

KIC 004180199

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})
004180199-01	OBS	No	0.933515	131.657073	277.7	1.147	10.1	12.1	2.54	7452	4.30	34900.82
004180199-02	OBS	No	0.856419	132.297603	259.9	1.819	9.8	10.1	2.54	7452	4.79	39151.52
004180199-03	OBS	No	0.986639	131.855444	141.2	6.074	9.5	6.2	2.54	7452	3.05	32418.00
004180199-04	OBS	No	39.324892	135.229356	2683.5	1.732	12.4	11.4	2.54	7452	13.38	238.11
004180199-06	OBS	No	19.073041	139.625779	53.8	3.000	9.3	-1.0	2.54	7452	1.89	624.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004180199-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
004180199-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

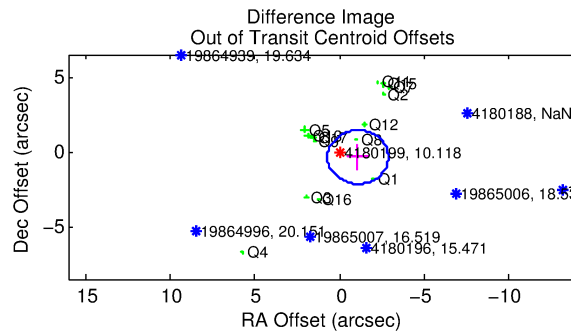
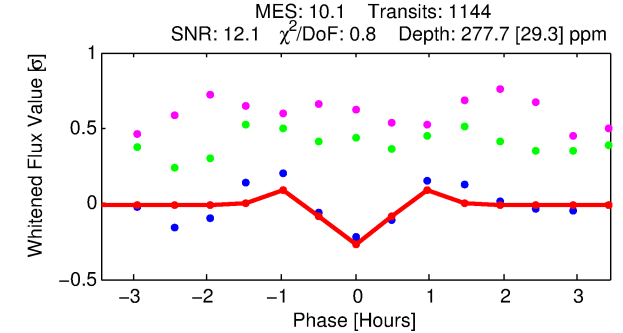
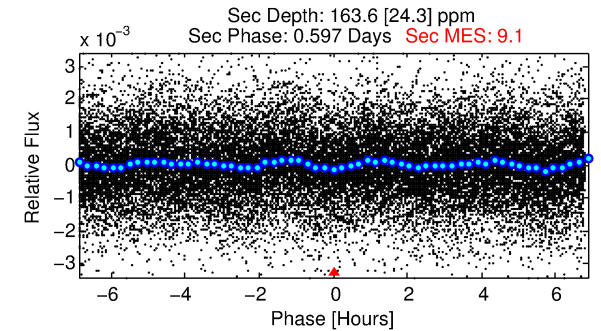
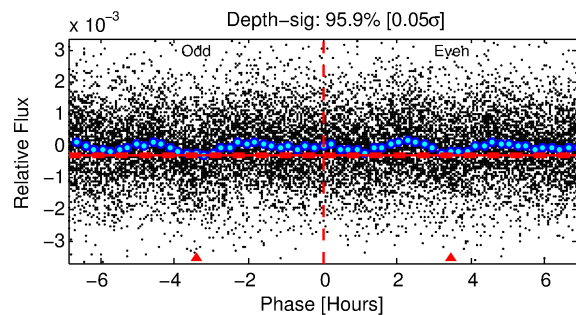
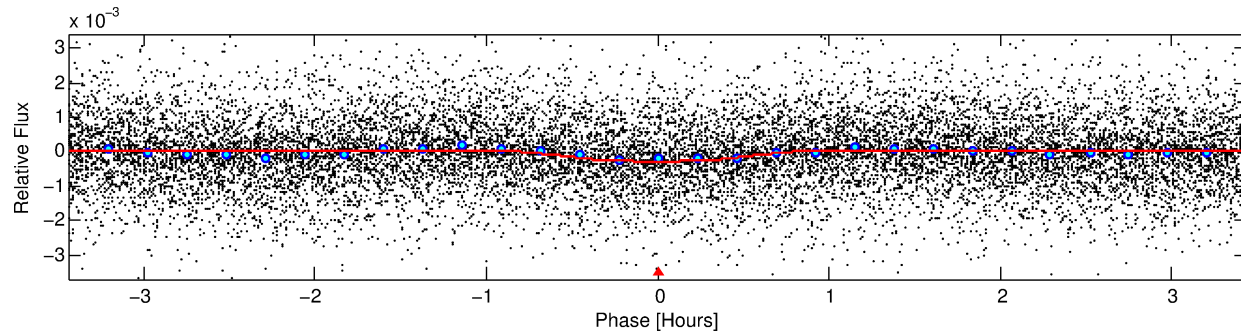
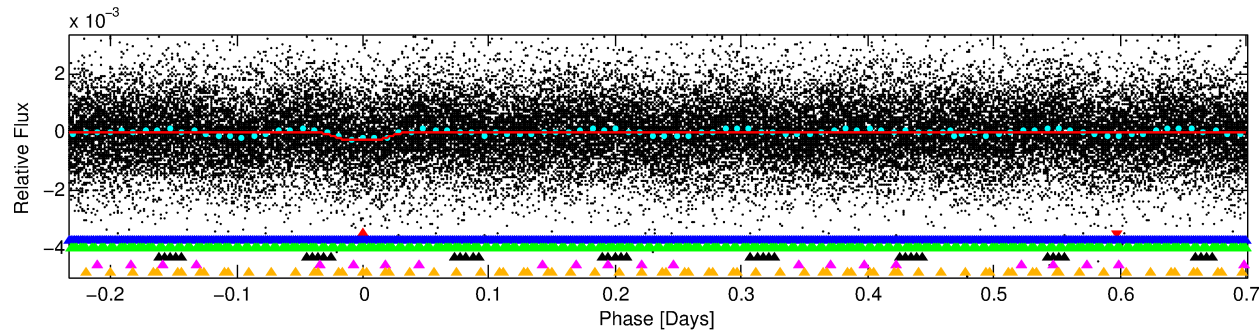
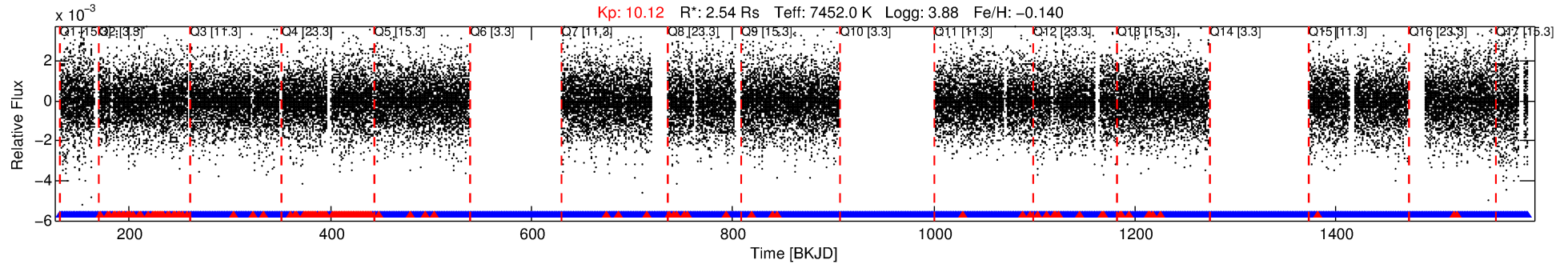
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004180199-01

No Significant Match Found

DV One-Page Summary

KIC: 4180199 Candidate: 1 of 6 Period: 0.934 d



DV Fit Results:

Period = 0.93351 [0.00001] d
Epoch = 131.6571 [0.0010] BKJD
Rp/R* = 0.0155 [0.0083]
a/R* = 6.34 [18.46]
b = 0.03 [105.84]
Teff = 34900.82 [20722.98]
Teq = 3485 [517] K
Rp = 4.30 [2.83] Re
a = 0.0226 [0.0081] AU
Ag = 2.49 [3.06] [0.49 σ]
Teffp = 6771 [1867] K [1.70 σ]

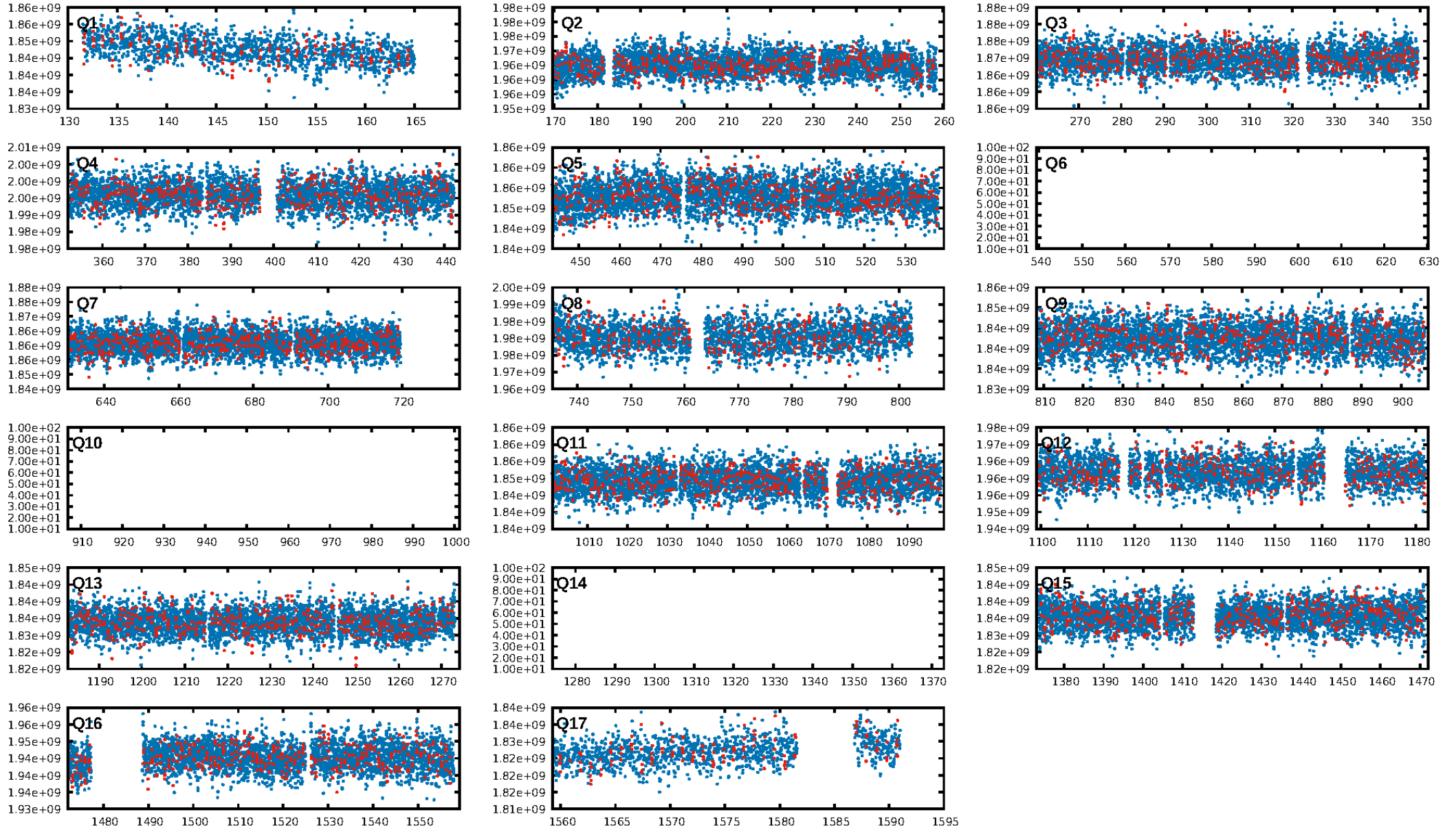
DV Diagnostic Results:

ShortPeriod-sig: 61.0% [0.86 σ]
LongPeriod-sig: 16.3% [0.21 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.86 [932/1079]
GhostDiagnostic-chr: N/A
Centroid-sig: 1.1%
Centroid-so: 0.309 arcsec [3.79 σ]
OotOffset-rm: 1.141 arcsec [1.91 σ]
KicOffset-rm: 1.591 arcsec [2.90 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.07 [1/14]
DiffImageOverlap-fno: 1.00 [14/14]

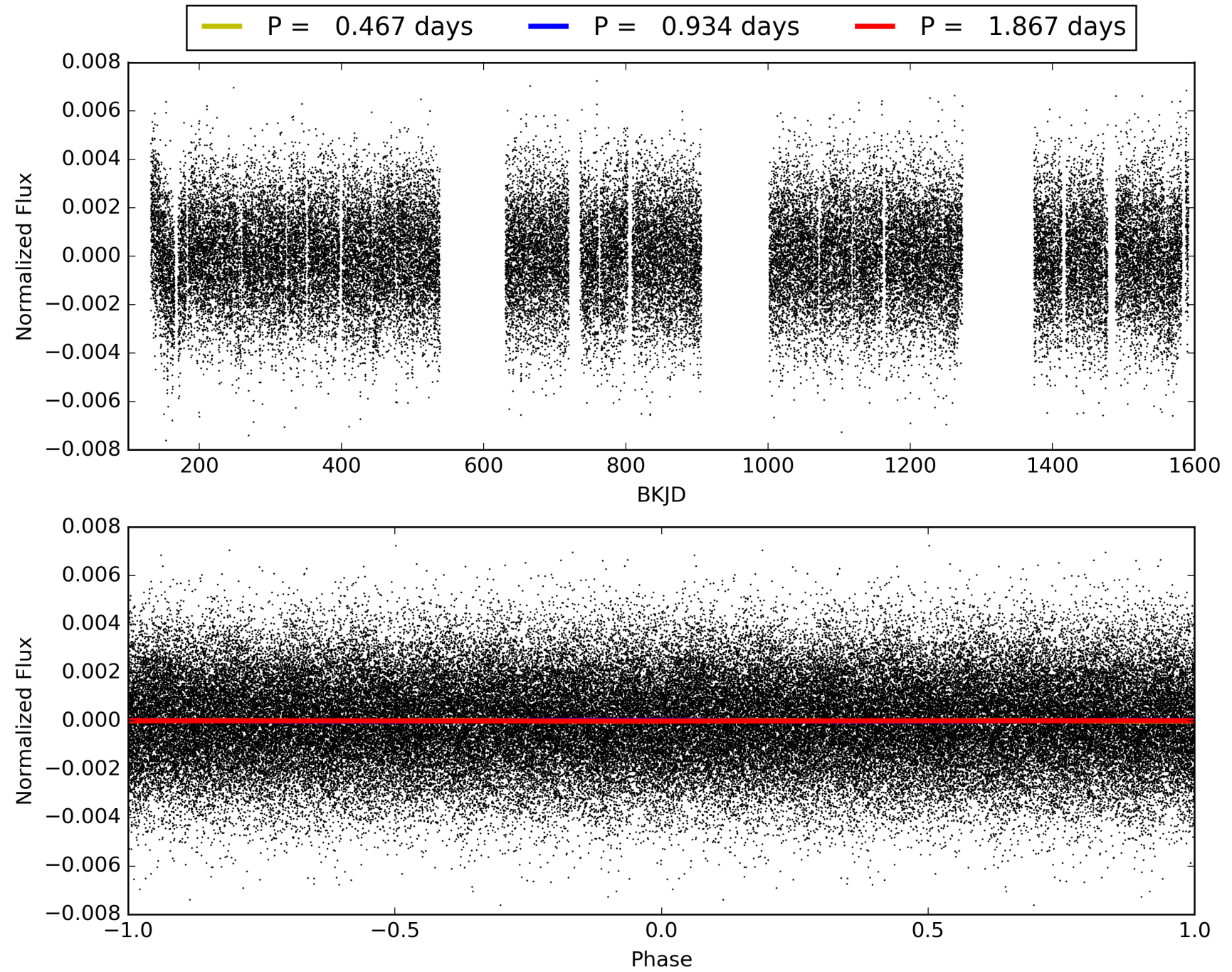
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004180199-01, PDC Light Curves

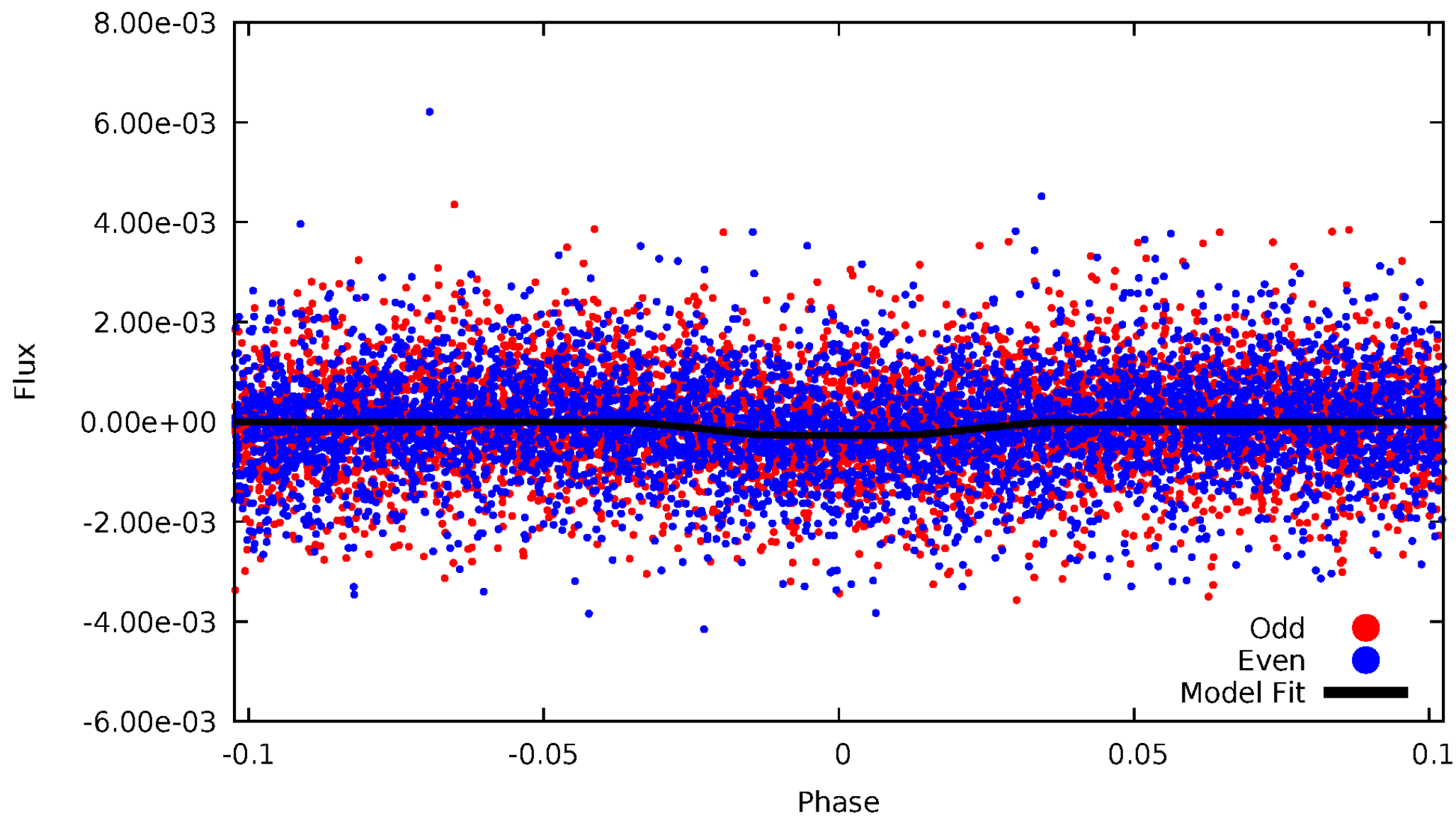


TCE 004180199-01



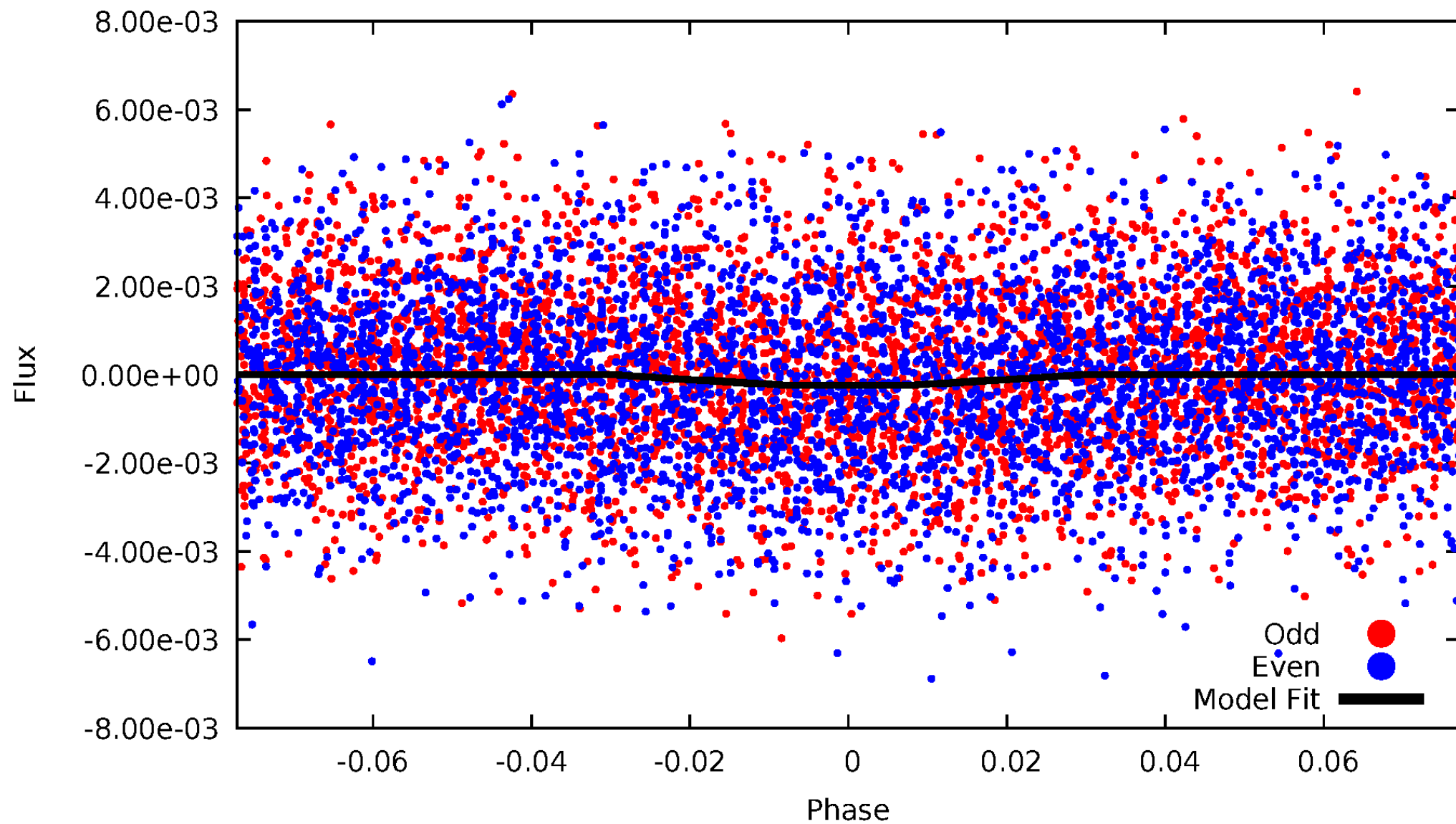
DV Odd/Even

TCE 004180199-01



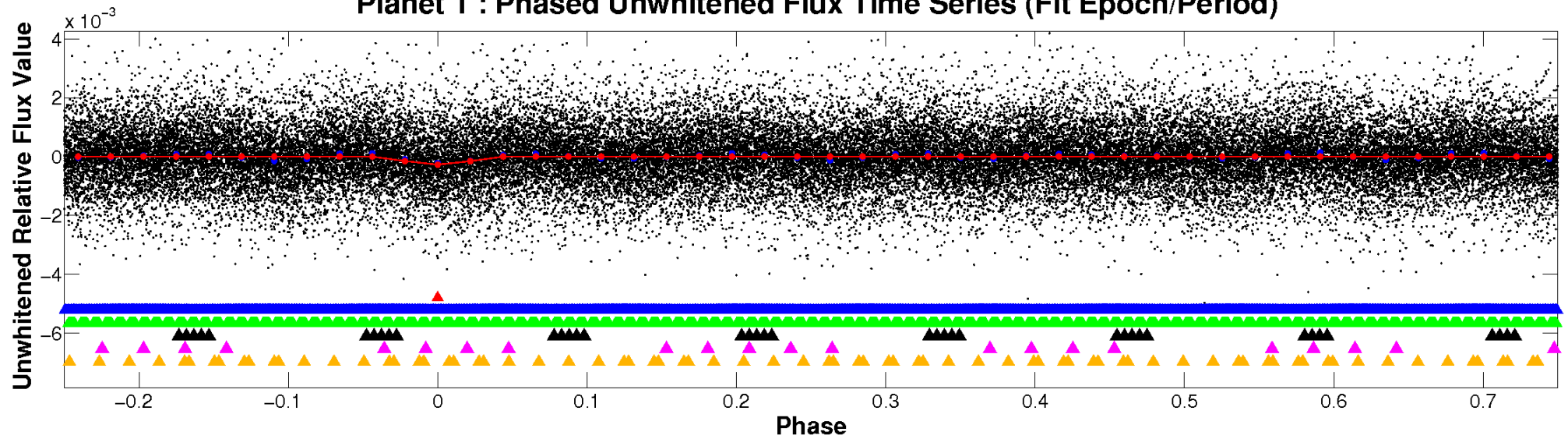
ALT Odd/Even

TCE 004180199-01

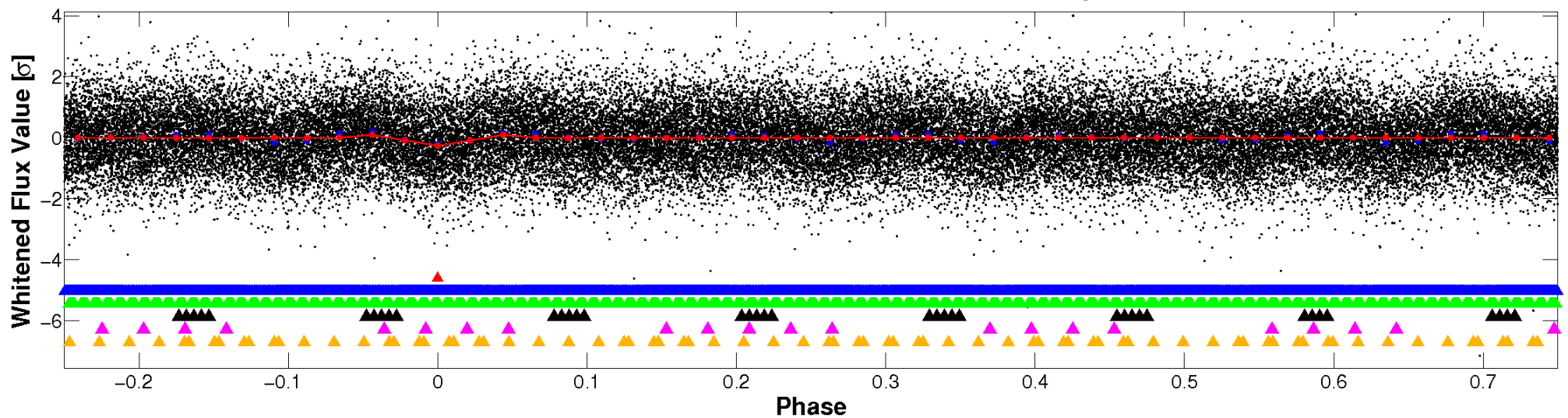


Non-Whitened Vs. Whitened Light Curve

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

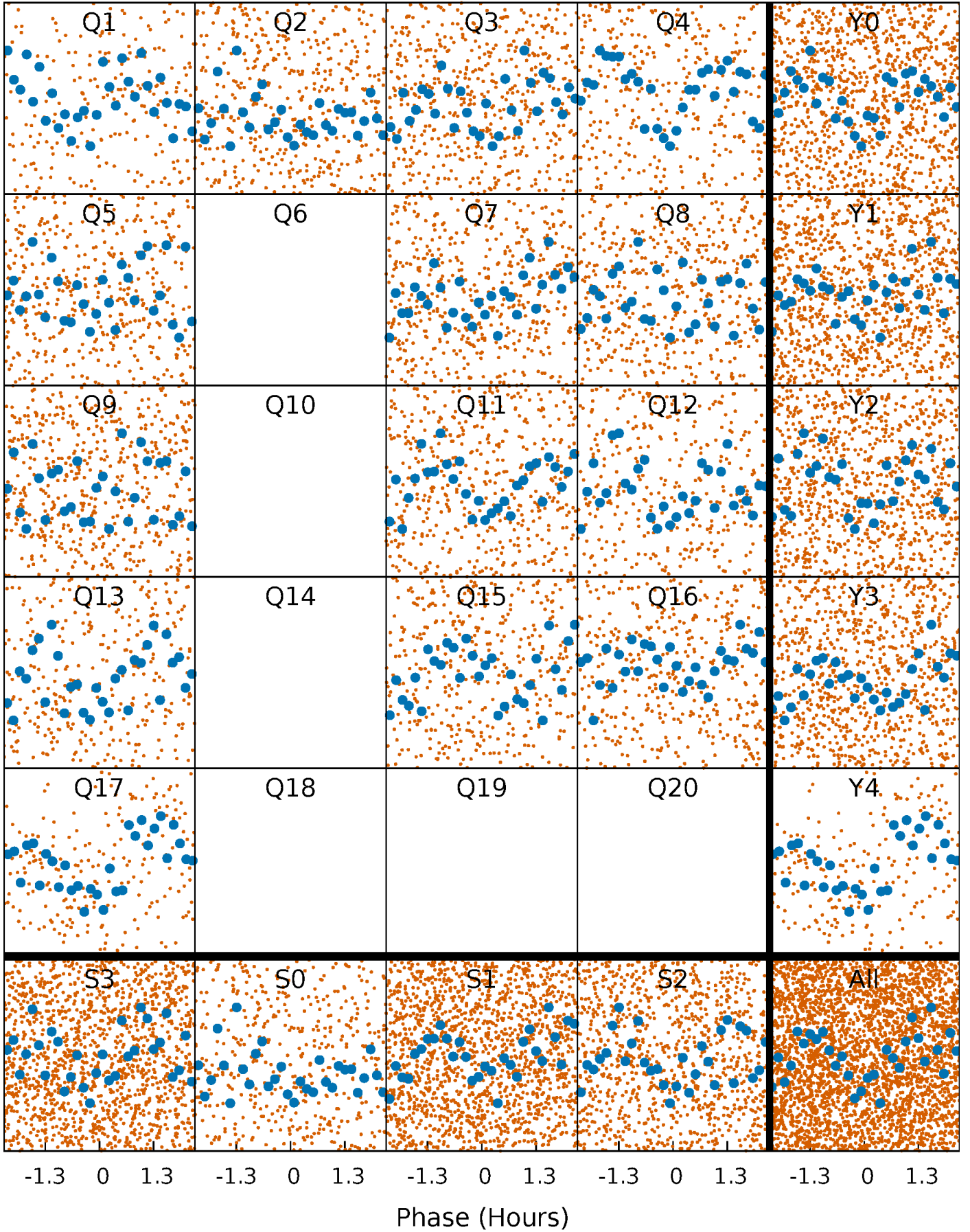


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



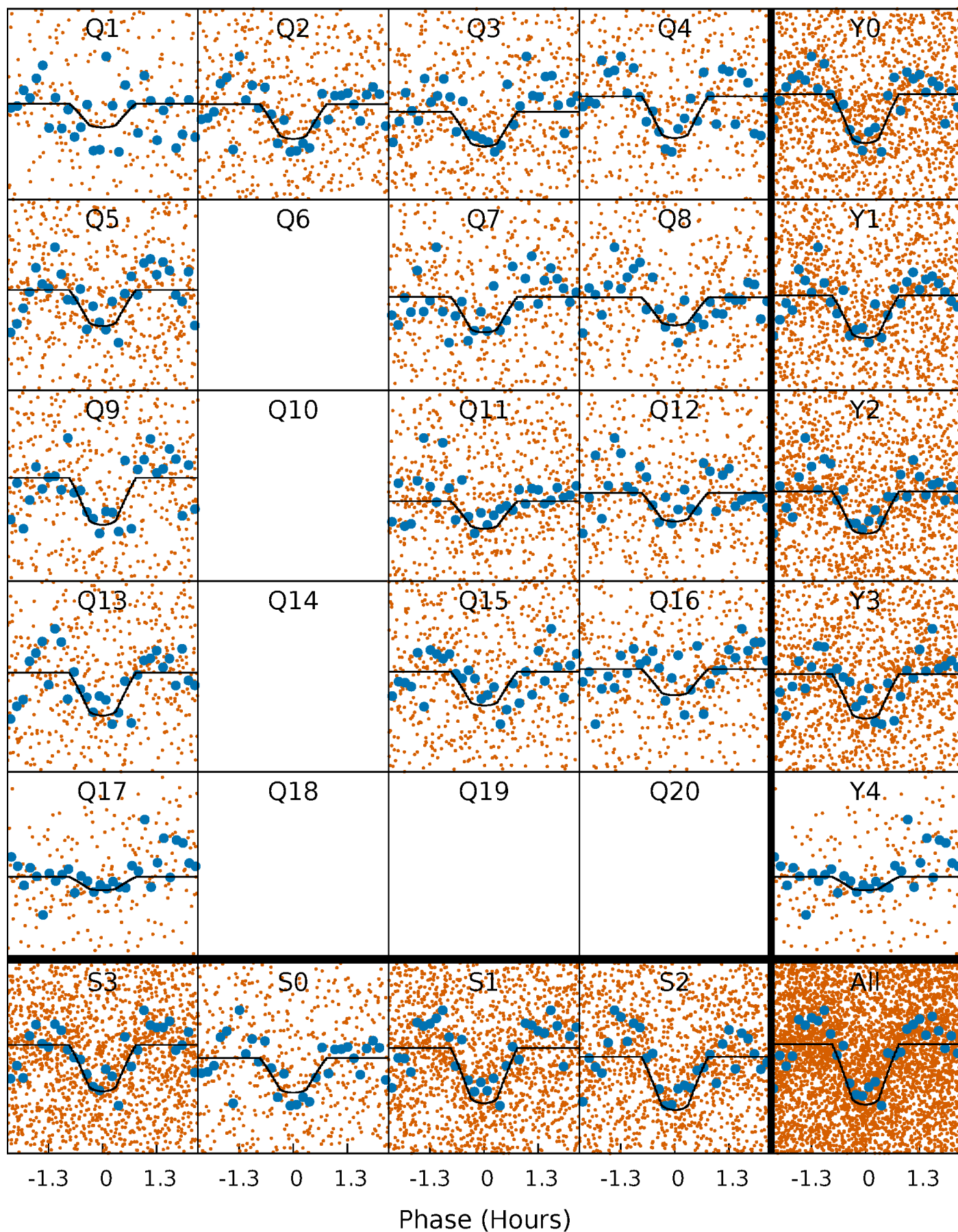
PDC Quarter-Phased Transit Curves

TCE 004180199-01 P= 0.933515 Days $T_0=131.657073$ (BKJD)



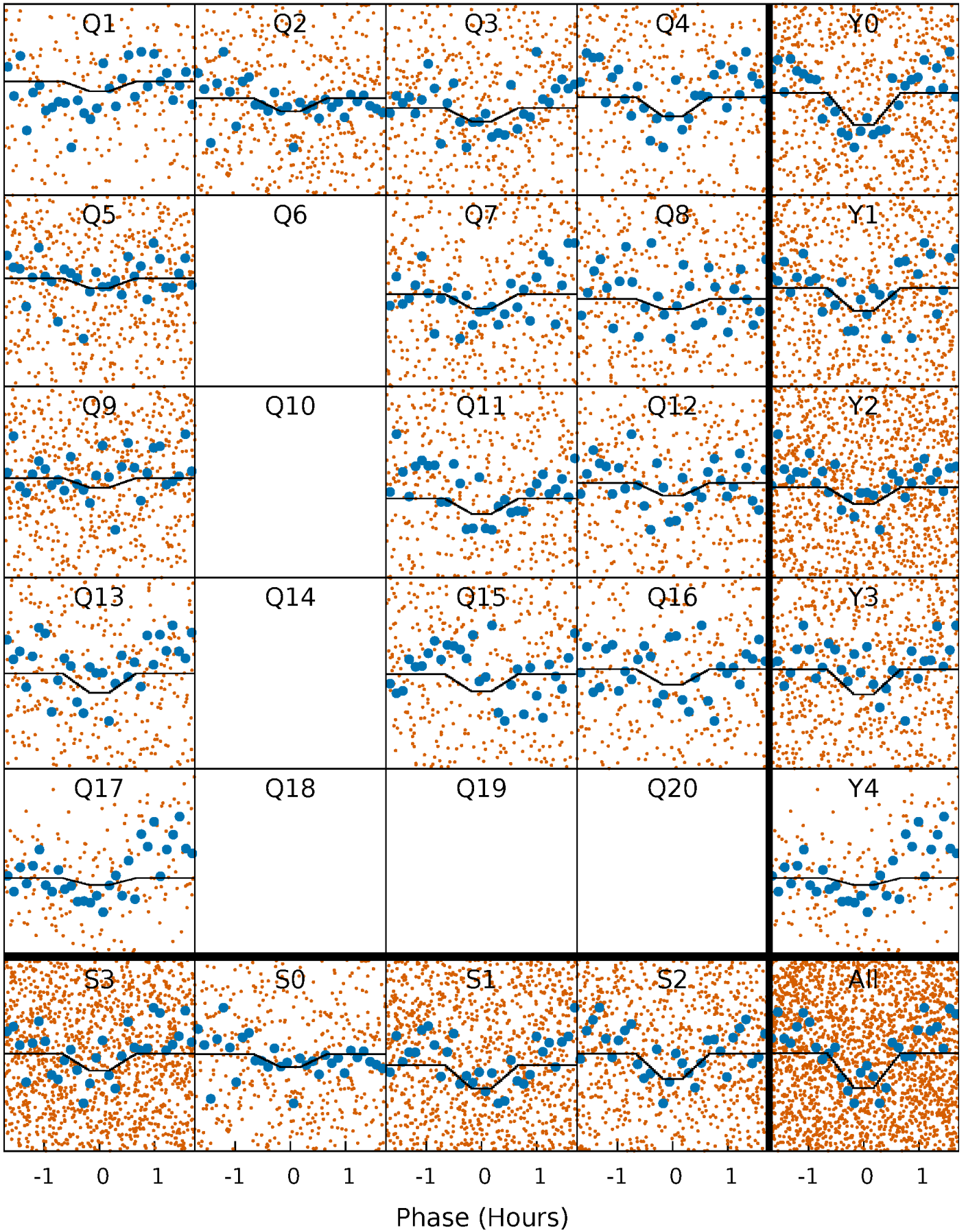
DV Quarter-Phased Transit Curves

TCE 004180199-01 P= 0.933515 Days $T_0=131.657073$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

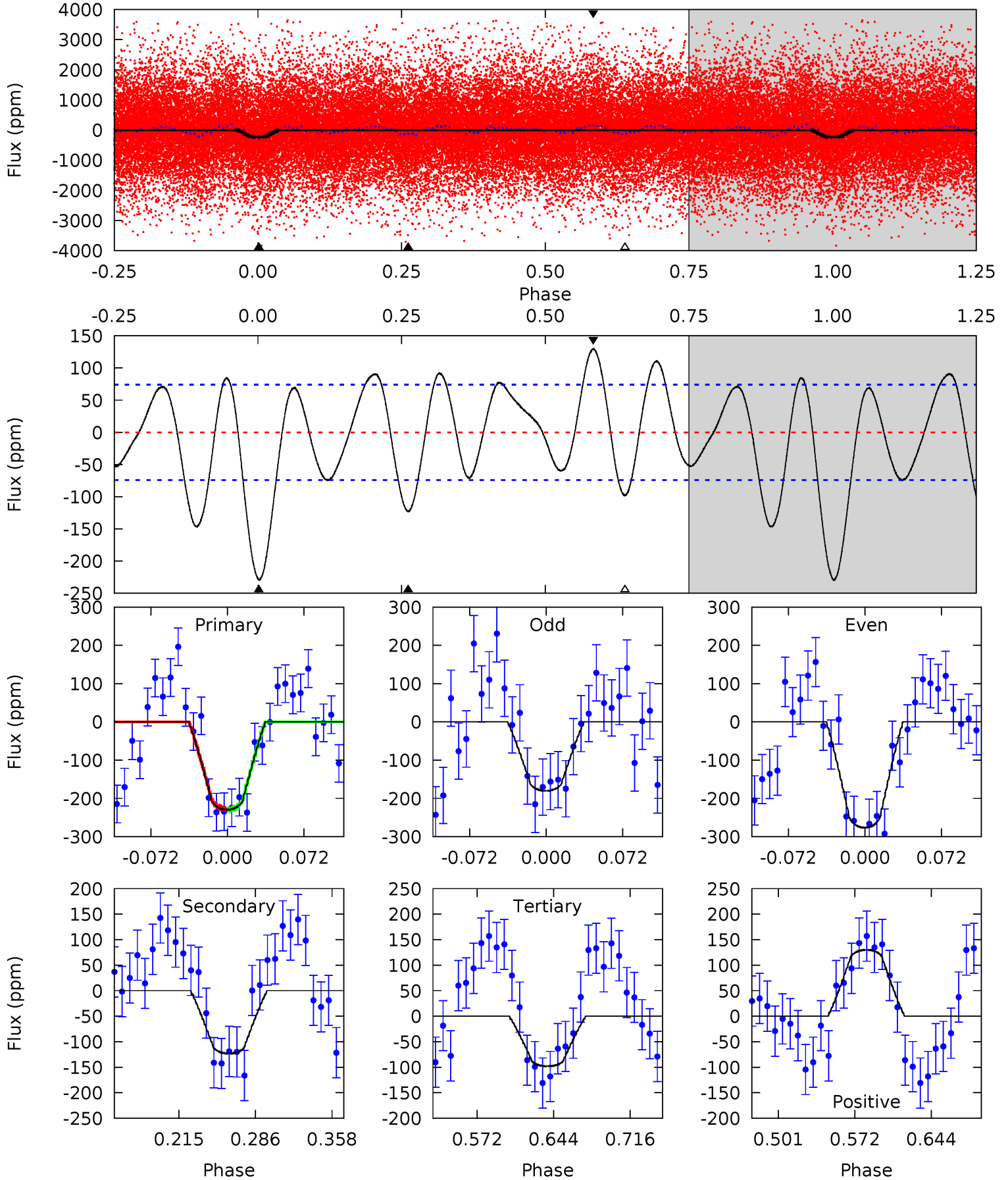
TCE 004180199-01 P= 0.933515 Days $T_0=131.656960$ (BKJD)



DV Model-Shift Uniqueness Test

004180199-01, P = 0.933515 Days, E = 130.723558 Days

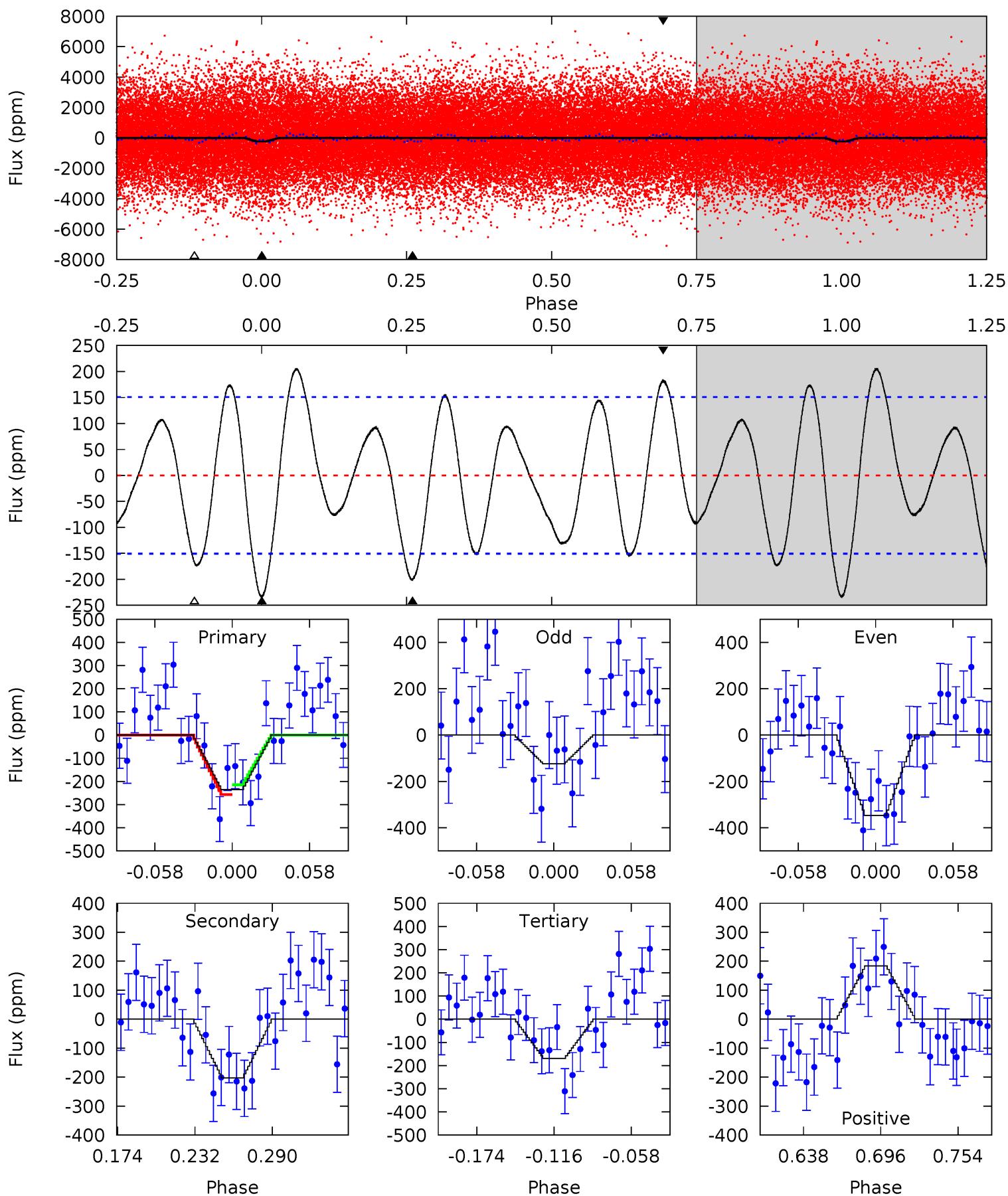
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	7.70	6.13	8.13	4.63	1.80	3.90	8.22	6.22	1.57	-0.43	3.01	0.91	0.36	0.07



Alt Model-Shift Uniqueness Test

004180199-01, P = 0.933515 Days, E = 130.723445 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.31	6.28	5.26	5.71	4.68	1.90	2.98	2.05	1.59	1.03	0.57	3.43	0.78	0.47	0.64



Stellar Parameters For KIC 004180199

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7452^{+206}_{-336}	$3.876^{+0.330}_{-0.110}$	$-0.140^{+0.250}_{-0.350}$	$2.544^{+0.517}_{-0.961}$	$1.774^{+0.173}_{-0.403}$	$0.152^{+0.376}_{-0.052}$
	+3%/-5%	+9%/-3%	+179%/-250%	+20%/-38%	+10%/-23%	+248%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004180199-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-123 ± 16	$3.85^{+2.52}_{-1.97}$	4747^{+349}_{-499}	5971^{+3237}_{-1413}	$2.305^{+6.718}_{-1.468}$
Alt.	-203 ± 32	$3.88^{+2.53}_{-2.00}$	4740^{+372}_{-475}	6846^{+4234}_{-1575}	$3.581^{+11.443}_{-2.230}$

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

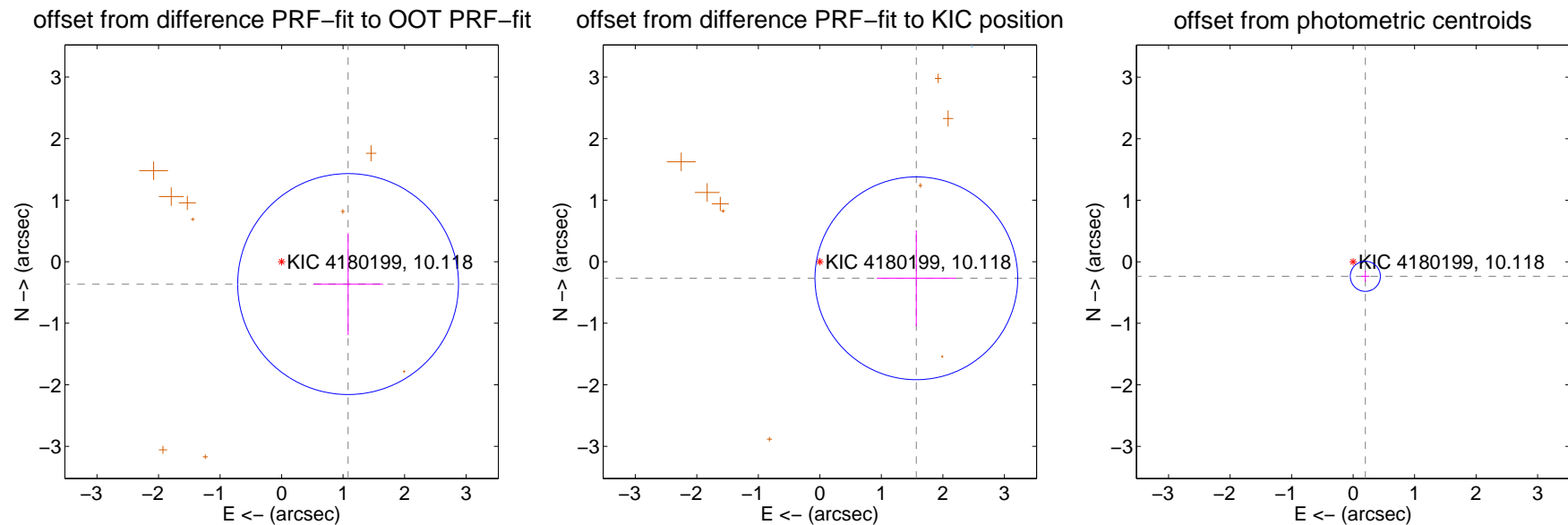
DV Centroid Data

Supplemental centroid analysis for 004180199-01. **Kepler magnitude: 10.12.** Transit SNR 12.08

There are 1 quarters with good PRF difference image offsets

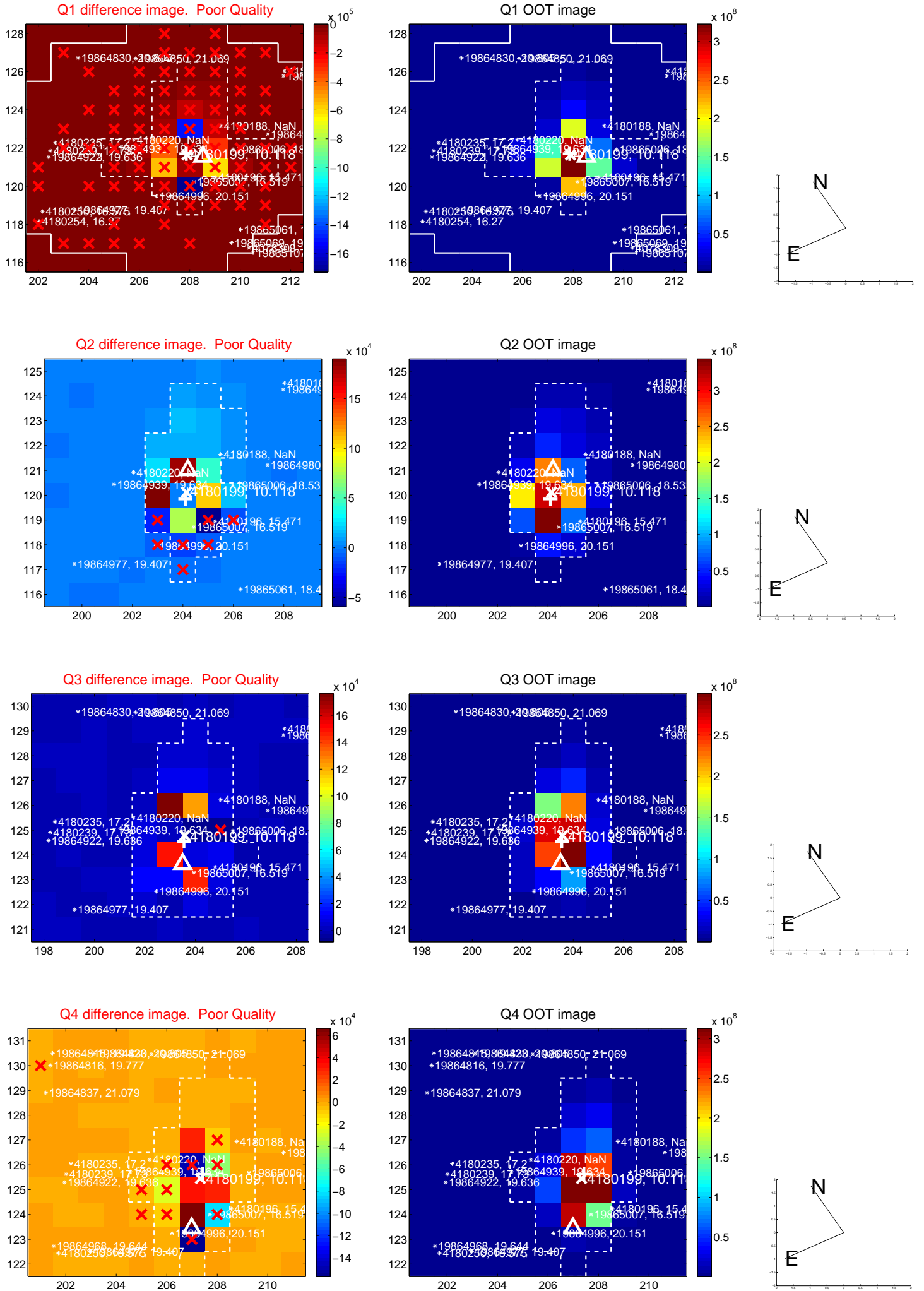
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.141 ± 0.598	1.91	-1.081 ± 0.566	-0.363 ± 0.828
PRF-fit source offset from KIC position	1.591 ± 0.549	2.90	-1.568 ± 0.642	-0.270 ± 0.779
photometric centroid source offset	0.31 ± 0.08	3.79	-0.20 ± 0.07	-0.24 ± 0.09

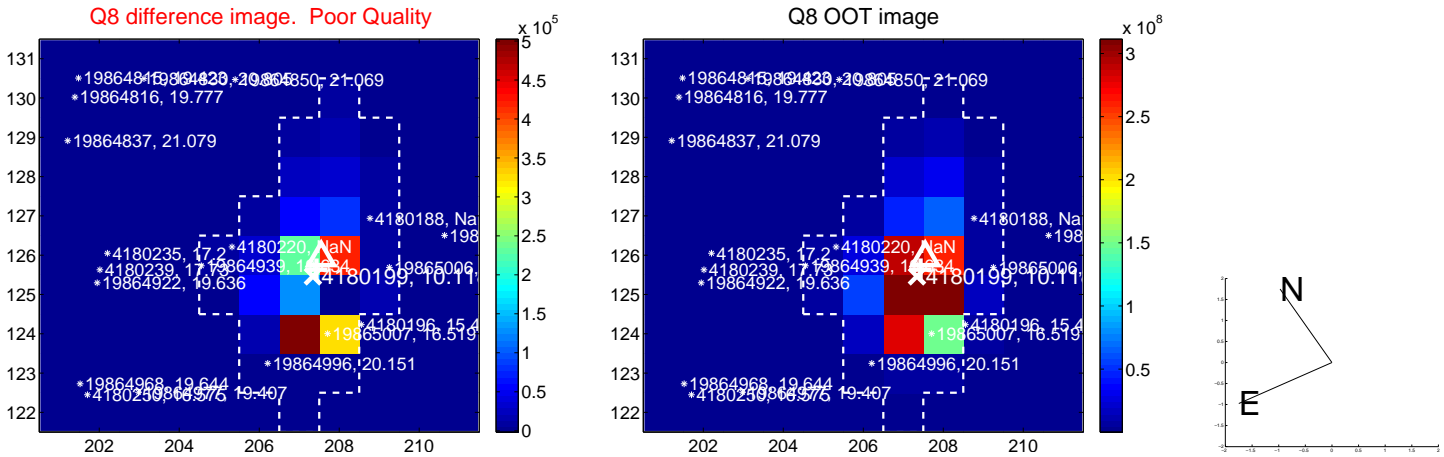
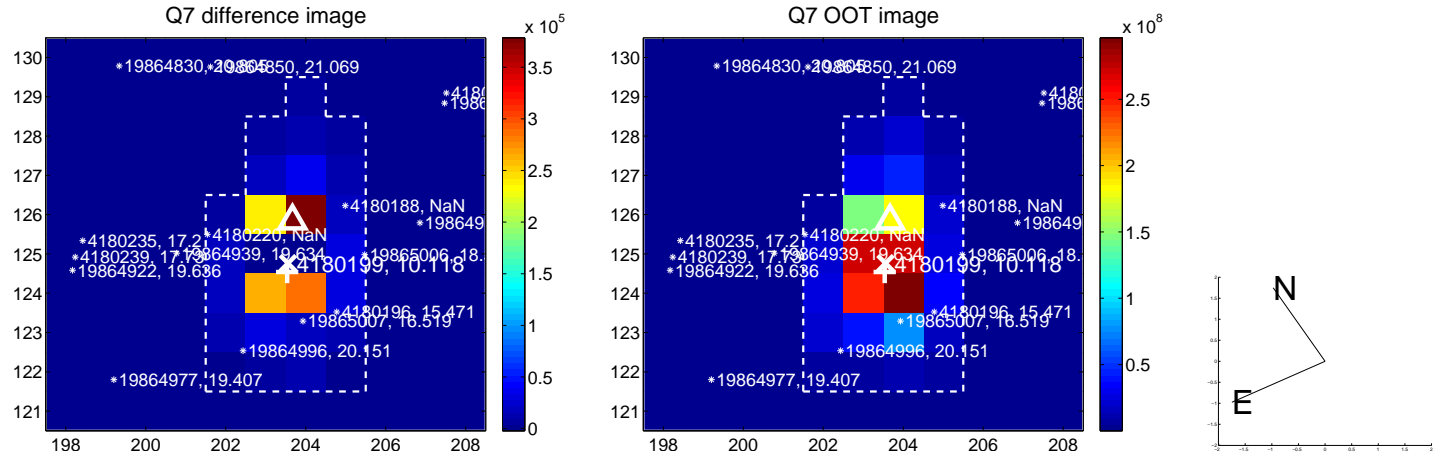
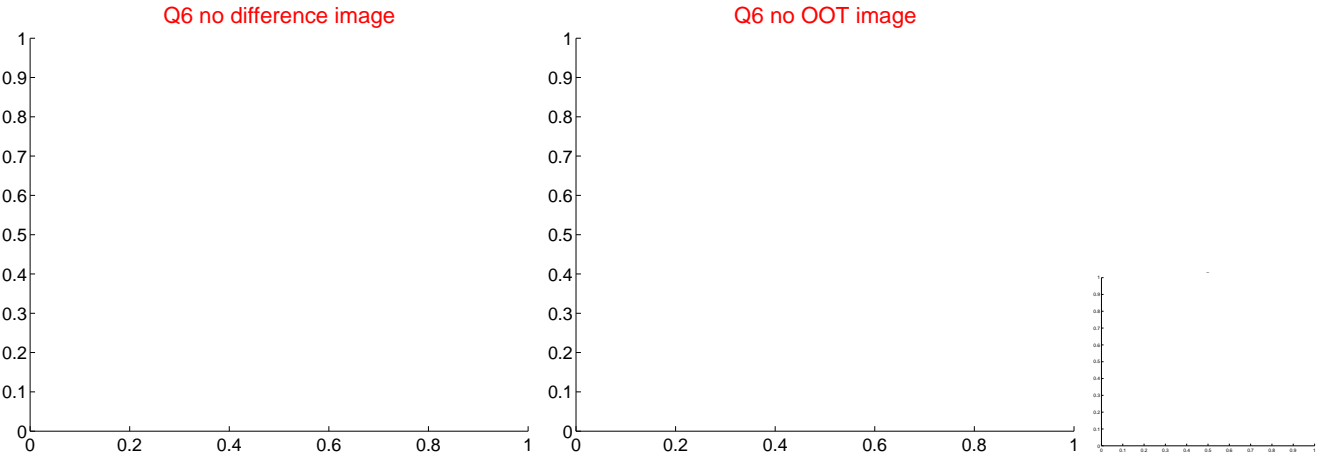
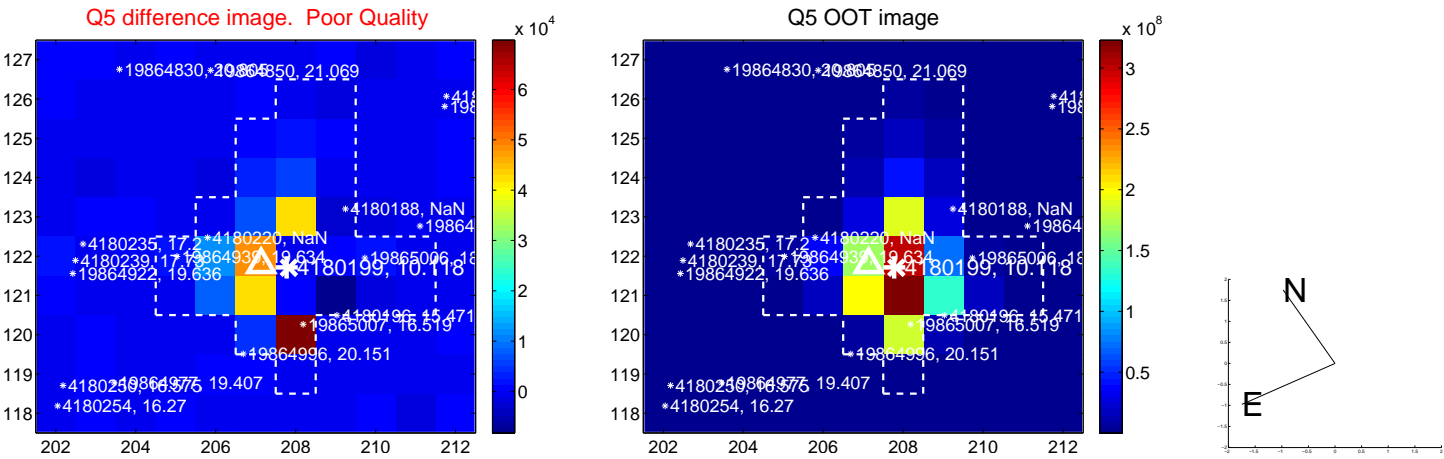


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

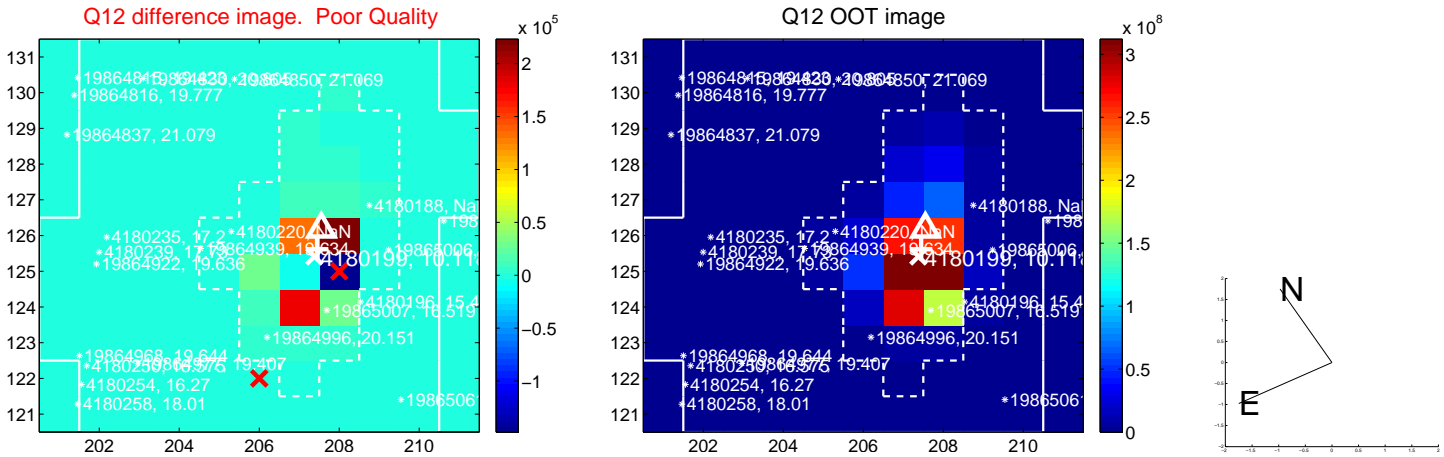
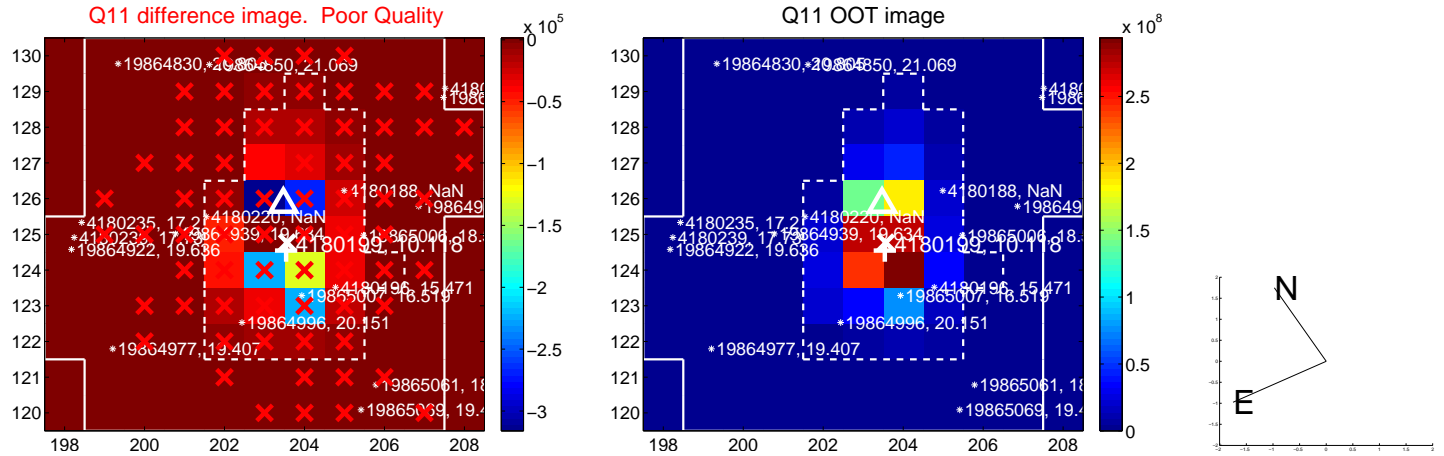
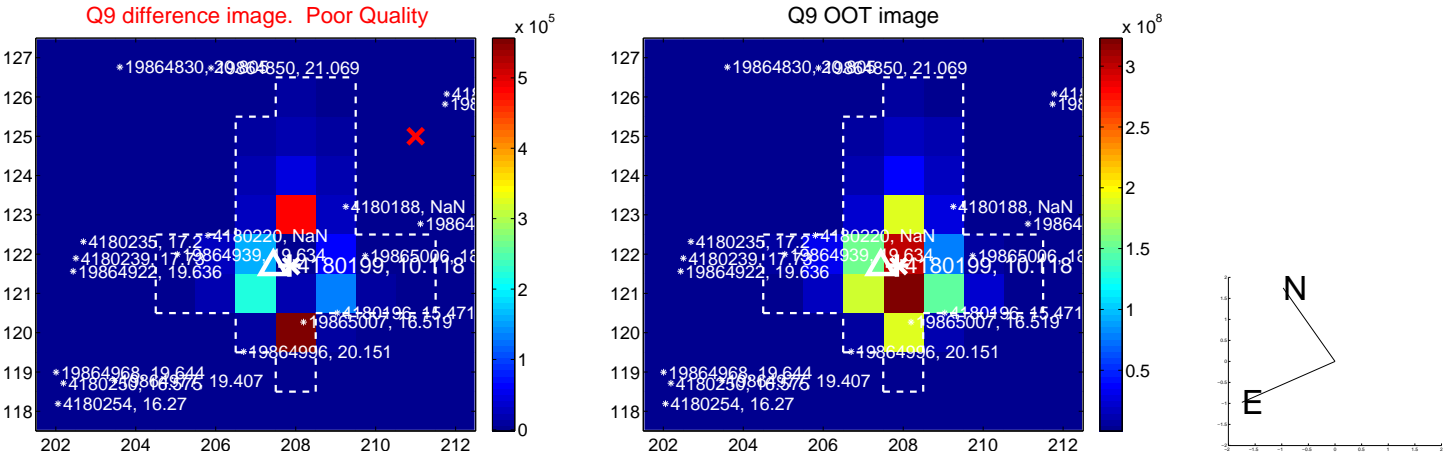
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



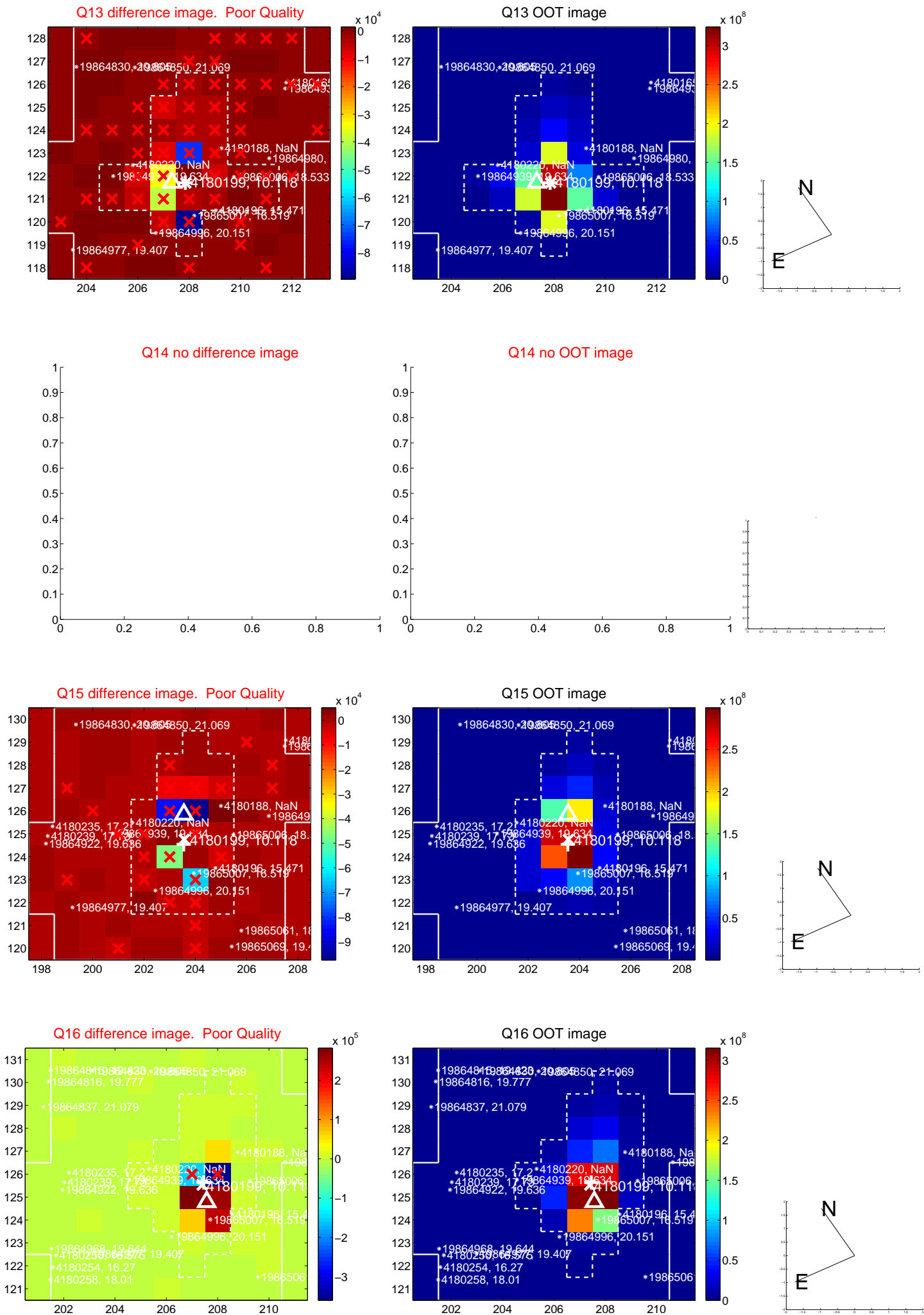
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



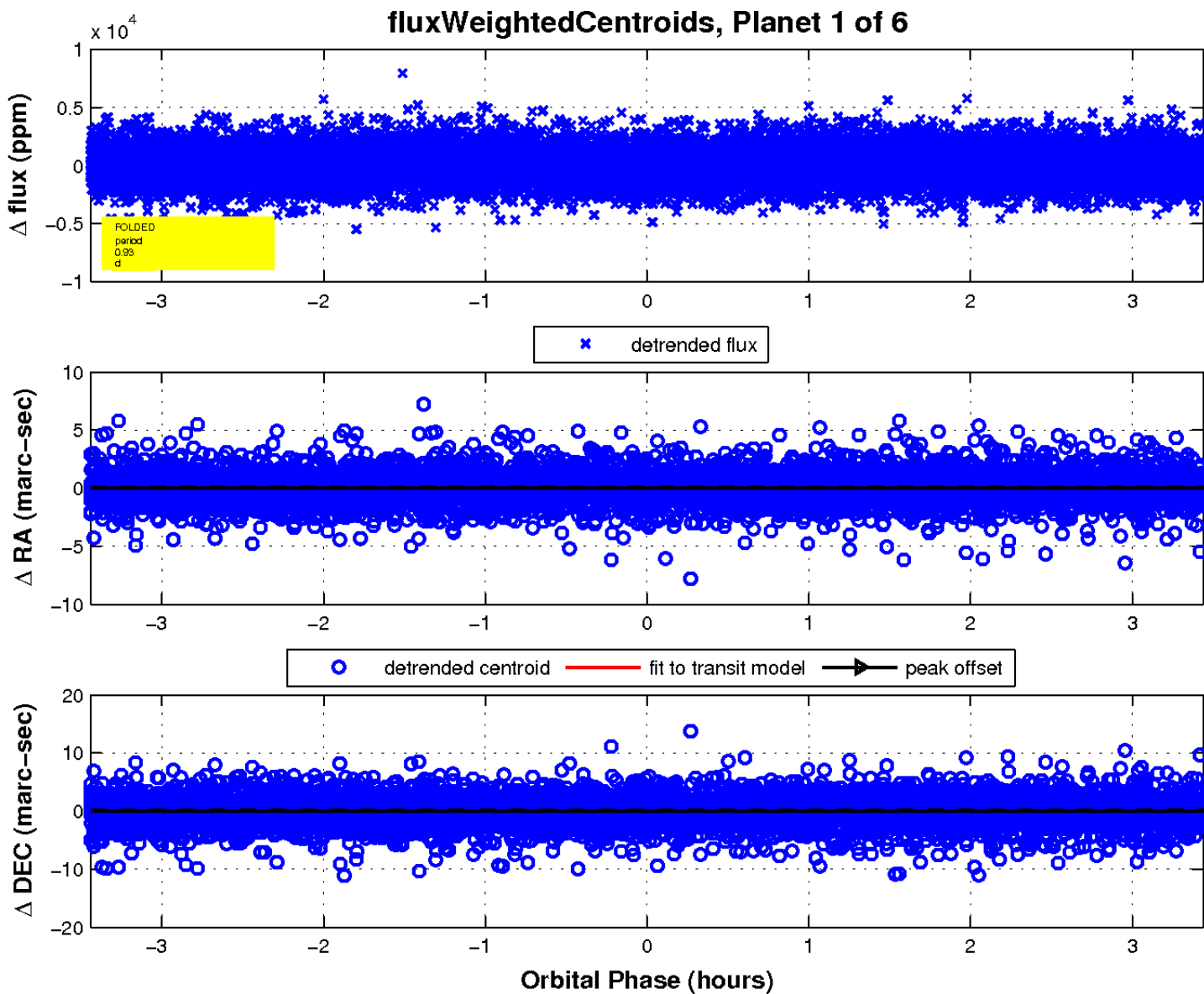
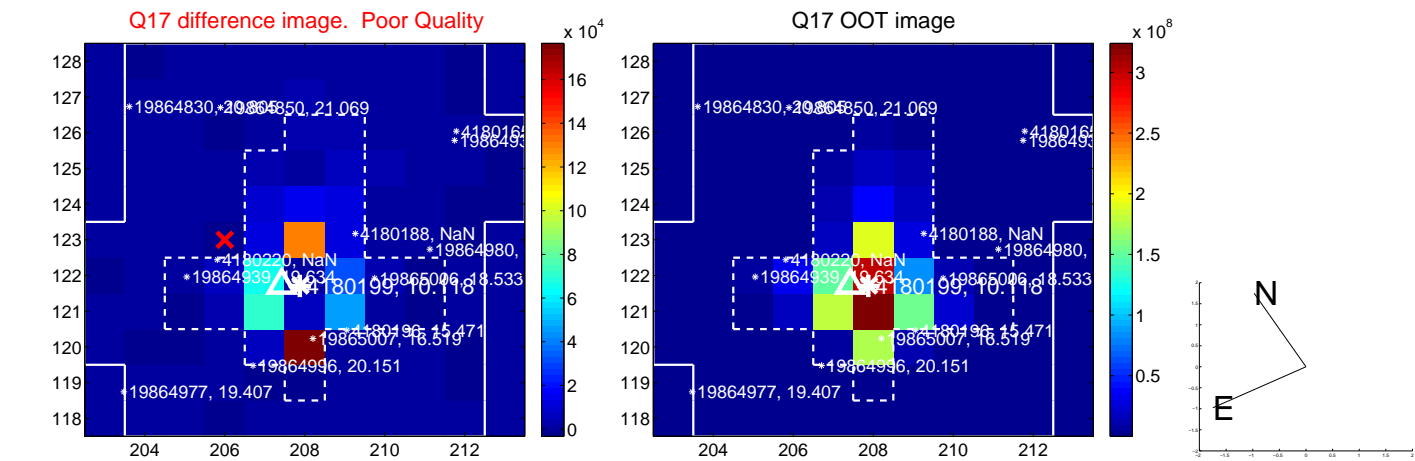
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



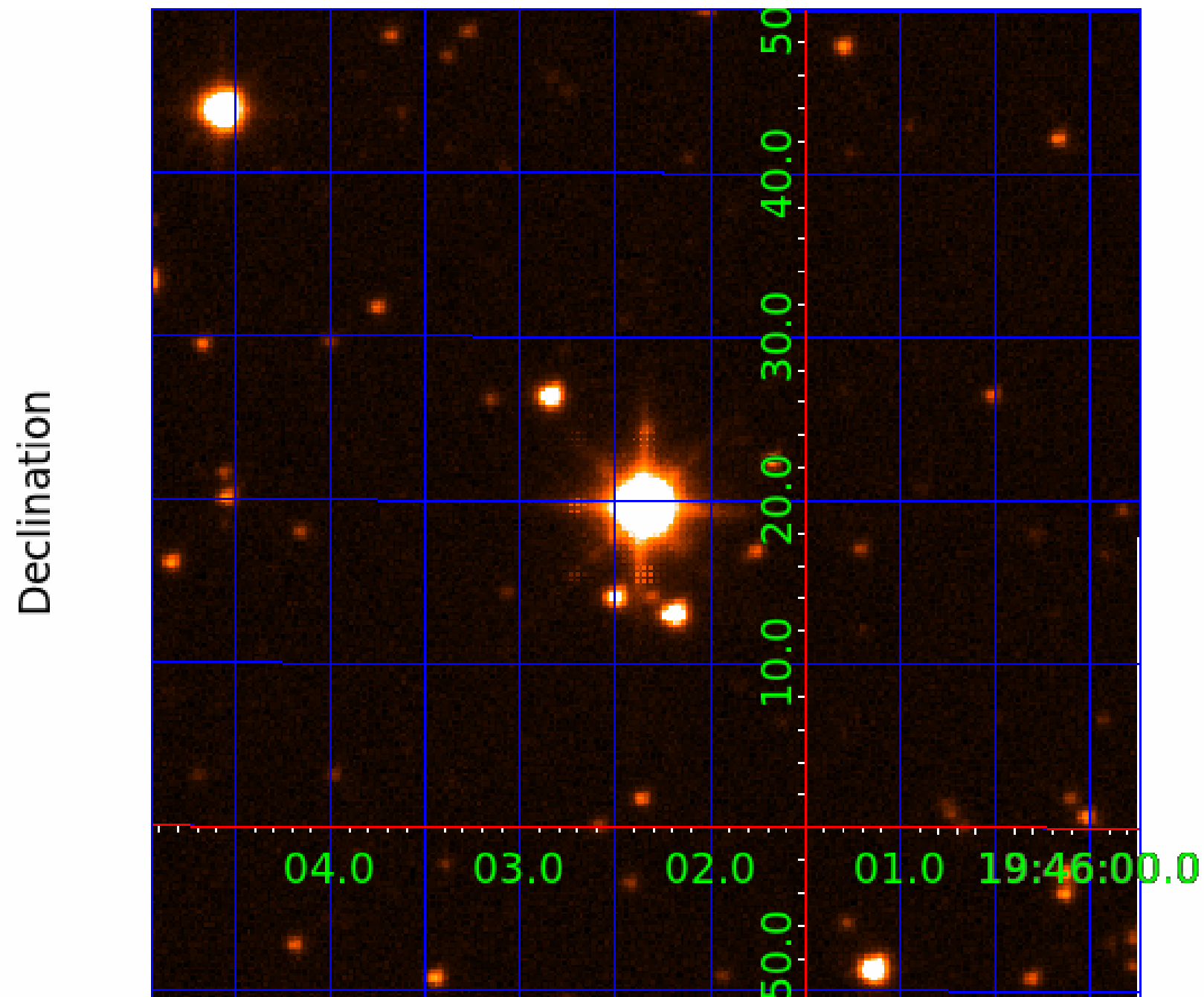
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004180199

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})
004180199-01	OBS	No	0.933515	131.657073	277.7	1.147	10.1	12.1	2.54	7452	4.30	34900.82
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004180199-03	OBS	No	0.986639	131.855444	141.2	6.074	9.5	6.2	2.54	7452	3.05	32418.00
004180199-04	OBS	No	39.324892	135.229356	2683.5	1.732	12.4	11.4	2.54	7452	13.38	238.11
004180199-06	OBS	No	19.073041	139.625779	53.8	3.000	9.3	-1.0	2.54	7452	1.89	624.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004180199-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
004180199-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

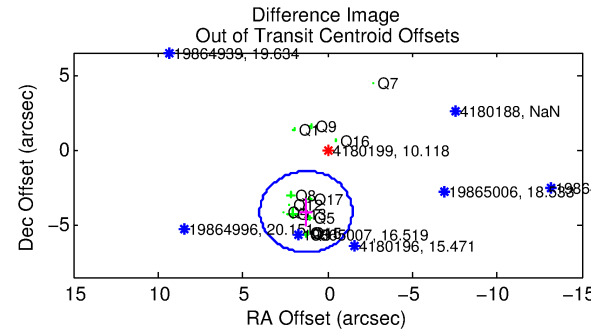
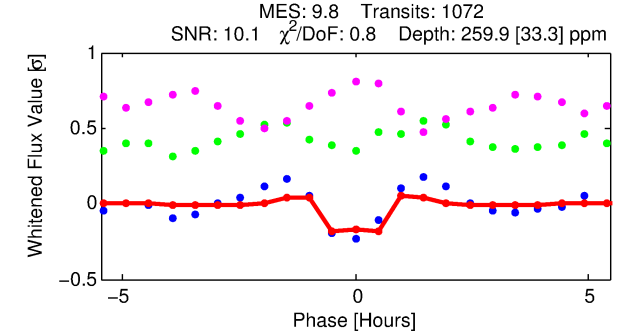
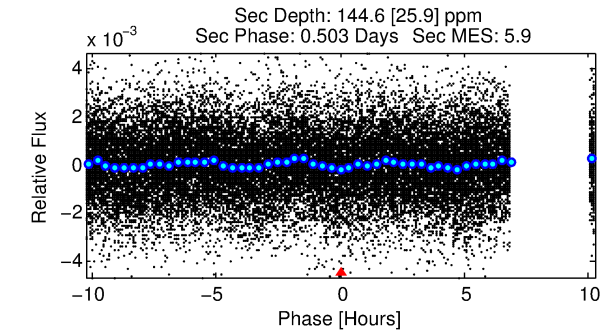
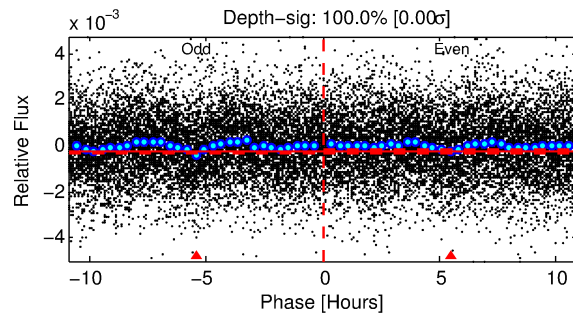
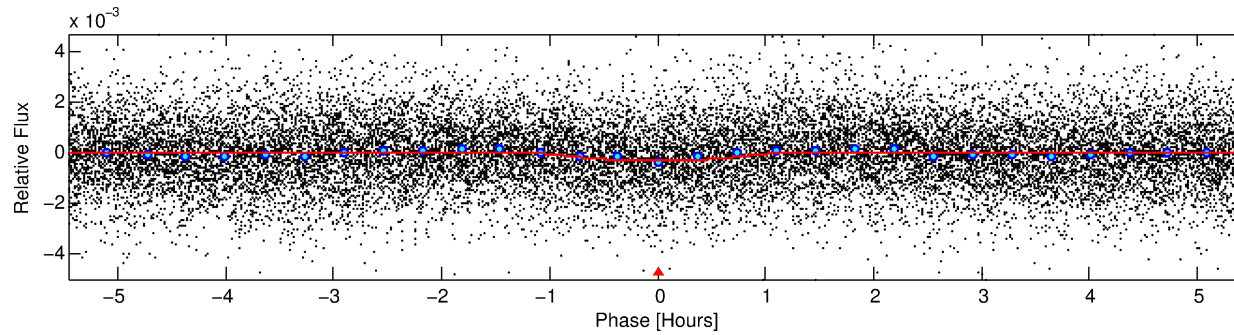
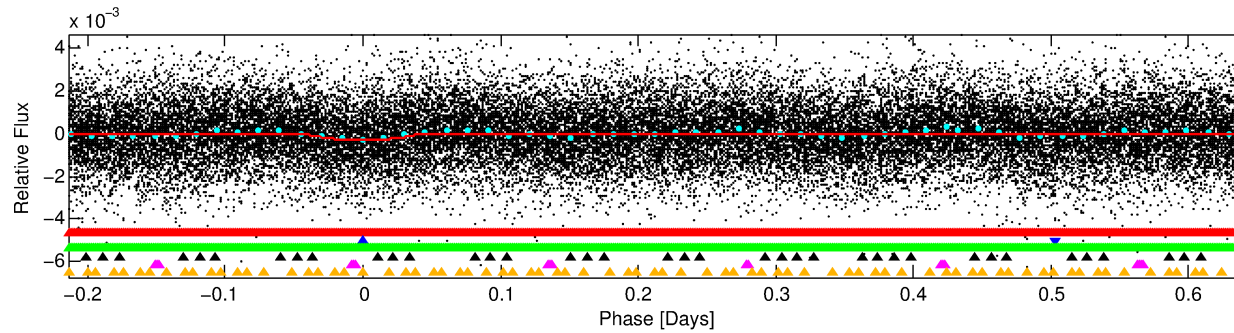
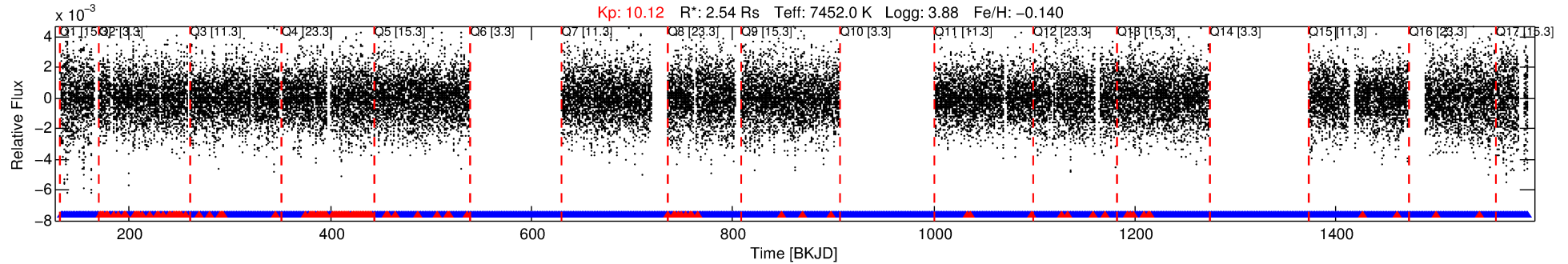
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004180199-02

No Significant Match Found

DV One-Page Summary

KIC: 4180199 Candidate: 2 of 6 Period: 0.856 d



DV Fit Results:

Period = 0.85642 [0.00001] d
Epoch = 132.2976 [0.0014] BKJD
Rp/R* = 0.0172 [0.0043]
a/R* = 1.95 [2.00]
b = 0.90 [0.30]
Seff = 39151.52 [23246.91]
Teq = 3587 [532] K
Rp = 4.79 [2.16] Re
a = 0.0214 [0.0076] AU
Ag = 1.59 [1.23] [0.48σ]
Teffp = 6223 [868] K [2.59σ]

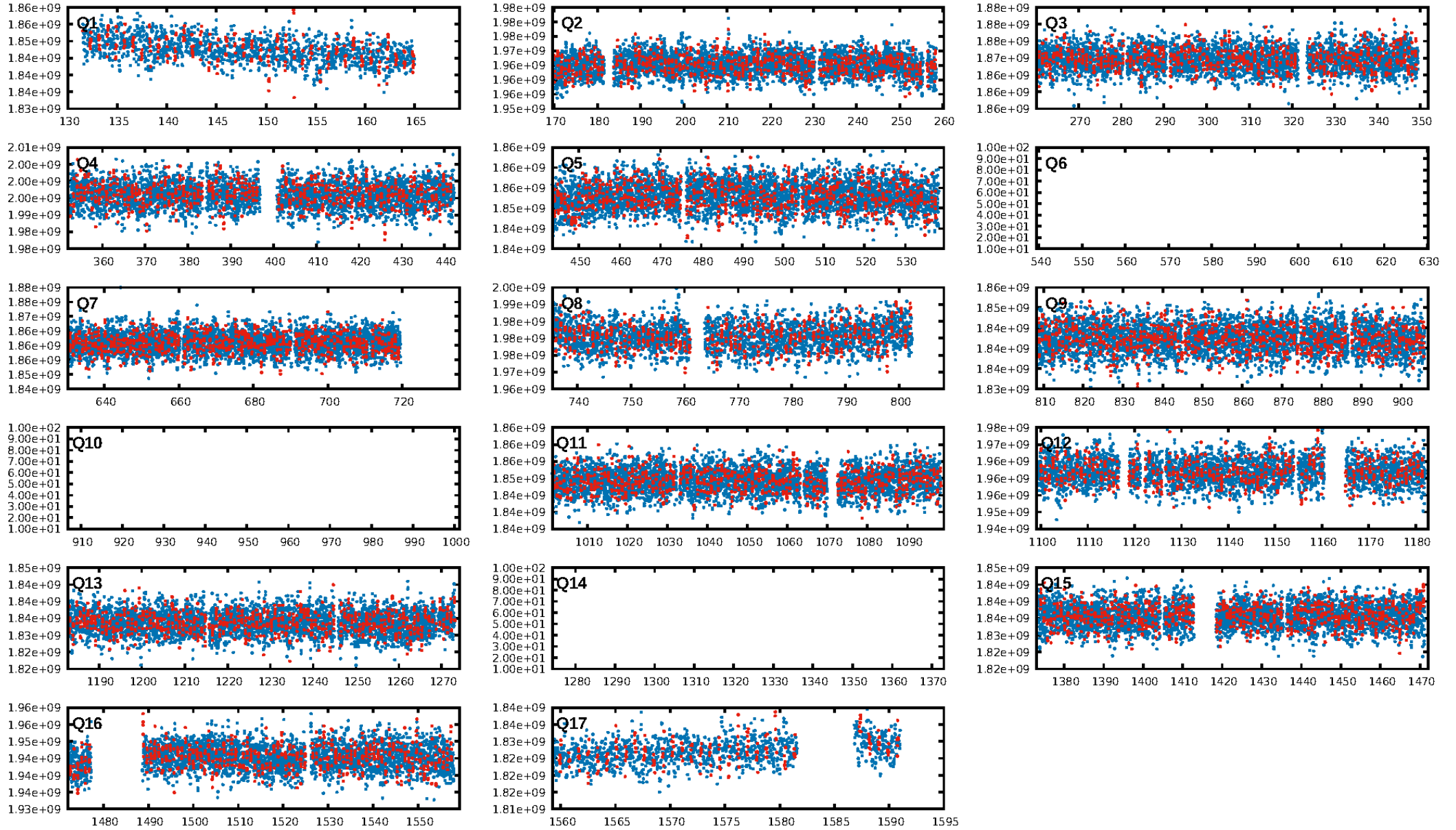
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 61.0% [0.86σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.87 [884/1014]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 0.329 arcsec [4.21σ]
OotOffset-rm: 4.343 arcsec [4.79σ]
KicOffset-rm: 4.297 arcsec [4.35σ]
OotOffset-st: 0/4/4/5 [13]
KicOffset-st: 0/4/4/5 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 1.00 [14/14]

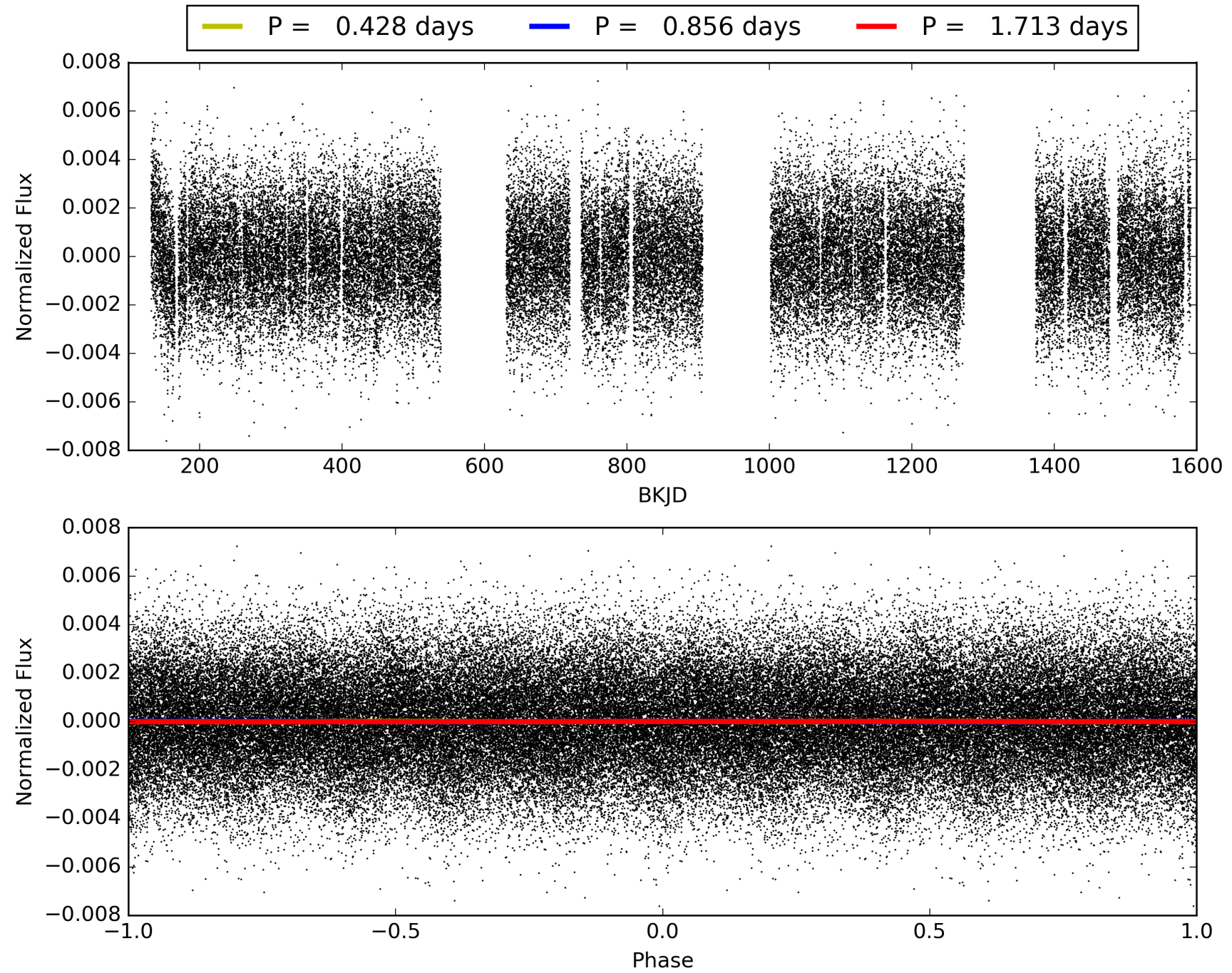
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:02:16 Z

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

TCE 004180199-02, PDC Light Curves

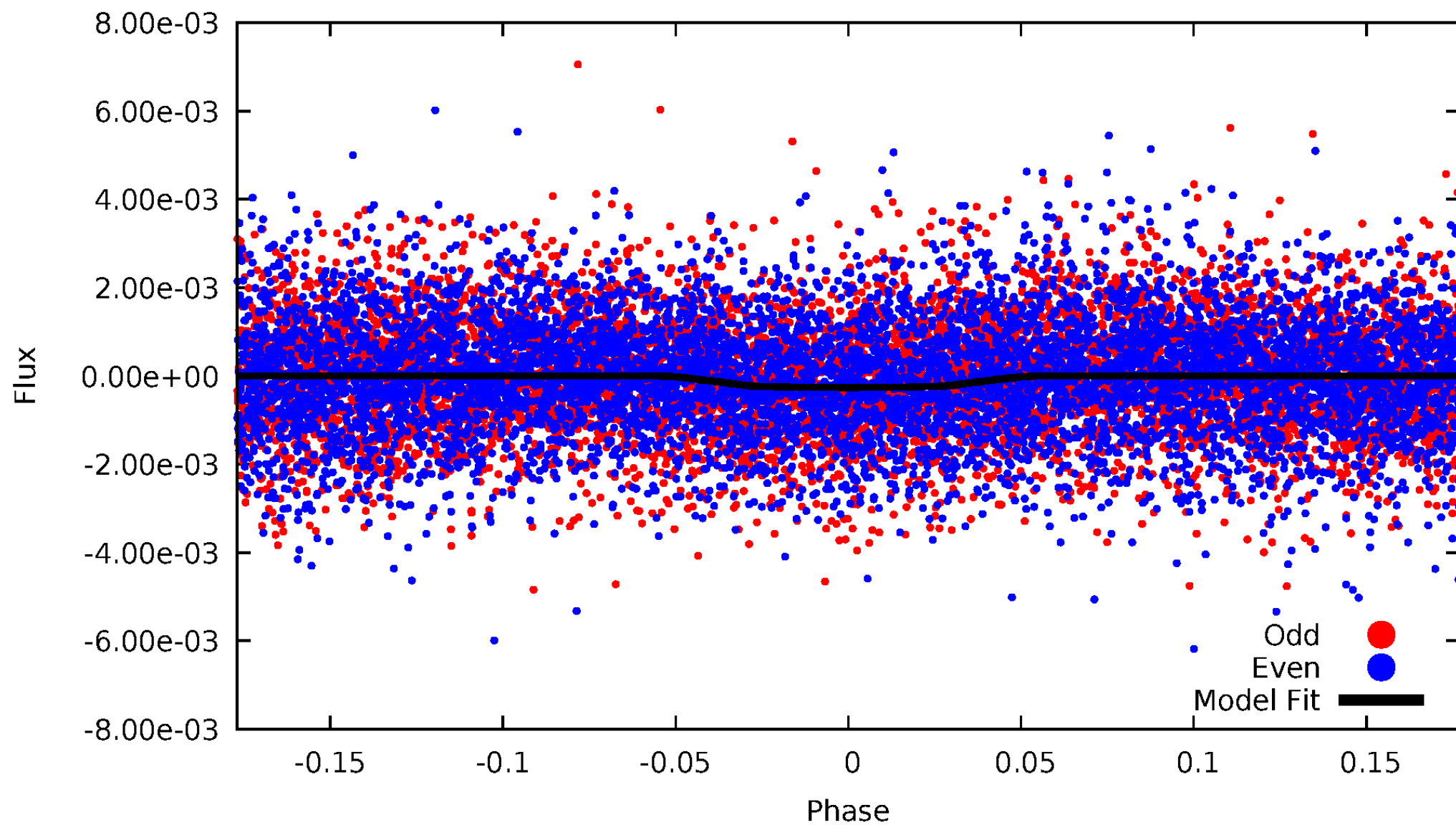


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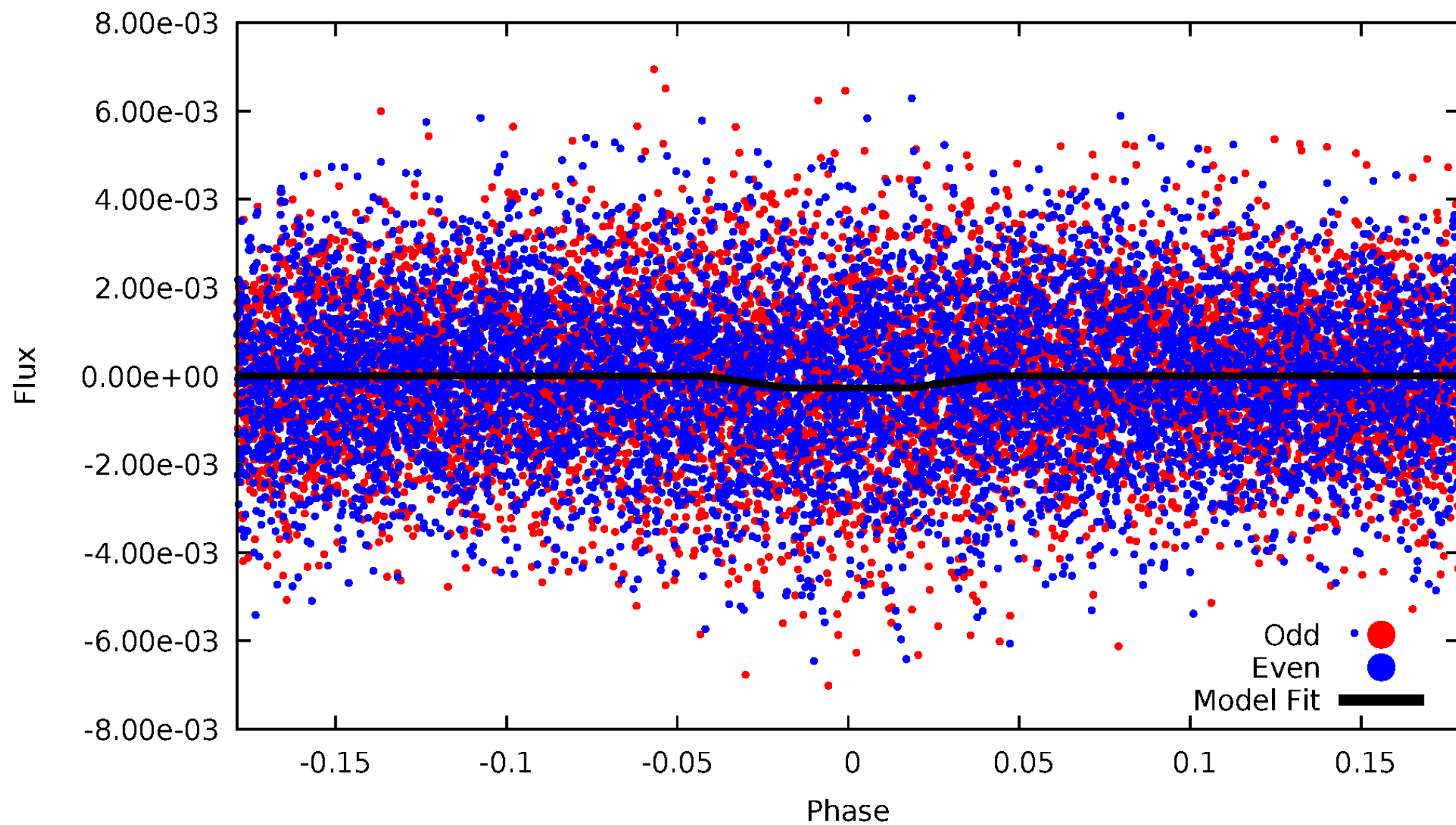
DV Odd/Even

TCE 004180199-02



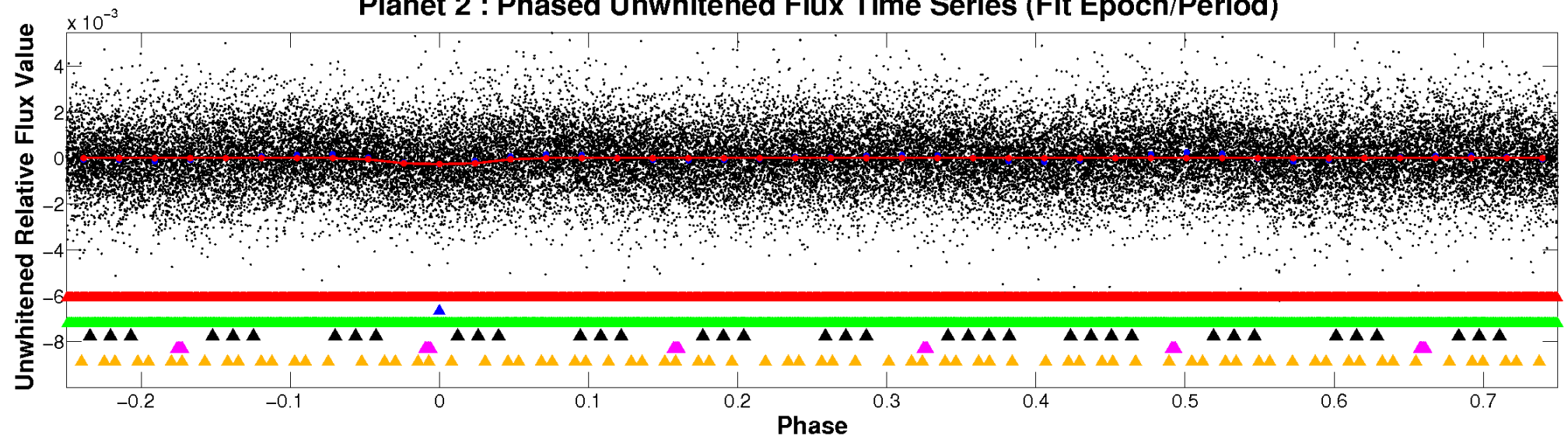
ALT Odd/Even

TCE 004180199-02

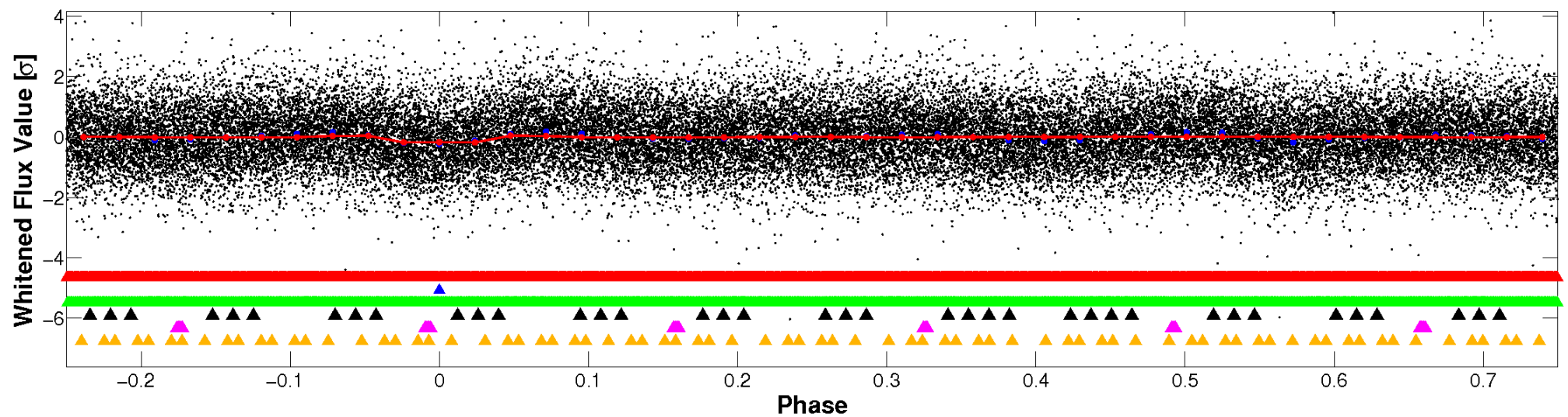


Non-Whitened Vs. Whitened Light Curve

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

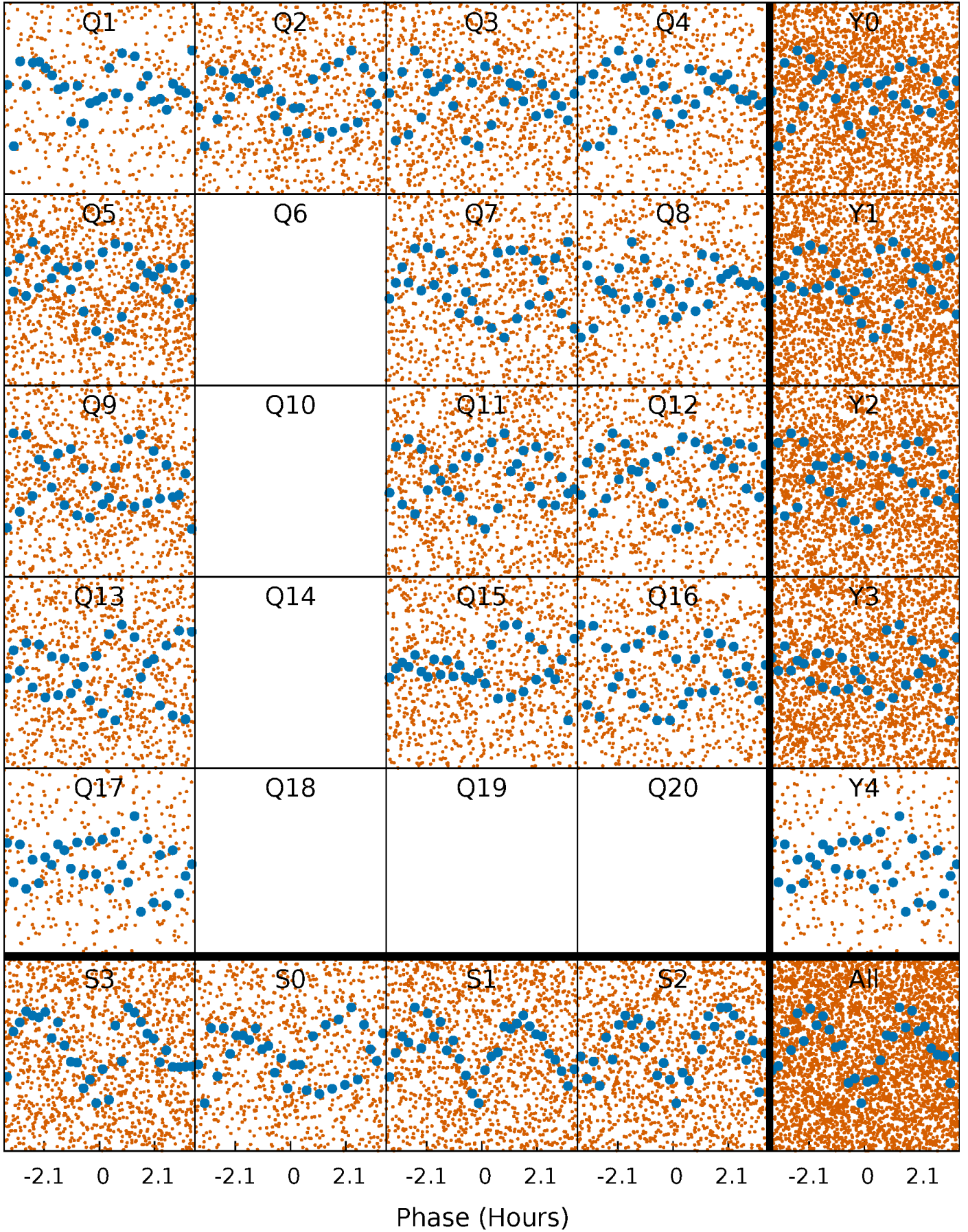


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



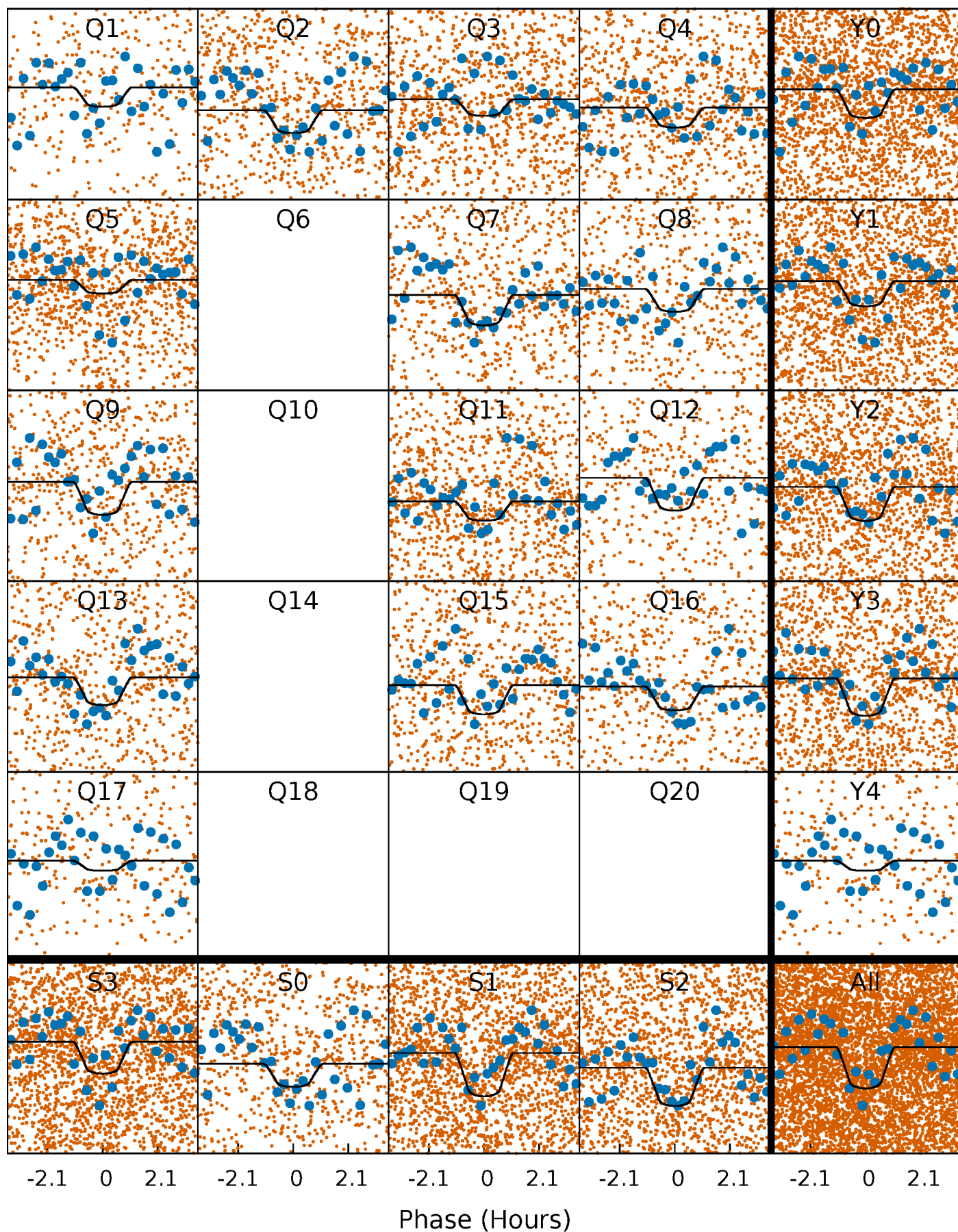
PDC Quarter-Phased Transit Curves

TCE 004180199-02 P= 0.856419 Days $T_0=132.297603$ (BKJD)



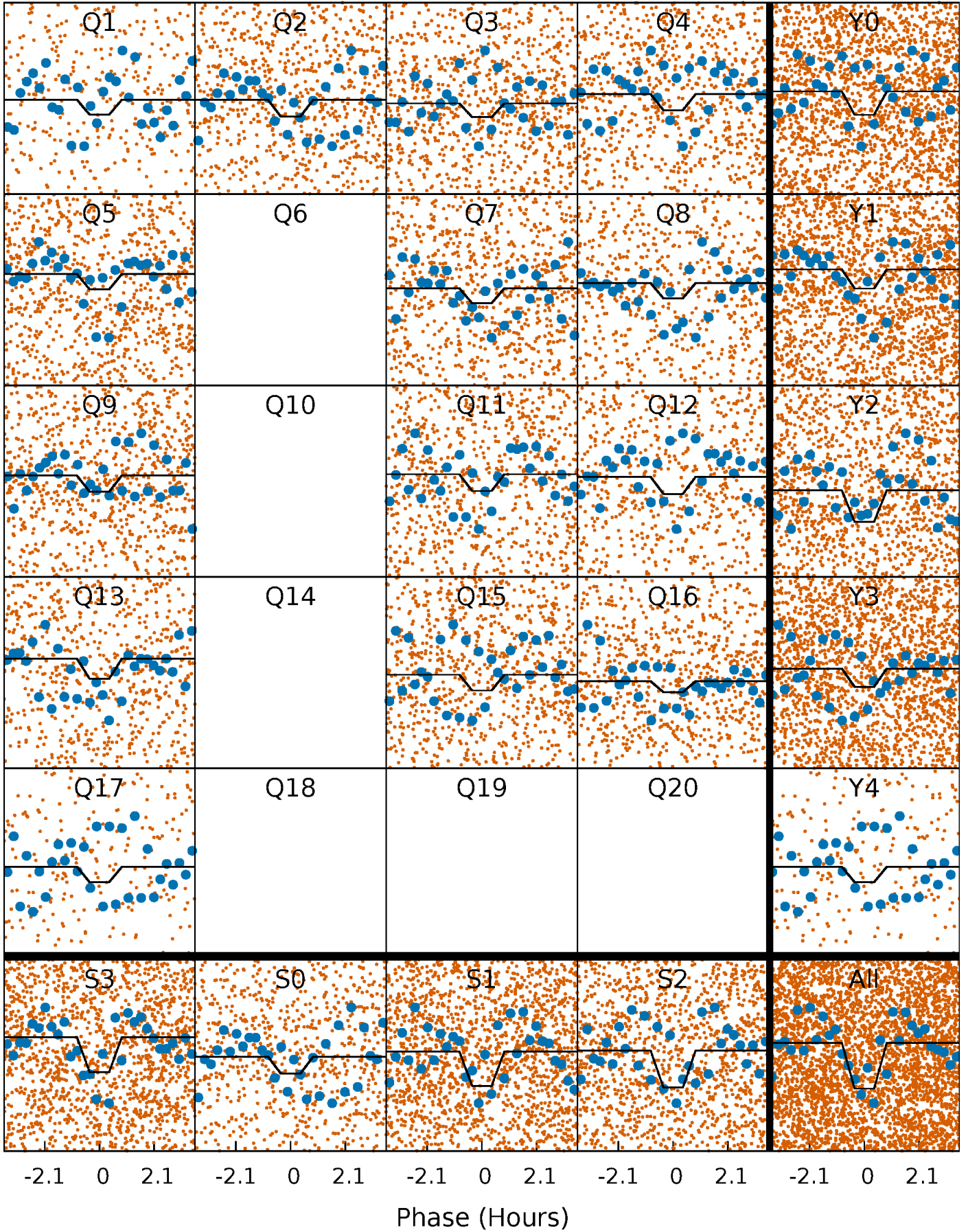
DV Quarter-Phased Transit Curves

TCE 004180199-02 P= 0.856419 Days $T_0=132.297603$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

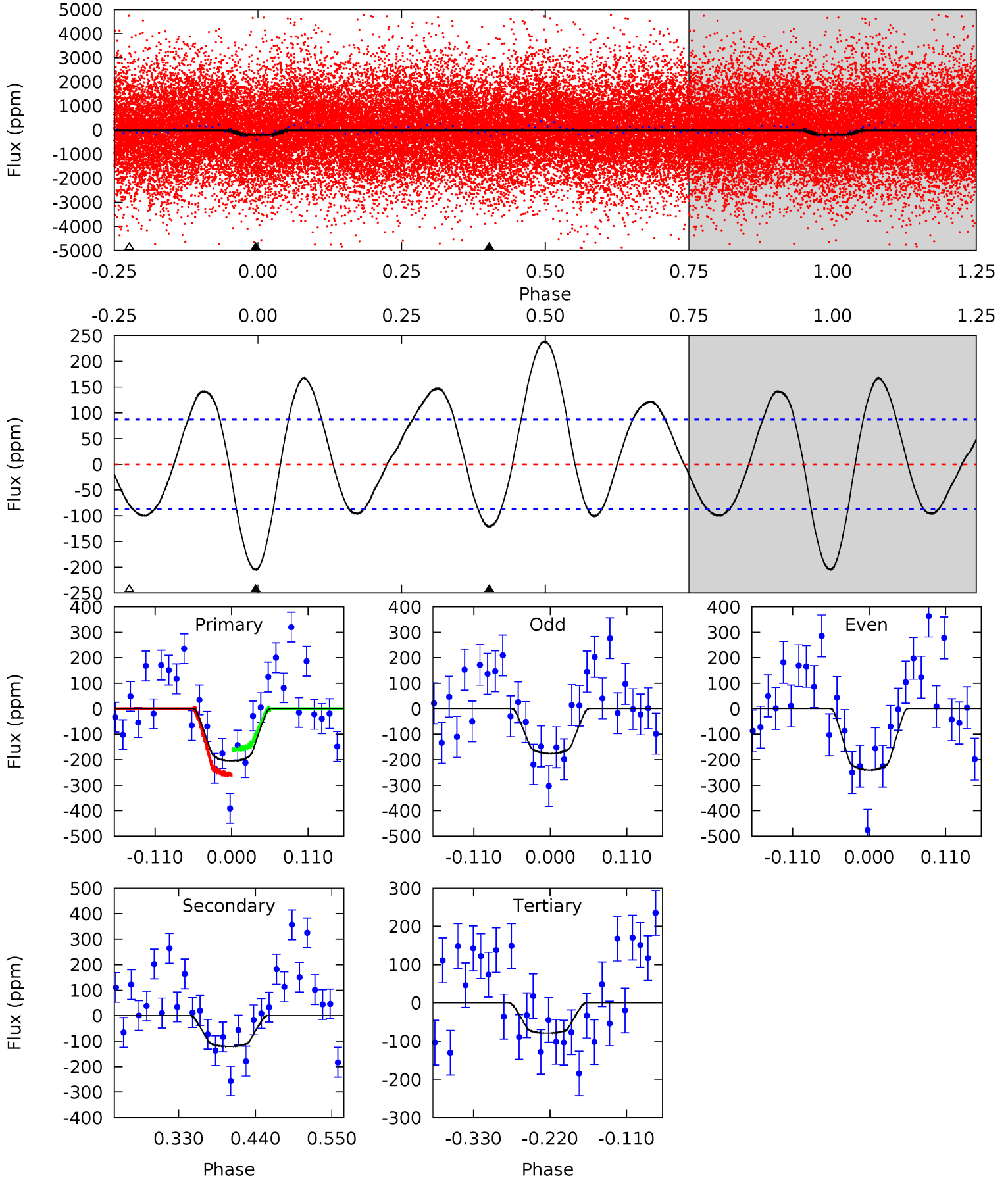
TCE 004180199-02 P= 0.856416 Days $T_0=132.296888$ (BKJD)



DV Model-Shift Uniqueness Test

004180199-02, P = 0.856419 Days, E = 131.441184 Days

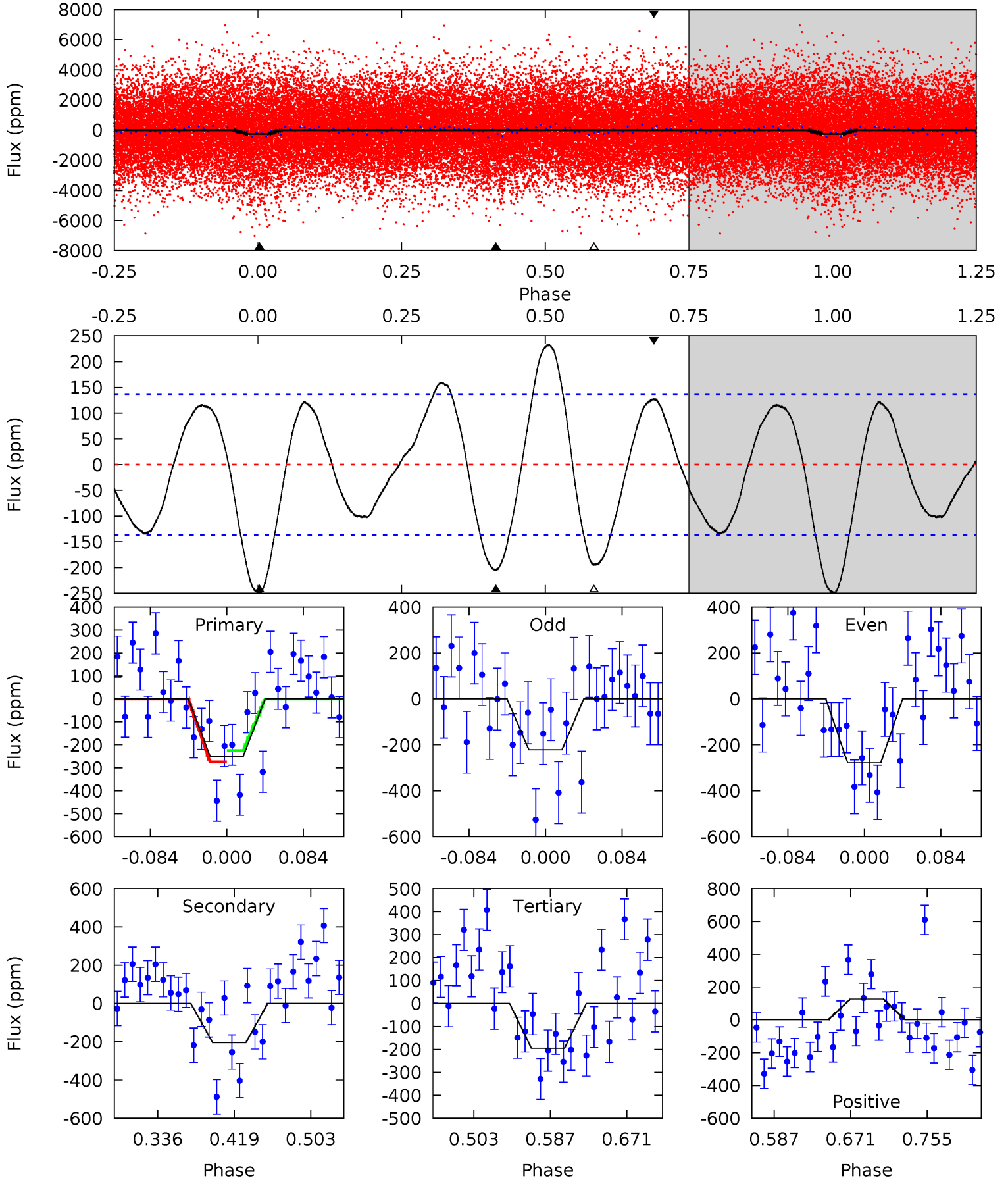
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	6.31	4.14	0	4.54	1.60	4.14	6.54	10.7	2.17	6.31	1.70	0.86	0.54	2.56



Alt Model-Shift Uniqueness Test

004180199-02, P = 0.856416 Days, E = 131.440472 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.40	6.88	6.54	4.27	4.60	1.73	3.53	1.85	4.13	0.34	2.61	0.95	1.23	0.48	0.84



Stellar Parameters For KIC 004180199

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7452^{+206}_{-336}	$3.876^{+0.330}_{-0.110}$	$-0.140^{+0.250}_{-0.350}$	$2.544^{+0.517}_{-0.961}$	$1.774^{+0.173}_{-0.403}$	$0.152^{+0.376}_{-0.052}$
	+3%/-5%	+9%/-3%	+179%/-250%	+20%/-38%	+10%/-23%	+248%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004180199-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-121 ± 19	$4.42^{+1.49}_{-1.31}$	4878^{+339}_{-471}	5484^{+1158}_{-695}	$1.472^{+1.531}_{-0.624}$
Alt.	-205 ± 30	$4.10^{+1.44}_{-1.28}$	4900^{+346}_{-494}	6702^{+1570}_{-904}	$2.969^{+3.398}_{-1.325}$

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 $A_{obs} \gg 1.0$

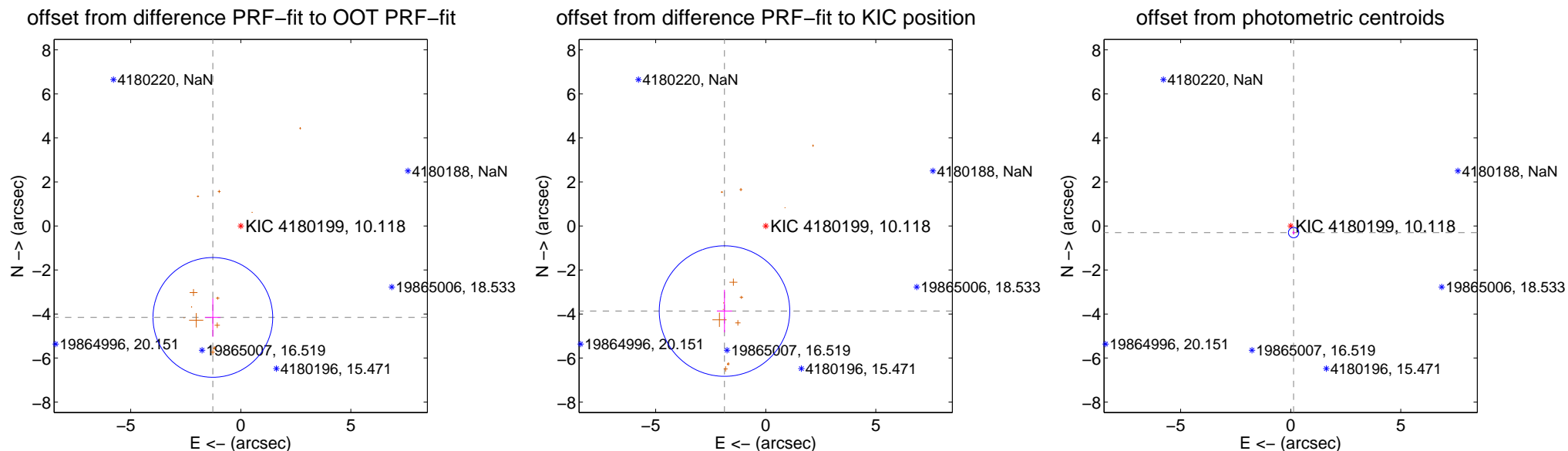
DV Centroid Data

Supplemental centroid analysis for 004180199-02. **Kepler magnitude: 10.12.** Transit SNR 10.06

There are 0 quarters with good PRF difference image offsets

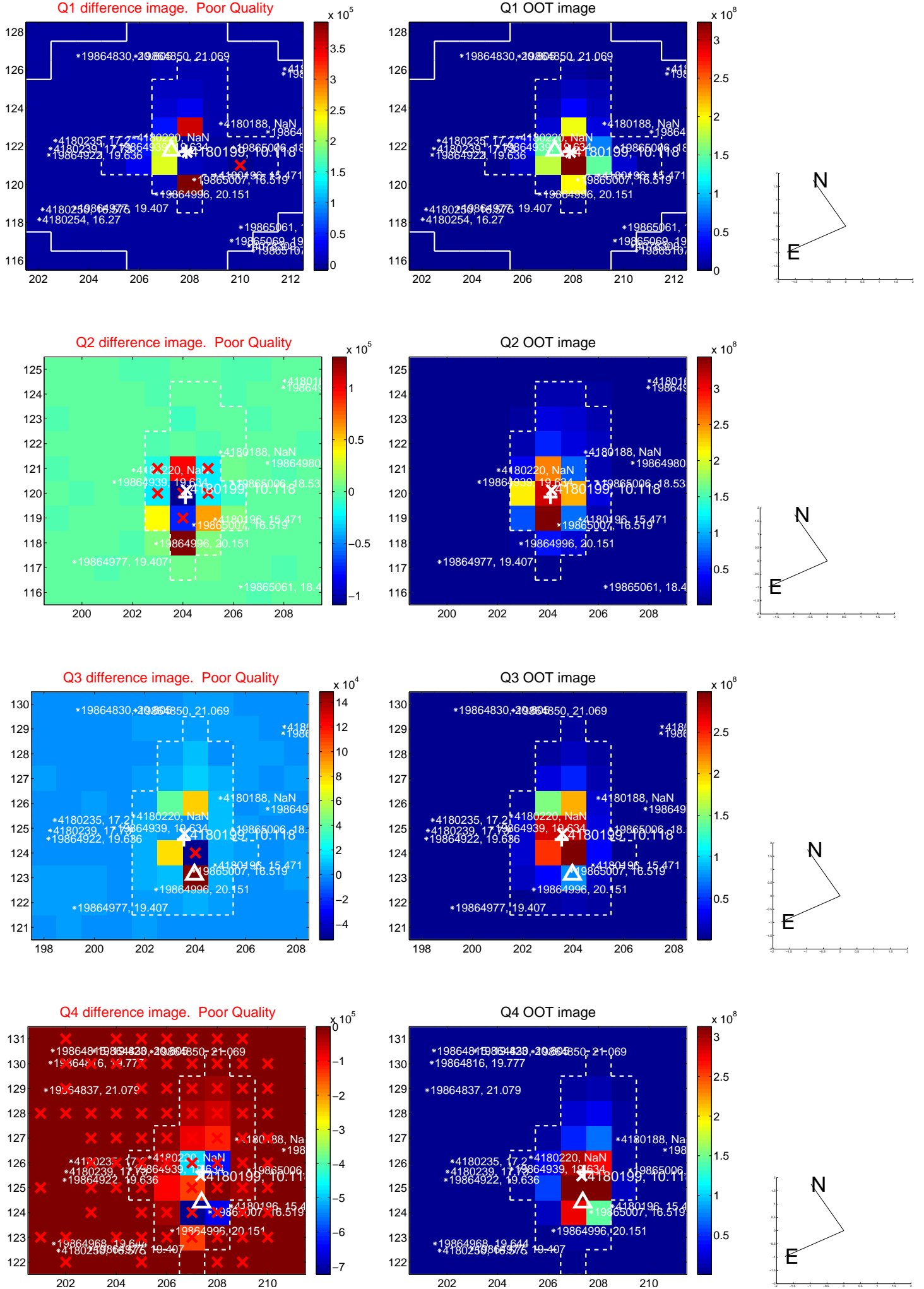
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.343 ± 0.906	4.79	1.269 ± 0.350	-4.154 ± 0.876
PRF-fit source offset from KIC position	4.297 ± 0.988	4.35	1.874 ± 0.345	-3.866 ± 0.970
photometric centroid source offset	0.33 ± 0.08	4.21	-0.13 ± 0.06	-0.30 ± 0.08

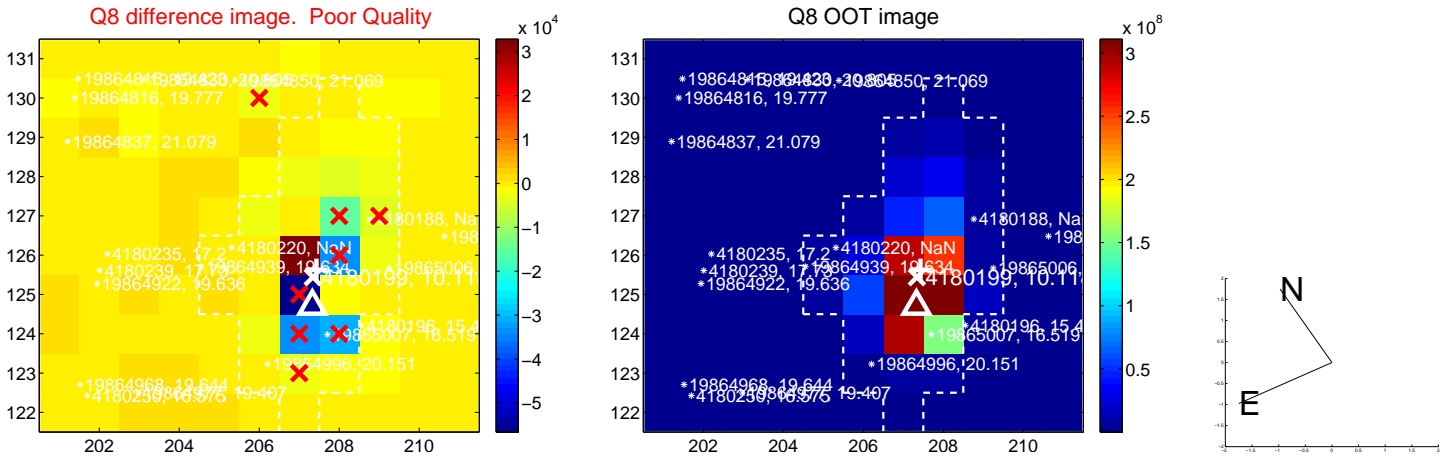
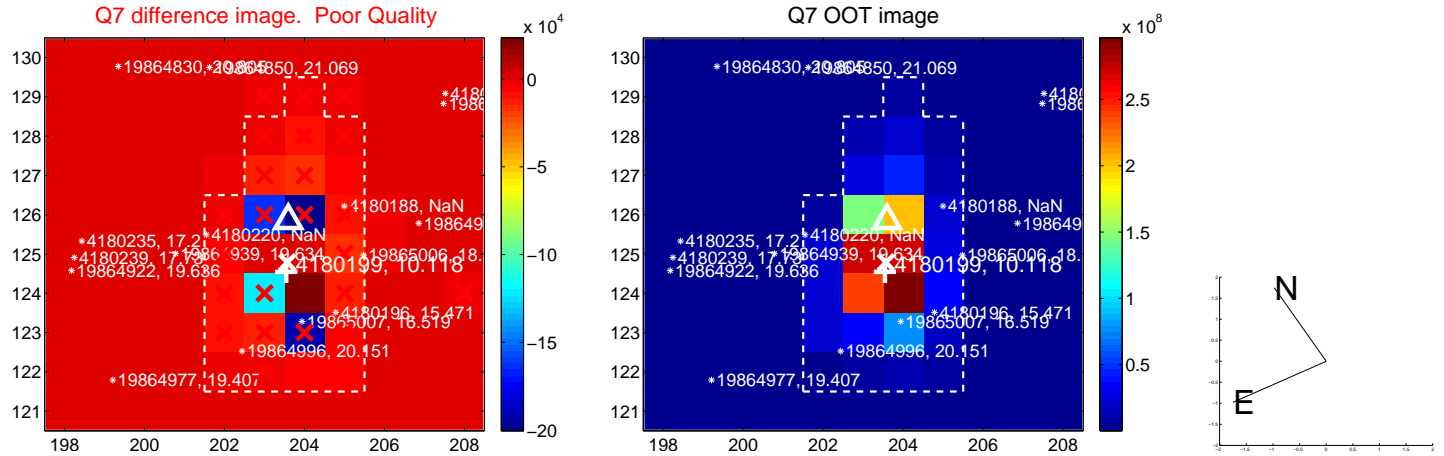
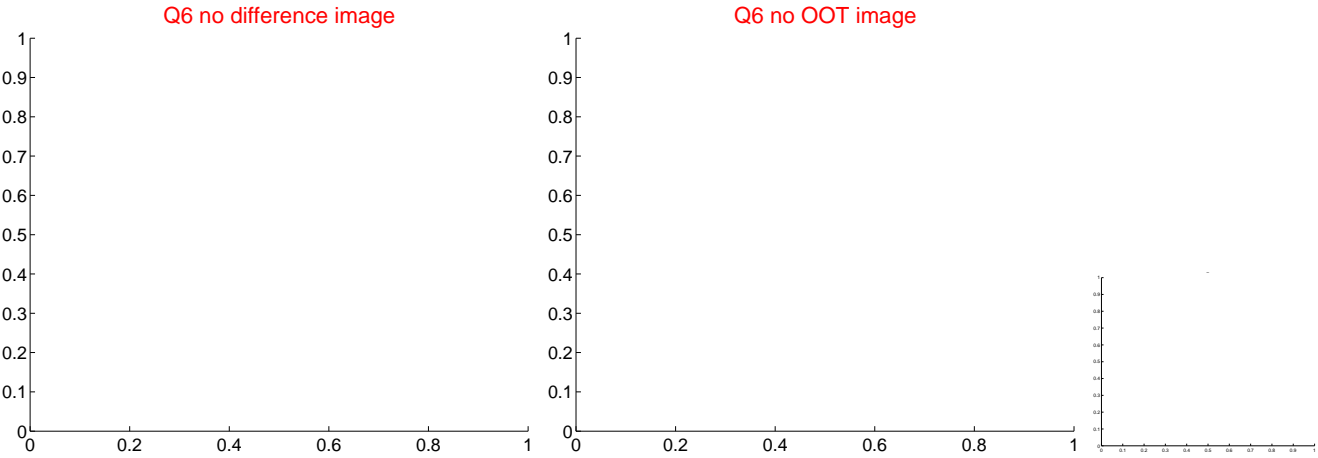
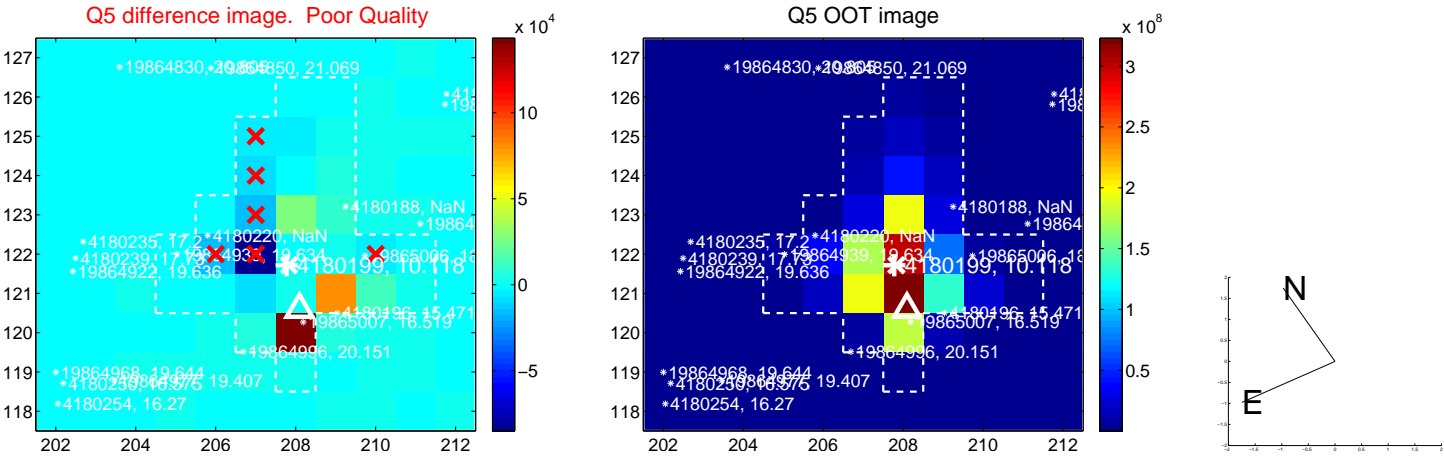


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

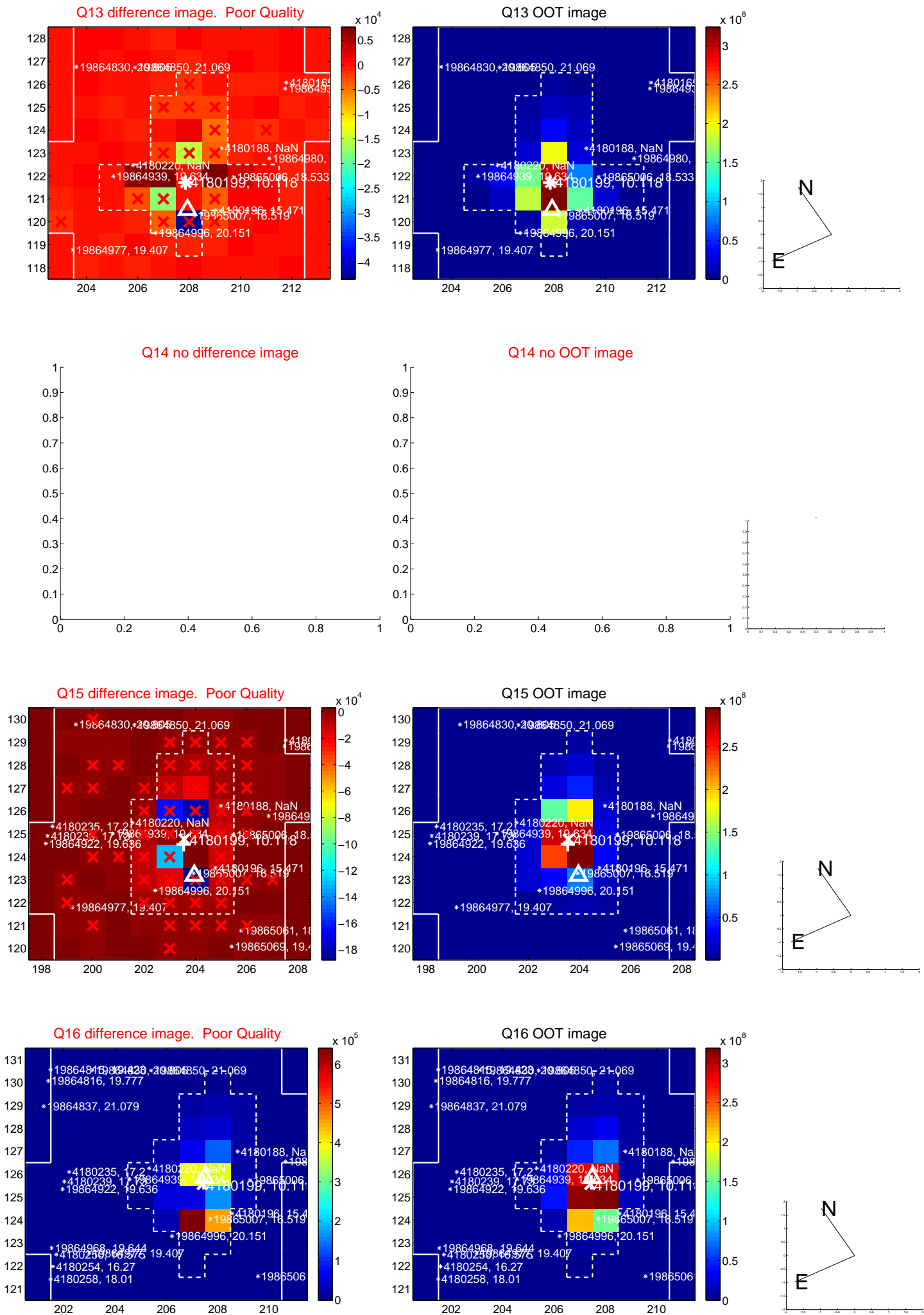
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



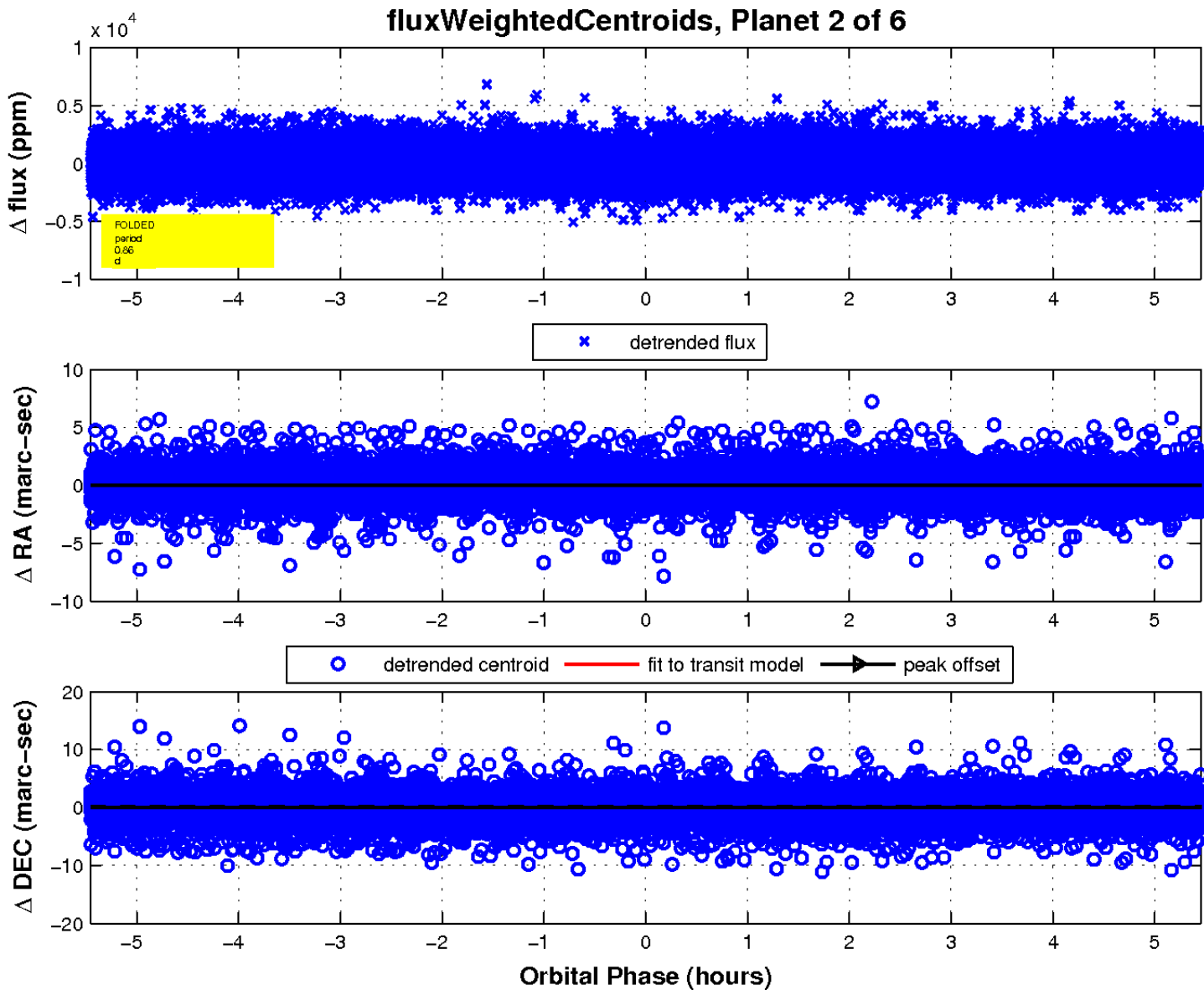
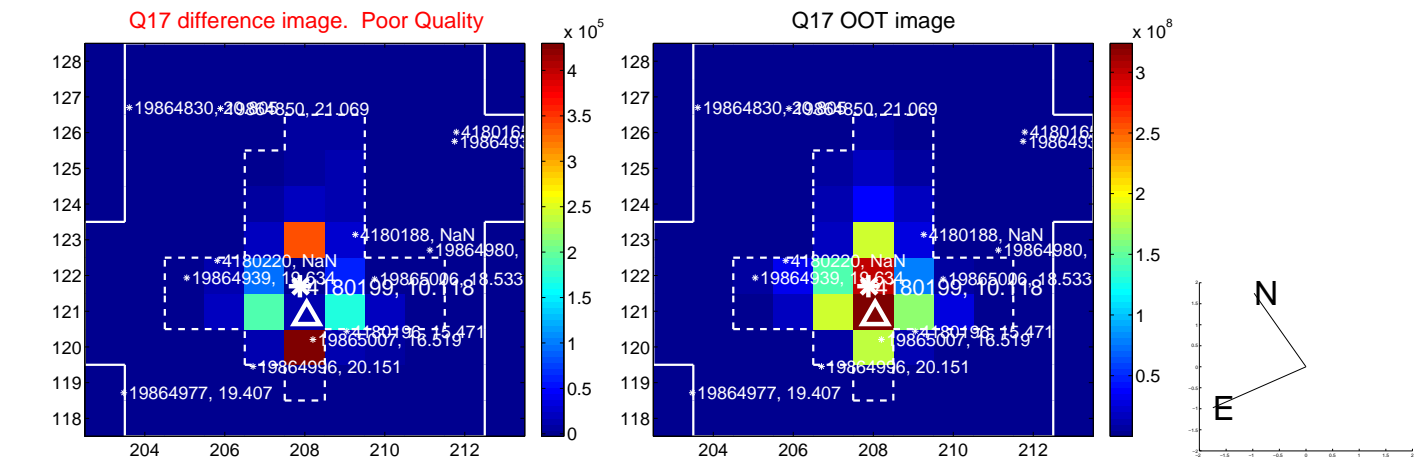
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



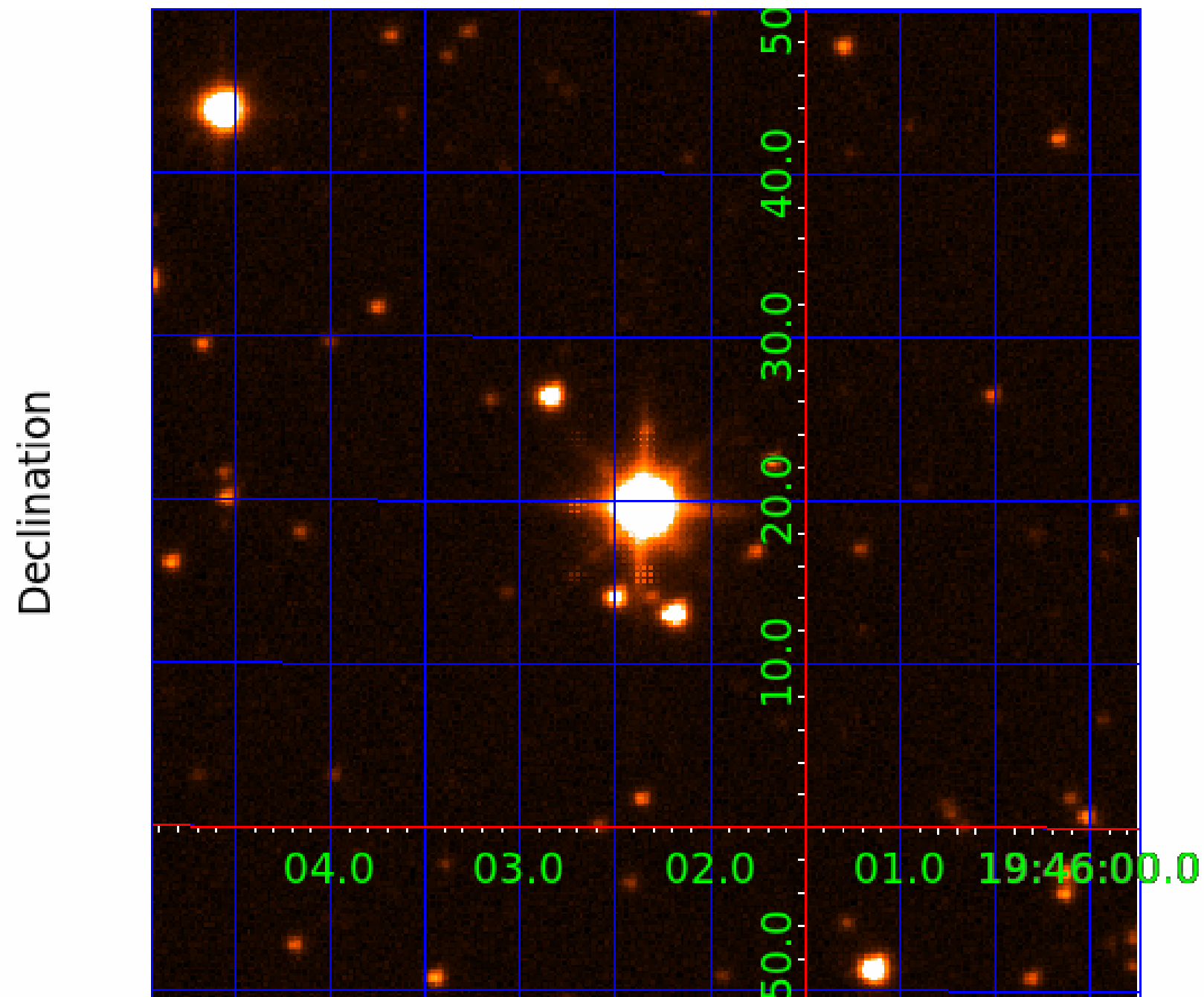
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004180199

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})
004180199-01	OBS	No	0.933515	131.657073	277.7	1.147	10.1	12.1	2.54	7452	4.30	34900.82
004180199-02	OBS	No	0.856419	132.297603	259.9	1.819	9.8	10.1	2.54	7452	4.79	39151.52
004180199-03	OBS	No	0.986639	131.855444	141.2	6.074	9.5	6.2	2.54	7452	3.05	32418.00
004180199-04	OBS	No	39.324892	135.229356	2683.5	1.732	12.4	11.4	2.54	7452	13.38	238.11
004180199-06	OBS	No	19.073041	139.625779	53.8	3.000	9.3	-1.0	2.54	7452	1.89	624.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004180199-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
004180199-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

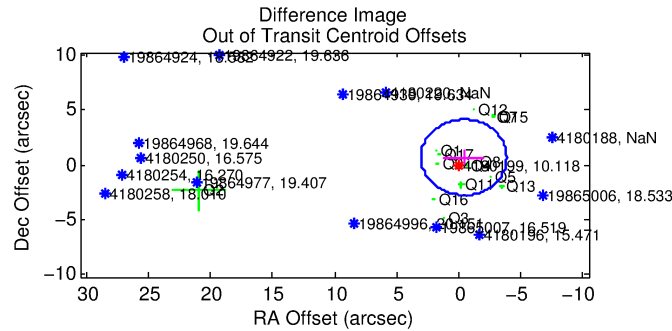
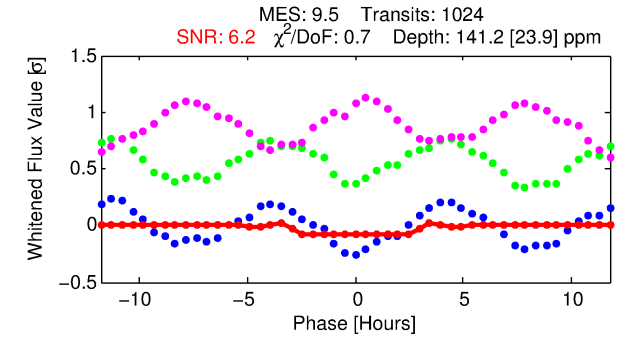
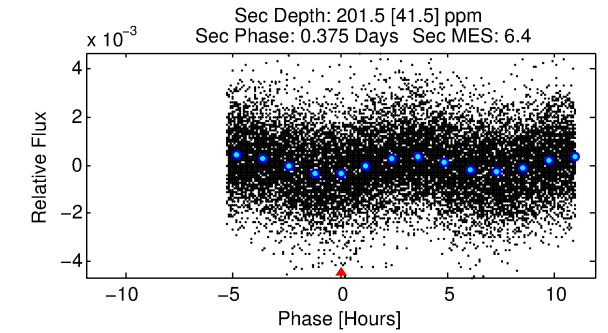
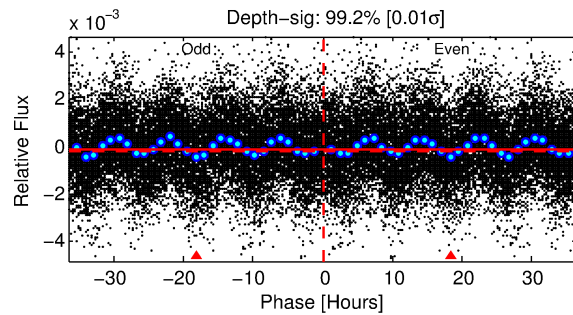
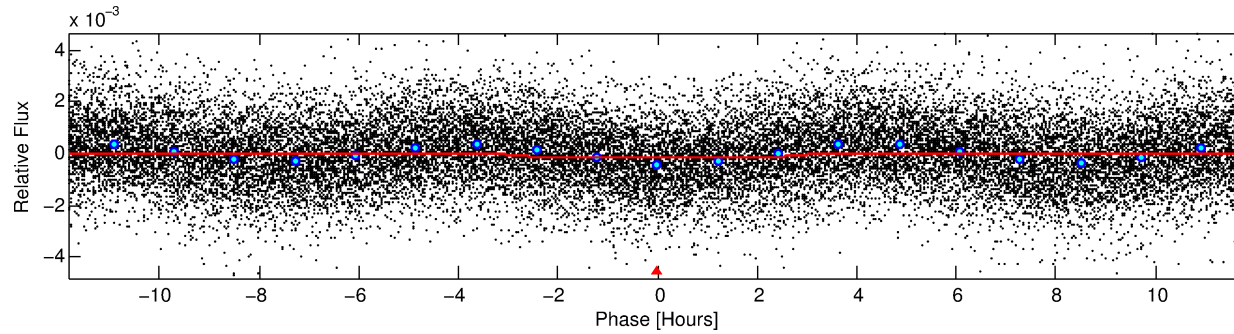
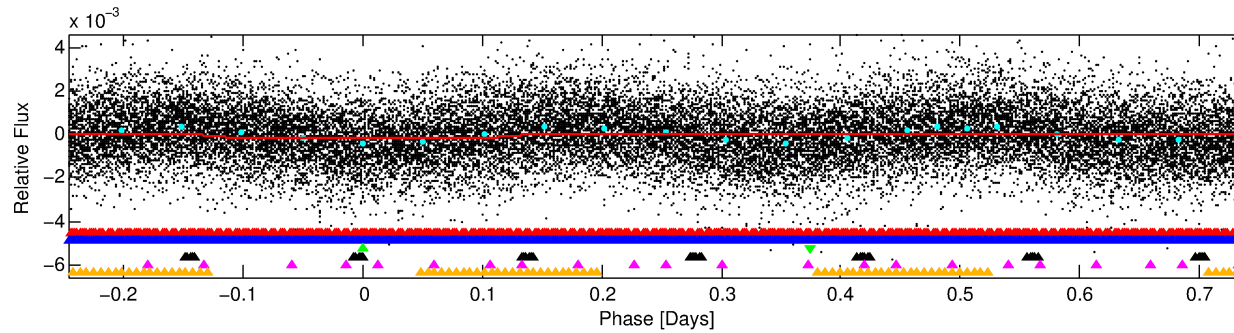
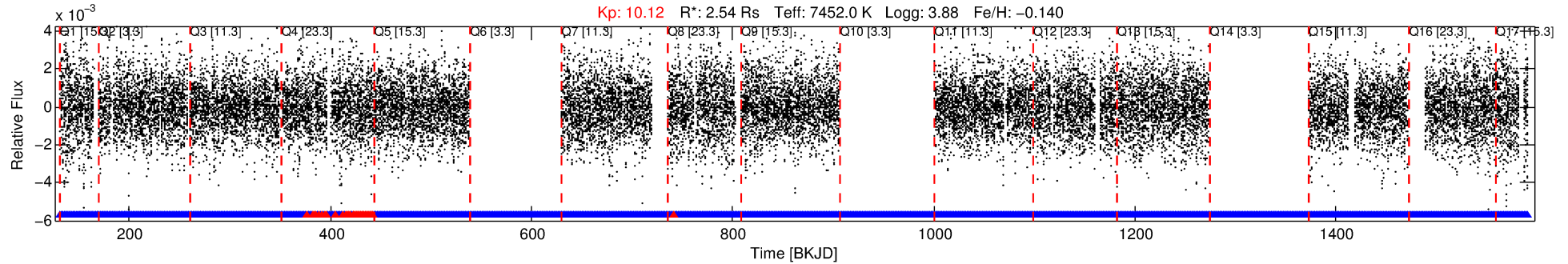
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004180199-03

No Significant Match Found

DV One-Page Summary

KIC: 4180199 Candidate: 3 of 6 Period: 0.987 d



DV Fit Results:

Period = 0.98664 [0.00002] d
Epoch = 131.8554 [0.0049] BKJD
Rp/R* = 0.0110 [0.0155]
a/R* = 1.40 [5.41]
b = 0.12 [67.14]
Seff = 32418.00 [19248.76]
Teq = 3422 [508] K
Rp = 3.05 [4.46] Re
a = 0.0235 [0.0084] AU
Ag = 6.56 [18.97] [0.29 σ]
Teffp = 8468 [6010] K [0.84 σ]

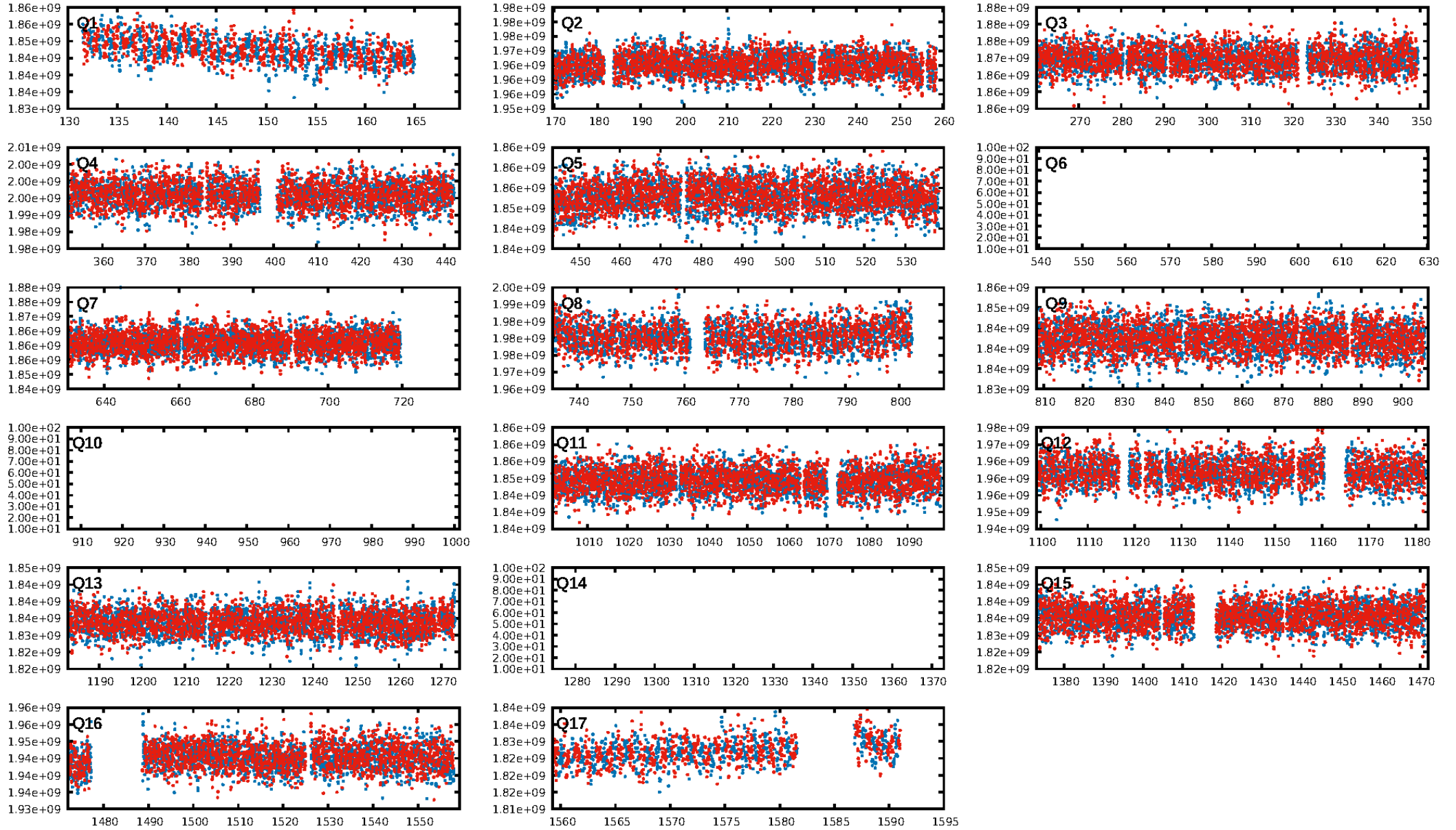
DV Diagnostic Results:

ShortPeriod-sig: 16.3% [0.21 σ]
LongPeriod-sig: 100.0% [64.08 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.96 [927/965]
GhostDiagnostic-chr: N/A
Centroid-sig: 20.6%
Centroid-so: 0.141 arcsec [1.41 σ]
OotOffset-rm: 0.788 arcsec [0.68 σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-rm: 0.928 arcsec [0.87 σ]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.21 [3/14]
DiffImageOverlap-fno: 0.00 [0/14]

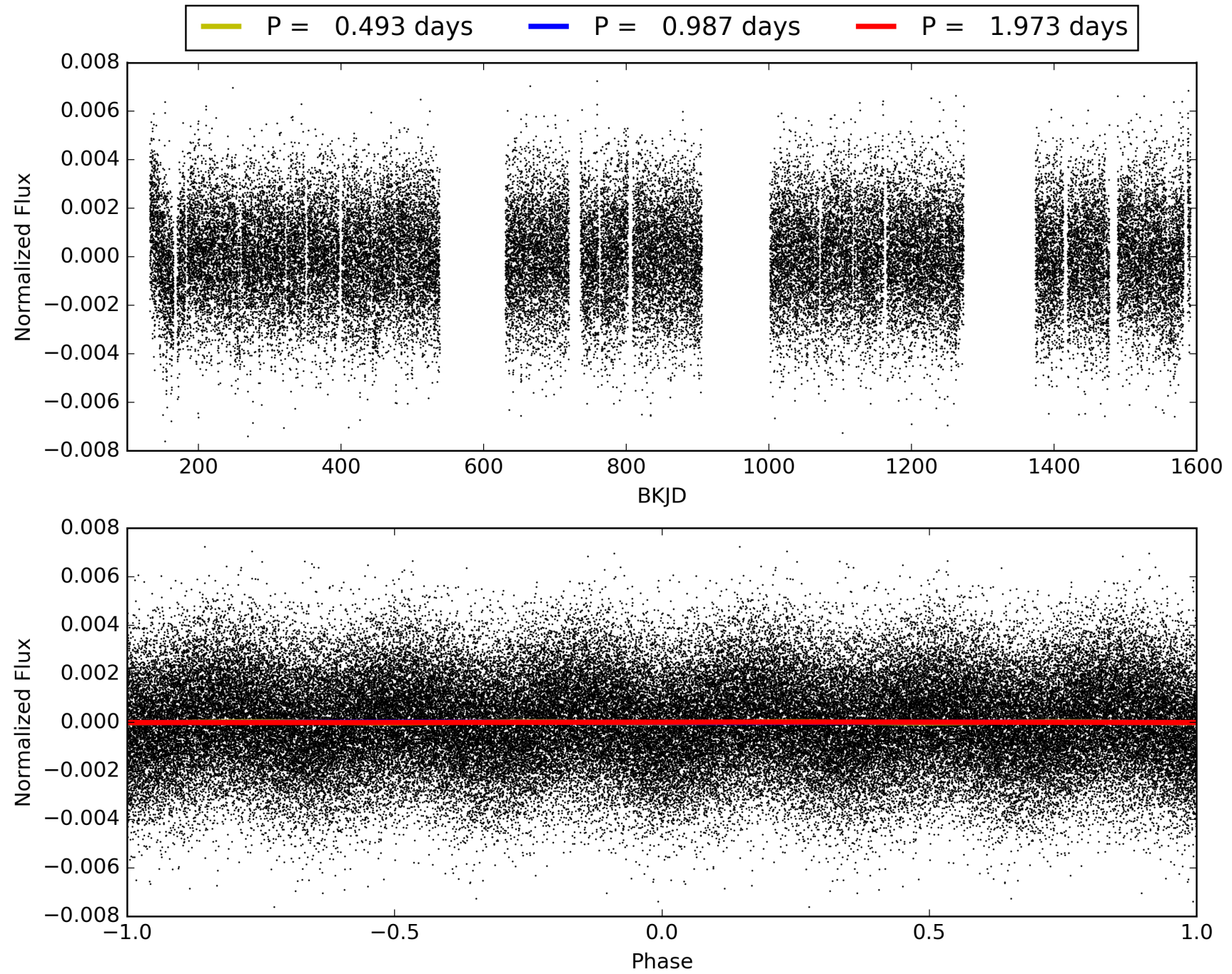
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:02:27 Z

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

TCE 004180199-03, PDC Light Curves

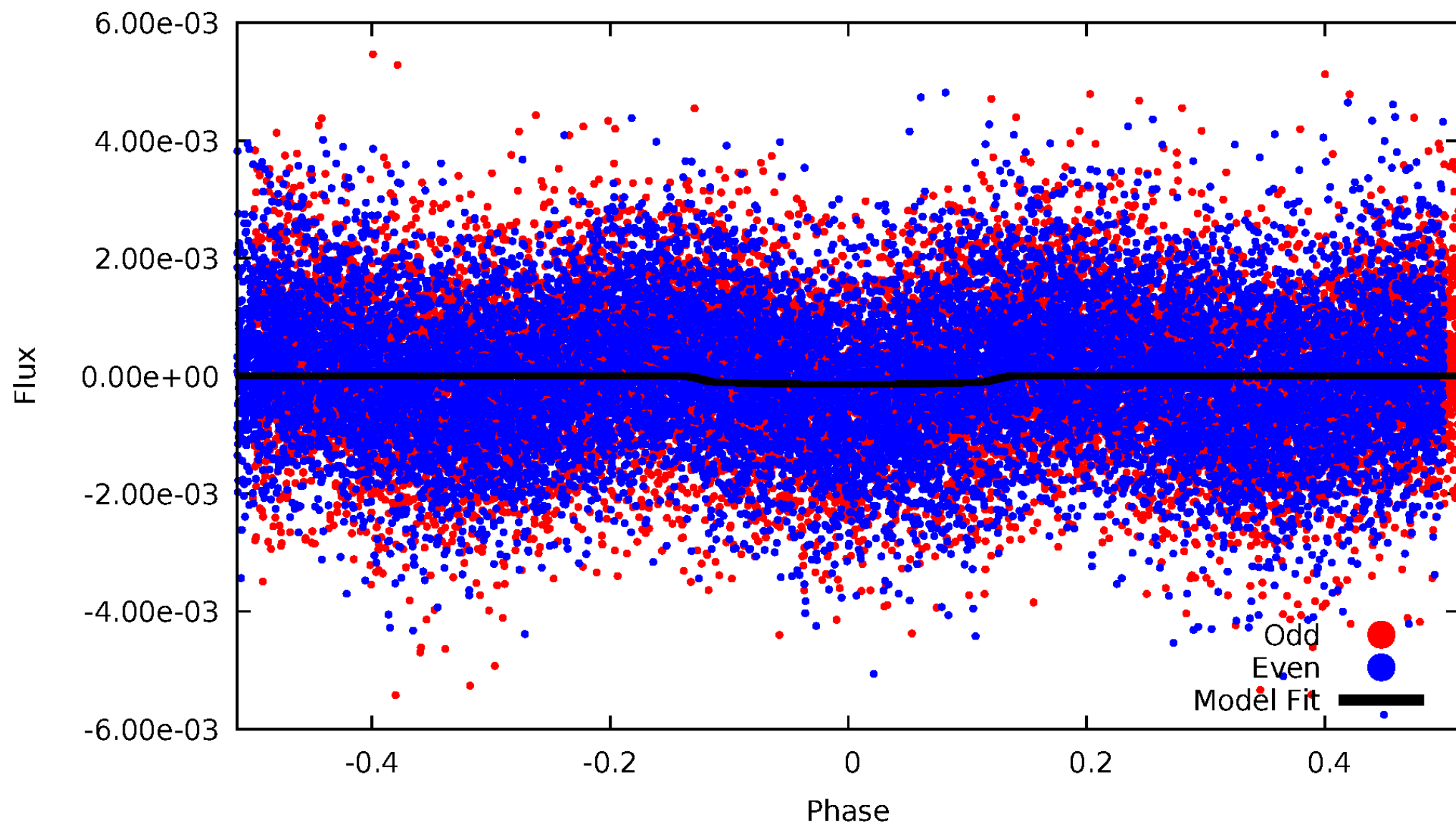


TCE 004180199-03



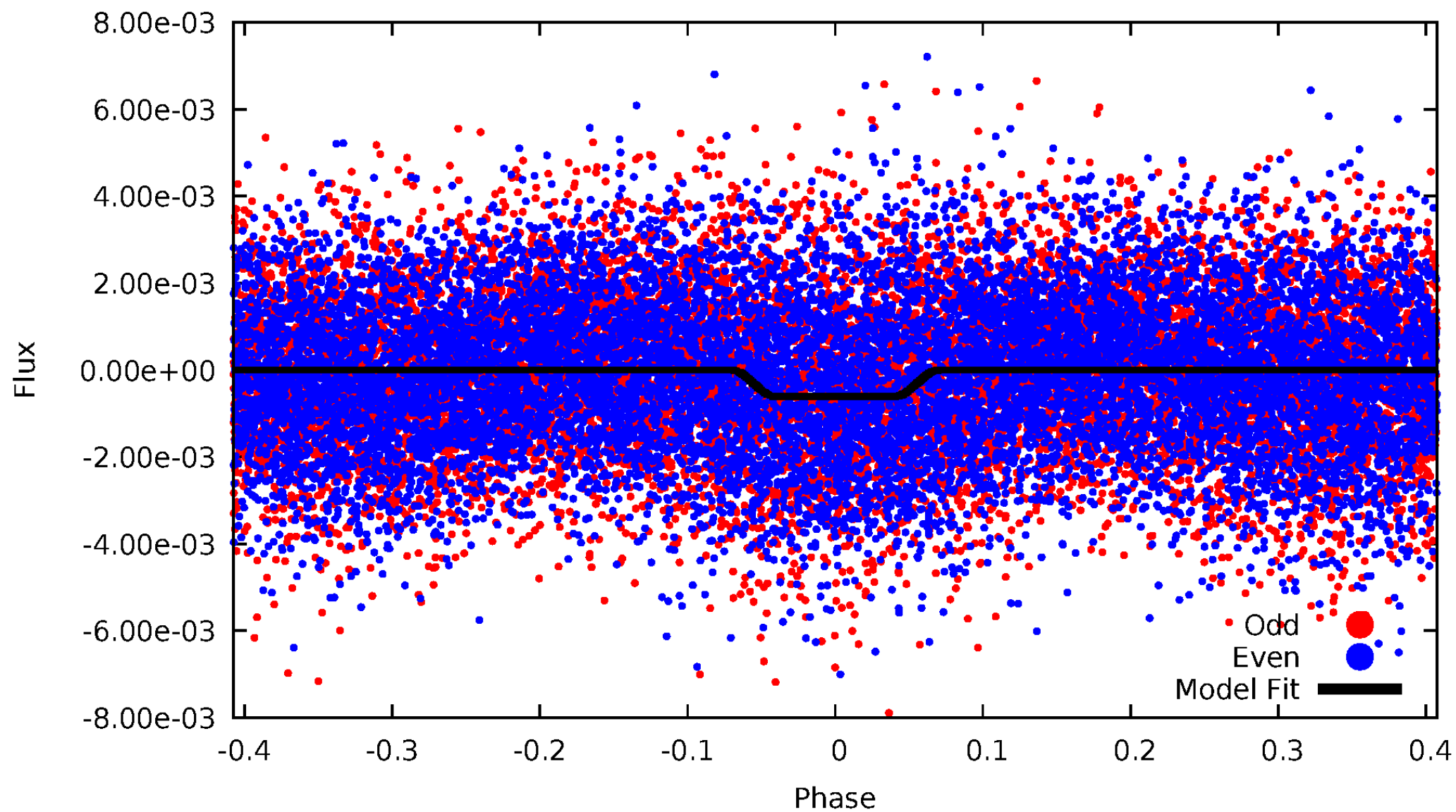
DV Odd/Even

TCE 004180199-03

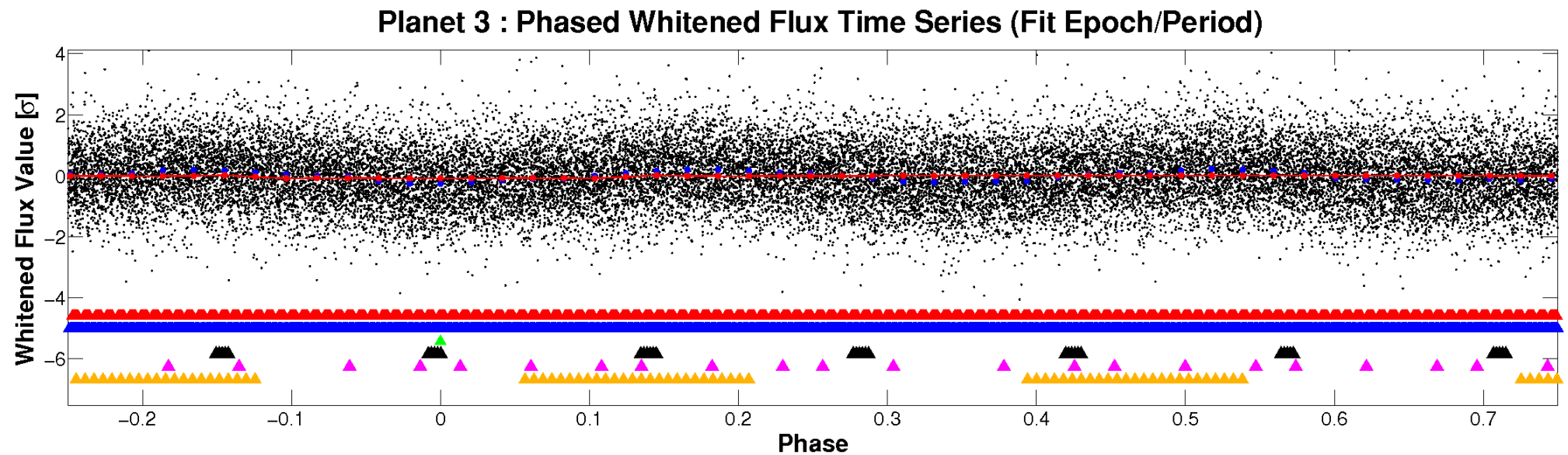
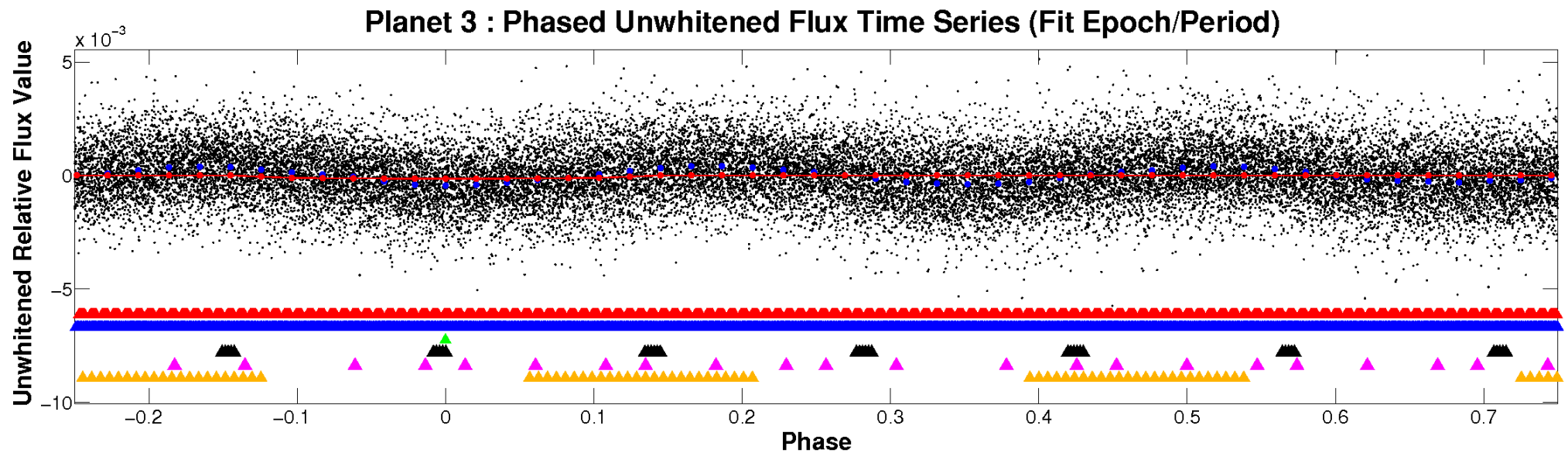


ALT Odd/Even

TCE 004180199-03

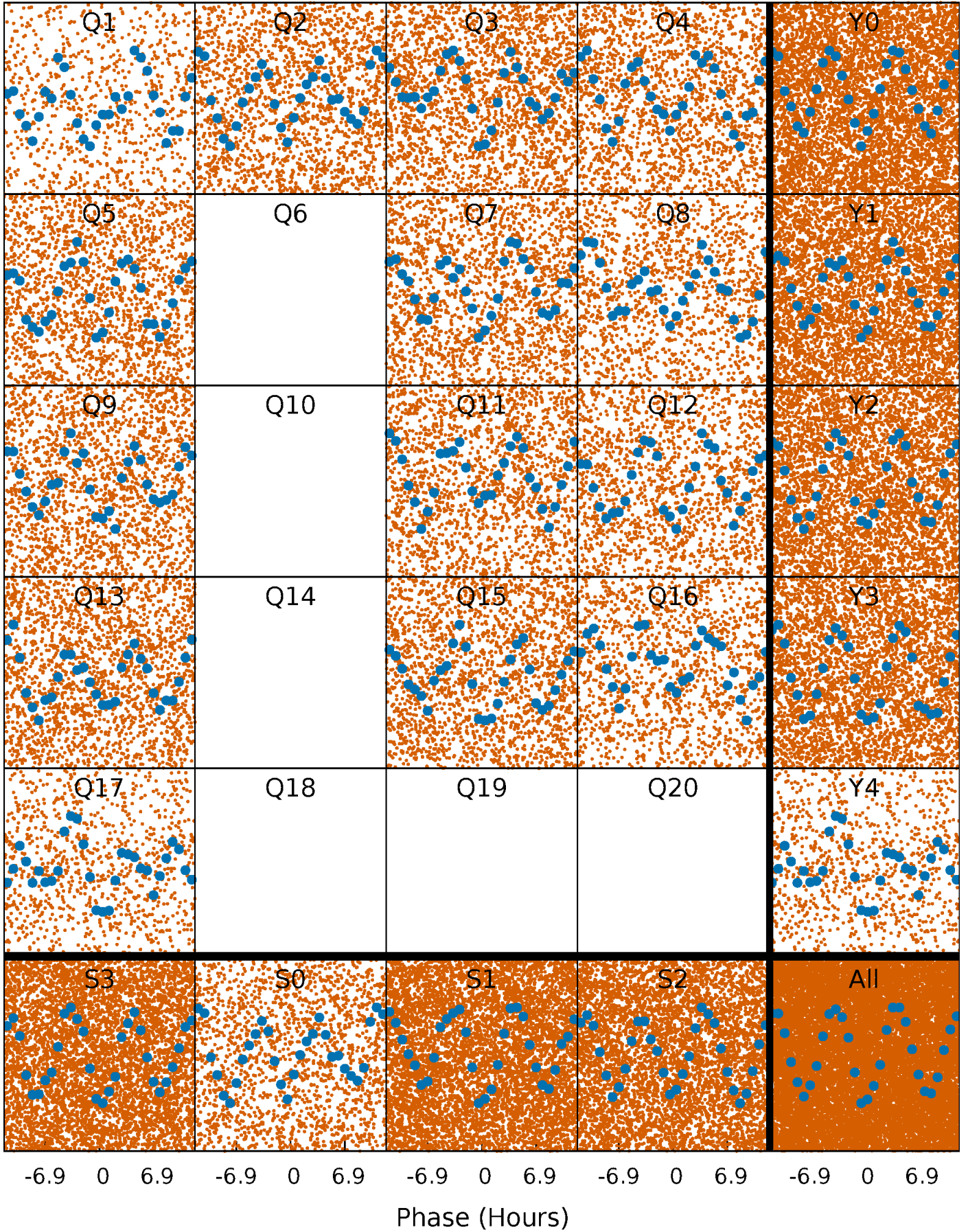


Non-Whitened Vs. Whitened Light Curve



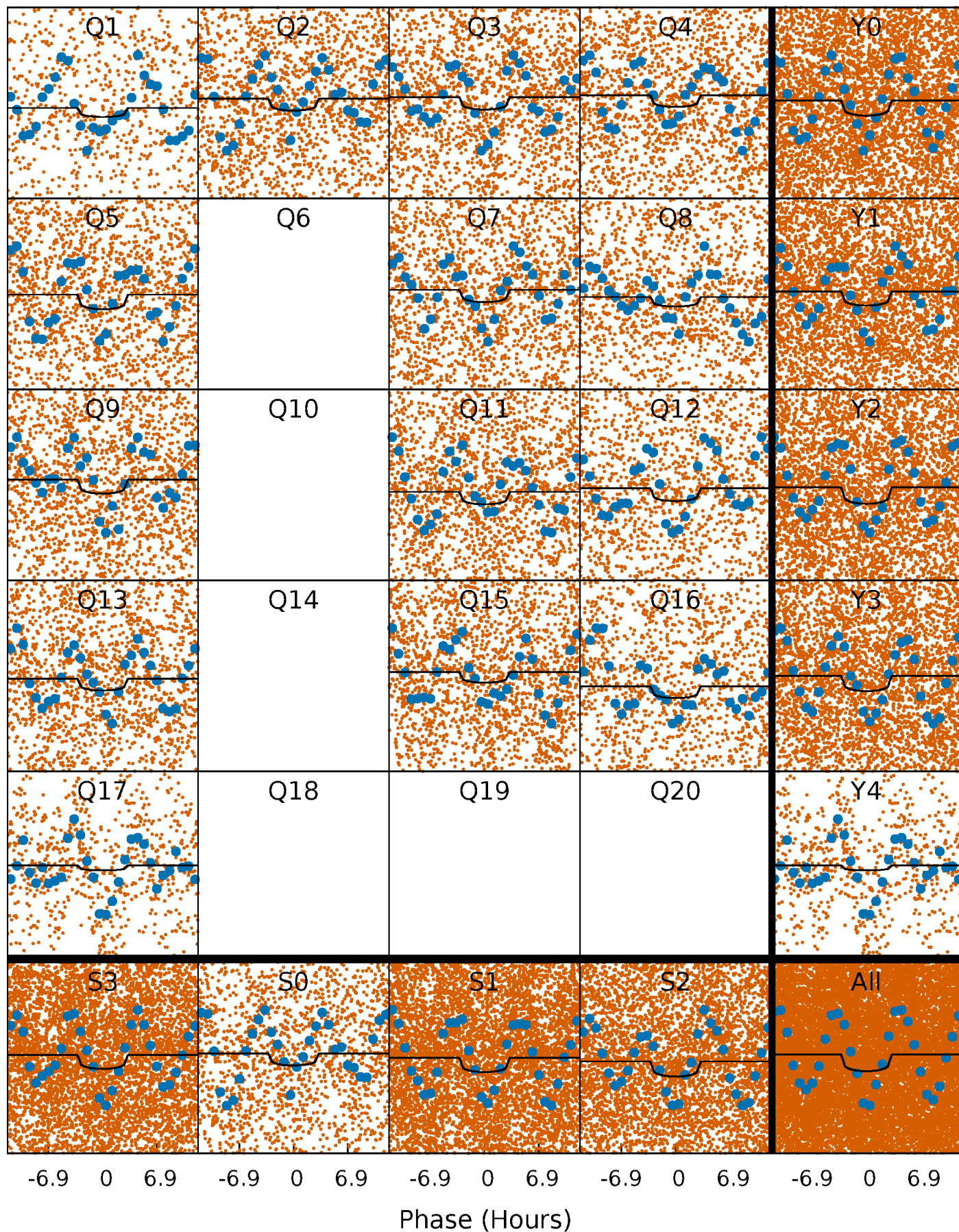
PDC Quarter-Phased Transit Curves

TCE 004180199-03 P= 0.986639 Days $T_0=131.855444$ (BKJD)



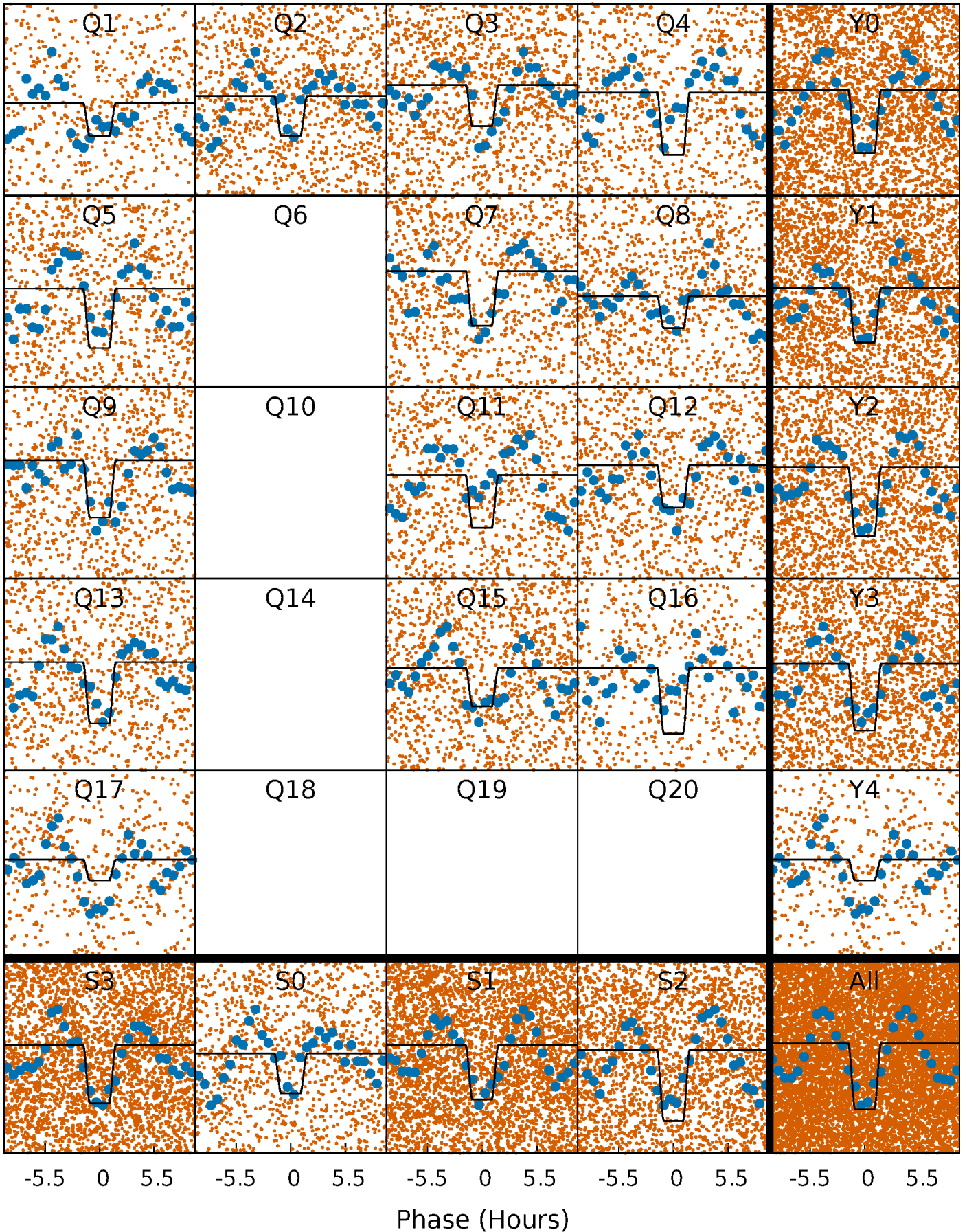
DV Quarter-Phased Transit Curves

TCE 004180199-03 P= 0.986639 Days $T_0=131.855444$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

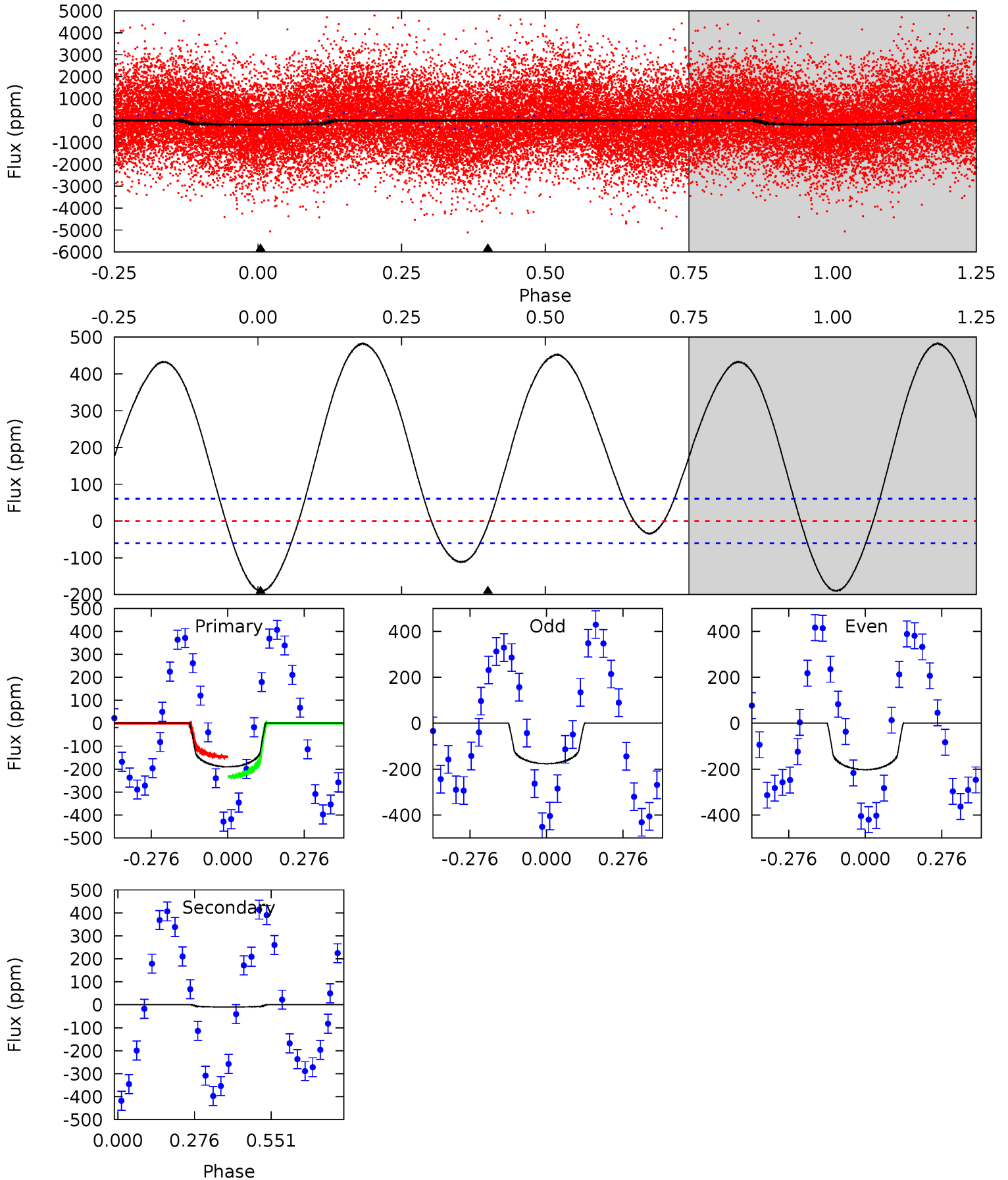
TCE 004180199-03 P= 0.986670 Days $T_0=131.843900$ (BKJD)



DV Model-Shift Uniqueness Test

004180199-03, P = 0.986639 Days, E = 130.868805 Days

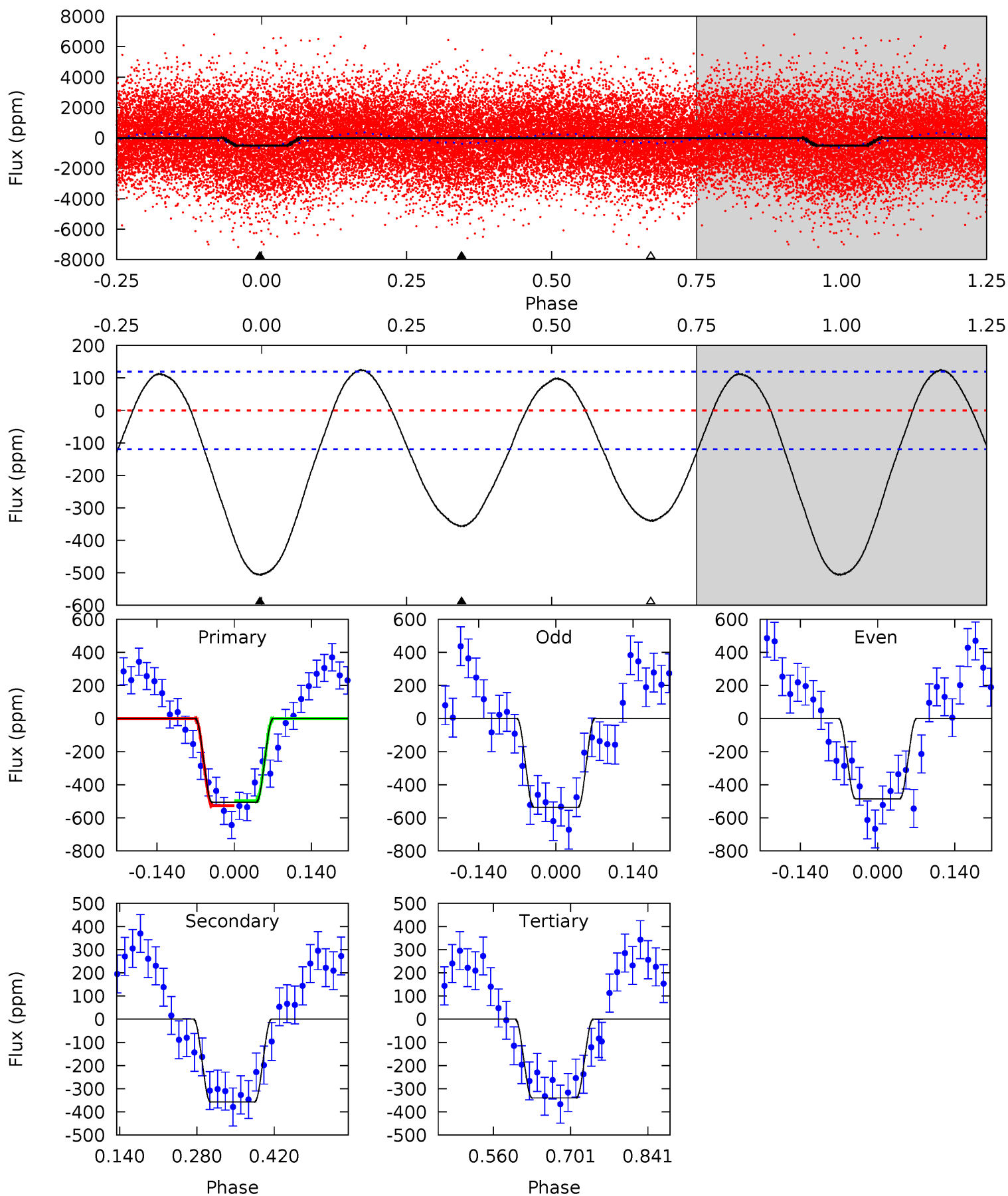
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	0.72	0	0	4.35	1.09	4.81	13.7	13.7	0.72	0.72	0.94	0.61	0.72	3.25



Alt Model-Shift Uniqueness Test

004180199-03, P = 0.986670 Days, E = 130.857230 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.0	13.4	12.8	0	4.49	1.48	6.30	6.24	19.0	0.63	13.4	0.93	0.86	0.20	0.56



Stellar Parameters For KIC 004180199

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7452^{+206}_{-336}	$3.876^{+0.330}_{-0.110}$	$-0.140^{+0.250}_{-0.350}$	$2.544^{+0.517}_{-0.961}$	$1.774^{+0.173}_{-0.403}$	$0.152^{+0.376}_{-0.052}$
	+3%/-5%	+9%/-3%	+179%/-250%	+20%/-38%	+10%/-23%	+248%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004180199-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-10 ± 14	$4.06^{+3.36}_{-2.68}$	4666^{+327}_{-474}	-3568^{+8828}_{-689}	$0.128^{+1.469}_{-0.181}$
Alt.	-357 ± 27	$6.68^{+4.35}_{-3.52}$	4660^{+334}_{-487}	5972^{+3670}_{-1399}	$2.393^{+8.069}_{-1.501}$

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

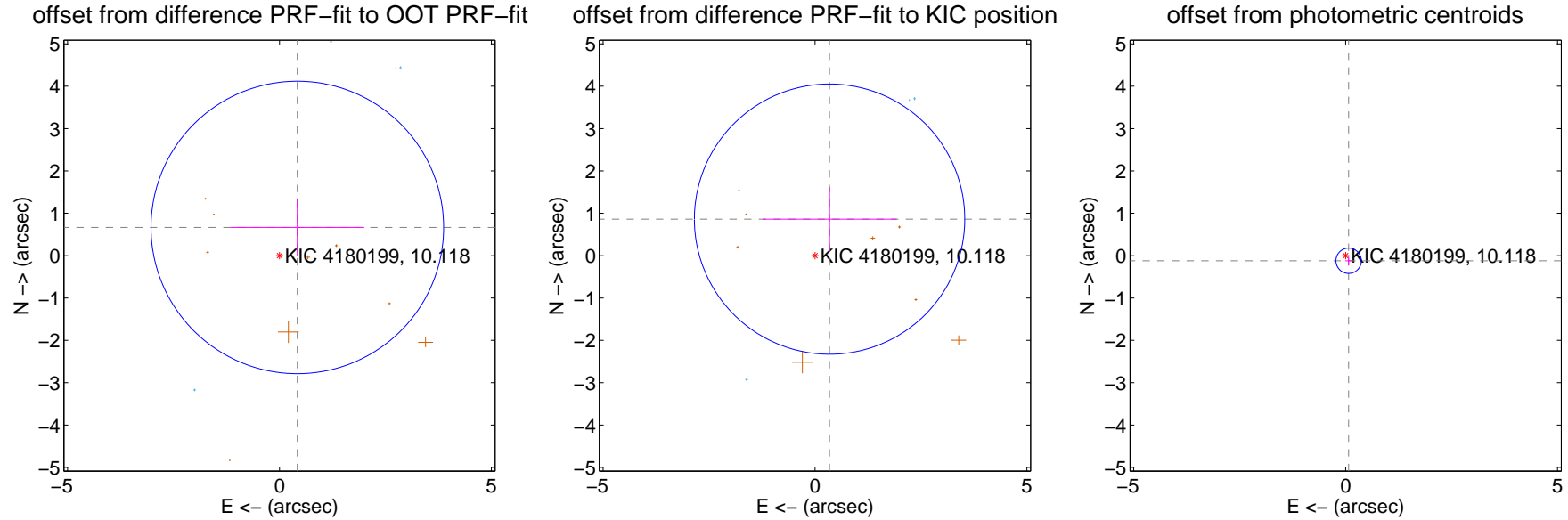
DV Centroid Data

Supplemental centroid analysis for 004180199-03. **Kepler magnitude: 10.12.** Transit SNR 6.17

There are 3 quarters with good PRF difference image offsets

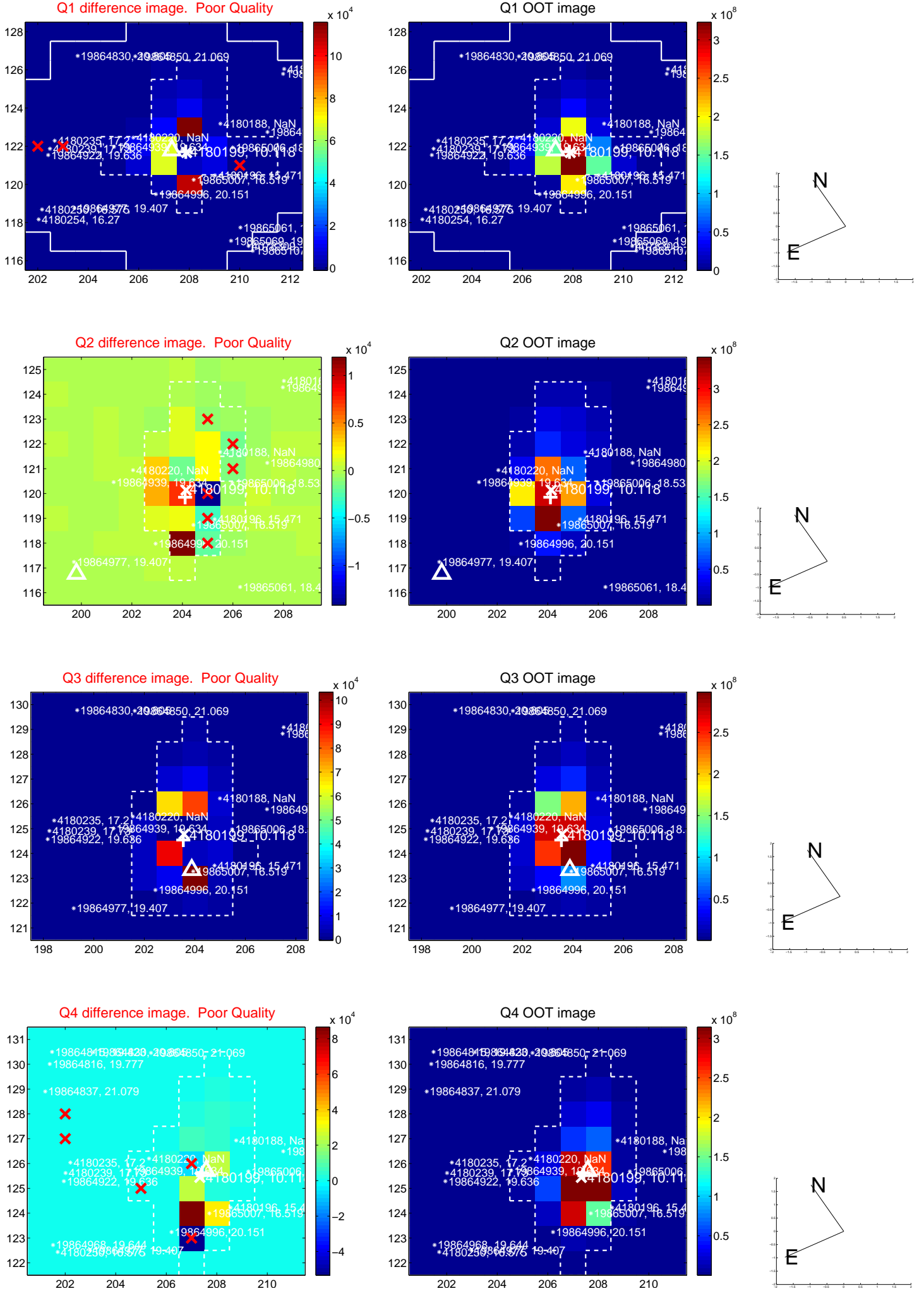
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.788 ± 1.151	0.68	-0.421 ± 1.579	0.666 ± 0.685
PRF-fit source offset from KIC position	0.928 ± 1.063	0.87	-0.344 ± 1.582	0.862 ± 0.752
photometric centroid source offset	0.14 ± 0.10	1.41	-0.07 ± 0.08	-0.12 ± 0.11

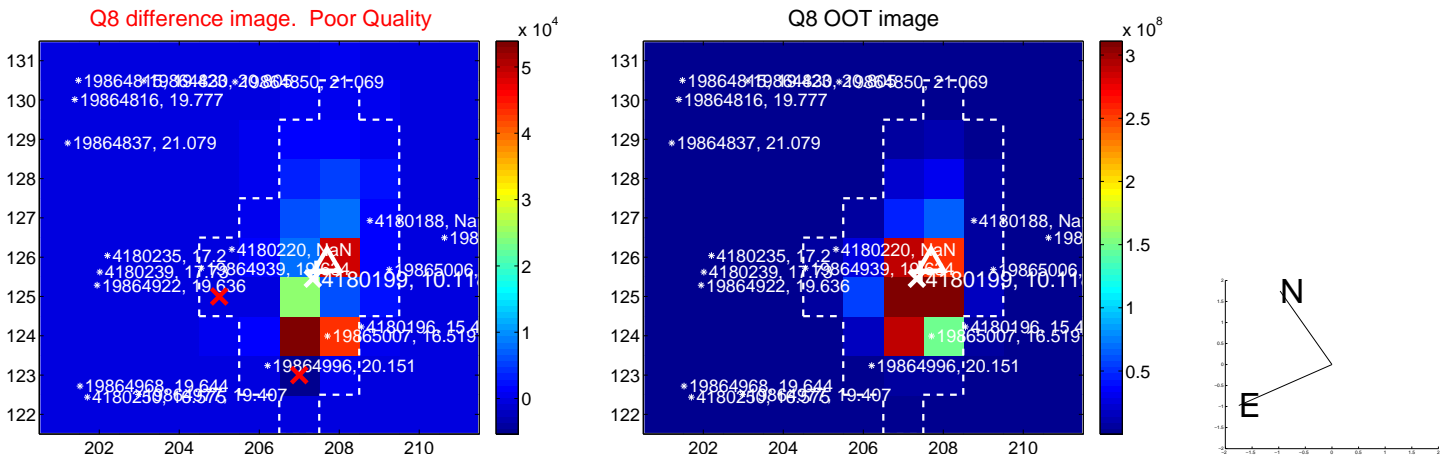
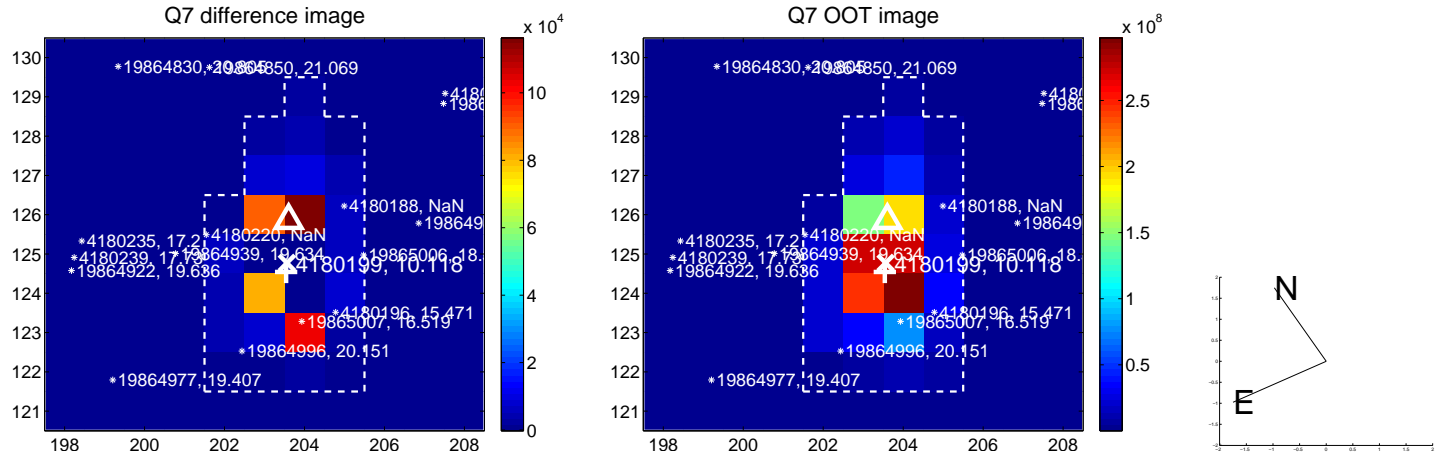
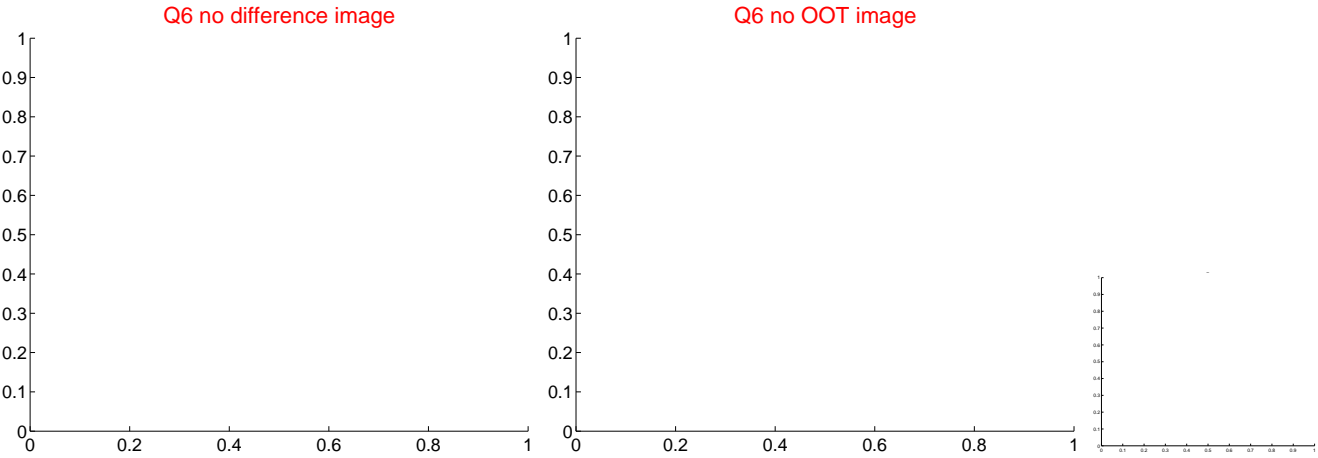
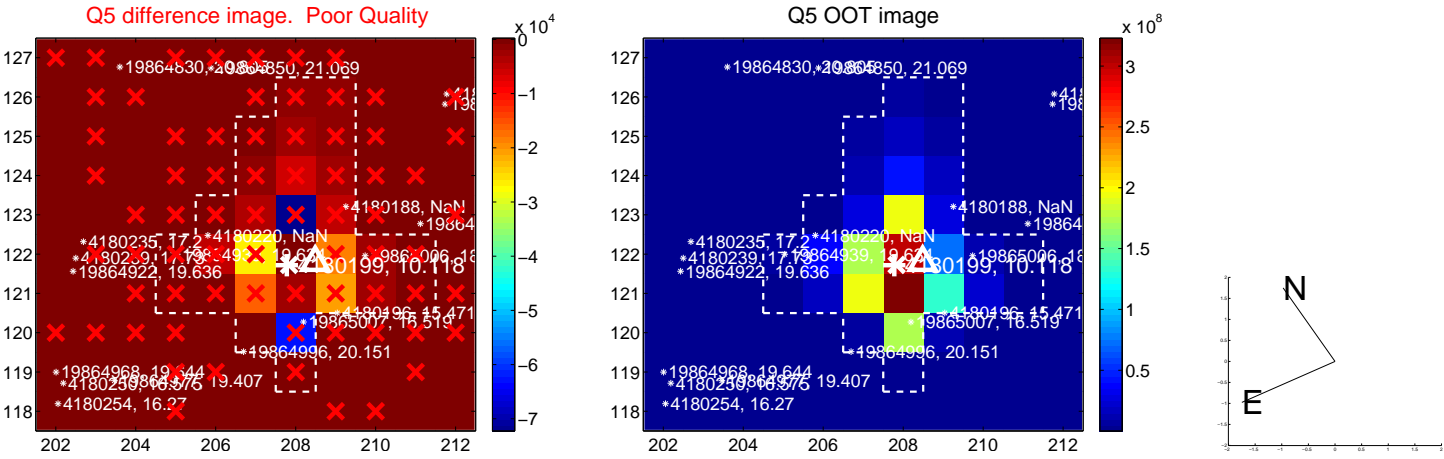


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

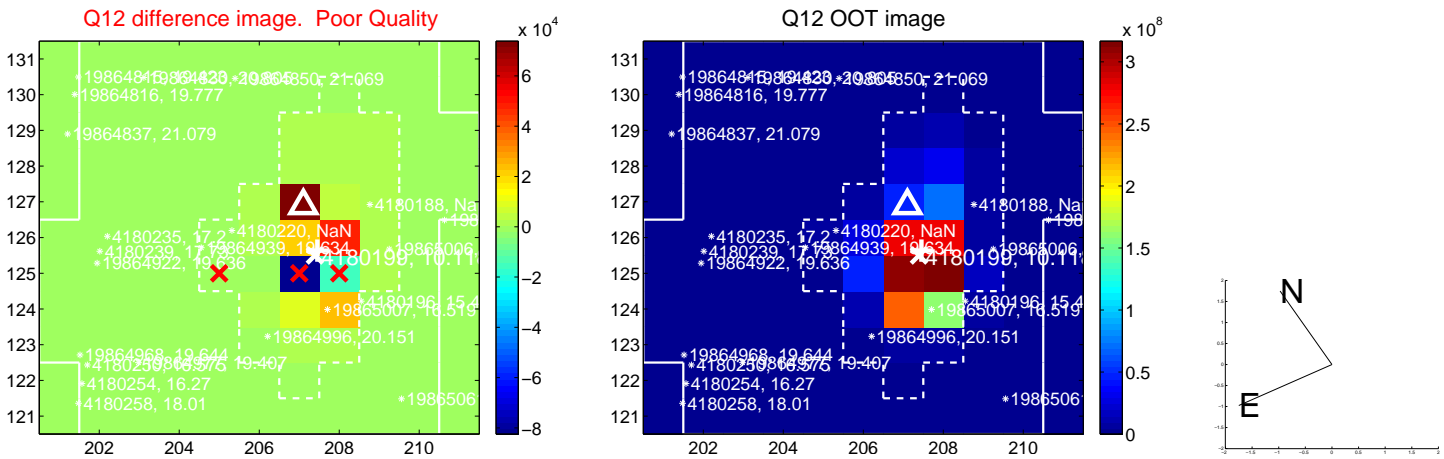
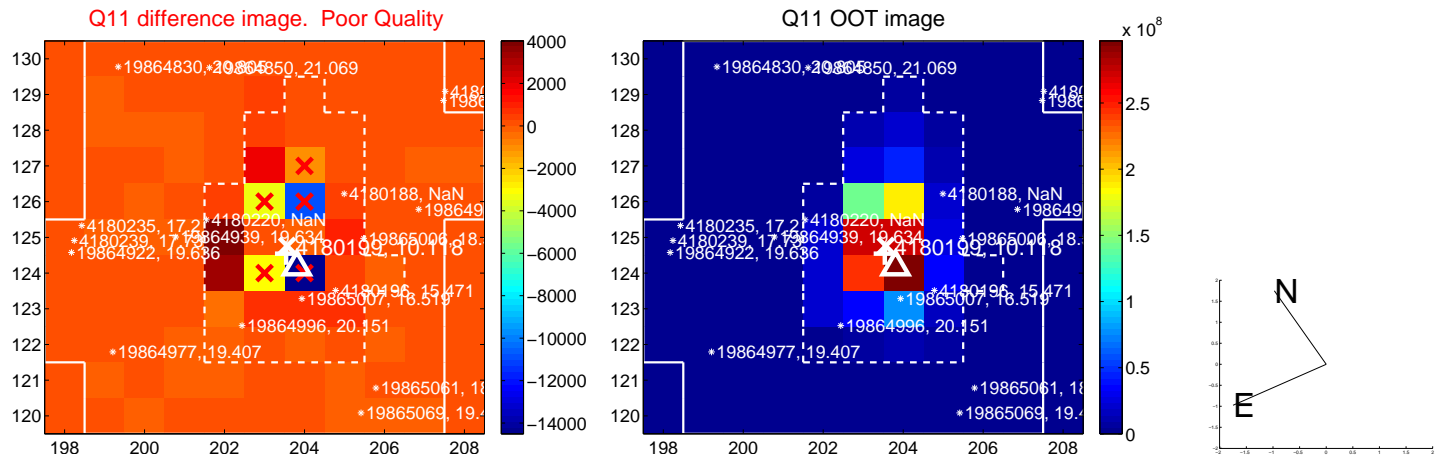
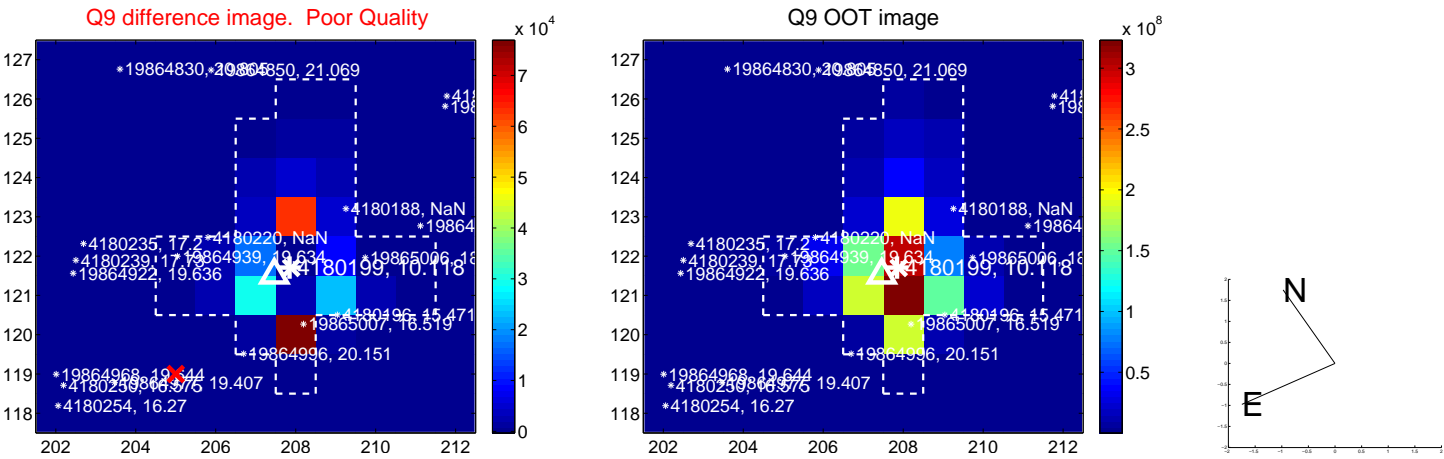
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



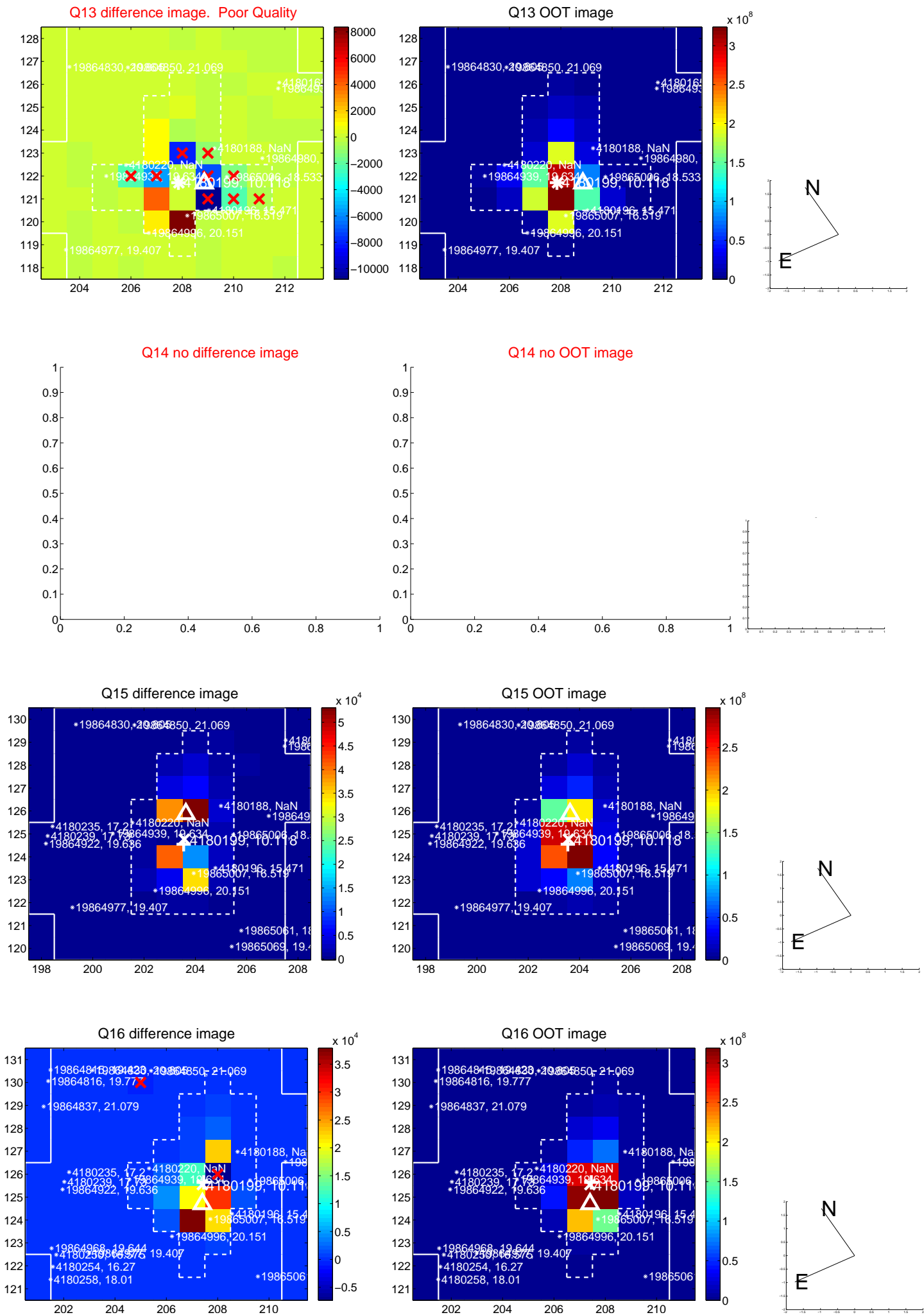
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



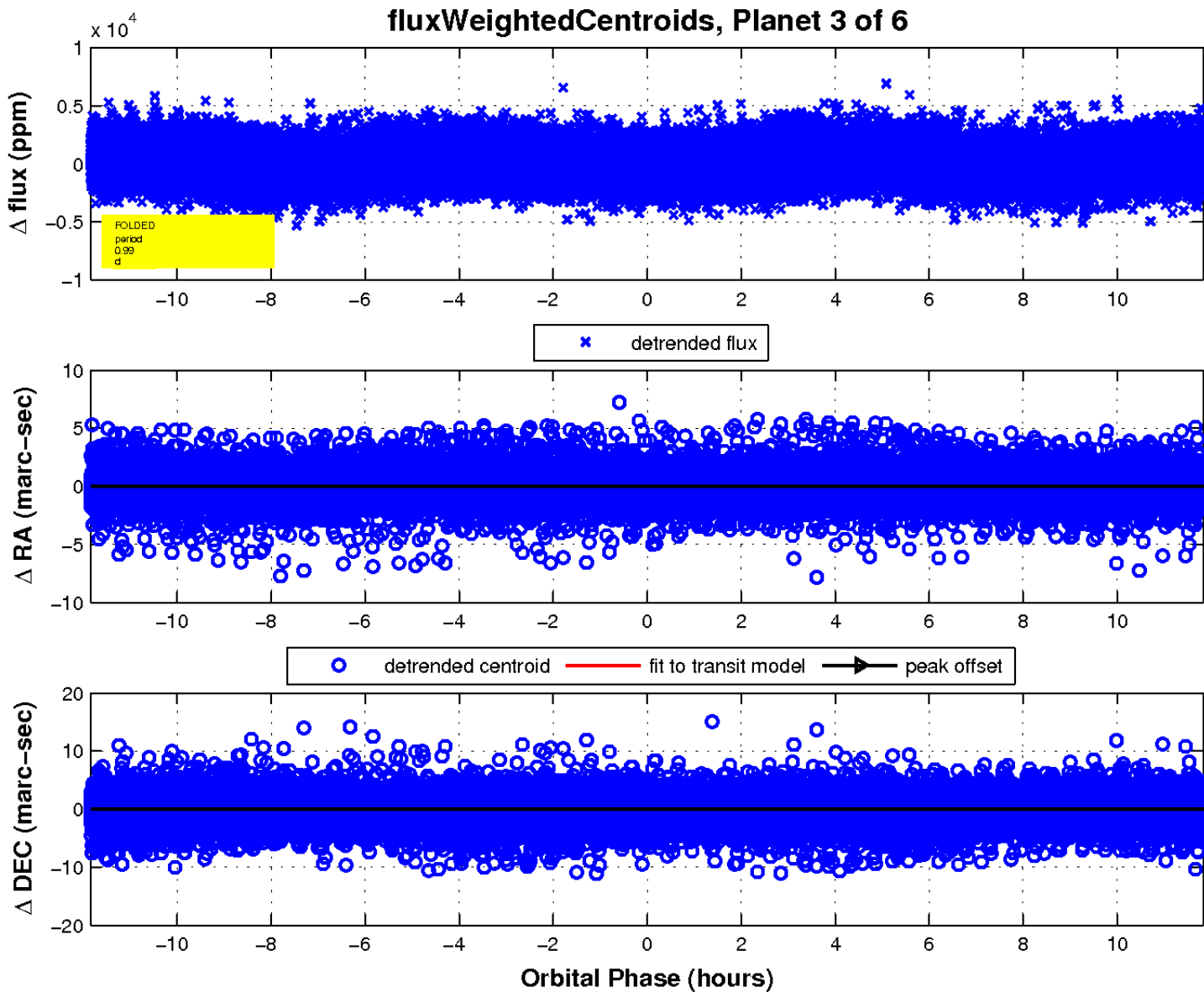
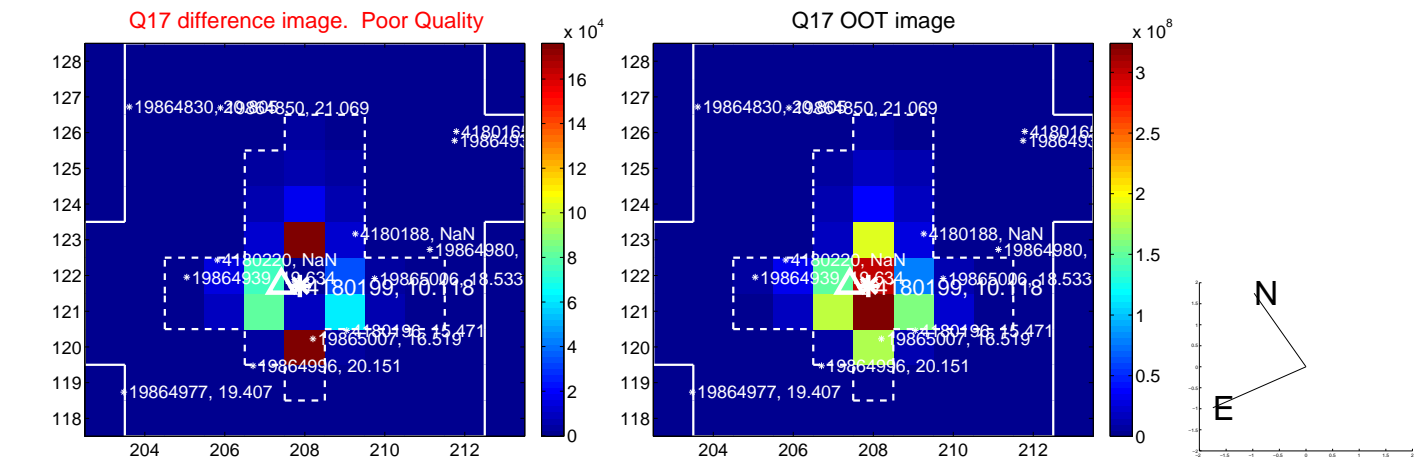
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



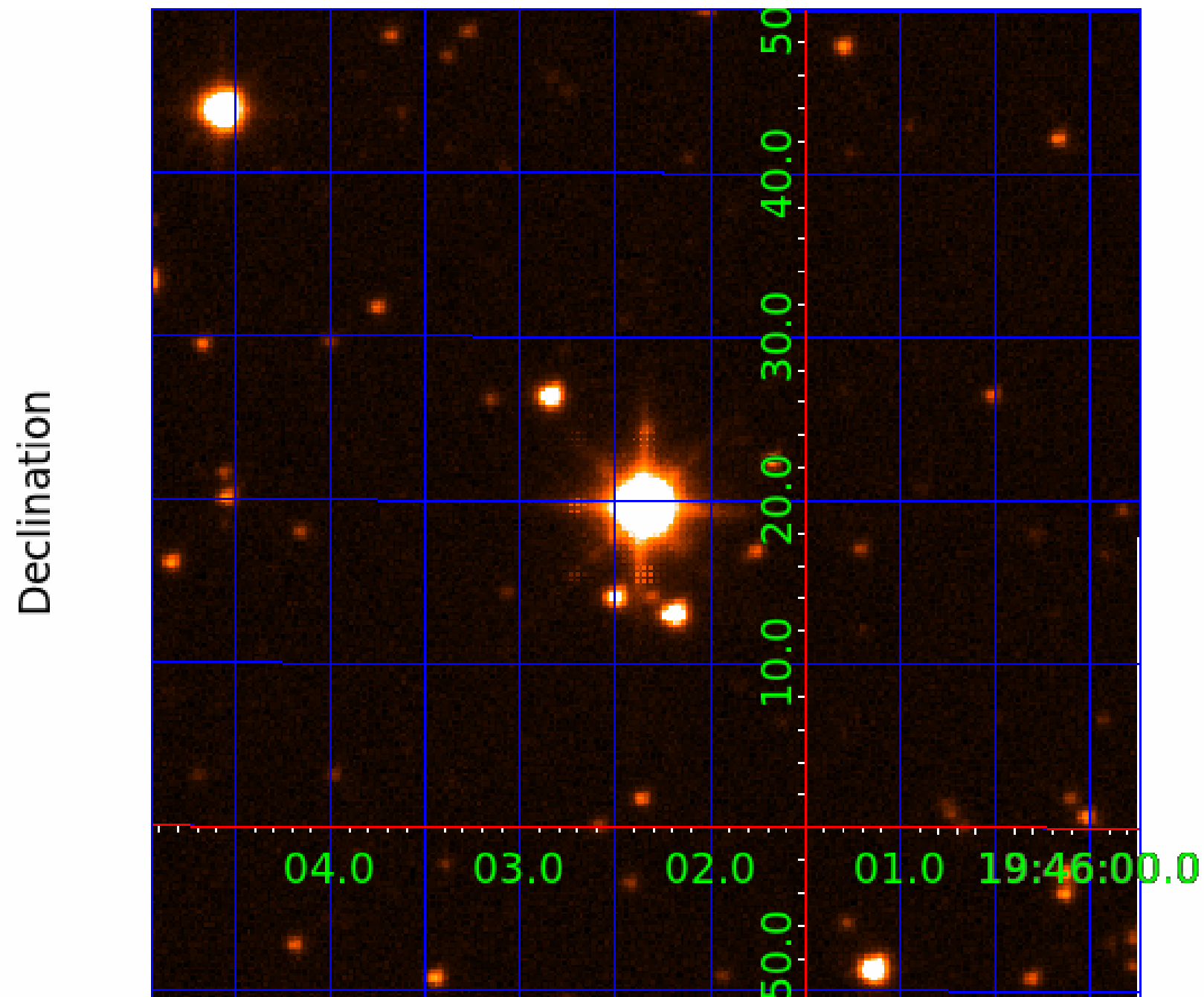
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image



KIC 004180199

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})
004180199-01	OBS	No	0.933515	131.657073	277.7	1.147	10.1	12.1	2.54	7452	4.30	34900.82
004180199-02	OBS	No	0.856419	132.297603	259.9	1.819	9.8	10.1	2.54	7452	4.79	39151.52
004180199-03	OBS	No	0.986639	131.855444	141.2	6.074	9.5	6.2	2.54	7452	3.05	32418.00
004180199-04	OBS	No	39.324892	135.229356	2683.5	1.732	12.4	11.4	2.54	7452	13.38	238.11
004180199-06	OBS	No	19.073041	139.625779	53.8	3.000	9.3	-1.0	2.54	7452	1.89	624.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004180199-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
004180199-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

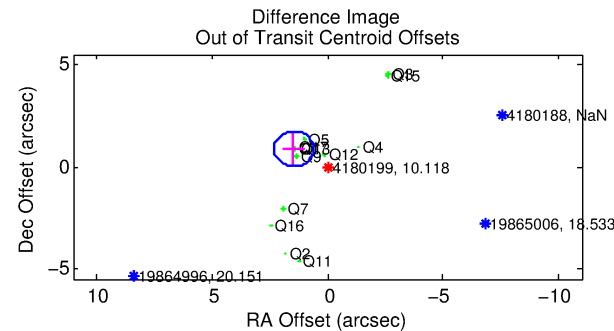
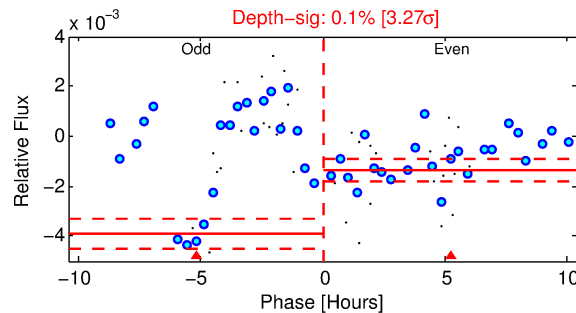
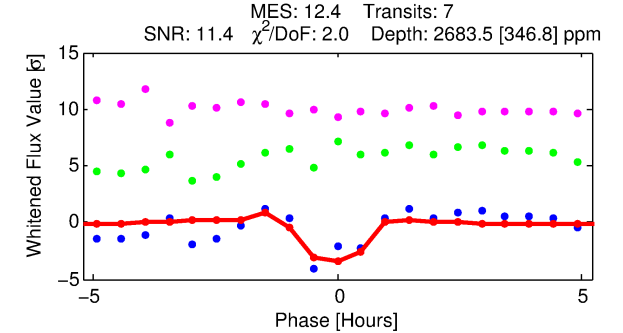
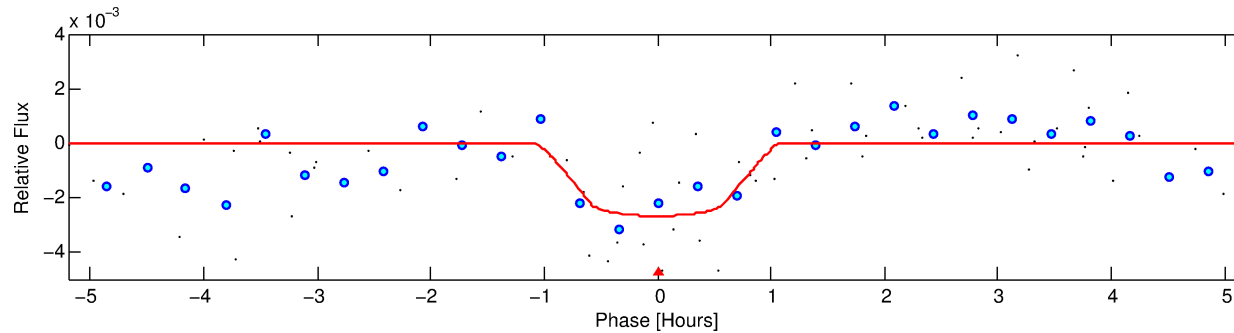
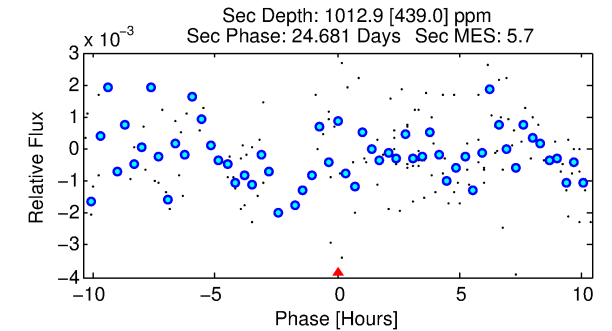
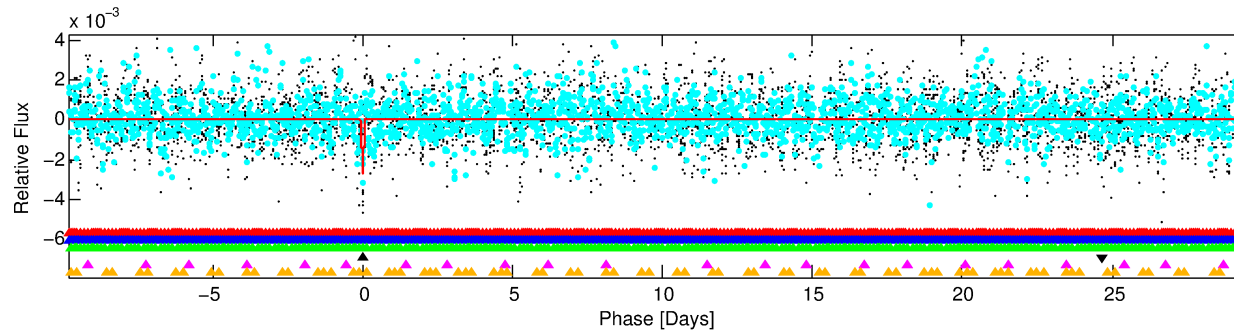
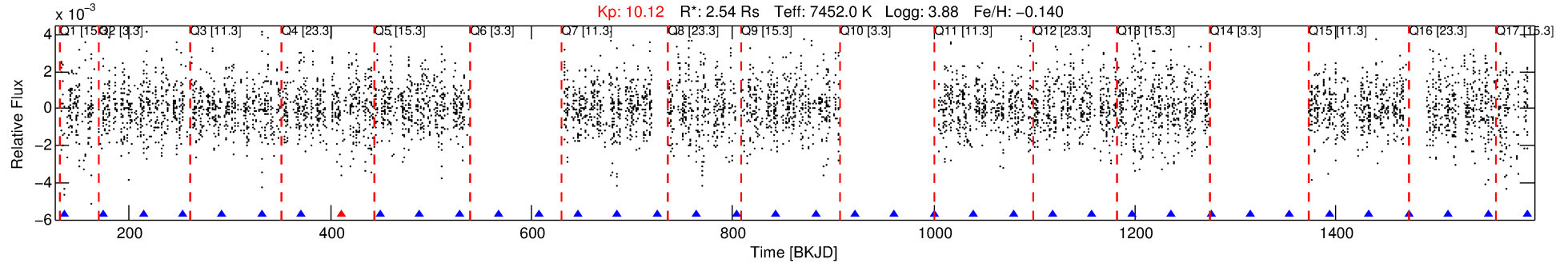
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004180199-04

No Significant Match Found

DV One-Page Summary

KIC: 4180199 Candidate: 4 of 6 Period: 39.325 d



DV Fit Results:

Period = 39.32489 [0.00029] d
Epoch = 135.2294 [0.0081] BKJD
Rp/R* = 0.0482 [0.2054]
a/R* = 178.21 [4216.24]
b = 0.21 [110.30]
Seff = 238.11 [141.38]
Teq = 1002 [149] K
Rp = 13.38 [57.26] Re
a = 0.2740 [0.0979] AU
Ag = 233.80 [2000.30] [0.12σ]
Teffp = 6056 [12927] K [0.39σ]

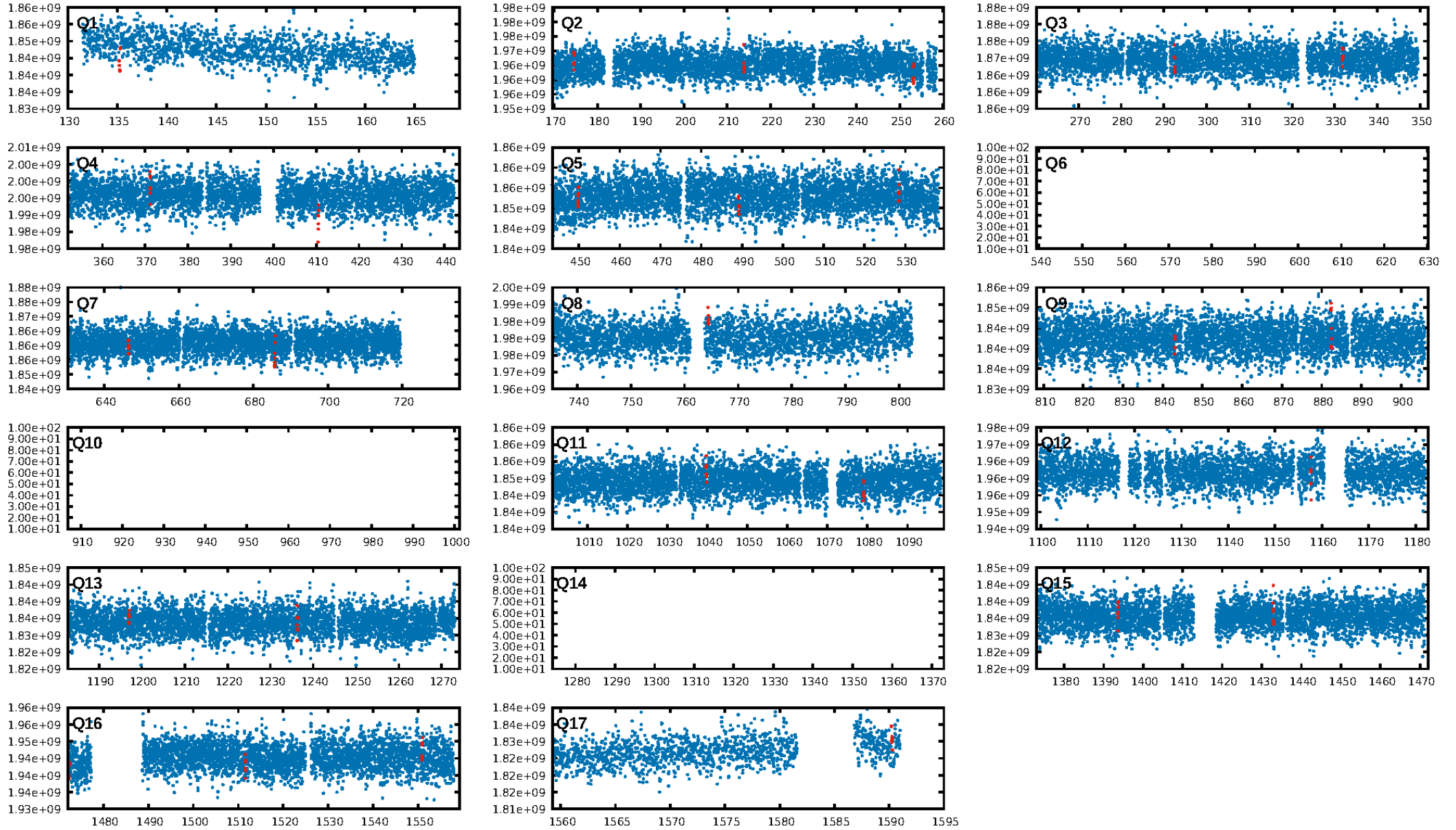
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [140.30σ]
LongPeriod-sig: 100.0% [279.46σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 53.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.83 [5/6]
GhostDiagnostic-chr: N/A
Centroid-sig: 58.0%
Centroid-so: 0.167 arcsec [3.60σ]
OotOffset-rm: 1.700 arcsec [5.89σ]
KicOffset-rm: 1.836 arcsec [6.49σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.00 [0/13]
DiffImageOverlap-fno: 0.08 [1/13]

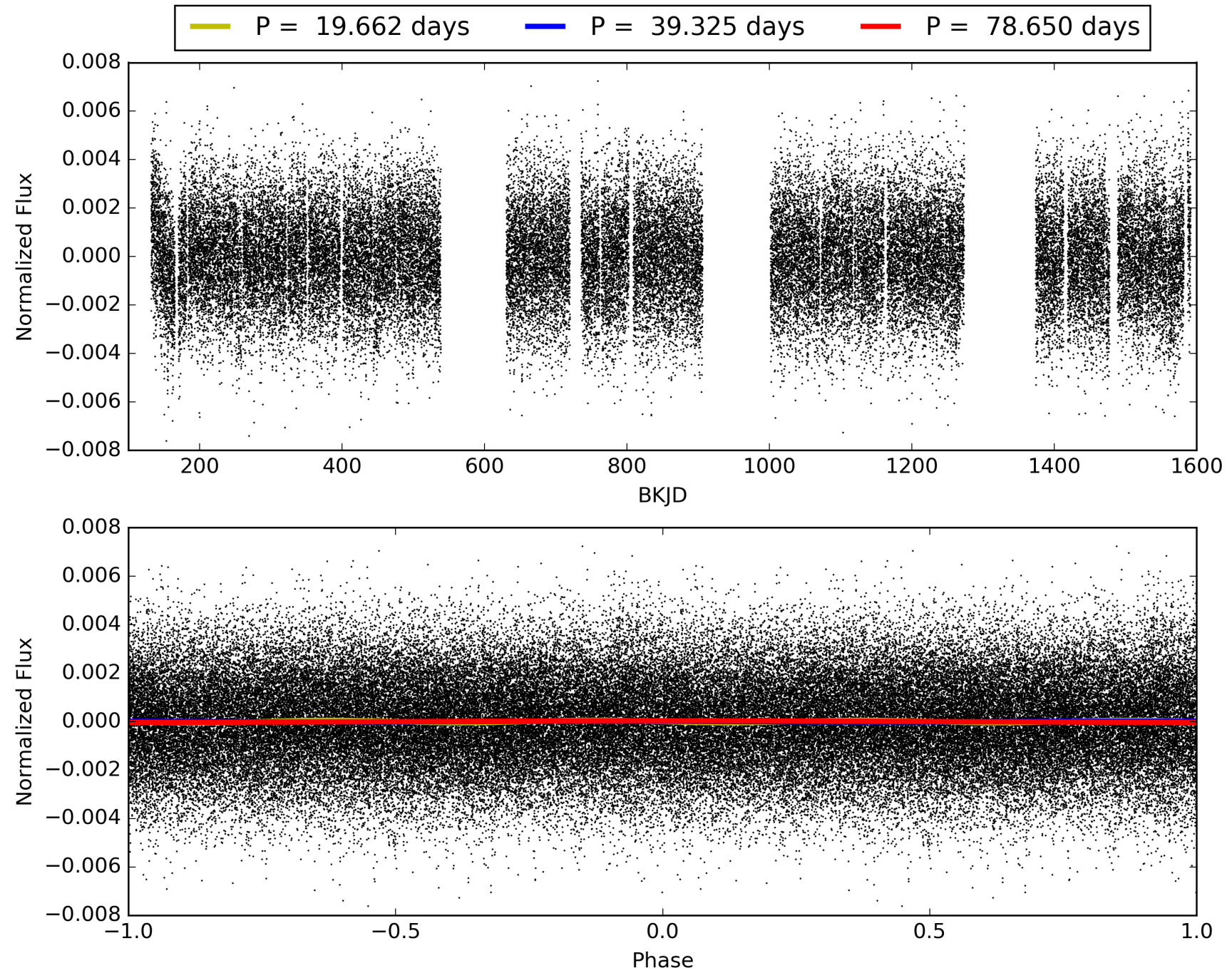
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:02:34 Z

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

TCE 004180199-04, PDC Light Curves

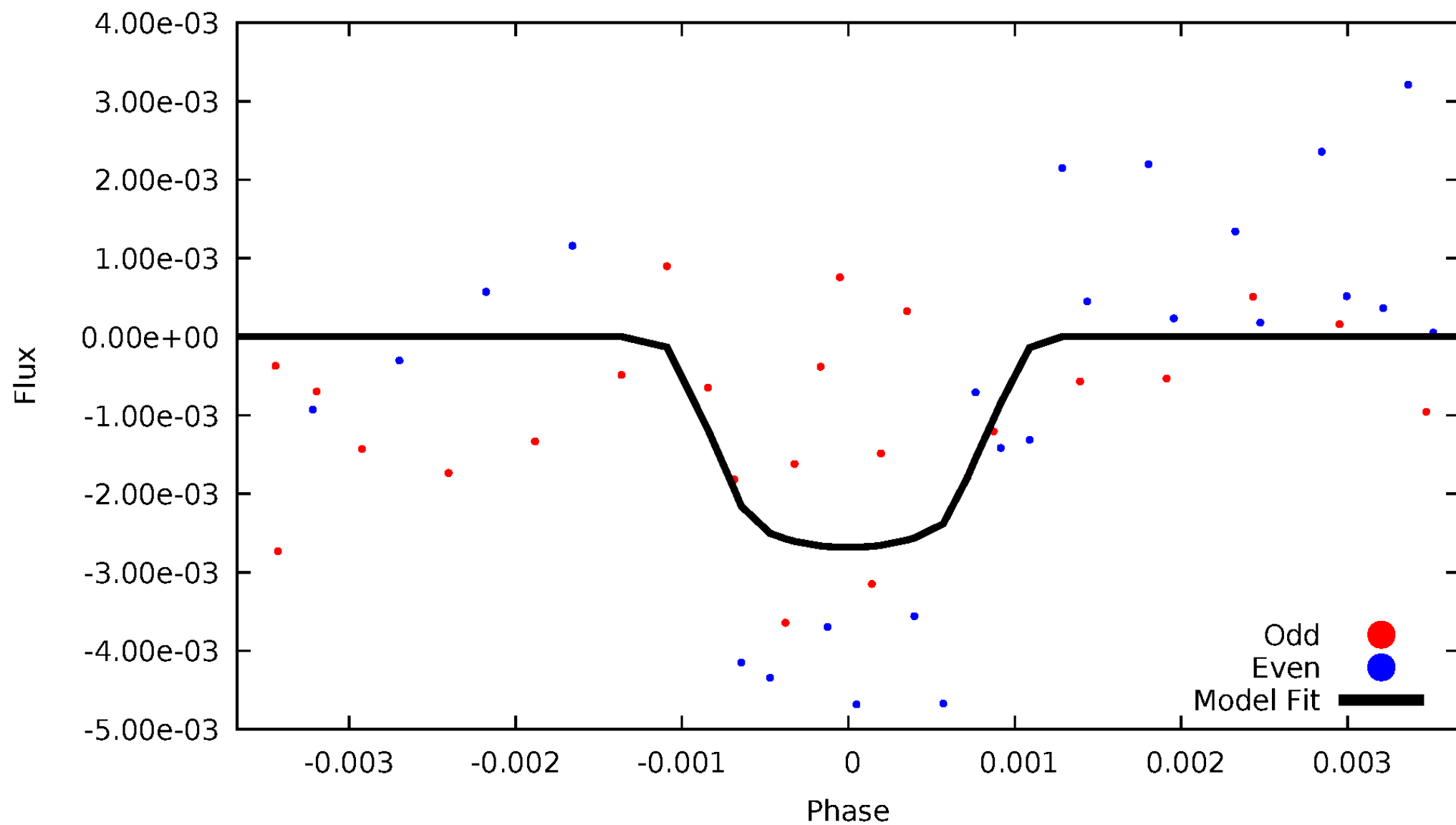


TCE 004180199-04



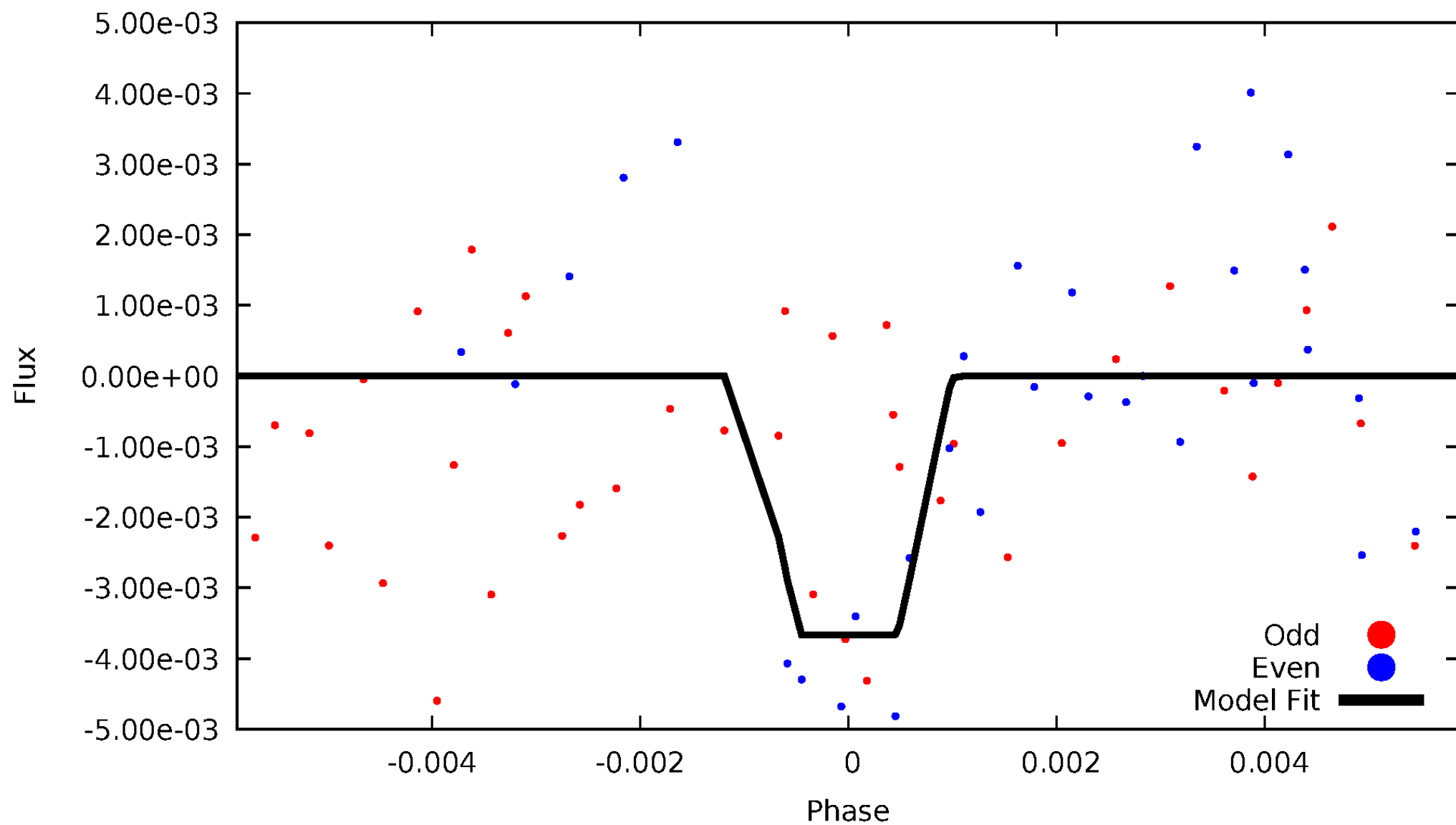
DV Odd/Even

TCE 004180199-04



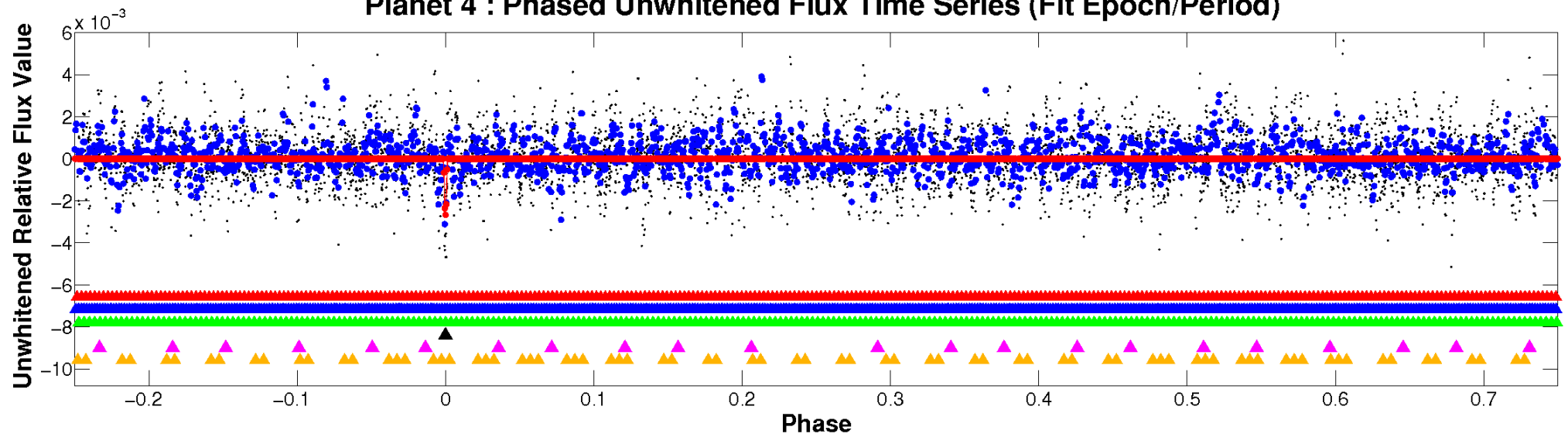
ALT Odd/Even

TCE 004180199-04

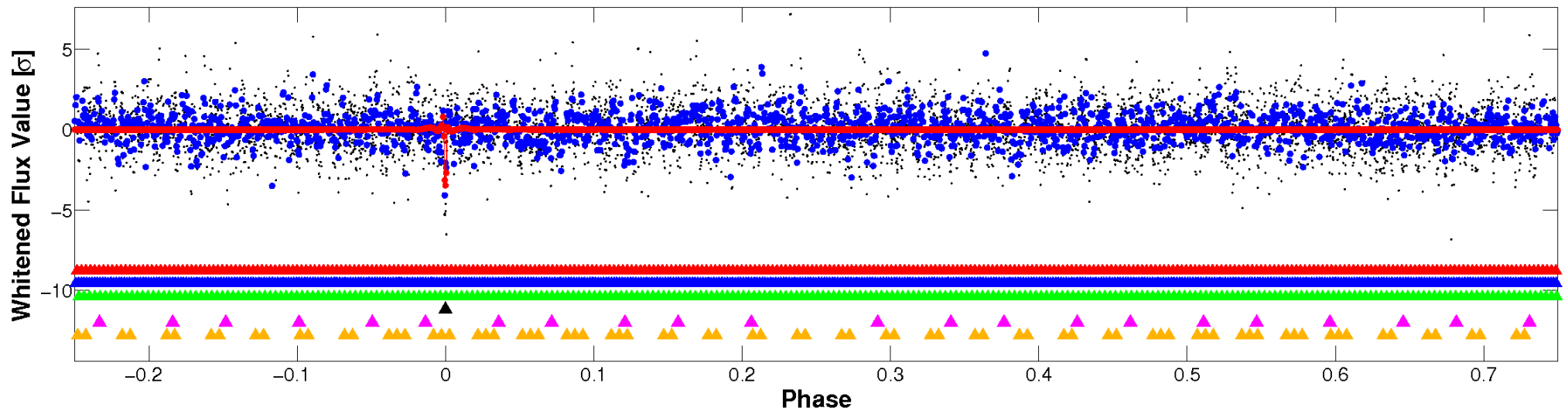


Non-Whitened Vs. Whitened Light Curve

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

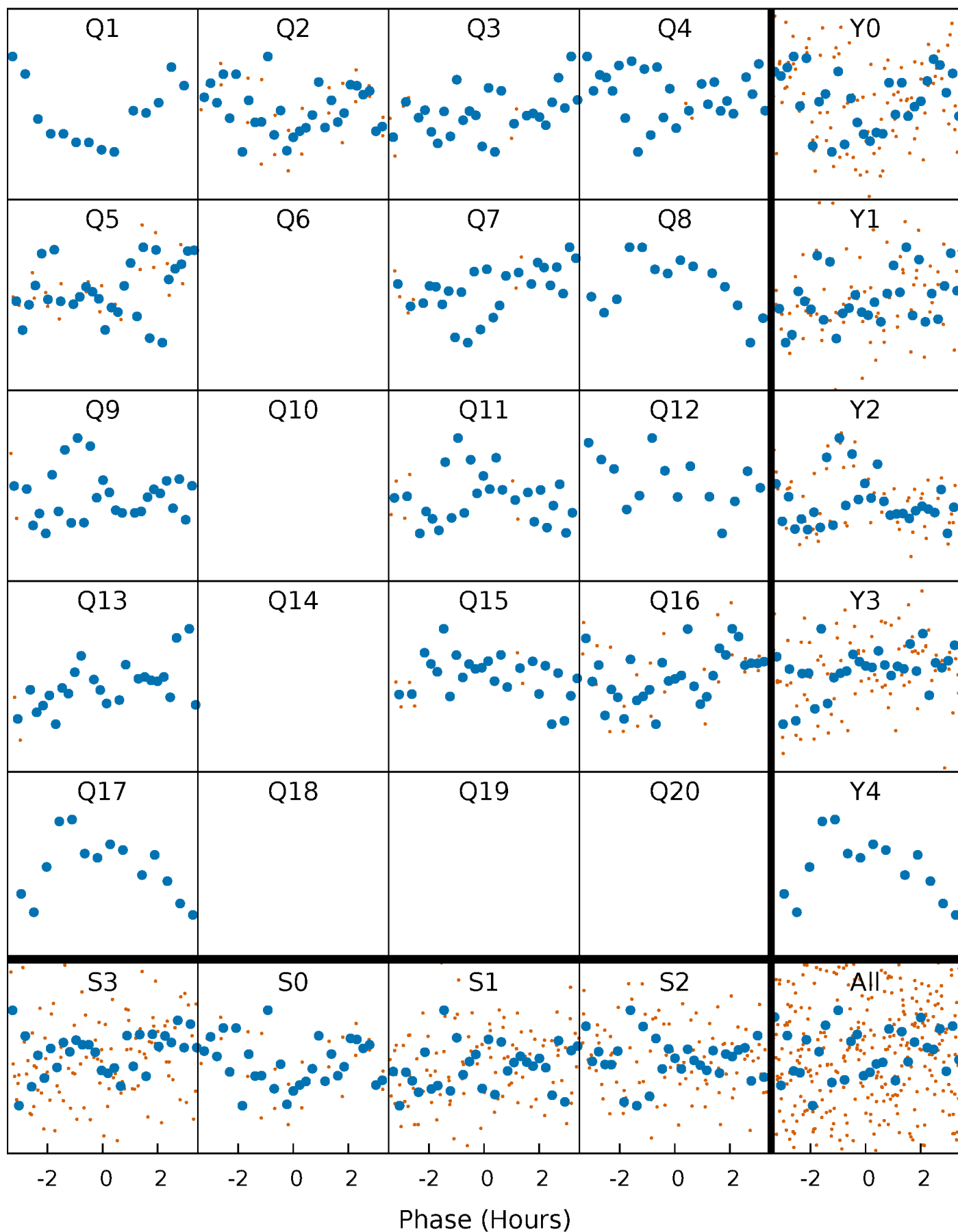


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



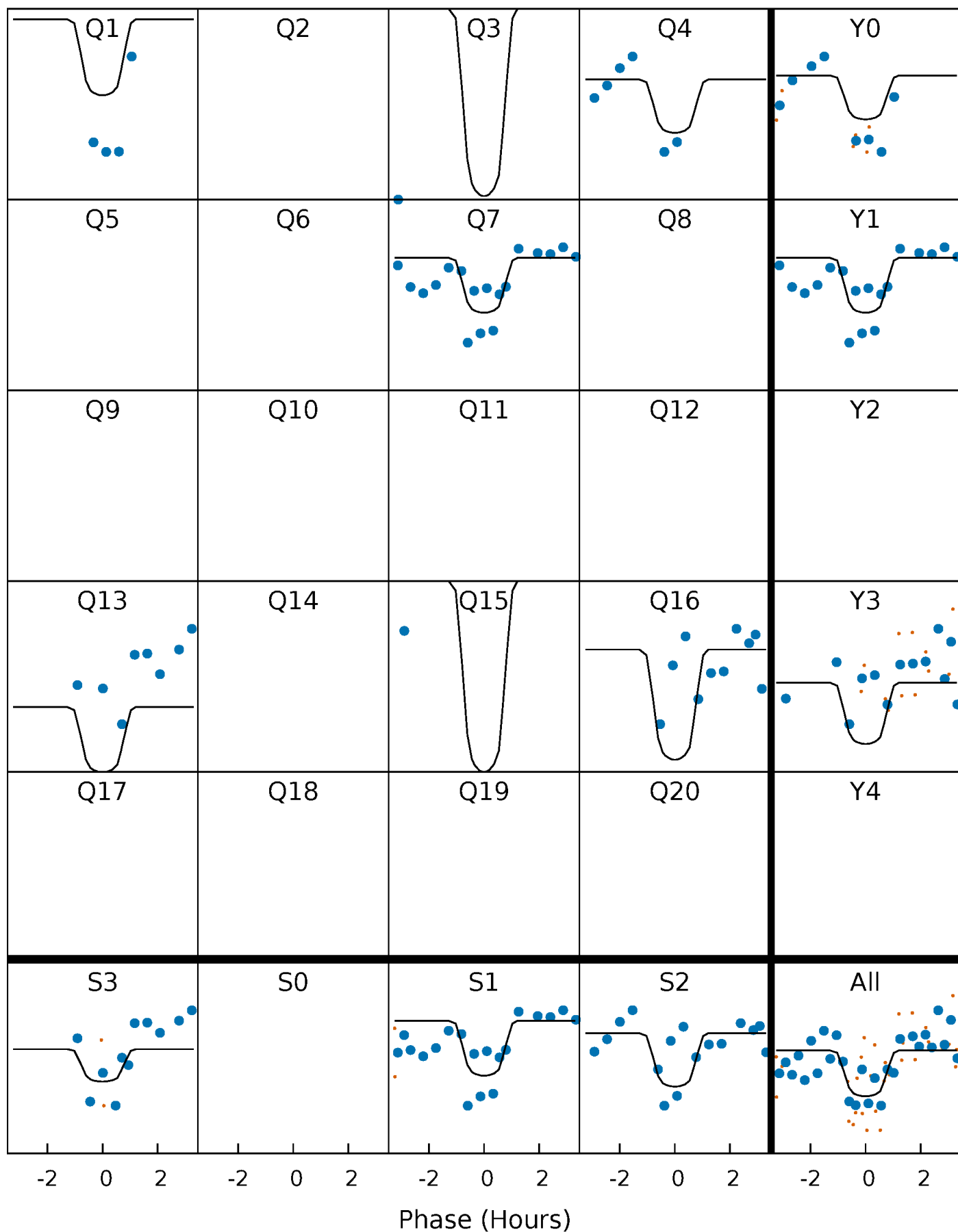
PDC Quarter-Phased Transit Curves

TCE 004180199-04 $P = 39.324892$ Days $T_0 = 135.229355$ (BKJD)



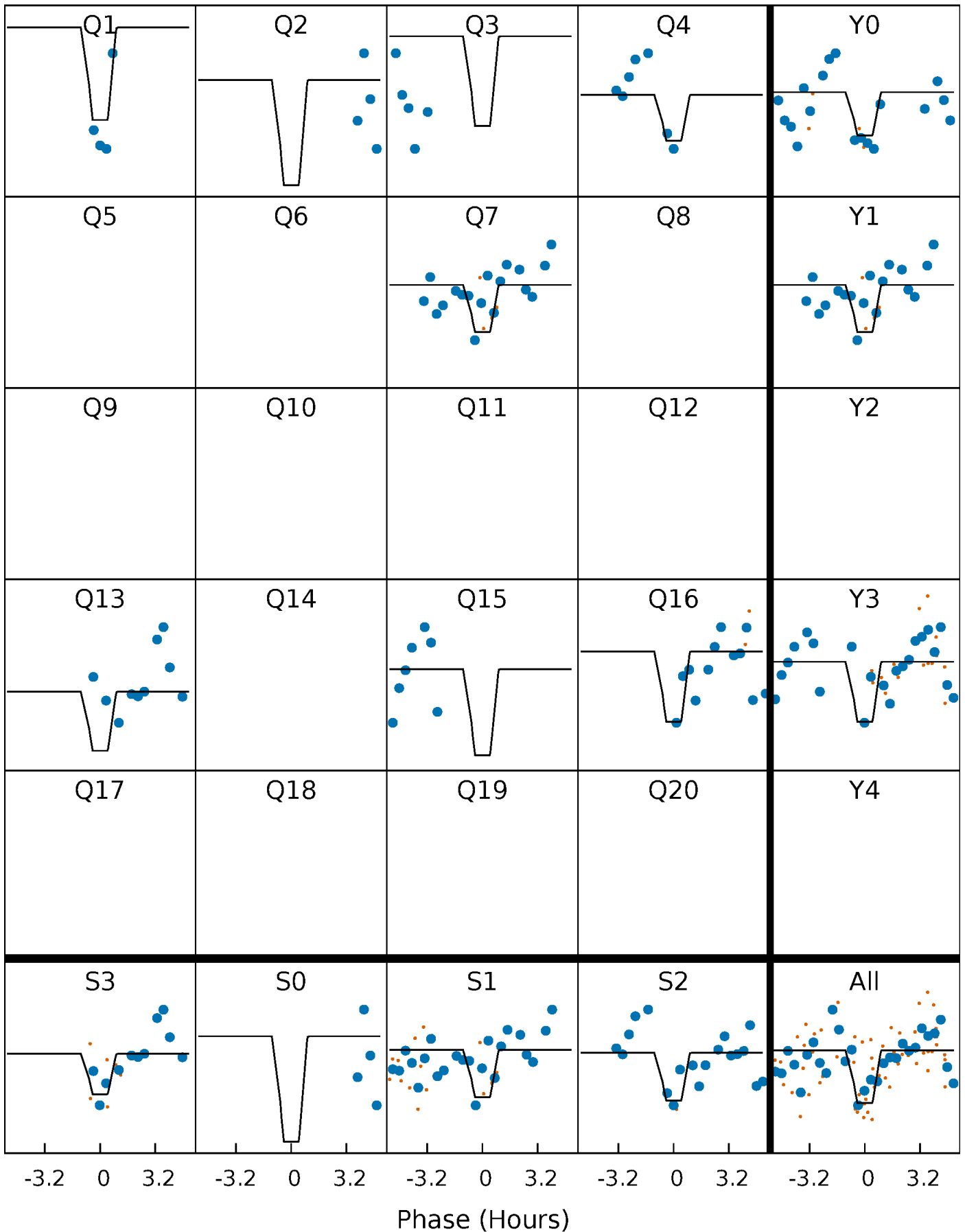
DV Quarter-Phased Transit Curves

TCE 004180199-04 $P = 39.324892$ Days $T_0 = 135.229355$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

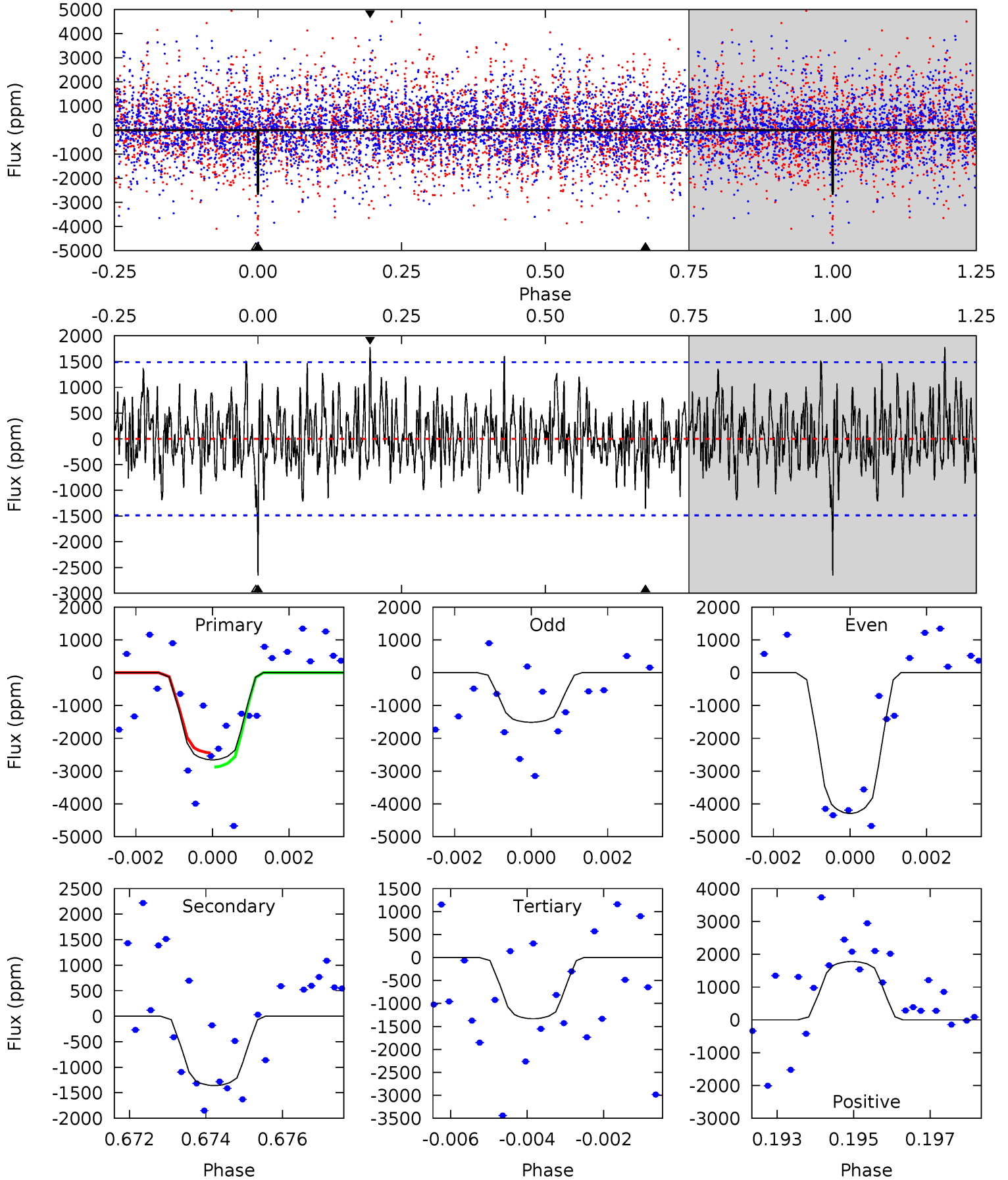
TCE 004180199-04 $P = 39.324021$ Days $T_0 = 135.233944$ (BKJD)



DV Model-Shift Uniqueness Test

004180199-04, P = 39.324892 Days, E = 95.904463 Days

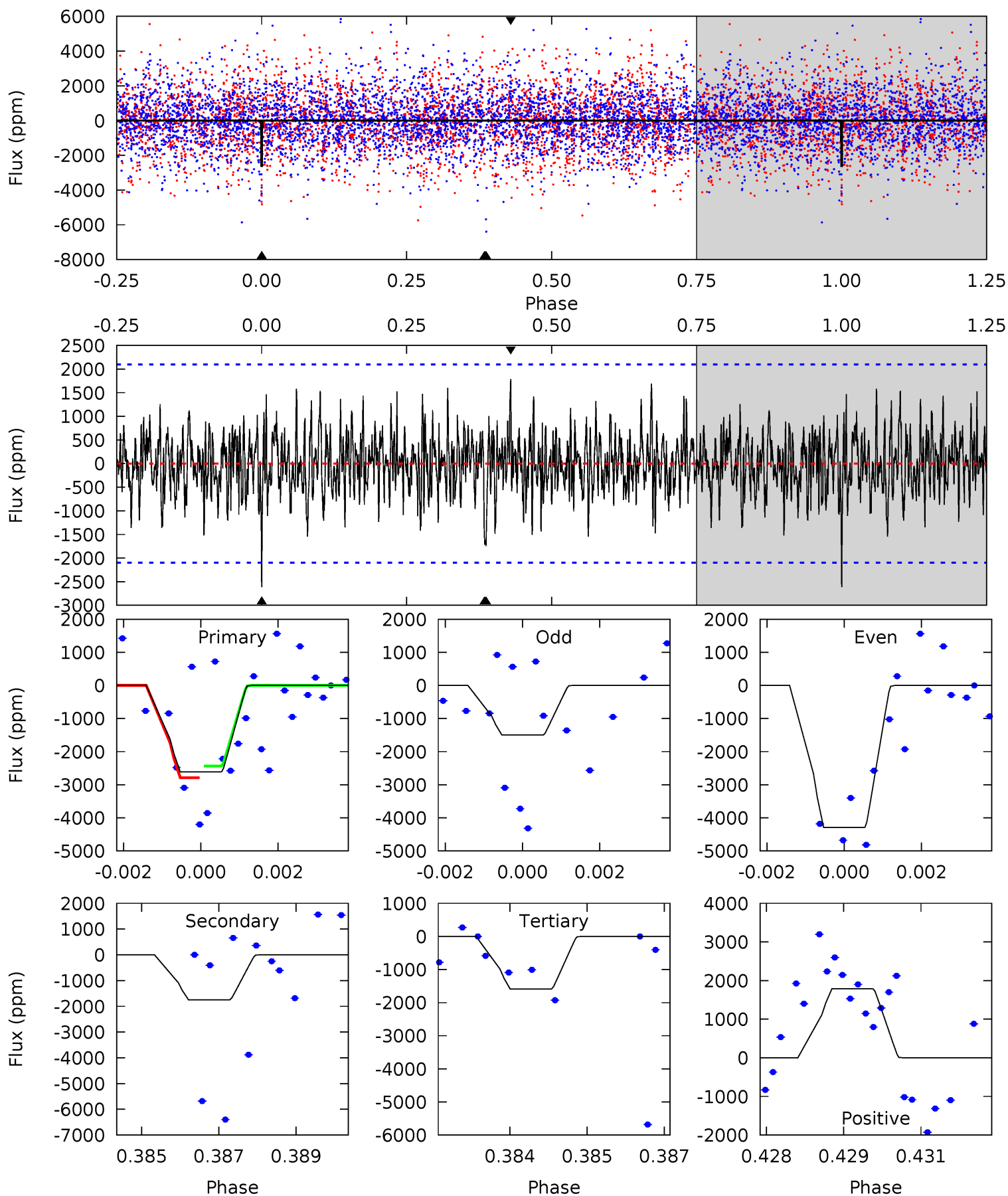
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.52	4.87	4.78	6.37	5.33	3.10	1.71	4.75	3.15	0.09	-1.50	4.95	0.90	0.40	0.77



Alt Model-Shift Uniqueness Test

004180199-04, P = 39.324021 Days, E = 95.909923 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.67	4.46	4.06	4.56	5.36	3.14	1.36	2.61	2.11	0.41	-0.10	3.53	0.78	0.41	0.45



Stellar Parameters For KIC 004180199

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7452^{+206}_{-336}	$3.876^{+0.330}_{-0.110}$	$-0.140^{+0.250}_{-0.350}$	$2.544^{+0.517}_{-0.961}$	$1.774^{+0.173}_{-0.403}$	$0.152^{+0.376}_{-0.052}$
	+3%/-5%	+9%/-3%	+179%/-250%	+20%/-38%	+10%/-23%	+248%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004180199-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1358 ± 279	$38.39^{+42.42}_{-27.86}$	1360^{+103}_{-131}	3922^{+2980}_{-820}	35^{+436}_{-27}
Alt.	-1747 ± 392	$43.07^{+40.28}_{-28.13}$	1364^{+101}_{-137}	3934^{+2261}_{-784}	38^{+282}_{-28}

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

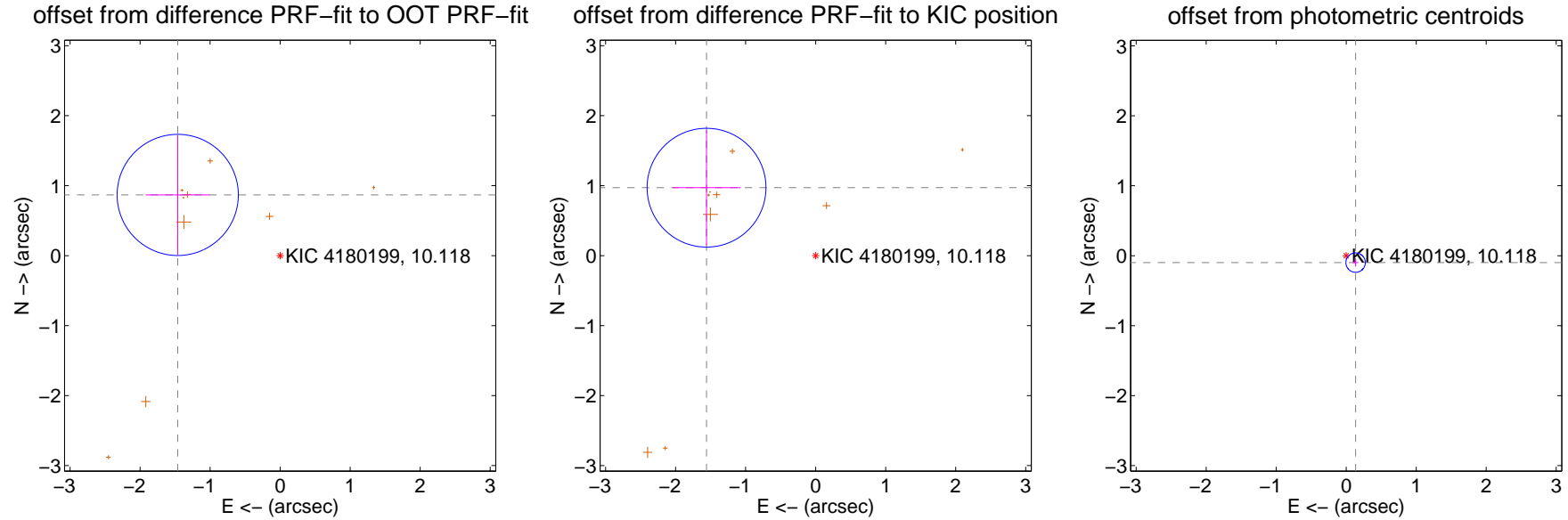
DV Centroid Data

Supplemental centroid analysis for 004180199-04. **Kepler magnitude: 10.12.** Transit SNR 11.38

There are 0 quarters with good PRF difference image offsets

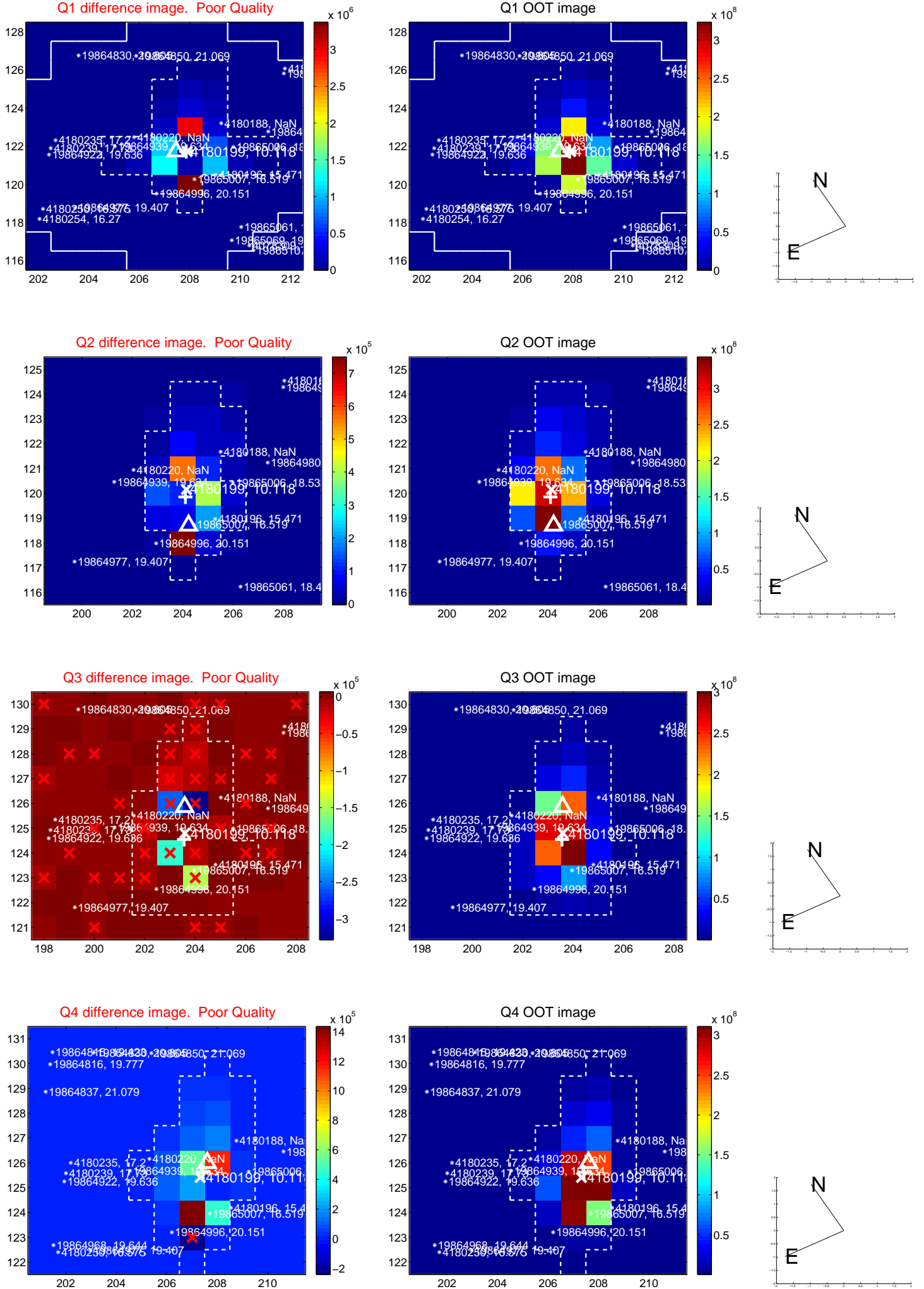
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.700 ± 0.288	5.89	1.462 ± 0.459	0.867 ± 0.855
PRF-fit source offset from KIC position	1.836 ± 0.283	6.49	1.558 ± 0.485	0.971 ± 0.822
photometric centroid source offset	0.17 ± 0.05	3.60	-0.13 ± 0.04	-0.10 ± 0.06

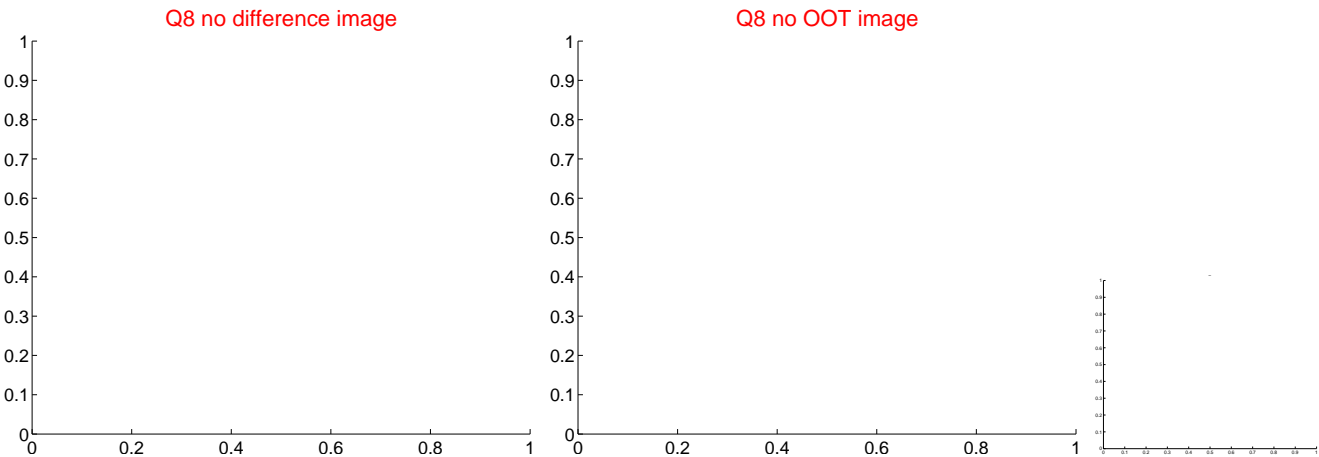
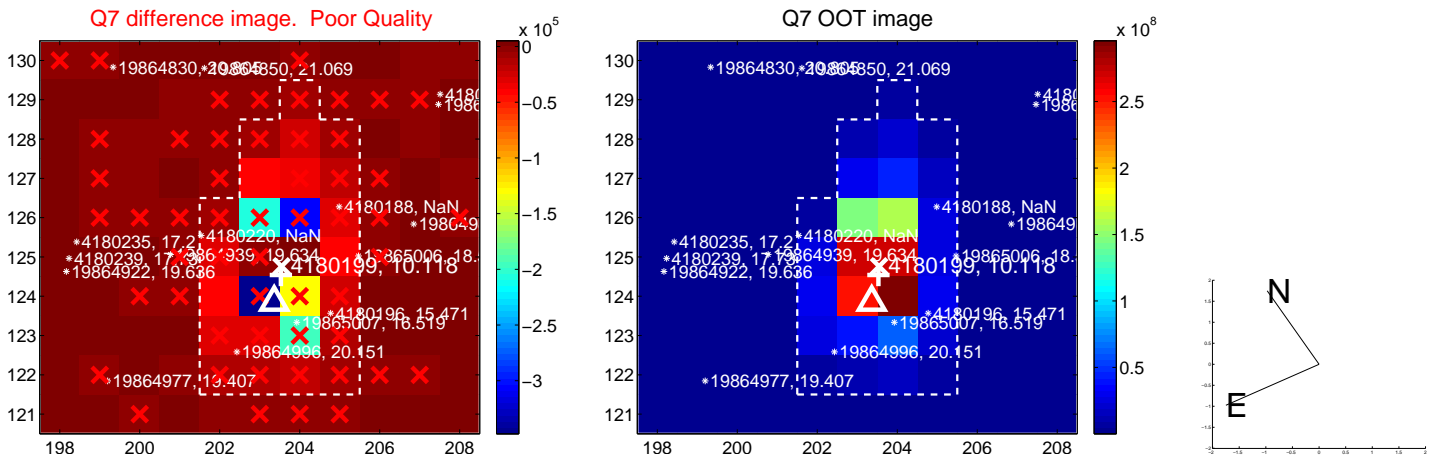
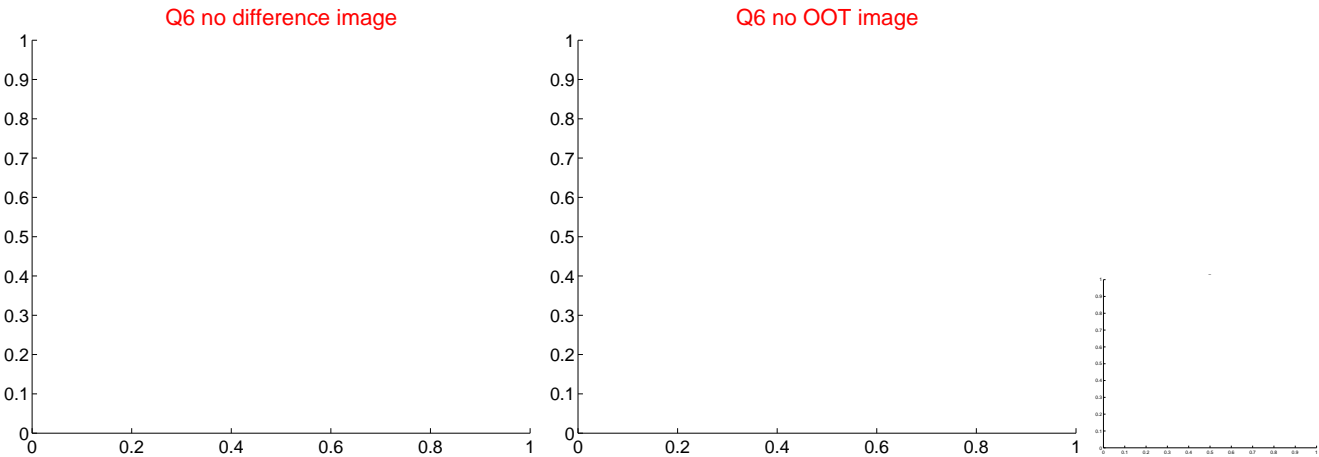
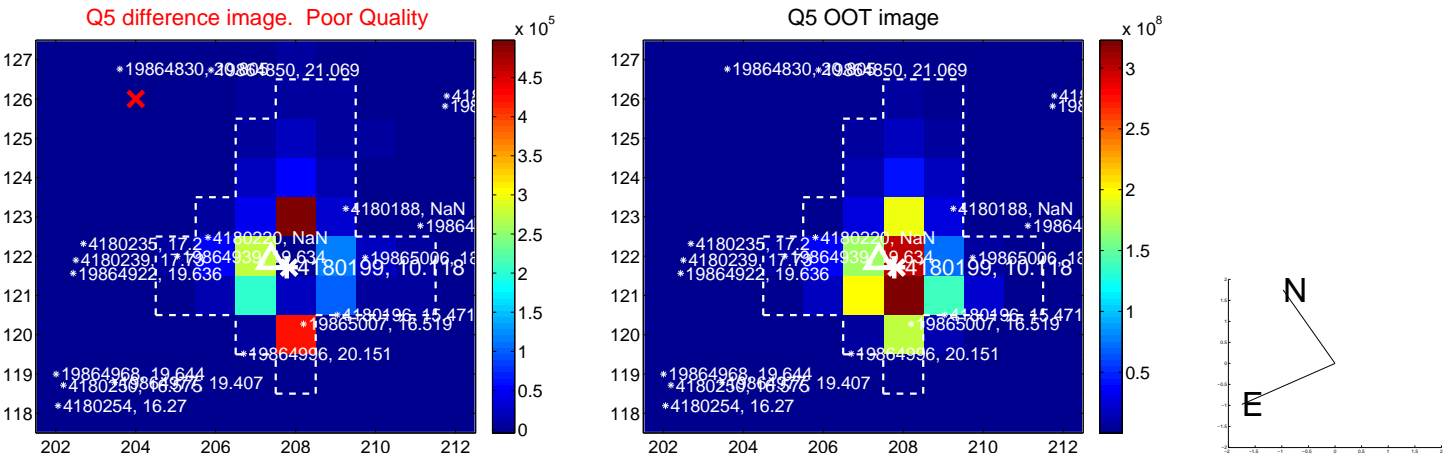


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

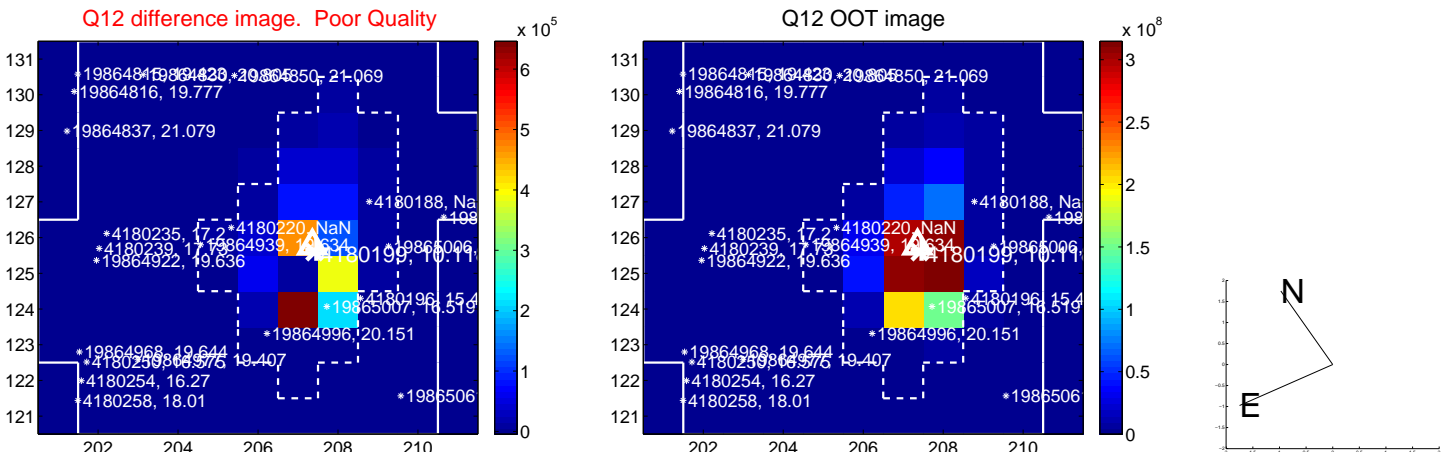
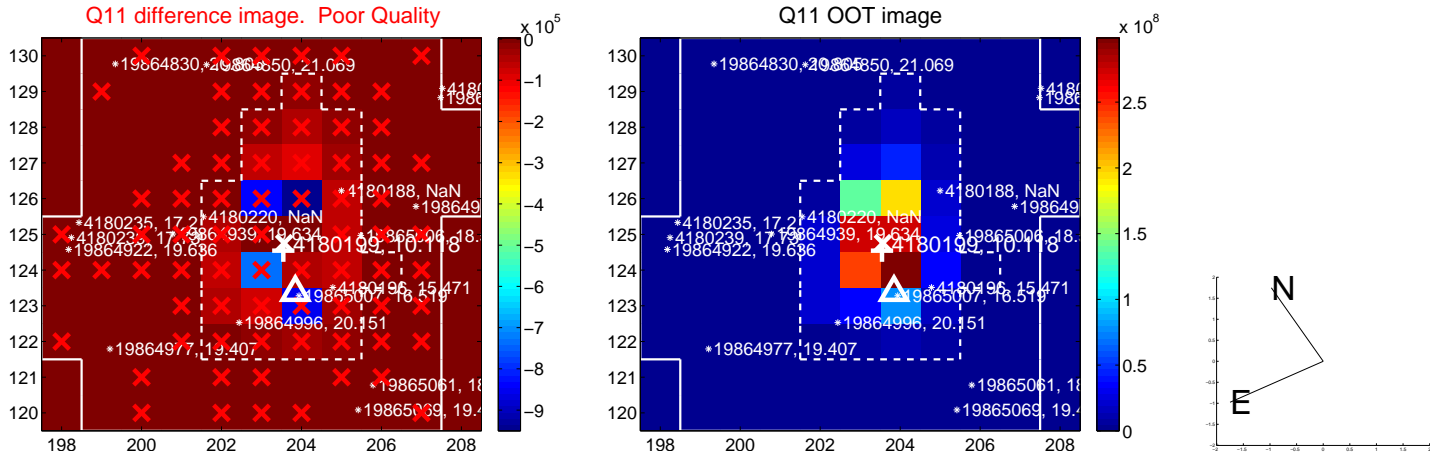
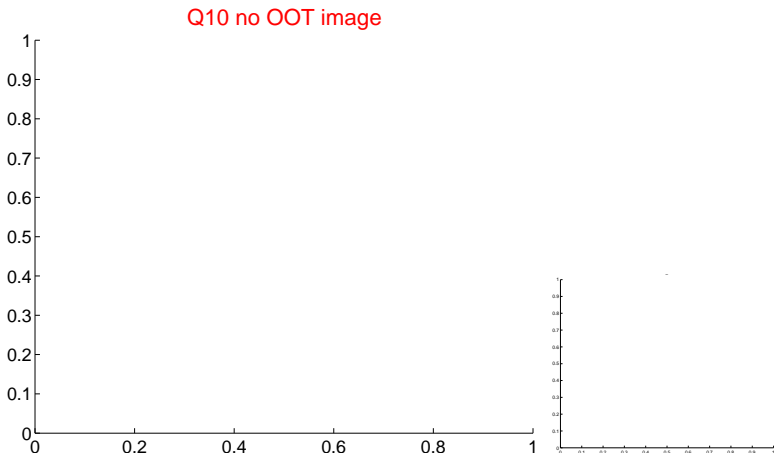
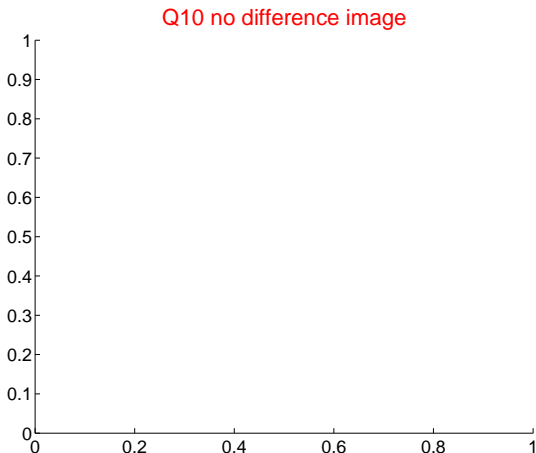
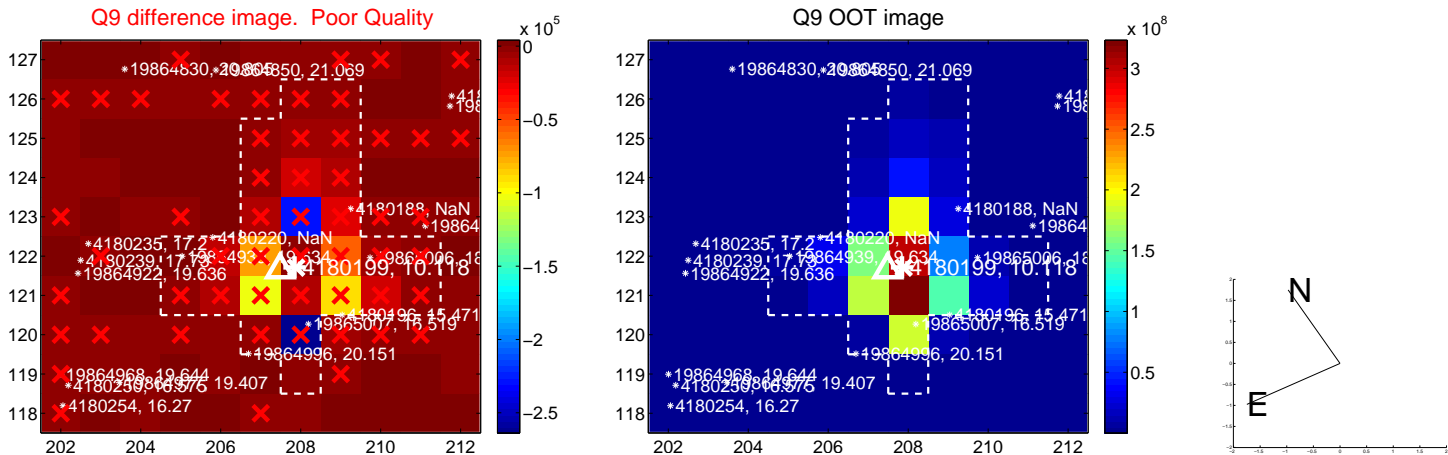
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



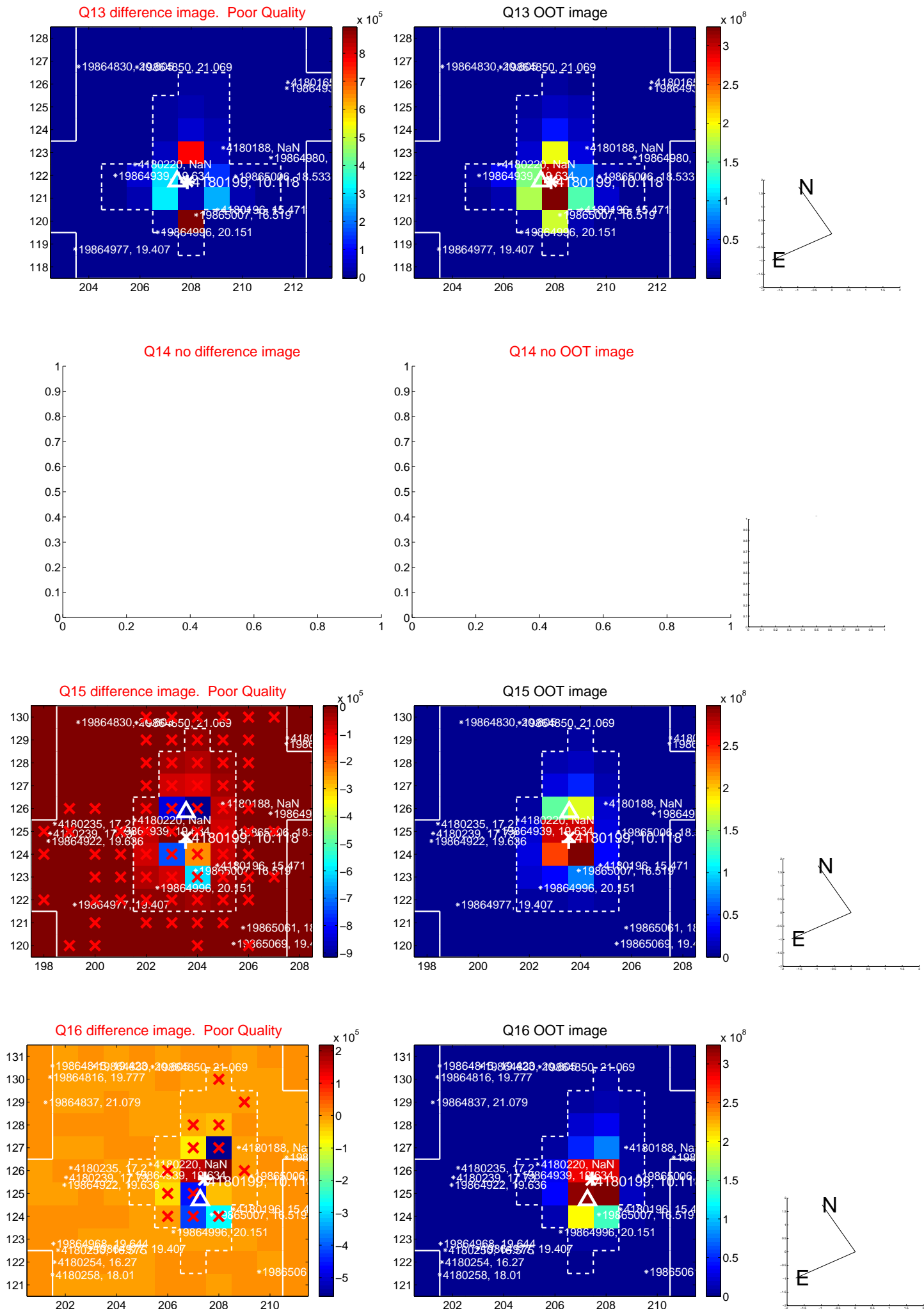
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



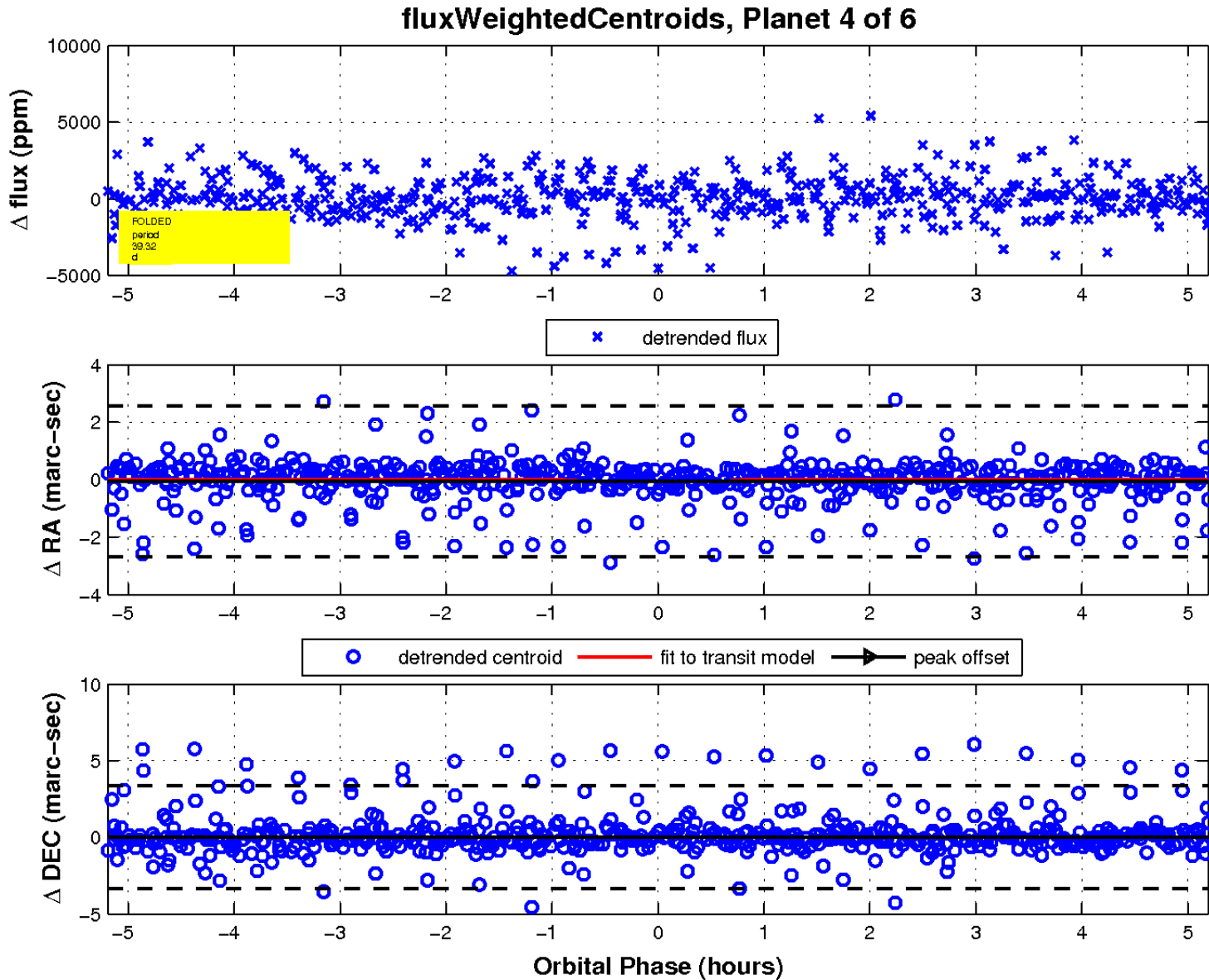
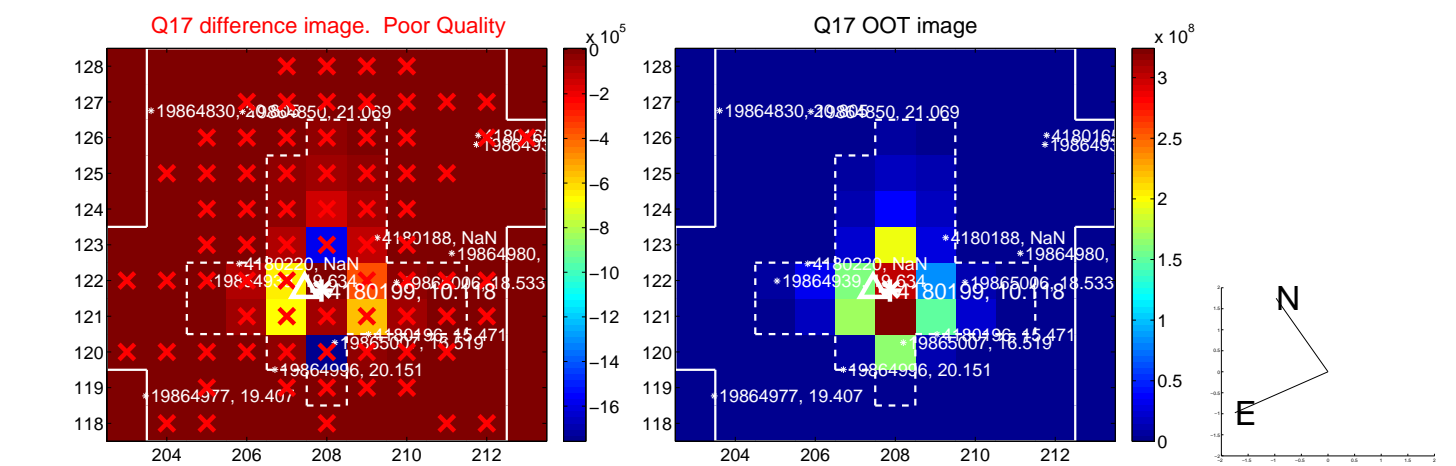
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



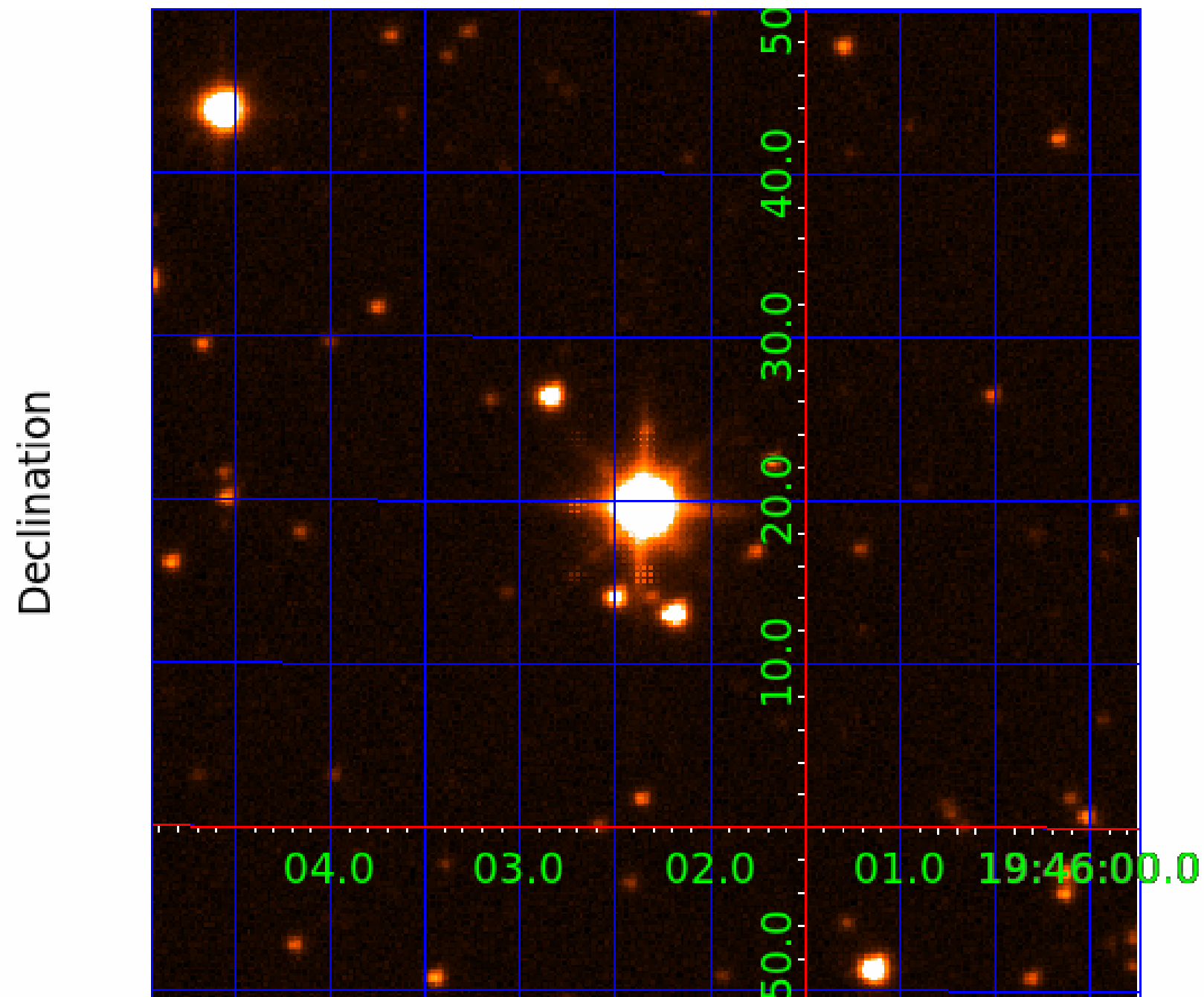
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 004180199

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})
004180199-01	OBS	No	0.933515	131.657073	277.7	1.147	10.1	12.1	2.54	7452	4.30	34900.82
004180199-02	OBS	No	0.856419	132.297603	259.9	1.819	9.8	10.1	2.54	7452	4.79	39151.52
004180199-03	OBS	No	0.986639	131.855444	141.2	6.074	9.5	6.2	2.54	7452	3.05	32418.00
004180199-04	OBS	No	39.324892	135.229356	2683.5	1.732	12.4	11.4	2.54	7452	13.38	238.11
004180199-06	OBS	No	19.073041	139.625779	53.8	3.000	9.3	-1.0	2.54	7452	1.89	624.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004180199-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
004180199-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
004180199-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

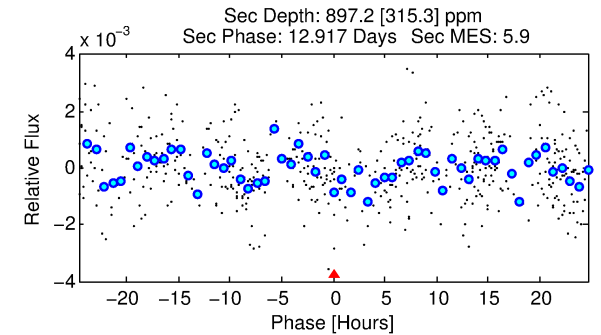
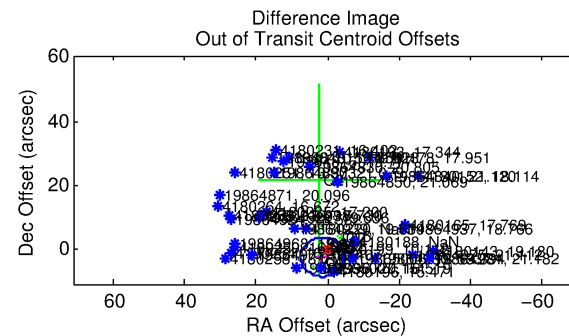
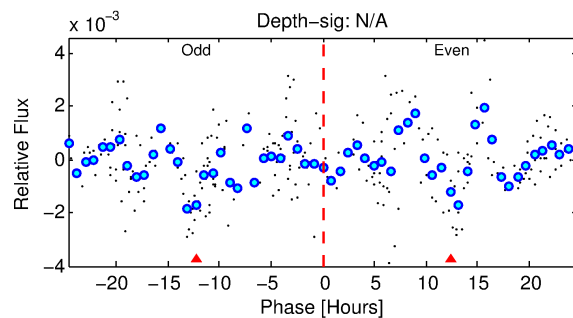
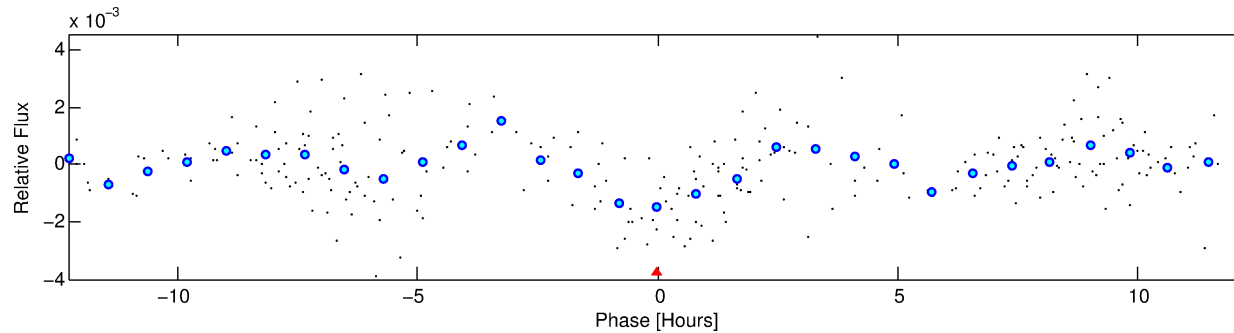
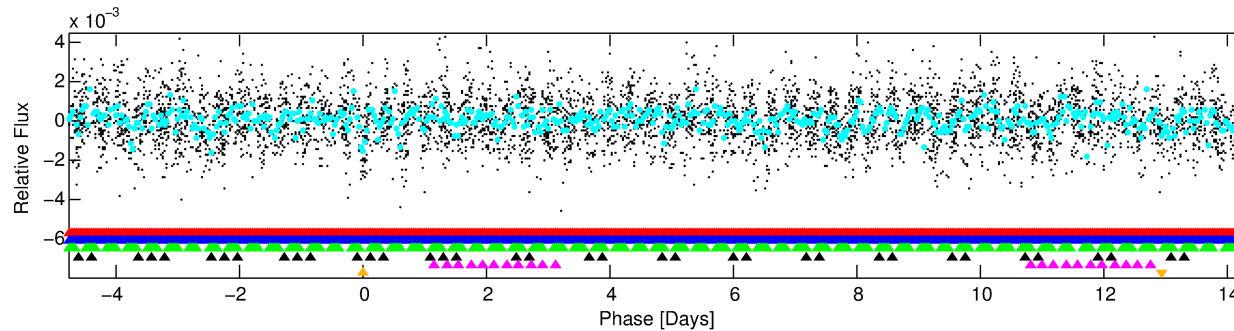
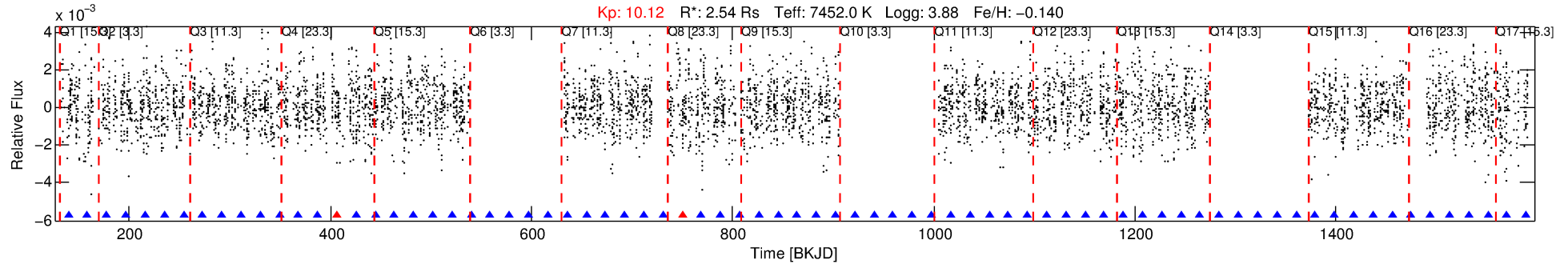
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004180199-06

No Significant Match Found

DV One-Page Summary

KIC: 4180199 Candidate: 6 of 6 Period: 19.073 d



TPS TCE Results:

Period = 19.07304 d
Epoch = 139.6258 BKJD

DV fit results are unavailable

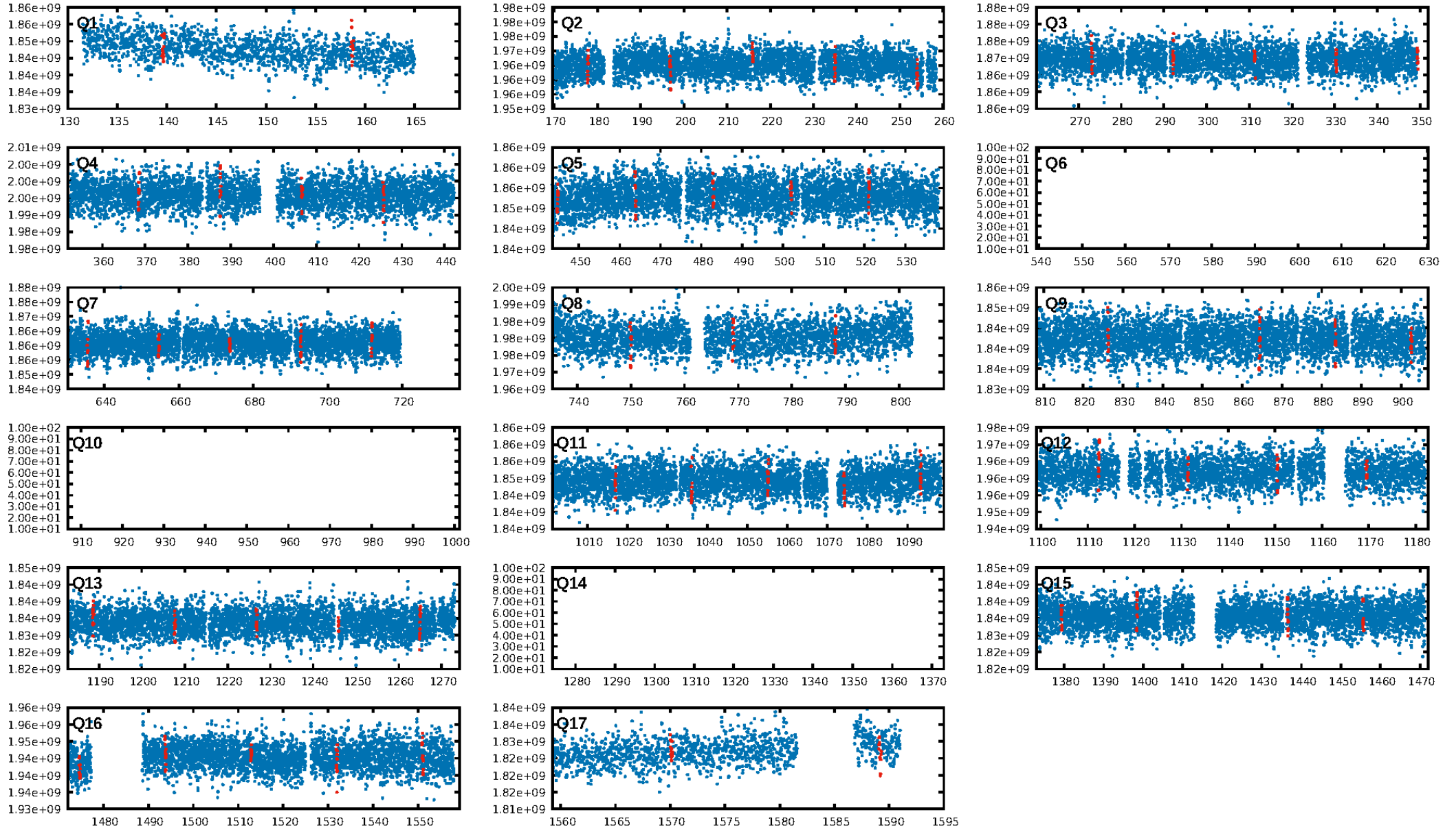
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [64.08 σ]
LongPeriod-sig: 100.0% [140.30 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.86 [12/14]
GhostDiagnostic-chr: N/A
Centroid-sig: 30.0%
Centroid-so: 0.205 arcsec [6.29 σ]
OotOffset-rm: 2.690 arcsec [1.34 σ]
KicOffset-rm: 3.974 arcsec [1.85 σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.08 [1/13]
DiffImageOverlap-fno: 0.00 [0/14]

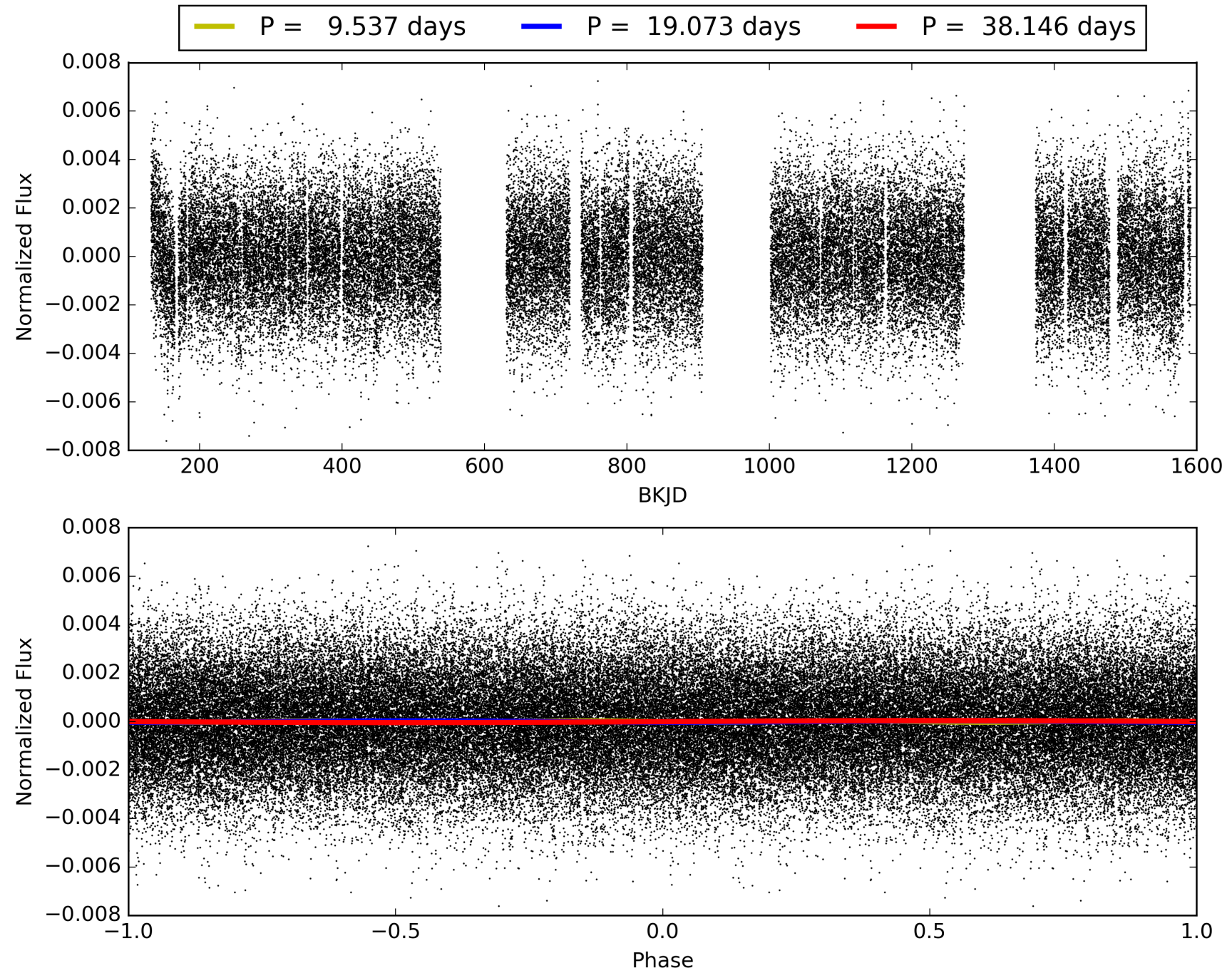
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:02:41 Z

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

TCE 004180199-06, PDC Light Curves

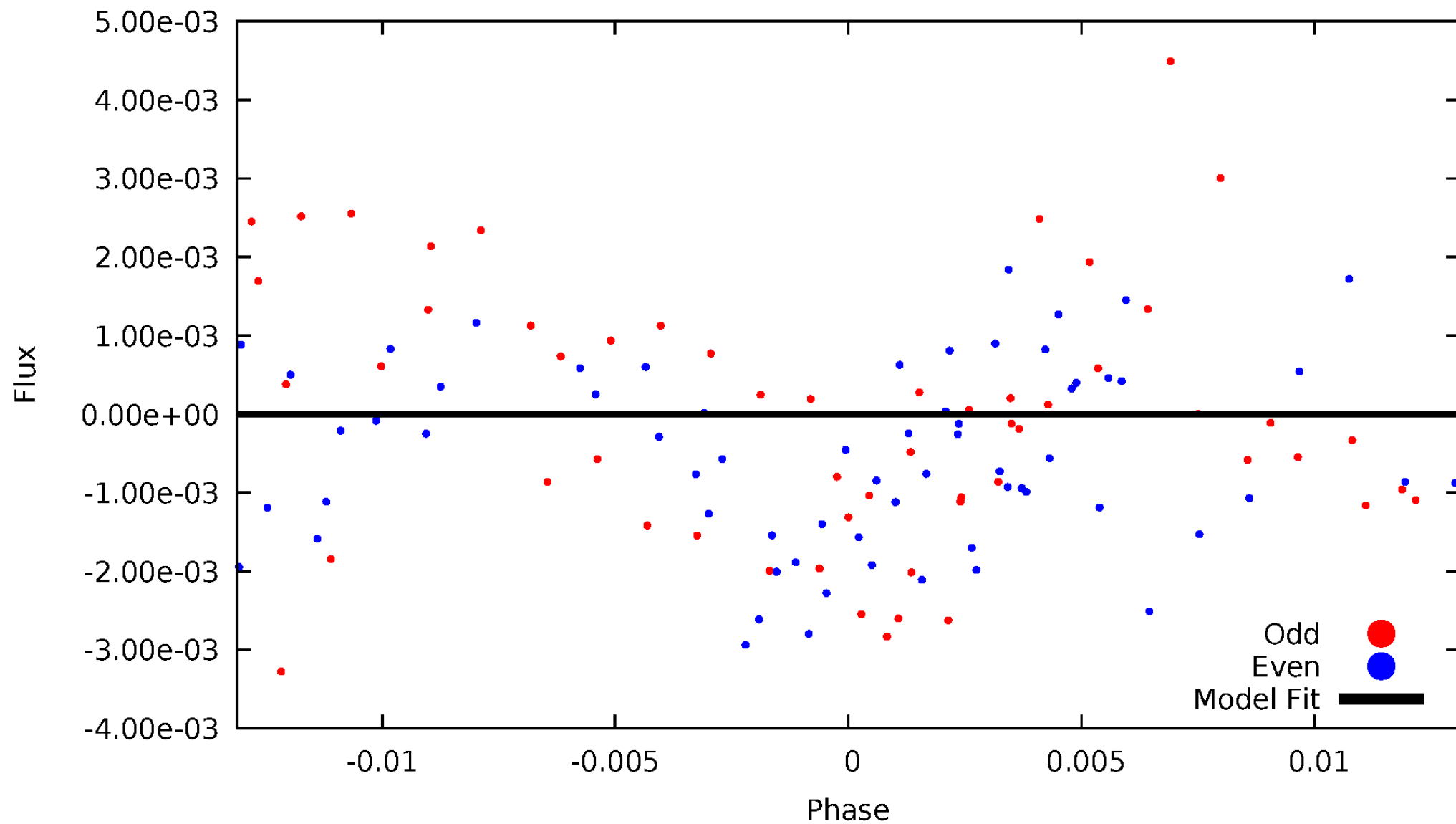


TCE 004180199-06



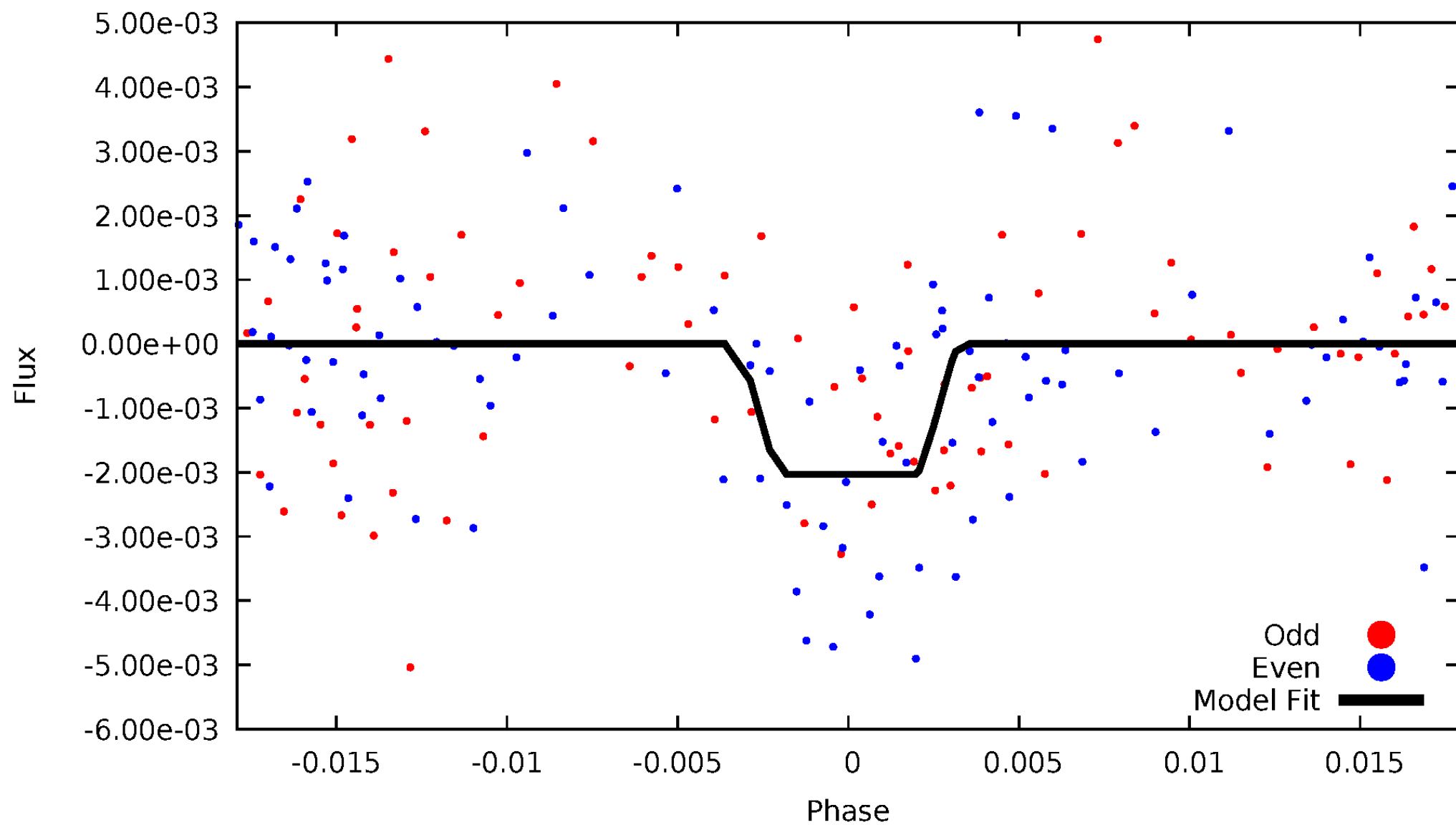
DV Odd/Even

TCE 004180199-06



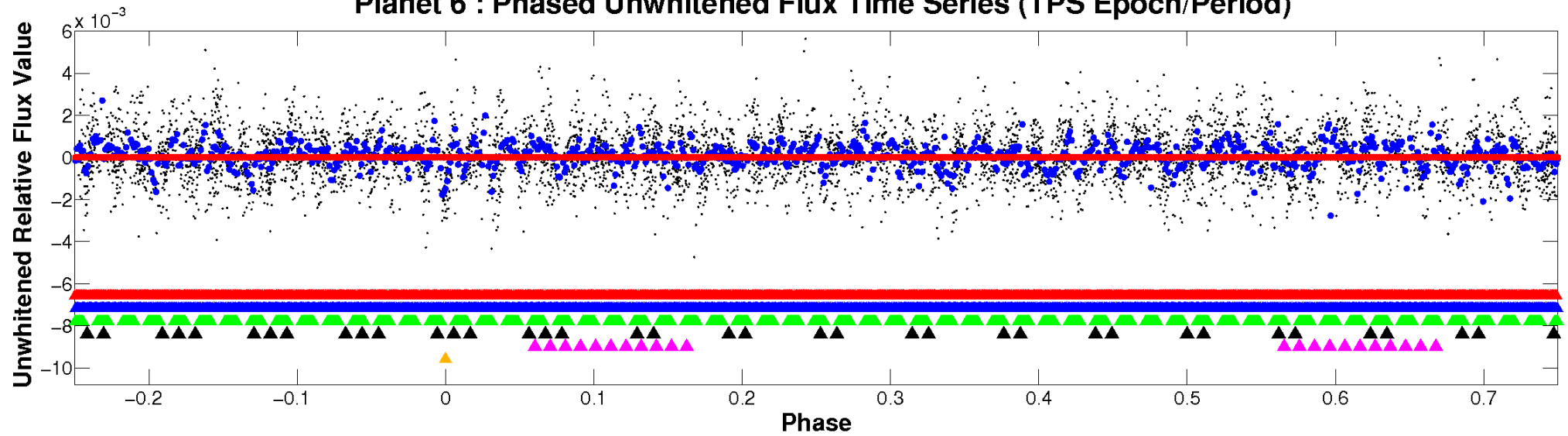
ALT Odd/Even

TCE 004180199-06

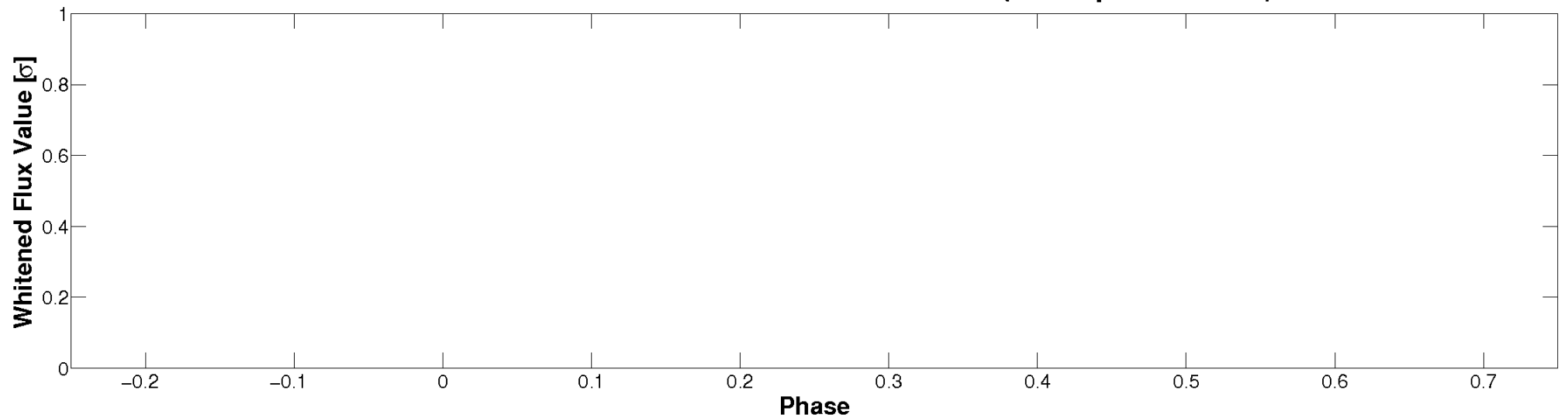


Non-Whitened Vs. Whitened Light Curve

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

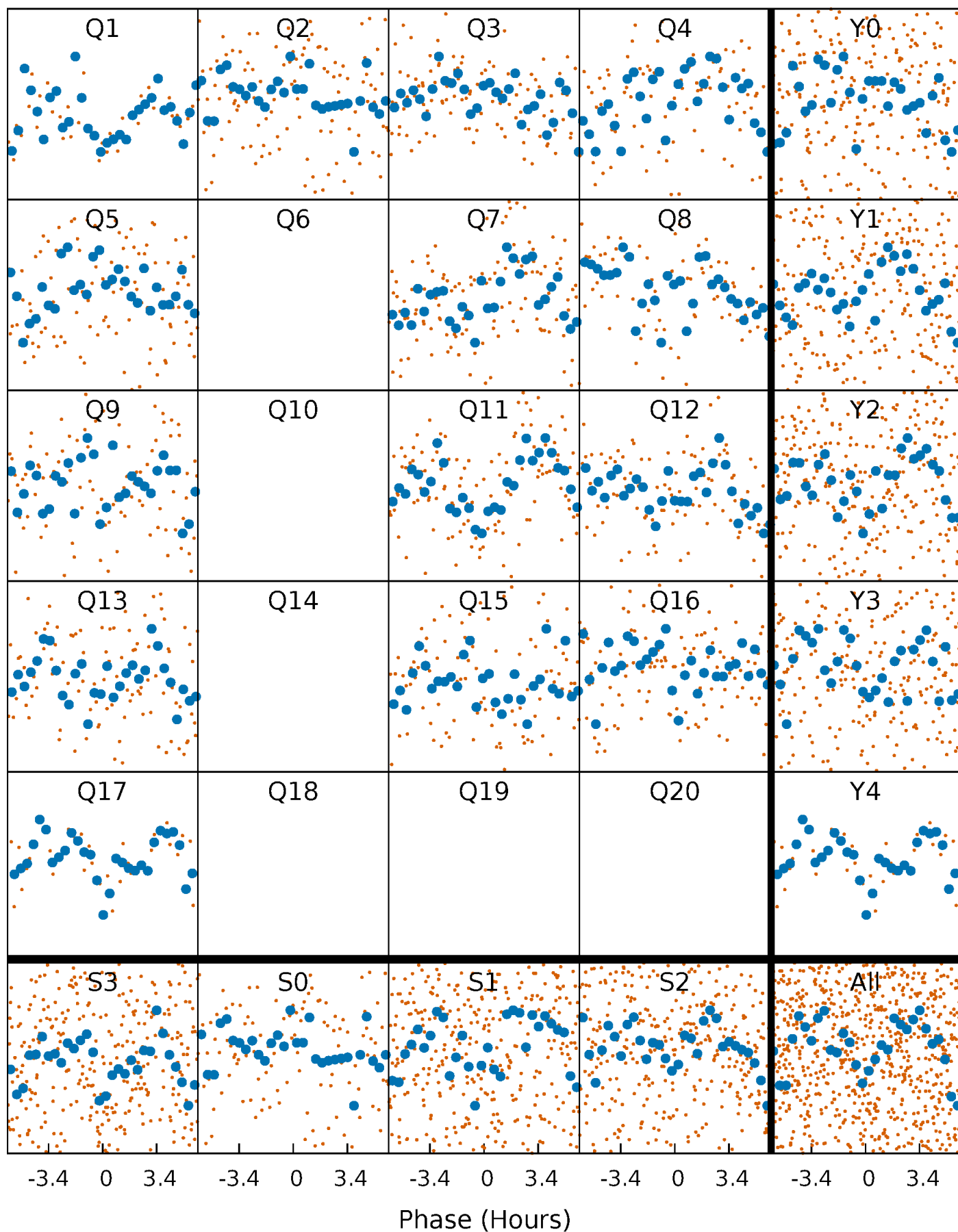


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



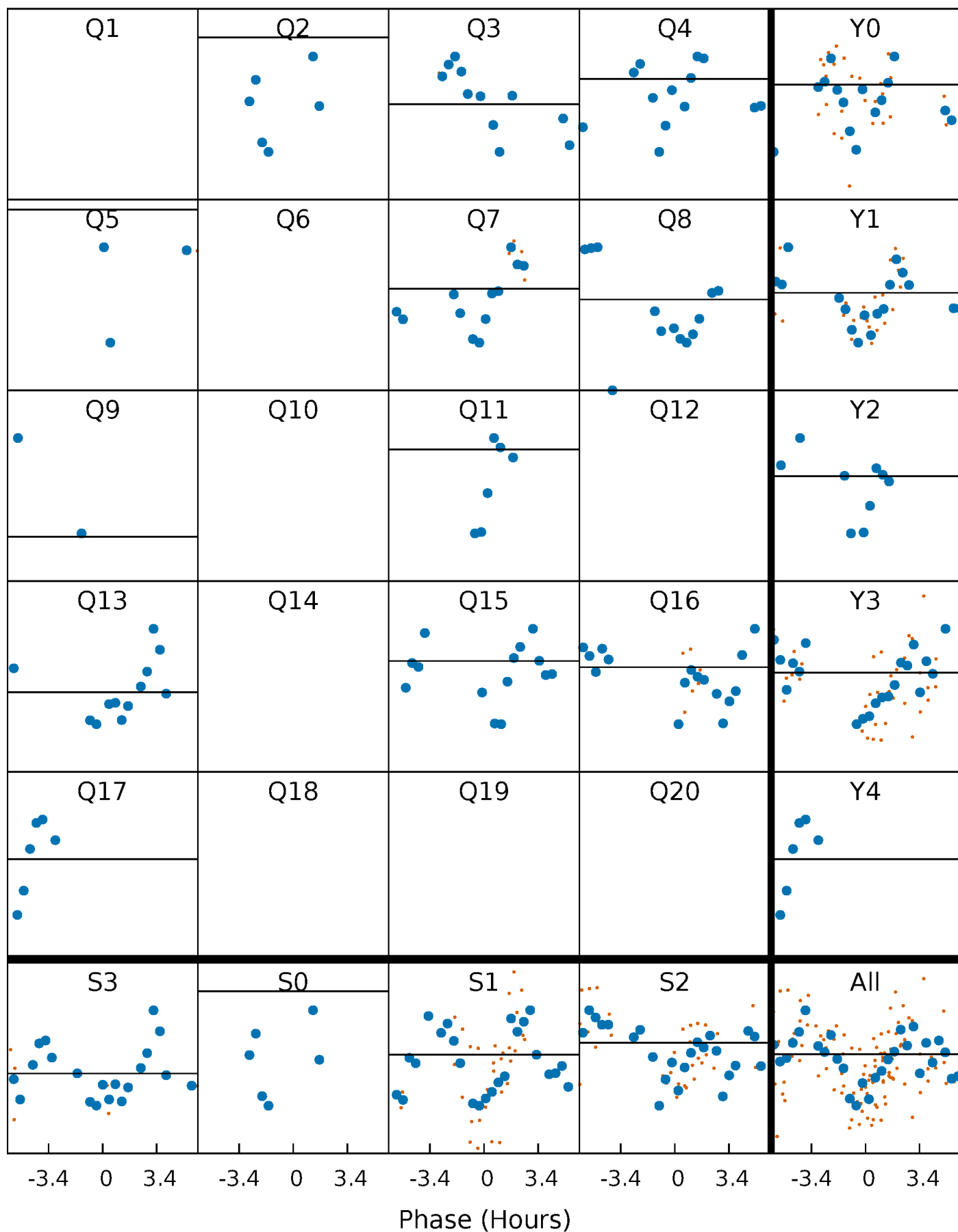
PDC Quarter-Phased Transit Curves

TCE 004180199-06 P= 19.073041 Days $T_0=139.625779$ (BKJD)



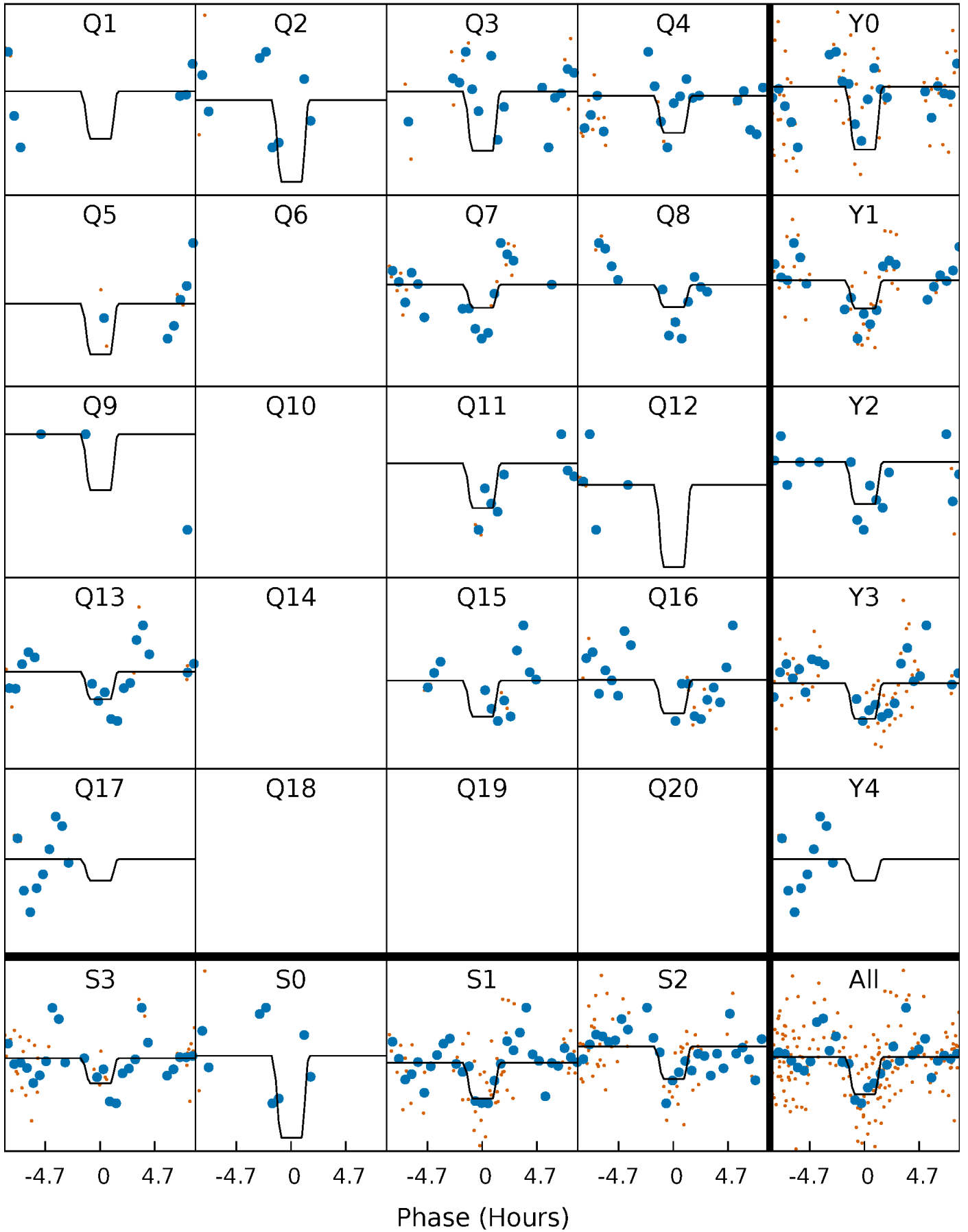
DV Quarter-Phased Transit Curves

TCE 004180199-06 P= 19.073041 Days $T_0=139.625779$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

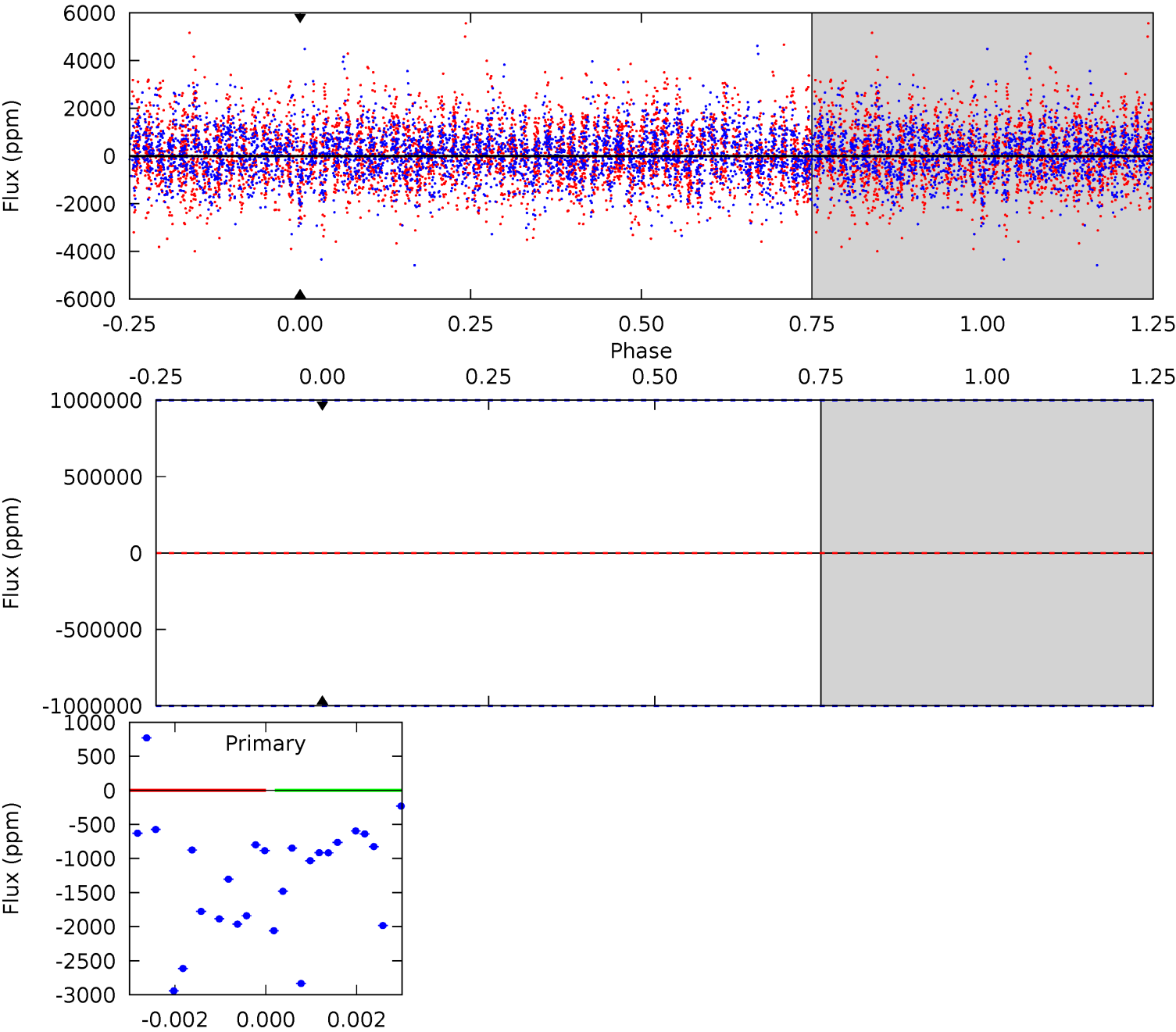
TCE 004180199-06 P= 19.073041 Days $T_0=139.618133$ (BKJD)



DV Model-Shift Uniqueness Test

004180199-06, P = 19.073041 Days, E = 120.552738 Days

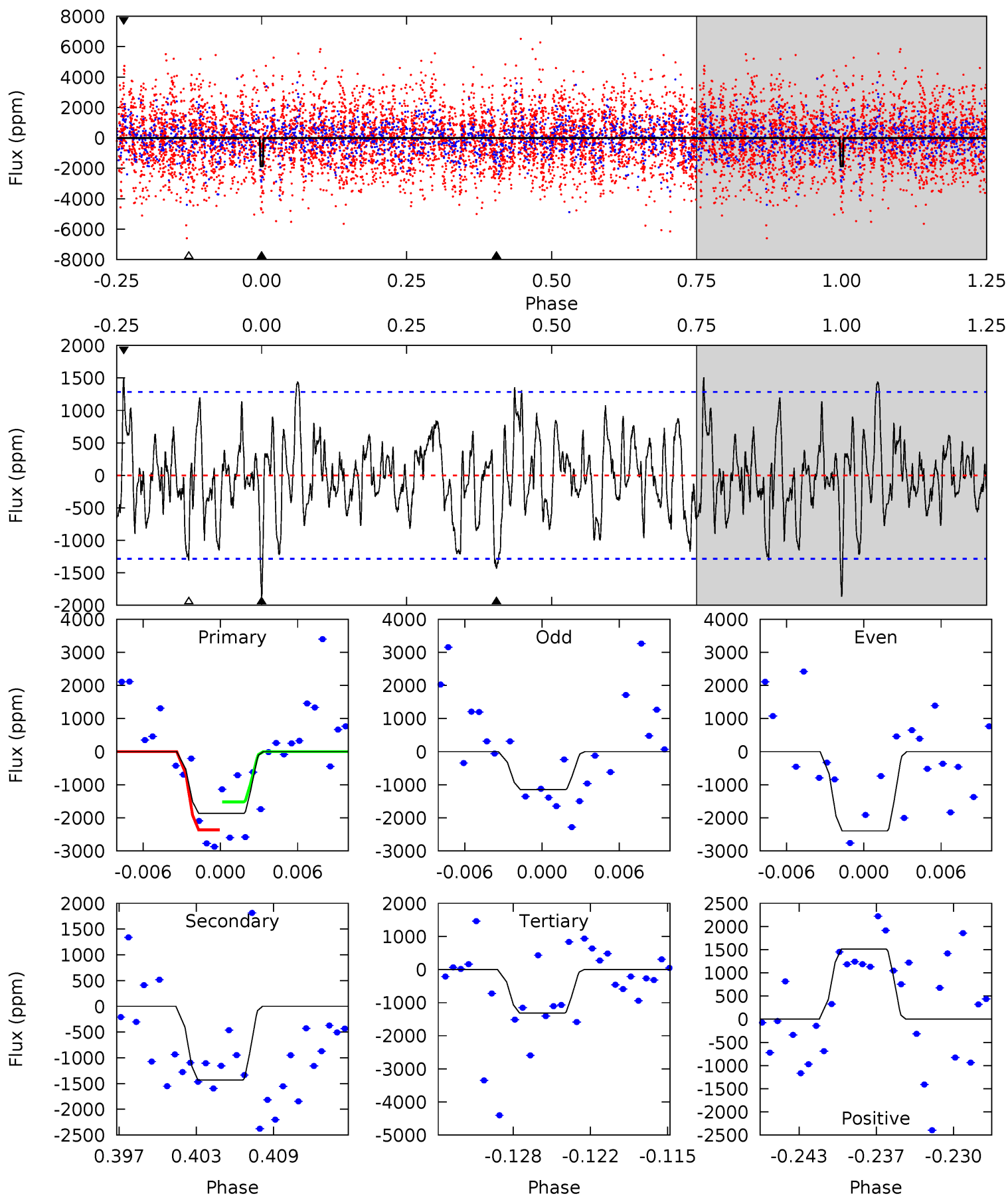
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

004180199-06, P = 19.073041 Days, E = 120.545092 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.44	5.69	5.23	6.01	5.11	2.73	1.95	2.21	1.43	0.46	-0.32	2.45	1.14	0.45	1.62



Stellar Parameters For KIC 004180199

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7452^{+206}_{-336}	$3.876^{+0.330}_{-0.110}$	$-0.140^{+0.250}_{-0.350}$	$2.544^{+0.517}_{-0.961}$	$1.774^{+0.173}_{-0.403}$	$0.152^{+0.376}_{-0.052}$
	+3%/-5%	+9%/-3%	+179%/-250%	+20%/-38%	+10%/-23%	+248%/-34%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 004180199-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$18.16^{+17.73}_{-13.10}$	1737^{+130}_{-169}	5825^{+35645}_{-43066}	105^{+9272}_{-8311}
Alt.	-1429 ± 251	$21.41^{+22.48}_{-14.90}$	1721^{+132}_{-155}	4927^{+4426}_{-1127}	47^{+430}_{-36}

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

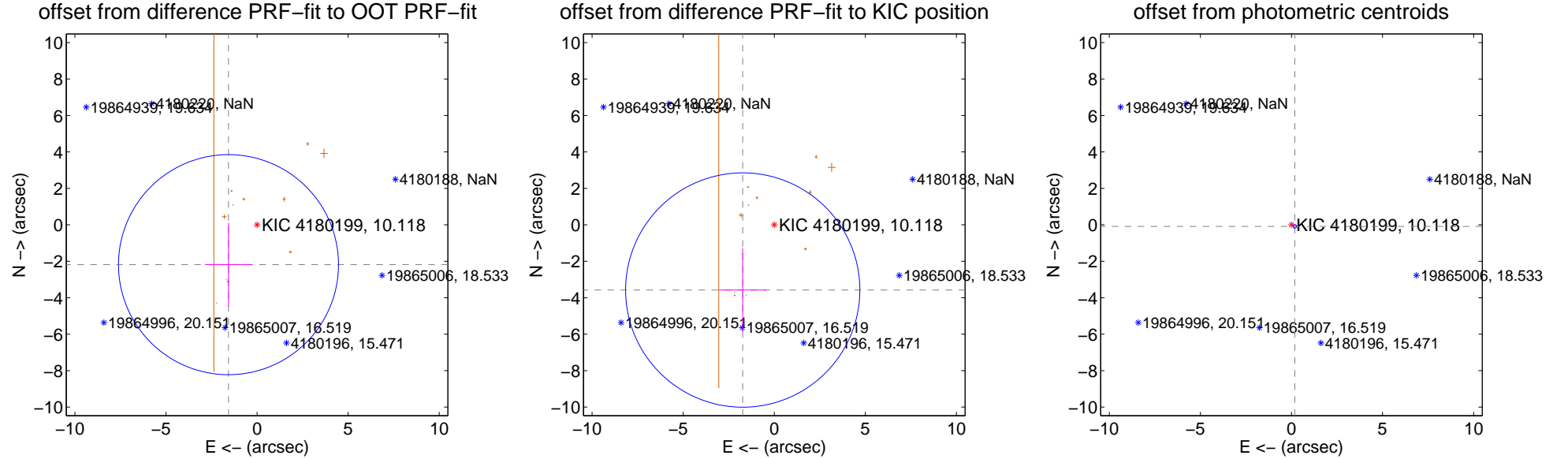
DV Centroid Data

Supplemental centroid analysis for 004180199-06. **Kepler magnitude: 10.12.** Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

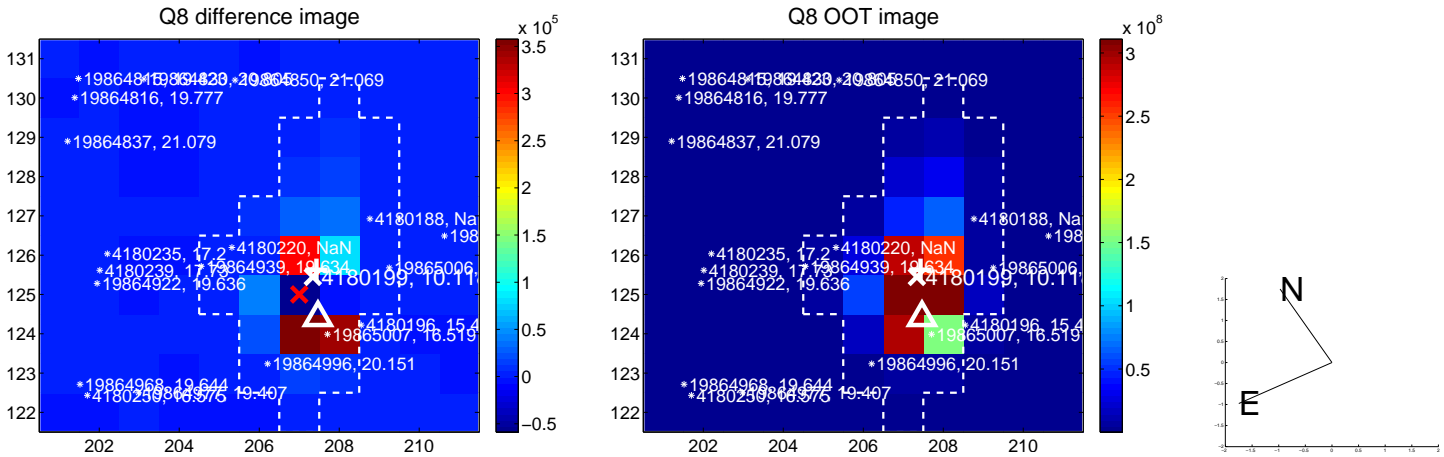
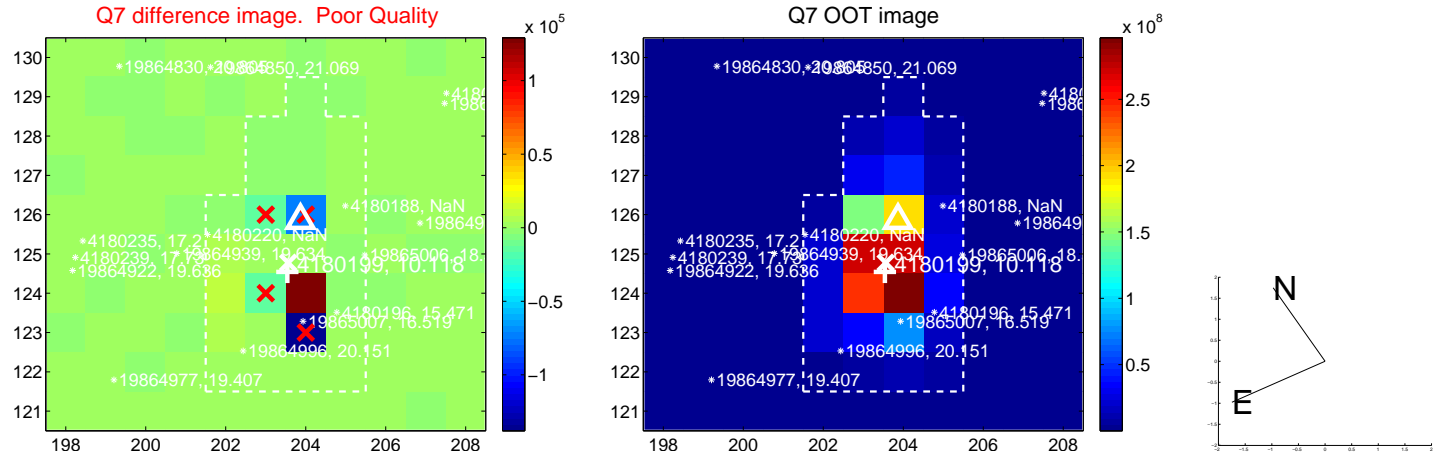
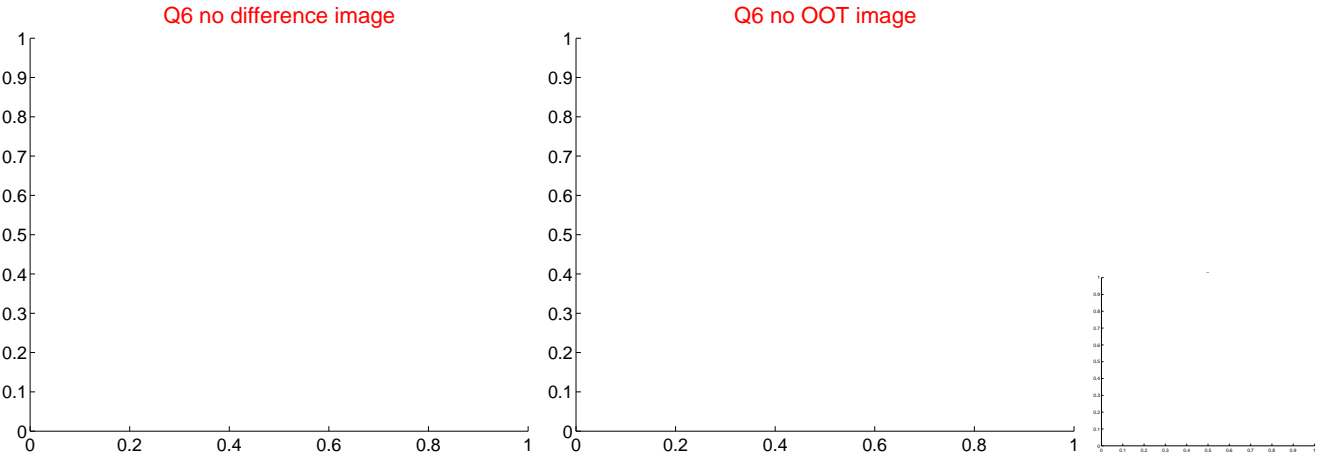
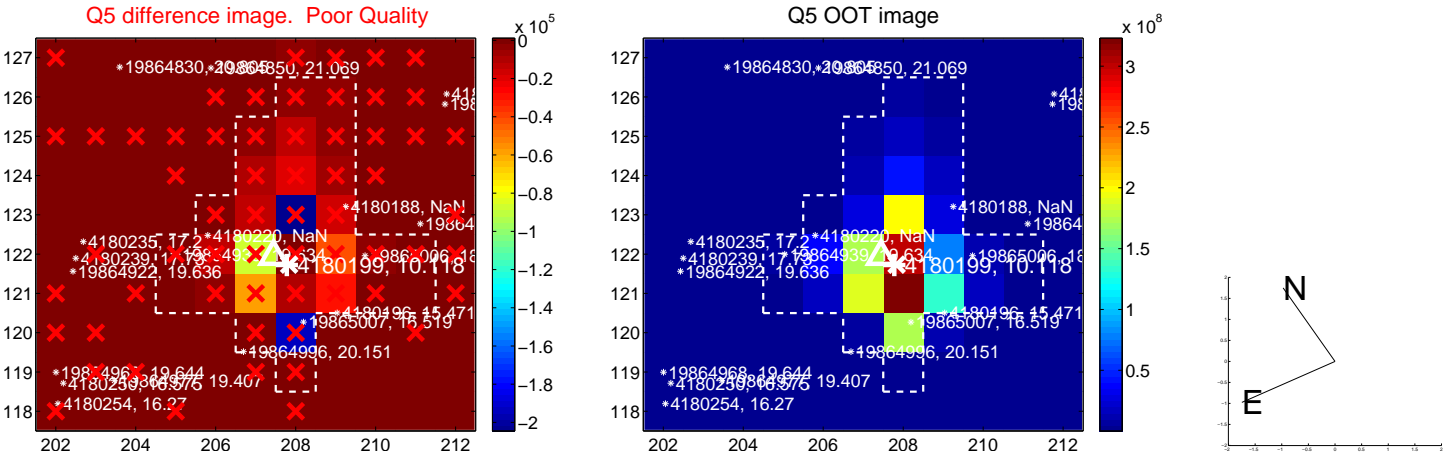
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.690 ± 2.013	1.34	1.569 ± 1.292	-2.185 ± 2.297
PRF-fit source offset from KIC position	3.974 ± 2.143	1.85	1.731 ± 1.292	-3.577 ± 2.297
photometric centroid source offset	0.21 ± 0.03	6.29	-0.19 ± 0.03	-0.08 ± 0.04

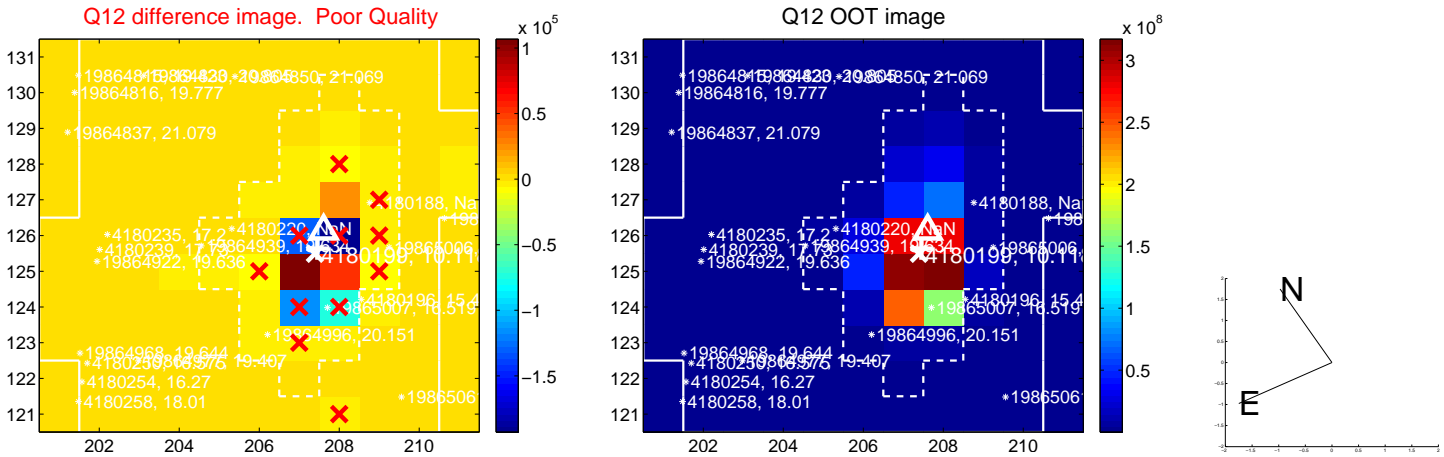
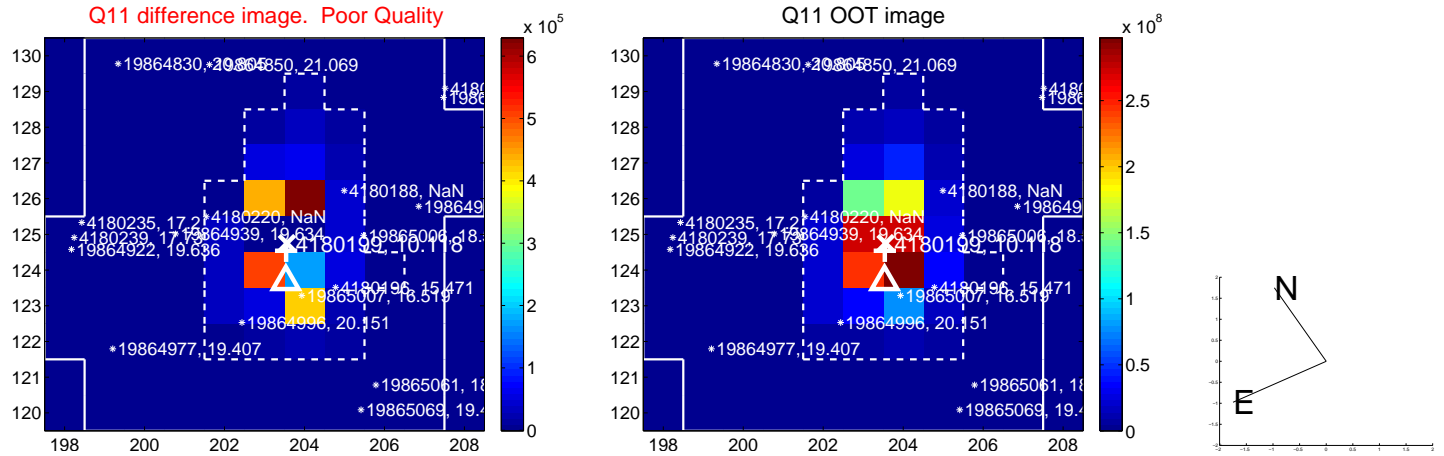
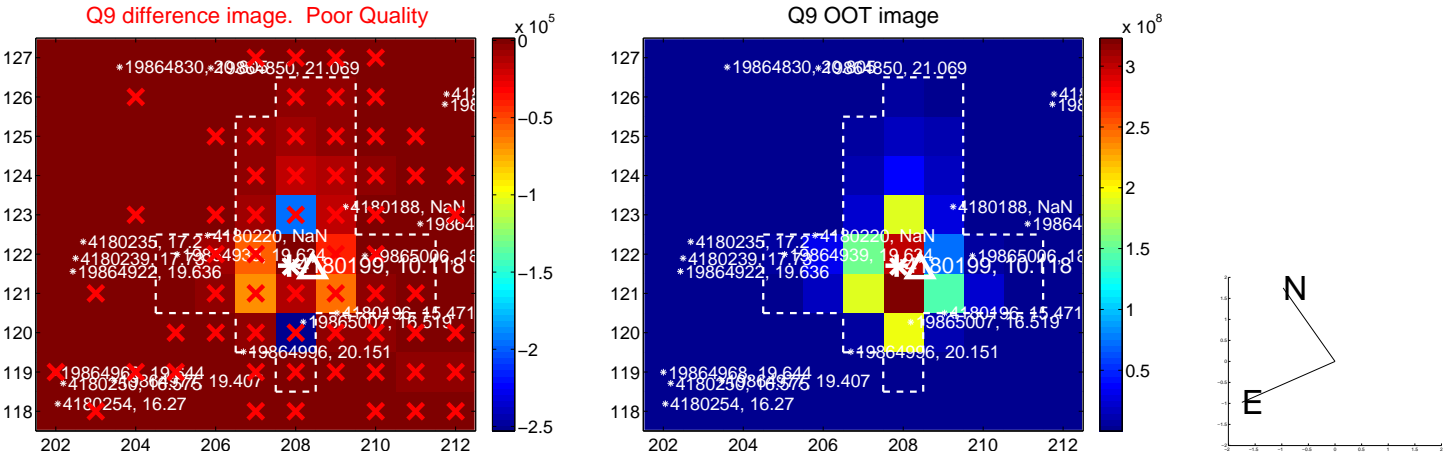


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

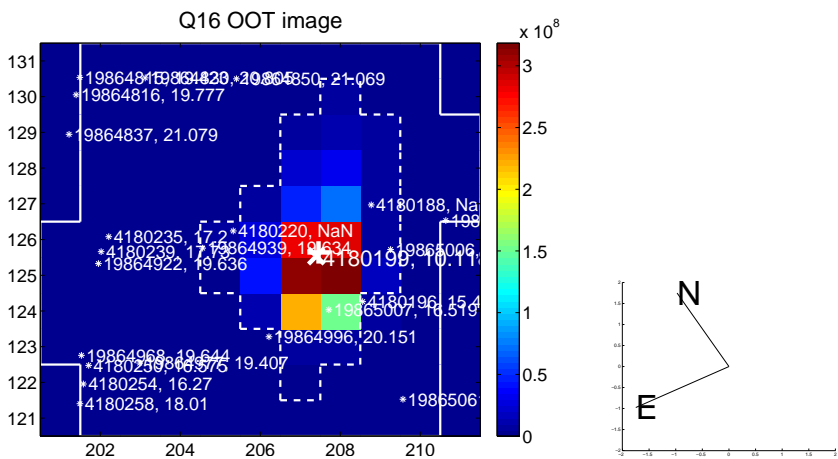
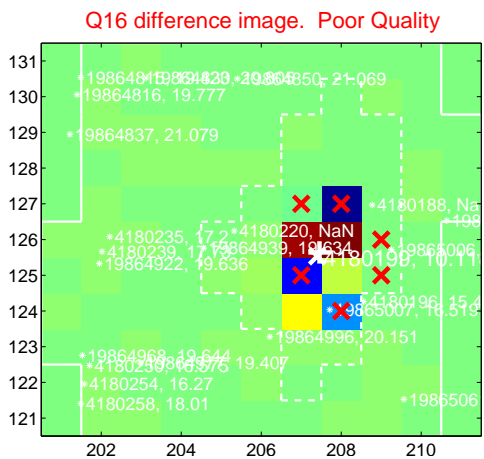
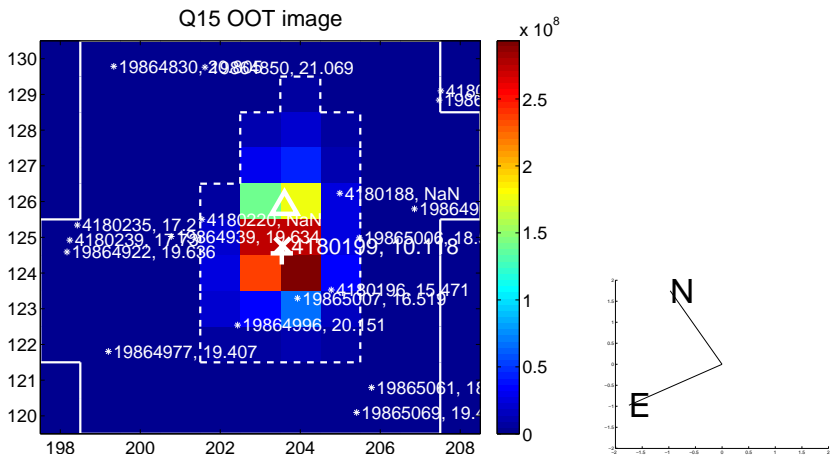
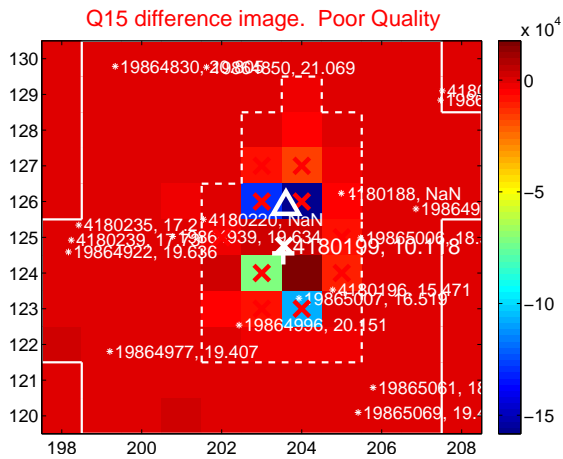
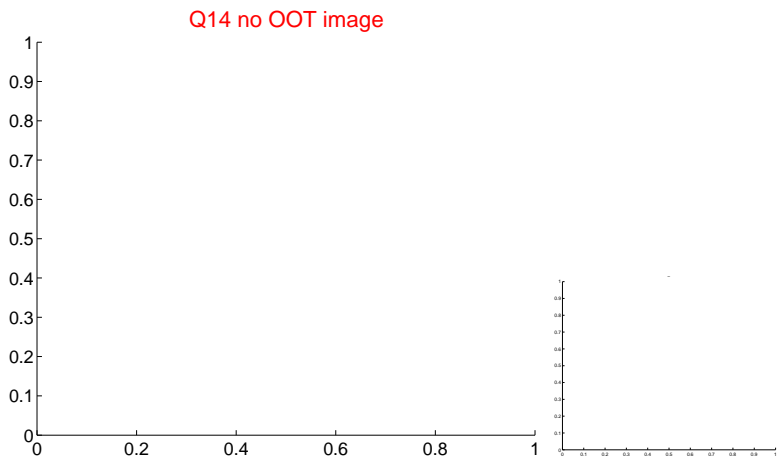
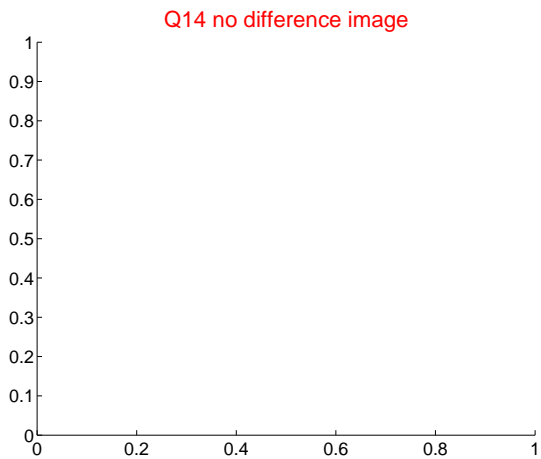
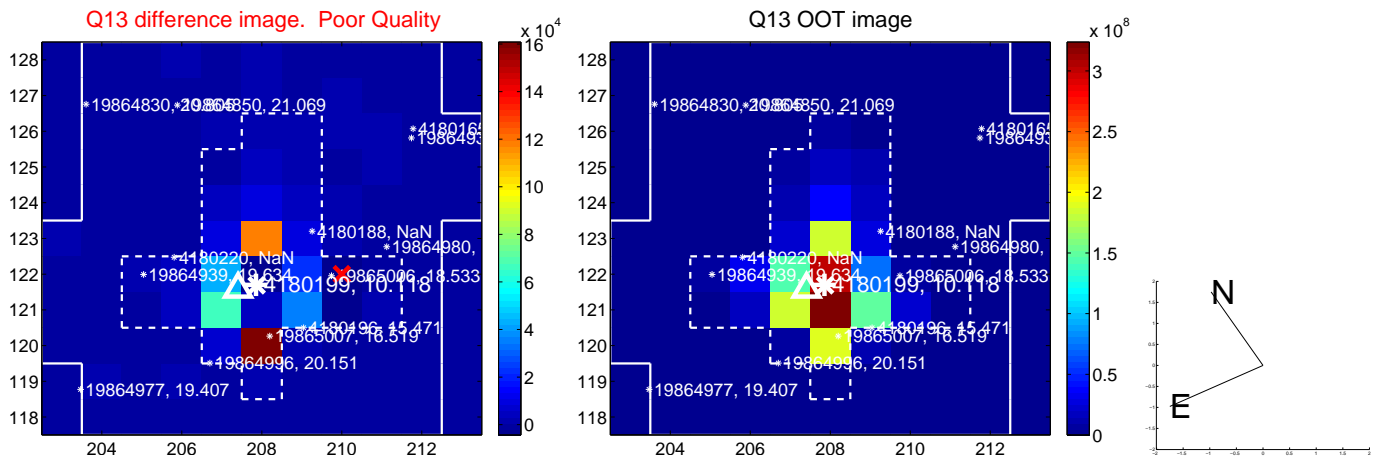
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



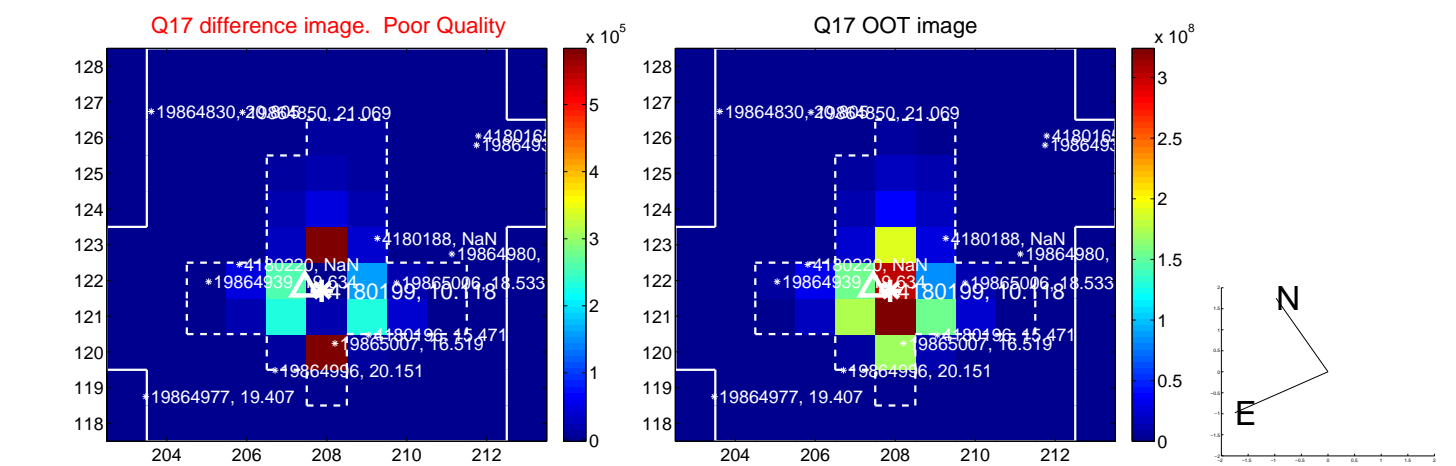
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



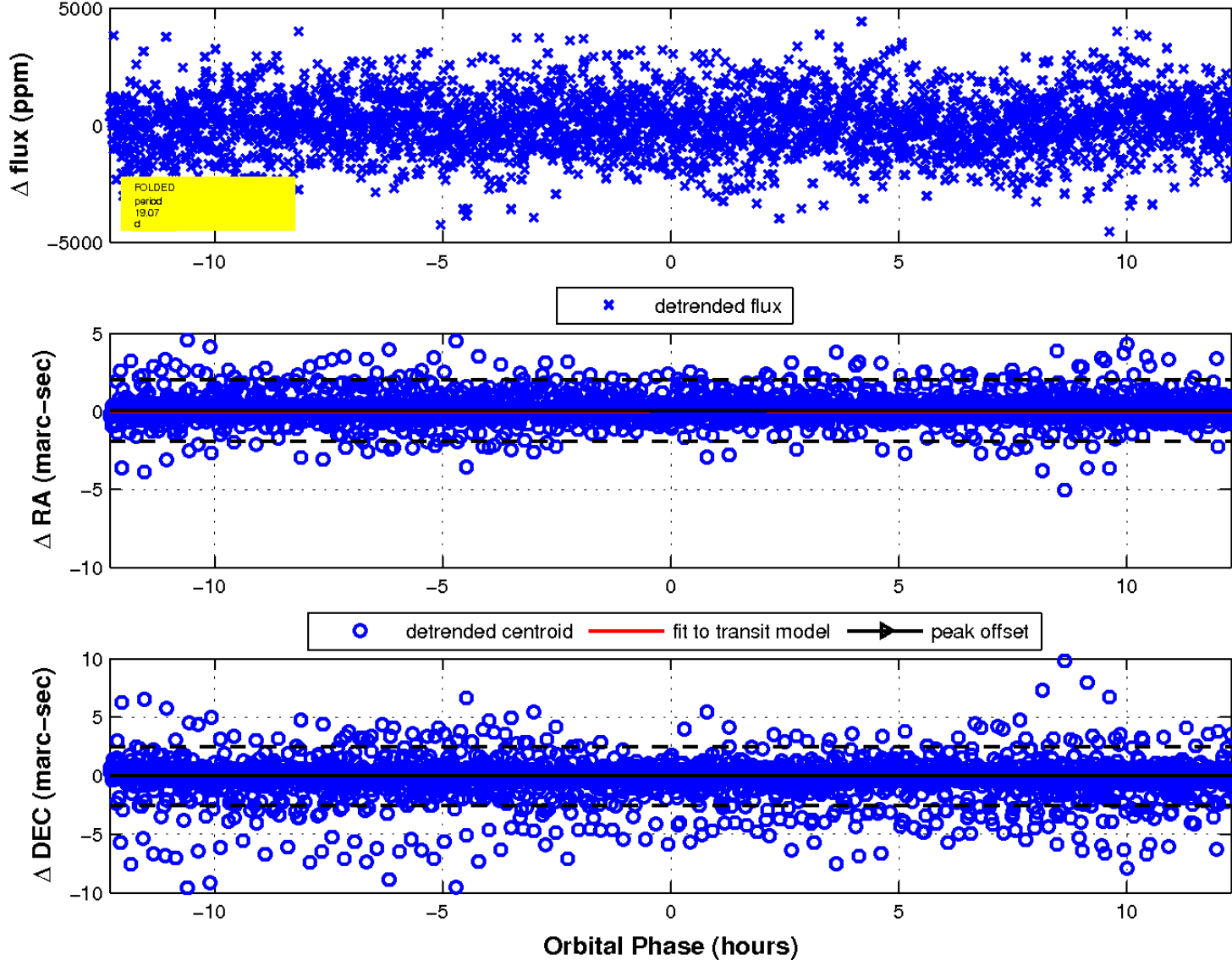
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 6 of 6



UKIRT Image

