

KIC 010727668

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})
010727668-01	OBS	6081.01	2.305905	131.791329	22529.9	3.376	571.7	516.0	2.49	9696	38.48	23218.90
010727668-02	OBS	No	2.305945	132.919527	7746.3	3.000	192.5	-1.0	2.49	9696	22.49	23218.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010727668-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
010727668-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

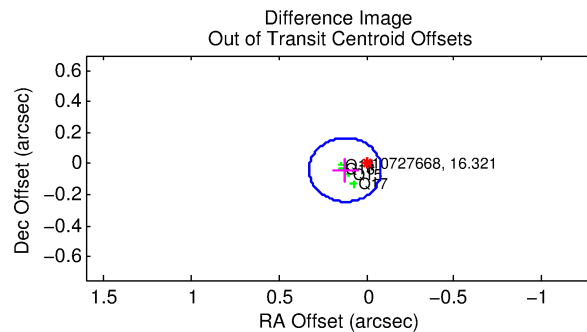
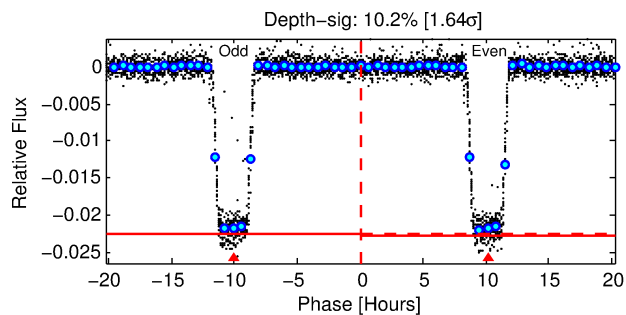
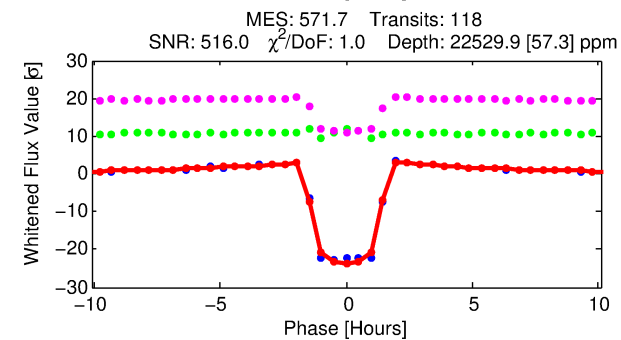
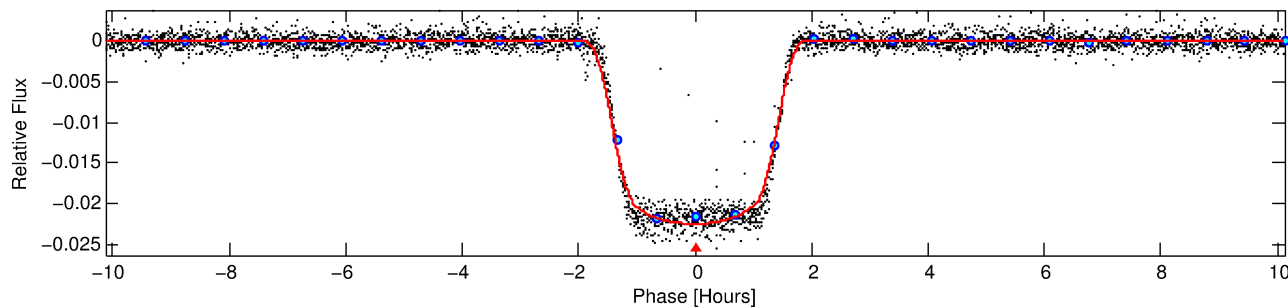
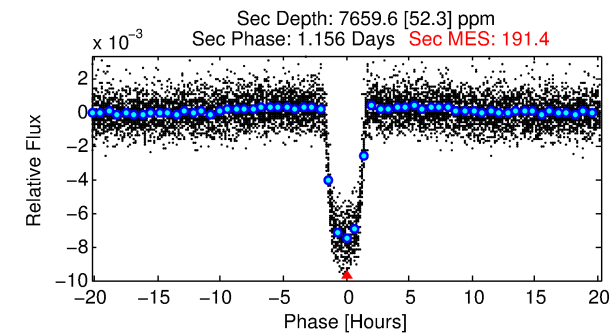
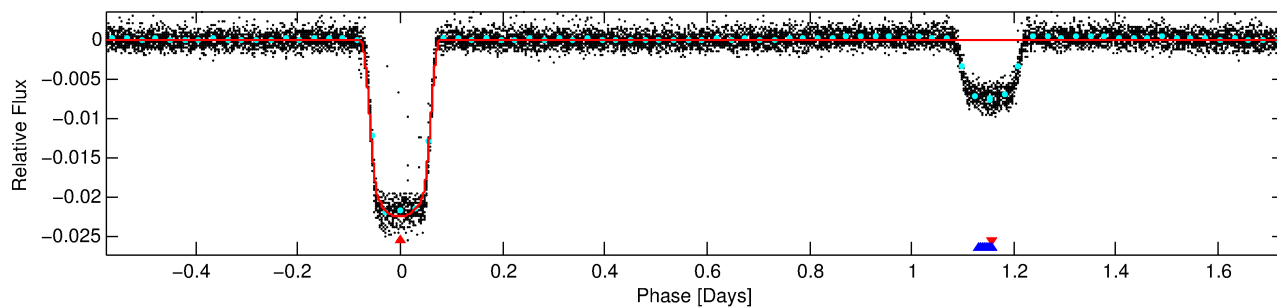
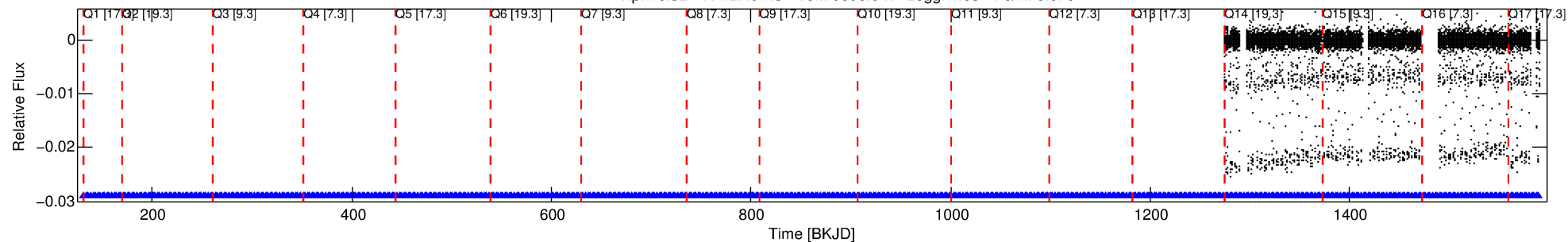
Ephemeris Match Information For 010727668-01

No Significant Match Found

DV One-Page Summary

KIC: 10727668 Candidate: 1 of 2 Period: 2.306 d
KOI: K06081.01 Corr: 0.994

Kp: 16.32 R*: 2.49 Rs Teff: 9696.0 K Logg: 4.03 Fe/H: 0.070



DV Fit Results:

Period = 2.30590 [0.00000] d
Epoch = 131.7913 [0.0001] BKJD
Rp/R* = 0.1415 [0.0005]
a/R* = 5.89 [0.12]
b = 0.22 [0.09]
Seff = 23218.90 [10357.12]
Teq = 3148 [351] K
Rp = 38.48 [13.28] Re
a = 0.0460 [0.0130] AU
Ag = 6.03 [2.43] [2.07σ]
Teffp = 7625 [368] K [8.81σ]

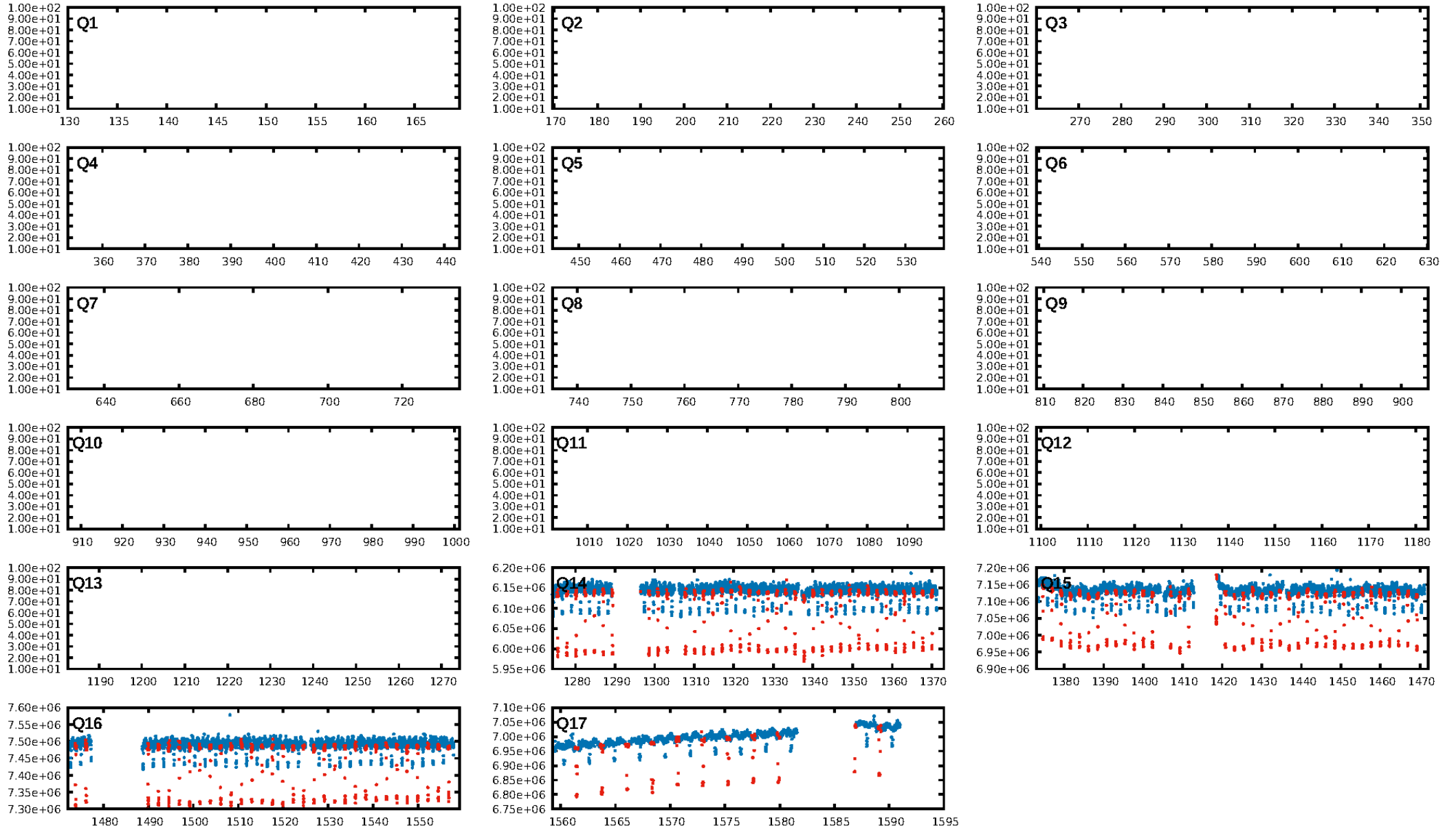
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [107/107]
GhostDiagnostic-chr: 7.165
Centroid-sig: 0.0%
Centroid-so: 0.086 arcsec [3.19σ]
OotOffset-rm: 0.128 arcsec [1.86σ]
KicOffset-rm: 0.164 arcsec [1.84σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

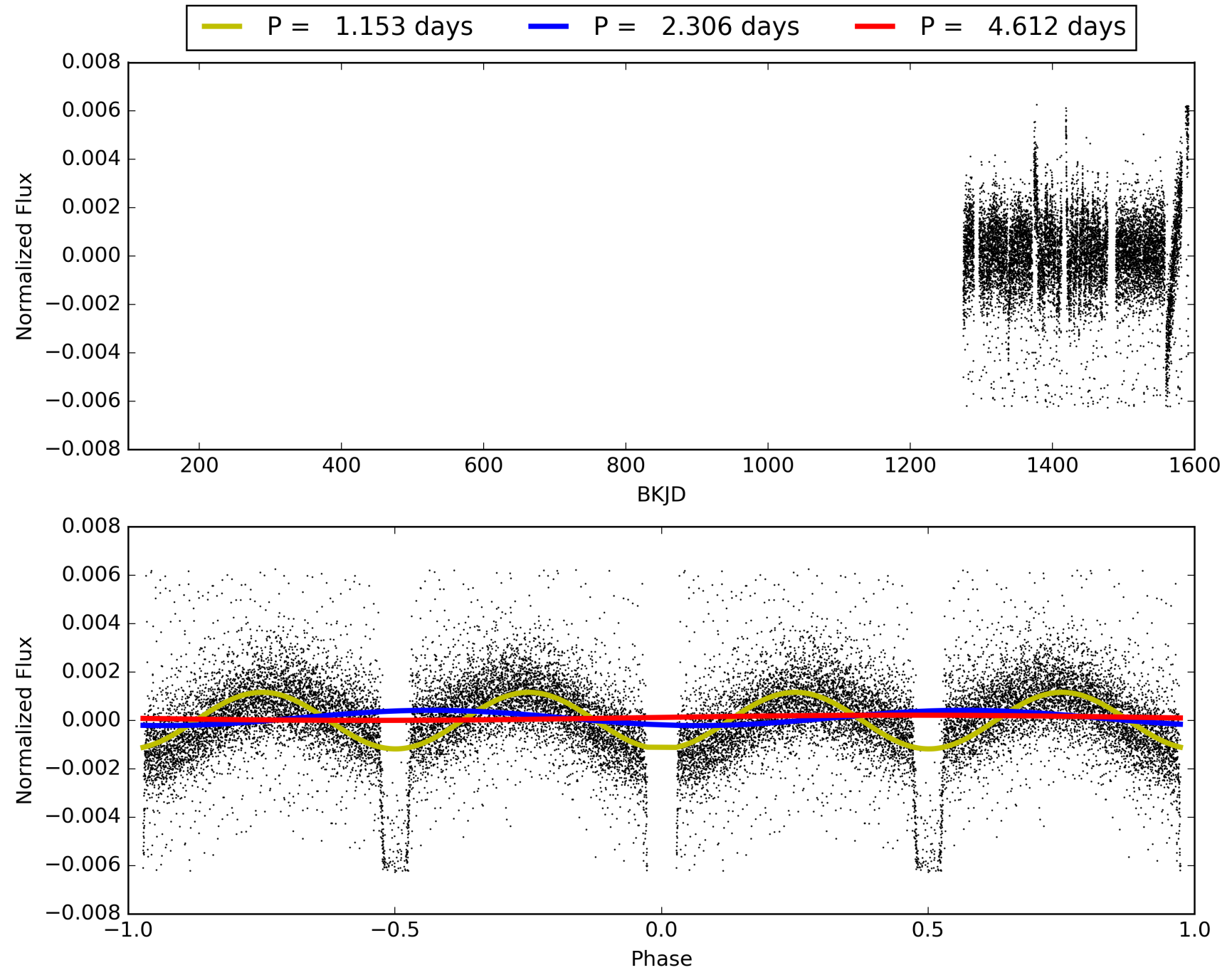
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:21:57 Z

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

TCE 010727668-01, PDC Light Curves

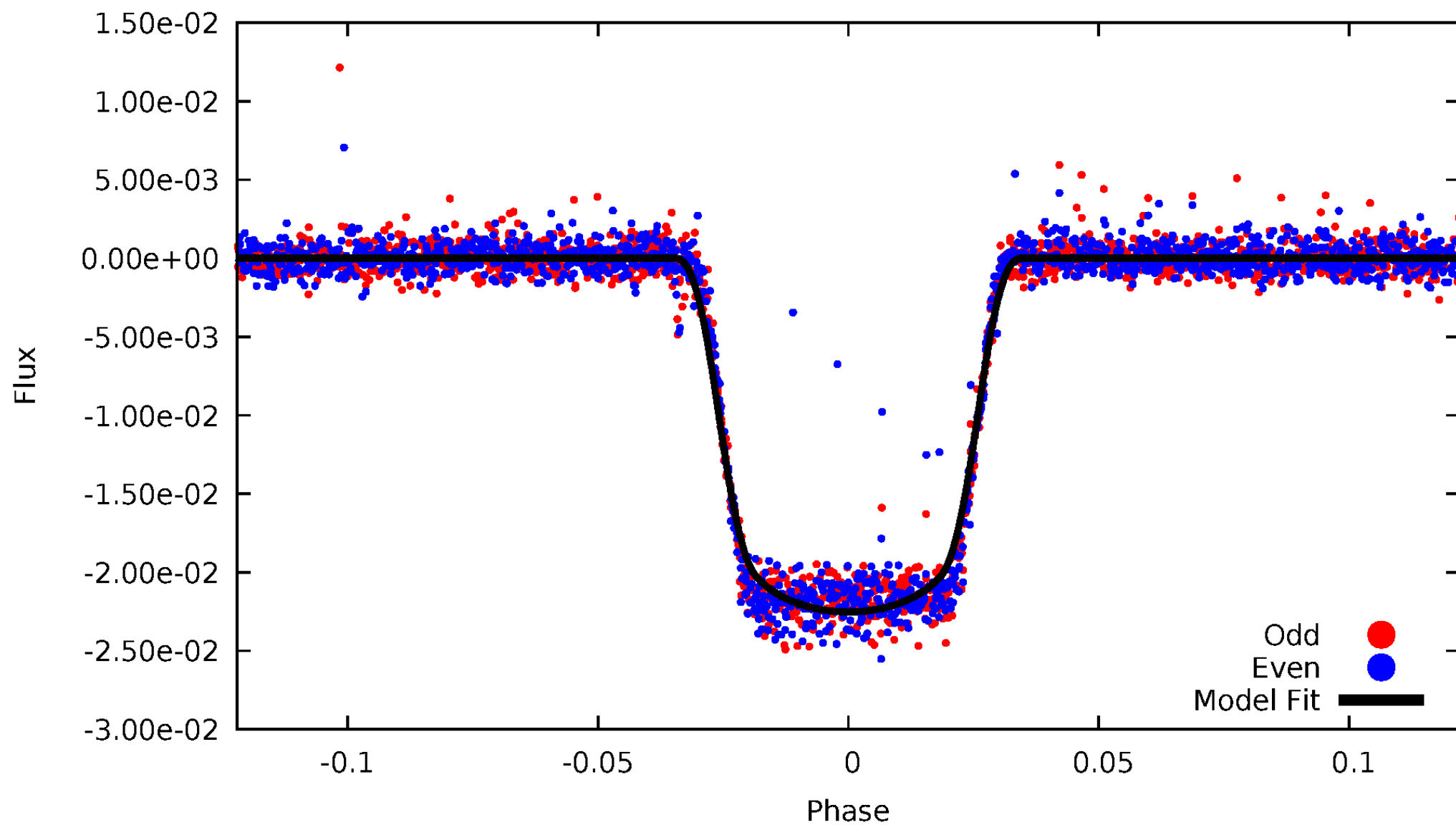


TCE 010727668-01



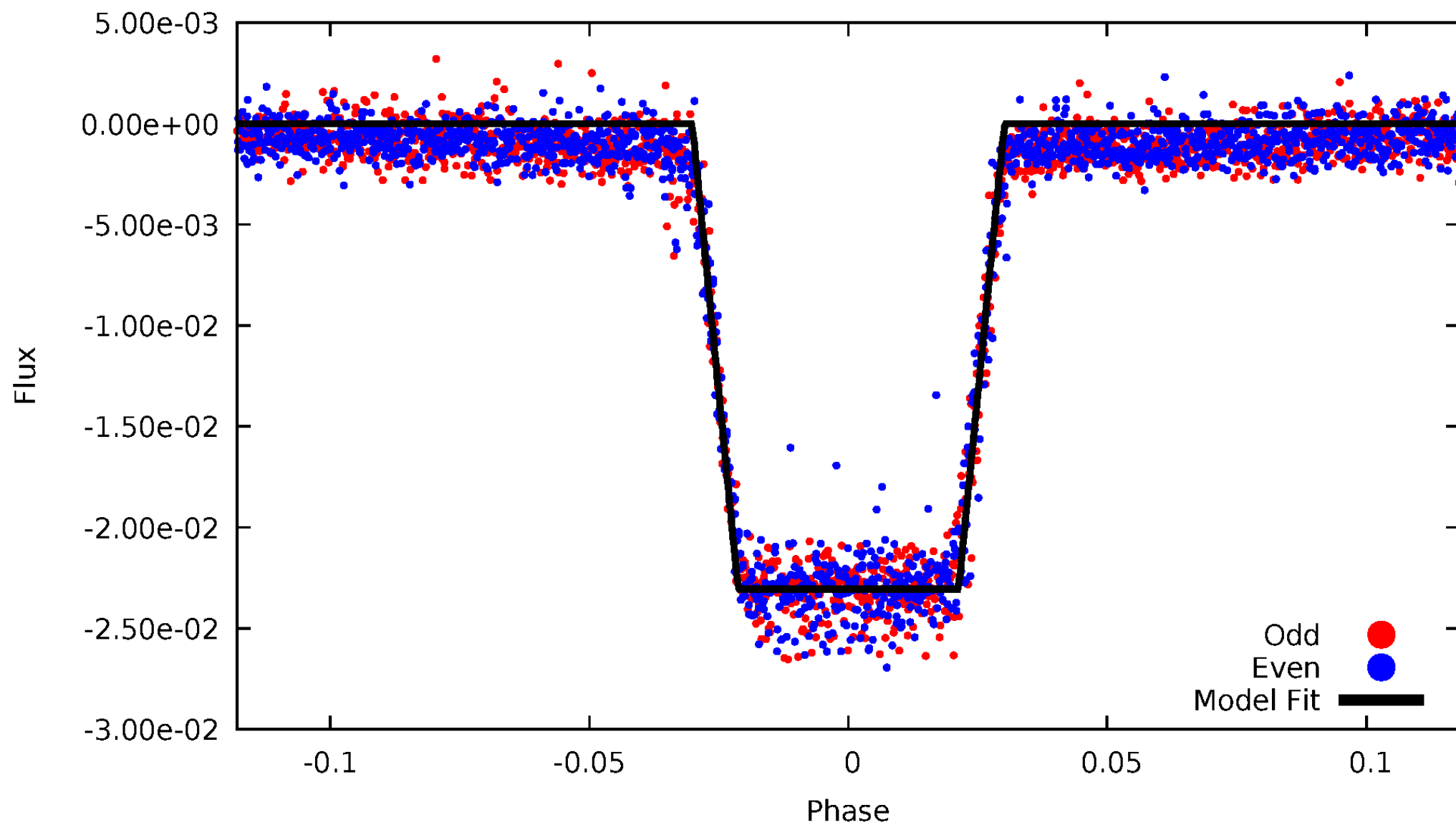
DV Odd/Even

TCE 010727668-01



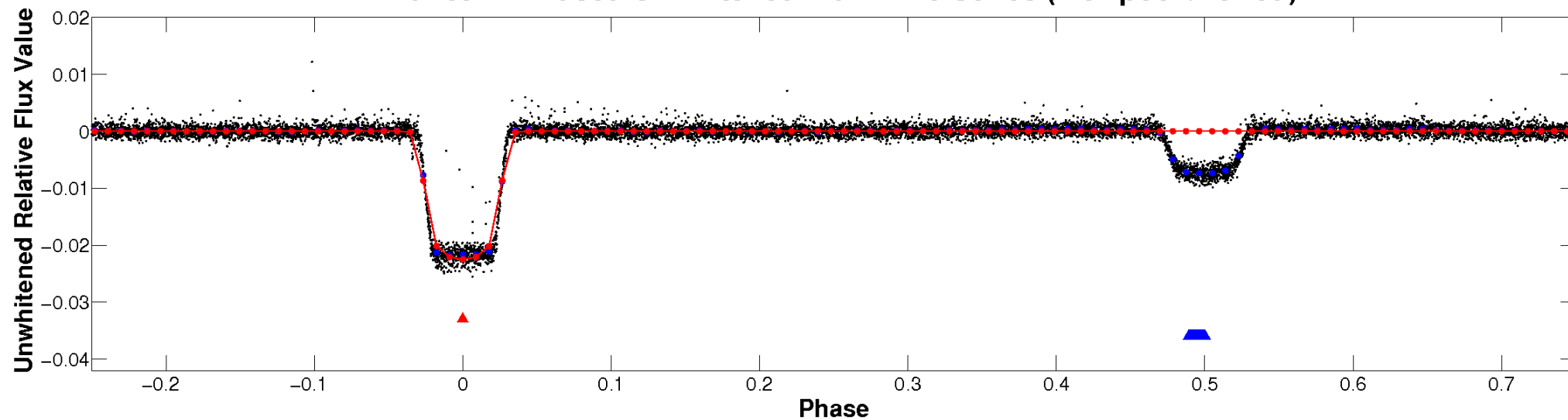
ALT Odd/Even

TCE 010727668-01

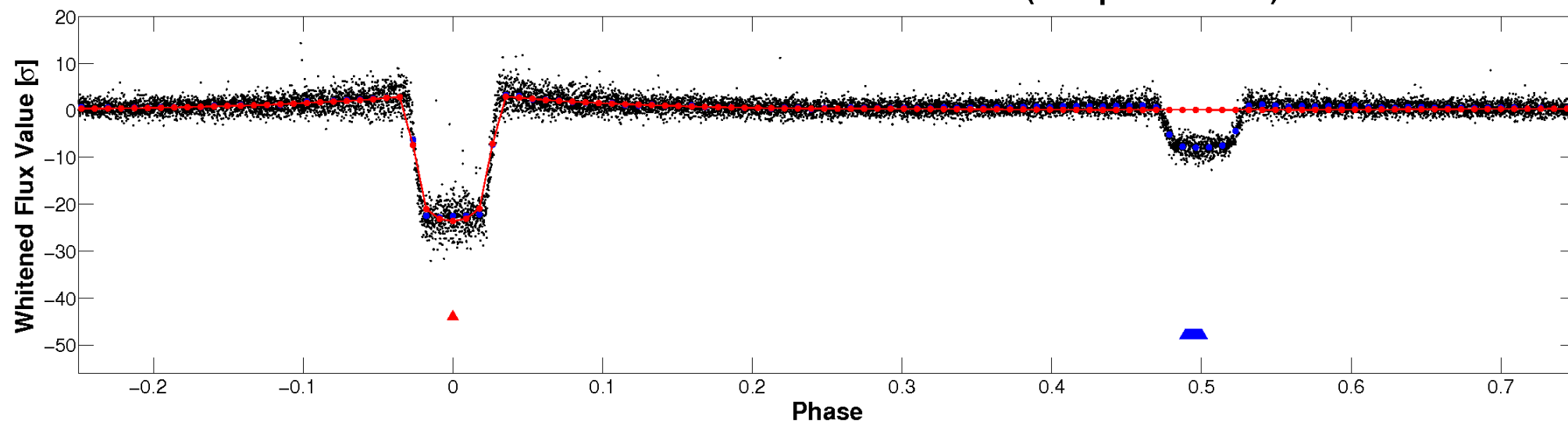


Non-Whitened Vs. Whitened Light Curve

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

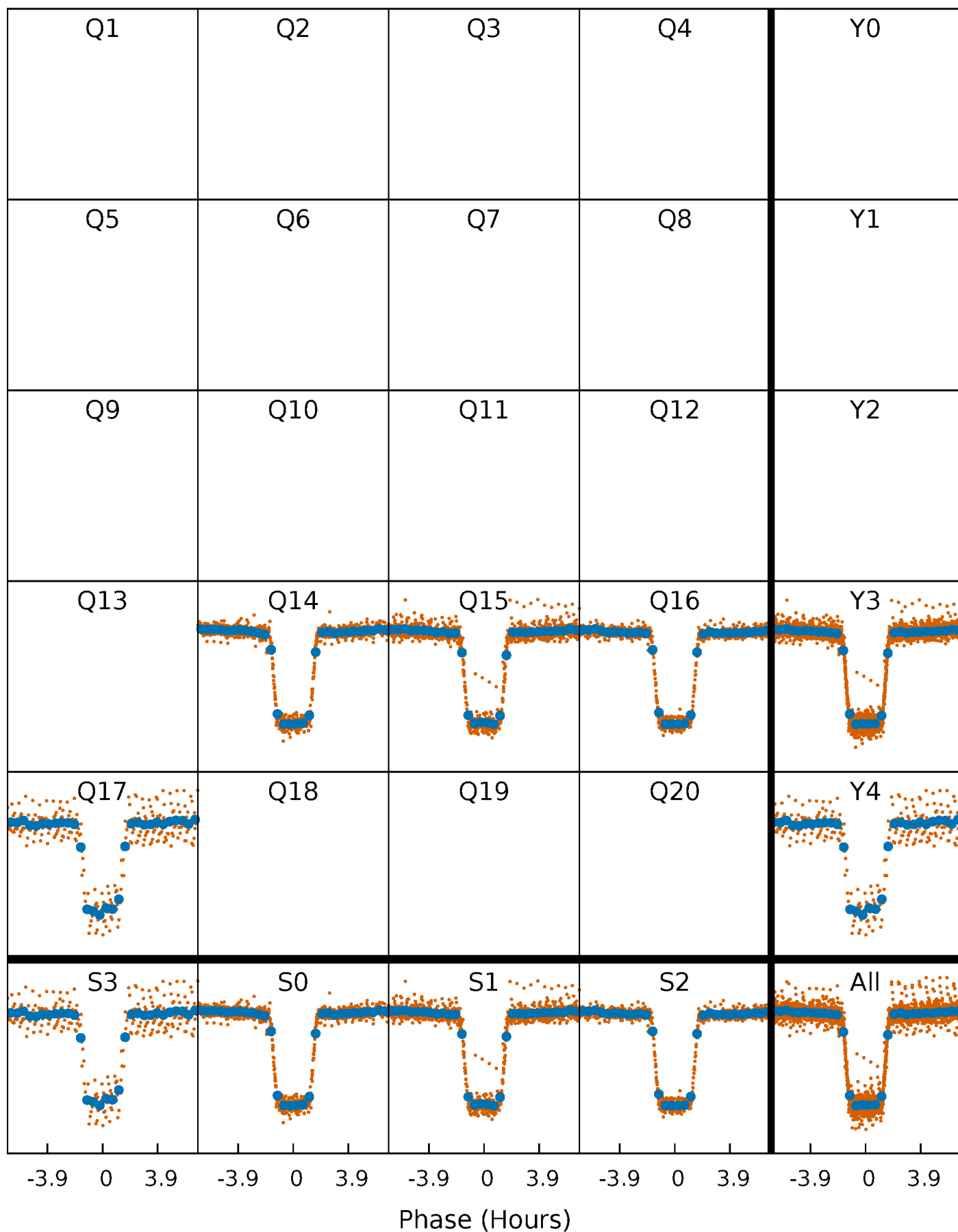


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



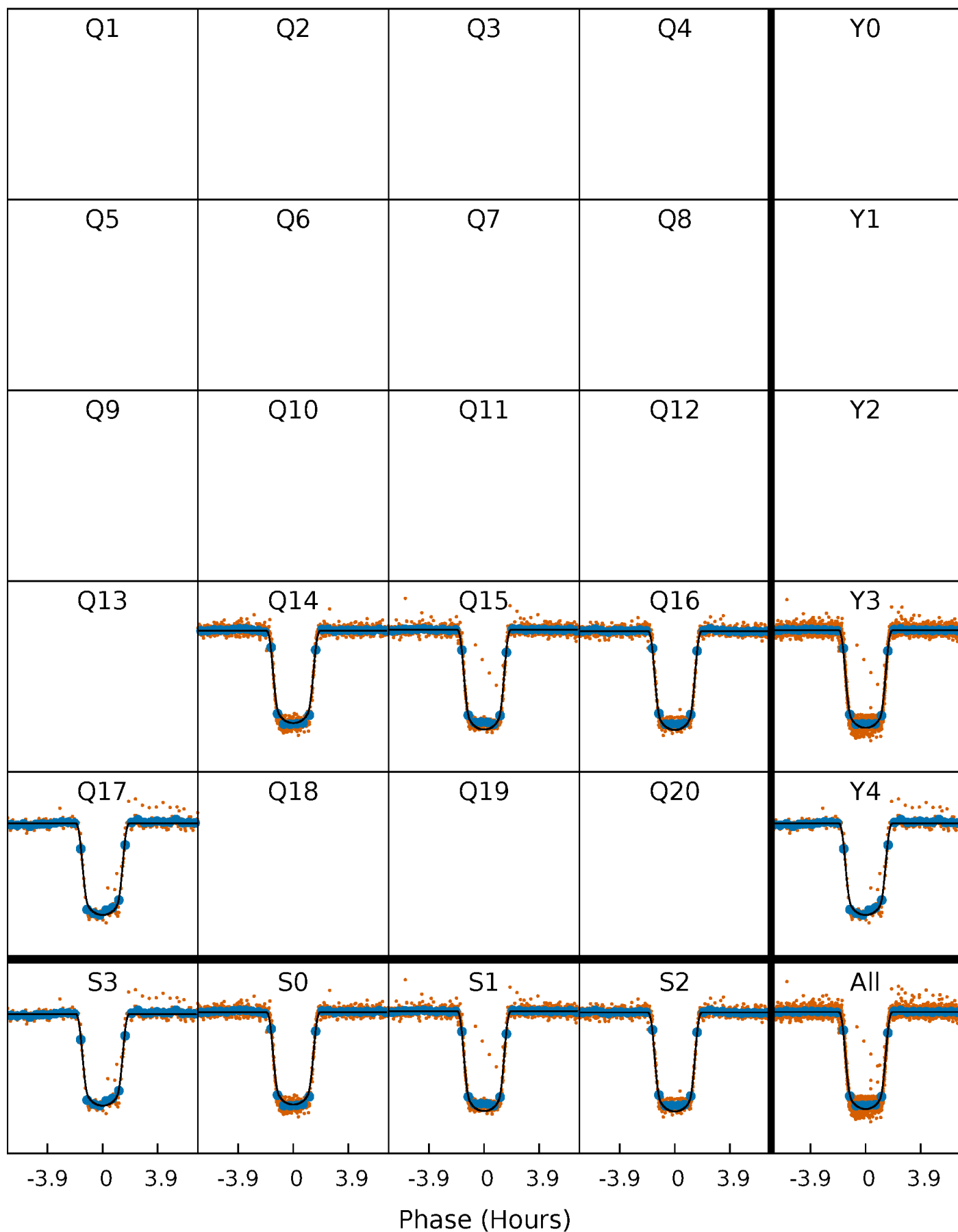
PDC Quarter-Phased Transit Curves

TCE 010727668-01 P= 2.305905 Days $T_0=131.791329$ (BKJD)



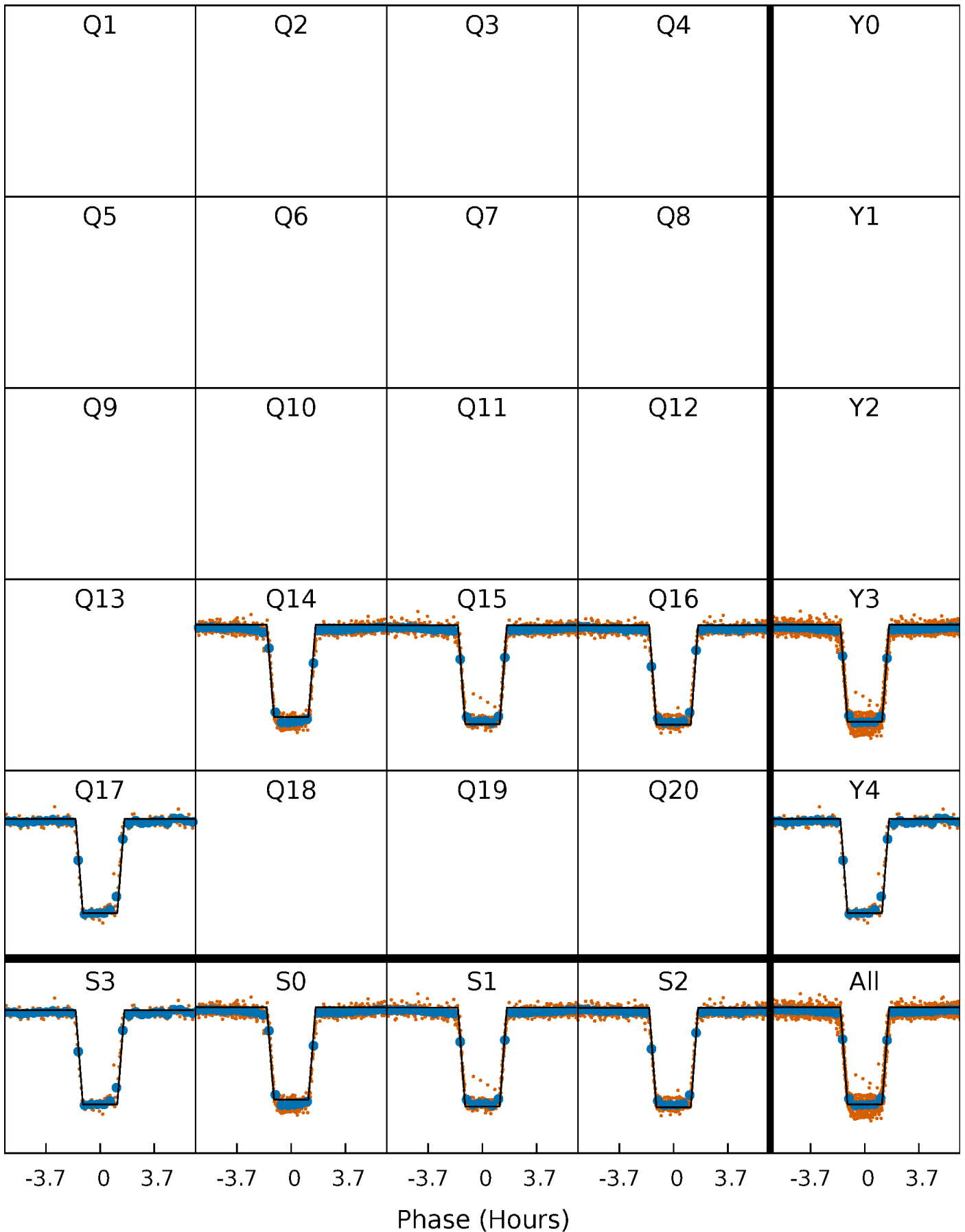
DV Quarter-Phased Transit Curves

TCE 010727668-01 P= 2.305905 Days $T_0=131.791329$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

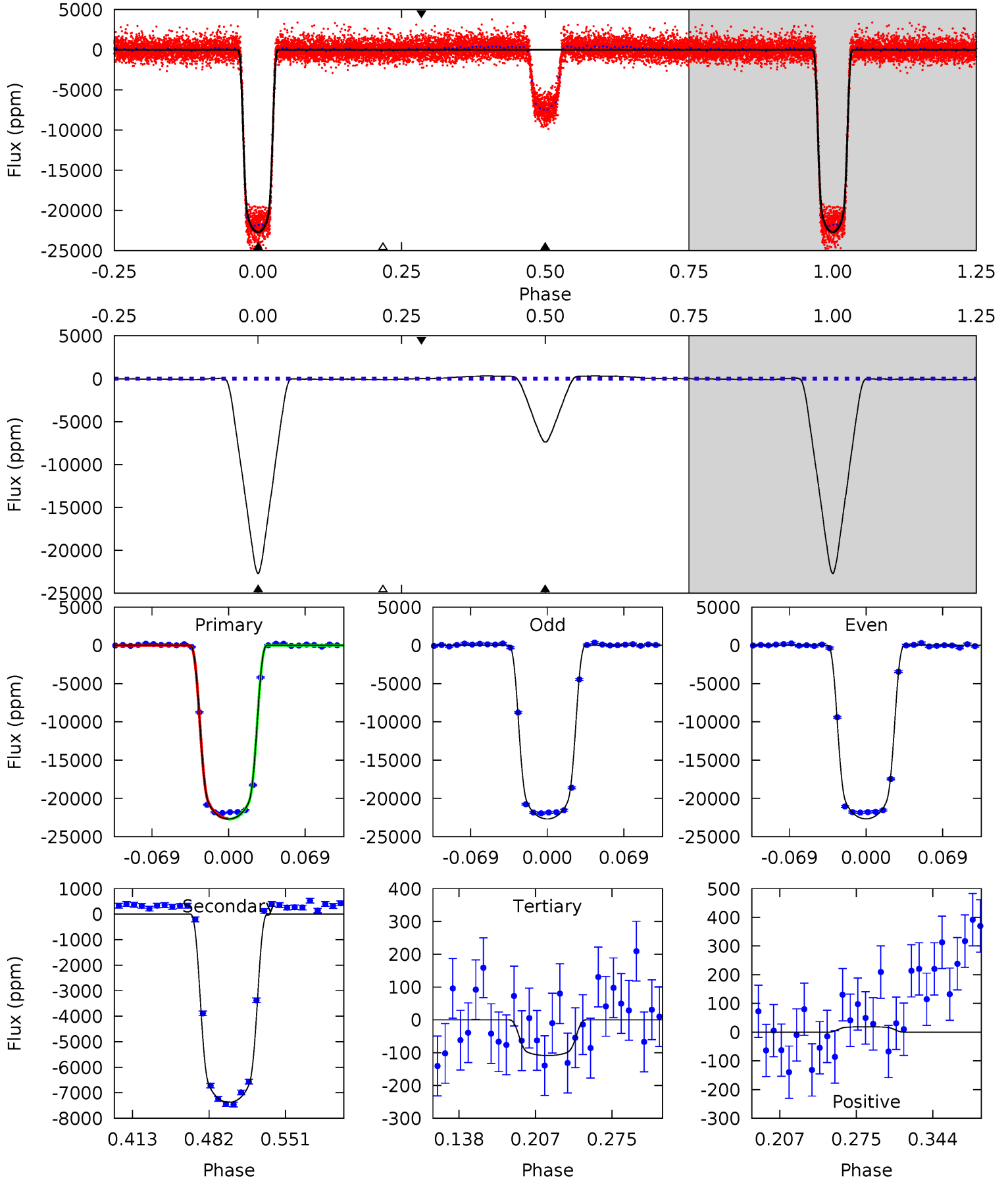
TCE 010727668-01 P= 2.305945 Days $T_0=131.769393$ (BKJD)



DV Model-Shift Uniqueness Test

010727668-01, P = 2.305905 Days, E = 131.791329 Days

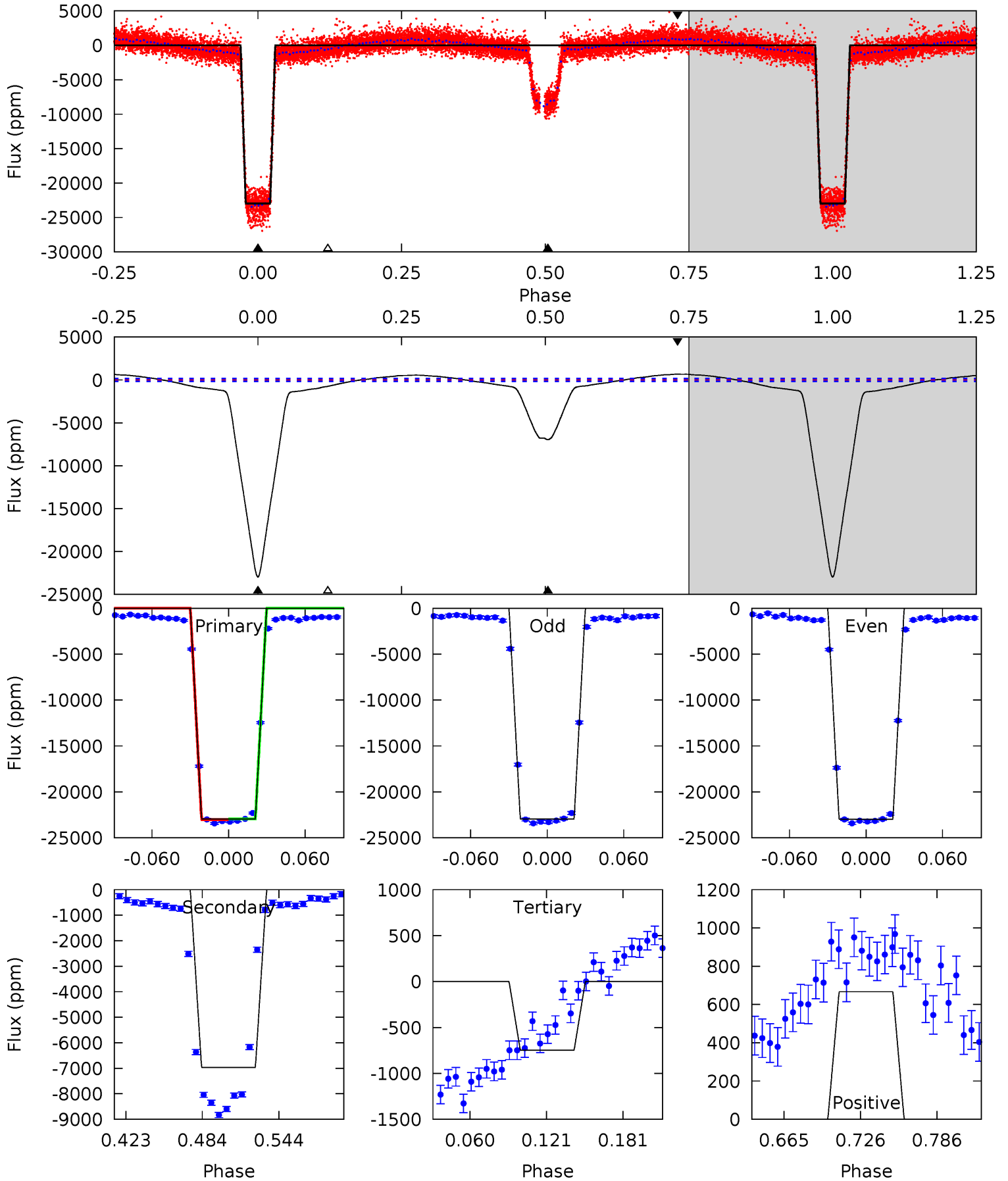
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
824.2	268.0	3.95	0.68	4.64	1.82	5.14	820.3	823.6	264.1	267.3	0.25	1.00	0.01	1.44



Alt Model-Shift Uniqueness Test

010727668-01, P = 2.305945 Days, E = 131.769393 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
653.0	198.2	21.2	18.9	4.67	1.88	16.1	631.7	634.0	176.9	179.2	0.50	1.01	0.03	1.33



Stellar Parameters For KIC 010727668

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9696^{+272}_{-467}	$4.033^{+0.215}_{-0.194}$	$0.070^{+0.200}_{-0.750}$	$2.492^{+0.860}_{-0.860}$	$2.444^{+0.379}_{-0.758}$	$0.222^{+0.345}_{-0.119}$
	+3%/-5%	+5%/-5%	+286%/-1071%	+35%/-35%	+16%/-31%	+155%/-54%
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 010727668-01 / KOI 6081.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-7376 ± 28	$38.56^{+6.64}_{-7.13}$	4375^{+400}_{-377}	6968^{+166}_{-253}	$5.785^{+2.150}_{-1.483}$
Alt.	-6969 ± 35	$41.06^{+7.98}_{-7.30}$	4377^{+384}_{-363}	6581^{+155}_{-229}	$4.783^{+1.627}_{-1.307}$

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 $A_{obs} \gg 1.0$

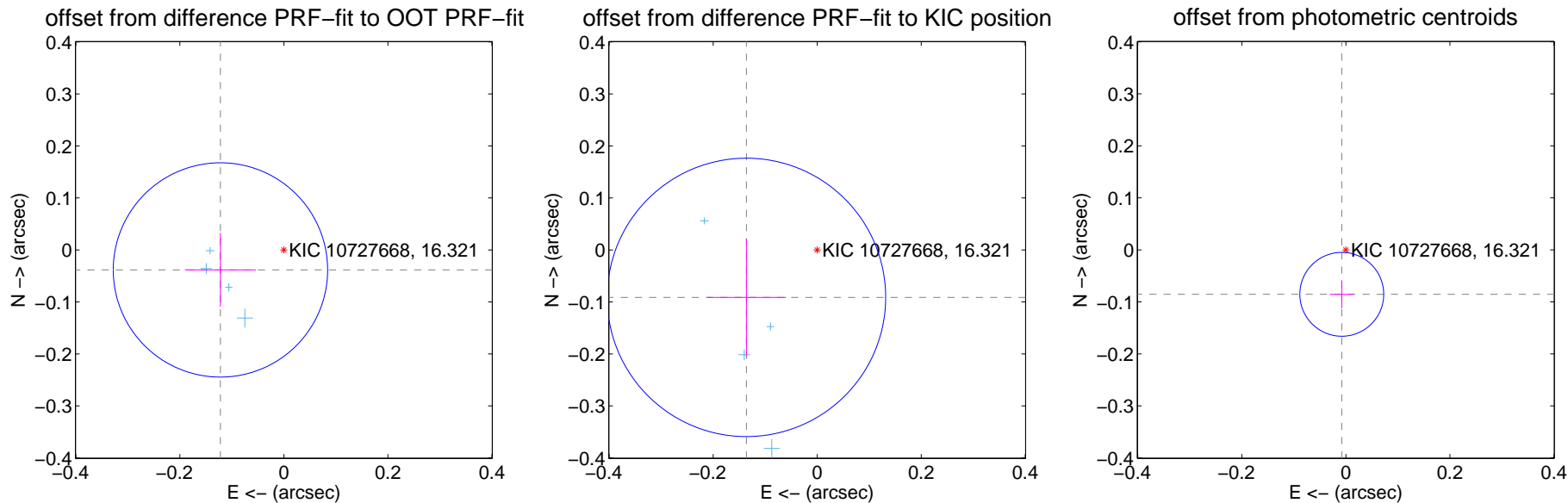
DV Centroid Data

Supplemental centroid analysis for 010727668-01. Kepler magnitude: 16.32. Transit SNR 516.03

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.128 ± 0.069	1.86	0.122 ± 0.068	-0.038 ± 0.071
PRF-fit source offset from KIC position	0.164 ± 0.089	1.84	0.136 ± 0.076	-0.091 ± 0.113
photometric centroid source offset	0.09 ± 0.03	3.19	0.01 ± 0.02	-0.09 ± 0.03



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

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



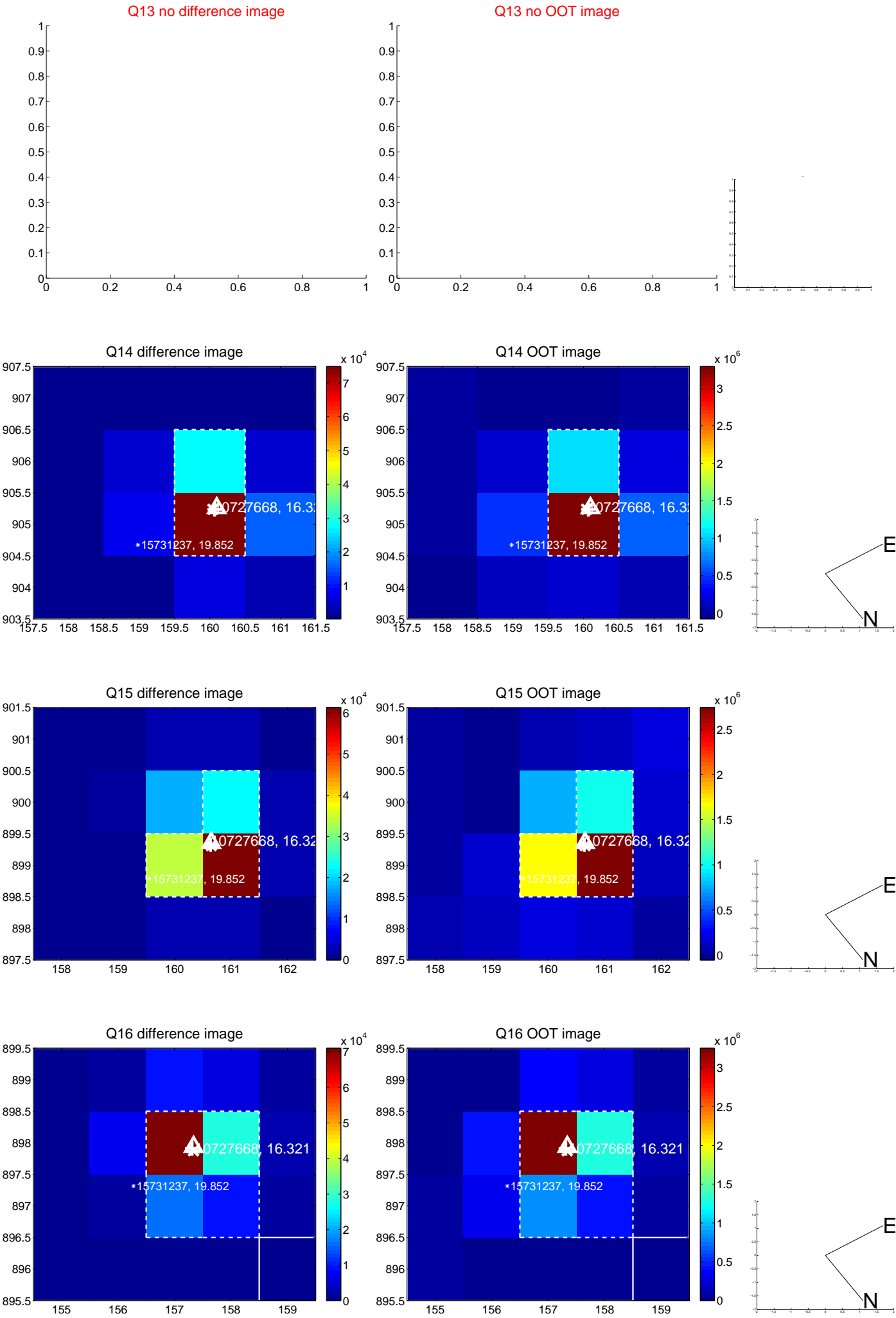
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

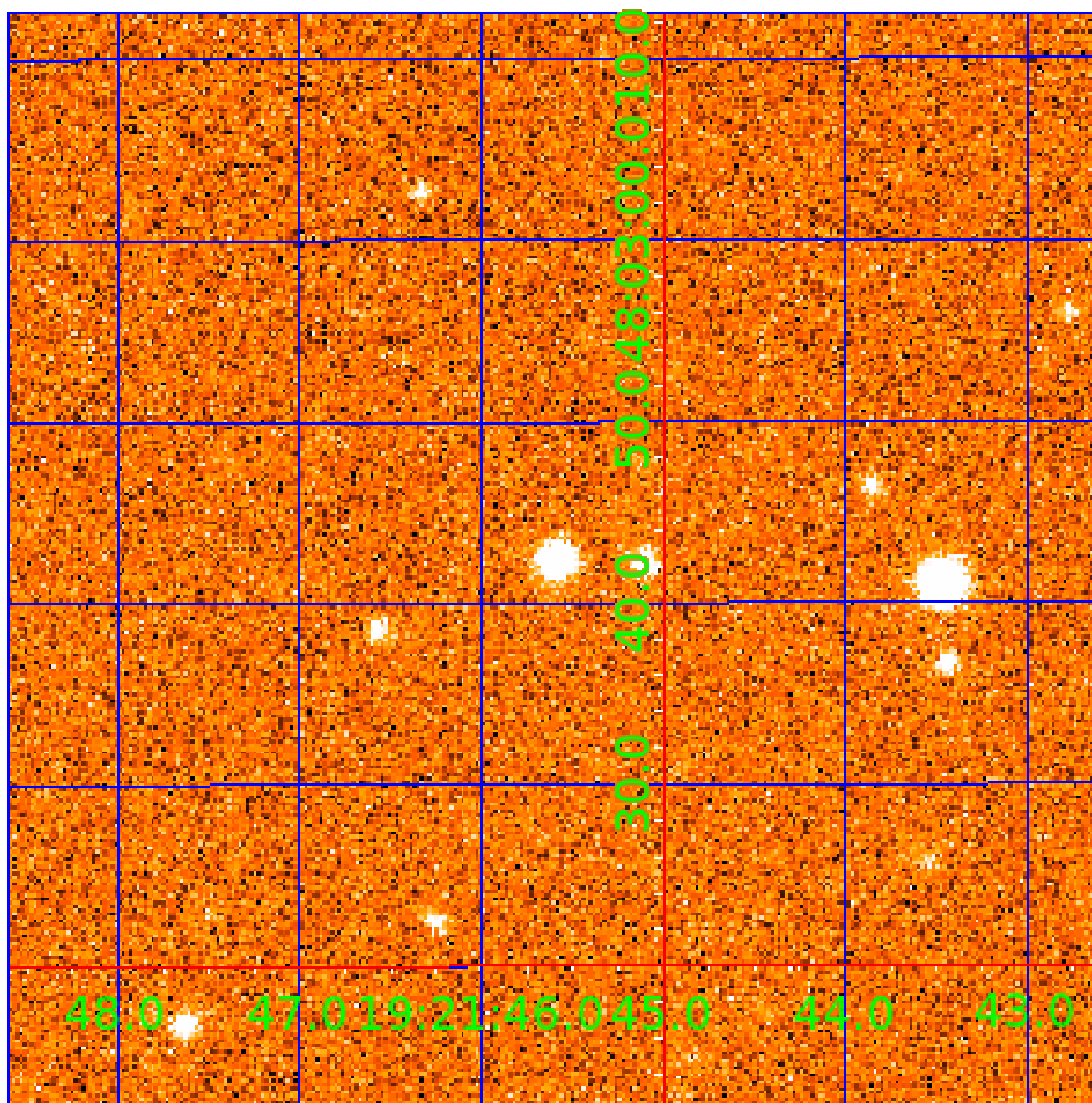


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010727668

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})
010727668-01	OBS	6081.01	2.305905	131.791329	22529.9	3.376	571.7	516.0	2.49	9696	38.48	23218.90
010727668-02	OBS	No	2.305945	132.919527	7746.3	3.000	192.5	-1.0	2.49	9696	22.49	23218.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010727668-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
010727668-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

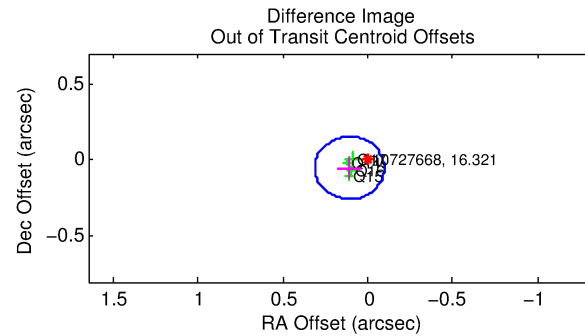
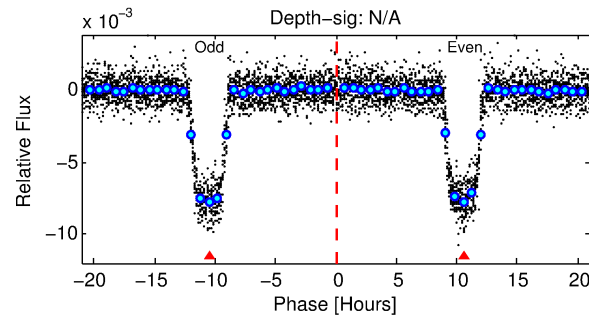
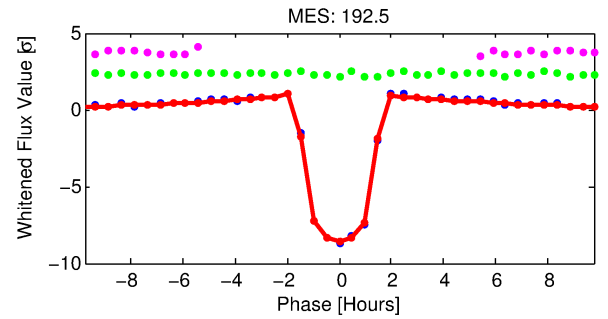
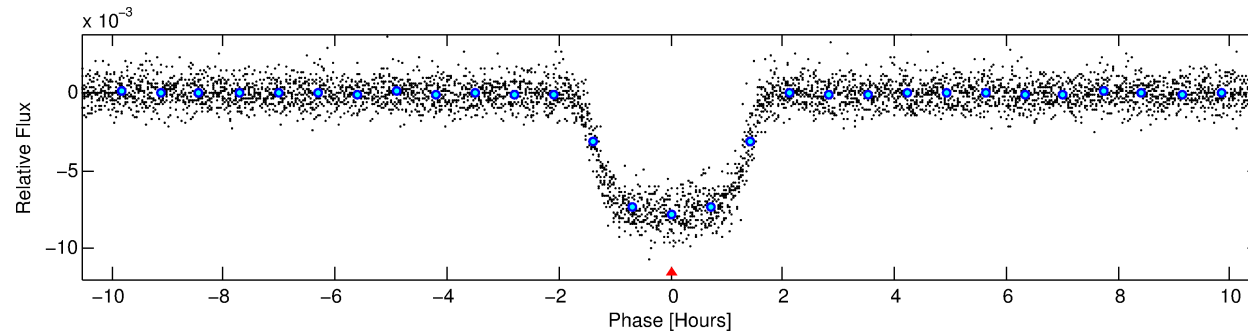
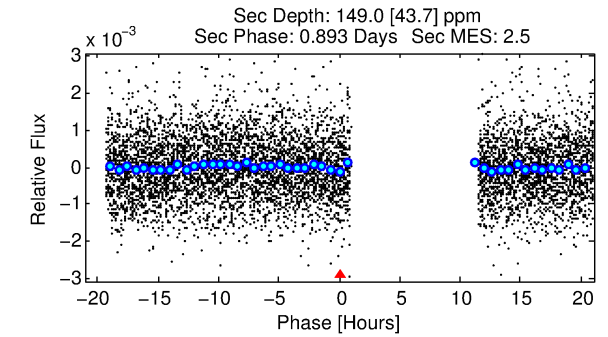
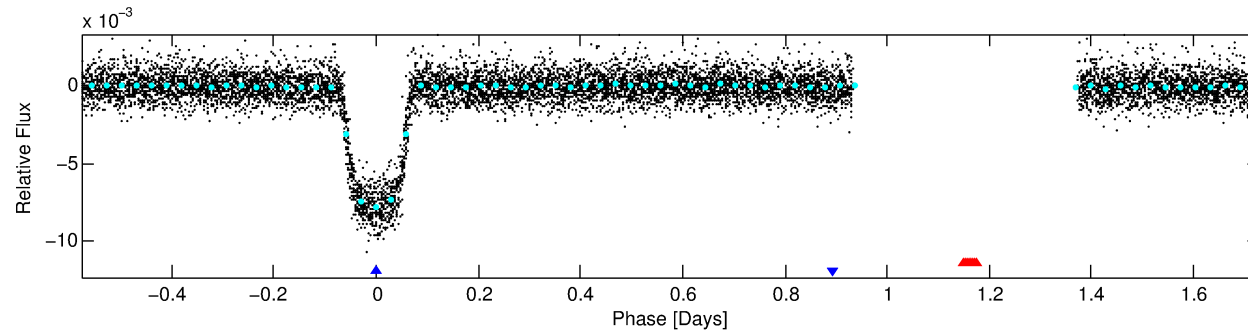
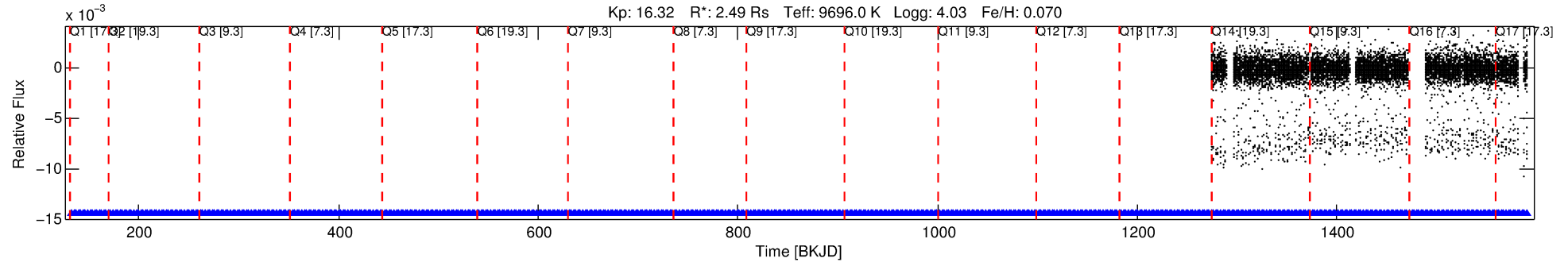
Ephemeris Match Information For 010727668-02

No Significant Match Found

DV One-Page Summary

KIC: 10727668 Candidate: 2 of 2 Period: 2.306 d
KOI: K06081 Corr: No Ephemeris Match

Kp: 16.32 R*: 2.49 Rs Teff: 9696.0 K Logg: 4.03 Fe/H: 0.070



TPS TCE Results:

Period = 2.30594 d
Epoch = 132.9195 BKJD

DV fit results are unavailable

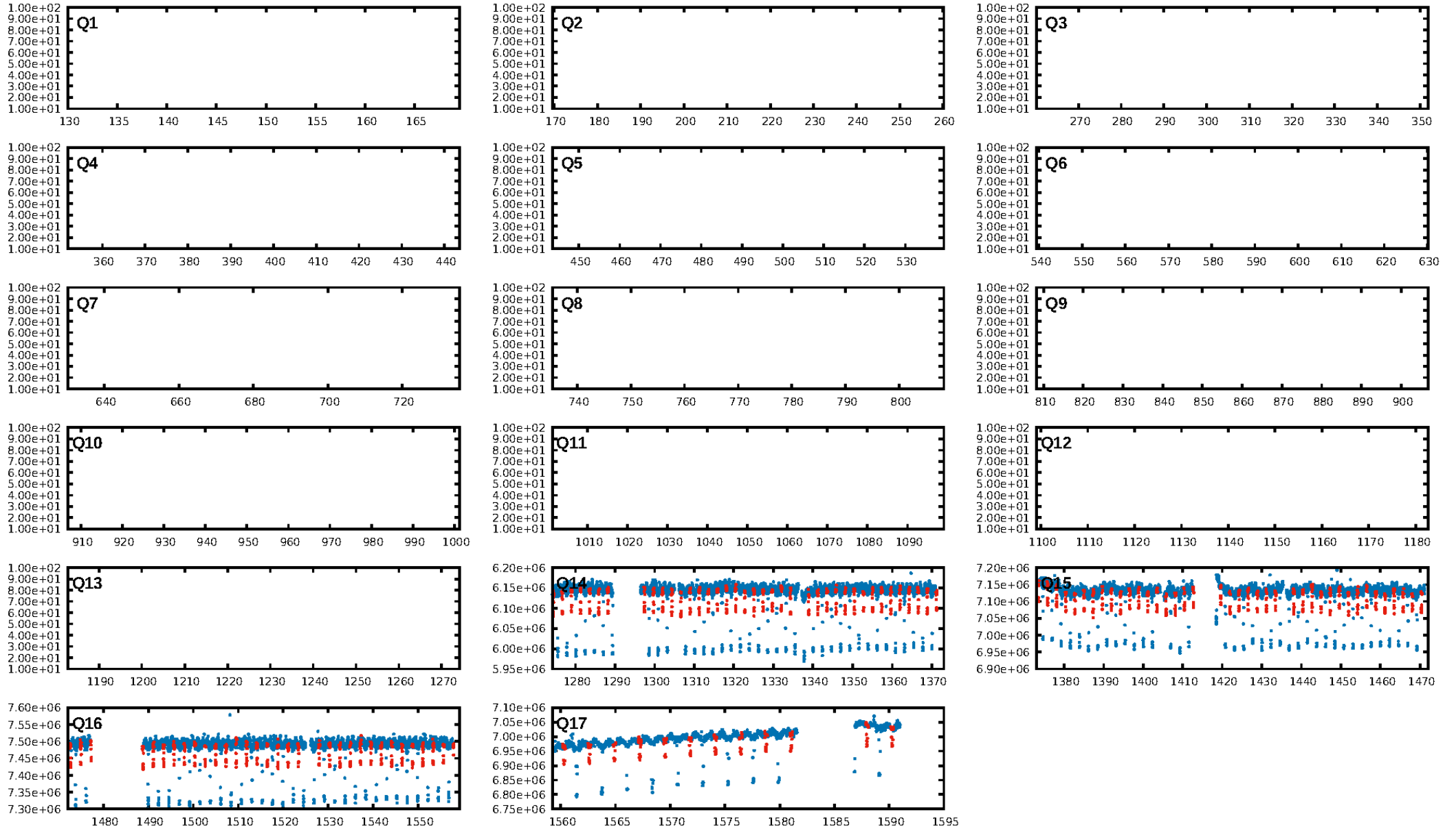
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [109/109]
GhostDiagnostic-chr: 12
Centroid-sig: 0.0%
Centroid-so: 0.279 arcsec [4.19σ]
OotOffset-rm: 0.121 arcsec [1.77σ]
KicOffset-rm: 0.165 arcsec [1.76σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [4/4]

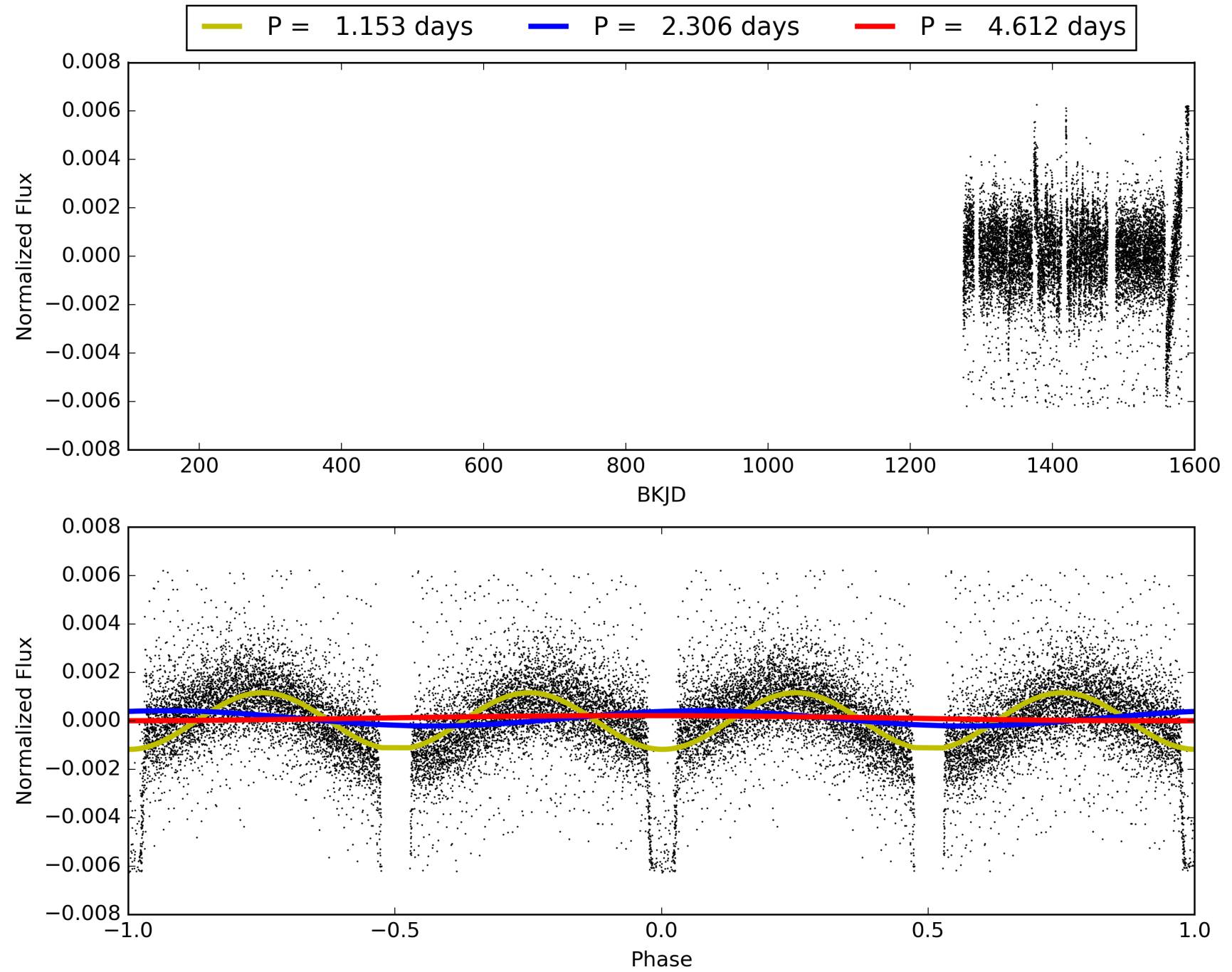
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:22:02 Z

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

TCE 010727668-02, PDC Light Curves

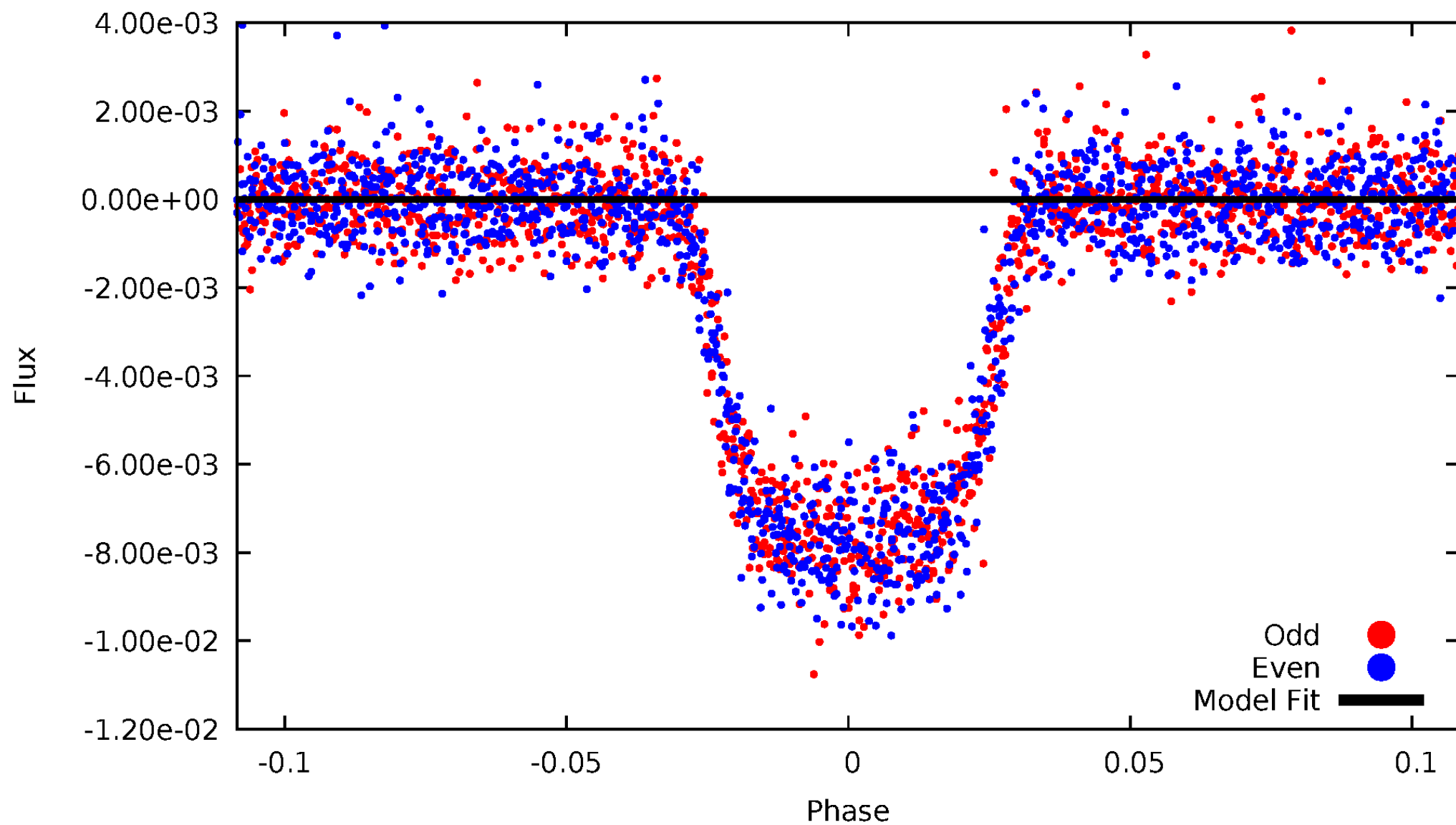


TCE 010727668-02



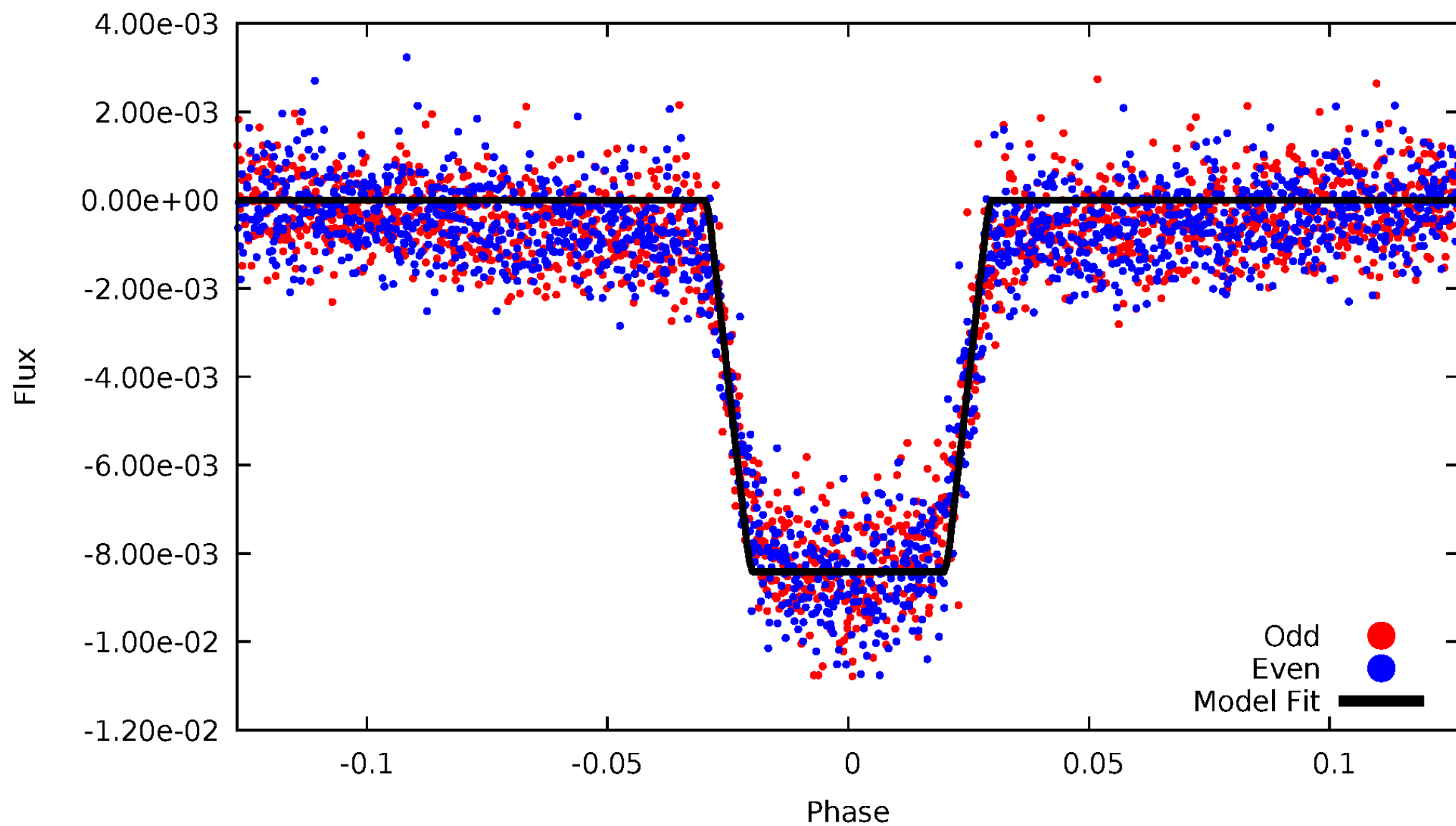
DV Odd/Even

TCE 010727668-02



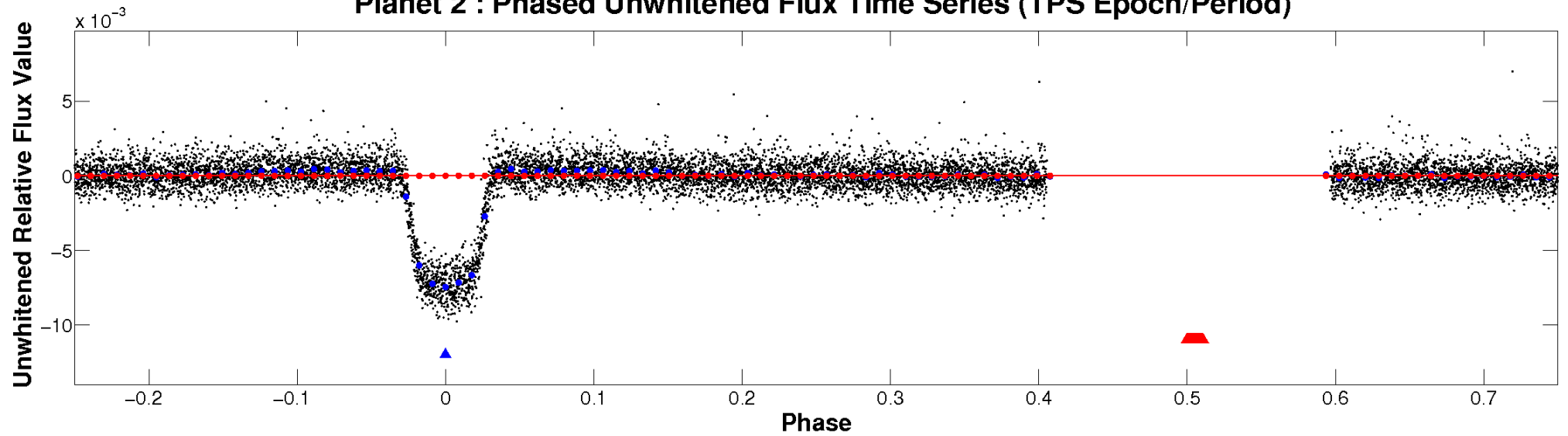
ALT Odd/Even

TCE 010727668-02



Non-Whitened Vs. Whitened Light Curve

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

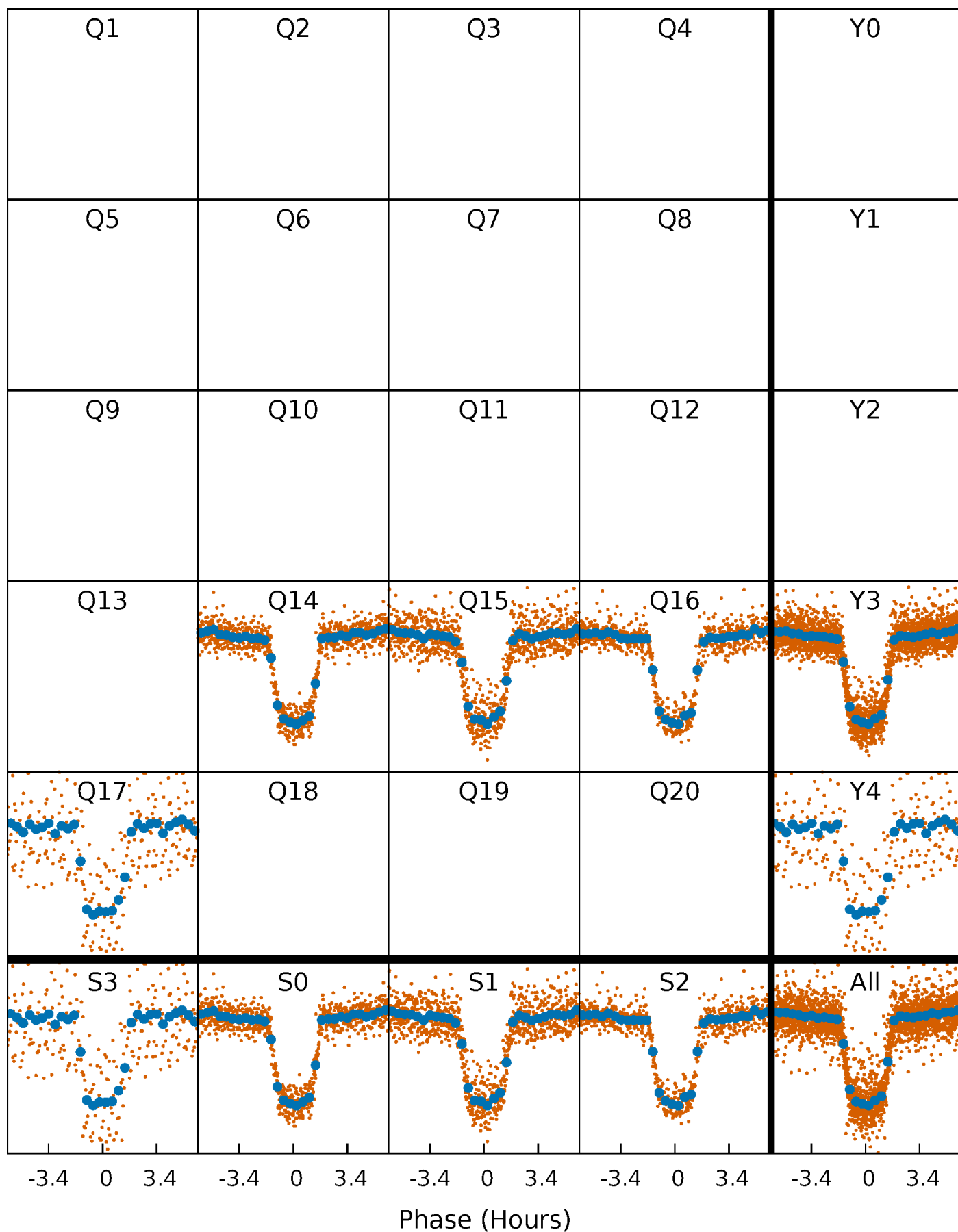


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



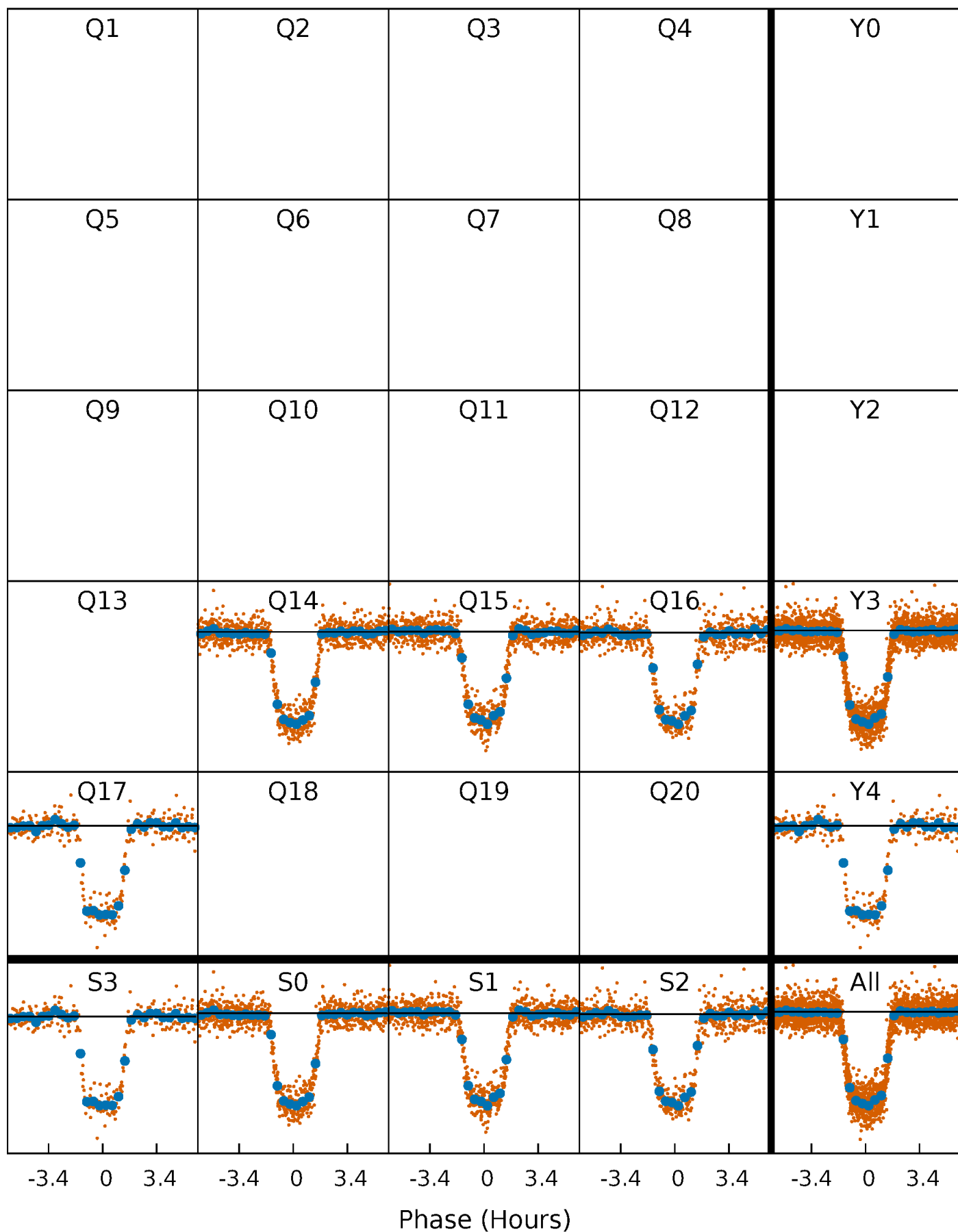
PDC Quarter-Phased Transit Curves

TCE 010727668-02 $P = 2.305945$ Days $T_0 = 132.919527$ (BKJD)



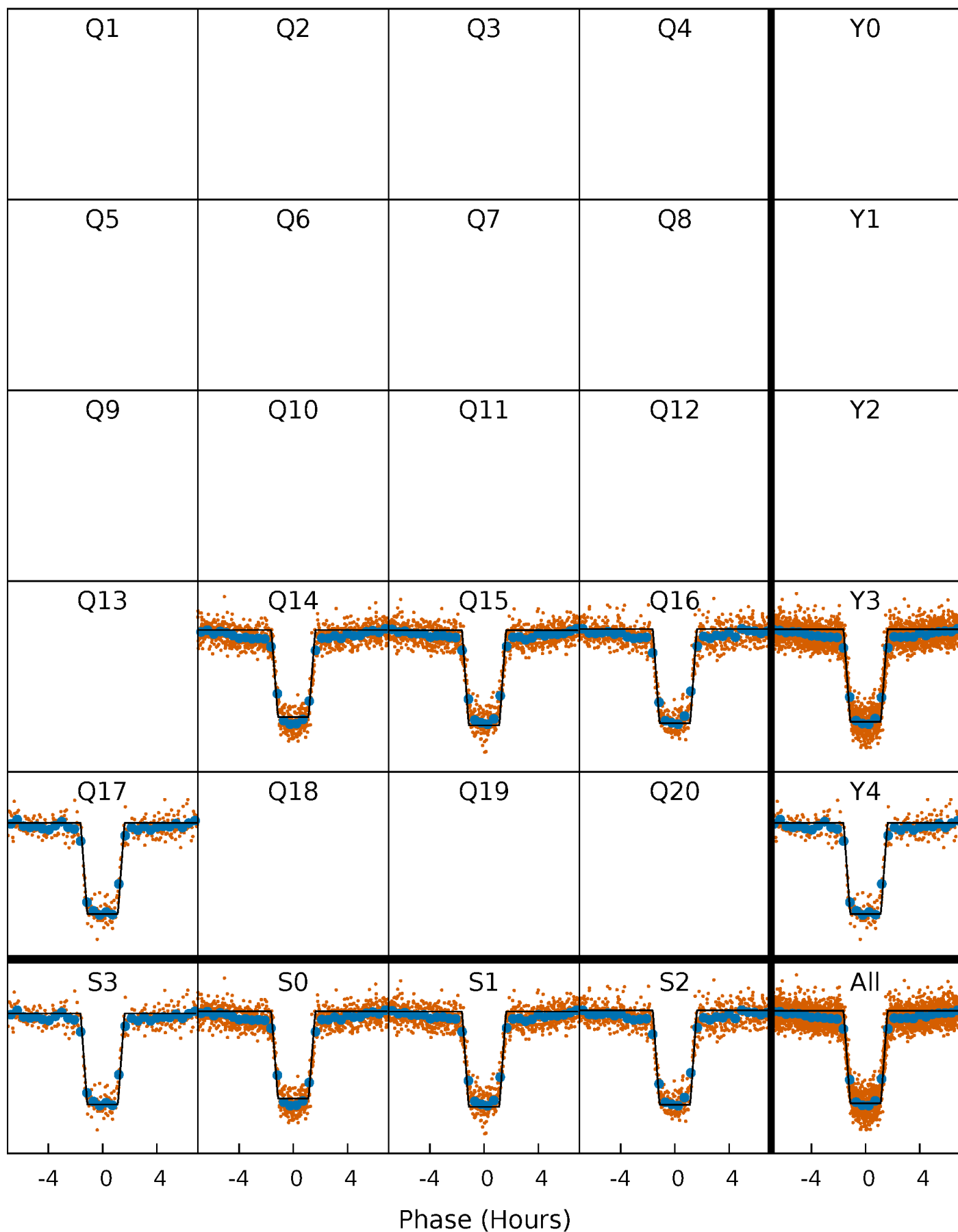
DV Quarter-Phased Transit Curves

TCE 010727668-02 P= 2.305945 Days $T_0=132.919527$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

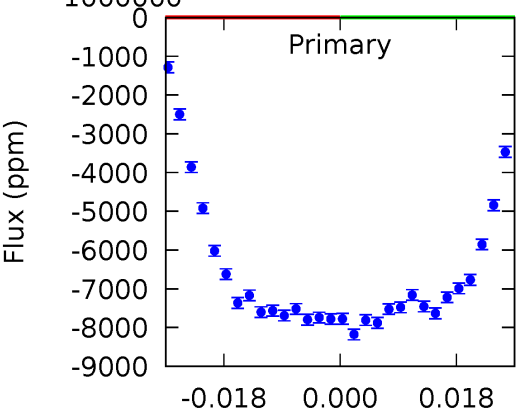
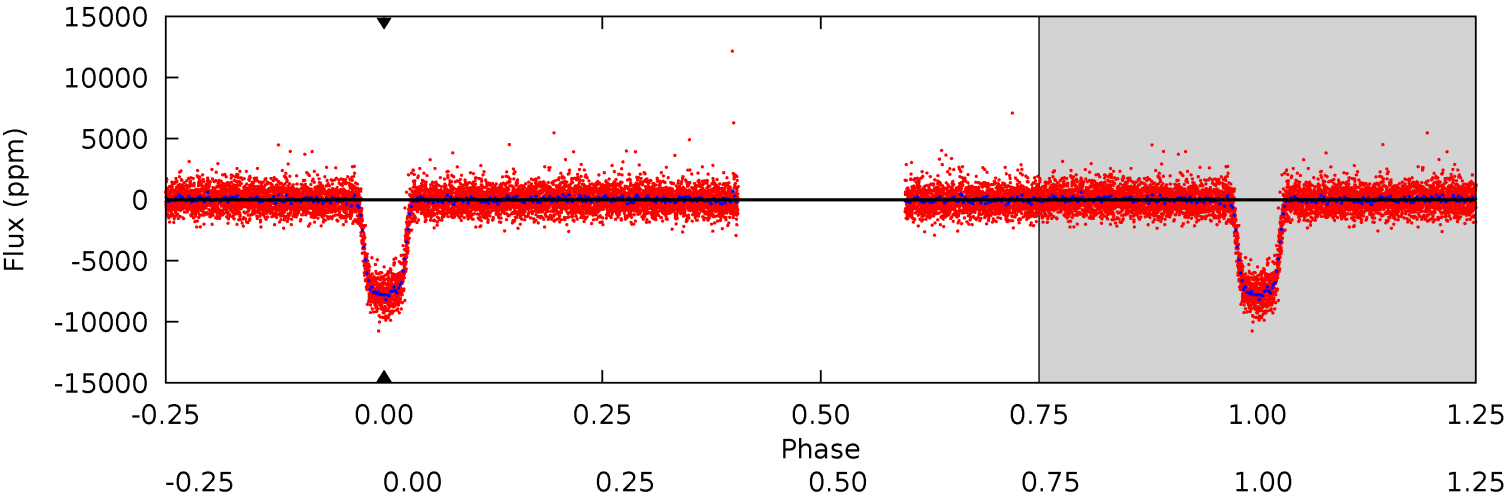
TCE 010727668-02 P= 2.305945 Days $T_0=132.922001$ (BKJD)



DV Model-Shift Uniqueness Test

010727668-02, P = 2.305945 Days, E = 132.919527 Days

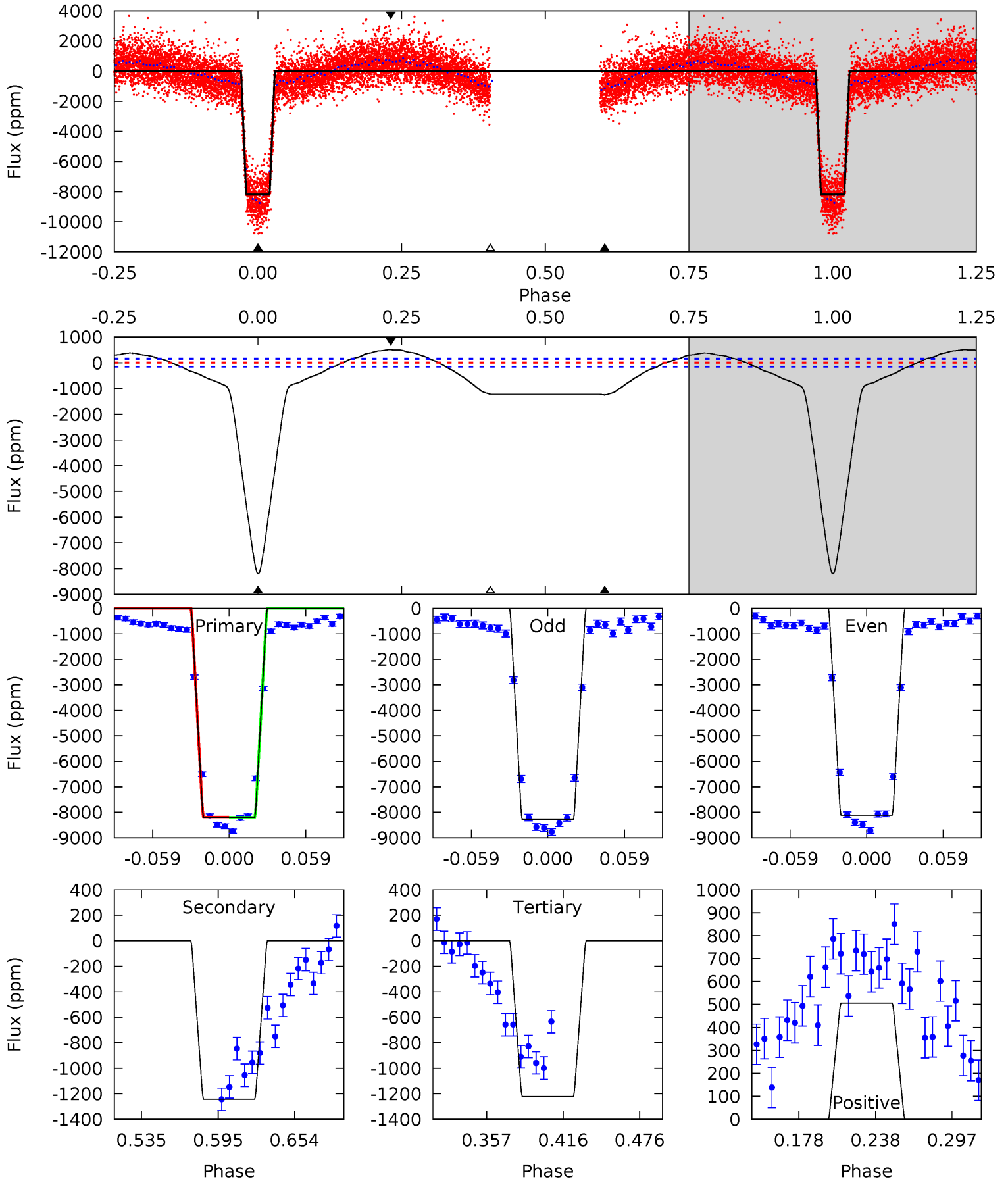
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

010727668-02, P = 2.305945 Days, E = 132.922001 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
253.4	38.5	37.8	15.6	4.67	1.88	13.6	215.6	237.8	0.69	22.8	2.64	1.00	0.06	0.18



Stellar Parameters For KIC 010727668

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	9696^{+272}_{-467}	$4.033^{+0.215}_{-0.194}$	$0.070^{+0.200}_{-0.750}$	$2.492^{+0.860}_{-0.860}$	$2.444^{+0.379}_{-0.758}$	$0.222^{+0.345}_{-0.119}$
	+3%/-5%	+5%/-5%	+286%/-1071%	+35%/-35%	+16%/-31%	+155%/-54%
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 010727668-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$28.05^{+23.54}_{-17.75}$	4376^{+380}_{-392}	-4492^{+43241}_{-31248}	$-0.498^{+221.436}_{-194.008}$
Alt.	-1244 ± 32	$30.42^{+26.02}_{-19.59}$	4355^{+398}_{-403}	4773^{+3827}_{-1471}	$1.485^{+10.468}_{-1.048}$

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 $A_{obs} \gg 1.0$

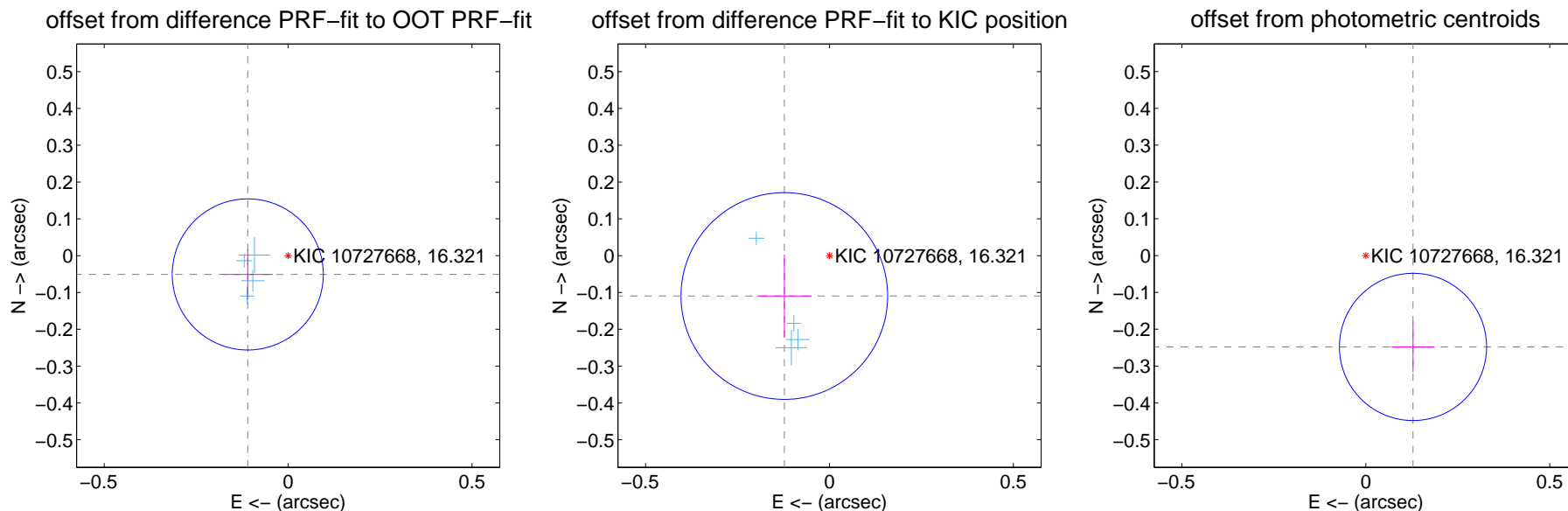
DV Centroid Data

Supplemental centroid analysis for 010727668-02. Kepler magnitude: 16.32. Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.121 ± 0.068	1.77	0.110 ± 0.068	-0.051 ± 0.069
PRF-fit source offset from KIC position	0.165 ± 0.094	1.76	0.123 ± 0.075	-0.110 ± 0.113
photometric centroid source offset	0.28 ± 0.07	4.19	-0.13 ± 0.06	-0.25 ± 0.07



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.



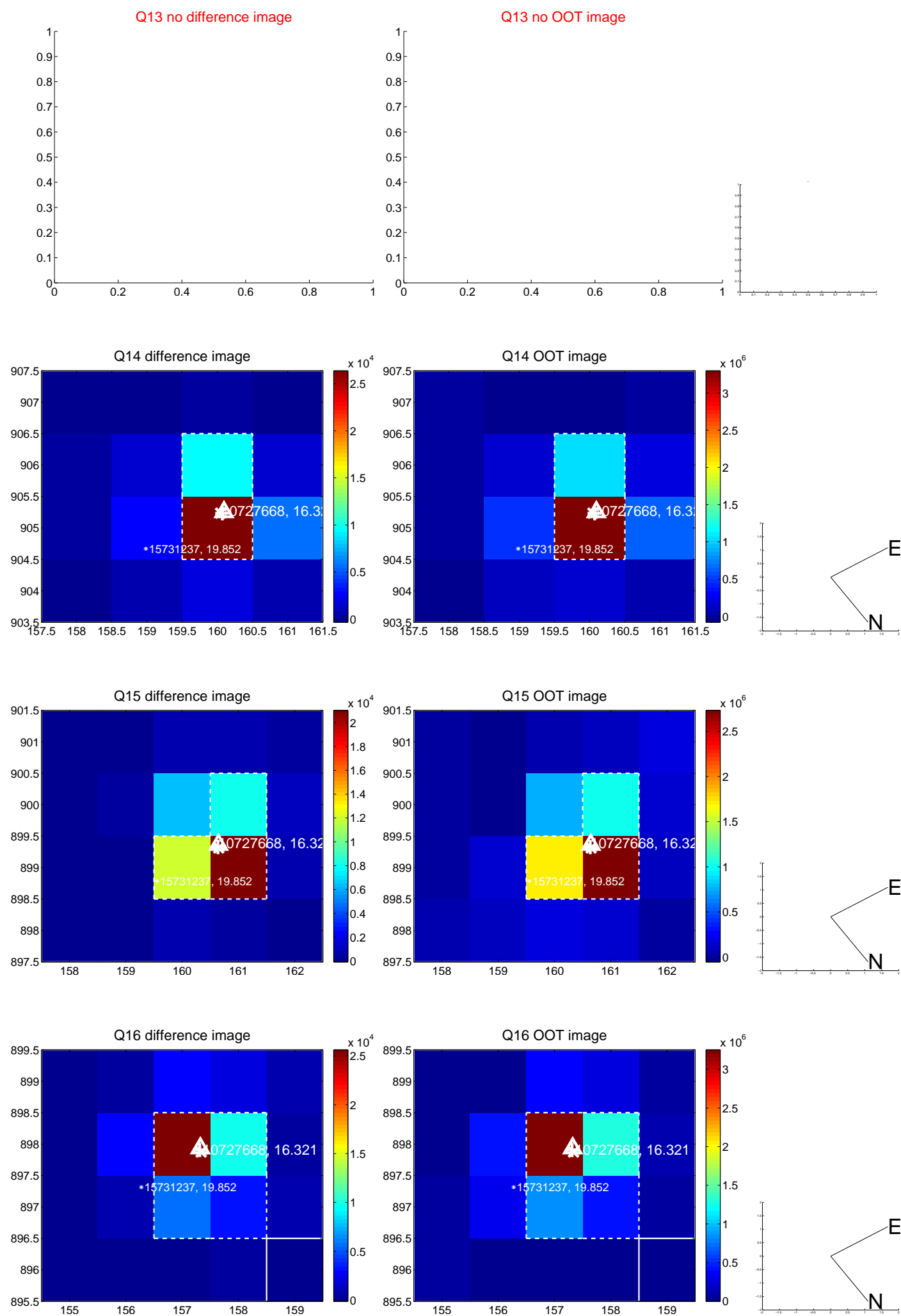
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



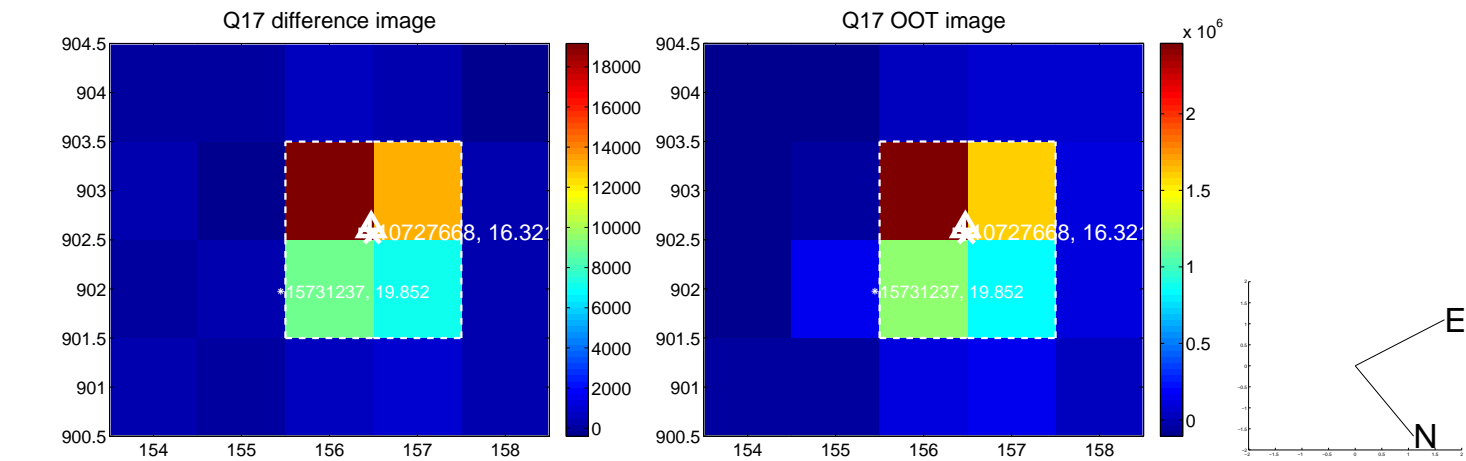
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



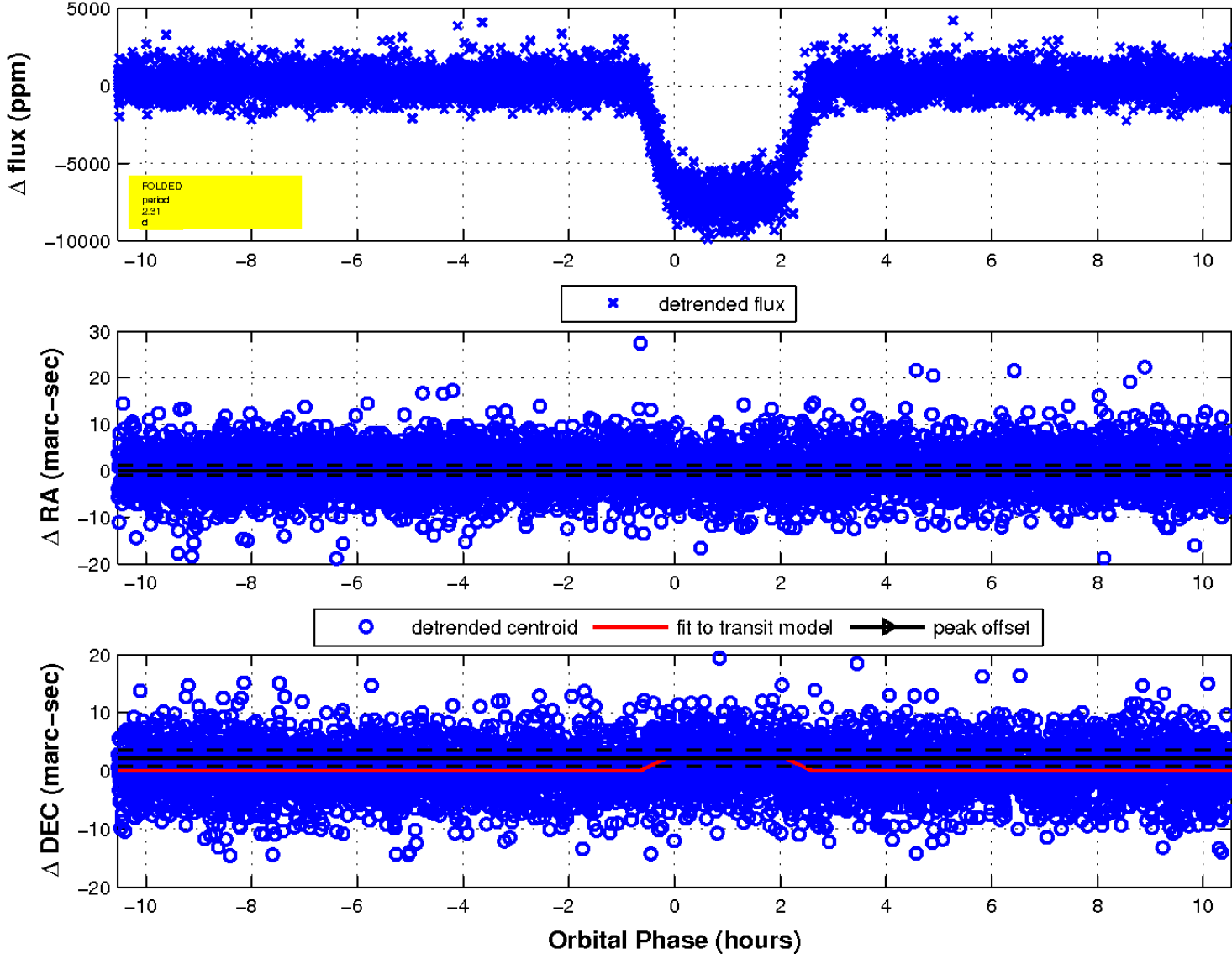
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

