

KIC 009238899

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})
009238899-01	OBS	No	575.879513	134.103671	1453.9	3.696	13.1	7.5	0.62	4070	2.79	0.07
009238899-02	OBS	No	148.940219	135.366125	826.7	12.500	12.6	-1.0	0.62	4070	1.72	0.43
009238899-03	OBS	No	457.128491	187.484407	1804.0	4.628	10.3	8.1	0.62	4070	2.66	0.10
009238899-04	OBS	No	475.855286	436.147751	1342.1	4.013	12.3	4.9	0.62	4070	2.54	0.09
009238899-05	OBS	No	502.903968	334.136986	1359.6	3.500	12.3	-1.0	0.62	4070	2.21	0.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009238899-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
009238899-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
009238899-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009238899-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009238899-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

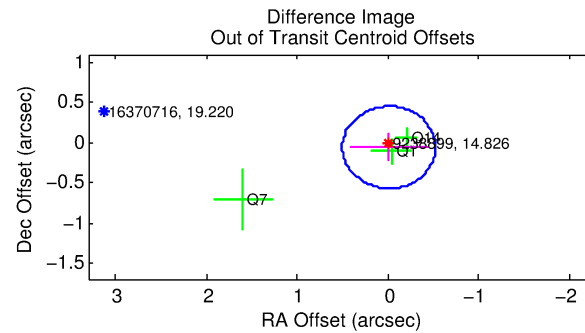
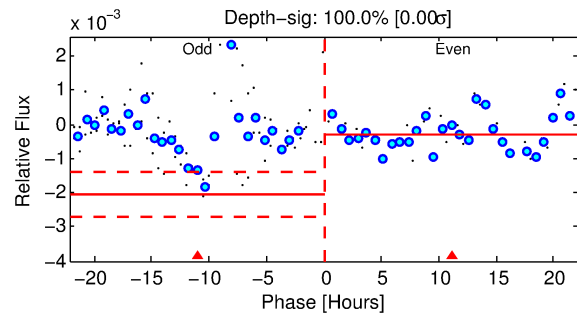
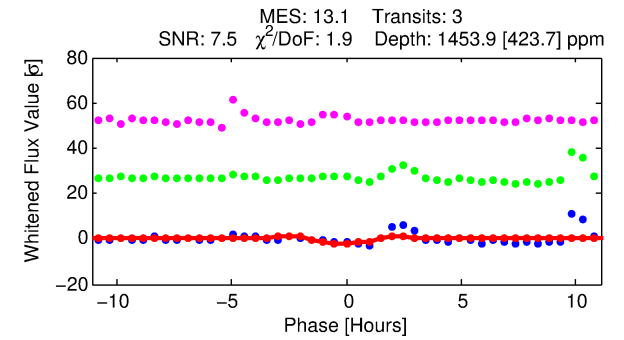
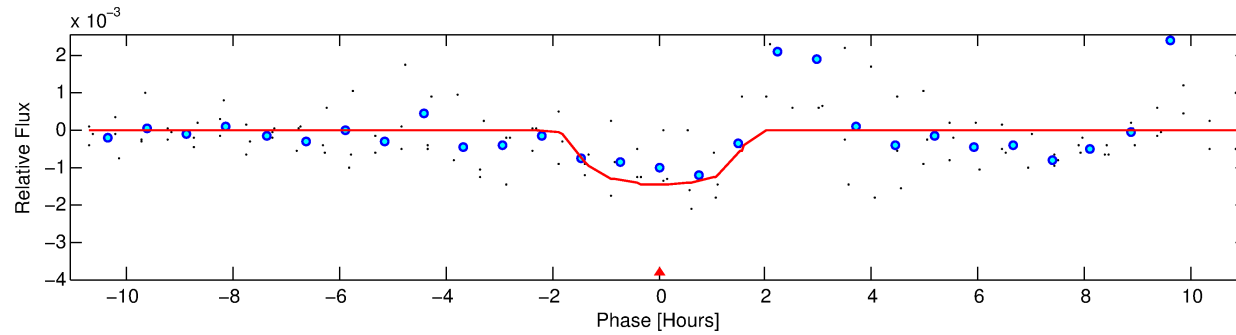
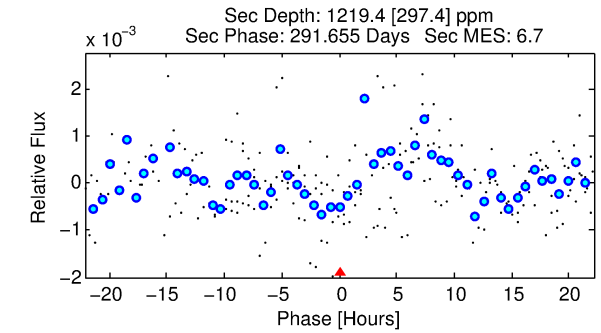
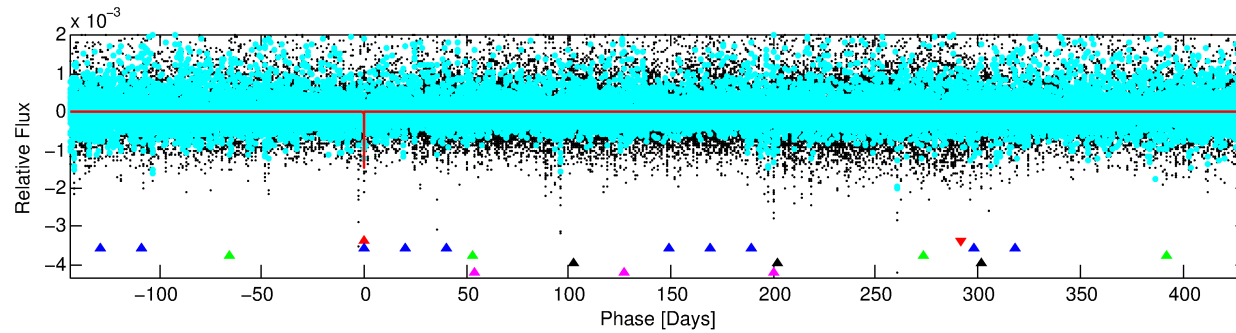
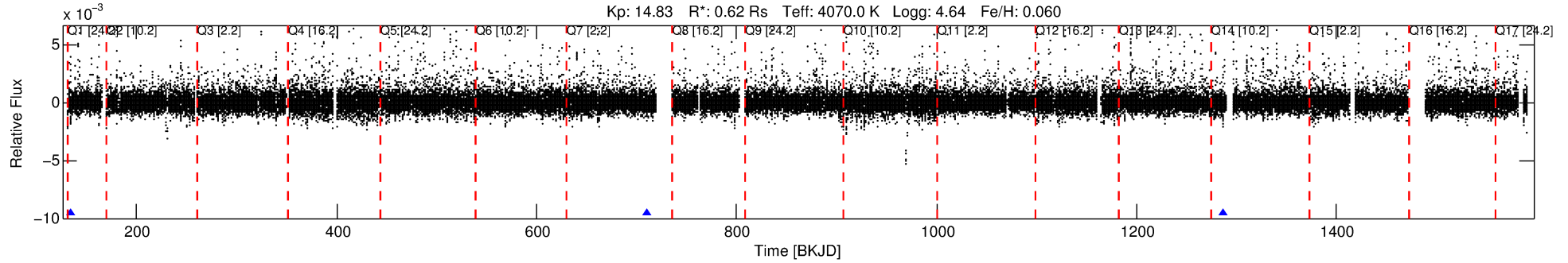
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009238899-01

No Significant Match Found

DV One-Page Summary

KIC: 9238899 Candidate: 1 of 5 Period: 575.880 d



DV Fit Results:

Period = 575.87951 [0.00898] d
Epoch = 134.1037 [0.0118] BKJD
Rp/R* = 0.0414 [0.0229]
a/R* = 678.37 [1279.08]
b = 0.87 [0.52]
Seff = 0.07 [0.01]
Teq = 132 [6] K
Rp = 2.80 [1.57] Re
a = 1.1518 [0.0946] AU
Ag = 113900.48 [129504.45] [0.88 σ]
Teffp = 3739 [1067] K [3.38 σ]

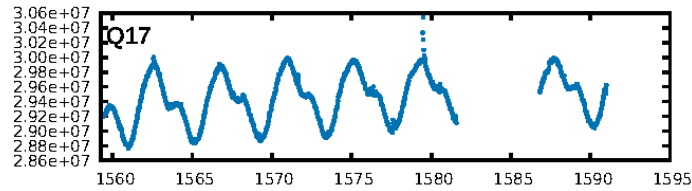
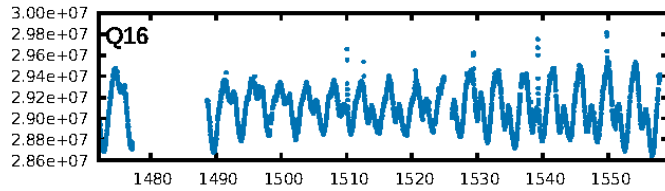
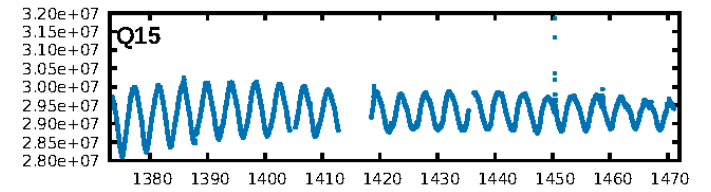
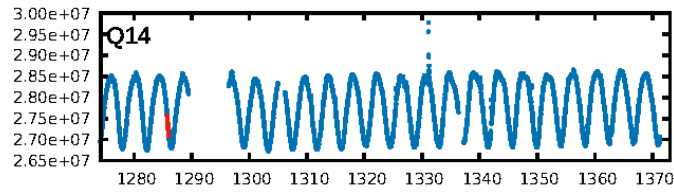
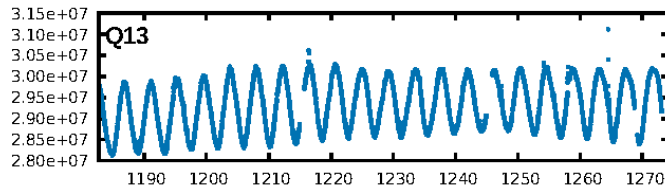
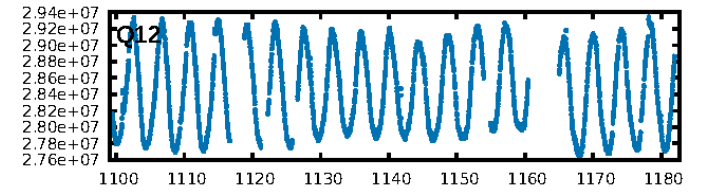
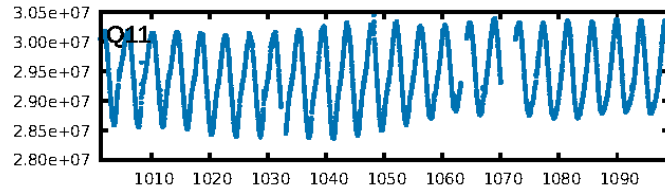
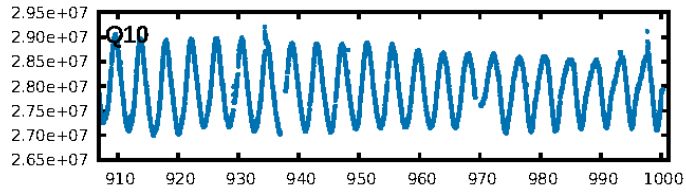
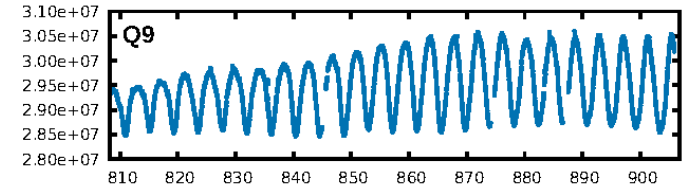
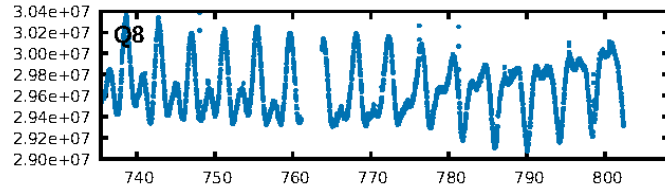
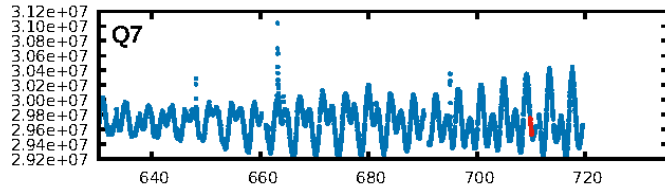
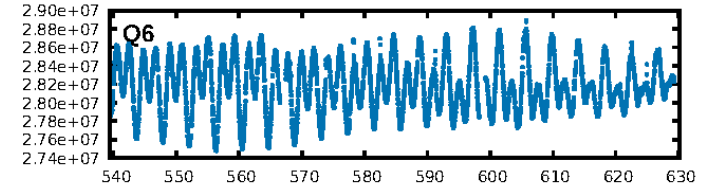
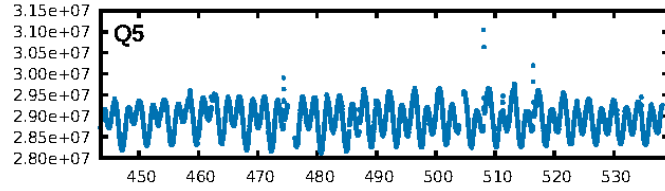
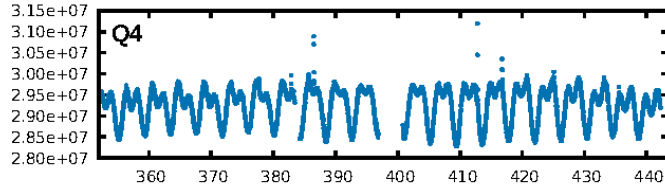
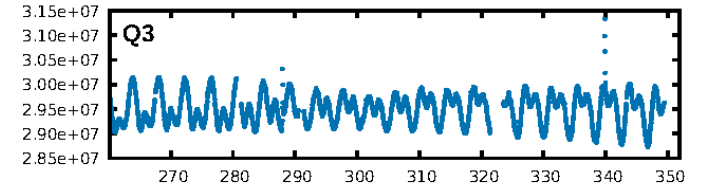
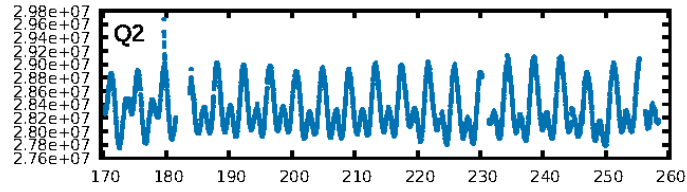
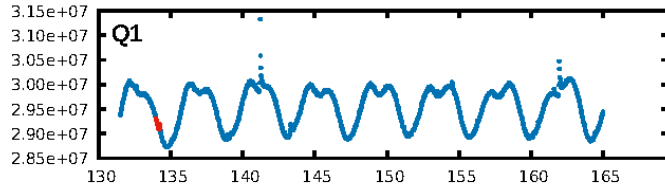
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [344.09 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 1.3%
ModelChiSquareGof-sig: 27.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 2.115
Centroid-sig: 39.0%
Centroid-so: 0.868 arcsec [0.77 σ]
OotOffset-rm: 0.060 arcsec [0.35 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.271 arcsec [0.48 σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.67 [2/3]

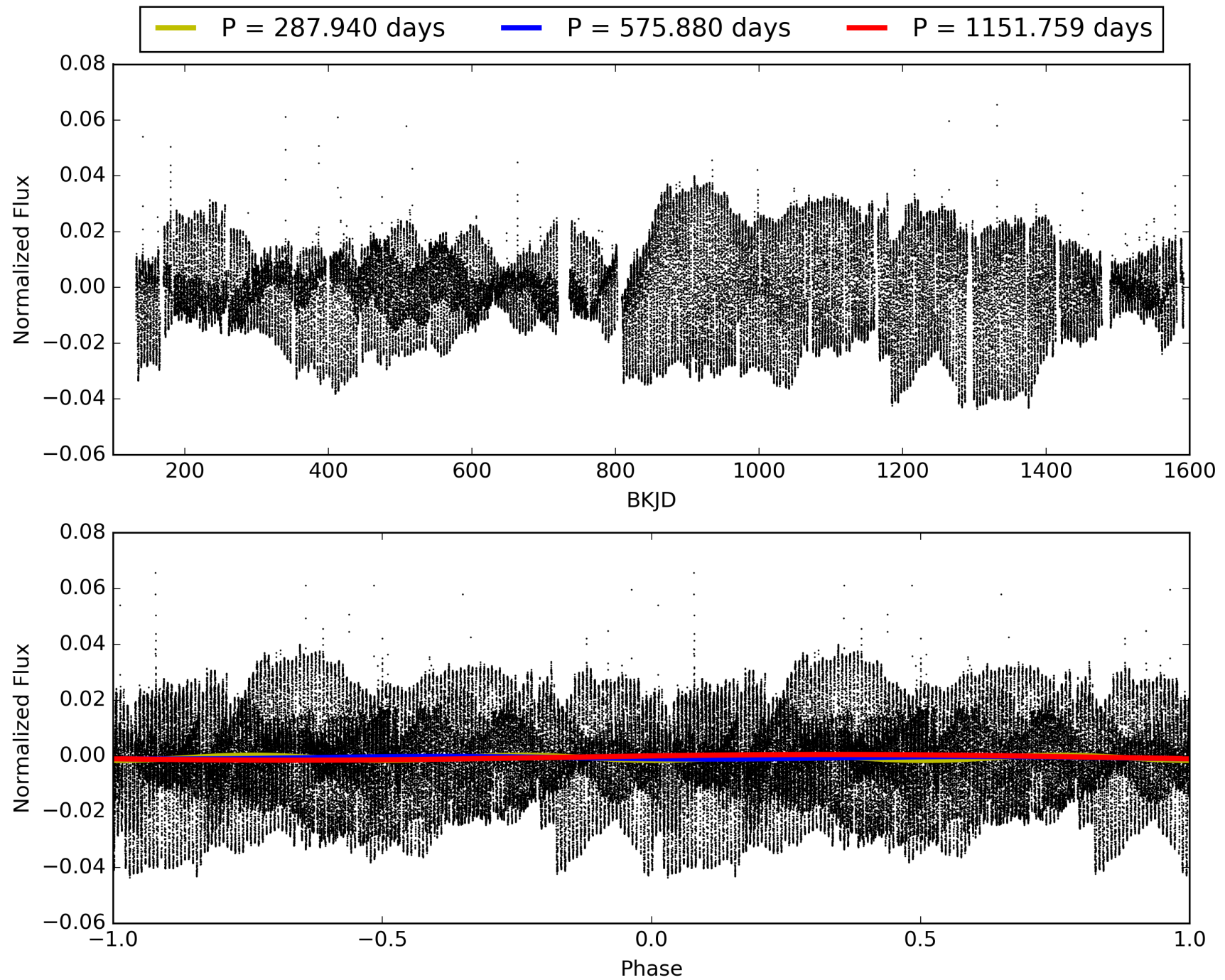
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009238899-01, PDC Light Curves

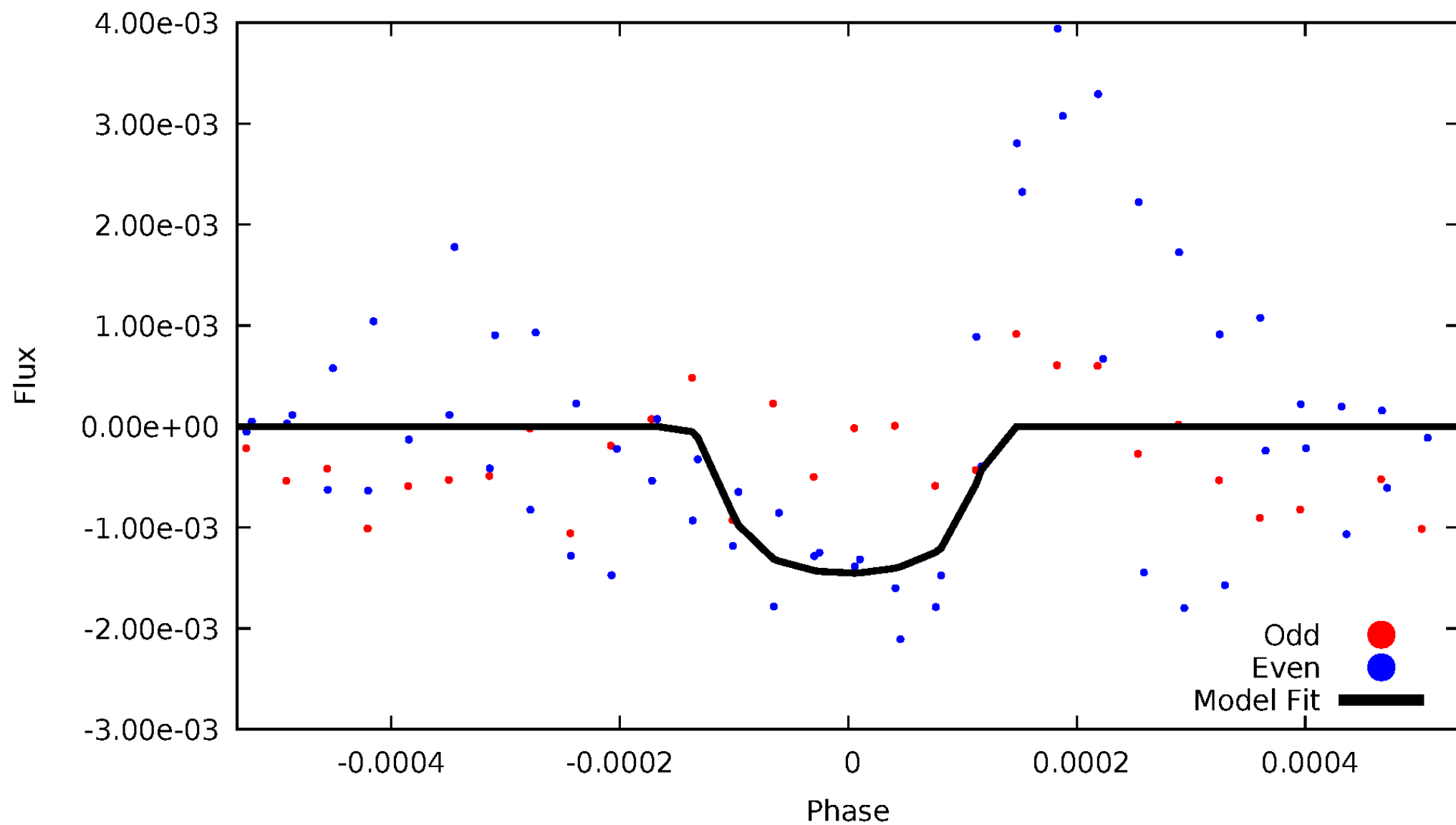


TCE 009238899-01



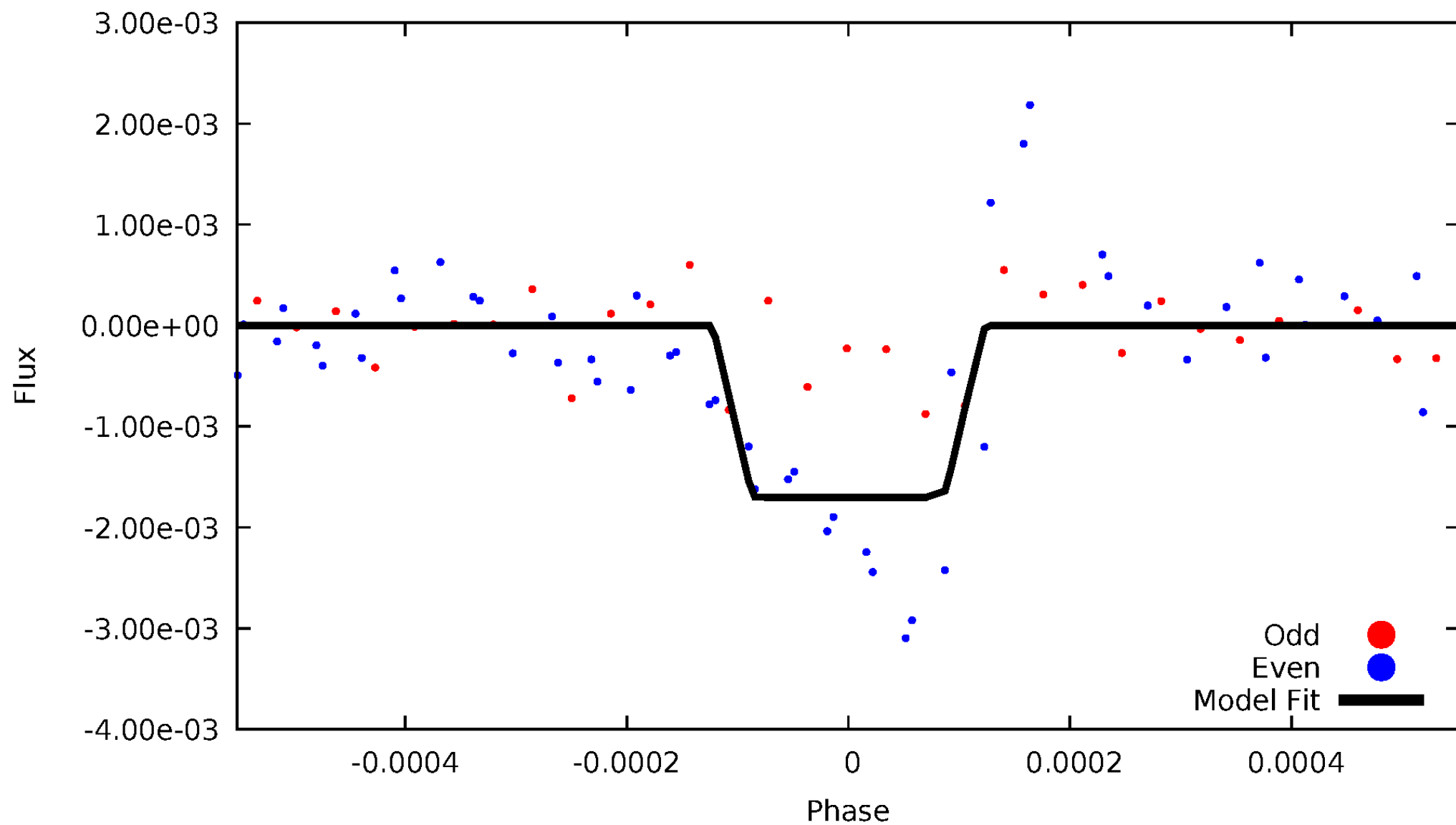
DV Odd/Even

TCE 009238899-01



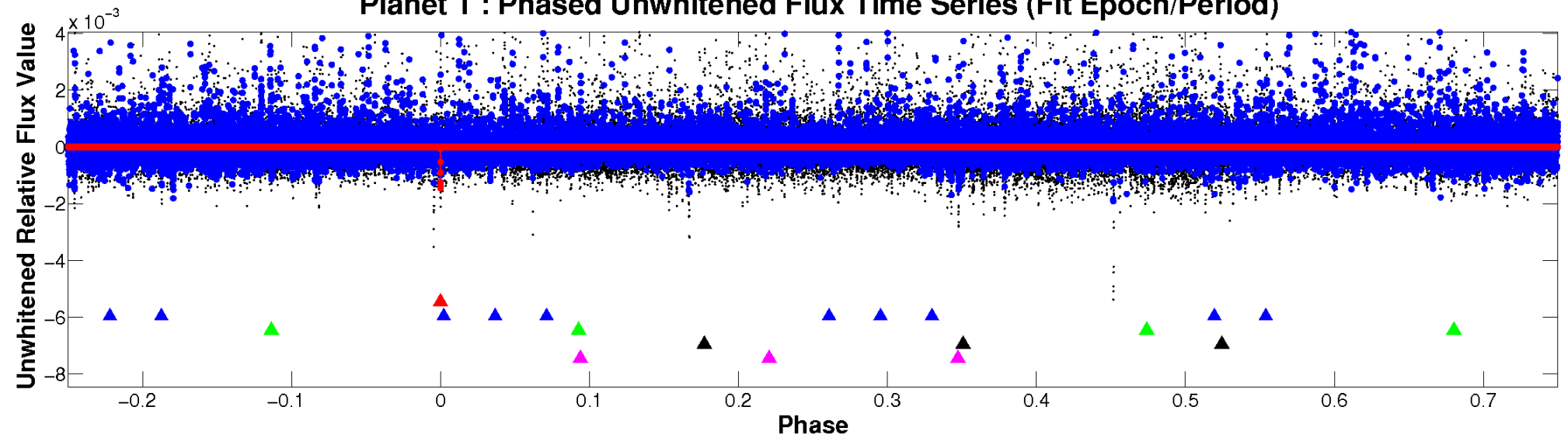
ALT Odd/Even

TCE 009238899-01

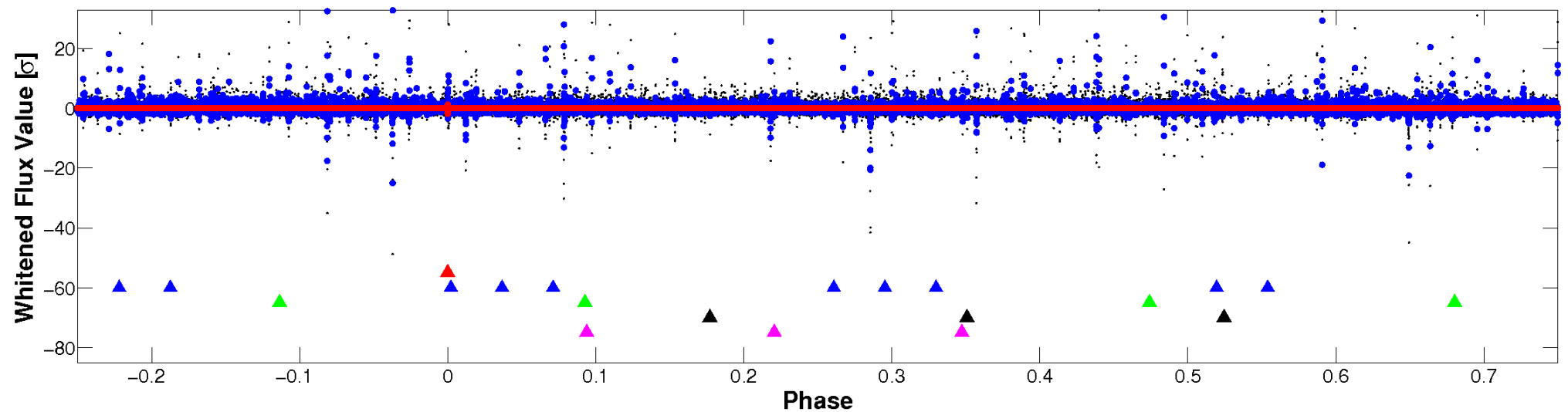


Non-Whitened Vs. Whitened Light Curve

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

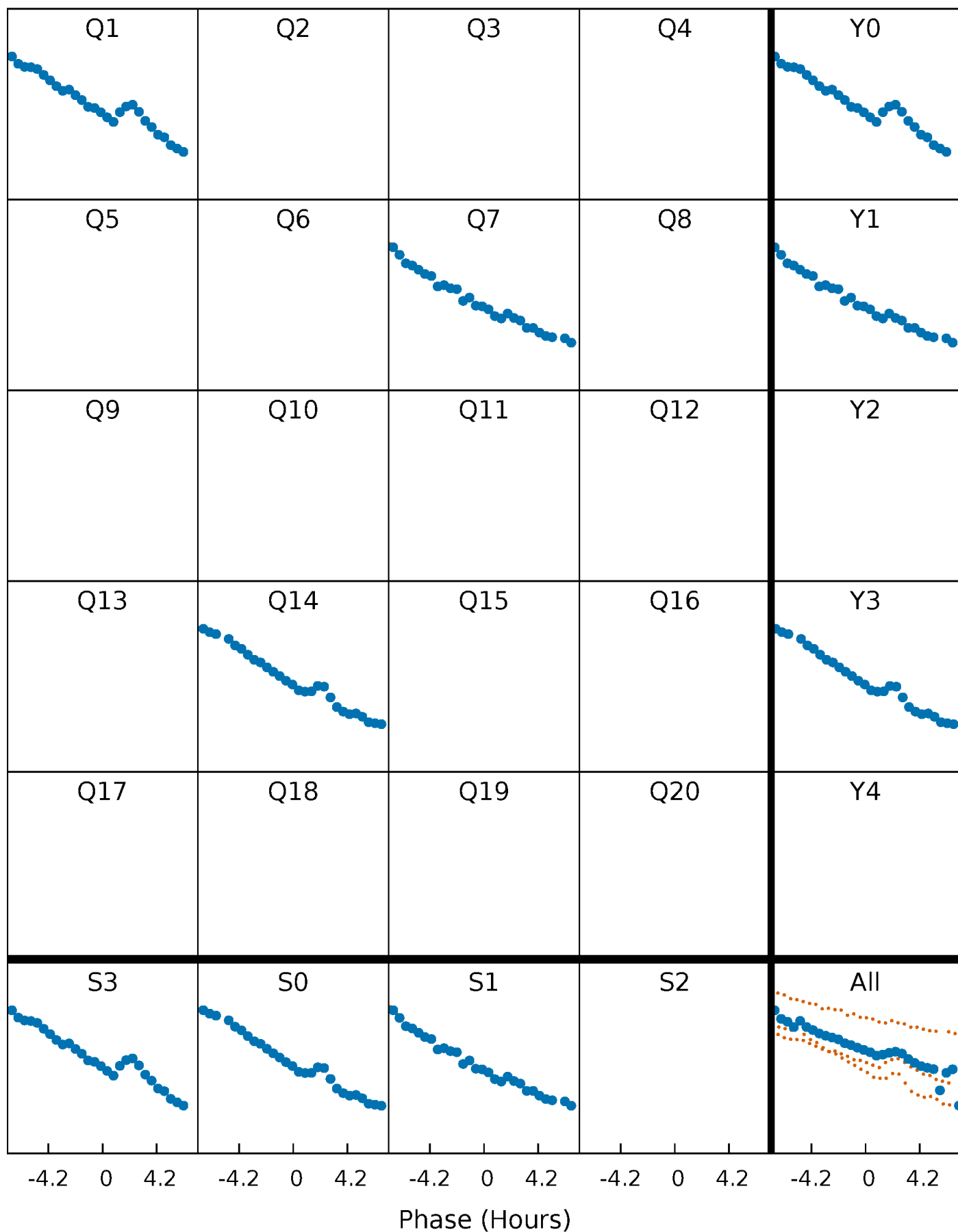


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



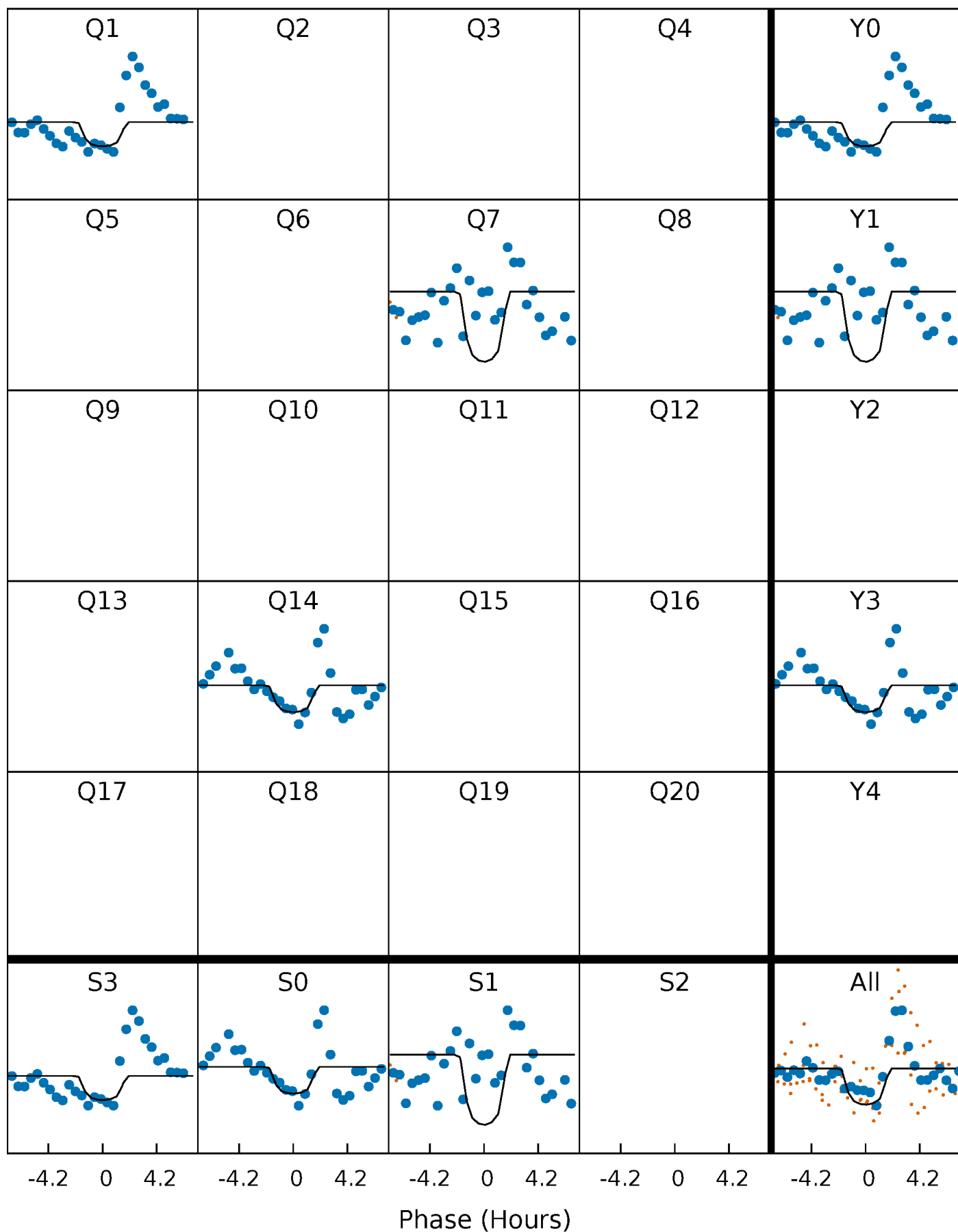
PDC Quarter-Phased Transit Curves

TCE 009238899-01 P=575.879513 Days $T_0=134.103671$ (BKJD)



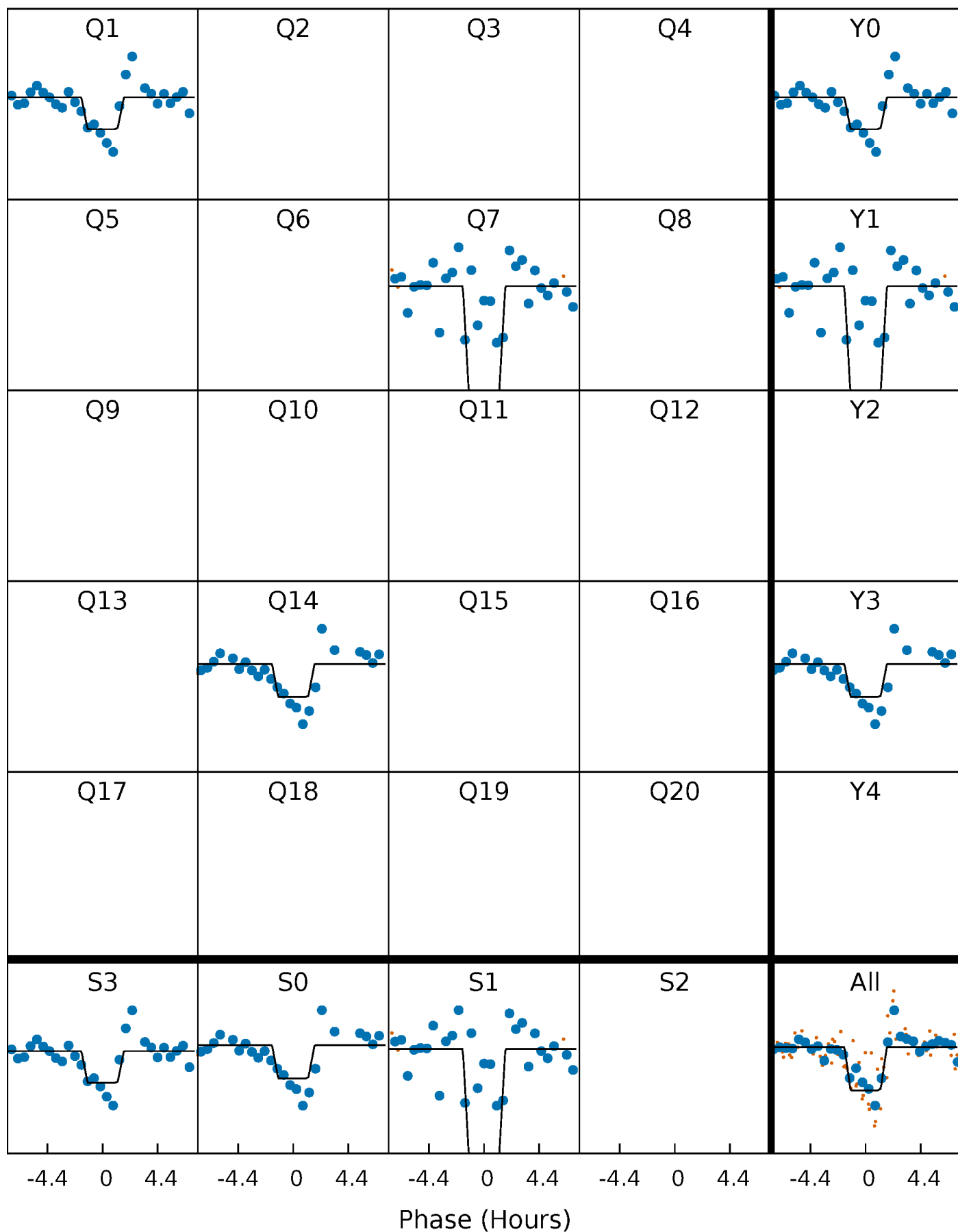
DV Quarter-Phased Transit Curves

TCE 009238899-01 P=575.879513 Days $T_0=134.103671$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

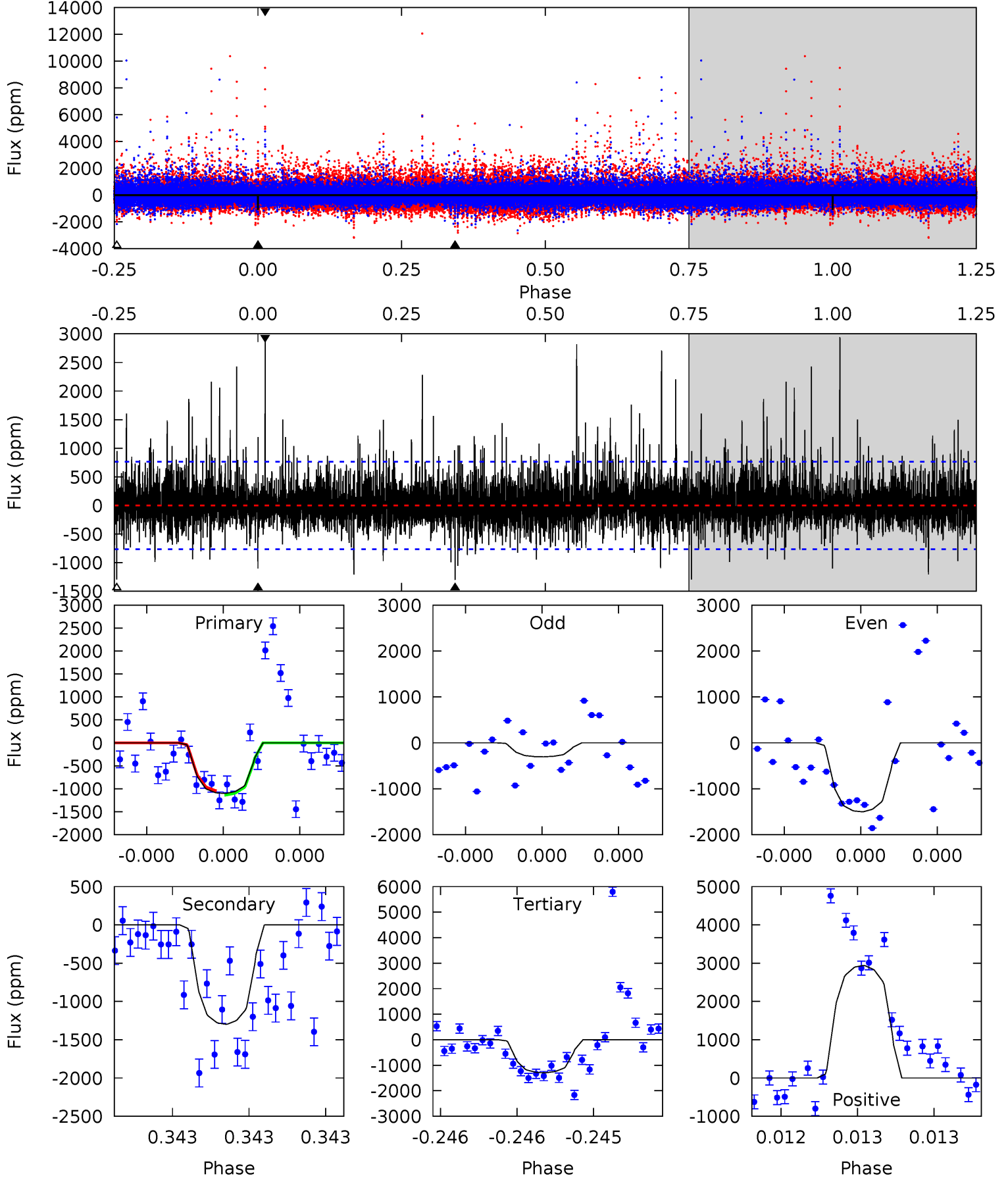
TCE 009238899-01 P=575.872210 Days $T_0=134.114701$ (BKJD)



DV Model-Shift Uniqueness Test

009238899-01, P = 575.879513 Days, E = 134.103671 Days

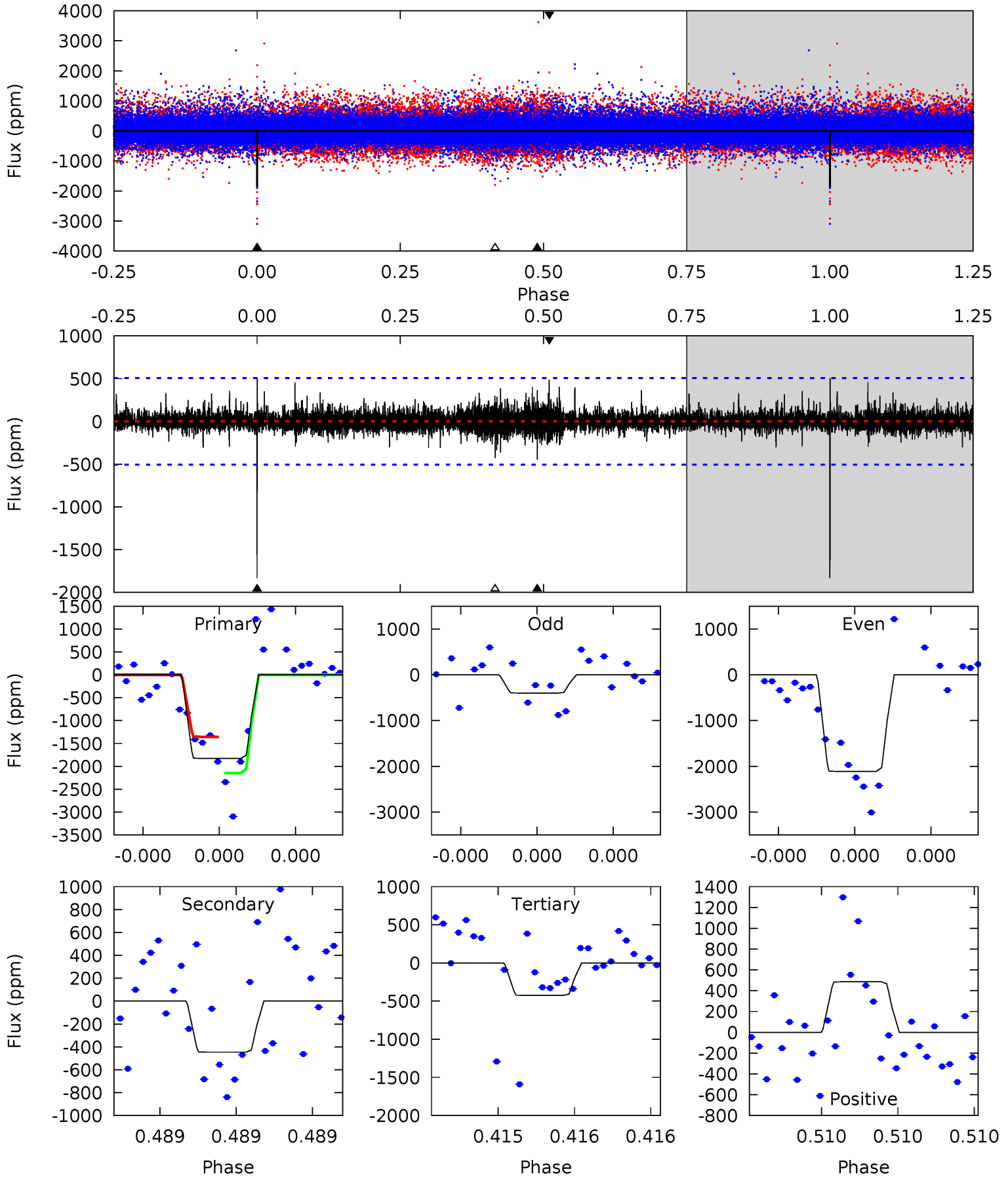
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.18	9.63	9.62	21.8	5.67	3.63	2.30	-1.43	-13.6	0.02	-12.2	2.84	0.76	0.69	0.35



Alt Model-Shift Uniqueness Test

009238899-01, P = 575.872210 Days, E = 134.114701 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.6	5.02	4.77	5.46	5.69	3.66	0.77	15.8	15.1	0.24	-0.44	9.32	0.79	0.22	4.59



Stellar Parameters For KIC 009238899

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4070^{+141}_{-155}	$4.643^{+0.056}_{-0.020}$	$0.060^{+0.250}_{-0.300}$	$0.619^{+0.038}_{-0.065}$	$0.613^{+0.052}_{-0.063}$	$3.645^{+1.005}_{-0.361}$
	+3%/-4%	+1%/-0%	+417%/-500%	+6%/-11%	+8%/-10%	+28%/-10%
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 009238899-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1298 ± 135	$2.74^{+1.62}_{-1.34}$	183^{+7}_{-8}	3886^{+1149}_{-571}	$127691^{+364108}_{-78666}$
Alt.	-446 ± 89	$2.94^{+1.46}_{-1.42}$	182^{+7}_{-8}	3192^{+801}_{-375}	38321^{+99866}_{-21789}

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

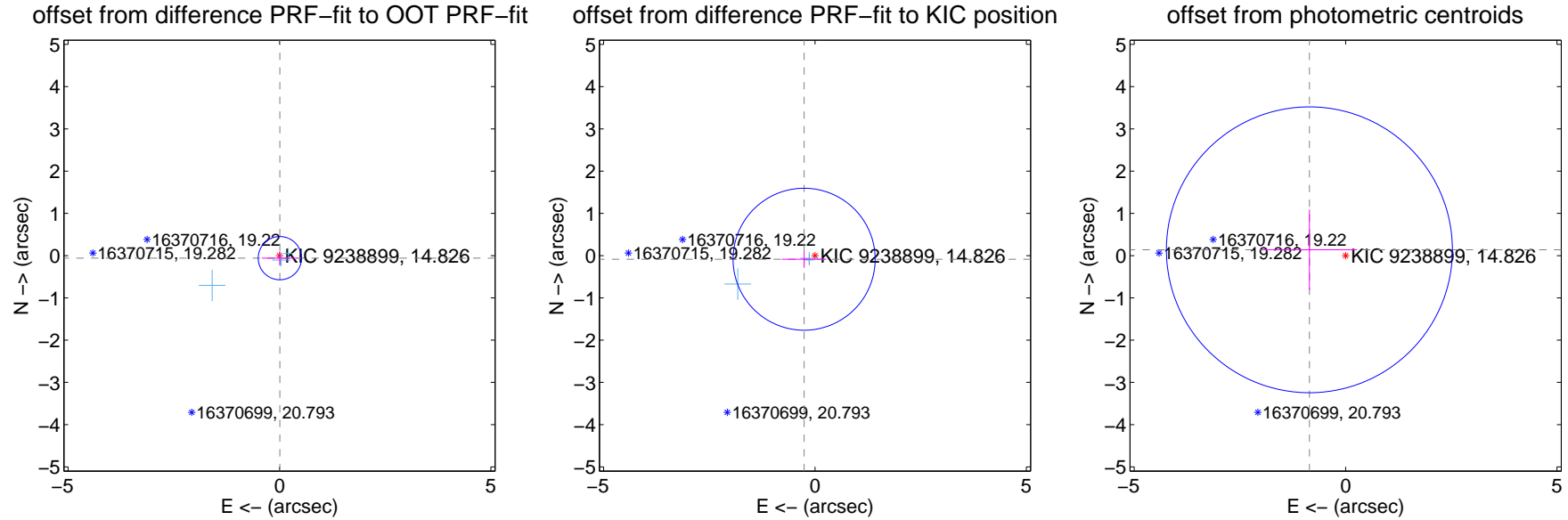
DV Centroid Data

Supplemental centroid analysis for 009238899-01. Kepler magnitude: 14.83. Transit SNR 7.52

There are 3 quarters with good PRF difference image offsets

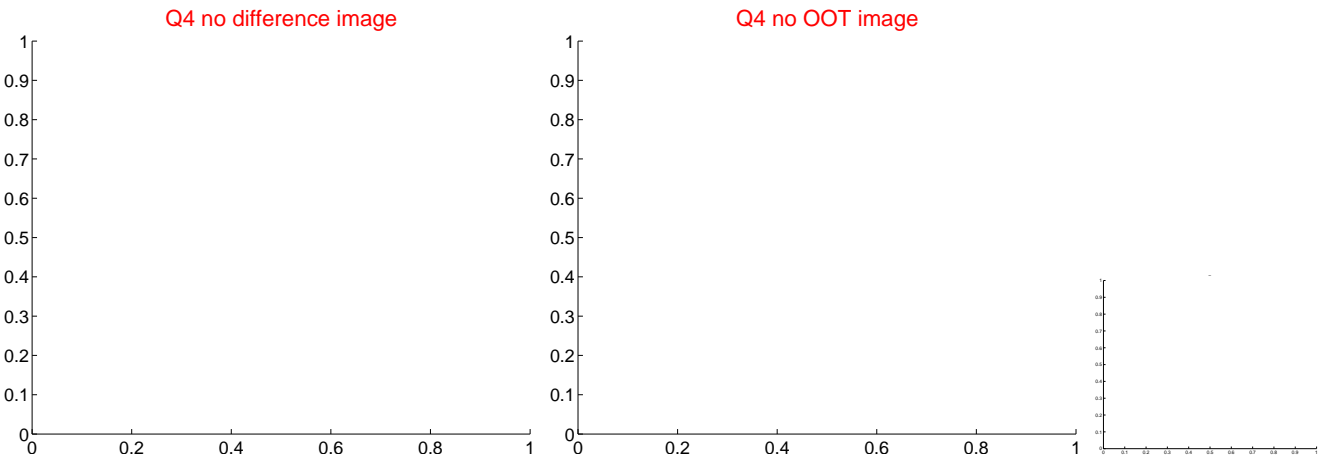
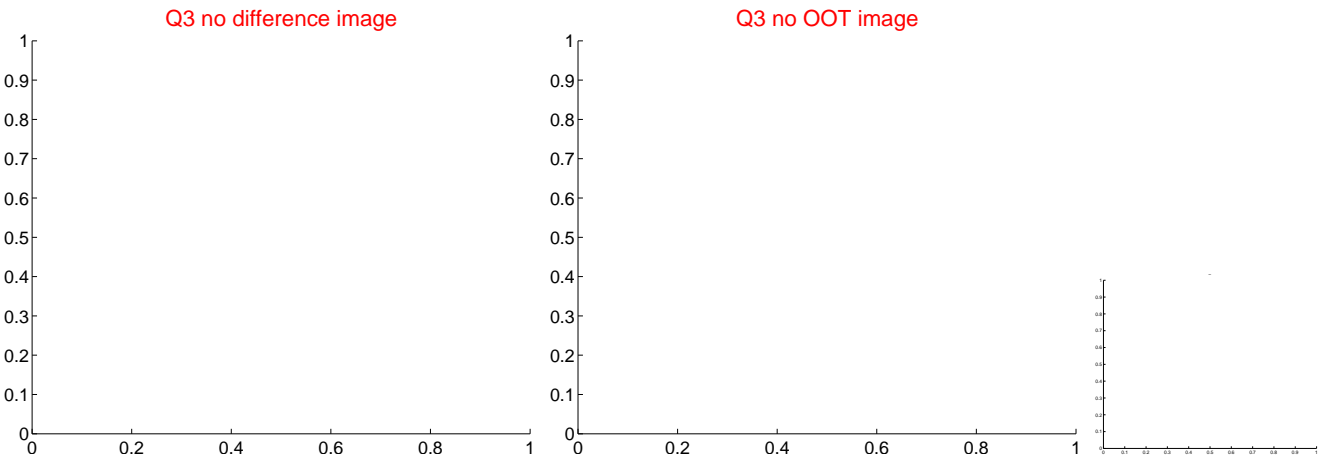
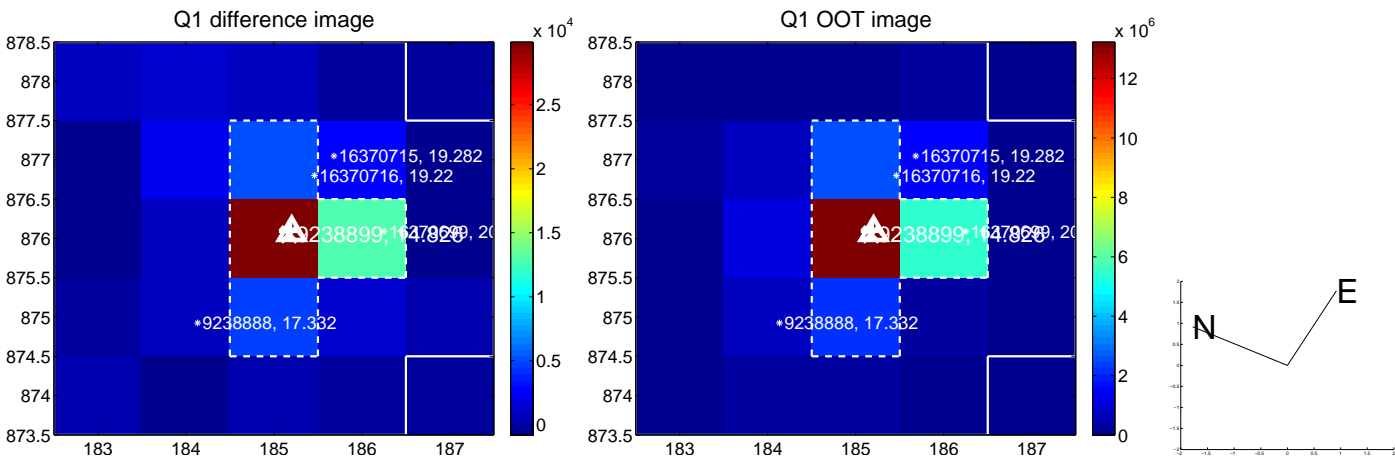
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.060 ± 0.171	0.35	-0.009 ± 0.424	-0.060 ± 0.161
PRF-fit source offset from KIC position	0.271 ± 0.560	0.48	0.257 ± 0.527	-0.085 ± 0.202
photometric centroid source offset	0.87 ± 1.13	0.77	0.86 ± 1.13	0.14 ± 0.95

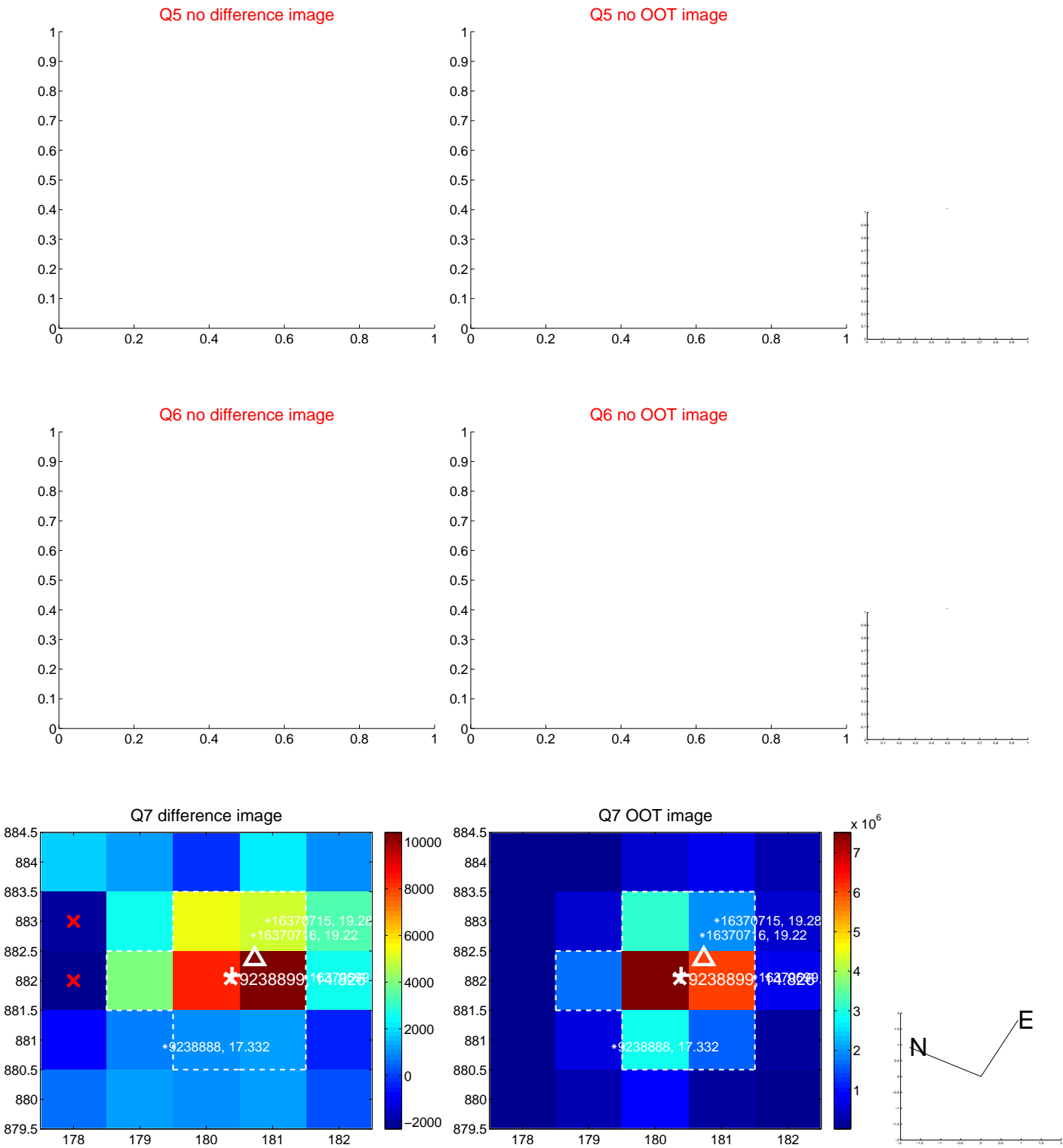


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

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



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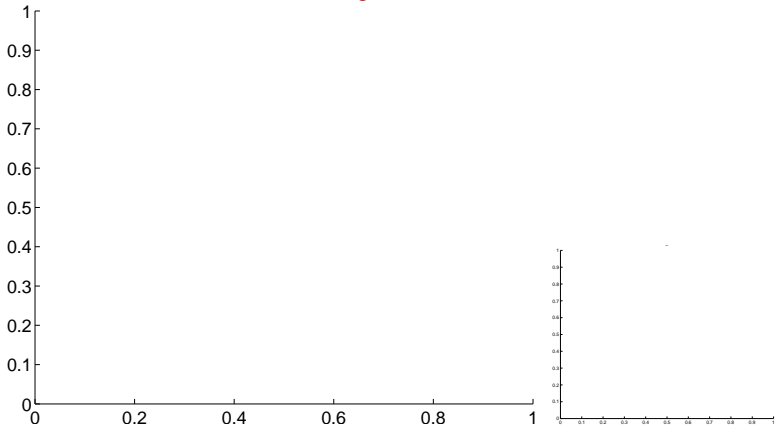


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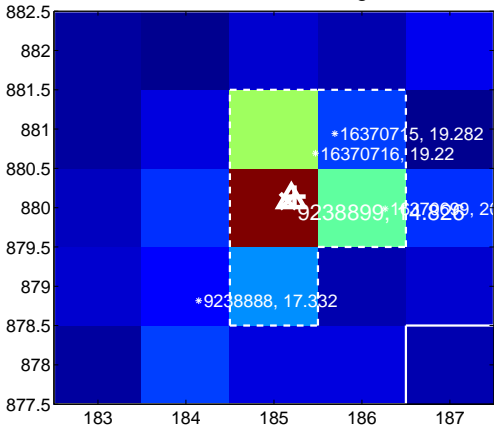
Q13 no difference image



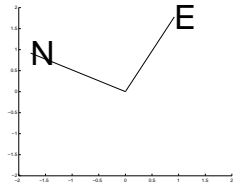
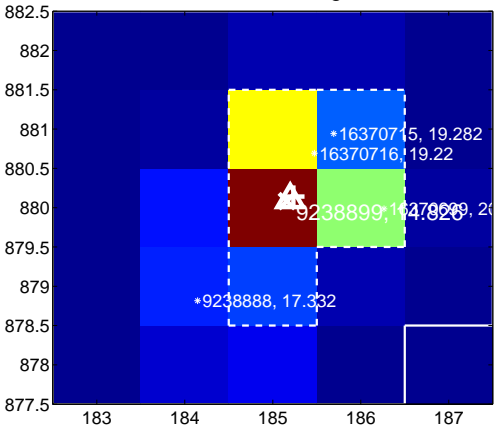
Q13 no OOT image



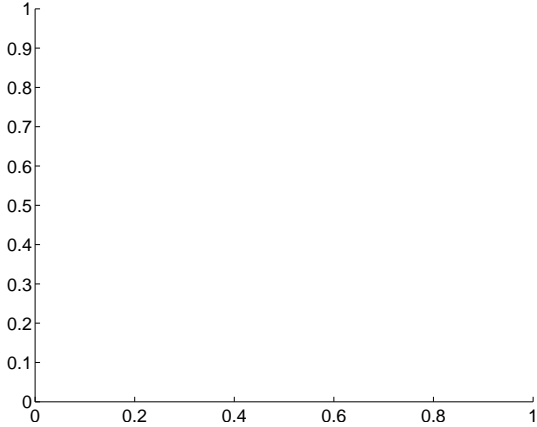
Q14 difference image



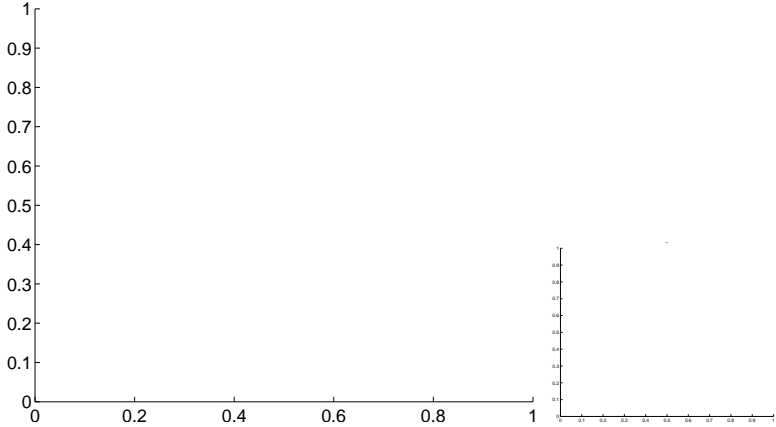
Q14 OOT image



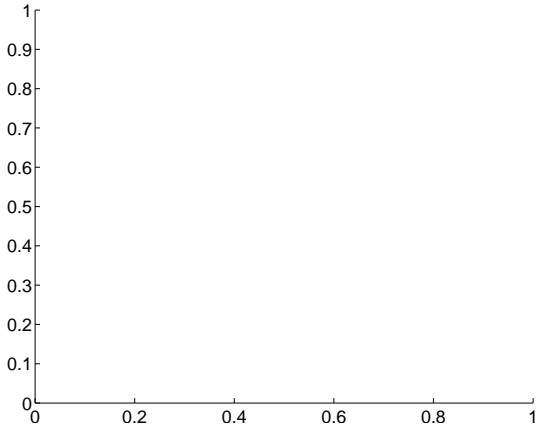
Q15 no difference image



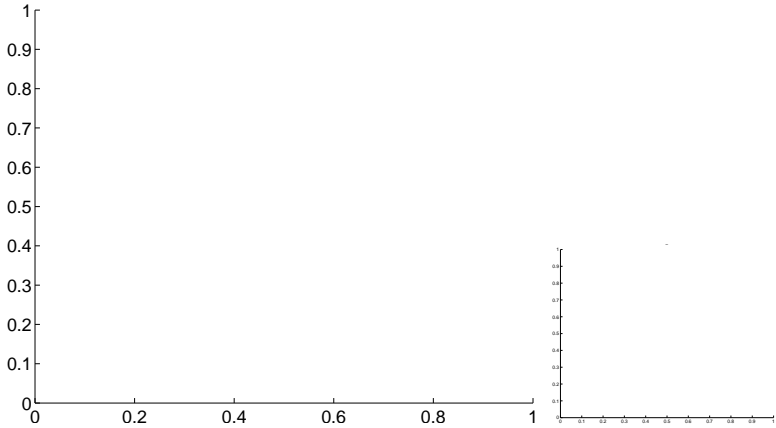
Q15 no OOT image



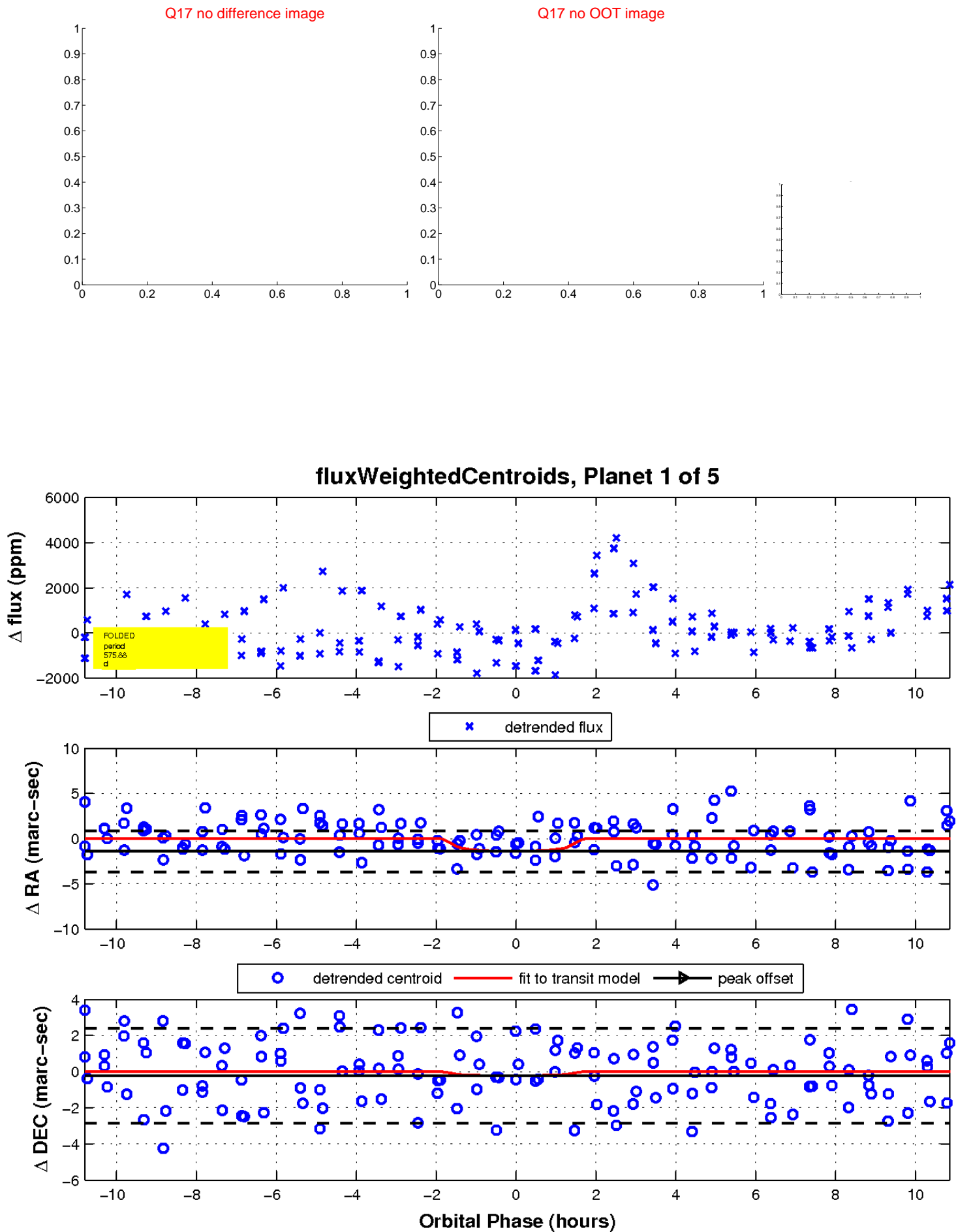
Q16 no difference image



Q16 no OOT image

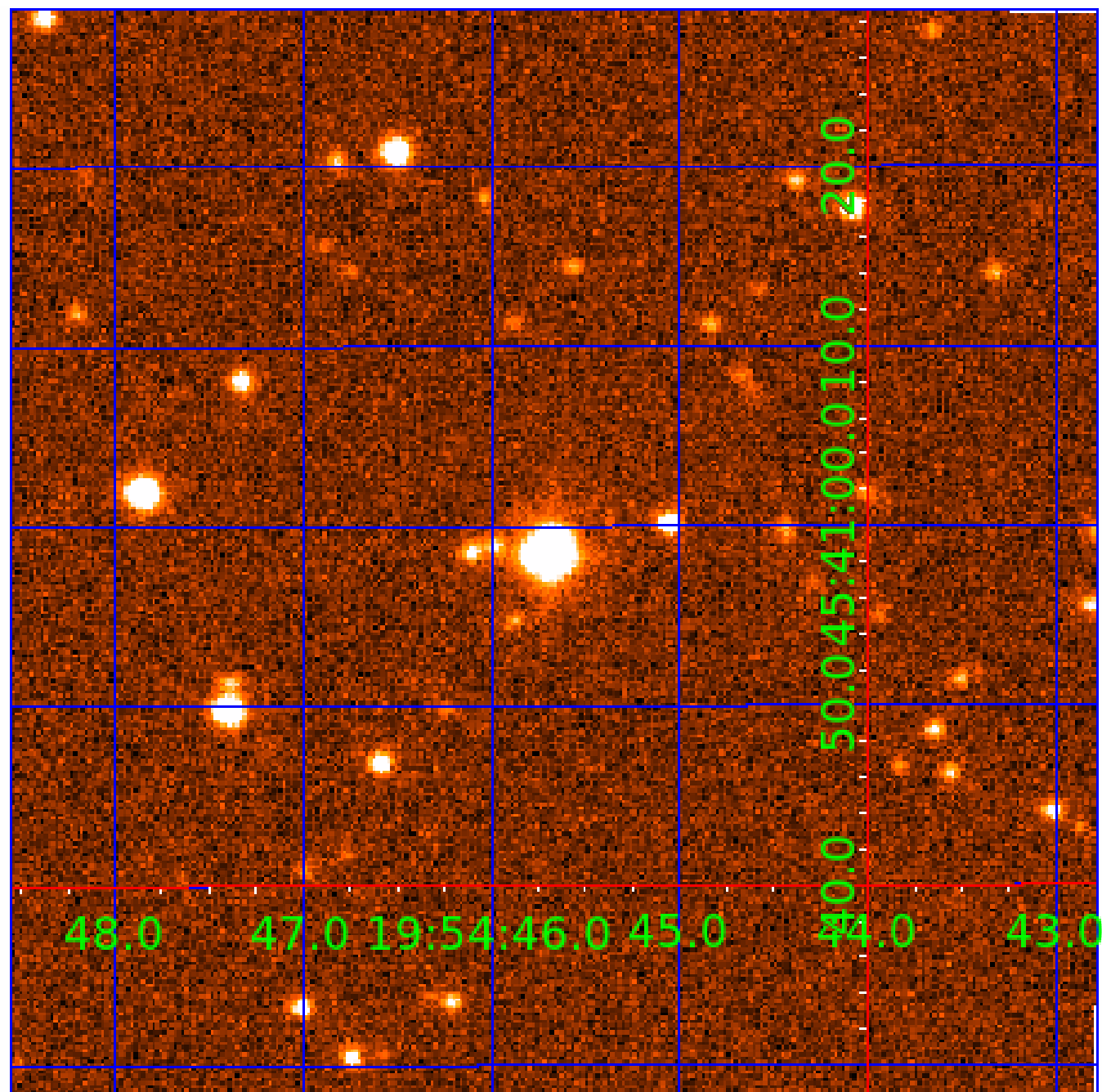


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UKIRT Image

Declination



KIC 009238899

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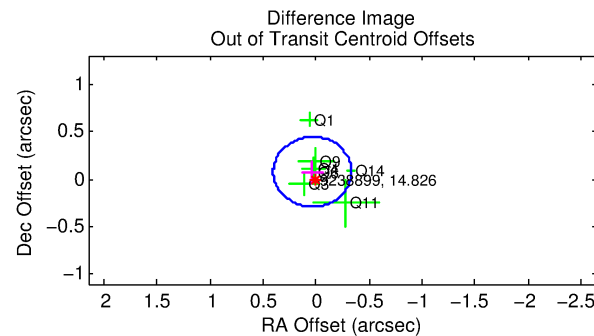
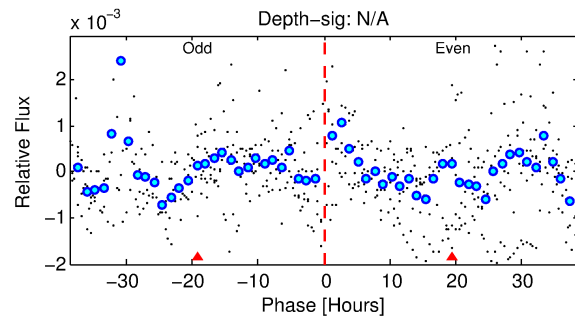
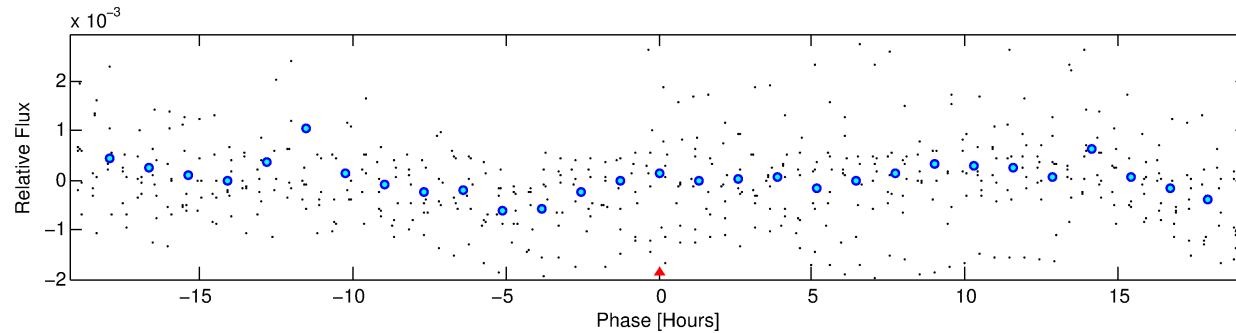
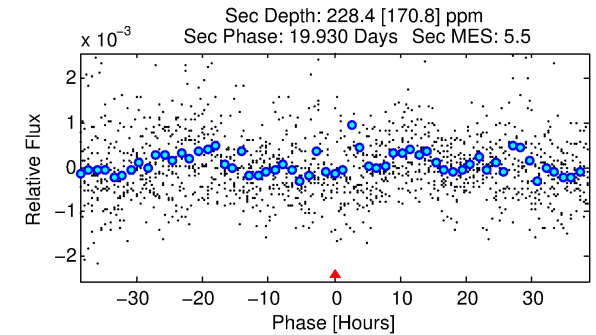
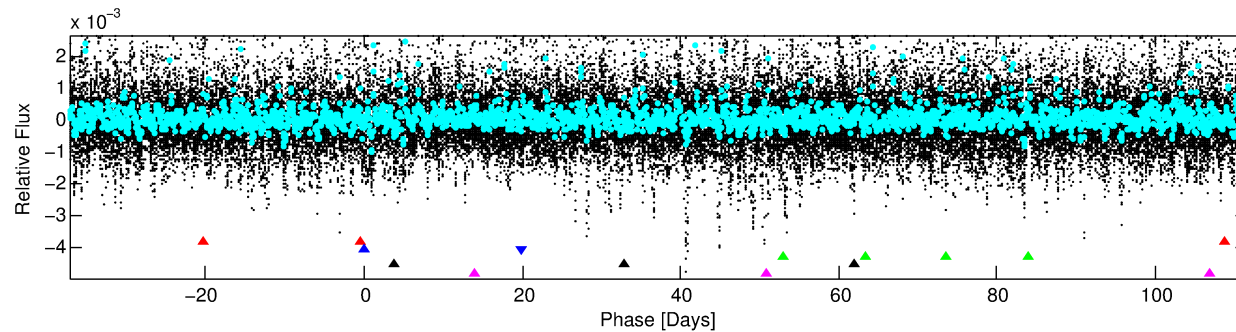
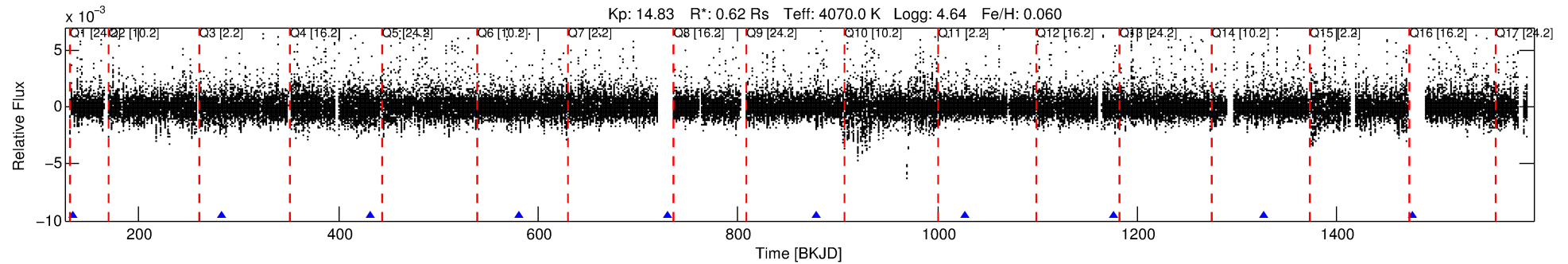
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009238899-02

No Significant Match Found

DV One-Page Summary

KIC: 9238899 Candidate: 2 of 5 Period: 148.940 d



TPS TCE Results:

Period = 148.94022 d
Epoch = 135.3661 BKJD

DV fit results are unavailable

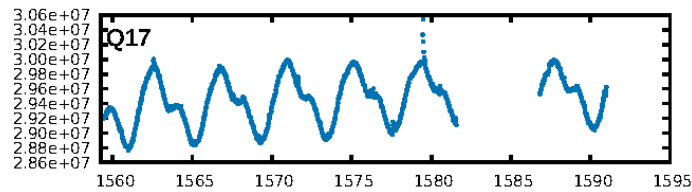
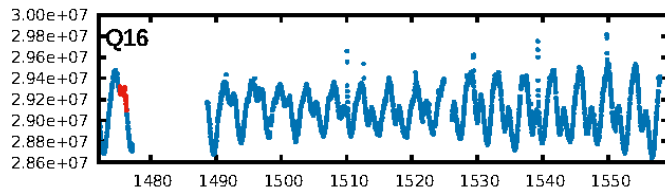
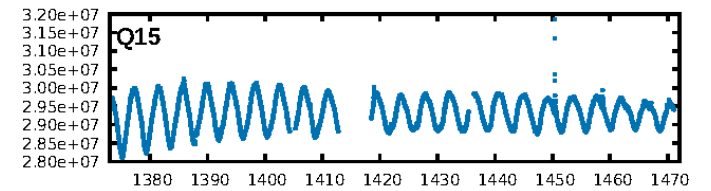
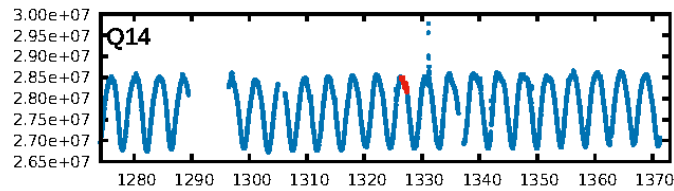
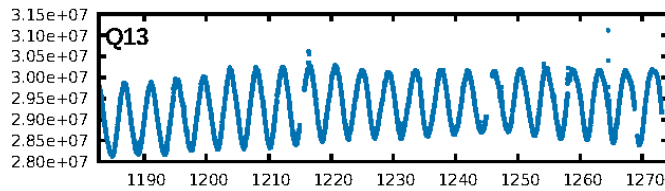
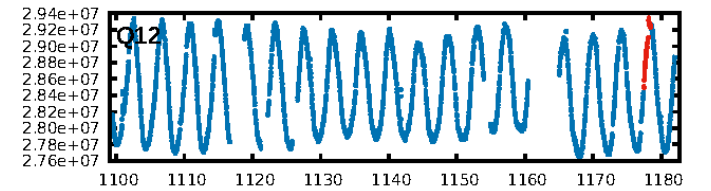
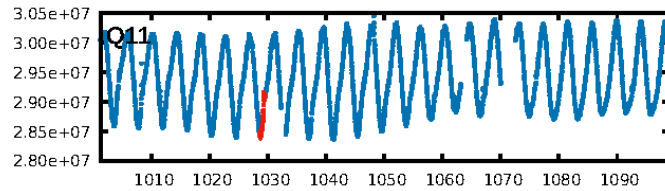
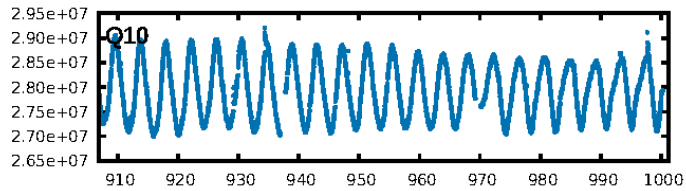
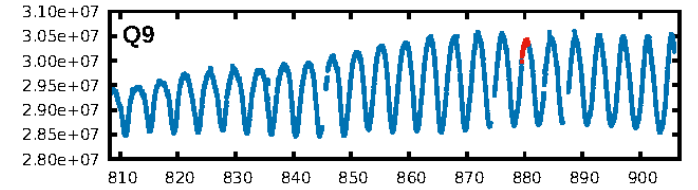
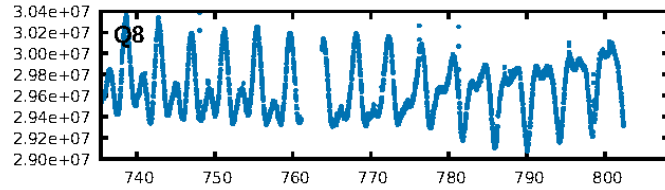
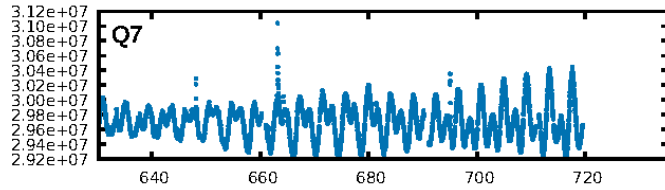
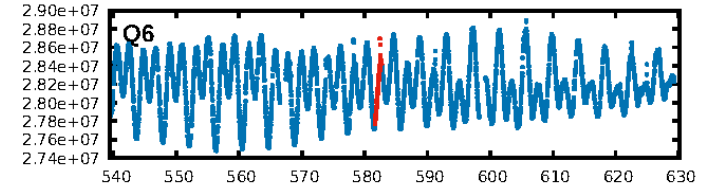
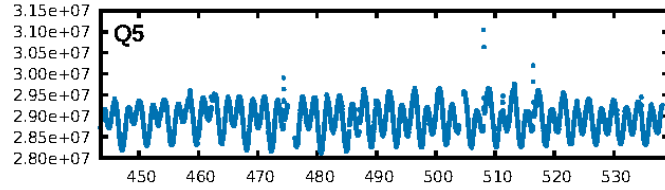
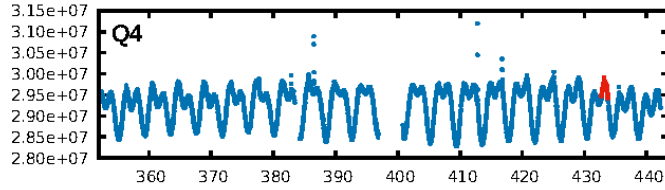
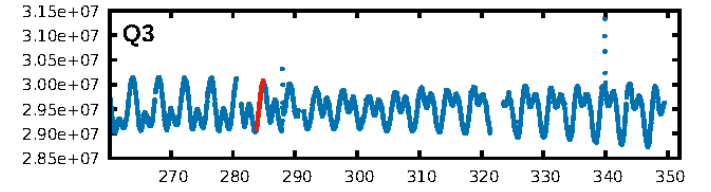
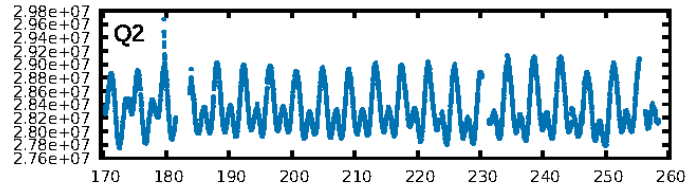
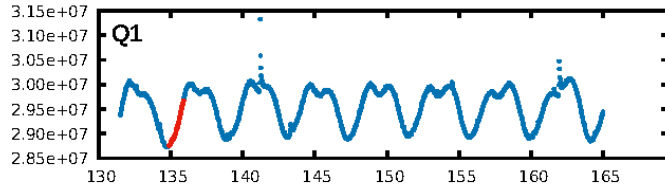
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [554.90 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 0.3419
Centroid-sig: 67.8%
Centroid-so: 0.373 arcsec [0.59 σ]
OotOffset-rm: 0.085 arcsec [0.70 σ]
KicOffset-rm: 0.289 arcsec [3.32 σ]
OotOffset-st: 2/2/1/2 [7]
KicOffset-st: 2/2/1/2 [7]
DiffImageQuality-fgm: 0.86 [6/7]
DiffImageOverlap-fno: 0.86 [6/7]

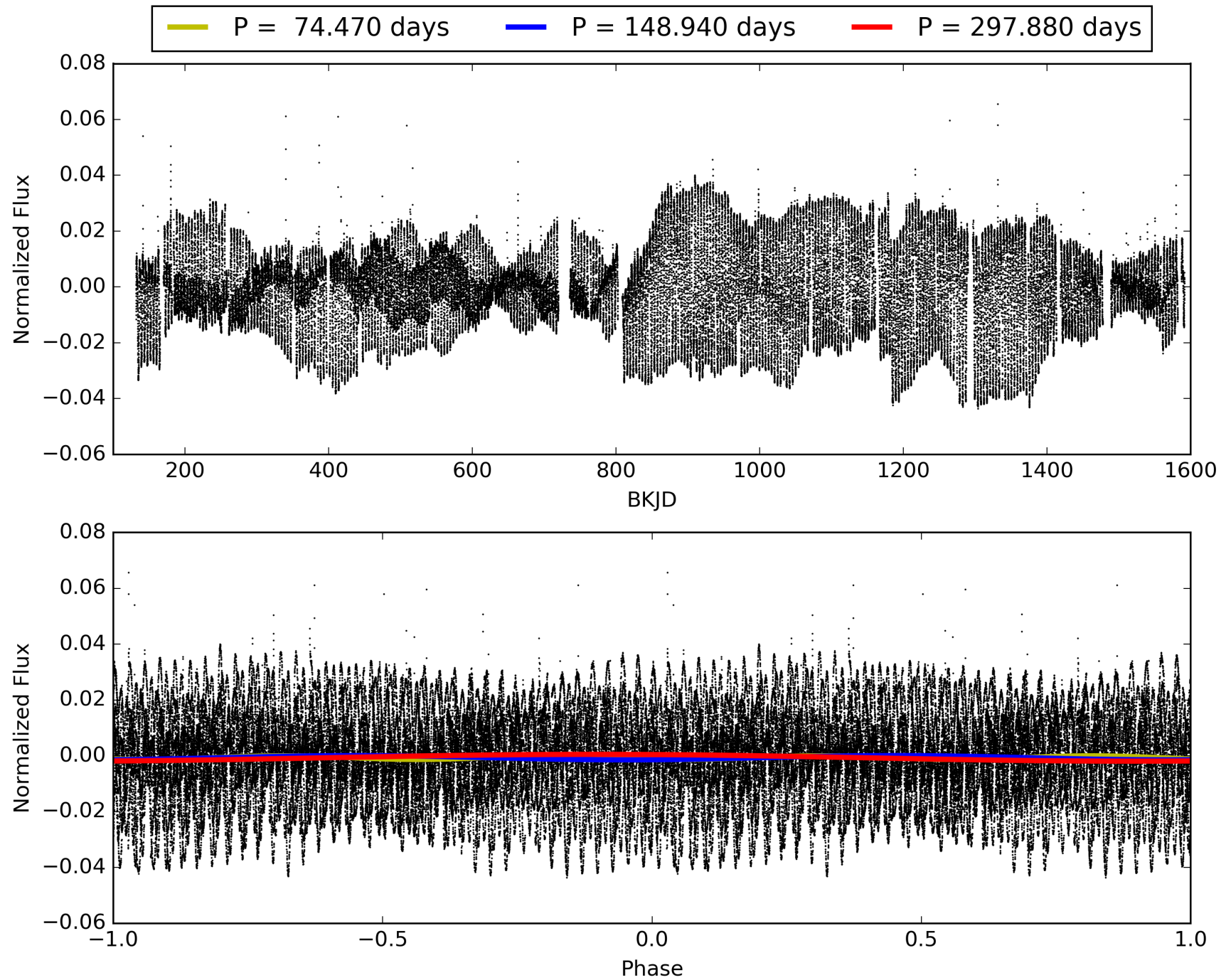
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:15:15 Z

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

TCE 009238899-02, PDC Light Curves

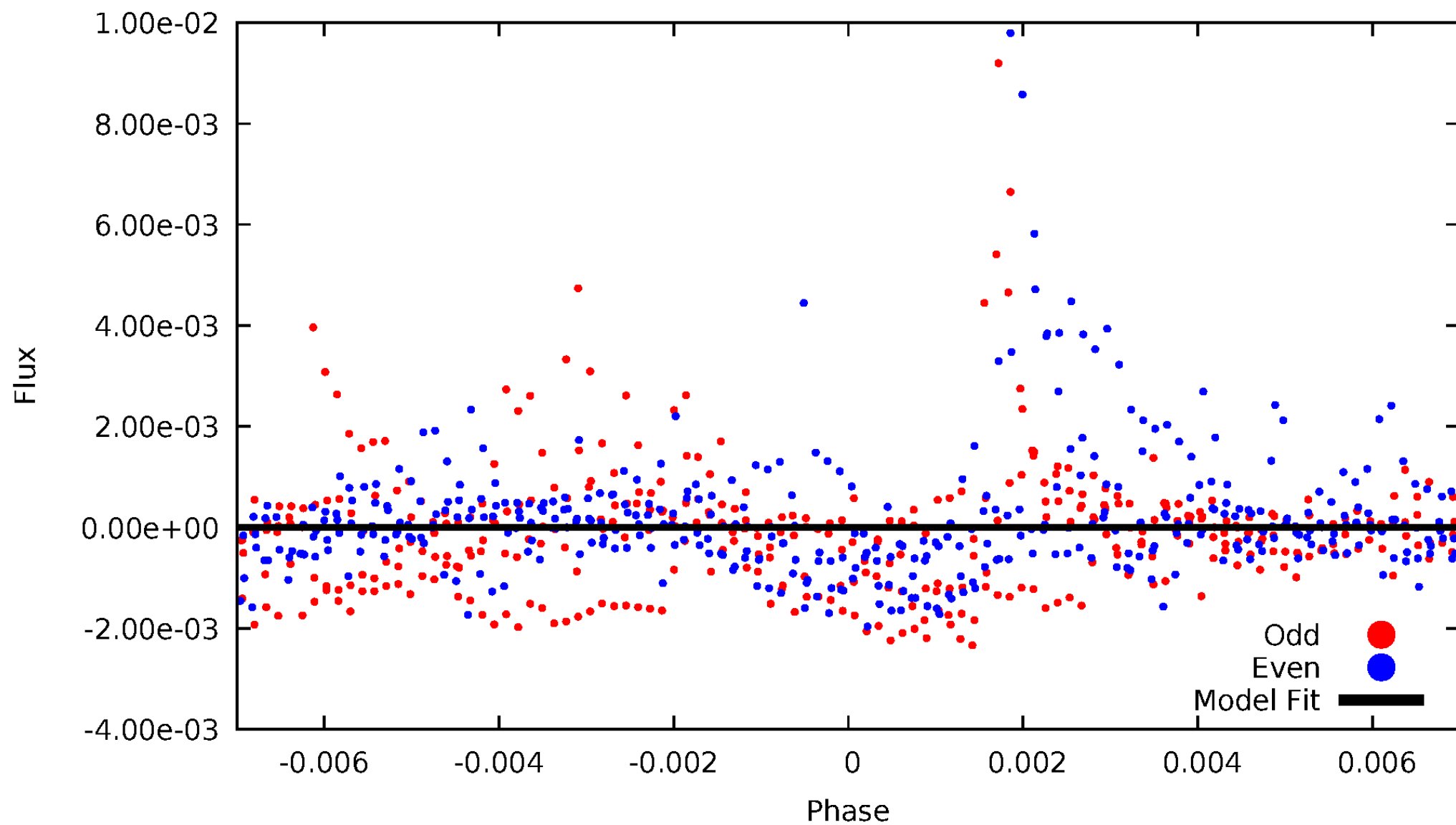


TCE 009238899-02



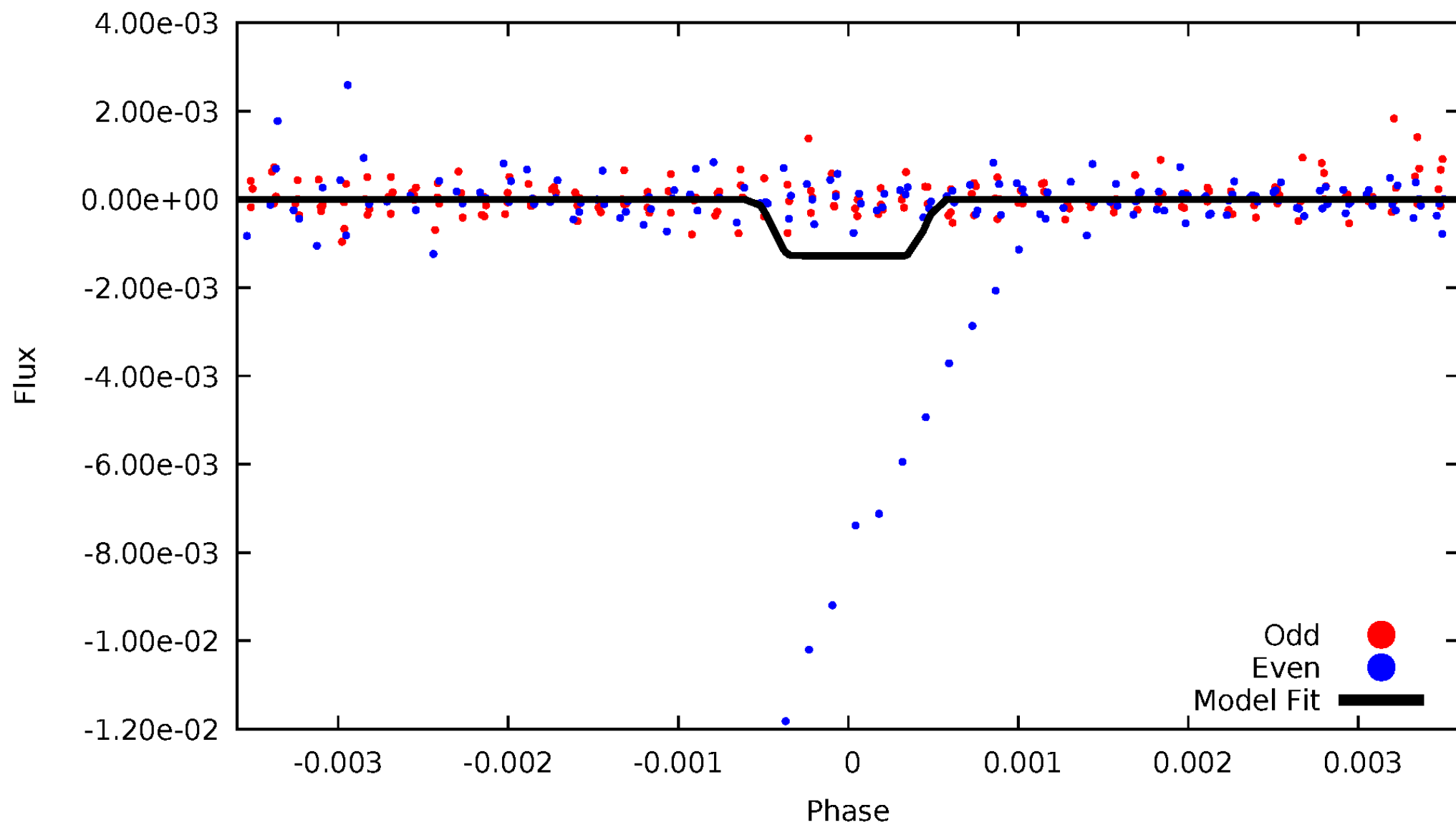
DV Odd/Even

TCE 009238899-02



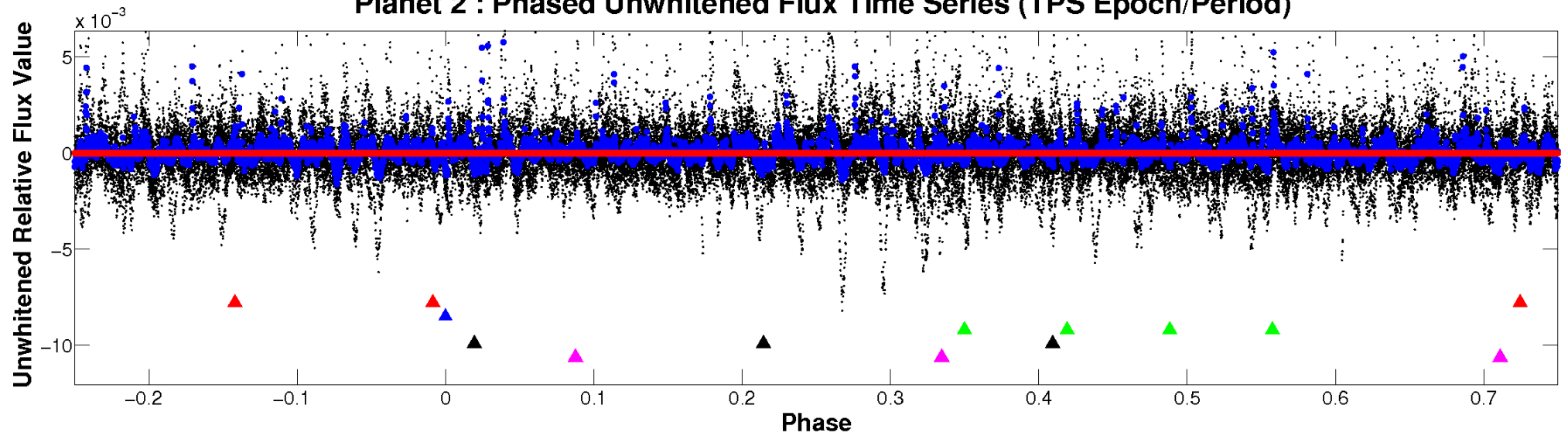
ALT Odd/Even

TCE 009238899-02

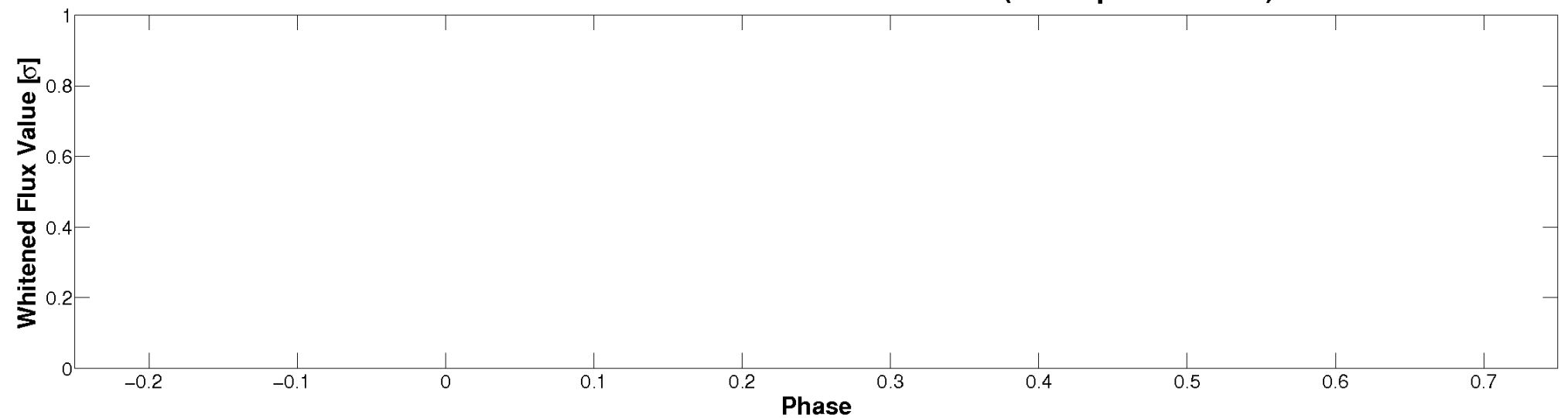


Non-Whitened Vs. Whitened Light Curve

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

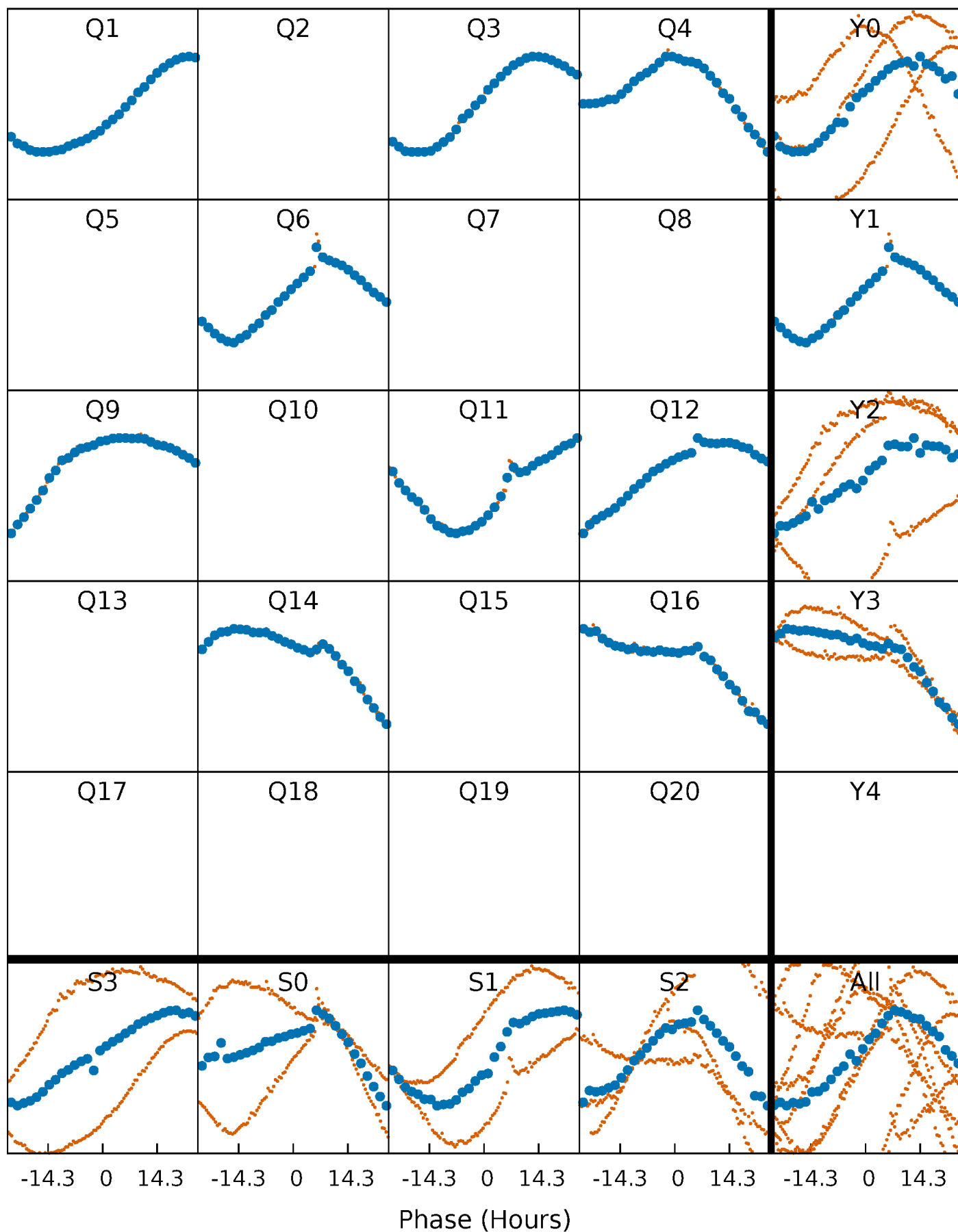


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



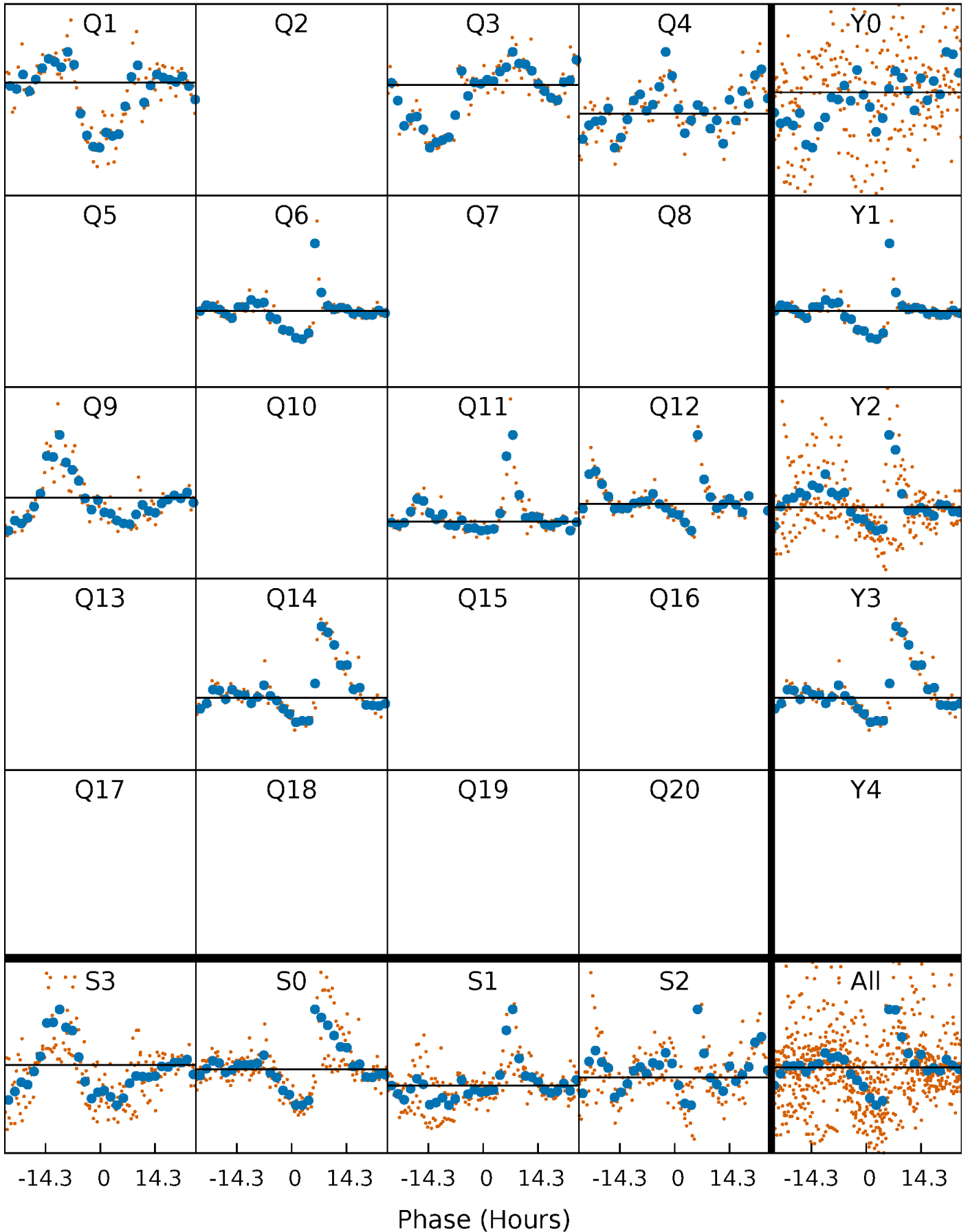
PDC Quarter-Phased Transit Curves

TCE 009238899-02 P=148.940219 Days $T_0=135.366126$ (BKJD)



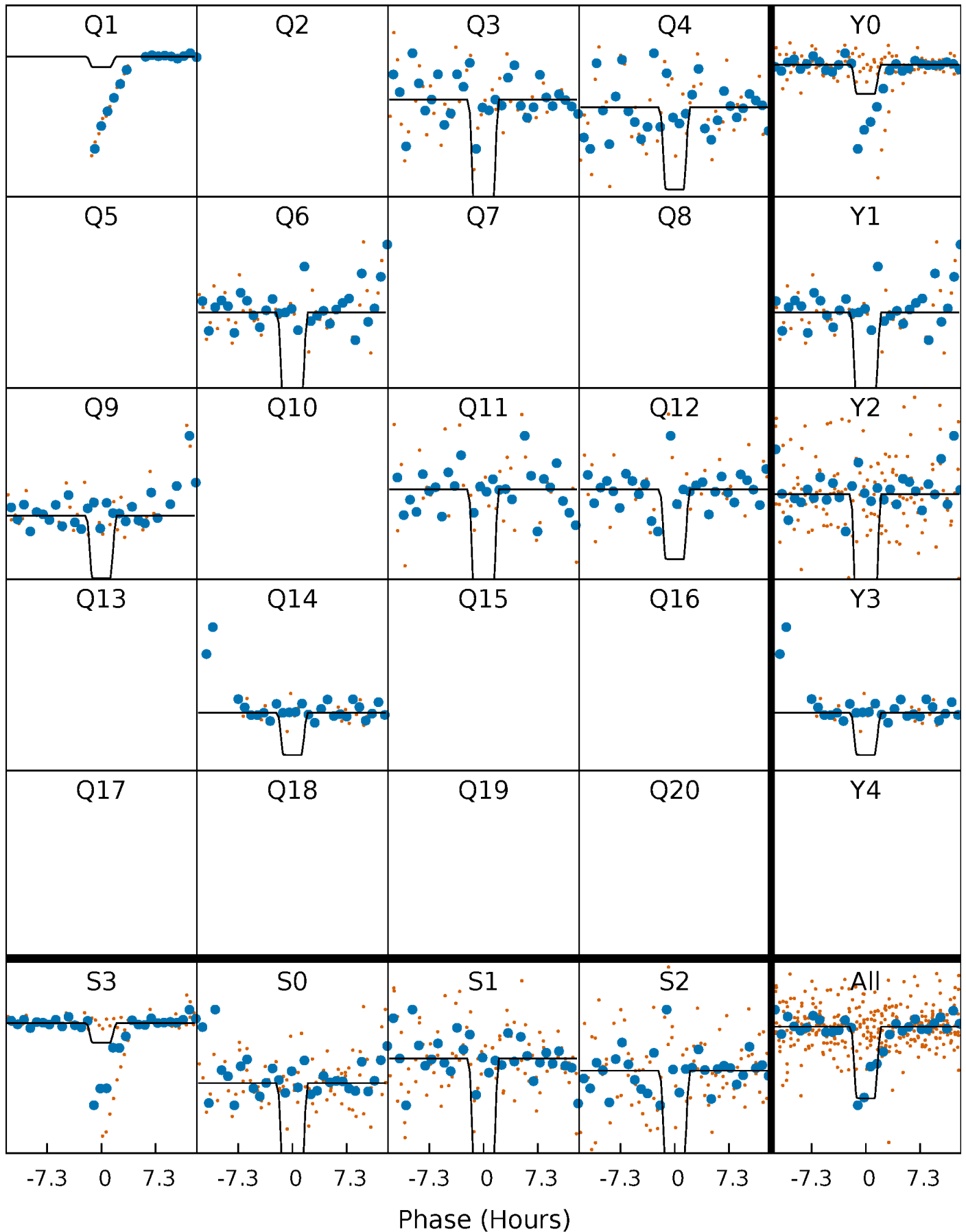
DV Quarter-Phased Transit Curves

TCE 009238899-02 P=148.940219 Days $T_0=135.366126$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

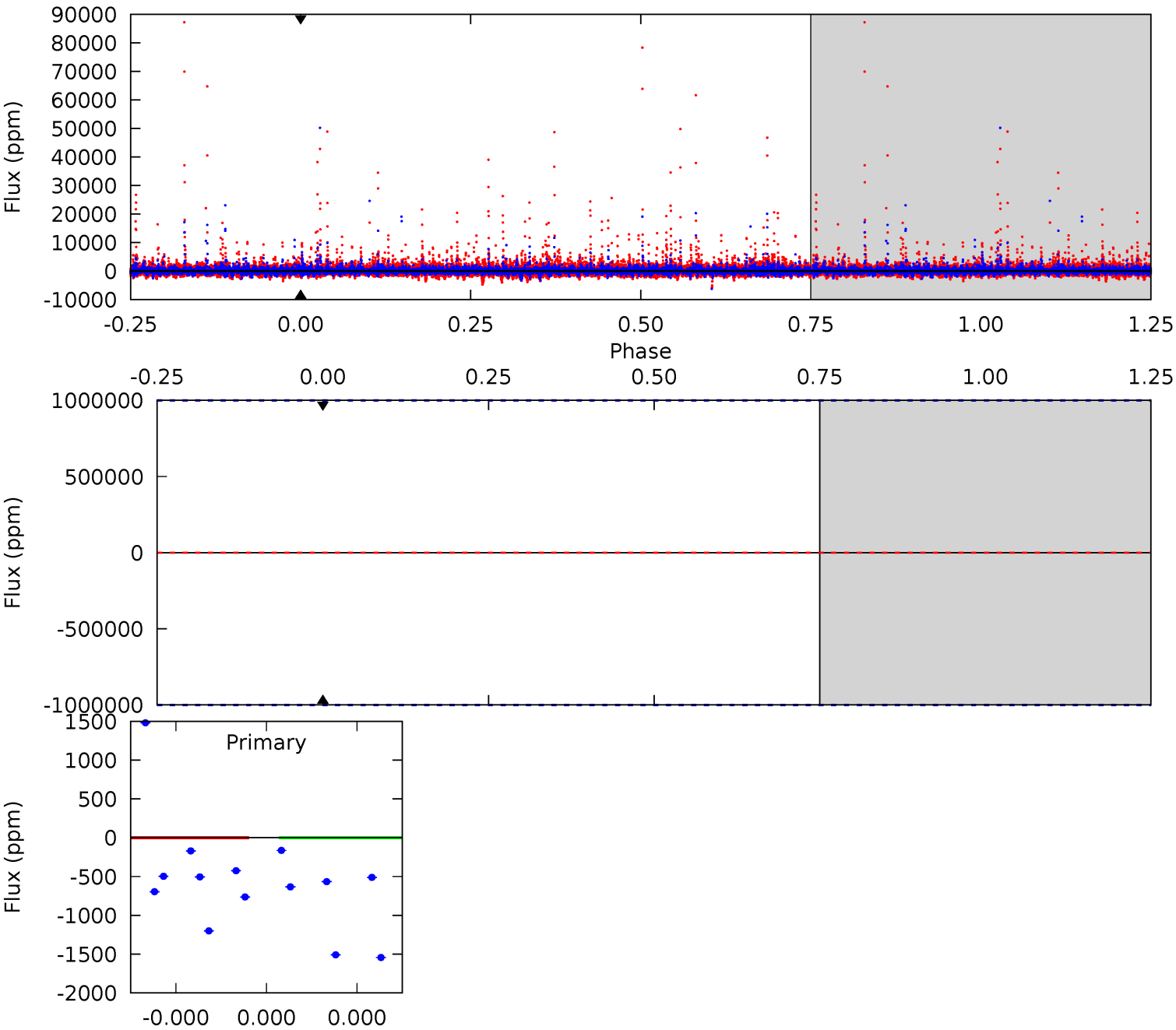
TCE 009238899-02 P=148.940219 Days $T_0=134.509214$ (BKJD)



DV Model-Shift Uniqueness Test

009238899-02, P = 148.940219 Days, E = 135.366126 Days

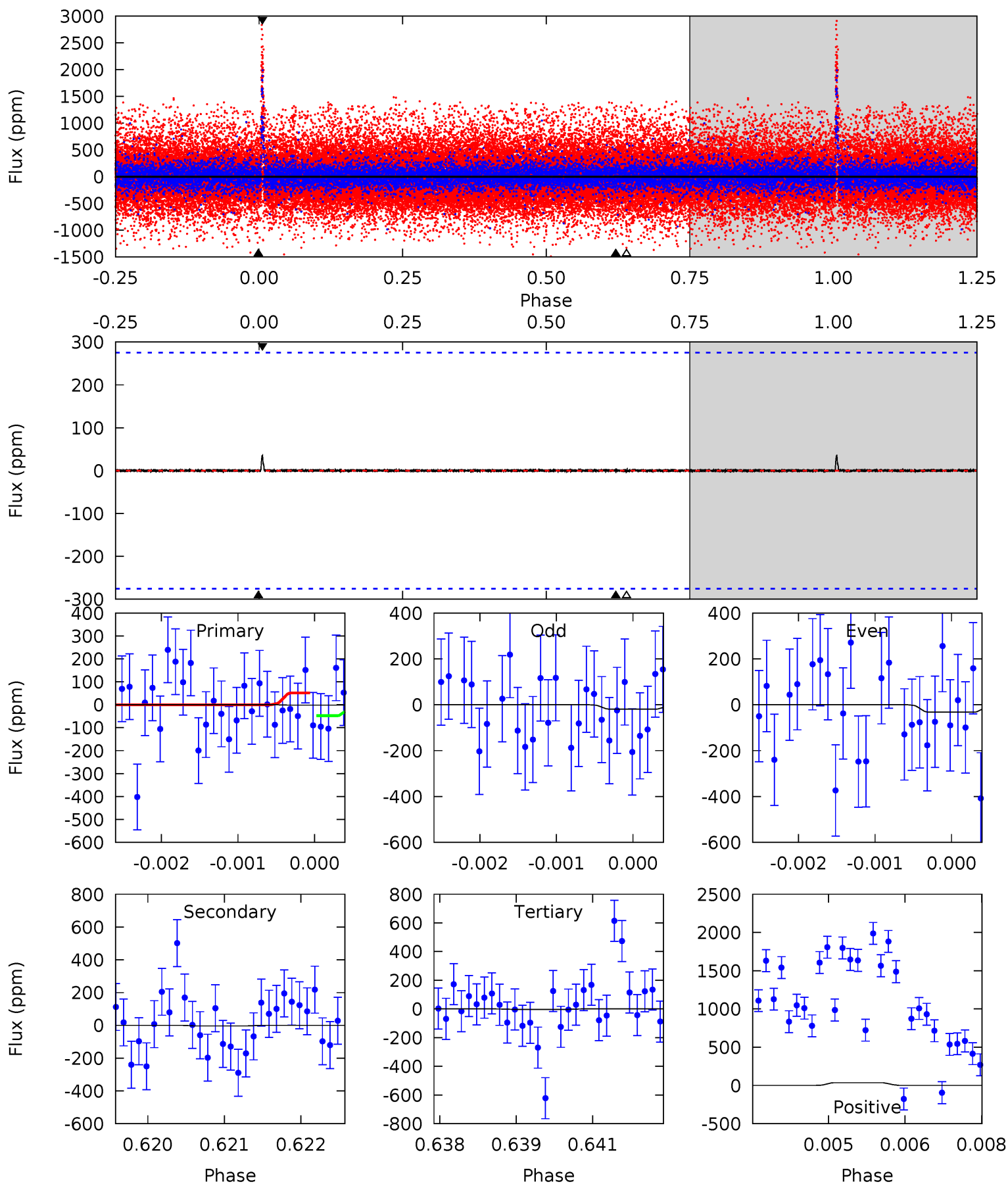
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009238899-02, P = 148.940219 Days, E = 134.509214 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.03	0.08	0.07	0.71	5.44	3.27	0.03	-0.04	-0.68	0.01	-0.63	0.12	-28.9	0.90	0.04



Stellar Parameters For KIC 009238899

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4070^{+141}_{-155}	$4.643^{+0.056}_{-0.020}$	$0.060^{+0.250}_{-0.300}$	$0.619^{+0.038}_{-0.065}$	$0.613^{+0.052}_{-0.063}$	$3.645^{+1.005}_{-0.361}$
	+3%/-4%	+1%/-0%	+417%/-500%	+6%/-11%	+8%/-10%	+28%/-10%
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 009238899-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$5.26^{+5.32}_{-3.78}$	286^{+10}_{-12}	-2781^{+12464}_{-5953}	$-2565.474^{+811432.204}_{-666558.335}$
Alt.	-4 ± 51	$5.49^{+5.46}_{-3.59}$	286^{+11}_{-12}	1456^{+775}_{-3676}	$4.228^{+380.470}_{-352.042}$

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

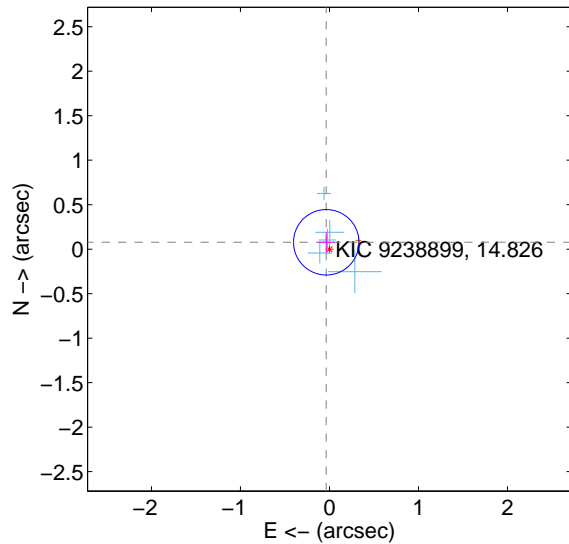
Supplemental centroid analysis for 009238899-02. Kepler magnitude: 14.83. Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

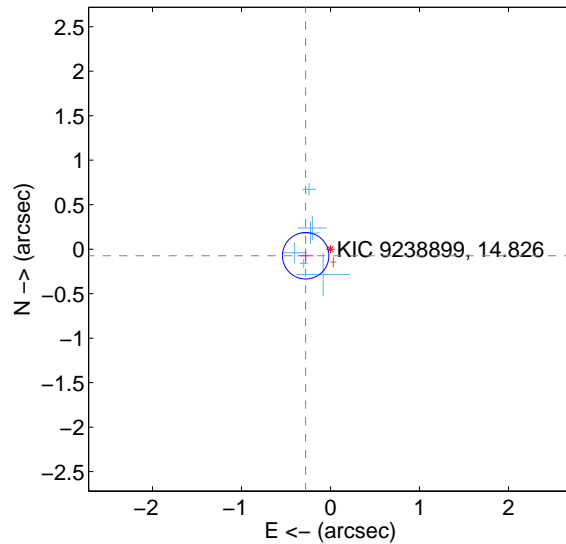
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.085 ± 0.123	0.70	0.036 ± 0.092	0.077 ± 0.115
PRF-fit source offset from KIC position	0.289 ± 0.087	3.32	0.279 ± 0.087	-0.074 ± 0.083
photometric centroid source offset	0.37 ± 0.63	0.59	-0.24 ± 0.66	-0.29 ± 0.61

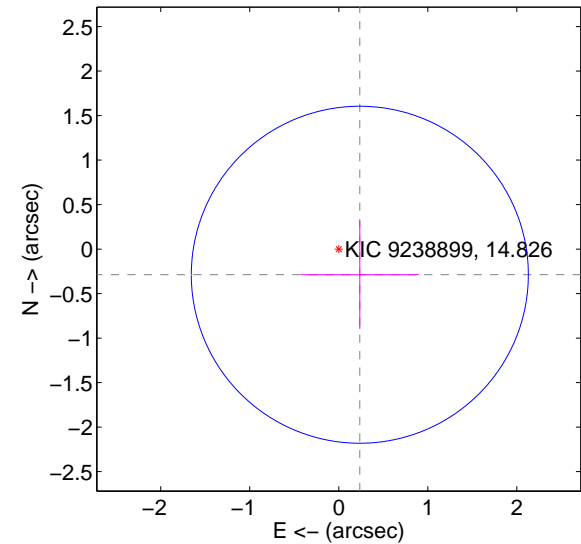
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

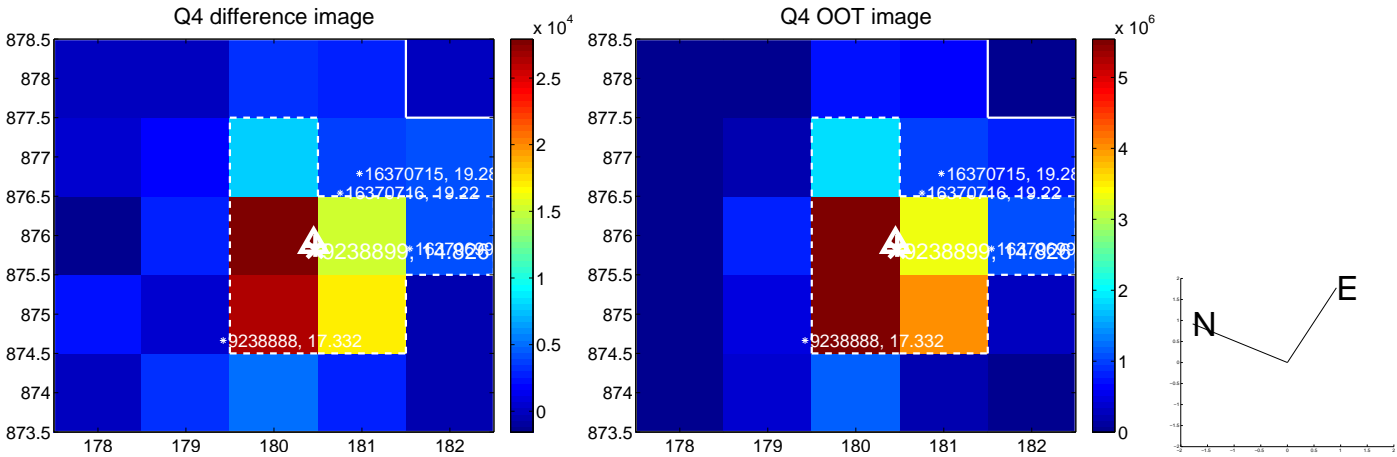
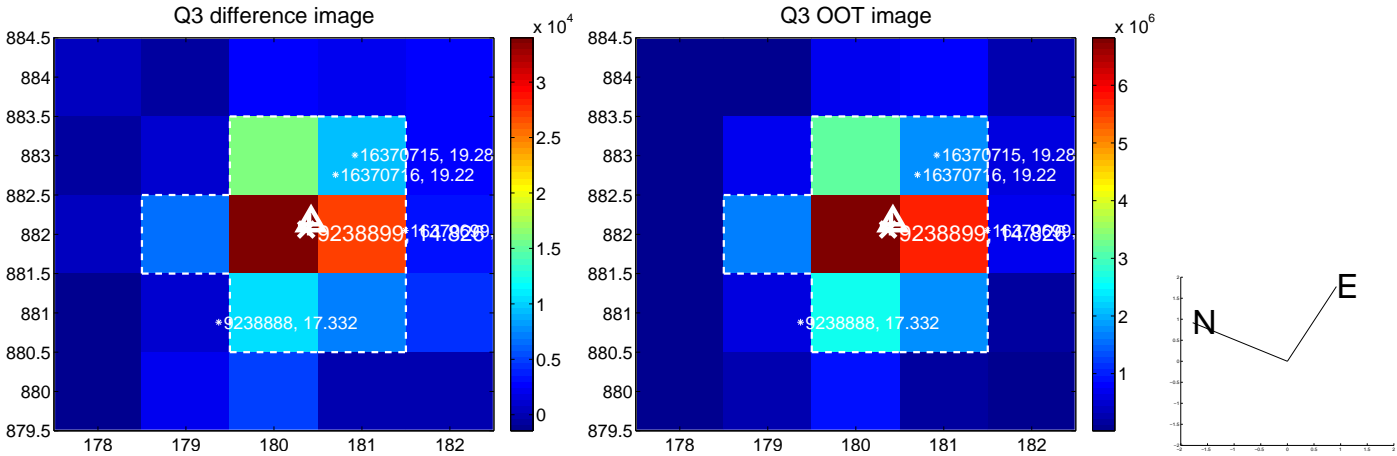
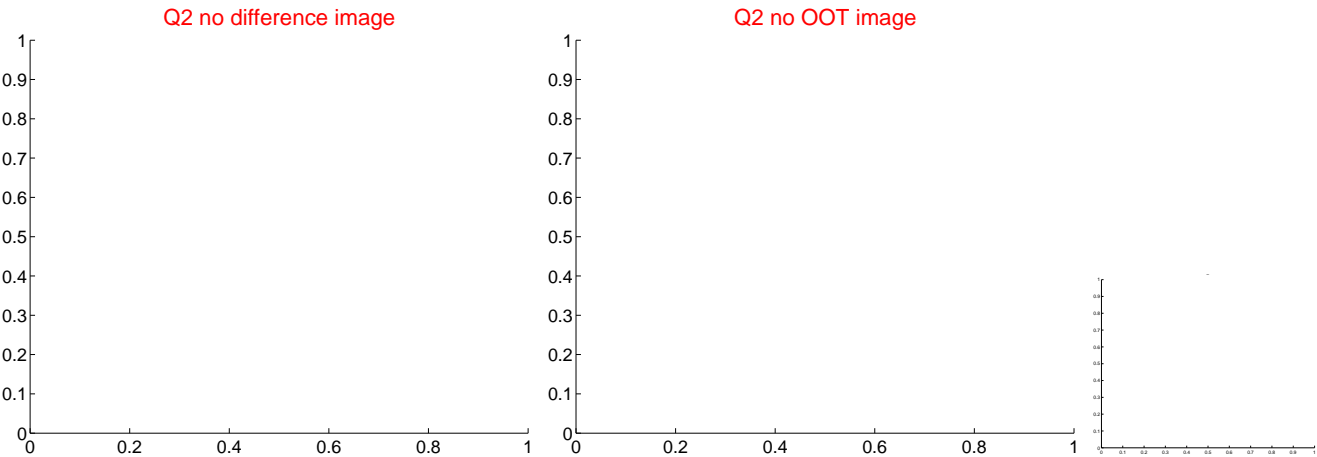
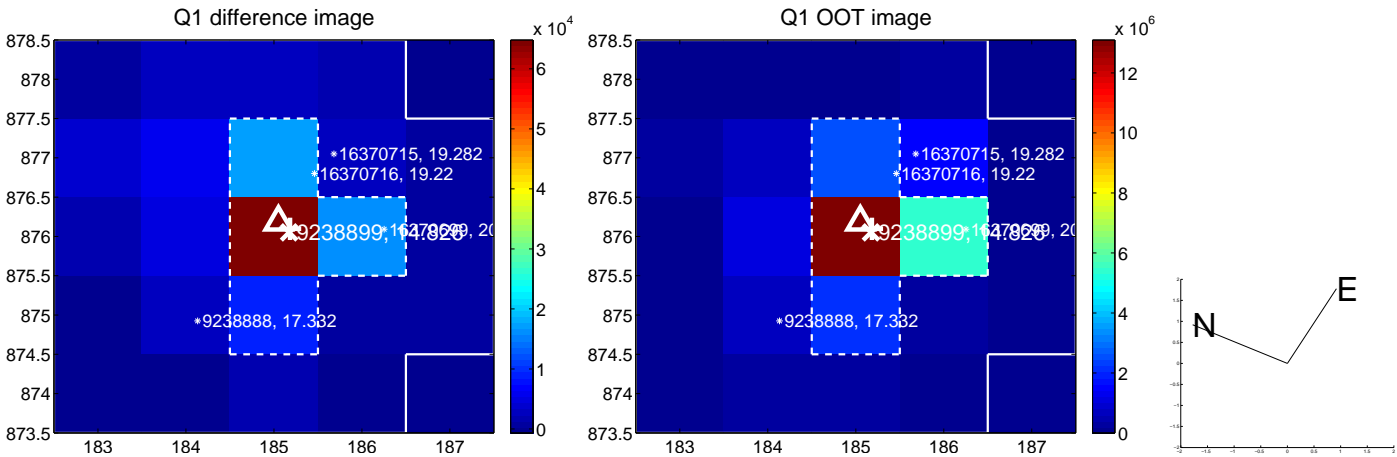


offset from photometric centroids

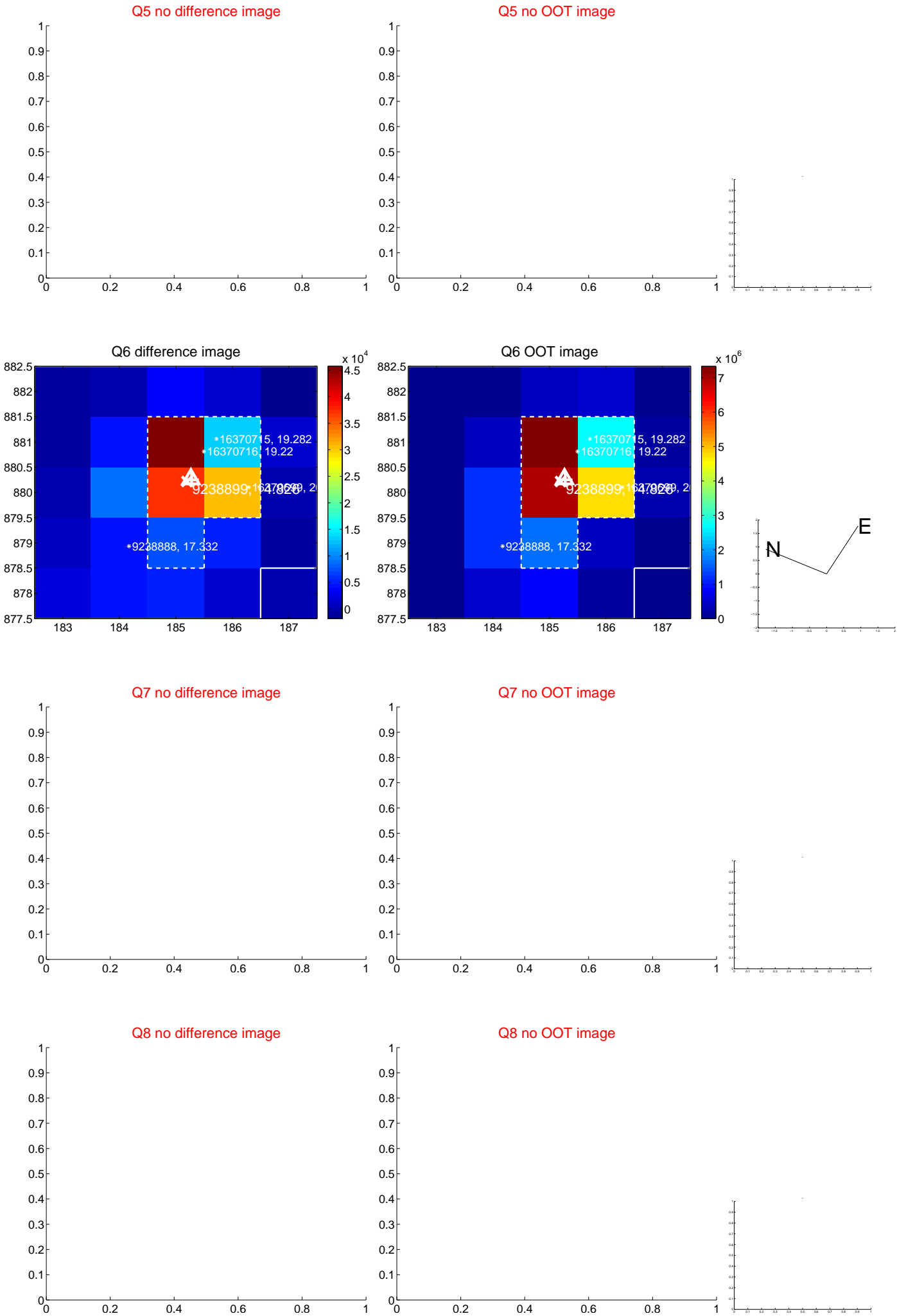


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

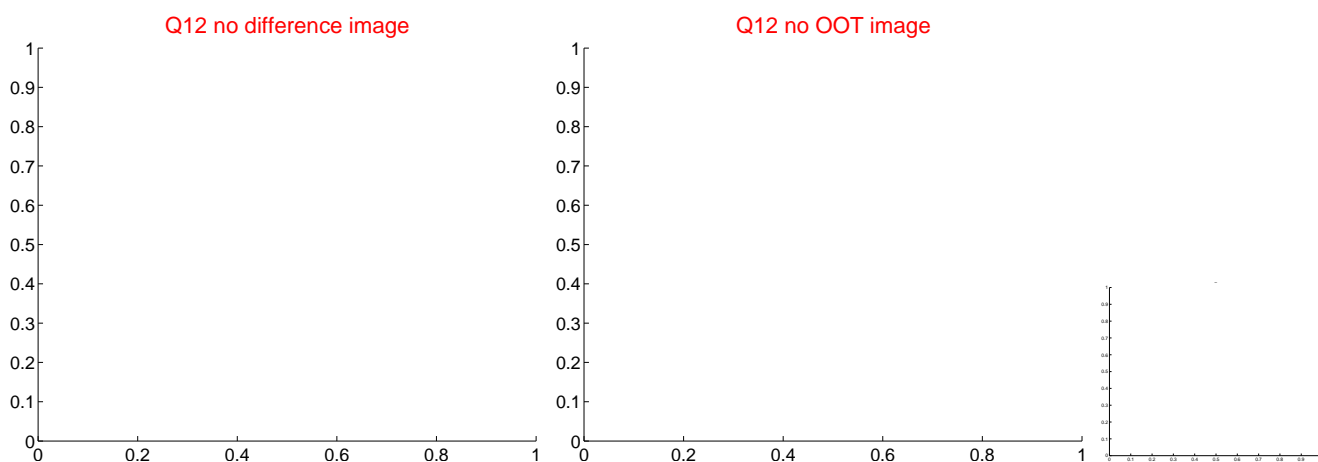
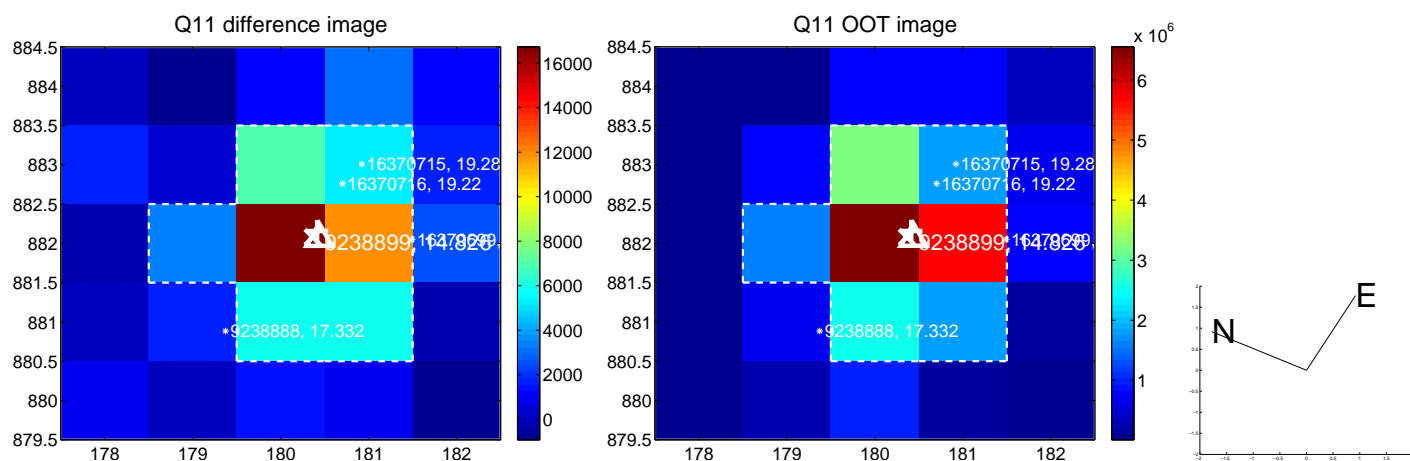
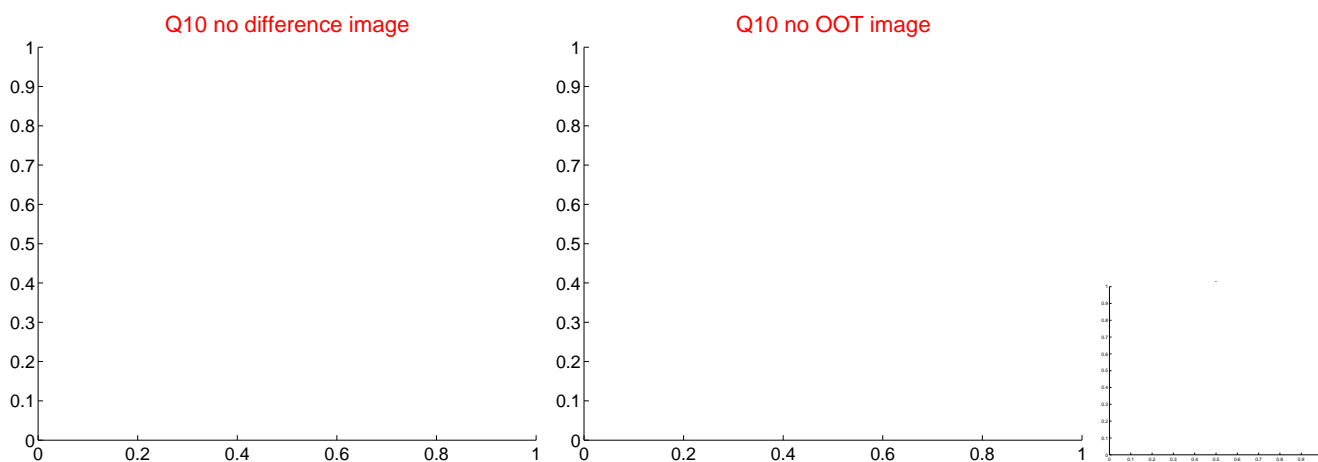
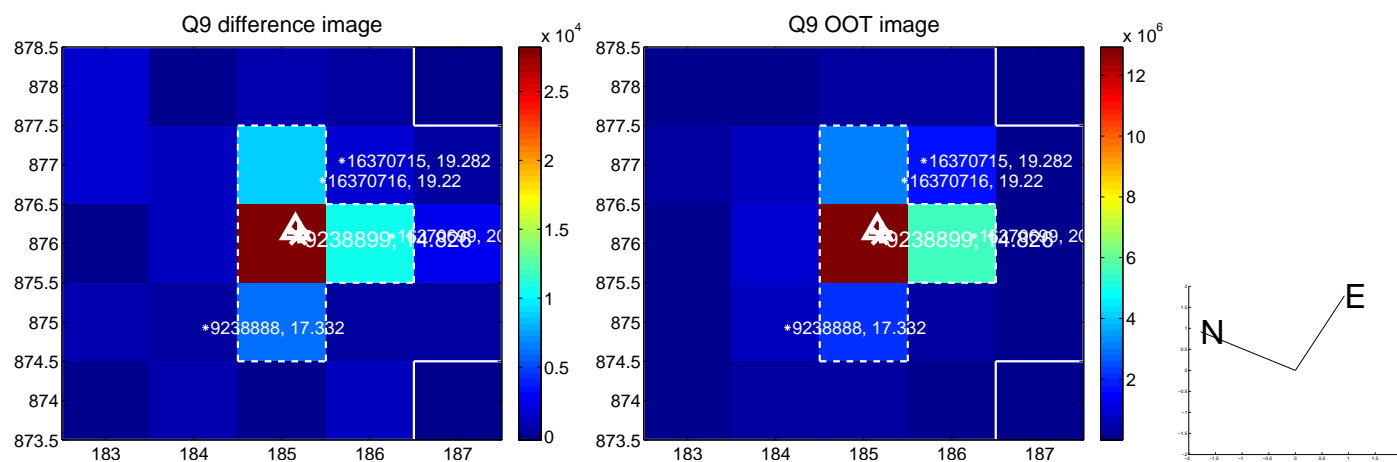
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



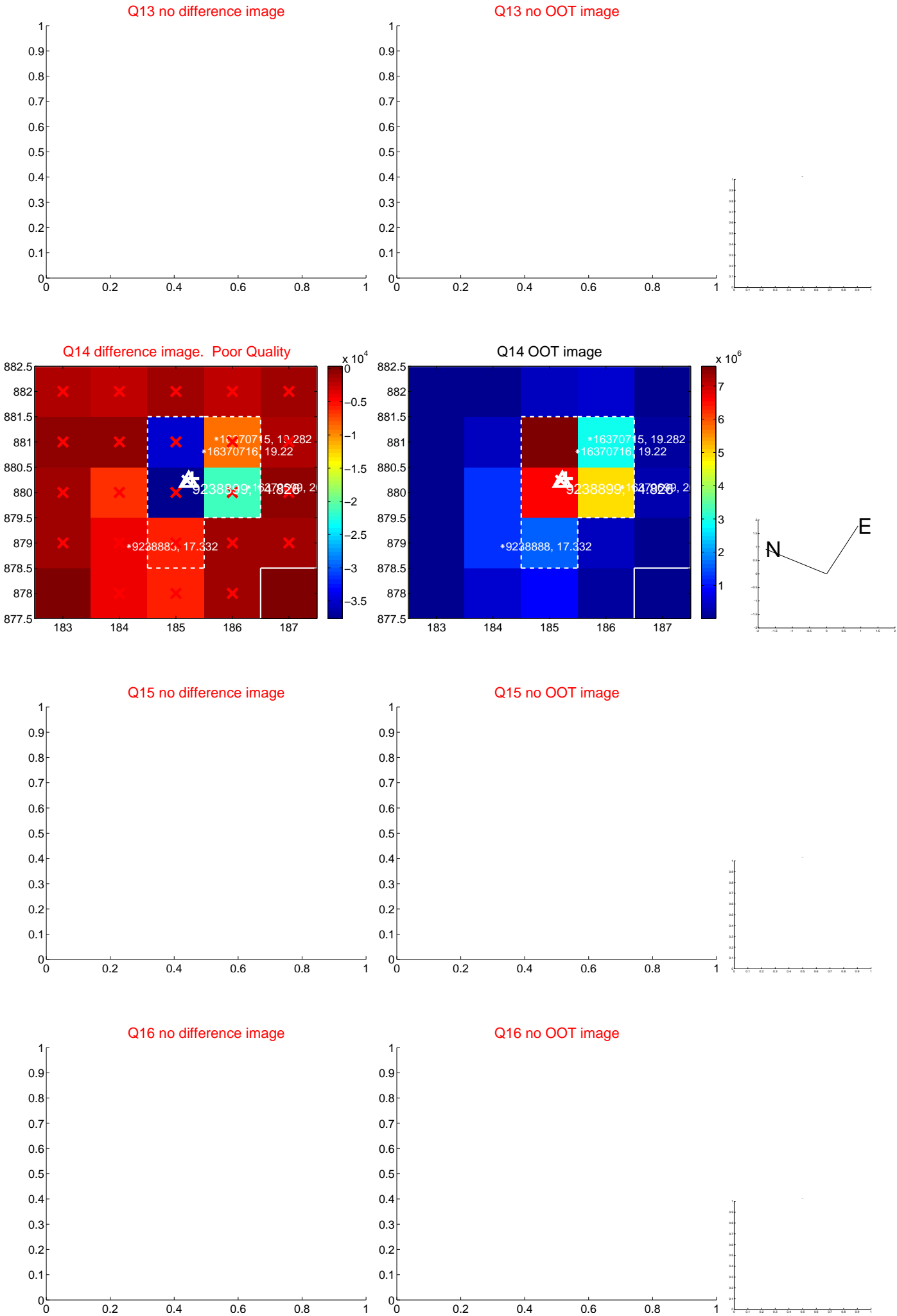
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



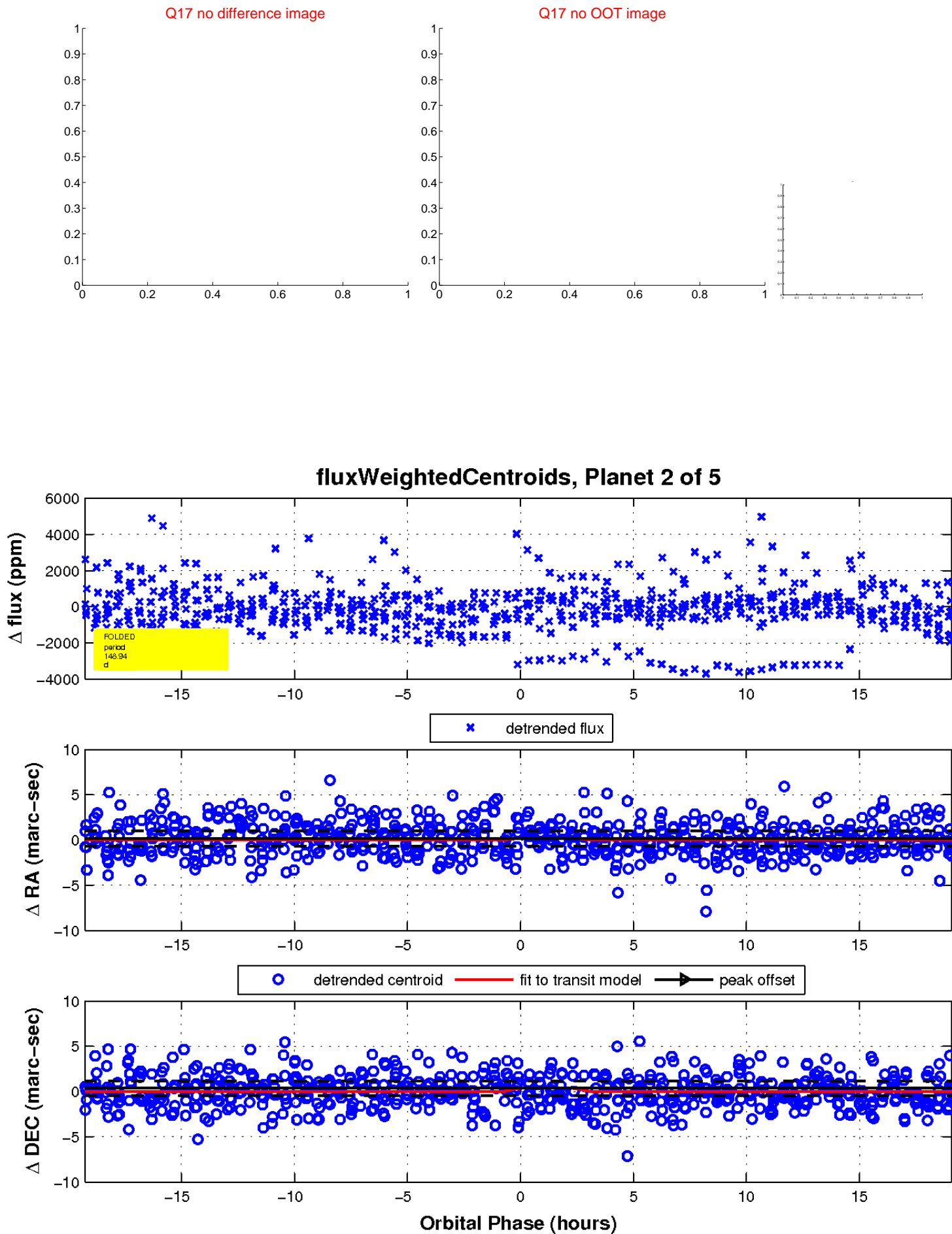
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

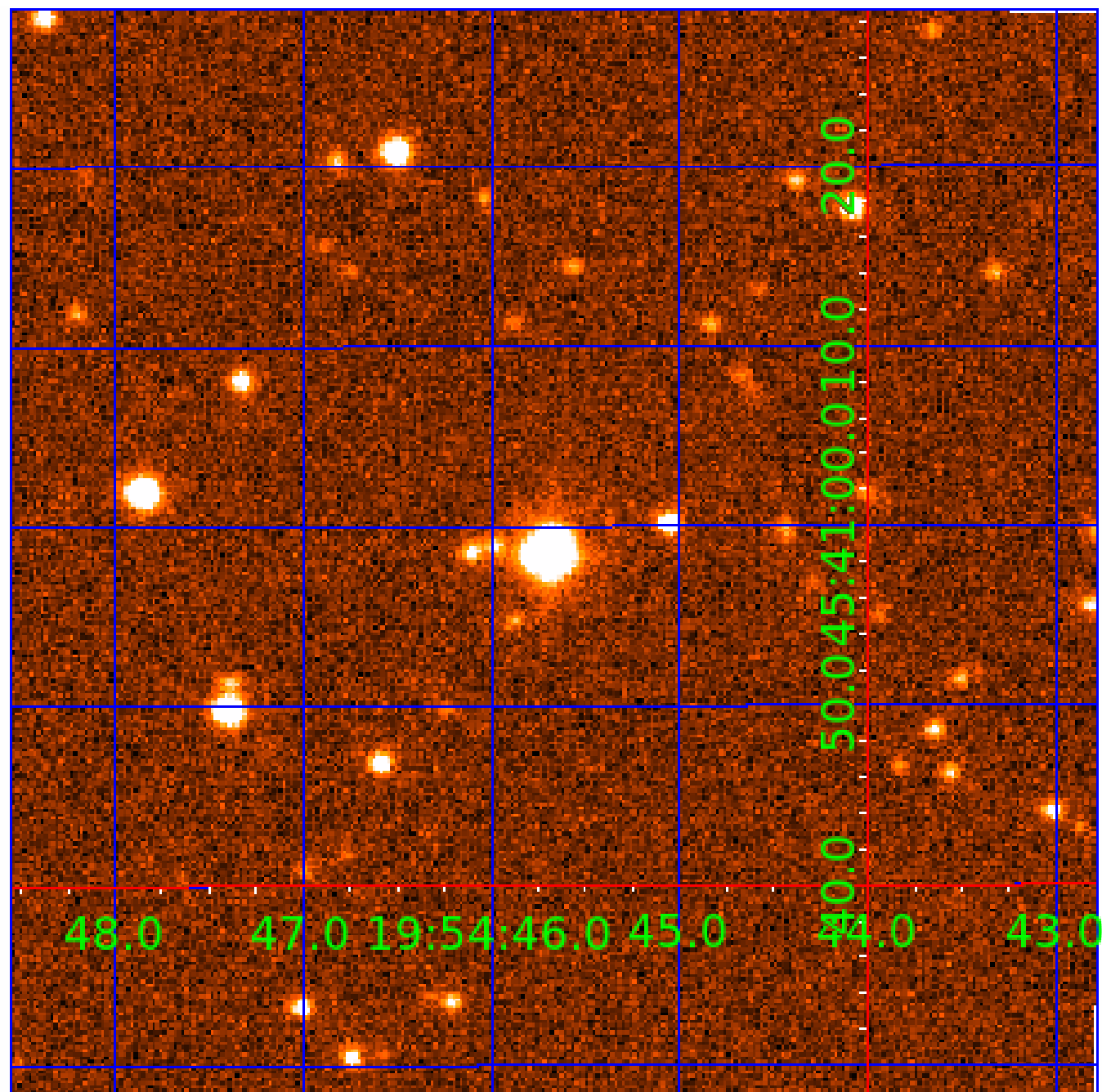


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009238899

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})
009238899-01	OBS	No	575.879513	134.103671	1453.9	3.696	13.1	7.5	0.62	4070	2.79	0.07
009238899-02	OBS	No	148.940219	135.366125	826.7	12.500	12.6	-1.0	0.62	4070	1.72	0.43
009238899-03	OBS	No	457.128491	187.484407	1804.0	4.628	10.3	8.1	0.62	4070	2.66	0.10
009238899-04	OBS	No	475.855286	436.147751	1342.1	4.013	12.3	4.9	0.62	4070	2.54	0.09
009238899-05	OBS	No	502.903968	334.136986	1359.6	3.500	12.3	-1.0	0.62	4070	2.21	0.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009238899-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
009238899-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
009238899-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009238899-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009238899-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

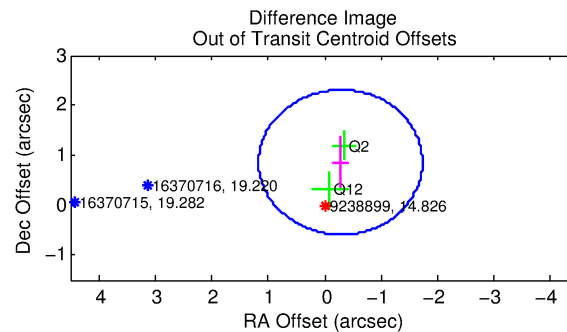
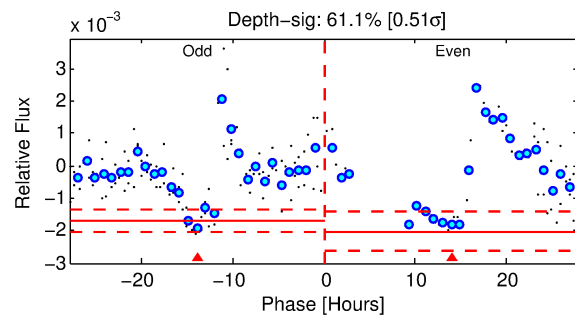
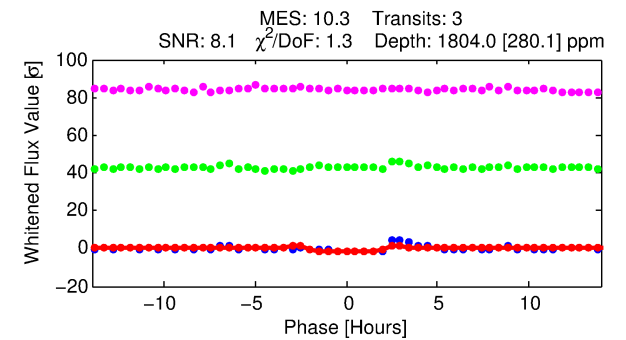
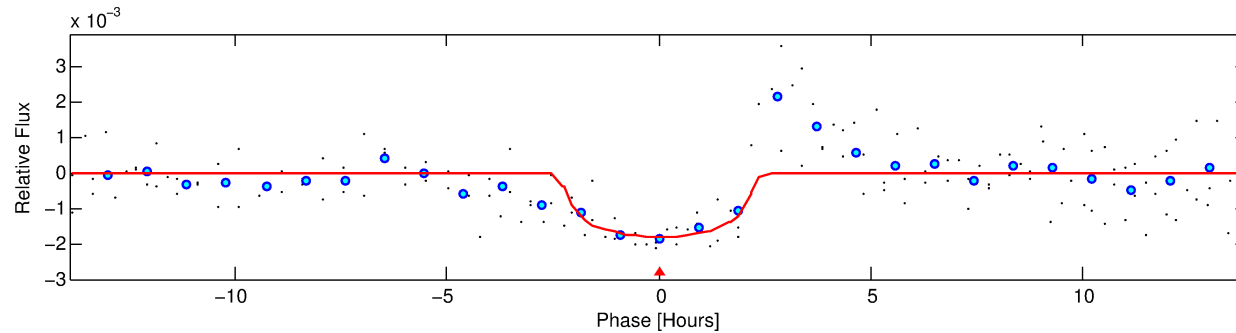
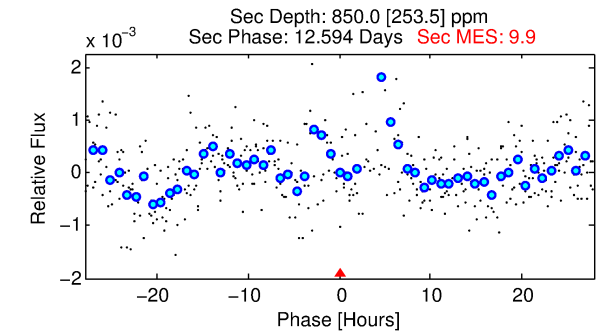
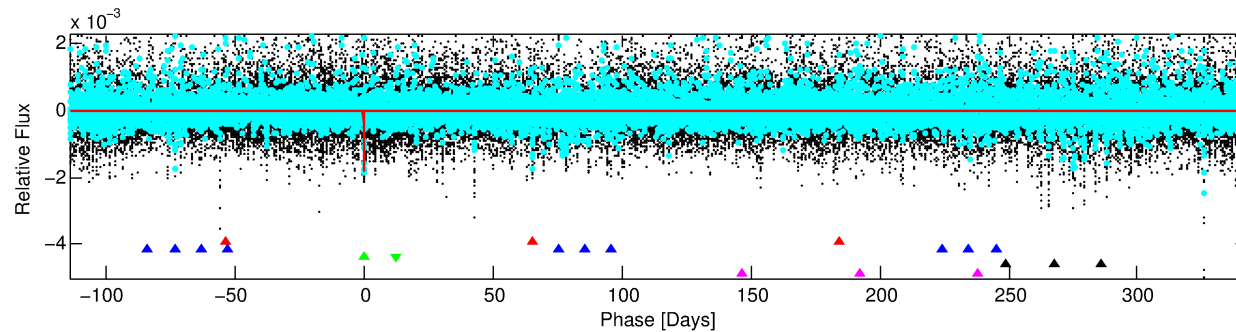
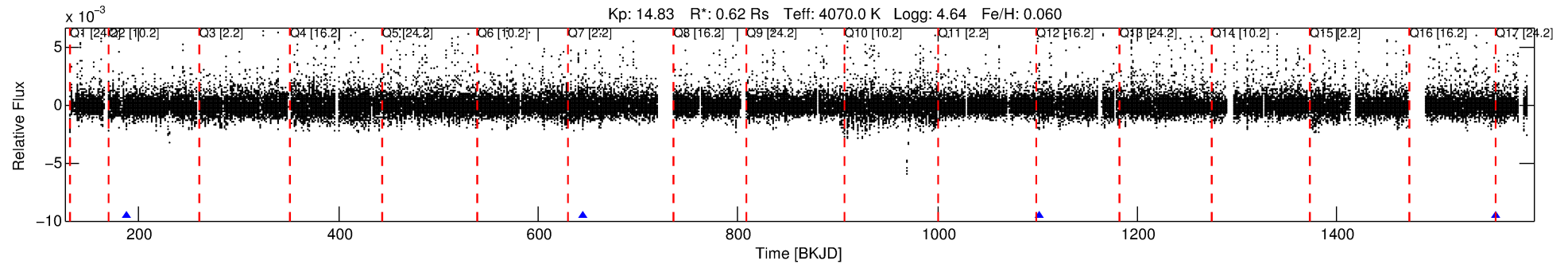
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009238899-03

No Significant Match Found

DV One-Page Summary

KIC: 9238899 Candidate: 3 of 5 Period: 457.128 d



DV Fit Results:

Period = 457.12849 [0.00592] d
Epoch = 187.4844 [0.0078] BKJD
Rp/R* = 0.0394 [0.0454]
a/R* = 677.97 [2571.61]
b = 0.52 [5.38]
Seff = 0.10 [0.02]
Teq = 142 [7] K
Rp = 2.66 [3.08] Re
a = 0.9875 [0.0811] AU
Ag = 64279.53 [149311.69] [0.43 σ]
Teffp = 3500 [2034] K [1.65 σ]

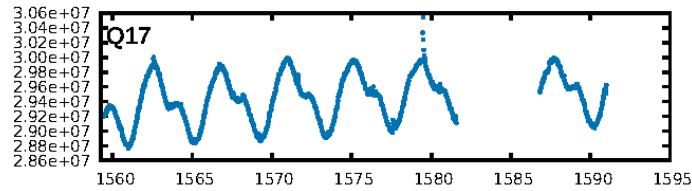
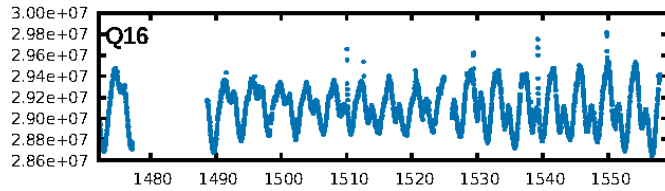
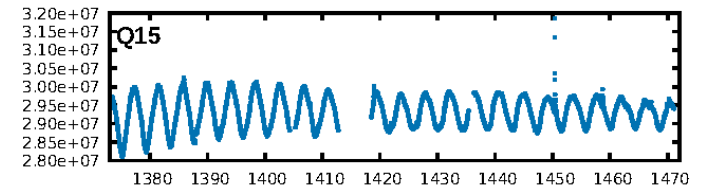
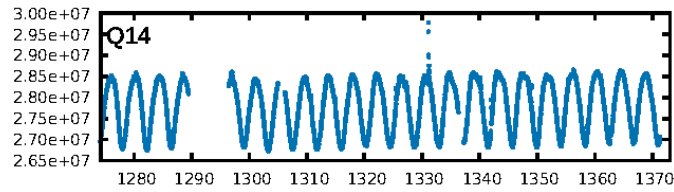
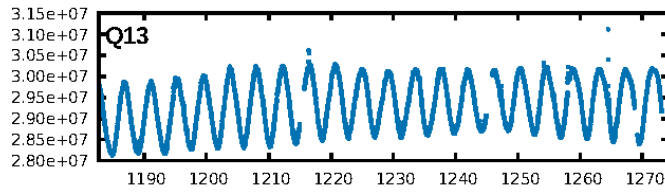
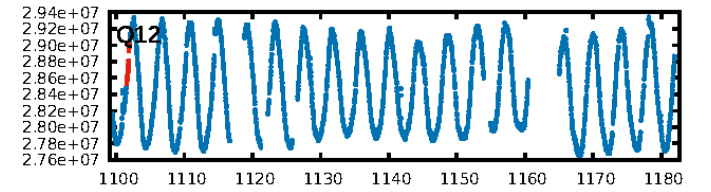
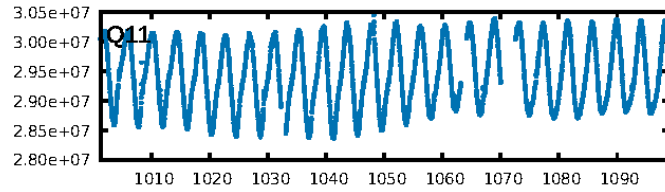
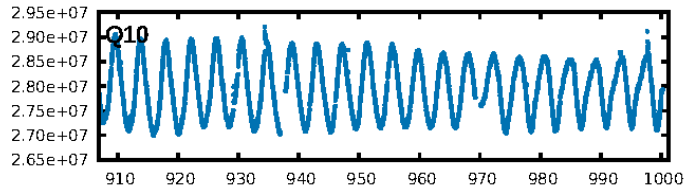
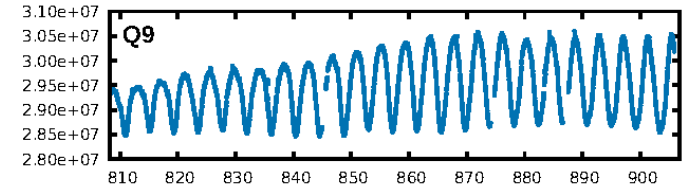
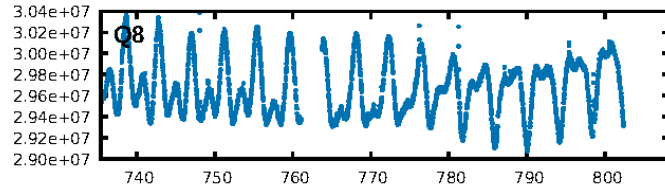
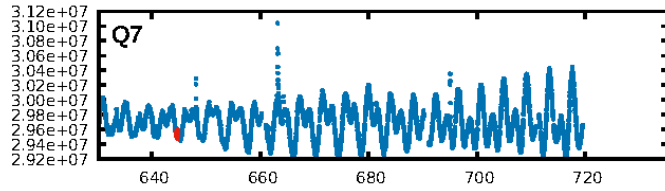
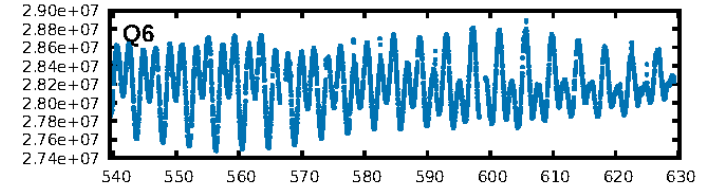
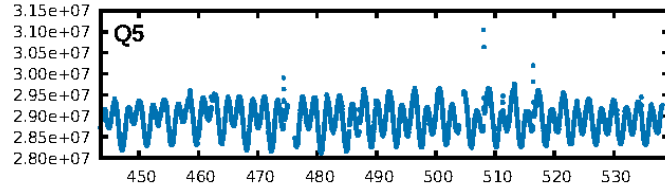
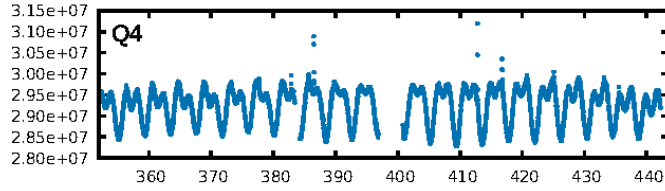
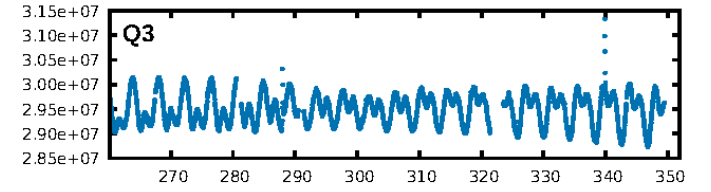
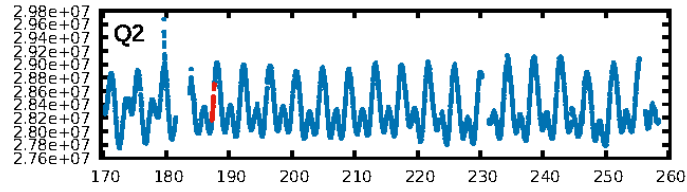
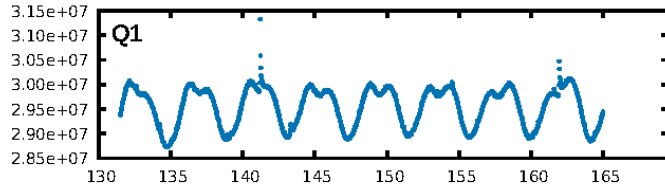
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [554.90 σ]
LongPeriod-sig: 100.0% [73.36 σ]
ModelChiSquare2-sig: 8.5%
ModelChiSquareGof-sig: 68.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.8814
Centroid-sig: 56.4%
Centroid-so: 0.664 arcsec [0.86 σ]
OotOffset-rm: 0.903 arcsec [1.87 σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-rm: 0.785 arcsec [1.67 σ]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

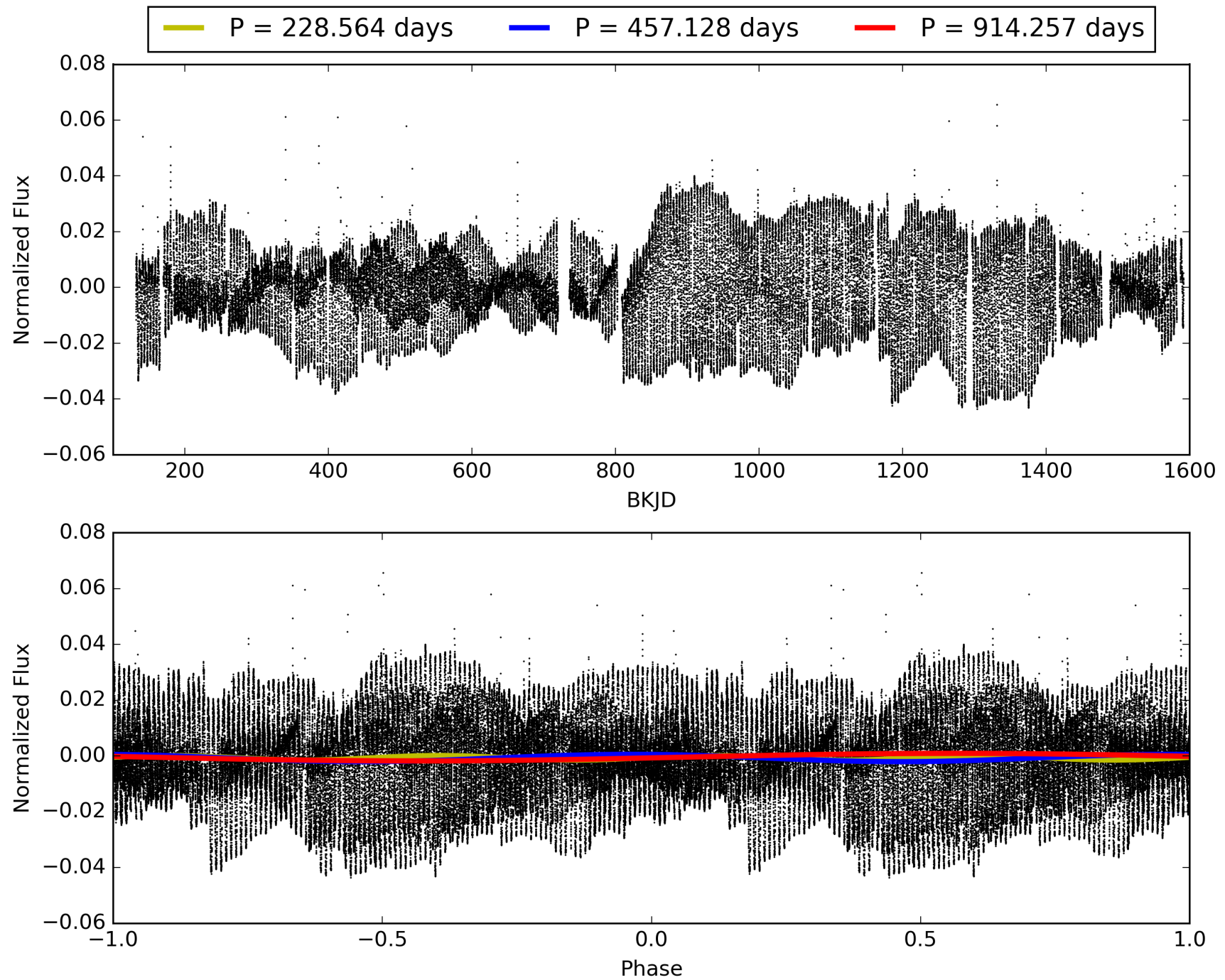
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:15:31 Z

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

TCE 009238899-03, PDC Light Curves

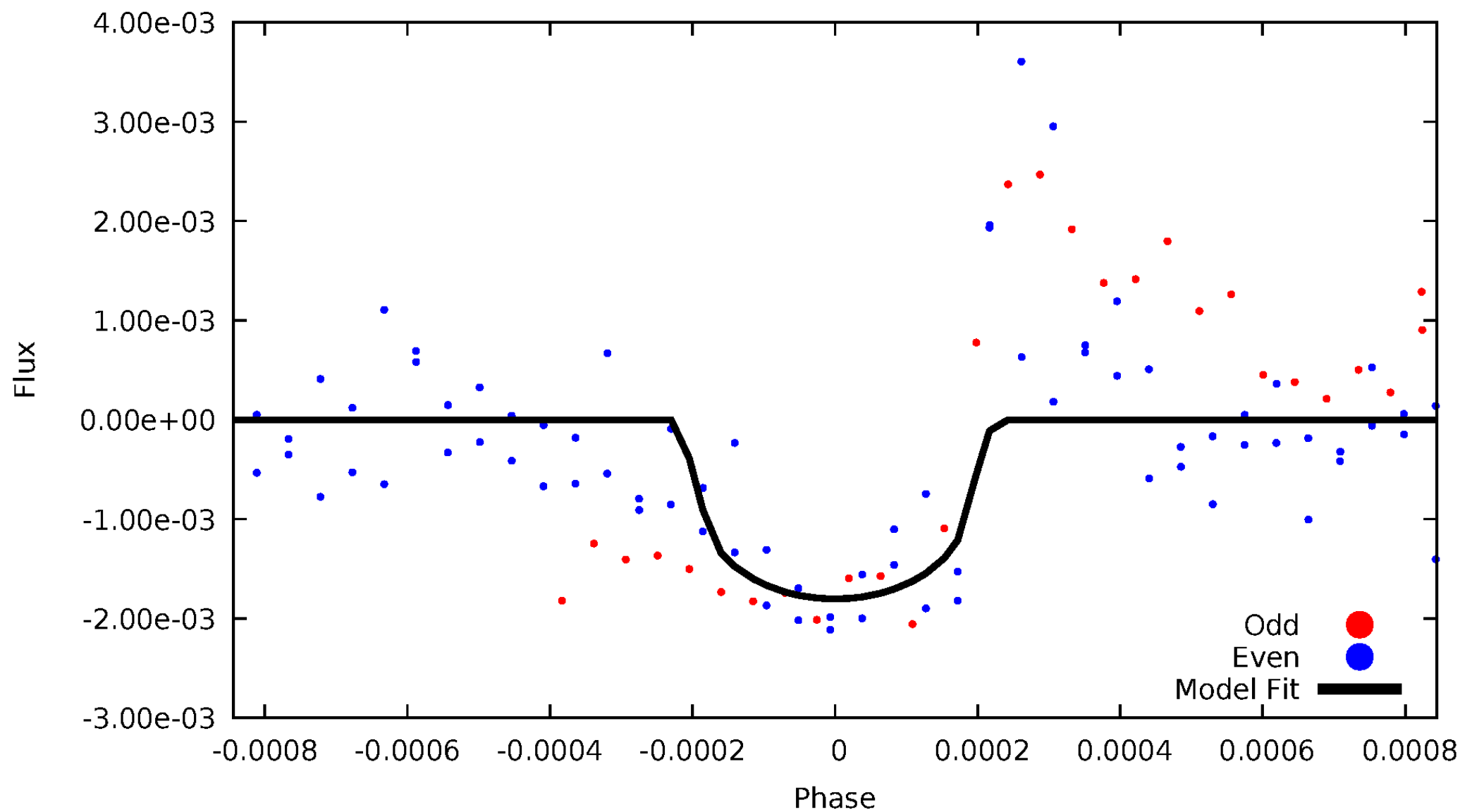


TCE 009238899-03



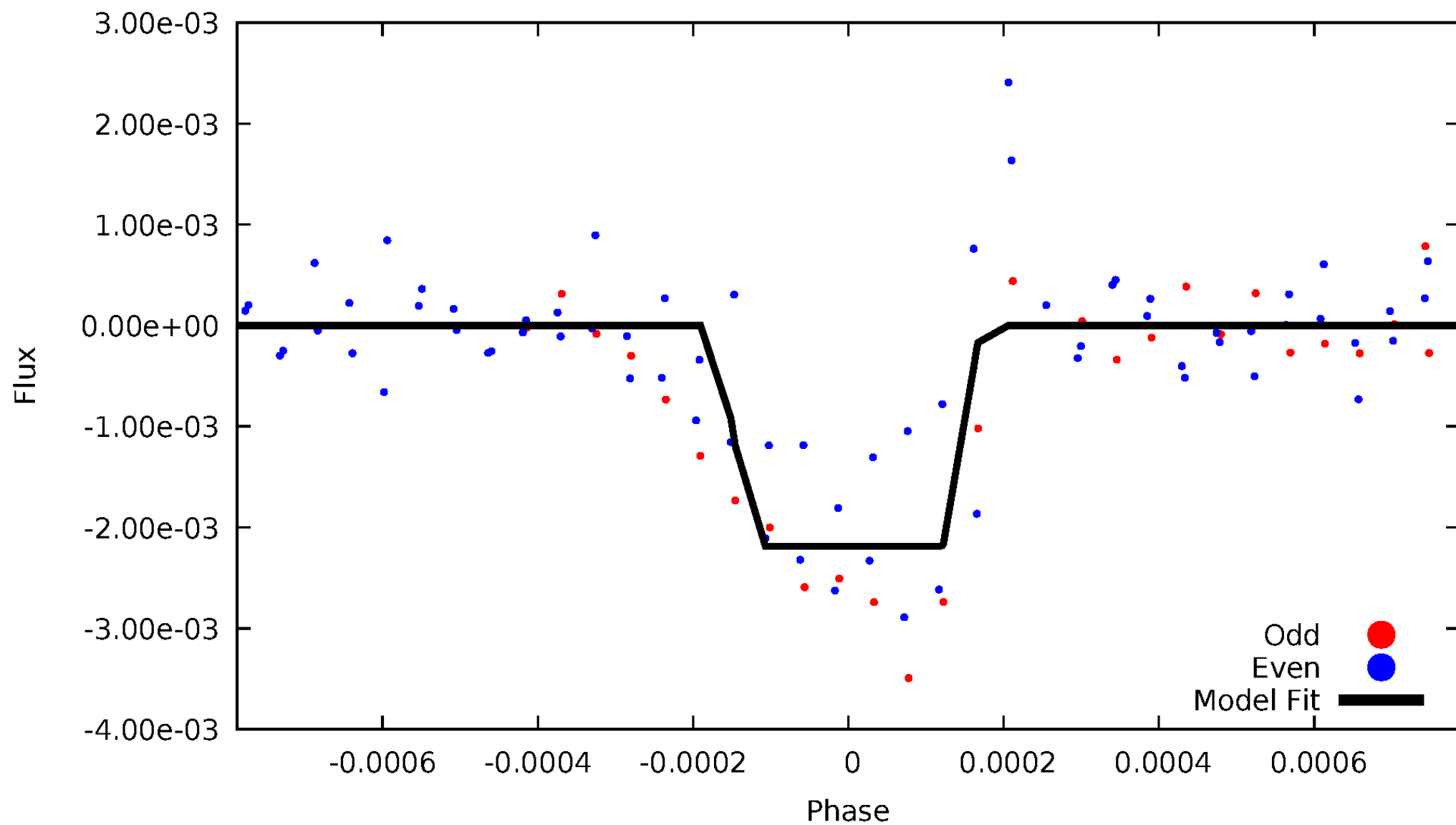
DV Odd/Even

TCE 009238899-03



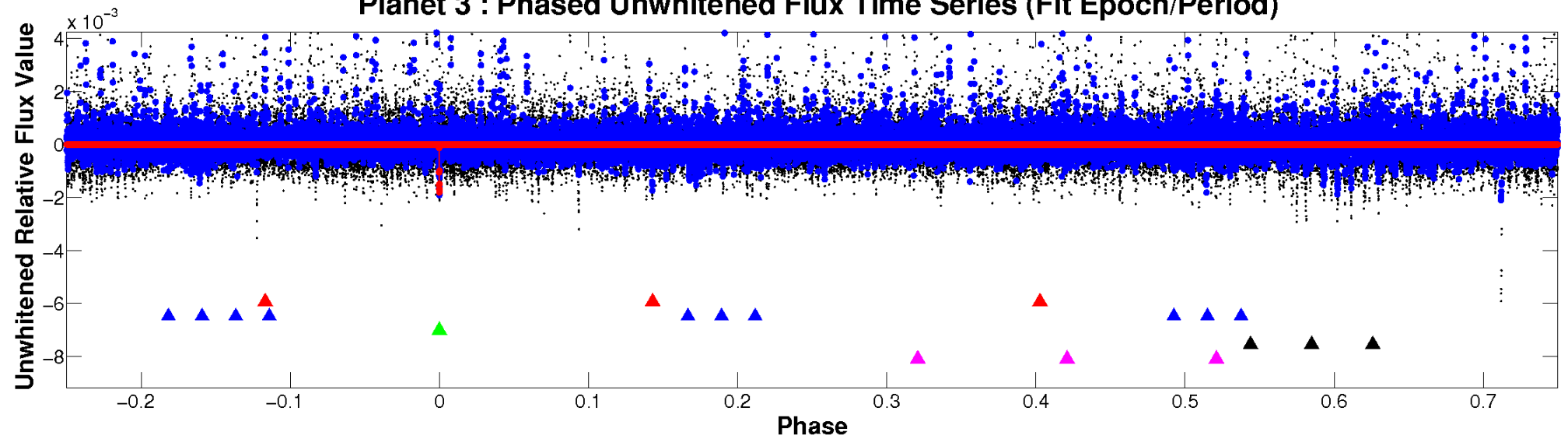
ALT Odd/Even

TCE 009238899-03

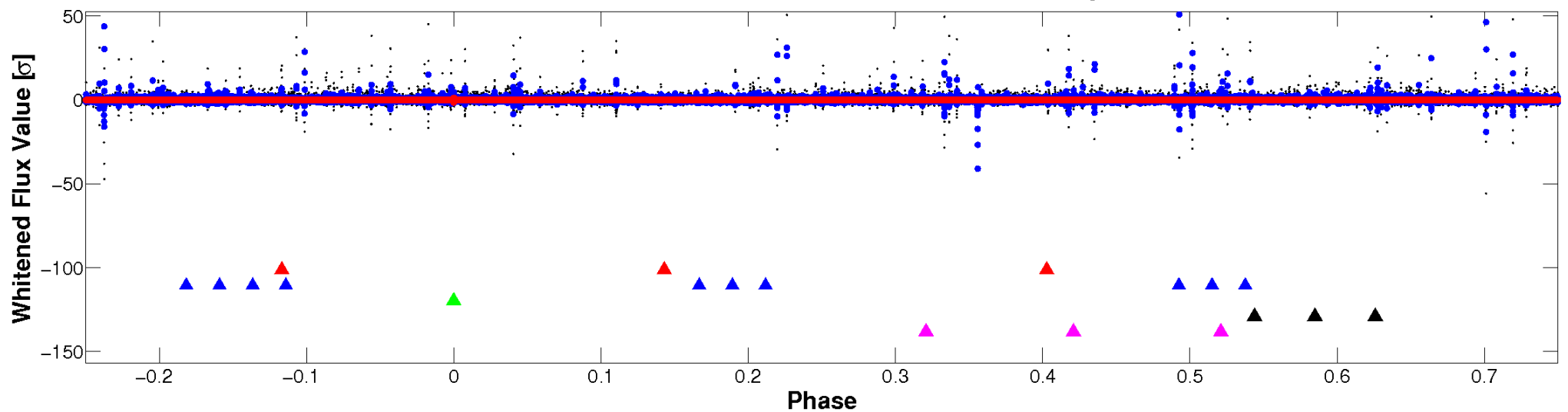


Non-Whitened Vs. Whitened Light Curve

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

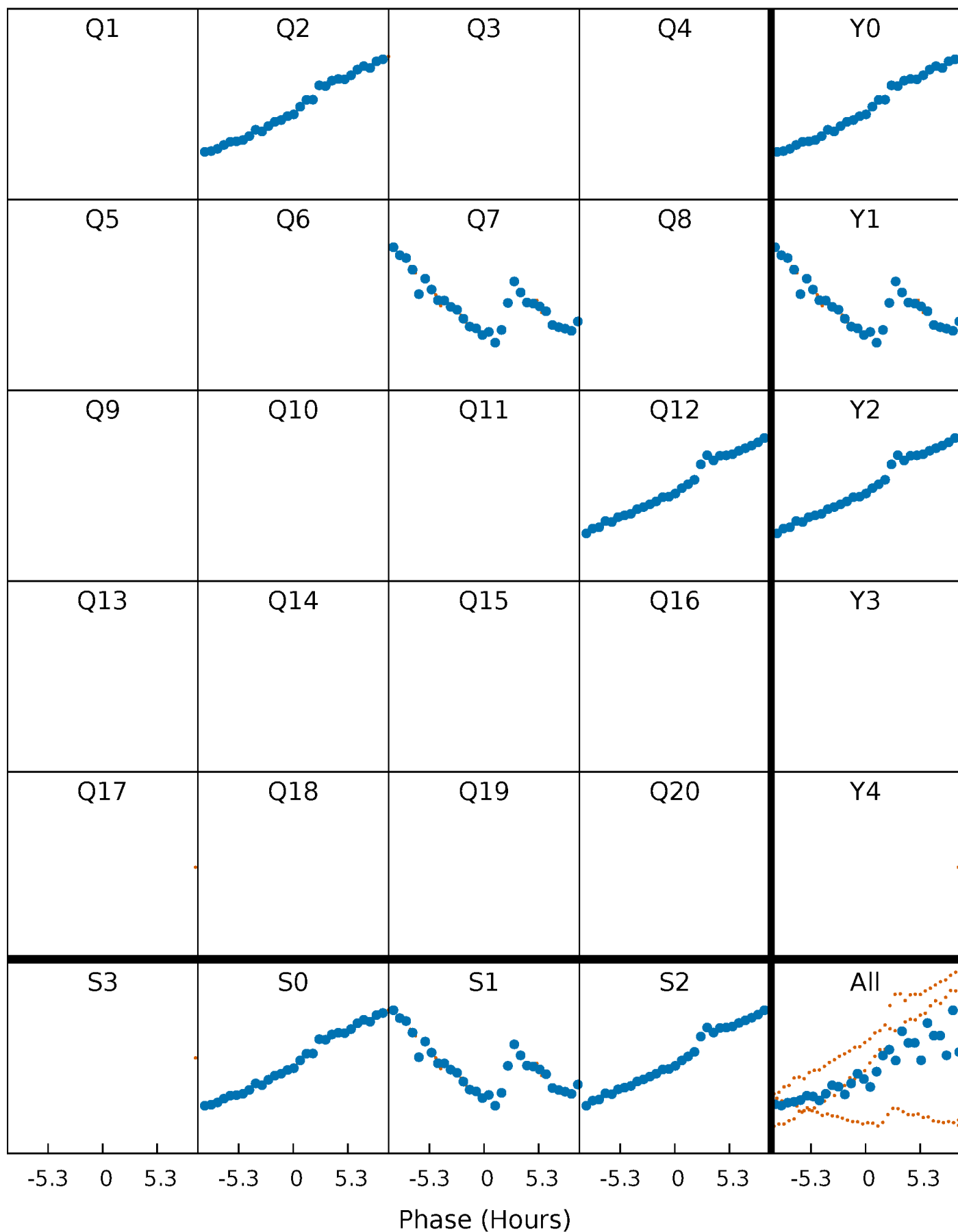


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



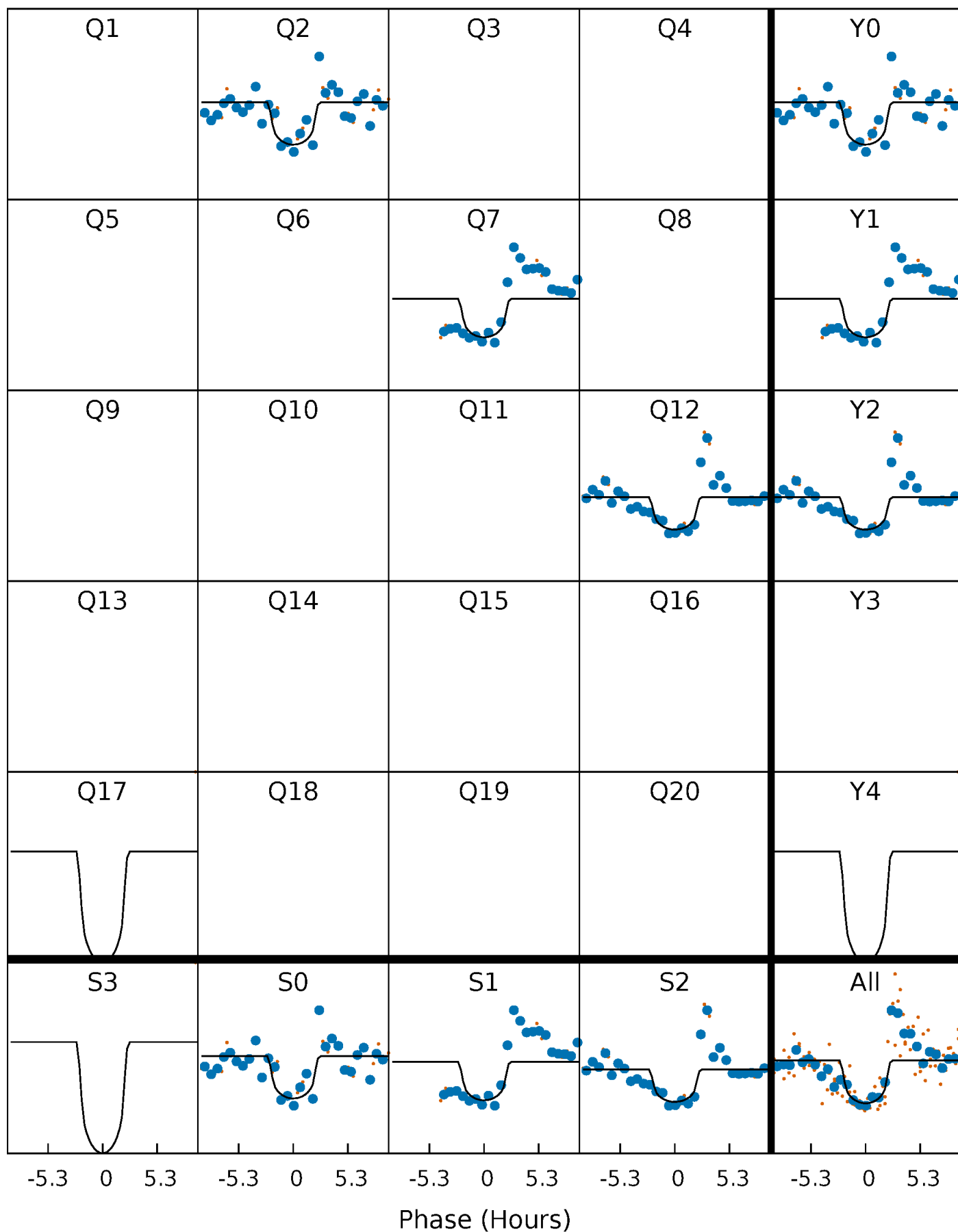
PDC Quarter-Phased Transit Curves

TCE 009238899-03 P=457.128491 Days $T_0=187.484407$ (BKJD)



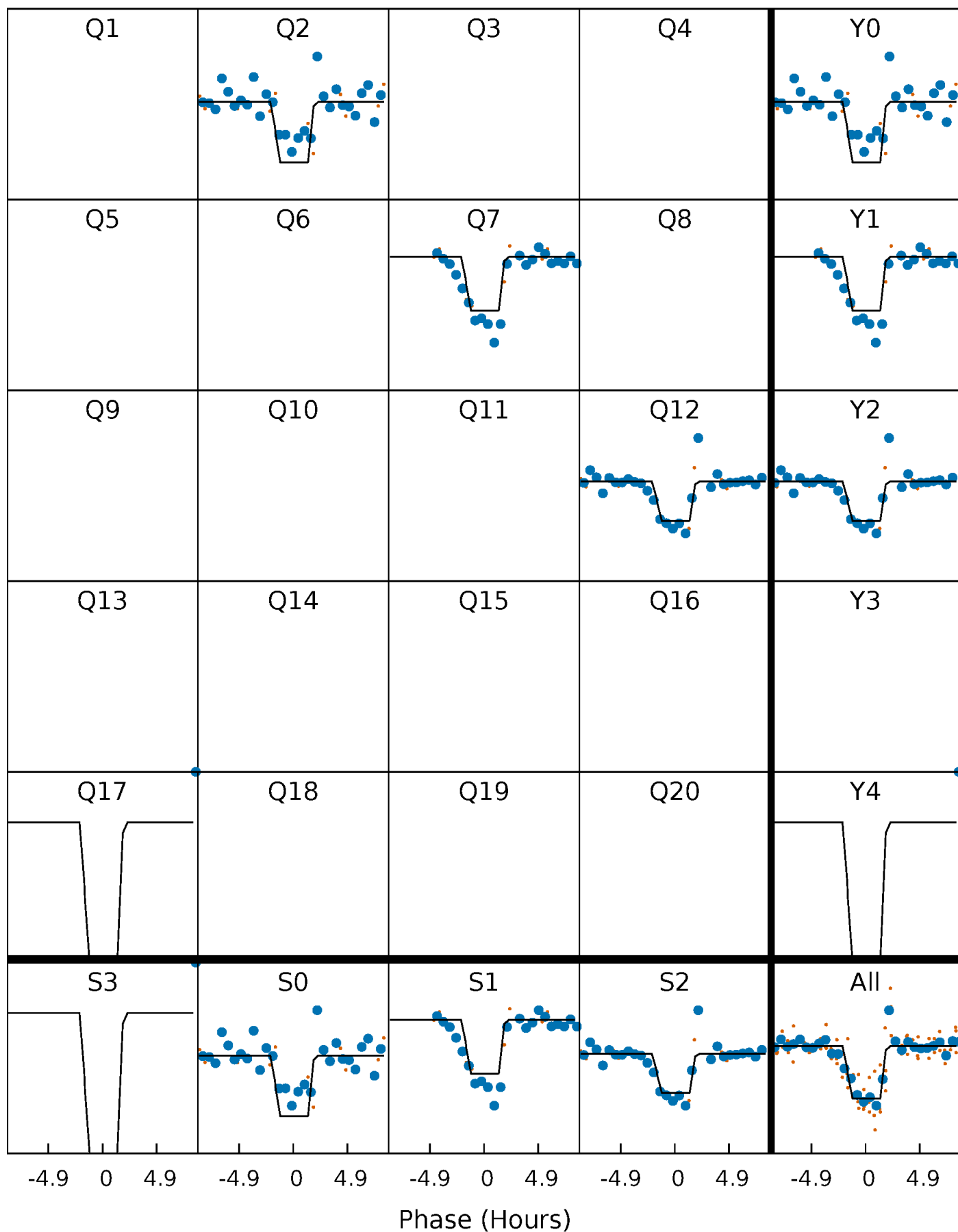
DV Quarter-Phased Transit Curves

TCE 009238899-03 $P=457.128491$ Days $T_0=187.484407$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

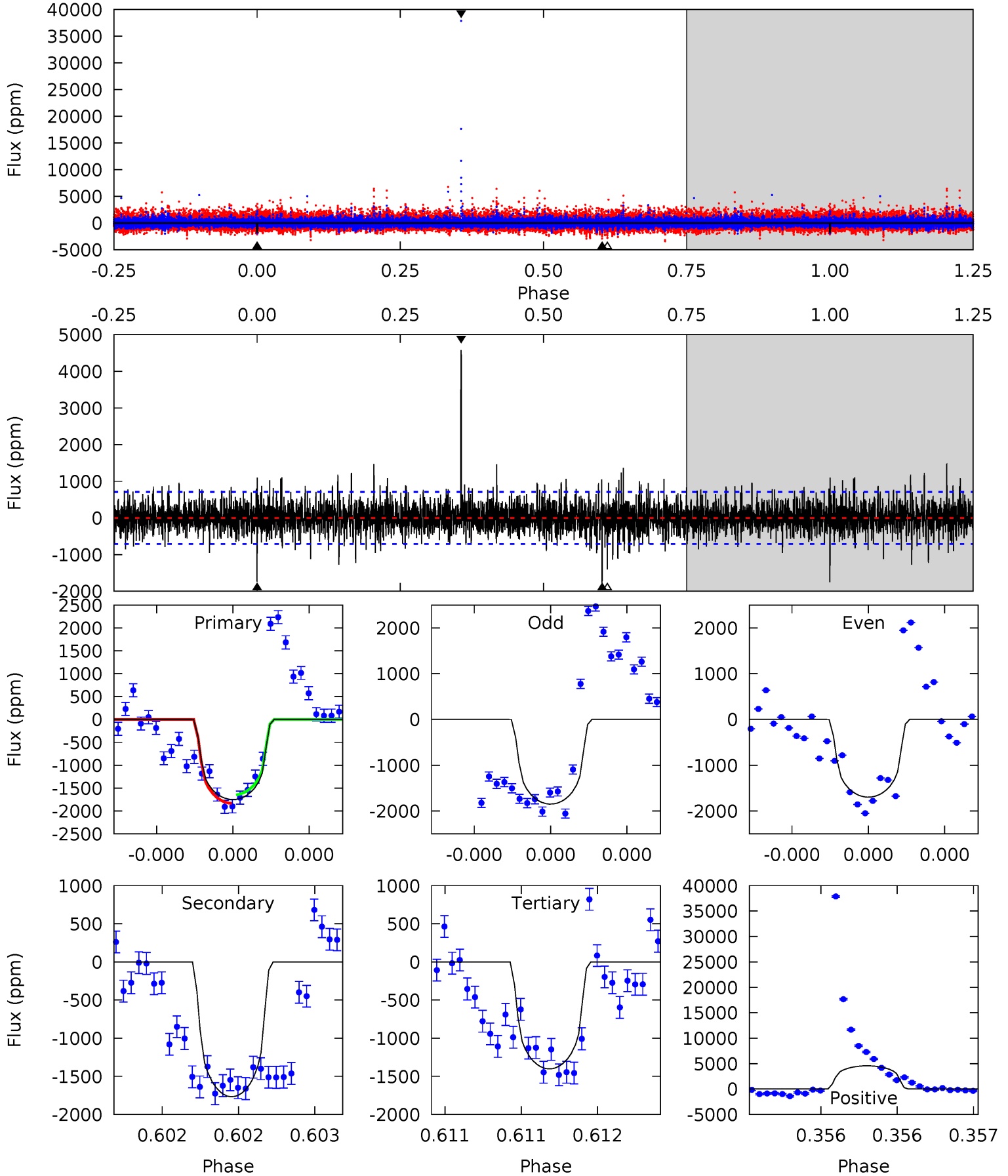
TCE 009238899-03 P=457.139604 Days $T_0=187.487401$ (BKJD)



DV Model-Shift Uniqueness Test

009238899-03, P = 457.128491 Days, E = 187.484407 Days

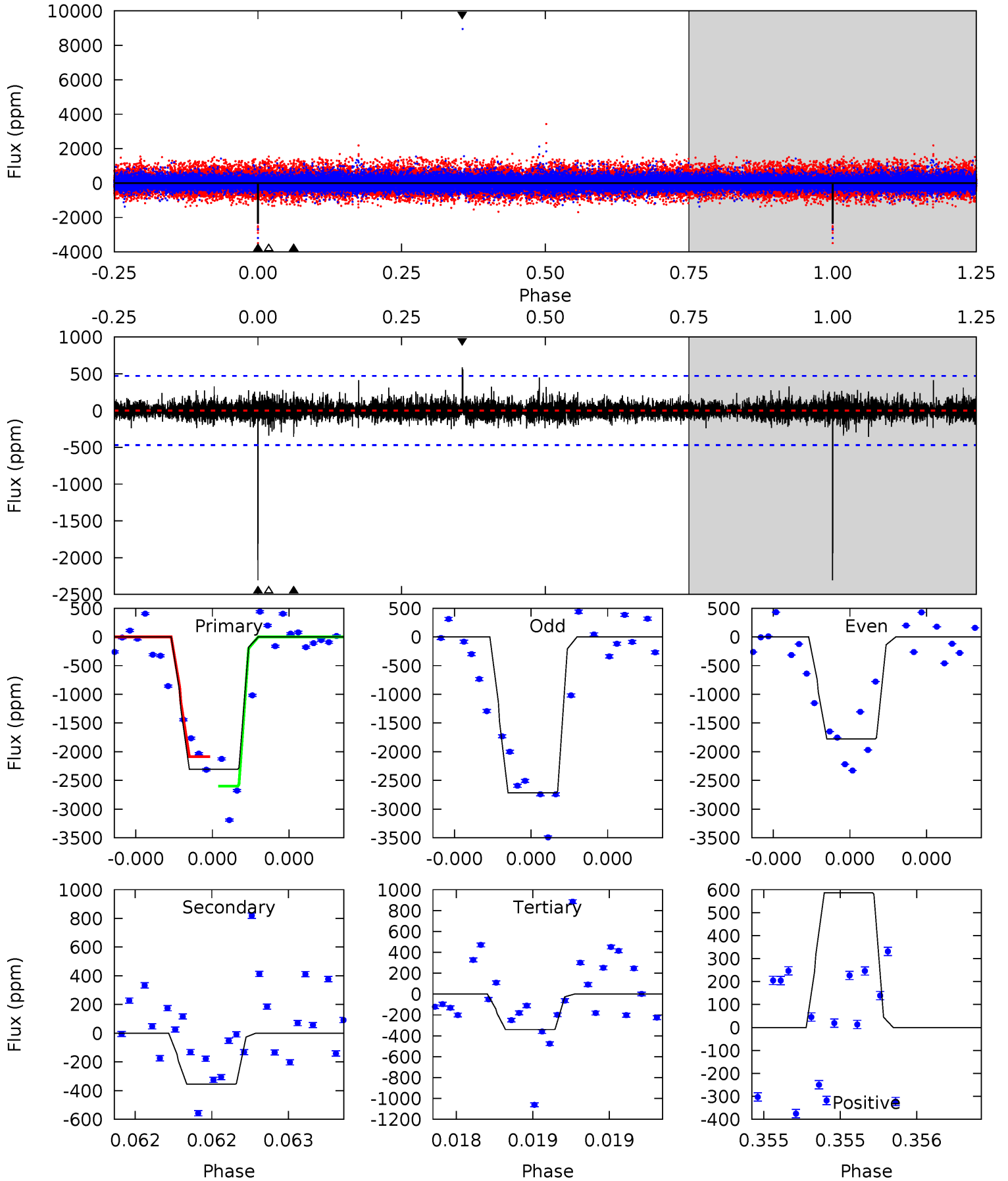
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	13.9	11.0	36.0	5.59	3.51	2.41	2.74	-22.2	2.88	-22.1	0.46	0.94	0.72	0.74



Alt Model-Shift Uniqueness Test

009238899-03, P = 457.139604 Days, E = 187.487401 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.6	4.25	4.07	7.02	5.63	3.57	0.77	23.5	20.6	0.19	-2.77	5.77	0.86	0.20	3.05



Stellar Parameters For KIC 009238899

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4070^{+141}_{-155}	$4.643^{+0.056}_{-0.020}$	$0.060^{+0.250}_{-0.300}$	$0.619^{+0.038}_{-0.065}$	$0.613^{+0.052}_{-0.063}$	$3.645^{+1.005}_{-0.361}$
	+3%/-4%	+1%/-0%	+417%/-500%	+6%/-11%	+8%/-10%	+28%/-10%
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 009238899-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1767 ± 127	$3.30^{+2.81}_{-2.01}$	197^{+8}_{-8}	3845^{+1738}_{-690}	$85679^{+499984}_{-60363}$
Alt.	-355 ± 84	$3.56^{+3.01}_{-2.24}$	197^{+8}_{-7}	2936^{+1060}_{-452}	14891^{+93734}_{-10746}

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

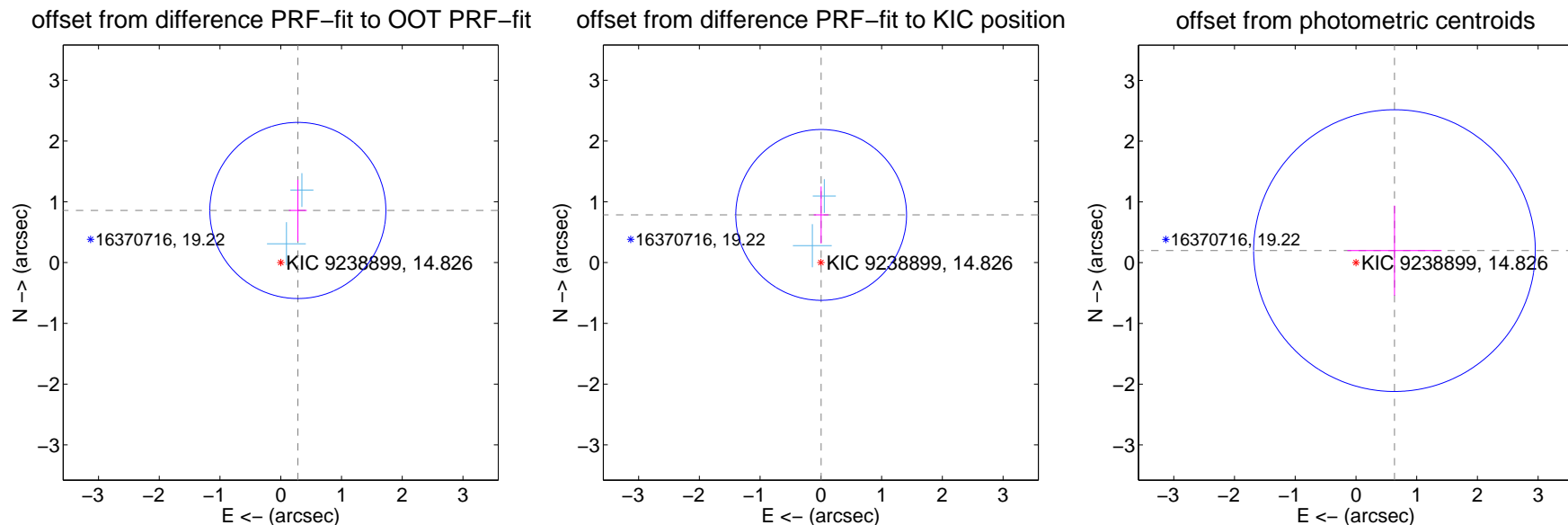
DV Centroid Data

Supplemental centroid analysis for 009238899-03. Kepler magnitude: 14.83. Transit SNR 8.06

There are 2 quarters with good PRF difference image offsets

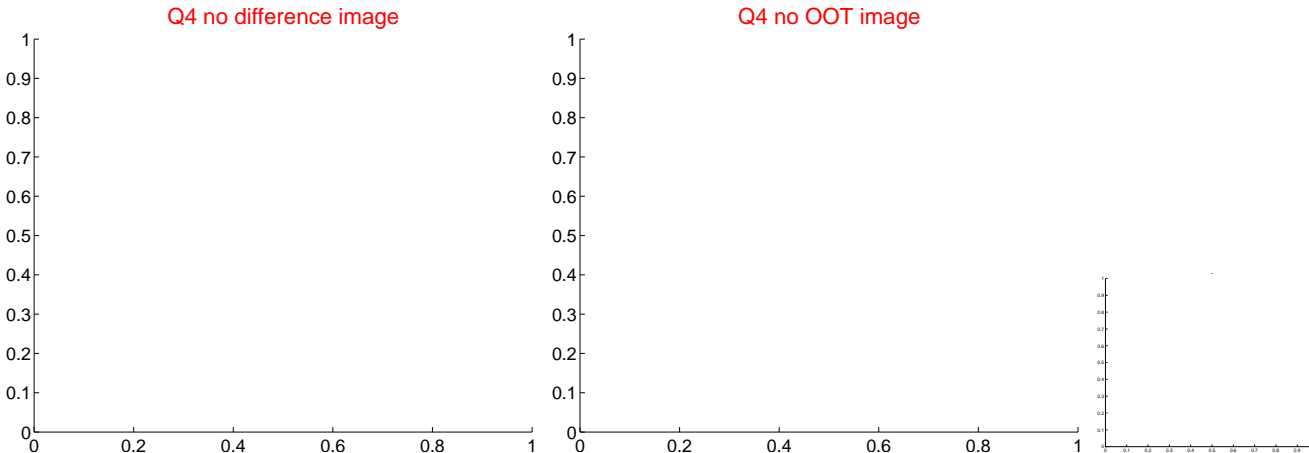
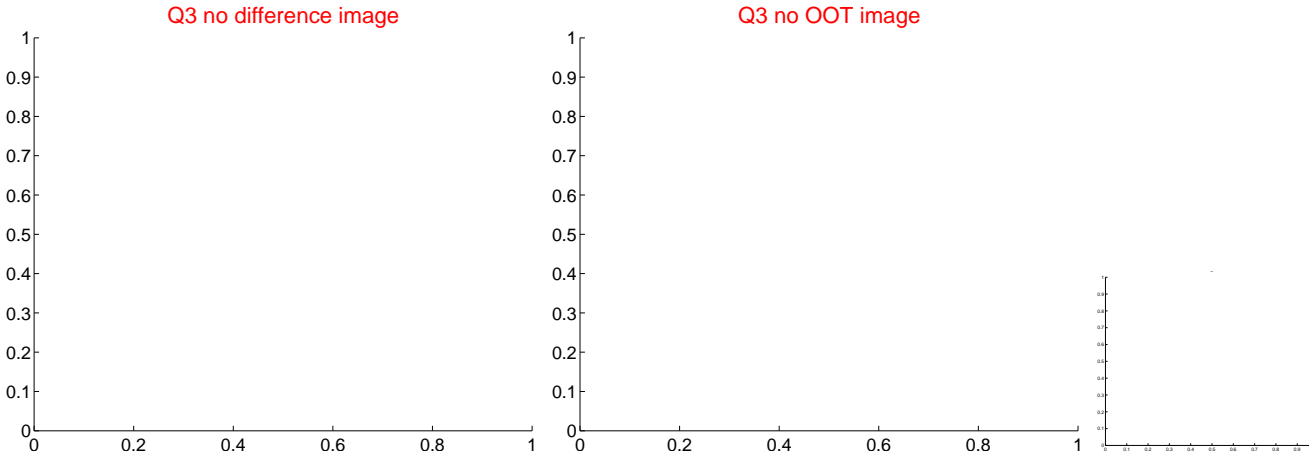
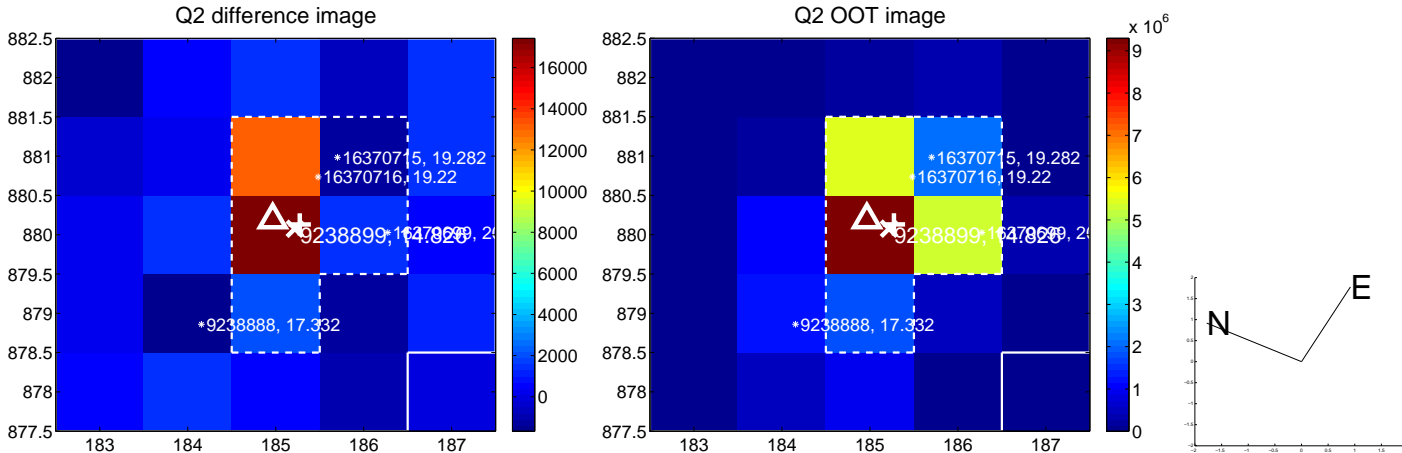
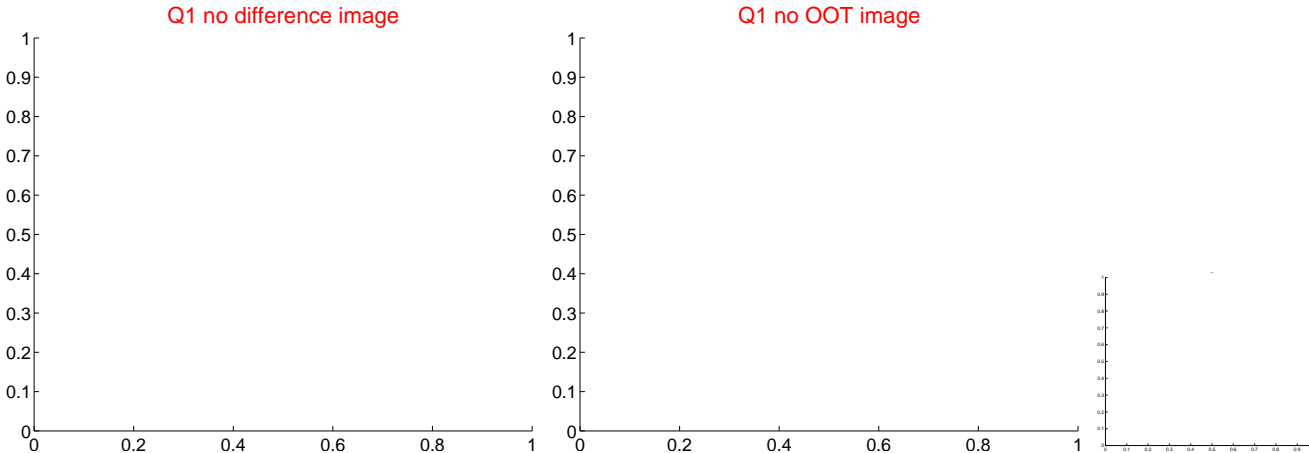
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.903 ± 0.483	1.87	-0.282 ± 0.146	0.858 ± 0.506
PRF-fit source offset from KIC position	0.785 ± 0.469	1.67	-0.005 ± 0.121	0.785 ± 0.469
photometric centroid source offset	0.66 ± 0.77	0.86	-0.63 ± 0.78	0.20 ± 0.74



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.

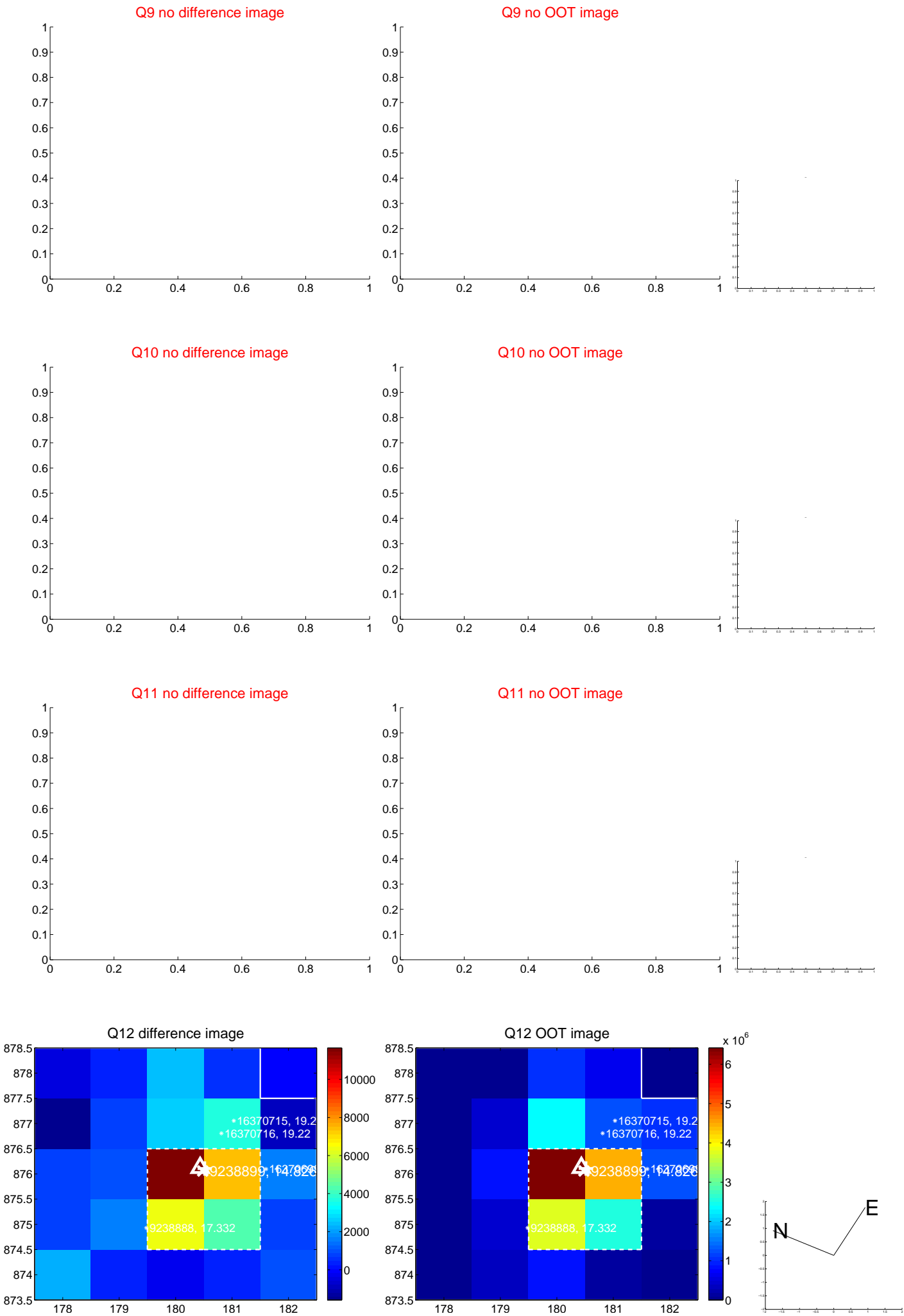
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



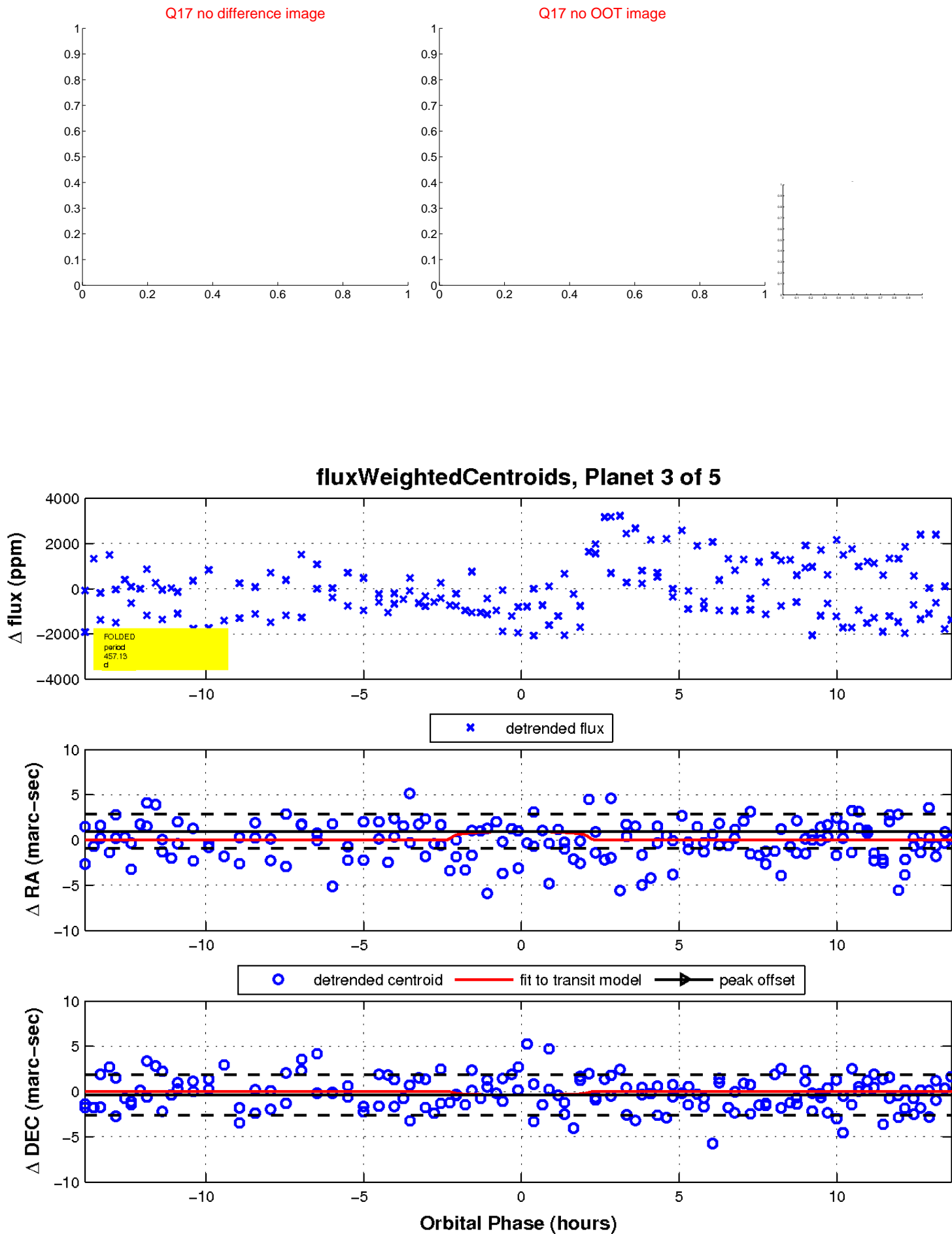
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

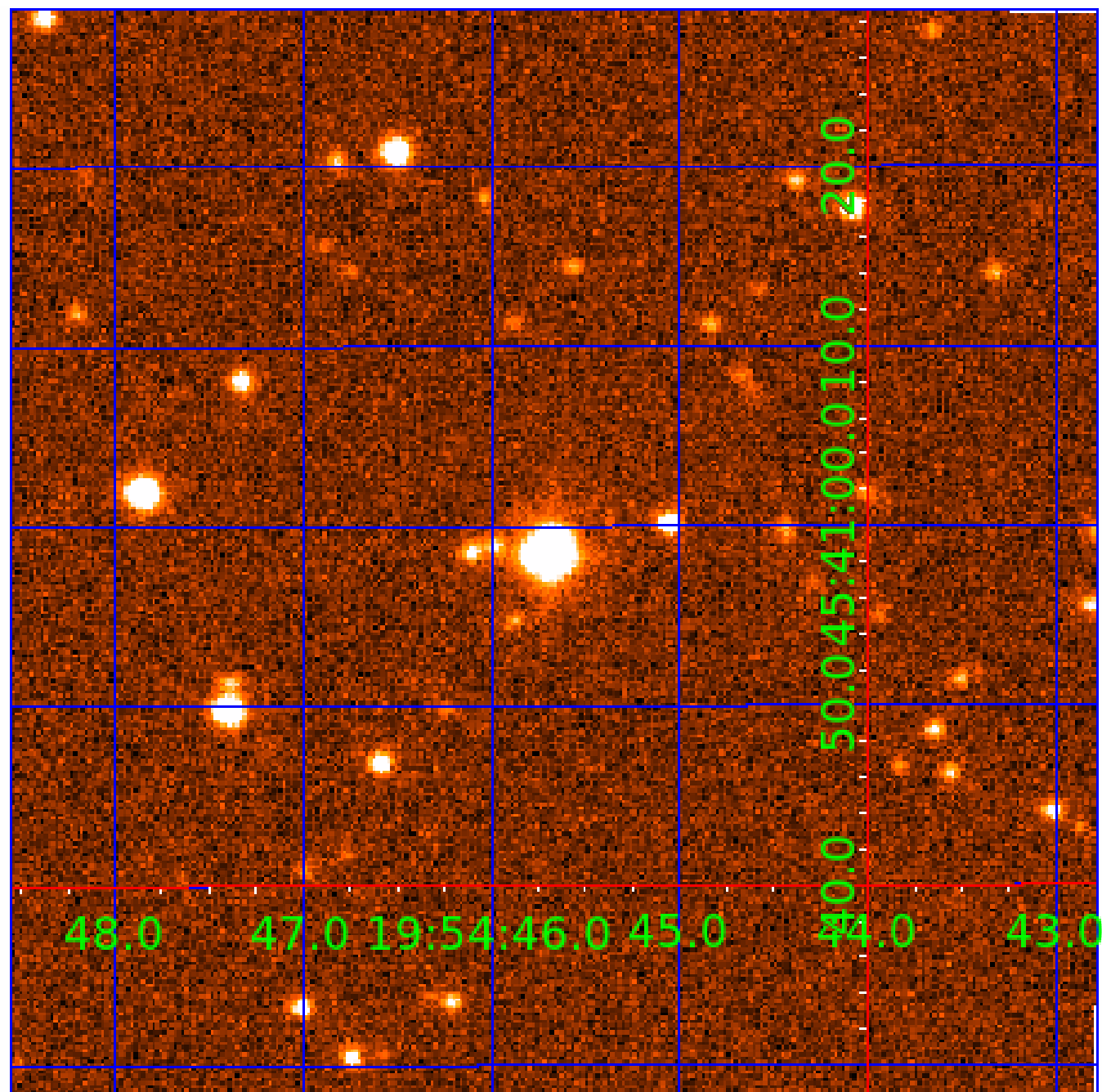


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009238899

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})
009238899-01	OBS	No	575.879513	134.103671	1453.9	3.696	13.1	7.5	0.62	4070	2.79	0.07
009238899-02	OBS	No	148.940219	135.366125	826.7	12.500	12.6	-1.0	0.62	4070	1.72	0.43
009238899-03	OBS	No	457.128491	187.484407	1804.0	4.628	10.3	8.1	0.62	4070	2.66	0.10
009238899-04	OBS	No	475.855286	436.147751	1342.1	4.013	12.3	4.9	0.62	4070	2.54	0.09
009238899-05	OBS	No	502.903968	334.136986	1359.6	3.500	12.3	-1.0	0.62	4070	2.21	0.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009238899-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
009238899-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
009238899-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009238899-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009238899-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

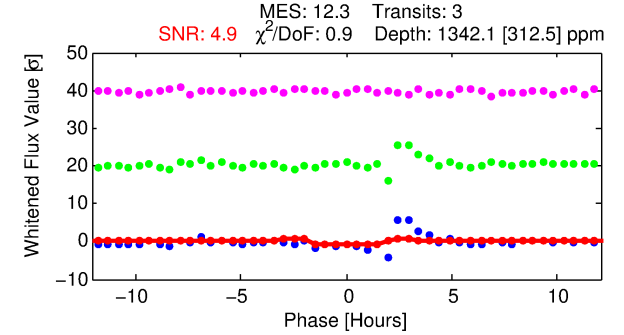
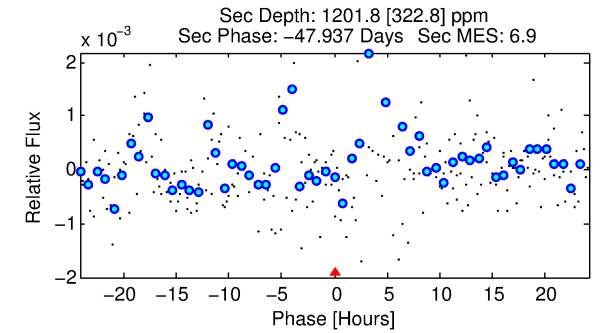
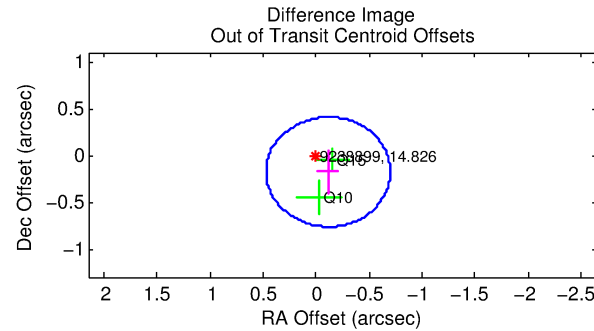
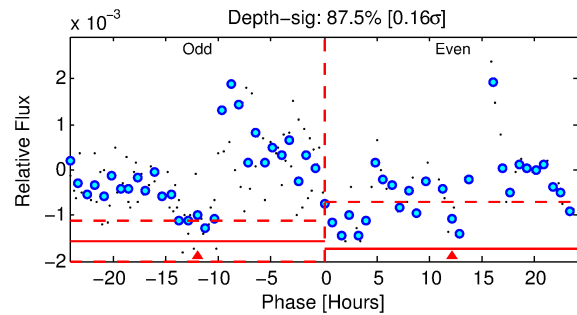
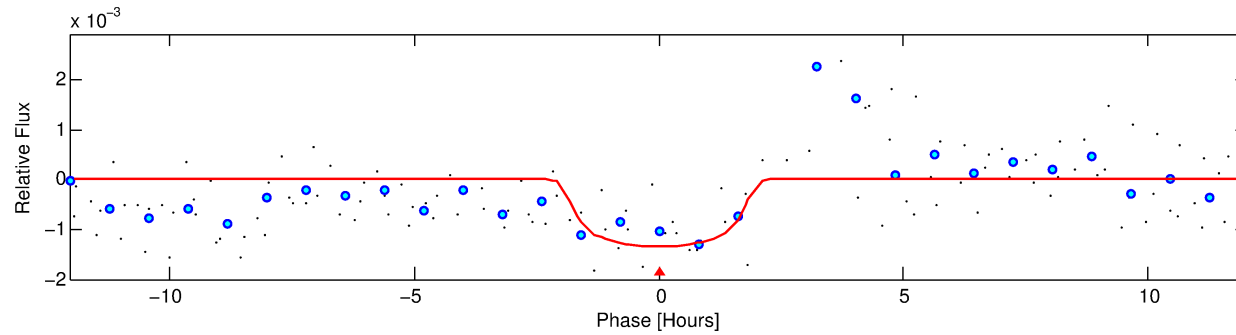
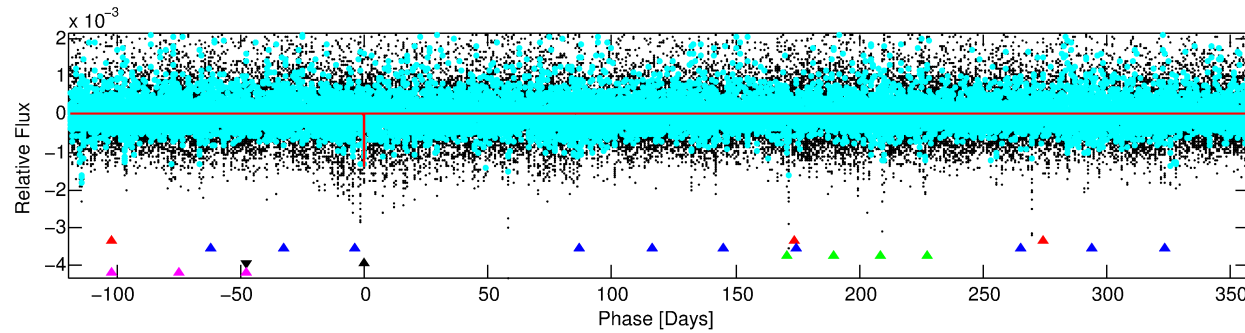
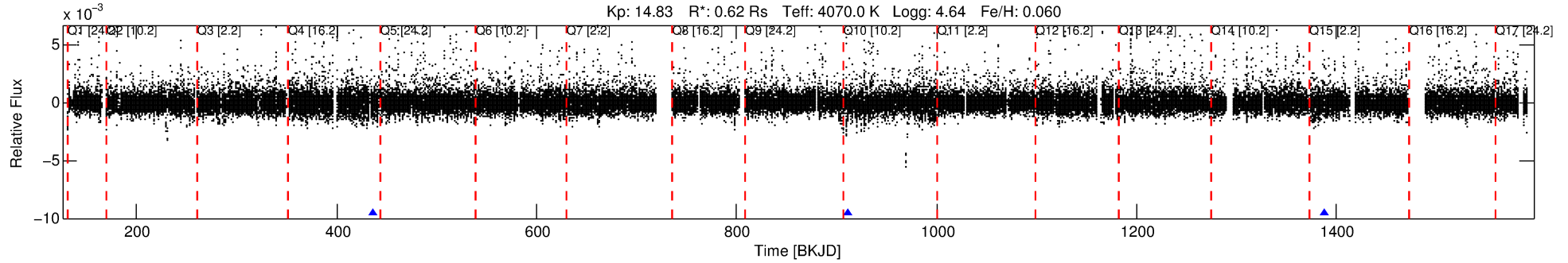
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009238899-04

No Significant Match Found

DV One-Page Summary

KIC: 9238899 Candidate: 4 of 5 Period: 475.855 d



DV Fit Results:

Period = 475.85529 [0.00791] d
Epoch = 436.1478 [0.0108] BKJD
Rp/R* = 0.0376 [0.0240]
a/R* = 599.82 [1326.49]
b = 0.80 [1.01]
Seff = 0.09 [0.02]
Teq = 140 [7] K
Rp = 2.54 [1.64] Re
a = 1.0142 [0.0833] AU
Ag = 105227.89 [137738.38] [0.76 σ]
Teffp = 3906 [1282] K [2.94 σ]

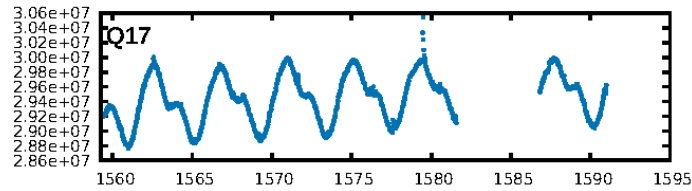
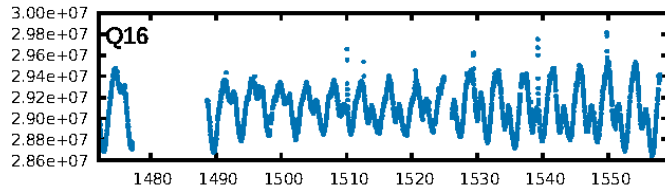
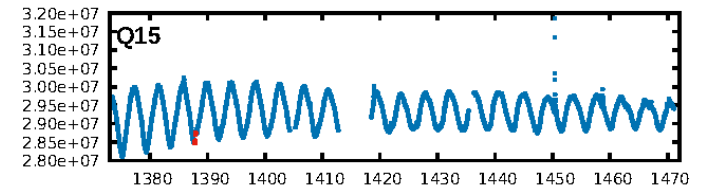
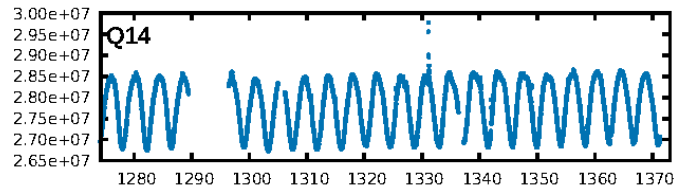
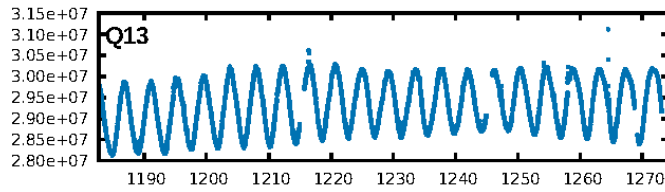
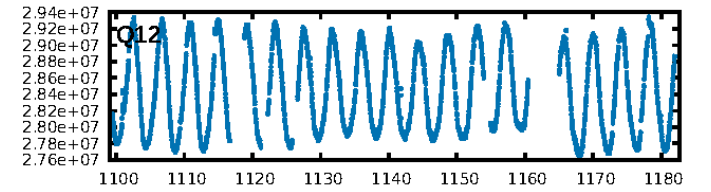
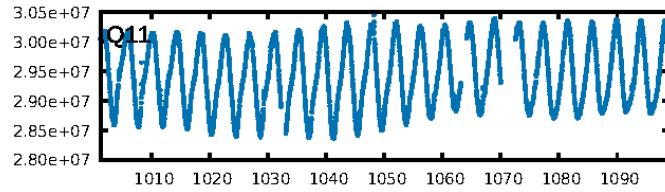
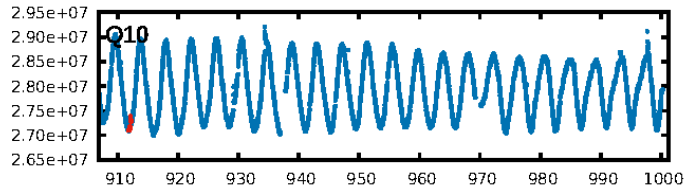
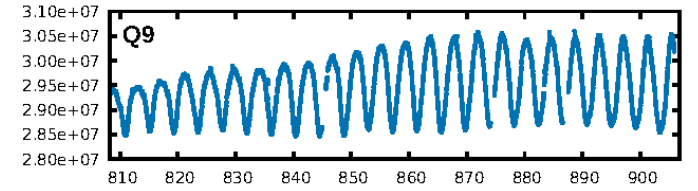
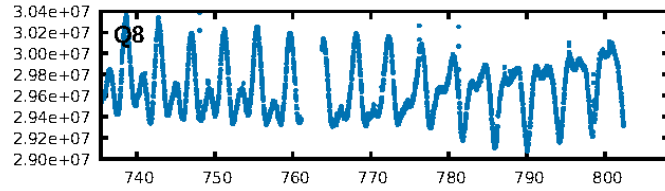
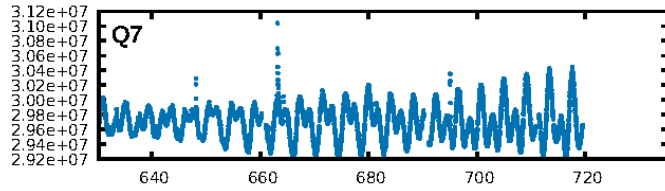
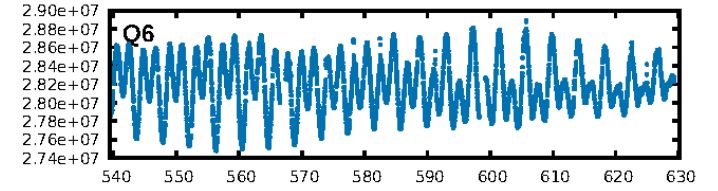
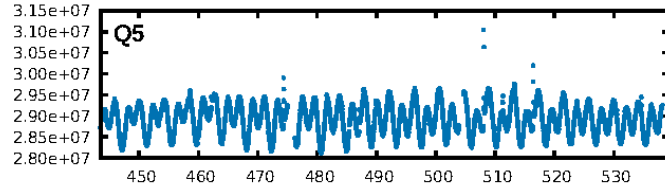
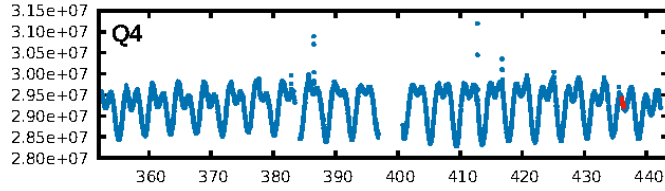
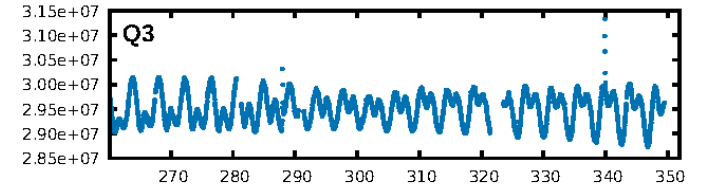
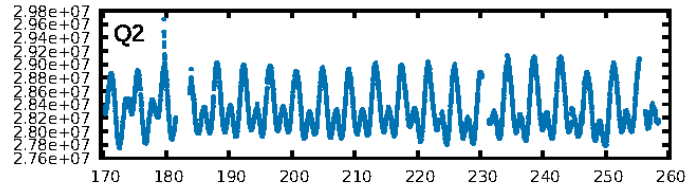
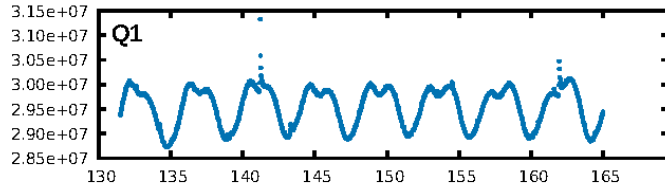
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [73.36 σ]
LongPeriod-sig: 100.0% [121.90 σ]
ModelChiSquare2-sig: 76.1%
ModelChiSquareGof-sig: 96.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.597
Centroid-sig: 27.3%
Centroid-so: 1.117 arcsec [1.02 σ]
OotOffset-rm: 0.211 arcsec [1.08 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.301 arcsec [1.45 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

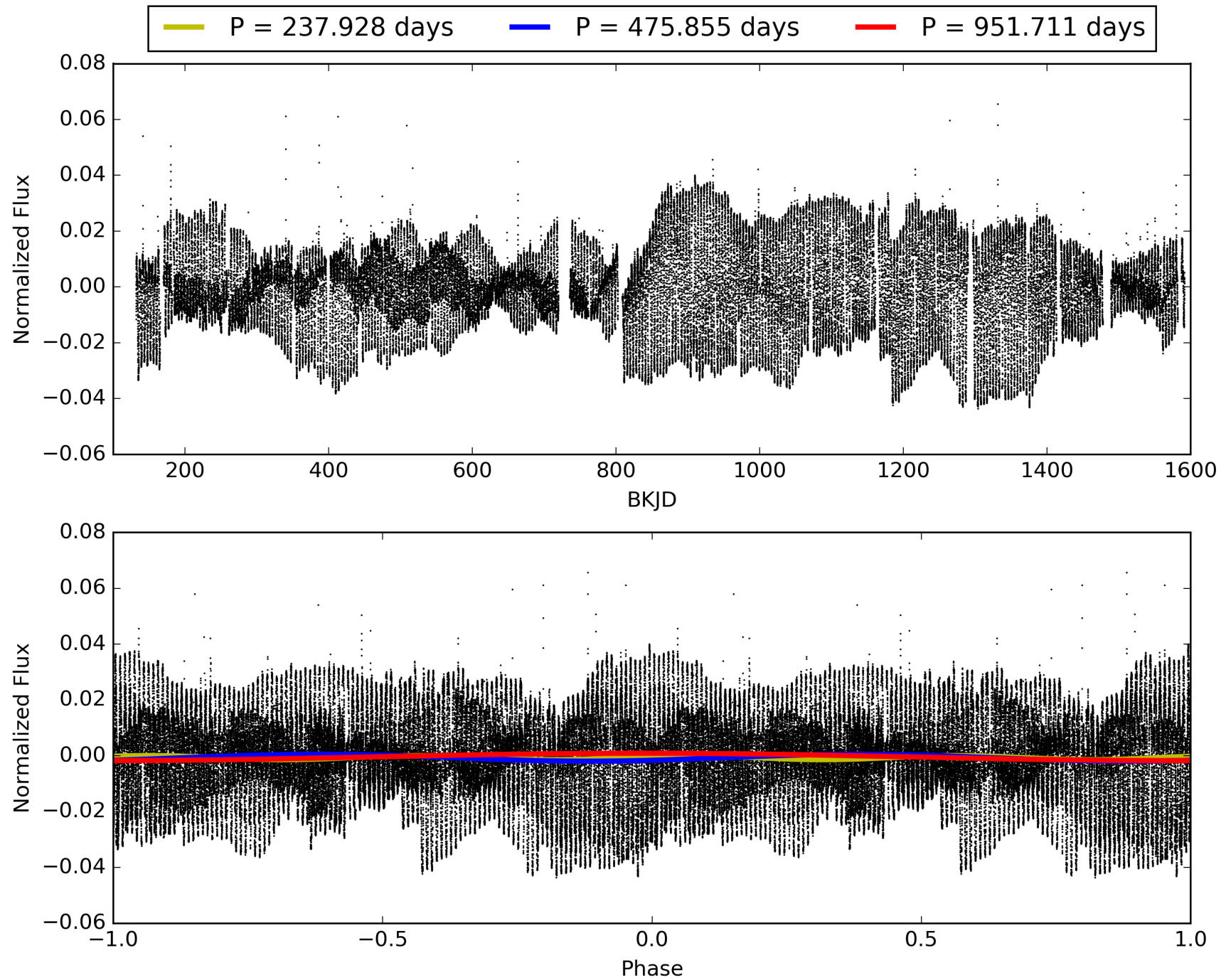
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:15:48 Z

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

TCE 009238899-04, PDC Light Curves

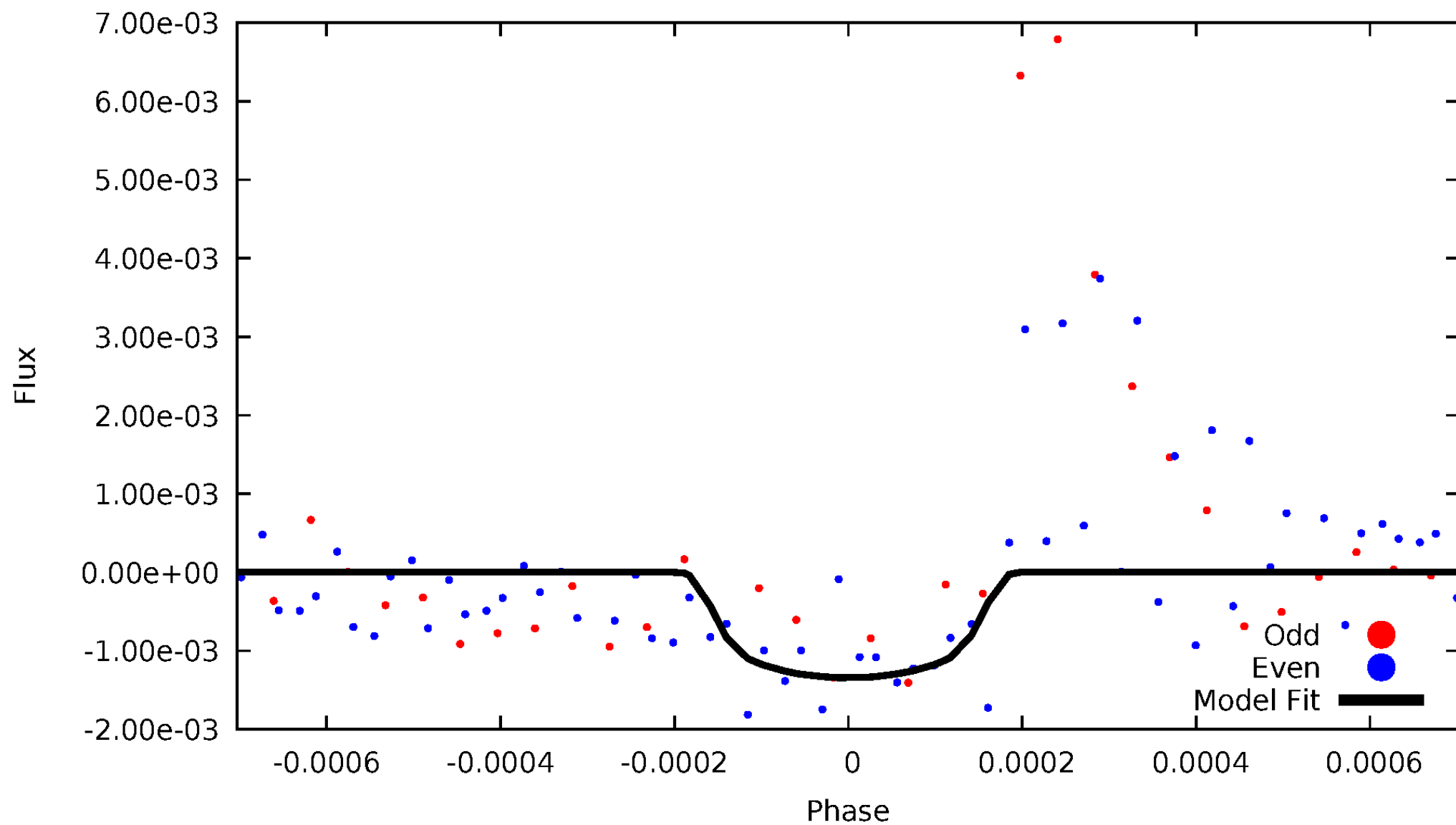


TCE 009238899-04



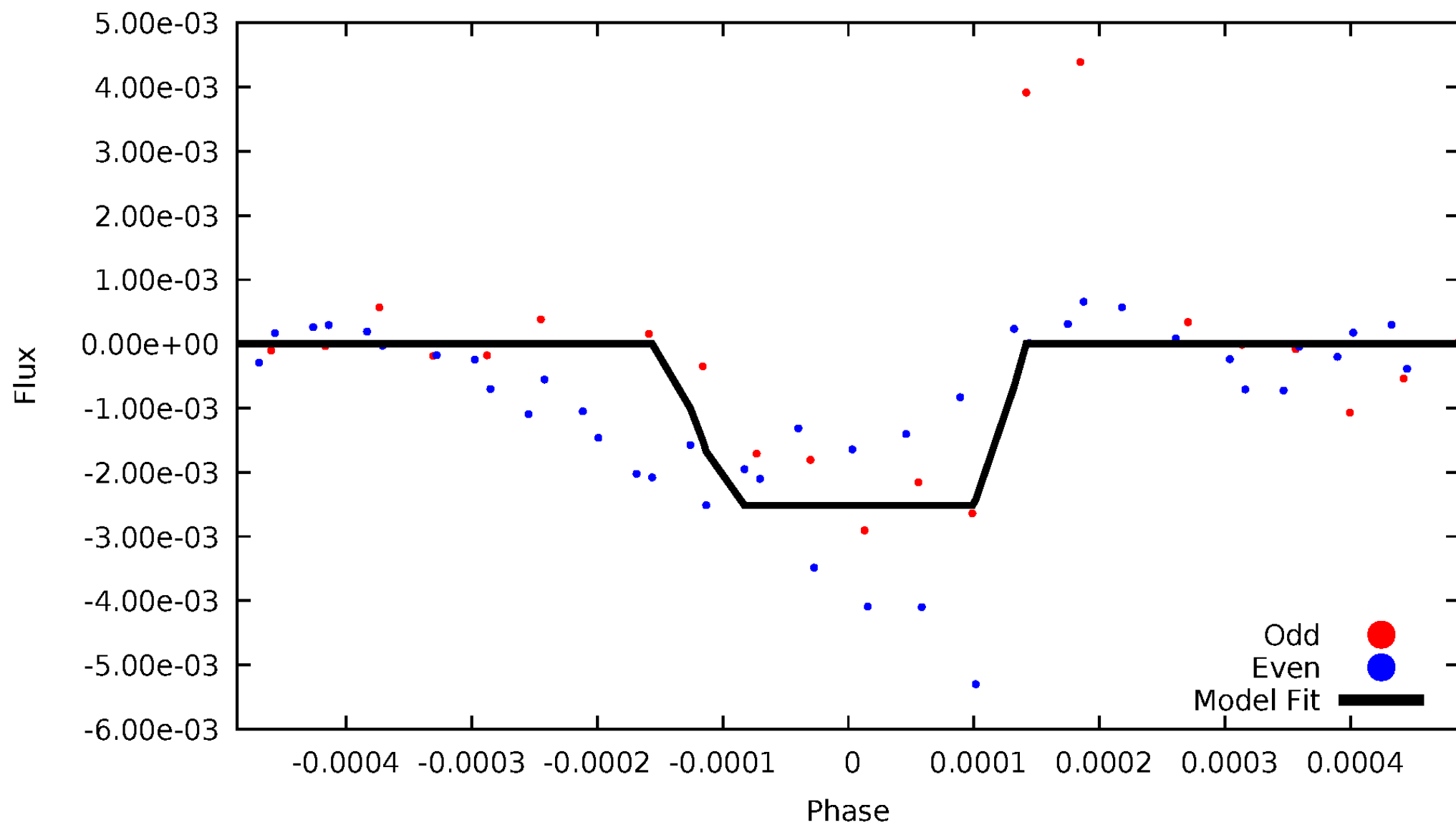
DV Odd/Even

TCE 009238899-04



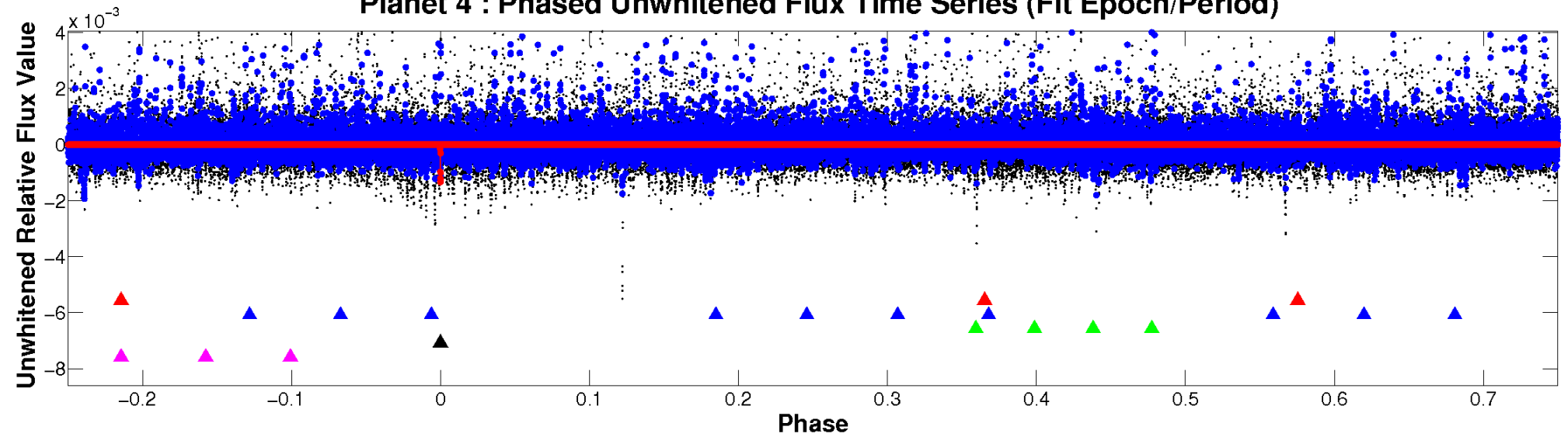
ALT Odd/Even

TCE 009238899-04

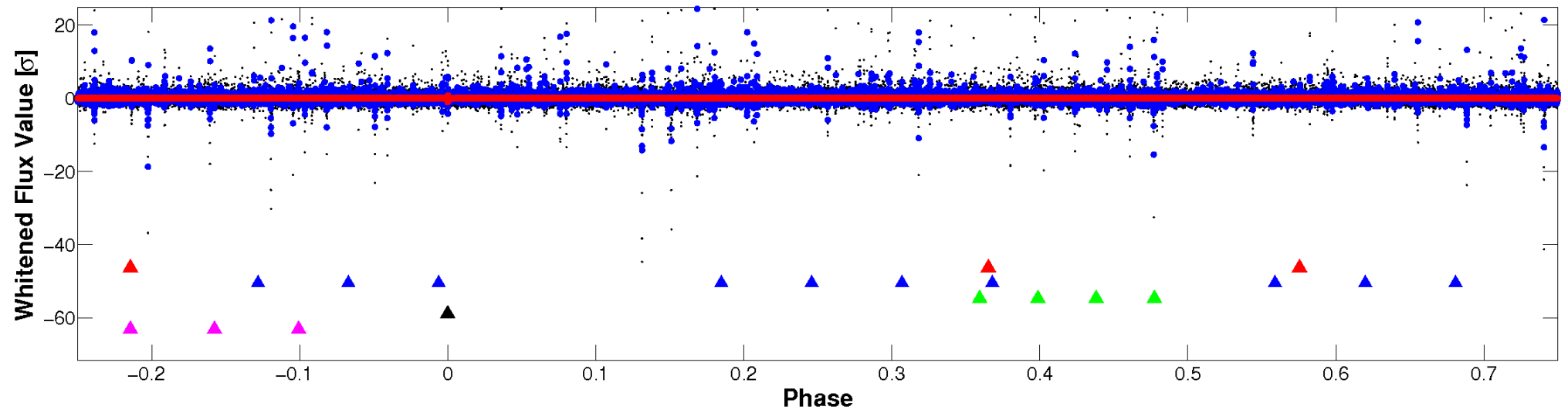


Non-Whitened Vs. Whitened Light Curve

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

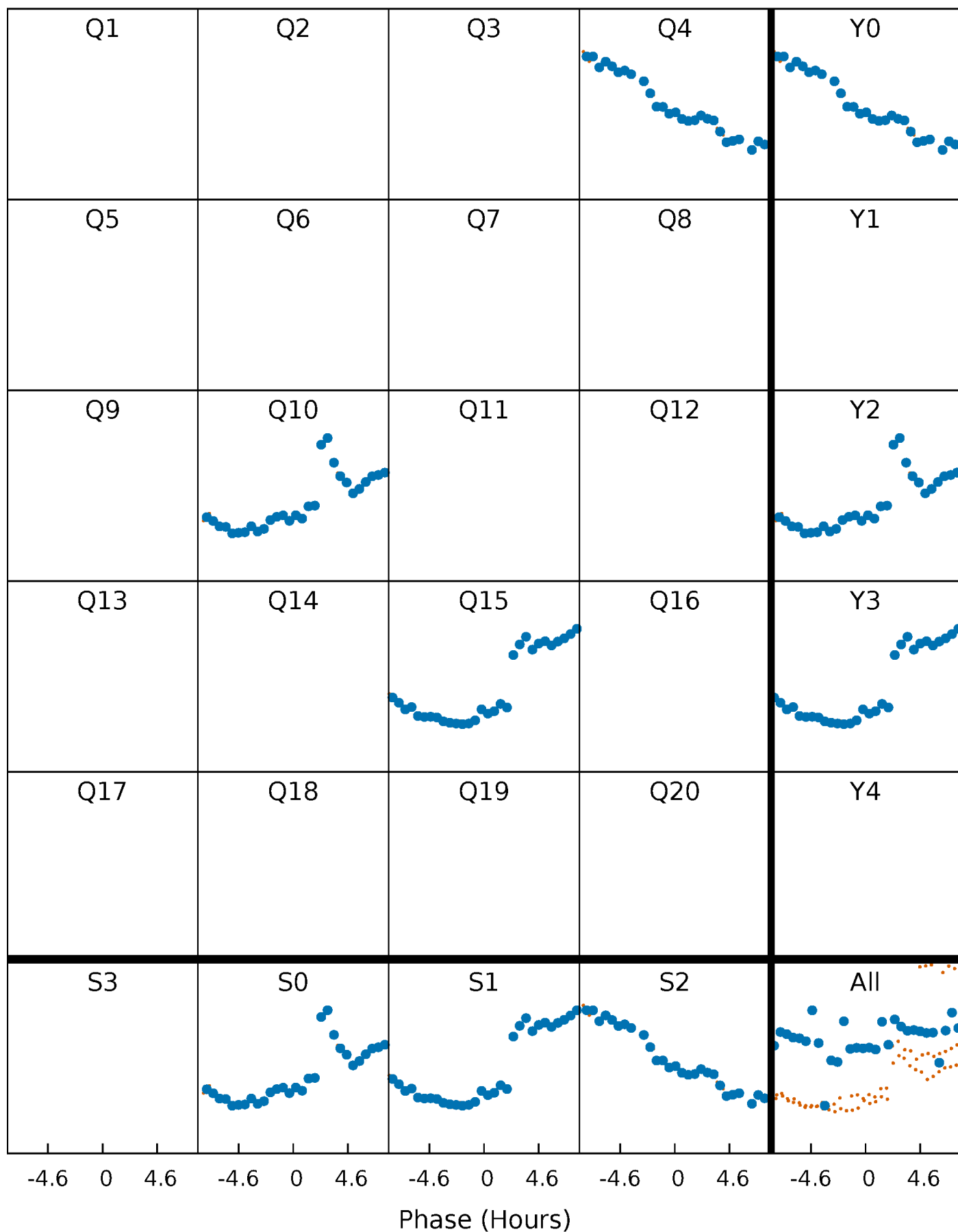


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



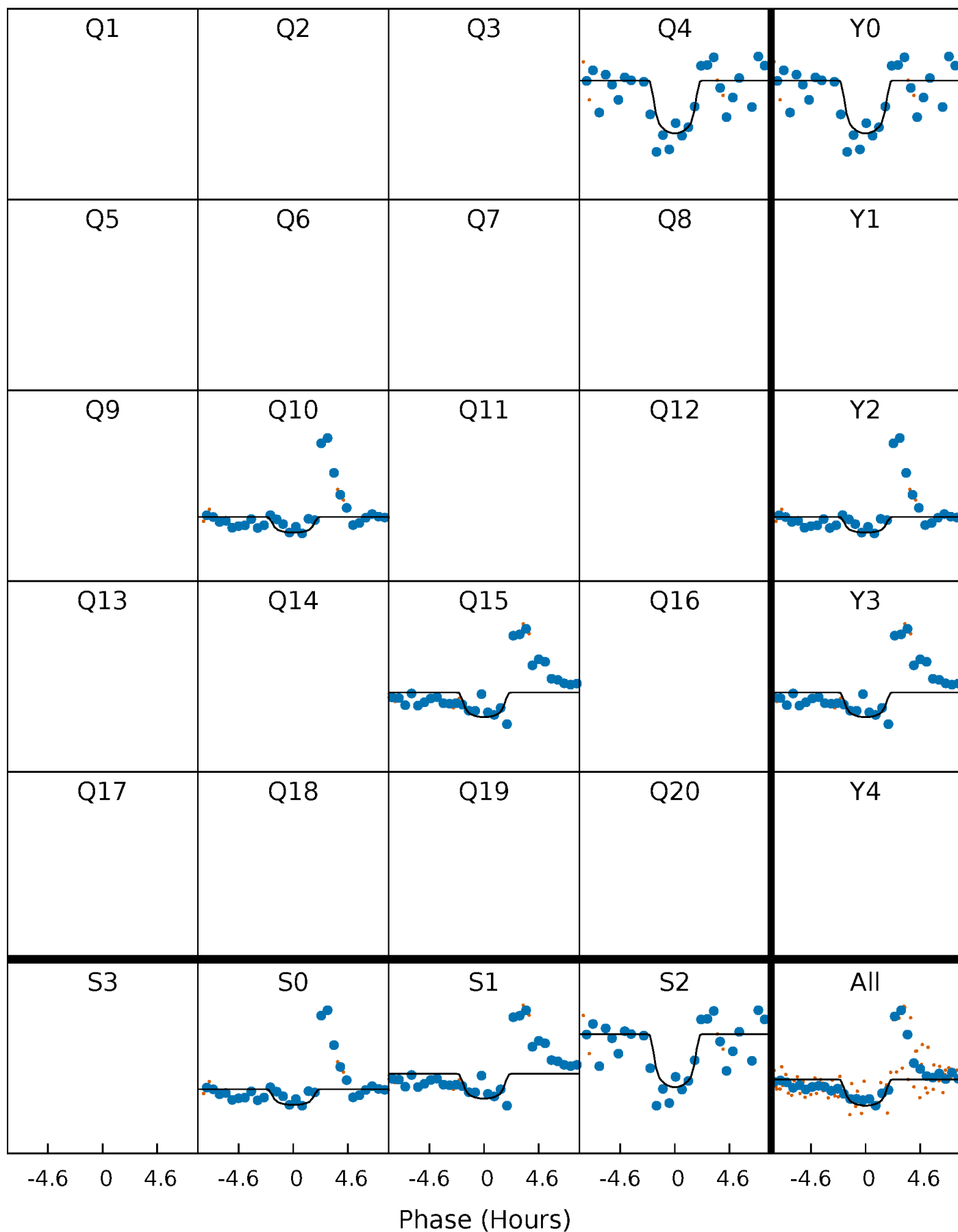
PDC Quarter-Phased Transit Curves

TCE 009238899-04 P=475.855286 Days $T_0=436.147751$ (BKJD)



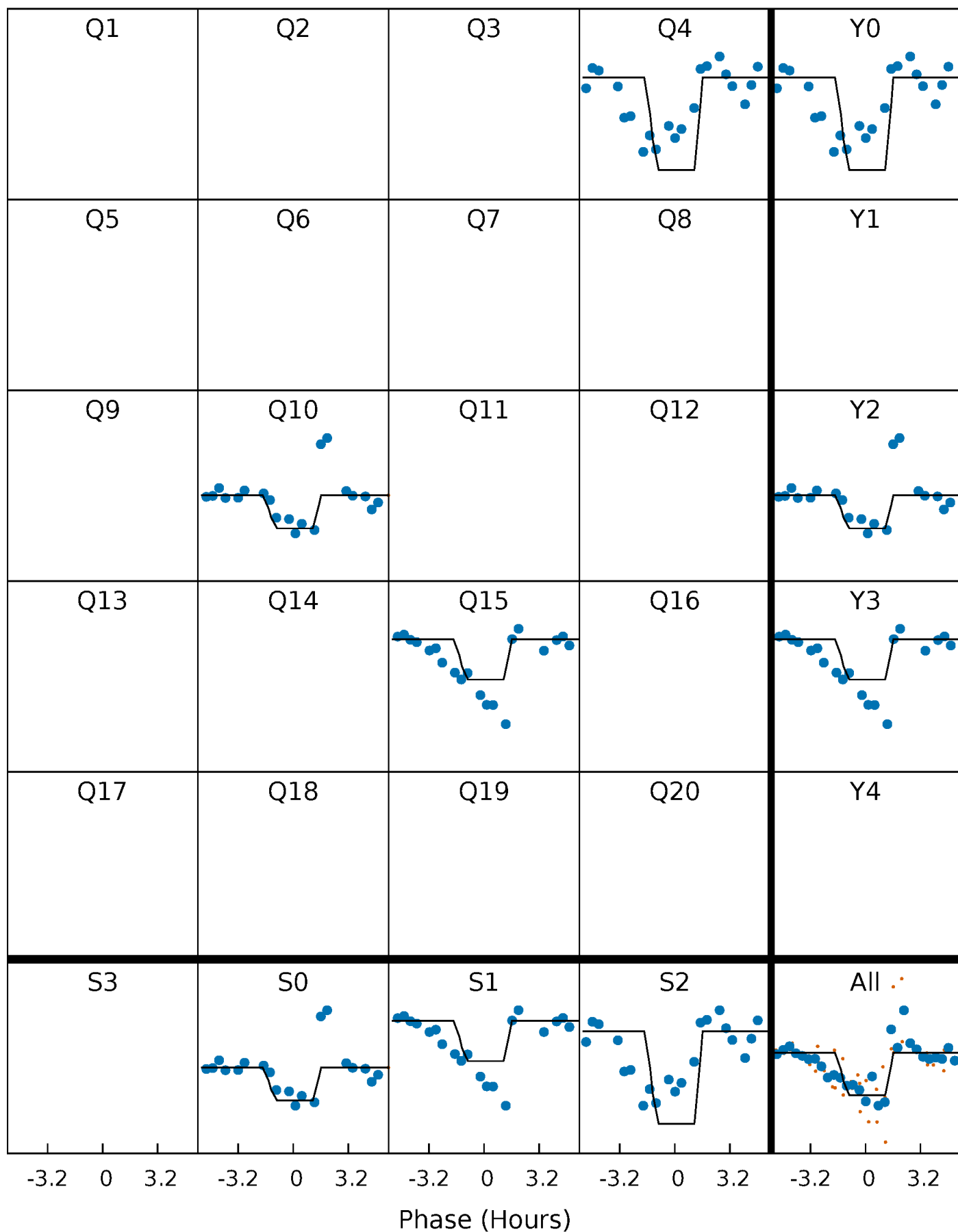
DV Quarter-Phased Transit Curves

TCE 009238899-04 $P=475.855286$ Days $T_0=436.147751$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

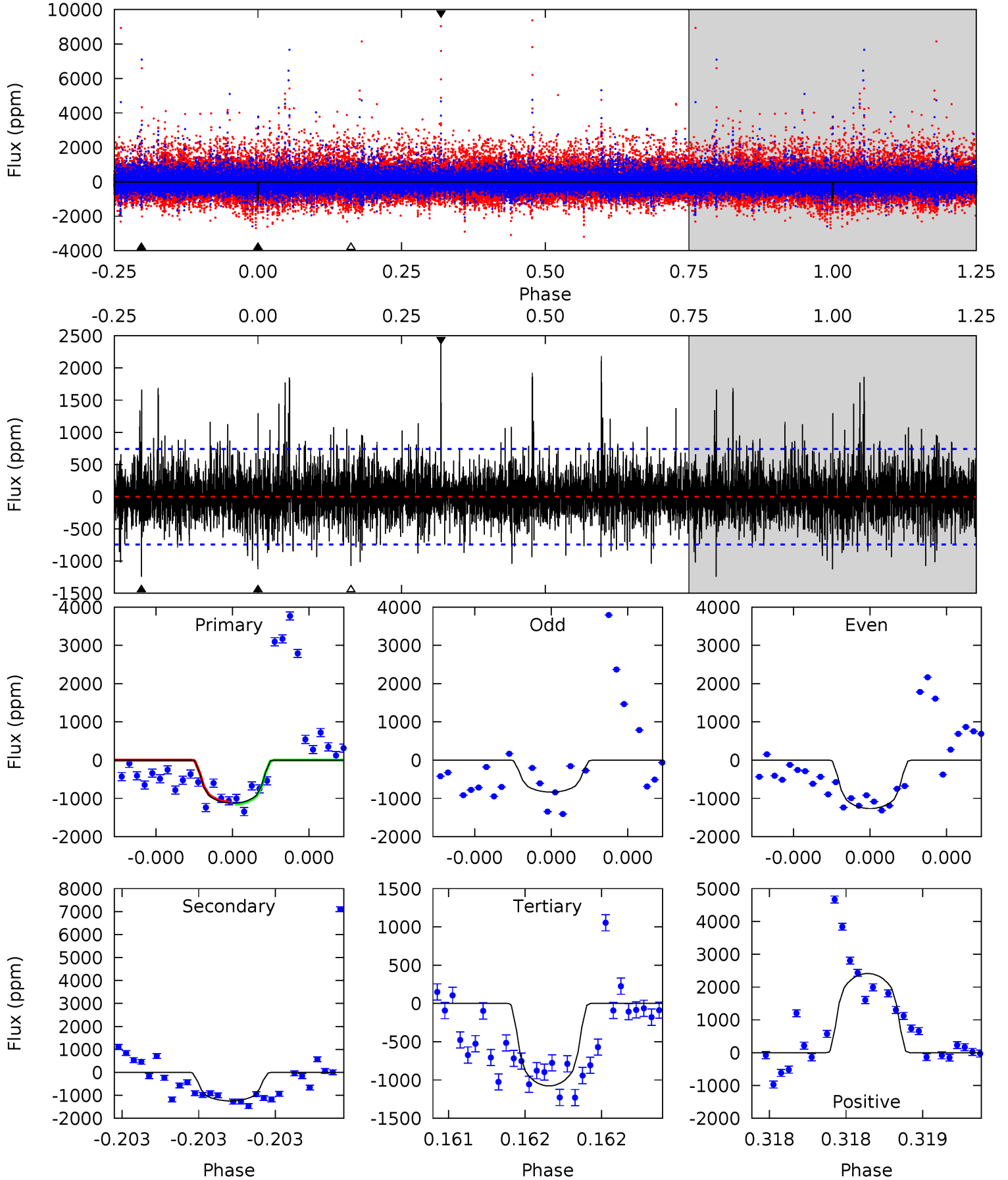
TCE 009238899-04 P=475.856745 Days $T_0=436.172963$ (BKJD)



DV Model-Shift Uniqueness Test

009238899-04, P = 475.855286 Days, E = 436.147751 Days

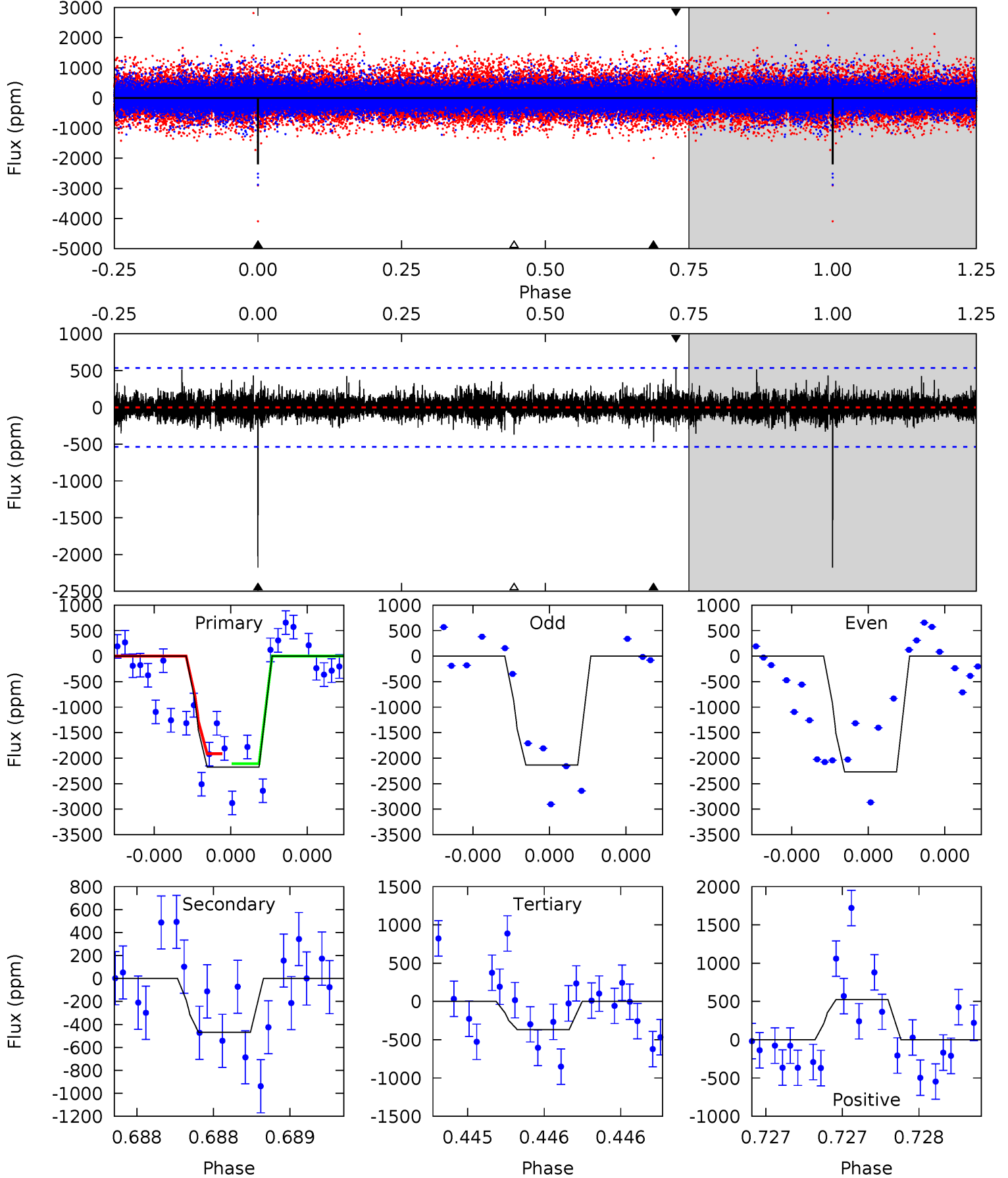
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.54	9.42	8.16	18.3	5.62	3.56	2.22	0.38	-9.73	1.26	-8.85	1.12	1.11	0.66	0.21



Alt Model-Shift Uniqueness Test

009238899-04, P = 475.856745 Days, E = 436.172963 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.1	4.97	3.89	5.56	5.68	3.64	0.85	19.2	17.5	1.08	-0.60	0.75	1.16	0.19	0



Stellar Parameters For KIC 009238899

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4070^{+141}_{-155}	$4.643^{+0.056}_{-0.020}$	$0.060^{+0.250}_{-0.300}$	$0.619^{+0.038}_{-0.065}$	$0.613^{+0.052}_{-0.063}$	$3.645^{+1.005}_{-0.361}$
	+3%/-4%	+1%/-0%	+417%/-500%	+6%/-11%	+8%/-10%	+28%/-10%
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 009238899-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1242 ± 132	$2.66^{+1.44}_{-1.57}$	194^{+7}_{-8}	3910^{+1514}_{-541}	$103302^{+461155}_{-62322}$
Alt.	-468 ± 94	$3.45^{+1.66}_{-1.55}$	194^{+7}_{-8}	3065^{+668}_{-332}	22480^{+53344}_{-12870}

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

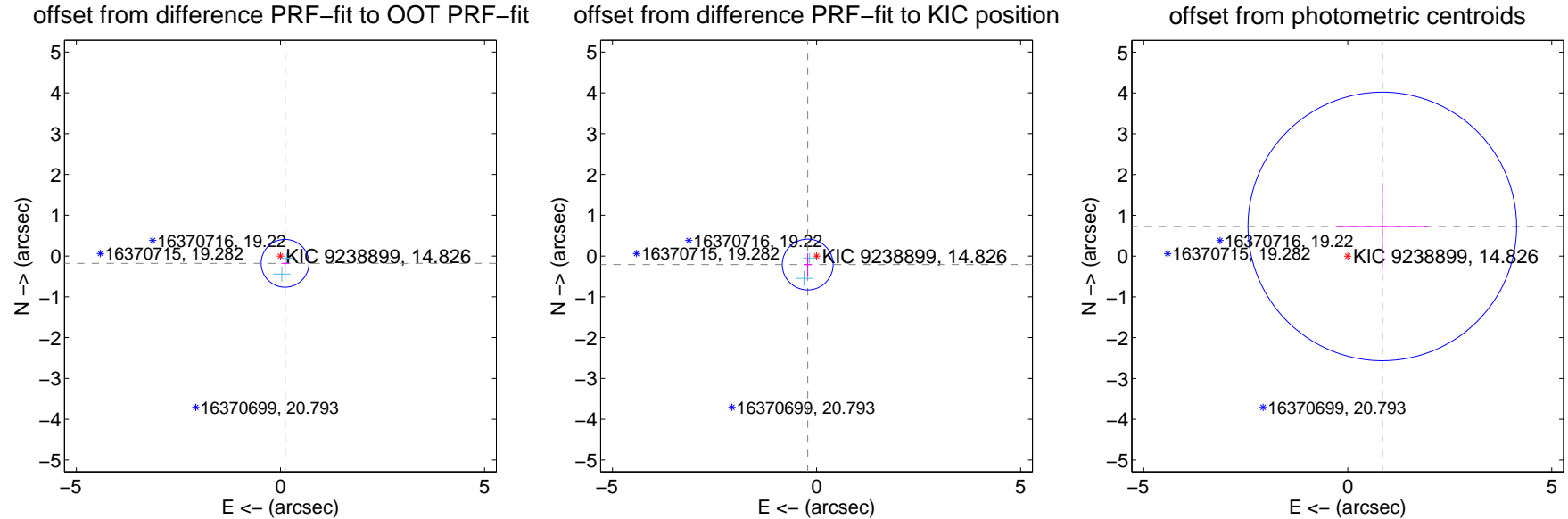
DV Centroid Data

Supplemental centroid analysis for 009238899-04. Kepler magnitude: 14.83. Transit SNR 4.94

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.211 ± 0.195	1.08	-0.113 ± 0.094	-0.178 ± 0.223
PRF-fit source offset from KIC position	0.301 ± 0.208	1.45	0.217 ± 0.101	-0.208 ± 0.281
photometric centroid source offset	1.12 ± 1.10	1.02	-0.85 ± 1.12	0.73 ± 1.07



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.

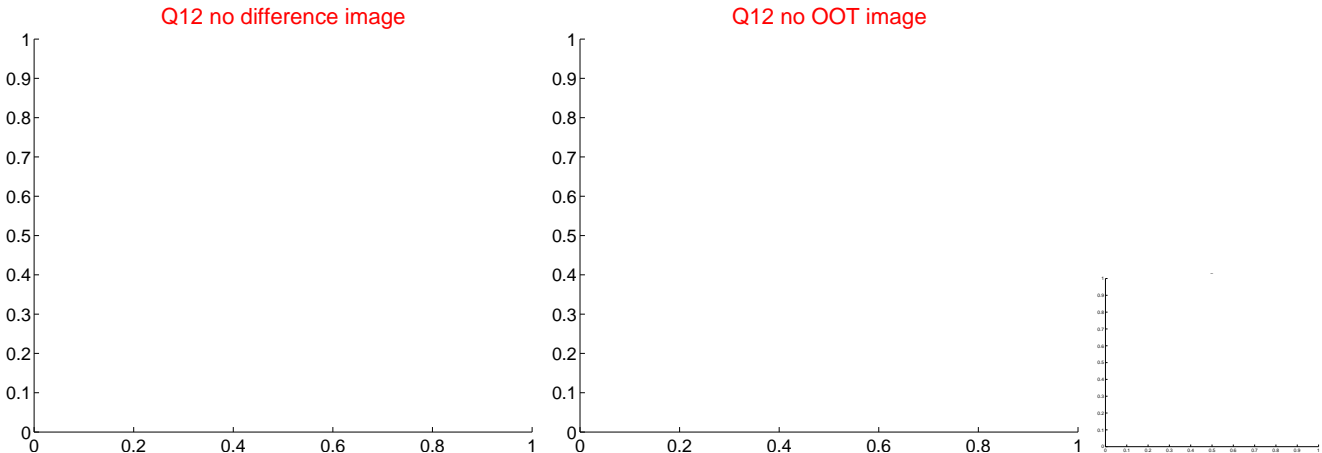
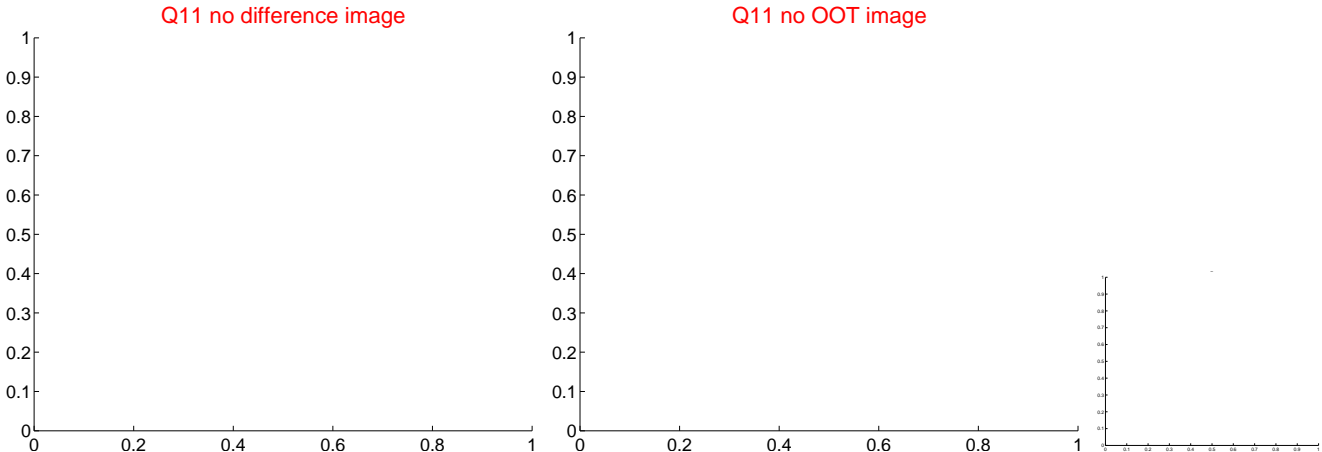
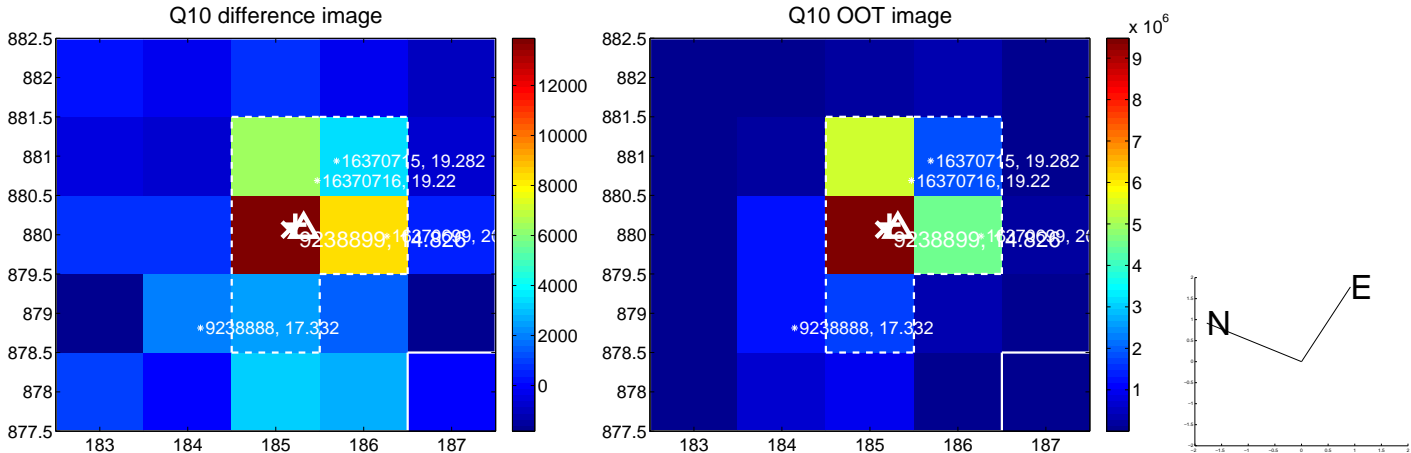
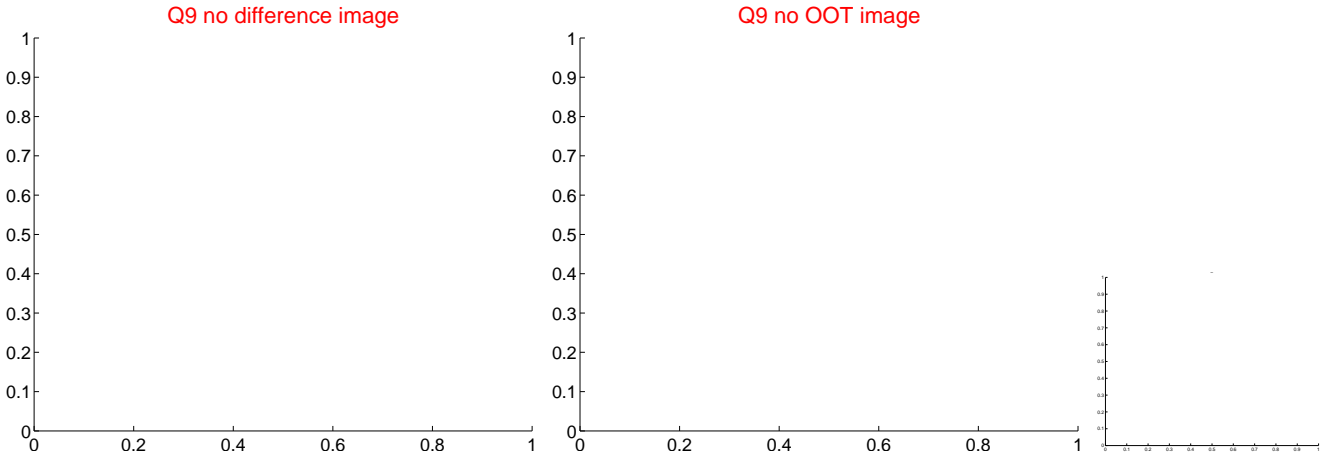
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



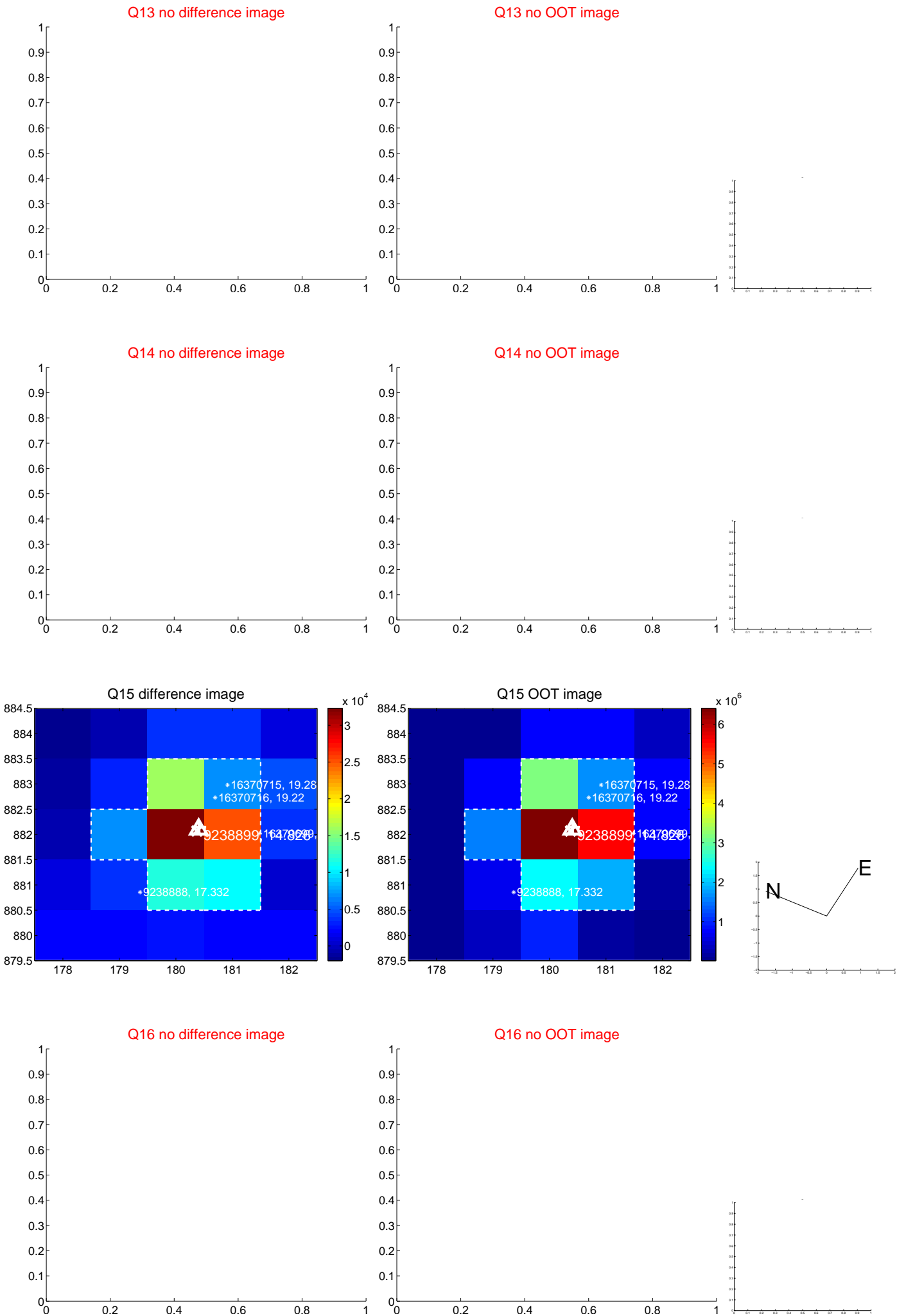
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



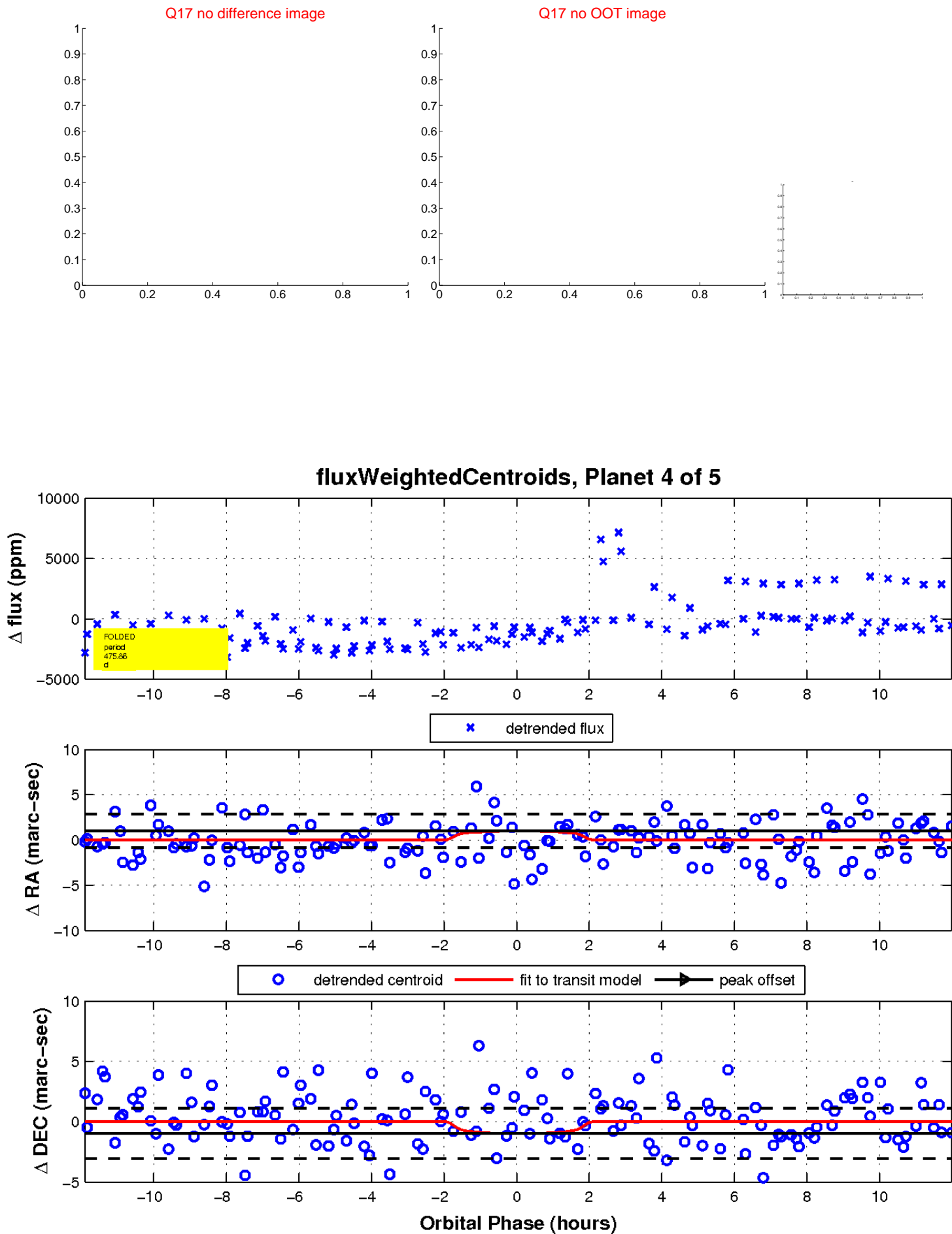
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

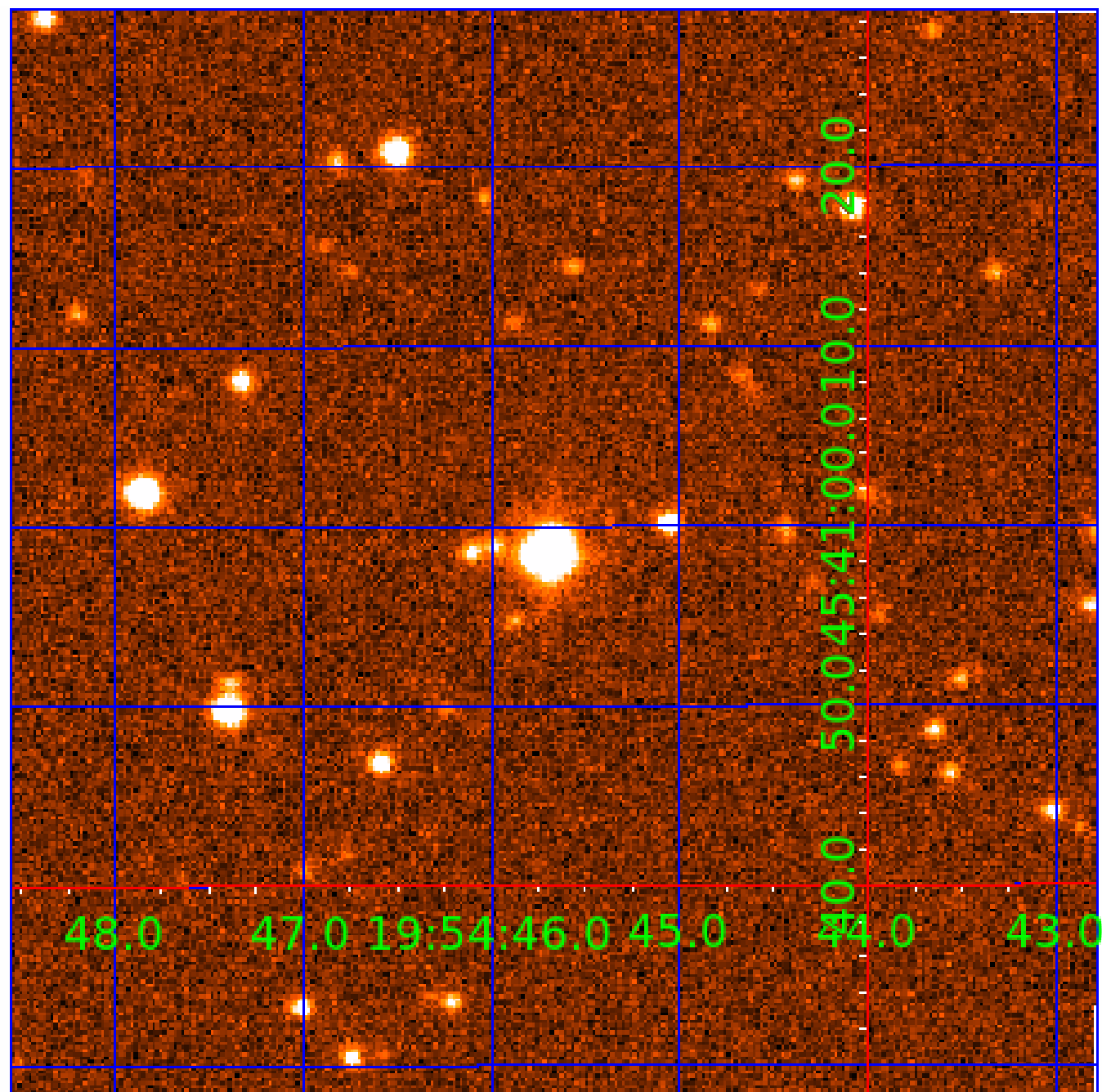


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009238899

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})
009238899-01	OBS	No	575.879513	134.103671	1453.9	3.696	13.1	7.5	0.62	4070	2.79	0.07
009238899-02	OBS	No	148.940219	135.366125	826.7	12.500	12.6	-1.0	0.62	4070	1.72	0.43
009238899-03	OBS	No	457.128491	187.484407	1804.0	4.628	10.3	8.1	0.62	4070	2.66	0.10
009238899-04	OBS	No	475.855286	436.147751	1342.1	4.013	12.3	4.9	0.62	4070	2.54	0.09
009238899-05	OBS	No	502.903968	334.136986	1359.6	3.500	12.3	-1.0	0.62	4070	2.21	0.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009238899-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
009238899-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
009238899-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009238899-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
009238899-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

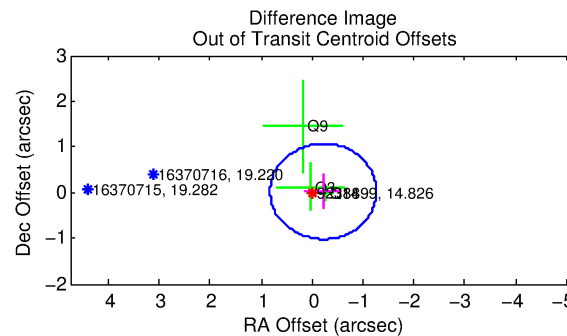
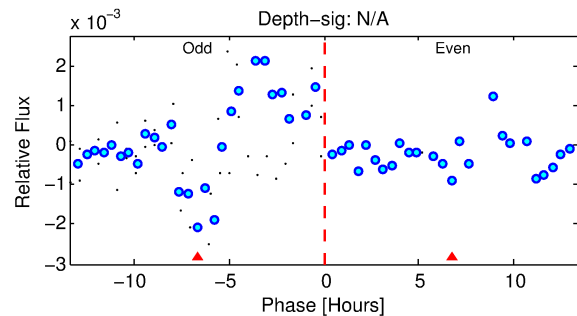
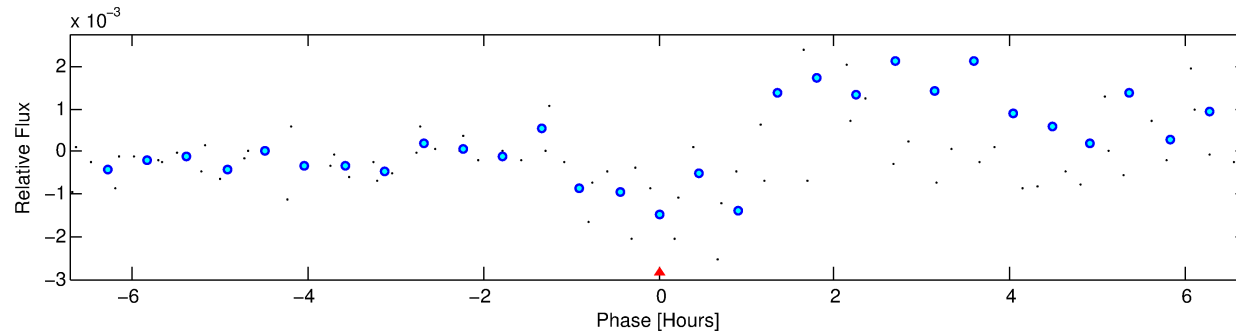
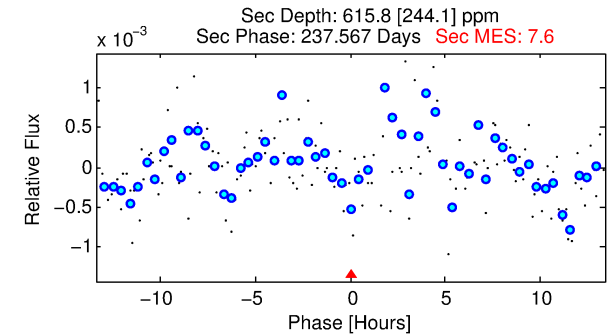
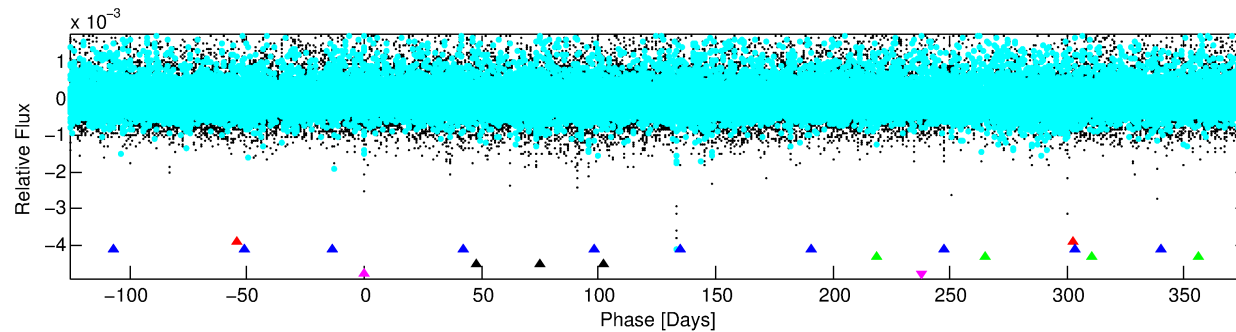
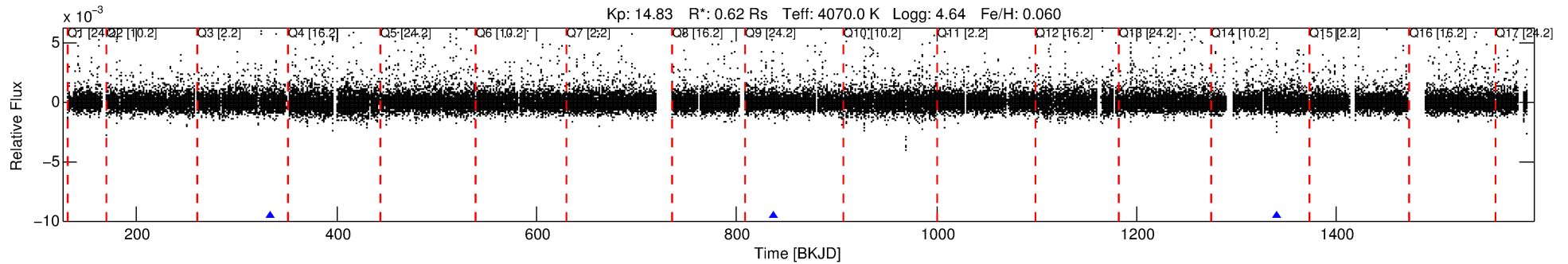
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009238899-05

No Significant Match Found

DV One-Page Summary

KIC: 9238899 Candidate: 5 of 5 Period: 502.904 d



TPS TCE Results:

Period = 502.90397 d
Epoch = 334.1370 BKJD

DV fit results are unavailable

DV Diagnostic Results:

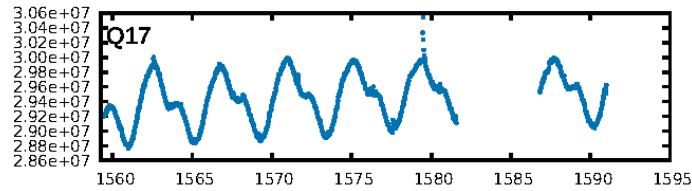
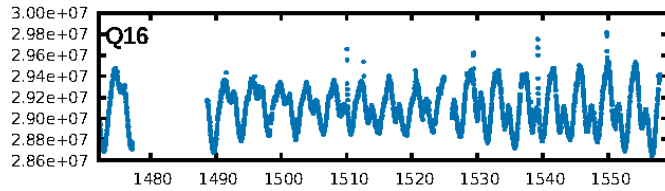
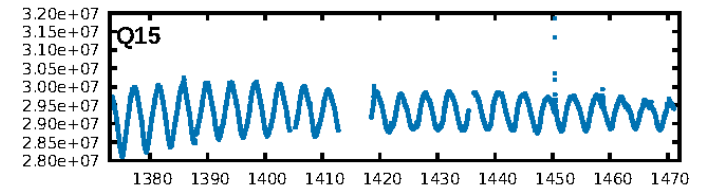
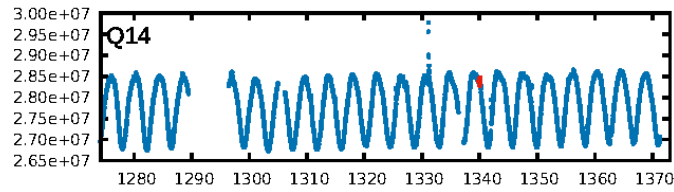
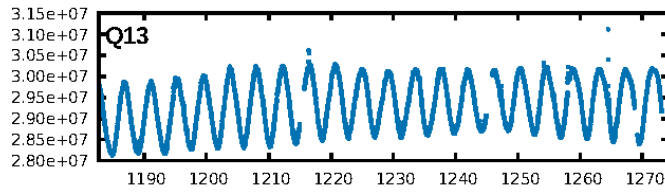
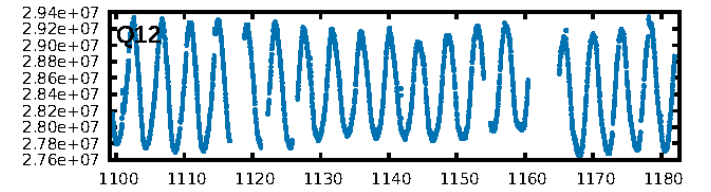
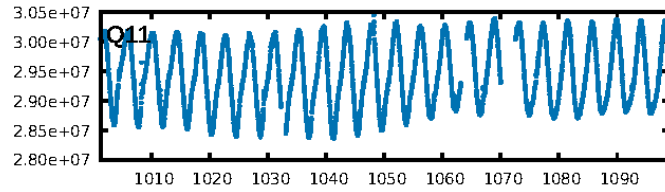
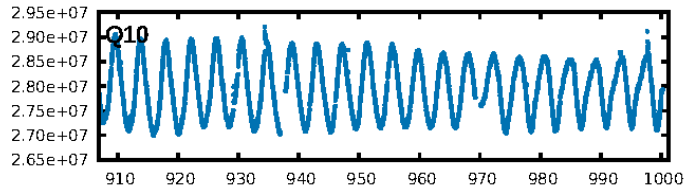
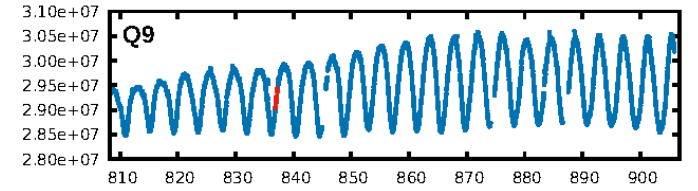
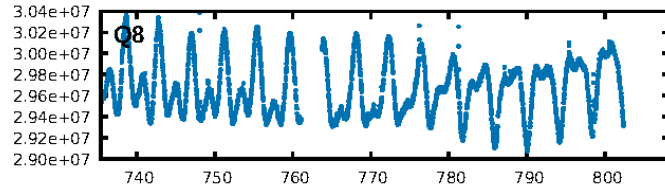
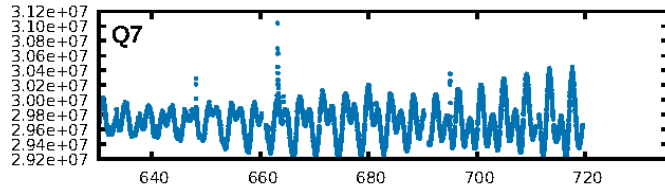
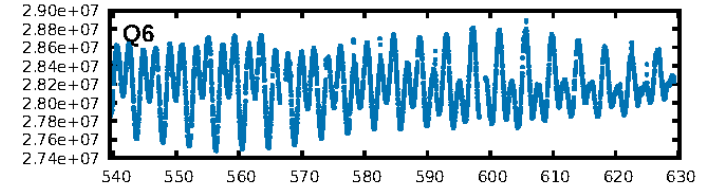
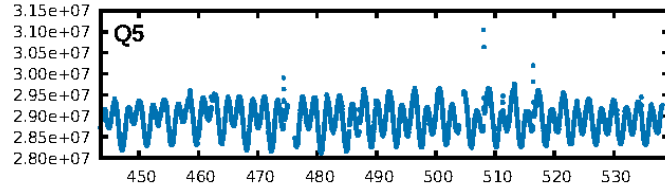
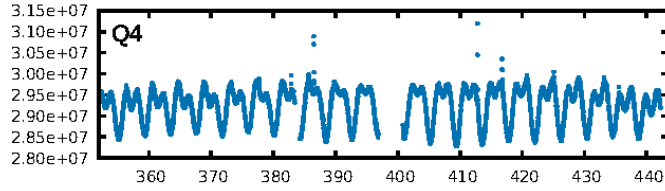
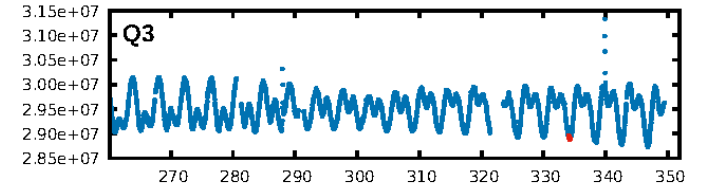
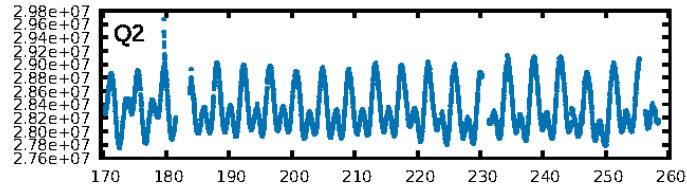
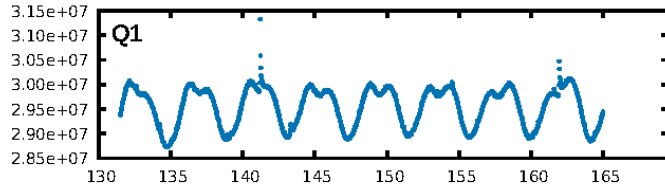
ShortPeriod-sig: 100.0% [121.90 σ]
LongPeriod-sig: 100.0% [344.09 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.412

Centroid-sig: 6.3%
Centroid-so: 1.142 arcsec [1.54 σ]
OotOffset-rm: 0.223 arcsec [0.64 σ]
KicOffset-rm: 0.186 arcsec [0.48 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
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DiffImageOverlap-fno: 1.00 [3/3]

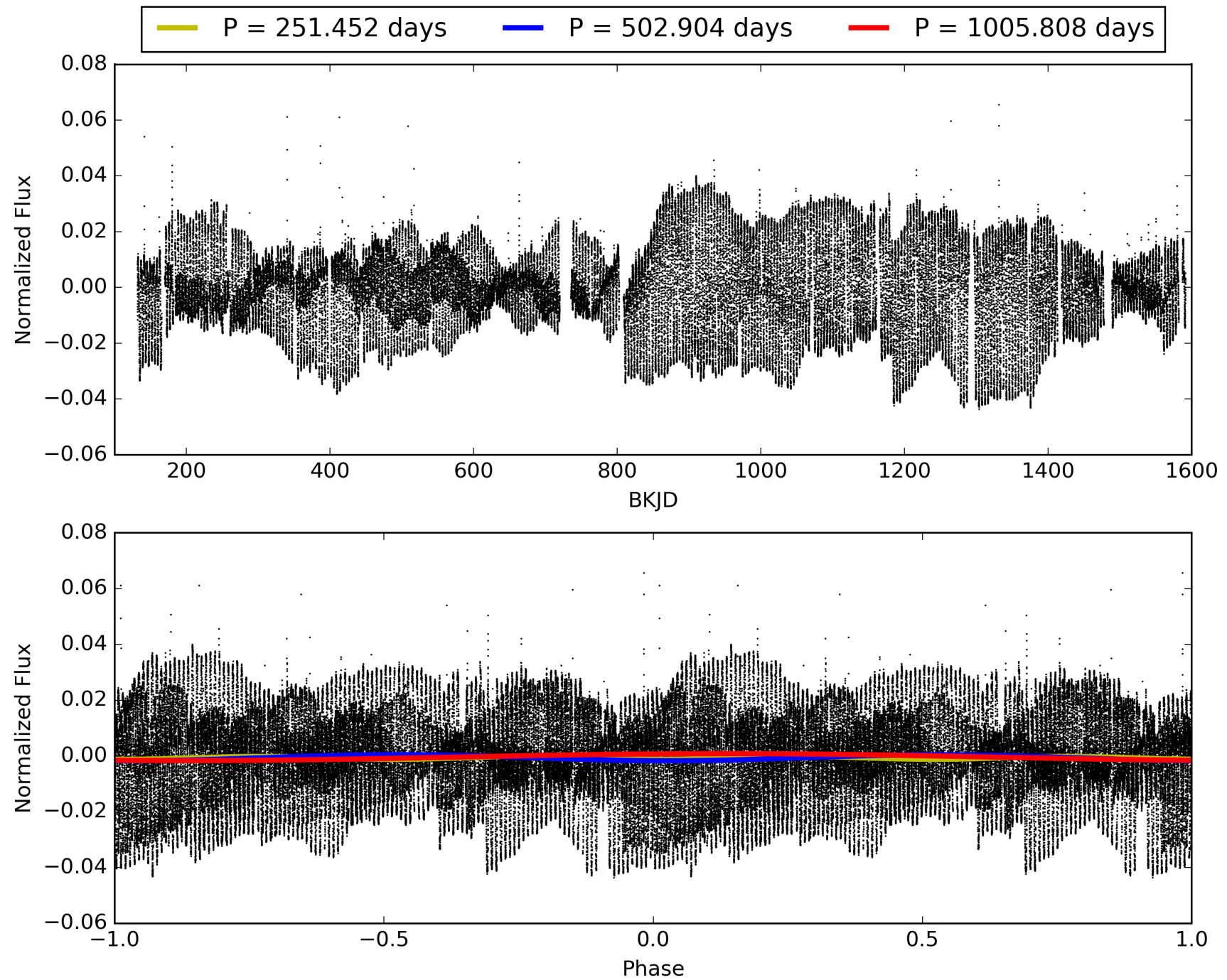
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:16:16 Z

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

TCE 009238899-05, PDC Light Curves

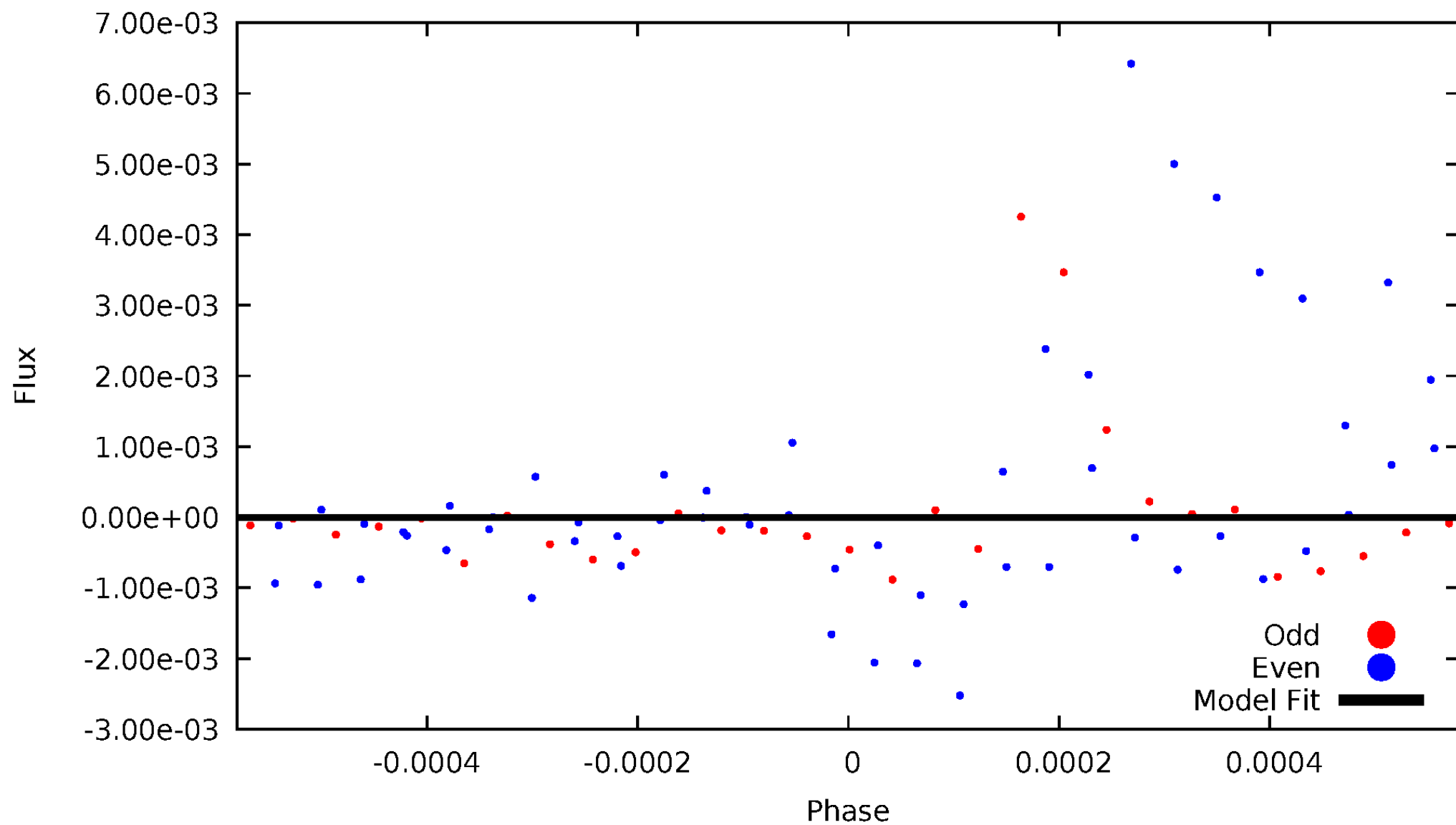


TCE 009238899-05



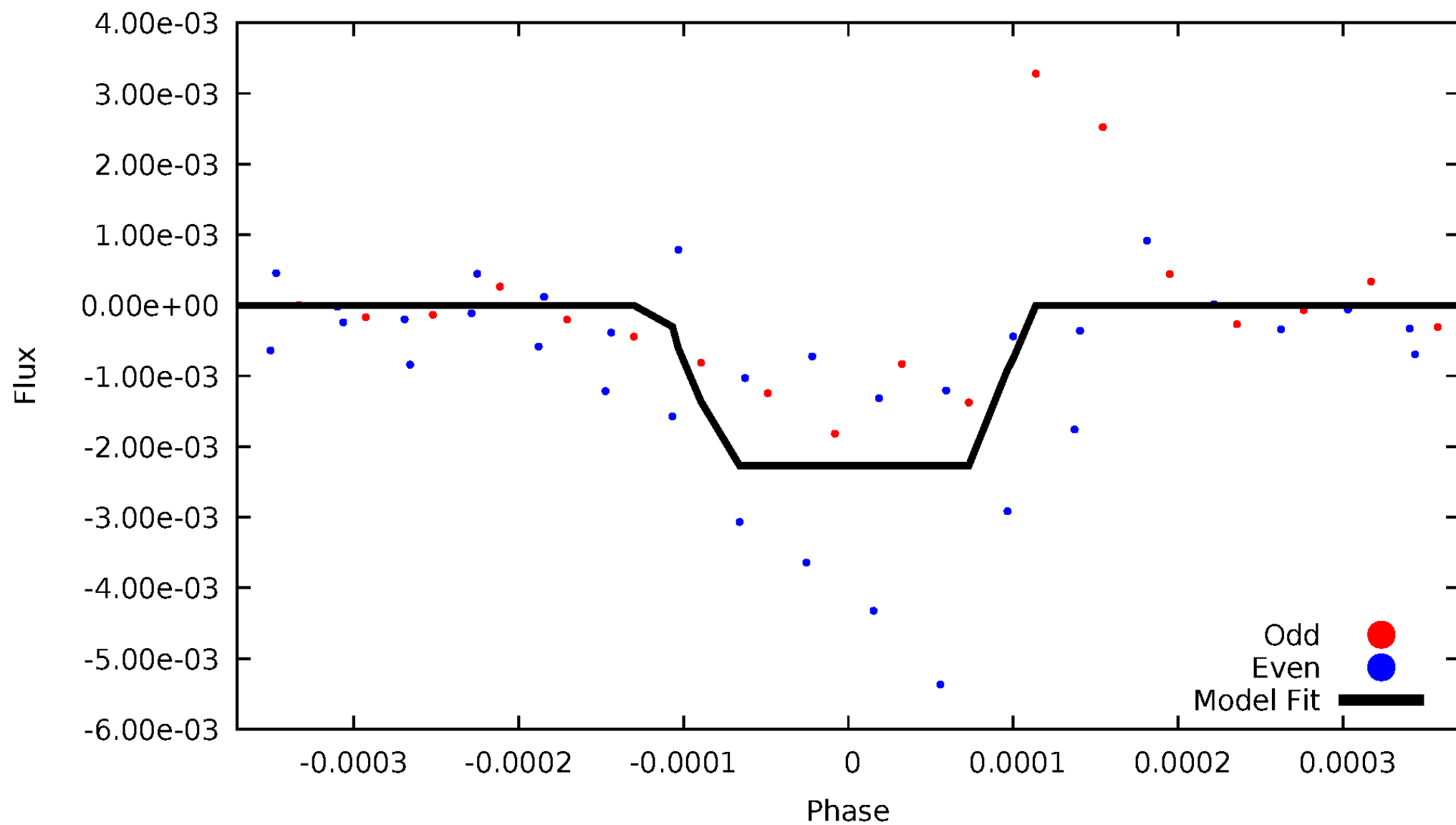
DV Odd/Even

TCE 009238899-05

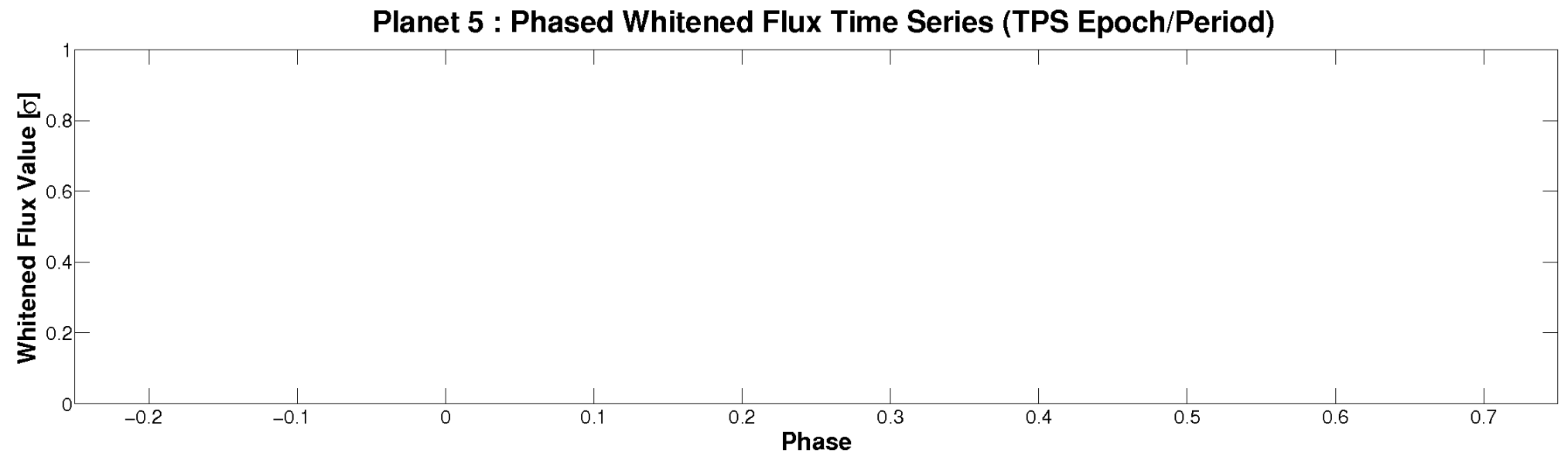
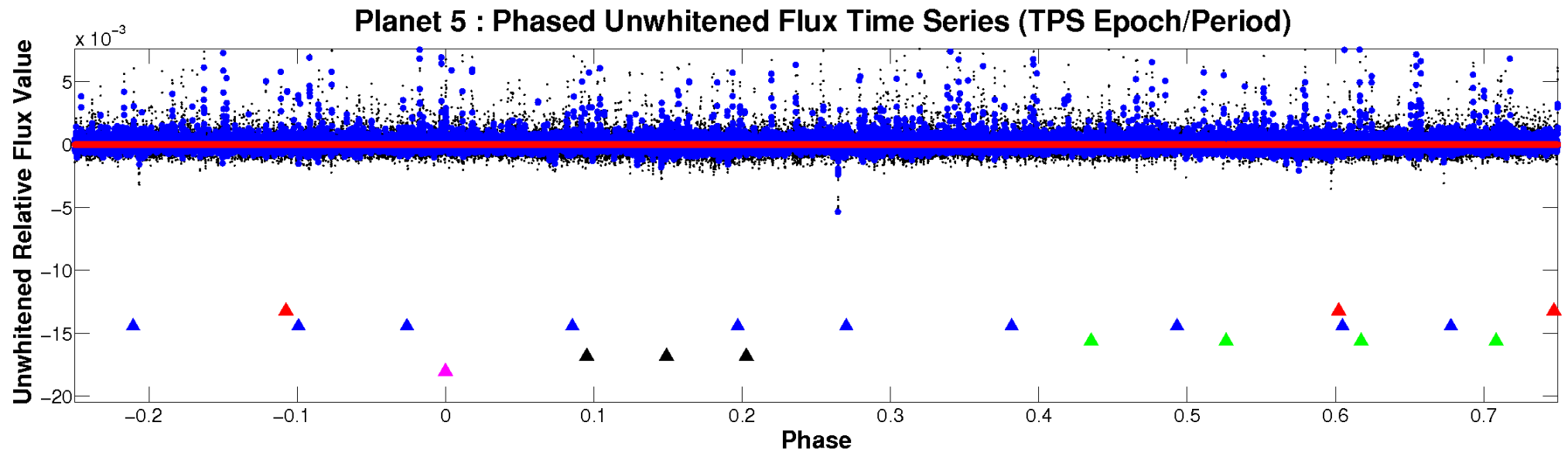


ALT Odd/Even

TCE 009238899-05

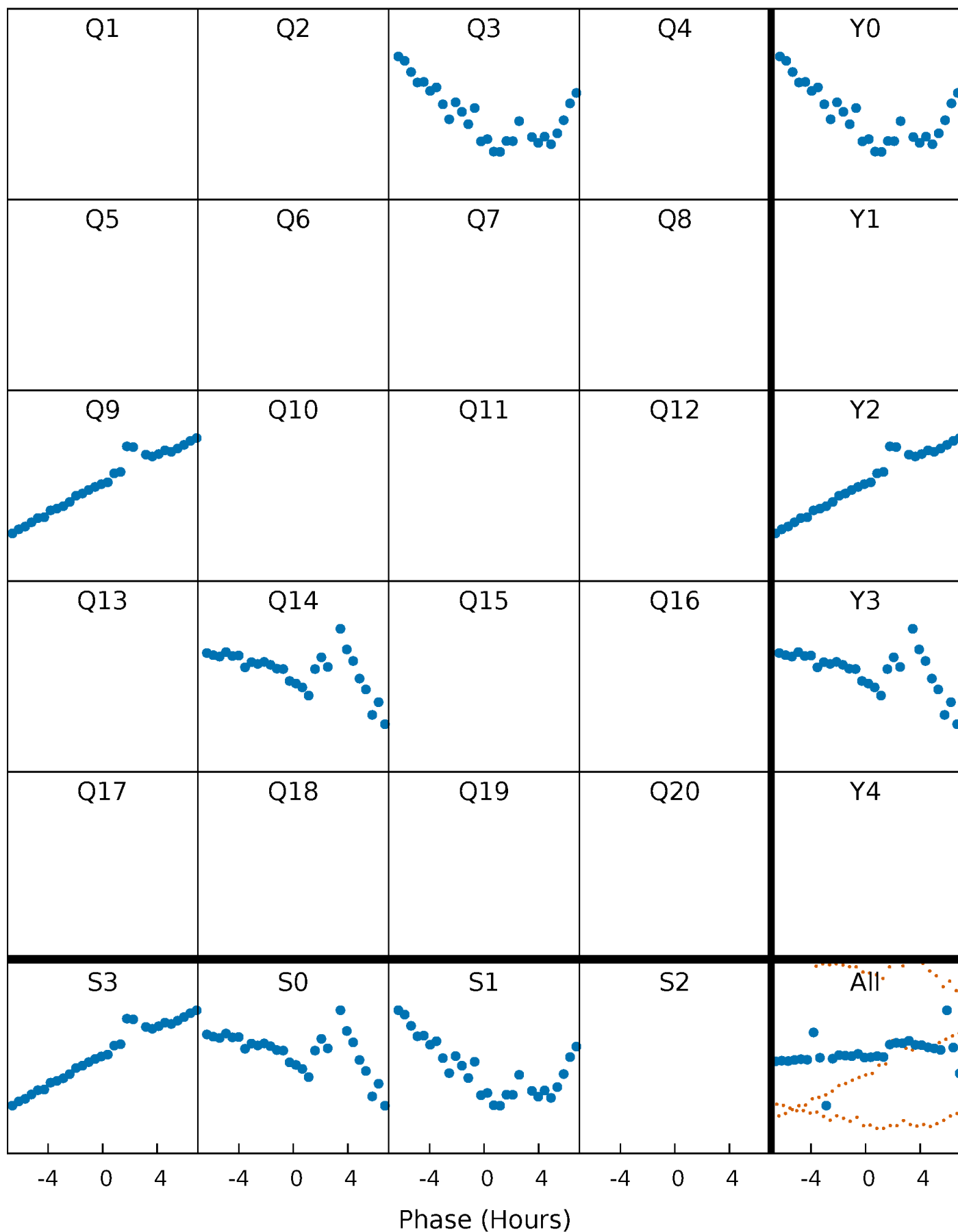


Non-Whitened Vs. Whitened Light Curve



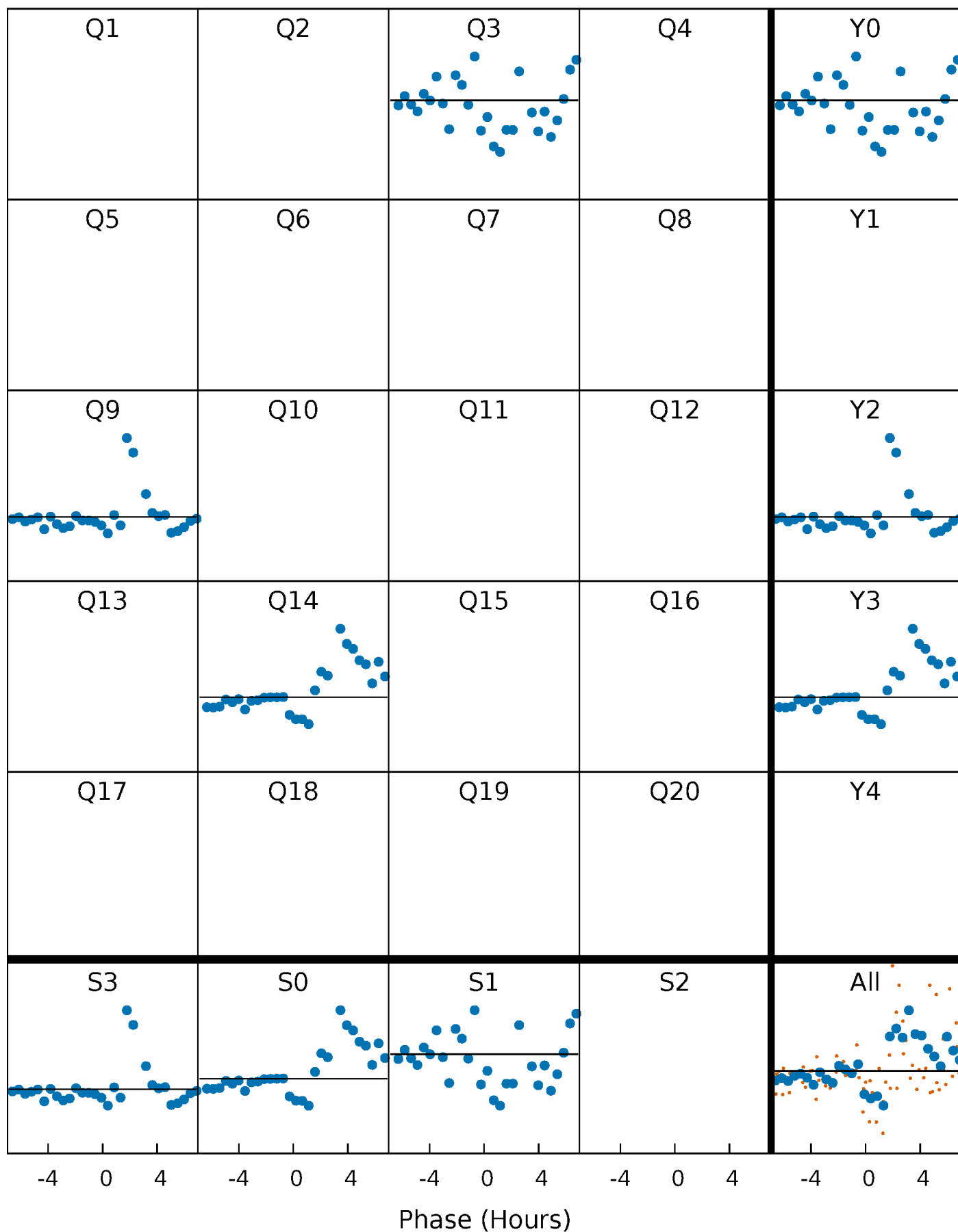
PDC Quarter-Phased Transit Curves

TCE 009238899-05 $P=502.903968$ Days $T_0=334.136986$ (BKJD)



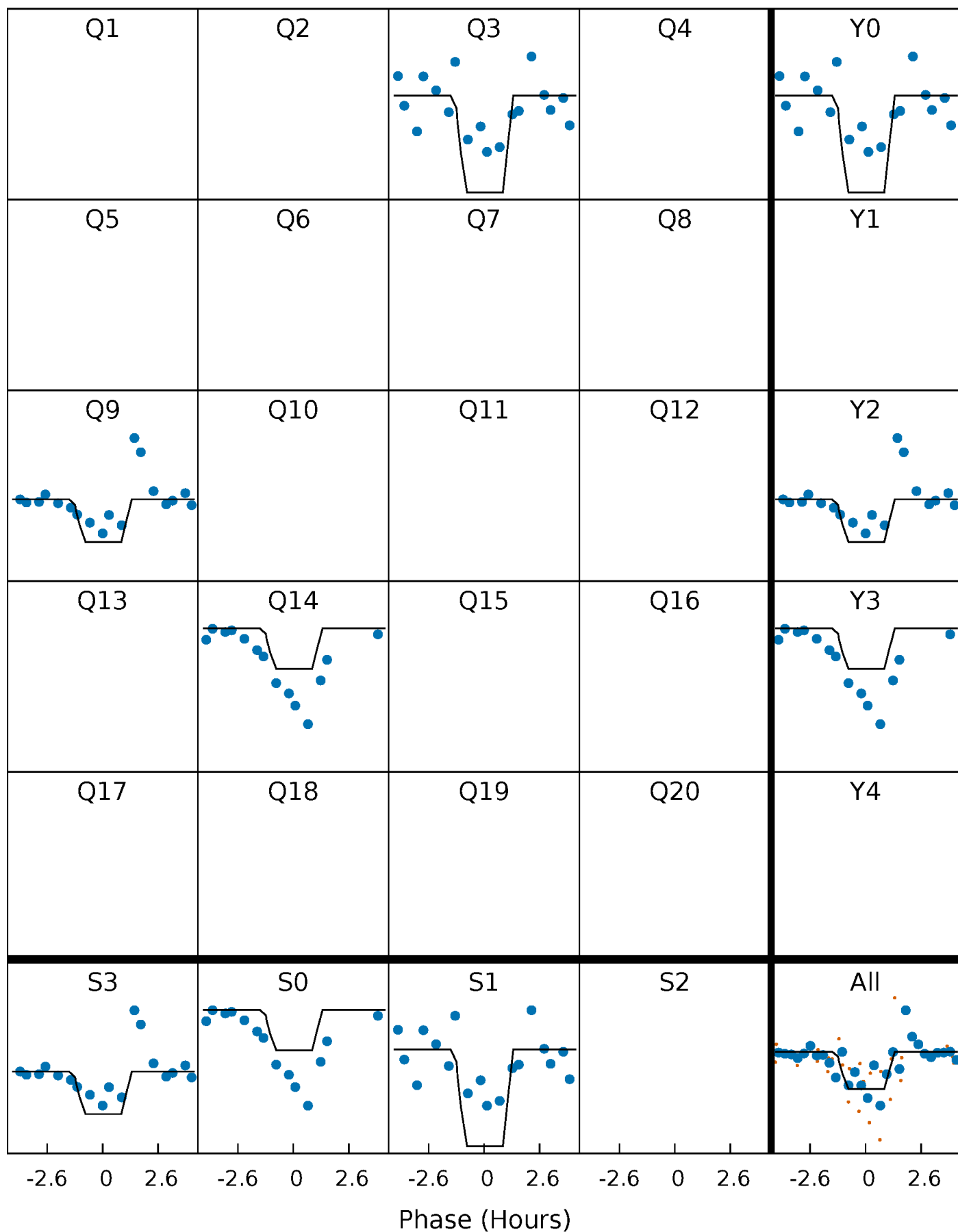
DV Quarter-Phased Transit Curves

TCE 009238899-05 $P=502.903968$ Days $T_0=334.136986$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

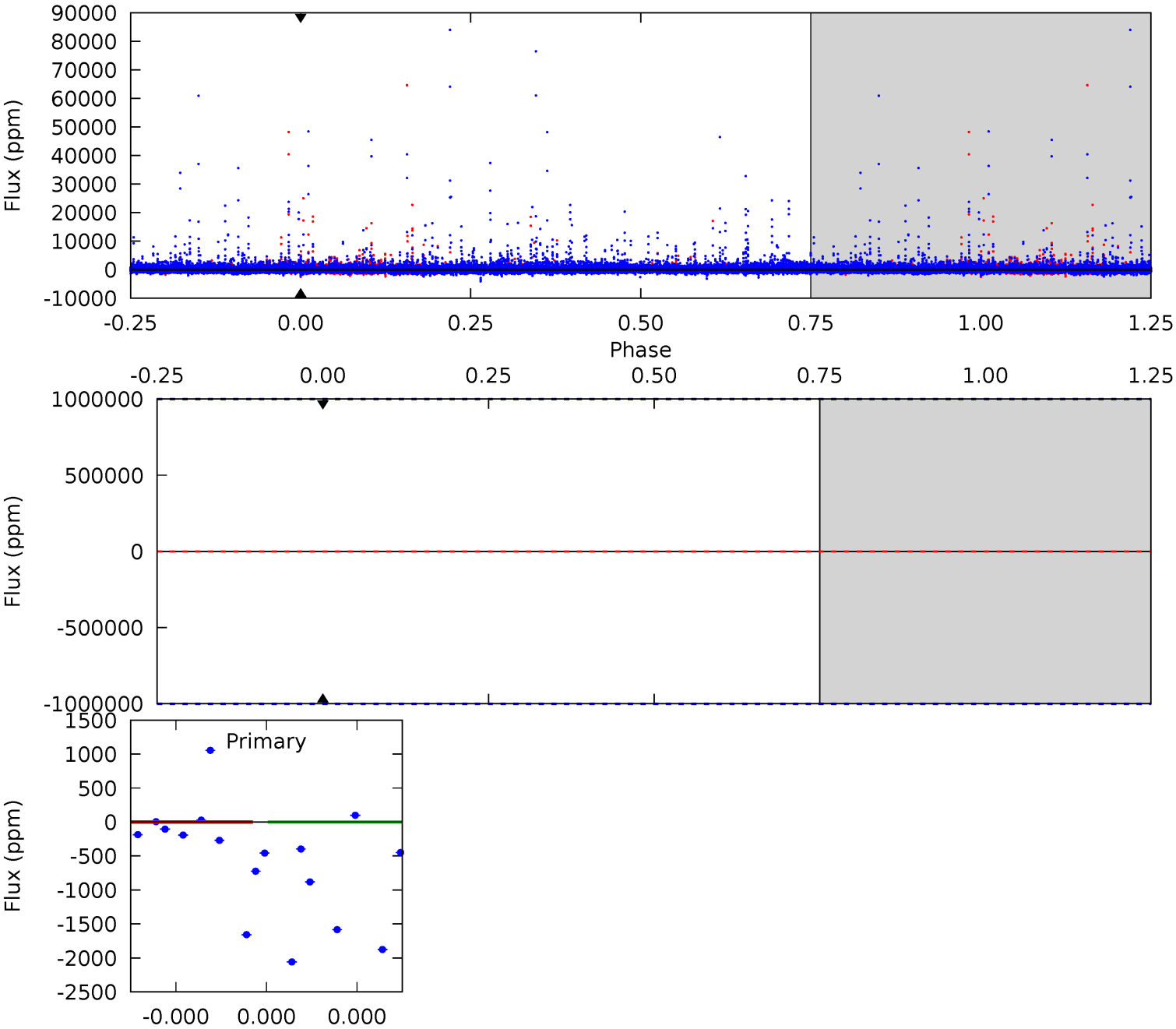
TCE 009238899-05 $P=502.903968$ Days $T_0=334.162158$ (BKJD)



DV Model-Shift Uniqueness Test

009238899-05, P = 502.903968 Days, E = 334.136986 Days

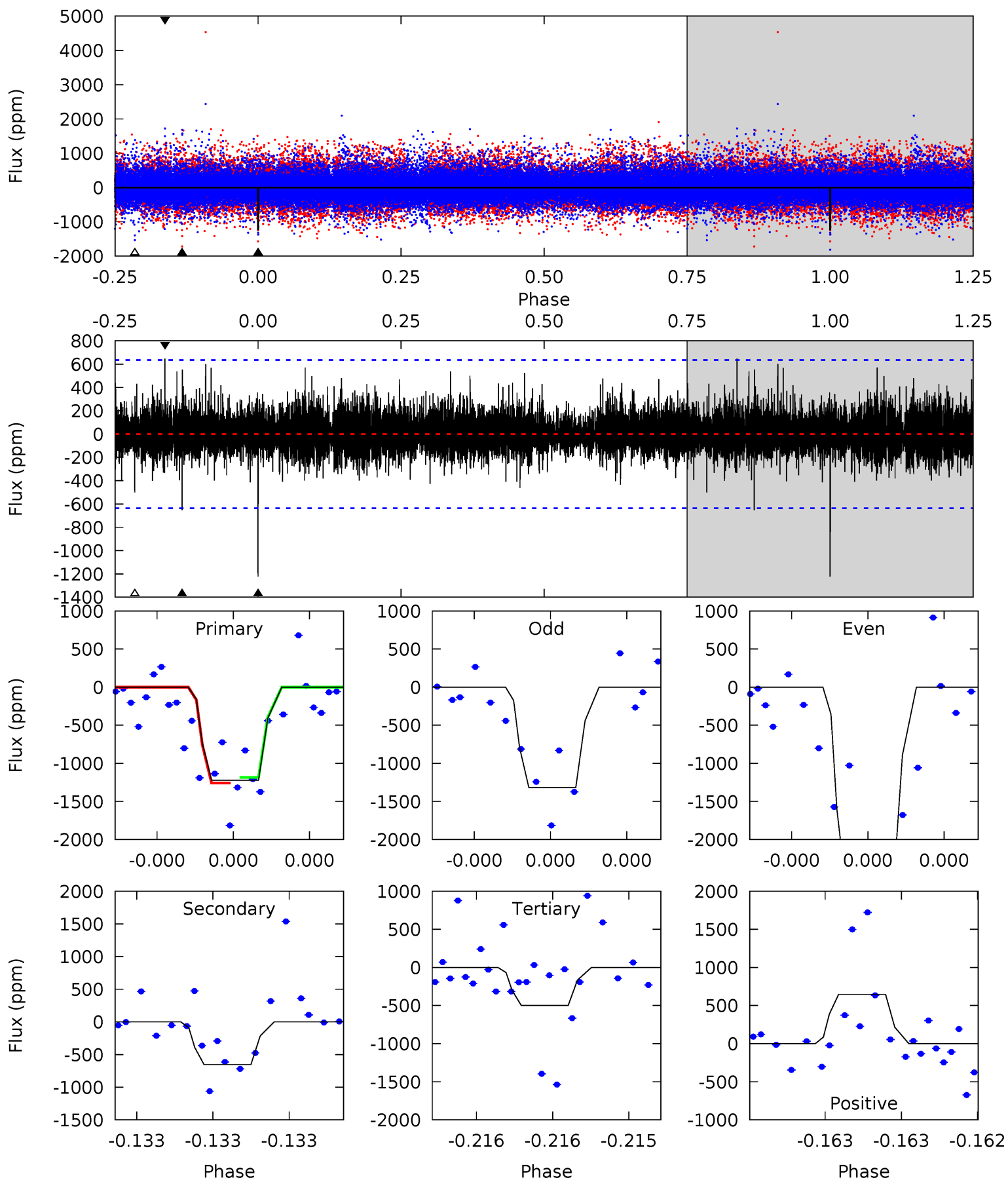
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009238899-05, P = 502.903968 Days, E = 334.162158 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	5.87	4.49	5.81	5.71	3.69	0.93	6.51	5.18	1.38	0.05	7.14	1.66	0.35	0.32



Stellar Parameters For KIC 009238899

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4070^{+141}_{-155}	$4.643^{+0.056}_{-0.020}$	$0.060^{+0.250}_{-0.300}$	$0.619^{+0.038}_{-0.065}$	$0.613^{+0.052}_{-0.063}$	$3.645^{+1.005}_{-0.361}$
	+3%/-4%	+1%/-0%	+417%/-500%	+6%/-11%	+8%/-10%	+28%/-10%
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 009238899-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$5.35^{+5.12}_{-3.42}$	191^{+7}_{-9}	3496^{+6172}_{-11544}	$57734^{+4337565}_{-2650057}$
Alt.	-653 ± 111	$5.86^{+5.39}_{-3.75}$	191^{+7}_{-9}	2774^{+1018}_{-414}	11719^{+81486}_{-8653}

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

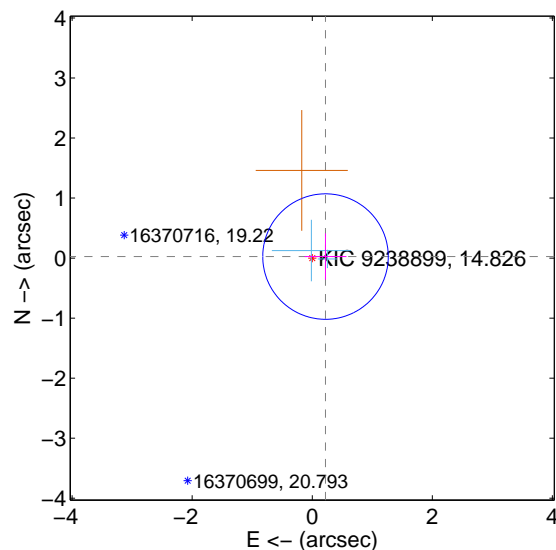
Supplemental centroid analysis for 009238899-05. Kepler magnitude: 14.83. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

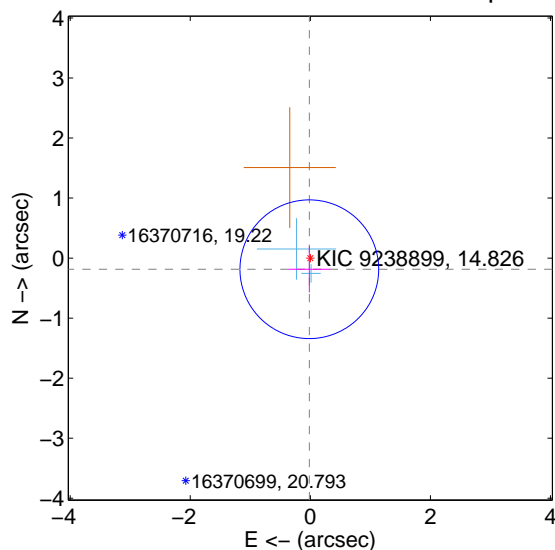
The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.223 ± 0.348	0.64	-0.221 ± 0.348	0.026 ± 0.385
PRF-fit source offset from KIC position	0.186 ± 0.385	0.48	0.017 ± 0.348	-0.185 ± 0.385
photometric centroid source offset	1.14 ± 0.74	1.54	0.96 ± 0.75	0.61 ± 0.71

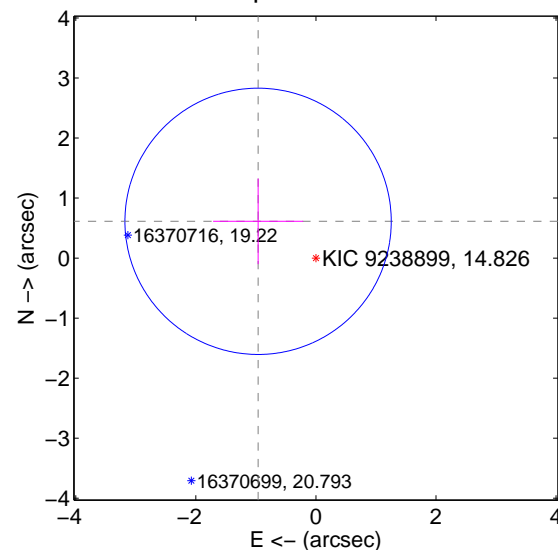
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

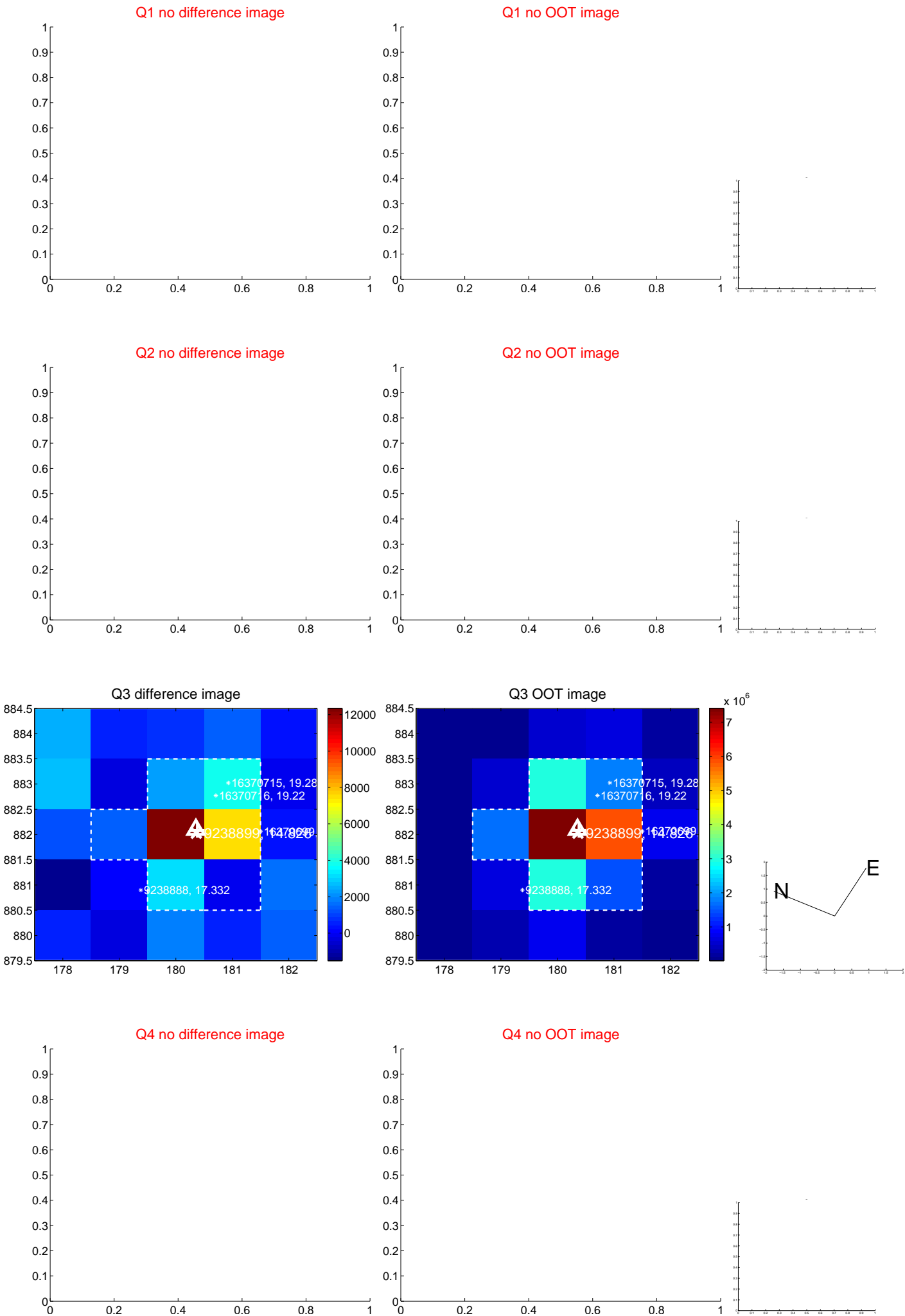


offset from photometric centroids

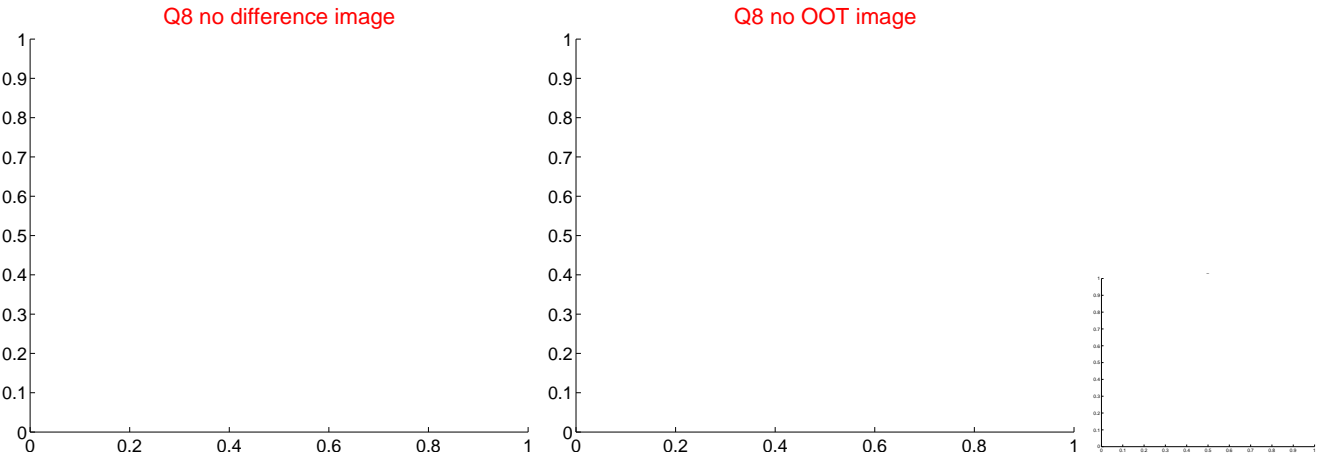
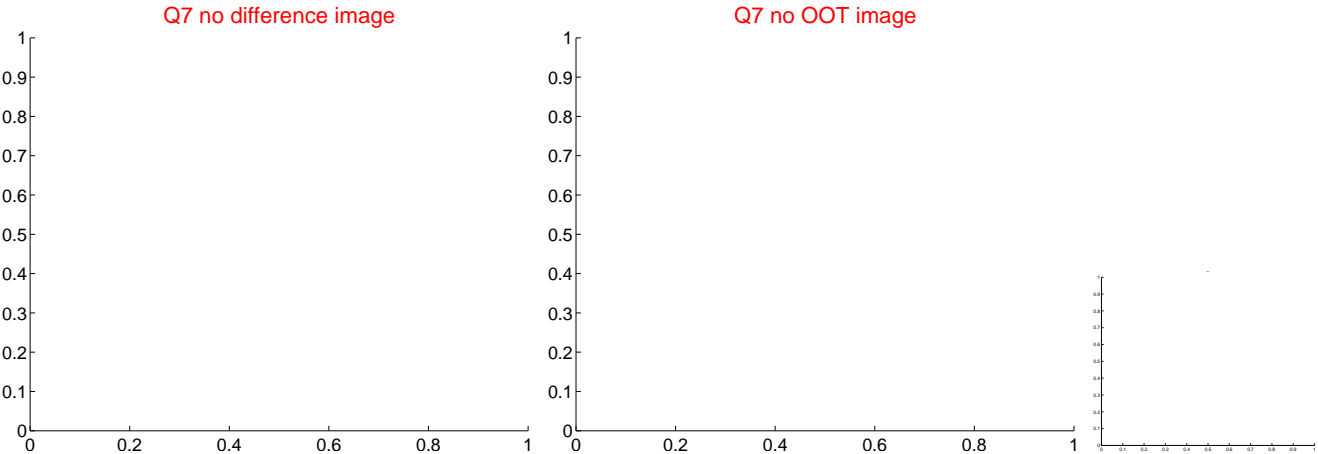
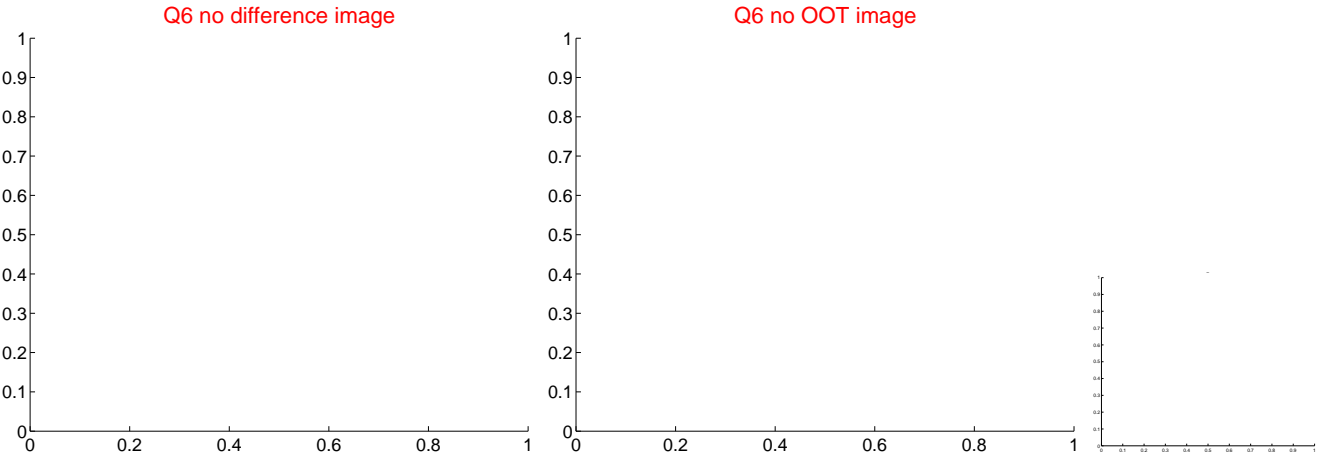
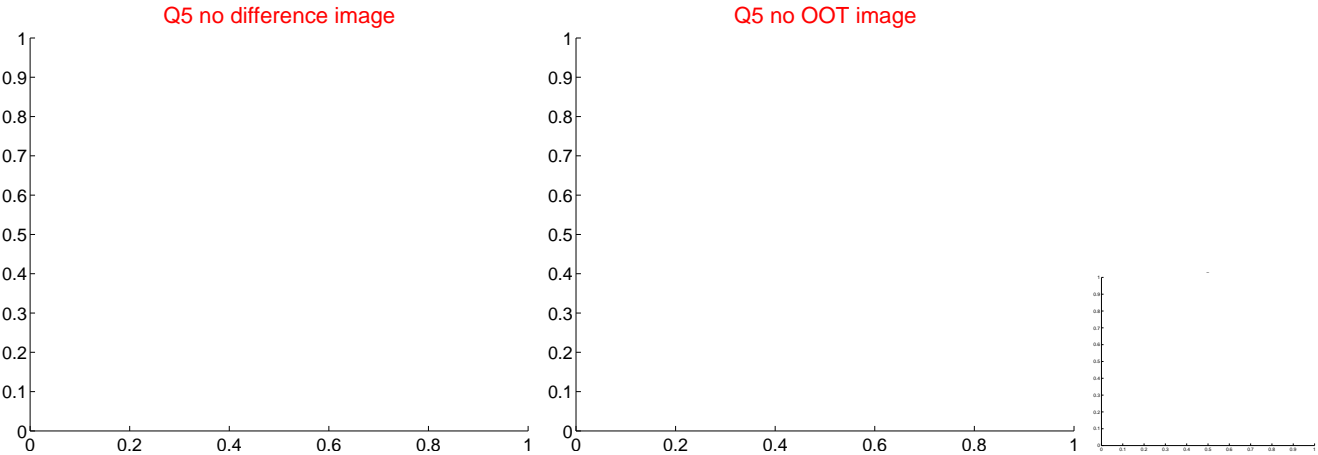


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

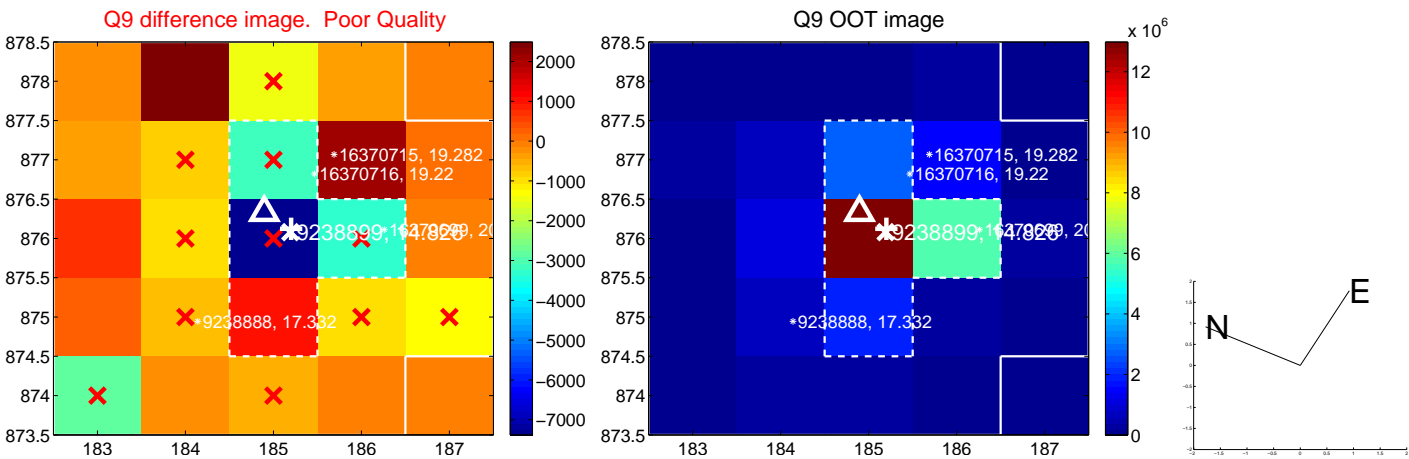
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



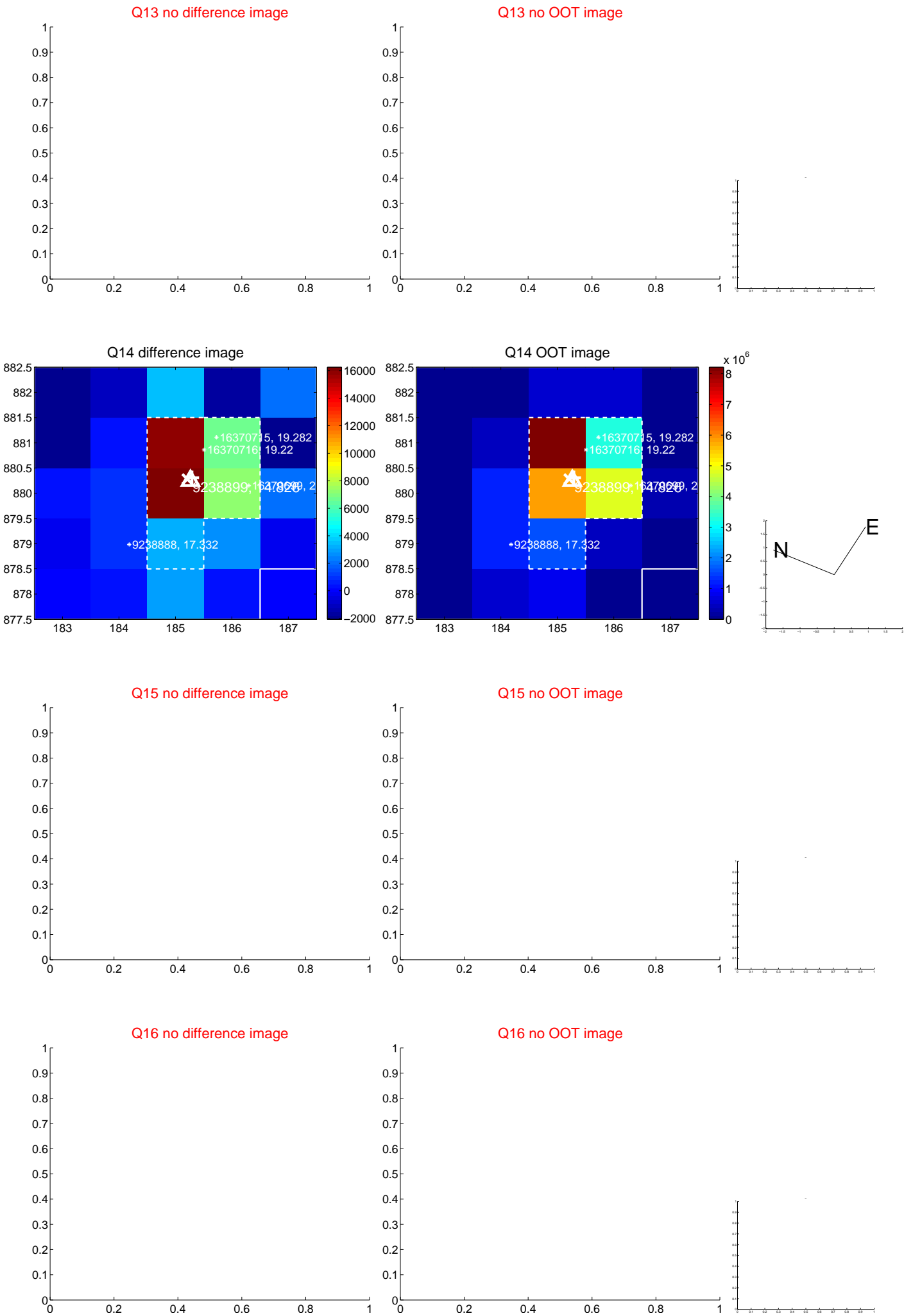
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



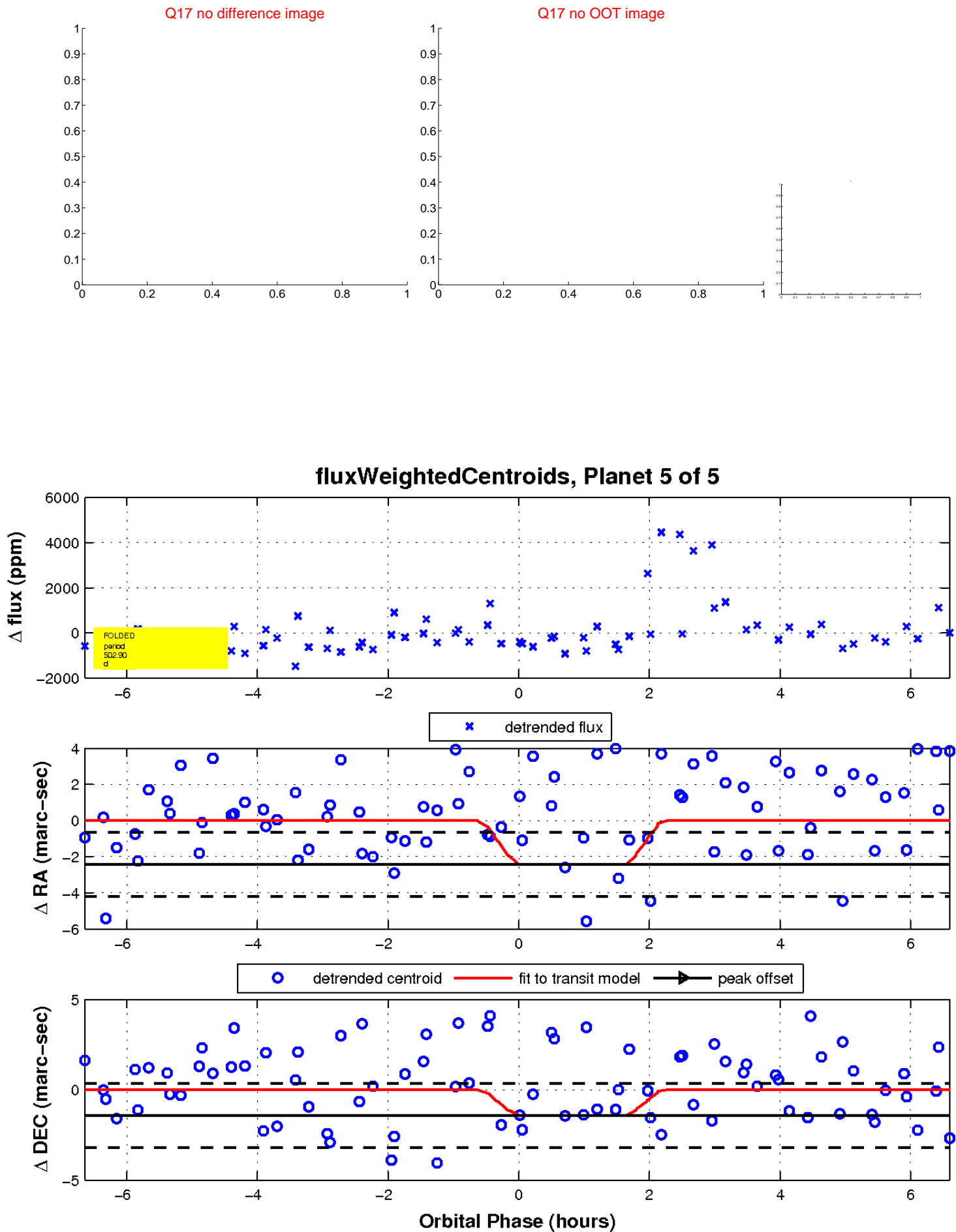
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

