

KIC 005723310

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})
005723310-01	OBS	No	2.241090	133.477377	18.4	10.864	10.3	11.2	1.80	8175	0.79	7737.46
005723310-02	OBS	No	597.590861	263.302980	239.9	48.566	7.6	10.9	1.80	8175	3.25	4.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005723310-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005723310-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

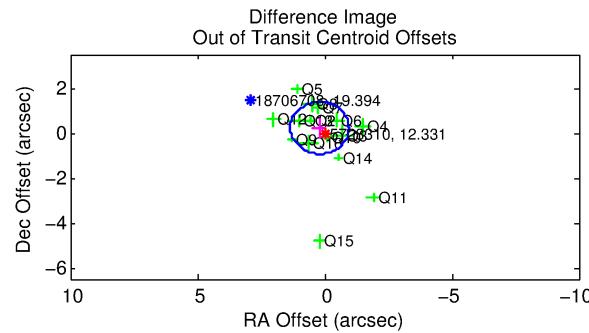
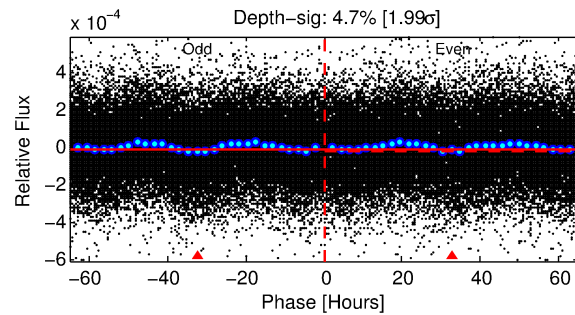
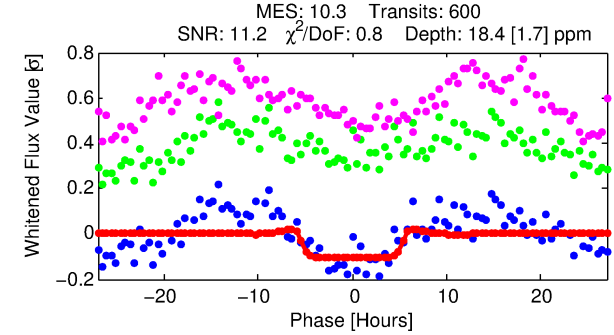
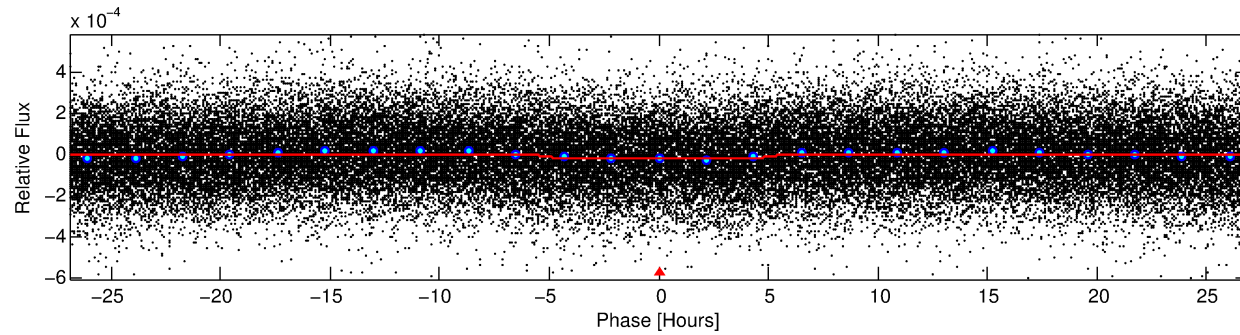
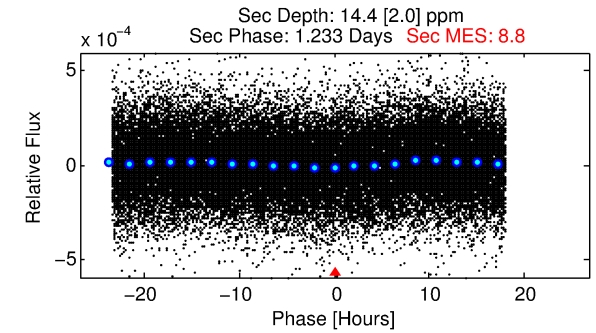
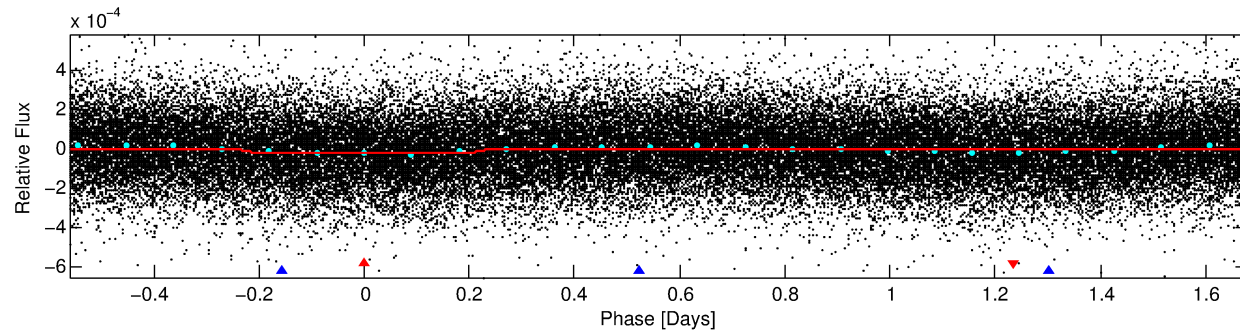
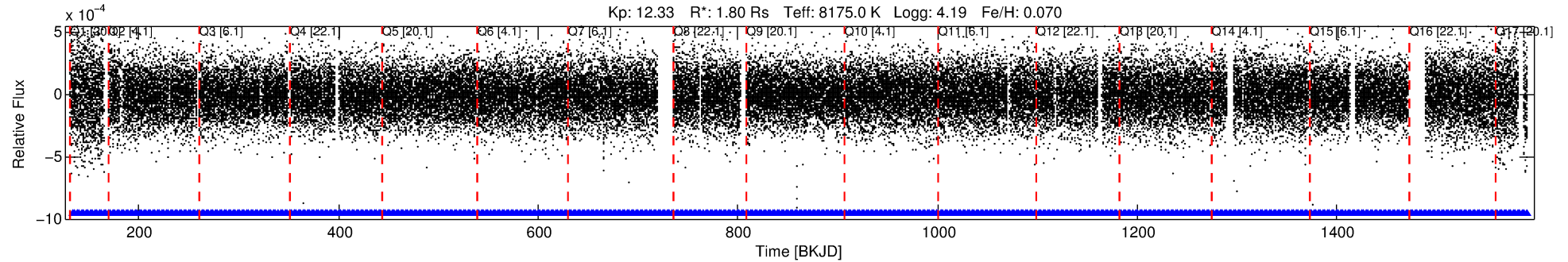
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005723310-01

No Significant Match Found

DV One-Page Summary

KIC: 5723310 Candidate: 1 of 2 Period: 2.241 d



DV Fit Results:

Period = 2.24109 [0.00003] d
Epoch = 133.4774 [0.0087] BKJD
Rp/R* = 0.0040 [0.0029]
a/R* = 1.64 [4.51]
b = 0.31 [12.90]
Seff = 7737.46 [3006.86]
Teff = 2392 [232] K
Rp = 0.79 [0.62] Re
a = 0.0409 [0.0098] AU
Ag = 21.29 [32.09] [0.63σ]
Teffp = 7942 [2933] K [1.89σ]

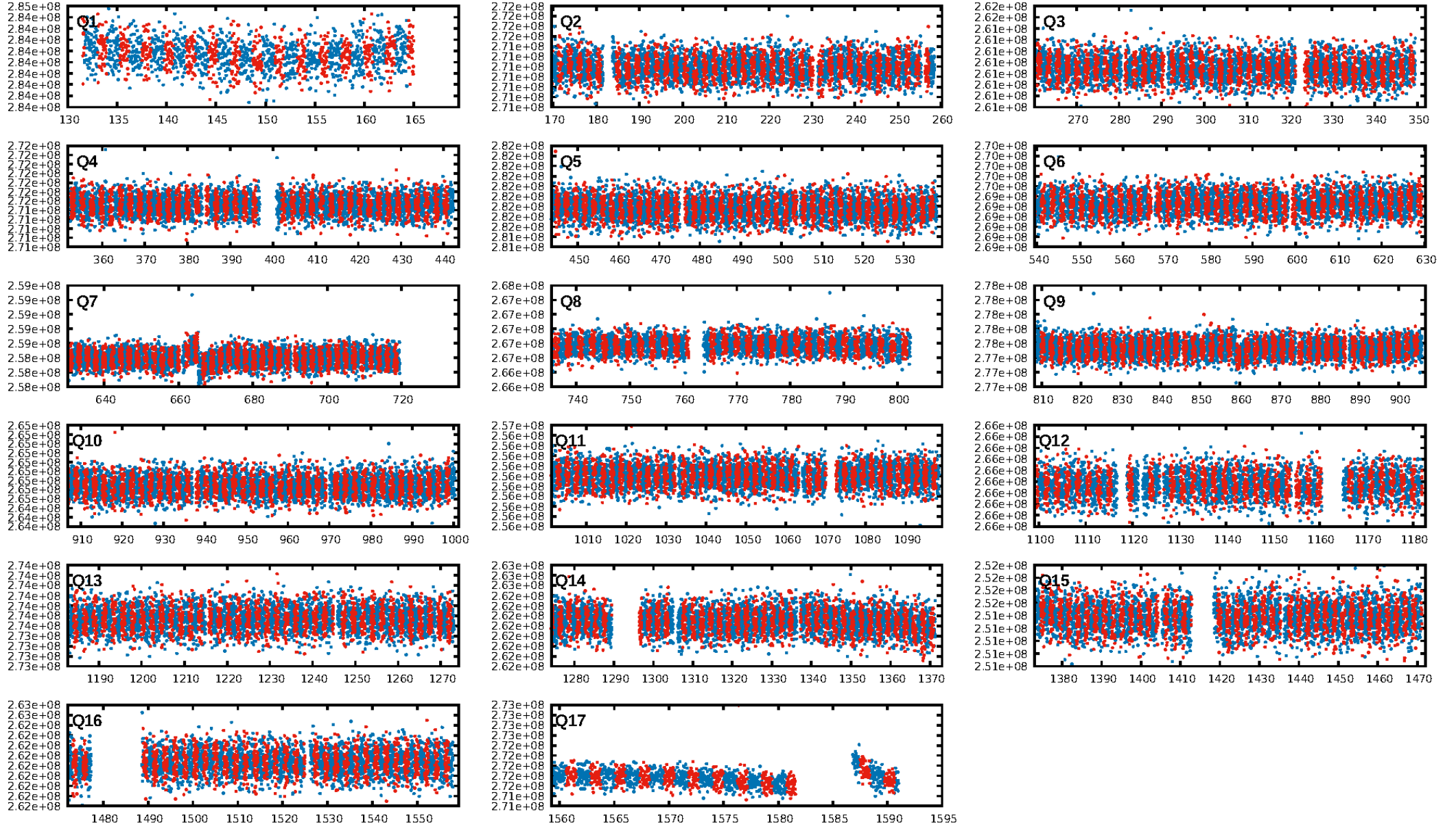
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [287.11σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.33e-18
RollingBand-fgt: 1.00 [573/573]
GhostDiagnostic-chr: 9.118
Centroid-sig: 11.5%
Centroid-so: 1.286 arcsec [1.64σ]
OotOffset-rm: 0.305 arcsec [0.79σ]
KicOffset-rm: 0.222 arcsec [0.50σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.87 [13/15]
DiffImageOverlap-fno: 1.00 [17/17]

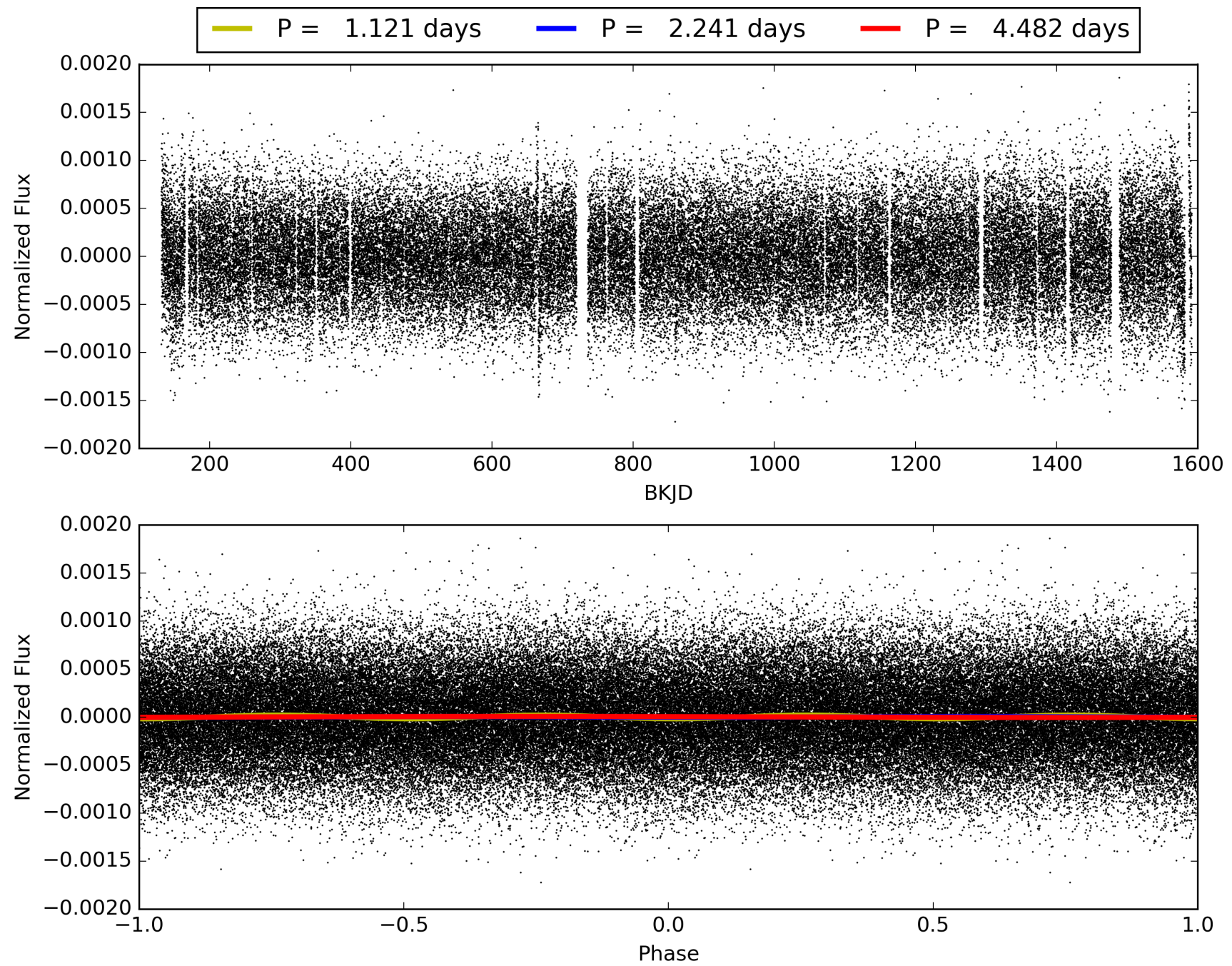
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:22:34 Z

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

TCE 005723310-01, PDC Light Curves

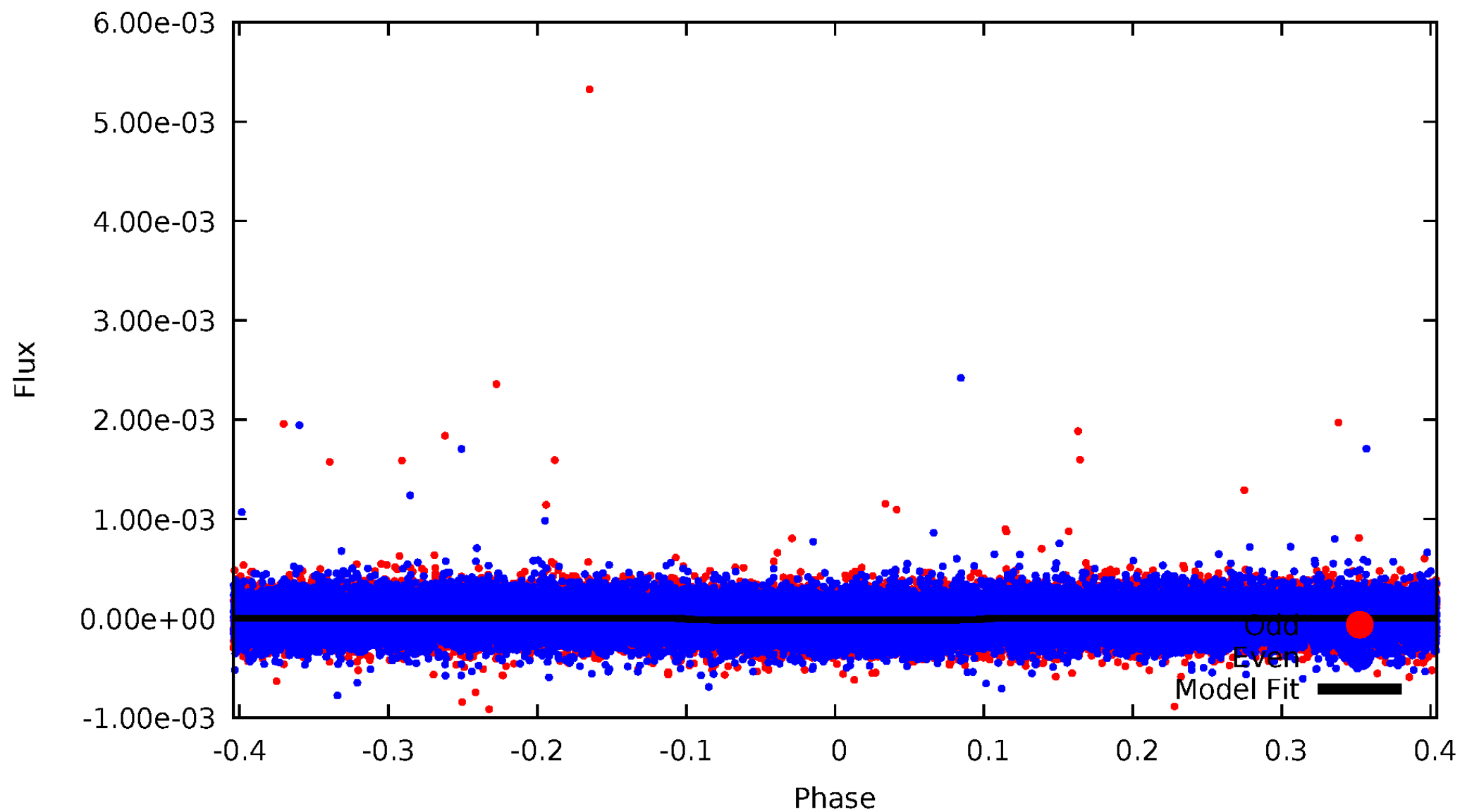


TCE 005723310-01



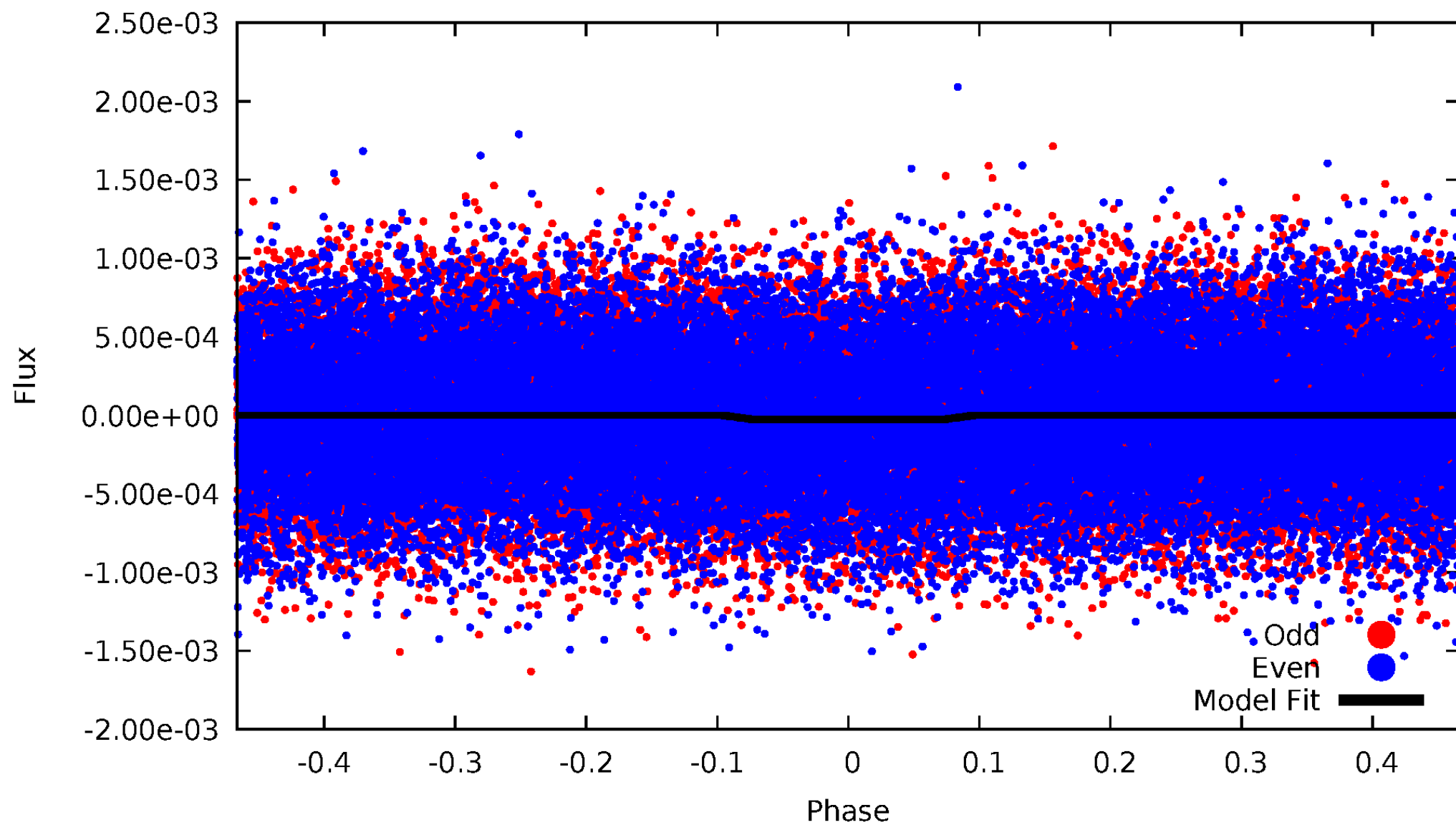
DV Odd/Even

TCE 005723310-01



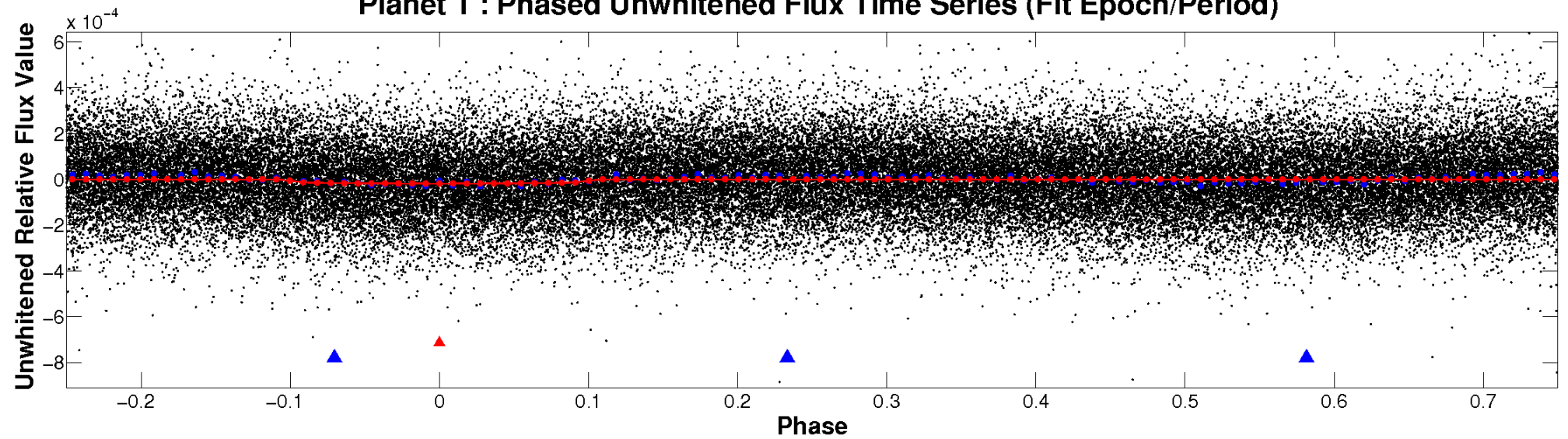
ALT Odd/Even

TCE 005723310-01

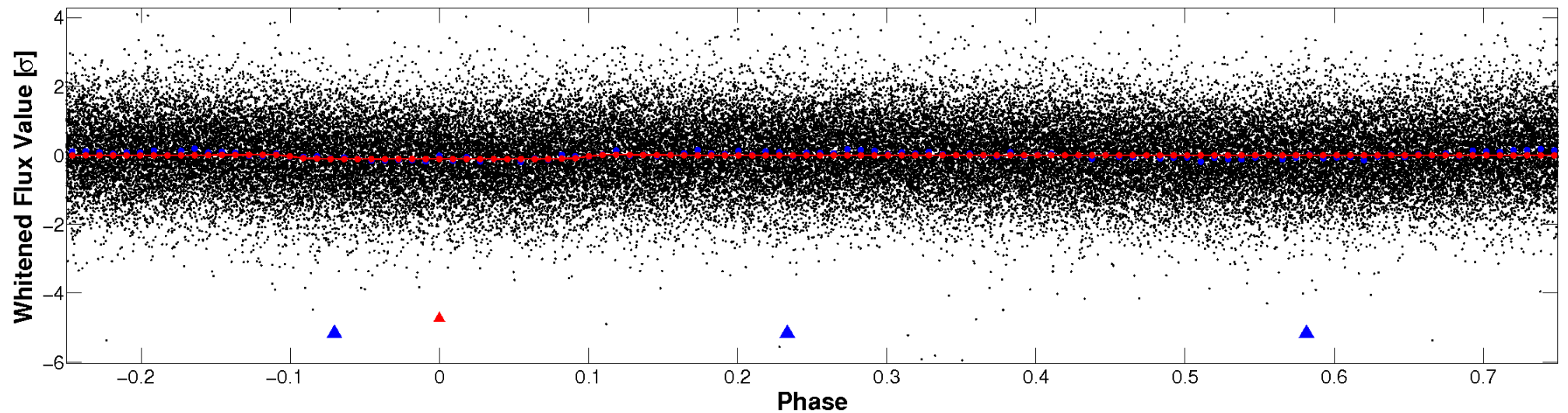


Non-Whitened Vs. Whitened Light Curve

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

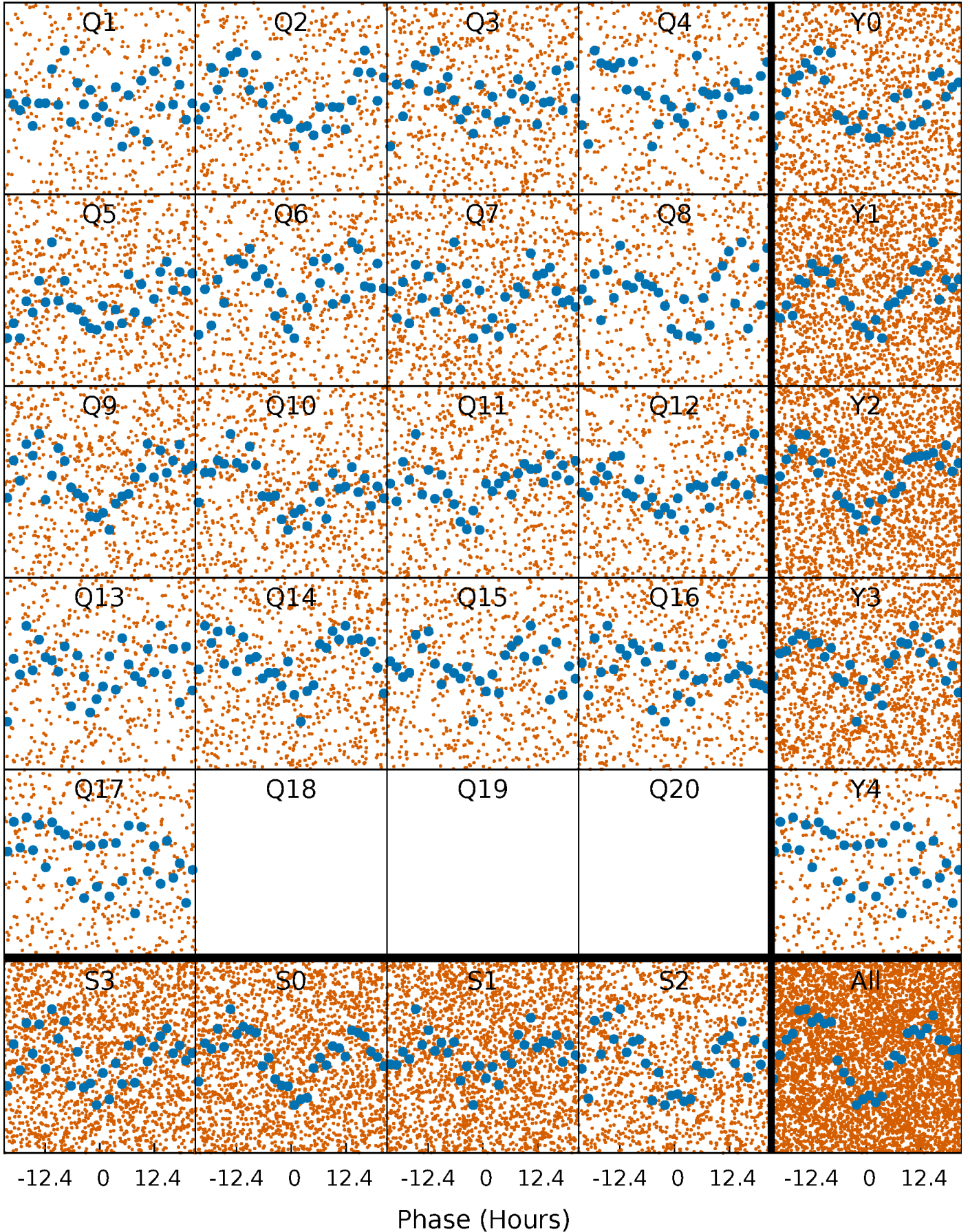


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



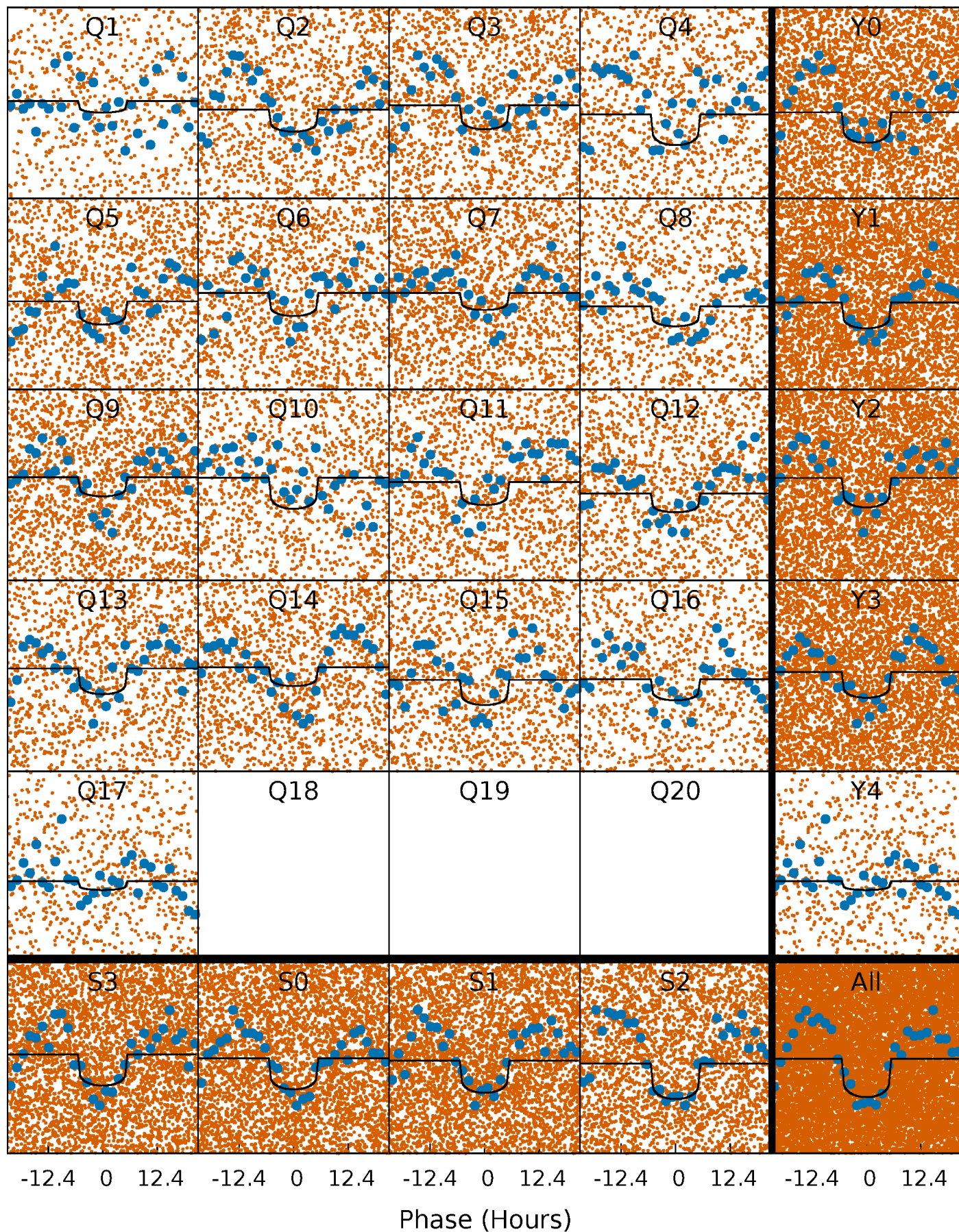
PDC Quarter-Phased Transit Curves

TCE 005723310-01 P= 2.241090 Days $T_0=133.477377$ (BKJD)



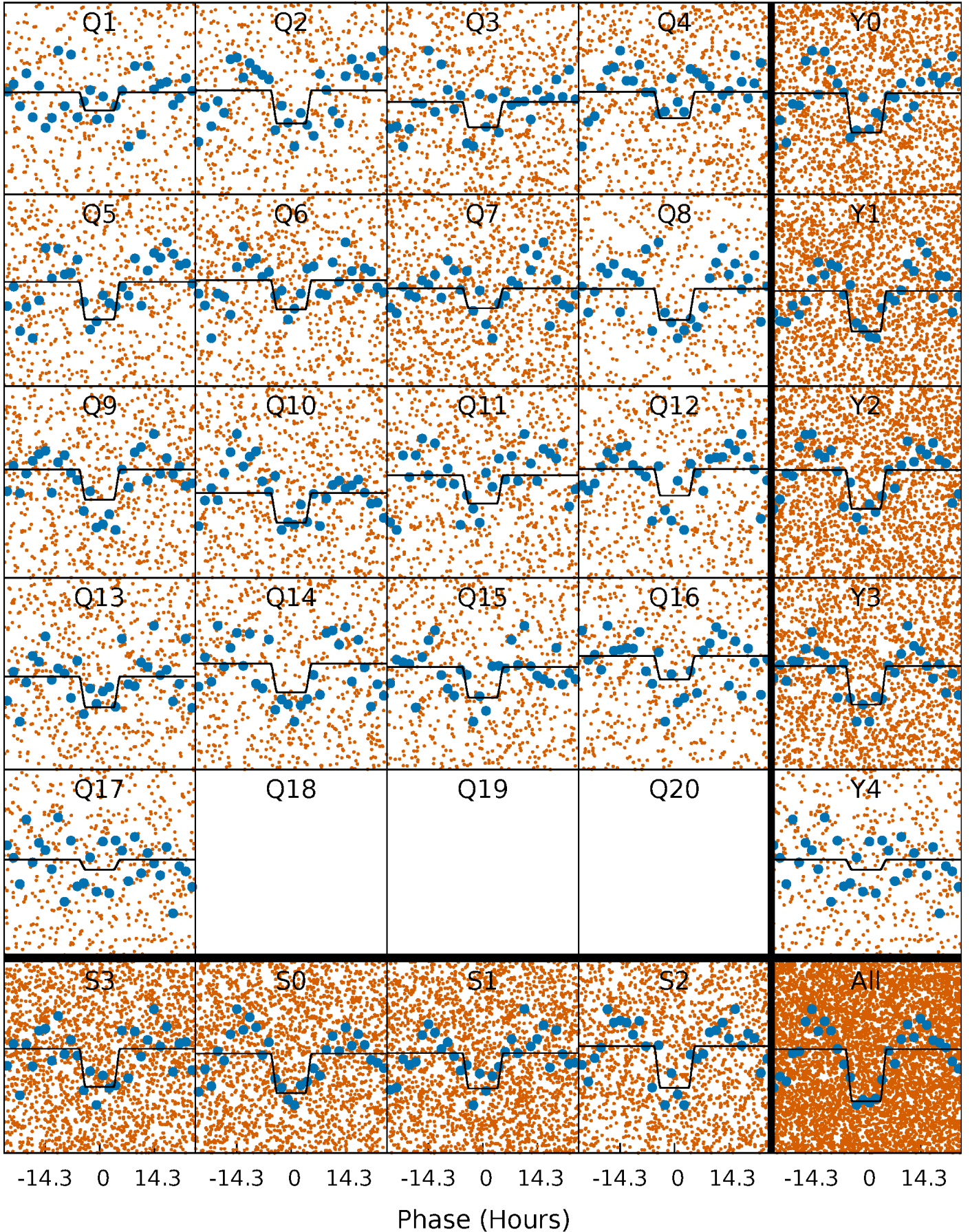
DV Quarter-Phased Transit Curves

TCE 005723310-01 P= 2.241090 Days $T_0=133.477377$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

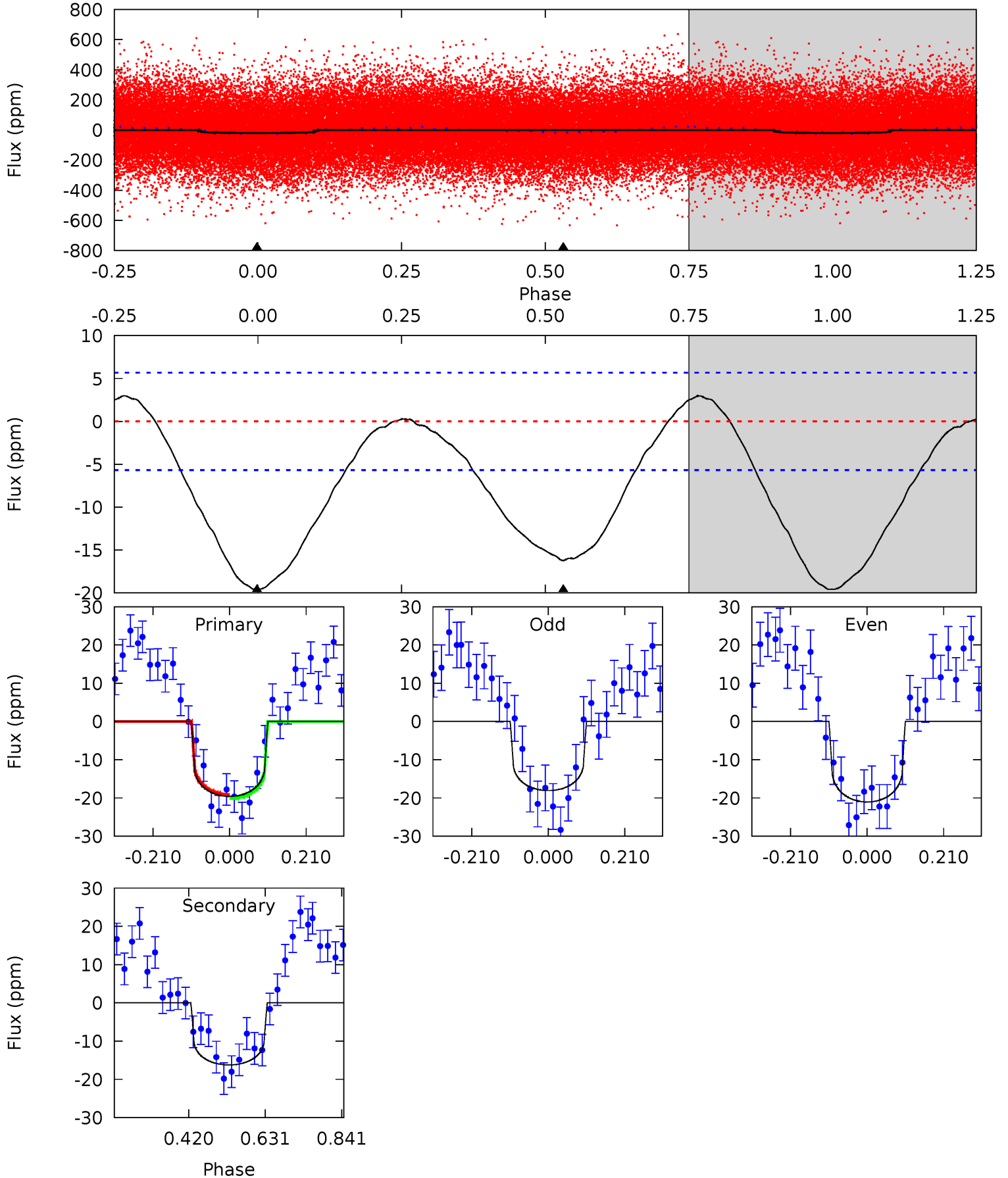
TCE 005723310-01 P= 2.241087 Days $T_0=133.480294$ (BKJD)



DV Model-Shift Uniqueness Test

005723310-01, P = 2.241090 Days, E = 131.236287 Days

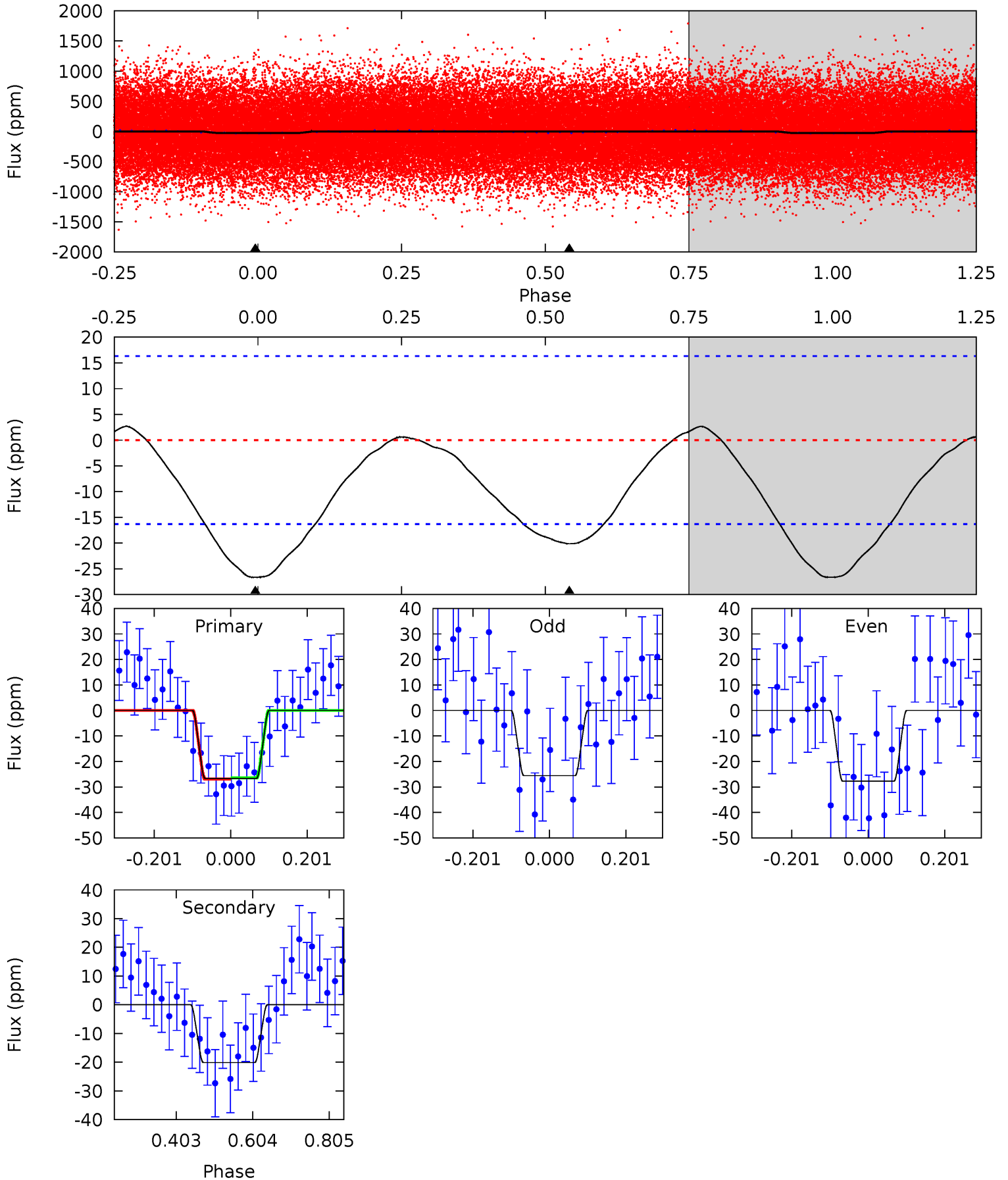
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	12.6	0	0	4.41	1.25	1.18	15.2	15.2	12.6	12.6	1.15	0.98	0.13	0.40



Alt Model-Shift Uniqueness Test

005723310-01, P = 2.241087 Days, E = 131.239207 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.21	5.44	0	0	4.42	1.28	0.42	7.21	7.21	5.44	5.44	0.30	1.02	0.09	0.06



Stellar Parameters For KIC 005723310

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8175^{+226}_{-356}	$4.187^{+0.067}_{-0.189}$	$0.070^{+0.250}_{-0.400}$	$1.797^{+0.515}_{-0.277}$	$1.810^{+0.272}_{-0.272}$	$0.440^{+0.159}_{-0.228}$
	+3%/-4%	+2%/-5%	+357%/-571%	+29%/-15%	+15%/-15%	+36%/-52%
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 005723310-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-16 ± 1	$0.91^{+0.59}_{-0.52}$	3388^{+247}_{-187}	7566^{+6343}_{-1781}	17^{+77}_{-11}
Alt.	-20 ± 4	$1.13^{+0.59}_{-0.57}$	3409^{+243}_{-192}	7182^{+4264}_{-1439}	14^{+44}_{-8}

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 $A_{obs} \gg 1.0$

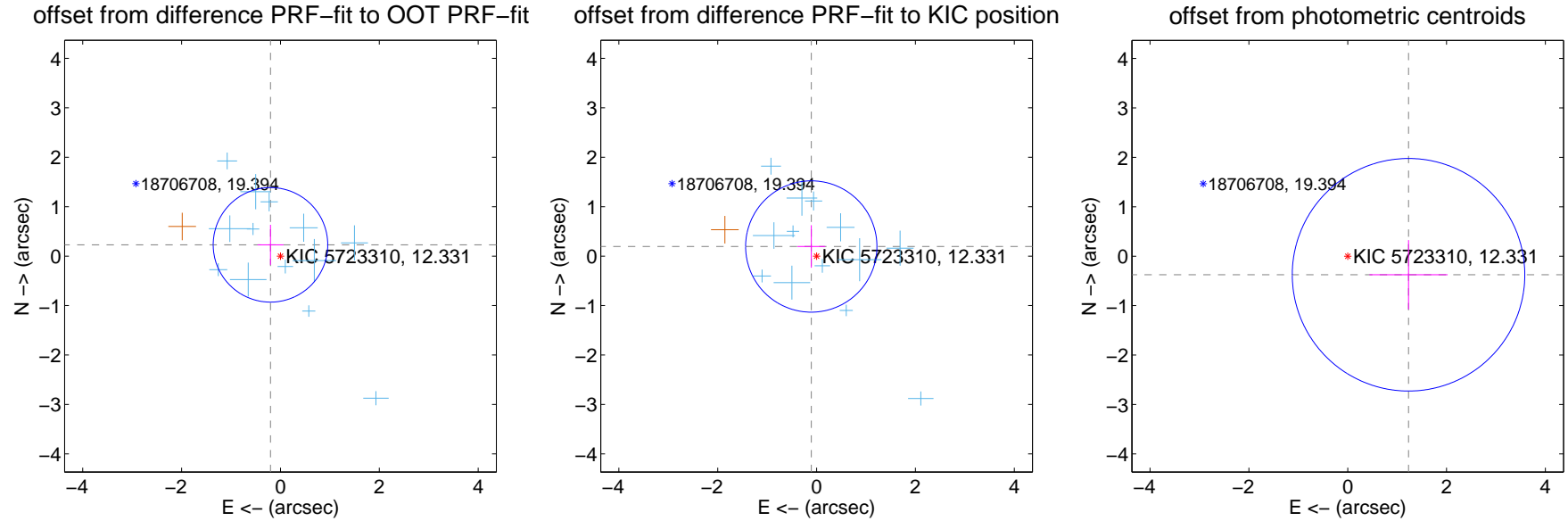
DV Centroid Data

Supplemental centroid analysis for 005723310-01. Kepler magnitude: 12.33. Transit SNR 11.22

There are 13 quarters with good PRF difference image offsets

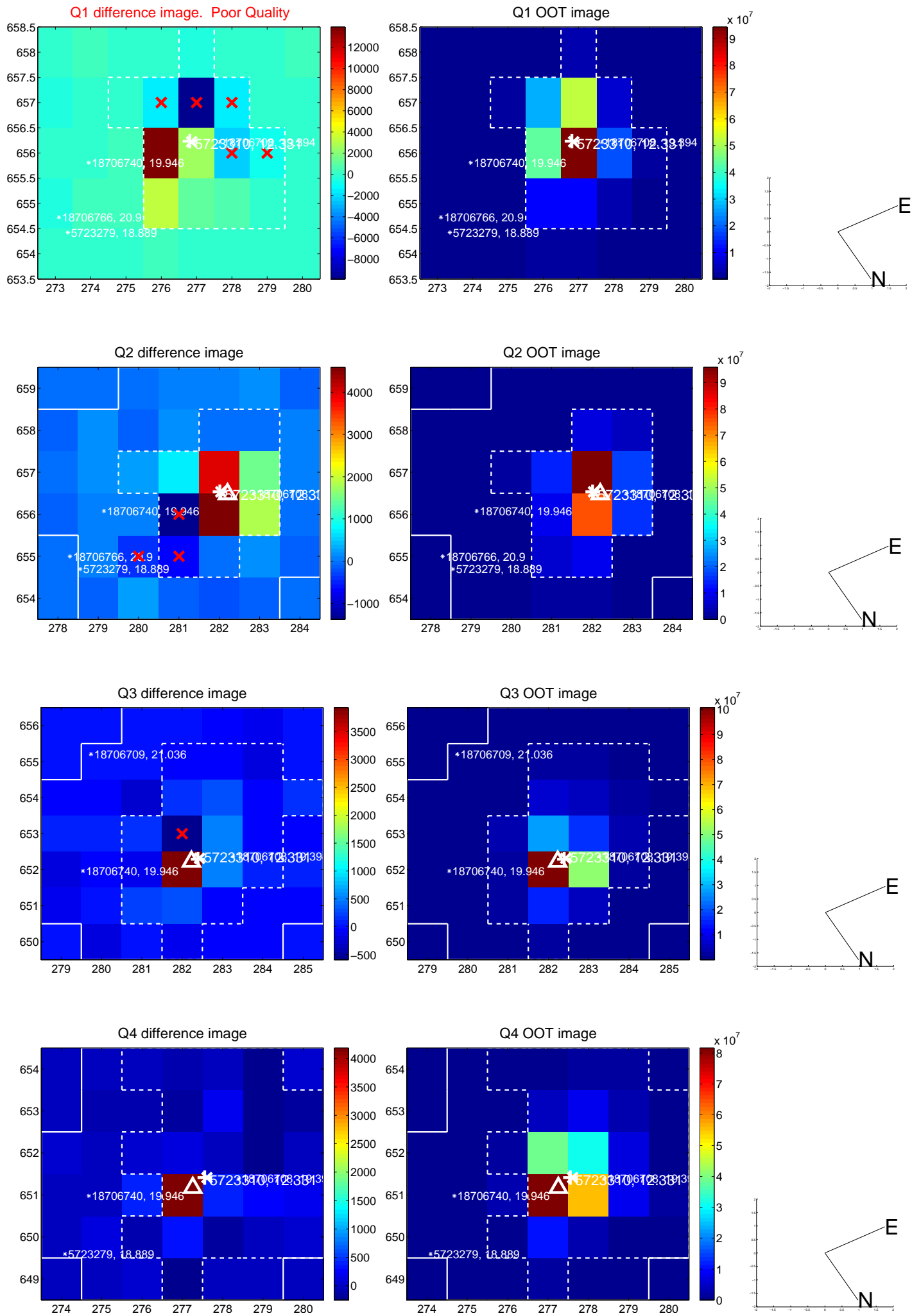
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.305 ± 0.386	0.79	0.202 ± 0.262	0.228 ± 0.405
PRF-fit source offset from KIC position	0.222 ± 0.443	0.50	0.107 ± 0.281	0.195 ± 0.430
photometric centroid source offset	1.29 ± 0.78	1.64	-1.23 ± 0.79	-0.38 ± 0.70

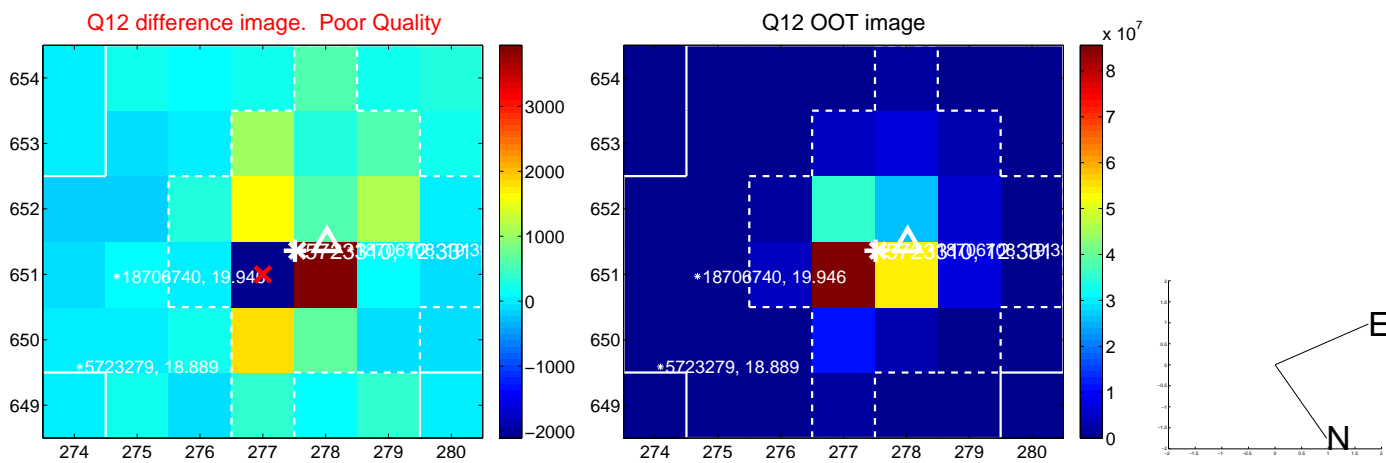
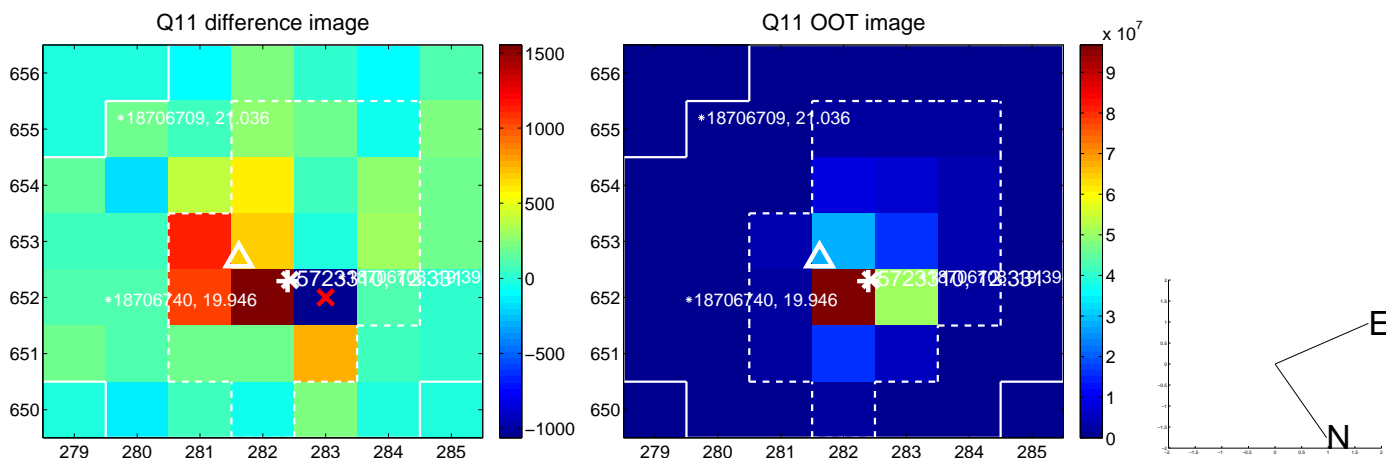
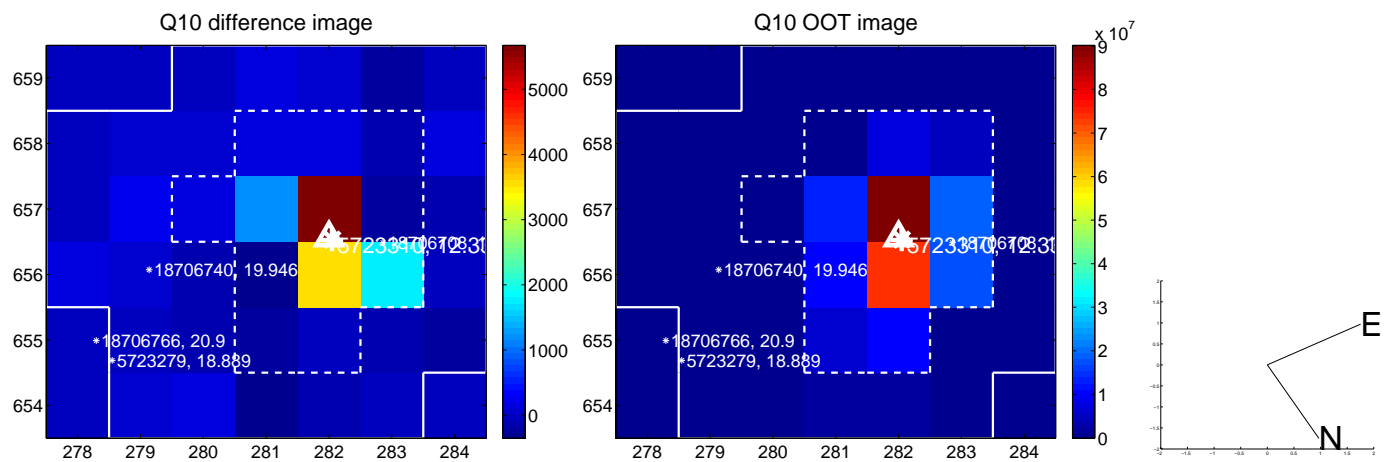
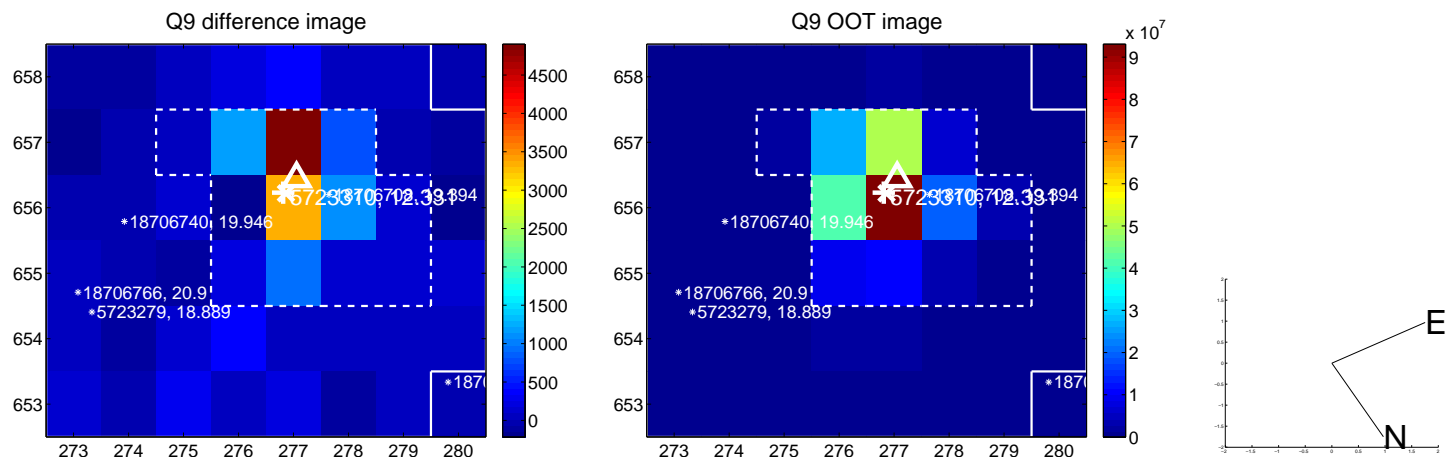


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

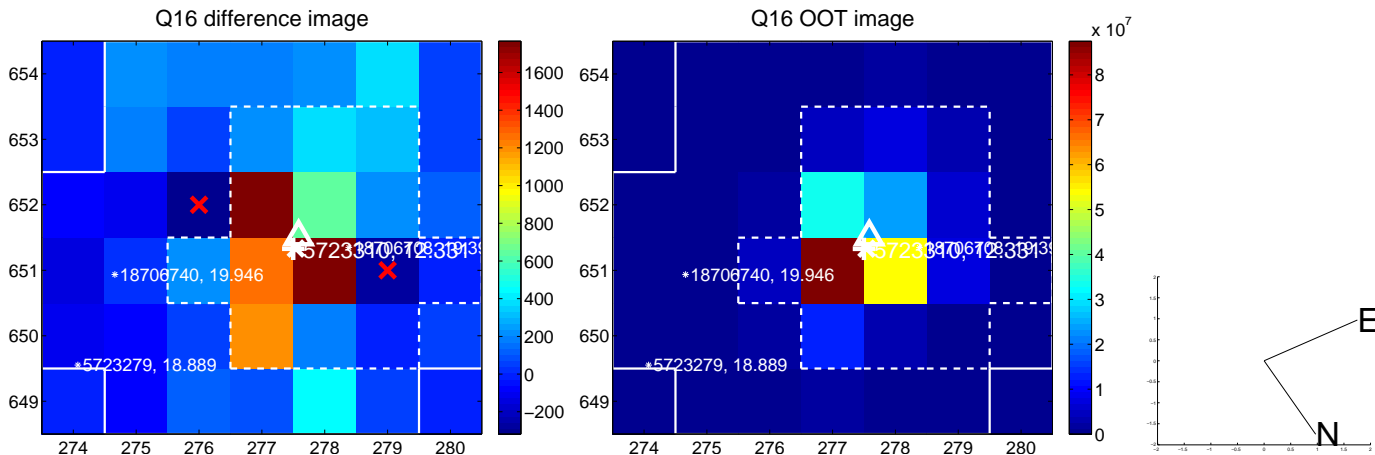
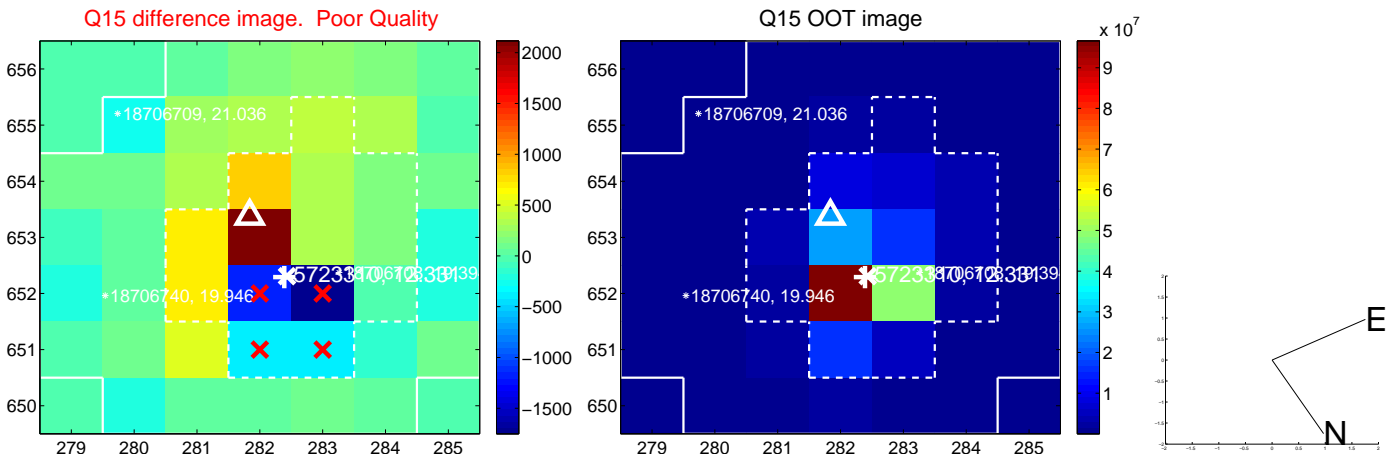
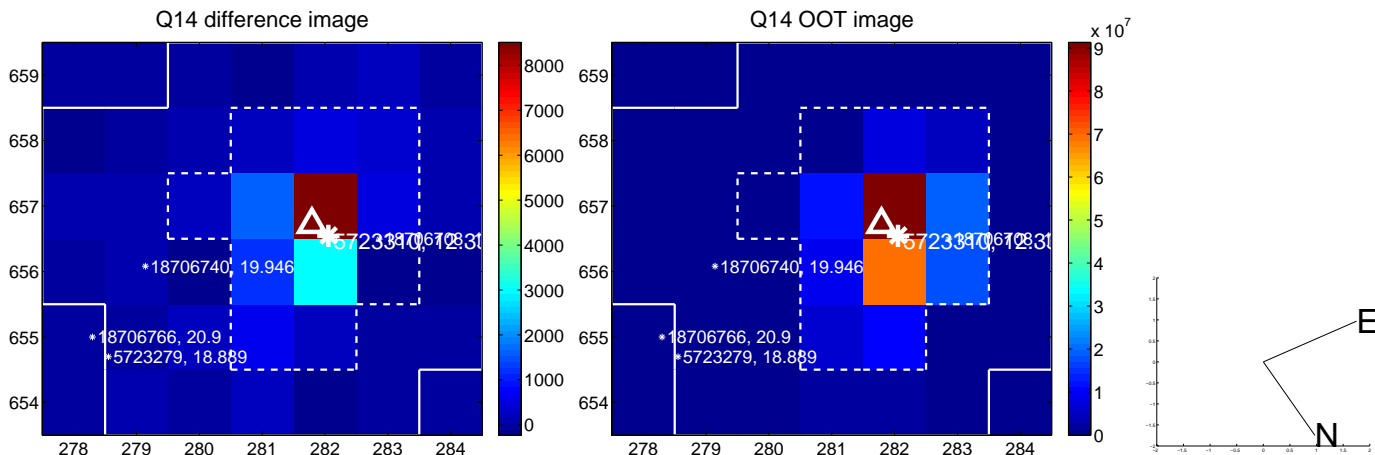
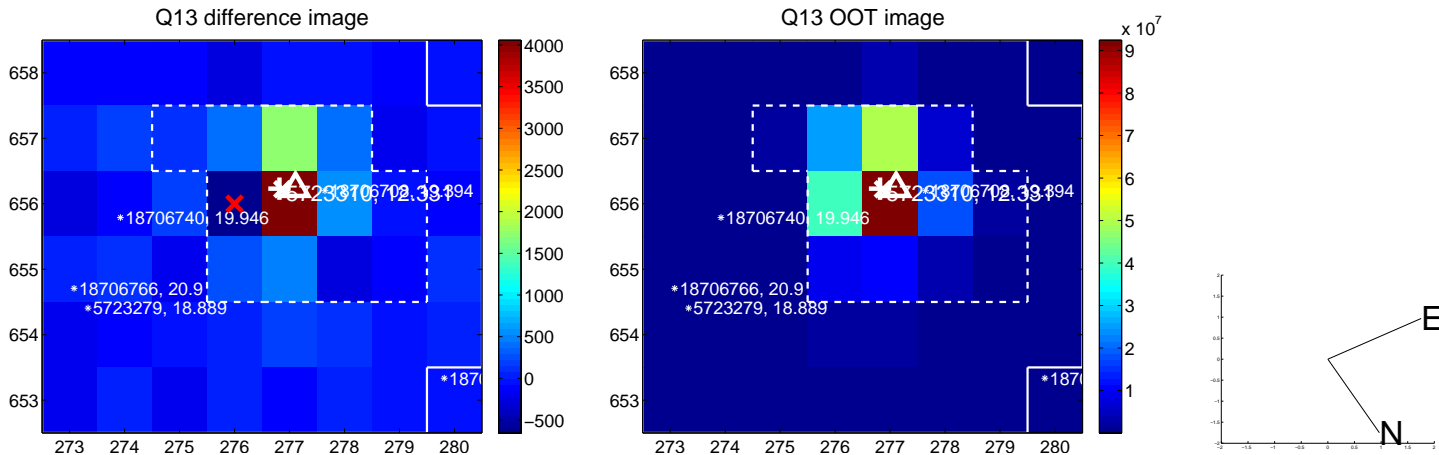
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



This astronomical image shows a field of stars against a dark background. A blue grid is overlaid on the image, with green text labels indicating the coordinates. The horizontal axis (Right Ascension) is labeled at the top with values 25.0, 24.0, 23.0, 22.0, 21.0, and 19:46:00. The vertical axis (Declination) is labeled on the left with values 40:59:20.0, 40:00:00.0, and 50:041:00:00.0. The stars are concentrated in the central region of the image, with a prominent bright star near the center.

Declination

KIC 005723310

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})
005723310-01	OBS	No	2.241090	133.477377	18.4	10.864	10.3	11.2	1.80	8175	0.79	7737.46
005723310-02	OBS	No	597.590861	263.302980	239.9	48.566	7.6	10.9	1.80	8175	3.25	4.51

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005723310-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005723310-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

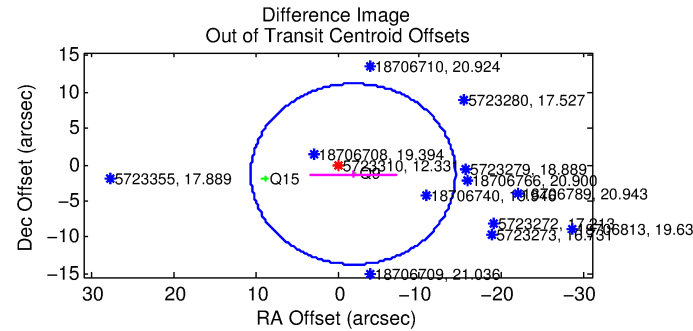
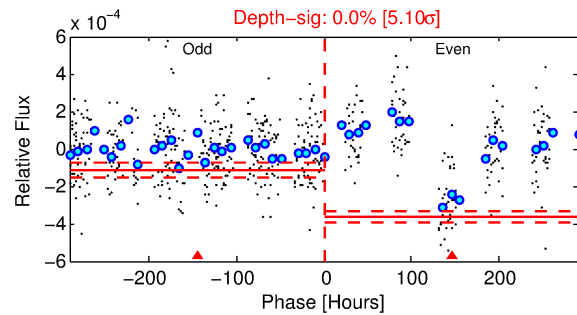
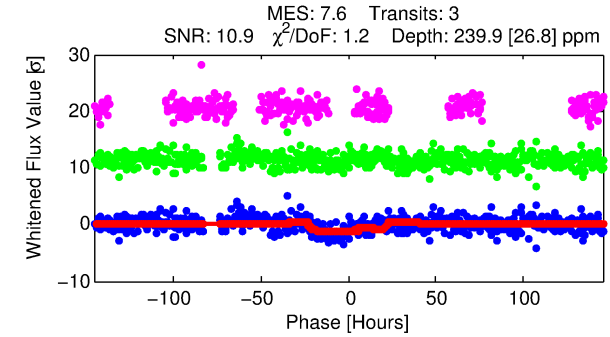
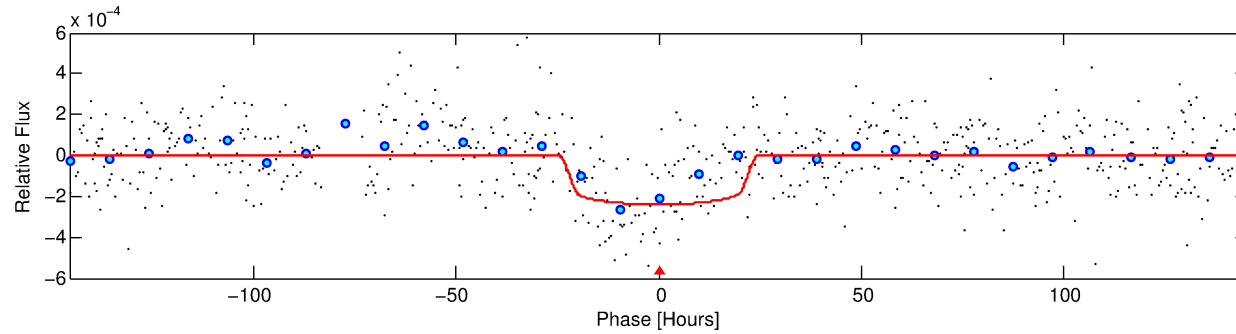
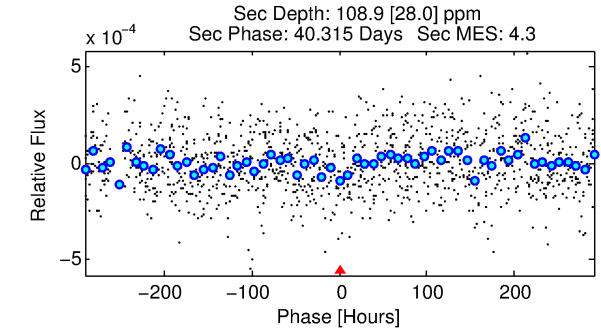
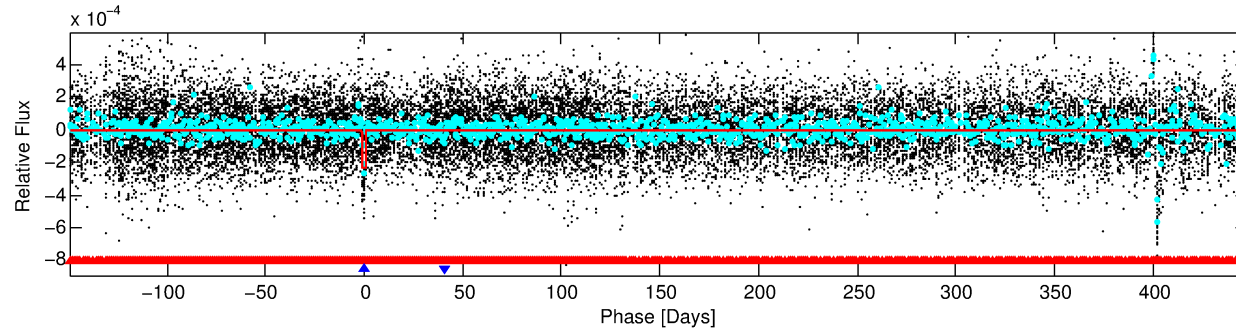
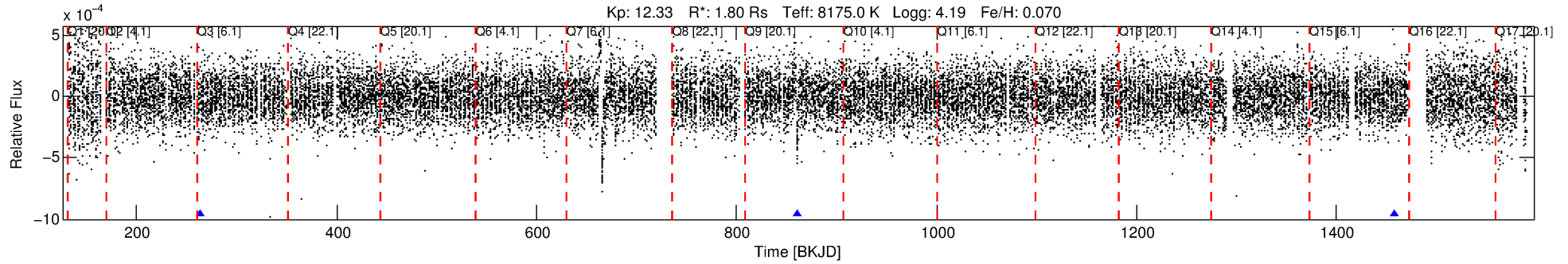
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005723310-02

No Significant Match Found

DV One-Page Summary

KIC: 5723310 Candidate: 2 of 2 Period: 597.591 d



DV Fit Results:

Period = 597.59086 [0.03633] d
Epoch = 263.3030 [0.0346] BKJD
Rp/R* = 0.0165 [0.0013]
a/R* = 43.17 [14.42]
b = 0.91 [0.07]
Seff = 4.51 [1.75]
Teq = 372 [36] K
Rp = 3.25 [0.97] Re
a = 1.6930 [0.4061] AU
Ag = 16310.83 [7522.91] [2.17 σ]
Teffp = 6492 [568] K [10.76 σ]

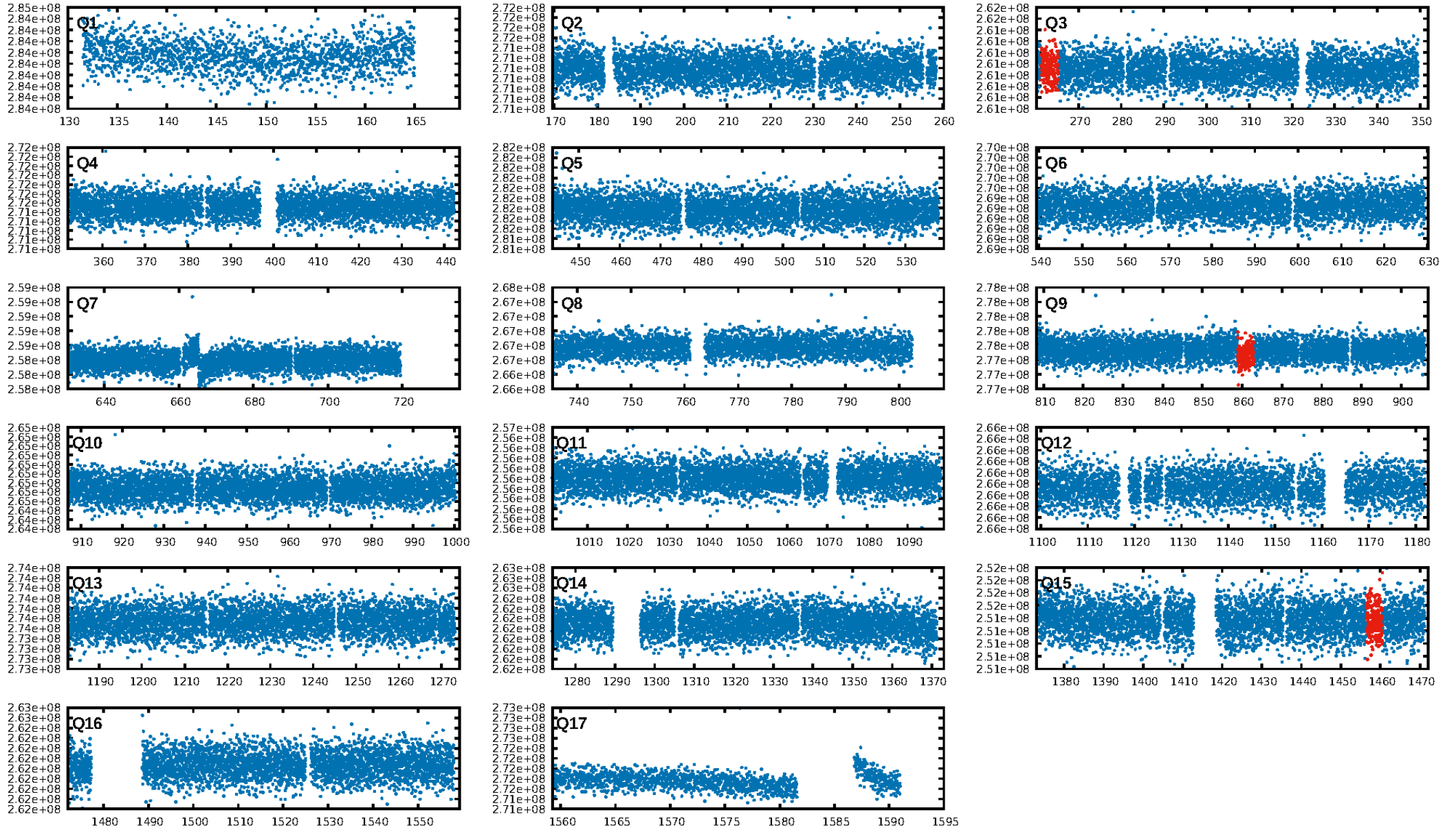
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [287.11 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.25e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.518
Centroid-sig: 23.3%
Centroid-so: 0.782 arcsec [1.21 σ]
OotOffset-rm: 2.316 arcsec [0.56 σ]
OotOffset-st: 0.1/0/1 [2]
KicOffset-rm: 2.510 arcsec [0.61 σ]
KicOffset-st: 0.1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/2]

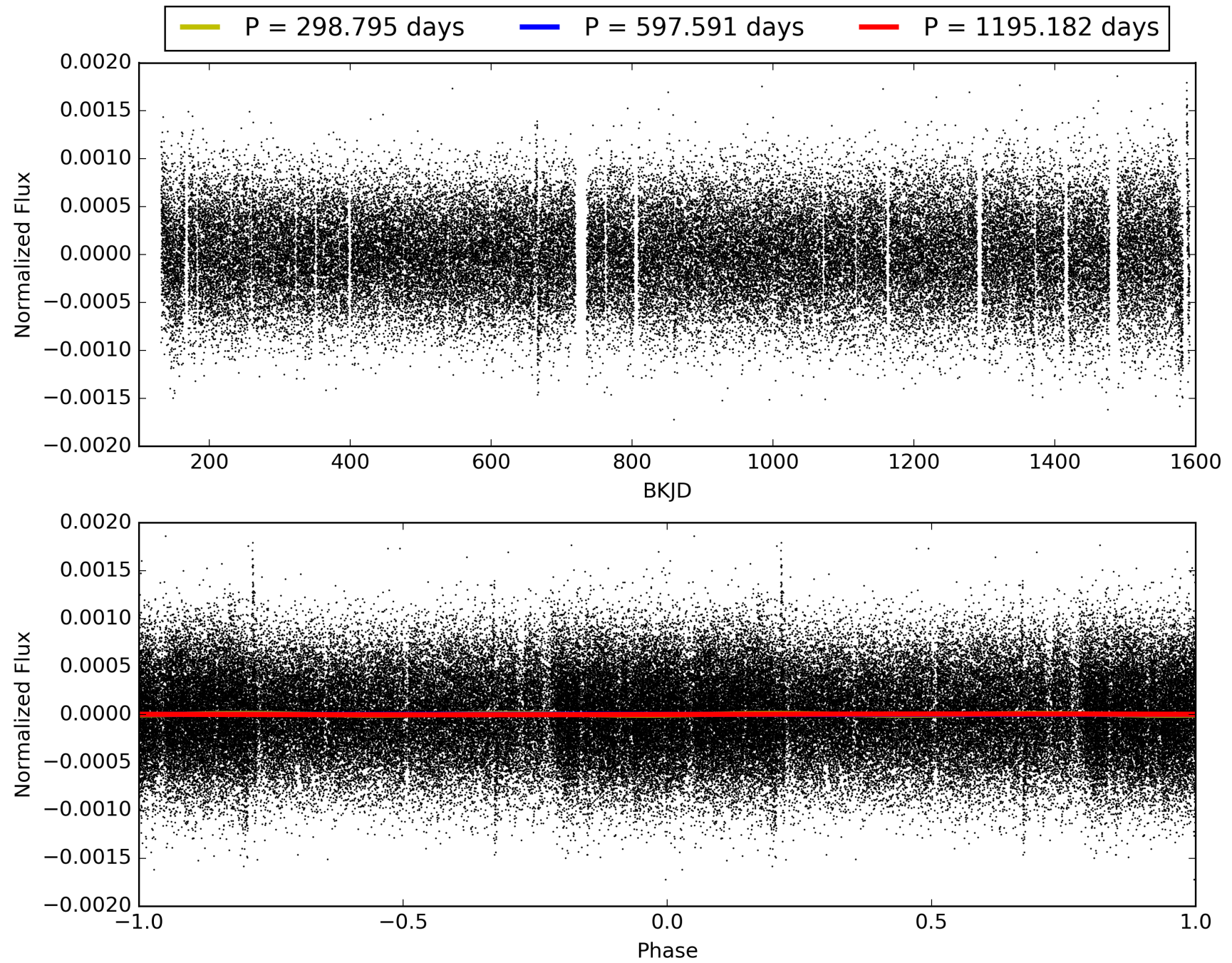
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:22:47 Z

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

TCE 005723310-02, PDC Light Curves

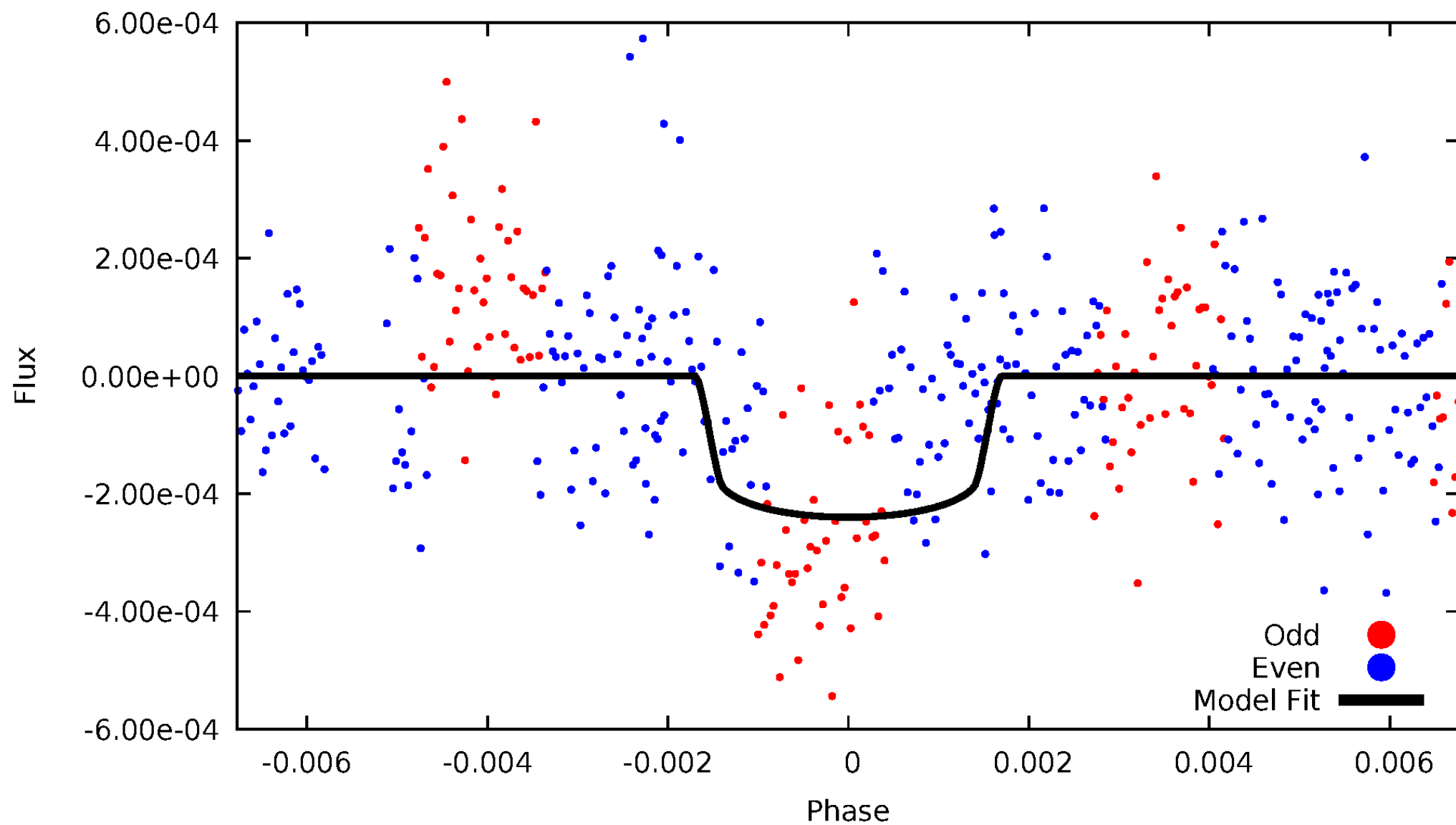


TCE 005723310-02



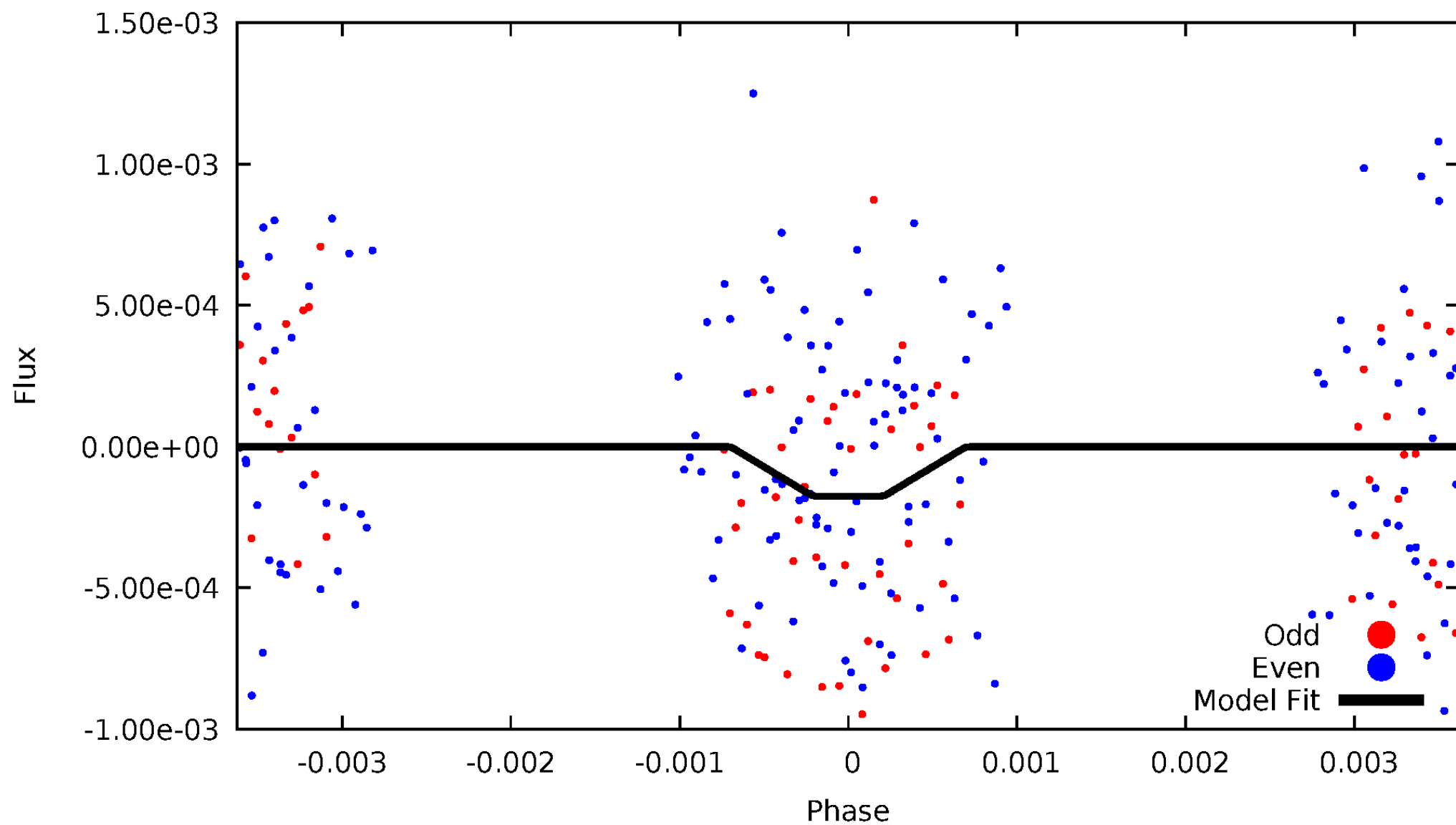
DV Odd/Even

TCE 005723310-02



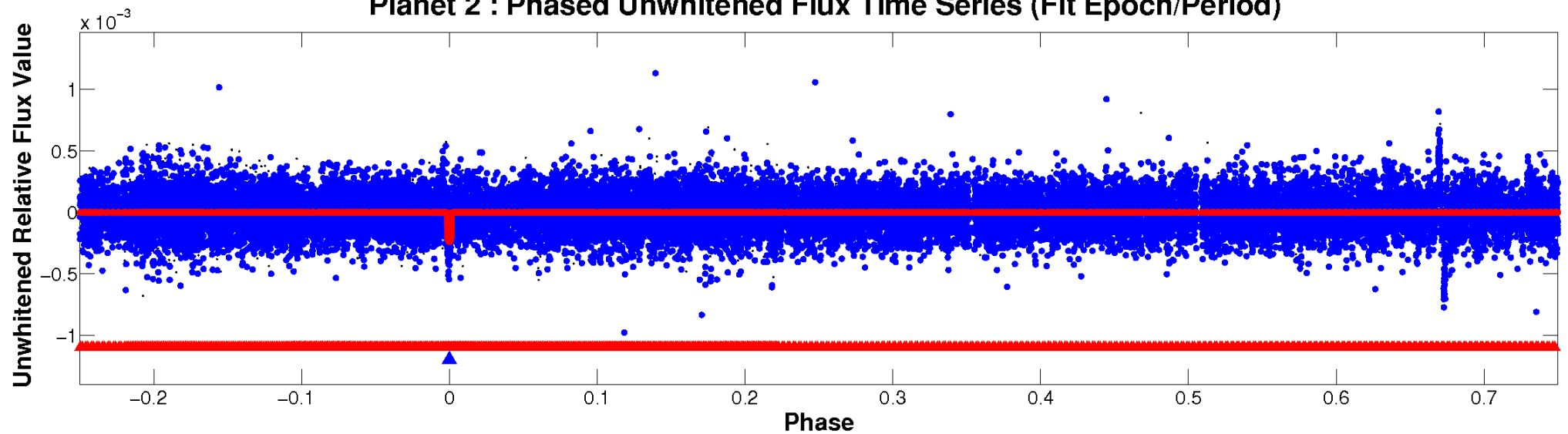
ALT Odd/Even

TCE 005723310-02

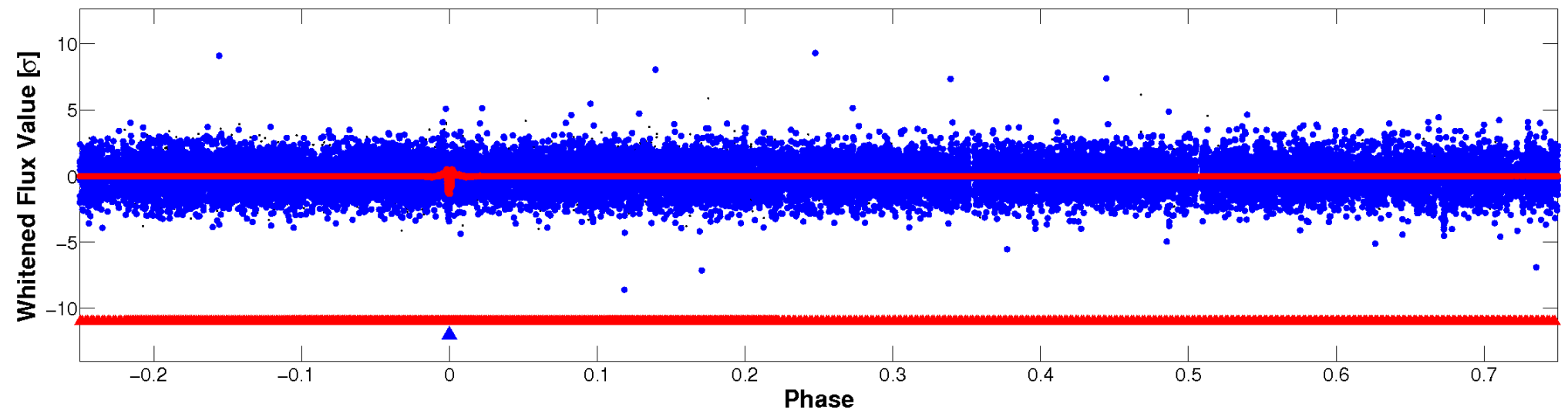


Non-Whitened Vs. Whitened Light Curve

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 005723310-02 P=597.590861 Days $T_0=263.302979$ (BKJD)



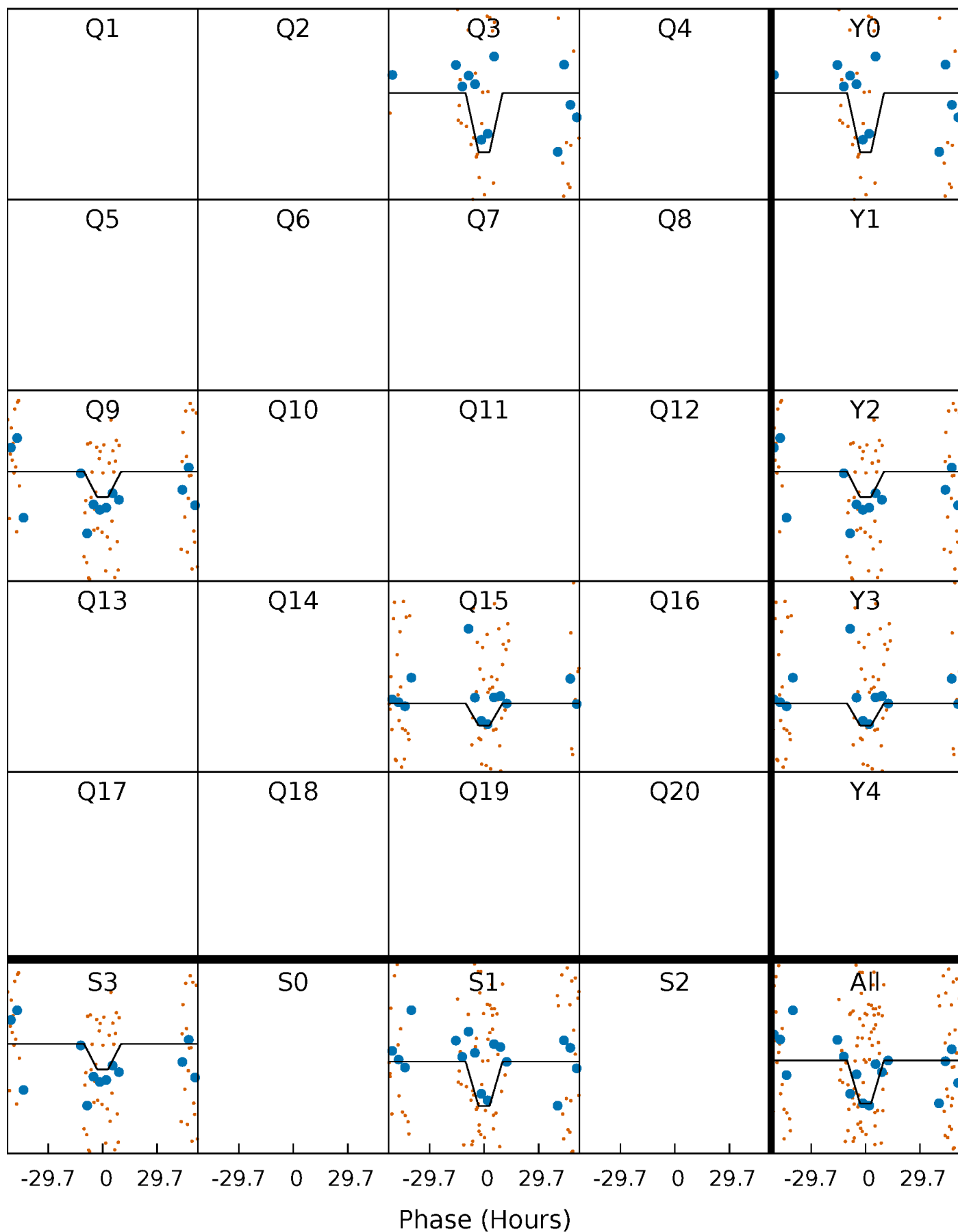
DV Quarter-Phased Transit Curves

TCE 005723310-02 P=597.590861 Days $T_0=263.302979$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

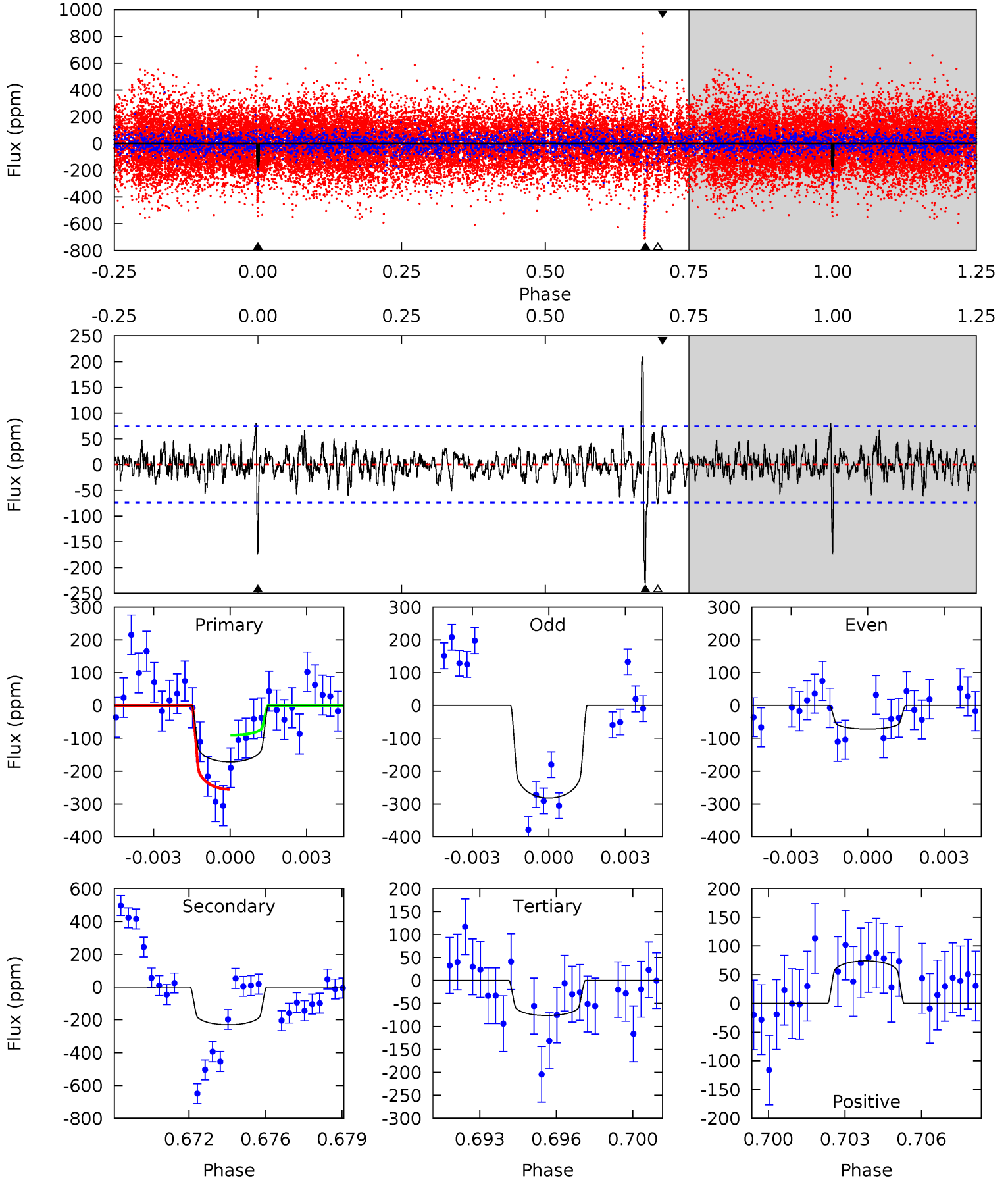
TCE 005723310-02 P=598.212903 Days $T_0=262.524177$ (BKJD)



DV Model-Shift Uniqueness Test

005723310-02, P = 597.590861 Days, E = 263.302979 Days

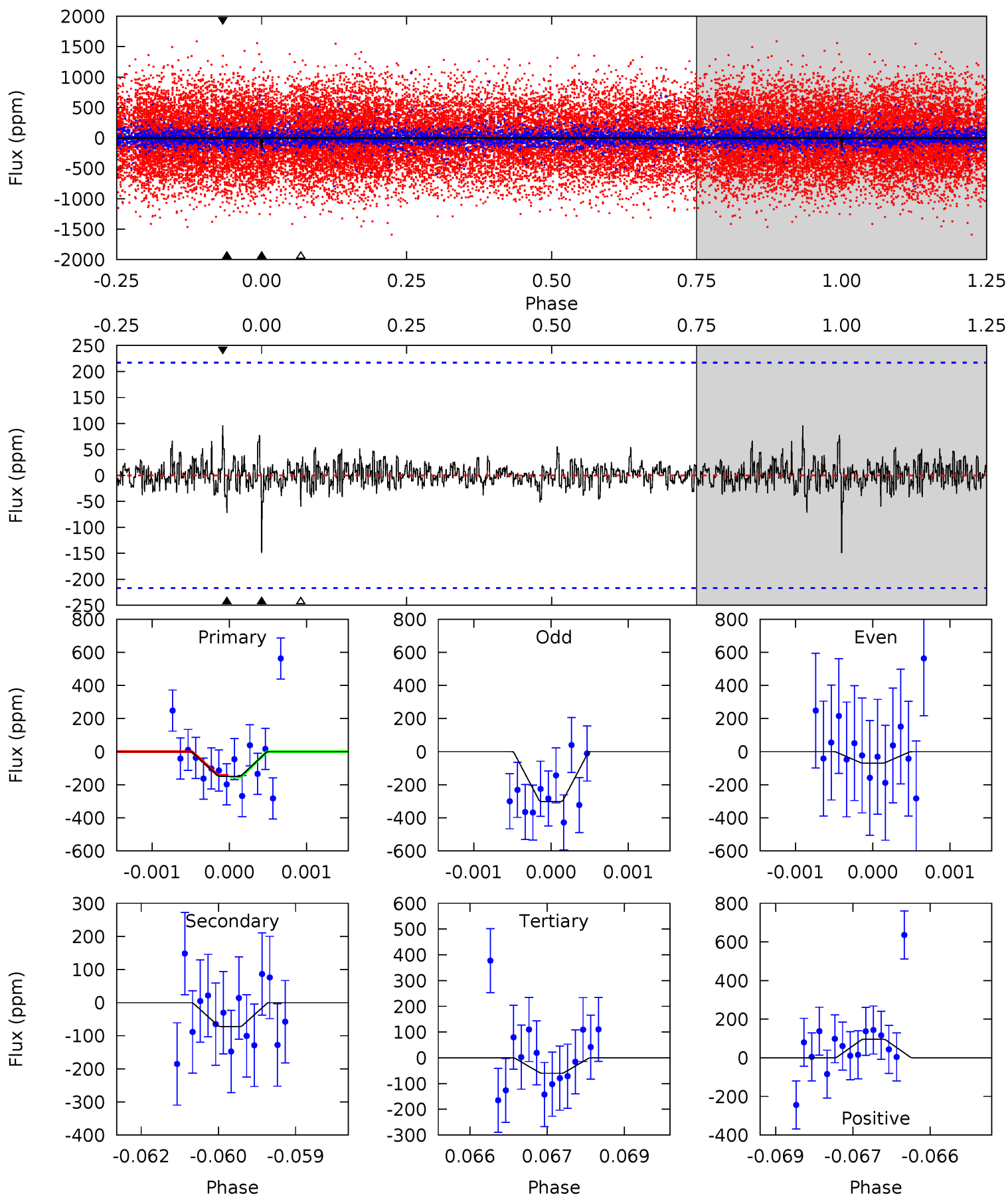
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	16.2	5.37	5.22	5.23	2.93	1.65	6.74	6.90	10.8	11.0	7.21	1.13	0.48	5.77



Alt Model-Shift Uniqueness Test

005723310-02, P = 598.212903 Days, E = 262.524177 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.71	1.79	1.49	2.39	5.39	3.19	0.44	2.22	1.32	0.30	-0.60	2.83	2.00	0.39	0.14



Stellar Parameters For KIC 005723310

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8175^{+226}_{-356}	$4.187^{+0.067}_{-0.189}$	$0.070^{+0.250}_{-0.400}$	$1.797^{+0.515}_{-0.277}$	$1.810^{+0.272}_{-0.272}$	$0.440^{+0.159}_{-0.228}$
	+3%/-4%	+2%/-5%	+357%/-571%	+29%/-15%	+15%/-15%	+36%/-52%
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 005723310-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-230 ± 14	$3.33^{+0.56}_{-0.38}$	526^{+40}_{-29}	7721^{+487}_{-447}	31472^{+8927}_{-7213}
Alt.	-72 ± 40	$2.70^{+0.46}_{-0.37}$	527^{+39}_{-31}	6309^{+956}_{-1170}	15125^{+10231}_{-8925}

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

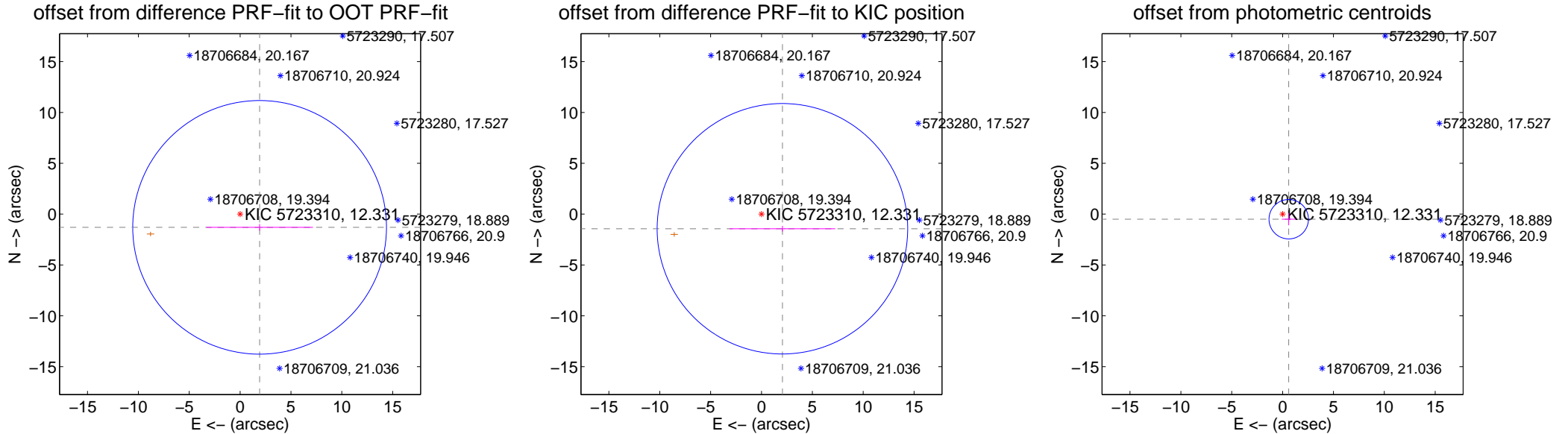
DV Centroid Data

Supplemental centroid analysis for 005723310-02. Kepler magnitude: 12.33. Transit SNR 10.88

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.316 ± 4.157	0.56	-1.917 ± 5.239	-1.299 ± 0.328
PRF-fit source offset from KIC position	2.510 ± 4.105	0.61	-2.058 ± 5.197	-1.437 ± 0.280
photometric centroid source offset	0.78 ± 0.65	1.21	-0.60 ± 0.68	-0.50 ± 0.59



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.

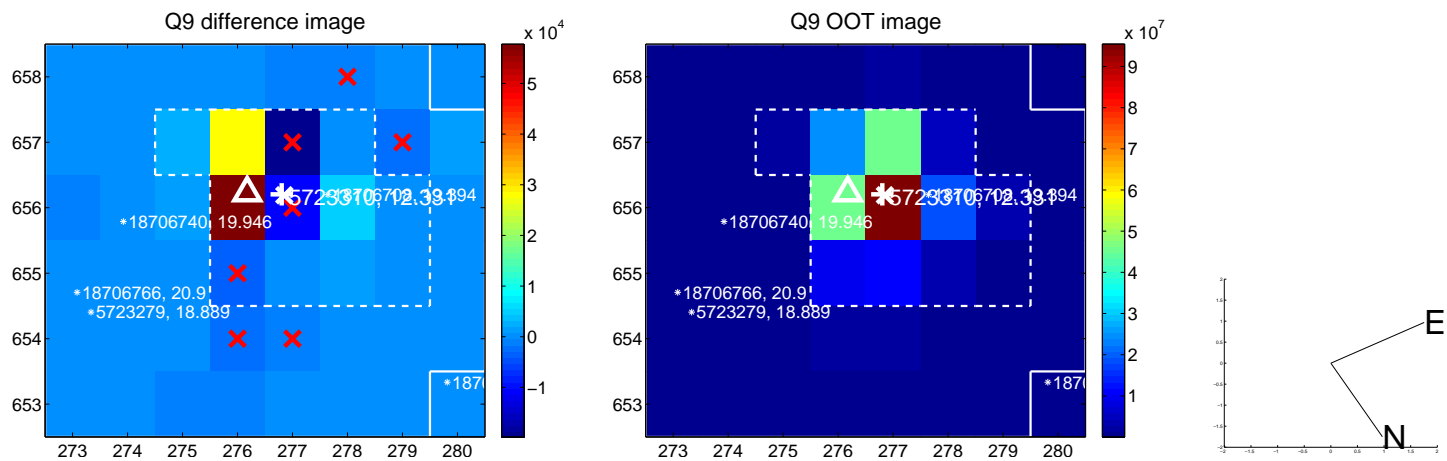
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



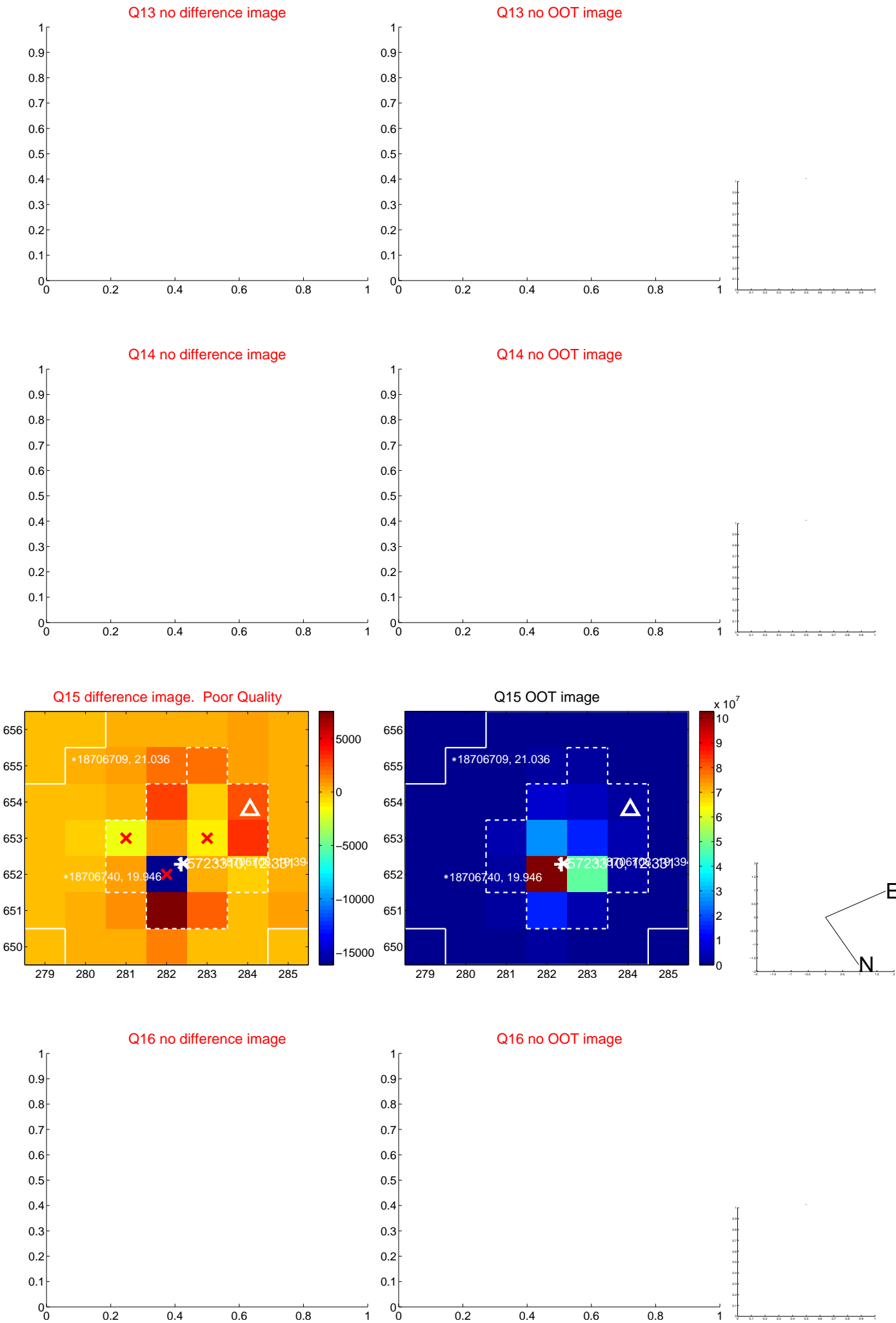
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



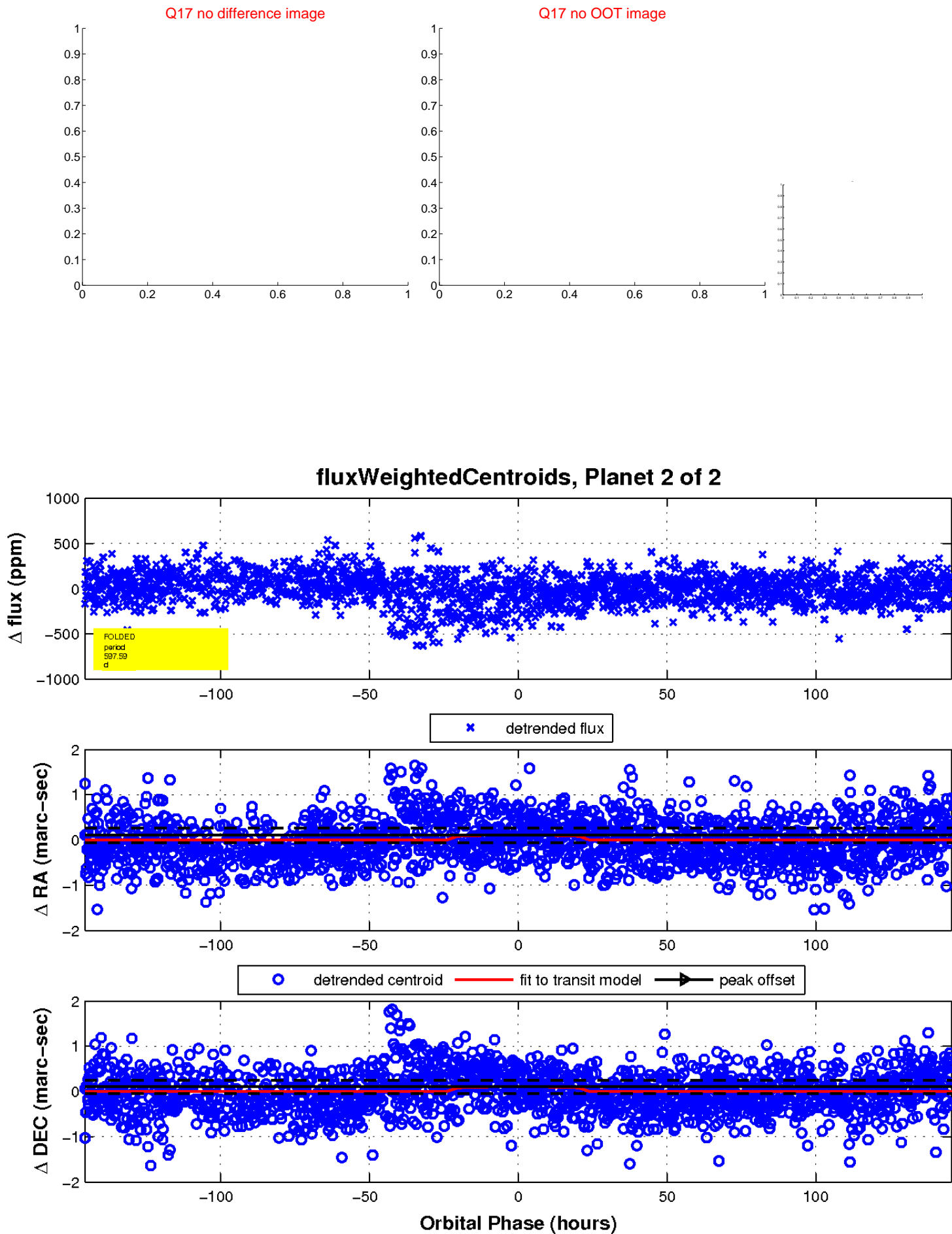
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

