

KIC 002142183

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})
002142183-01	OBS	No	684.034322	185.891869	960.5	3.179	16.1	5.7	4.62	4860	14.21	5.05
002142183-02	OBS	No	380.807137	457.998847	535.1	8.757	17.1	2.5	4.62	4860	11.63	11.03
002142183-03	OBS	No	478.498297	218.531928	1040.9	5.184	17.6	4.9	4.62	4860	15.11	8.13
002142183-04	OBS	No	431.385380	515.038978	1275.7	6.524	15.6	6.1	4.62	4860	16.47	9.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002142183-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
002142183-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002142183-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002142183-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

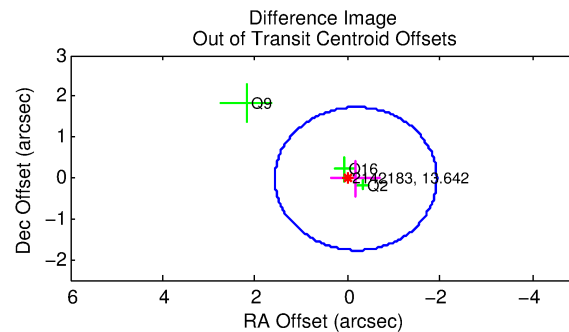
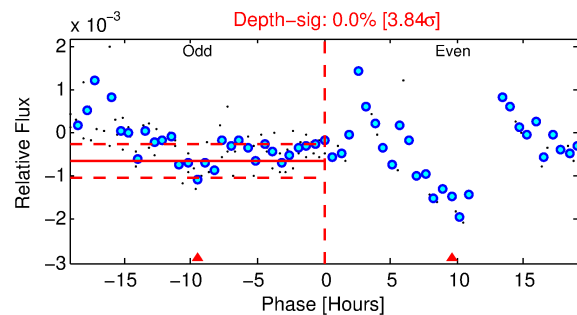
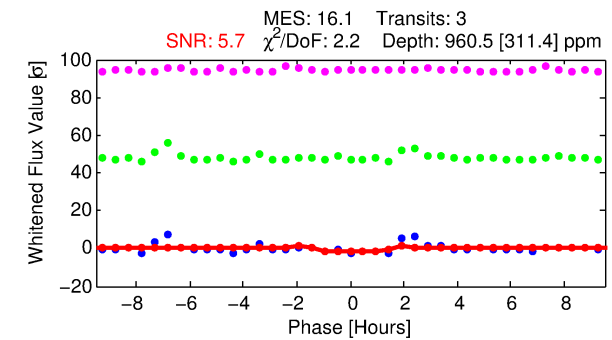
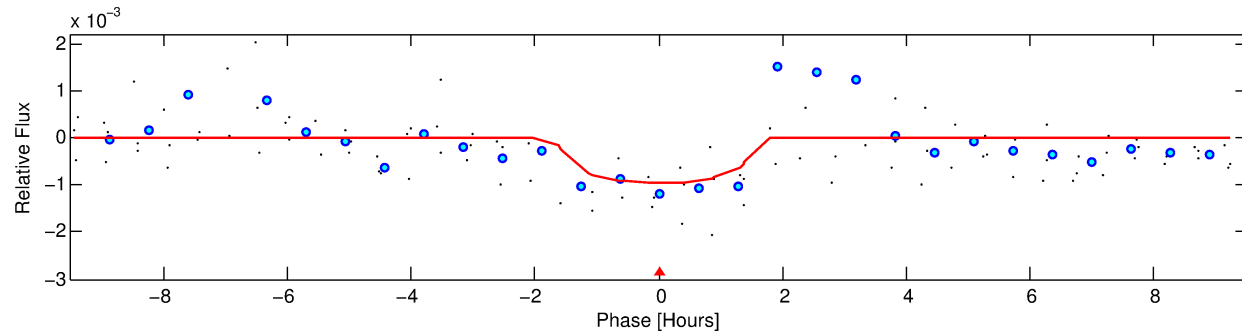
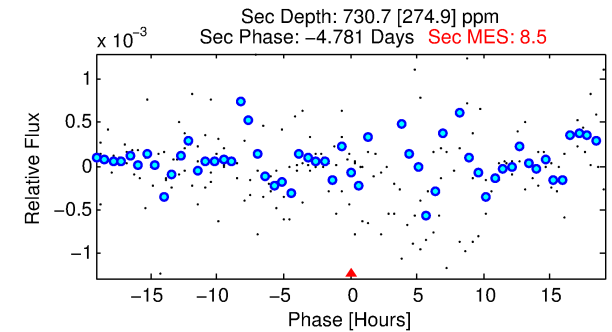
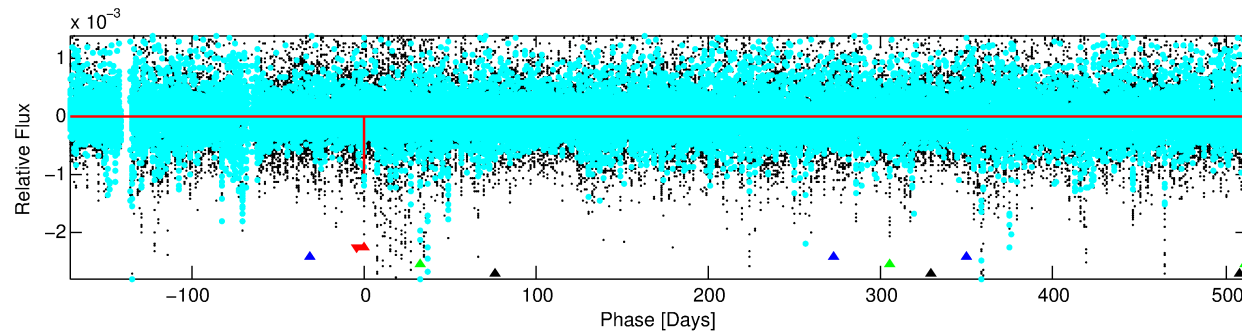
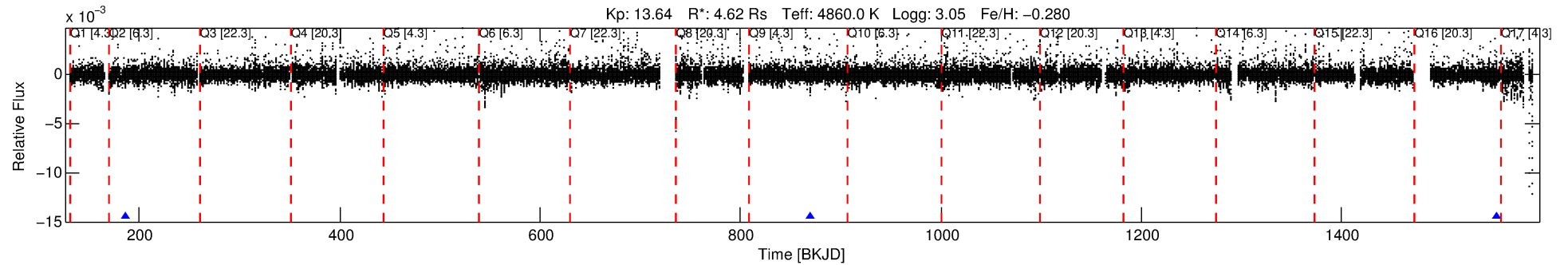
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002142183-01

No Significant Match Found

DV One-Page Summary

KIC: 2142183 Candidate: 1 of 4 Period: 684.034 d



DV Fit Results:

Period = 684.03432 [0.00792] d
Epoch = 185.8919 [0.0126] BKJD
Rp/R* = 0.0282 [0.1371]
a/R* = 1564.58 [25724.06]
b = 0.39 [36.54]
Seff = 5.05 [4.38]
Teq = 382 [83] K
Rp = 14.21 [69.72] Re
a = 1.4547 [0.8137] AU
Ag = 4213.09 [41204.45] [0.10 σ]
Teffp = 4762 [11598] K [0.38 σ]

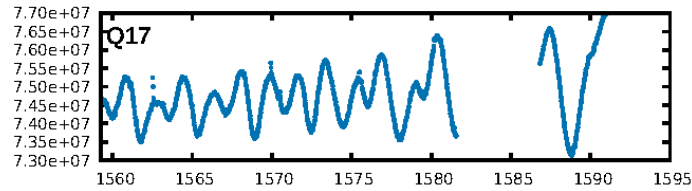
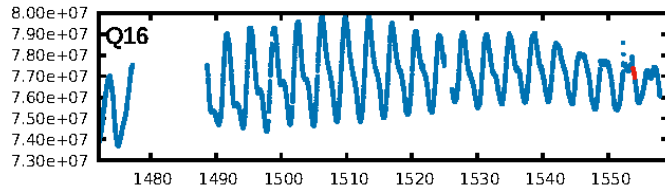
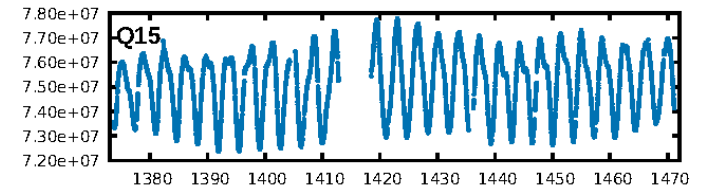
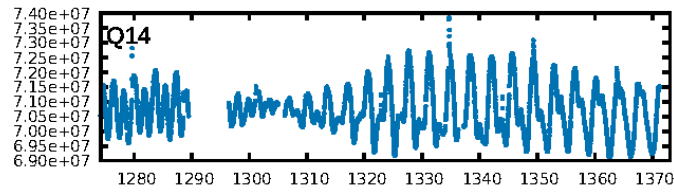
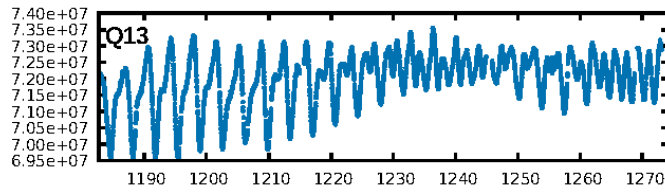
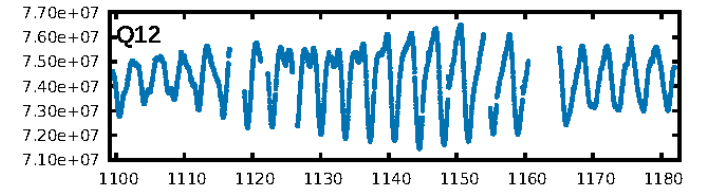
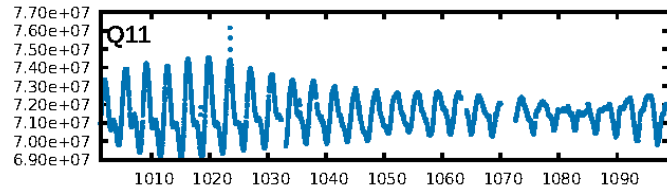
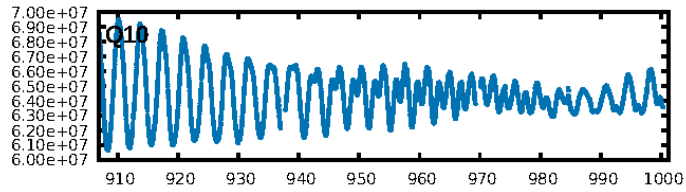
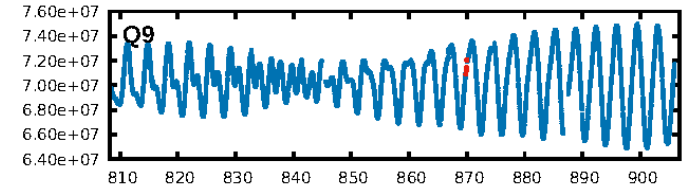
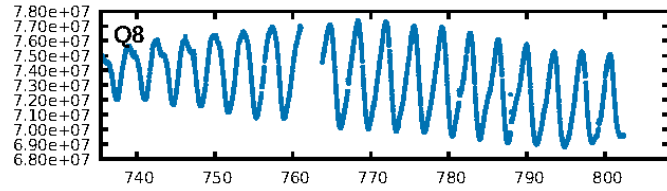
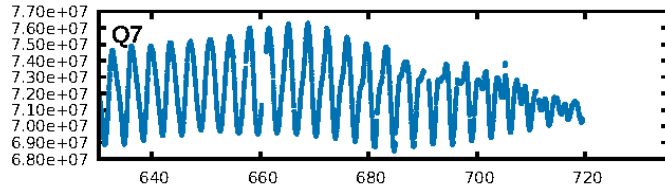
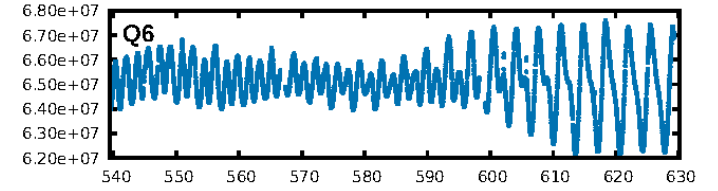
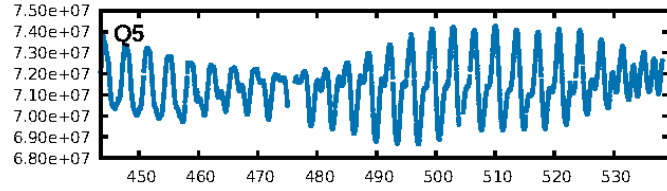
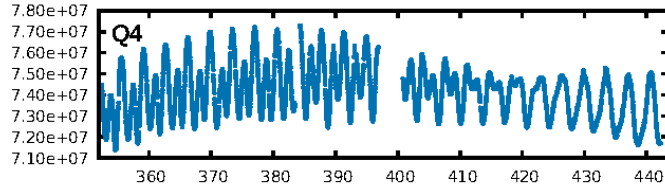
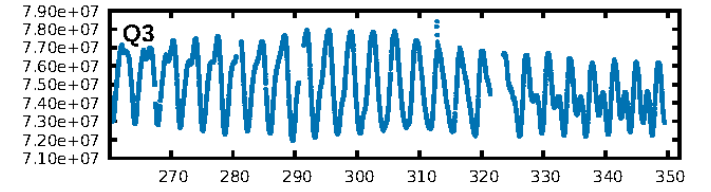
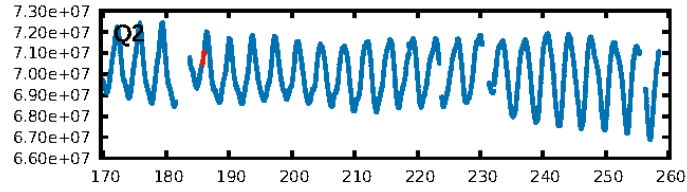
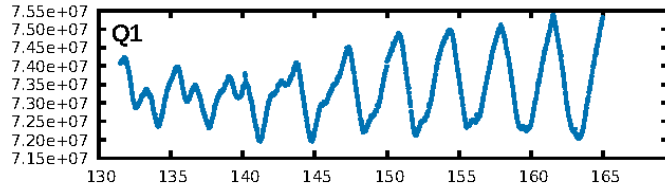
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [811.21 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 9.4%
Bootstrap-pfa: 2.70e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.01121
Centroid-sig: 95.1%
Centroid-so: 0.637 arcsec [0.67 σ]
OotOffset-rm: 0.179 arcsec [0.31 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-rm: 0.177 arcsec [0.40 σ]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

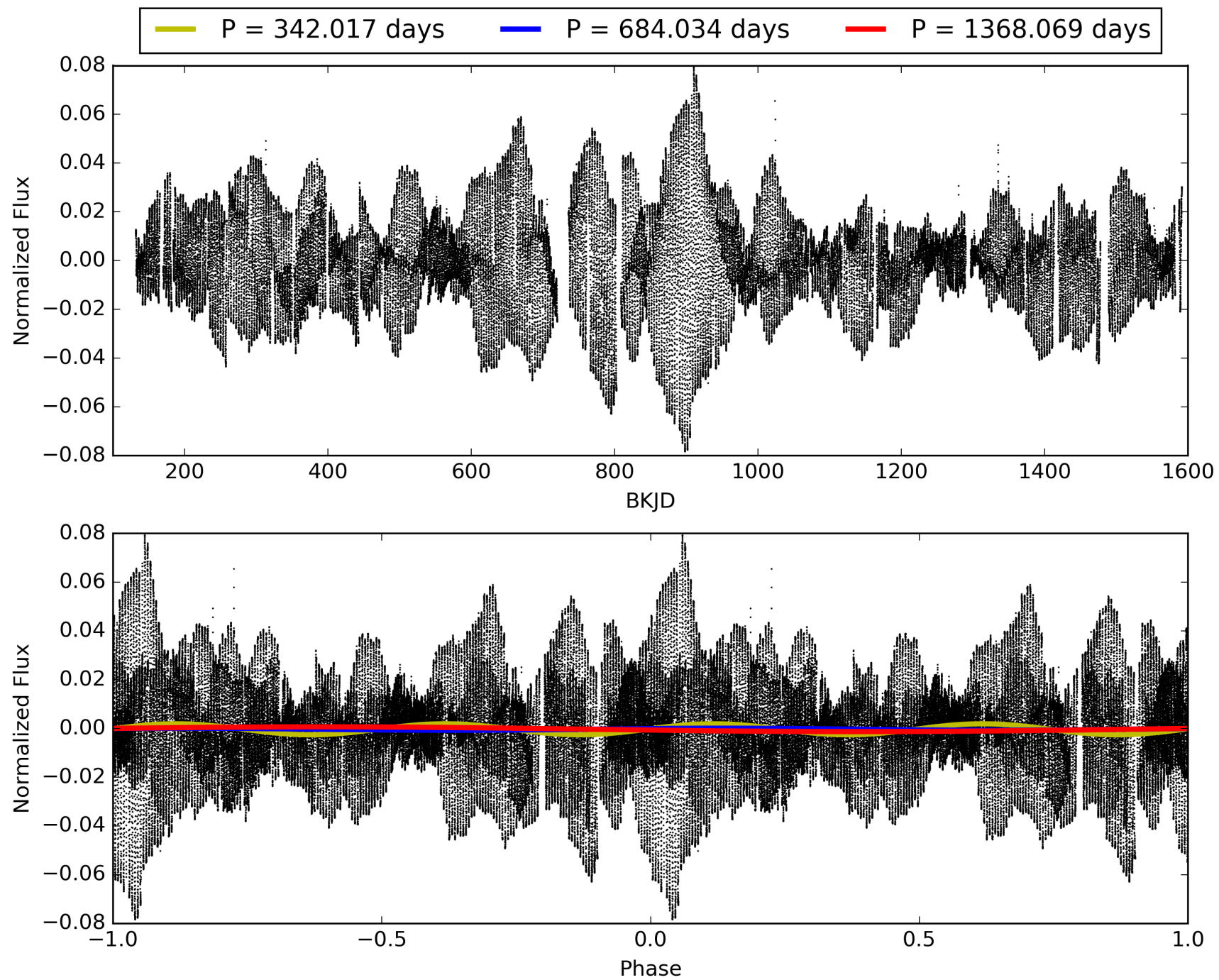
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 21:19:29 Z

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

TCE 002142183-01, PDC Light Curves

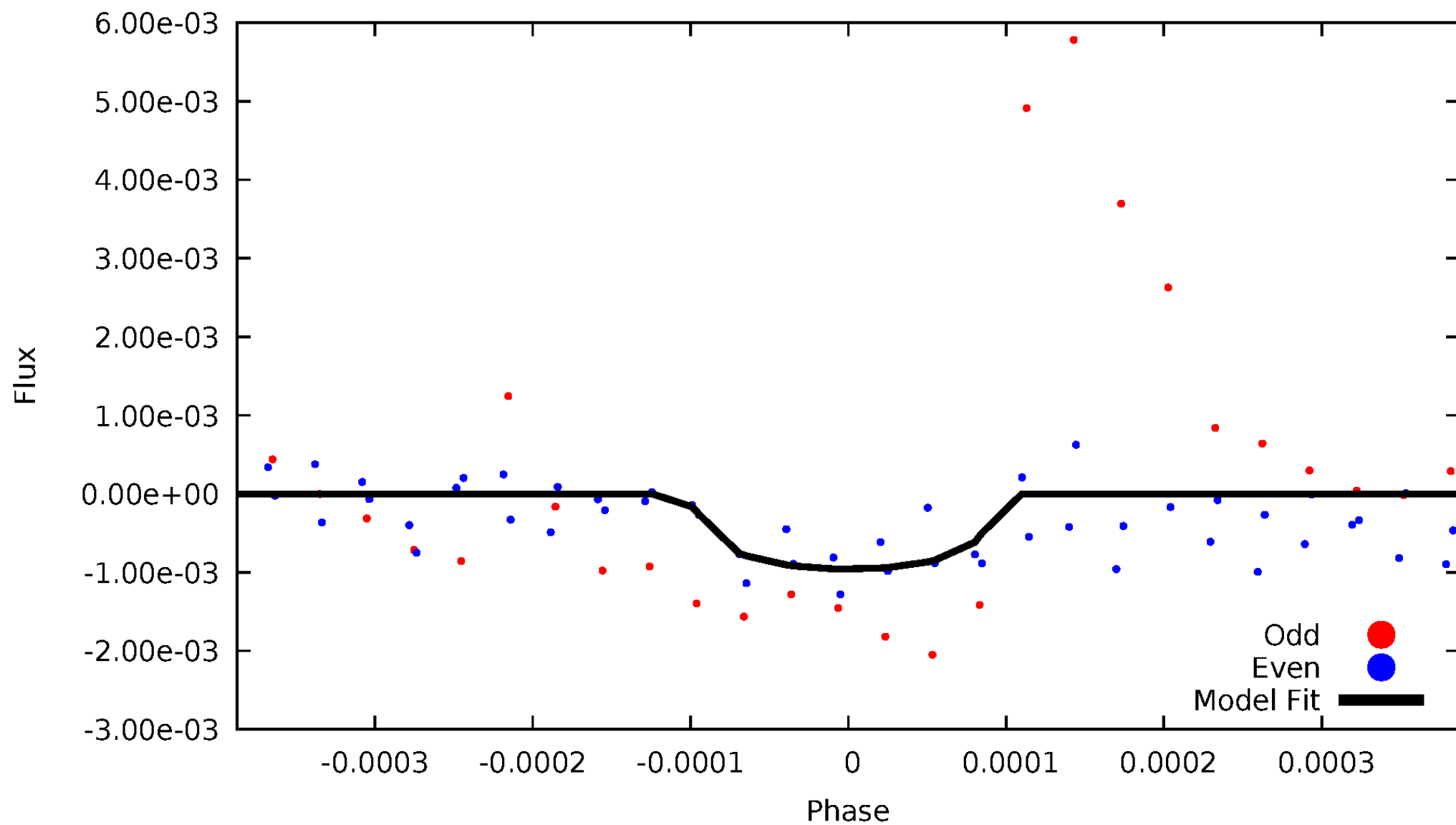


TCE 002142183-01



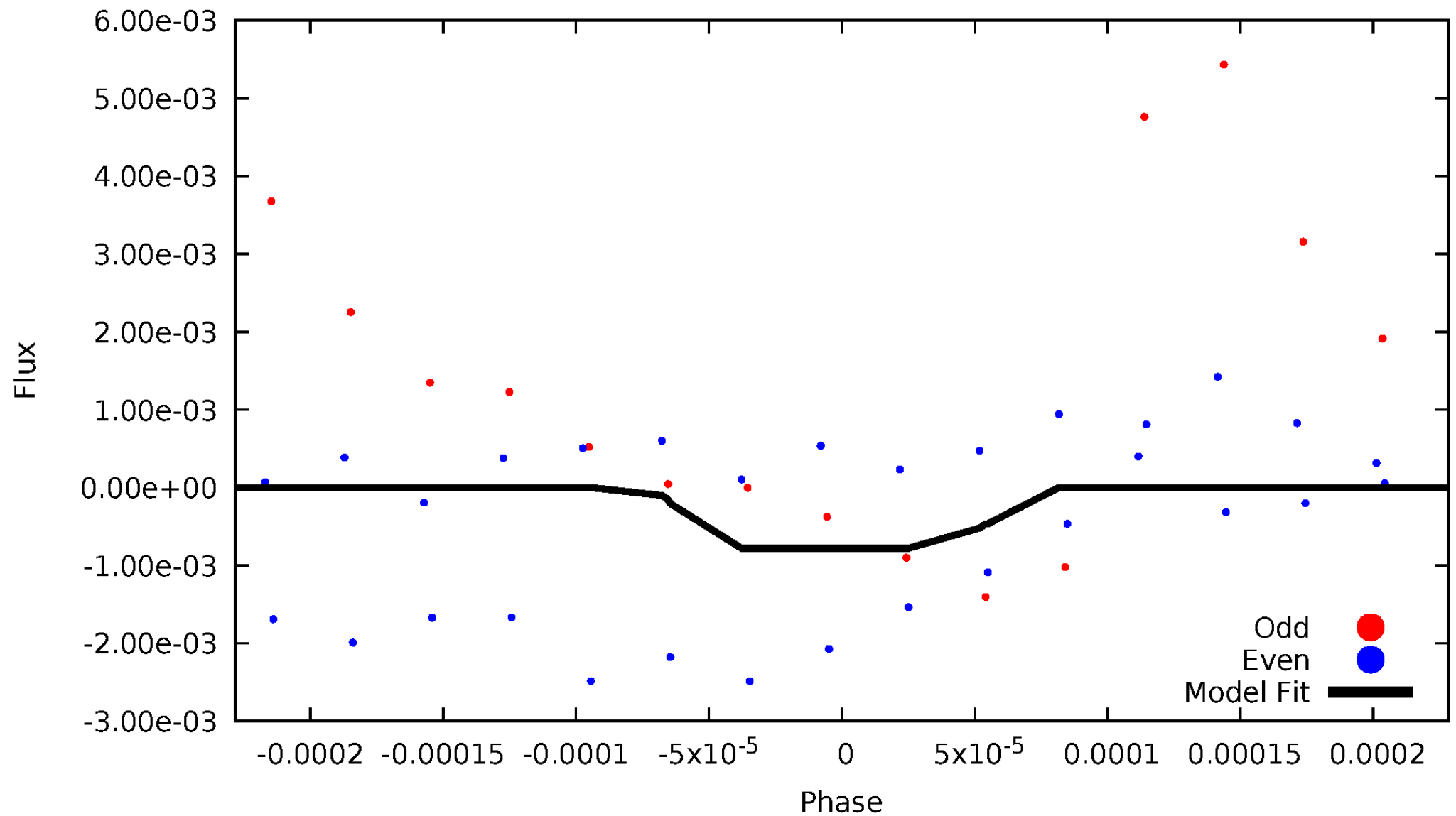
DV Odd/Even

TCE 002142183-01



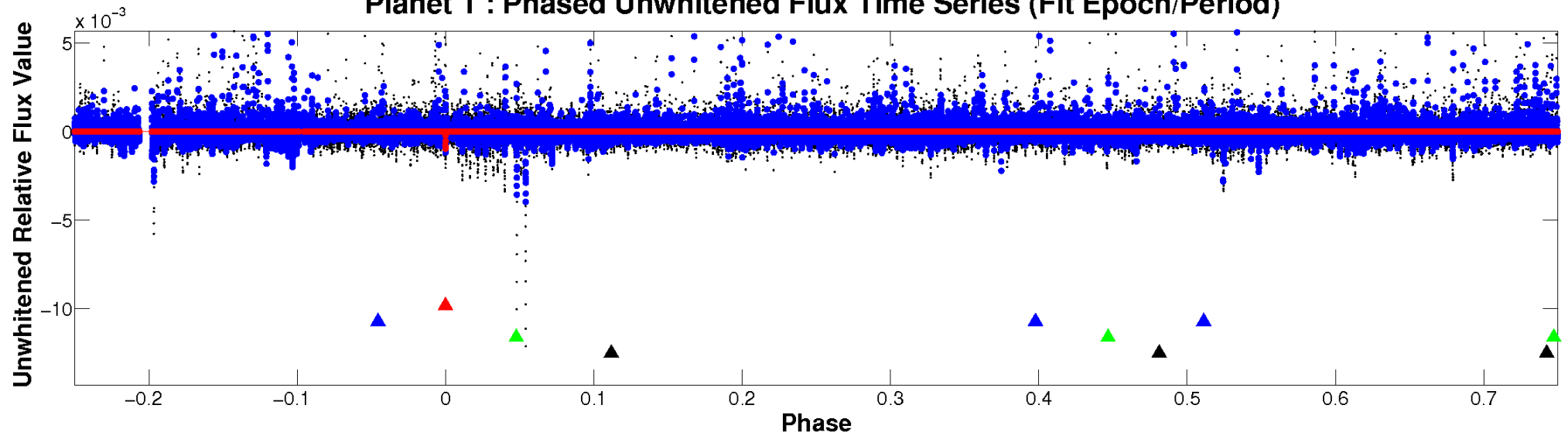
ALT Odd/Even

TCE 002142183-01

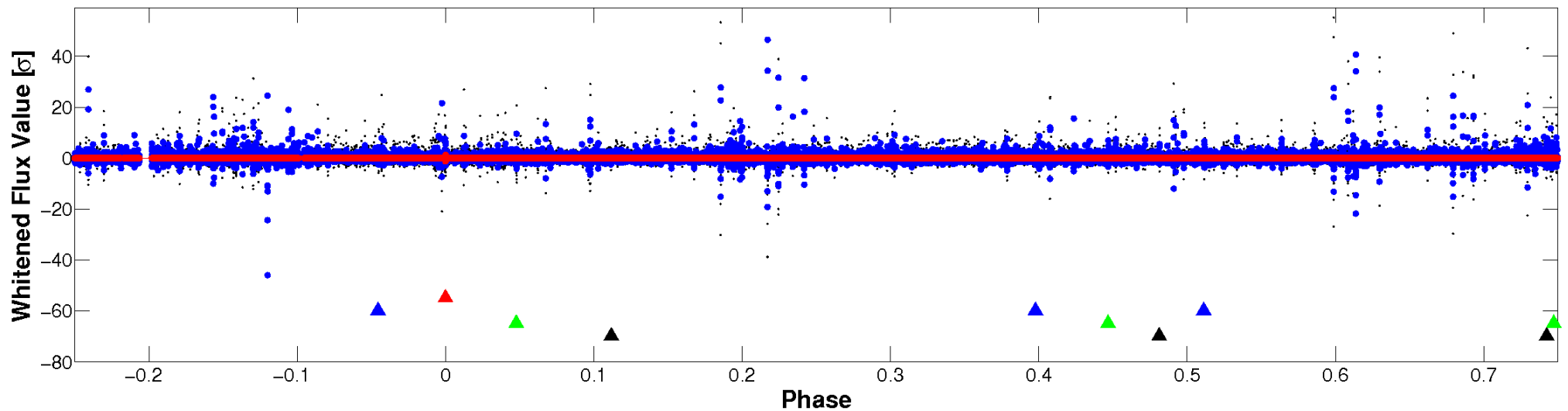


Non-Whitened Vs. Whitened Light Curve

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

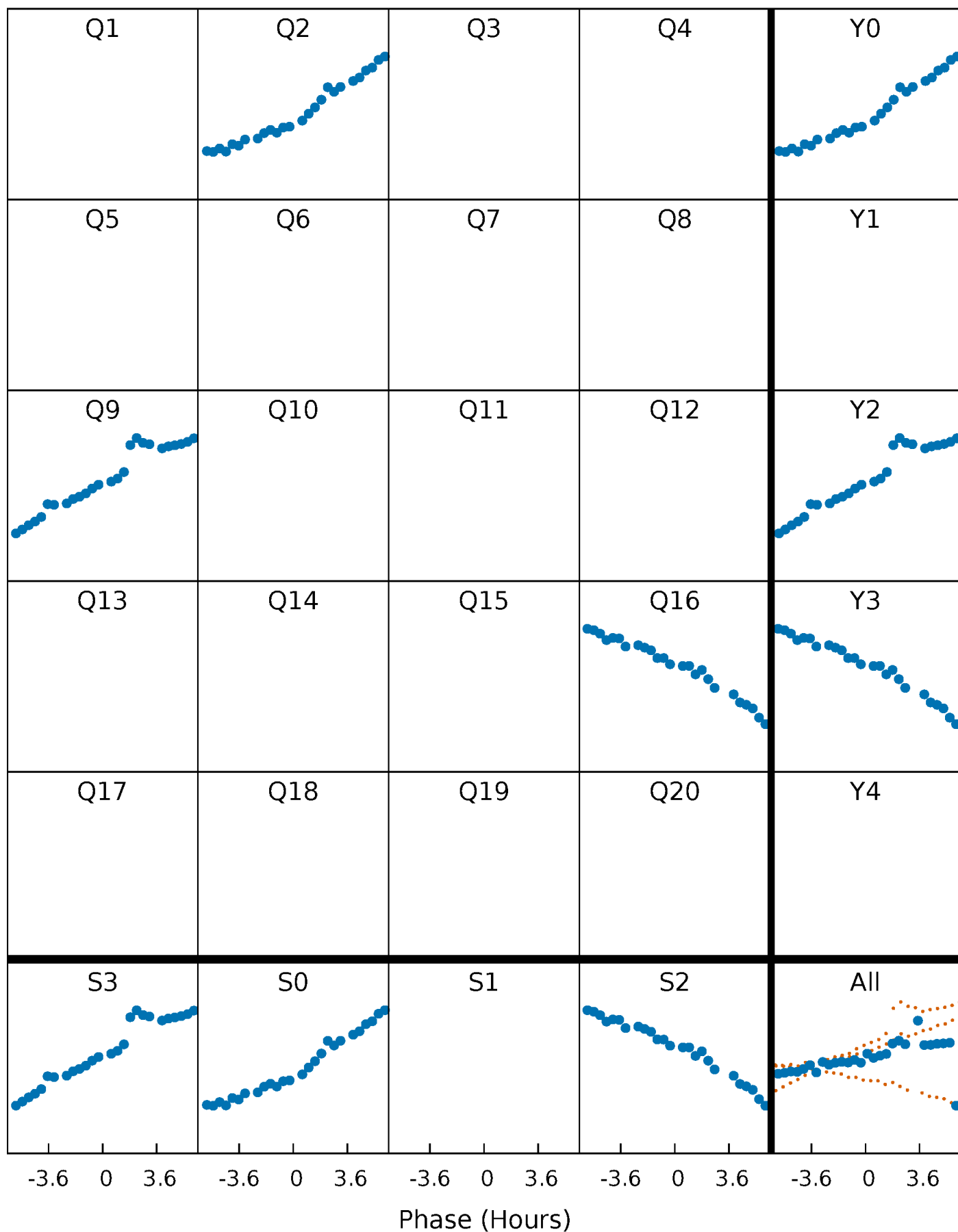


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



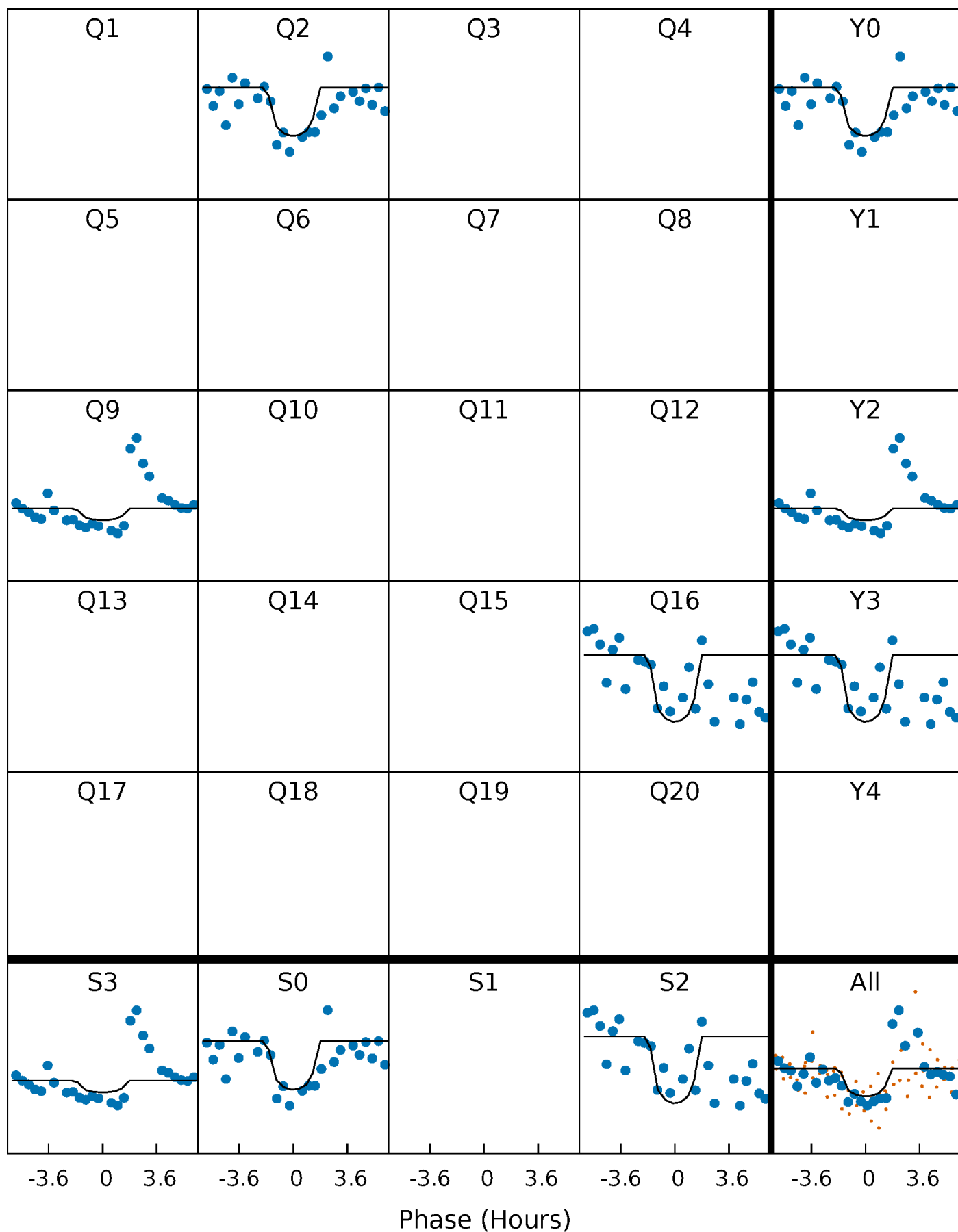
PDC Quarter-Phased Transit Curves

TCE 002142183-01 P=684.034322 Days $T_0=185.891869$ (BKJD)



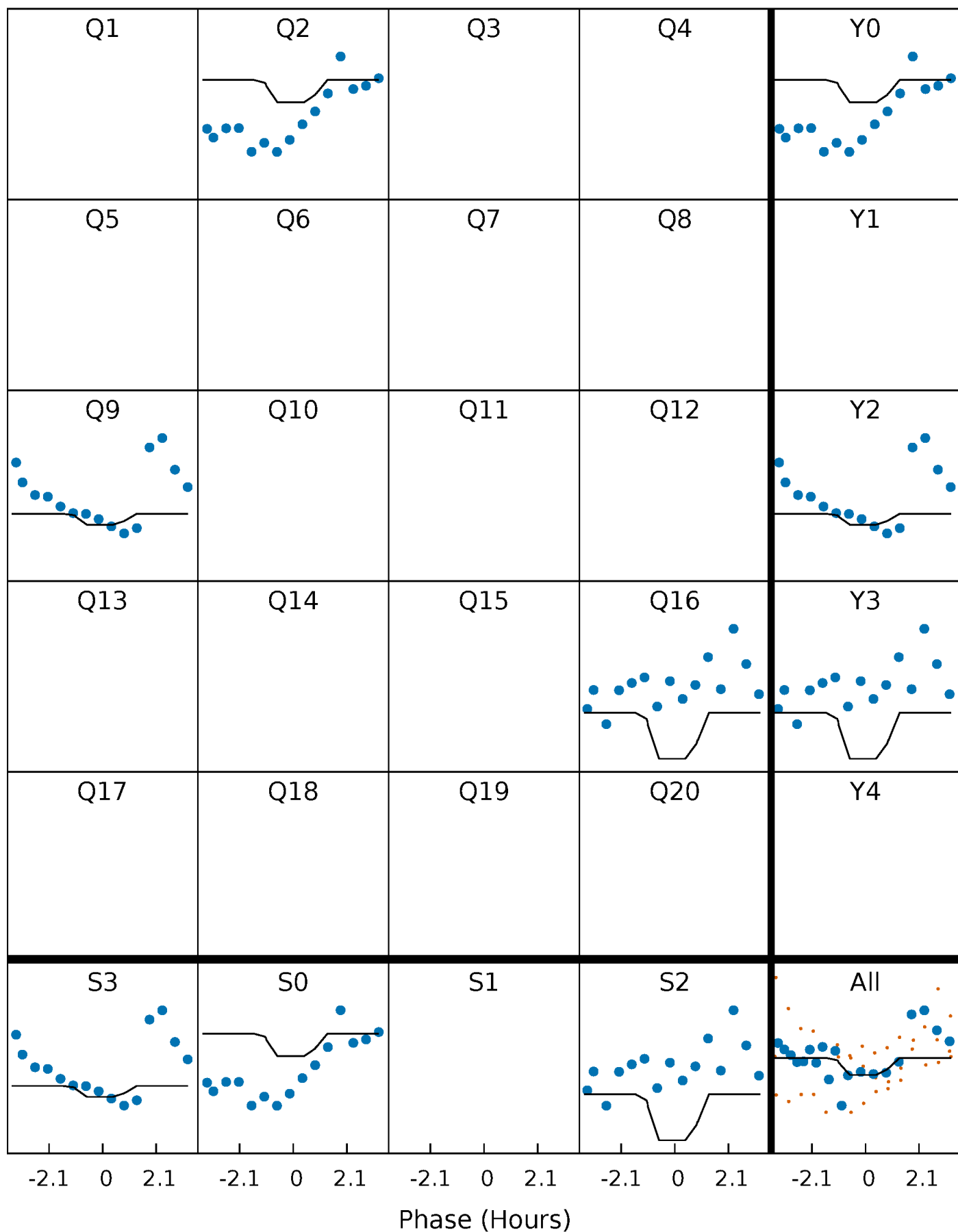
DV Quarter-Phased Transit Curves

TCE 002142183-01 P=684.034322 Days $T_0=185.891869$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

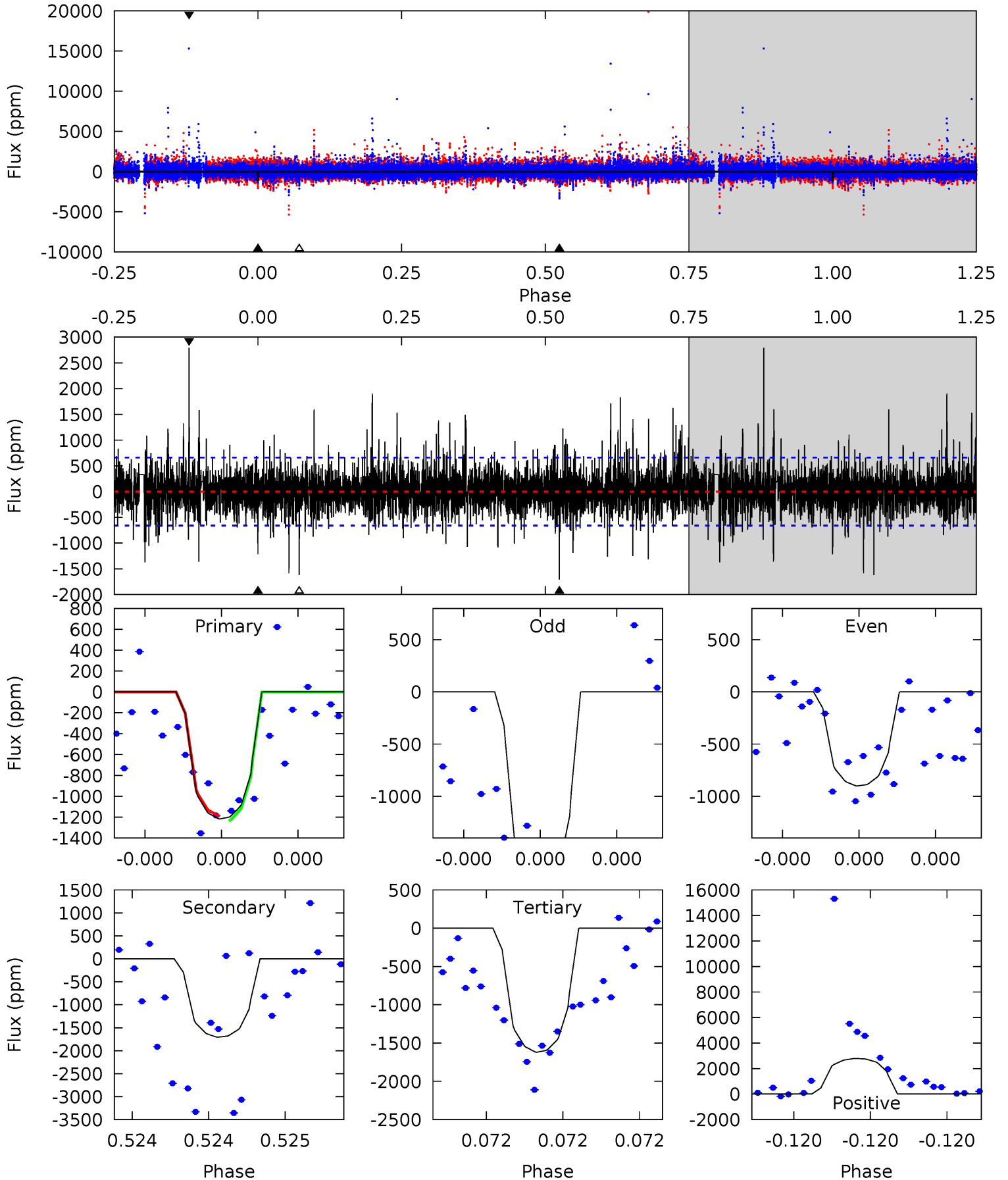
TCE 002142183-01 P=684.013421 Days $T_0=185.912168$ (BKJD)



DV Model-Shift Uniqueness Test

002142183-01, P = 684.034322 Days, E = 185.891869 Days

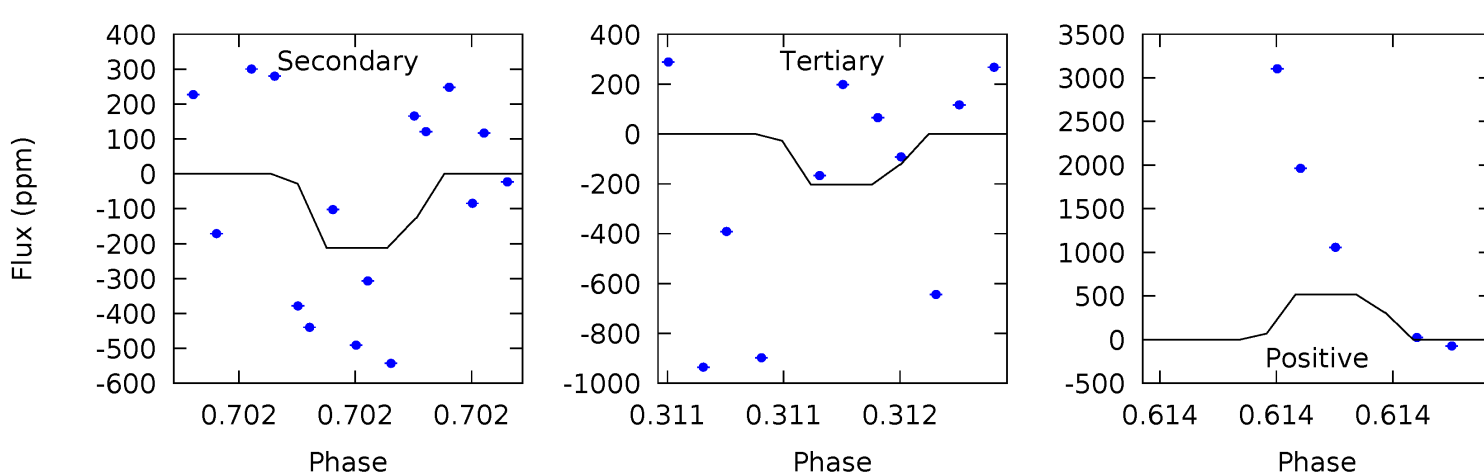
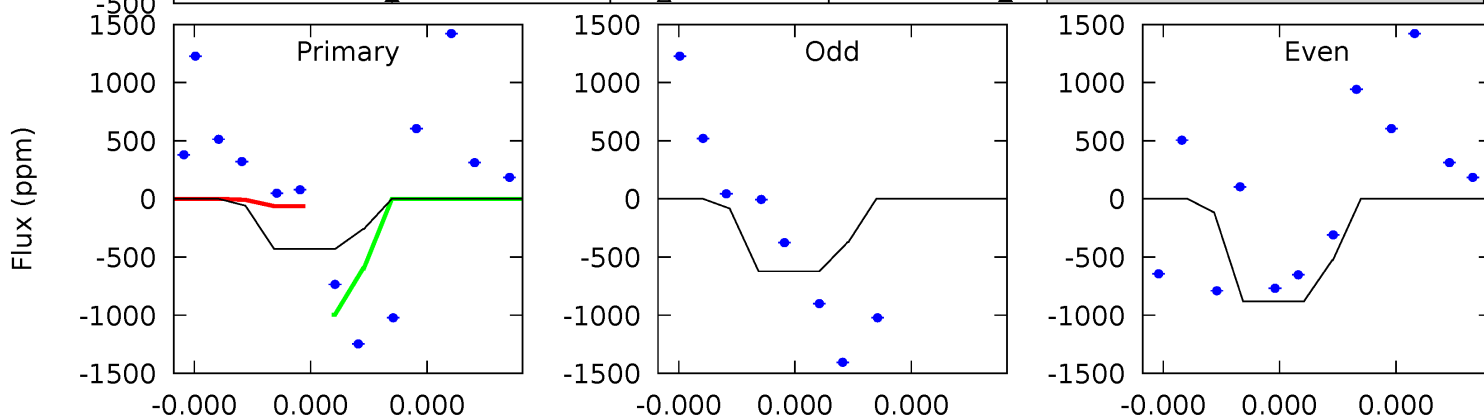
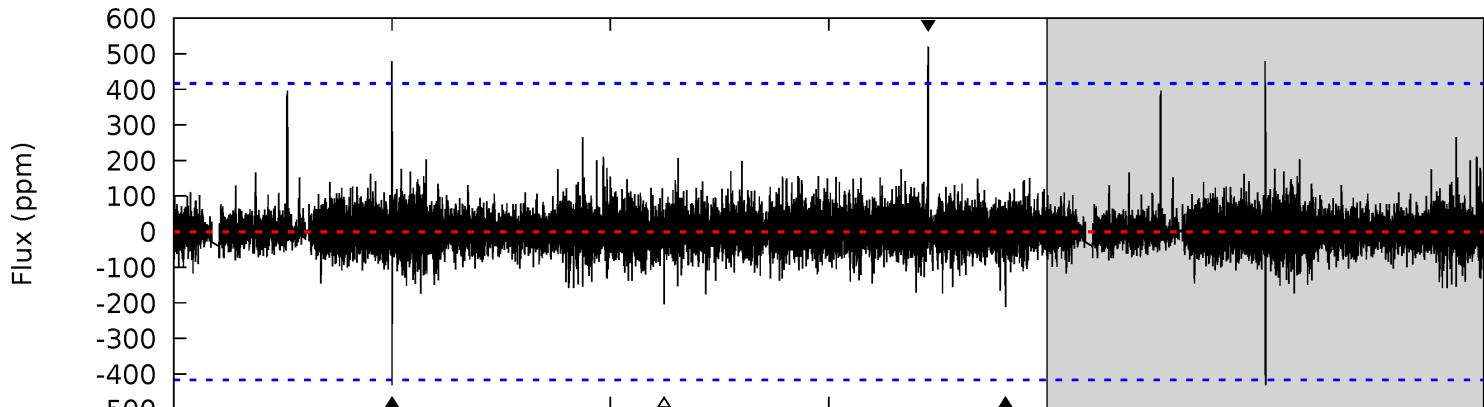
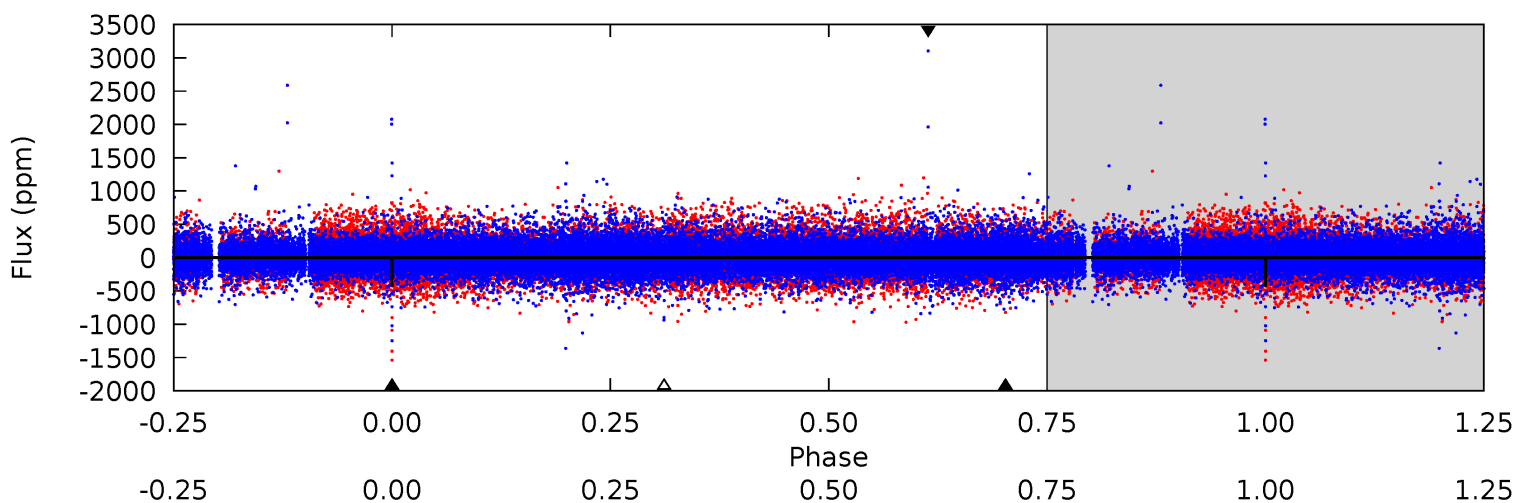
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	14.8	14.0	24.2	5.72	3.71	2.48	-3.48	-13.6	0.75	-9.40	2.93	1.06	0.62	0.21



Alt Model-Shift Uniqueness Test

002142183-01, P = 684.013421 Days, E = 185.912168 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.03	2.96	2.85	7.22	5.82	3.85	0.50	3.18	-1.19	0.11	-4.26	1.91	1.28	0.54	0



Stellar Parameters For KIC 002142183

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4860^{+134}_{-122}	$3.051^{+0.492}_{-0.328}$	$-0.280^{+0.300}_{-0.250}$	$4.624^{+2.862}_{-1.908}$	$0.878^{+0.278}_{-0.228}$	$0.013^{+0.056}_{-0.009}$
	+3%/-3%	+16%/-11%	+107%/-89%	+62%/-41%	+32%/-26%	+449%/-70%
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 002142183-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1706 ± 116	$50.95^{+55.14}_{-36.21}$	528^{+78}_{-67}	3461^{+2117}_{-614}	737^{+8542}_{-553}
Alt.	-212 ± 72	$53.29^{+60.11}_{-39.46}$	528^{+81}_{-67}	2560^{+1110}_{-412}	83^{+1097}_{-66}

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

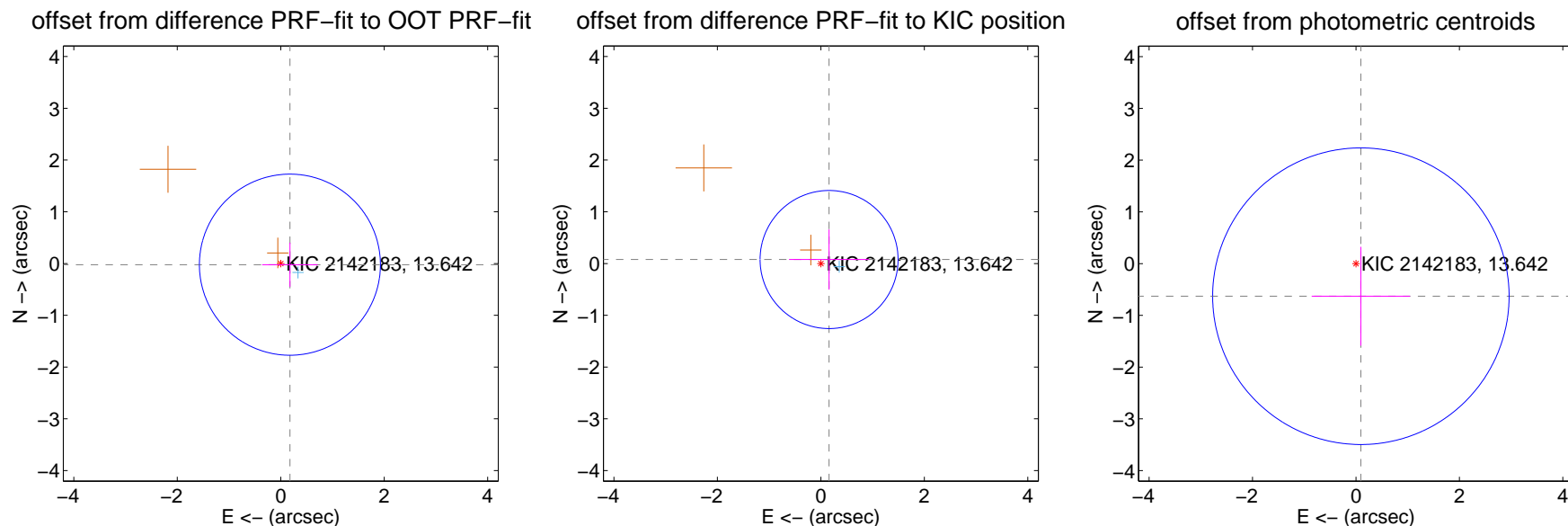
DV Centroid Data

Supplemental centroid analysis for 002142183-01. Kepler magnitude: 13.64. Transit SNR 5.74

There are 1 quarters with good PRF difference image offsets

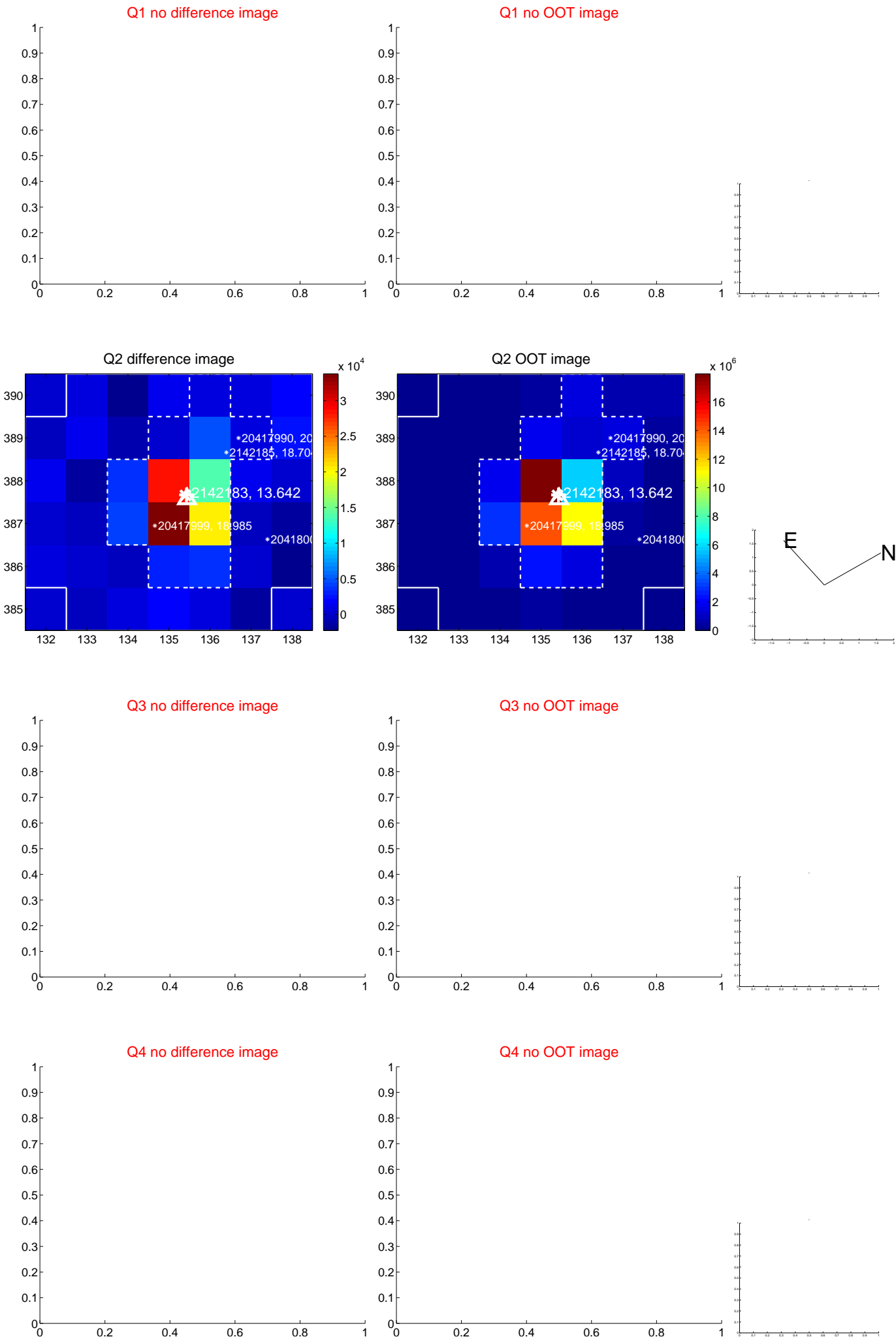
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.179 ± 0.583	0.31	-0.177 ± 0.536	-0.022 ± 0.426
PRF-fit source offset from KIC position	0.177 ± 0.445	0.40	-0.159 ± 0.774	0.078 ± 0.582
photometric centroid source offset	0.64 ± 0.96	0.67	-0.10 ± 0.95	-0.63 ± 0.96



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

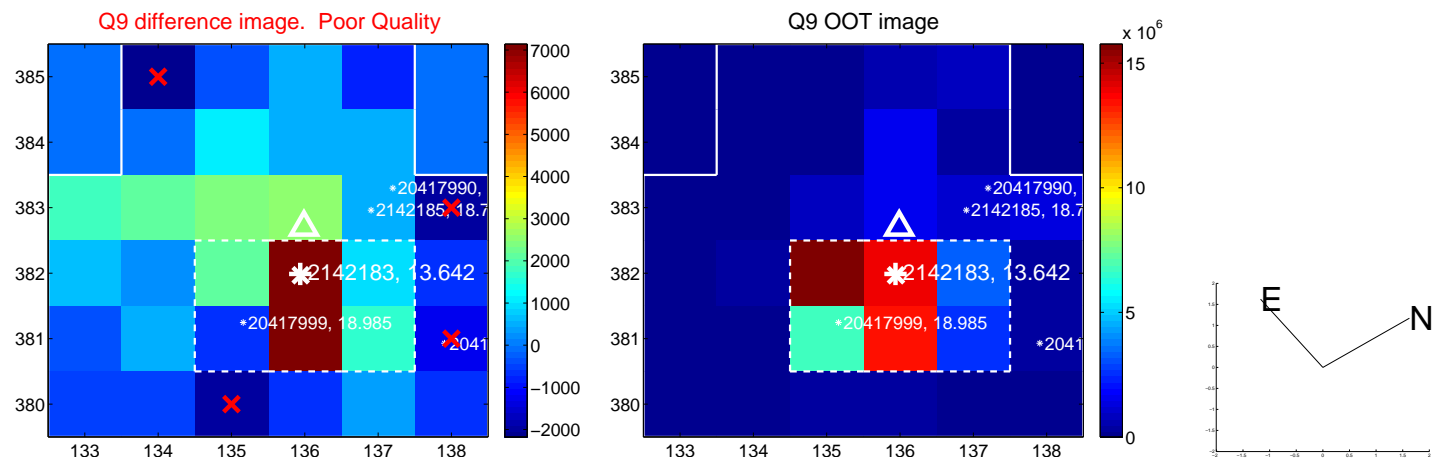
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



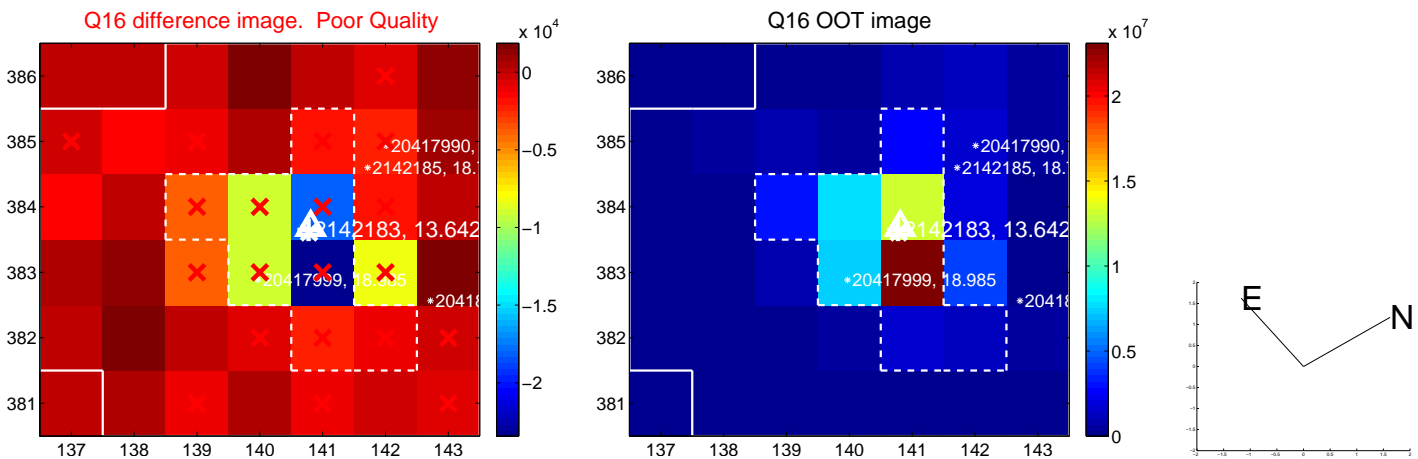
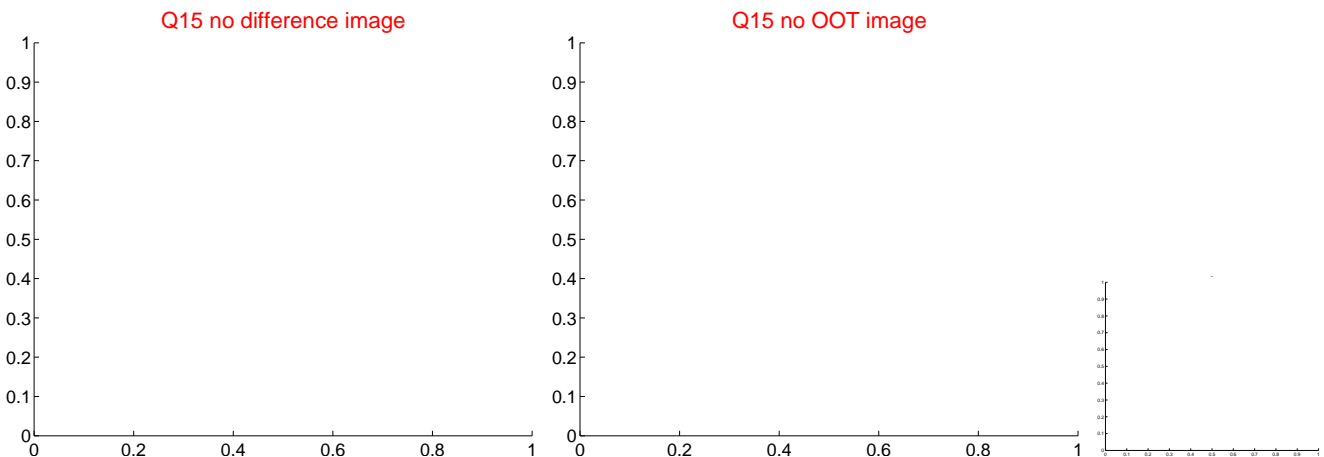
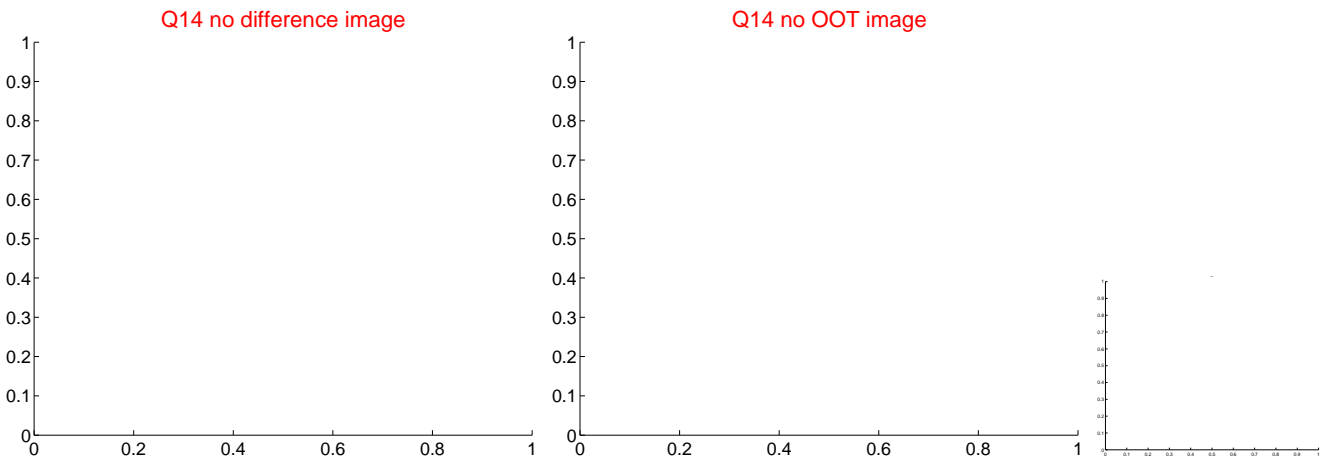
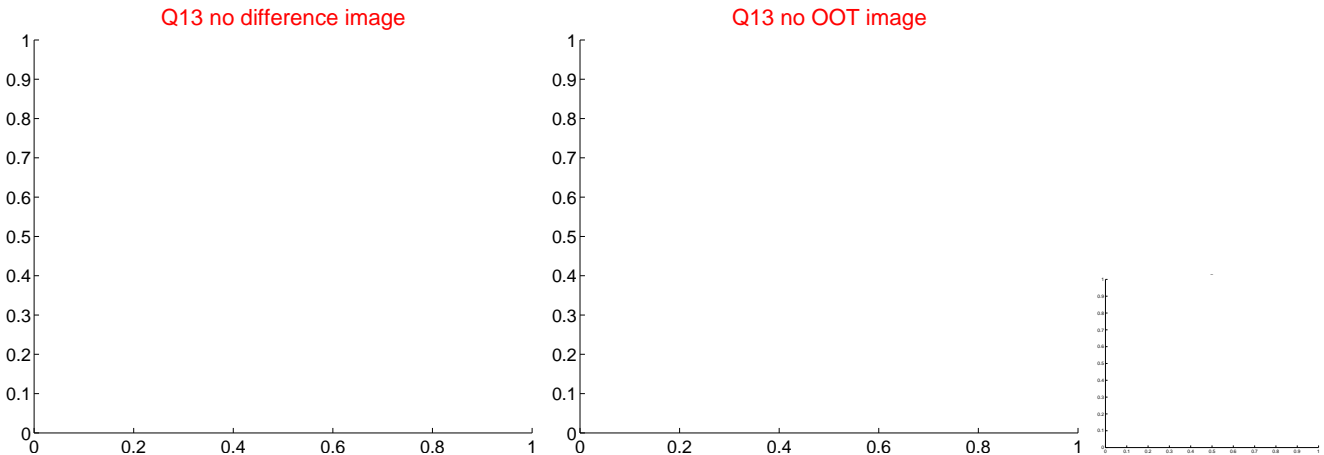
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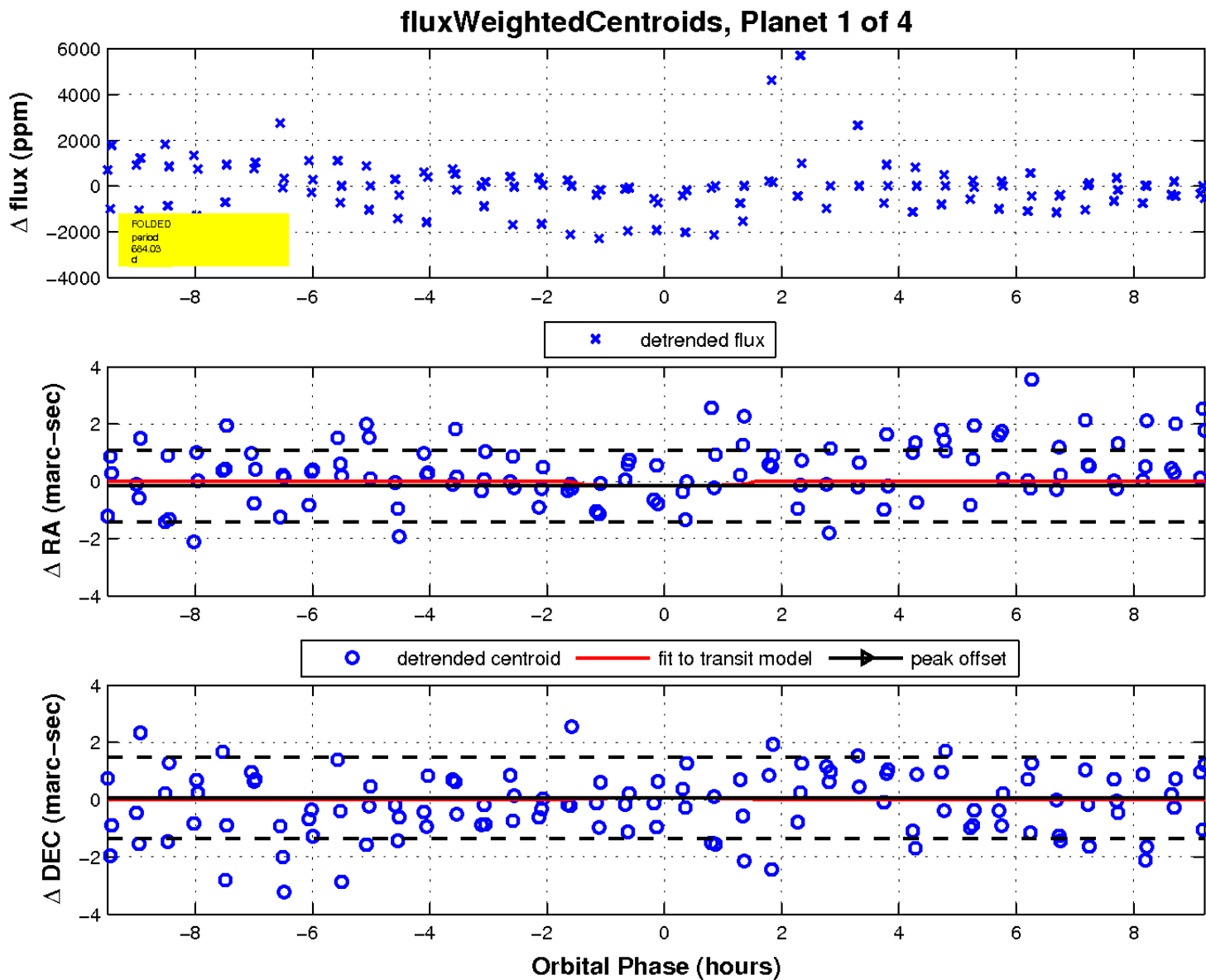
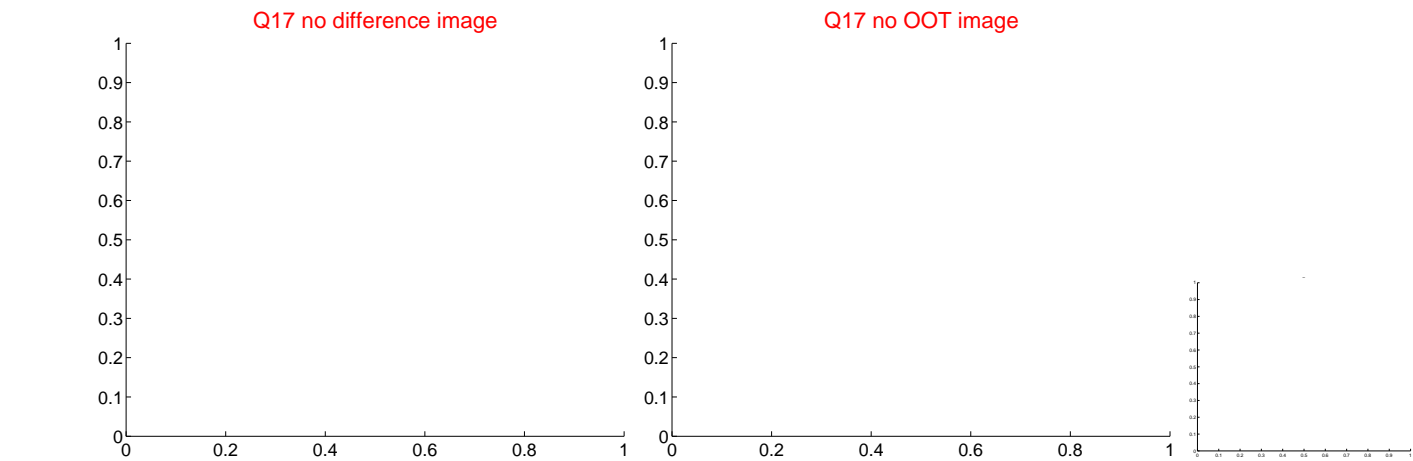
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



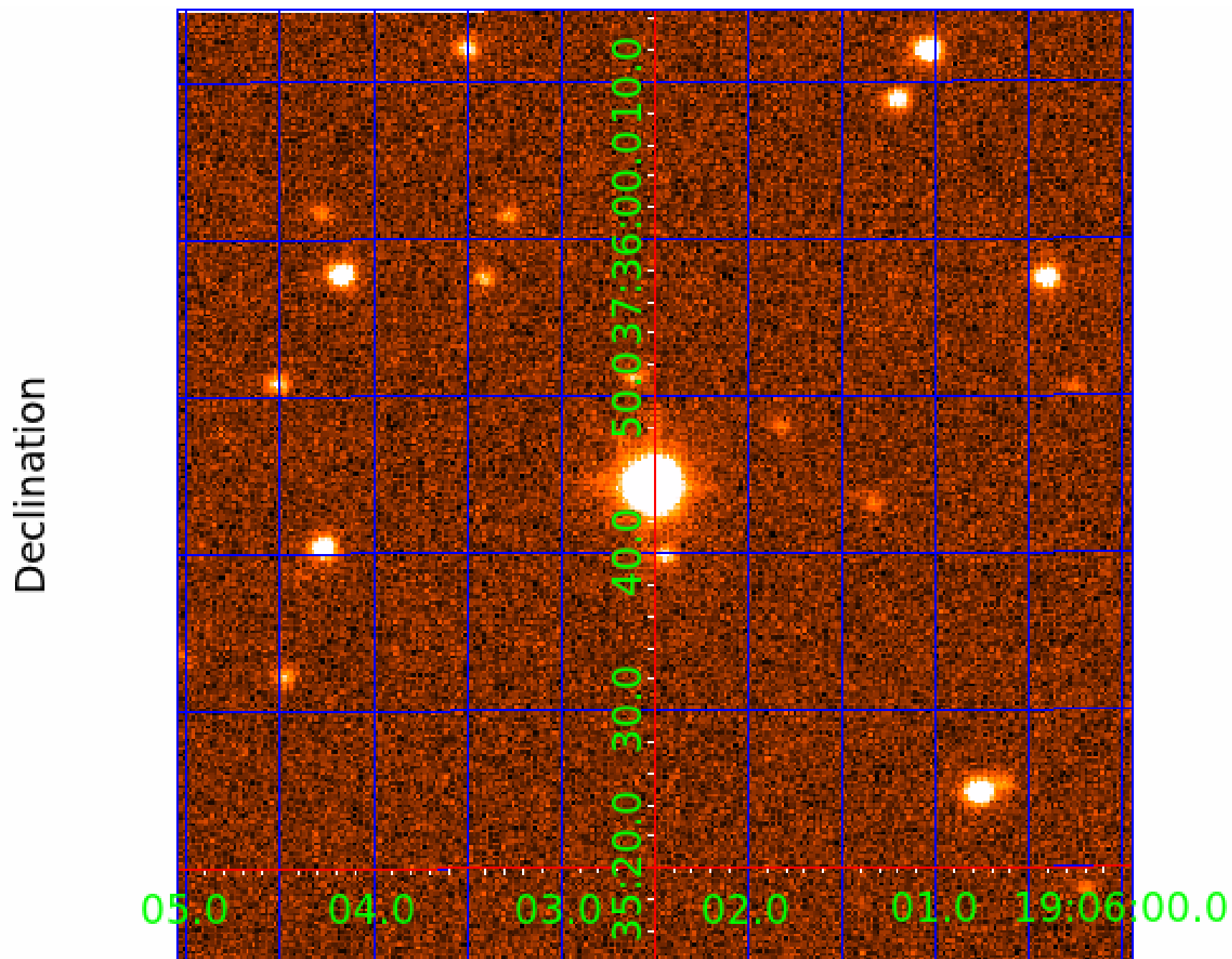
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UKIRT Image



KIC 002142183

Q1-17 DR25 TCE Parameters

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Robovetter Results

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002142183-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002142183-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

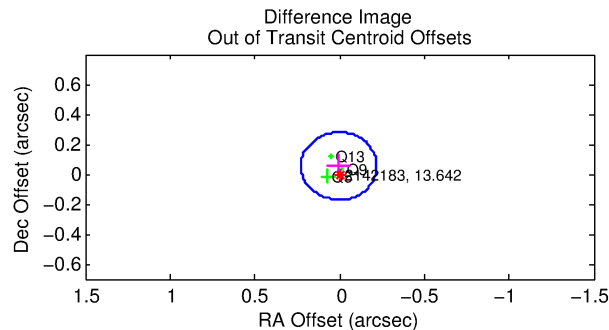
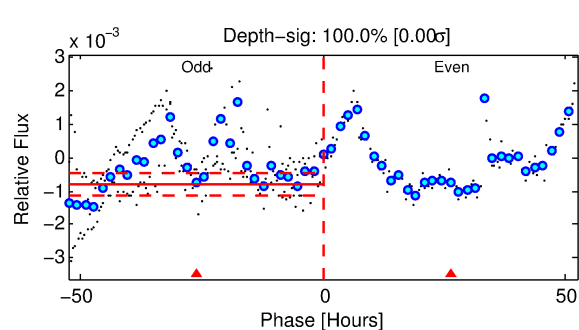
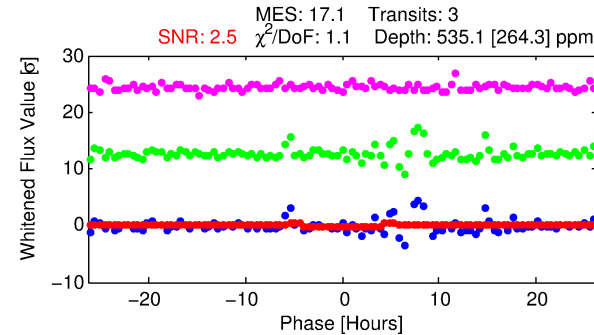
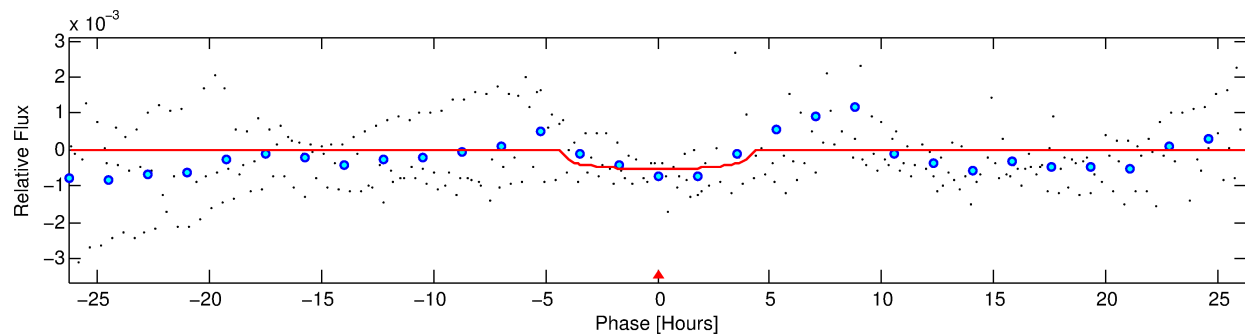
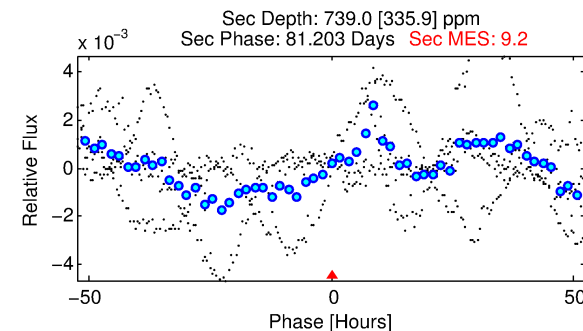
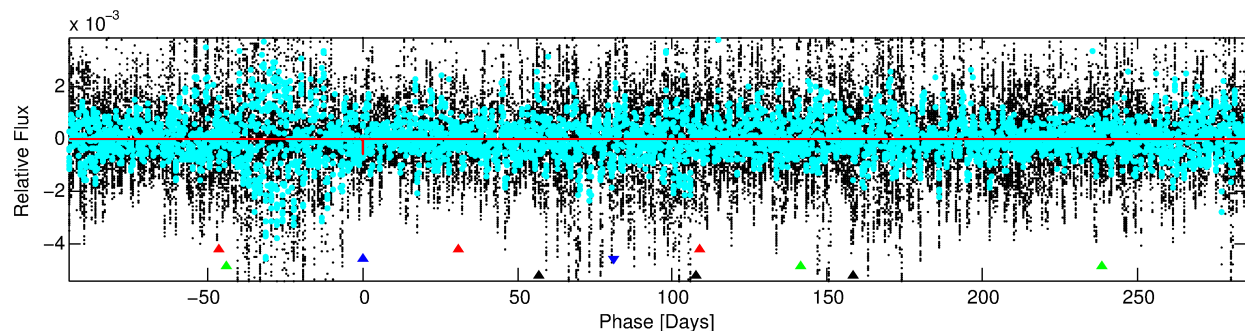
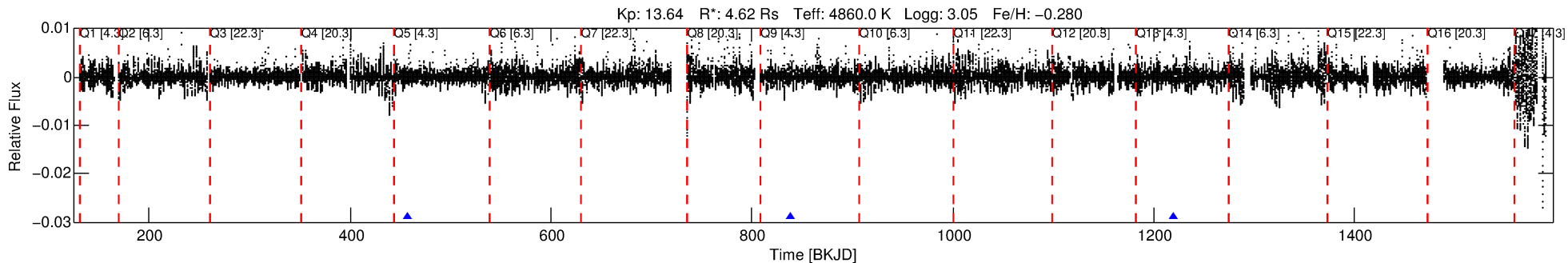
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002142183-02

No Significant Match Found

DV One-Page Summary

KIC: 2142183 Candidate: 2 of 4 Period: 380.807 d



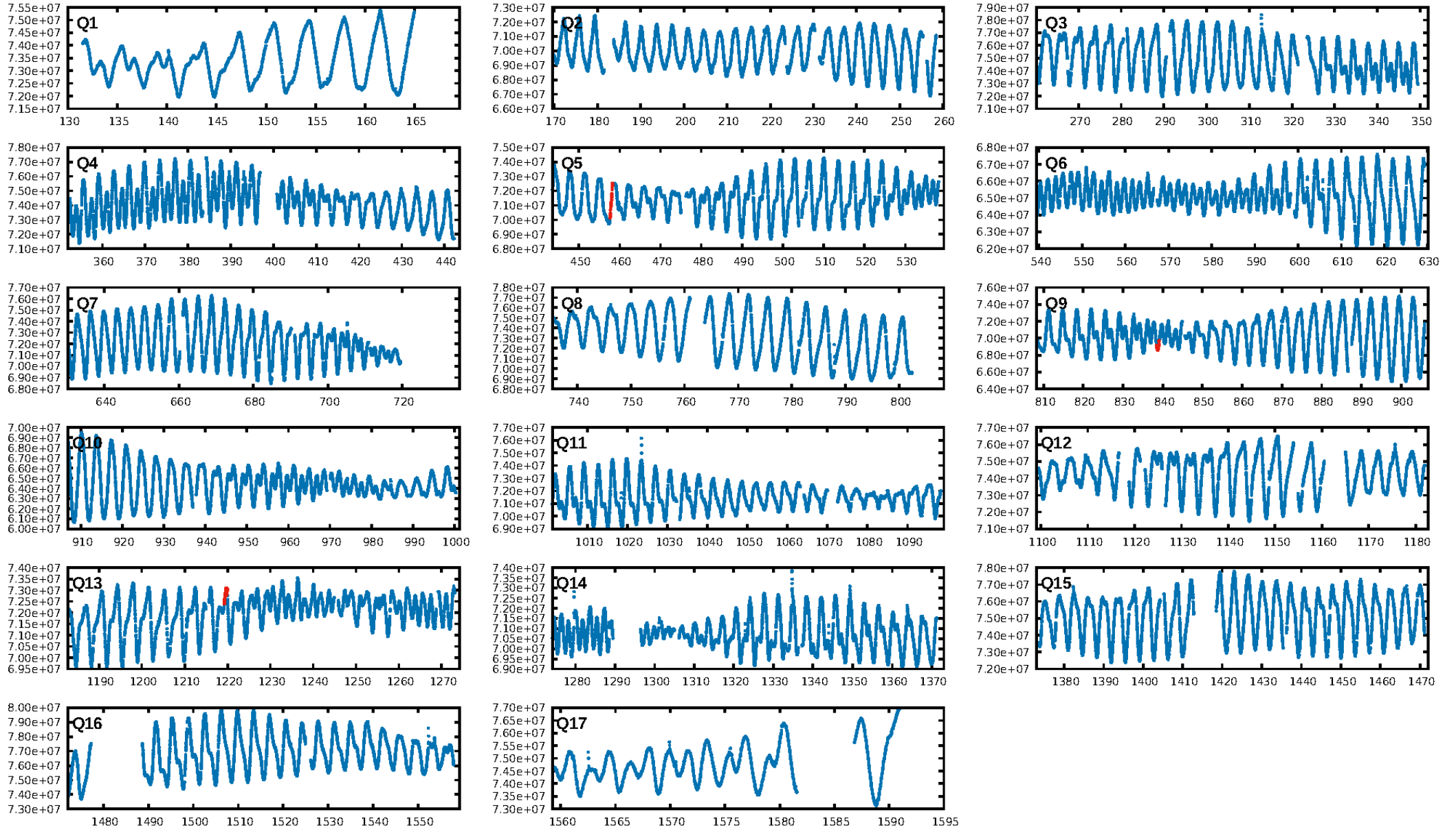
DV Fit Results:

Period = 380.80714 [0.01308] d
Epoch = 457.9988 [0.0222] BKJD
Rp/R* = 0.0231 [0.0208]
a/R* = 232.47 [719.21]
b = 0.75 [1.87]
Seff = 11.03 [9.57]
Teq = 465 [101] K
Rp = 11.63 [12.71] Re
a = 0.9844 [0.5506] AU
Ag = 2911.61 [5962.24] [0.49σ]
Teffp = 5277 [2456] K [1.96σ]

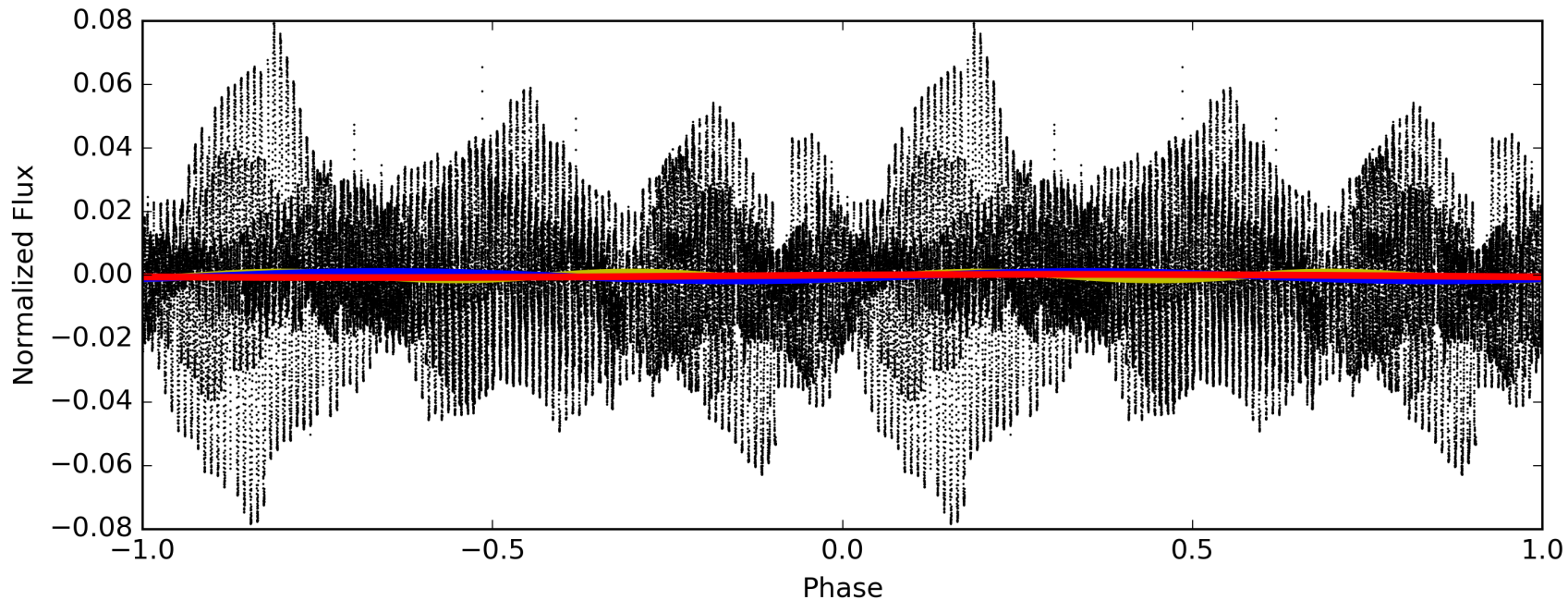
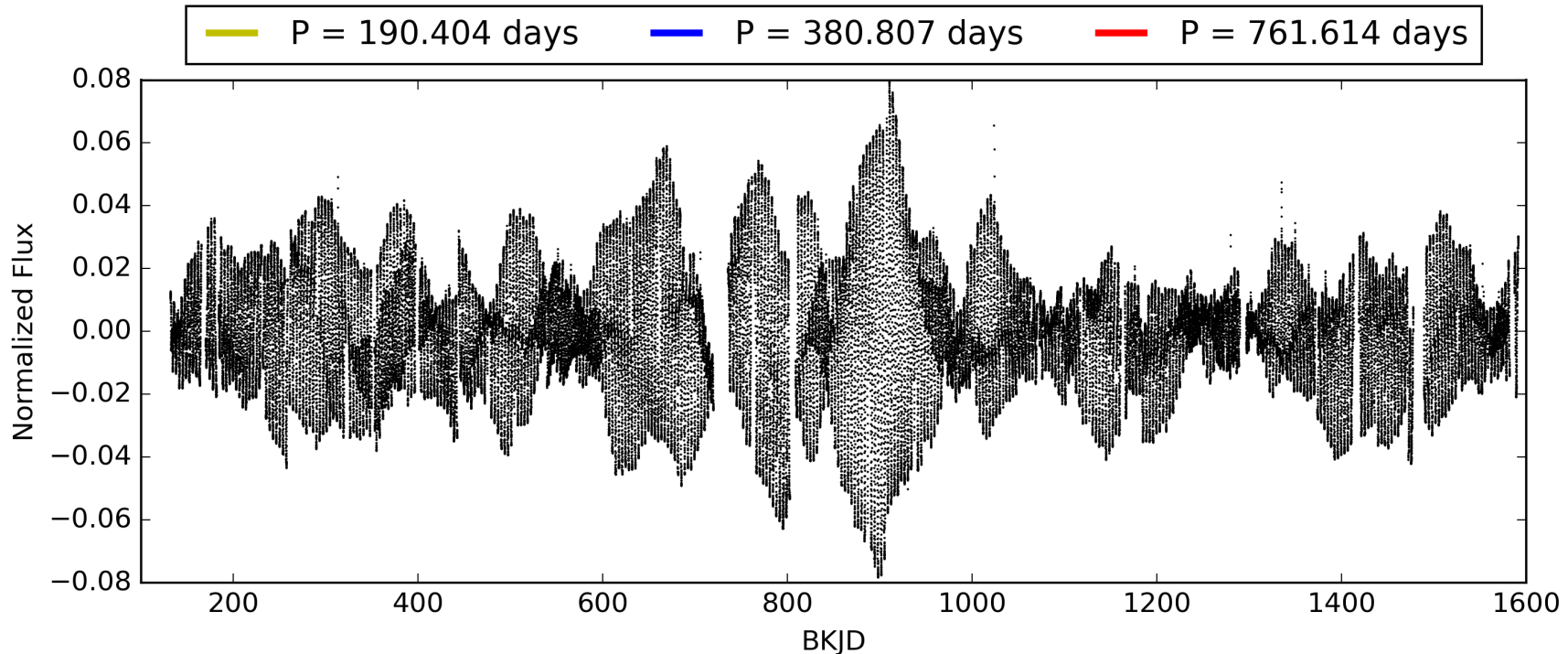
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [111.16σ]
ModelChiSquare2-sig: 3.5%
ModelChiSquareGof-sig: 97.6%
Bootstrap-pfa: 8.76e-14
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.885
Centroid-sig: 76.6%
Centroid-so: 0.833 arcsec [0.74σ]
OotOffset-rm: 0.054 arcsec [0.72σ]
KicOffset-rm: 0.115 arcsec [1.63σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 002142183-02, PDC Light Curves

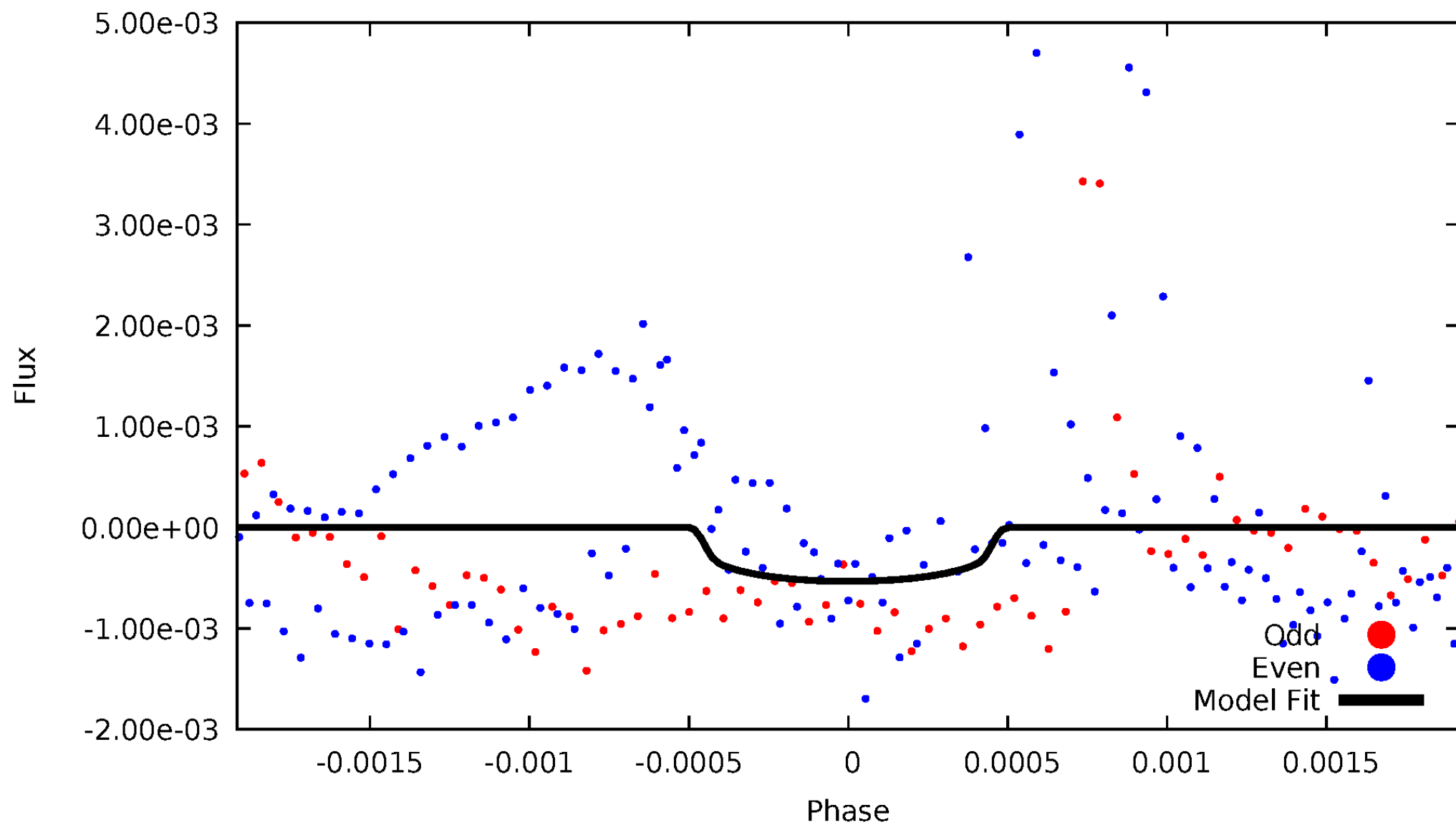


TCE 002142183-02



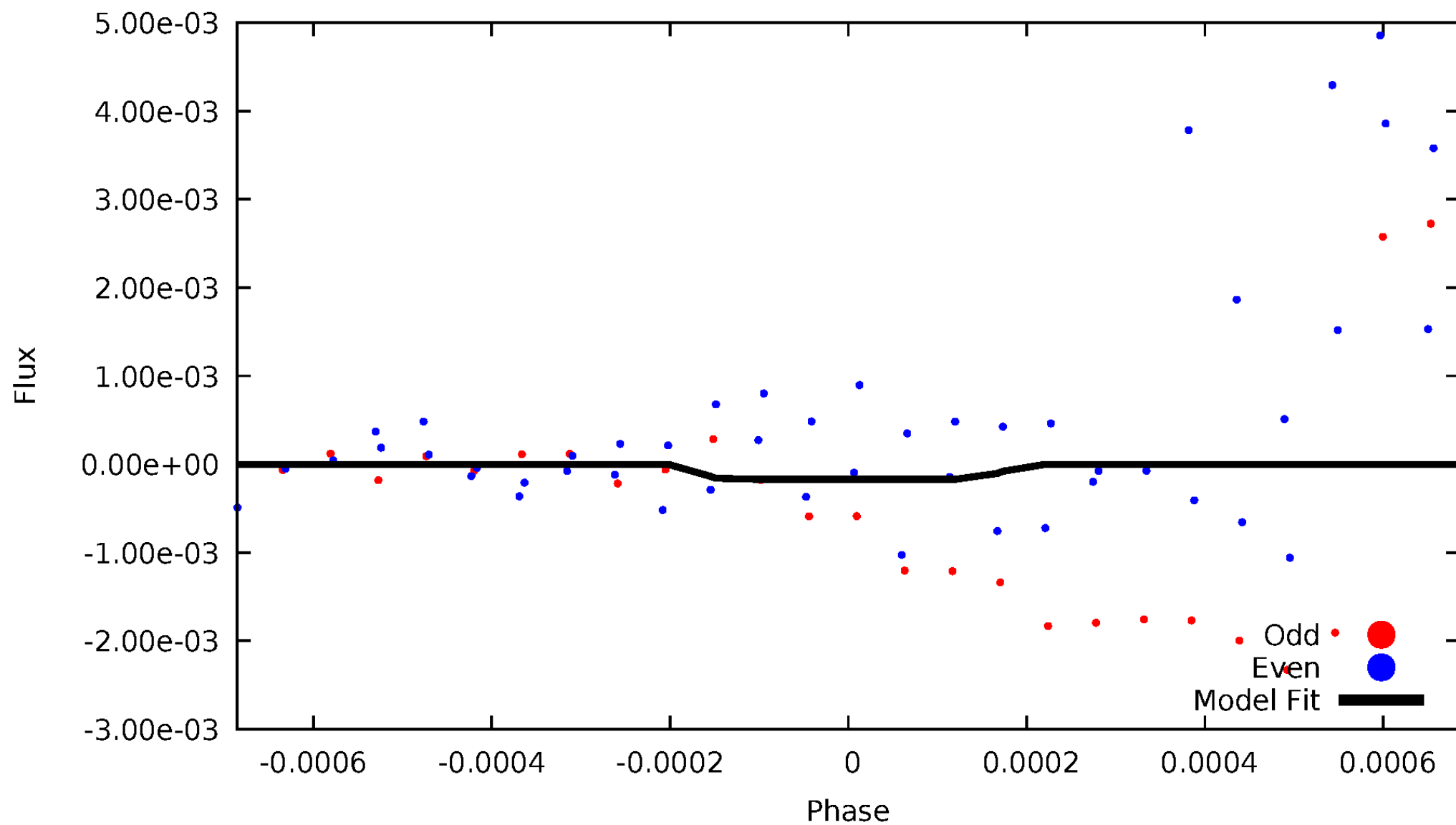
DV Odd/Even

TCE 002142183-02



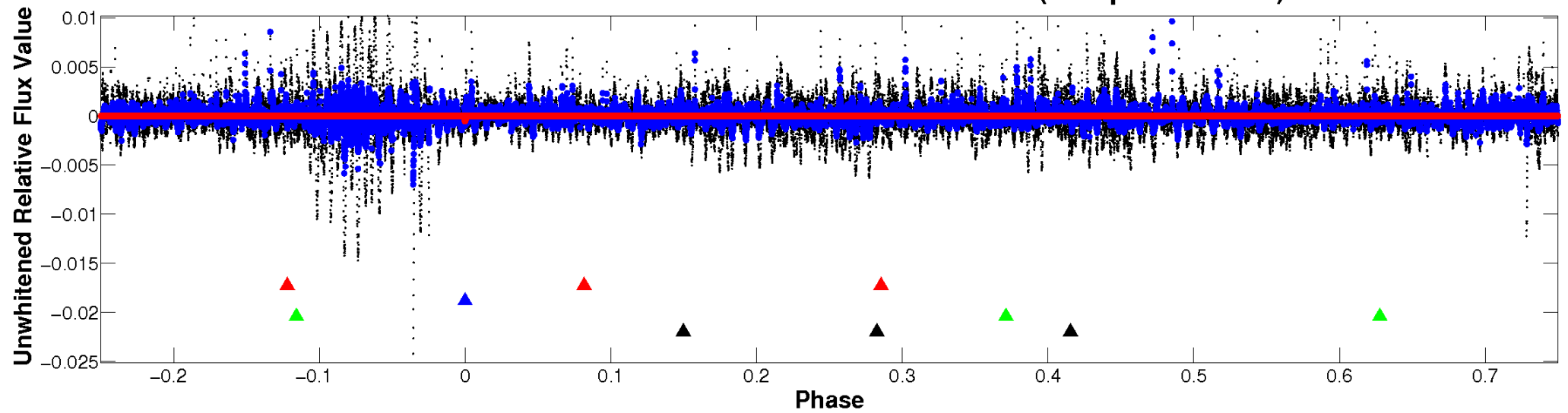
ALT Odd/Even

TCE 002142183-02

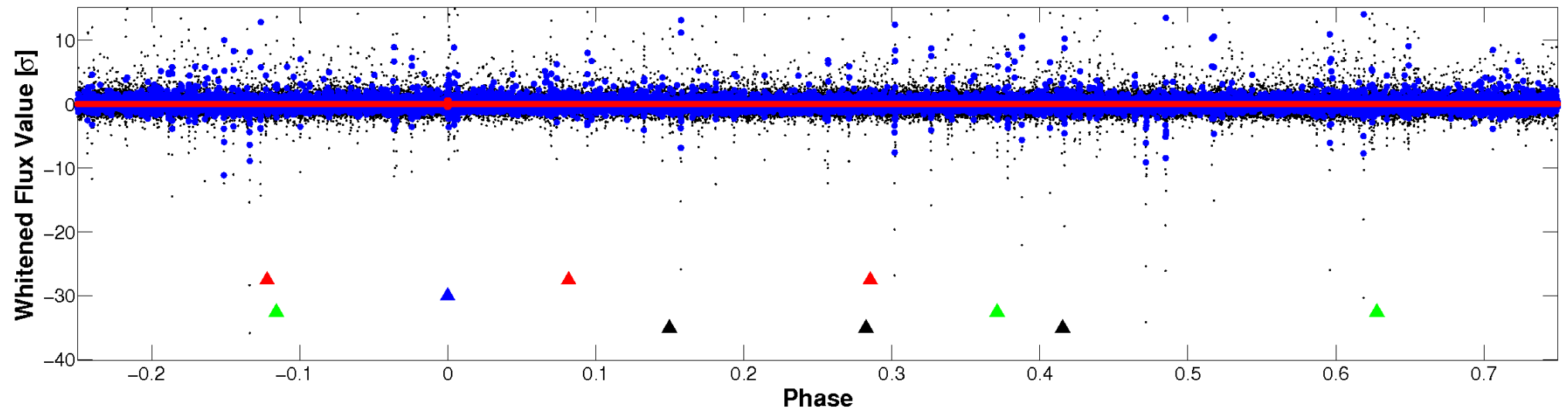


Non-Whitened Vs. Whitened Light Curve

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

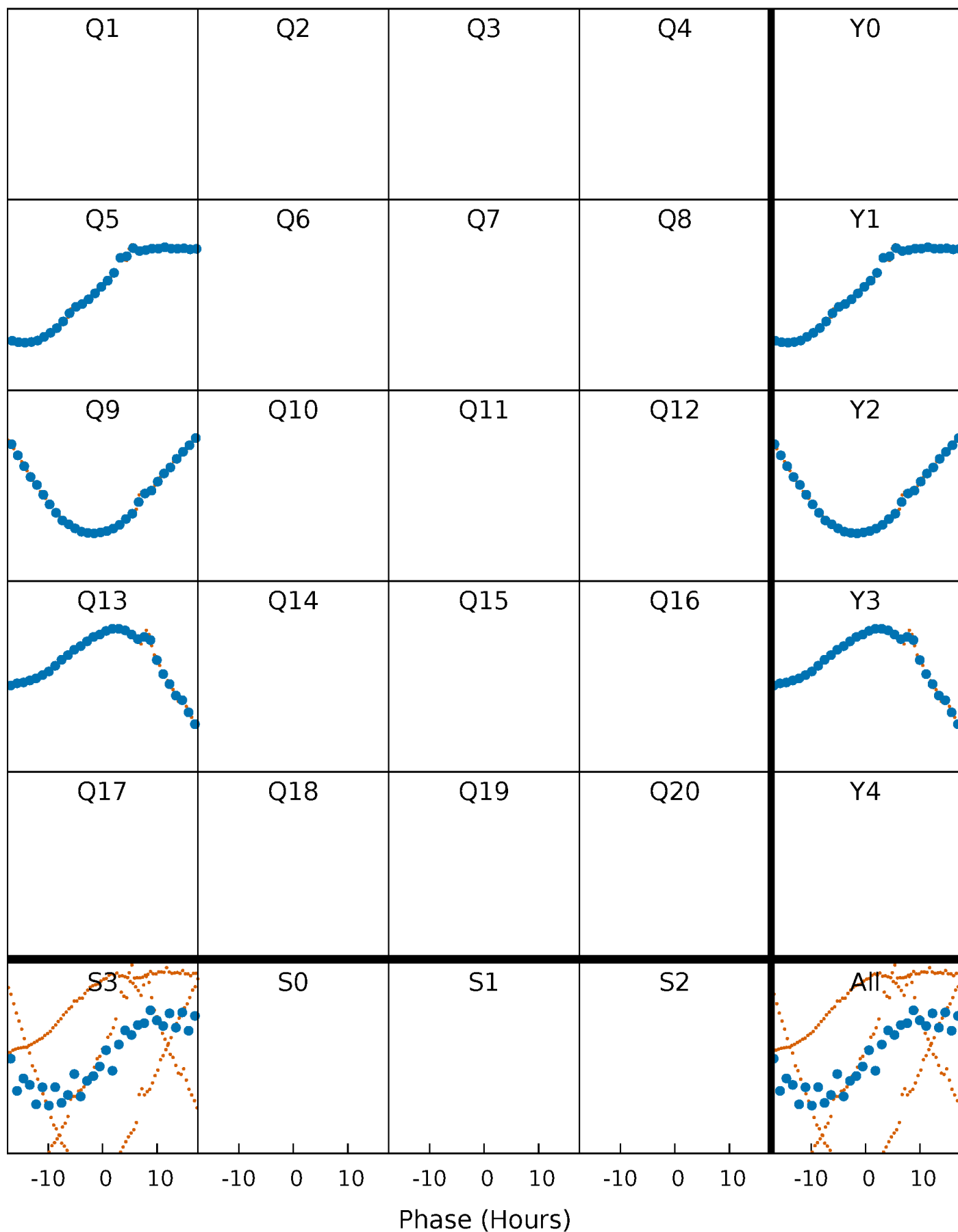


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



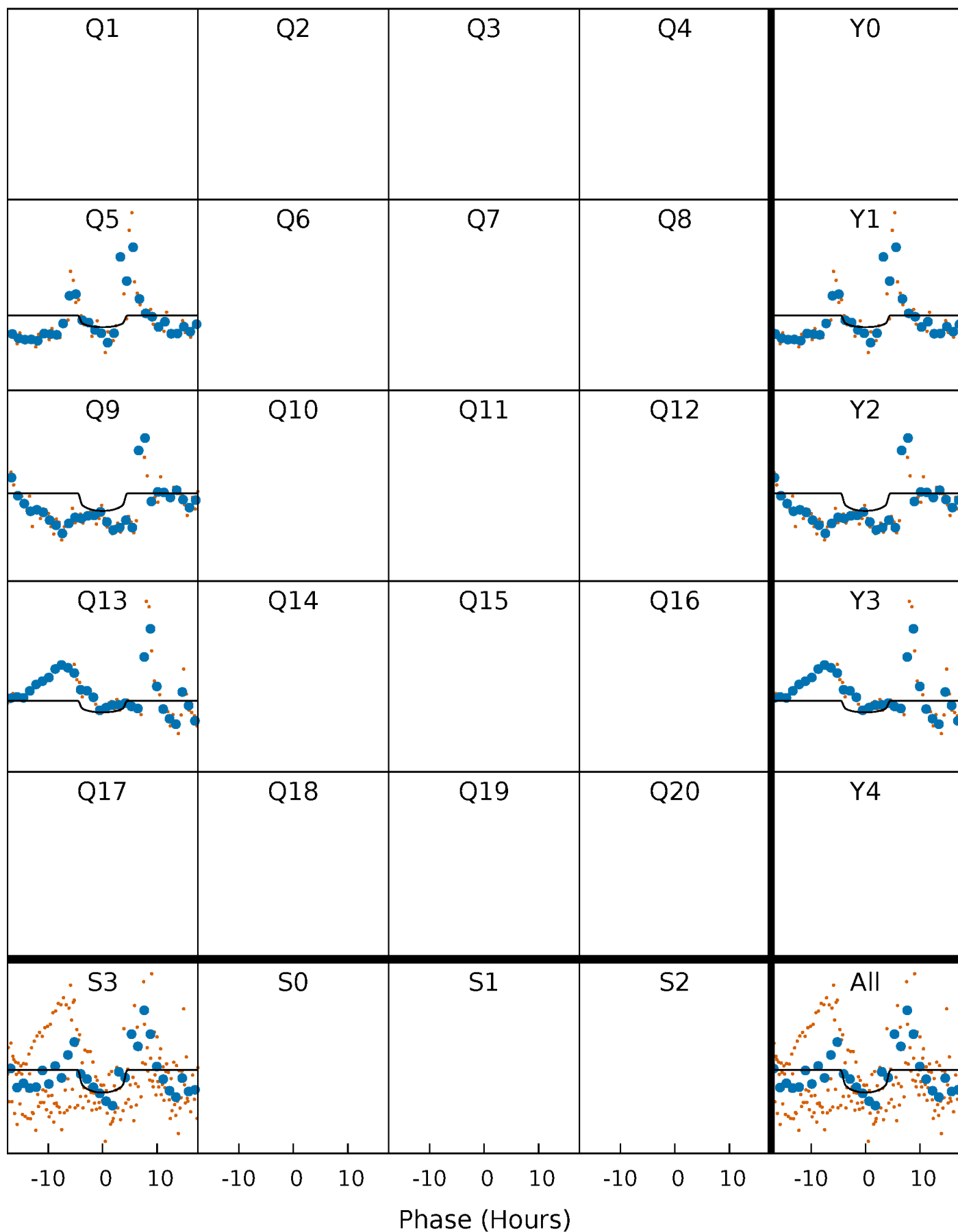
PDC Quarter-Phased Transit Curves

TCE 002142183-02 $P=380.807137$ Days $T_0=457.998847$ (BKJD)



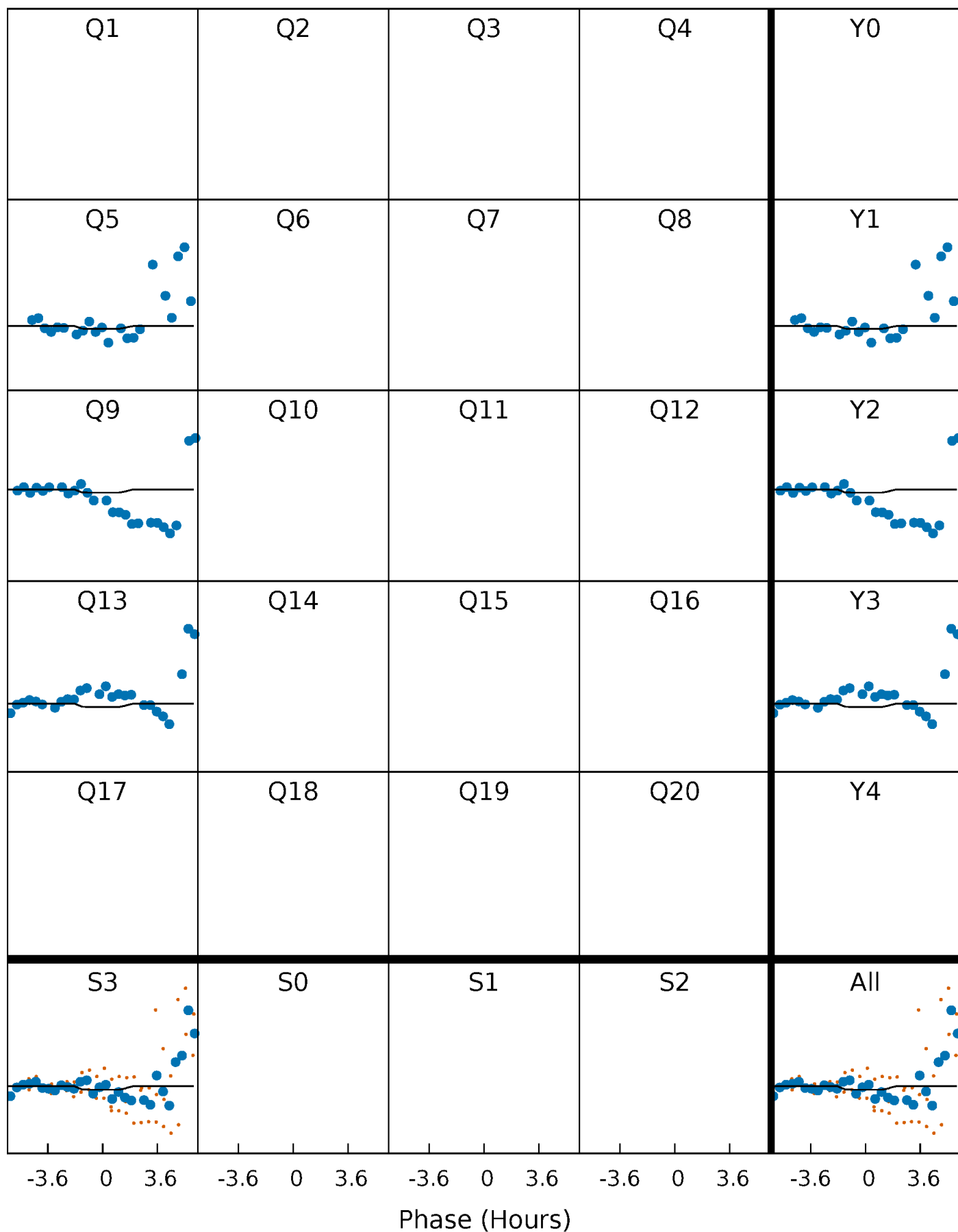
DV Quarter-Phased Transit Curves

TCE 002142183-02 $P=380.807137$ Days $T_0=457.998847$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

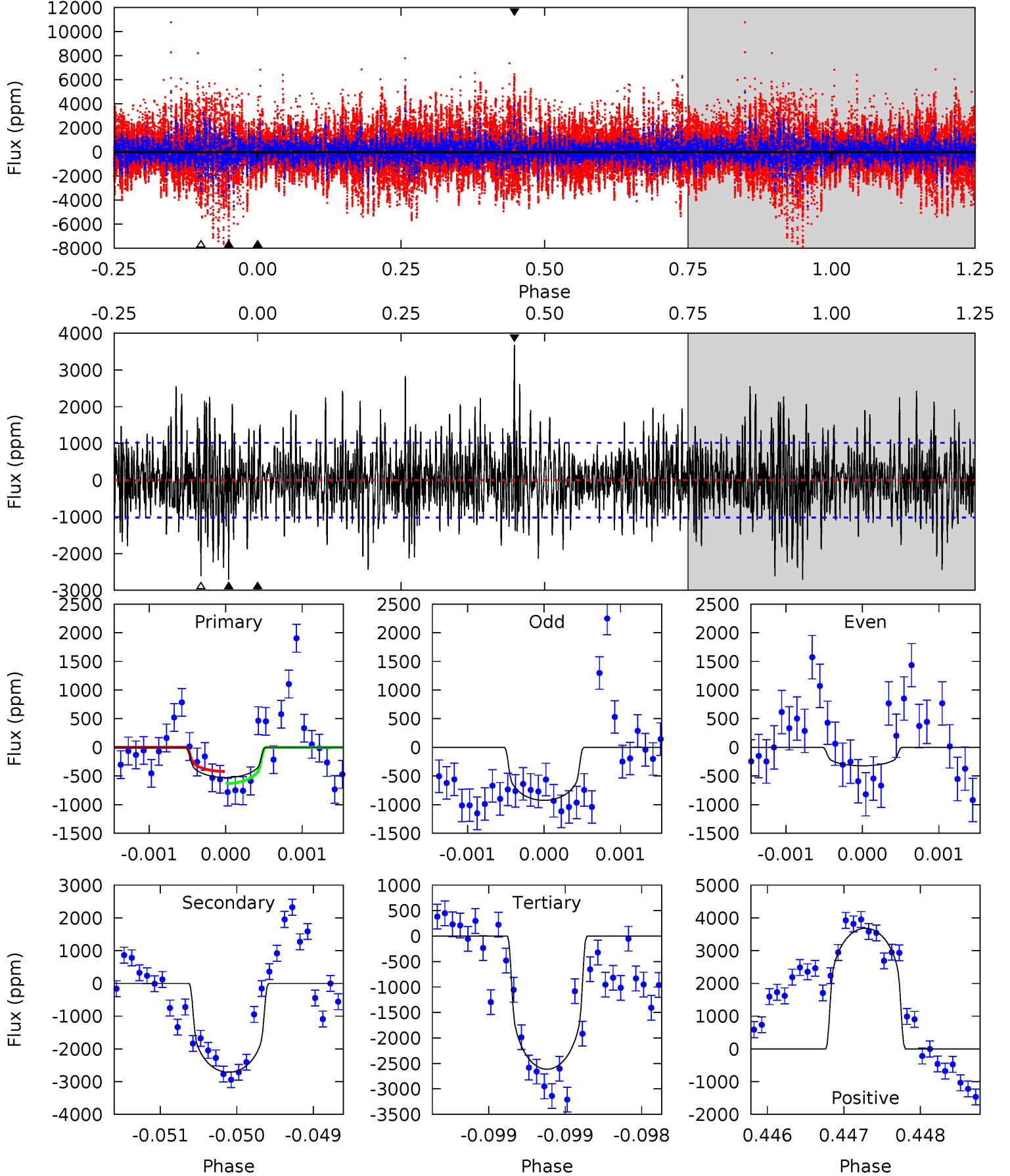
TCE 002142183-02 P=380.861125 Days $T_0=457.996474$ (BKJD)



DV Model-Shift Uniqueness Test

002142183-02, $P = 380.807137$ Days, $E = 77.191710$ Days

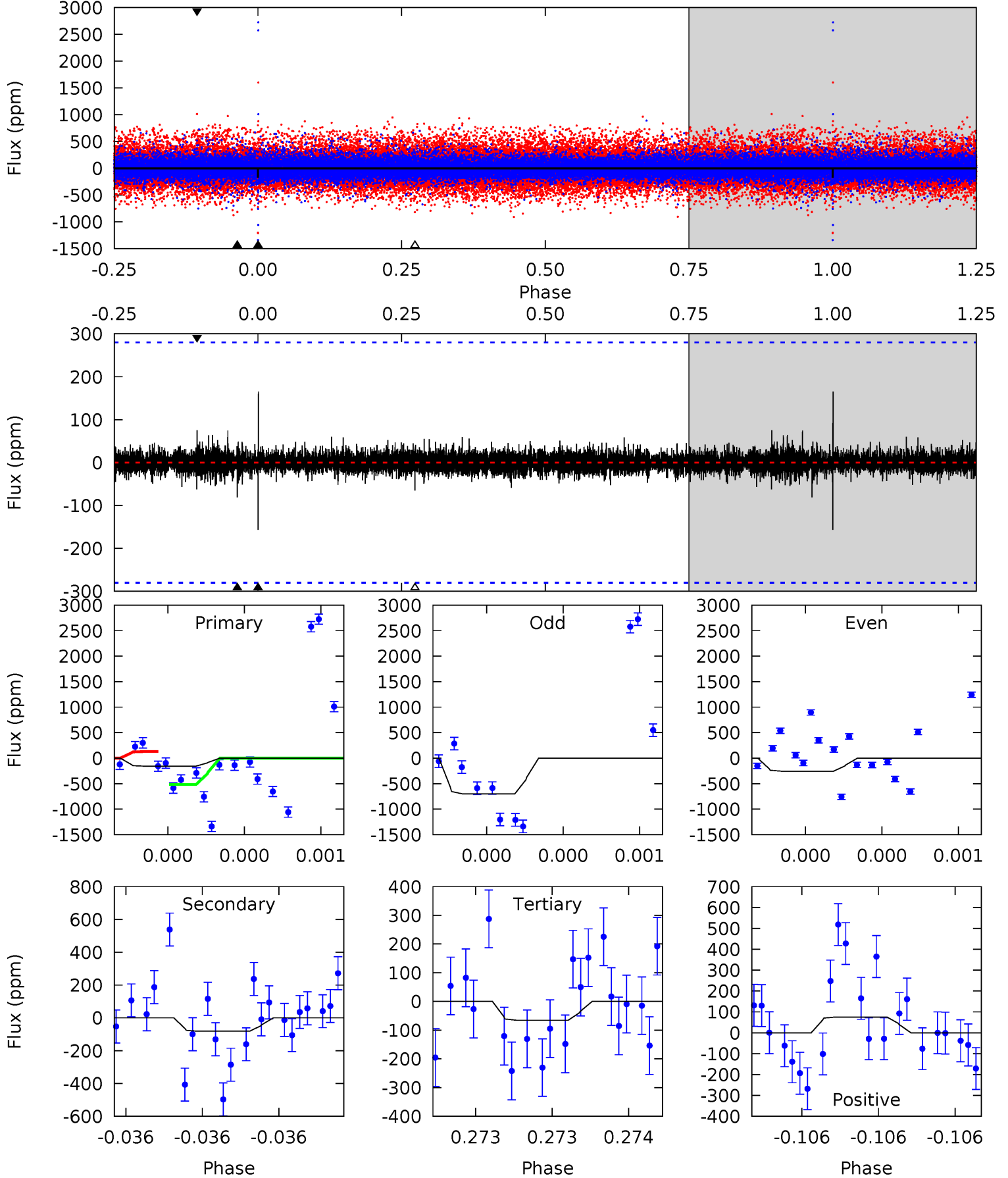
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.83	14.6	14.0	19.8	5.46	3.30	3.80	-11.2	-16.9	0.53	-5.20	1.21	0.94	0.58	0.57



Alt Model-Shift Uniqueness Test

002142183-02, P = 380.861125 Days, E = 77.135349 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.16	1.64	1.32	1.52	5.65	3.59	0.27	1.84	1.64	0.32	0.12	4.43	0.40	0.51	3.79



Stellar Parameters For KIC 002142183

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4860^{+134}_{-122}	$3.051^{+0.492}_{-0.328}$	$-0.280^{+0.300}_{-0.250}$	$4.624^{+2.862}_{-1.908}$	$0.878^{+0.278}_{-0.228}$	$0.013^{+0.056}_{-0.009}$
	+3%/-3%	+16%/-11%	+107%/-89%	+62%/-41%	+32%/-26%	+449%/-70%
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 002142183-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2713 ± 186	$13.19^{+10.71}_{-8.13}$	639^{+92}_{-89}	6575^{+5337}_{-1500}	8453^{+46185}_{-5900}
Alt.	-81 ± 50	$9.36^{+9.70}_{-6.20}$	643^{+89}_{-80}	3551^{+1702}_{-774}	398^{+3068}_{-340}

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

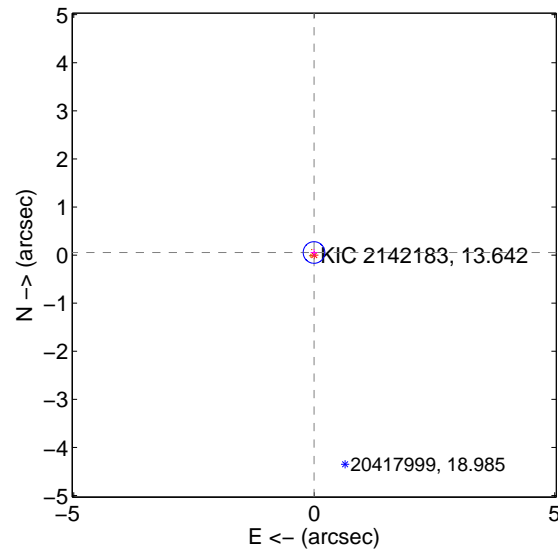
Supplemental centroid analysis for 002142183-02. Kepler magnitude: 13.64. Transit SNR 2.47

There are 1 quarters with good PRF difference image offsets

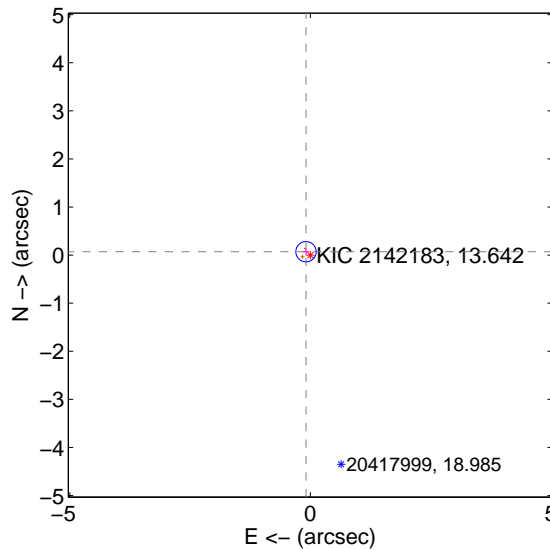
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.054 ± 0.075	0.72	0.005 ± 0.070	0.054 ± 0.075
PRF-fit source offset from KIC position	0.115 ± 0.070	1.63	0.090 ± 0.068	0.071 ± 0.073
photometric centroid source offset	0.83 ± 1.12	0.74	-0.74 ± 1.10	-0.39 ± 1.19

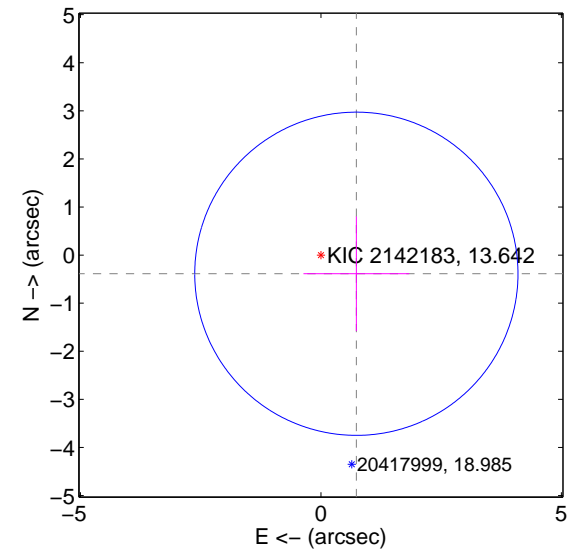
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

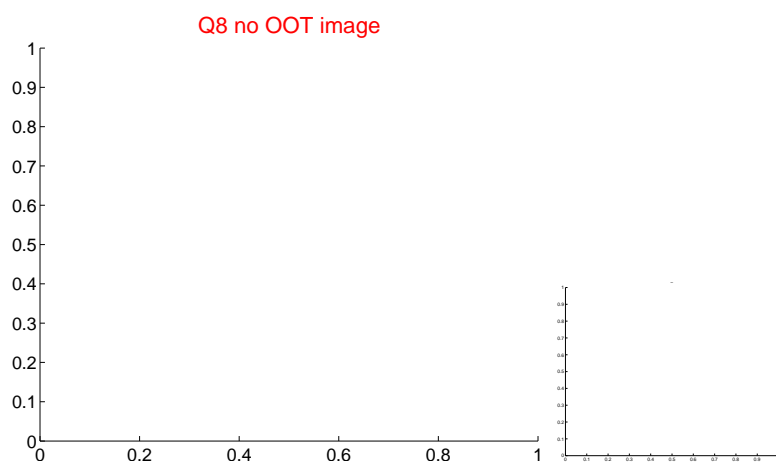
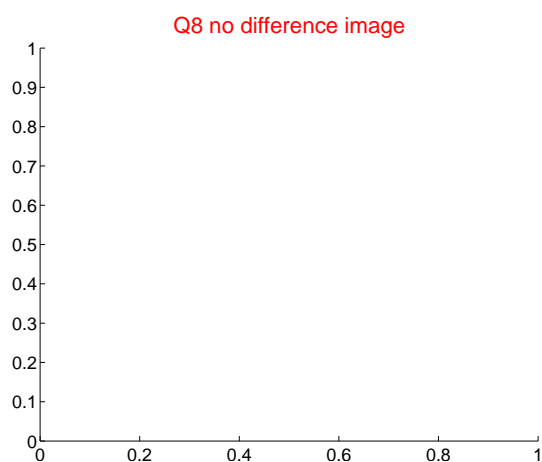
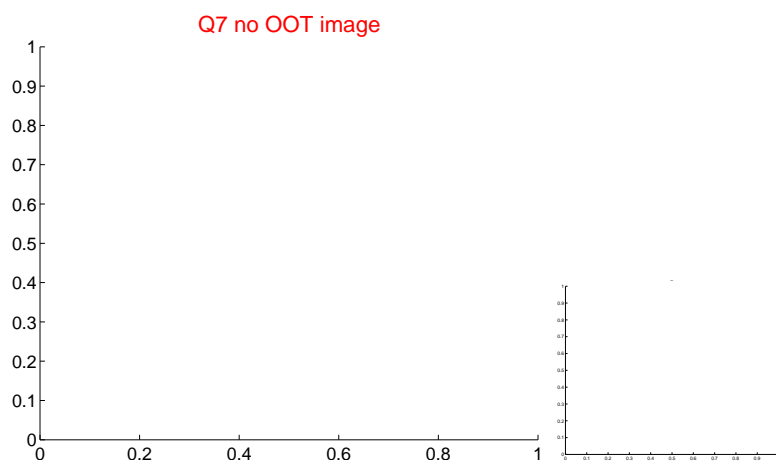
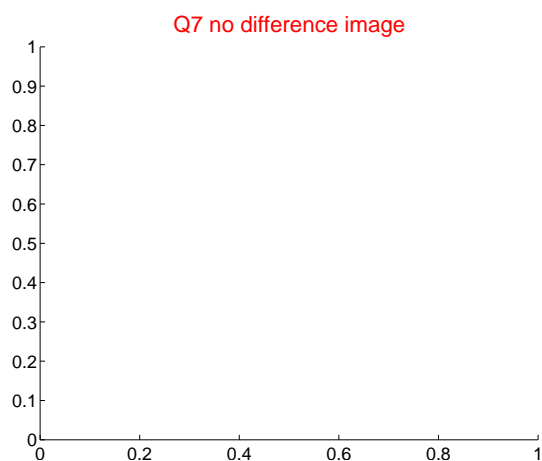
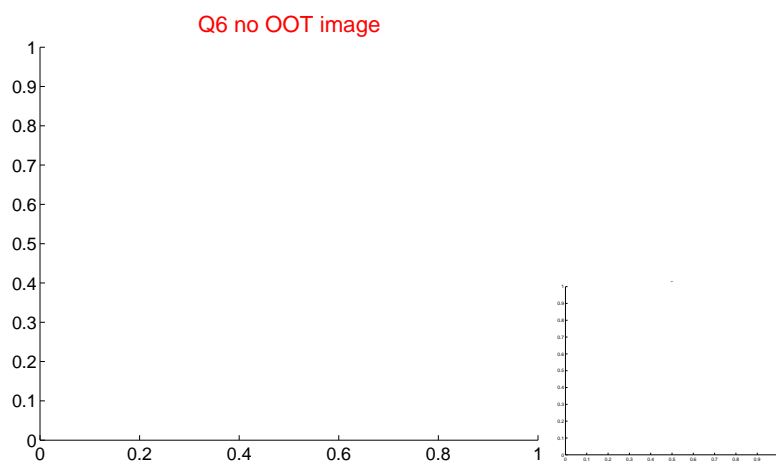
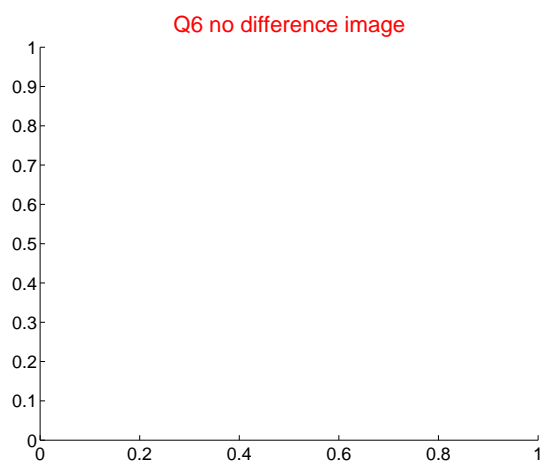
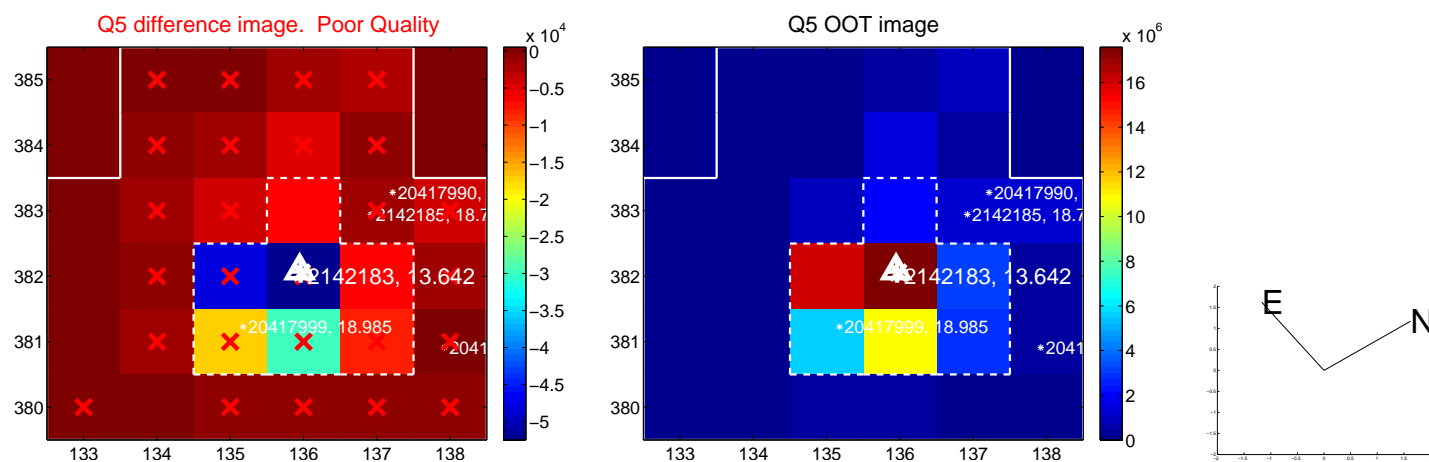


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

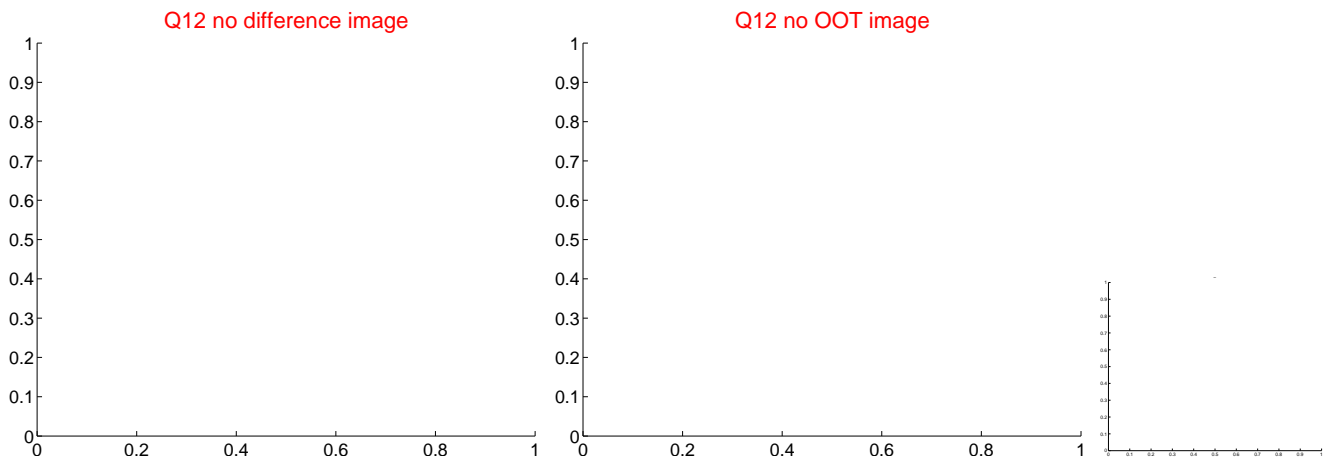
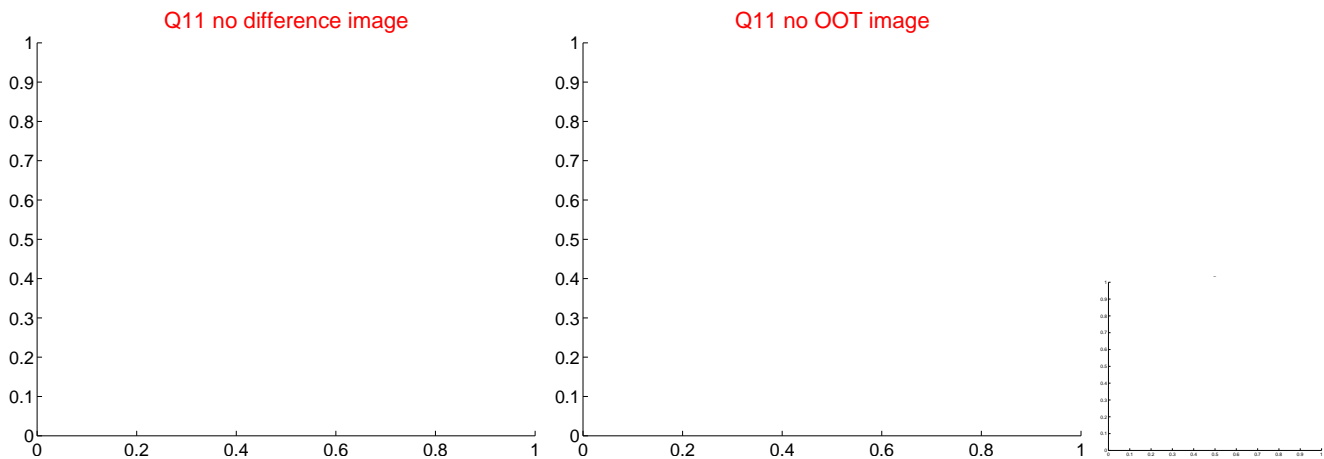
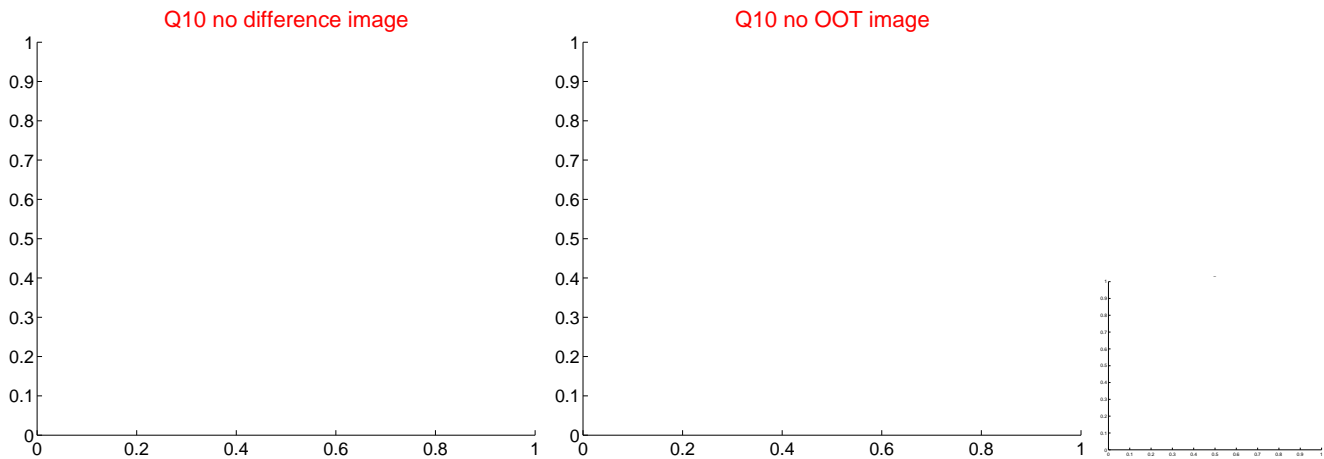
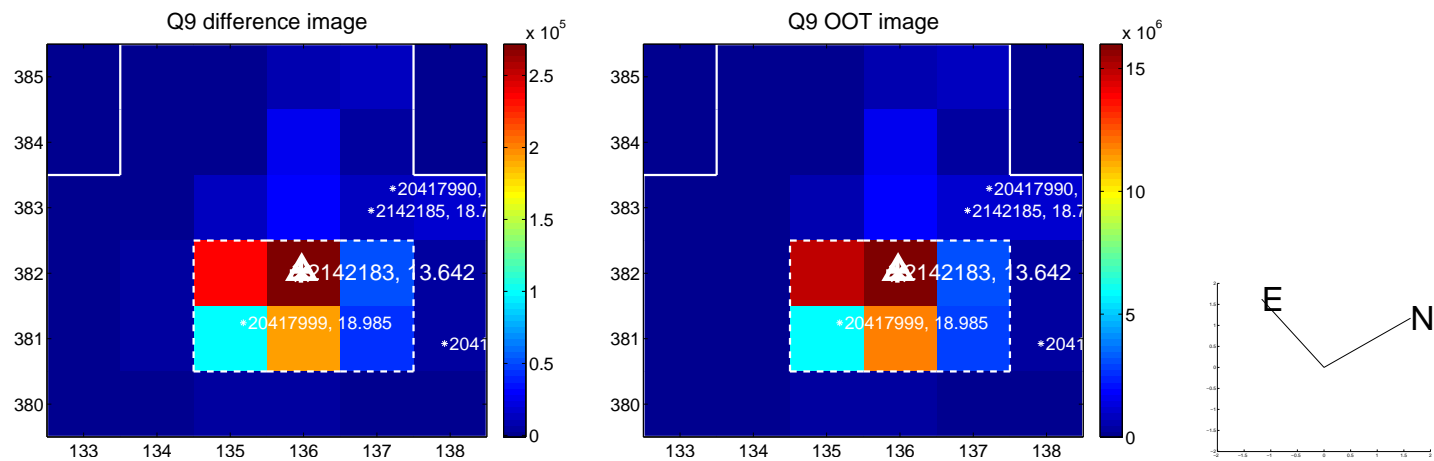
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



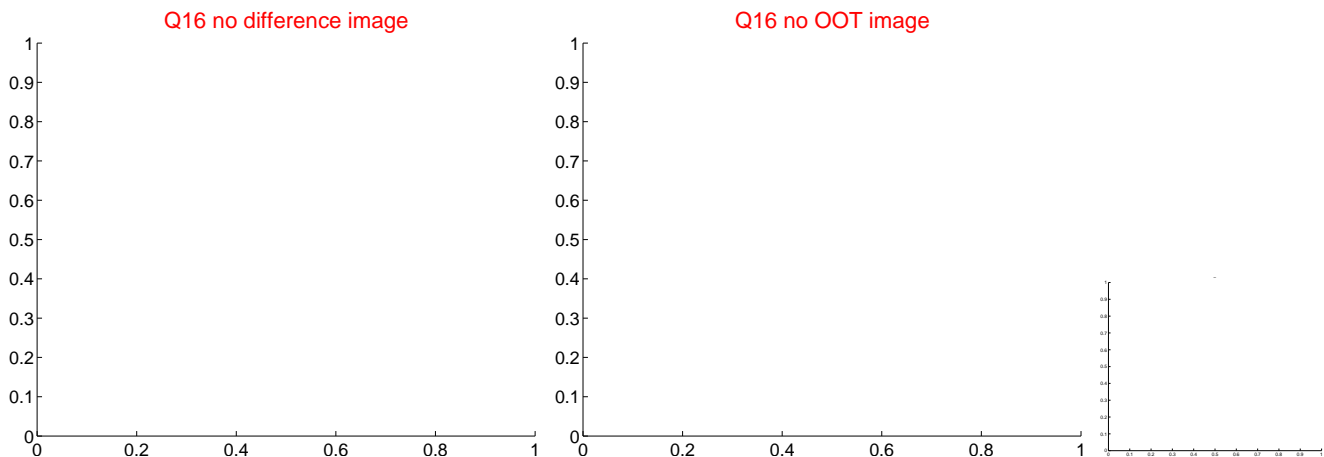
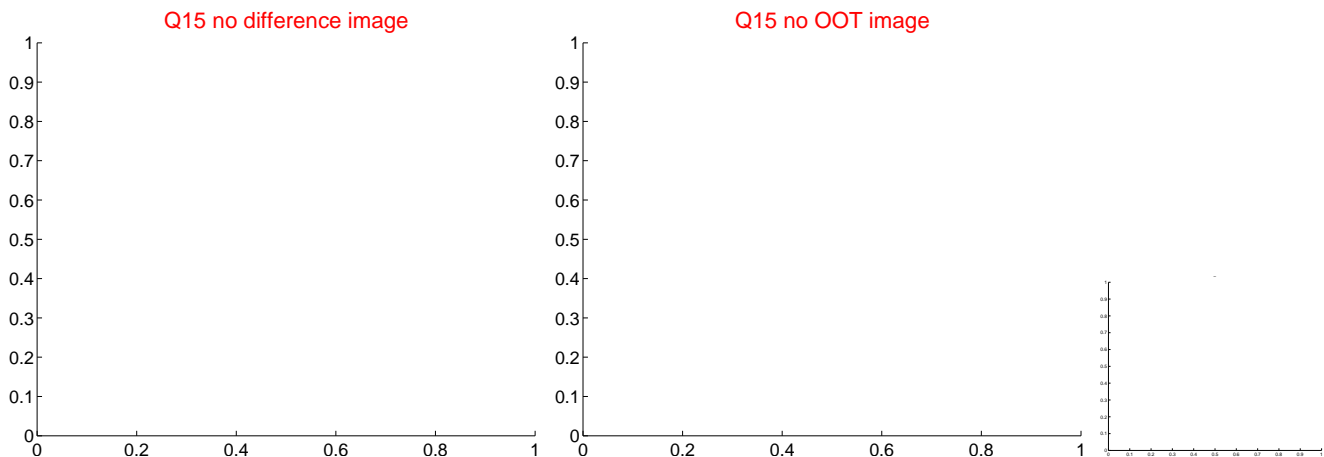
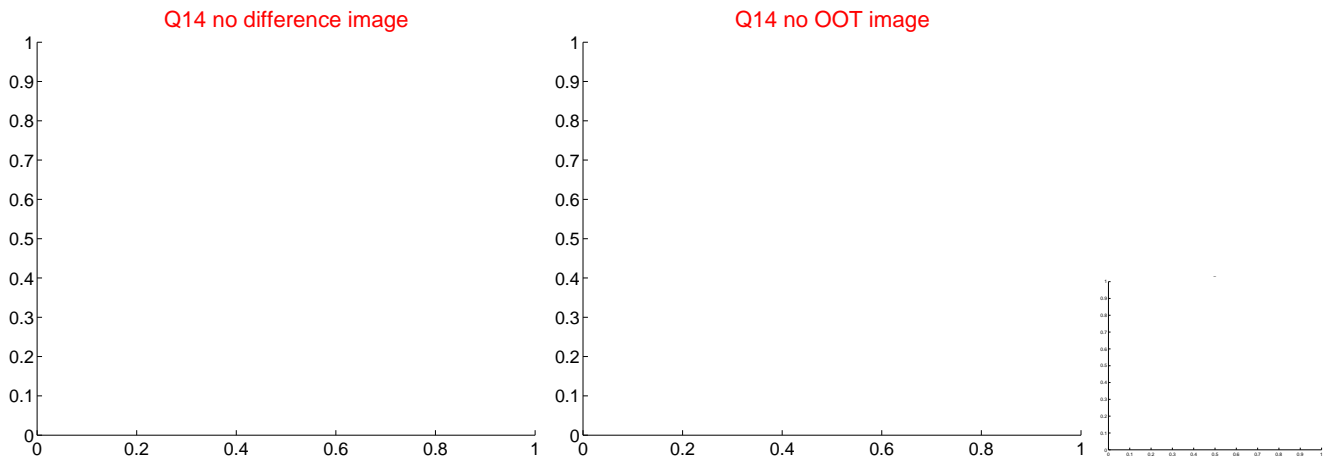
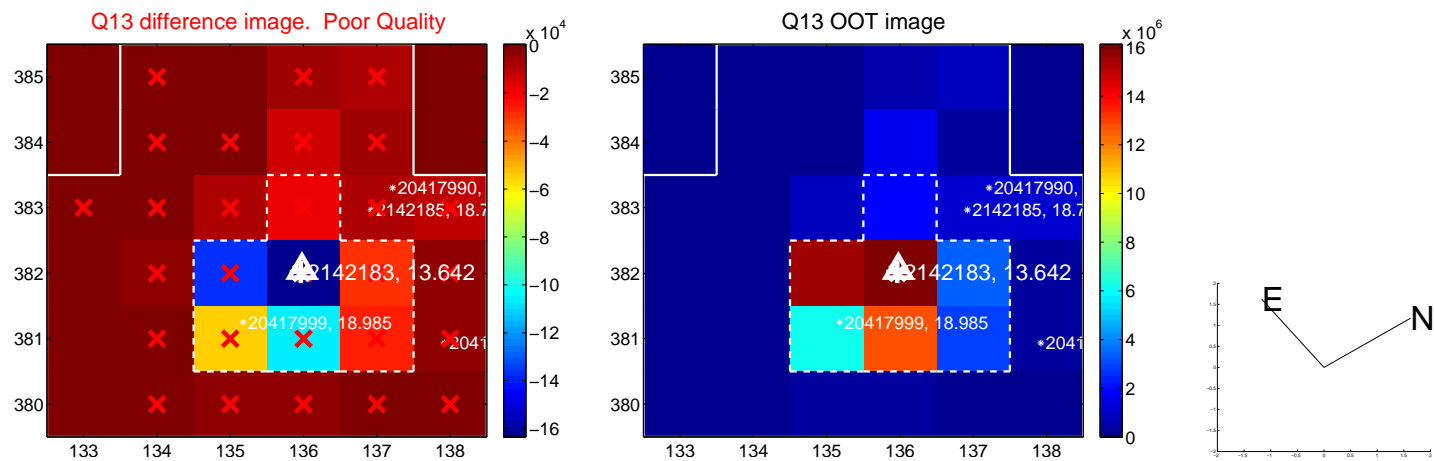
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



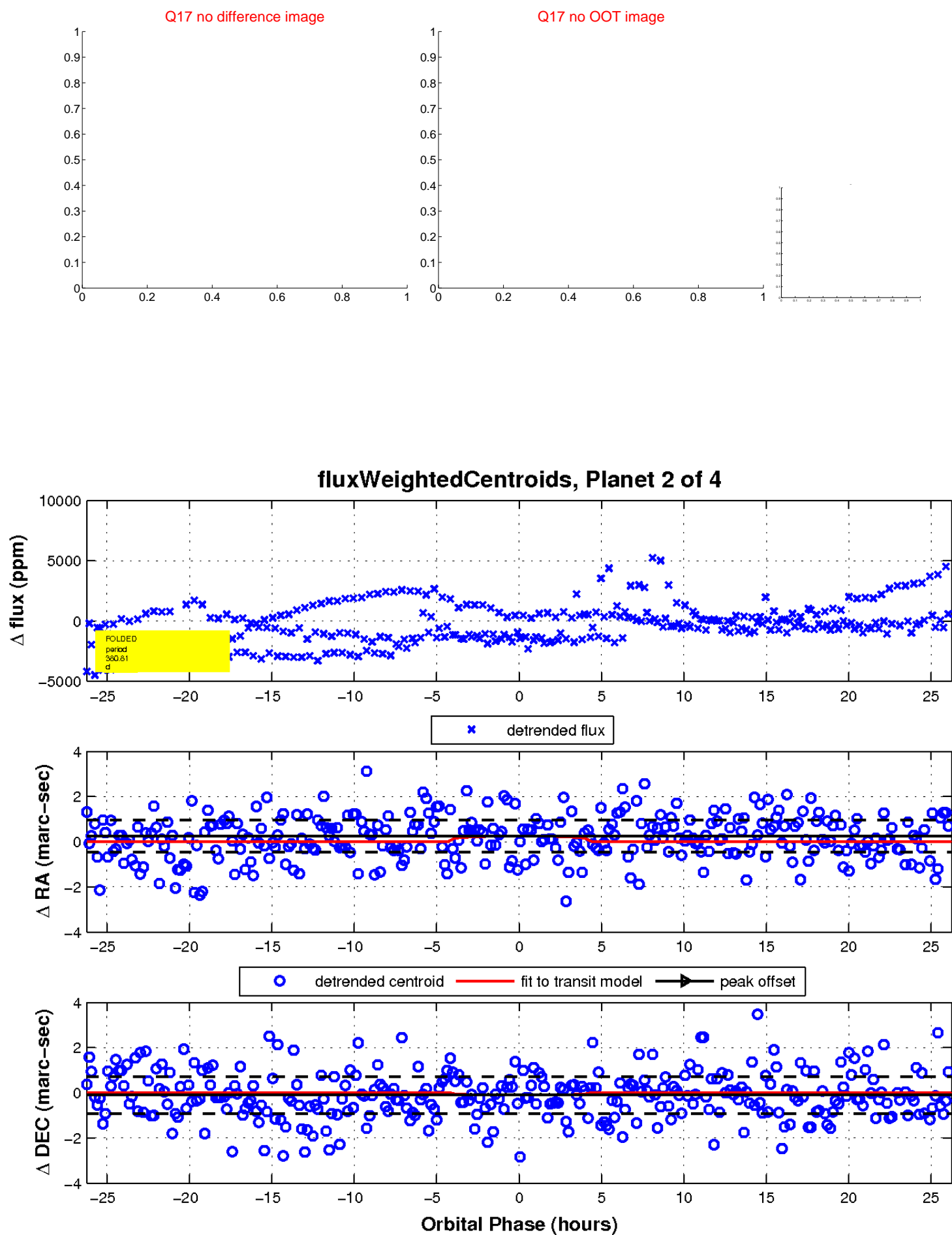
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



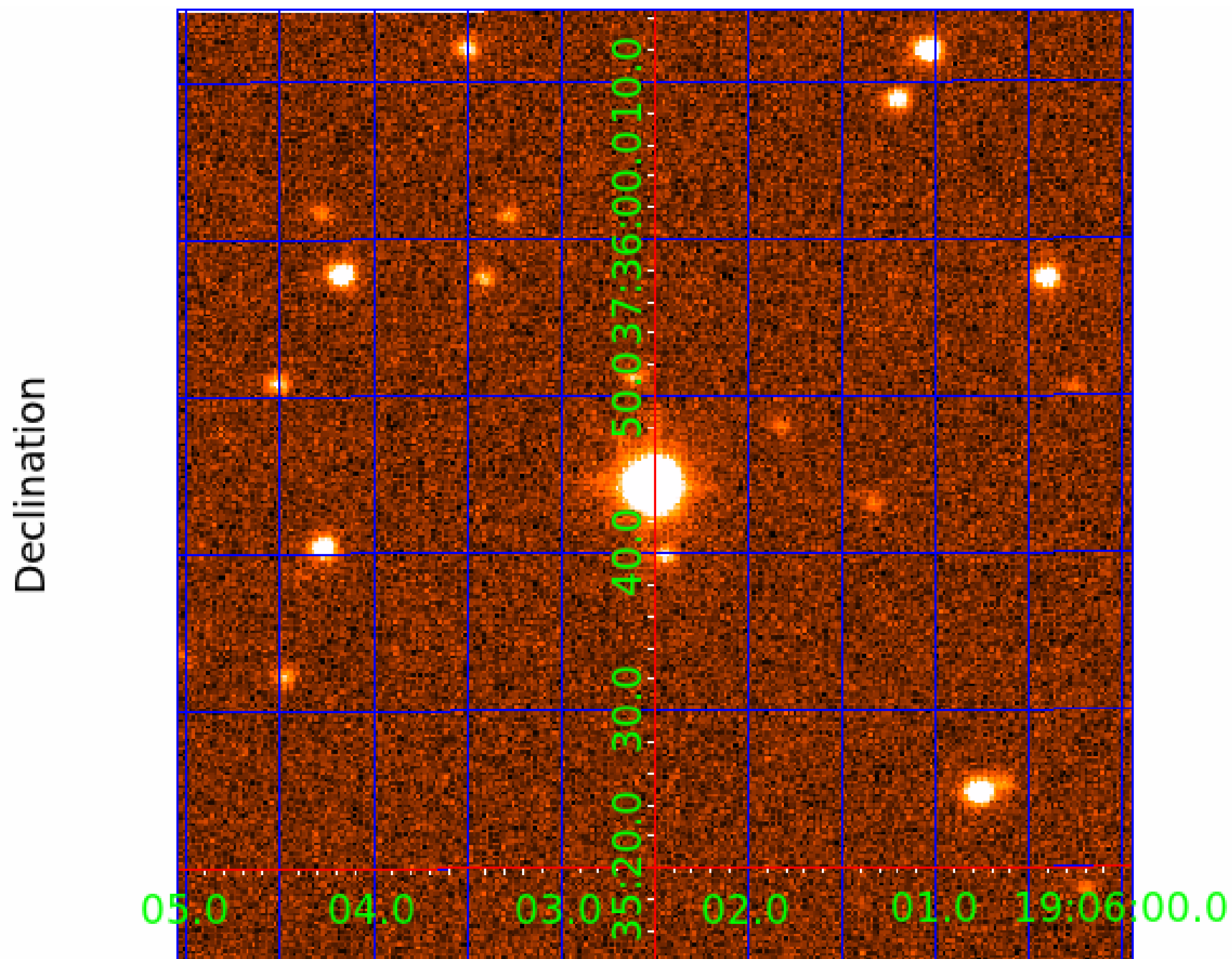
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 002142183

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})
002142183-01	OBS	No	684.034322	185.891869	960.5	3.179	16.1	5.7	4.62	4860	14.21	5.05
002142183-02	OBS	No	380.807137	457.998847	535.1	8.757	17.1	2.5	4.62	4860	11.63	11.03
002142183-03	OBS	No	478.498297	218.531928	1040.9	5.184	17.6	4.9	4.62	4860	15.11	8.13
002142183-04	OBS	No	431.385380	515.038978	1275.7	6.524	15.6	6.1	4.62	4860	16.47	9.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002142183-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
002142183-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002142183-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002142183-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

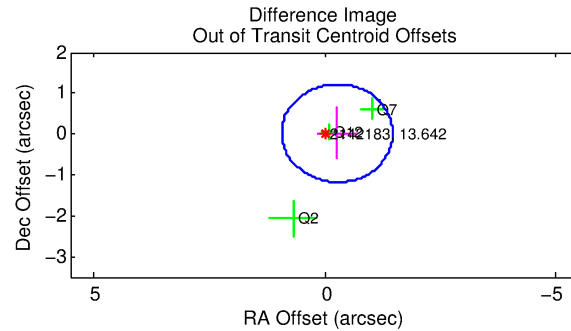
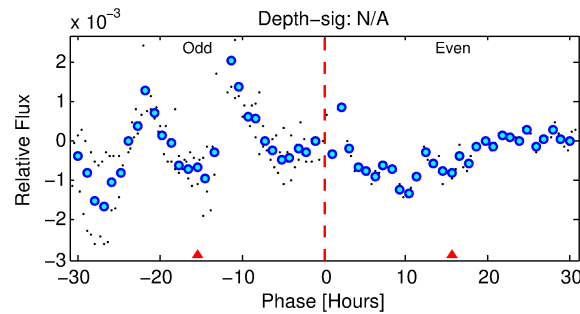
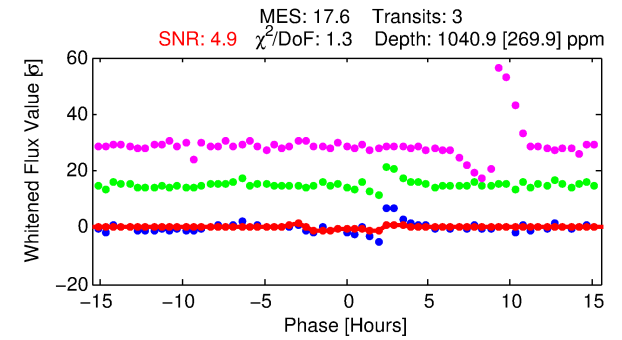
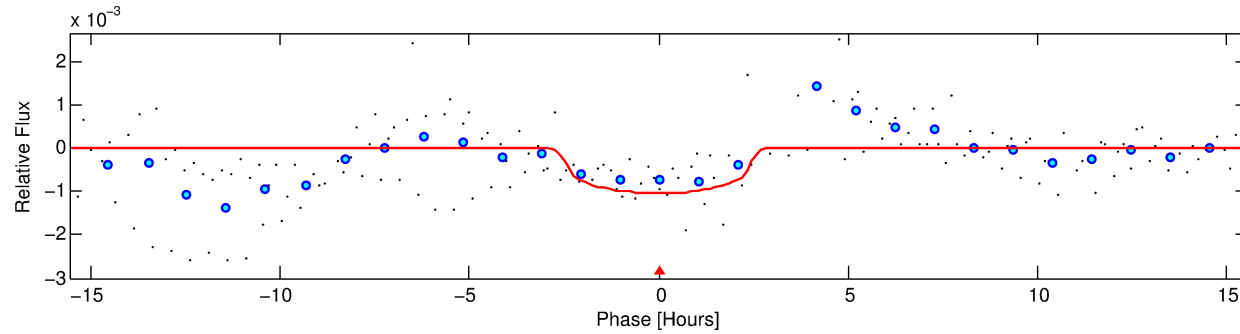
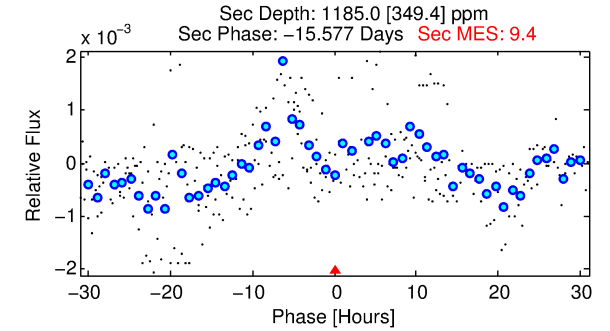
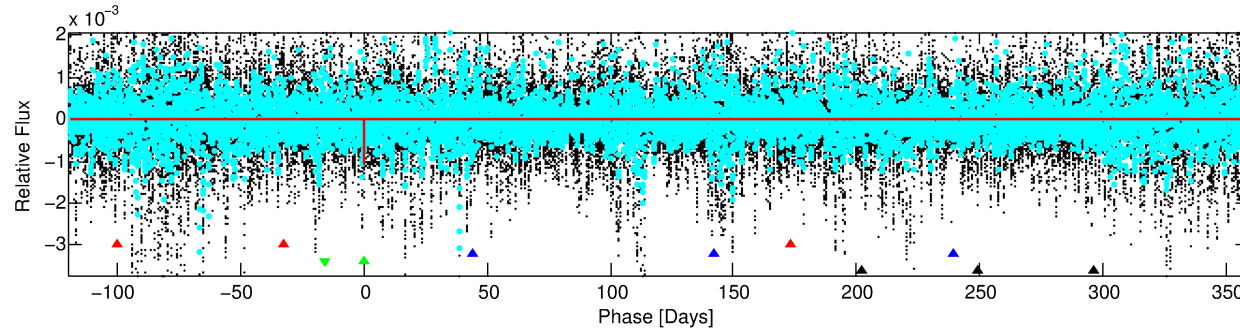
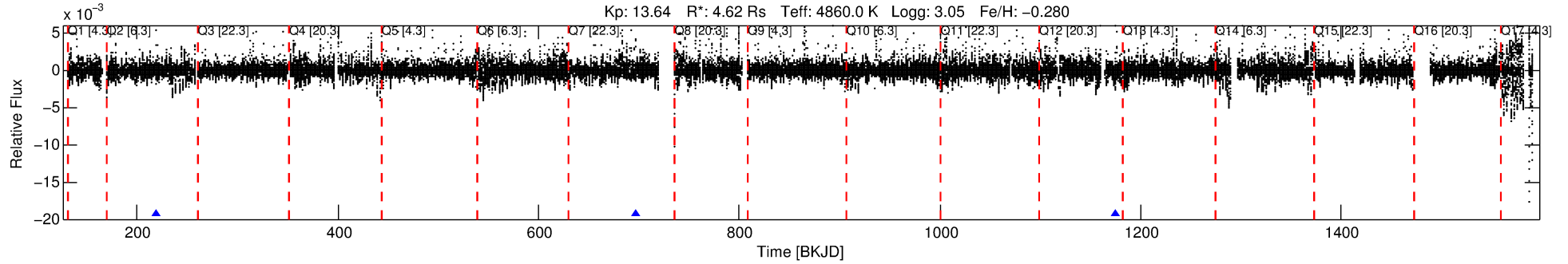
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002142183-03

No Significant Match Found

DV One-Page Summary

KIC: 2142183 Candidate: 3 of 4 Period: 478.498 d



DV Fit Results:

Period = 478.49830 [0.00720] d
Epoch = 218.5319 [0.0092] BKJD
Rp/R* = 0.0299 [0.0366]
a/R* = 627.00 [2585.77]
b = 0.52 [5.88]
Seff = 8.13 [7.06]
Teq = 431 [93] K
Rp = 15.10 [20.70] Re
a = 1.1463 [0.6412] AU
Ag = 3754.52 [9796.29] [0.38] σ
Teffp = 5212 [3213] K [1.49] σ

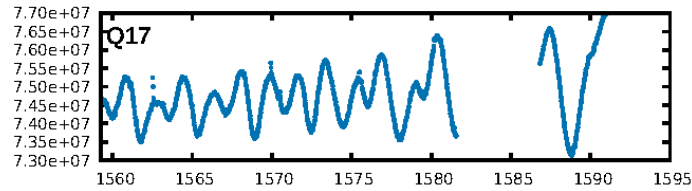
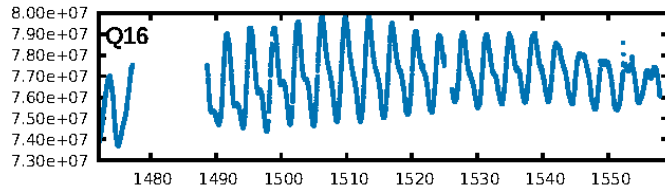
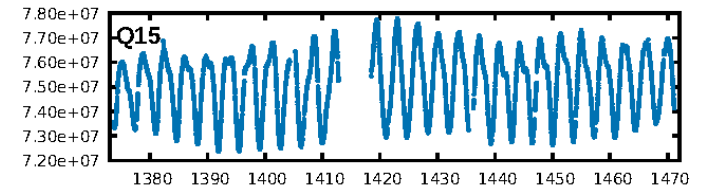
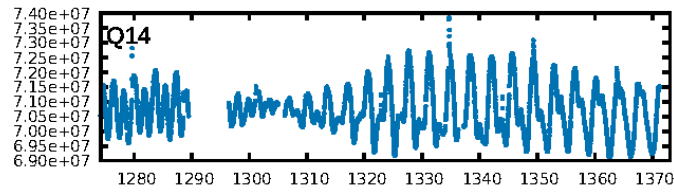
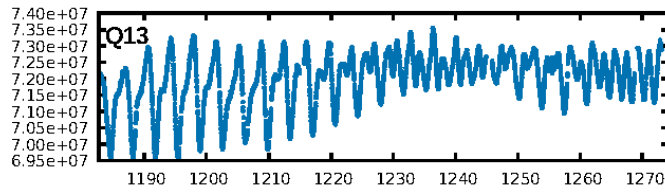
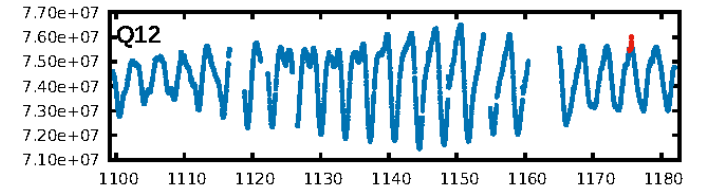
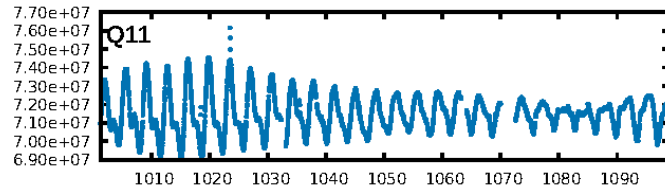
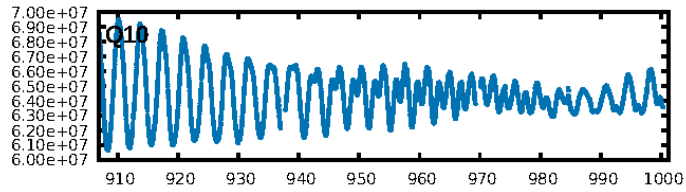
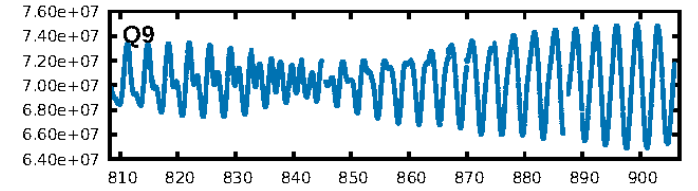
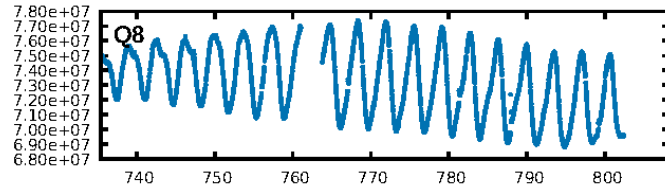
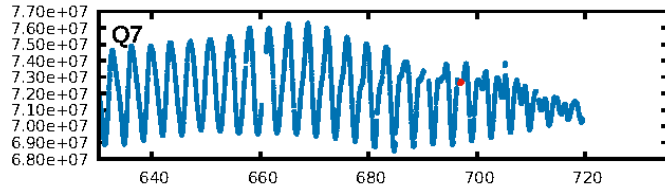
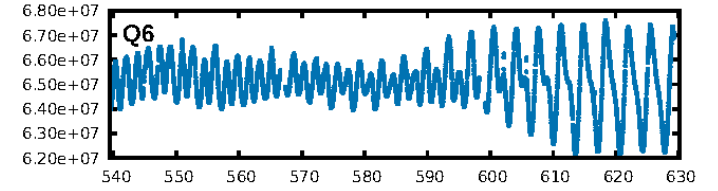
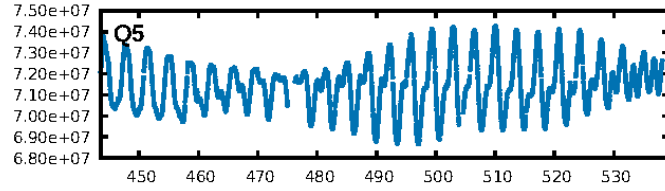
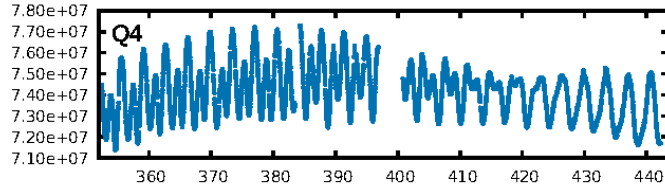
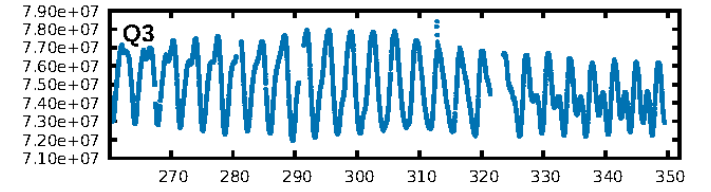
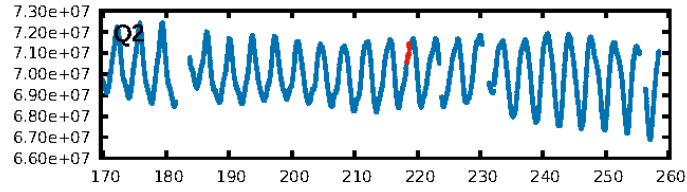
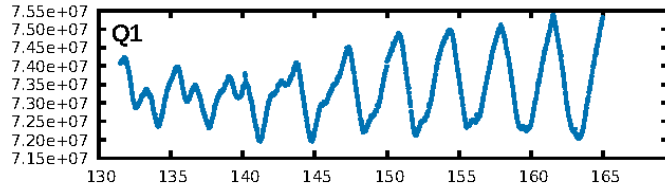
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [135.69] σ
LongPeriod-sig: 100.0% [811.21] σ
ModelChiSquare2-sig: 11.7%
ModelChiSquareGof-sig: 79.7%
Bootstrap-pfa: 3.30e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.6914
Centroid-sig: 59.6%
Centroid-so: 0.901 arcsec [1.23] σ
OotOffset-rm: 0.272 arcsec [0.68] σ
KicOffset-rm: 0.199 arcsec [0.45] σ
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
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DiffImageOverlap-fno: 1.00 [3/3]

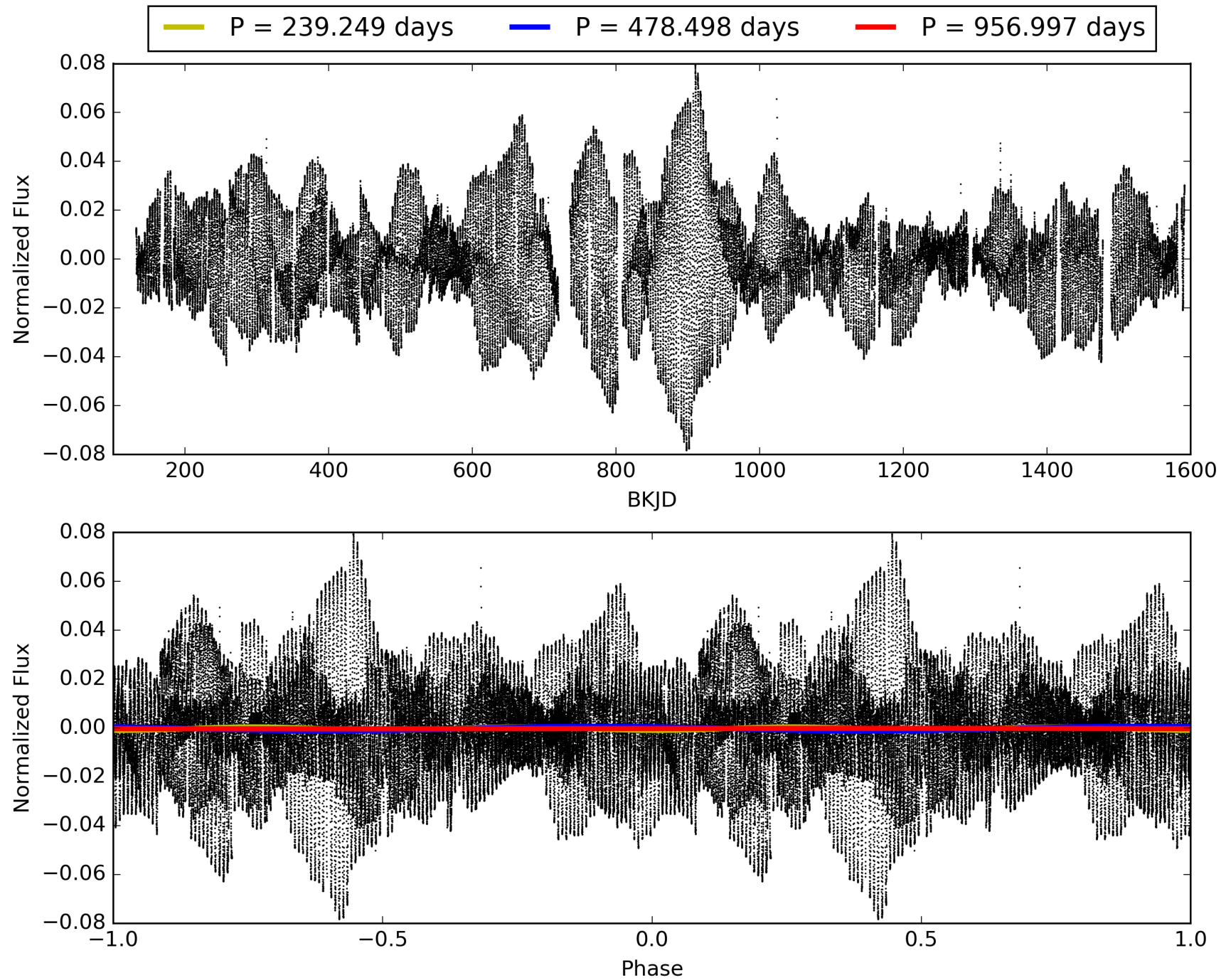
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 21:19:55 Z

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

TCE 002142183-03, PDC Light Curves

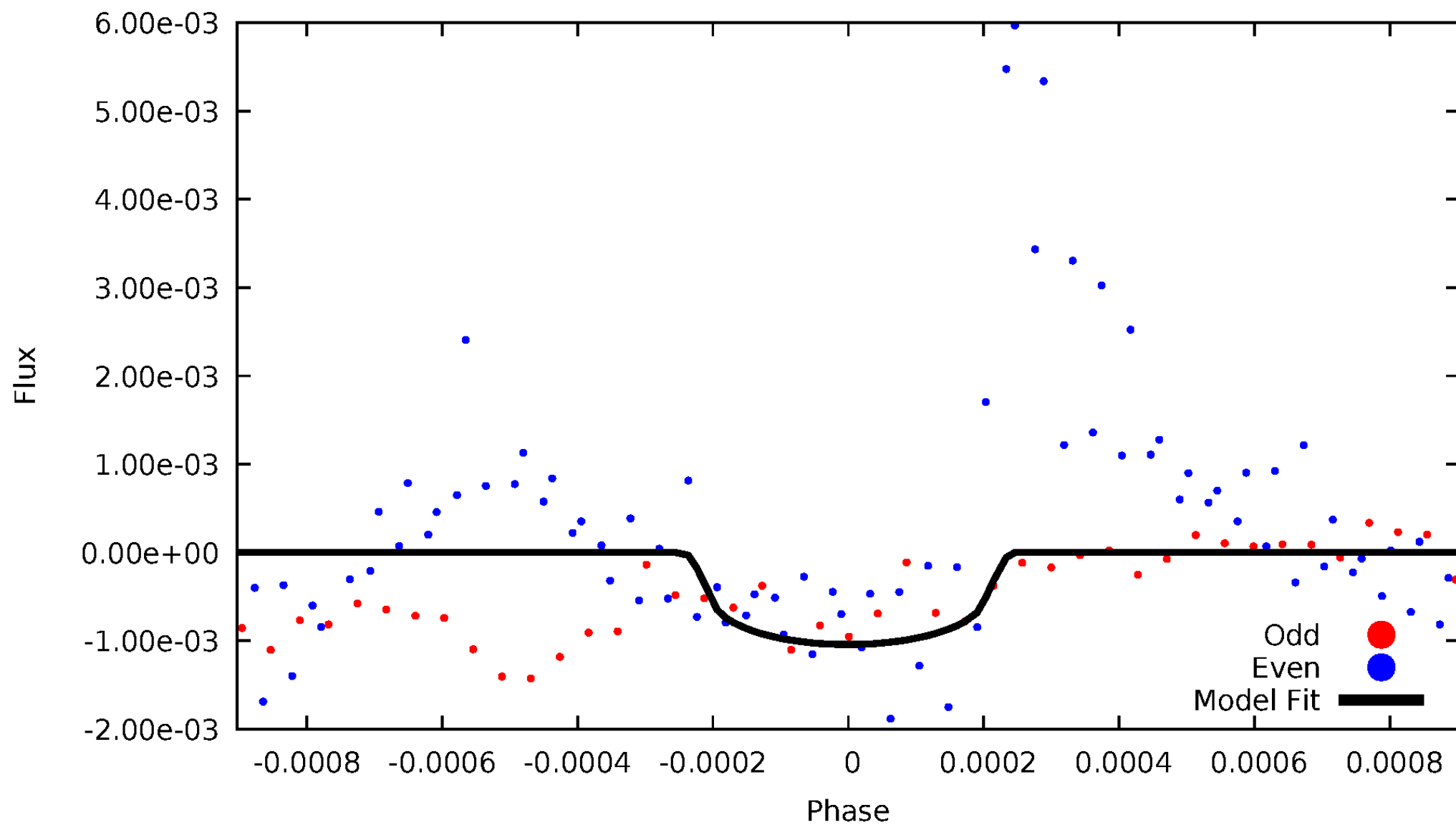


TCE 002142183-03



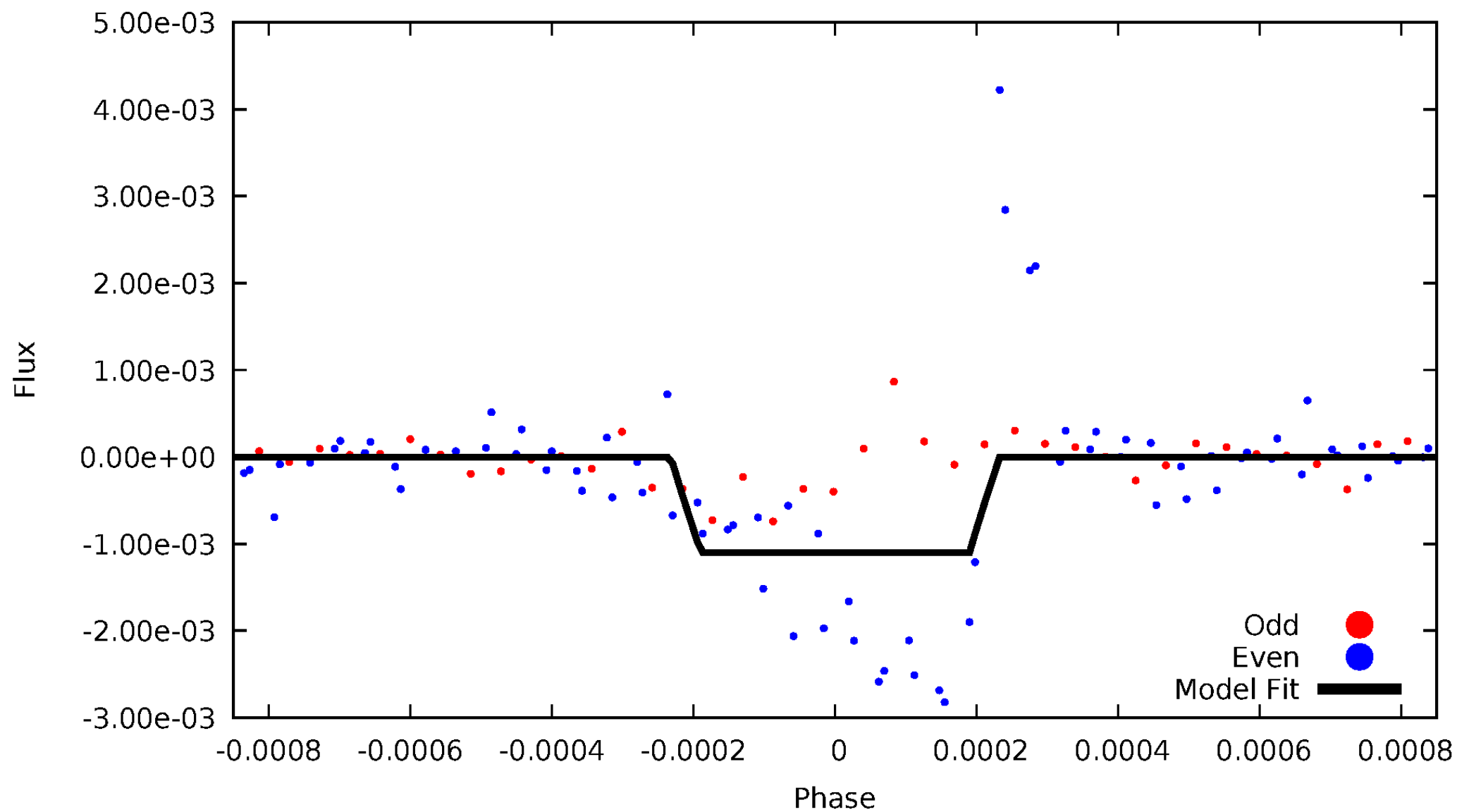
DV Odd/Even

TCE 002142183-03



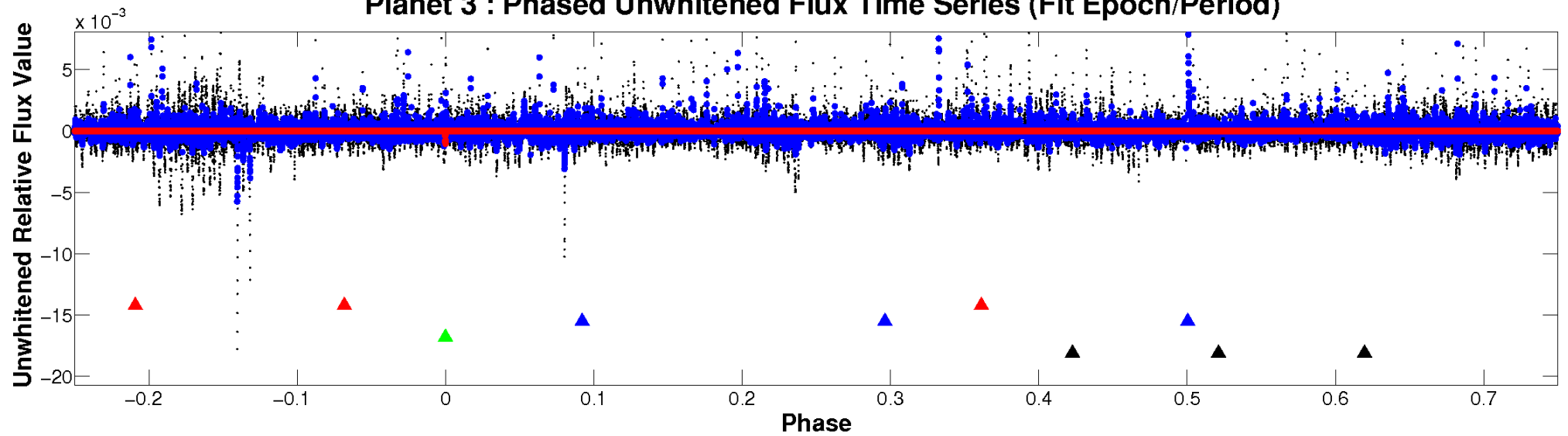
ALT Odd/Even

TCE 002142183-03

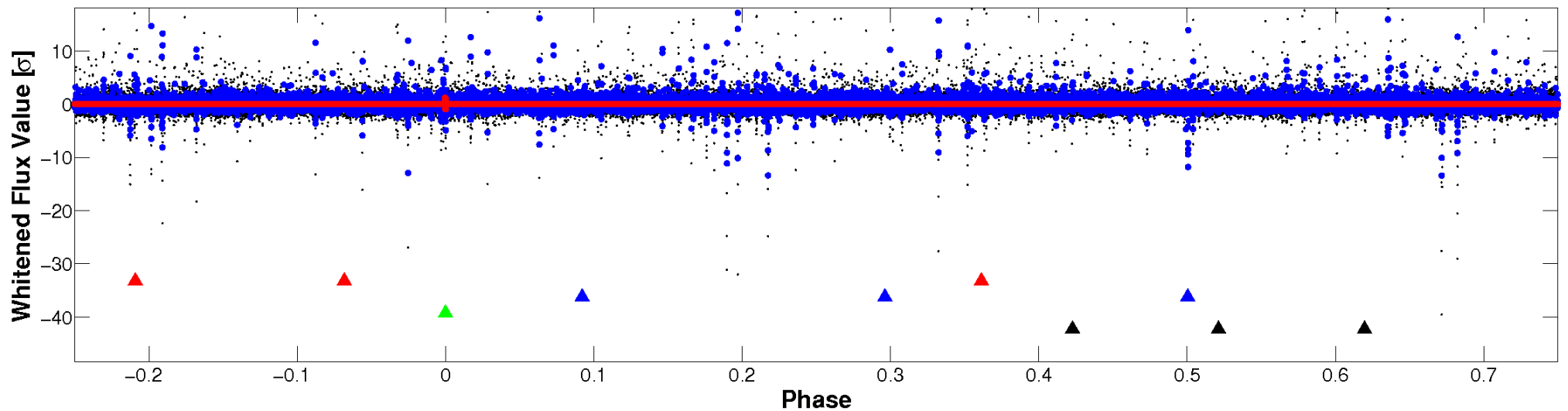


Non-Whitened Vs. Whitened Light Curve

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

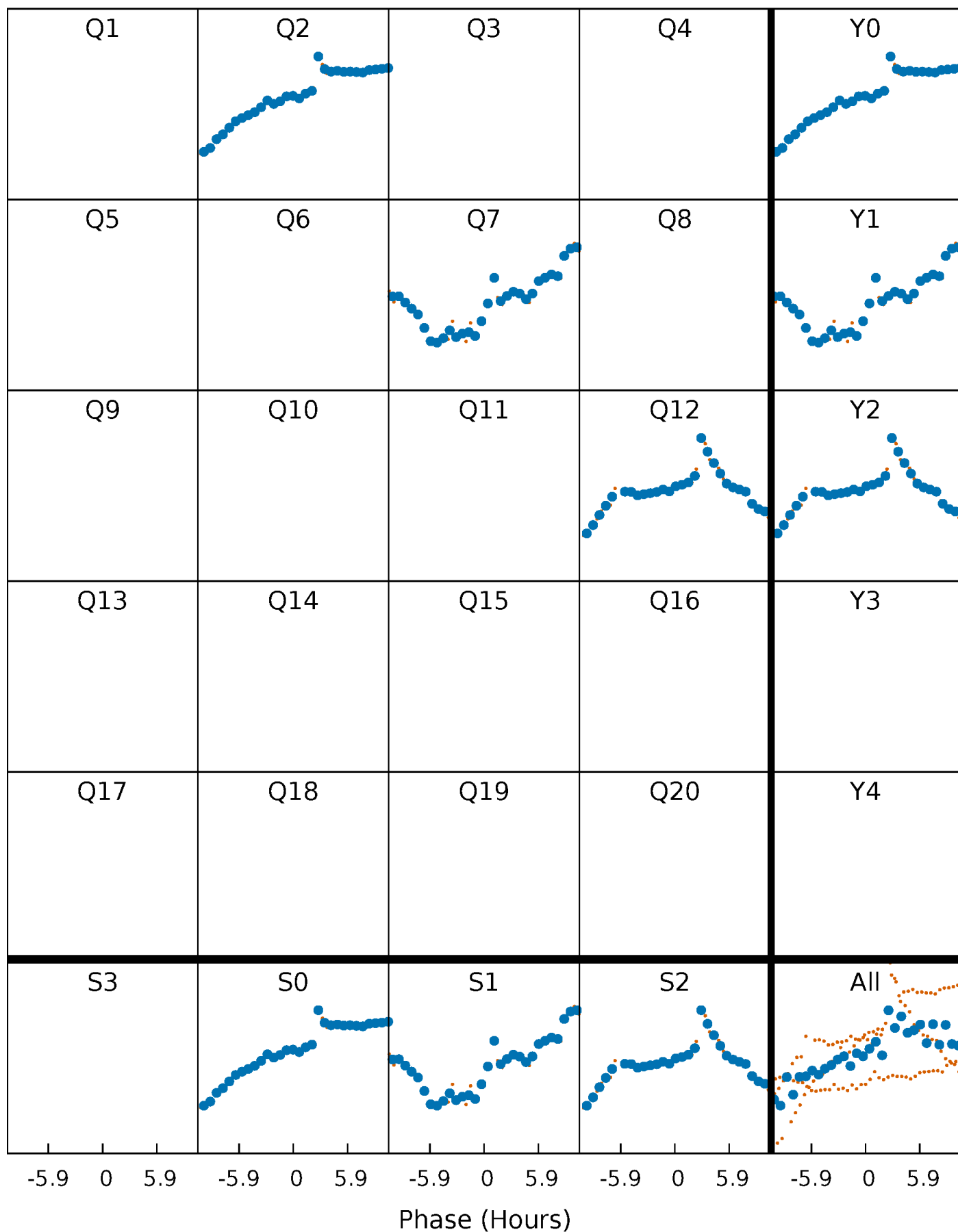


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



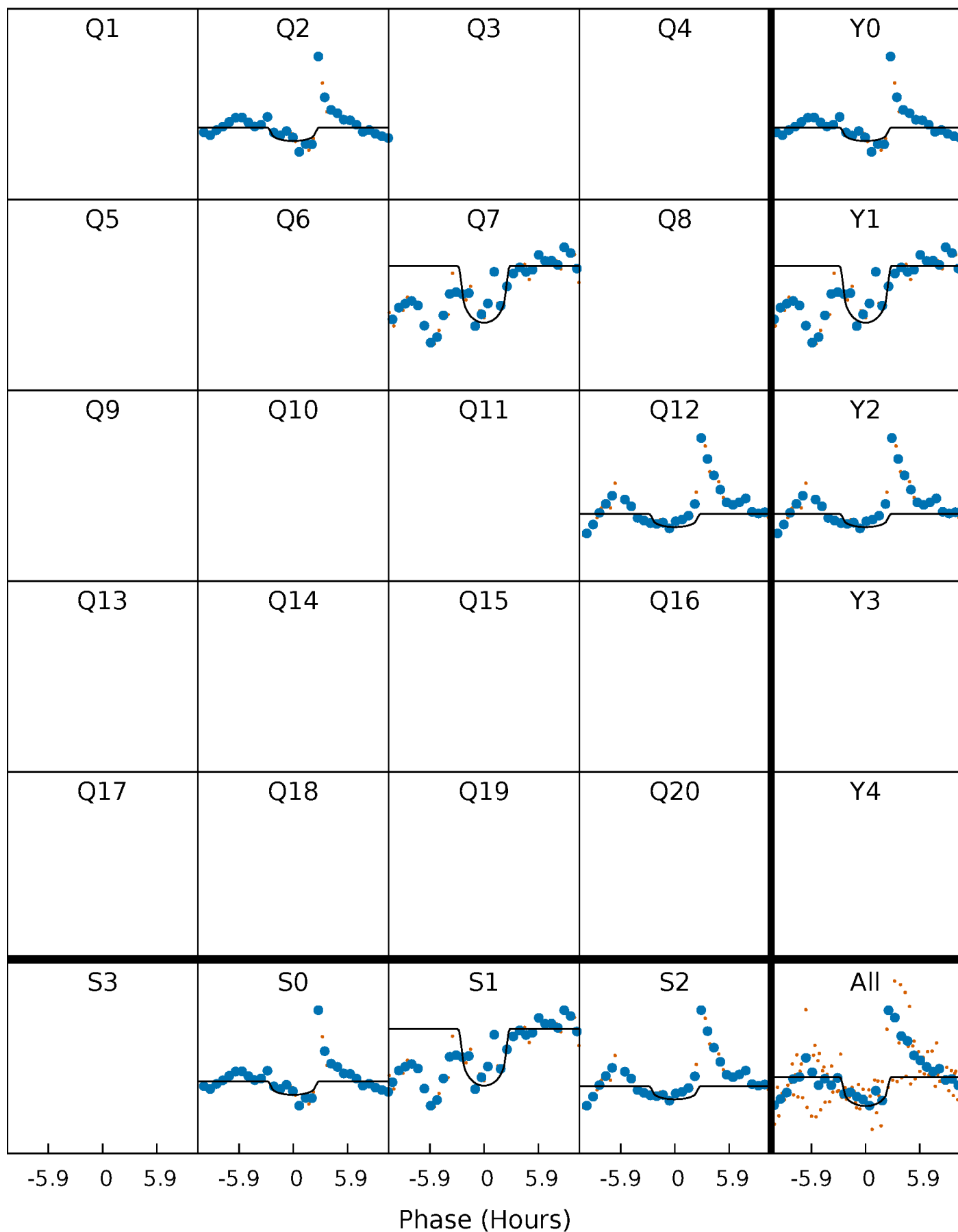
PDC Quarter-Phased Transit Curves

TCE 002142183-03 P=478.498297 Days $T_0=218.531928$ (BKJD)



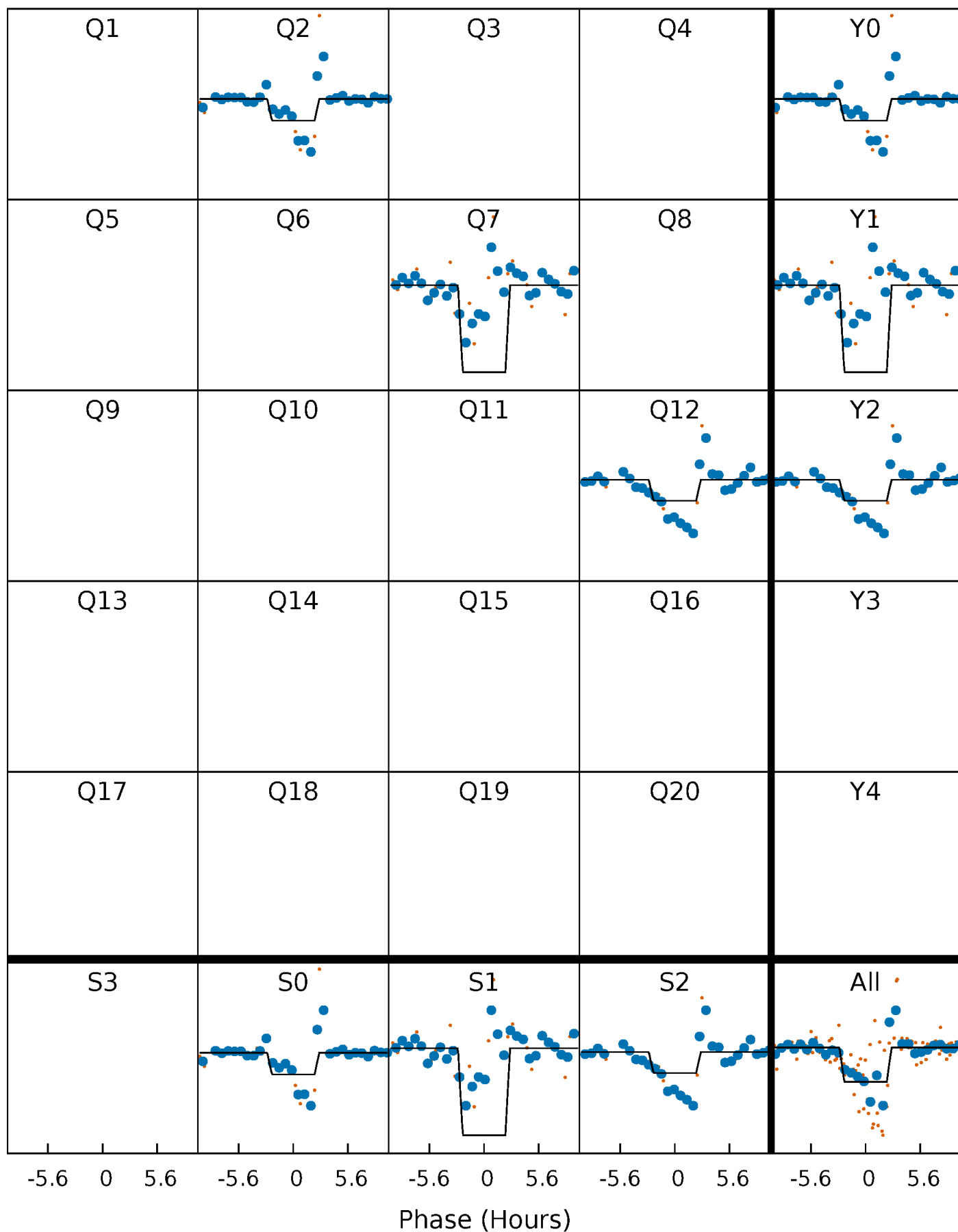
DV Quarter-Phased Transit Curves

TCE 002142183-03 P=478.498297 Days $T_0=218.531928$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

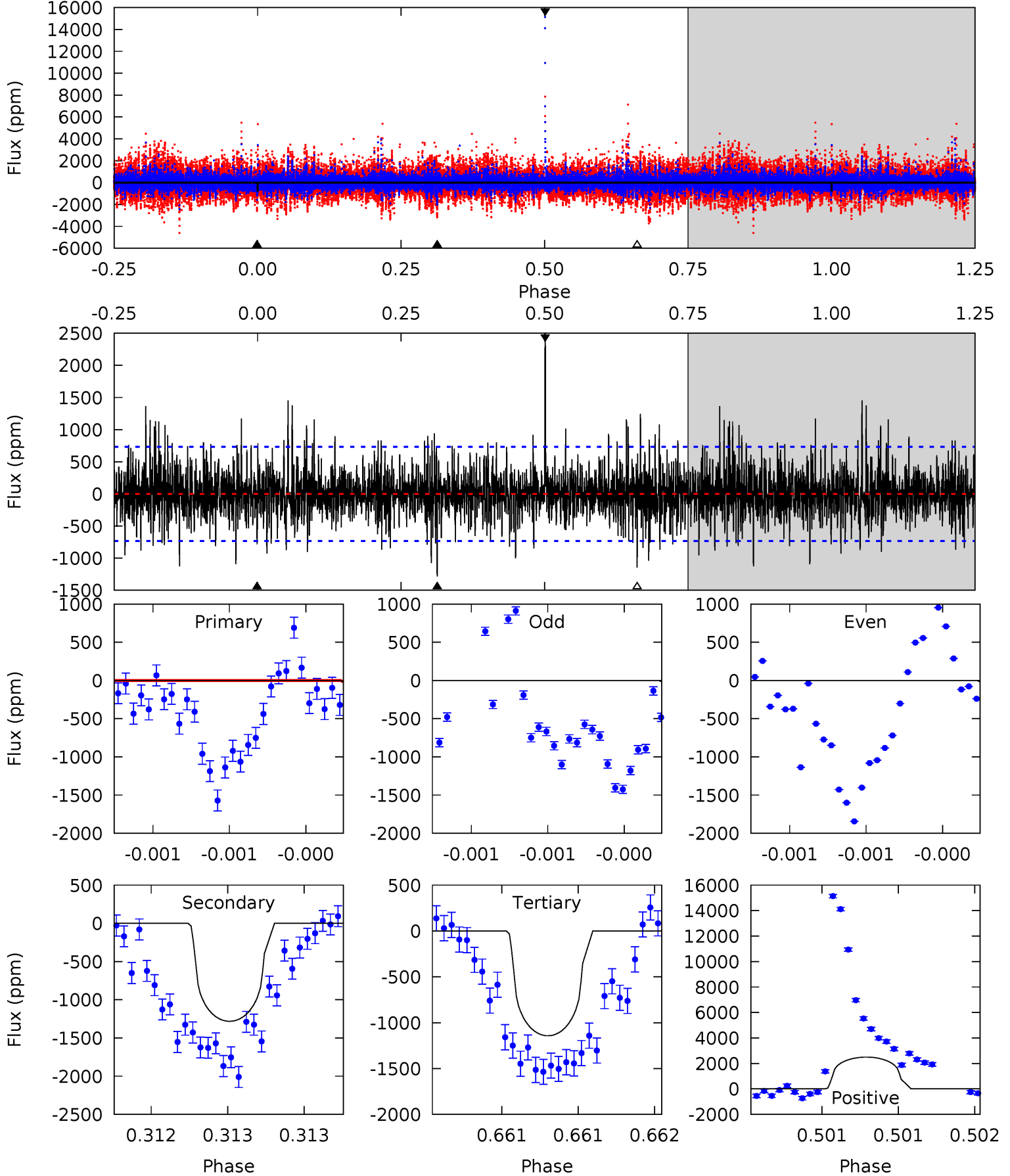
TCE 002142183-03 P=478.499486 Days $T_0=218.532141$ (BKJD)



DV Model-Shift Uniqueness Test

002142183-03, P = 478.498297 Days, E = 218.531928 Days

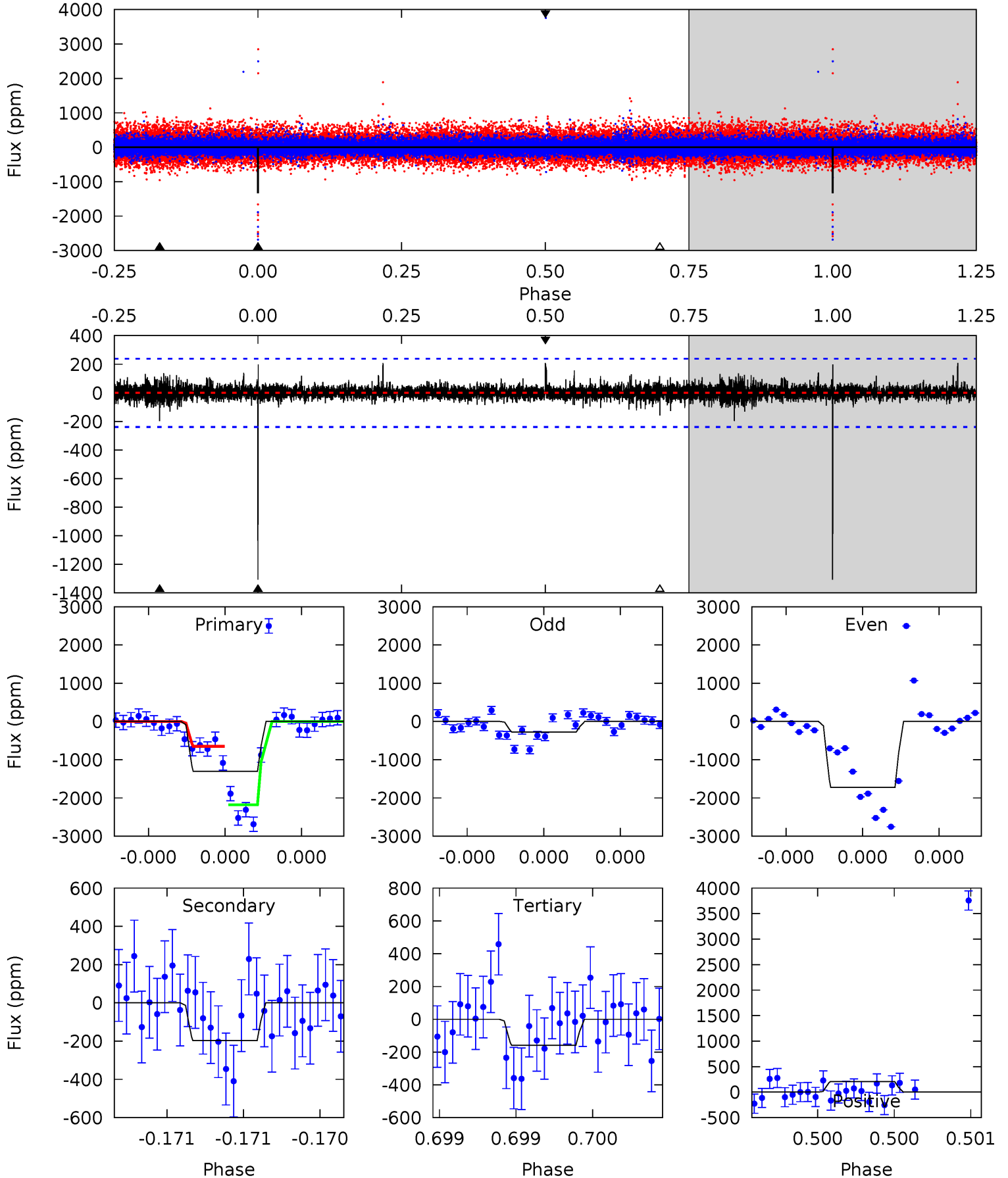
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.95	9.76	8.70	19.0	5.58	3.50	2.25	-2.75	-13.1	1.06	-9.26	0.00	1.00	0.66	0.15



Alt Model-Shift Uniqueness Test

002142183-03, P = 478.499486 Days, E = 218.532141 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.6	4.61	3.72	4.88	5.59	3.51	0.63	26.9	25.7	0.89	-0.27	17.3	0.80	0.14	17.6



Stellar Parameters For KIC 002142183

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4860^{+134}_{-122}	$3.051^{+0.492}_{-0.328}$	$-0.280^{+0.300}_{-0.250}$	$4.624^{+2.862}_{-1.908}$	$0.878^{+0.278}_{-0.228}$	$0.013^{+0.056}_{-0.009}$
	+3%/-3%	+16%/-11%	+107%/-89%	+62%/-41%	+32%/-26%	+449%/-70%
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 002142183-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1282 ± 131	$19.51^{+18.51}_{-13.24}$	593^{+87}_{-75}	4665^{+2839}_{-977}	2478^{+20599}_{-1828}
Alt.	-197 ± 43	$19.07^{+19.41}_{-13.04}$	592^{+83}_{-75}	3345^{+1570}_{-544}	386^{+3284}_{-296}

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

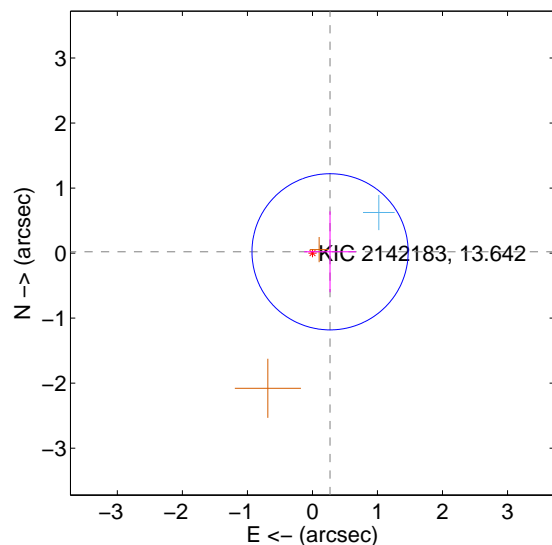
Supplemental centroid analysis for 002142183-03. Kepler magnitude: 13.64. Transit SNR 4.91

There are 1 quarters with good PRF difference image offsets

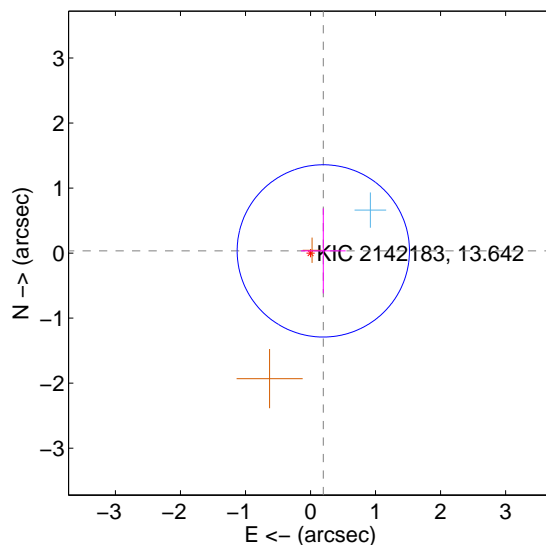
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.272 ± 0.400	0.68	-0.271 ± 0.399	0.020 ± 0.621
PRF-fit source offset from KIC position	0.199 ± 0.441	0.45	-0.197 ± 0.343	0.034 ± 0.653
photometric centroid source offset	0.90 ± 0.73	1.23	-0.12 ± 0.64	-0.89 ± 0.73

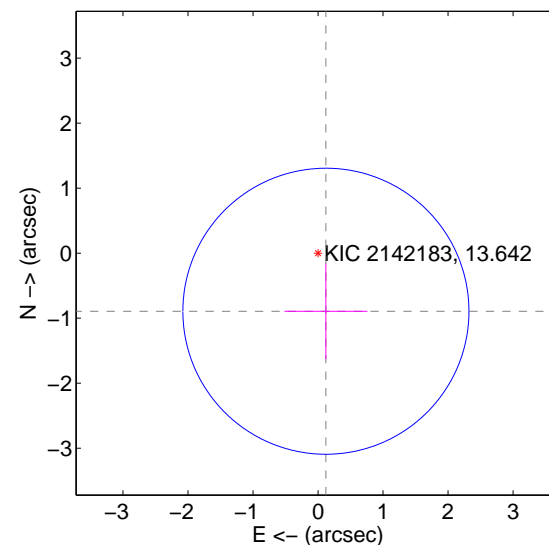
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

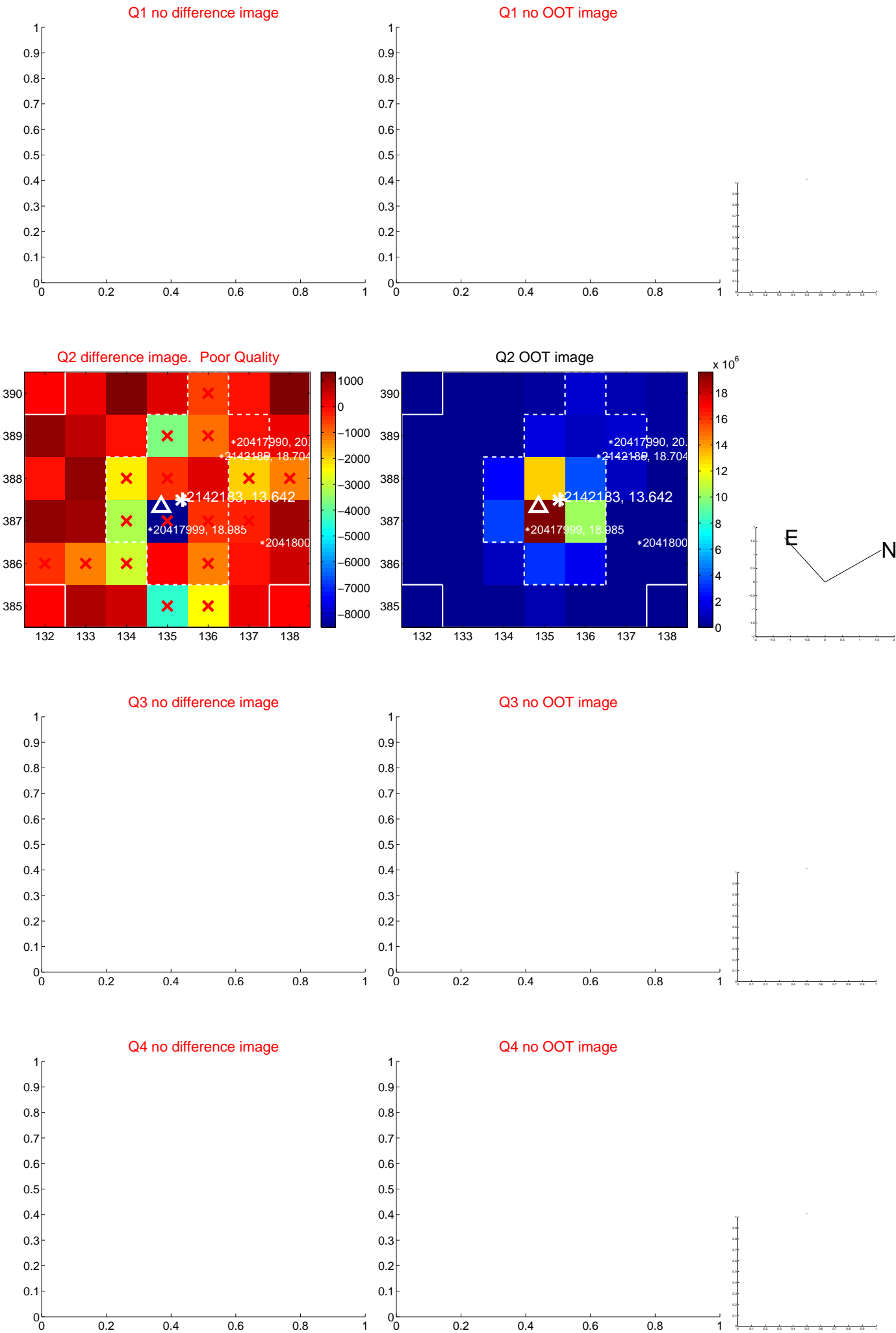


offset from photometric centroids



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



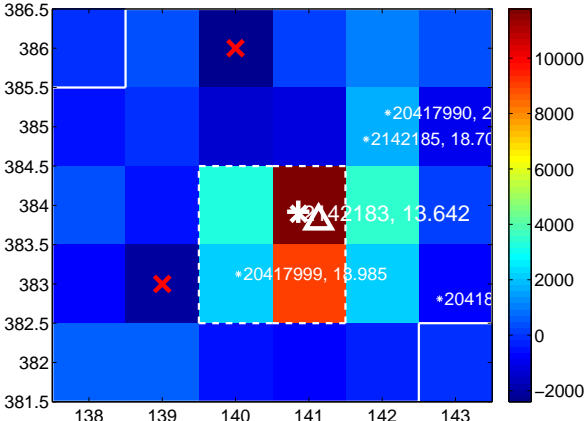
Q6 no difference image



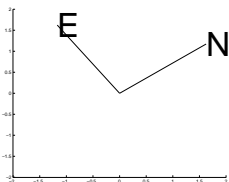
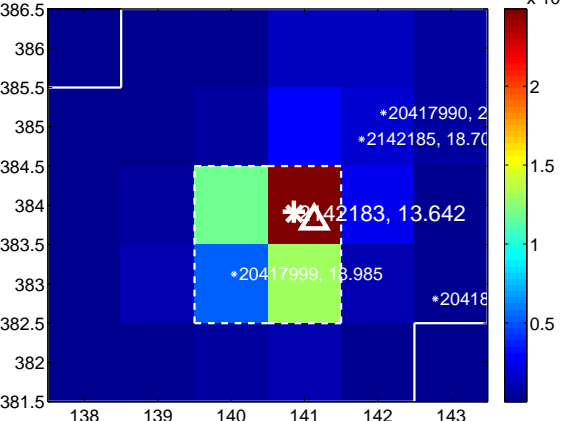
Q6 no OOT image



Q7 difference image



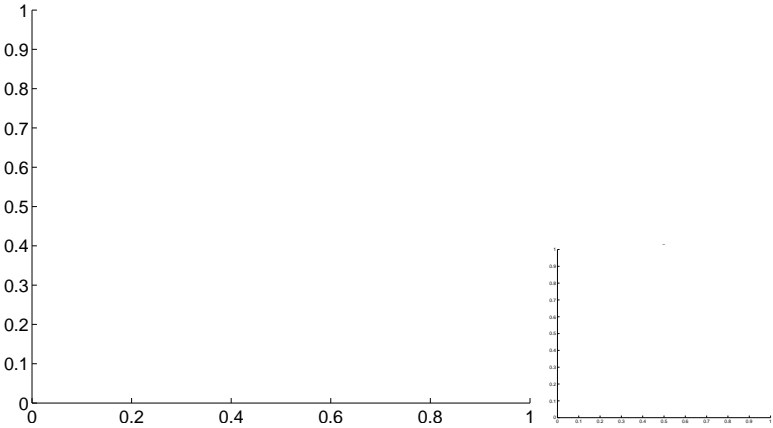
Q7 OOT image



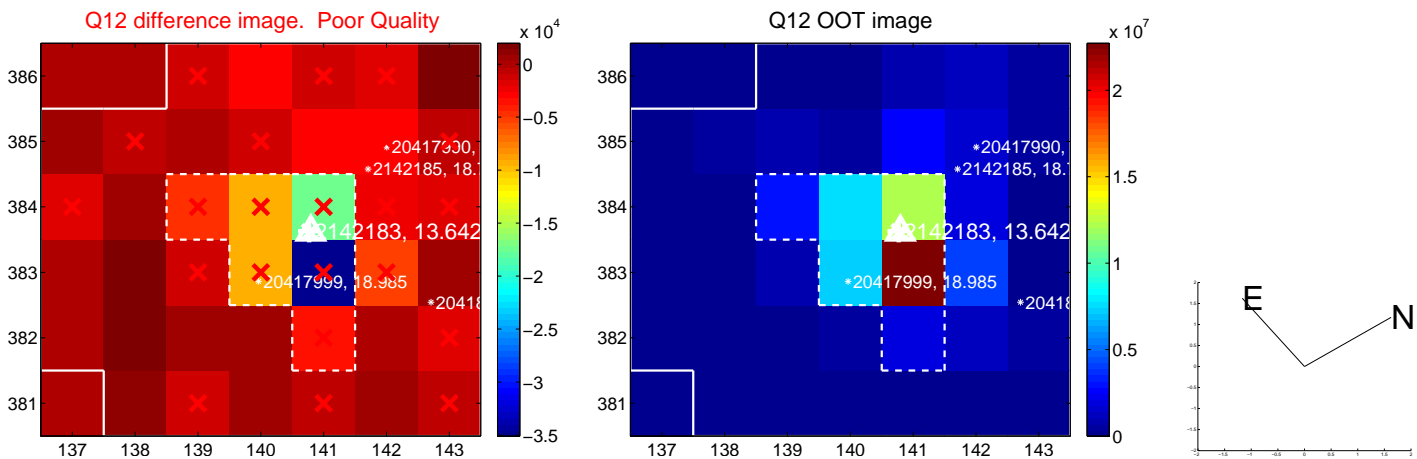
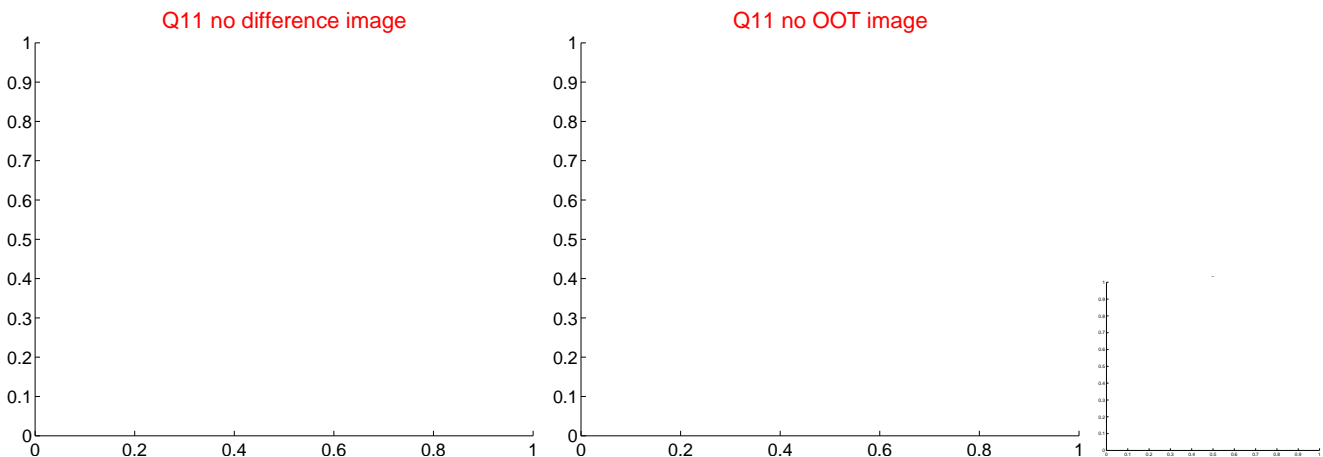
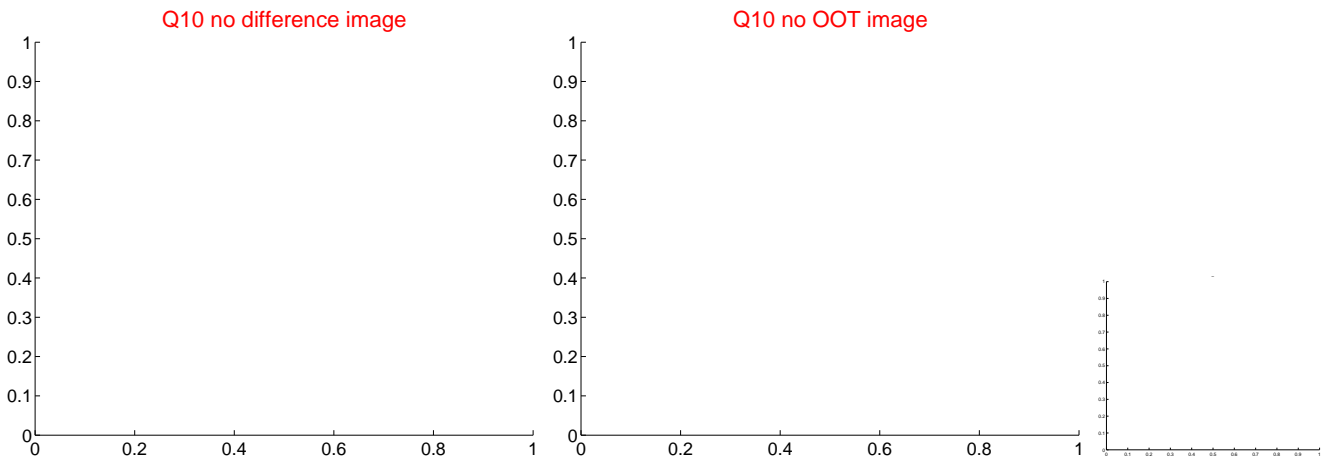
Q8 no difference image



Q8 no OOT image



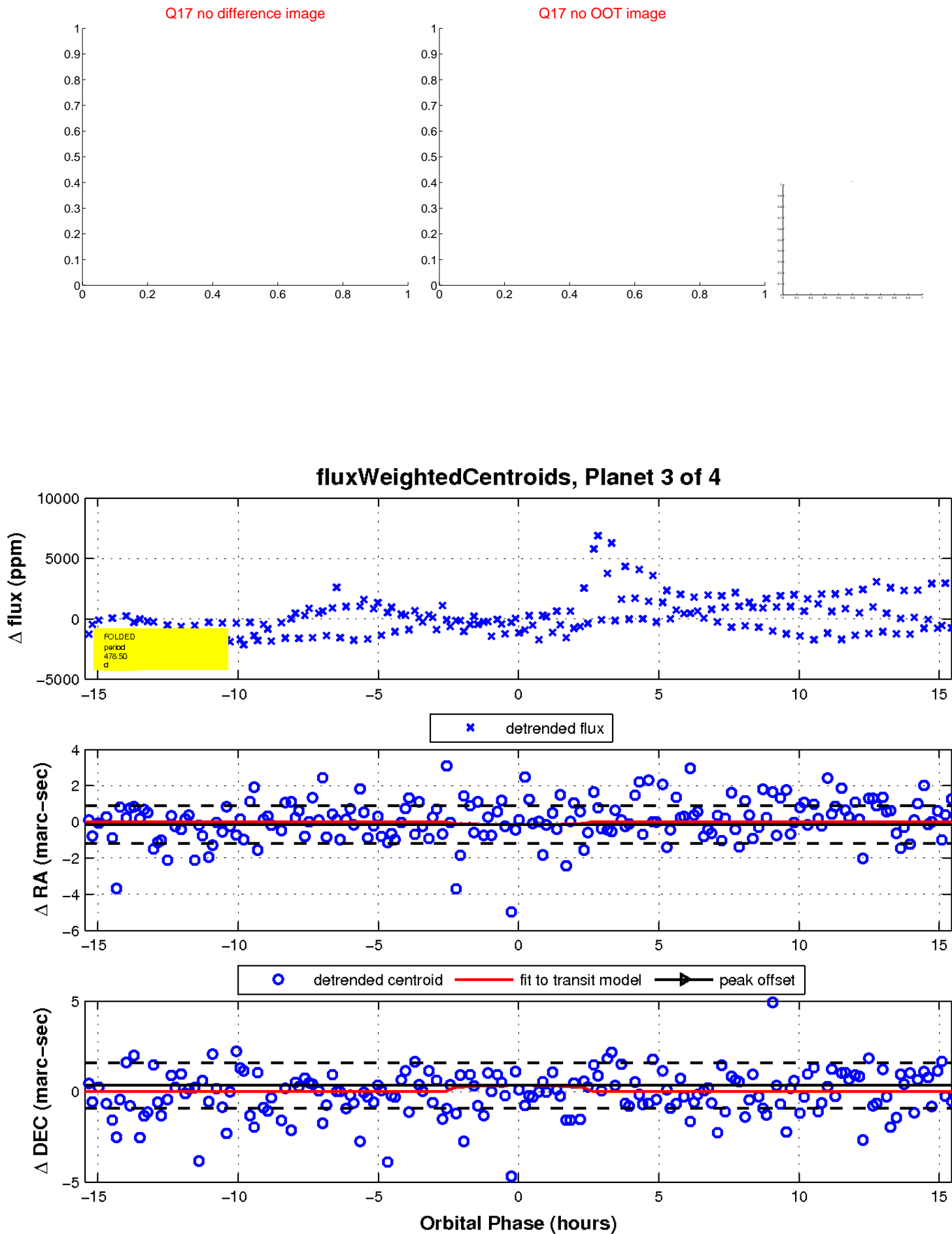
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



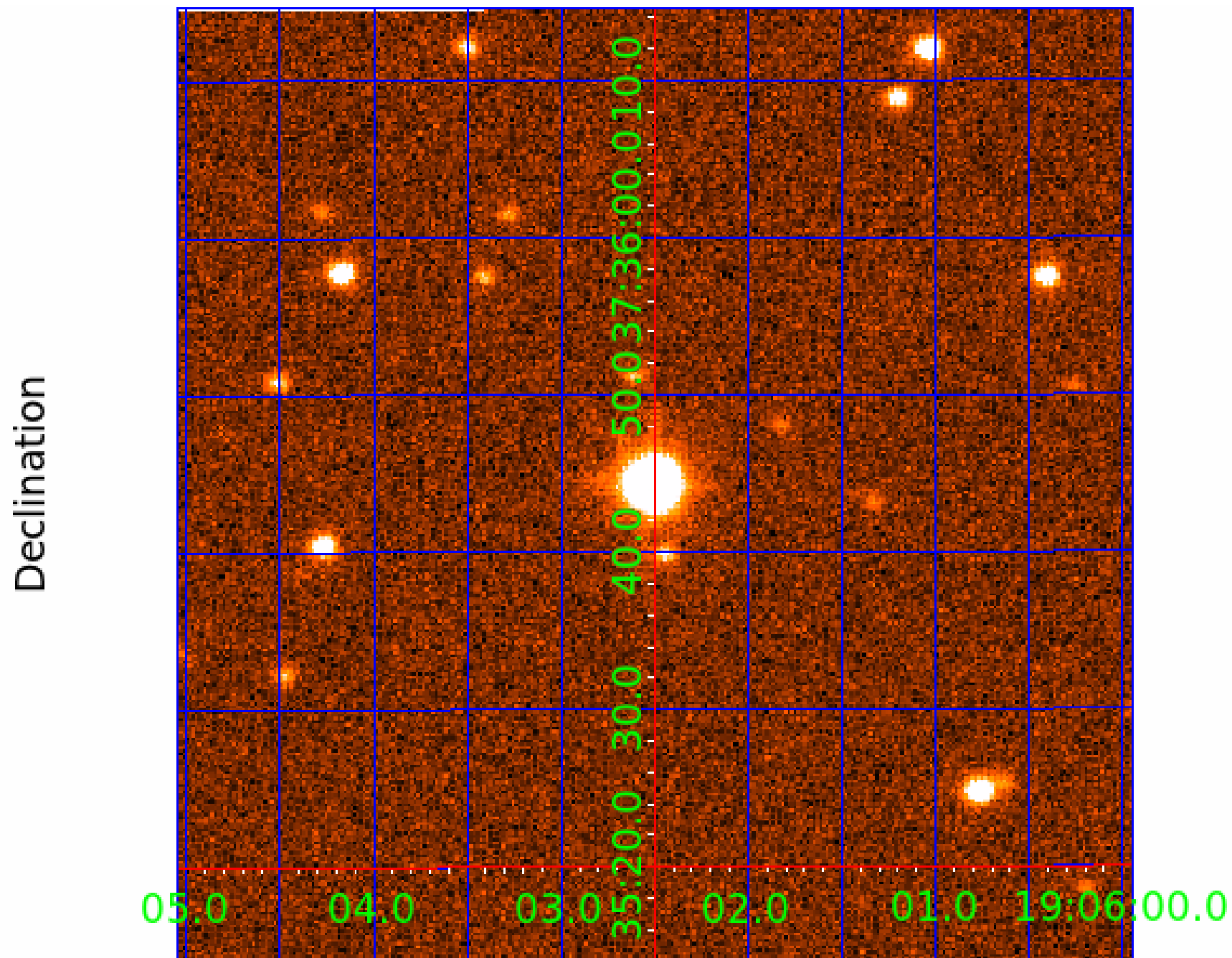
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 002142183

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})
002142183-01	OBS	No	684.034322	185.891869	960.5	3.179	16.1	5.7	4.62	4860	14.21	5.05
002142183-02	OBS	No	380.807137	457.998847	535.1	8.757	17.1	2.5	4.62	4860	11.63	11.03
002142183-03	OBS	No	478.498297	218.531928	1040.9	5.184	17.6	4.9	4.62	4860	15.11	8.13
002142183-04	OBS	No	431.385380	515.038978	1275.7	6.524	15.6	6.1	4.62	4860	16.47	9.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002142183-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
002142183-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002142183-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
002142183-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

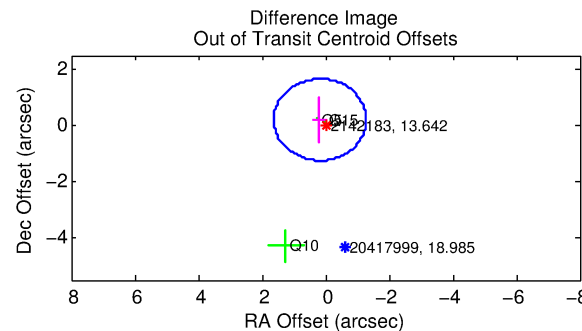
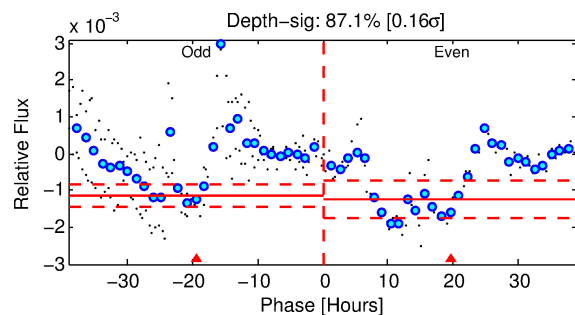
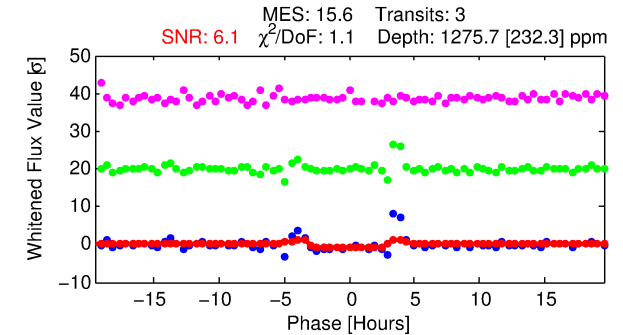
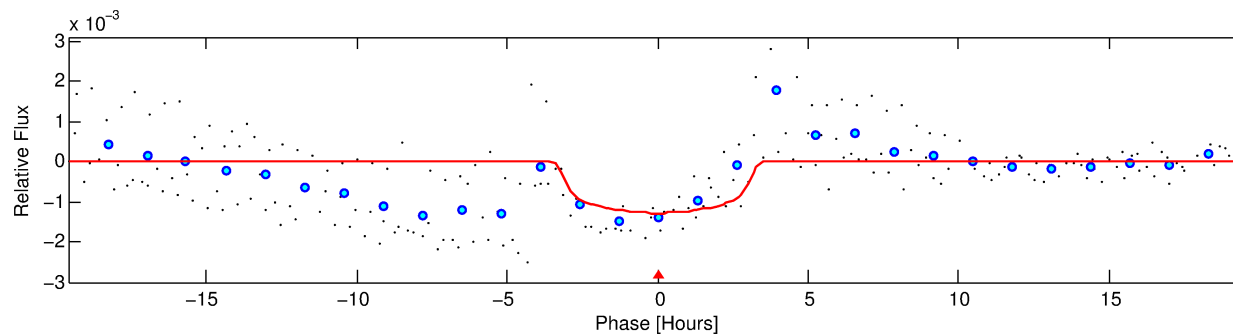
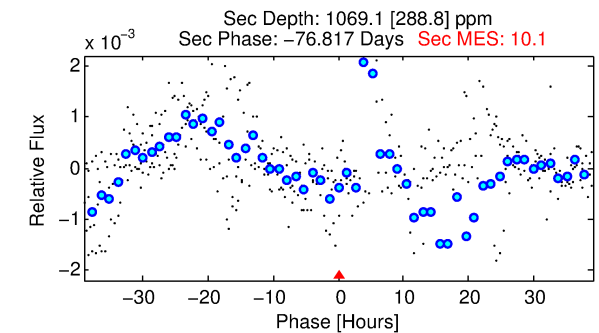
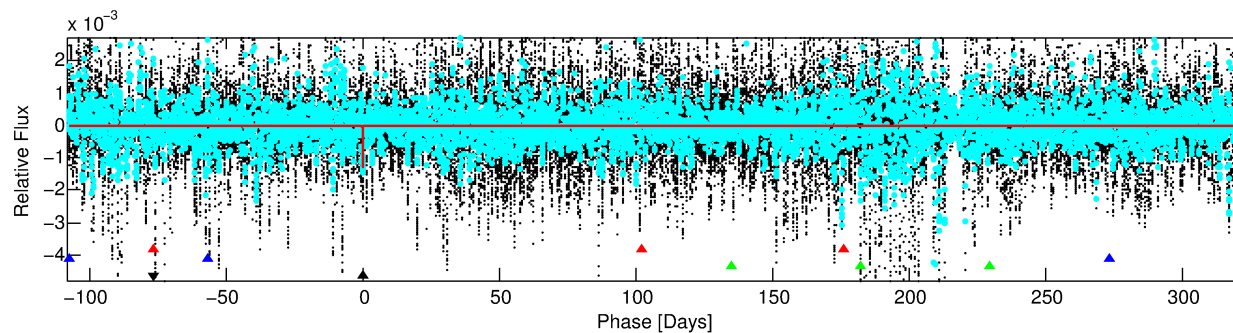
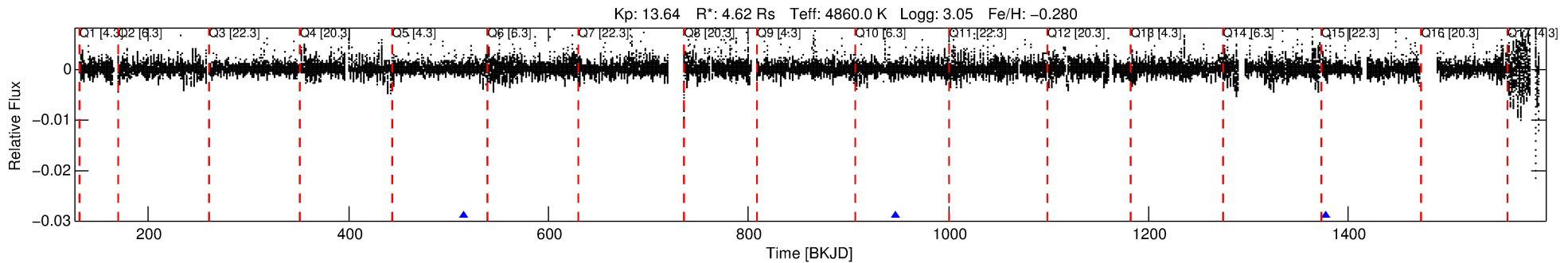
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002142183-04

No Significant Match Found

DV One-Page Summary

KIC: 2142183 Candidate: 4 of 4 Period: 431.385 d



DV Fit Results:

Period = 431.38538 [0.00467] d
Epoch = 515.0390 [0.0063] BKJD
Rp/R* = 0.0326 [0.0255]
a/R* = 472.56 [1264.52]
b = 0.44 [5.02]
Seff = 9.34 [8.10]
Teq = 446 [97] K
Rp = 16.47 [16.42] Re
a = 1.0698 [0.5984] AU
Ag = 2480.80 [4476.14] [0.55σ]
Teffp = 4864 [1933] K [2.28σ]

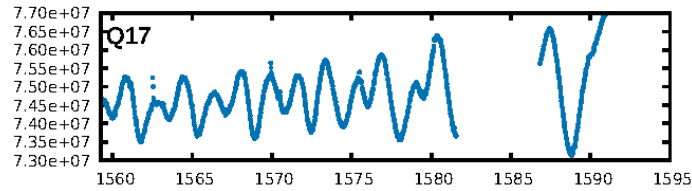
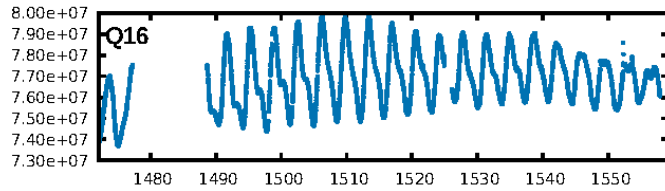
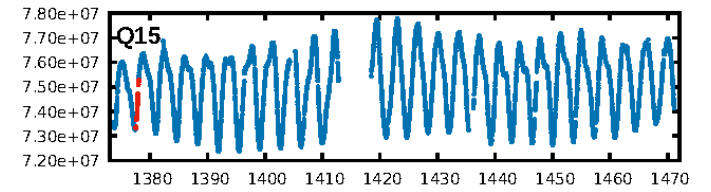
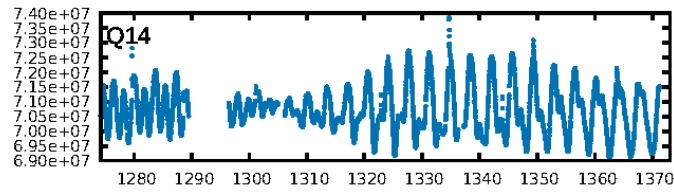
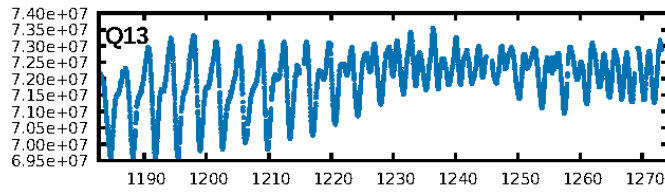
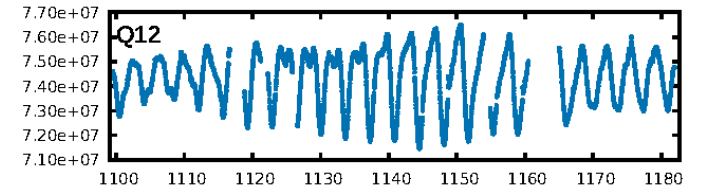
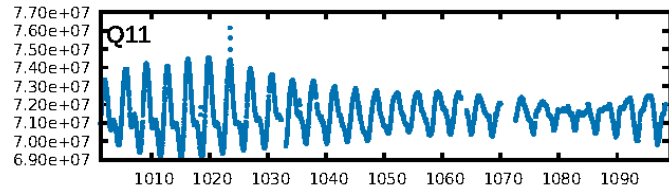
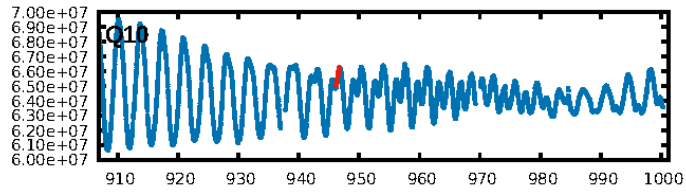
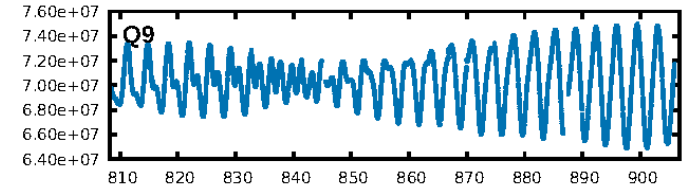
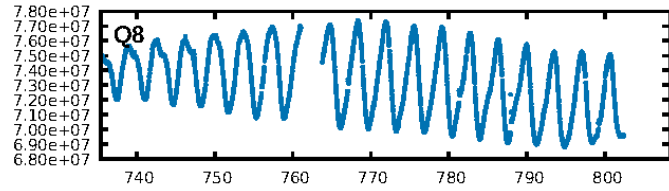
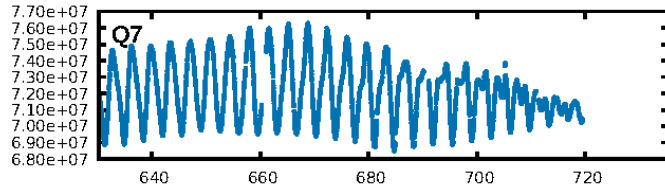
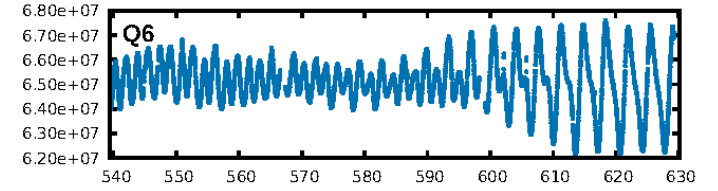
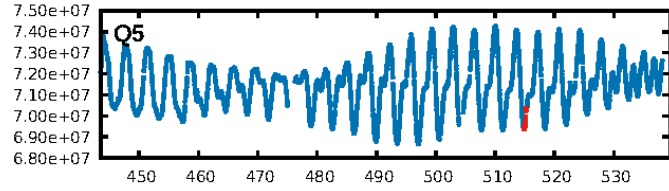
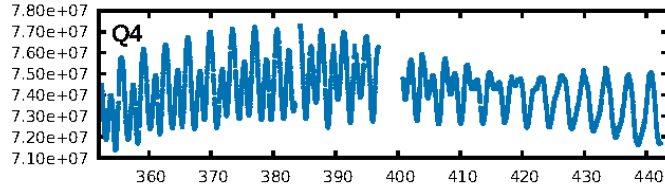
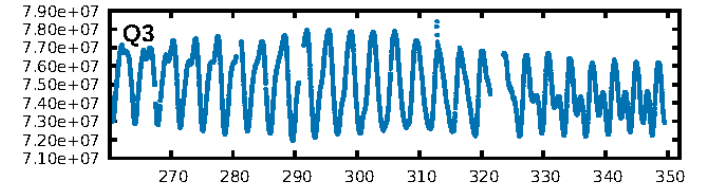
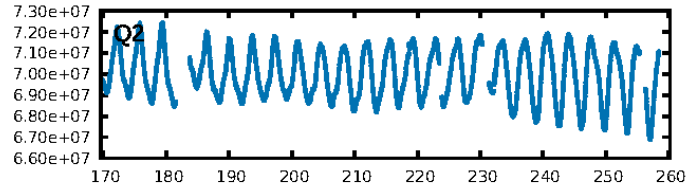
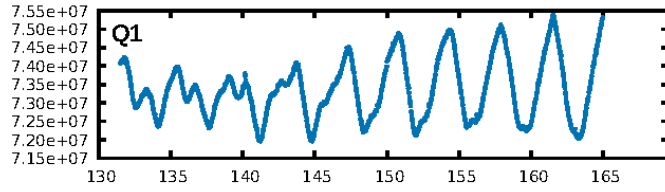
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [111.16σ]
LongPeriod-sig: 100.0% [135.69σ]
ModelChiSquare2-sig: 68.0%
ModelChiSquareGof-sig: 94.9%
Bootstrap-pfa: 1.32e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.877
Centroid-sig: 61.2%
Centroid-so: 0.910 arcsec [1.62σ]
OotOffset-rm: 0.276 arcsec [0.57σ]
KicOffset-rm: 0.330 arcsec [1.23σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

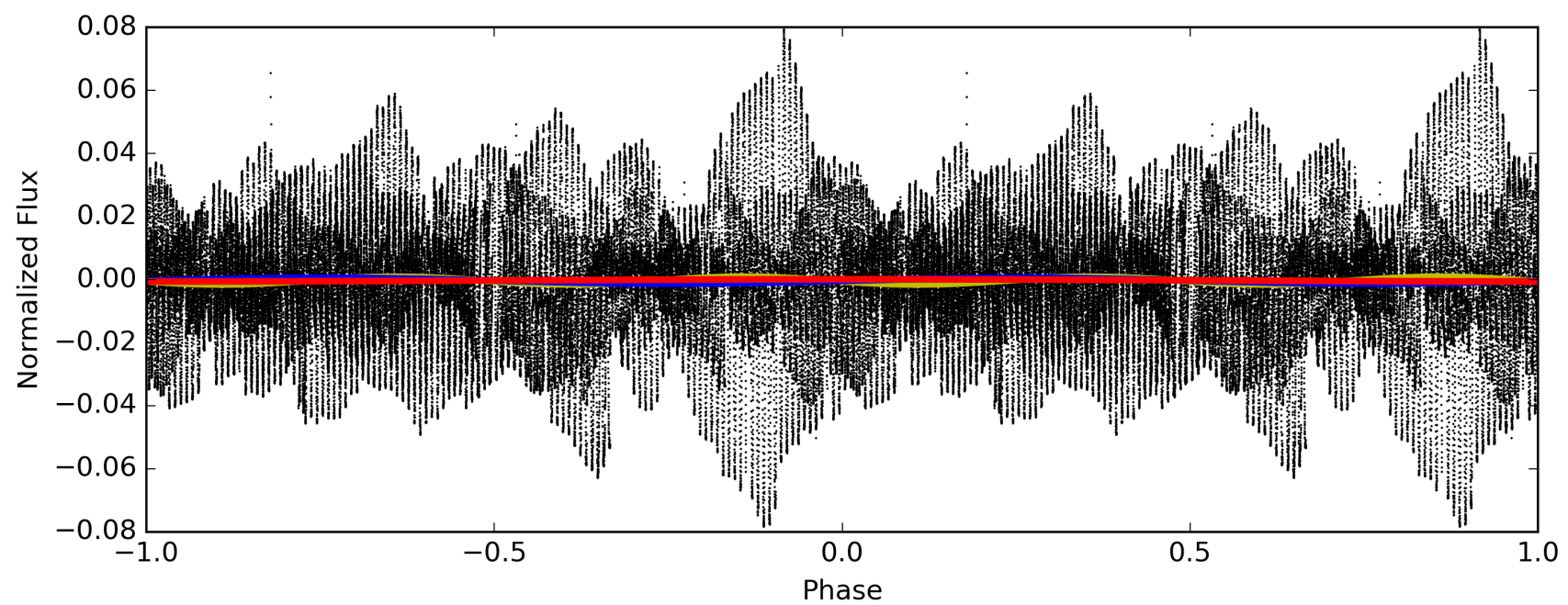
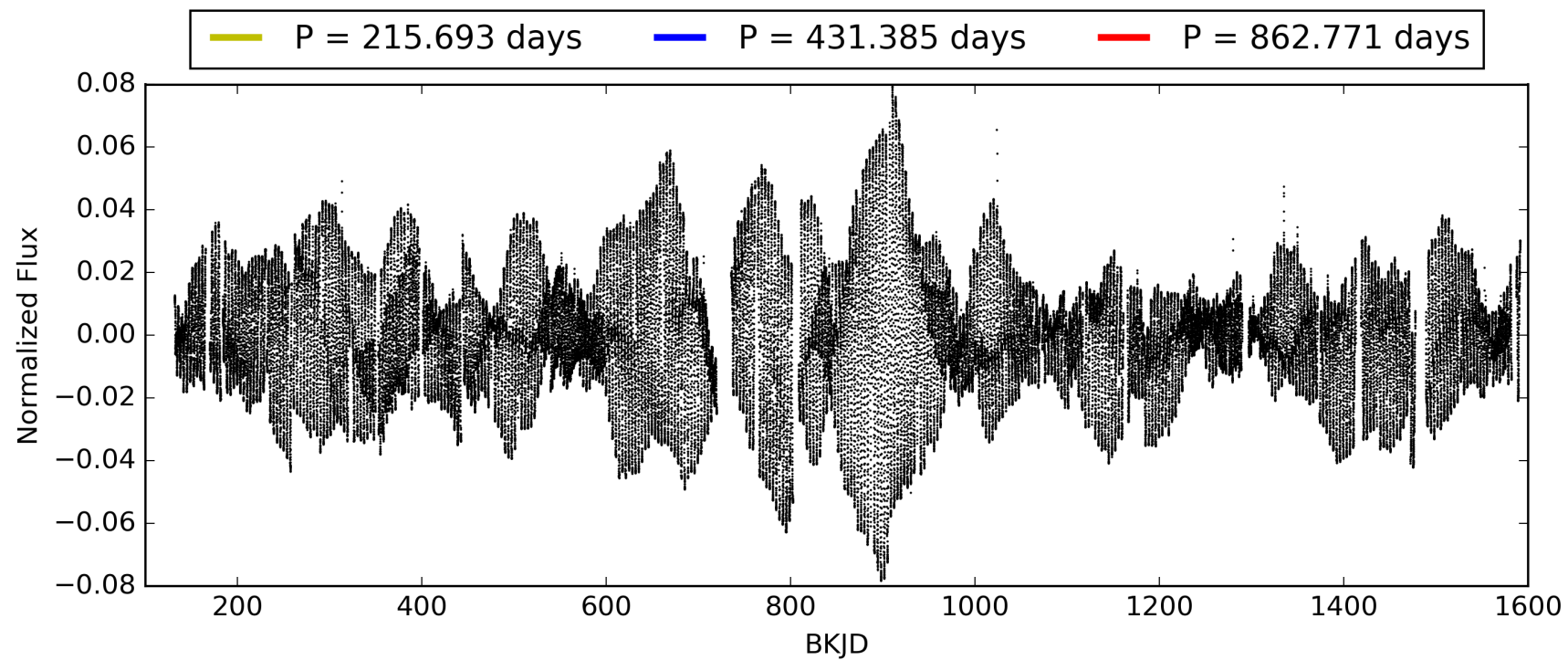
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 21:20:07 Z

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

TCE 002142183-04, PDC Light Curves

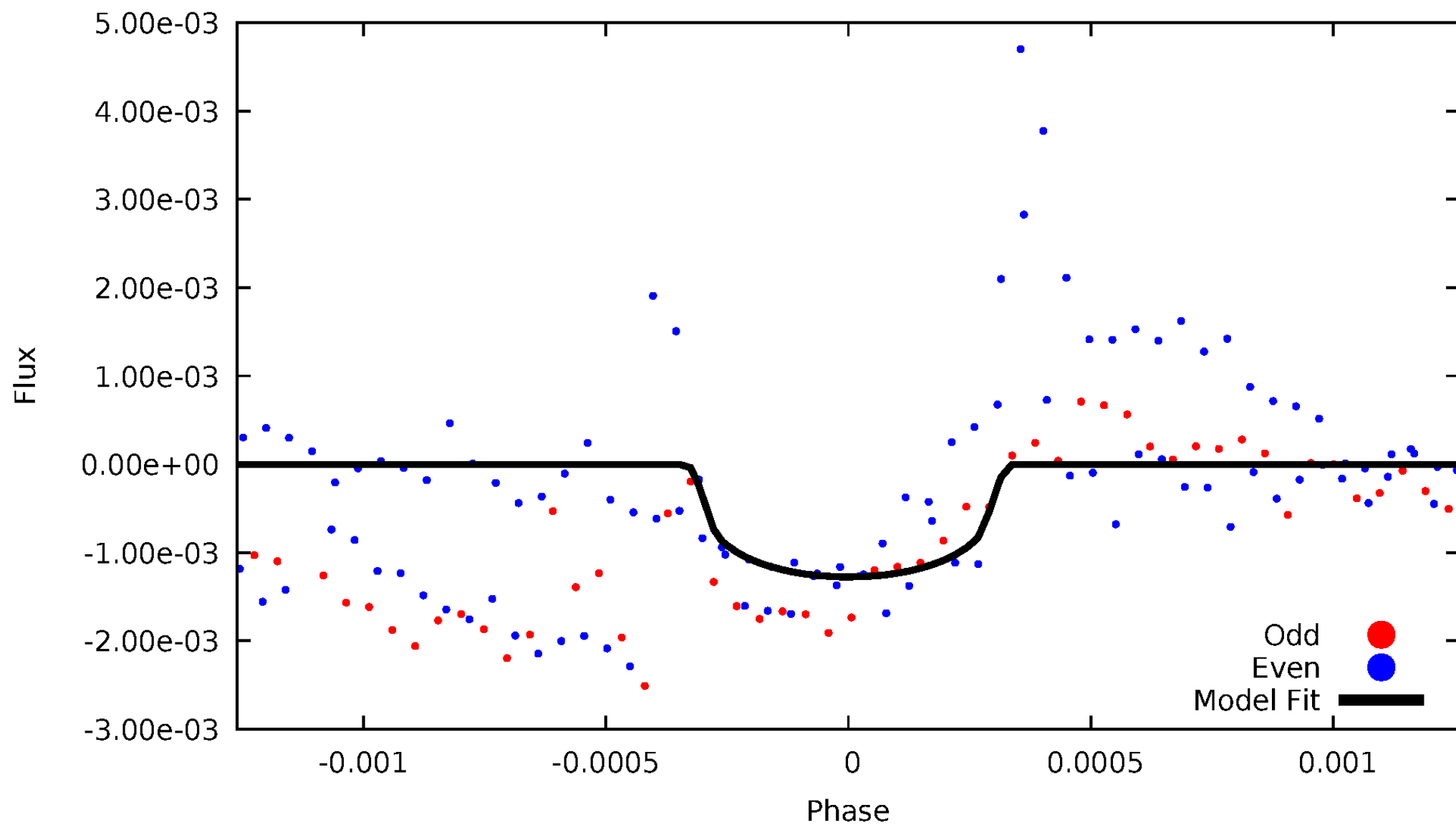


TCE 002142183-04



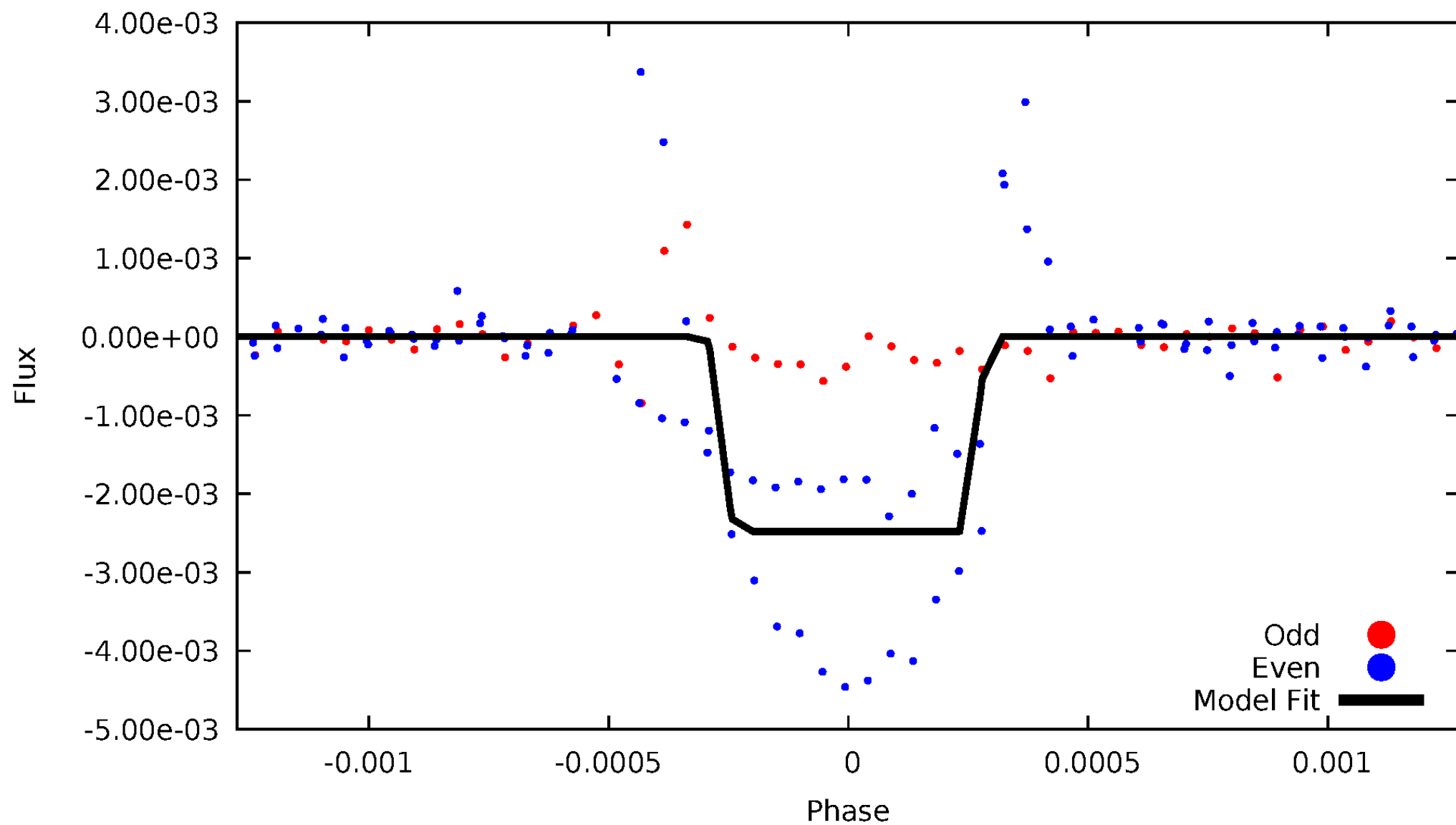
DV Odd/Even

TCE 002142183-04



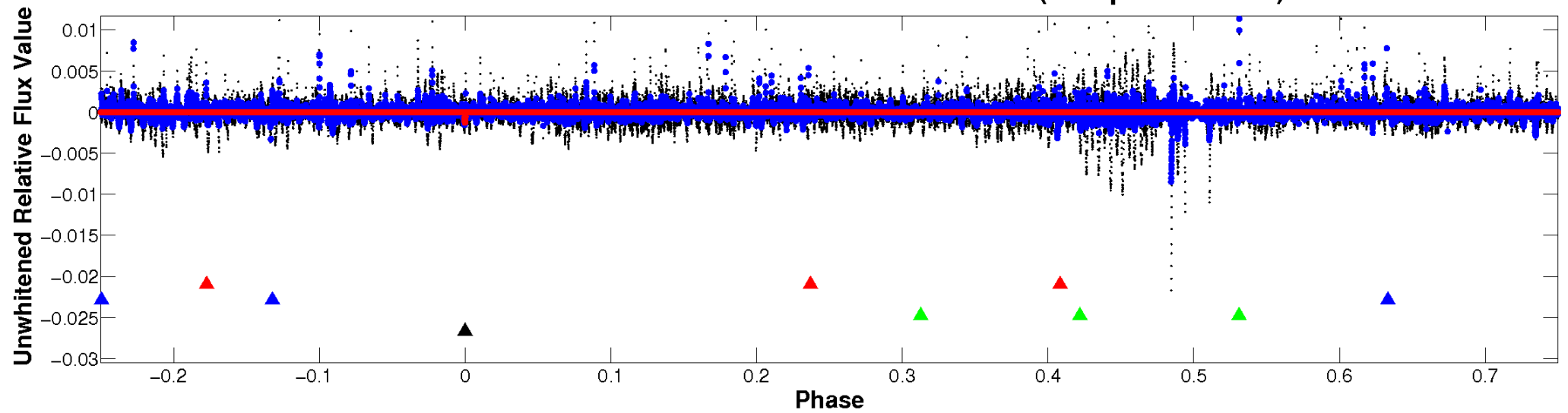
ALT Odd/Even

TCE 002142183-04

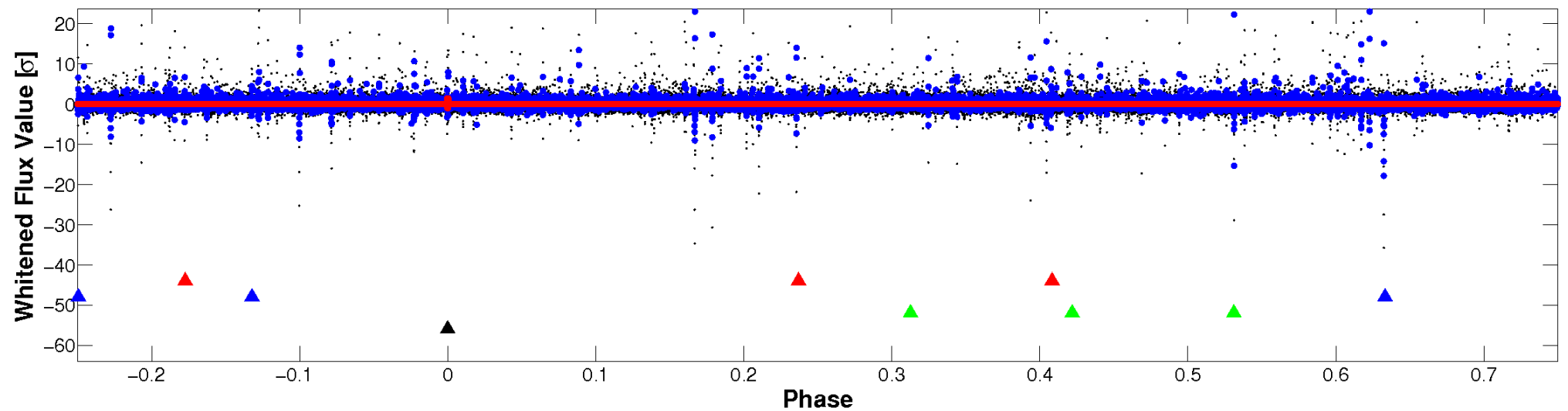


Non-Whitened Vs. Whitened Light Curve

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

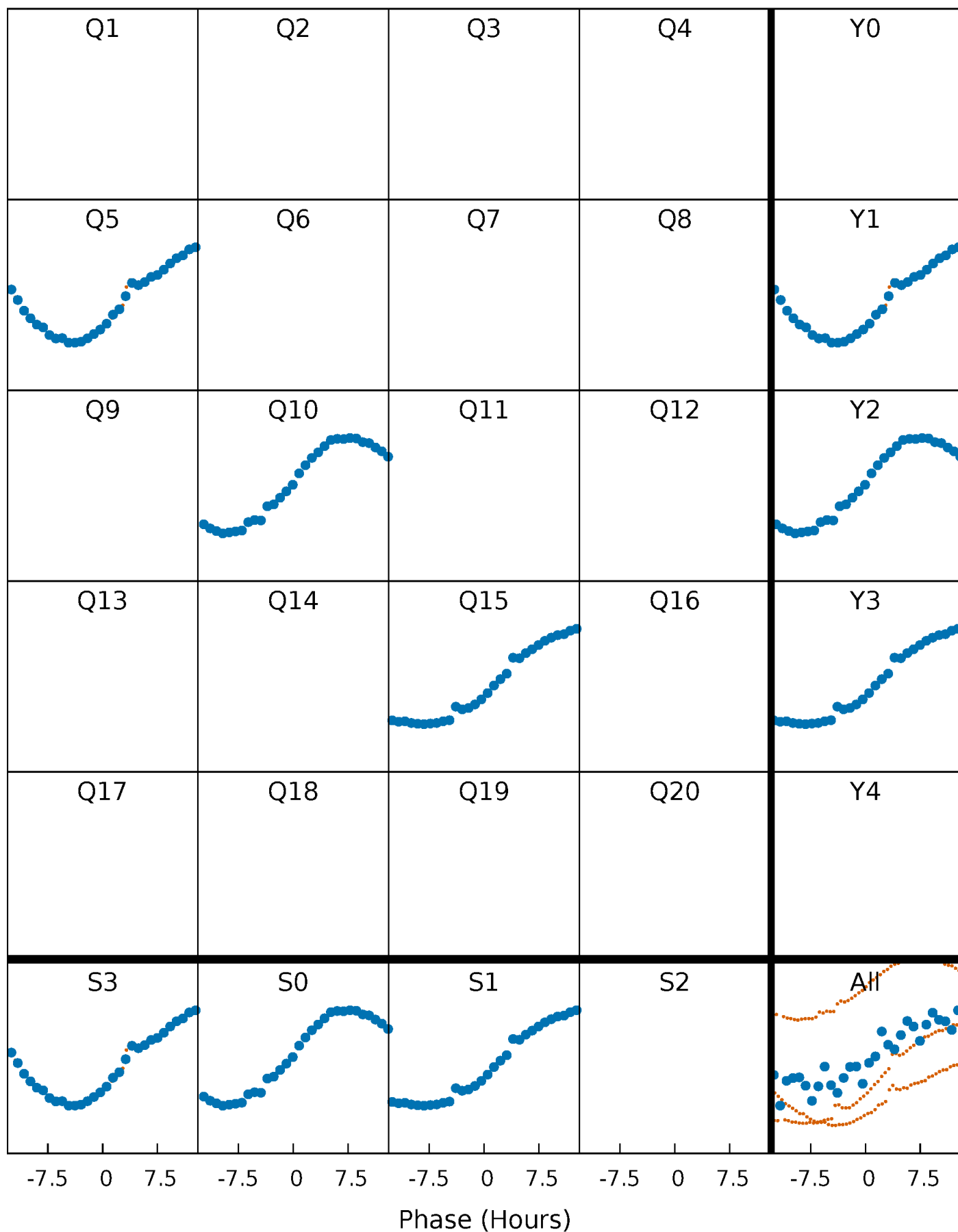


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



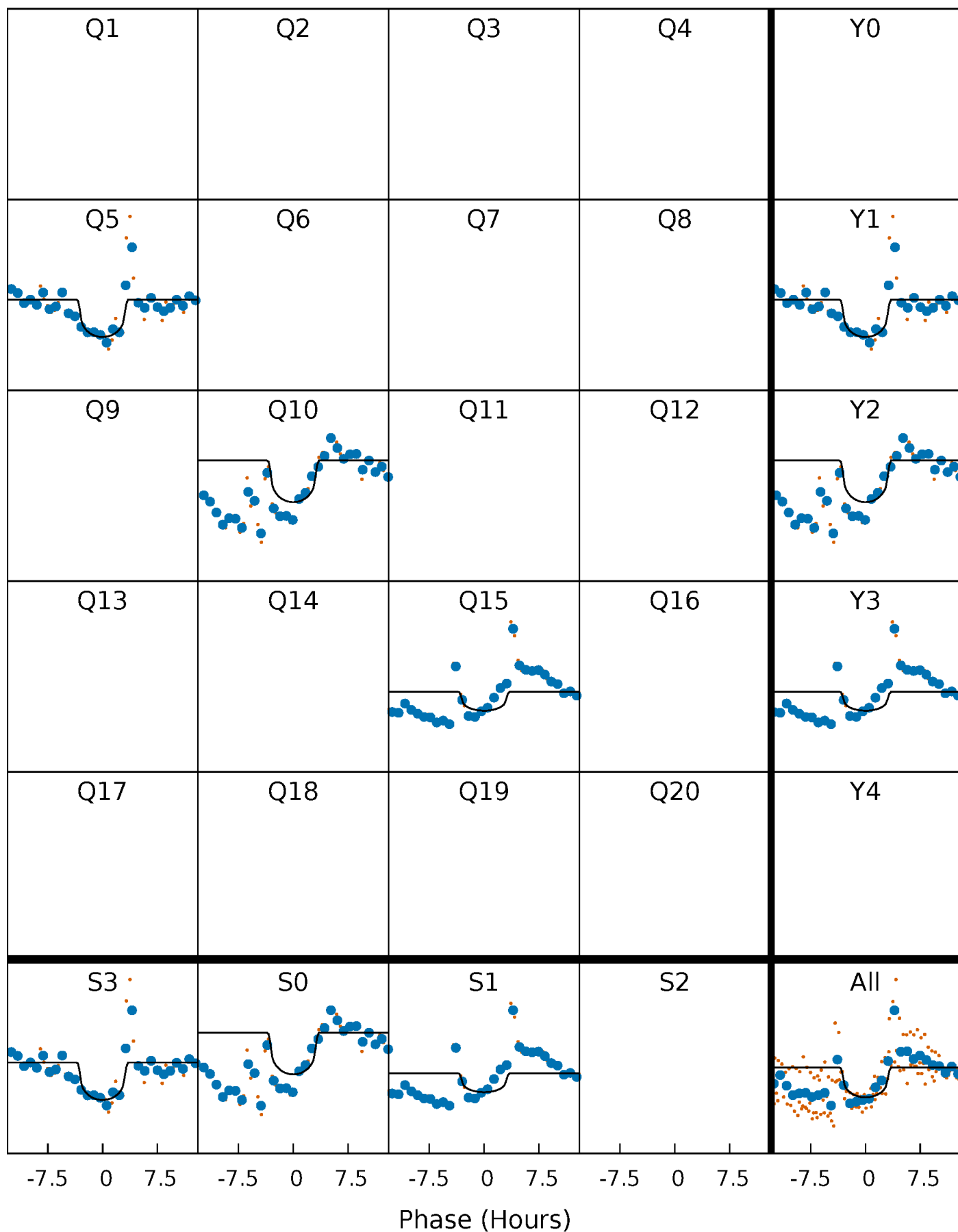
PDC Quarter-Phased Transit Curves

TCE 002142183-04 P=431.385380 Days $T_0=515.038977$ (BKJD)



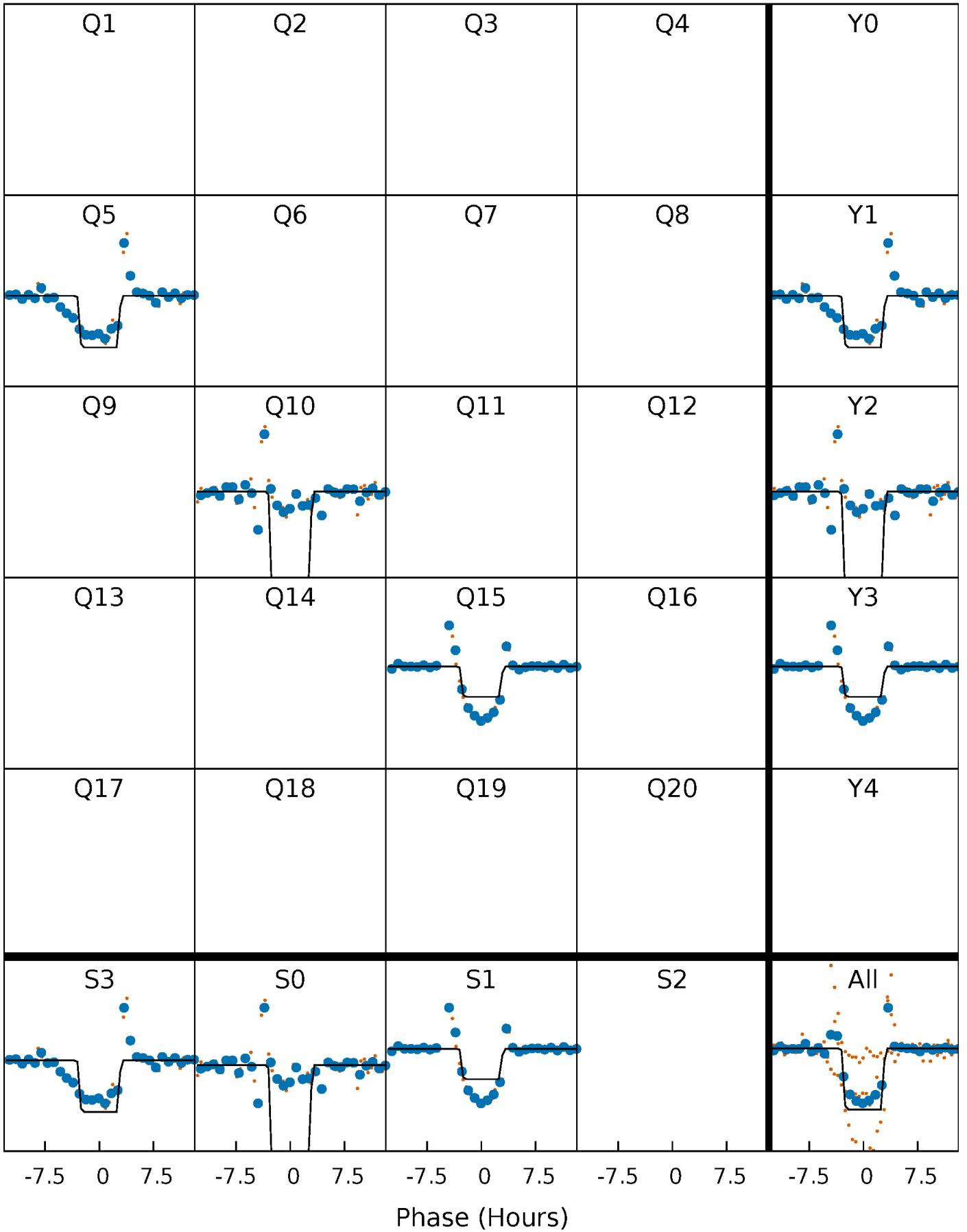
DV Quarter-Phased Transit Curves

TCE 002142183-04 $P=431.385380$ Days $T_0=515.038977$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

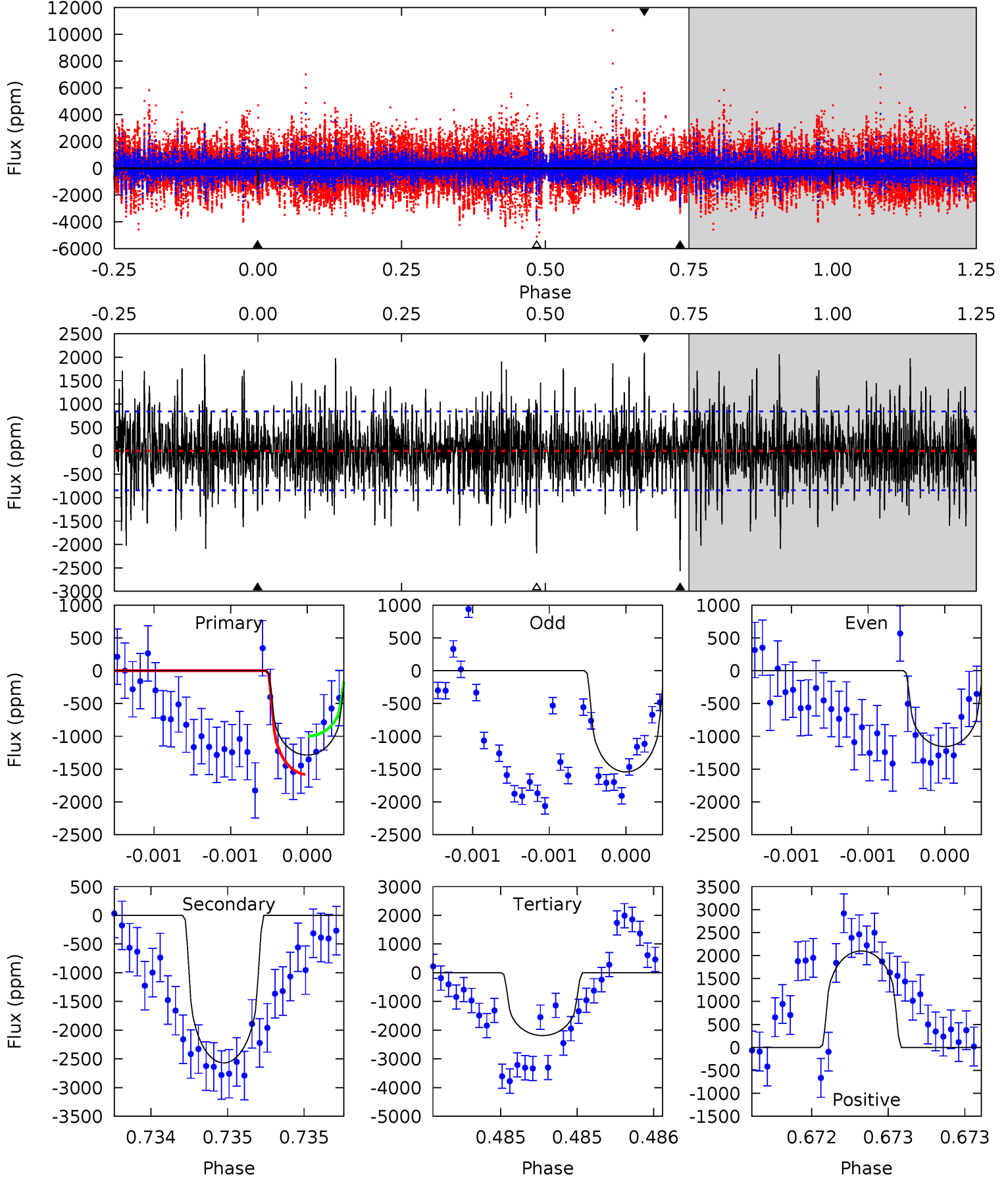
TCE 002142183-04 $P=431.393319$ Days $T_0=515.035999$ (BKJD)



DV Model-Shift Uniqueness Test

002142183-04, P = 431.385380 Days, E = 83.653597 Days

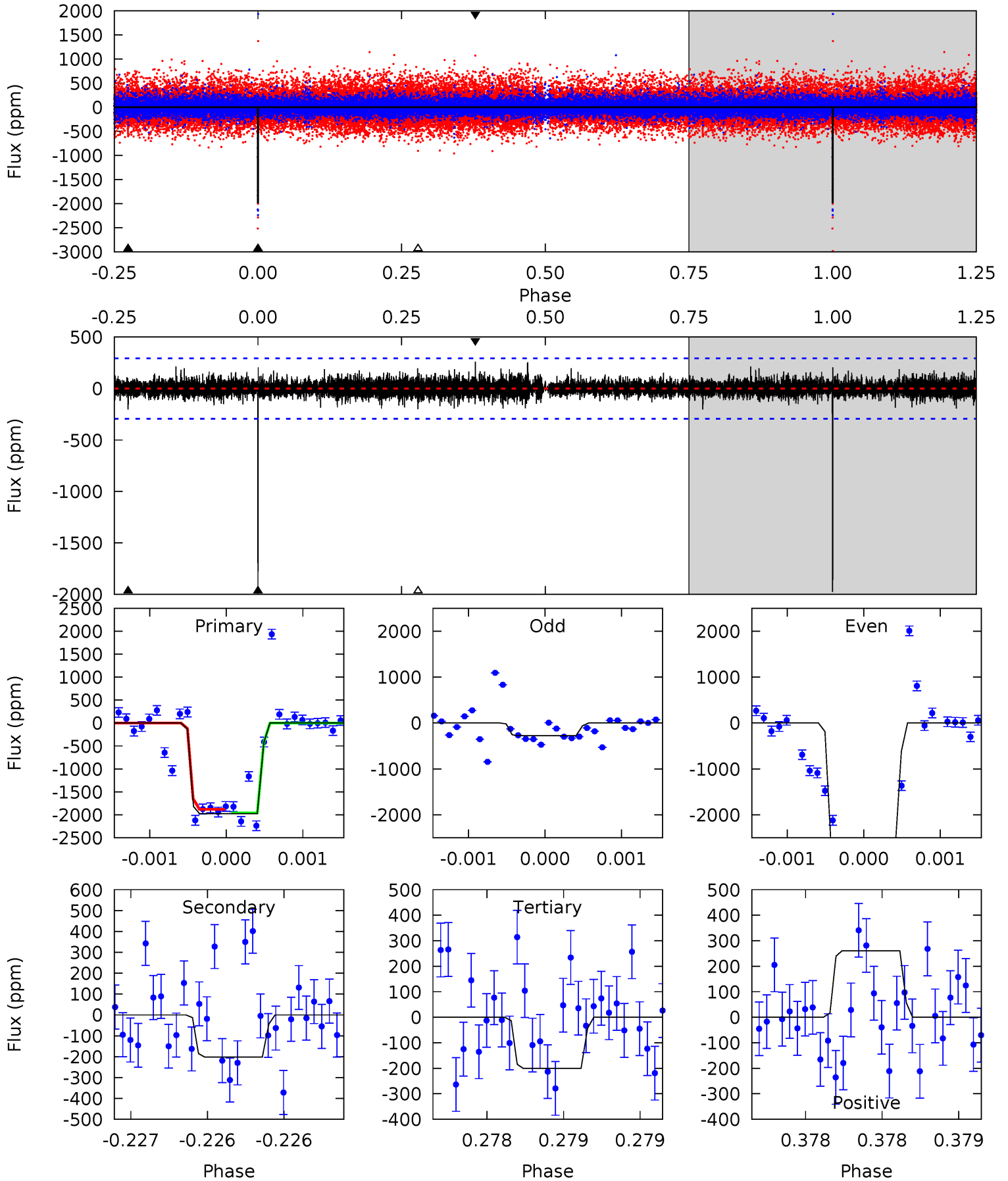
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.45	16.9	14.4	13.8	5.53	3.41	3.34	-5.93	-5.34	2.51	3.09	1.03	1.00	0.45	1.94



Alt Model-Shift Uniqueness Test

002142183-04, P = 431.393319 Days, E = 83.642680 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.4	3.81	3.79	4.93	5.55	3.45	0.82	33.6	32.4	0.02	-1.12	35.5	1.06	0.12	0



Stellar Parameters For KIC 002142183

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4860^{+134}_{-122}	$3.051^{+0.492}_{-0.328}$	$-0.280^{+0.300}_{-0.250}$	$4.624^{+2.862}_{-1.908}$	$0.878^{+0.278}_{-0.228}$	$0.013^{+0.056}_{-0.009}$
	+3%/-3%	+16%/-11%	+107%/-89%	+62%/-41%	+32%/-26%	+449%/-70%
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 002142183-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2570 ± 152	$17.37^{+13.59}_{-10.01}$	618^{+90}_{-86}	5675^{+3615}_{-1145}	5393^{+25562}_{-3721}
Alt.	-201 ± 53	$24.77^{+15.30}_{-12.61}$	621^{+85}_{-85}	3115^{+692}_{-350}	202^{+682}_{-129}

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 $A_{obs} \gg 1.0$

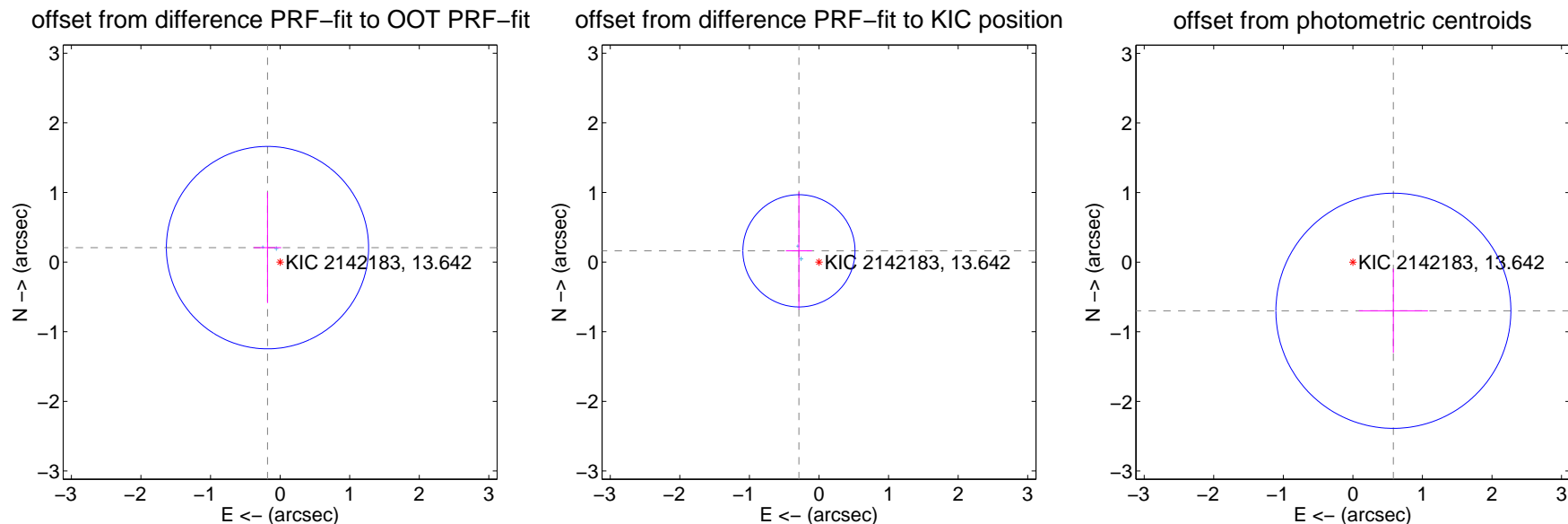
DV Centroid Data

Supplemental centroid analysis for 002142183-04. Kepler magnitude: 13.64. Transit SNR 6.14

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.276 ± 0.484	0.57	0.181 ± 0.197	0.208 ± 0.795
PRF-fit source offset from KIC position	0.330 ± 0.269	1.23	0.288 ± 0.188	0.162 ± 0.845
photometric centroid source offset	0.91 ± 0.56	1.62	-0.58 ± 0.50	-0.70 ± 0.60

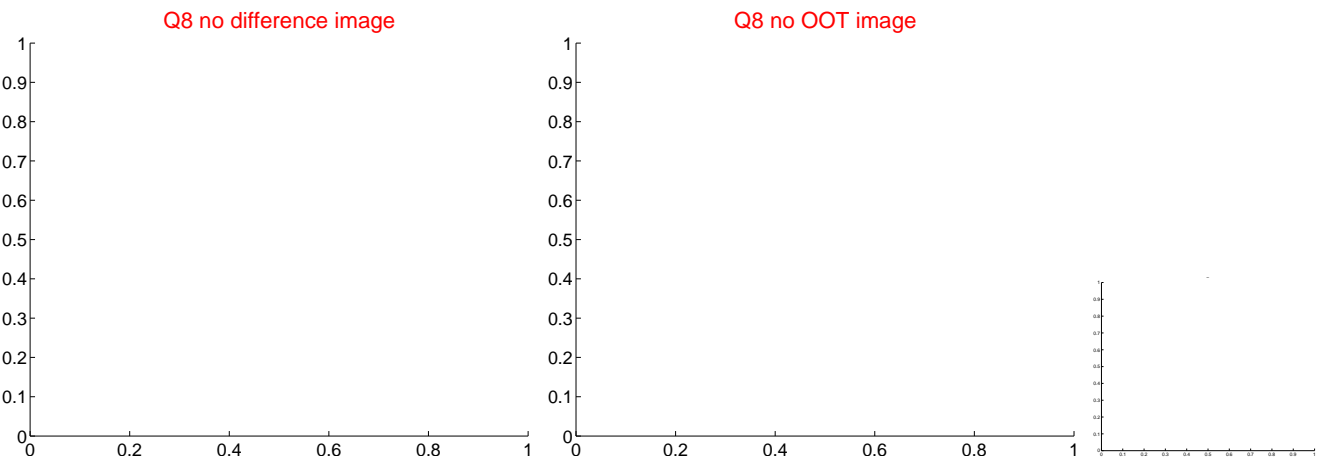
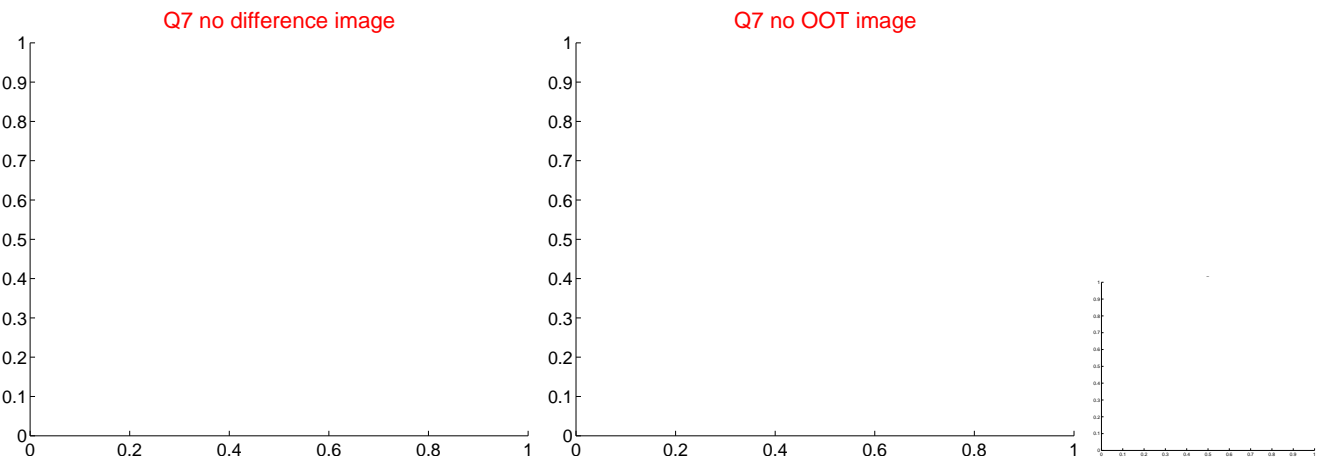
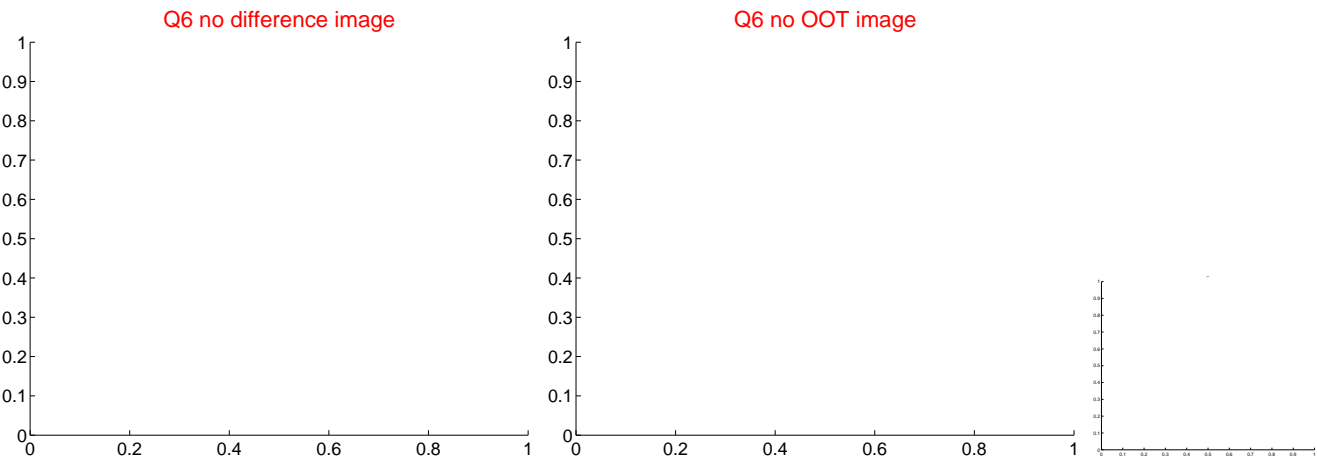
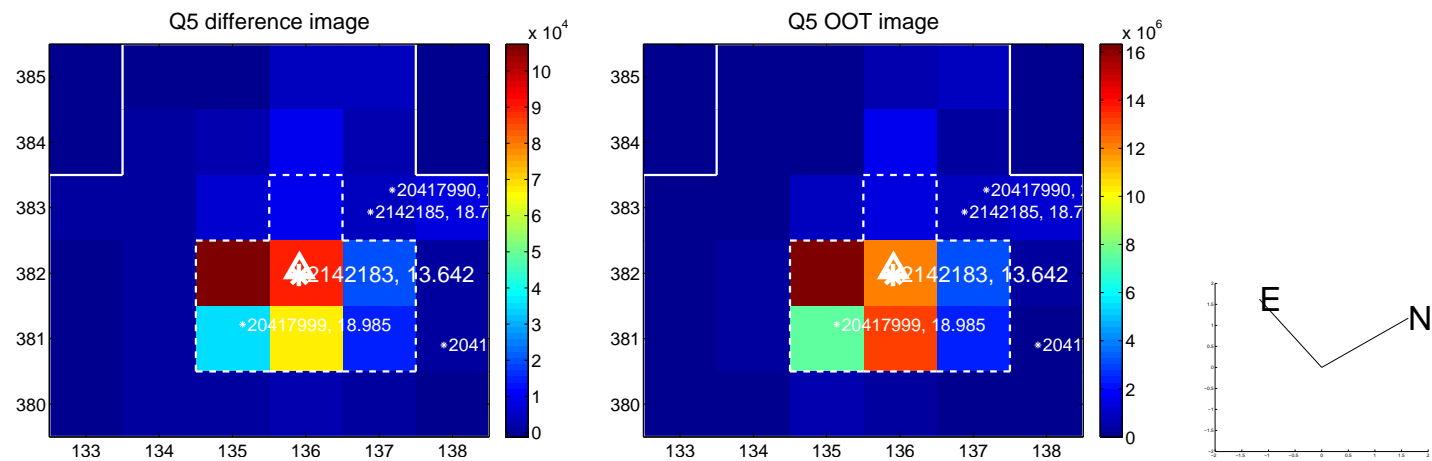


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

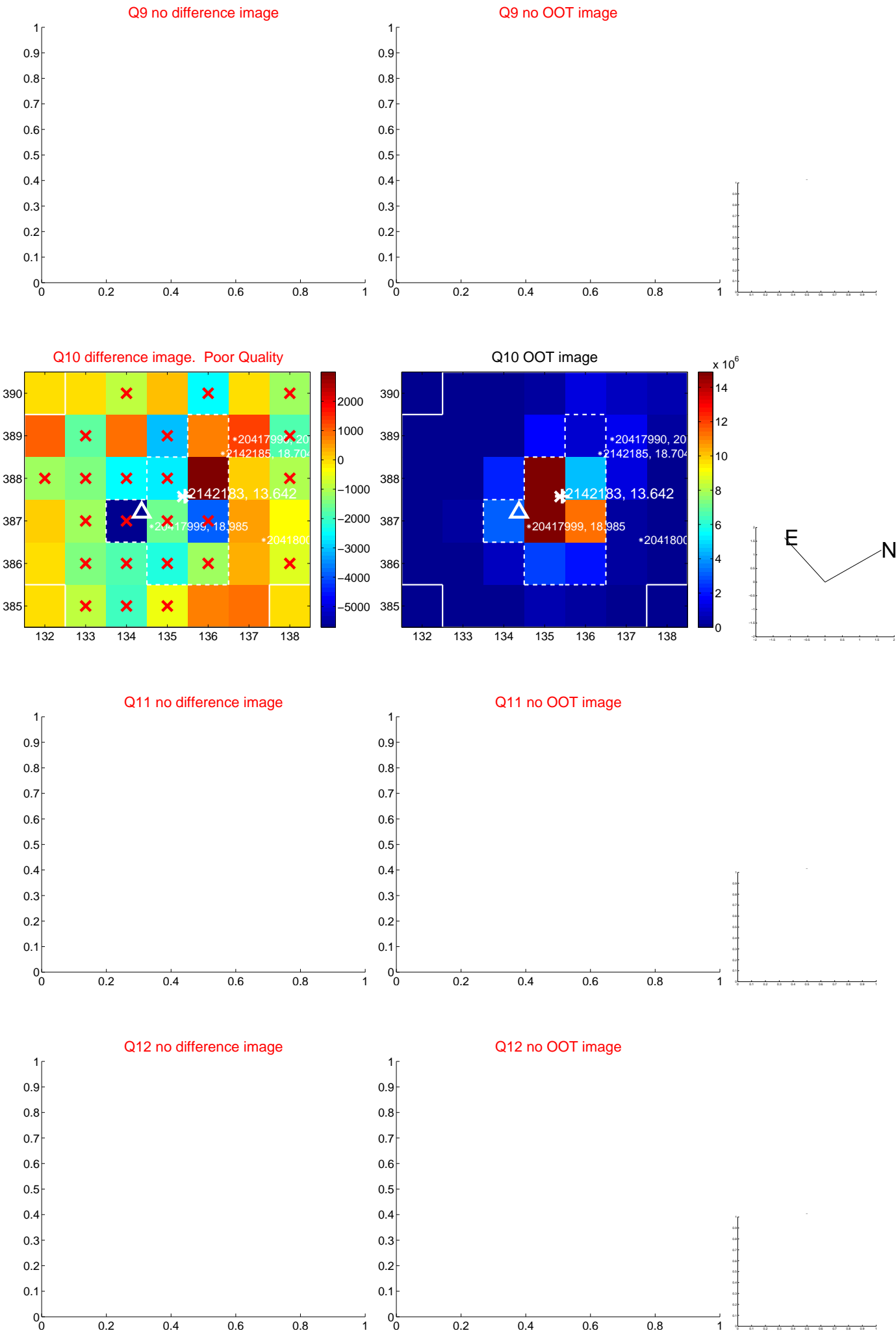
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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

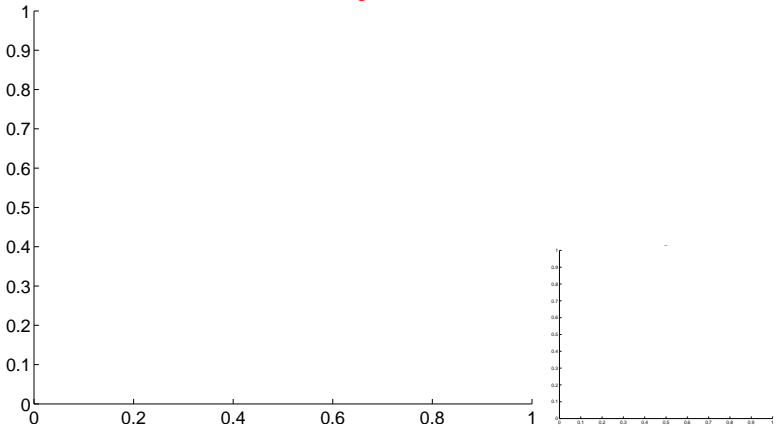


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q13 no difference image



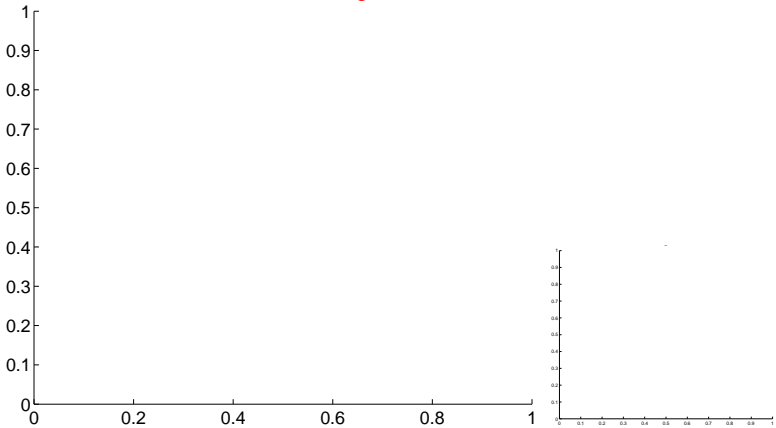
Q13 no OOT image



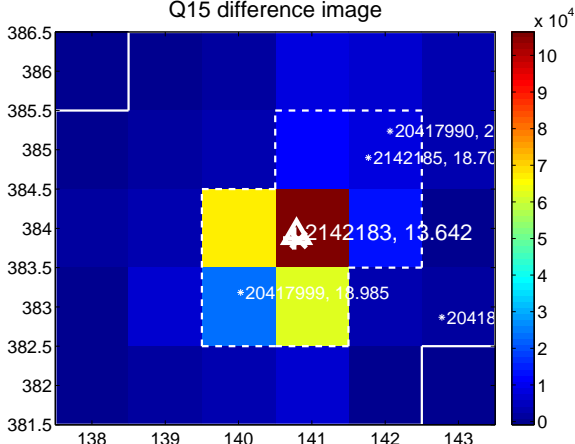
Q14 no difference image



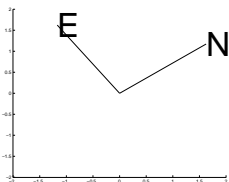
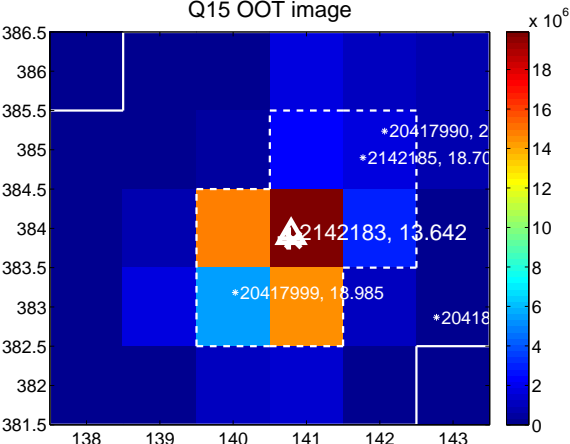
Q14 no OOT image



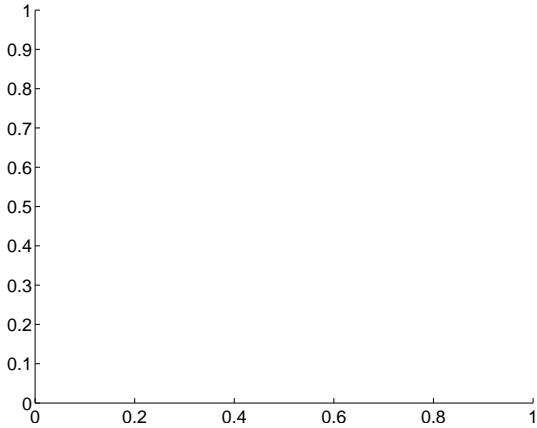
Q15 difference image



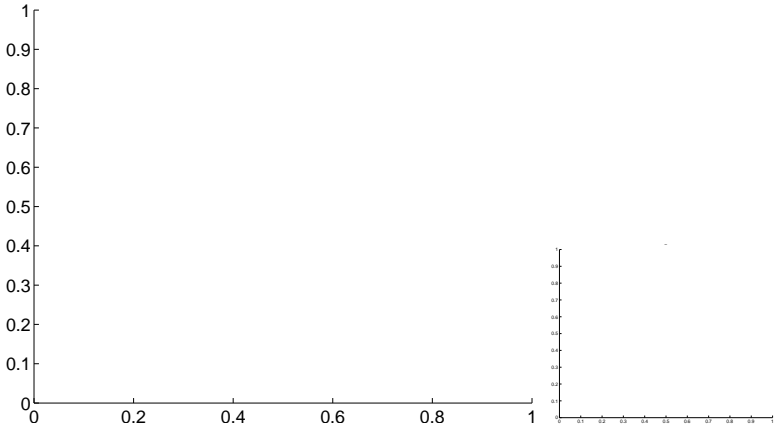
Q15 OOT image



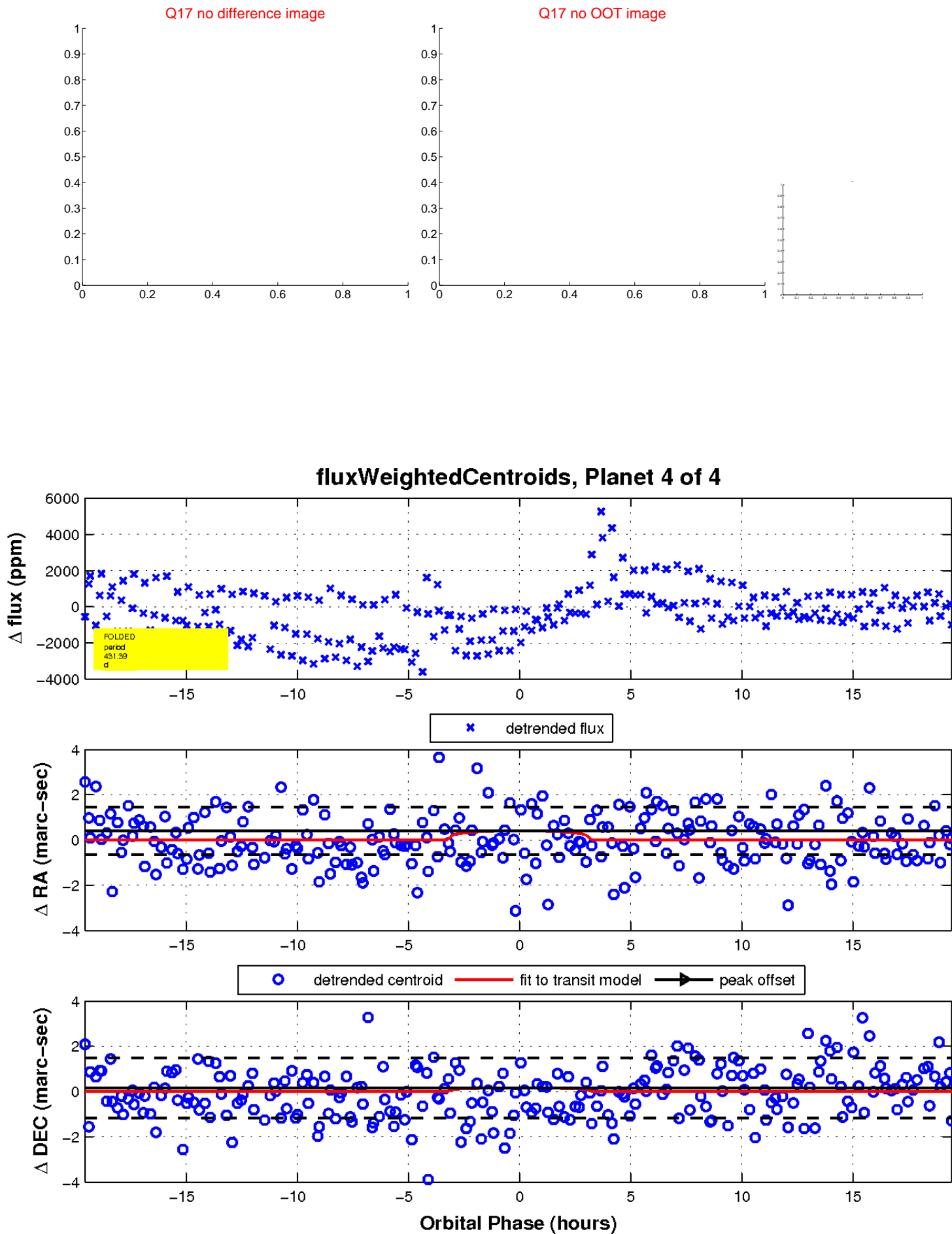
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

