

KIC 010661771

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})
010661771-01	OBS	1291.01	1.231296	131.836163	87.1	3.482	22.3	18.9	0.89	5897	0.98	2011.50
010661771-02	OBS	No	411.617174	270.511182	582.3	16.407	8.8	9.6	0.89	5897	2.29	0.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010661771-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
010661771-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

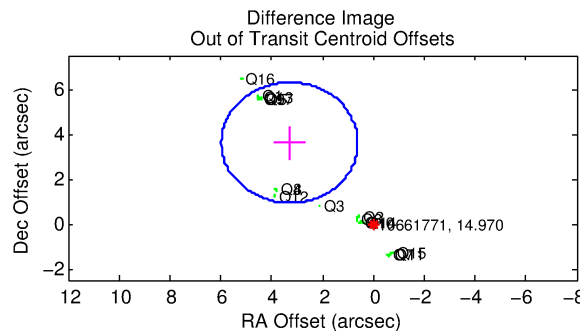
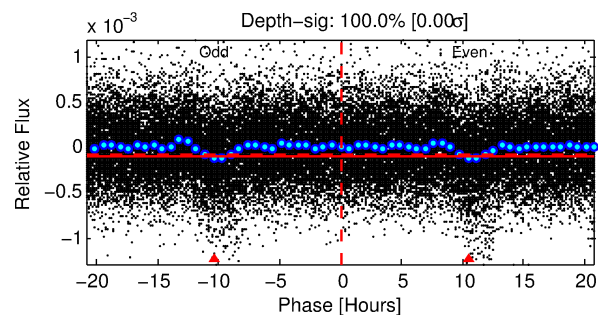
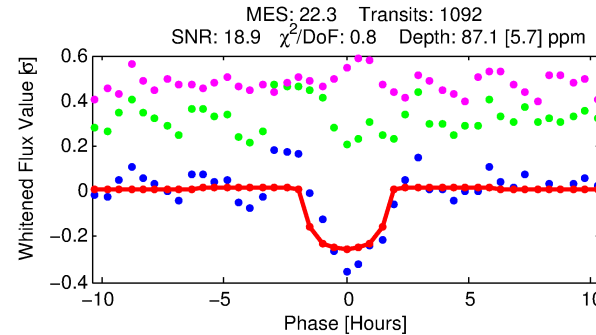
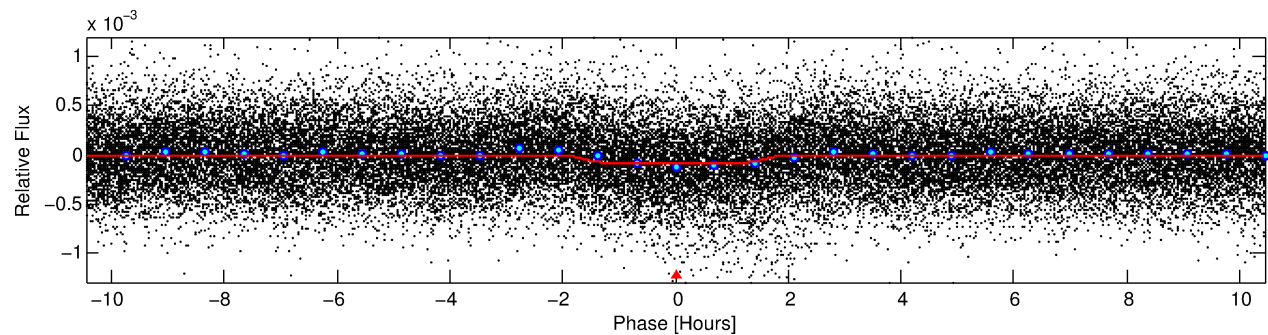
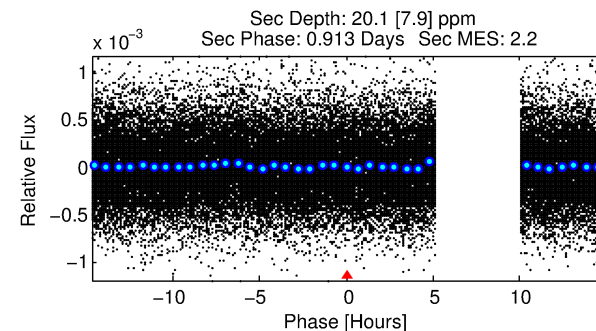
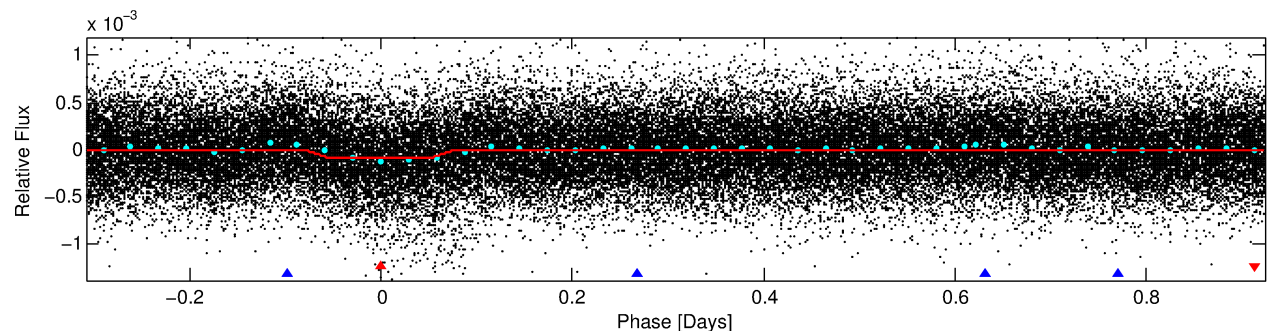
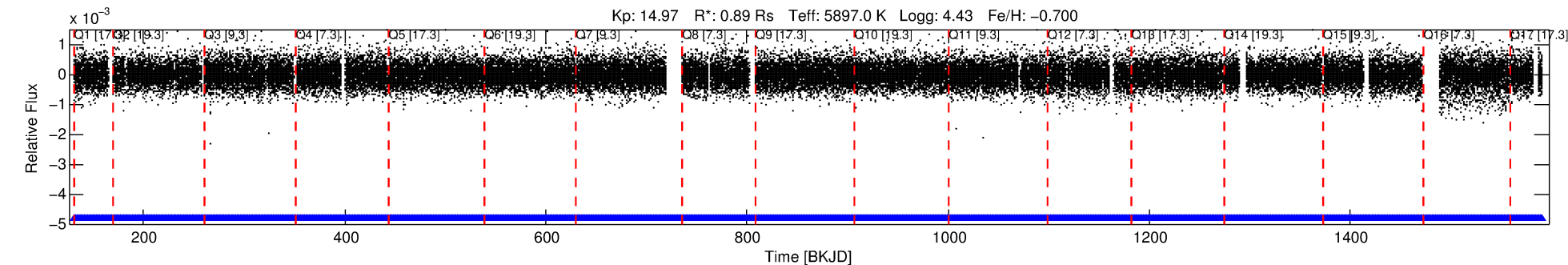
Ephemeris Match Information For 010661771-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010661771-01	10661771	010661783-pri	10661783	1:1	41.2	7	-8	9.59	14.97	2503.40	Direct-PRF	0	4.67	2.13

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10661771 Candidate: 1 of 2 Period: 1.231 d
KOI: K01291.01 Corr: 0.786



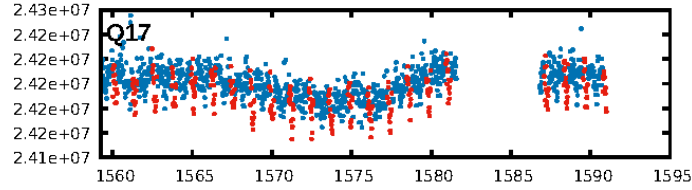
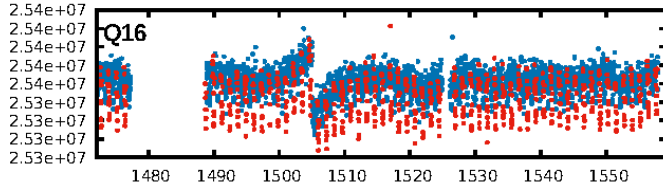
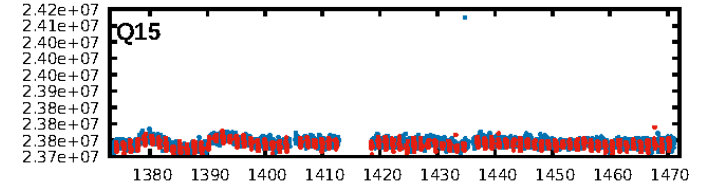
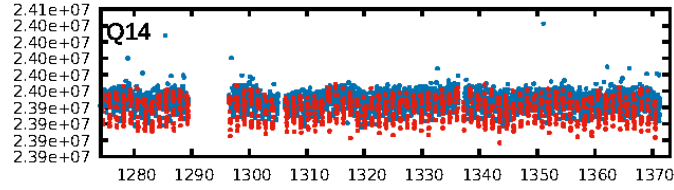
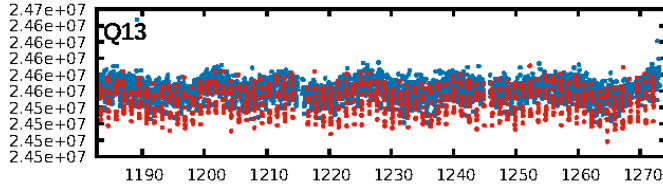
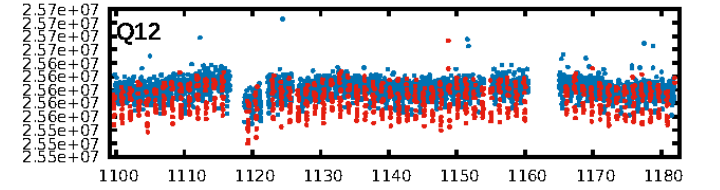
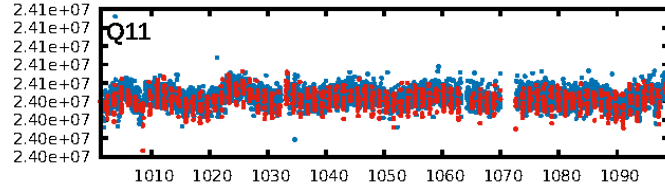
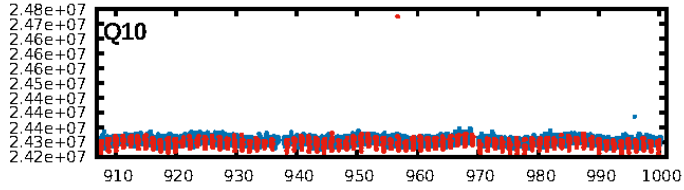
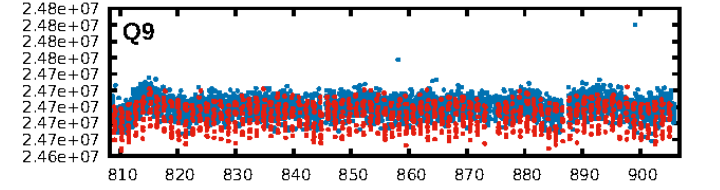
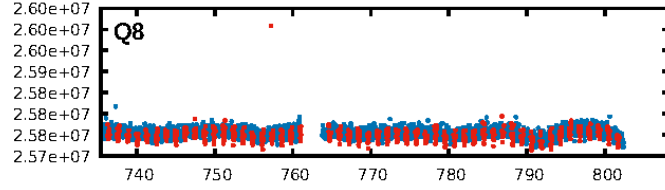
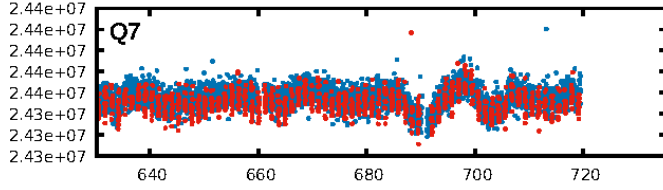
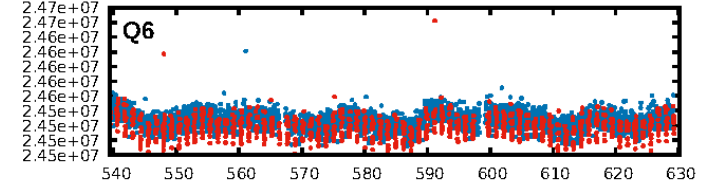
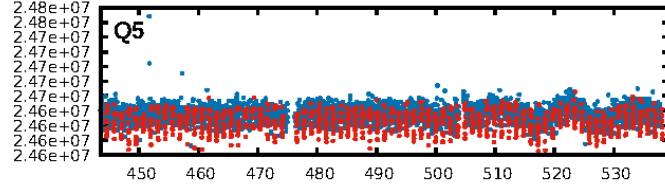
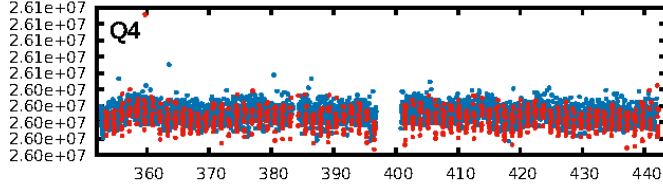
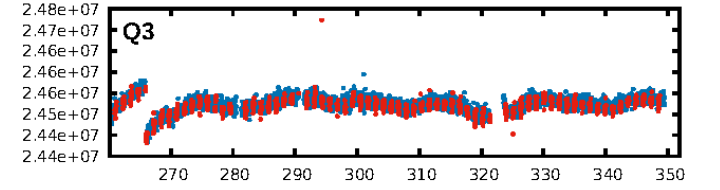
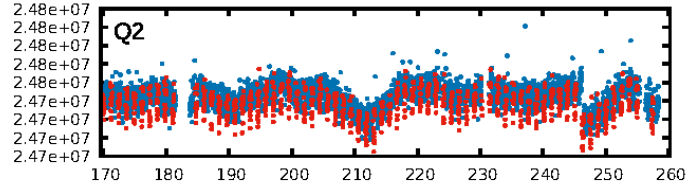
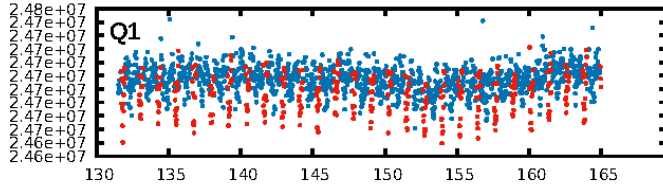
DV Fit Results:

Period = 1.23130 [0.00001] d
Epoch = 131.8362 [0.0023] BKJD
Rp/R* = 0.0100 [0.0029]
a/R* = 1.55 [1.40]
b = 0.90 [0.33]
Seff = 2011.50 [669.14]
Teff = 1708 [142] K
Rp = 0.98 [0.37] Re
a = 0.0207 [0.0044] AU
Ag = 4.96 [3.76] [1.05σ]
Teffp = 3940 [692] K [3.16σ]

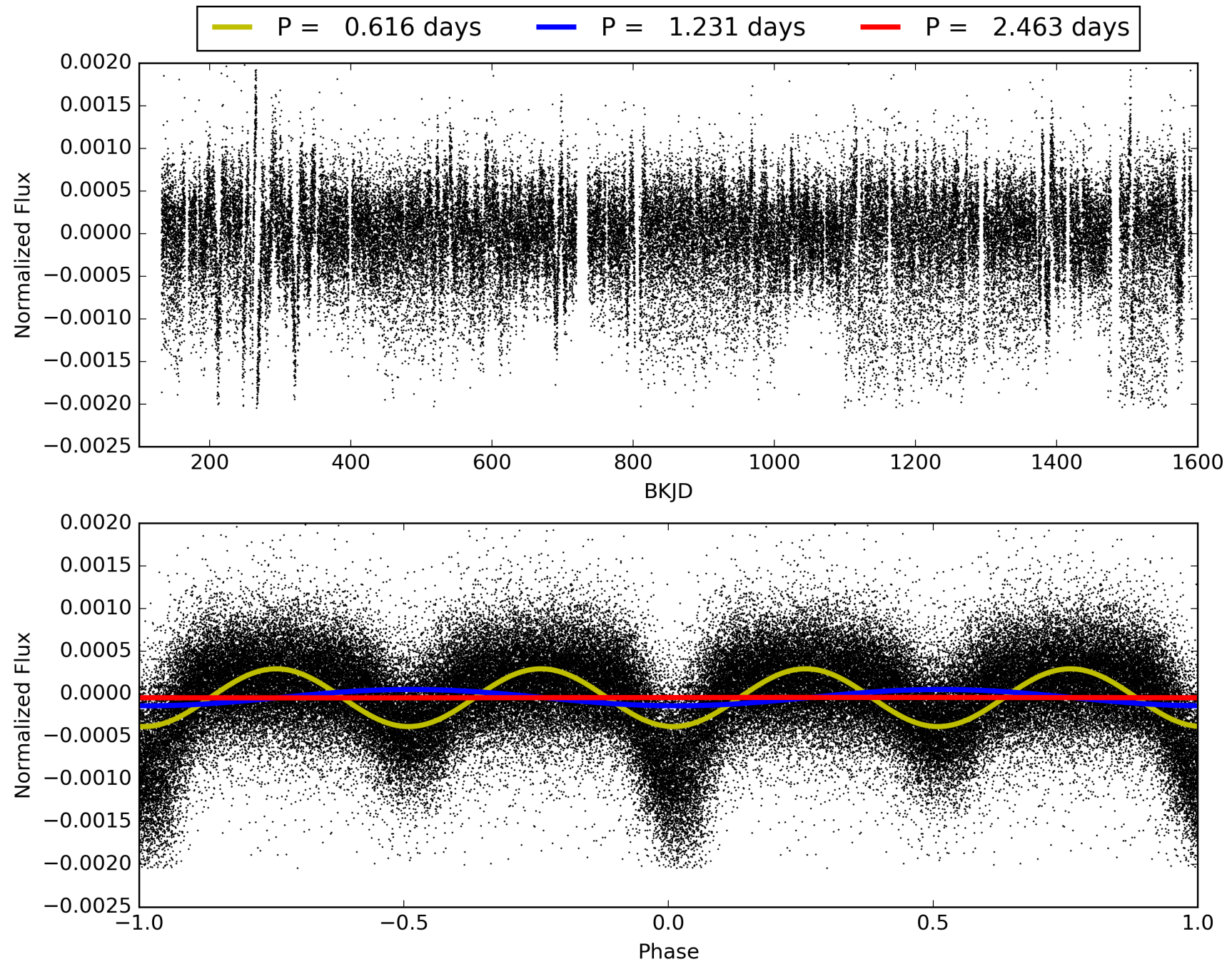
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [587.22σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.00e-97
RollingBand-fgt: 1.00 [1043/1043]
GhostDiagnostic-chr: 0.1073
Centroid-sig: 0.0%
Centroid-so: 4.196 arcsec [6.41σ]
OotOffset-rm: 4.884 arcsec [5.46σ]
KicOffset-rm: 4.554 arcsec [5.14σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.41 [7/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010661771-01, PDC Light Curves

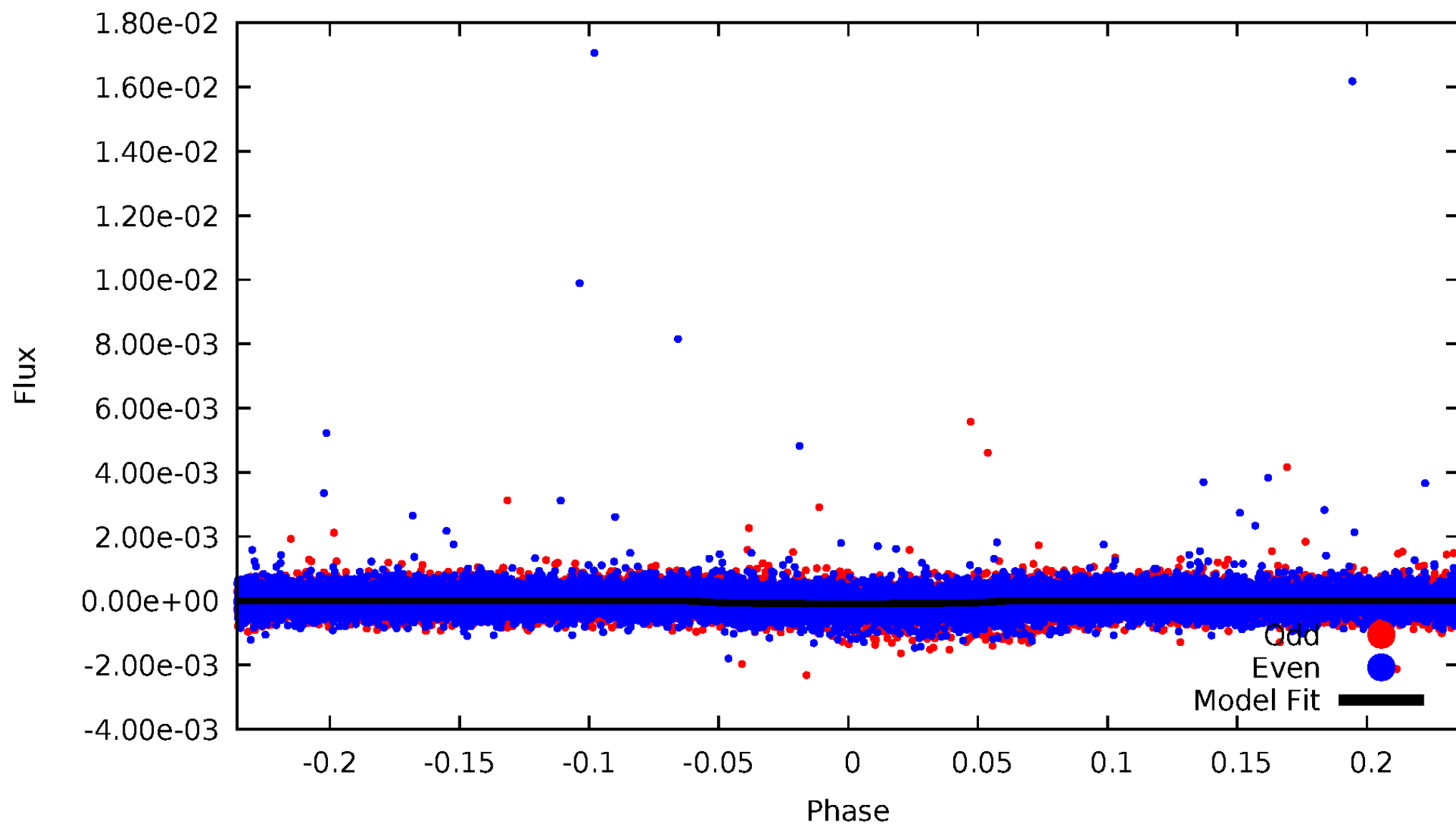


TCE 010661771-01



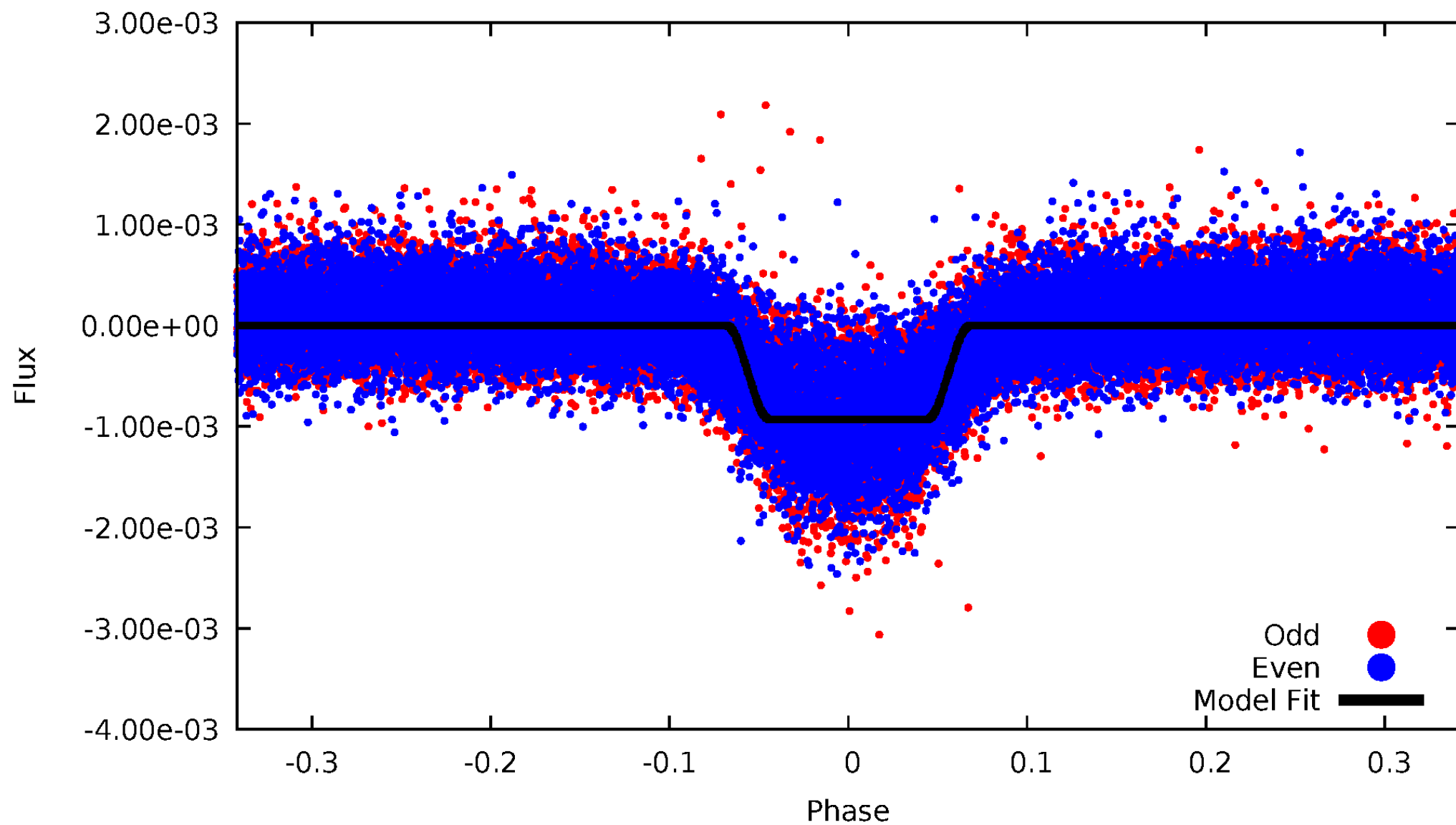
DV Odd/Even

TCE 010661771-01



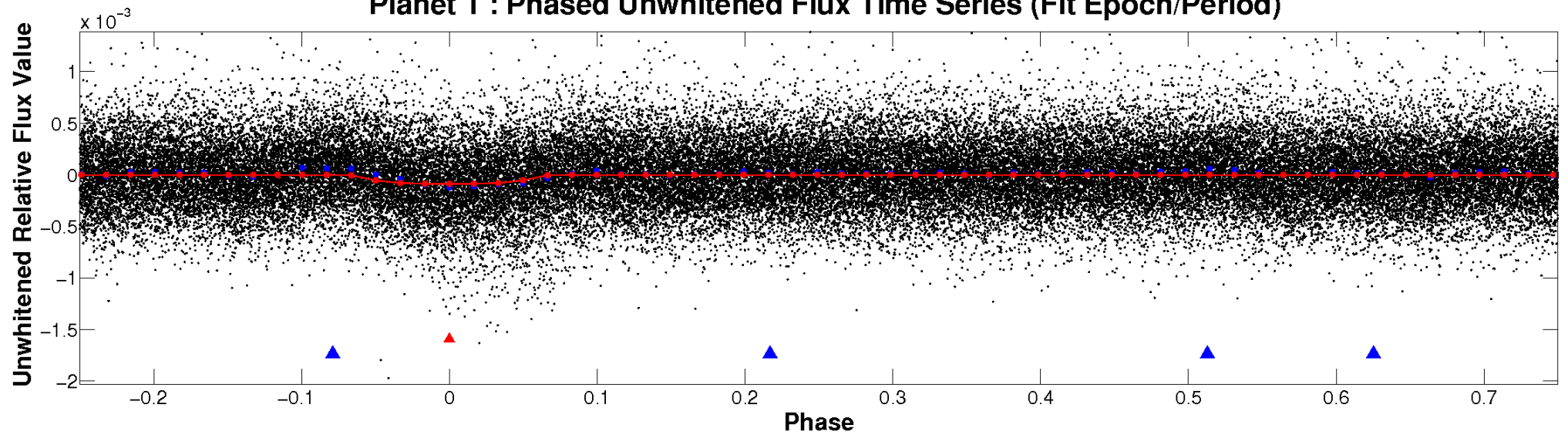
ALT Odd/Even

TCE 010661771-01

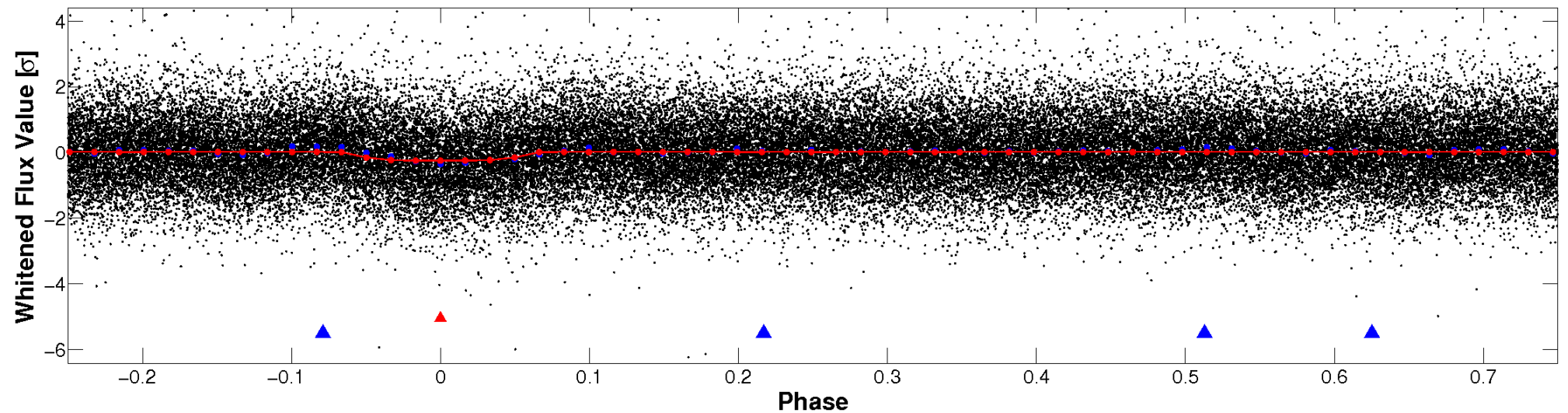


Non-Whitened Vs. Whitened Light Curve

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

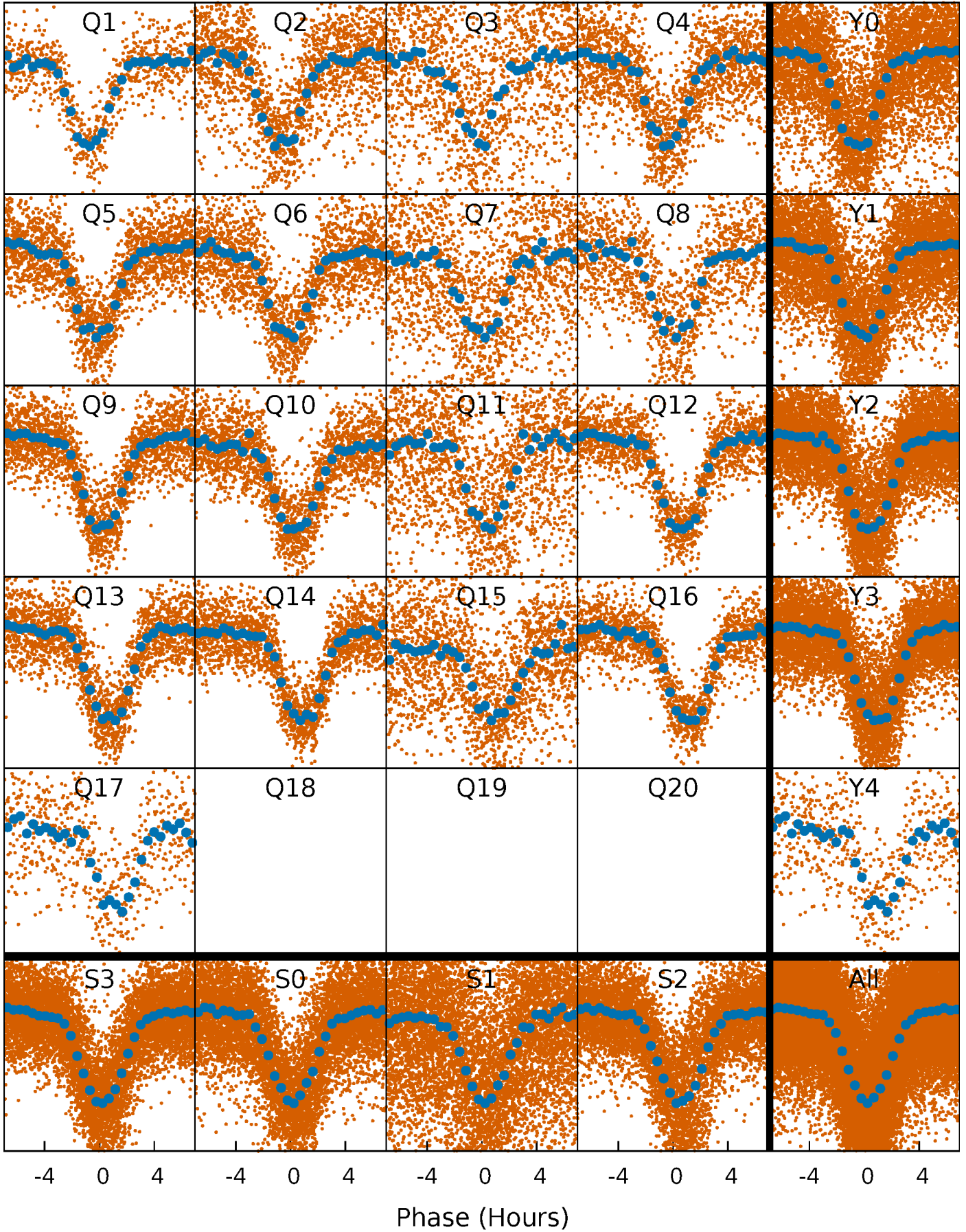


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



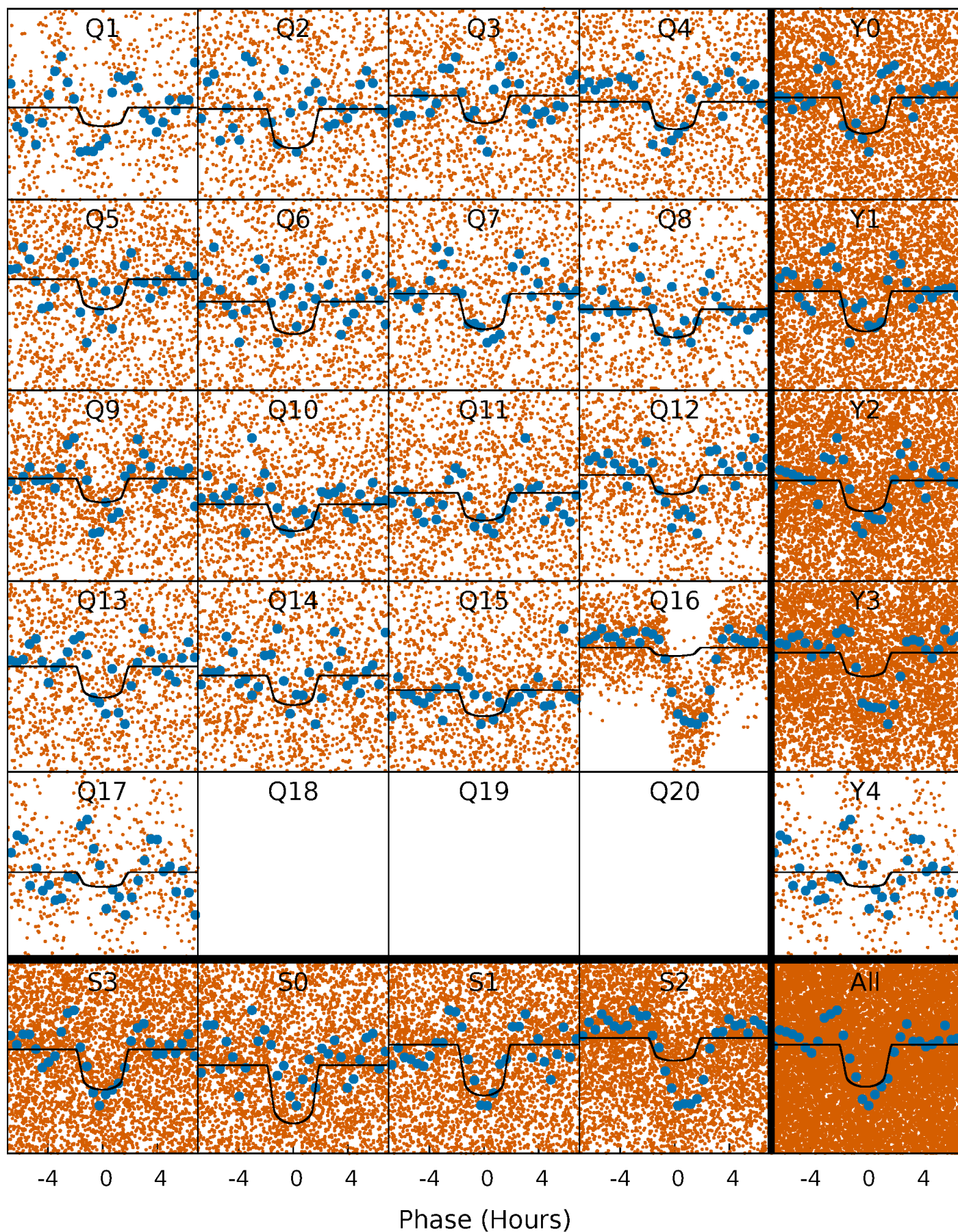
PDC Quarter-Phased Transit Curves

TCE 010661771-01 P= 1.231296 Days $T_0=131.836163$ (BKJD)



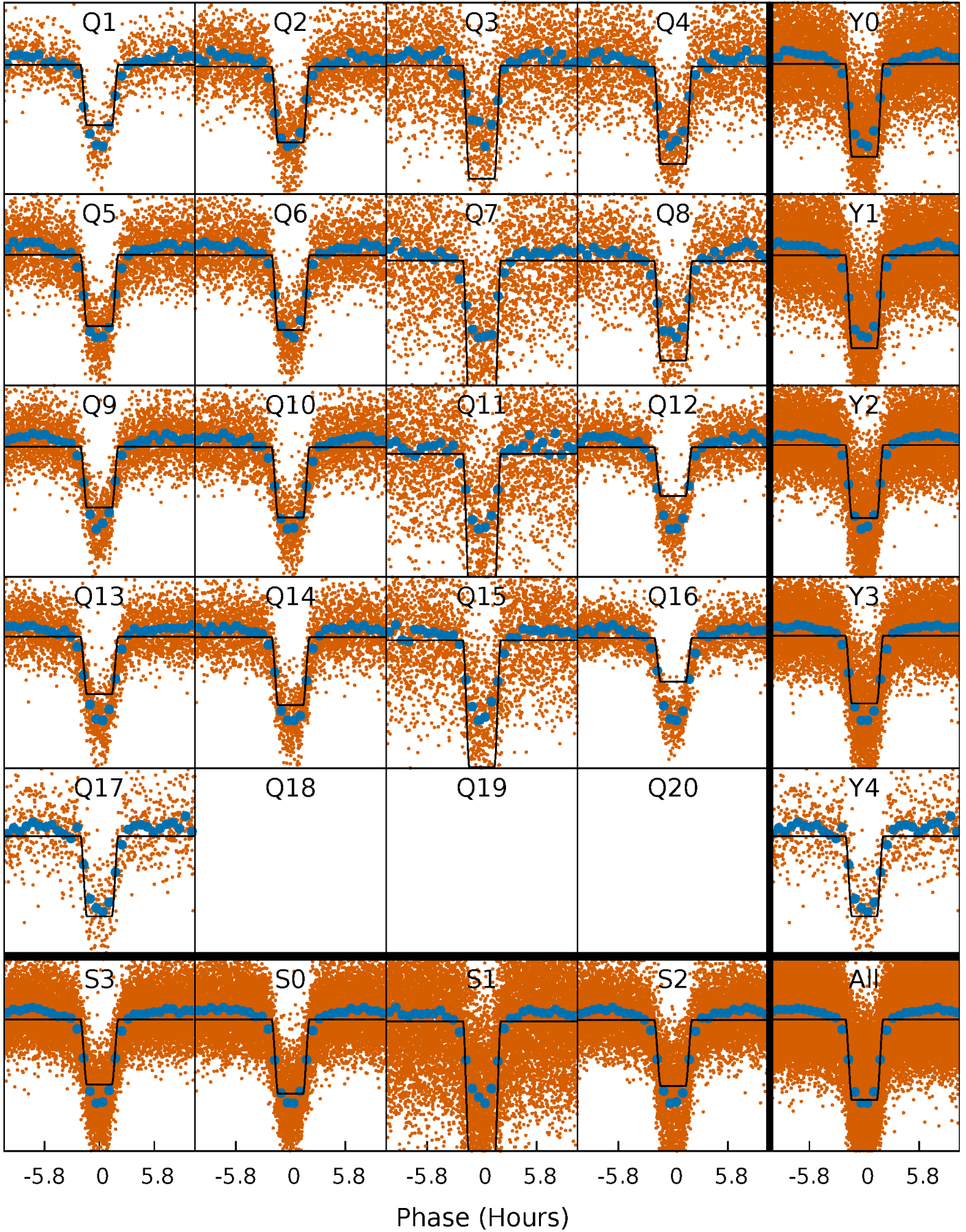
DV Quarter-Phased Transit Curves

TCE 010661771-01 P= 1.231296 Days $T_0=131.836163$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

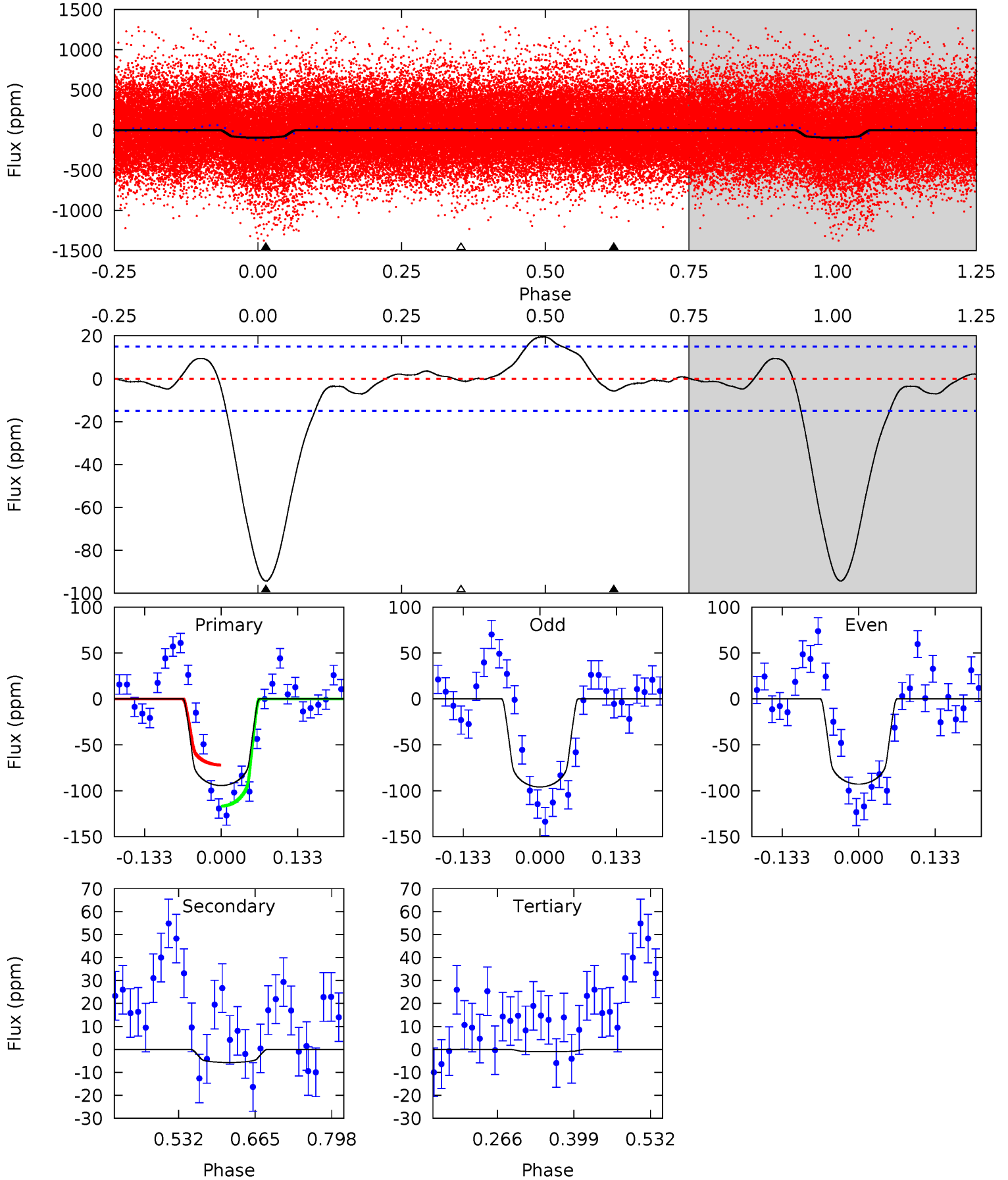
TCE 010661771-01 P= 1.231359 Days $T_0=131.808660$ (BKJD)



DV Model-Shift Uniqueness Test

010661771-01, P = 1.231296 Days, E = 130.604867 Days

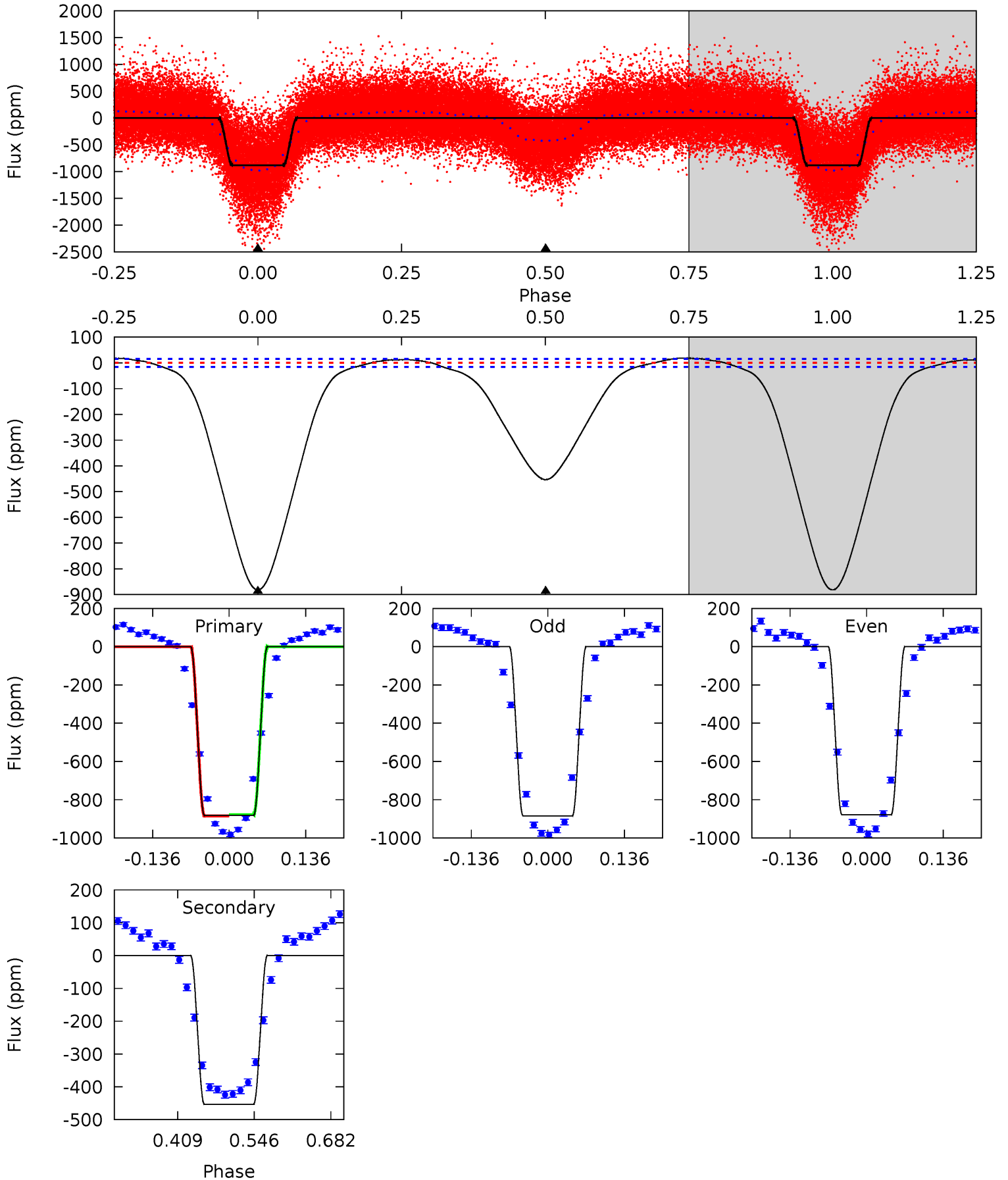
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.3	1.72	0.29	0	4.50	1.50	1.55	28.1	28.3	1.43	1.72	0.47	1.10	0.17	6.72



Alt Model-Shift Uniqueness Test

010661771-01, P = 1.231359 Days, E = 130.577301 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
255.4	131.3	0	0	4.50	1.49	5.22	255.4	255.4	131.3	131.3	0.91	0.99	0.02	1.10



Stellar Parameters For KIC 010661771

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5897^{+177}_{-159}	$4.429^{+0.140}_{-0.171}$	$-0.700^{+0.300}_{-0.300}$	$0.891^{+0.221}_{-0.136}$	$0.778^{+0.098}_{-0.049}$	$1.549^{+0.987}_{-0.705}$
	+3%/-3%	+3%/-4%	+43%/-43%	+25%/-15%	+13%/-6%	+64%/-46%
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 010661771-01 / KOI 1291.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-6 ± 3	$0.98^{+0.34}_{-0.29}$	2388^{+161}_{-135}	3242^{+553}_{-643}	$1.303^{+1.877}_{-0.807}$
Alt.	-453 ± 3	$2.98^{+0.49}_{-0.38}$	2391^{+155}_{-129}	4995^{+252}_{-240}	12^{+4}_{-3}

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

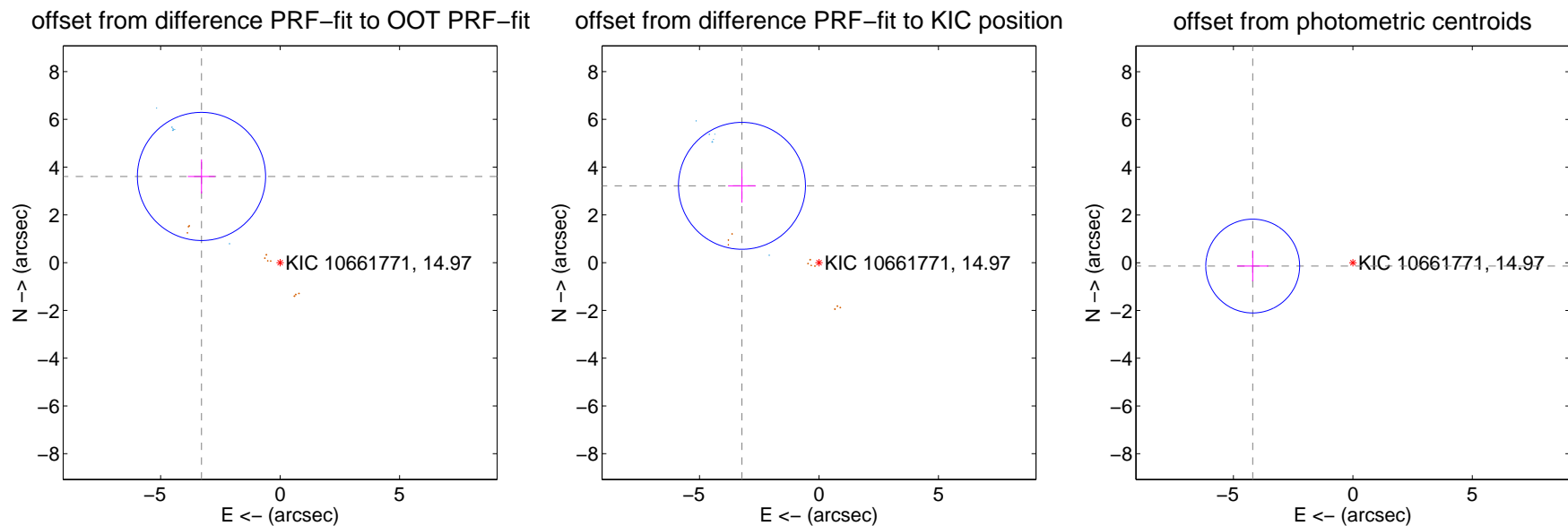
DV Centroid Data

Supplemental centroid analysis for 010661771-01. Kepler magnitude: 14.97. Transit SNR 18.88

There are 7 quarters with good PRF difference image offsets

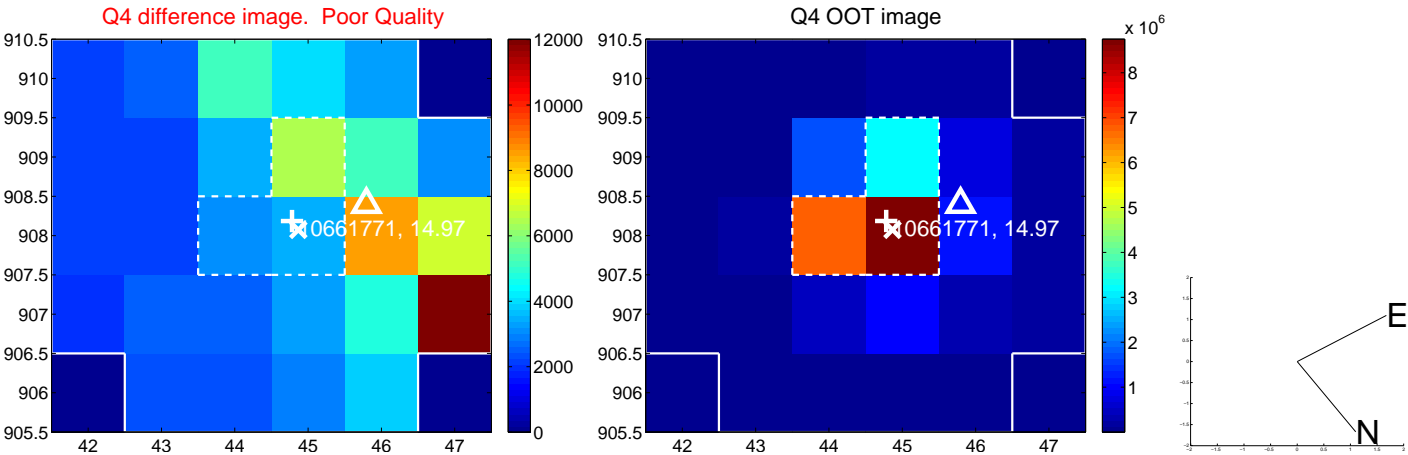
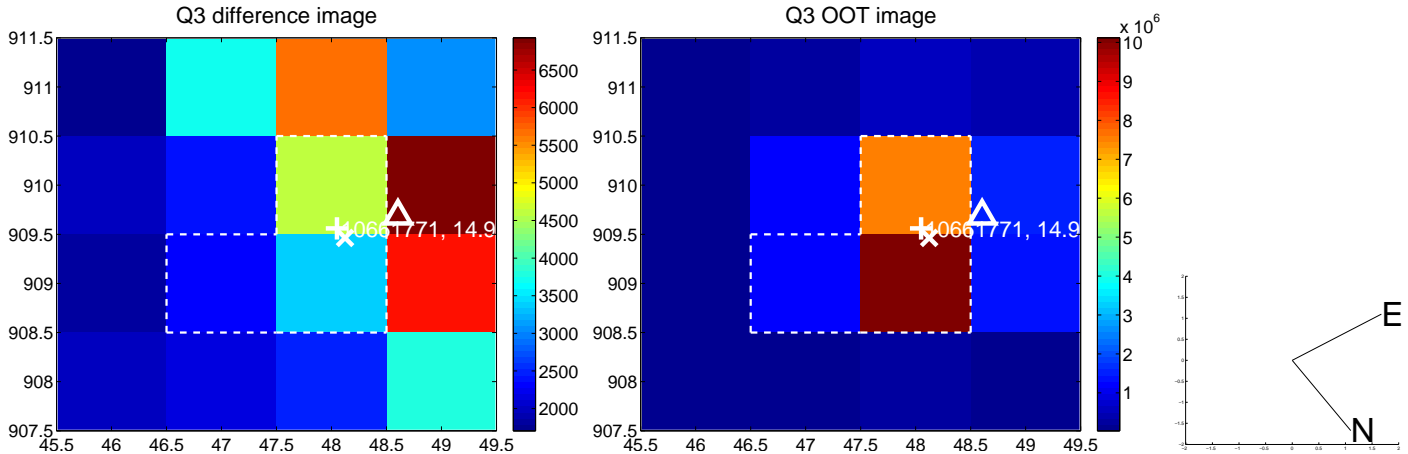
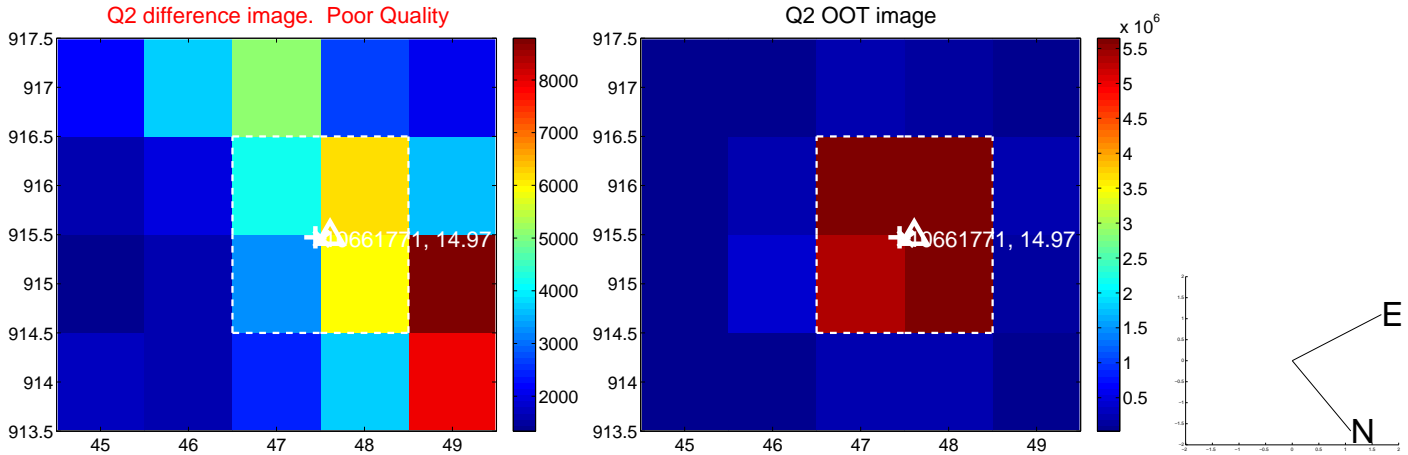
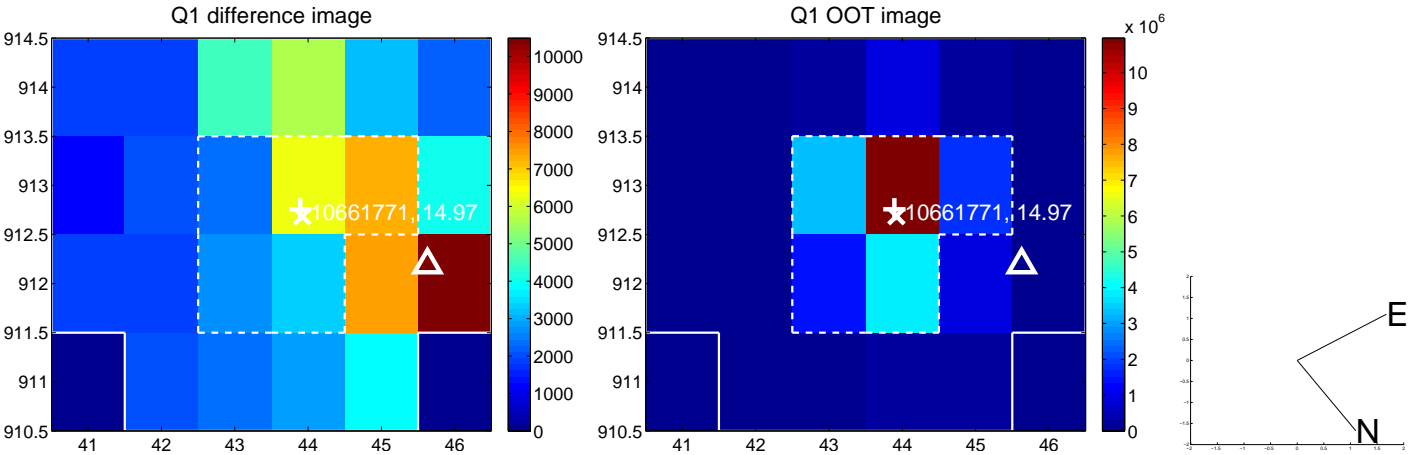
The direct PRF centroid is offset from the target star catalog position by about 0.49 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.884 ± 0.894	5.46	3.291 ± 0.573	3.609 ± 0.716
PRF-fit source offset from KIC position	4.554 ± 0.886	5.14	3.224 ± 0.581	3.217 ± 0.705
photometric centroid source offset	4.20 ± 0.65	6.41	4.19 ± 0.65	-0.14 ± 0.64

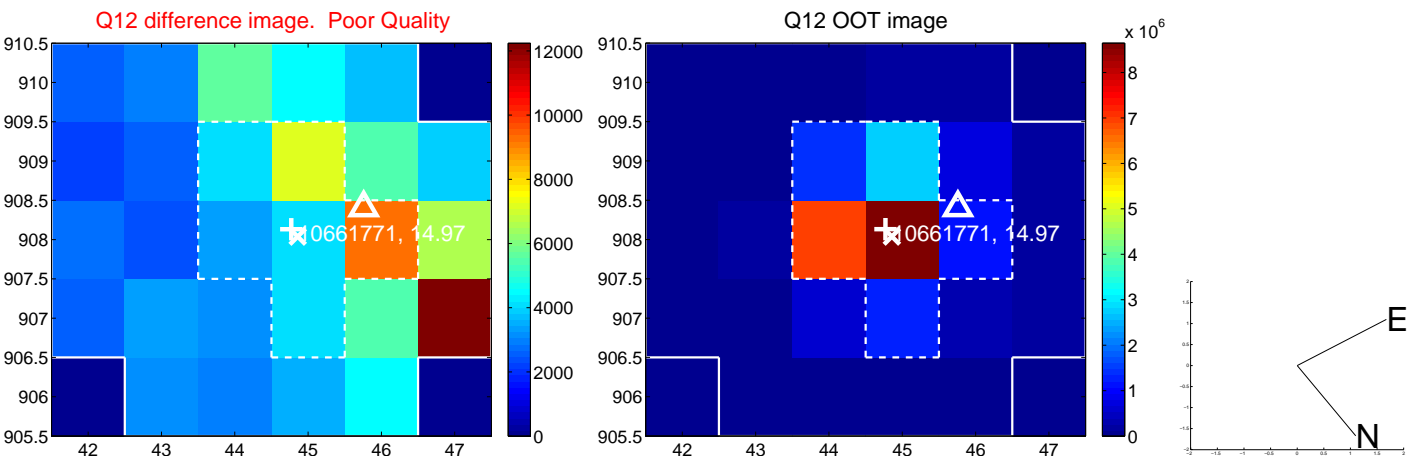
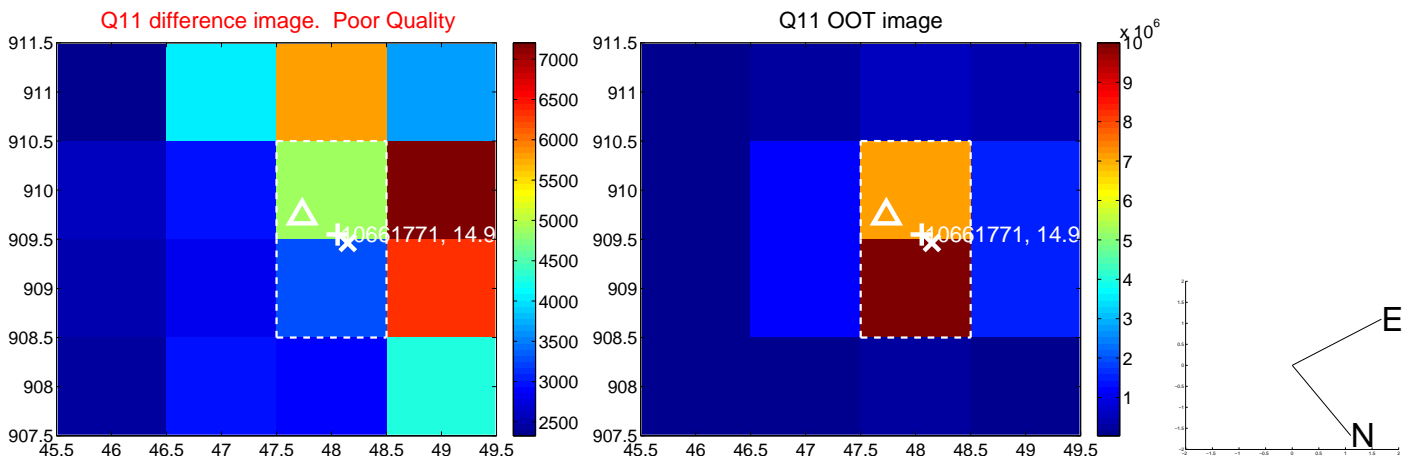
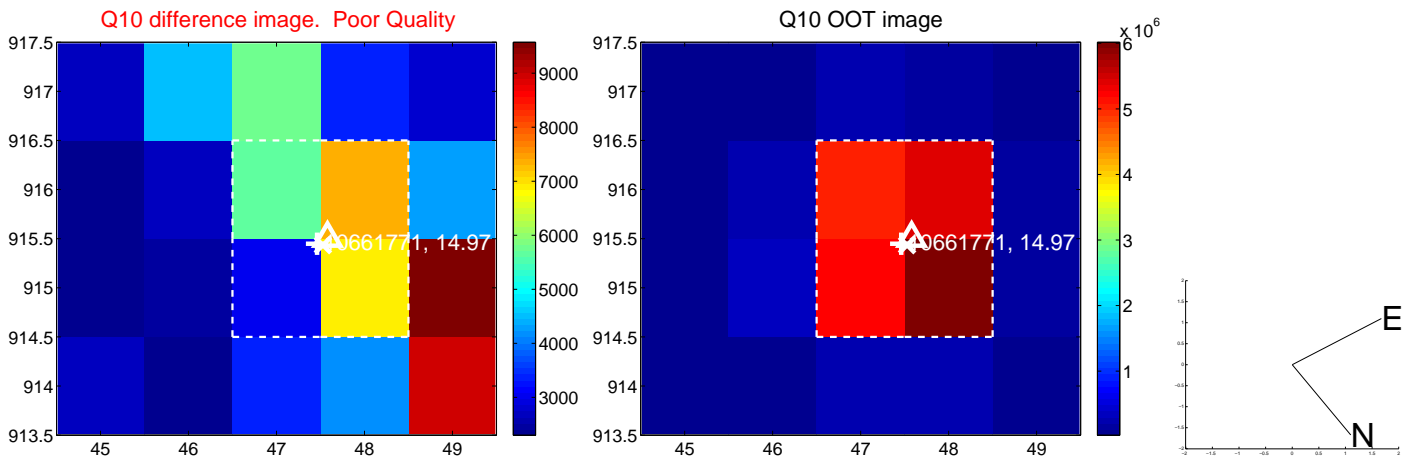
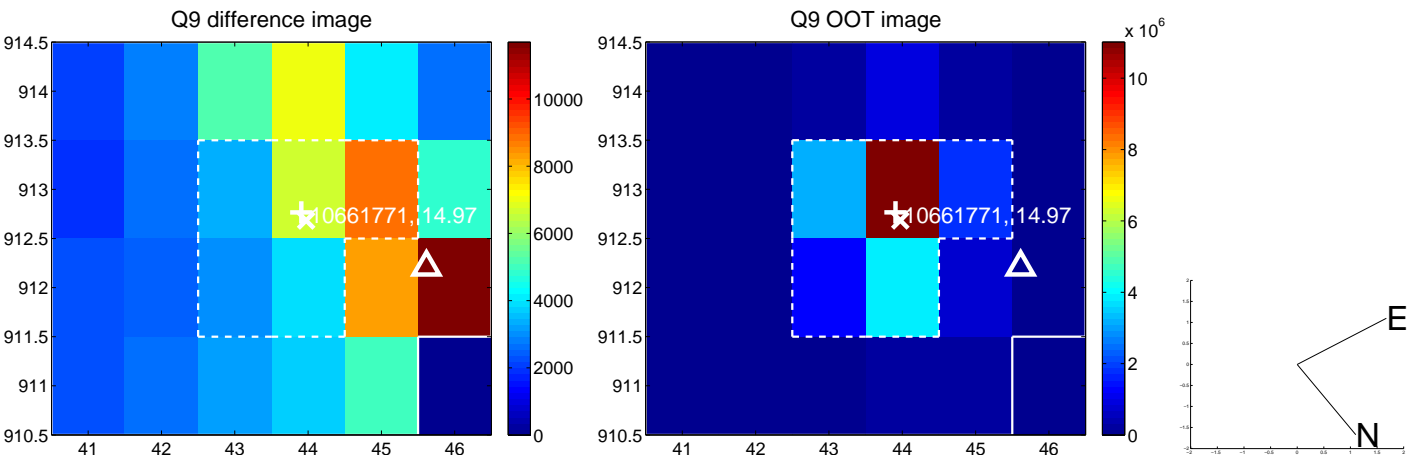


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

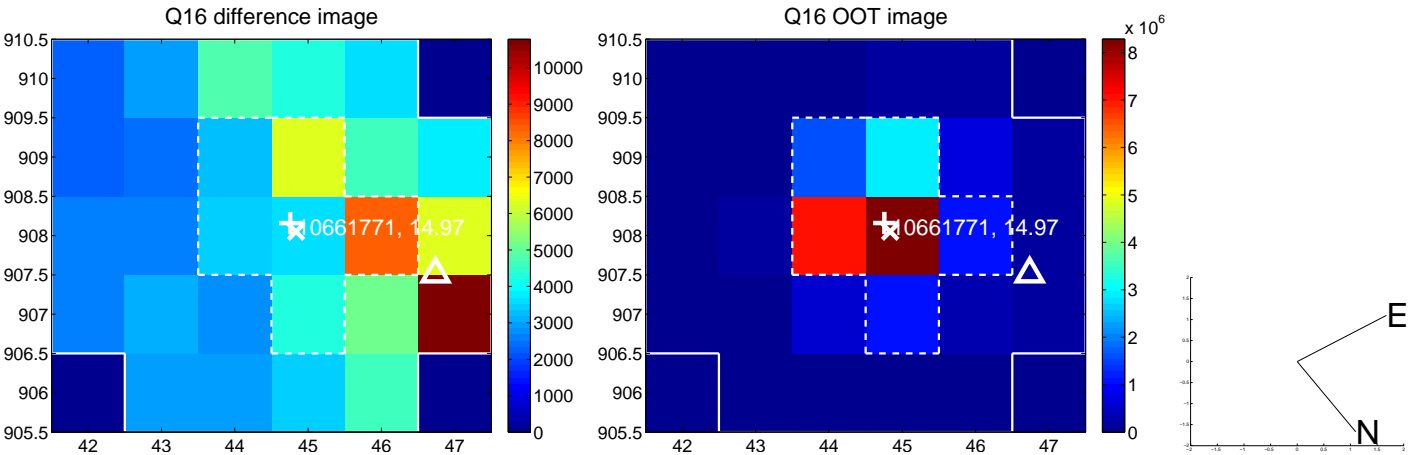
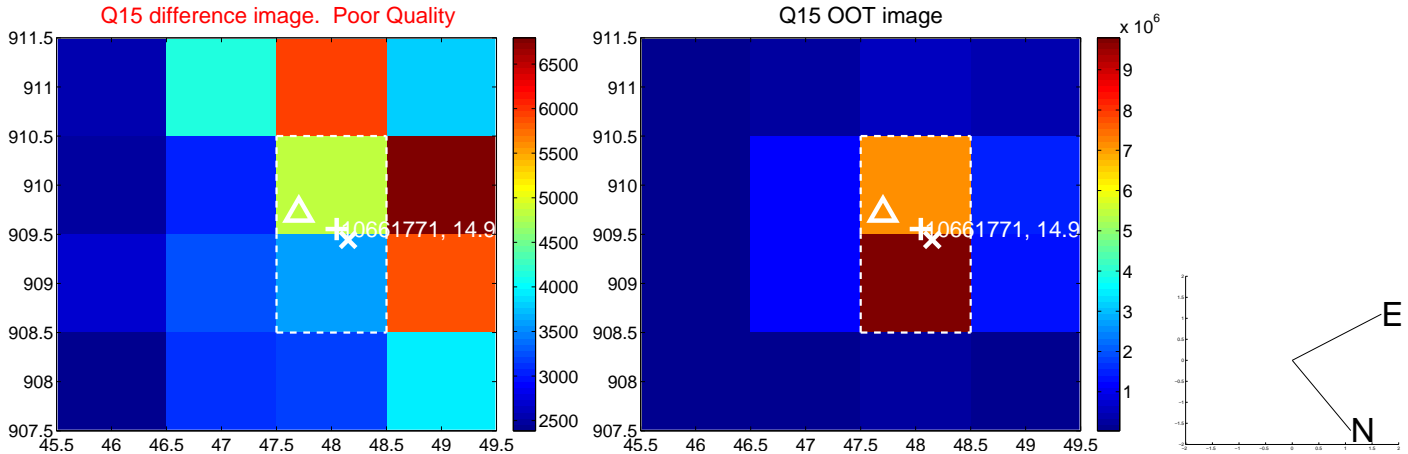
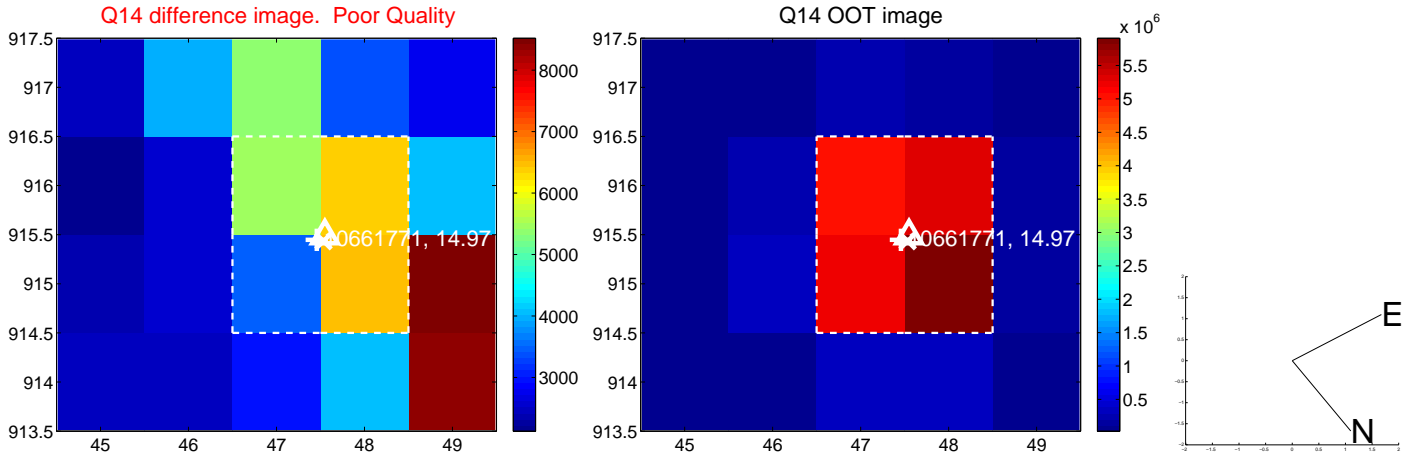
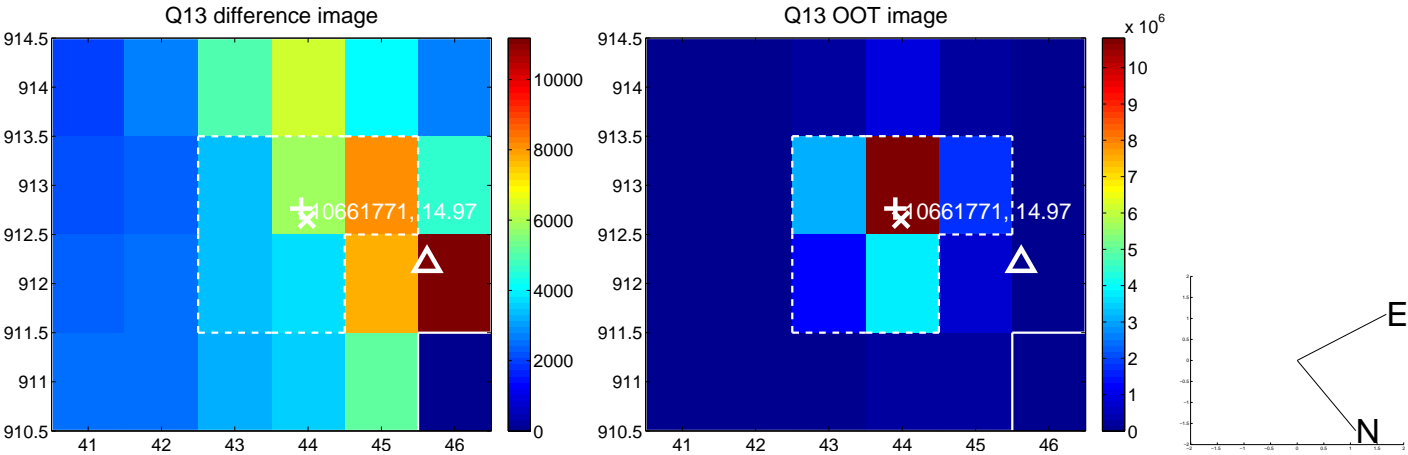
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

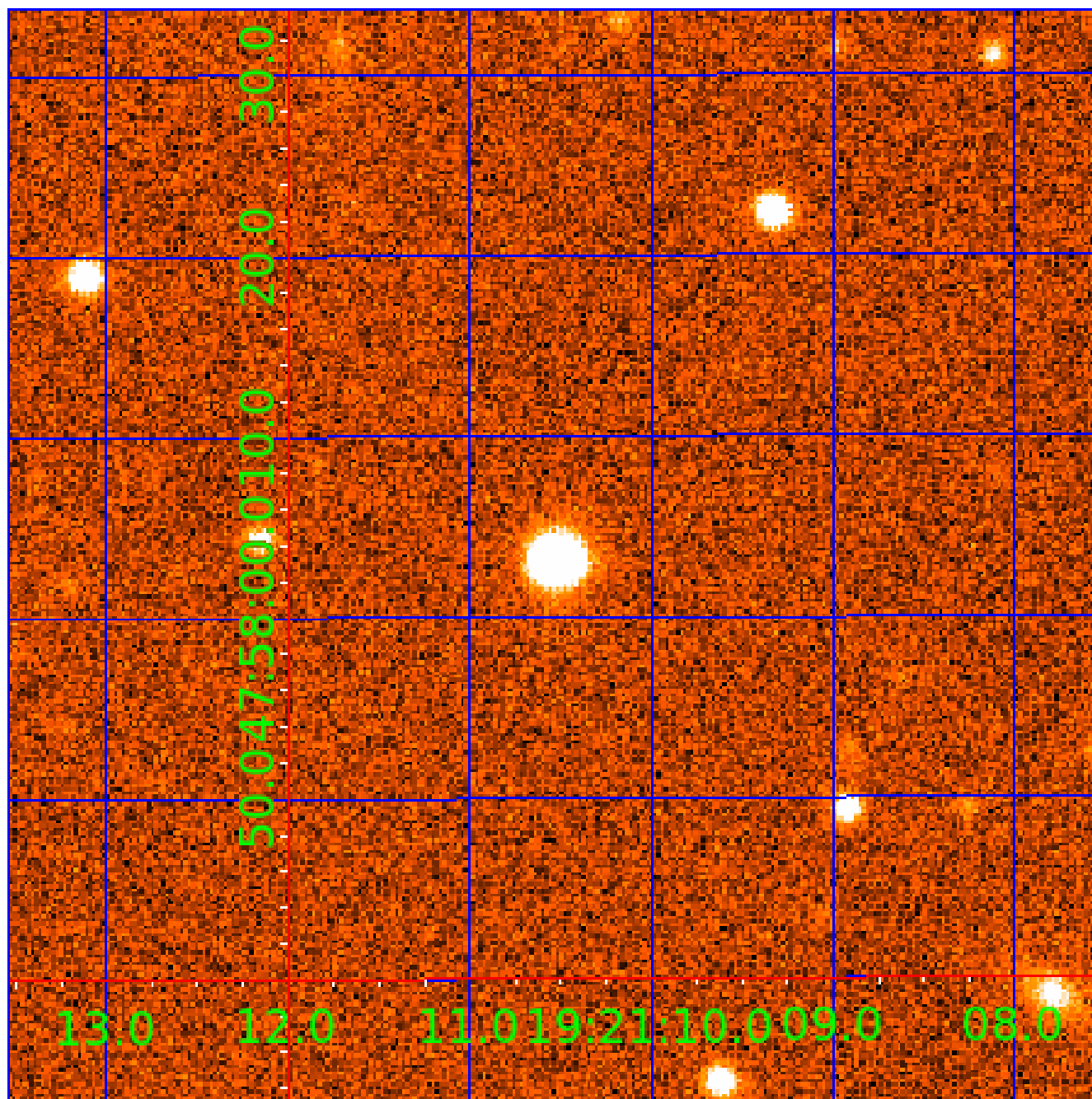


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010661771

Q1-17 DR25 TCE Parameters

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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010661771-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
010661771-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

Ephemeris Match Information For 010661771-02

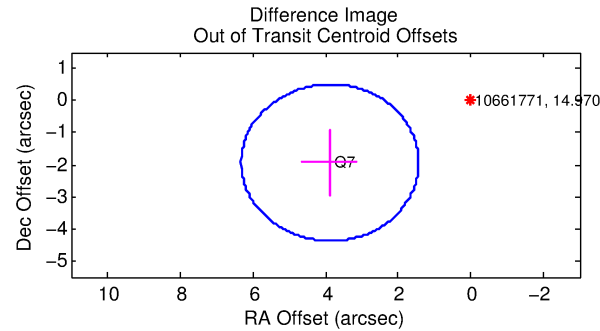
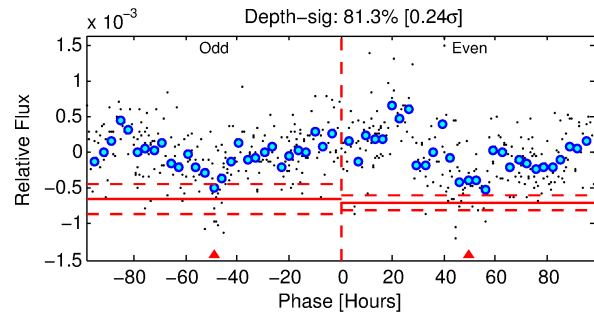
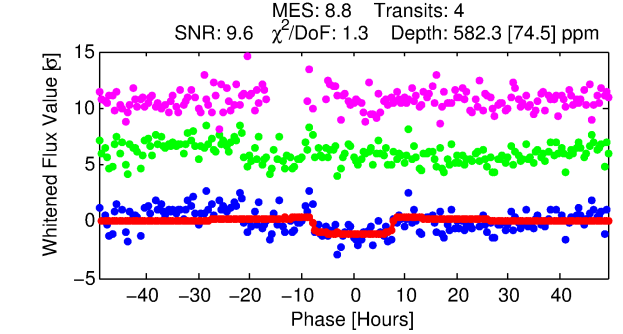
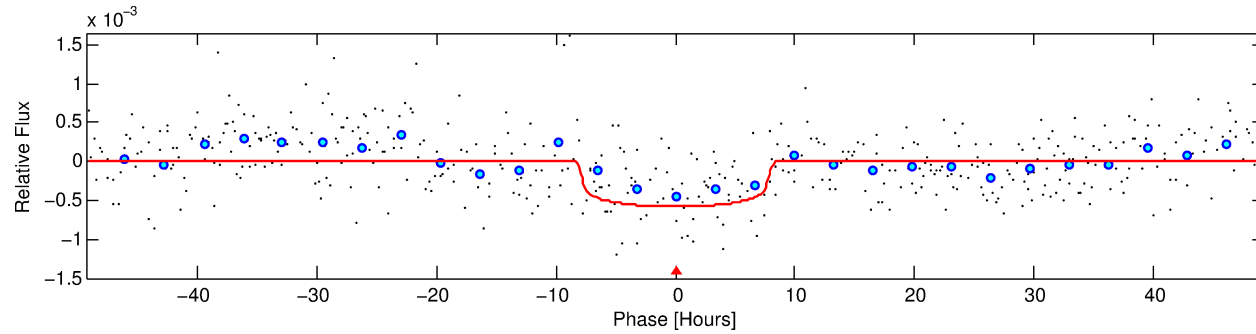
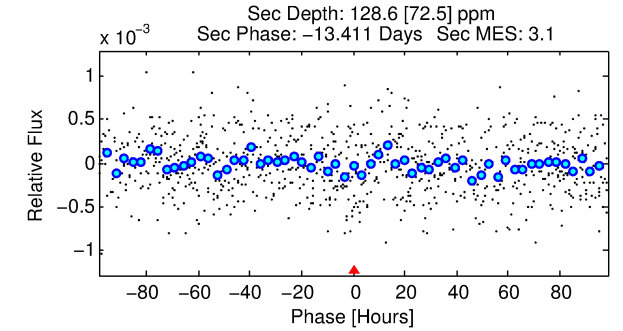
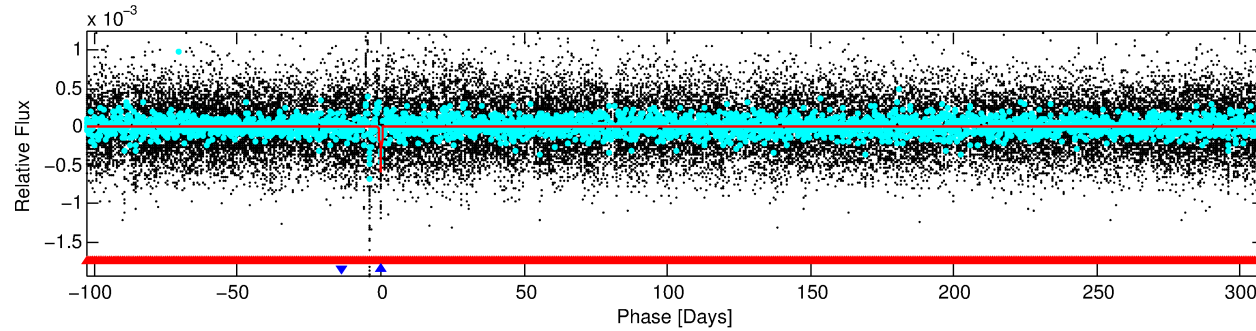
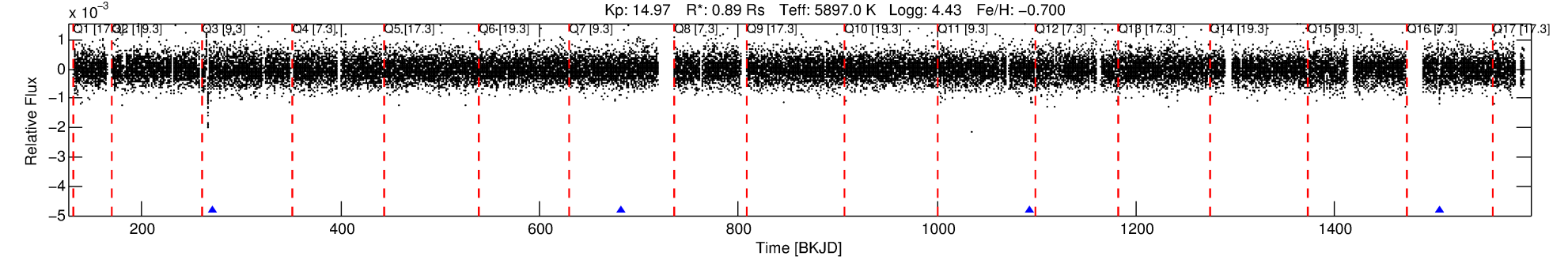
No Significant Match Found

DV One-Page Summary

KIC: 10661771 Candidate: 2 of 2 Period: 411.617 d

KOI: K01291 Corr: No Ephemeris Match

Kp: 14.97 R*: 0.89 Rs Teff: 5897.0 K Logg: 4.43 Fe/H: -0.700



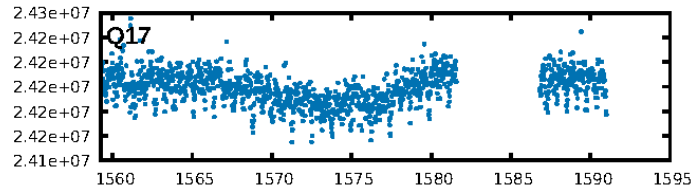
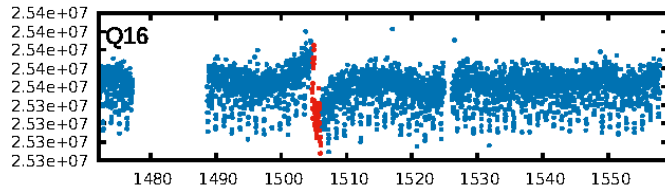
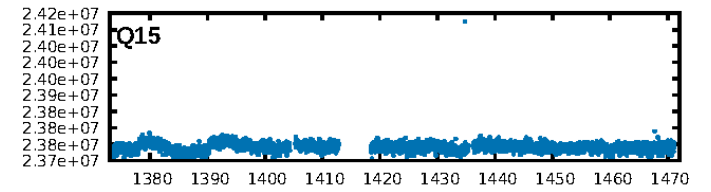
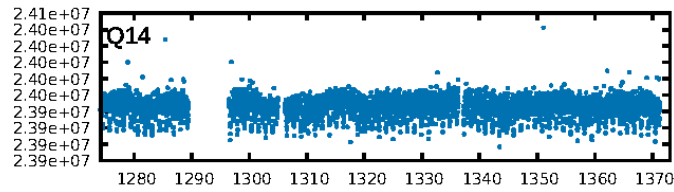
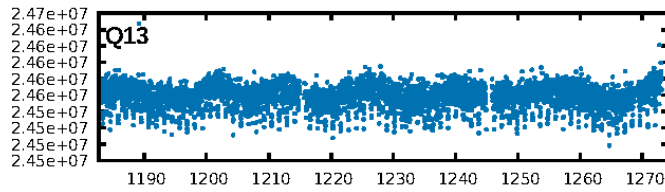
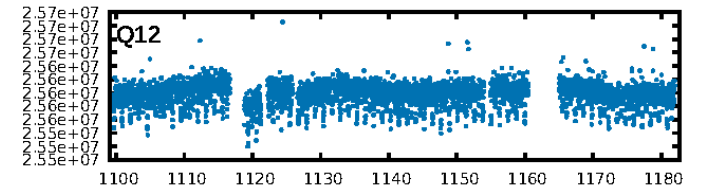
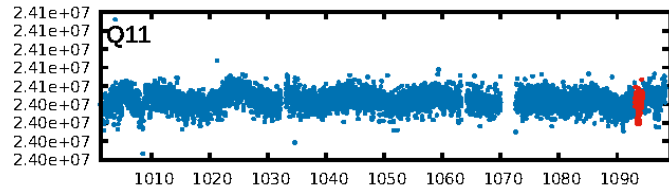
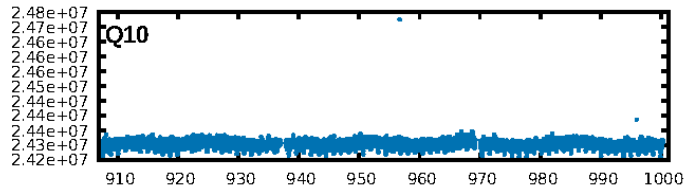
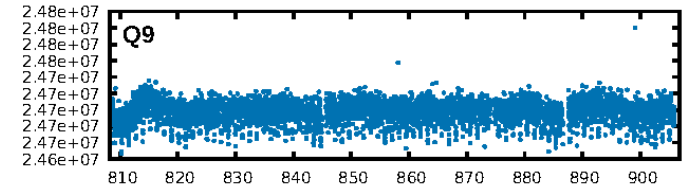
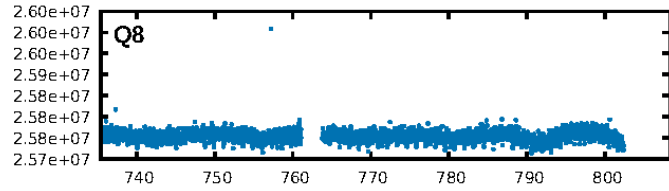
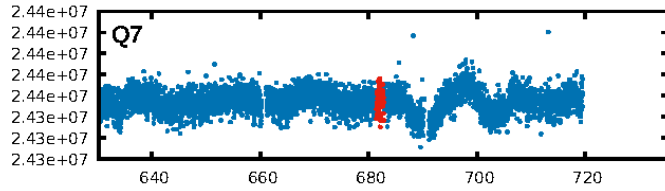
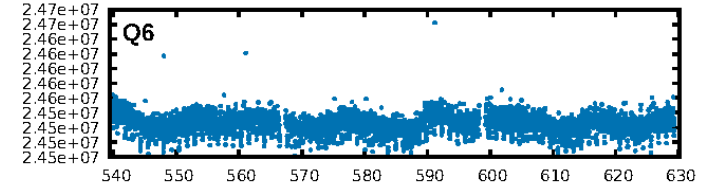
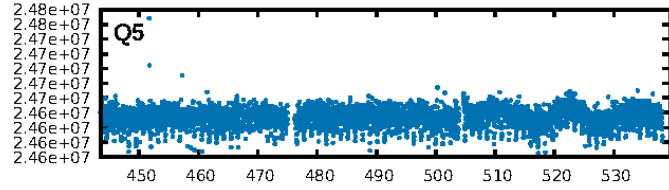
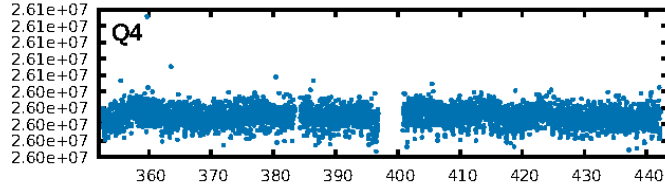
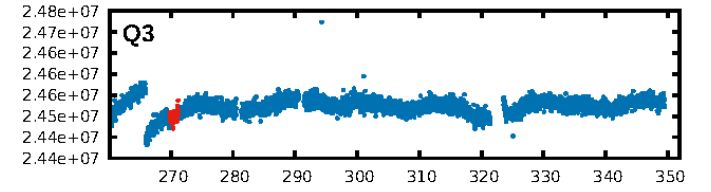
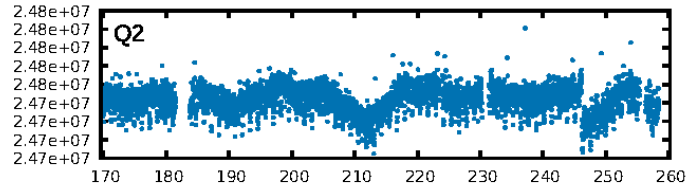
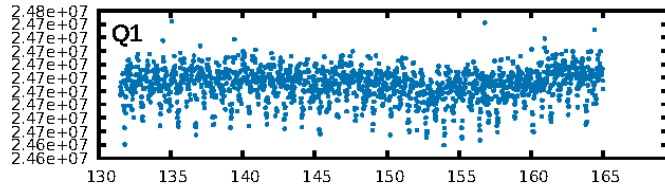
DV Fit Results:

Period = 411.61717 [0.01194] d
Epoch = 270.5112 [0.0253] BKJD
Rp/R* = 0.0236 [0.0062]
a/R* = 144.54 [182.82]
b = 0.69 [0.97]
Seff = 0.87 [0.29]
Teq = 246 [20] K
Rp = 2.29 [0.83] Re
a = 0.9960 [0.2103] AU
Ag = 13341.91 [11058.82] [1.21 sigma]
Teffp = 4089 [795] K [4.83 sigma]

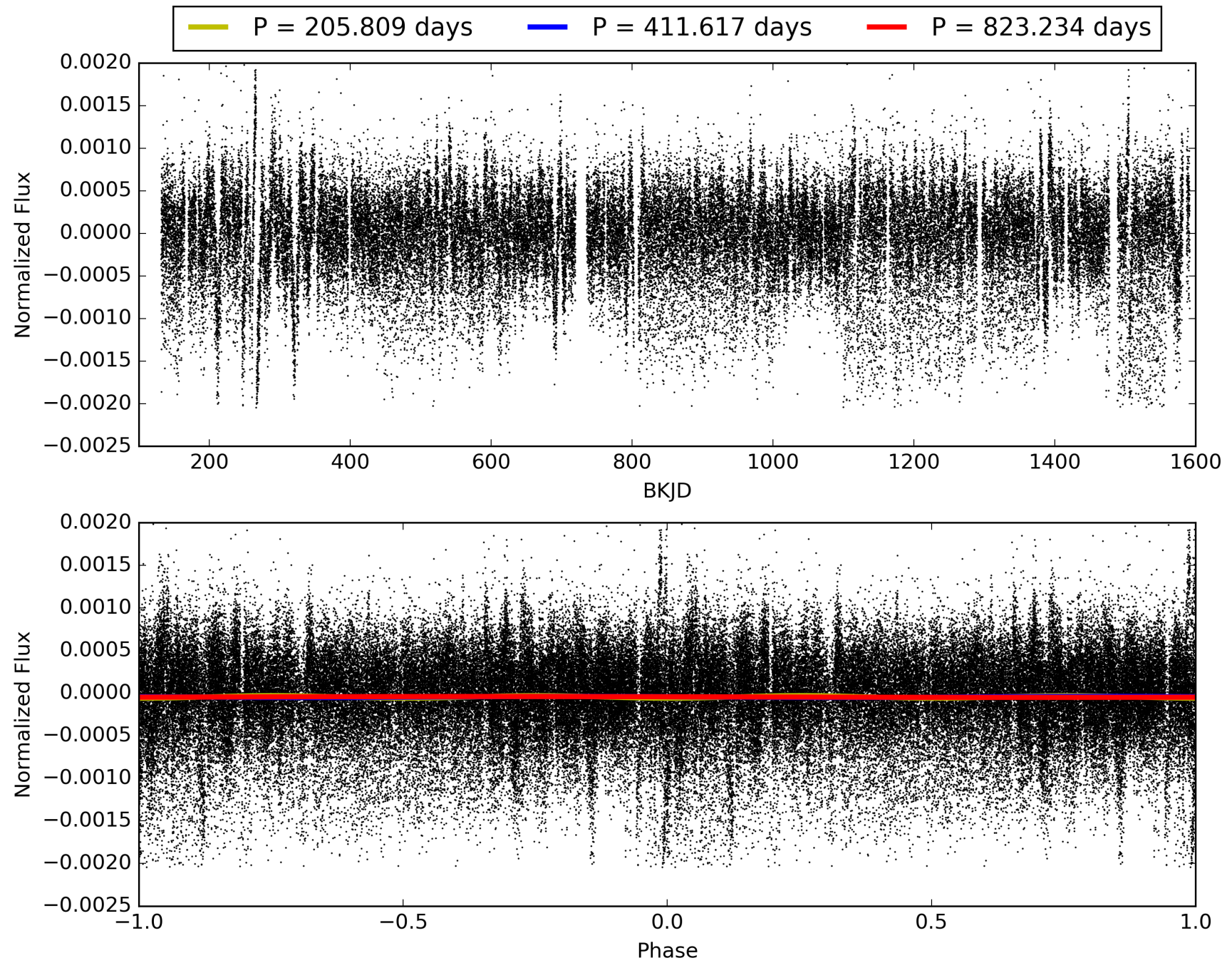
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [587.22 sigma]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.46e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.135
Centroid-sig: 7.0%
Centroid-so: 1.025 arcsec [1.34 sigma]
OotOffset-rm: 4.334 arcsec [5.32 sigma]
KicOffset-rm: 4.544 arcsec [5.38 sigma]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.00 [0/1]

TCE 010661771-02, PDC Light Curves

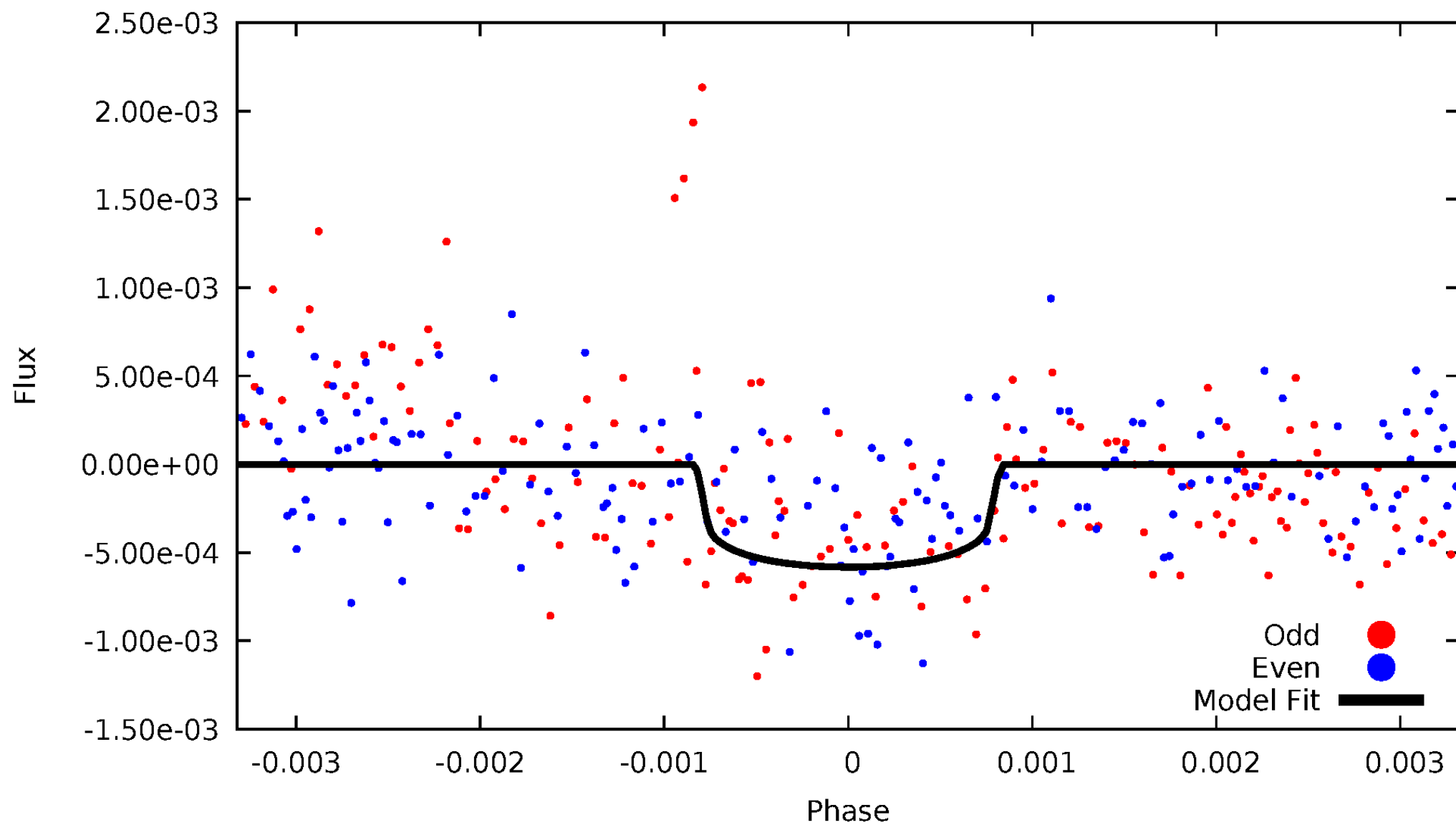


TCE 010661771-02



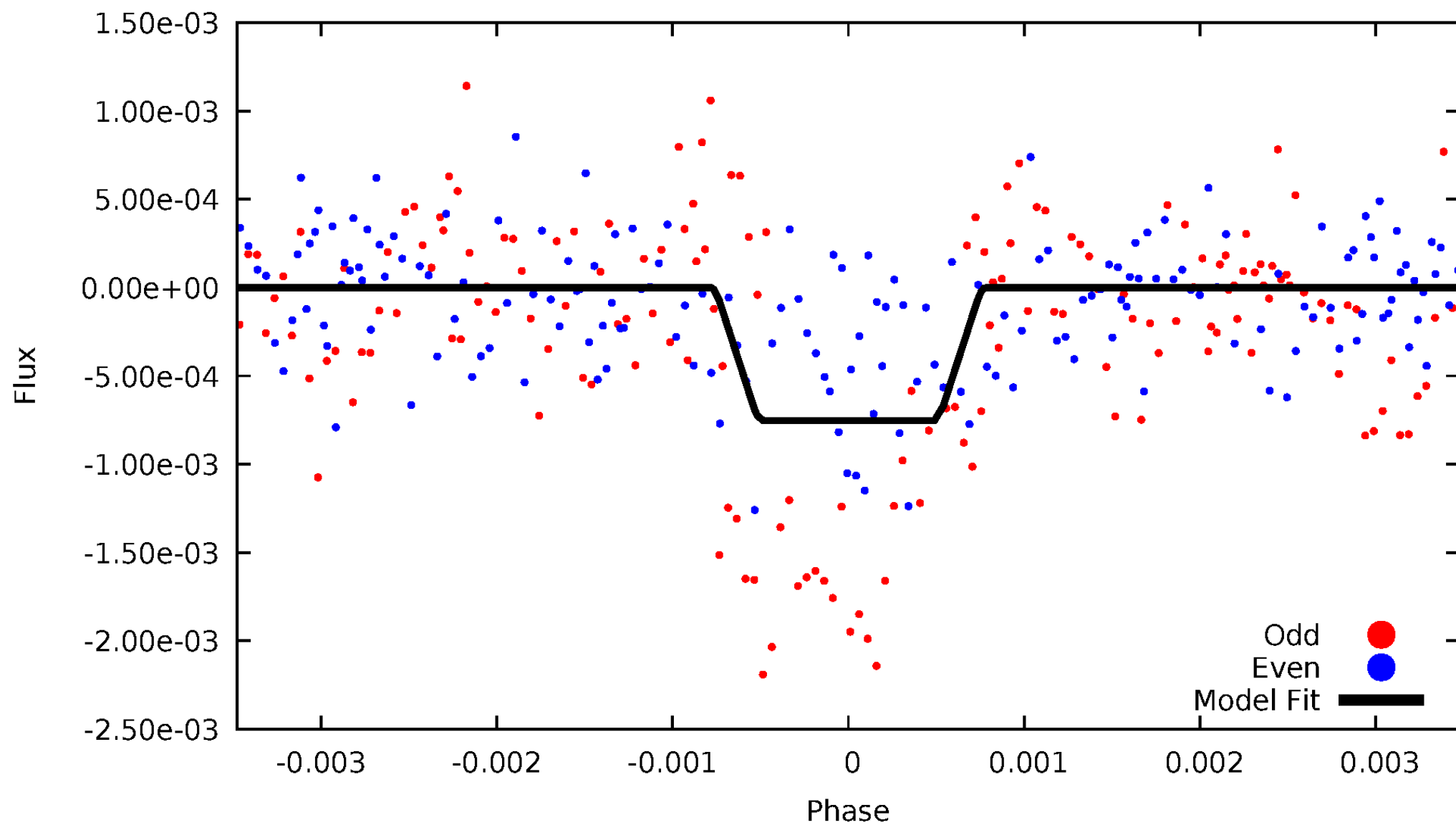
DV Odd/Even

TCE 010661771-02



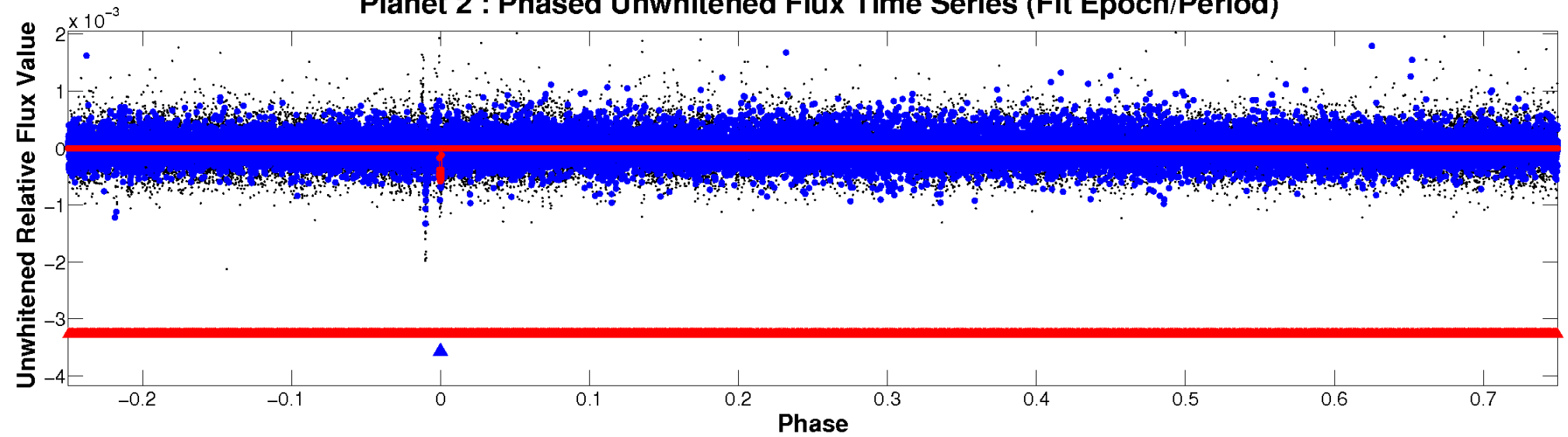
ALT Odd/Even

TCE 010661771-02

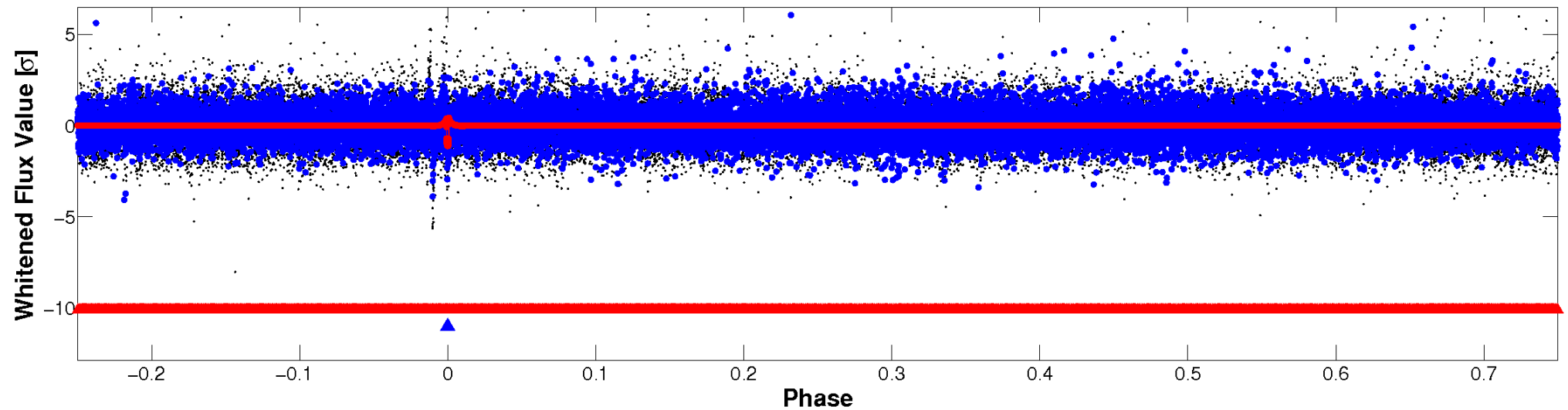


Non-Whitened Vs. Whitened Light Curve

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

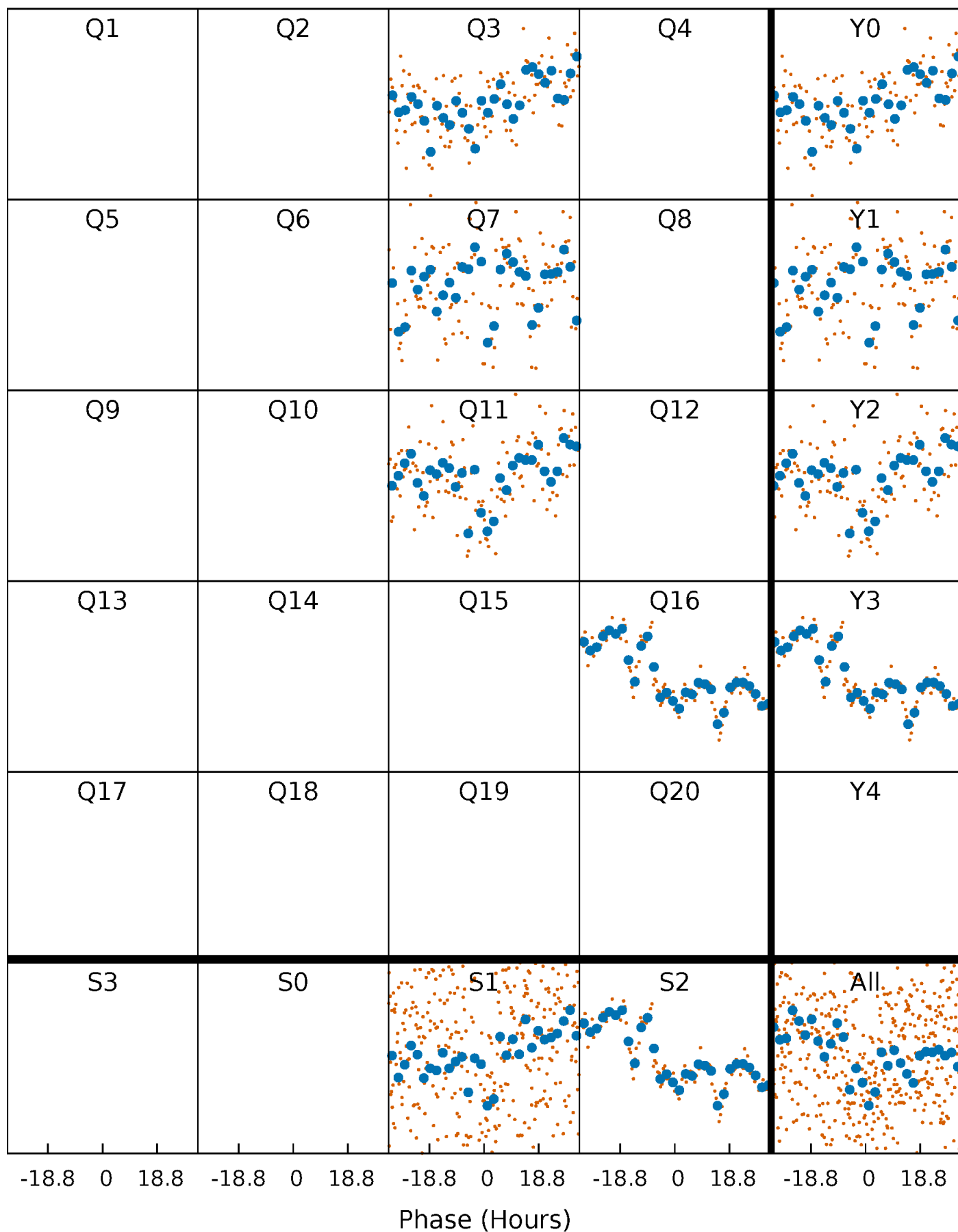


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



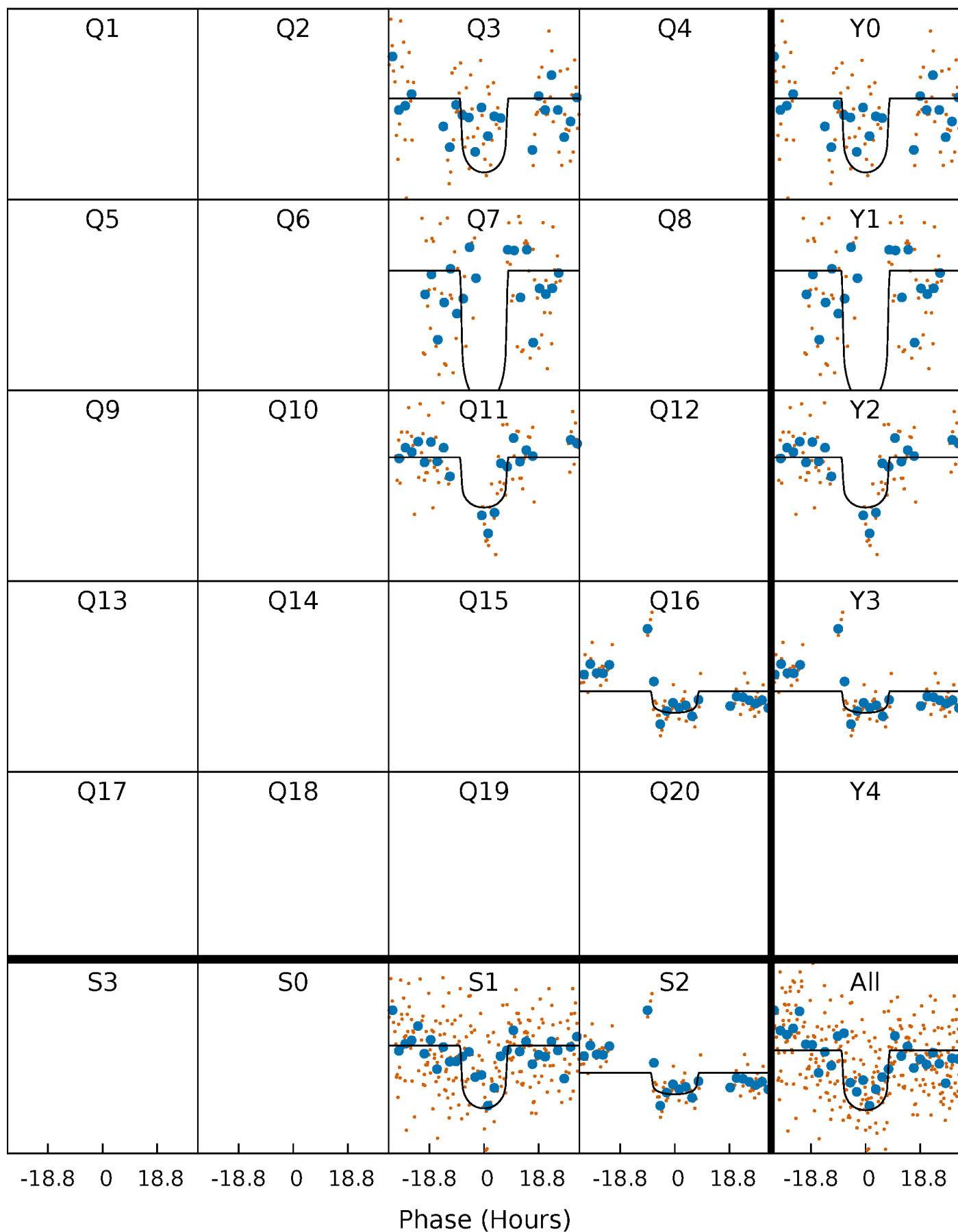
PDC Quarter-Phased Transit Curves

TCE 010661771-02 P=411.617174 Days $T_0=270.511182$ (BKJD)



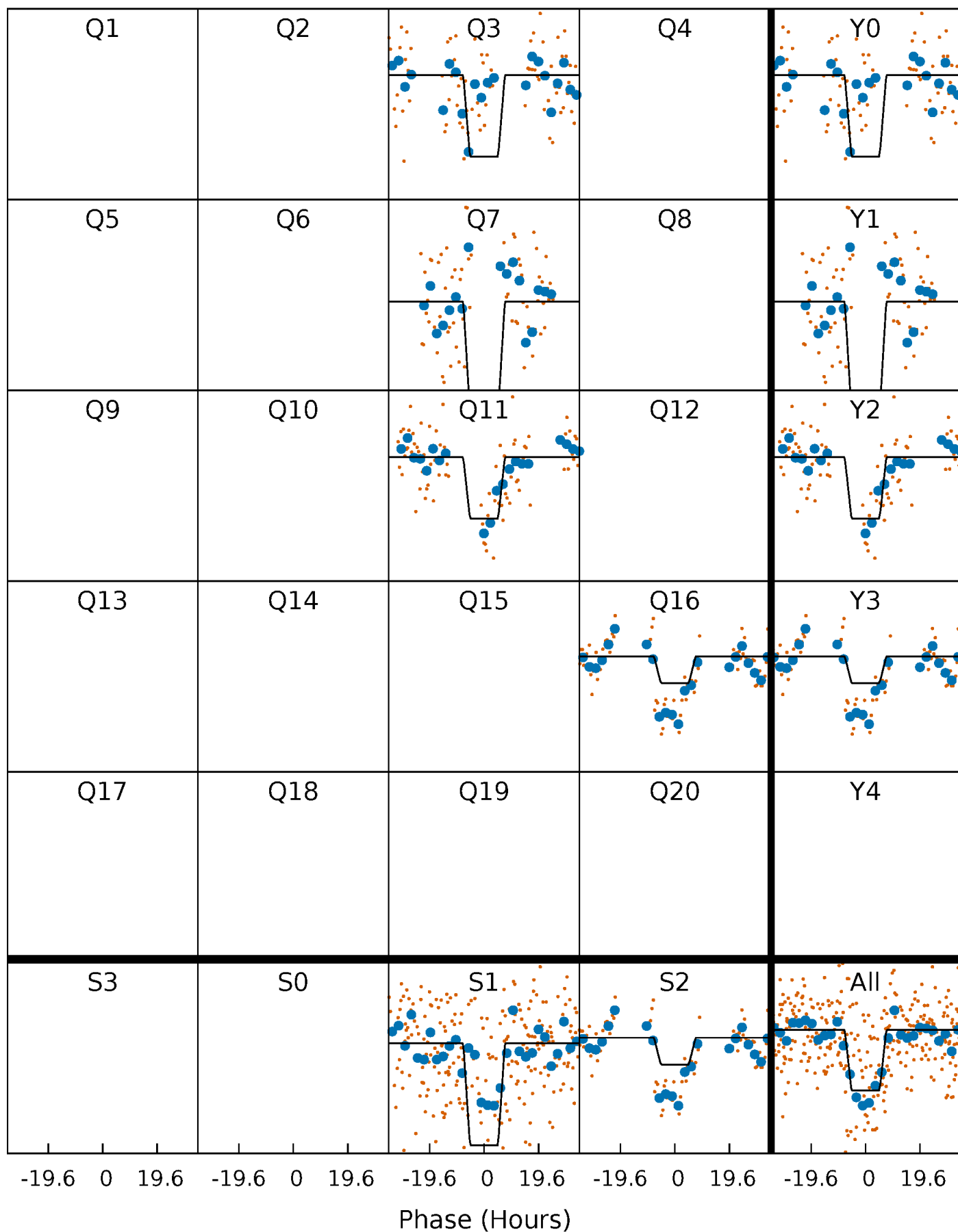
DV Quarter-Phased Transit Curves

TCE 010661771-02 $P=411.617174$ Days $T_0=270.511182$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

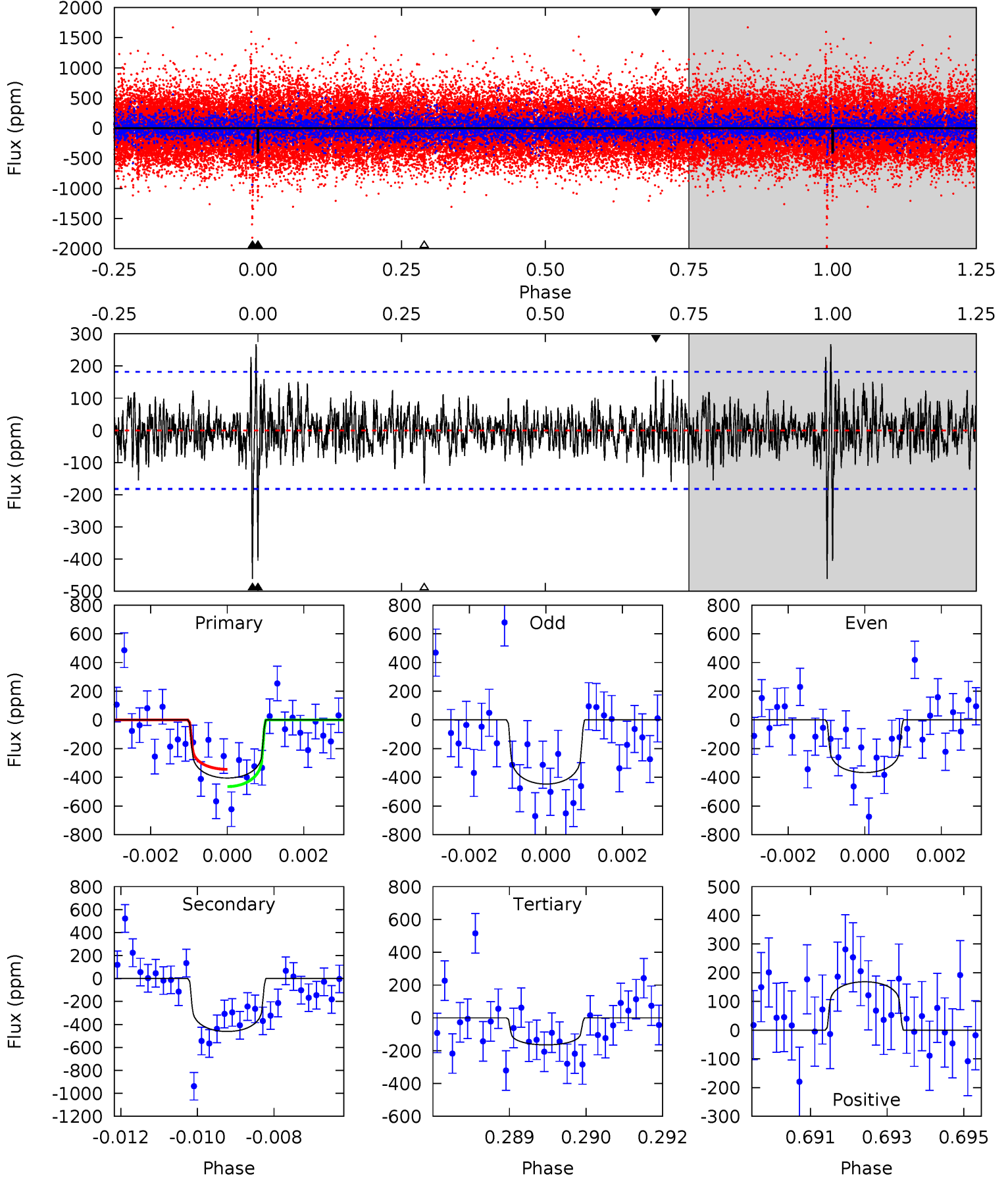
TCE 010661771-02 P=411.586388 Days $T_0=270.598891$ (BKJD)



DV Model-Shift Uniqueness Test

010661771-02, P = 411.617174 Days, E = 270.511182 Days

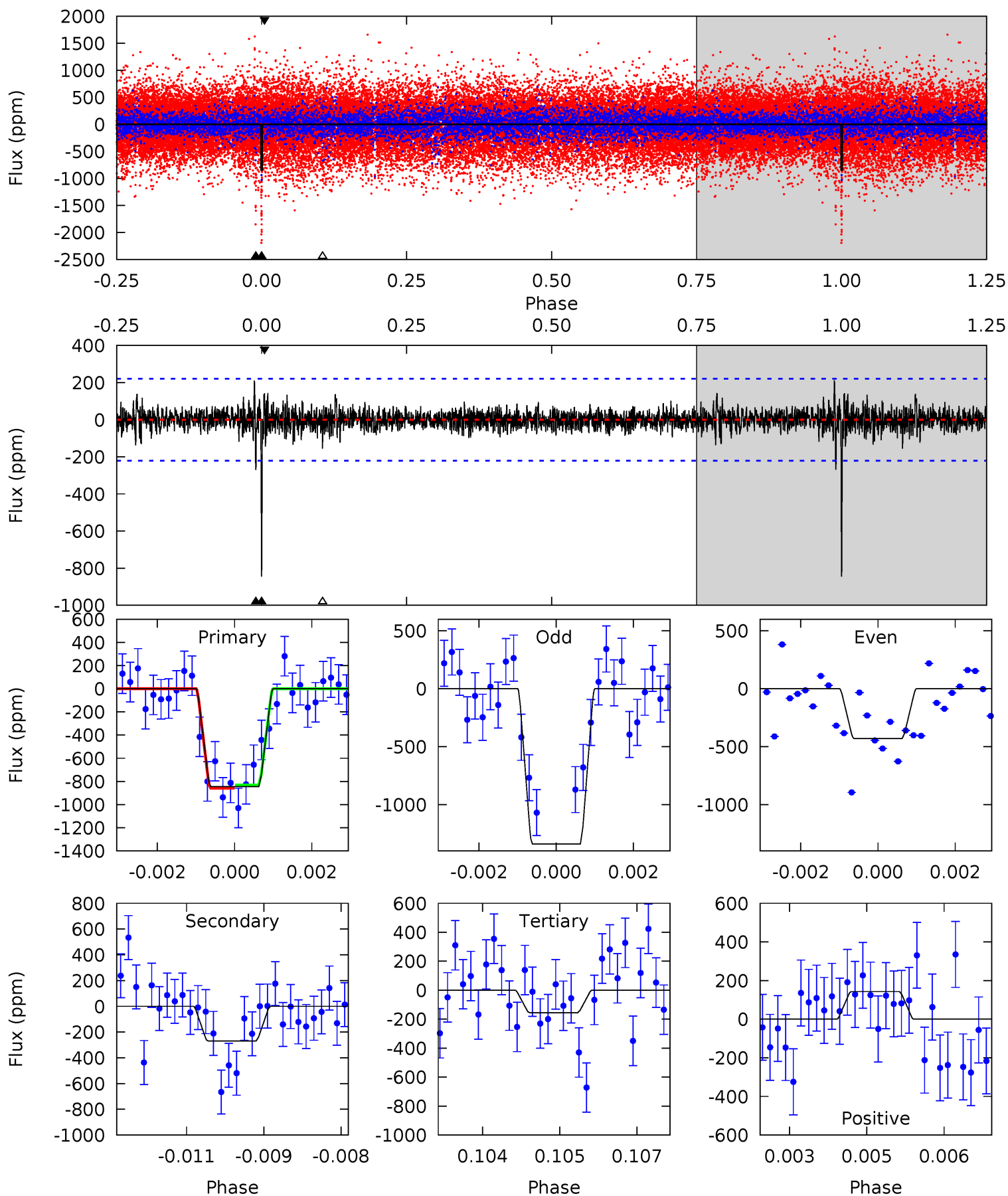
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	13.6	4.84	4.96	5.36	3.14	1.45	7.08	6.96	8.74	8.62	1.18	0.91	0.37	1.77



Alt Model-Shift Uniqueness Test

010661771-02, P = 411.586388 Days, E = 270.598891 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	6.55	3.77	3.48	5.37	3.16	0.92	16.8	17.1	2.78	3.08	11.1	1.15	0.20	0.35



Stellar Parameters For KIC 010661771

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5897^{+177}_{-159}	$4.429^{+0.140}_{-0.171}$	$-0.700^{+0.300}_{-0.300}$	$0.891^{+0.221}_{-0.136}$	$0.778^{+0.098}_{-0.049}$	$1.549^{+0.987}_{-0.705}$
	+3%/-3%	+3%/-4%	+43%/-43%	+25%/-15%	+13%/-6%	+64%/-46%
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 010661771-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-462 ± 34	$2.29^{+0.75}_{-0.67}$	346^{+22}_{-18}	5667^{+1020}_{-615}	47618^{+48955}_{-19794}
Alt.	-269 ± 41	$2.70^{+0.66}_{-0.66}$	344^{+23}_{-19}	4700^{+556}_{-395}	20572^{+14704}_{-7987}

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

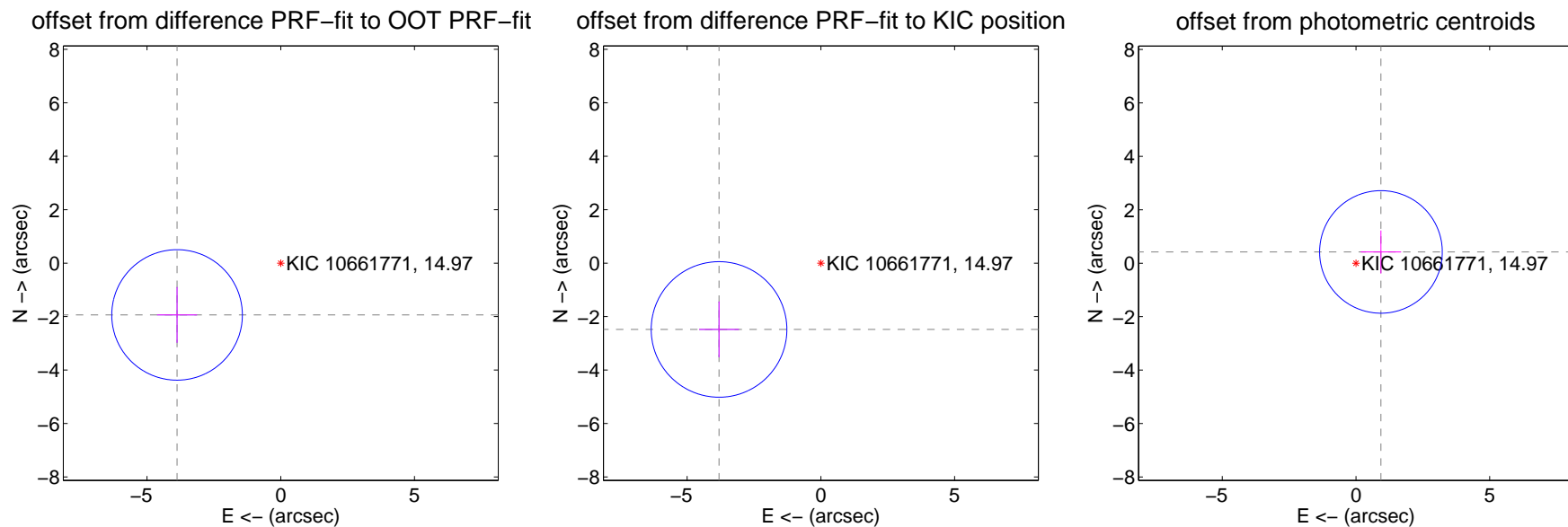
DV Centroid Data

Supplemental centroid analysis for 010661771-02. Kepler magnitude: 14.97. Transit SNR 9.55

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.55 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.334 ± 0.814	5.32	3.876 ± 0.746	-1.937 ± 1.043
PRF-fit source offset from KIC position	4.544 ± 0.845	5.38	3.807 ± 0.746	-2.481 ± 1.043
photometric centroid source offset	1.03 ± 0.76	1.34	-0.93 ± 0.76	0.42 ± 0.80

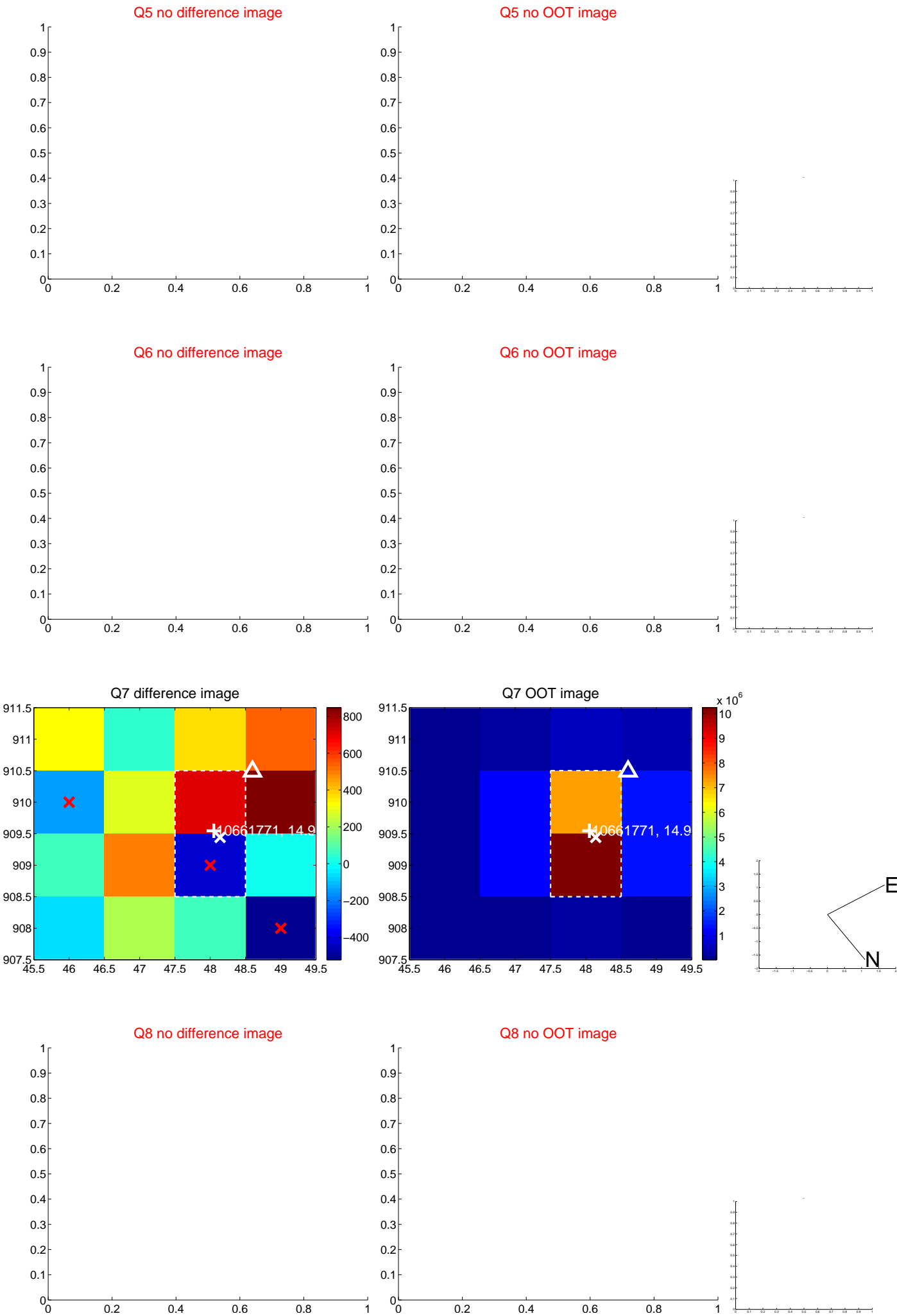


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



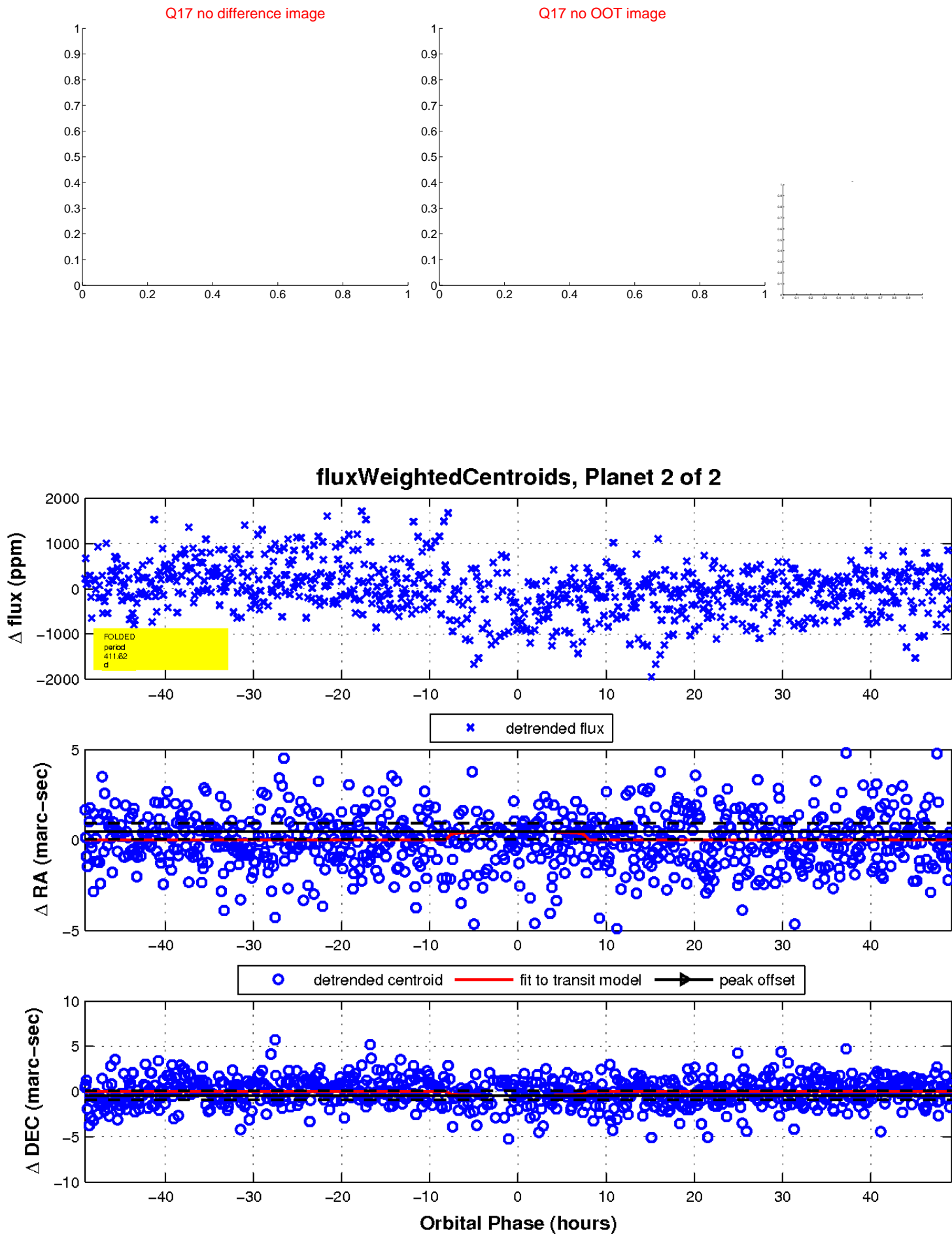
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

