

KIC 010271680

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})
010271680-01	OBS	No	526.685637	519.502392	829.6	15.986	7.9	7.0	0.93	6060	2.75	0.63
010271680-02	OBS	No	377.240784	508.026750	829.0	23.492	7.8	8.2	0.93	6060	2.75	0.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010271680-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS
010271680-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST

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

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

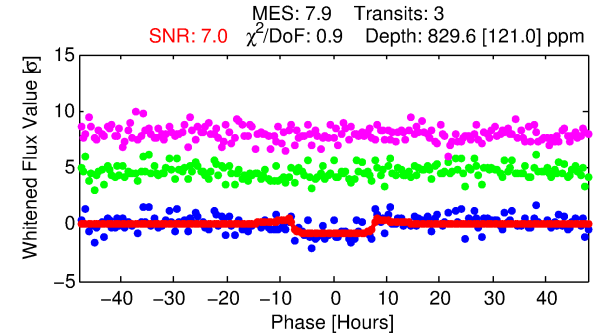
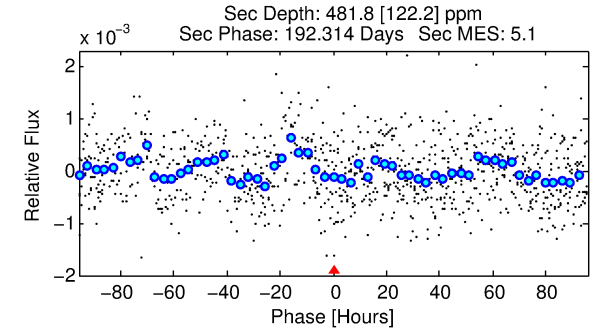
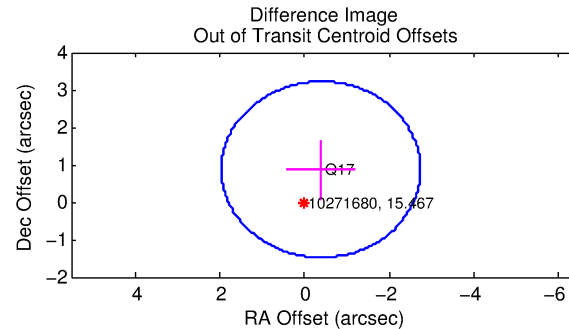
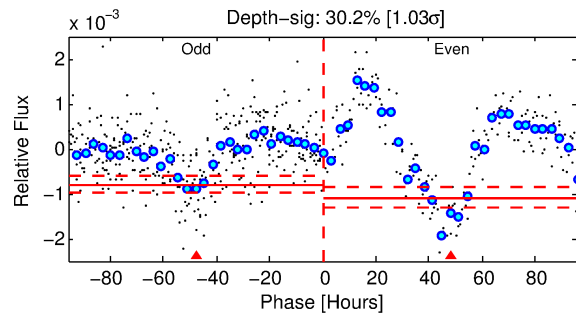
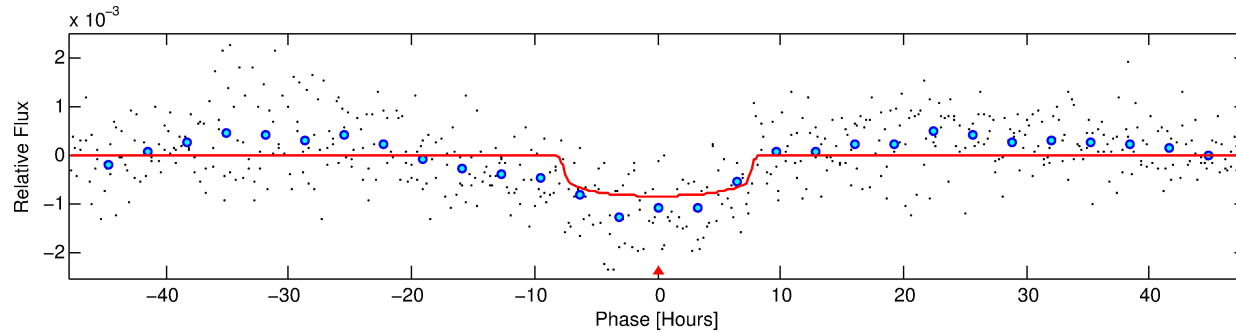
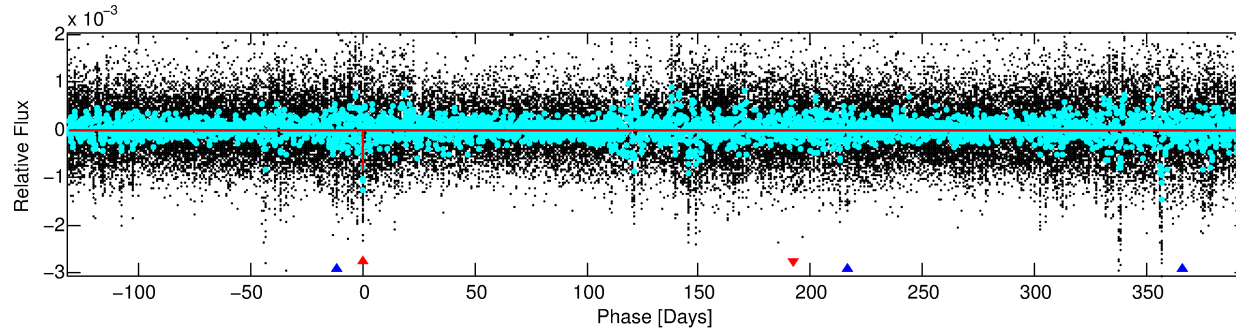
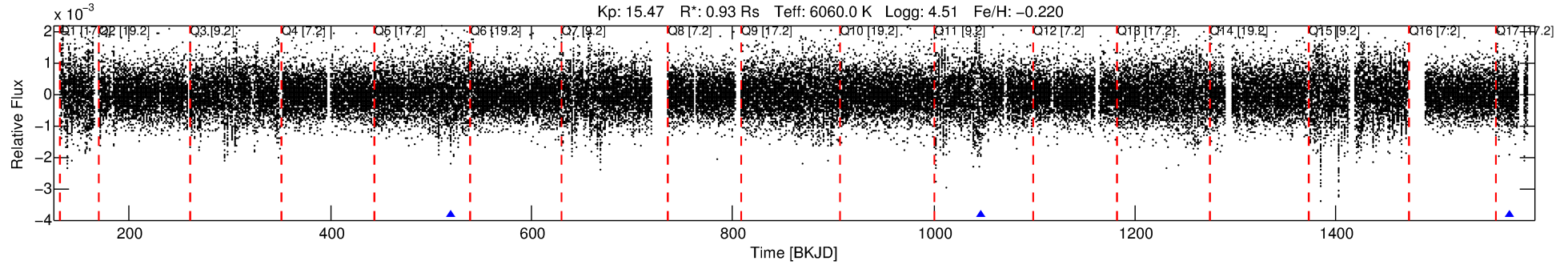
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010271680-01

No Significant Match Found

DV One-Page Summary

KIC: 10271680 Candidate: 1 of 2 Period: 526.686 d



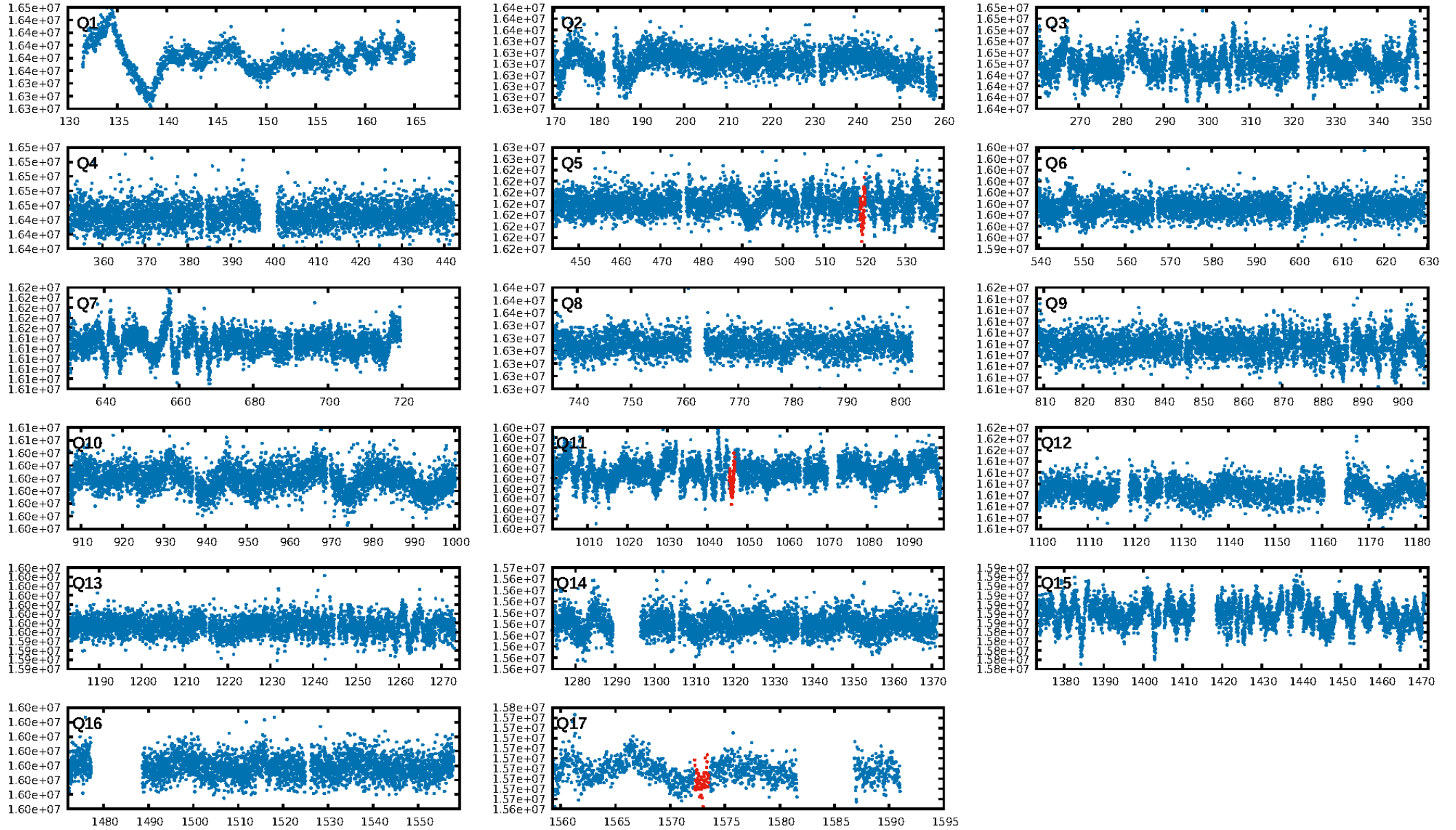
DV Fit Results:

Period = 526.68564 [0.01412] d
Epoch = 519.5024 [0.0178] BKJD
Rp/R* = 0.0272 [0.0093]
a/R* = 222.95 [357.19]
b = 0.52 [2.26]
Seff = 0.63 [0.23]
Teq = 227 [21] K
Rp = 2.75 [1.22] Re
a = 1.2799 [0.3066] AU
Ag = 57592.37 [46585.45] [1.24 σ]
Teffp = 5444 [1006] K [5.19 σ]

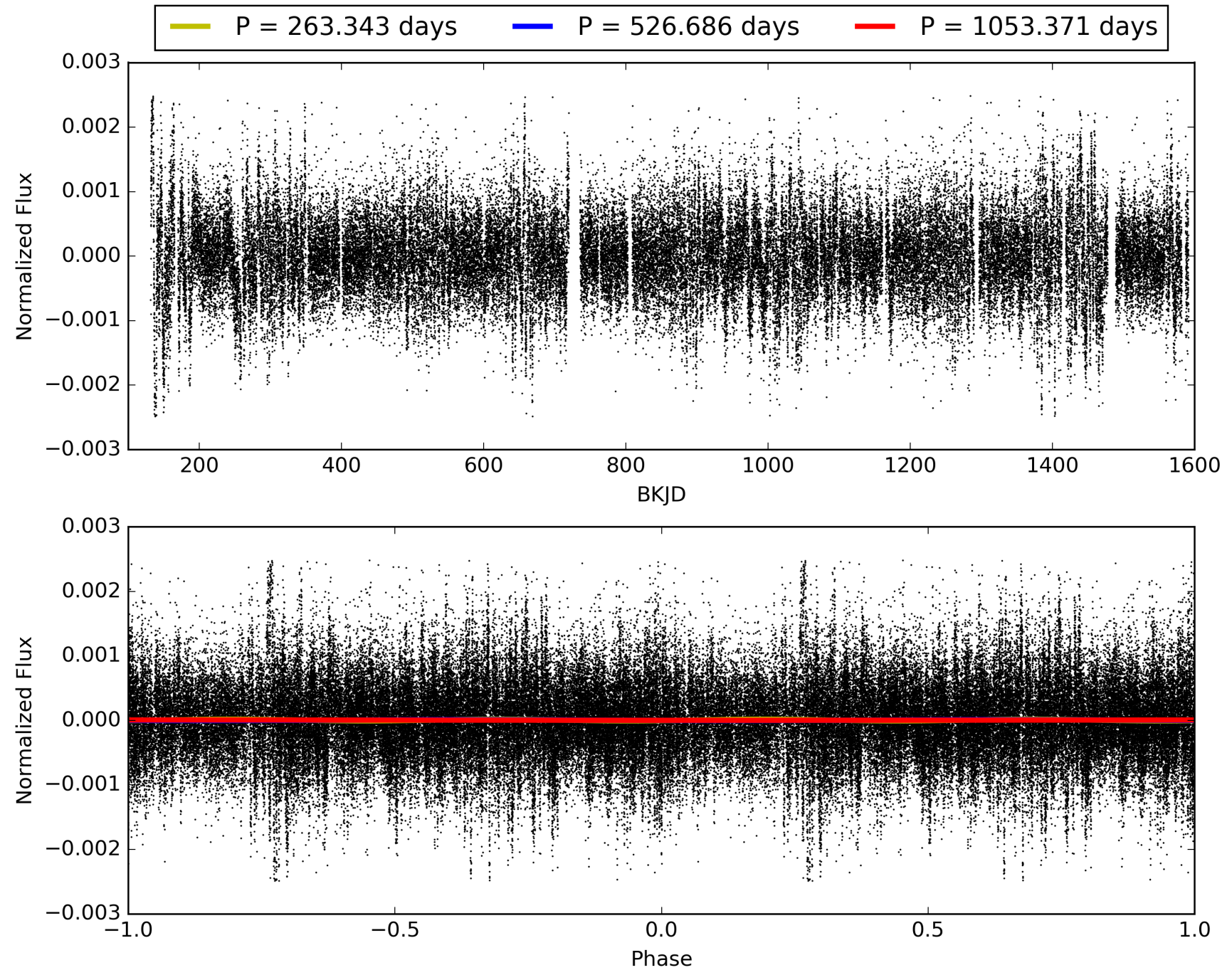
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [126.22 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.24e-07
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.715
Centroid-sig: 27.7%
Centroid-so: 2.820 arcsec [1.35 σ]
OotOffset-rm: 0.954 arcsec [1.22 σ]
KicOffset-rm: 1.129 arcsec [1.45 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 010271680-01, PDC Light Curves

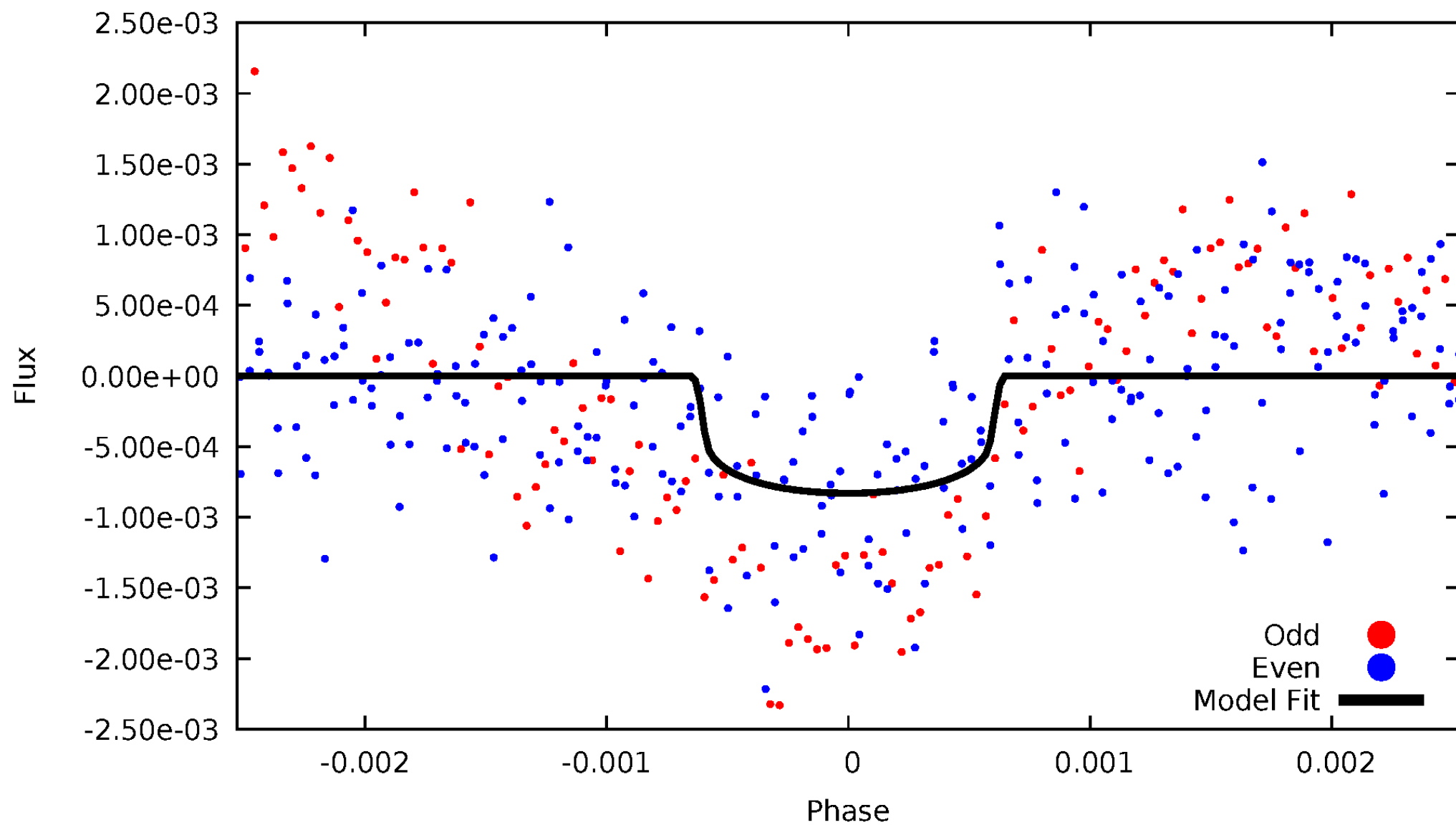


TCE 010271680-01



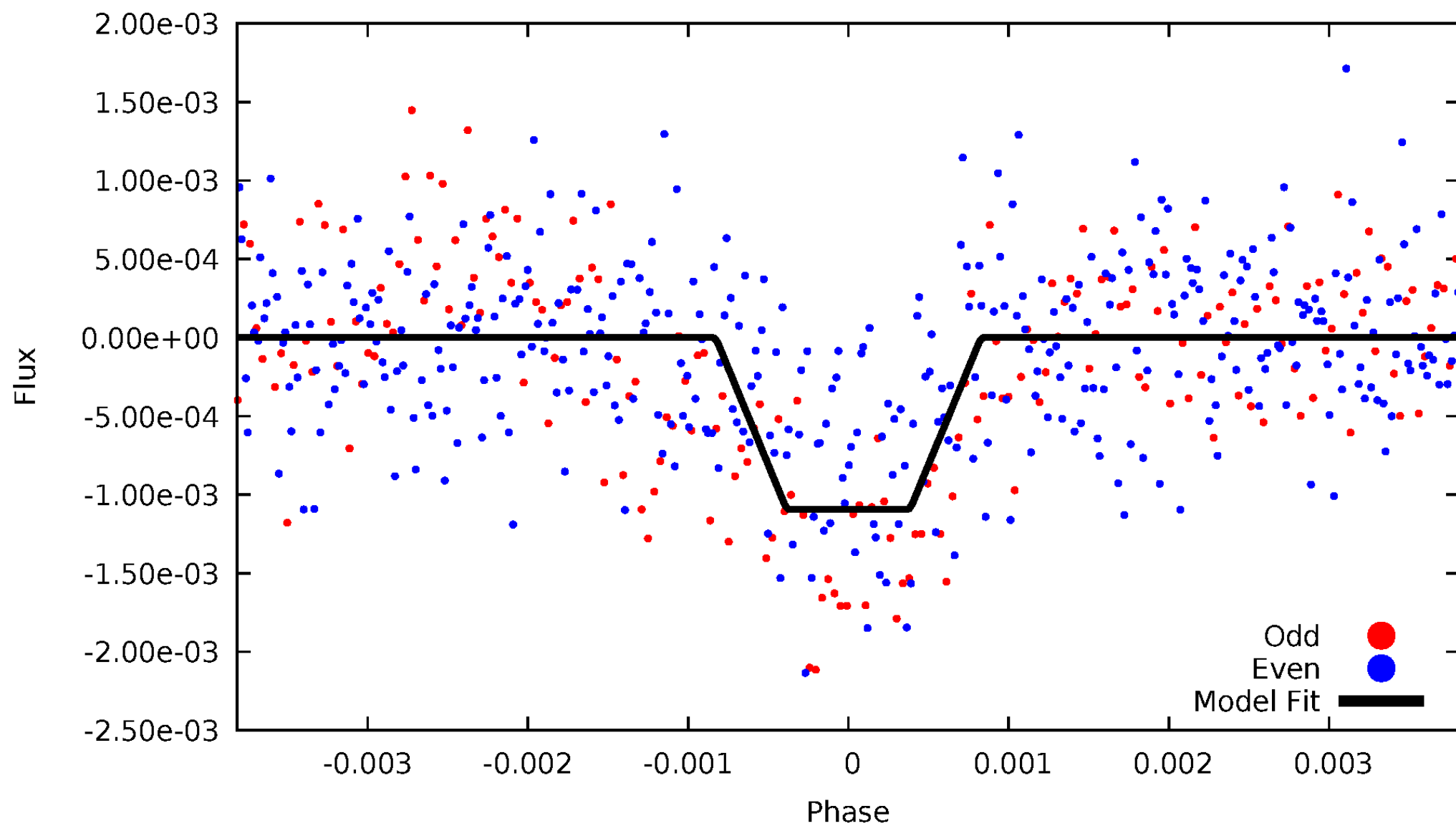
DV Odd/Even

TCE 010271680-01



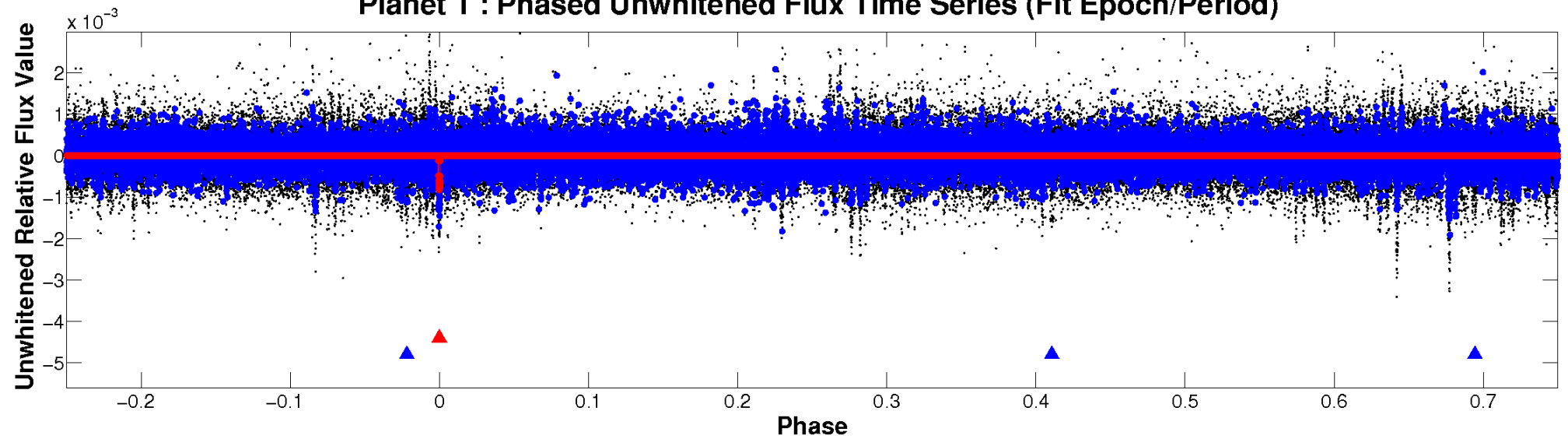
ALT Odd/Even

TCE 010271680-01

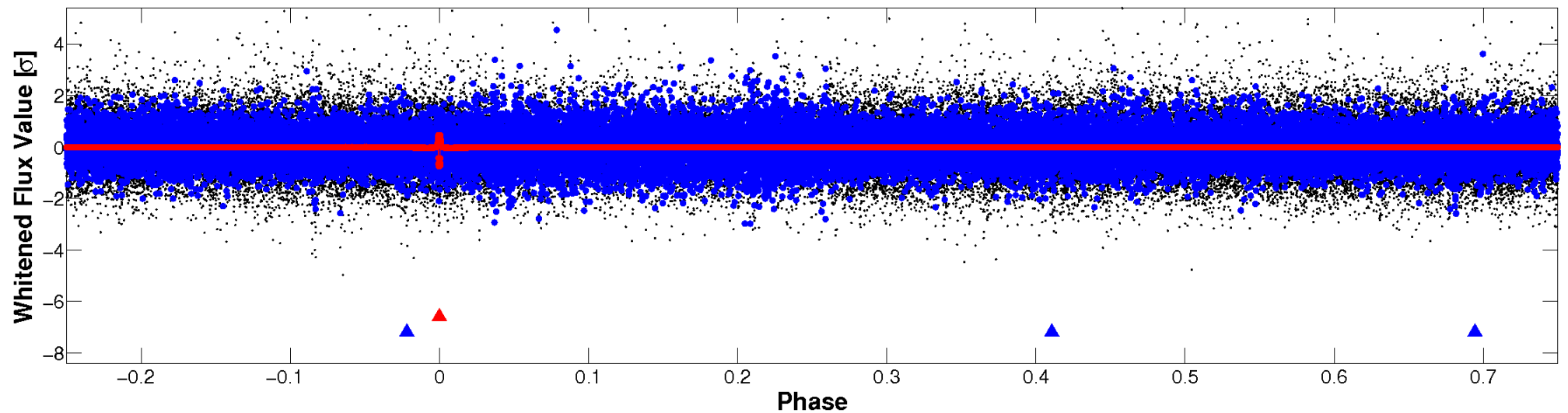


Non-Whitened Vs. Whitened Light Curve

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

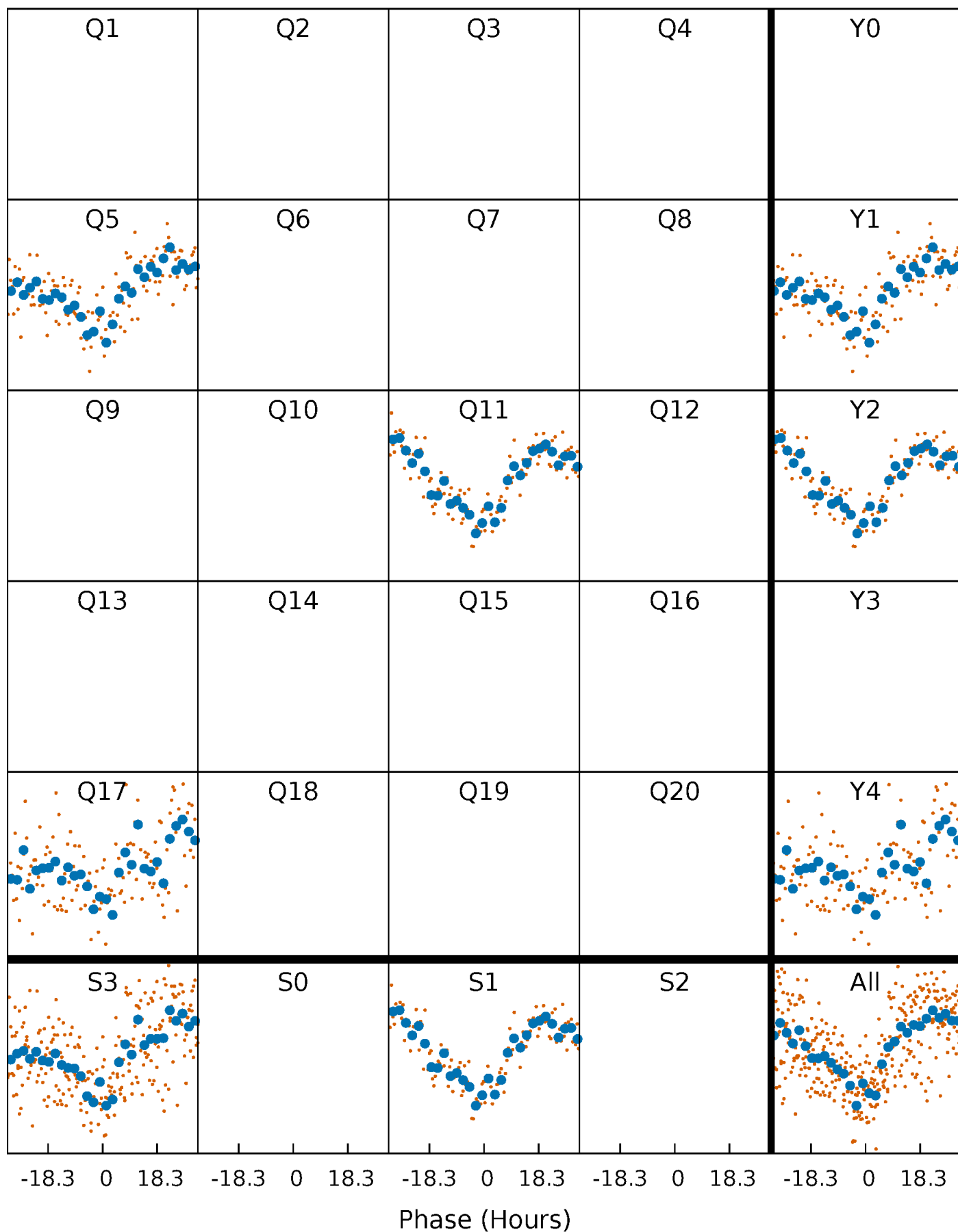


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



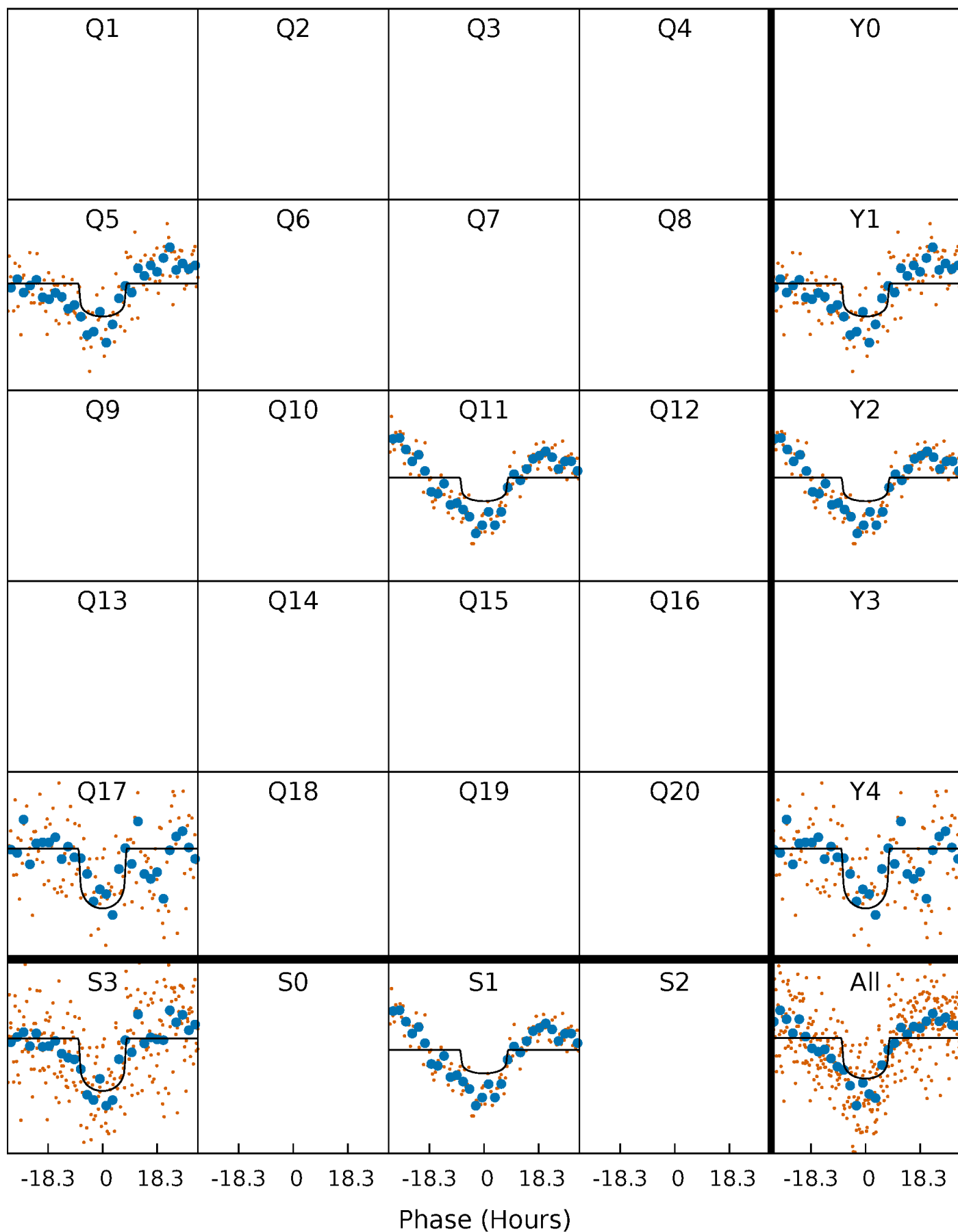
PDC Quarter-Phased Transit Curves

TCE 010271680-01 P=526.685637 Days $T_0=519.502392$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010271680-01 P=526.685637 Days $T_0=519.502392$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

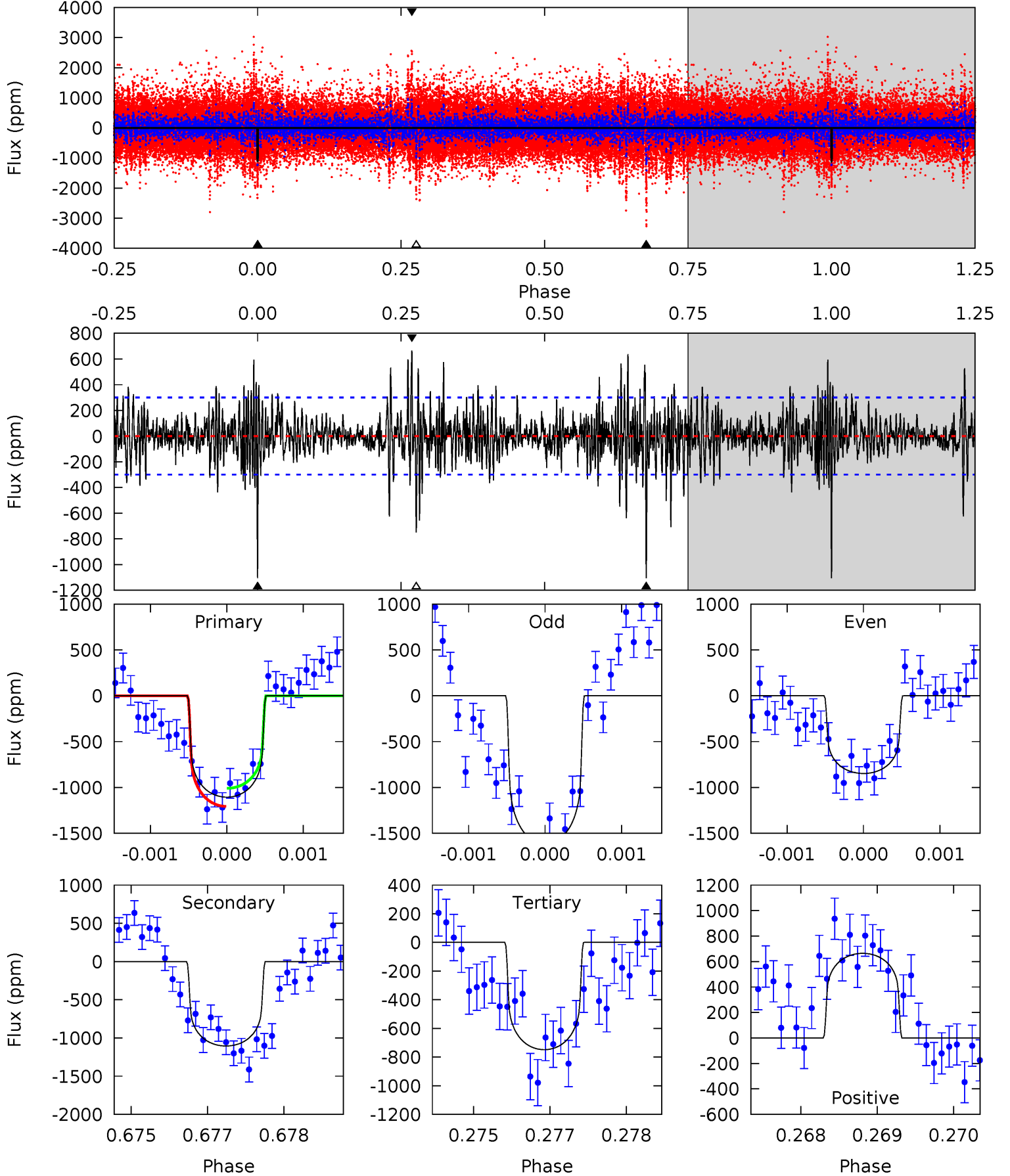
TCE 010271680-01 P=526.681820 Days $T_0=519.463309$ (BKJD)



DV Model-Shift Uniqueness Test

010271680-01, P = 526.685637 Days, E = 519.502392 Days

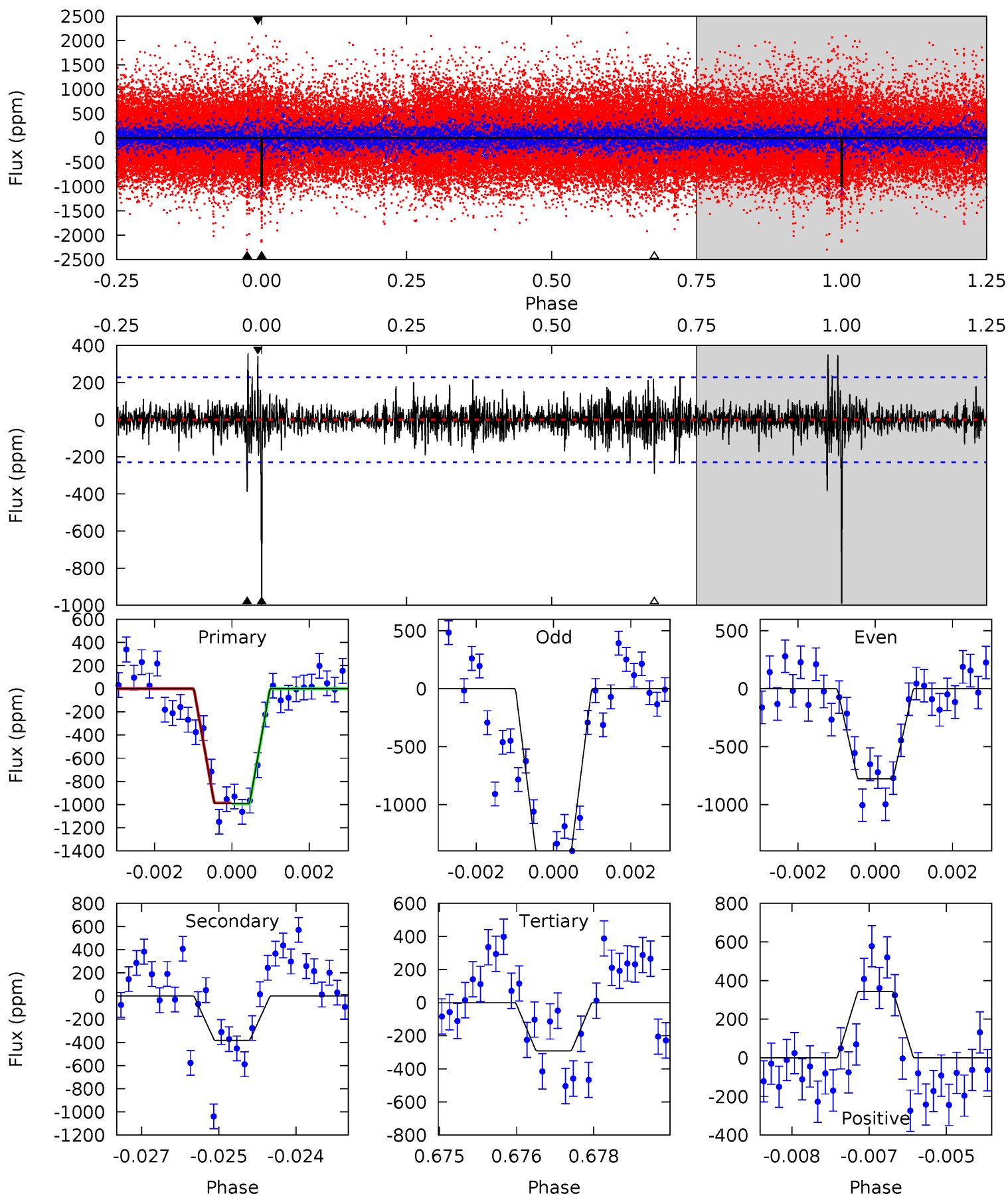
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	19.9	13.5	12.0	5.41	3.22	2.80	6.45	7.97	6.43	7.95	6.50	1.01	0.38	1.79



Alt Model-Shift Uniqueness Test

010271680-01, P = 526.681820 Days, E = 519.463309 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	8.95	6.81	8.02	5.36	3.14	1.34	16.3	15.1	2.14	0.93	6.92	0.92	0.26	0.09



Stellar Parameters For KIC 010271680

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6060^{+181}_{-181}	$4.509^{+0.048}_{-0.192}$	$-0.220^{+0.300}_{-0.300}$	$0.925^{+0.262}_{-0.087}$	$1.008^{+0.130}_{-0.130}$	$1.795^{+0.437}_{-0.860}$
	+3%/-3%	+1%/-4%	+136%/-136%	+28%/-9%	+13%/-13%	+24%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010271680-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1105 ± 55	$2.87^{+1.06}_{-0.90}$	325^{+22}_{-15}	6732^{+1765}_{-962}	$117927^{+136706}_{-54407}$
Alt.	-383 ± 43	$3.53^{+1.05}_{-1.03}$	326^{+20}_{-15}	4795^{+745}_{-483}	26922^{+28852}_{-10860}

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

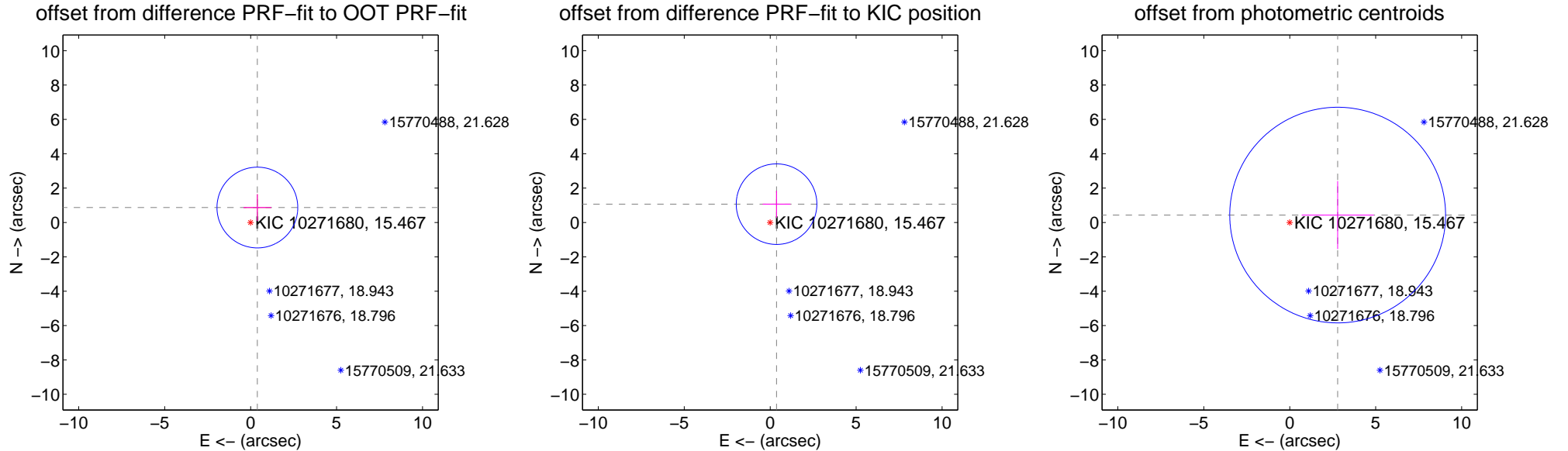
DV Centroid Data

Supplemental centroid analysis for 010271680-01. Kepler magnitude: 15.47. Transit SNR 7.02

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.954 ± 0.783	1.22	-0.392 ± 0.808	0.870 ± 0.778
PRF-fit source offset from KIC position	1.129 ± 0.781	1.45	-0.371 ± 0.808	1.067 ± 0.778
photometric centroid source offset	2.82 ± 2.09	1.35	-2.79 ± 2.09	0.43 ± 1.98

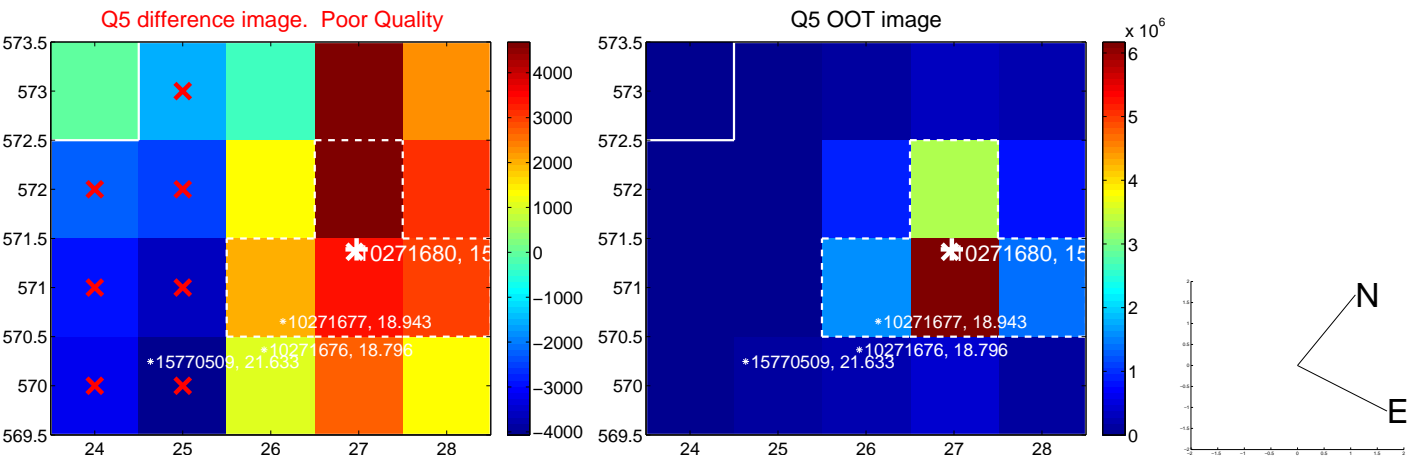


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

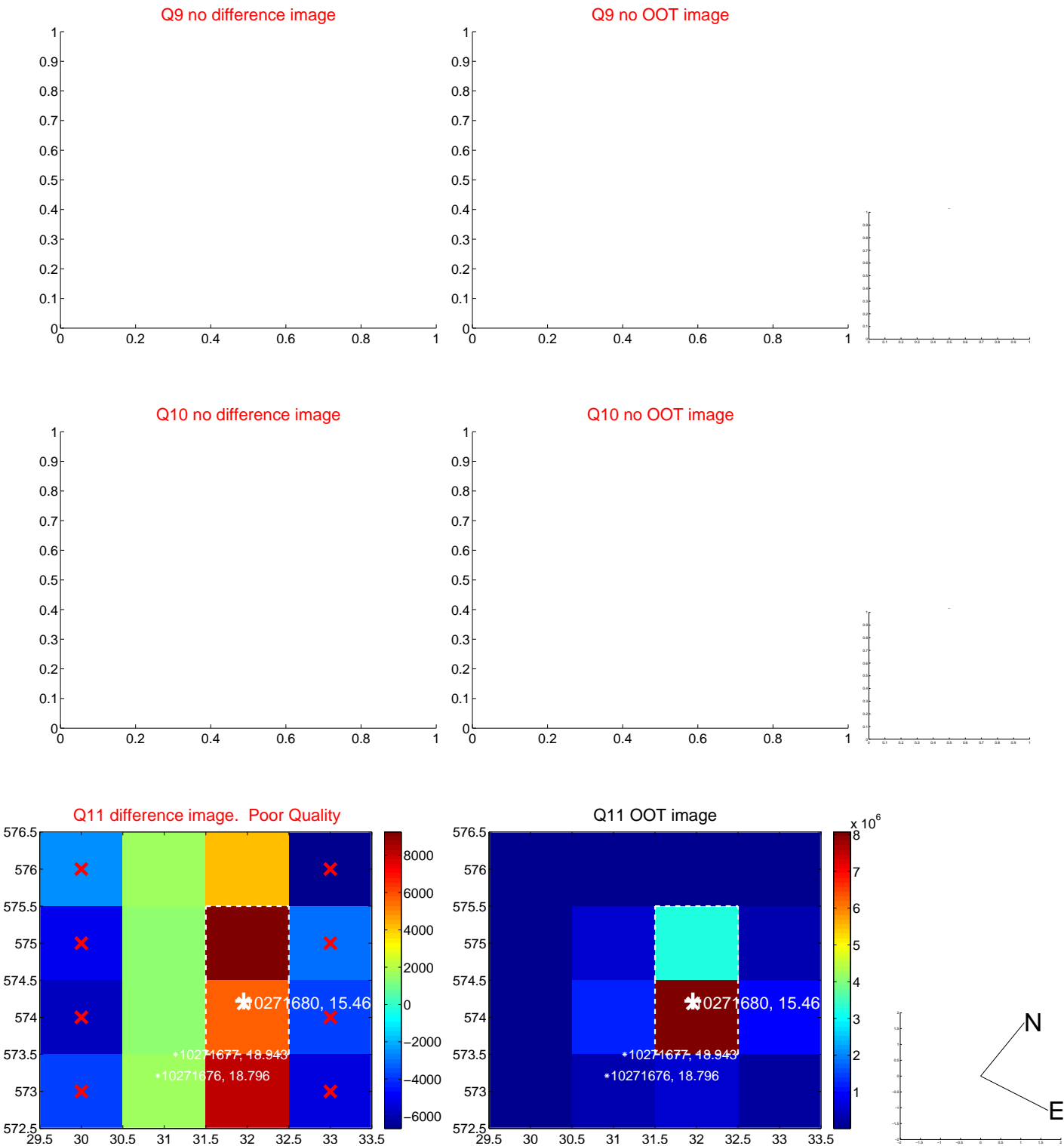
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



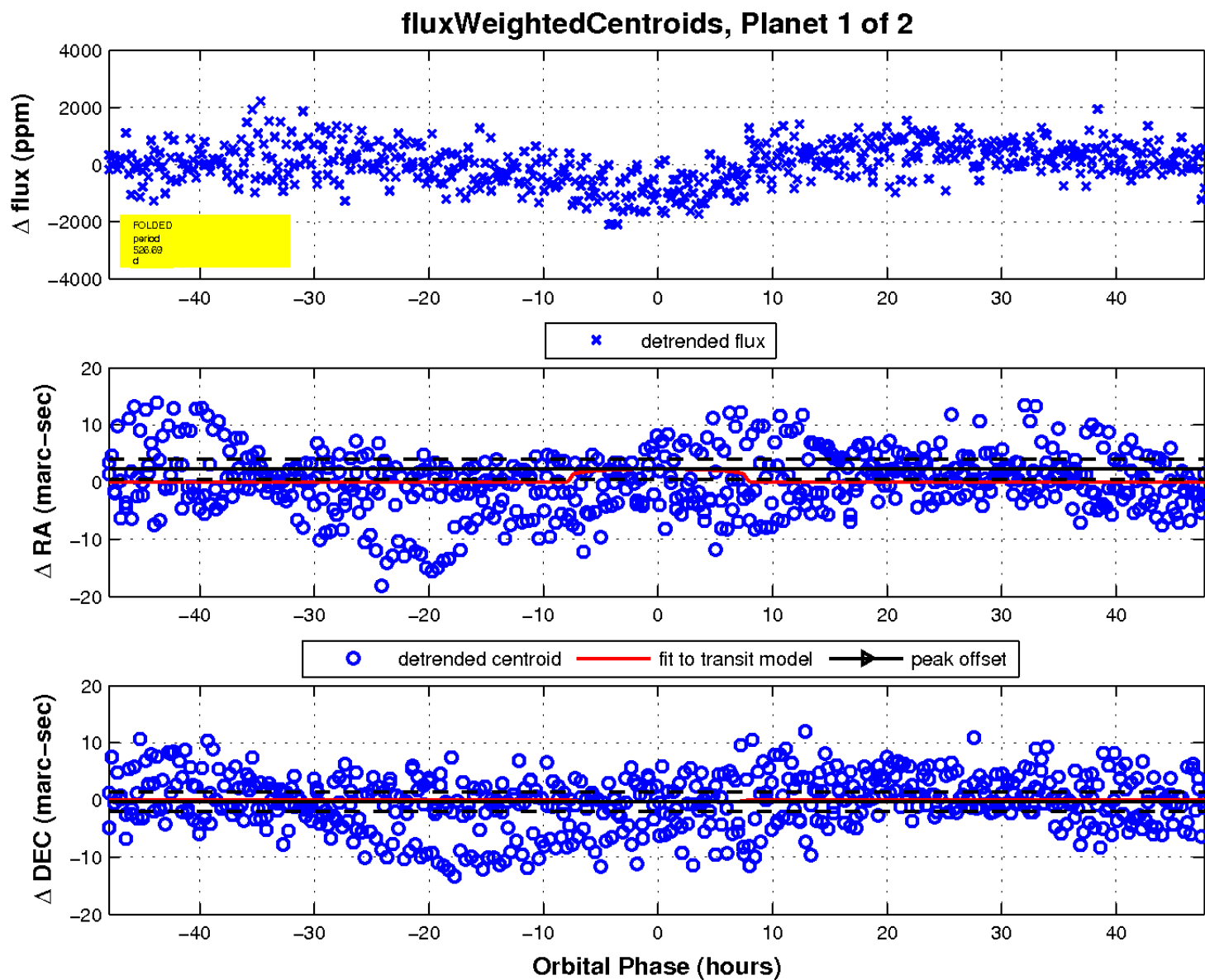
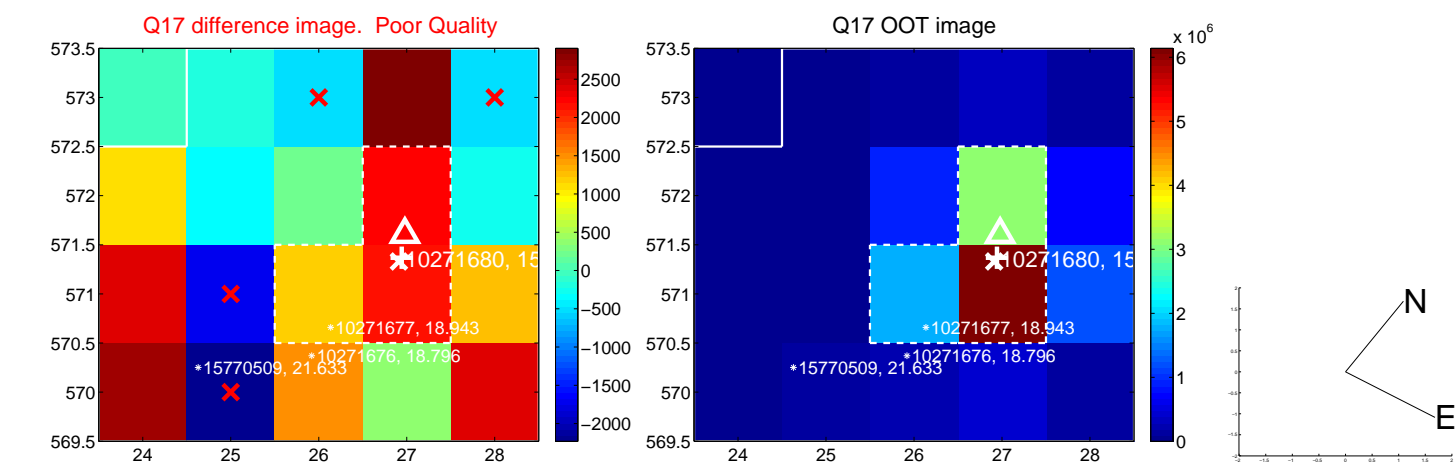
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

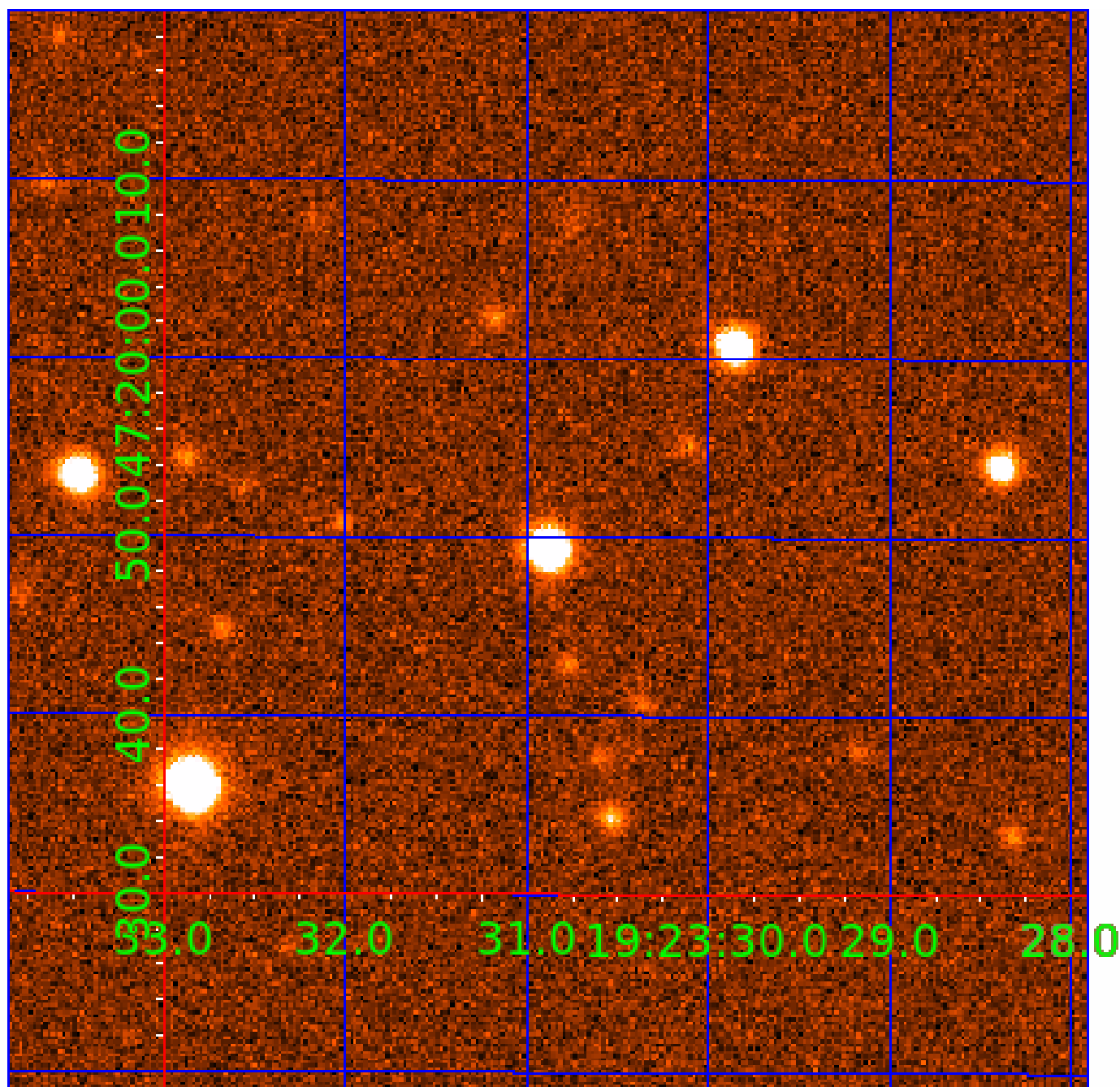


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010271680

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})
010271680-01	OBS	No	526.685637	519.502392	829.6	15.986	7.9	7.0	0.93	6060	2.75	0.63
010271680-02	OBS	No	377.240784	508.026750	829.0	23.492	7.8	8.2	0.93	6060	2.75	0.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010271680-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS
010271680-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—CENT_FEW_DIFFS—HALO_GHOST

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

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

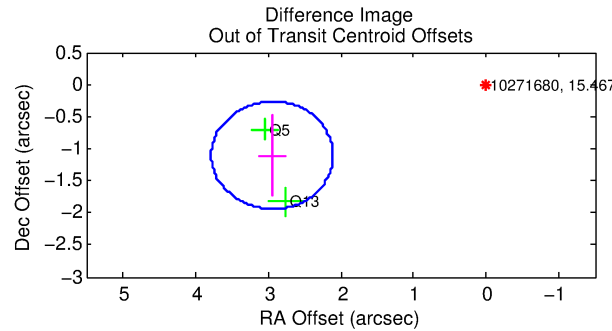
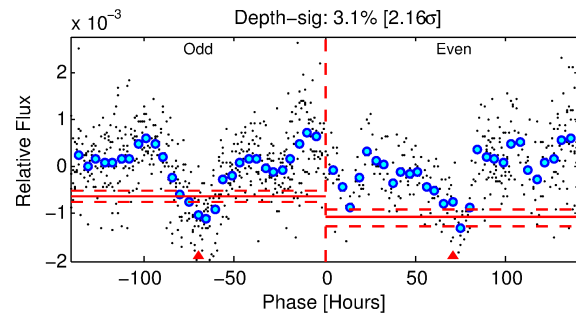
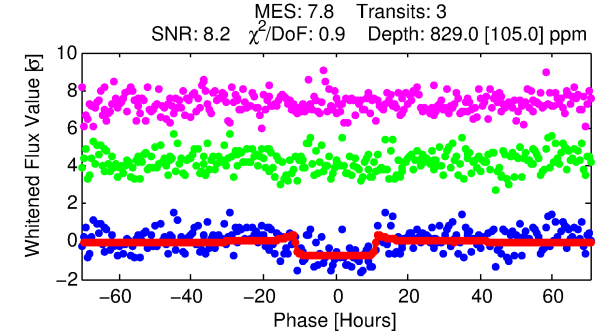
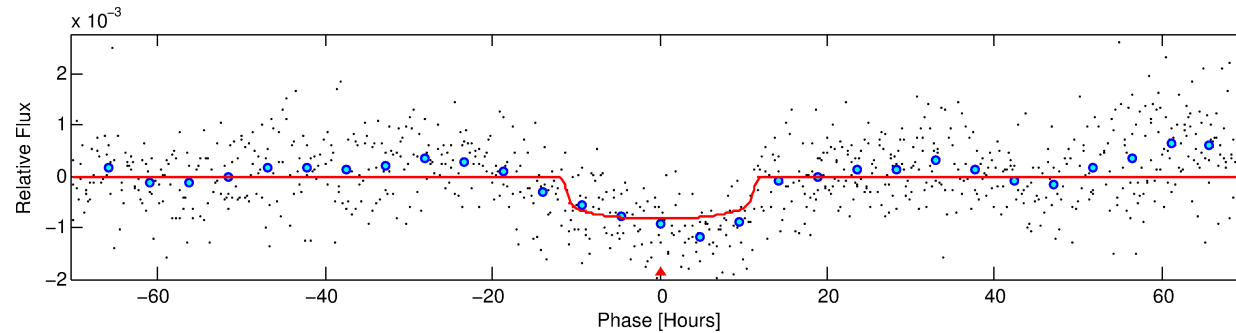
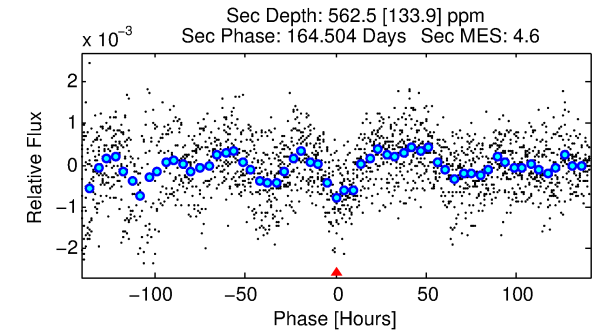
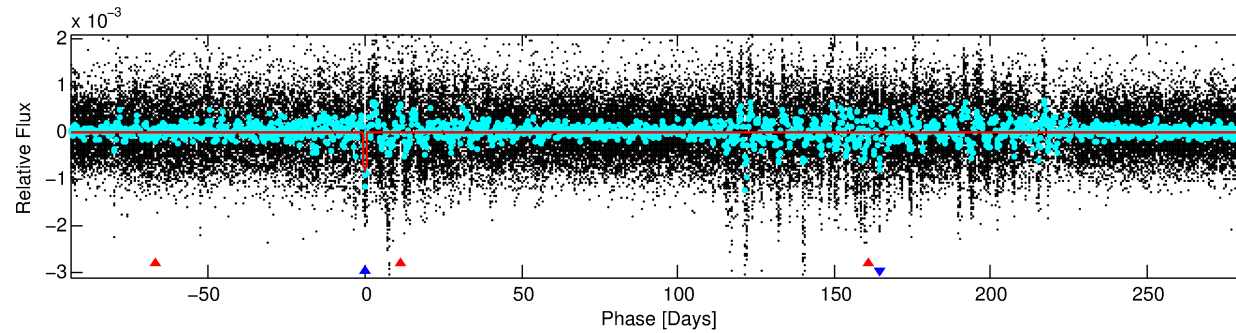
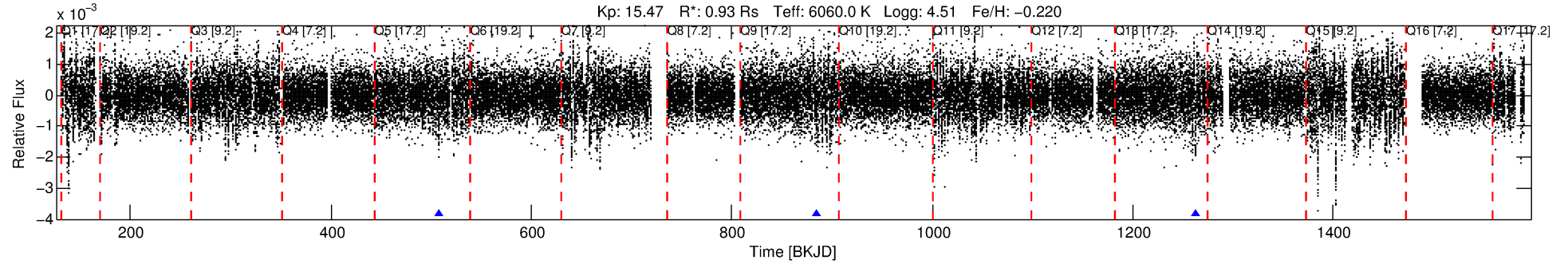
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010271680-02

No Significant Match Found

DV One-Page Summary

KIC: 10271680 Candidate: 2 of 2 Period: 377.241 d



DV Fit Results:

Period = 377.24078 [0.01555] d
Epoch = 508.0267 [0.0208] BKJD
Rp/R* = 0.0273 [0.0062]
a/R* = 107.37 [113.20]
b = 0.54 [1.40]
Seff = 0.98 [0.36]
Teq = 254 [23] K
Rp = 2.75 [1.00] Re
a = 1.0246 [0.2454] AU
Ag = 42894.29 [26736.84] [1.60σ]
Teff = 5652 [748] K [7.21σ]

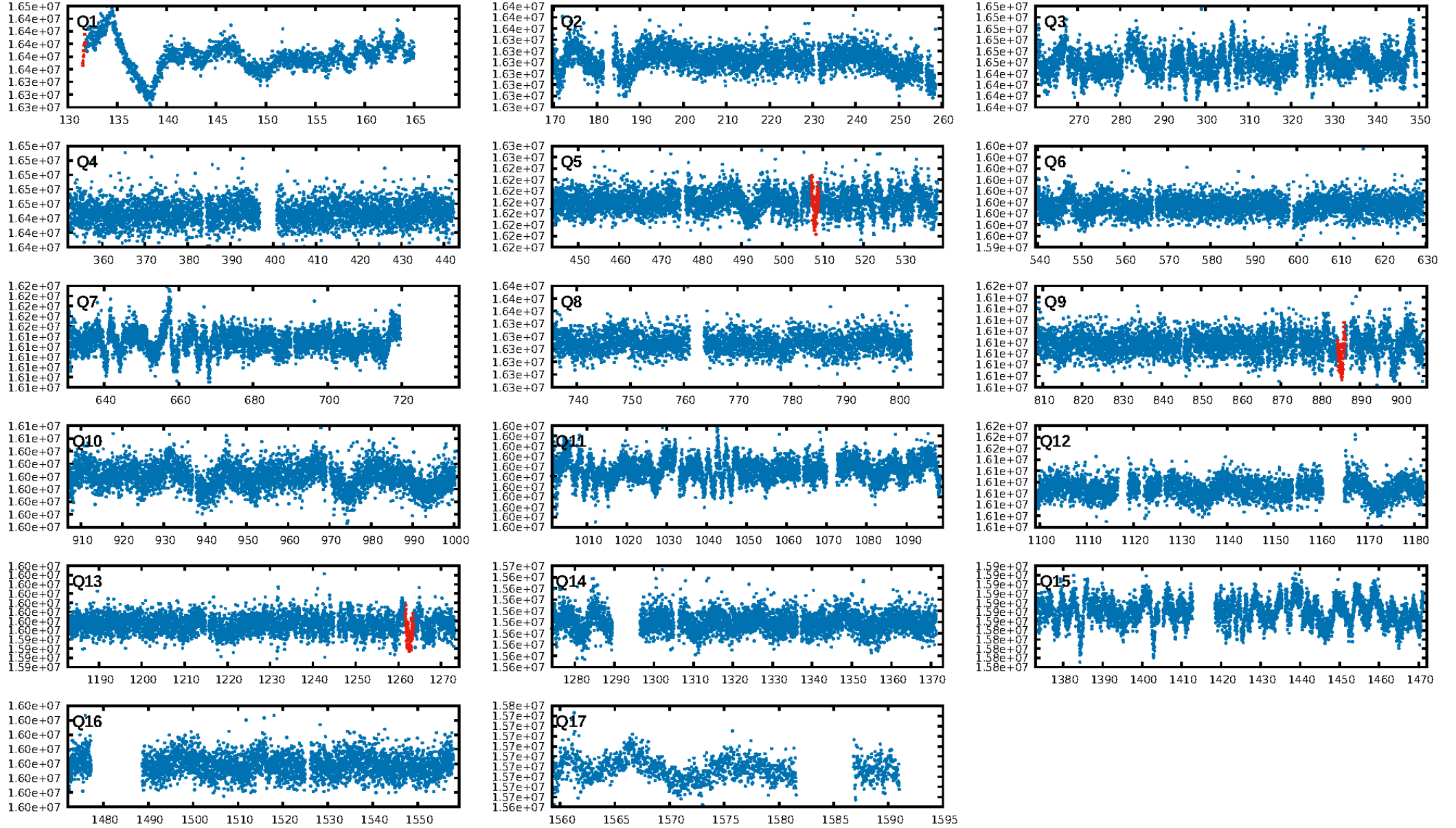
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [126.22σ]
ModelChiSquare2-sig: 41.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.47e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.07184
Centroid-sig: 0.0%
Centroid-so: 6.099 arcsec [2.54σ]
OotOffset-rm: 3.142 arcsec [11.25σ]
KicOffset-rm: 3.110 arcsec [13.04σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

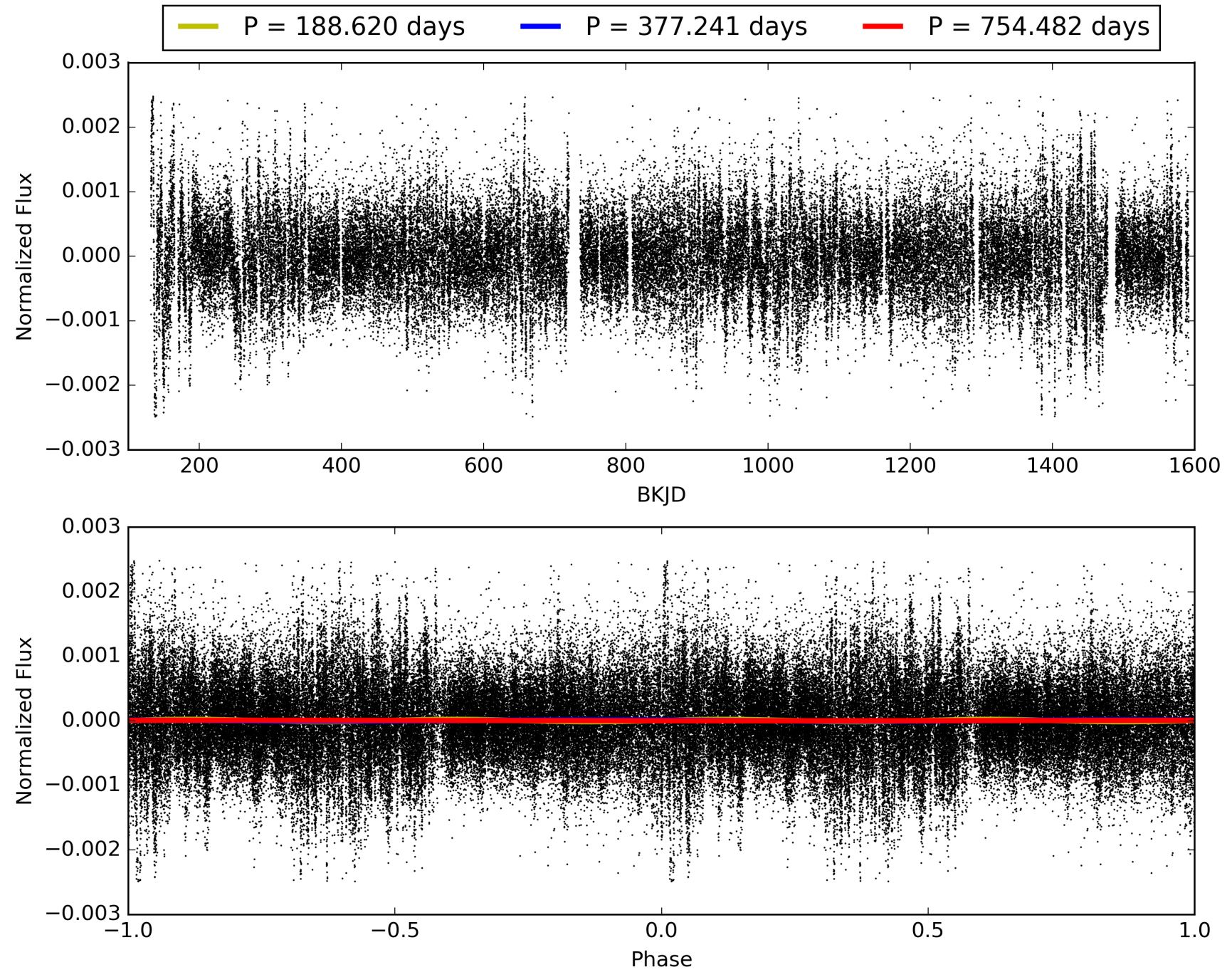
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:37:40 Z

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

TCE 010271680-02, PDC Light Curves

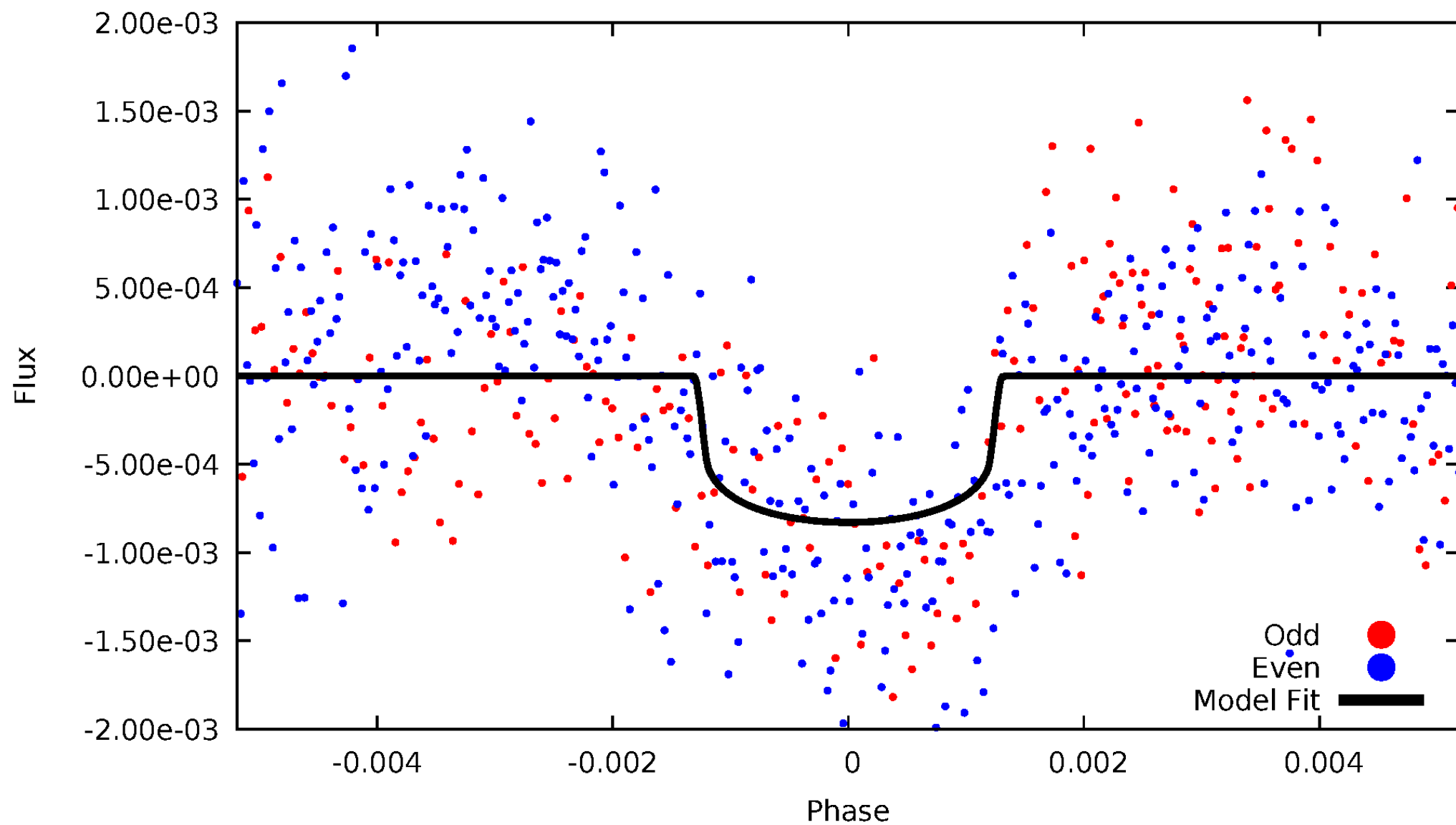


TCE 010271680-02



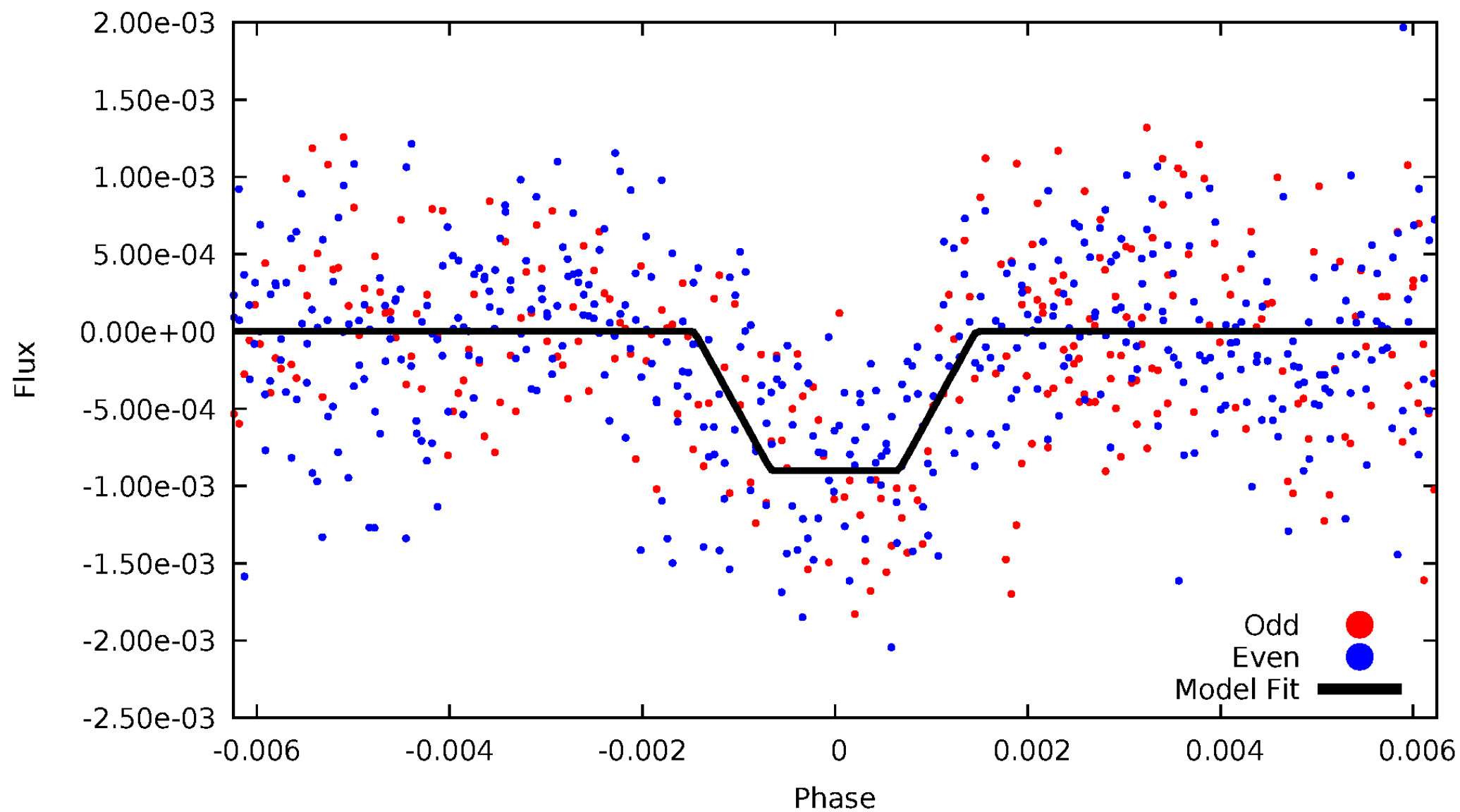
DV Odd/Even

TCE 010271680-02



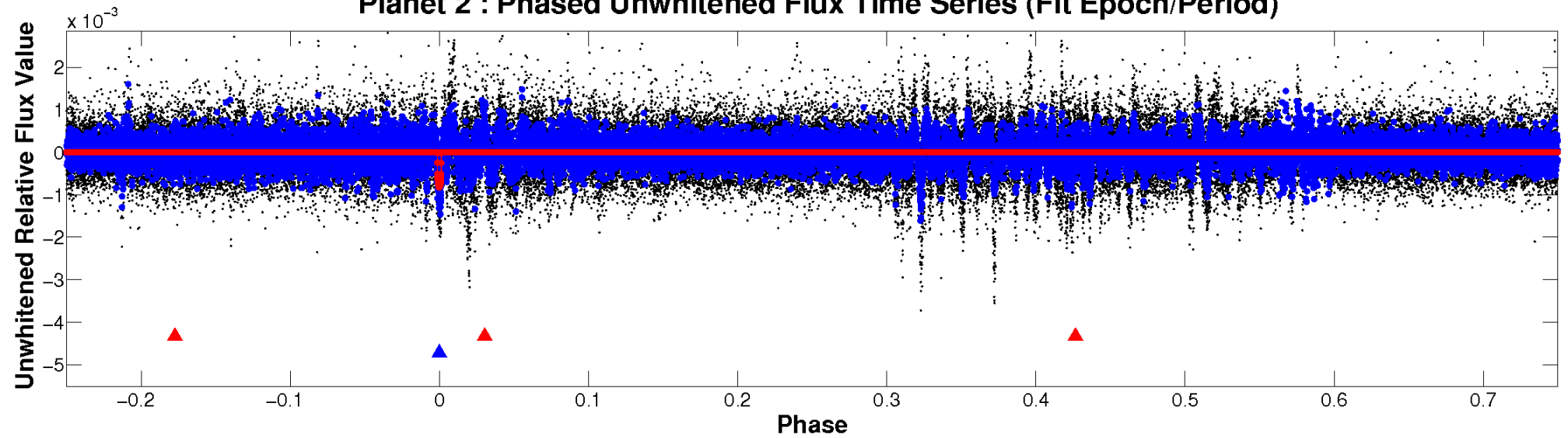
ALT Odd/Even

TCE 010271680-02

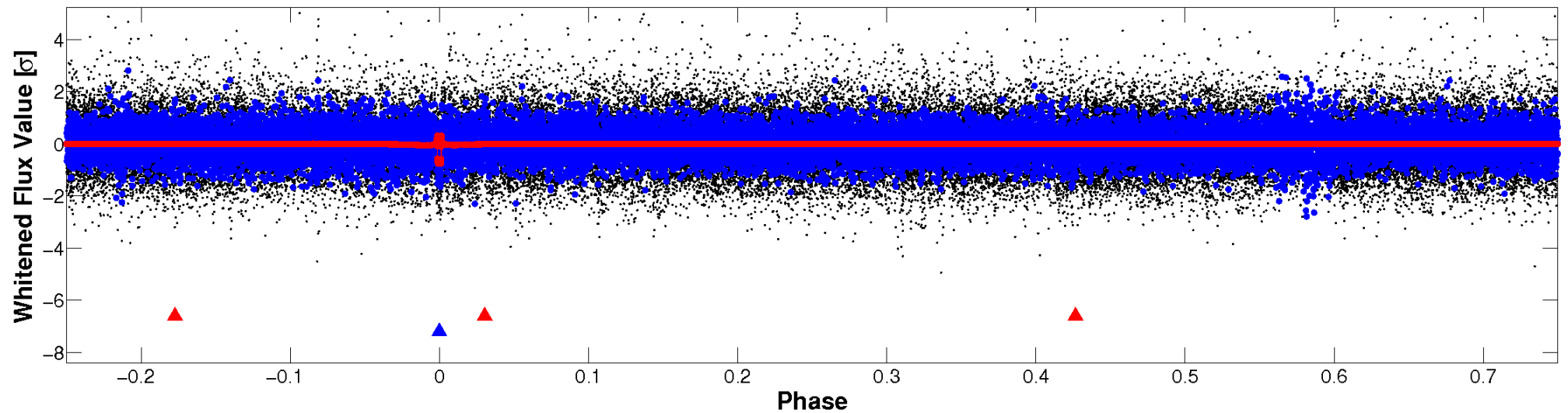


Non-Whitened Vs. Whitened Light Curve

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

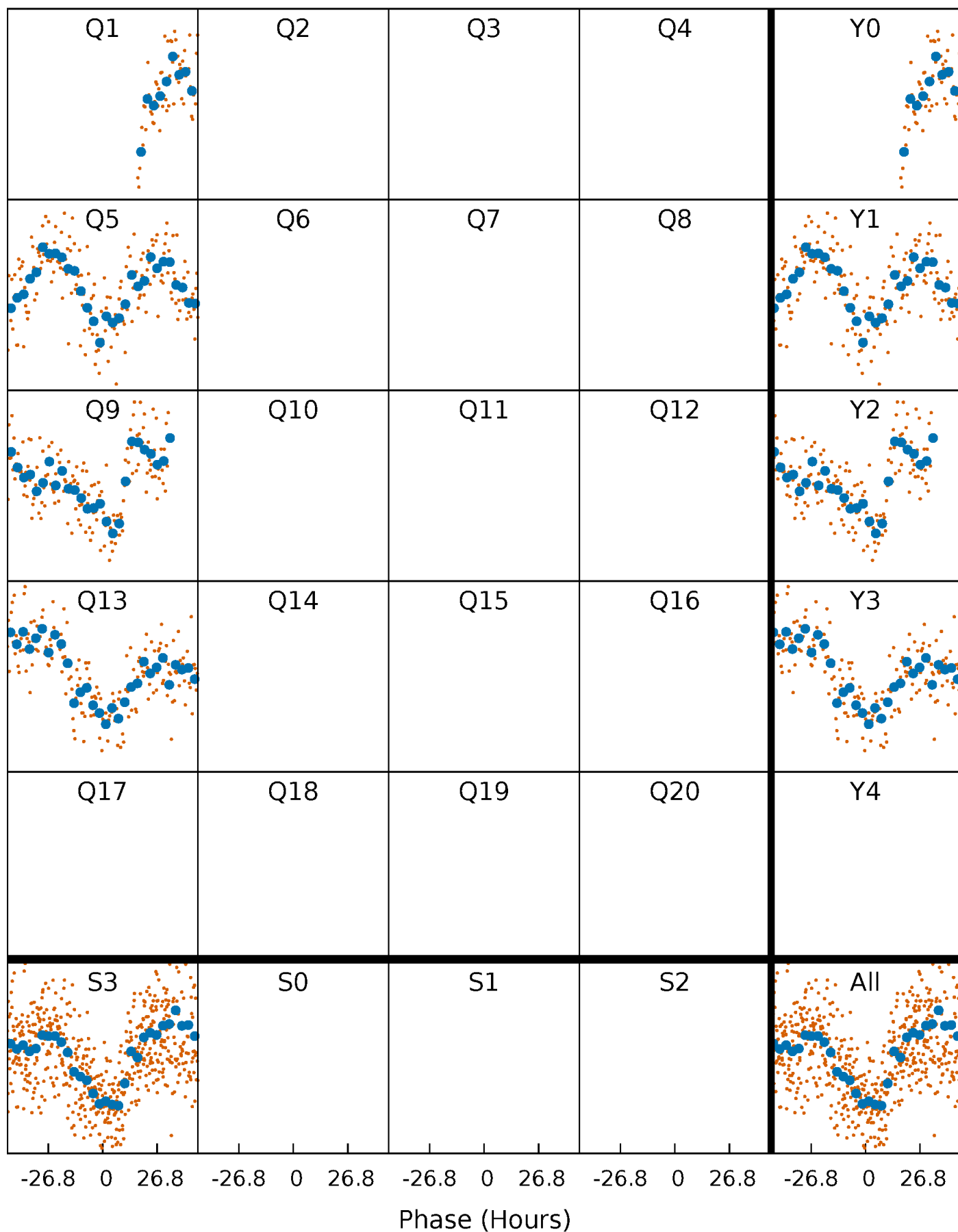


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



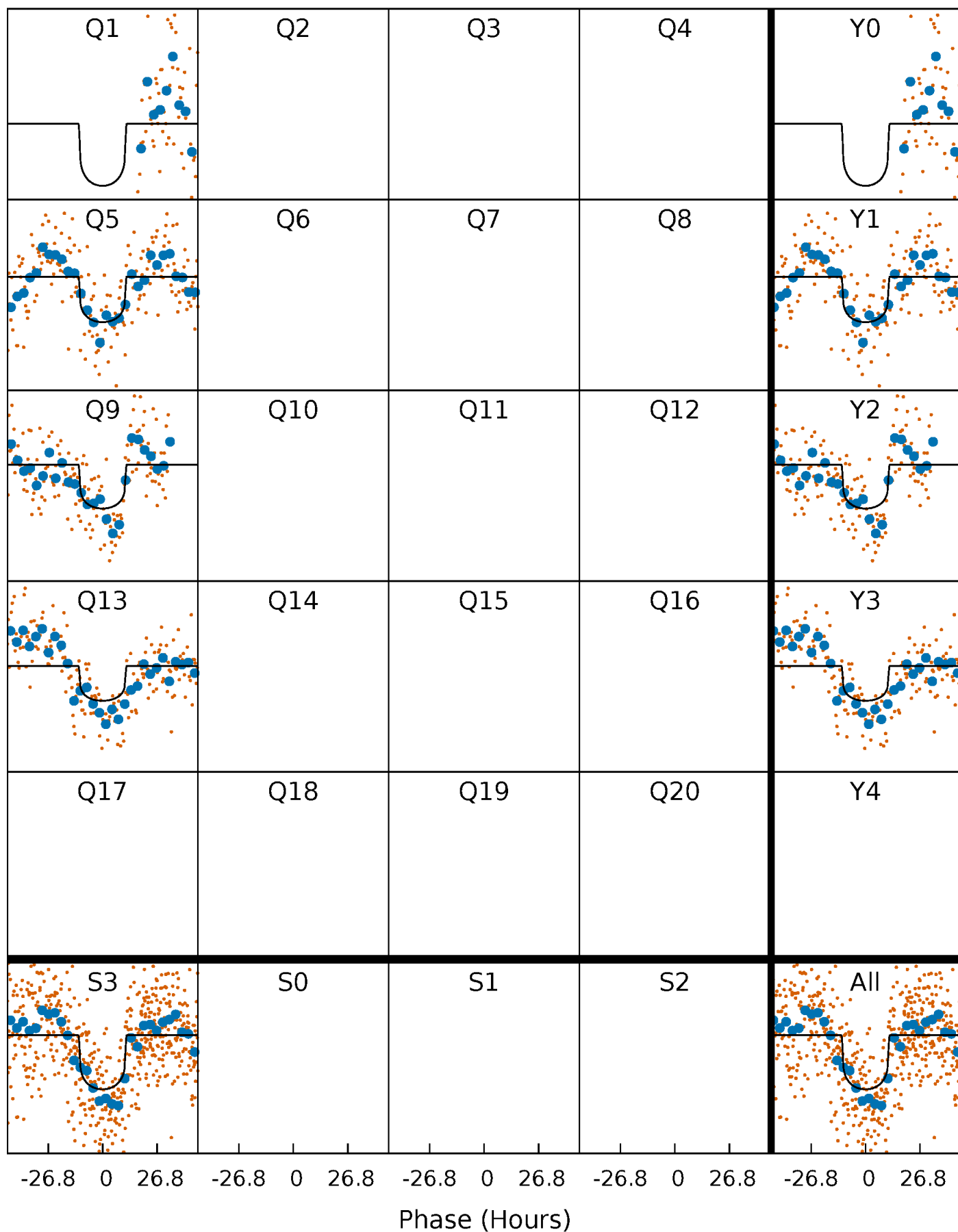
PDC Quarter-Phased Transit Curves

TCE 010271680-02 $P=377.240784$ Days $T_0=508.026750$ (BKJD)



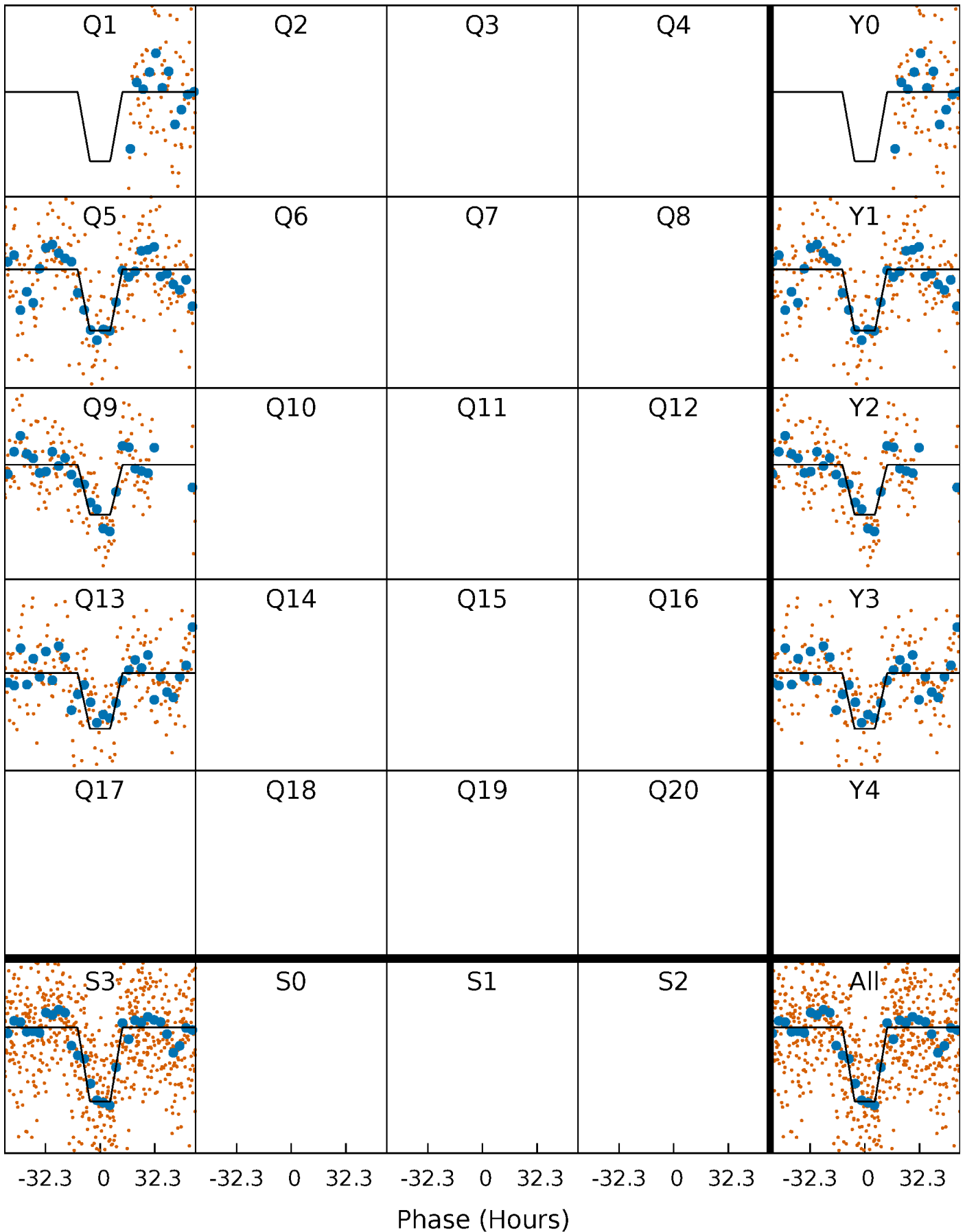
DV Quarter-Phased Transit Curves

TCE 010271680-02 $P=377.240784$ Days $T_0=508.026750$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

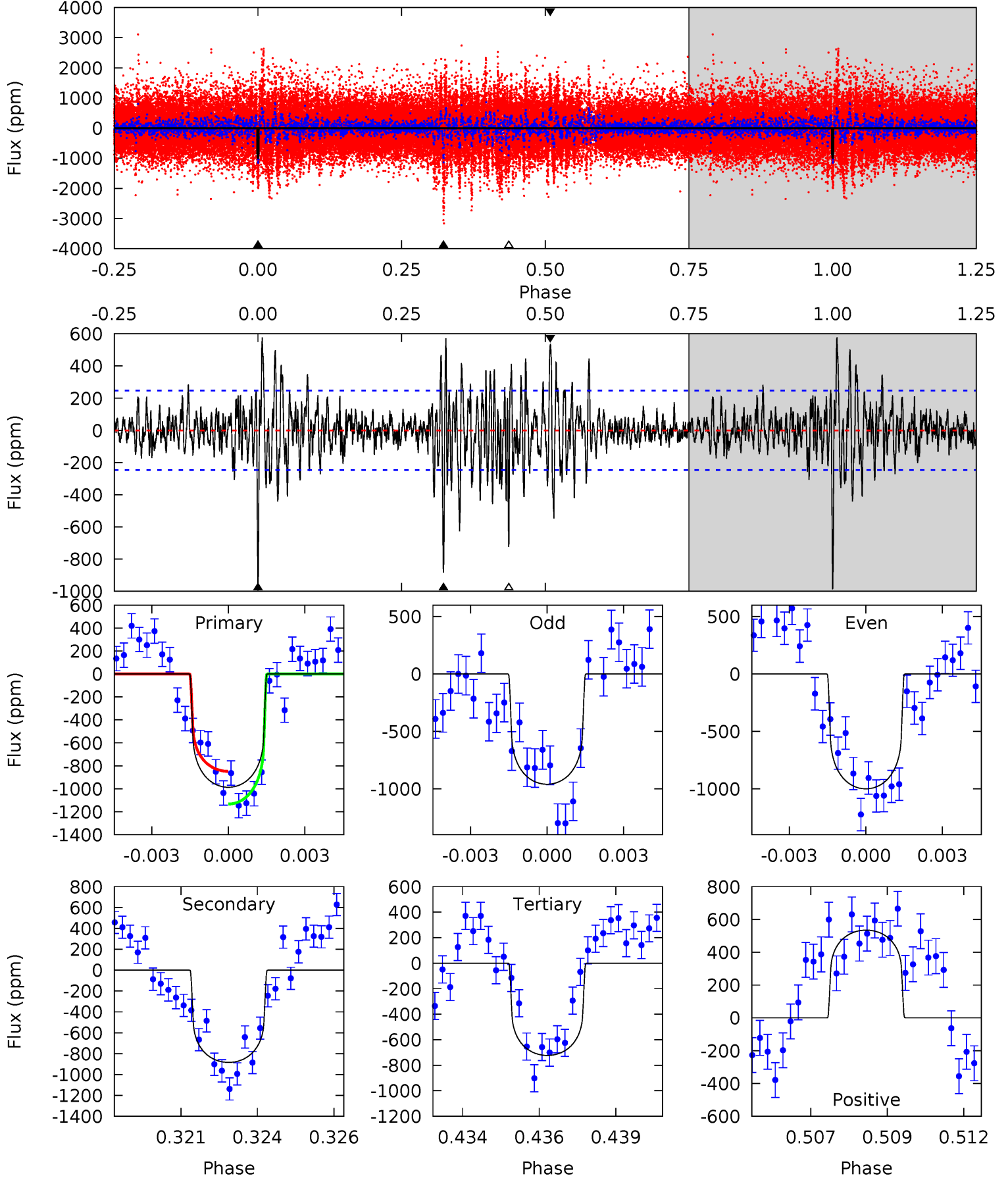
TCE 010271680-02 $P=377.244385$ Days $T_0=508.087716$ (BKJD)



DV Model-Shift Uniqueness Test

010271680-02, P = 377.240784 Days, E = 130.785966 Days

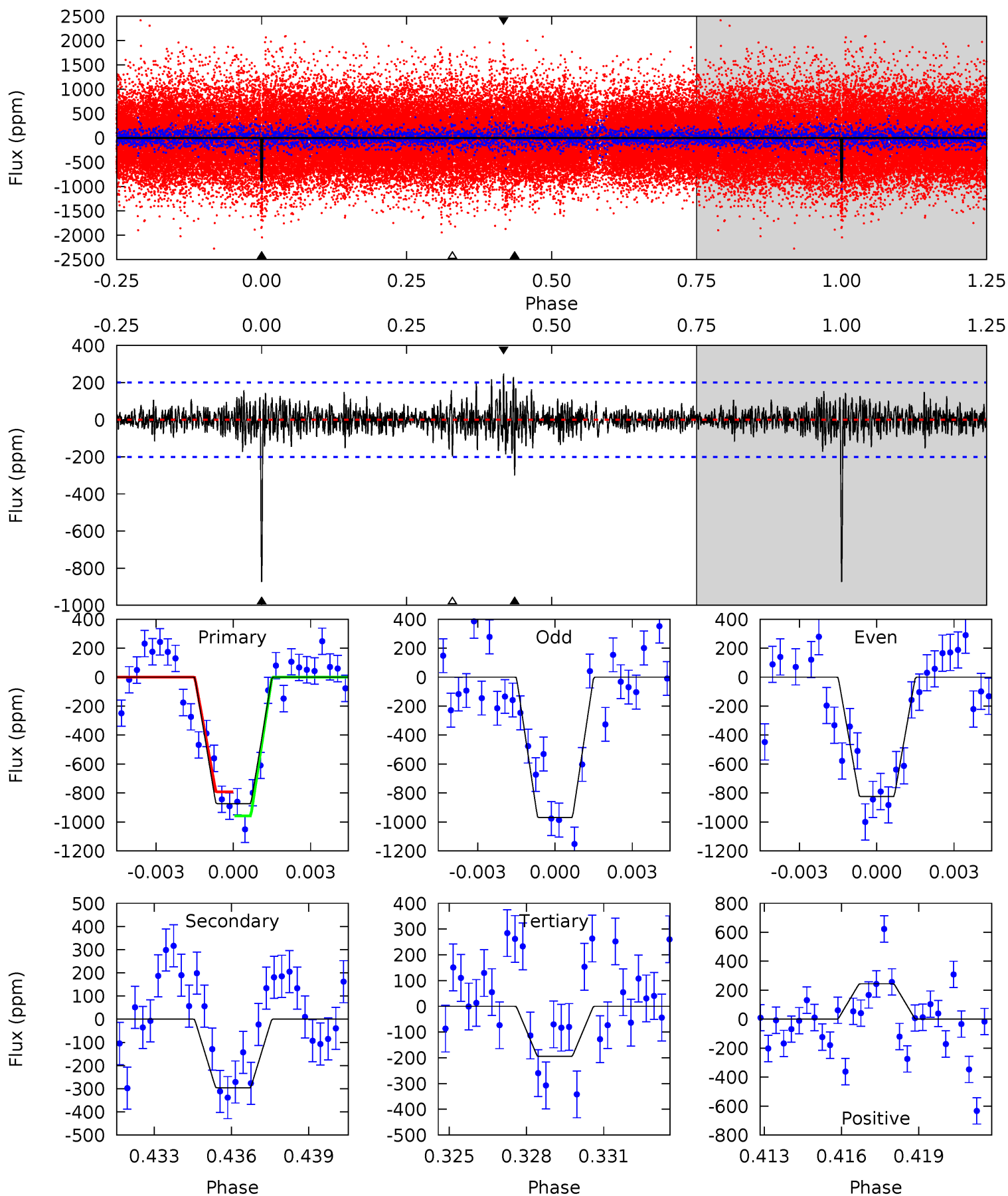
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.1	18.9	15.5	11.4	5.28	3.01	3.17	5.64	9.67	3.44	7.47	0.40	1.03	0.37	3.04



Alt Model-Shift Uniqueness Test

010271680-02, P = 377.244385 Days, E = 130.843331 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.9	7.75	5.09	6.39	5.26	2.98	1.29	17.8	16.5	2.65	1.36	1.80	0.90	0.22	2.16



Stellar Parameters For KIC 010271680

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6060^{+181}_{-181}	$4.509^{+0.048}_{-0.192}$	$-0.220^{+0.300}_{-0.300}$	$0.925^{+0.262}_{-0.087}$	$1.008^{+0.130}_{-0.130}$	$1.795^{+0.437}_{-0.860}$
	+3%/-3%	+1%/-4%	+136%/-136%	+28%/-9%	+13%/-13%	+24%/-48%
Source	PHO1	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 010271680-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-884 ± 47	$2.84^{+0.79}_{-0.72}$	362^{+24}_{-16}	6373^{+1058}_{-647}	62029^{+48770}_{-22905}
Alt.	-296 ± 38	$3.12^{+0.80}_{-0.64}$	362^{+24}_{-17}	4722^{+476}_{-358}	17189^{+10720}_{-6413}

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

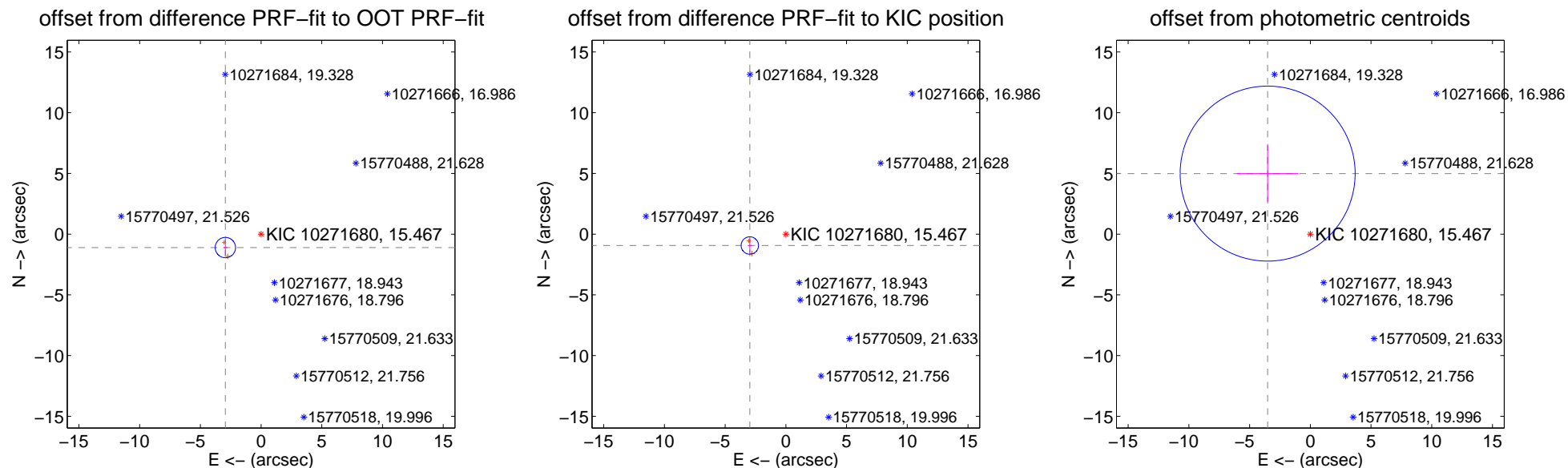
DV Centroid Data

Supplemental centroid analysis for 010271680-02. Kepler magnitude: 15.47. Transit SNR 8.24

There are 0 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	3.142 ± 0.279	11.25	2.941 ± 0.177	-1.105 ± 0.639
PRF-fit source offset from KIC position	3.110 ± 0.239	13.04	2.966 ± 0.167	-0.935 ± 0.590
photometric centroid source offset	6.10 ± 2.40	2.54	3.51 ± 2.54	4.98 ± 2.33

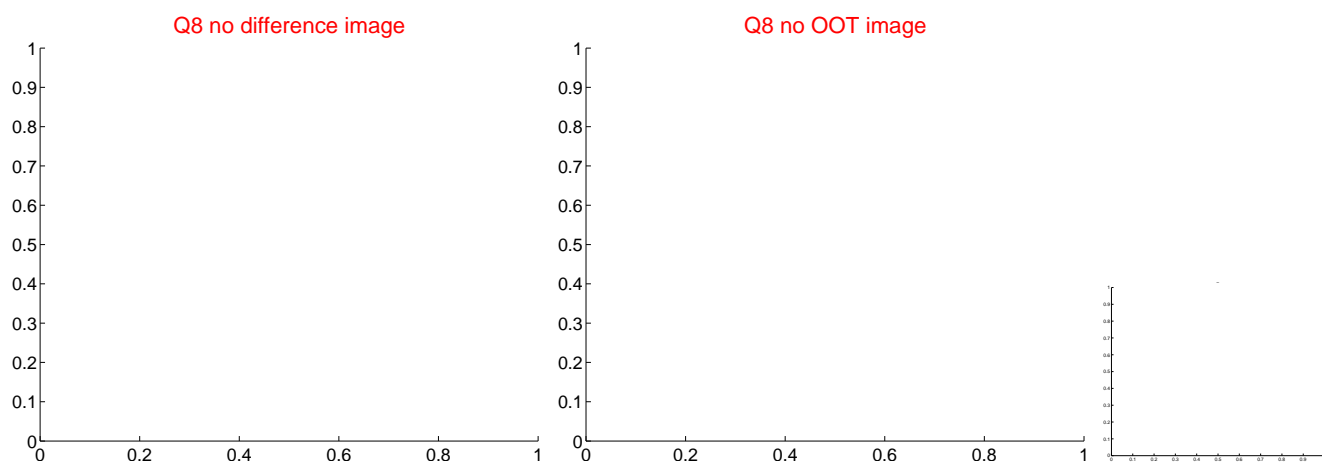
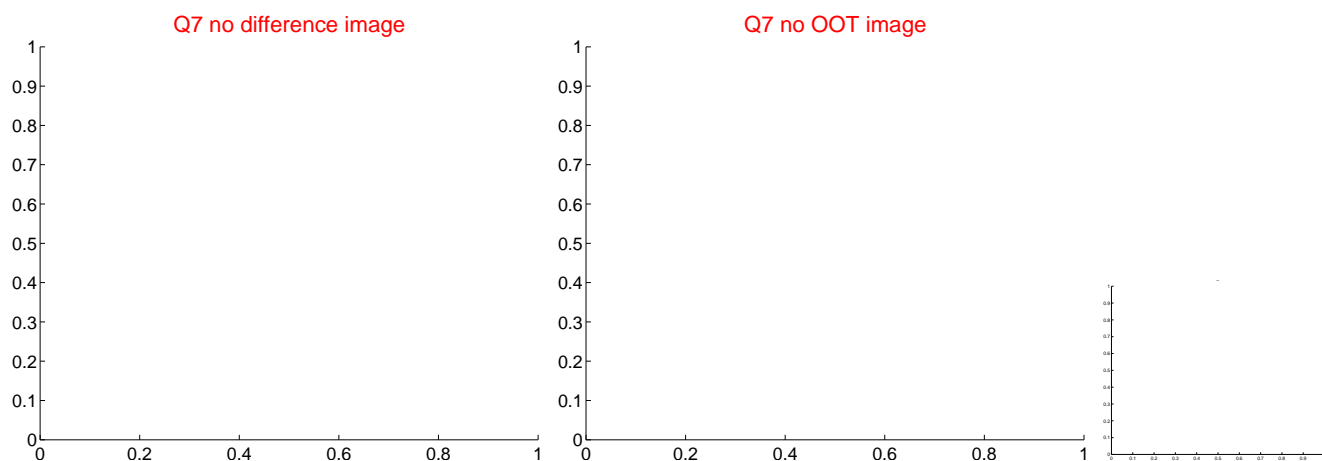
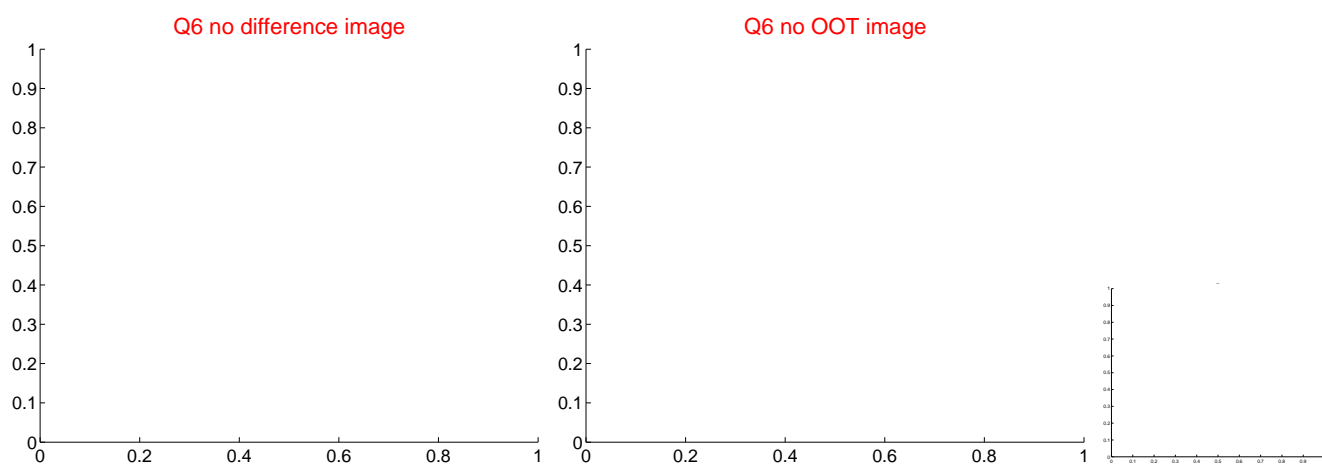
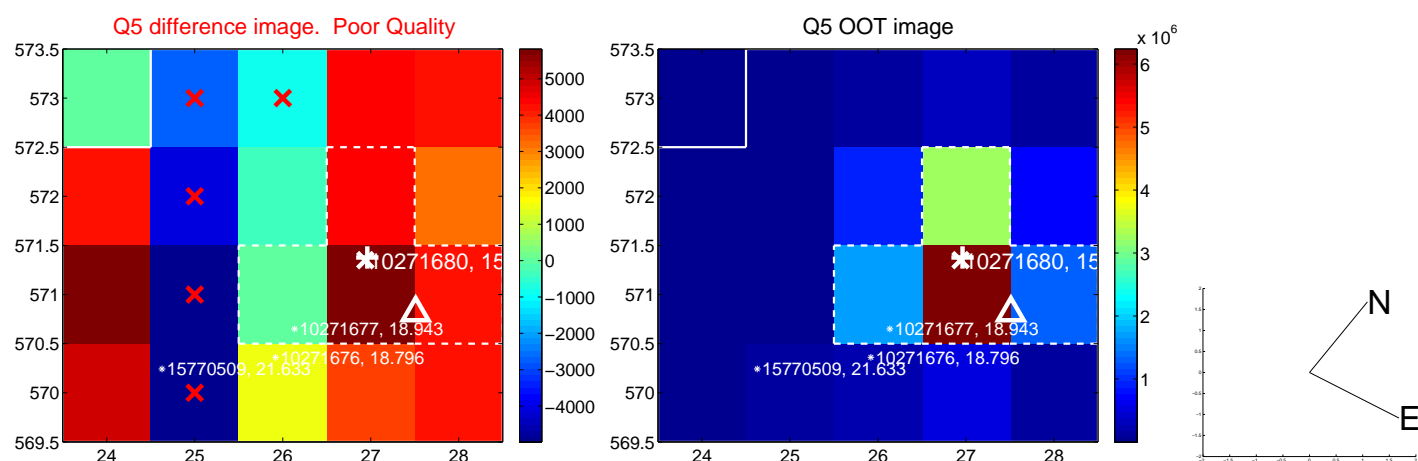


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



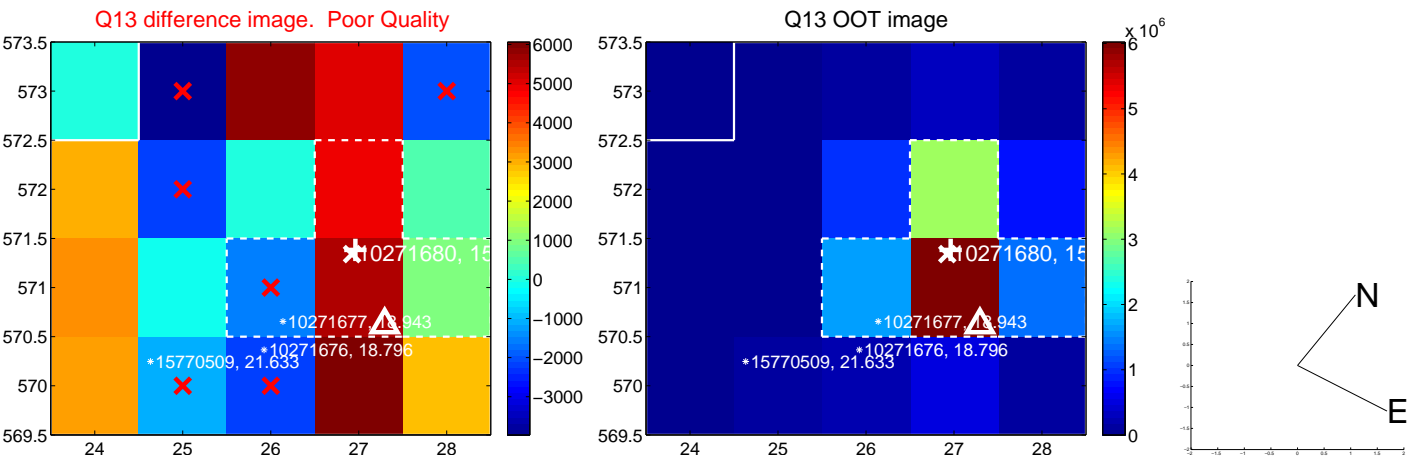
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



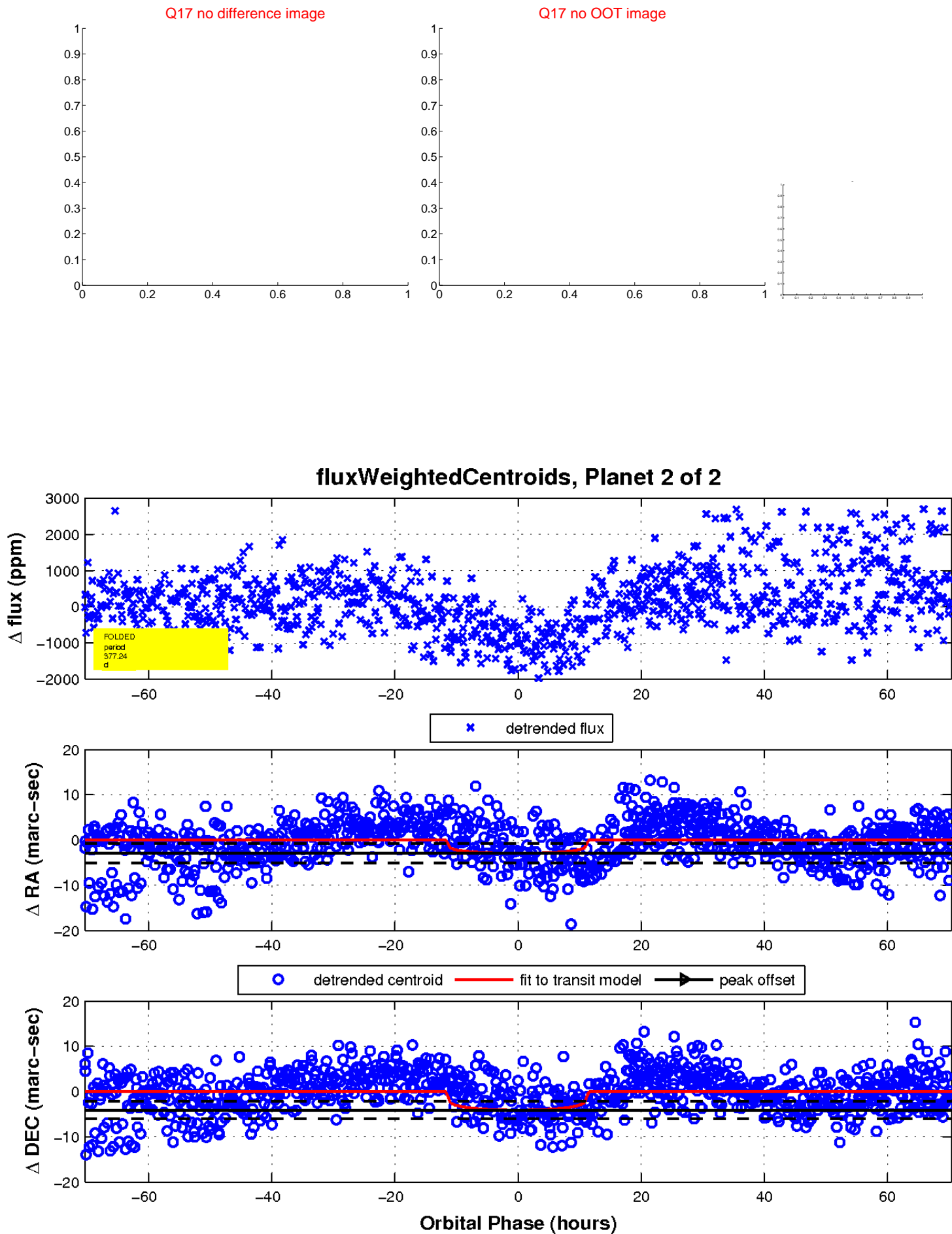
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

Declination

