

KIC 005009189

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})
005009189-01	OBS	1605.01	4.939141	135.050340	341.8	1.111	18.0	21.9	1.17	5956	2.65	462.70
005009189-02	OBS	No	4.939132	133.122806	270.4	0.981	13.6	17.1	1.17	5956	2.29	462.70
005009189-03	OBS	No	482.791632	387.778656	678.5	4.924	7.3	6.7	1.17	5956	5.93	1.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005009189-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
005009189-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005009189-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

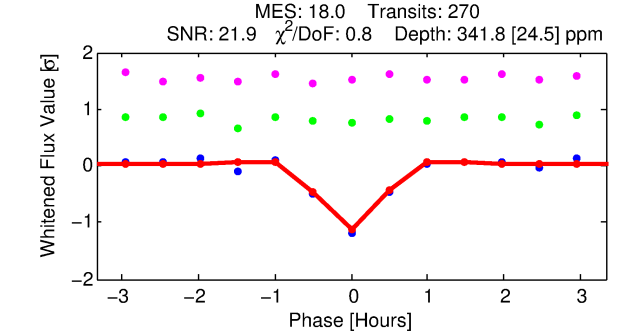
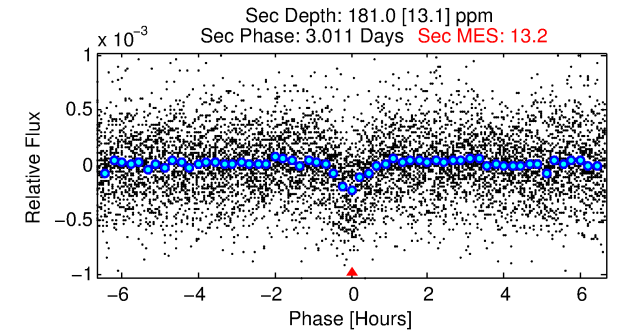
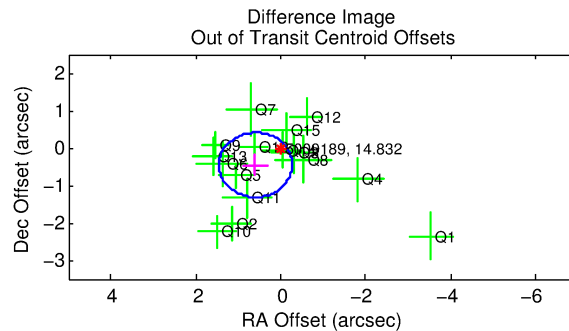
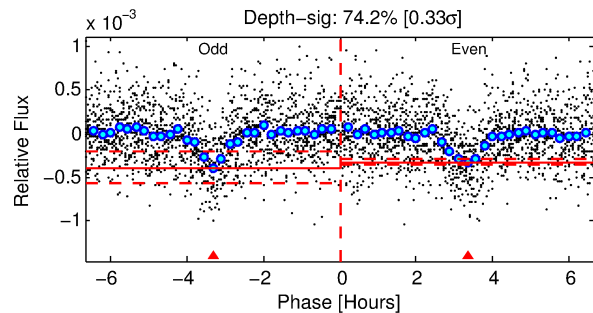
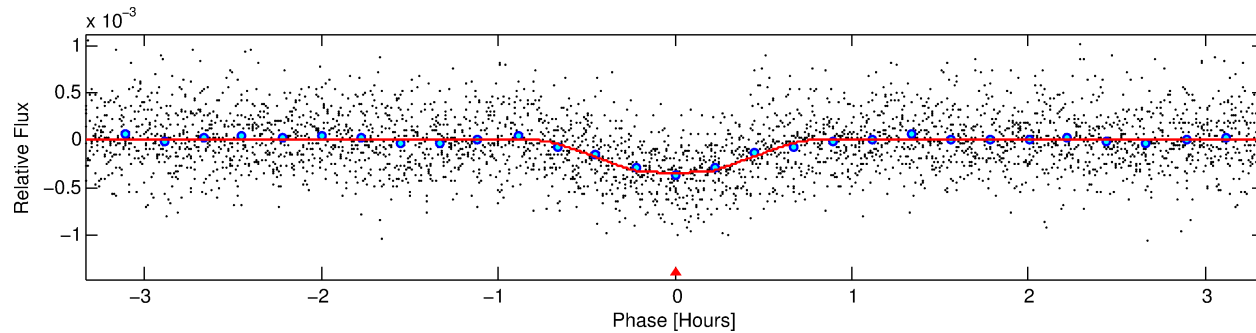
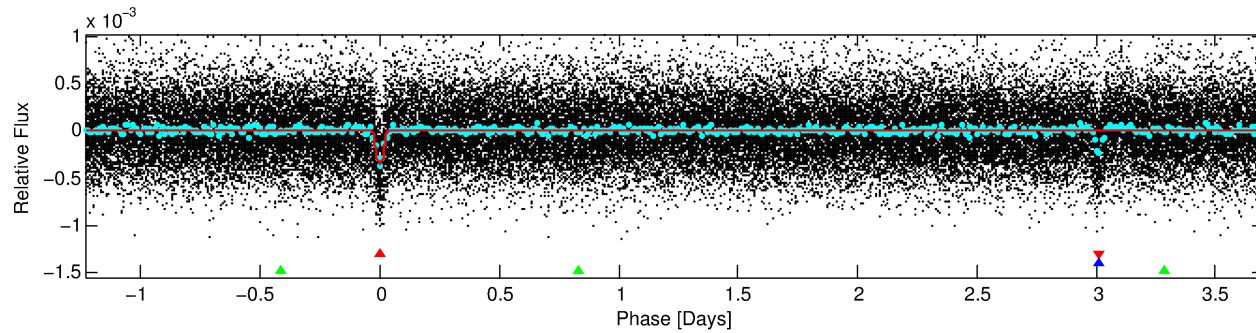
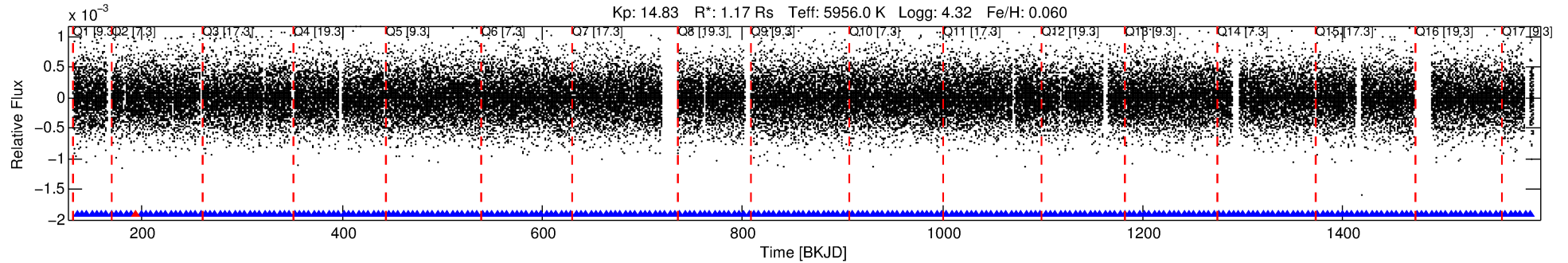
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005009189-01

No Significant Match Found

DV One-Page Summary

KIC: 5009189 Candidate: 1 of 3 Period: 4.939 d
KOI: K01605.01 Corr: 0.910



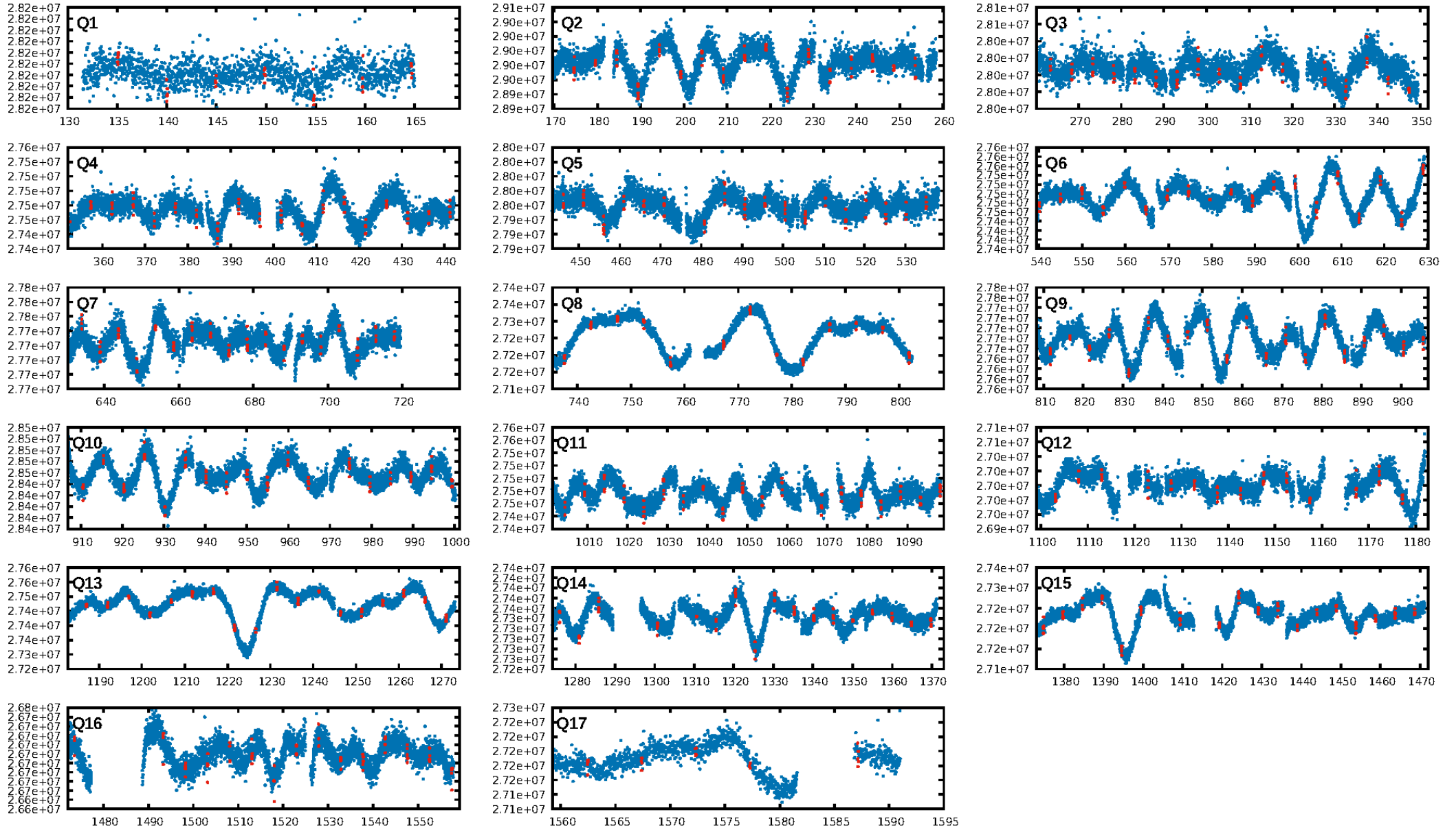
DV Fit Results:

Period = 4.93914 [0.00001] d
Epoch = 135.0503 [0.0011] BKJD
Rp/R* = 0.0208 [0.0053]
a/R* = 14.72 [18.35]
b = 0.92 [0.20]
Seff = 462.70 [168.95]
Teq = 1183 [108] K
Rp = 2.65 [1.04] Re
a = 0.0578 [0.0140] AU
Ag = 47.28 [29.40] [1.57σ]
Teffp = 4795 [642] K [5.55σ]

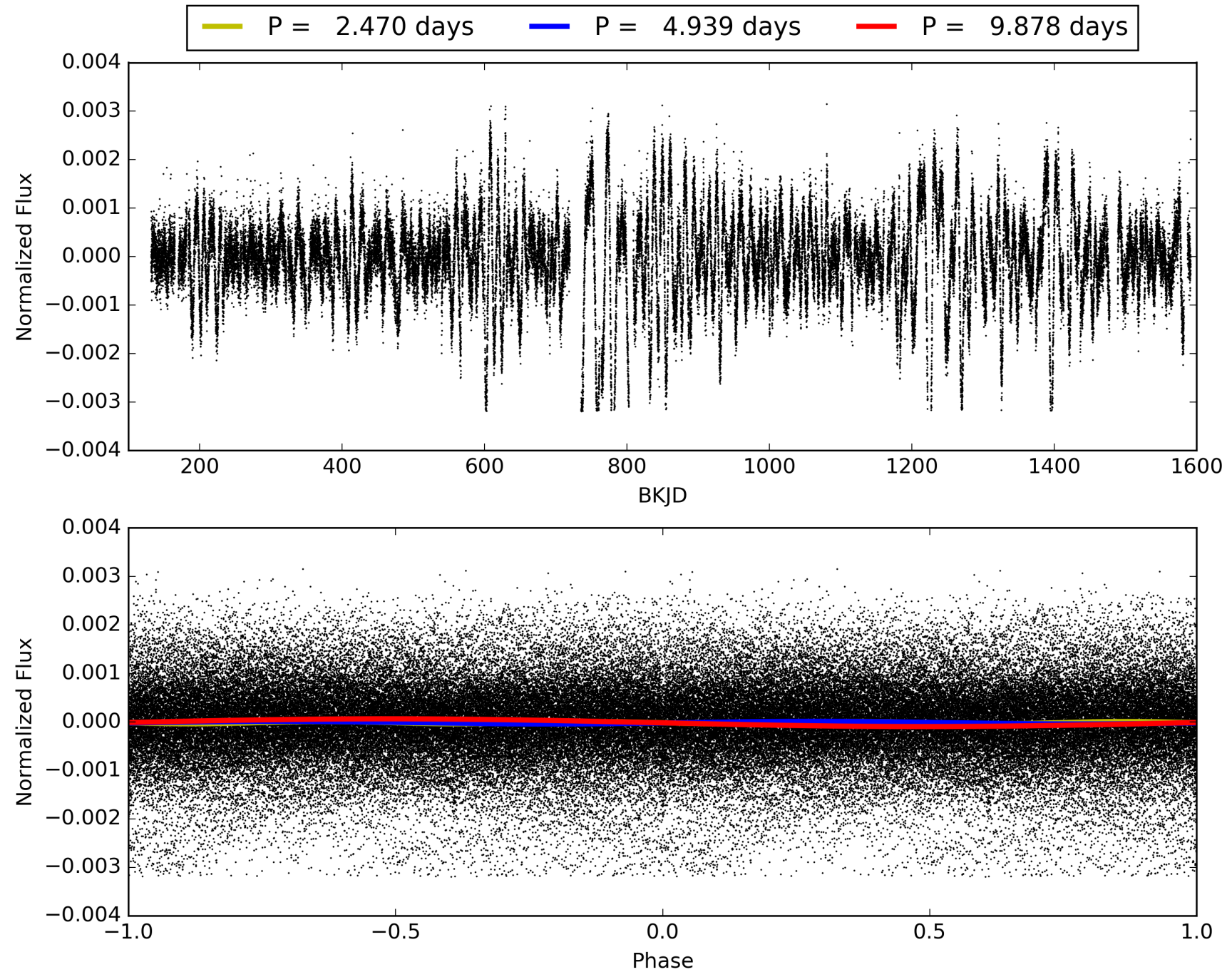
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: 100.0% [2272.09σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.97e-69
RollingBand-fgt: 1.00 [257/258]
GhostDiagnostic-chr: 2.727
Centroid-sig: 31.4%
Centroid-so: 0.441 arcsec [0.67σ]
OotOffset-rm: 0.751 arcsec [2.61σ]
KicOffset-rm: 0.794 arcsec [2.75σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005009189-01, PDC Light Curves

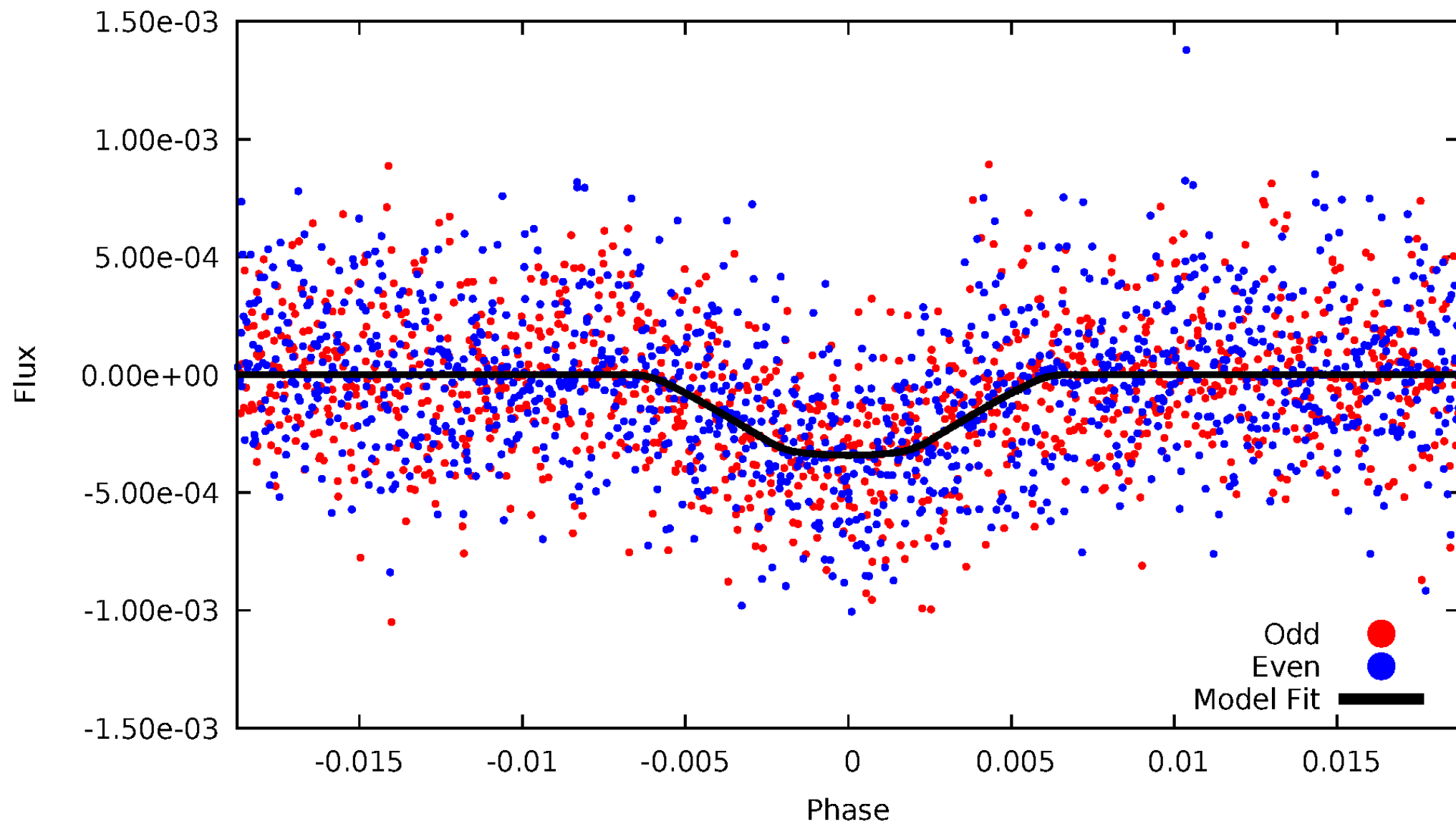


TCE 005009189-01



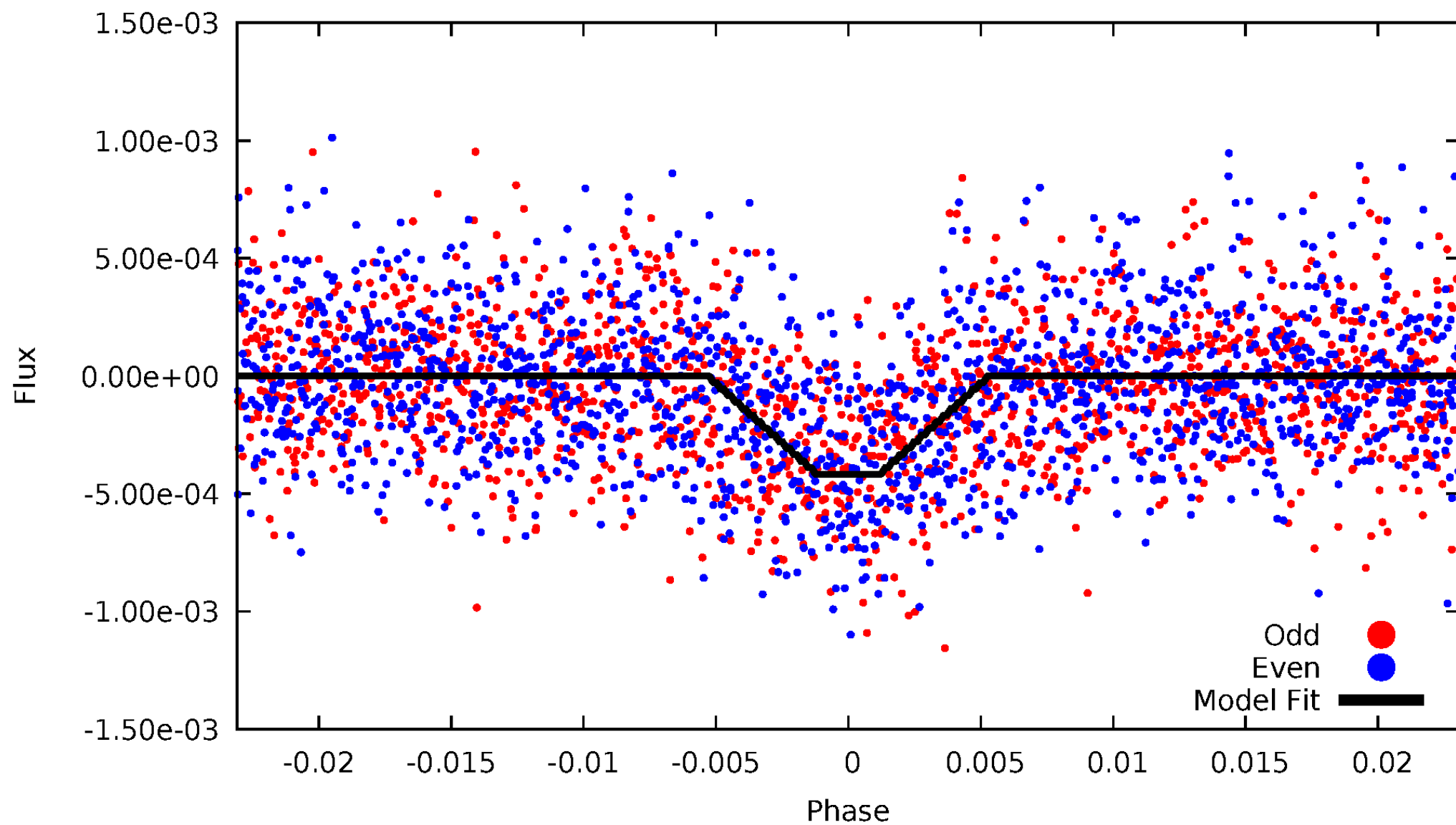
DV Odd/Even

TCE 005009189-01

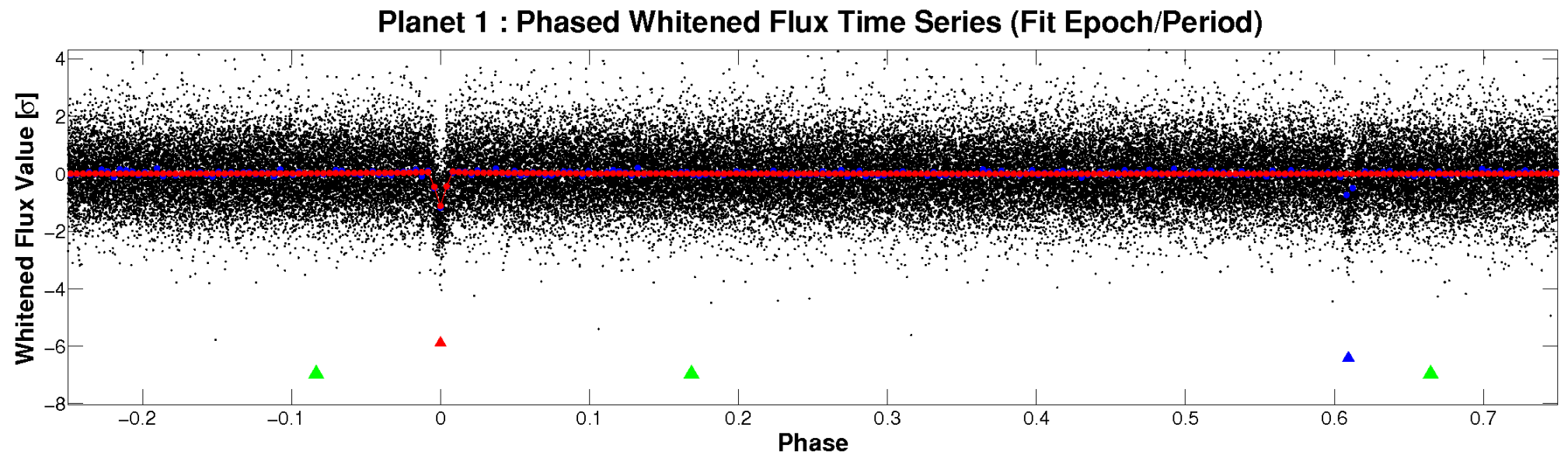
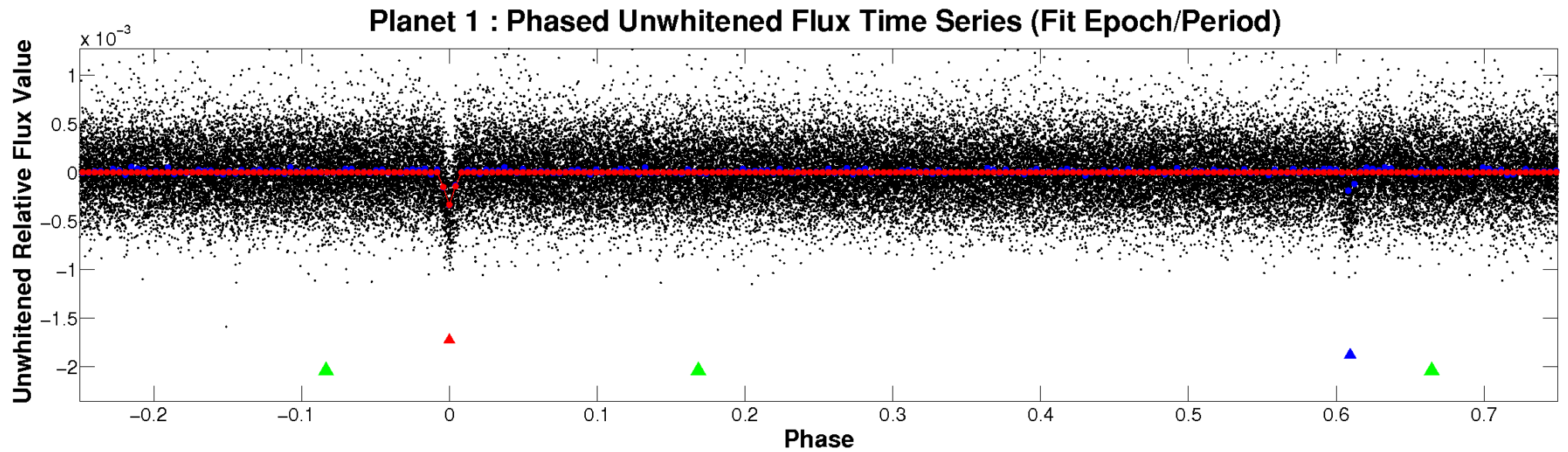


ALT Odd/Even

TCE 005009189-01

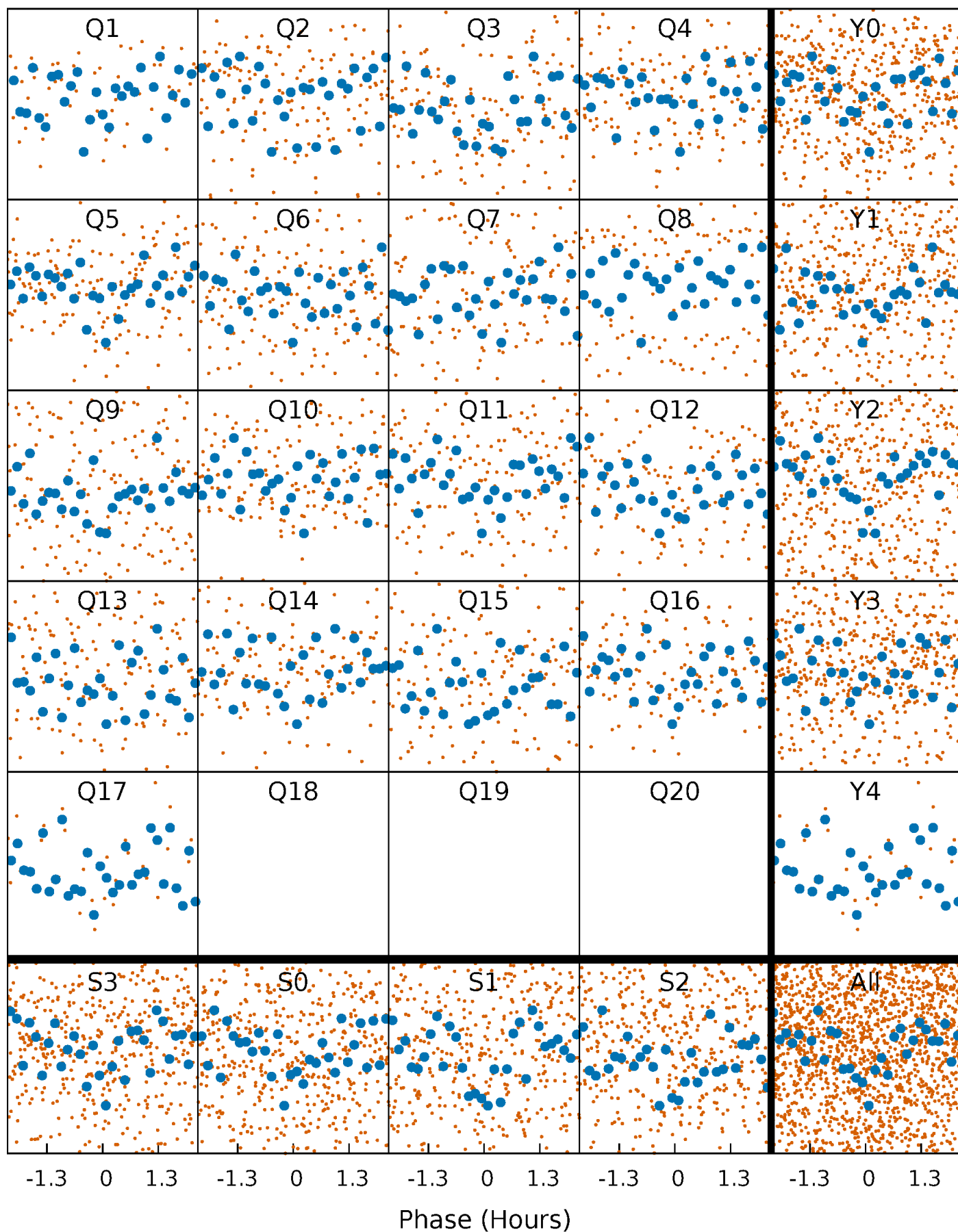


Non-Whitened Vs. Whitened Light Curve



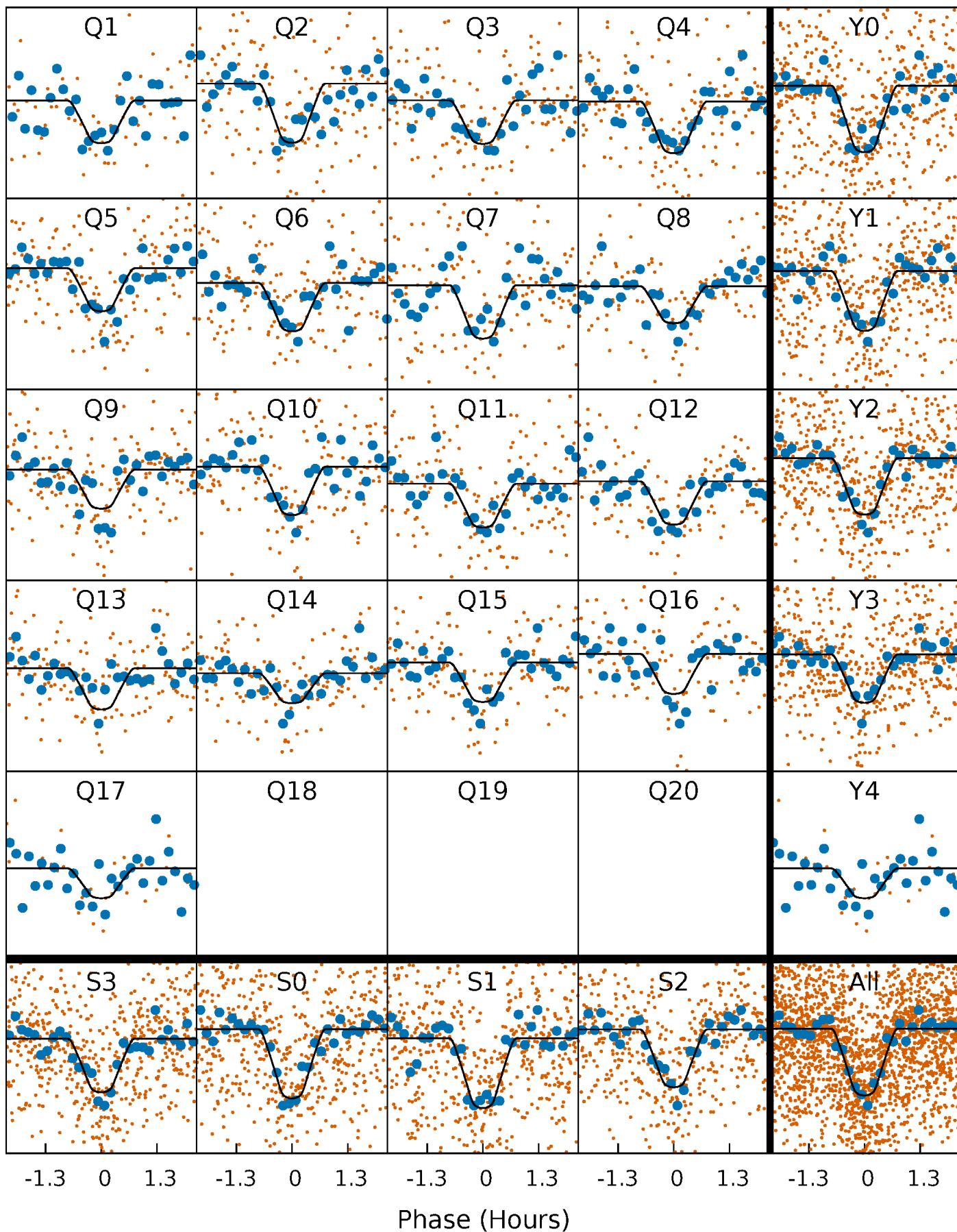
PDC Quarter-Phased Transit Curves

TCE 005009189-01 P= 4.939141 Days $T_0=135.050341$ (BKJD)



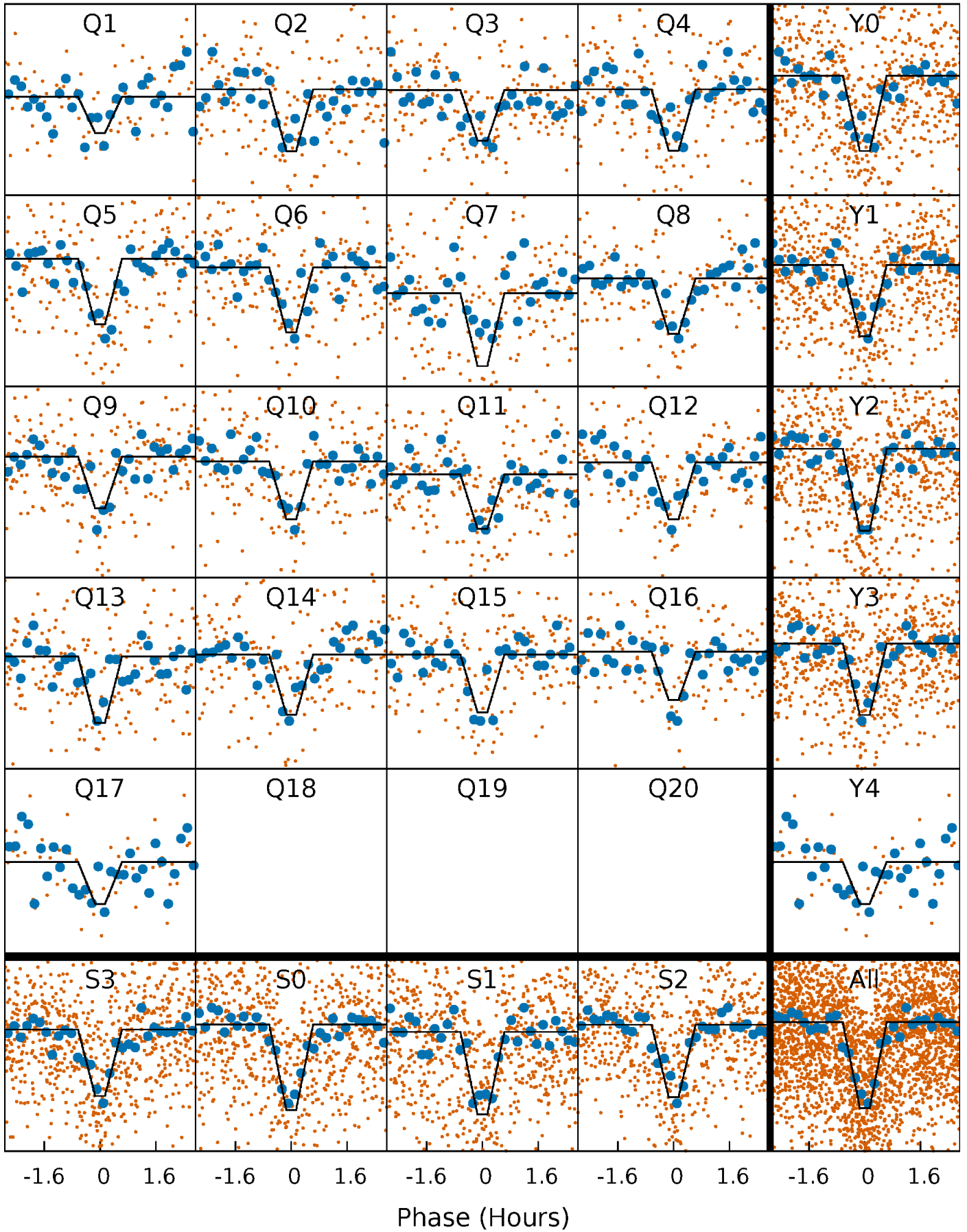
DV Quarter-Phased Transit Curves

TCE 005009189-01 P= 4.939141 Days $T_0=135.050341$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

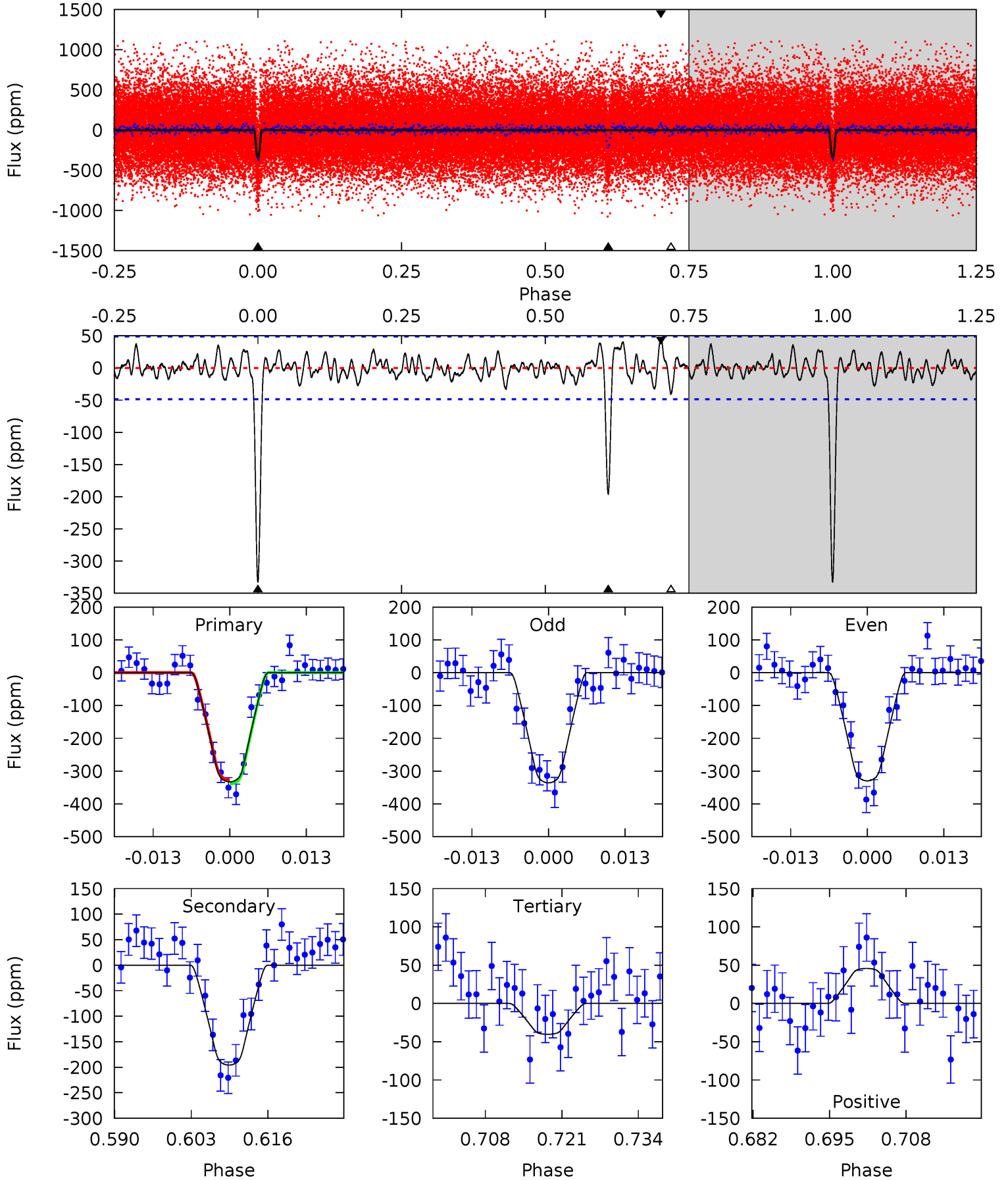
TCE 005009189-01 P= 4.939142 Days $T_0=135.050139$ (BKJD)



DV Model-Shift Uniqueness Test

005009189-01, P = 4.939141 Days, E = 130.111200 Days

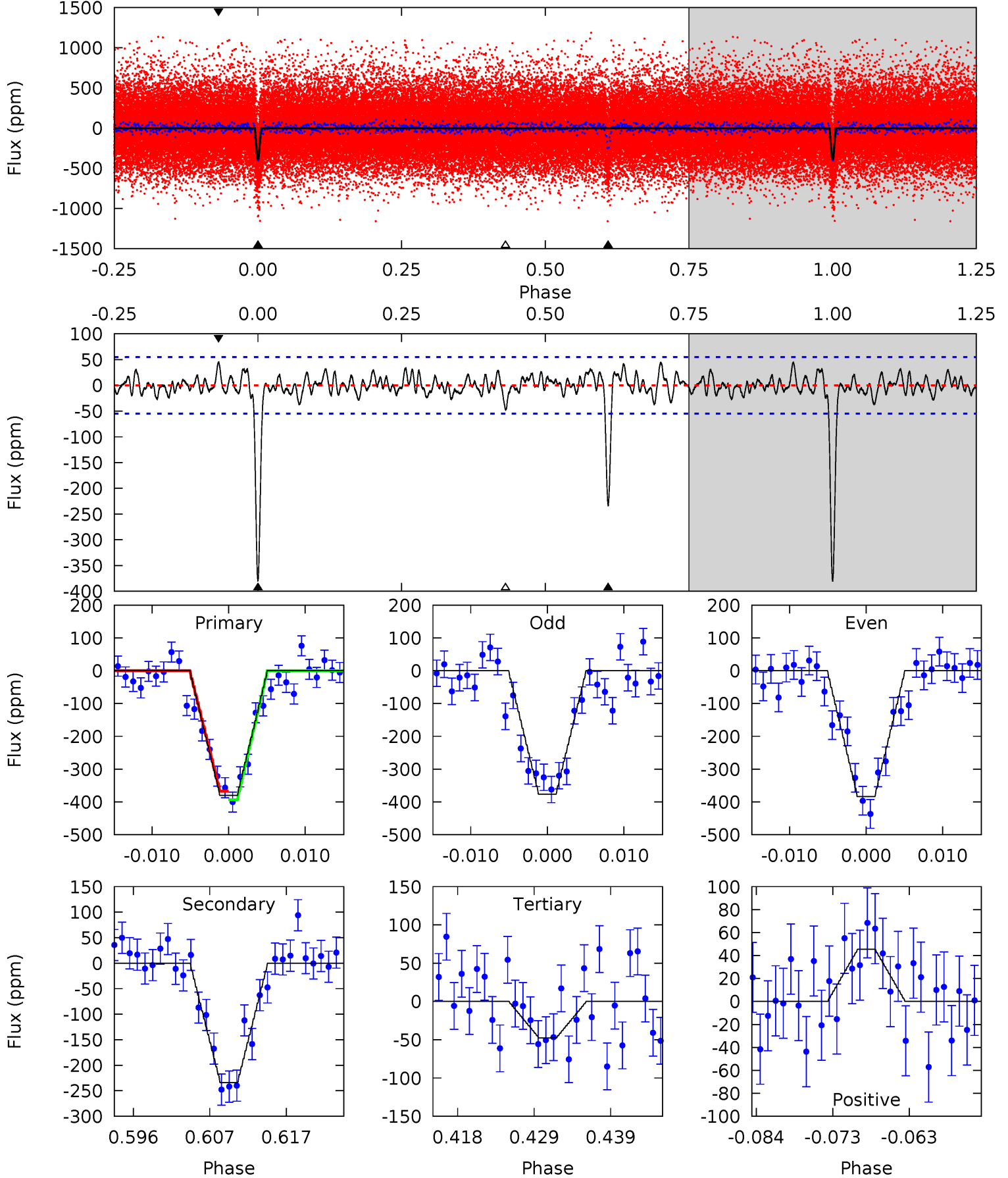
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.0	20.0	4.12	4.67	4.97	2.48	1.39	29.9	29.3	15.9	15.3	0.31	0.97	0.12	0.62



Alt Model-Shift Uniqueness Test

005009189-01, P = 4.939142 Days, E = 130.110997 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.8	21.4	4.36	4.16	5.02	2.56	1.37	30.4	30.6	17.0	17.2	0.34	0.97	0.11	1.17



Stellar Parameters For KIC 005009189

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5956^{+176}_{-193}	$4.324^{+0.132}_{-0.181}$	$0.060^{+0.250}_{-0.300}$	$1.170^{+0.348}_{-0.214}$	$1.053^{+0.152}_{-0.124}$	$0.926^{+0.563}_{-0.470}$
	+3%/-3%	+3%/-4%	+417%/-500%	+30%/-18%	+14%/-12%	+61%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005009189-01 / KOI 1605.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-196 ± 10	$2.66^{+0.84}_{-0.73}$	1657^{+122}_{-99}	4988^{+717}_{-503}	50^{+49}_{-21}
Alt.	-234 ± 11	$2.64^{+0.82}_{-0.76}$	1664^{+115}_{-102}	5175^{+876}_{-500}	60^{+61}_{-25}

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

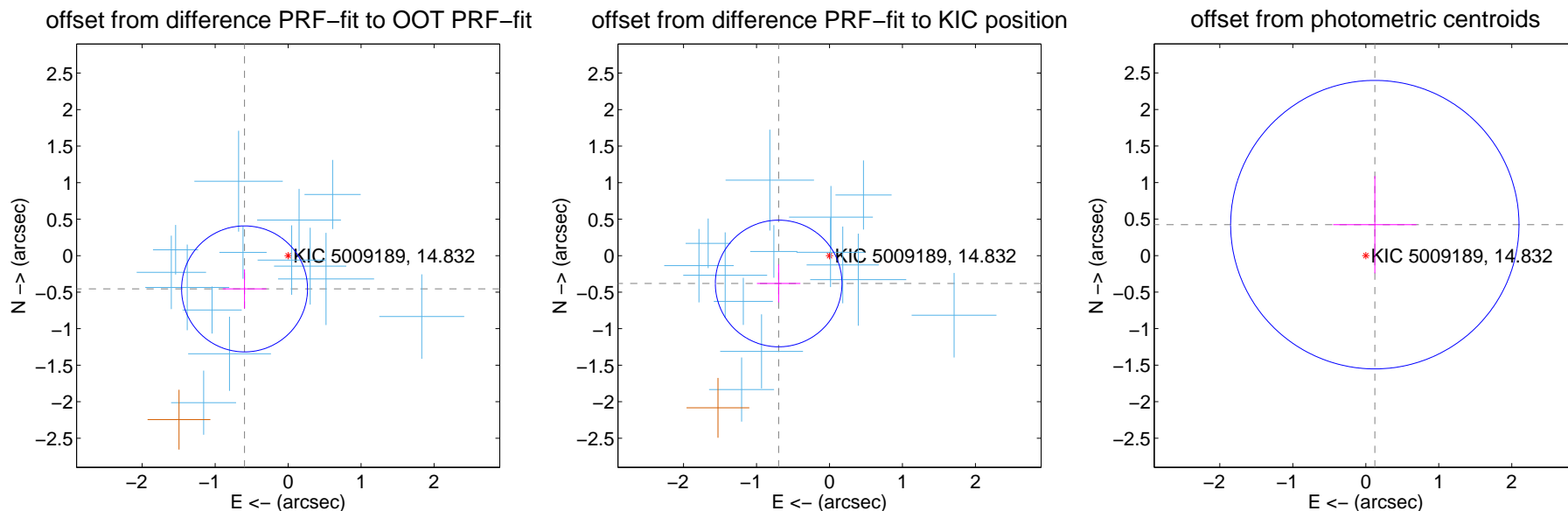
DV Centroid Data

Supplemental centroid analysis for 005009189-01. Kepler magnitude: 14.83. Transit SNR 21.93

There are 14 quarters with good PRF difference image offsets

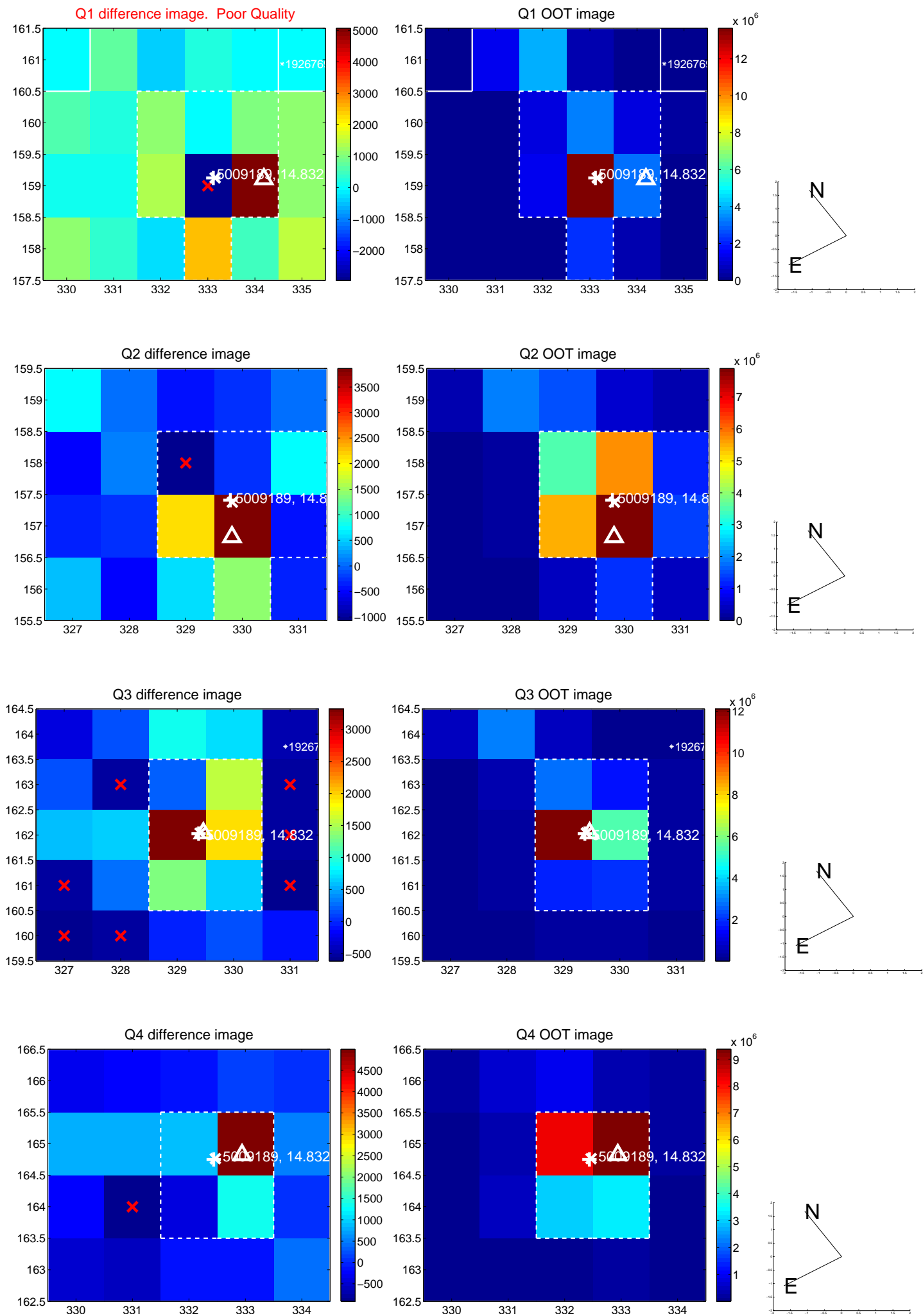
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.751 ± 0.288	2.61	0.597 ± 0.298	-0.455 ± 0.268
PRF-fit source offset from KIC position	0.794 ± 0.289	2.75	0.697 ± 0.297	-0.381 ± 0.259
photometric centroid source offset	0.44 ± 0.66	0.67	-0.12 ± 0.57	0.42 ± 0.67

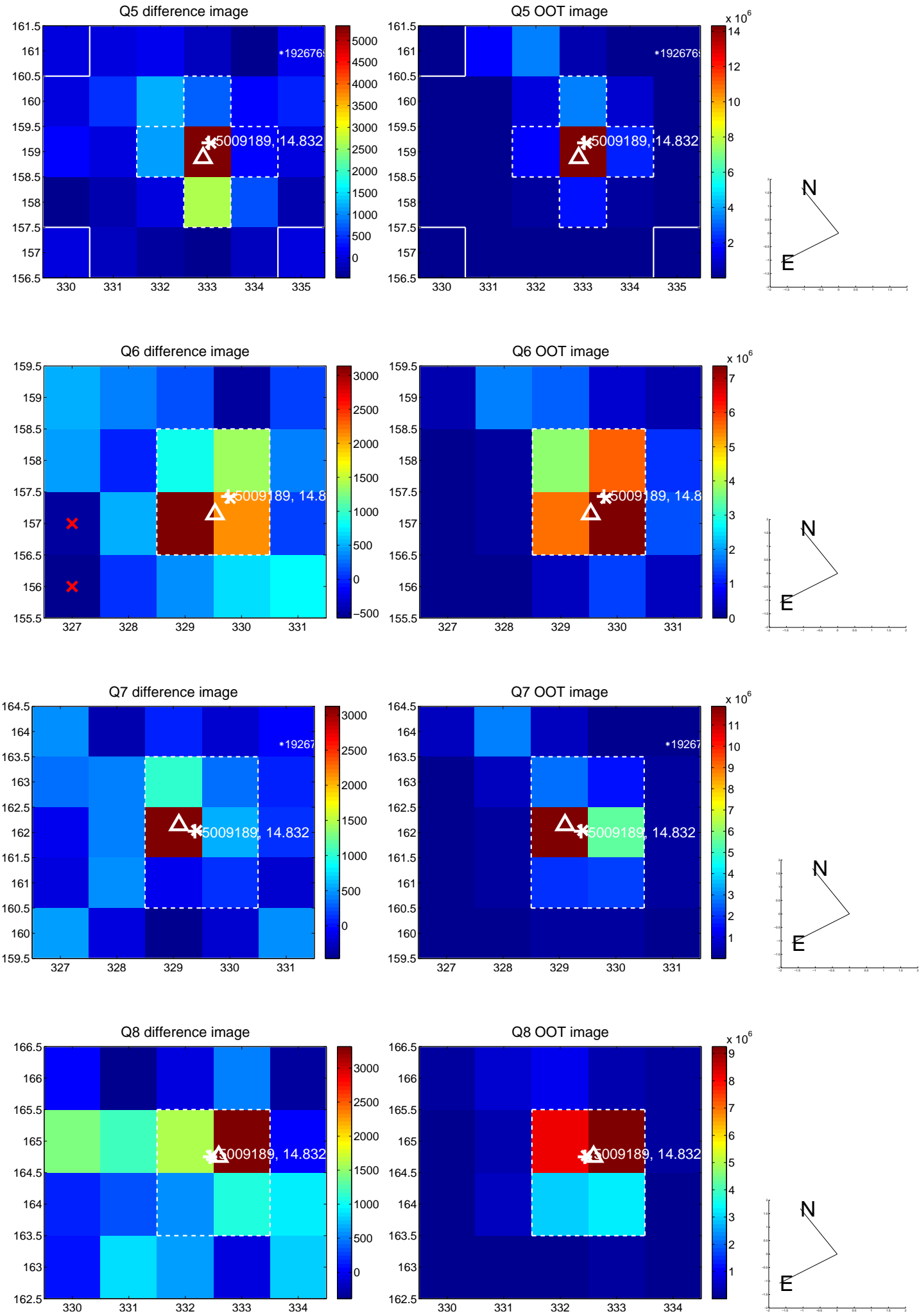


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

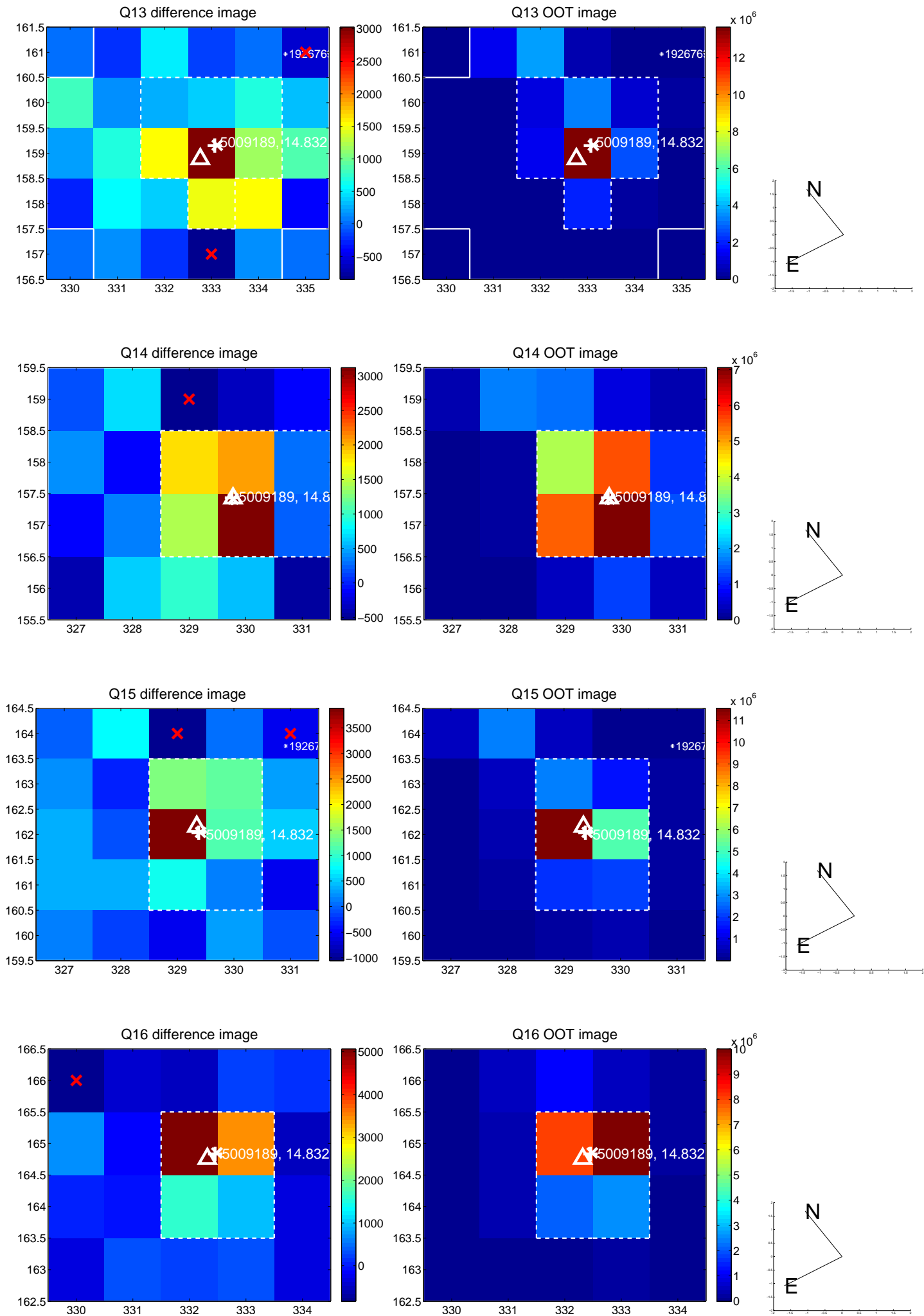
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



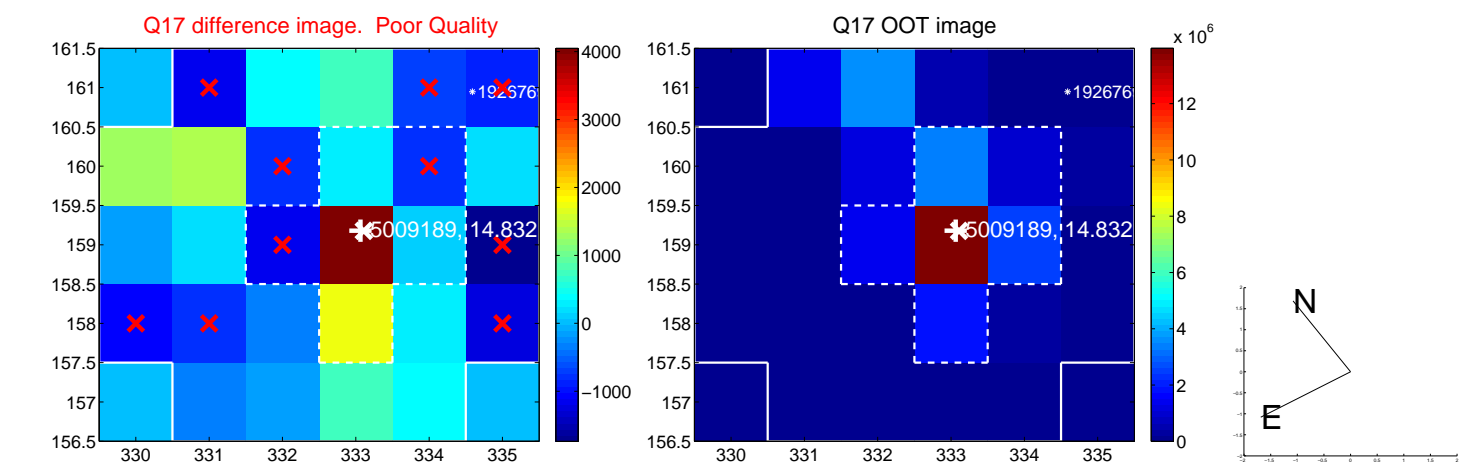
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



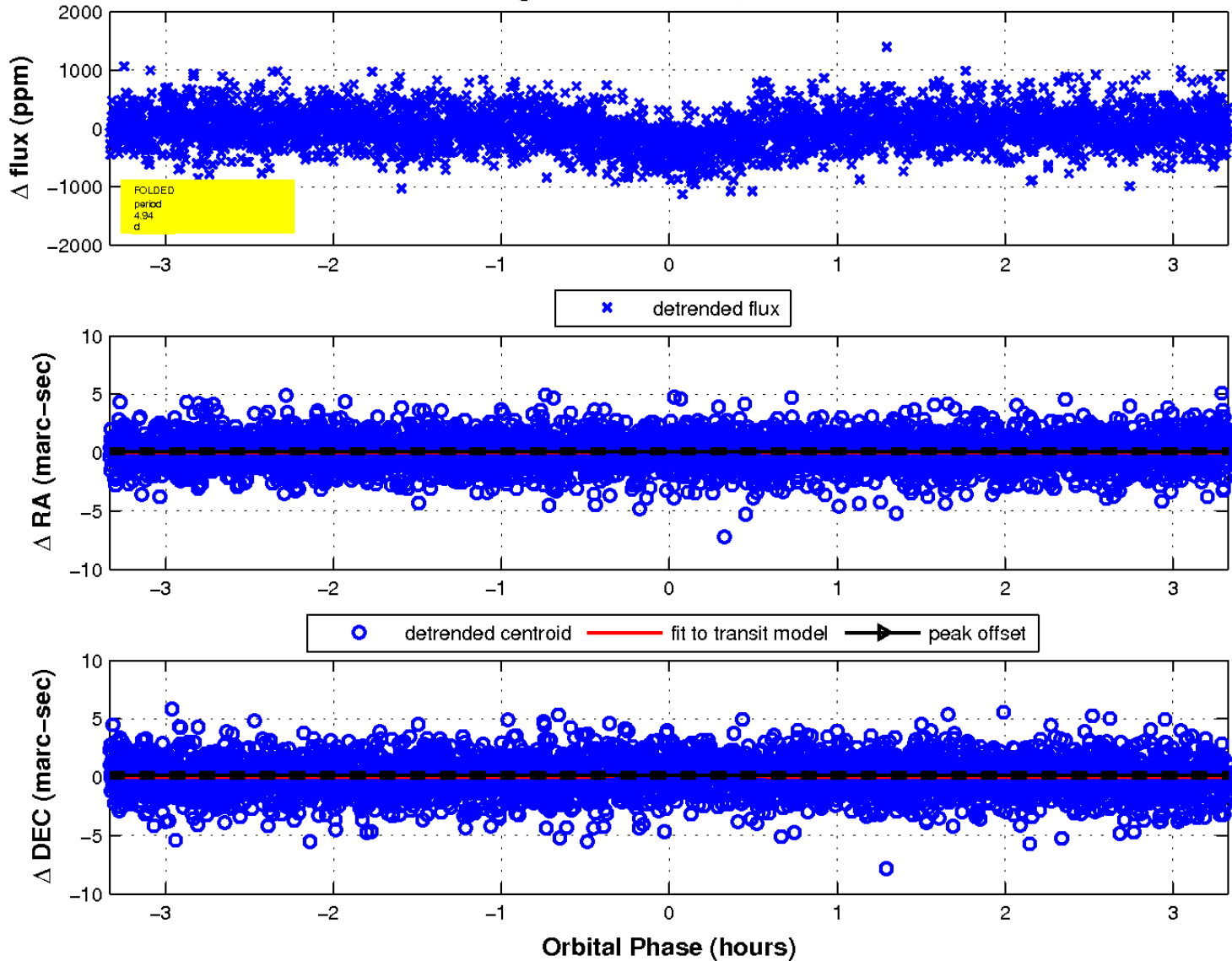
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

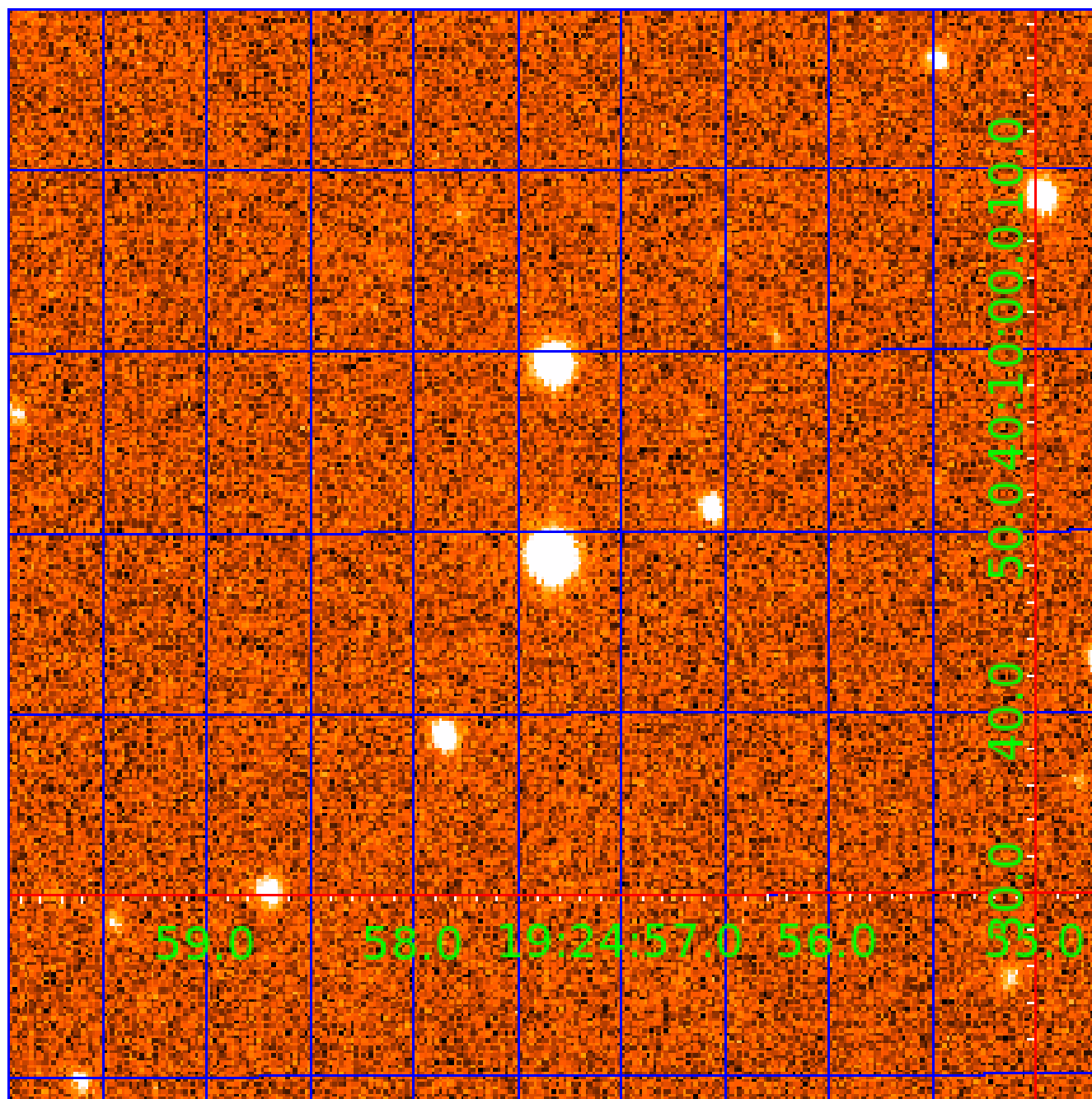


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 005009189

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})
005009189-01	OBS	1605.01	4.939141	135.050340	341.8	1.111	18.0	21.9	1.17	5956	2.65	462.70
005009189-02	OBS	No	4.939132	133.122806	270.4	0.981	13.6	17.1	1.17	5956	2.29	462.70
005009189-03	OBS	No	482.791632	387.778656	678.5	4.924	7.3	6.7	1.17	5956	5.93	1.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005009189-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
005009189-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005009189-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

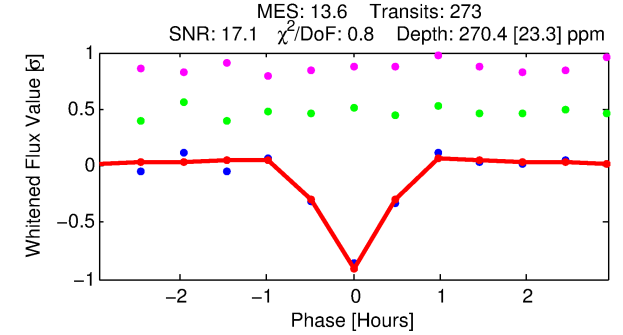
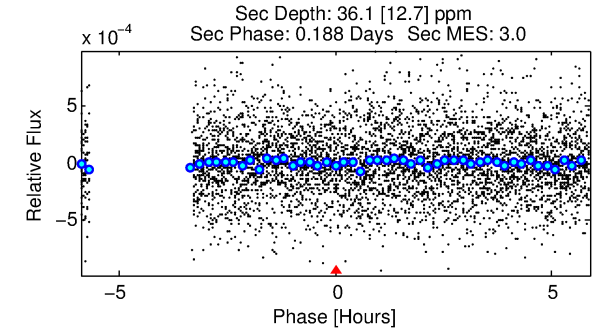
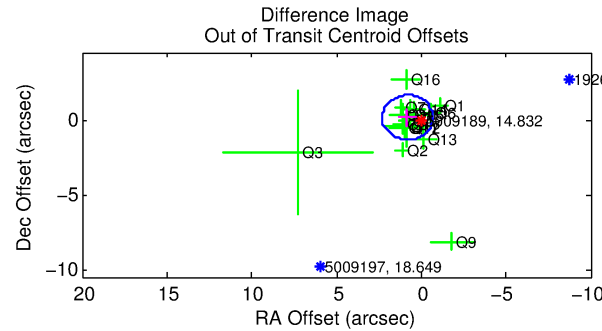
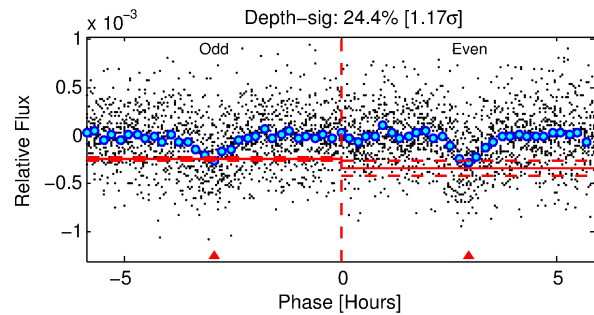
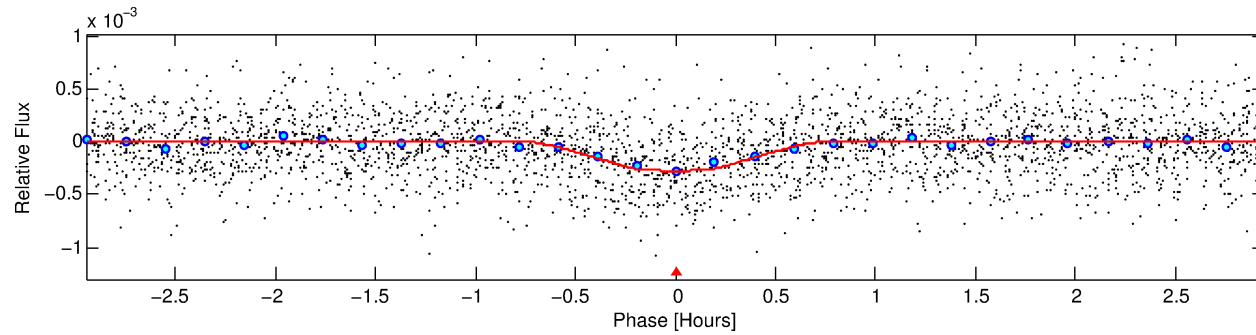
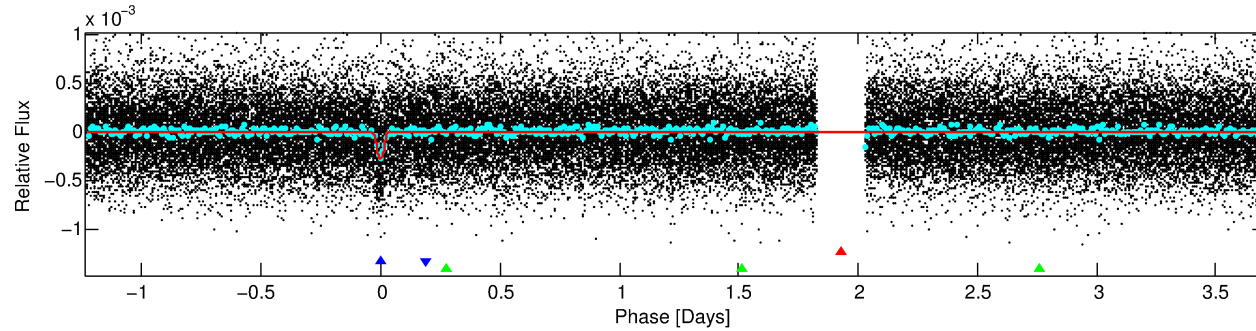
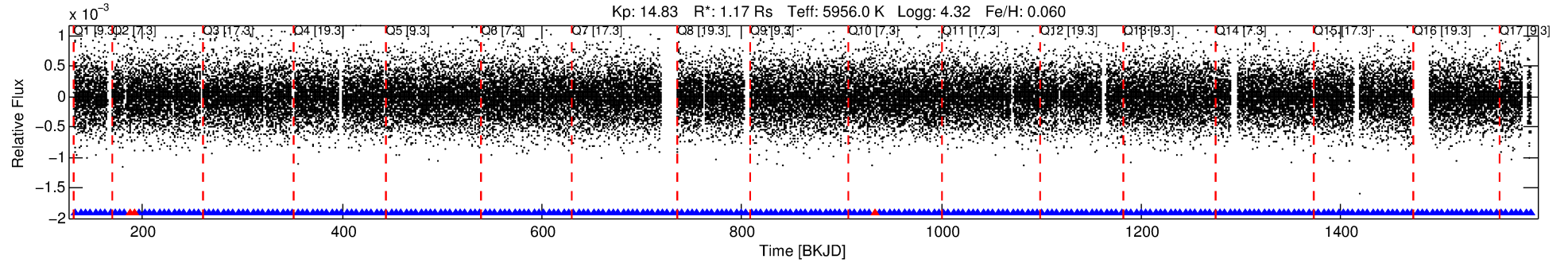
Ephemeris Match Information For 005009189-02

No Significant Match Found

DV One-Page Summary

KIC: 5009189 Candidate: 2 of 3 Period: 4.939 d

KOI: K01605 Corr: No Ephemeris Match



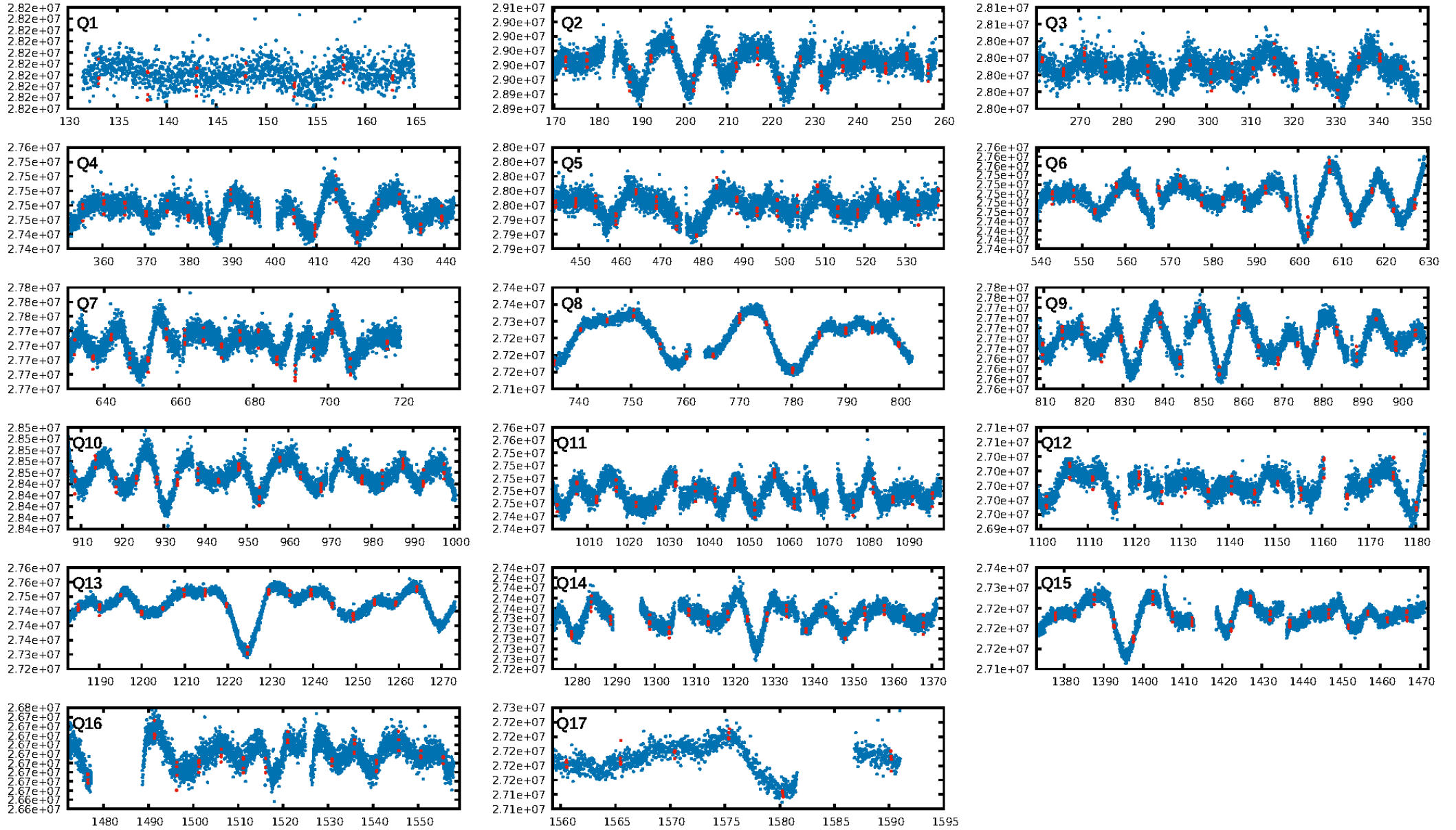
DV Fit Results:

Period = 4.93913 [0.00001] d
Epoch = 133.1228 [0.0013] BKJD
Rp/R* = 0.0179 [0.0083]
a/R* = 18.70 [42.20]
b = 0.89 [0.52]
Seff = 462.70 [168.95]
T_{eq} = 1183 [108] K
Rp = 2.29 [1.26] Re
a = 0.0578 [0.0140] AU
Ag = 12.64 [13.28] [0.88 σ]
T_{effp} = 3447 [864] K [2.60 σ]

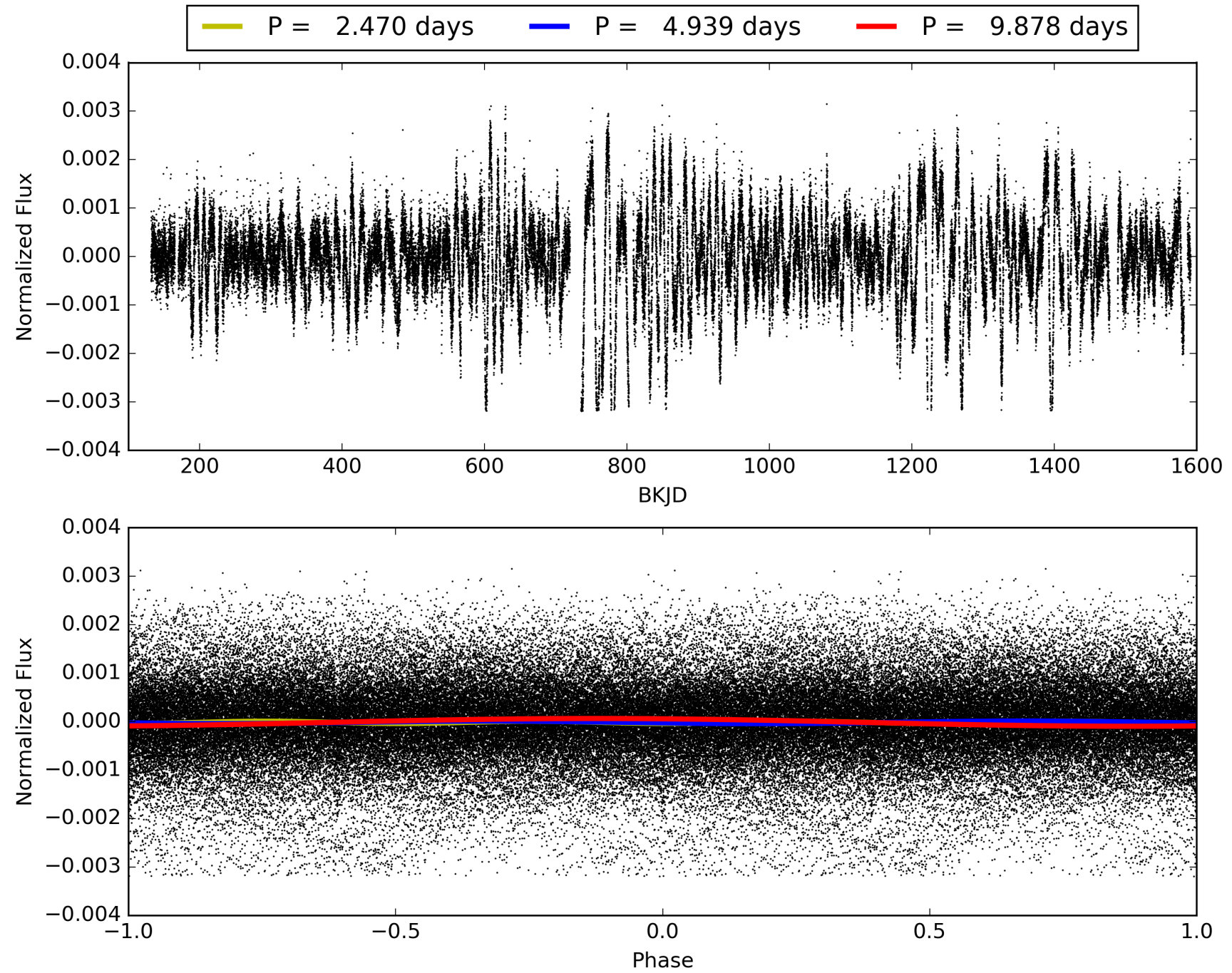
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.85e-40
RollingBand-fgt: 0.99 [257/260]
GhostDiagnostic-chr: 80.28
Centroid-sig: 15.2%
Centroid-so: 0.803 arcsec [1.07 σ]
OotOffset-rm: 0.829 arcsec [1.67 σ]
KicOffset-rm: 1.039 arcsec [2.04 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 005009189-02, PDC Light Curves

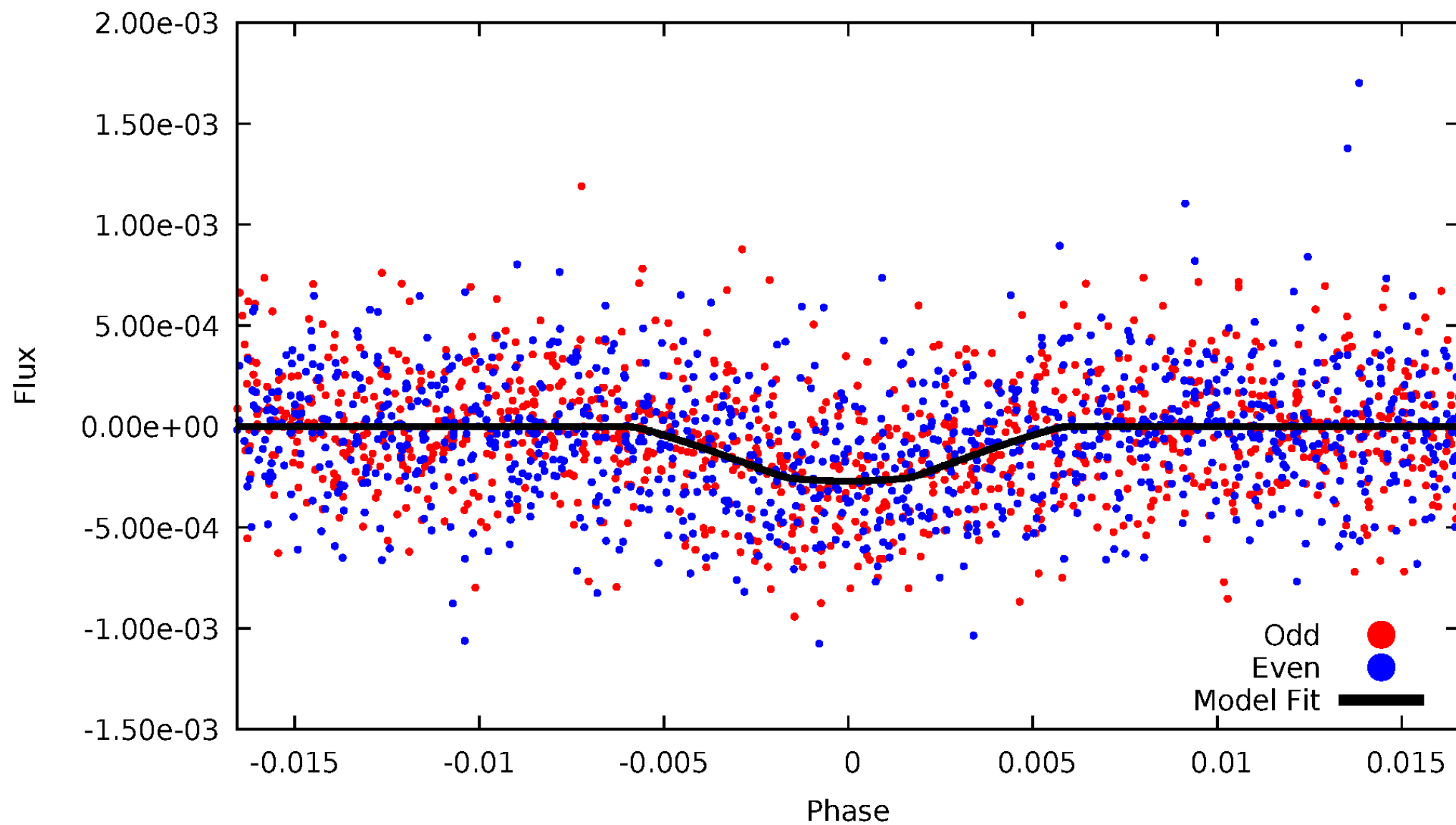


TCE 005009189-02



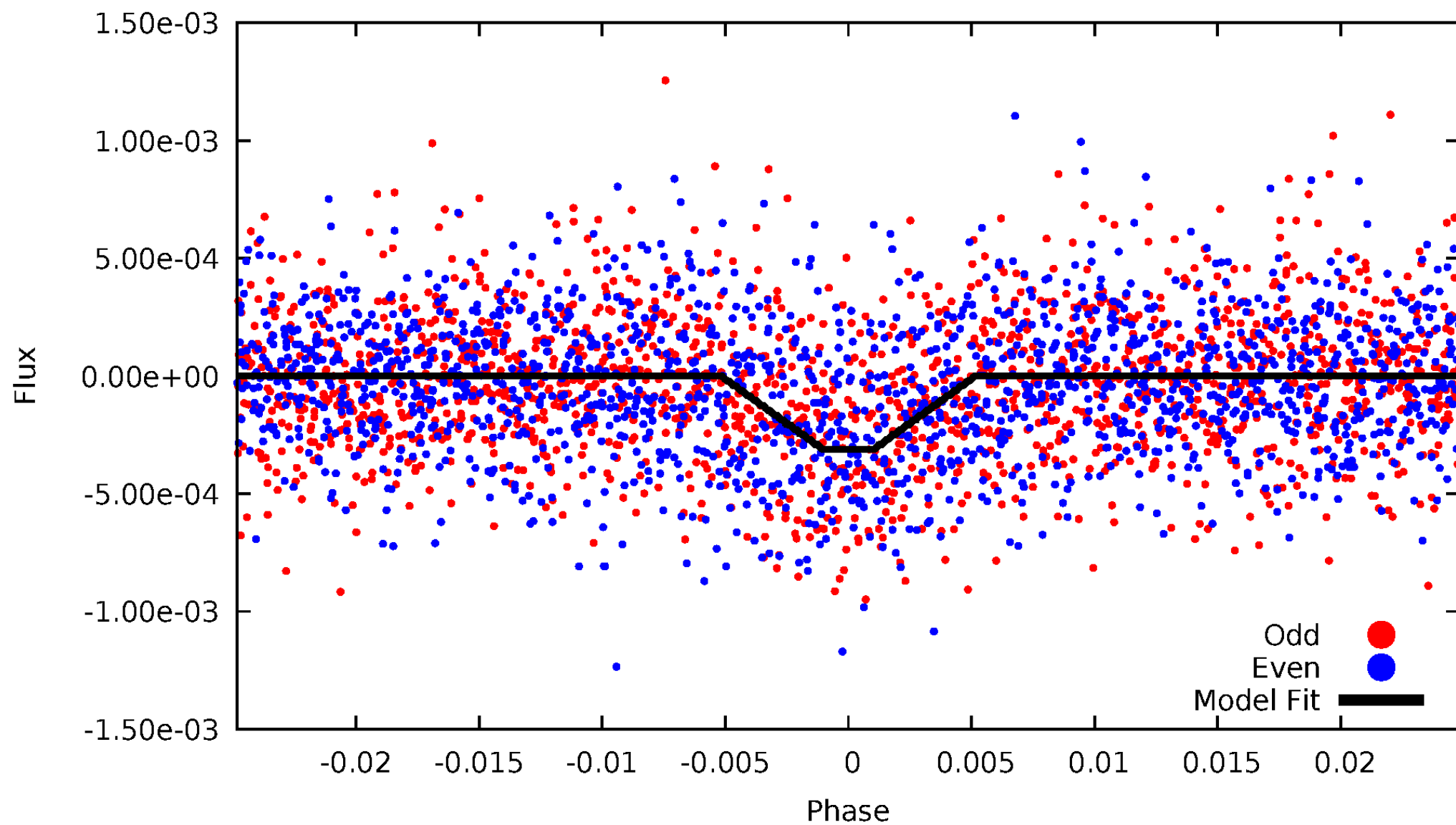
DV Odd/Even

TCE 005009189-02



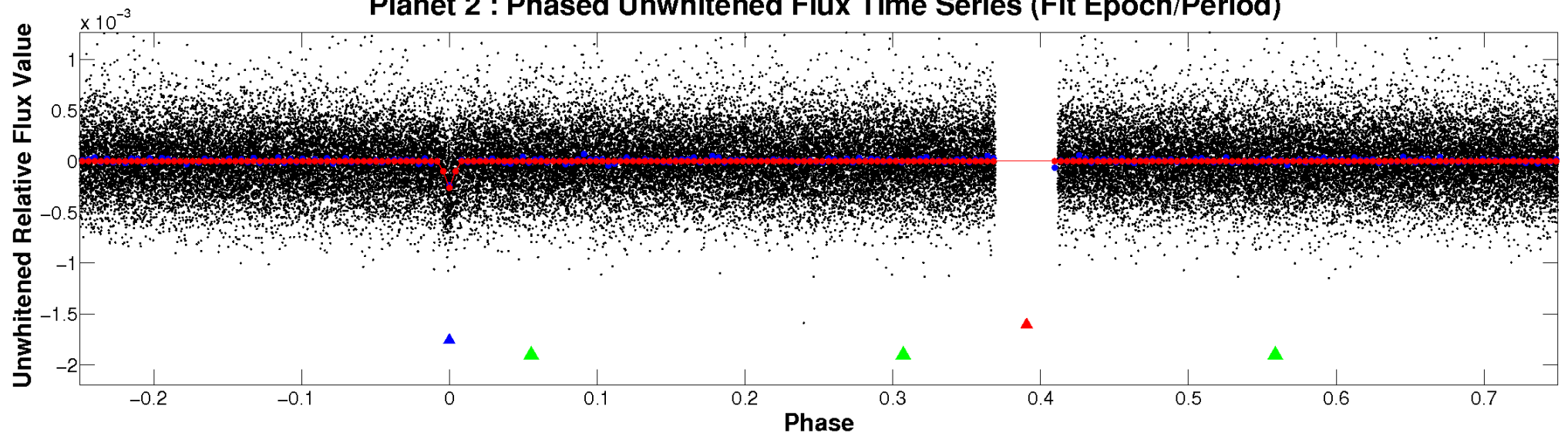
ALT Odd/Even

TCE 005009189-02

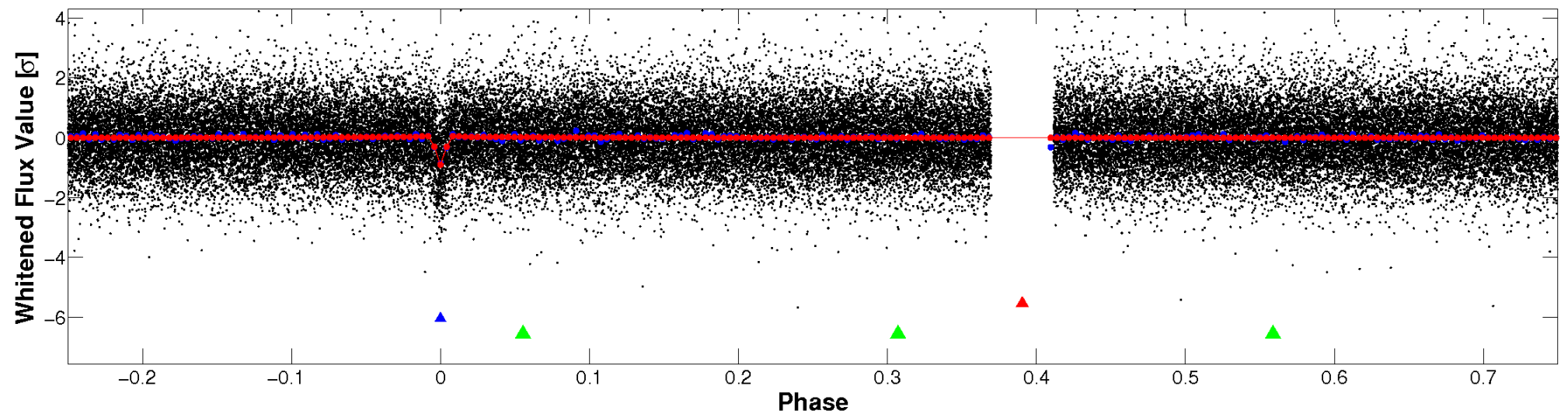


Non-Whitened Vs. Whitened Light Curve

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

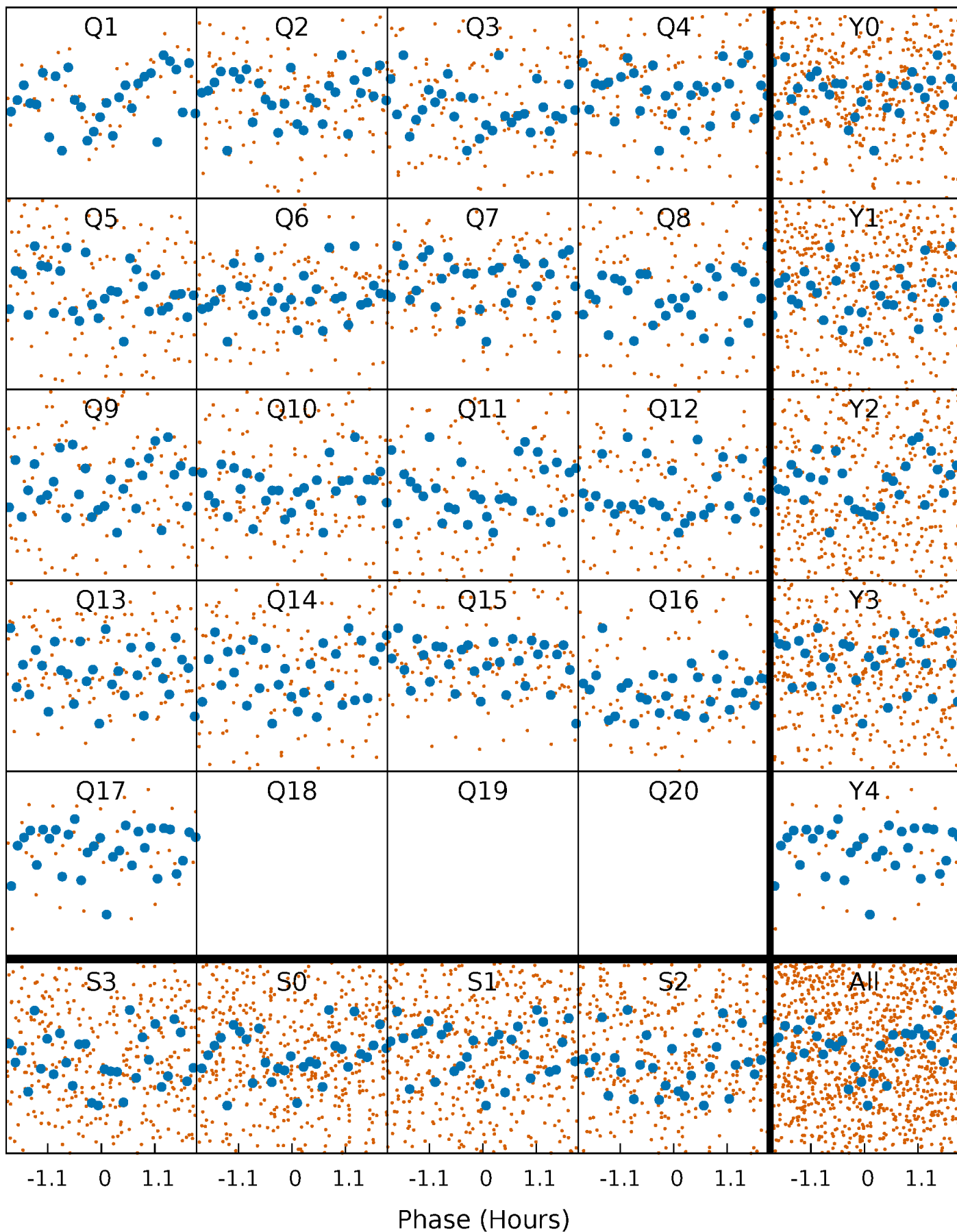


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



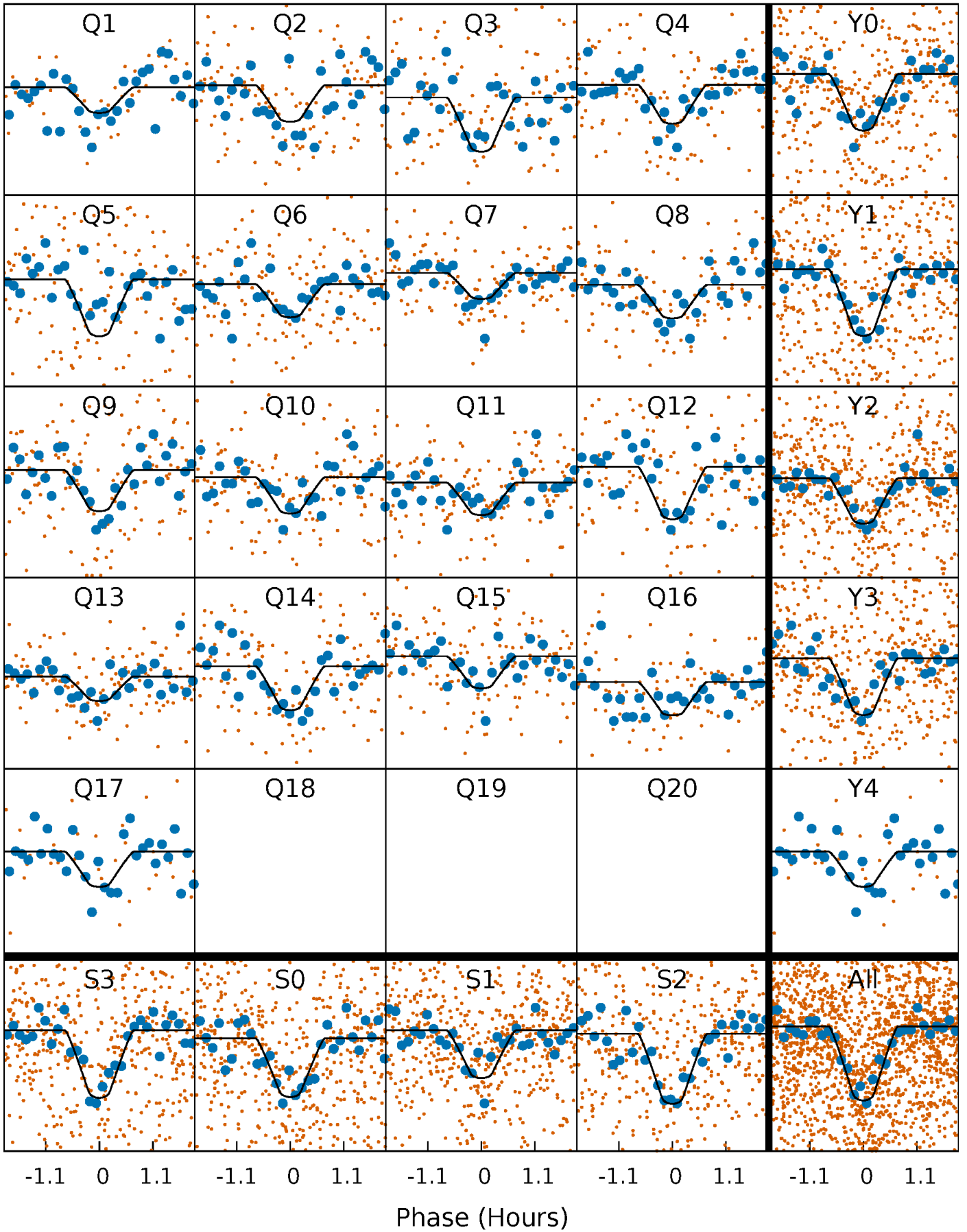
PDC Quarter-Phased Transit Curves

TCE 005009189-02 P= 4.939131 Days $T_0=133.122806$ (BKJD)



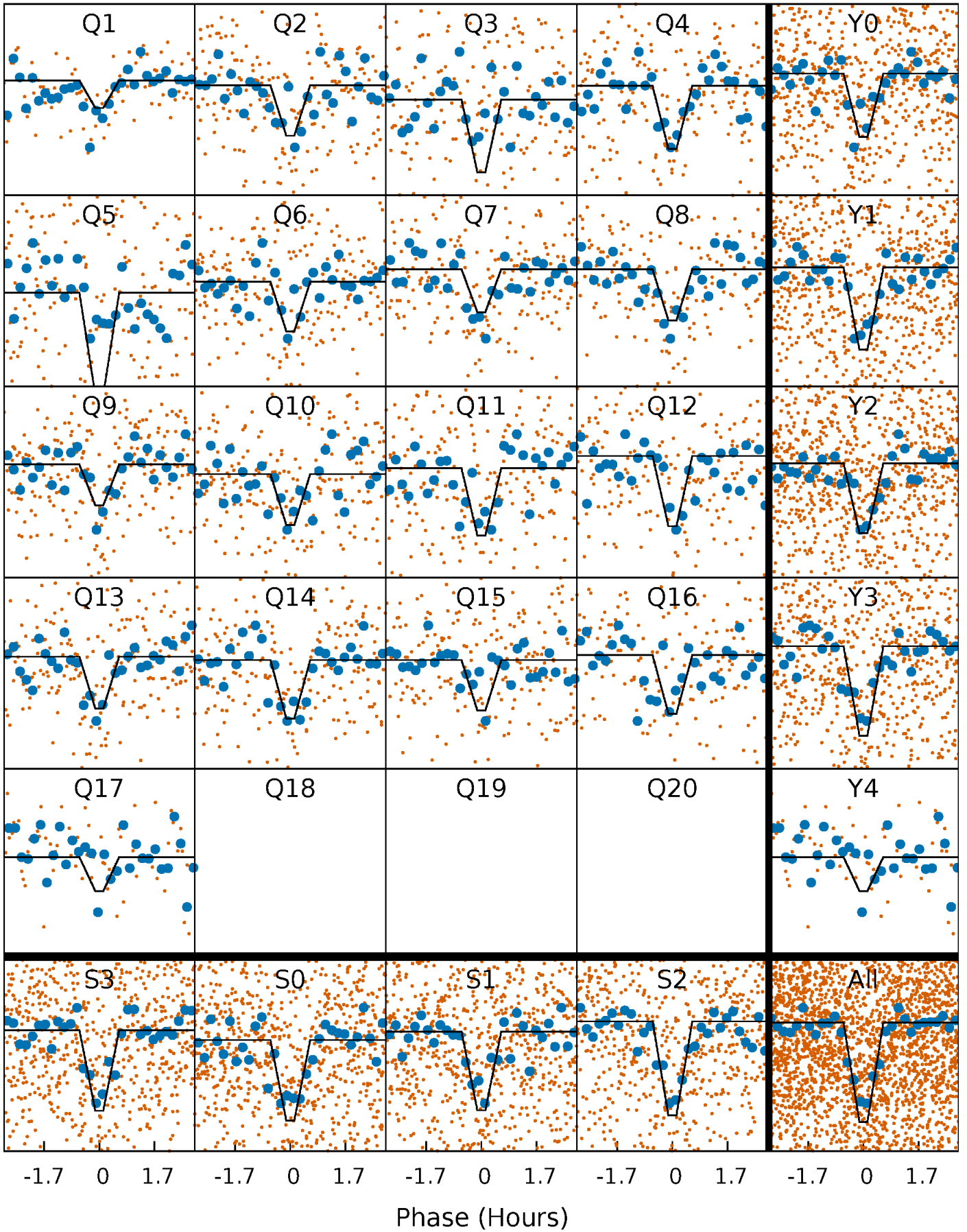
DV Quarter-Phased Transit Curves

TCE 005009189-02 P= 4.939131 Days $T_0=133.122806$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

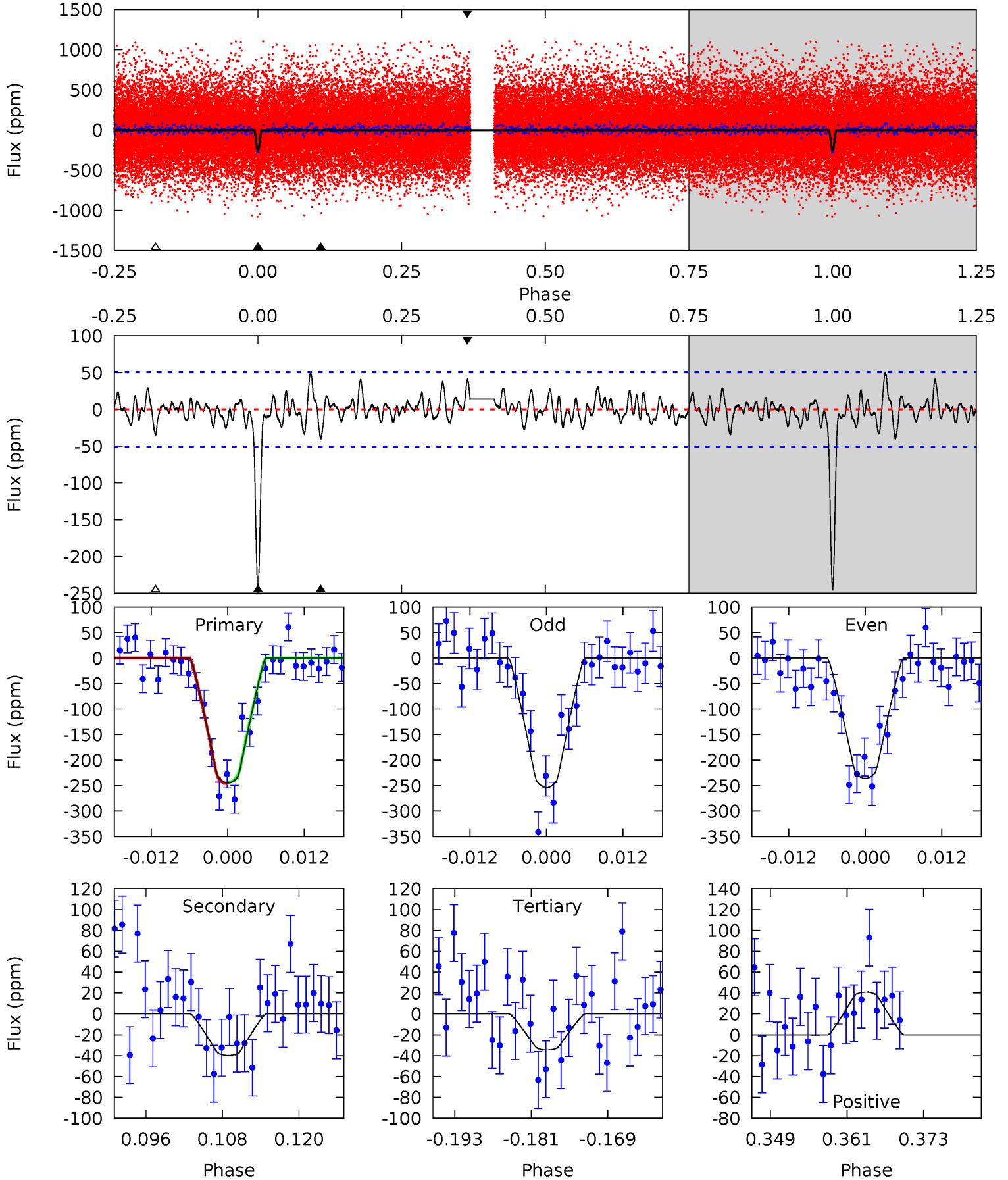
TCE 005009189-02 P= 4.939100 Days $T_0=133.126821$ (BKJD)



DV Model-Shift Uniqueness Test

005009189-02, P = 4.939131 Days, E = 128.183675 Days

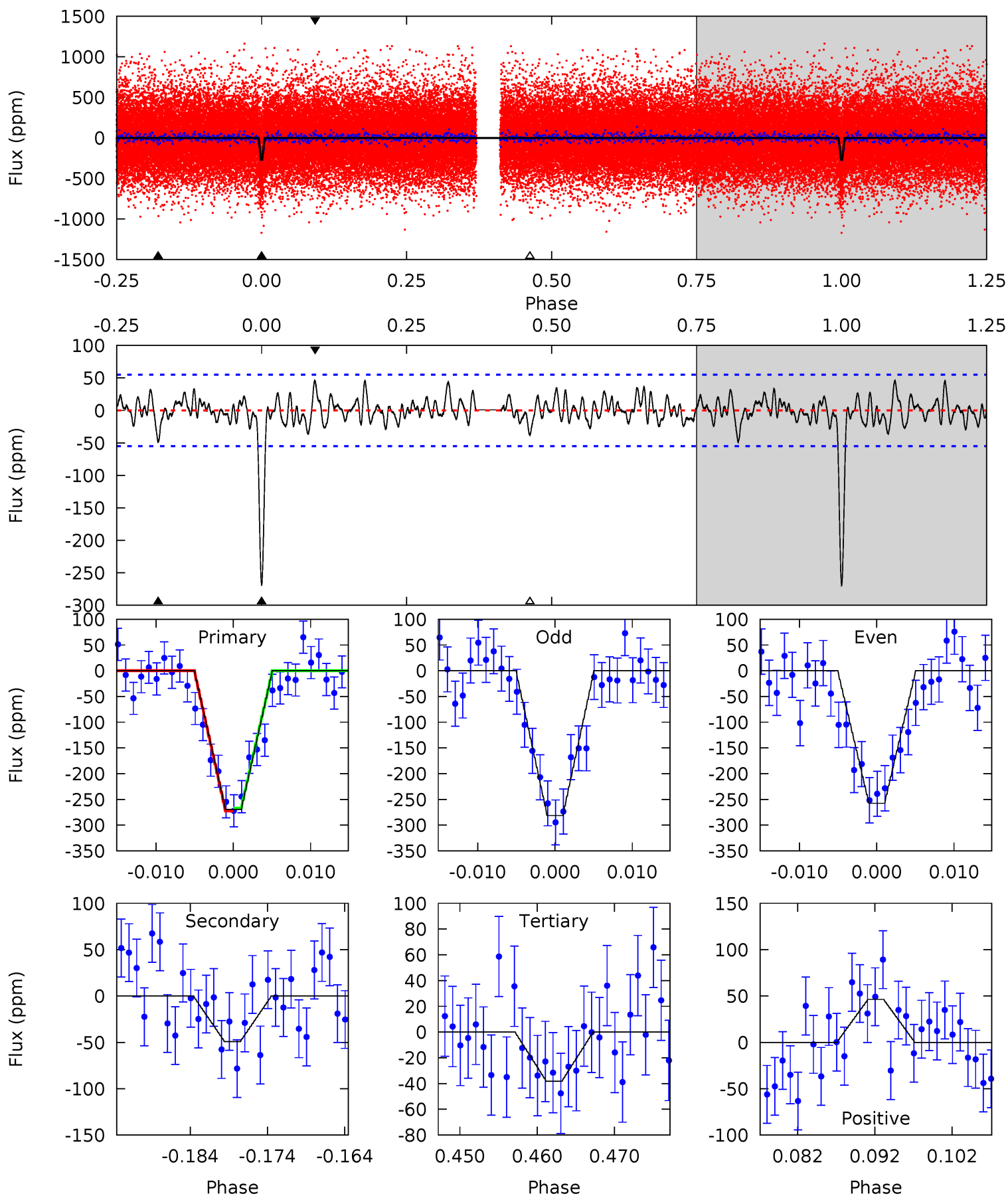
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.1	3.92	3.40	4.02	4.99	2.51	1.30	20.7	20.1	0.51	-0.10	0.89	0.97	0.17	0.13



Alt Model-Shift Uniqueness Test

005009189-02, P = 4.939100 Days, E = 128.187721 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.6	4.49	3.48	4.22	5.02	2.57	1.34	21.1	20.3	1.01	0.26	1.09	0.94	0.15	0.25



Stellar Parameters For KIC 005009189

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5956^{+176}_{-193}	$4.324^{+0.132}_{-0.181}$	$0.060^{+0.250}_{-0.300}$	$1.170^{+0.348}_{-0.214}$	$1.053^{+0.152}_{-0.124}$	$0.926^{+0.563}_{-0.470}$
	+3%/-3%	+3%/-4%	+417%/-500%	+30%/-18%	+14%/-12%	+61%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005009189-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-40 ± 10	$2.28^{+1.17}_{-0.99}$	1669^{+116}_{-107}	3874^{+989}_{-531}	13^{+31}_{-8}
Alt.	-49 ± 11	$2.37^{+1.22}_{-1.07}$	1667^{+128}_{-107}	3959^{+1037}_{-475}	16^{+38}_{-9}

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 $A_{obs} \gg 1.0$

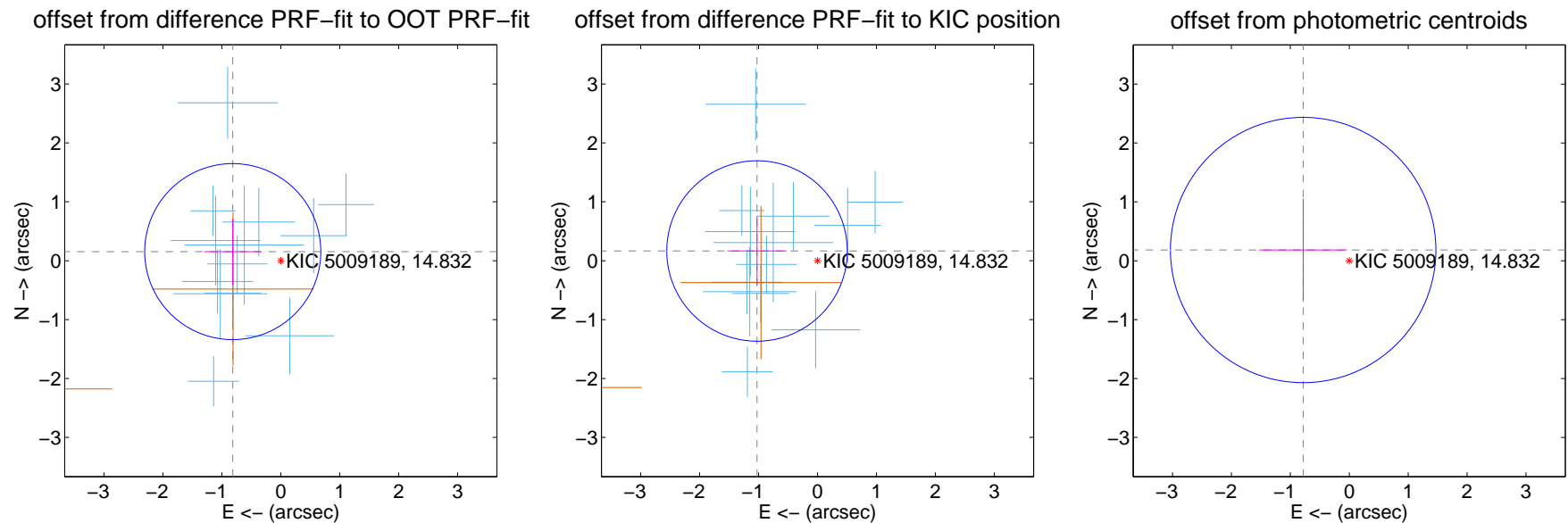
DV Centroid Data

Supplemental centroid analysis for 005009189-02. Kepler magnitude: 14.83. Transit SNR 17.13

There are 13 quarters with good PRF difference image offsets

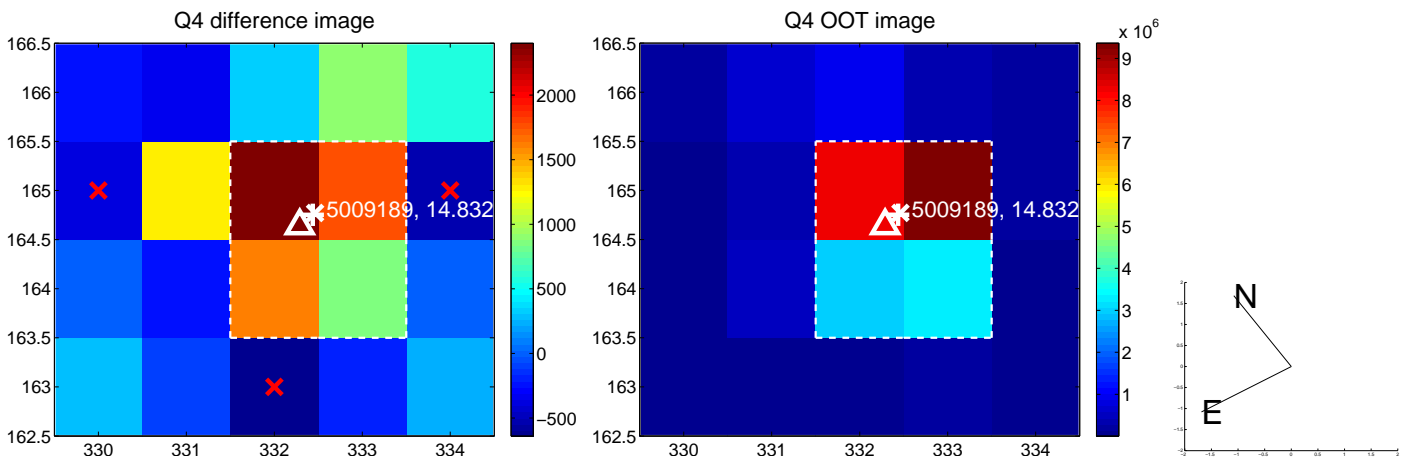
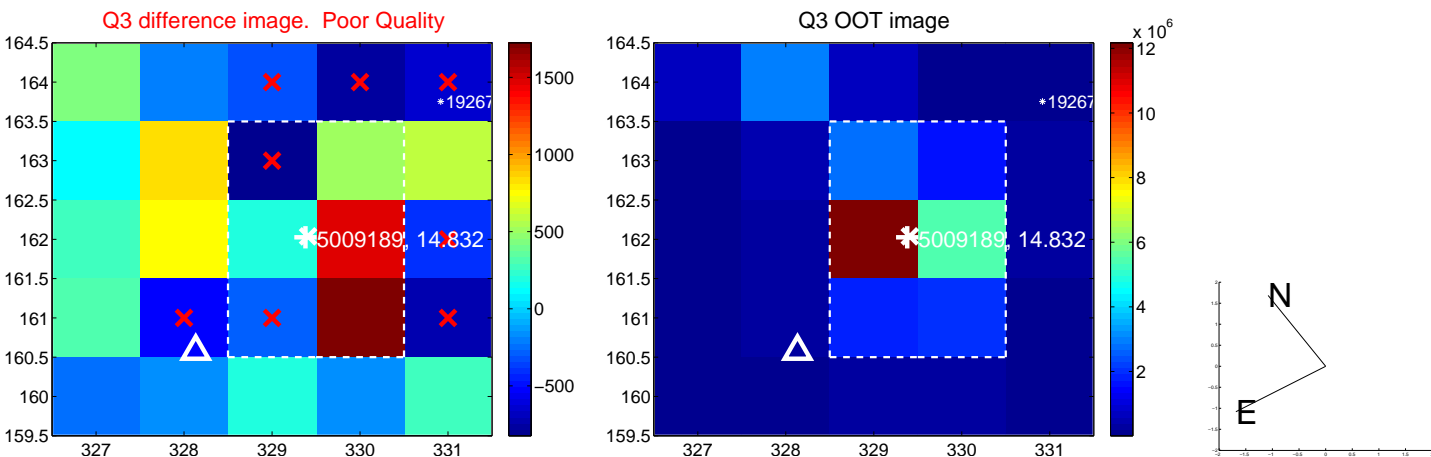
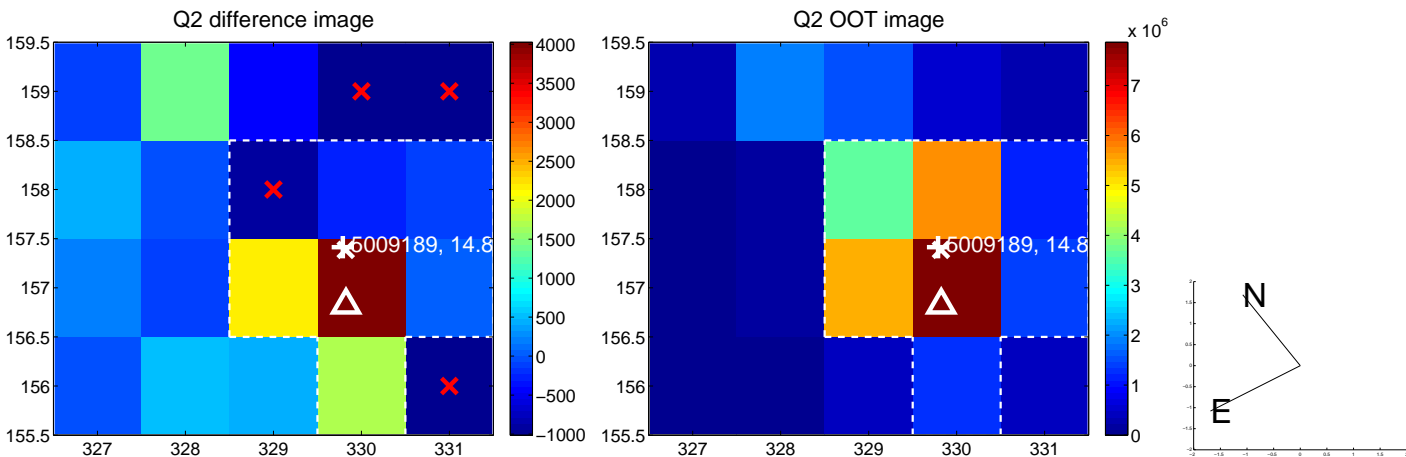
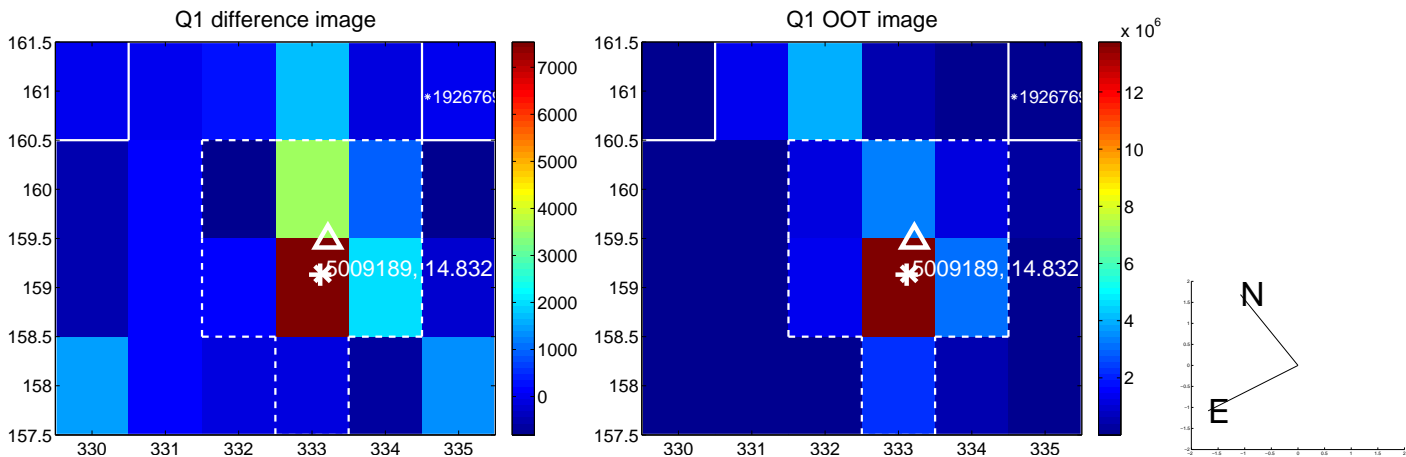
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.829 ± 0.498	1.67	0.815 ± 0.486	0.154 ± 0.562
PRF-fit source offset from KIC position	1.039 ± 0.511	2.04	1.026 ± 0.499	0.165 ± 0.595
photometric centroid source offset	0.80 ± 0.75	1.07	0.78 ± 0.74	0.18 ± 0.87

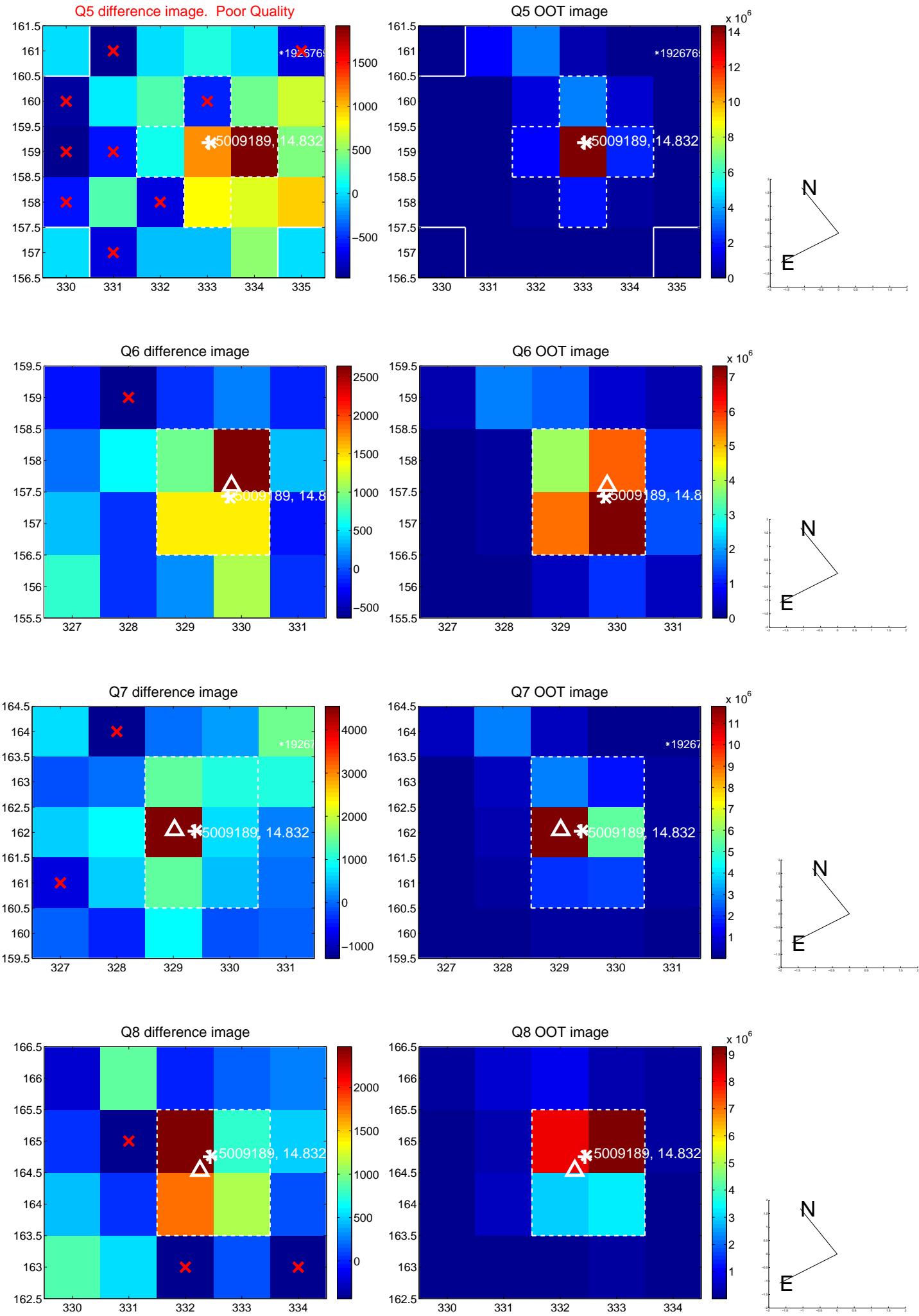


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

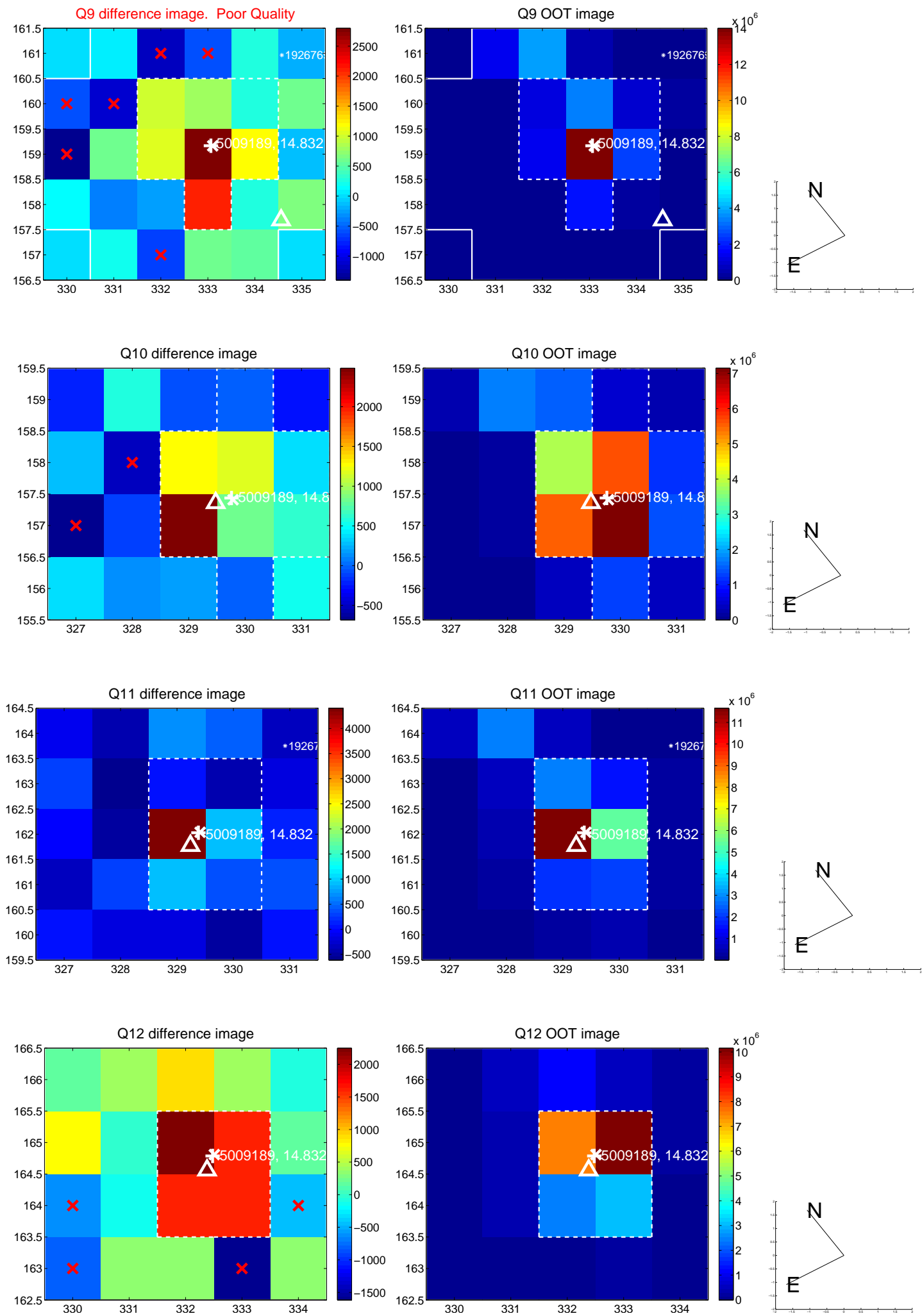
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



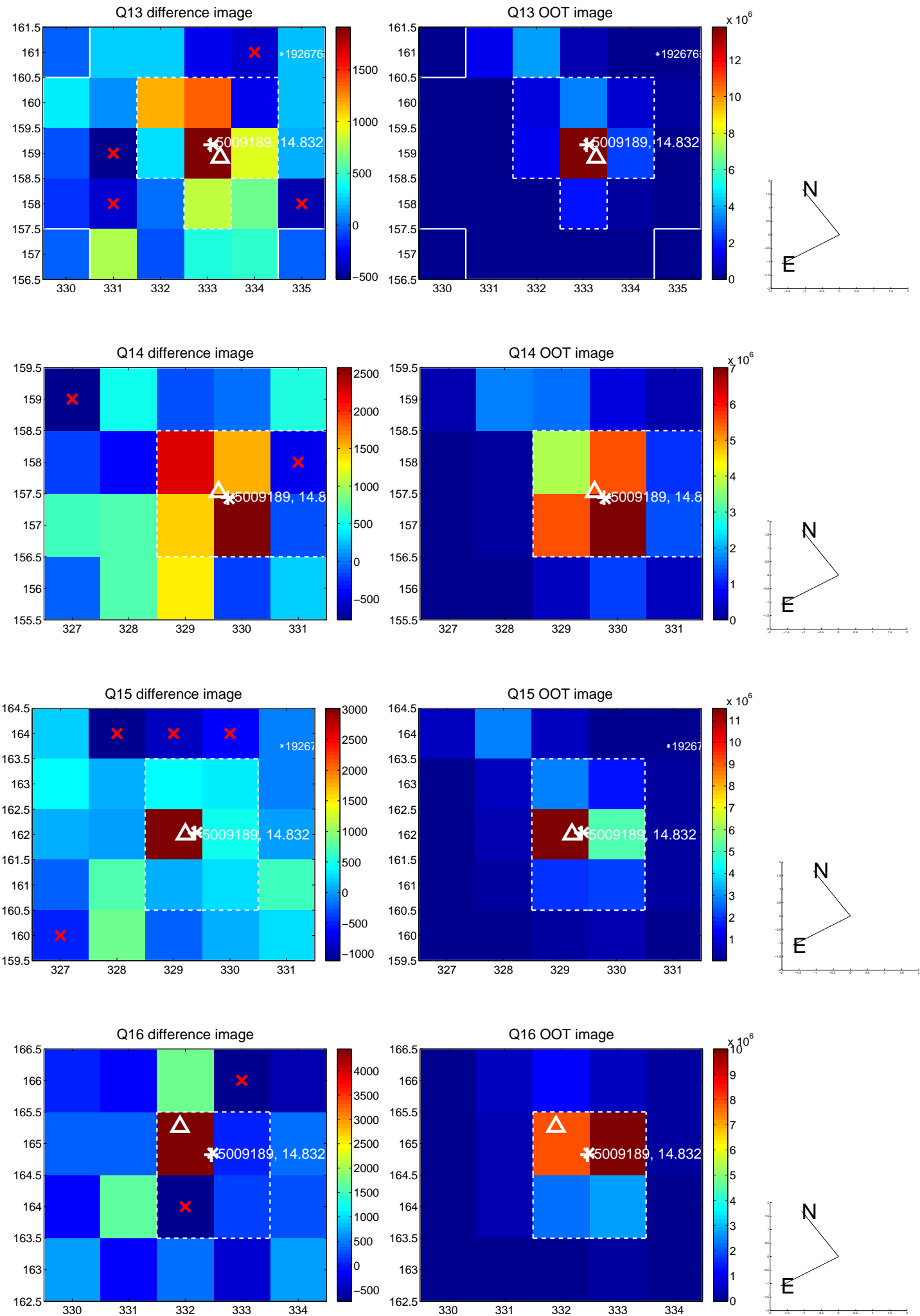
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



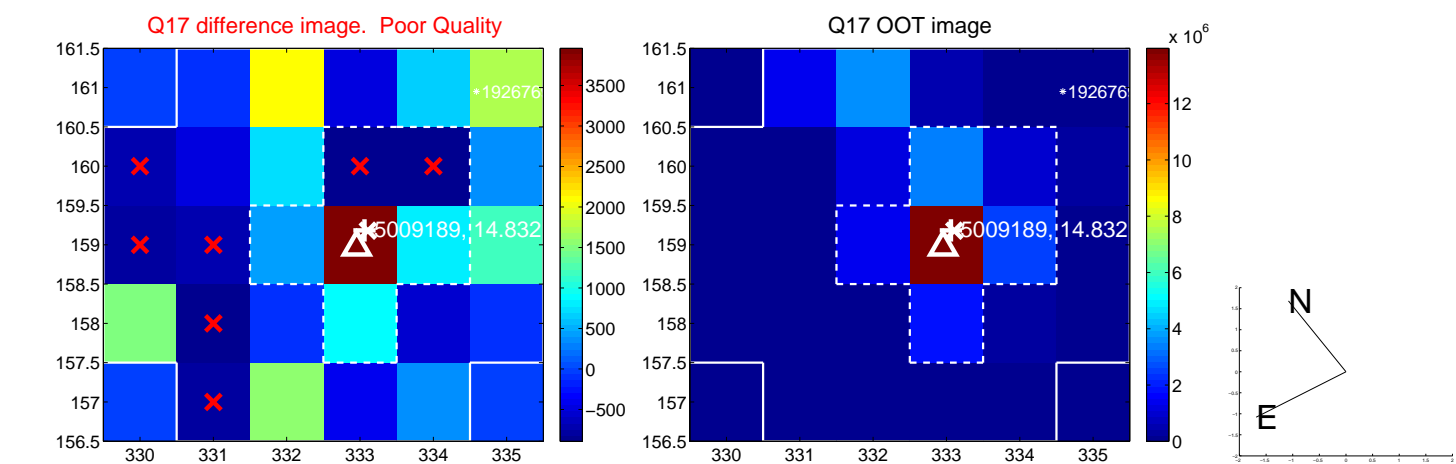
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



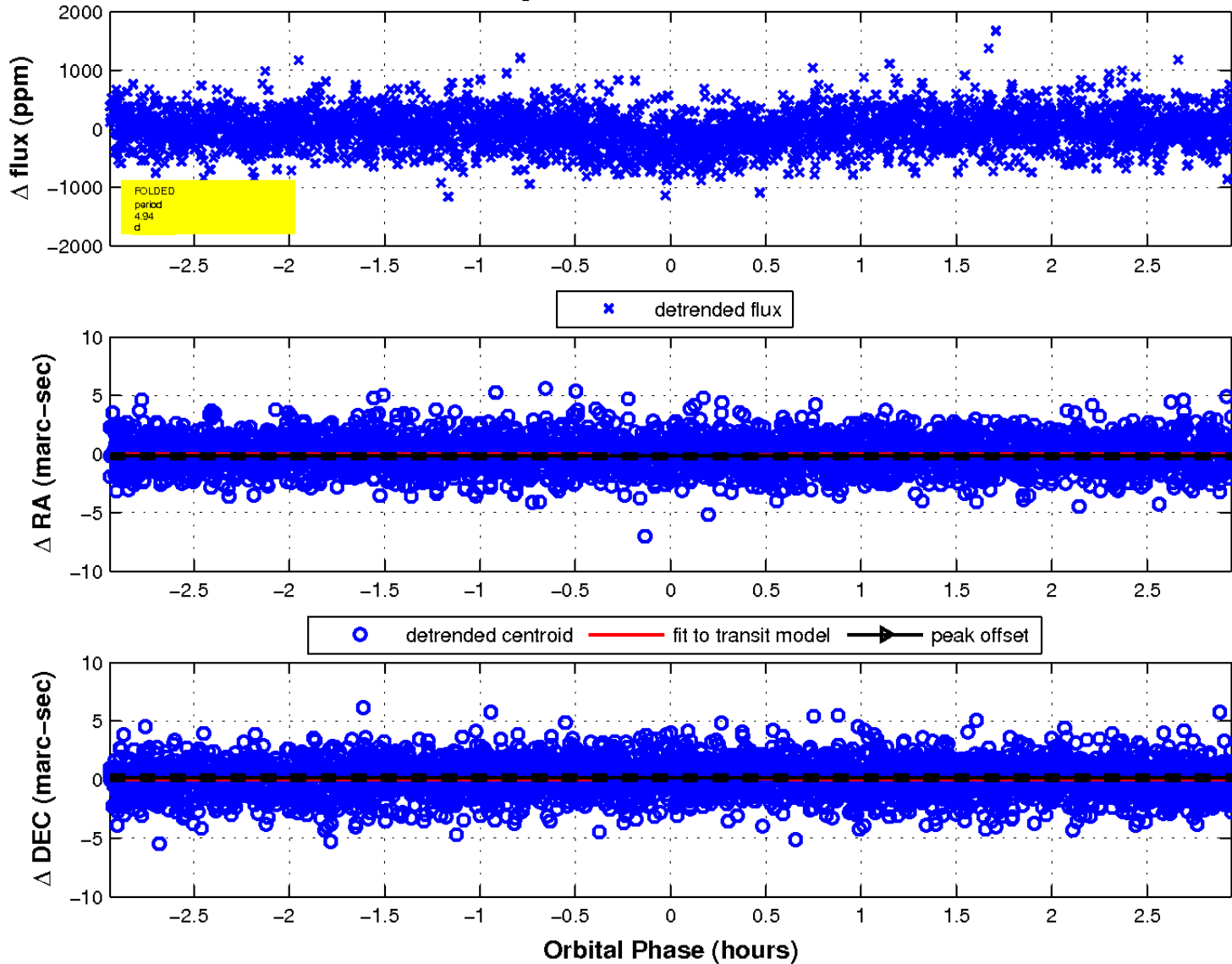
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

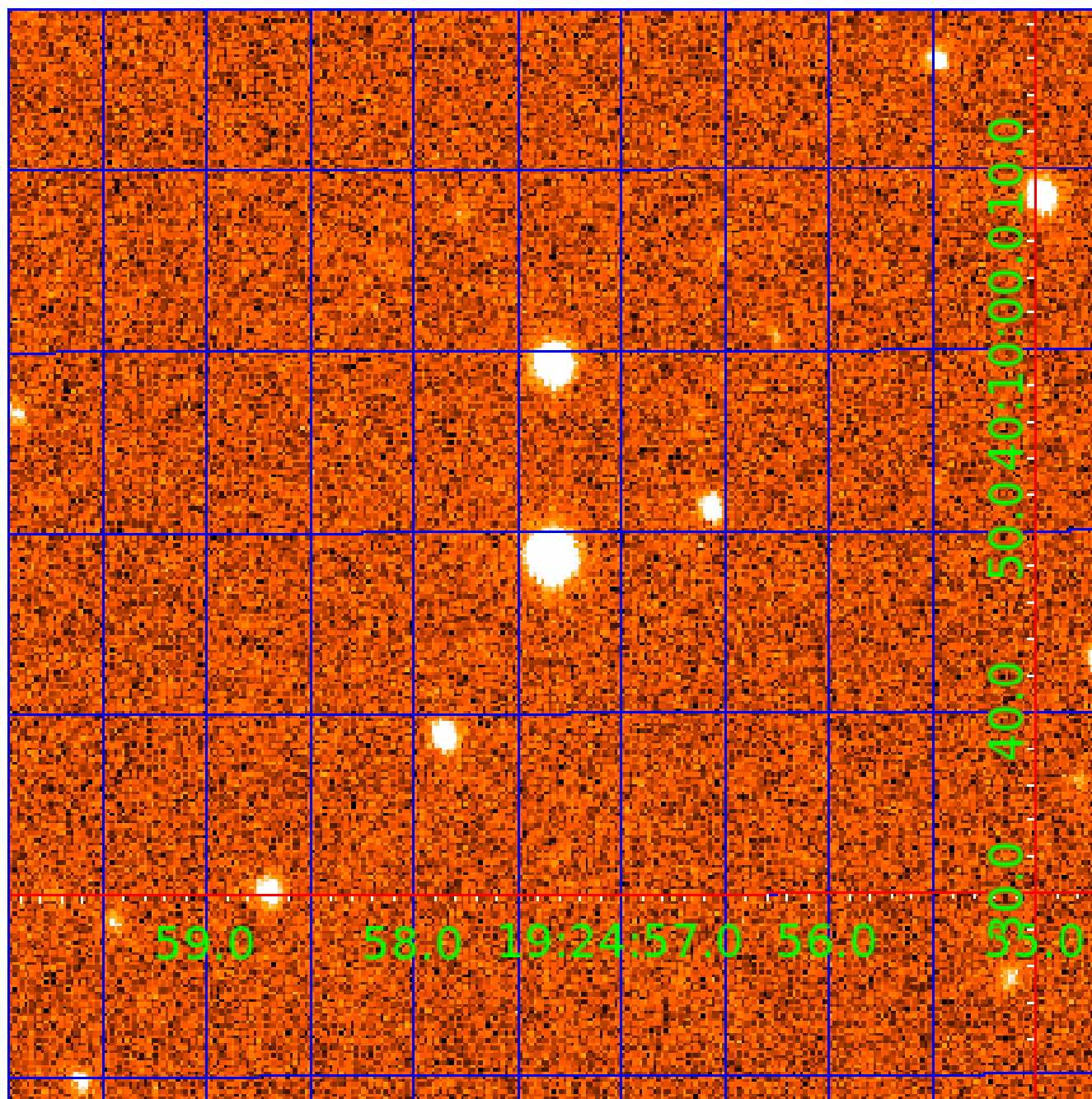


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 005009189

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})
005009189-01	OBS	1605.01	4.939141	135.050340	341.8	1.111	18.0	21.9	1.17	5956	2.65	462.70
005009189-02	OBS	No	4.939132	133.122806	270.4	0.981	13.6	17.1	1.17	5956	2.29	462.70
005009189-03	OBS	No	482.791632	387.778656	678.5	4.924	7.3	6.7	1.17	5956	5.93	1.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005009189-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
005009189-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
005009189-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

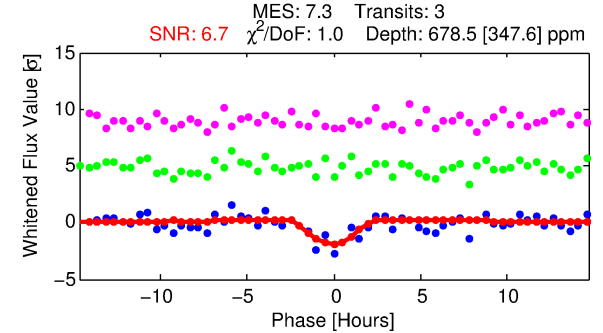
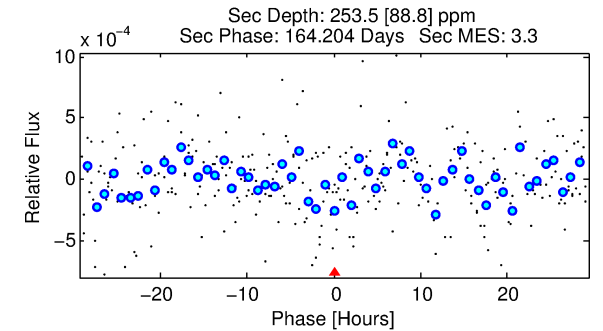
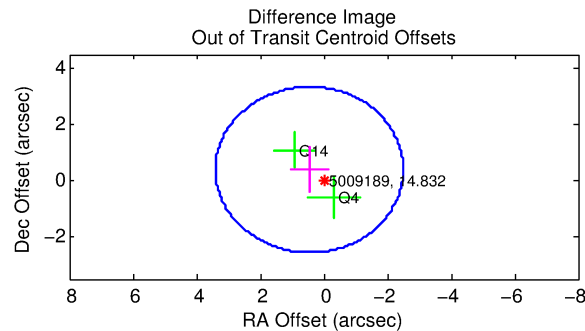
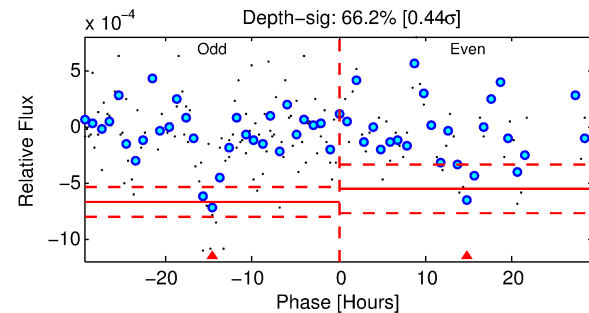
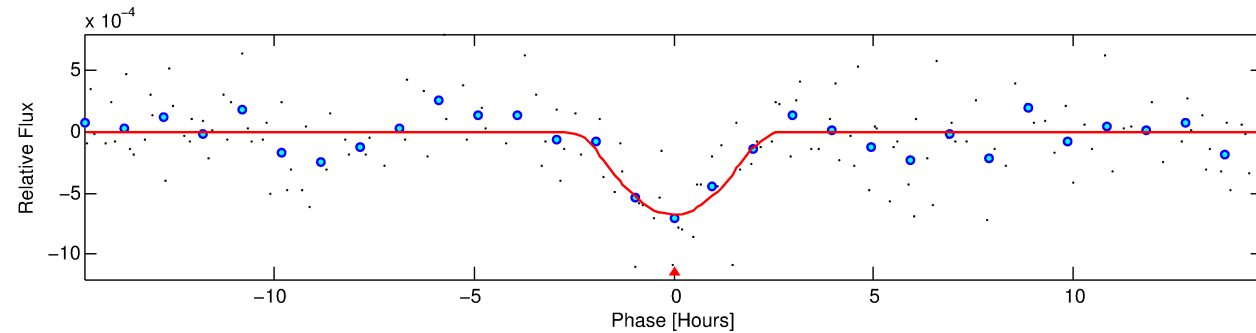
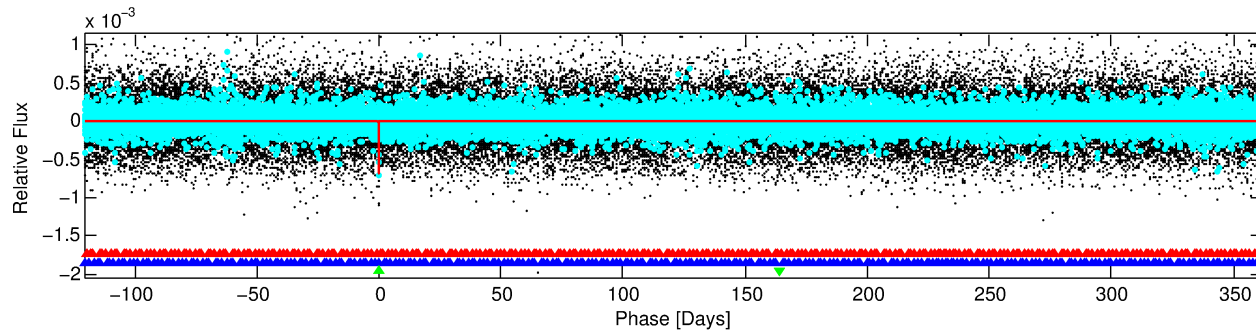
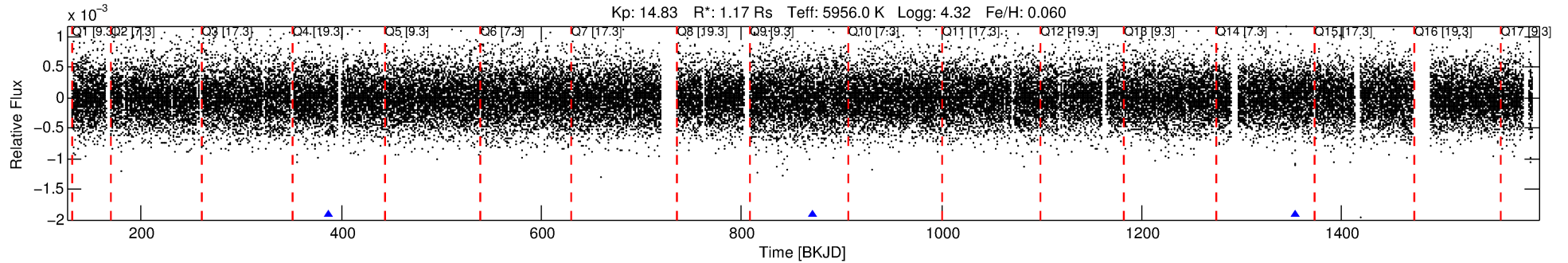
Ephemeris Match Information For 005009189-03

No Significant Match Found

DV One-Page Summary

KIC: 5009189 Candidate: 3 of 3 Period: 482.792 d
KOI: K01605 Corr: No Ephemeris Match

Kp: 14.83 R*: 1.17 Rs Teff: 5956.0 K Logg: 4.32 Fe/H: 0.060



DV Fit Results:

Period = 482.79163 [0.01143] d
Epoch = 387.7787 [0.0139] BKJD
Rp/R* = 0.0464 [0.2941]
a/R* = 232.67 [374.39]
b = 1.00 [0.44]
Seff = 1.03 [0.38]
Teq = 257 [23] K
Rp = 5.93 [37.59] Re
a = 1.2255 [0.2967] AU
Ag = 5965.80 [75665.92] [0.08σ]
Teffp = 3489 [11058] K [0.29σ]

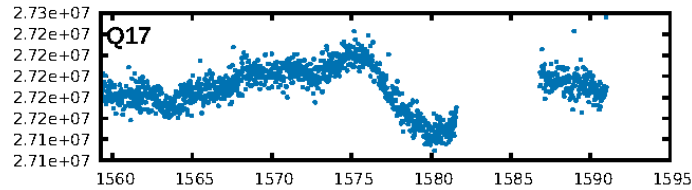
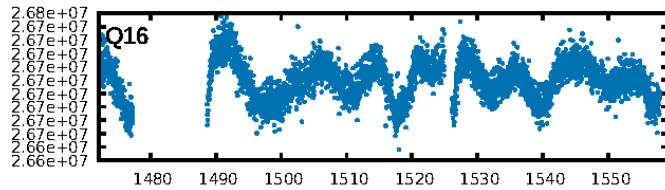
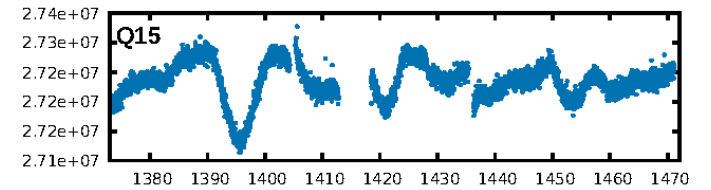
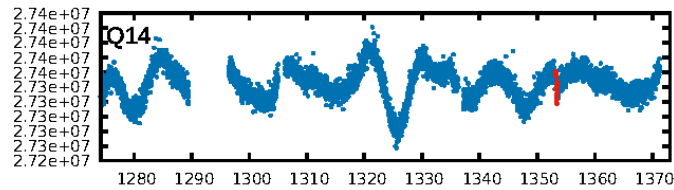
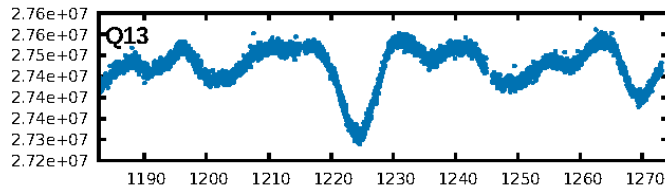
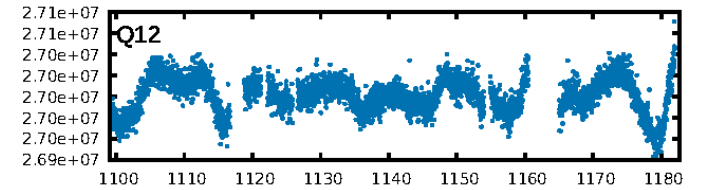
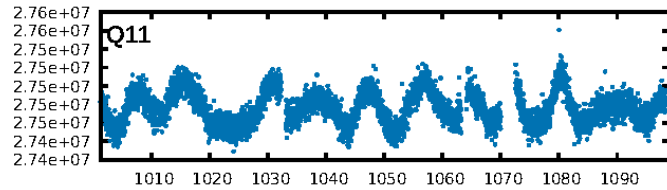
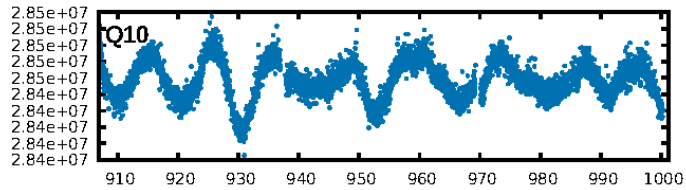
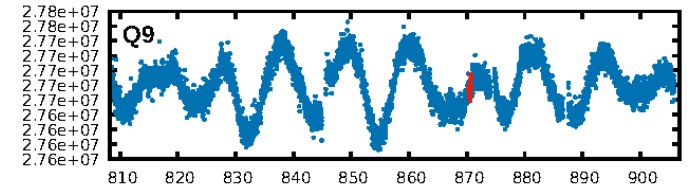
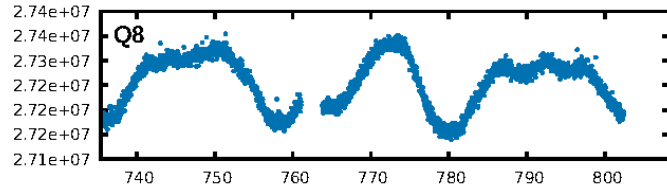
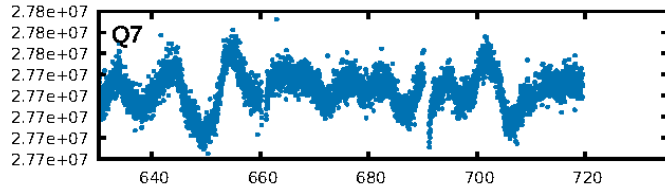
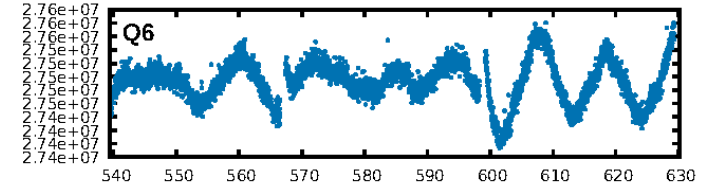
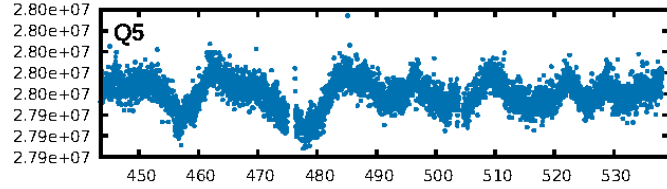
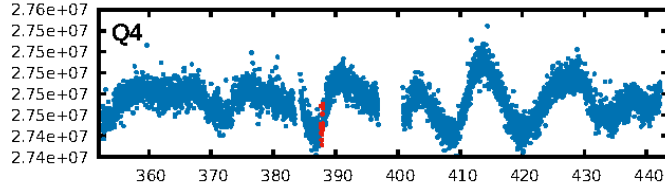
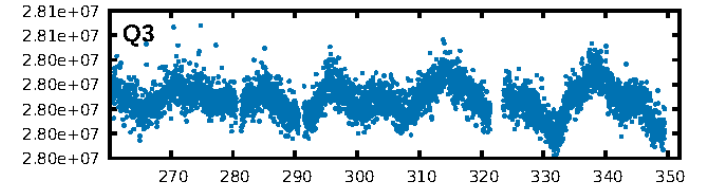
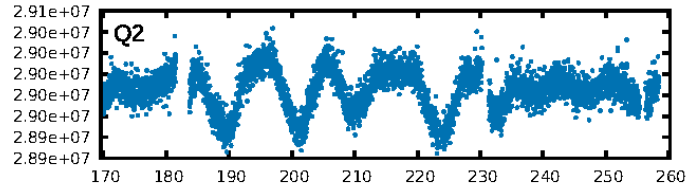
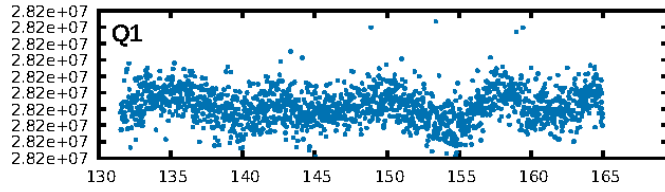
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [2272.09σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 26.7%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 9.95e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.698
Centroid-sig: 36.9%
Centroid-so: 2.320 arcsec [1.25σ]
OotOffset-rm: 0.599 arcsec [0.61σ]
KicOffset-rm: 0.701 arcsec [0.81σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.33 [1/3]

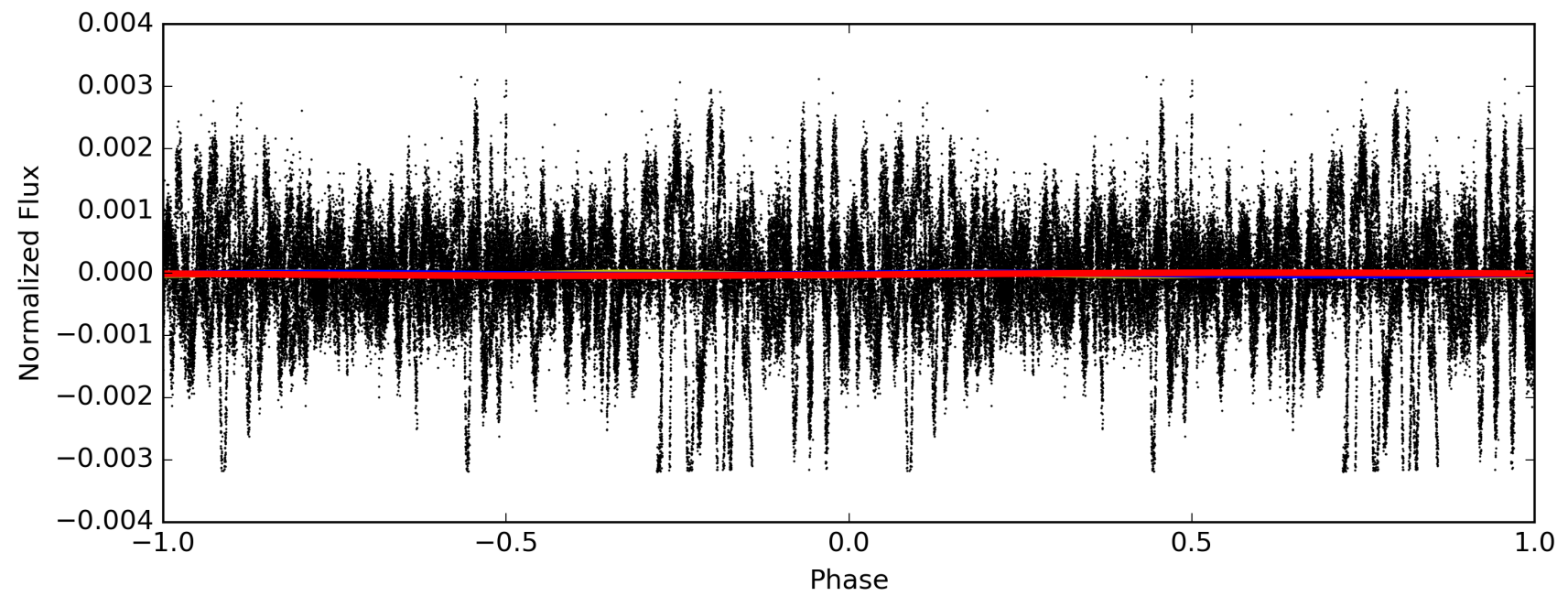
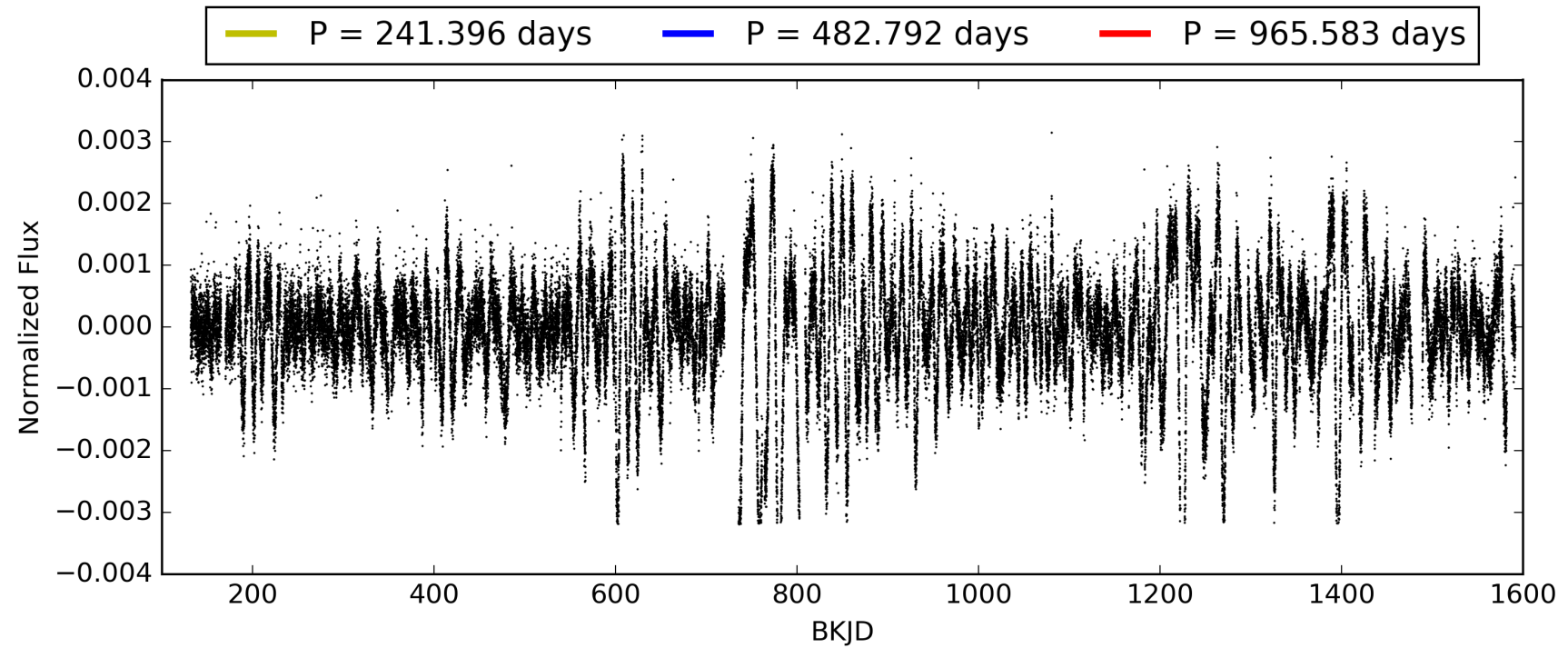
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:56:14 Z

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

TCE 005009189-03, PDC Light Curves

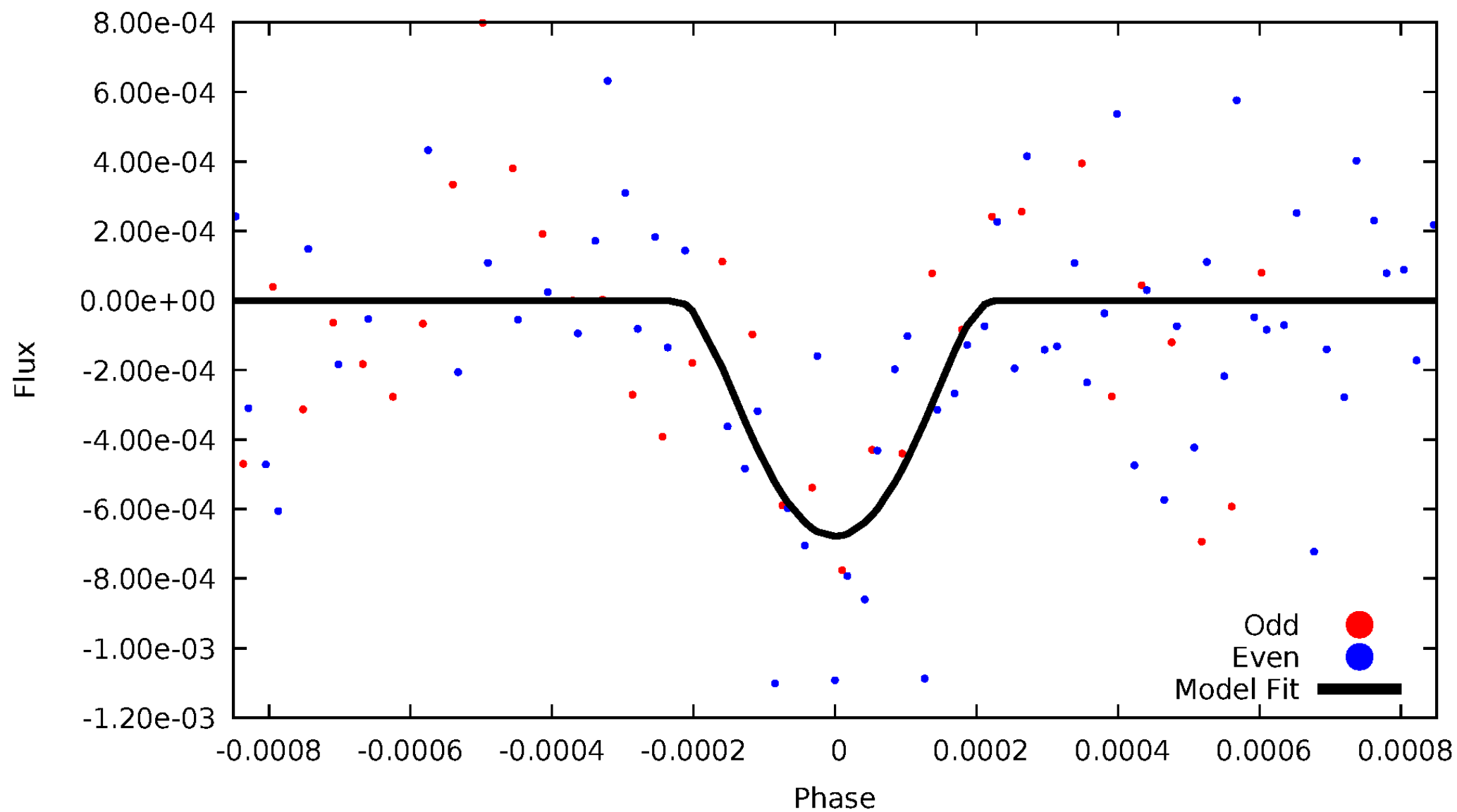


TCE 005009189-03



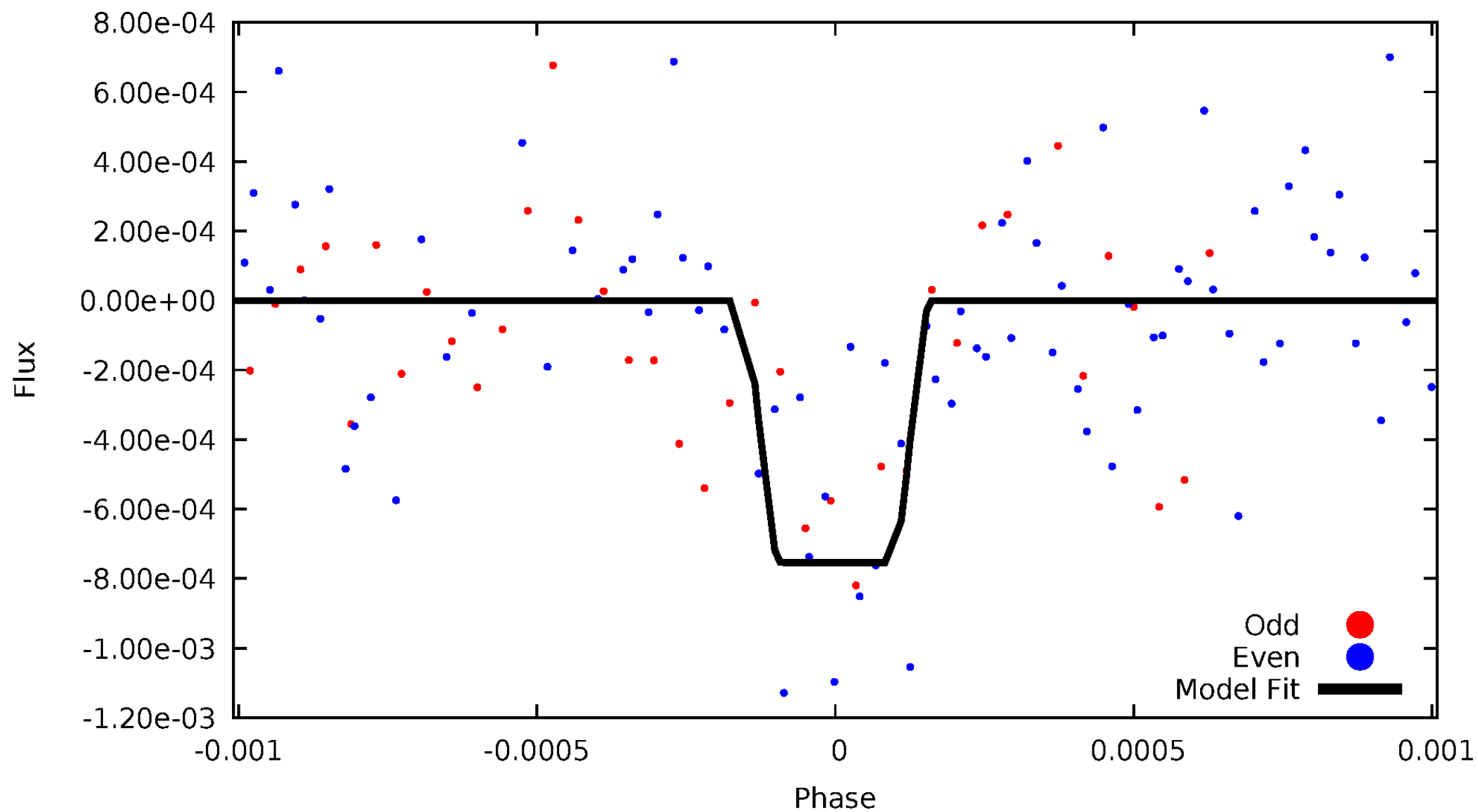
DV Odd/Even

TCE 005009189-03



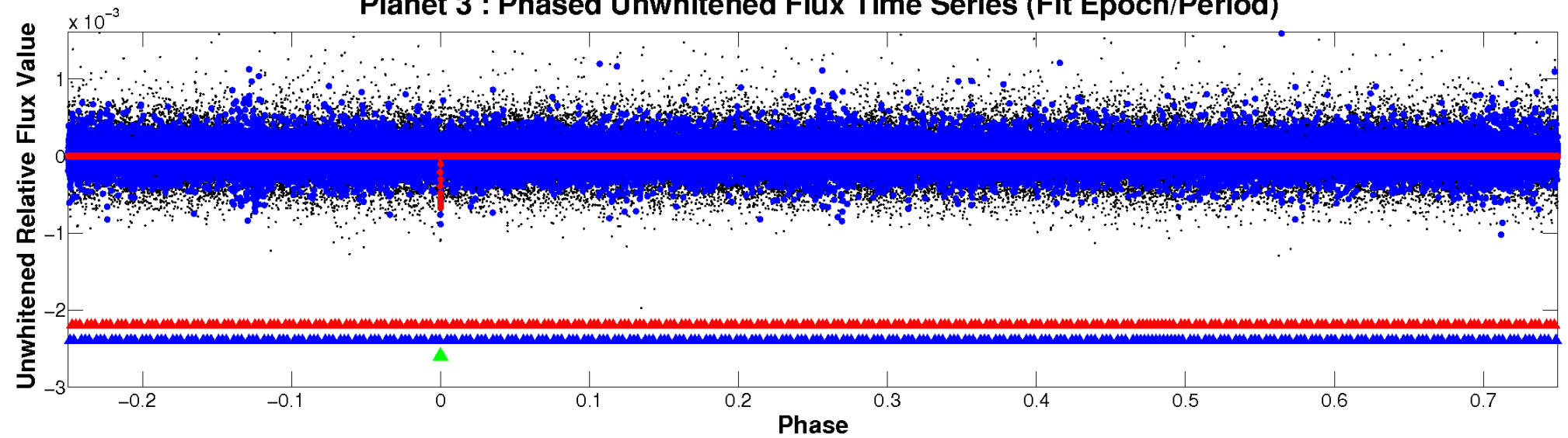
ALT Odd/Even

TCE 005009189-03

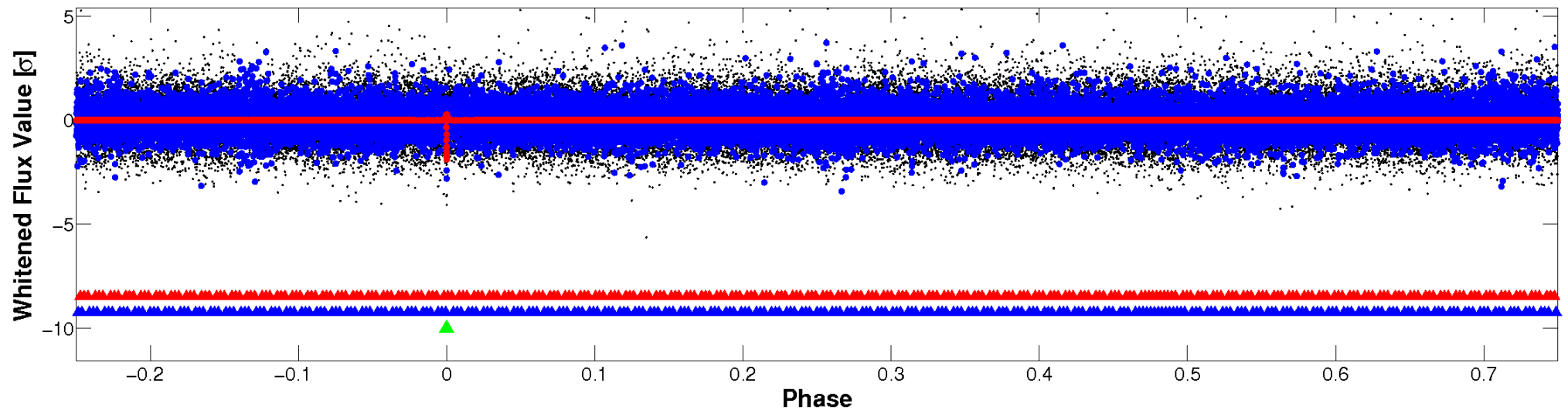


Non-Whitened Vs. Whitened Light Curve

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

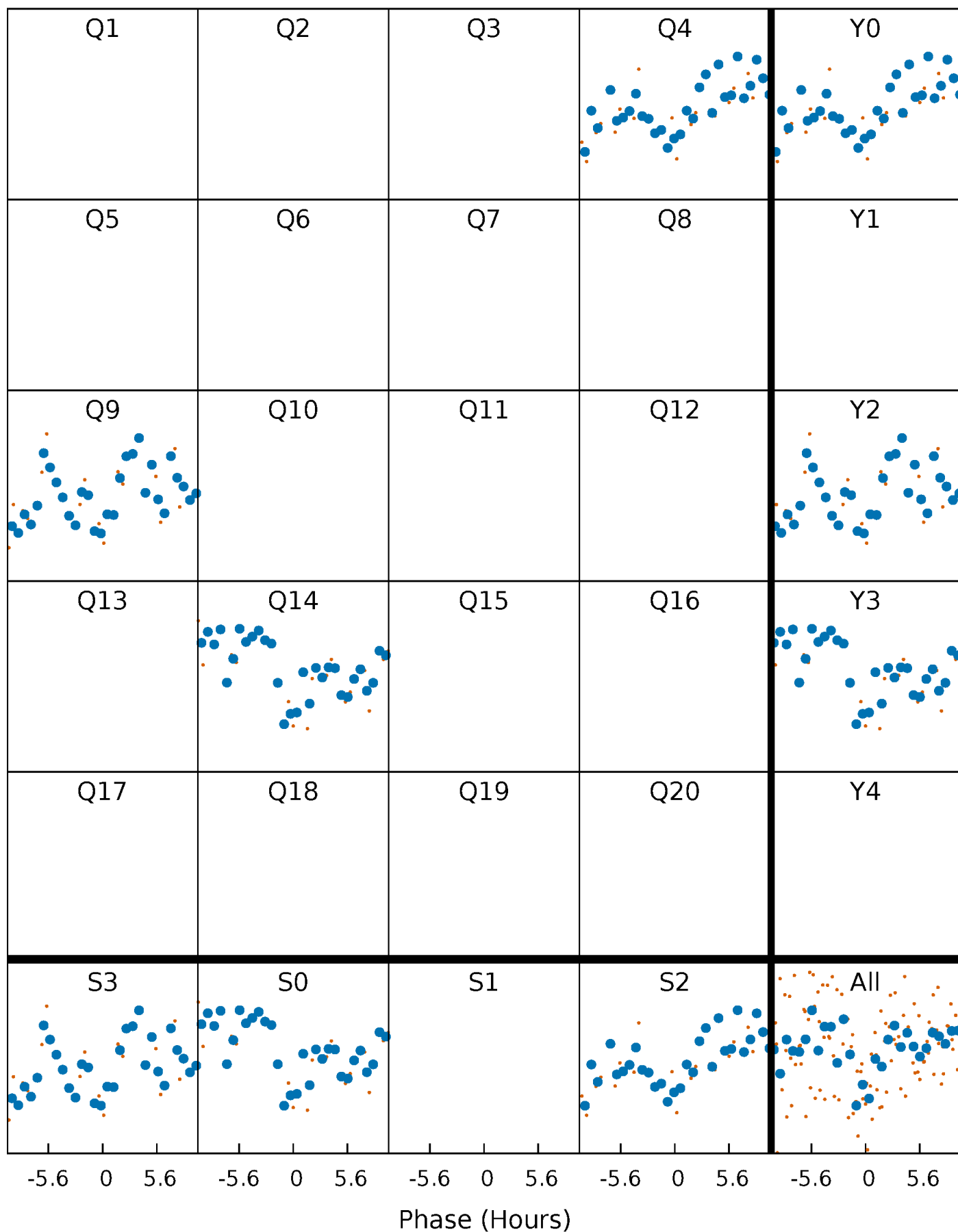


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



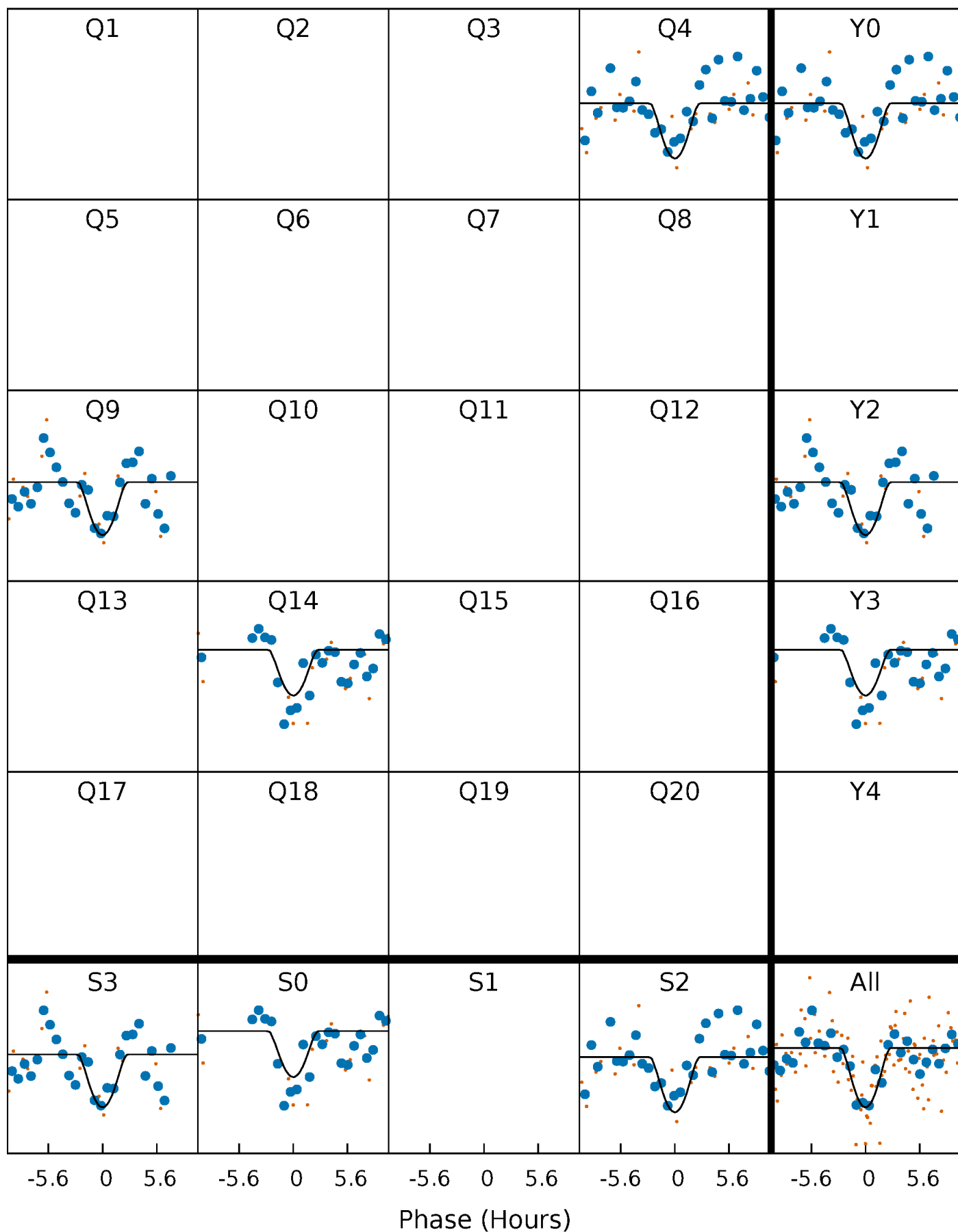
PDC Quarter-Phased Transit Curves

TCE 005009189-03 $P=482.791632$ Days $T_0=387.778656$ (BKJD)



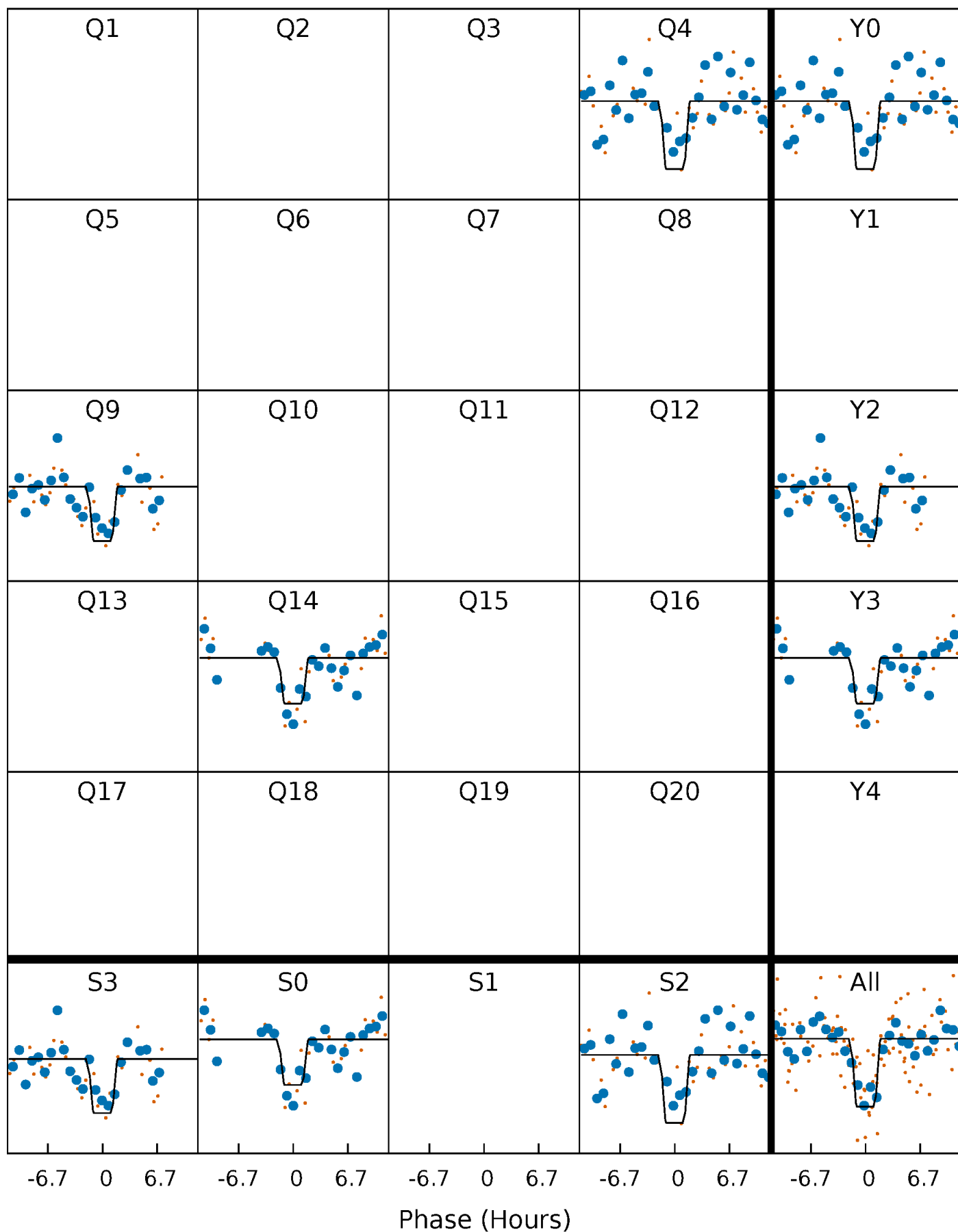
DV Quarter-Phased Transit Curves

TCE 005009189-03 P=482.791632 Days $T_0=387.778656$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

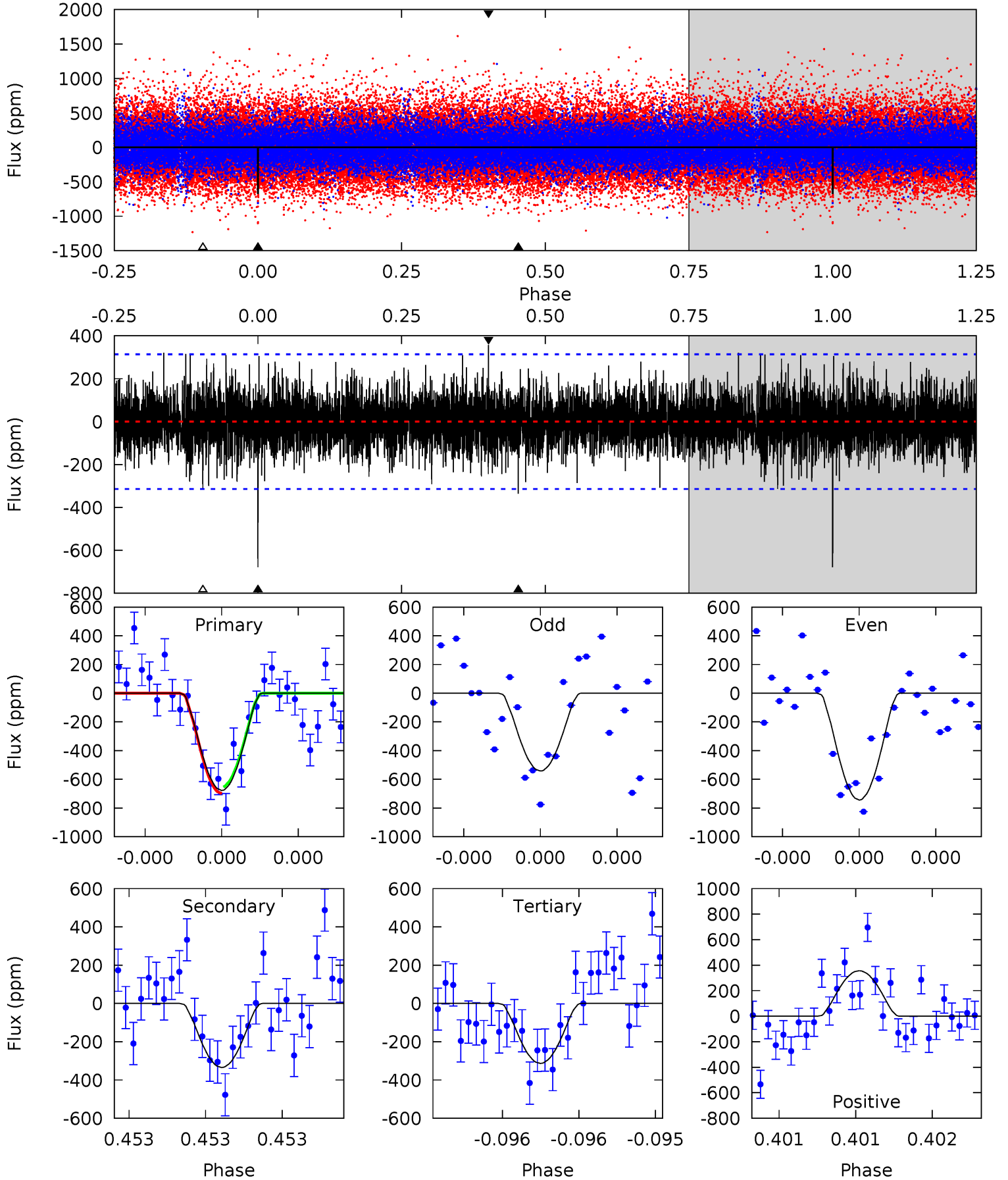
TCE 005009189-03 P=482.804156 Days $T_0=387.754266$ (BKJD)



DV Model-Shift Uniqueness Test

005009189-03, P = 482.791632 Days, E = 387.778656 Days

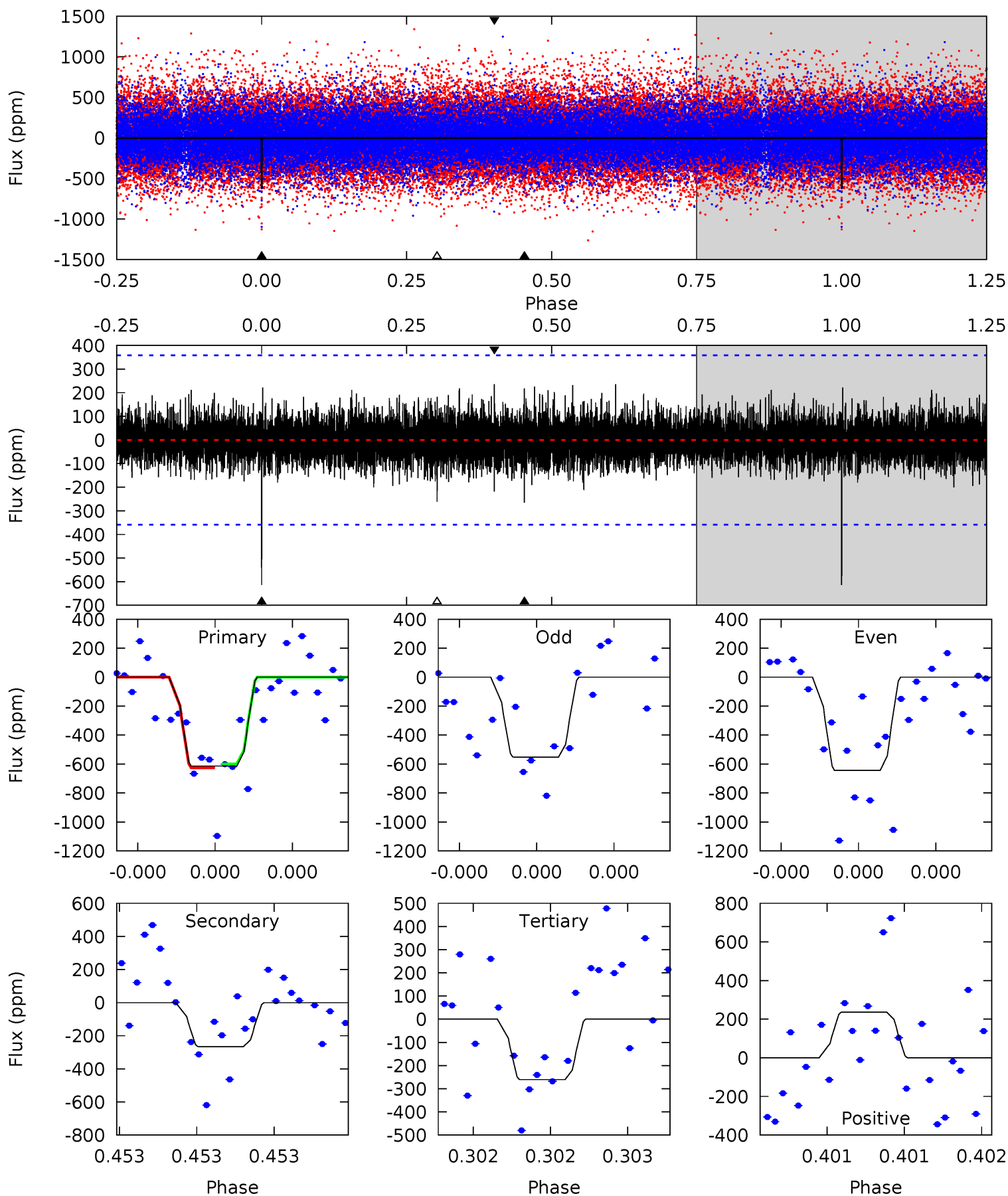
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	5.97	5.59	6.36	5.60	3.52	1.53	6.51	5.73	0.38	-0.39	1.72	1.25	0.34	0.41



Alt Model-Shift Uniqueness Test

005009189-03, P = 482.804156 Days, E = 387.754266 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.70	4.20	4.12	3.73	5.66	3.62	0.94	5.58	5.97	0.08	0.46	0.67	1.12	0.28	0.21



Stellar Parameters For KIC 005009189

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5956^{+176}_{-193}	$4.324^{+0.132}_{-0.181}$	$0.060^{+0.250}_{-0.300}$	$1.170^{+0.348}_{-0.214}$	$1.053^{+0.152}_{-0.124}$	$0.926^{+0.563}_{-0.470}$
	+3%/-3%	+3%/-4%	+417%/-500%	+30%/-18%	+14%/-12%	+61%/-51%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 005009189-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-335 ± 56	$27.80^{+29.30}_{-18.47}$	360^{+27}_{-22}	2567^{+899}_{-394}	348^{+2702}_{-263}
Alt.	-266 ± 63	$27.32^{+26.90}_{-18.99}$	361^{+26}_{-22}	2504^{+955}_{-368}	281^{+3023}_{-209}

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

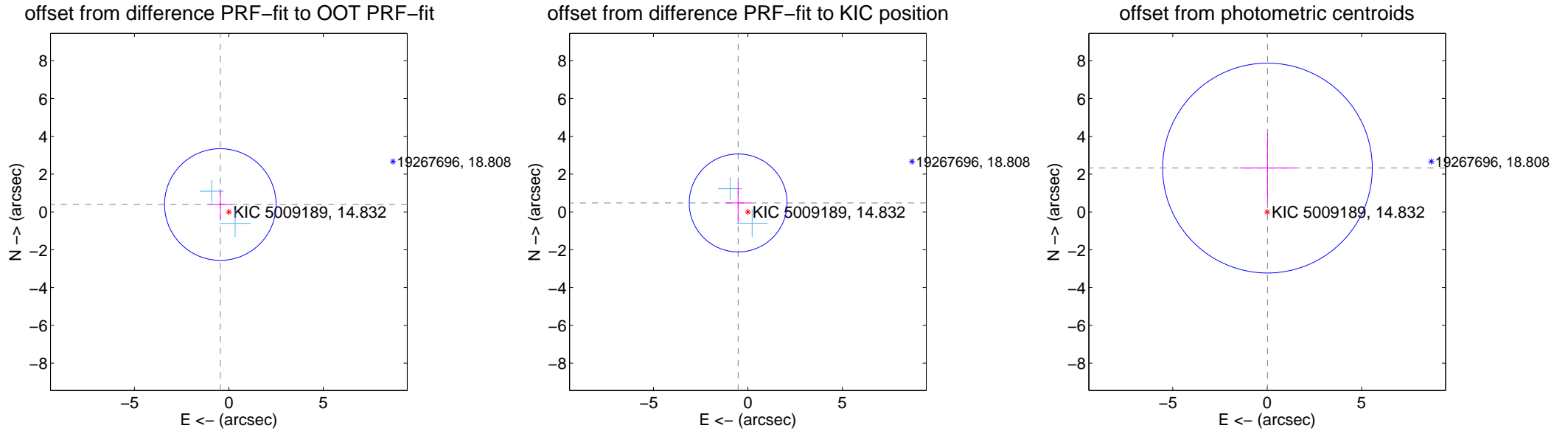
DV Centroid Data

Supplemental centroid analysis for 005009189-03. Kepler magnitude: 14.83. Transit SNR 6.68

There are 2 quarters with good PRF difference image offsets

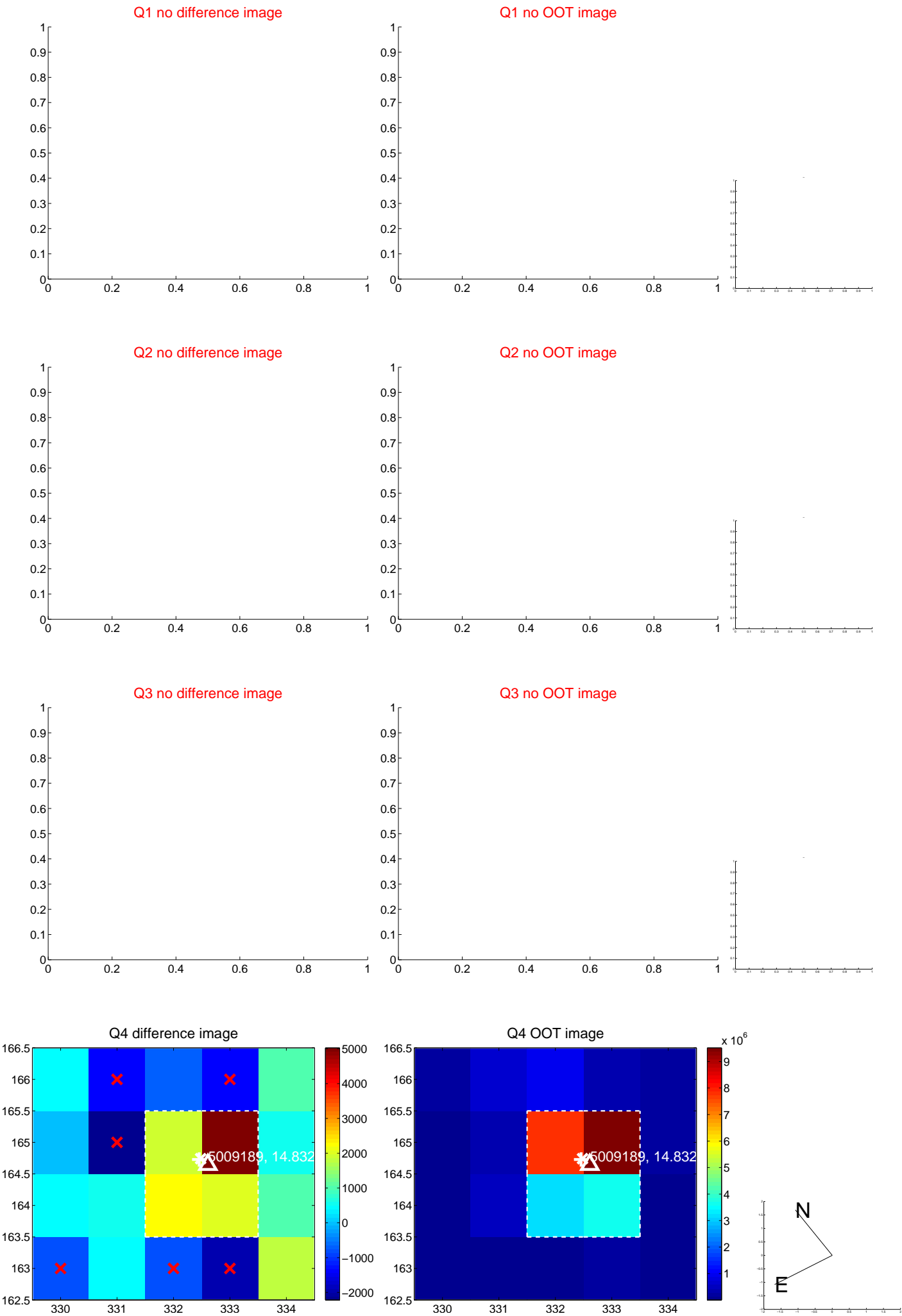
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.599 ± 0.984	0.61	0.453 ± 0.598	0.391 ± 0.817
PRF-fit source offset from KIC position	0.701 ± 0.863	0.81	0.516 ± 0.660	0.474 ± 1.054
photometric centroid source offset	2.32 ± 1.85	1.25	-0.01 ± 1.46	2.32 ± 1.85



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

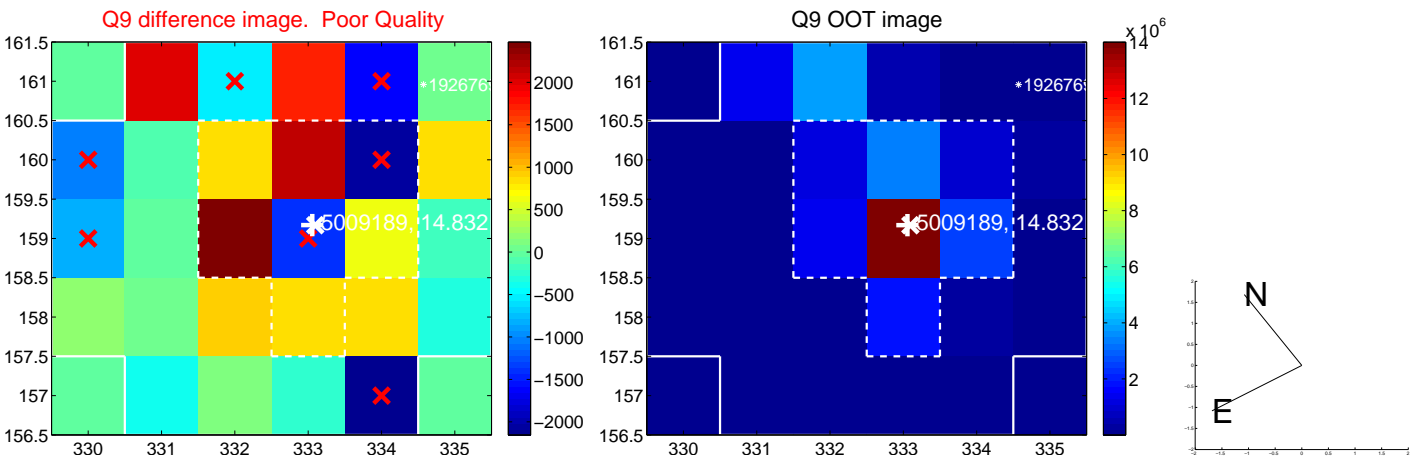
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



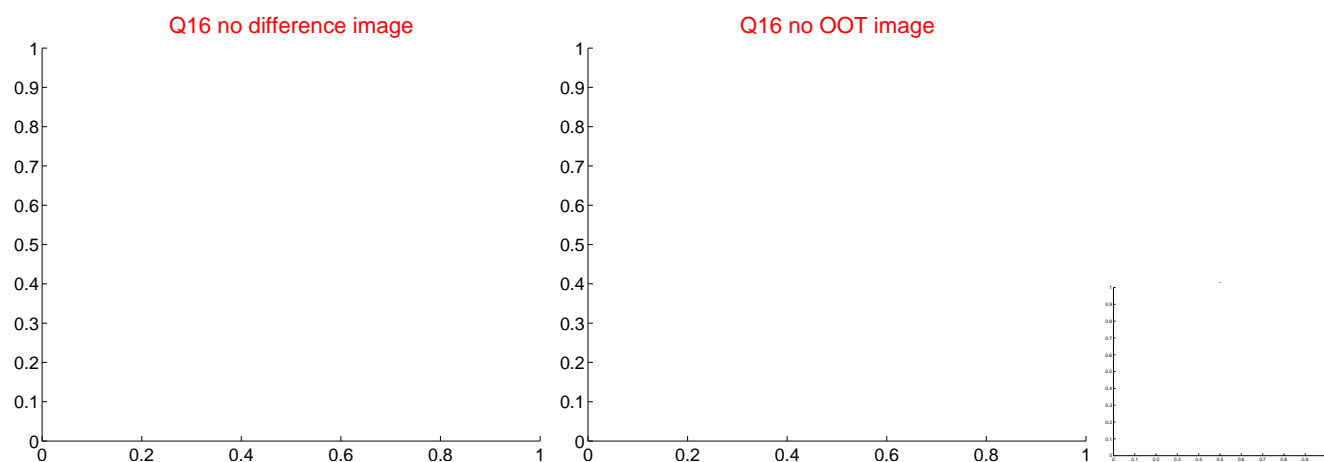
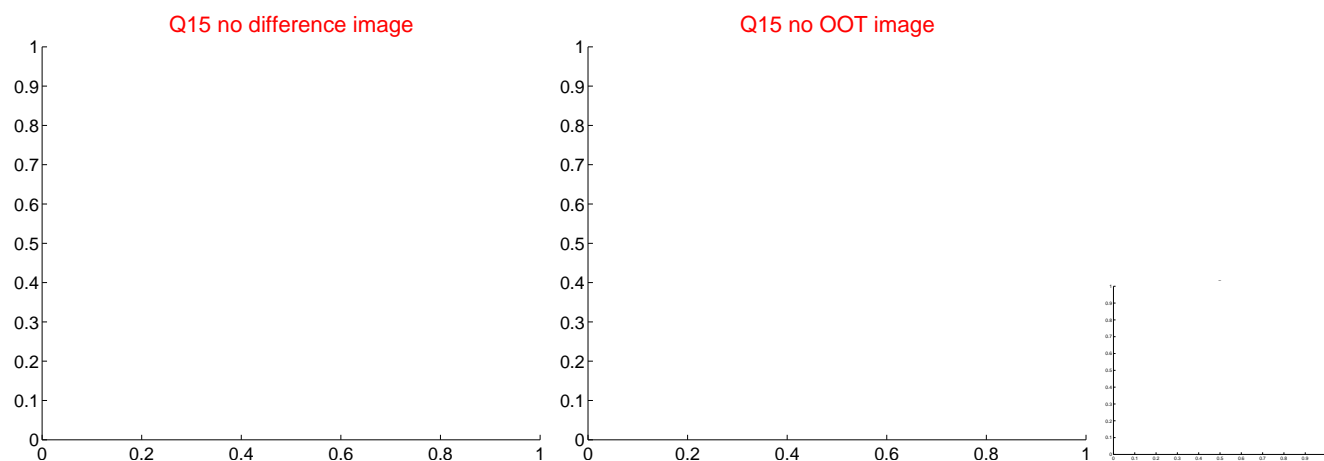
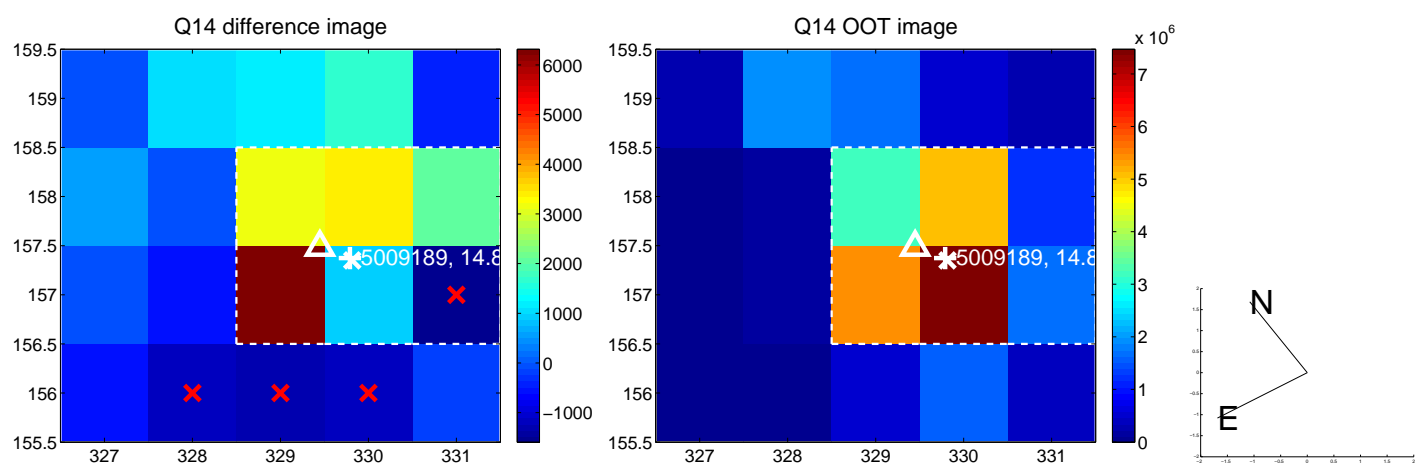
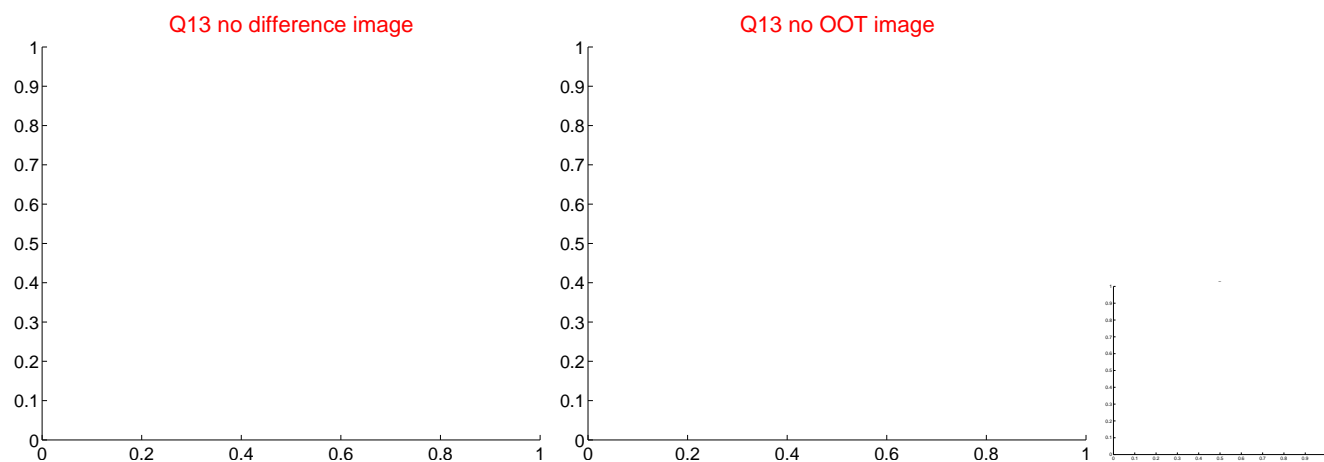
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



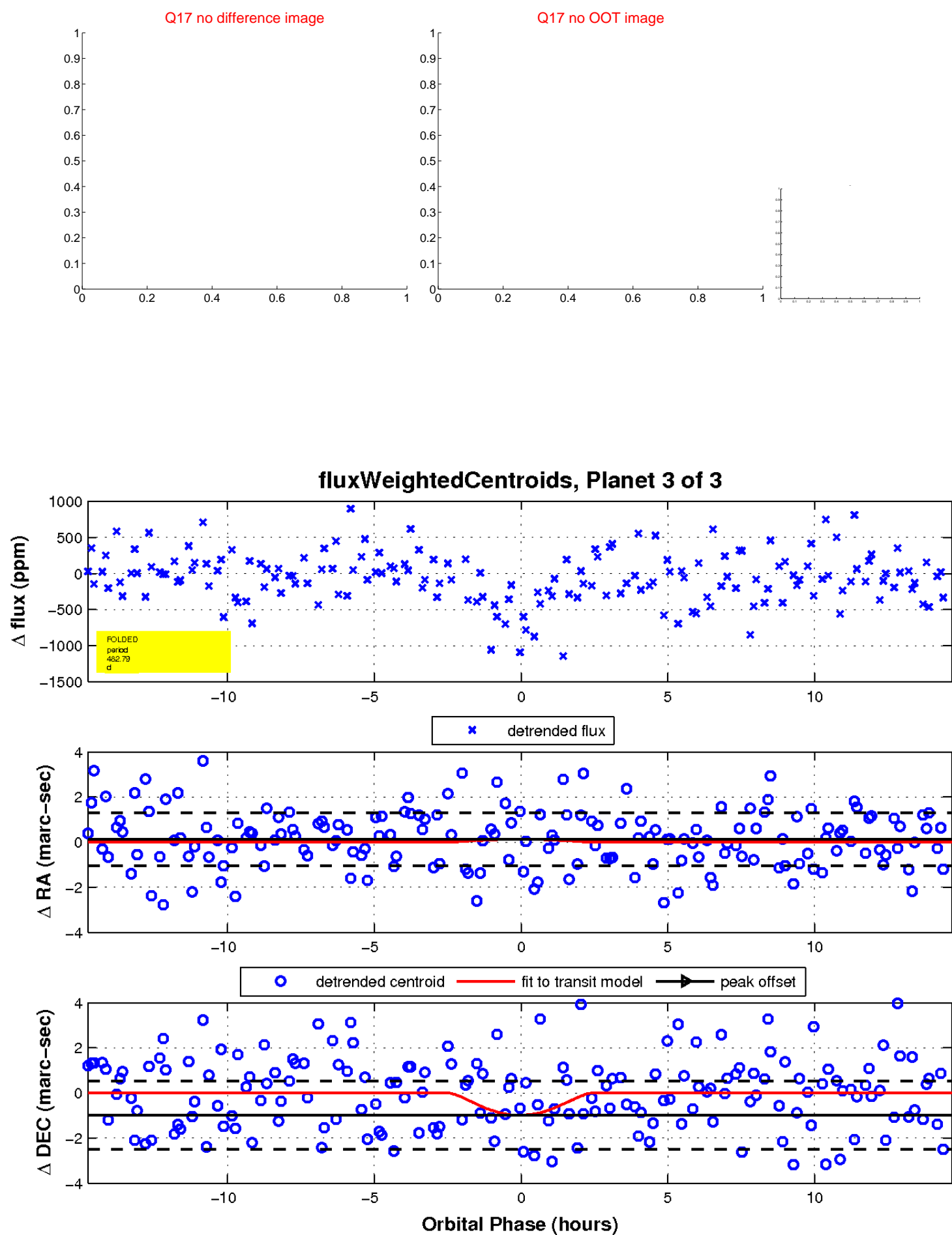
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

