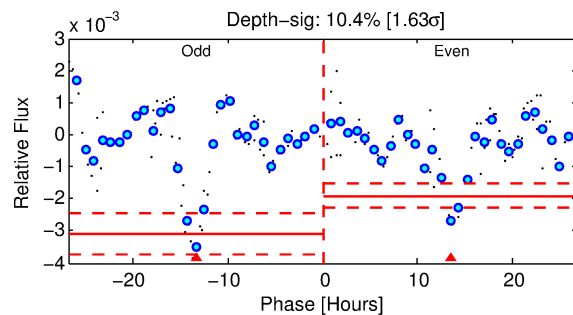
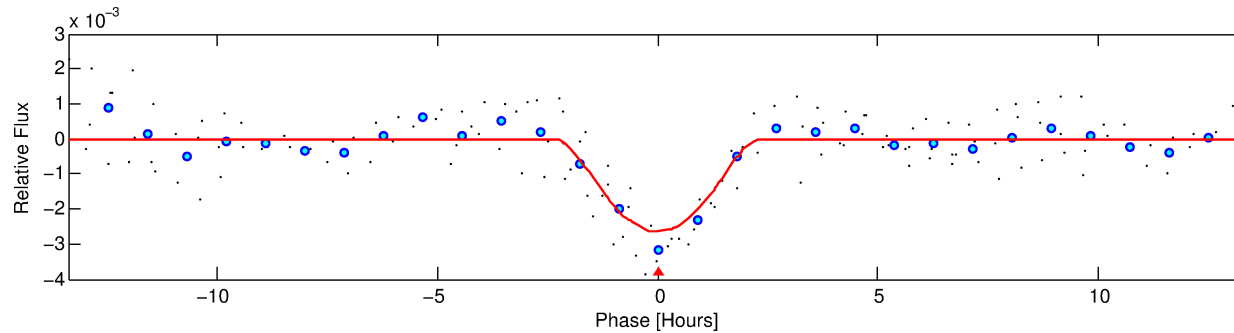
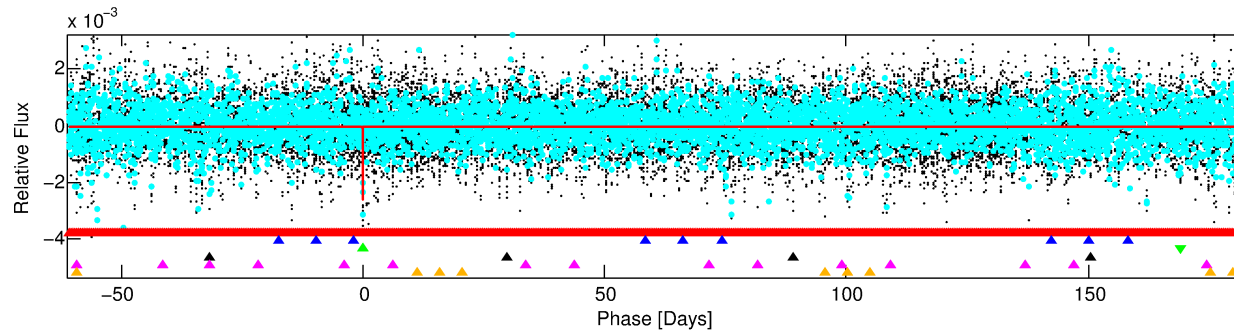
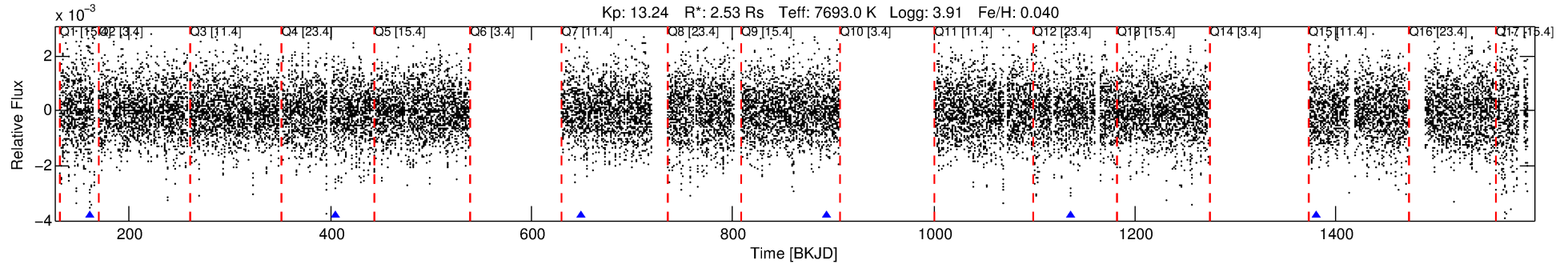
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004476186-03

No Significant Match Found

DV One-Page Summary

KIC: 4476186 Candidate: 3 of 6 Period: 243.734 d



DV Fit Results:

Period = 243.73354 [0.00310] d
Epoch = 161.6332 [0.0077] BKJD
Rp/R* = 0.0847 [0.1648]
a/R* = 176.53 [73.11]
b = 1.00 [0.24]
Seff = 22.41 [10.74]
Teq = 555 [66] K
Rp = 23.42 [46.23] Re
a = 0.9478 [0.2817] AU
Ag = 1282.53 [5024.23] [0.26 σ]
Teffp = 5133 [4999] K [0.92 σ]

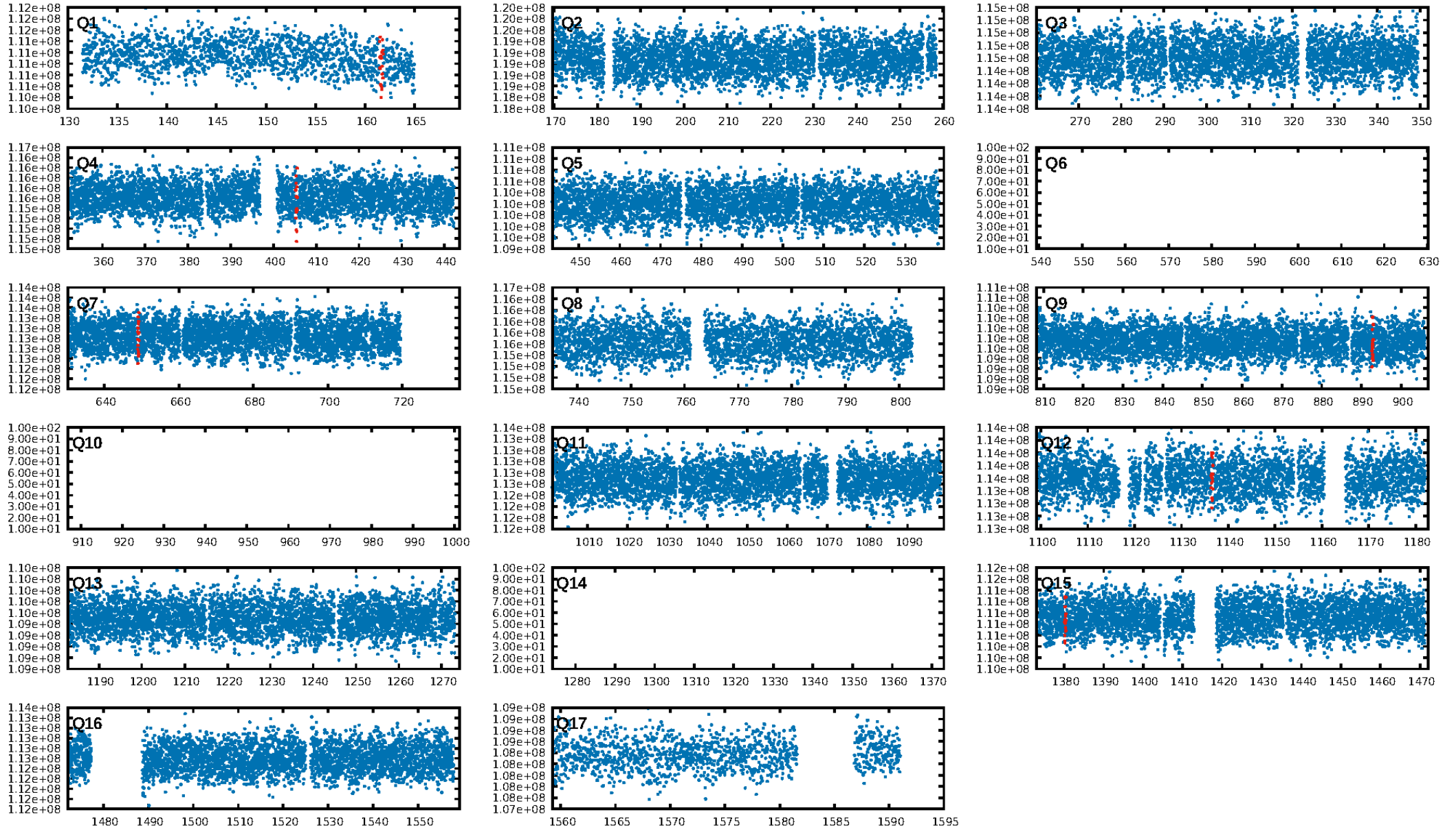
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [84.62 σ]
LongPeriod-sig: 100.0% [745.46 σ]
ModelChiSquare2-sig: 53.0%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 9.90e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.59
Centroid-sig: 27.8%
Centroid-so: 0.144 arcsec [0.89 σ]
OotOffset-rm: 0.172 arcsec [0.73 σ]
OotOffset-st: 0/2/2/2 [6]
KicOffset-rm: 0.296 arcsec [1.29 σ]
KicOffset-st: 0/2/2/2 [6]
DiffImageQuality-fgm: 0.67 [4/6]
DiffImageOverlap-fno: 0.17 [1/6]

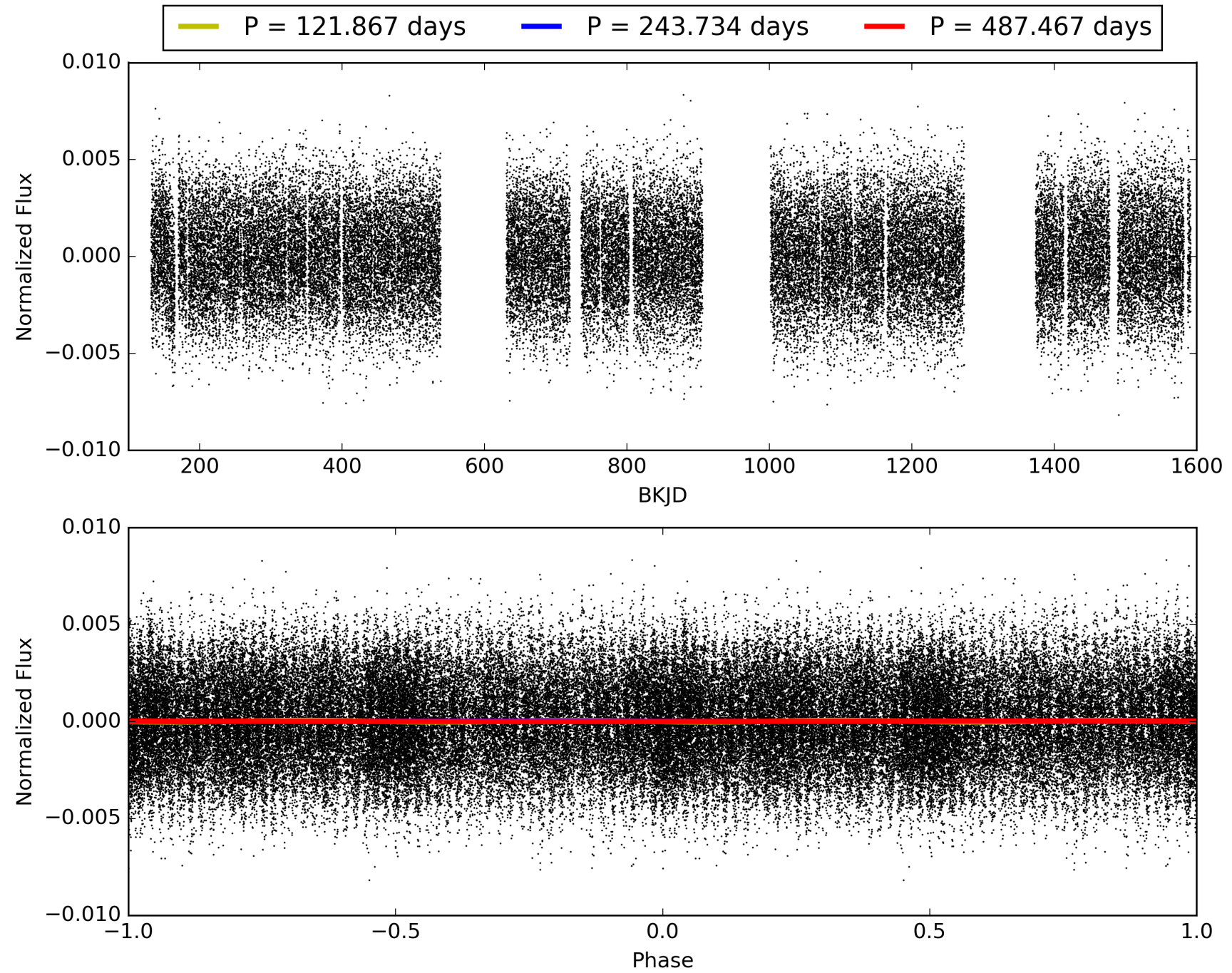
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:31:58 Z

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

TCE 004476186-03, PDC Light Curves

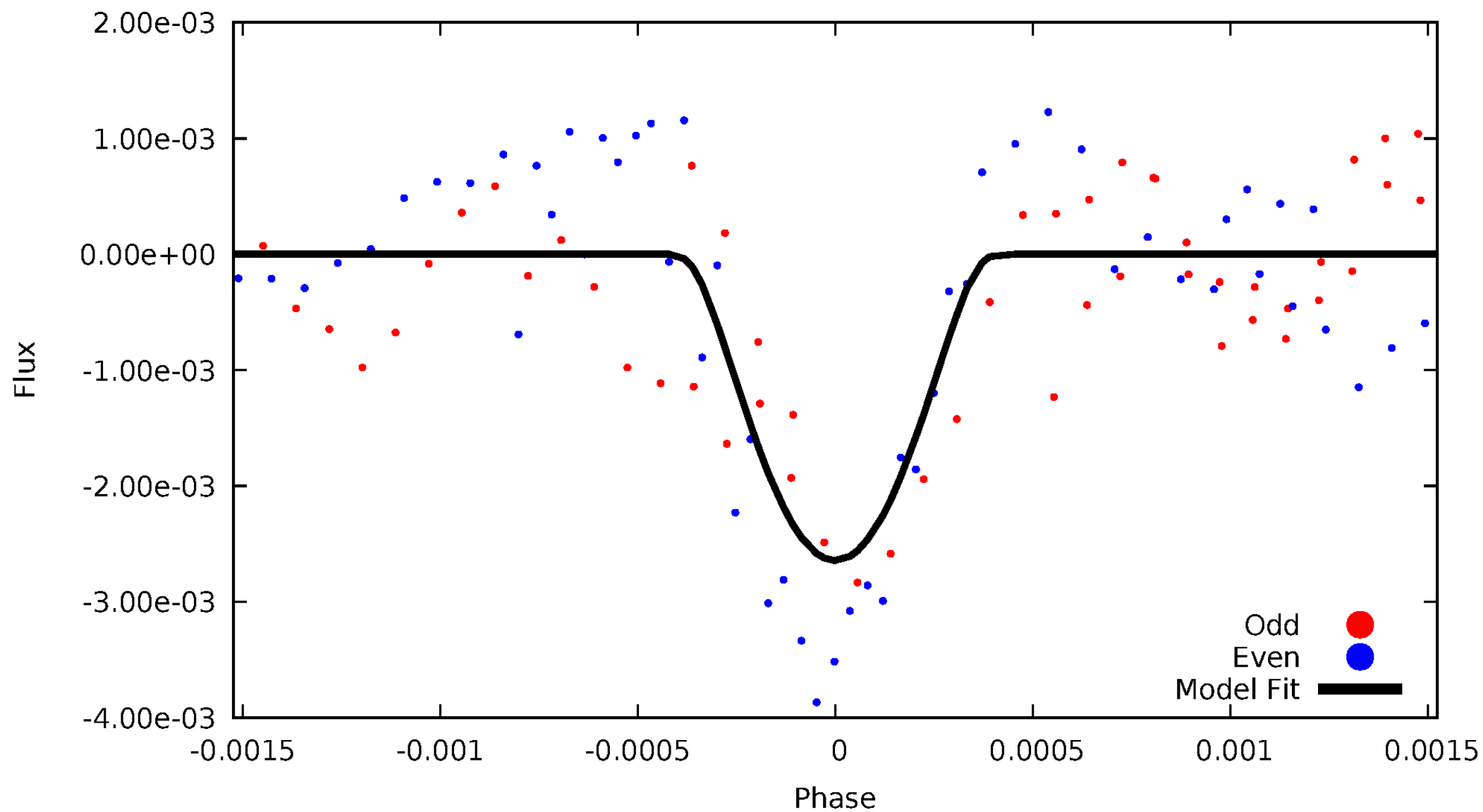


TCE 004476186-03



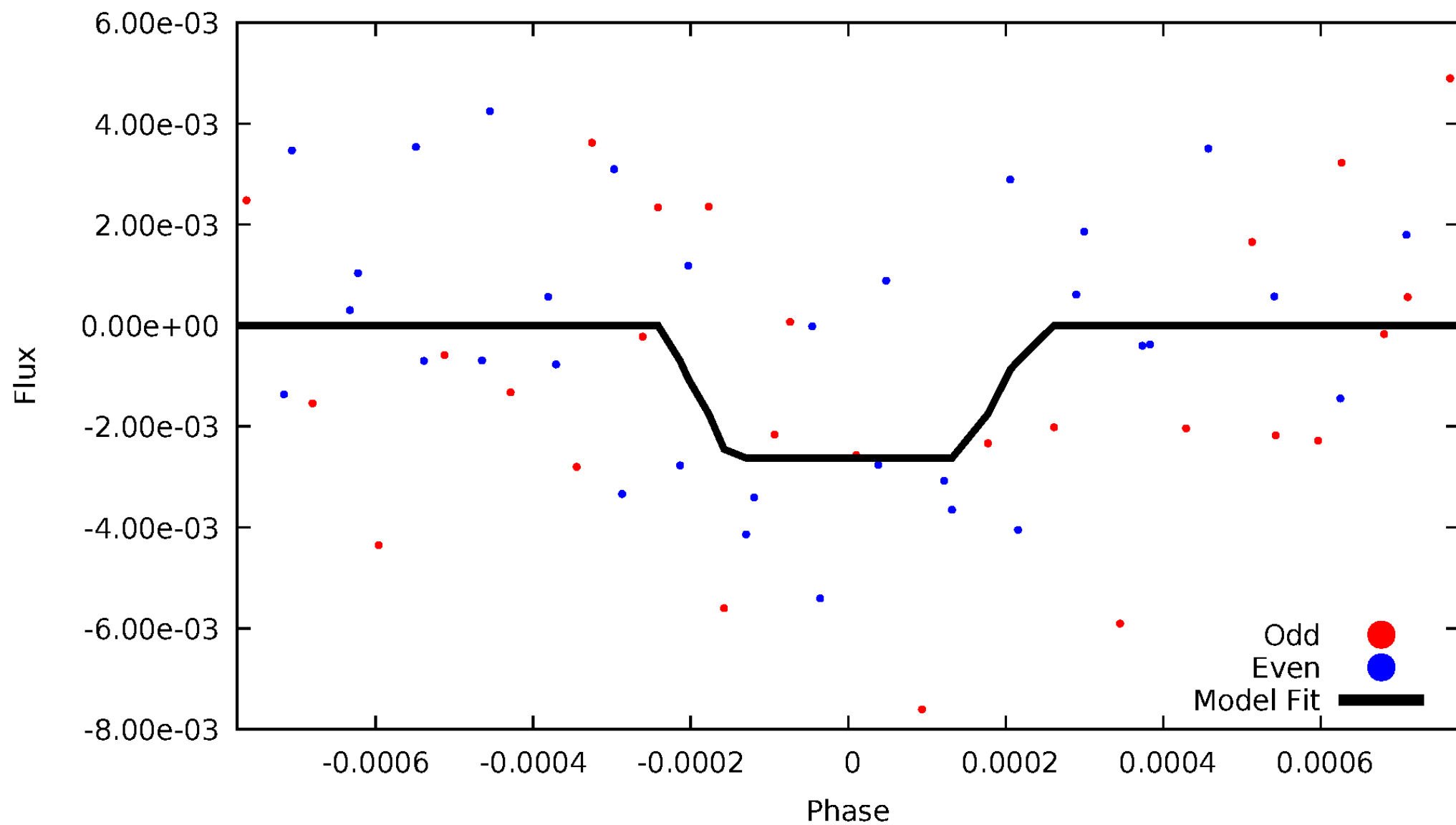
DV Odd/Even

TCE 004476186-03



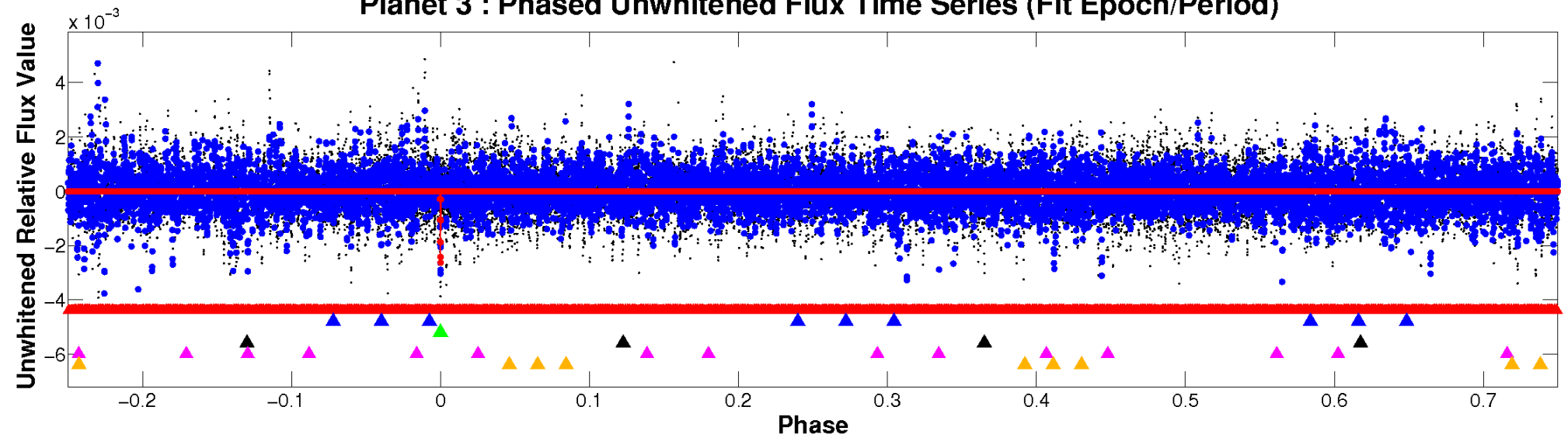
ALT Odd/Even

TCE 004476186-03

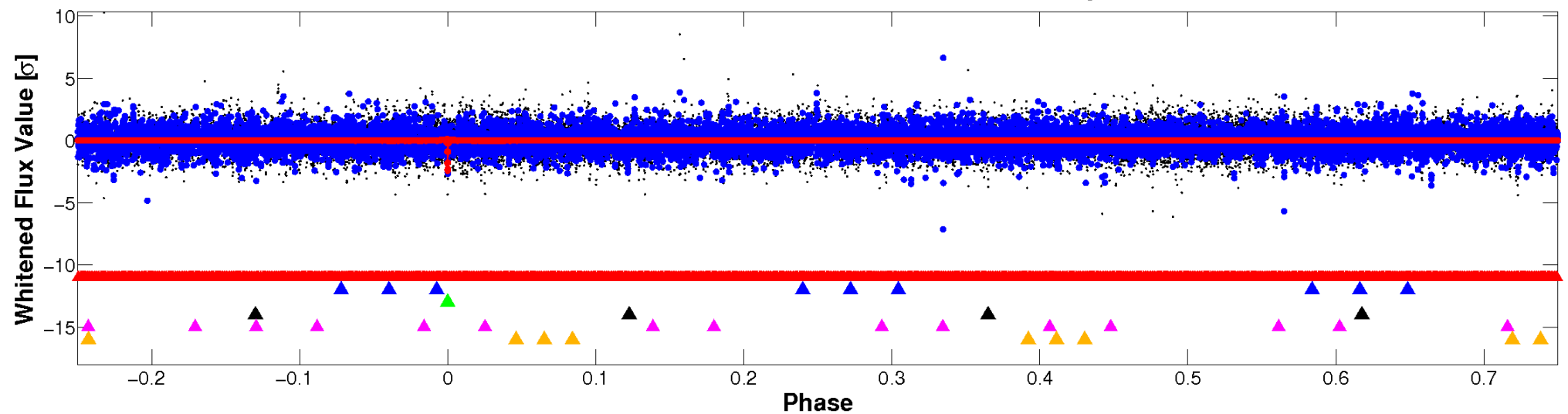


Non-Whitened Vs. Whitened Light Curve

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

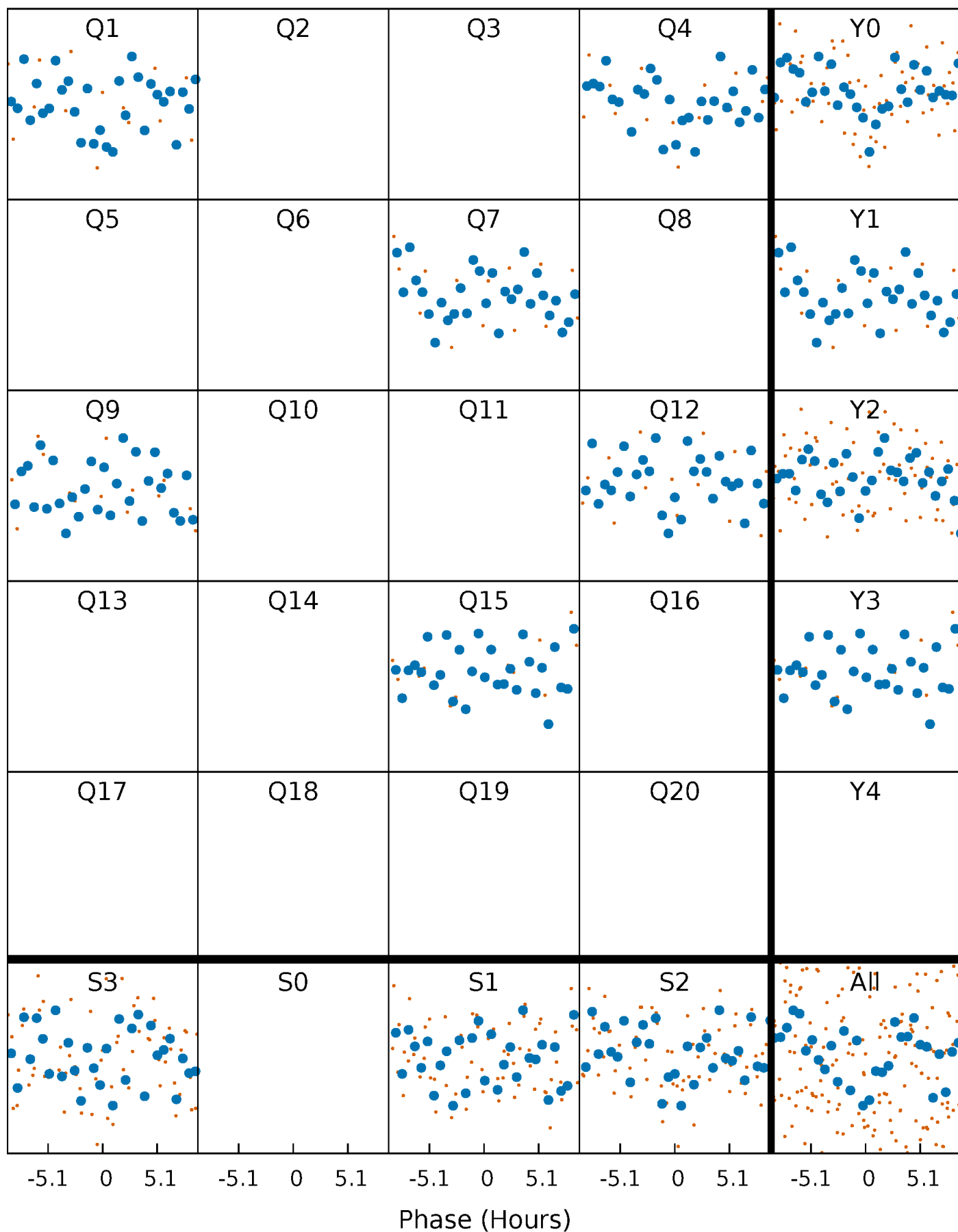


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



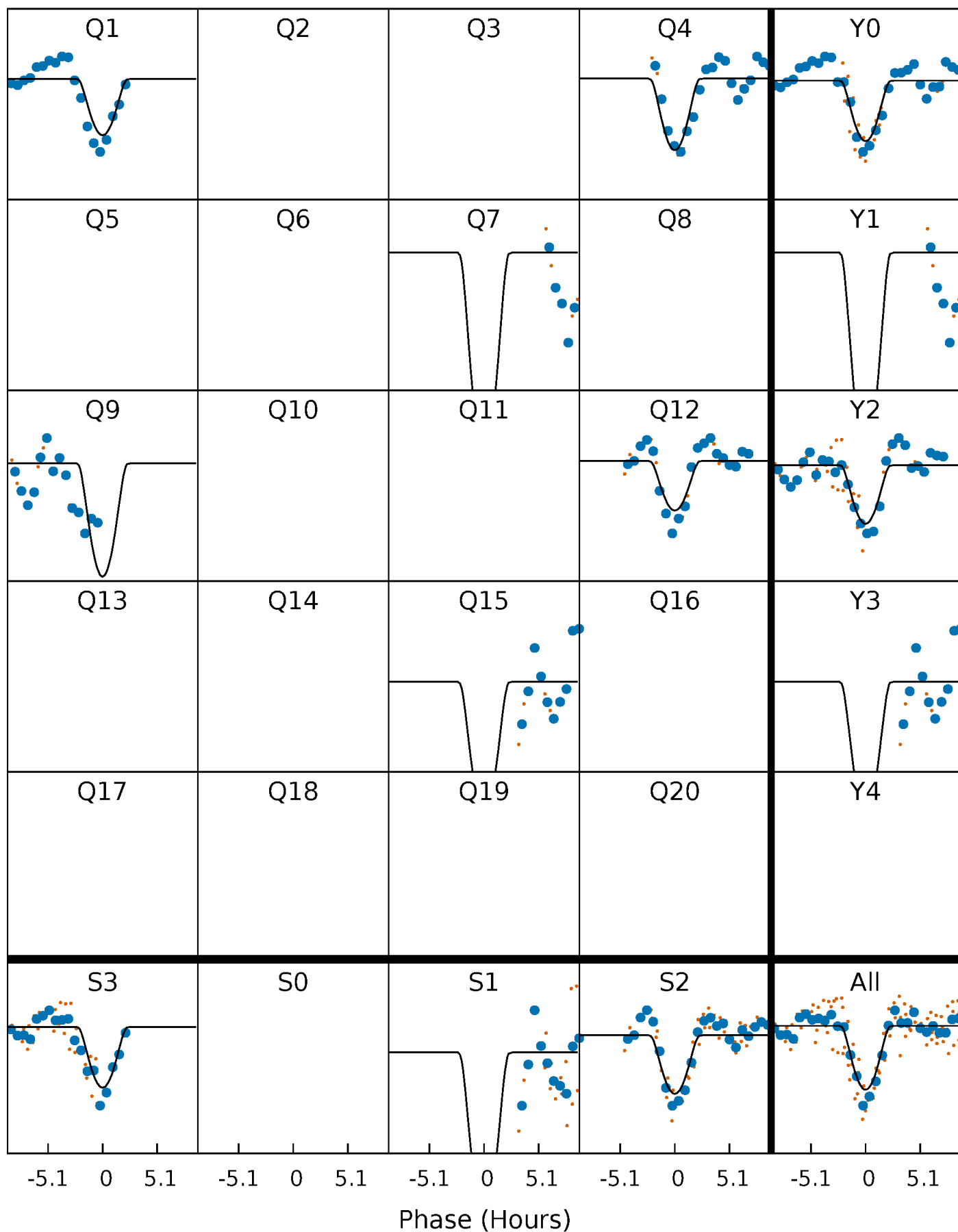
PDC Quarter-Phased Transit Curves

TCE 004476186-03 P=243.733544 Days $T_0=161.633217$ (BKJD)



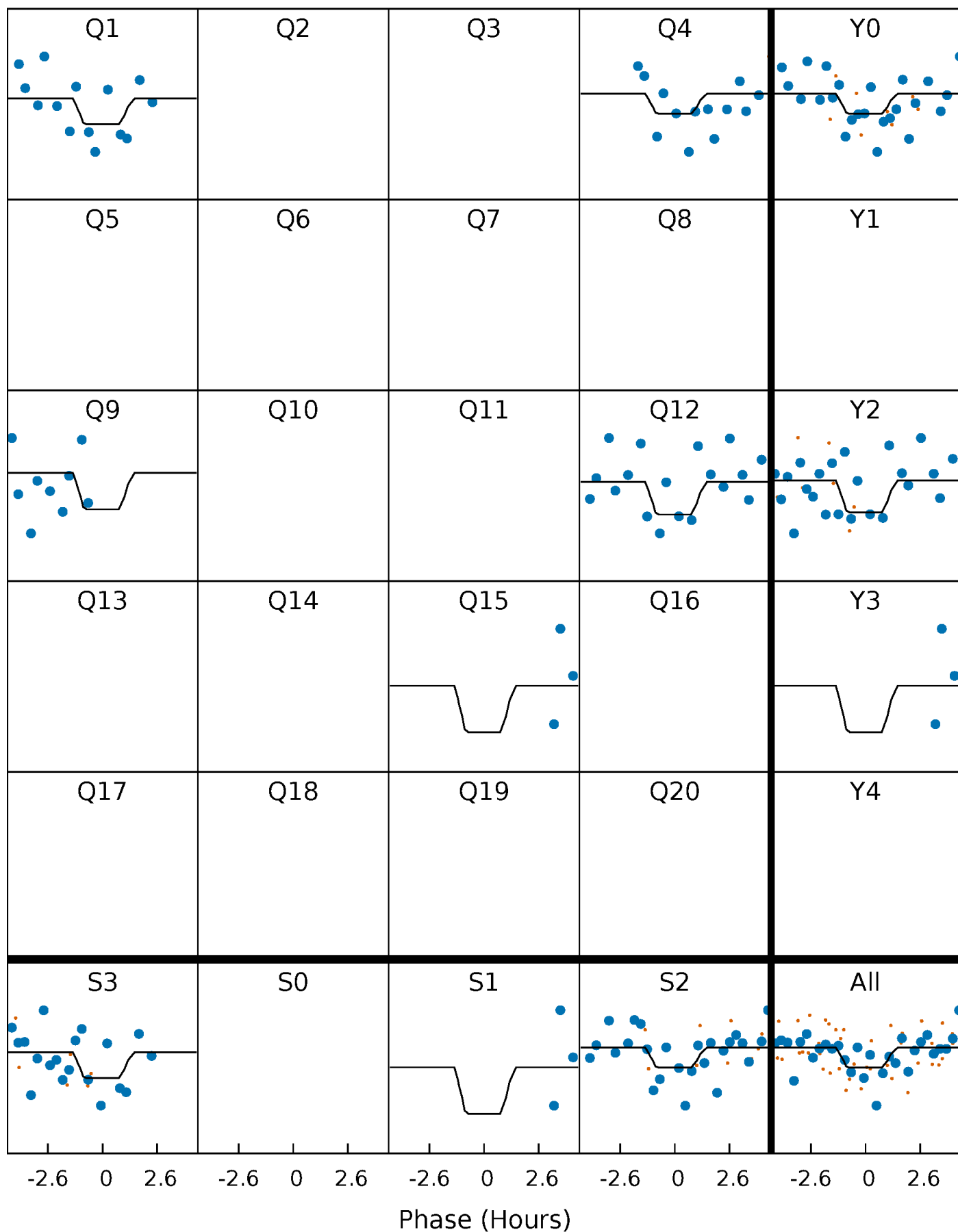
DV Quarter-Phased Transit Curves

TCE 004476186-03 $P=243.733544$ Days $T_0=161.633217$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

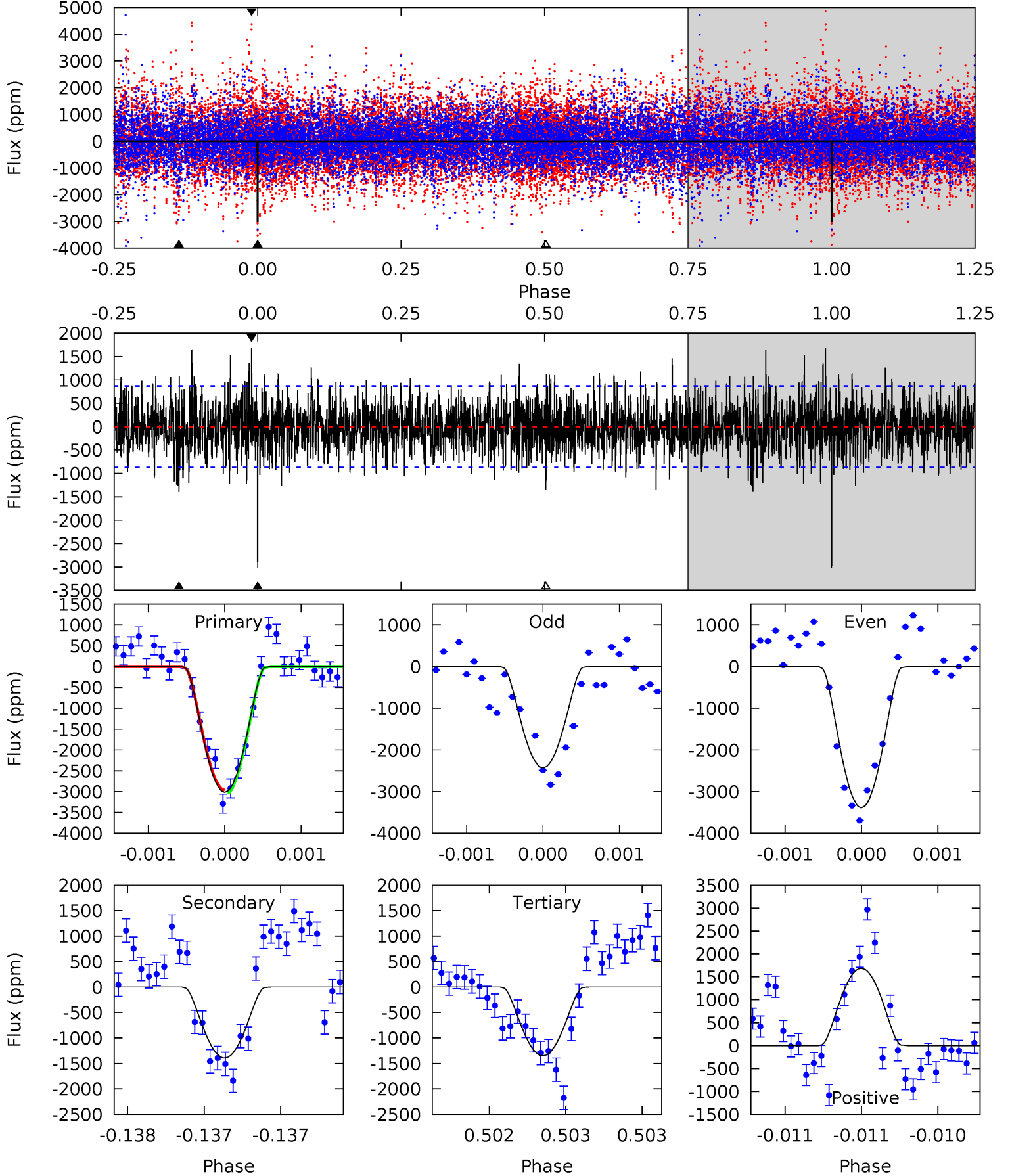
TCE 004476186-03 P=243.736491 Days $T_0=161.621079$ (BKJD)



DV Model-Shift Uniqueness Test

004476186-03, P = 243.733544 Days, E = 161.633217 Days

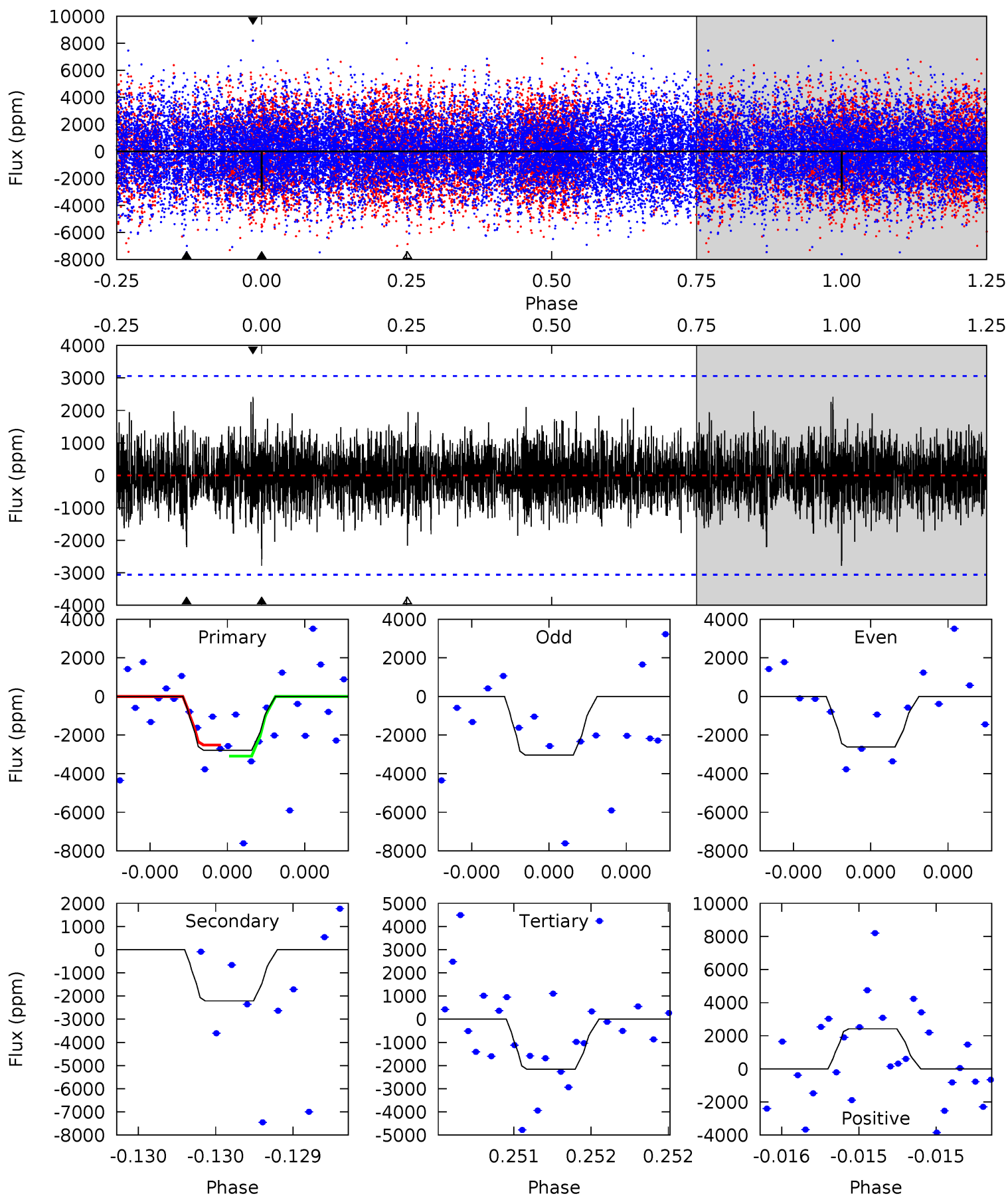
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	8.79	8.52	10.6	5.50	3.37	2.54	10.5	8.39	0.27	-1.86	2.99	0.96	0.36	0.27



Alt Model-Shift Uniqueness Test

004476186-03, P = 243.736491 Days, E = 161.621079 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.10	4.05	3.96	4.43	5.60	3.53	1.09	1.14	0.67	0.09	-0.38	0.39	0.91	0.46	0.52



Stellar Parameters For KIC 004476186

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7693^{+214}_{-322}	$3.912^{+0.253}_{-0.136}$	$0.040^{+0.200}_{-0.350}$	$2.533^{+0.460}_{-0.855}$	$1.910^{+0.103}_{-0.414}$	$0.166^{+0.284}_{-0.057}$
	+3%/-4%	+6%/-3%	+500%/-875%	+18%/-34%	+5%/-22%	+171%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004476186-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1393 ± 158	$38.63^{+39.12}_{-27.44}$	767^{+49}_{-60}	4135^{+2757}_{-852}	449^{+4596}_{-339}
Alt.	-2210 ± 546	$34.87^{+35.55}_{-24.15}$	769^{+49}_{-65}	4594^{+3796}_{-1006}	862^{+7691}_{-657}

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 $A_{obs} \gg 1.0$

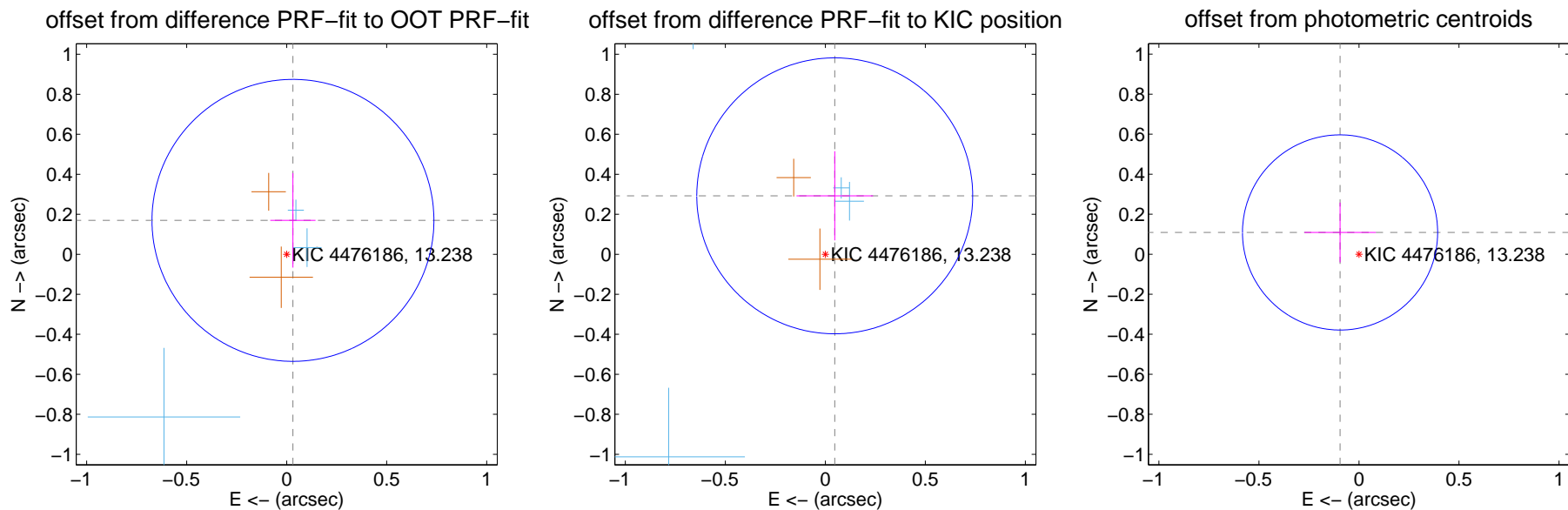
DV Centroid Data

Supplemental centroid analysis for 004476186-03. Kepler magnitude: 13.24. Transit SNR 9.12

There are 4 quarters with good PRF difference image offsets

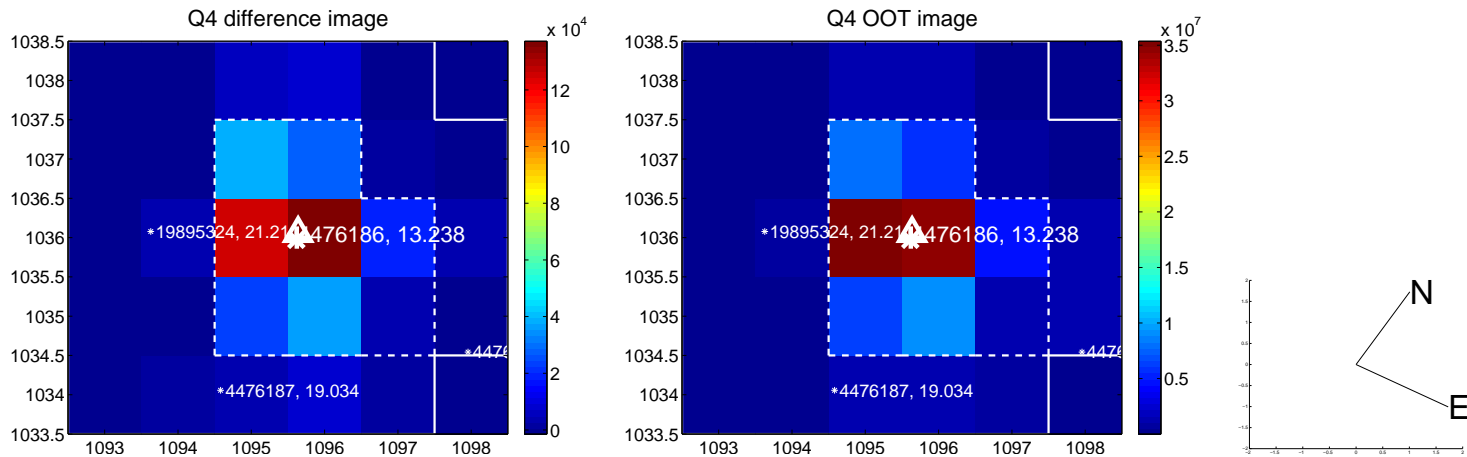
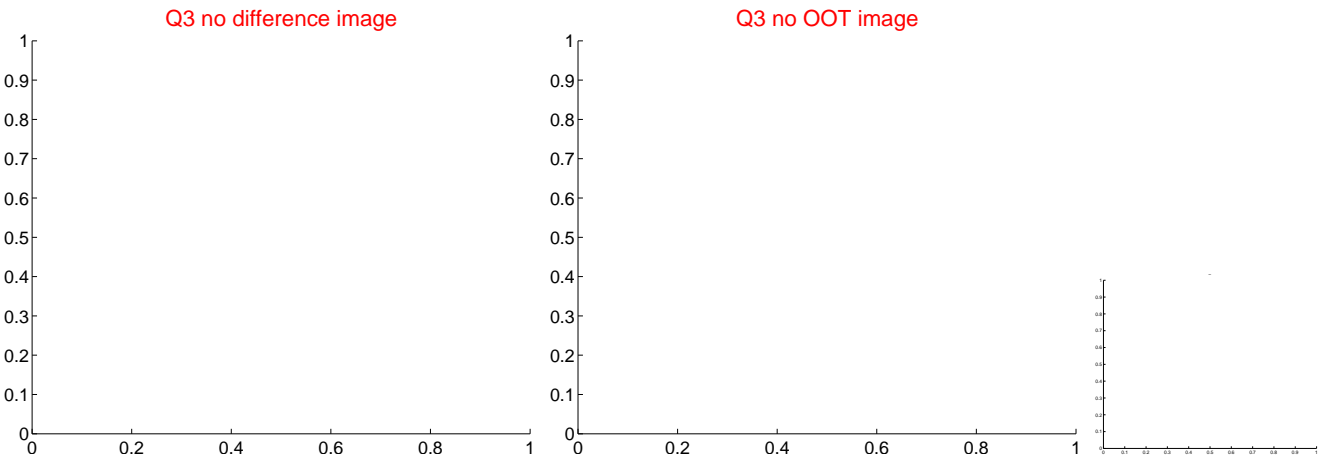
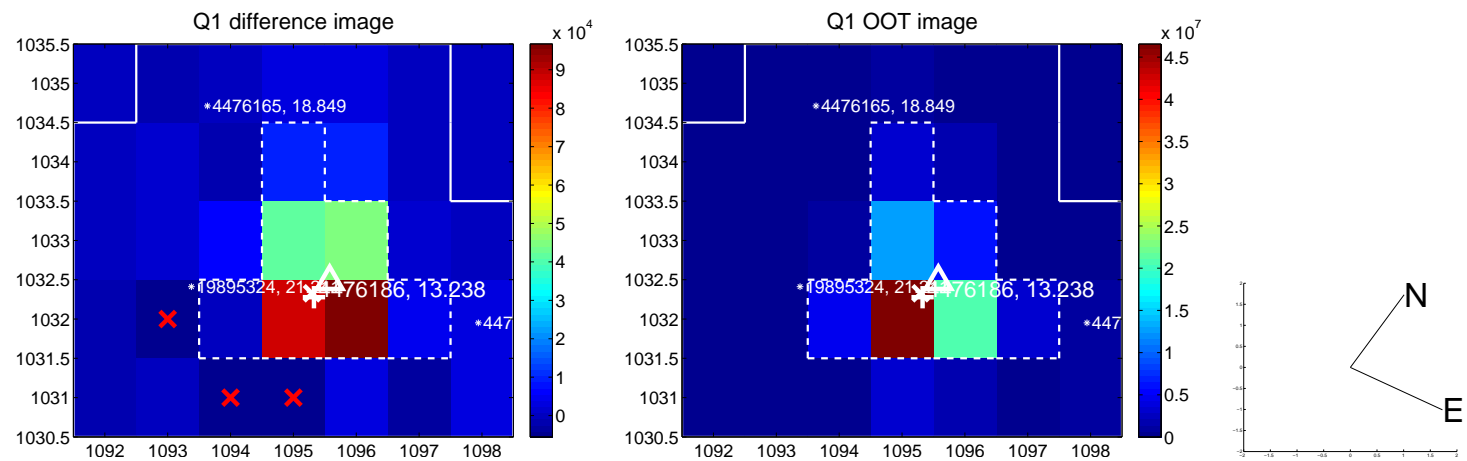
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.172 ± 0.235	0.73	-0.031 ± 0.113	0.170 ± 0.236
PRF-fit source offset from KIC position	0.296 ± 0.230	1.29	-0.047 ± 0.191	0.292 ± 0.223
photometric centroid source offset	0.14 ± 0.16	0.89	0.09 ± 0.18	0.11 ± 0.15

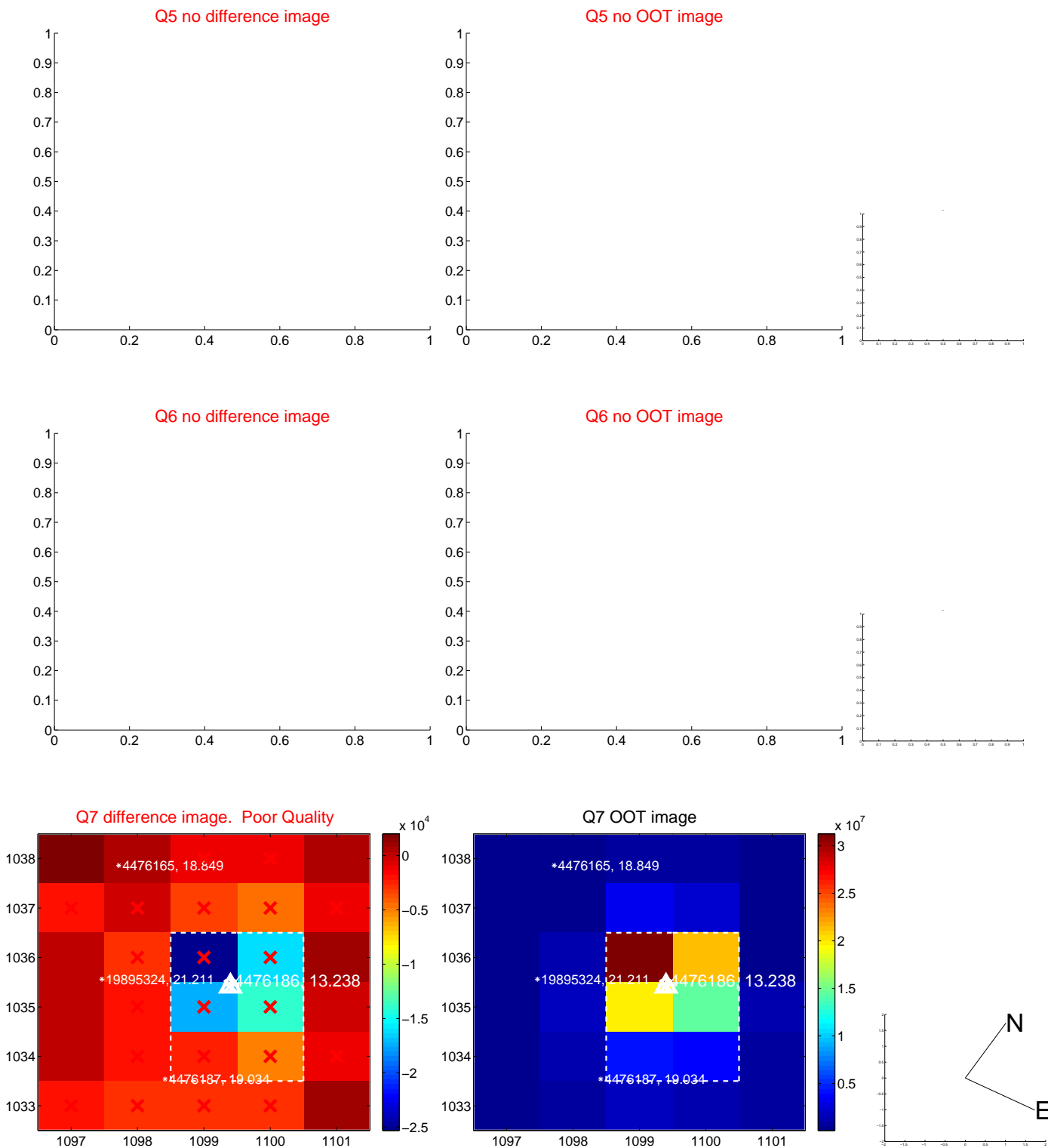


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

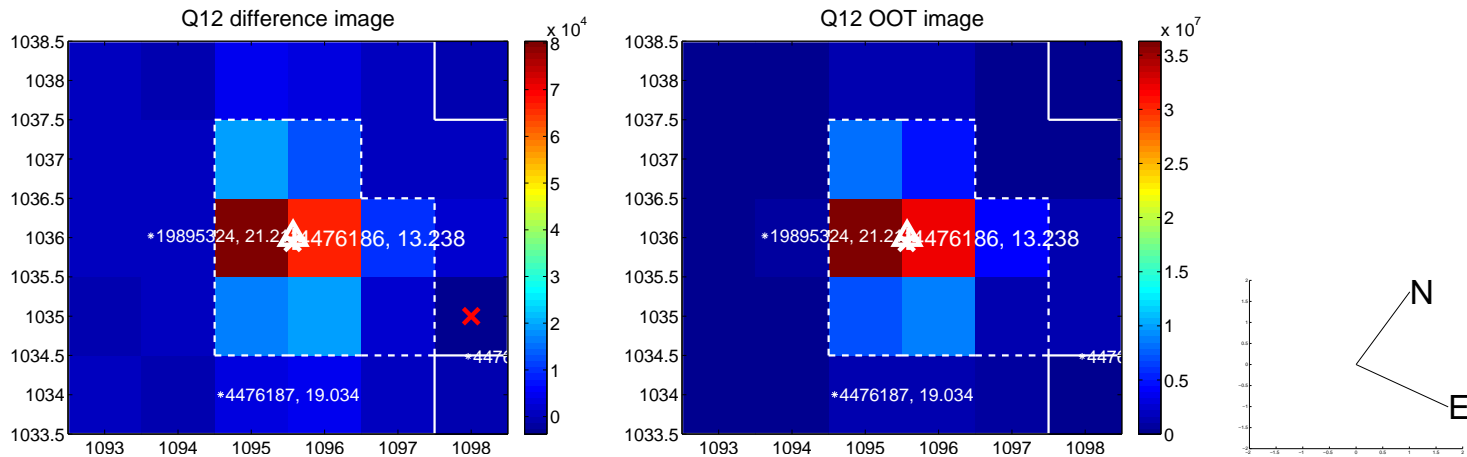
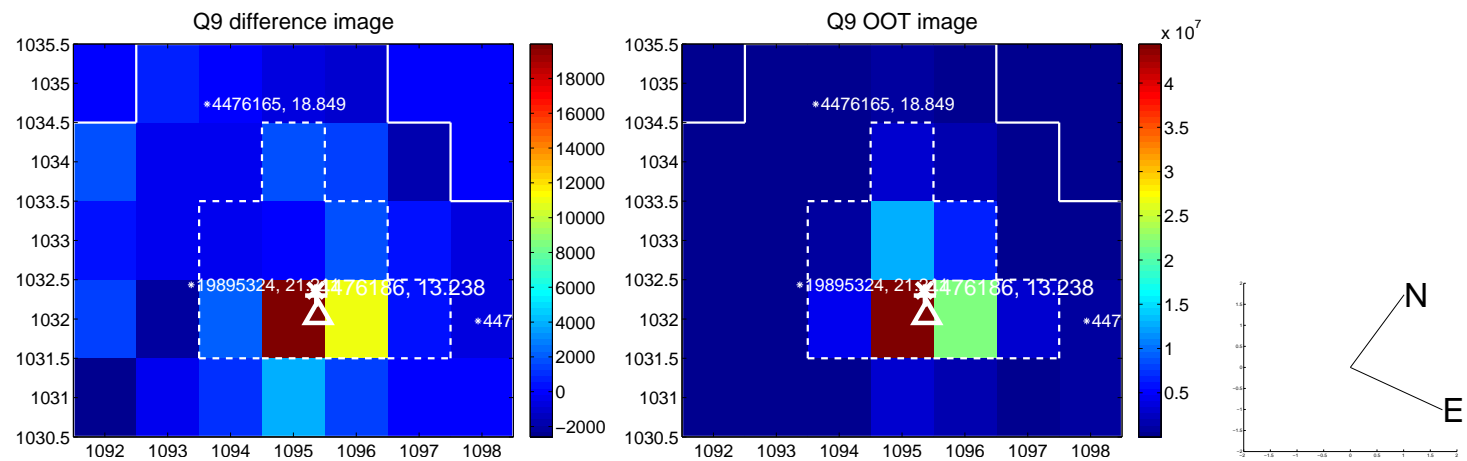
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



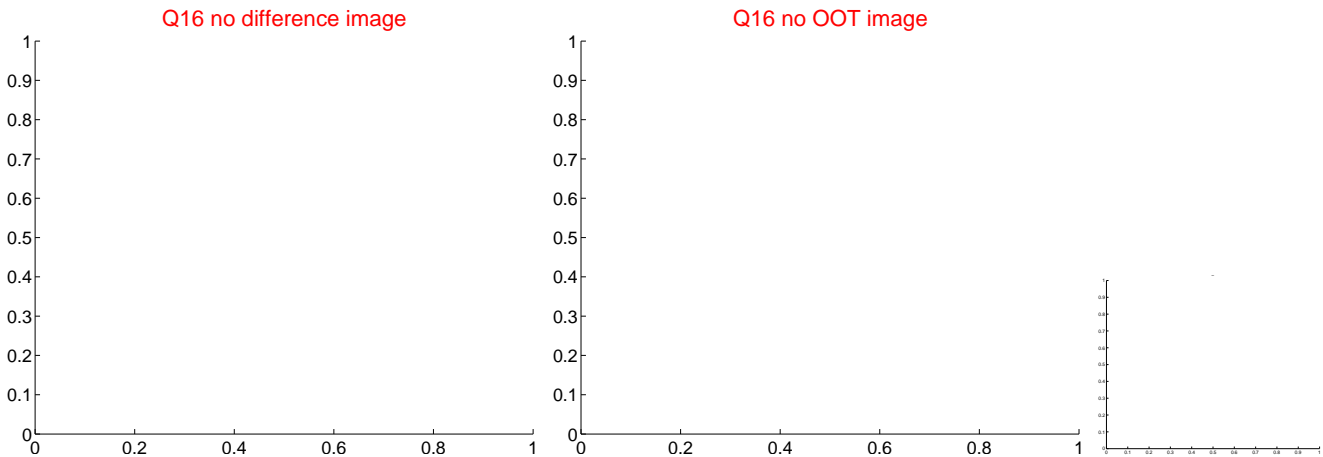
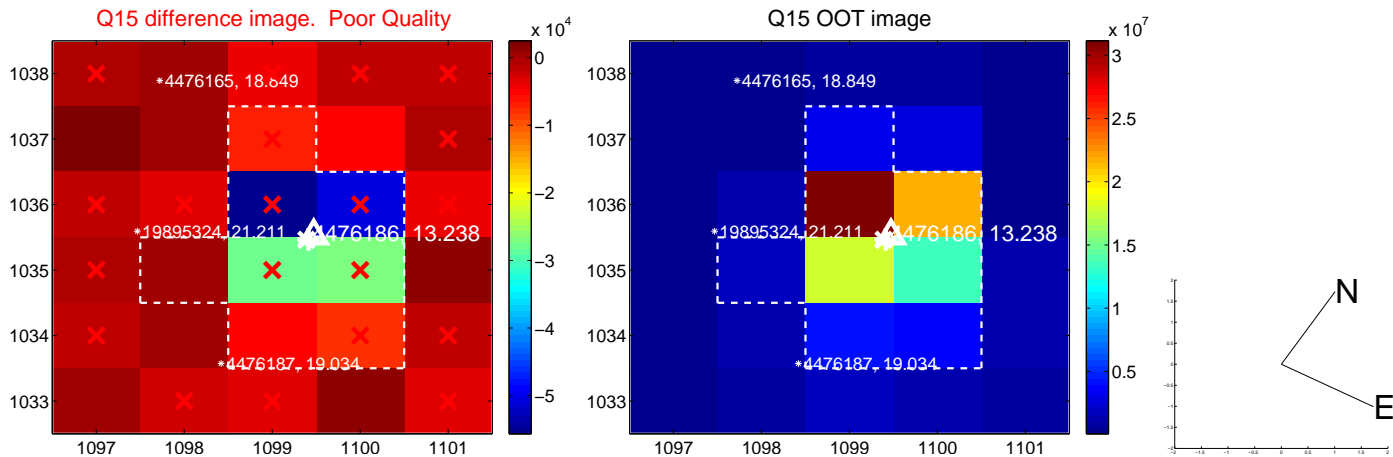
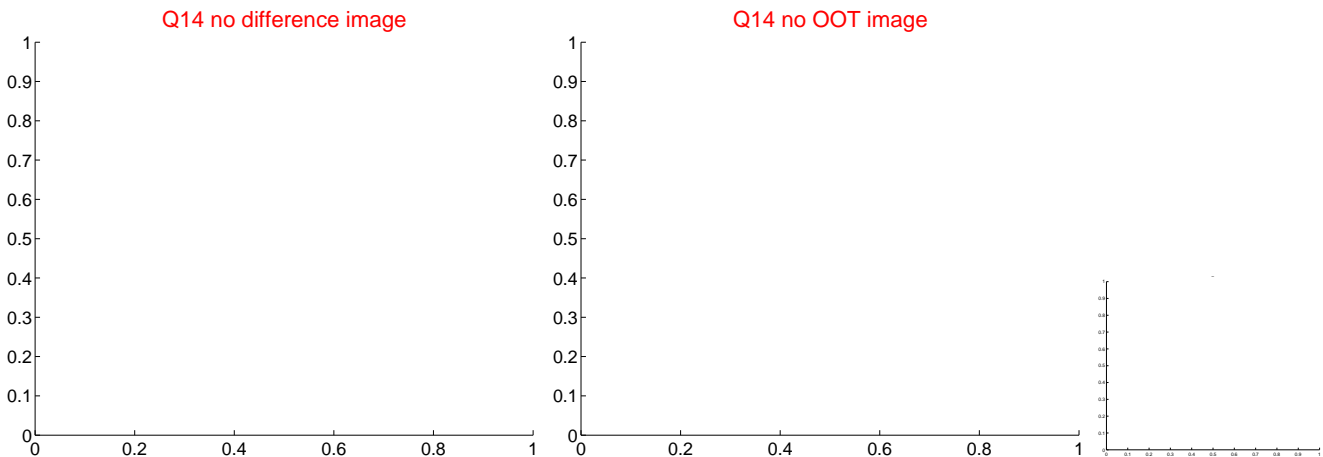
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



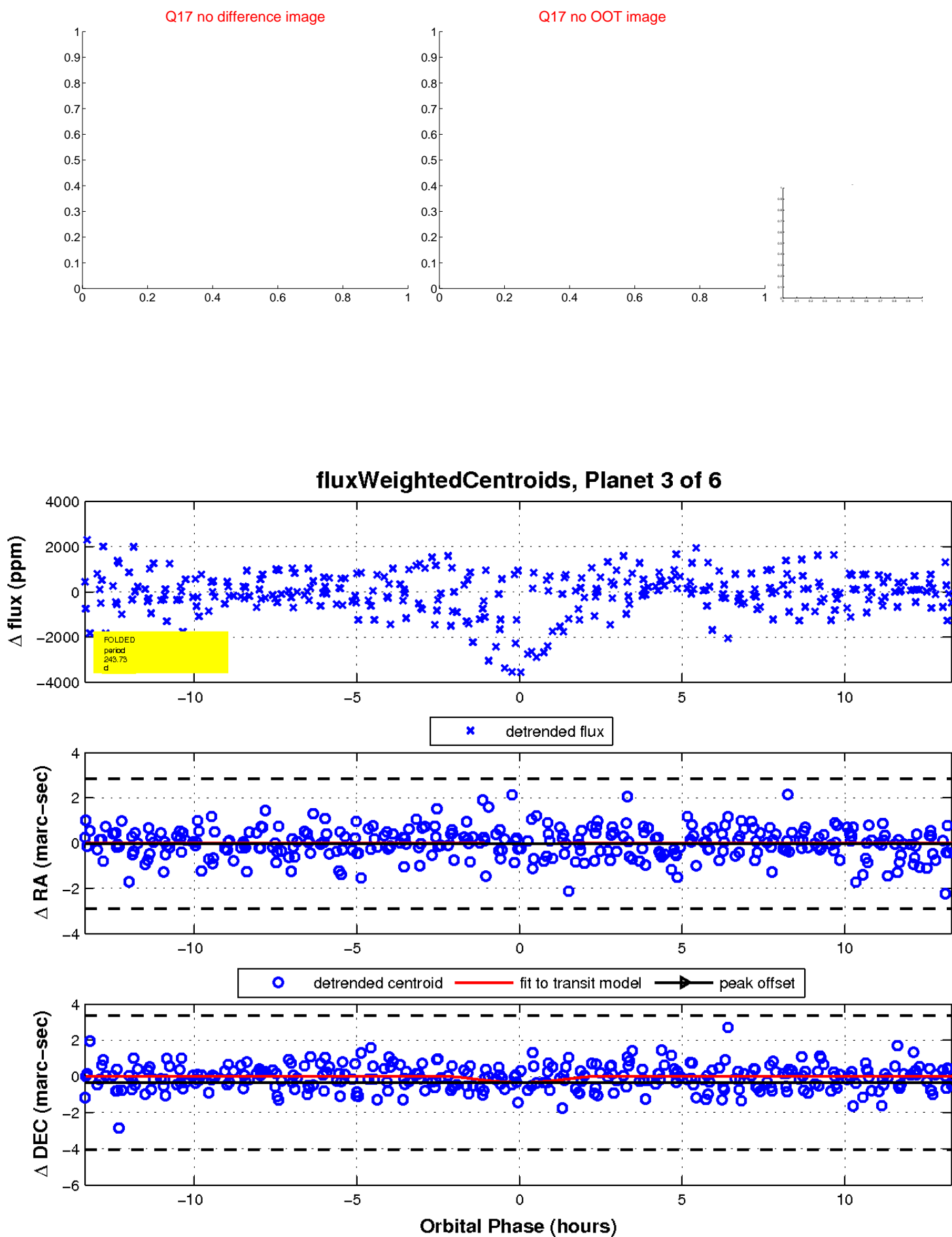
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



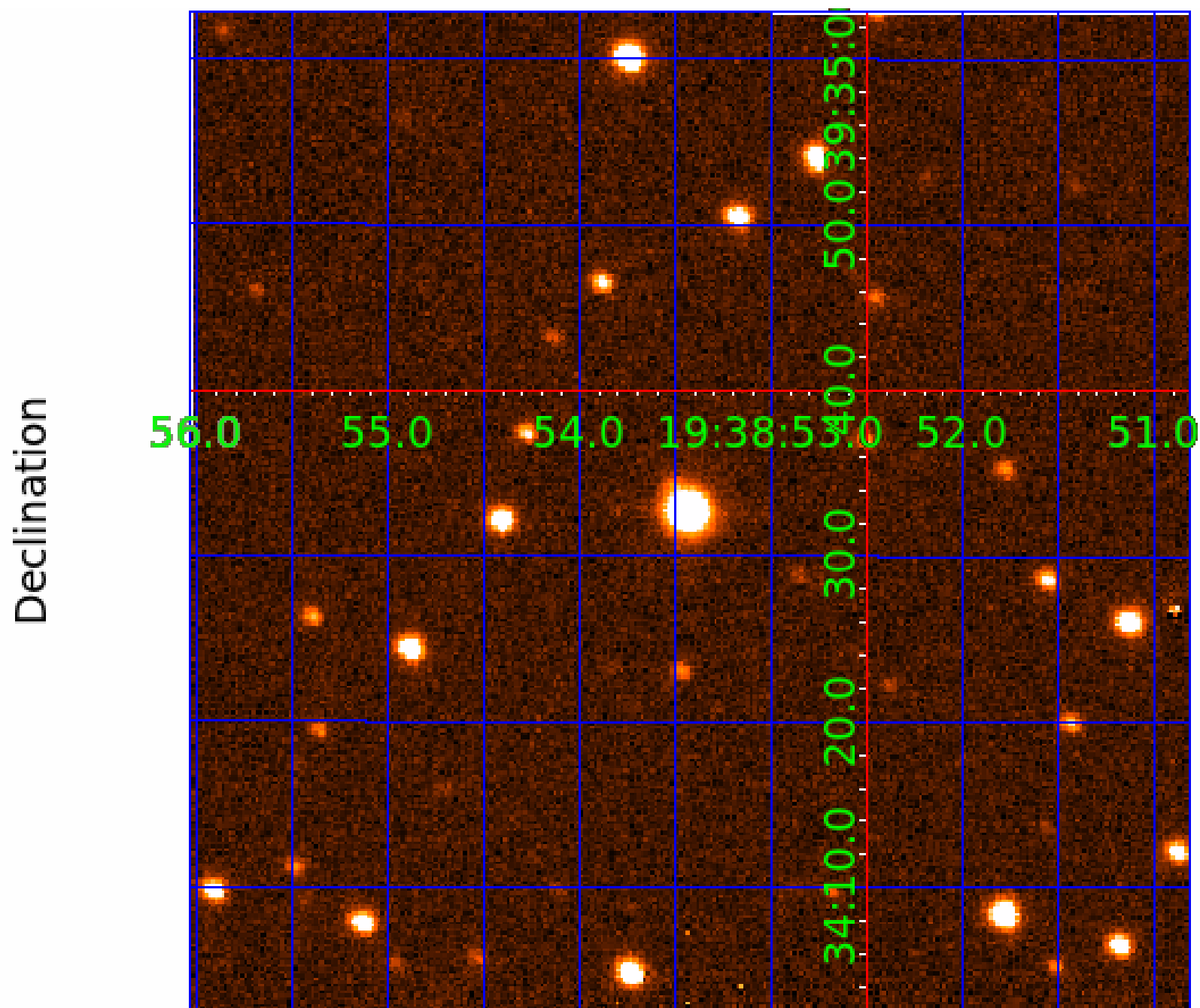
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image



KIC 004476186

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})
004476186-01	OBS	No	1.109392	132.061263	137.6	4.562	10.9	9.7	2.53	7693	3.44	29711.22
004476186-02	OBS	No	159.865937	159.834064	3022.4	3.300	10.6	10.9	2.53	7693	25.17	39.33
004476186-03	OBS	No	243.733544	161.633217	2644.5	4.454	8.8	9.1	2.53	7693	23.42	22.41
004476186-05	OBS	No	103.023102	140.132505	1855.0	4.168	7.5	7.9	2.53	7693	18.36	70.65
004476186-06	OBS	No	164.036445	172.897624	831.8	22.160	7.4	8.9	2.53	7693	7.48	38.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004476186-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004476186-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004476186-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004476186-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
004476186-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

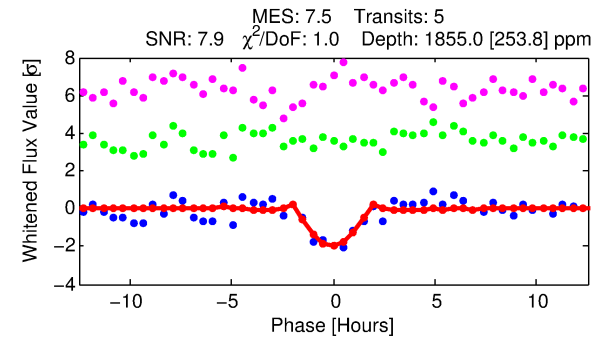
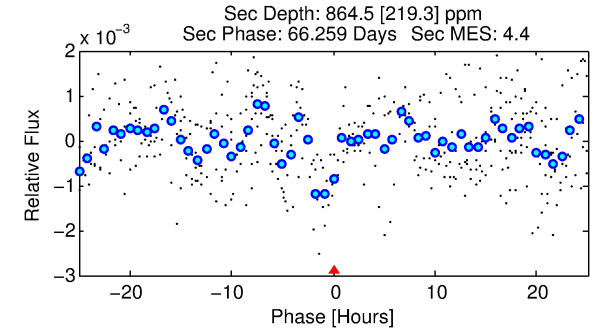
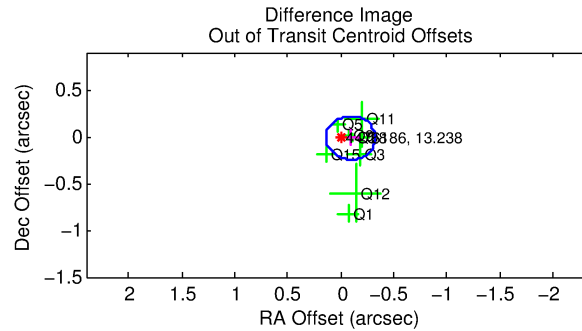
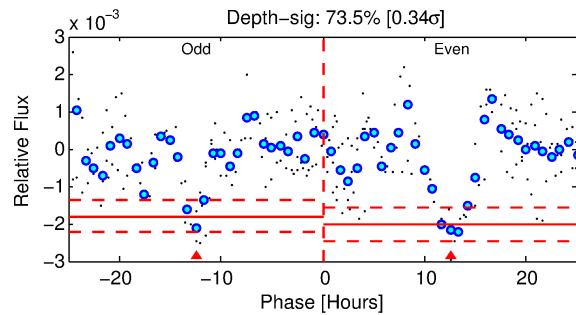
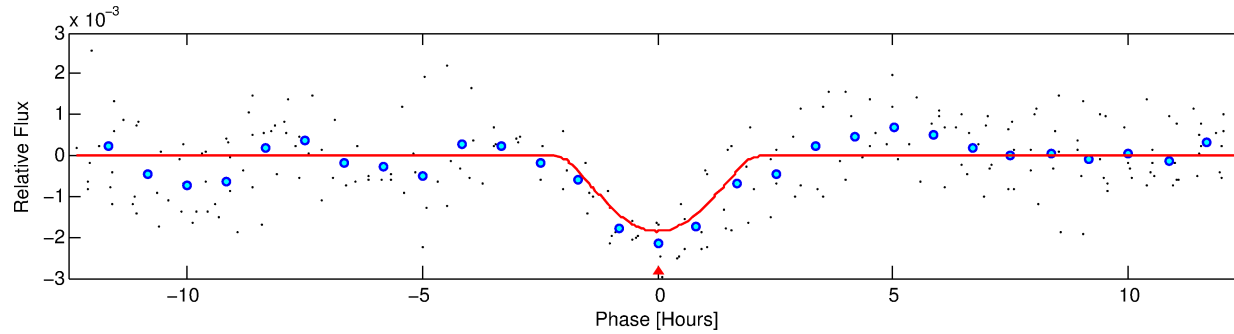
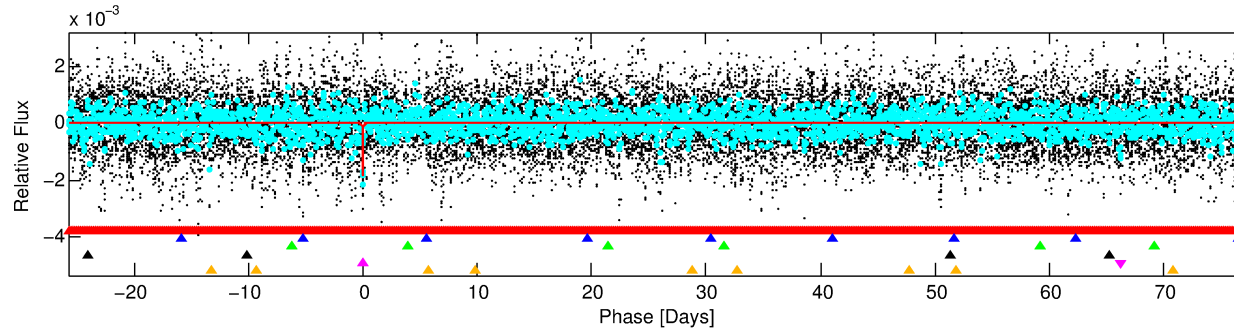
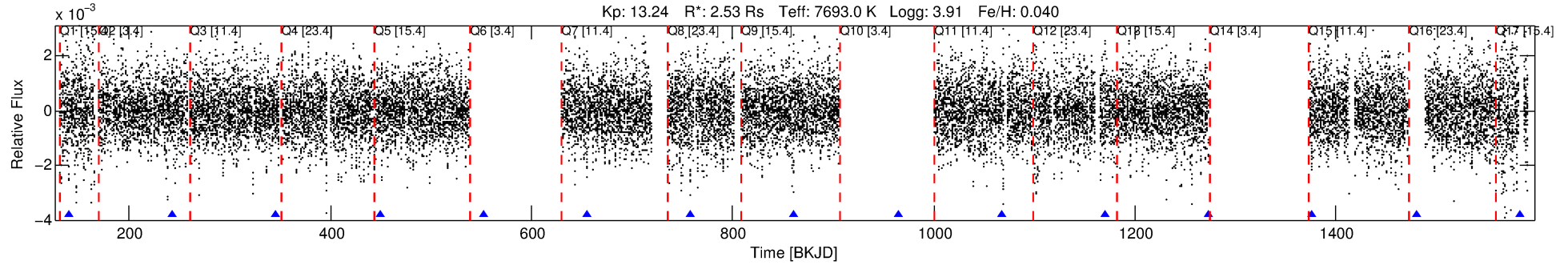
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004476186-05

No Significant Match Found

DV One-Page Summary

KIC: 4476186 Candidate: 5 of 6 Period: 103.023 d



DV Fit Results:

Period = 103.02310 [0.00196] d
Epoch = 140.1325 [0.0140] BKJD
Rp/R* = 0.0664 [0.1367]
a/R* = 74.28 [41.22]
b = 0.99 [0.21]
Seff = 70.65 [33.85]
Teq = 739 [89] K
Rp = 18.36 [38.29] Re
a = 0.5338 [0.1587] AU
Ag = 402.13 [1668.23] [0.24 σ]
Teffp = 5118 [5282] K [0.83 σ]

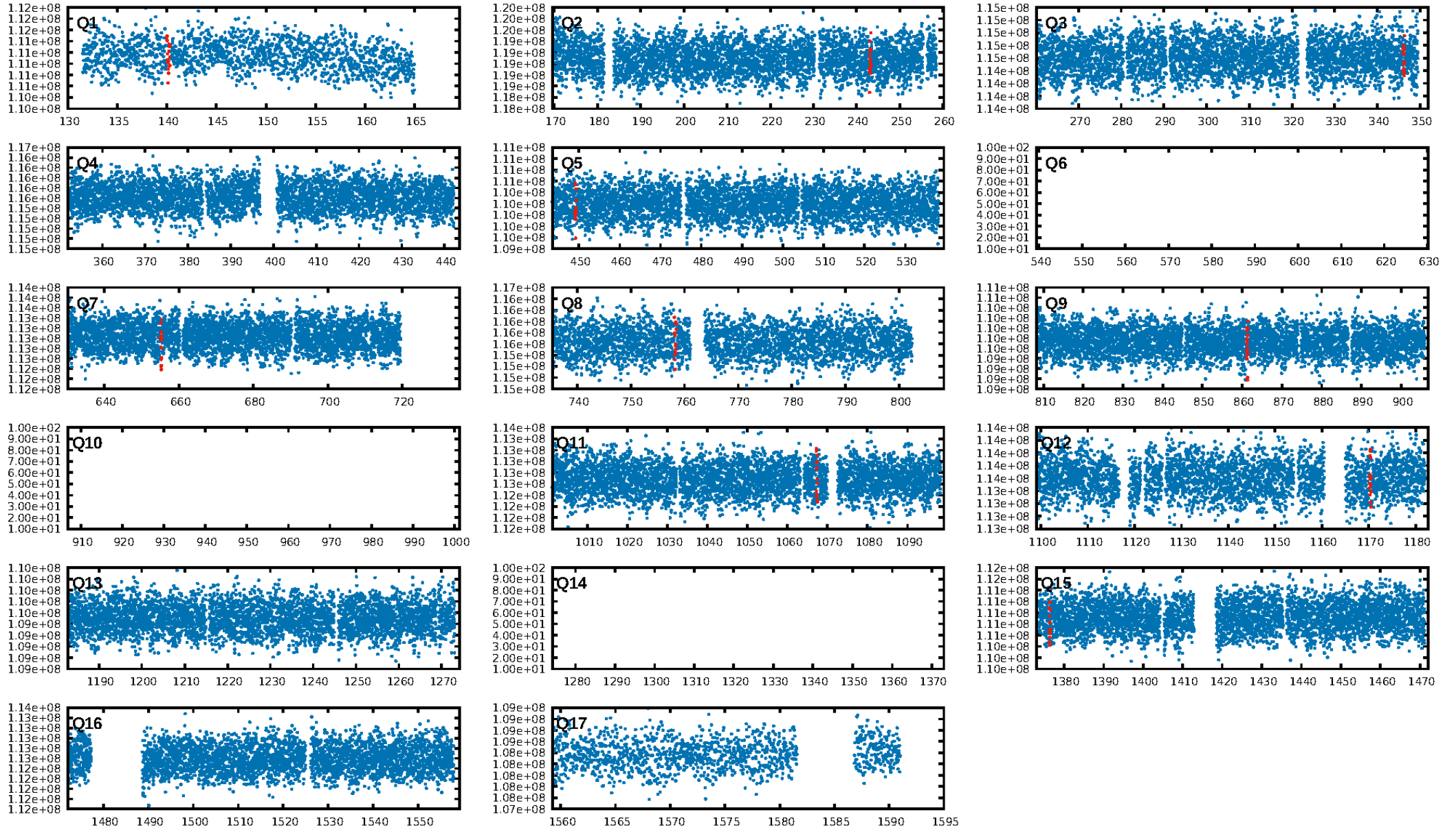
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [395.85 σ]
LongPeriod-sig: 100.0% [256.62 σ]
ModelChiSquare2-sig: 77.8%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 1.99e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 5.49
Centroid-sig: 1.1%
Centroid-so: 0.275 arcsec [1.44 σ]
OotOffset-rm: 0.096 arcsec [1.23 σ]
OotOffset-st: 0/4/2/3 [9]
KicOffset-rm: 0.070 arcsec [0.62 σ]
KicOffset-st: 0/4/2/3 [9]
DiffImageQuality-fgm: 0.78 [7/9]
DiffImageOverlap-fno: 0.10 [1/10]

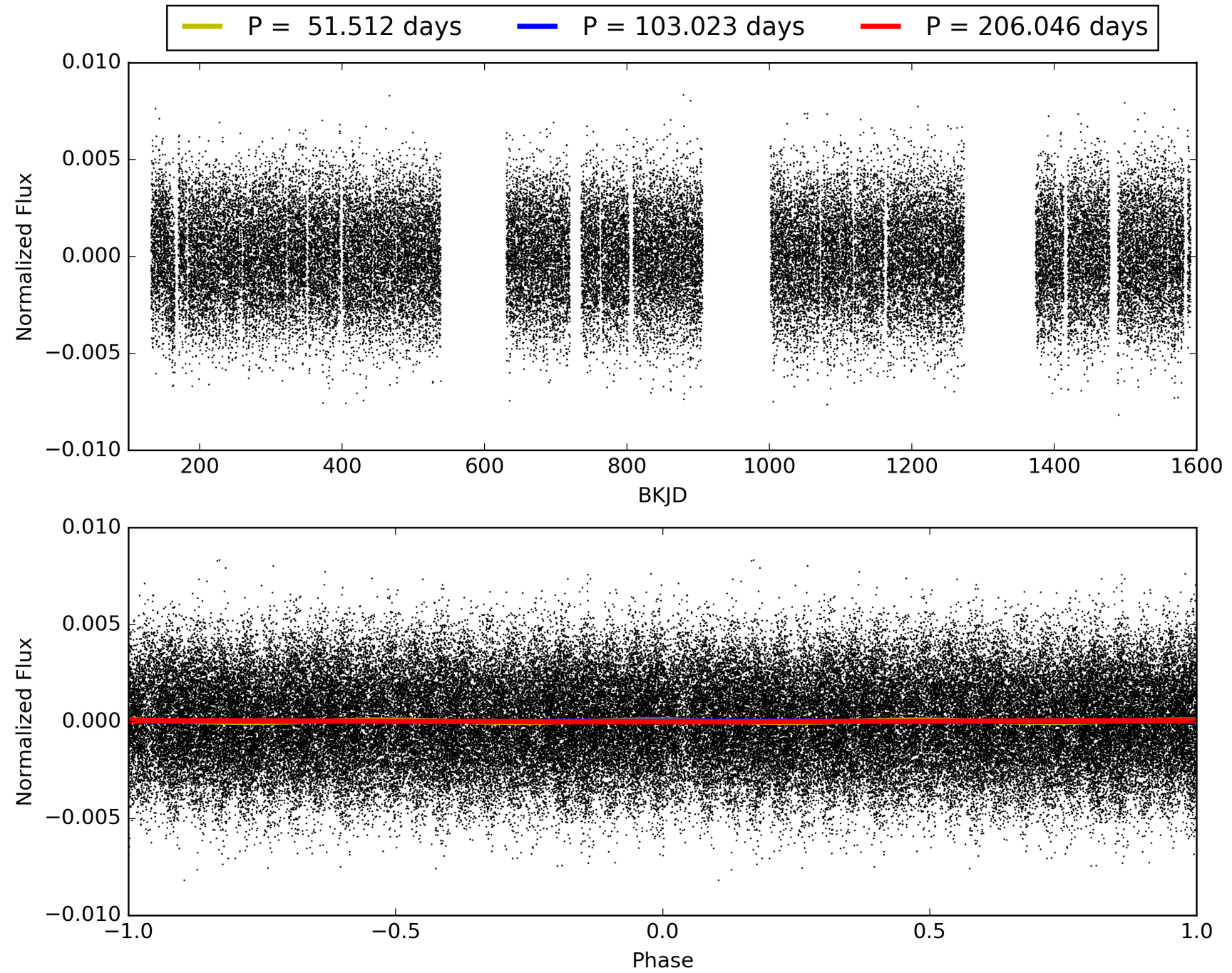
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:32:12 Z

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

TCE 004476186-05, PDC Light Curves

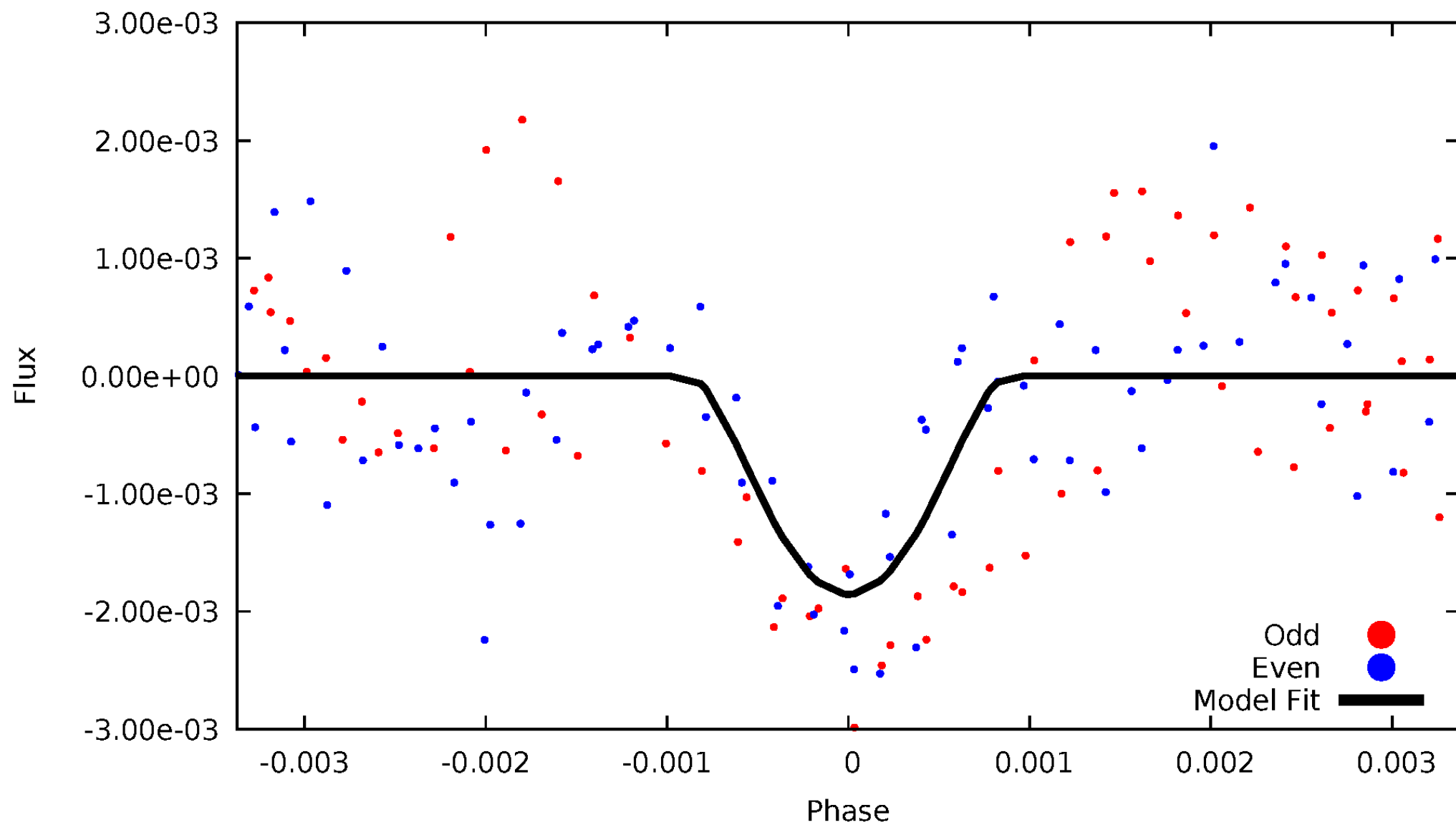


TCE 004476186-05



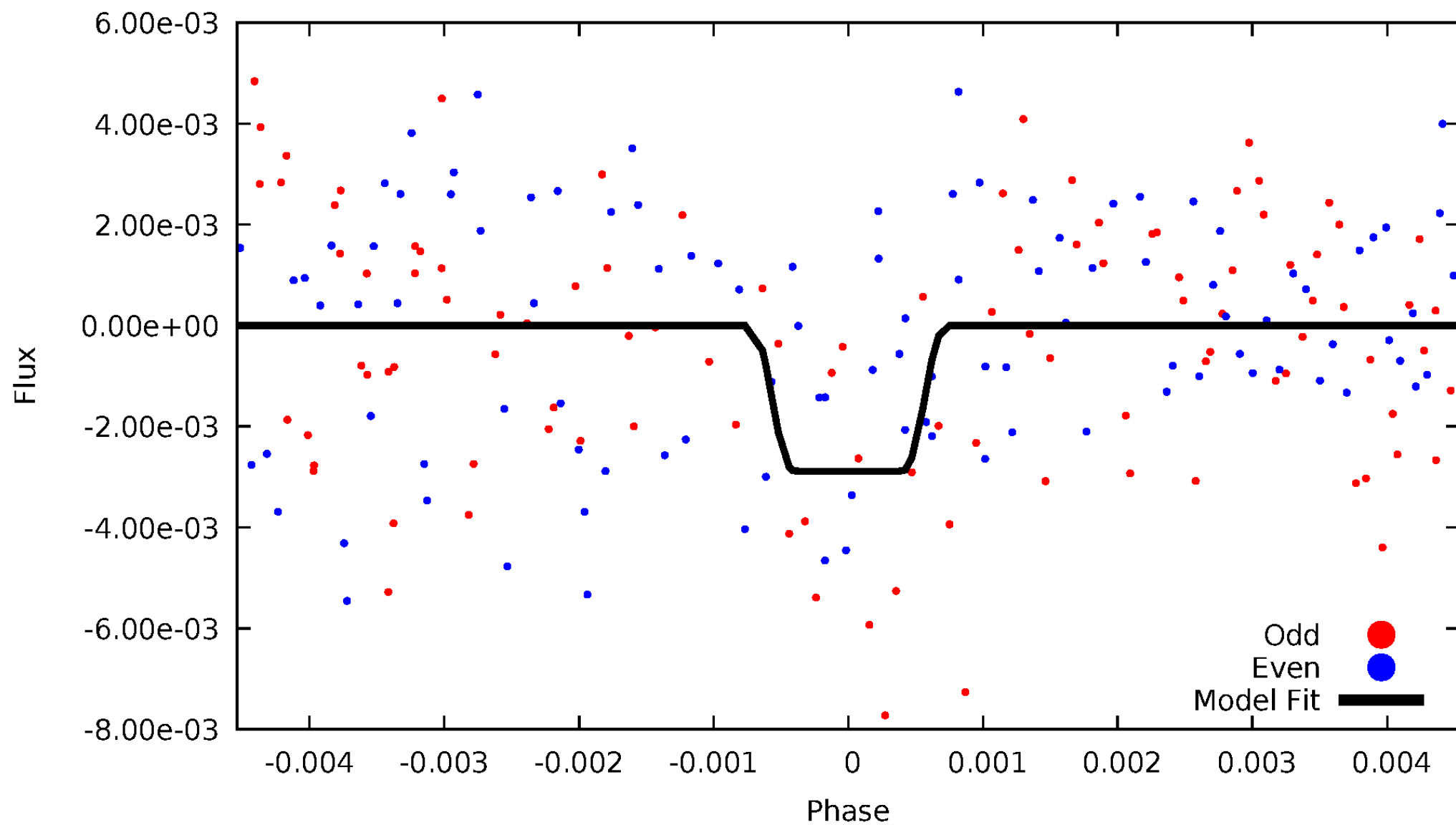
DV Odd/Even

TCE 004476186-05



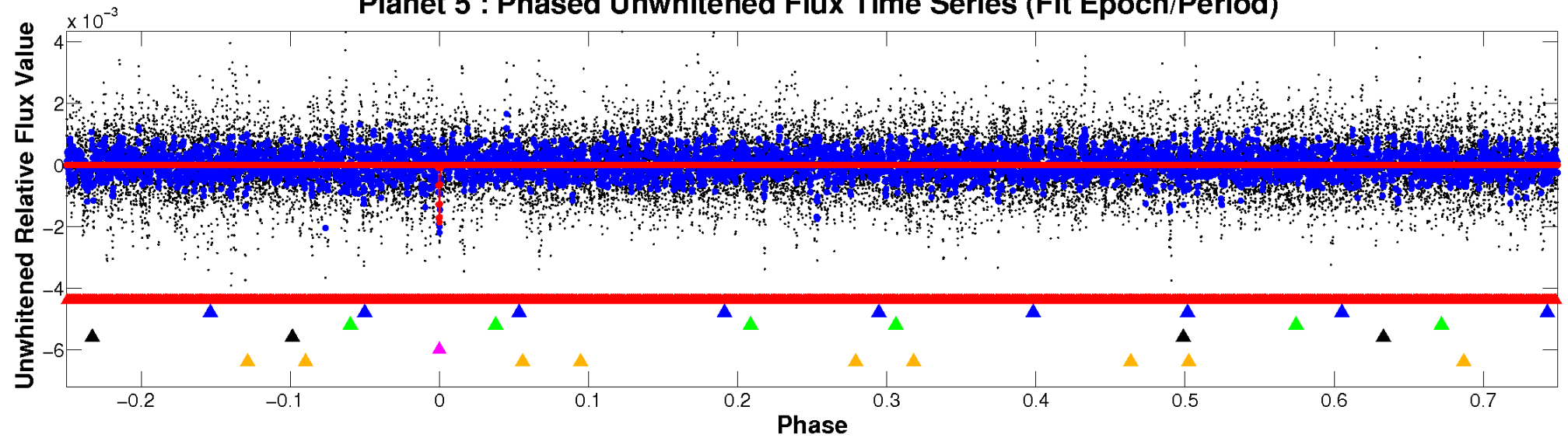
ALT Odd/Even

TCE 004476186-05

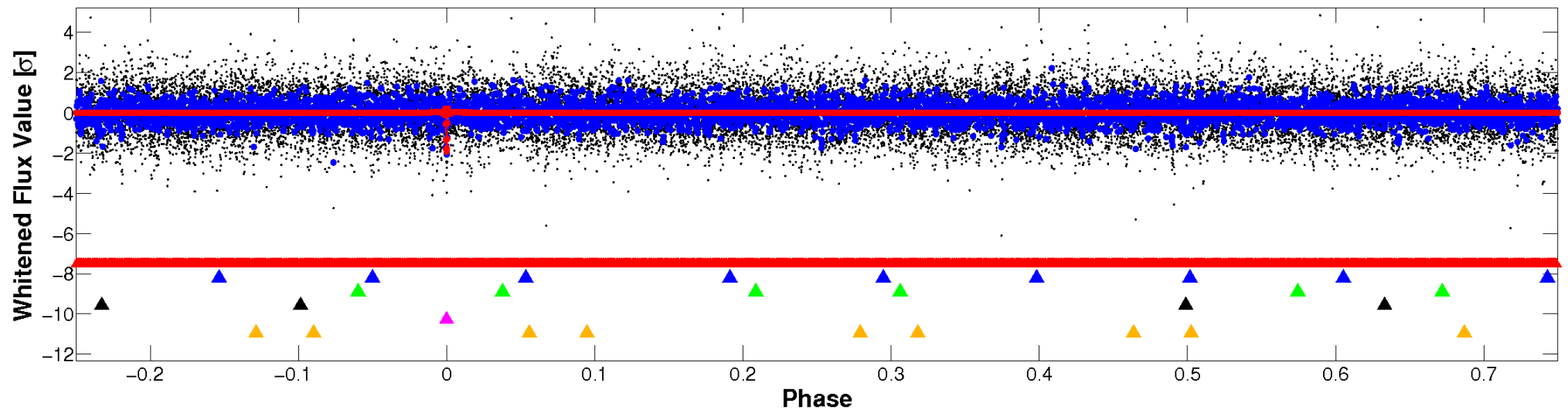


Non-Whitened Vs. Whitened Light Curve

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

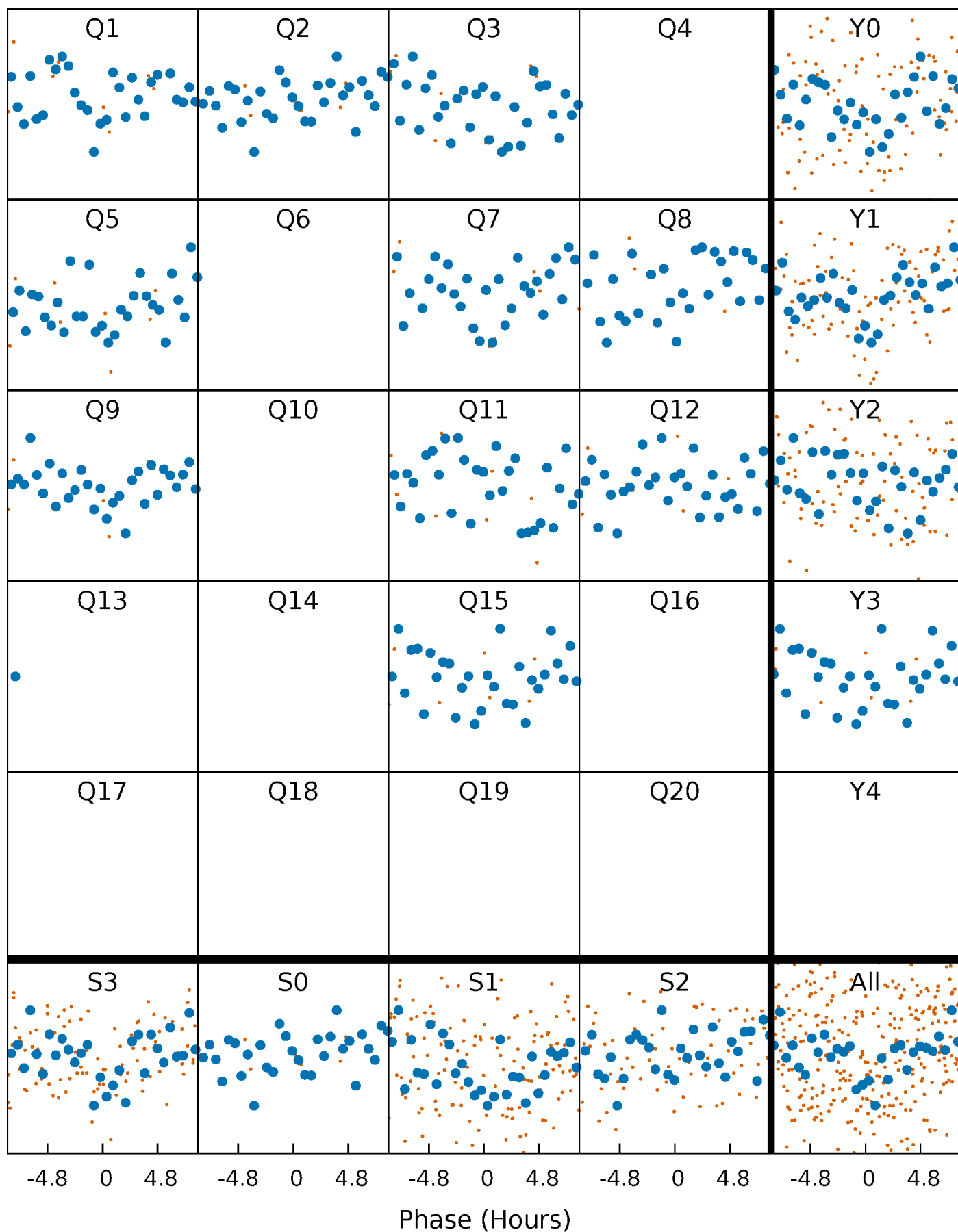


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



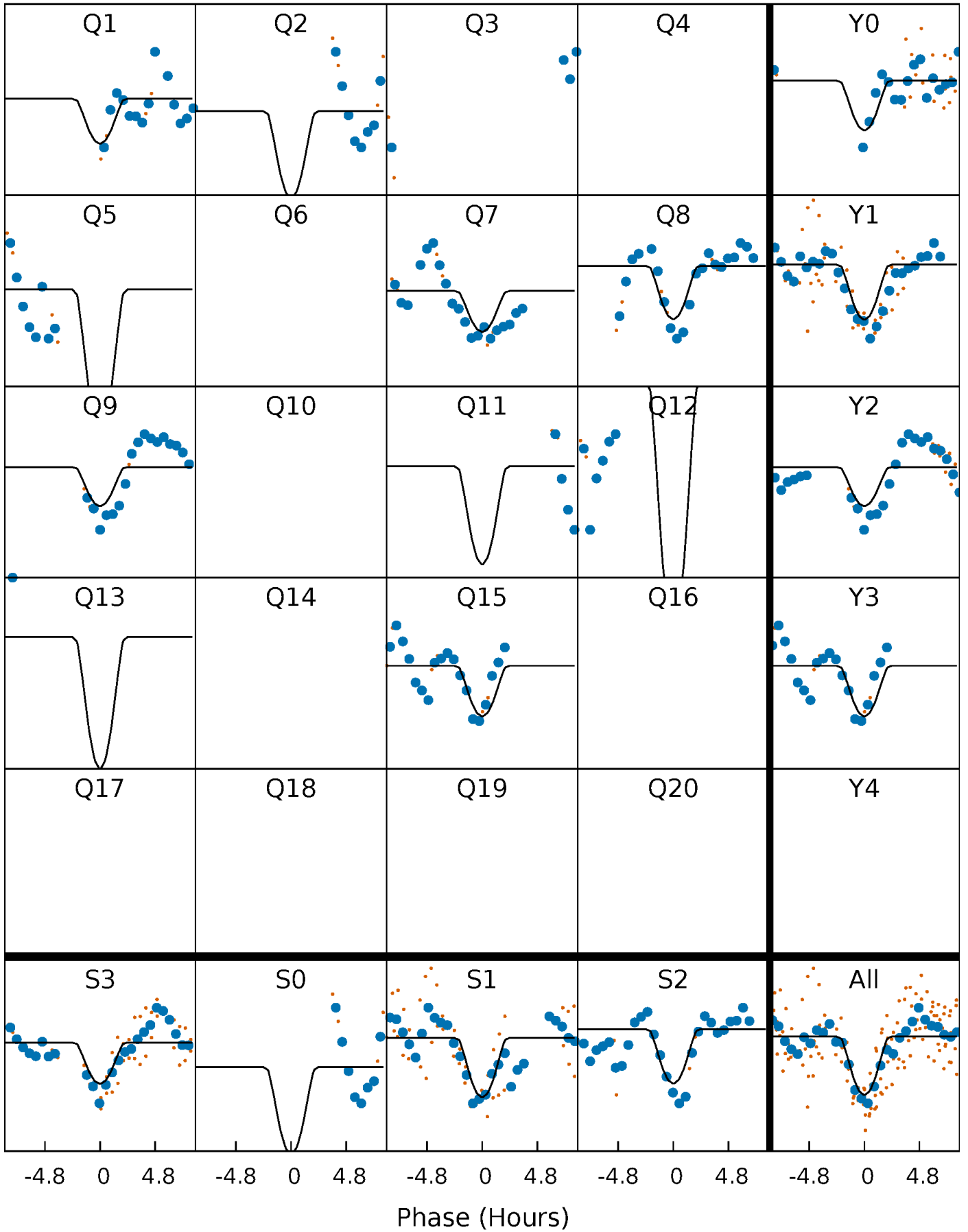
PDC Quarter-Phased Transit Curves

TCE 004476186-05 $P=103.023102$ Days $T_0=140.132505$ (BKJD)



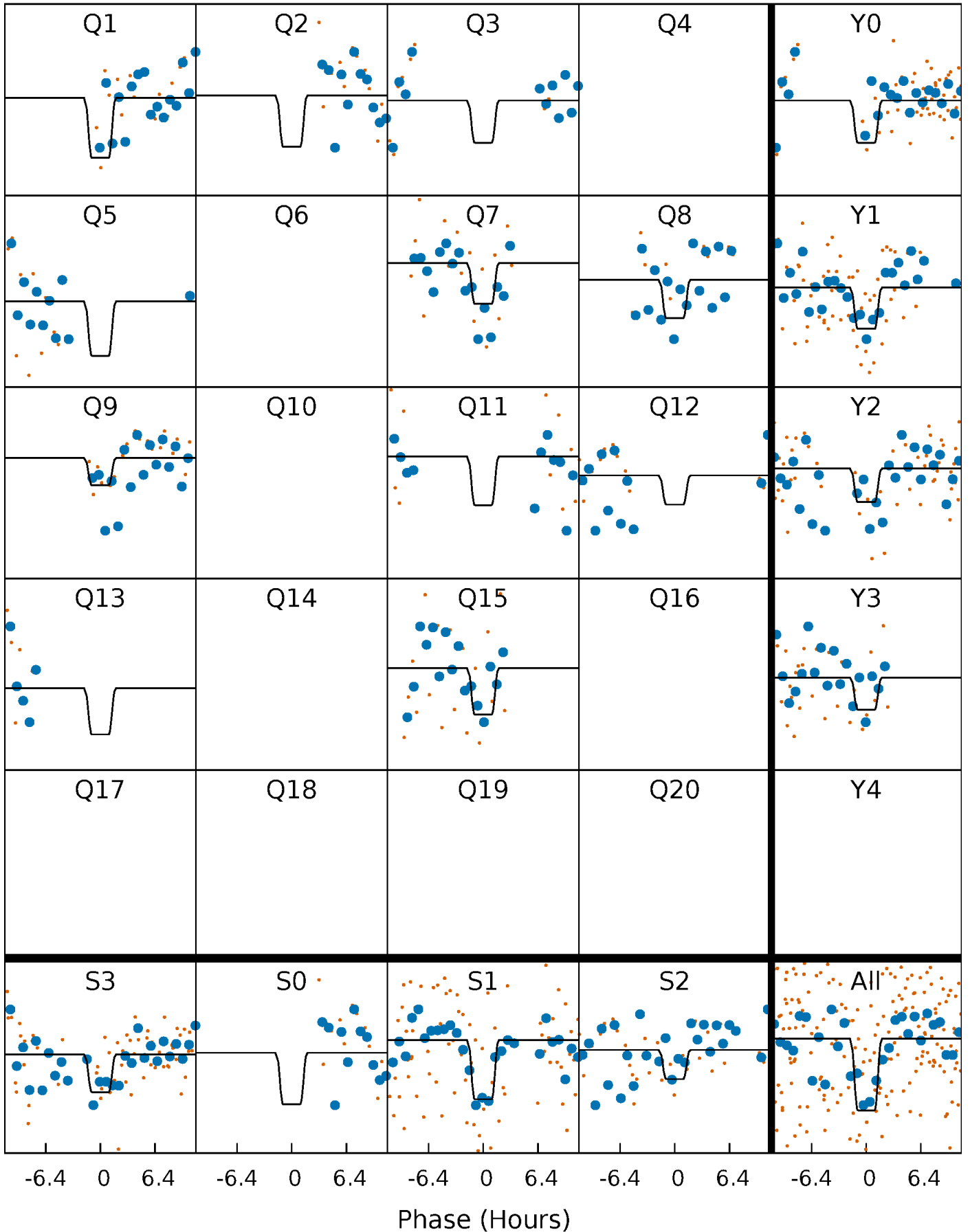
DV Quarter-Phased Transit Curves

TCE 004476186-05 P=103.023102 Days $T_0=140.132505$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

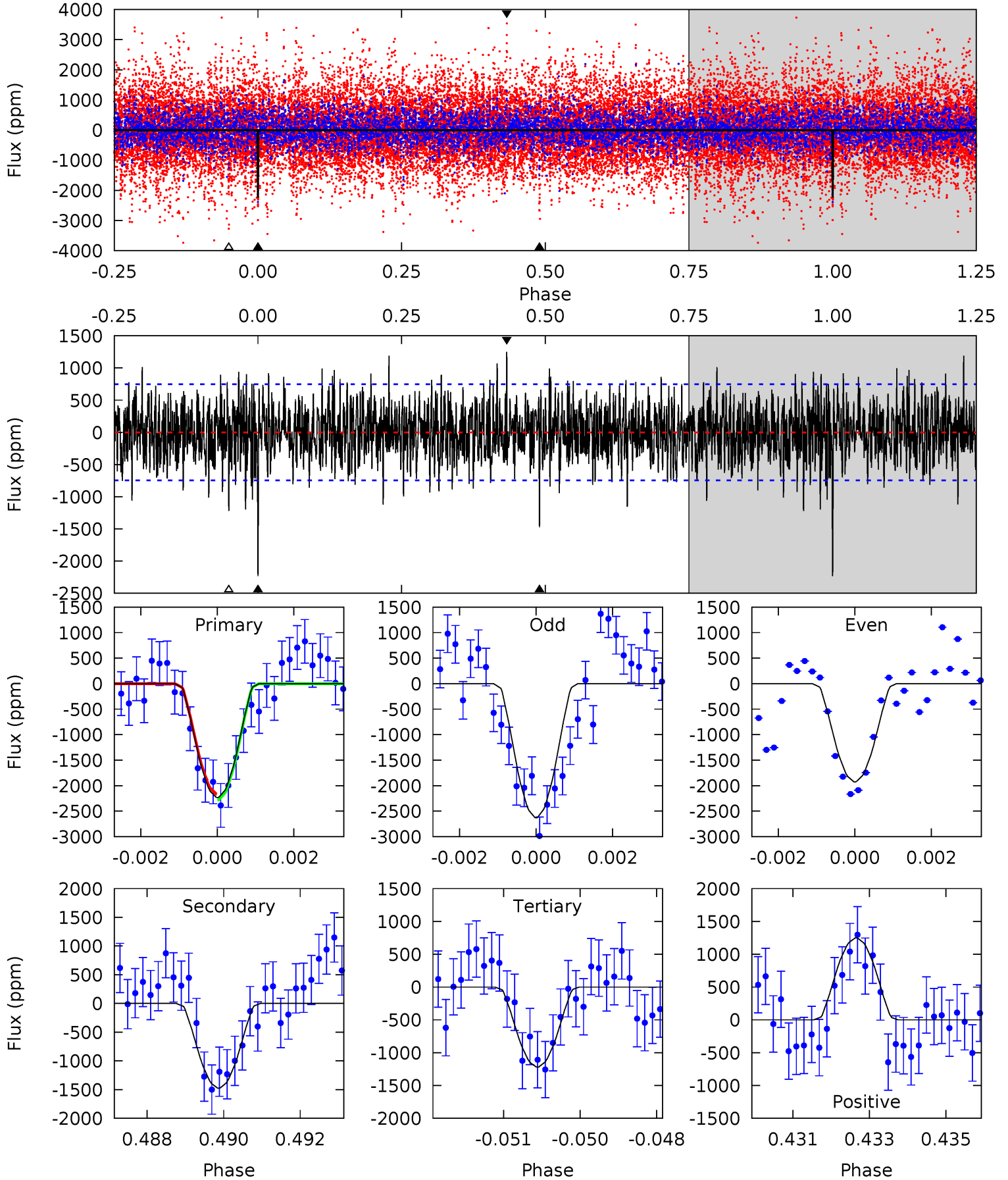
TCE 004476186-05 P=103.019509 Days $T_0=140.153413$ (BKJD)



DV Model-Shift Uniqueness Test

004476186-05, P = 103.023102 Days, E = 37.109403 Days

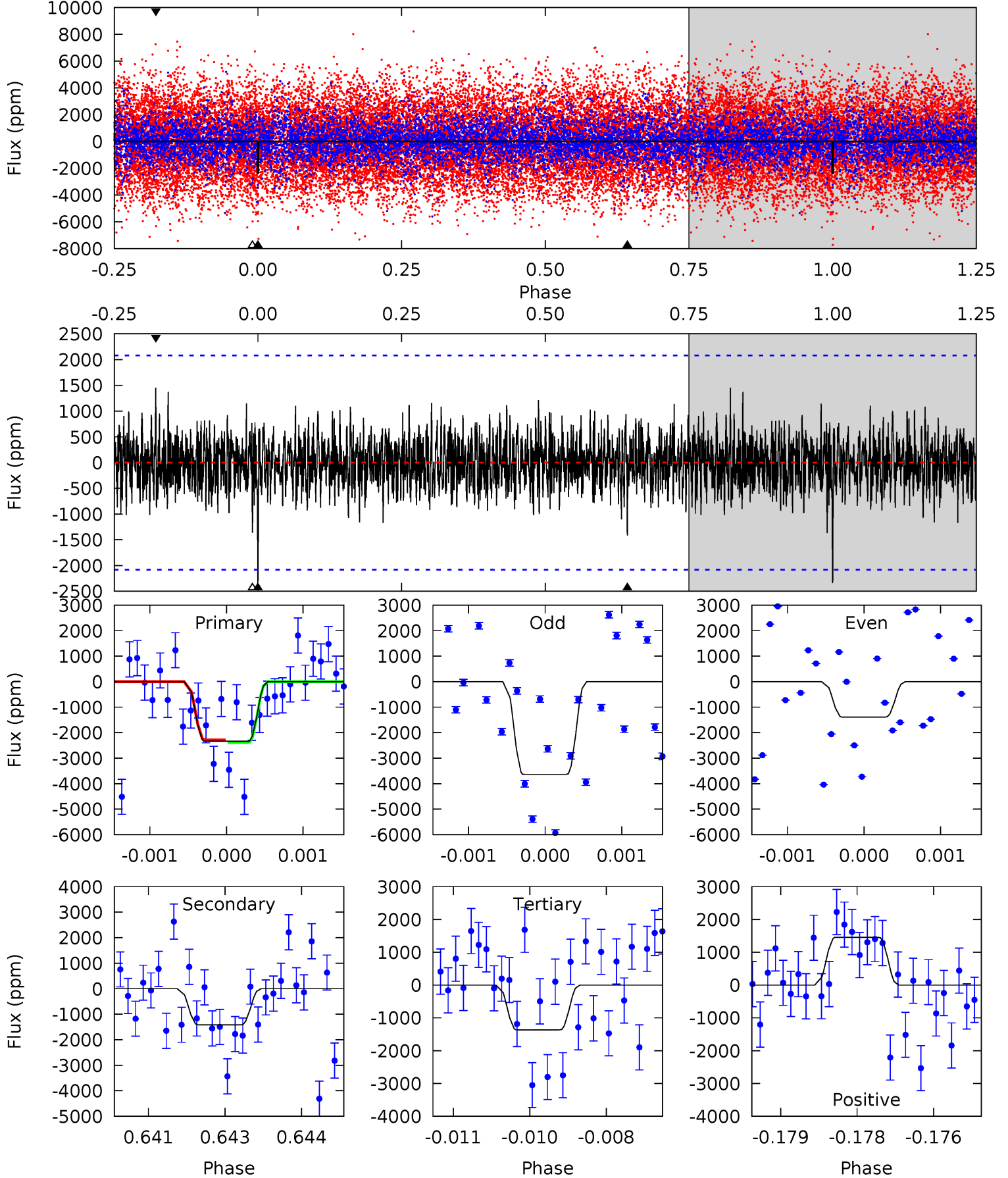
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	10.6	8.74	8.95	5.35	3.13	2.45	7.25	7.04	1.83	1.62	2.49	0.97	0.36	0.41



Alt Model-Shift Uniqueness Test

004476186-05, P = 103.019509 Days, E = 37.133904 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.06	3.66	3.54	3.77	5.39	3.20	1.01	2.52	2.29	0.12	-0.11	2.86	1.39	0.38	0.14



Stellar Parameters For KIC 004476186

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7693^{+214}_{-322}	$3.912^{+0.253}_{-0.136}$	$0.040^{+0.200}_{-0.350}$	$2.533^{+0.460}_{-0.855}$	$1.910^{+0.103}_{-0.414}$	$0.166^{+0.284}_{-0.057}$
	+3%/-4%	+6%/-3%	+500%/-875%	+18%/-34%	+5%/-22%	+171%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004476186-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1476 ± 140	$31.72^{+31.71}_{-20.39}$	1019^{+70}_{-85}	4377^{+2696}_{-878}	221^{+1439}_{-168}
Alt.	-1413 ± 386	$30.25^{+32.03}_{-20.05}$	1022^{+70}_{-91}	4425^{+3142}_{-965}	223^{+1927}_{-169}

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

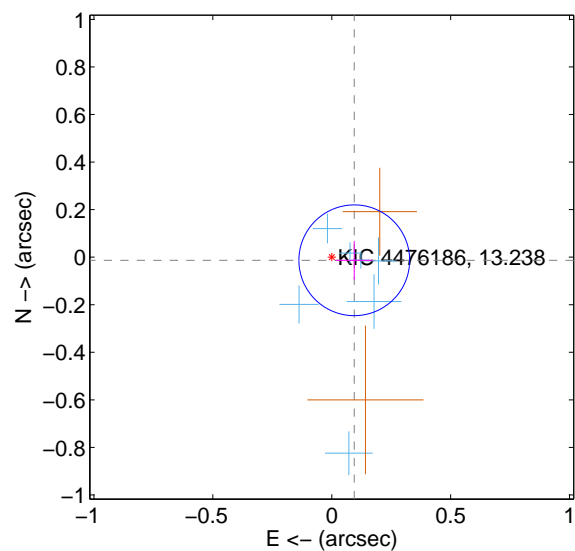
Supplemental centroid analysis for 004476186-05. Kepler magnitude: 13.24. Transit SNR 7.94

There are 7 quarters with good PRF difference image offsets

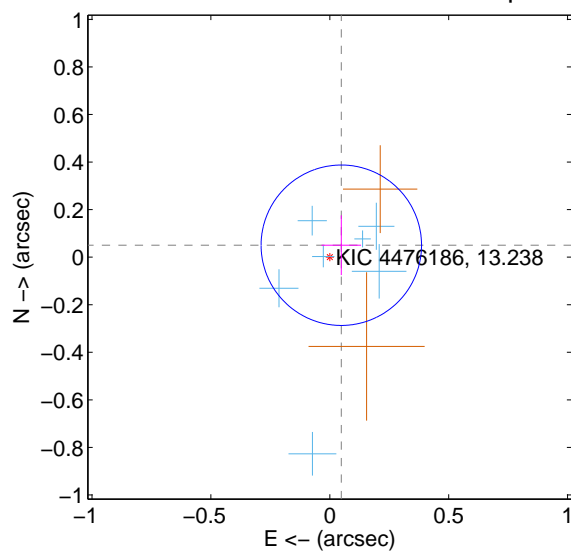
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.096 ± 0.078	1.23	-0.095 ± 0.078	-0.013 ± 0.081
PRF-fit source offset from KIC position	0.070 ± 0.112	0.62	-0.048 ± 0.083	0.050 ± 0.126
photometric centroid source offset	0.28 ± 0.19	1.44	-0.24 ± 0.20	0.13 ± 0.17

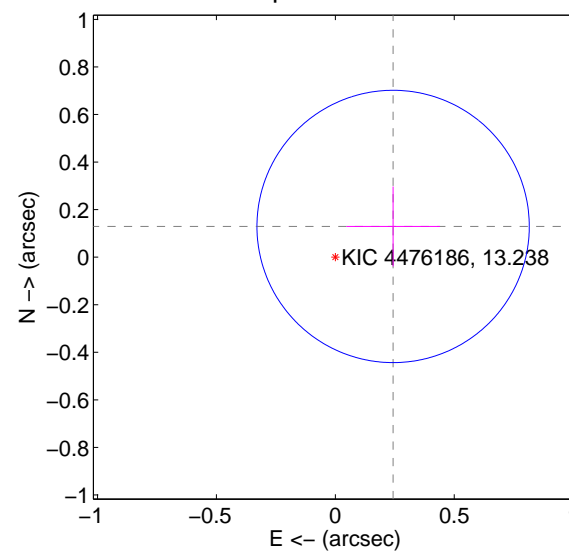
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

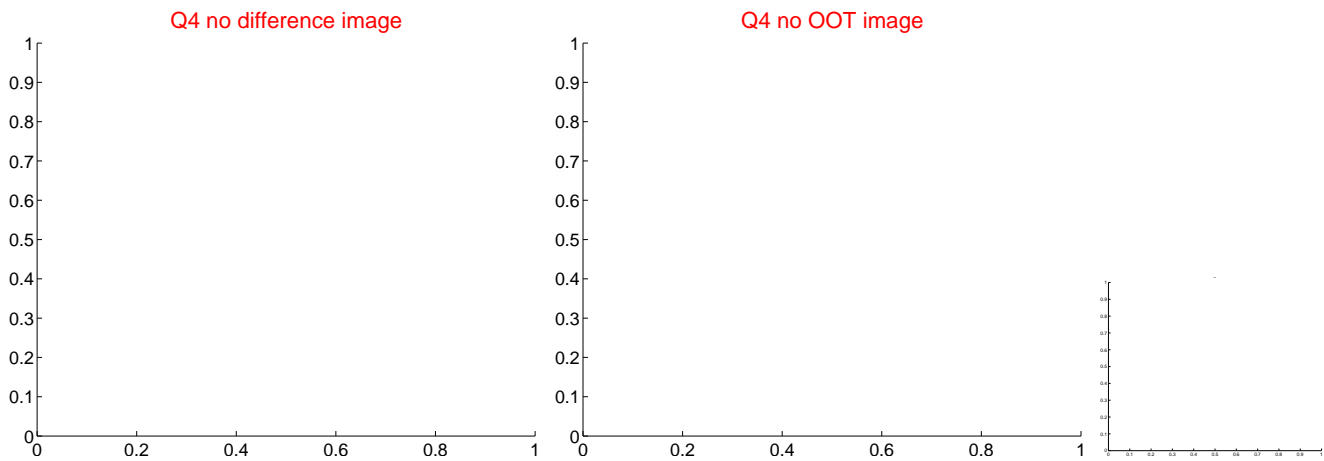
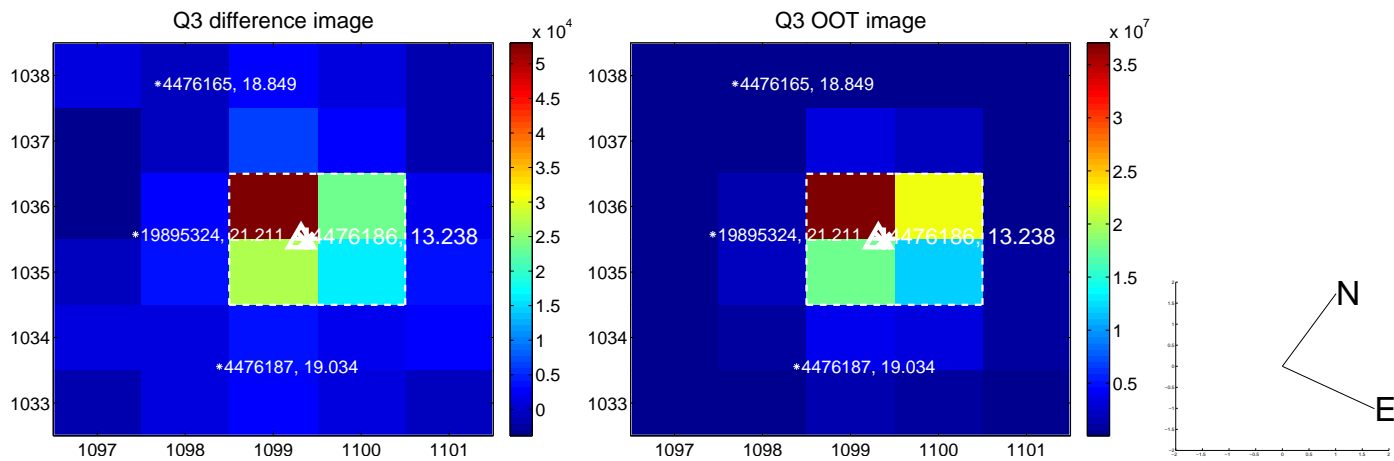
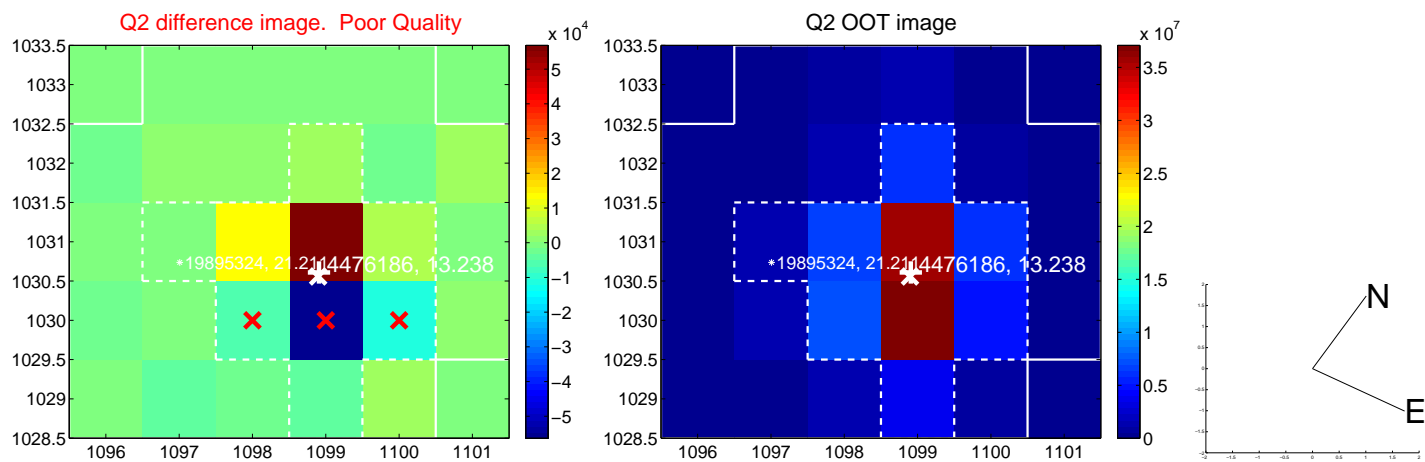
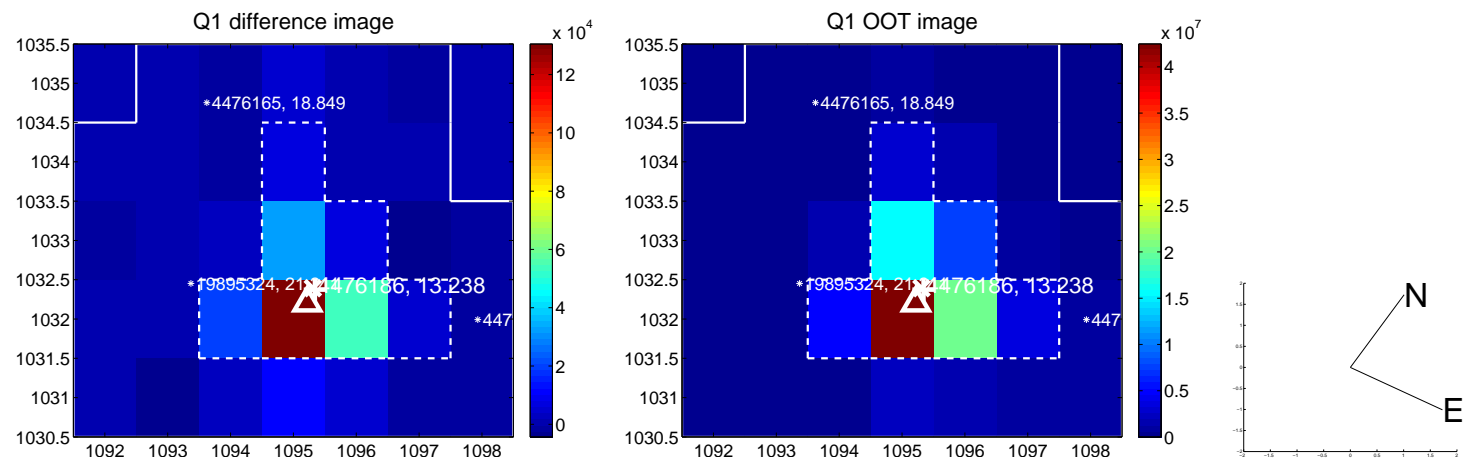


offset from photometric centroids

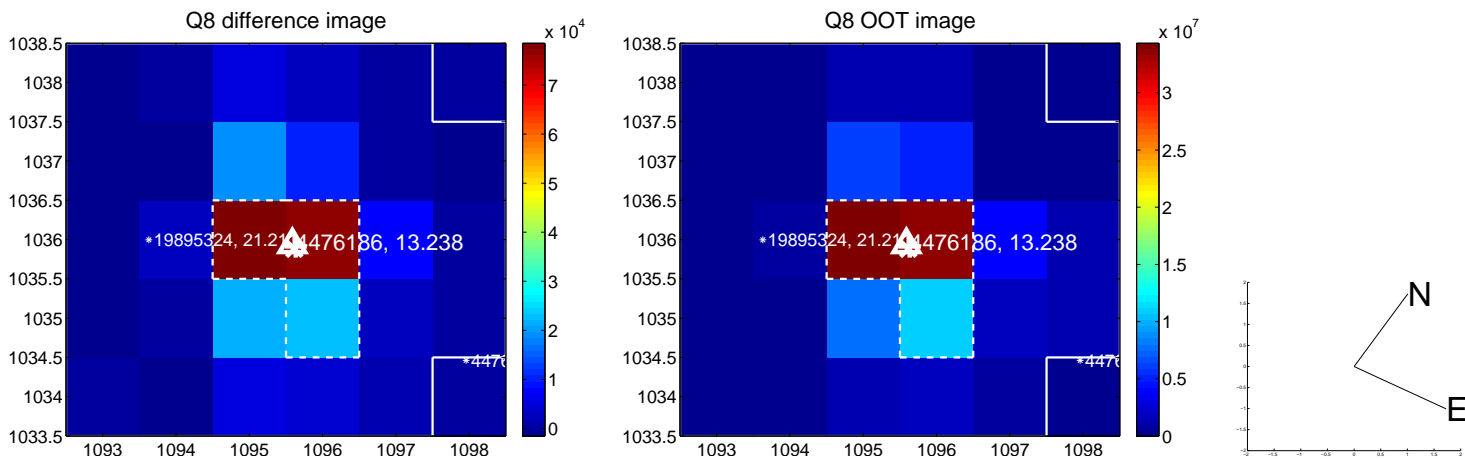
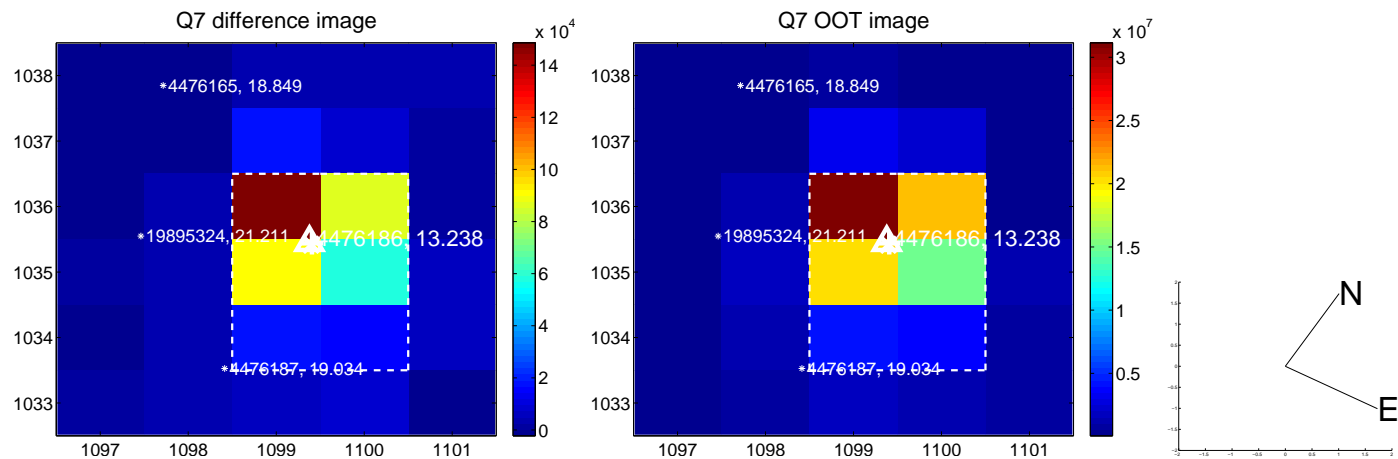
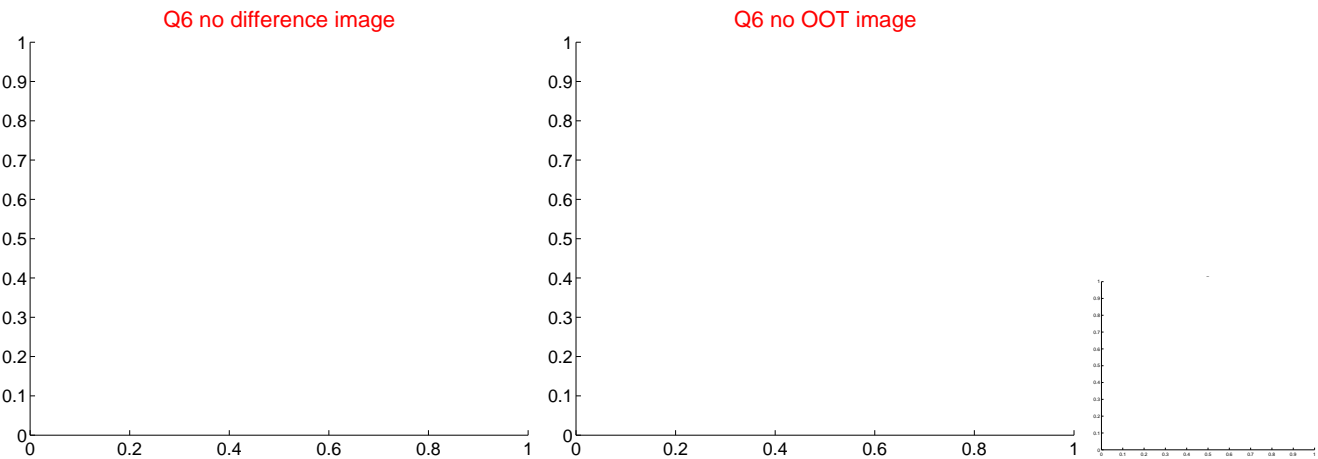
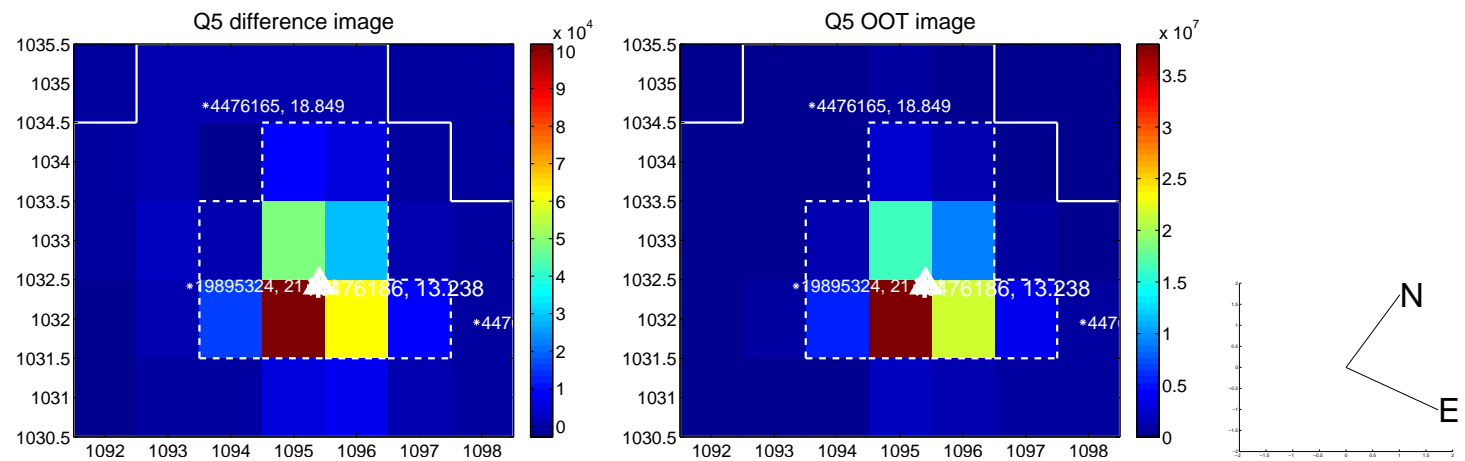


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

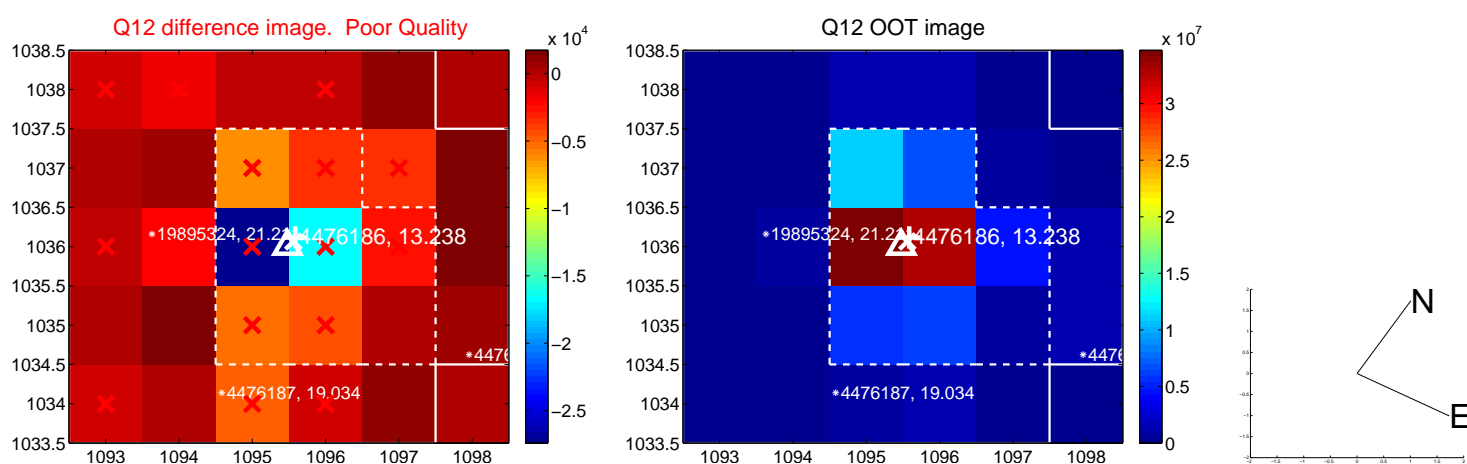
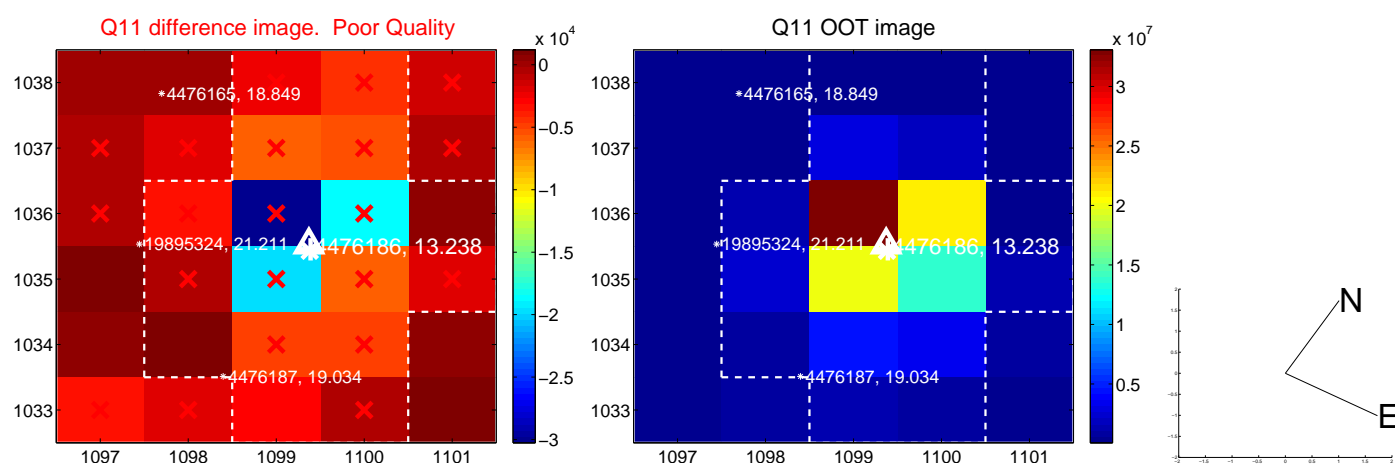
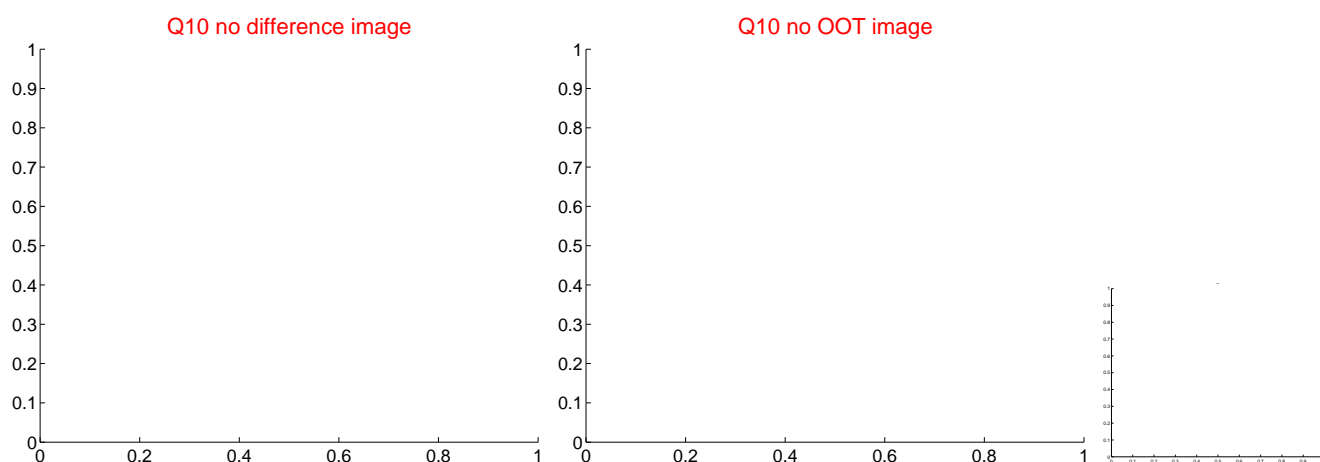
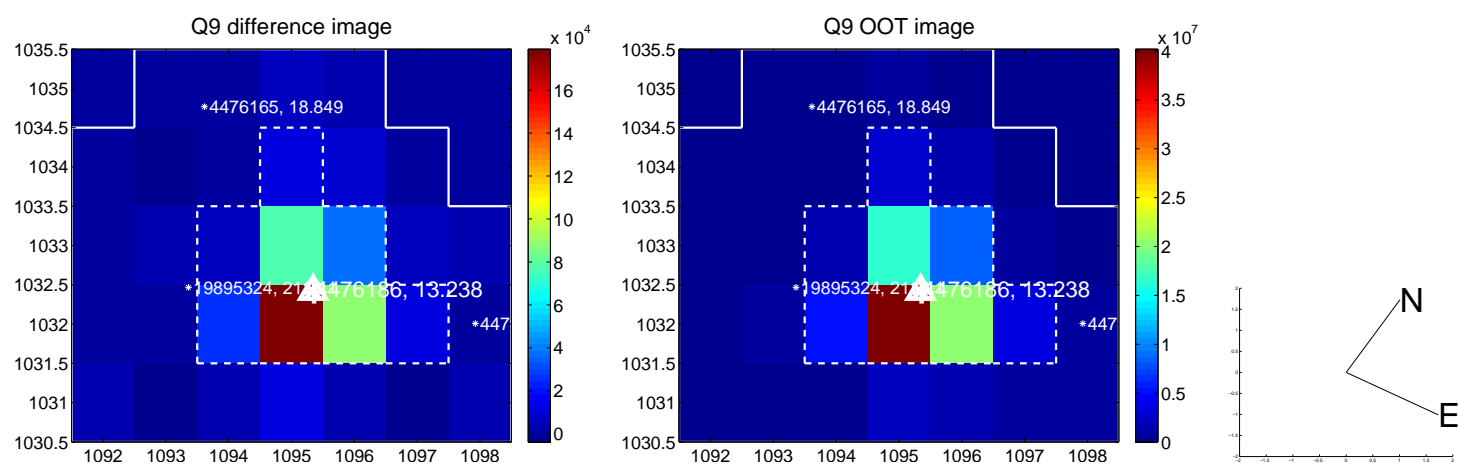
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



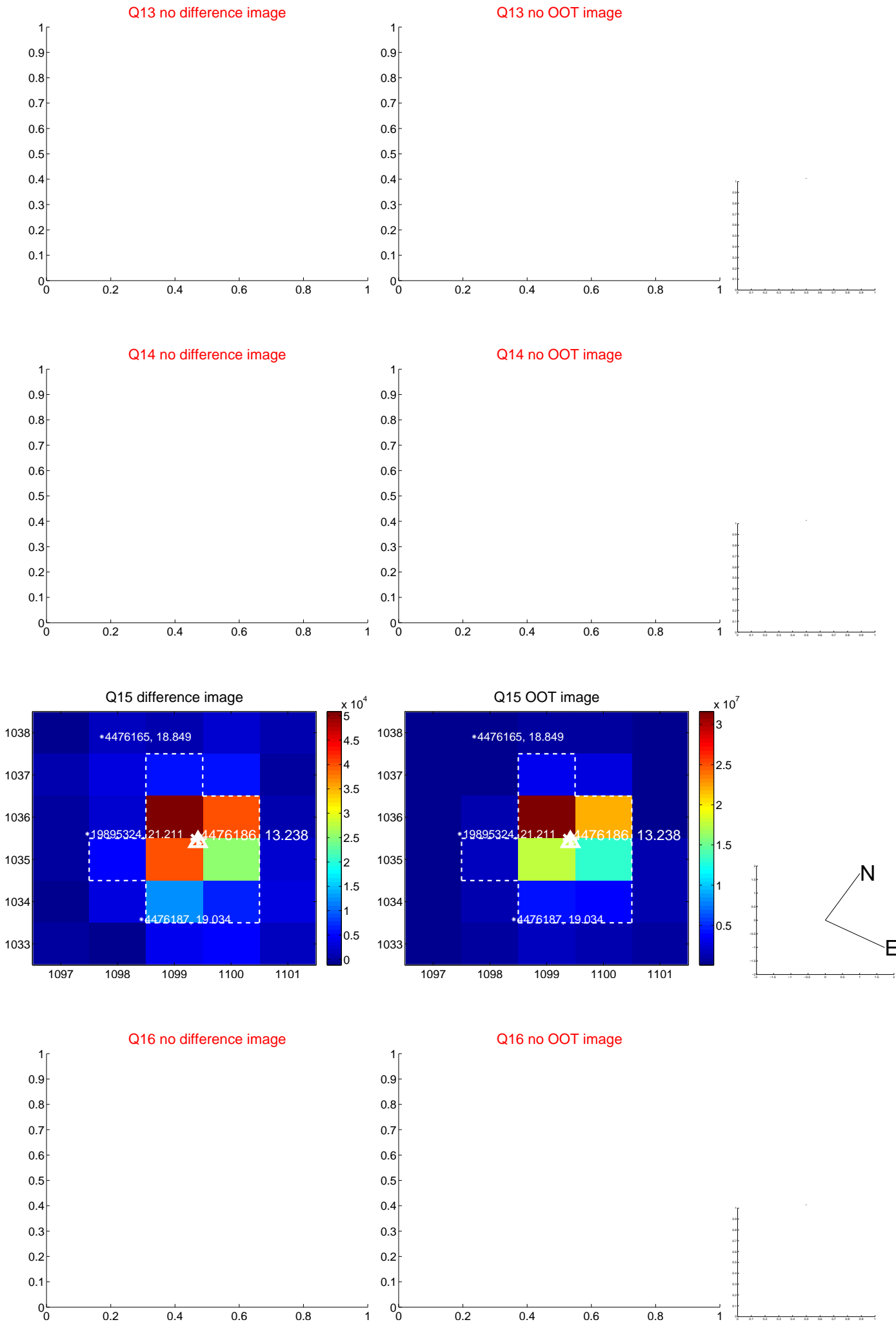
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



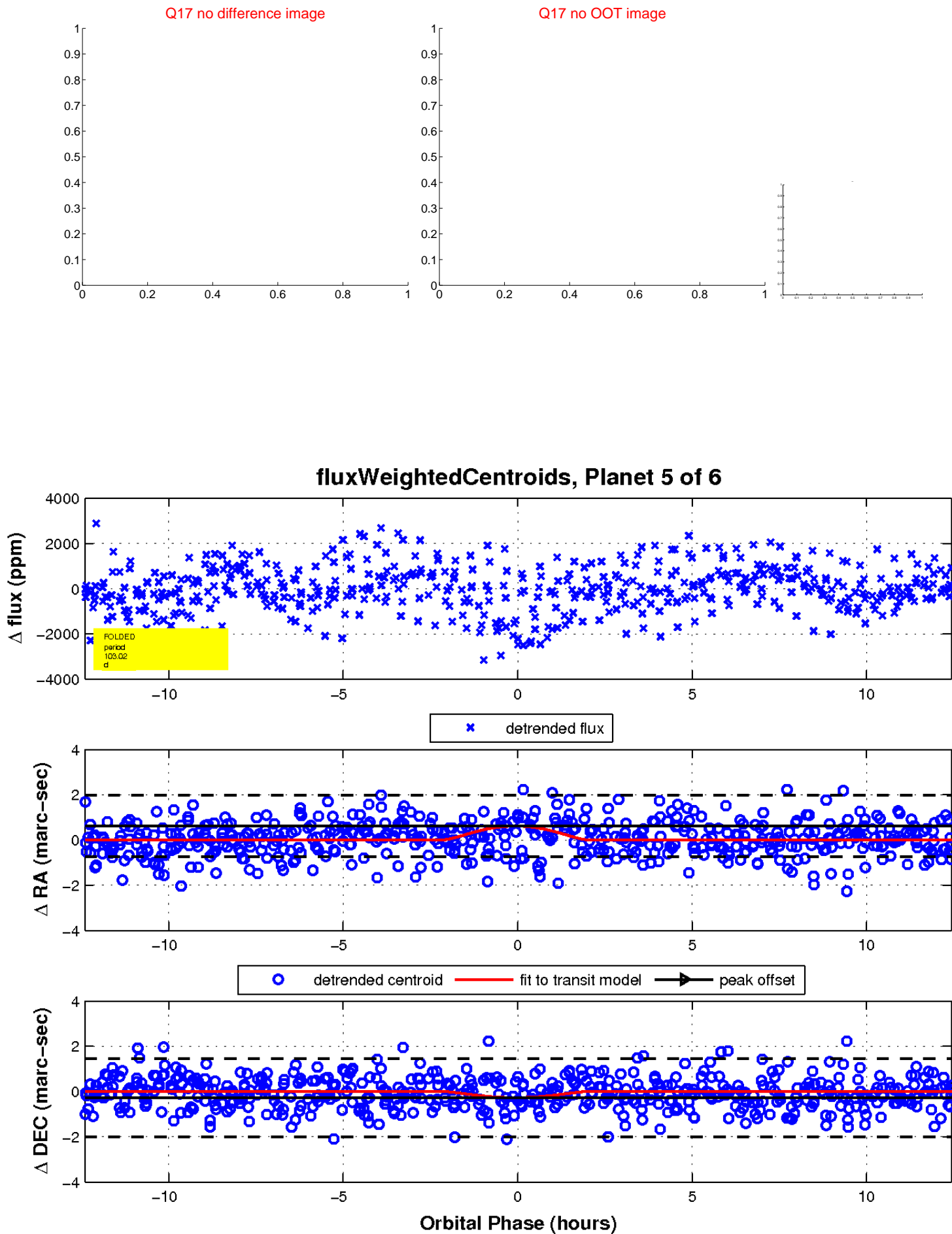
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



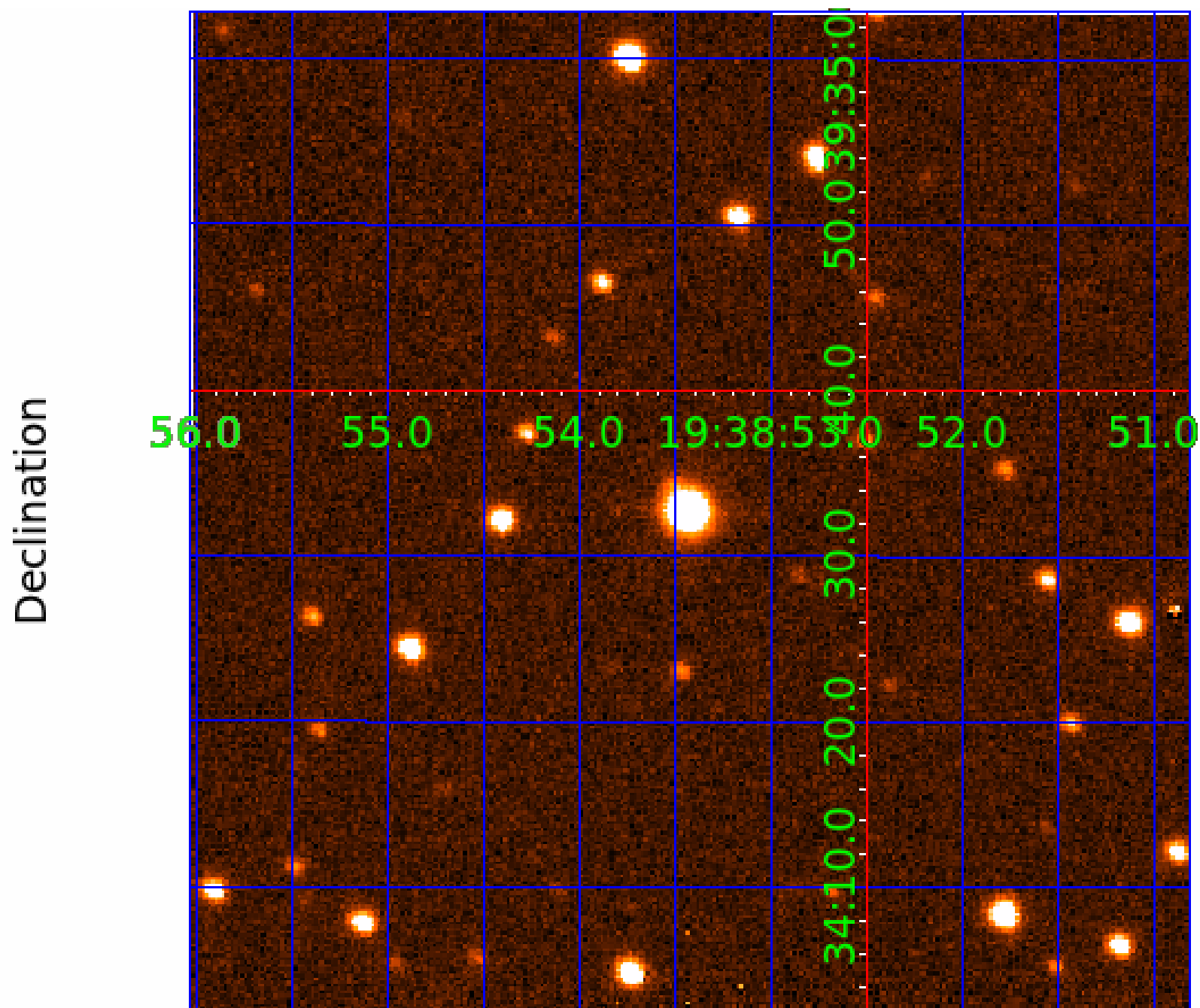
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004476186

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})
004476186-01	OBS	No	1.109392	132.061263	137.6	4.562	10.9	9.7	2.53	7693	3.44	29711.22
004476186-02	OBS	No	159.865937	159.834064	3022.4	3.300	10.6	10.9	2.53	7693	25.17	39.33
004476186-03	OBS	No	243.733544	161.633217	2644.5	4.454	8.8	9.1	2.53	7693	23.42	22.41
004476186-05	OBS	No	103.023102	140.132505	1855.0	4.168	7.5	7.9	2.53	7693	18.36	70.65
004476186-06	OBS	No	164.036445	172.897624	831.8	22.160	7.4	8.9	2.53	7693	7.48	38.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004476186-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
004476186-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004476186-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
004476186-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS
004476186-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS

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

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

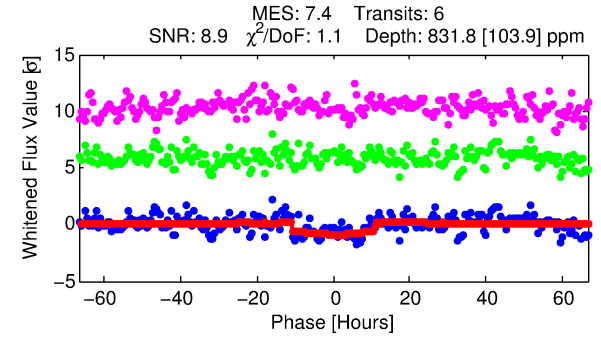
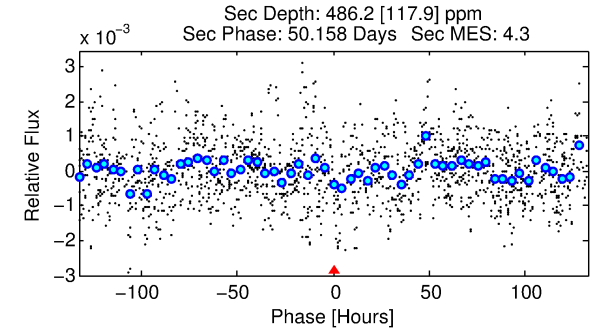
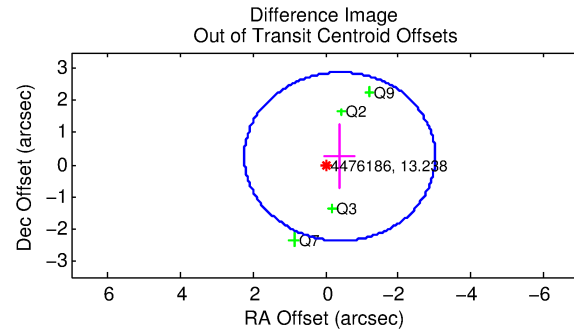
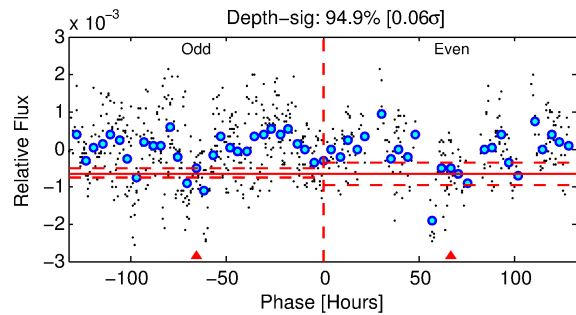
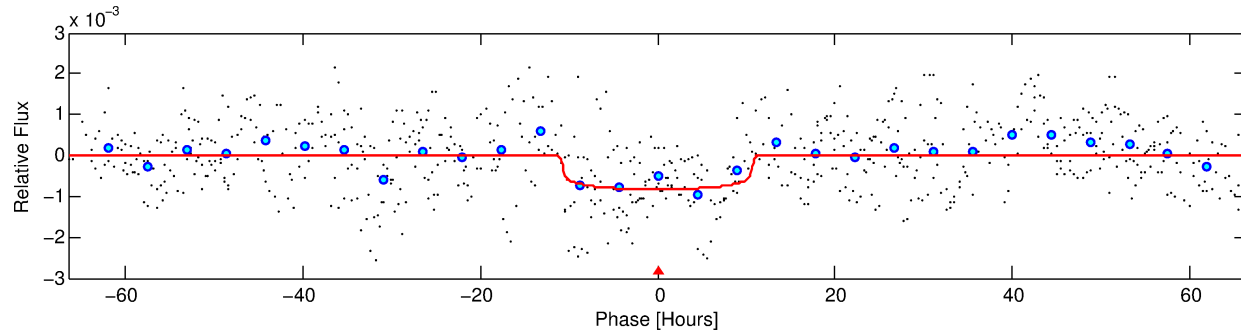
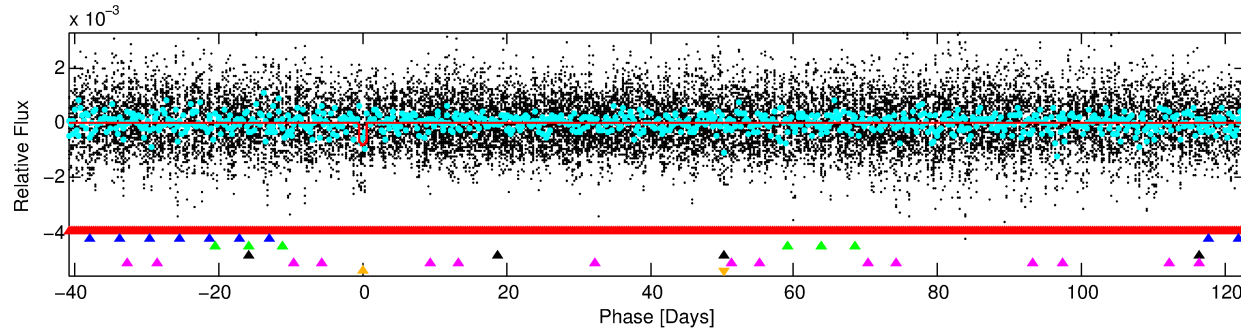
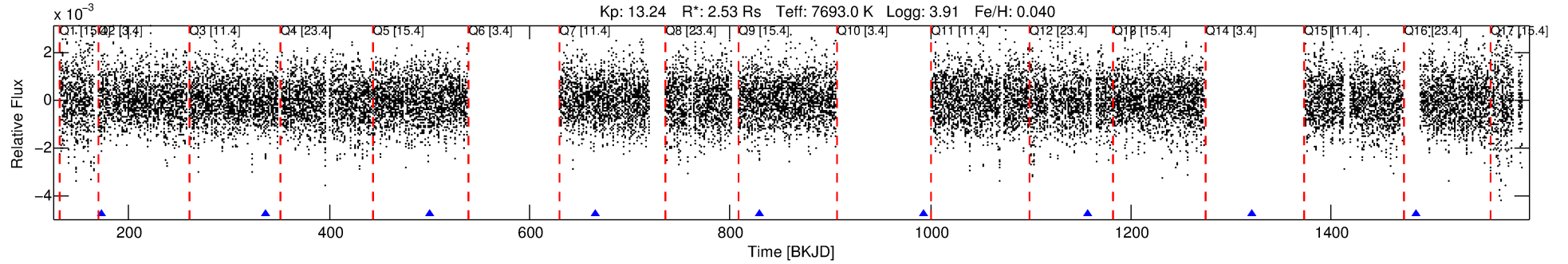
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004476186-06

No Significant Match Found

DV One-Page Summary

KIC: 4476186 Candidate: 6 of 6 Period: 164.036 d



DV Fit Results:

Period = 164.03644 [0.00742] d
Epoch = 172.8976 [0.0341] BKJD
Rp/R* = 0.0271 [0.0064]
a/R* = 54.77 [72.94]
b = 0.34 [3.47]
Seff = 38.00 [18.20]
Teq = 633 [76] K
Rp = 7.48 [3.08] Re
a = 0.7279 [0.2164] AU
Ag = 2534.79 [1762.42] [1.44 σ]
Teffp = 6945 [967] K [6.51 σ]

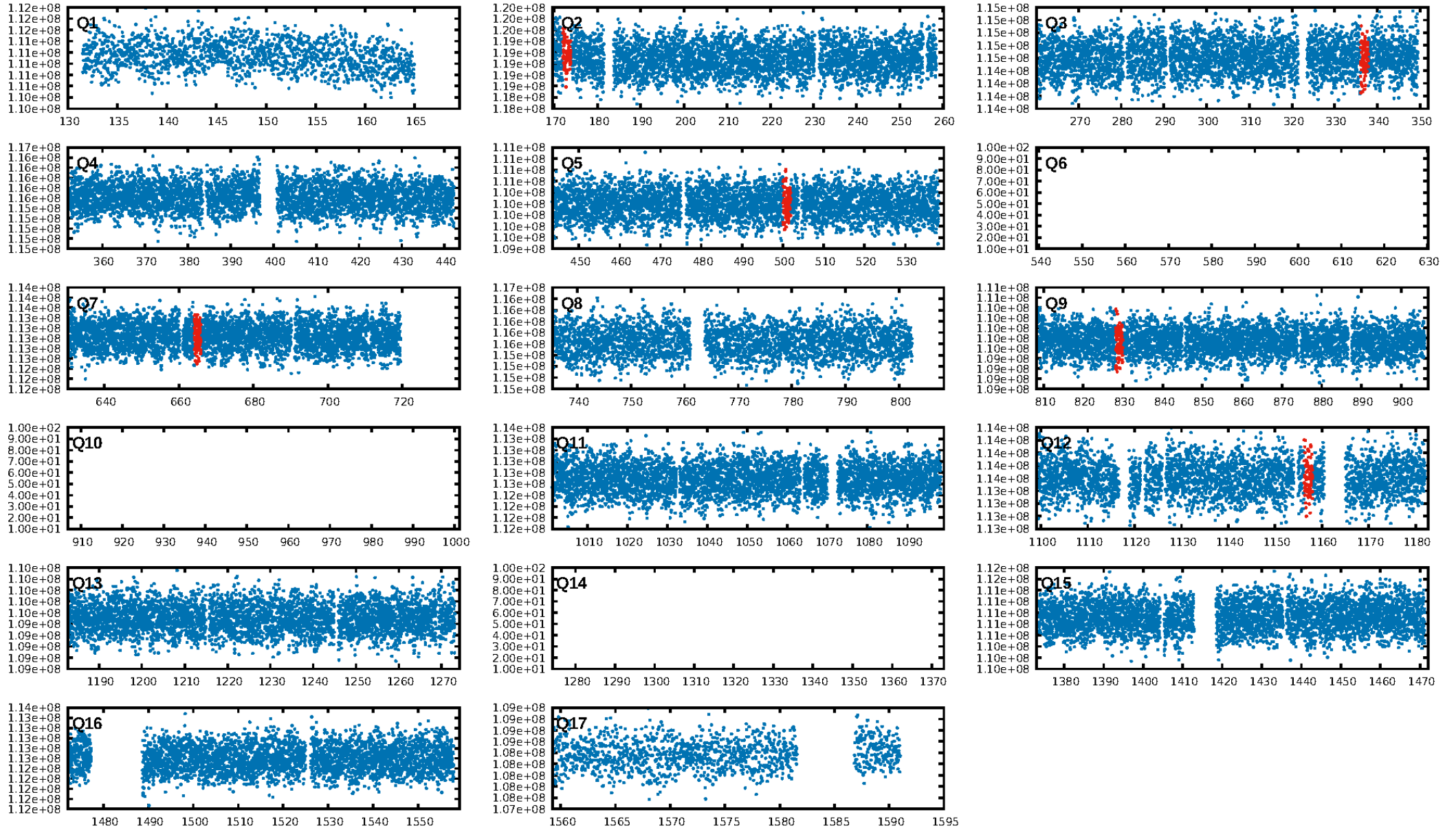
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.47 σ]
LongPeriod-sig: 100.0% [84.62 σ]
ModelChiSquare2-sig: 73.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.65e-11
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.7102
Centroid-sig: 13.0%
Centroid-so: 0.207 arcsec [0.97 σ]
OotOffset-rm: 0.467 arcsec [0.53 σ]
OotOffset-st: 1/2/0/1 [4]
KicOffset-rm: 0.512 arcsec [0.59 σ]
KicOffset-st: 1/2/0/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 0.00 [0/5]

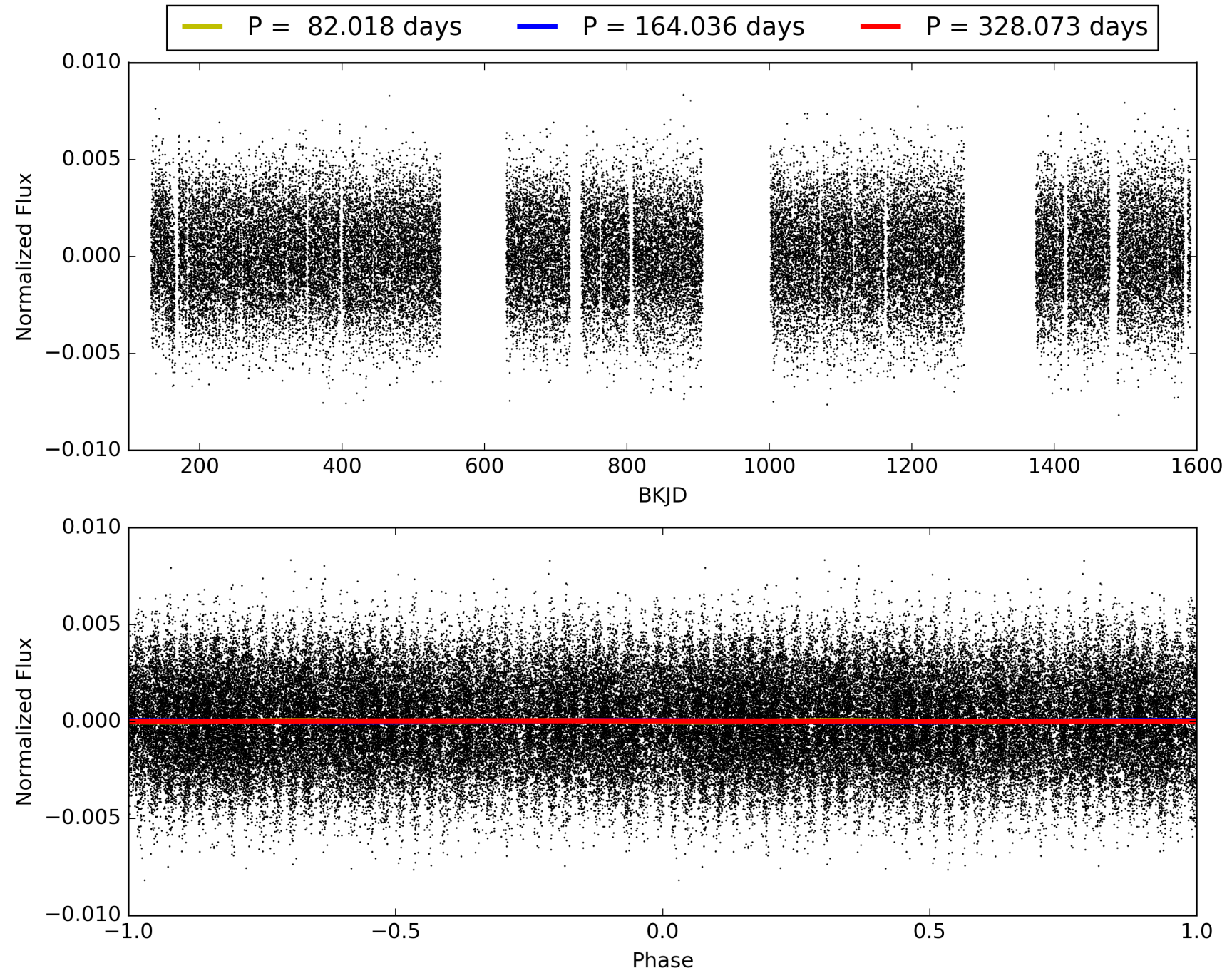
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:32:17 Z

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

TCE 004476186-06, PDC Light Curves

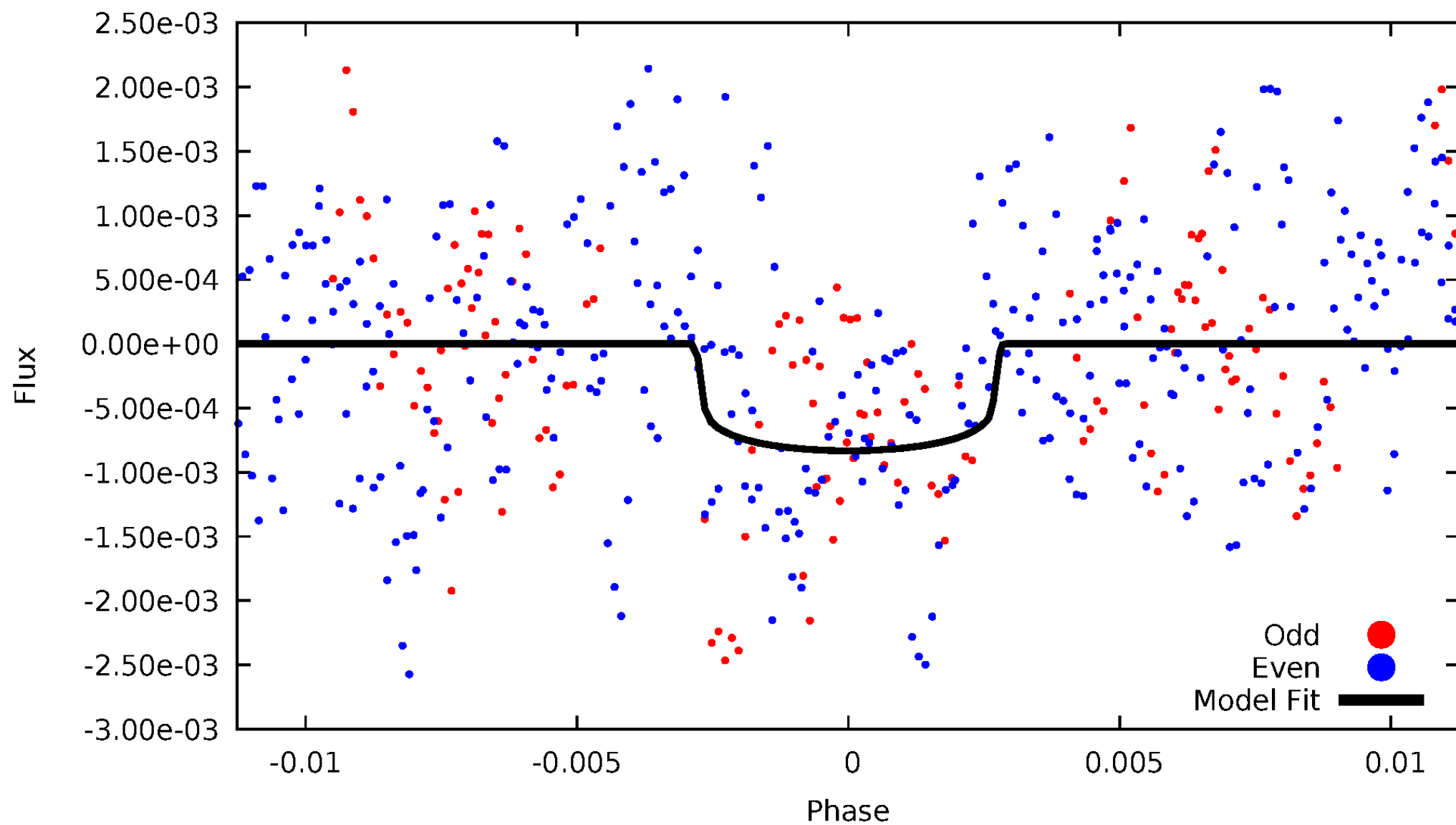


TCE 004476186-06



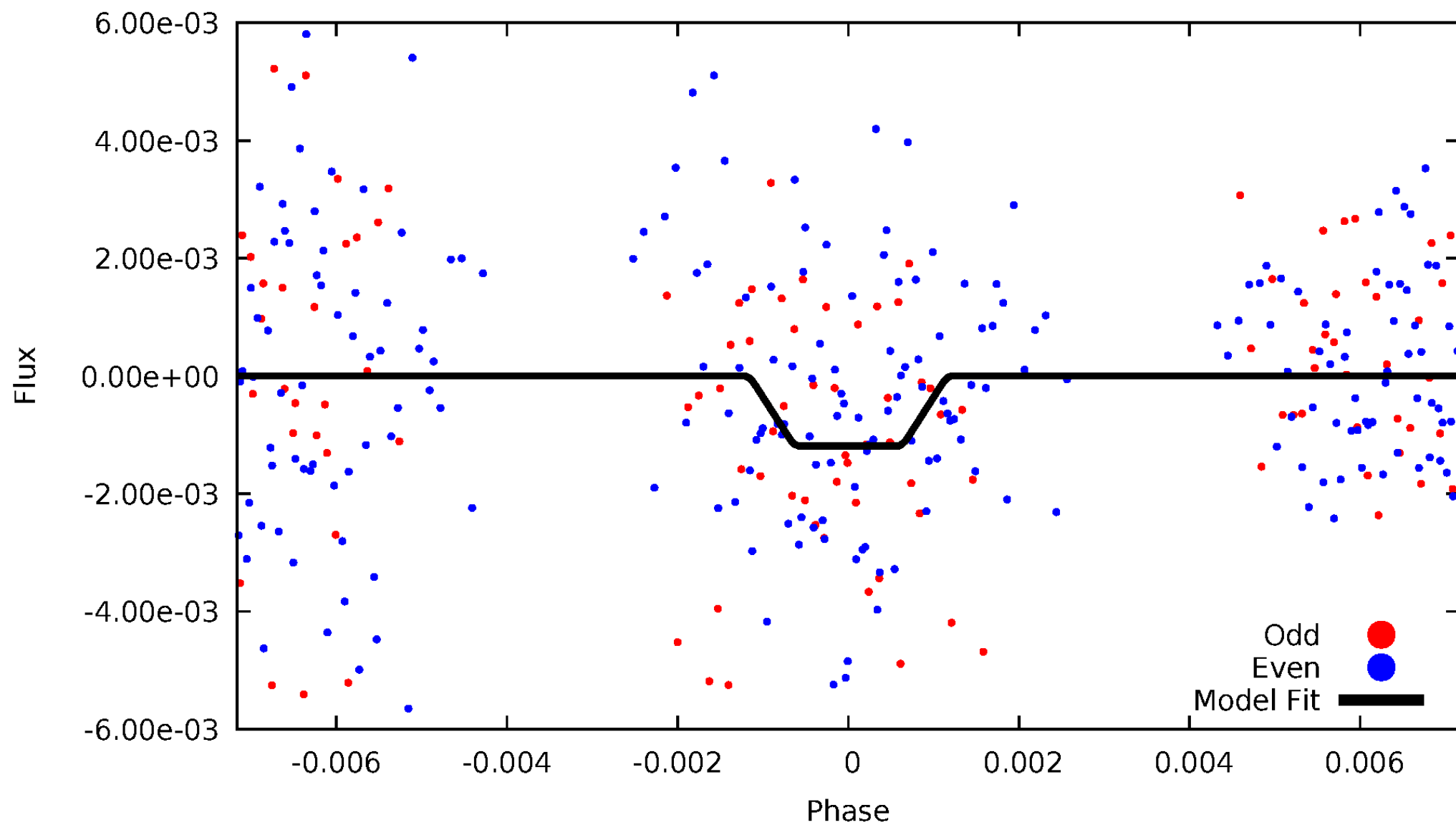
DV Odd/Even

TCE 004476186-06



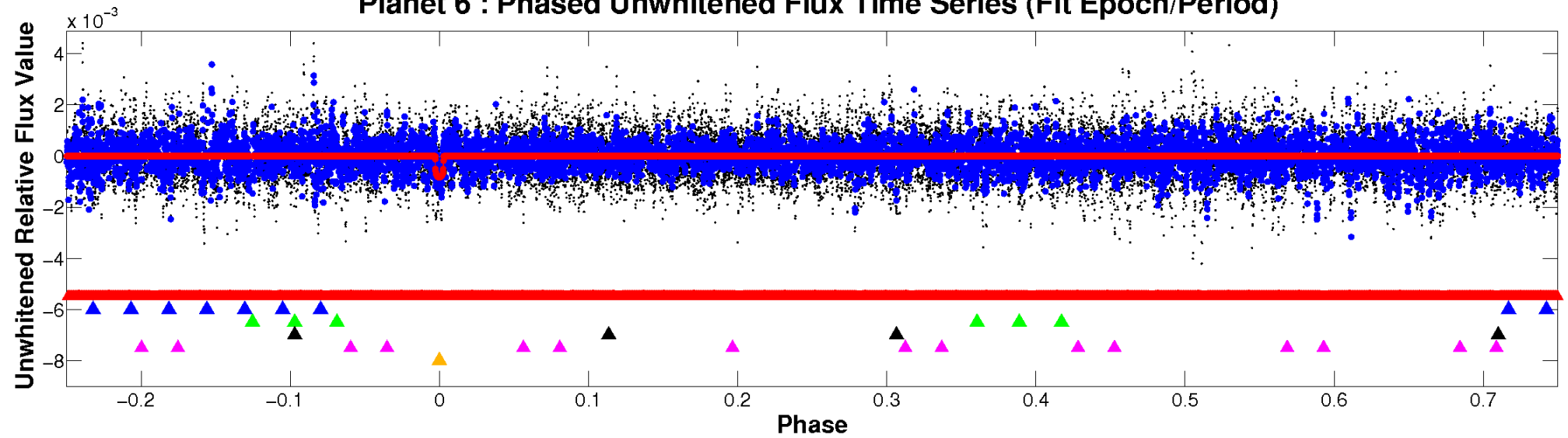
ALT Odd/Even

TCE 004476186-06

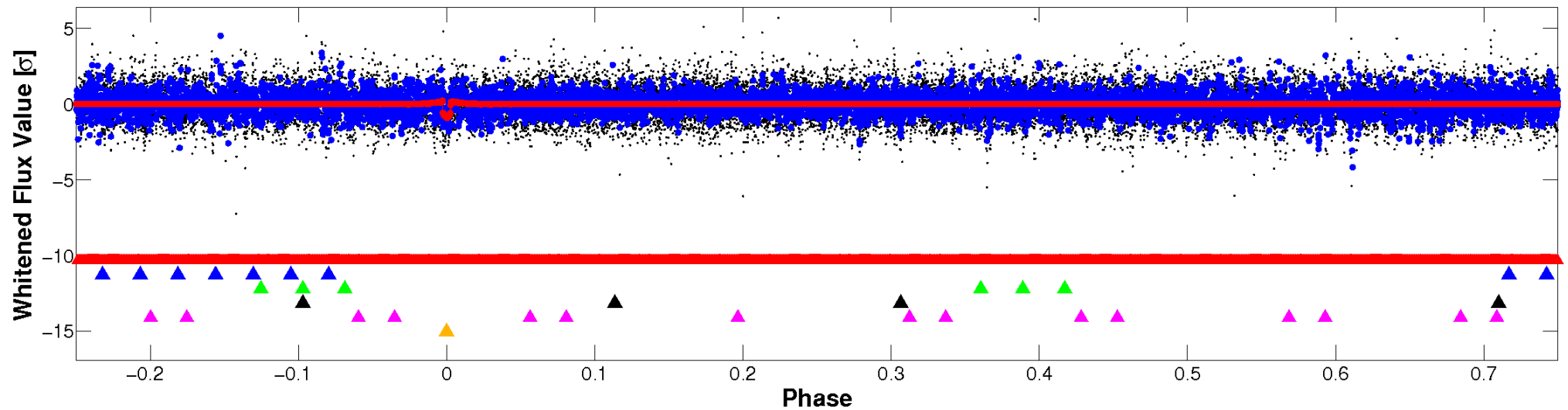


Non-Whitened Vs. Whitened Light Curve

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

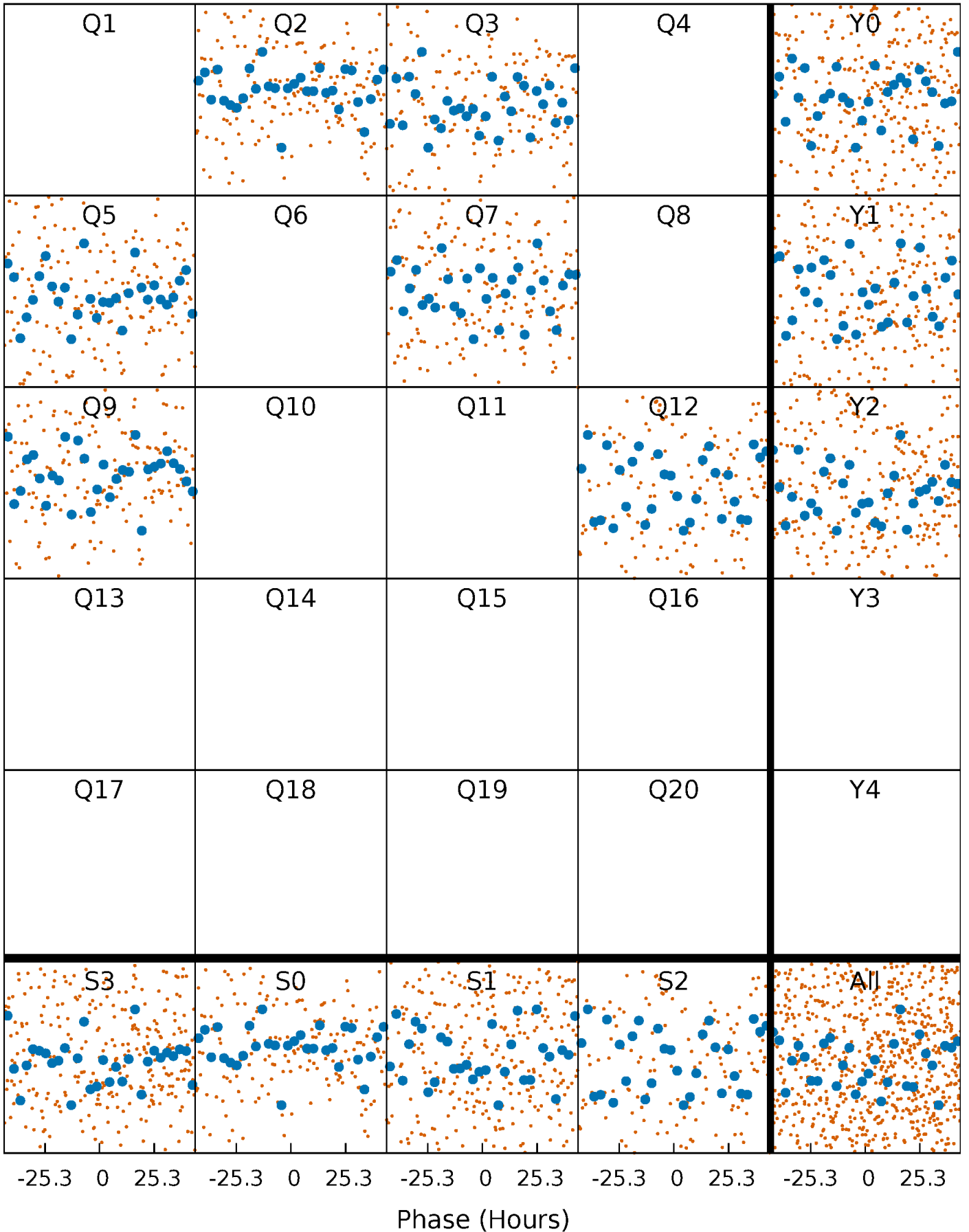


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



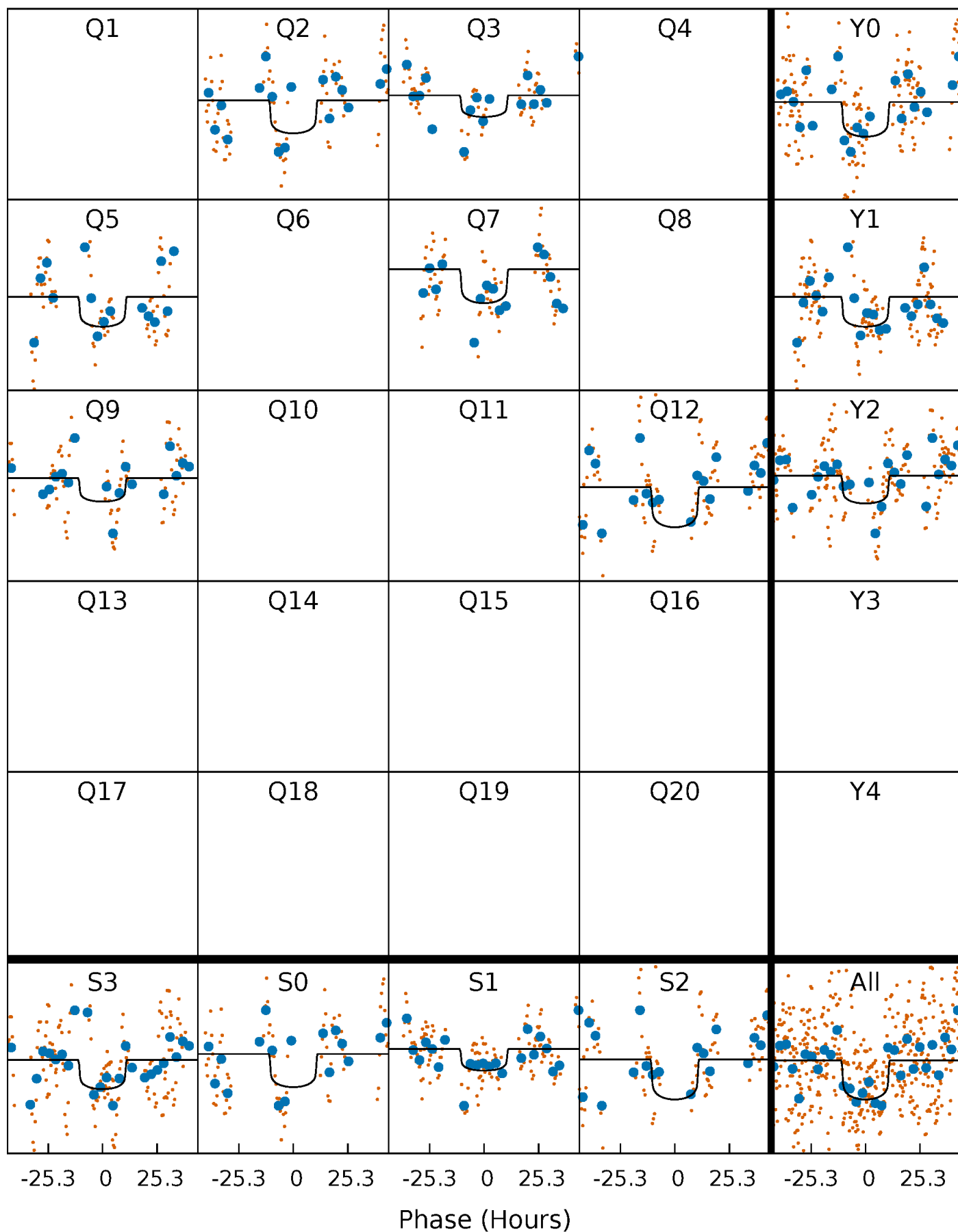
PDC Quarter-Phased Transit Curves

TCE 004476186-06 $P=164.036445$ Days $T_0=172.897624$ (BKJD)



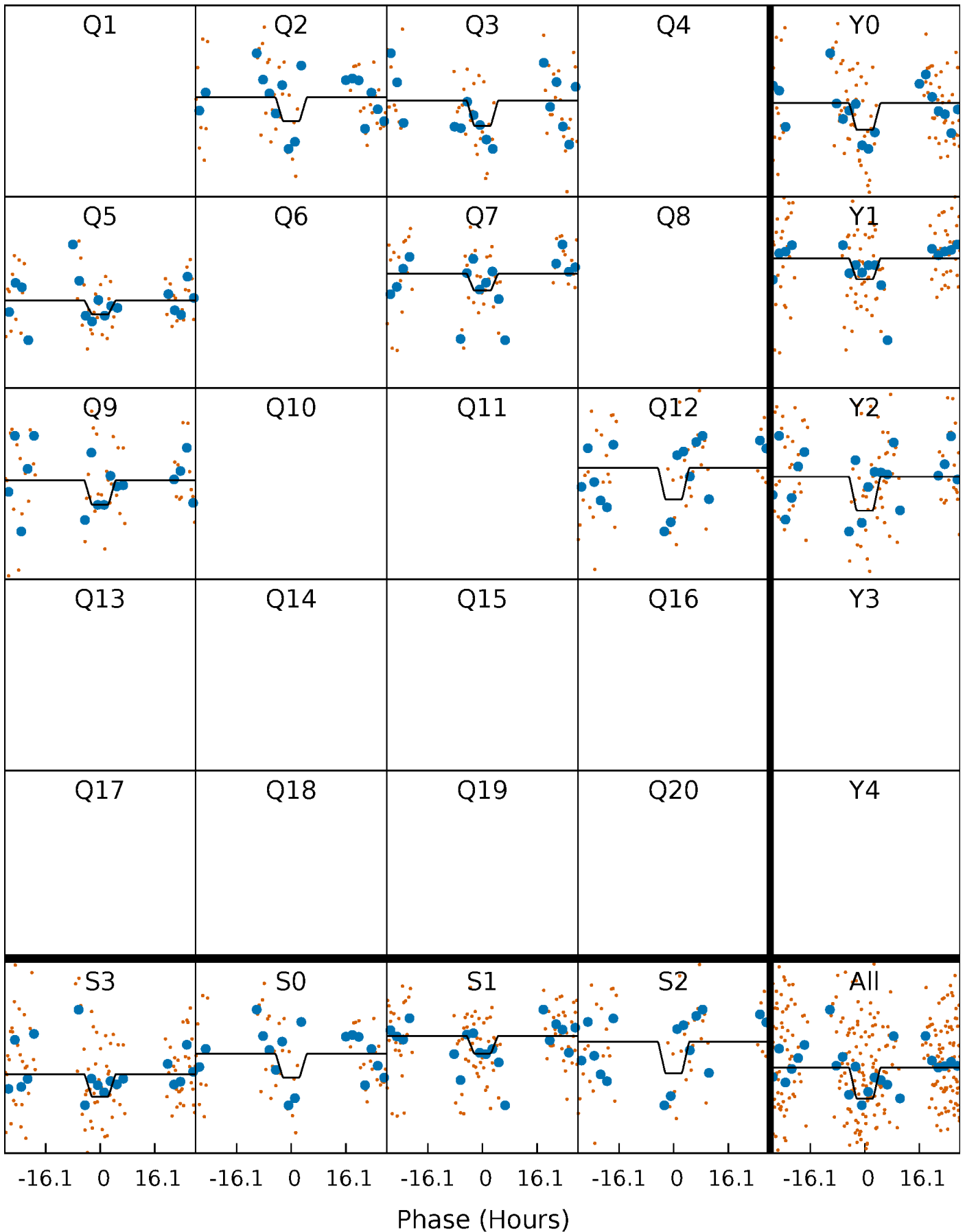
DV Quarter-Phased Transit Curves

TCE 004476186-06 P=164.036445 Days $T_0=172.897624$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

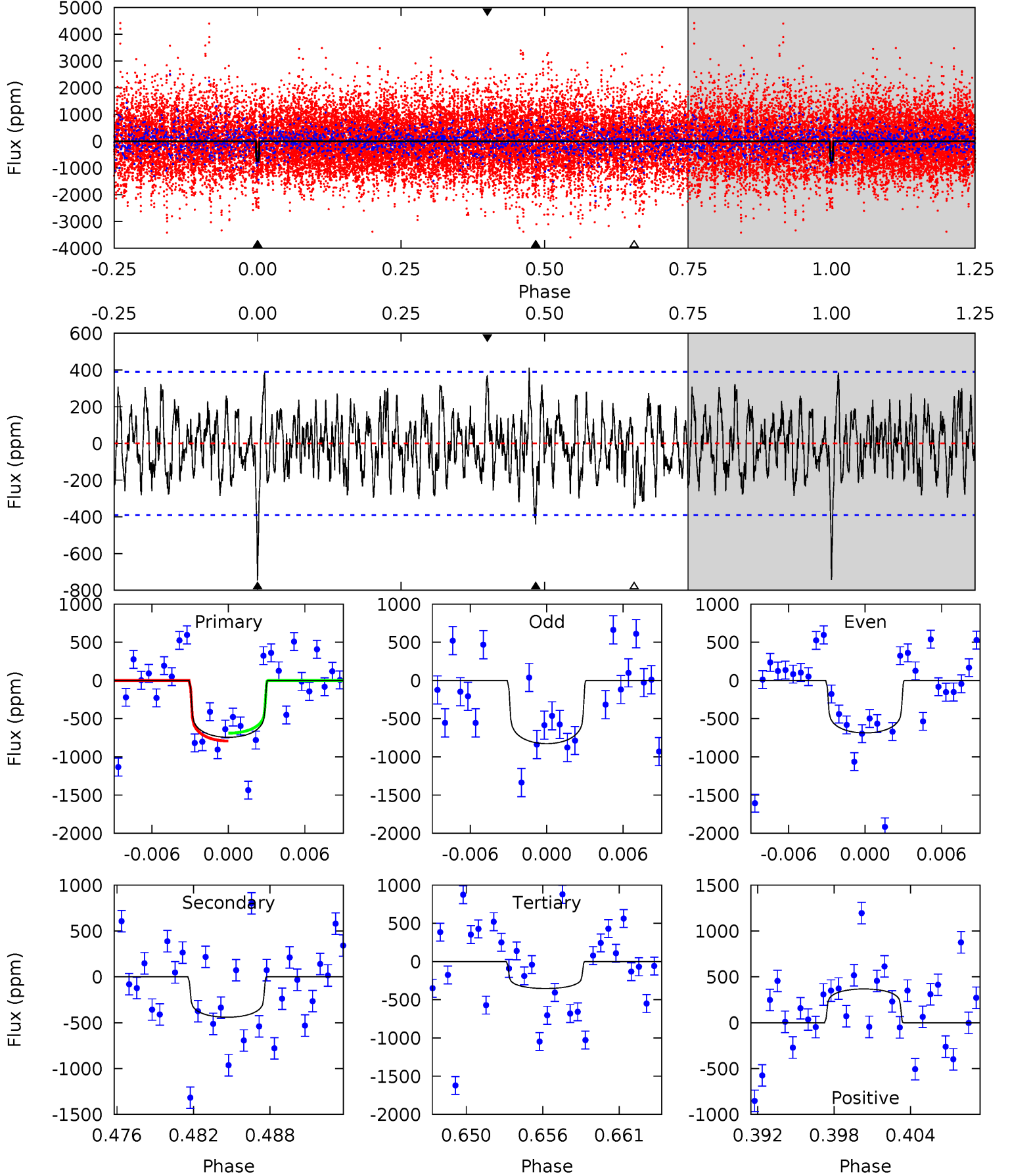
TCE 004476186-06 P=164.135976 Days $T_0=172.713421$ (BKJD)



DV Model-Shift Uniqueness Test

004476186-06, P = 164.036445 Days, E = 8.861179 Days

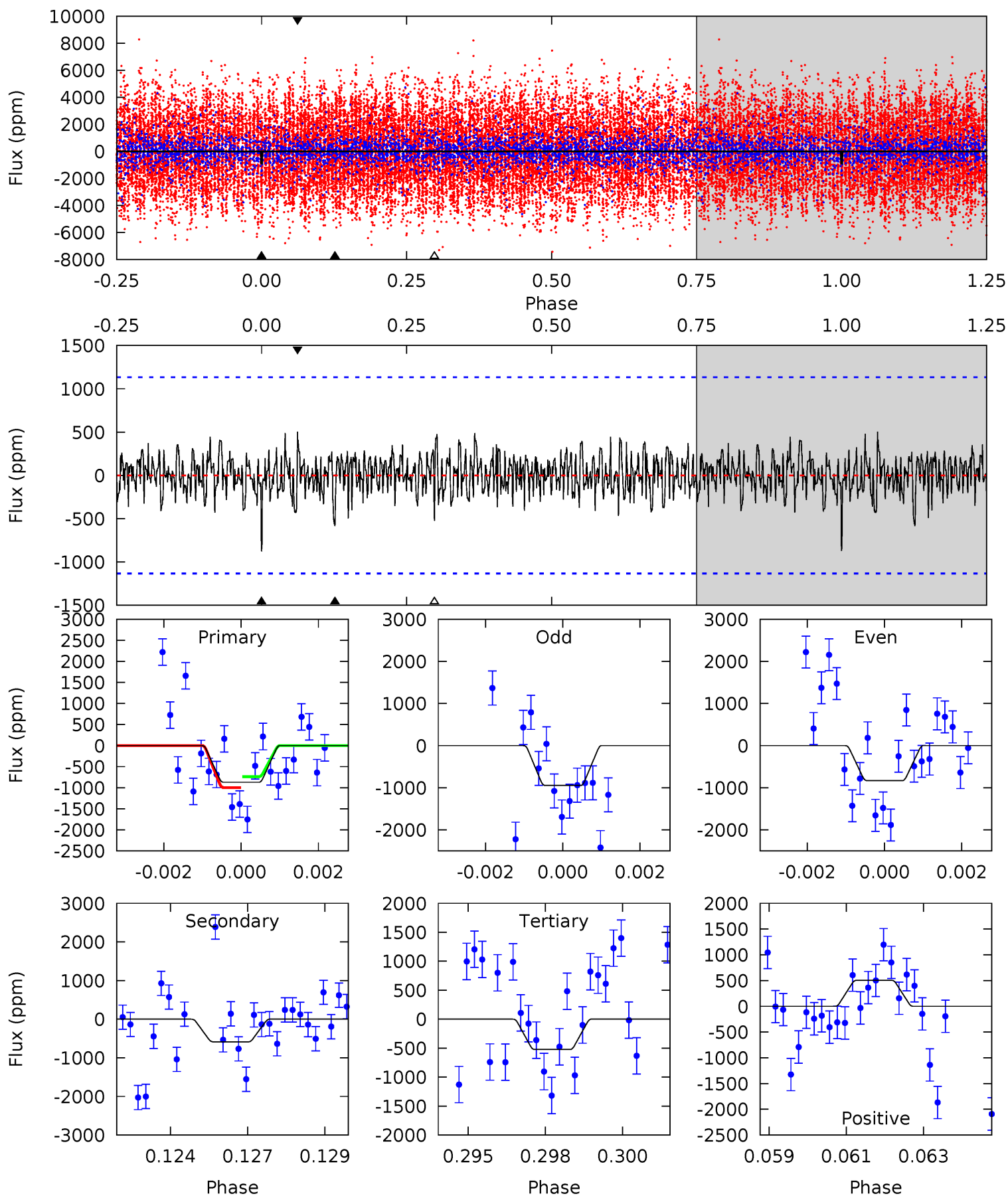
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.80	5.80	4.65	4.85	5.14	2.77	1.77	5.14	4.95	1.15	0.96	0.90	0.95	0.36	0.68



Alt Model-Shift Uniqueness Test

004476186-06, P = 164.135976 Days, E = 8.577445 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.06	2.73	2.44	2.35	5.29	3.03	0.78	1.62	1.71	0.29	0.39	0.26	1.11	0.37	0.61



Stellar Parameters For KIC 004476186

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7693^{+214}_{-322}	$3.912^{+0.253}_{-0.136}$	$0.040^{+0.200}_{-0.350}$	$2.533^{+0.460}_{-0.855}$	$1.910^{+0.103}_{-0.414}$	$0.166^{+0.284}_{-0.057}$
	+3%/-4%	+6%/-3%	+500%/-875%	+18%/-34%	+5%/-22%	+171%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004476186-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-440 ± 76	$7.11^{+2.08}_{-1.97}$	873^{+67}_{-75}	6627^{+1179}_{-751}	2454^{+2284}_{-1042}
Alt.	-585 ± 214	$9.28^{+2.22}_{-2.31}$	878^{+54}_{-73}	6255^{+948}_{-888}	1871^{+1656}_{-905}

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 $A_{obs} \gg 1.0$

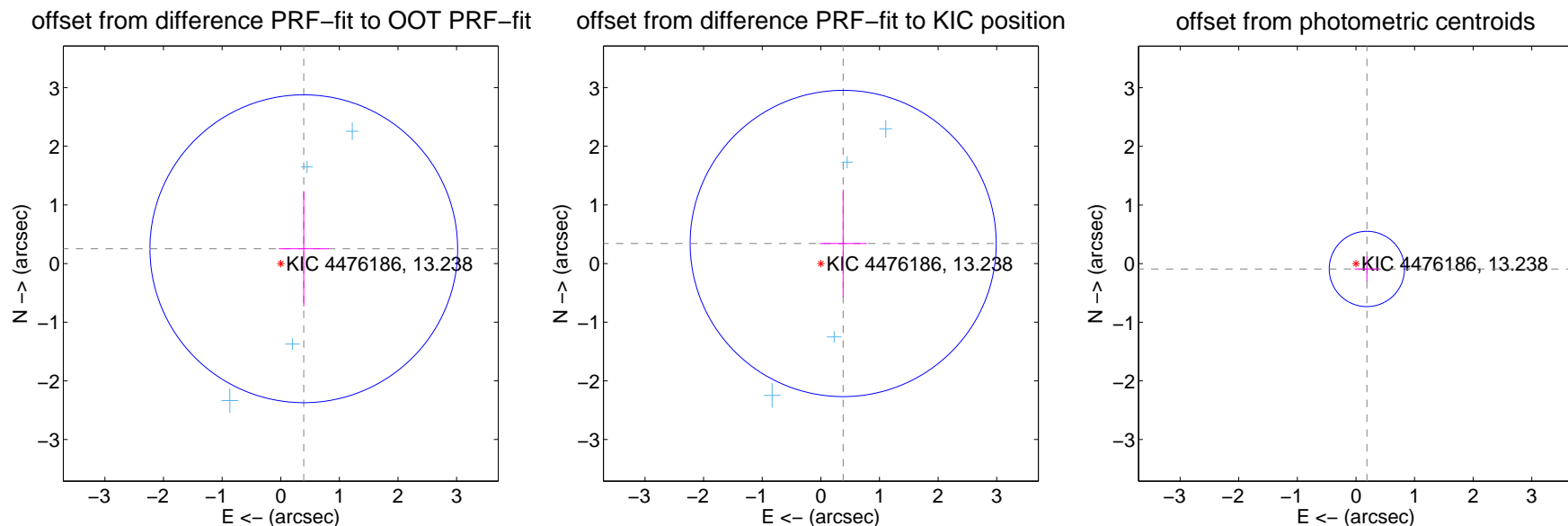
DV Centroid Data

Supplemental centroid analysis for 004476186-06. Kepler magnitude: 13.24. Transit SNR 8.90

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.467 ± 0.875	0.53	-0.393 ± 0.425	0.252 ± 0.983
PRF-fit source offset from KIC position	0.512 ± 0.870	0.59	-0.381 ± 0.400	0.342 ± 0.916
photometric centroid source offset	0.21 ± 0.21	0.97	-0.19 ± 0.21	-0.09 ± 0.21



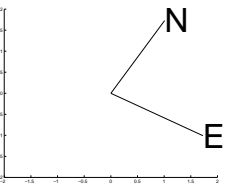
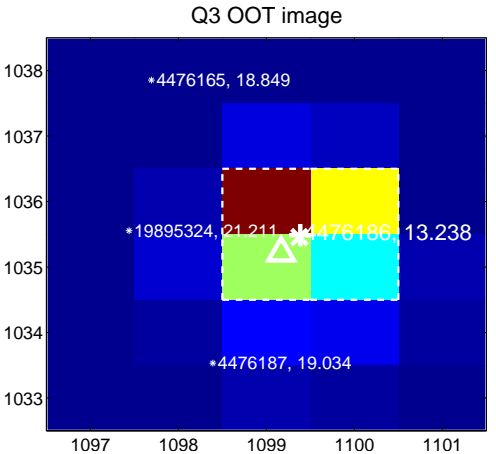
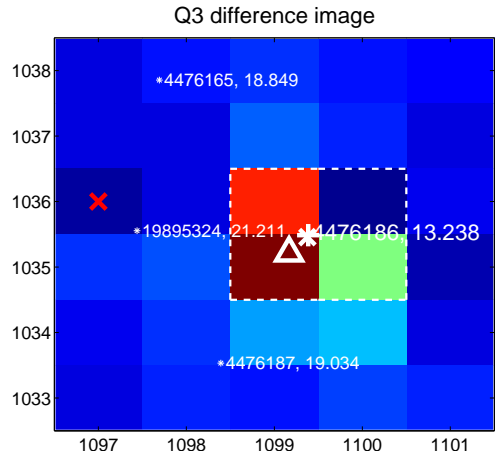
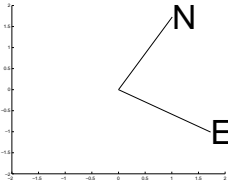
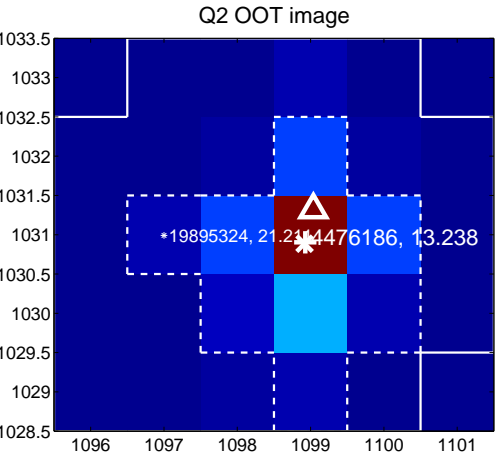
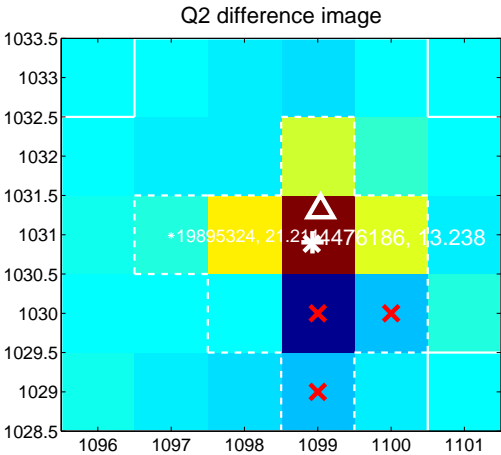
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

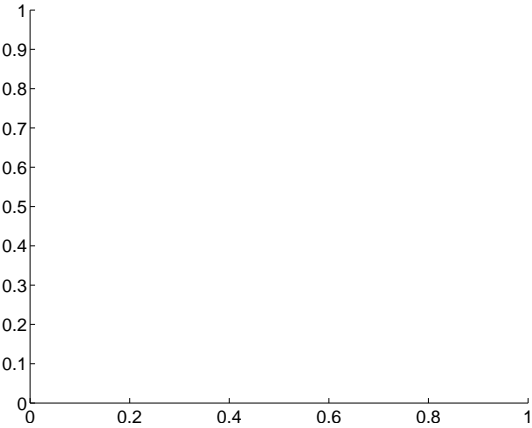
Q1 no difference image



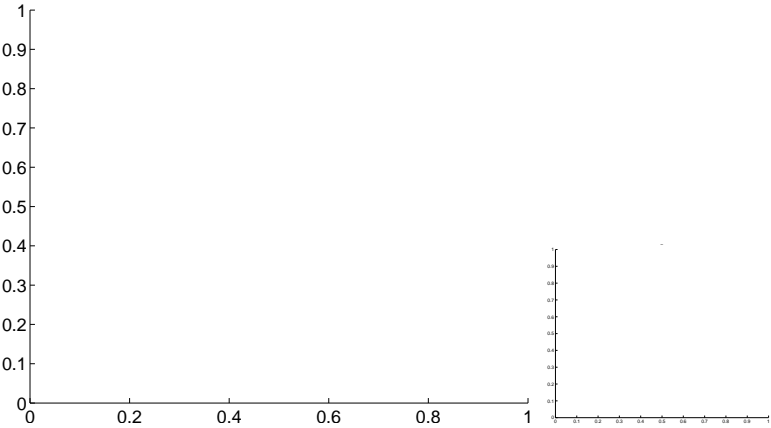
Q1 no OOT image



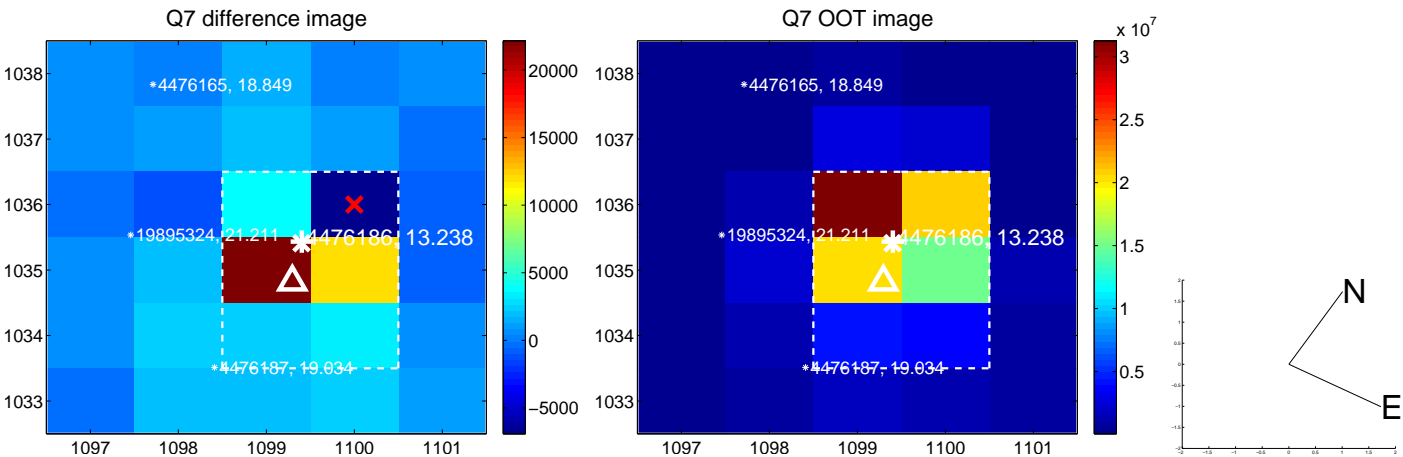
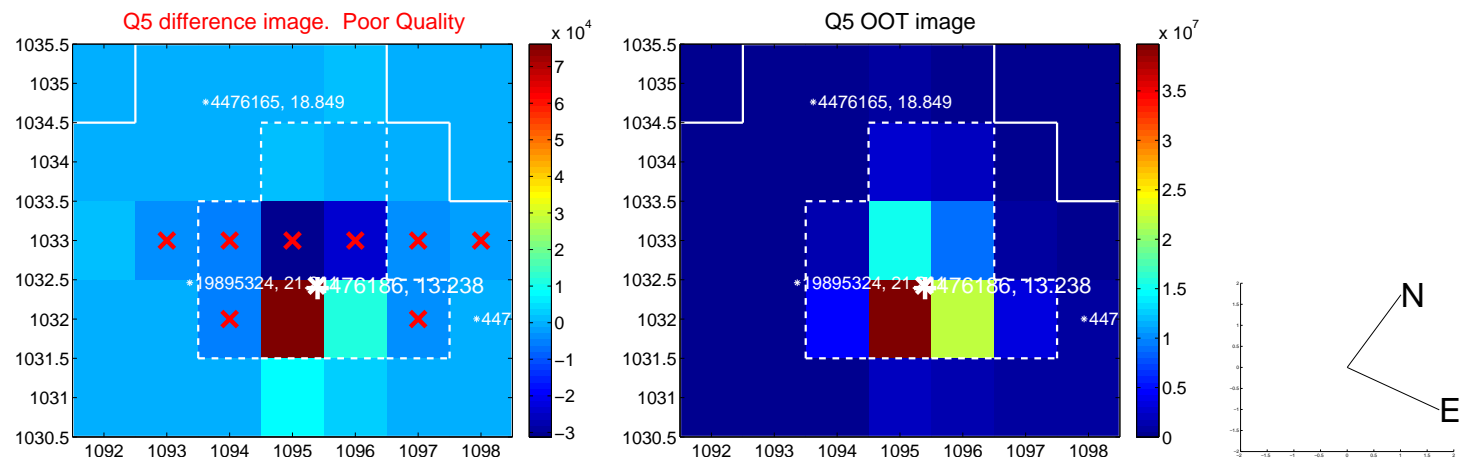
Q4 no difference image



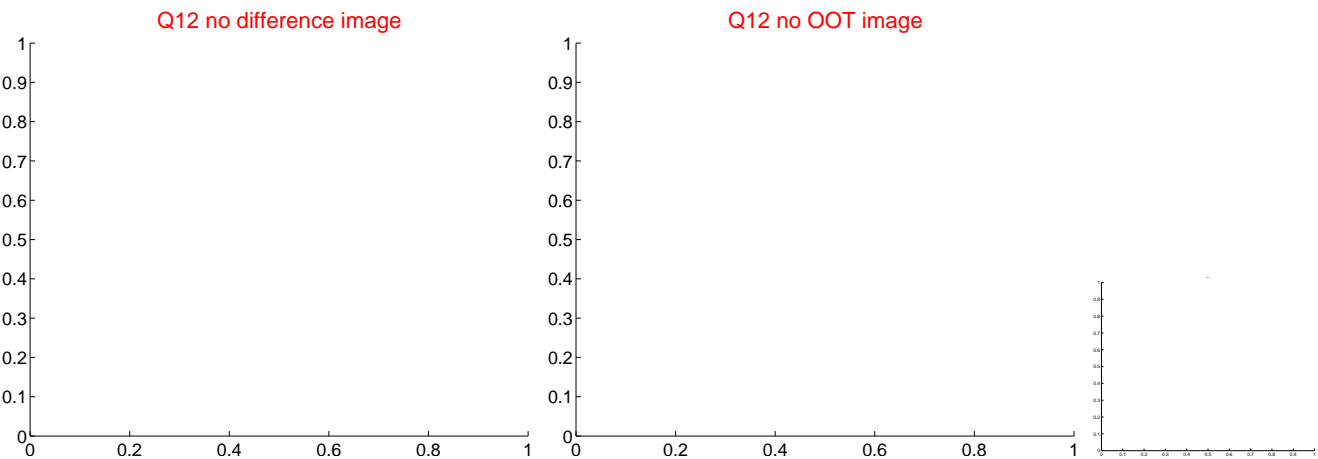
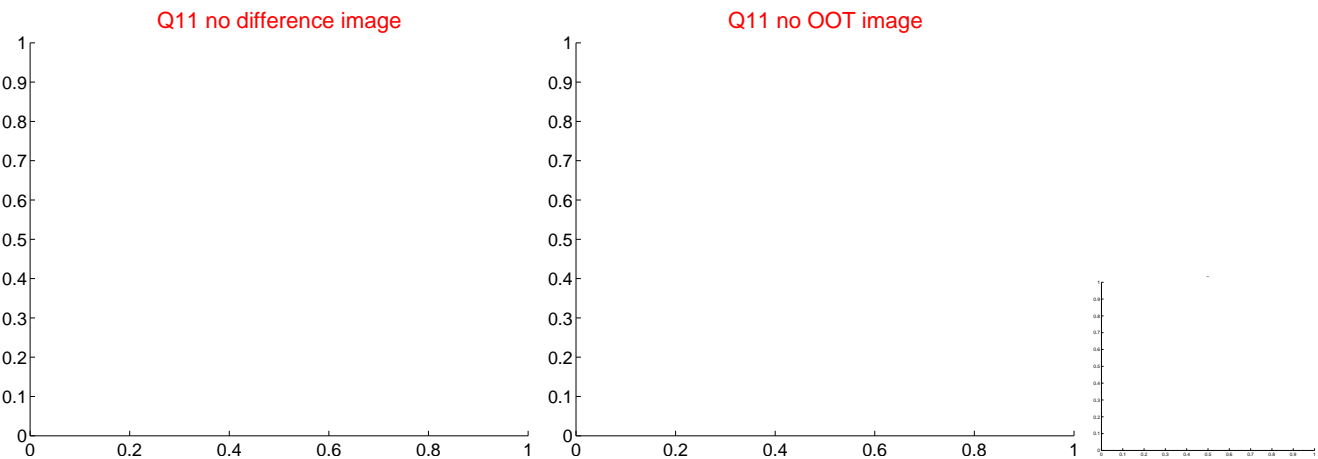
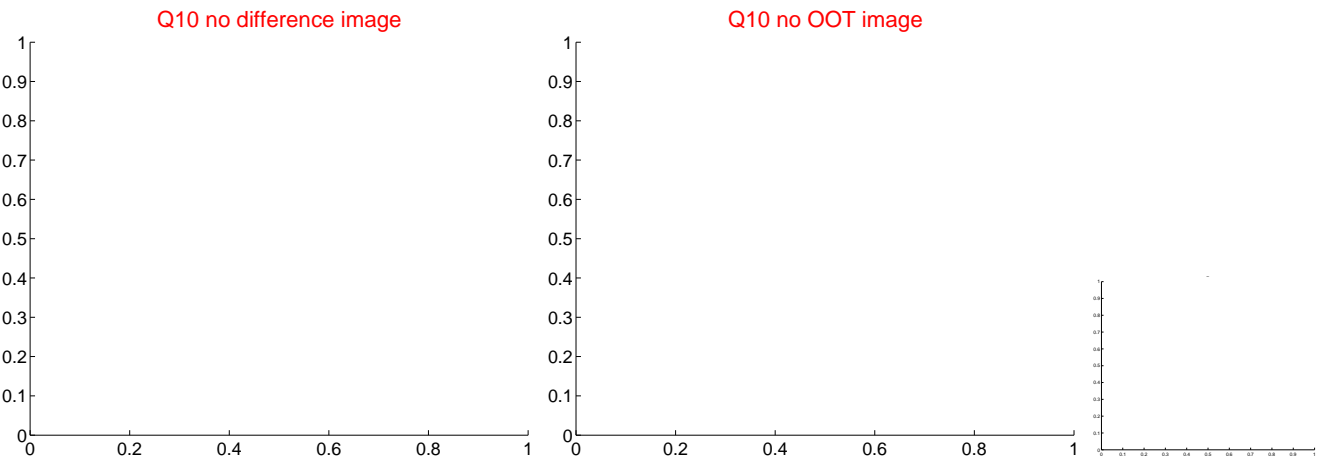
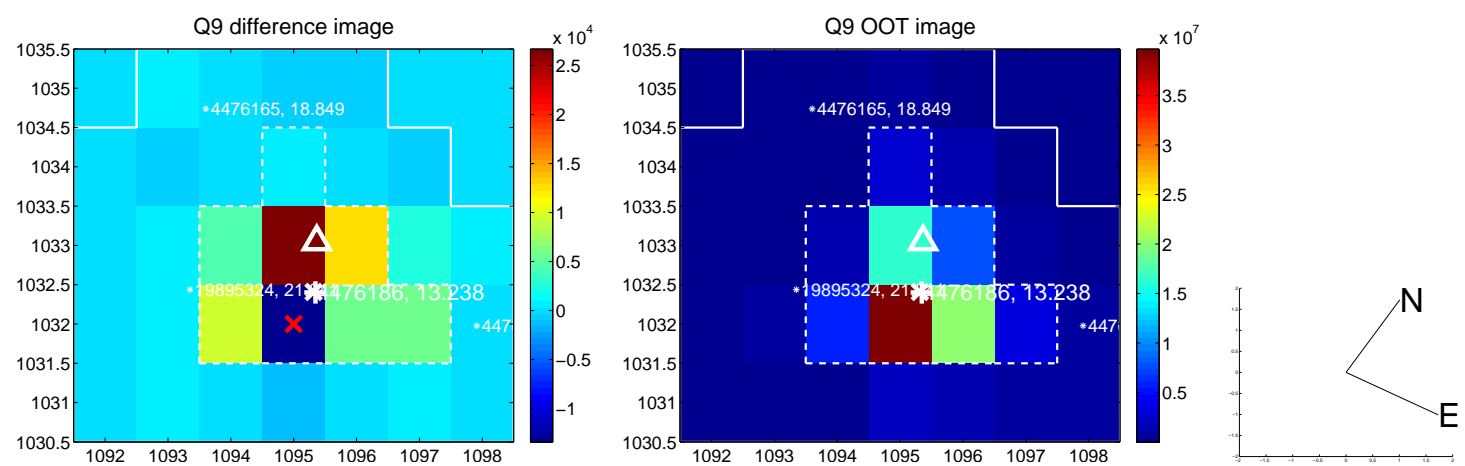
Q4 no OOT image



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



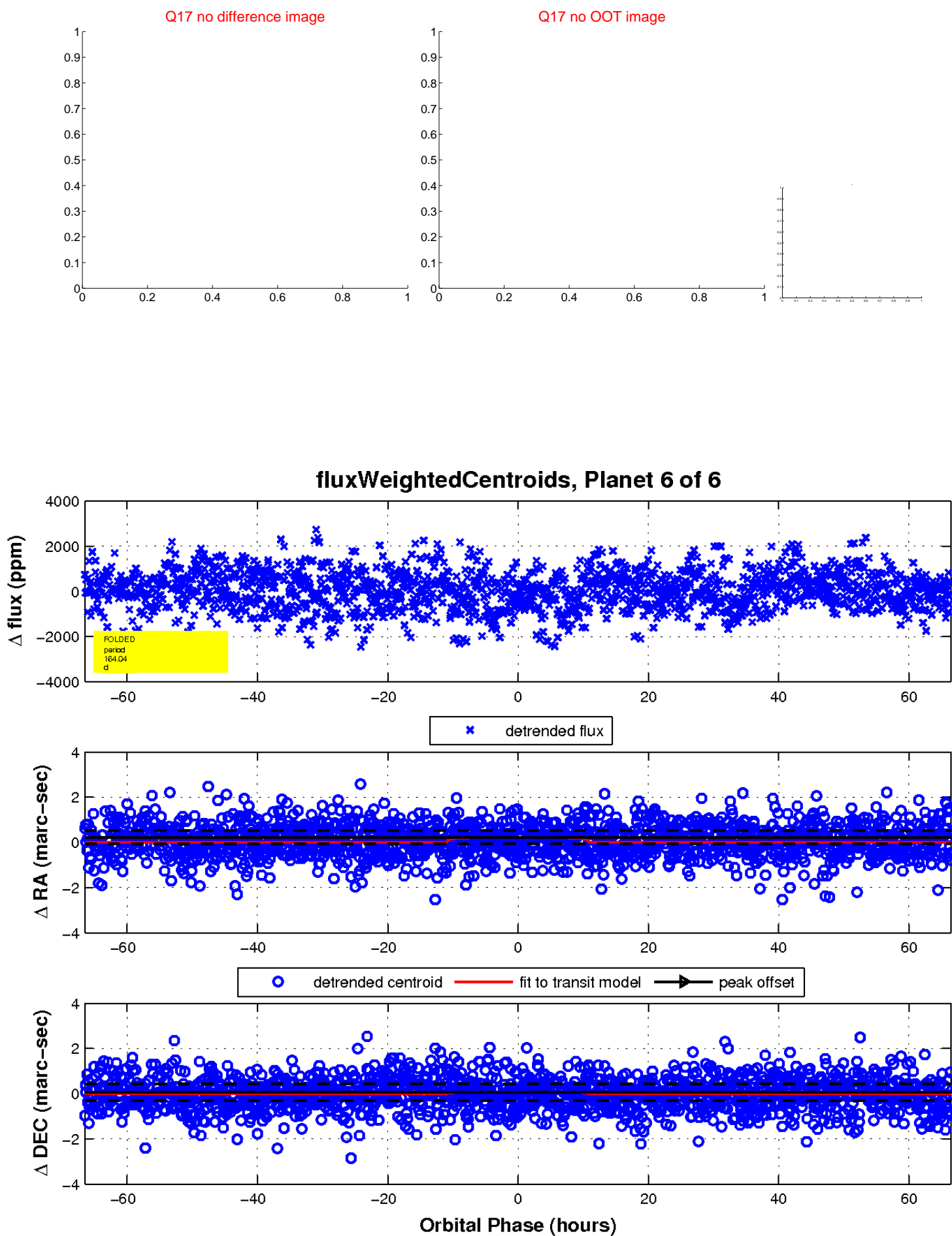
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

