

KIC 003440346

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})
003440346-01	OBS	No	388.432623	324.925384	42.1	0.556	10.8	0.6	135.07	3447	119.72	1778.04
003440346-02	OBS	No	321.690562	160.079903	1894.2	6.115	42.1	13.0	135.07	3447	565.96	2286.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003440346-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA_TRACKER—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_FEW_DIFFS
003440346-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

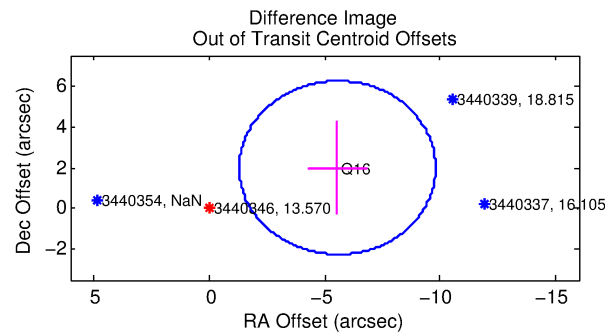
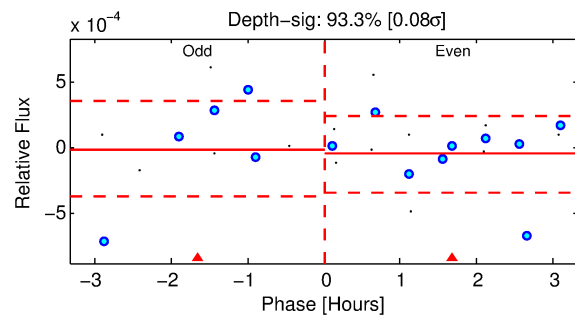
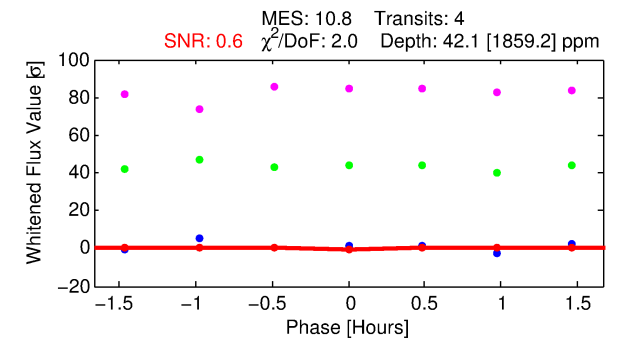
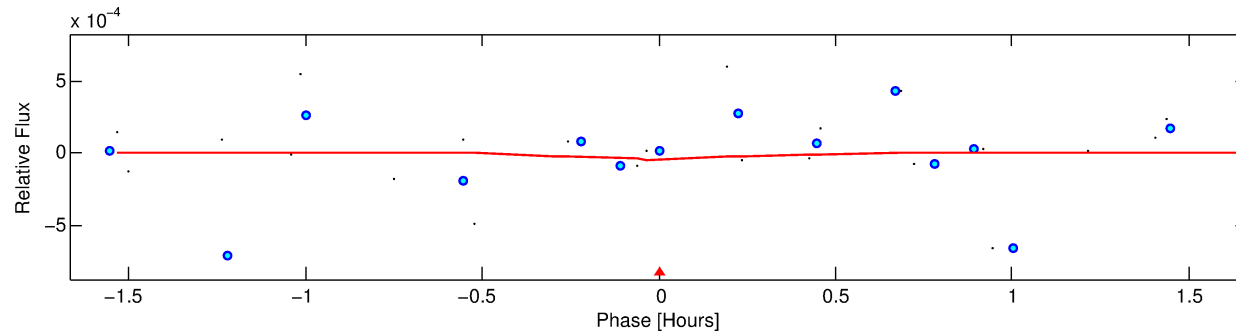
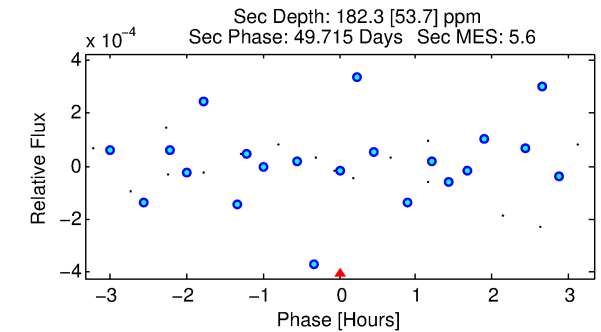
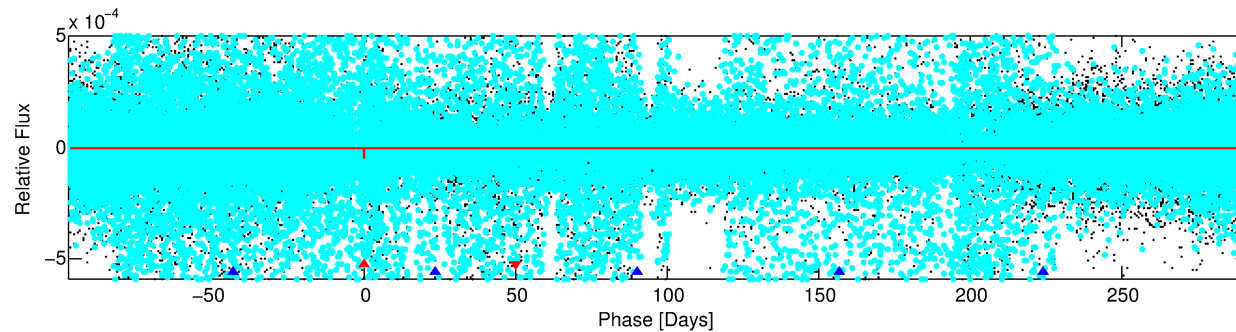
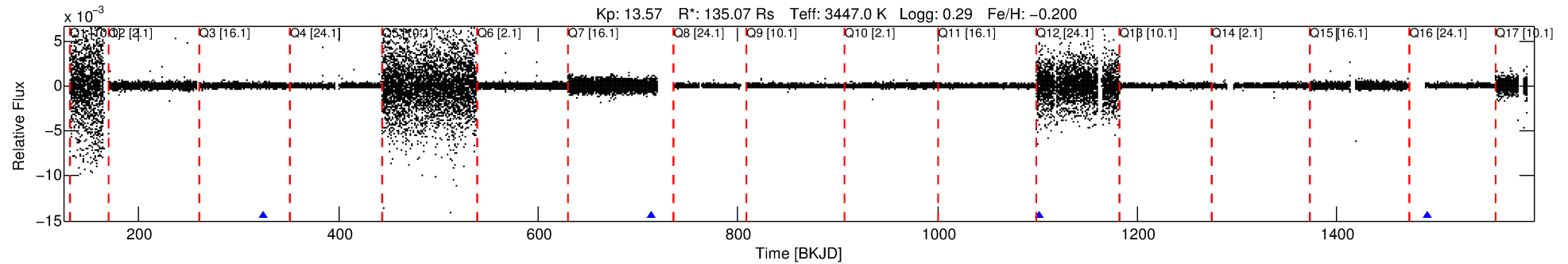
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003440346-01

No Significant Match Found

DV One-Page Summary

KIC: 3440346 Candidate: 1 of 2 Period: 388.433 d



DV Fit Results:

Period = 388.43262 [0.18885] d
Epoch = 324.9254 [0.2130] BKJD
Rp/R* = 0.0081 [0.3892]
a/R* = 2415.80 [365287.07]
b = 0.90 [32.93]
Seff = 1778.04 [208.68]
Teq = 1656 [49] K
Rp = 119.72 [5737.11] Re
a = 1.1392 [0.0727] AU
Ag = 9.08 [870.37] [0.01 σ]
Teffp = 4444 [106484] K [0.03 σ]

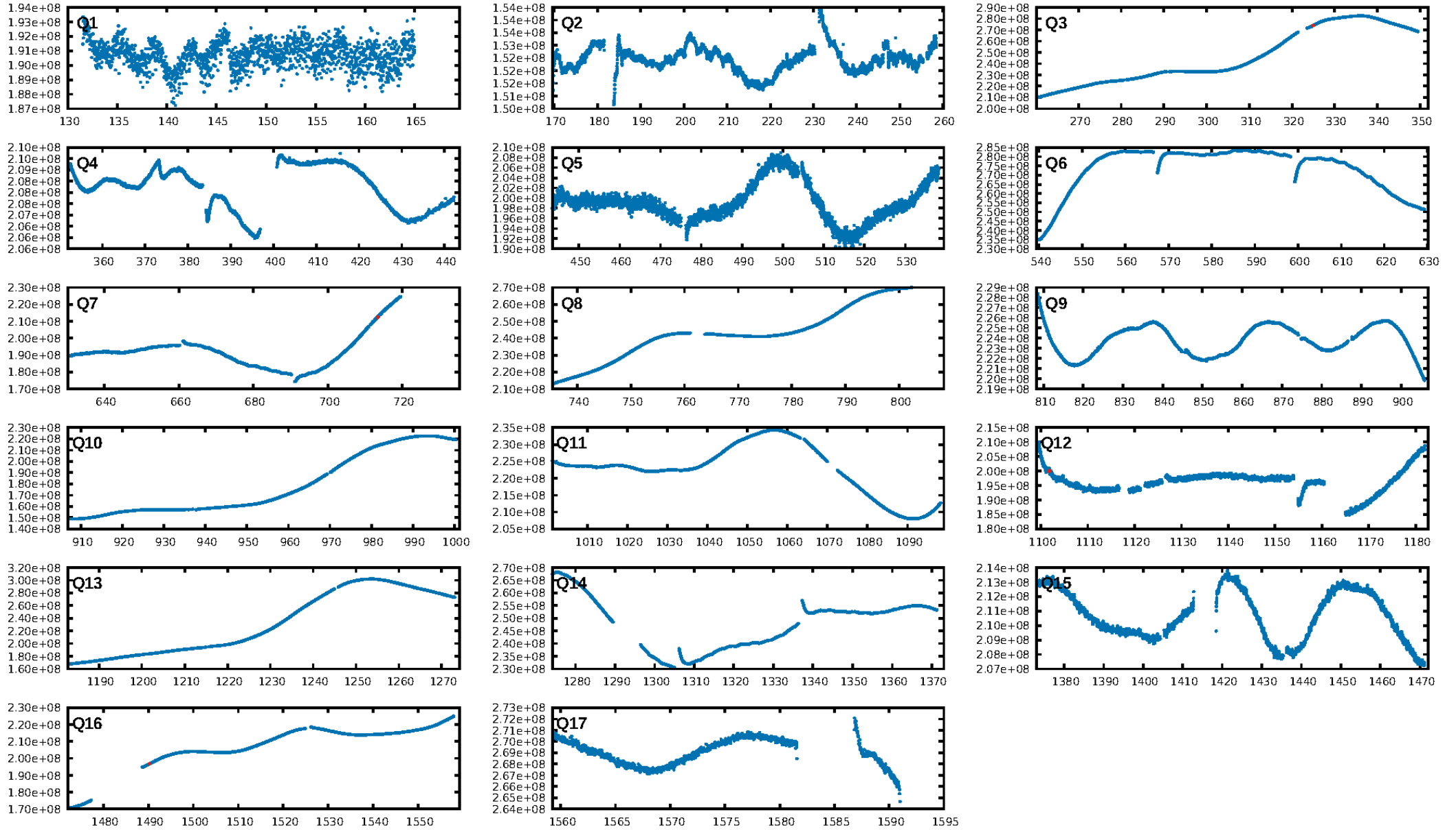
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [260.85 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 30.6%
ModelChiSquareGoF-sig: 94.1%
Bootstrap-pfa: 1.17e-04
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.445
Centroid-sig: 51.5%
Centroid-so: 15.515 arcsec [0.77 σ]
OotOffset-rm: 5.903 arcsec [4.17 σ]
KicOffset-rm: 5.979 arcsec [4.27 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [2/2]

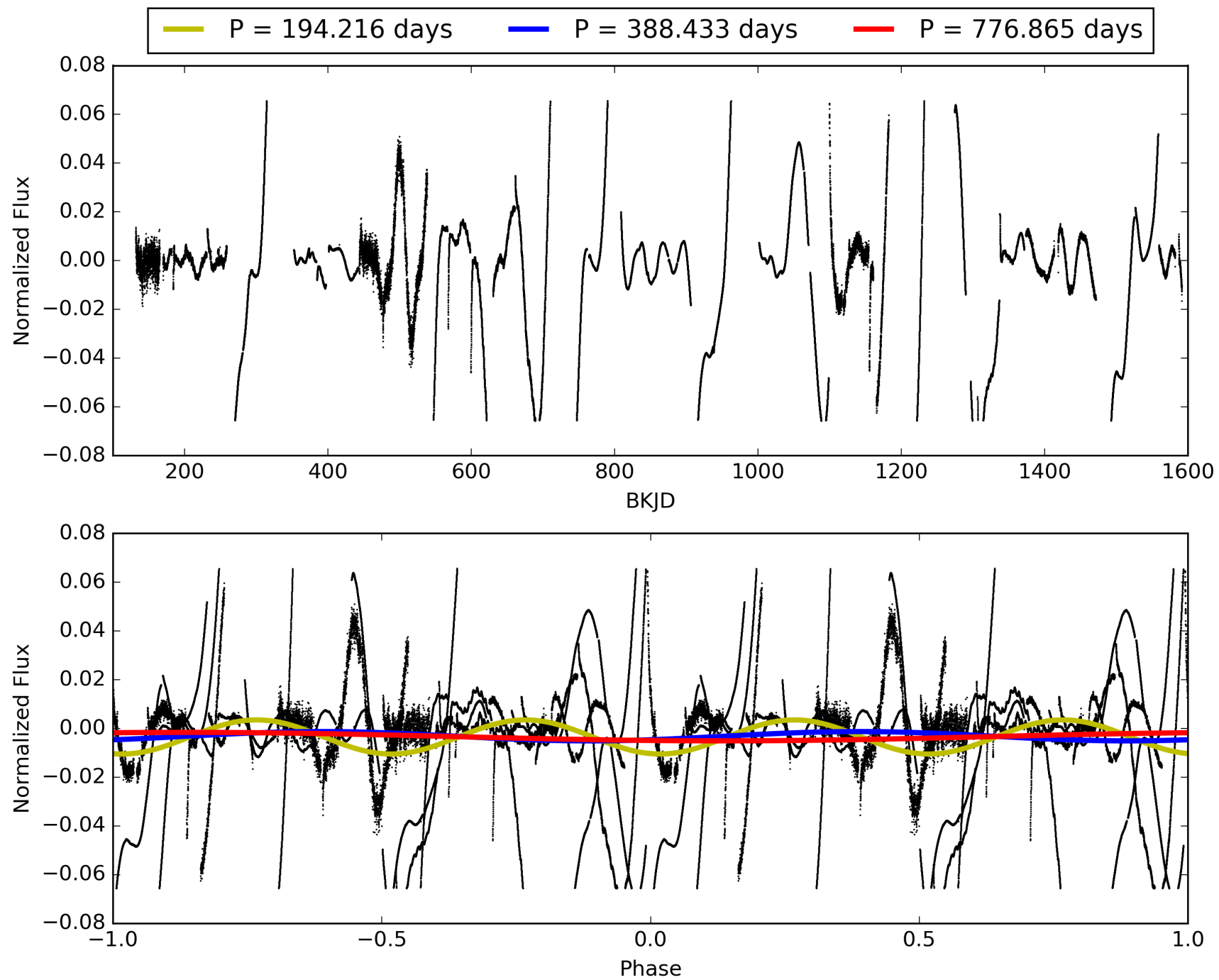
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 04:17:23 Z

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

TCE 003440346-01, PDC Light Curves

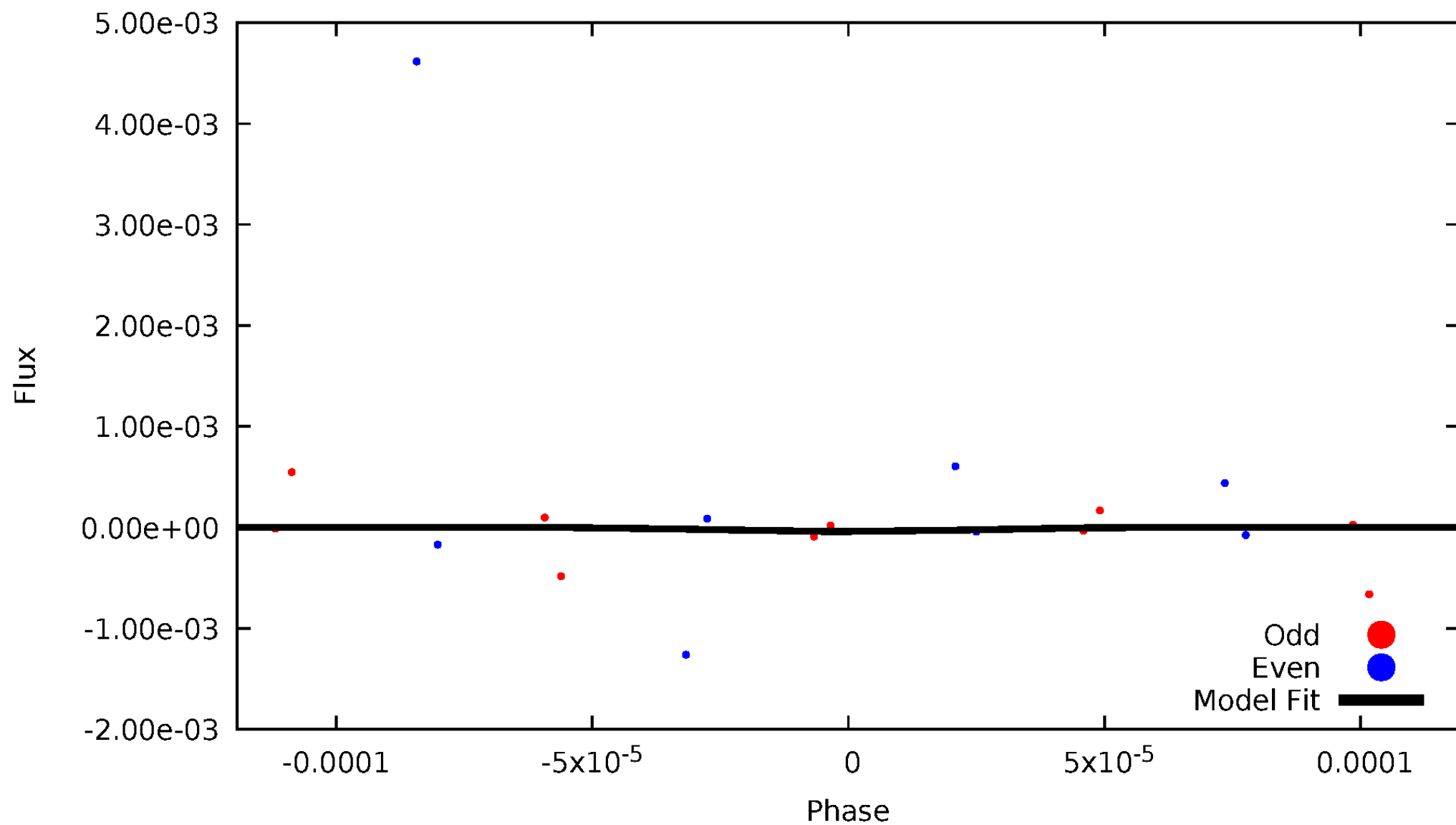


TCE 003440346-01



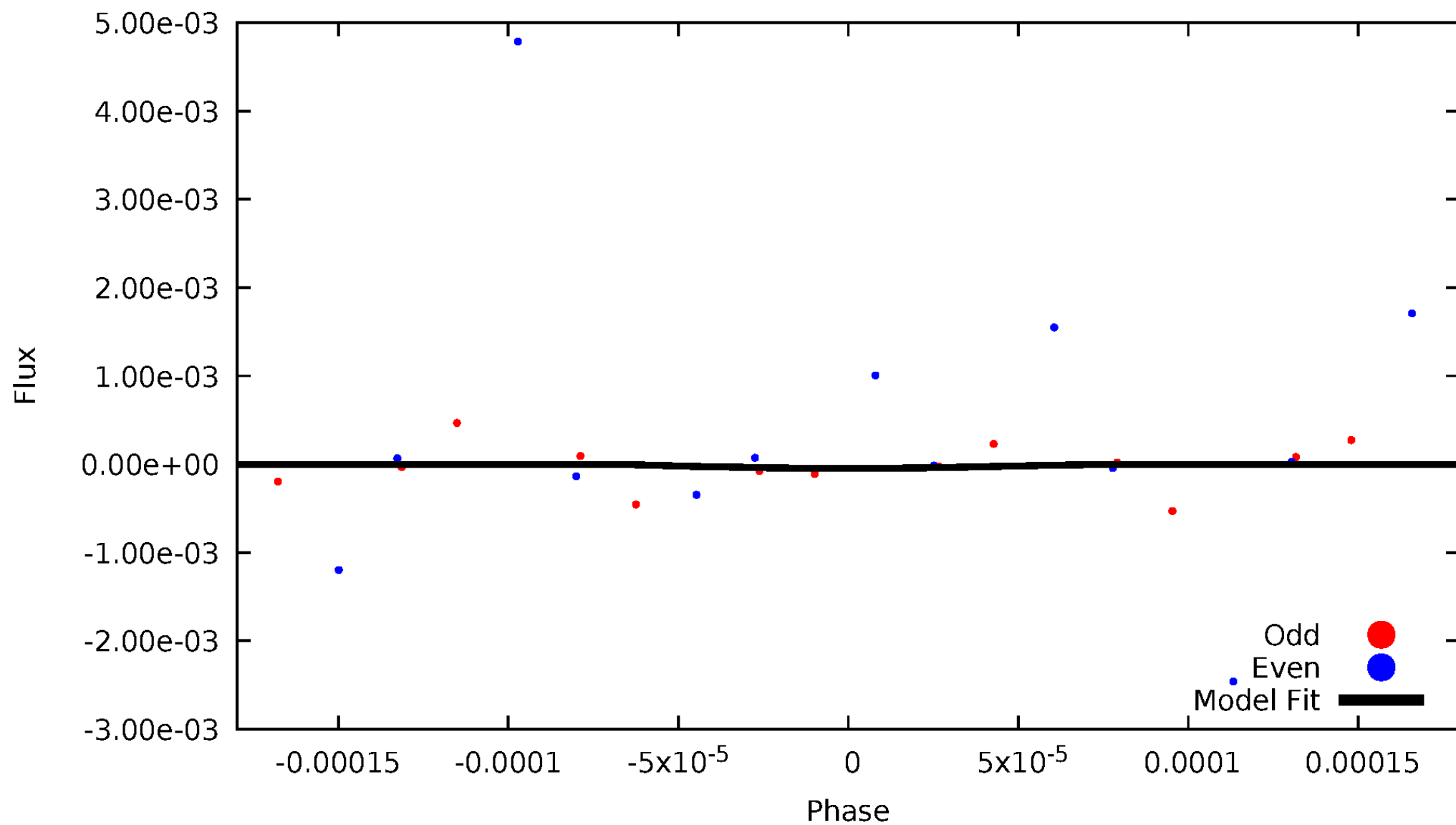
DV Odd/Even

TCE 003440346-01



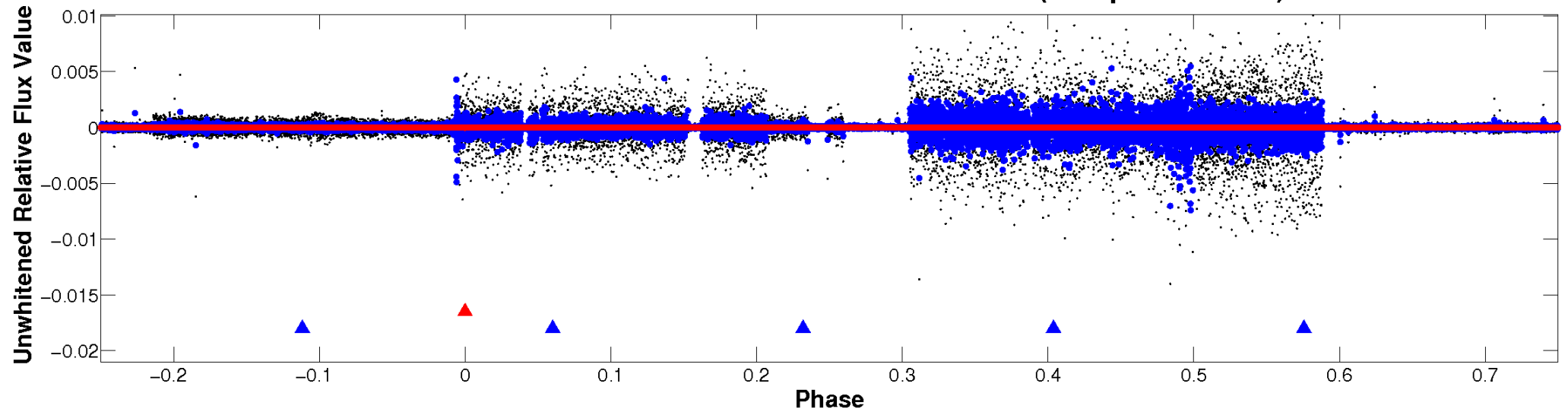
ALT Odd/Even

TCE 003440346-01

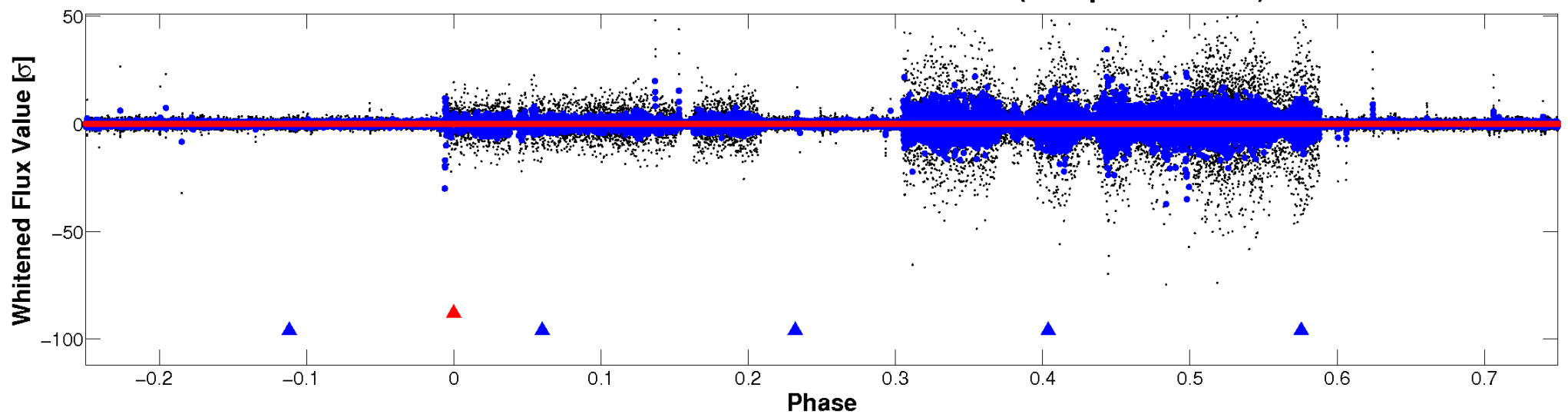


Non-Whitened Vs. Whitened Light Curve

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

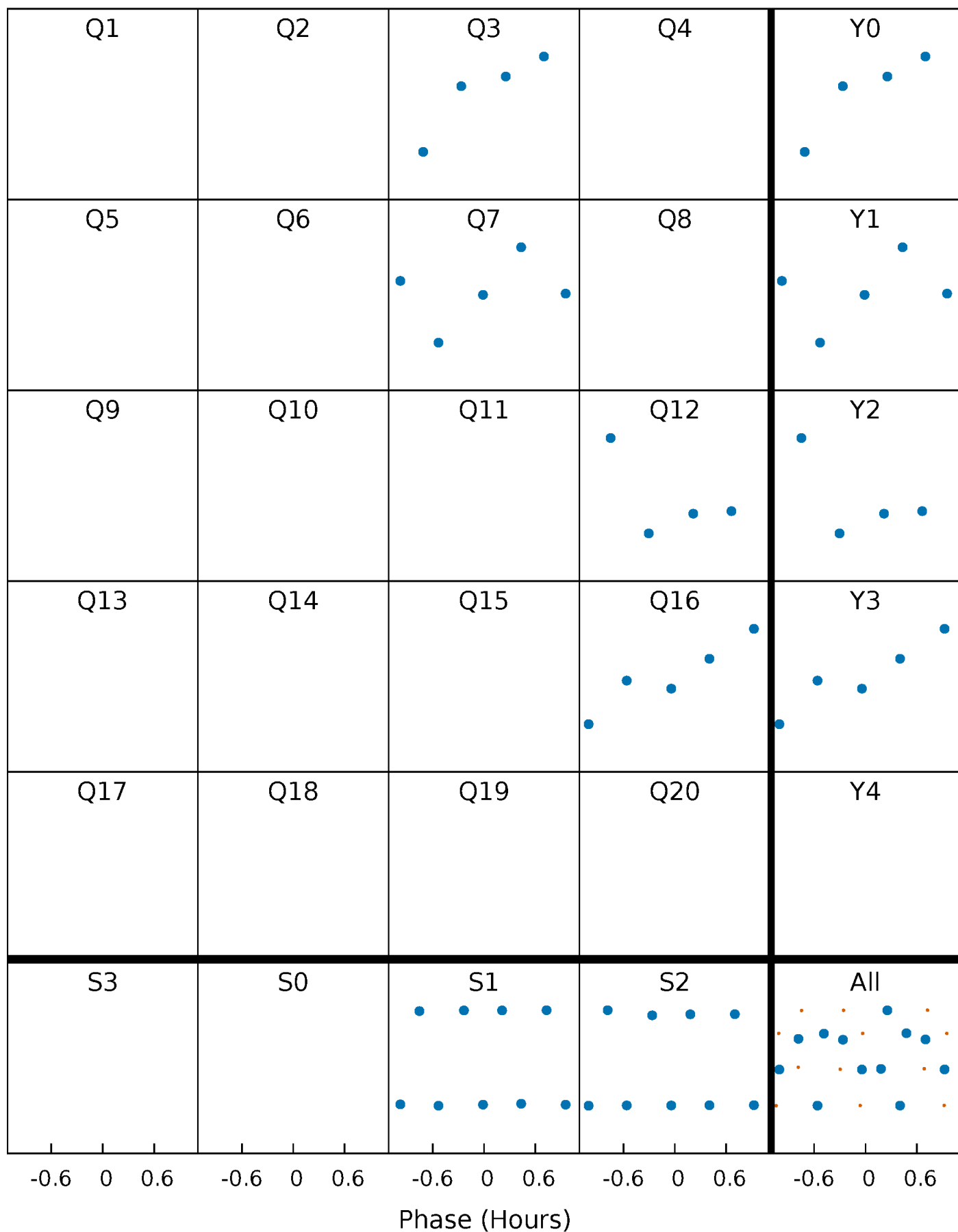


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



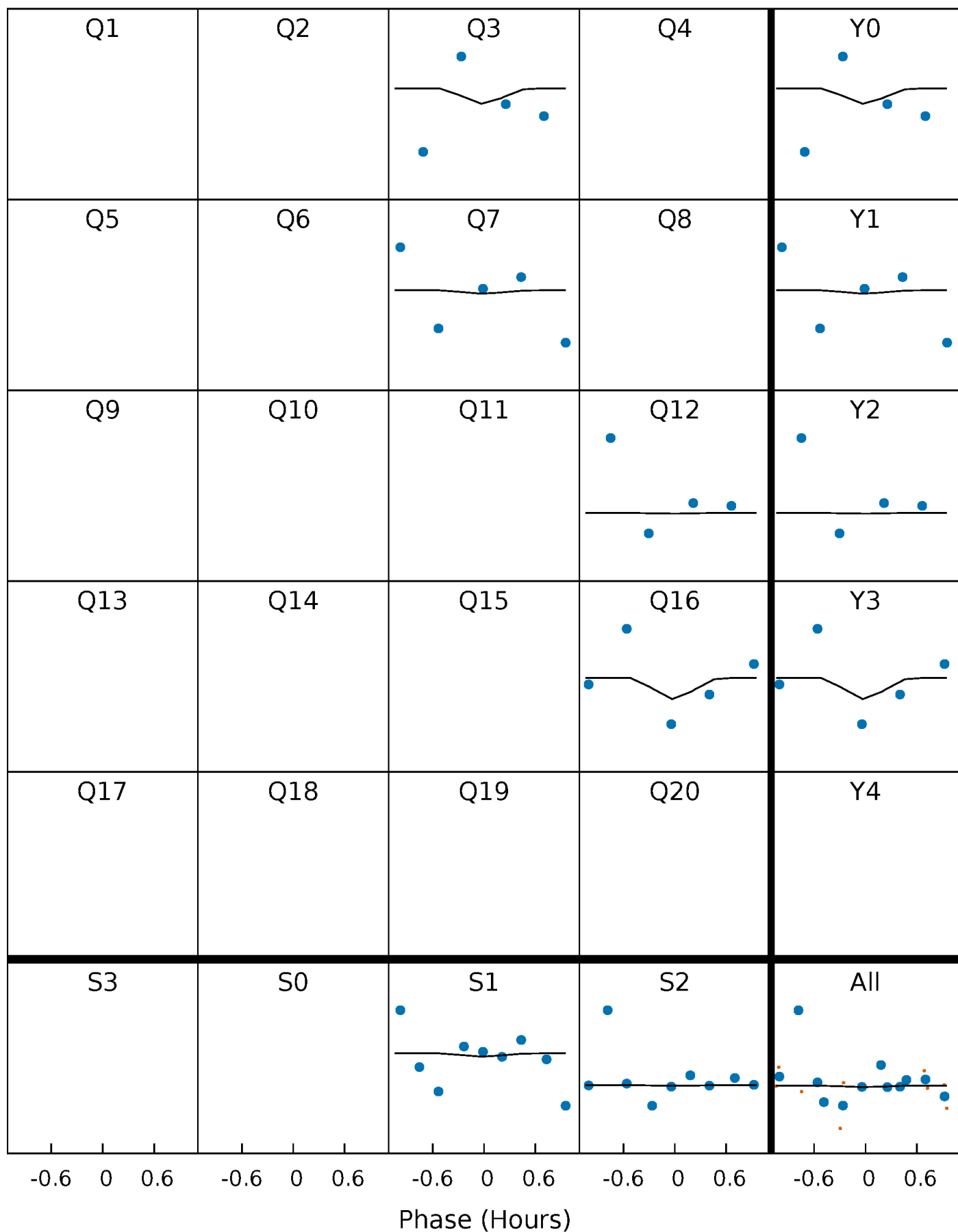
PDC Quarter-Phased Transit Curves

TCE 003440346-01 P=388.432623 Days $T_0=324.925384$ (BKJD)



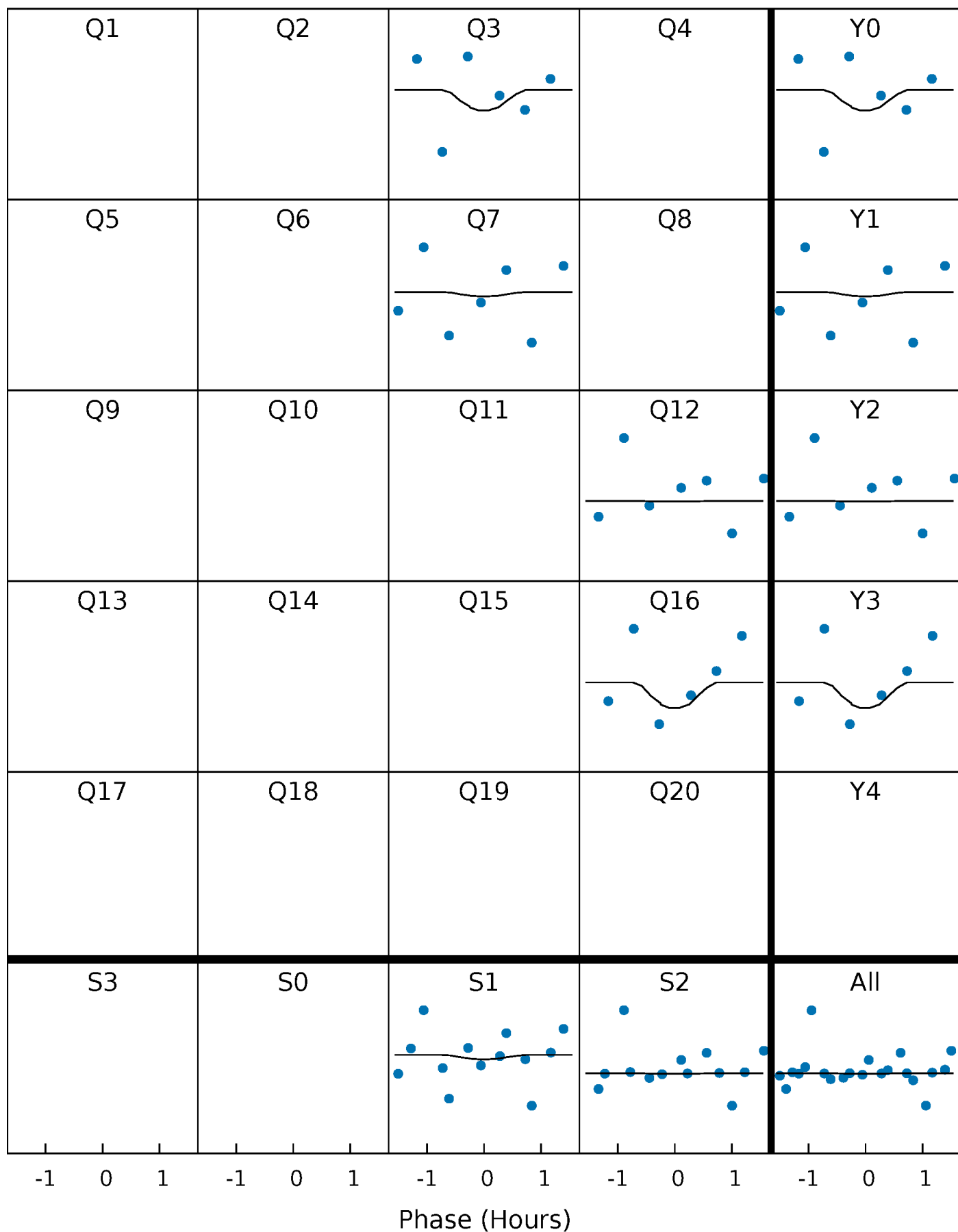
DV Quarter-Phased Transit Curves

TCE 003440346-01 P=388.432623 Days $T_0=324.925384$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

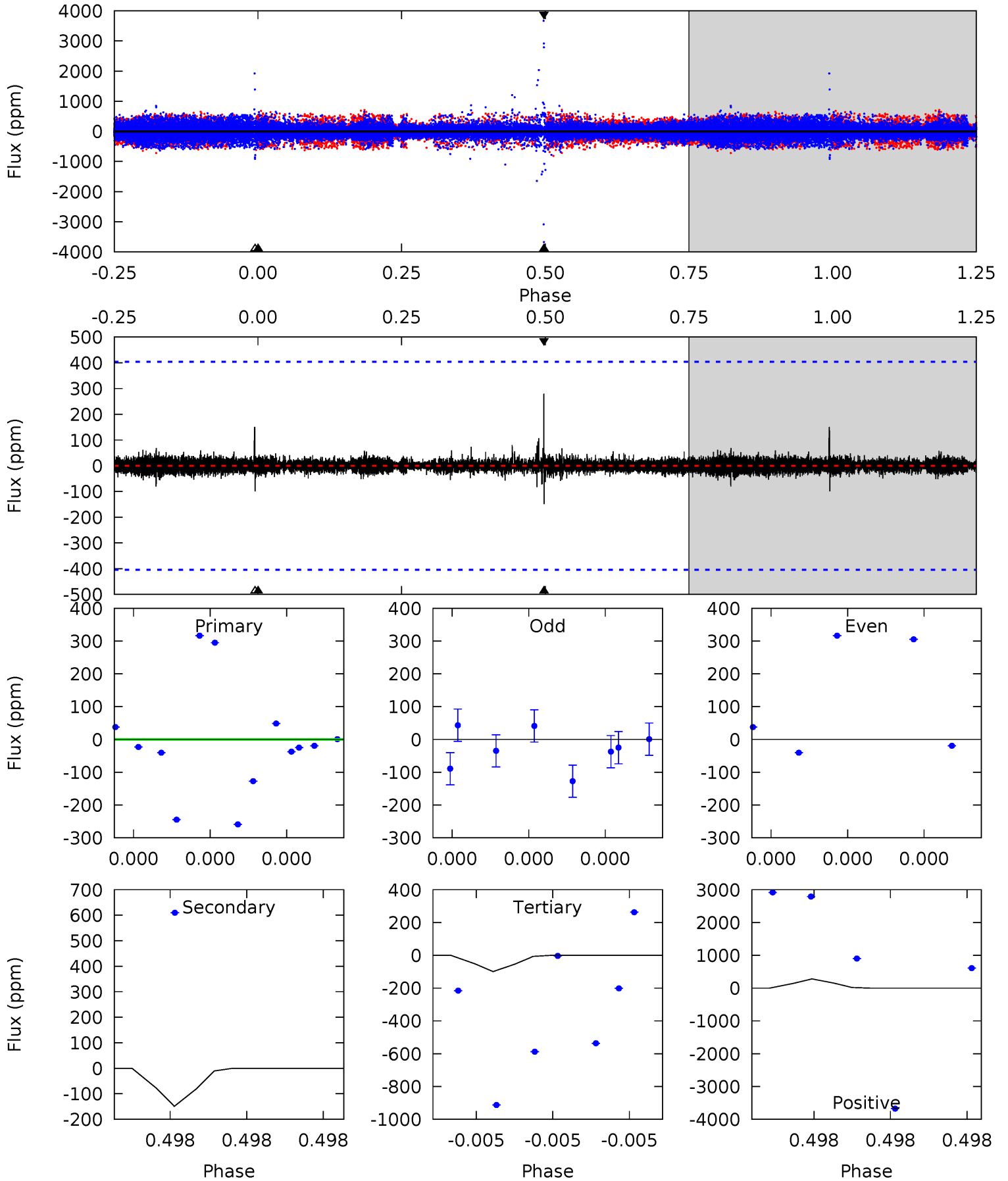
TCE 003440346-01 P=388.435164 Days $T_0=324.925323$ (BKJD)



DV Model-Shift Uniqueness Test

003440346-01, P = 388.432623 Days, E = 324.925384 Days

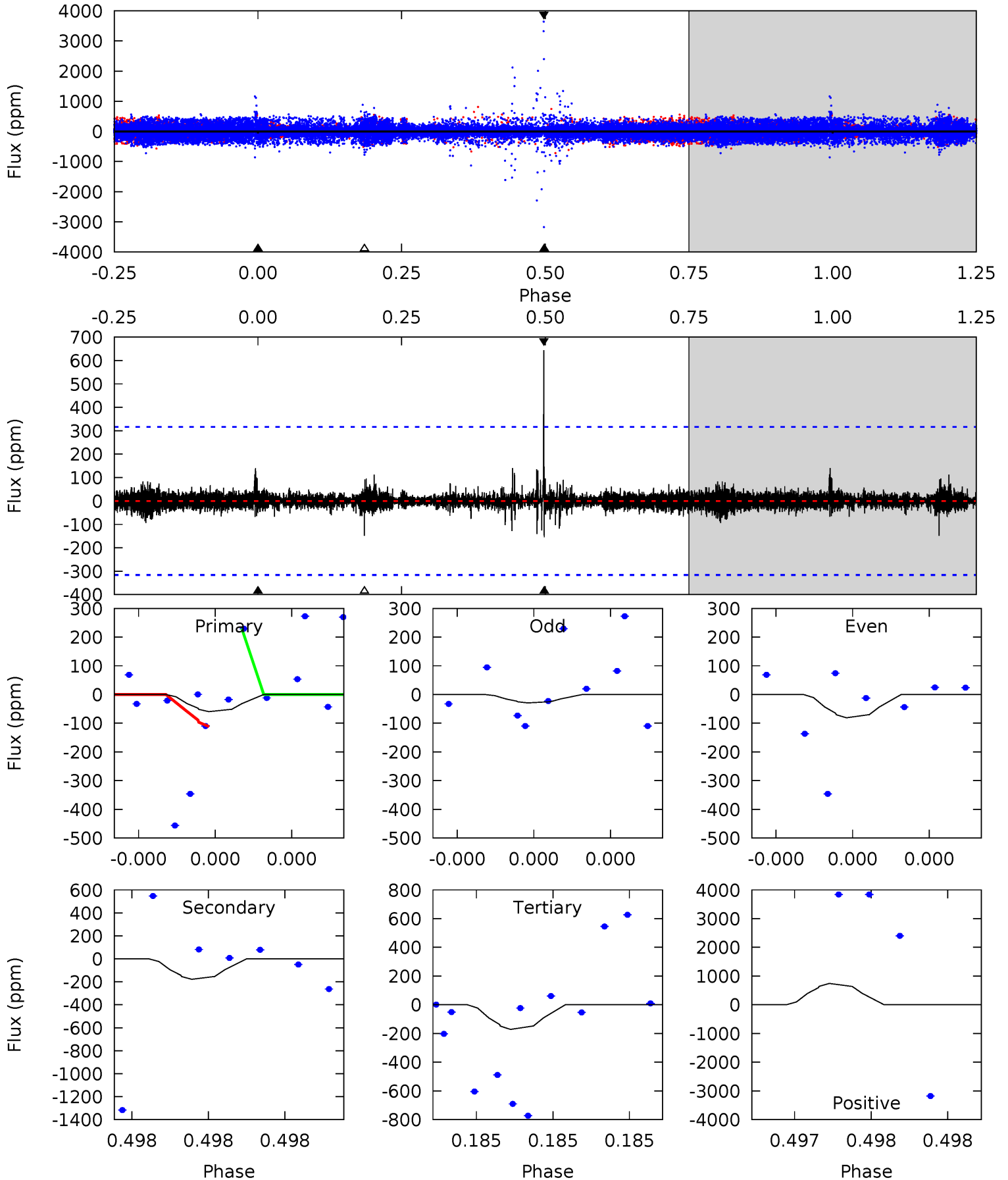
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.22	2.16	1.44	4.06	5.85	3.89	0.18	-1.22	-3.84	0.72	-1.90	1.58	2.00	0.65	2.36



Alt Model-Shift Uniqueness Test

003440346-01, P = 388.435164 Days, E = 324.925323 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.95	2.84	2.73	11.8	5.81	3.84	0.34	-1.78	-10.9	0.11	-8.99	0.16	-193.8	0.81	0.81



Stellar Parameters For KIC 003440346

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3447^{+69}_{-76}	$0.293^{+0.033}_{-0.033}$	$-0.200^{+0.200}_{-0.200}$	$135.069^{+5.477}_{-11.866}$	$1.308^{+0.166}_{-0.203}$	$0.000^{+0.000}_{-0.000}$
	+2%/-2%	+11%/-11%	+100%/-100%	+4%/-9%	+13%/-16%	+15%/-9%
Source	PHO54	AST54	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 003440346-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-149 ± 69	$4180.68^{+4177.12}_{-2923.41}$	2311^{+54}_{-58}	-2461^{+77}_{-47}	$0.005^{+0.043}_{-0.004}$
Alt.	-155 ± 54	$3989.86^{+3974.16}_{-2697.82}$	2309^{+58}_{-59}	-2456^{+81}_{-51}	$0.006^{+0.062}_{-0.005}$

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 $A_{obs} \gg 1.0$

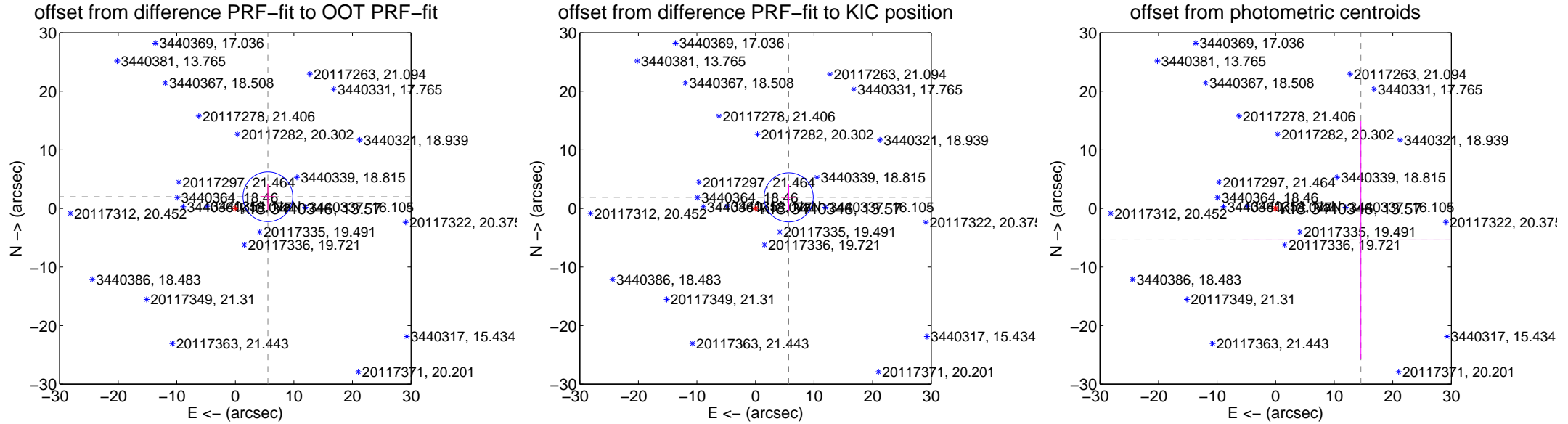
DV Centroid Data

Supplemental centroid analysis for 003440346-01. Kepler magnitude: 13.57. Transit SNR 0.58

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.903 ± 1.416	4.17	-5.556 ± 1.271	1.995 ± 2.243
PRF-fit source offset from KIC position	5.979 ± 1.399	4.27	-5.671 ± 1.271	1.896 ± 2.243
photometric centroid source offset	15.52 ± 20.20	0.77	-14.55 ± 20.19	-5.37 ± 20.27

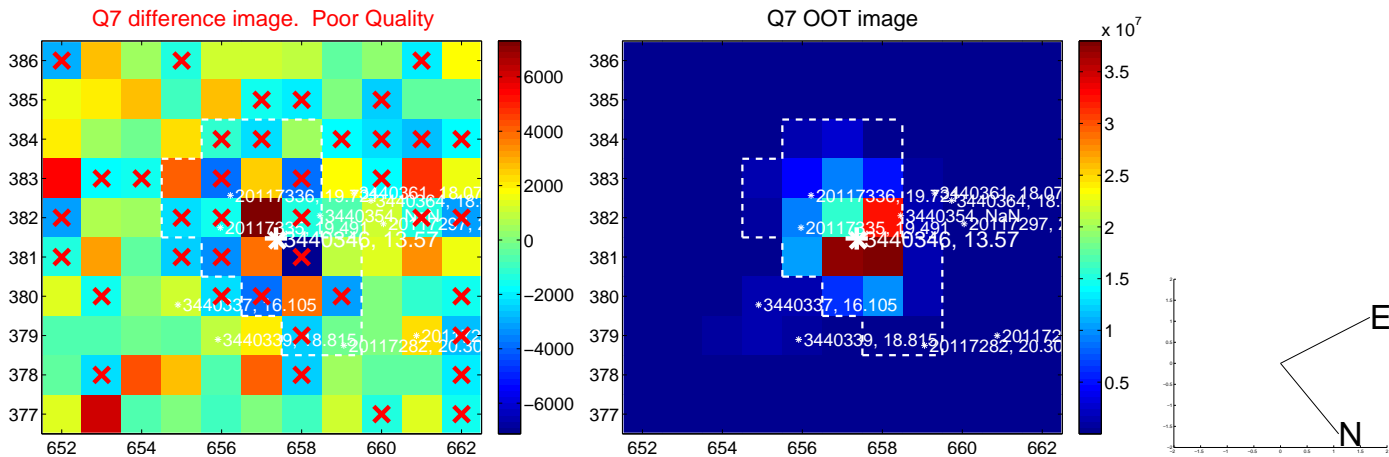


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



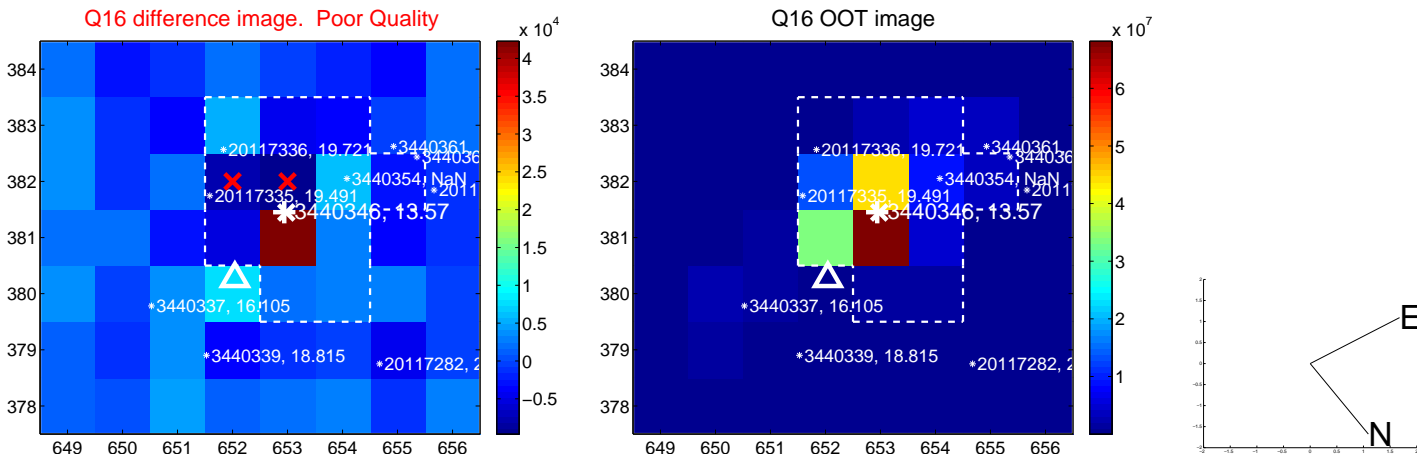
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



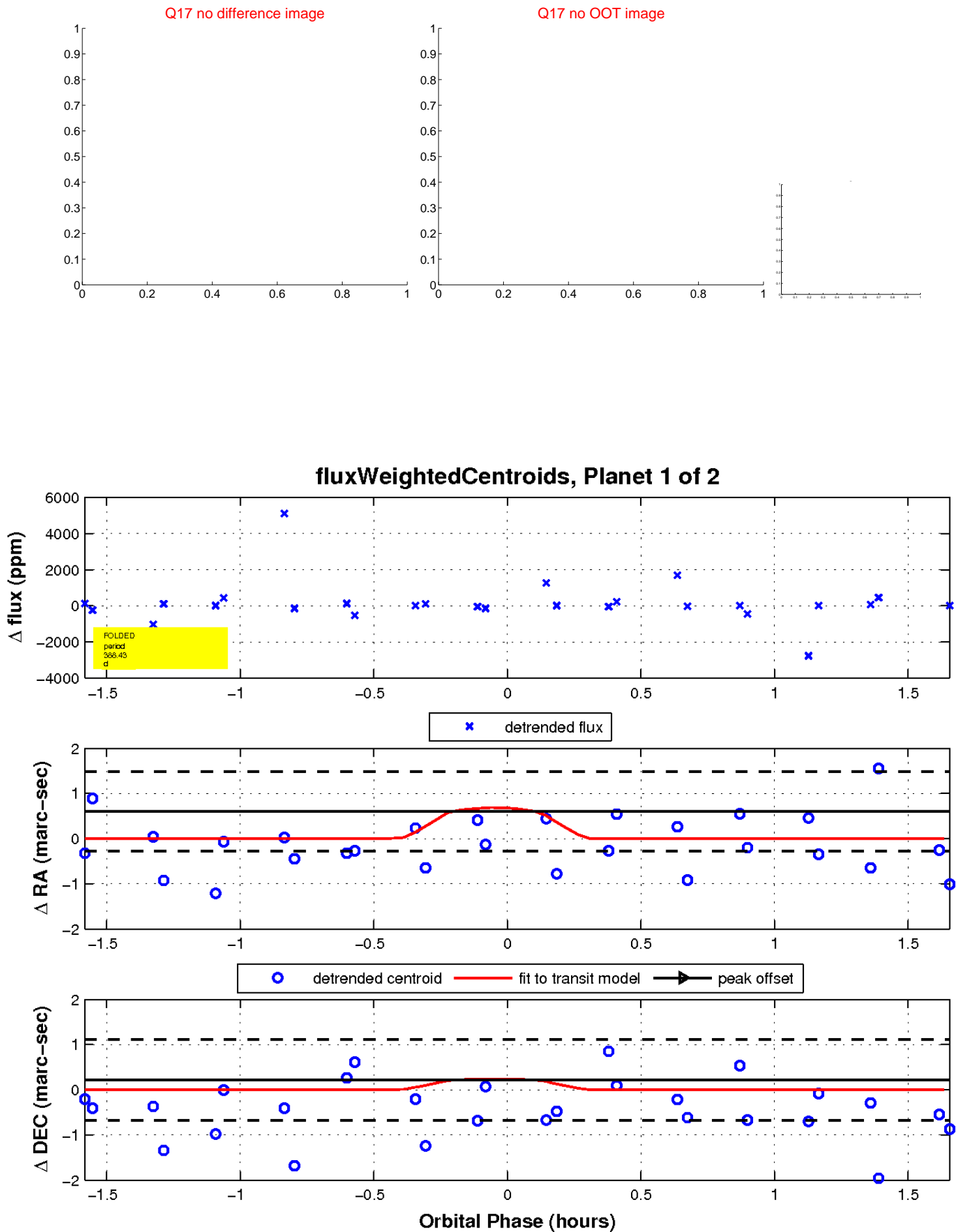
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



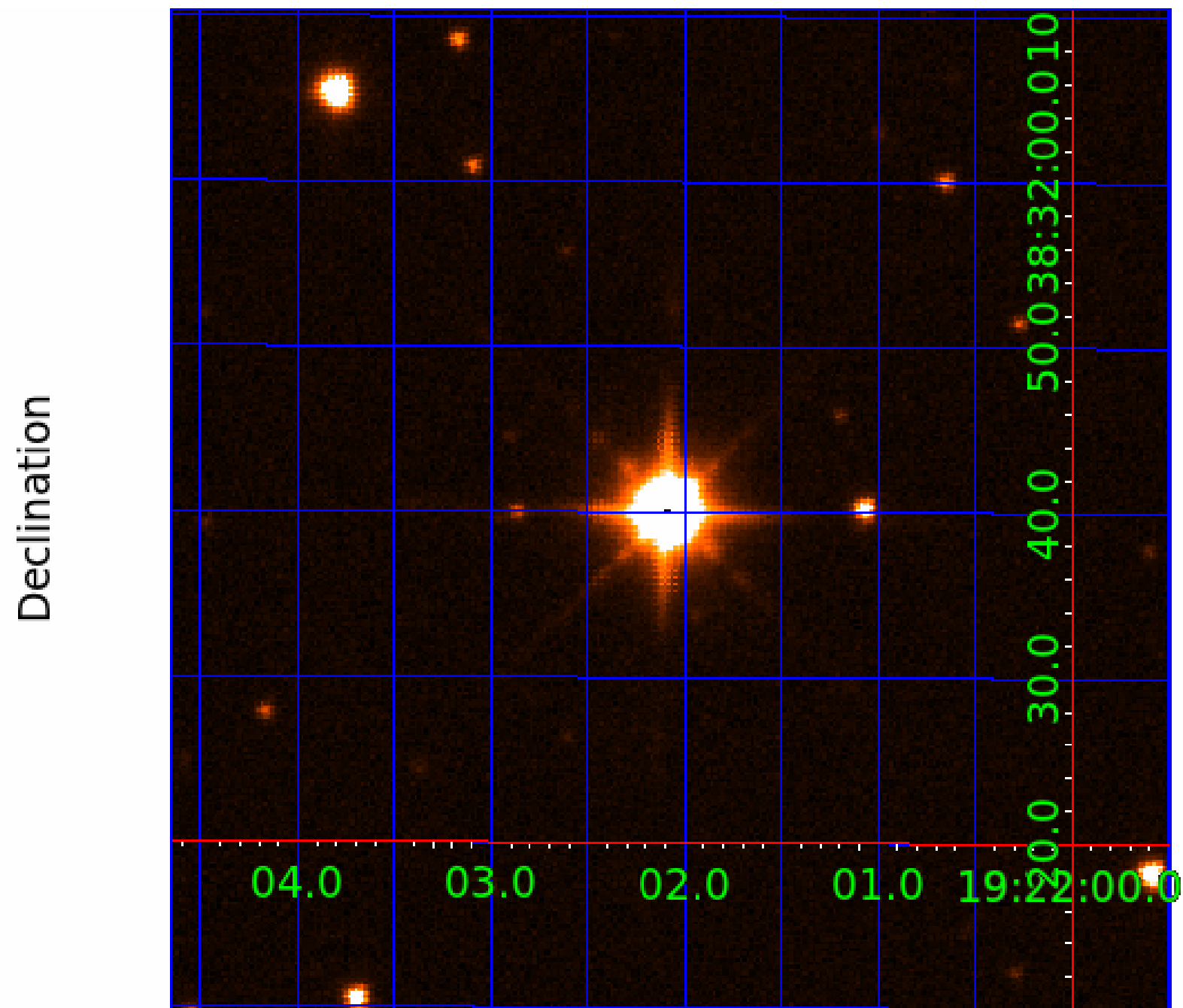
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 003440346

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})
003440346-01	OBS	No	388.432623	324.925384	42.1	0.556	10.8	0.6	135.07	3447	119.72	1778.04
003440346-02	OBS	No	321.690562	160.079903	1894.2	6.115	42.1	13.0	135.07	3447	565.96	2286.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003440346-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_ZUMA_TRACKER—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_FEW_DIFFS
003440346-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

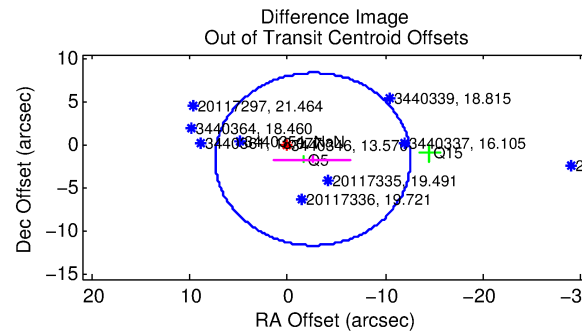
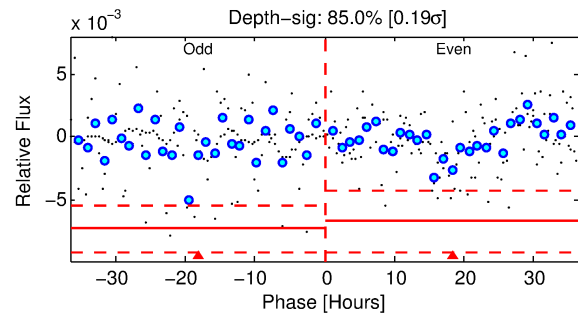
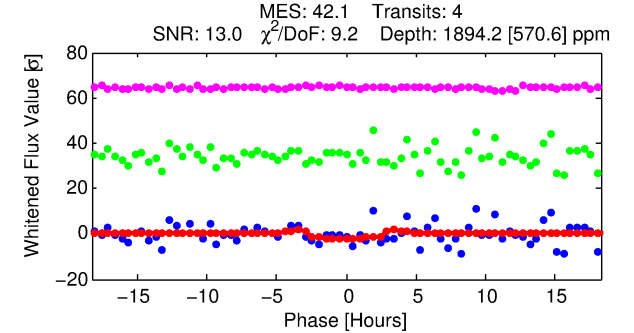
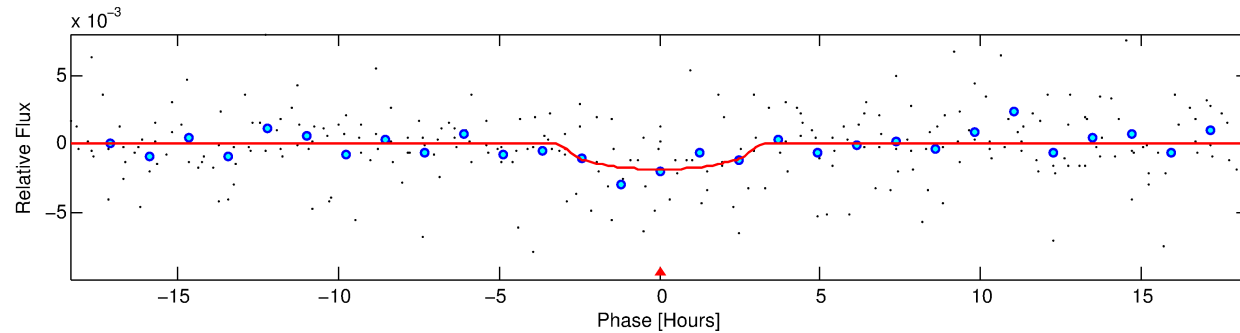
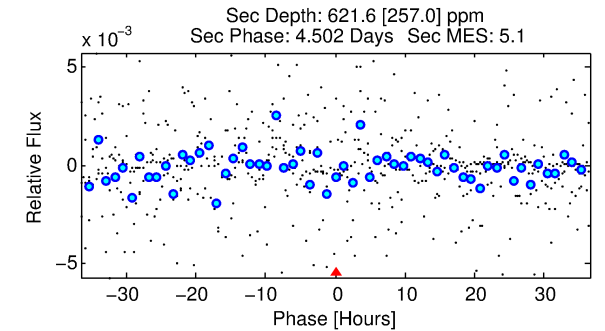
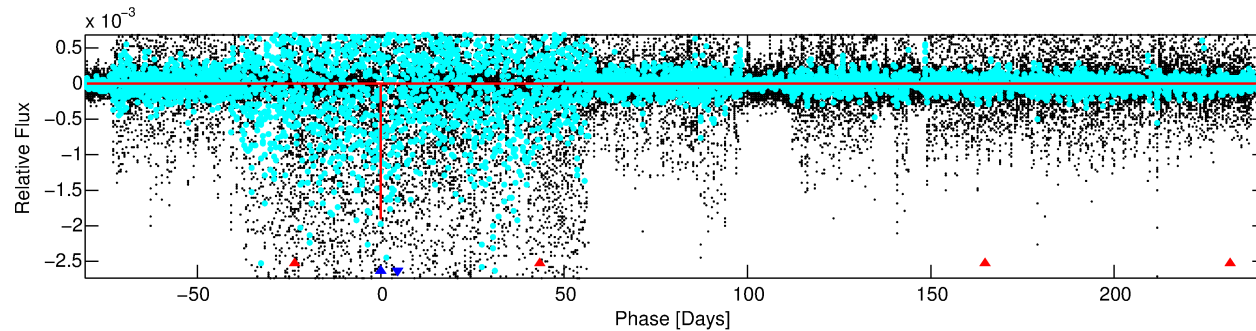
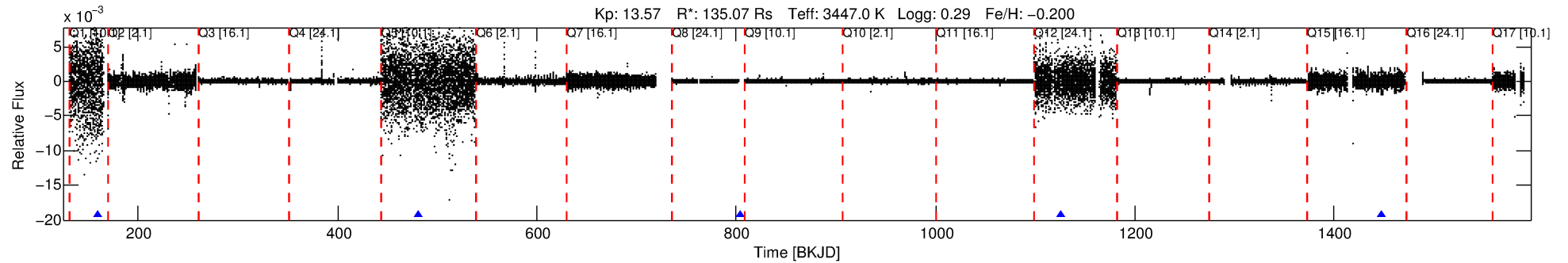
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003440346-02

No Significant Match Found

DV One-Page Summary

KIC: 3440346 Candidate: 2 of 2 Period: 321.691 d



DV Fit Results:

Period = 321.69056 [0.00627] d
Epoch = 160.0799 [0.0192] BKJD
Rp/R* = 0.0384 [0.0312]
a/R* = 380.32 [666.88]
b = 0.43 [3.48]
Seff = 2286.19 [268.32]
Teff = 1763 [52] K
Rp = 565.96 [463.06] Re
a = 1.0047 [0.0641] AU
Ag = 1.08 [1.81] [0.04σ]
Teffp = 2778 [1167] K [0.87σ]

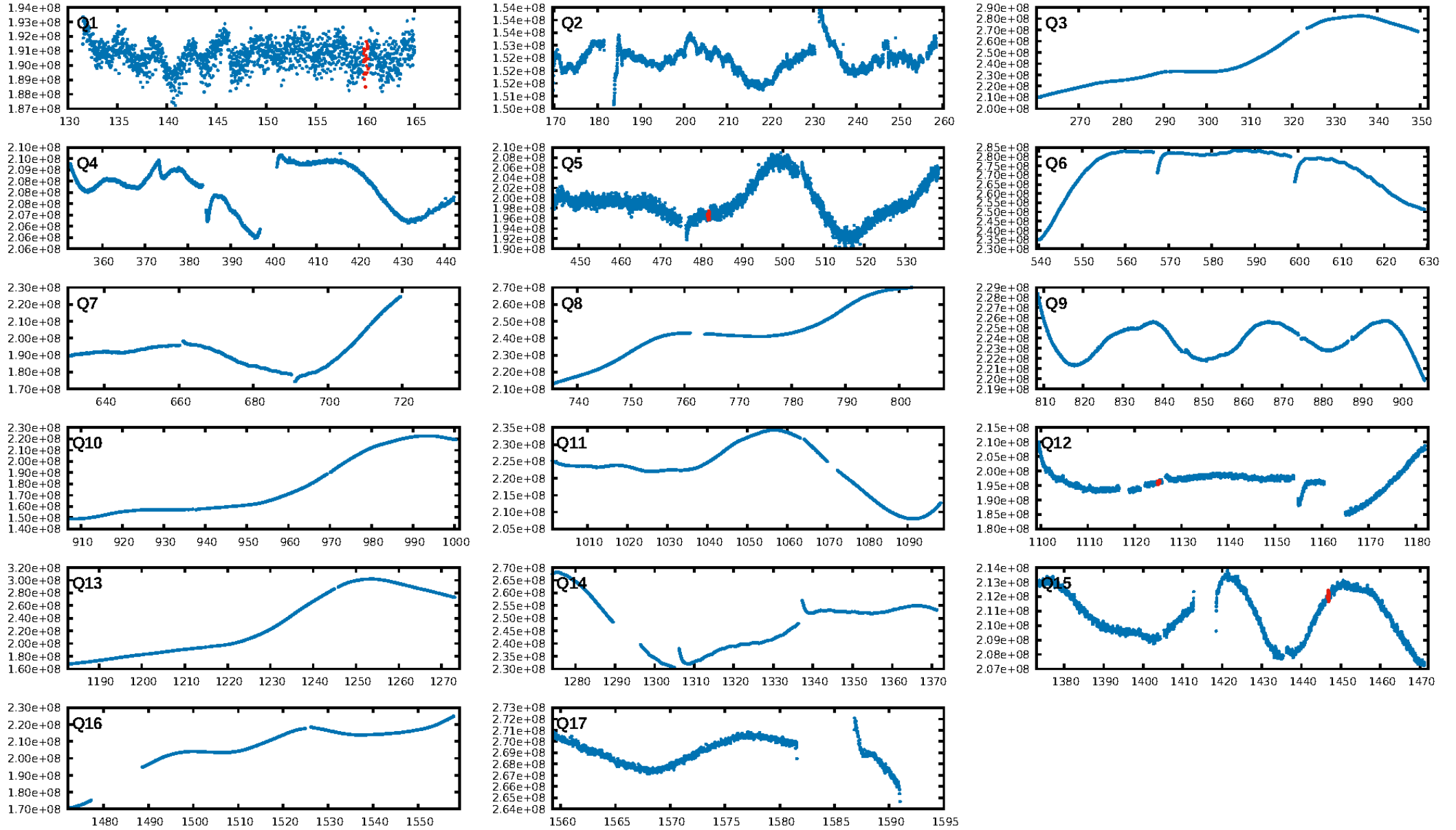
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [260.85σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.0%
Bootstrap-pfa: 4.03e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.19
Centroid-sig: 35.4%
Centroid-so: 0.284 arcsec [1.60σ]
OotOffset-rm: 3.071 arcsec [0.92σ]
KicOffset-rm: 3.148 arcsec [0.72σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [4/4]

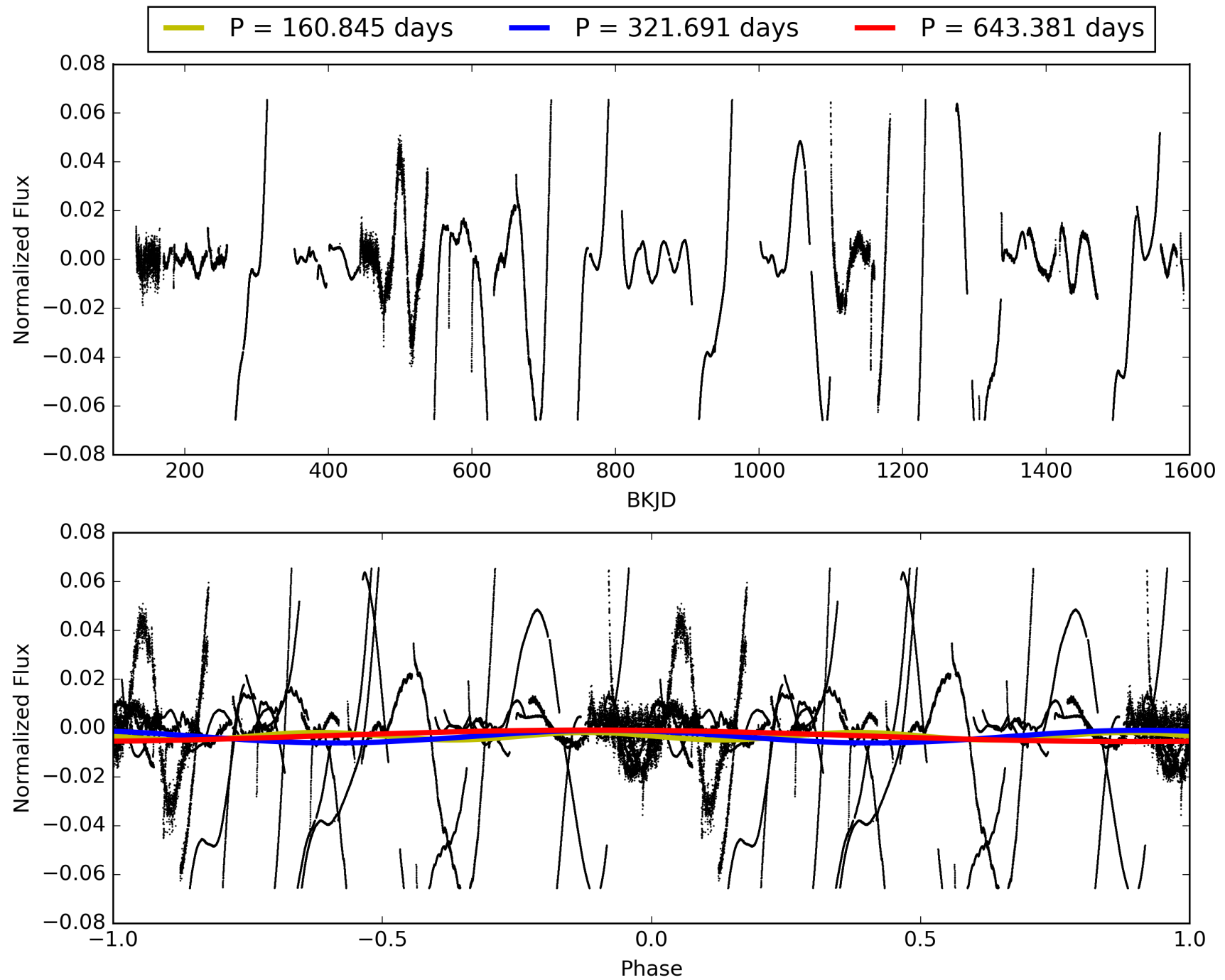
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 04:17:35 Z

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

TCE 003440346-02, PDC Light Curves

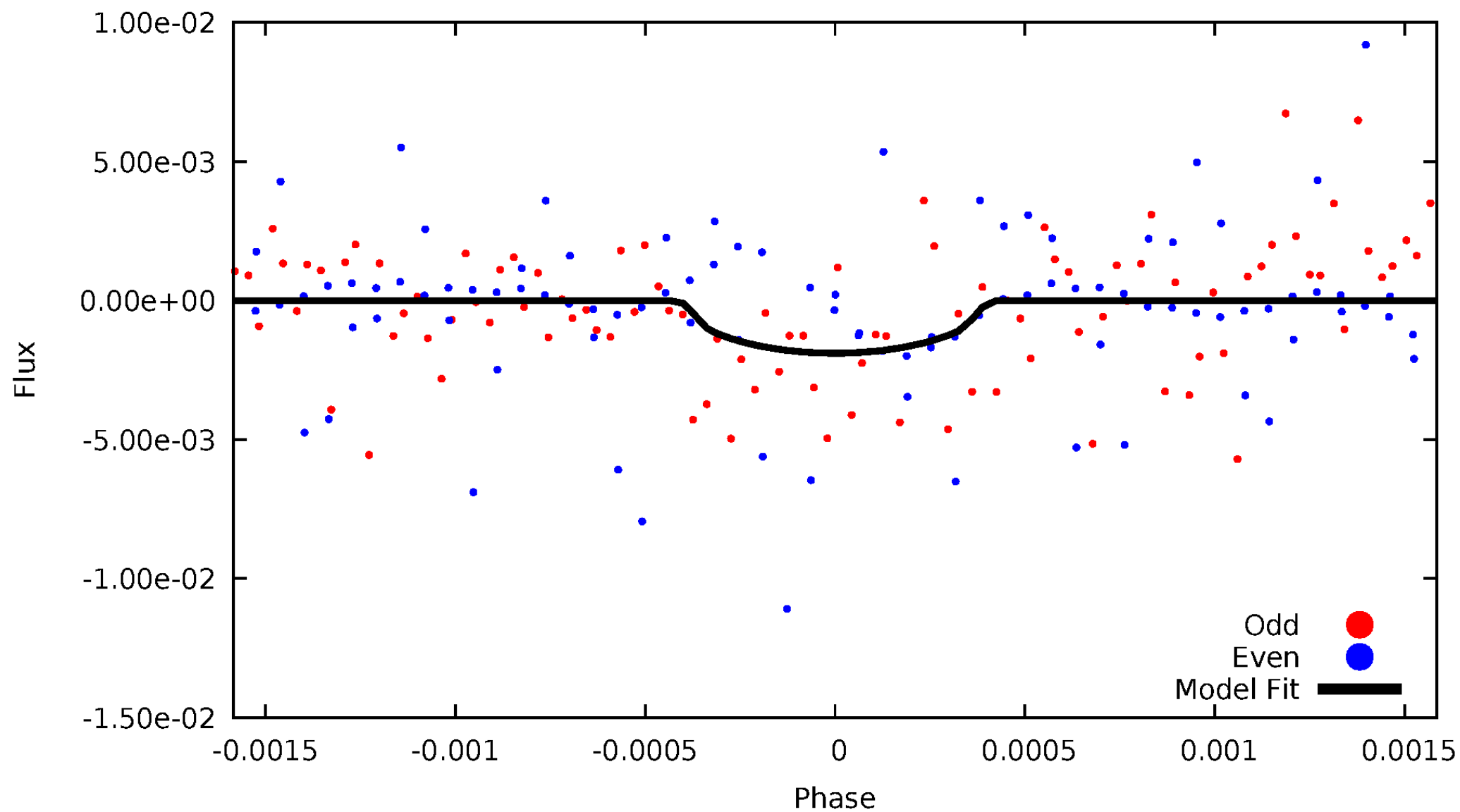


TCE 003440346-02



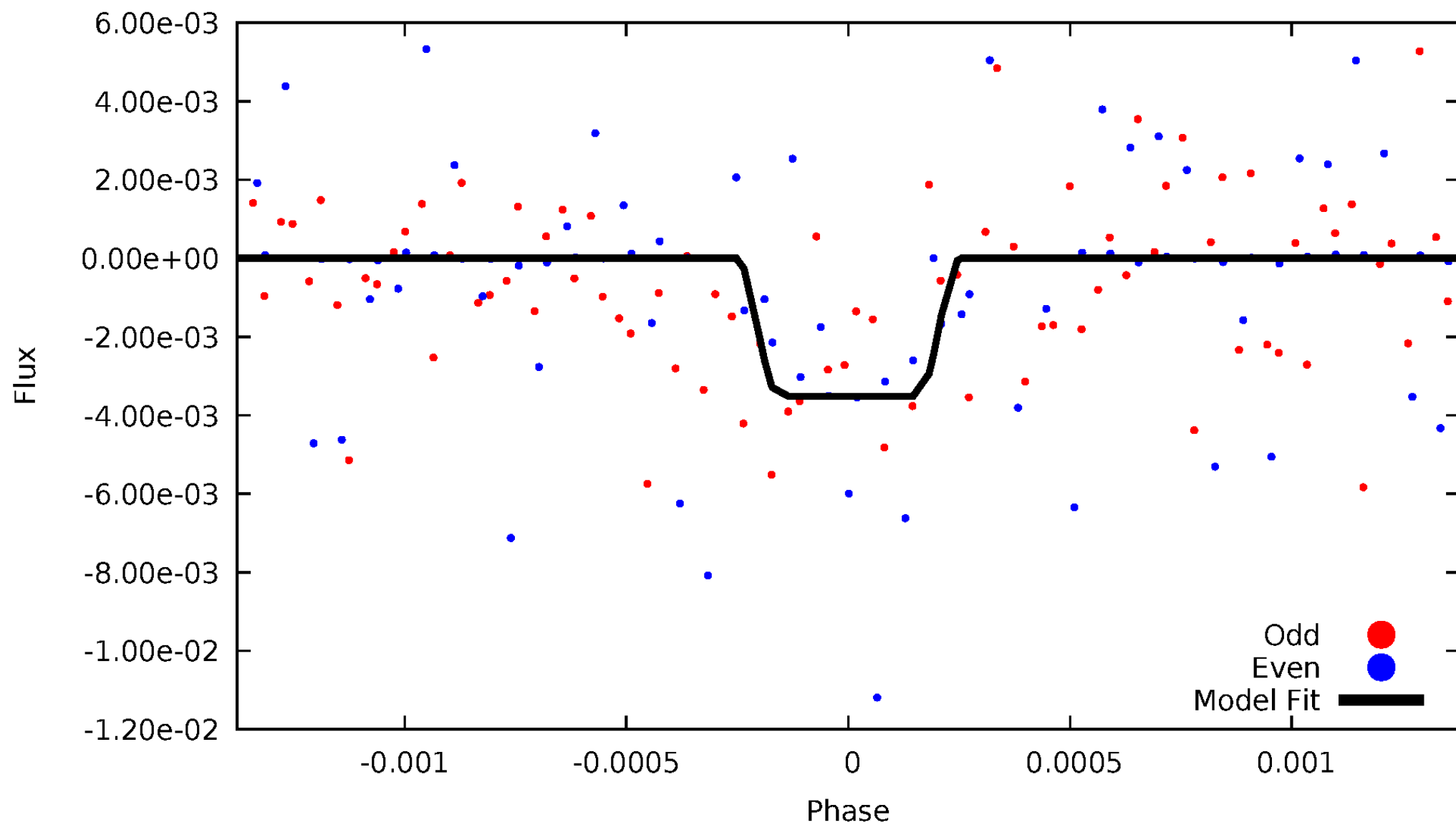
DV Odd/Even

TCE 003440346-02



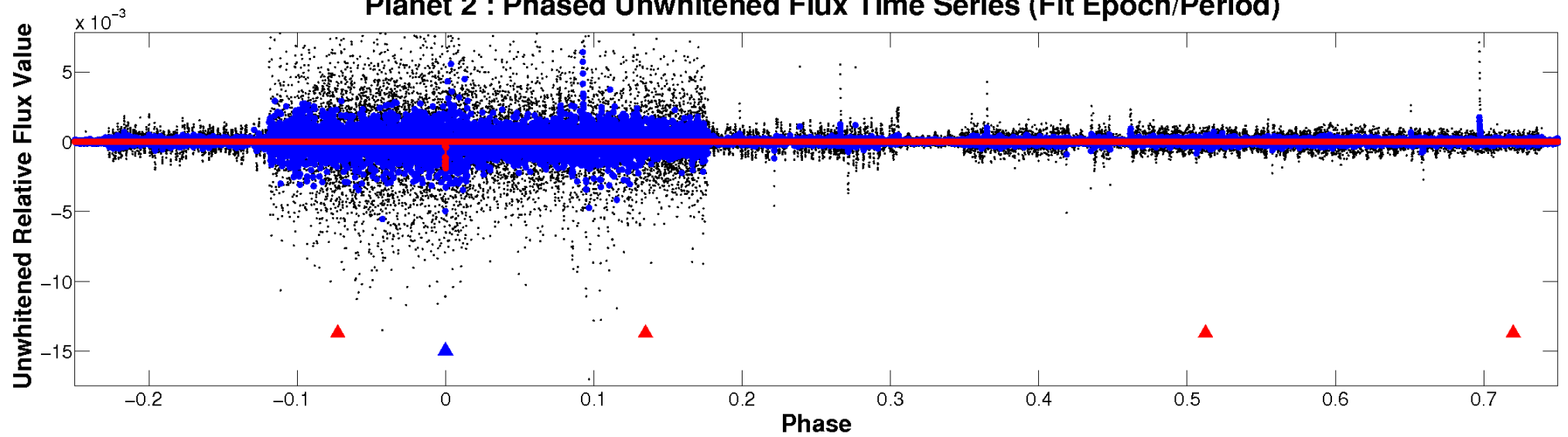
ALT Odd/Even

TCE 003440346-02

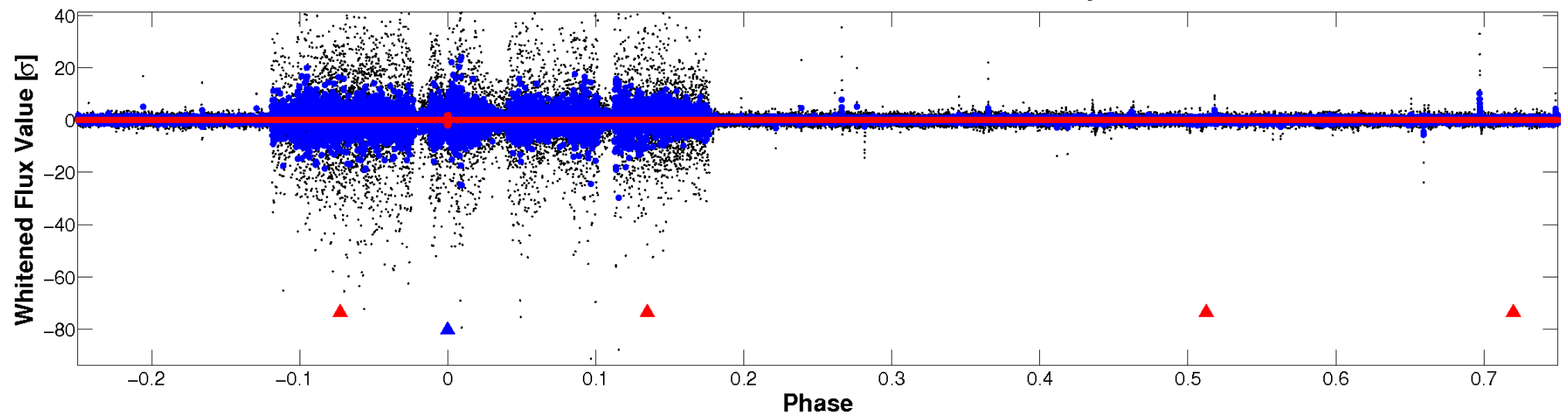


Non-Whitened Vs. Whitened Light Curve

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

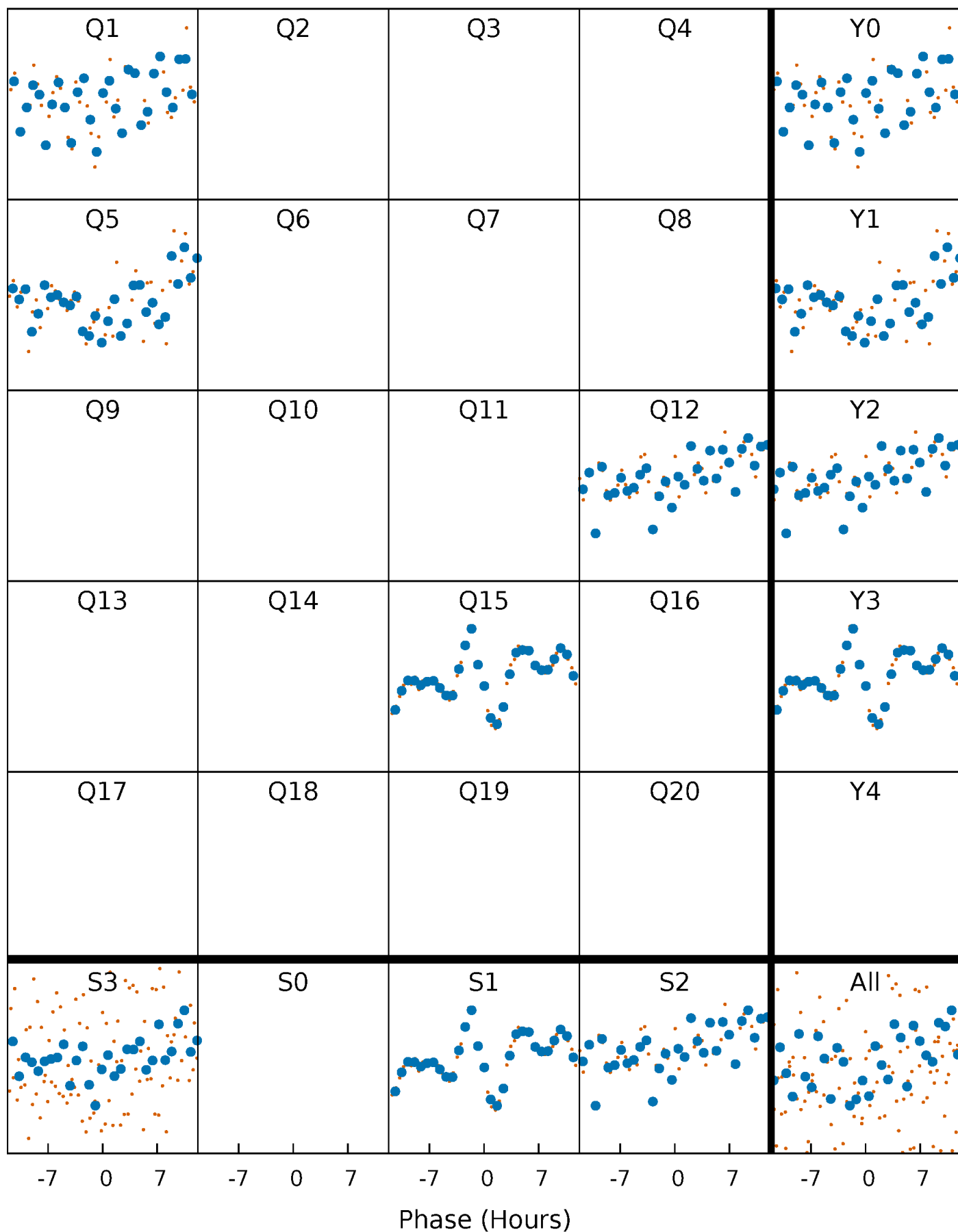


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



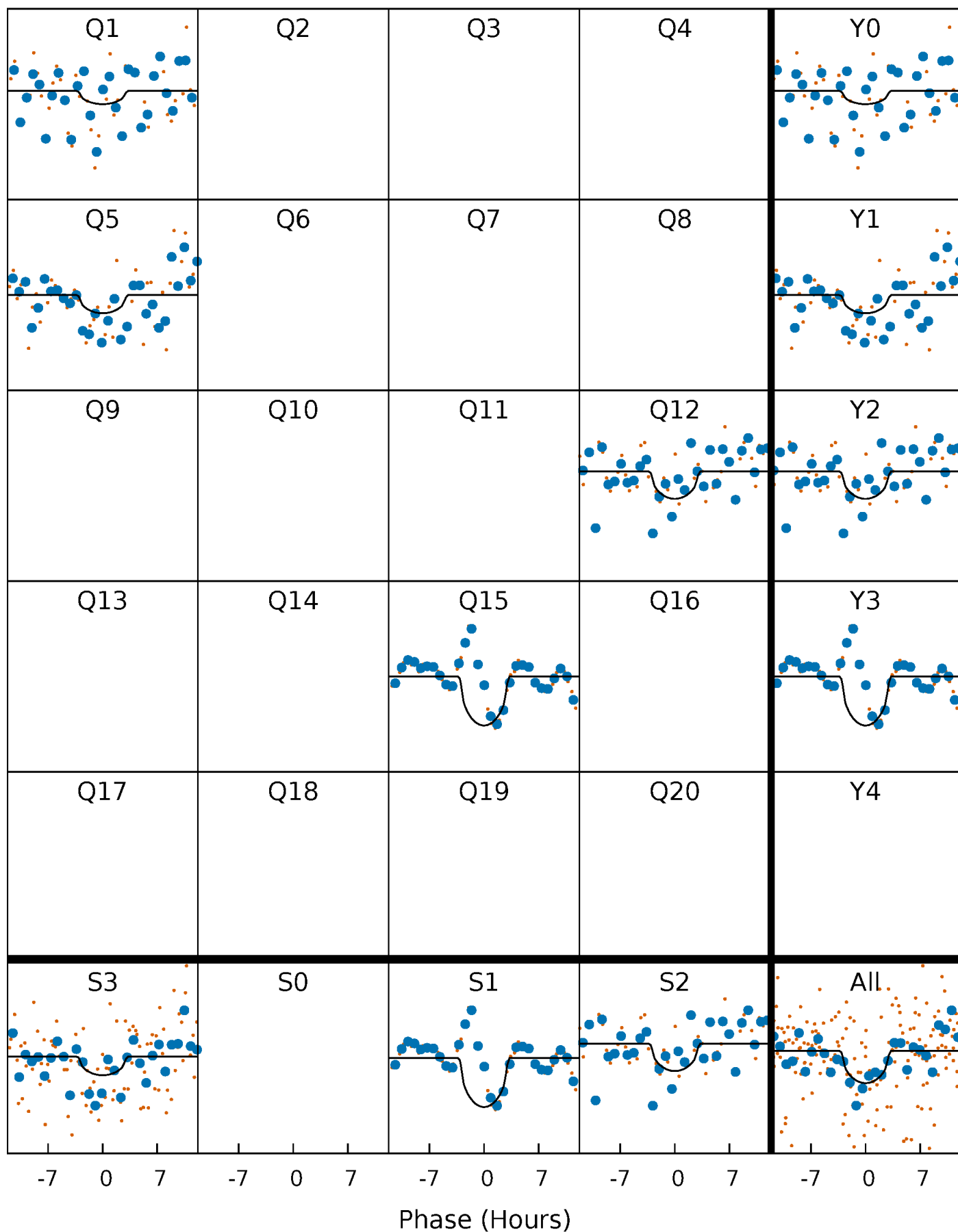
PDC Quarter-Phased Transit Curves

TCE 003440346-02 P=321.690562 Days $T_0=160.079903$ (BKJD)



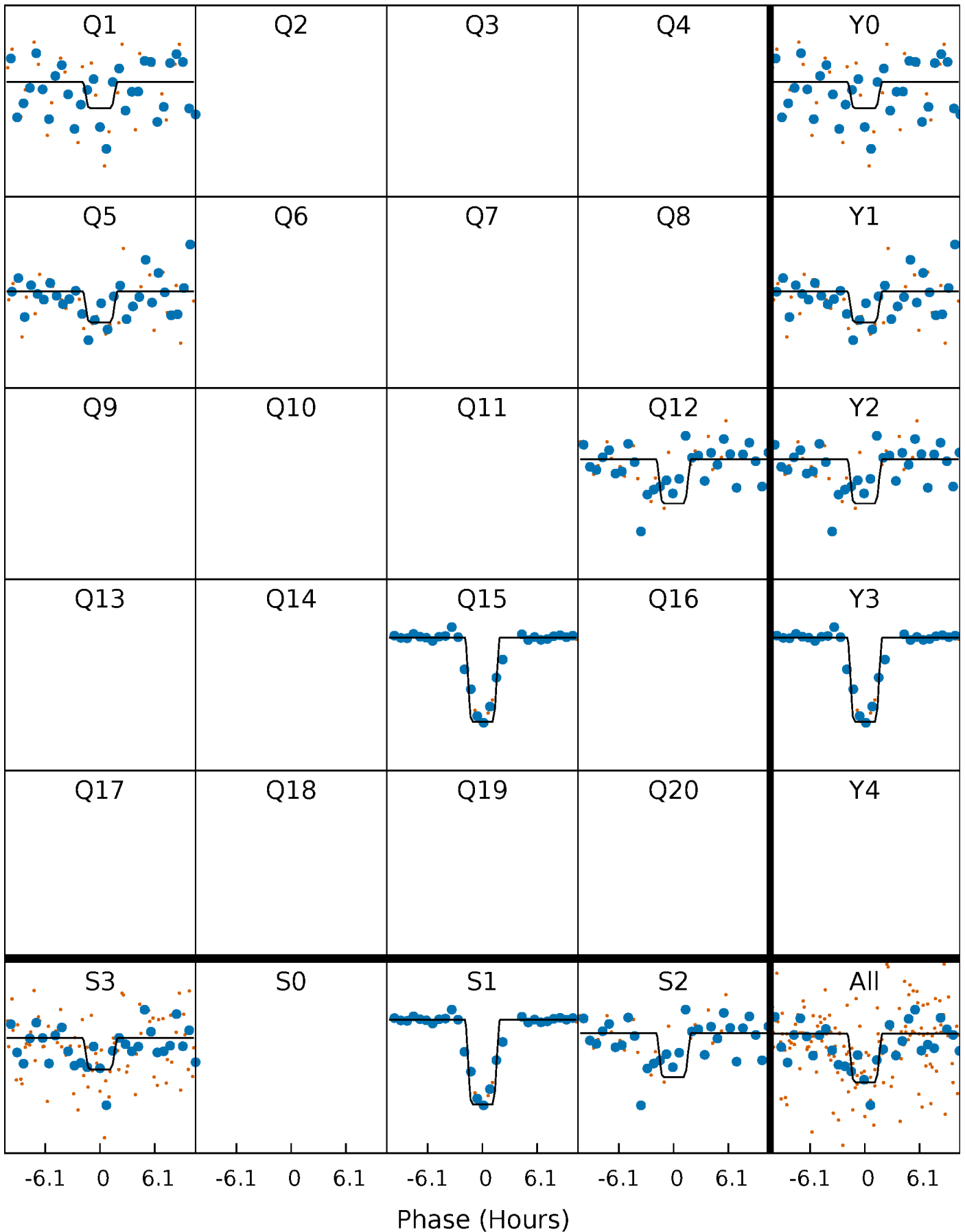
DV Quarter-Phased Transit Curves

TCE 003440346-02 $P=321.690562$ Days $T_0=160.079903$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

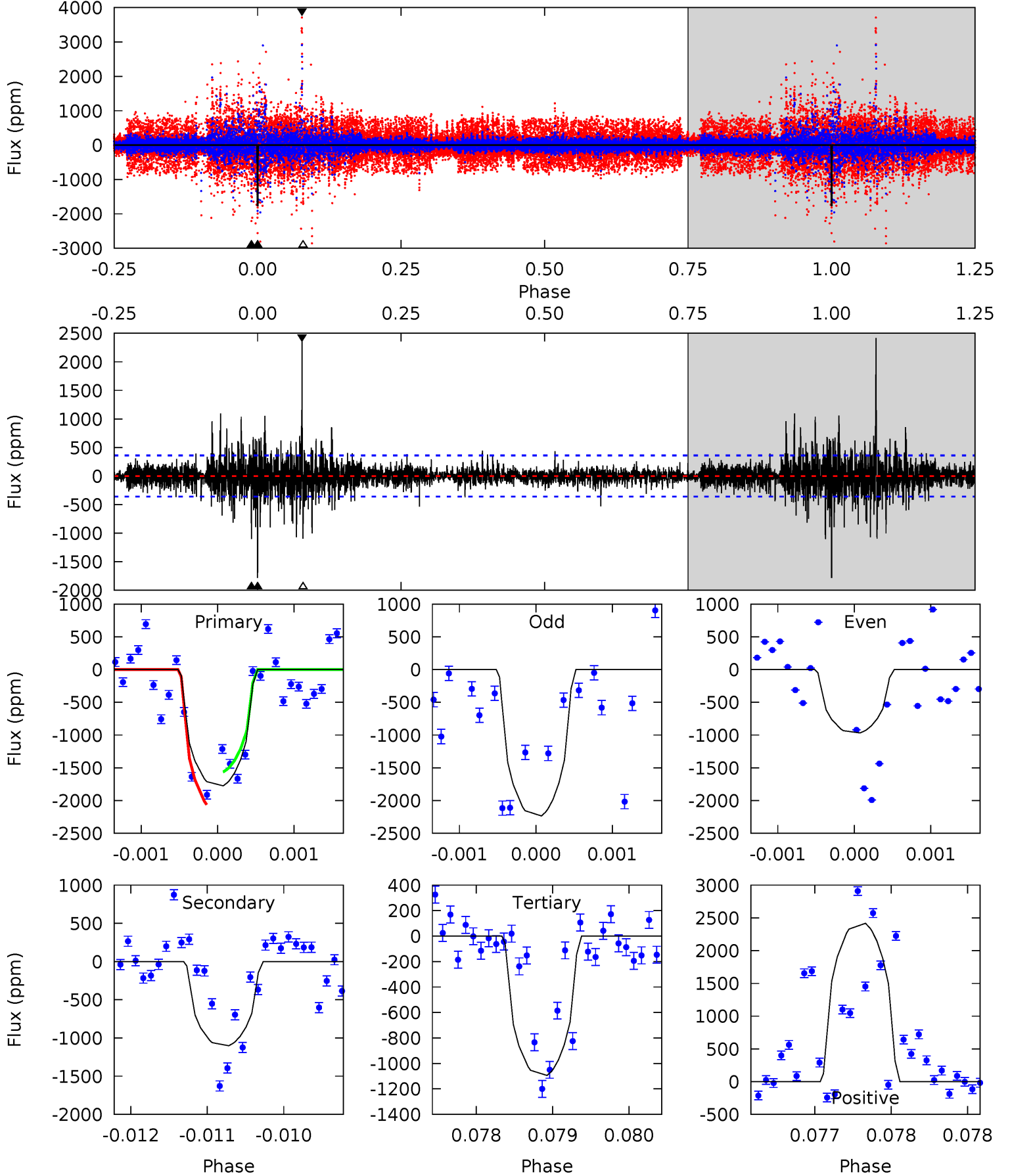
TCE 003440346-02 P=321.719591 Days $T_0=160.018310$ (BKJD)



DV Model-Shift Uniqueness Test

003440346-02, P = 321.690562 Days, E = 160.079903 Days

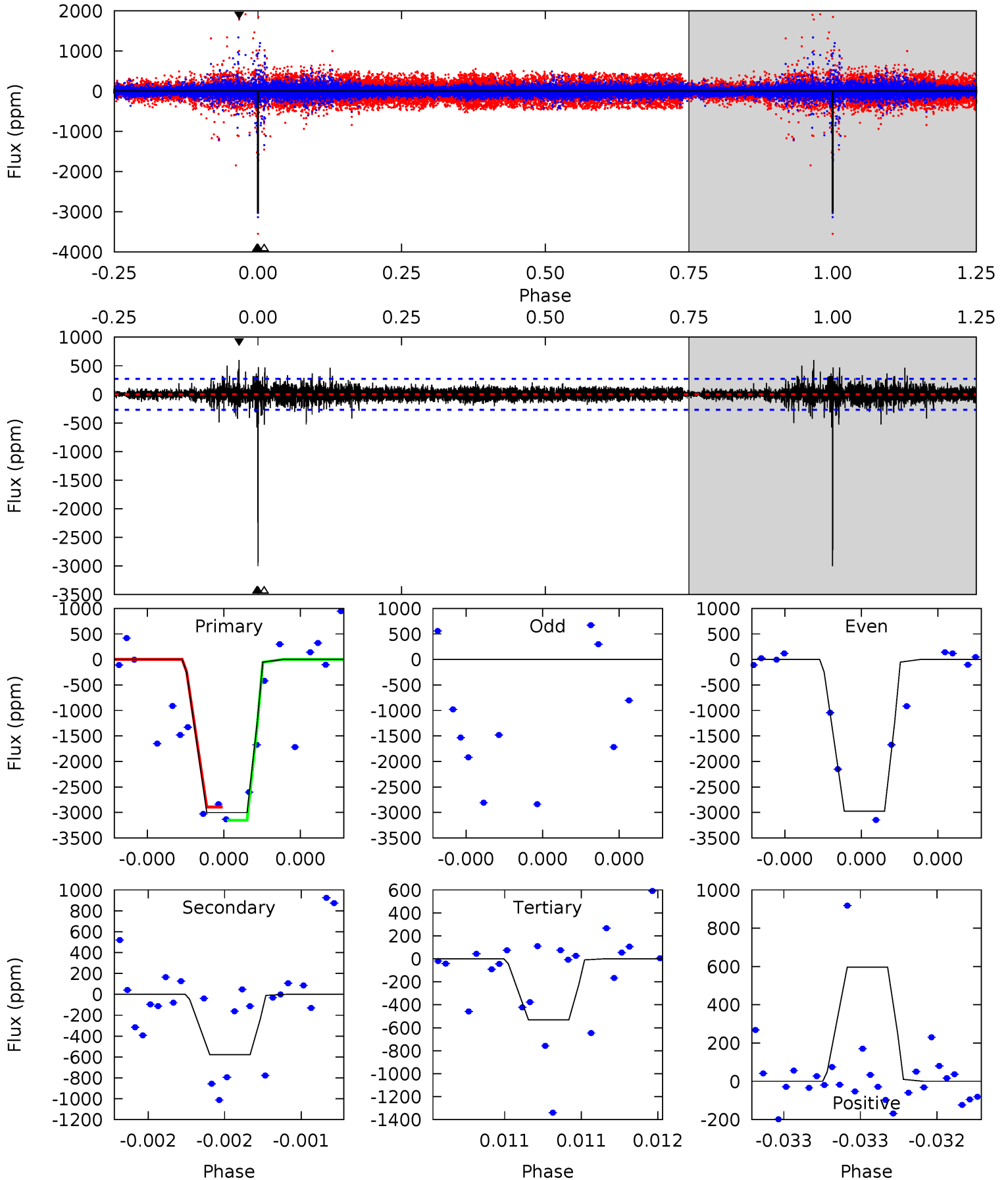
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.0	16.7	16.6	36.7	5.48	3.34	2.10	10.4	-9.76	0.12	-20.0	5.02	0.94	0.58	0



Alt Model-Shift Uniqueness Test

003440346-02, P = 321.719591 Days, E = 160.018310 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
61.9	11.9	11.0	12.3	5.58	3.49	1.22	50.9	49.6	0.95	-0.39	0	0.90	0.17	2.72



Stellar Parameters For KIC 003440346

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3447^{+69}_{-76}	$0.293^{+0.033}_{-0.033}$	$-0.200^{+0.200}_{-0.200}$	$135.069^{+5.477}_{-11.866}$	$1.308^{+0.166}_{-0.203}$	$0.000^{+0.000}_{-0.000}$
	+2%/-2%	+11%/-11%	+100%/-100%	+4%/-9%	+13%/-16%	+15%/-9%
Source	PHO54	AST54	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 003440346-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1102 ± 66	$593.45^{+441.88}_{-343.93}$	2461^{+63}_{-63}	3143^{+1197}_{-605}	$1.723^{+7.985}_{-1.137}$
Alt.	-577 ± 48	$853.39^{+474.89}_{-456.28}$	2463^{+56}_{-60}	2342^{+907}_{-4638}	$0.437^{+1.641}_{-0.260}$

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 $A_{obs} \gg 1.0$

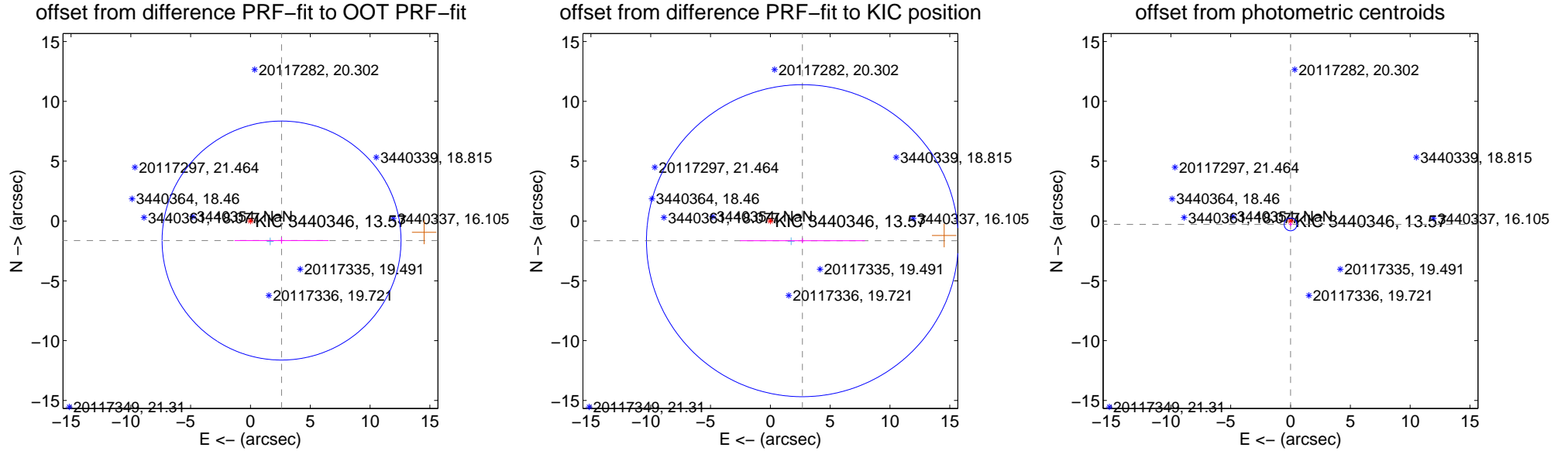
DV Centroid Data

Supplemental centroid analysis for 003440346-02. Kepler magnitude: 13.57. Transit SNR 12.97

There are 1 quarters with good PRF difference image offsets

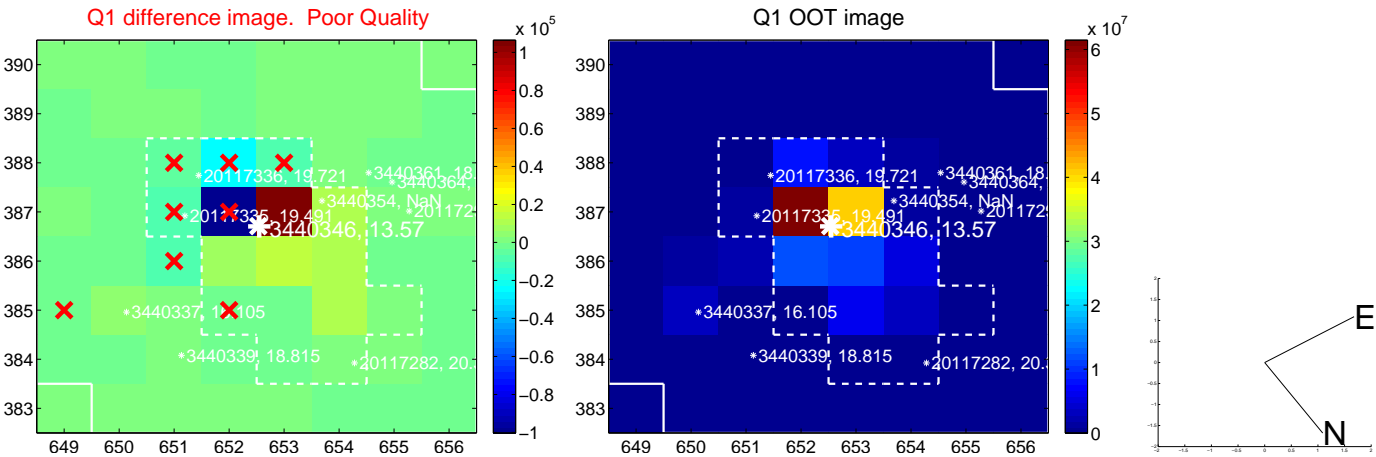
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.071 ± 3.329	0.92	-2.600 ± 3.929	-1.636 ± 0.269
PRF-fit source offset from KIC position	3.148 ± 4.346	0.72	-2.682 ± 5.222	-1.648 ± 0.209
photometric centroid source offset	0.28 ± 0.18	1.60	-0.00 ± 0.15	-0.28 ± 0.18

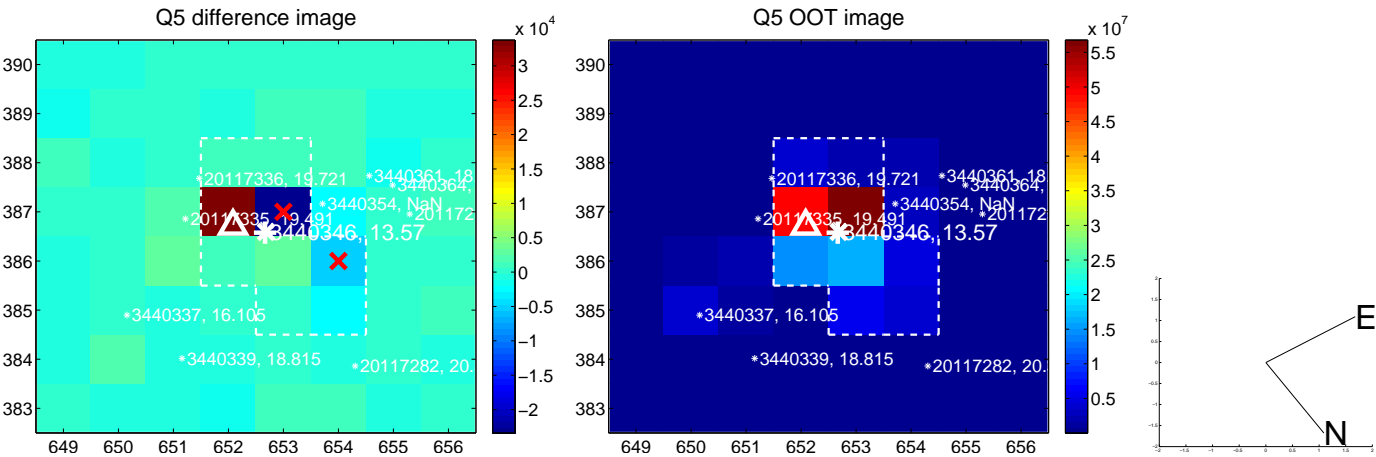


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

Q9 no difference image



Q9 no OOT image



Q10 no difference image



Q10 no OOT image



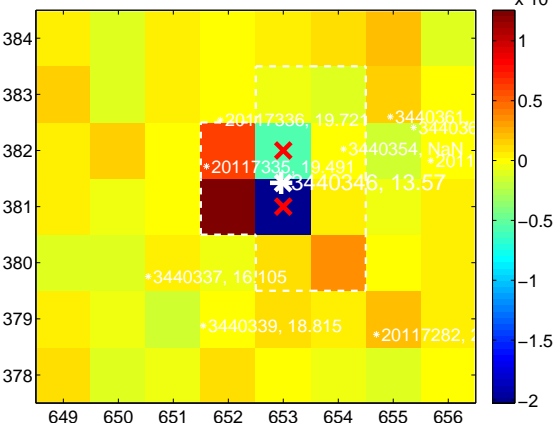
Q11 no difference image



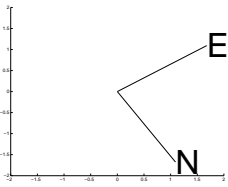
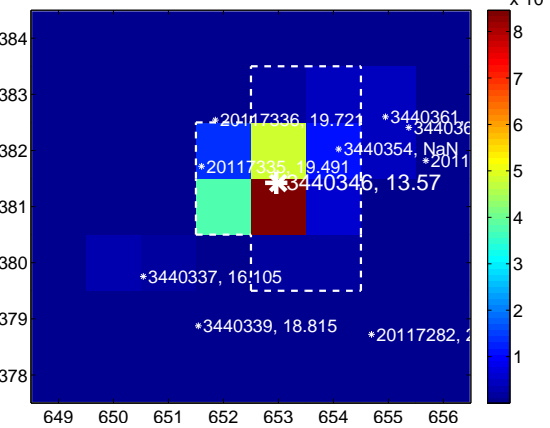
Q11 no OOT image



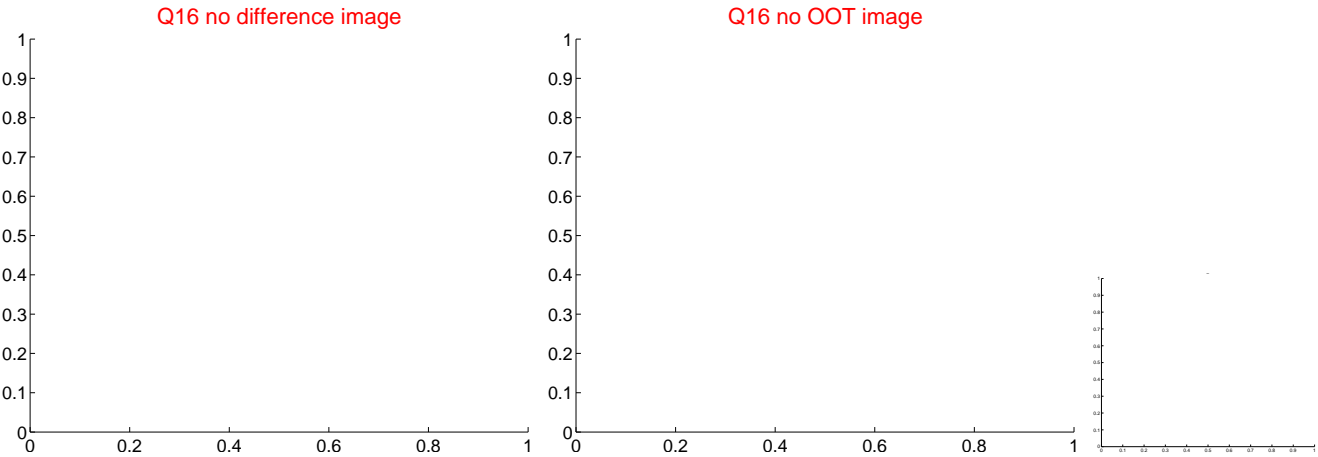
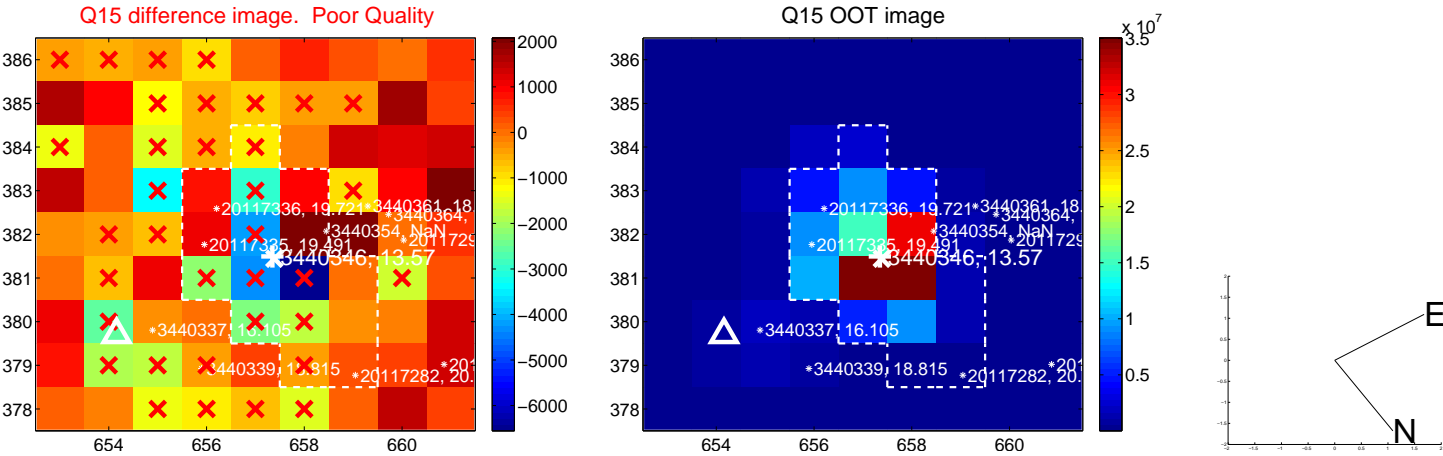
Q12 difference image. Poor Quality



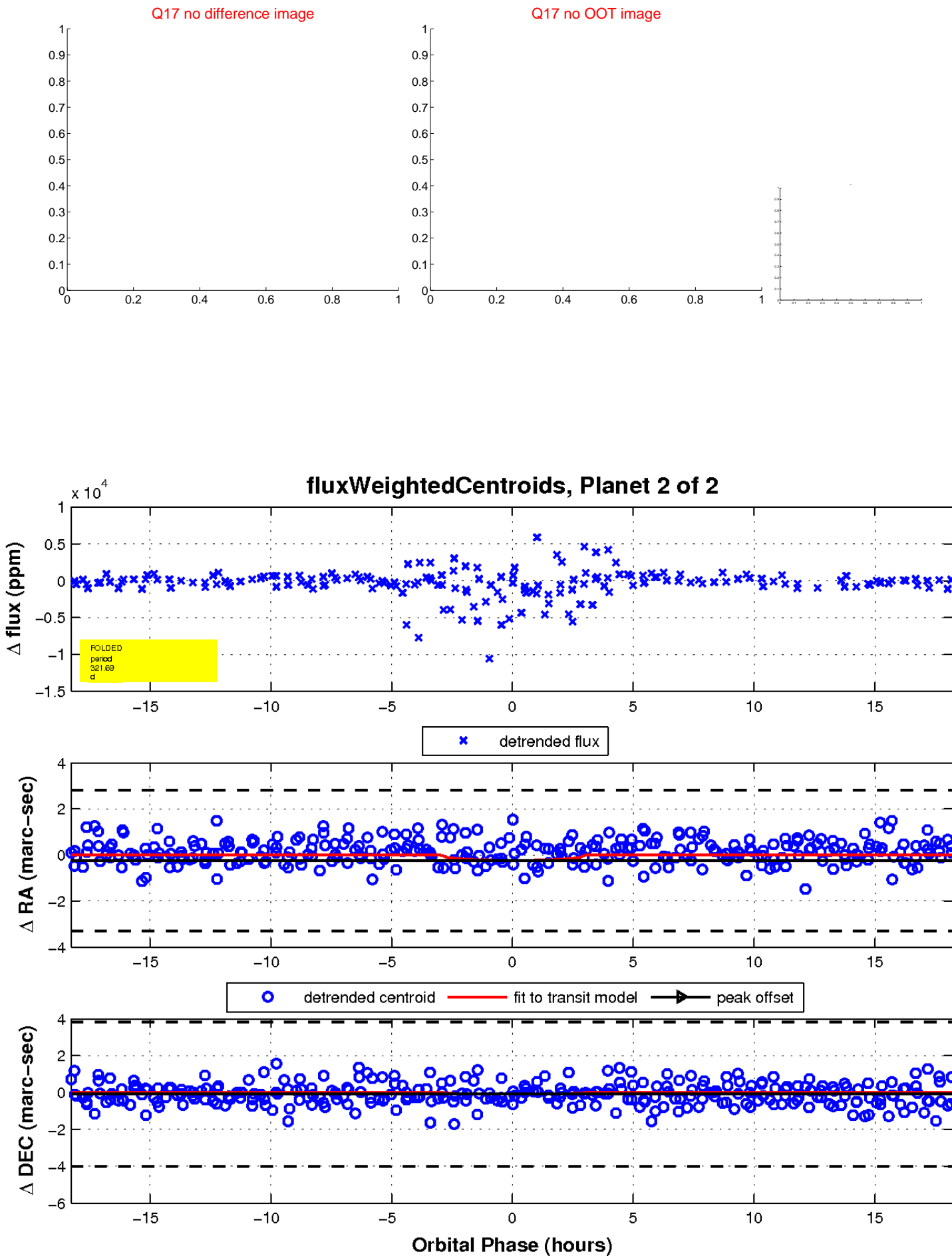
Q12 OOT image



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

