

KIC 008175404

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})
008175404-01	OBS	No	2.039741	132.593991	18.5	6.741	7.3	7.1	1.18	6540	0.63	2094.24
008175404-02	OBS	No	691.461736	189.217767	341.4	3.146	11.0	7.8	1.18	6540	2.34	0.89
008175404-03	OBS	No	709.857914	148.412692	485.2	6.165	10.4	7.0	1.18	6540	5.01	0.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008175404-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
008175404-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008175404-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS

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

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

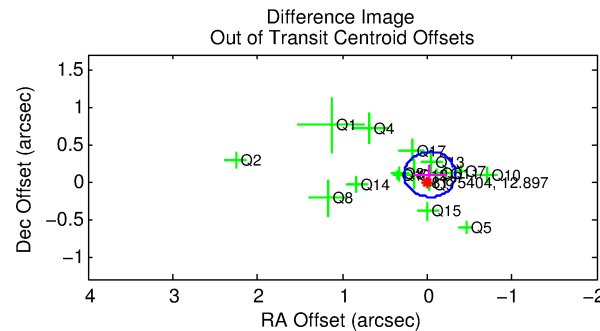
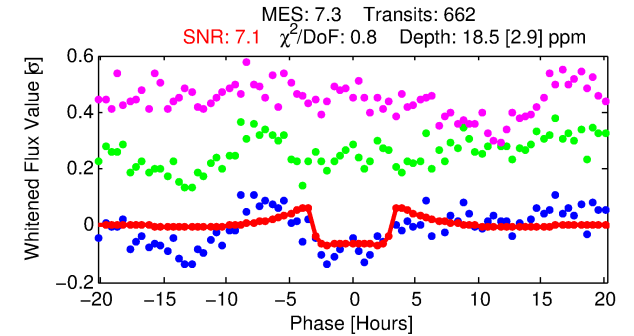
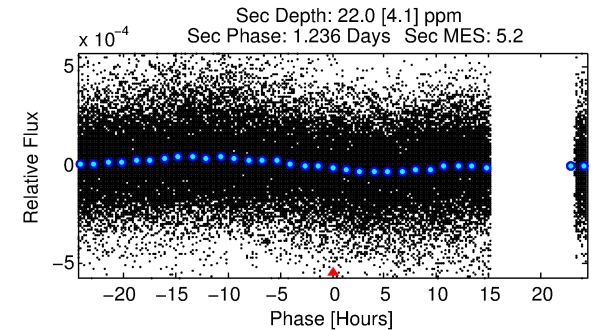
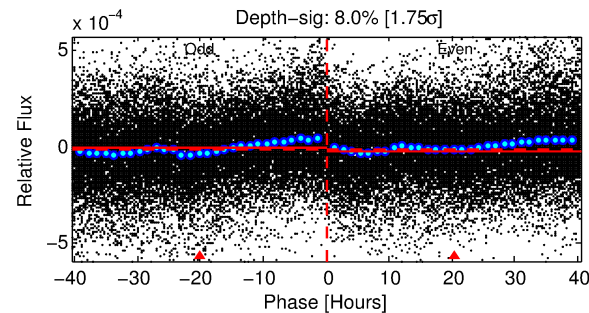
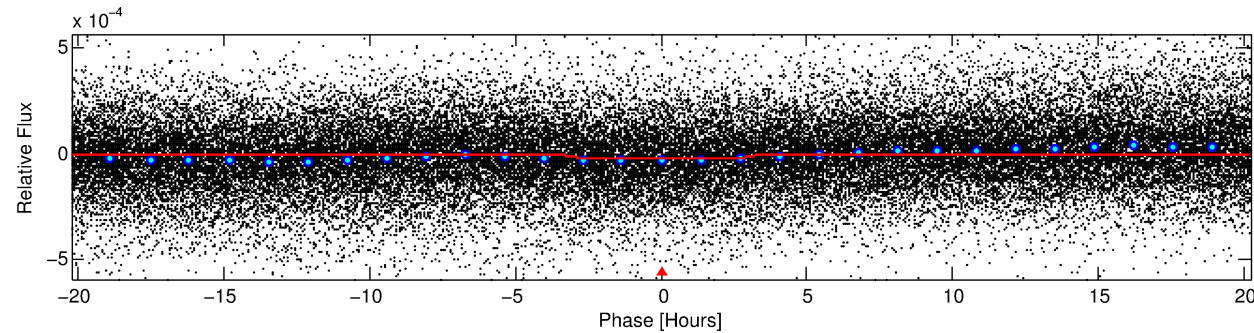
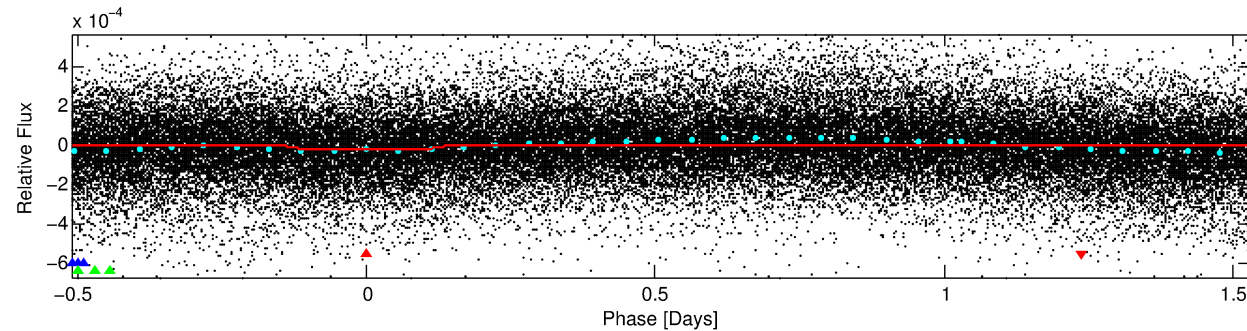
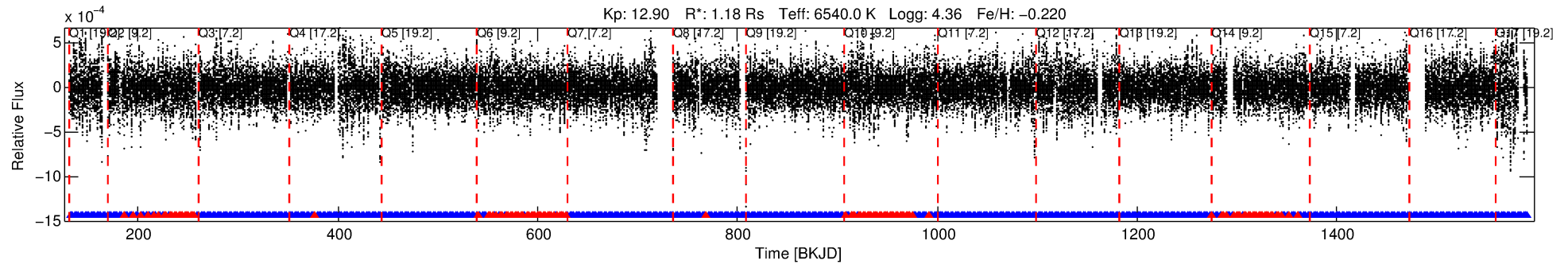
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008175404-01

No Significant Match Found

DV One-Page Summary

KIC: 8175404 Candidate: 1 of 3 Period: 2.040 d



DV Fit Results:

Period = 2.03974 [0.00002] d
Epoch = 132.5940 [0.0054] BKJD
Rp/R* = 0.0049 [0.0008]
a/R* = 1.21 [0.33]
b = 0.96 [0.08]
Seff = 2094.24 [620.06]
Teq = 1725 [128] K
Rp = 0.63 [0.18] Re
a = 0.0330 [0.0062] AU
Ag = 33.10 [15.50] [2.07σ]
Teffp = 6397 [641] K [7.14σ]

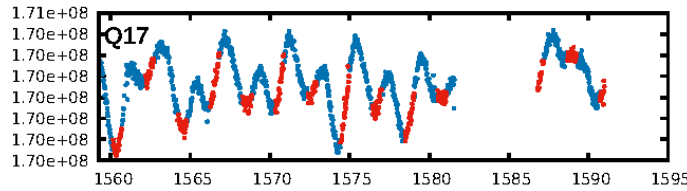
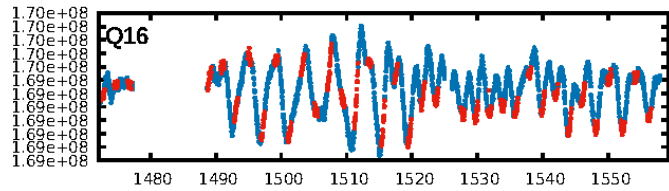
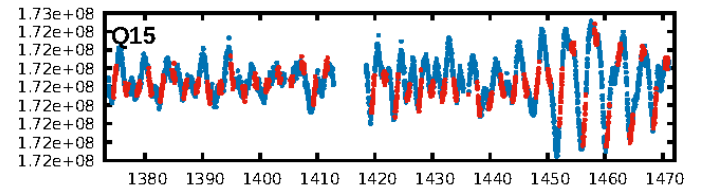
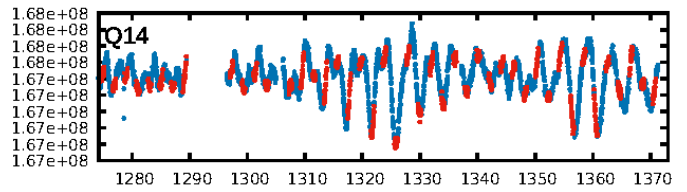
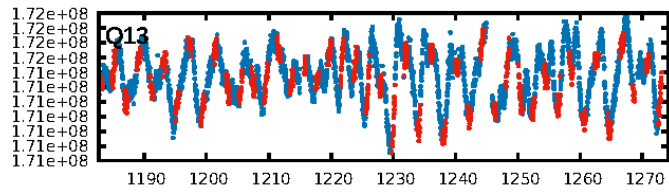
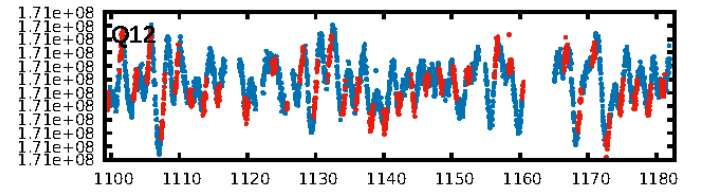
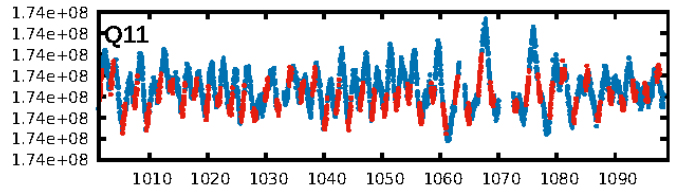
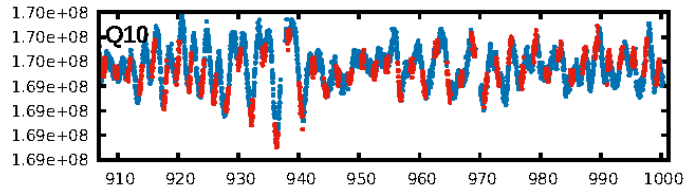
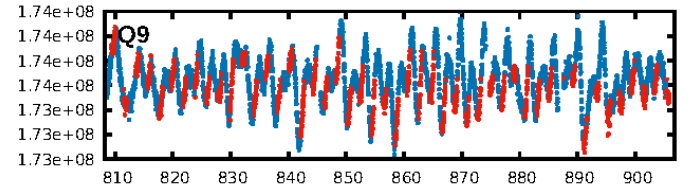
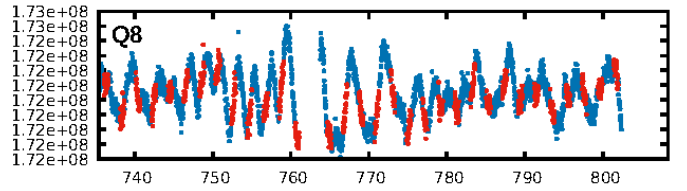
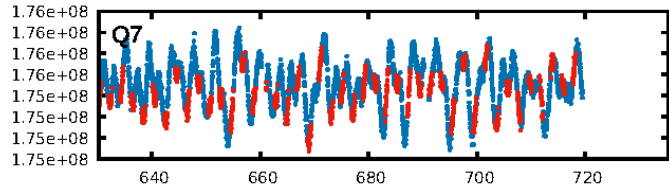
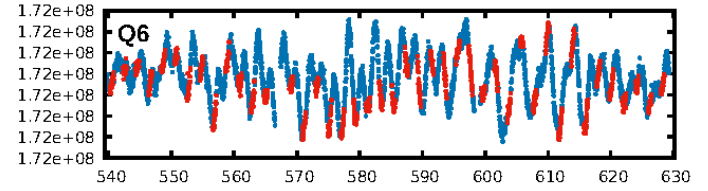
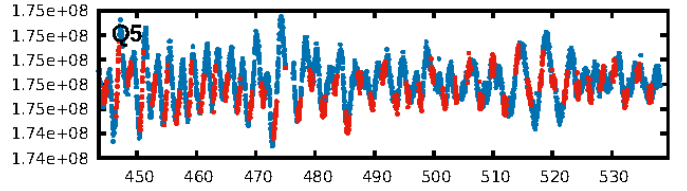
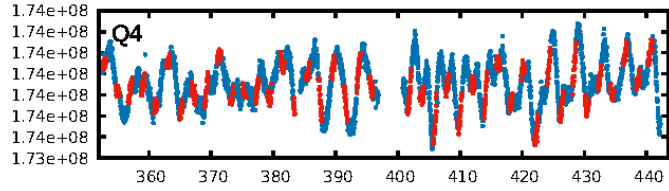
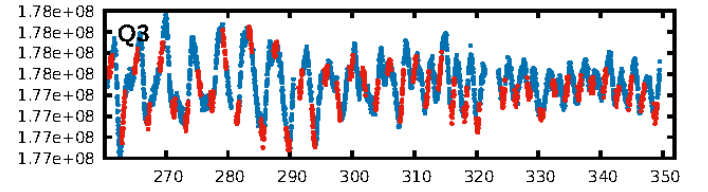
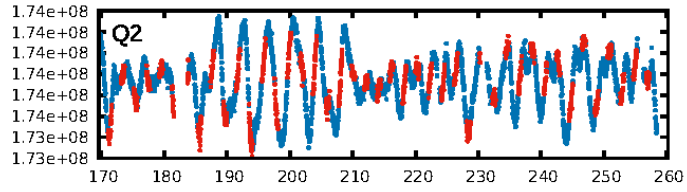
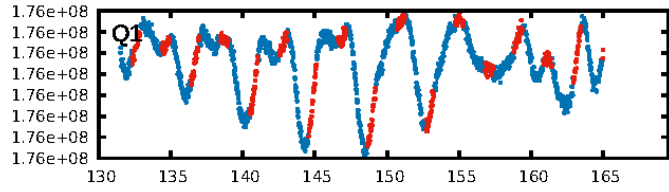
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [2224.28σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.29e-10
RollingBand-fgt: 0.81 [514/632]
GhostDiagnostic-chr: 0.6664
Centroid-sig: 10.8%
Centroid-so: 1.474 arcsec [1.62σ]
OotOffset-rm: 0.104 arcsec [1.03σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.089 arcsec [0.75σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

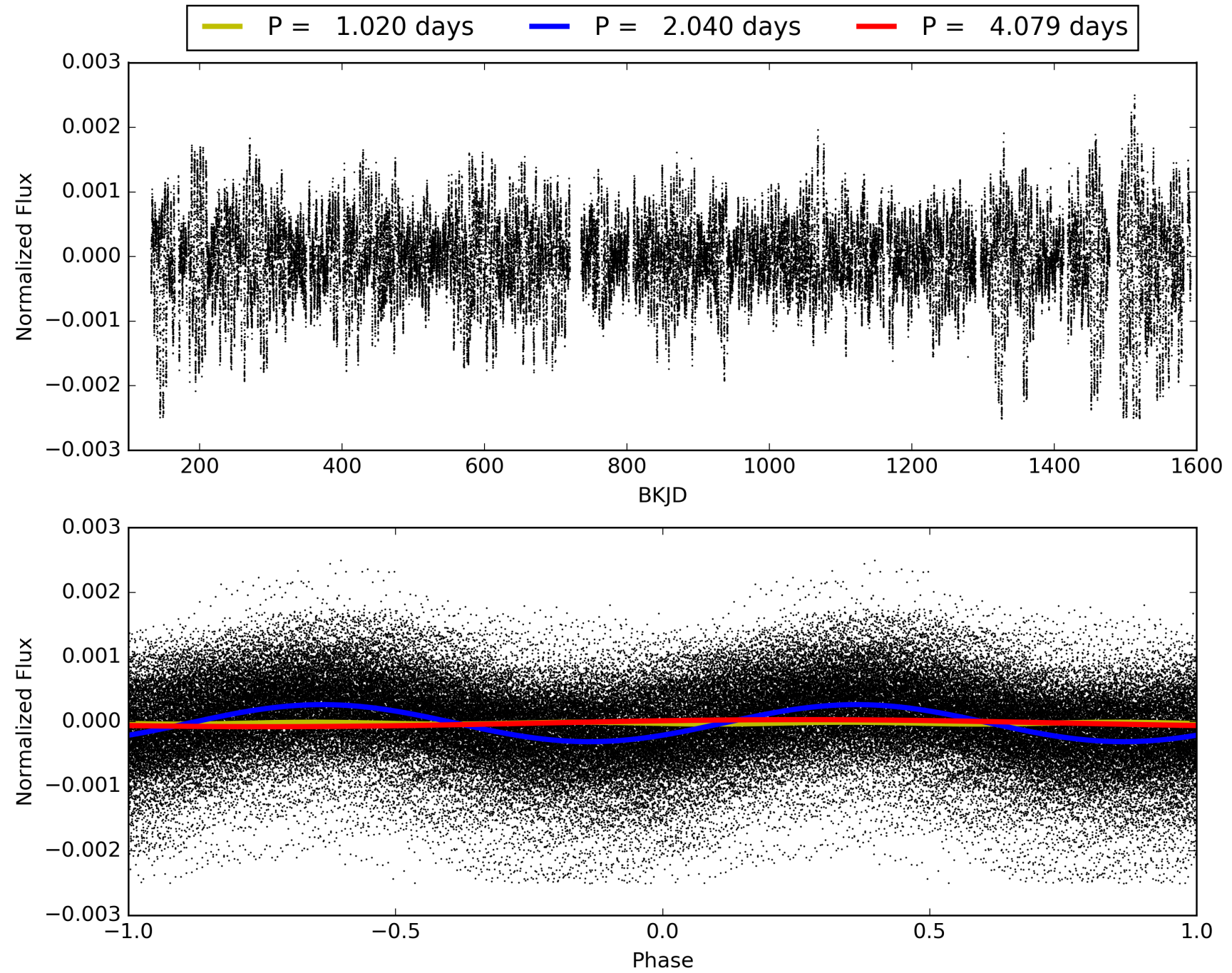
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:01:20 Z

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

TCE 008175404-01, PDC Light Curves

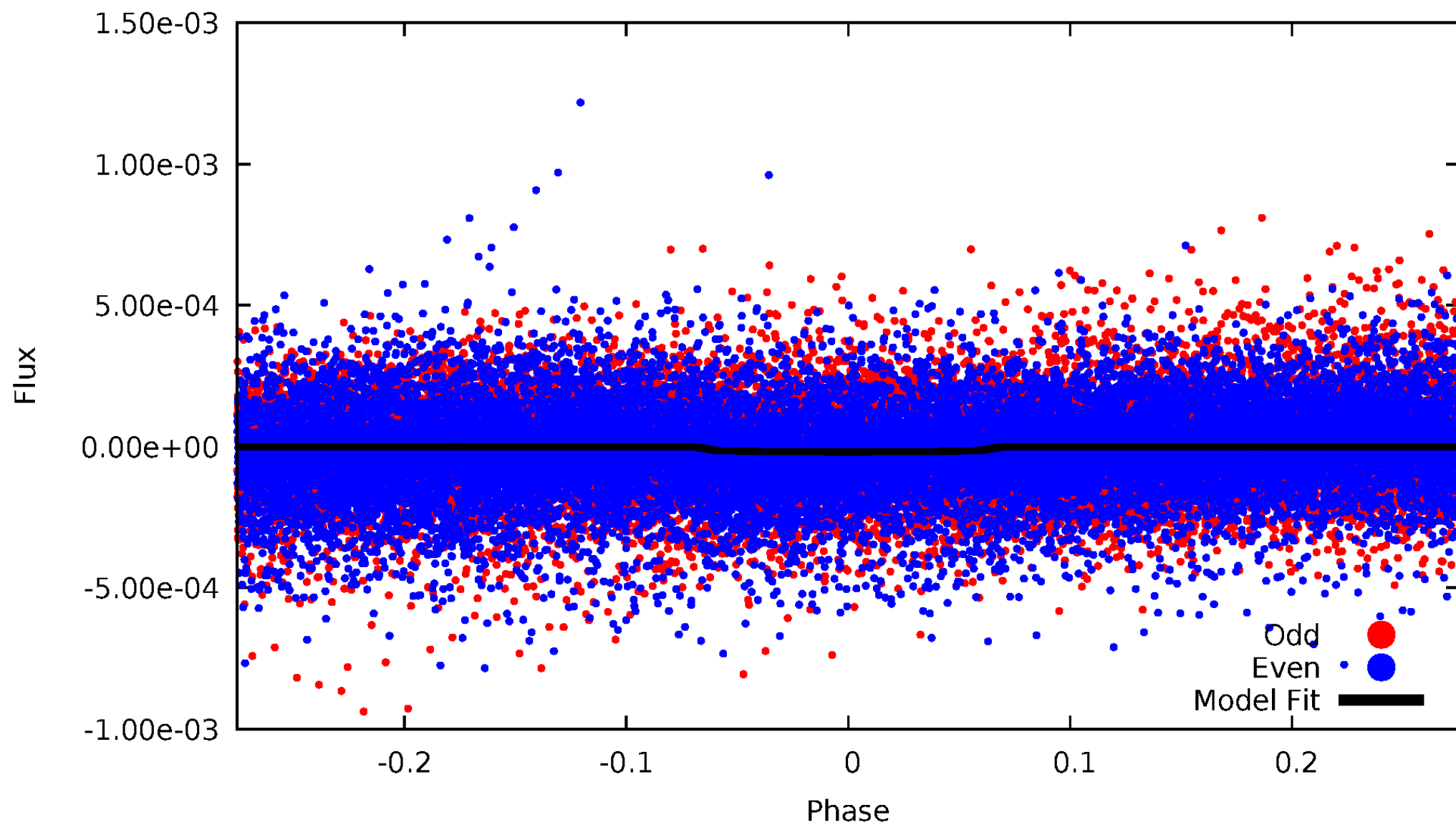


TCE 008175404-01



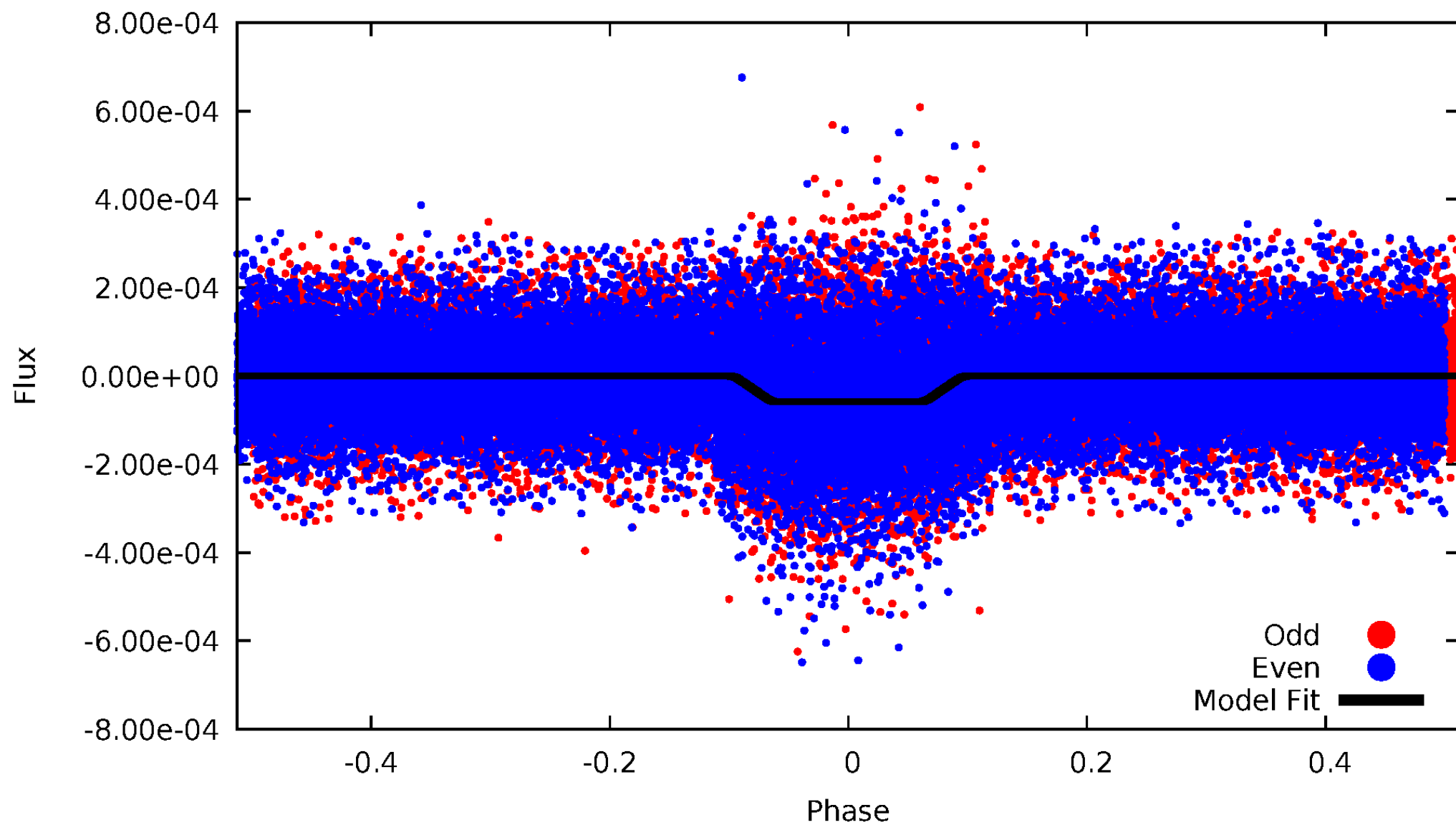
DV Odd/Even

TCE 008175404-01

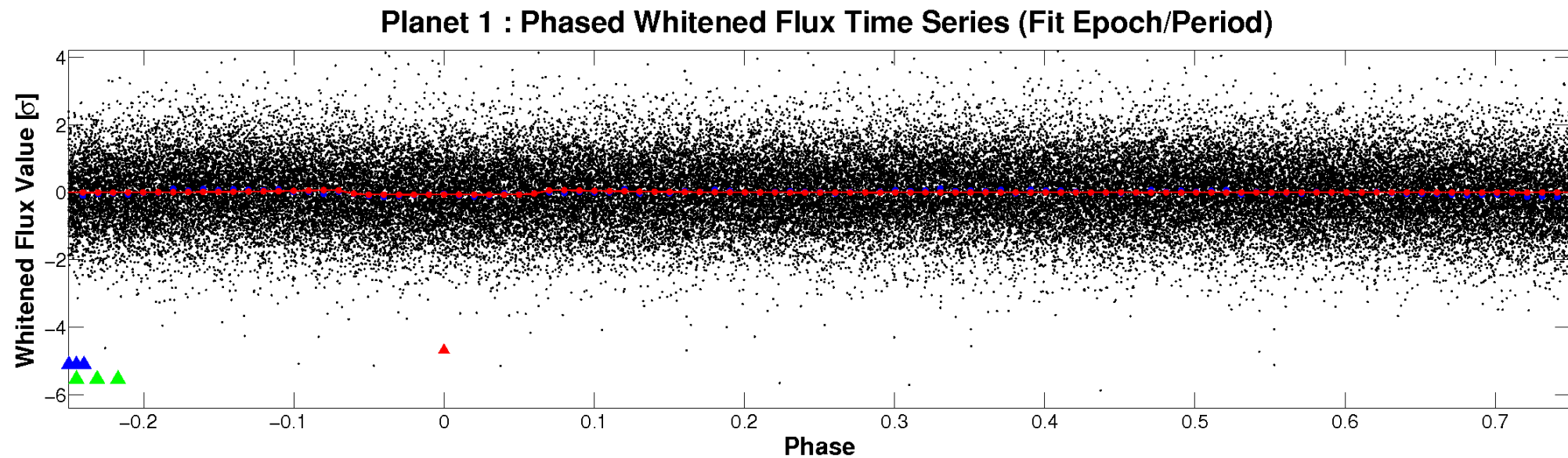
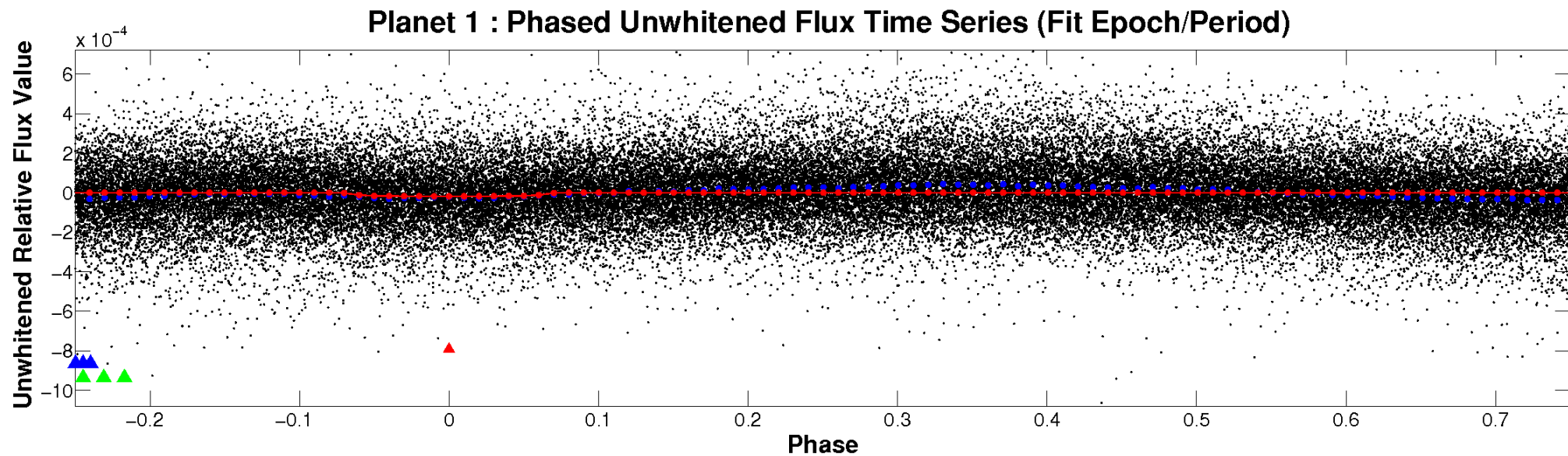


ALT Odd/Even

TCE 008175404-01

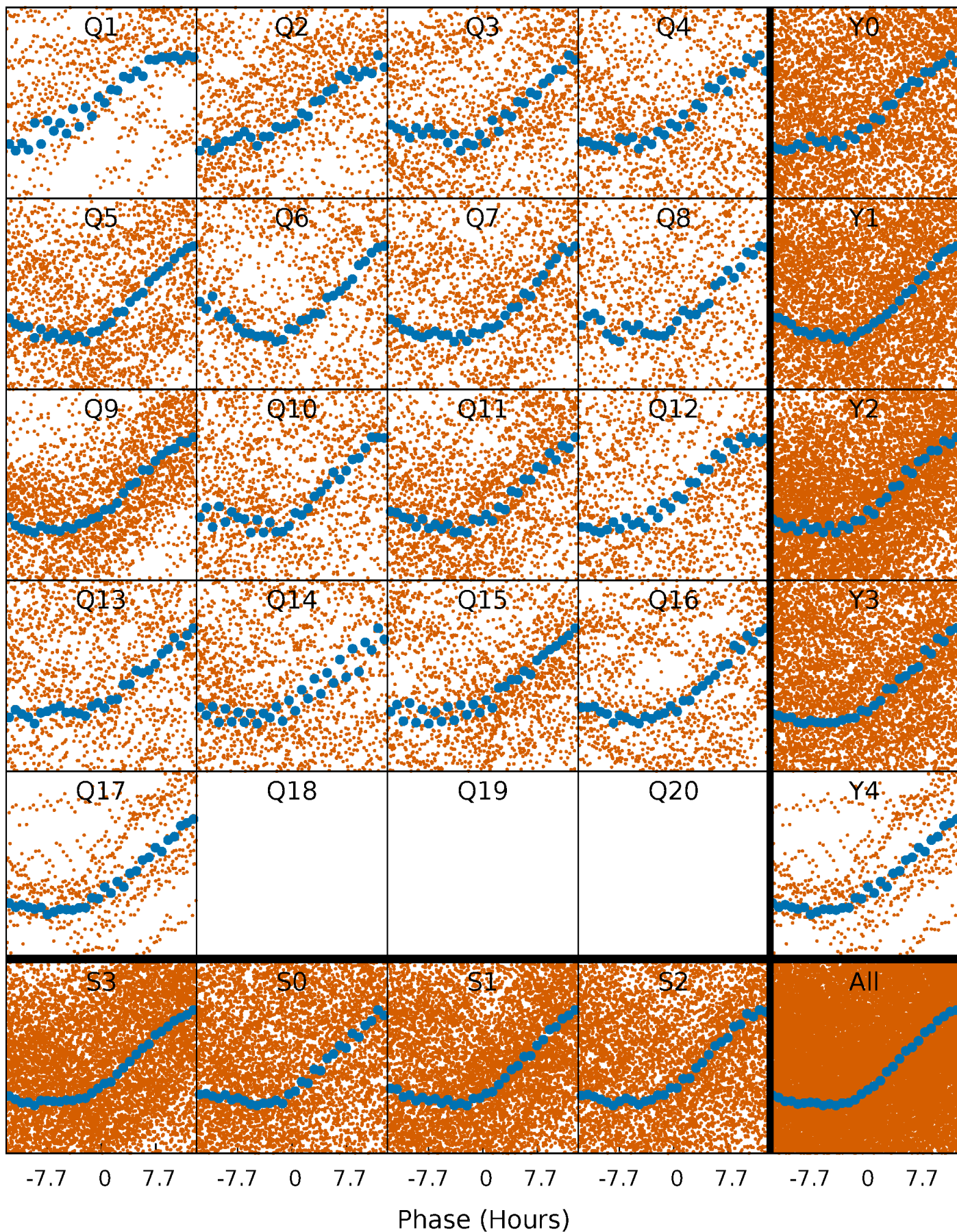


Non-Whitened Vs. Whitened Light Curve



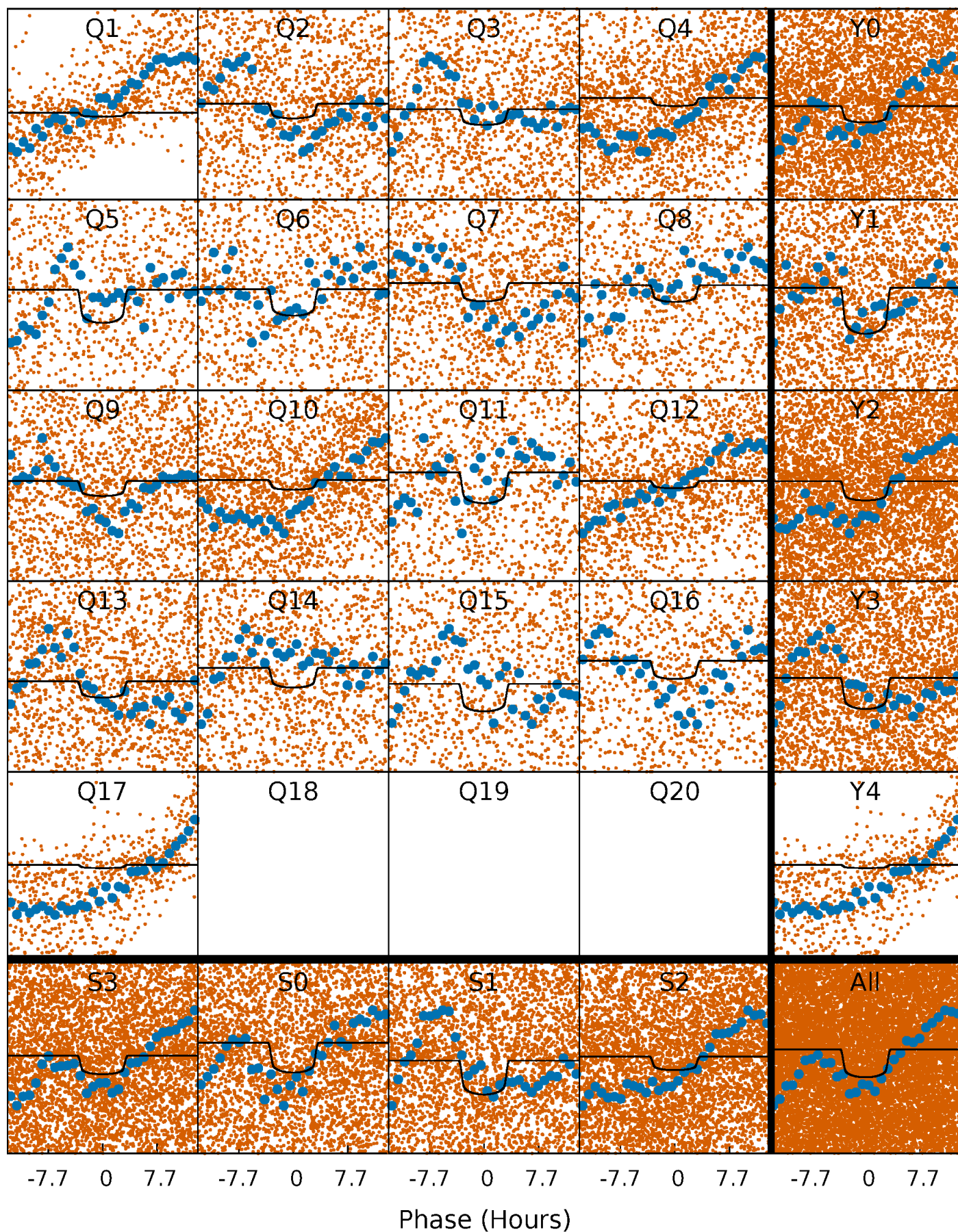
PDC Quarter-Phased Transit Curves

TCE 008175404-01 P= 2.039741 Days $T_0=132.593991$ (BKJD)



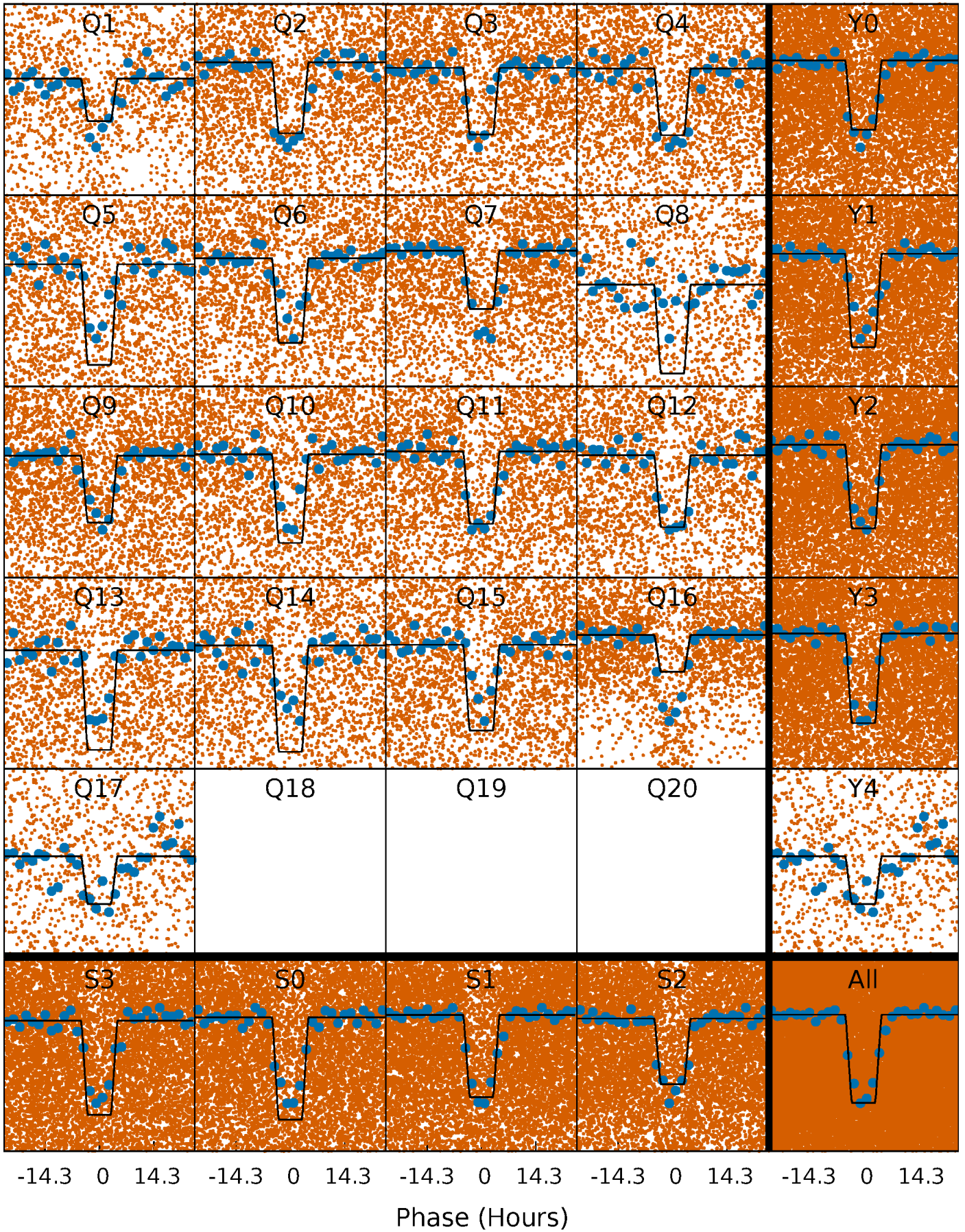
DV Quarter-Phased Transit Curves

TCE 008175404-01 P= 2.039741 Days $T_0=132.593991$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

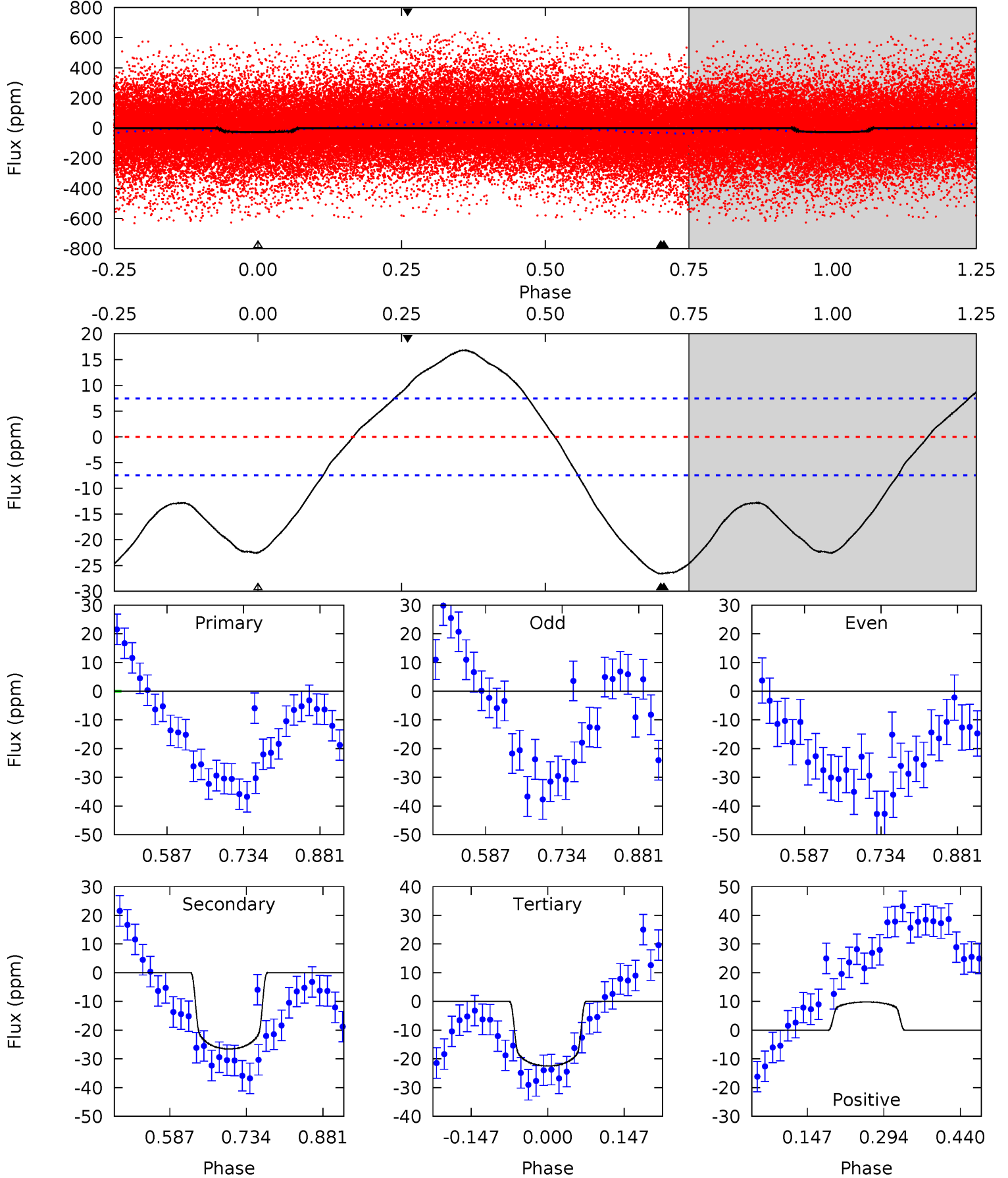
TCE 008175404-01 P= 2.039740 Days $T_0=132.584496$ (BKJD)



DV Model-Shift Uniqueness Test

008175404-01, P = 2.039741 Days, E = 130.554250 Days

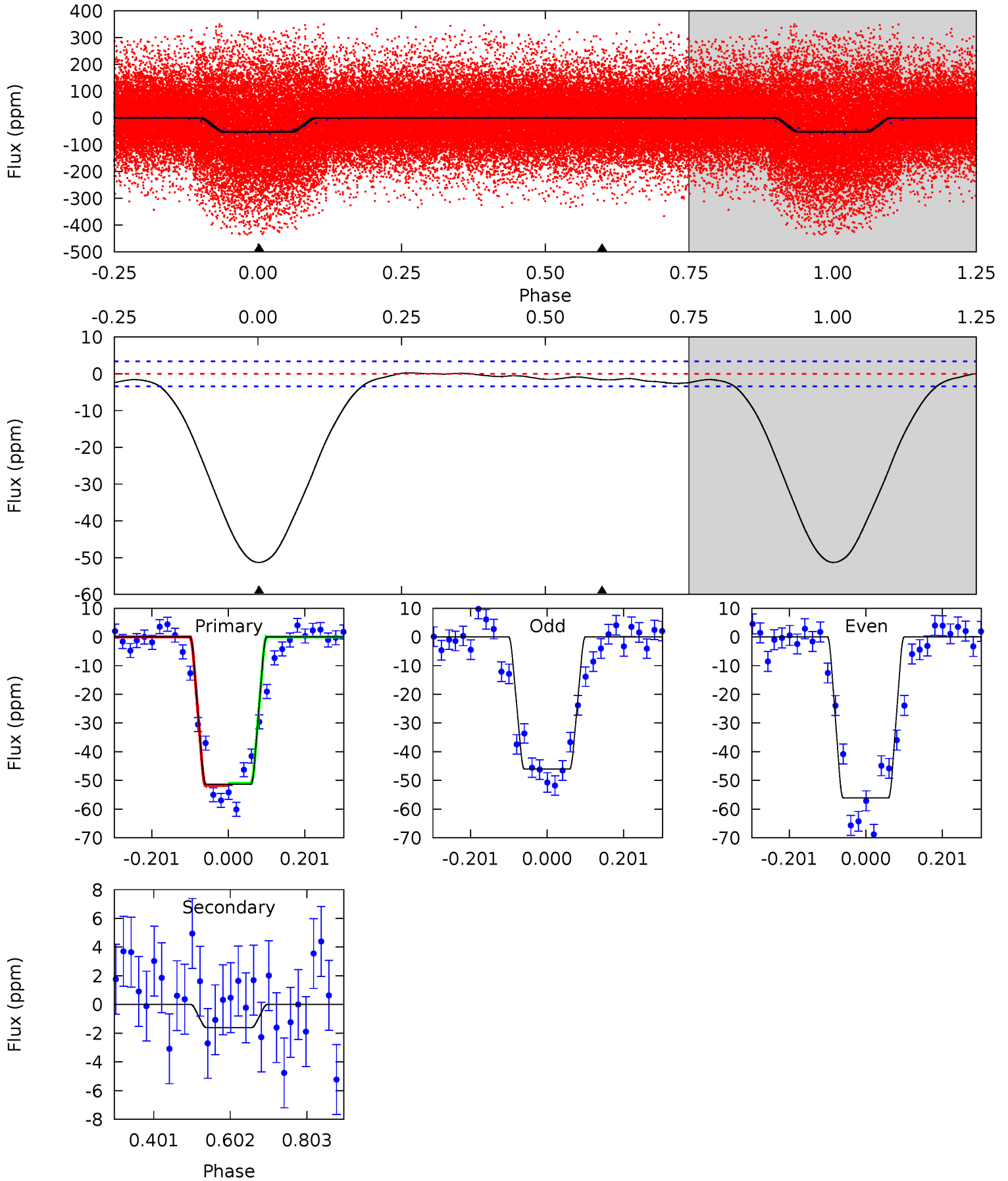
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	16.0	13.5	5.90	4.48	1.45	7.93	2.42	10.0	2.45	10.1	6.40	1.29	0.39	1.14



Alt Model-Shift Uniqueness Test

008175404-01, P = 2.039740 Days, E = 130.544756 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
66.6	2.09	0	0	4.42	1.28	0.59	66.6	66.6	2.09	2.09	6.50	1.02	0.00	0.47



Stellar Parameters For KIC 008175404

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6540^{+148}_{-198}	$4.356^{+0.073}_{-0.147}$	$-0.220^{+0.250}_{-0.300}$	$1.180^{+0.263}_{-0.142}$	$1.155^{+0.139}_{-0.153}$	$0.991^{+0.327}_{-0.381}$
	+2%/-3%	+2%/-3%	+114%/-136%	+22%/-12%	+12%/-13%	+33%/-38%
Source	PHO1	FLK73	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 008175404-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-27 ± 2	$0.65^{+0.12}_{-0.12}$	2429^{+136}_{-106}	6653^{+754}_{-541}	38^{+17}_{-11}
Alt.	-2 ± 1	$1.00^{+0.16}_{-0.13}$	2430^{+133}_{-106}	3069^{+298}_{-558}	$0.973^{+0.616}_{-0.530}$

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

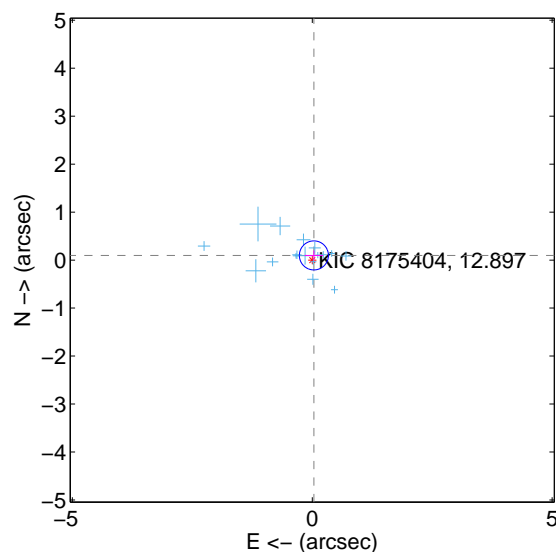
Supplemental centroid analysis for 008175404-01. Kepler magnitude: 12.90. Transit SNR 7.07

There are 17 quarters with good PRF difference image offsets

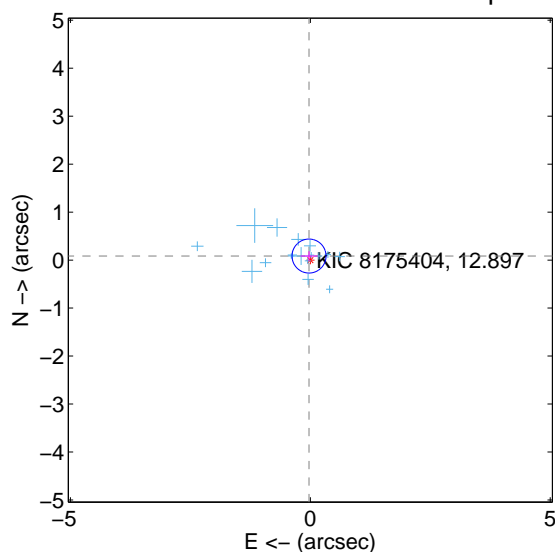
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.104 ± 0.101	1.03	-0.034 ± 0.192	0.098 ± 0.105
PRF-fit source offset from KIC position	0.089 ± 0.118	0.75	0.027 ± 0.178	0.085 ± 0.101
photometric centroid source offset	1.47 ± 0.91	1.62	1.41 ± 0.90	-0.44 ± 1.02

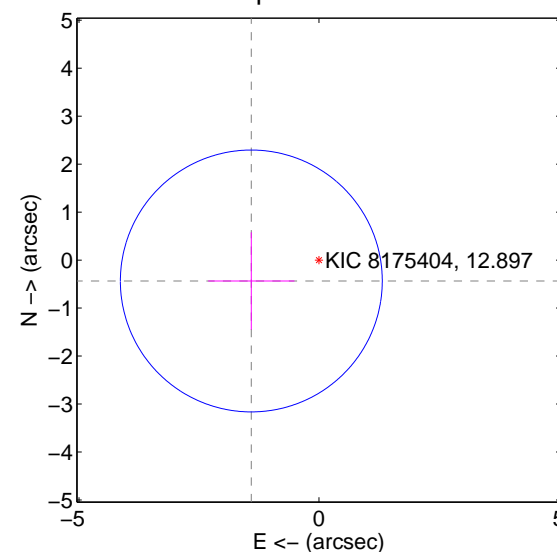
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

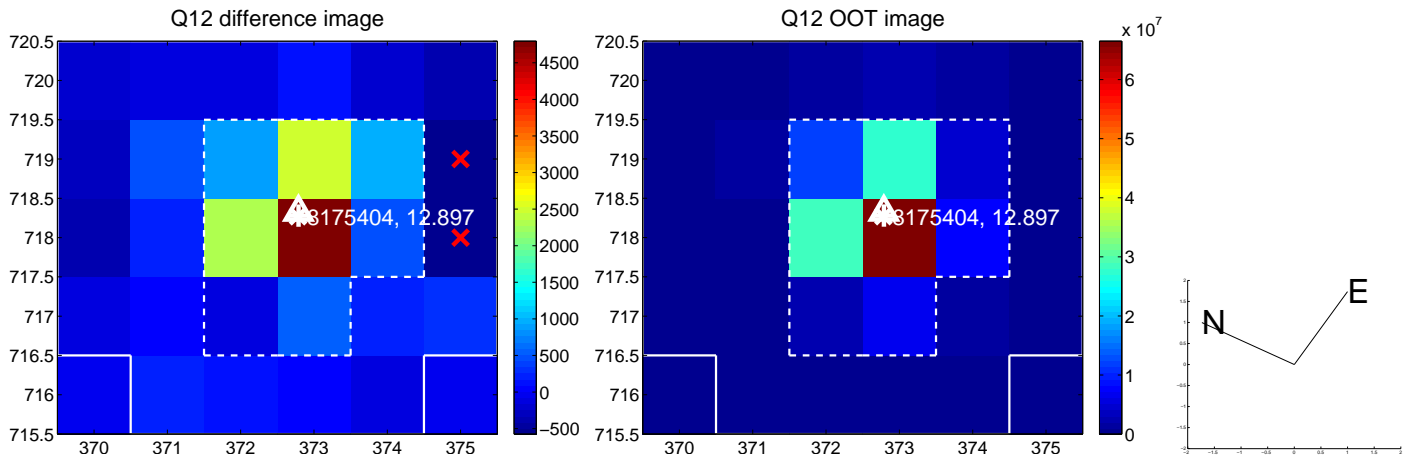
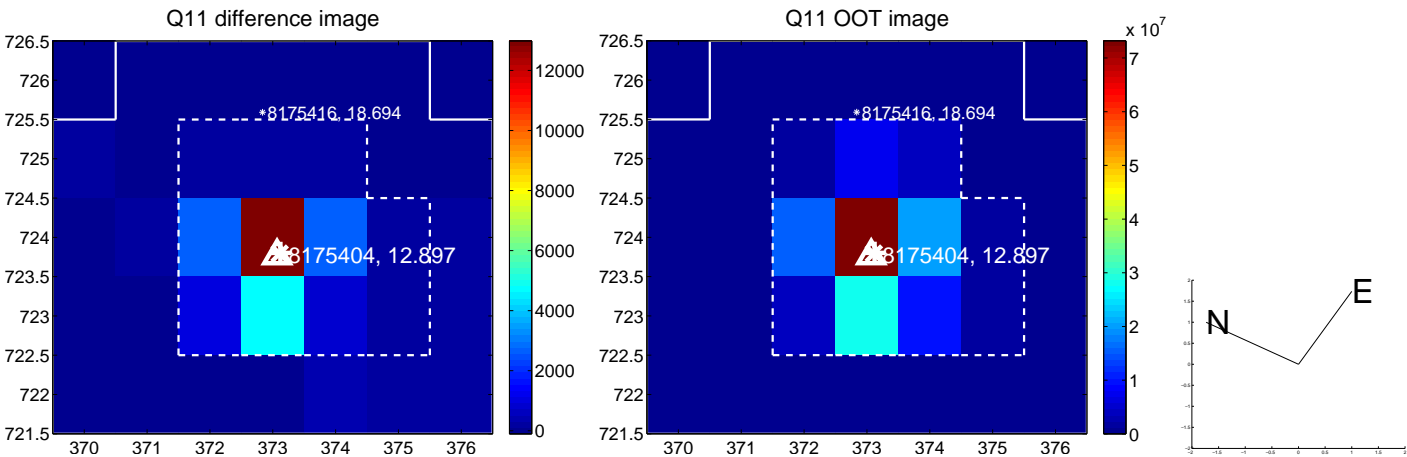
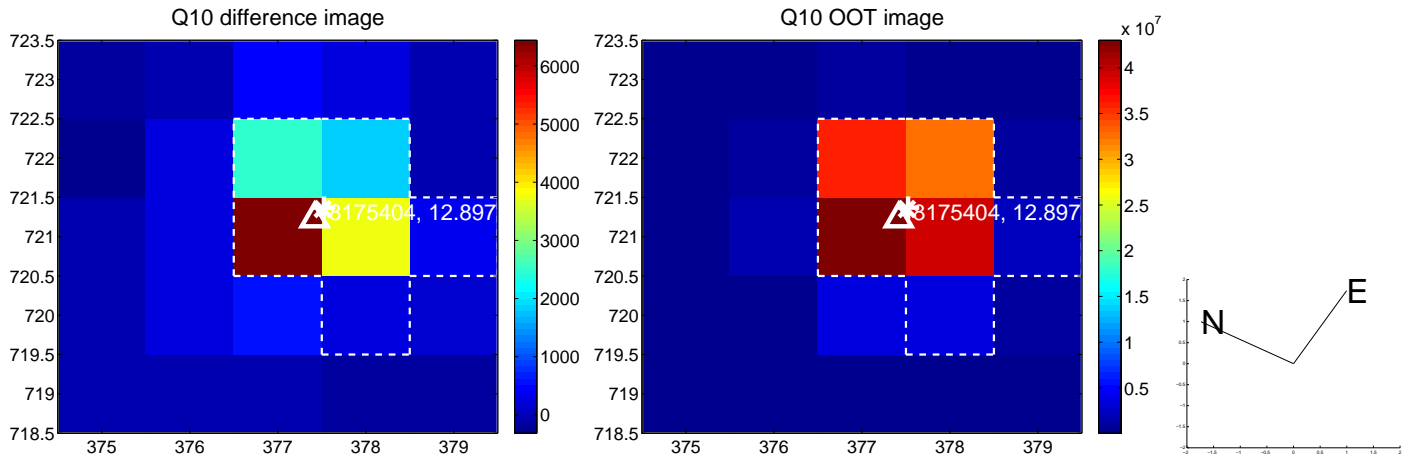
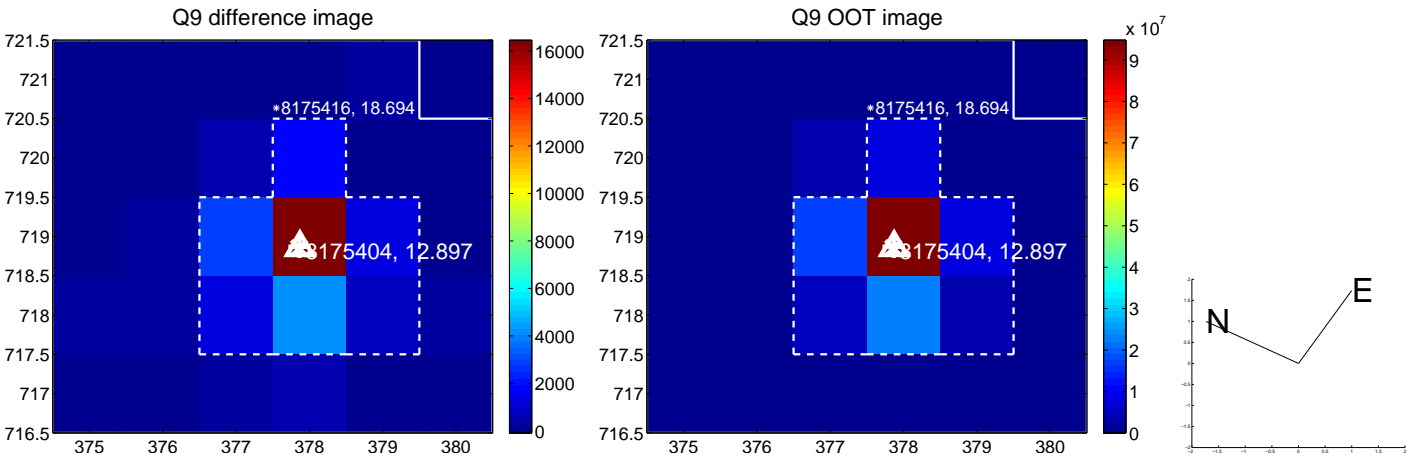


offset from photometric centroids

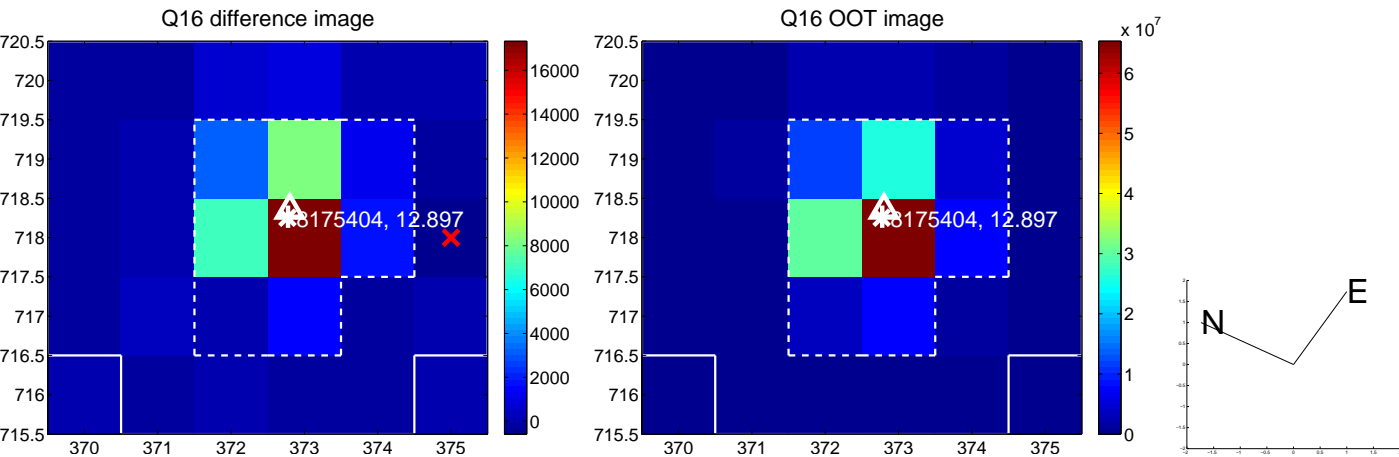
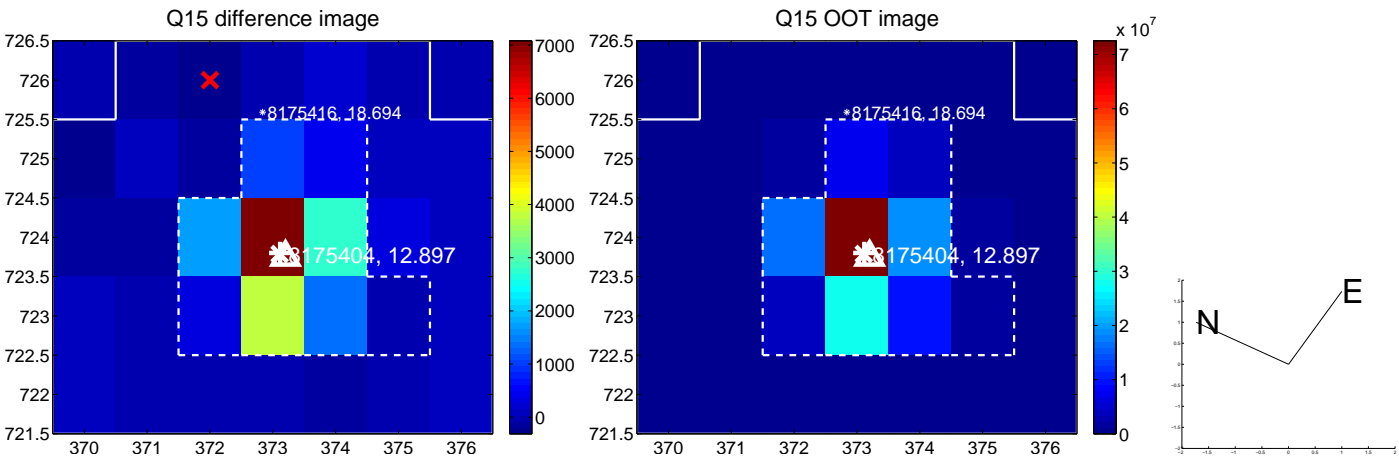
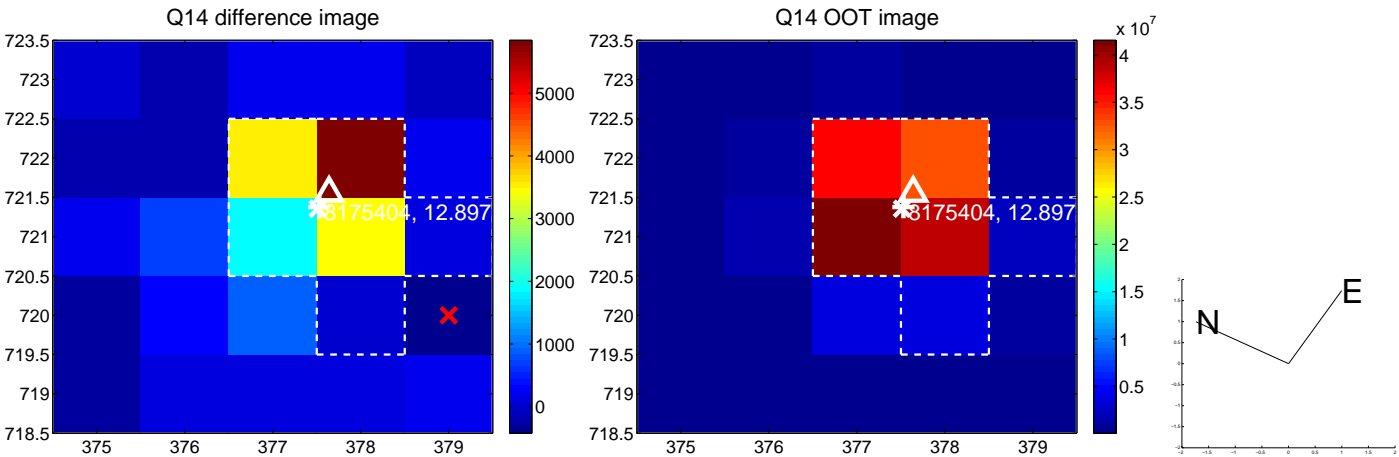
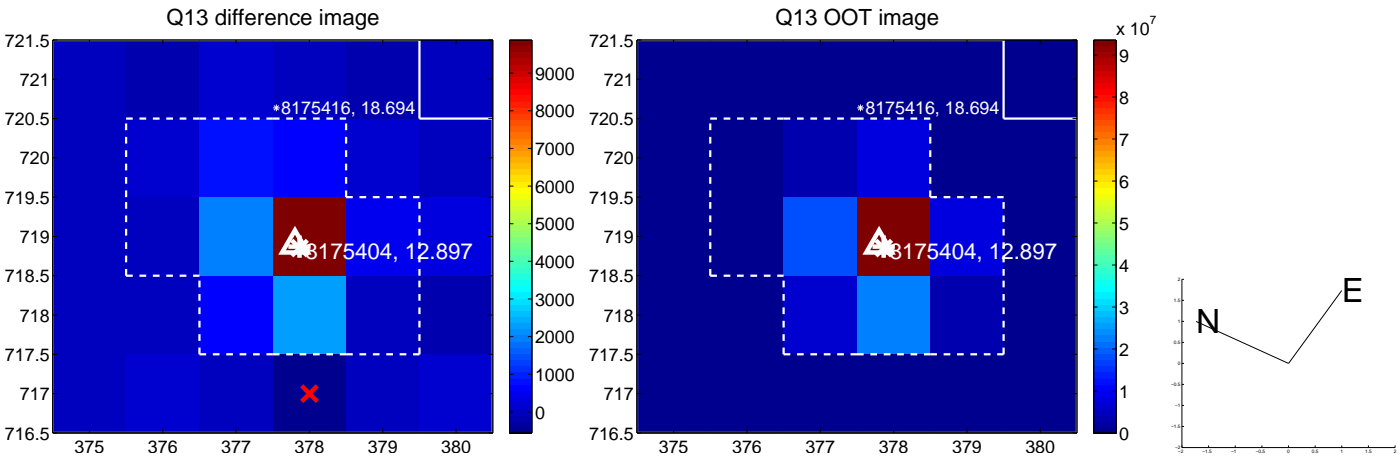


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

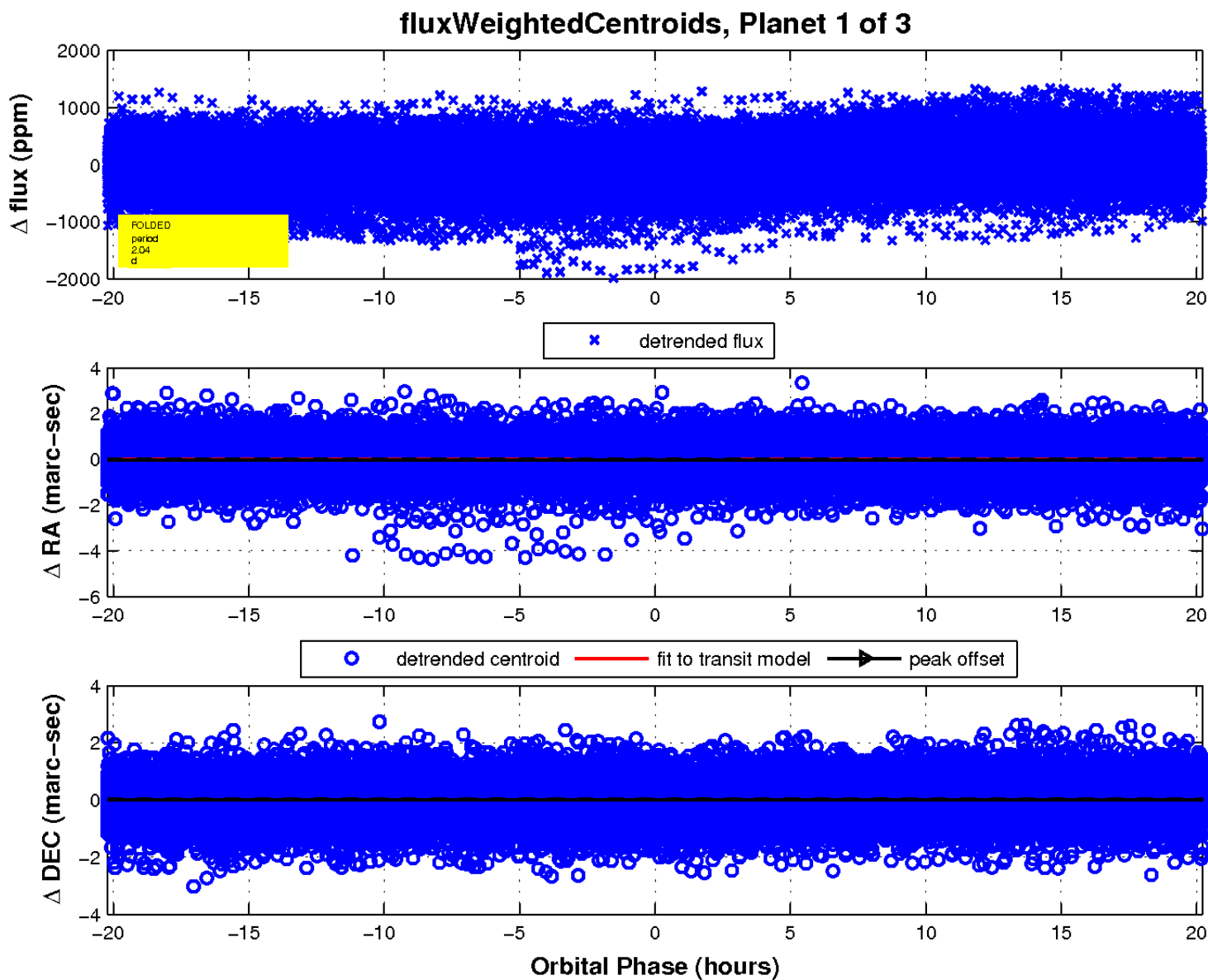
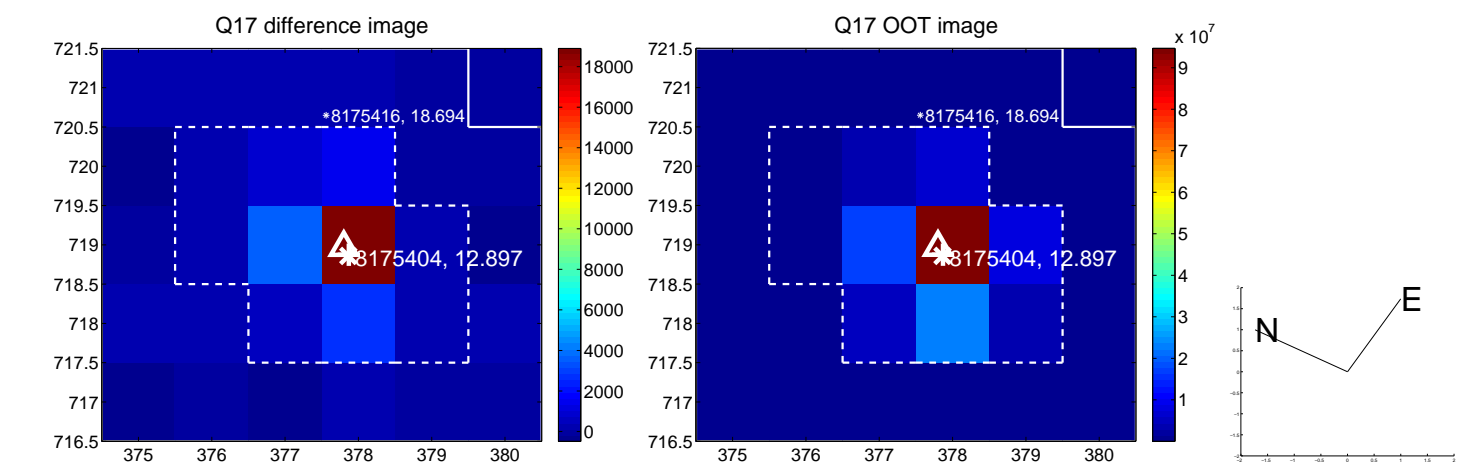
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



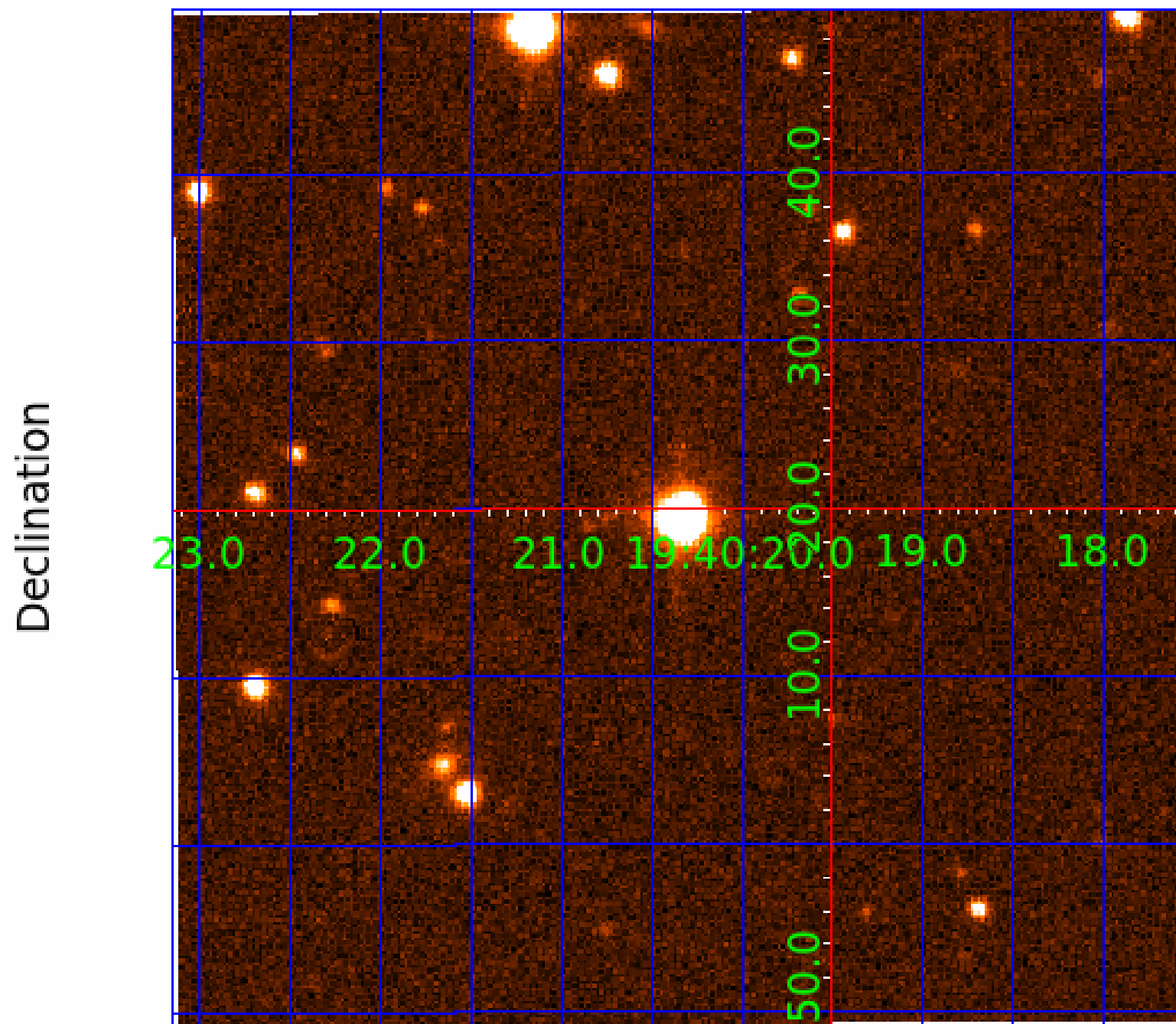
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008175404

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
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008175404-03	OBS	No	709.857914	148.412692	485.2	6.165	10.4	7.0	1.18	6540	5.01	0.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008175404-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
008175404-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008175404-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS

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

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

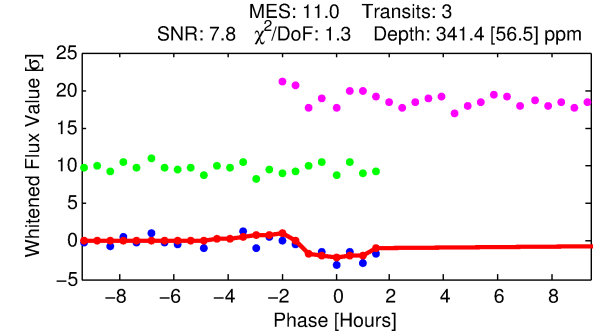
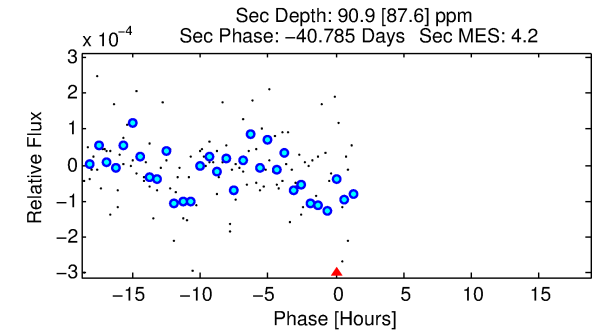
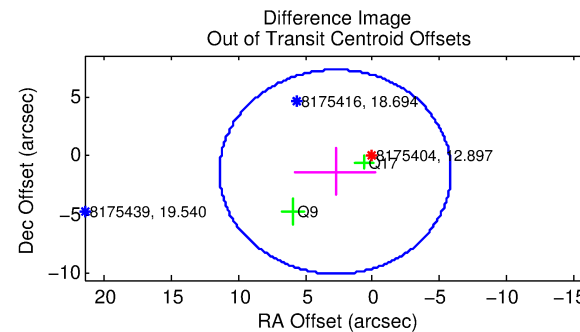
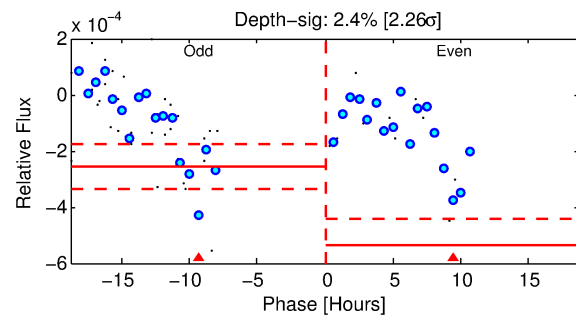
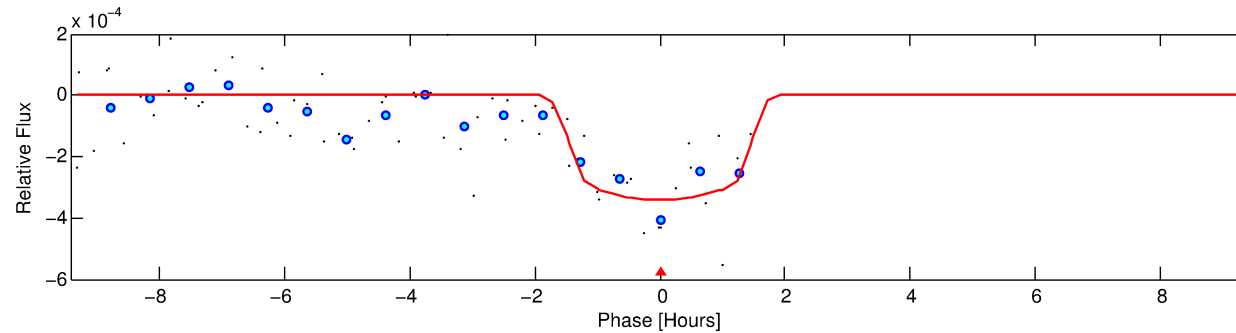
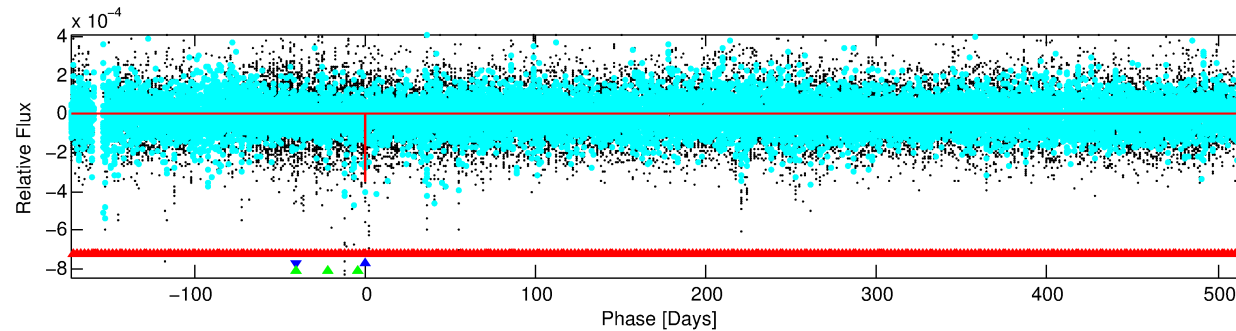
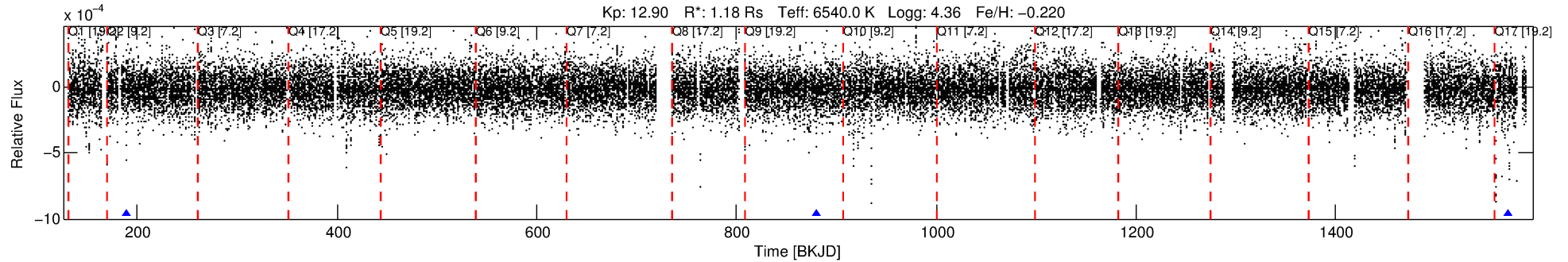
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008175404-02

No Significant Match Found

DV One-Page Summary

KIC: 8175404 Candidate: 2 of 3 Period: 691.462 d



DV Fit Results:

Period = 691.46174 [0.00649] d
Epoch = 189.2178 [0.0109] BKJD
Rp/R* = 0.0181 [0.0734]
a/R* = 1237.29 [27750.30]
b = 0.70 [16.28]
Seff = 0.89 [0.26]
Teq = 247 [18] K
Rp = 2.34 [9.46] Re
a = 1.6050 [0.2994] AU
Ag = 23595.24 [192298.62] [0.12 σ]
Teffp = 4741 [9655] K [0.47 σ]

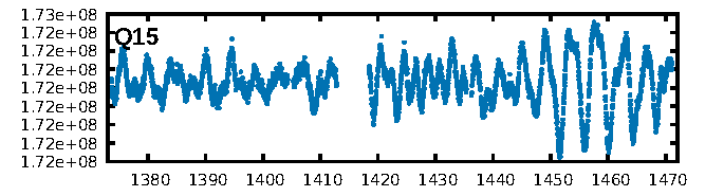
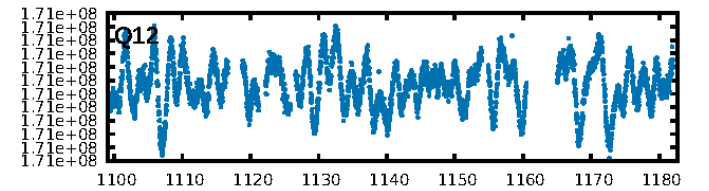
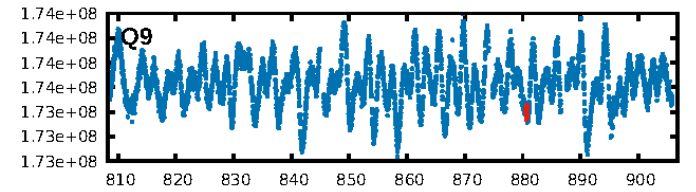
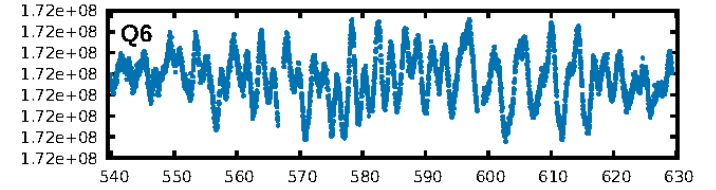
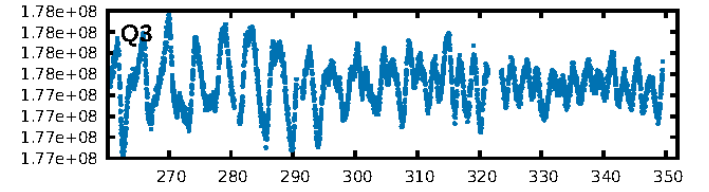
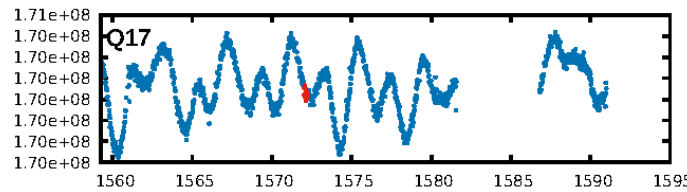
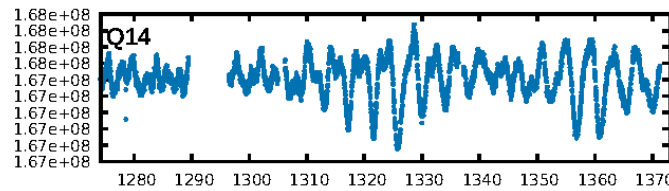
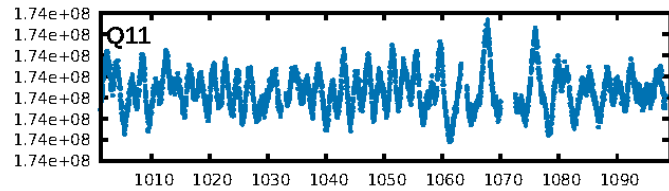
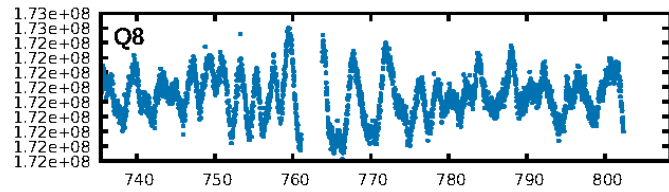
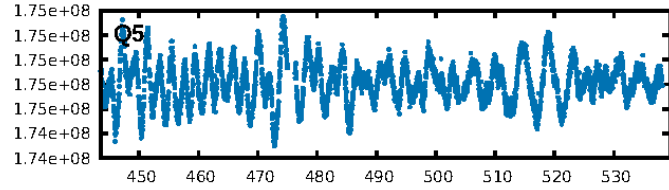
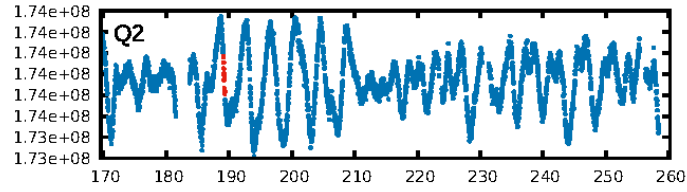
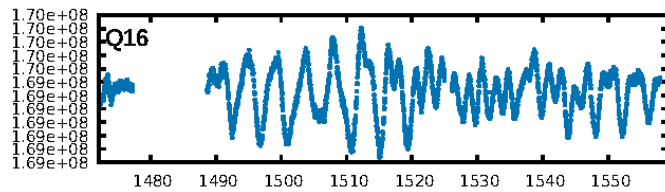
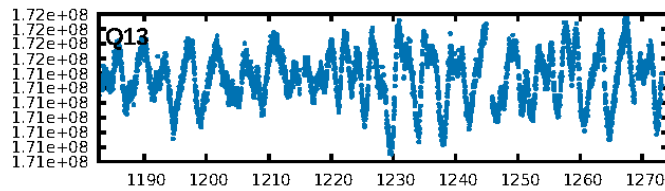
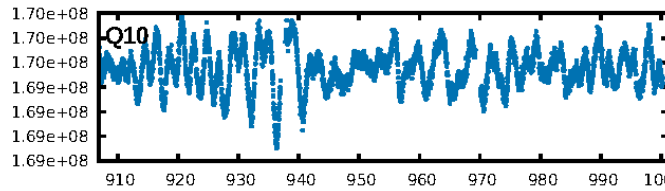
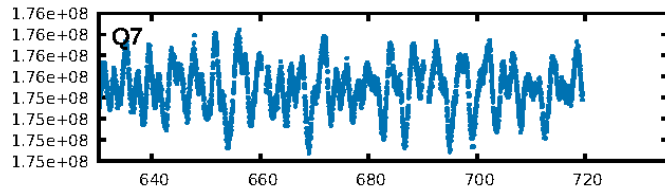
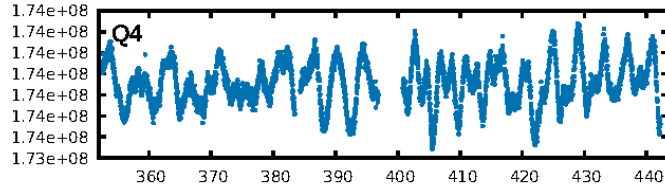
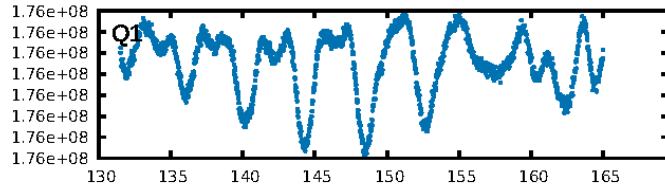
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [2224.28 σ]
LongPeriod-sig: 100.0% [63.79 σ]
ModelChiSquare2-sig: 0.9%
ModelChiSquareGof-sig: 42.0%
Bootstrap-pfa: 2.76e-10
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -1.601
Centroid-sig: 30.0%
Centroid-so: 1.012 arcsec [0.93 σ]
OotOffset-rm: 3.083 arcsec [1.07 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 3.135 arcsec [0.99 σ]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

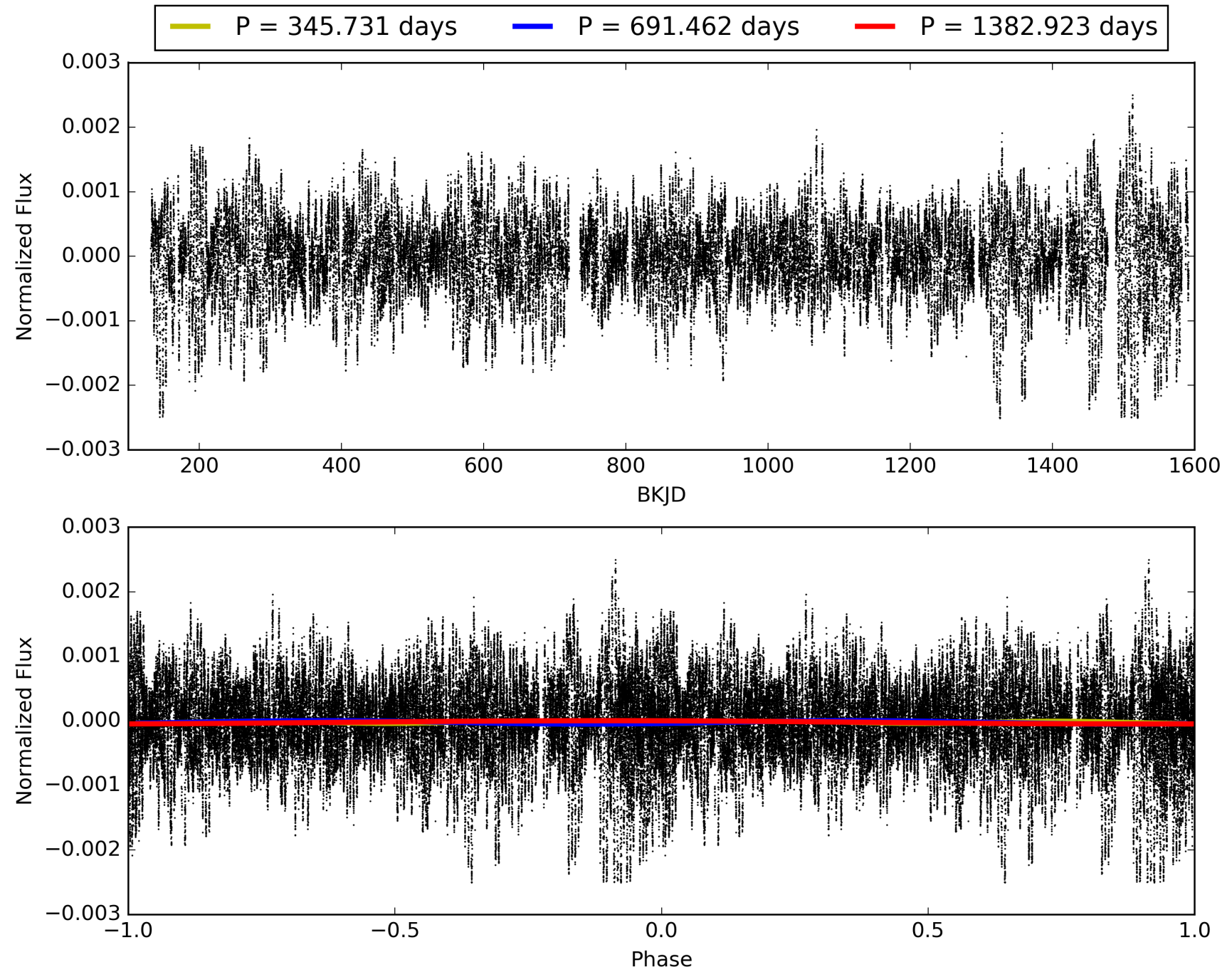
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:01:43 Z

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

TCE 008175404-02, PDC Light Curves

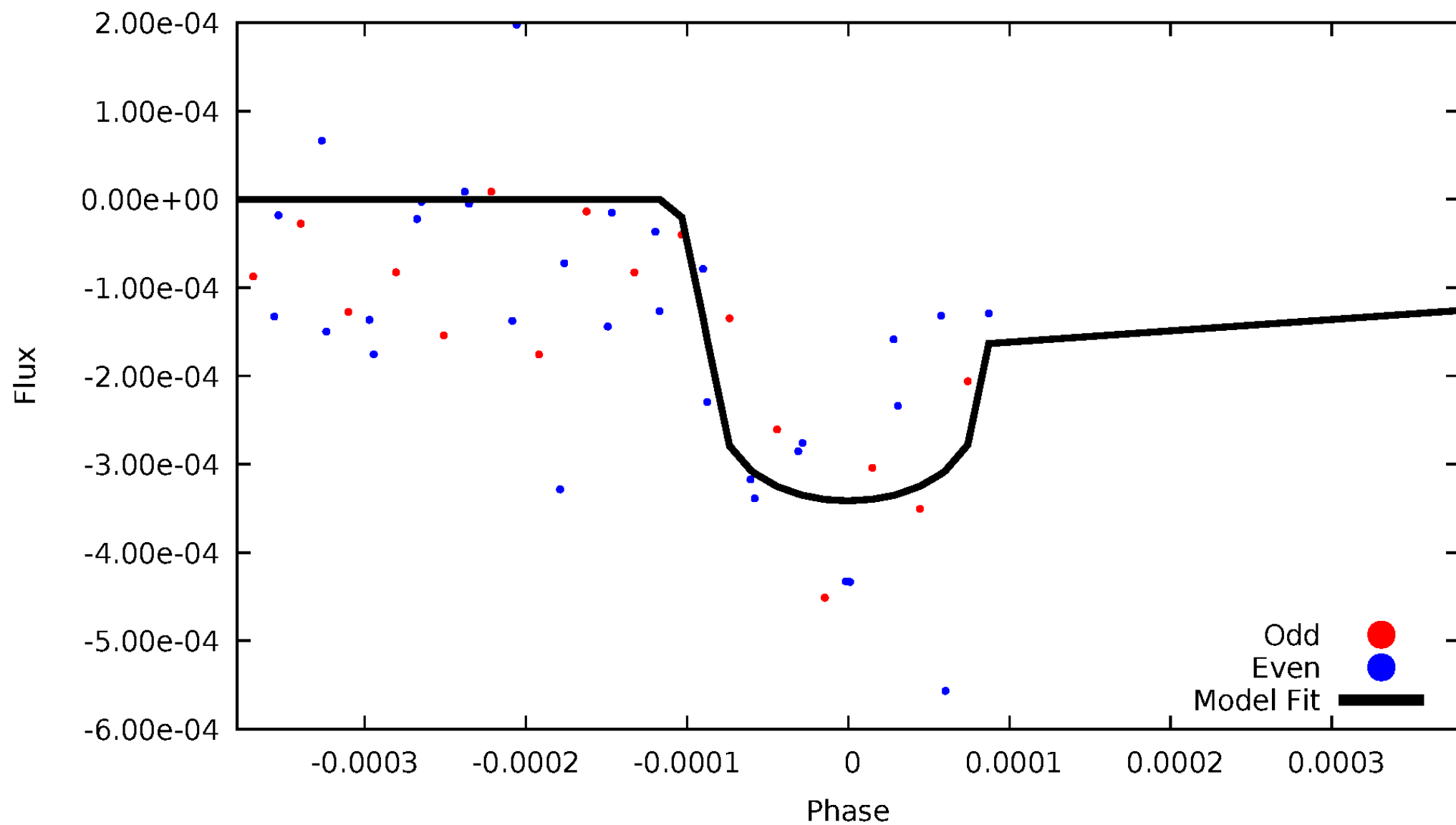


TCE 008175404-02



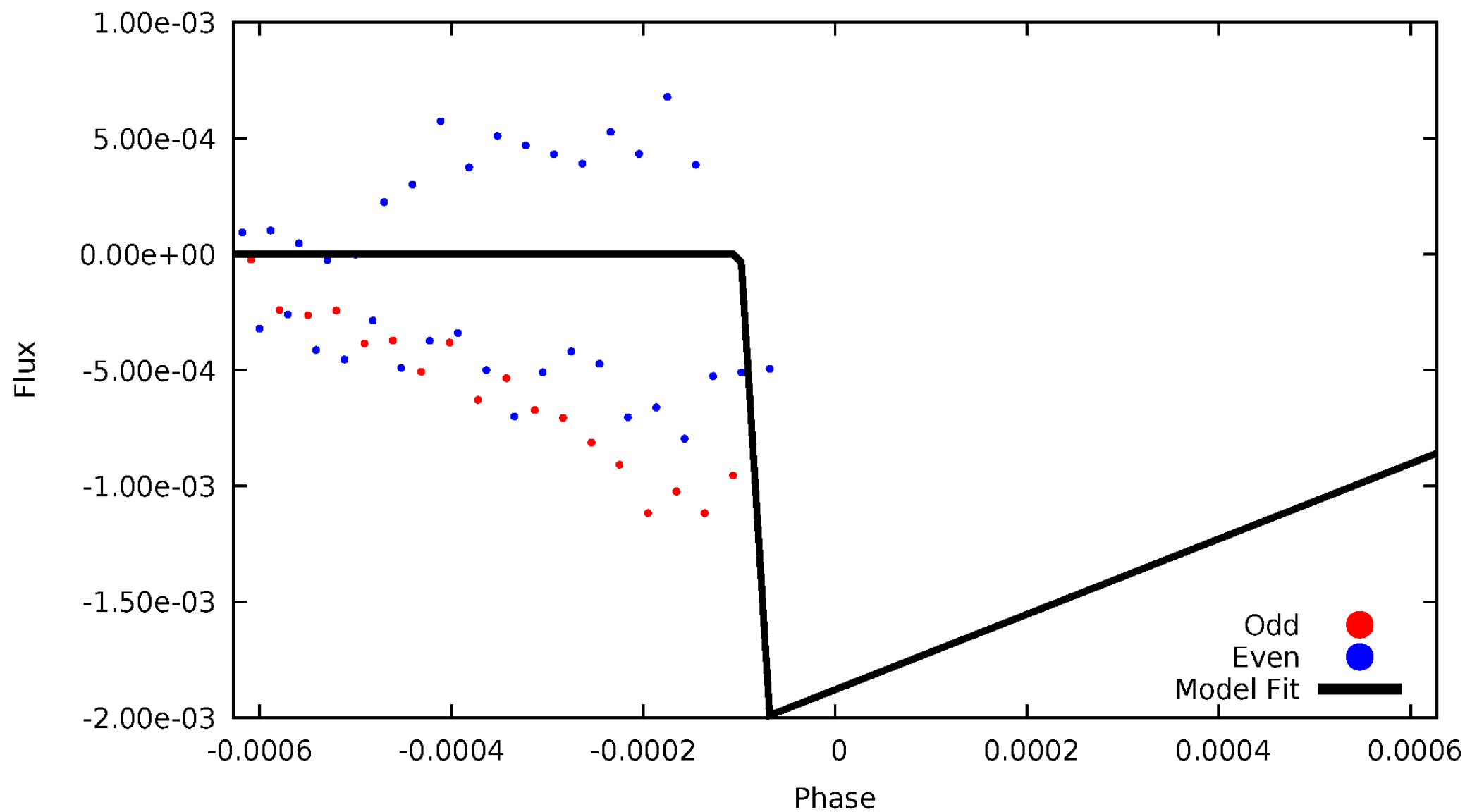
DV Odd/Even

TCE 008175404-02



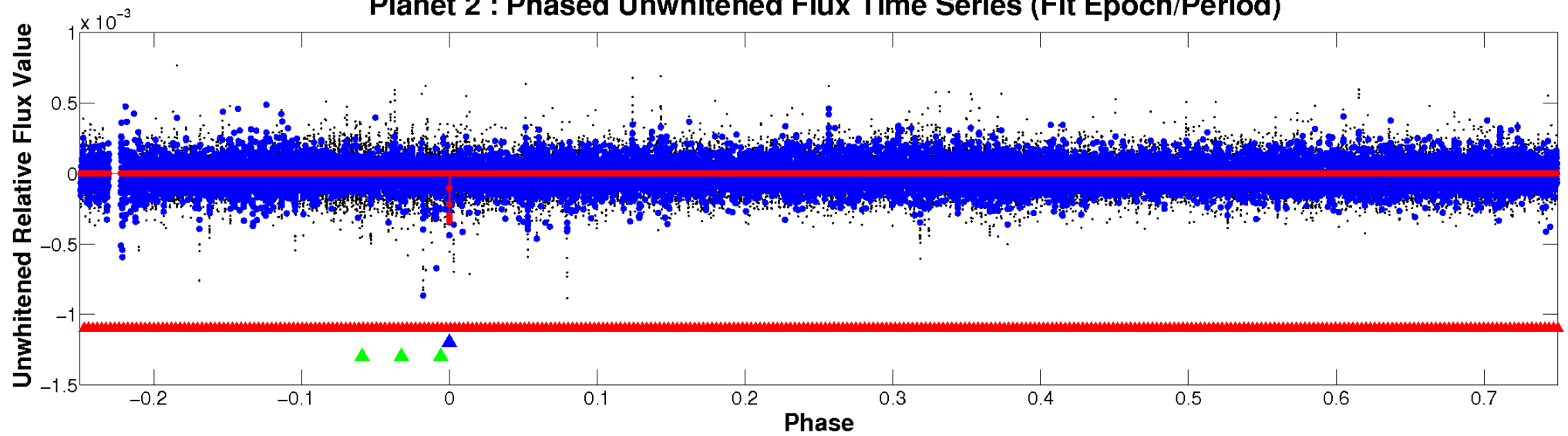
ALT Odd/Even

TCE 008175404-02

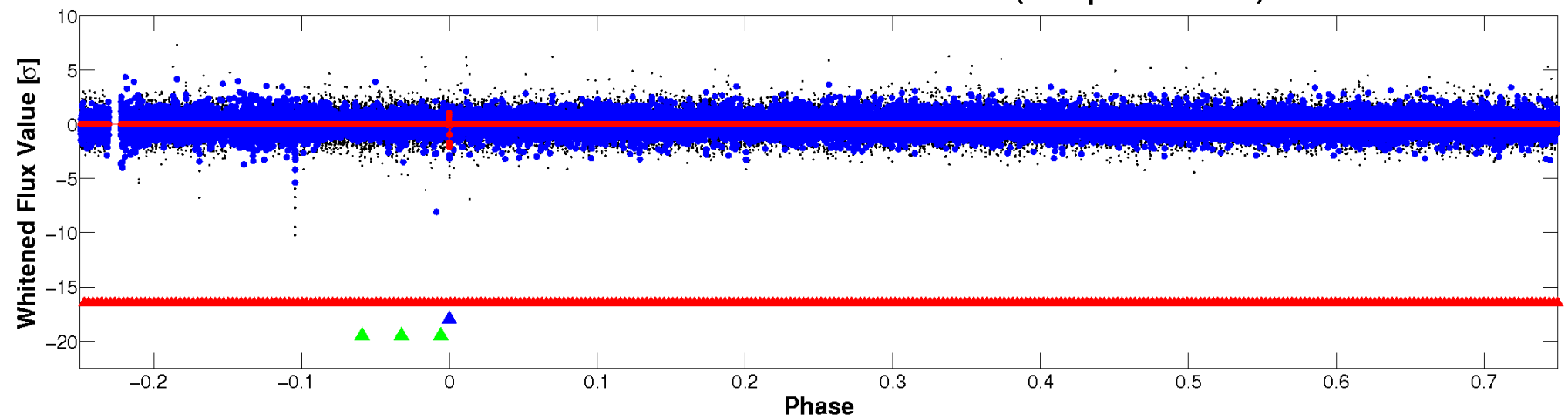


Non-Whitened Vs. Whitened Light Curve

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

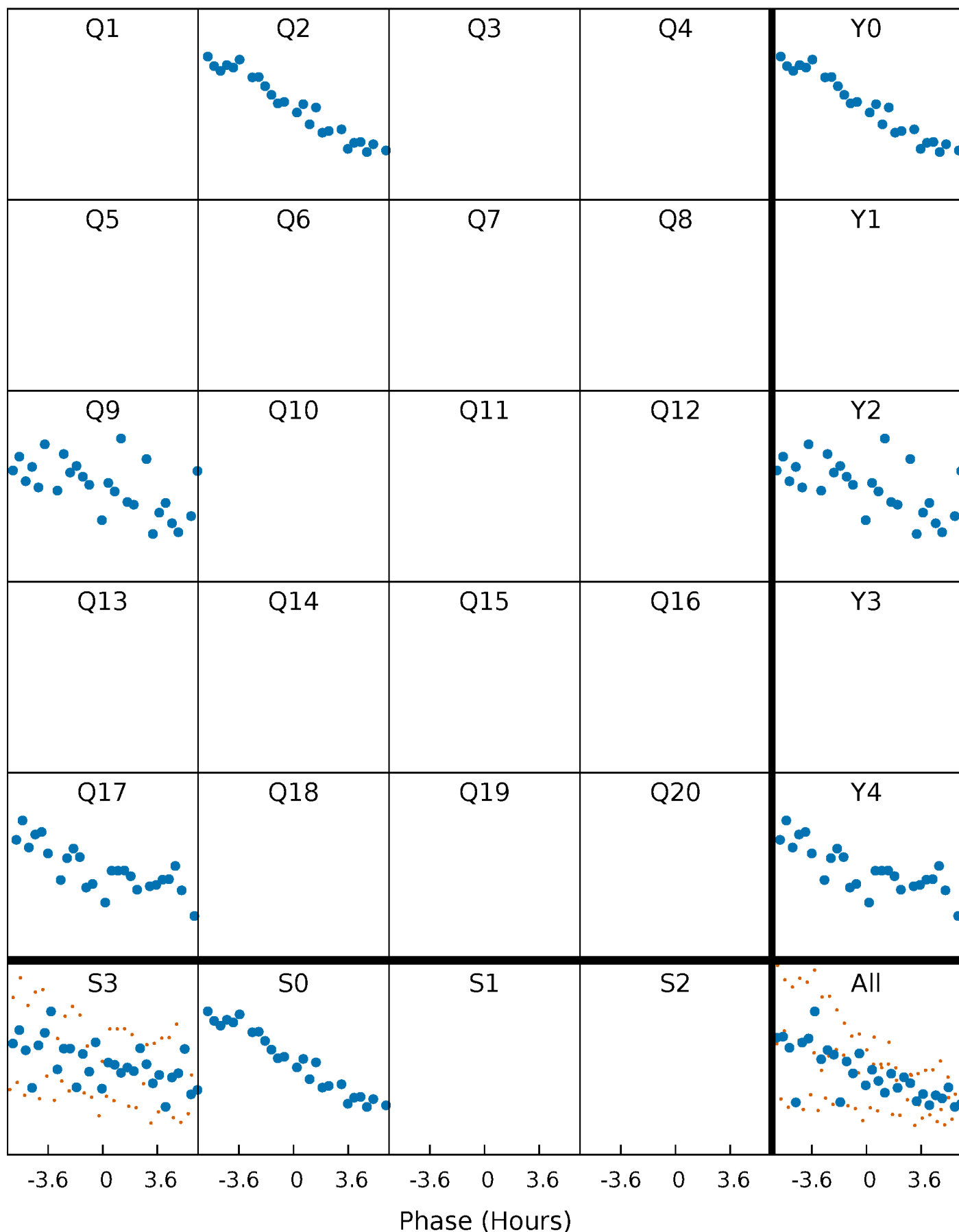


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



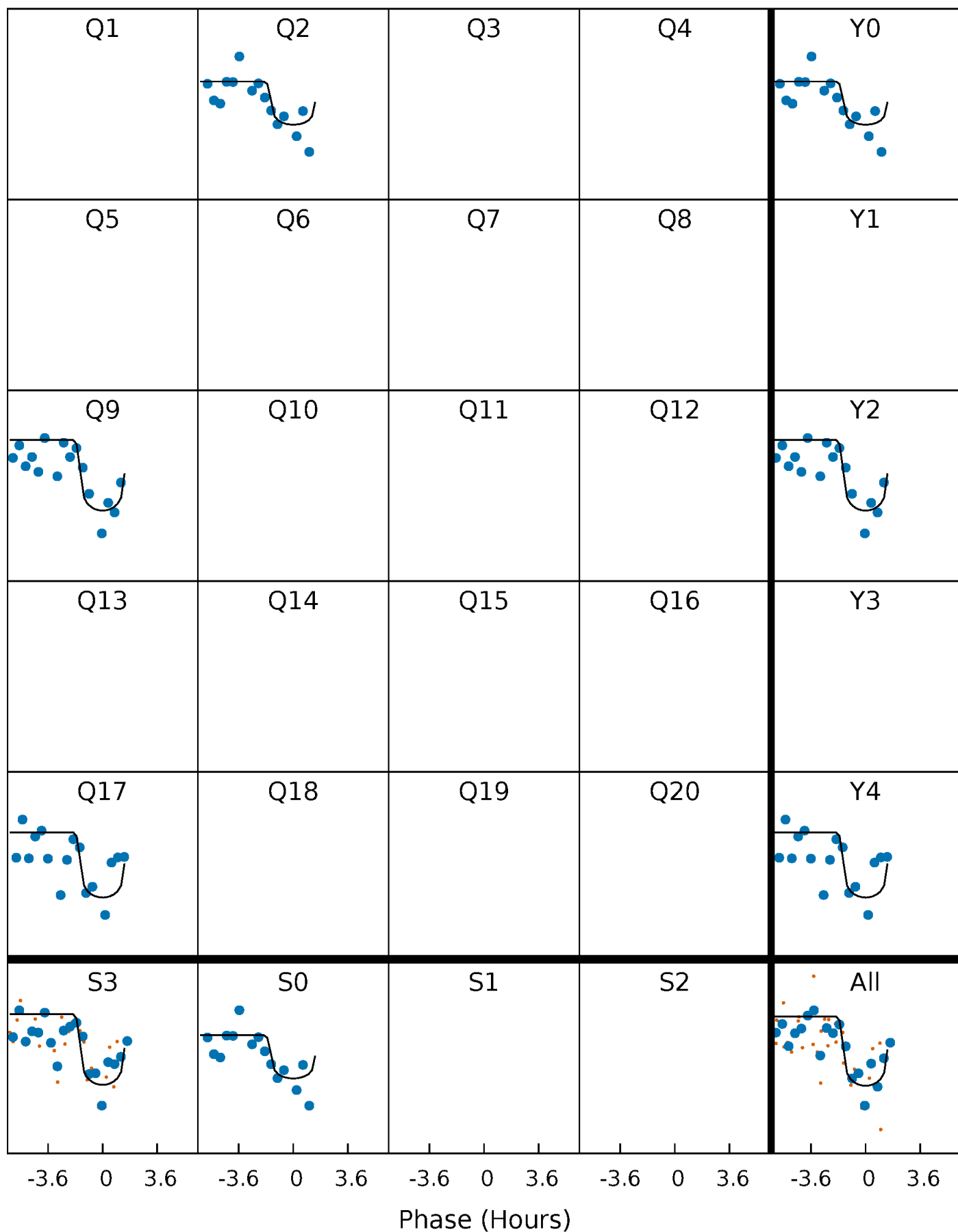
PDC Quarter-Phased Transit Curves

TCE 008175404-02 P=691.461736 Days $T_0=189.217767$ (BKJD)



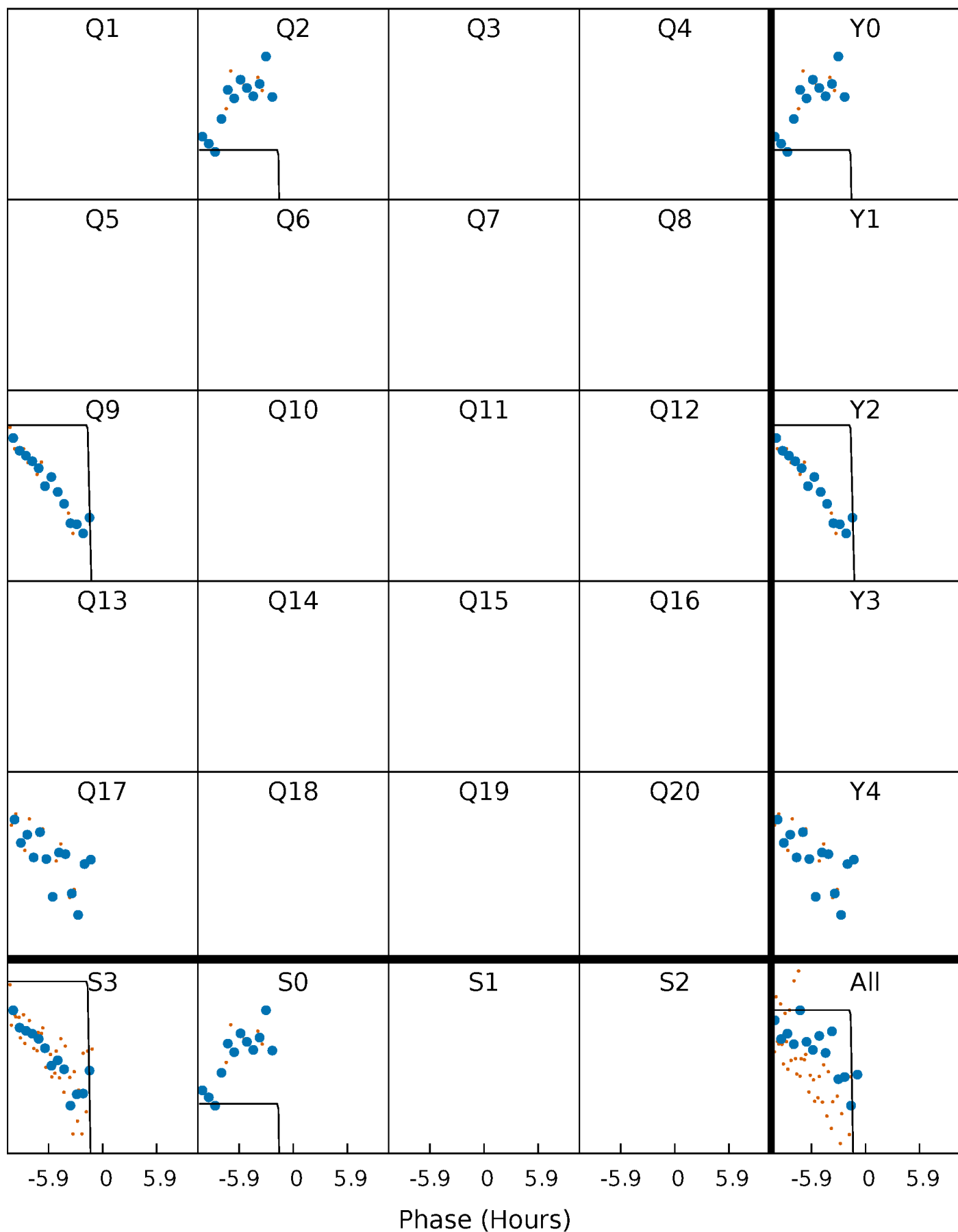
DV Quarter-Phased Transit Curves

TCE 008175404-02 $P=691.461736$ Days $T_0=189.217767$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

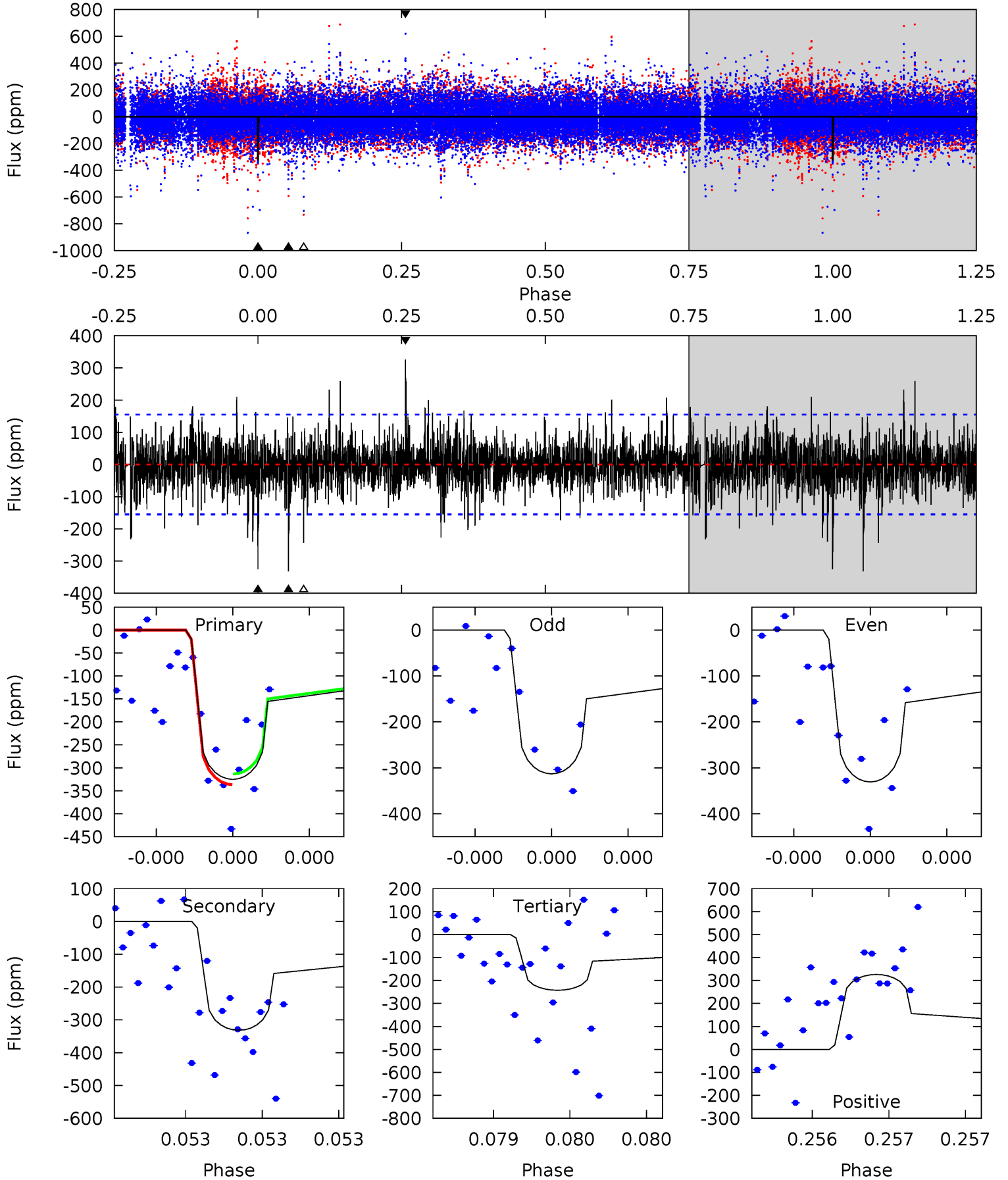
TCE 008175404-02 P=691.444426 Days $T_0=189.359823$ (BKJD)



DV Model-Shift Uniqueness Test

008175404-02, P = 691.461736 Days, E = 189.217767 Days

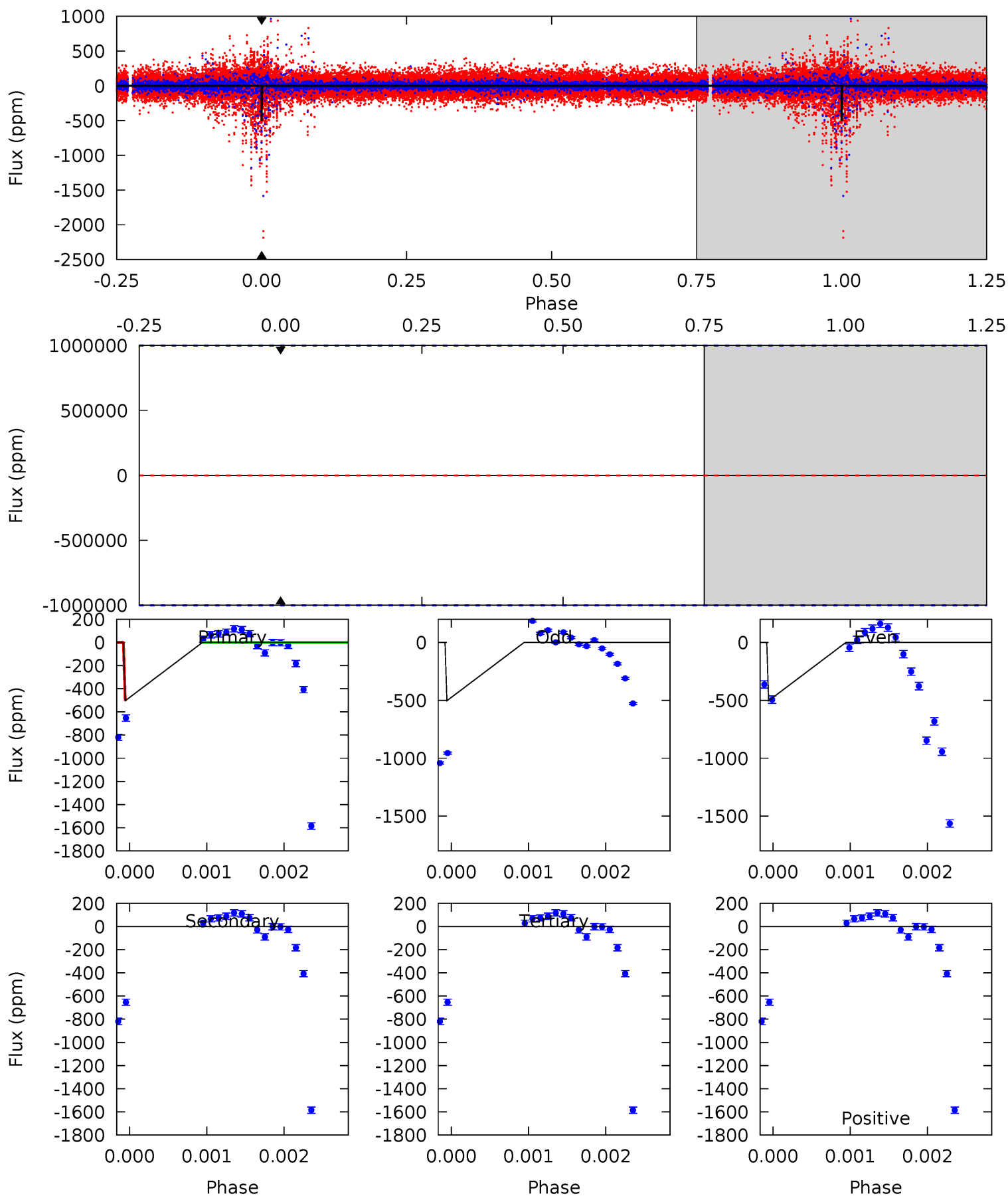
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	12.3	8.97	12.1	5.74	3.73	1.80	3.06	-0.03	3.30	0.21	0.31	1.04	0.50	0.43



Alt Model-Shift Uniqueness Test

008175404-02, P = 691.444426 Days, E = 189.359823 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0.00	0	0	0



Stellar Parameters For KIC 008175404

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6540^{+148}_{-198}	$4.356^{+0.073}_{-0.147}$	$-0.220^{+0.250}_{-0.300}$	$1.180^{+0.263}_{-0.142}$	$1.155^{+0.139}_{-0.153}$	$0.991^{+0.327}_{-0.381}$
	+2%/-3%	+2%/-3%	+114%/-136%	+22%/-12%	+12%/-13%	+33%/-38%
Source	PHO1	FLK73	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 008175404-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-332 ± 27	$7.36^{+7.54}_{-5.12}$	349^{+18}_{-16}	4032^{+2925}_{-811}	8662^{+82651}_{-6502}
Alt.	-0 ± 1000000	$9.56^{+8.35}_{-6.16}$	349^{+19}_{-16}	4305^{+21279}_{-31514}	$13049^{+2284549}_{-2515909}$

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

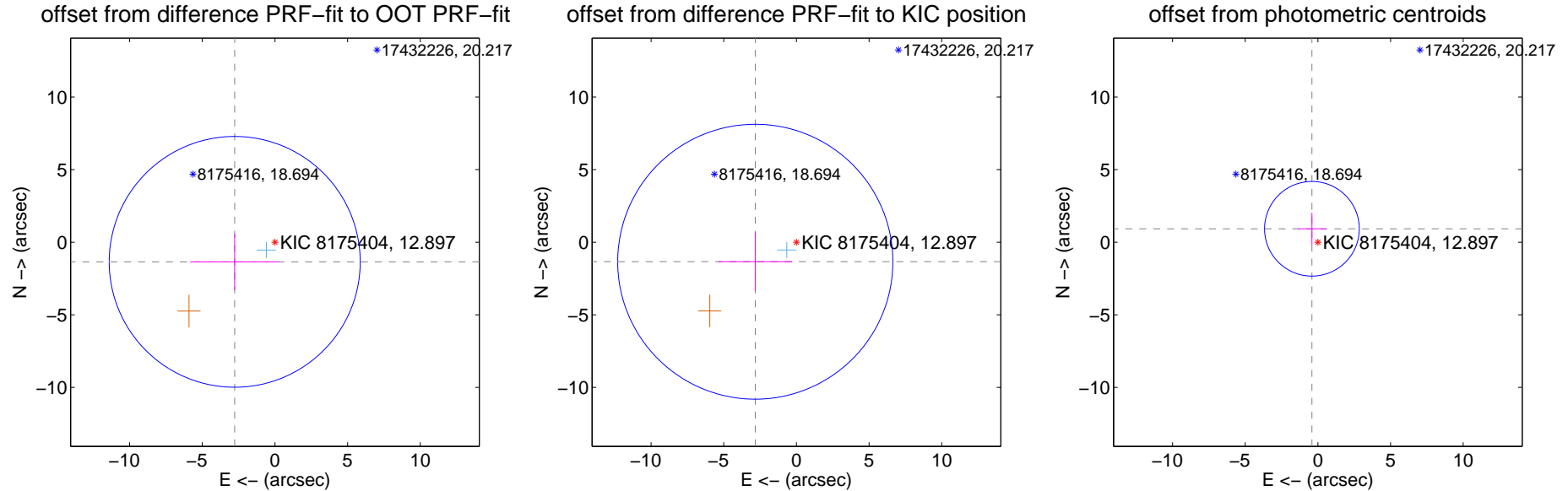
DV Centroid Data

Supplemental centroid analysis for 008175404-02. Kepler magnitude: 12.90. Transit SNR 7.85

There are 1 quarters with good PRF difference image offsets

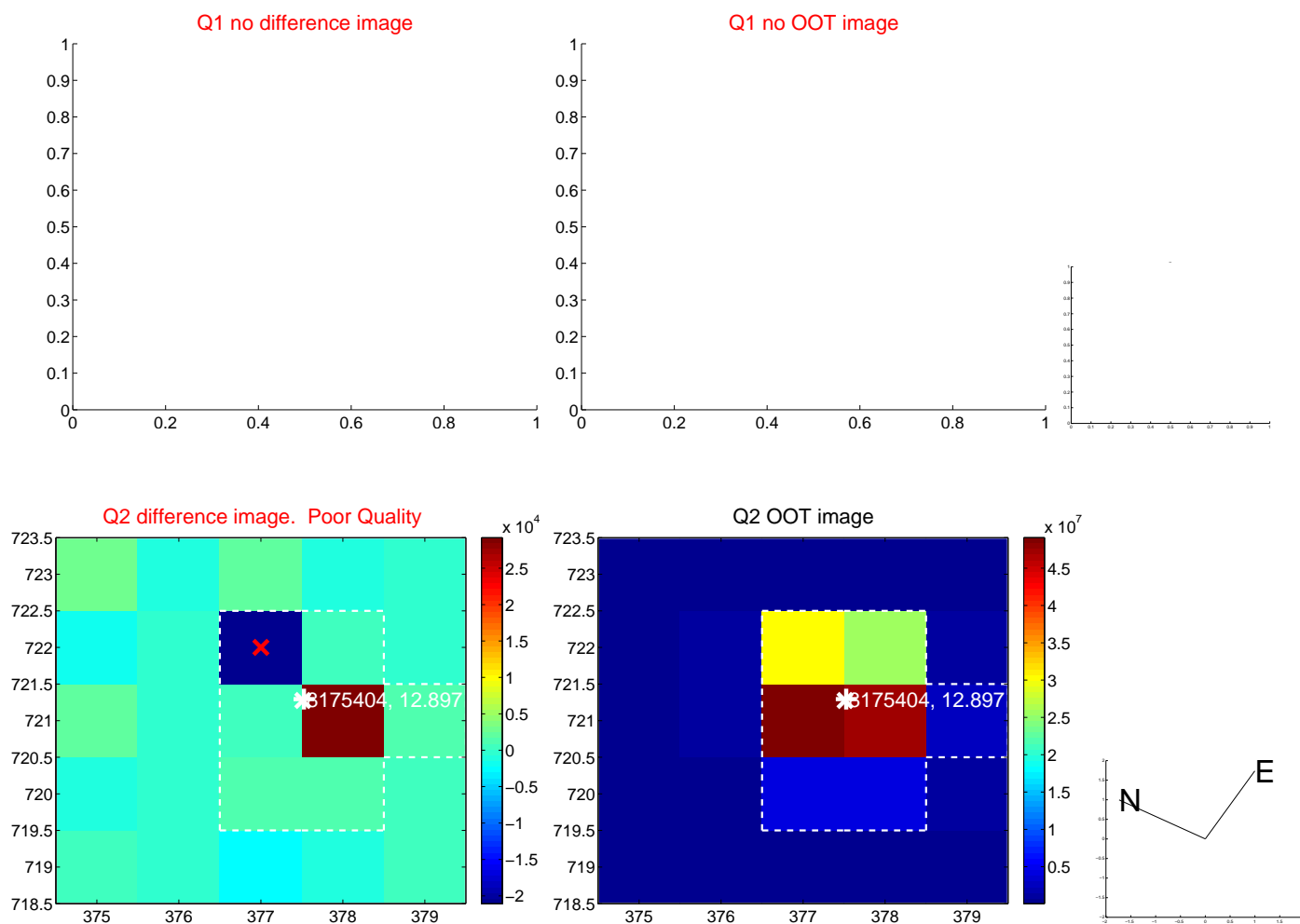
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.083 ± 2.880	1.07	2.770 ± 3.062	-1.353 ± 1.939
PRF-fit source offset from KIC position	3.135 ± 3.157	0.99	2.832 ± 2.540	-1.345 ± 2.012
photometric centroid source offset	1.01 ± 1.09	0.93	0.41 ± 0.99	0.93 ± 1.11



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.

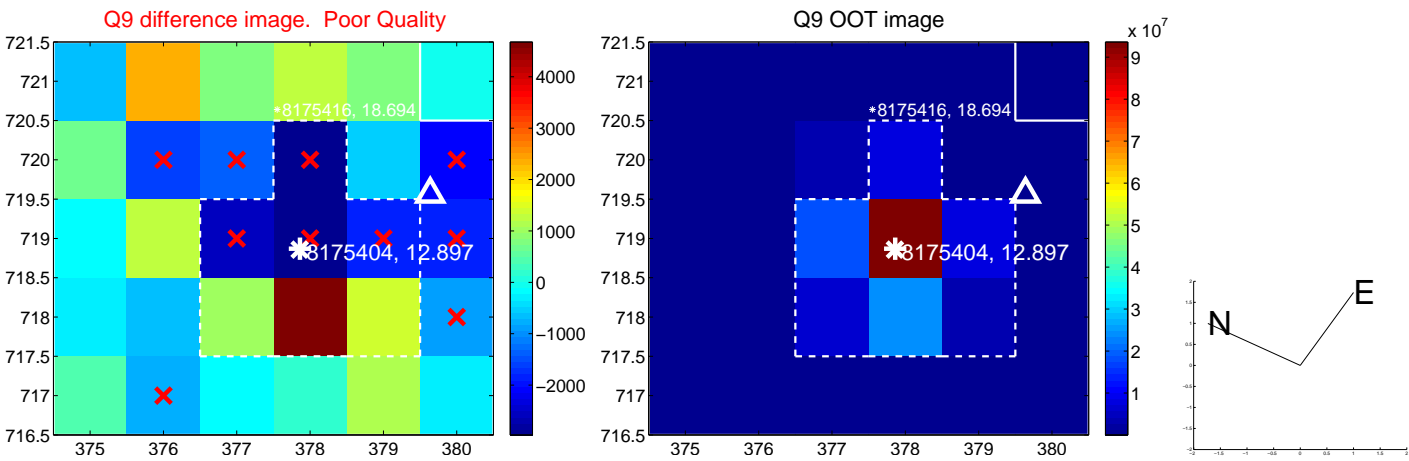
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



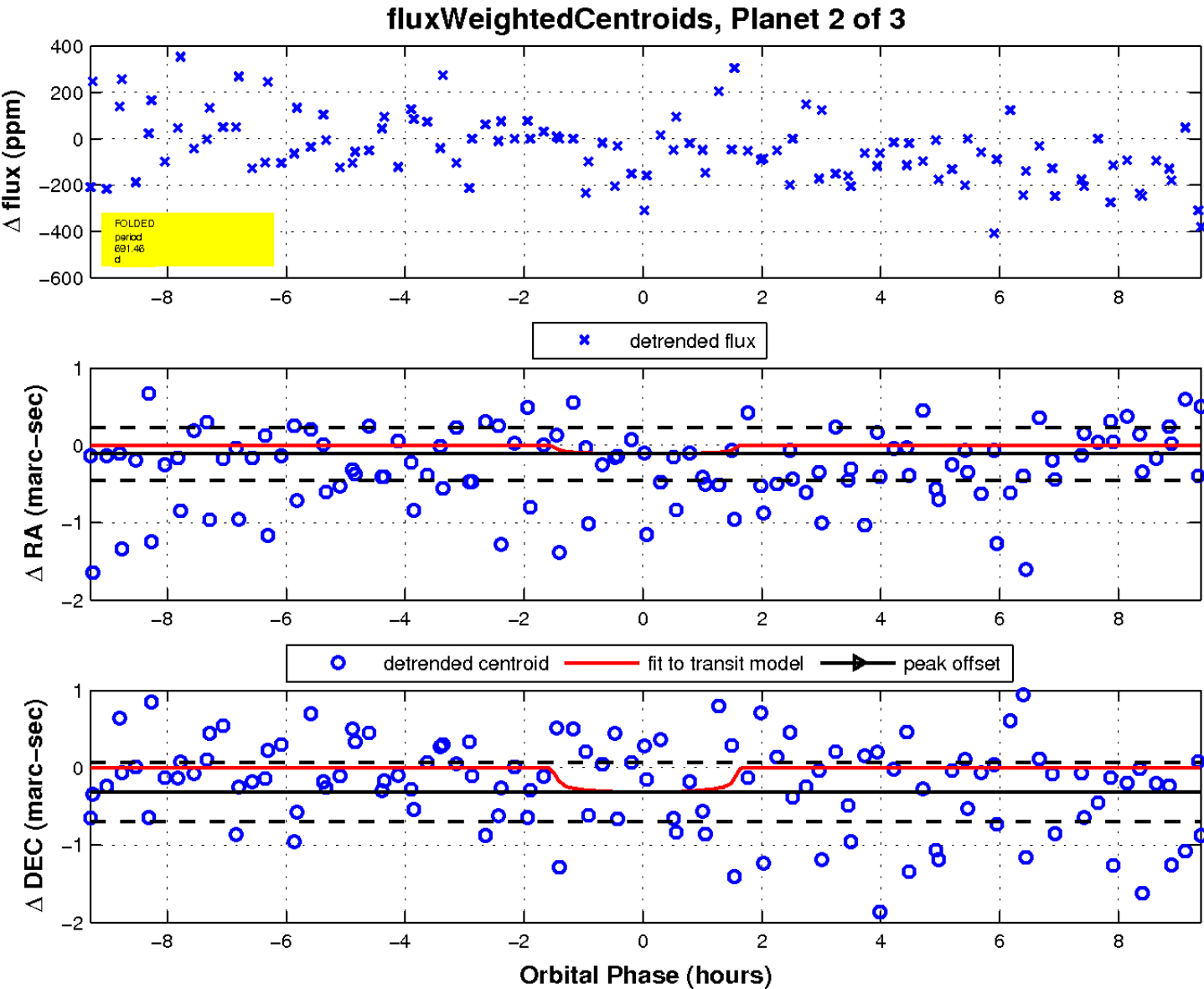
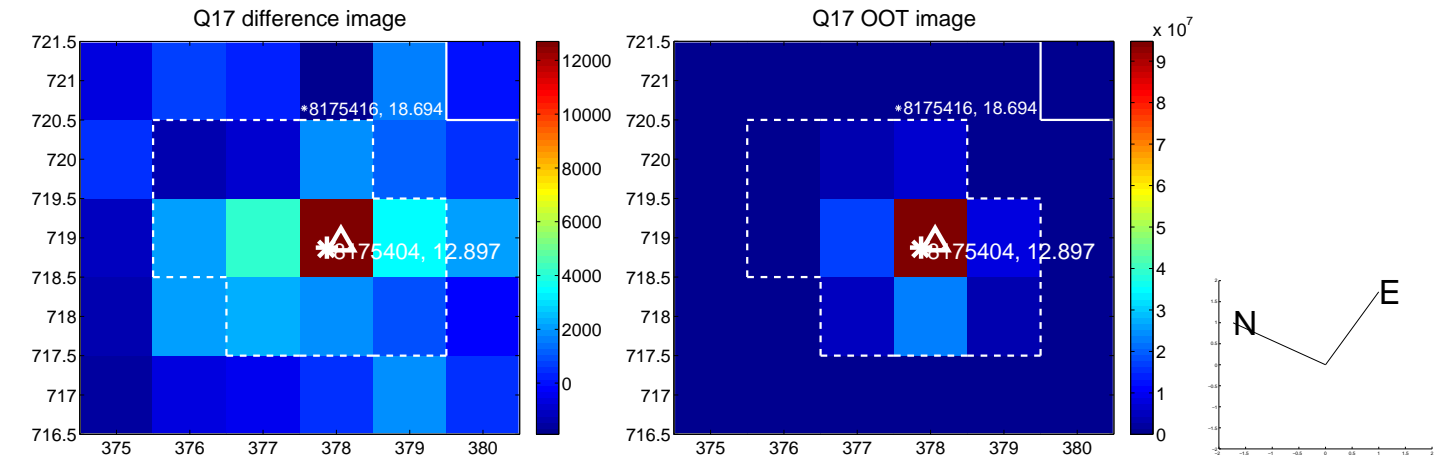
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



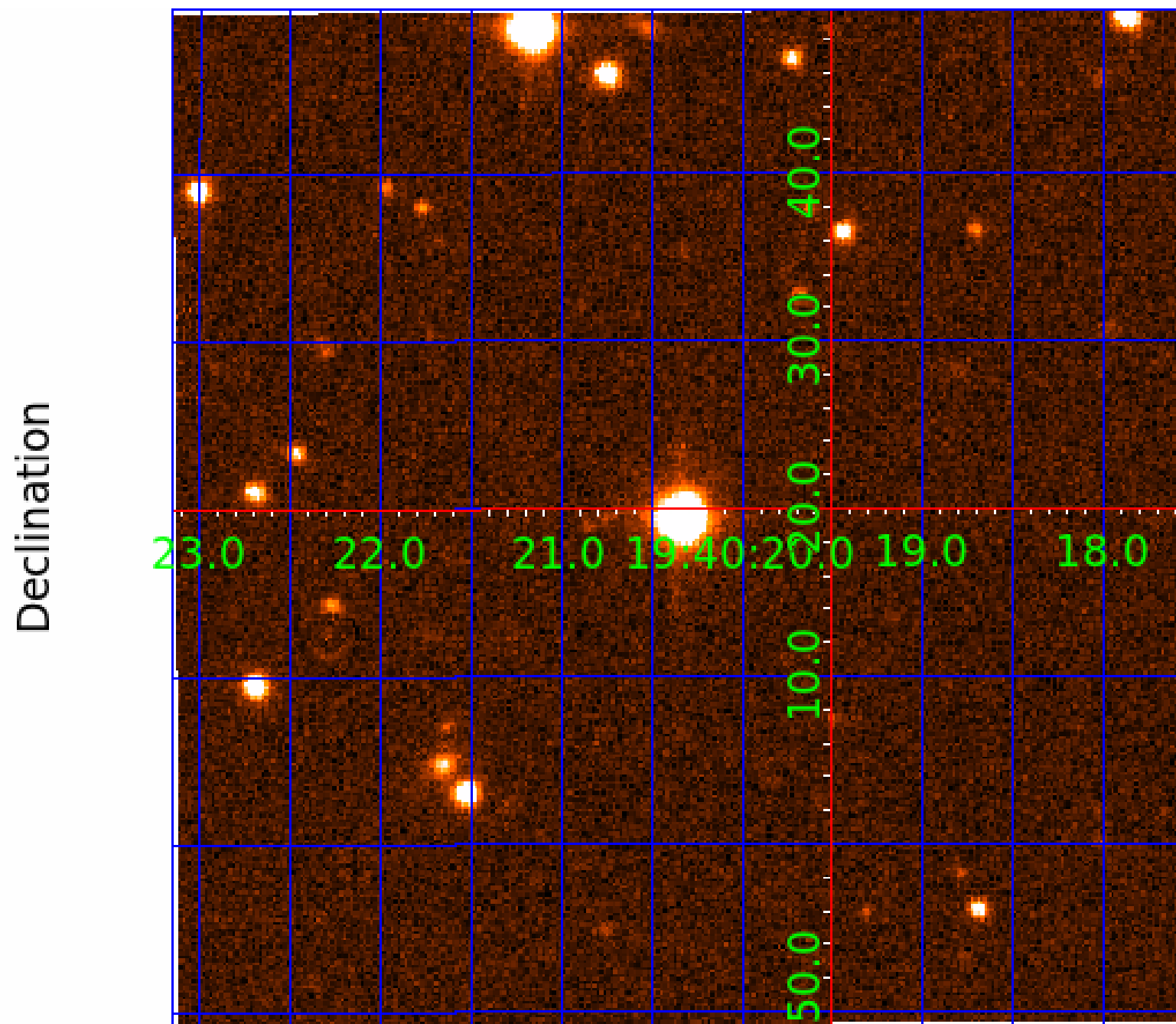
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008175404

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})
008175404-01	OBS	No	2.039741	132.593991	18.5	6.741	7.3	7.1	1.18	6540	0.63	2094.24
008175404-02	OBS	No	691.461736	189.217767	341.4	3.146	11.0	7.8	1.18	6540	2.34	0.89
008175404-03	OBS	No	709.857914	148.412692	485.2	6.165	10.4	7.0	1.18	6540	5.01	0.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008175404-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV
008175404-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008175404-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS

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

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

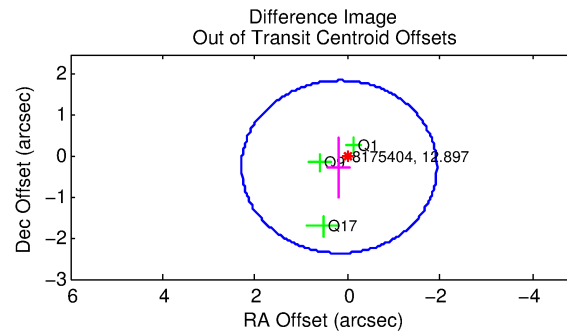
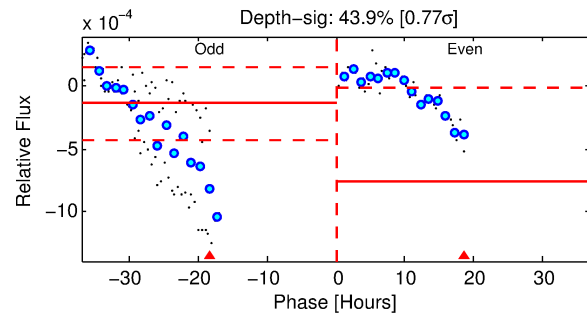
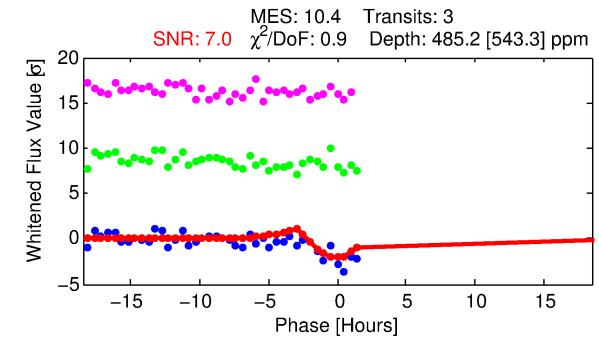
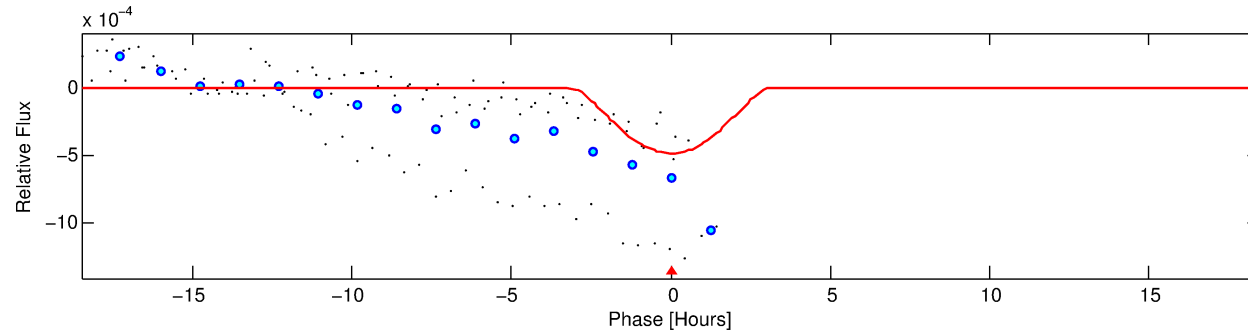
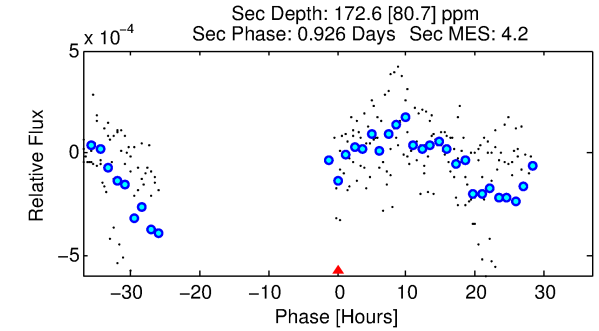
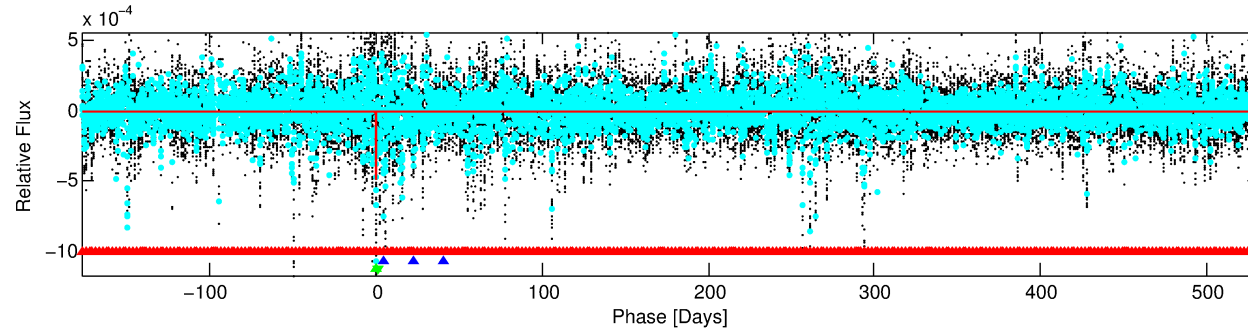
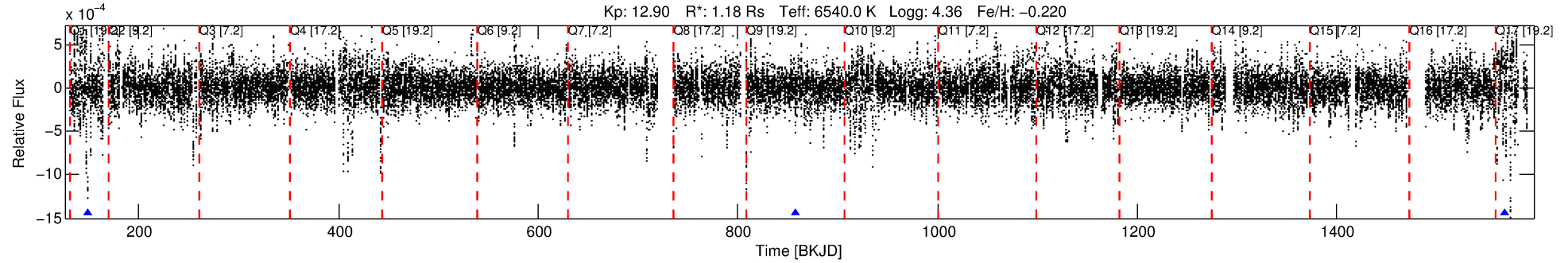
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008175404-03

No Significant Match Found

DV One-Page Summary

KIC: 8175404 Candidate: 3 of 3 Period: 709.858 d



DV Fit Results:

Period = 709.85791 [0.01116] d
Epoch = 148.4127 [0.0161] BKJD
Rp/R* = 0.0389 [0.1061]
a/R* = 247.65 [176.48]
b = 1.00 [0.12]
Seff = 0.86 [0.25]
Teq = 245 [18] K
Rp = 5.01 [13.71] Re
a = 1.6333 [0.3047] AU
Ag = 10107.92 [55448.59] [0.18 σ]
Teffp = 3802 [5209] K [0.68 σ]

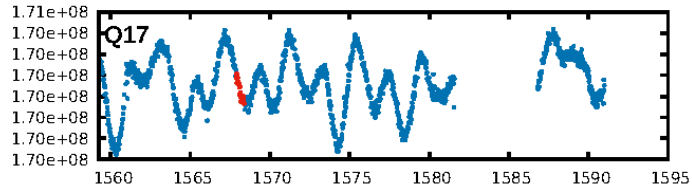
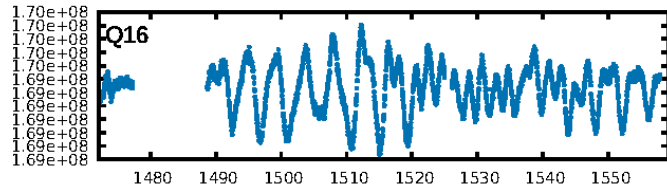
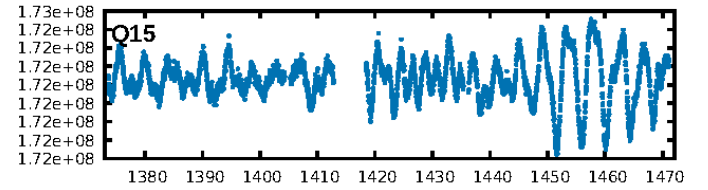
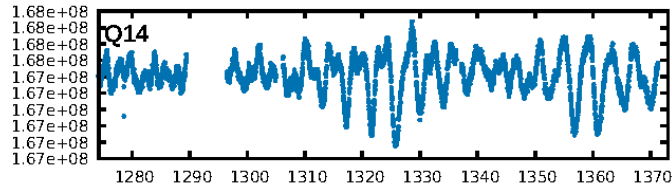
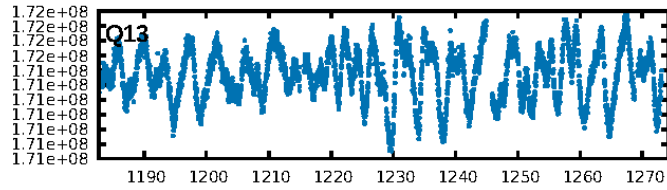
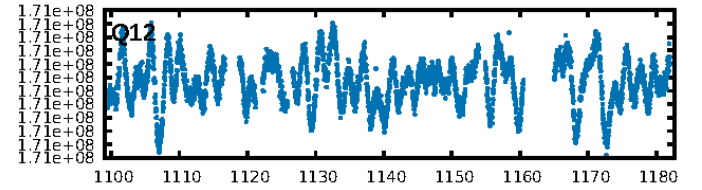
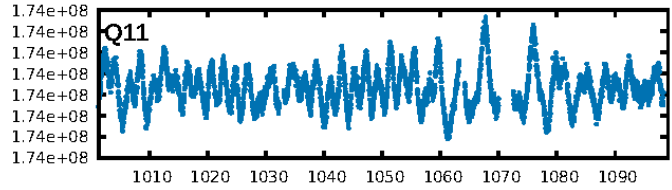
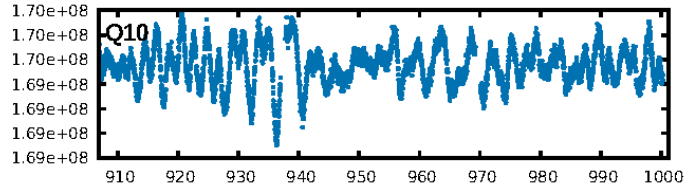
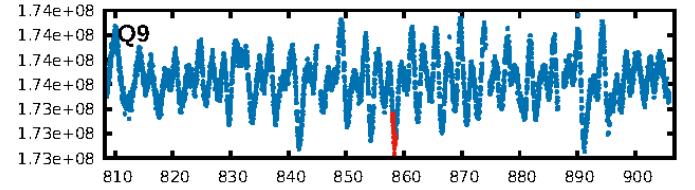
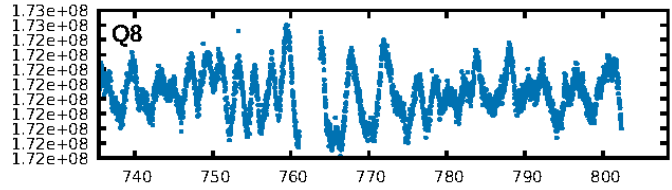
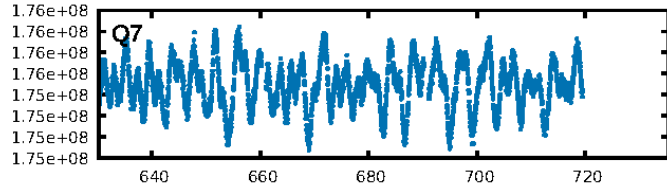
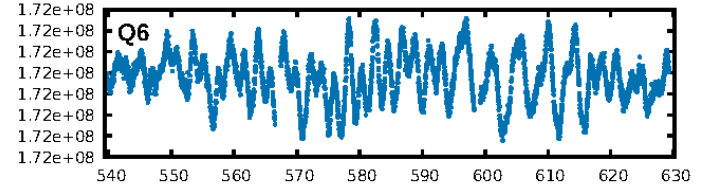
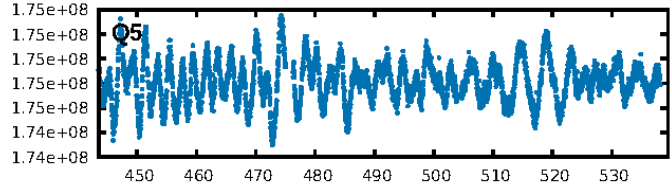
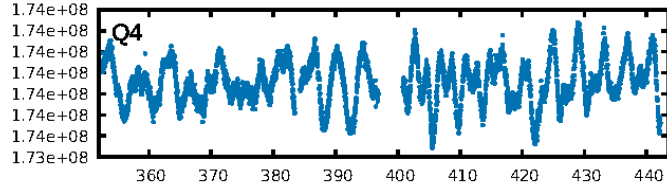
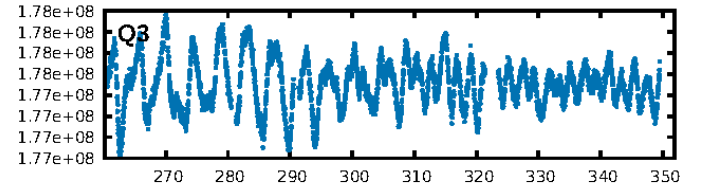
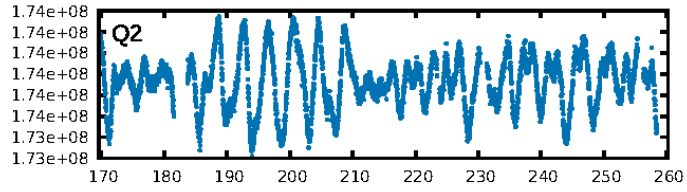
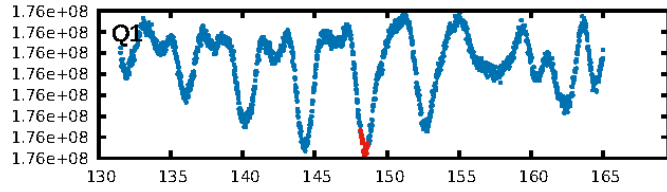
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [63.79 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.4%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 4.70e-11
RollingBand-fgt: 1.00 [1/1]
GhostDiagnostic-chr: -274.8
Centroid-sig: 16.1%
Centroid-so: 1.094 arcsec [1.67 σ]
OotOffset-rm: 0.314 arcsec [0.45 σ]
KicOffset-rm: 0.349 arcsec [0.72 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]

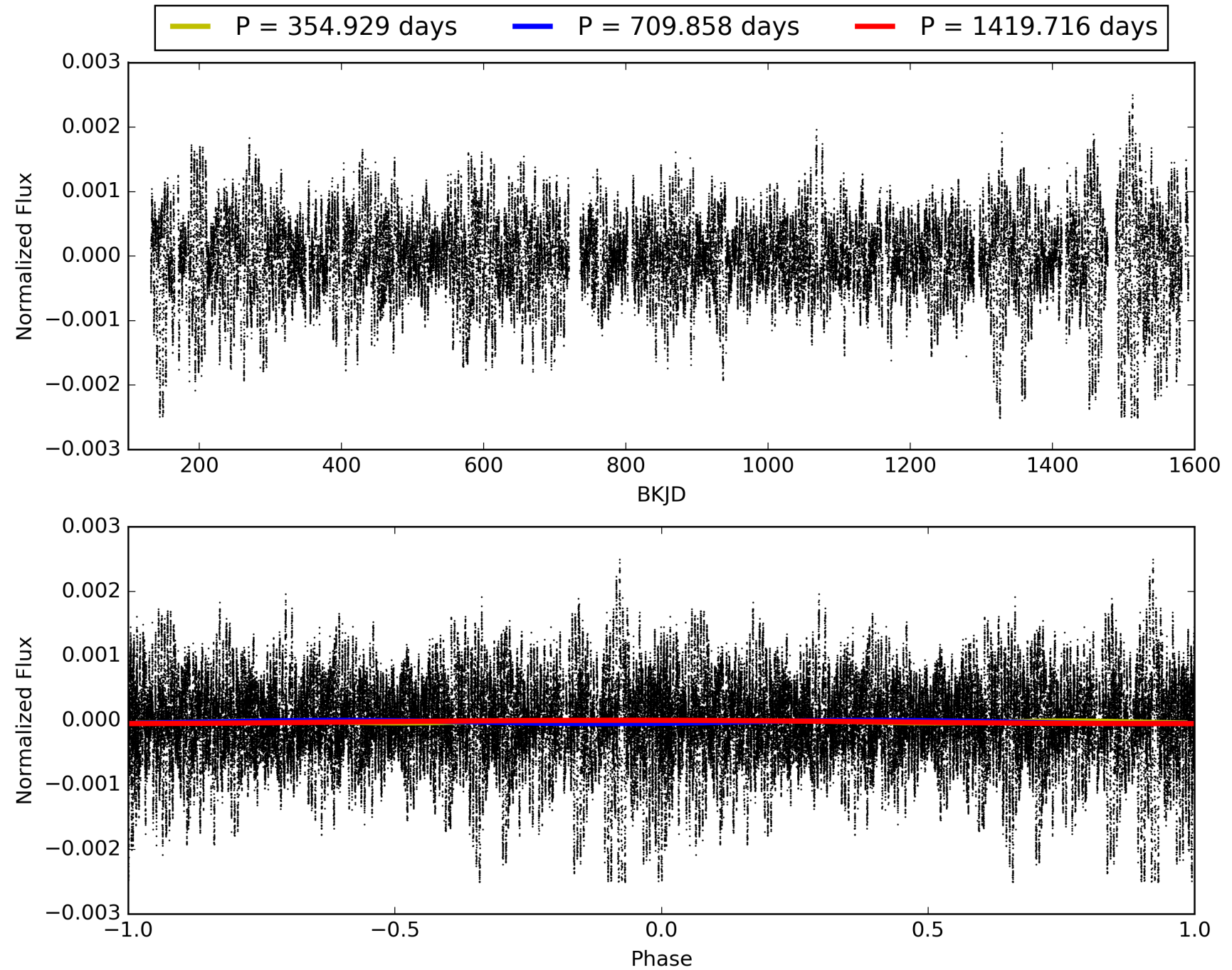
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:01:55 Z

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

TCE 008175404-03, PDC Light Curves

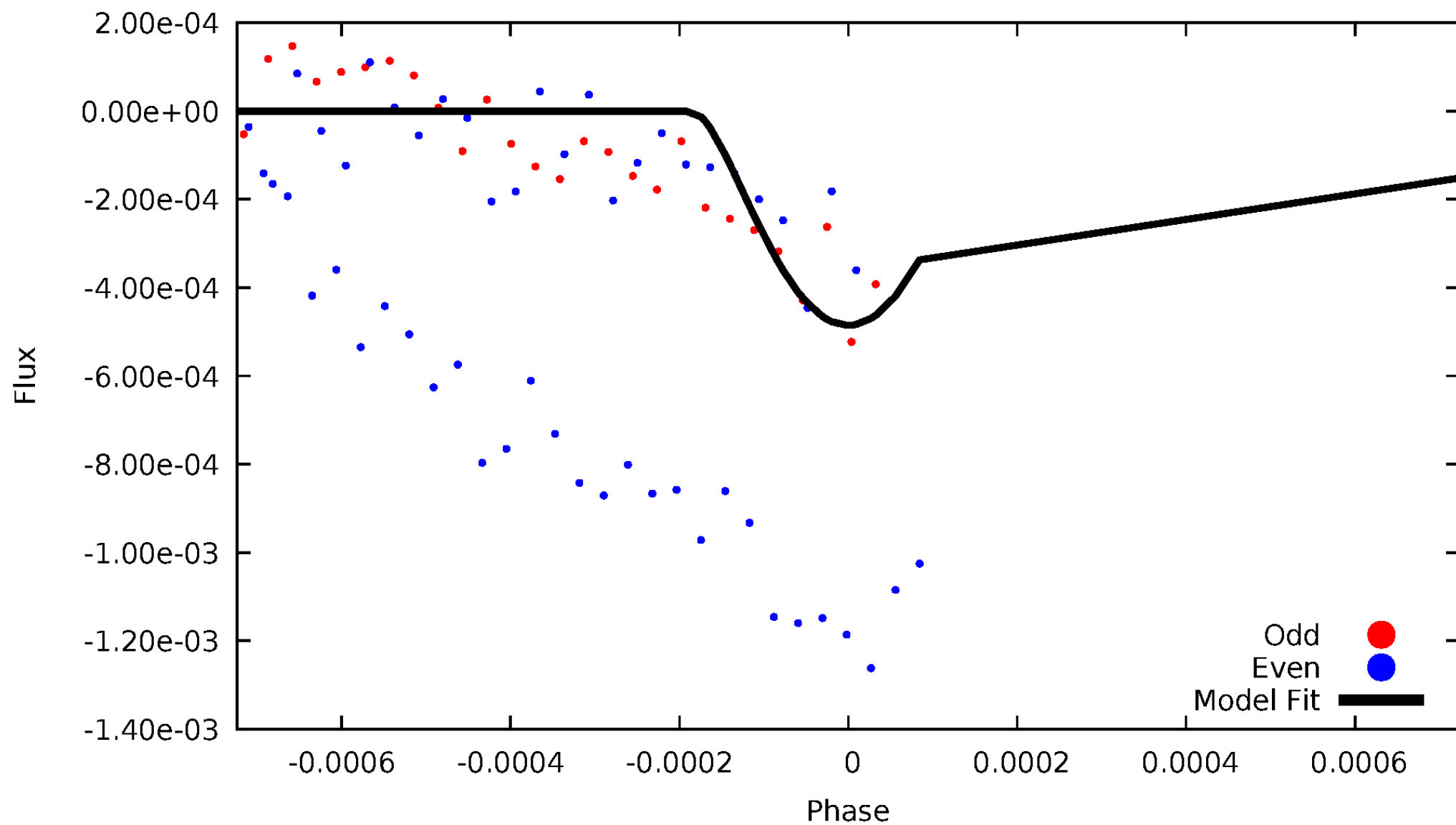


TCE 008175404-03



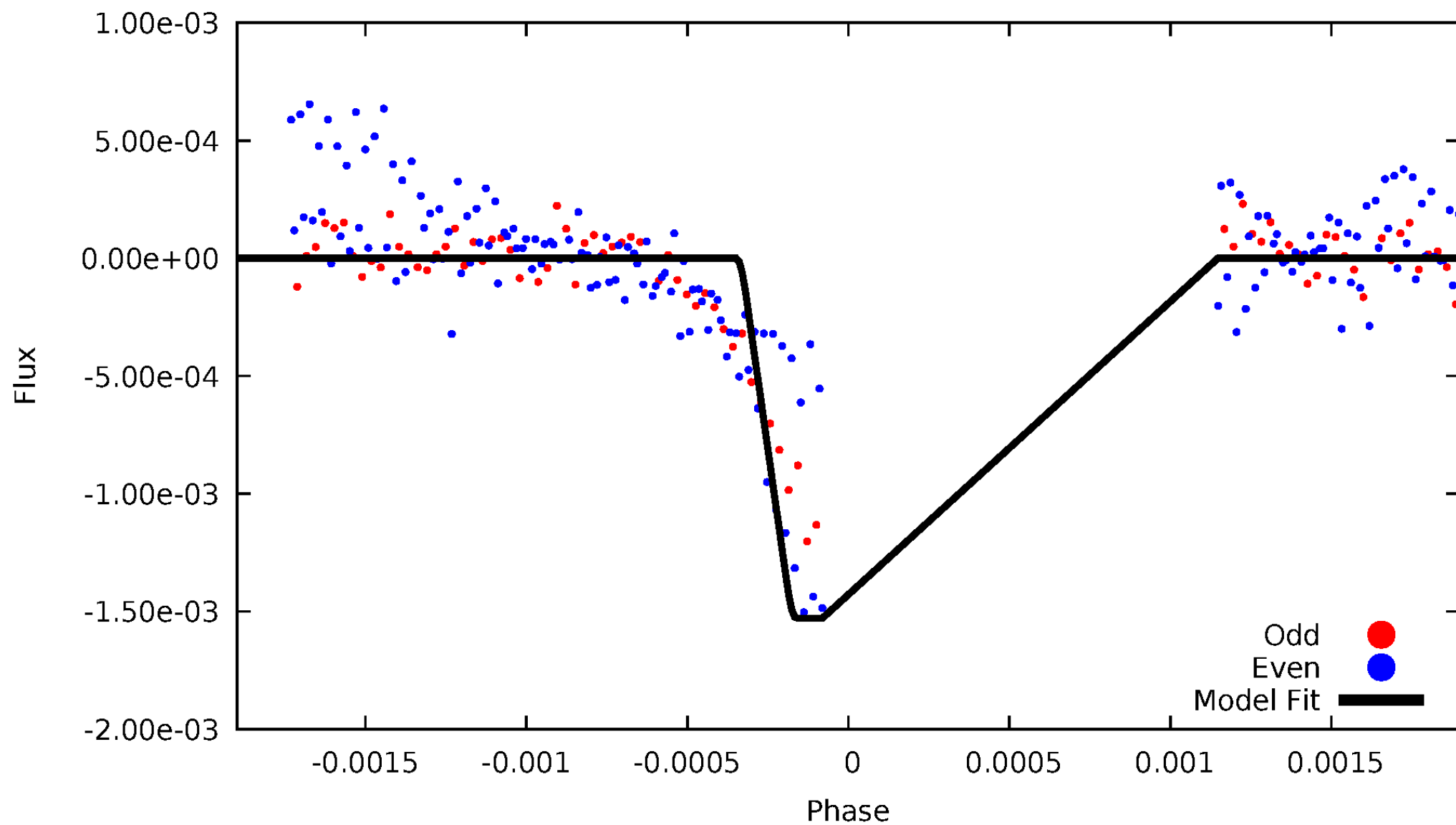
DV Odd/Even

TCE 008175404-03



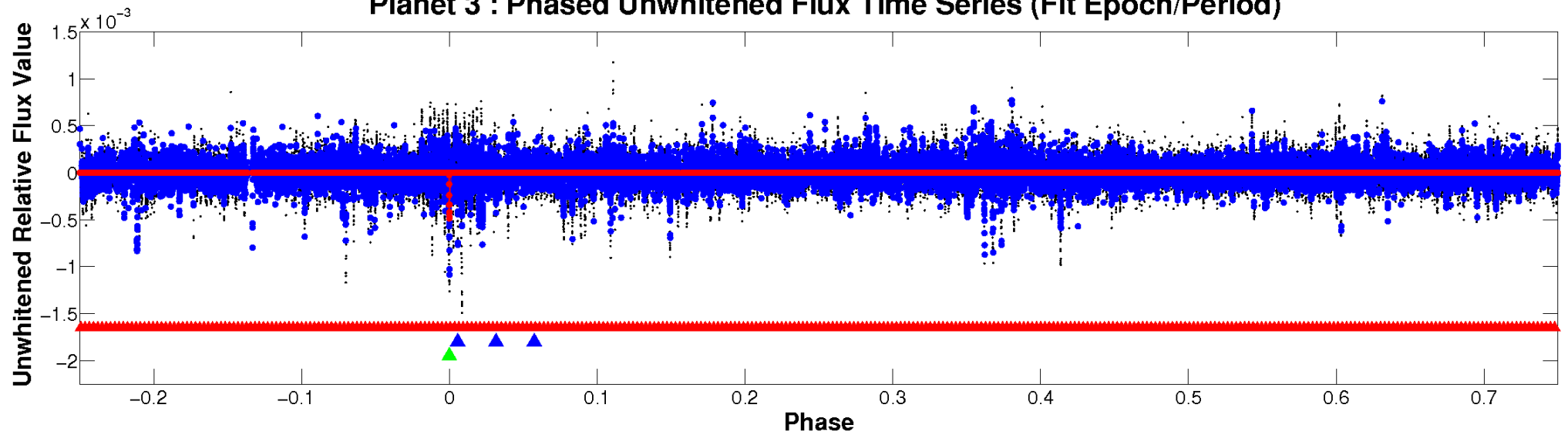
ALT Odd/Even

TCE 008175404-03

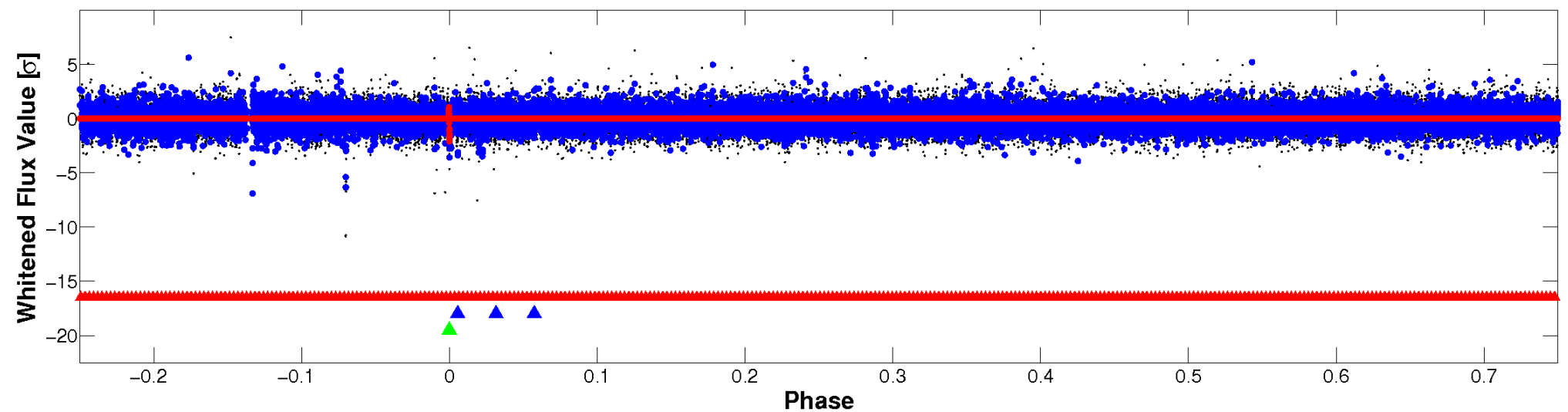


Non-Whitened Vs. Whitened Light Curve

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

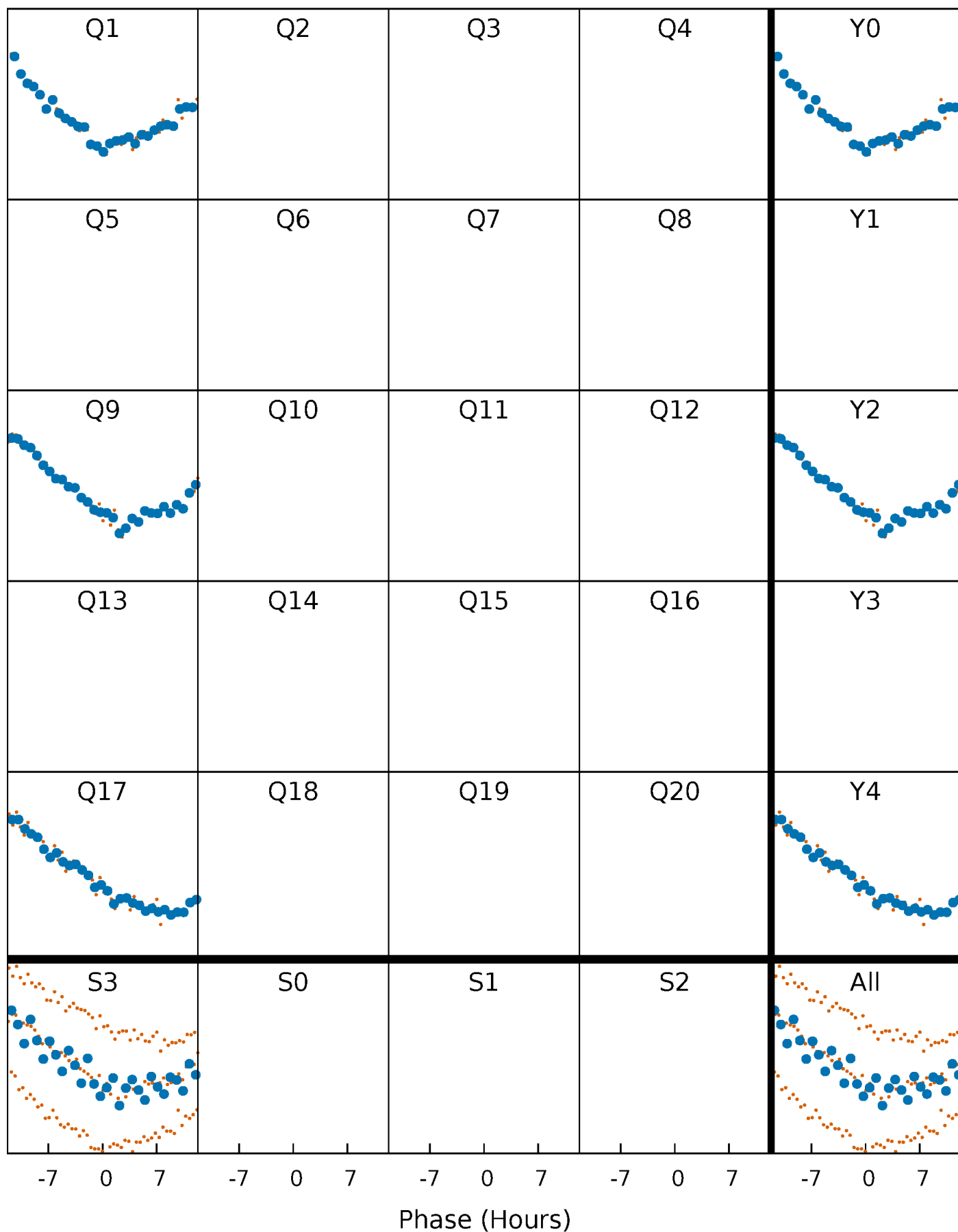


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



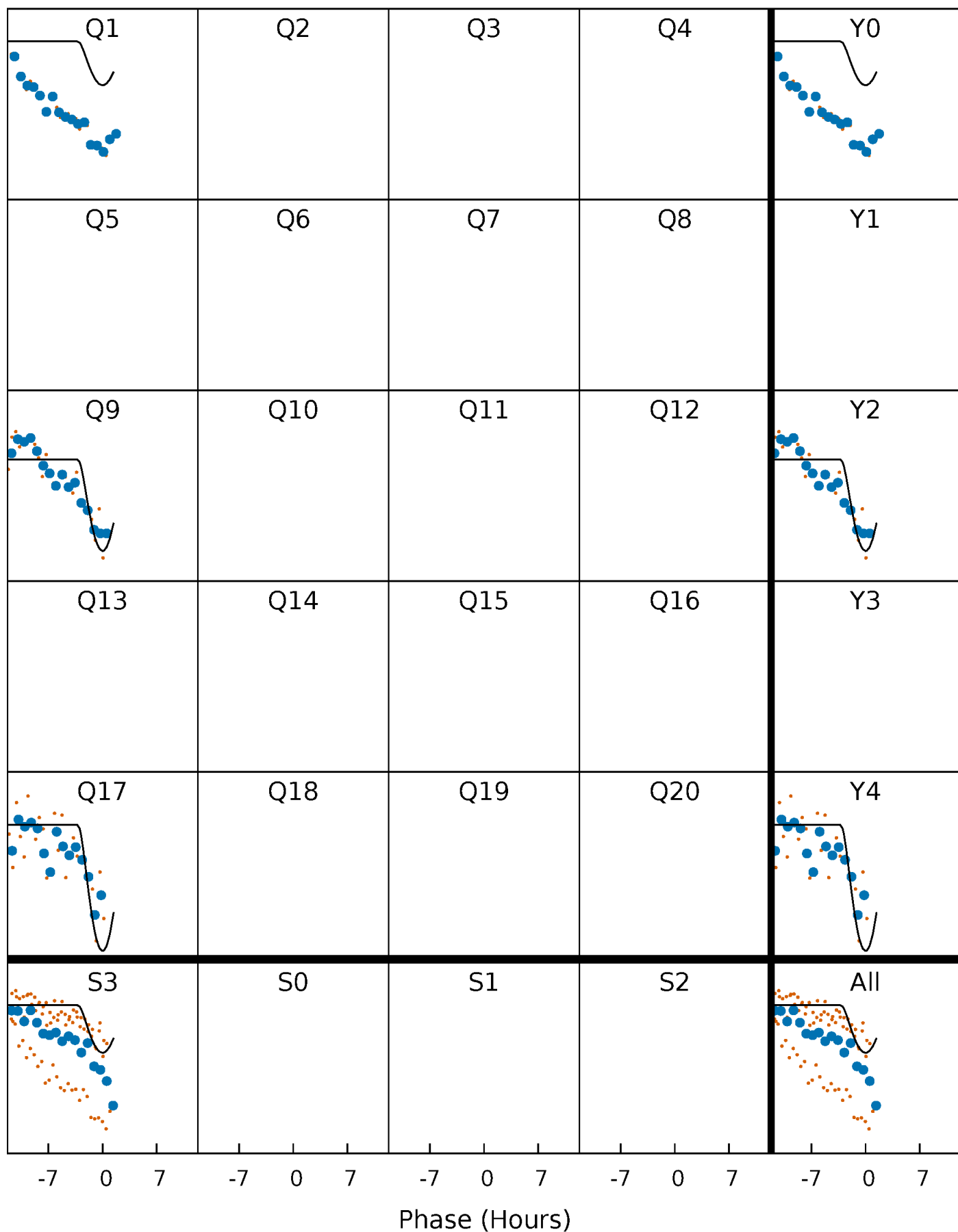
PDC Quarter-Phased Transit Curves

TCE 008175404-03 $P=709.857914$ Days $T_0=148.412691$ (BKJD)



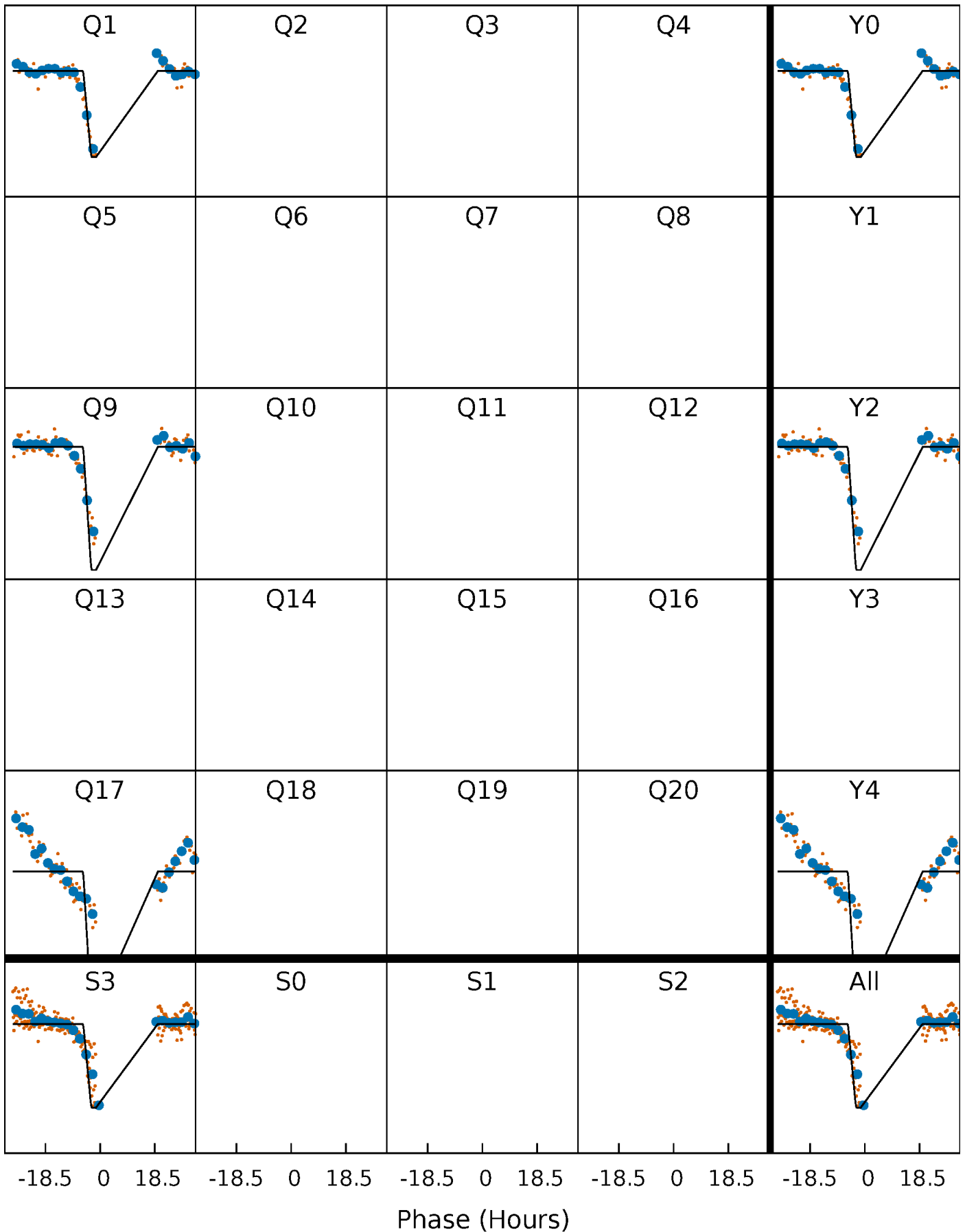
DV Quarter-Phased Transit Curves

TCE 008175404-03 $P=709.857914$ Days $T_0=148.412691$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

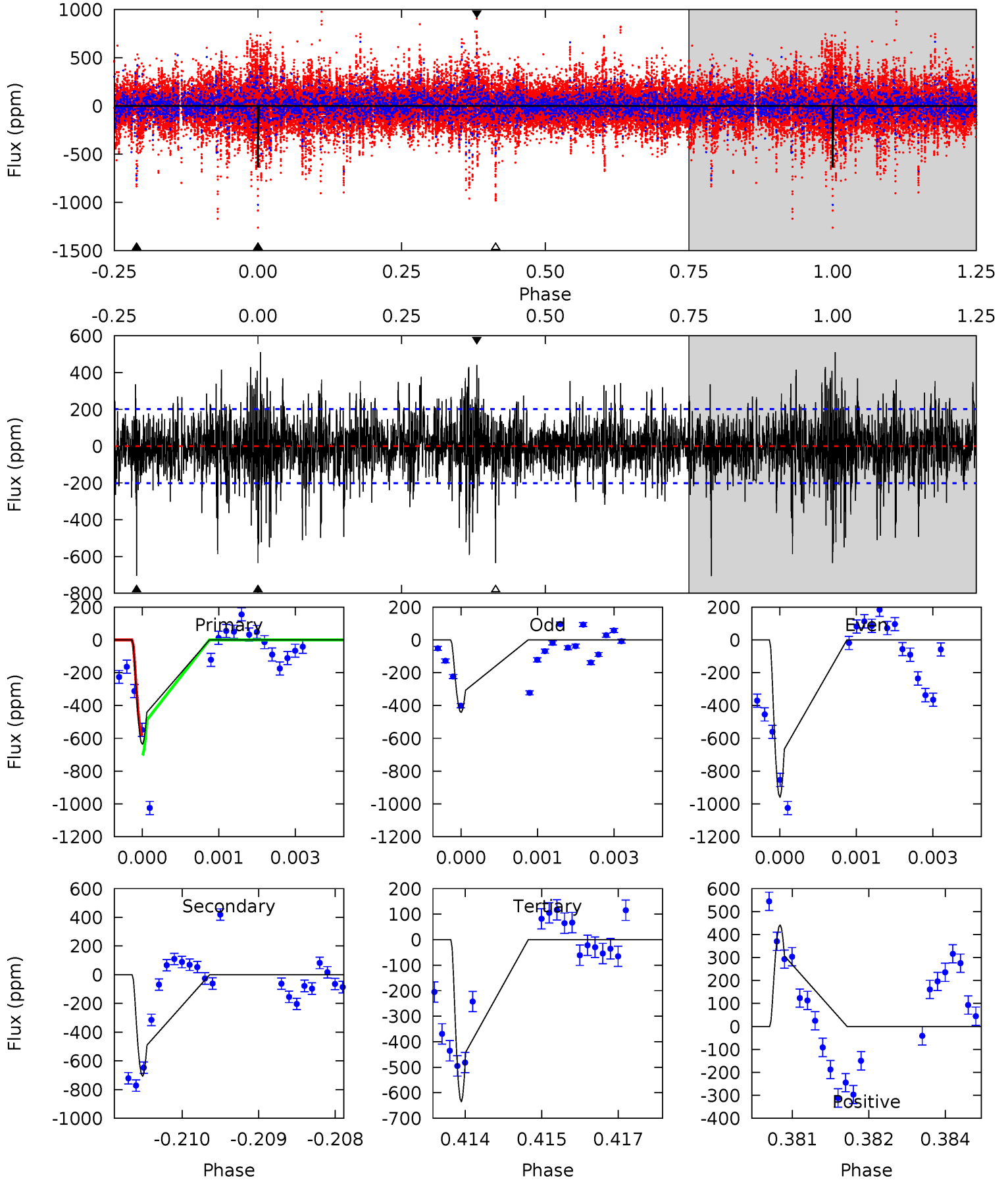
TCE 008175404-03 $P=709.834630$ Days $T_0=148.529466$ (BKJD)



DV Model-Shift Uniqueness Test

008175404-03, P = 709.857914 Days, E = 148.412691 Days

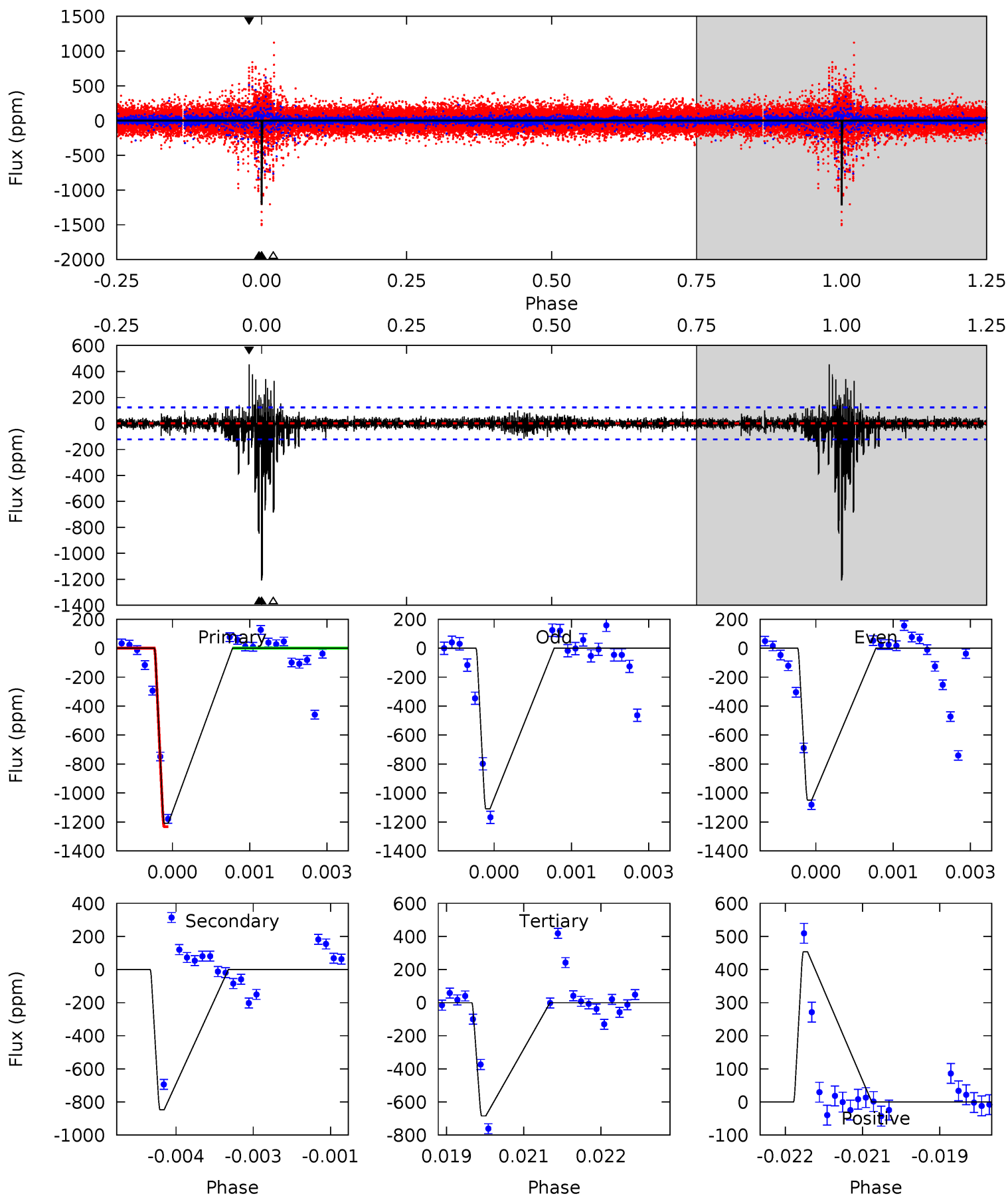
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	18.9	17.0	11.8	5.39	3.19	3.19	0.04	5.21	1.90	7.07	7.22	1.63	0.42	1.39



Alt Model-Shift Uniqueness Test

008175404-03, P = 709.834630 Days, E = 148.529466 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.8	37.0	29.9	19.8	5.38	3.18	1.91	22.9	33.0	7.10	17.2	1.28	0	0.27	0



Stellar Parameters For KIC 008175404

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6540^{+148}_{-198}	$4.356^{+0.073}_{-0.147}$	$-0.220^{+0.250}_{-0.300}$	$1.180^{+0.263}_{-0.142}$	$1.155^{+0.139}_{-0.153}$	$0.991^{+0.327}_{-0.381}$
	+2%/-3%	+2%/-3%	+114%/-136%	+22%/-12%	+12%/-13%	+33%/-38%
Source	PHO1	FLK73	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 008175404-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-705 ± 37	$11.18^{+11.29}_{-7.28}$	345^{+18}_{-16}	3953^{+2203}_{-786}	8139^{+59944}_{-6101}
Alt.	-847 ± 23	$12.19^{+11.35}_{-8.57}$	346^{+19}_{-16}	3966^{+2966}_{-775}	8274^{+88700}_{-6037}

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 $A_{obs} \gg 1.0$

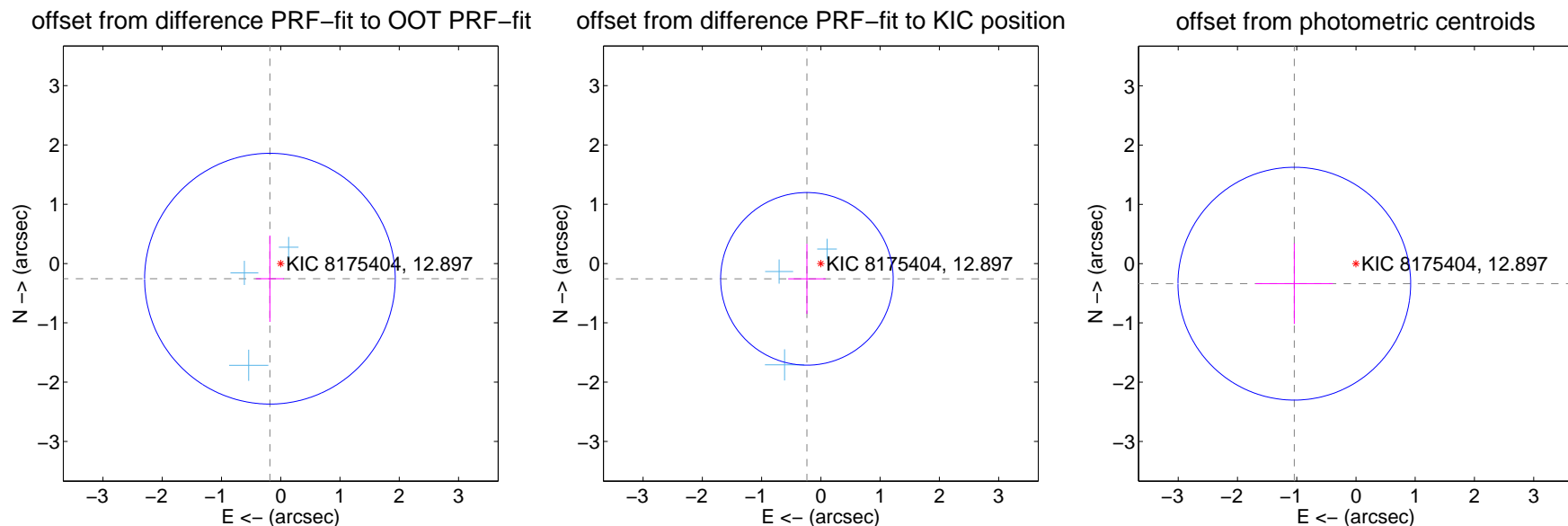
DV Centroid Data

Supplemental centroid analysis for 008175404-03. Kepler magnitude: 12.90. Transit SNR 7.02

There are 3 quarters with good PRF difference image offsets

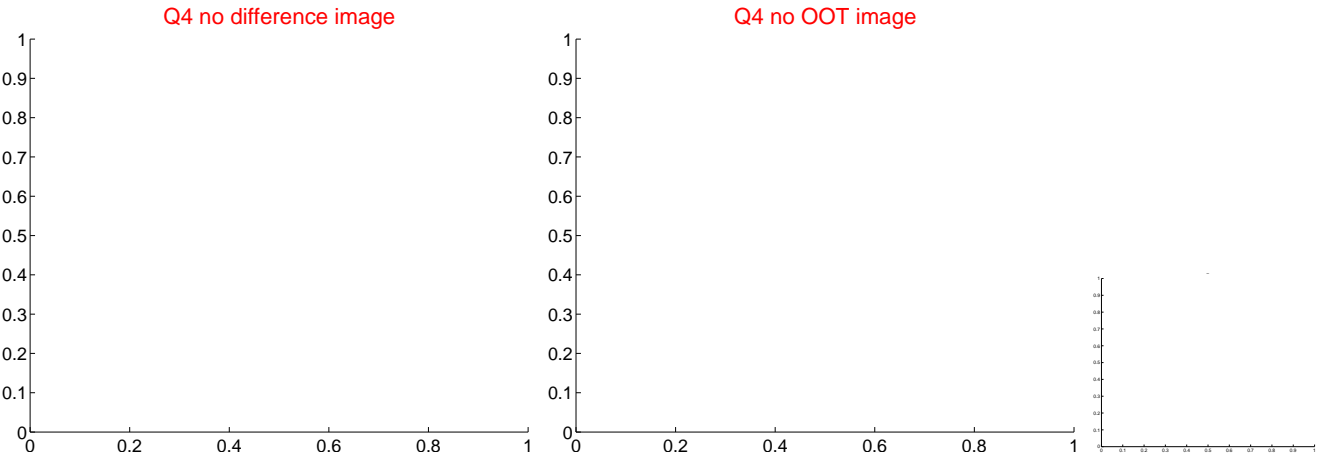
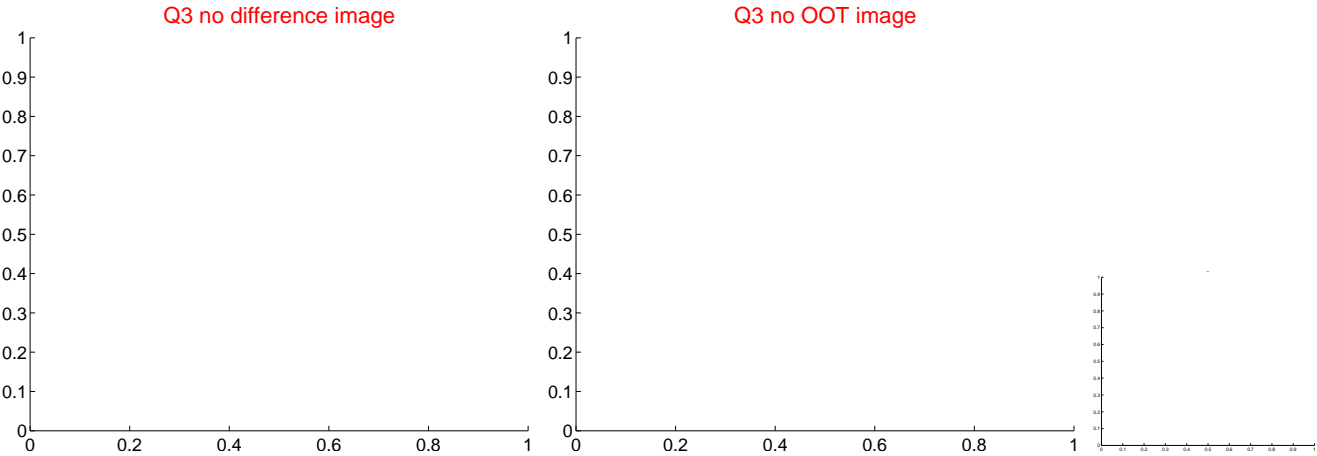
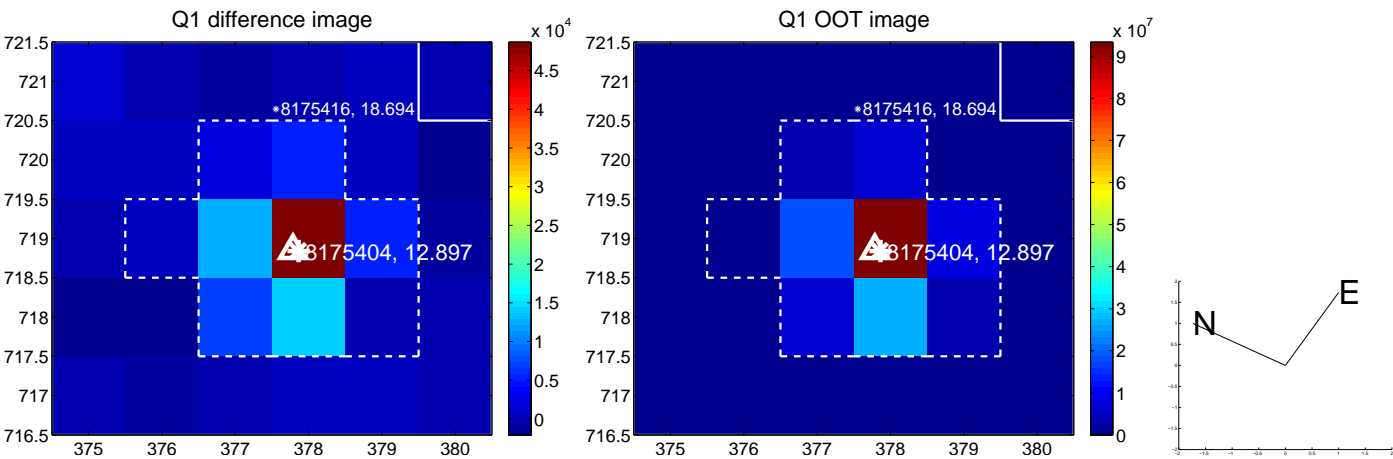
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.314 ± 0.705	0.45	0.183 ± 0.237	-0.256 ± 0.728
PRF-fit source offset from KIC position	0.349 ± 0.485	0.72	0.235 ± 0.317	-0.258 ± 0.590
photometric centroid source offset	1.09 ± 0.65	1.67	1.04 ± 0.65	-0.34 ± 0.68



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

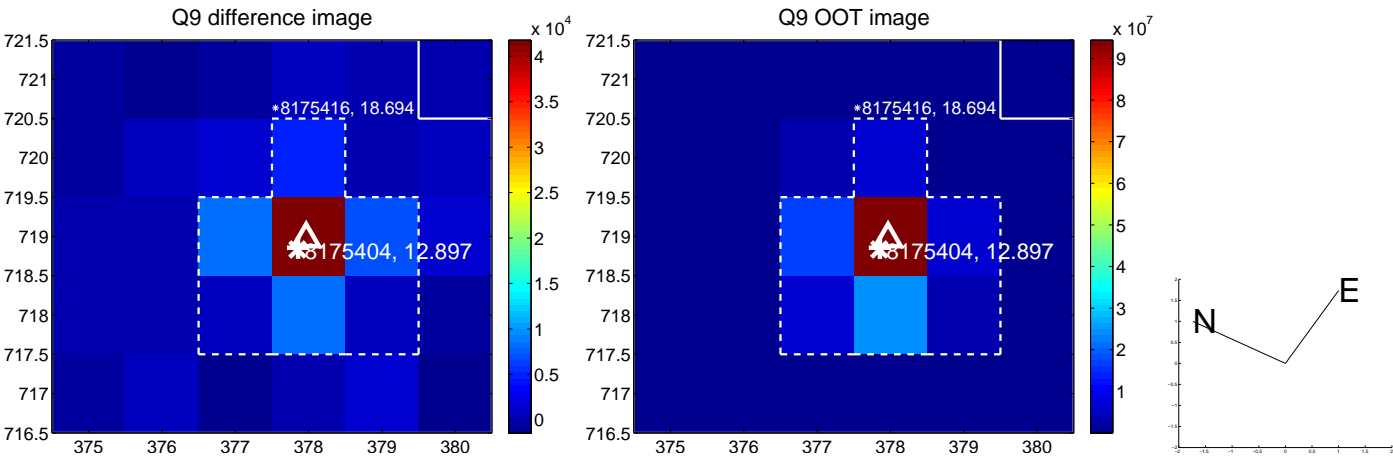
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



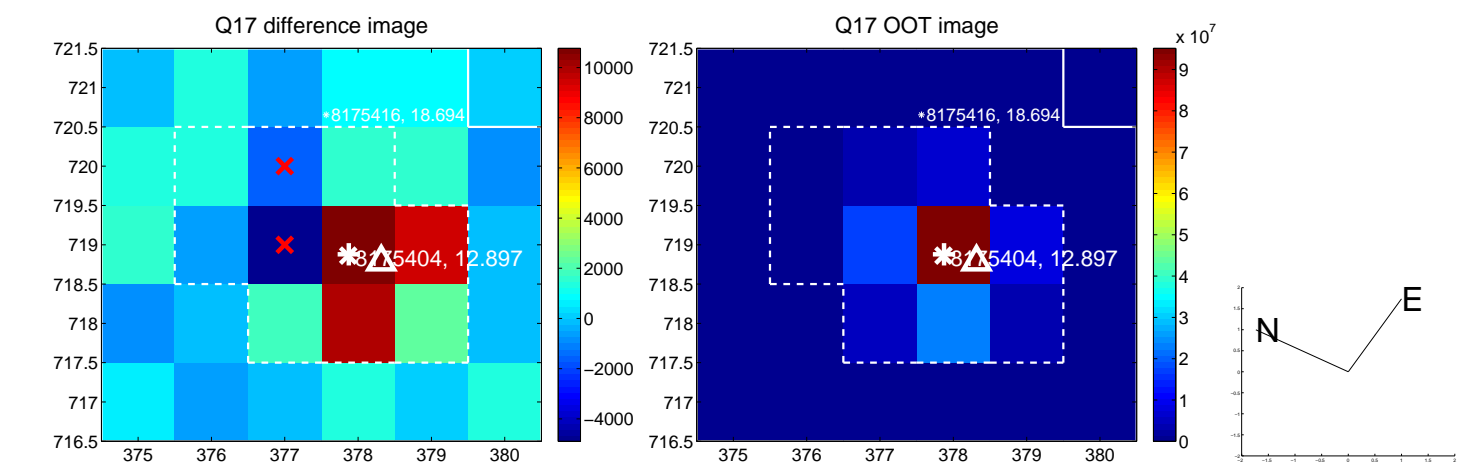
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



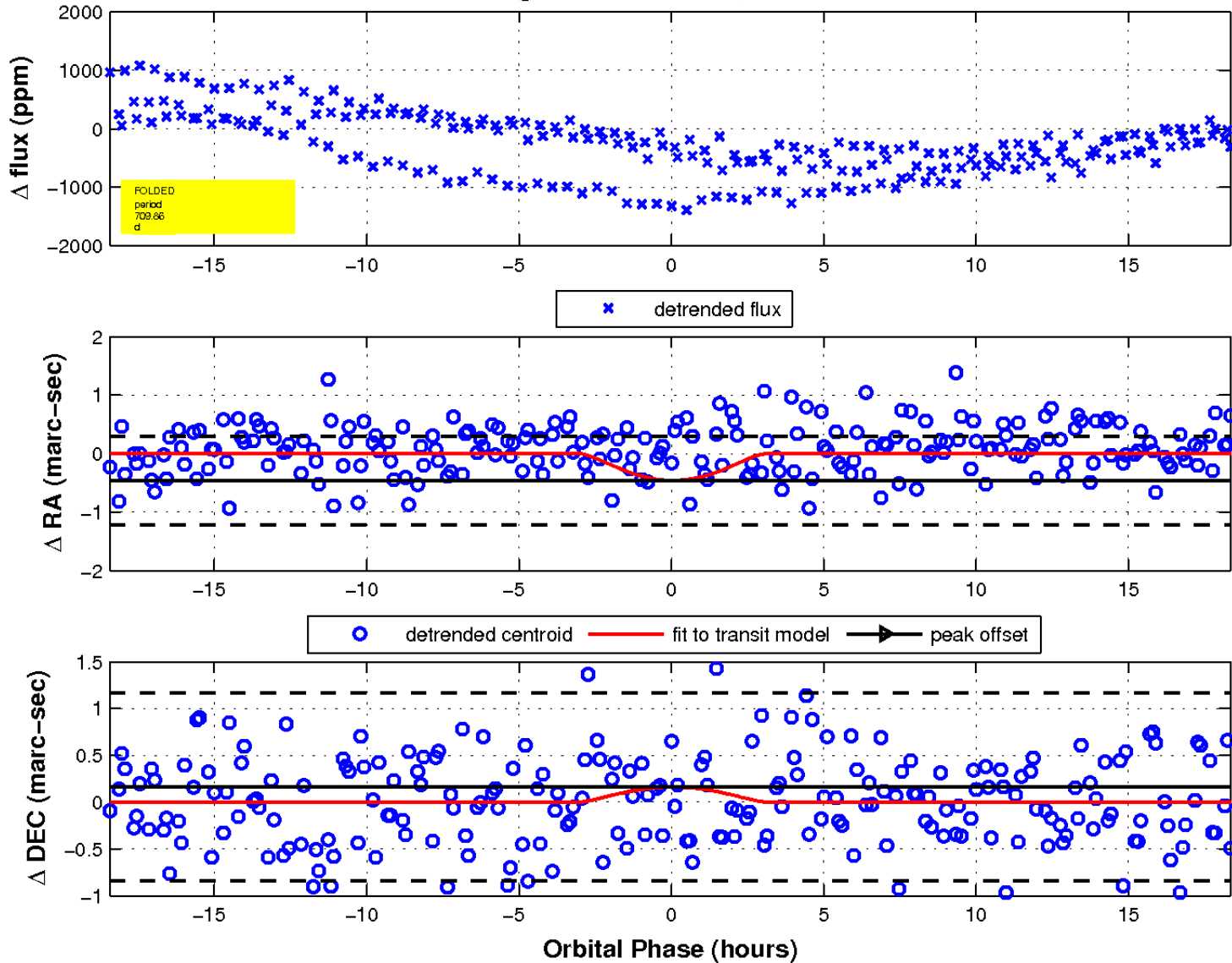
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 3 of 3



UKIRT Image

