

KIC 006939772

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})
006939772-01	OBS	No	591.439961	273.040222	4919.7	13.044	35.2	3.1	1.73	6770	14.41	2.29
006939772-02	OBS	No	627.732586	238.787184	355.1	3.500	21.3	-1.0	1.73	6770	3.28	2.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006939772-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006939772-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

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

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

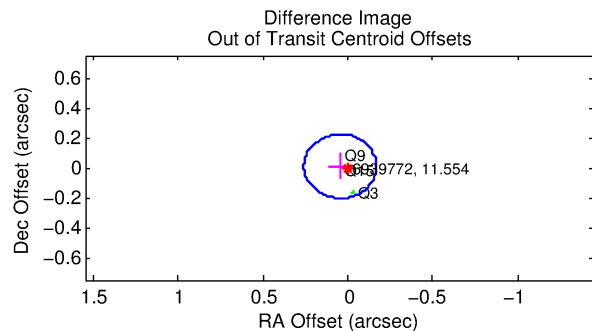
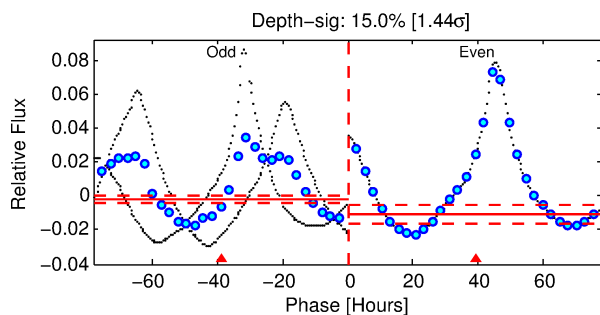
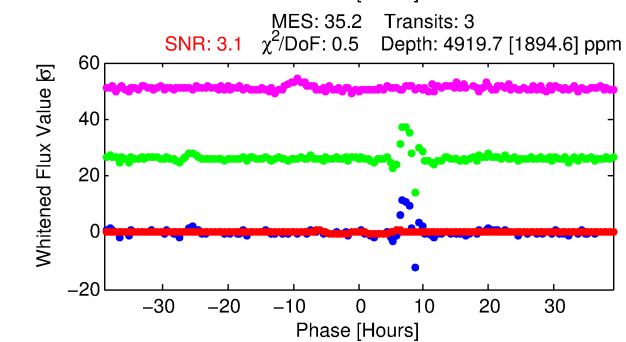
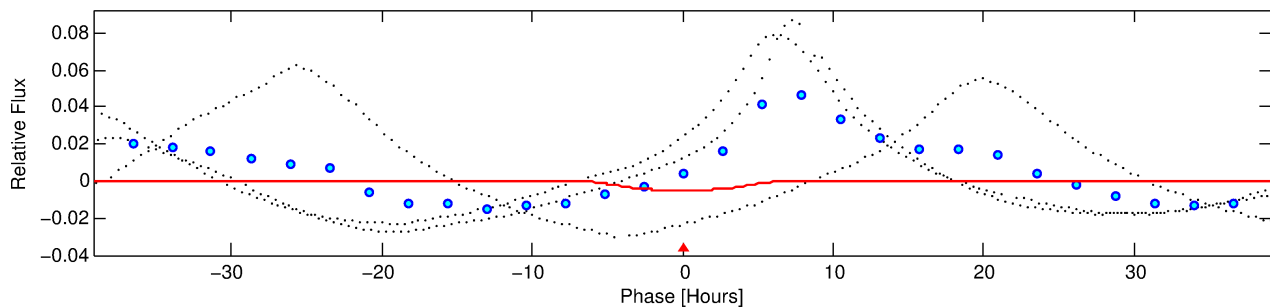
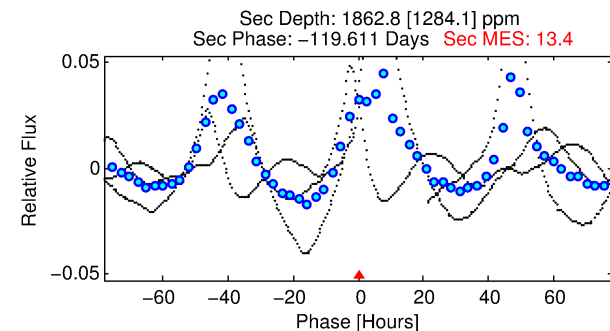
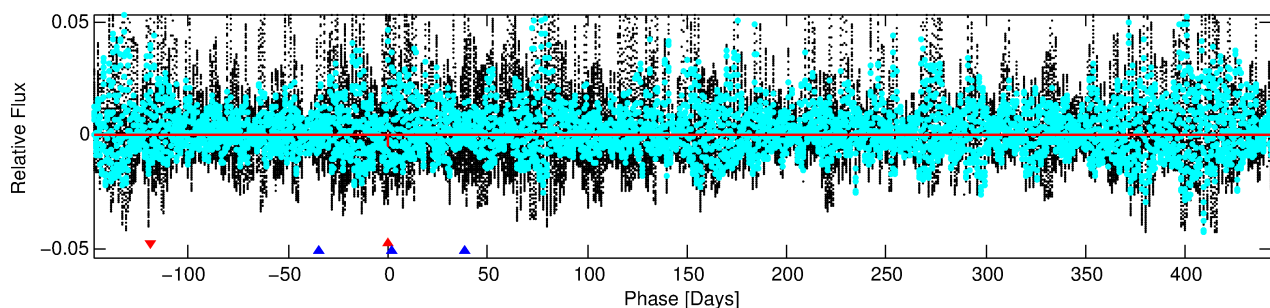
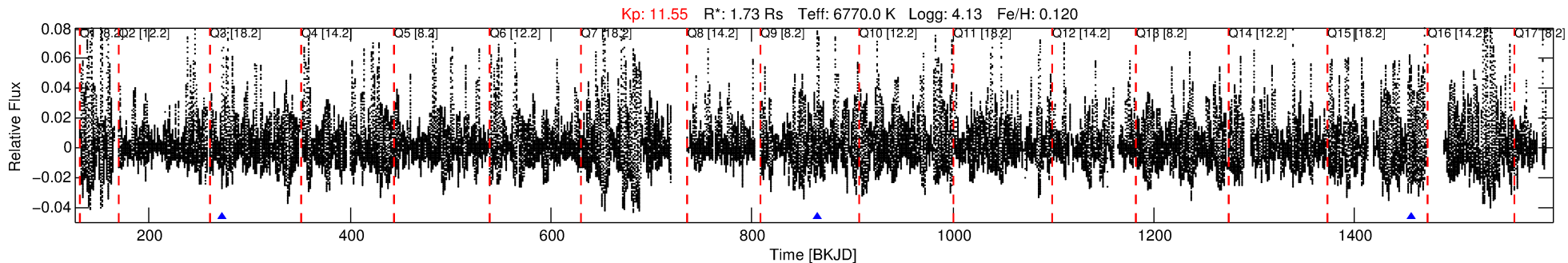
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006939772-01

No Significant Match Found

DV One-Page Summary

KIC: 6939772 Candidate: 1 of 2 Period: 591.440 d



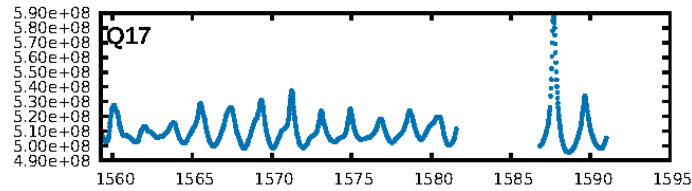
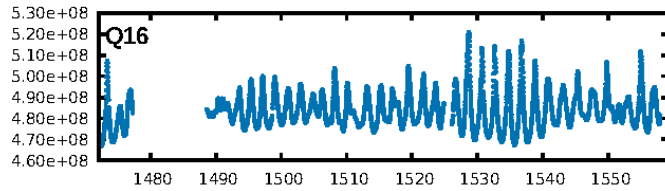
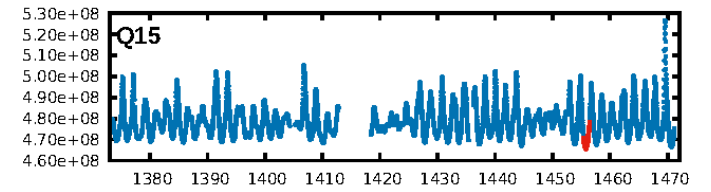
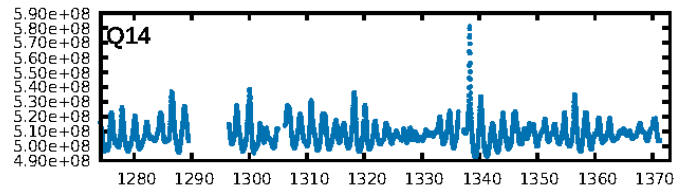
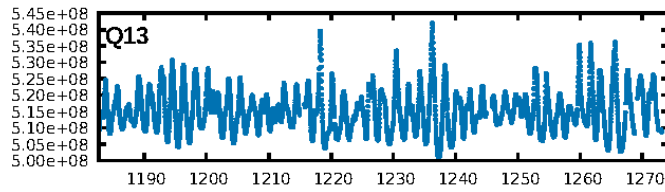
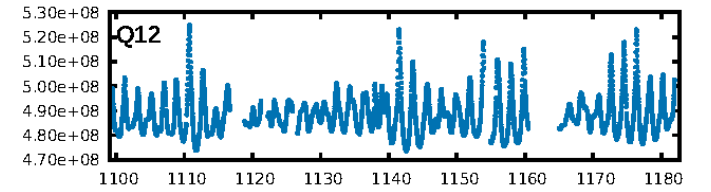
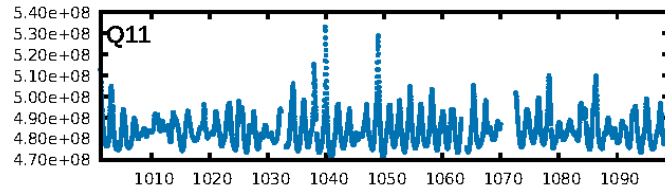
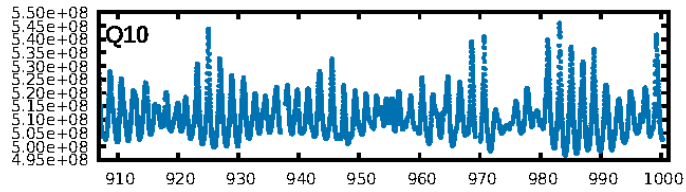
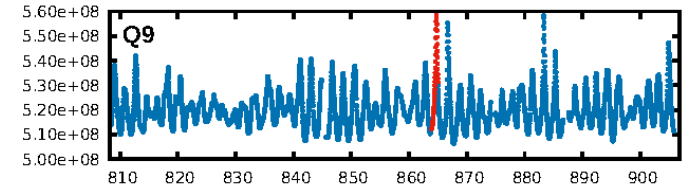
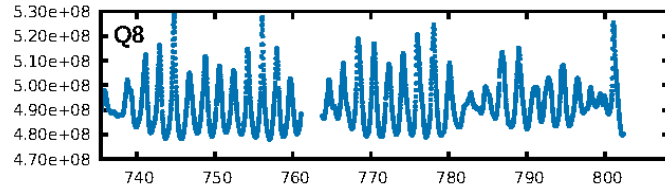
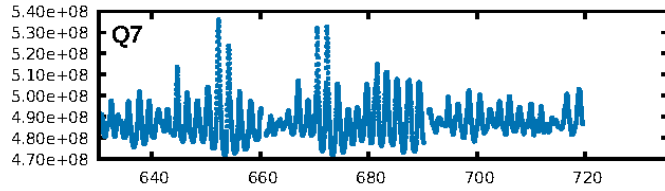
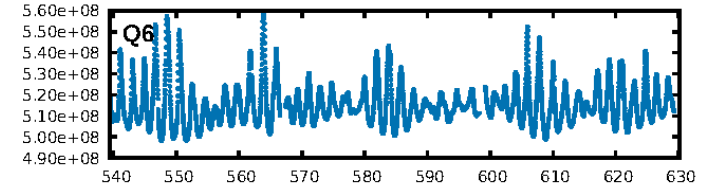
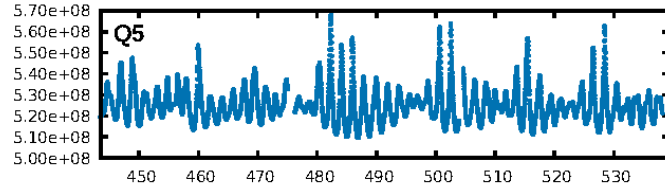
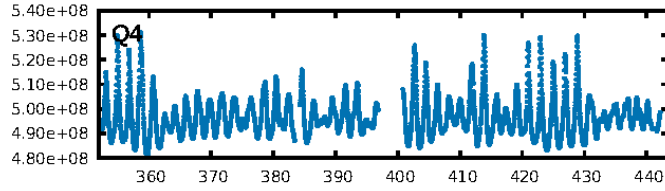
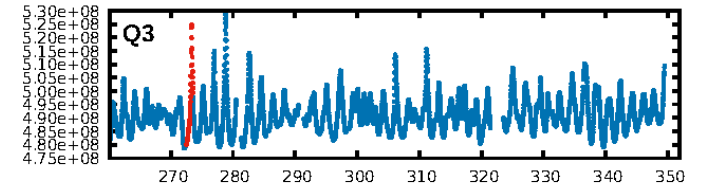
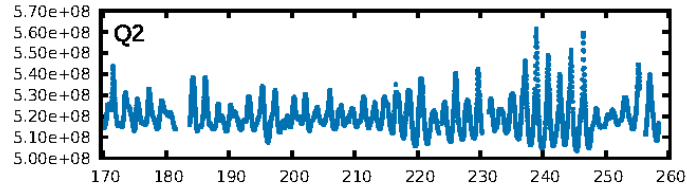
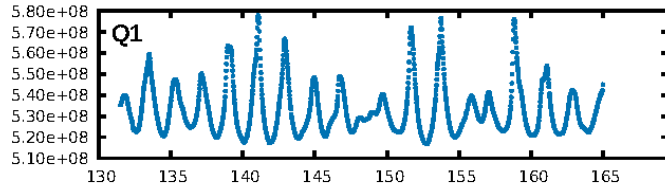
DV Fit Results:

Period = 591.43996 [0.01144] d
Epoch = 273.0402 [0.0107] BKJD
Rp/R* = 0.0765 [0.0149]
a/R* = 196.58 [15.74]
b = 0.91 [0.02]
Seff = 2.29 [0.89]
Teq = 314 [30] K
Rp = 14.42 [5.16] Re
a = 1.5655 [0.3860] AU
Ag = 12086.82 [10462.30] [1.16σ]
Teffp = 5084 [1028] K [4.64σ]

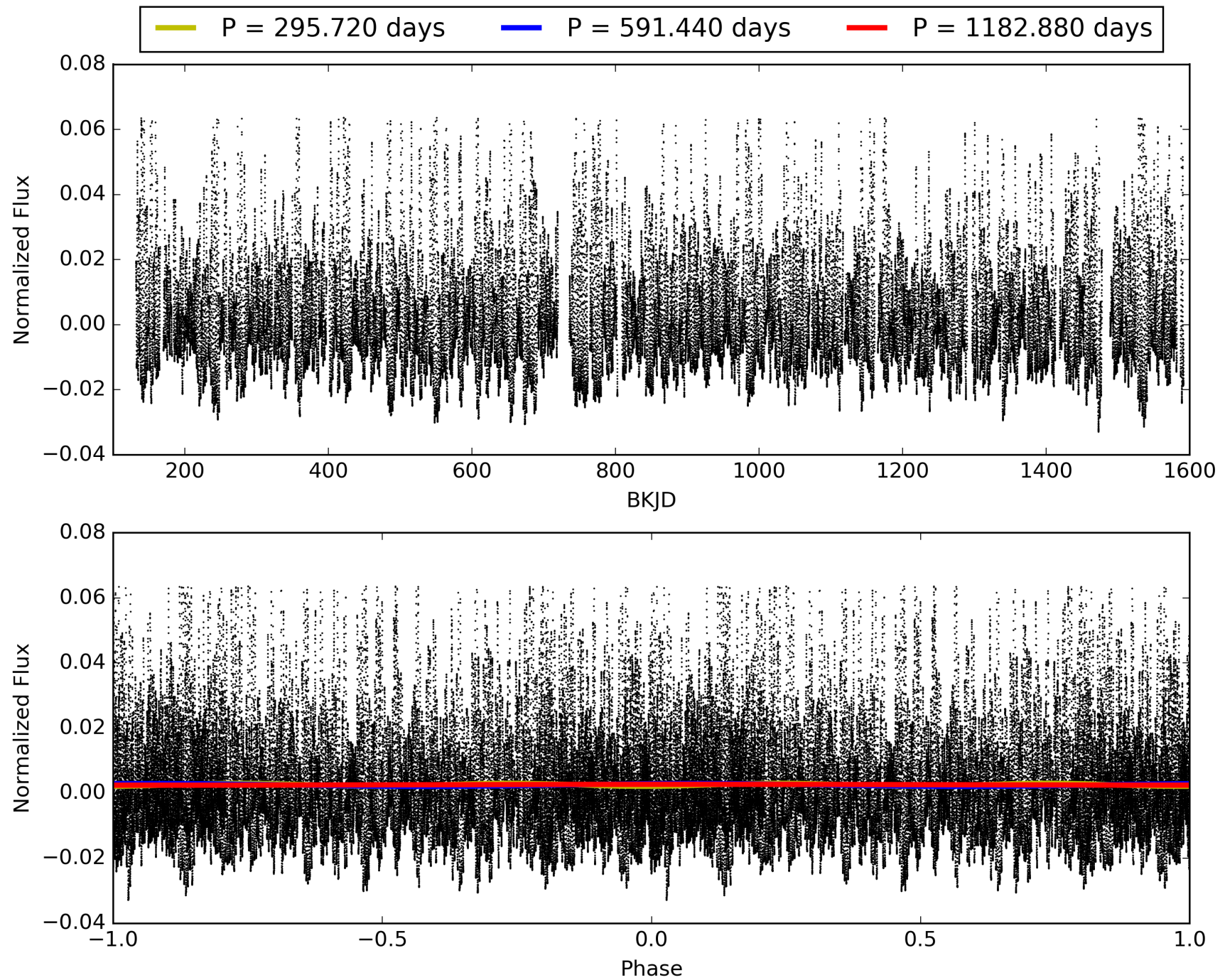
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [64.49σ]
ModelChiSquare2-sig: 31.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.6619
Centroid-sig: N/A
Centroid-so: 0.312 arcsec [1.67σ]
OotOffset-rm: 0.047 arcsec [0.67σ]
KicOffset-rm: 0.109 arcsec [1.41σ]
OotOffset-st: 0/2/0/1 [3]
KicOffset-st: 0/2/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 006939772-01, PDC Light Curves

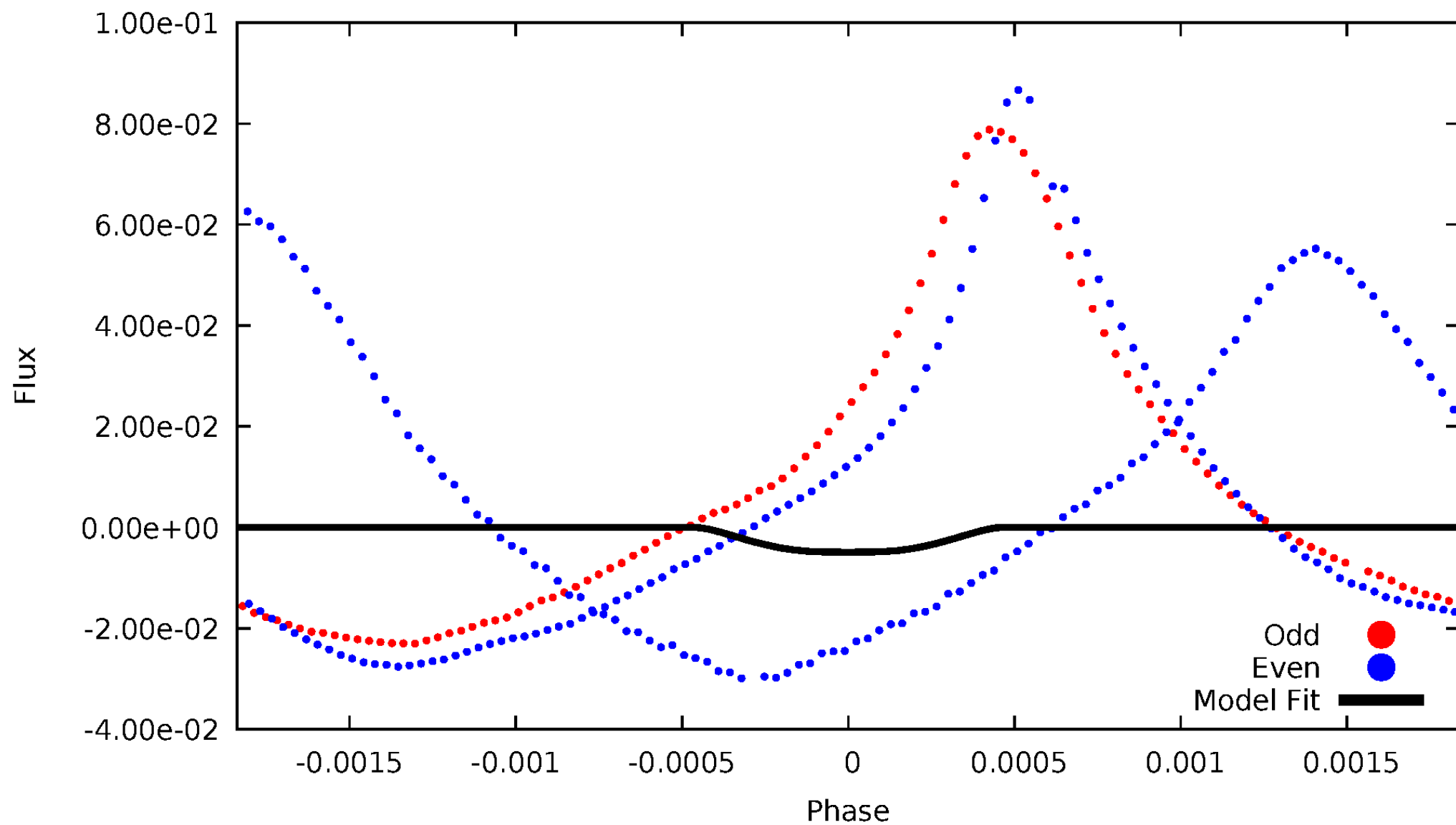


TCE 006939772-01



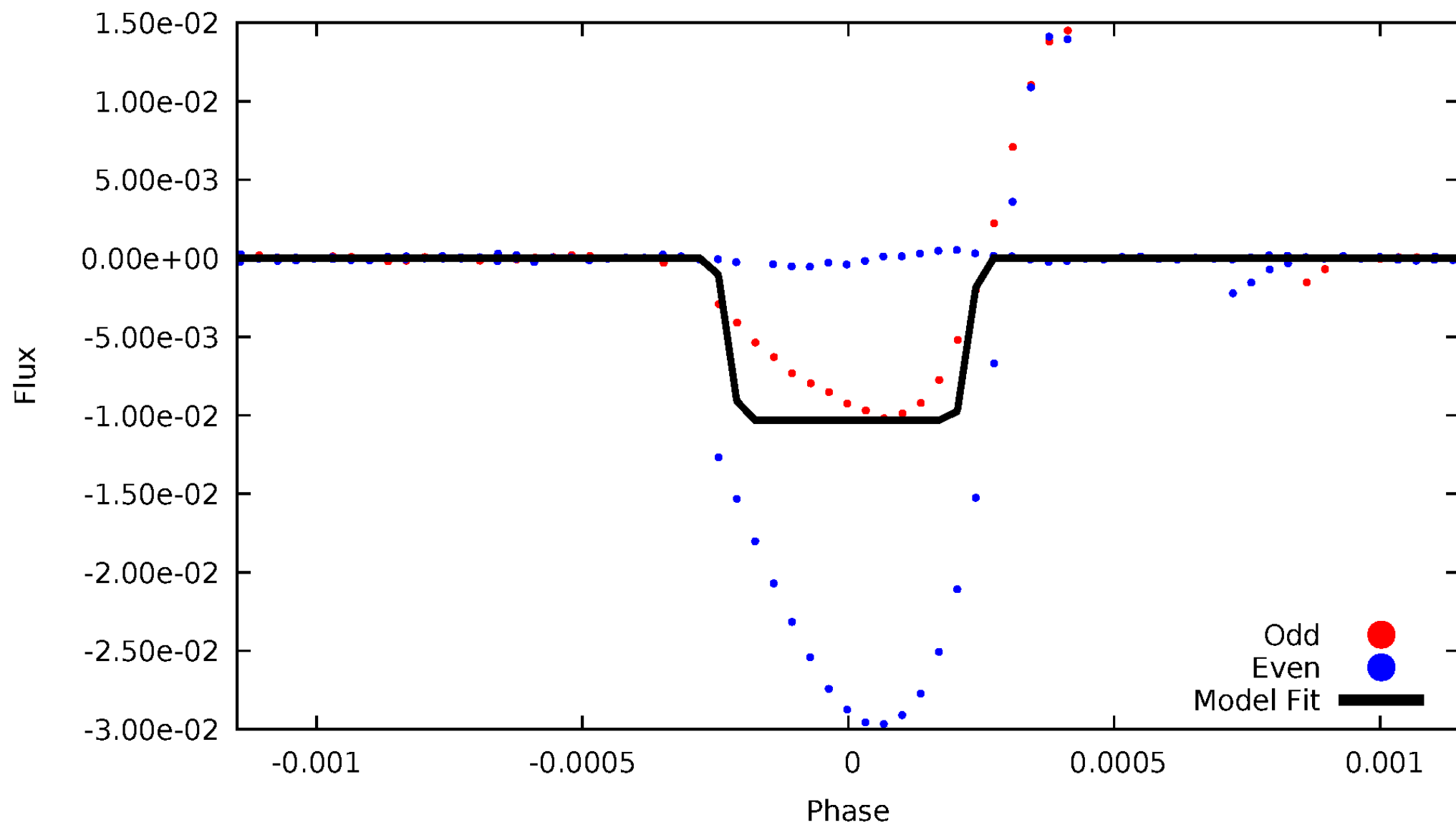
DV Odd/Even

TCE 006939772-01



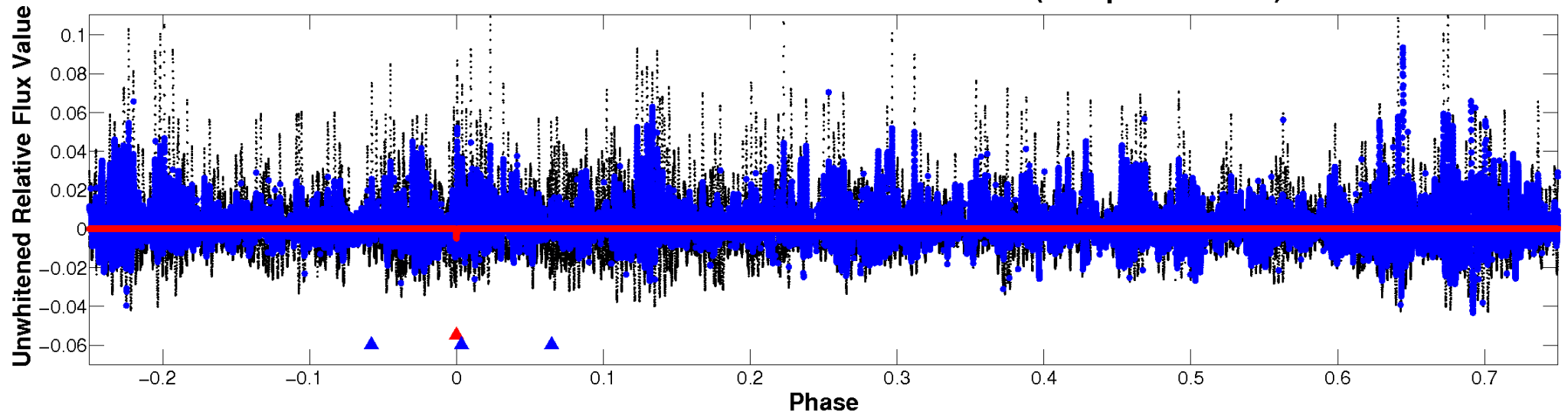
ALT Odd/Even

TCE 006939772-01

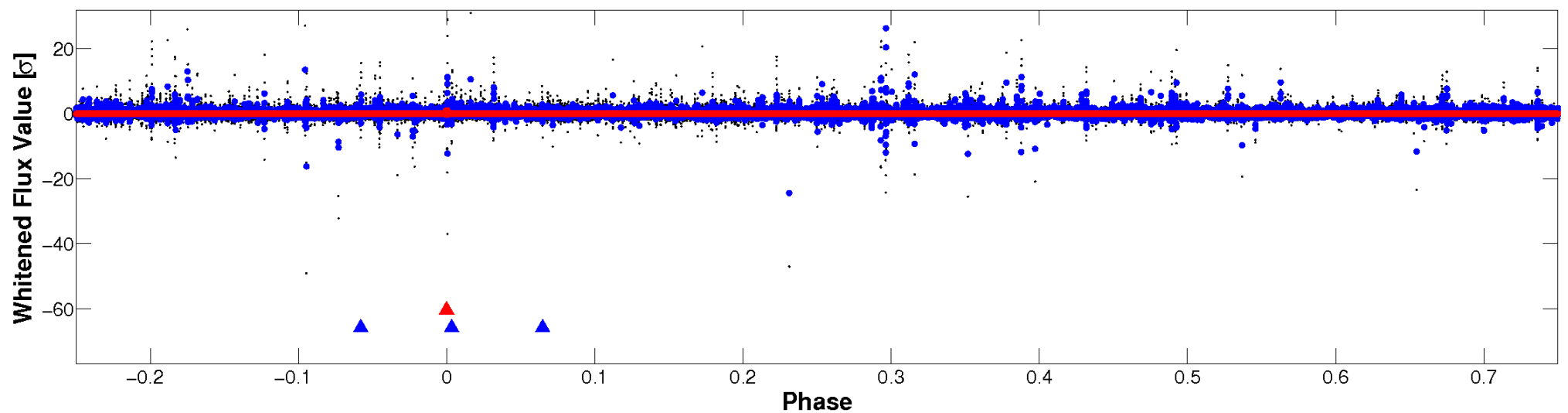


Non-Whitened Vs. Whitened Light Curve

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

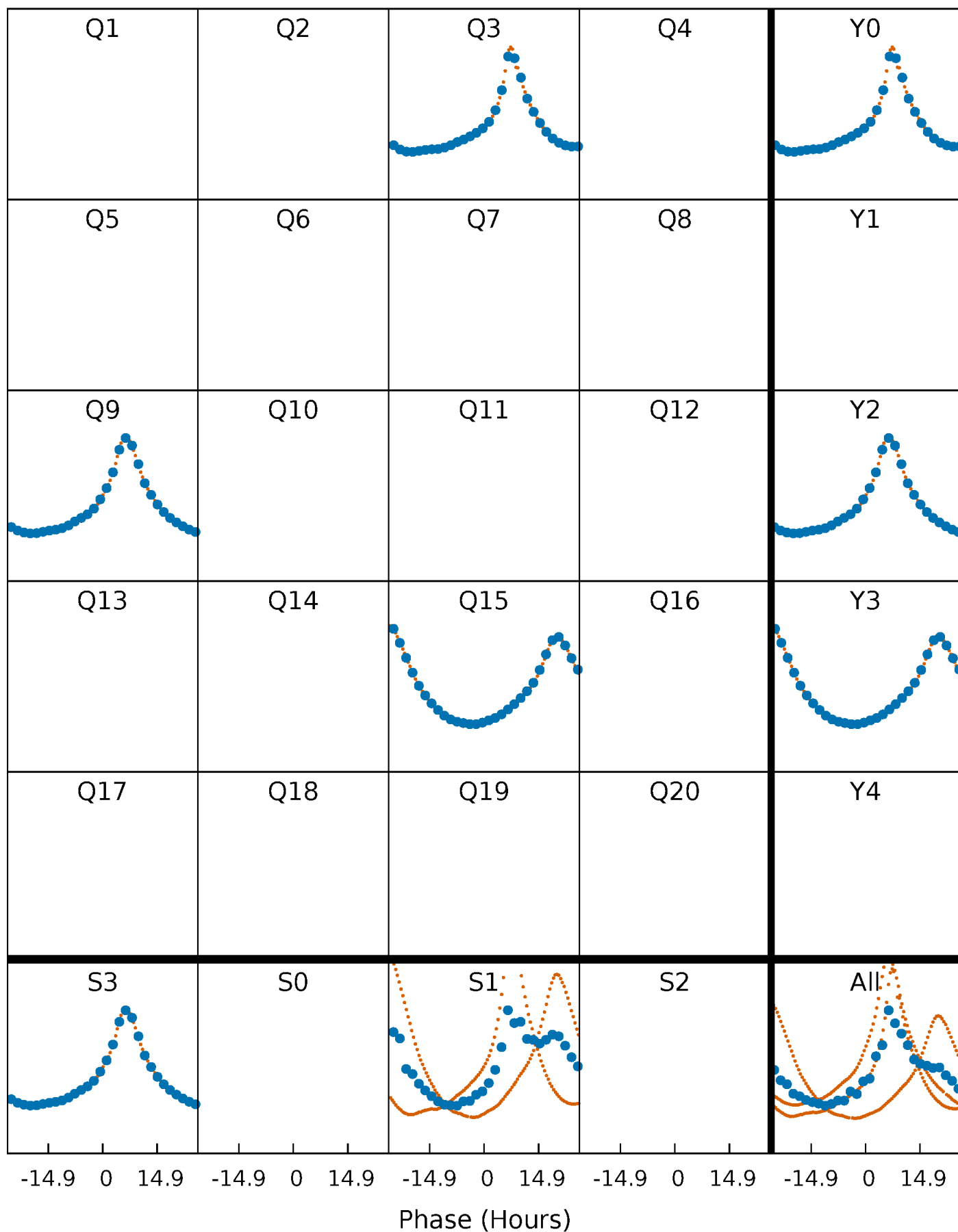


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



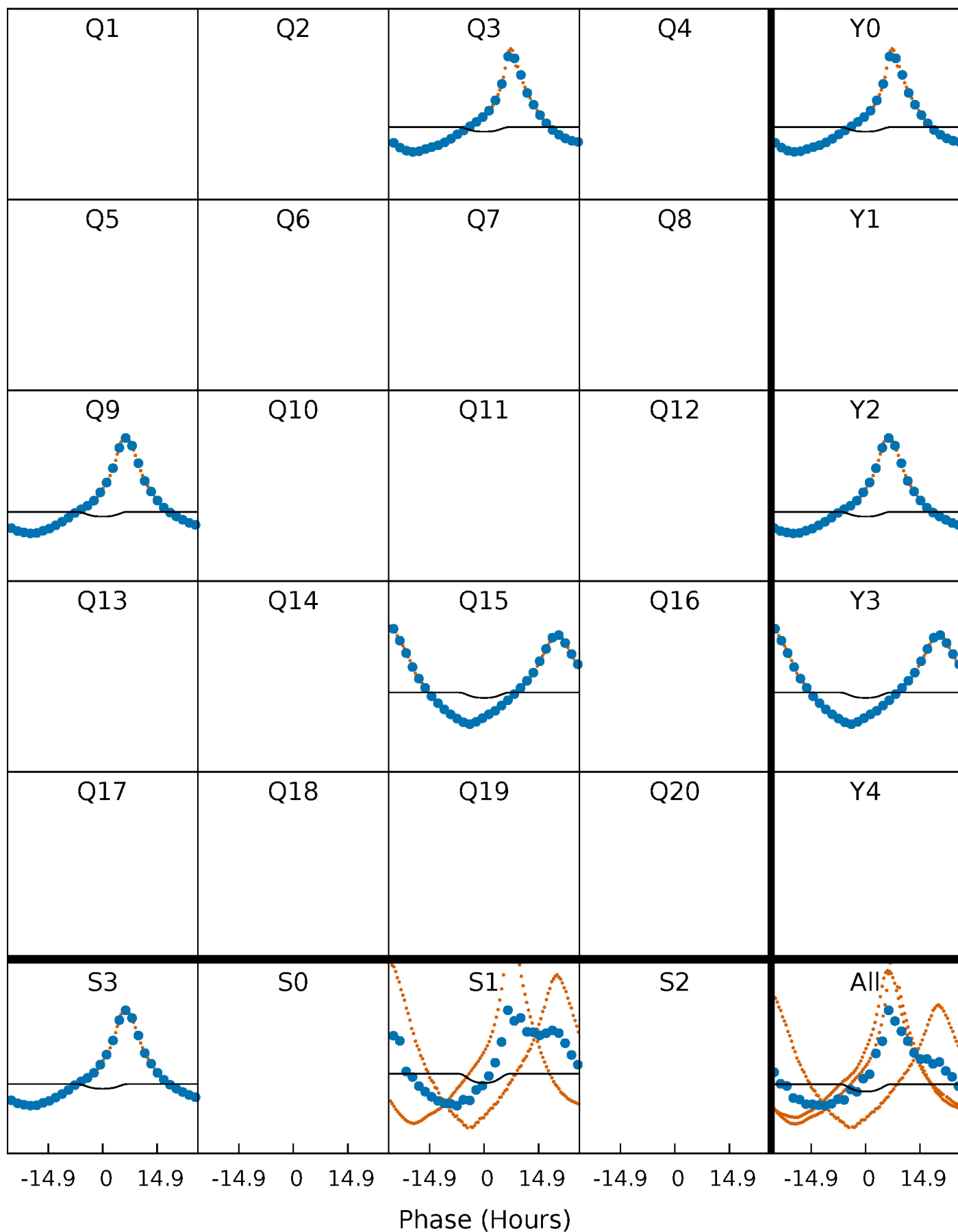
PDC Quarter-Phased Transit Curves

TCE 006939772-01 P=591.439961 Days $T_0=273.040222$ (BKJD)



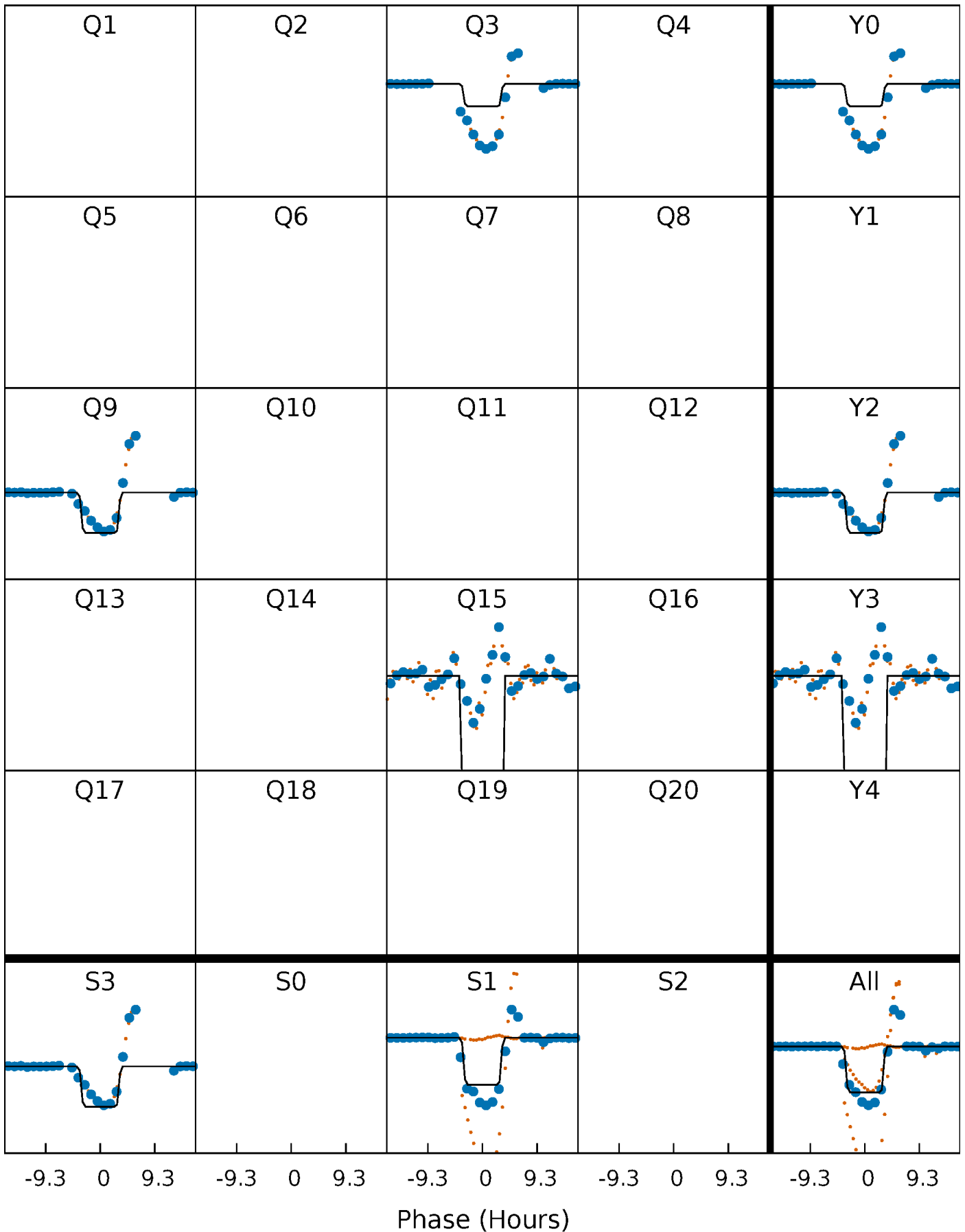
DV Quarter-Phased Transit Curves

TCE 006939772-01 P=591.439961 Days $T_0=273.040222$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

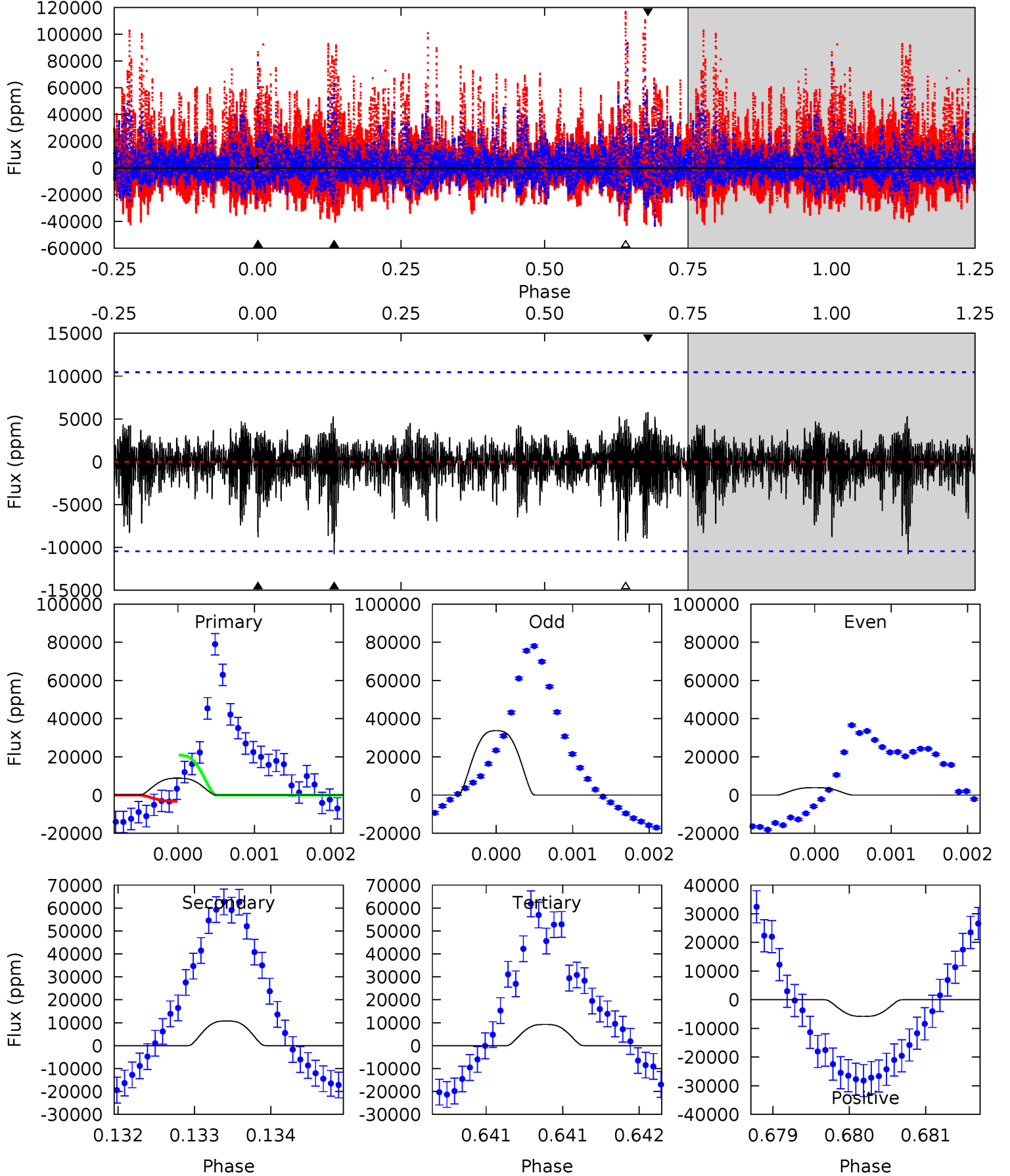
TCE 006939772-01 P=591.367660 Days $T_0=273.119228$ (BKJD)



DV Model-Shift Uniqueness Test

006939772-01, P = 591.439961 Days, E = 273.040222 Days

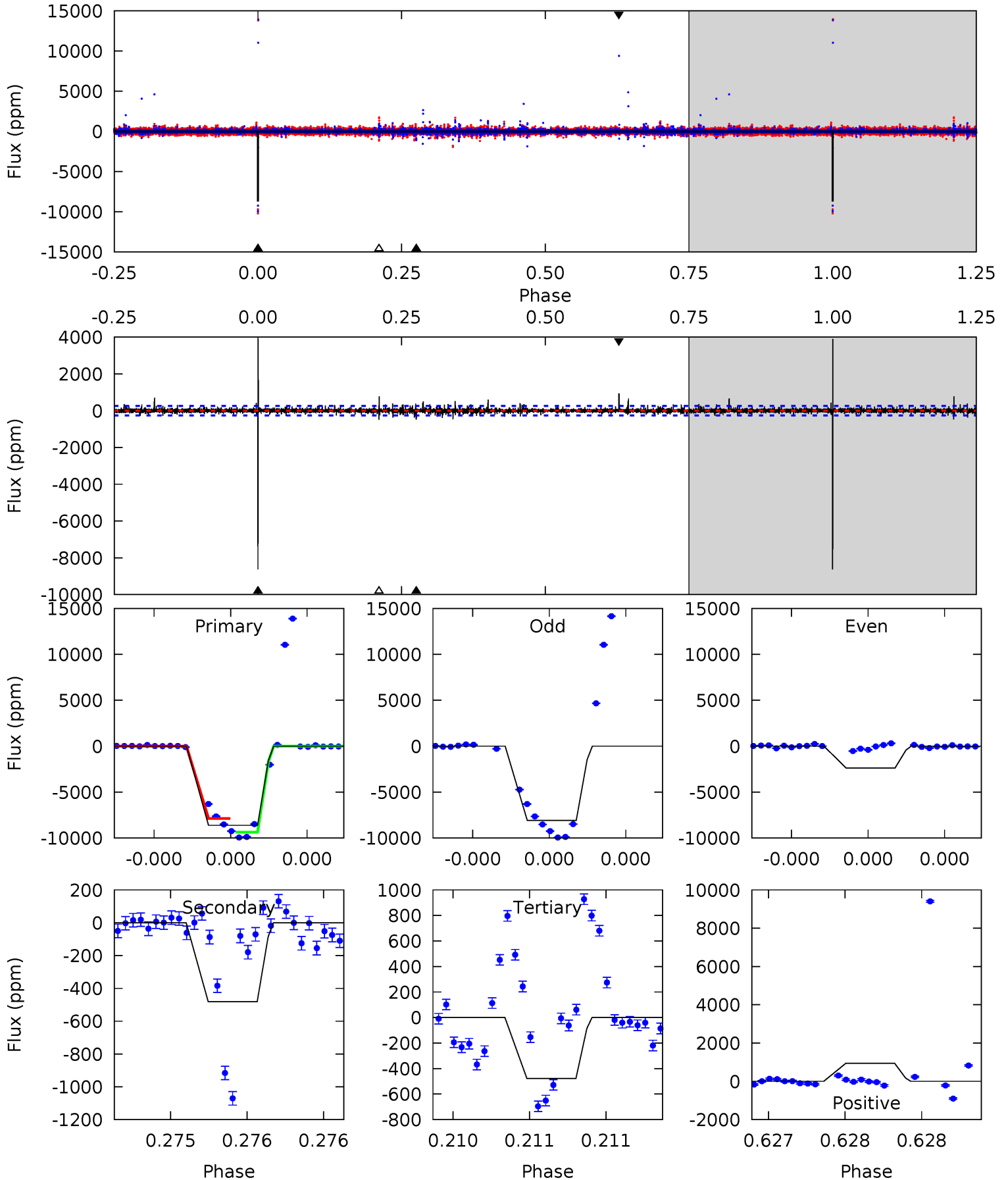
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.60	5.63	4.83	3.04	5.46	3.31	1.10	-0.23	1.56	0.79	2.59	7.51	0.45	0.35	4.65



Alt Model-Shift Uniqueness Test

006939772-01, P = 591.367660 Days, E = 273.119228 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
186.1	10.4	10.3	20.3	5.58	3.49	1.33	175.8	165.9	0.07	-9.87	47.0	1.40	0.31	16.2



Stellar Parameters For KIC 006939772

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+189}_{-283}	$4.129^{+0.153}_{-0.187}$	$0.120^{+0.200}_{-0.350}$	$1.726^{+0.519}_{-0.377}$	$1.460^{+0.196}_{-0.239}$	$0.400^{+0.334}_{-0.211}$
	+3%/-4%	+4%/-5%	+167%/-292%	+30%/-22%	+13%/-16%	+83%/-53%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006939772-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10758 ± 1912	$14.33^{+3.72}_{-3.22}$	438^{+33}_{-28}	8061^{+1335}_{-923}	71121^{+45892}_{-28501}
Alt.	-481 ± 46	$19.20^{+4.18}_{-3.31}$	439^{+34}_{-31}	3575^{+212}_{-175}	1727^{+801}_{-525}

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 $A_{obs} \gg 1.0$

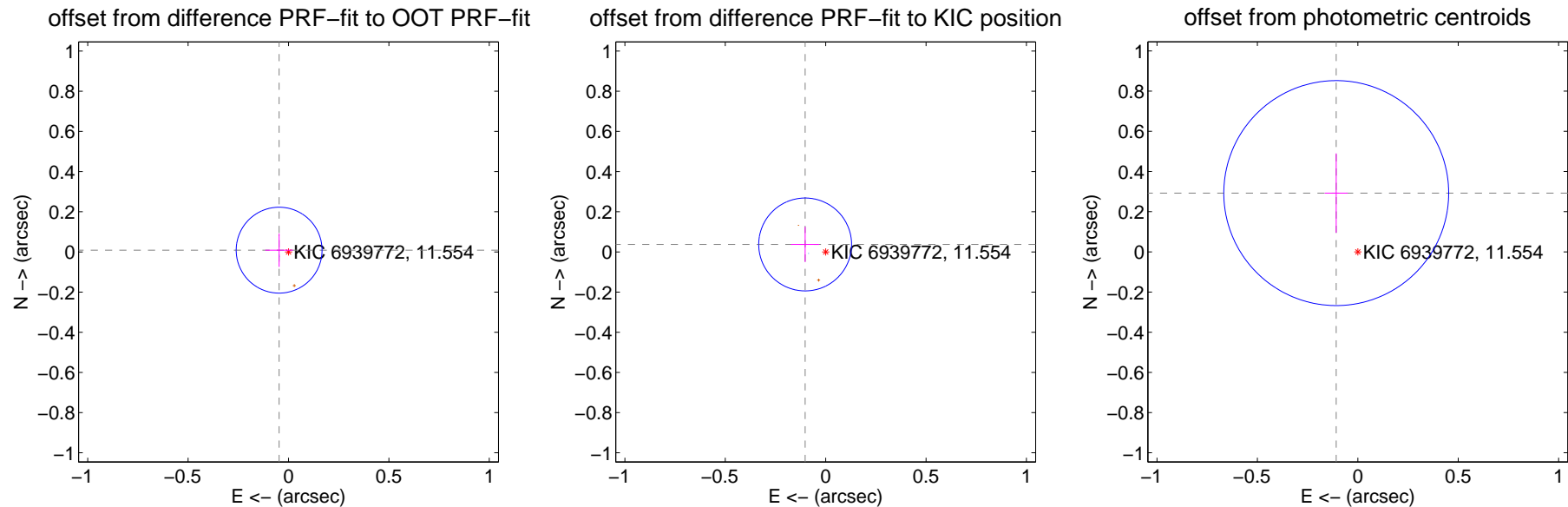
DV Centroid Data

Supplemental centroid analysis for 006939772-01. **Kepler magnitude: 11.55.** Transit SNR 3.14

There are 1 quarters with good PRF difference image offsets

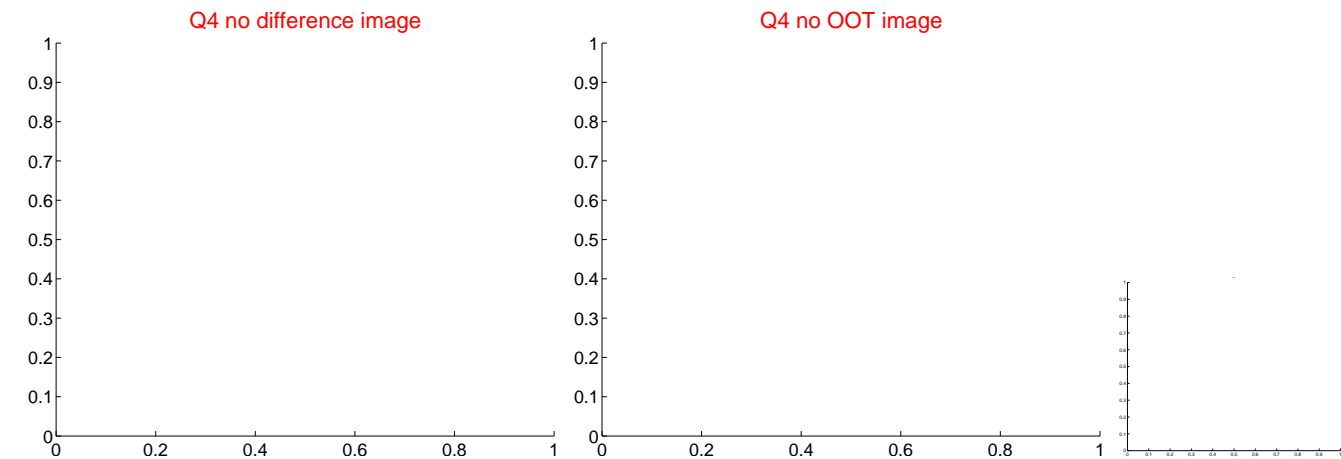
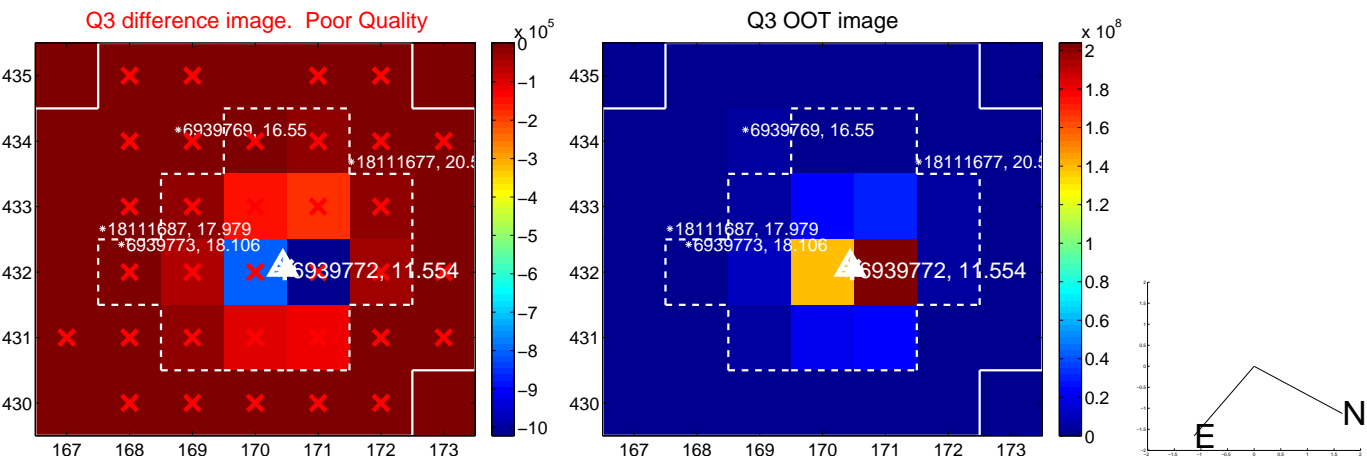
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.047 ± 0.071	0.67	0.047 ± 0.069	0.009 ± 0.083
PRF-fit source offset from KIC position	0.109 ± 0.077	1.41	0.102 ± 0.070	0.037 ± 0.087
photometric centroid source offset	0.31 ± 0.19	1.67	0.11 ± 0.06	0.29 ± 0.20



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.

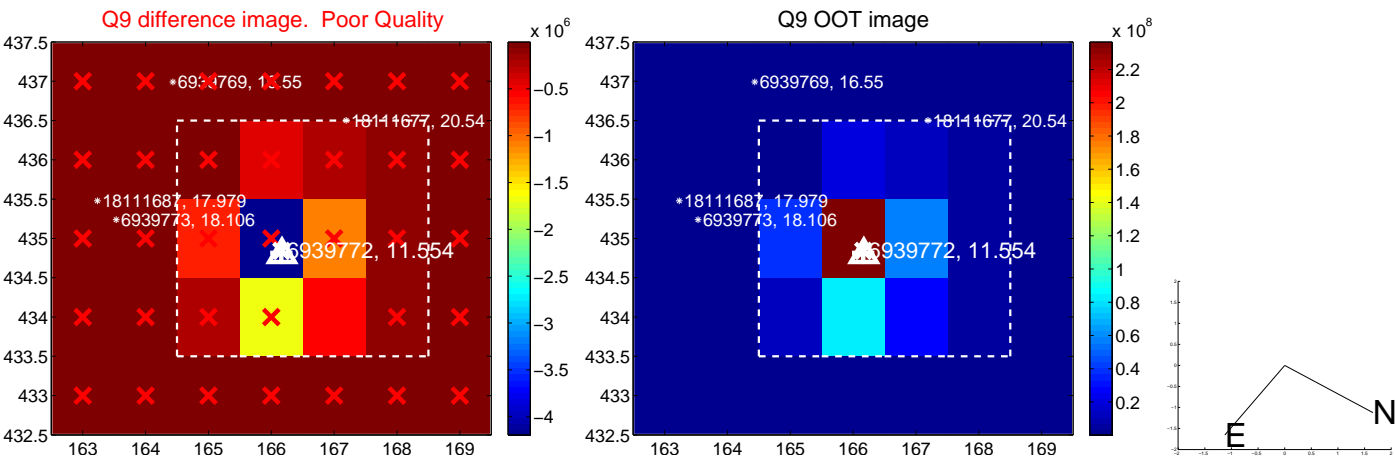
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



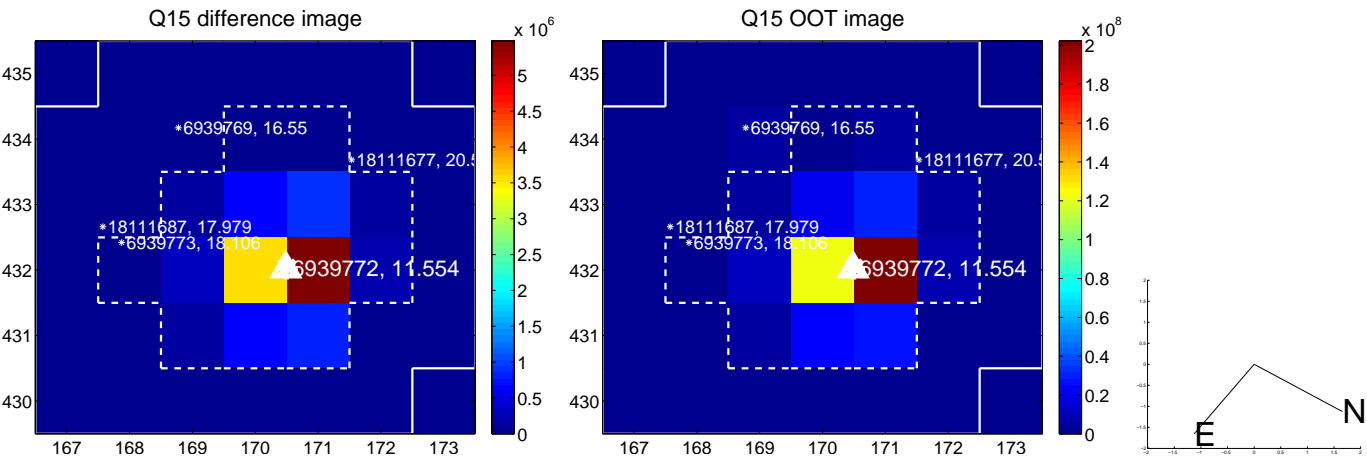
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



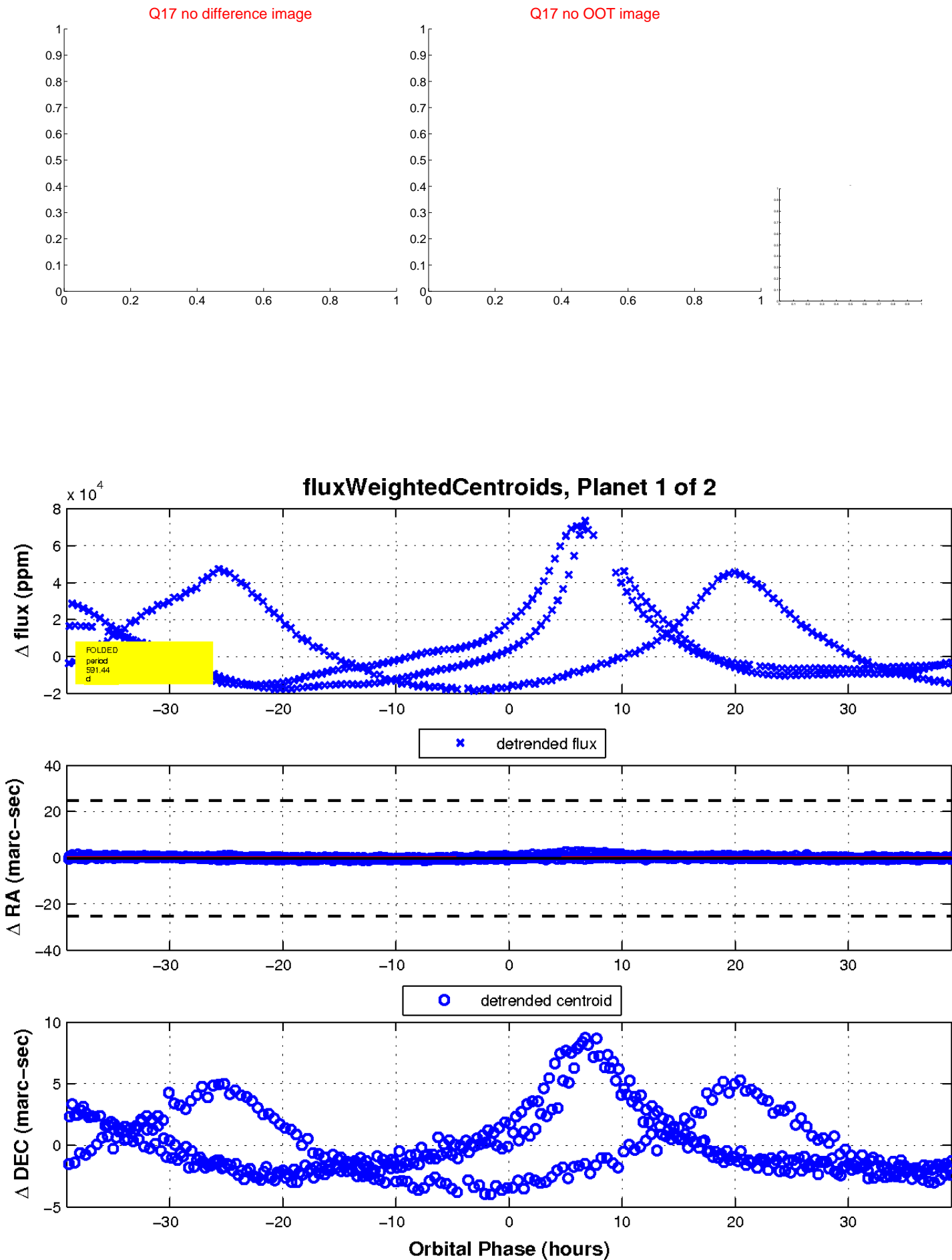
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

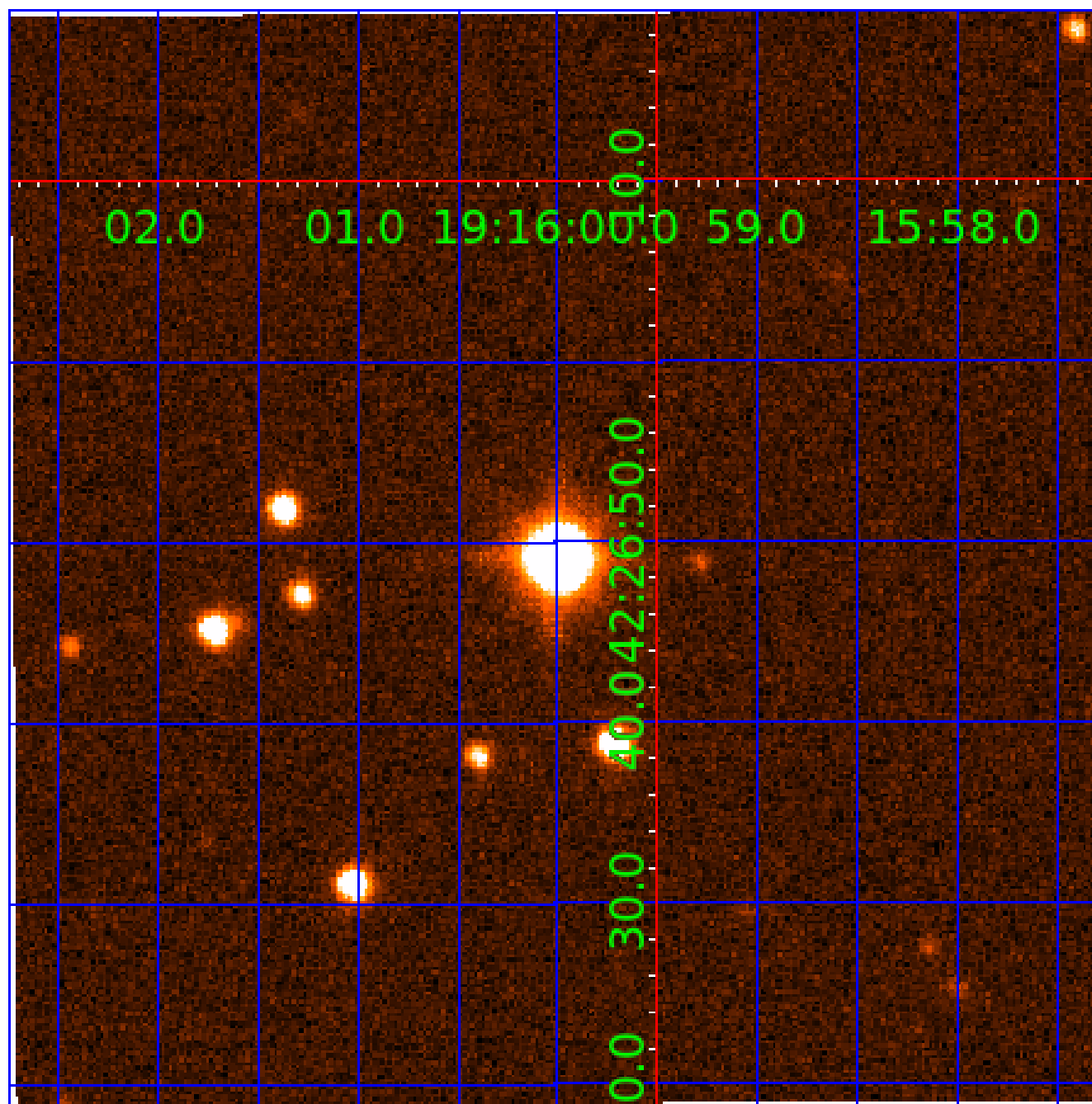


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006939772

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})
006939772-01	OBS	No	591.439961	273.040222	4919.7	13.044	35.2	3.1	1.73	6770	14.41	2.29
006939772-02	OBS	No	627.732586	238.787184	355.1	3.500	21.3	-1.0	1.73	6770	3.28	2.11

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006939772-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006939772-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

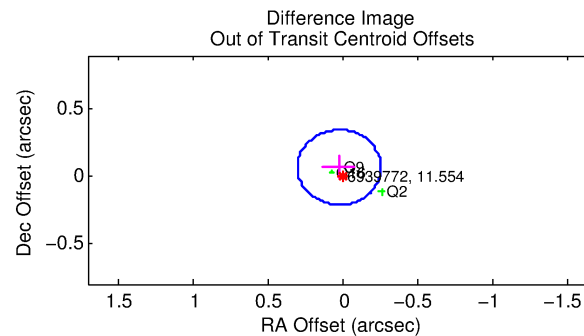
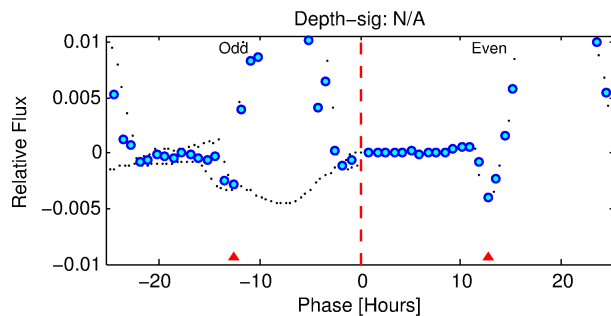
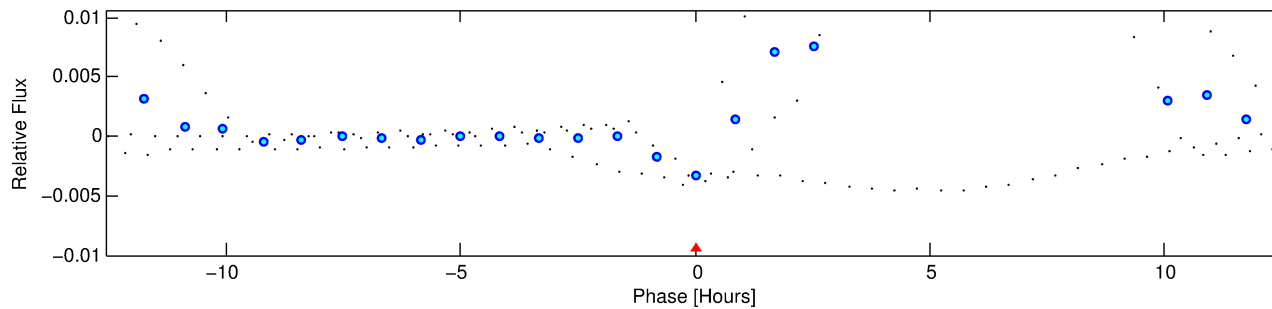
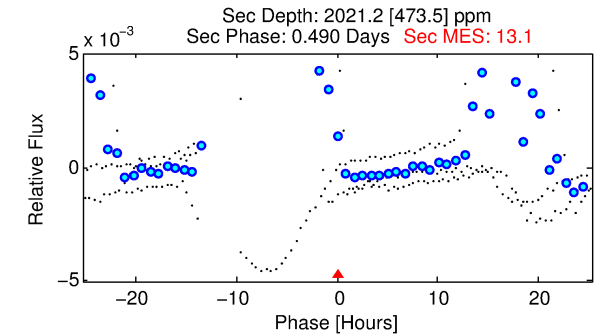
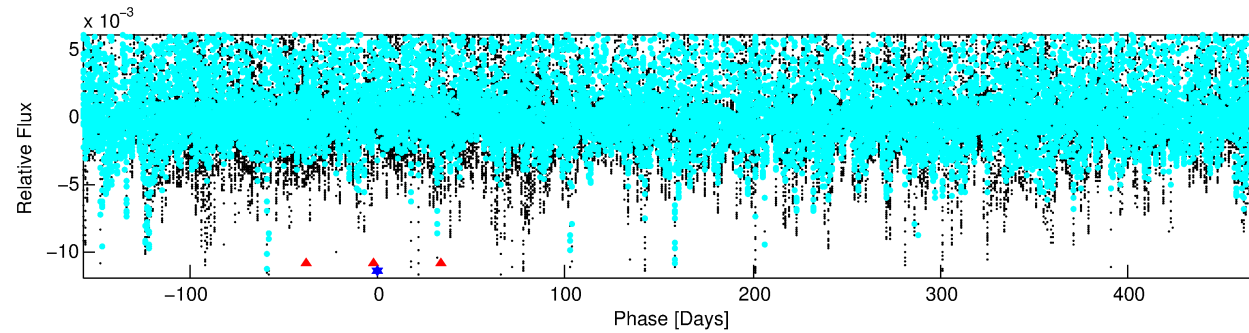
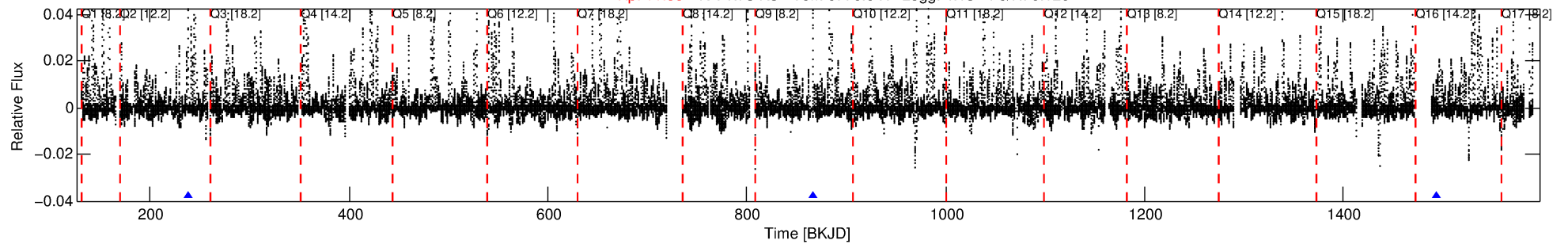
Ephemeris Match Information For 006939772-02

No Significant Match Found

DV One-Page Summary

KIC: 6939772 Candidate: 2 of 2 Period: 627.733 d

Kp: 11.55 R*: 1.73 Rs Teff: 6770.0 K Logg: 4.13 Fe/H: 0.120



TPS TCE Results:

Period = 627.73259 d
Epoch = 238.7872 BKJD

DV fit results are unavailable

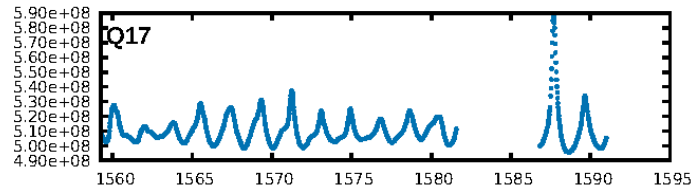
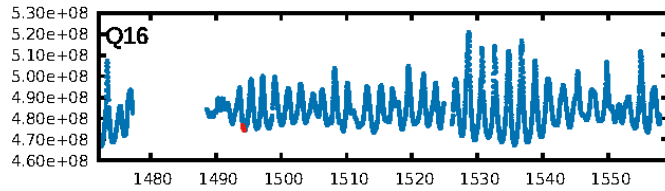
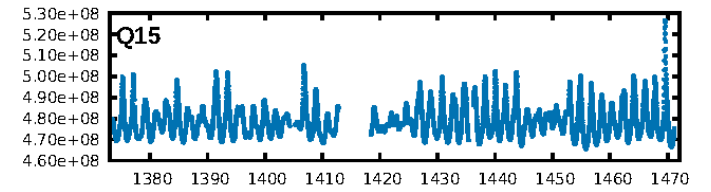
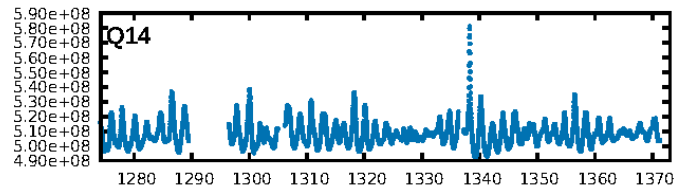
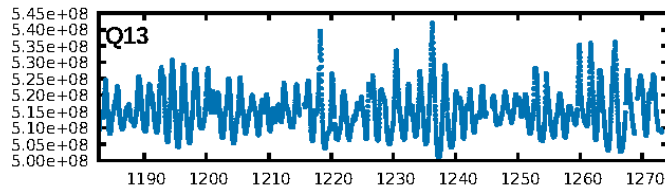
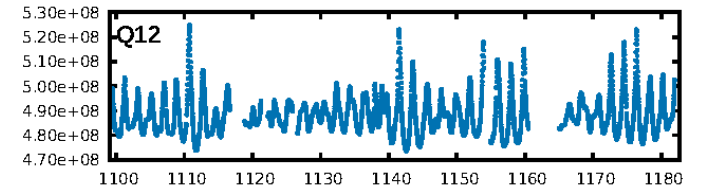
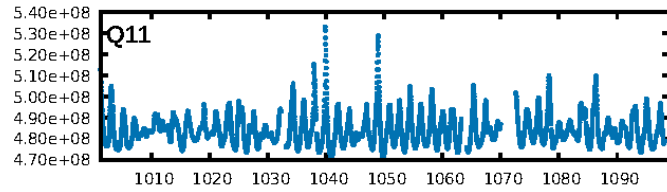
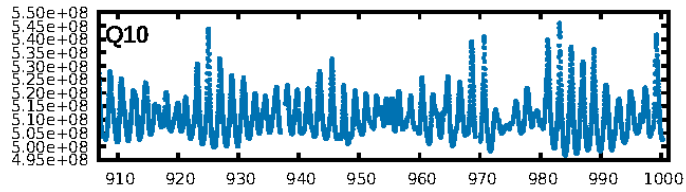
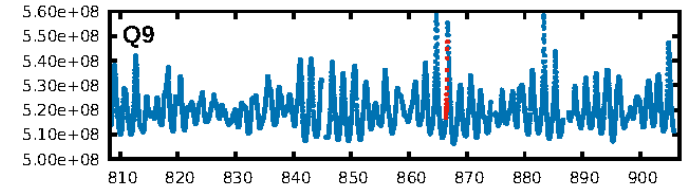
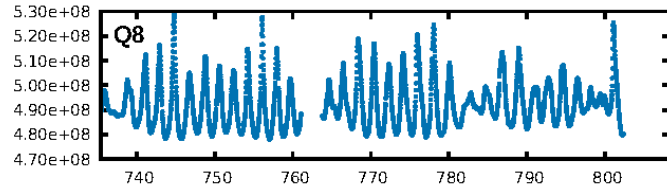
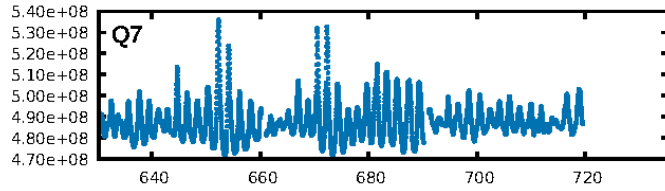
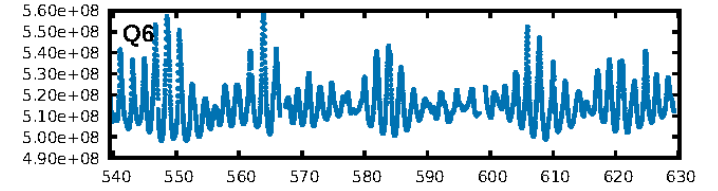
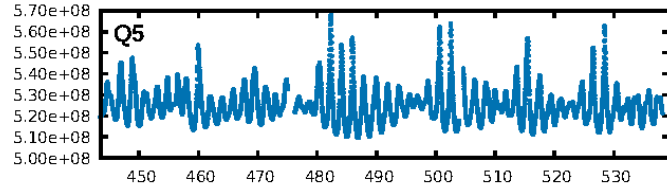
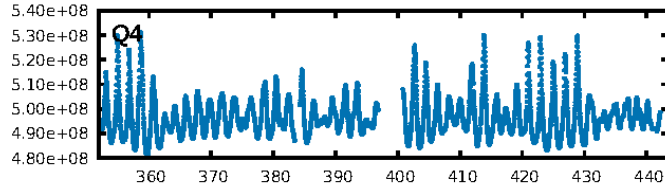
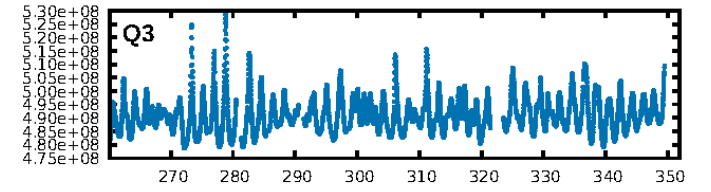
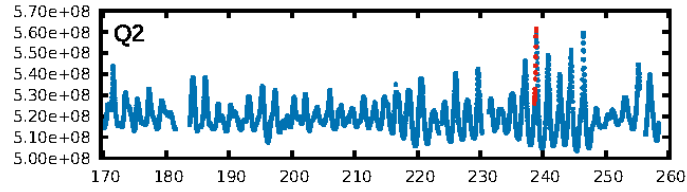
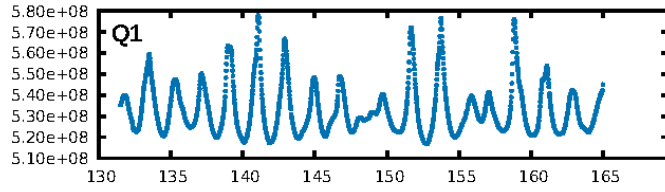
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [64.49σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.7131
Centroid-sig: N/A
Centroid-so: 0.065 arcsec [0.82σ]
OotOffset-rm: 0.071 arcsec [0.77σ]
KicOffset-rm: 0.156 arcsec [1.10σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

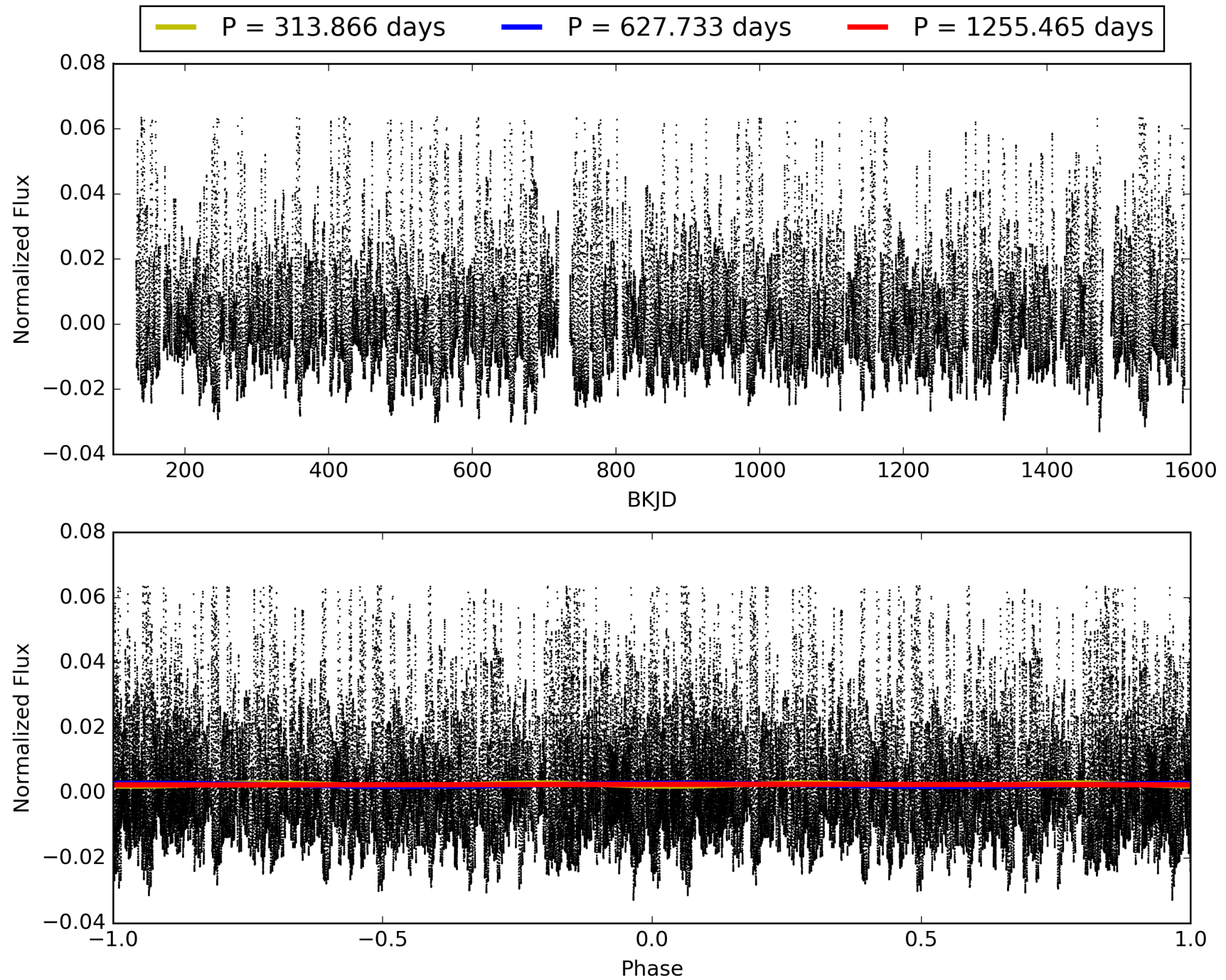
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:22:03 Z

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

TCE 006939772-02, PDC Light Curves

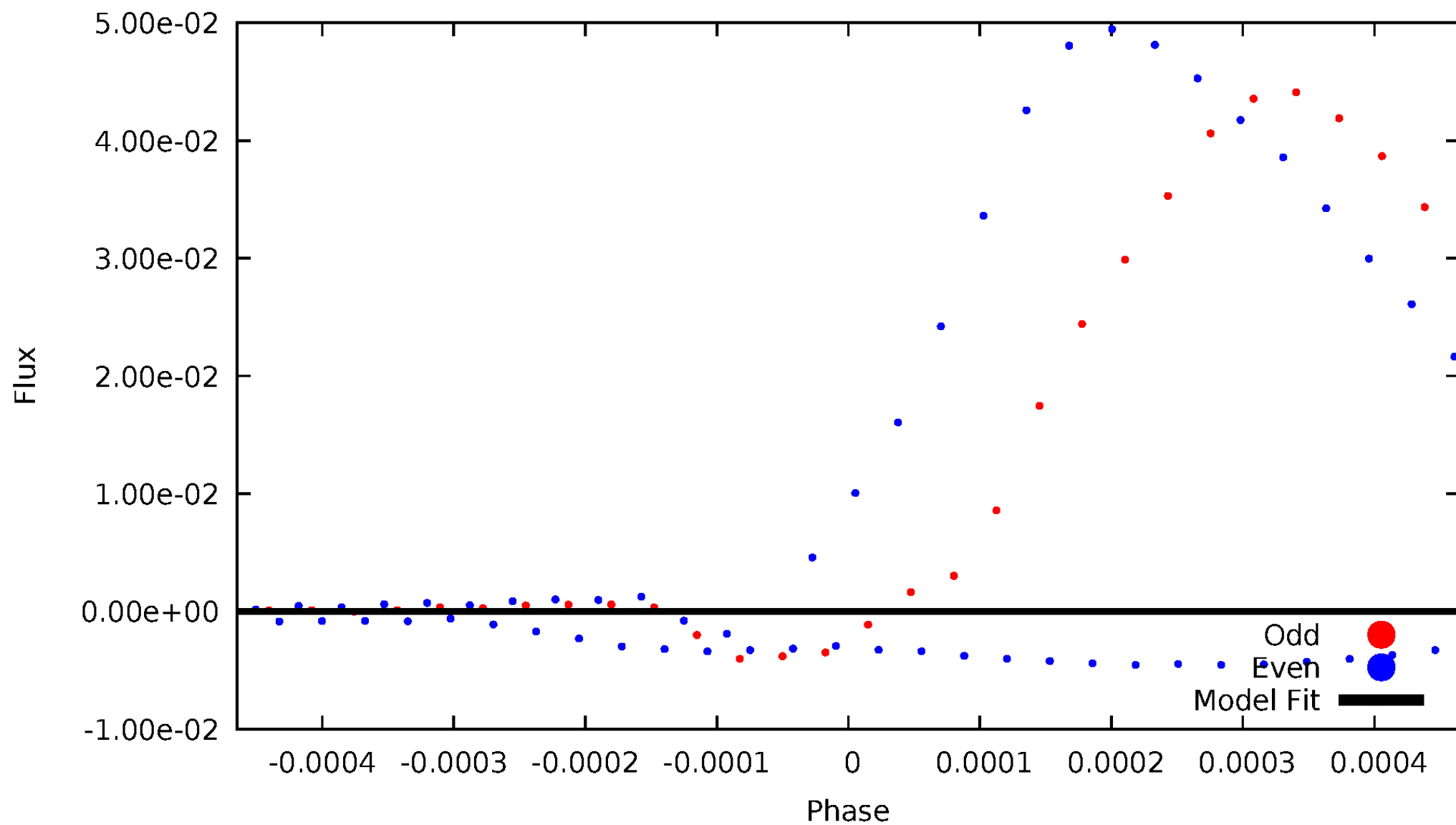


TCE 006939772-02



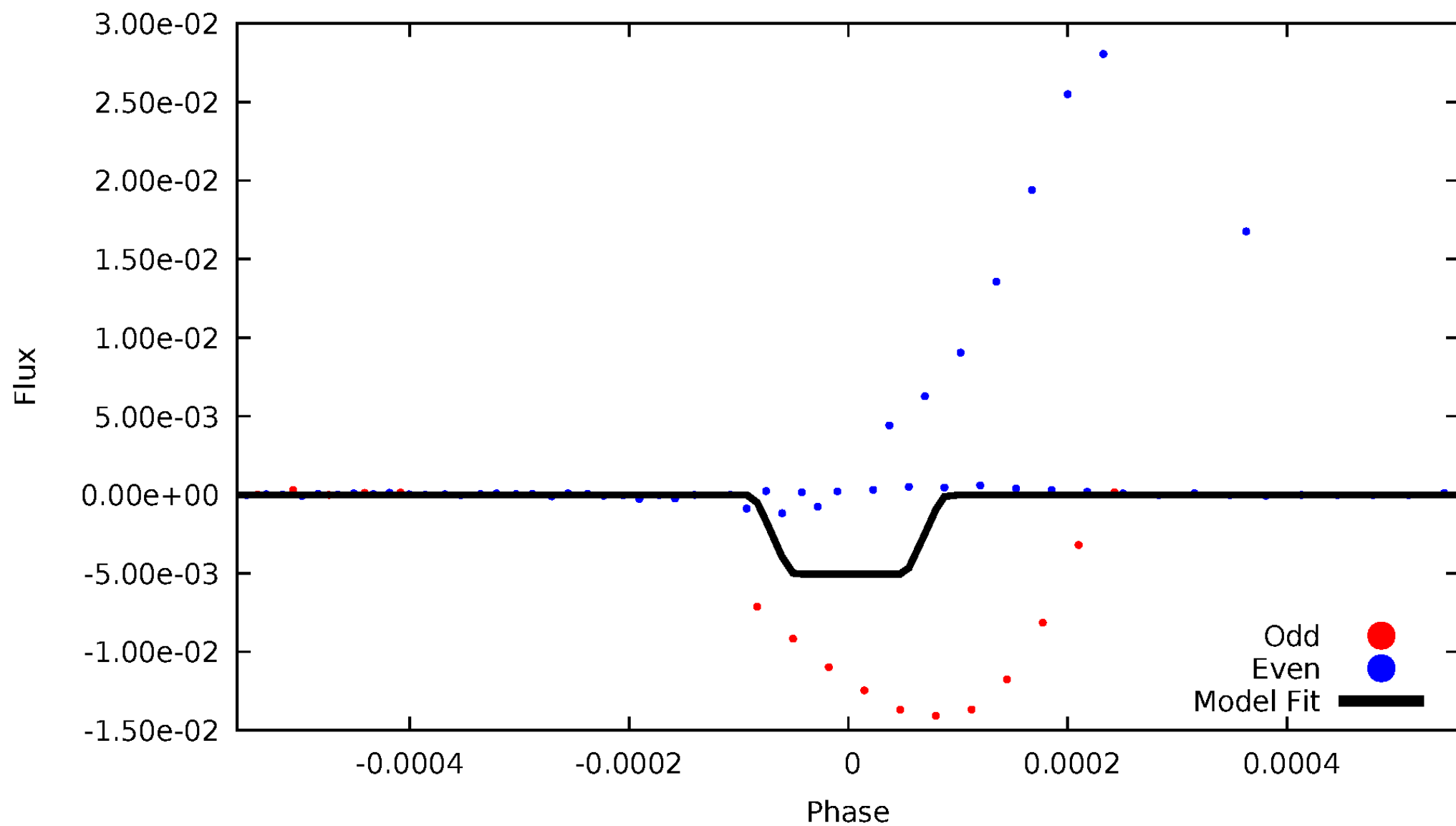
DV Odd/Even

TCE 006939772-02



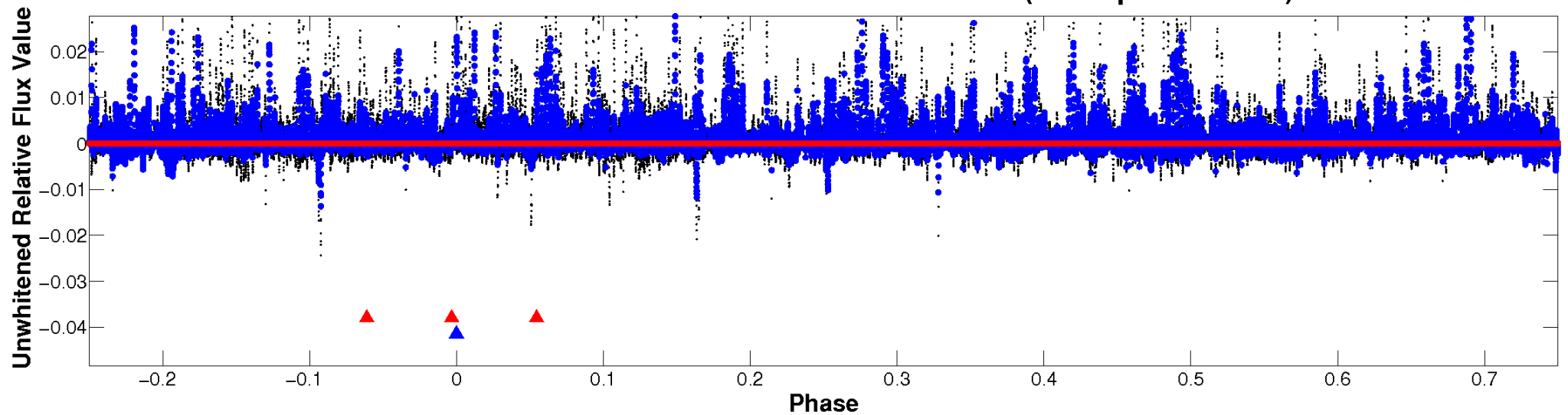
ALT Odd/Even

TCE 006939772-02

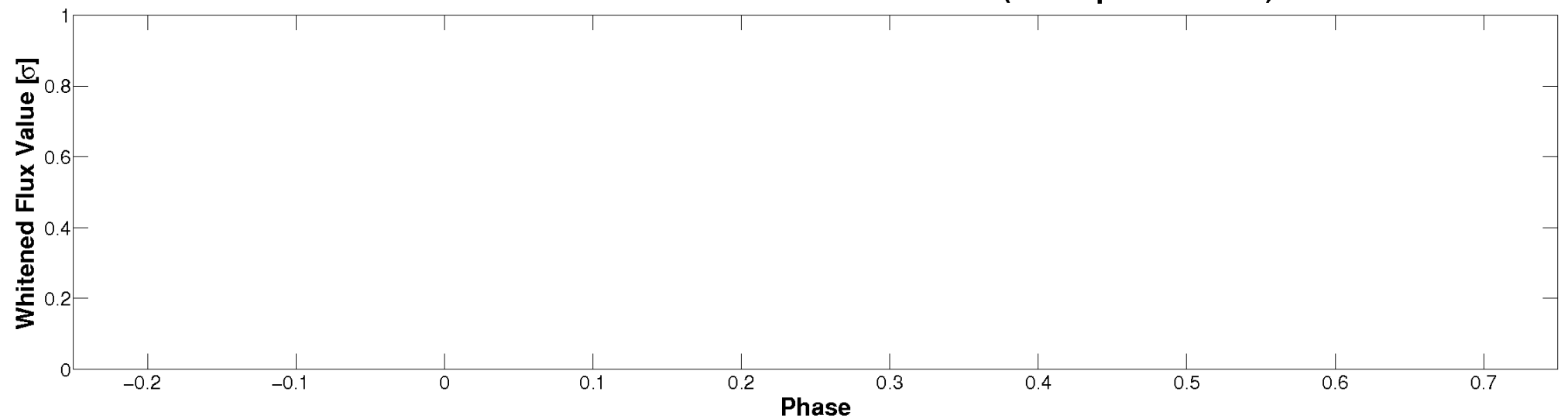


Non-Whitened Vs. Whitened Light Curve

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

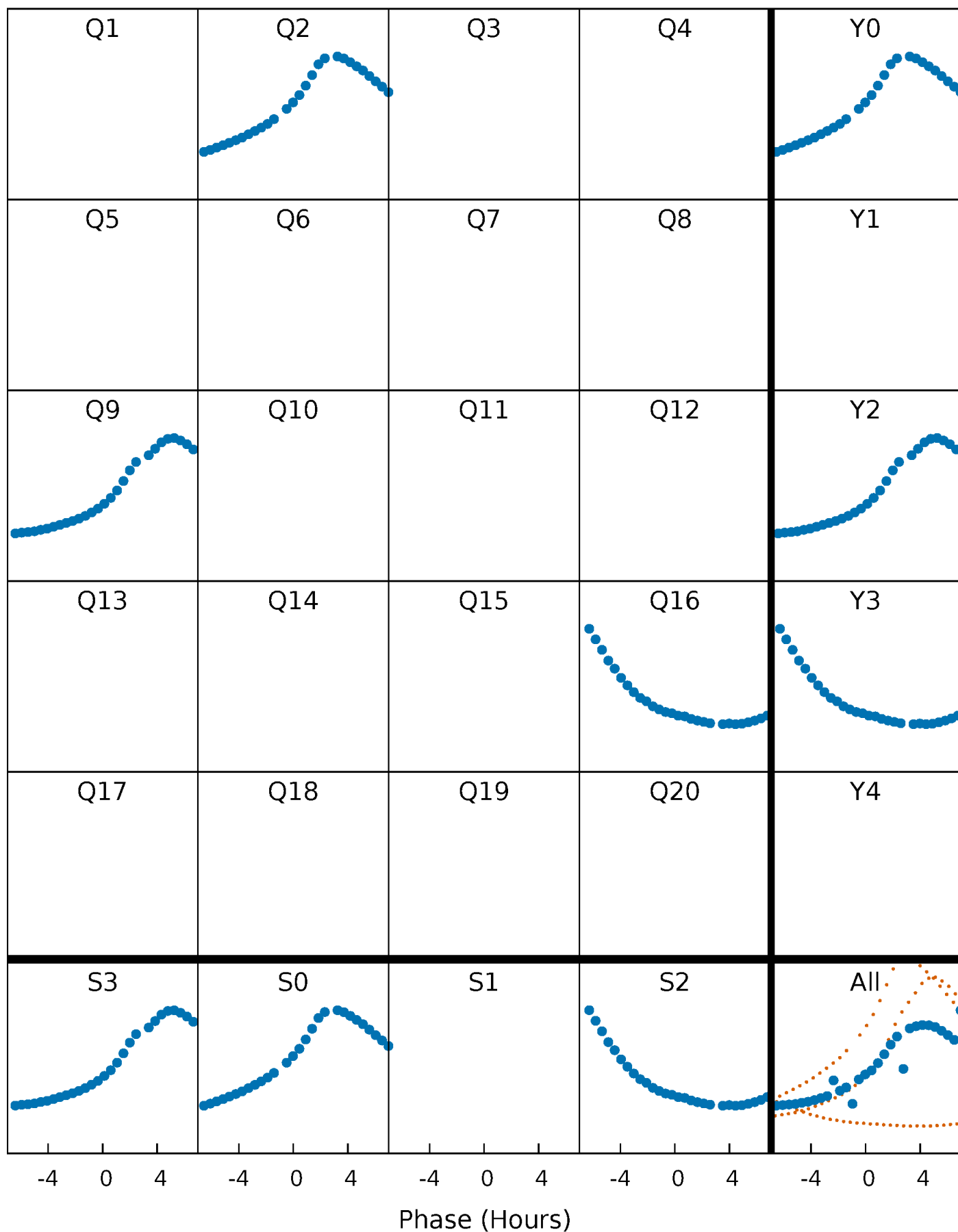


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



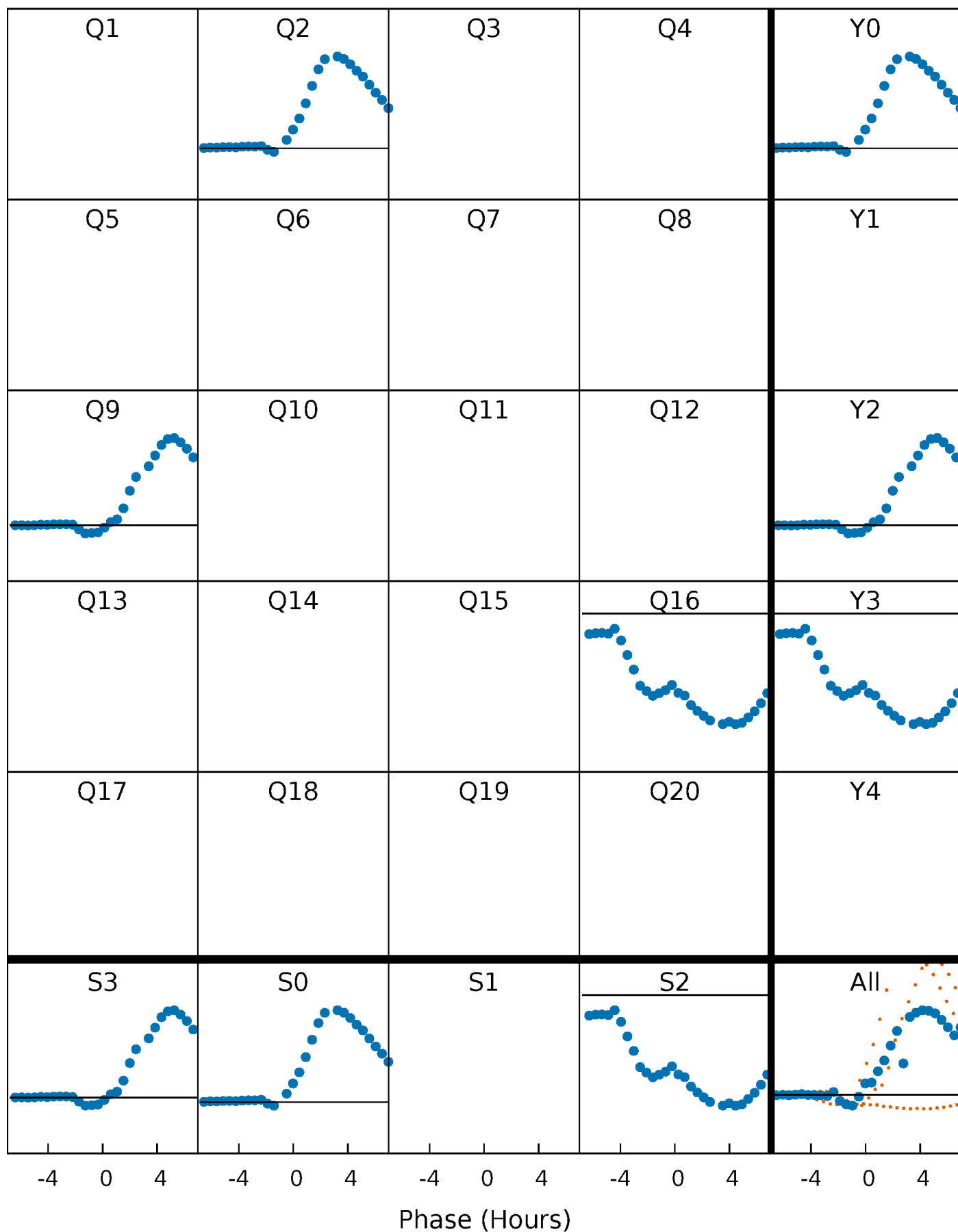
PDC Quarter-Phased Transit Curves

TCE 006939772-02 P=627.732586 Days $T_0=238.787184$ (BKJD)



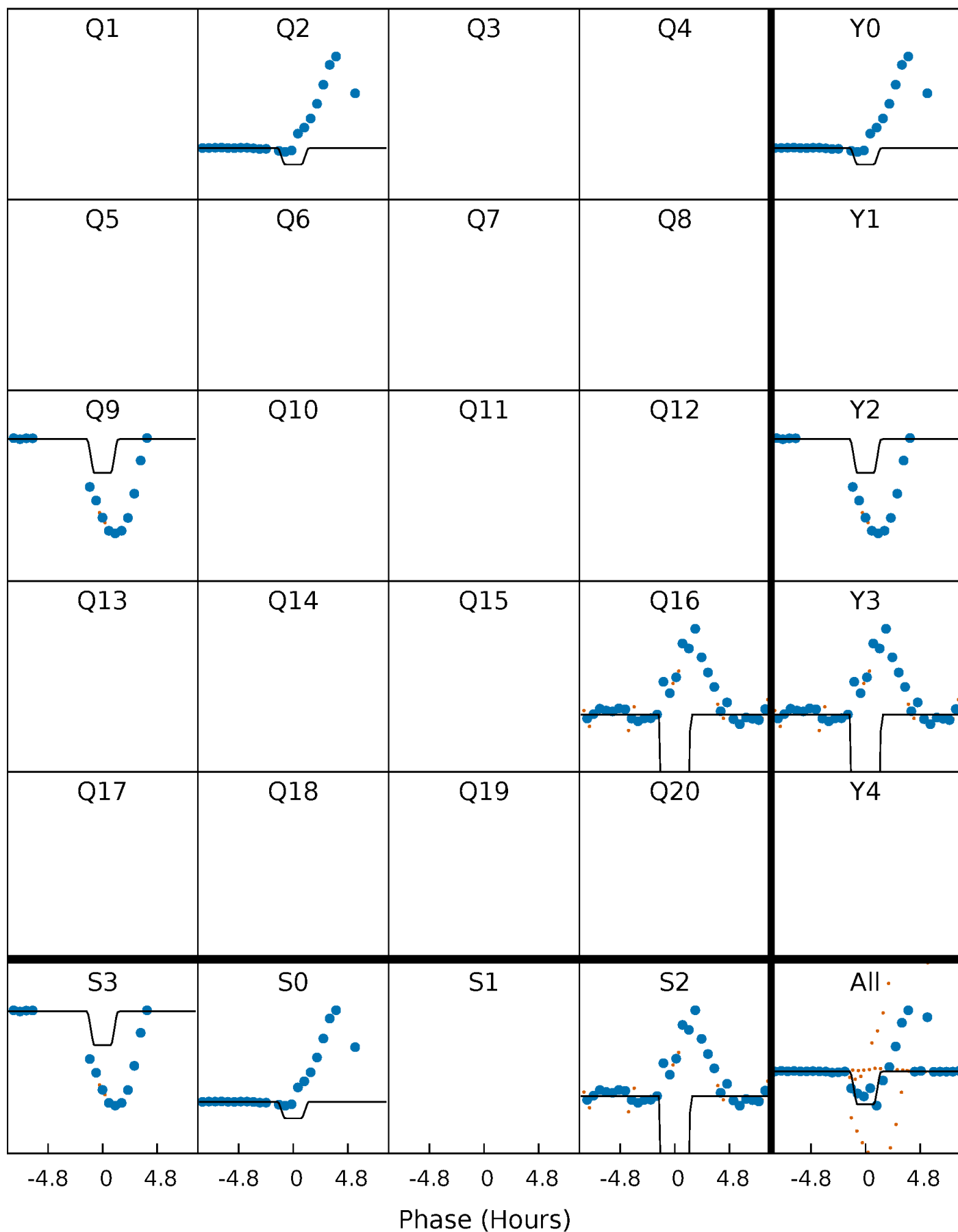
DV Quarter-Phased Transit Curves

TCE 006939772-02 P=627.732586 Days $T_0=238.787184$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

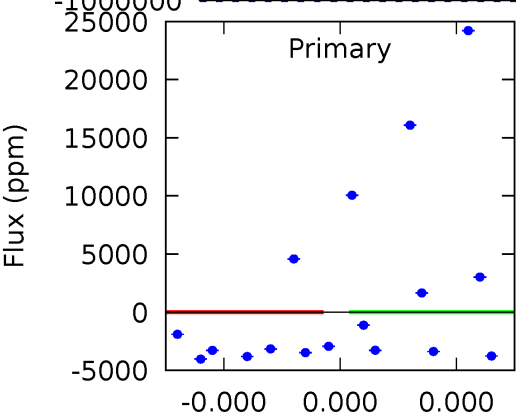
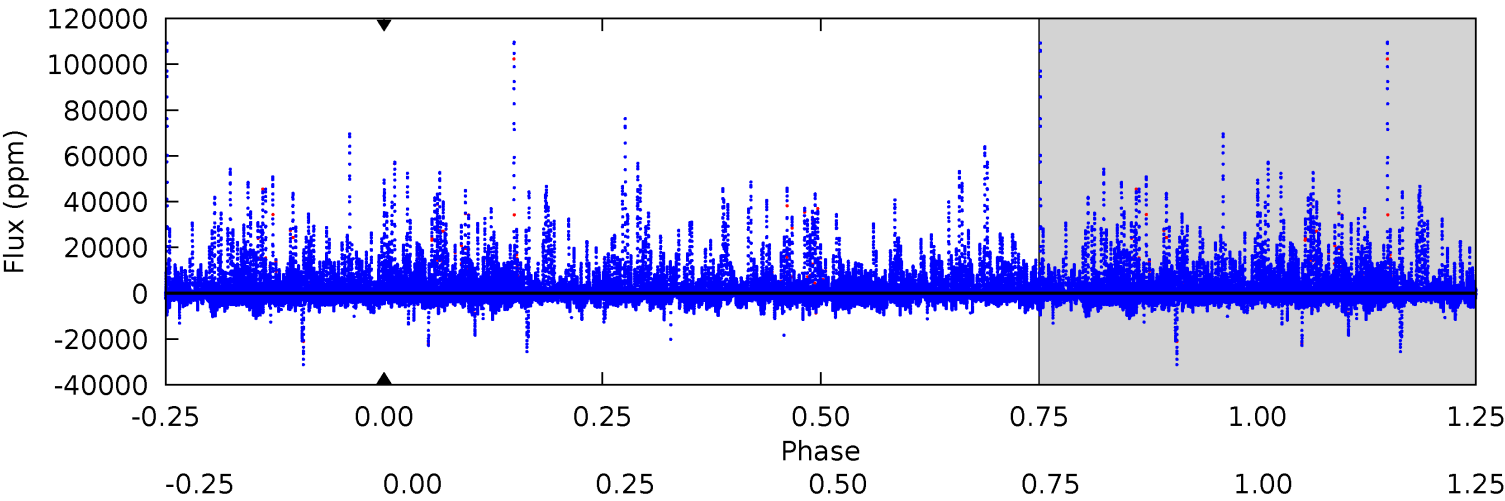
TCE 006939772-02 P=627.732586 Days $T_0=238.746591$ (BKJD)



DV Model-Shift Uniqueness Test

006939772-02, P = 627.732586 Days, E = 238.787184 Days

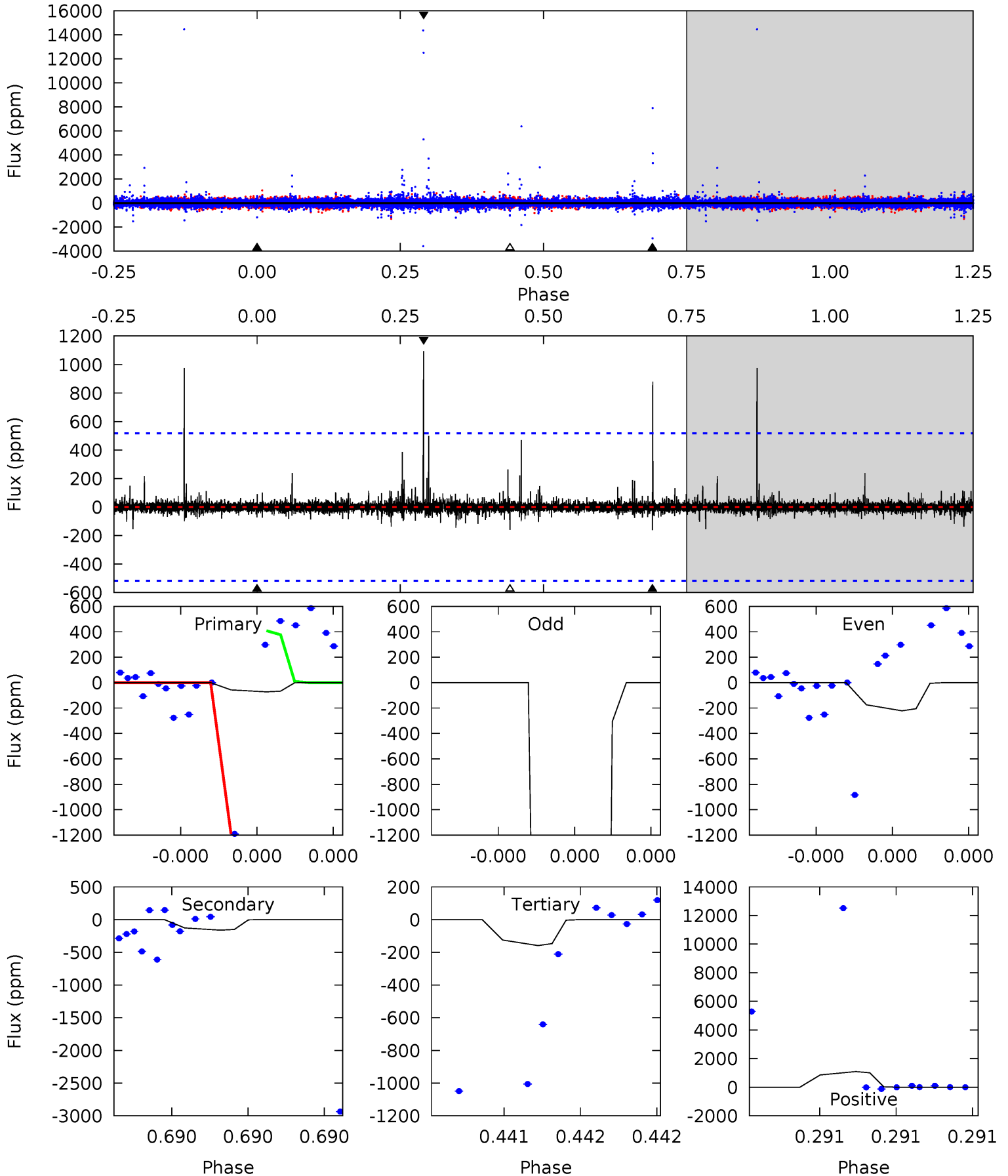
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006939772-02, P = 627.732586 Days, E = 238.746591 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.81	1.80	1.77	12.2	5.75	3.75	0.23	-0.96	-11.4	0.04	-10.4	61.0	-11.1	0.87	0



Stellar Parameters For KIC 006939772

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6770^{+189}_{-283}	$4.129^{+0.153}_{-0.187}$	$0.120^{+0.200}_{-0.350}$	$1.726^{+0.519}_{-0.377}$	$1.460^{+0.196}_{-0.239}$	$0.400^{+0.334}_{-0.211}$
	+3%/-4%	+4%/-5%	+167%/-292%	+30%/-22%	+13%/-16%	+83%/-53%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 006939772-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$13.98^{+14.59}_{-10.08}$	431^{+34}_{-28}	5041^{+28441}_{-38724}	$14444^{+1425356}_{-1444134}$
Alt.	-162 ± 90	$19.47^{+17.65}_{-13.13}$	429^{+33}_{-27}	3007^{+1216}_{-571}	564^{+4597}_{-449}

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 $A_{obs} \gg 1.0$

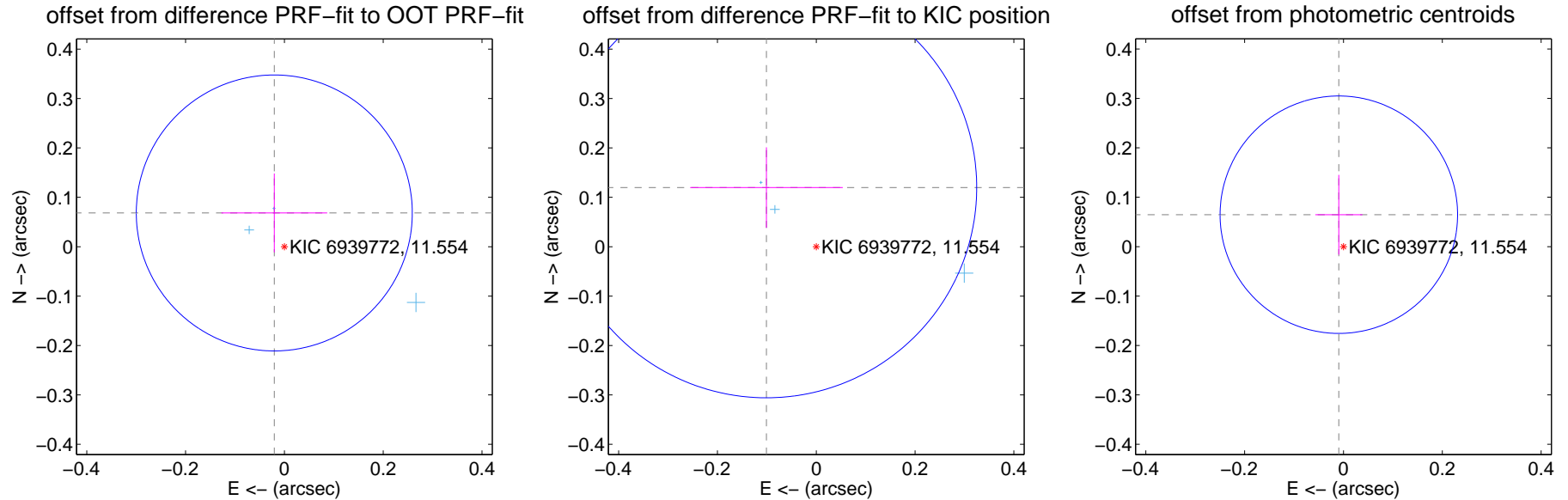
DV Centroid Data

Supplemental centroid analysis for 006939772-02. **Kepler magnitude: 11.55.** Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

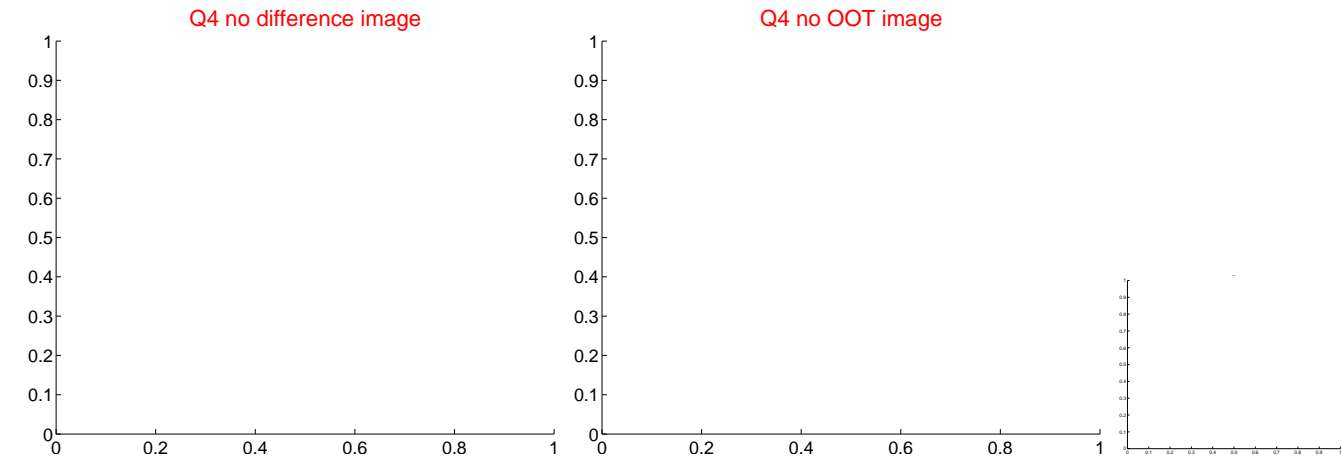
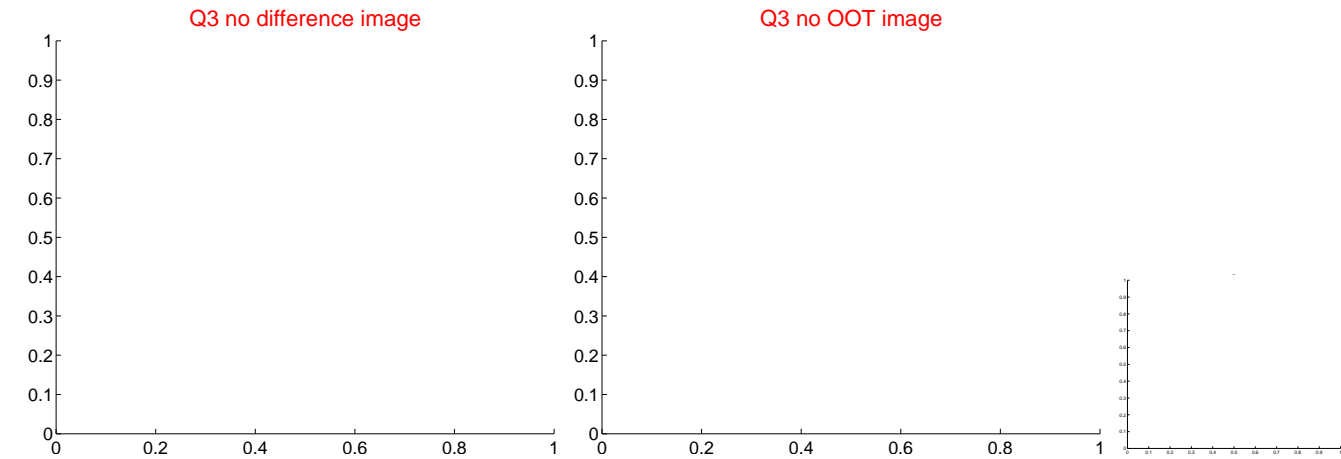
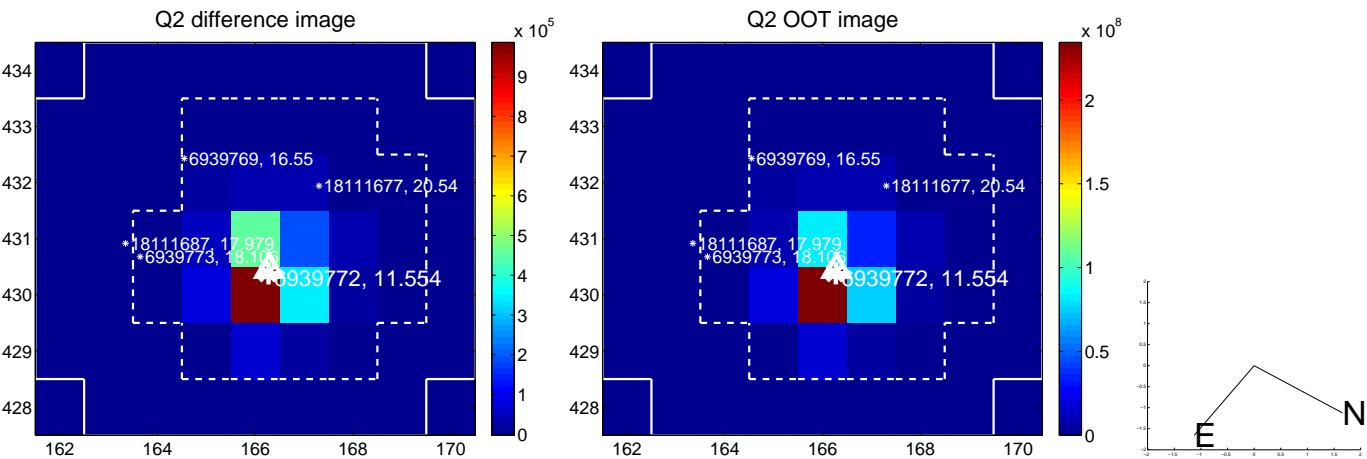
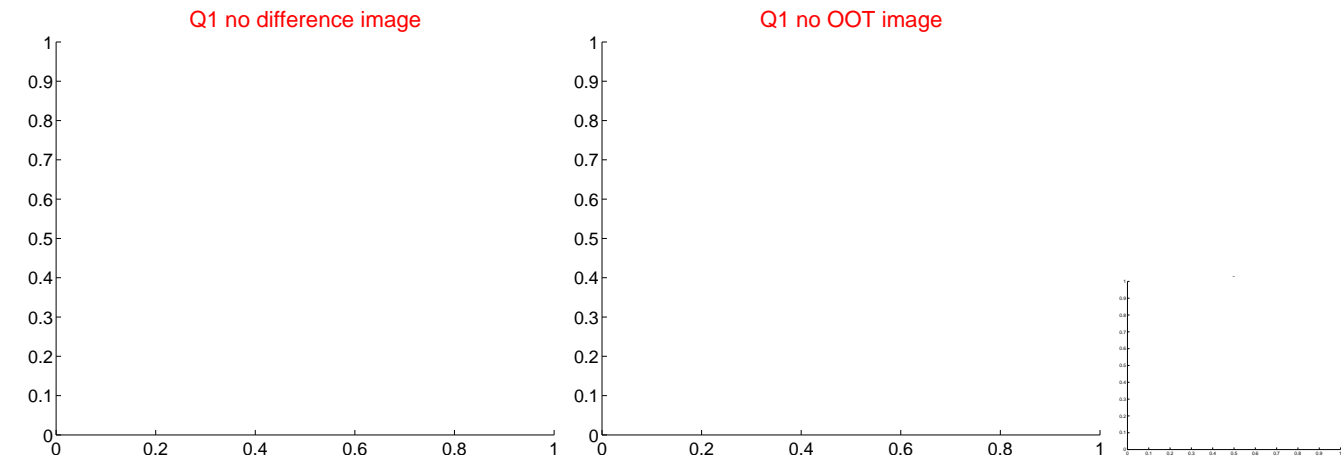
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.071 ± 0.093	0.77	0.020 ± 0.107	0.068 ± 0.080
PRF-fit source offset from KIC position	0.156 ± 0.142	1.10	0.101 ± 0.154	0.120 ± 0.081
photometric centroid source offset	0.07 ± 0.08	0.82	0.01 ± 0.05	0.06 ± 0.08



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.

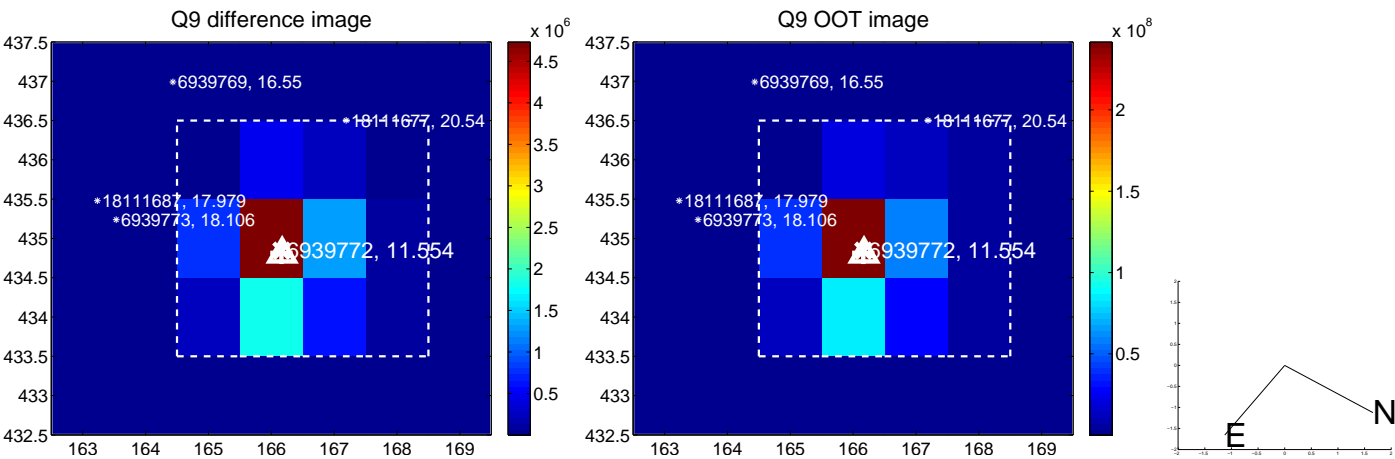
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



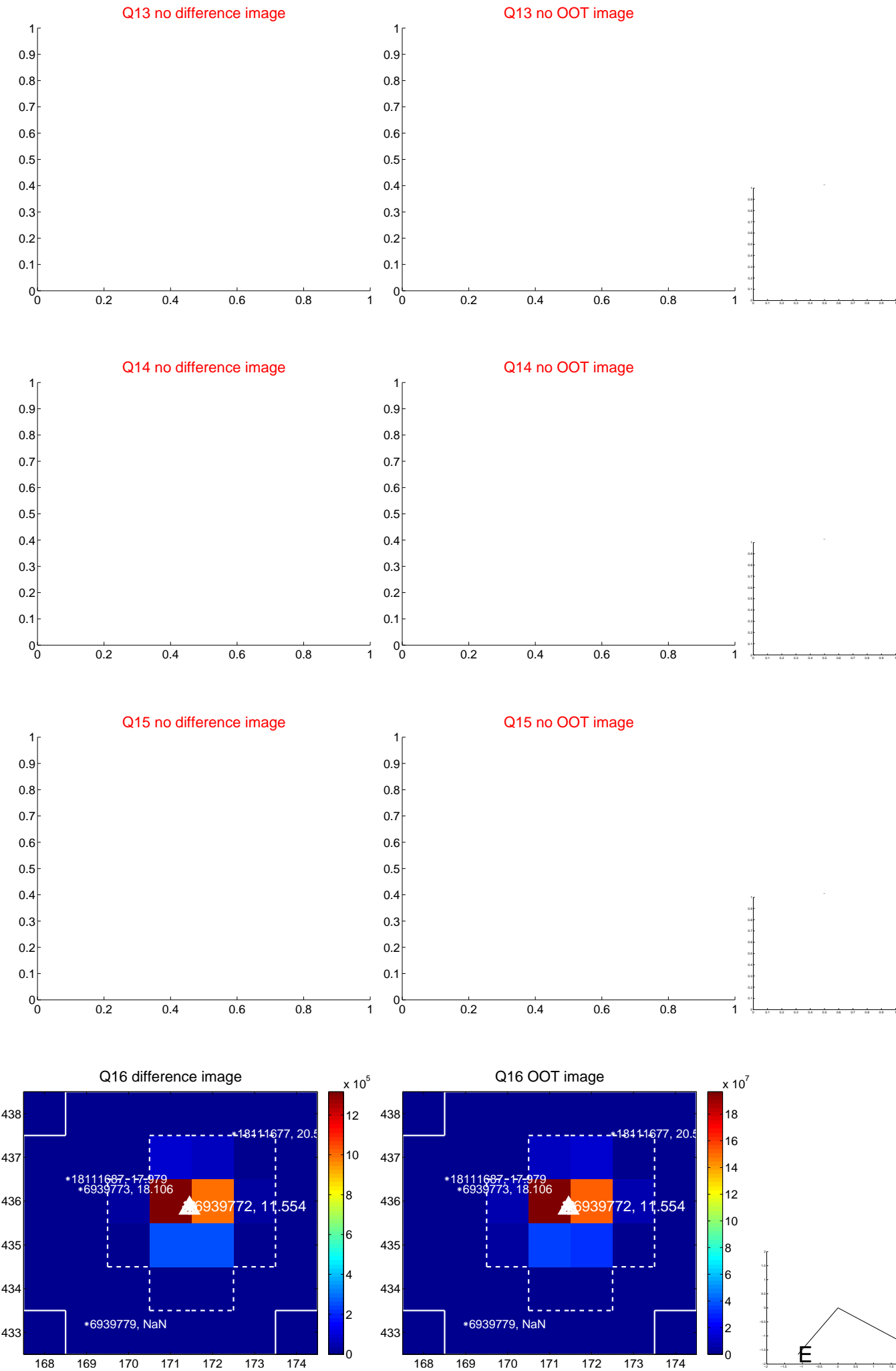
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



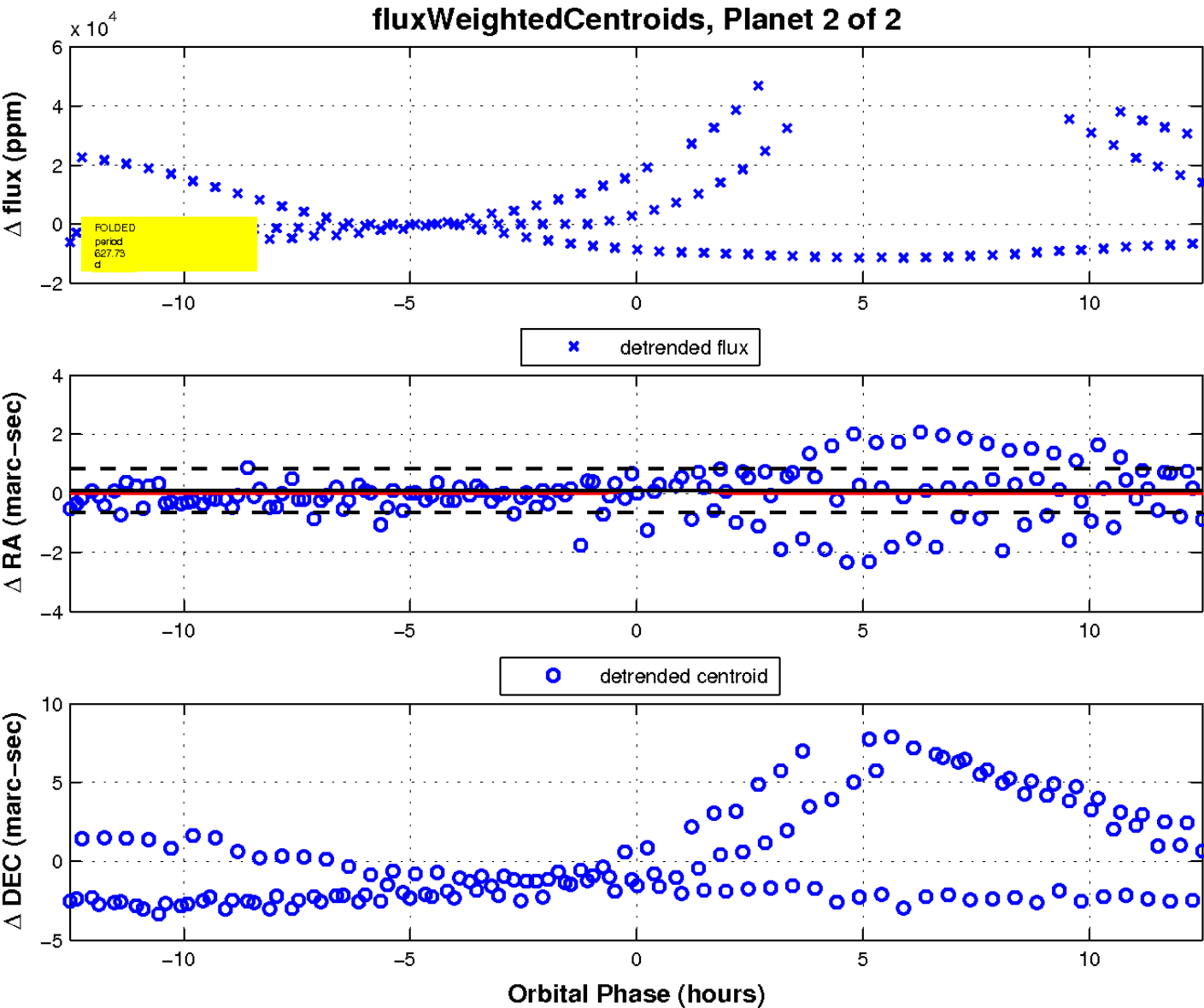
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

