

KIC 003848645

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})
003848645-01	OBS	No	378.228190	252.188306	274.9	3.000	12.6	-1.0	3.35	8072	5.62	24.97
003848645-02	OBS	No	322.928323	299.962241	651.0	3.460	9.5	7.9	3.35	8072	8.86	30.82
003848645-03	OBS	No	300.461879	193.846815	1171.1	3.939	10.4	11.2	3.35	8072	14.16	33.93
003848645-04	OBS	No	0.515761	131.566417	37.4	2.374	10.1	8.2	3.35	8072	2.10	165103.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003848645-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003848645-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003848645-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003848645-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED

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

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

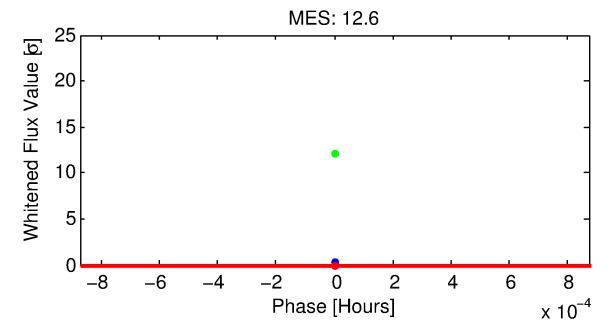
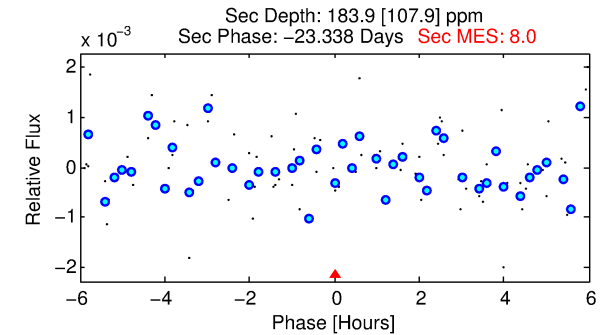
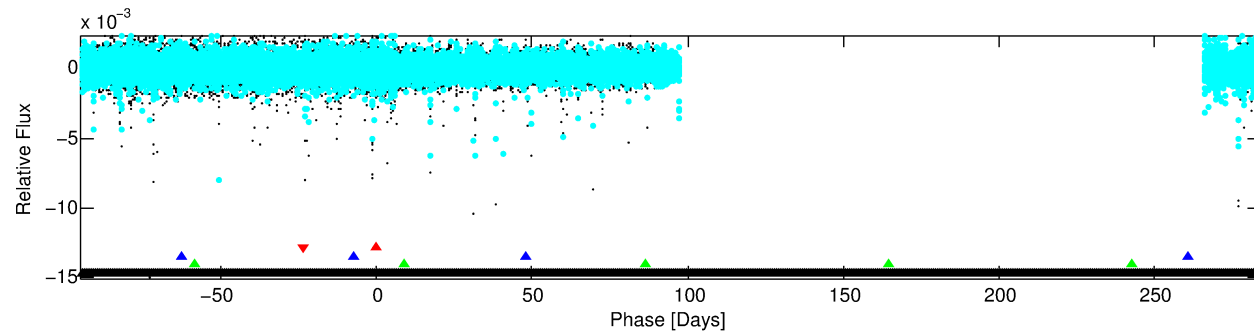
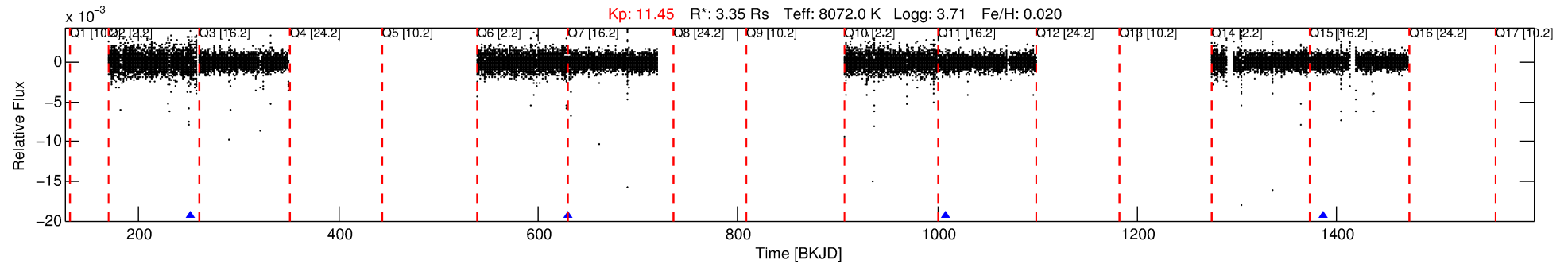
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003848645-01

No Significant Match Found

DV One-Page Summary

KIC: 3848645 Candidate: 1 of 4 Period: 378.228 d



TPS TCE Results:

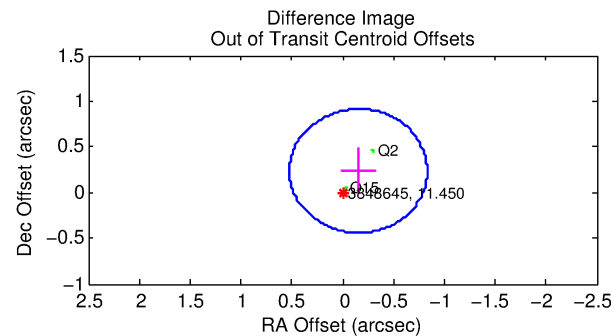
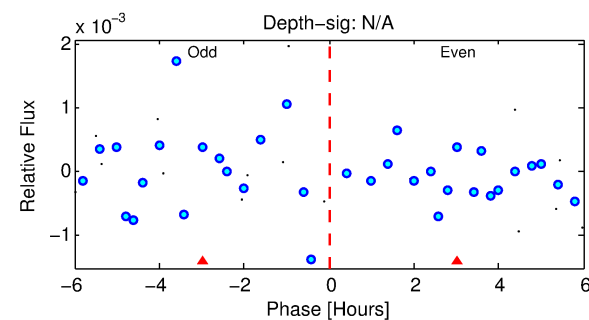
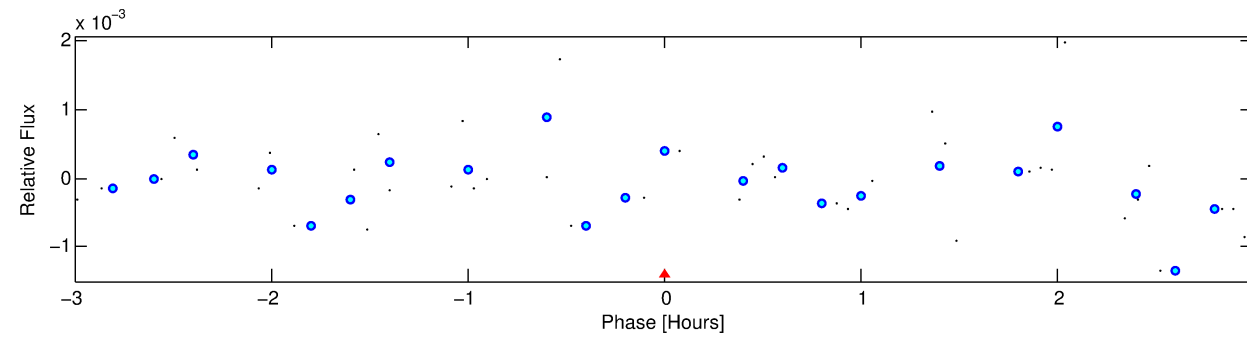
Period = 378.22819 d
Epoch = 252.1883 BKJD

DV fit results are unavailable

DV Diagnostic Results:

ShortPeriod-sig: 100.0% [289.80σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.38e-09
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.722

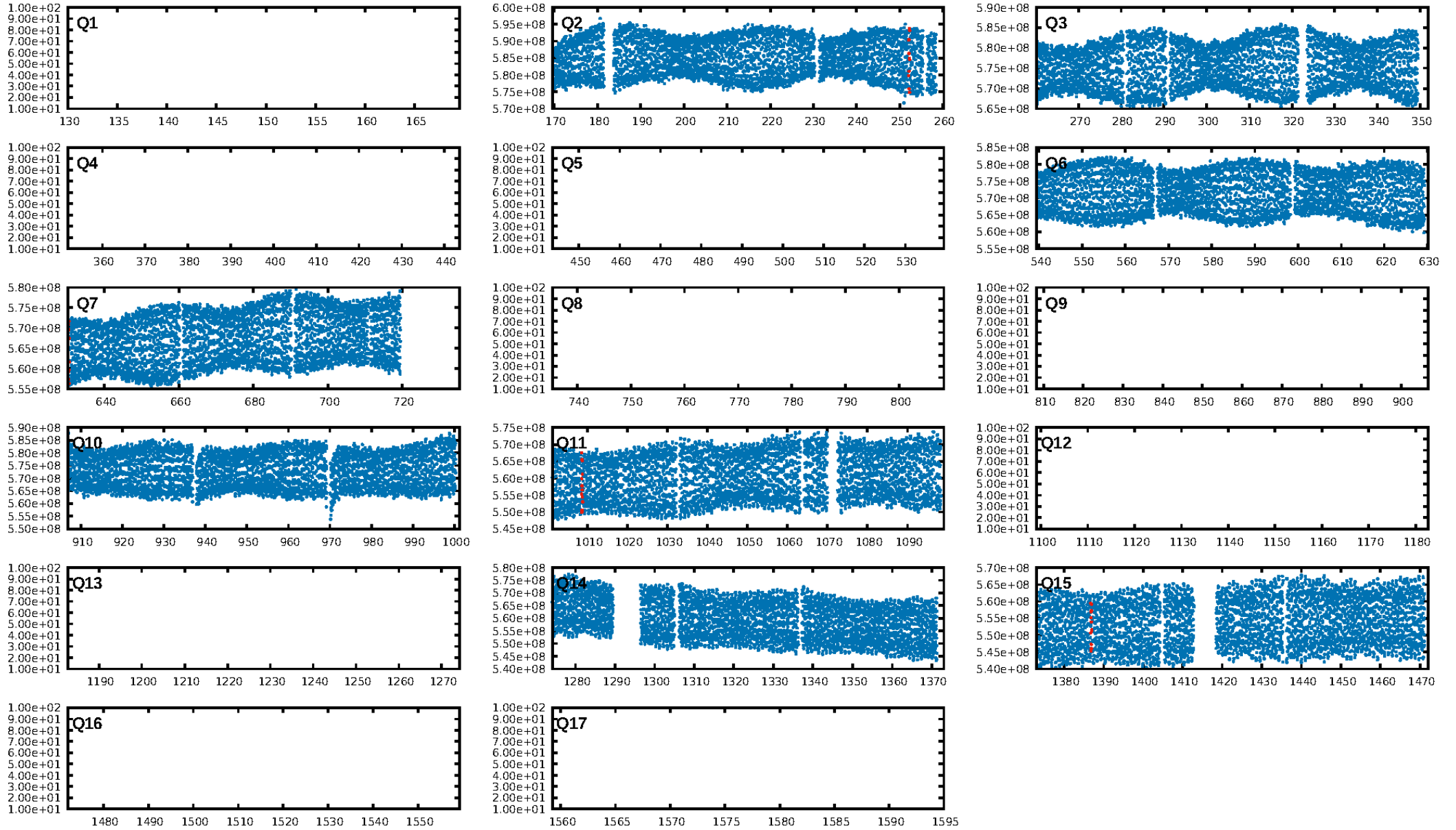
Centroid-sig: 94.9%
Centroid-so: 0.150 arcsec [2.99σ]
OotOffset-rm: 0.283 arcsec [1.25σ]
KicOffset-rm: 0.481 arcsec [2.53σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/2]



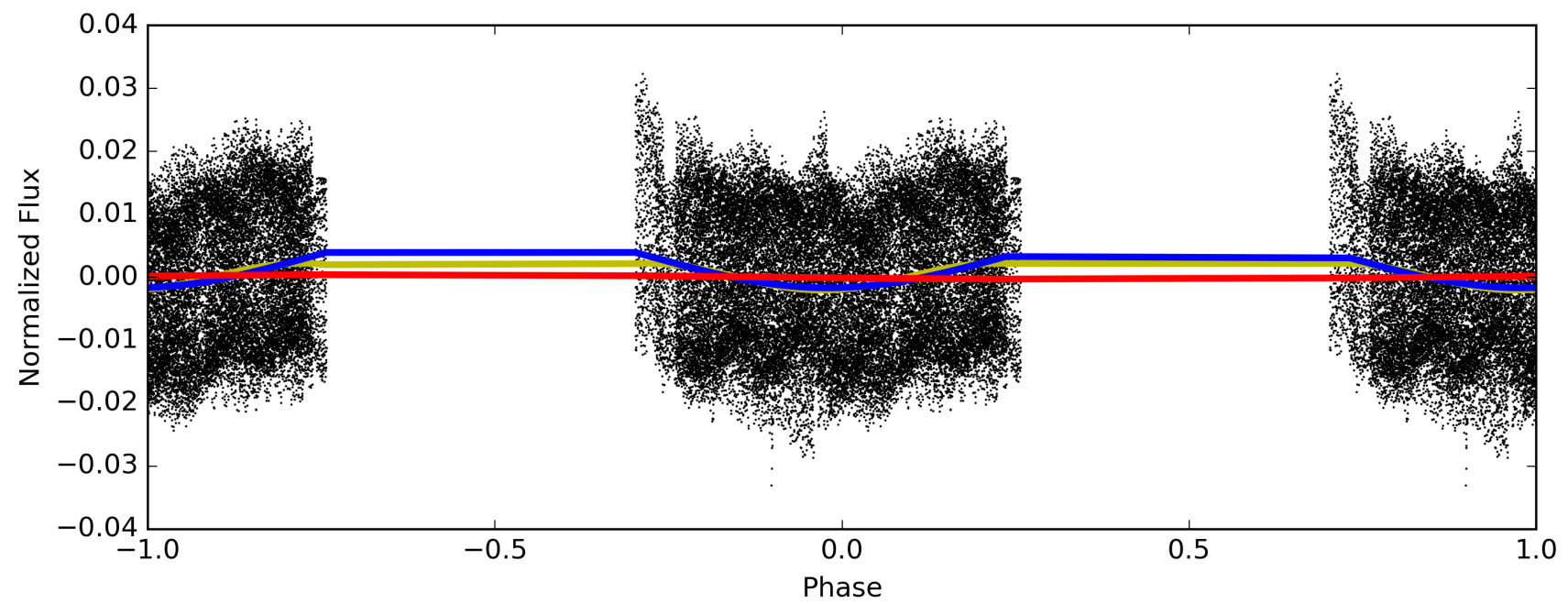
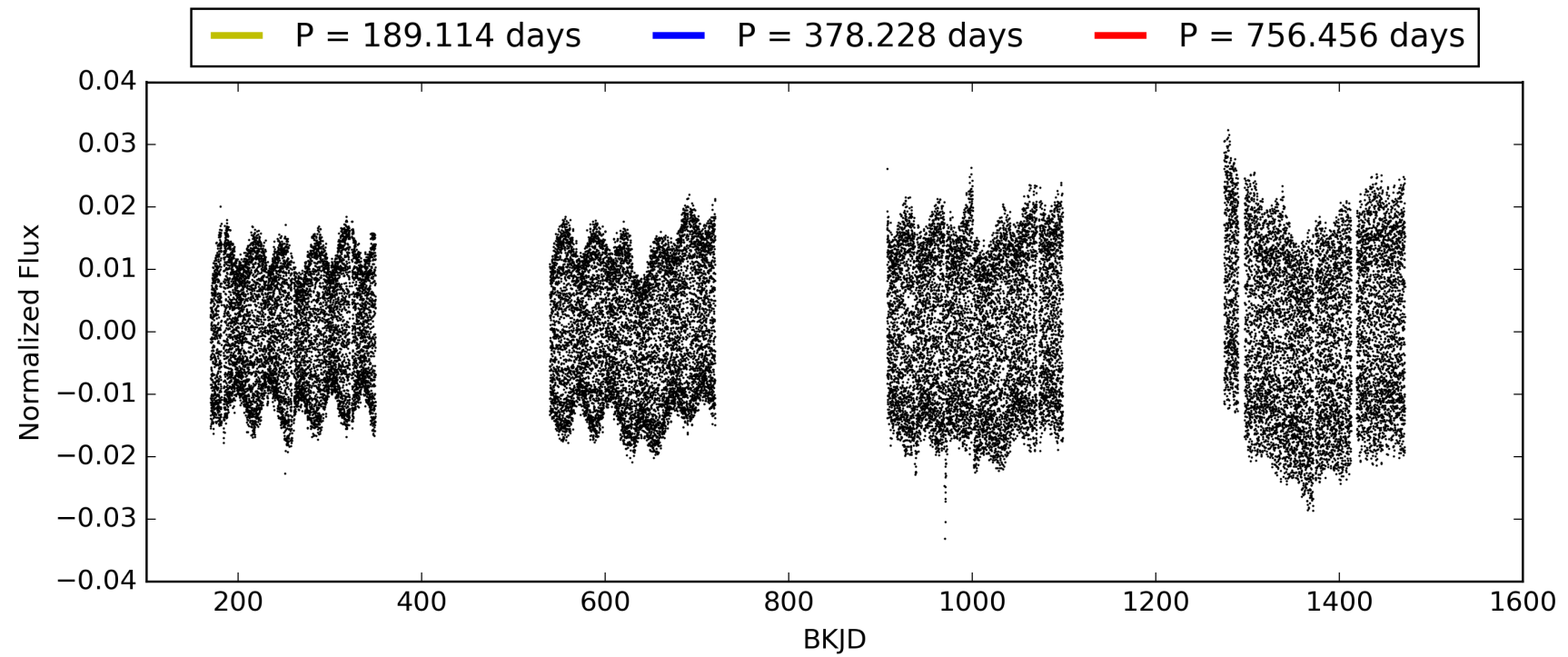
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:21:14 Z

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

TCE 003848645-01, PDC Light Curves

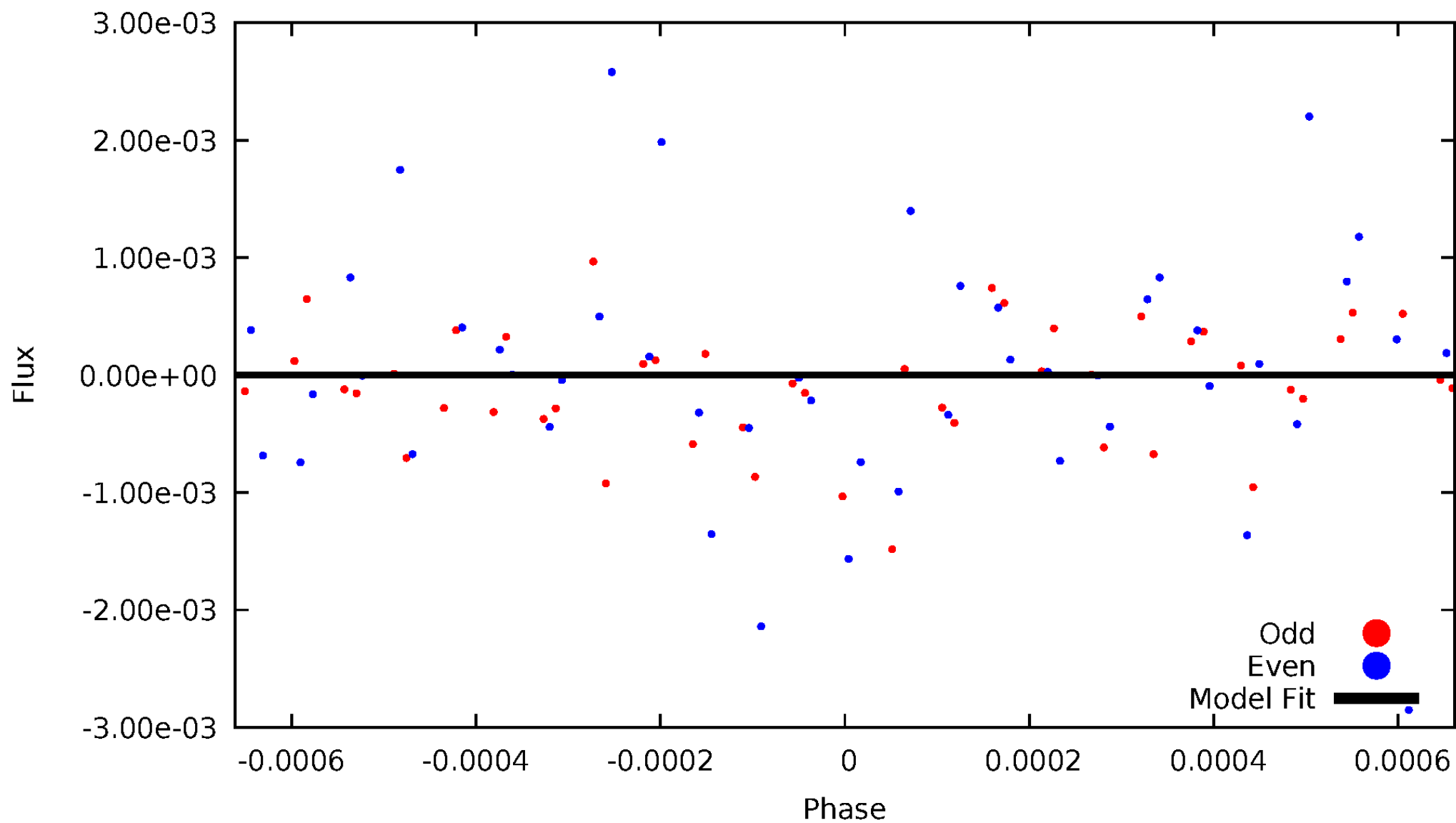


TCE 003848645-01



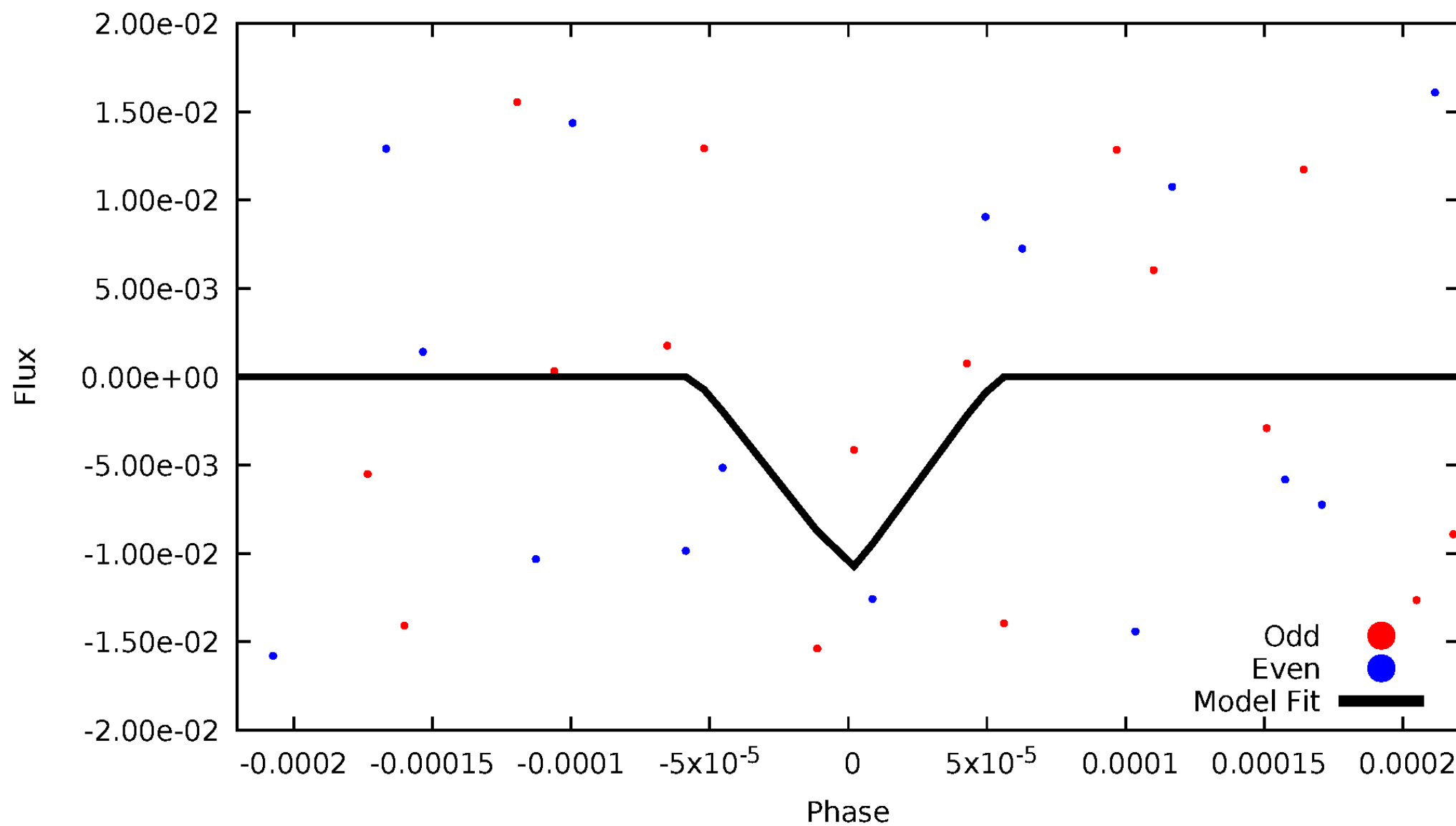
DV Odd/Even

TCE 003848645-01

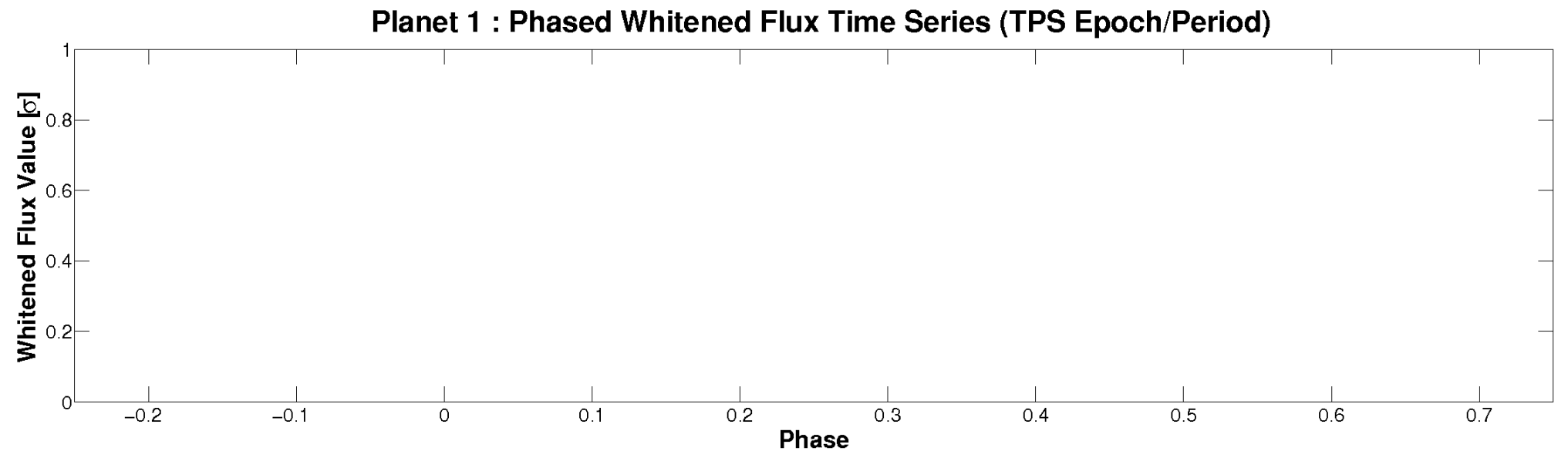
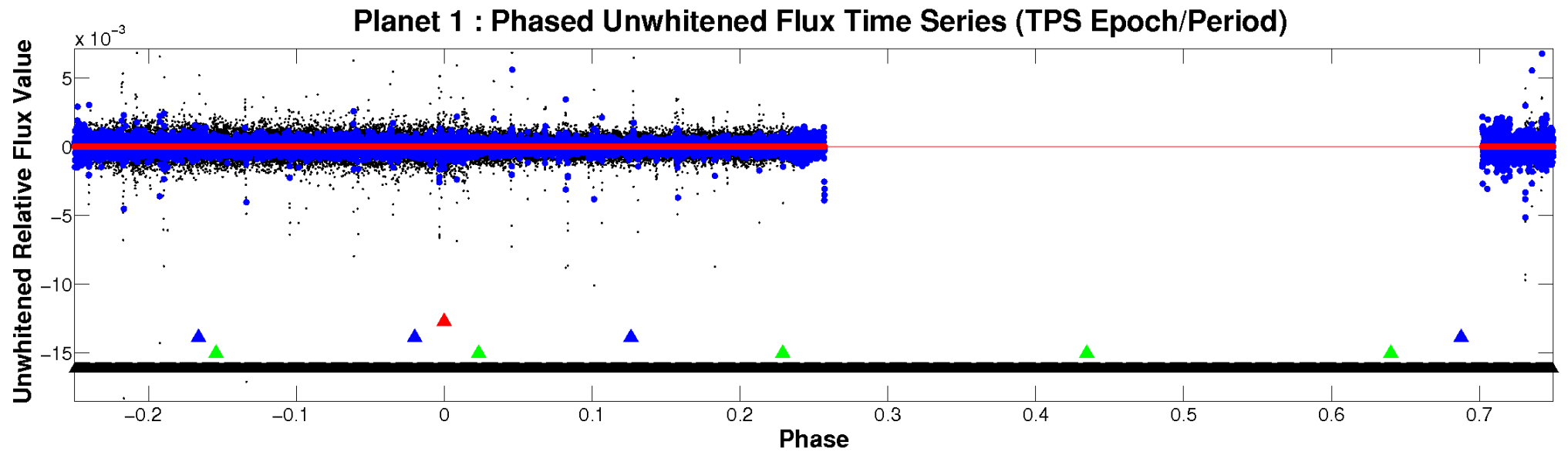


ALT Odd/Even

TCE 003848645-01

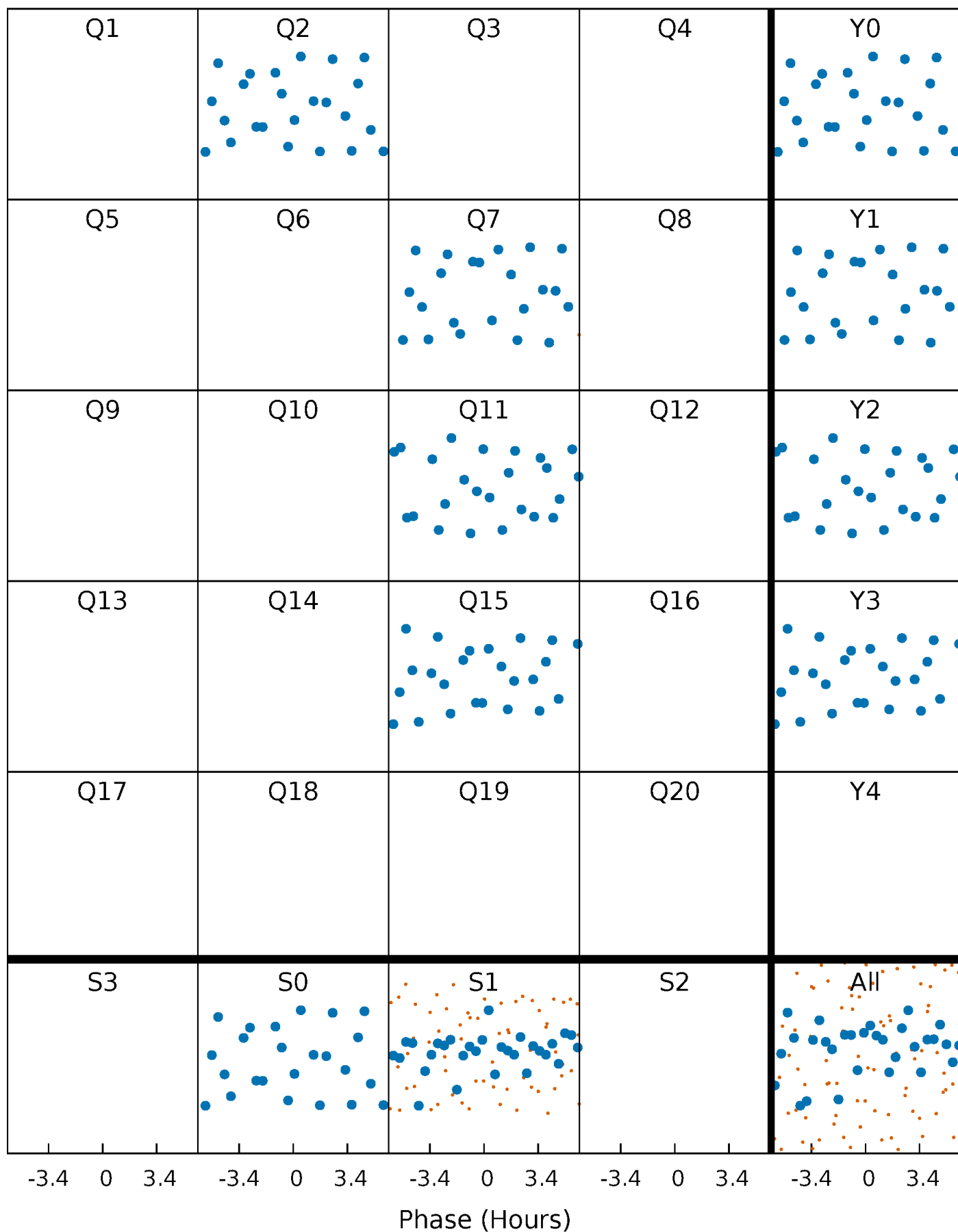


Non-Whitened Vs. Whitened Light Curve



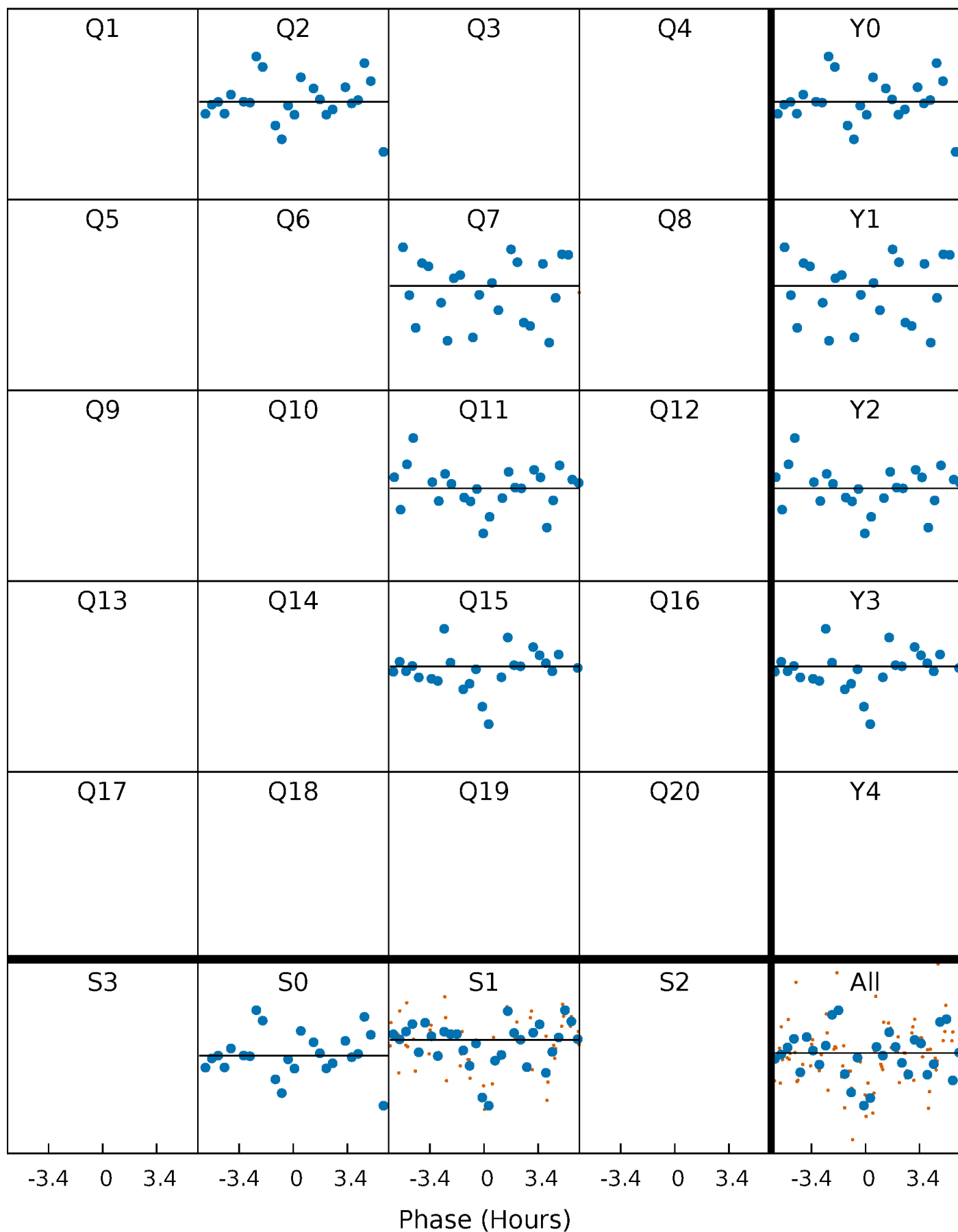
PDC Quarter-Phased Transit Curves

TCE 003848645-01 P=378.228190 Days $T_0=252.188306$ (BKJD)



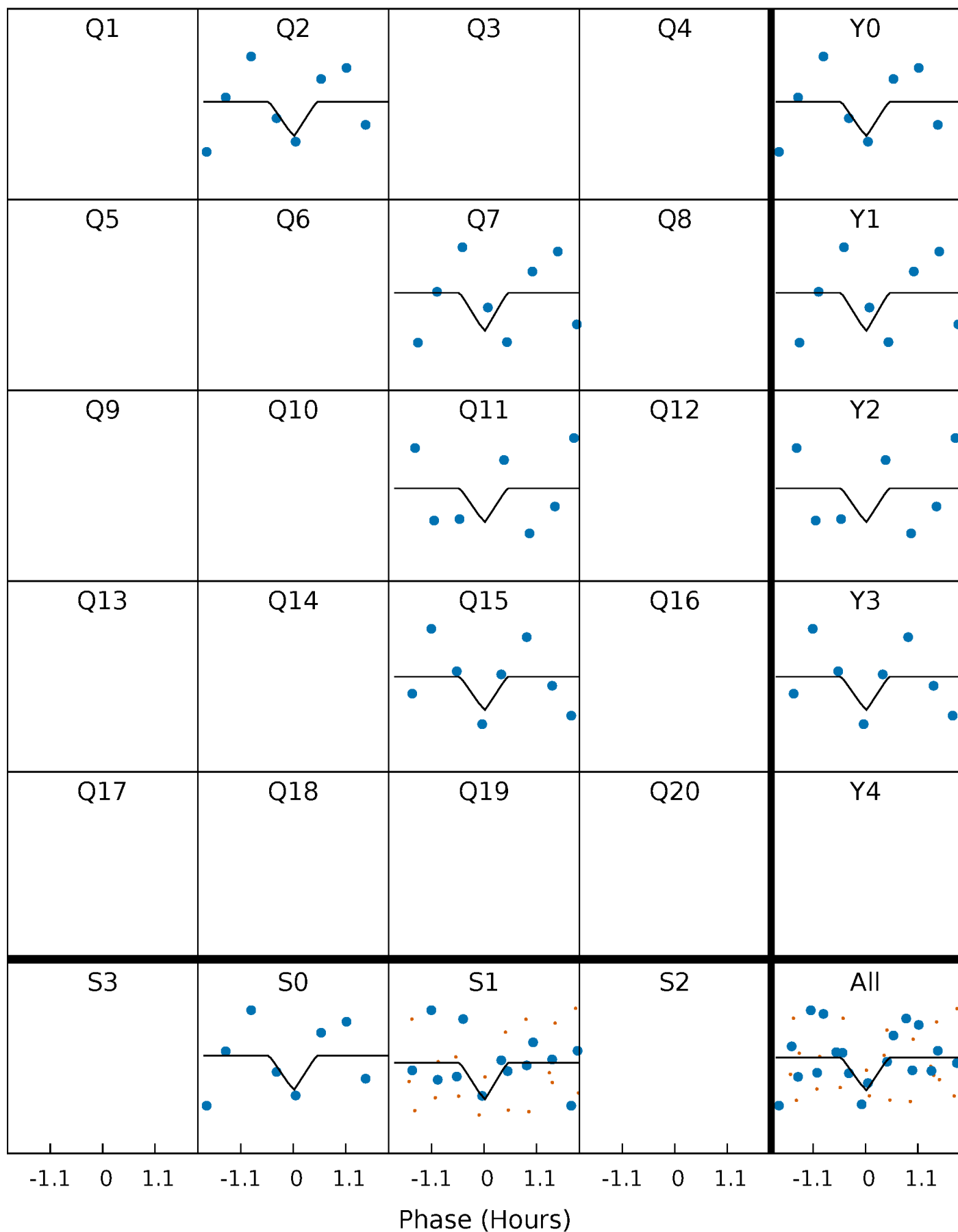
DV Quarter-Phased Transit Curves

TCE 003848645-01 P=378.228190 Days $T_0=252.188306$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

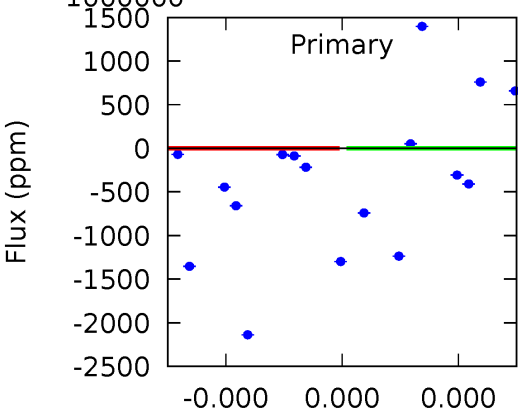
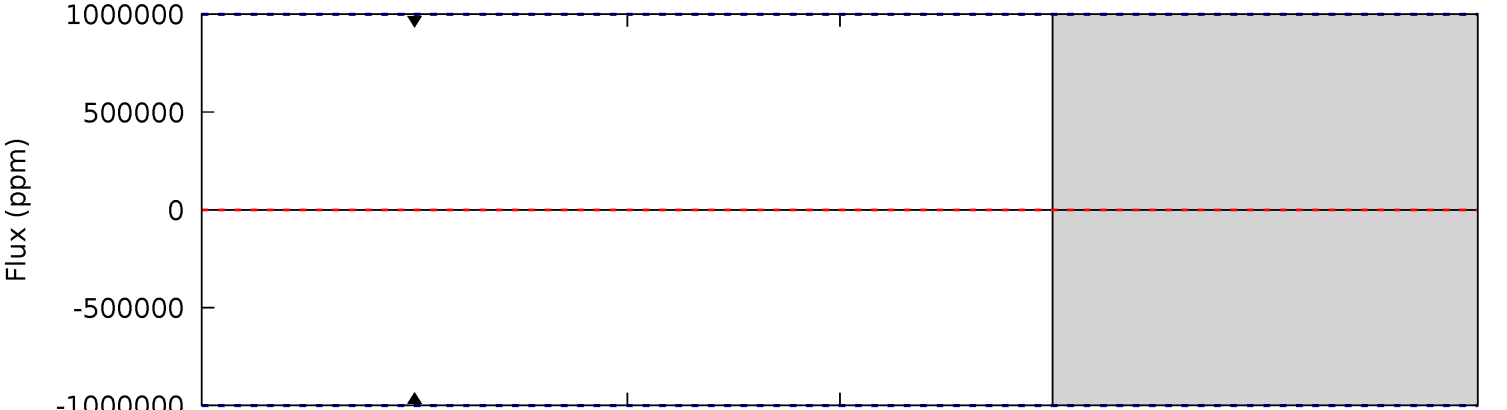
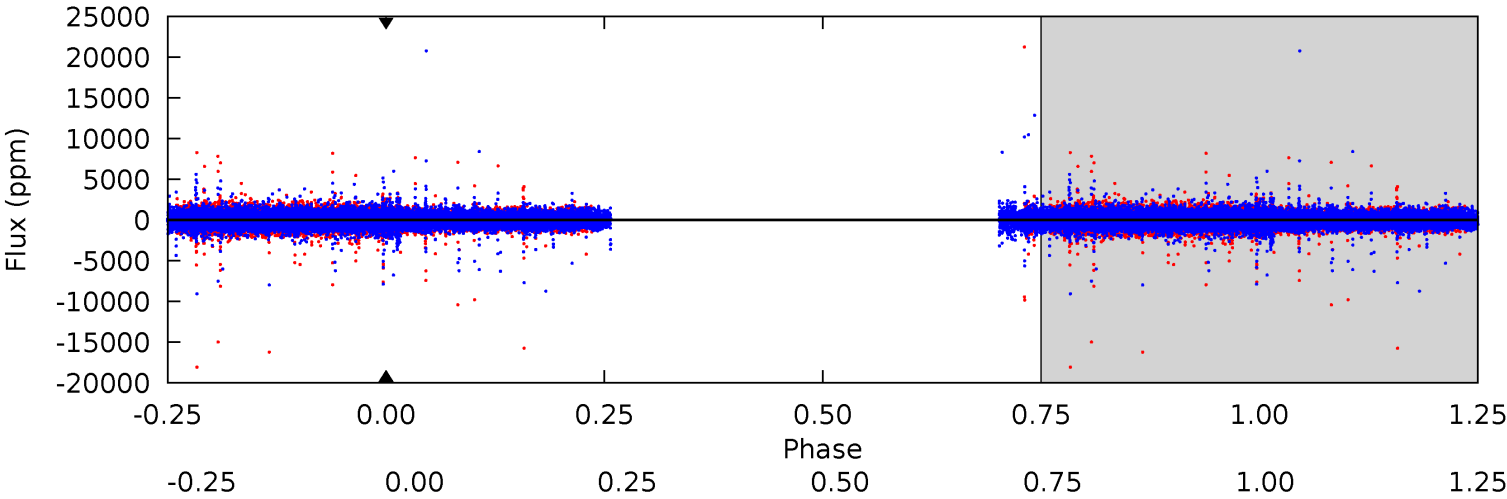
TCE 003848645-01 P=378.228190 Days $T_0=252.028127$ (BKJD)



DV Model-Shift Uniqueness Test

003848645-01, P = 378.228190 Days, E = 252.188306 Days

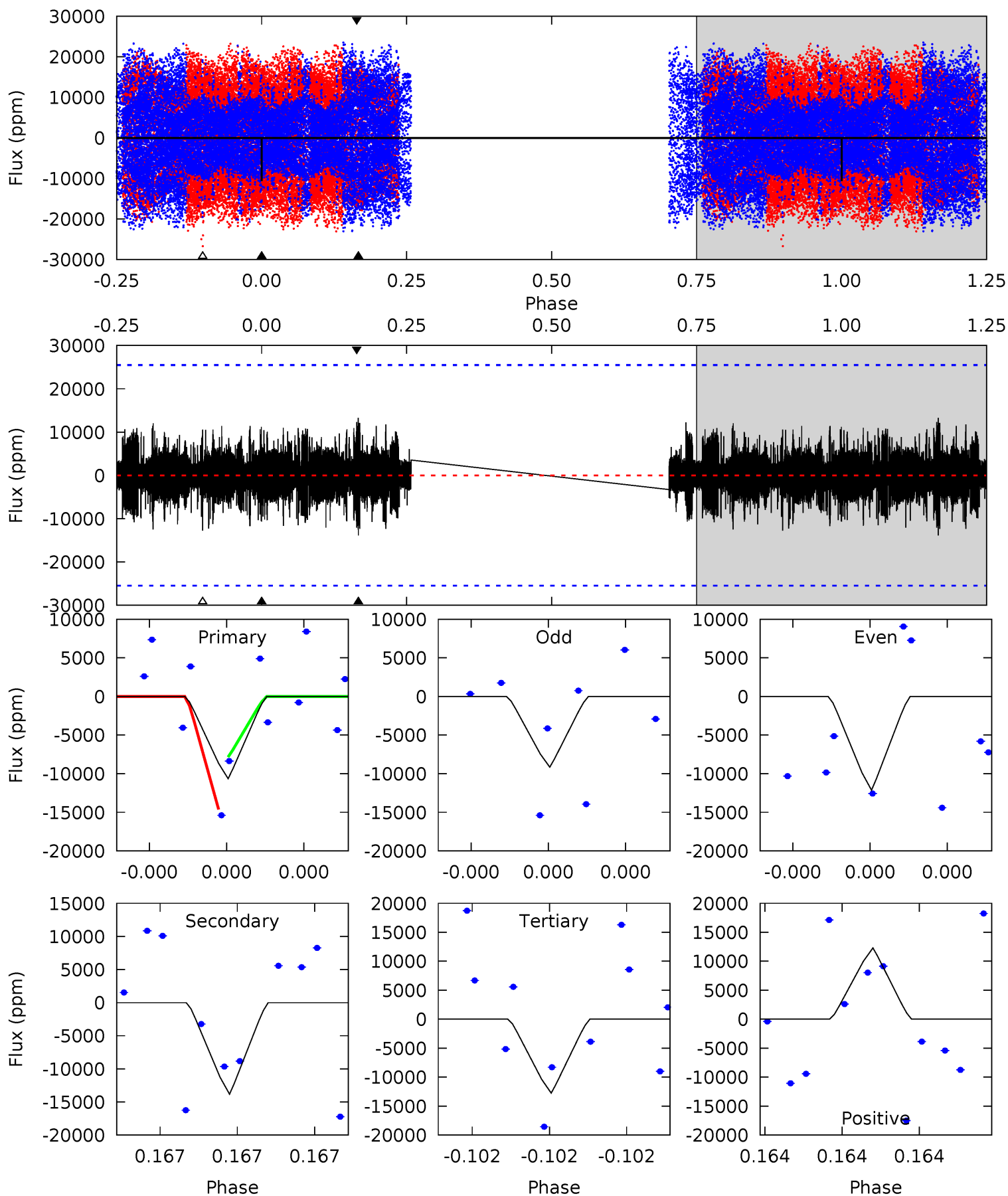
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003848645-01, P = 378.228190 Days, E = 252.028127 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.44	3.17	2.92	2.82	5.83	3.87	0.70	-0.48	-0.38	0.25	0.35	0.34	0.80	0.49	0.73



Stellar Parameters For KIC 003848645

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8072^{+223}_{-363}	$3.707^{+0.413}_{-0.138}$	$0.020^{+0.200}_{-0.400}$	$3.352^{+0.839}_{-1.559}$	$2.086^{+0.362}_{-0.482}$	$0.078^{+0.313}_{-0.033}$
	+3%/-4%	+11%/-4%	+1000%/-2000%	+25%/-47%	+17%/-23%	+401%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003848645-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$25.02^{+24.55}_{-17.86}$	776^{+65}_{-85}	3688^{+43222}_{-46073}	$160^{+271641}_{-252711}$
Alt.	-13829 ± 4365	$42.45^{+31.80}_{-26.47}$	775^{+64}_{-94}	7799^{+7679}_{-2179}	7242^{+39974}_{-5125}

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 $A_{obs} \gg 1.0$

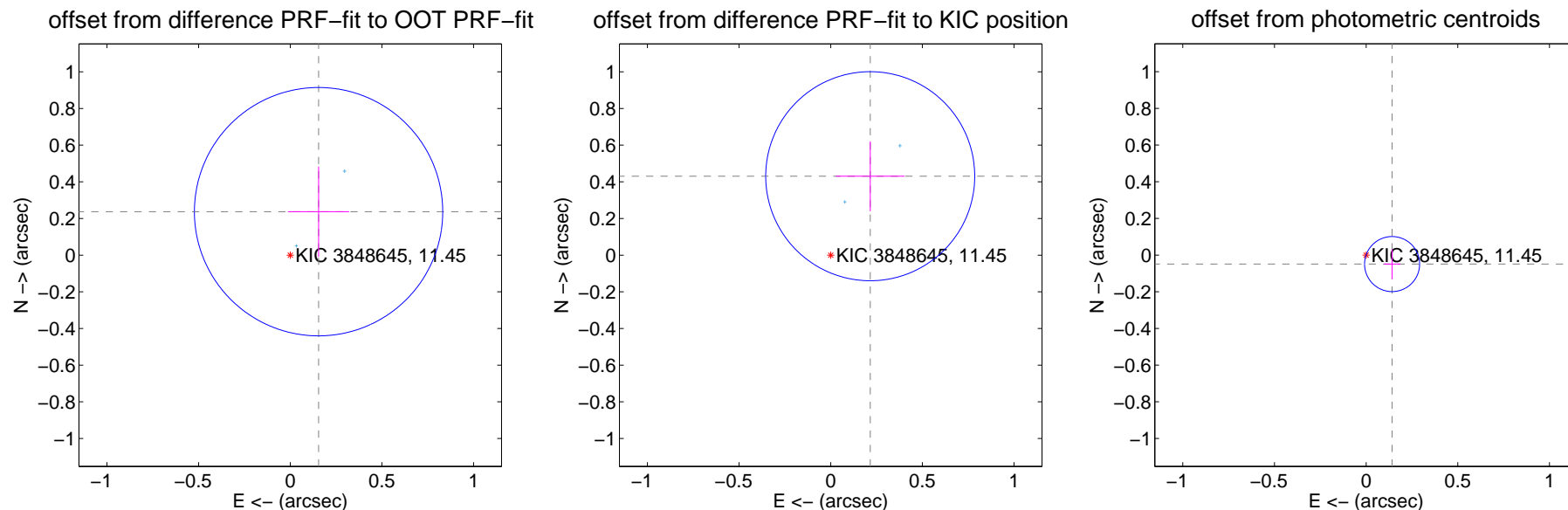
DV Centroid Data

Supplemental centroid analysis for 003848645-01. **Kepler magnitude: 11.45.** Transit SNR -1.00

There are 2 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	0.283 ± 0.226	1.25	-0.154 ± 0.167	0.237 ± 0.247
PRF-fit source offset from KIC position	0.481 ± 0.190	2.53	-0.215 ± 0.188	0.431 ± 0.191
photometric centroid source offset	0.15 ± 0.05	2.99	-0.14 ± 0.04	-0.05 ± 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.

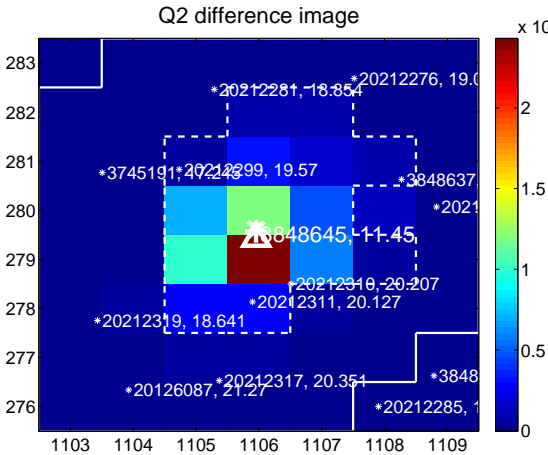
Q1 no difference image



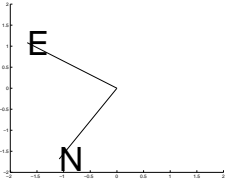
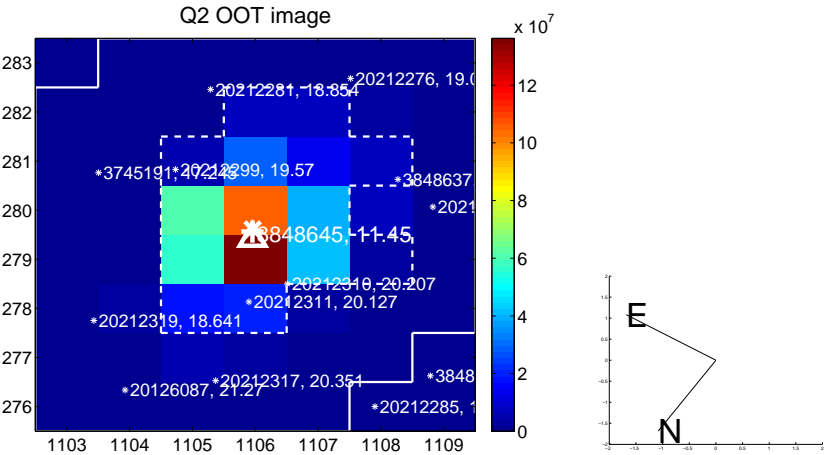
Q1 no OOT image



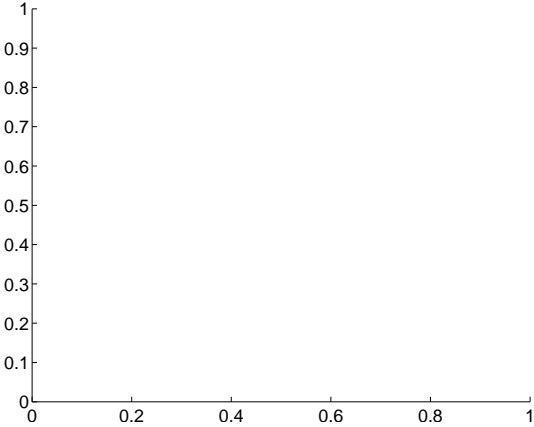
Q2 difference image



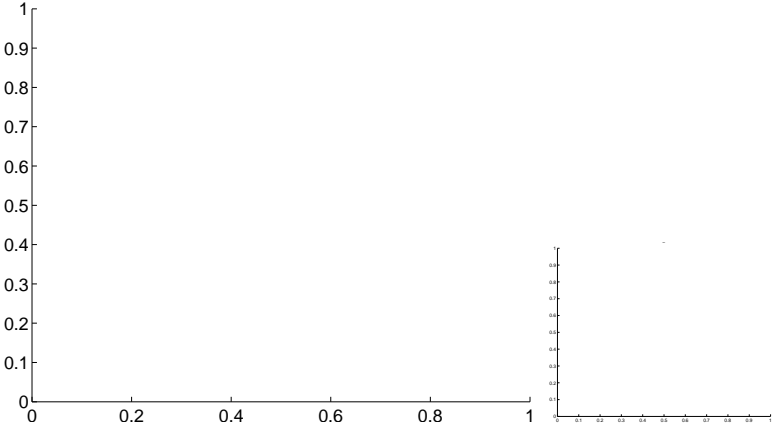
Q2 OOT image



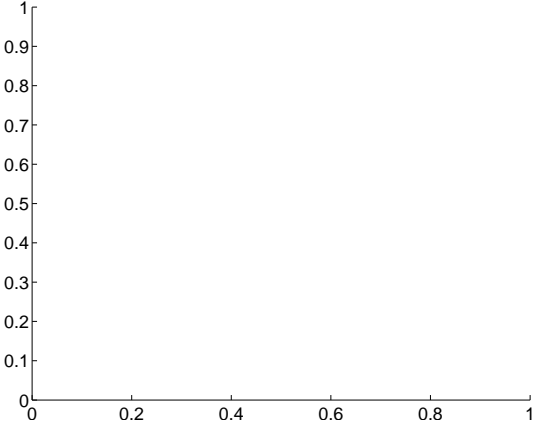
Q3 no difference image



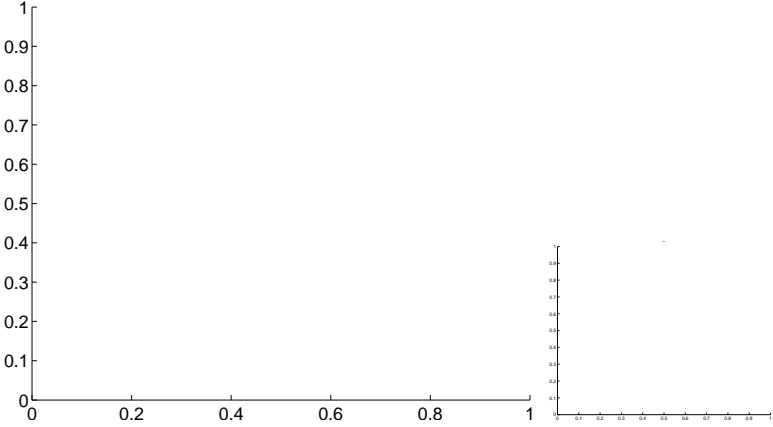
Q3 no OOT image



Q4 no difference image



Q4 no OOT image



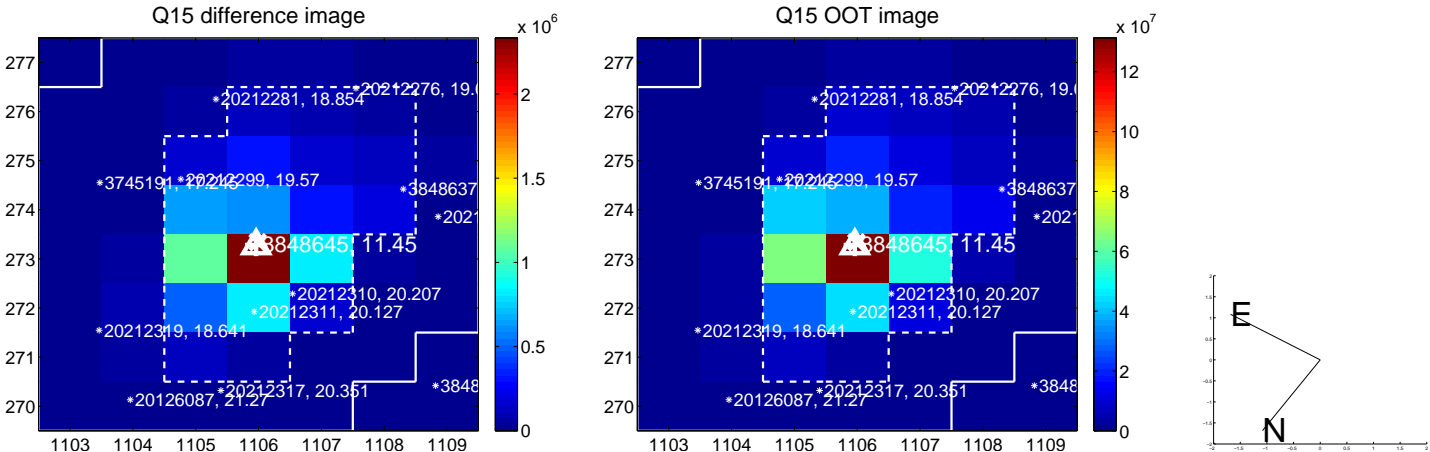
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



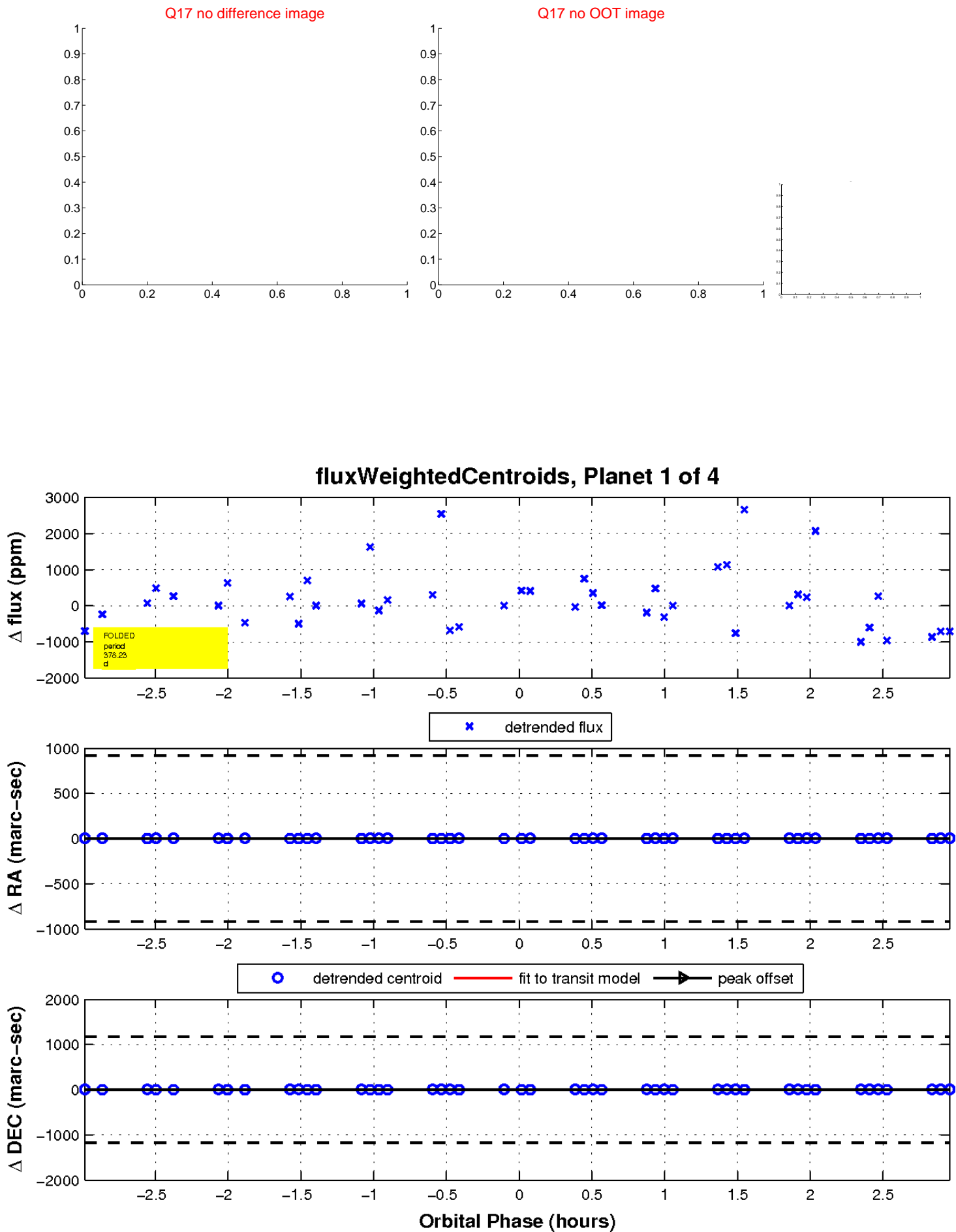
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

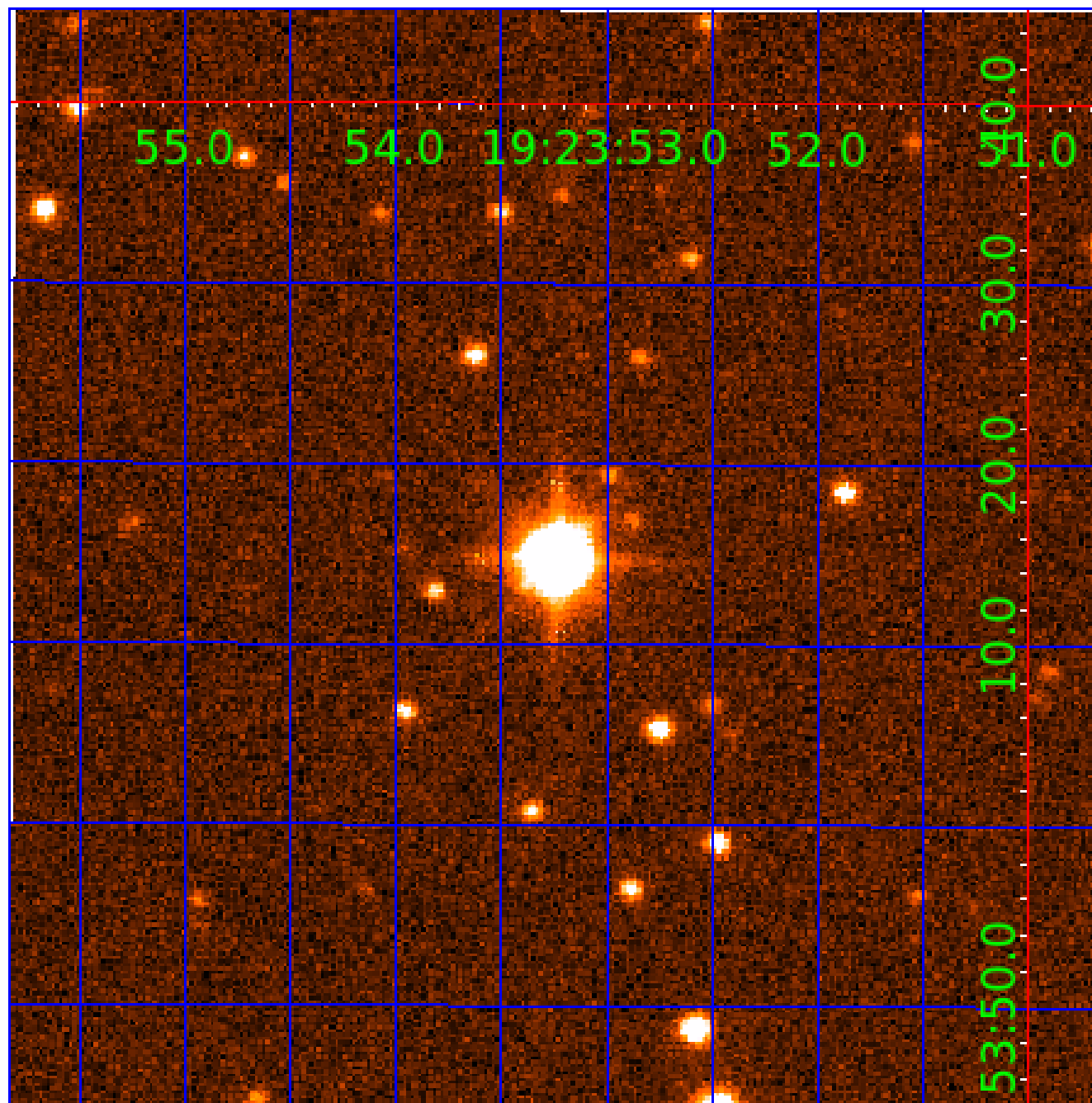


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003848645

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})
003848645-01	OBS	No	378.228190	252.188306	274.9	3.000	12.6	-1.0	3.35	8072	5.62	24.97
003848645-02	OBS	No	322.928323	299.962241	651.0	3.460	9.5	7.9	3.35	8072	8.86	30.82
003848645-03	OBS	No	300.461879	193.846815	1171.1	3.939	10.4	11.2	3.35	8072	14.16	33.93
003848645-04	OBS	No	0.515761	131.566417	37.4	2.374	10.1	8.2	3.35	8072	2.10	165103.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003848645-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003848645-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003848645-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003848645-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED

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

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

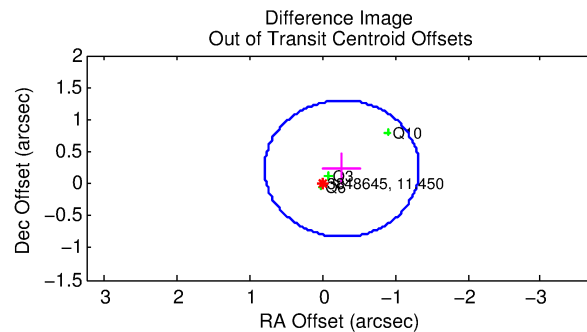
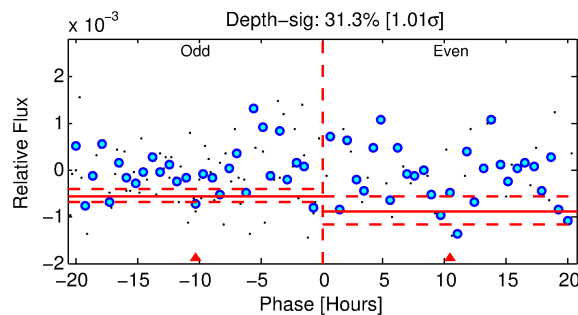
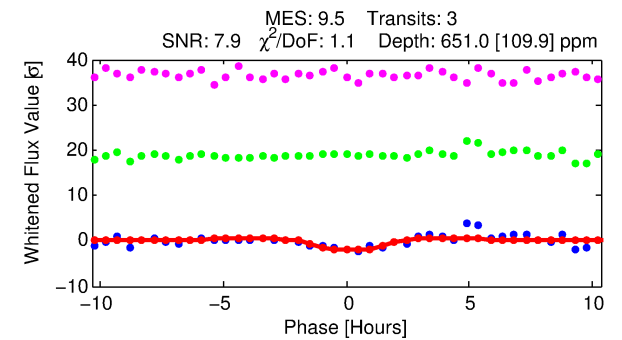
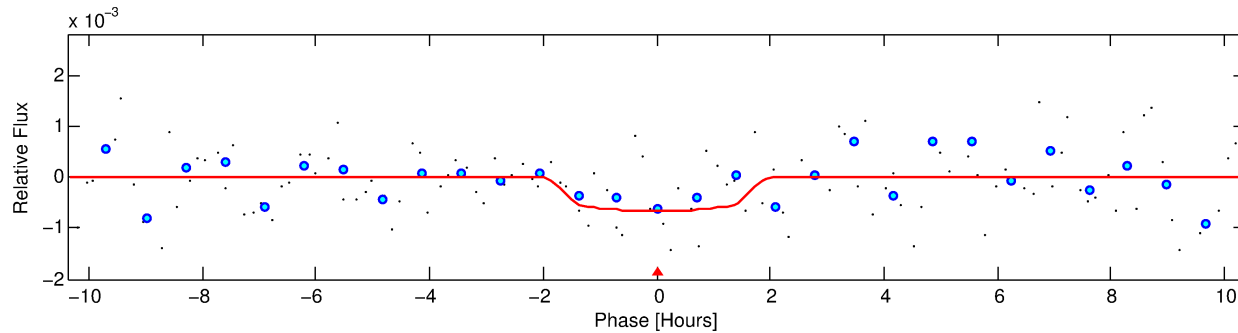
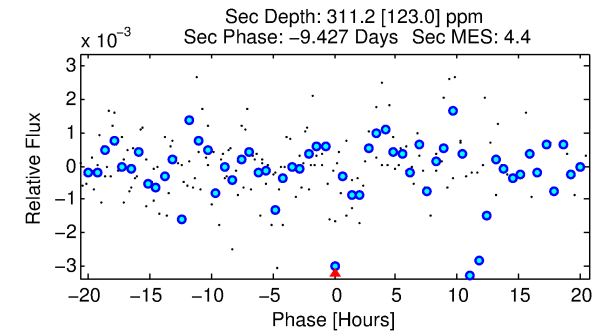
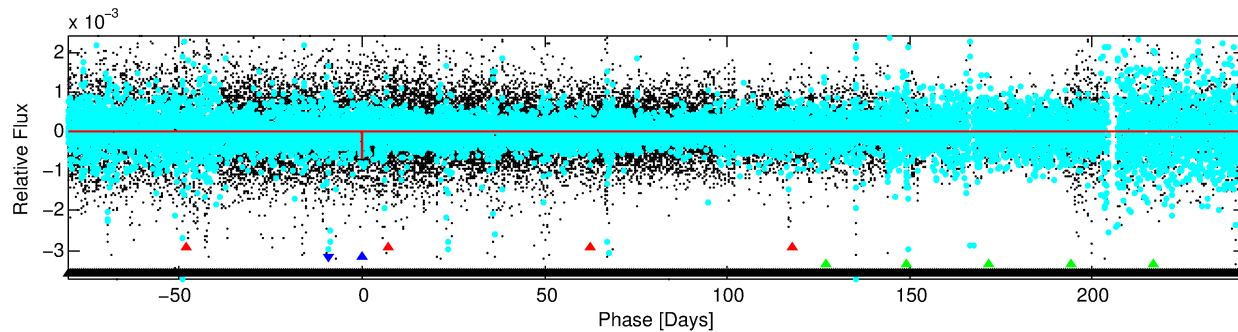
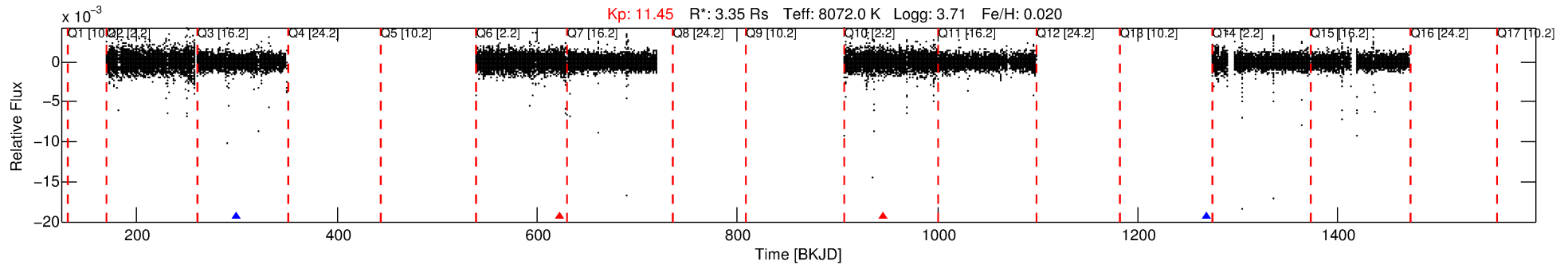
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003848645-02

No Significant Match Found

DV One-Page Summary

KIC: 3848645 Candidate: 2 of 4 Period: 322.928 d



DV Fit Results:

Period = 322.92832 [0.01060] d
Epoch = 299.9622 [0.0129] BKJD
Rp/R* = 0.0242 [0.1512]
a/R* = 637.69 [22237.11]
b = 0.50 [53.04]
Seff = 30.82 [22.45]
Teq = 601 [109] K
Rp = 8.86 [55.46] Re
a = 1.1775 [0.5221] AU
Ag = 3025.82 [37866.14] [0.08 σ]
Teffp = 6890 [21523] K [0.29 σ]

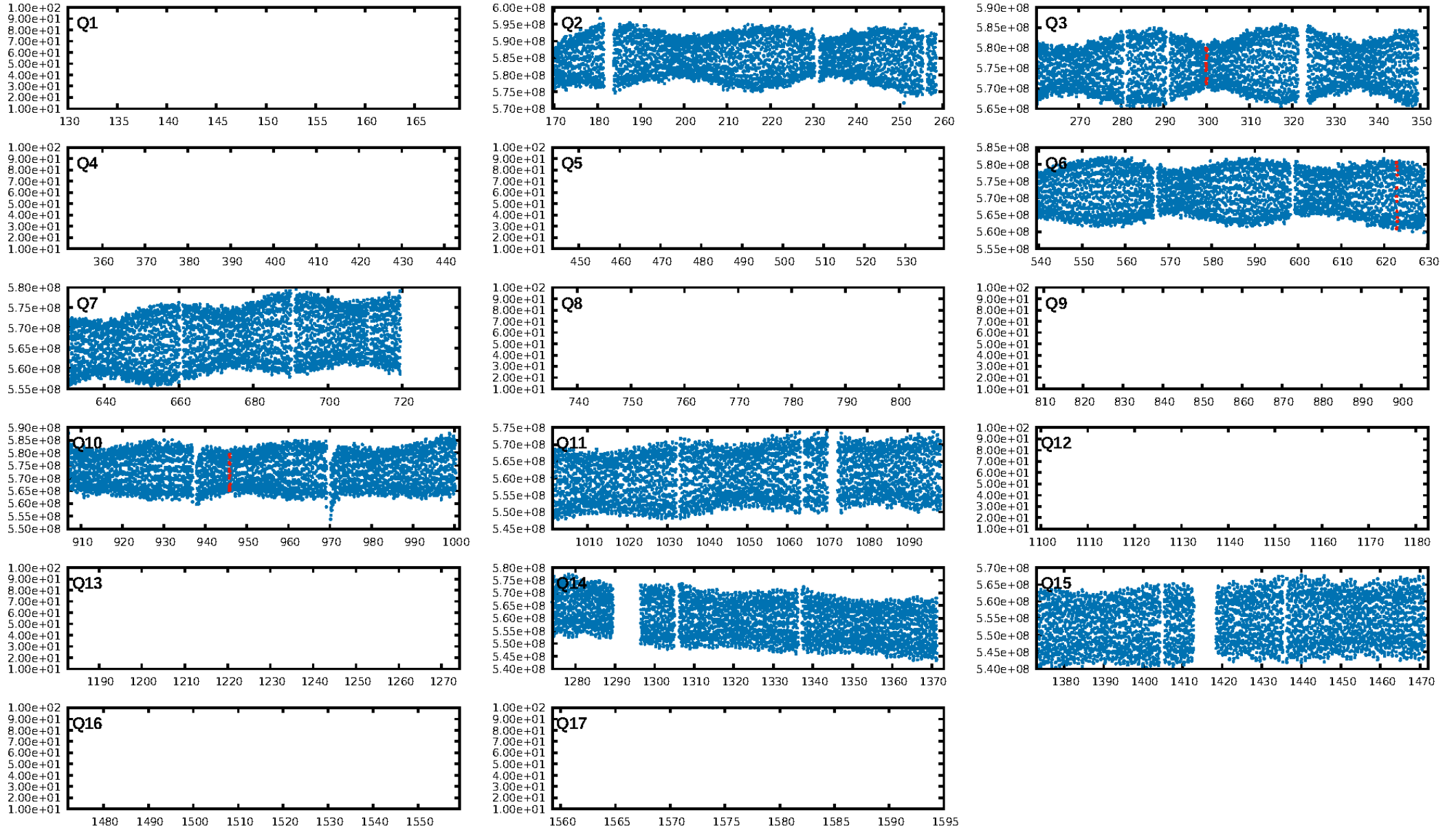
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [102.84 σ]
LongPeriod-sig: 100.0% [289.80 σ]
ModelChiSquare2-sig: 16.1%
ModelChiSquareGof-sig: 90.4%
Bootstrap-pfa: 9.85e-08
RollingBand-fgt: 0.33 [1/3]
GhostDiagnostic-chr: 6.733
Centroid-sig: 6.9%
Centroid-so: 0.557 arcsec [1.40 σ]
OotOffset-rm: 0.355 arcsec [1.00 σ]
OotOffset-st: 2/1/0/0 [3]
KicOffset-rm: 0.476 arcsec [1.41 σ]
KicOffset-st: 2/1/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/3]

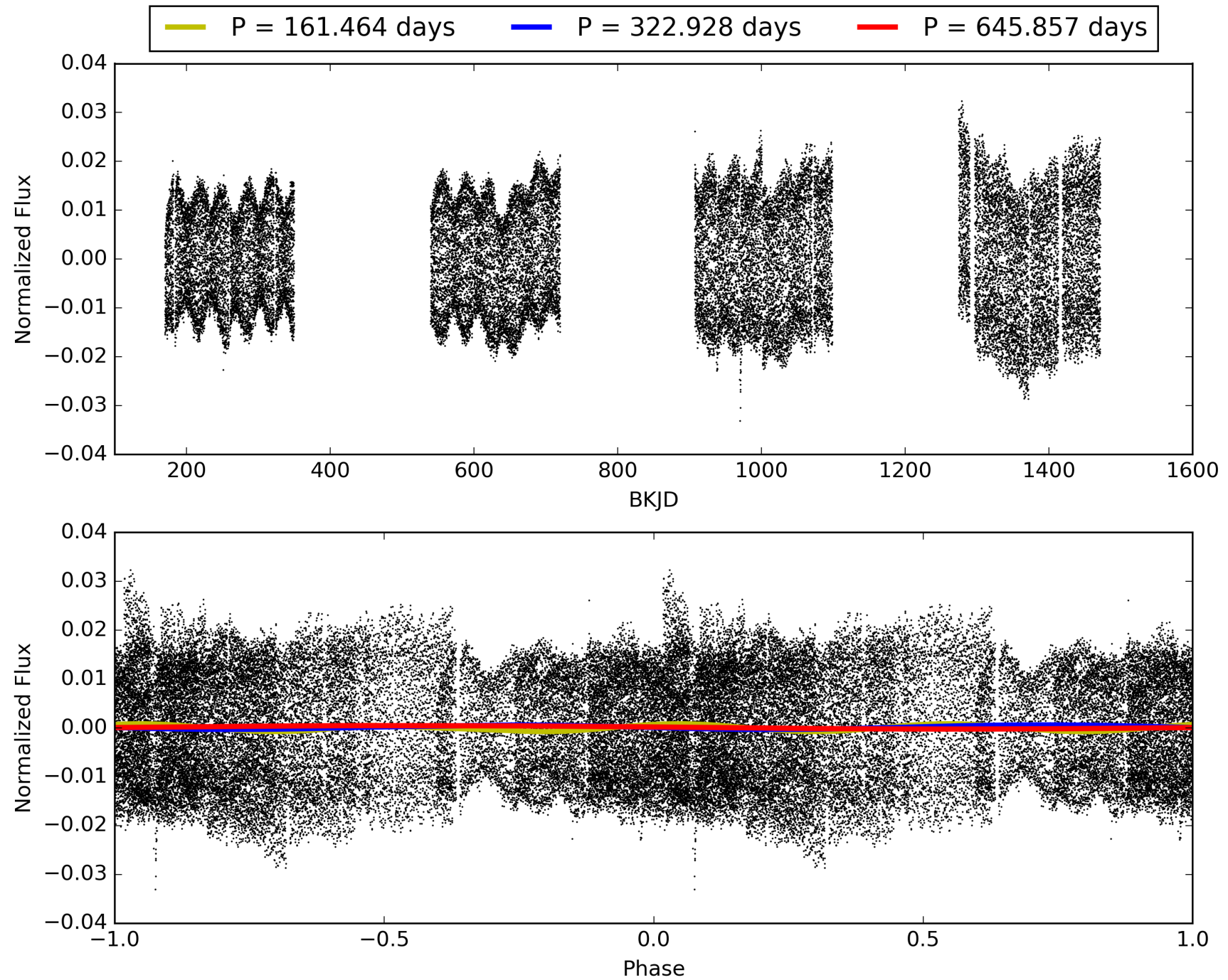
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:21:23 Z

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

TCE 003848645-02, PDC Light Curves

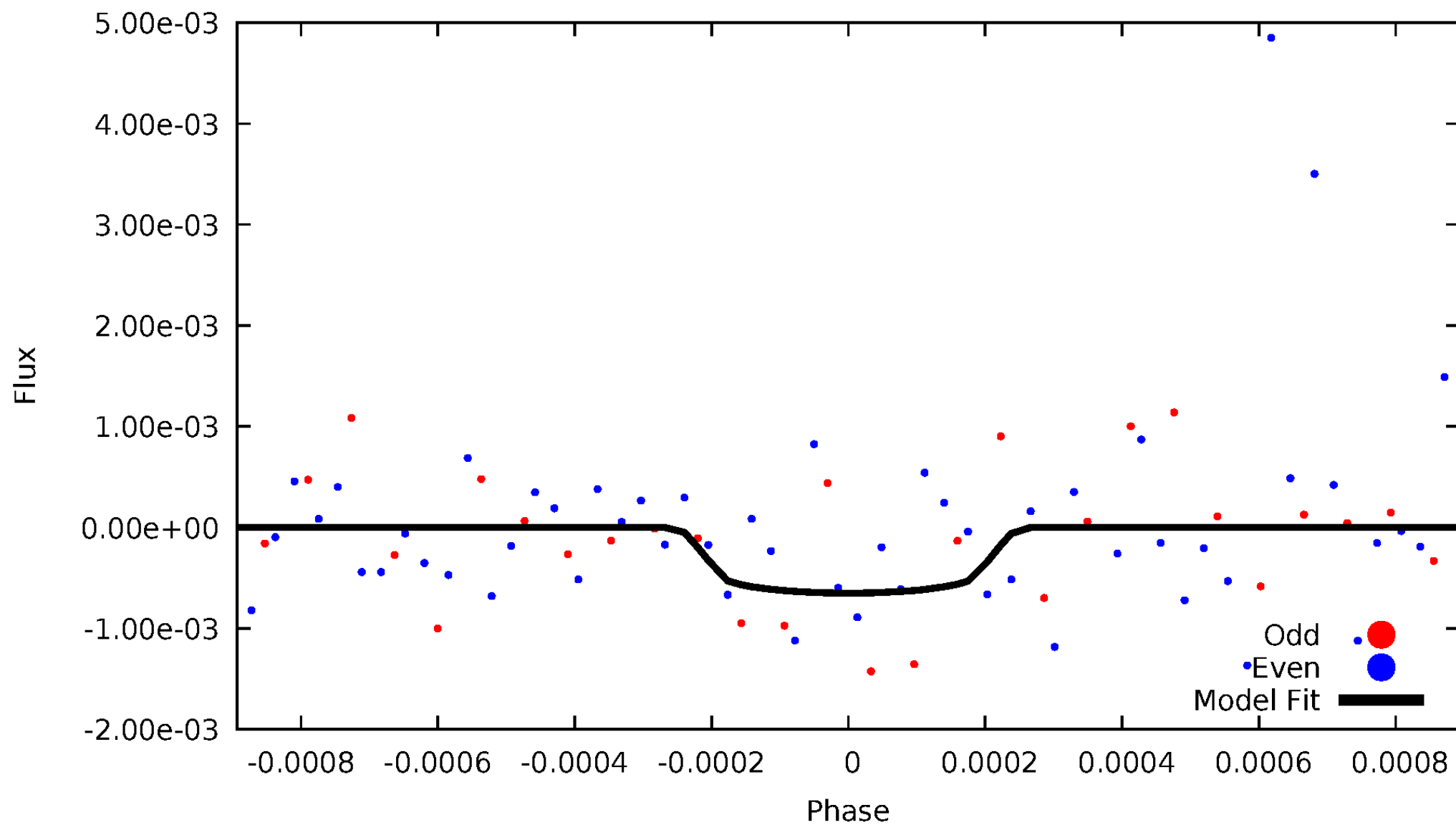


TCE 003848645-02



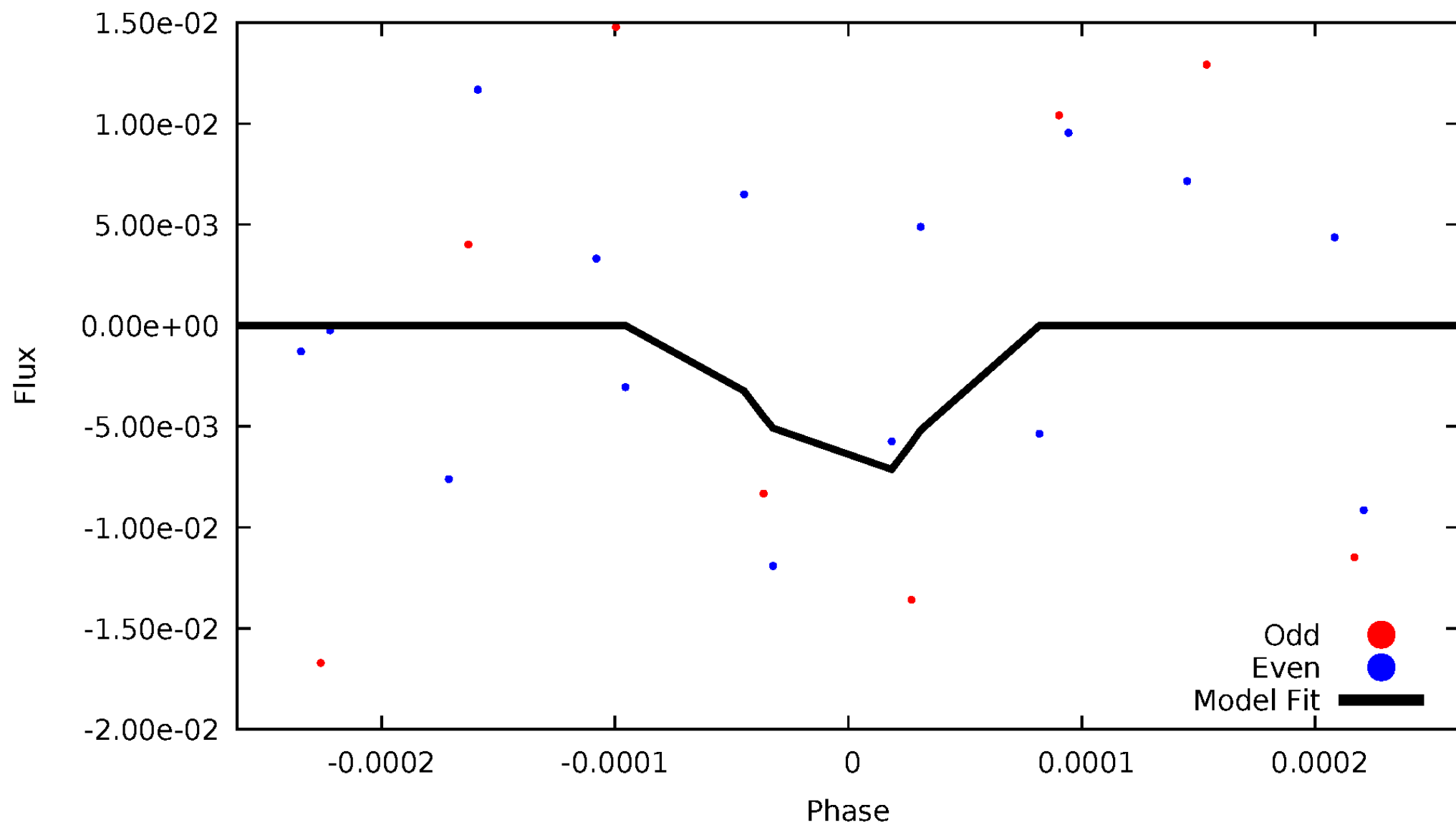
DV Odd/Even

TCE 003848645-02



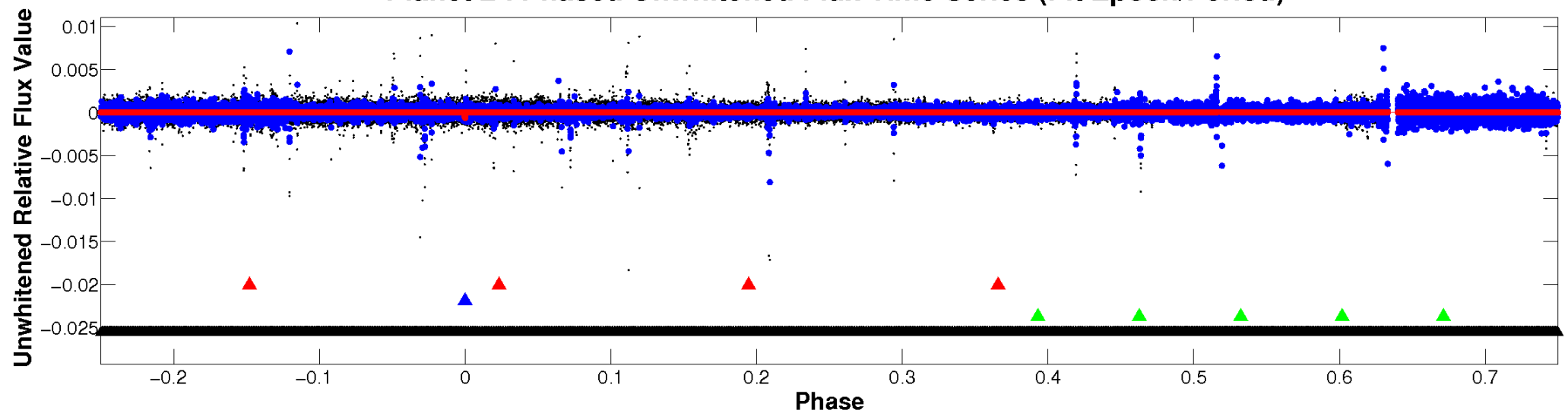
ALT Odd/Even

TCE 003848645-02

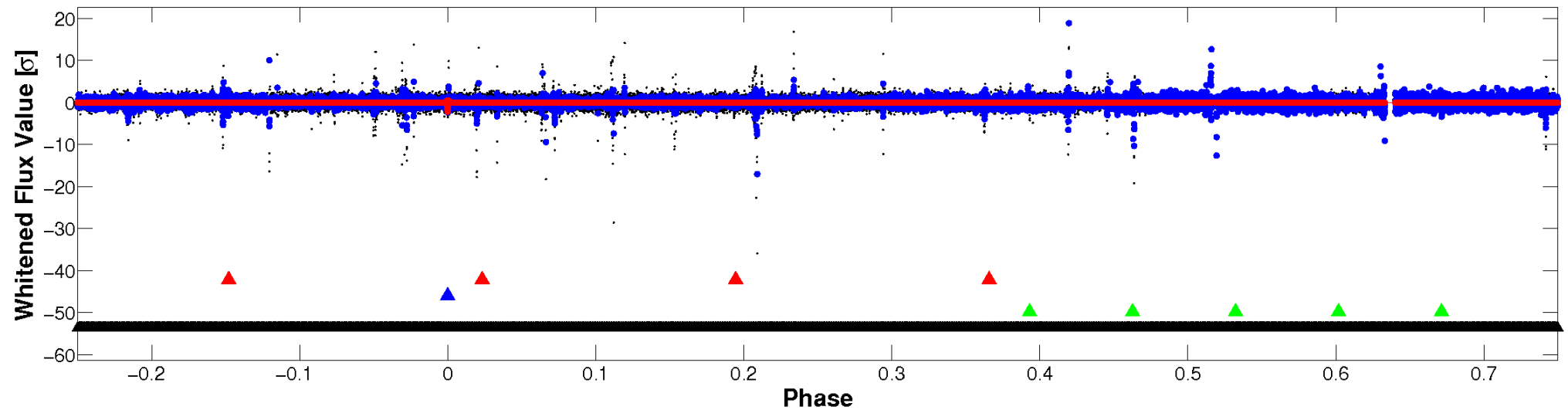


Non-Whitened Vs. Whitened Light Curve

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

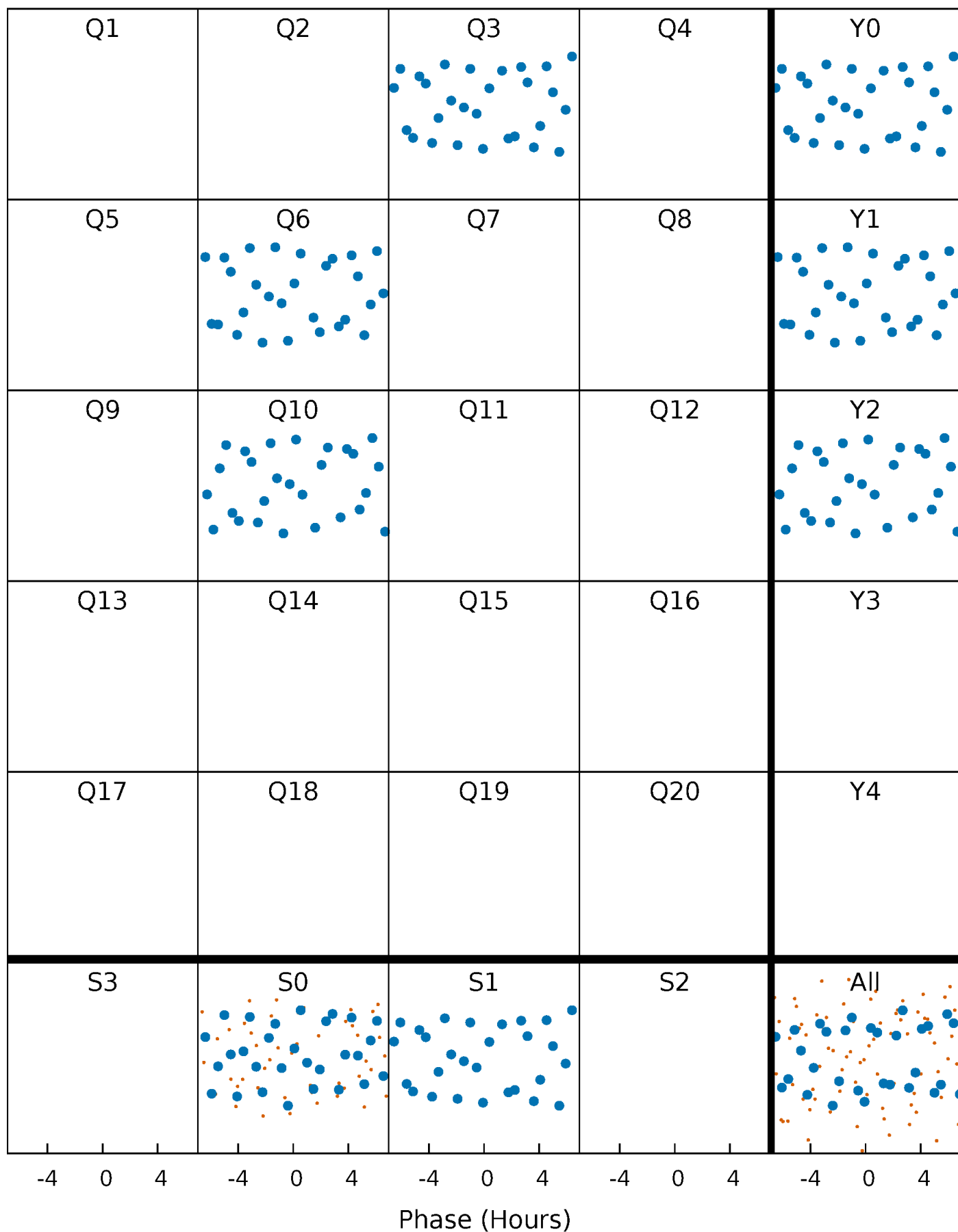


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



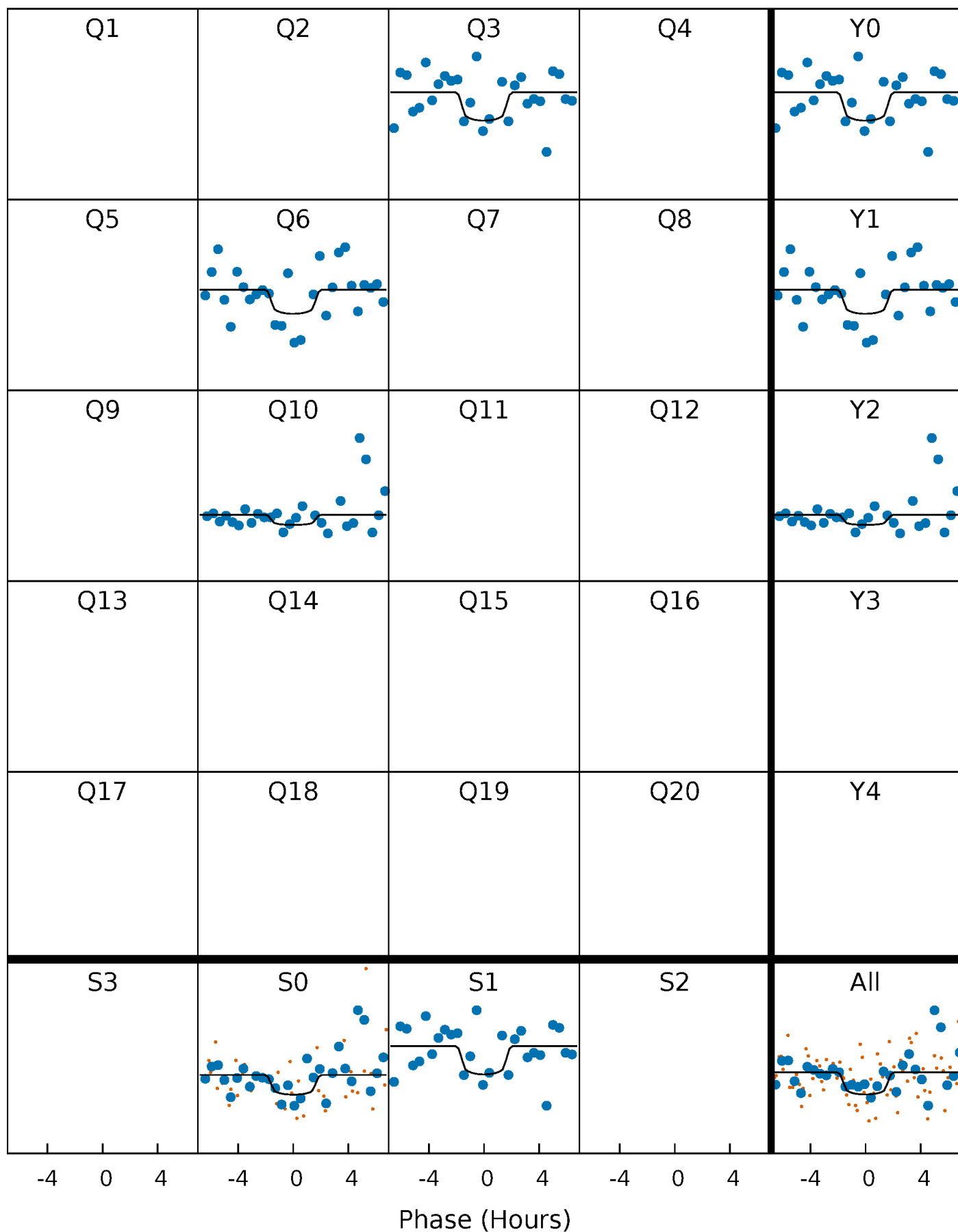
PDC Quarter-Phased Transit Curves

TCE 003848645-02 P=322.928323 Days $T_0=299.962241$ (BKJD)



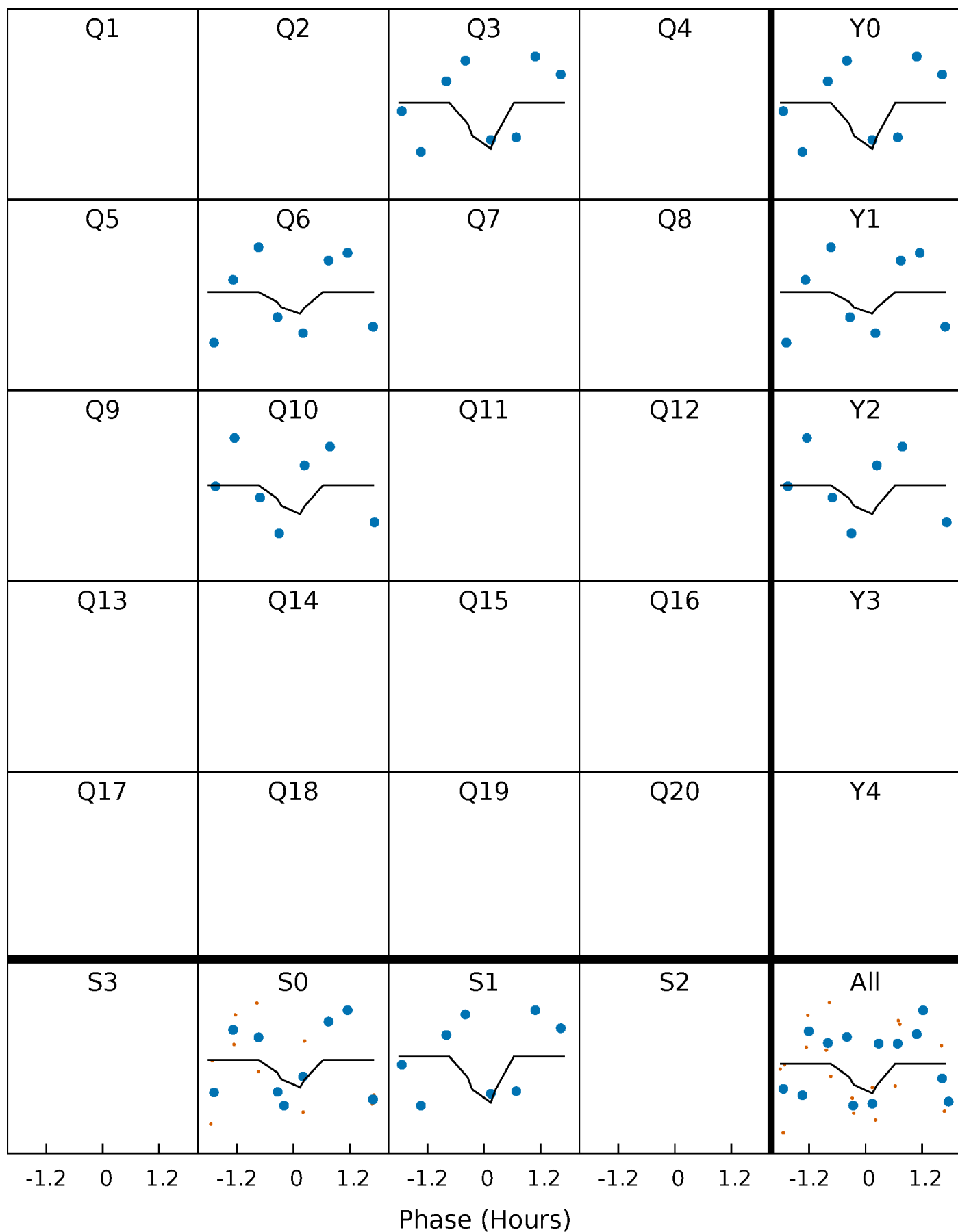
DV Quarter-Phased Transit Curves

TCE 003848645-02 $P=322.928323$ Days $T_0=299.962241$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

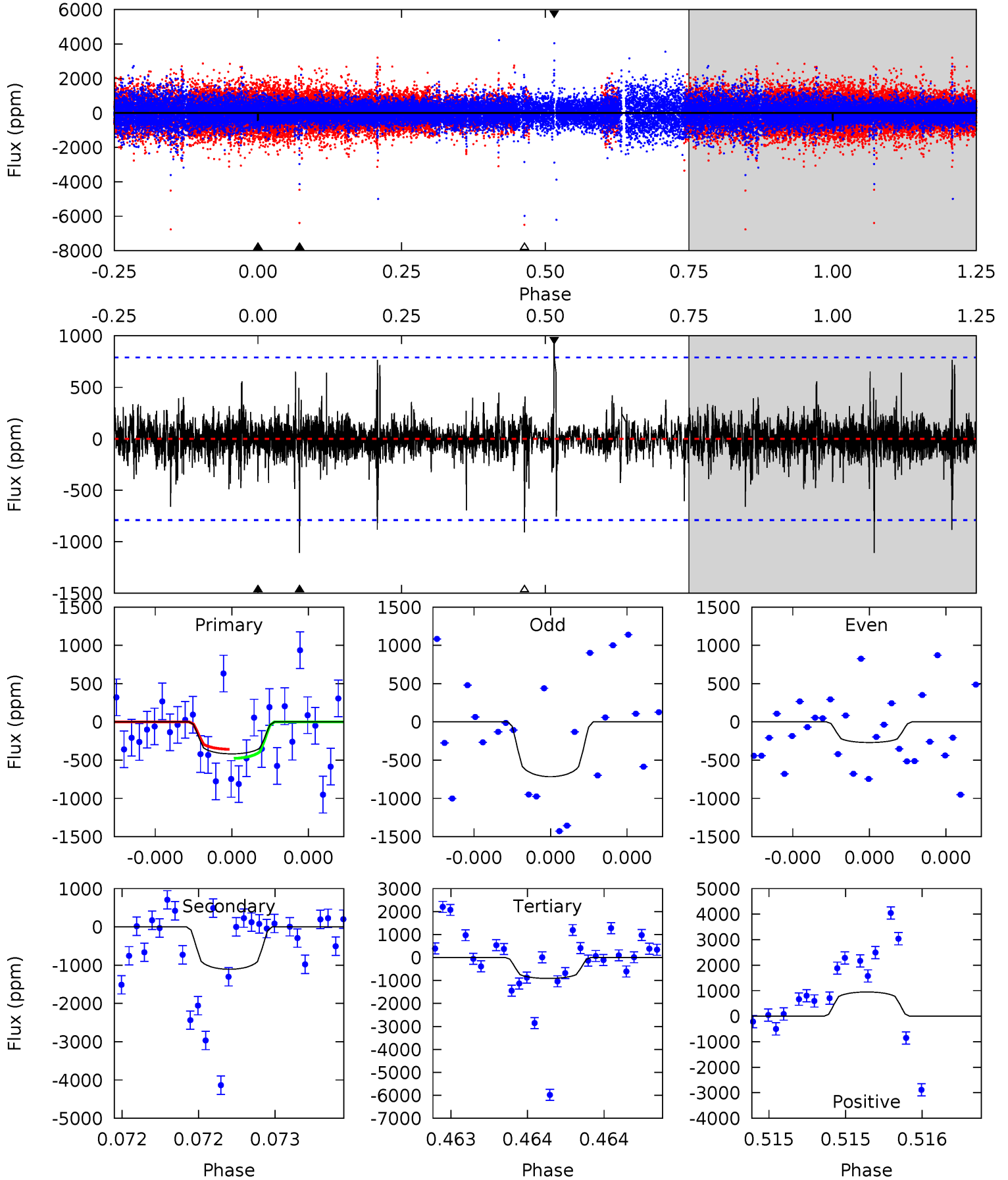
TCE 003848645-02 P=322.931982 Days $T_0=300.021836$ (BKJD)



DV Model-Shift Uniqueness Test

003848645-02, P = 322.928323 Days, E = 299.962241 Days

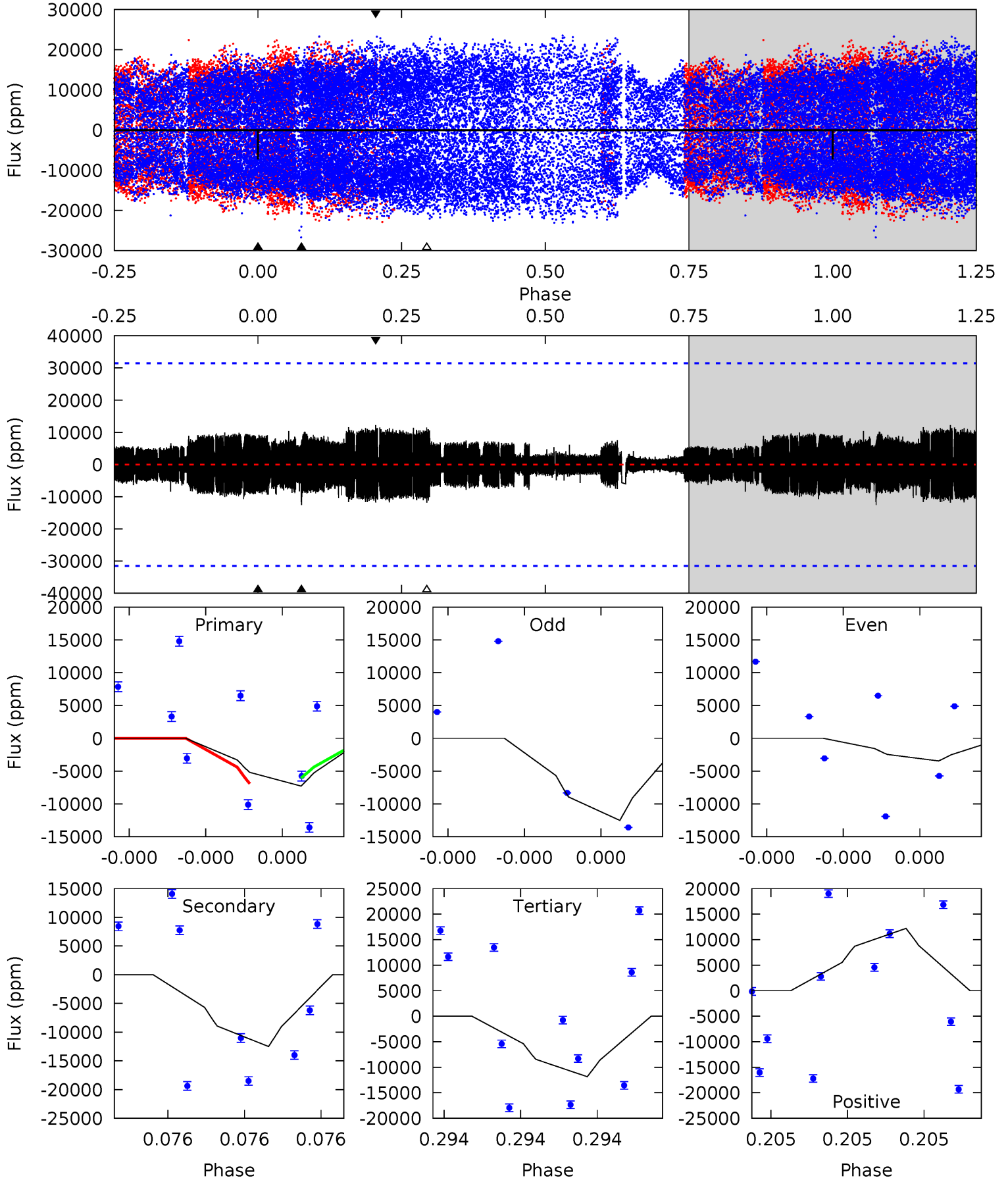
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.95	7.81	6.42	6.70	5.58	3.49	0.81	-3.47	-3.75	1.39	1.11	1.54	1.52	0.46	0.41



Alt Model-Shift Uniqueness Test

003848645-02, P = 322.931982 Days, E = 300.021836 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.36	2.34	2.22	2.28	5.89	3.96	0.85	-0.85	-0.92	0.12	0.06	0.92	1.56	0.49	0.08



Stellar Parameters For KIC 003848645

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8072^{+223}_{-363}	$3.707^{+0.413}_{-0.138}$	$0.020^{+0.200}_{-0.400}$	$3.352^{+0.839}_{-1.559}$	$2.086^{+0.362}_{-0.482}$	$0.078^{+0.313}_{-0.033}$
	+3%/-4%	+11%/-4%	+1000%/-2000%	+25%/-47%	+17%/-23%	+401%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003848645-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1107 ± 142	$35.44^{+36.53}_{-23.68}$	821^{+64}_{-95}	4521^{+3387}_{-986}	646^{+5268}_{-491}
Alt.	-12508 ± 5347	$48.74^{+47.25}_{-32.91}$	813^{+76}_{-88}	6799^{+8079}_{-1920}	4043^{+30995}_{-3151}

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

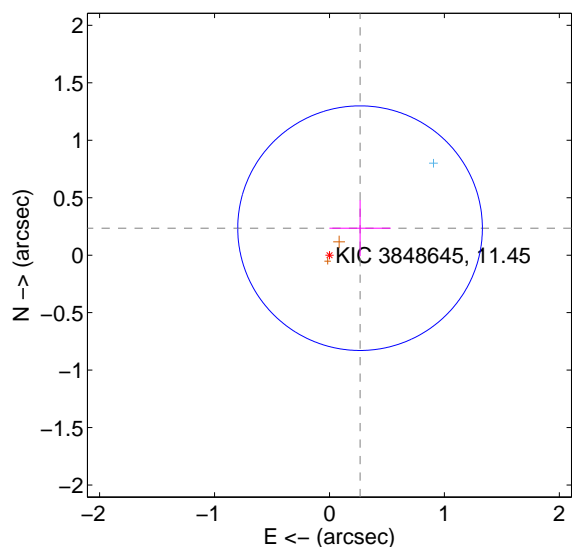
Supplemental centroid analysis for 003848645-02. **Kepler magnitude: 11.45.** Transit SNR 7.92

There are 1 quarters with good PRF difference image offsets

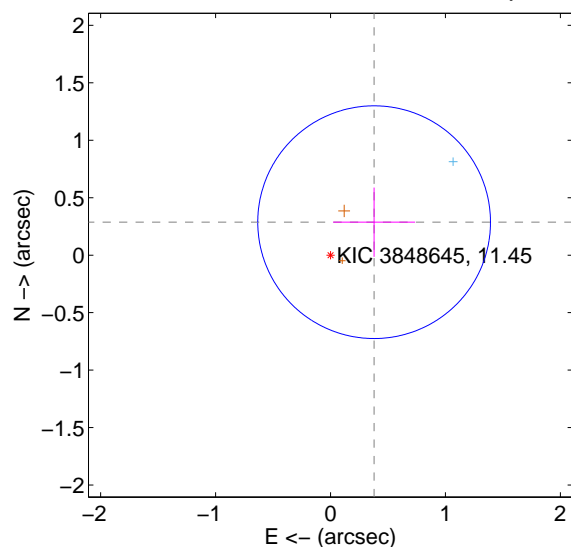
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.355 ± 0.355	1.00	-0.266 ± 0.267	0.235 ± 0.243
PRF-fit source offset from KIC position	0.476 ± 0.337	1.41	-0.379 ± 0.357	0.287 ± 0.301
photometric centroid source offset	0.56 ± 0.40	1.40	-0.10 ± 0.29	-0.55 ± 0.40

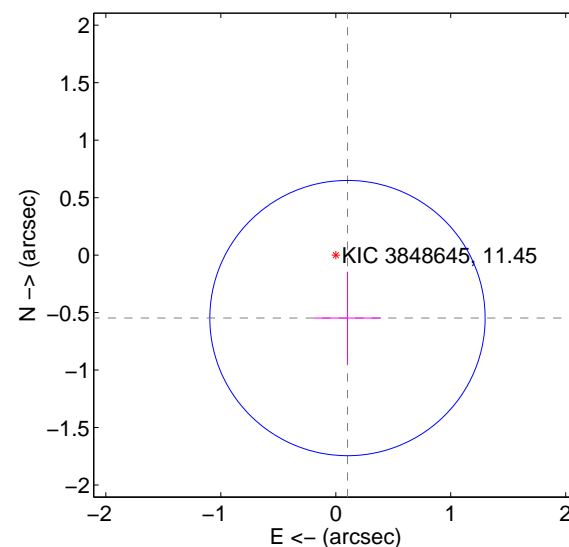
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

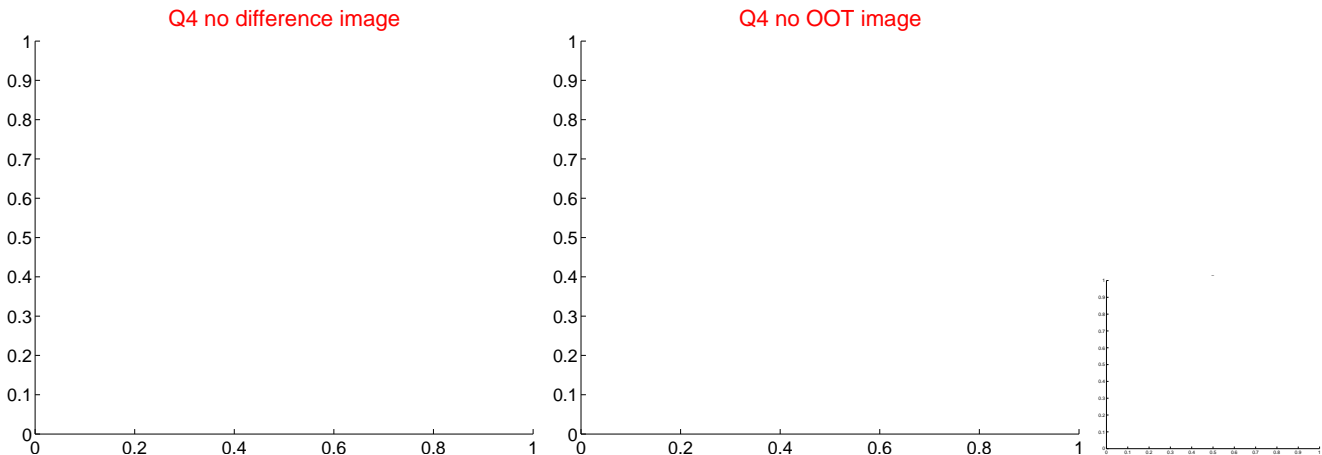
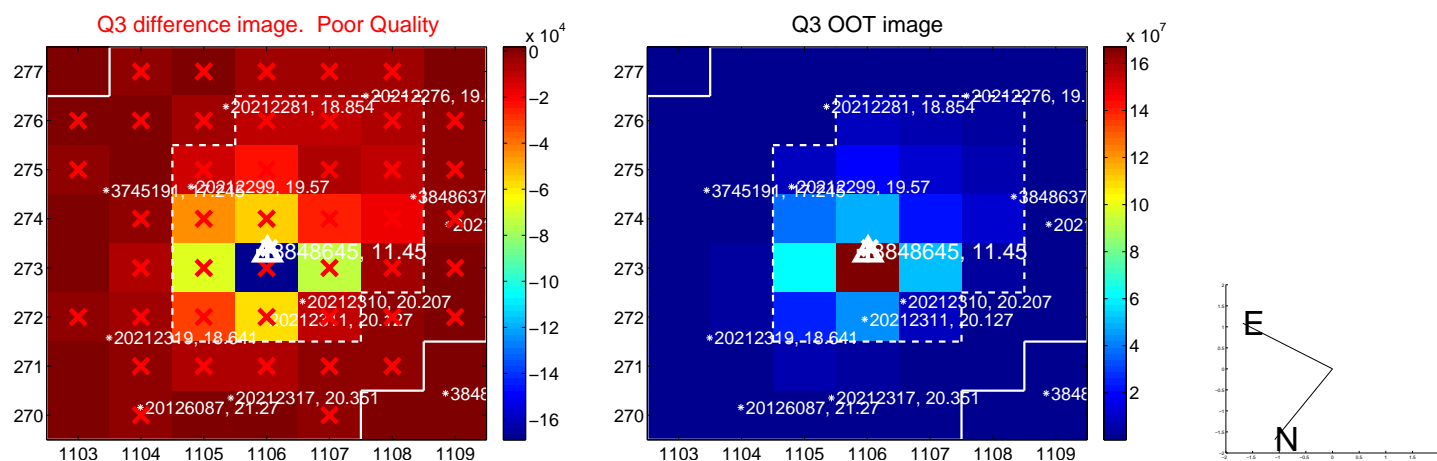
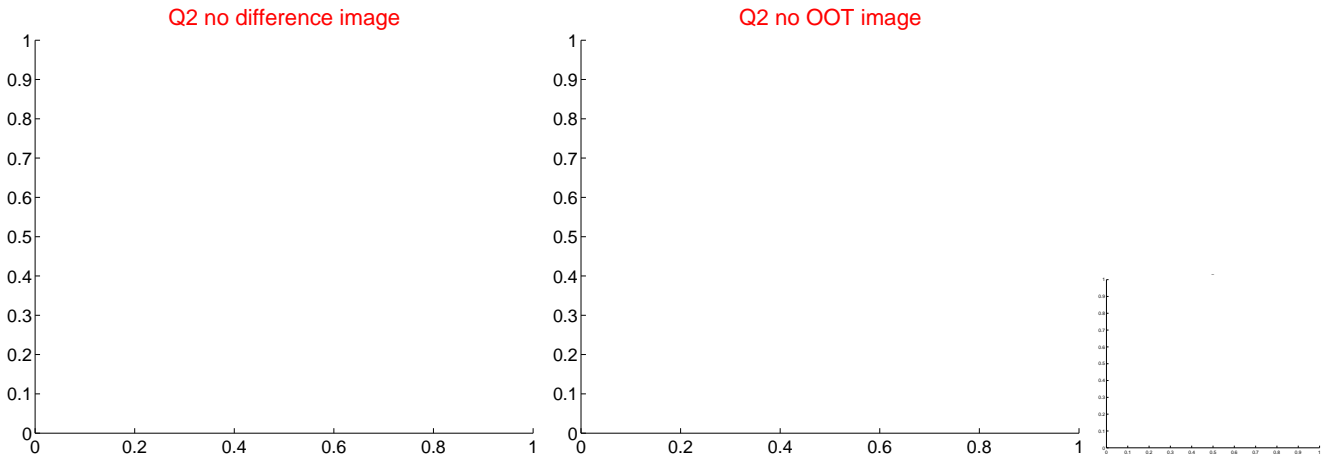


offset from photometric centroids



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.

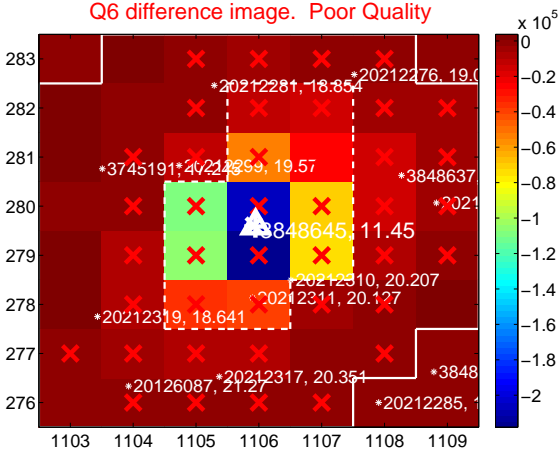
Q5 no difference image



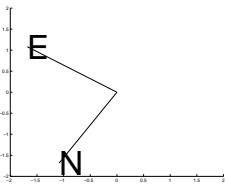
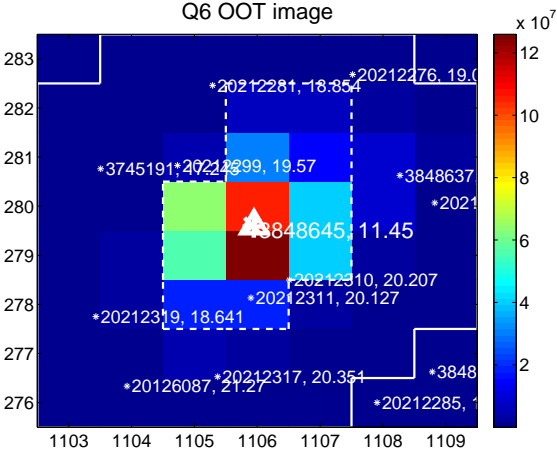
Q5 no OOT image



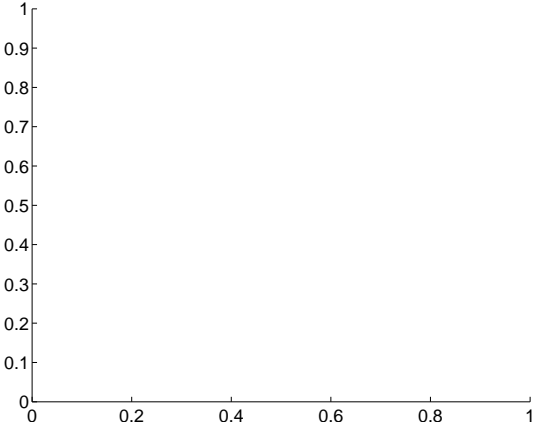
Q6 difference image. Poor Quality



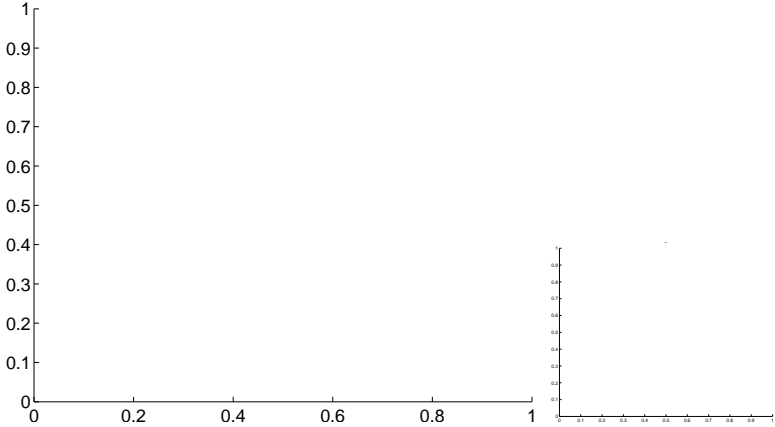
Q6 OOT image



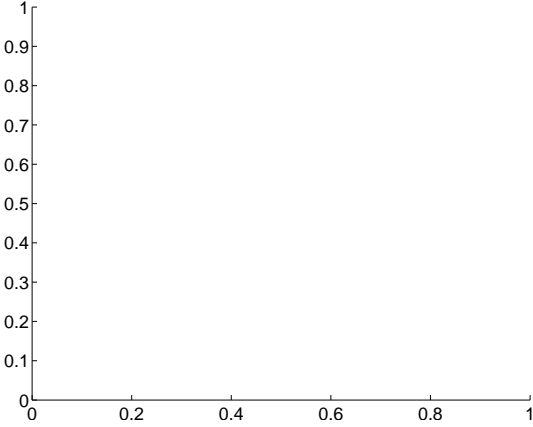
Q7 no difference image



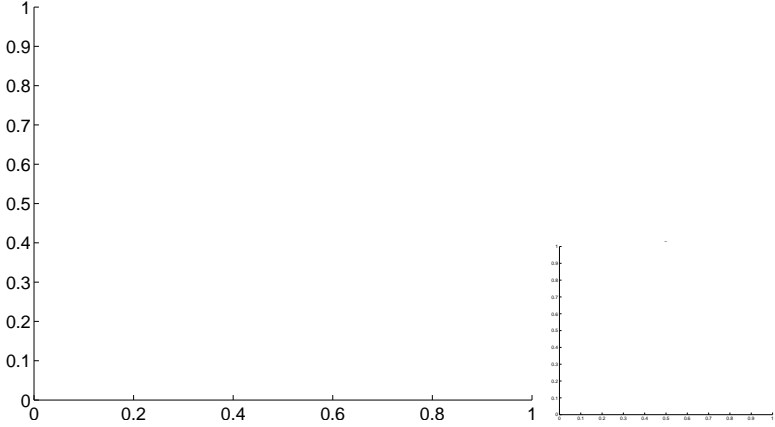
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

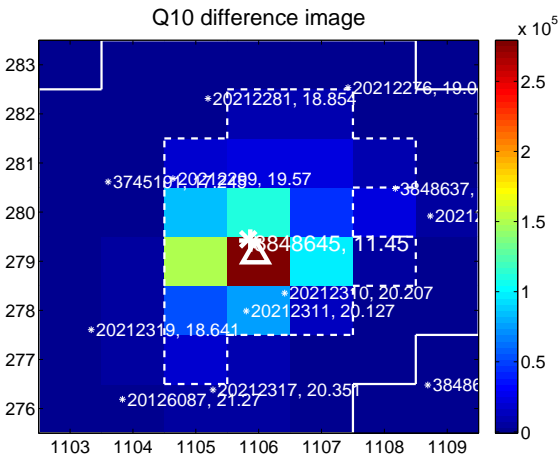
Q9 no difference image



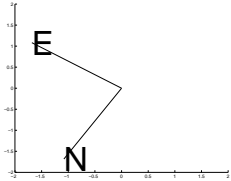
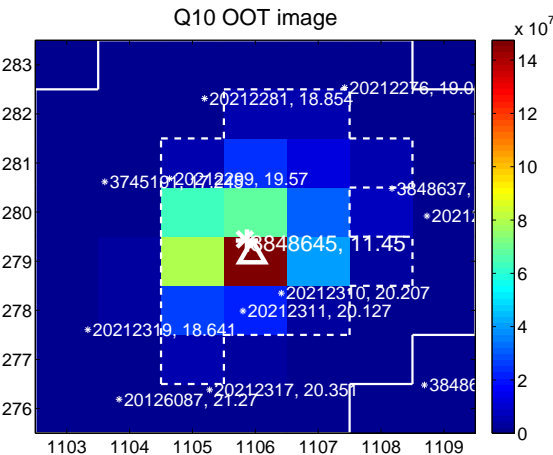
Q9 no OOT image



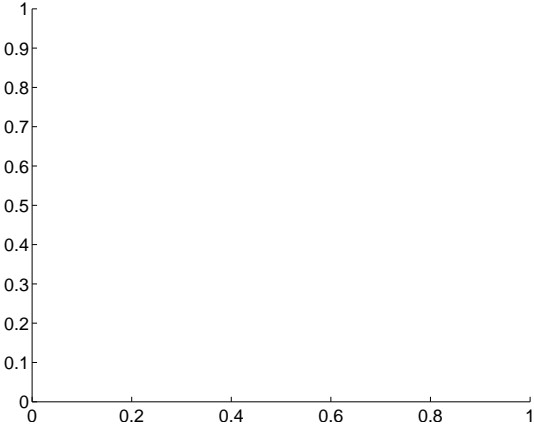
Q10 difference image



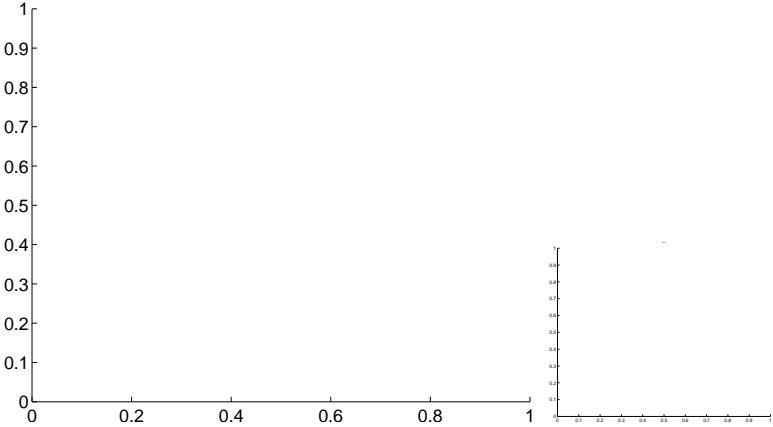
Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



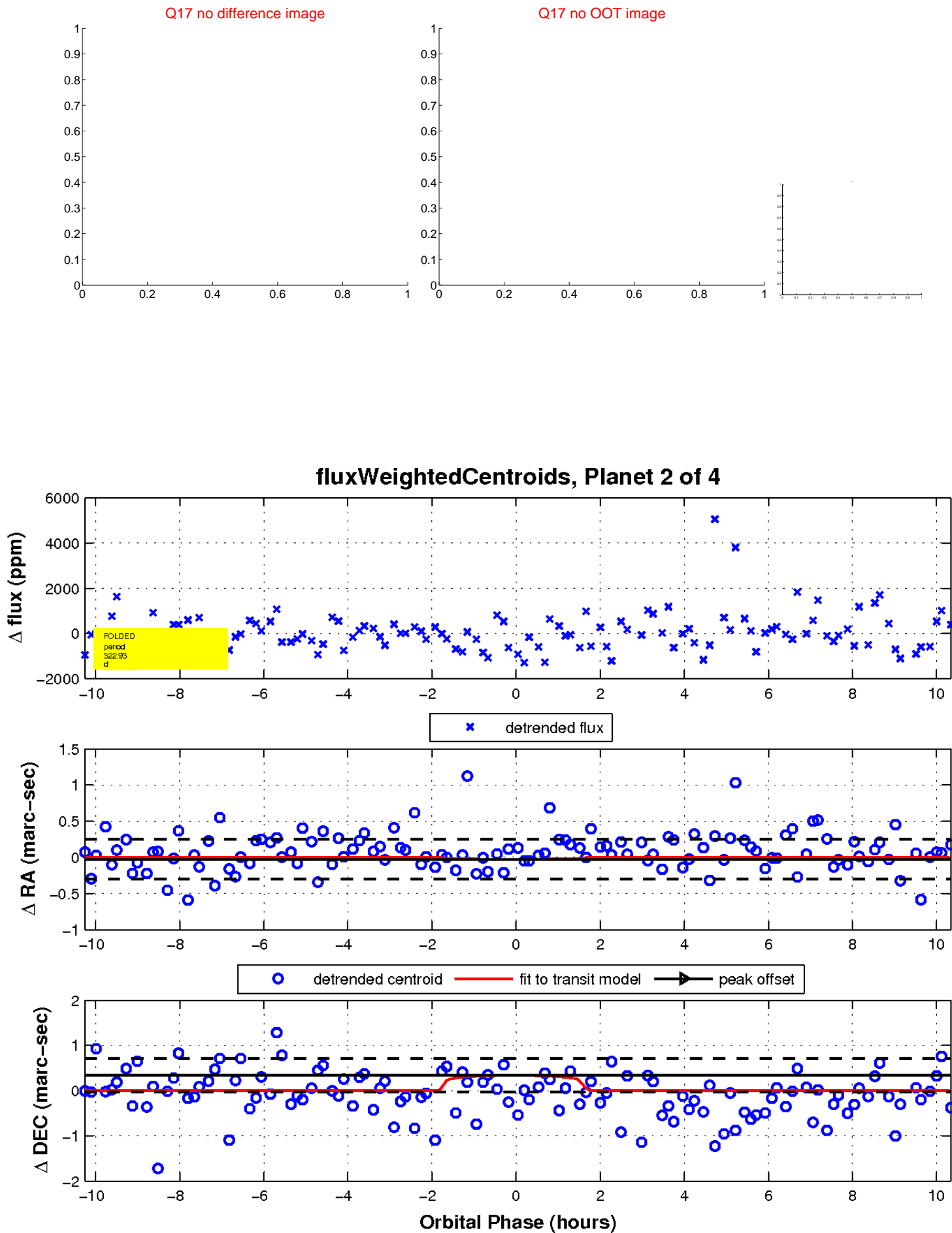
Q12 no OOT image



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

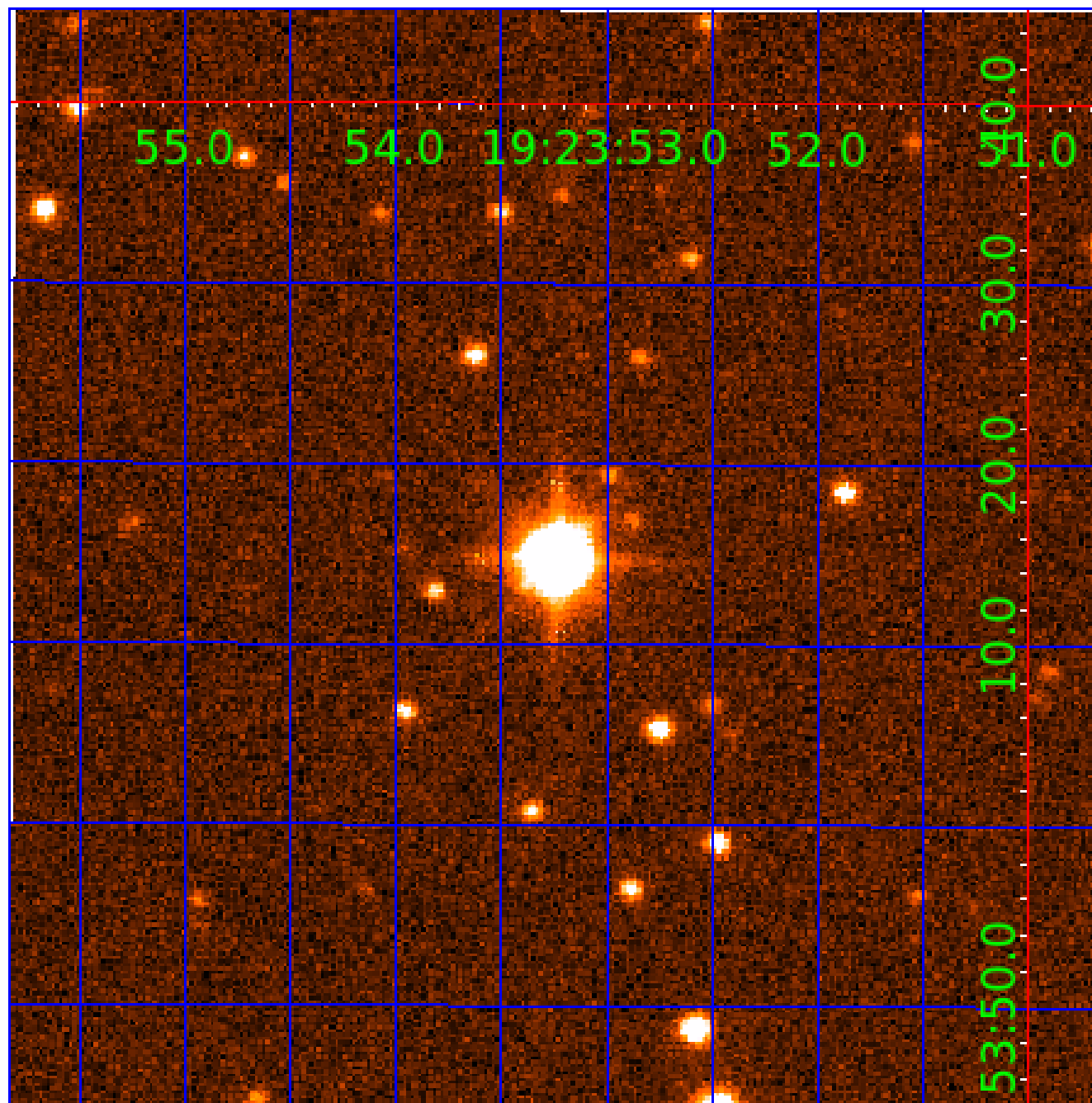


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003848645

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})
003848645-01	OBS	No	378.228190	252.188306	274.9	3.000	12.6	-1.0	3.35	8072	5.62	24.97
003848645-02	OBS	No	322.928323	299.962241	651.0	3.460	9.5	7.9	3.35	8072	8.86	30.82
003848645-03	OBS	No	300.461879	193.846815	1171.1	3.939	10.4	11.2	3.35	8072	14.16	33.93
003848645-04	OBS	No	0.515761	131.566417	37.4	2.374	10.1	8.2	3.35	8072	2.10	165103.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003848645-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003848645-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003848645-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003848645-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED

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

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

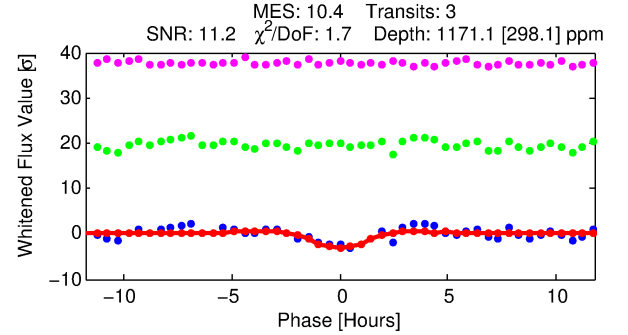
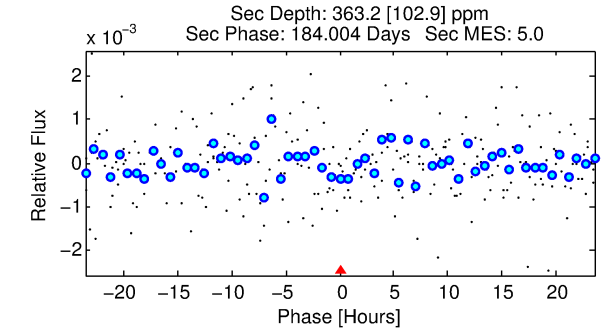
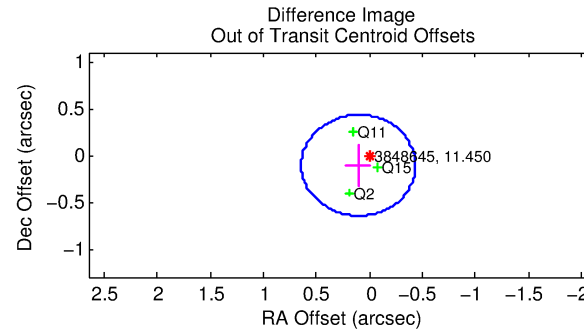
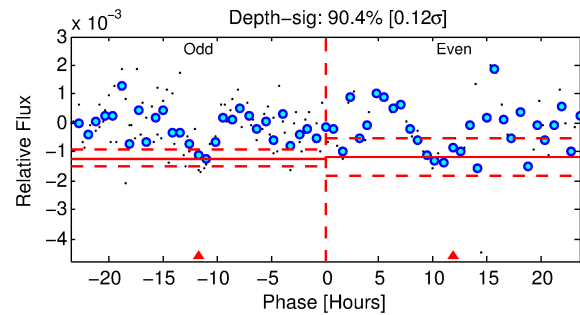
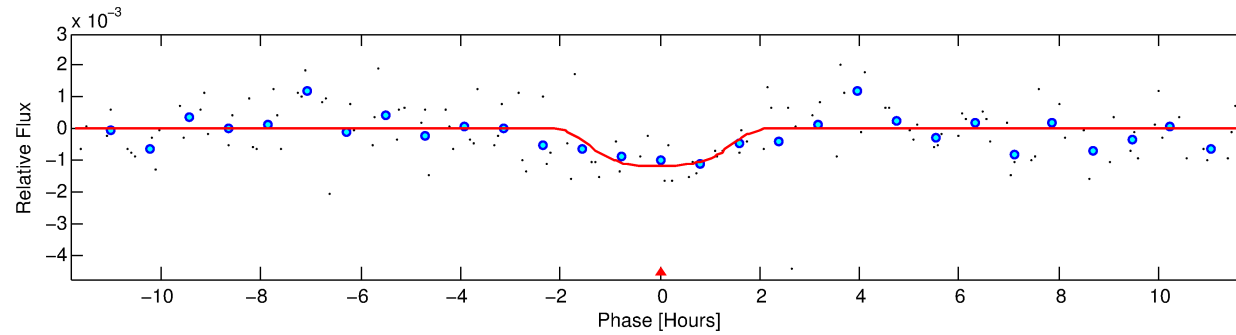
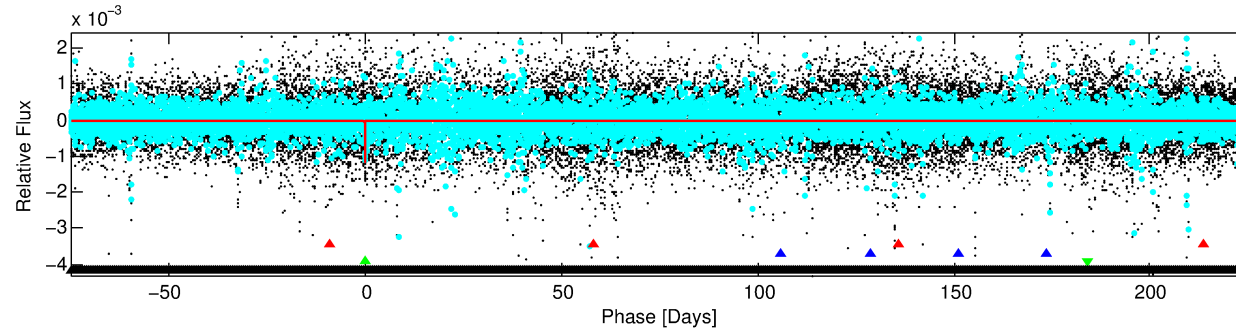
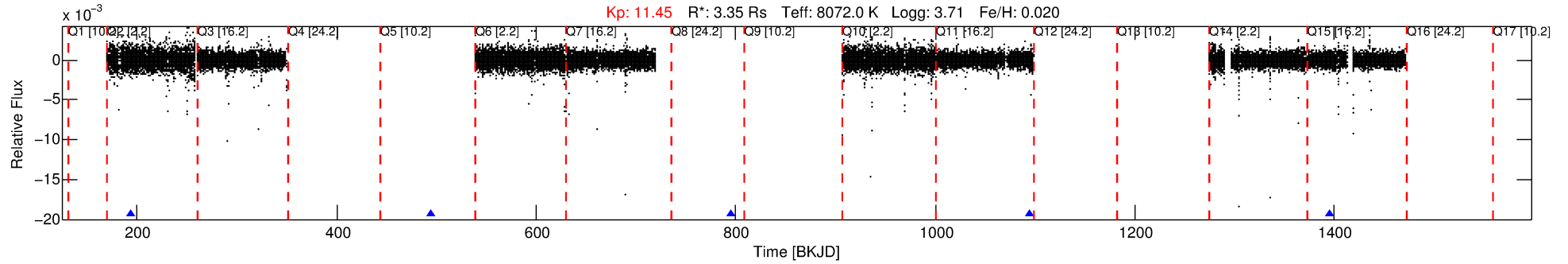
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003848645-03

No Significant Match Found

DV One-Page Summary

KIC: 3848645 Candidate: 3 of 4 Period: 300.462 d



DV Fit Results:

Period = 300.46188 [0.00393] d
Epoch = 193.8468 [0.0122] BKJD
Rp/R* = 0.0387 [0.0091]
a/R* = 243.60 [161.84]
b = 0.95 [0.08]
Seff = 33.93 [24.71]
Teq = 615 [112] K
Rp = 14.16 [7.37] Re
a = 1.1223 [0.4976] AU
Ag = 1254.97 [1120.49] [1.12 σ]
Teffp = 5663 [815] K [6.14 σ]

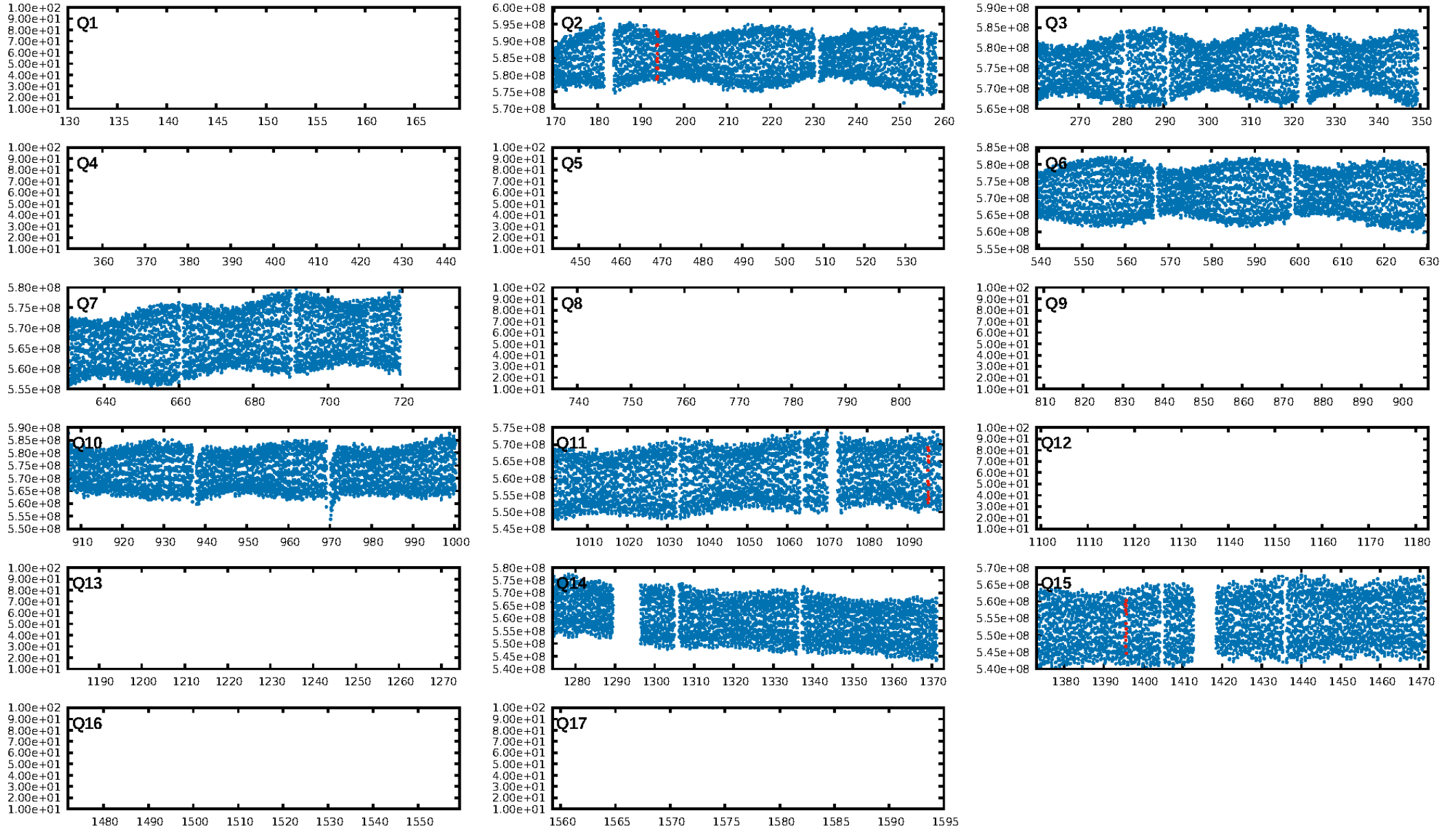
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1565.35 σ]
LongPeriod-sig: 100.0% [102.84 σ]
ModelChiSquare2-sig: 52.3%
ModelChiSquareGof-sig: 88.0%
Bootstrap-pfa: 8.17e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.11
Centroid-sig: 91.2%
Centroid-so: 0.086 arcsec [0.39 σ]
OotOffset-rm: 0.150 arcsec [0.83 σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-rm: 0.072 arcsec [0.33 σ]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 0.00 [0/3]

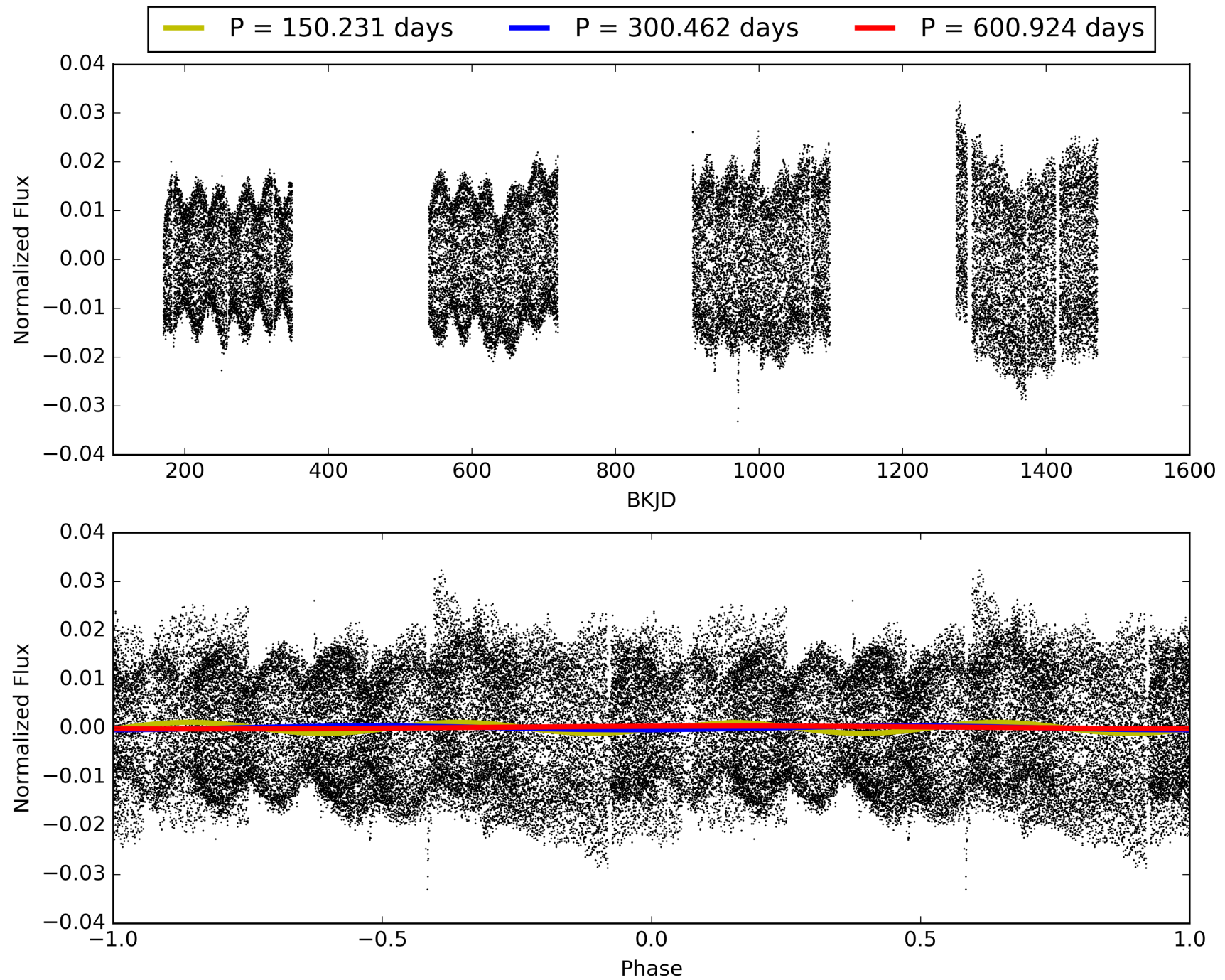
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:21:32 Z

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

TCE 003848645-03, PDC Light Curves

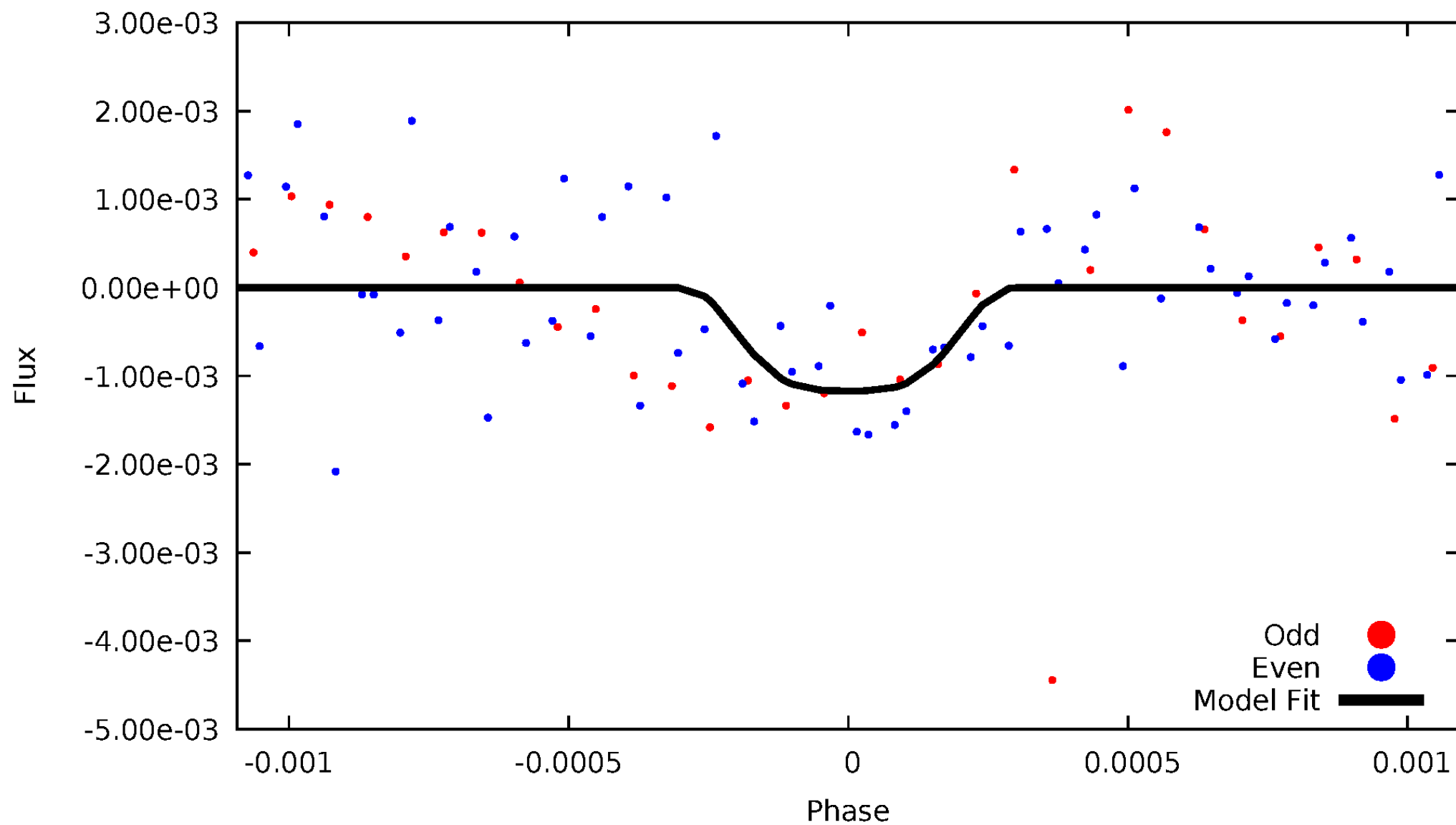


TCE 003848645-03



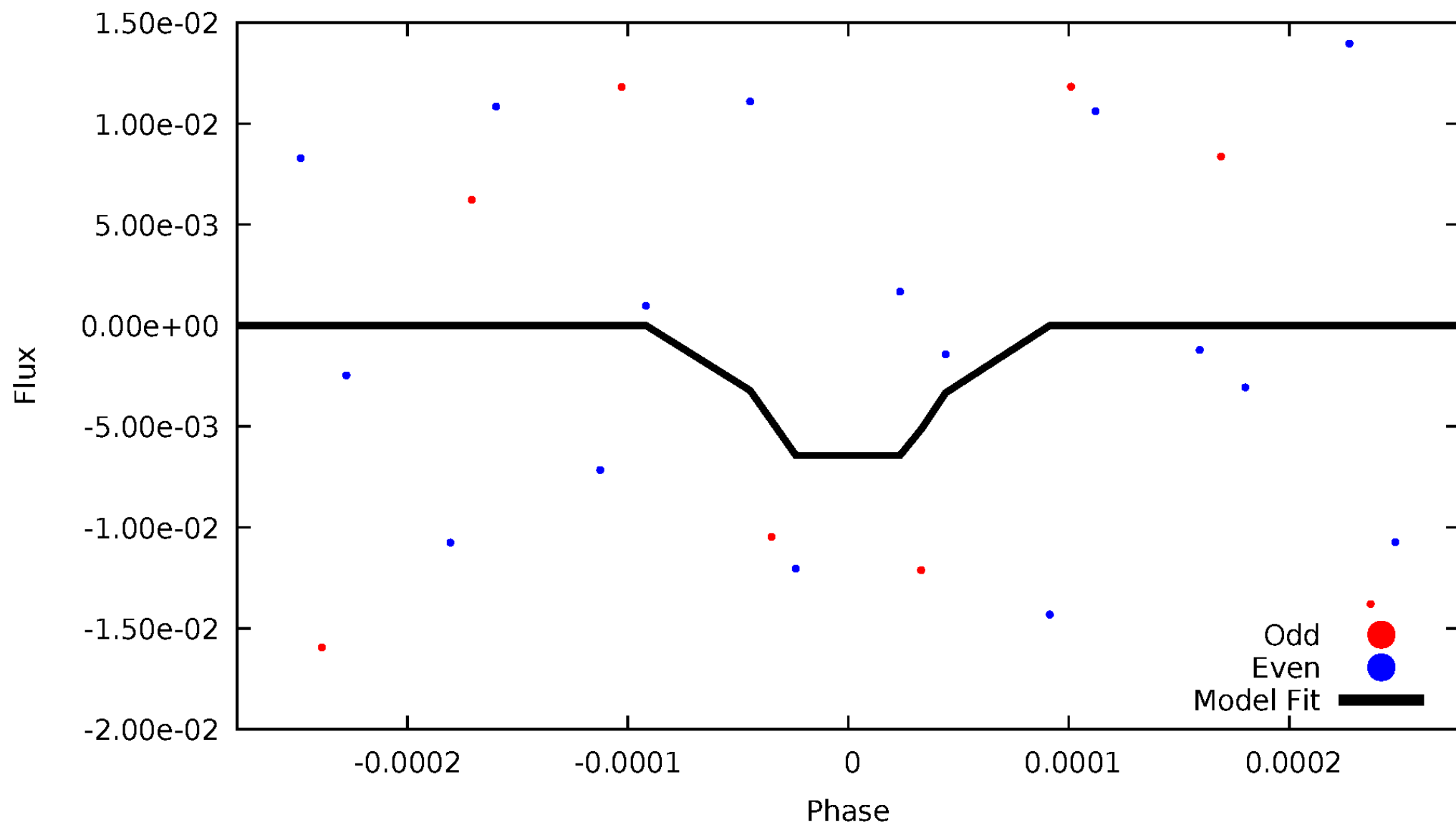
DV Odd/Even

TCE 003848645-03



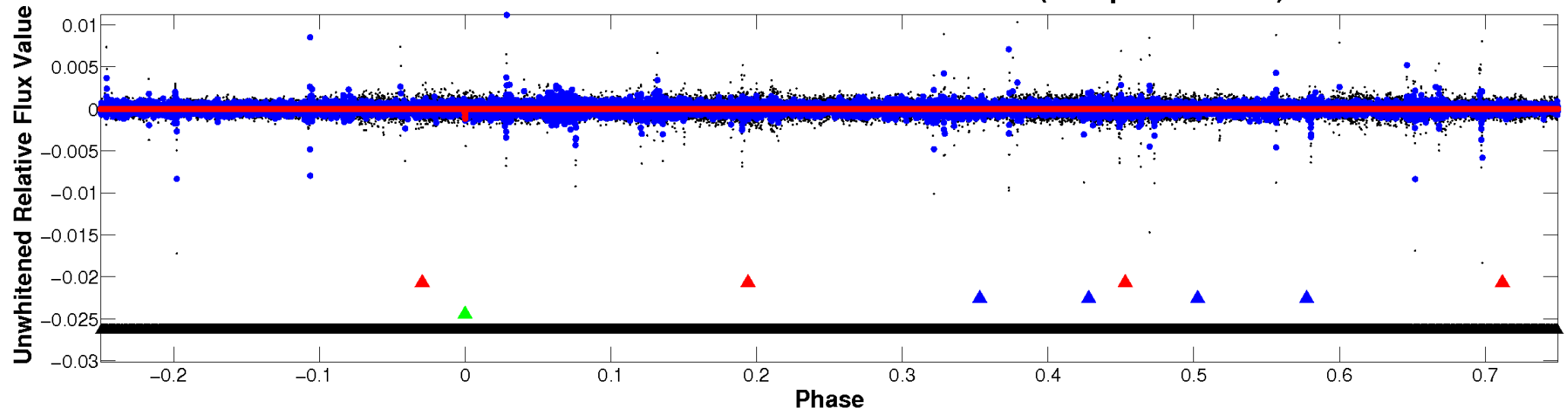
ALT Odd/Even

TCE 003848645-03

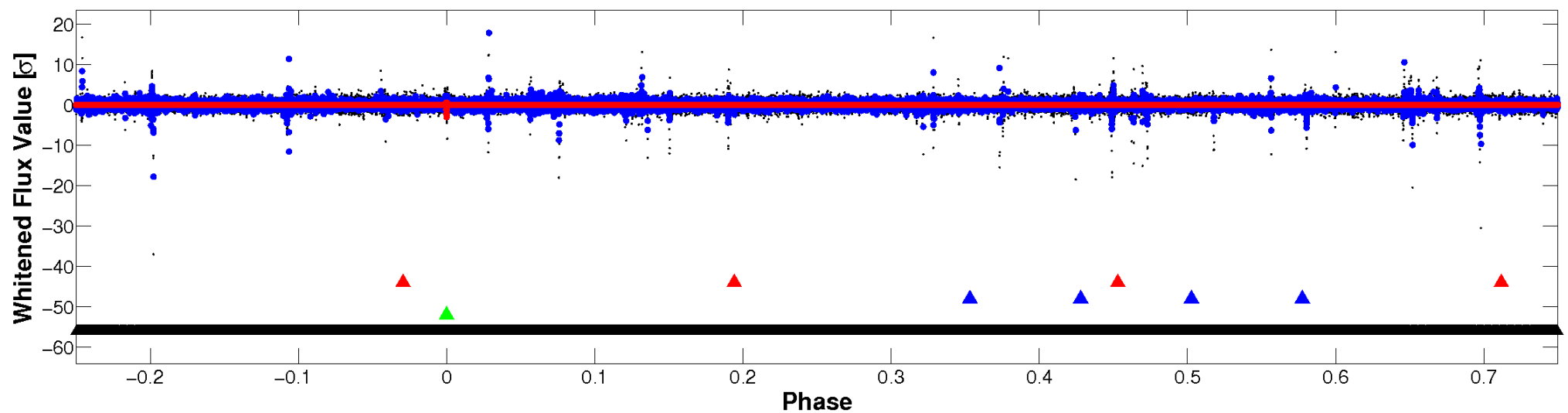


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



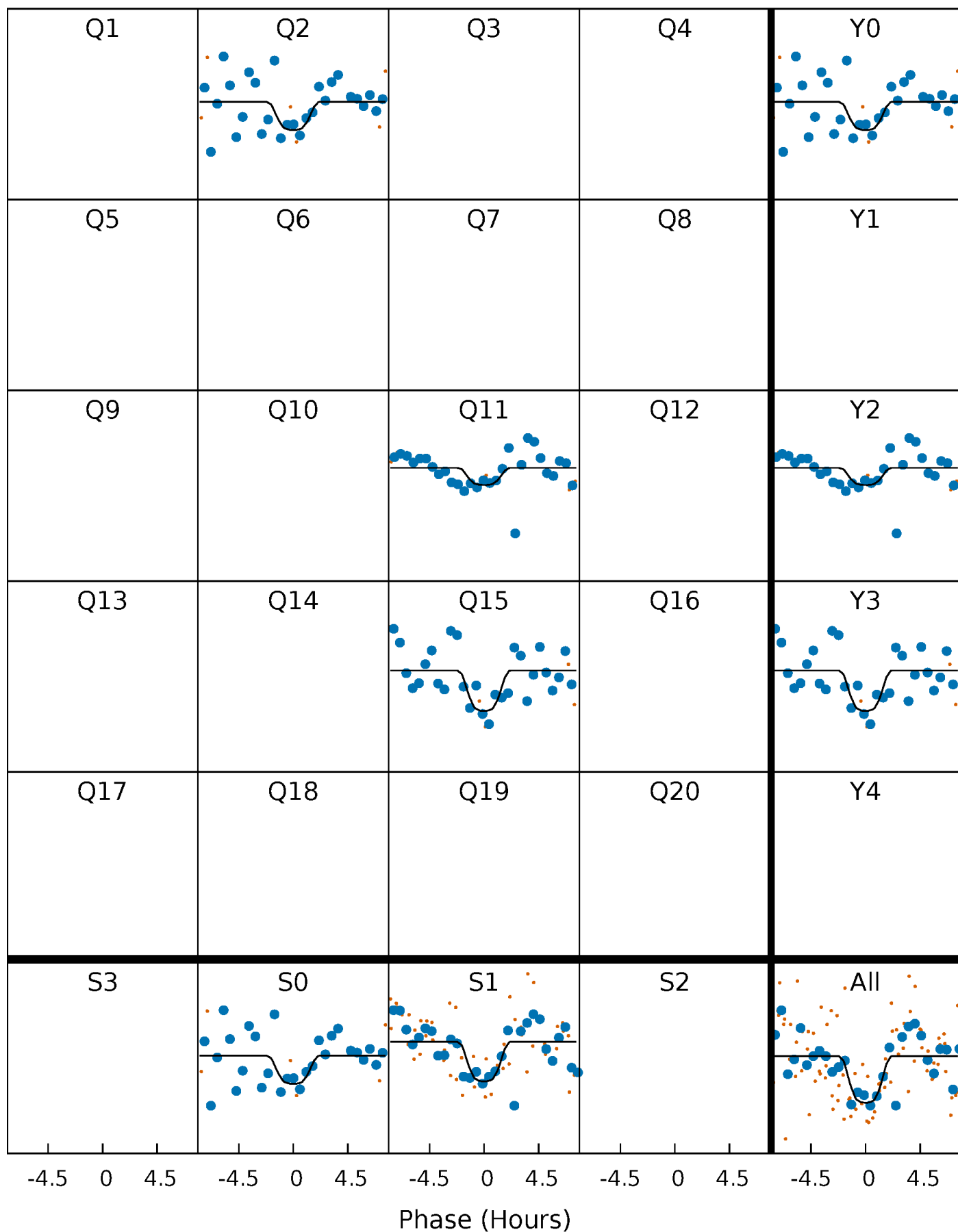
PDC Quarter-Phased Transit Curves

TCE 003848645-03 P=300.461879 Days $T_0=193.846815$ (BKJD)



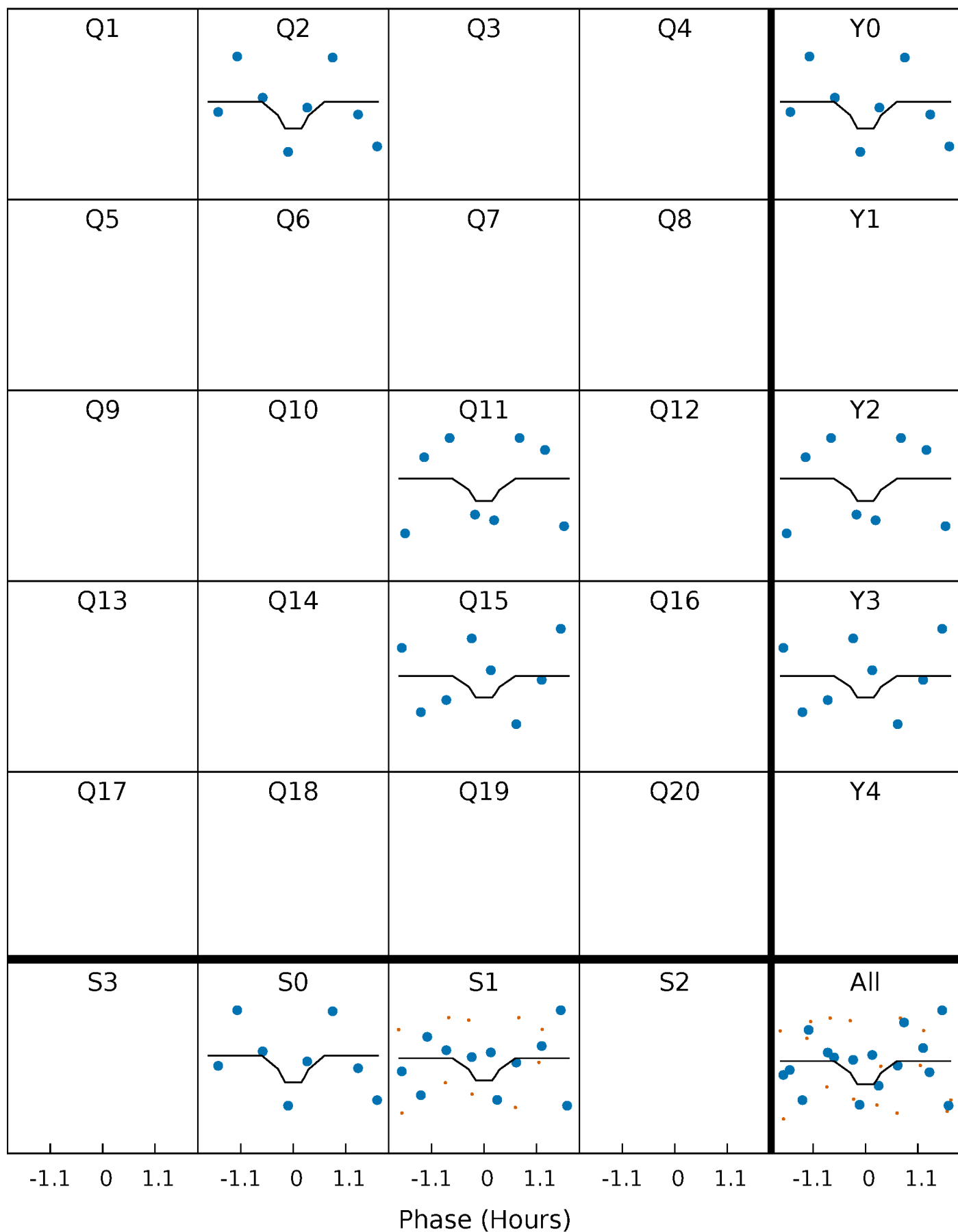
DV Quarter-Phased Transit Curves

TCE 003848645-03 P=300.461879 Days $T_0=193.846815$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

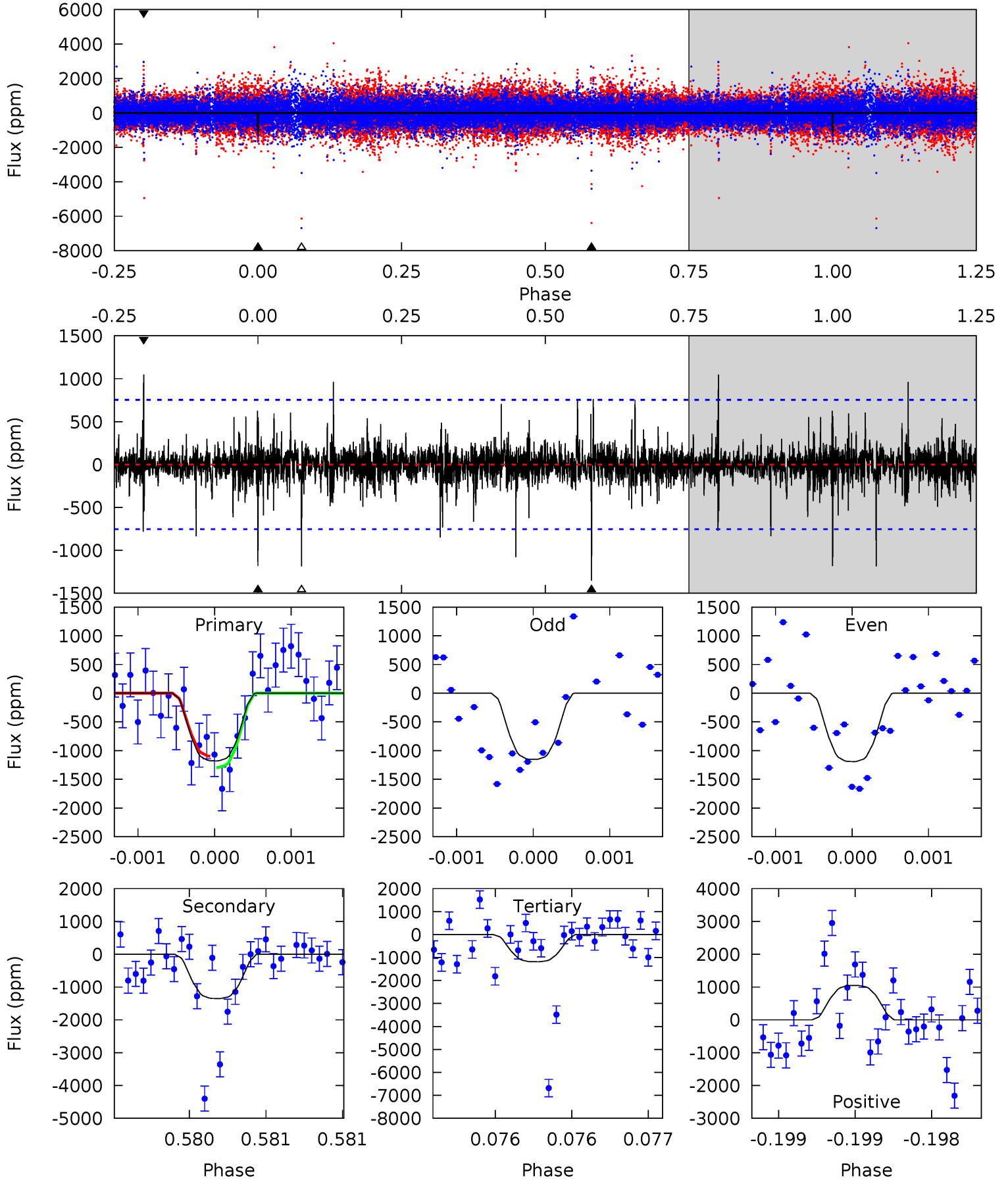
TCE 003848645-03 P=300.461877 Days $T_0=193.844273$ (BKJD)



DV Model-Shift Uniqueness Test

003848645-03, P = 300.461879 Days, E = 193.846815 Days

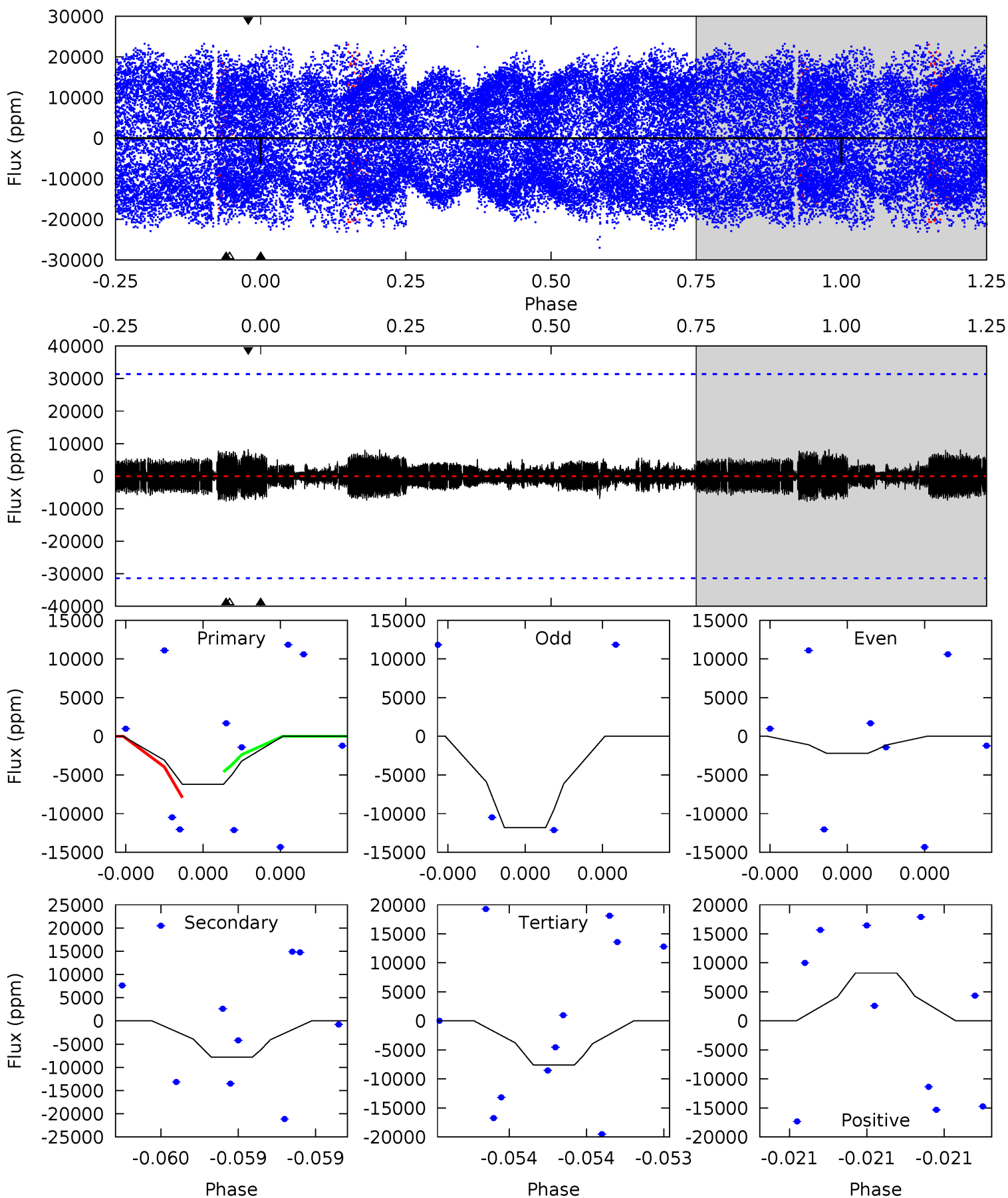
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.70	9.96	8.74	7.73	5.56	3.45	0.98	-0.04	0.97	1.22	2.23	0.13	1.02	0.44	0.71



Alt Model-Shift Uniqueness Test

003848645-03, P = 300.461877 Days, E = 193.844273 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.16	1.46	1.42	1.54	5.87	3.92	0.43	-0.26	-0.38	0.04	-0.08	0.90	0.63	0.51	0.31



Stellar Parameters For KIC 003848645

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8072^{+223}_{-363}	$3.707^{+0.413}_{-0.138}$	$0.020^{+0.200}_{-0.400}$	$3.352^{+0.839}_{-1.559}$	$2.086^{+0.362}_{-0.482}$	$0.078^{+0.313}_{-0.033}$
	+3%/-4%	+11%/-4%	+1000%/-2000%	+25%/-47%	+17%/-23%	+401%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003848645-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1351 ± 136	$13.31^{+4.49}_{-4.10}$	834^{+74}_{-95}	7702^{+1587}_{-873}	5198^{+5951}_{-2186}
Alt.	-7815 ± 5348	$34.37^{+7.24}_{-7.87}$	840^{+69}_{-95}	7474^{+1473}_{-2039}	4476^{+4978}_{-3196}

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 $A_{obs} \gg 1.0$

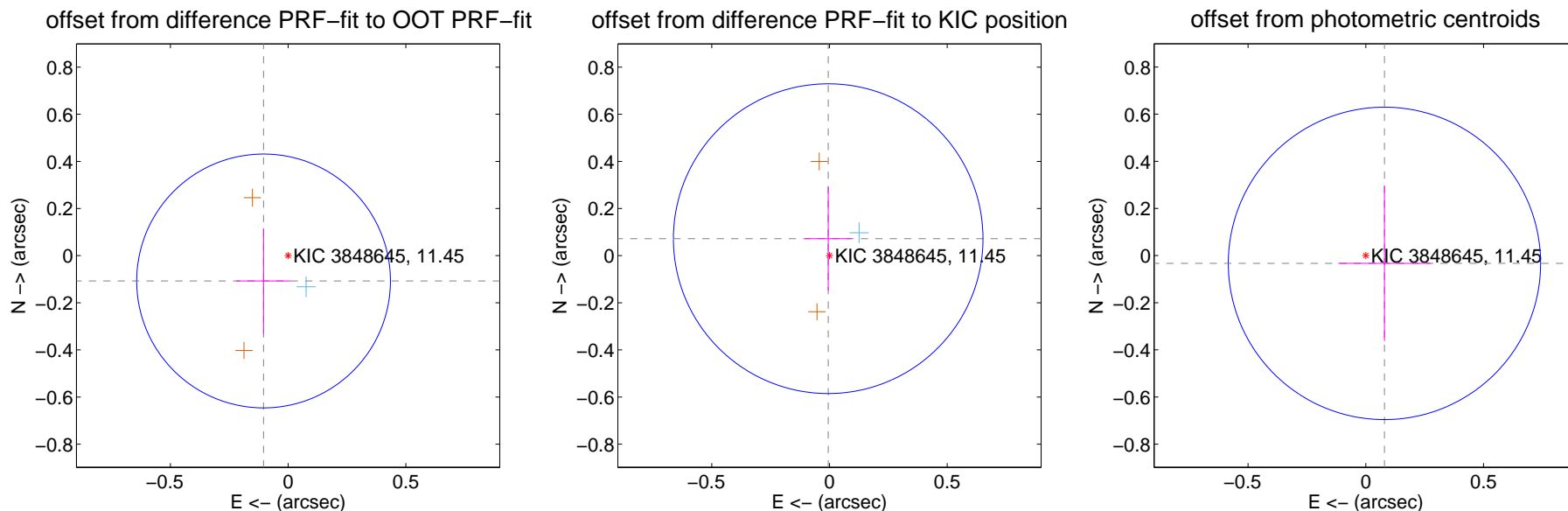
DV Centroid Data

Supplemental centroid analysis for 003848645-03. **Kepler magnitude: 11.45.** Transit SNR 11.24

There are 1 quarters with good PRF difference image offsets

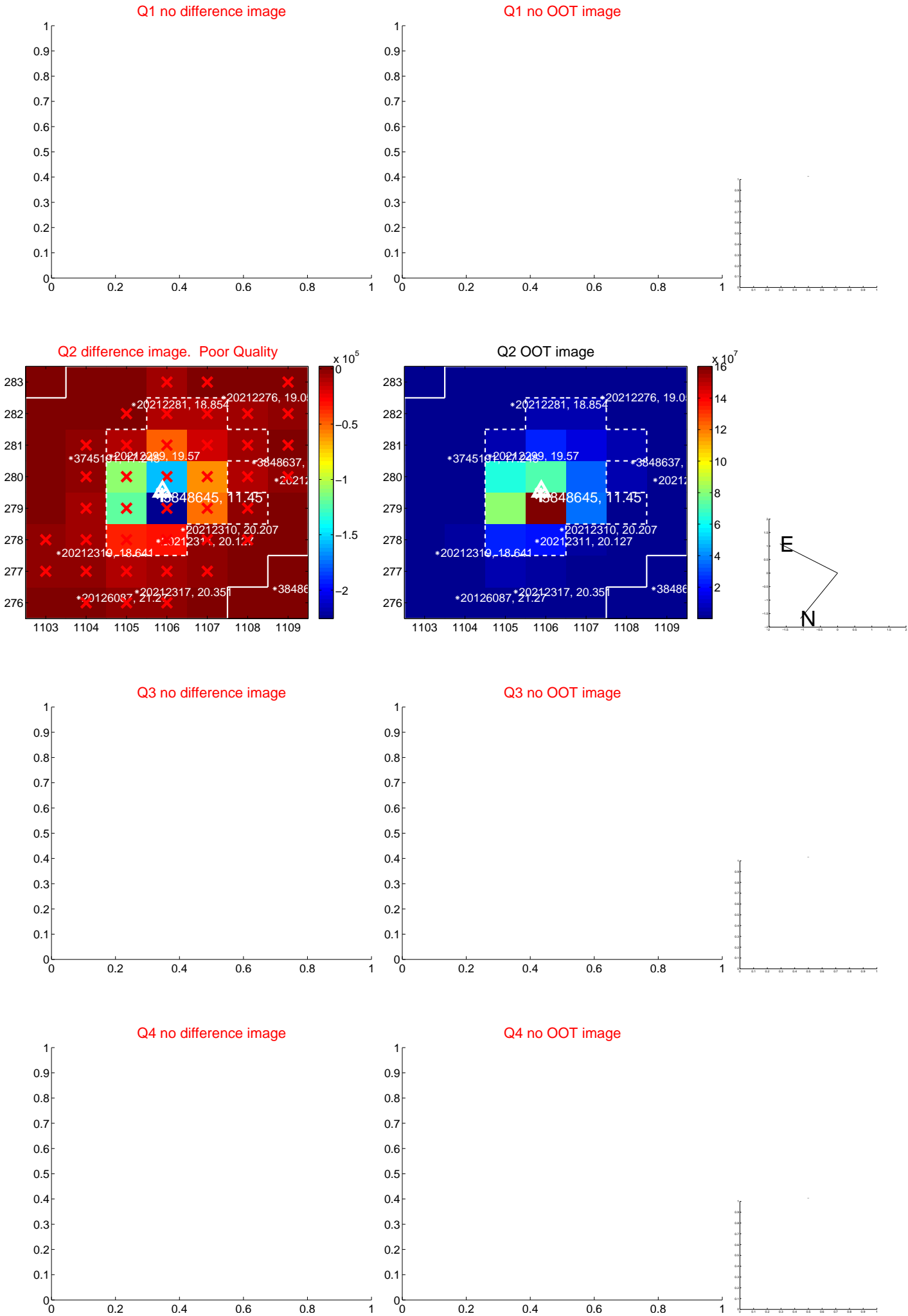
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.150 ± 0.180	0.83	0.104 ± 0.116	-0.107 ± 0.224
PRF-fit source offset from KIC position	0.072 ± 0.219	0.33	0.005 ± 0.098	0.072 ± 0.220
photometric centroid source offset	0.09 ± 0.22	0.39	-0.08 ± 0.20	-0.03 ± 0.33



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.

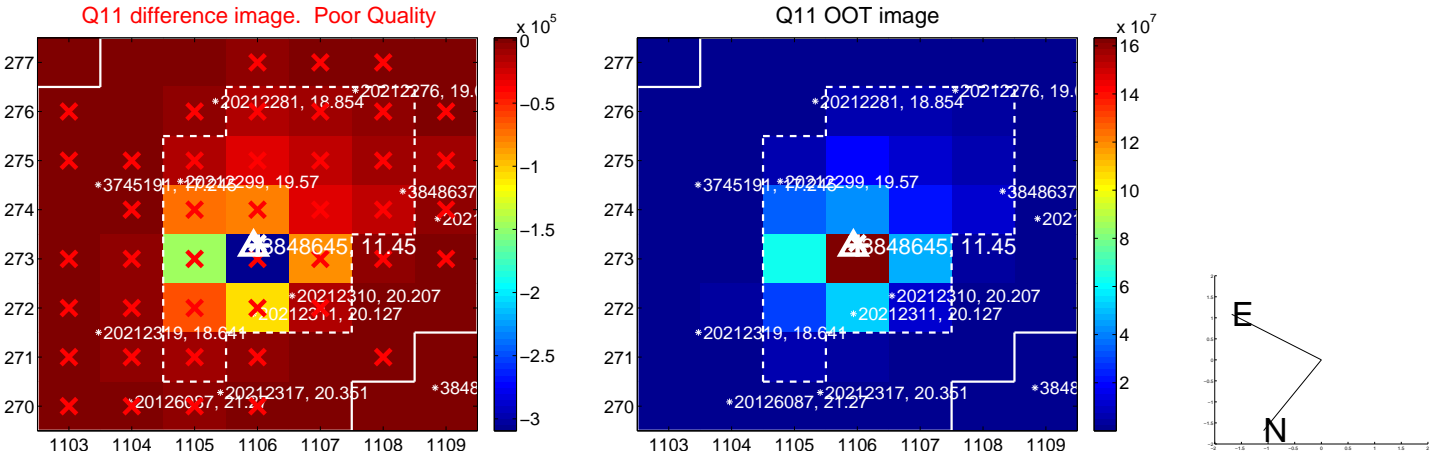
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Q13 no difference image



Q13 no OOT image



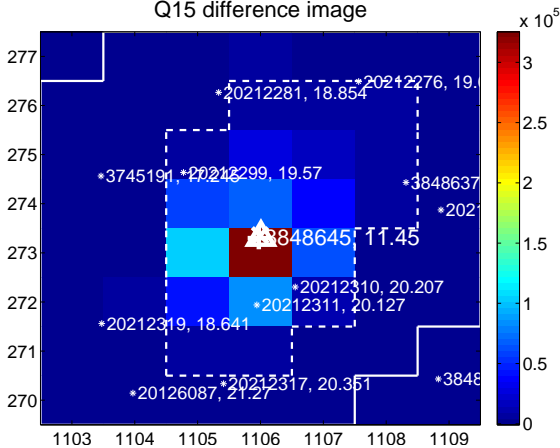
Q14 no difference image



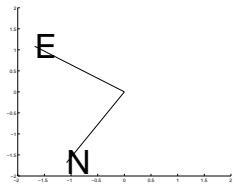
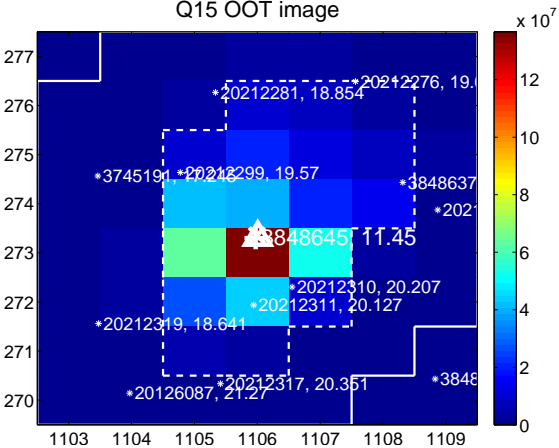
Q14 no OOT image



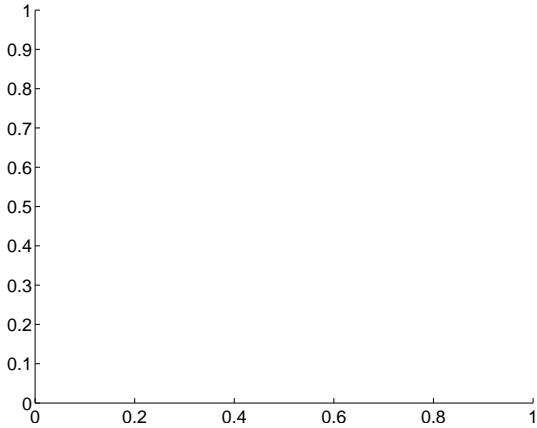
Q15 difference image



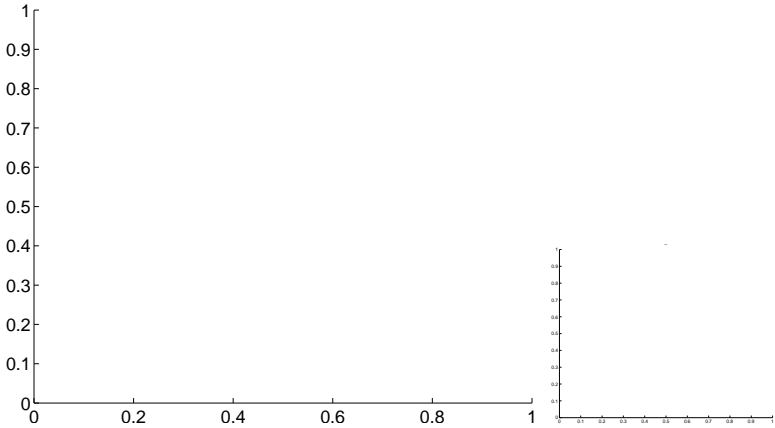
Q15 OOT image



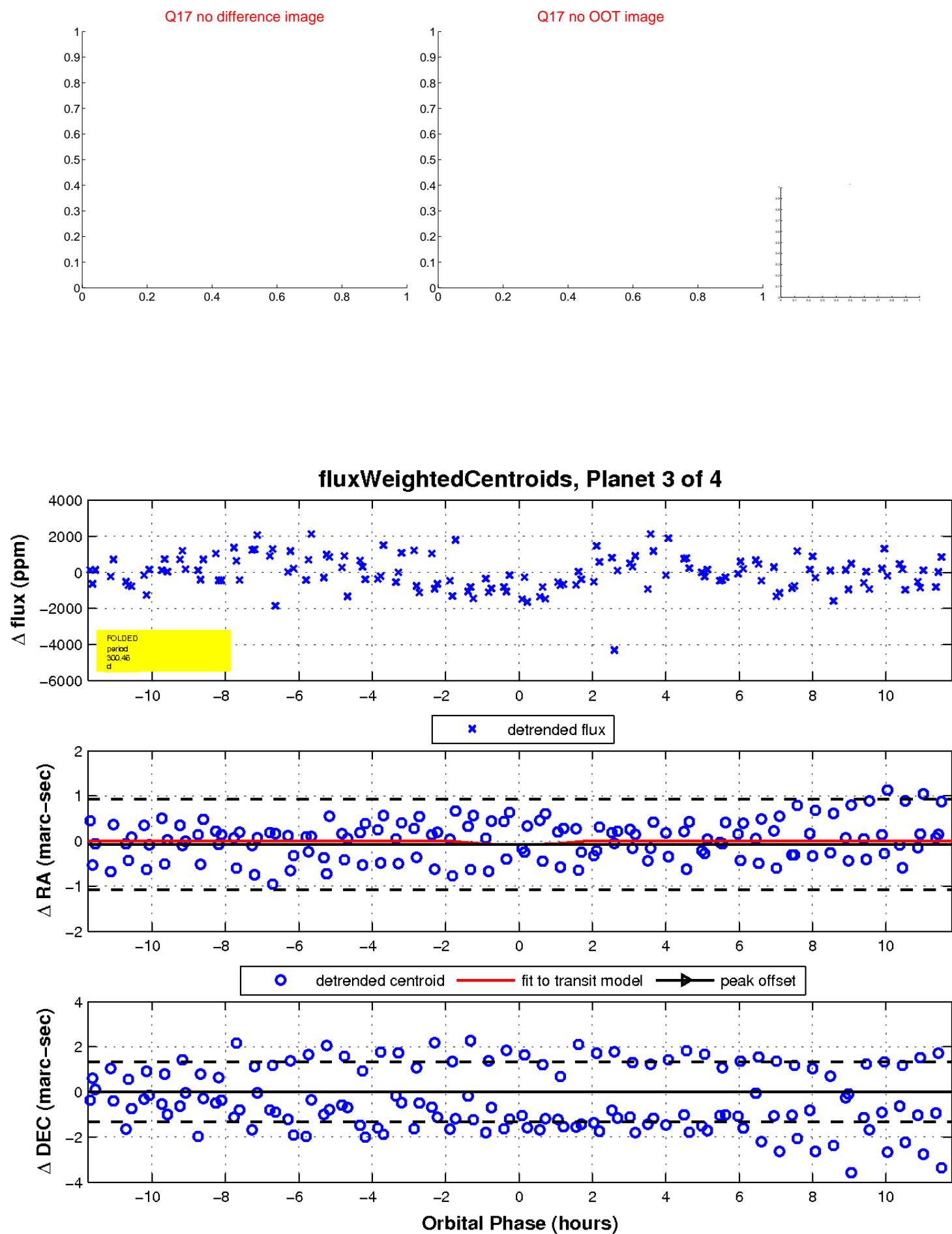
Q16 no difference image



Q16 no OOT image

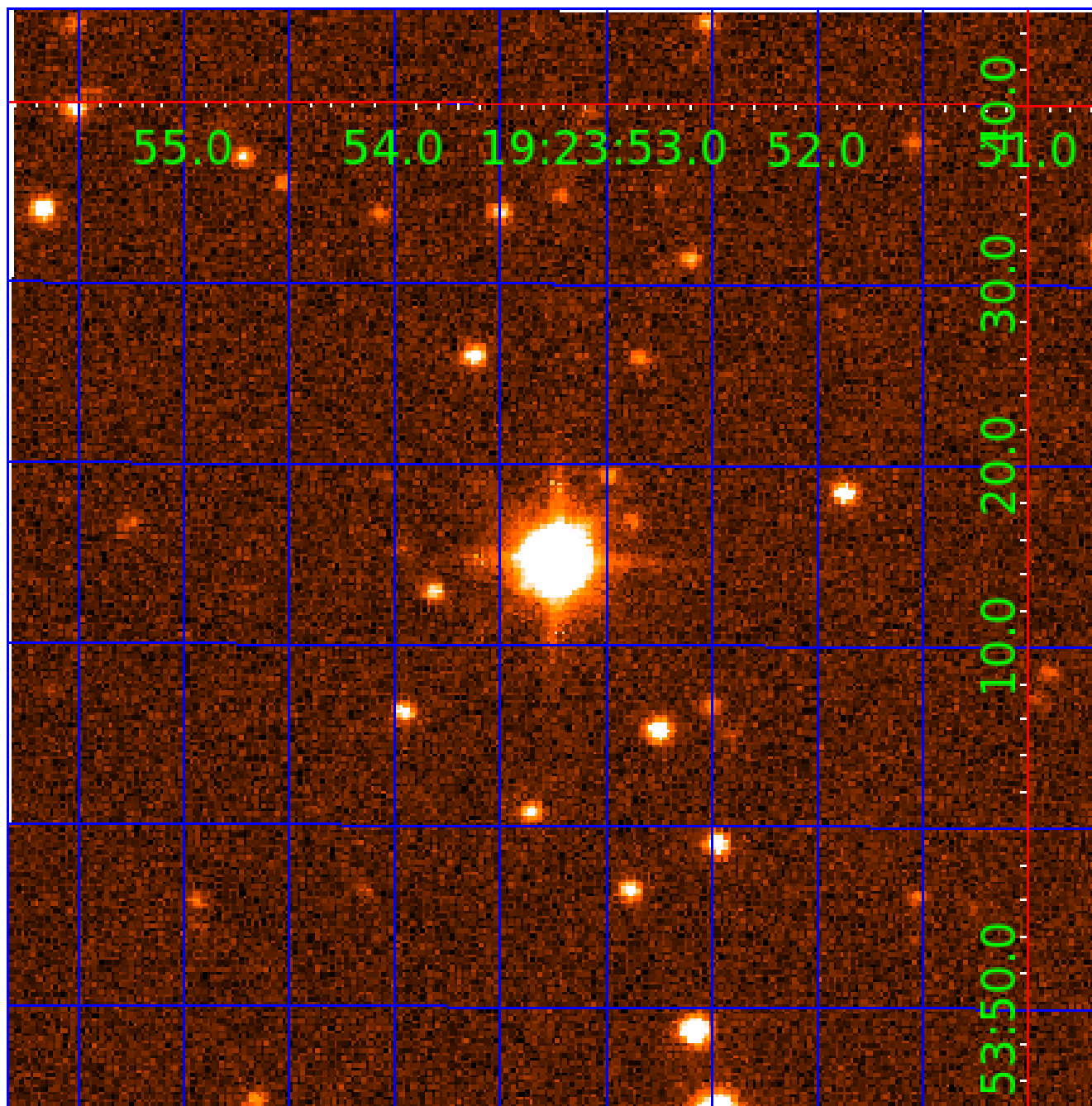


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003848645

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})
003848645-01	OBS	No	378.228190	252.188306	274.9	3.000	12.6	-1.0	3.35	8072	5.62	24.97
003848645-02	OBS	No	322.928323	299.962241	651.0	3.460	9.5	7.9	3.35	8072	8.86	30.82
003848645-03	OBS	No	300.461879	193.846815	1171.1	3.939	10.4	11.2	3.35	8072	14.16	33.93
003848645-04	OBS	No	0.515761	131.566417	37.4	2.374	10.1	8.2	3.35	8072	2.10	165103.92

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003848645-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003848645-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003848645-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
003848645-04	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED

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

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

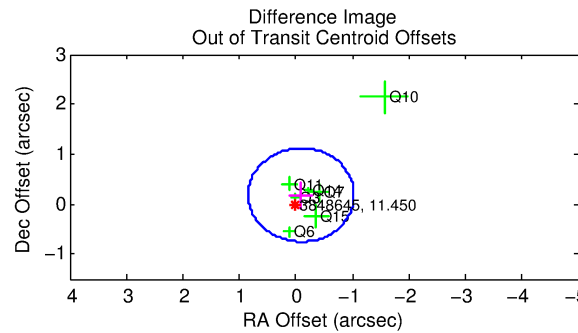
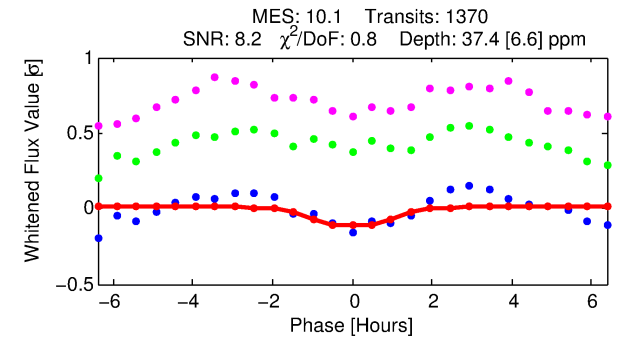
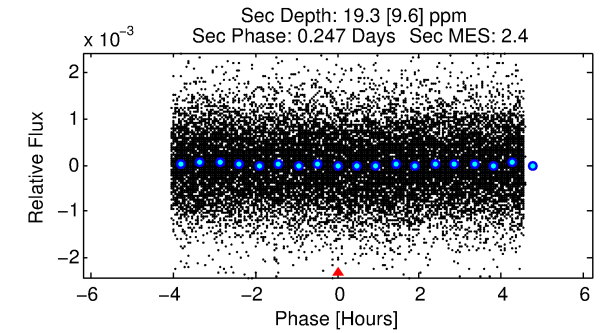
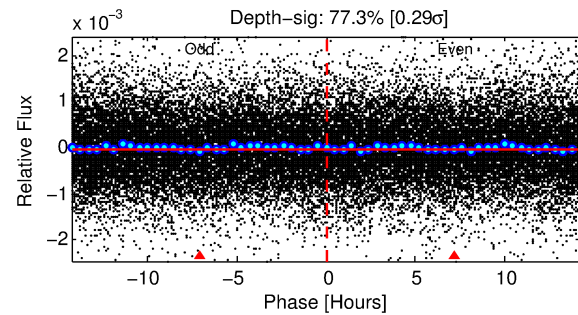
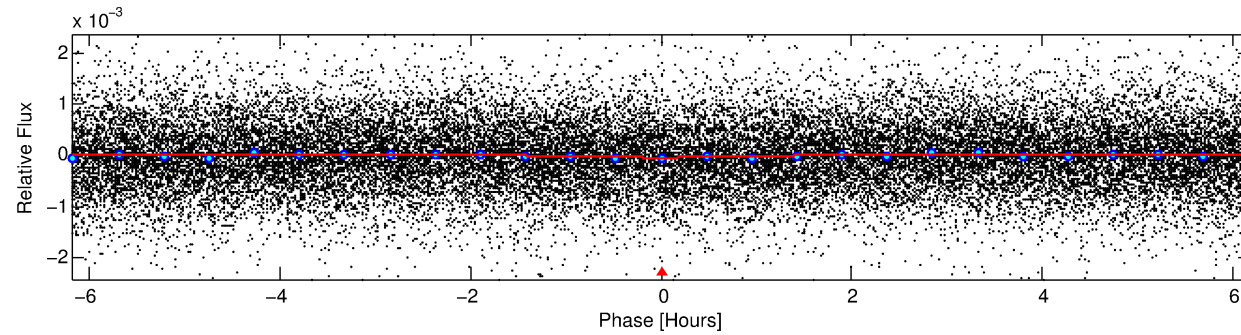
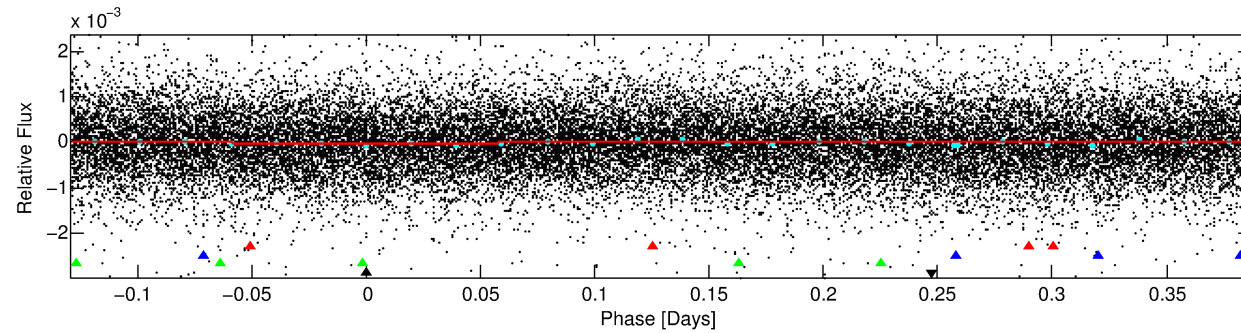
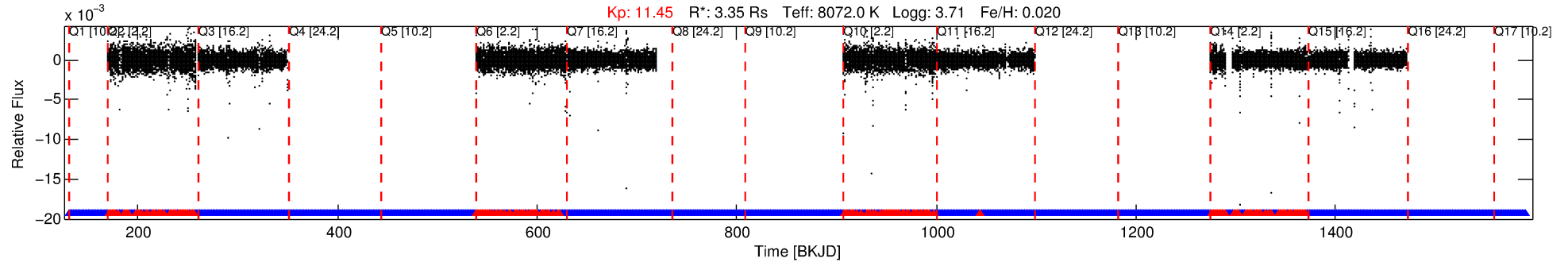
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003848645-04

No Significant Match Found

DV One-Page Summary

KIC: 3848645 Candidate: 4 of 4 Period: 0.516 d



DV Fit Results:

Period = 0.51576 [0.00001] d
Epoch = 131.5664 [0.0054] BKJD
Rp/R* = 0.0058 [0.0068]
a/R* = 1.67 [7.20]
b = 0.41 [13.84]
Seff = 165103.92 [120245.68]
Teq = 5140 [936] K
Rp = 2.10 [2.67] Re
a = 0.0161 [0.0071] AU
Ag = 0.62 [1.57] [-0.24σ]
Teffp = 7058 [4273] K [0.44σ]

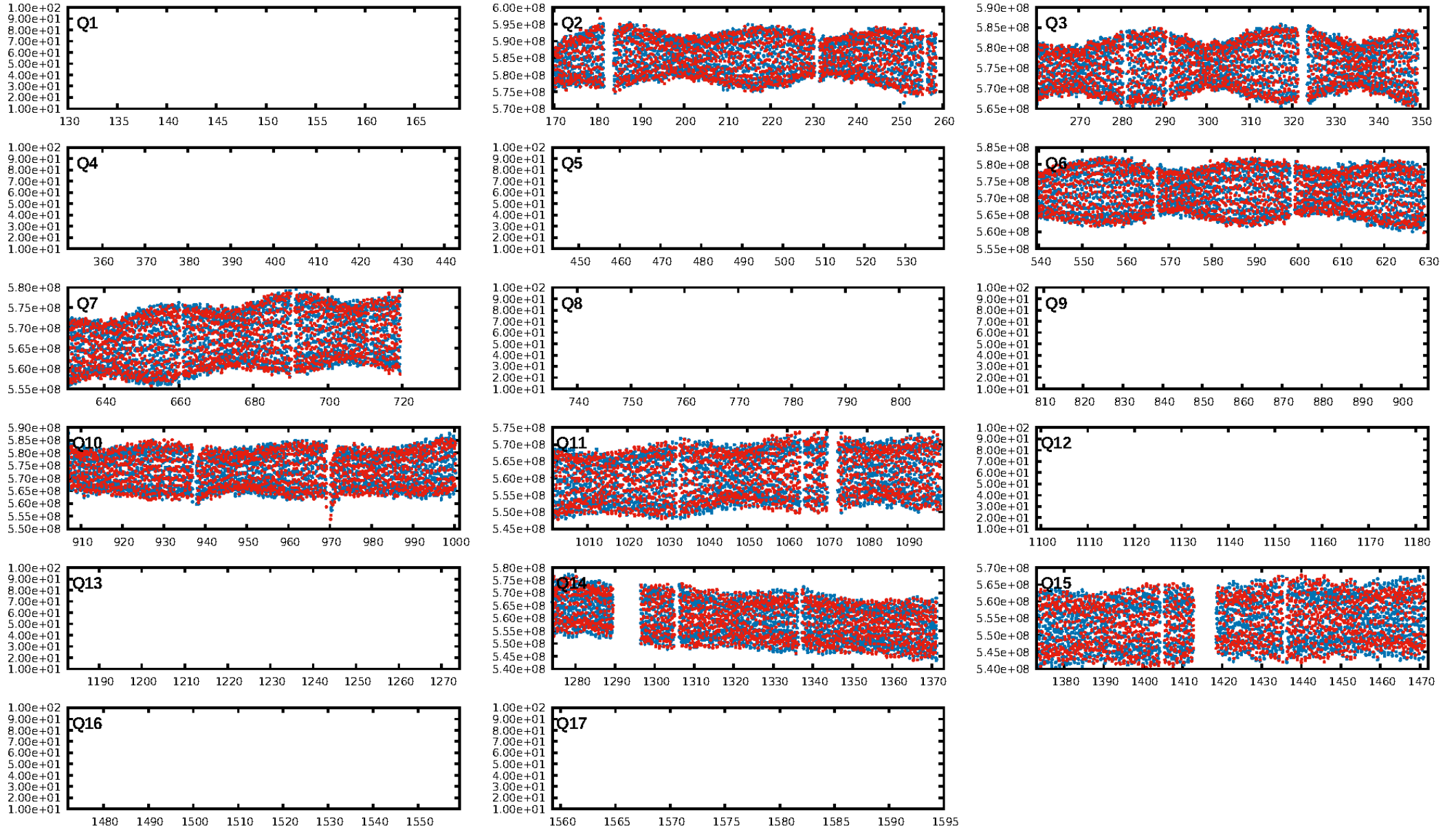
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1565.35σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.26e-17
RollingBand-fgt: 0.84 [1157/1370]
GhostDiagnostic-chr: 1.838
Centroid-sig: 0.3%
Centroid-so: 0.810 arcsec [2.26σ]
OotOffset-rm: 0.204 arcsec [0.65σ]
OotOffset-st: 3/4/0/0 [7]
KicOffset-rm: 0.382 arcsec [0.99σ]
KicOffset-st: 3/4/0/0 [7]
DiffImageQuality-fgm: 0.86 [6/7]
DiffImageOverlap-fno: 1.00 [8/8]

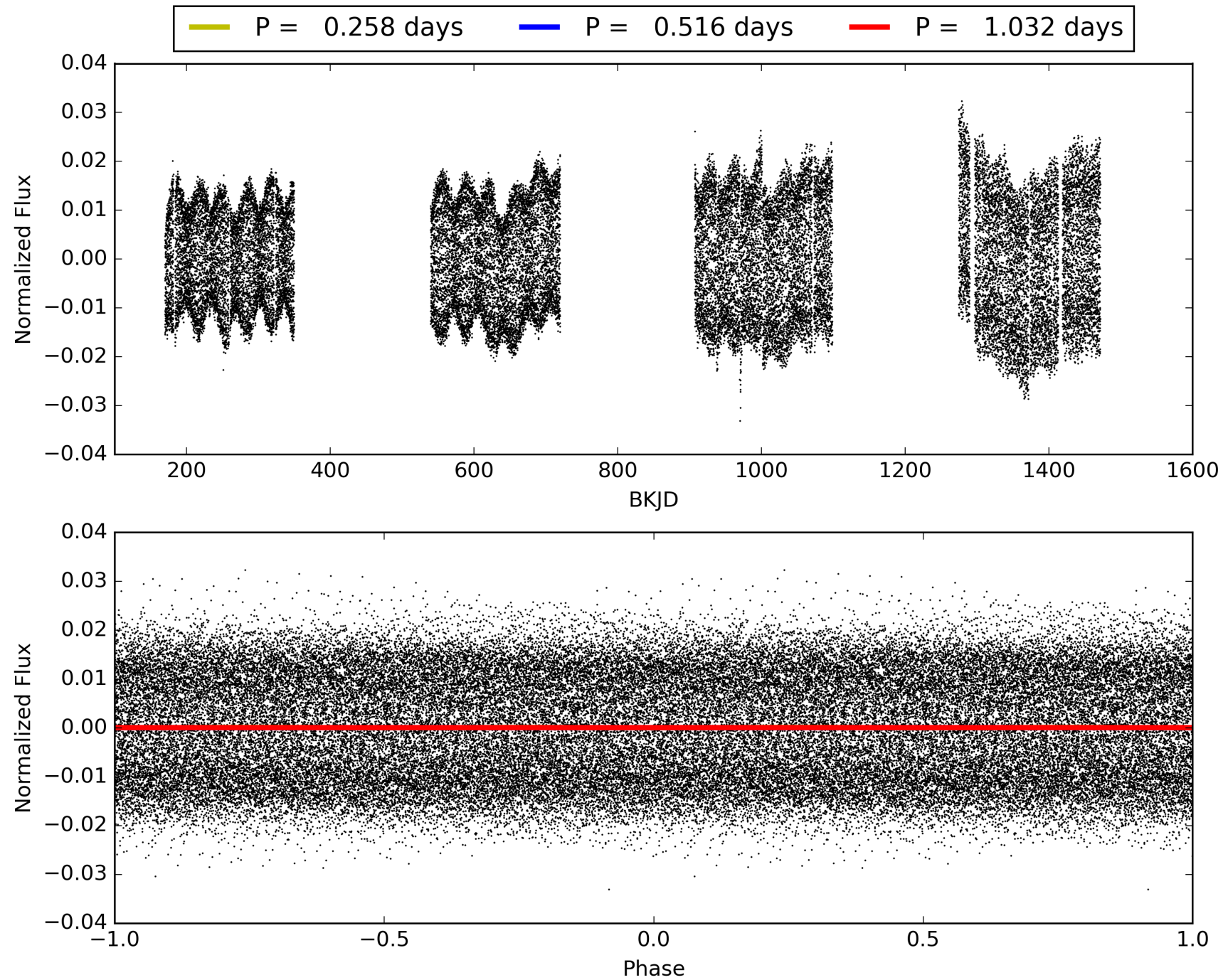
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:21:41 Z

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

TCE 003848645-04, PDC Light Curves

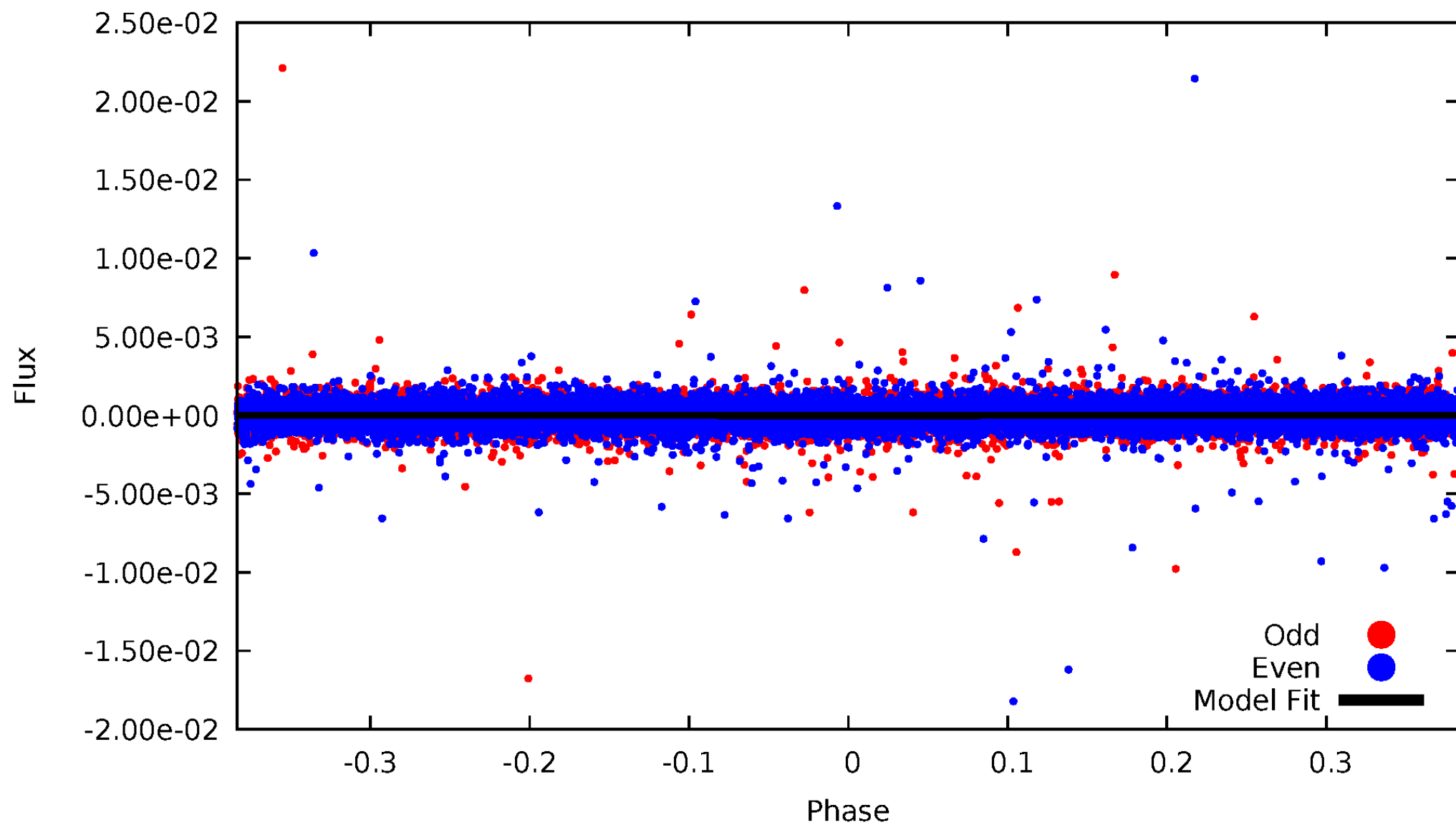


TCE 003848645-04



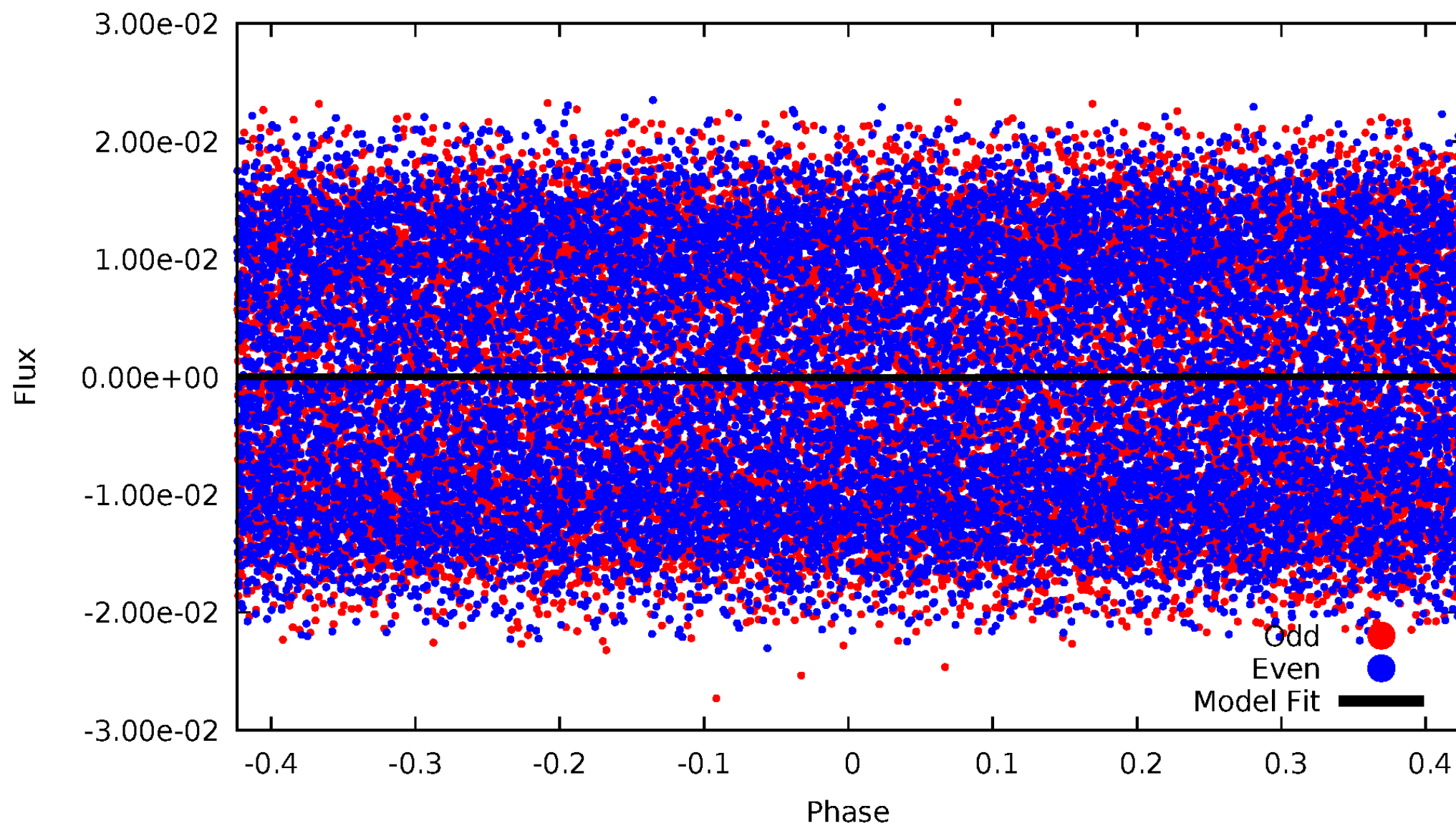
DV Odd/Even

TCE 003848645-04



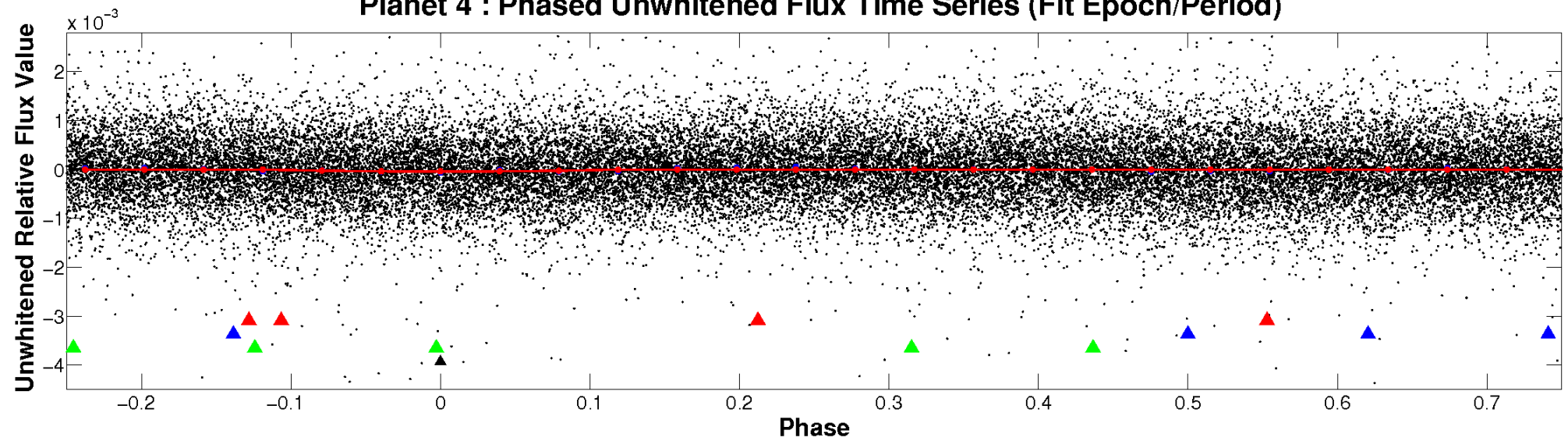
ALT Odd/Even

TCE 003848645-04

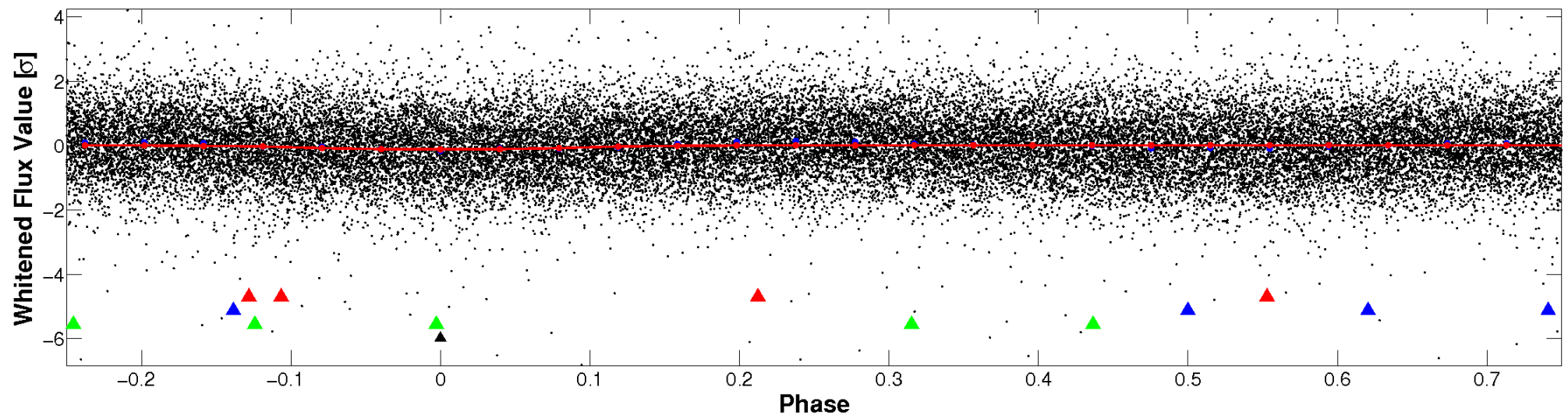


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

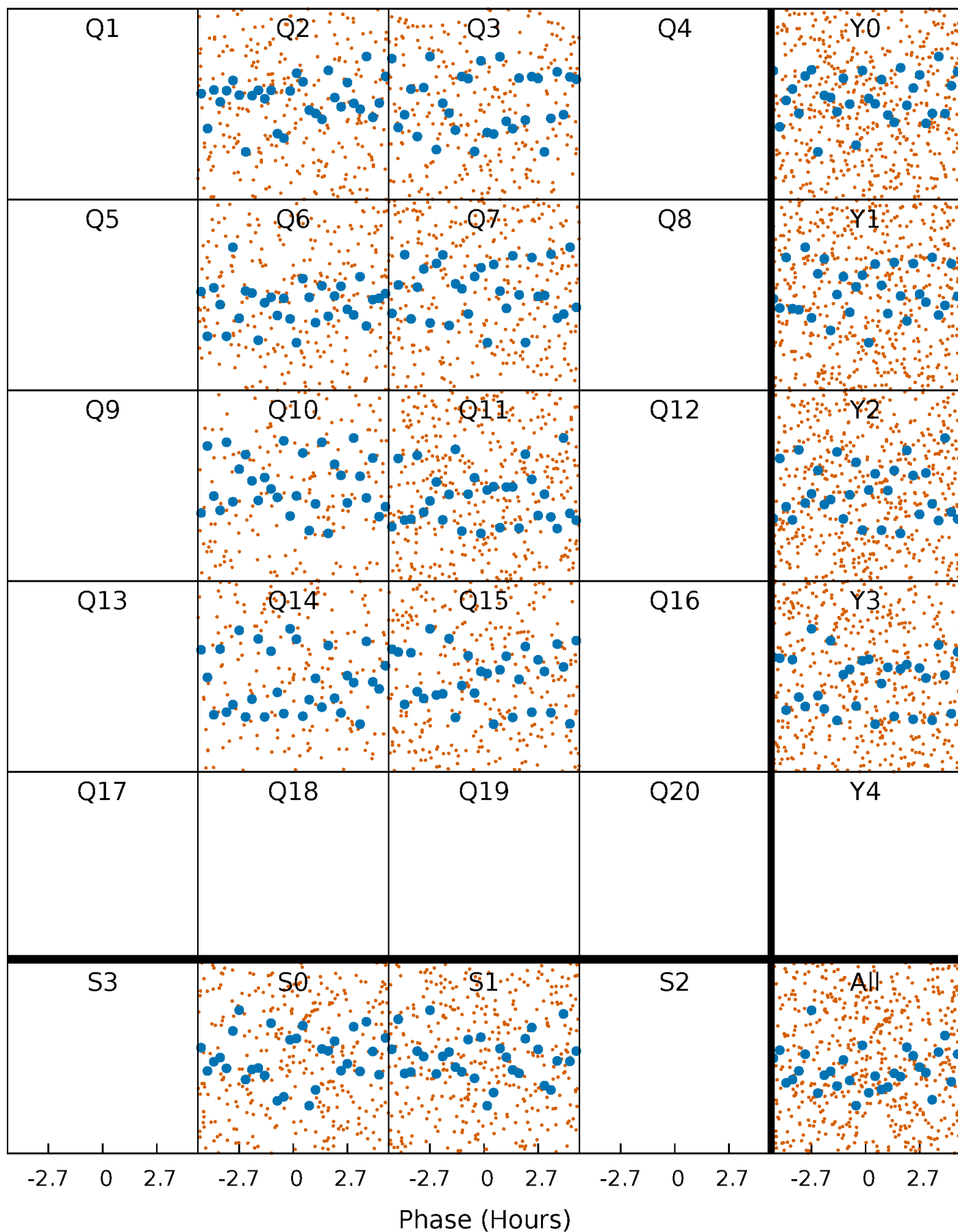


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



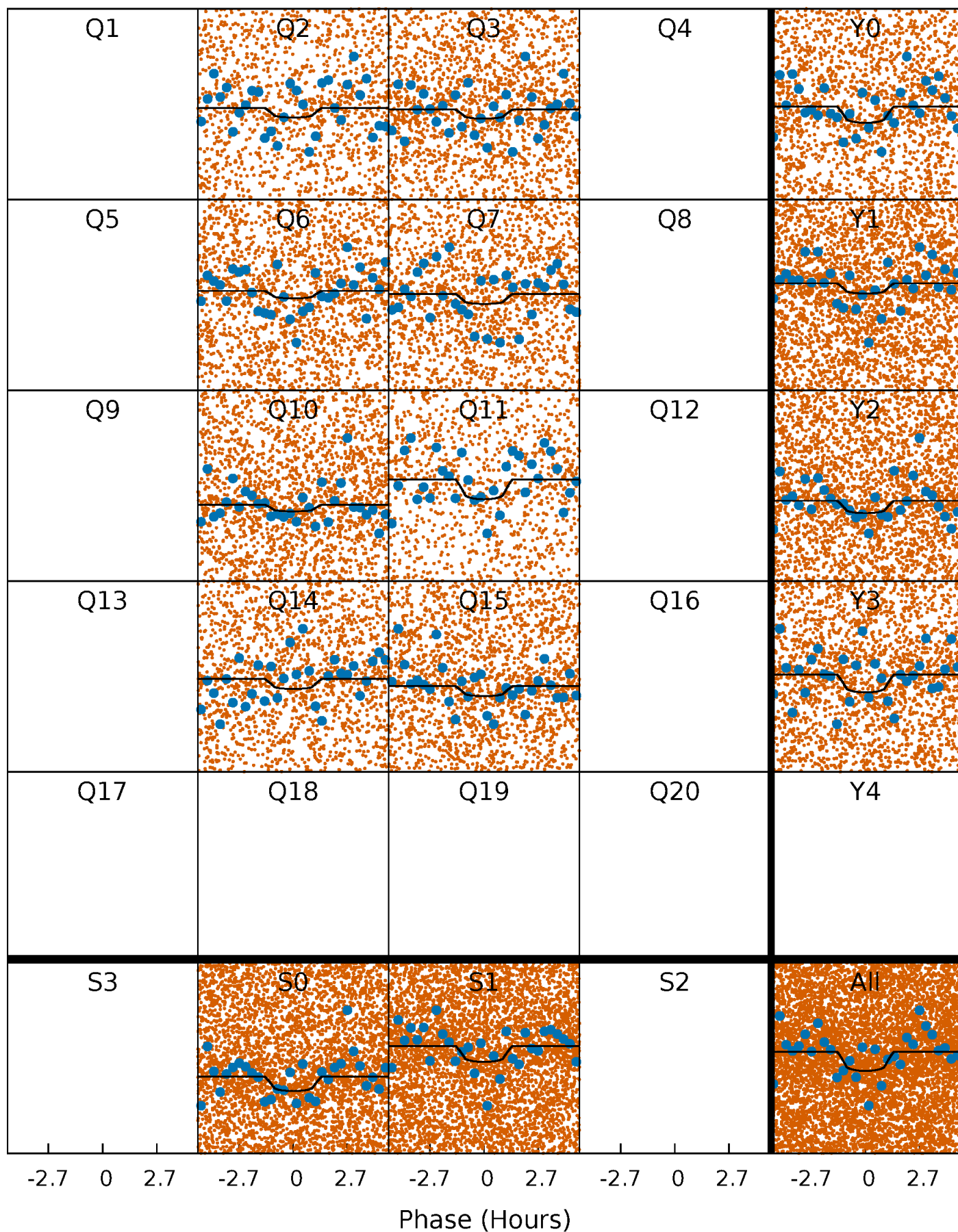
PDC Quarter-Phased Transit Curves

TCE 003848645-04 P= 0.515761 Days $T_0=131.566417$ (BKJD)



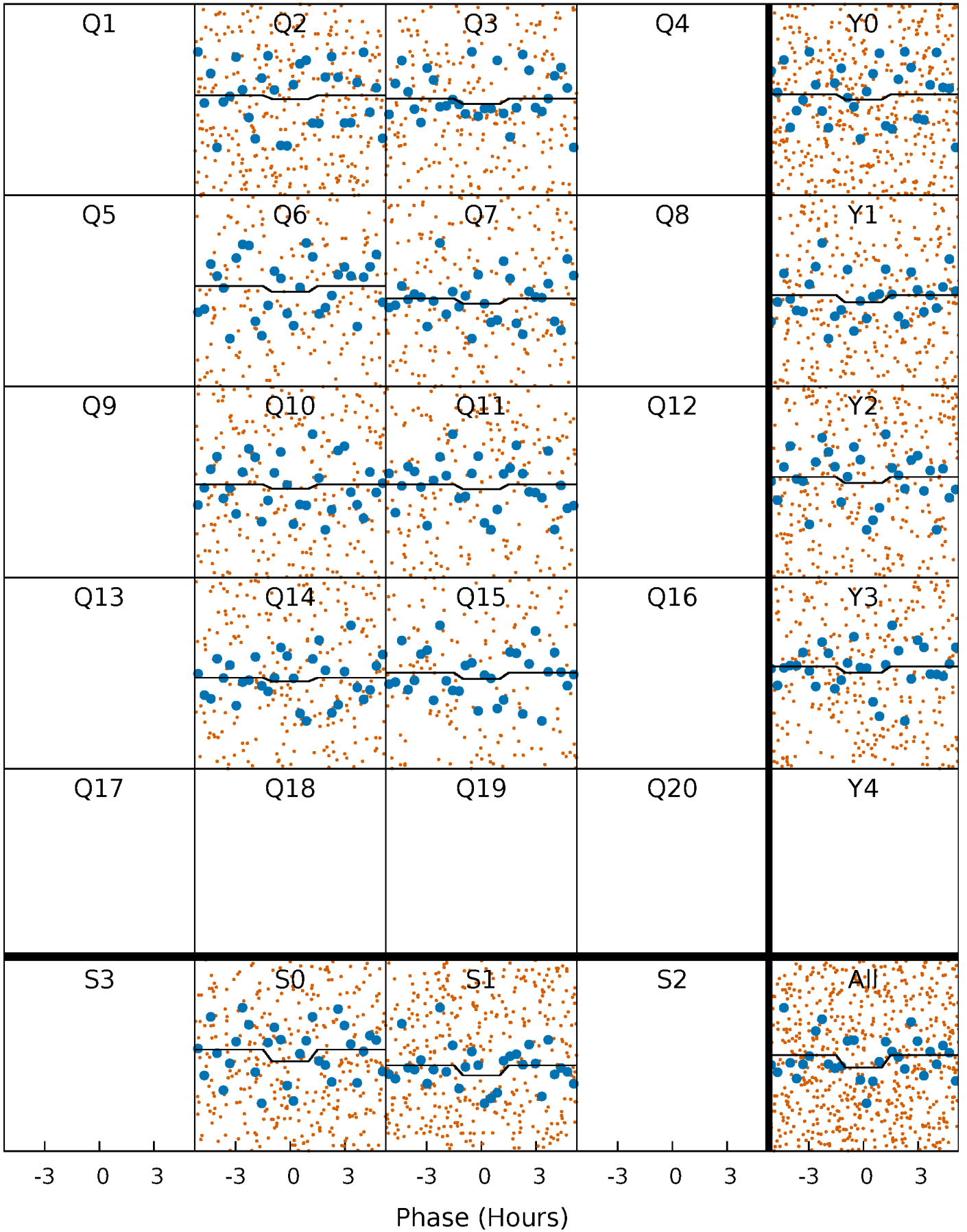
DV Quarter-Phased Transit Curves

TCE 003848645-04 P= 0.515761 Days $T_0=131.566417$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

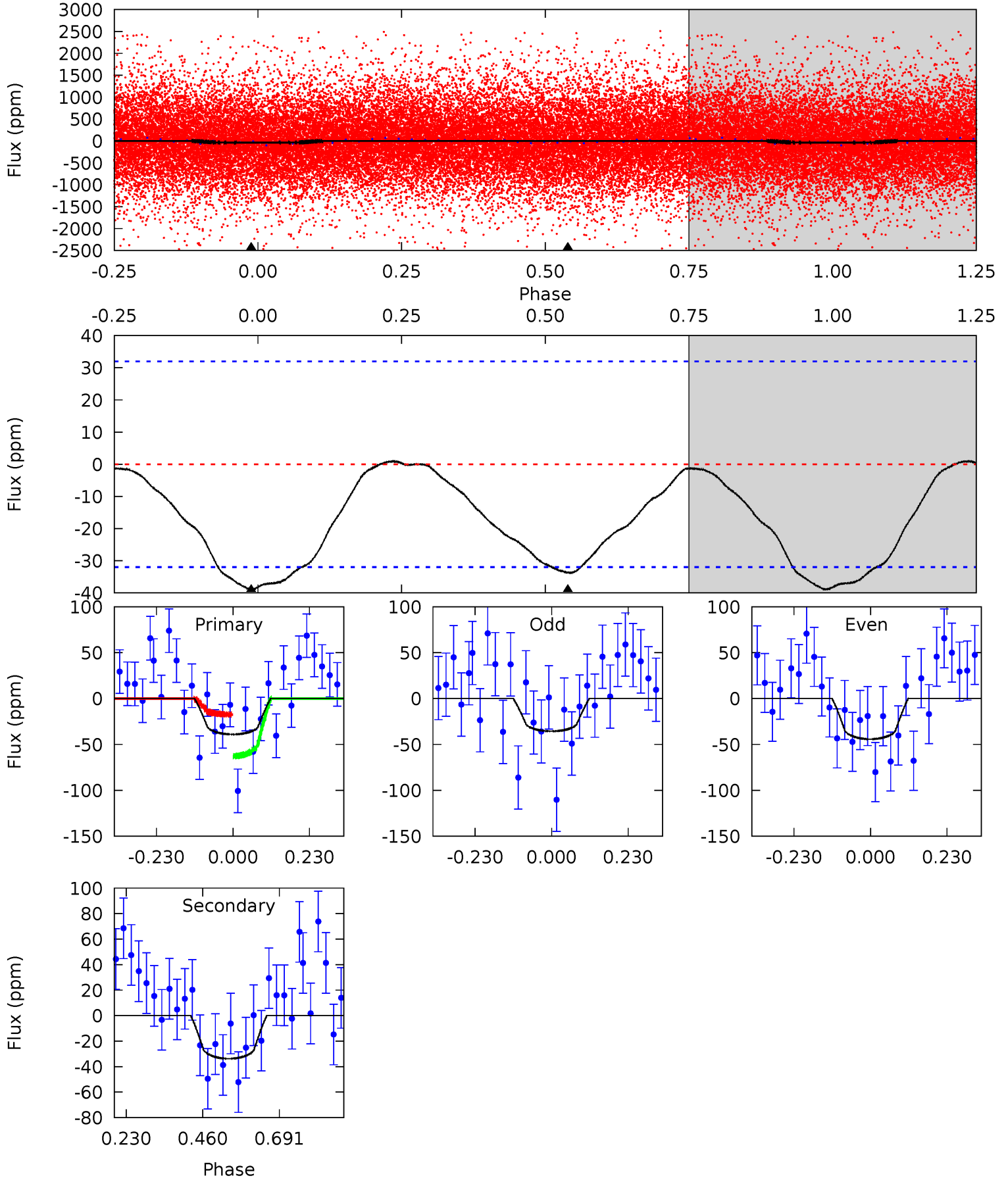
TCE 003848645-04 $P = 0.515773$ Days $T_0 = 131.551181$ (BKJD)



DV Model-Shift Uniqueness Test

003848645-04, P = 0.515761 Days, E = 131.566417 Days

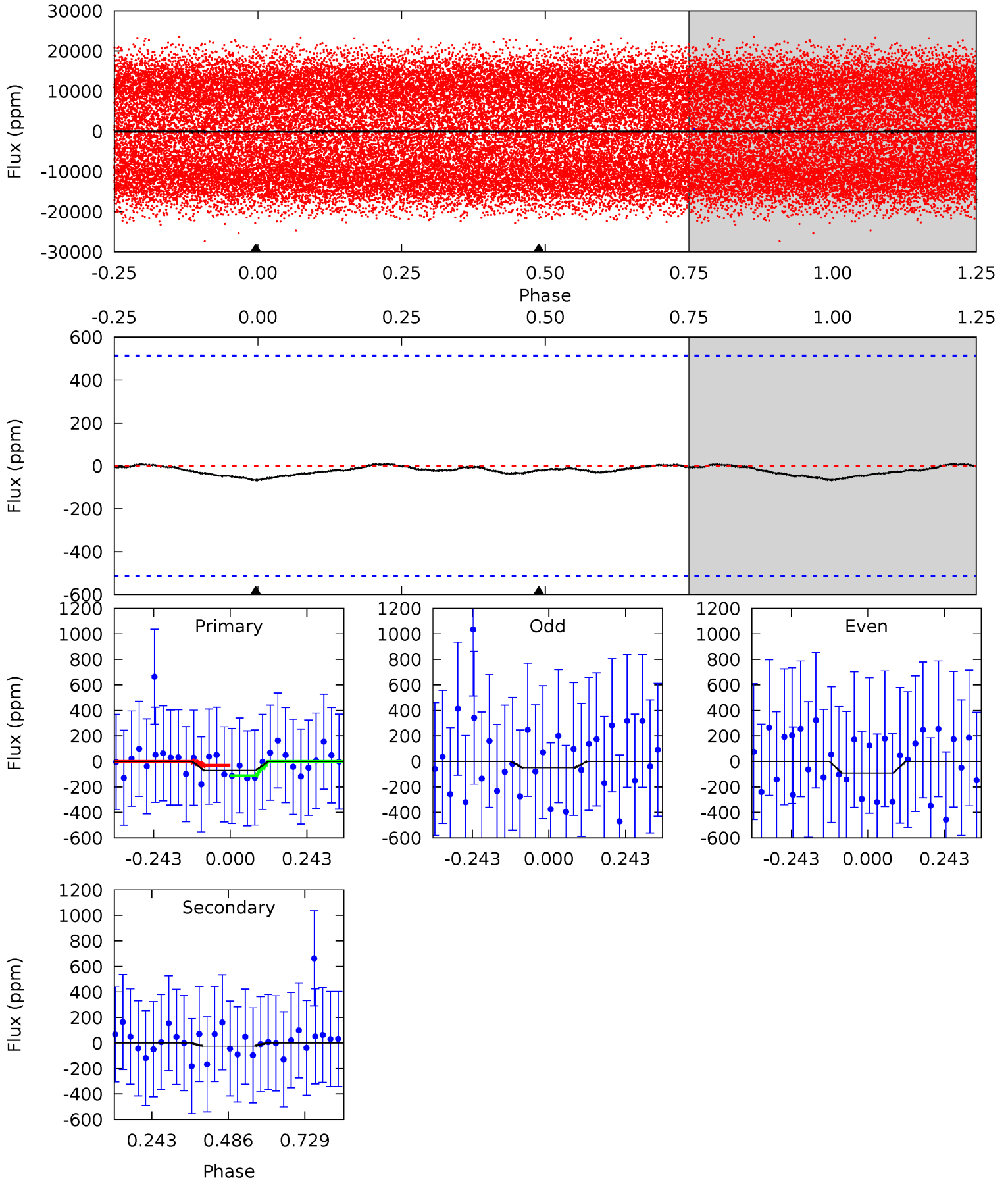
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.36	4.63	0	0	4.39	1.20	0.13	5.36	5.36	4.63	4.63	0.59	1.05	0.03	3.11



Alt Model-Shift Uniqueness Test

003848645-04, P = 0.515773 Days, E = 131.551181 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.60	0.21	0	0	4.37	1.17	0.04	0.60	0.60	0.21	0.21	0.17	1.11	0.13	0.34



Stellar Parameters For KIC 003848645

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8072^{+223}_{-363}	$3.707^{+0.413}_{-0.138}$	$0.020^{+0.200}_{-0.400}$	$3.352^{+0.839}_{-1.559}$	$2.086^{+0.362}_{-0.482}$	$0.078^{+0.313}_{-0.033}$
	+3%/-4%	+11%/-4%	+1000%/-2000%	+25%/-47%	+17%/-23%	+401%/-42%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 003848645-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-34 ± 7	$2.43^{+2.36}_{-1.48}$	6999^{+578}_{-756}	6168^{+7095}_{-10585}	$0.780^{+4.462}_{-0.576}$
Alt.	-25 ± 117	$3.07^{+2.43}_{-1.90}$	7012^{+574}_{-759}	-4625^{+15332}_{-5178}	$0.176^{+3.107}_{-2.047}$

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 $A_{obs} \gg 1.0$

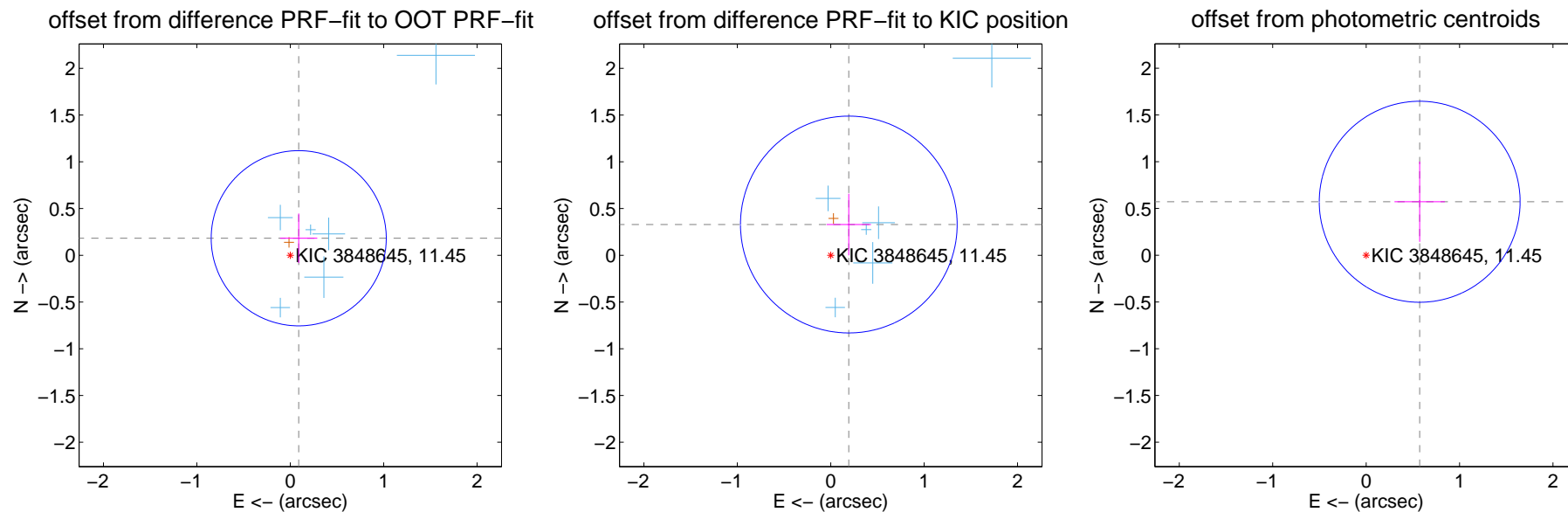
DV Centroid Data

Supplemental centroid analysis for 003848645-04. **Kepler magnitude: 11.45.** Transit SNR 8.21

There are 6 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.204 ± 0.312	0.65	-0.091 ± 0.199	0.182 ± 0.264
PRF-fit source offset from KIC position	0.382 ± 0.387	0.99	-0.194 ± 0.237	0.329 ± 0.330
photometric centroid source offset	0.81 ± 0.36	2.26	-0.57 ± 0.27	0.57 ± 0.43



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.

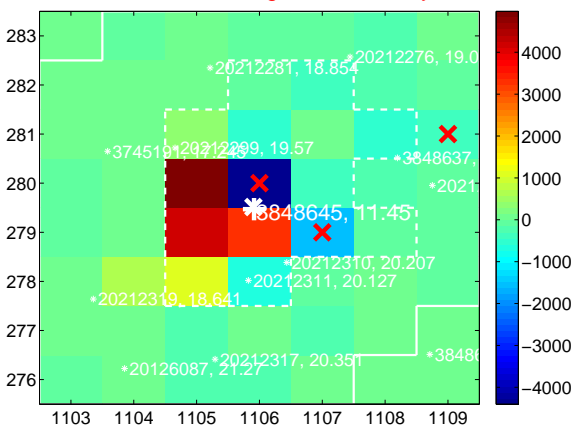
Q1 no difference image



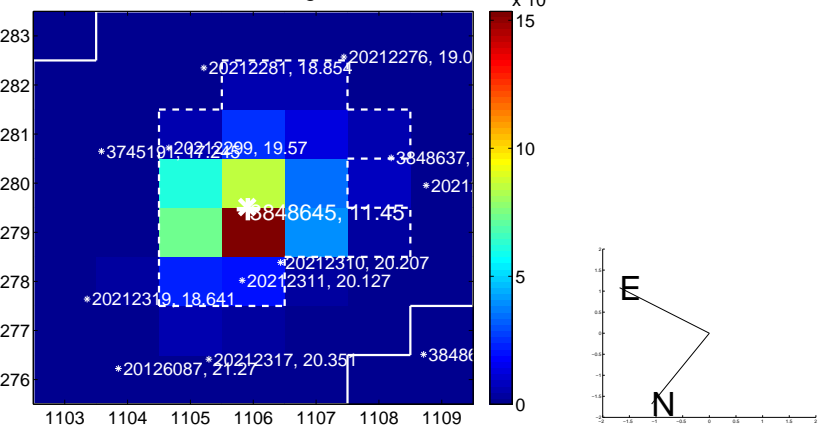
Q1 no OOT image



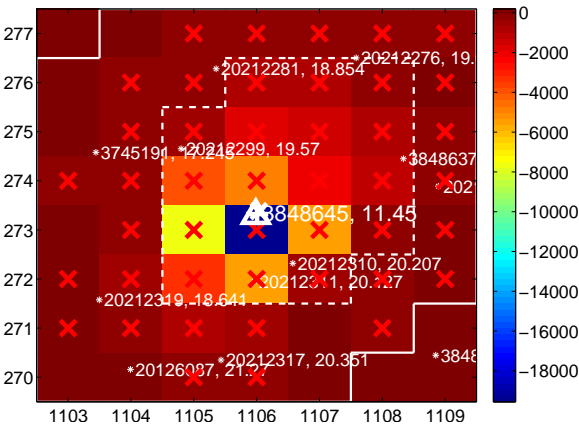
Q2 difference image. Poor Quality



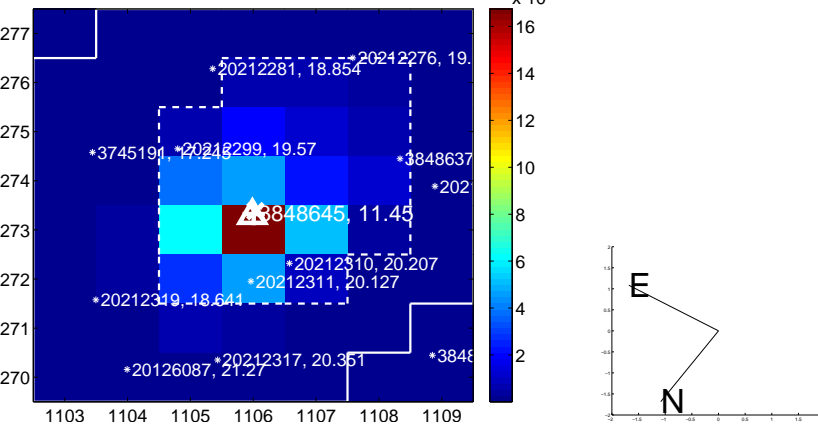
Q2 OOT image



Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image



Q4 no OOT image



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

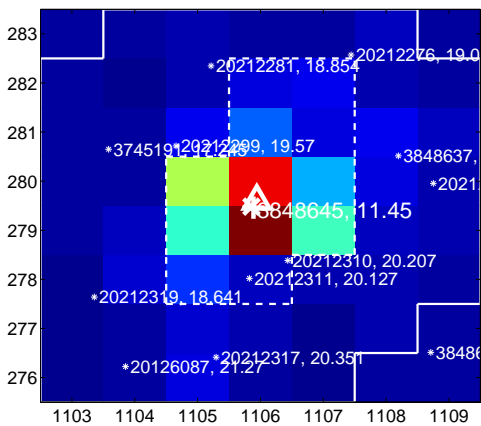
Q5 no difference image



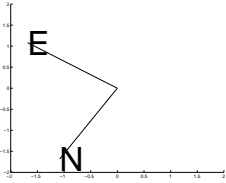
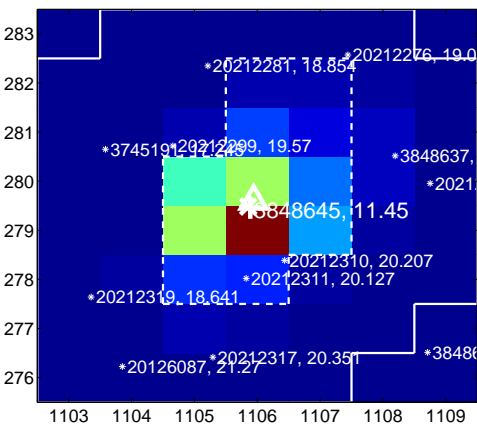
Q5 no OOT image



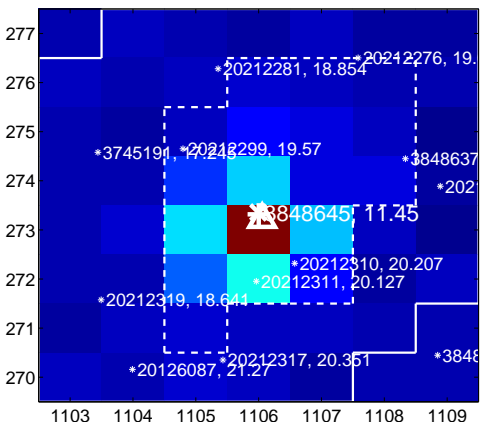
Q6 difference image



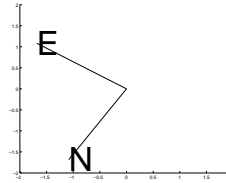
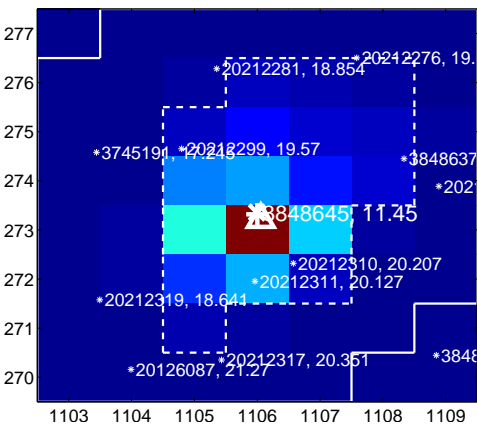
Q6 OOT image



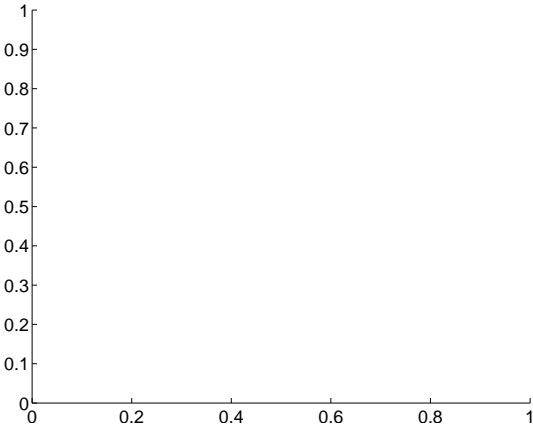
Q7 difference image



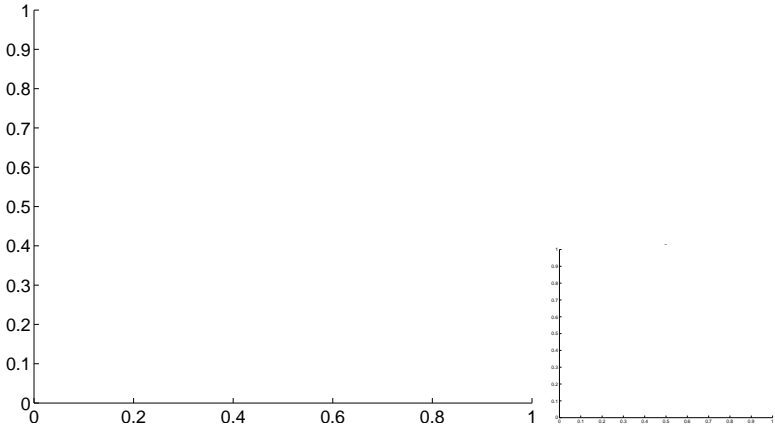
Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

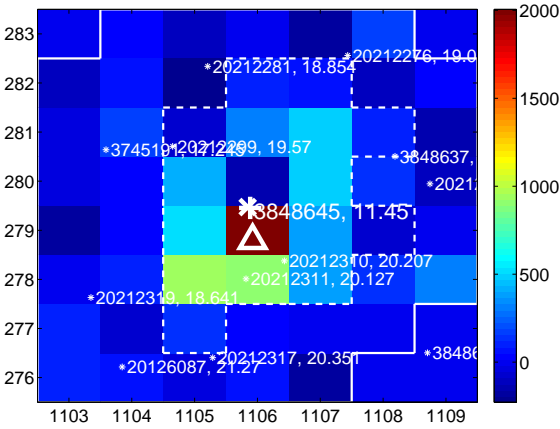
Q9 no difference image



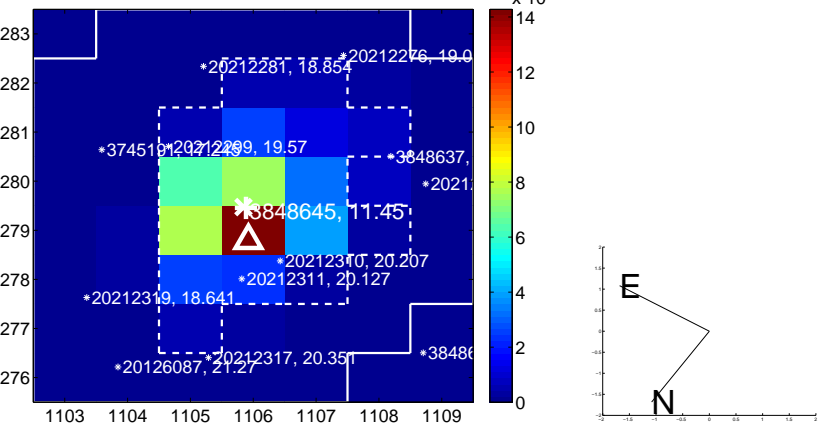
Q9 no OOT image



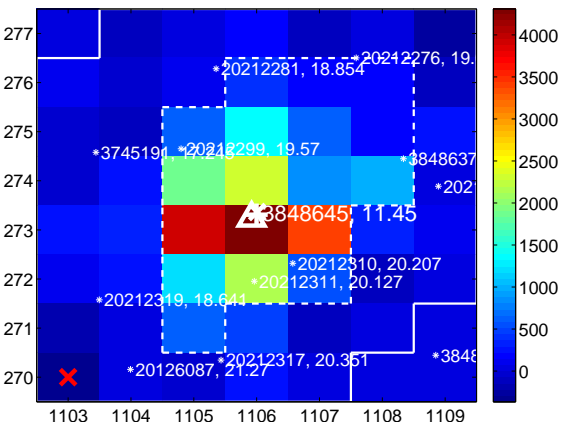
Q10 difference image



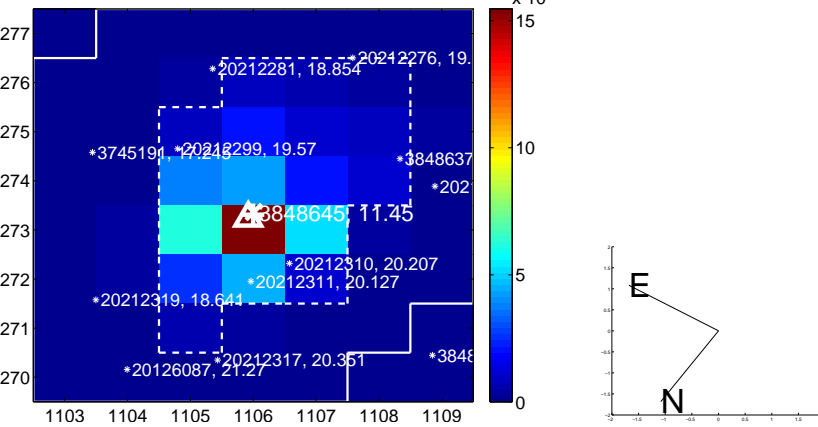
Q10 OOT image



Q11 difference image



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

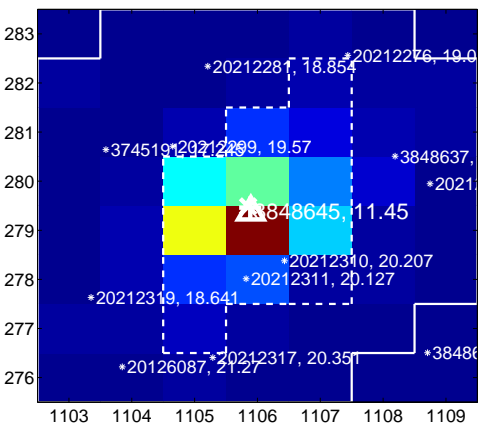
Q13 no difference image



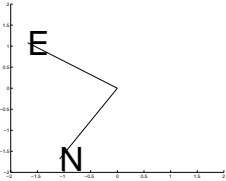
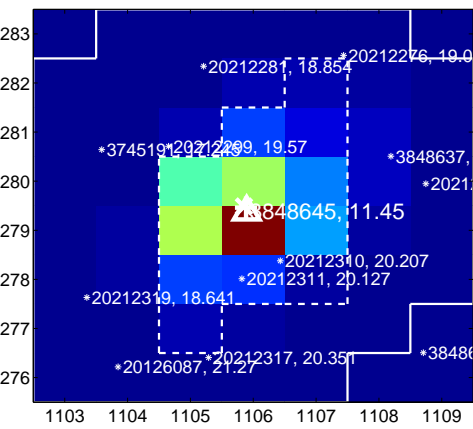
Q13 no OOT image



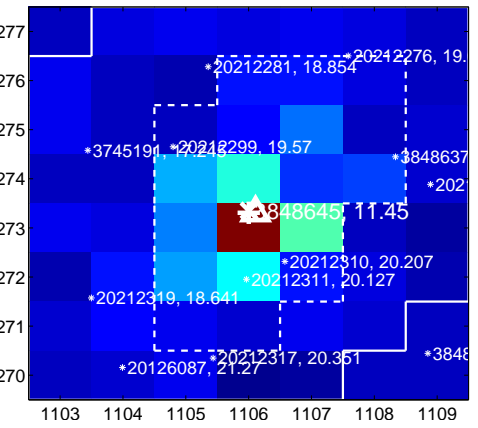
Q14 difference image



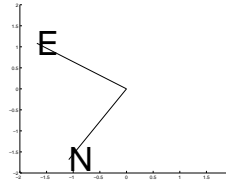
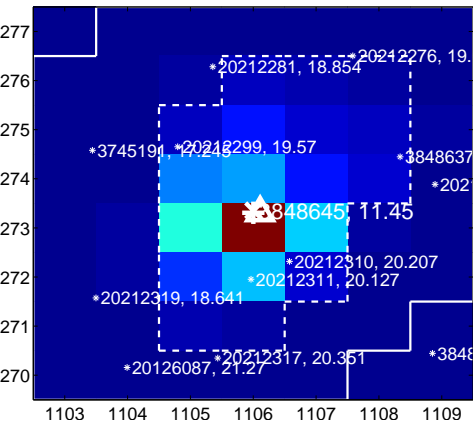
Q14 OOT image



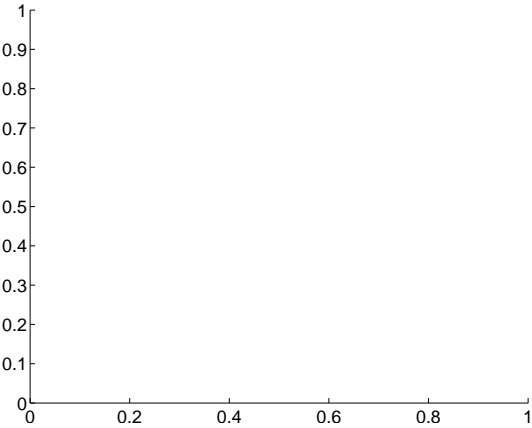
Q15 difference image



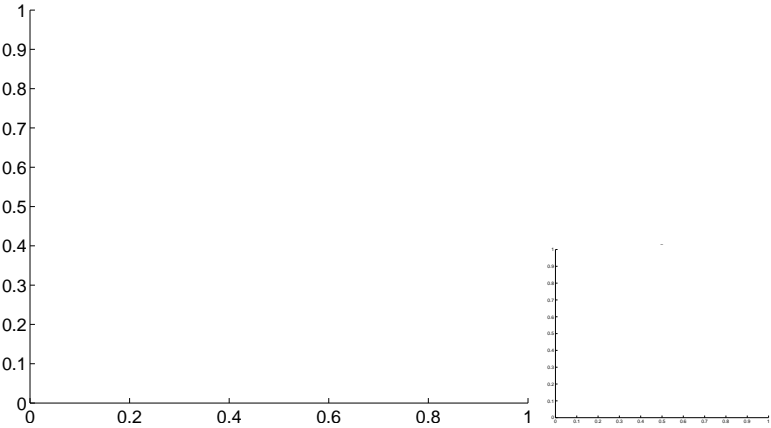
Q15 OOT image



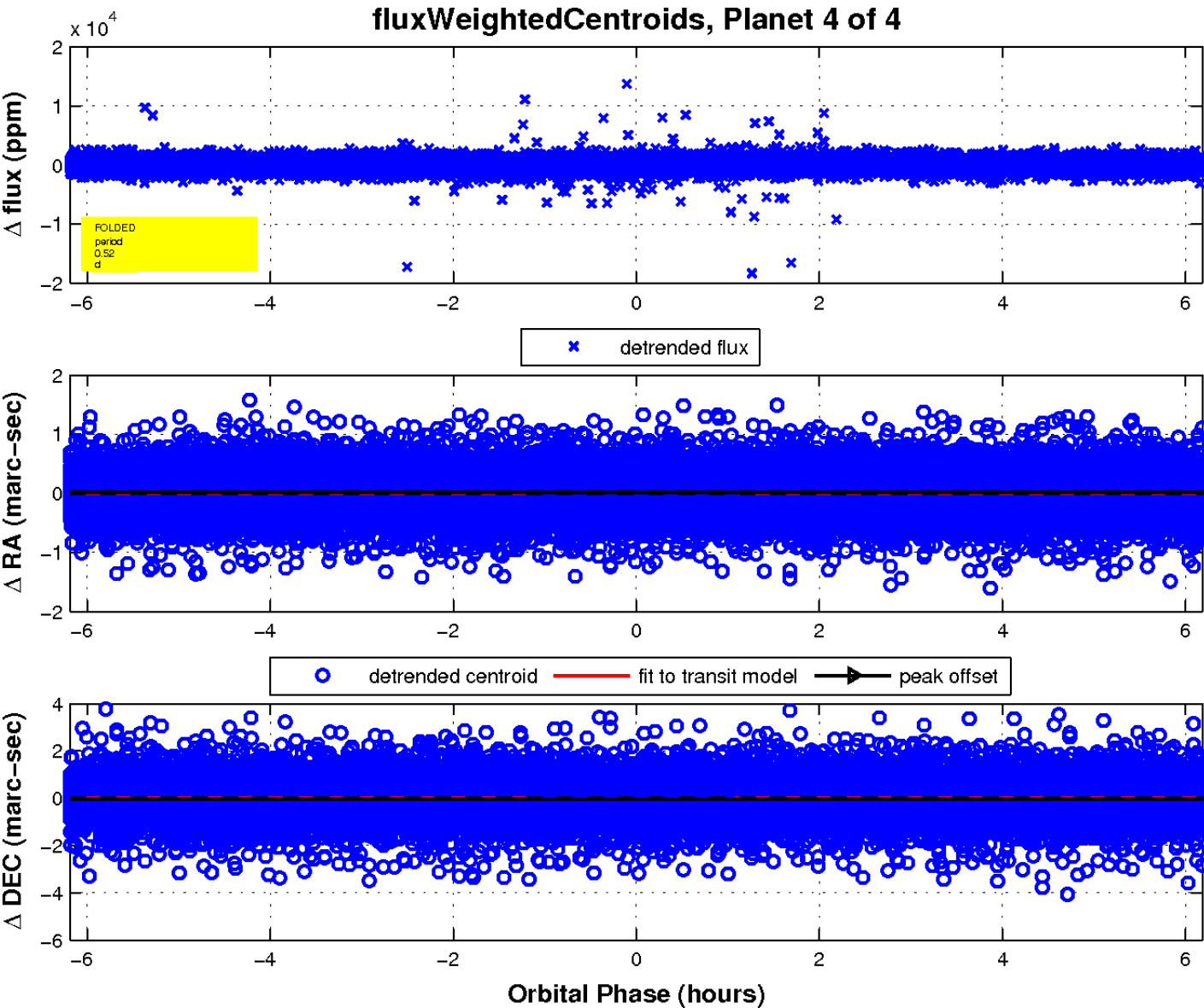
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

