

KIC 009580167

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})
009580167-01	OBS	2548.01	0.827142	132.087747	288.8	1.293	20.1	24.7	11.89	4452	19.70	0.00
009580167-02	OBS	No	375.559007	450.960276	3914.7	6.105	11.4	7.0	11.89	4452	70.78	48.51
009580167-04	OBS	No	371.497385	459.036723	7452.8	9.782	8.8	9.3	11.89	4452	124.48	49.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009580167-01	OBS	PC	1.00	0	0	0	0	PLANET_IN_STAR—CENT_KIC_POS
009580167-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009580167-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

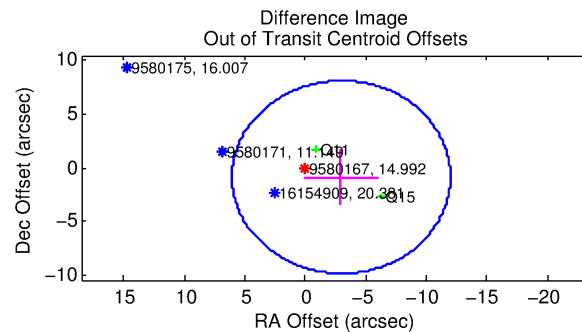
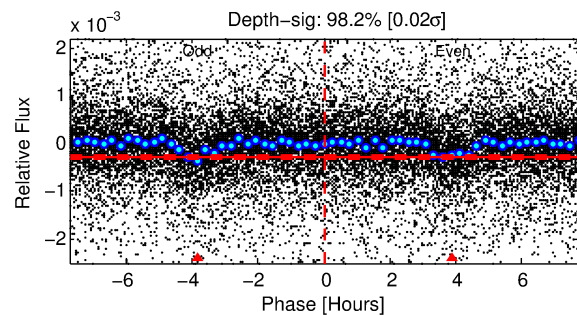
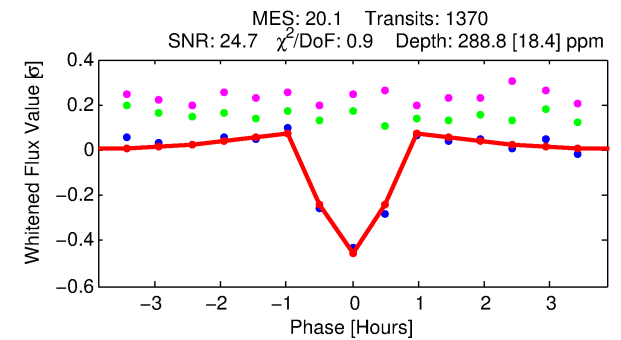
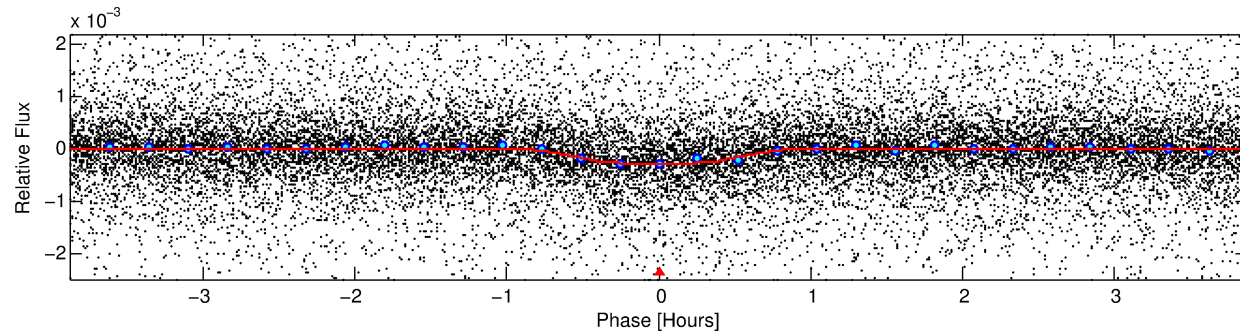
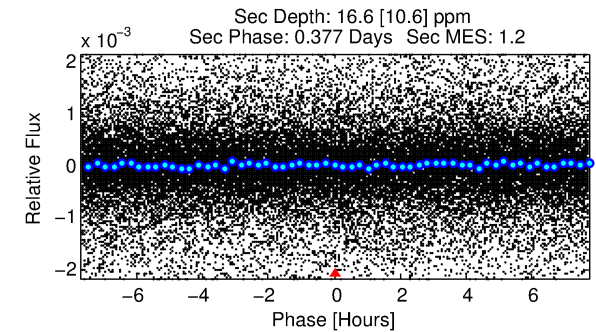
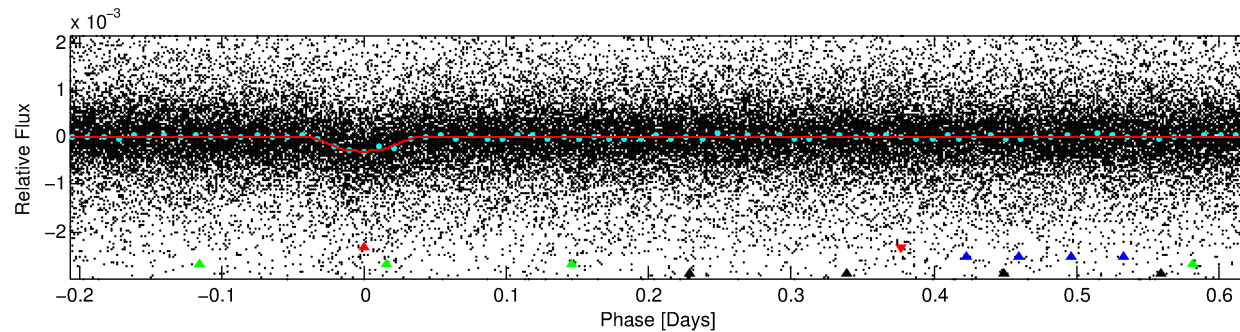
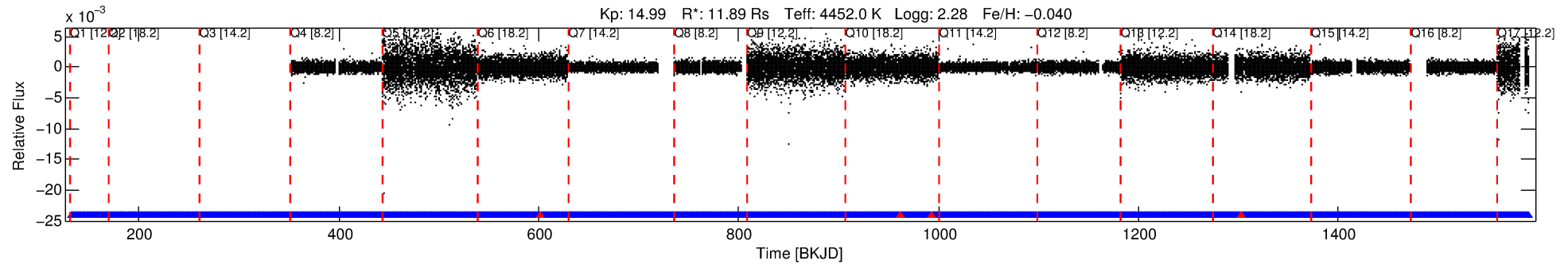
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009580167-01

No Significant Match Found

DV One-Page Summary

KIC: 9580167 Candidate: 1 of 4 Period: 0.827 d
KOI: K02548.01 Corr: 0.937



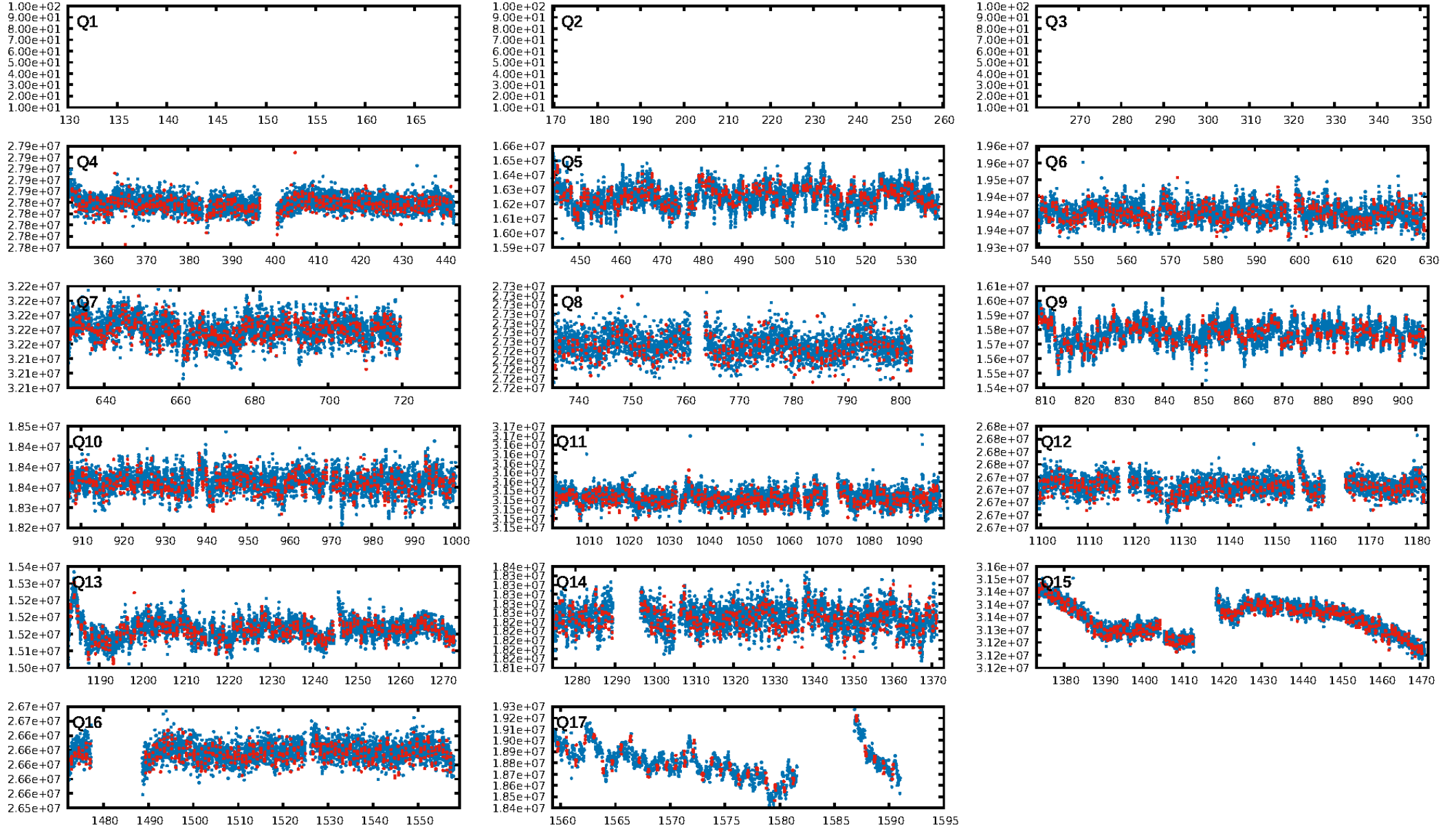
DV Fit Results:

Period = 0.82714 [0.00000] d
Epoch = 132.0877 [0.0008] BKJD
Rp/R* = 0.0152 [0.0090]
a/R* = 4.79 [7.77]
b = 0.30 [5.32]
Seff = N/A
Teq = N/A
Rp = 19.70 [12.89] Re
a = N/A
Ag = N/A
Teffp = N/A

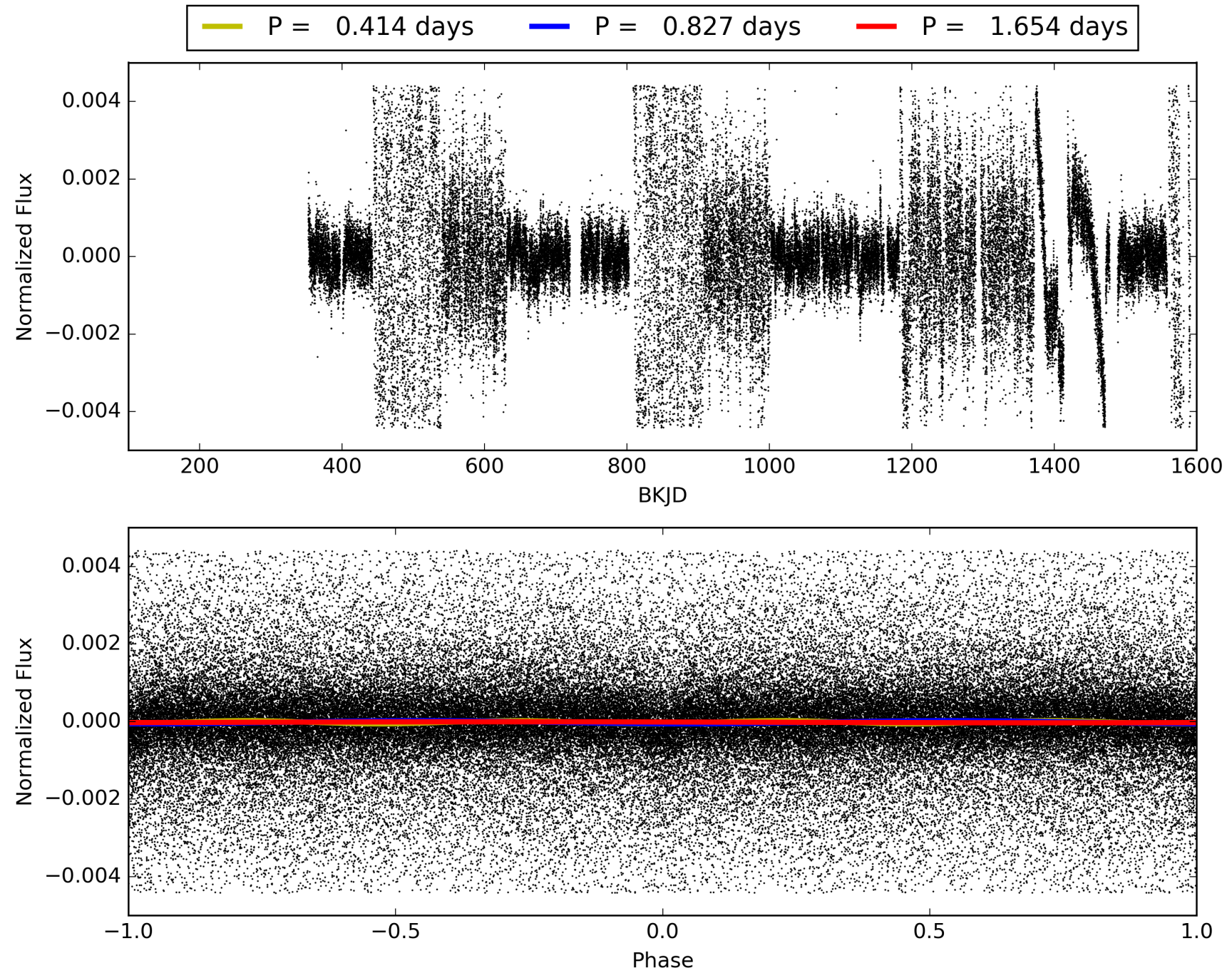
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [901.56σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.92e-85
RollingBand-fgt: 1.00 [1334/1338]
GhostDiagnostic-chr: 5.035
Centroid-sig: 0.0%
Centroid-so: 3.635 arcsec [50.38σ]
OotOffset-rm: 3.090 arcsec [1.03σ]
KicOffset-rm: 1.961 arcsec [2.06σ]
OotOffset-st: 0.2/0/0 [2]
KicOffset-st: 1/2/3/3 [9]
DiffImageQuality-fgm: 0.67 [6/9]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009580167-01, PDC Light Curves

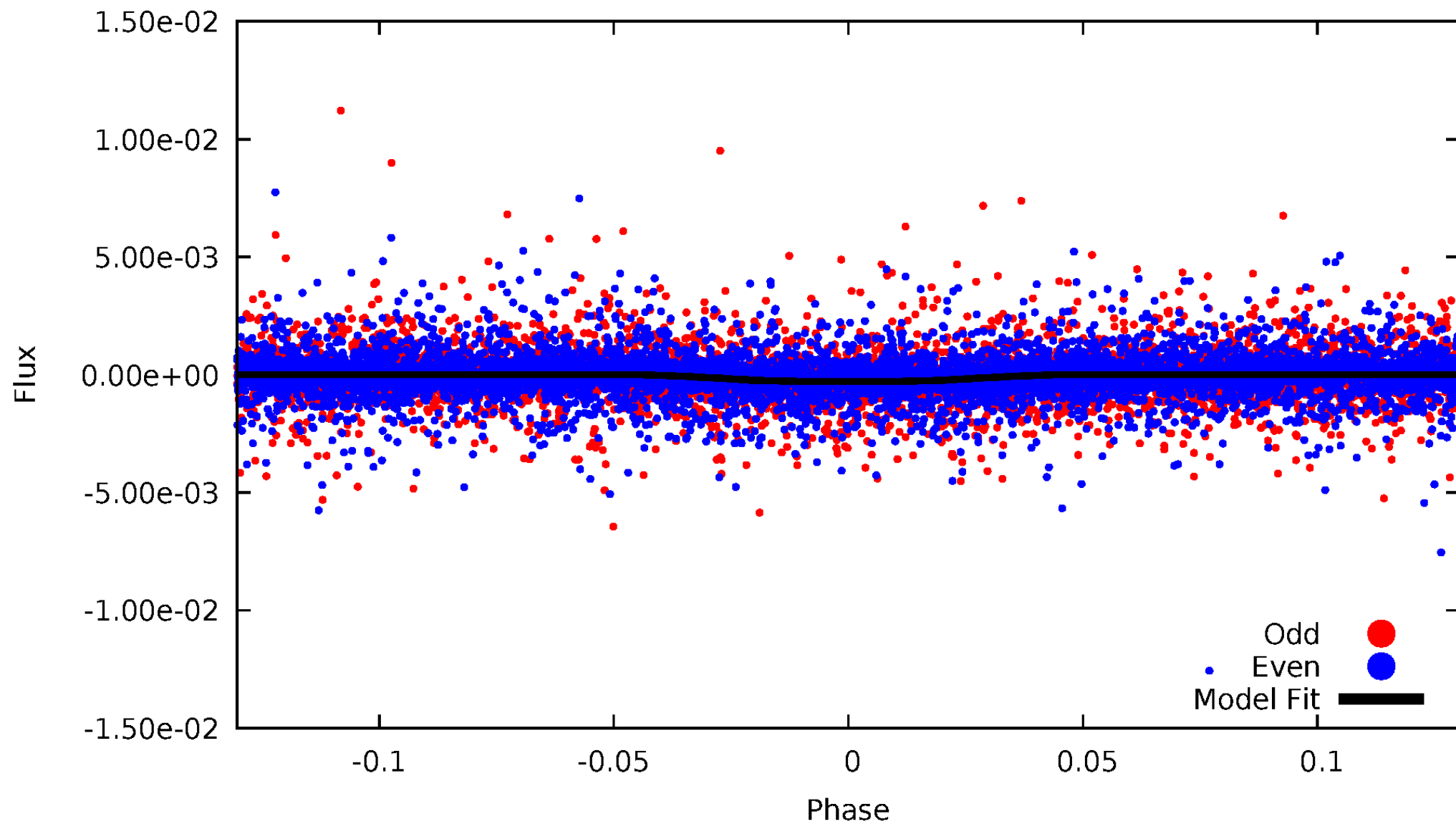


TCE 009580167-01



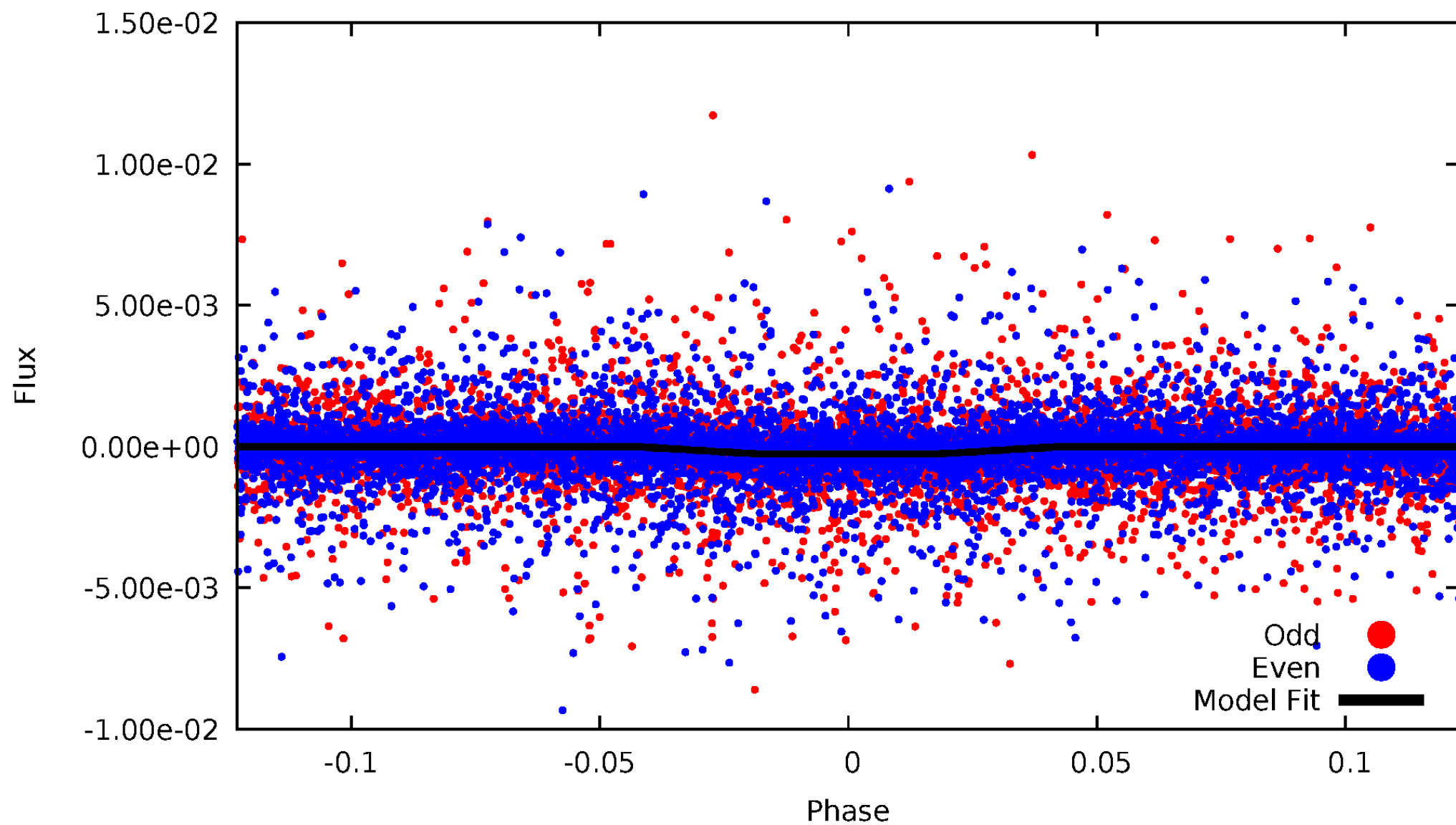
DV Odd/Even

TCE 009580167-01

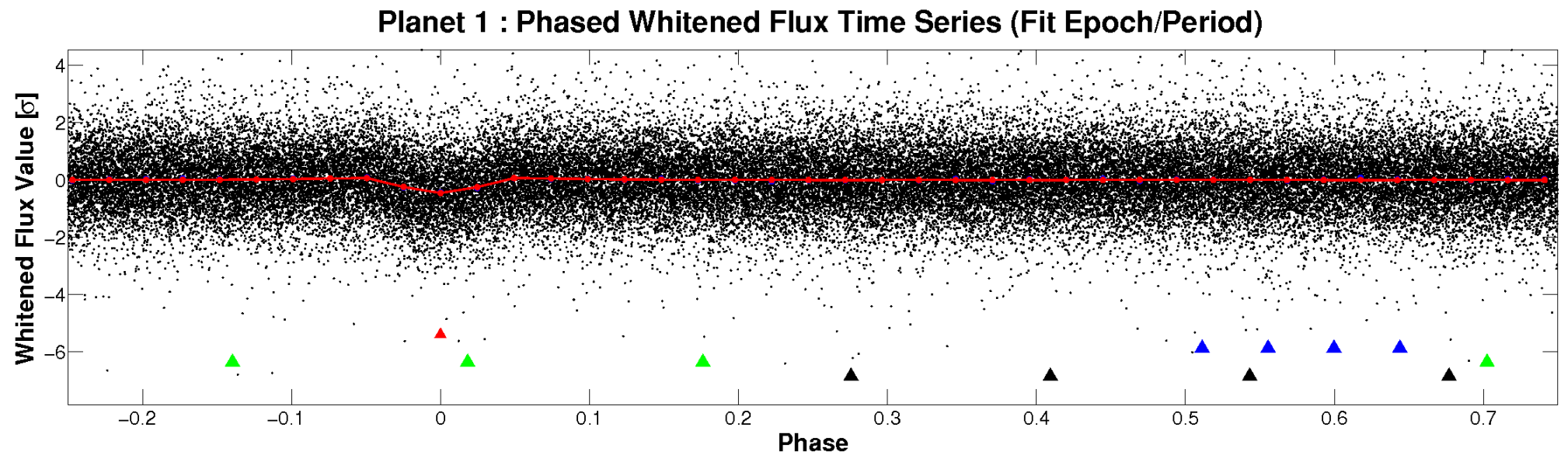
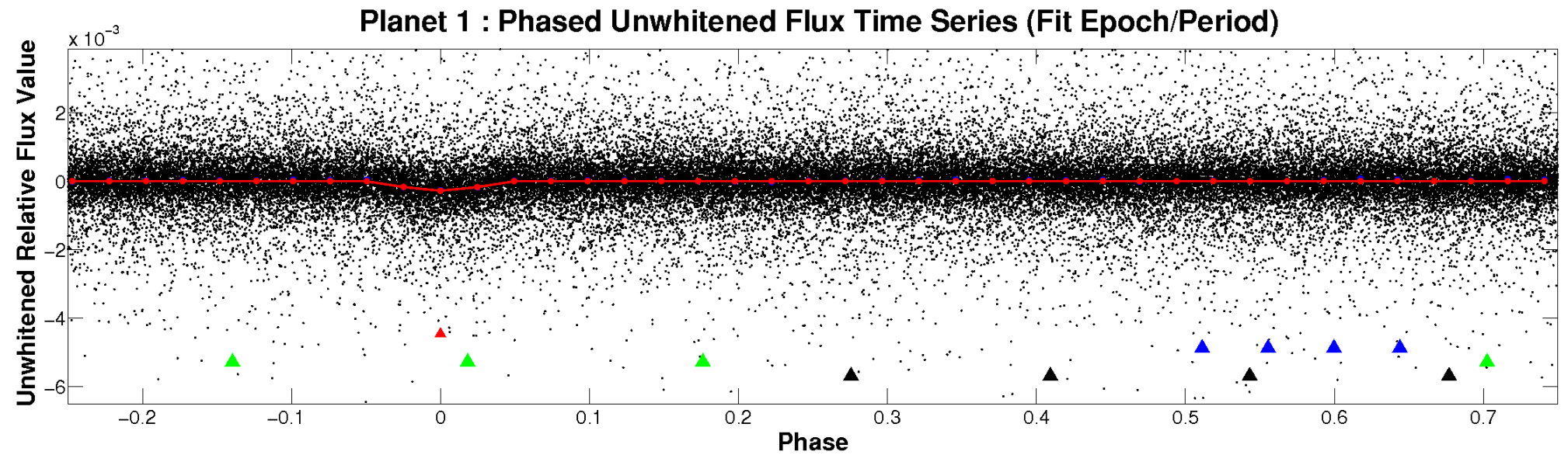


ALT Odd/Even

TCE 009580167-01

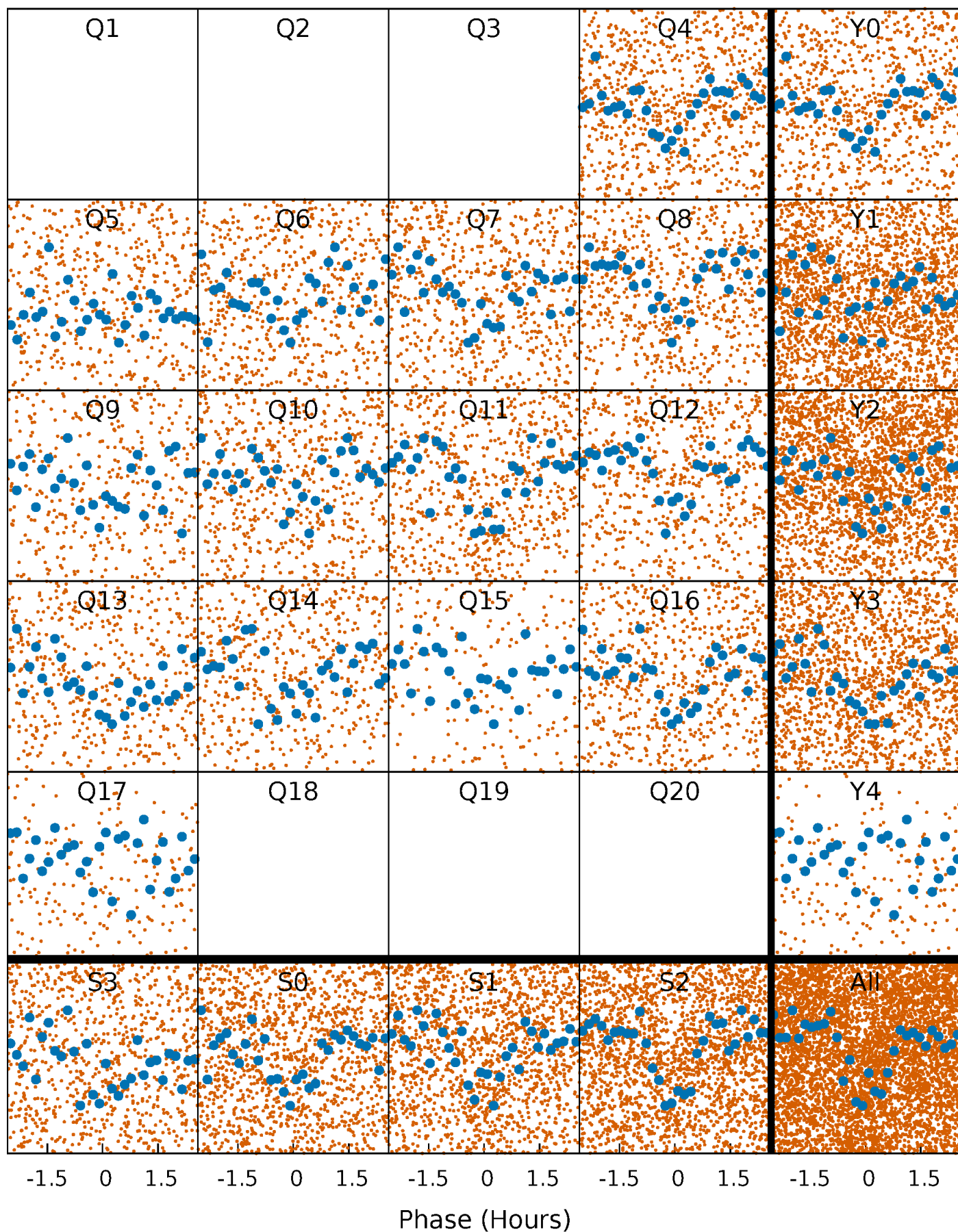


Non-Whitened Vs. Whitened Light Curve



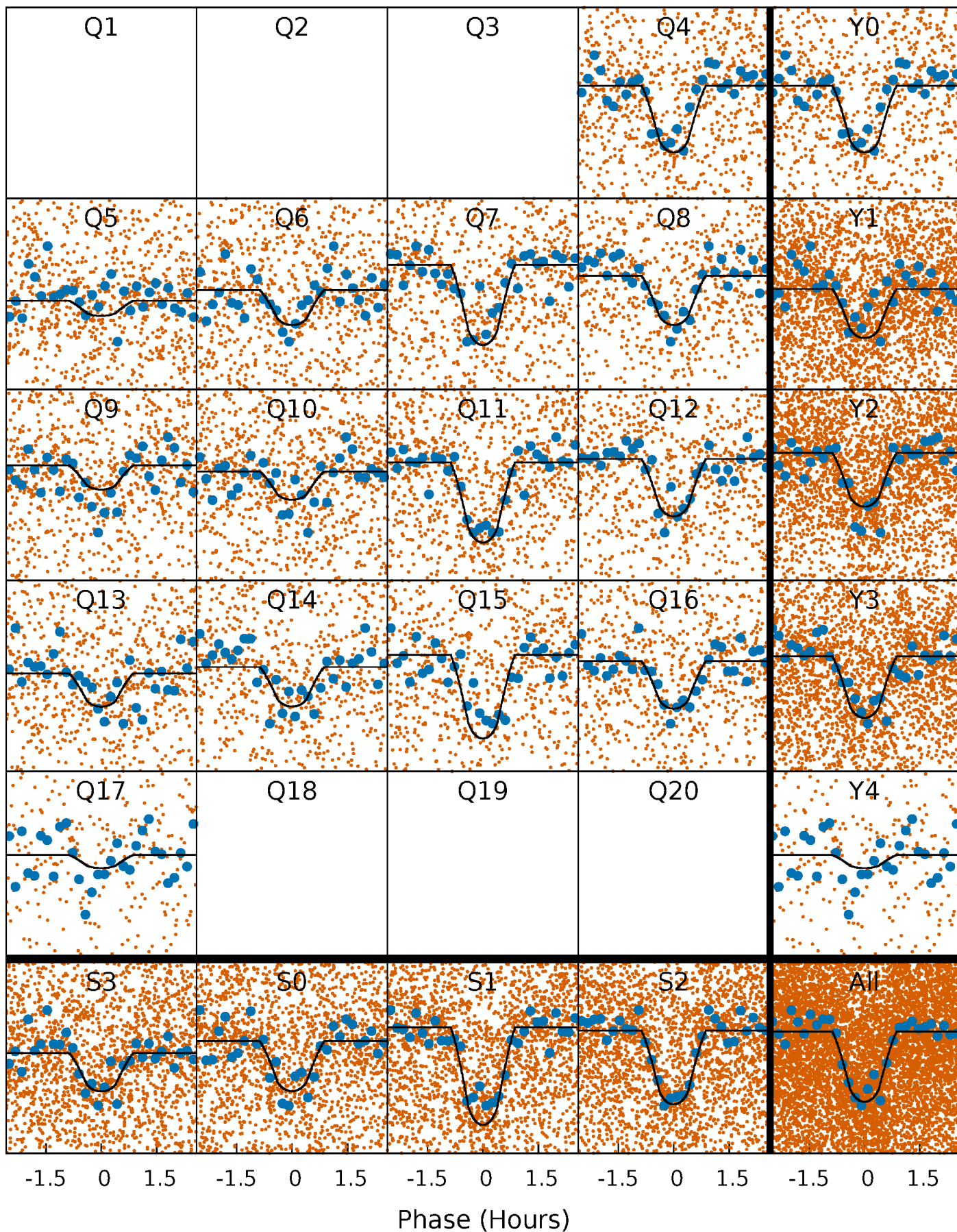
PDC Quarter-Phased Transit Curves

TCE 009580167-01 P= 0.827142 Days $T_0=132.087747$ (BKJD)



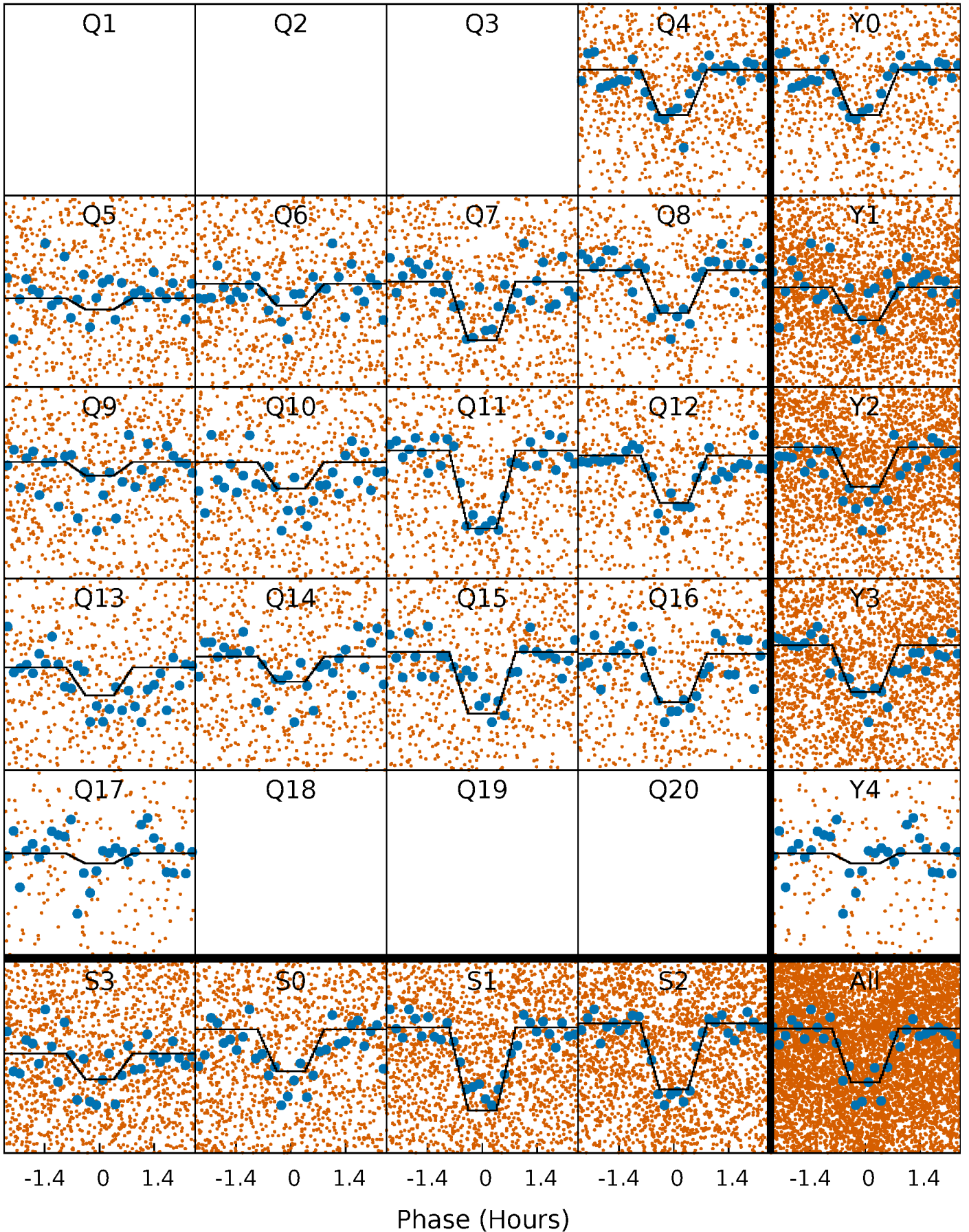
DV Quarter-Phased Transit Curves

TCE 009580167-01 P= 0.827142 Days $T_0=132.087747$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

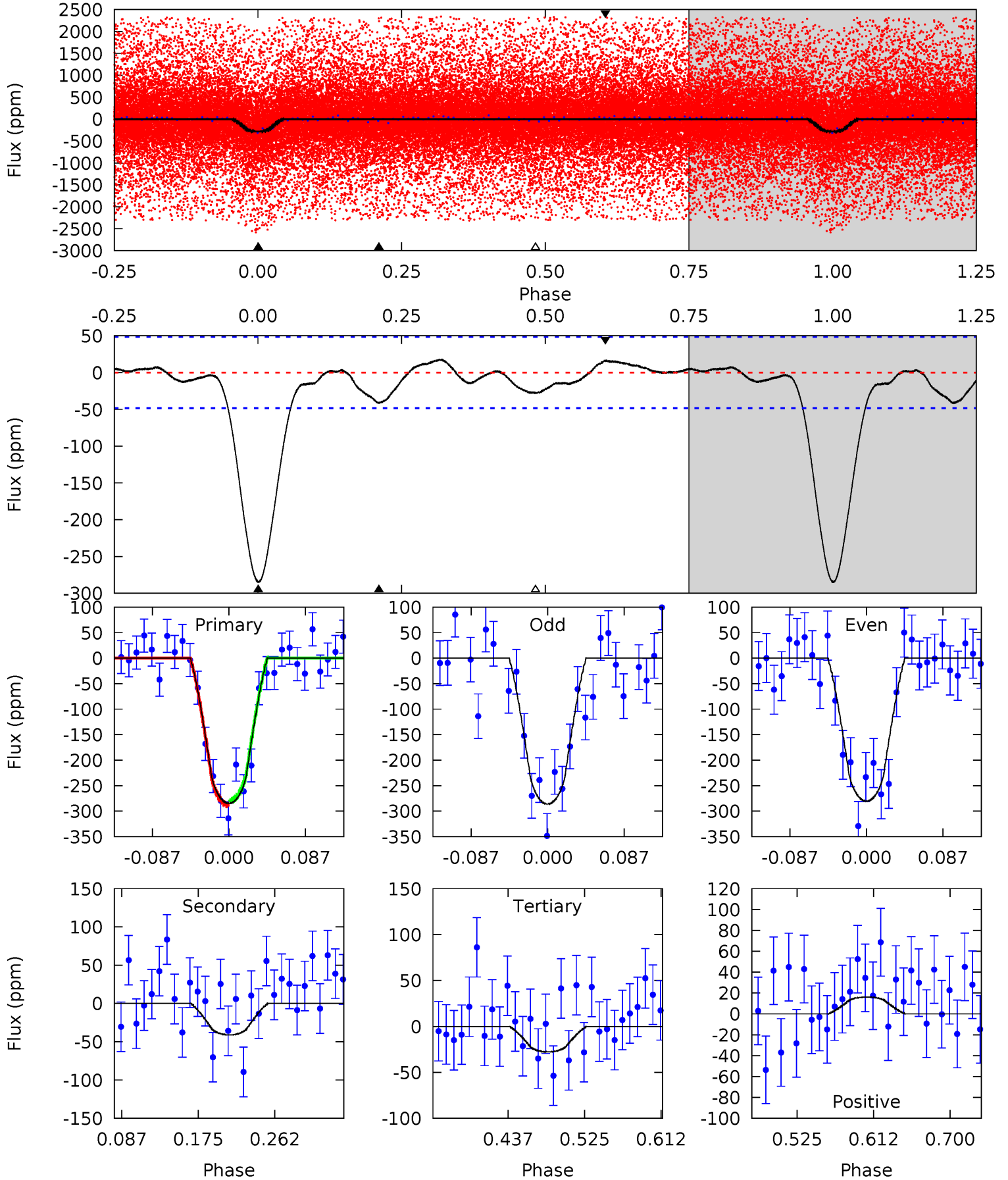
TCE 009580167-01 P= 0.827143 Days $T_0=132.087361$ (BKJD)



DV Model-Shift Uniqueness Test

009580167-01, P = 0.827142 Days, E = 132.087747 Days

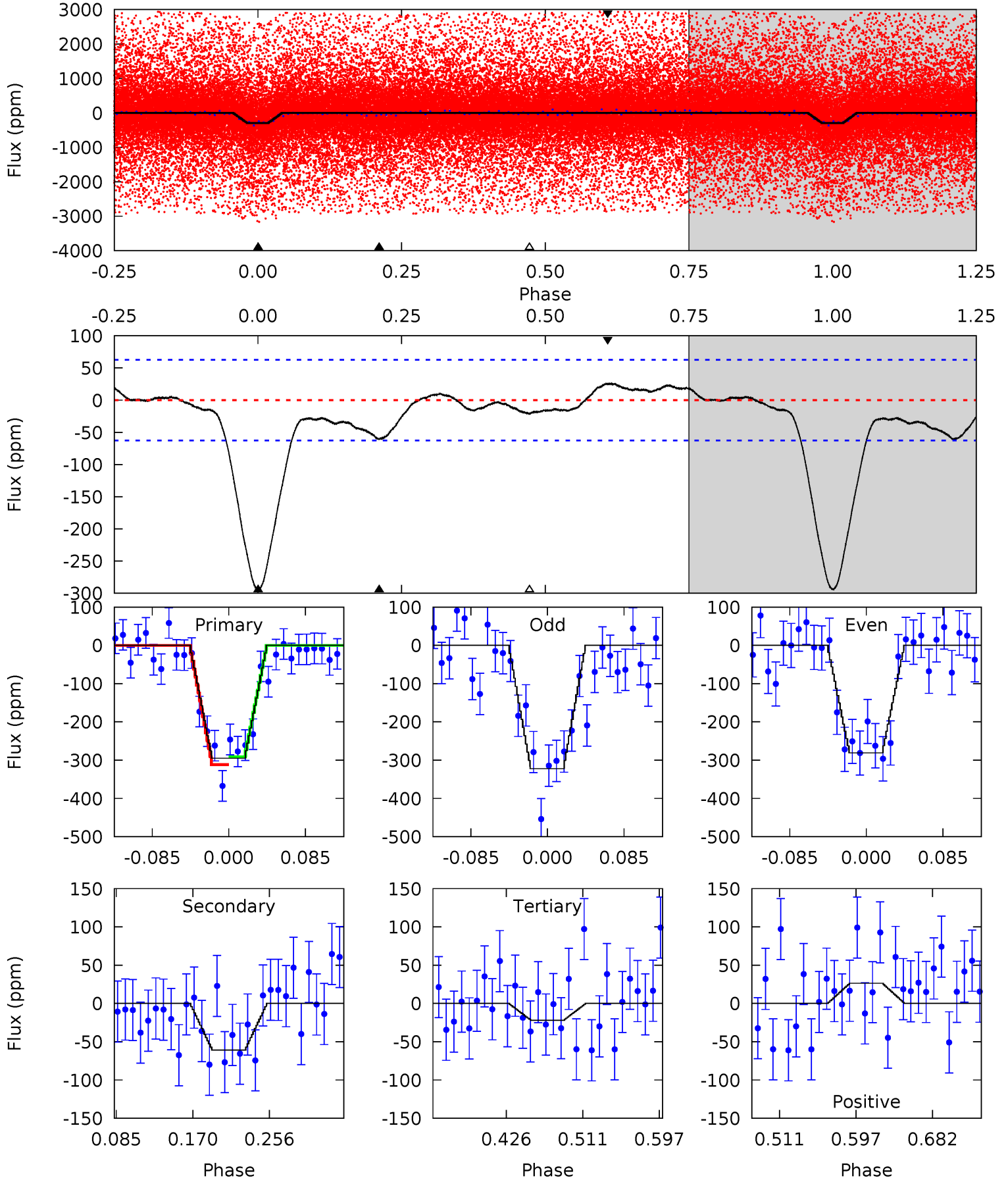
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.0	3.91	2.63	1.54	4.59	1.71	1.08	24.4	25.5	1.27	2.37	0.27	1.07	0.06	0.40



Alt Model-Shift Uniqueness Test

009580167-01, P = 0.827143 Days, E = 132.087361 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.7	4.47	1.62	1.93	4.60	1.72	1.11	20.0	19.7	2.86	2.54	1.53	1.09	0.08	0.75



Stellar Parameters For KIC 009580167

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4452^{+87}_{-47}	$2.280^{+0.030}_{-0.030}$	$-0.040^{+0.150}_{-0.100}$	$11.895^{+3.211}_{-0.567}$	$0.984^{+0.587}_{-0.065}$	$0.001^{+0.000}_{-0.000}$
	+2%/-1%	+1%/-1%	+375%/-250%	+27%/-5%	+60%/-7%	+10%/-23%
Source	SPE74	AST71	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 009580167-01 / KOI 2548.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-41 ± 11	$20.72^{+11.81}_{-11.33}$	7234^{+194}_{-130}	-5565^{+277}_{-191}	$0.015^{+0.063}_{-0.009}$
Alt.	-61 ± 14	$22.56^{+11.46}_{-11.11}$	7237^{+185}_{-130}	-5555^{+253}_{-181}	$0.019^{+0.057}_{-0.011}$

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 $A_{obs} \gg 1.0$

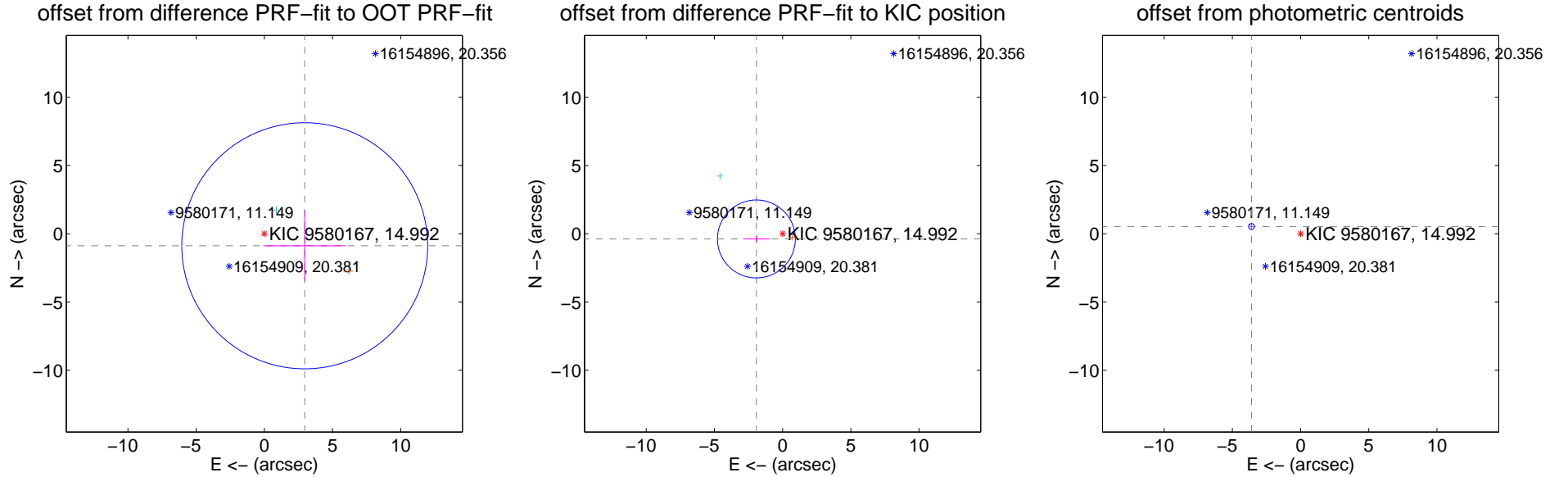
DV Centroid Data

Supplemental centroid analysis for 009580167-01. Kepler magnitude: 14.99. Transit SNR 24.74

There are 6 quarters with good PRF difference image offsets

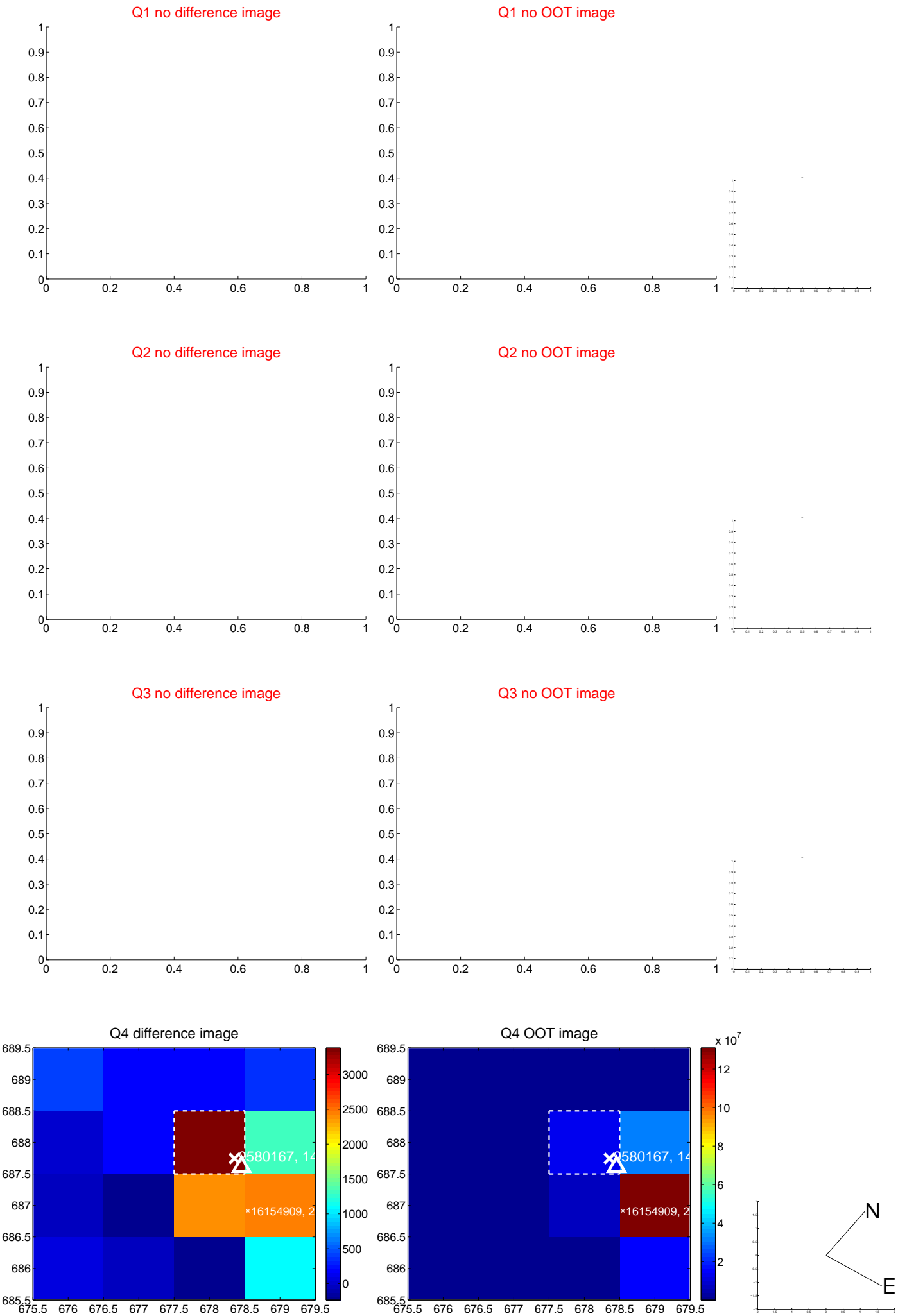
The OOT PRF centroid is offset from the target star catalog position by about 6.02 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.090 ± 3.005	1.03	-2.961 ± 3.039	-0.884 ± 2.580
PRF-fit source offset from KIC position	1.961 ± 0.952	2.06	1.923 ± 0.969	-0.383 ± 0.272
photometric centroid source offset	3.63 ± 0.07	50.38	3.60 ± 0.07	0.53 ± 0.04

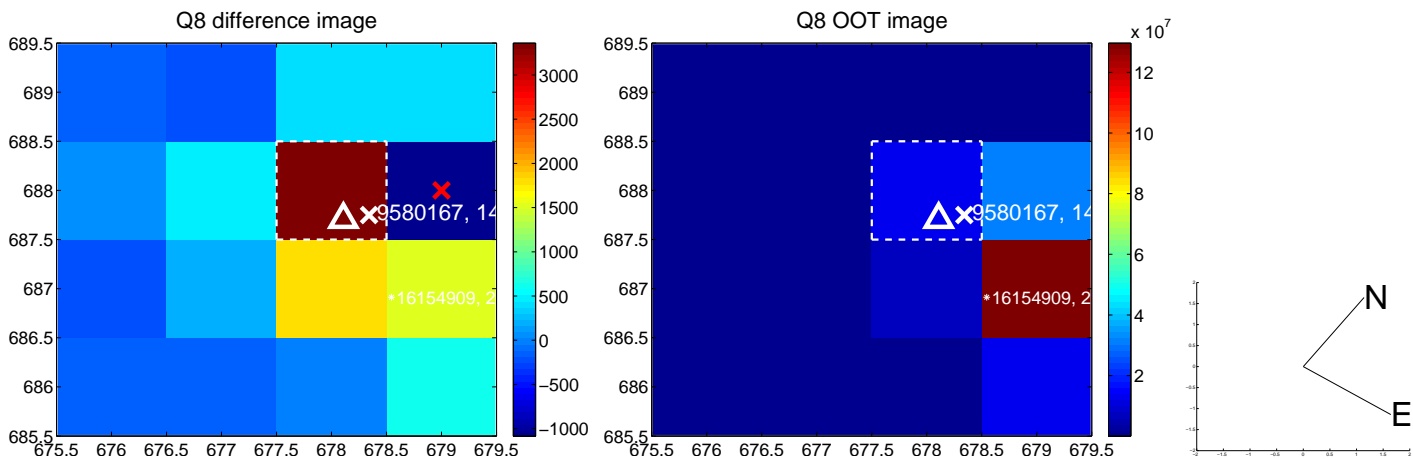
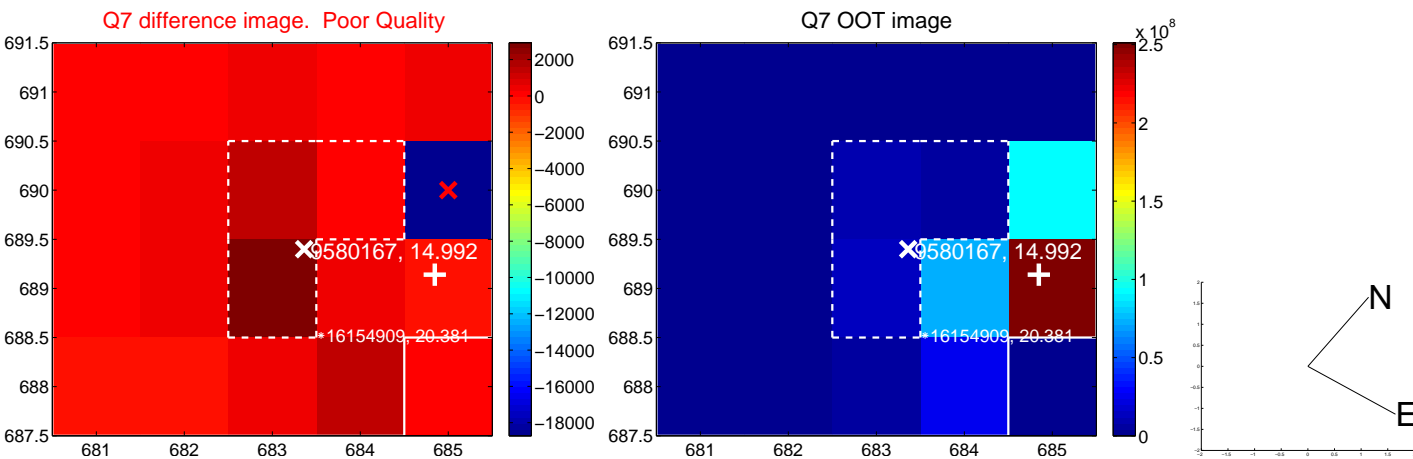
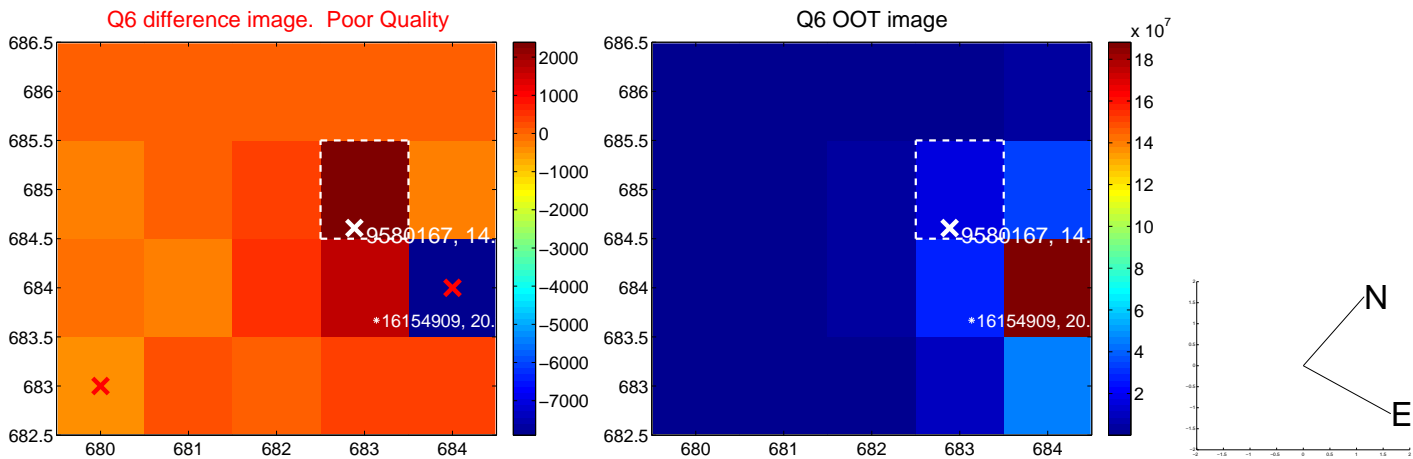
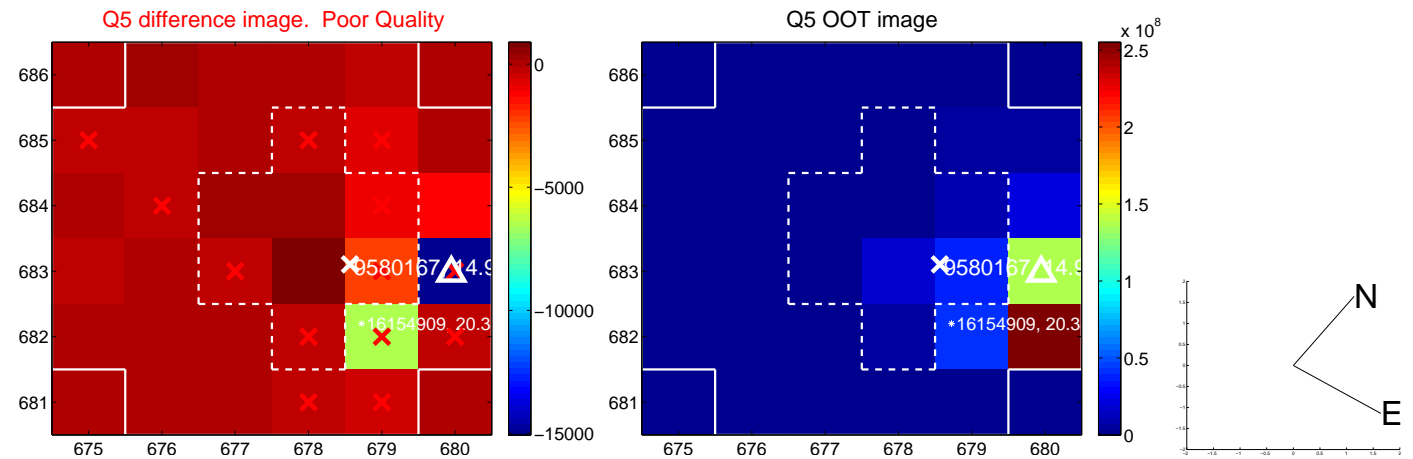


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

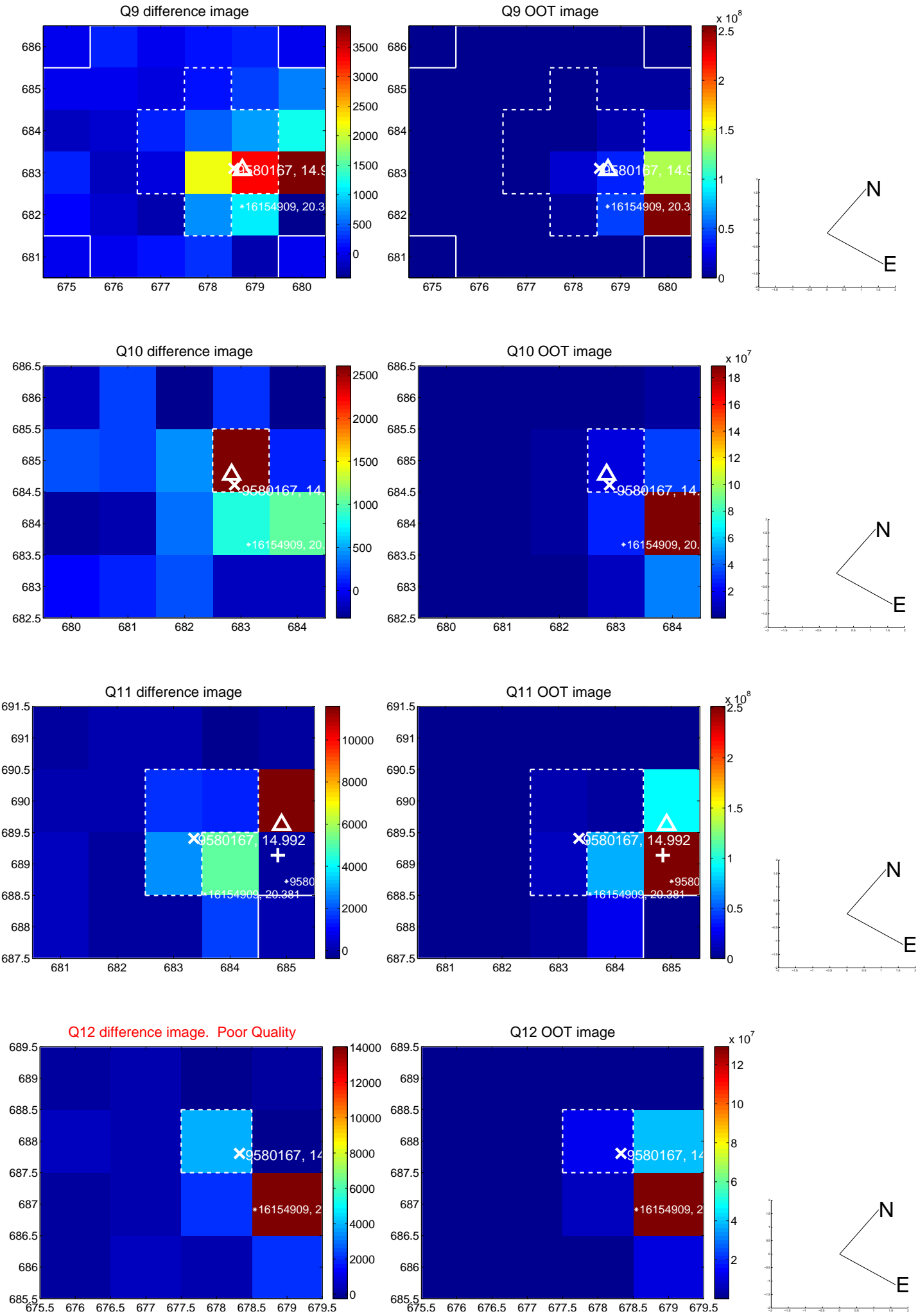
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



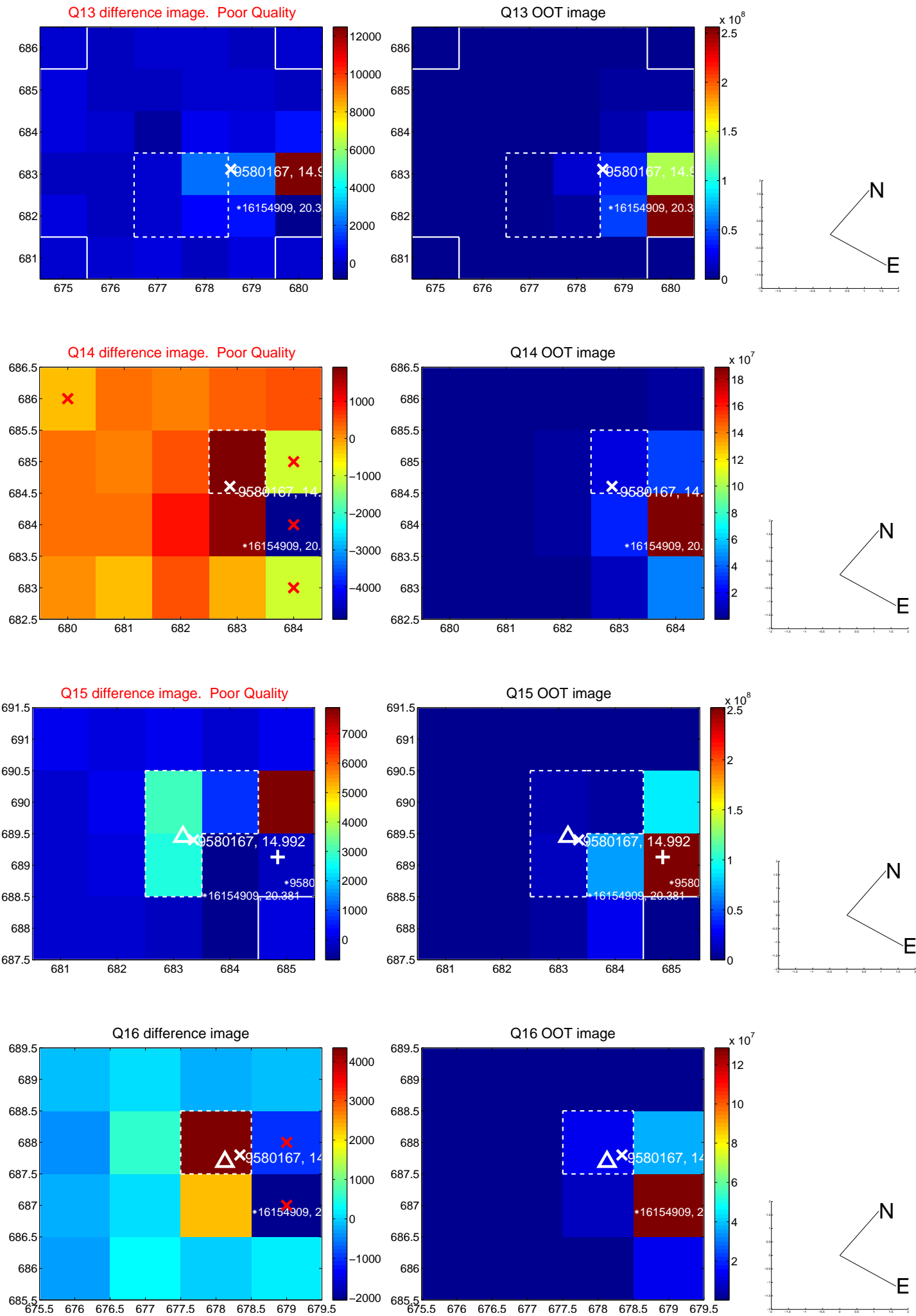
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



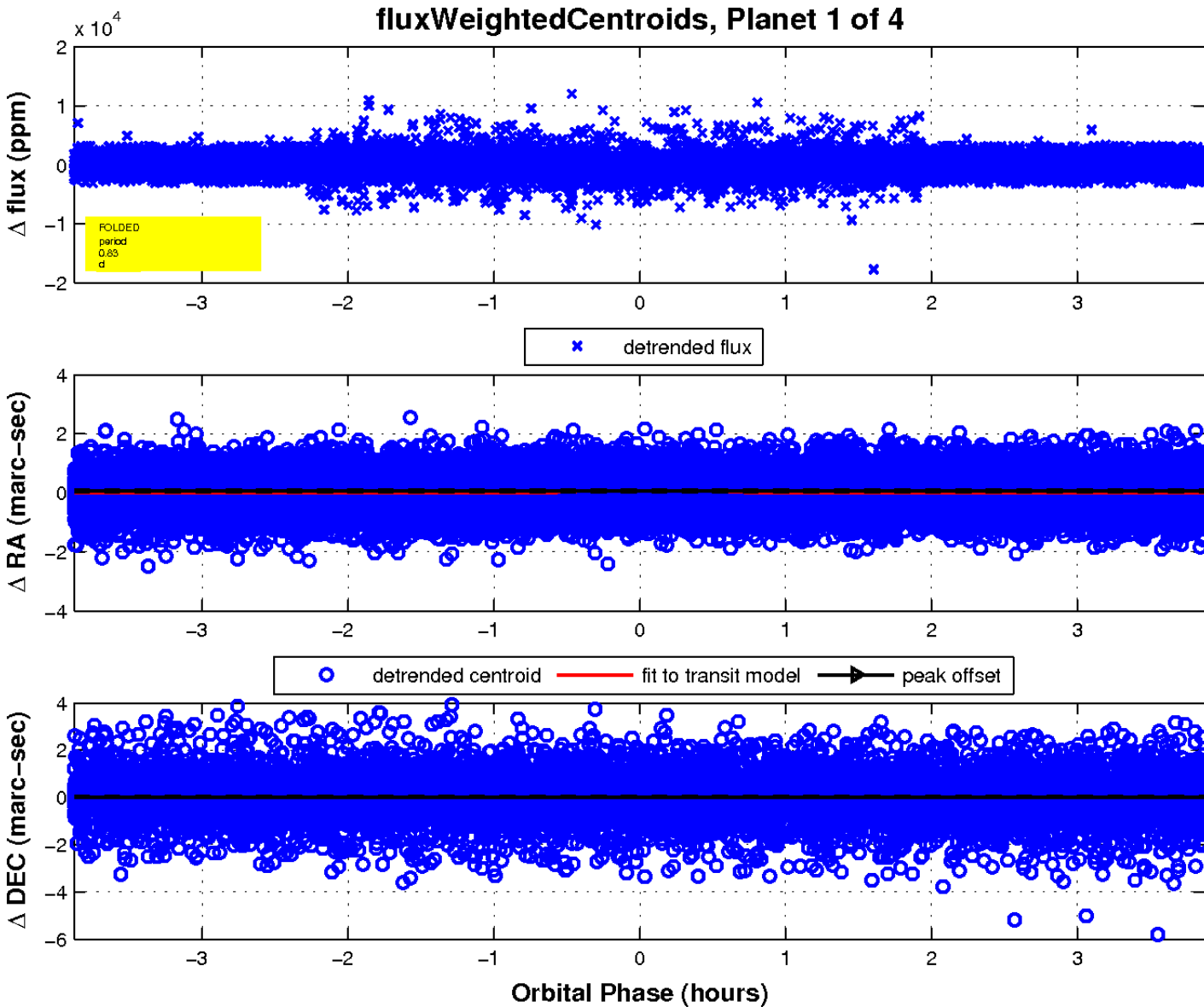
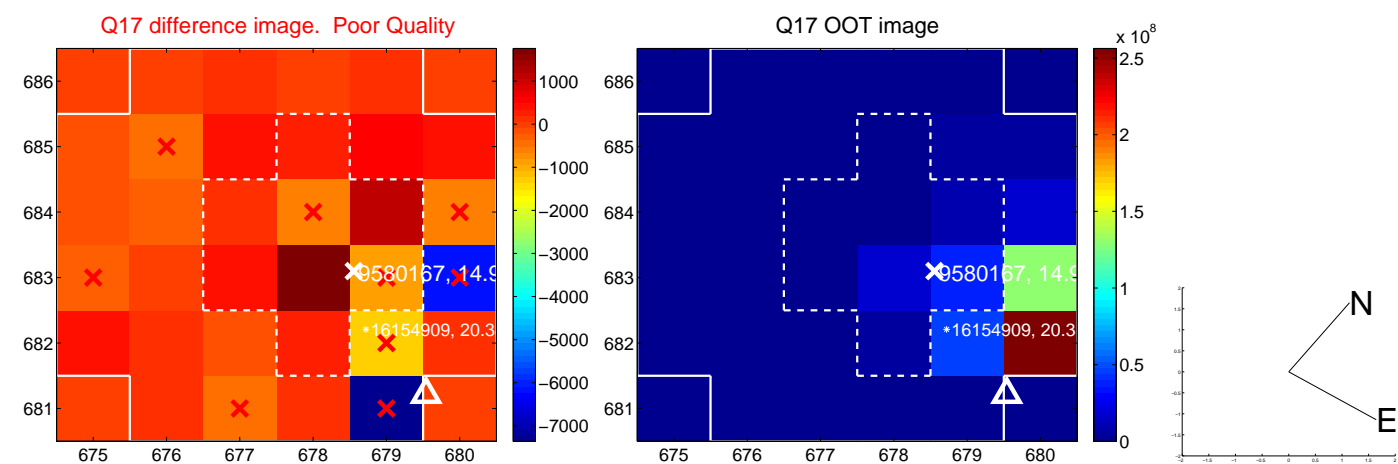
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



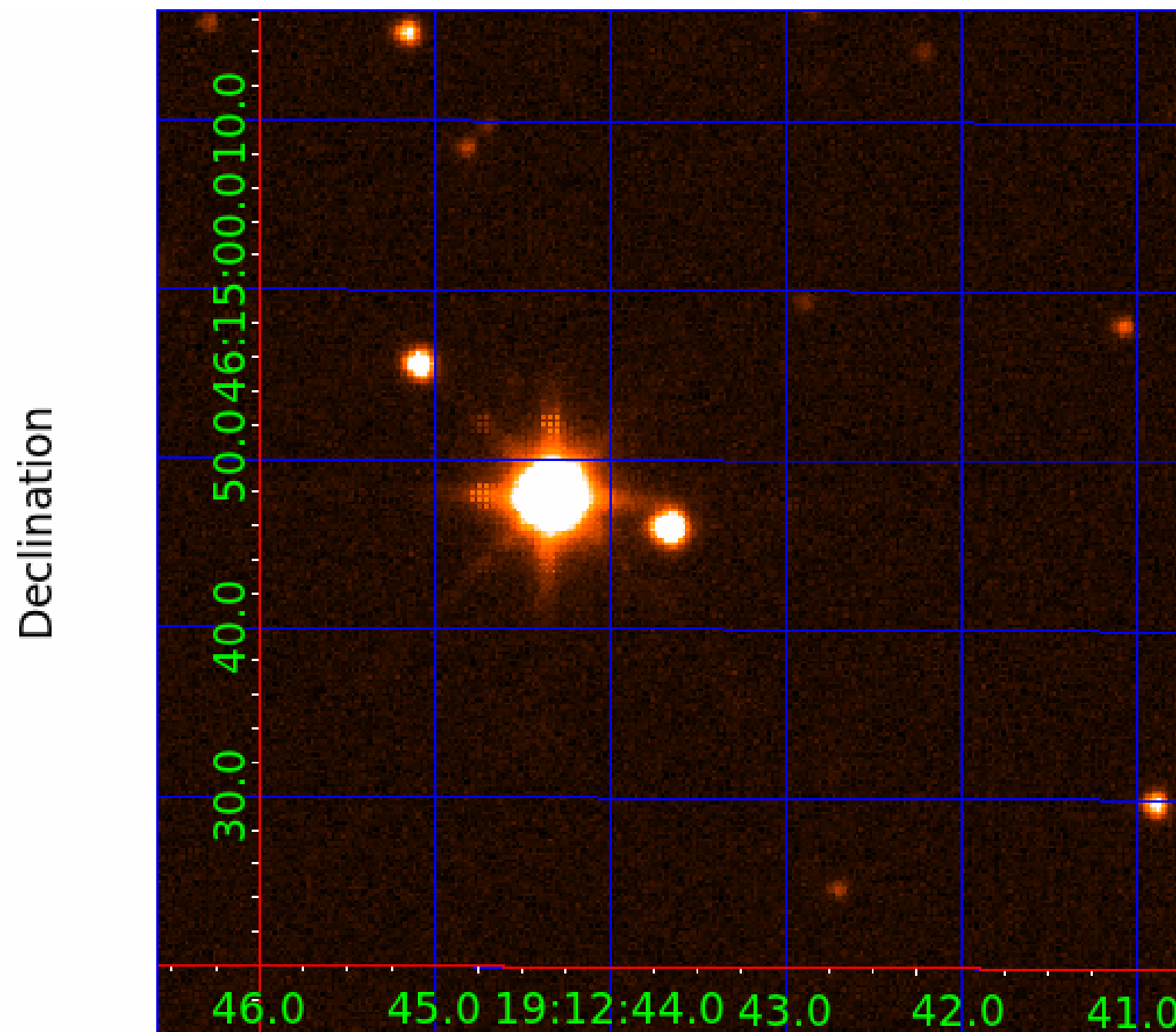
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009580167

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})
009580167-01	OBS	2548.01	0.827142	132.087747	288.8	1.293	20.1	24.7	11.89	4452	19.70	0.00
009580167-02	OBS	No	375.559007	450.960276	3914.7	6.105	11.4	7.0	11.89	4452	70.78	48.51
009580167-04	OBS	No	371.497385	459.036723	7452.8	9.782	8.8	9.3	11.89	4452	124.48	49.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009580167-01	OBS	PC	1.00	0	0	0	0	PLANET_IN_STAR—CENT_KIC_POS
009580167-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009580167-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

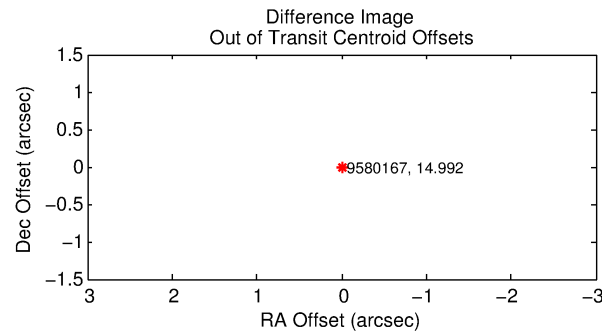
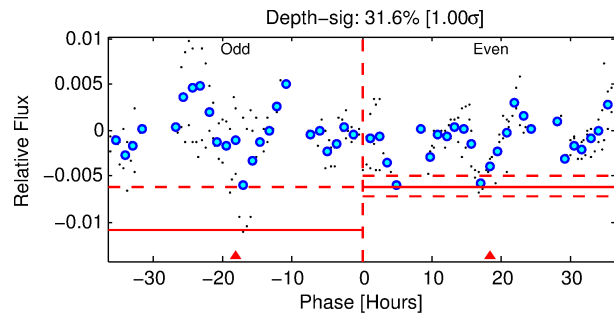
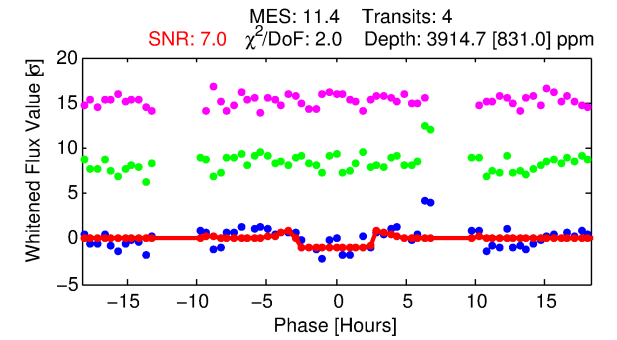
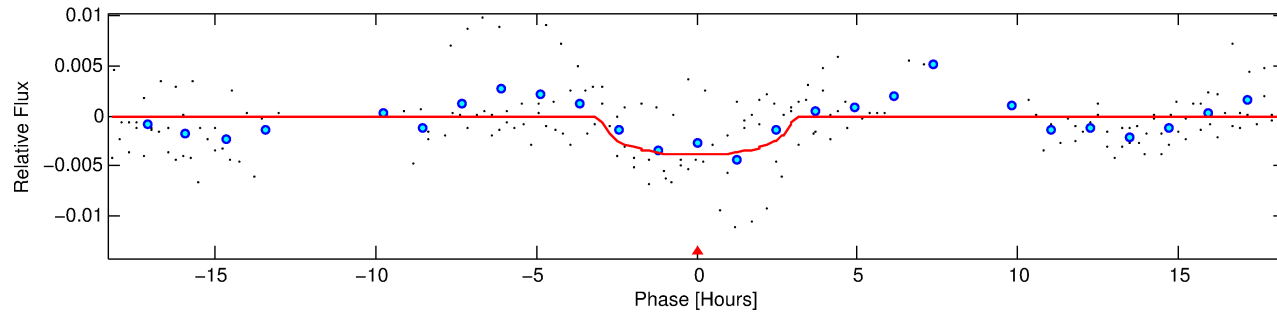
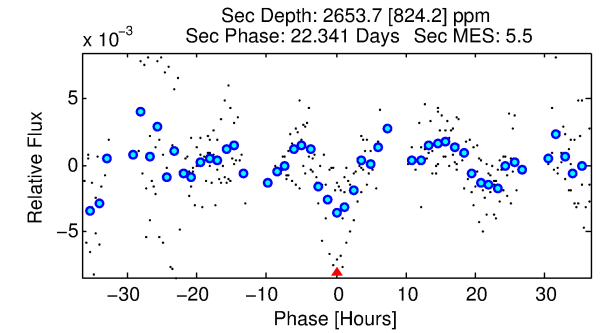
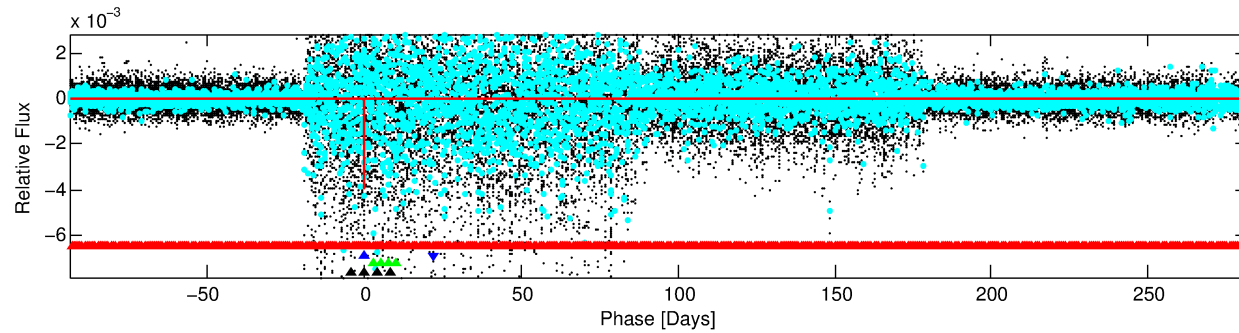
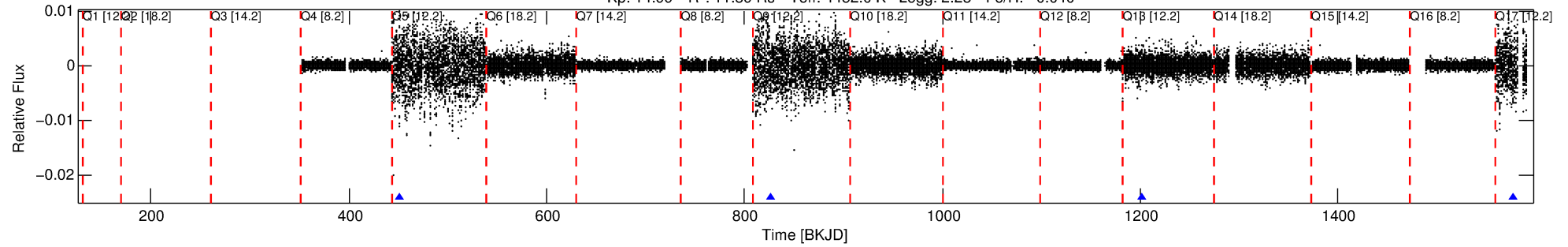
Ephemeris Match Information For 009580167-02

No Significant Match Found

DV One-Page Summary

KIC: 9580167 Candidate: 2 of 4 Period: 375.559 d
KOI: K02548 Corr: No Ephemeris Match

Kp: 14.99 R*: 11.89 Rs Teff: 4452.0 K Logg: 2.28 Fe/H: -0.040



DV Fit Results:

Period = 375.55901 [0.00628] d
Epoch = 450.9603 [0.0108] BKJD
Rp/R* = 0.0545 [0.0630]
a/R* = 495.55 [1611.69]
b = 0.00 [714.29]
Seff = 48.51 [9.78]
Teq = 673 [34] K
Rp = 70.78 [84.01] Re
a = 1.0133 [0.1838] AU
Ag = 299.18 [700.00] [0.43σ]
Teffp = 4327 [2525] K [1.45σ]

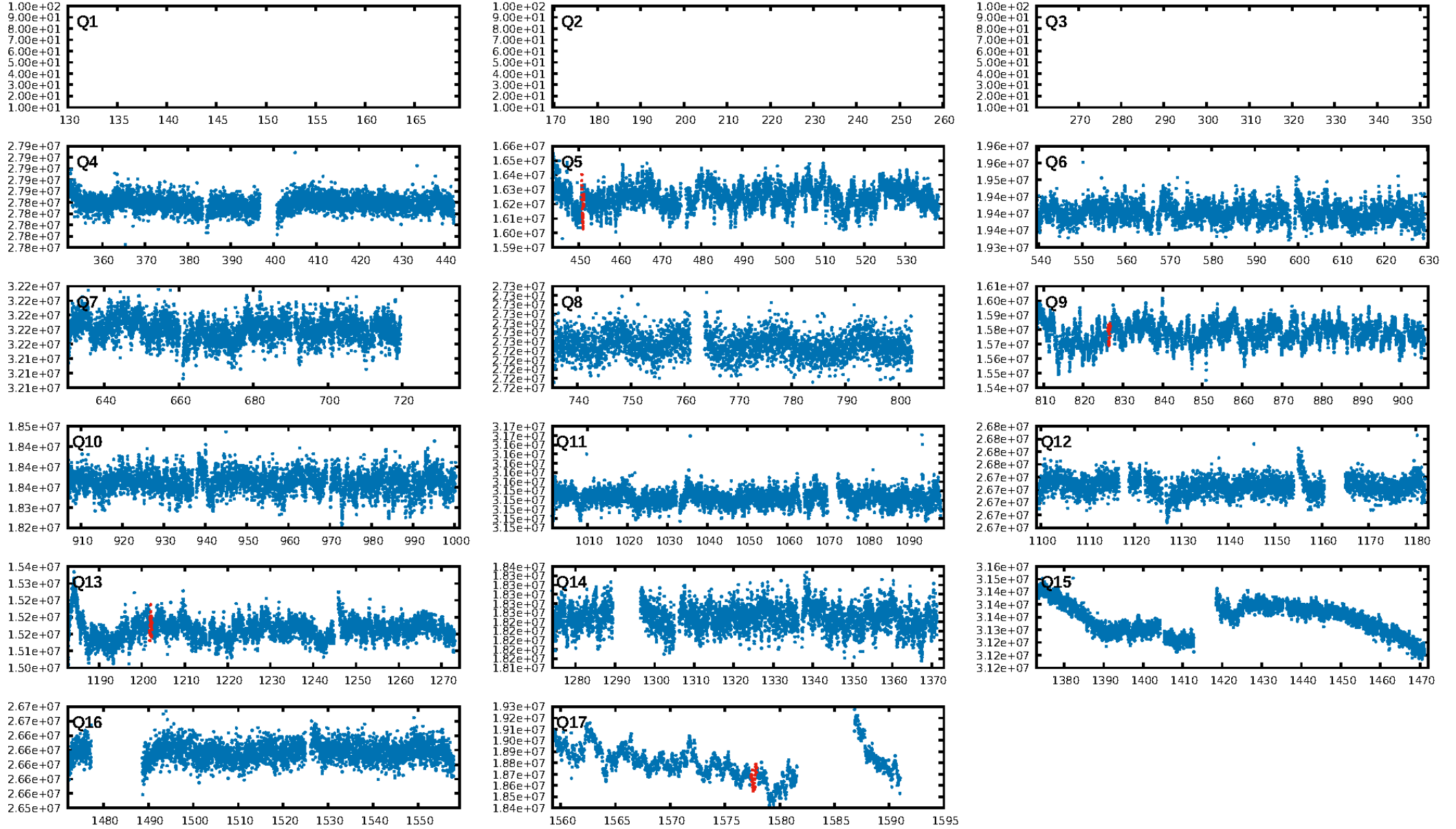
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.52σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.4%
Bootstrap-pfa: 9.92e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.264
Centroid-sig: 1.5%
Centroid-so: 3.643 arcsec [28.95σ]
OotOffset-rm: N/A
KicOffset-rm: 5.376 arcsec [8.61σ]
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 0.00 [0/4]

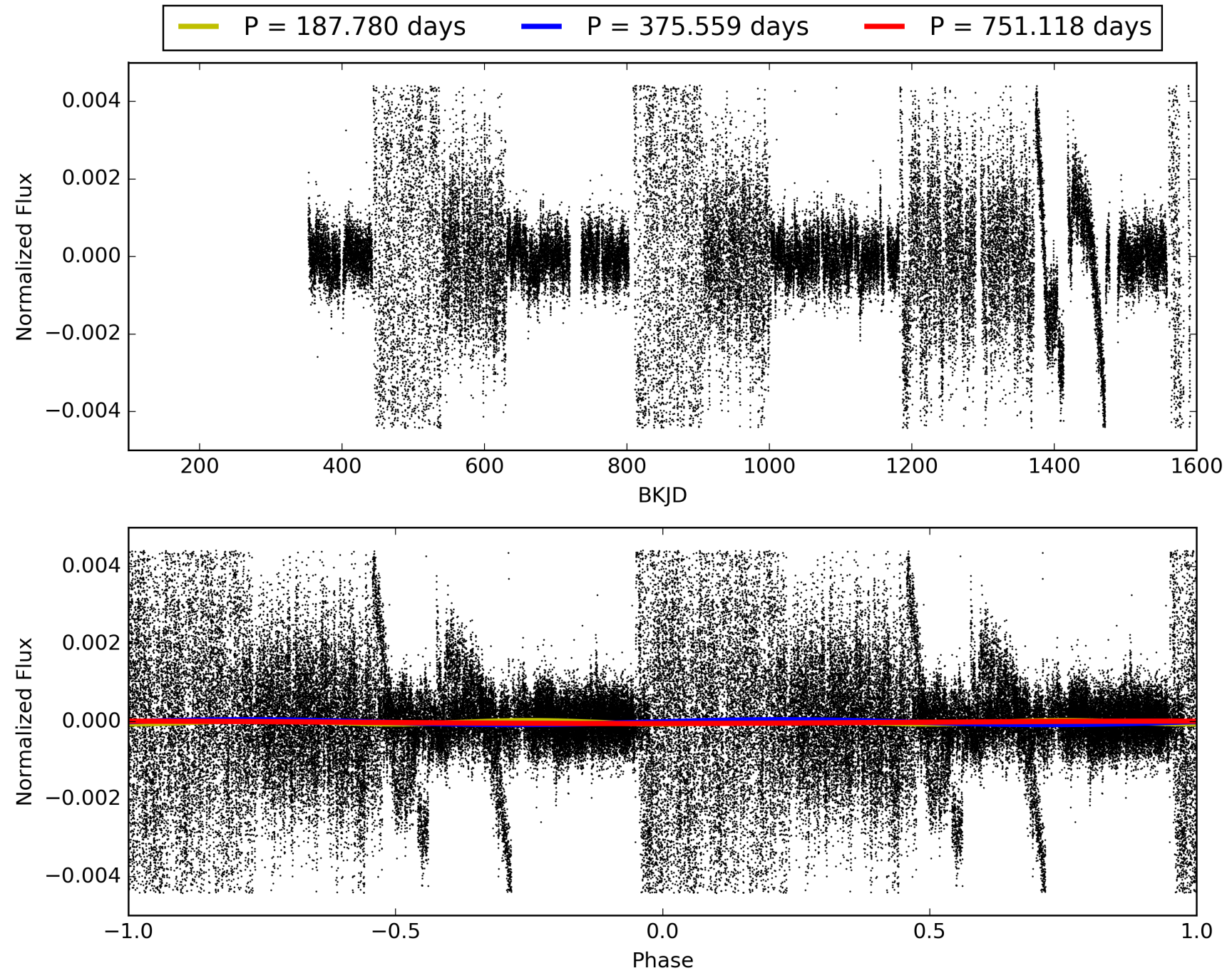
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:08:23 Z

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

TCE 009580167-02, PDC Light Curves

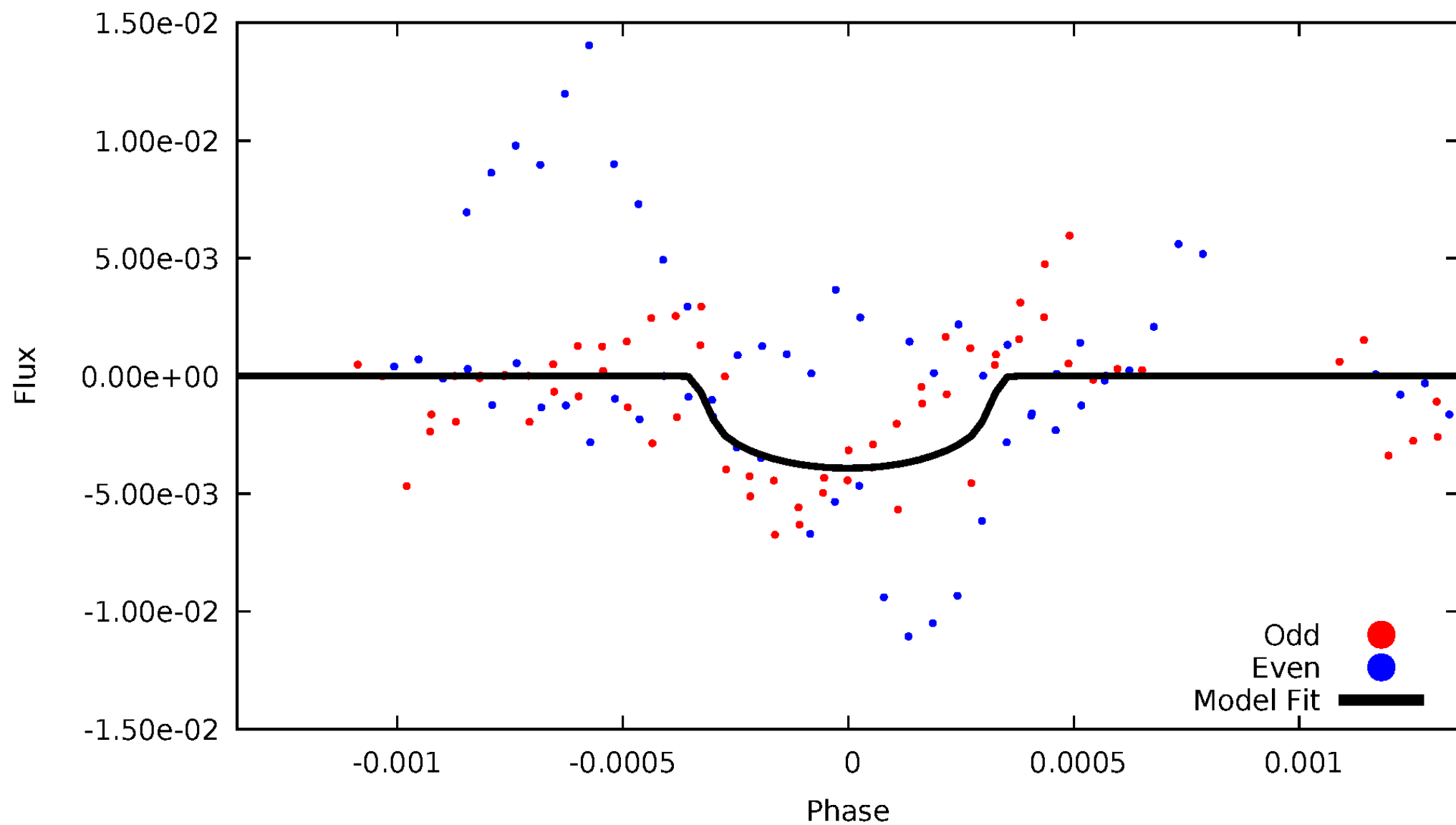


TCE 009580167-02



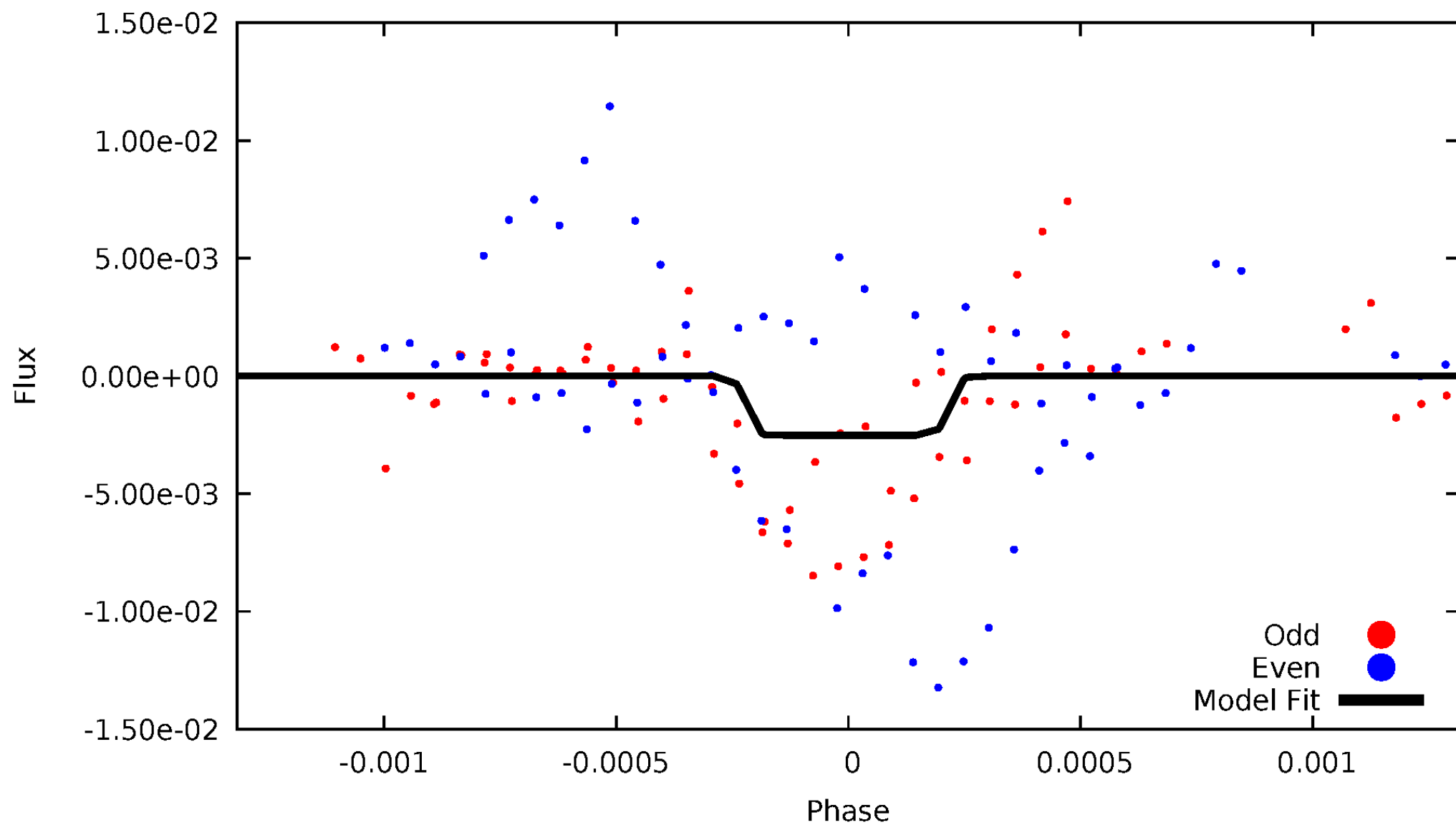
DV Odd/Even

TCE 009580167-02



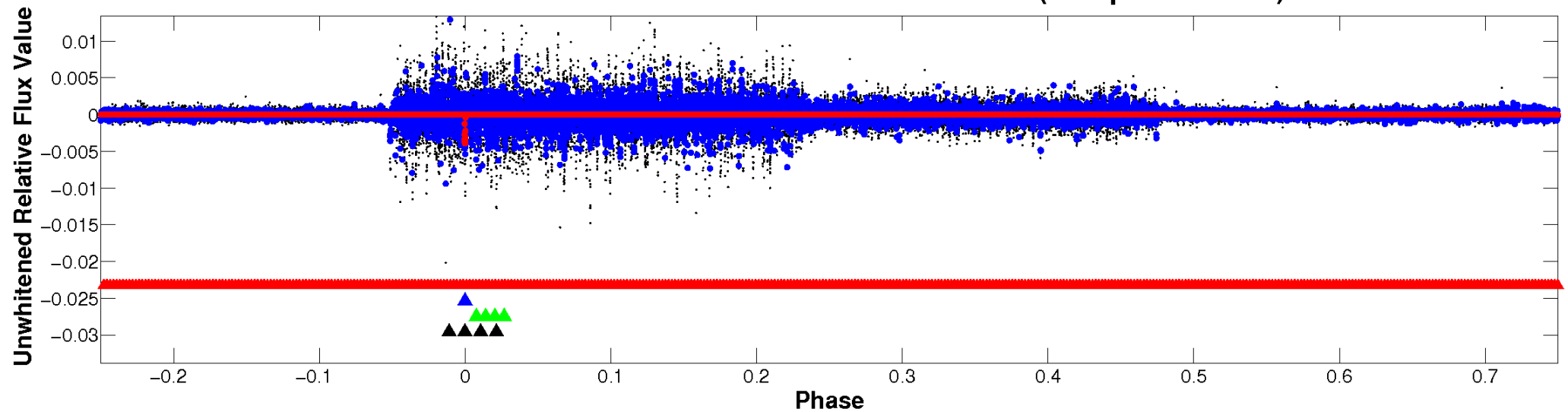
ALT Odd/Even

TCE 009580167-02

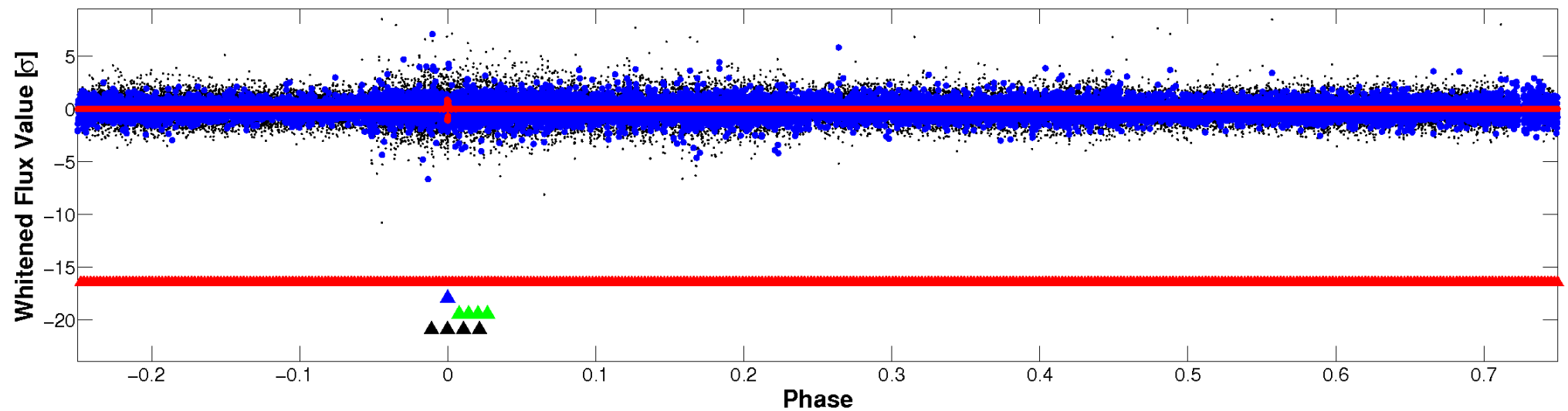


Non-Whitened Vs. Whitened Light Curve

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

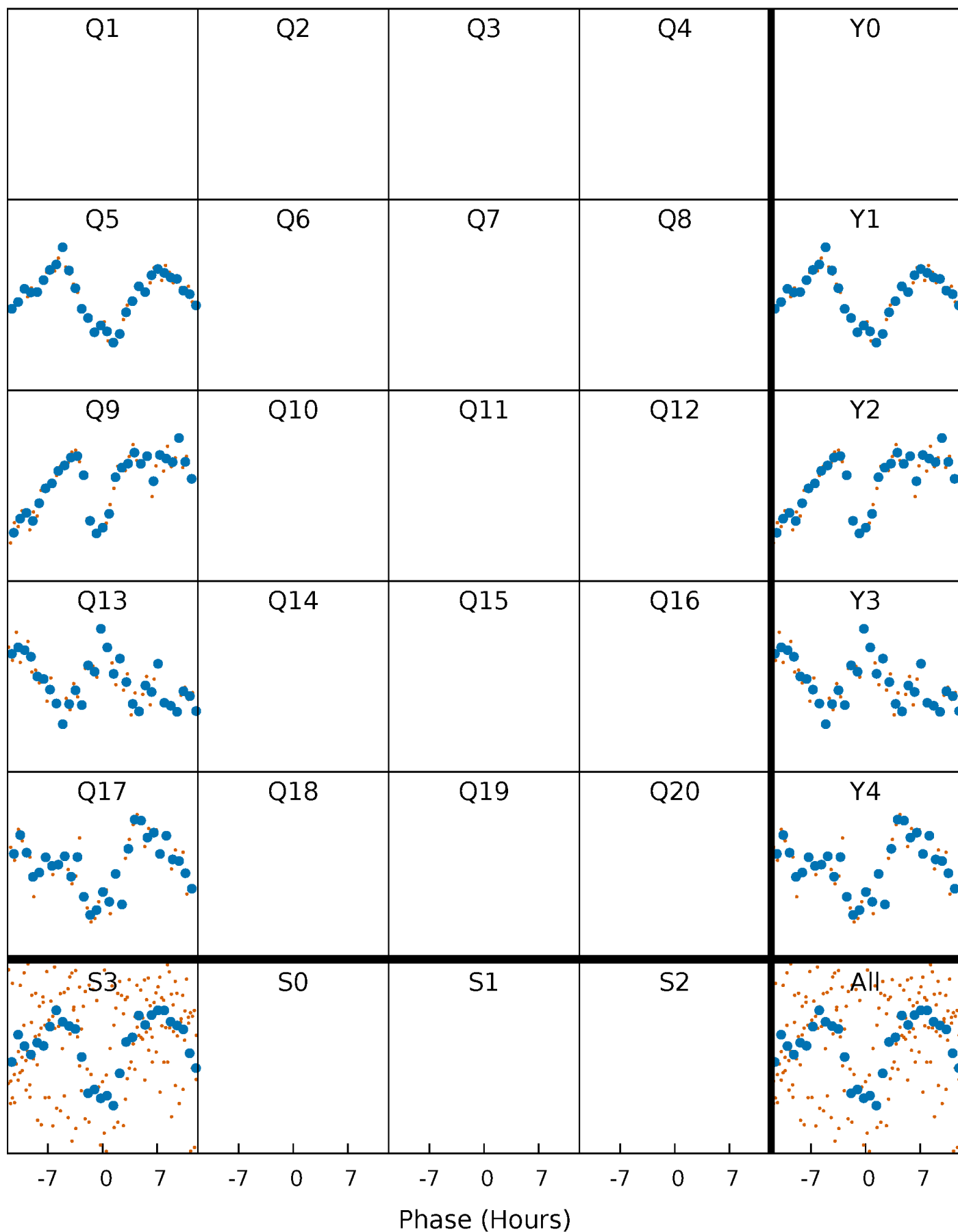


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



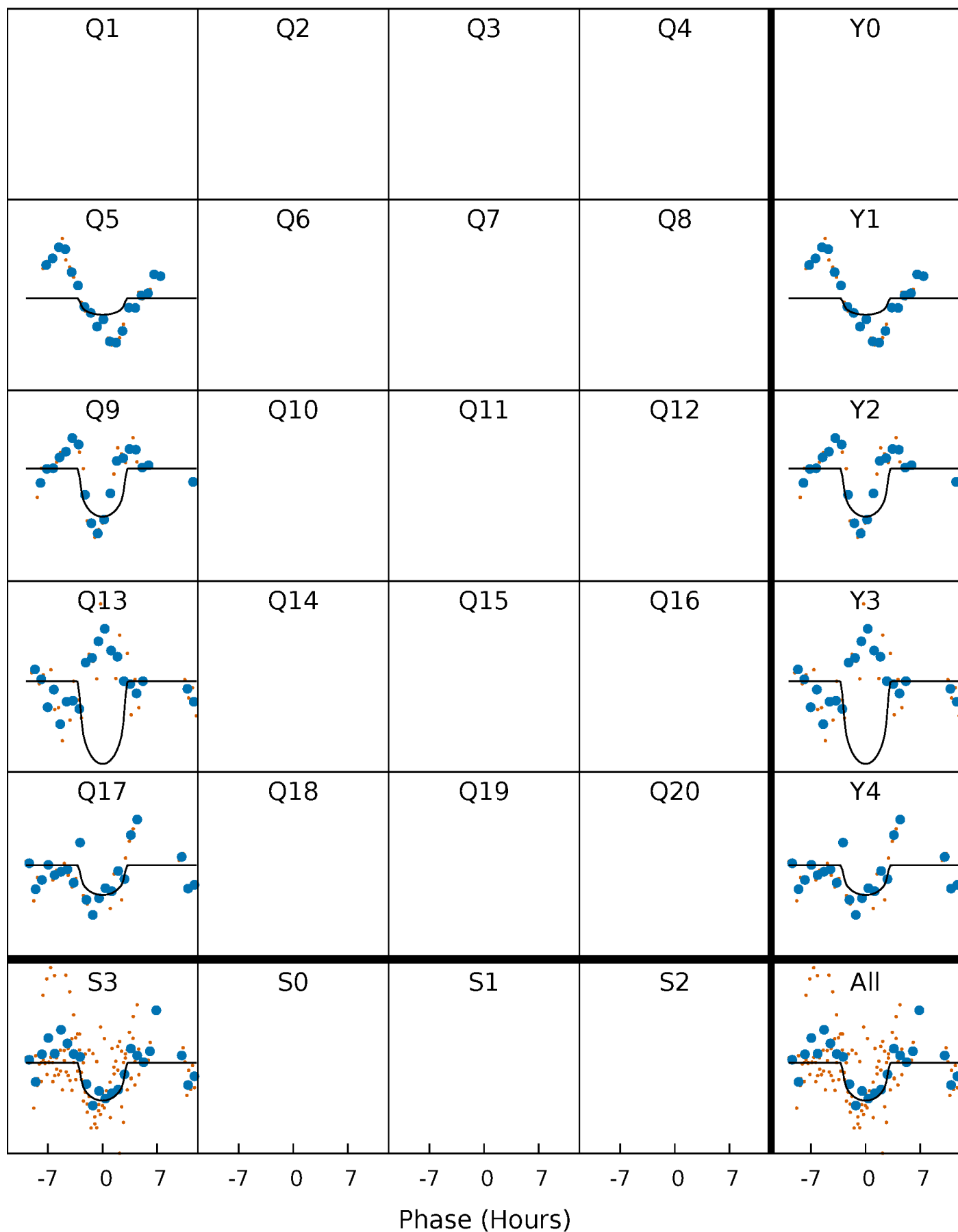
PDC Quarter-Phased Transit Curves

TCE 009580167-02 $P=375.559008$ Days $T_0=450.960276$ (BKJD)



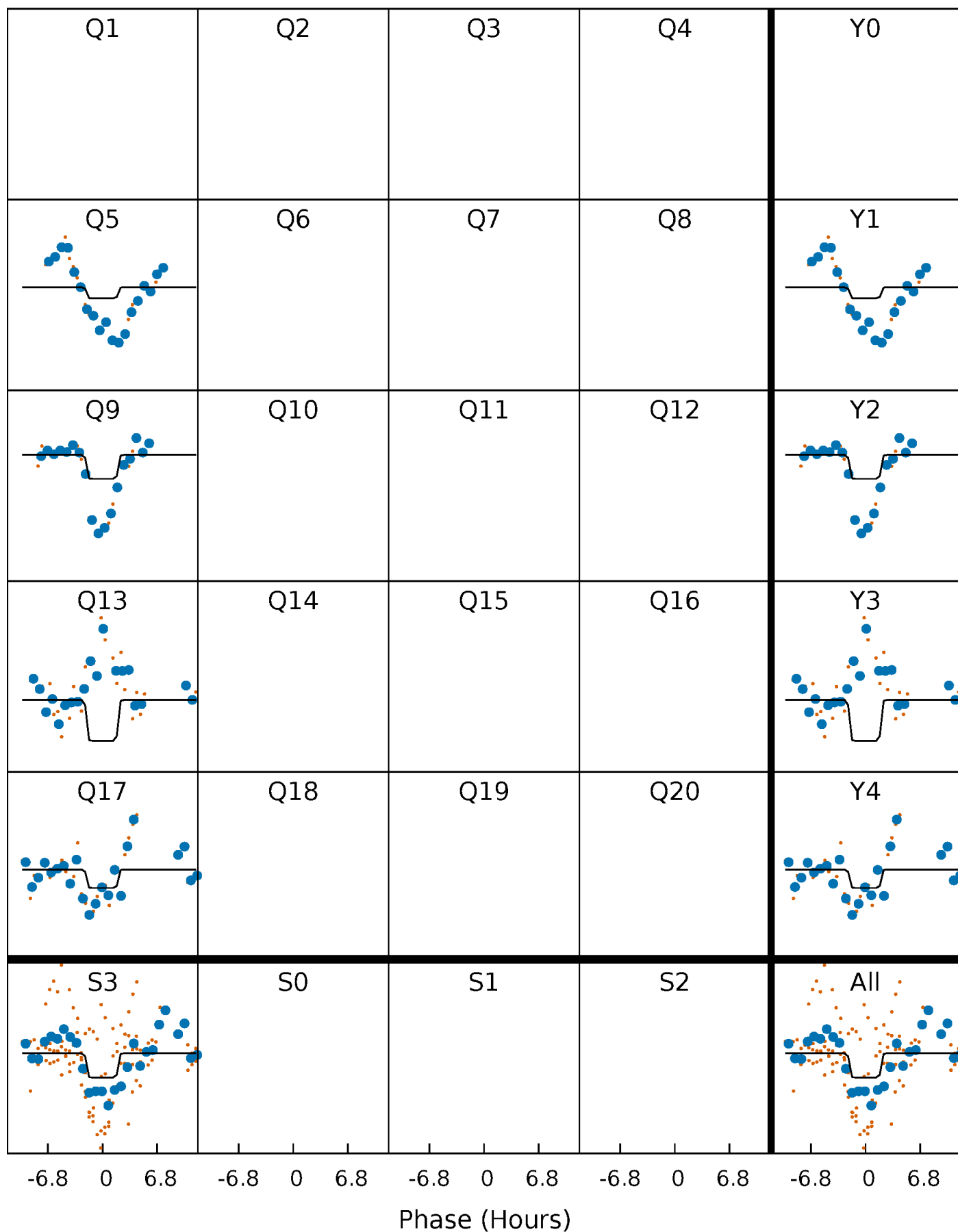
DV Quarter-Phased Transit Curves

TCE 009580167-02 $P=375.559008$ Days $T_0=450.960276$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

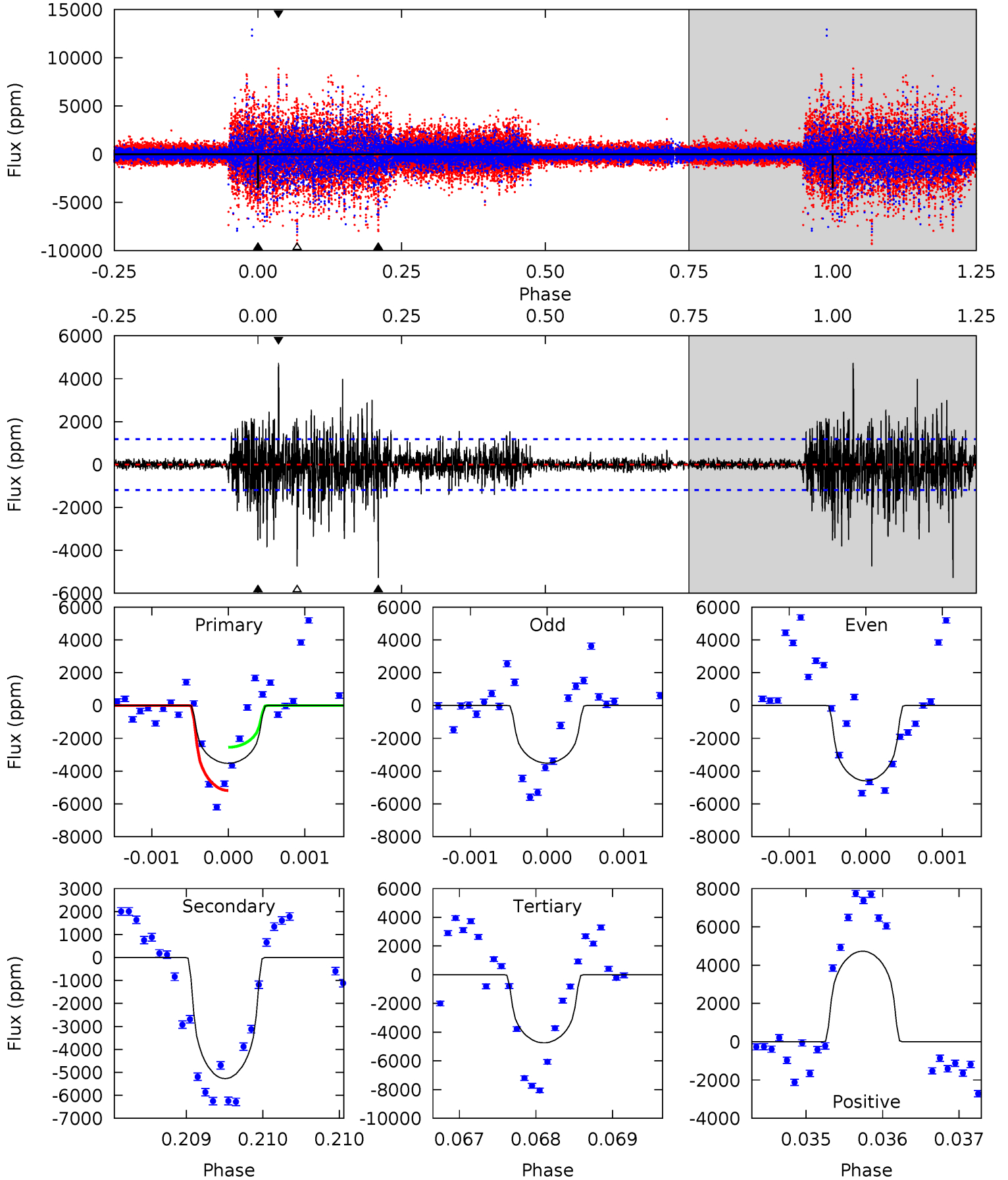
TCE 009580167-02 $P=375.568833$ Days $T_0=450.937484$ (BKJD)



DV Model-Shift Uniqueness Test

009580167-02, $P = 375.559008$ Days, $E = 75.401268$ Days

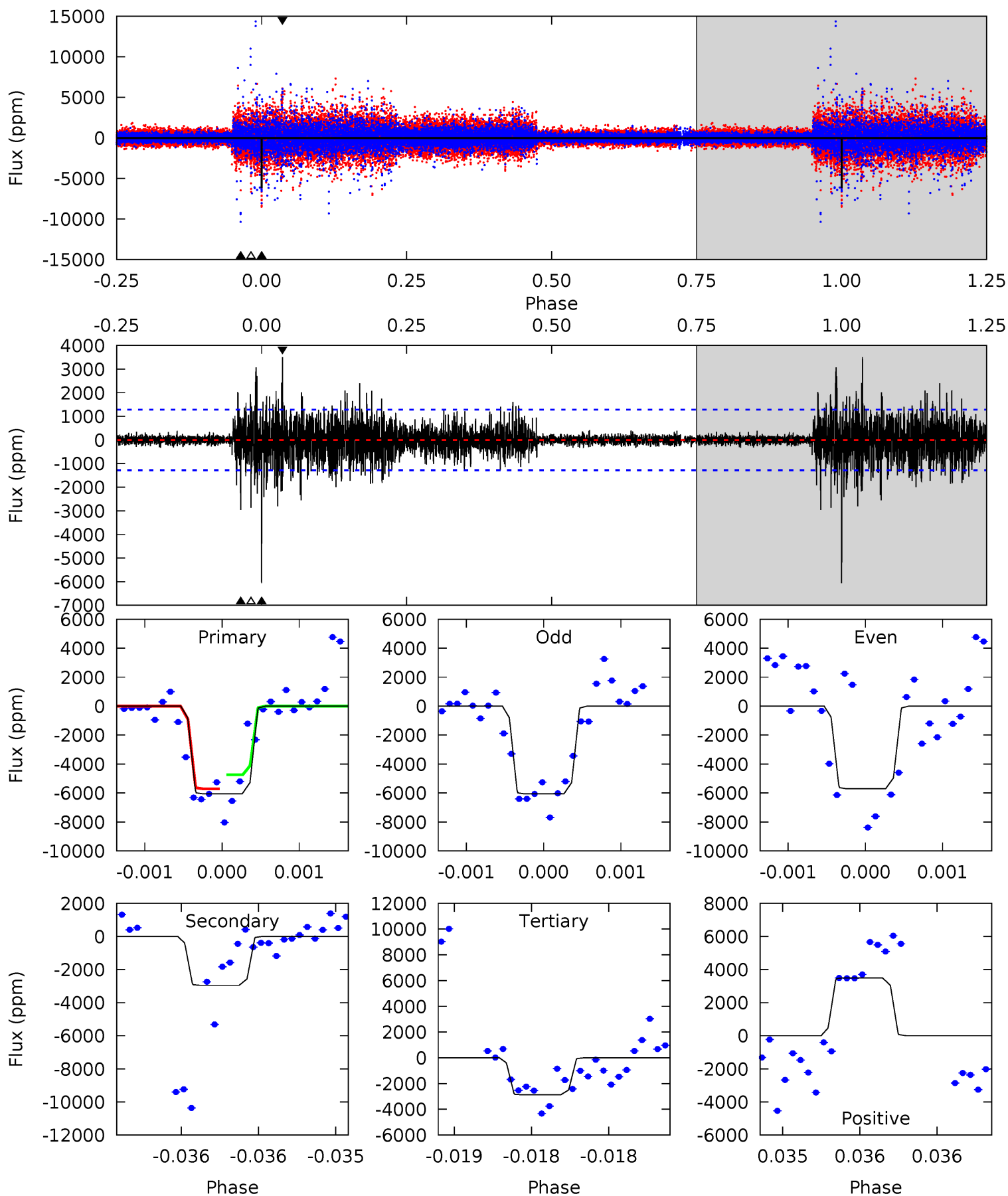
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	24.5	22.0	21.9	5.51	3.38	2.83	-5.65	-5.59	2.46	2.52	2.31	0.93	0.47	6.03



Alt Model-Shift Uniqueness Test

009580167-02, P = 375.568833 Days, E = 75.368651 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.3	12.8	12.5	15.2	5.56	3.46	1.94	13.9	11.1	0.37	-2.35	0.71	0.82	0.37	2.05



Stellar Parameters For KIC 009580167

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4452^{+87}_{-47}	$2.280^{+0.030}_{-0.030}$	$-0.040^{+0.150}_{-0.100}$	$11.895^{+3.211}_{-0.567}$	$0.984^{+0.587}_{-0.065}$	$0.001^{+0.000}_{-0.000}$
	+2%/-1%	+1%/-1%	+375%/-250%	+27%/-5%	+60%/-7%	+10%/-23%
Source	SPE74	AST71	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 009580167-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5274 ± 216	$92.99^{+69.46}_{-59.73}$	941^{+26}_{-16}	4509^{+2778}_{-835}	346^{+2280}_{-234}
Alt.	-2956 ± 230	$86.07^{+77.02}_{-58.57}$	942^{+27}_{-18}	4132^{+2611}_{-749}	223^{+1933}_{-158}

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 $A_{obs} \gg 1.0$

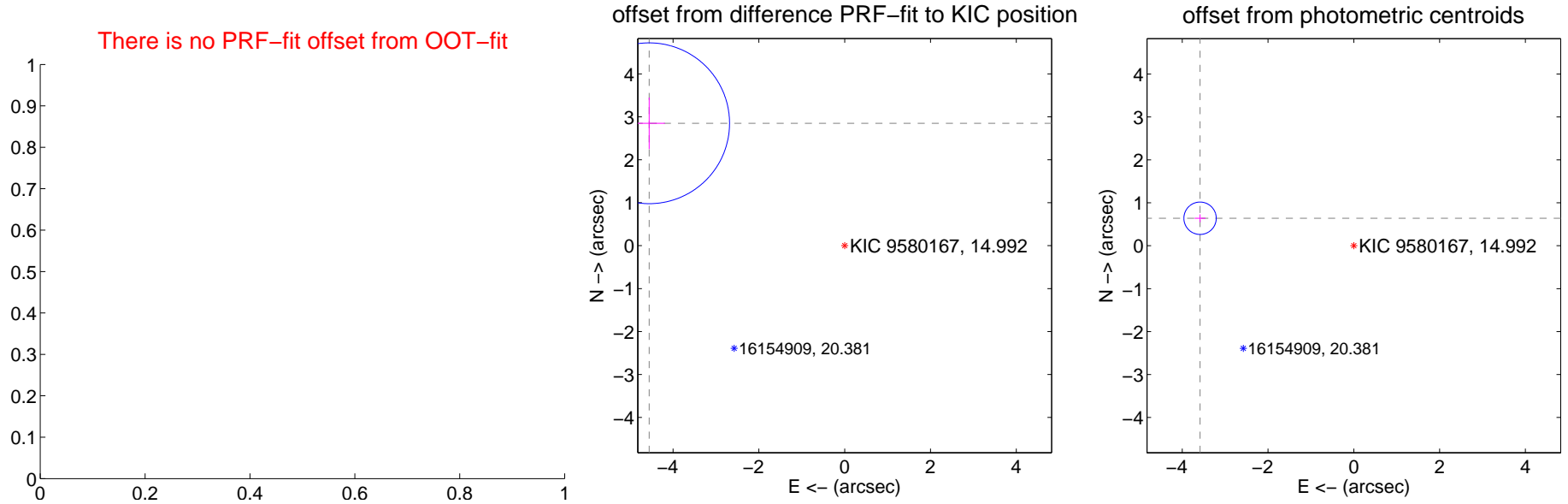
DV Centroid Data

Supplemental centroid analysis for 009580167-02. Kepler magnitude: 14.99. Transit SNR 7.04

There are 3 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	5.376 ± 0.624	8.61	4.557 ± 0.366	2.851 ± 0.601
photometric centroid source offset	3.64 ± 0.13	28.95	3.59 ± 0.13	0.64 ± 0.09

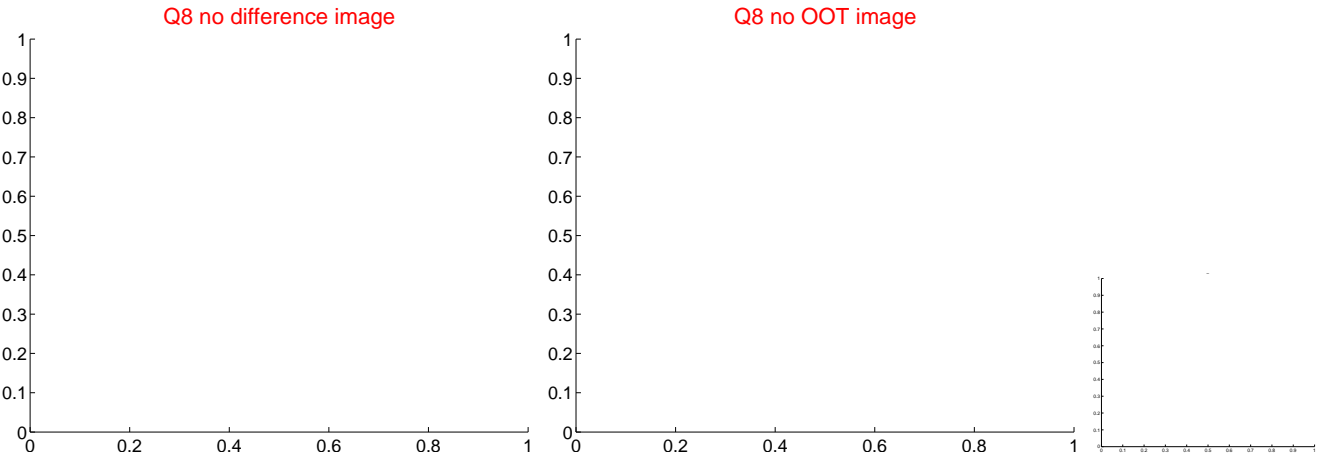
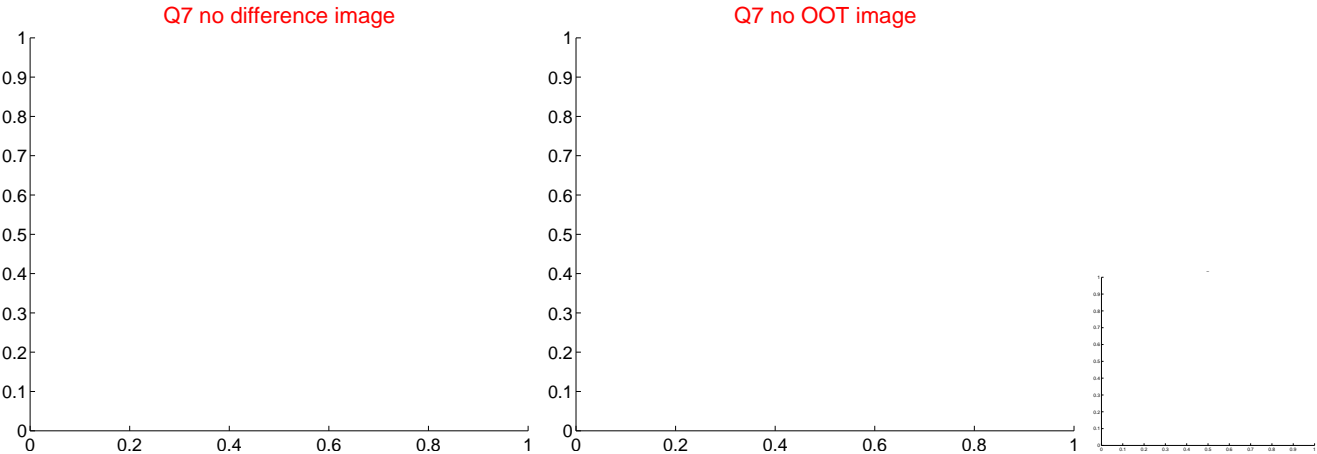
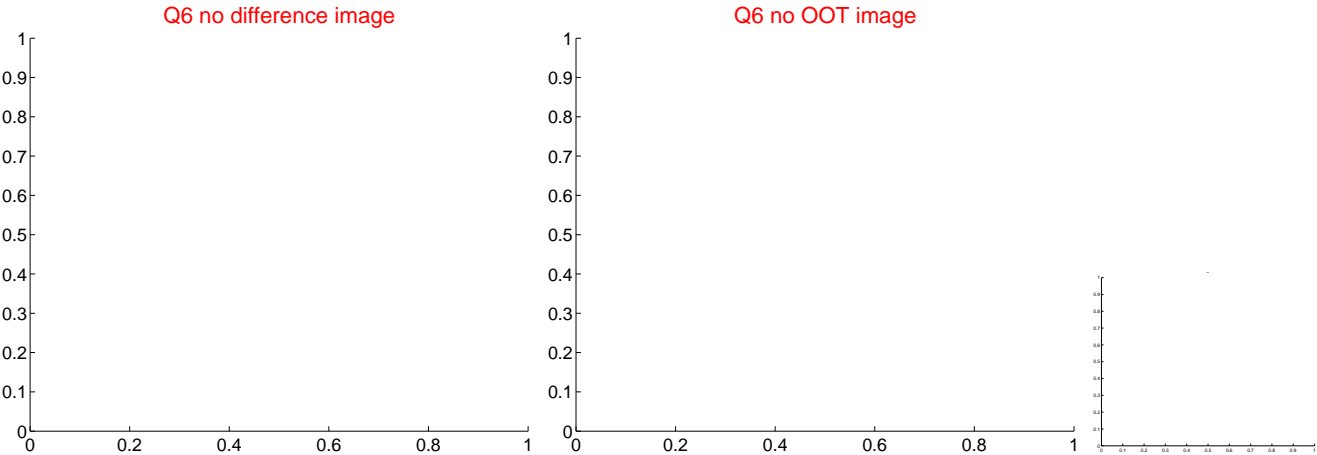
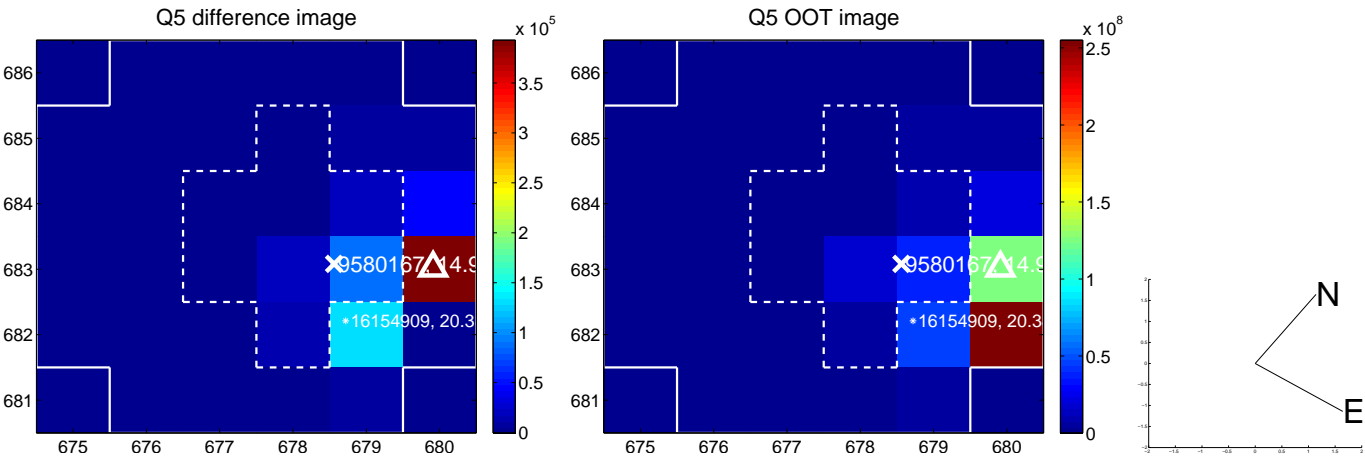


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

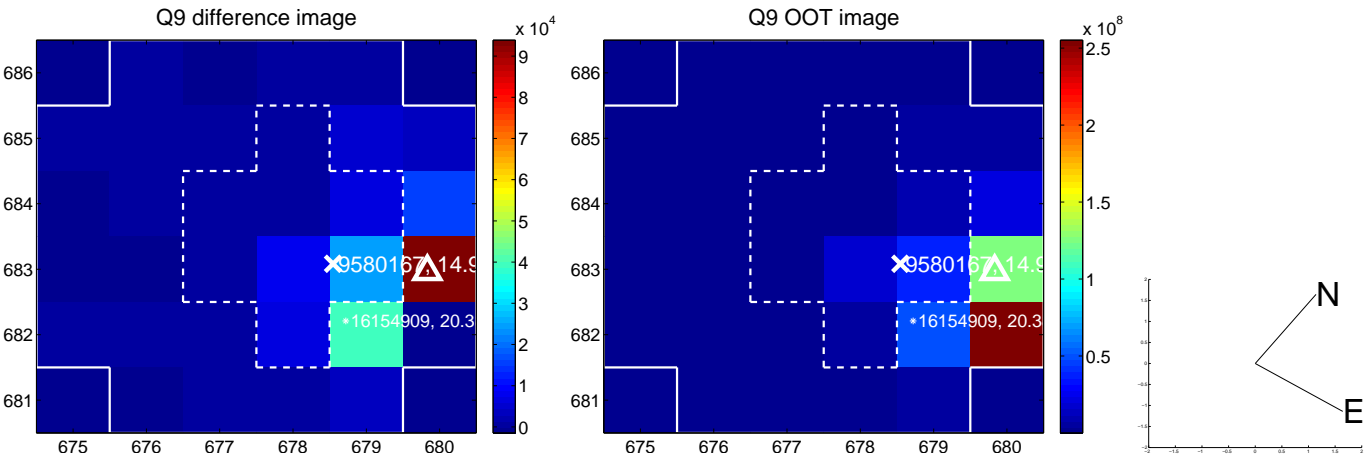
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



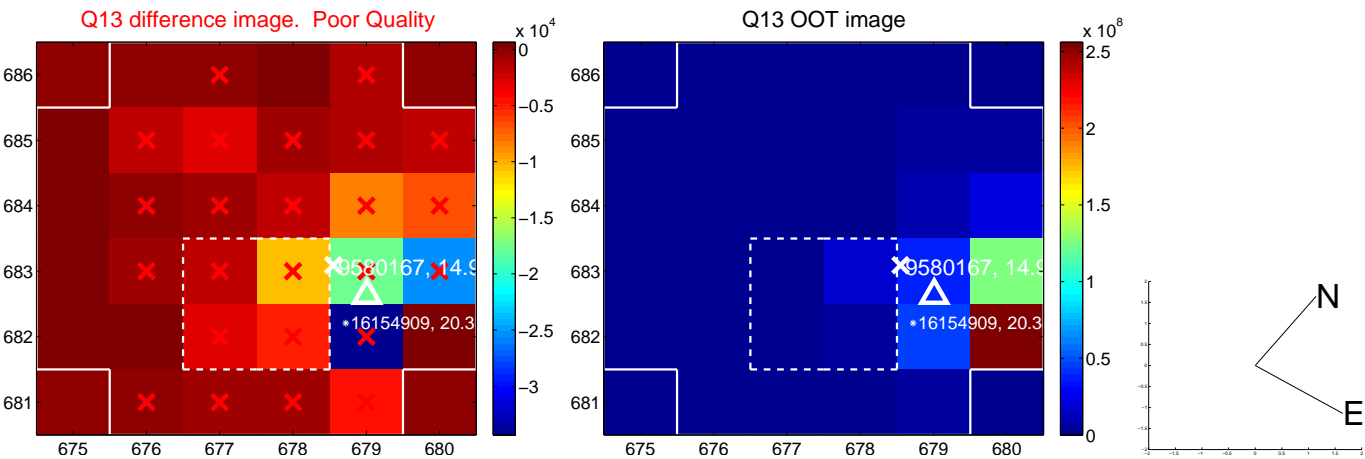
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



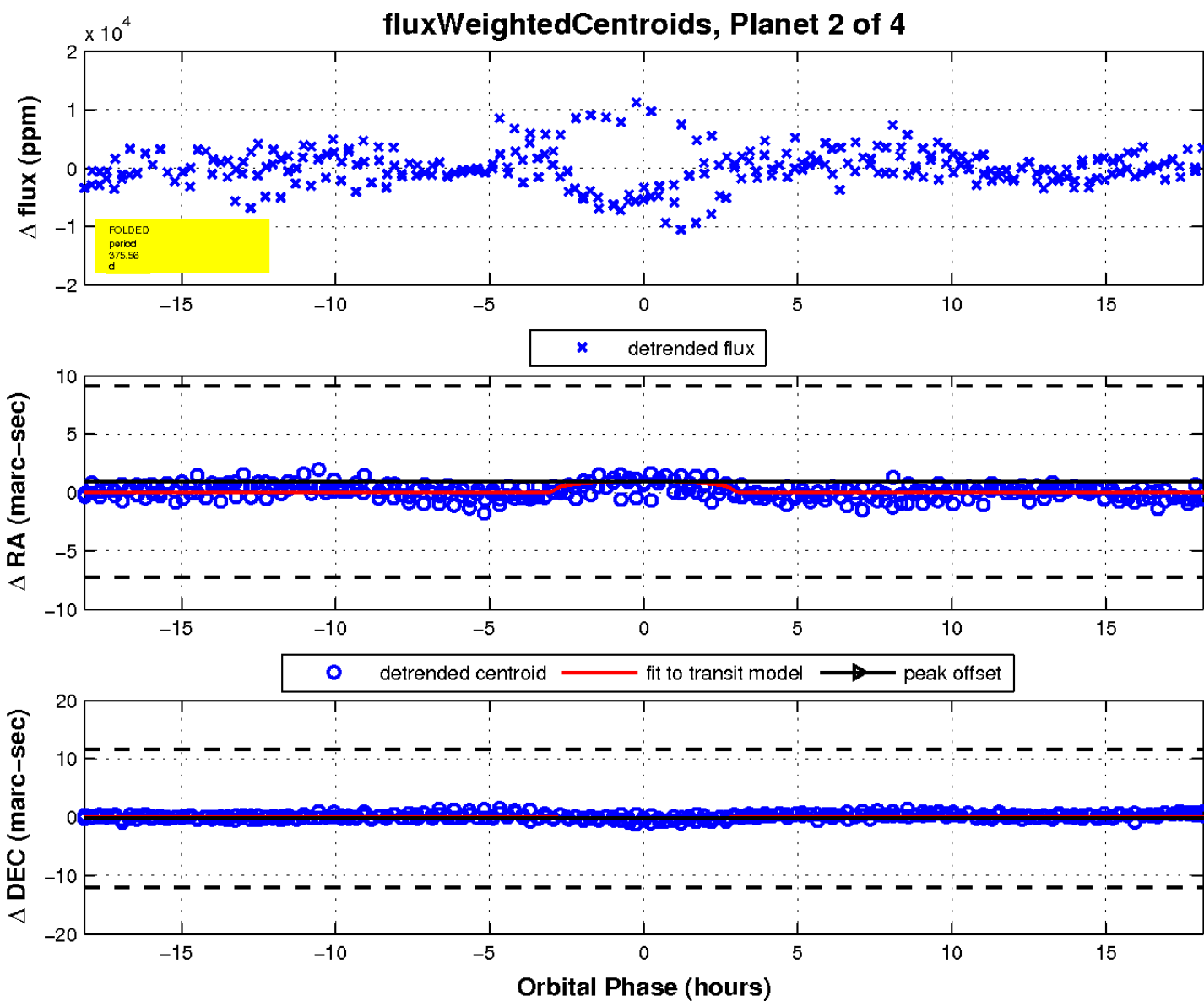
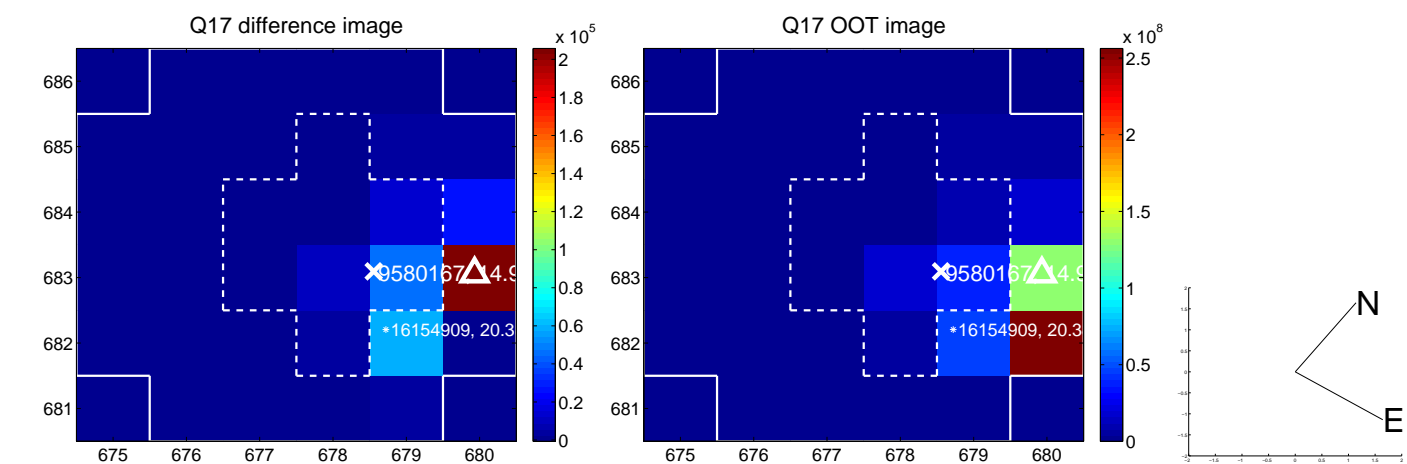
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



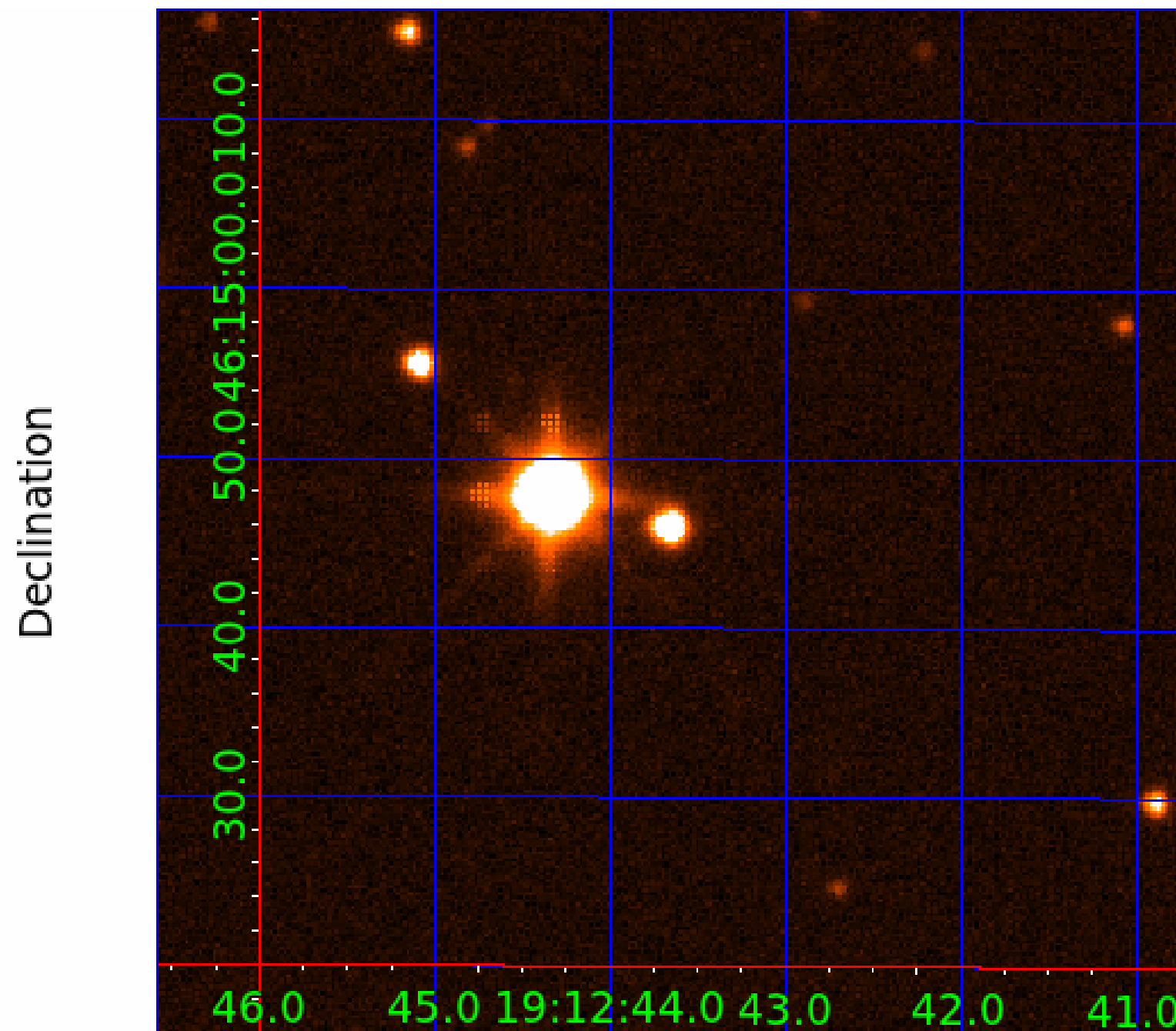
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009580167

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})
009580167-01	OBS	2548.01	0.827142	132.087747	288.8	1.293	20.1	24.7	11.89	4452	19.70	0.00
009580167-02	OBS	No	375.559007	450.960276	3914.7	6.105	11.4	7.0	11.89	4452	70.78	48.51
009580167-04	OBS	No	371.497385	459.036723	7452.8	9.782	8.8	9.3	11.89	4452	124.48	49.21

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009580167-01	OBS	PC	1.00	0	0	0	0	PLANET_IN_STAR—CENT_KIC_POS
009580167-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009580167-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

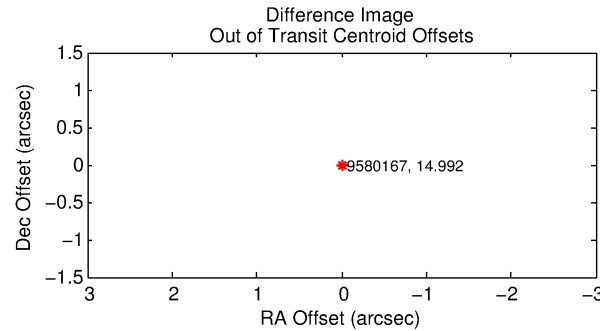
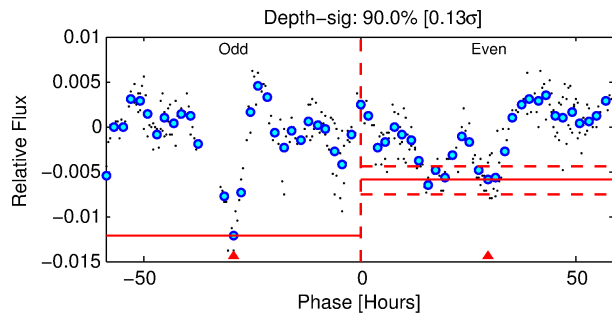
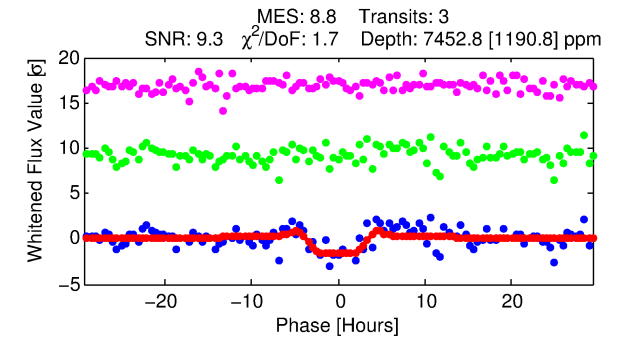
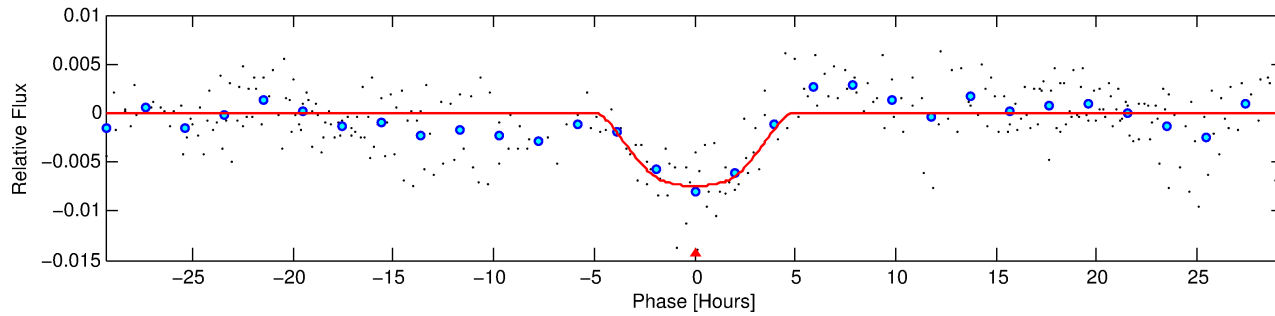
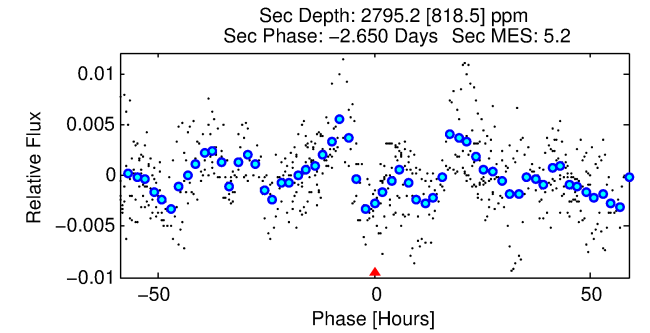
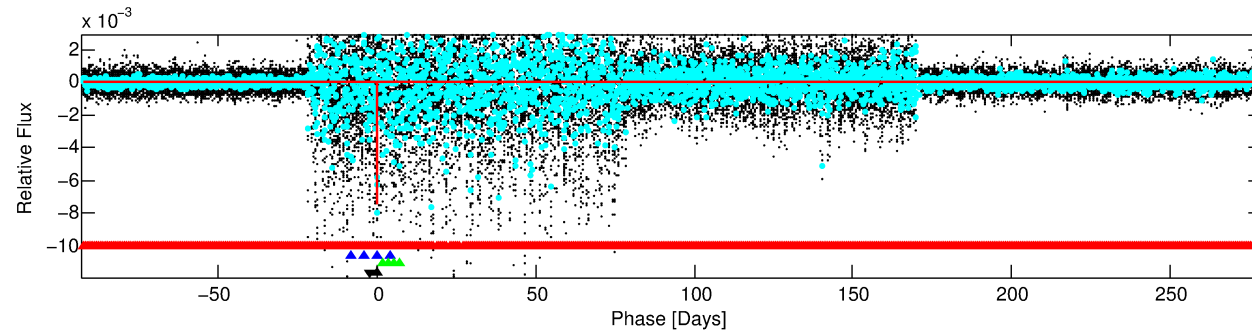
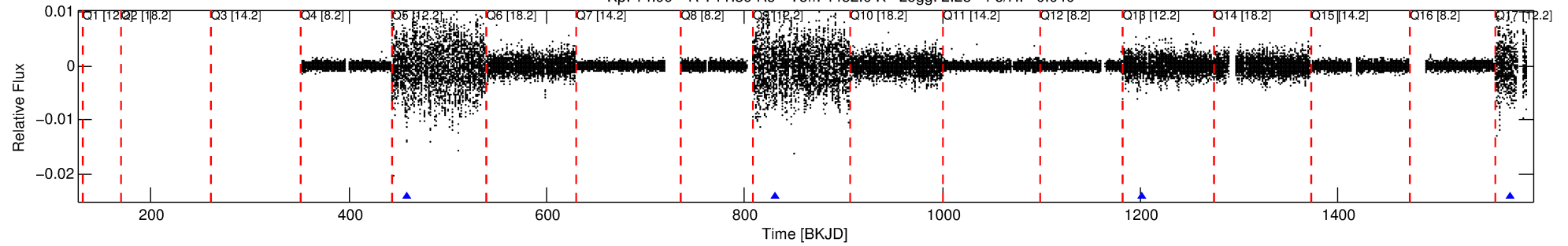
Ephemeris Match Information For 009580167-04

No Significant Match Found

DV One-Page Summary

KIC: 9580167 Candidate: 4 of 4 Period: 371.497 d
KOI: K02548 Corr: No Ephemeris Match

Kp: 14.99 R*: 11.89 Rs Teff: 4452.0 K Logg: 2.28 Fe/H: -0.040



DV Fit Results:

Period = 371.49738 [0.01017] d
Epoch = 459.0367 [0.0181] BKJD
Rp/R* = 0.0959 [0.0099]
a/R* = 191.29 [28.24]
b = 0.88 [0.04]
Seff = 49.21 [9.92]
Teq = 675 [34] K
Rp = 124.48 [35.98] Re
a = 1.0060 [0.1825] AU
Ag = 100.42 [40.53] [2.45σ]
Teffp = 3306 [303] K [8.62σ]

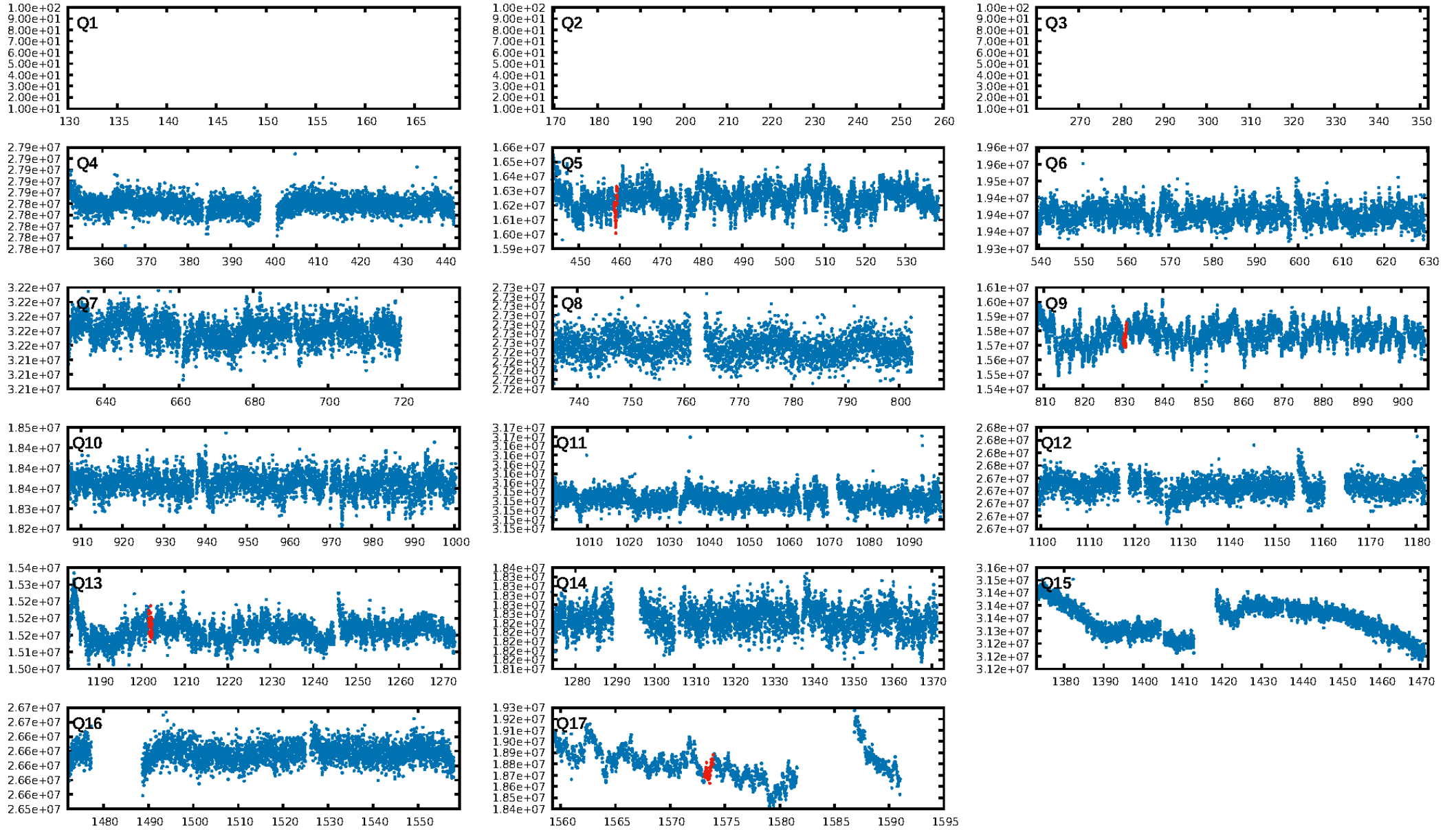
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [901.56σ]
LongPeriod-sig: 99.8% [3.12σ]
ModelChiSquare2-sig: 5.7%
ModelChiSquareGof-sig: 67.2%
Bootstrap-pfa: 1.38e-08
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.9493
Centroid-sig: 13.8%
Centroid-so: 3.788 arcsec [52.27σ]
OotOffset-rm: N/A
KicOffset-rm: 4.468 arcsec [5.13σ]
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 0.00 [0/4]

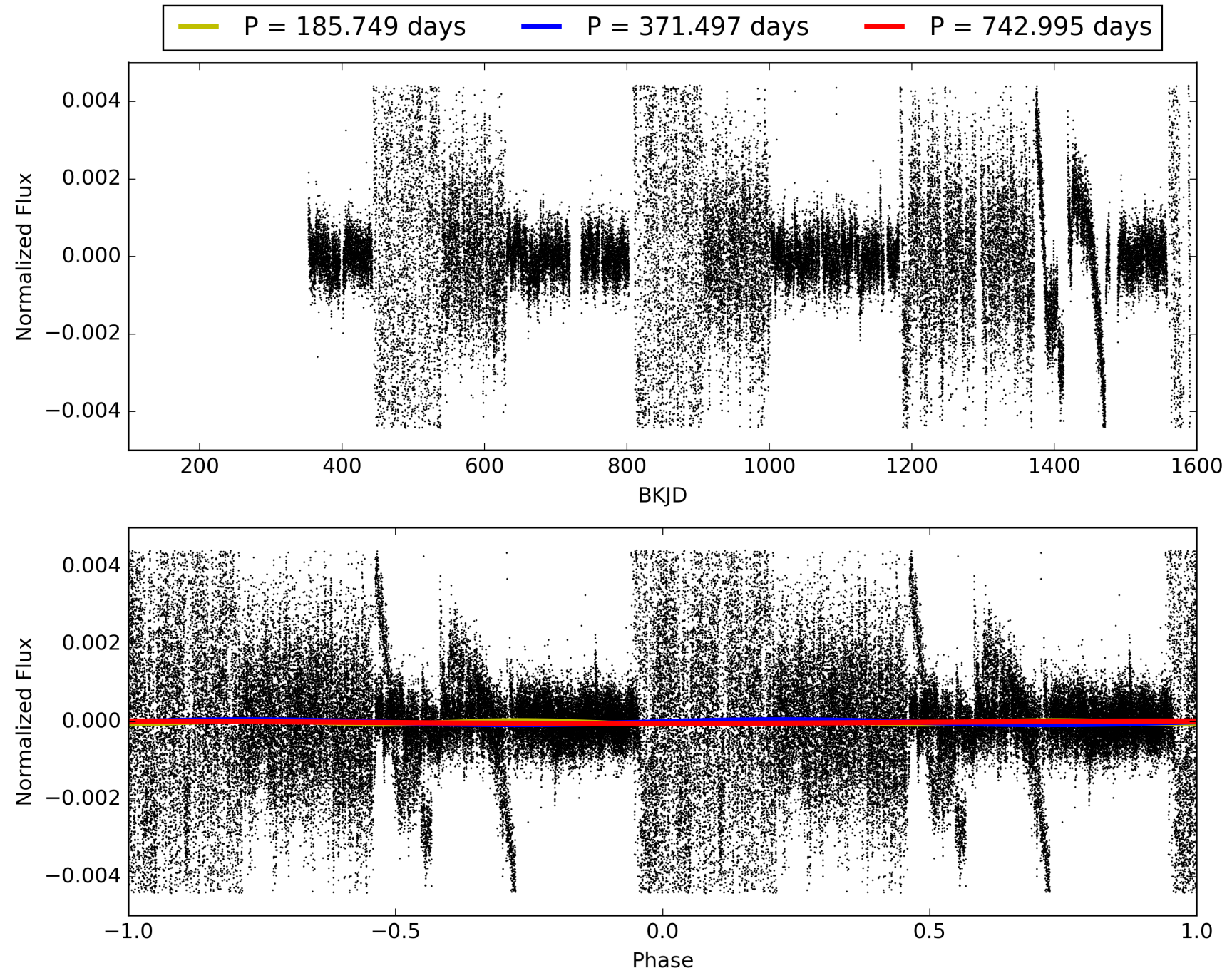
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:08:38 Z

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

TCE 009580167-04, PDC Light Curves

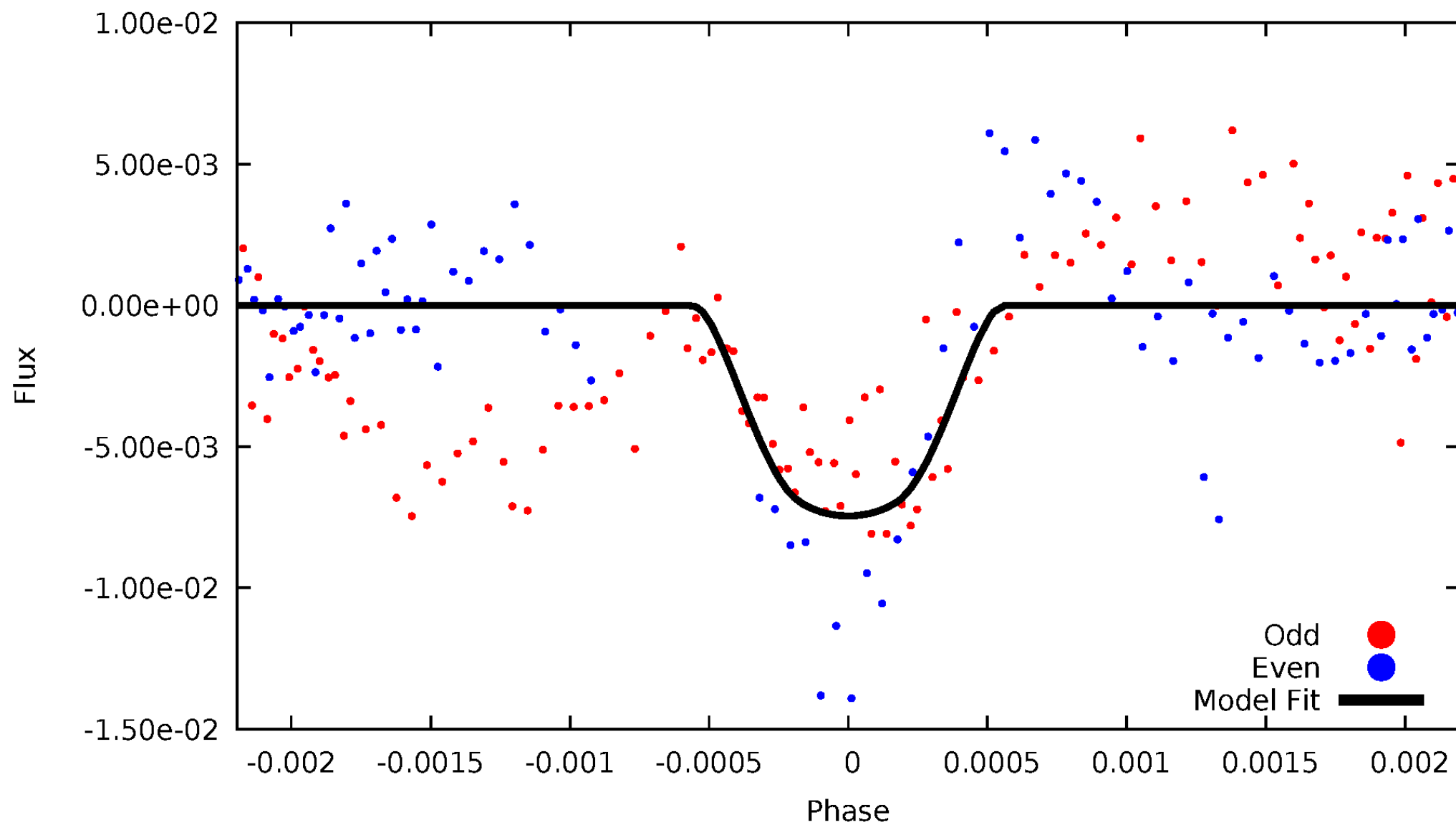


TCE 009580167-04



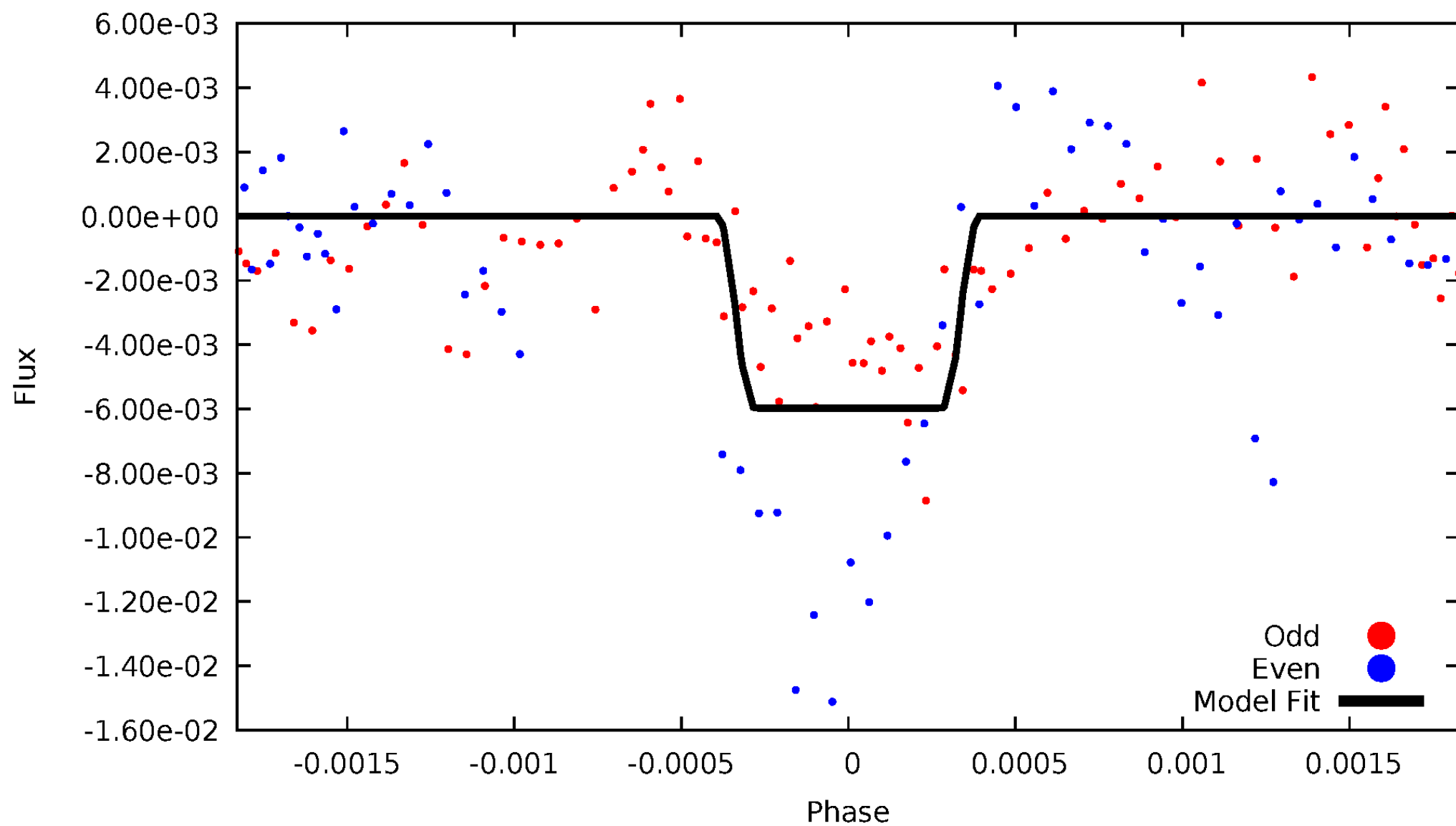
DV Odd/Even

TCE 009580167-04



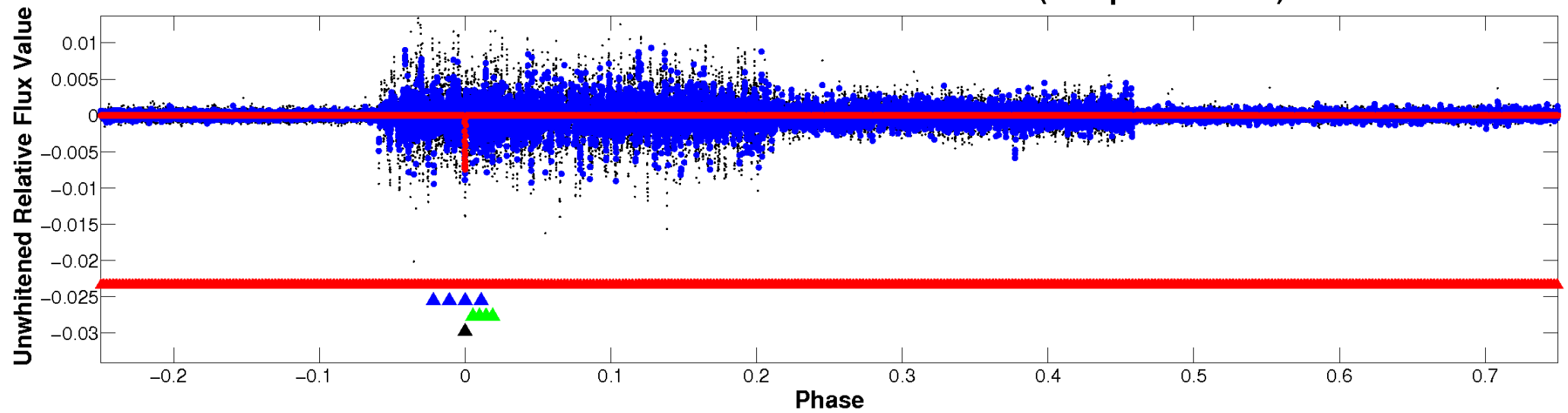
ALT Odd/Even

TCE 009580167-04

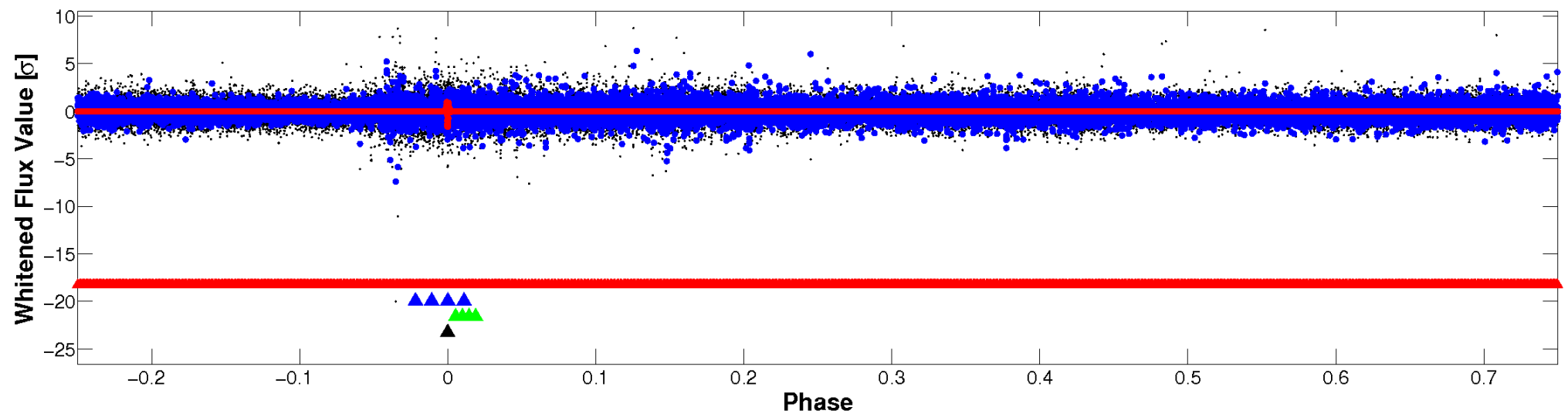


Non-Whitened Vs. Whitened Light Curve

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

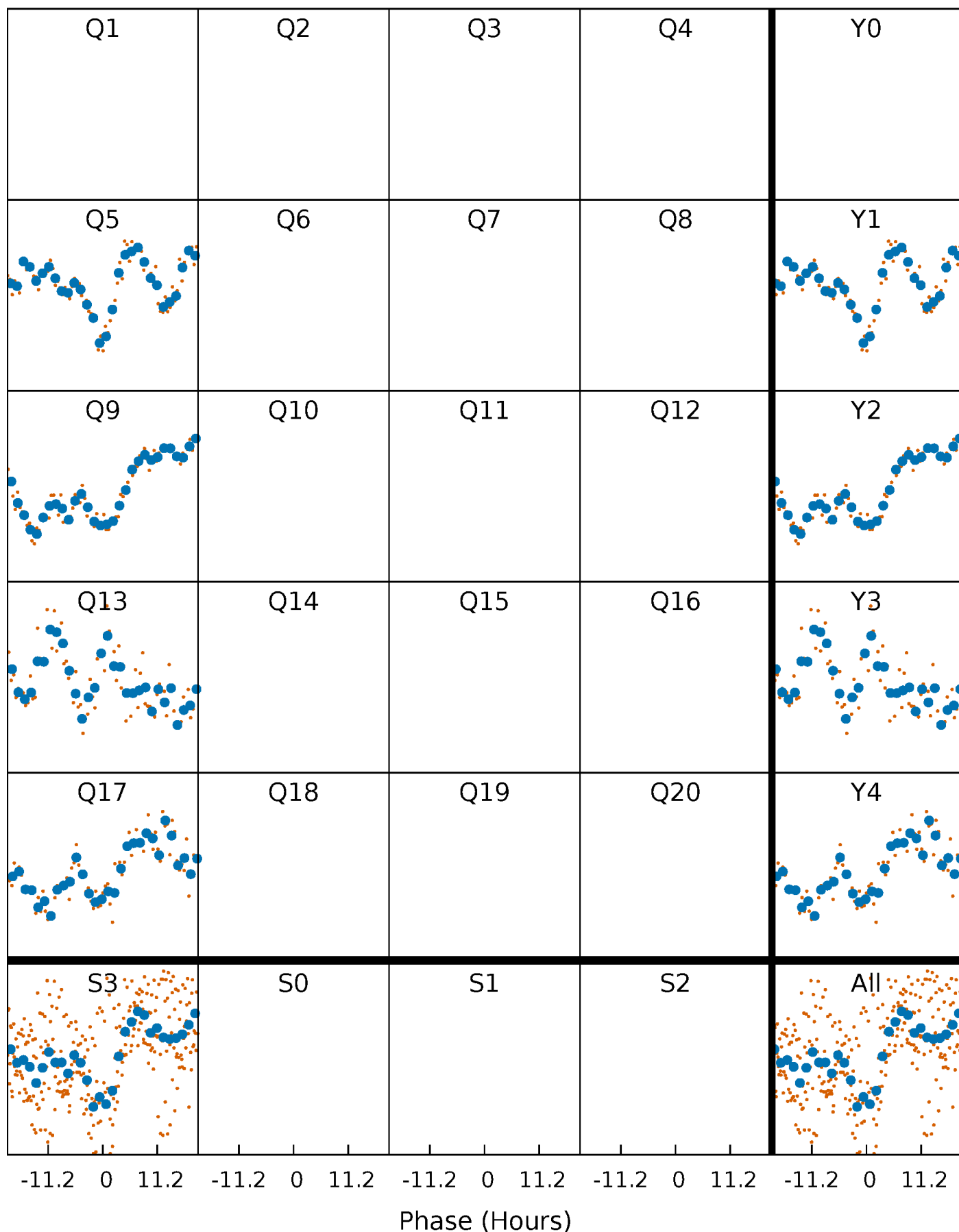


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



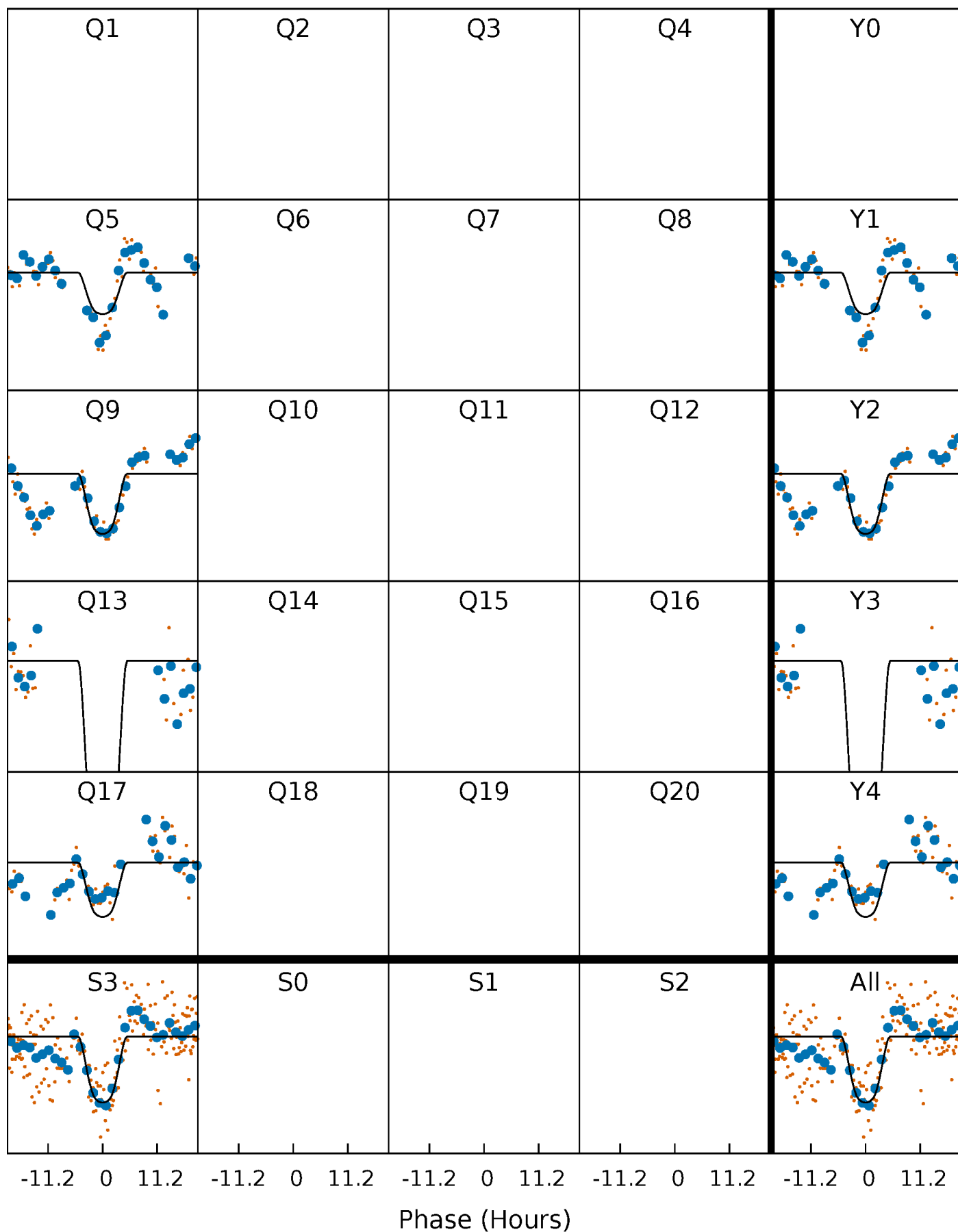
PDC Quarter-Phased Transit Curves

TCE 009580167-04 $P=371.497385$ Days $T_0=459.036723$ (BKJD)



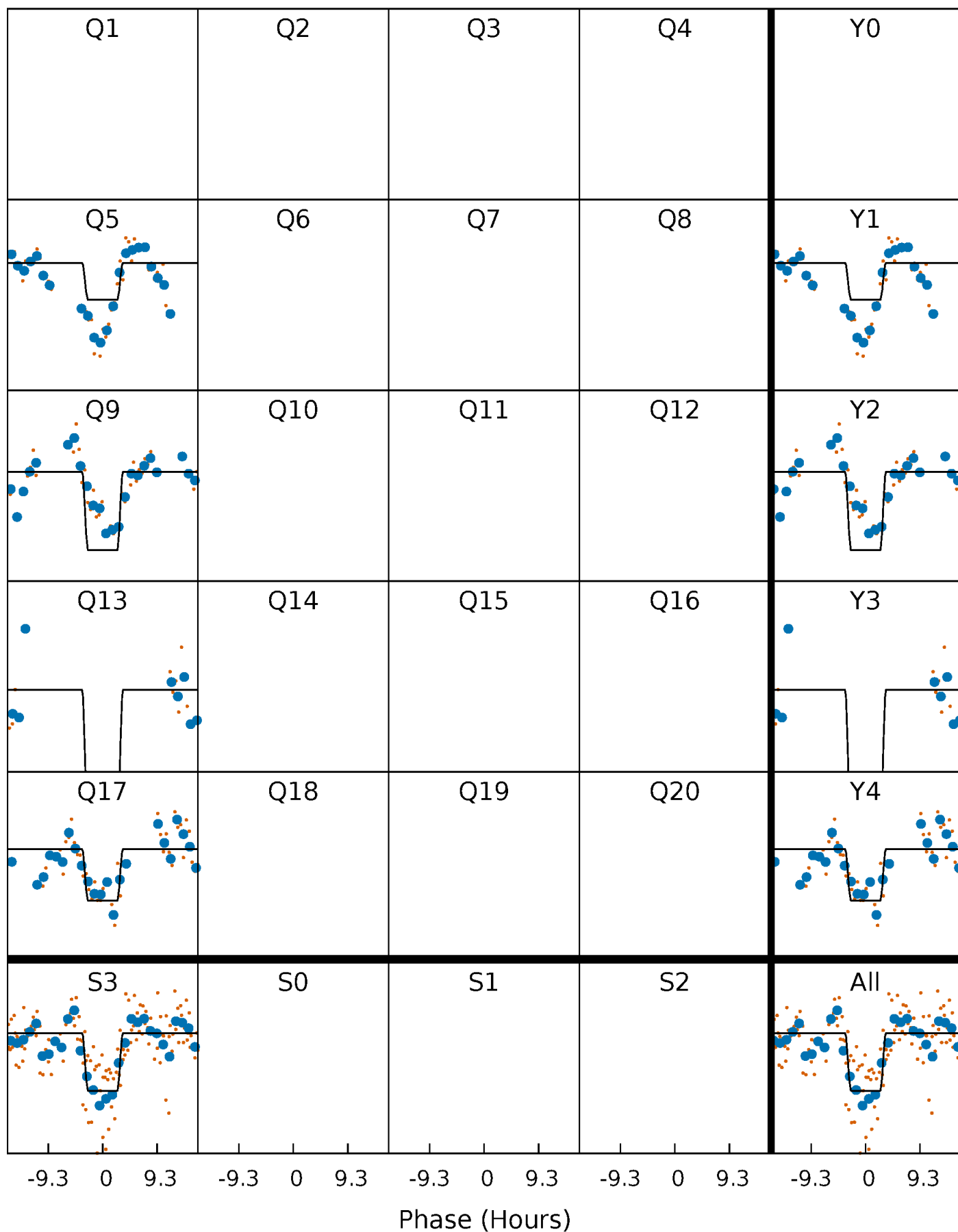
DV Quarter-Phased Transit Curves

TCE 009580167-04 $P=371.497385$ Days $T_0=459.036723$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

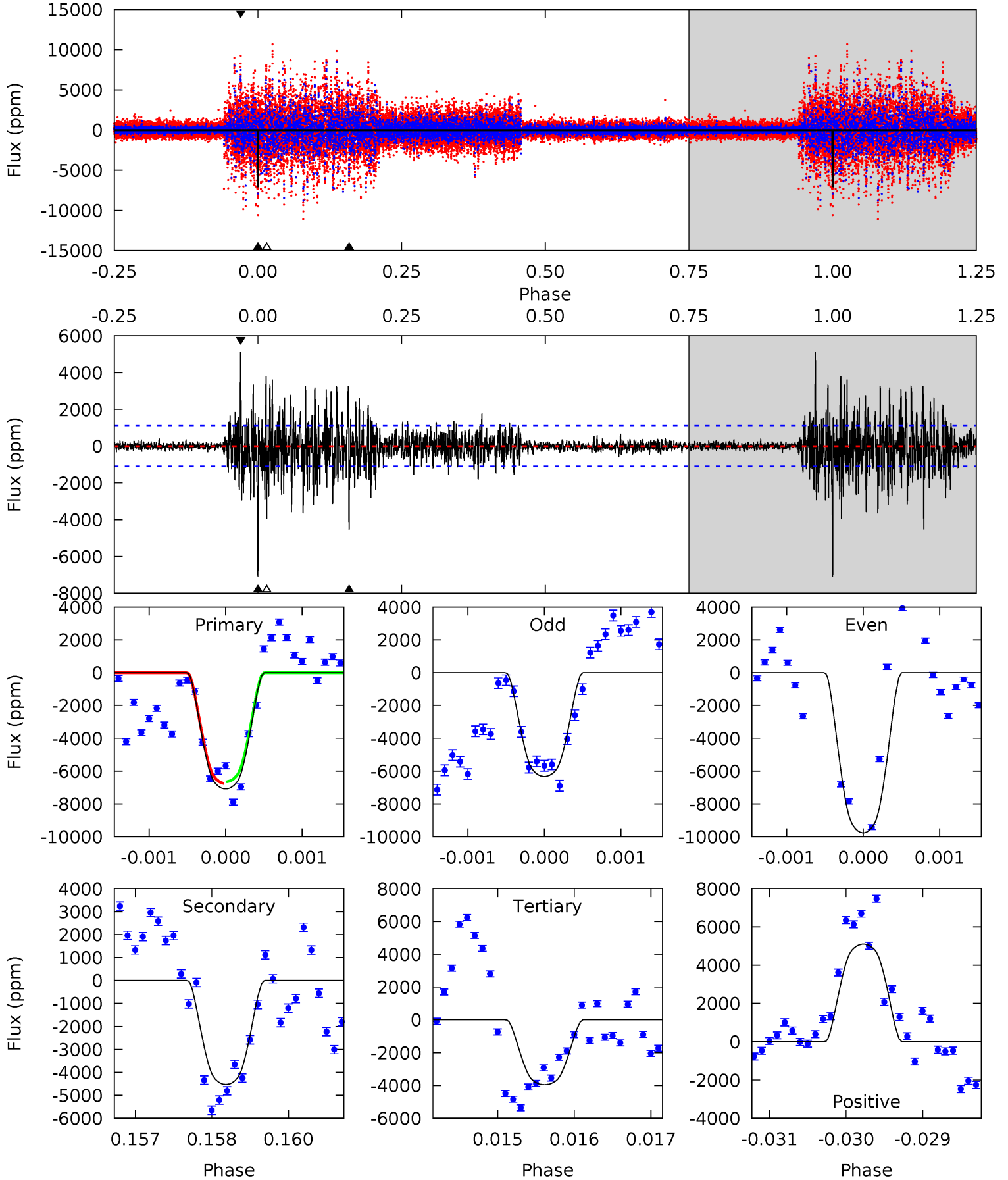
TCE 009580167-04 $P=371.488932$ Days $T_0=459.058710$ (BKJD)



DV Model-Shift Uniqueness Test

009580167-04, $P = 371.497385$ Days, $E = 87.539338$ Days

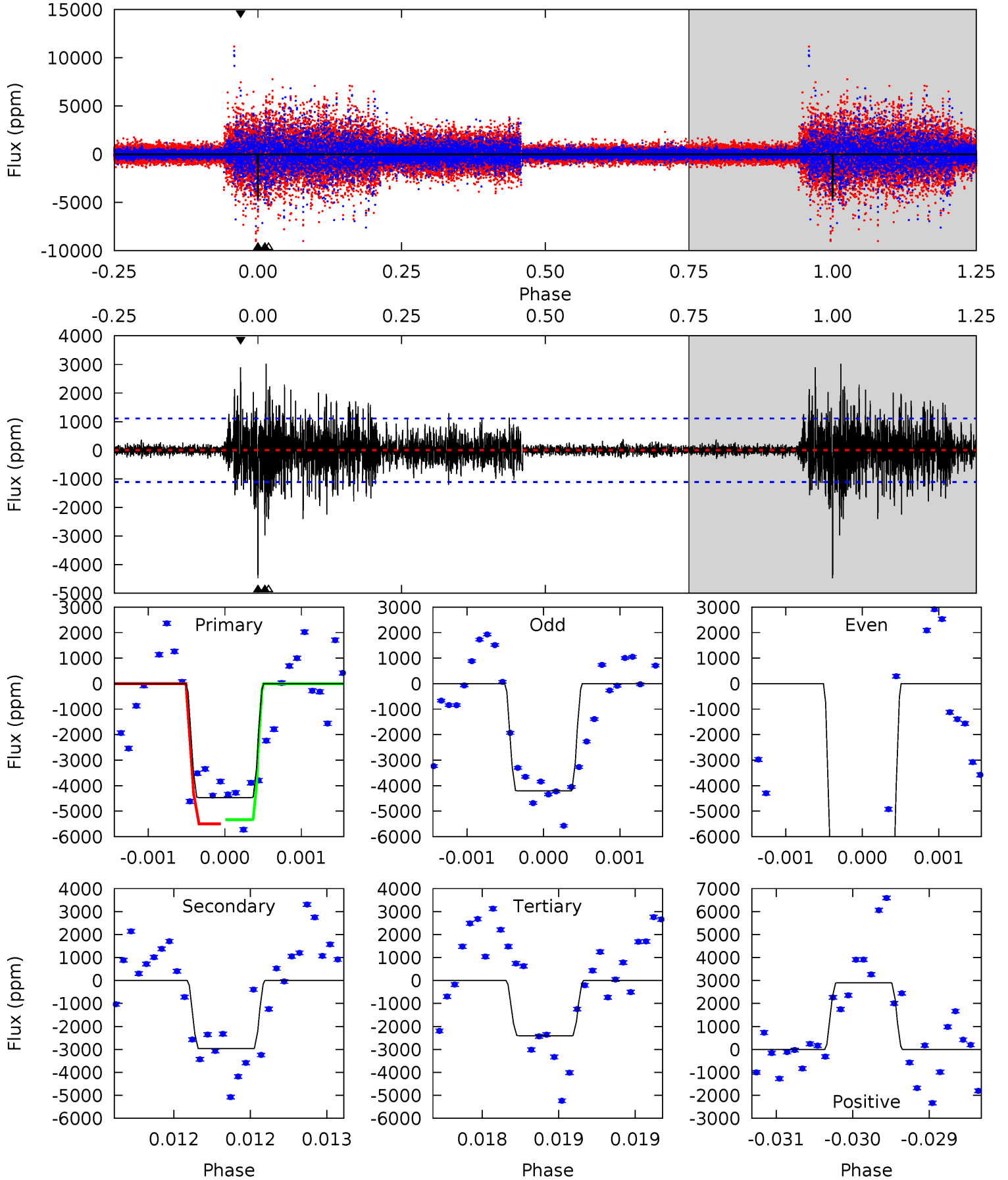
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.0	22.3	19.5	25.2	5.43	3.26	3.34	15.5	9.81	2.84	-2.82	6.89	1.00	0.42	0.23



Alt Model-Shift Uniqueness Test

009580167-04, P = 371.488932 Days, E = 87.569778 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.1	14.7	11.9	14.4	5.50	3.36	2.06	10.2	7.77	2.80	0.35	13.2	1.21	0.40	0



Stellar Parameters For KIC 009580167

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4452^{+87}_{-47}	$2.280^{+0.030}_{-0.030}$	$-0.040^{+0.150}_{-0.100}$	$11.895^{+3.211}_{-0.567}$	$0.984^{+0.587}_{-0.065}$	$0.001^{+0.000}_{-0.000}$
	+2%/-1%	+1%/-1%	+375%/-250%	+27%/-5%	+60%/-7%	+10%/-23%
Source	SPE74	AST71	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 009580167-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-4528 ± 203	$125.44^{+16.90}_{-14.90}$	944^{+24}_{-15}	3920^{+161}_{-147}	161^{+44}_{-31}
Alt.	-2970 ± 202	$100.07^{+15.84}_{-14.10}$	945^{+25}_{-18}	3923^{+225}_{-157}	164^{+58}_{-39}

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

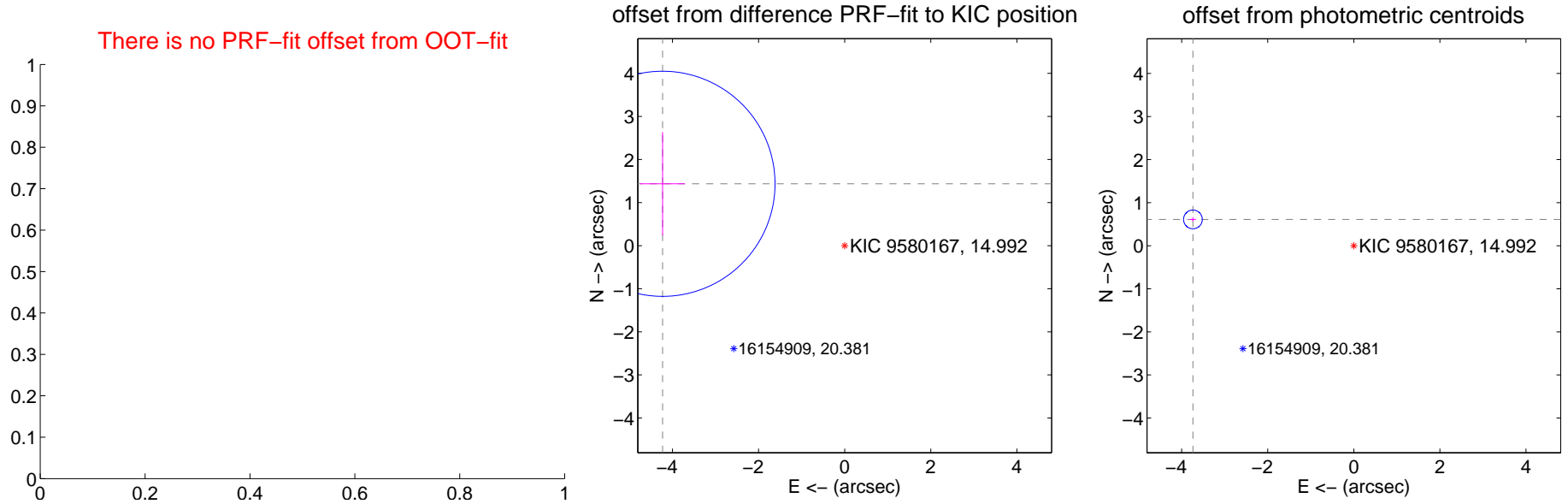
DV Centroid Data

Supplemental centroid analysis for 009580167-04. Kepler magnitude: 14.99. Transit SNR 9.33

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	4.468 ± 0.871	5.13	4.231 ± 0.520	1.436 ± 1.199
photometric centroid source offset	3.79 ± 0.07	52.27	3.74 ± 0.07	0.61 ± 0.05

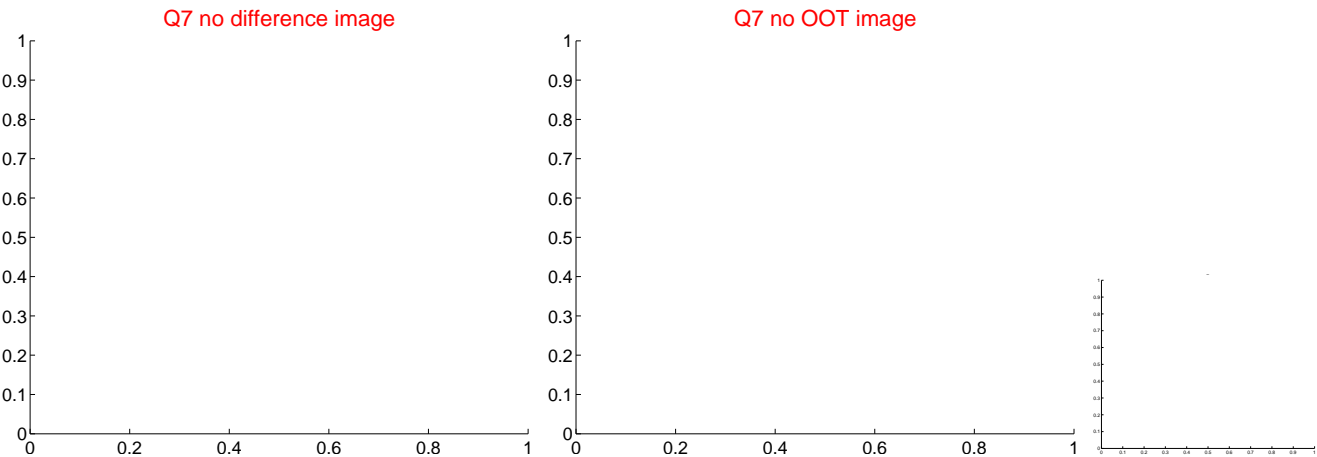
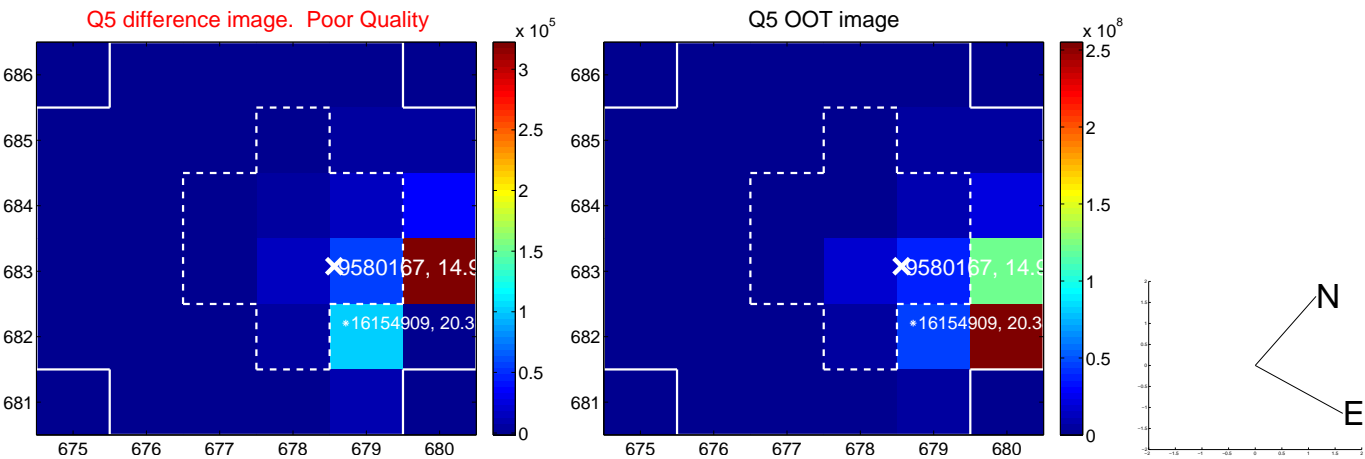


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

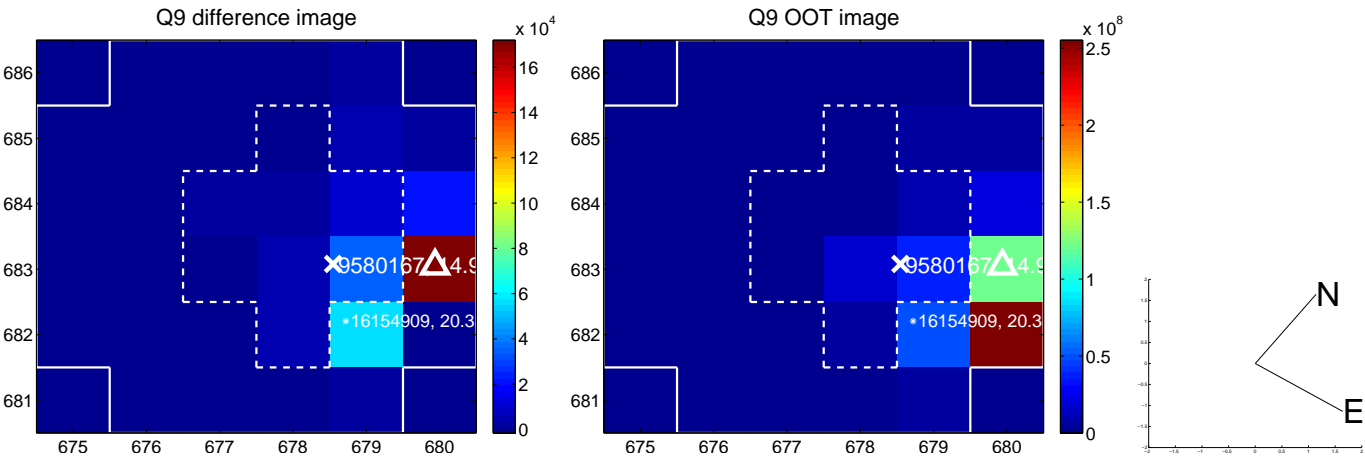
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



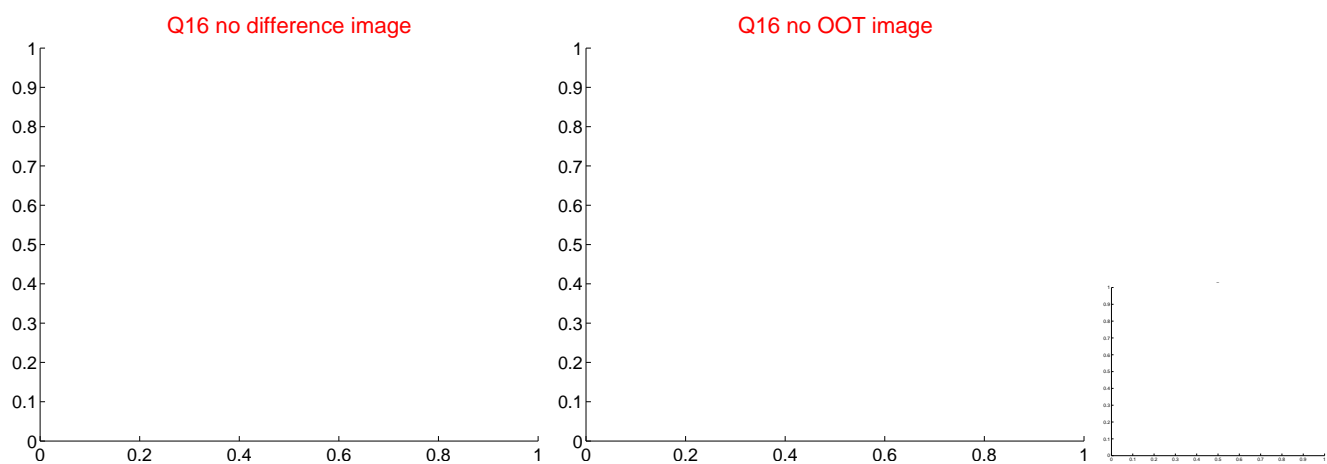
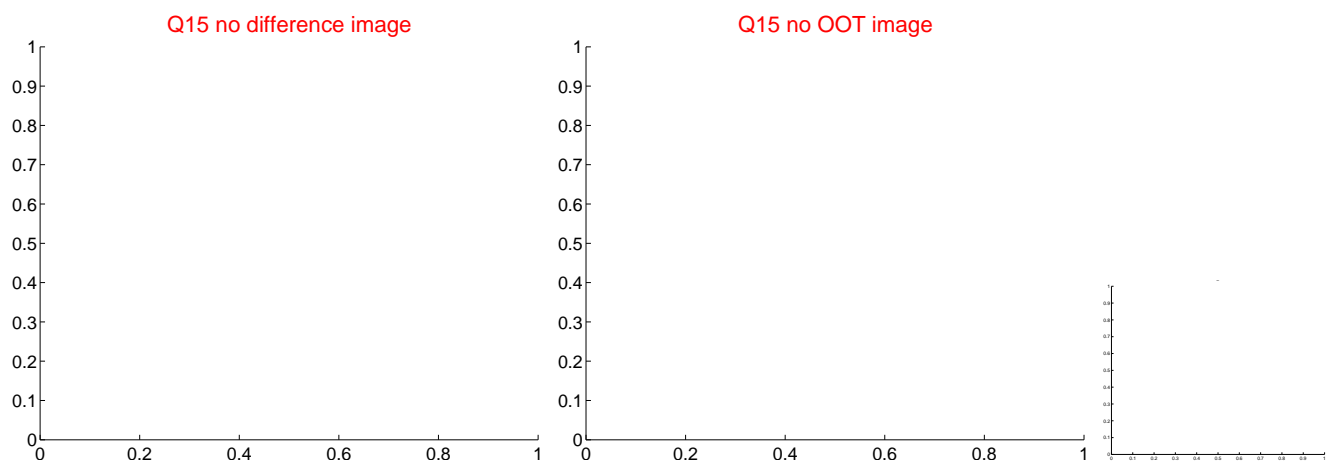
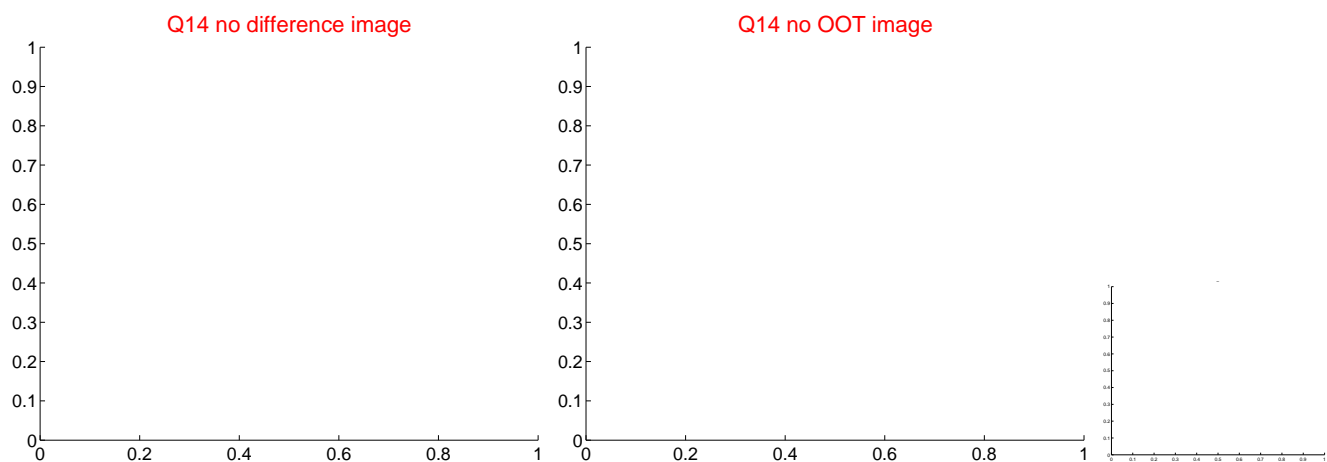
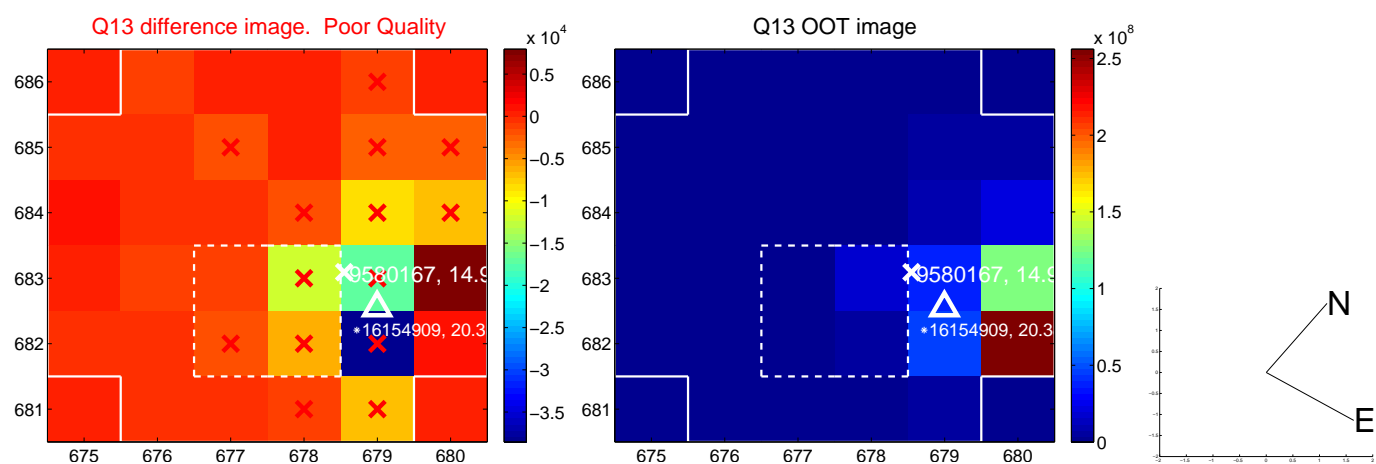
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



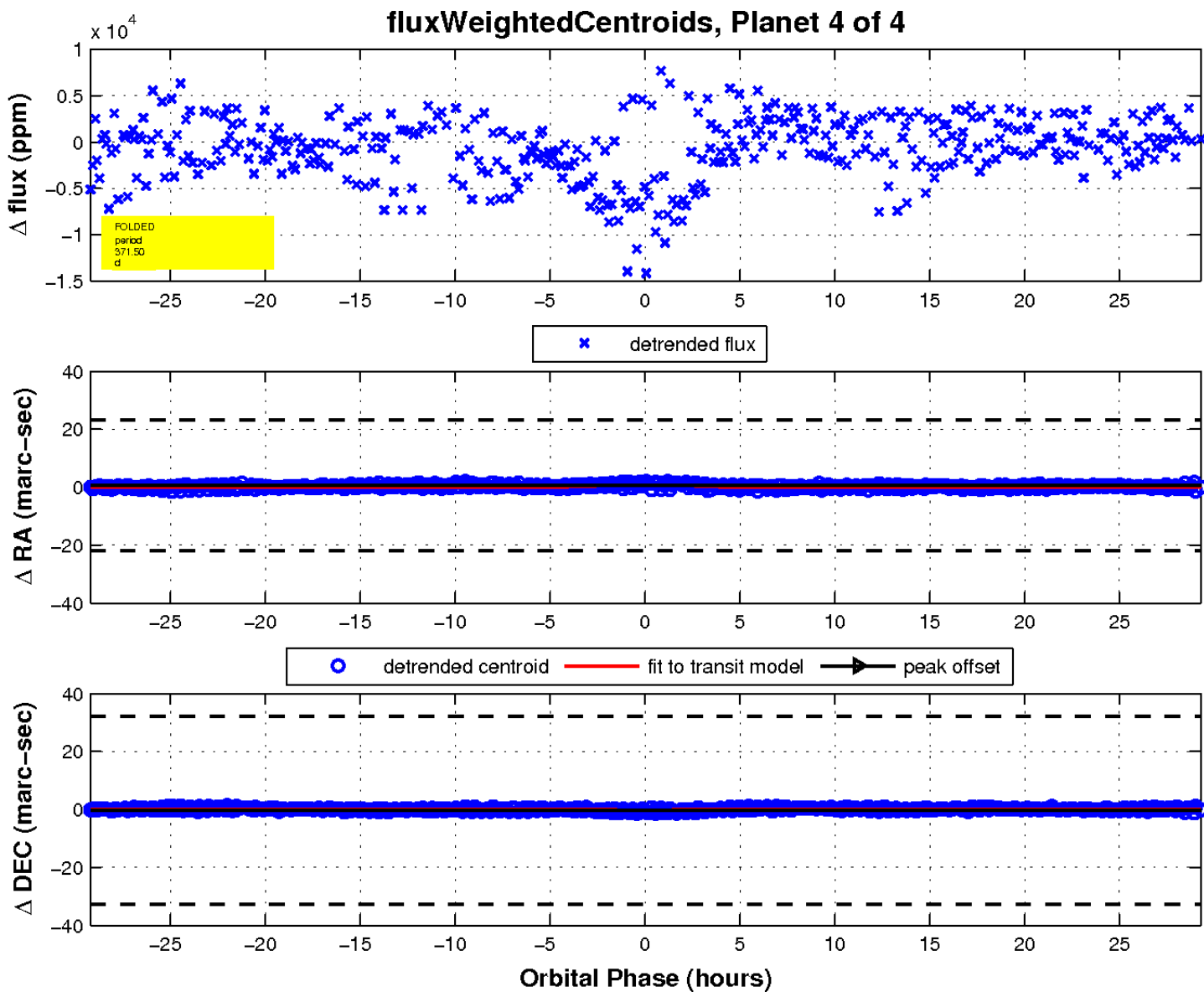
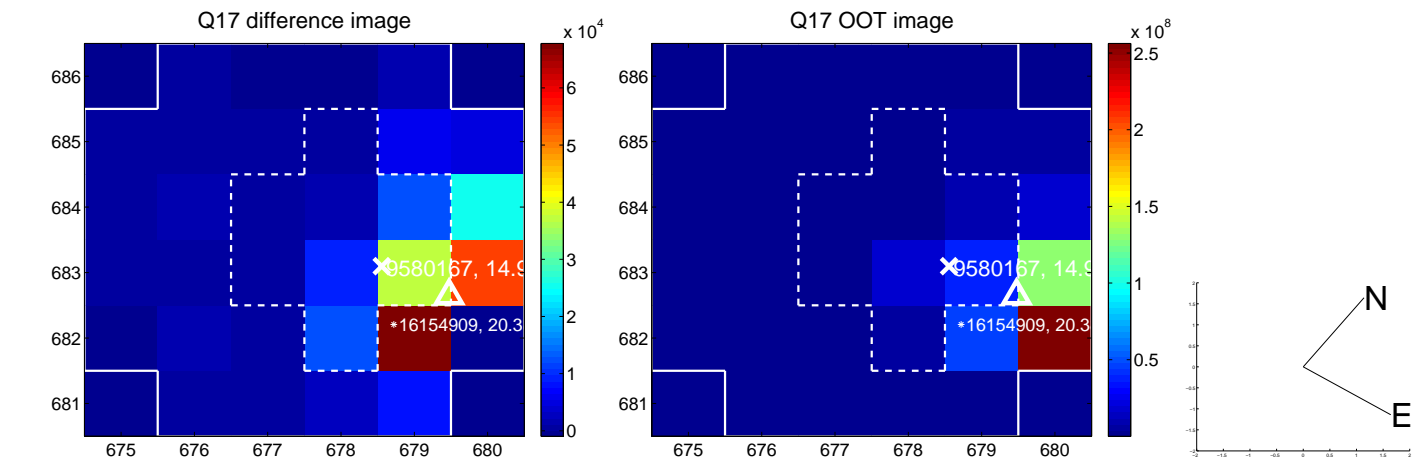
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

