

KIC 006038777

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})
006038777-01	OBS	No	362.755860	169.057919	1365.3	16.611	9.8	9.1	0.96	6029	3.61	1.06
006038777-02	OBS	No	362.924753	165.420753	1122.7	16.193	7.6	7.6	0.96	6029	3.61	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006038777-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006038777-02	OBS	FP	0.02	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—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.

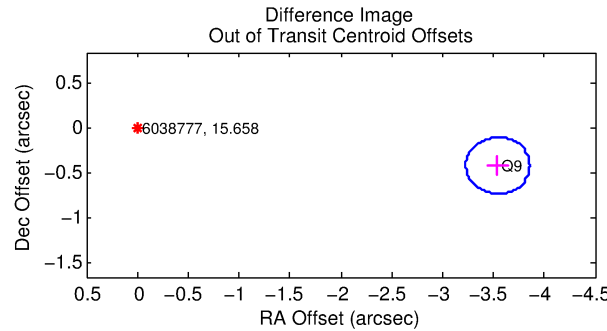
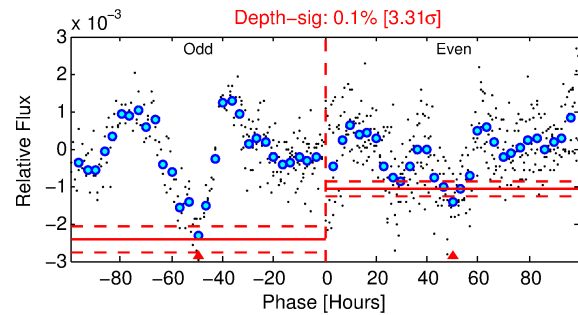
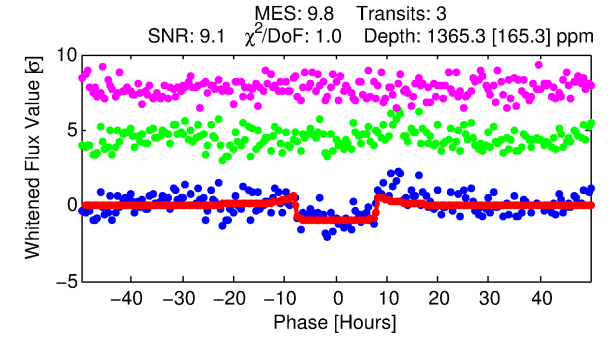
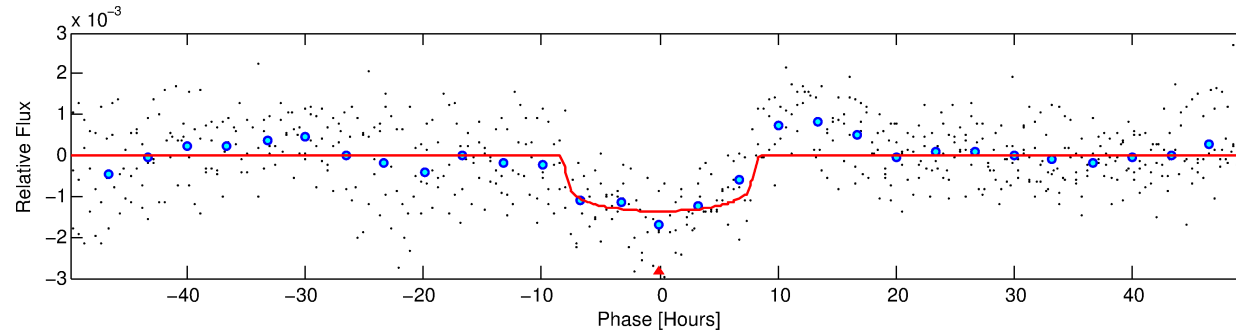
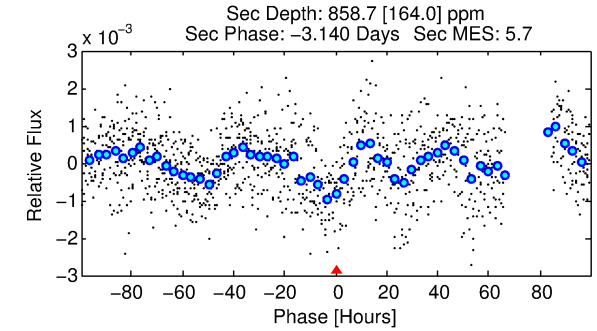
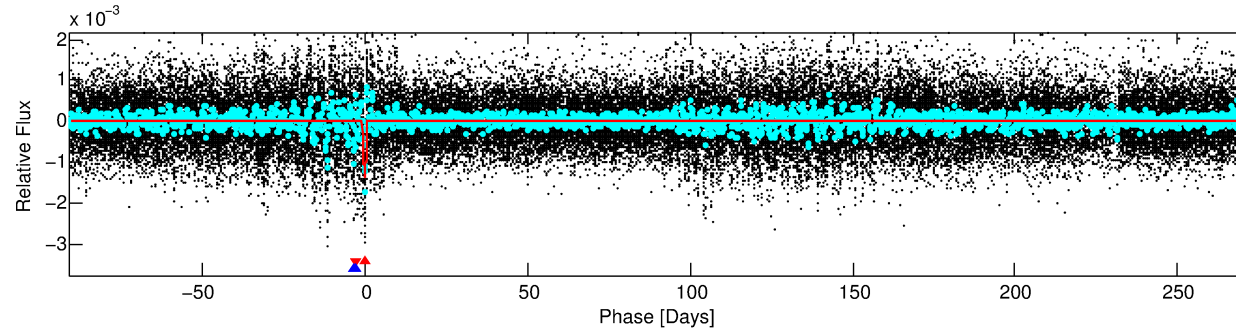
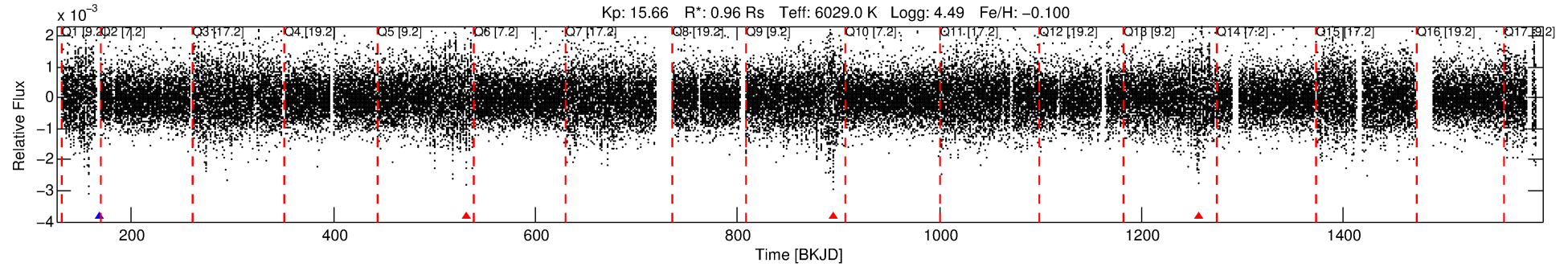
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006038777-01

No Significant Match Found

DV One-Page Summary

KIC: 6038777 Candidate: 1 of 2 Period: 362.756 d



DV Fit Results:

Period = 362.75586 [0.01024] d
Epoch = 169.0579 [0.0226] BKJD
Rp/R* = 0.0346 [0.0084]
a/R* = 154.20 [168.40]
b = 0.46 [1.85]
Seff = 1.06 [0.38]
Teq = 259 [23] K
Rp = 3.61 [1.29] Re
a = 1.0087 [0.2274] AU
Ag = 36892.07 [22820.11] [1.62σ]
Teff = 5548 [746] K [7.09σ]

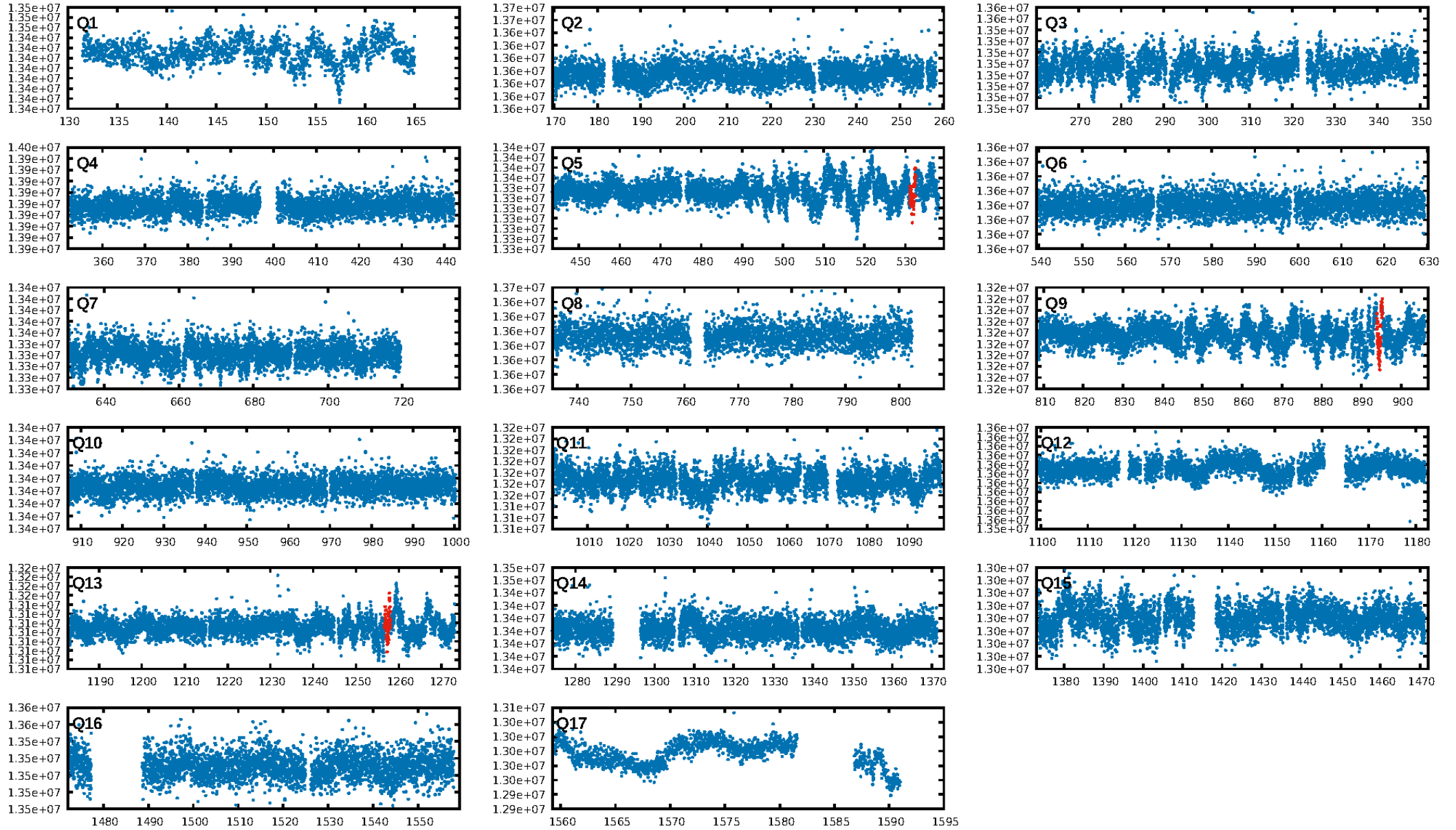
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 13.9% [0.17σ]
ModelChiSquare2-sig: 21.6%
ModelChiSquareGoF-sig: 99.7%
Bootstrap-pfa: 1.31e-11
RollingBand-fgt: 0.00 [0/3]
GhostDiagnostic-chr: -5.956
Centroid-sig: 0.0%
Centroid-so: 12.042 arcsec [4.62σ]
OotOffset-rm: 3.566 arcsec [33.99σ]
KicOffset-rm: 3.773 arcsec [35.98σ]
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]

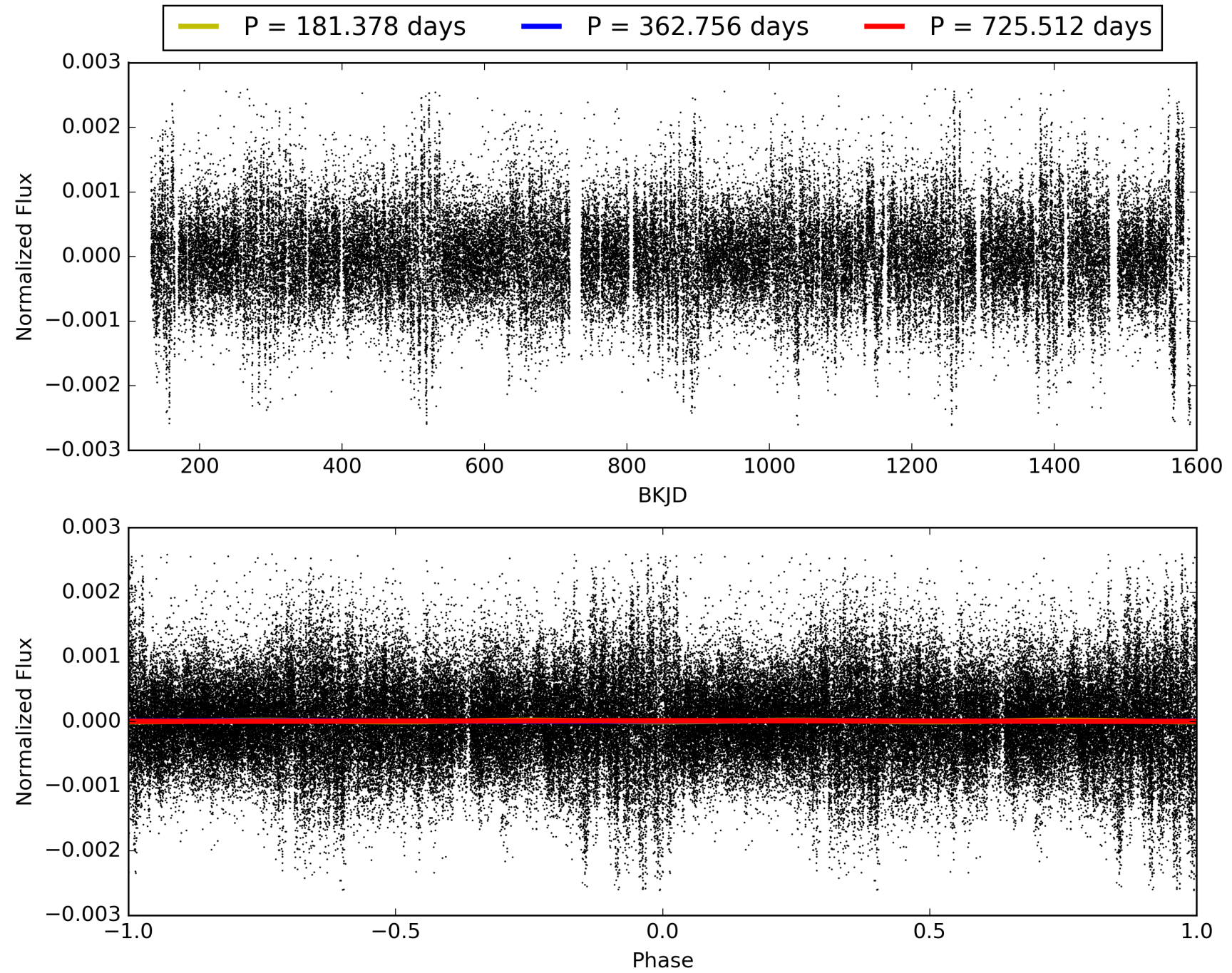
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:14:21 Z

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

TCE 006038777-01, PDC Light Curves

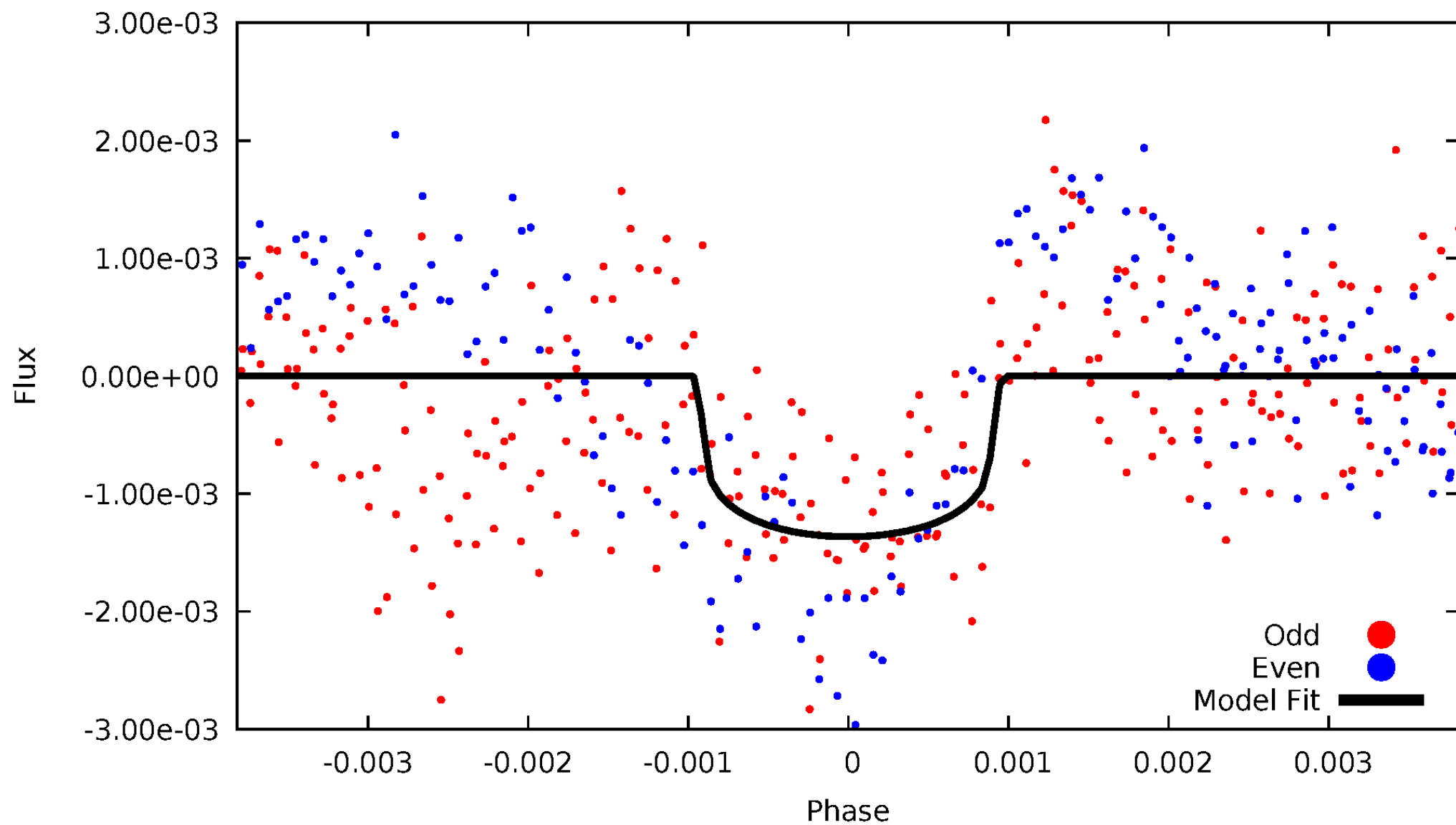


TCE 006038777-01



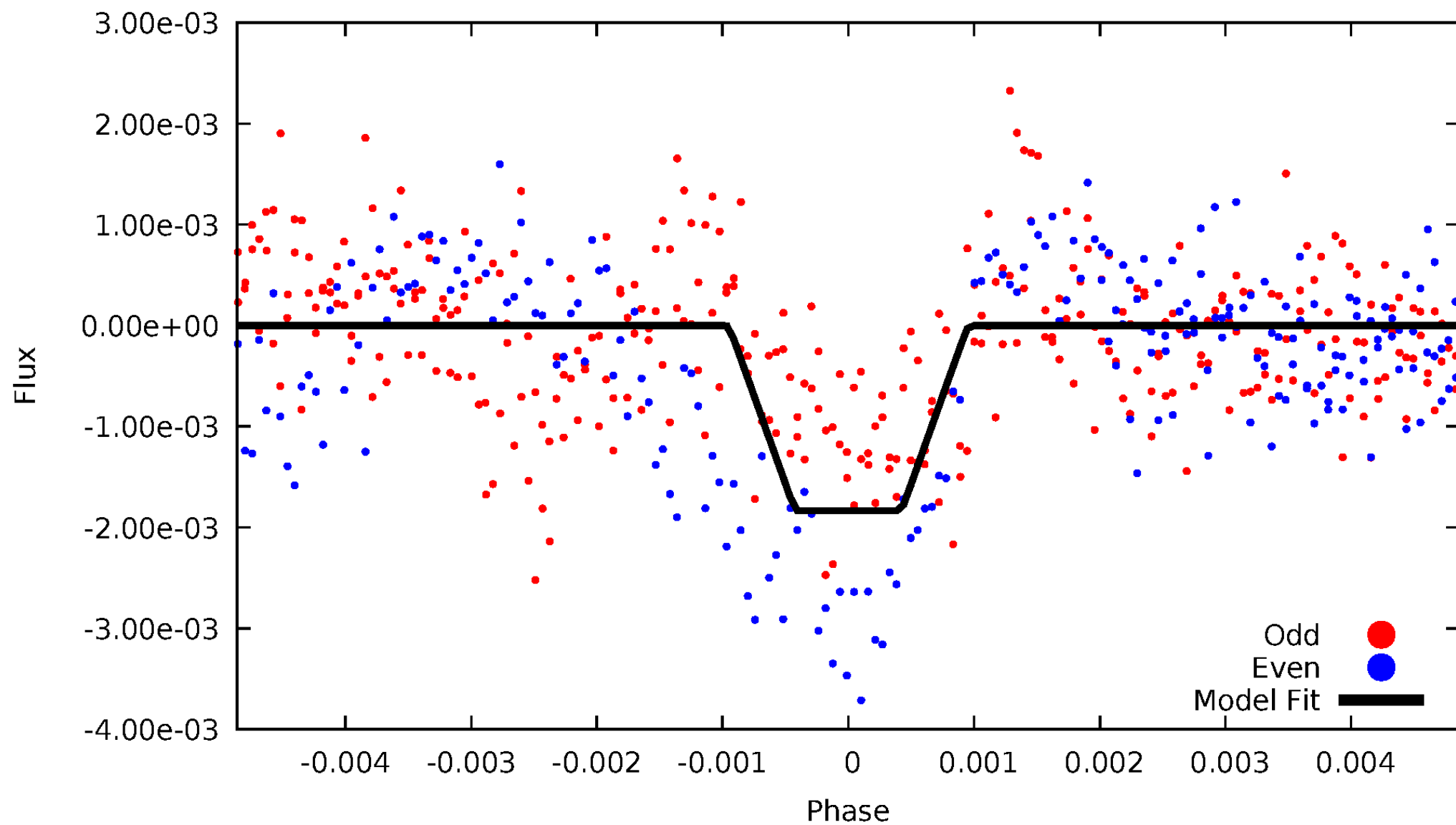
DV Odd/Even

TCE 006038777-01

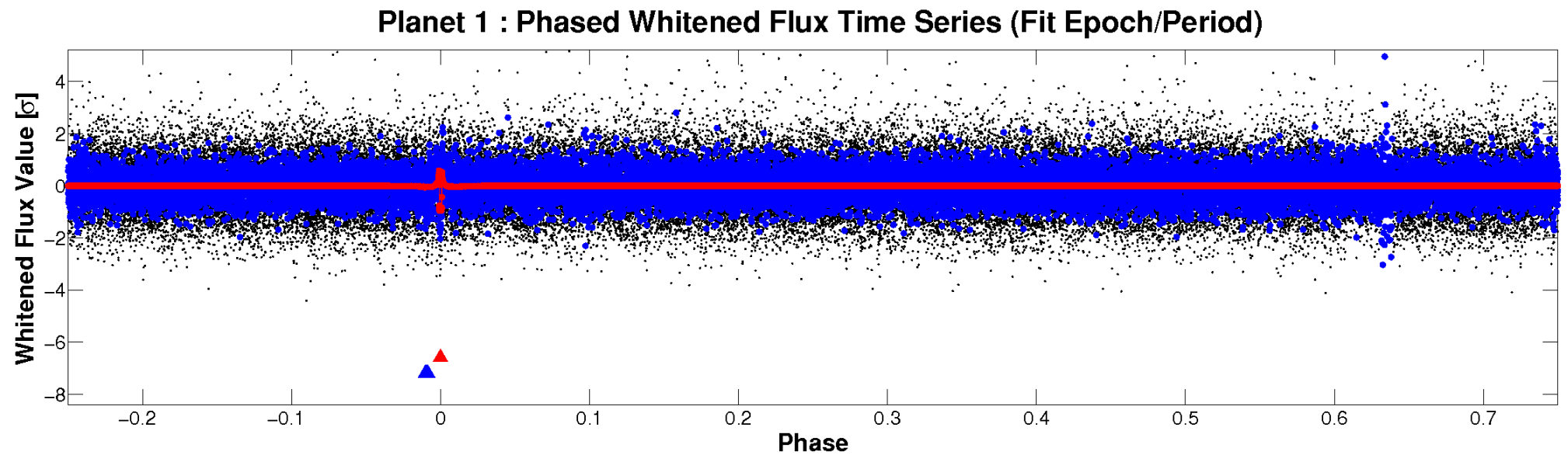
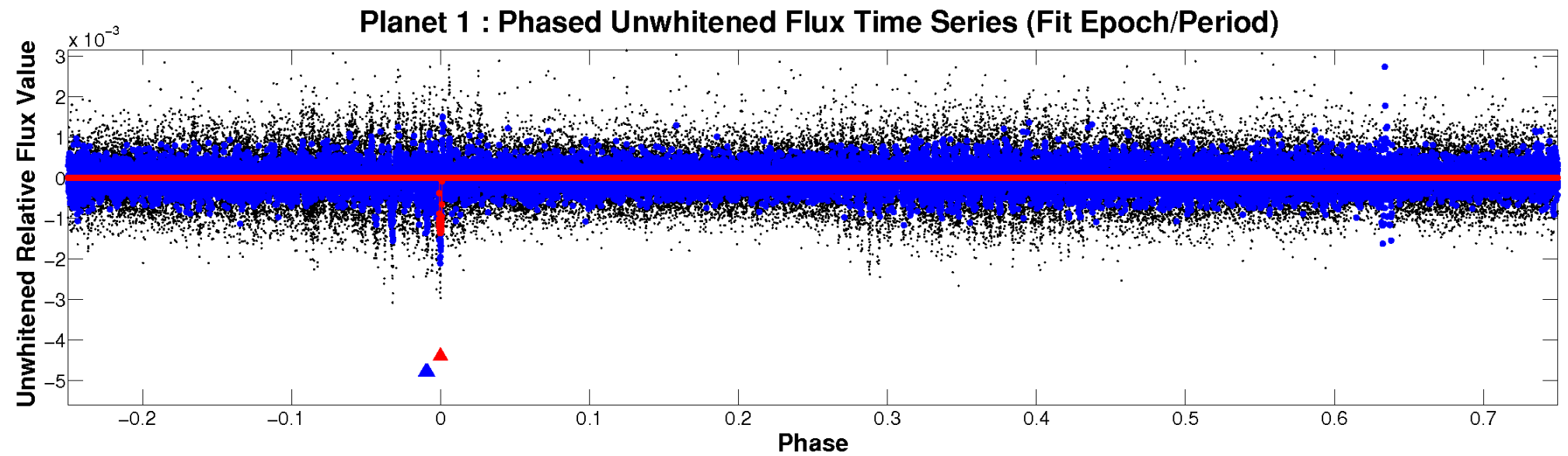


ALT Odd/Even

TCE 006038777-01

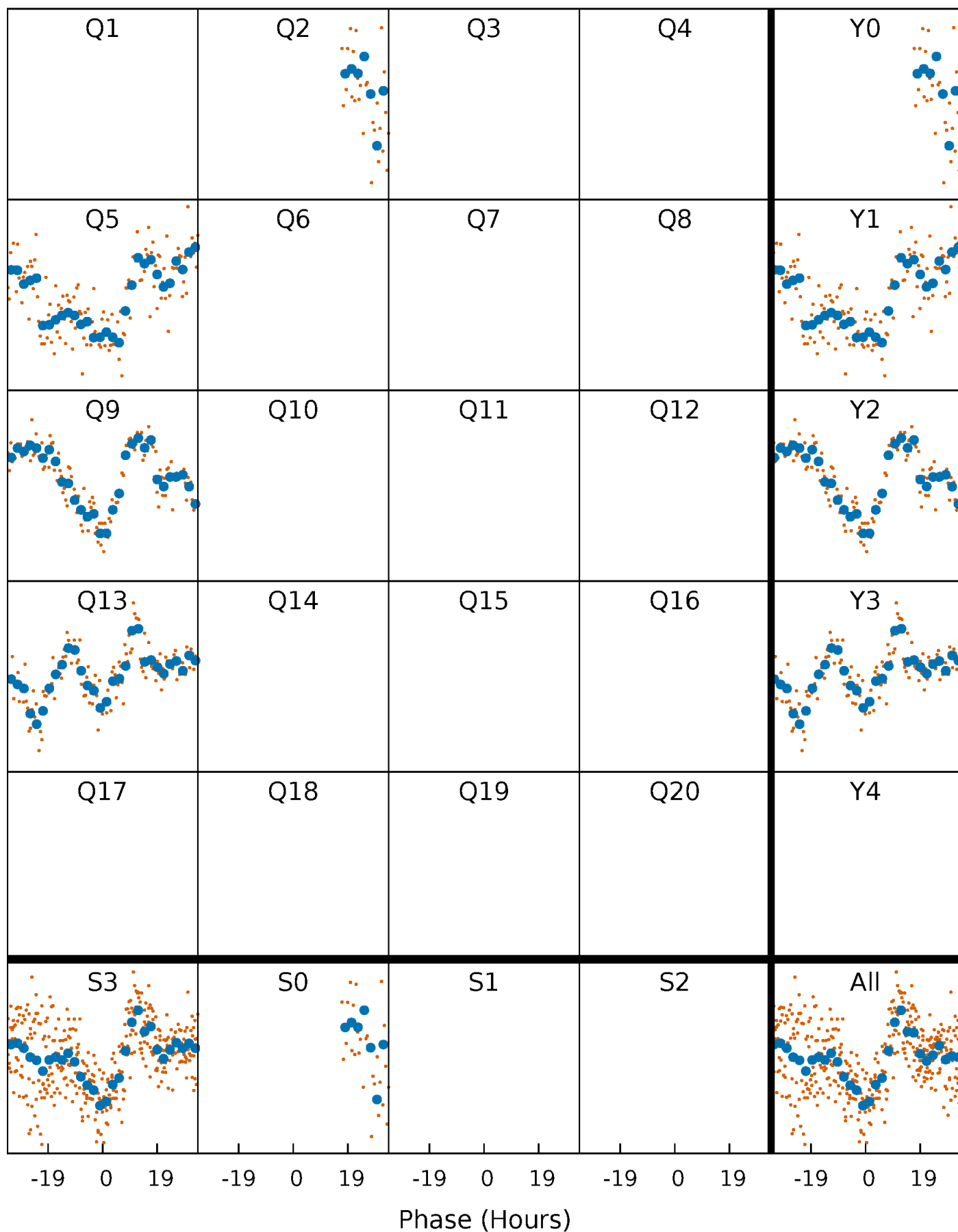


Non-Whitened Vs. Whitened Light Curve



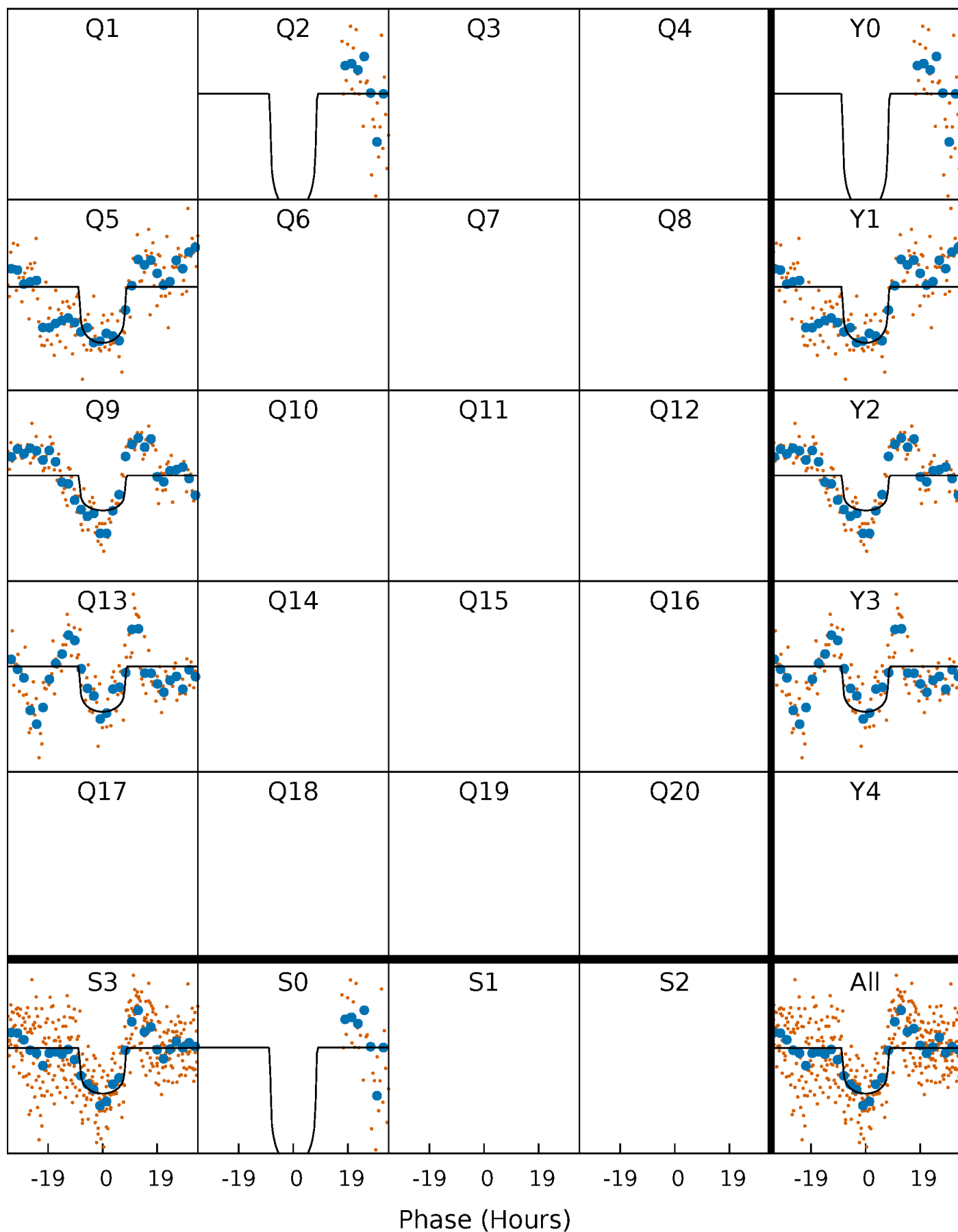
PDC Quarter-Phased Transit Curves

TCE 006038777-01 P=362.755860 Days $T_0=169.057919$ (BKJD)



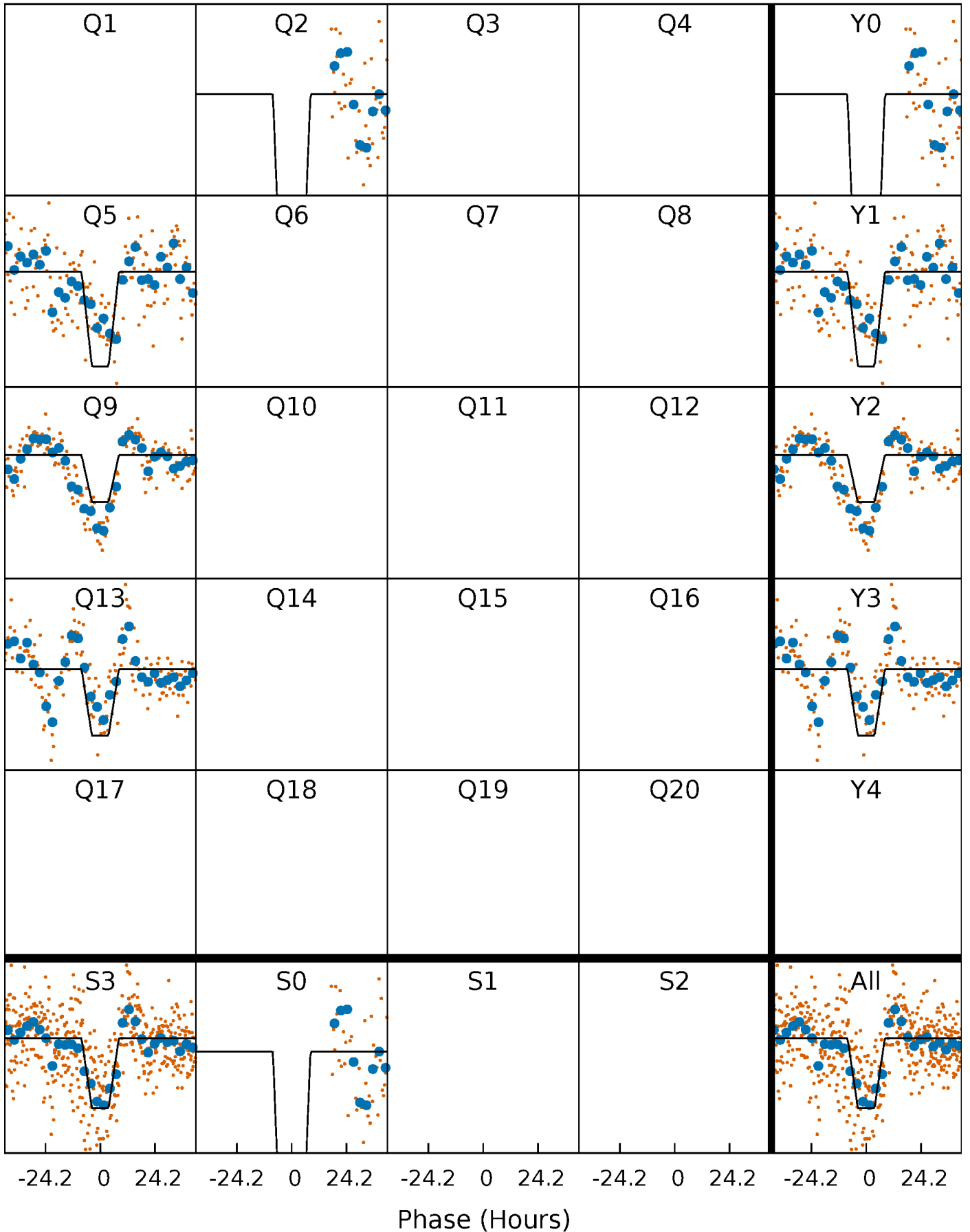
DV Quarter-Phased Transit Curves

TCE 006038777-01 P=362.755860 Days $T_0=169.057919$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

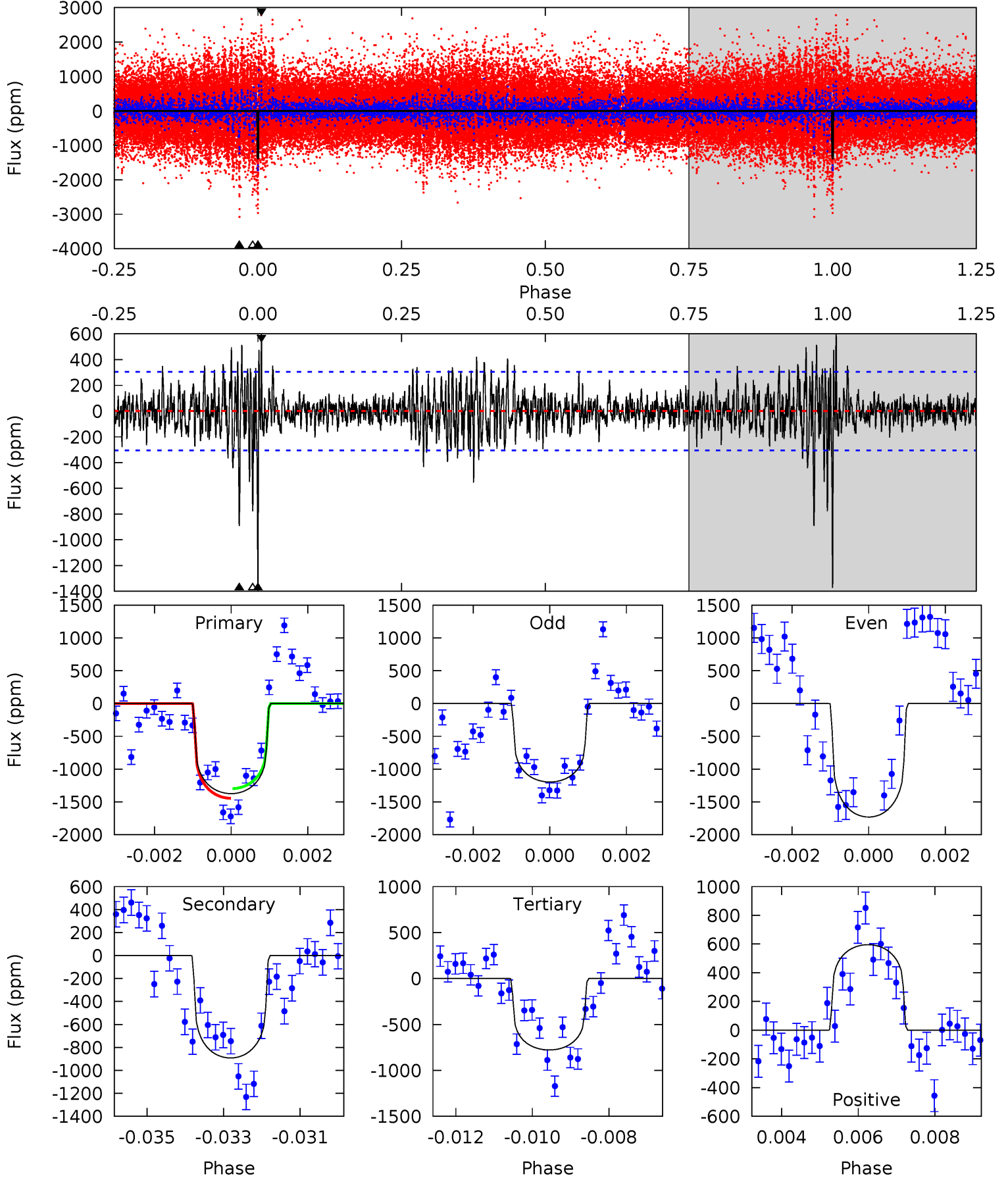
TCE 006038777-01 P=362.756991 Days $T_0=169.034816$ (BKJD)



DV Model-Shift Uniqueness Test

006038777-01, P = 362.755860 Days, E = 169.057919 Days

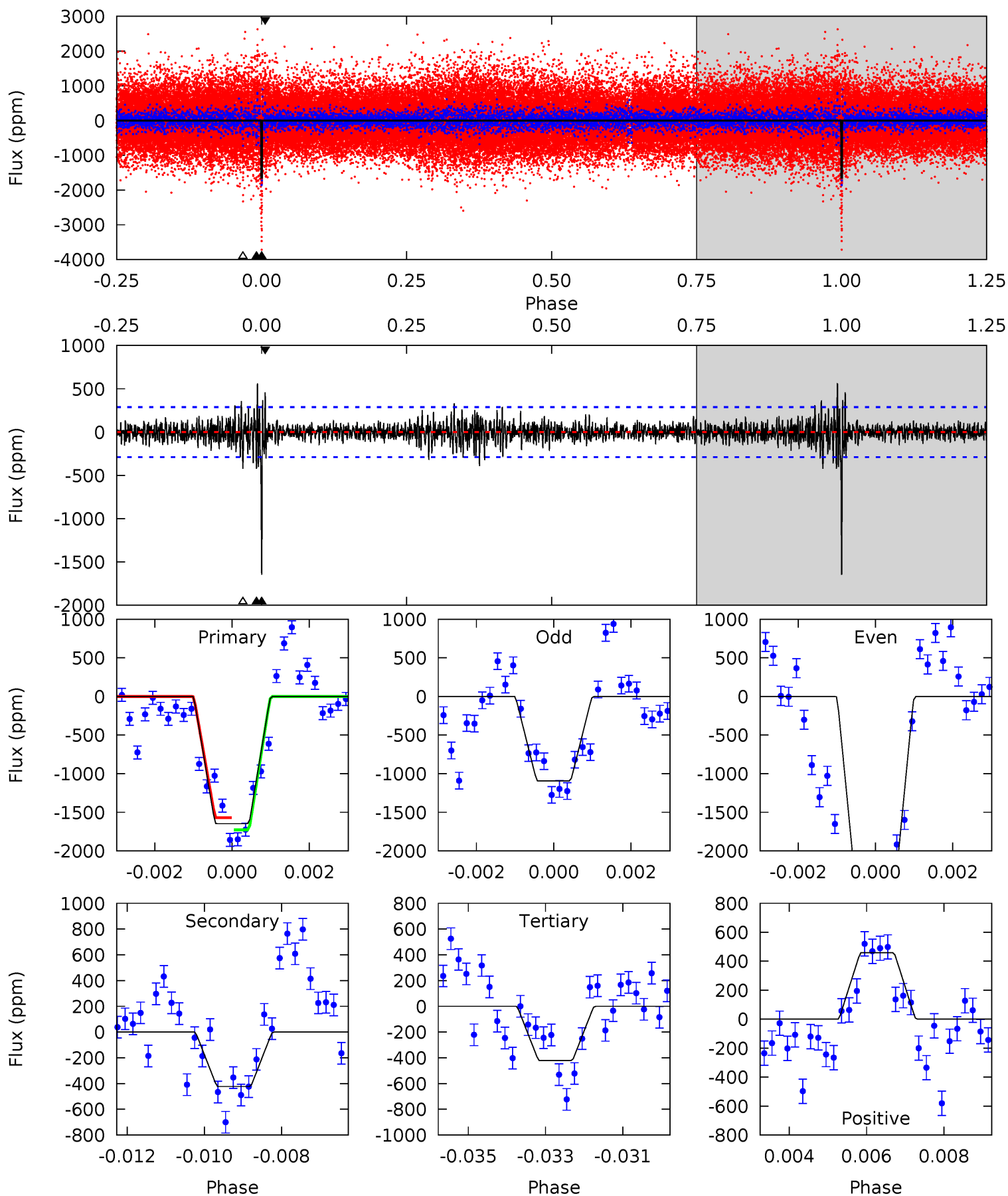
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.0	15.6	13.6	10.4	5.33	3.10	2.18	10.4	13.6	1.99	5.18	4.39	1.01	0.30	1.28



Alt Model-Shift Uniqueness Test

006038777-01, P = 362.756991 Days, E = 169.034816 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.4	7.81	7.79	8.49	5.33	3.10	1.52	22.7	22.0	0.02	-0.68	15.1	1.50	0.25	1.45



Stellar Parameters For KIC 006038777

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6029^{+180}_{-198}	$4.494^{+0.046}_{-0.184}$	$-0.100^{+0.300}_{-0.300}$	$0.956^{+0.252}_{-0.090}$	$1.040^{+0.126}_{-0.139}$	$1.675^{+0.412}_{-0.811}$
	+3%/-3%	+1%/-4%	+300%/-300%	+26%/-9%	+12%/-13%	+25%/-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 006038777-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-892 ± 57	$3.77^{+1.06}_{-0.93}$	369^{+23}_{-17}	5605^{+831}_{-522}	34734^{+26488}_{-13561}
Alt.	-423 ± 54	$4.60^{+1.13}_{-0.95}$	370^{+23}_{-17}	4377^{+458}_{-307}	10612^{+6795}_{-3701}

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

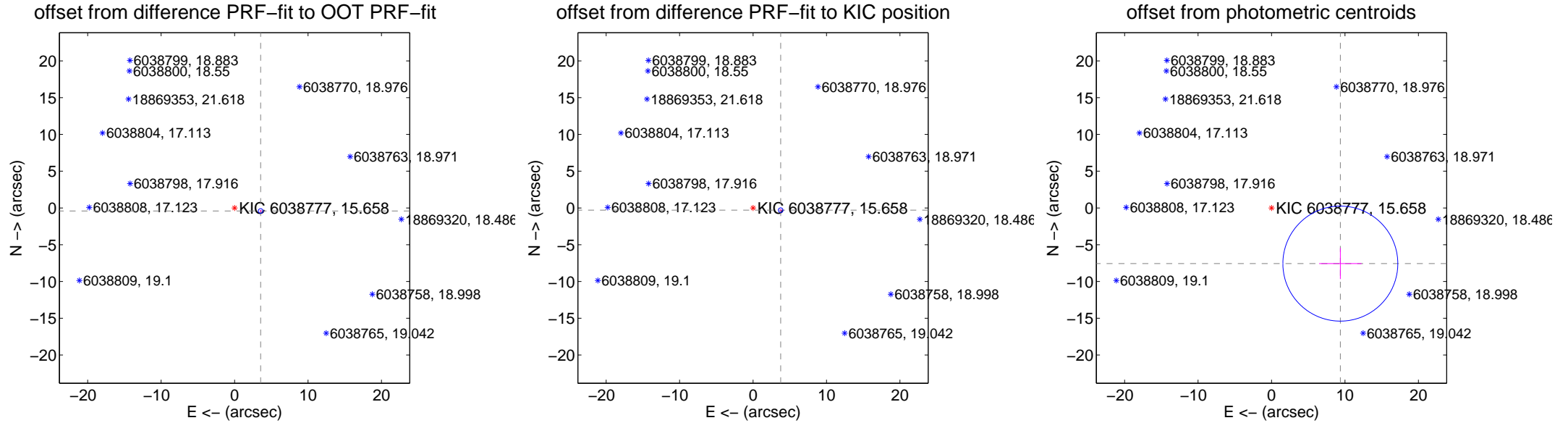
DV Centroid Data

Supplemental centroid analysis for 006038777-01. Kepler magnitude: 15.66. Transit SNR 9.12

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.566 ± 0.105	33.99	-3.543 ± 0.105	-0.410 ± 0.113
PRF-fit source offset from KIC position	3.773 ± 0.105	35.98	-3.761 ± 0.105	-0.300 ± 0.113
photometric centroid source offset	12.04 ± 2.61	4.62	-9.37 ± 2.89	-7.57 ± 2.11

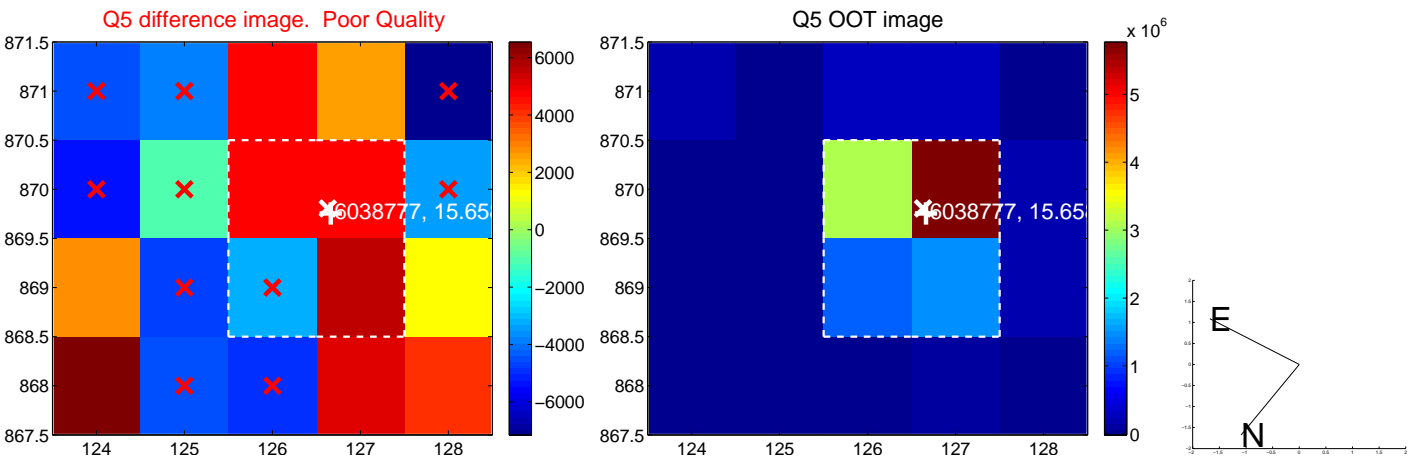


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

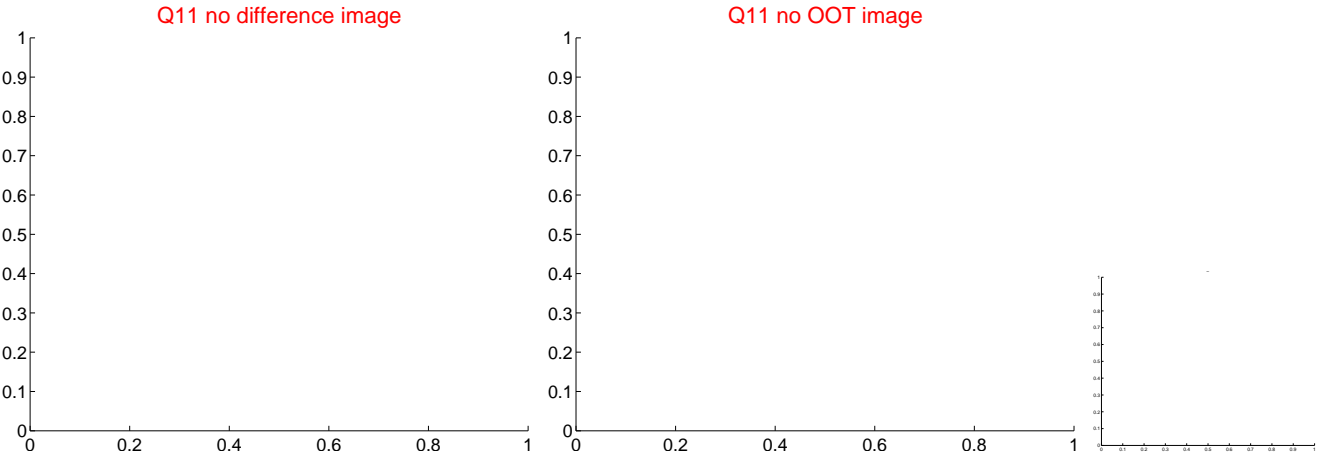
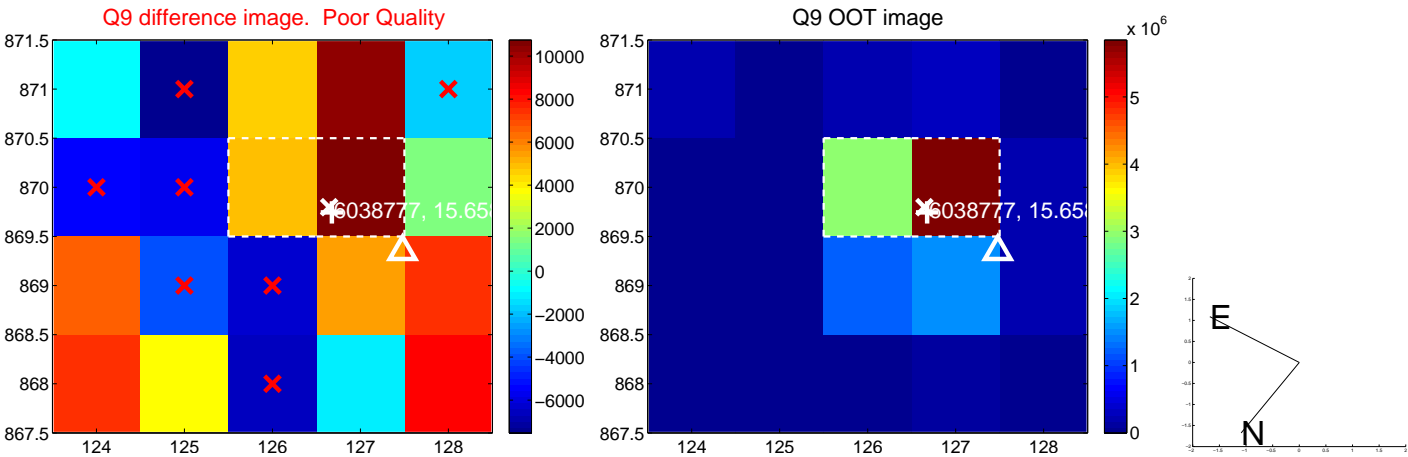
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



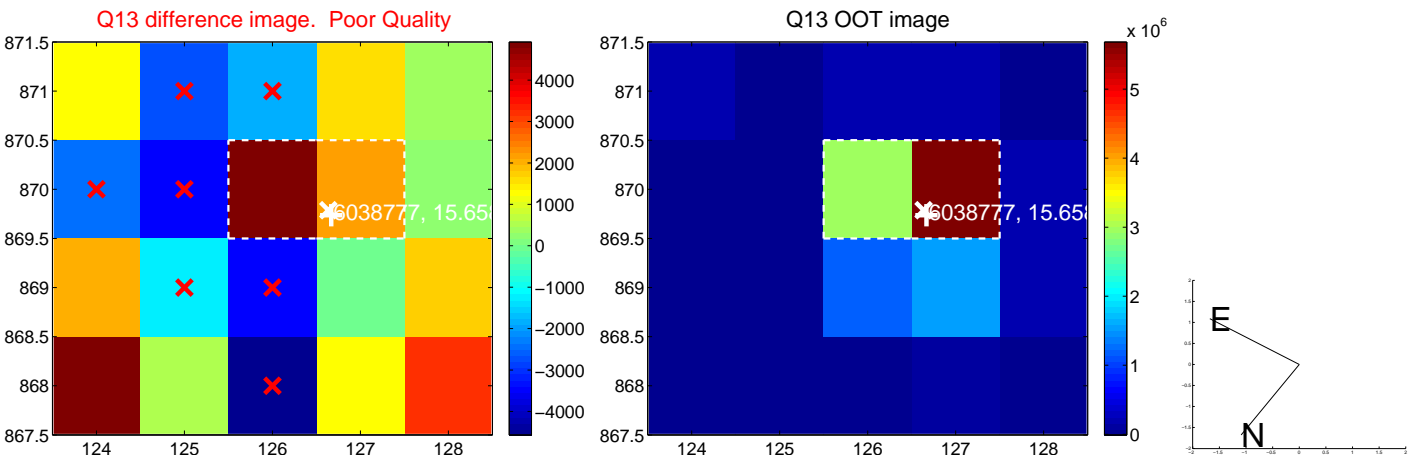
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



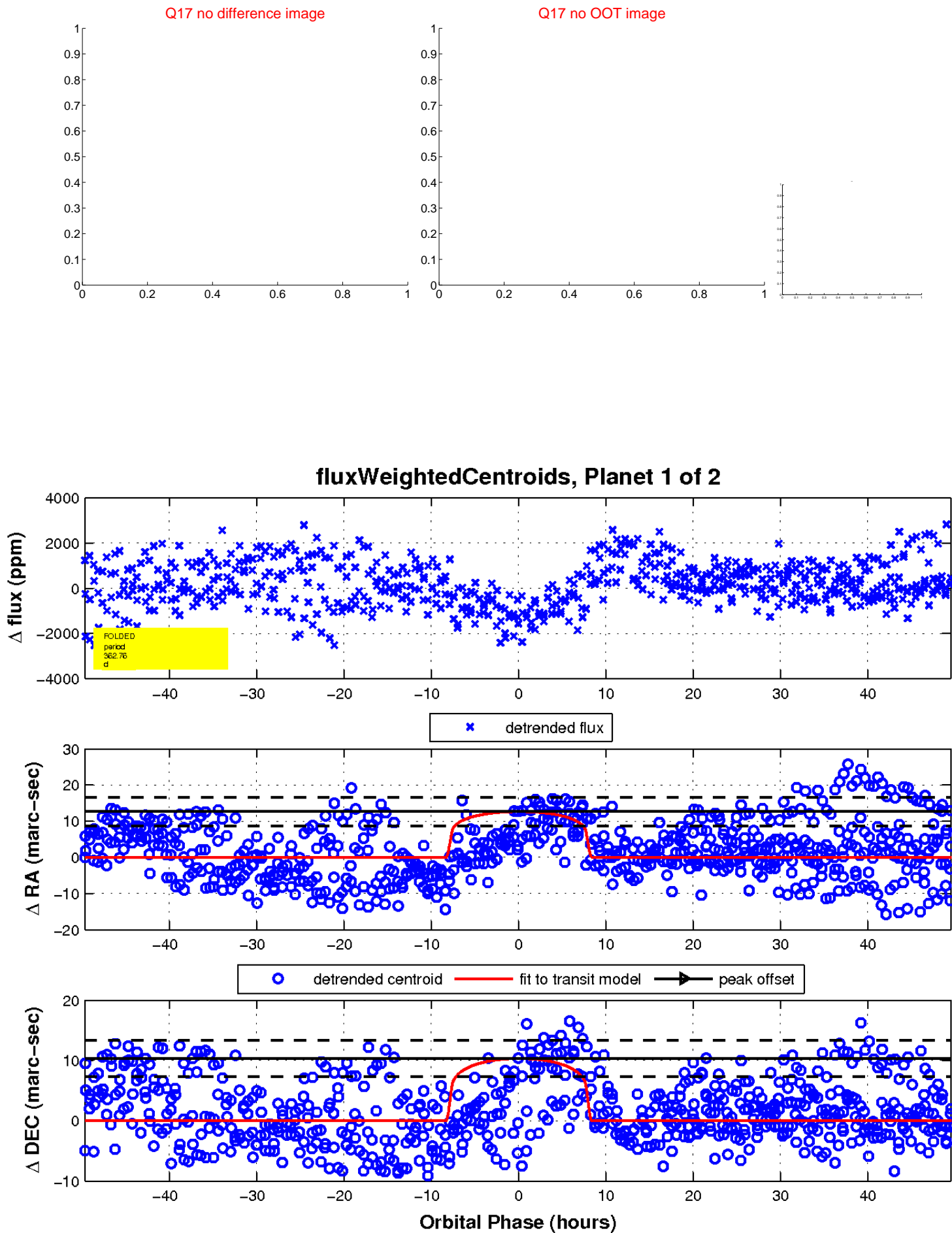
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

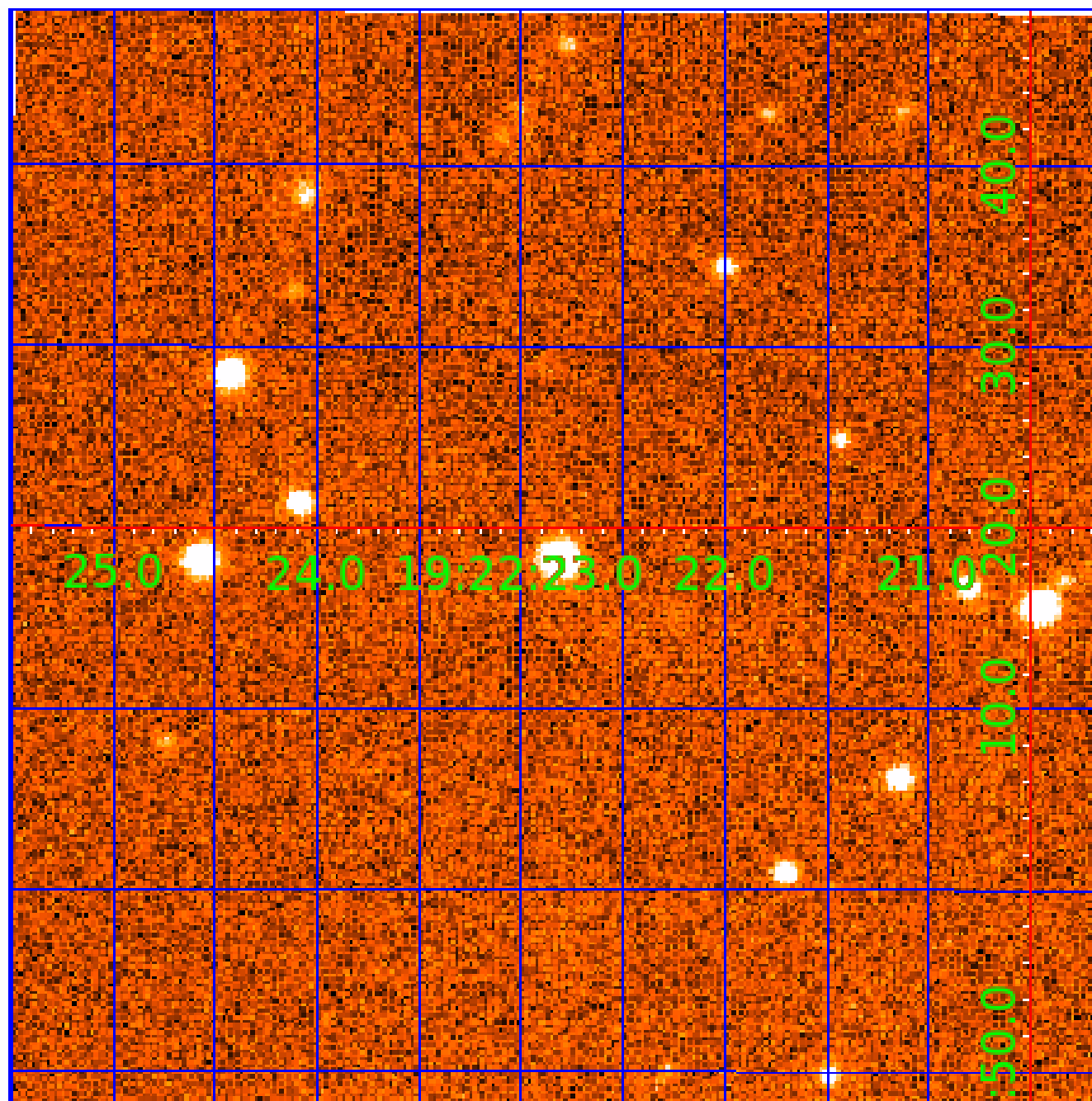


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006038777

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})
006038777-01	OBS	No	362.755860	169.057919	1365.3	16.611	9.8	9.1	0.96	6029	3.61	1.06
006038777-02	OBS	No	362.924753	165.420753	1122.7	16.193	7.6	7.6	0.96	6029	3.61	1.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006038777-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006038777-02	OBS	FP	0.02	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—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.

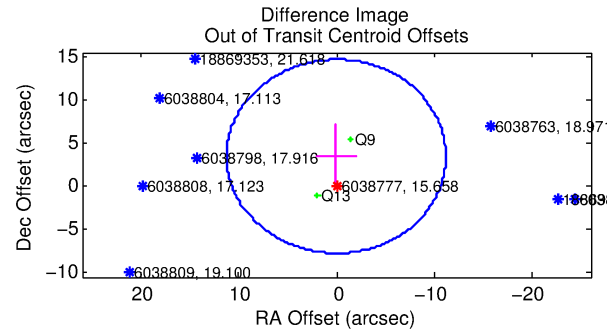
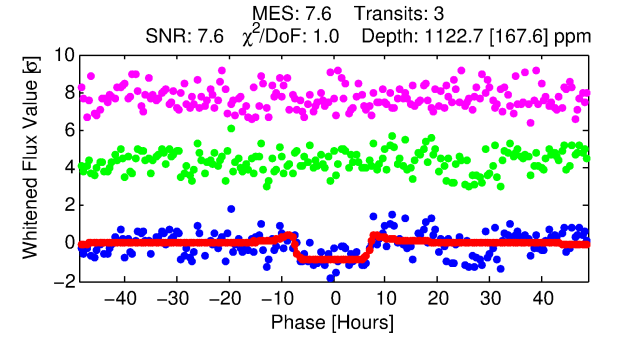
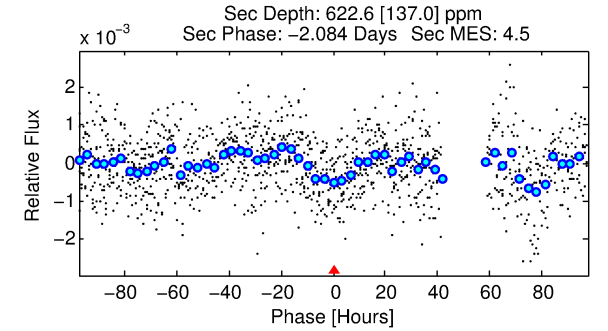
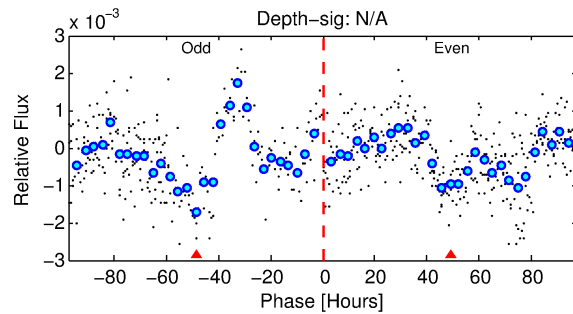
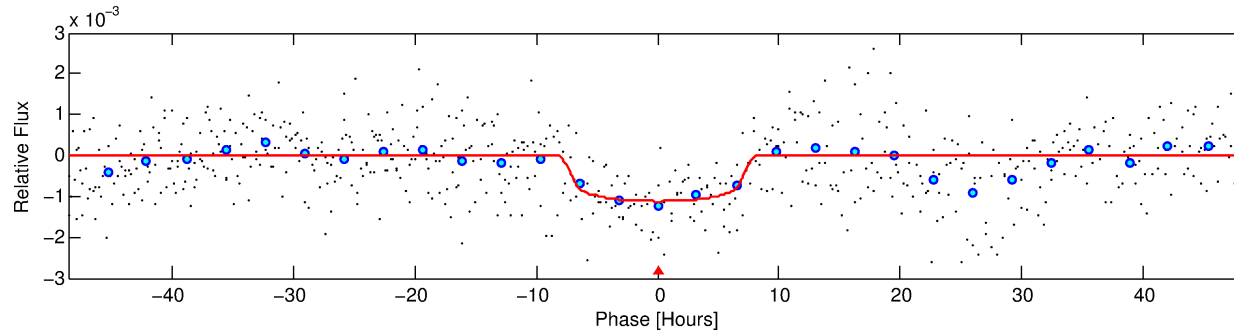
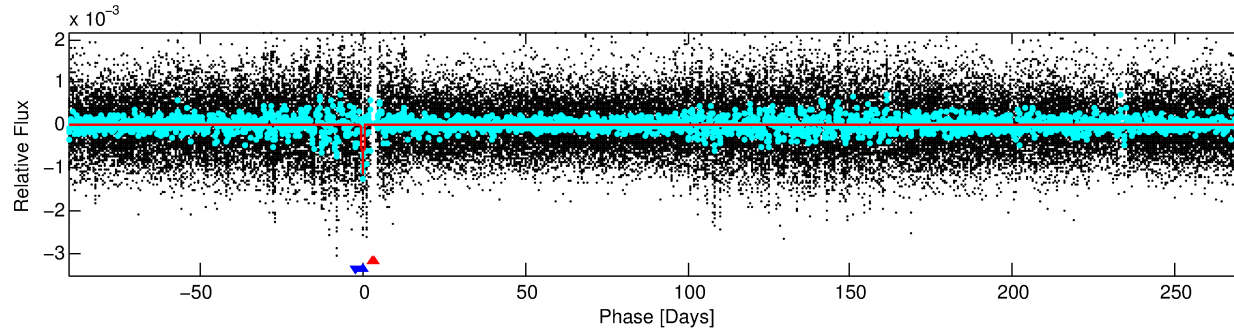
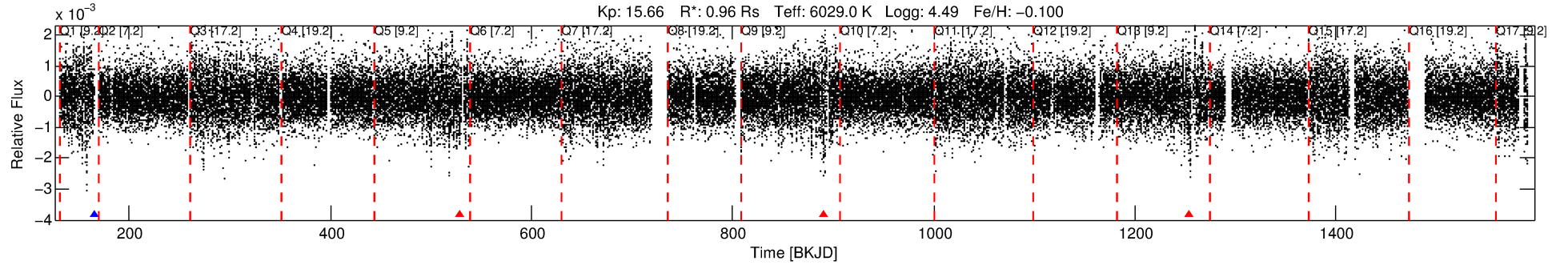
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006038777-02

No Significant Match Found

DV One-Page Summary

KIC: 6038777 Candidate: 2 of 2 Period: 362.925 d



DV Fit Results:

Period = 362.92475 [0.01662] d
Epoch = 165.4208 [0.0359] BKJD
Rp/R* = 0.0346 [0.0043]
a/R* = 104.08 [45.92]
b = 0.84 [0.16]
Seff = 1.06 [0.38]
Teq = 259 [23] K
Rp = 3.61 [1.05] Re
a = 1.0090 [0.2275] AU
Ag = 26694.11 [12540.12] [2.13σ]
Teff = 5117 [456] K [10.63σ]

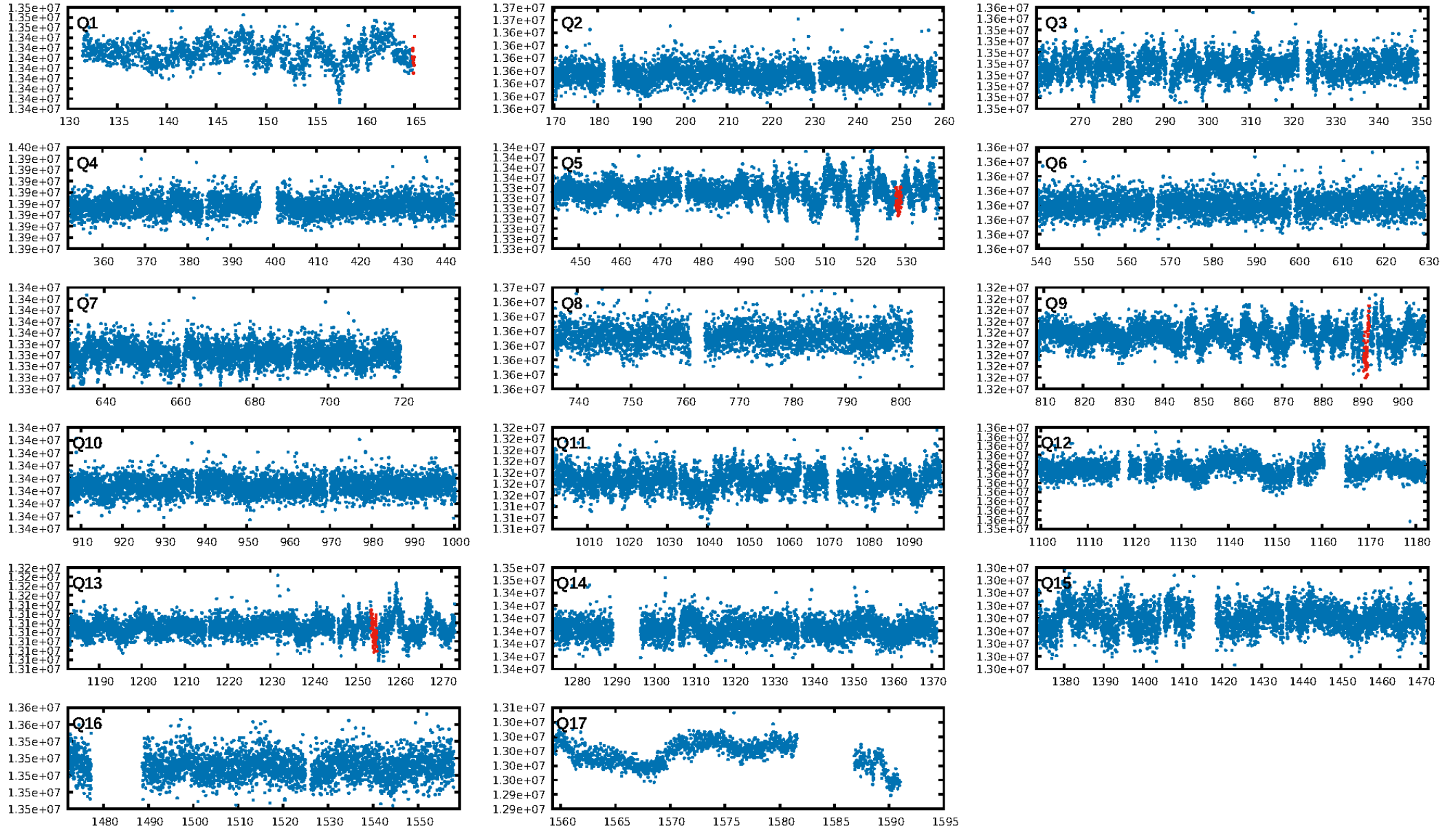
DV Diagnostic Results:

ShortPeriod-sig: 13.9% [0.17σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 26.0%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 8.46e-09
RollingBand-fgt: 0.00 [0/3]
GhostDiagnostic-chr: -3.443
Centroid-sig: 0.8%
Centroid-so: 5.308 arcsec [1.66σ]
OotOffset-rm: 3.455 arcsec [0.92σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 3.553 arcsec [1.01σ]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

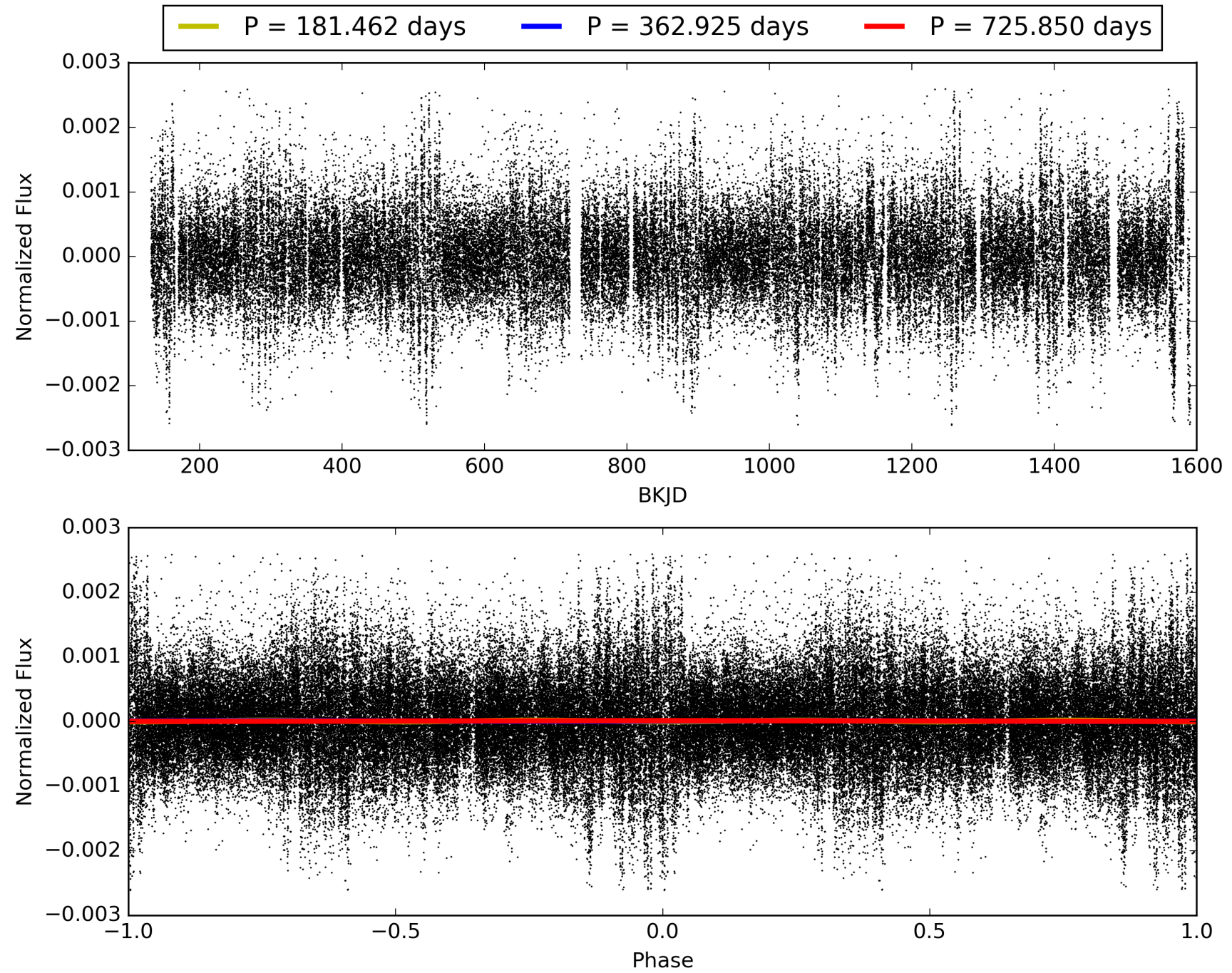
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:14:29 Z

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

TCE 006038777-02, PDC Light Curves

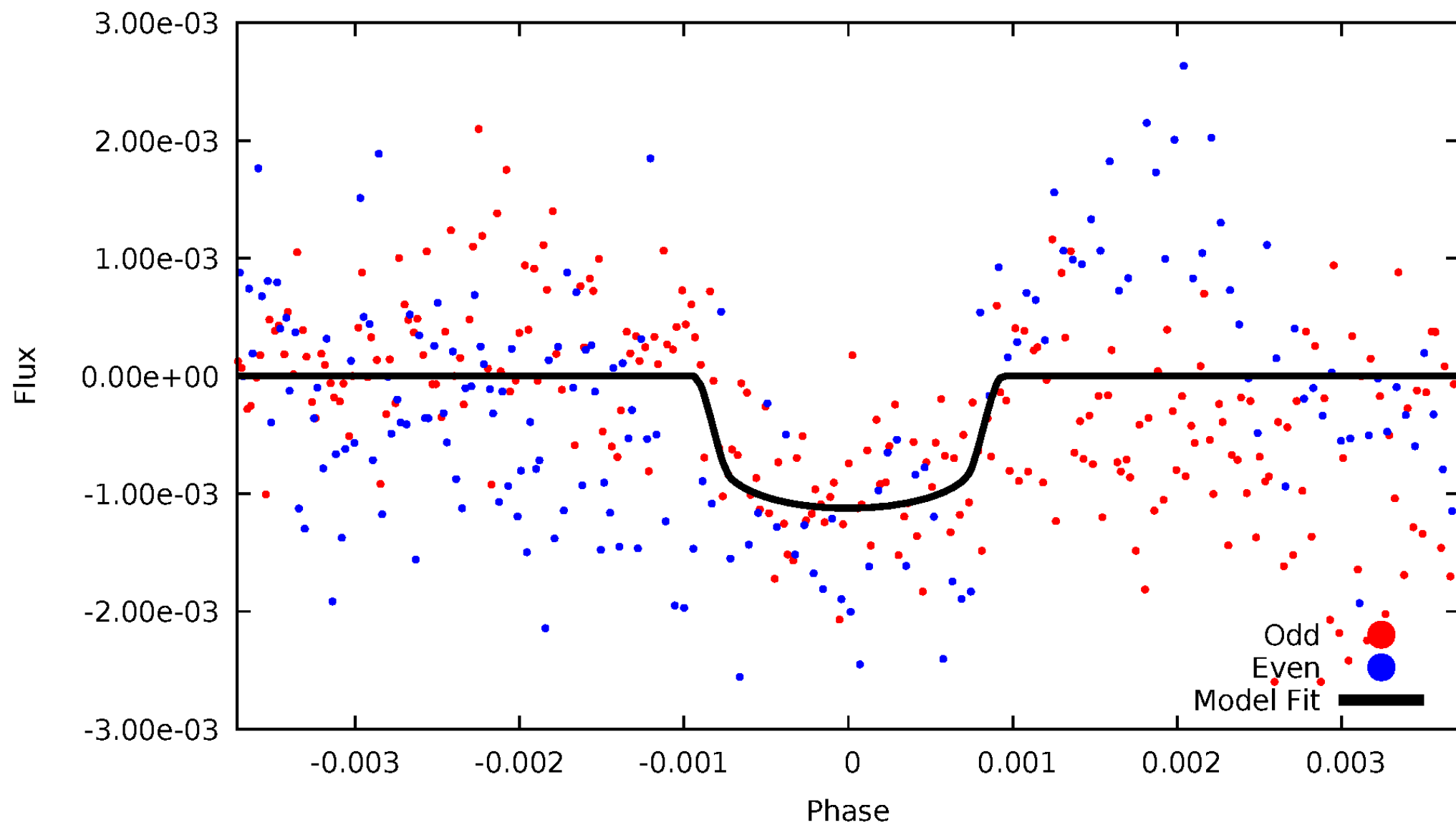


TCE 006038777-02



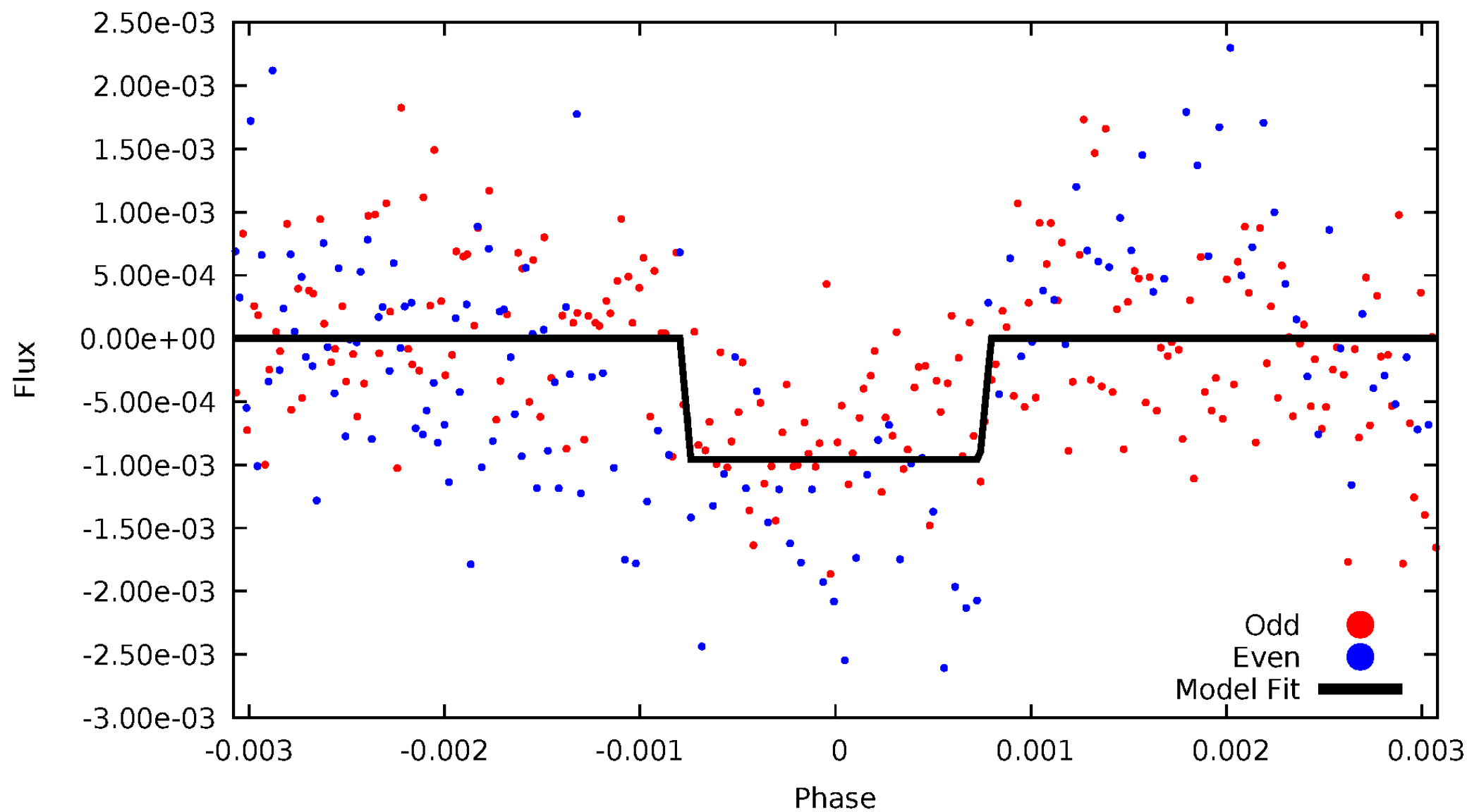
DV Odd/Even

TCE 006038777-02



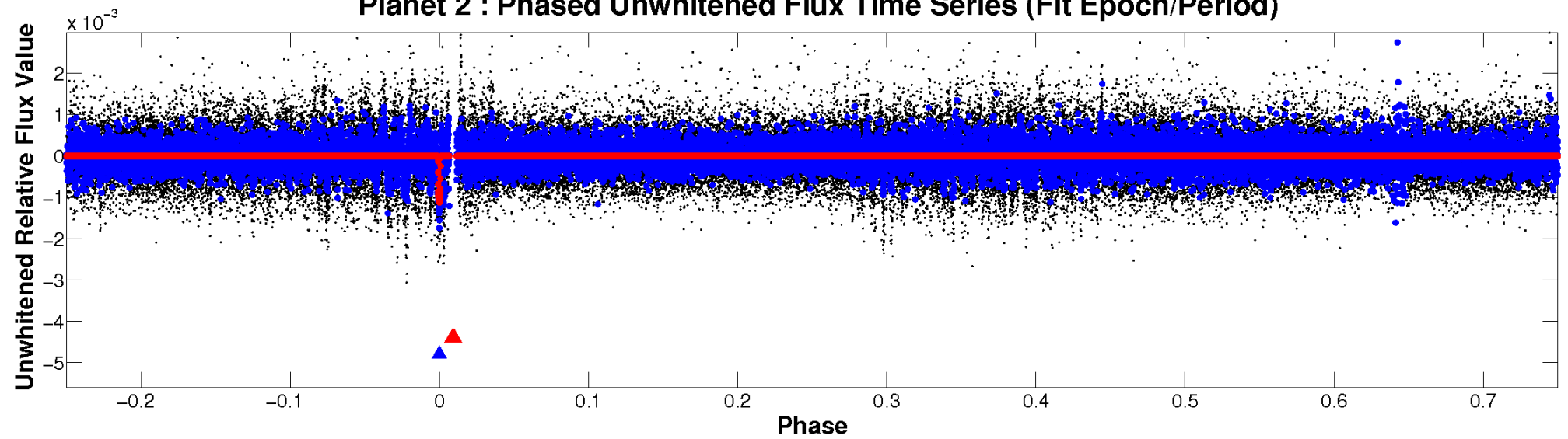
ALT Odd/Even

TCE 006038777-02

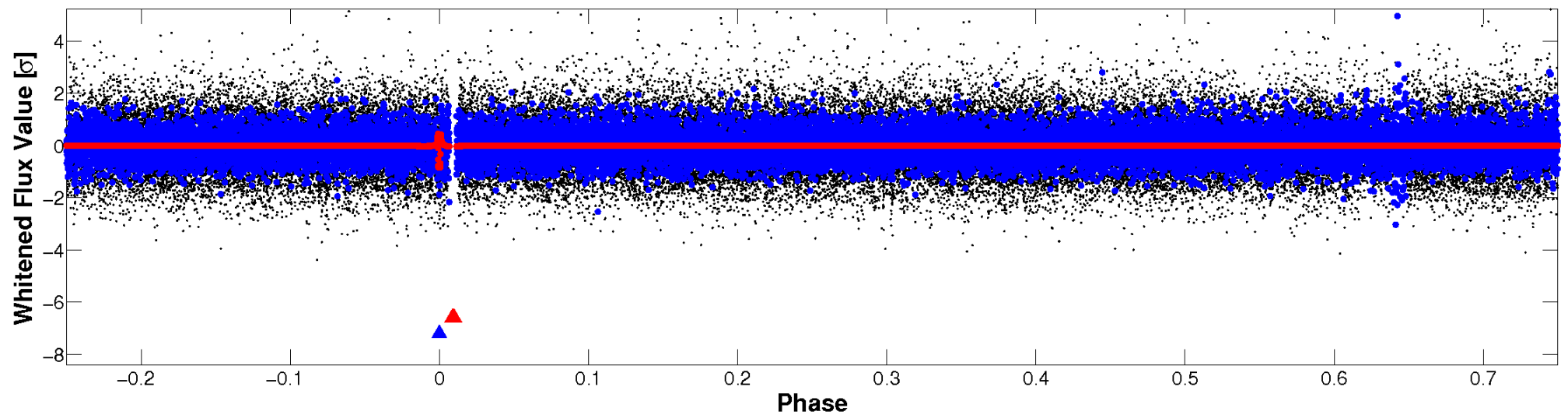


Non-Whitened Vs. Whitened Light Curve

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

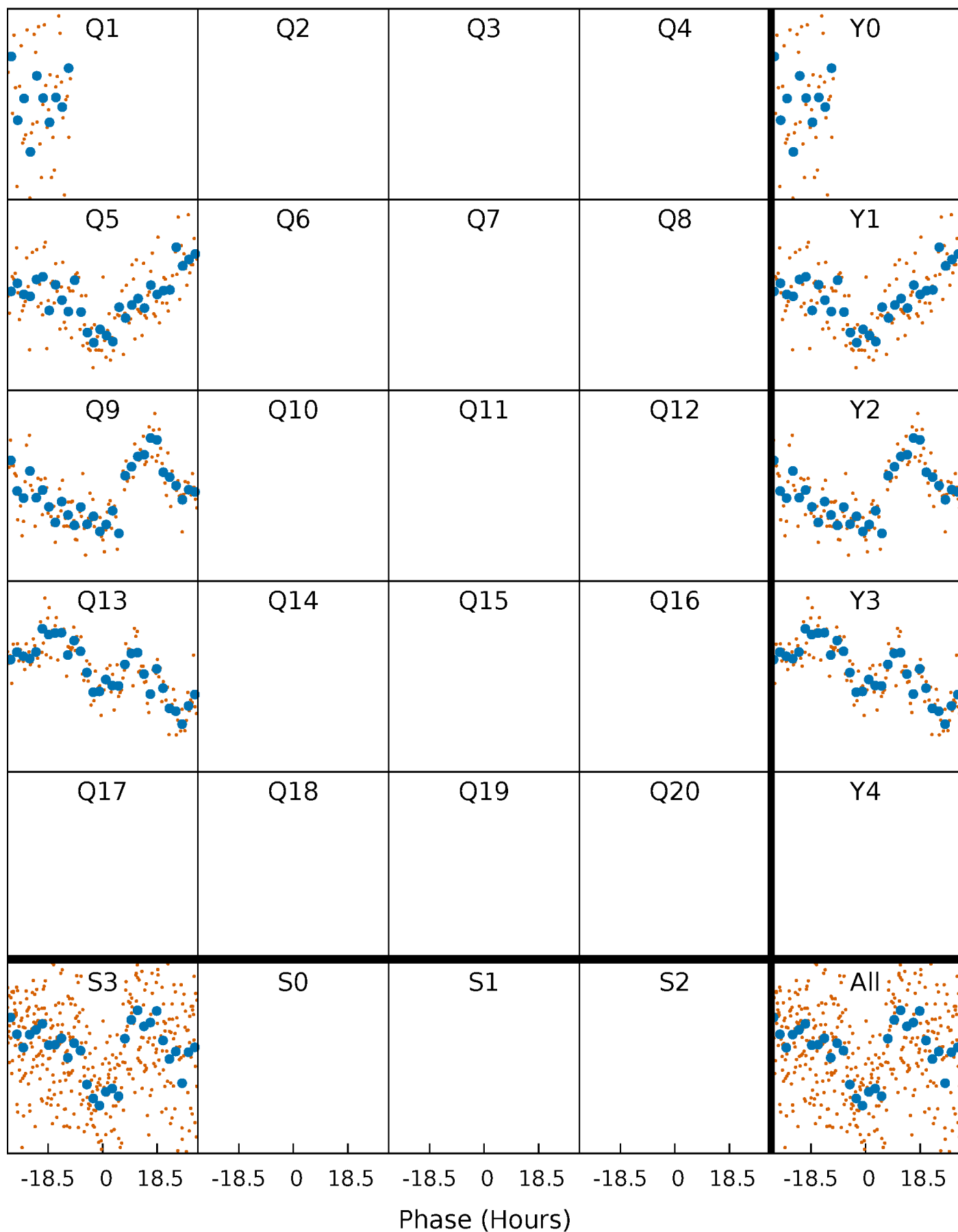


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



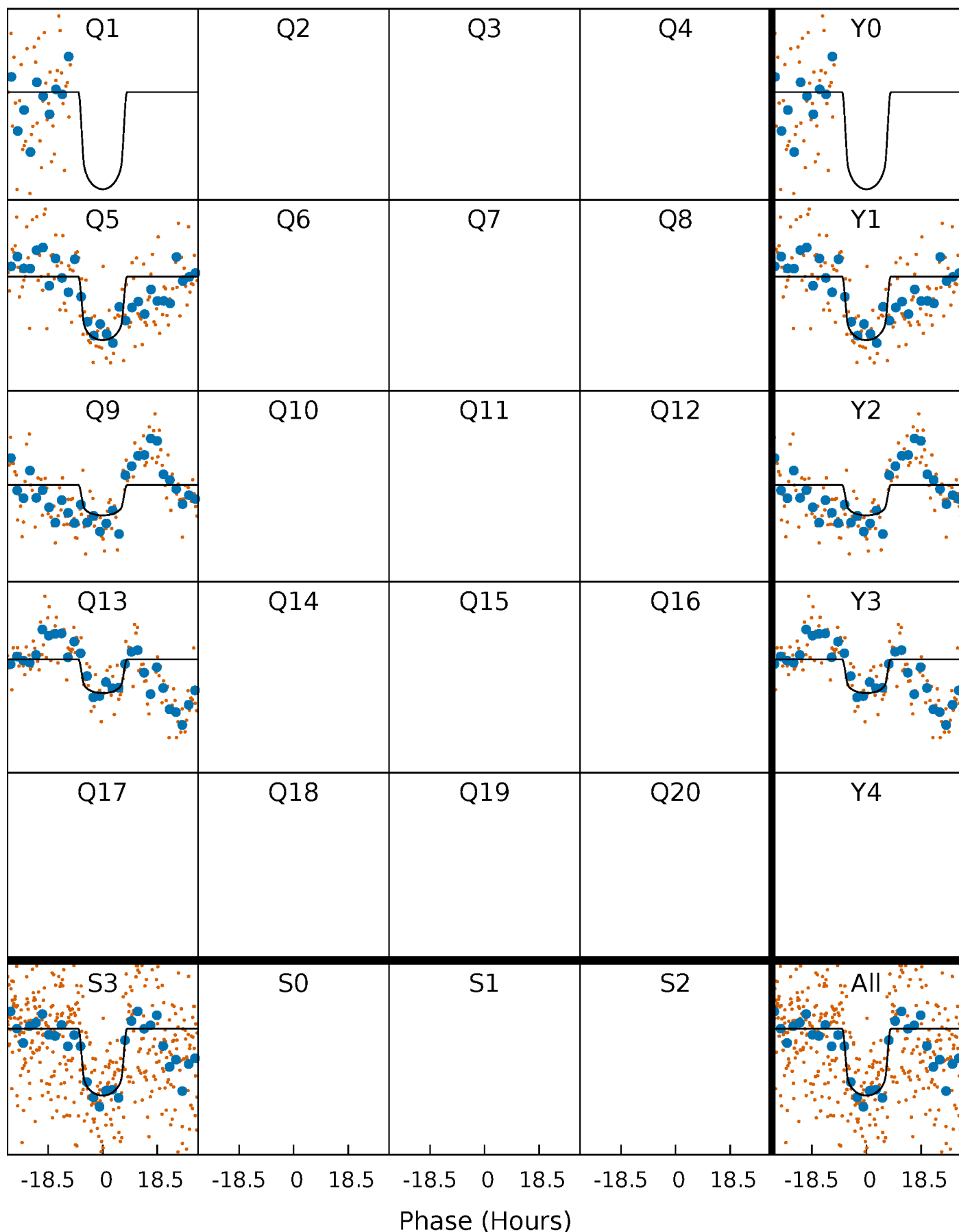
PDC Quarter-Phased Transit Curves

TCE 006038777-02 $P=362.924753$ Days $T_0=165.420753$ (BKJD)



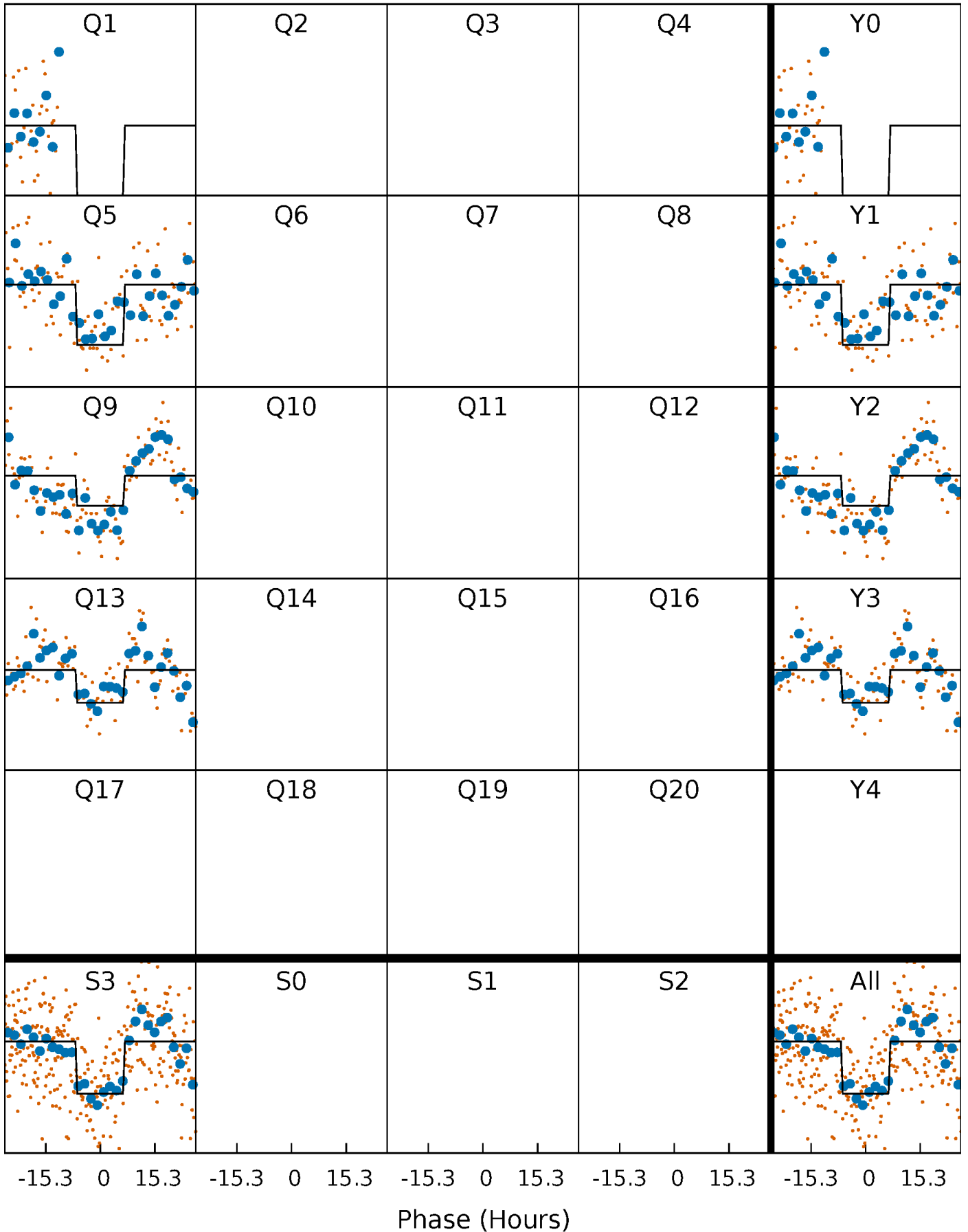
DV Quarter-Phased Transit Curves

TCE 006038777-02 $P=362.924753$ Days $T_0=165.420753$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

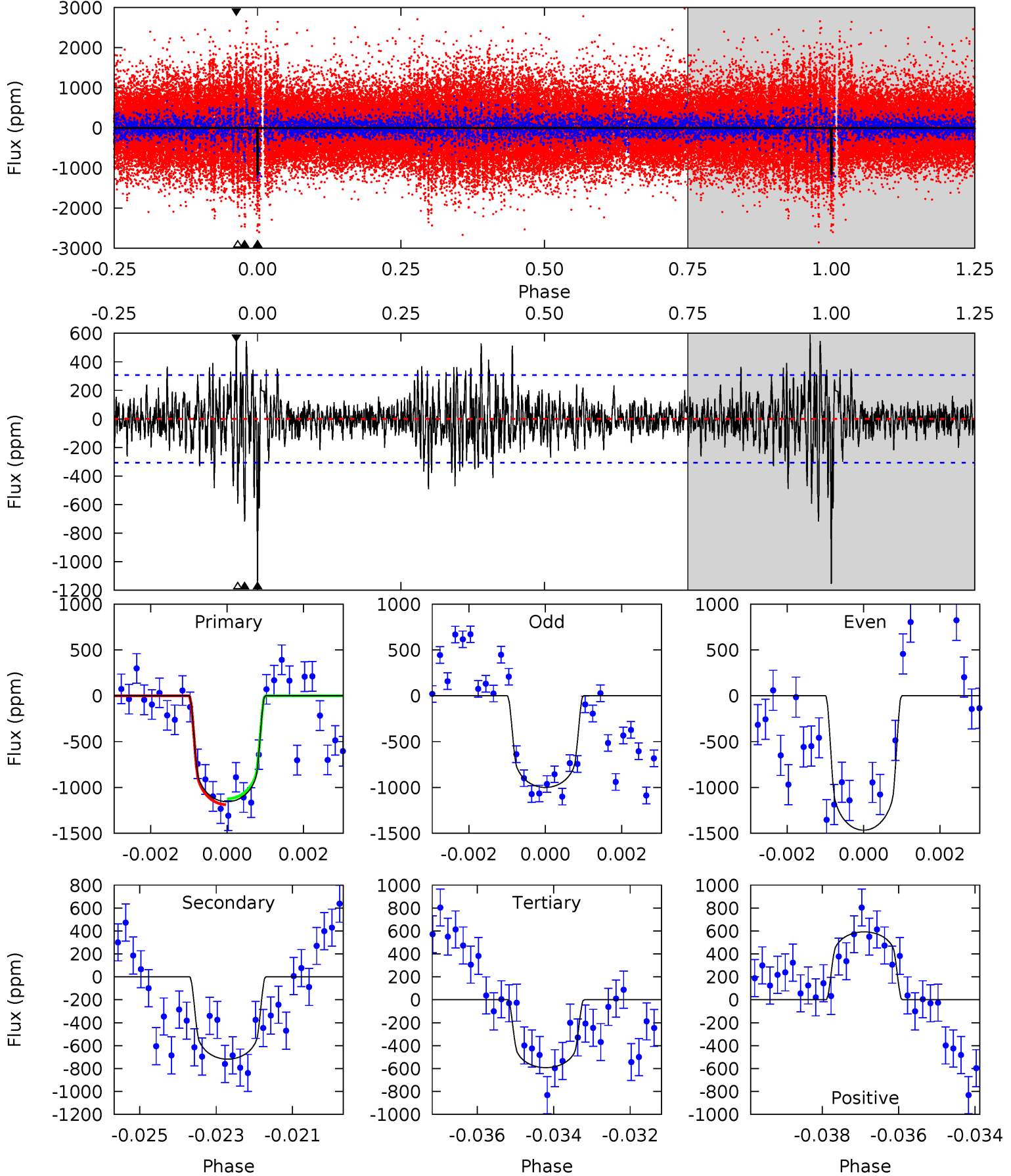
TCE 006038777-02 P=362.906837 Days $T_0=165.464221$ (BKJD)



DV Model-Shift Uniqueness Test

006038777-02, P = 362.924753 Days, E = 165.420753 Days

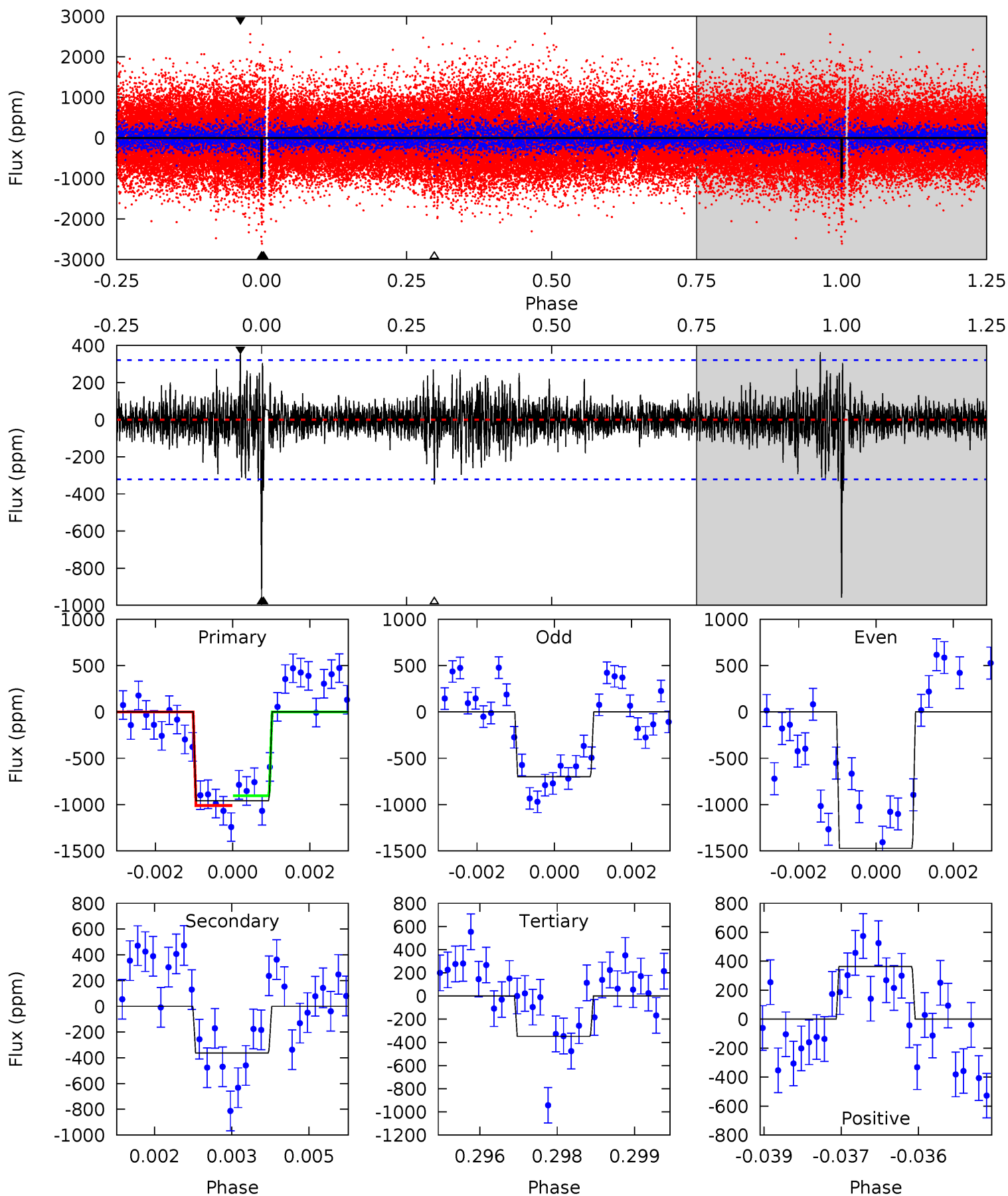
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	12.5	10.3	10.3	5.34	3.10	2.22	9.79	9.79	2.19	2.19	3.81	1.15	0.34	0.56



Alt Model-Shift Uniqueness Test

006038777-02, P = 362.906837 Days, E = 165.464221 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.0	6.07	5.83	6.09	5.37	3.16	1.18	10.2	9.93	0.24	-0.02	6.15	1.29	0.28	0.87



Stellar Parameters For KIC 006038777

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6029^{+180}_{-198}	$4.494^{+0.046}_{-0.184}$	$-0.100^{+0.300}_{-0.300}$	$0.956^{+0.252}_{-0.090}$	$1.040^{+0.126}_{-0.139}$	$1.675^{+0.412}_{-0.811}$
	+3%/-3%	+1%/-4%	+300%/-300%	+26%/-9%	+12%/-13%	+25%/-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 006038777-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-718 ± 58	$3.76^{+0.72}_{-0.56}$	370^{+24}_{-18}	5355^{+341}_{-320}	27915^{+9921}_{-8226}
Alt.	-363 ± 60	$3.34^{+0.62}_{-0.52}$	369^{+23}_{-17}	4835^{+346}_{-305}	17184^{+7911}_{-4841}

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 $A_{obs} \gg 1.0$

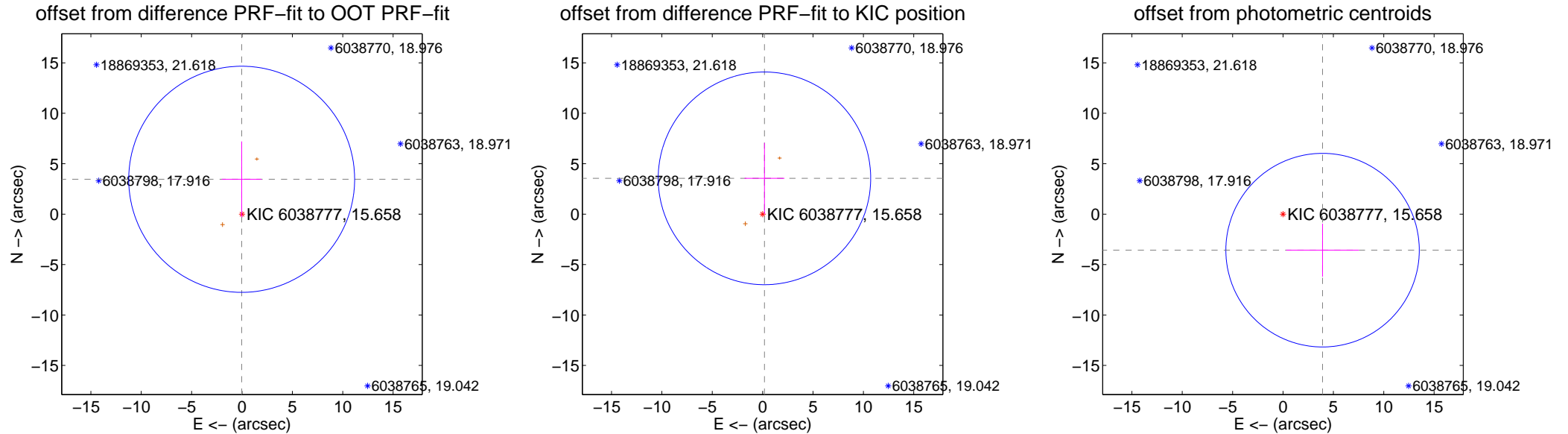
DV Centroid Data

Supplemental centroid analysis for 006038777-02. Kepler magnitude: 15.66. Transit SNR 7.60

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	3.455 ± 3.736	0.92	0.032 ± 1.969	3.455 ± 3.755
PRF-fit source offset from KIC position	3.553 ± 3.514	1.01	-0.180 ± 1.979	3.548 ± 3.517
photometric centroid source offset	5.31 ± 3.20	1.66	-3.93 ± 3.60	-3.57 ± 2.63

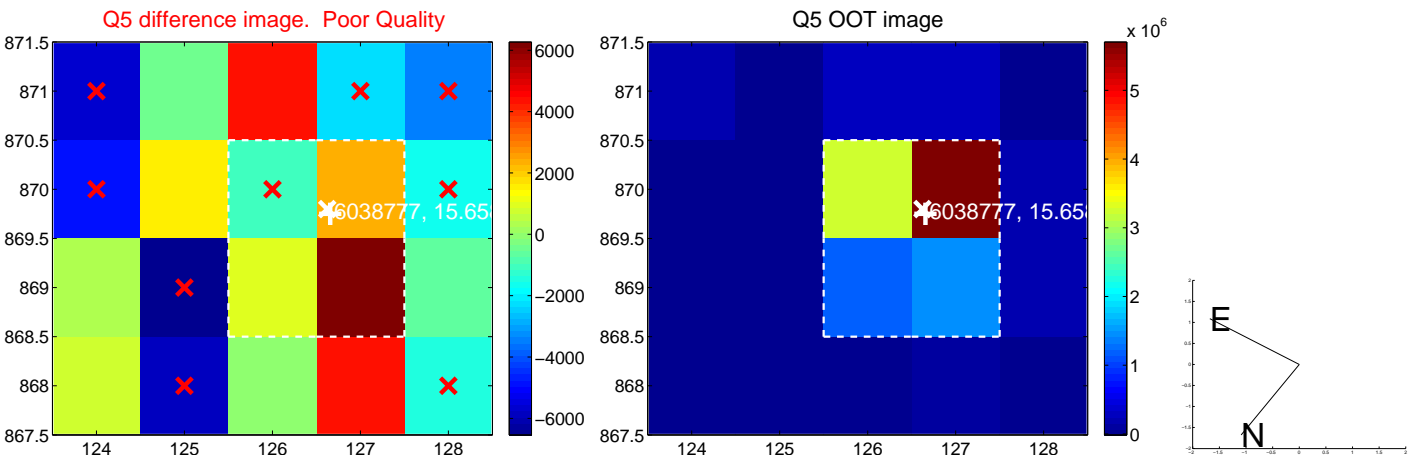


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

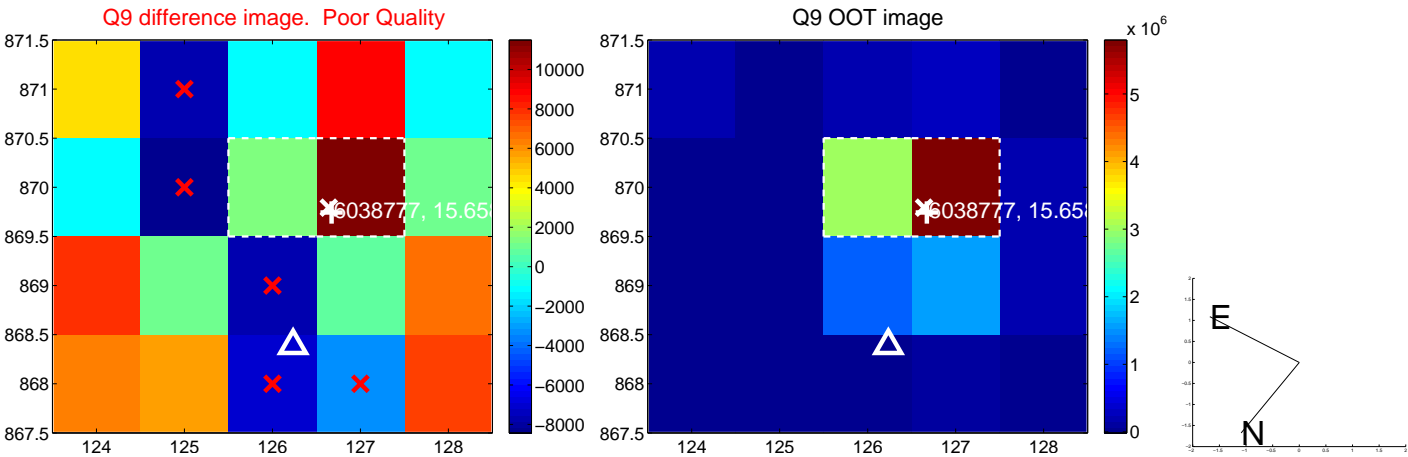
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



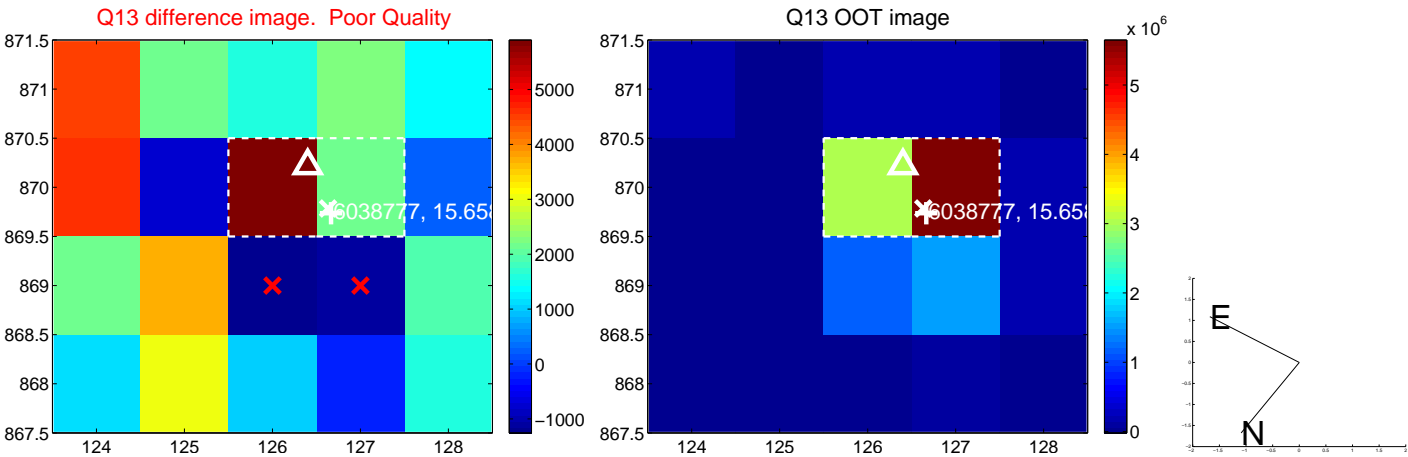
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



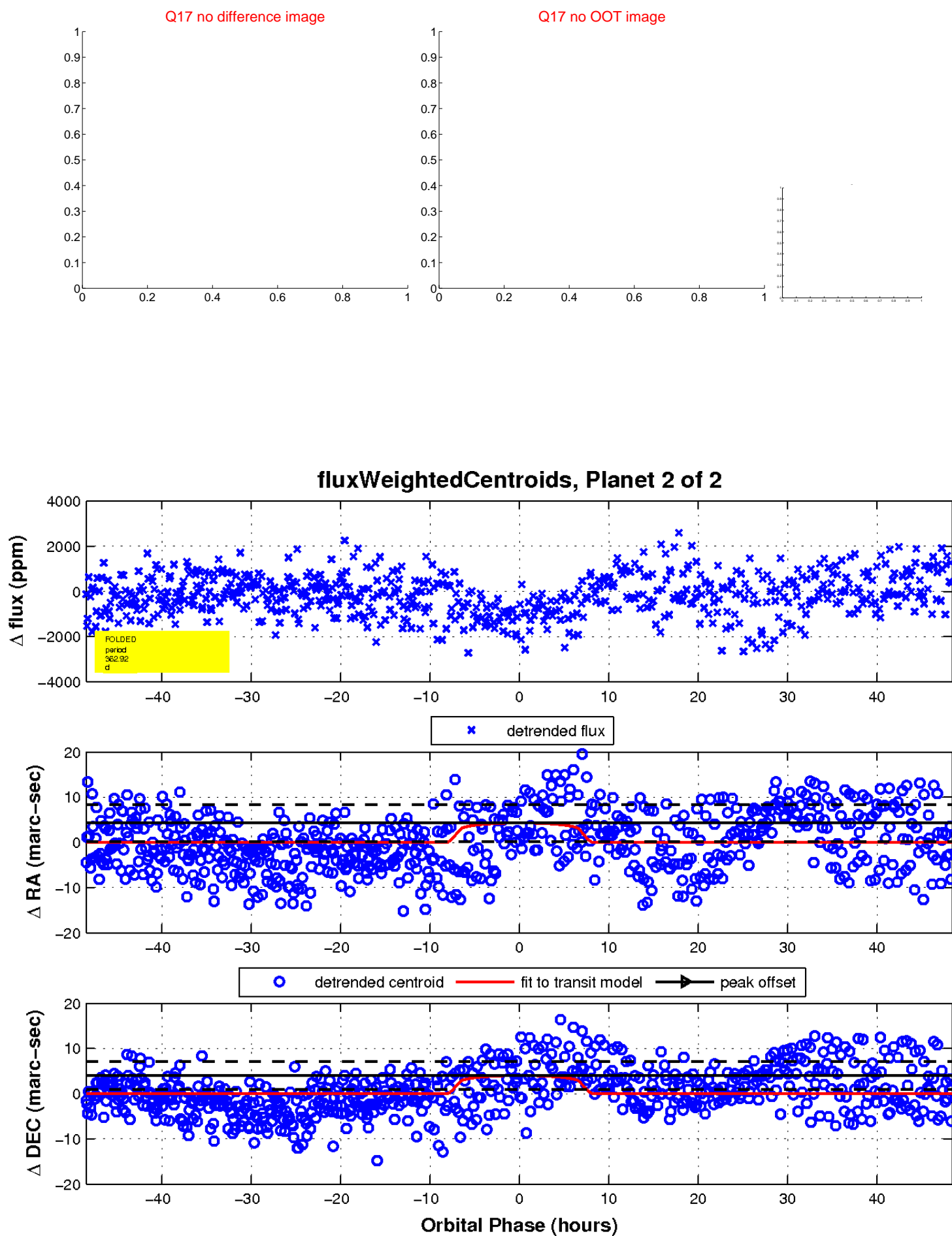
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

