

KIC 003340070

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})
003340070-01	OBS	No	370.972187	284.381872	1283.2	5.006	11.4	11.4	0.87	5904	3.55	0.82
003340070-02	OBS	No	360.064432	295.303460	1433.0	6.008	12.1	11.4	0.87	5904	5.58	0.86
003340070-03	OBS	No	360.063975	328.028899	917.1	4.908	9.9	9.6	0.87	5904	2.75	0.86
003340070-04	OBS	No	403.699203	251.666599	1045.2	3.185	8.7	7.5	0.87	5904	2.92	0.74
003340070-05	OBS	No	360.055300	306.212057	761.7	6.064	8.2	7.4	0.87	5904	2.57	0.86
003340070-06	OBS	No	360.060697	300.215535	1053.5	4.308	8.6	7.1	0.87	5904	5.06	0.86
003340070-07	OBS	No	349.136961	343.871902	1032.3	3.390	7.8	8.9	0.87	5904	3.23	0.89
003340070-08	OBS	No	370.971282	338.932061	734.7	4.500	7.3	-1.0	0.87	5904	2.34	0.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340070-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—CENT_FEW_DIFFS
003340070-02	OBS	FP	0.00	1	0	1	0	INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET
003340070-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-04	OBS	FP	0.04	0	0	1	0	CENT_RESOLVED_OFFSET
003340070-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
003340070-06	OBS	FP	0.00	1	0	0	0	MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003340070-07	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

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

Ephemeris Match Information For 003340070-01

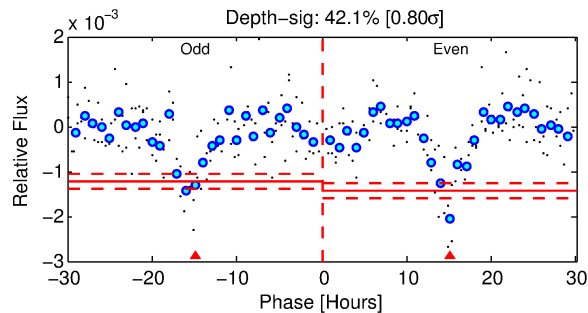
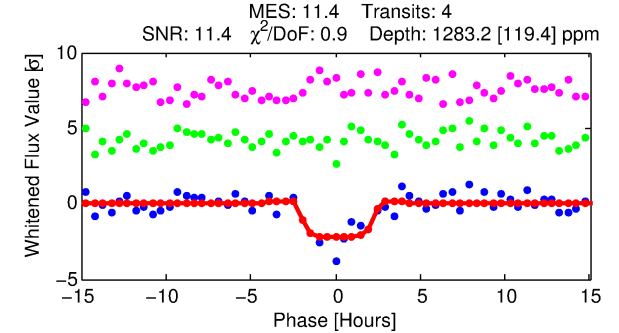
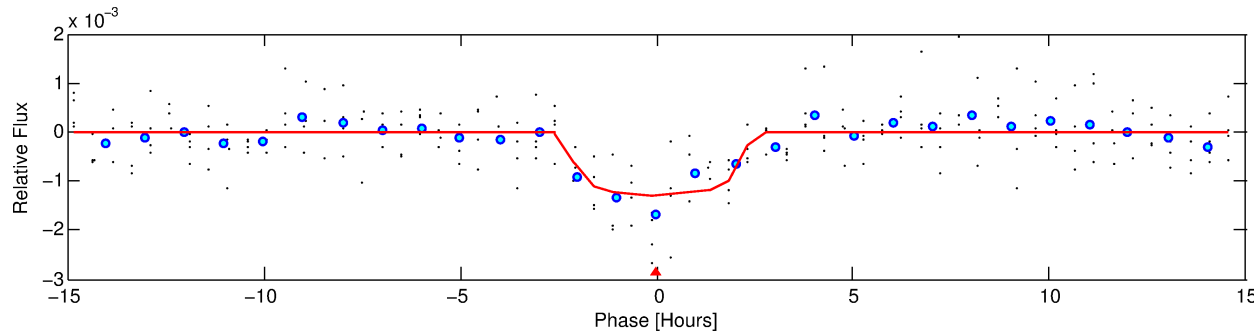
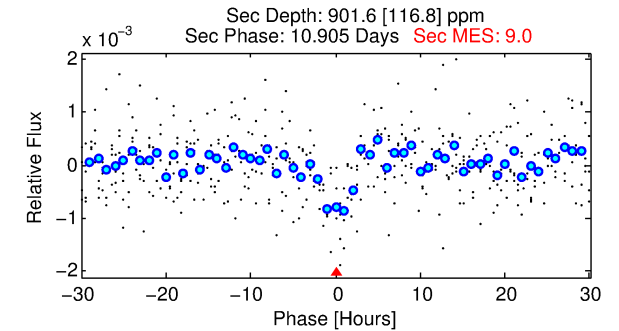
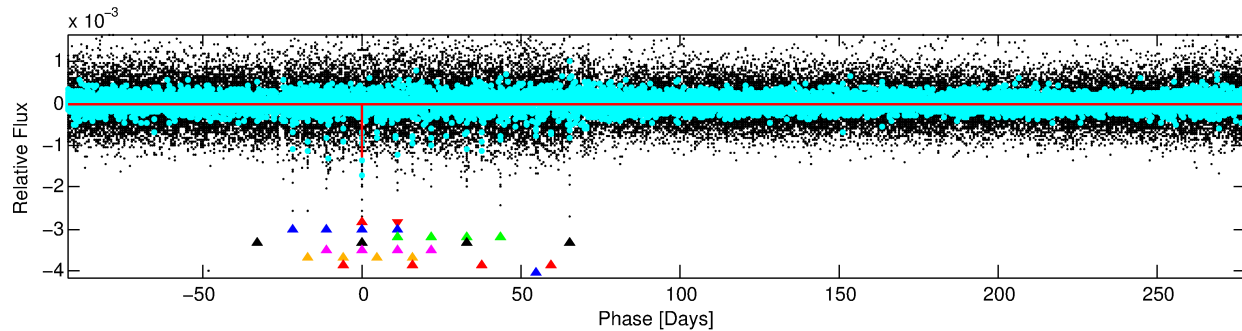
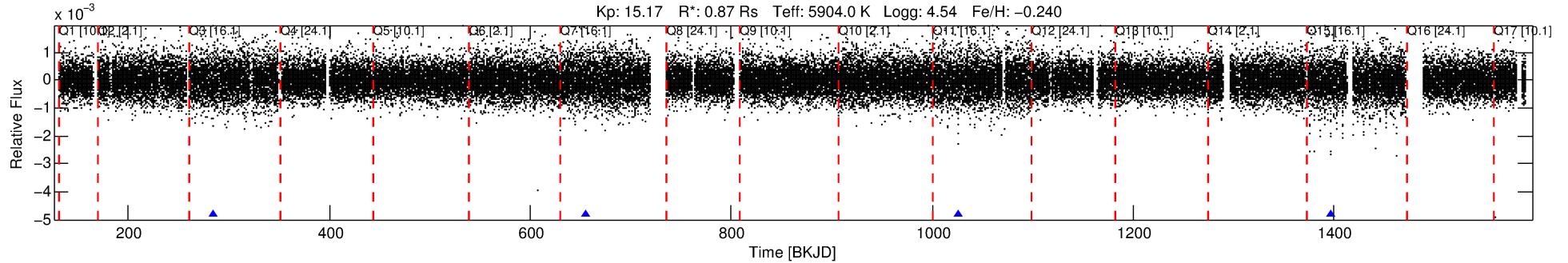
No Significant Match Found

DV One-Page Summary

KIC: 3340070 Candidate: 1 of 8 Period: 370.972 d

KOI: K01097 Corr: No Ephemeris Match

Kp: 15.17 R*: 0.87 Rs Teff: 5904.0 K Logg: 4.54 Fe/H: -0.240



DV Fit Results:

Period = 370.97219 [0.00415] d
Epoch = 284.3819 [0.0083] BKJD
Rp/R* = 0.0375 [0.0069]
a/R* = 332.02 [269.60]
b = 0.86 [0.26]
Seff = 0.82 [0.32]
Teq = 243 [24] K
Rp = 3.55 [1.25] Re
a = 0.9960 [0.2541] AU
Ag = 39055.72 [20995.33] [1.86σ]
Teffp = 5282 [536] K [9.39σ]

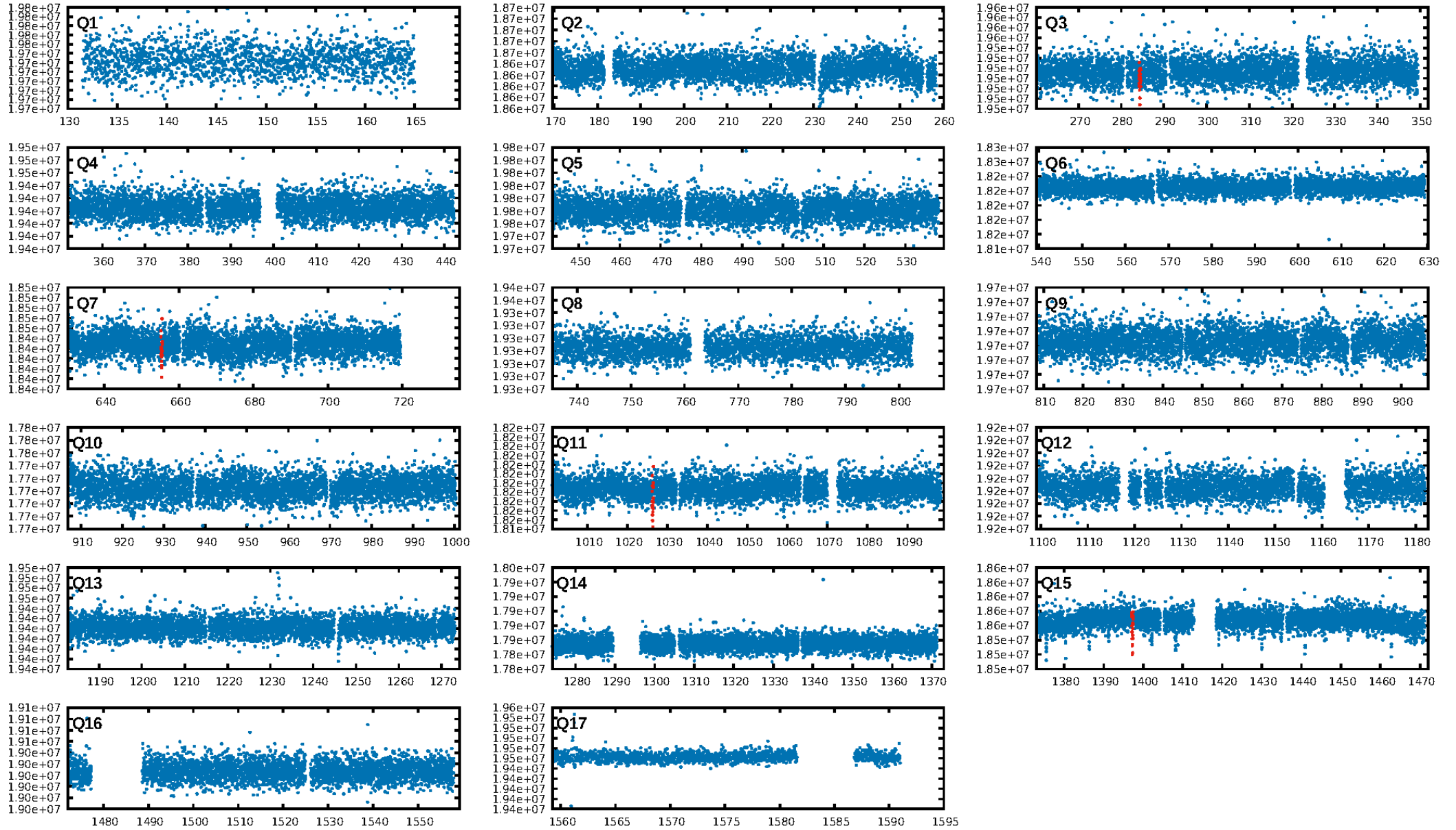
DV Diagnostic Results:

ShortPeriod-sig: 0.3% [0.00σ]
LongPeriod-sig: 100.0% [132.37σ]
ModelChiSquare2-sig: 2.5%
ModelChiSquareGof-sig: 94.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.2654
Centroid-sig: 0.0%
Centroid-so: 7.709 arcsec [6.34σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.33 [1/3]

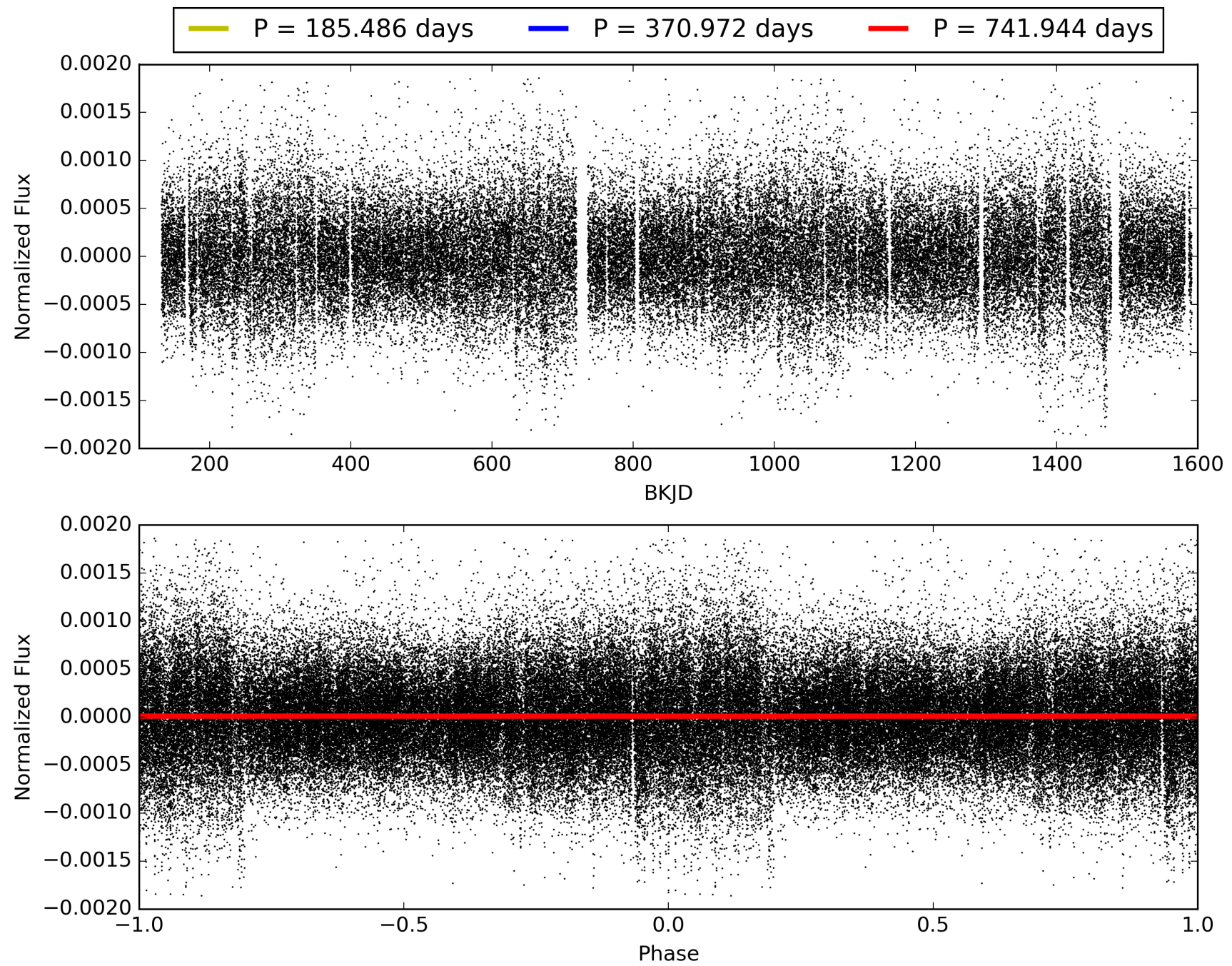
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:14:48 Z

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

TCE 003340070-01, PDC Light Curves

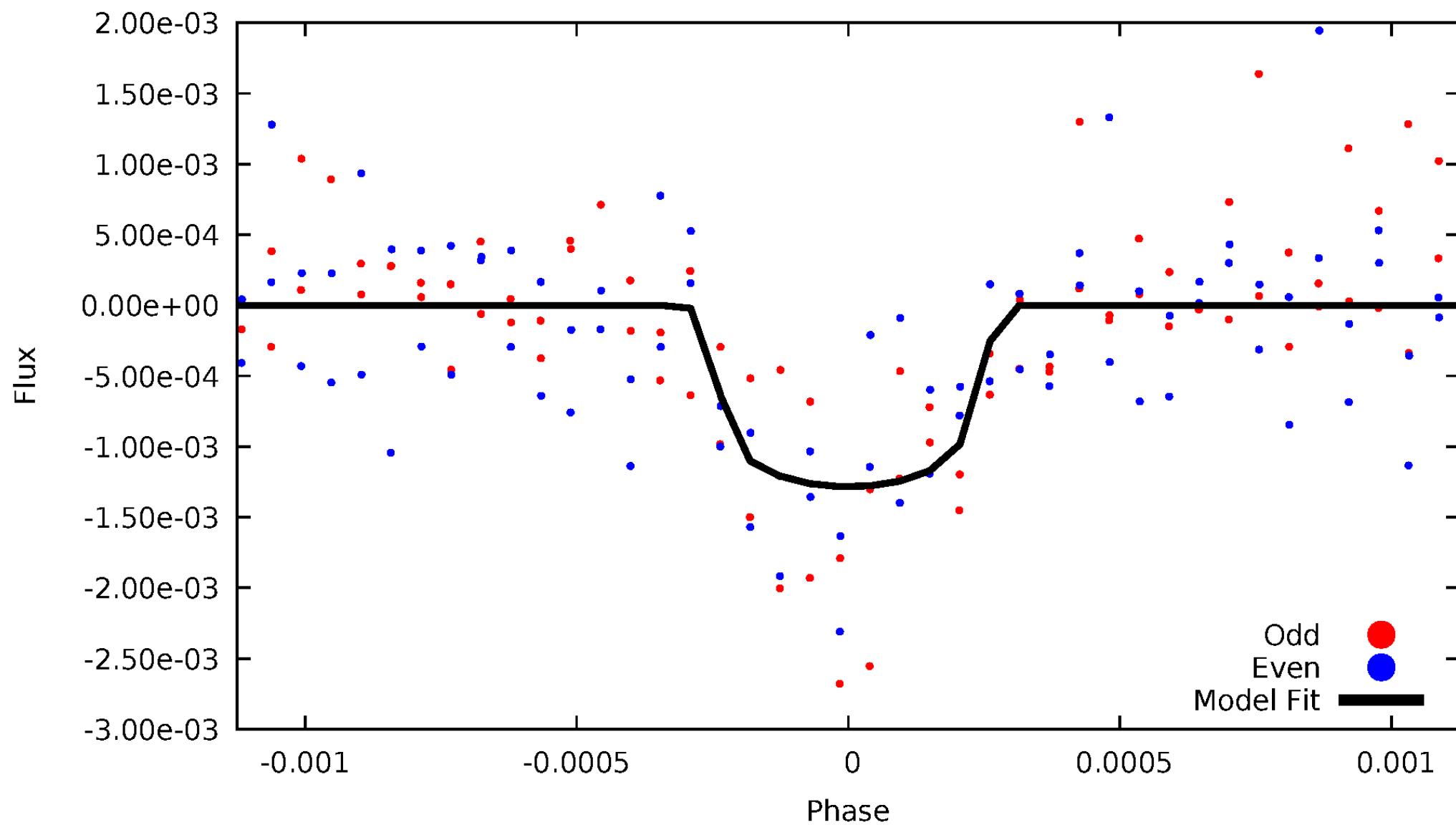


TCE 003340070-01



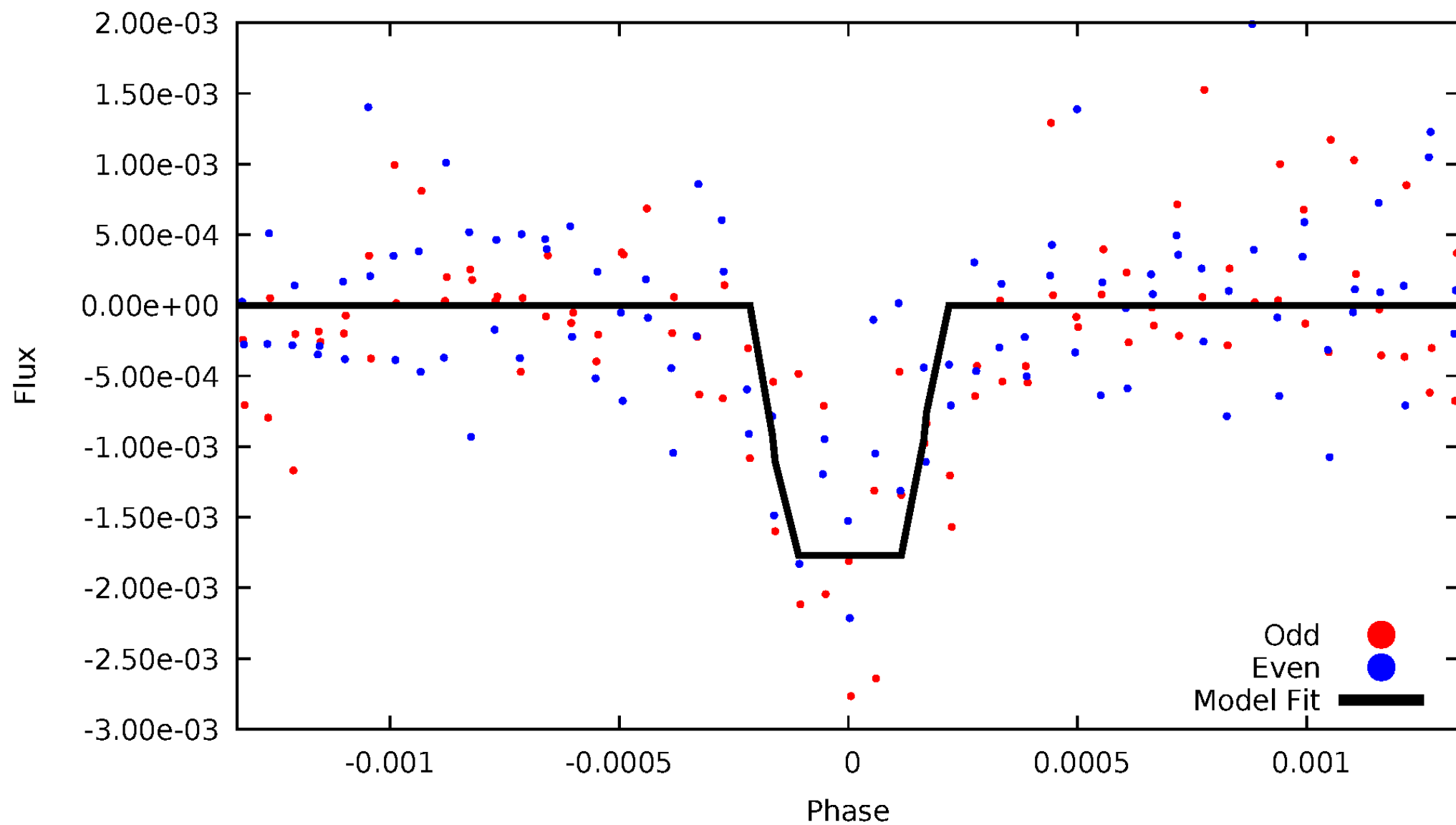
DV Odd/Even

TCE 003340070-01



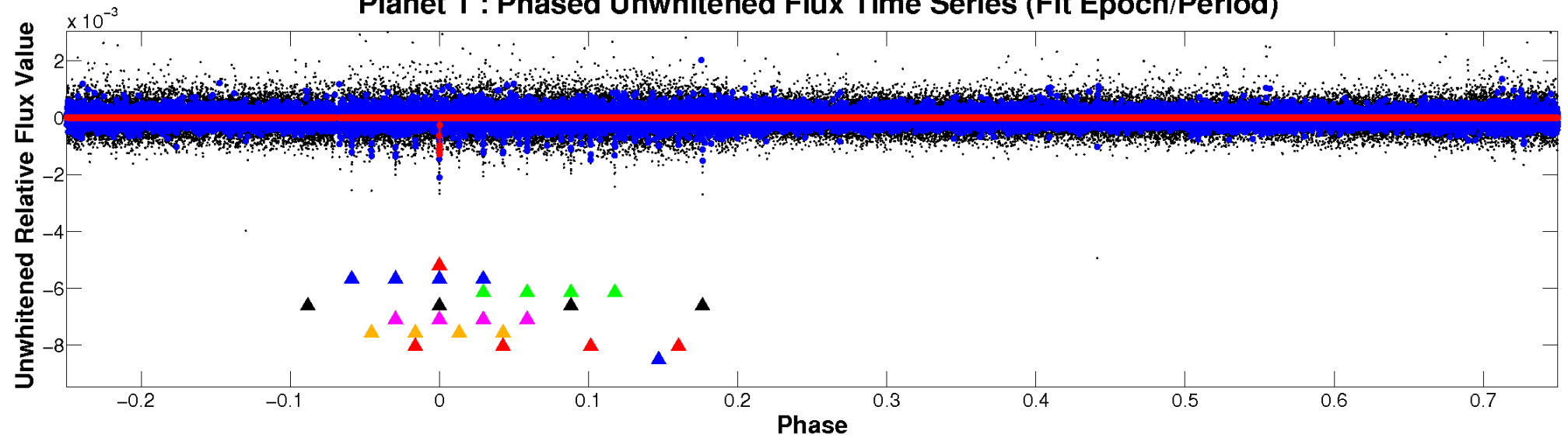
ALT Odd/Even

TCE 003340070-01

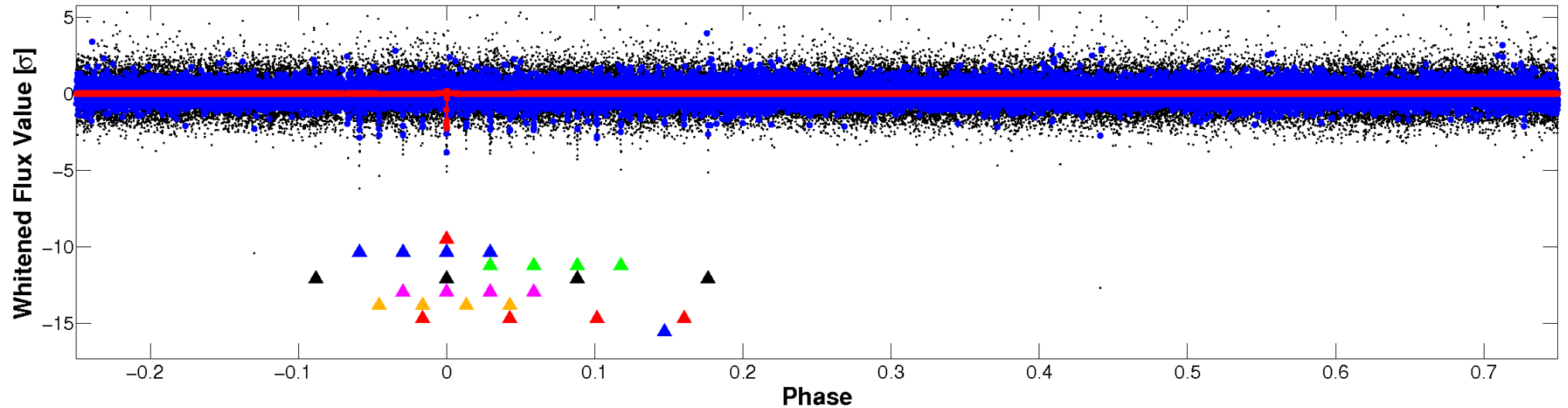


Non-Whitened Vs. Whitened Light Curve

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

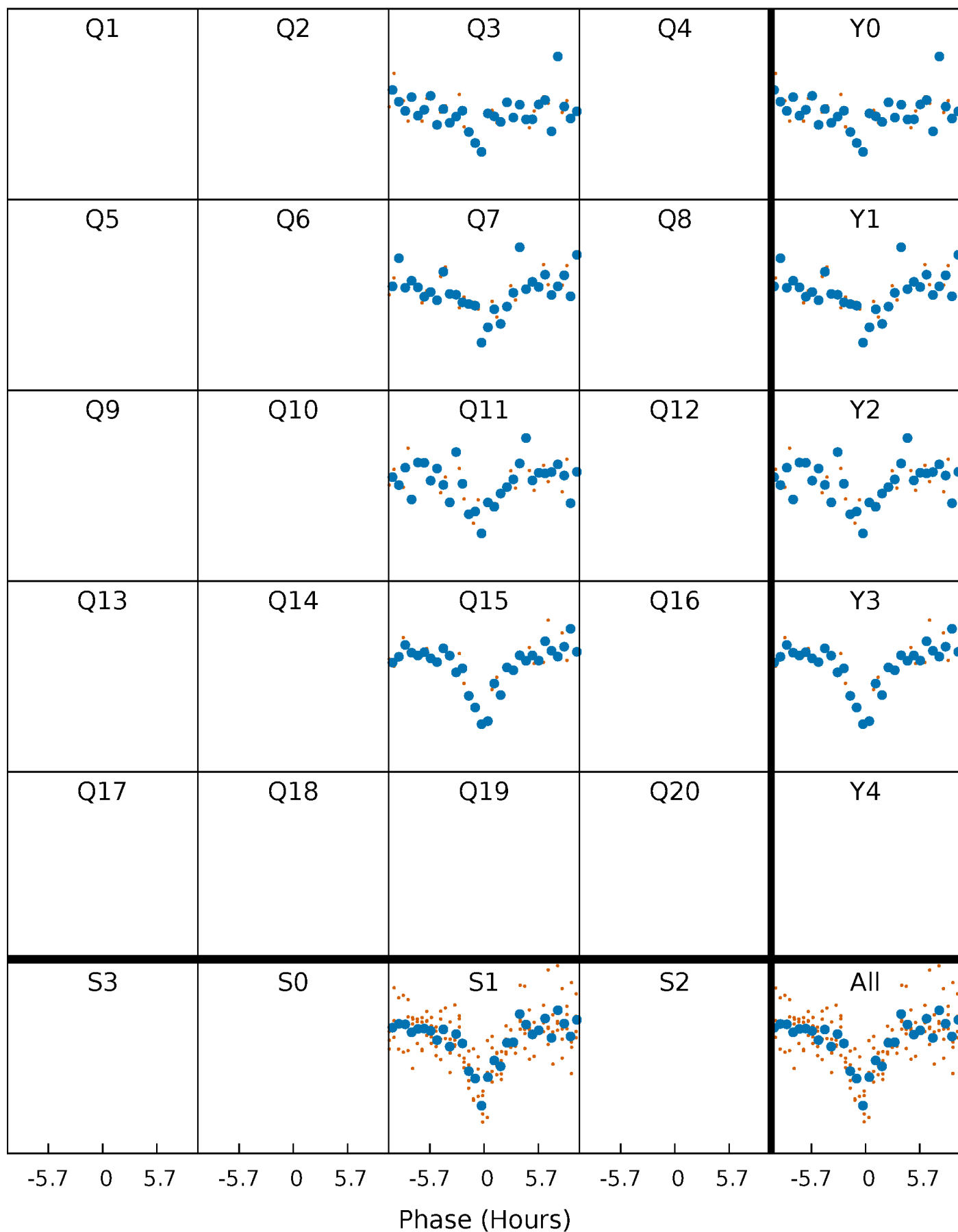


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



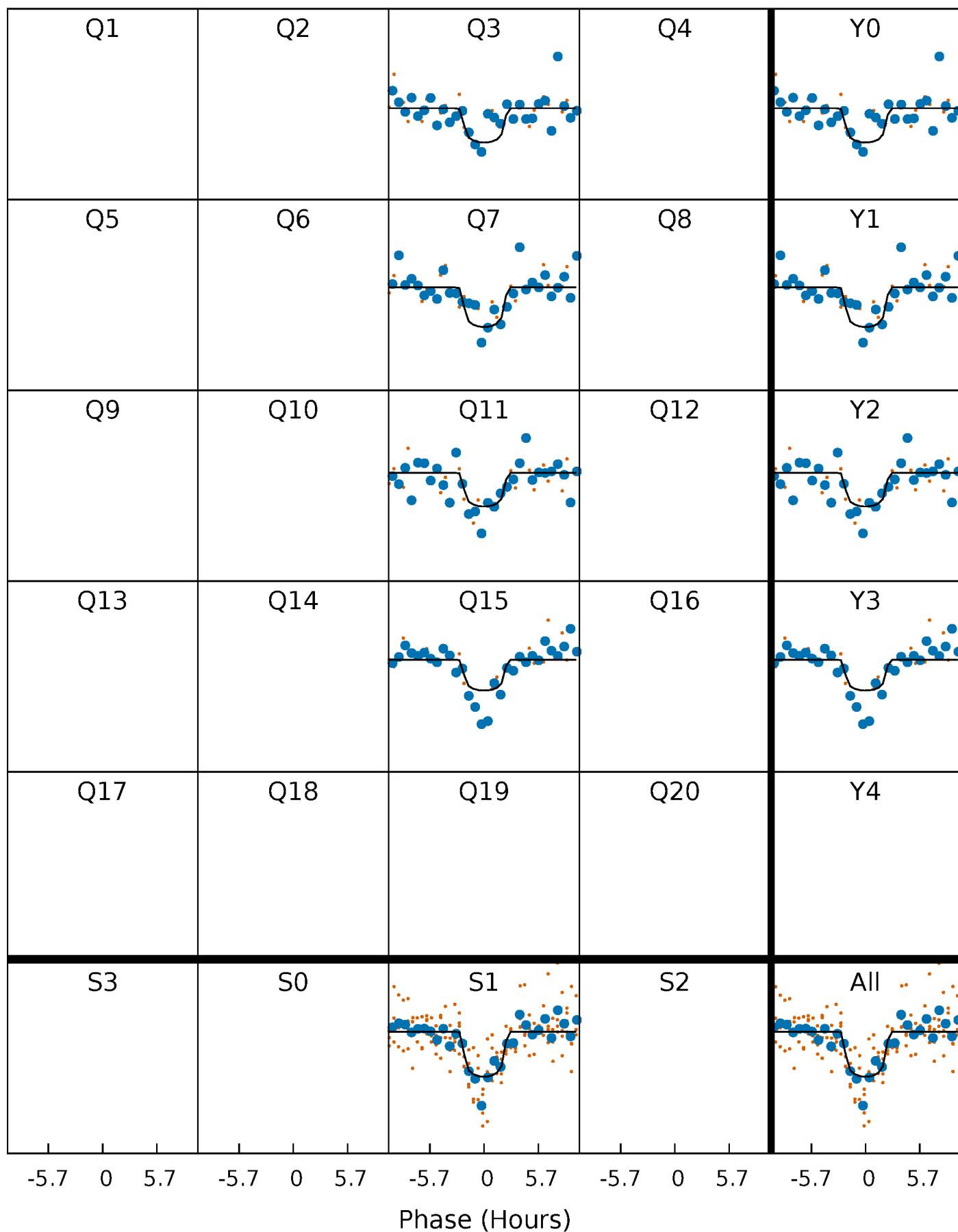
PDC Quarter-Phased Transit Curves

TCE 003340070-01 P=370.972187 Days $T_0=284.381872$ (BKJD)



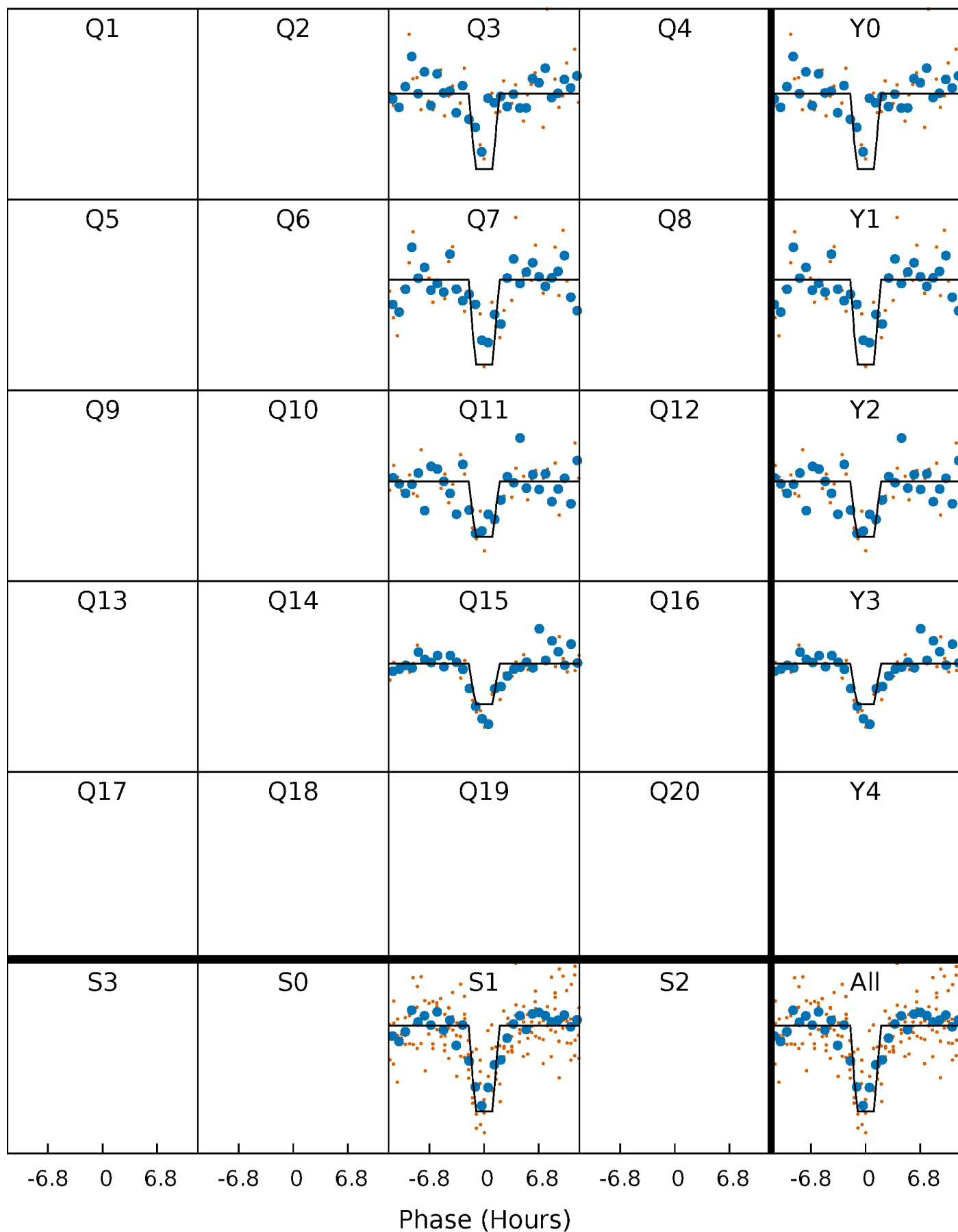
DV Quarter-Phased Transit Curves

TCE 003340070-01 P=370.972187 Days $T_0=284.381872$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

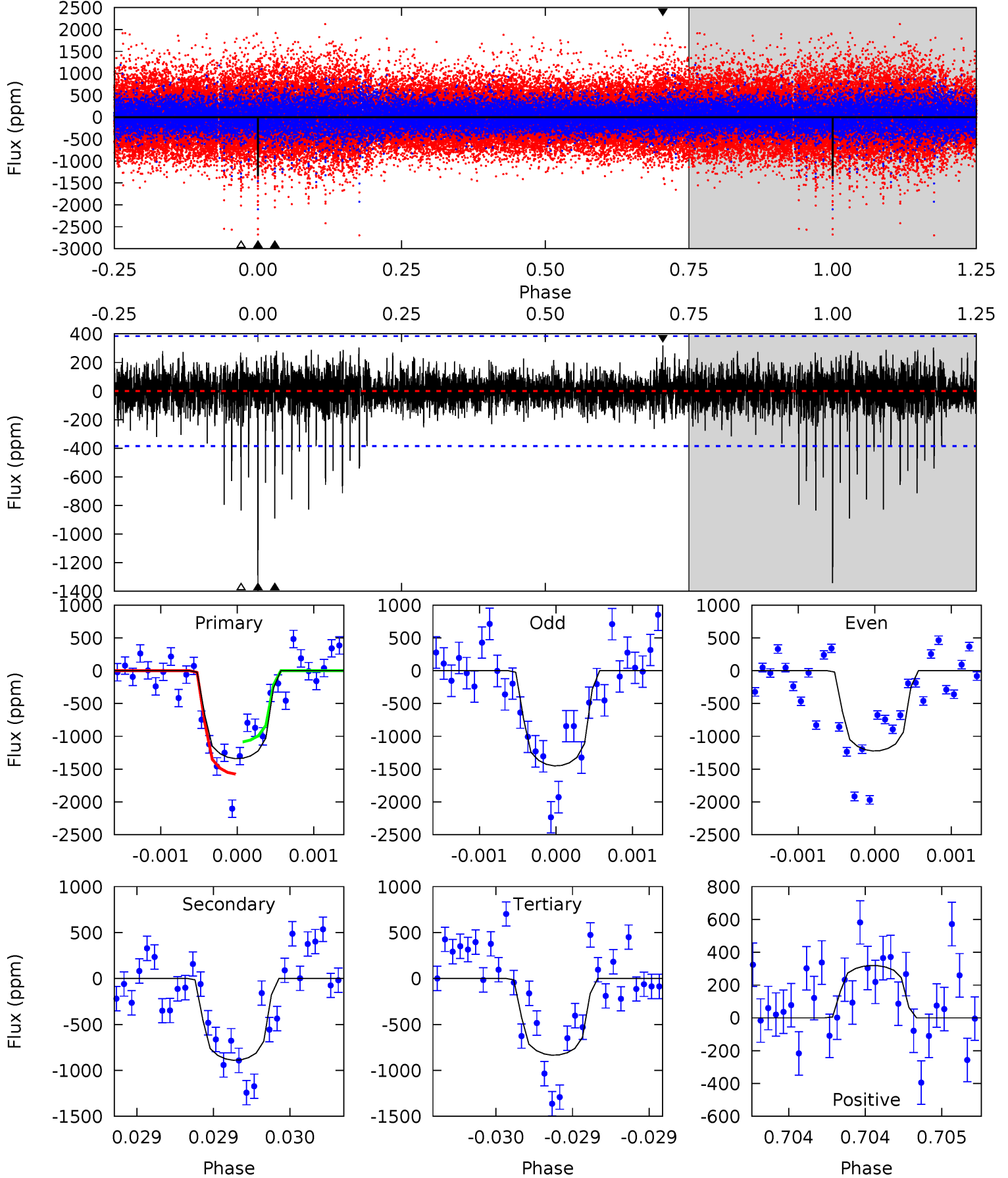
TCE 003340070-01 P=370.971282 Days $T_0=284.376696$ (BKJD)



DV Model-Shift Uniqueness Test

003340070-01, P = 370.972187 Days, E = 284.381872 Days

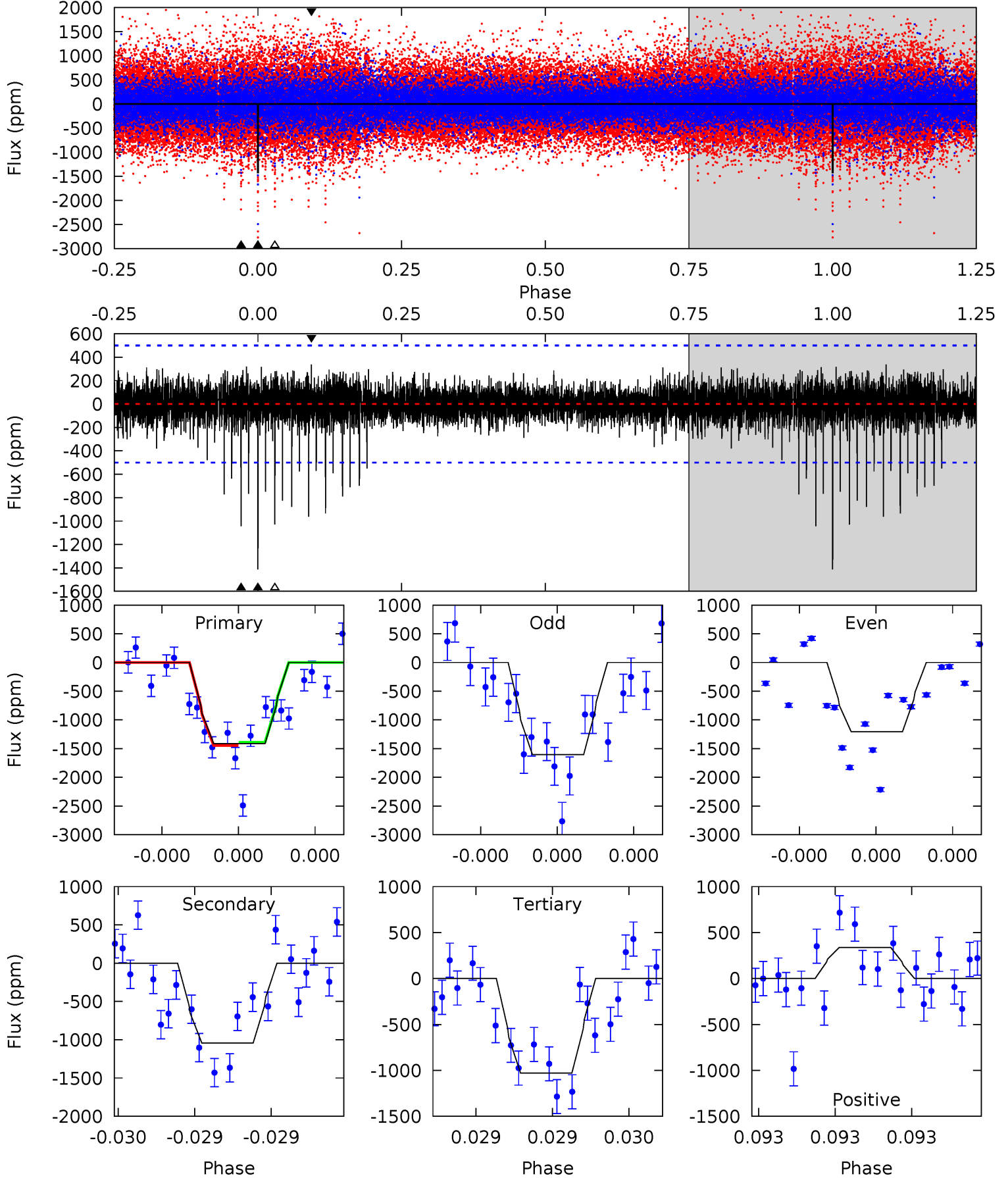
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.4	12.9	12.1	4.61	5.56	3.45	1.34	7.31	14.8	0.79	8.25	1.65	1.04	0.19	3.54



Alt Model-Shift Uniqueness Test

003340070-01, P = 370.971282 Days, E = 284.376696 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	11.8	11.6	3.82	5.64	3.59	1.19	4.33	12.1	0.15	7.94	2.25	1.07	0.19	0.30



Stellar Parameters For KIC 003340070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5904^{+160}_{-178}	$4.543^{+0.048}_{-0.204}$	$-0.240^{+0.300}_{-0.300}$	$0.867^{+0.262}_{-0.082}$	$0.958^{+0.107}_{-0.119}$	$2.073^{+0.399}_{-1.039}$
	+3%/-3%	+1%/-4%	+125%/-125%	+30%/-9%	+11%/-12%	+19%/-50%
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 003340070-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-890 ± 69	$3.67^{+0.88}_{-0.74}$	345^{+26}_{-14}	5315^{+587}_{-408}	35341^{+19868}_{-12072}
Alt.	-1043 ± 89	$4.13^{+0.92}_{-0.73}$	346^{+26}_{-15}	5222^{+449}_{-375}	31993^{+14942}_{-10339}

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

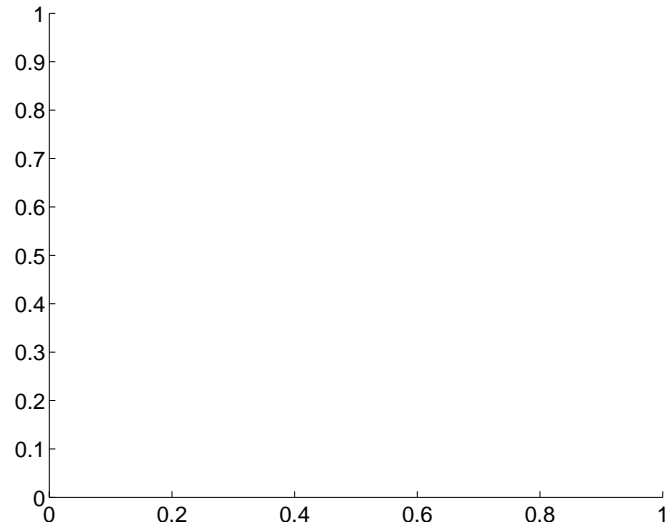
Supplemental centroid analysis for 003340070-01. Kepler magnitude: 15.17. Transit SNR 11.40

There are 0 quarters with good PRF difference image offsets

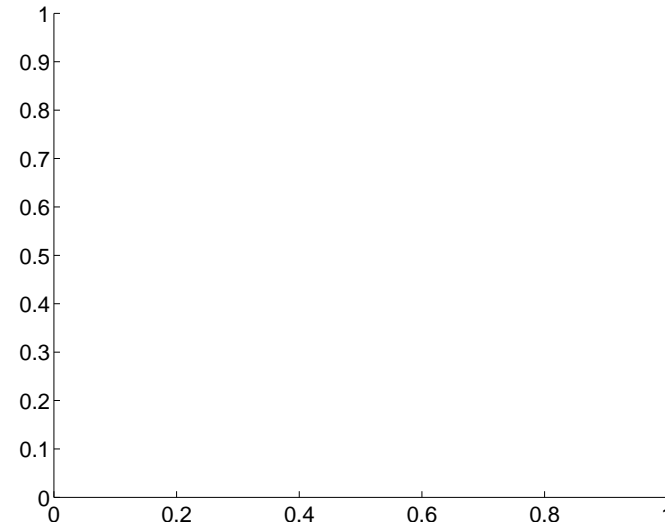
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	7.71 ± 1.22	6.34	0.38 ± 1.31	7.70 ± 1.22

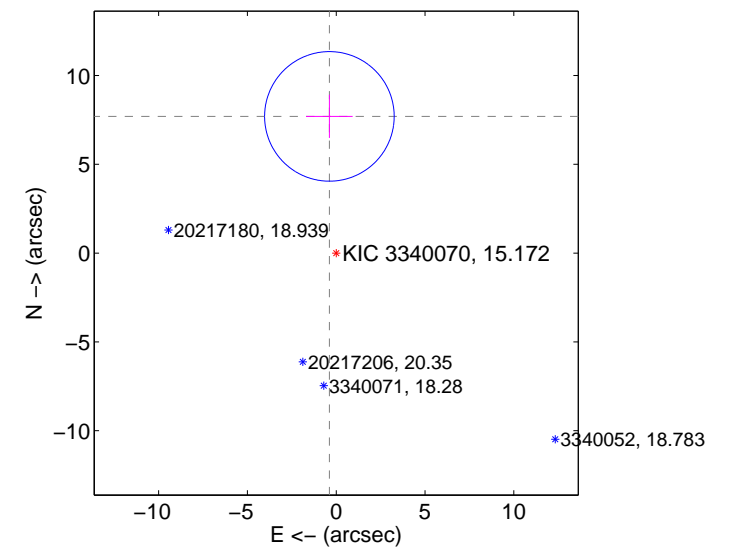
There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC

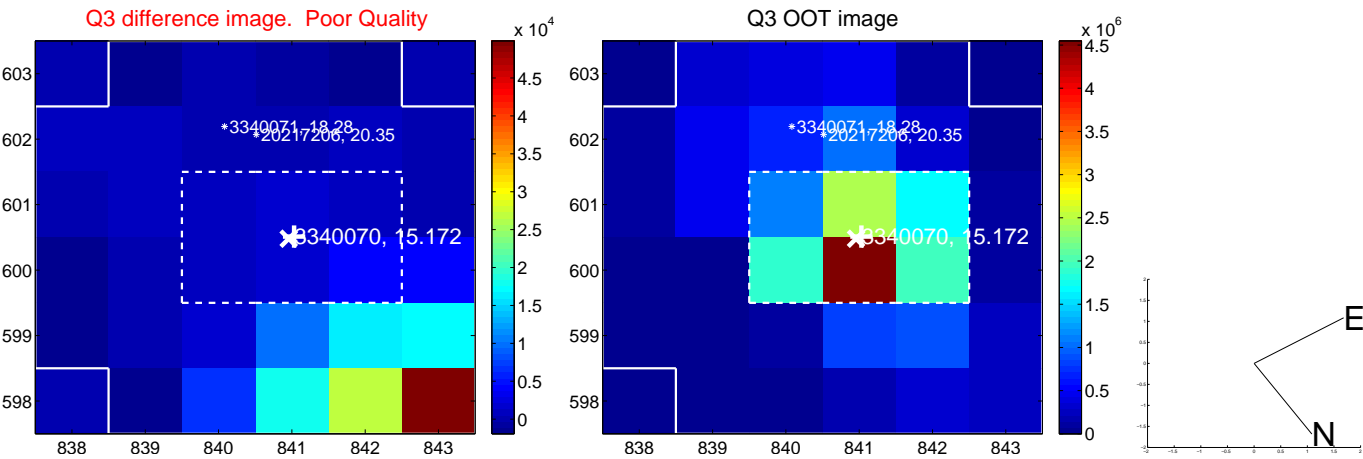


offset from photometric centroids

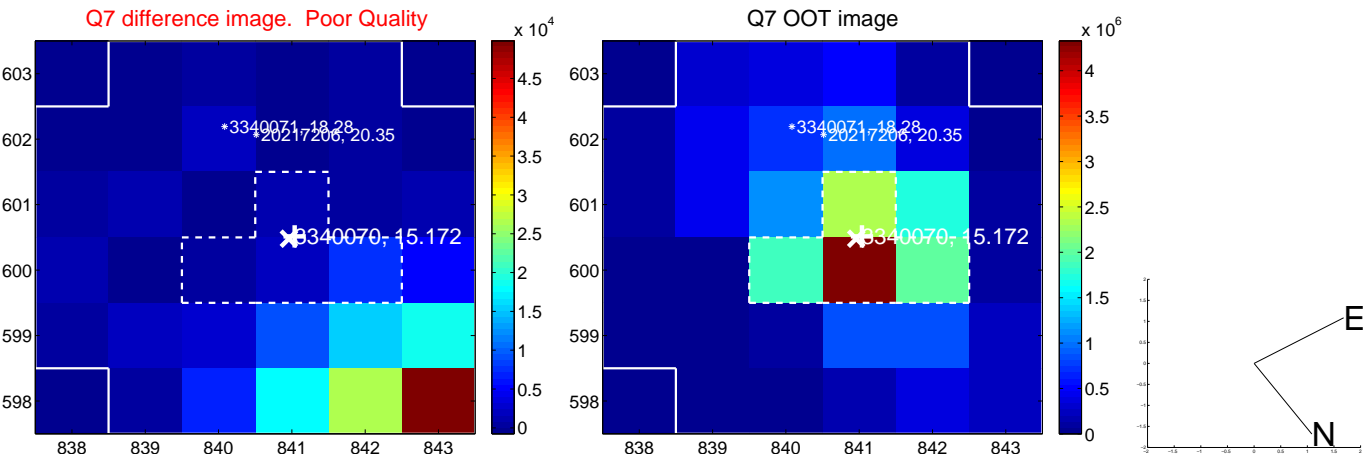


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

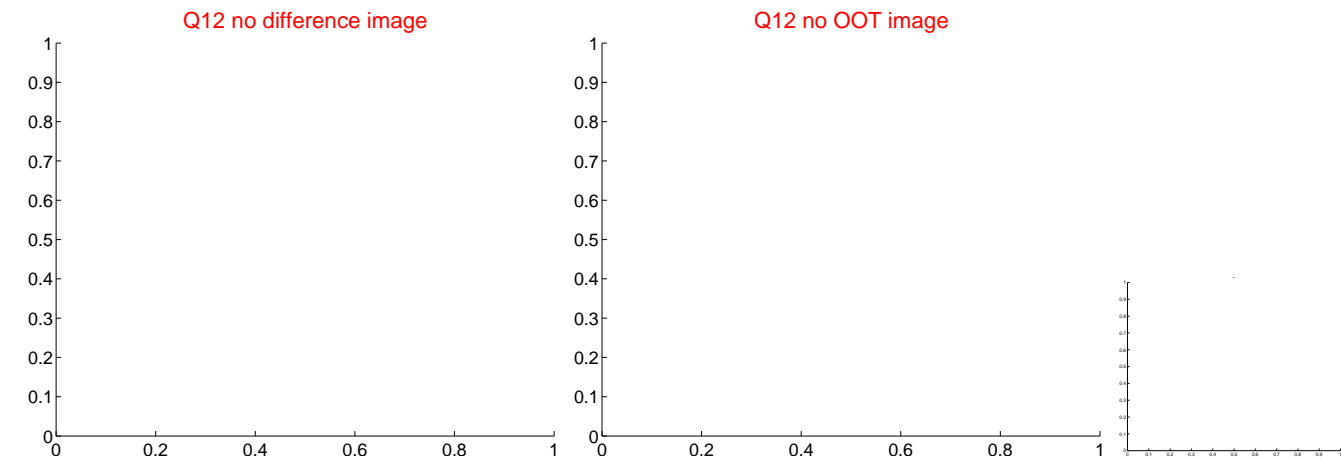
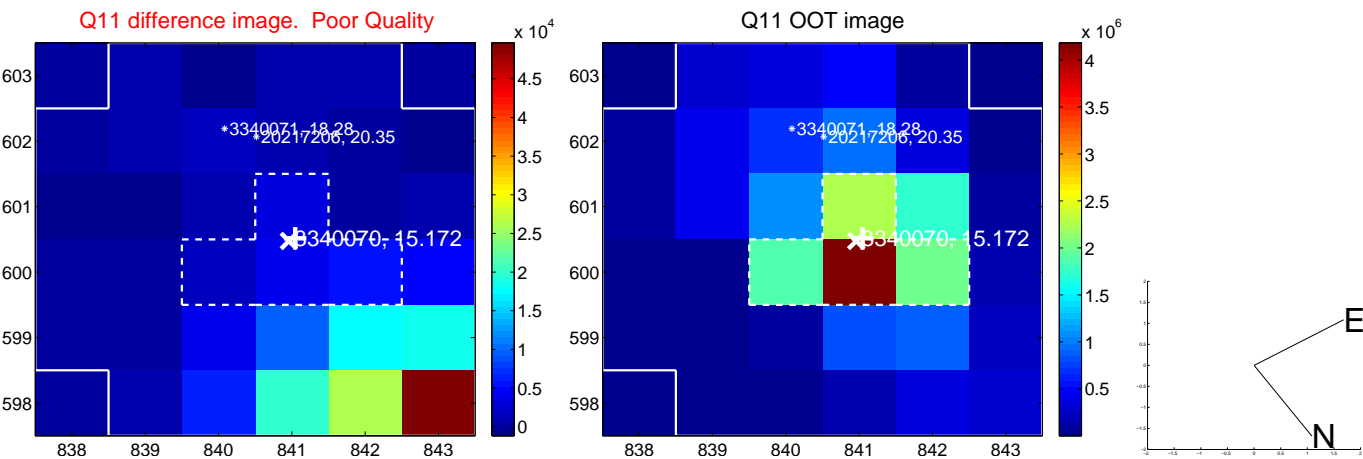
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



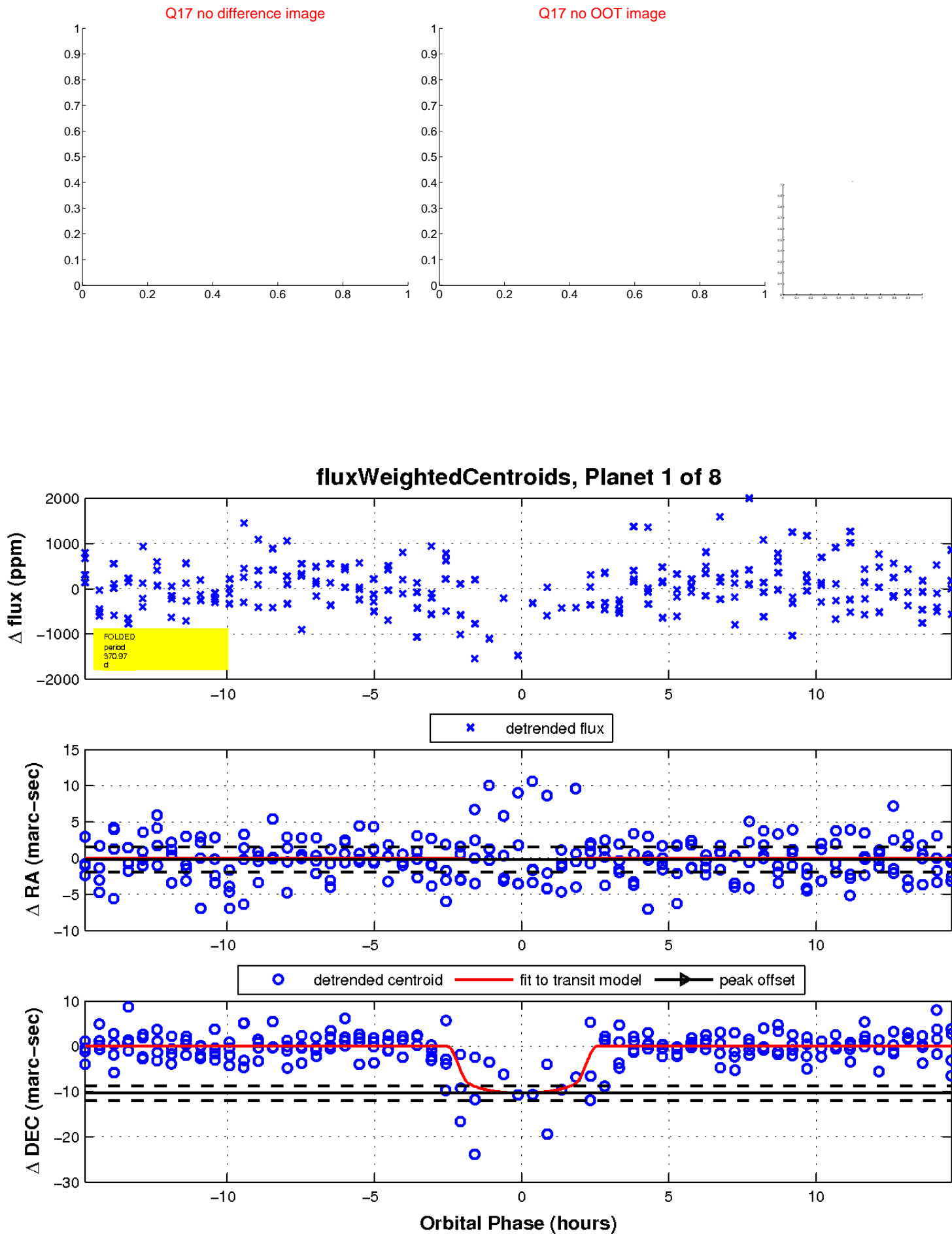
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

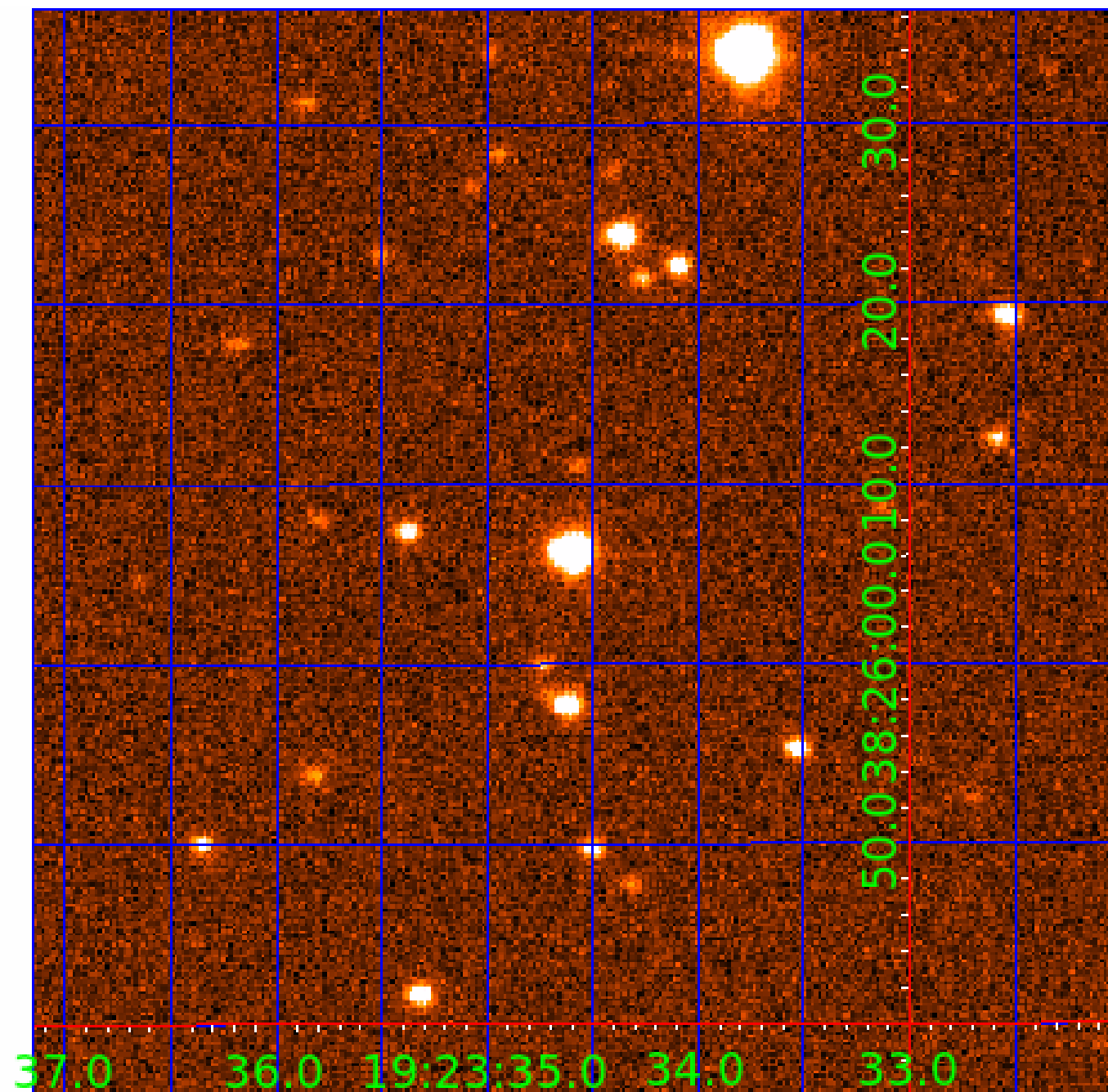


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003340070

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})
003340070-01	OBS	No	370.972187	284.381872	1283.2	5.006	11.4	11.4	0.87	5904	3.55	0.82
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003340070-03	OBS	No	360.063975	328.028899	917.1	4.908	9.9	9.6	0.87	5904	2.75	0.86
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003340070-07	OBS	No	349.136961	343.871902	1032.3	3.390	7.8	8.9	0.87	5904	3.23	0.89
003340070-08	OBS	No	370.971282	338.932061	734.7	4.500	7.3	-1.0	0.87	5904	2.34	0.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340070-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—CENT_FEW_DIFFS
003340070-02	OBS	FP	0.00	1	0	1	0	INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET
003340070-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-04	OBS	FP	0.04	0	0	1	0	CENT_RESOLVED_OFFSET
003340070-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
003340070-06	OBS	FP	0.00	1	0	0	0	MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003340070-07	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

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

Ephemeris Match Information For 003340070-02

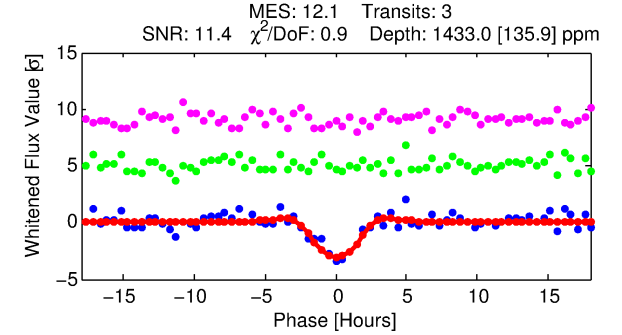
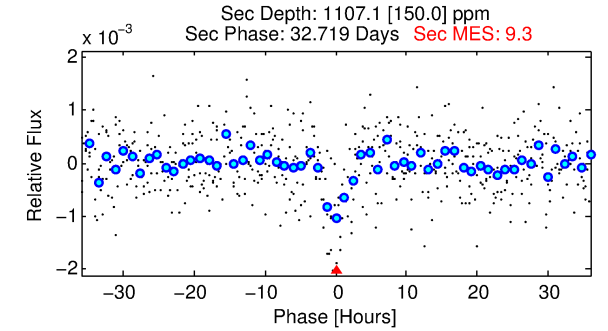
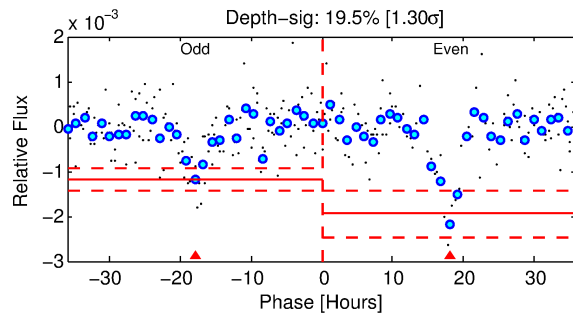
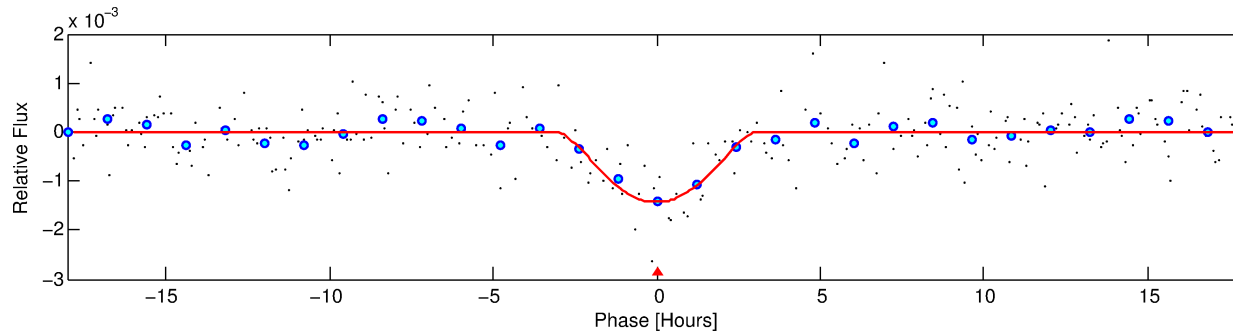
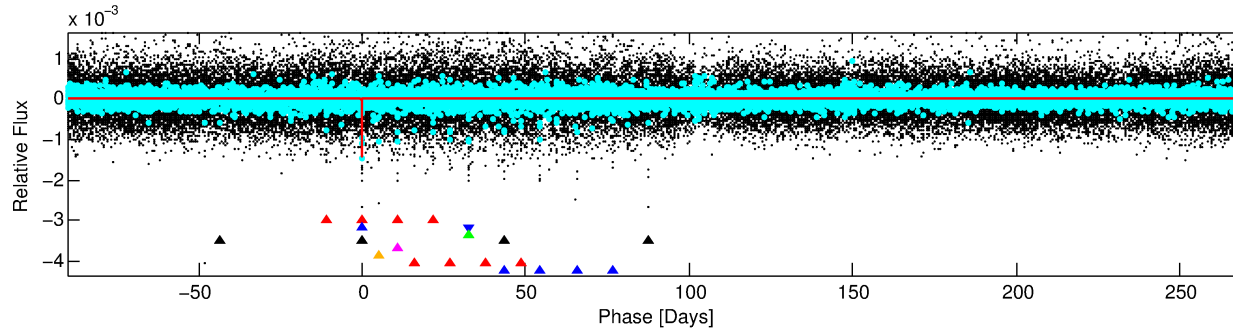
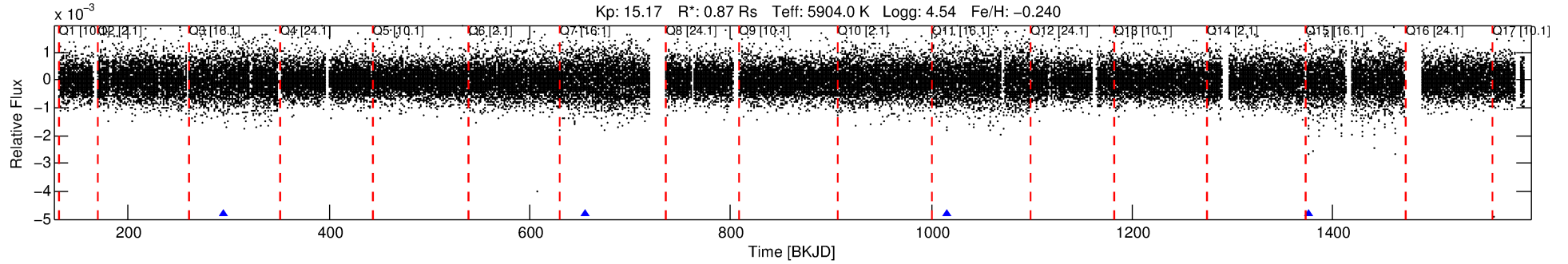
No Significant Match Found

DV One-Page Summary

KIC: 3340070 Candidate: 2 of 8 Period: 360.064 d

KOI: K01097 Corr: No Ephemeris Match

Kp: 15.17 R*: 0.87 Rs Teff: 5904.0 K Logg: 4.54 Fe/H: -0.240



DV Fit Results:

Period = 360.06443 [0.00576] d
Epoch = 295.3035 [0.0129] BKJD
Rp/R* = 0.0589 [0.1562]
a/R* = 173.56 [128.57]
b = 0.99 [0.25]
Seff = 0.86 [0.34]
Teq = 245 [24] K
Rp = 5.57 [14.88] Re
a = 0.9764 [0.2491] AU
Ag = 18683.78 [99364.38] [0.19σ]
Teffp = 4437 [5886] K [0.71σ]

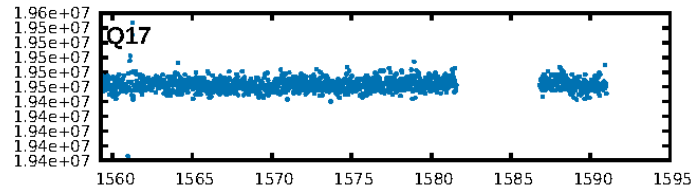
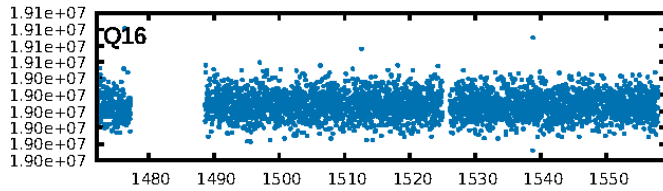
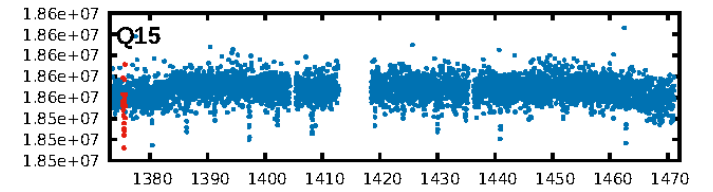
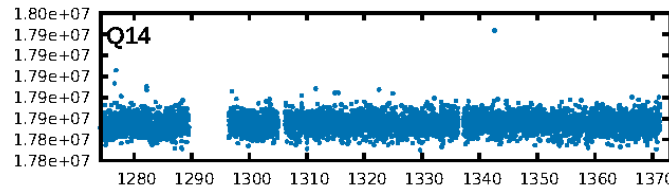
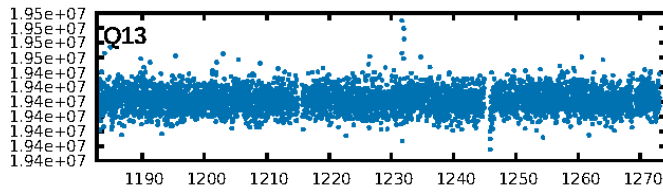
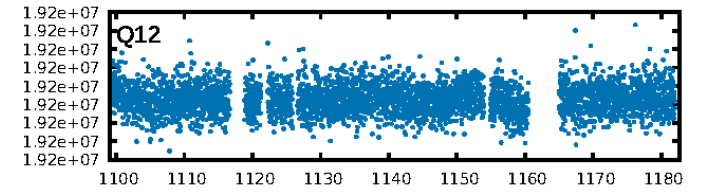
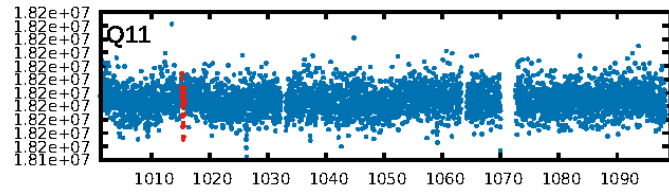
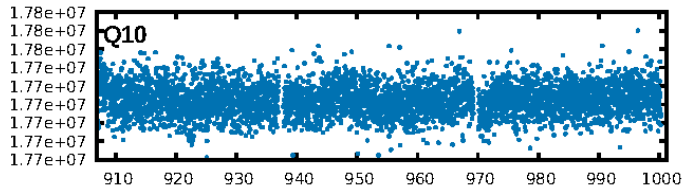
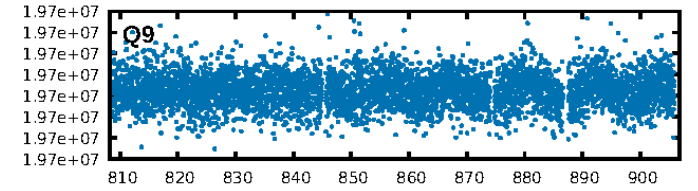
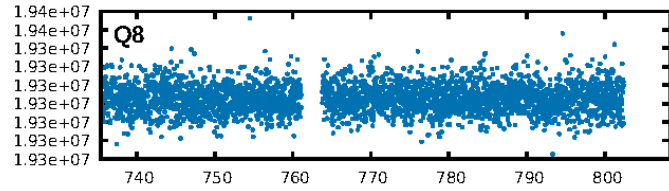
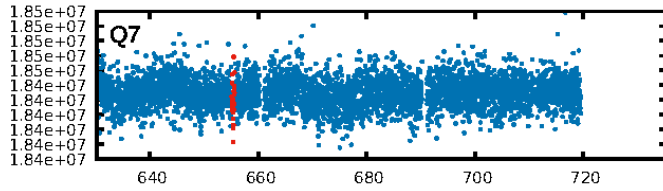
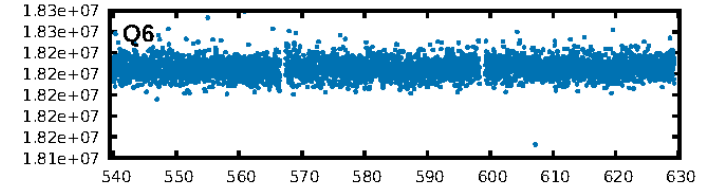
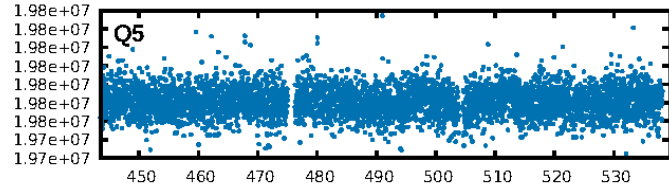
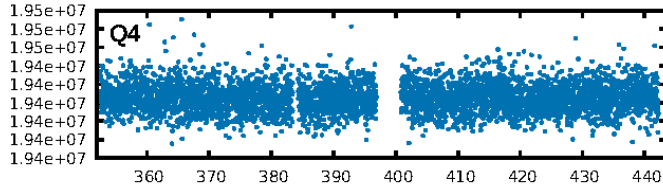
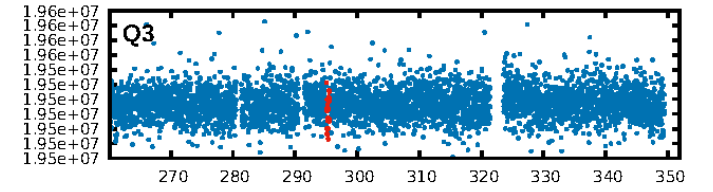
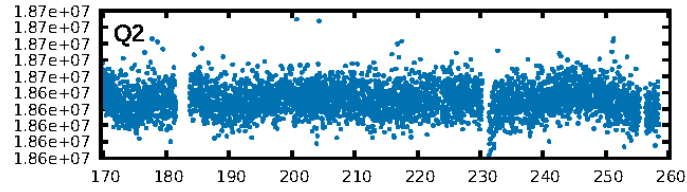
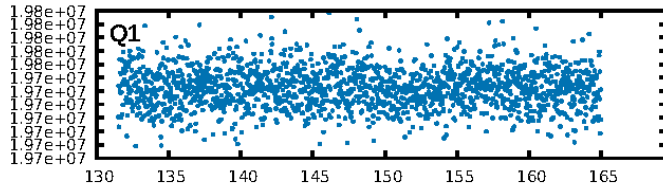
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 100.0% [34.87σ]
ModelChiSquare2-sig: 1.3%
ModelChiSquareGof-sig: 97.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.3095
Centroid-sig: 0.0%
Centroid-so: 17.528 arcsec [15.52σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.75 [3/4]

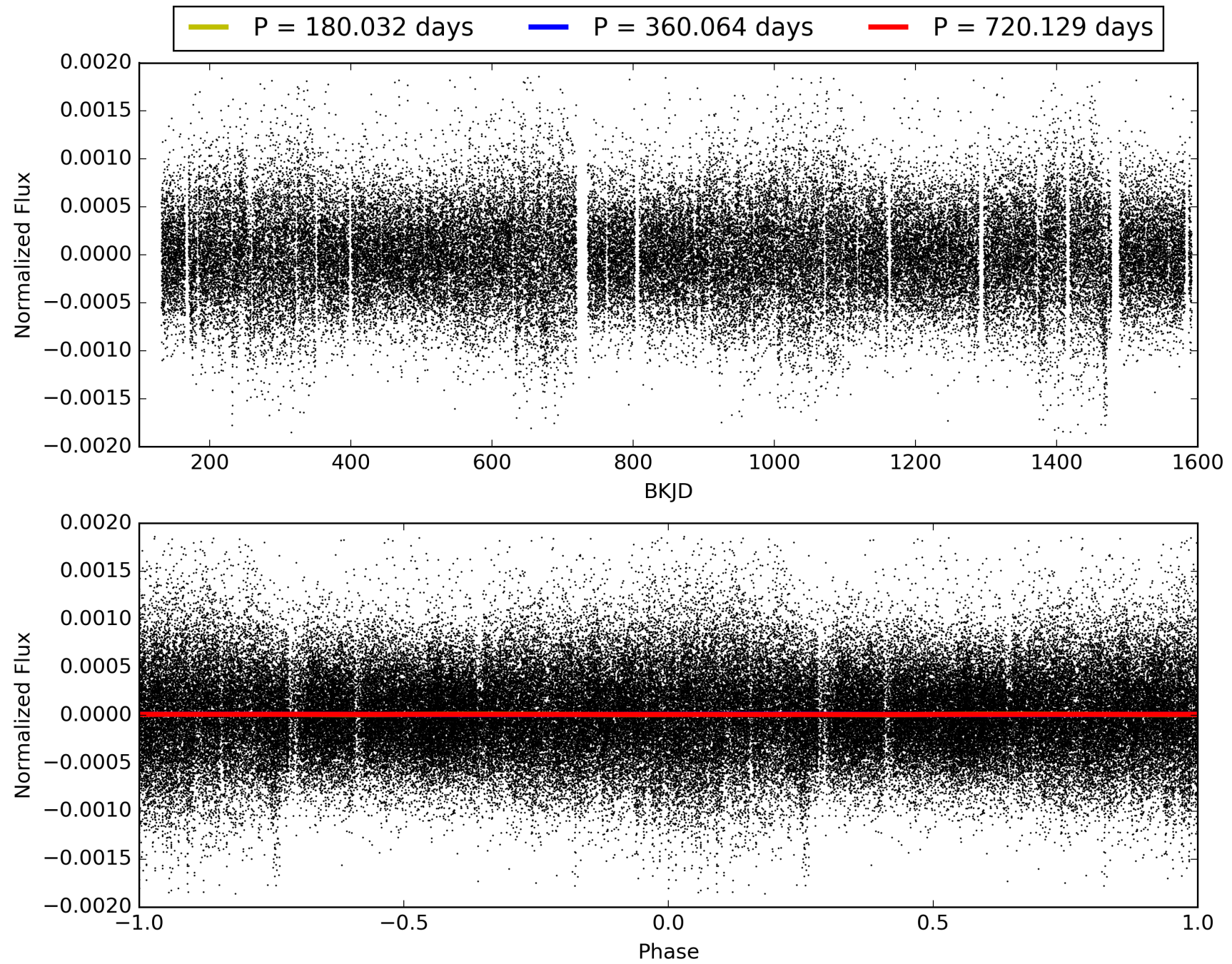
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:15:00 Z

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

TCE 003340070-02, PDC Light Curves

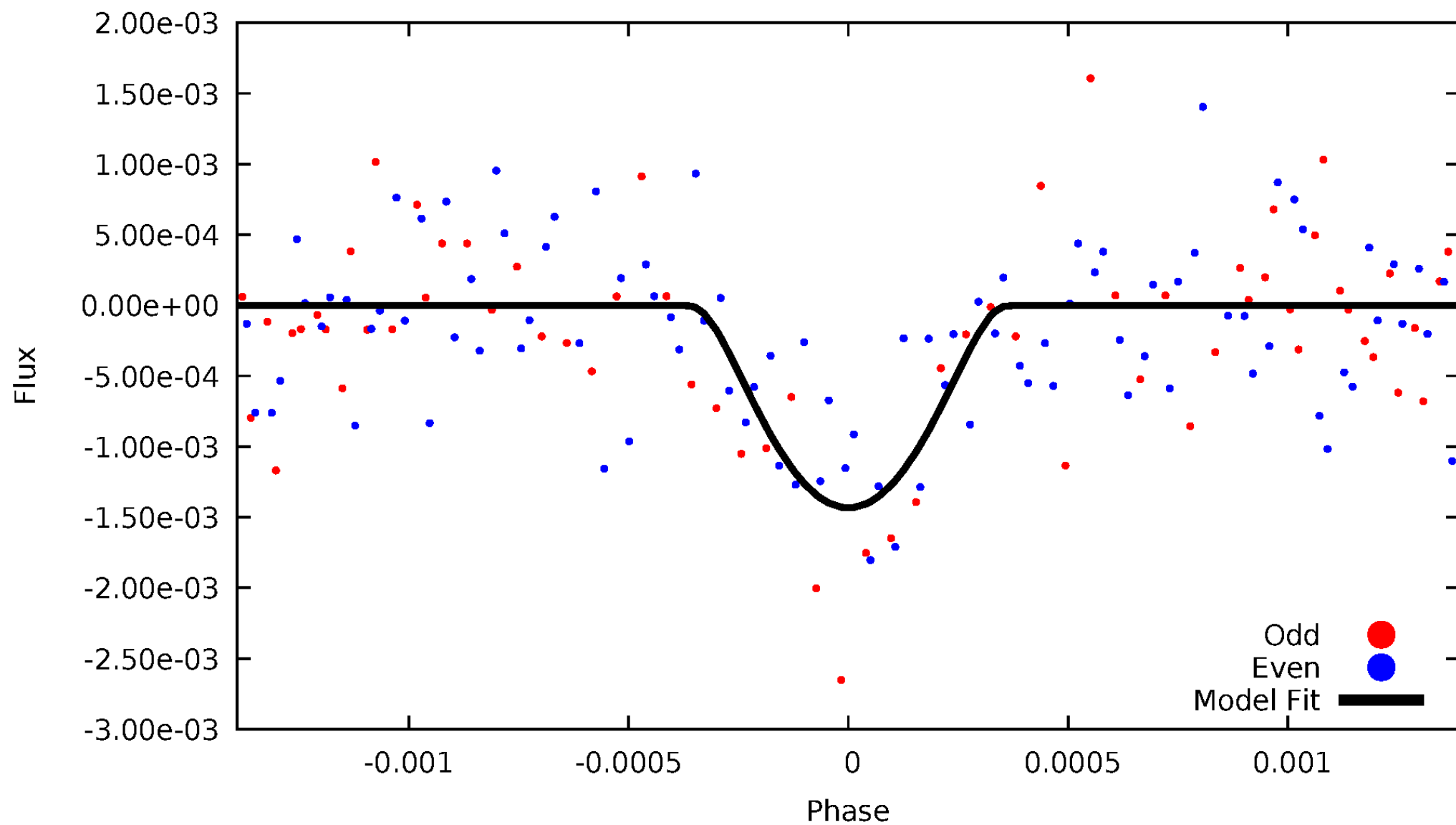


TCE 003340070-02



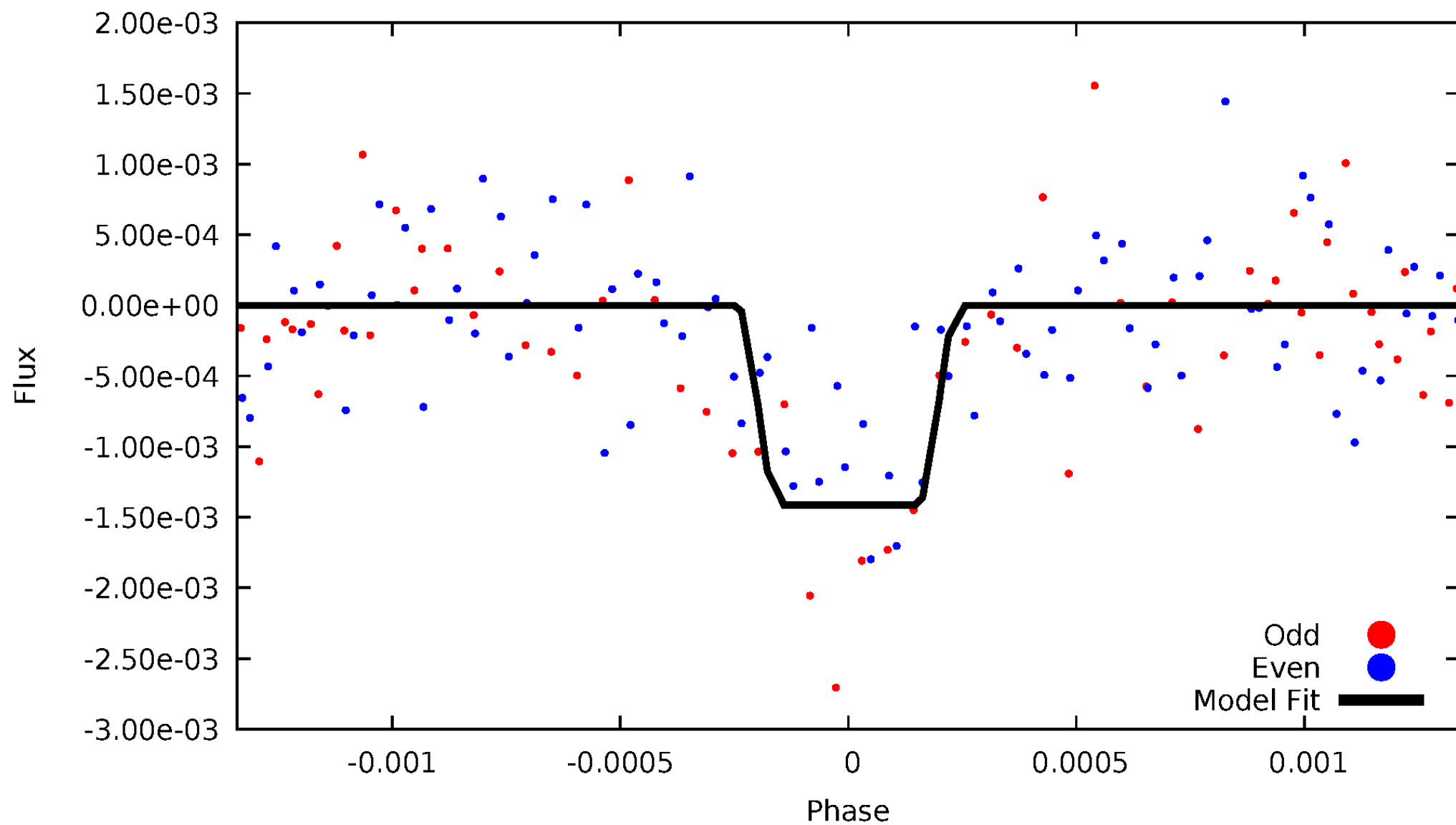
DV Odd/Even

TCE 003340070-02



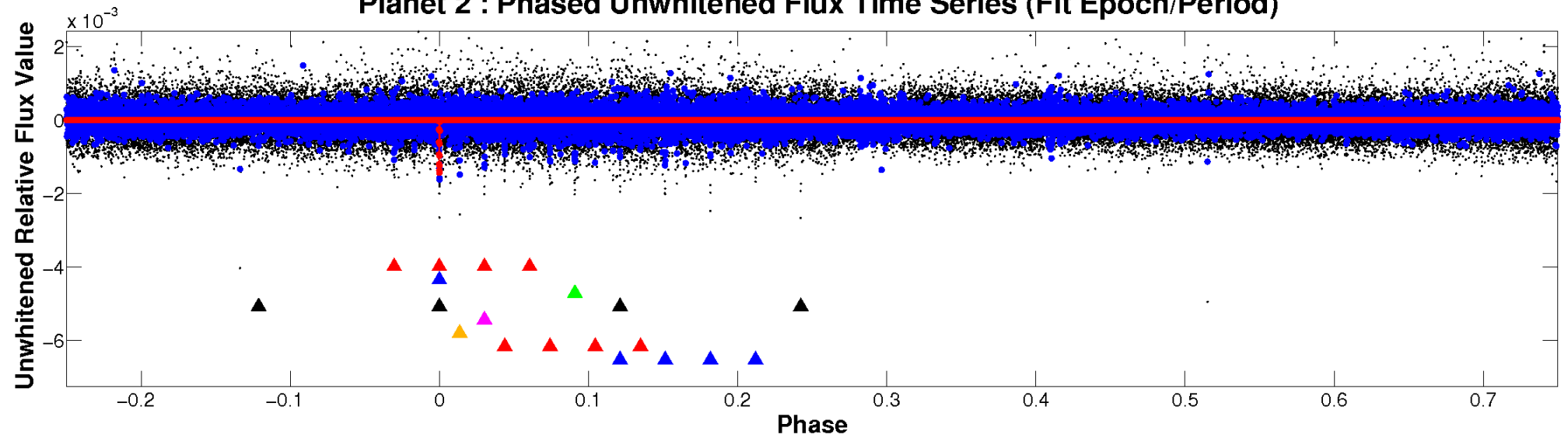
ALT Odd/Even

TCE 003340070-02

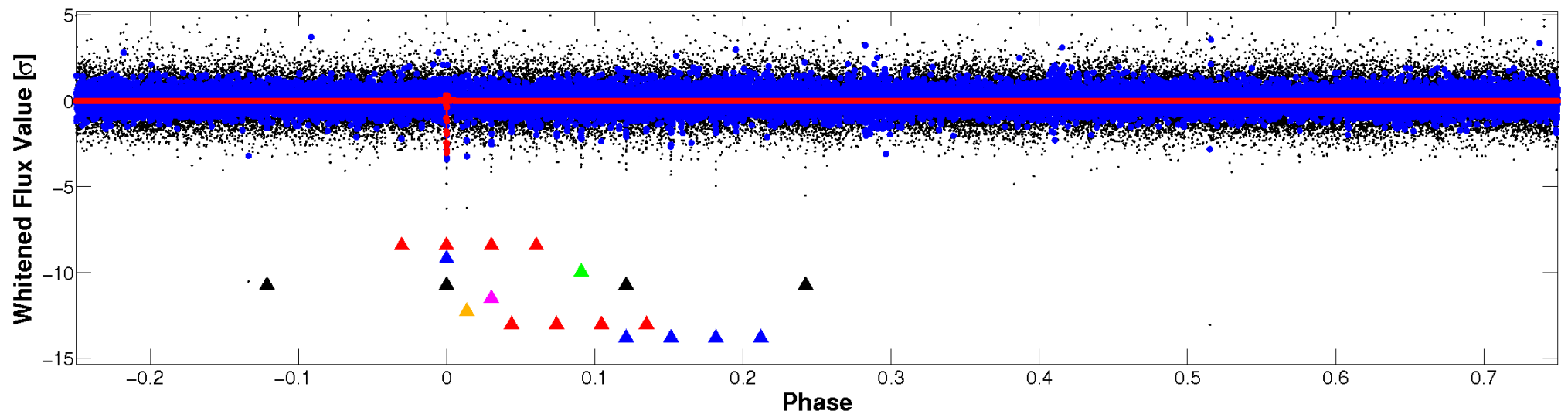


Non-Whitened Vs. Whitened Light Curve

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

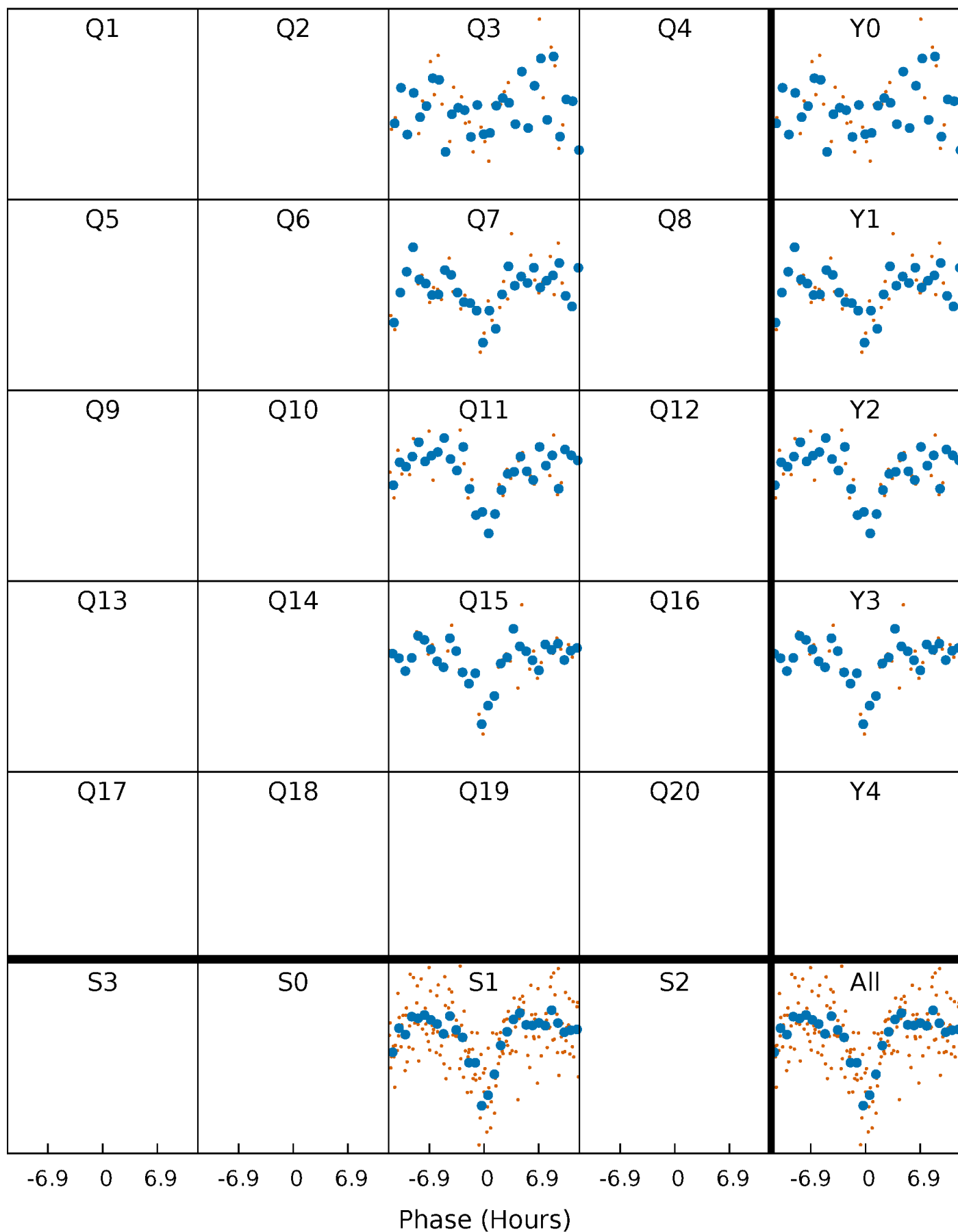


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



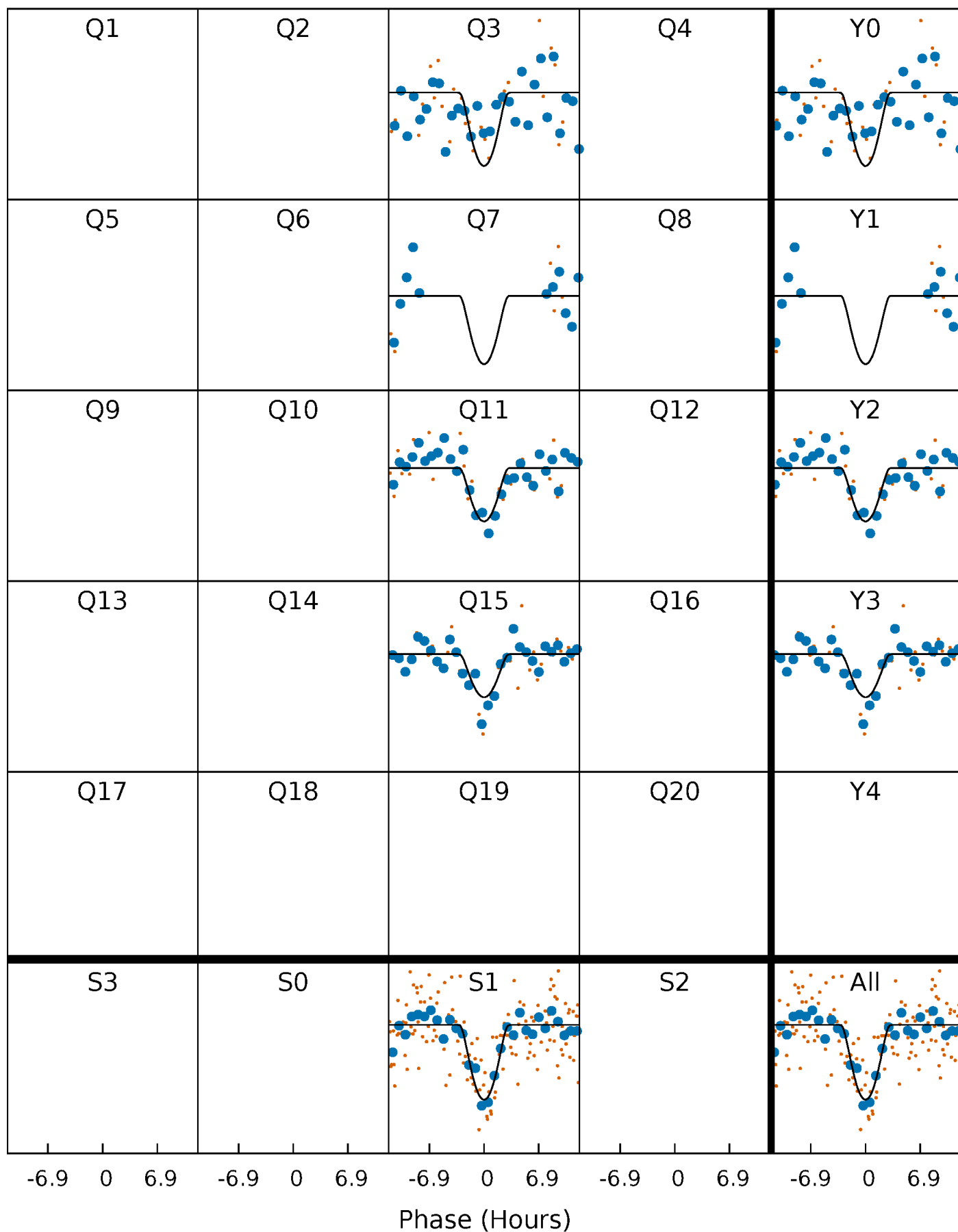
PDC Quarter-Phased Transit Curves

TCE 003340070-02 $P=360.064432$ Days $T_0=295.303460$ (BKJD)



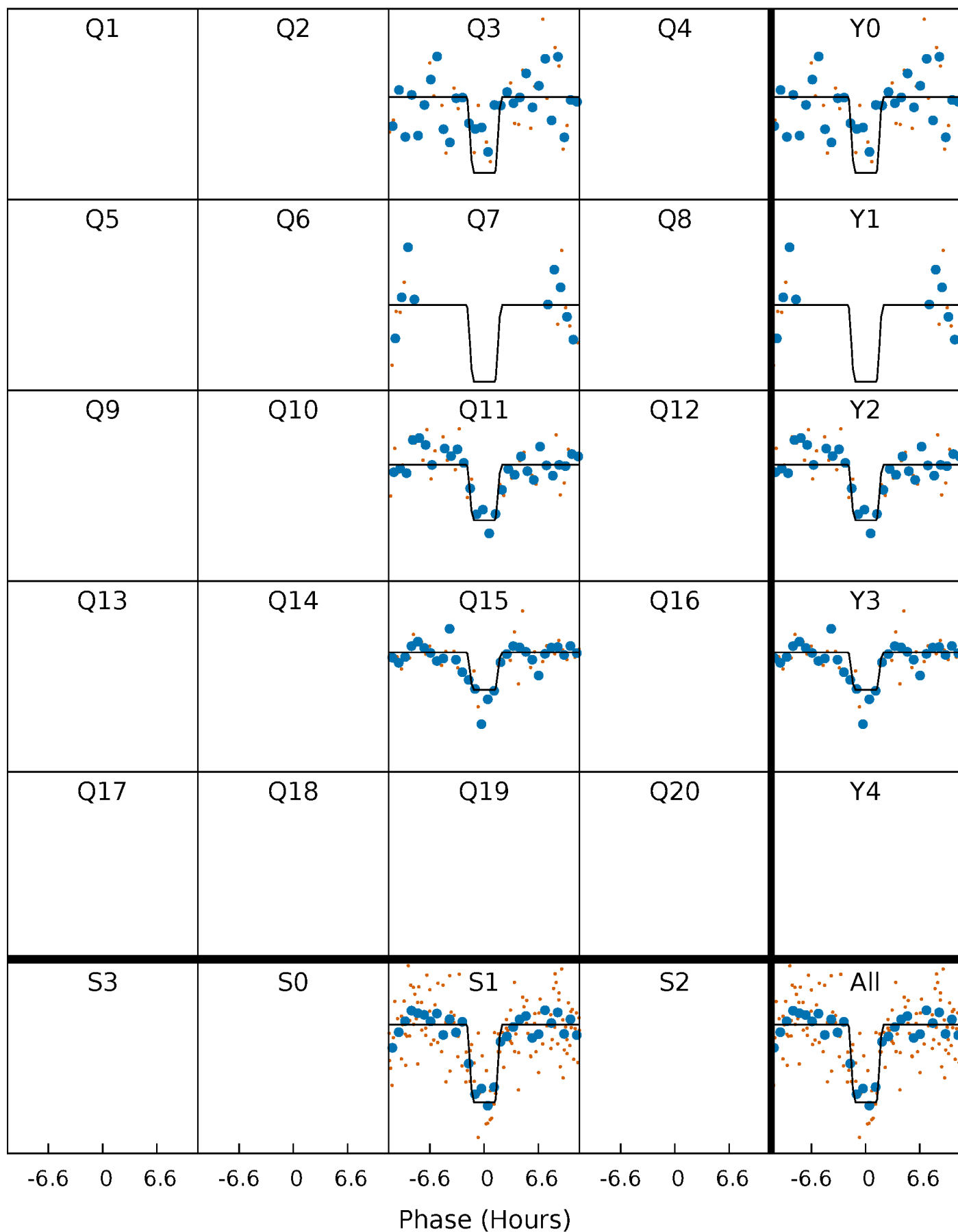
DV Quarter-Phased Transit Curves

TCE 003340070-02 $P=360.064432$ Days $T_0=295.303460$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

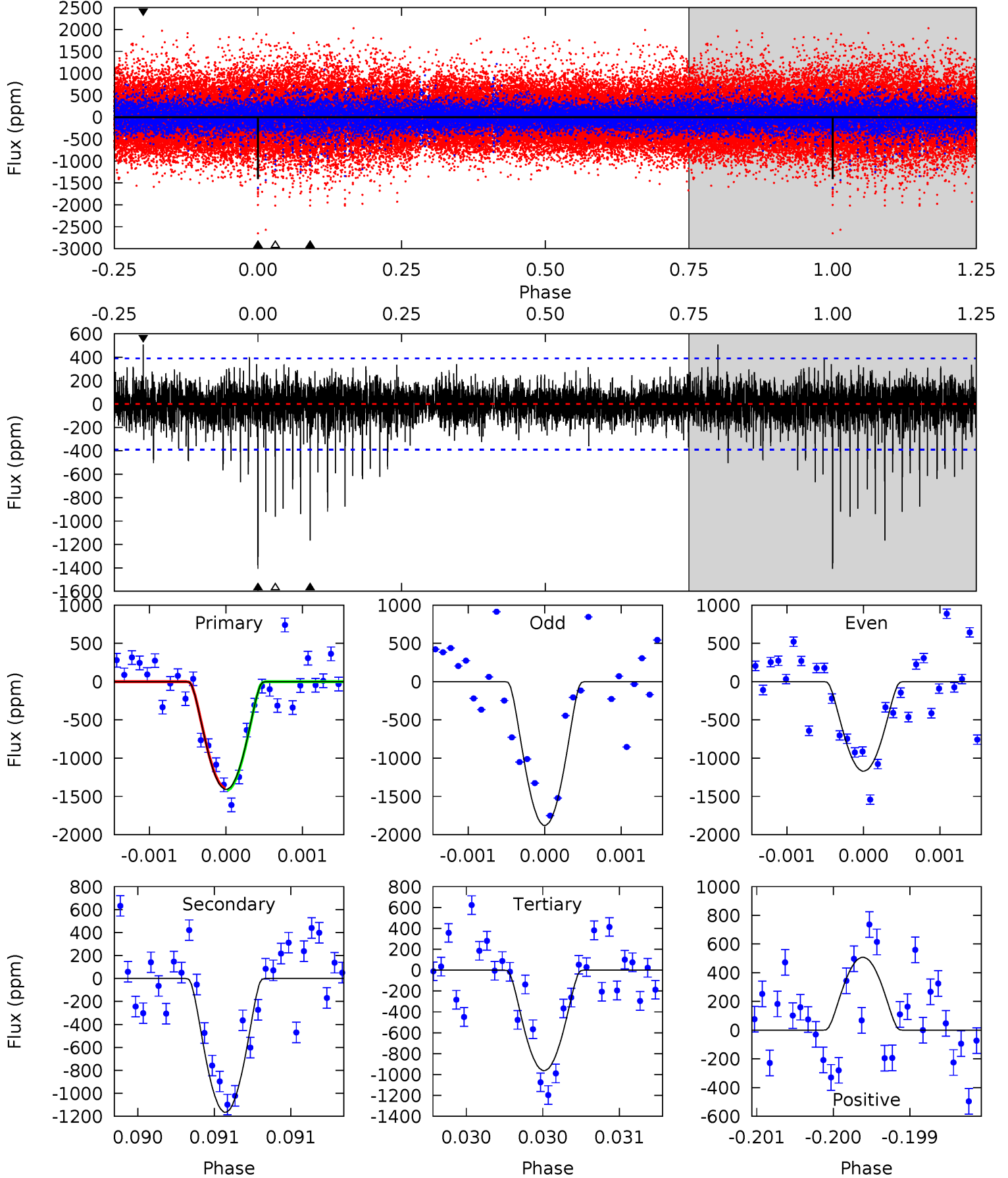
TCE 003340070-02 $P=360.068186$ Days $T_0=295.296149$ (BKJD)



DV Model-Shift Uniqueness Test

003340070-02, P = 360.064432 Days, E = 295.303460 Days

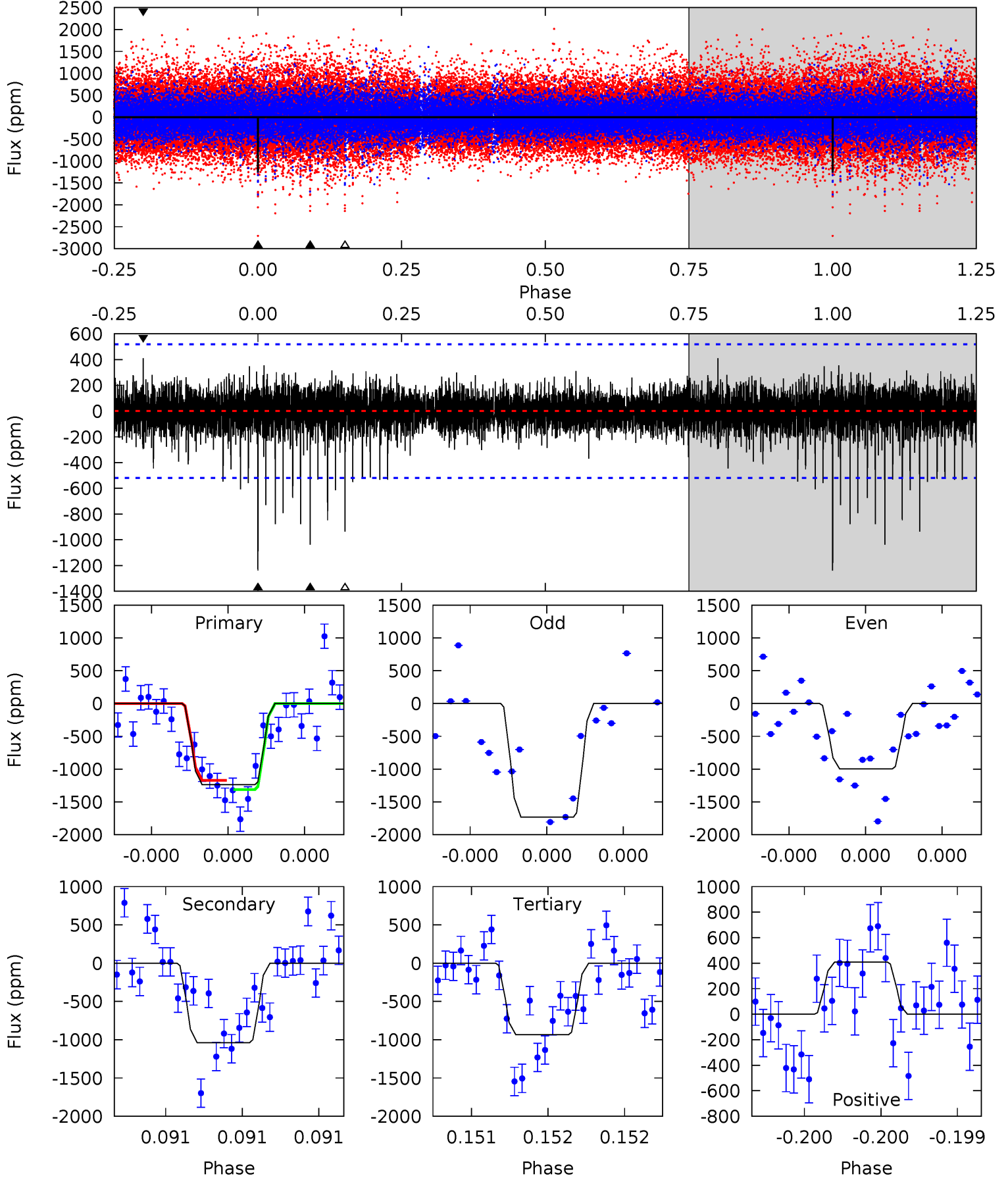
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	16.4	13.6	7.17	5.51	3.38	1.63	6.29	12.7	2.86	9.28	4.66	0.93	0.27	0.21



Alt Model-Shift Uniqueness Test

003340070-02, P = 360.068186 Days, E = 295.296149 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	11.2	10.1	4.42	5.60	3.53	1.12	3.28	8.97	1.10	6.79	3.69	0.94	0.25	0.77



Stellar Parameters For KIC 003340070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5904^{+160}_{-178}	$4.543^{+0.048}_{-0.204}$	$-0.240^{+0.300}_{-0.300}$	$0.867^{+0.262}_{-0.082}$	$0.958^{+0.107}_{-0.119}$	$2.073^{+0.399}_{-1.039}$
	+3%/-3%	+1%/-4%	+125%/-125%	+30%/-9%	+11%/-12%	+19%/-50%
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 003340070-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1165 ± 71	$13.48^{+11.83}_{-9.17}$	350^{+22}_{-17}	3456^{+1847}_{-582}	3394^{+29342}_{-2479}
Alt.	-1037 ± 93	$11.64^{+12.08}_{-8.29}$	349^{+25}_{-15}	3538^{+2160}_{-661}	3979^{+41167}_{-3015}

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 $A_{obs} \gg 1.0$

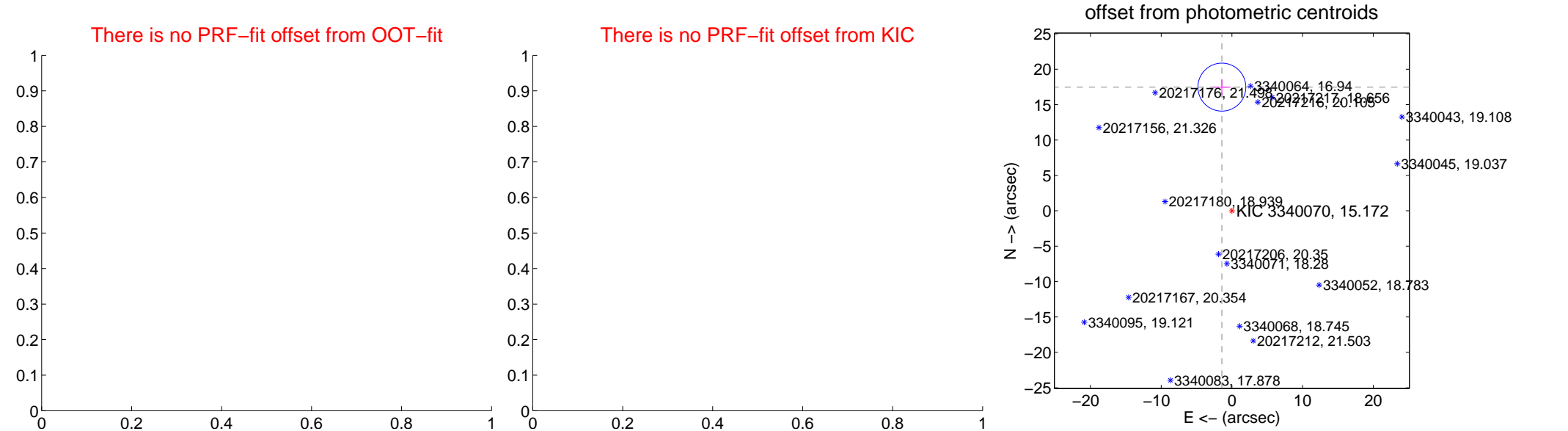
DV Centroid Data

Supplemental centroid analysis for 003340070-02. Kepler magnitude: 15.17. Transit SNR 11.36

There are 0 quarters with good PRF difference image offsets

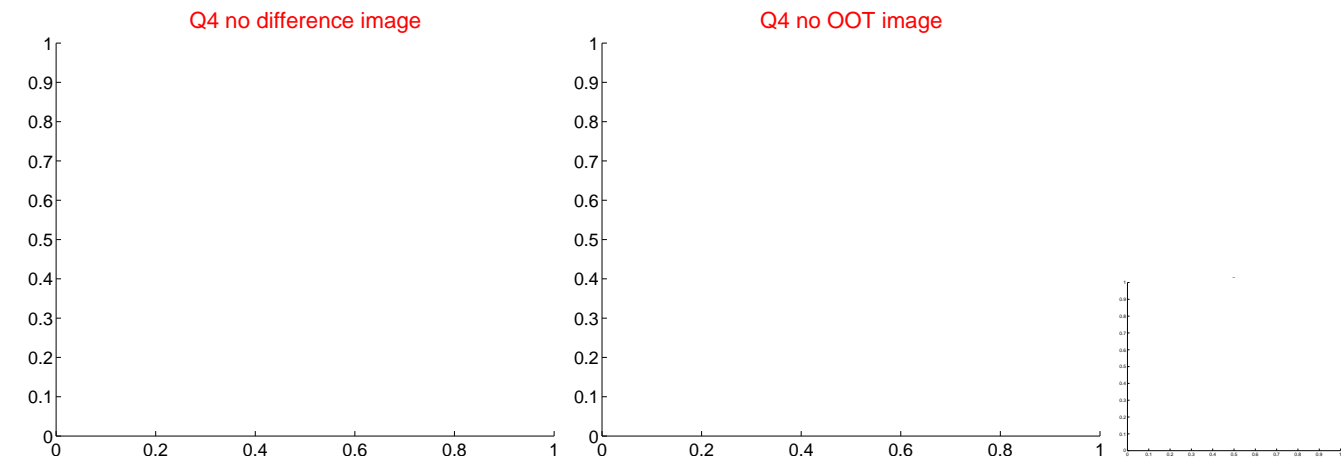
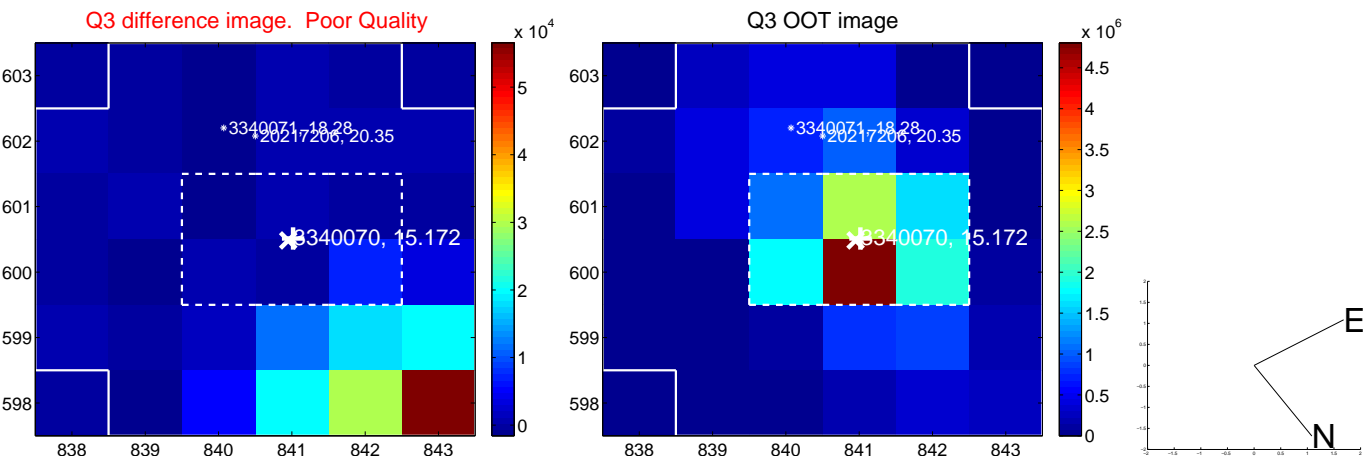
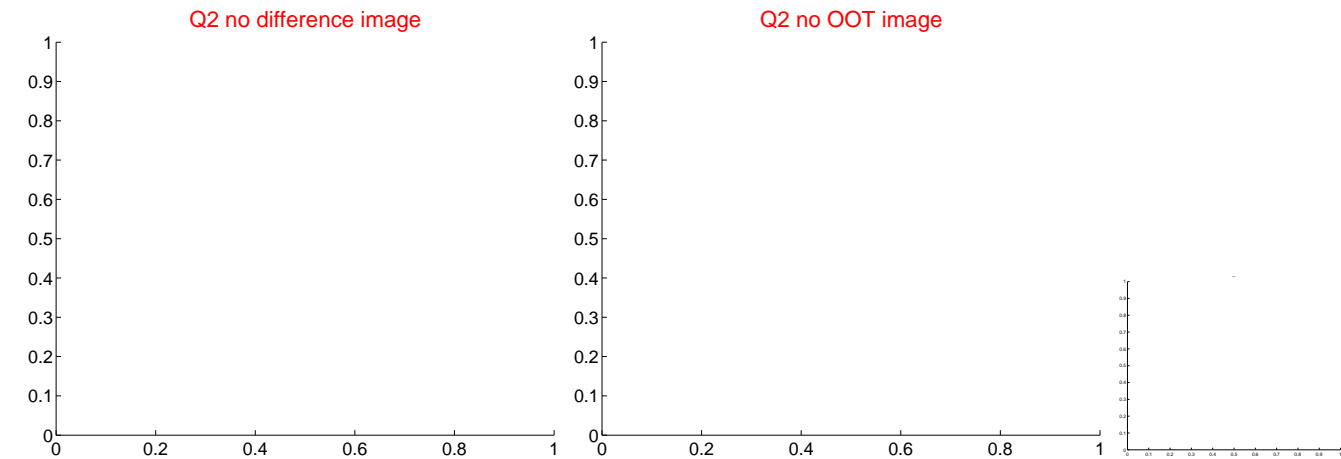
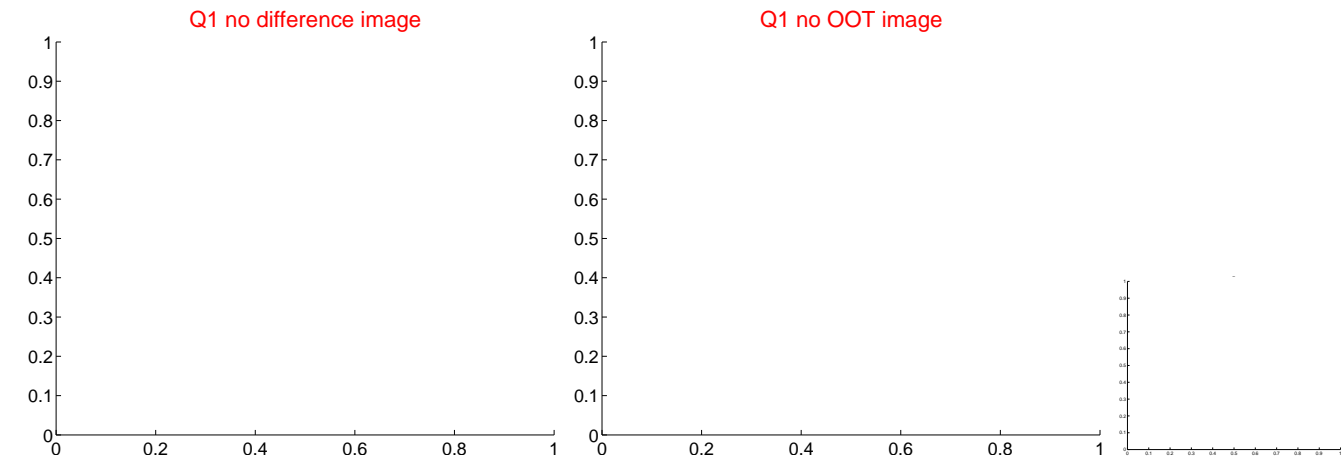
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	17.53 ± 1.13	15.52	1.42 ± 1.24	17.47 ± 1.13

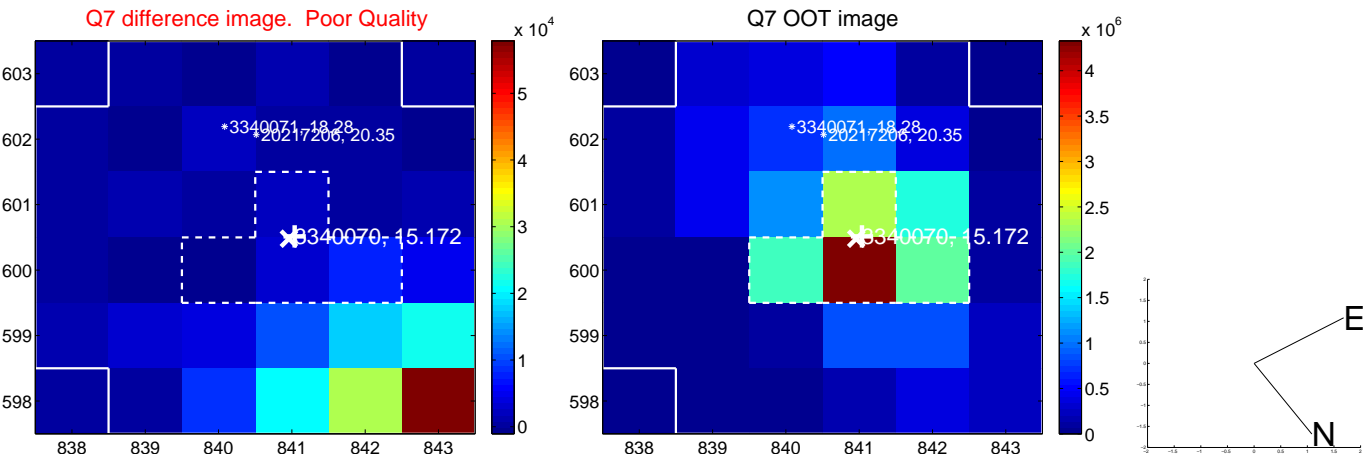


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

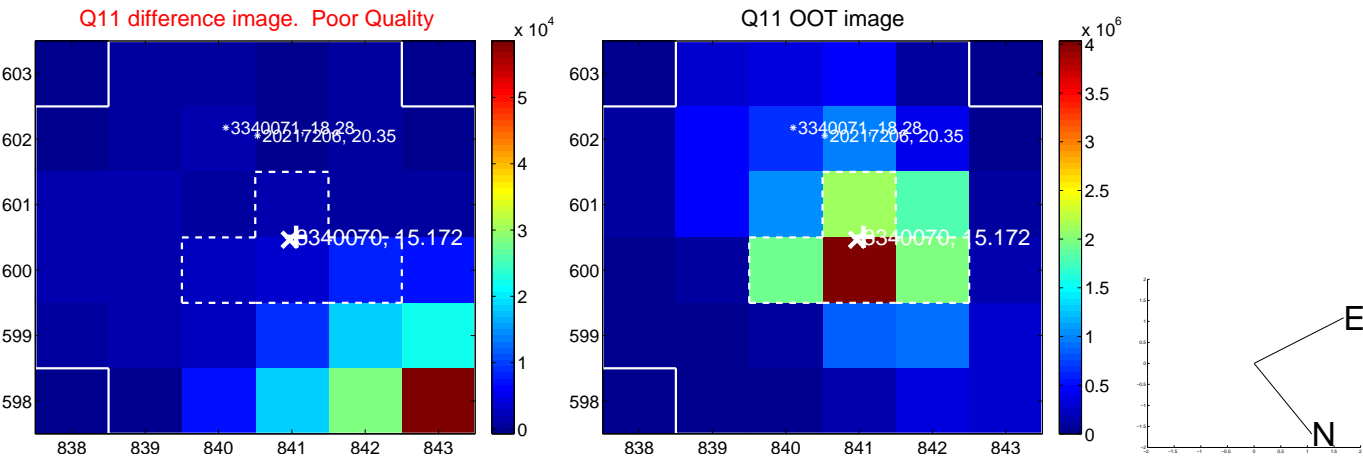
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



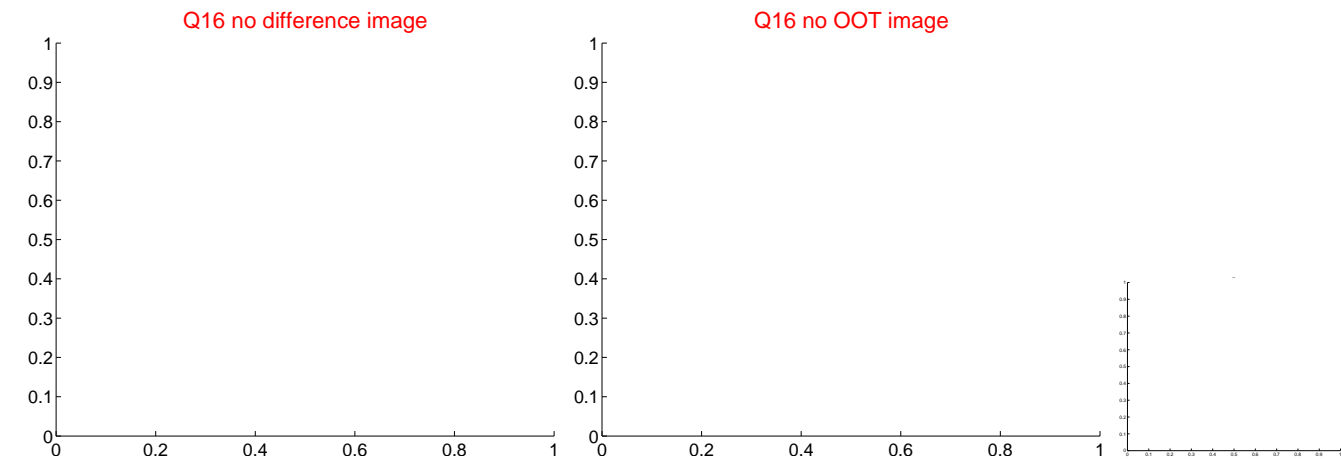
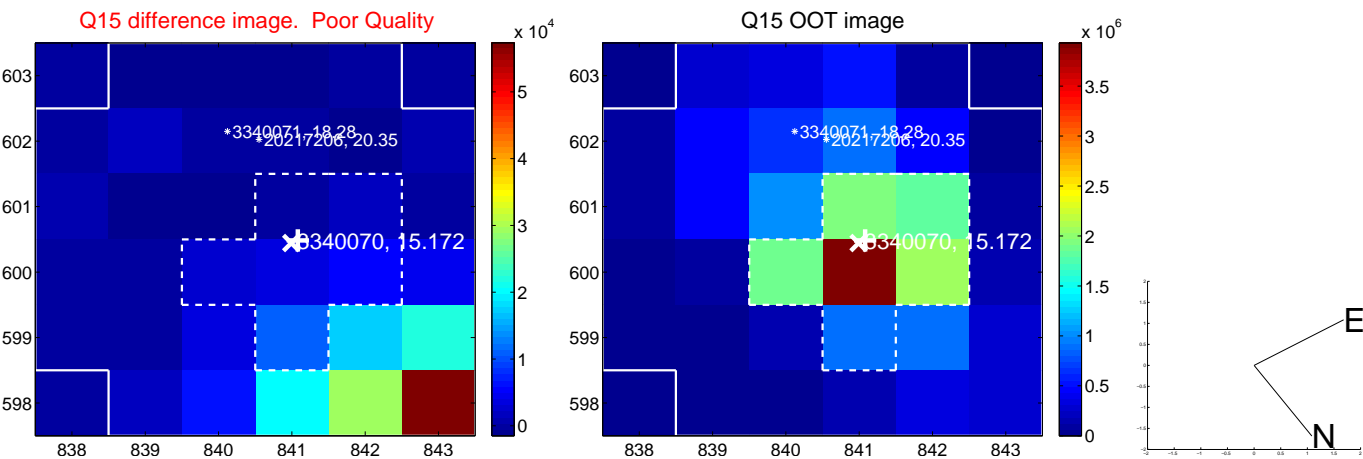
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



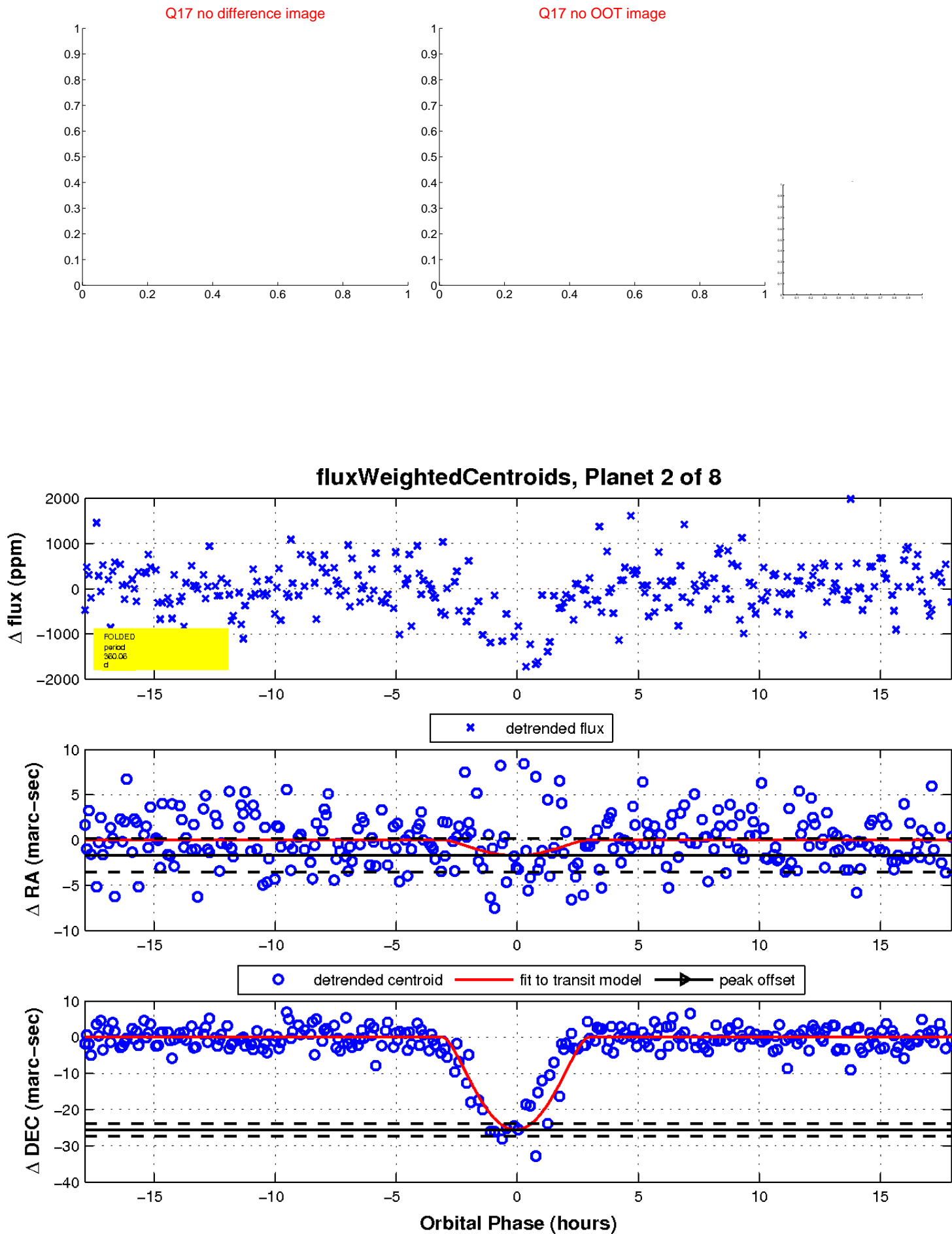
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

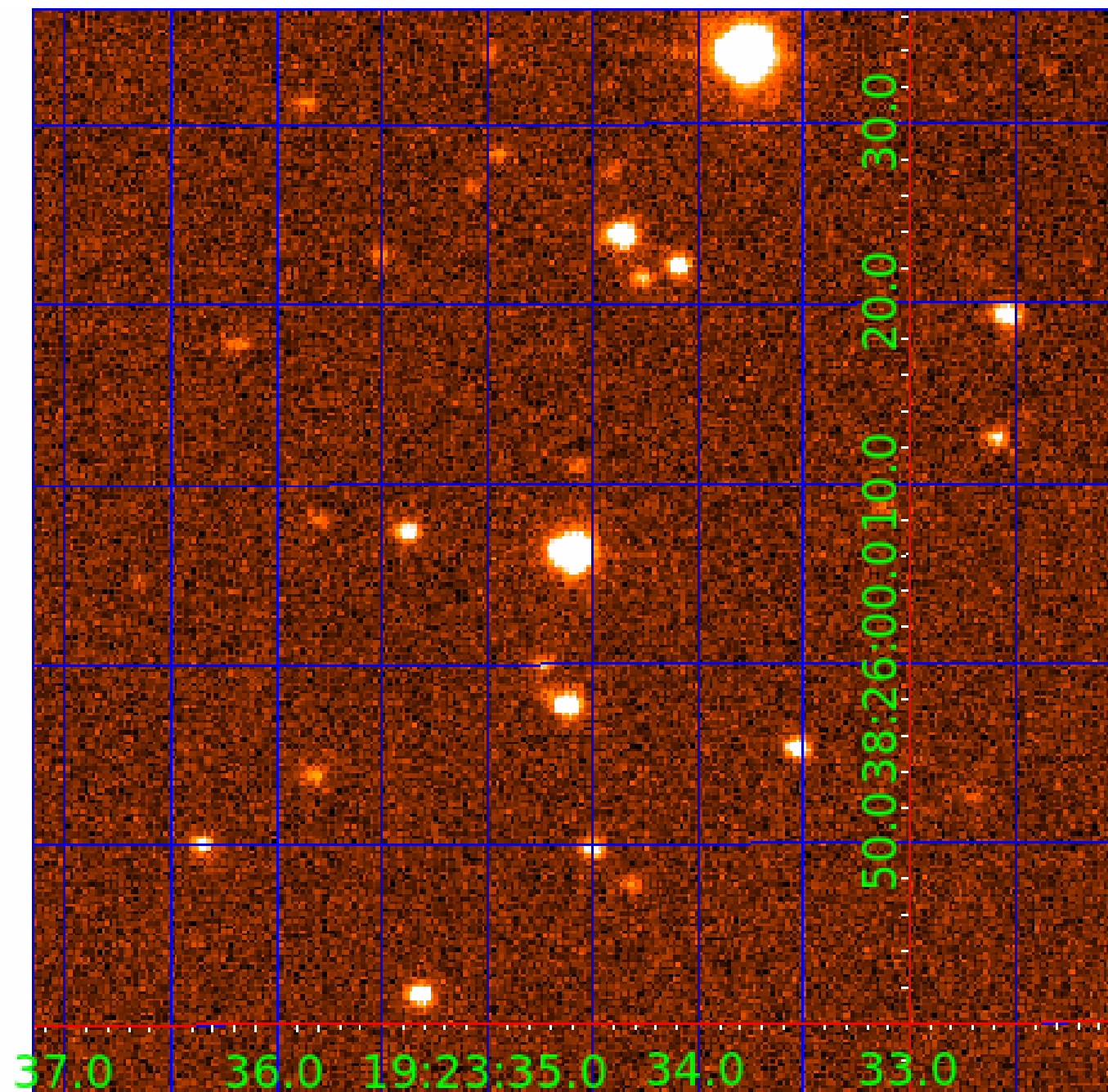


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003340070

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})
003340070-01	OBS	No	370.972187	284.381872	1283.2	5.006	11.4	11.4	0.87	5904	3.55	0.82
003340070-02	OBS	No	360.064432	295.303460	1433.0	6.008	12.1	11.4	0.87	5904	5.58	0.86
003340070-03	OBS	No	360.063975	328.028899	917.1	4.908	9.9	9.6	0.87	5904	2.75	0.86
003340070-04	OBS	No	403.699203	251.666599	1045.2	3.185	8.7	7.5	0.87	5904	2.92	0.74
003340070-05	OBS	No	360.055300	306.212057	761.7	6.064	8.2	7.4	0.87	5904	2.57	0.86
003340070-06	OBS	No	360.060697	300.215535	1053.5	4.308	8.6	7.1	0.87	5904	5.06	0.86
003340070-07	OBS	No	349.136961	343.871902	1032.3	3.390	7.8	8.9	0.87	5904	3.23	0.89
003340070-08	OBS	No	370.971282	338.932061	734.7	4.500	7.3	-1.0	0.87	5904	2.34	0.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340070-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—CENT_FEW_DIFFS
003340070-02	OBS	FP	0.00	1	0	1	0	INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET
003340070-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-04	OBS	FP	0.04	0	0	1	0	CENT_RESOLVED_OFFSET
003340070-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
003340070-06	OBS	FP	0.00	1	0	0	0	MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003340070-07	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

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

Ephemeris Match Information For 003340070-03

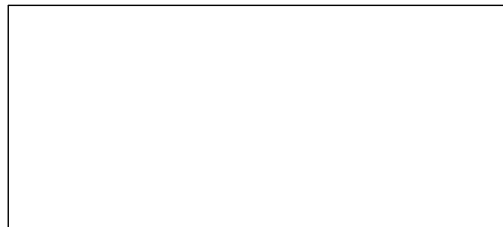
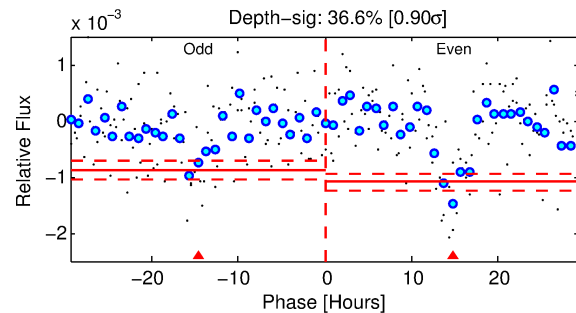
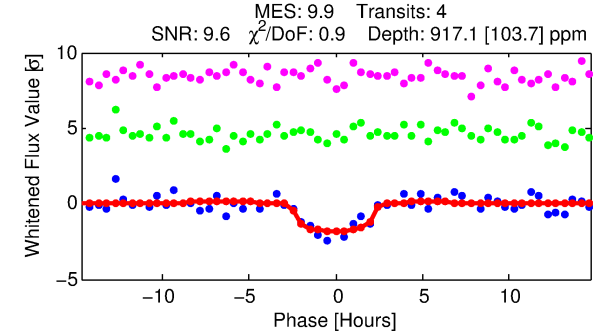
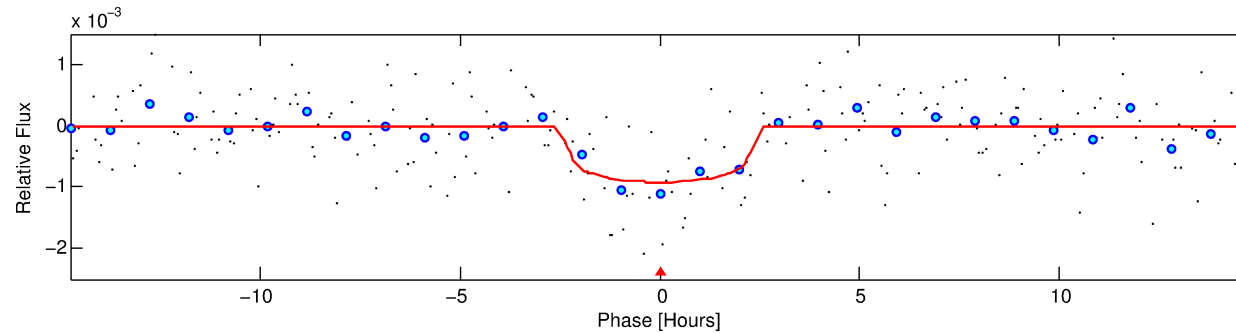
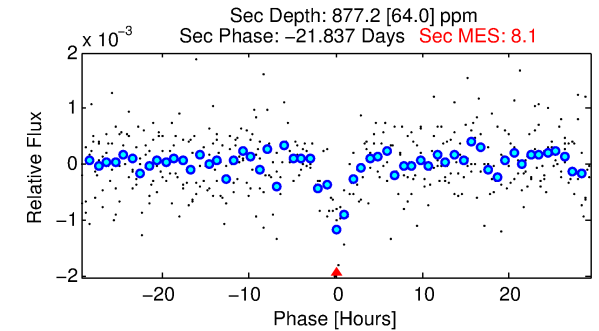
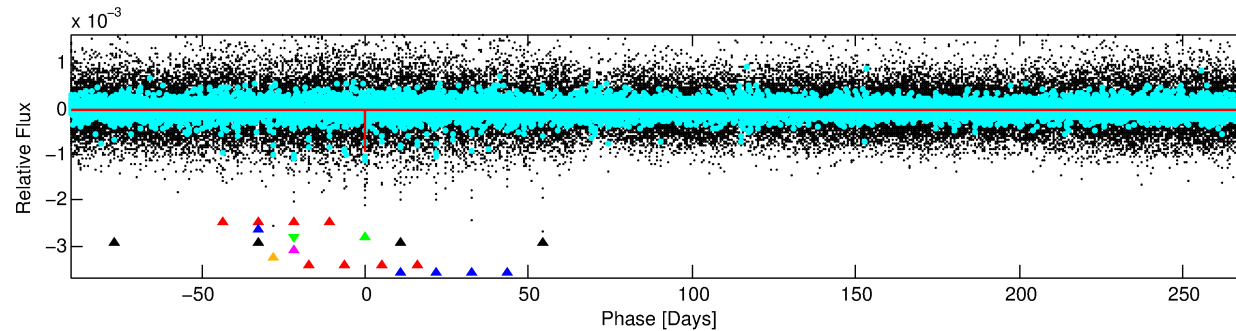
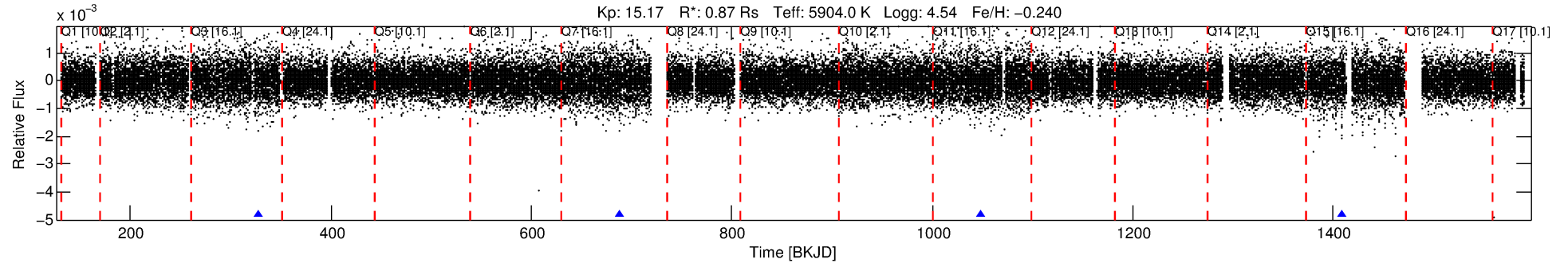
No Significant Match Found

DV One-Page Summary

KIC: 3340070 Candidate: 3 of 8 Period: 360.064 d

KOI: K01097 Corr: No Ephemeris Match

Kp: 15.17 R*: 0.87 Rs Teff: 5904.0 K Logg: 4.54 Fe/H: -0.240



DV Fit Results:

Period = 360.06397 [0.00583] d
Epoch = 328.0289 [0.0105] BKJD
Rp/R* = 0.0290 [0.0367]
a/R* = 464.85 [2763.72]
b = 0.61 [6.20]
Seff = 0.86 [0.34]
Teq = 245 [24] K
Rp = 2.74 [3.57] Re
a = 0.9764 [0.2491] AU
Ag = 61078.22 [156403.09] [0.39σ]
Teff = 5966 [3783] K [1.51σ]

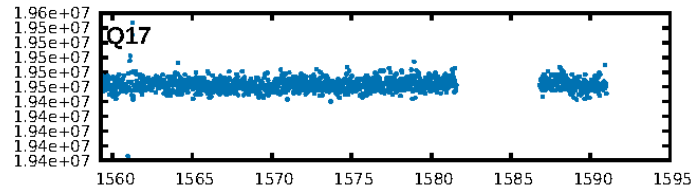
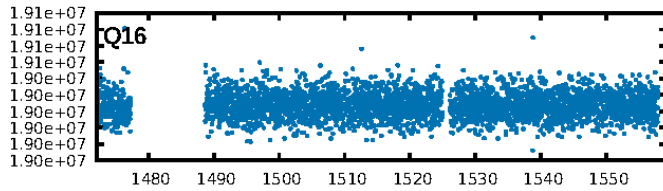
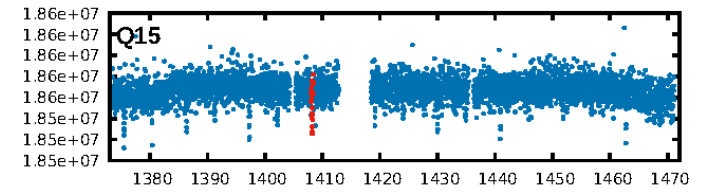
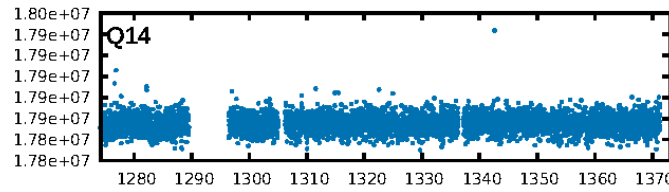
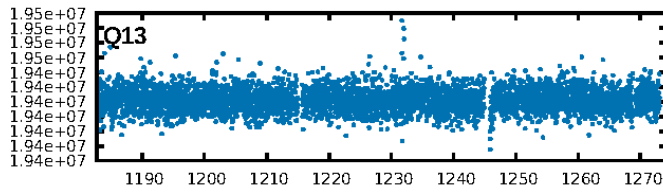
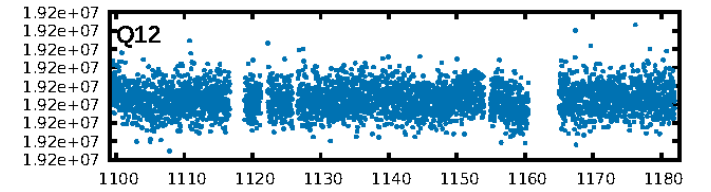
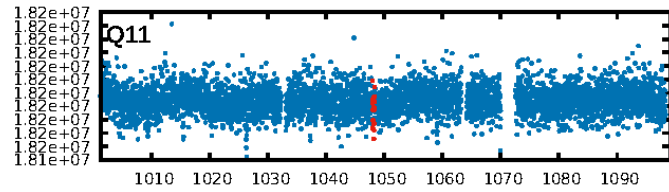
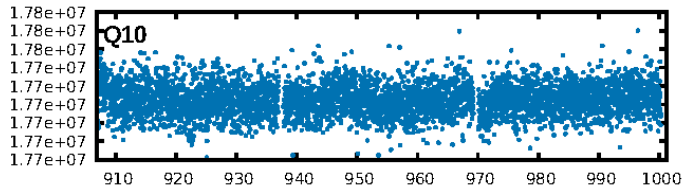
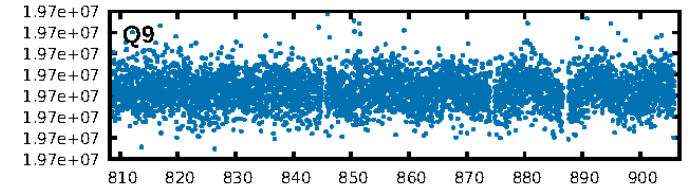
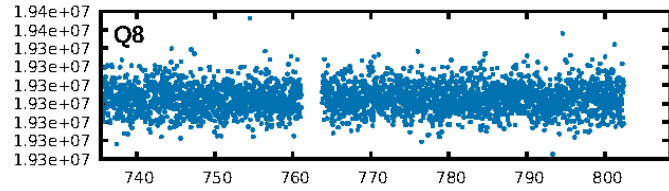
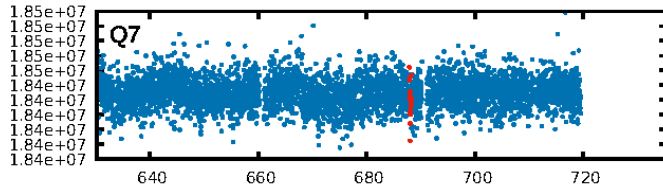
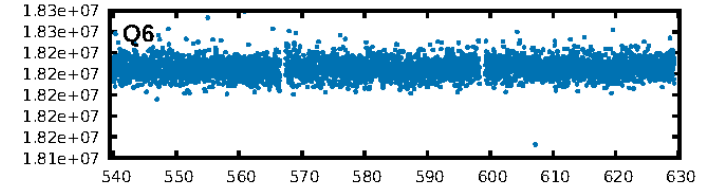
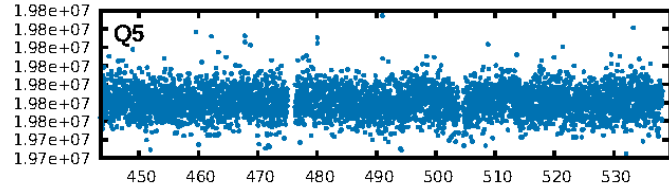
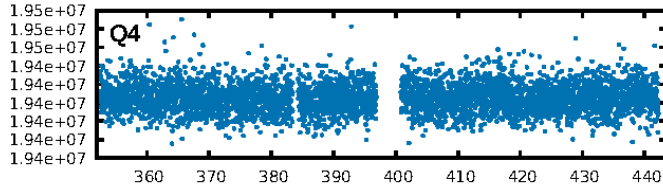
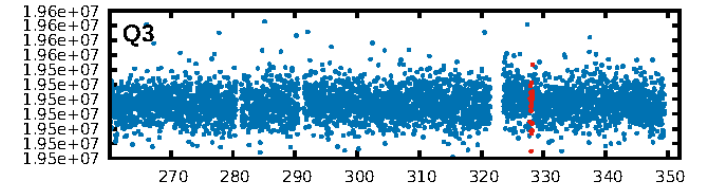
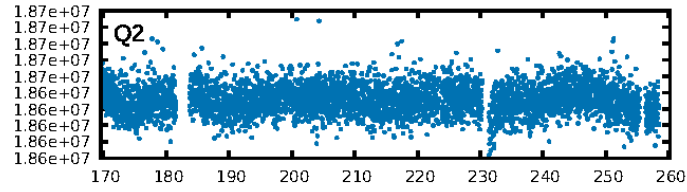
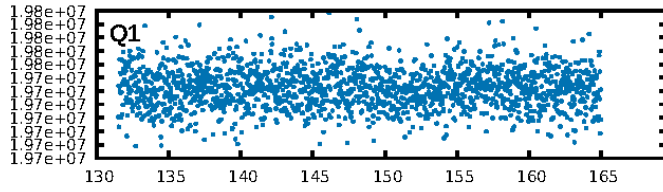
DV Diagnostic Results:

ShortPeriod-sig: 1.0% [0.01σ]
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 0.7%
ModelChiSquareGof-sig: 92.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.2235
Centroid-sig: 0.0%
Centroid-so: 21.632 arcsec [13.76σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [4/4]

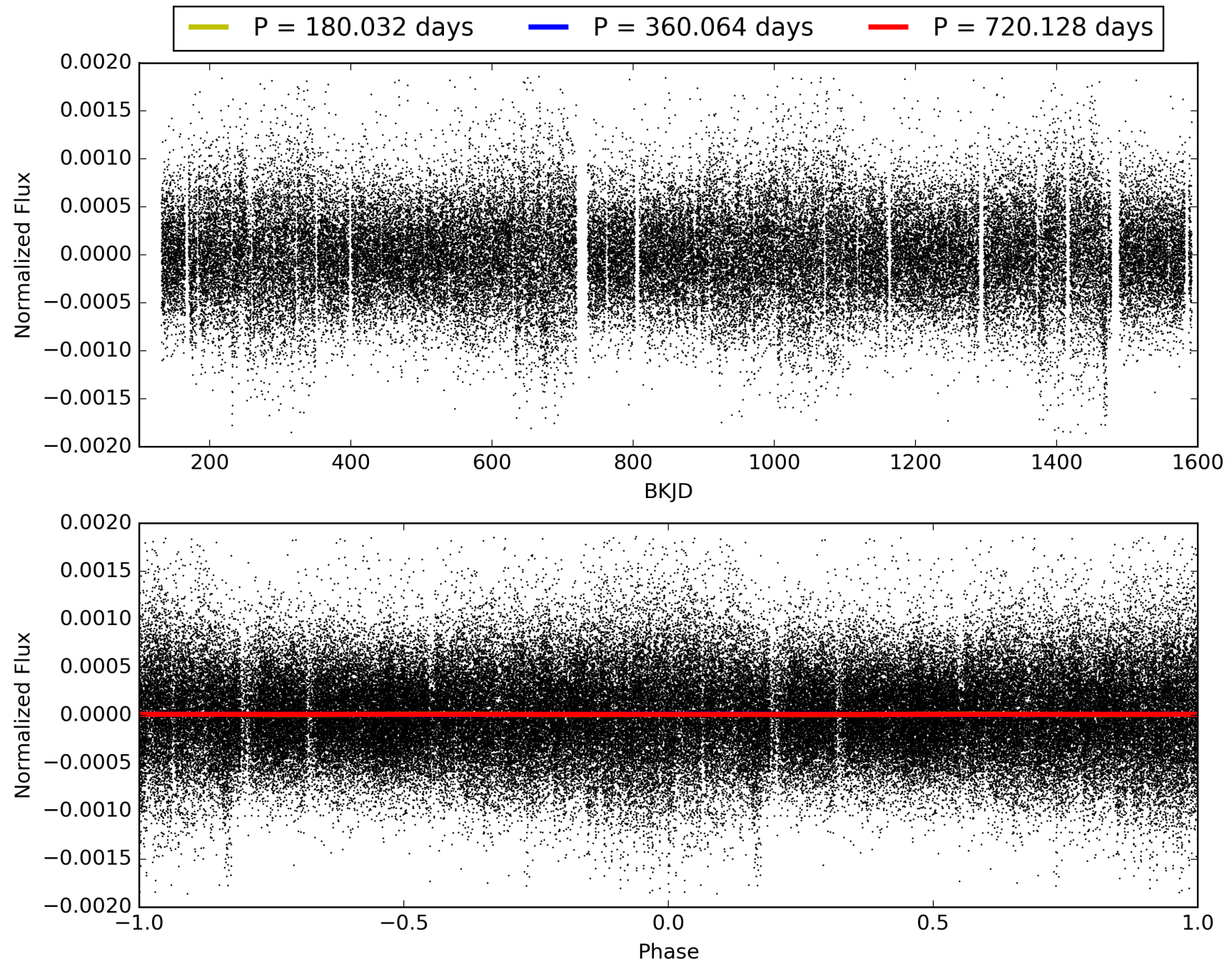
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:15:13 Z

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

TCE 003340070-03, PDC Light Curves

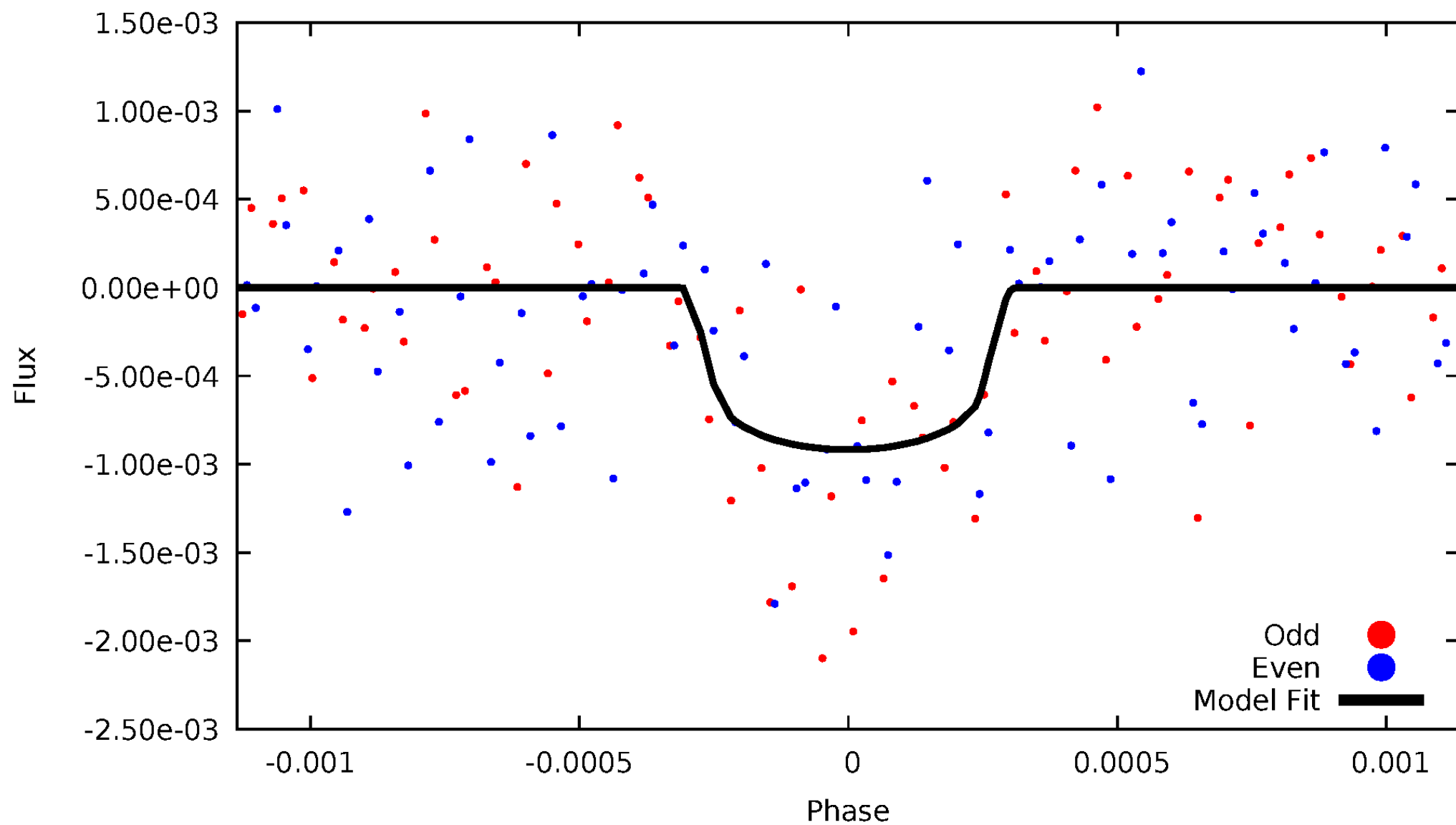


TCE 003340070-03



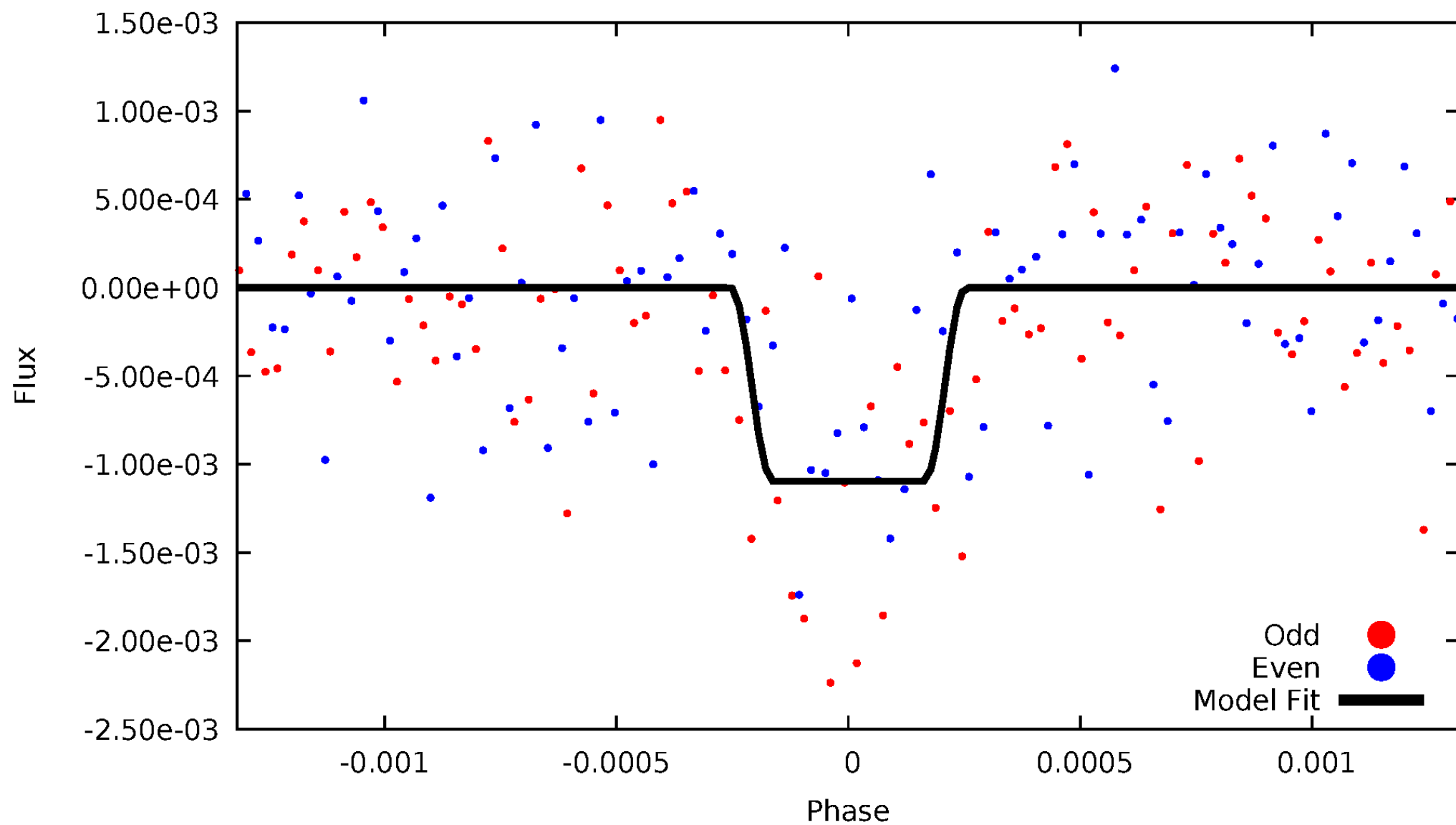
DV Odd/Even

TCE 003340070-03



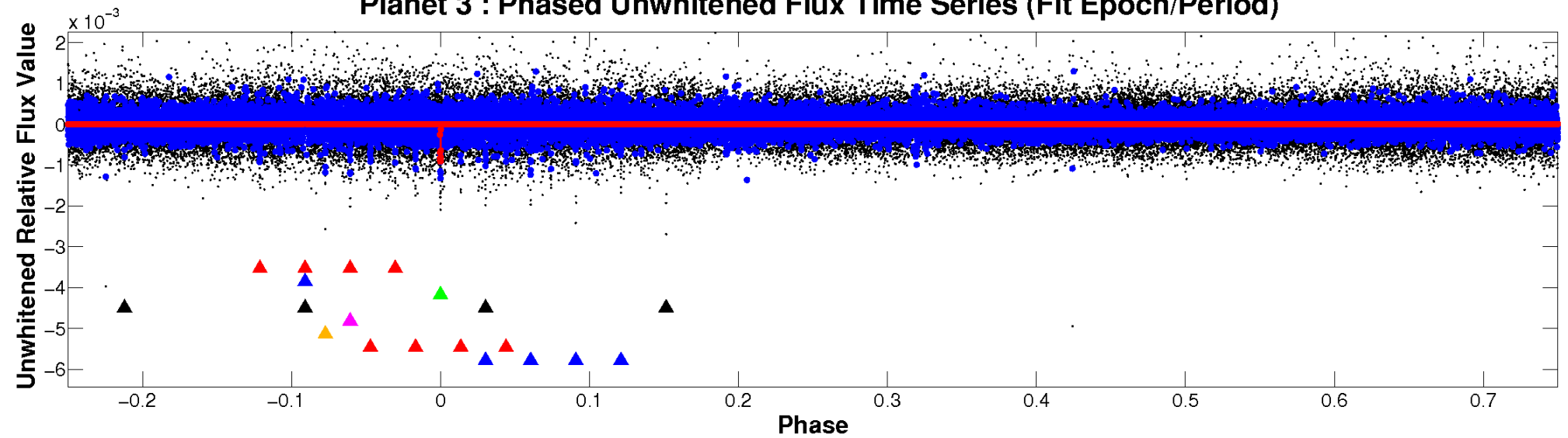
ALT Odd/Even

TCE 003340070-03

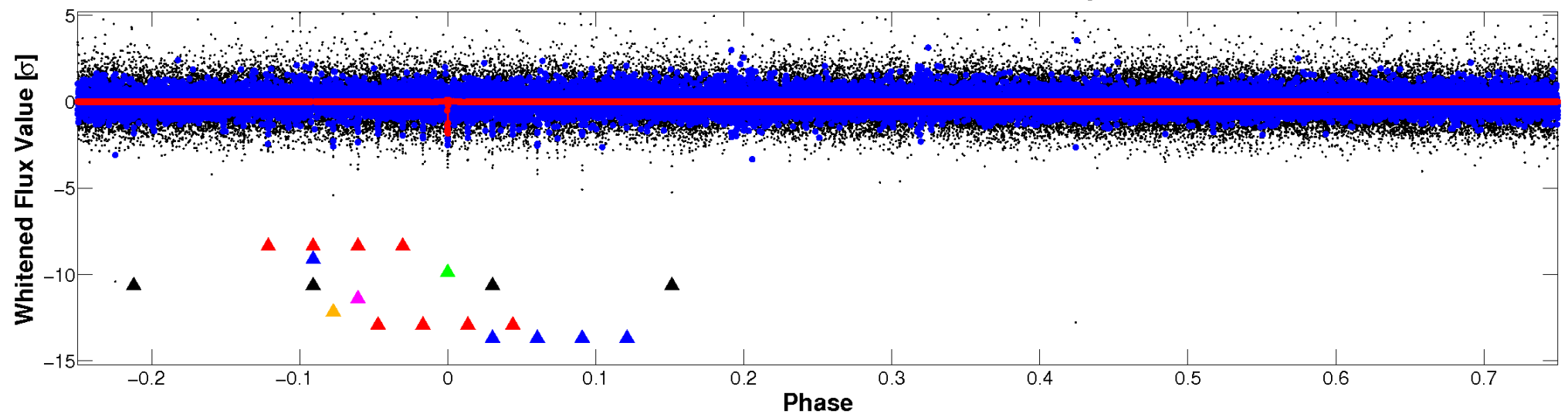


Non-Whitened Vs. Whitened Light Curve

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

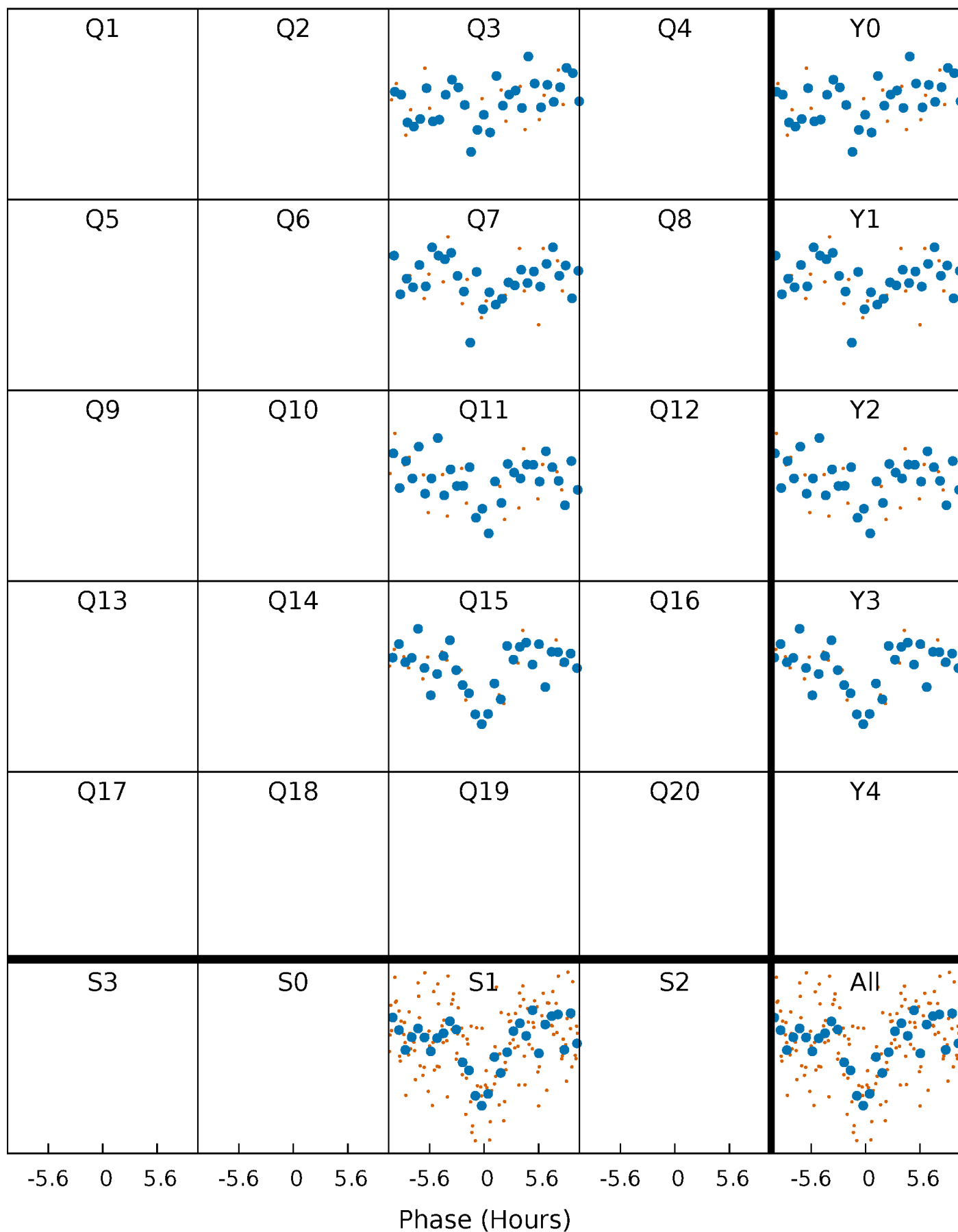


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



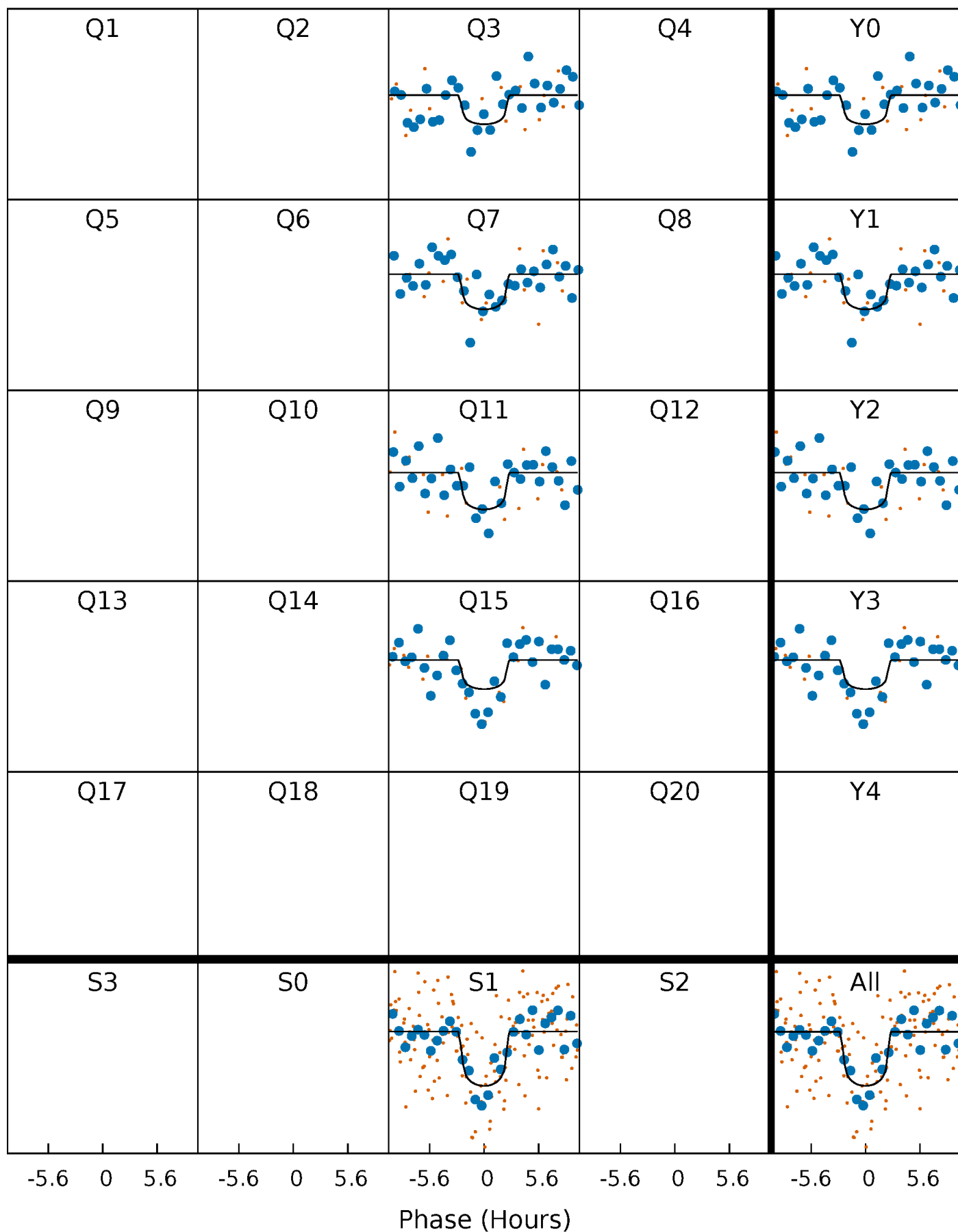
PDC Quarter-Phased Transit Curves

TCE 003340070-03 $P=360.063975$ Days $T_0=328.028899$ (BKJD)



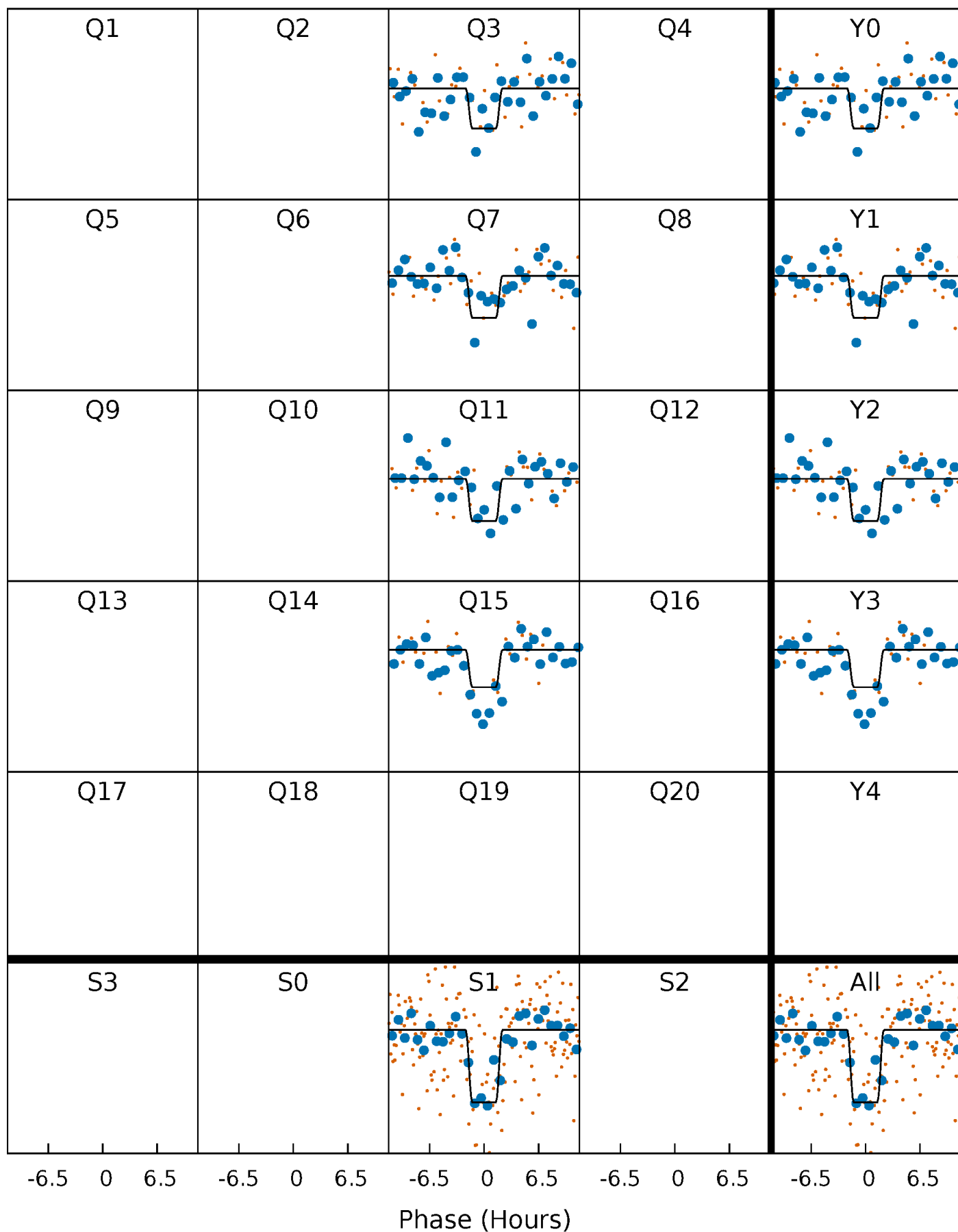
DV Quarter-Phased Transit Curves

TCE 003340070-03 $P=360.063975$ Days $T_0=328.028899$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

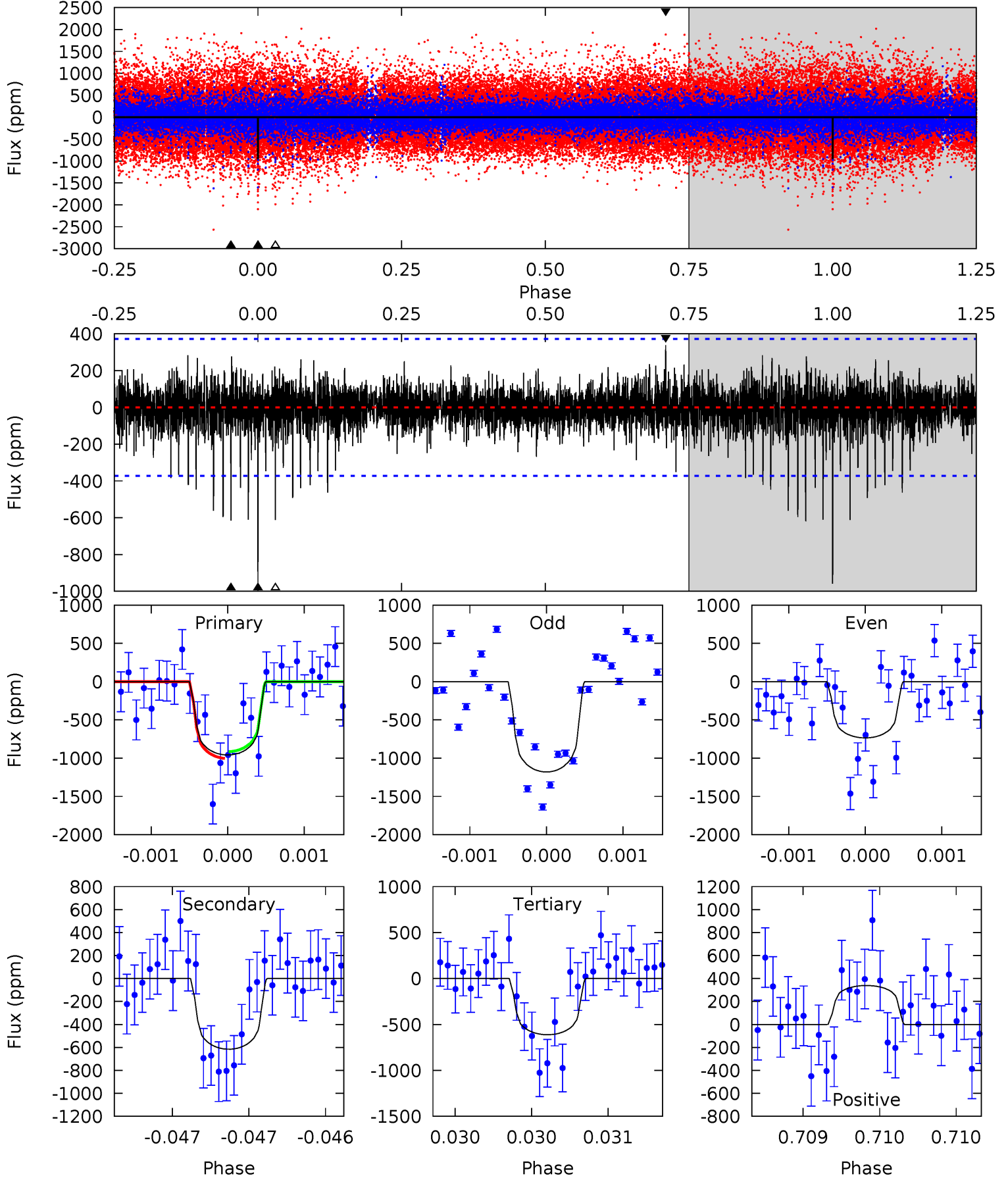
TCE 003340070-03 $P=360.066572$ Days $T_0=328.017804$ (BKJD)



DV Model-Shift Uniqueness Test

003340070-03, P = 360.063975 Days, E = 328.028899 Days

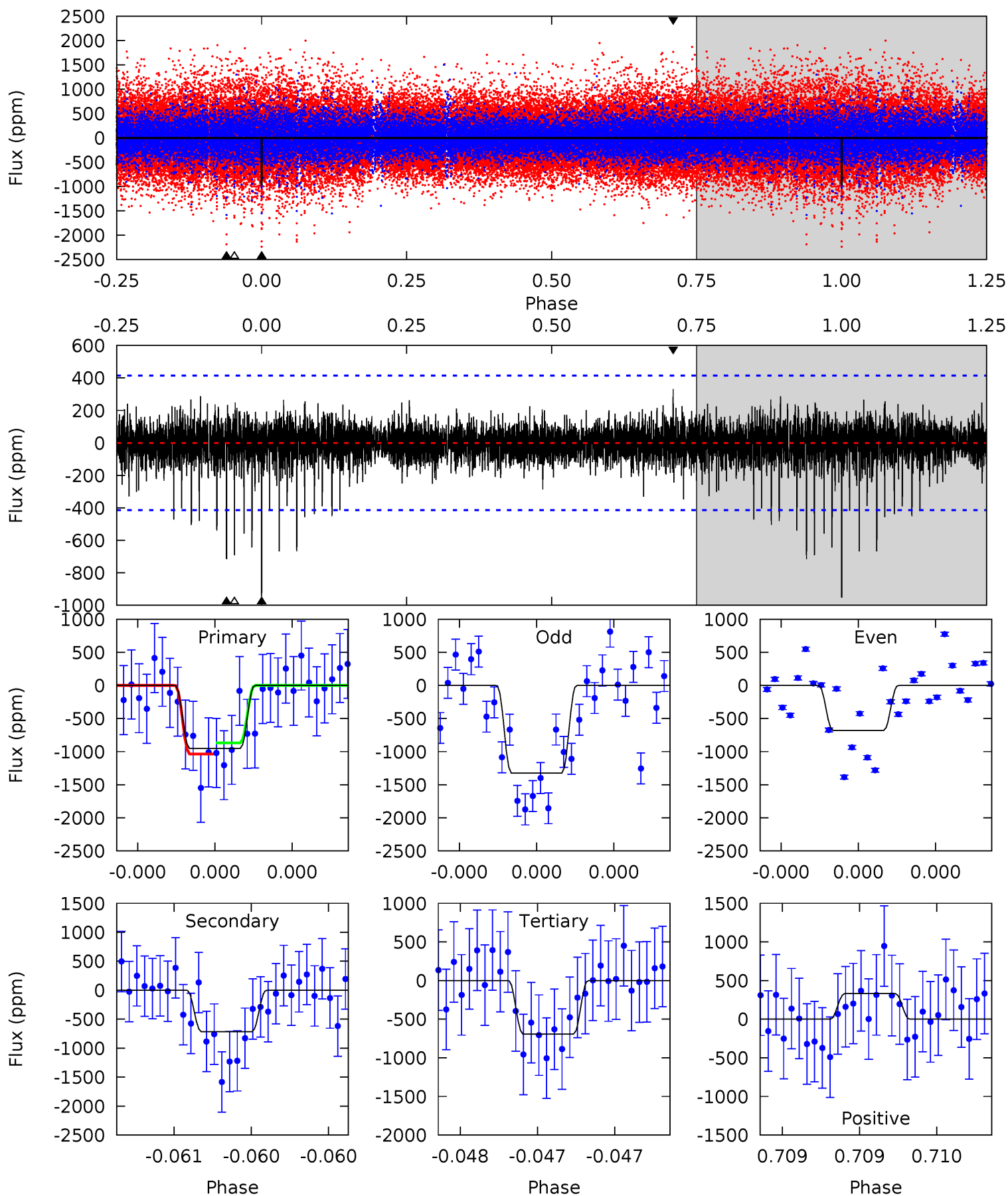
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	9.15	9.10	5.04	5.54	3.42	1.23	5.14	9.20	0.05	4.11	3.31	1.17	0.26	0.66



Alt Model-Shift Uniqueness Test

003340070-03, P = 360.066572 Days, E = 328.017804 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	9.62	9.31	4.45	5.57	3.48	1.14	3.51	8.36	0.32	5.17	4.27	1.34	0.26	1.13



Stellar Parameters For KIC 003340070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5904^{+160}_{-178}	$4.543^{+0.048}_{-0.204}$	$-0.240^{+0.300}_{-0.300}$	$0.867^{+0.262}_{-0.082}$	$0.958^{+0.107}_{-0.119}$	$2.073^{+0.399}_{-1.039}$
	+3%/-3%	+1%/-4%	+125%/-125%	+30%/-9%	+11%/-12%	+19%/-50%
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 003340070-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-616 ± 67	$3.93^{+3.57}_{-2.57}$	351^{+24}_{-16}	4839^{+3345}_{-1045}	$20884^{+158031}_{-14971}$
Alt.	-715 ± 74	$4.26^{+3.46}_{-2.66}$	351^{+23}_{-17}	4775^{+2976}_{-937}	$19653^{+119006}_{-13523}$

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

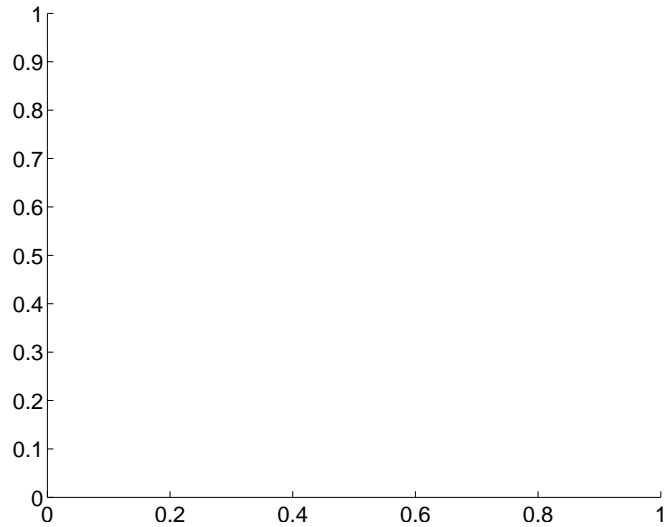
Supplemental centroid analysis for 003340070-03. Kepler magnitude: 15.17. Transit SNR 9.62

There are 0 quarters with good PRF difference image offsets

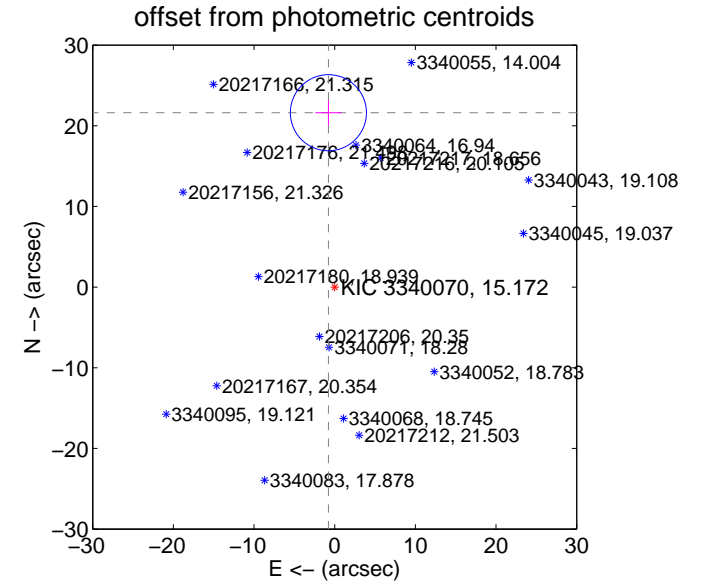
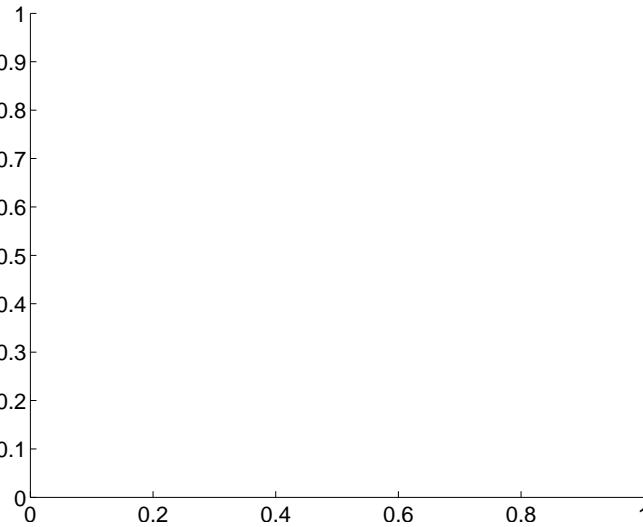
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	21.63 ± 1.57	13.76	0.78 ± 1.62	21.62 ± 1.57

There is no PRF-fit offset from OOT-fit

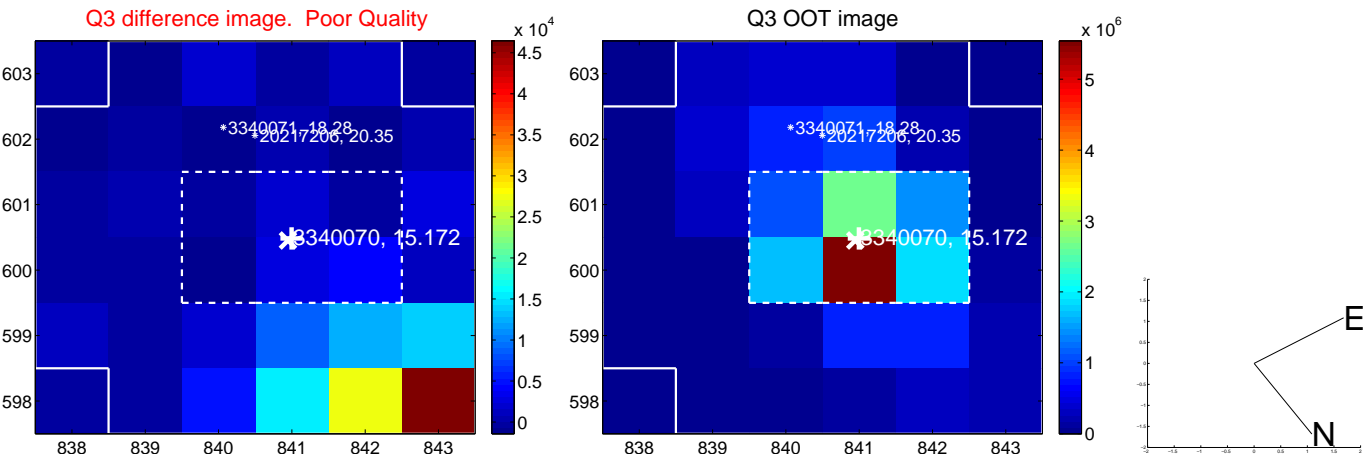
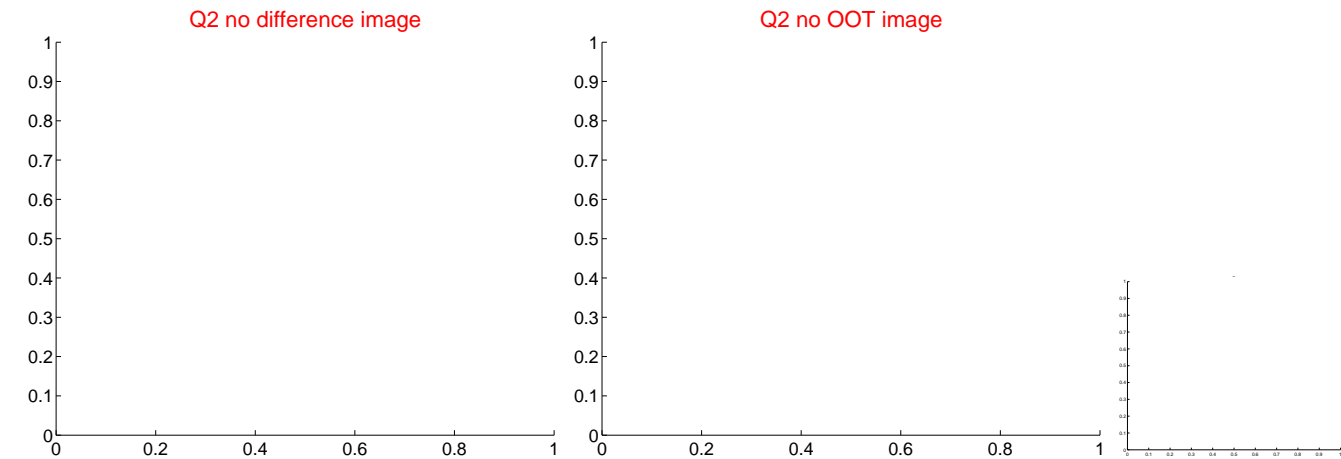


There is no PRF-fit offset from KIC

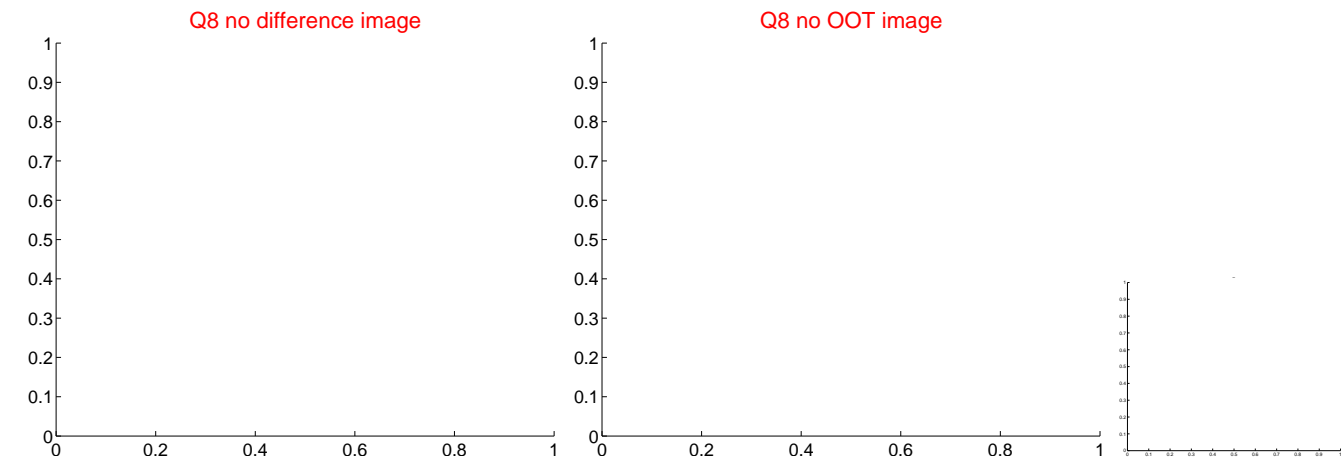
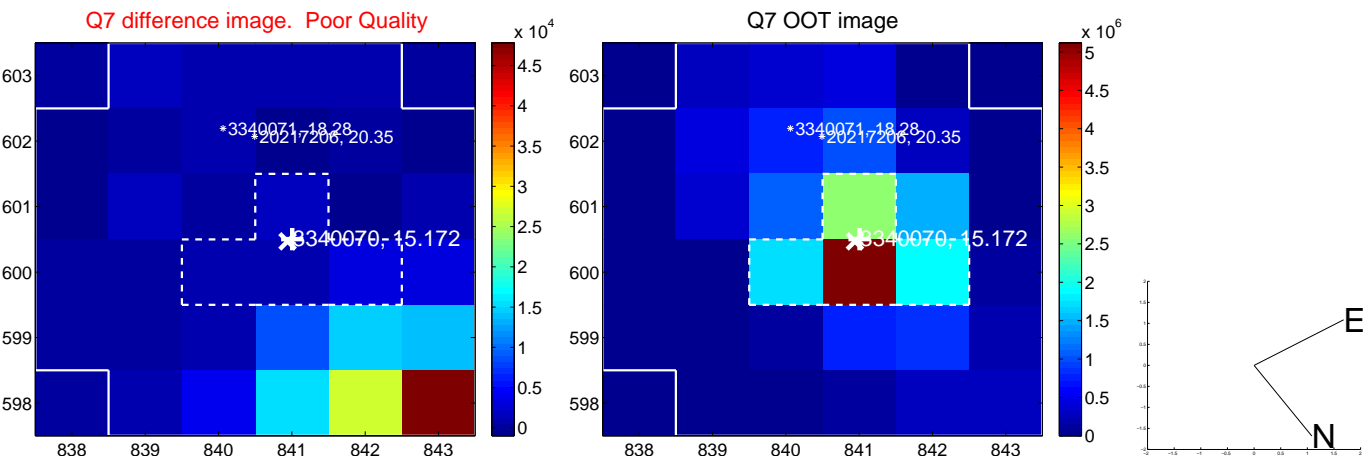
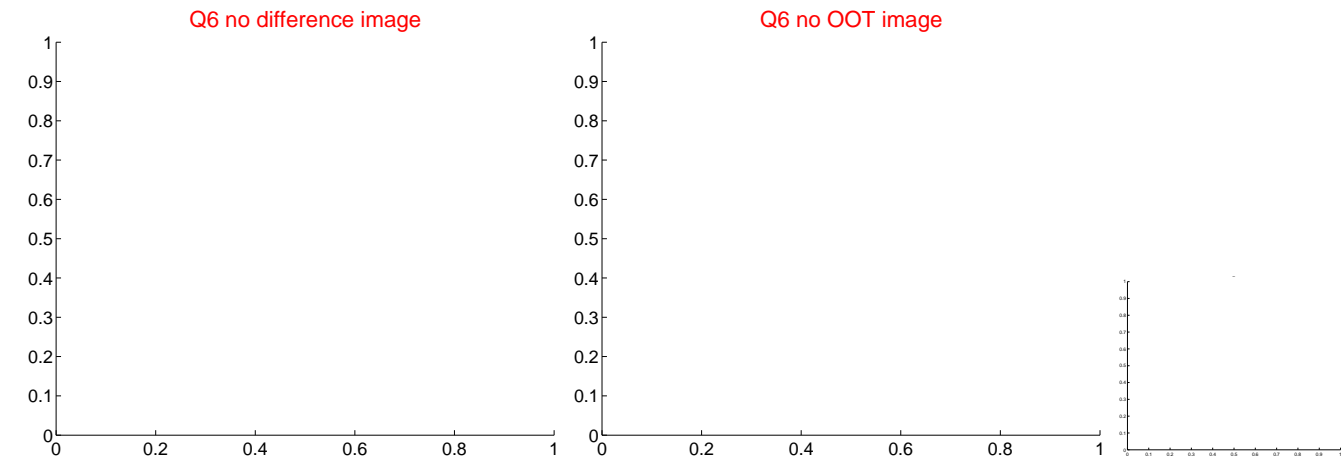


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

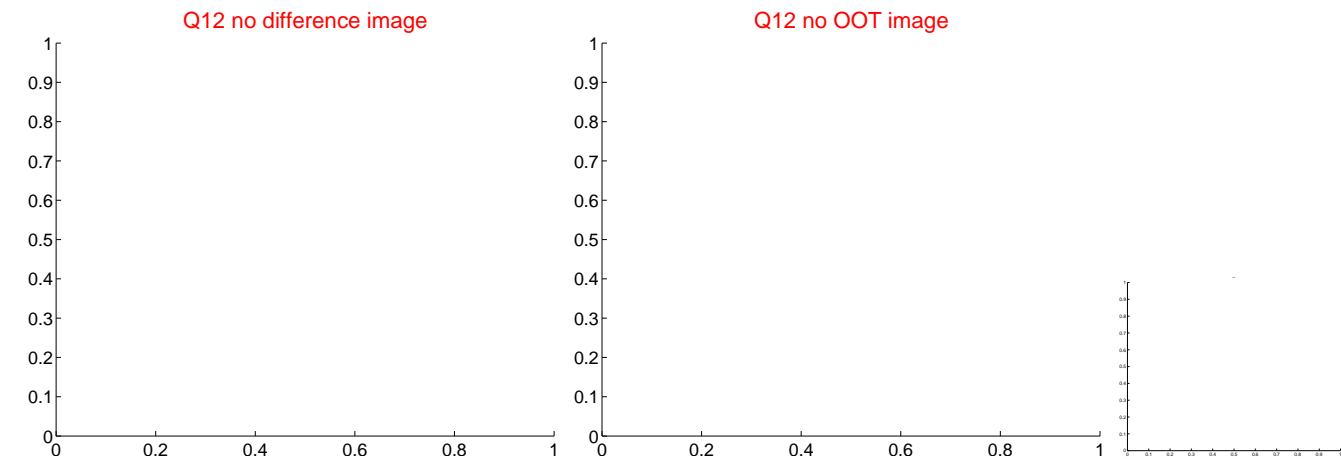
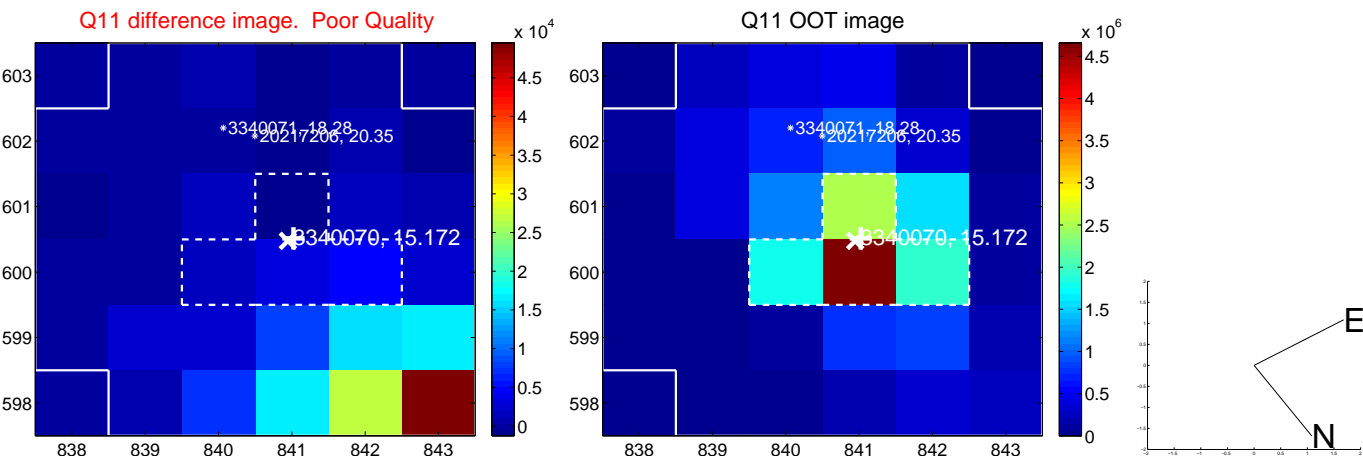
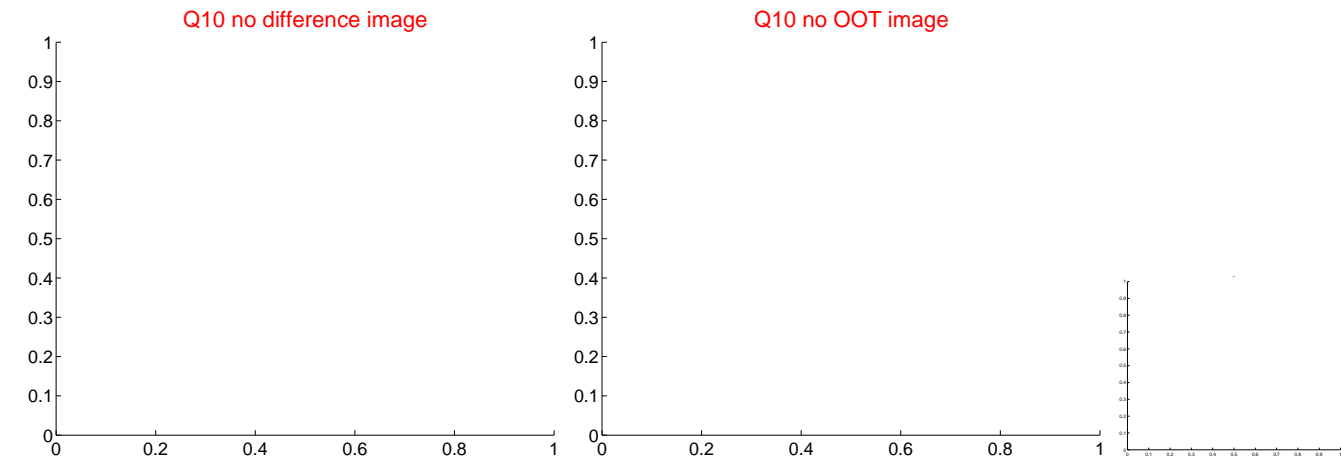
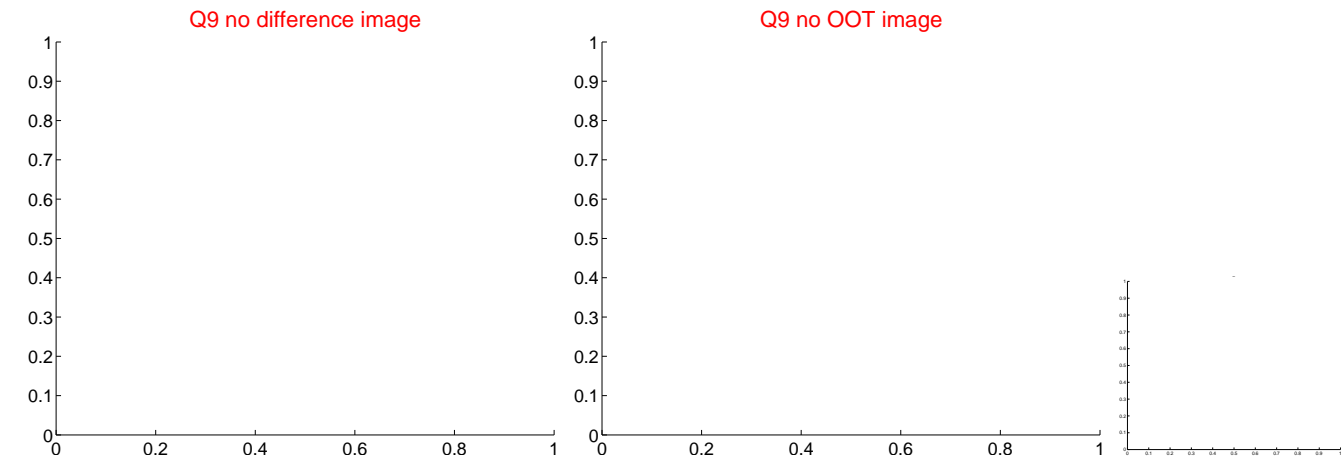
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



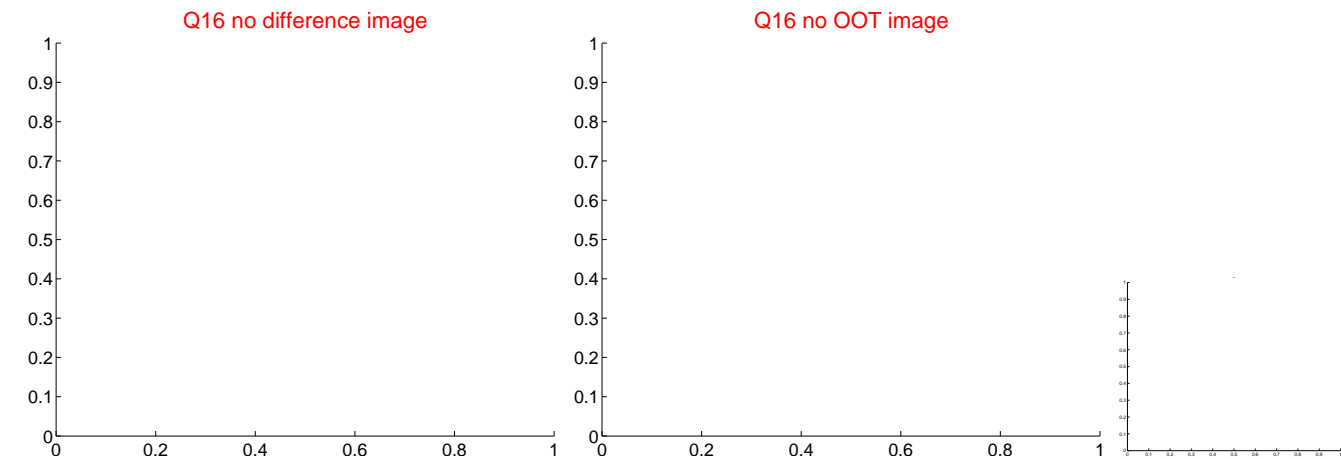
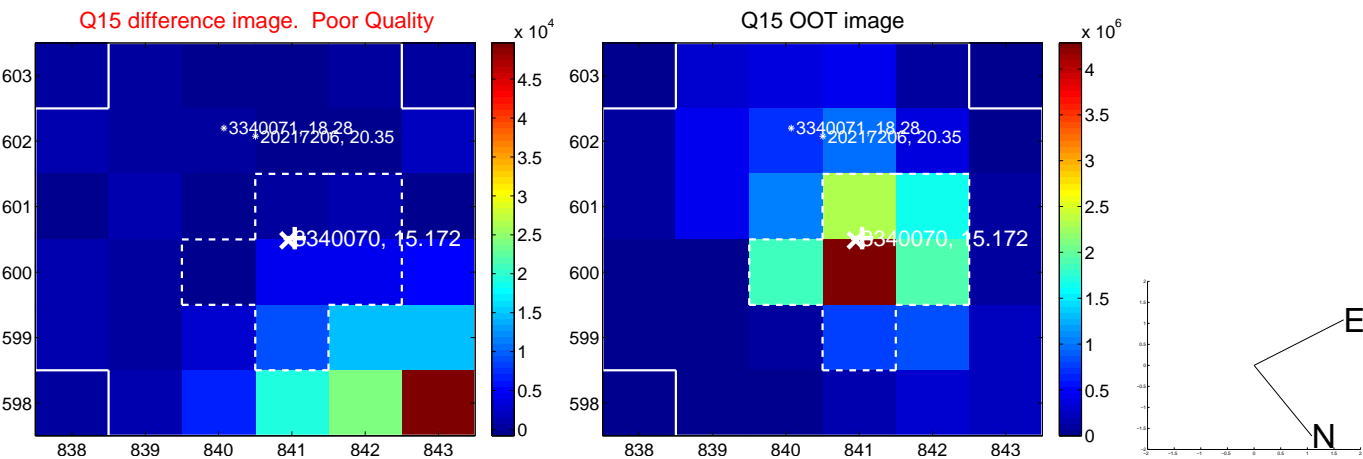
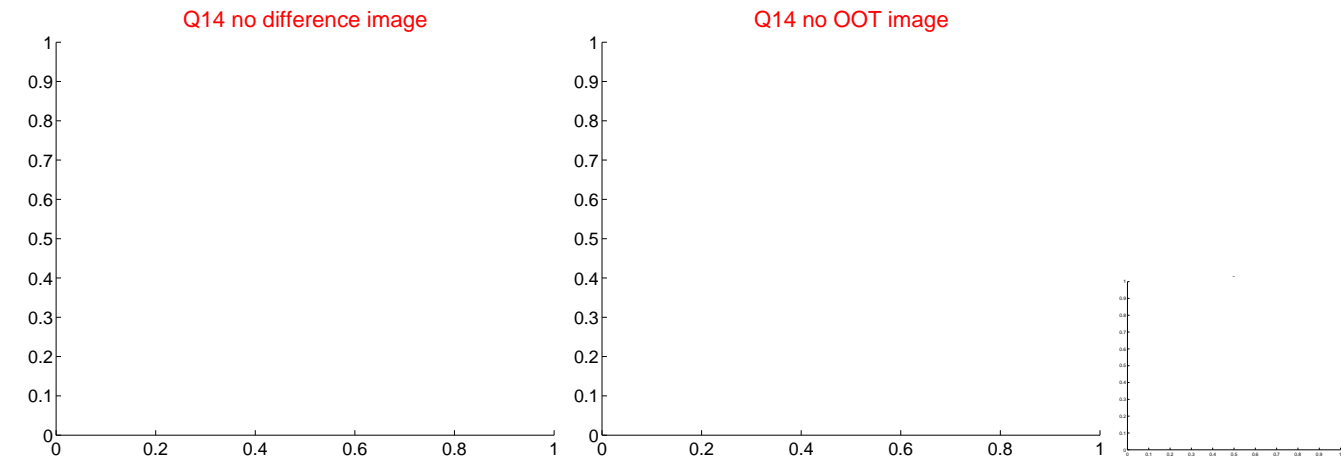
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



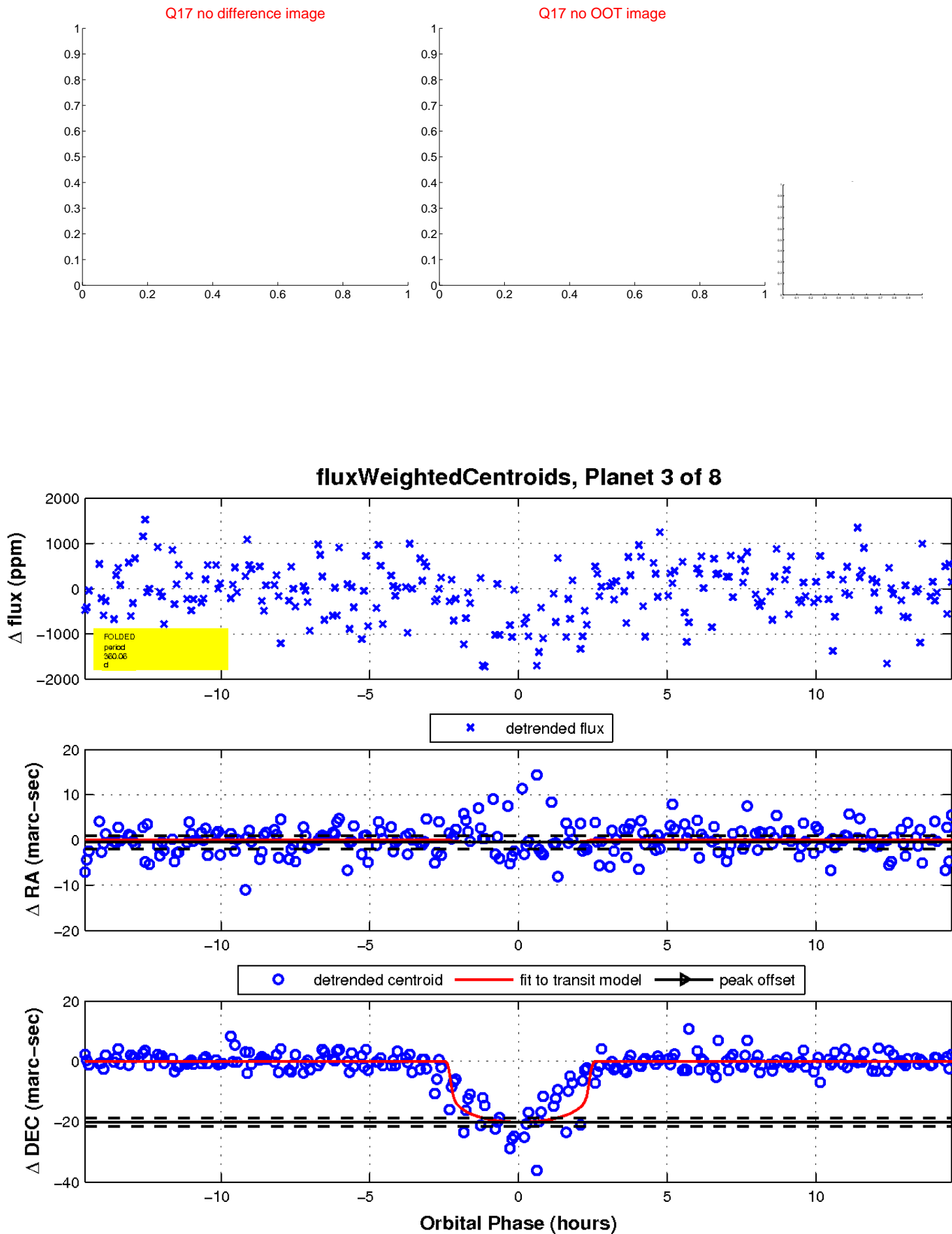
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

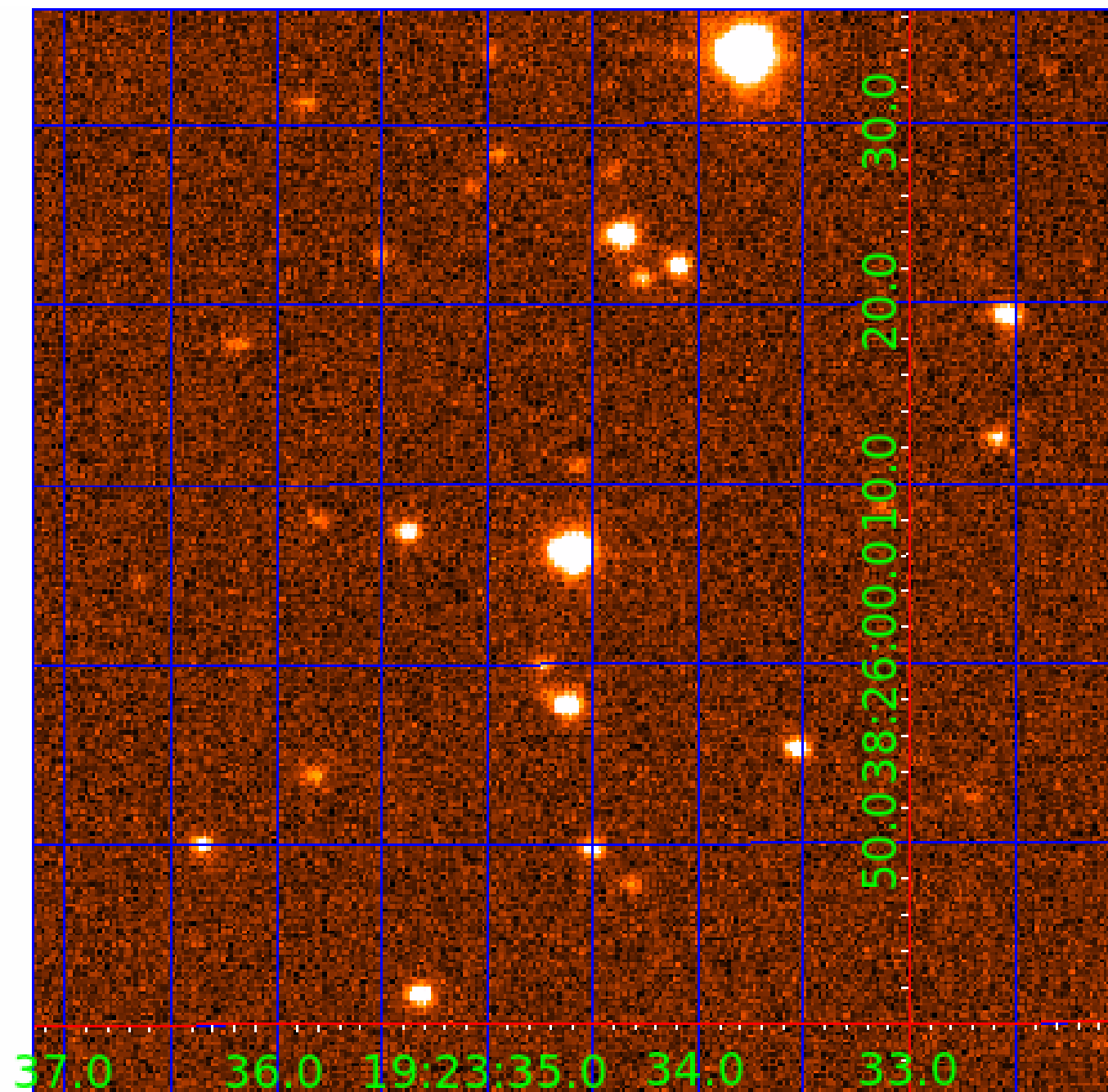


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003340070

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})
003340070-01	OBS	No	370.972187	284.381872	1283.2	5.006	11.4	11.4	0.87	5904	3.55	0.82
003340070-02	OBS	No	360.064432	295.303460	1433.0	6.008	12.1	11.4	0.87	5904	5.58	0.86
003340070-03	OBS	No	360.063975	328.028899	917.1	4.908	9.9	9.6	0.87	5904	2.75	0.86
003340070-04	OBS	No	403.699203	251.666599	1045.2	3.185	8.7	7.5	0.87	5904	2.92	0.74
003340070-05	OBS	No	360.055300	306.212057	761.7	6.064	8.2	7.4	0.87	5904	2.57	0.86
003340070-06	OBS	No	360.060697	300.215535	1053.5	4.308	8.6	7.1	0.87	5904	5.06	0.86
003340070-07	OBS	No	349.136961	343.871902	1032.3	3.390	7.8	8.9	0.87	5904	3.23	0.89
003340070-08	OBS	No	370.971282	338.932061	734.7	4.500	7.3	-1.0	0.87	5904	2.34	0.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340070-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—CENT_FEW_DIFFS
003340070-02	OBS	FP	0.00	1	0	1	0	INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET
003340070-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-04	OBS	FP	0.04	0	0	1	0	CENT_RESOLVED_OFFSET
003340070-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
003340070-06	OBS	FP	0.00	1	0	0	0	MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003340070-07	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

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

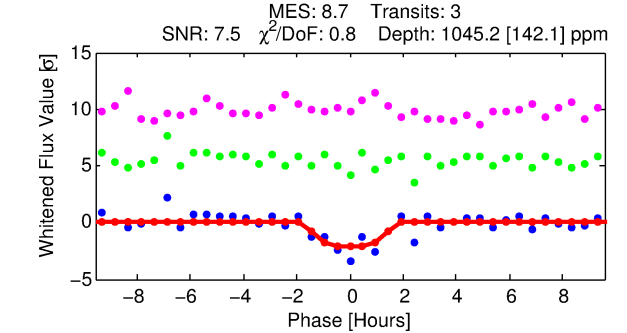
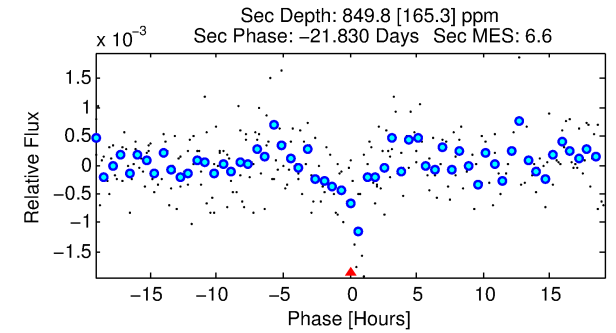
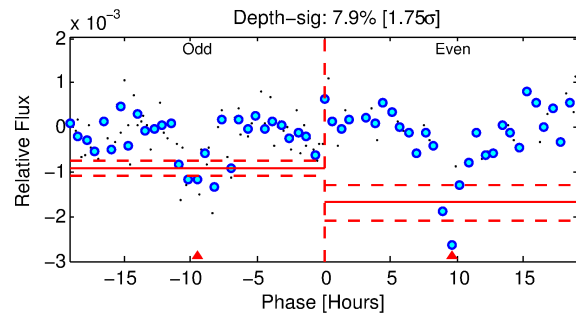
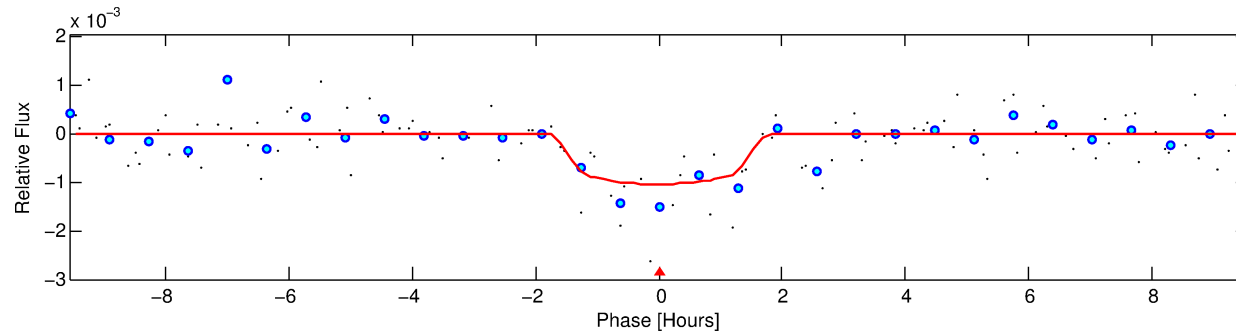
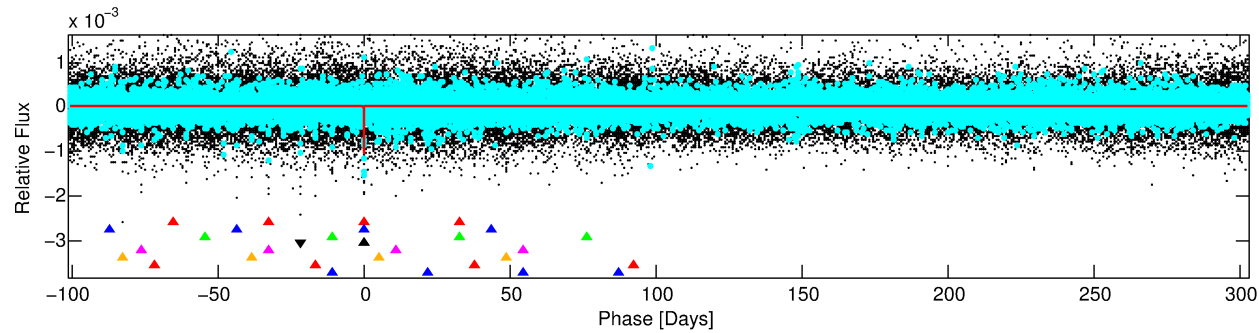
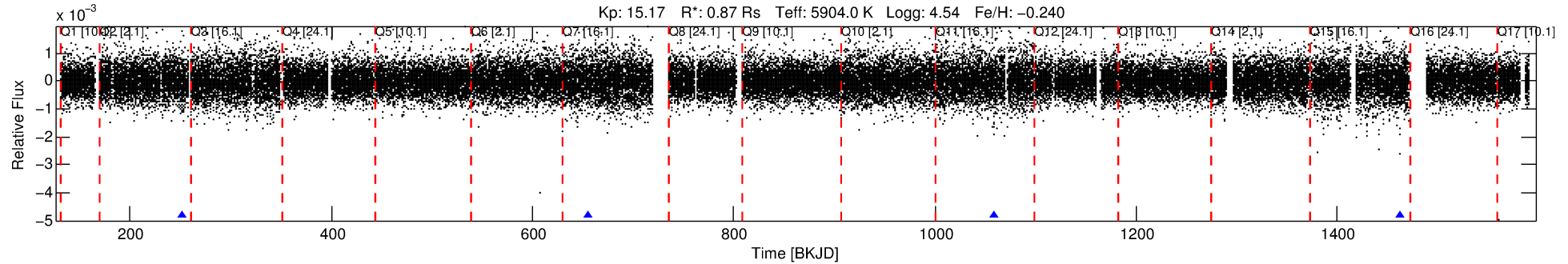
Ephemeris Match Information For 003340070-04

No Significant Match Found

DV One-Page Summary

KIC: 3340070 Candidate: 4 of 8 Period: 403.699 d
KOI: K01097 Corr: No Ephemeris Match

Kp: 15.17 R*: 0.87 Rs Teff: 5904.0 K Logg: 4.54 Fe/H: -0.240



DV Fit Results:

Period = 403.69920 [0.00382] d
Epoch = 251.6666 [0.0082] BKJD
Rp/R* = 0.0309 [0.0590]
a/R* = 816.58 [7312.57]
b = 0.59 [9.90]
Seff = 0.74 [0.29]
Teq = 236 [23] K
Rp = 2.92 [5.65] Re
a = 1.0538 [0.2689] AU
Ag = 60781.24 [233452.23] [0.26σ]
Teffp = 5735 [5484] K [1.00σ]

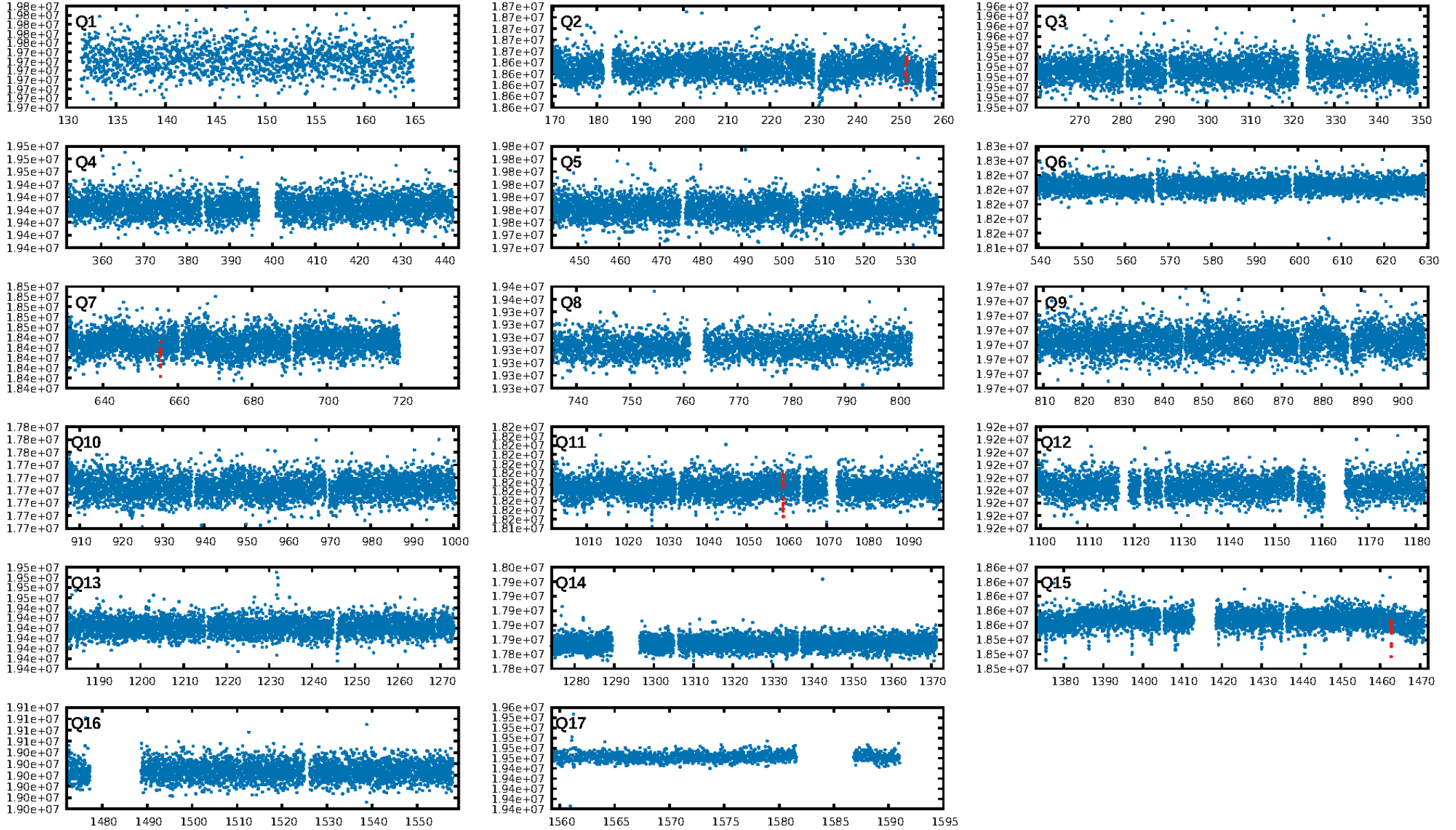
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [132.37σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 24.9%
ModelChiSquareGof-sig: 93.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.3633
Centroid-sig: 0.0%
Centroid-so: 15.487 arcsec [8.78σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.75 [3/4]

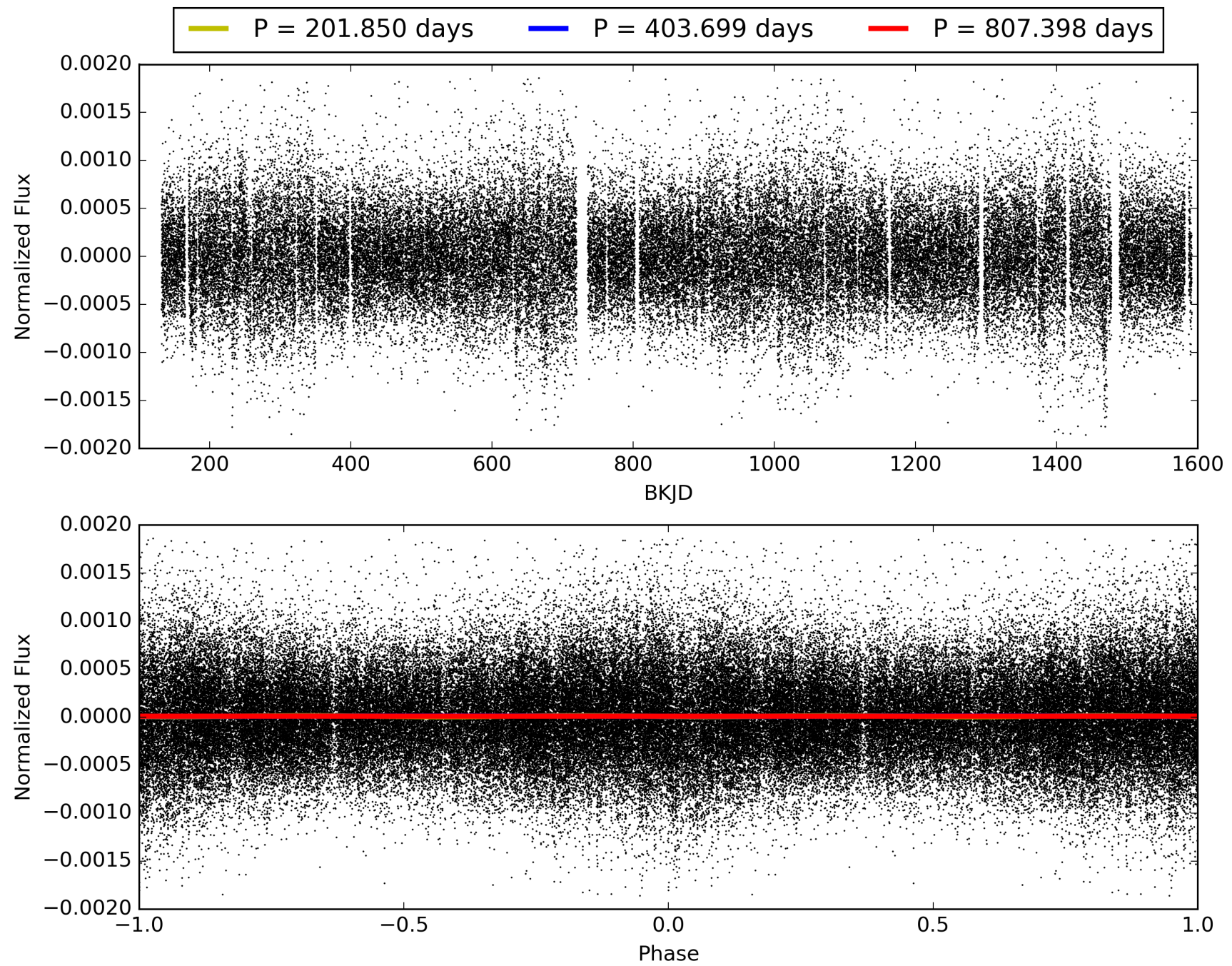
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:15:32 Z

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

TCE 003340070-04, PDC Light Curves

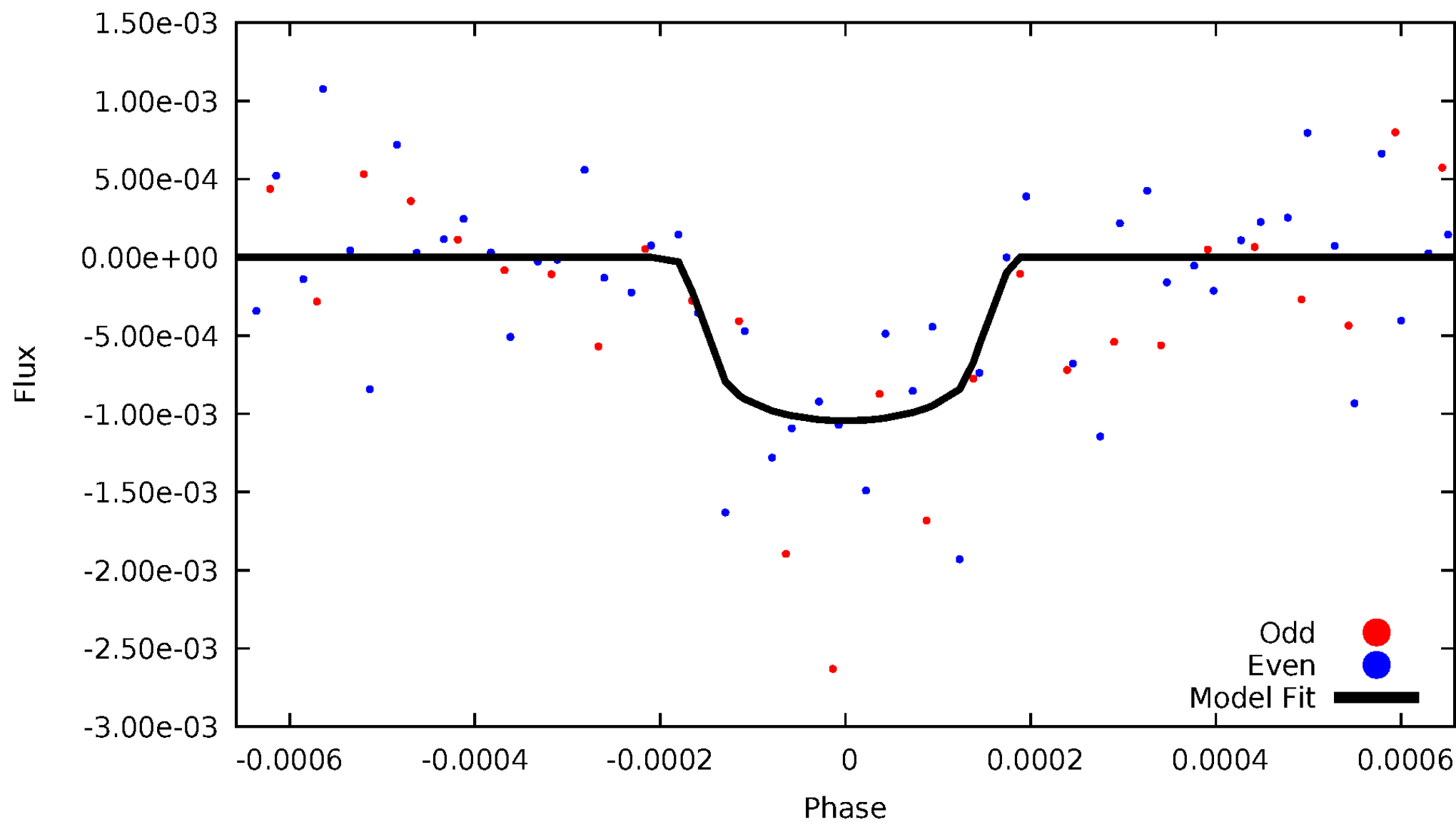


TCE 003340070-04



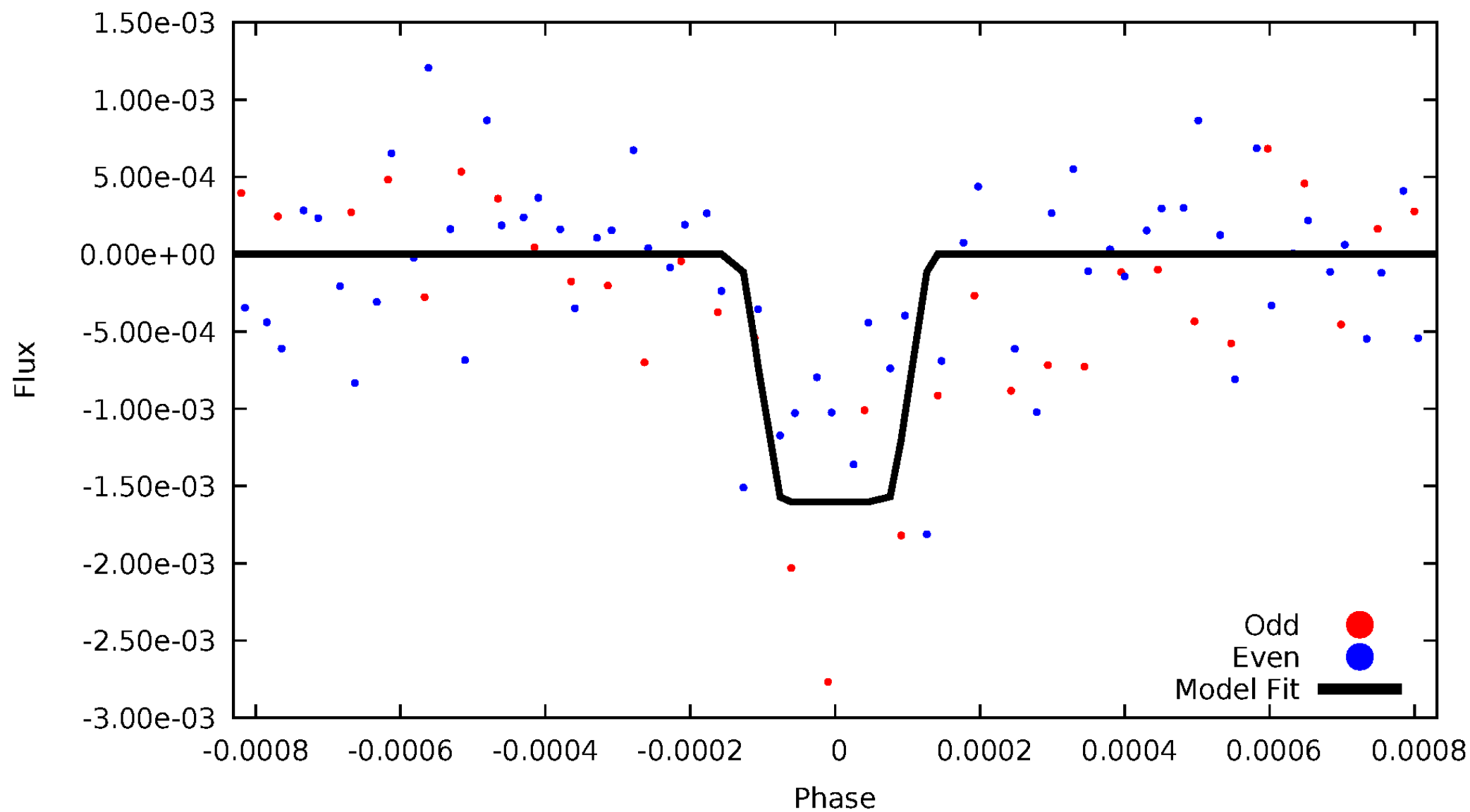
DV Odd/Even

TCE 003340070-04



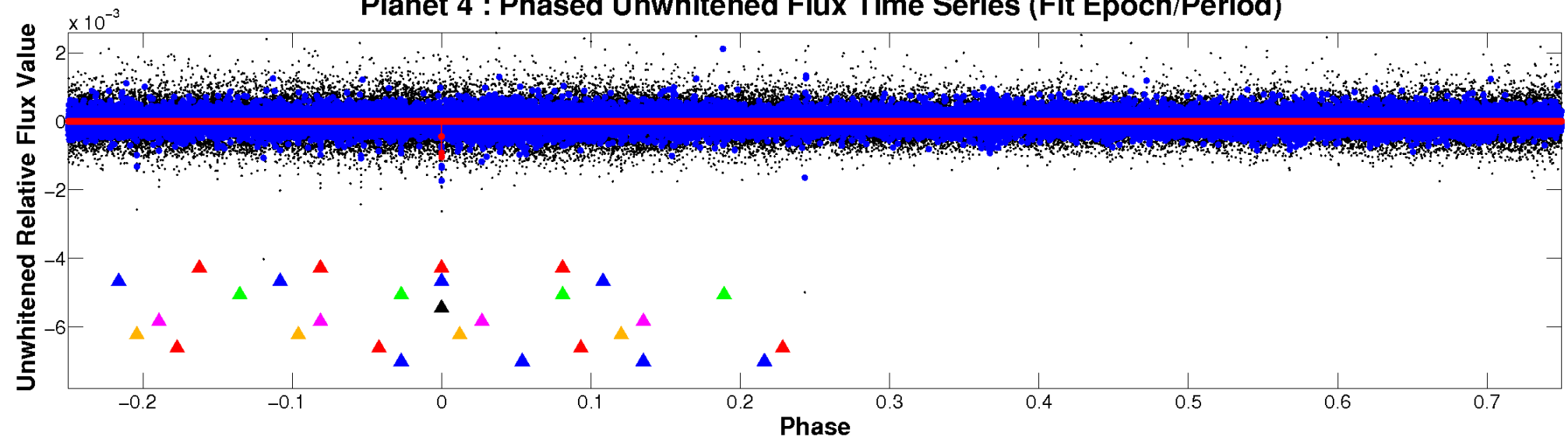
ALT Odd/Even

TCE 003340070-04

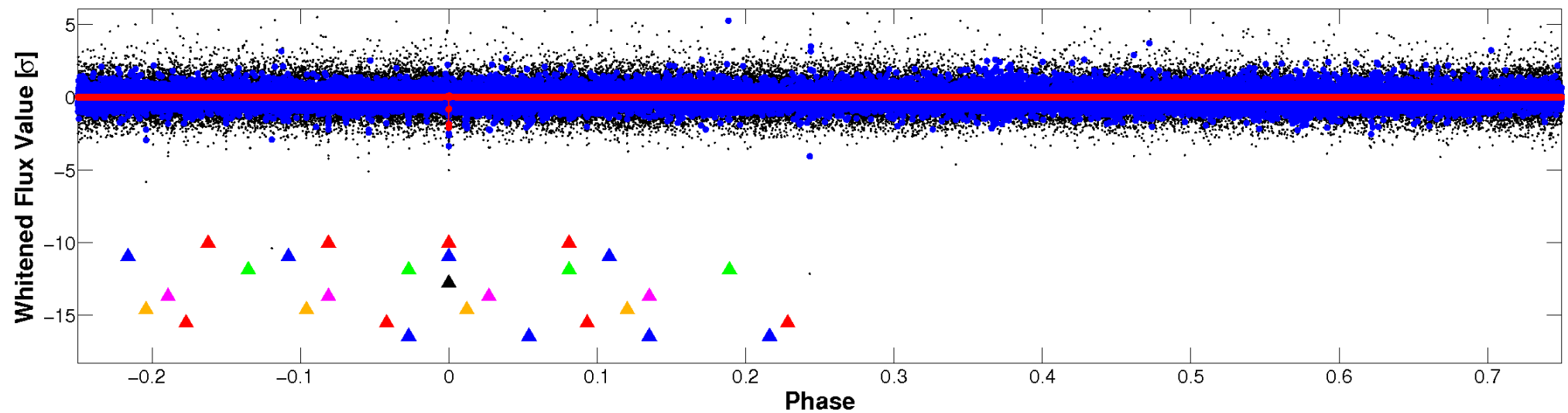


Non-Whitened Vs. Whitened Light Curve

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

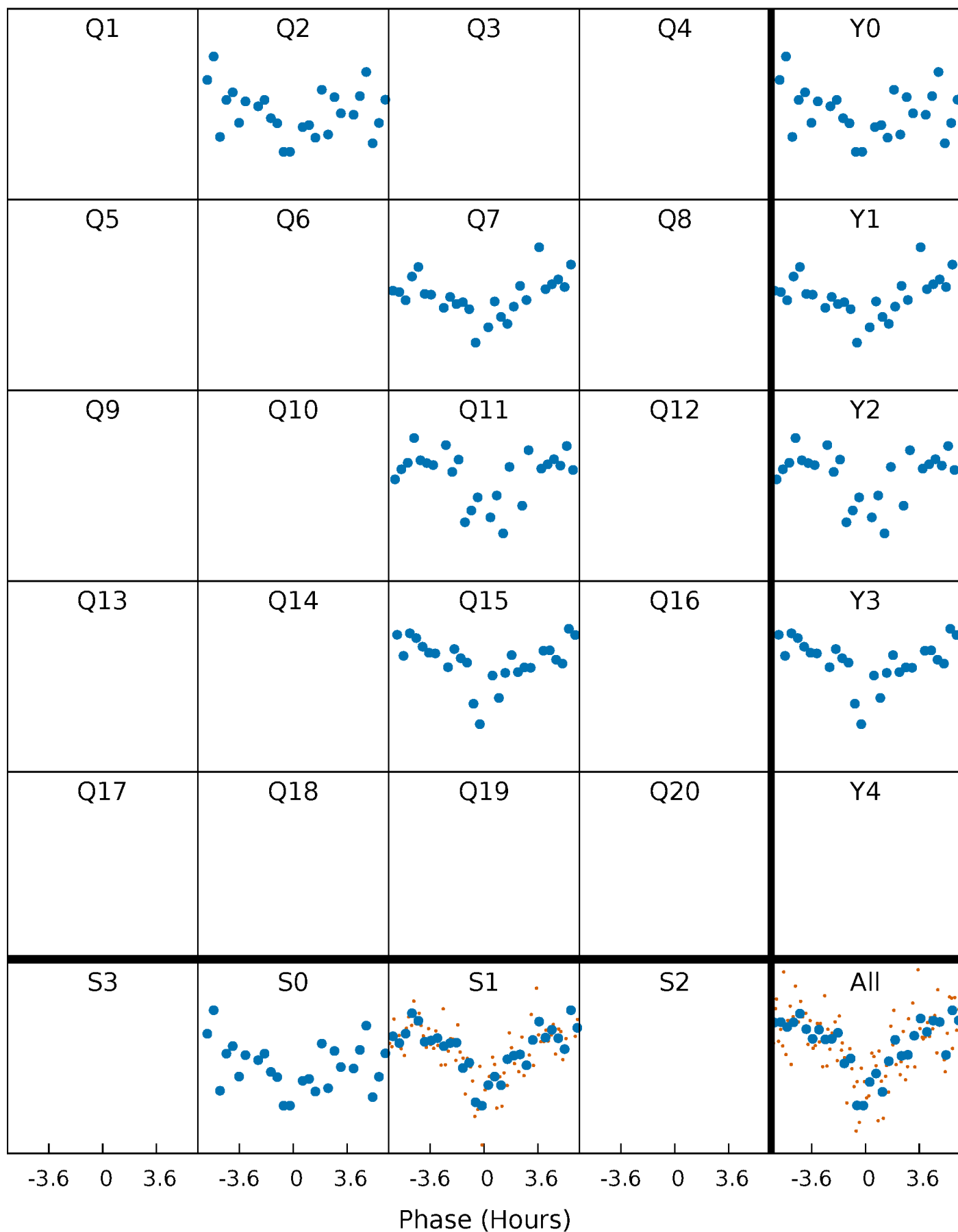


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



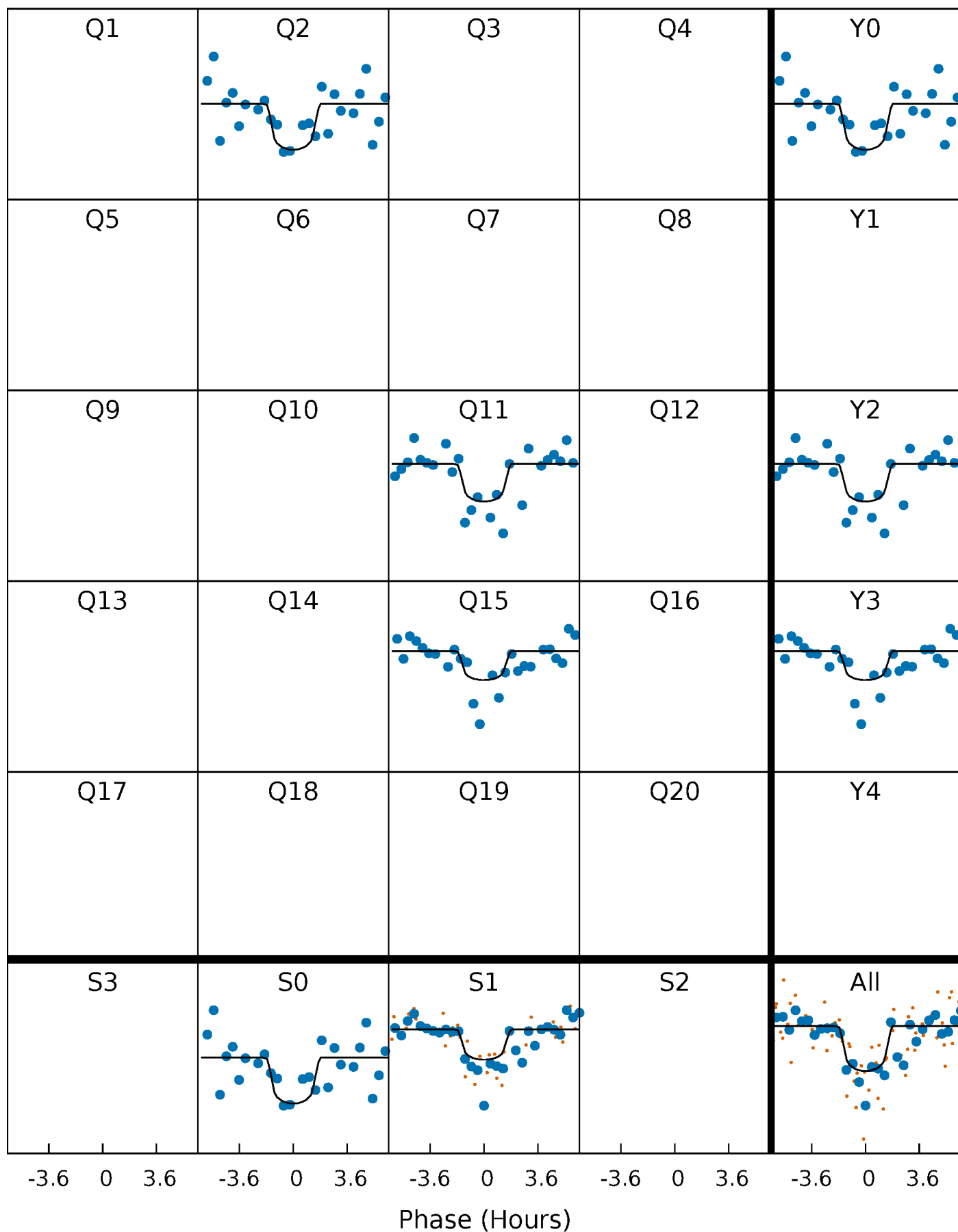
PDC Quarter-Phased Transit Curves

TCE 003340070-04 P=403.699203 Days $T_0=251.666599$ (BKJD)



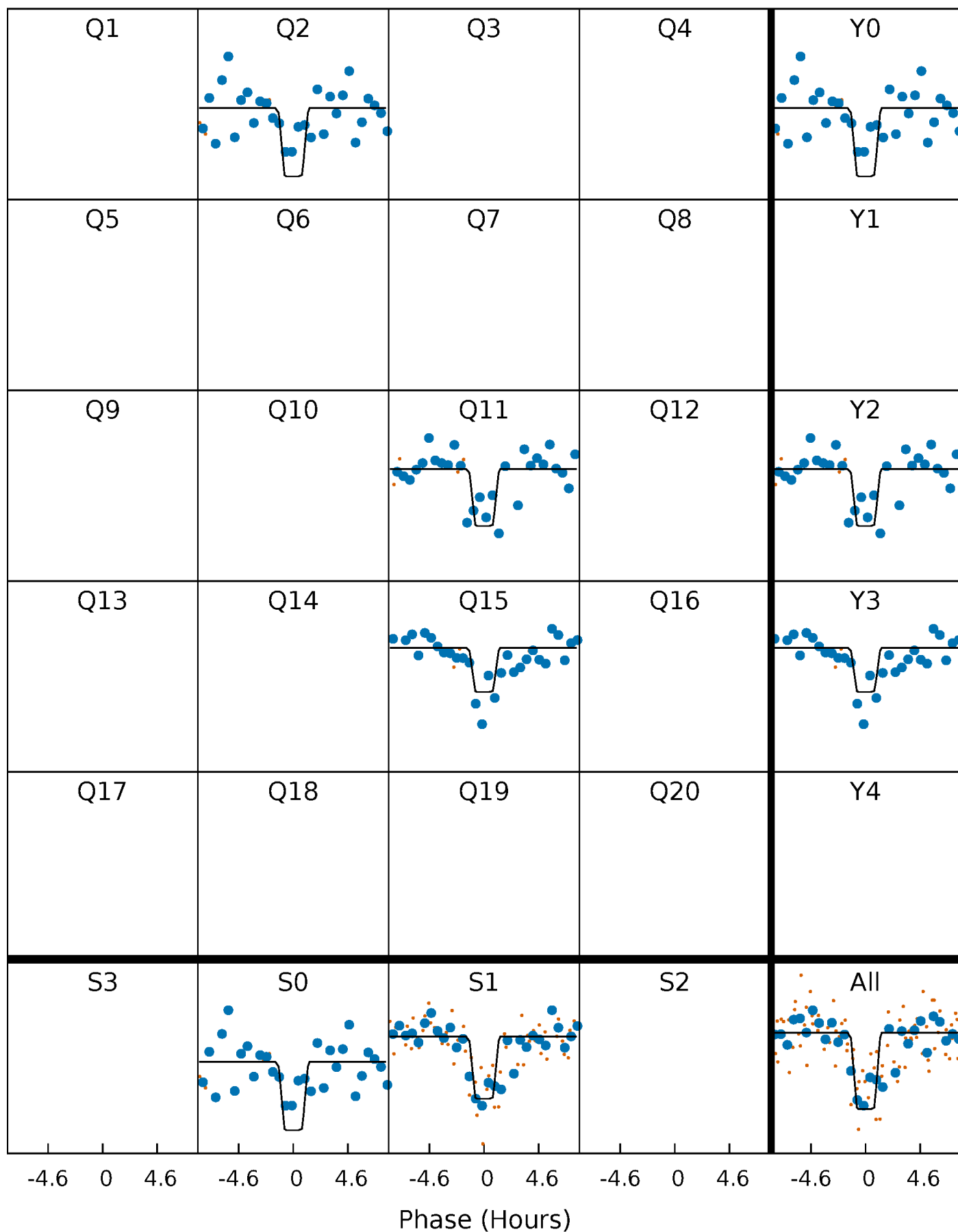
DV Quarter-Phased Transit Curves

TCE 003340070-04 P=403.699203 Days $T_0=251.666599$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

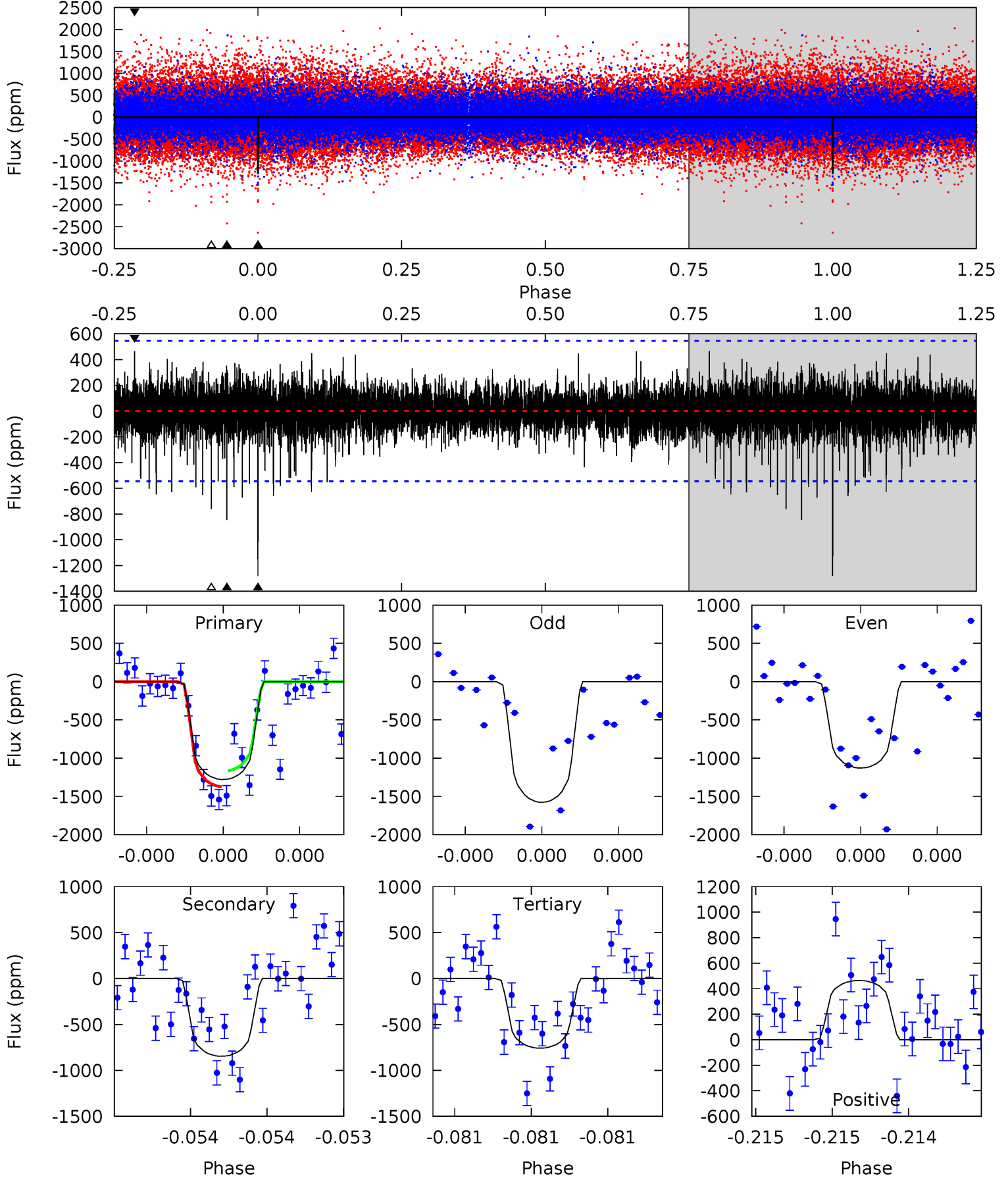
TCE 003340070-04 P=403.699034 Days $T_0=251.665636$ (BKJD)



DV Model-Shift Uniqueness Test

003340070-04, P = 403.699203 Days, E = 251.666599 Days

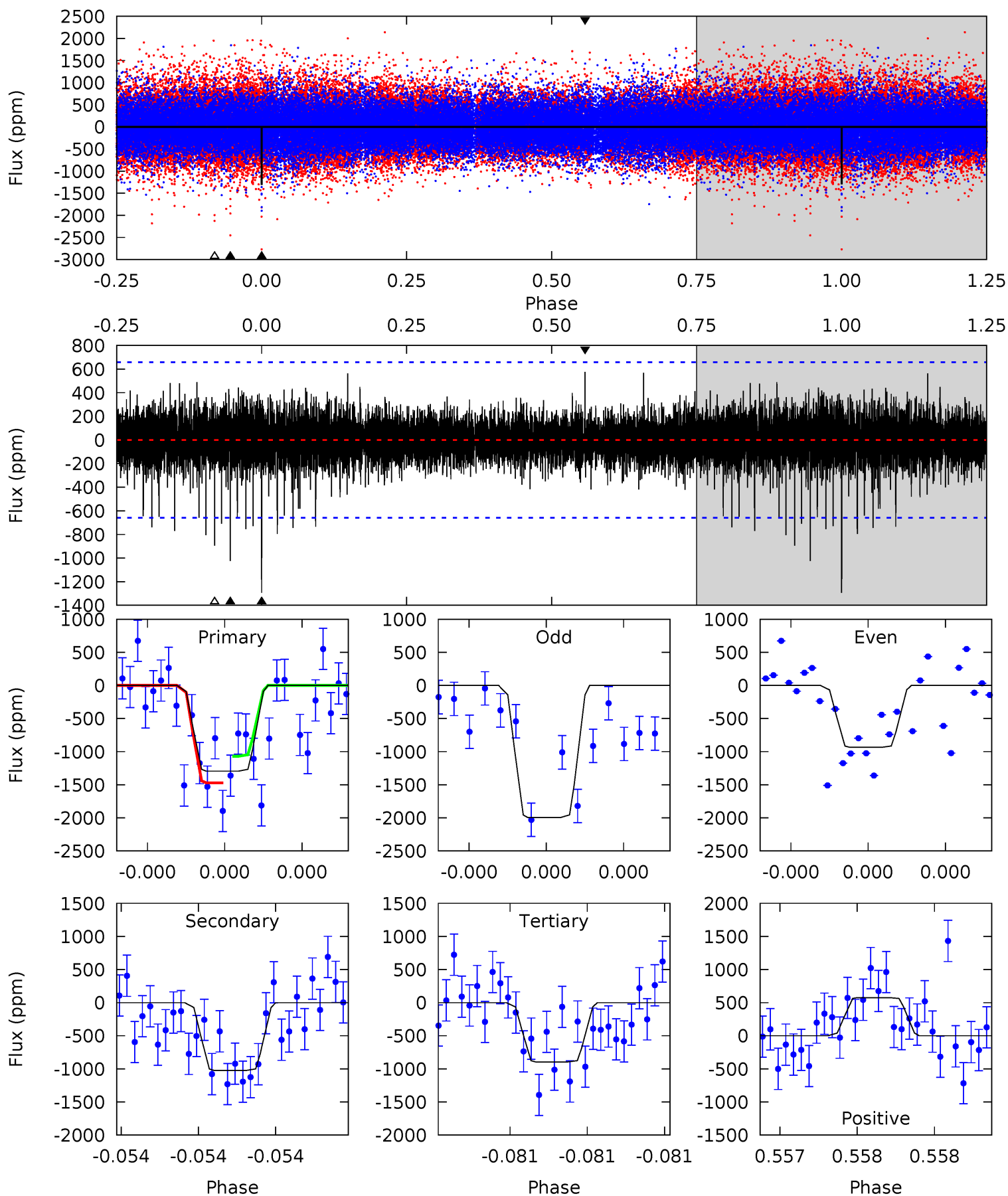
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	8.74	7.84	4.80	5.63	3.57	1.18	5.37	8.41	0.91	3.95	2.12	0.89	0.27	1.07



Alt Model-Shift Uniqueness Test

003340070-04, P = 403.699034 Days, E = 251.665636 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	8.84	7.73	4.97	5.69	3.66	1.12	3.45	6.22	1.11	3.87	4.41	1.19	0.31	1.72



Stellar Parameters For KIC 003340070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5904^{+160}_{-178}	$4.543^{+0.048}_{-0.204}$	$-0.240^{+0.300}_{-0.300}$	$0.867^{+0.262}_{-0.082}$	$0.958^{+0.107}_{-0.119}$	$2.073^{+0.399}_{-1.039}$
	+3%/-3%	+1%/-4%	+125%/-125%	+30%/-9%	+11%/-12%	+19%/-50%
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 003340070-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-847 ± 97	$5.28^{+4.82}_{-3.72}$	338^{+22}_{-15}	4514^{+3785}_{-903}	$17860^{+196631}_{-12691}$
Alt.	-1023 ± 116	$5.70^{+4.66}_{-3.62}$	337^{+22}_{-15}	4542^{+2763}_{-844}	$18573^{+125107}_{-12799}$

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 003340070-04. Kepler magnitude: 15.17. Transit SNR 7.54

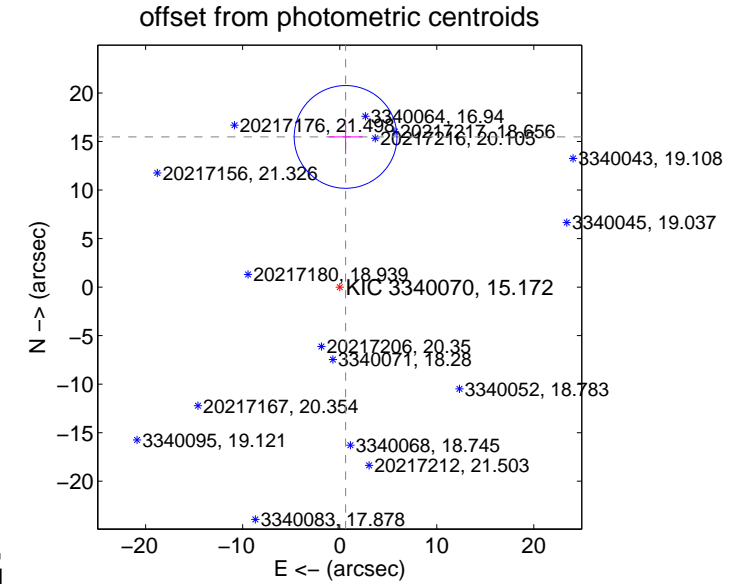
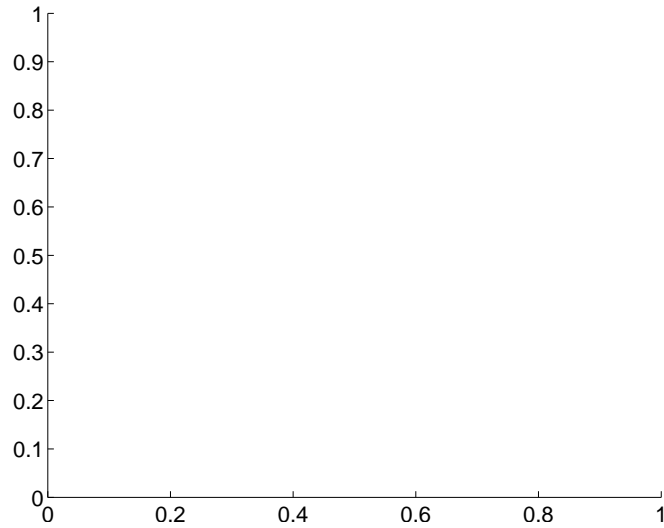
There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	15.49 ± 1.76	8.78	-0.60 ± 1.75	15.48 ± 1.76

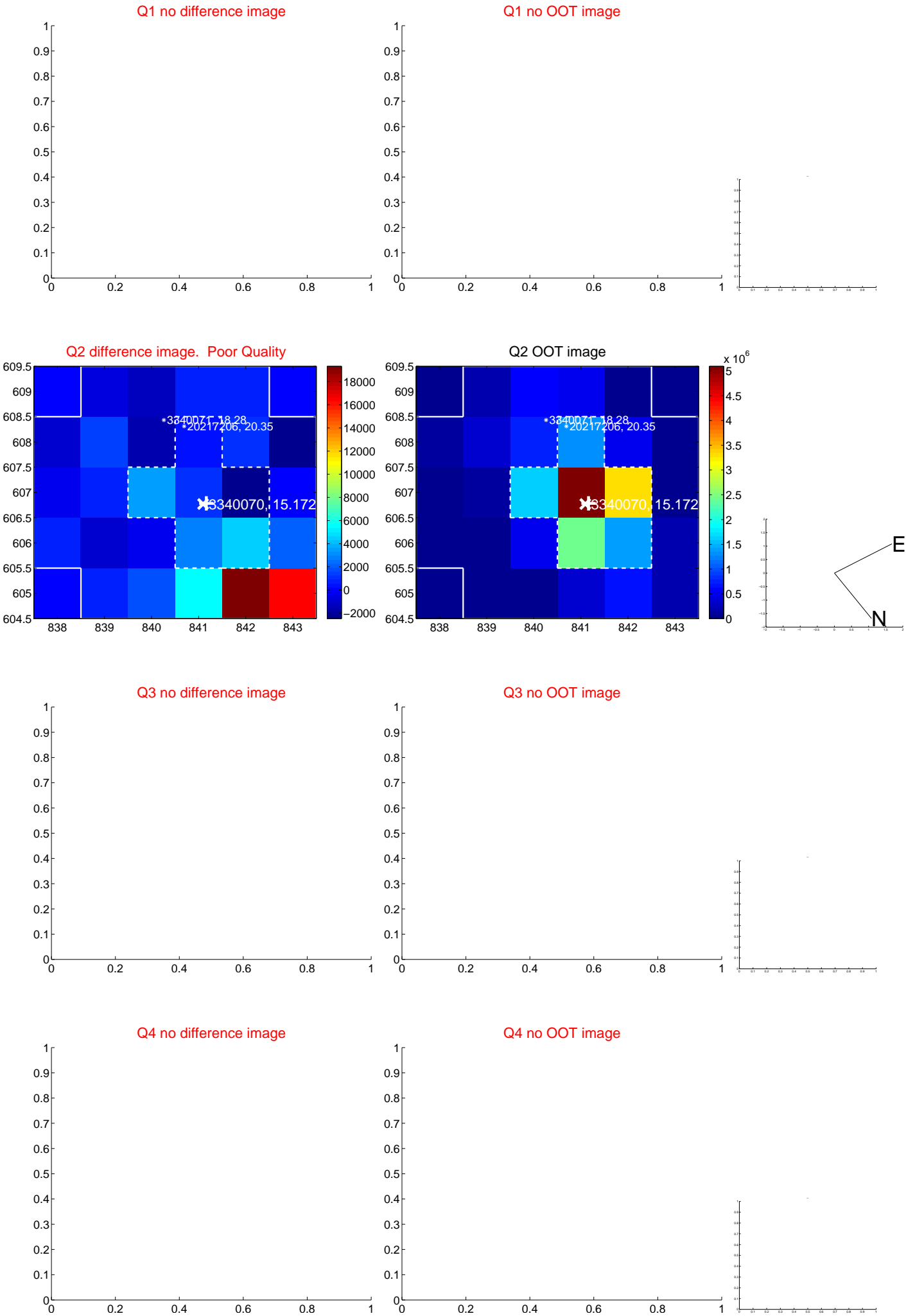
There is no PRF-fit offset from OOT-fit

There is no PRF-fit offset from KIC

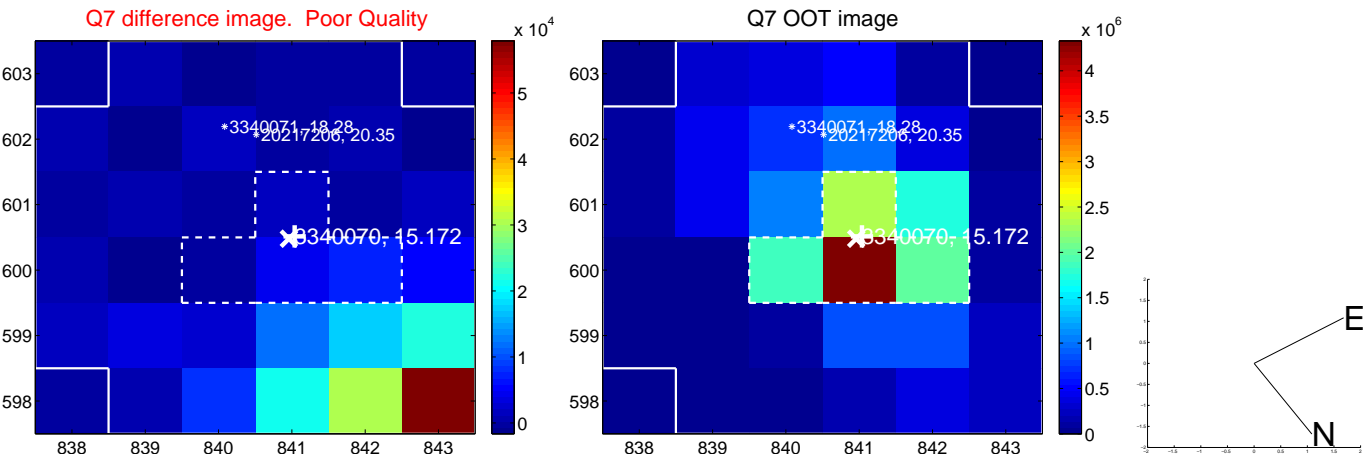


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

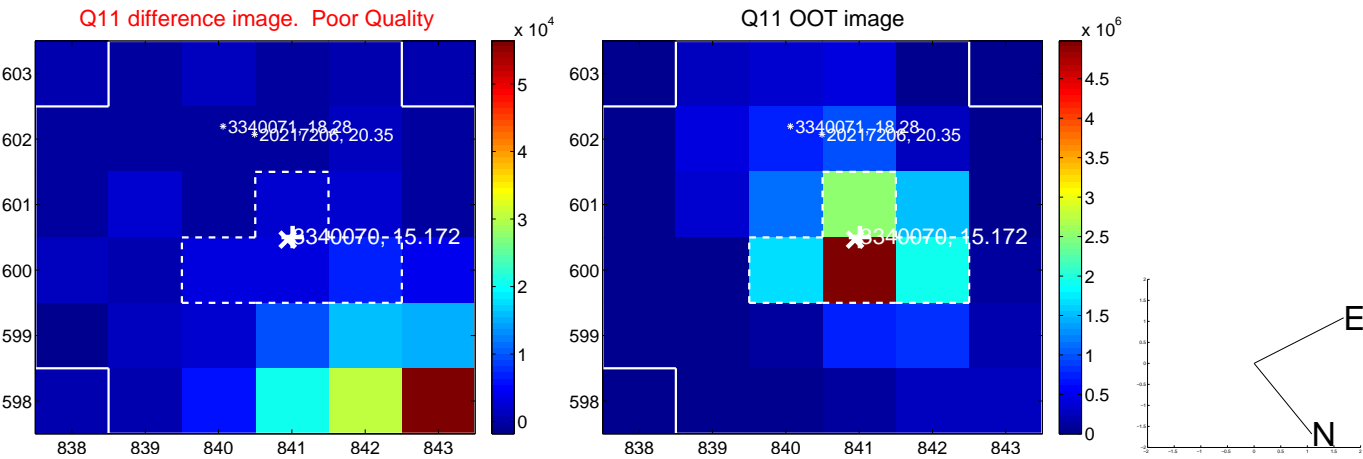
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



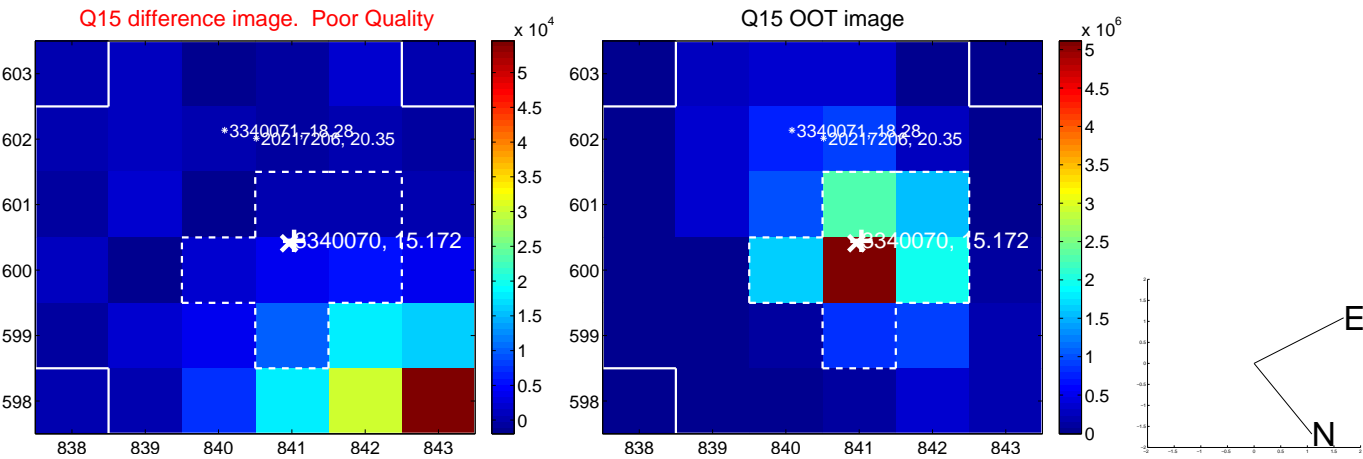
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



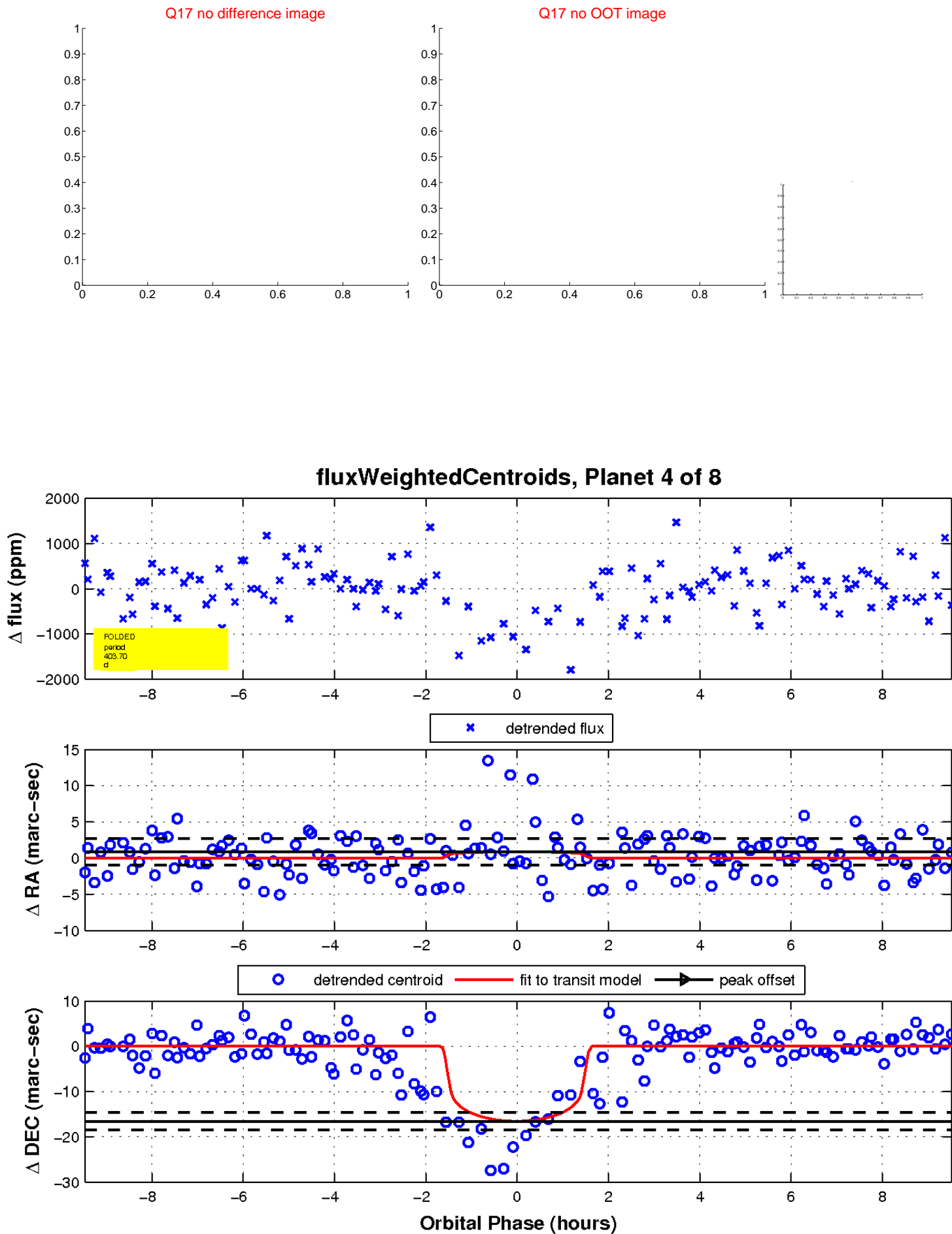
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

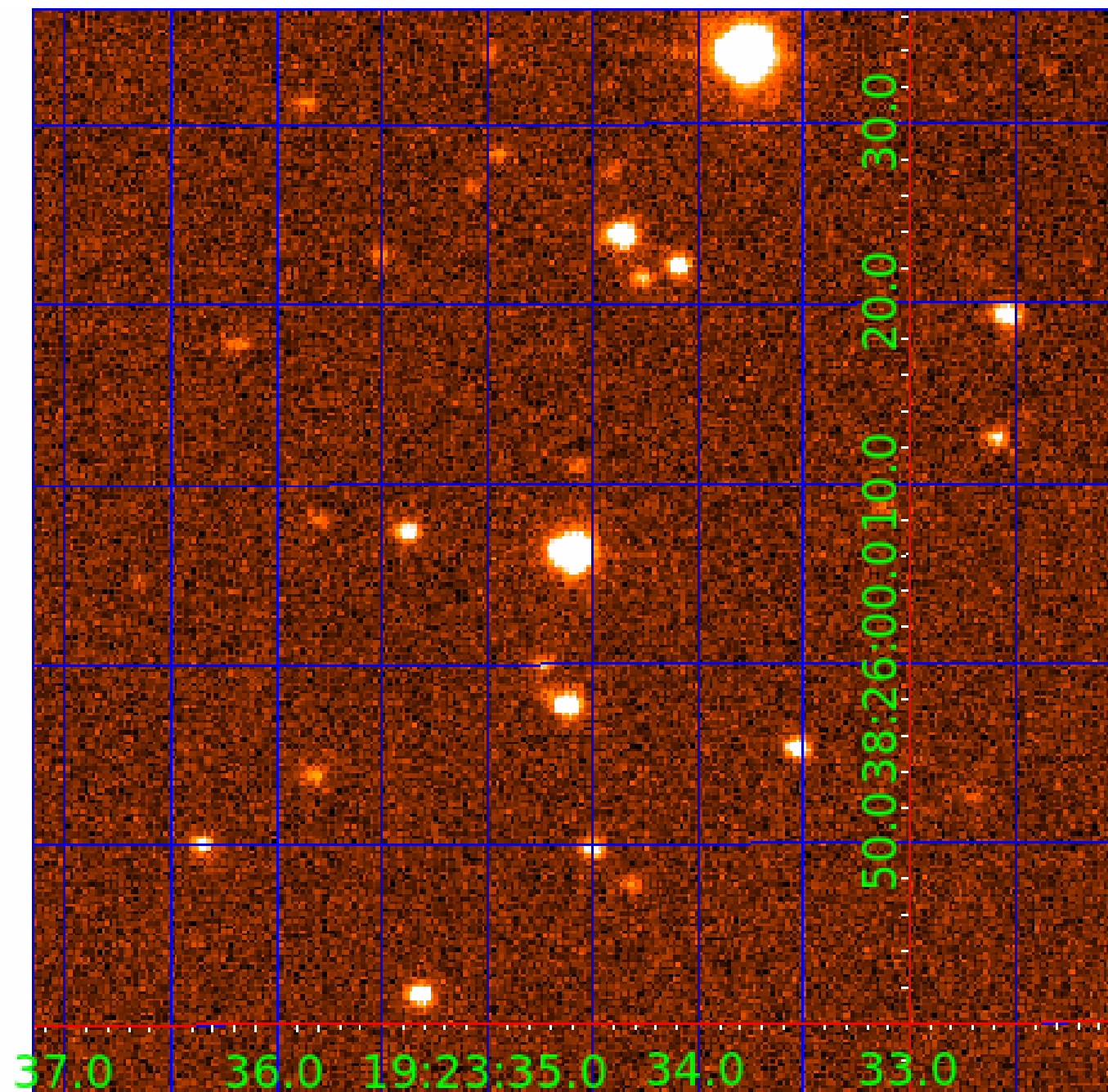


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003340070

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})
003340070-01	OBS	No	370.972187	284.381872	1283.2	5.006	11.4	11.4	0.87	5904	3.55	0.82
003340070-02	OBS	No	360.064432	295.303460	1433.0	6.008	12.1	11.4	0.87	5904	5.58	0.86
003340070-03	OBS	No	360.063975	328.028899	917.1	4.908	9.9	9.6	0.87	5904	2.75	0.86
003340070-04	OBS	No	403.699203	251.666599	1045.2	3.185	8.7	7.5	0.87	5904	2.92	0.74
003340070-05	OBS	No	360.055300	306.212057	761.7	6.064	8.2	7.4	0.87	5904	2.57	0.86
003340070-06	OBS	No	360.060697	300.215535	1053.5	4.308	8.6	7.1	0.87	5904	5.06	0.86
003340070-07	OBS	No	349.136961	343.871902	1032.3	3.390	7.8	8.9	0.87	5904	3.23	0.89
003340070-08	OBS	No	370.971282	338.932061	734.7	4.500	7.3	-1.0	0.87	5904	2.34	0.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340070-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—CENT_FEW_DIFFS
003340070-02	OBS	FP	0.00	1	0	1	0	INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET
003340070-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-04	OBS	FP	0.04	0	0	1	0	CENT_RESOLVED_OFFSET
003340070-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
003340070-06	OBS	FP	0.00	1	0	0	0	MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003340070-07	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

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

Ephemeris Match Information For 003340070-05

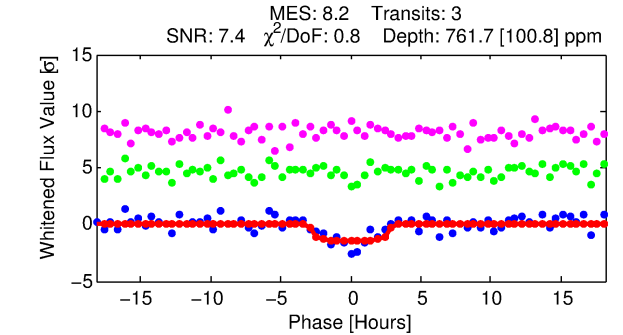
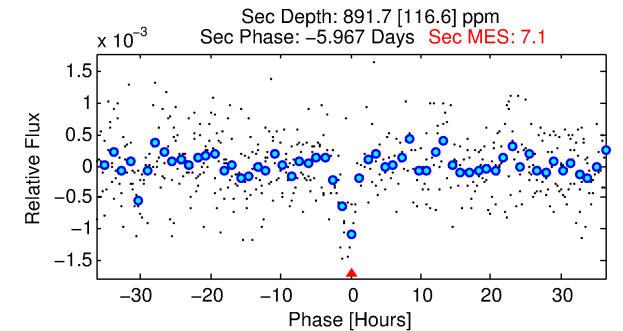
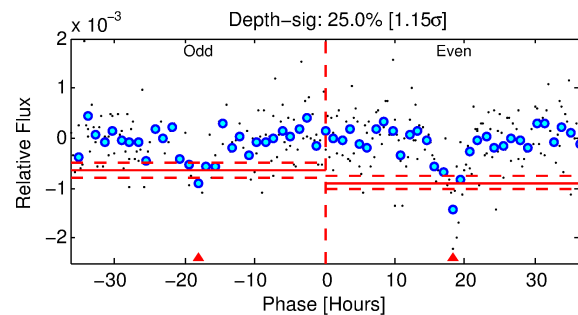
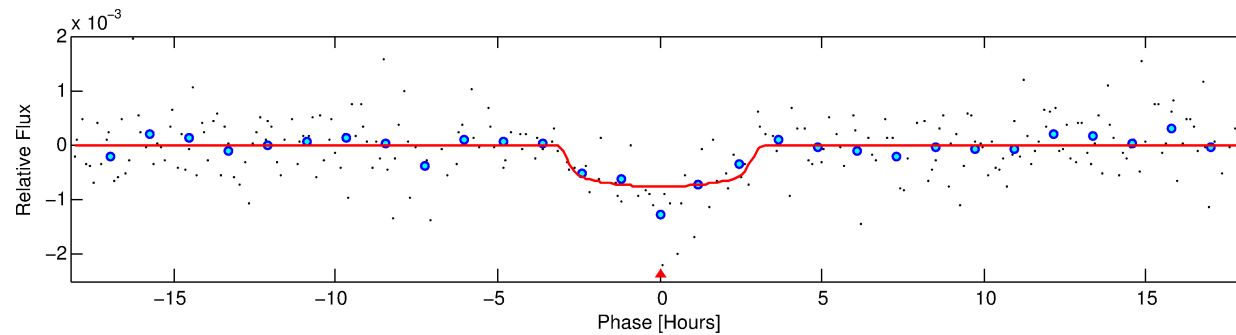
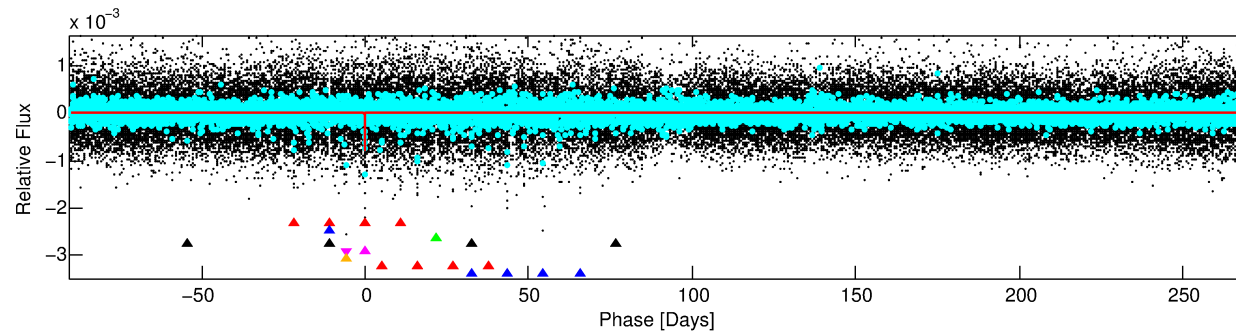
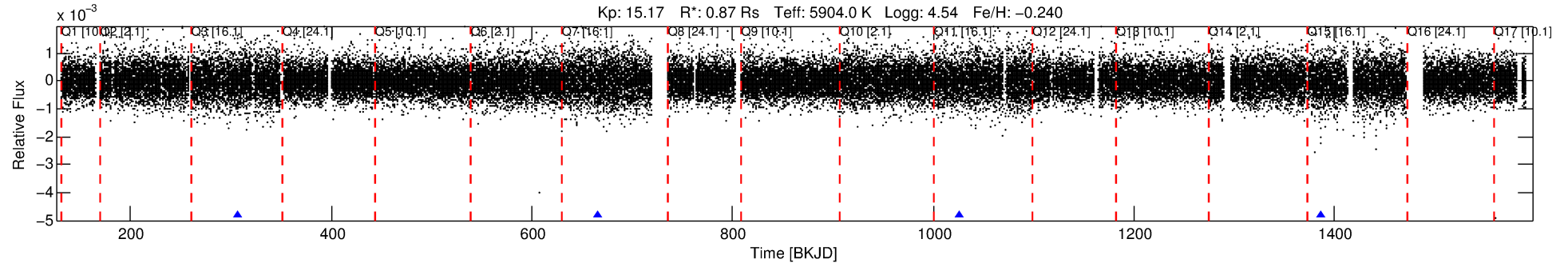
No Significant Match Found

DV One-Page Summary

KIC: 3340070 Candidate: 5 of 8 Period: 360.055 d

KOI: K01097 Corr: No Ephemeris Match

Kp: 15.17 R*: 0.87 Rs Teff: 5904.0 K Logg: 4.54 Fe/H: -0.240



DV Fit Results:

Period = 360.05530 [0.00678] d
Epoch = 306.2121 [0.0106] BKJD
Rp/R* = 0.0272 [0.0164]
a/R* = 331.17 [941.38]
b = 0.72 [1.89]
Seff = 0.86 [0.34]
Teq = 245 [24] K
Rp = 2.57 [1.74] Re
a = 0.9764 [0.2491] AU
Ag = 70587.40 [89761.62] [0.79σ]
Teff = 6185 [1889] K [3.14σ]

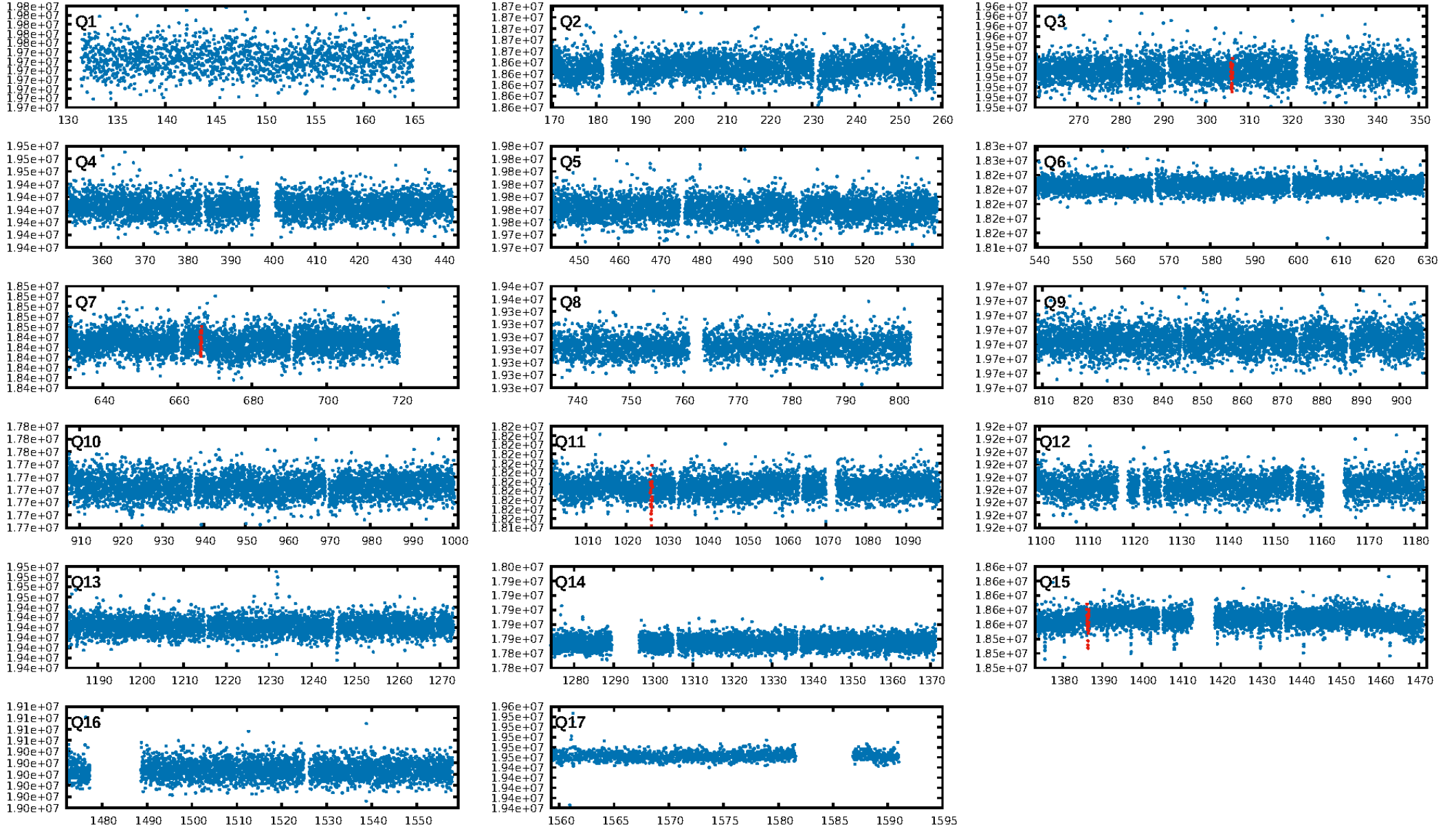
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [37.72σ]
LongPeriod-sig: 1.4% [0.02σ]
ModelChiSquare2-sig: 55.3%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.3016
Centroid-sig: 0.0%
Centroid-so: 24.538 arcsec [14.73σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 0.75 [3/4]

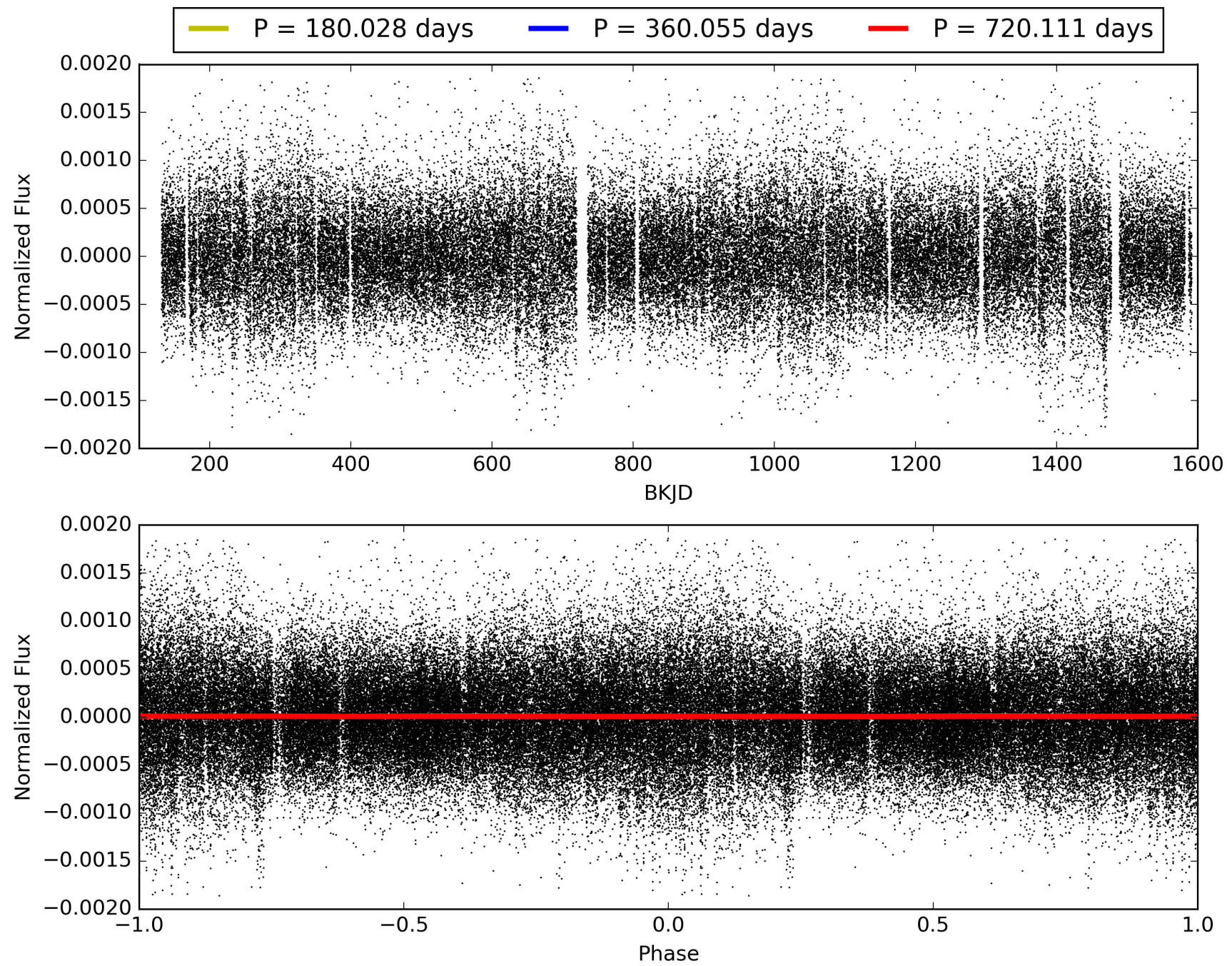
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:15:44 Z

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

TCE 003340070-05, PDC Light Curves

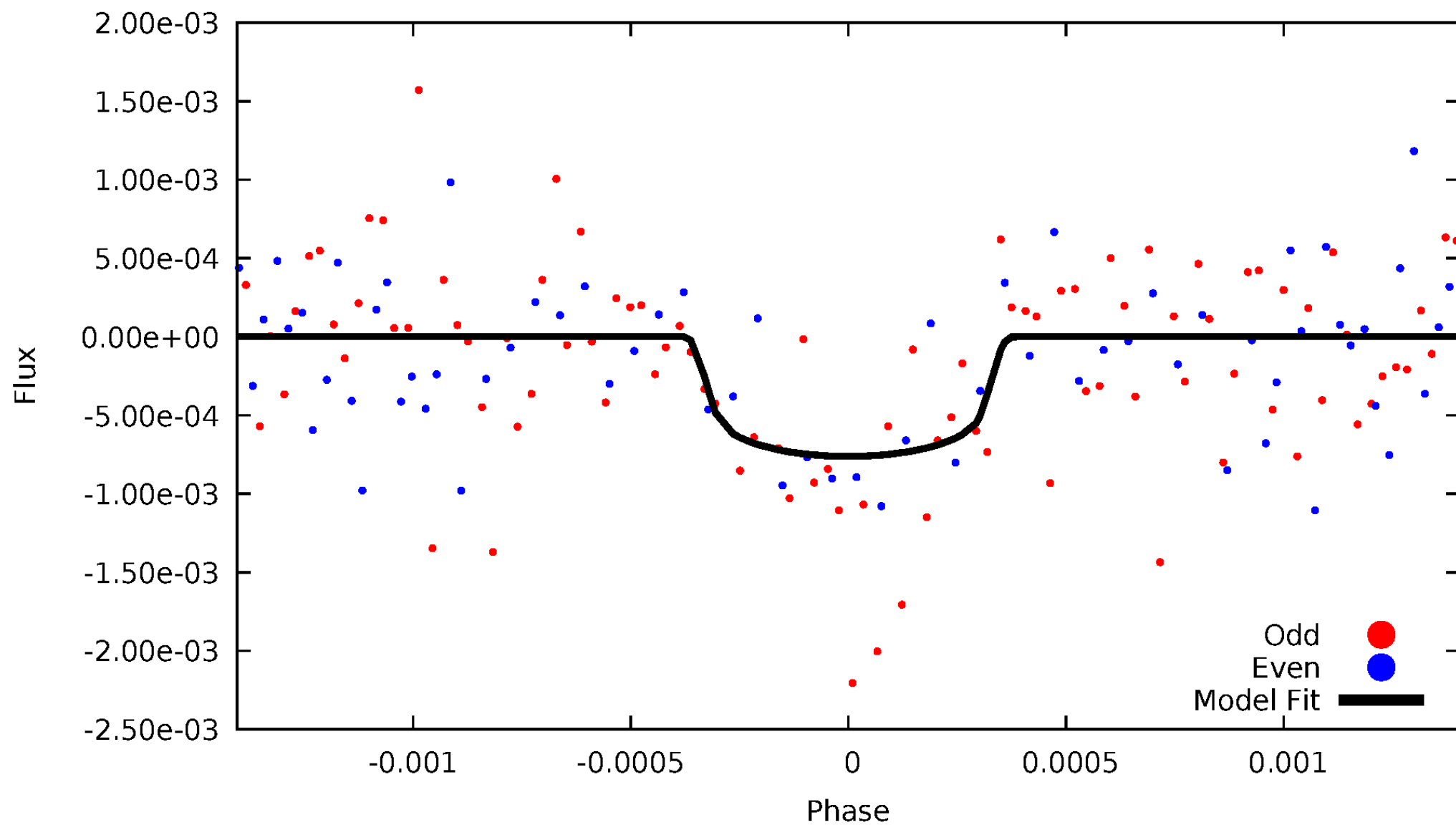


TCE 003340070-05



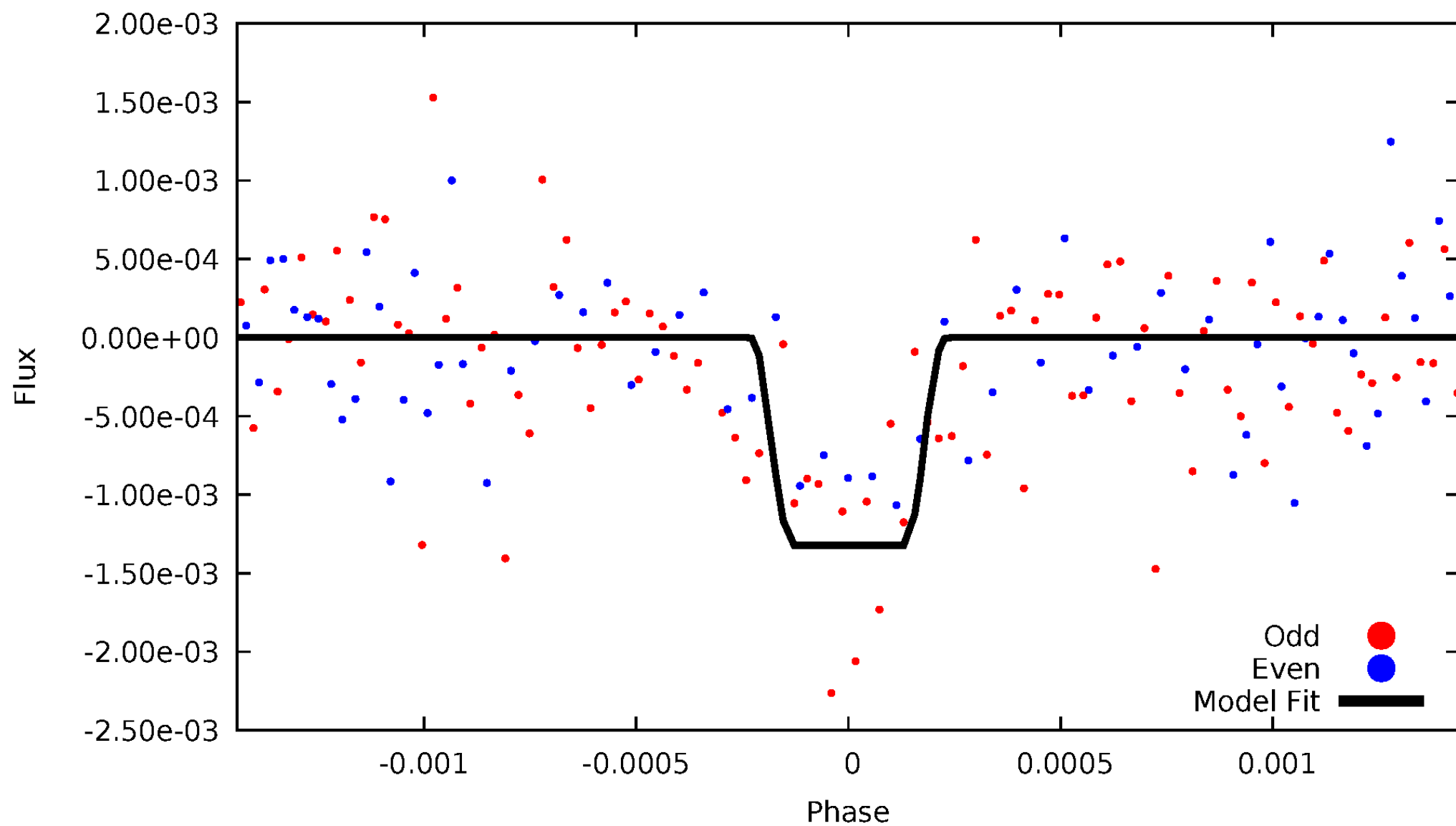
DV Odd/Even

TCE 003340070-05



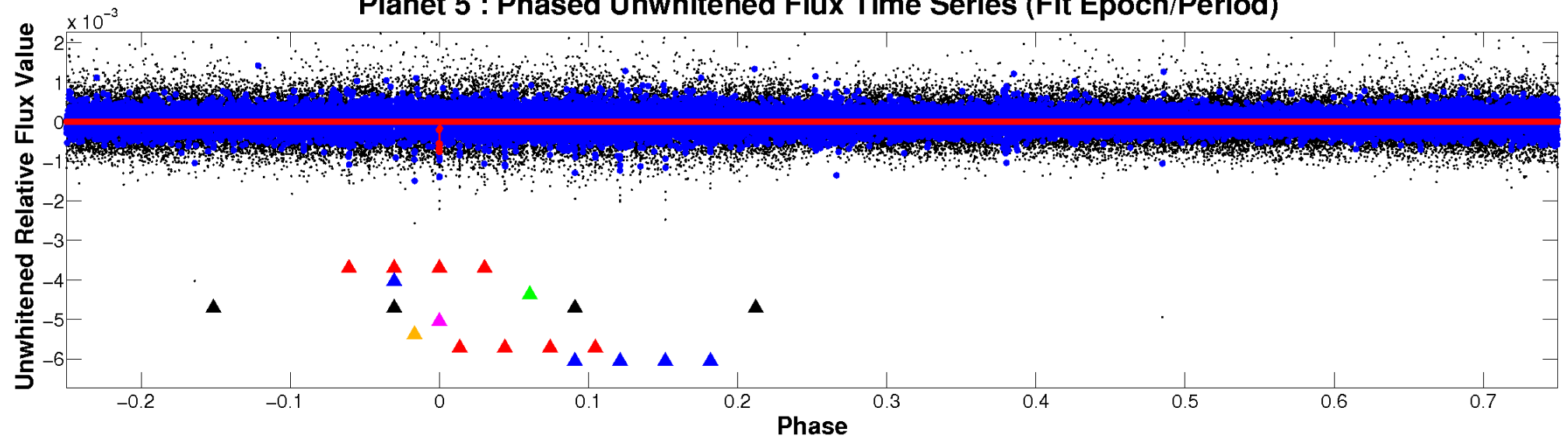
ALT Odd/Even

TCE 003340070-05

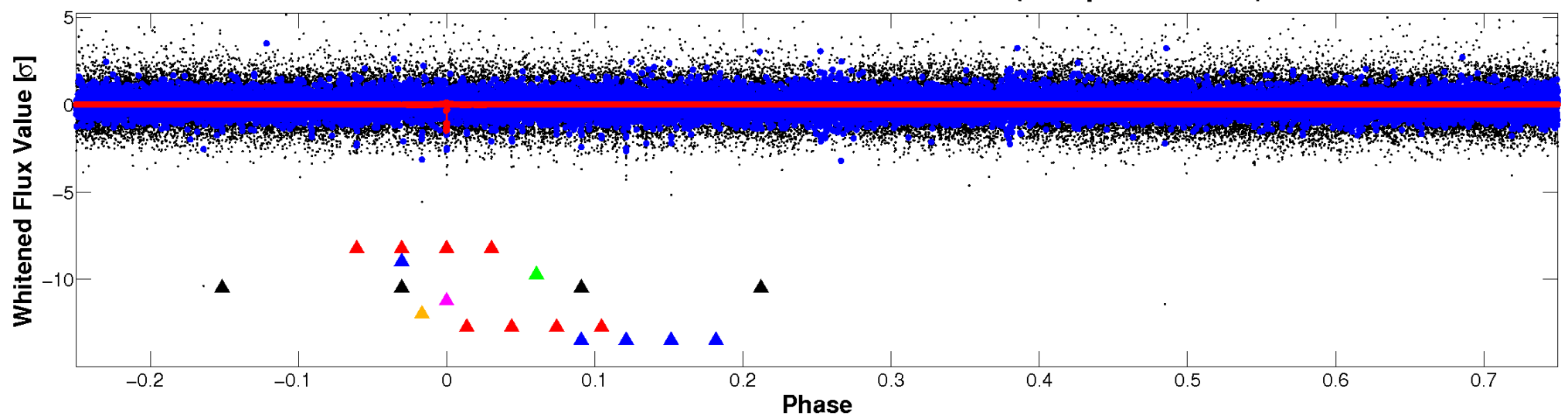


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

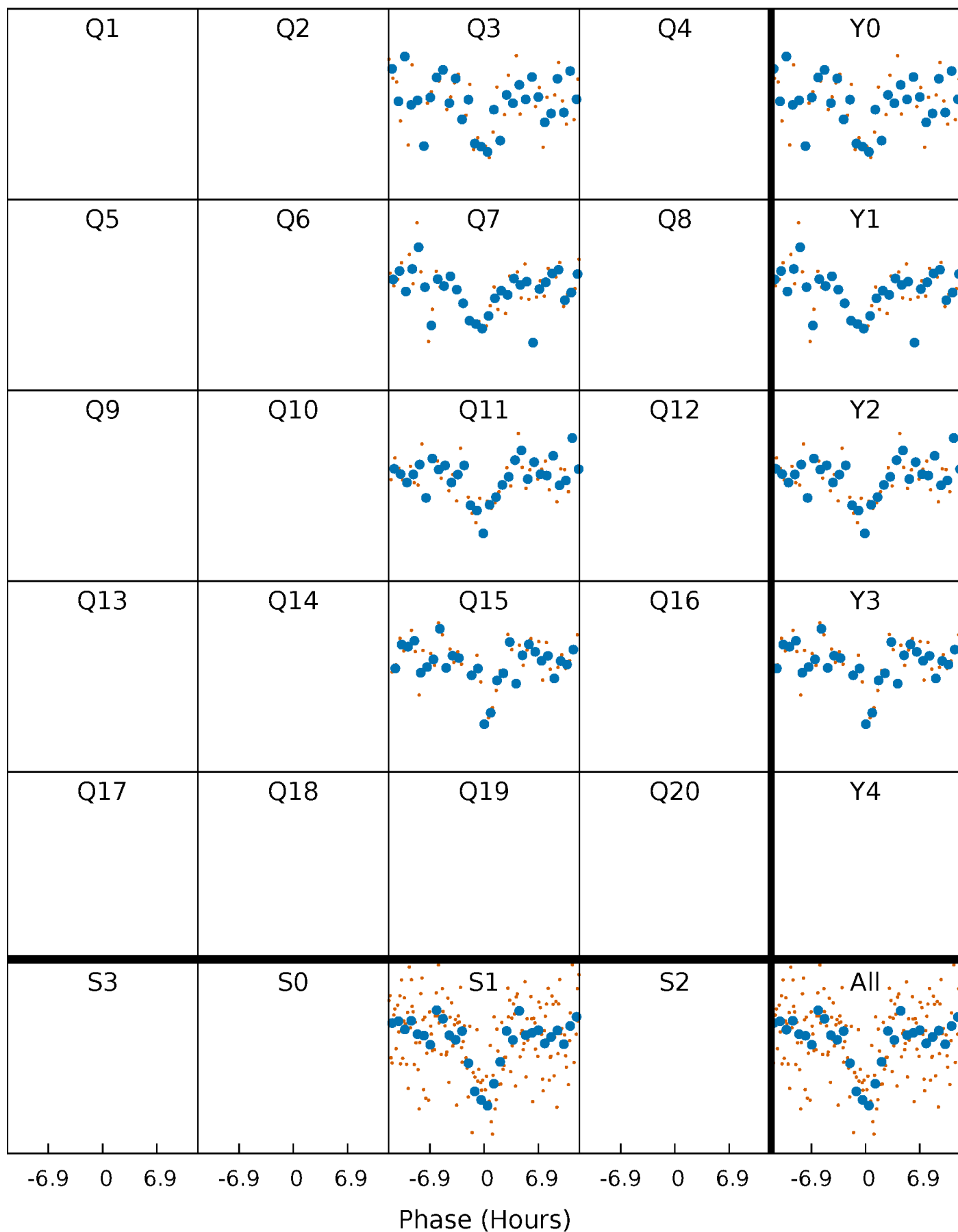


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



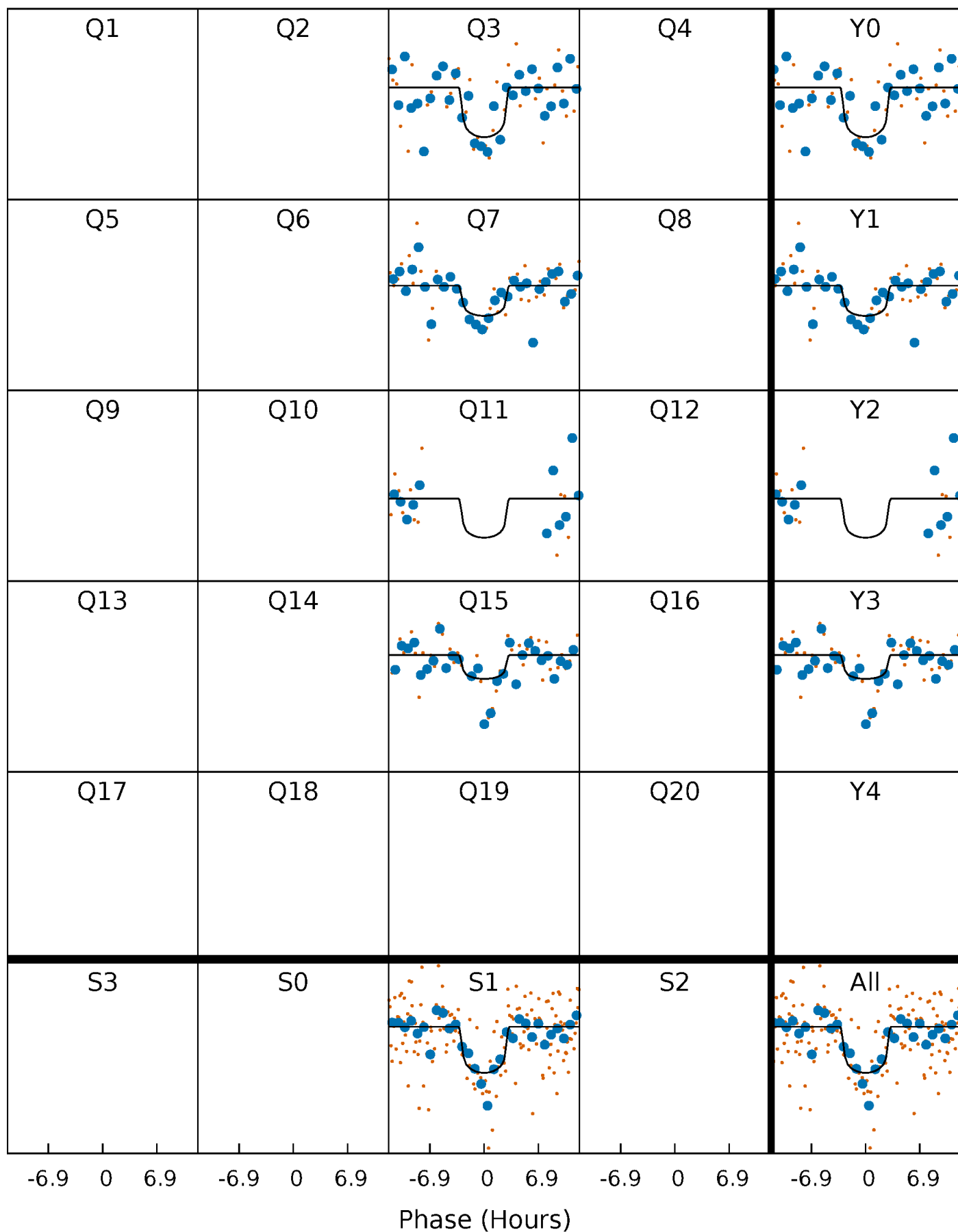
PDC Quarter-Phased Transit Curves

TCE 003340070-05 $P=360.055300$ Days $T_0=306.212057$ (BKJD)



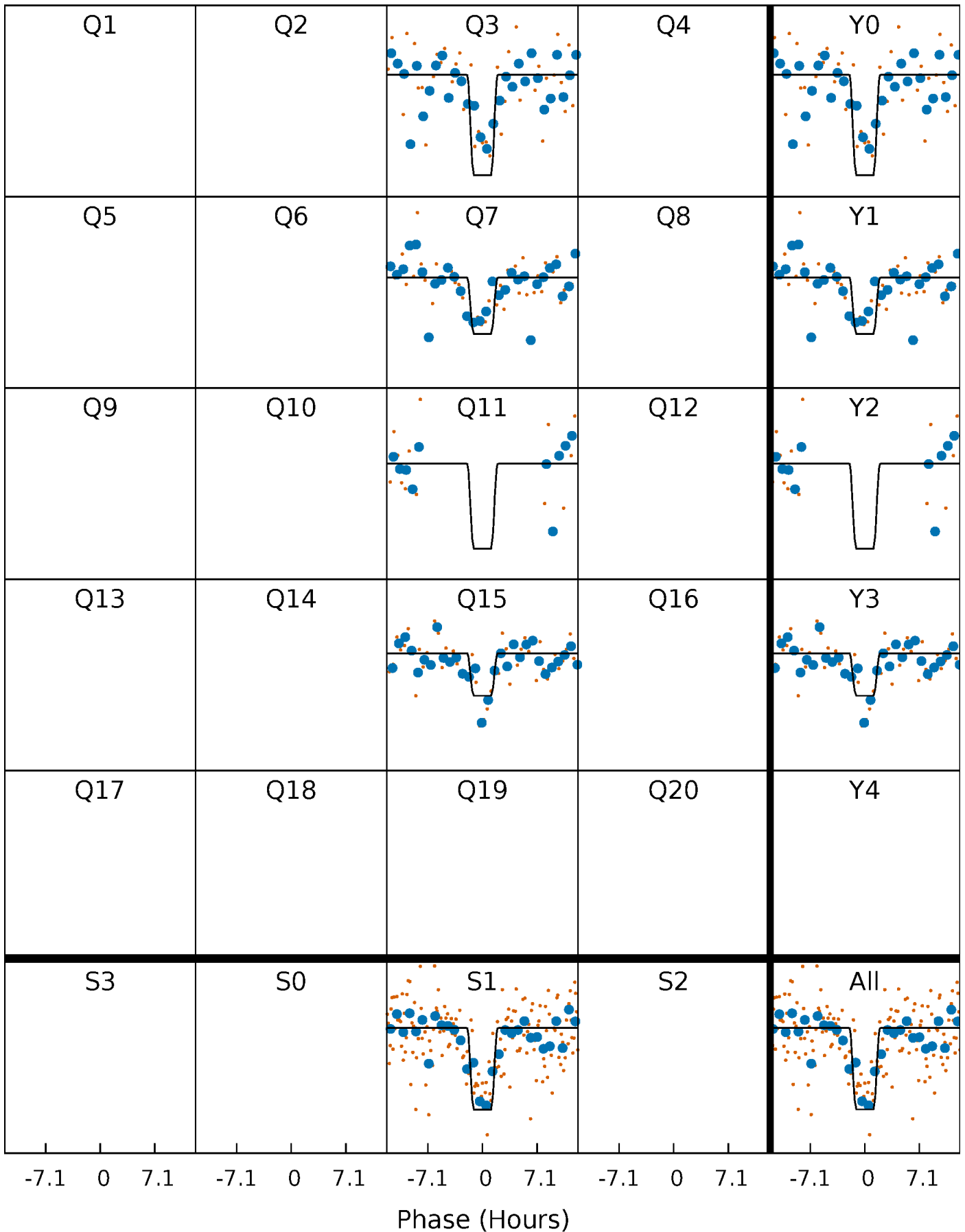
DV Quarter-Phased Transit Curves

TCE 003340070-05 $P=360.055300$ Days $T_0=306.212057$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

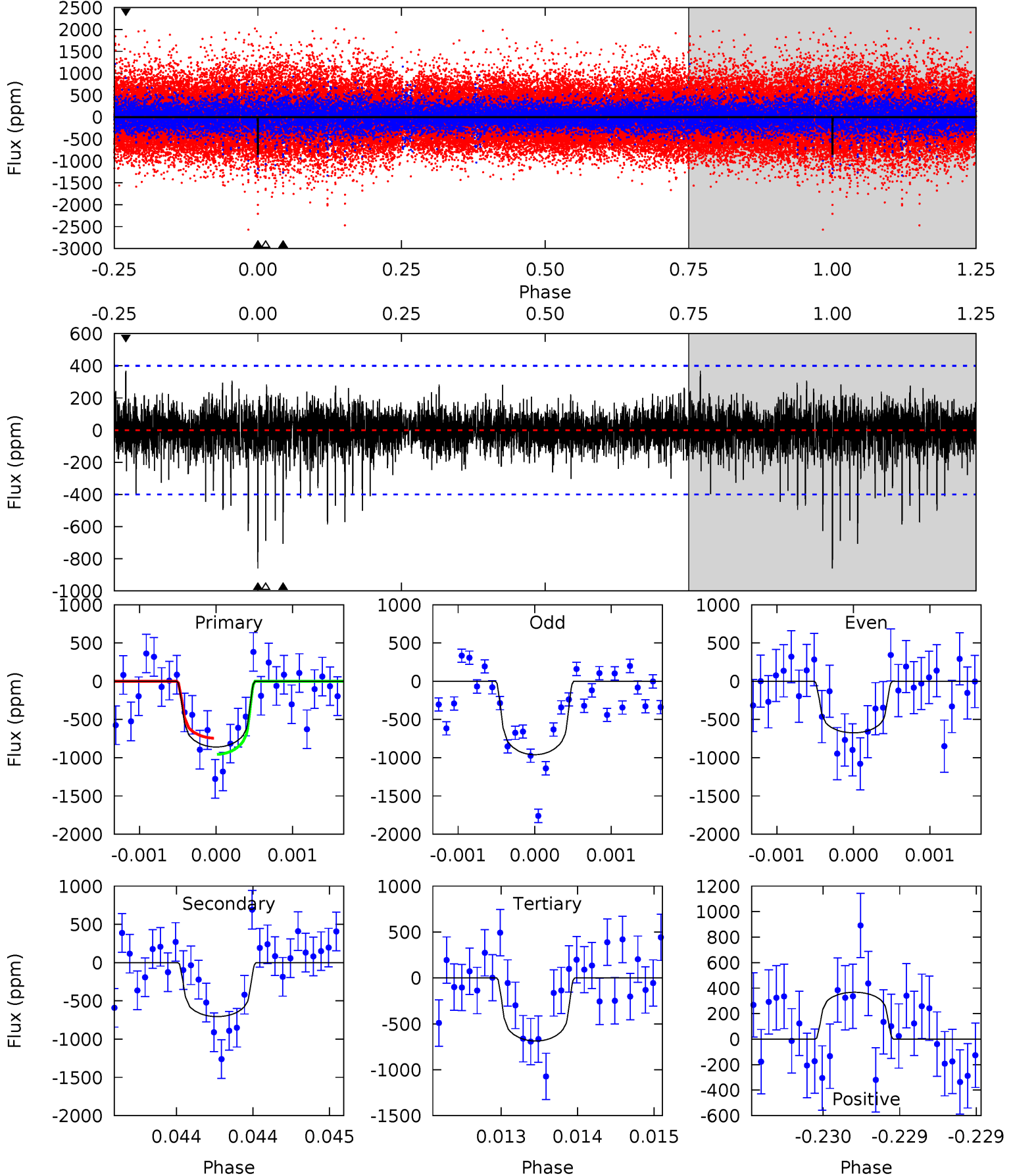
TCE 003340070-05 $P=360.065746$ Days $T_0=306.198681$ (BKJD)



DV Model-Shift Uniqueness Test

003340070-05, P = 360.055300 Days, E = 306.212057 Days

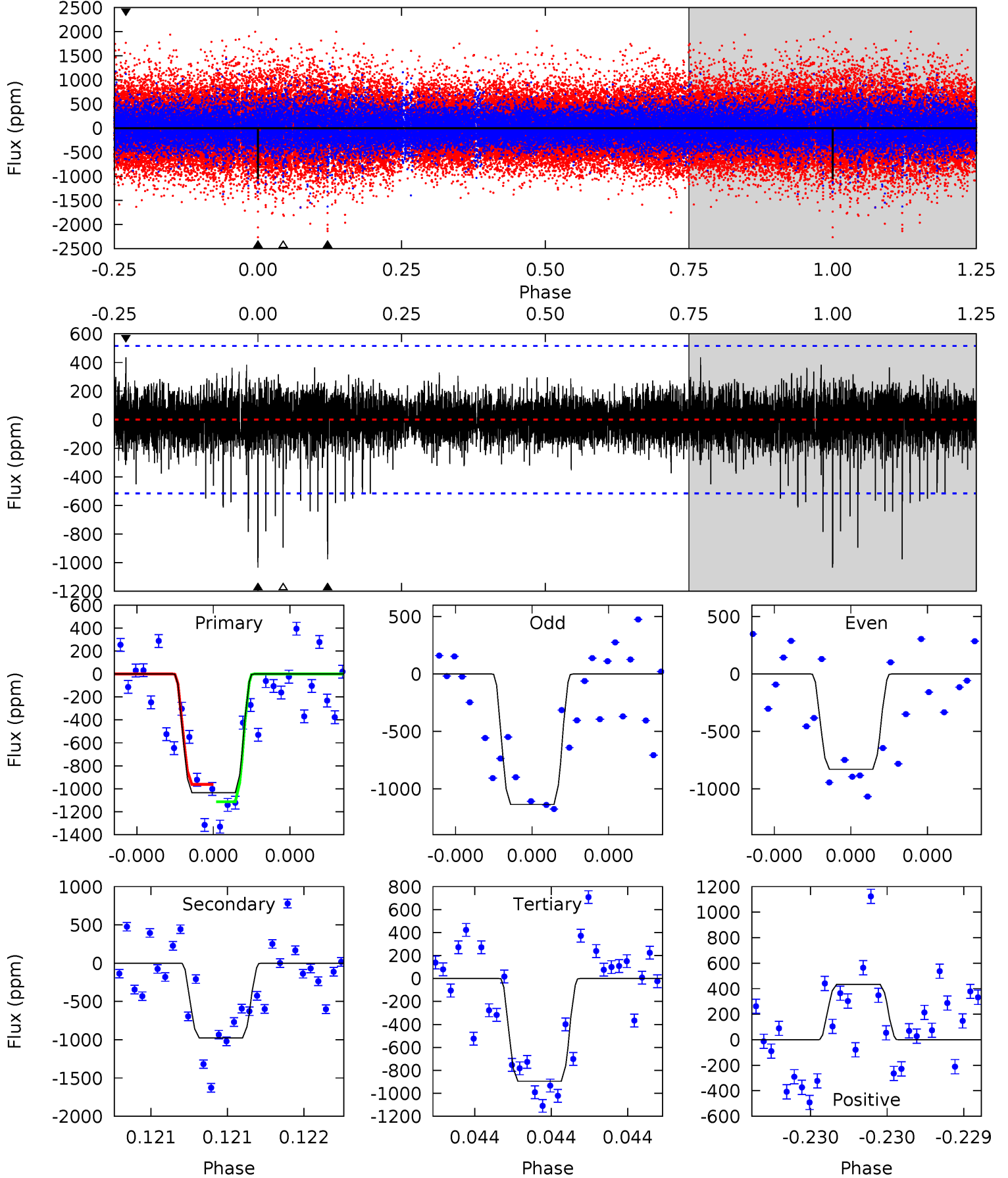
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	9.70	9.45	5.06	5.51	3.38	1.22	2.38	6.77	0.26	4.65	1.89	1.09	0.30	1.44



Alt Model-Shift Uniqueness Test

003340070-05, P = 360.065746 Days, E = 306.198681 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	10.6	9.70	4.71	5.59	3.51	1.13	1.50	6.49	0.88	5.87	1.60	1.23	0.30	0.82



Stellar Parameters For KIC 003340070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5904^{+160}_{-178}	$4.543^{+0.048}_{-0.204}$	$-0.240^{+0.300}_{-0.300}$	$0.867^{+0.262}_{-0.082}$	$0.958^{+0.107}_{-0.119}$	$2.073^{+0.399}_{-1.039}$
	+3%/-3%	+1%/-4%	+125%/-125%	+30%/-9%	+11%/-12%	+19%/-50%
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 003340070-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-706 ± 73	$2.80^{+1.60}_{-1.42}$	351^{+24}_{-17}	5720^{+2619}_{-956}	$47414^{+139085}_{-29042}$
Alt.	-976 ± 92	$3.67^{+1.77}_{-1.63}$	350^{+27}_{-16}	5455^{+1896}_{-820}	36749^{+82195}_{-19520}

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 $A_{obs} \gg 1.0$

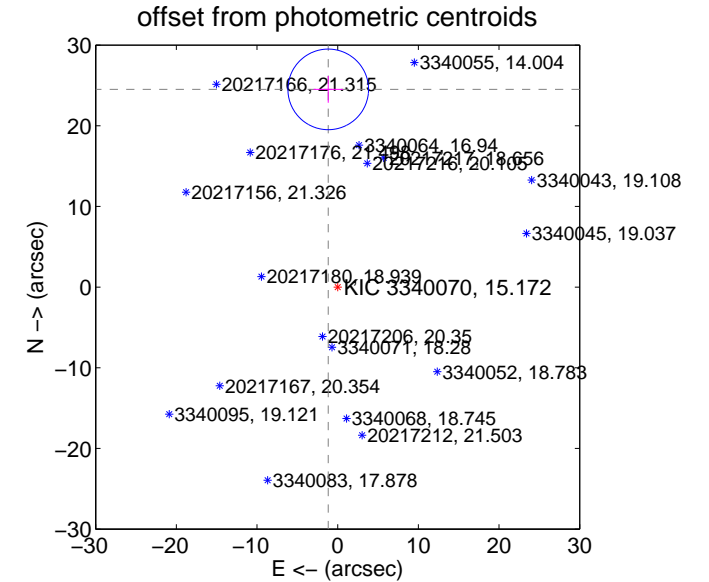
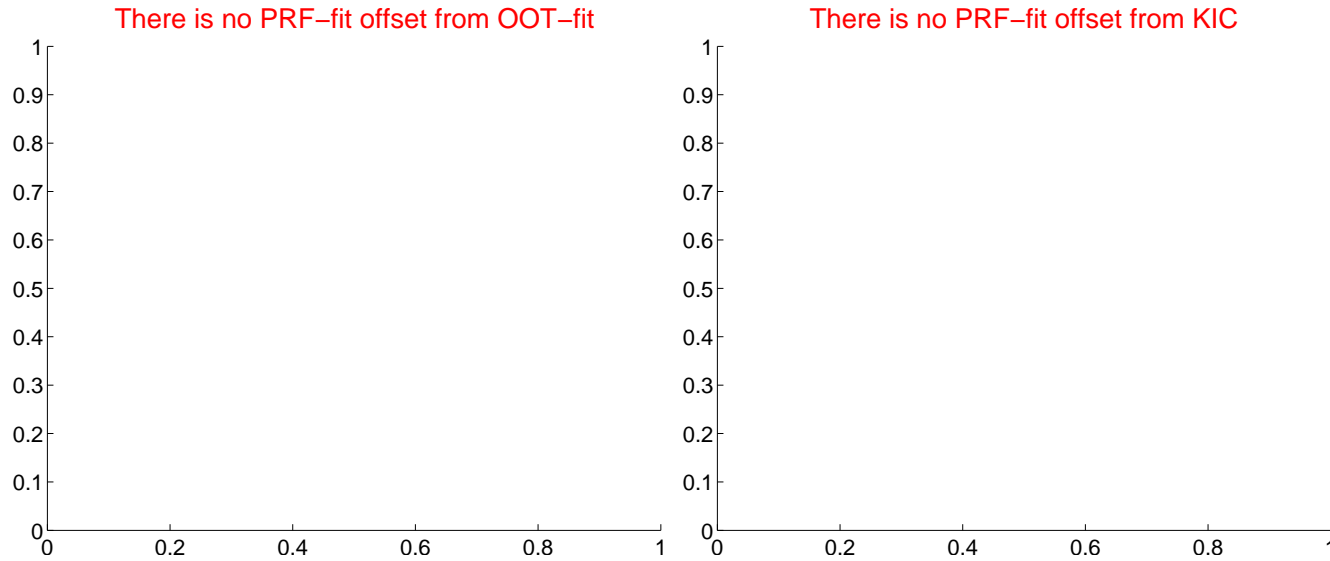
DV Centroid Data

Supplemental centroid analysis for 003340070-05. Kepler magnitude: 15.17. Transit SNR 7.40

There are 0 quarters with good PRF difference image offsets

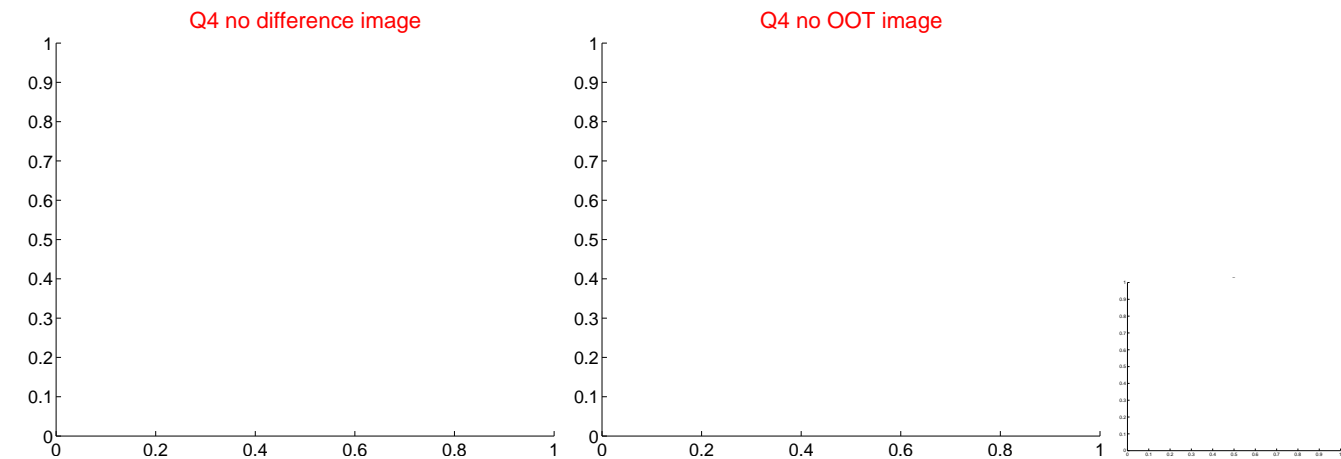
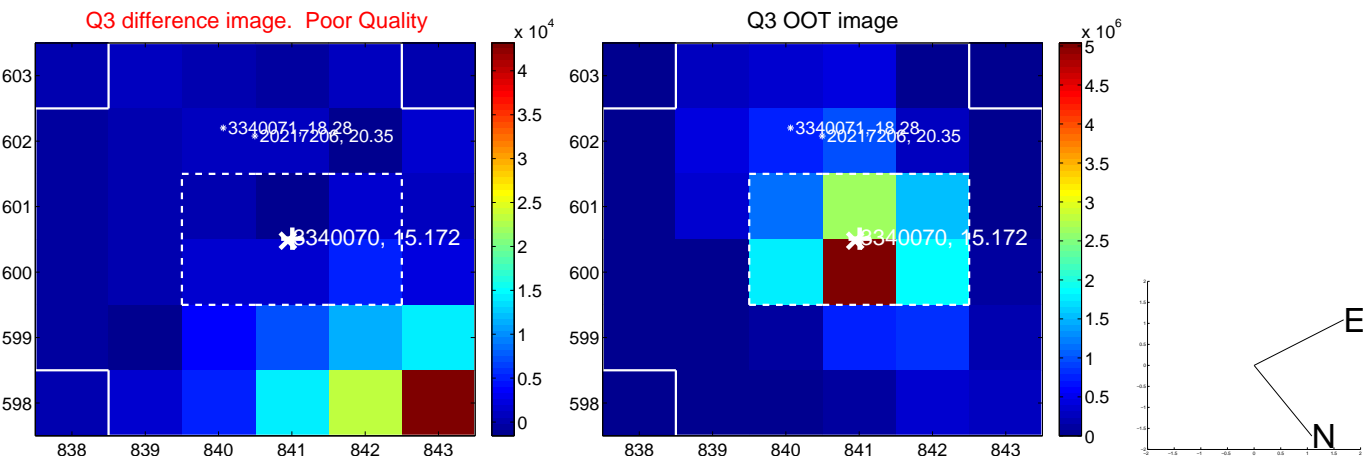
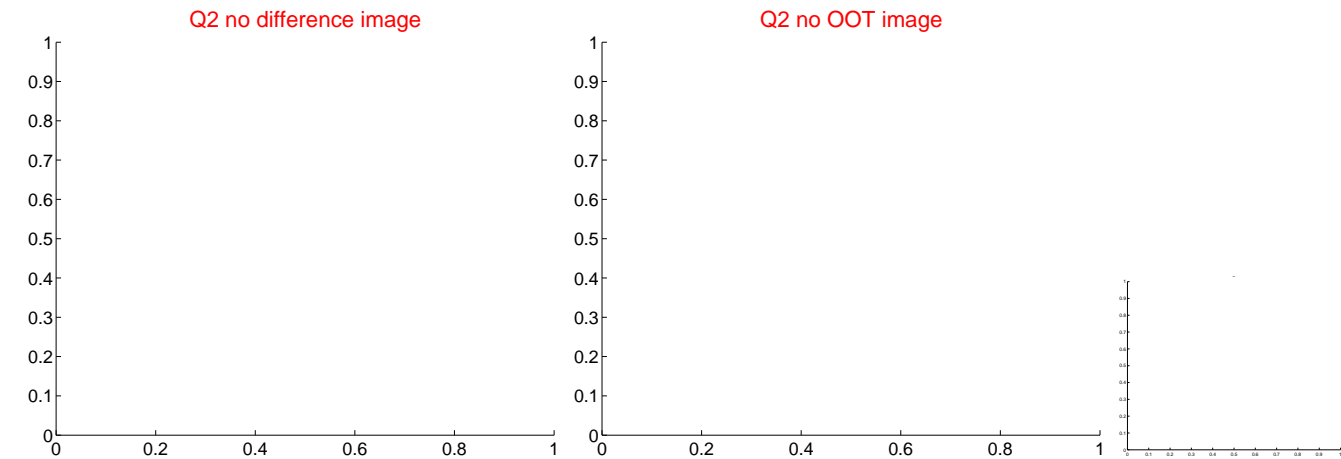
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	24.54 ± 1.67	14.73	1.17 ± 1.82	24.51 ± 1.67

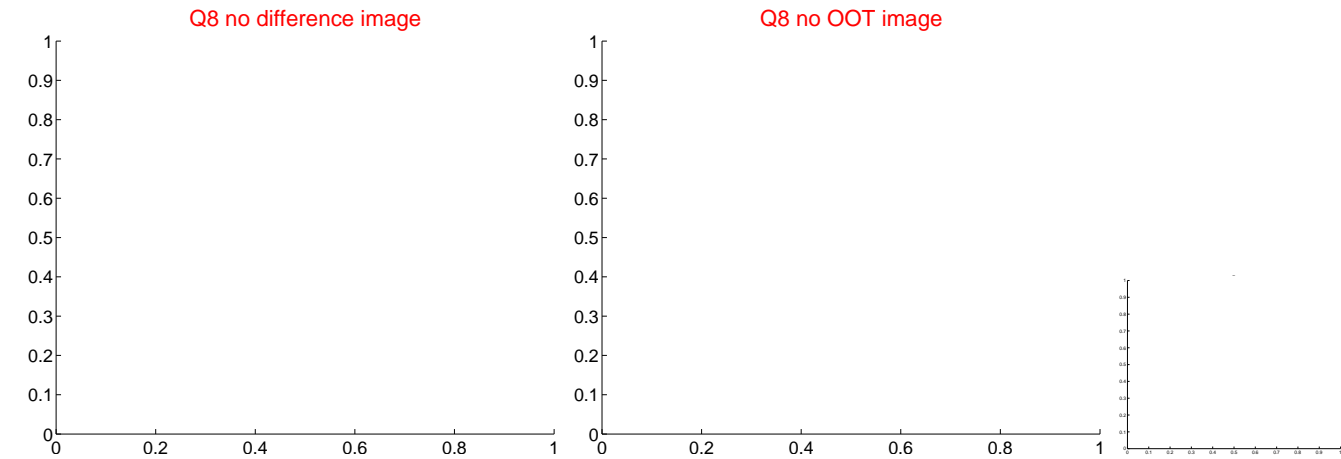
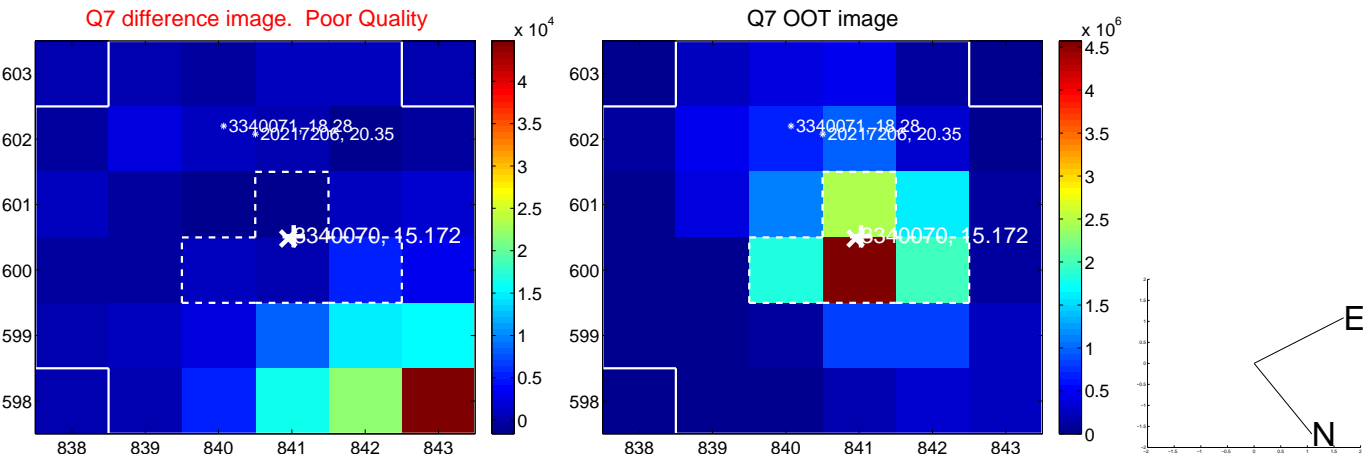
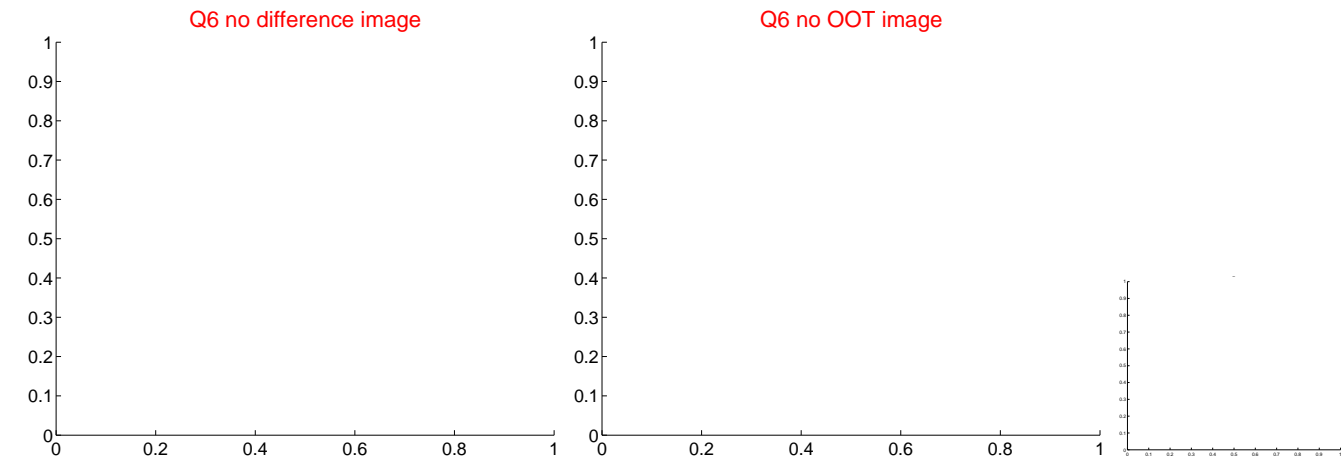


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

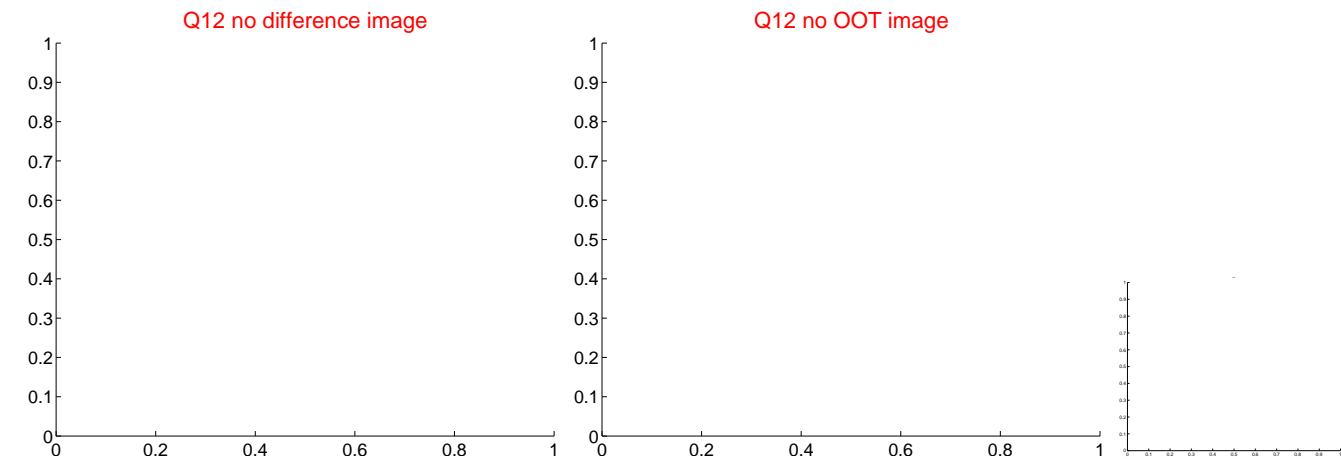
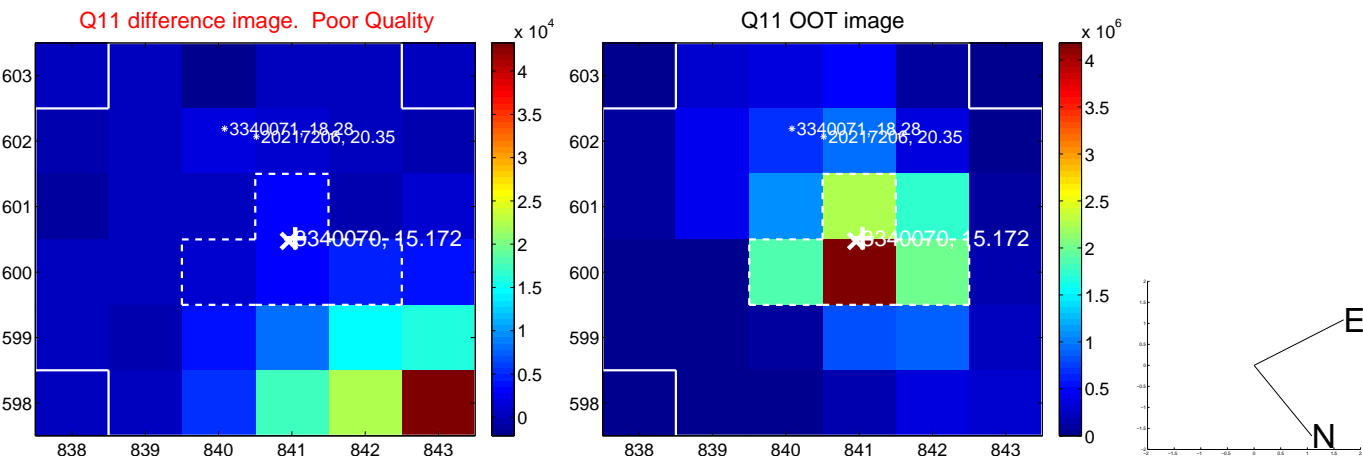
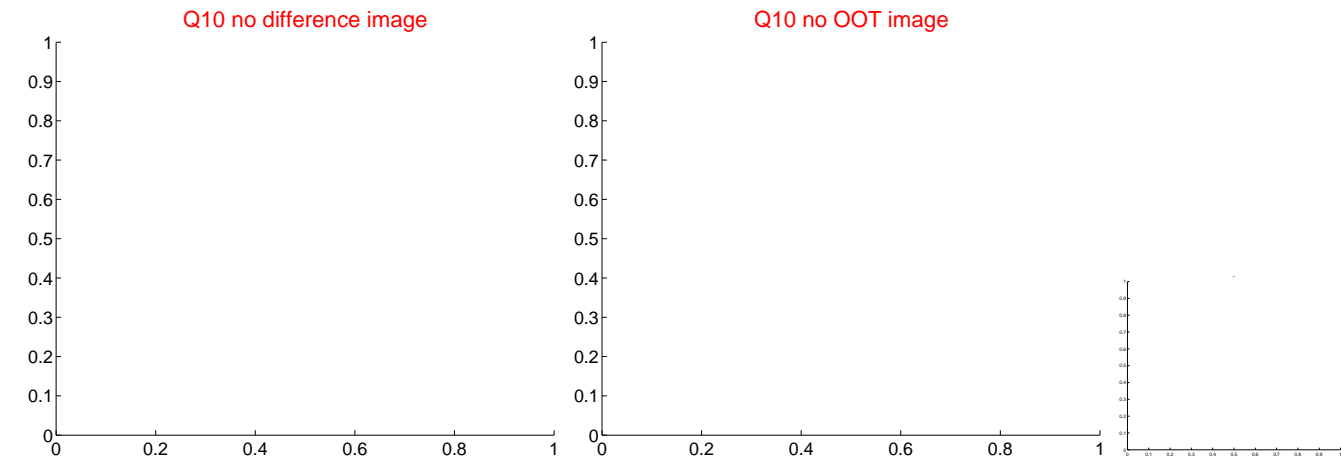
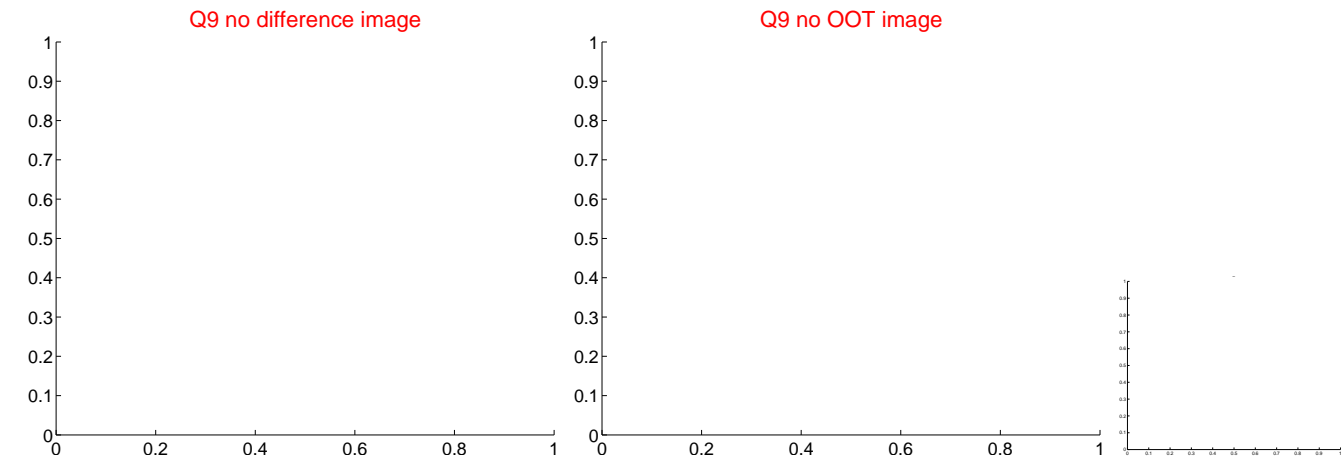
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



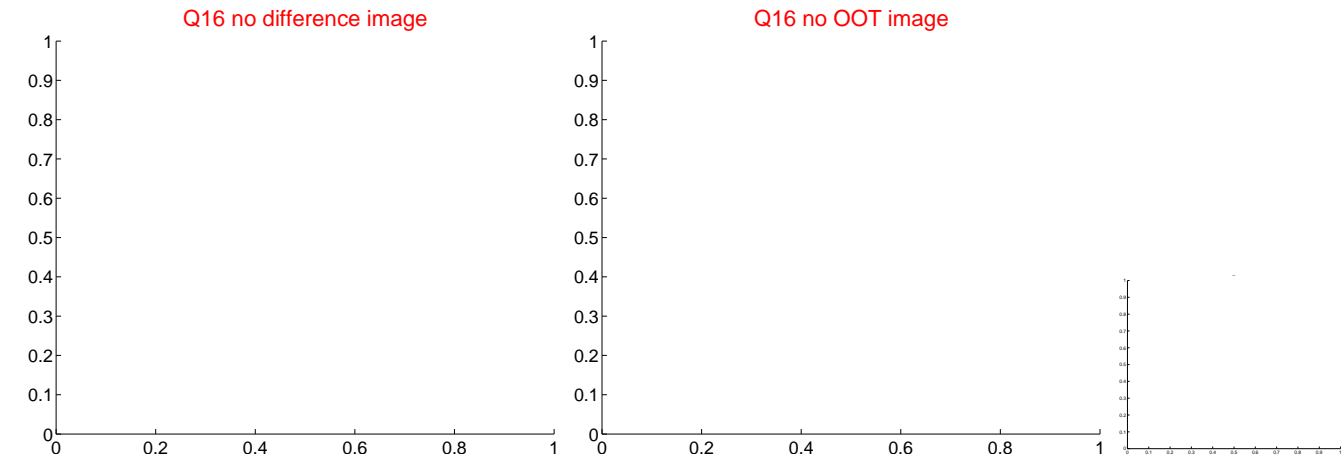
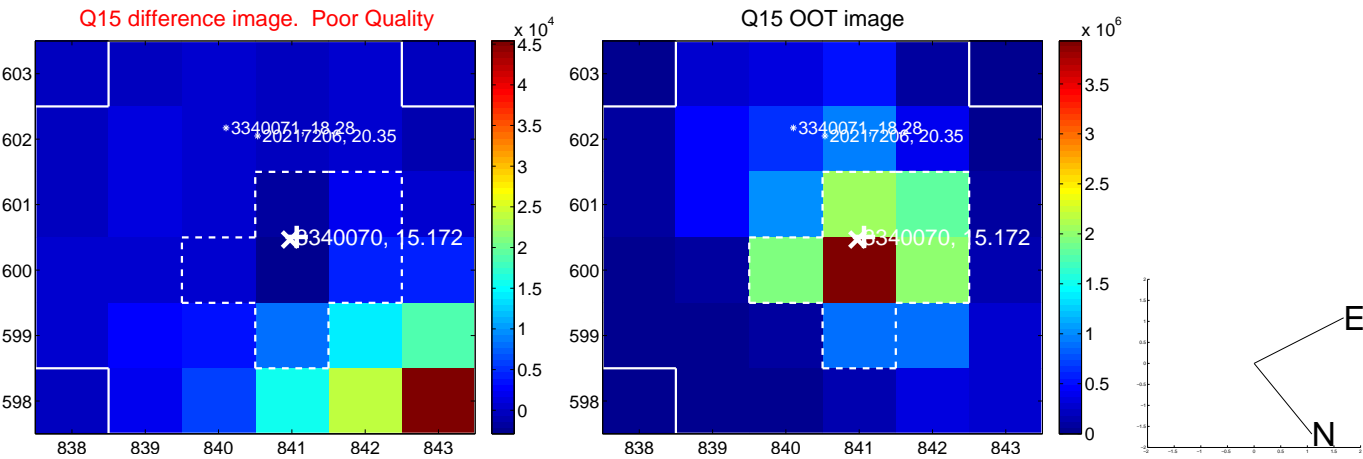
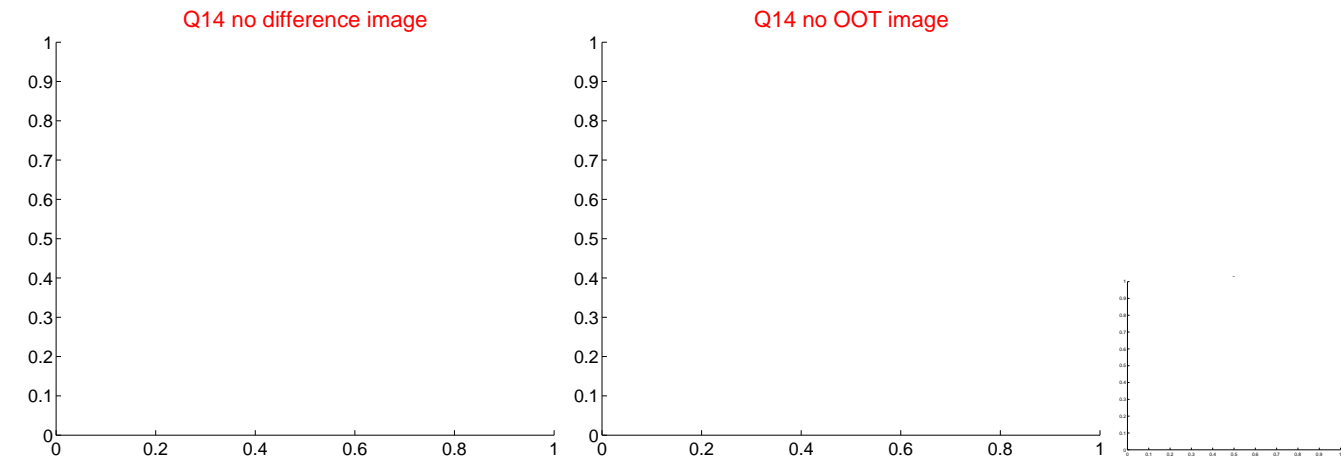
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



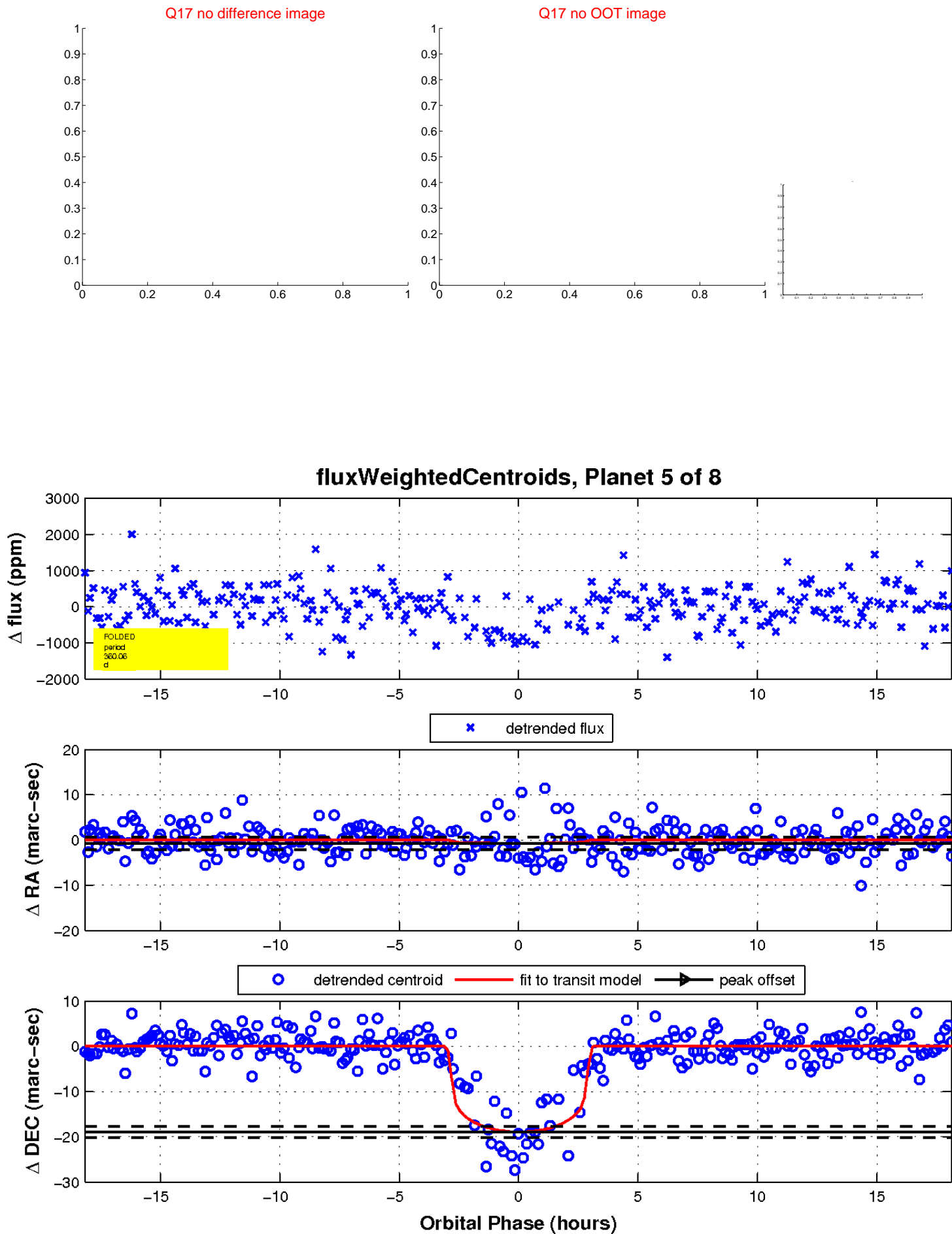
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

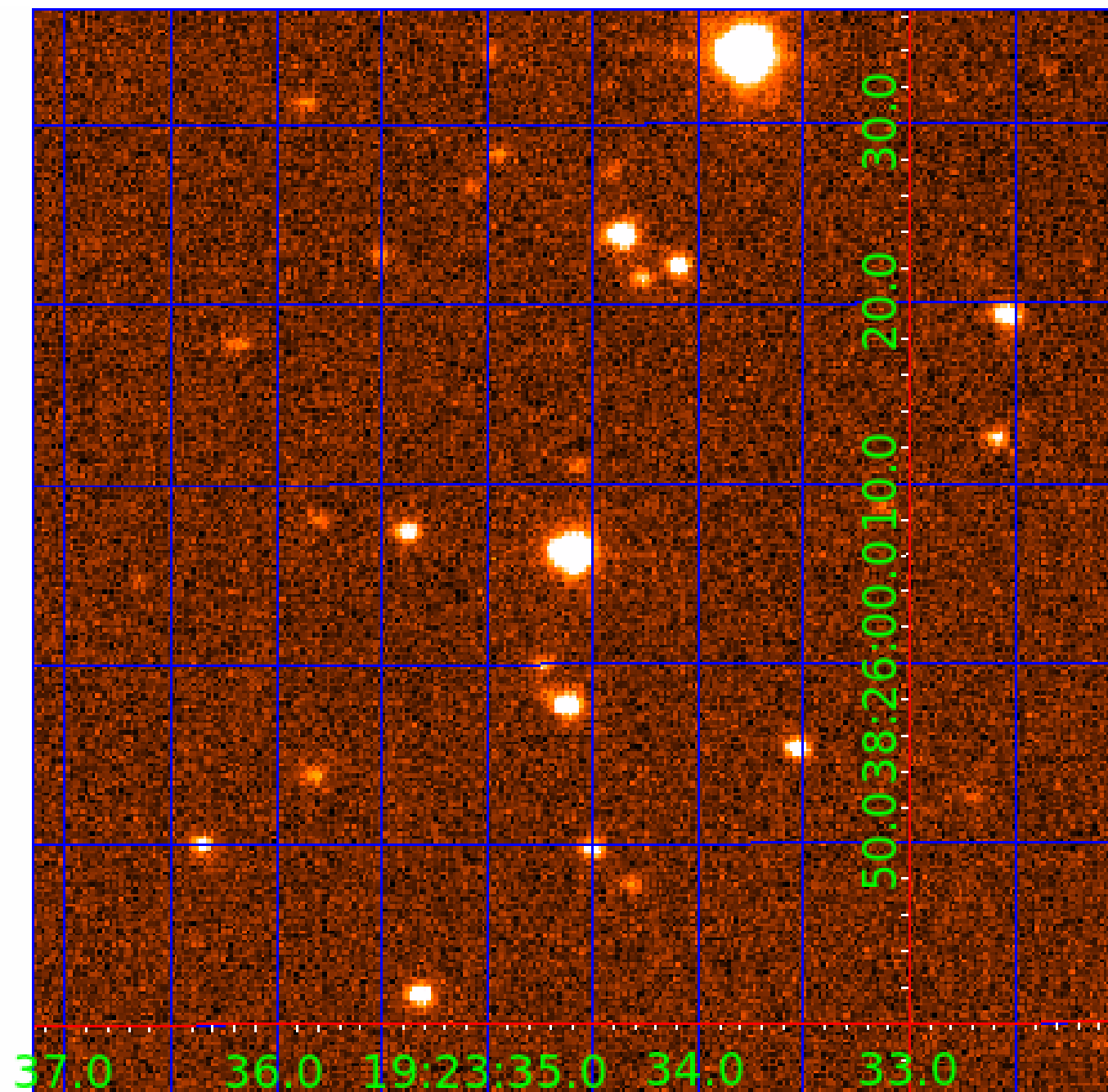


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003340070

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})
003340070-01	OBS	No	370.972187	284.381872	1283.2	5.006	11.4	11.4	0.87	5904	3.55	0.82
003340070-02	OBS	No	360.064432	295.303460	1433.0	6.008	12.1	11.4	0.87	5904	5.58	0.86
003340070-03	OBS	No	360.063975	328.028899	917.1	4.908	9.9	9.6	0.87	5904	2.75	0.86
003340070-04	OBS	No	403.699203	251.666599	1045.2	3.185	8.7	7.5	0.87	5904	2.92	0.74
003340070-05	OBS	No	360.055300	306.212057	761.7	6.064	8.2	7.4	0.87	5904	2.57	0.86
003340070-06	OBS	No	360.060697	300.215535	1053.5	4.308	8.6	7.1	0.87	5904	5.06	0.86
003340070-07	OBS	No	349.136961	343.871902	1032.3	3.390	7.8	8.9	0.87	5904	3.23	0.89
003340070-08	OBS	No	370.971282	338.932061	734.7	4.500	7.3	-1.0	0.87	5904	2.34	0.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340070-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—CENT_FEW_DIFFS
003340070-02	OBS	FP	0.00	1	0	1	0	INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET
003340070-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-04	OBS	FP	0.04	0	0	1	0	CENT_RESOLVED_OFFSET
003340070-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
003340070-06	OBS	FP	0.00	1	0	0	0	MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003340070-07	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

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

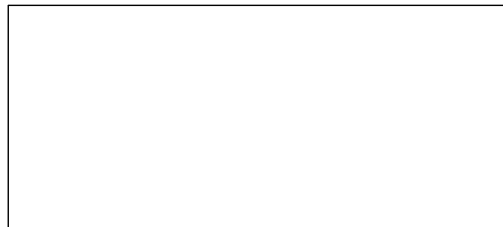
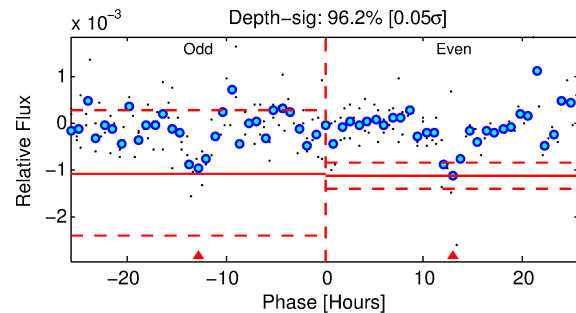
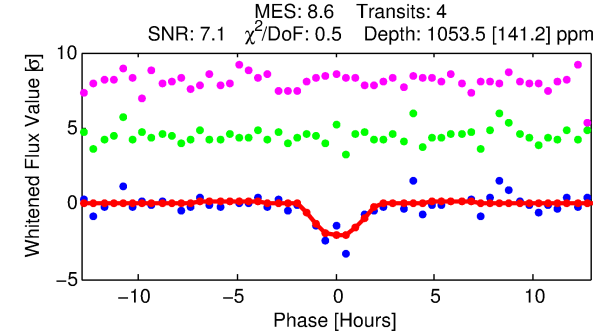
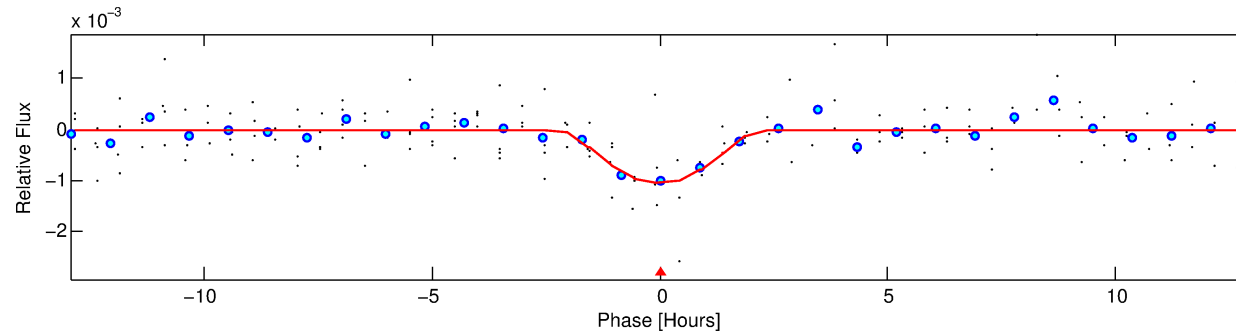
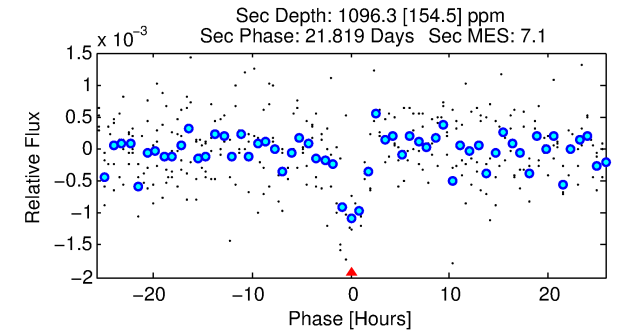
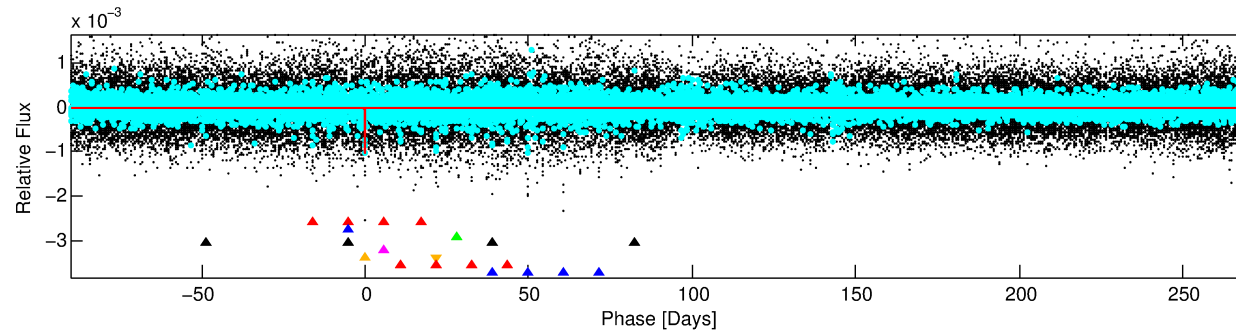
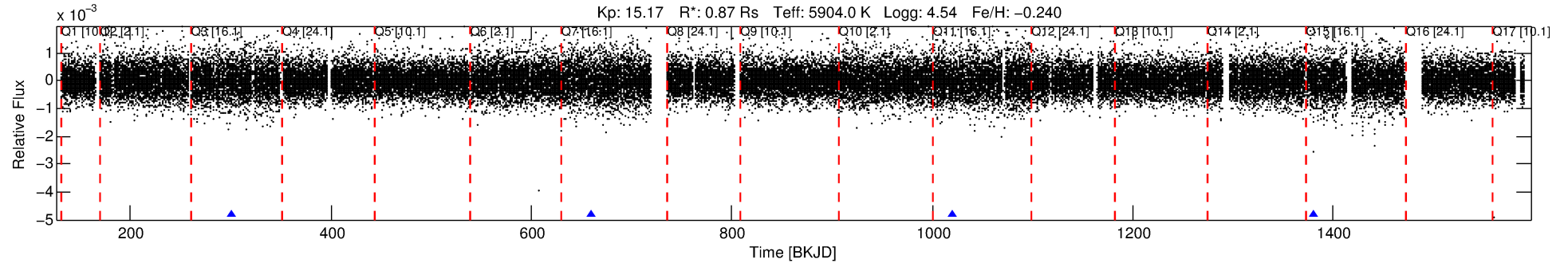
Ephemeris Match Information For 003340070-06

No Significant Match Found

DV One-Page Summary

KIC: 3340070 Candidate: 6 of 8 Period: 360.061 d
KOI: K01097 Corr: No Ephemeris Match

Kp: 15.17 R*: 0.87 Rs Teff: 5904.0 K Logg: 4.54 Fe/H: -0.240



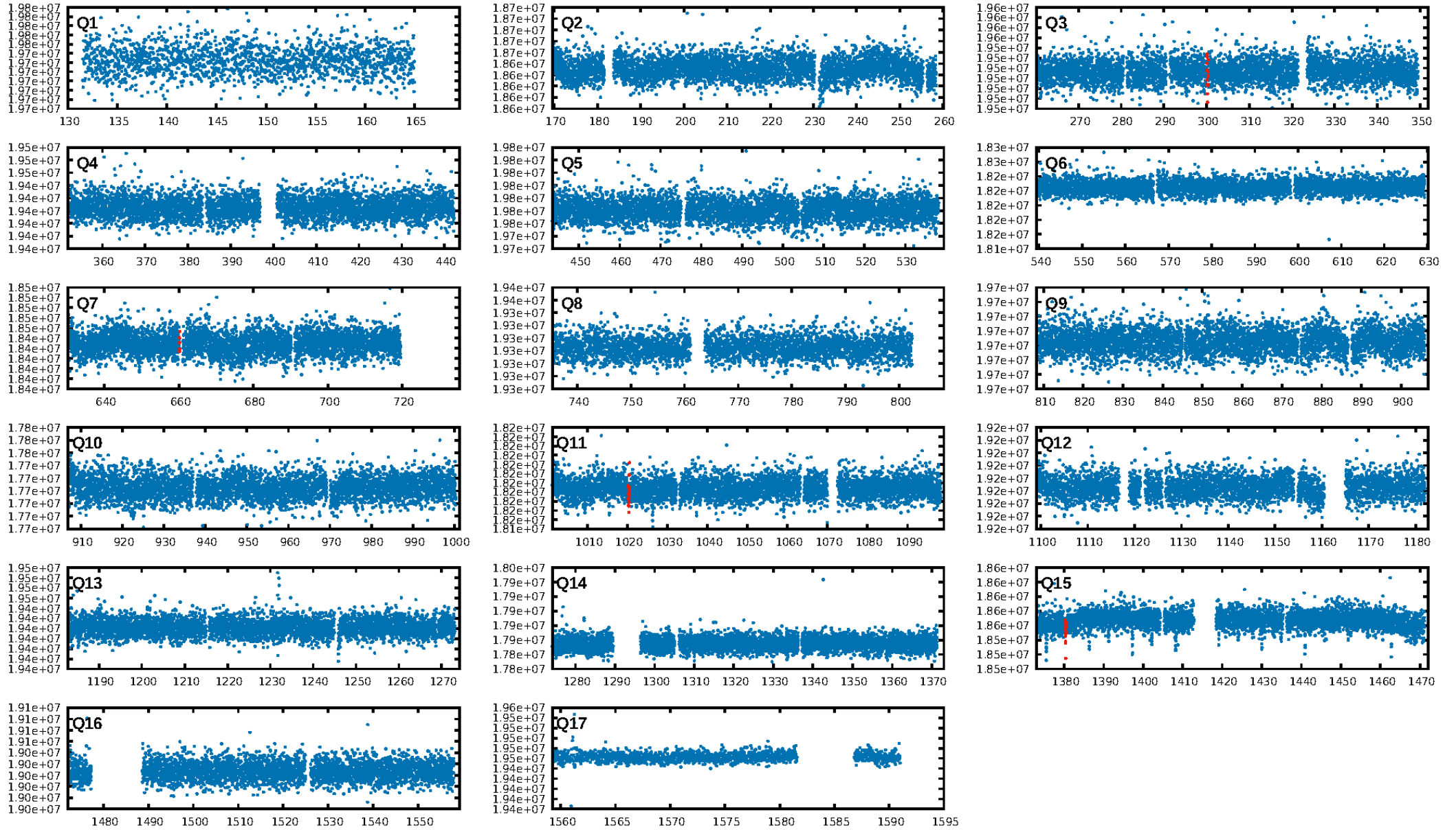
DV Fit Results:

Period = 360.06070 [0.00472] d
Epoch = 300.2155 [0.0091] BKJD
Rp/R* = 0.0534 [0.1772]
a/R* = 222.88 [198.73]
b = 0.99 [0.28]
Seff = 0.86 [0.34]
Teq = 245 [24] K
Rp = 5.06 [16.83] Re
a = 0.9764 [0.2491] AU
Ag = 22494.54 [149430.42] [0.15σ]
Teff = 4647 [7707] K [0.57σ]

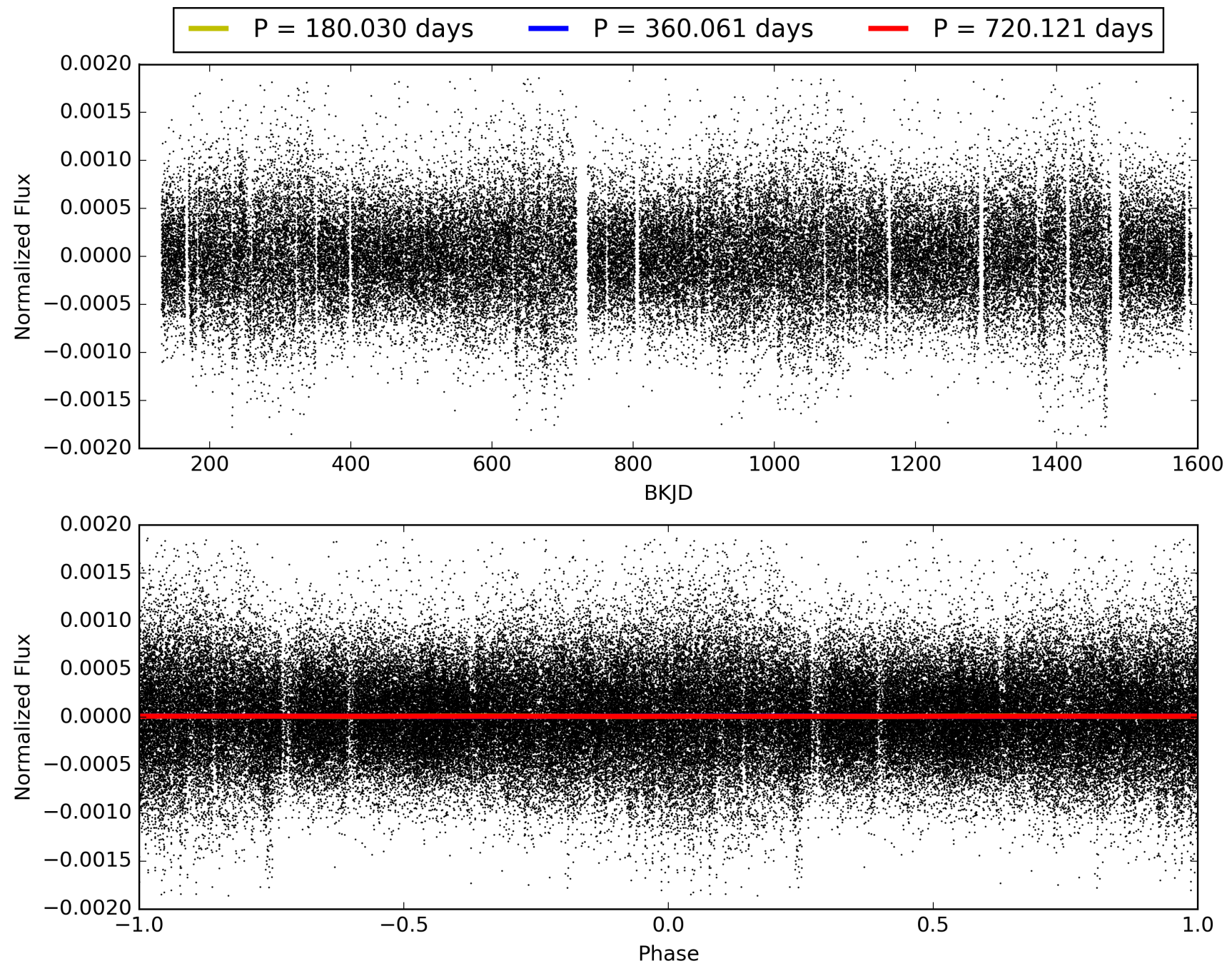
DV Diagnostic Results:

ShortPeriod-sig: 1.4% [0.02σ]
LongPeriod-sig: 1.0% [0.01σ]
ModelChiSquare2-sig: 94.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.3942
Centroid-sig: 0.0%
Centroid-so: 21.807 arcsec [11.72σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [3/3]

TCE 003340070-06, PDC Light Curves

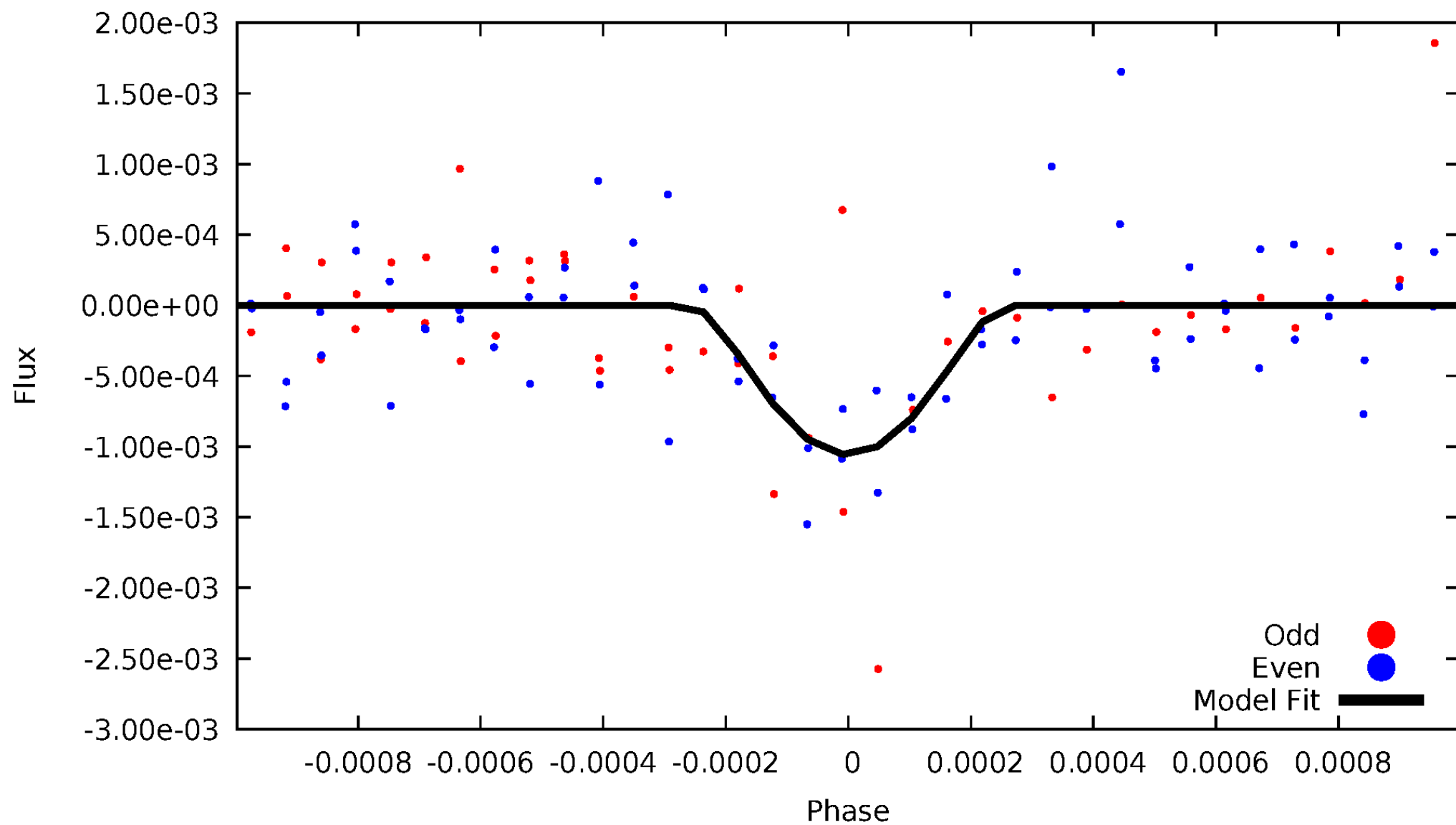


TCE 003340070-06



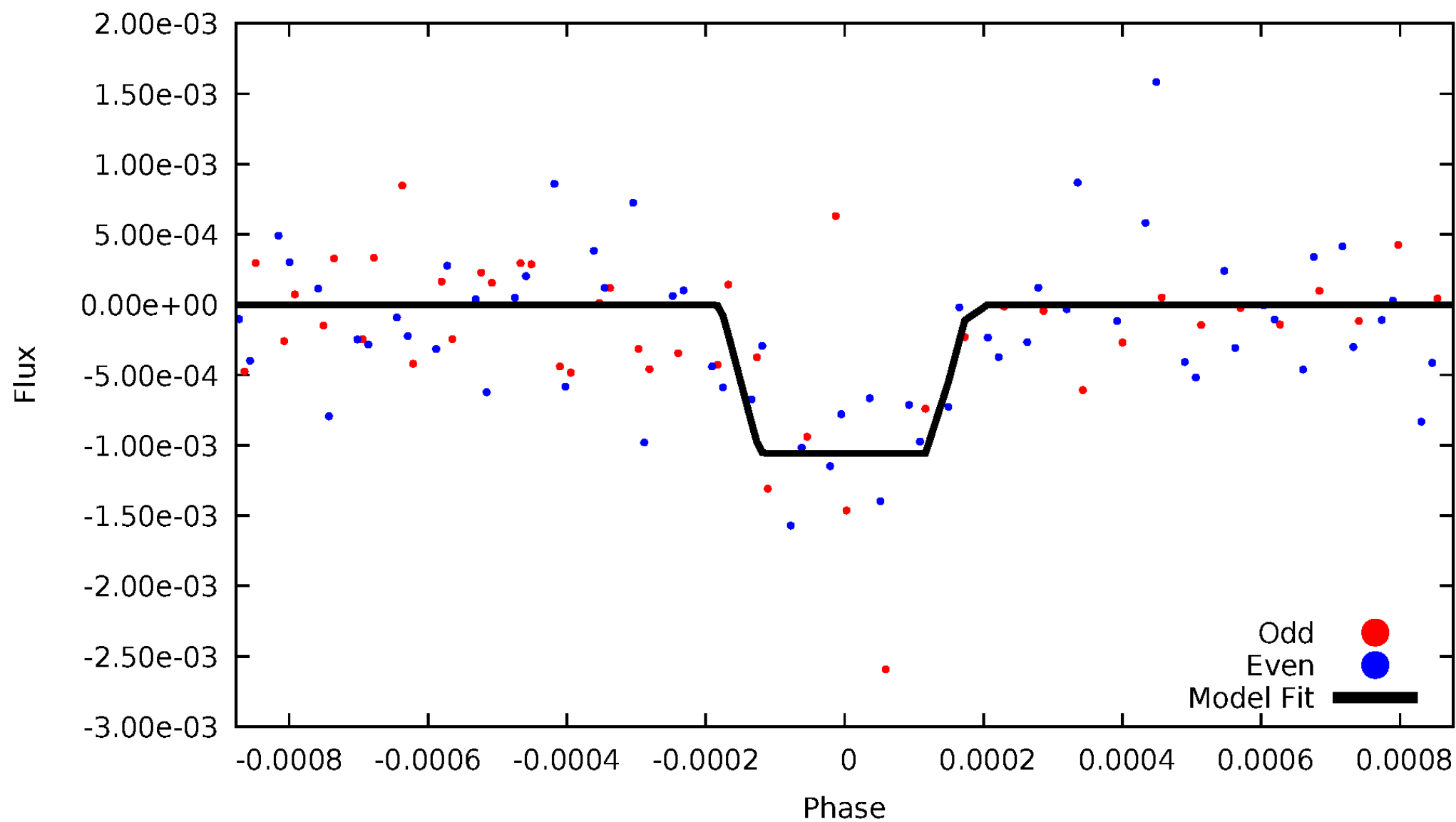
DV Odd/Even

TCE 003340070-06



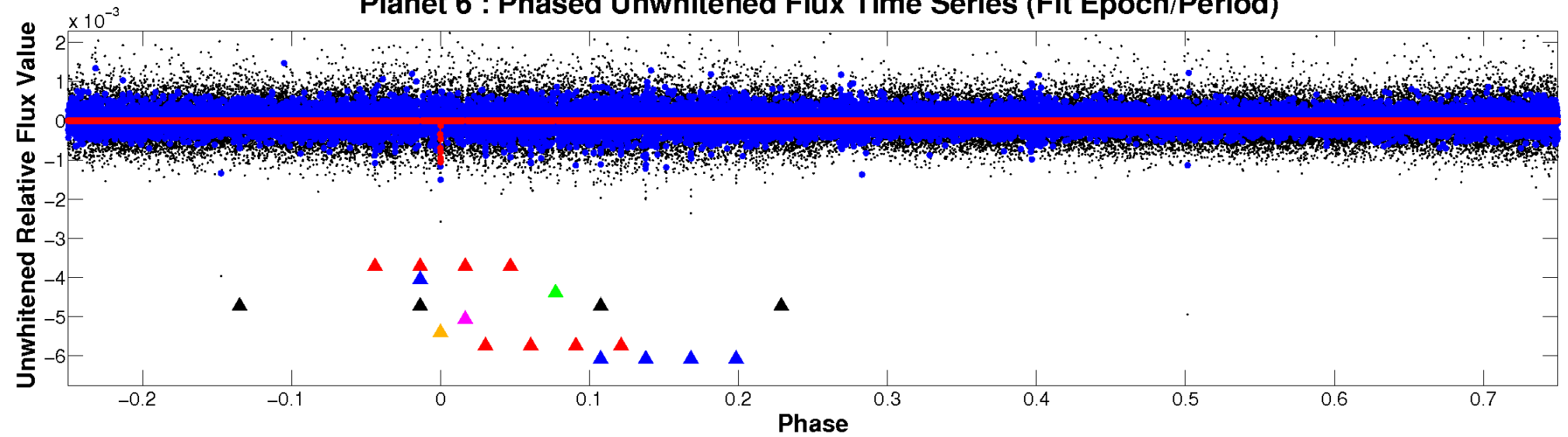
ALT Odd/Even

TCE 003340070-06

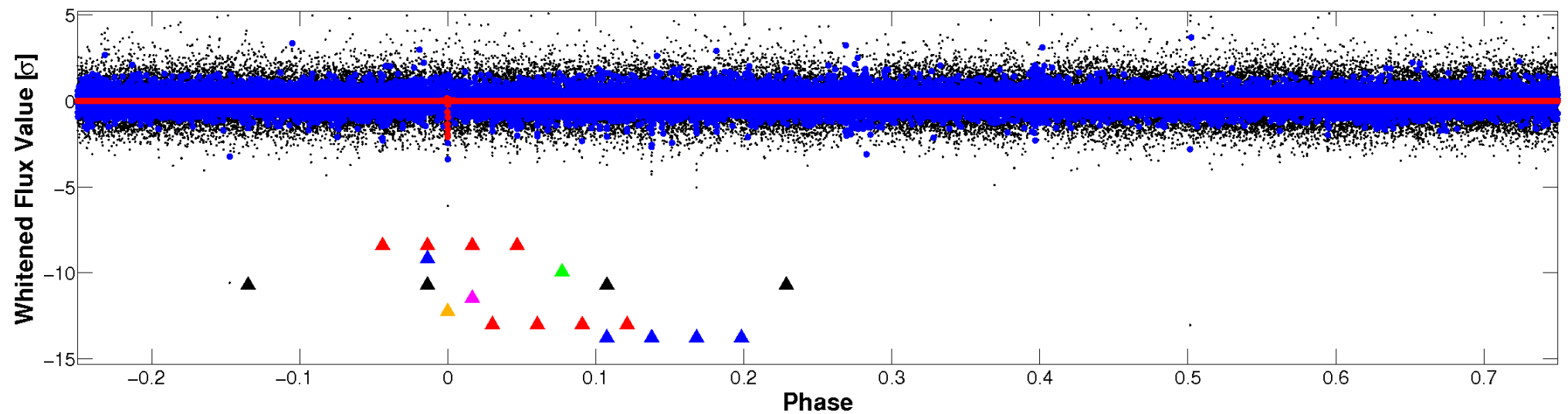


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

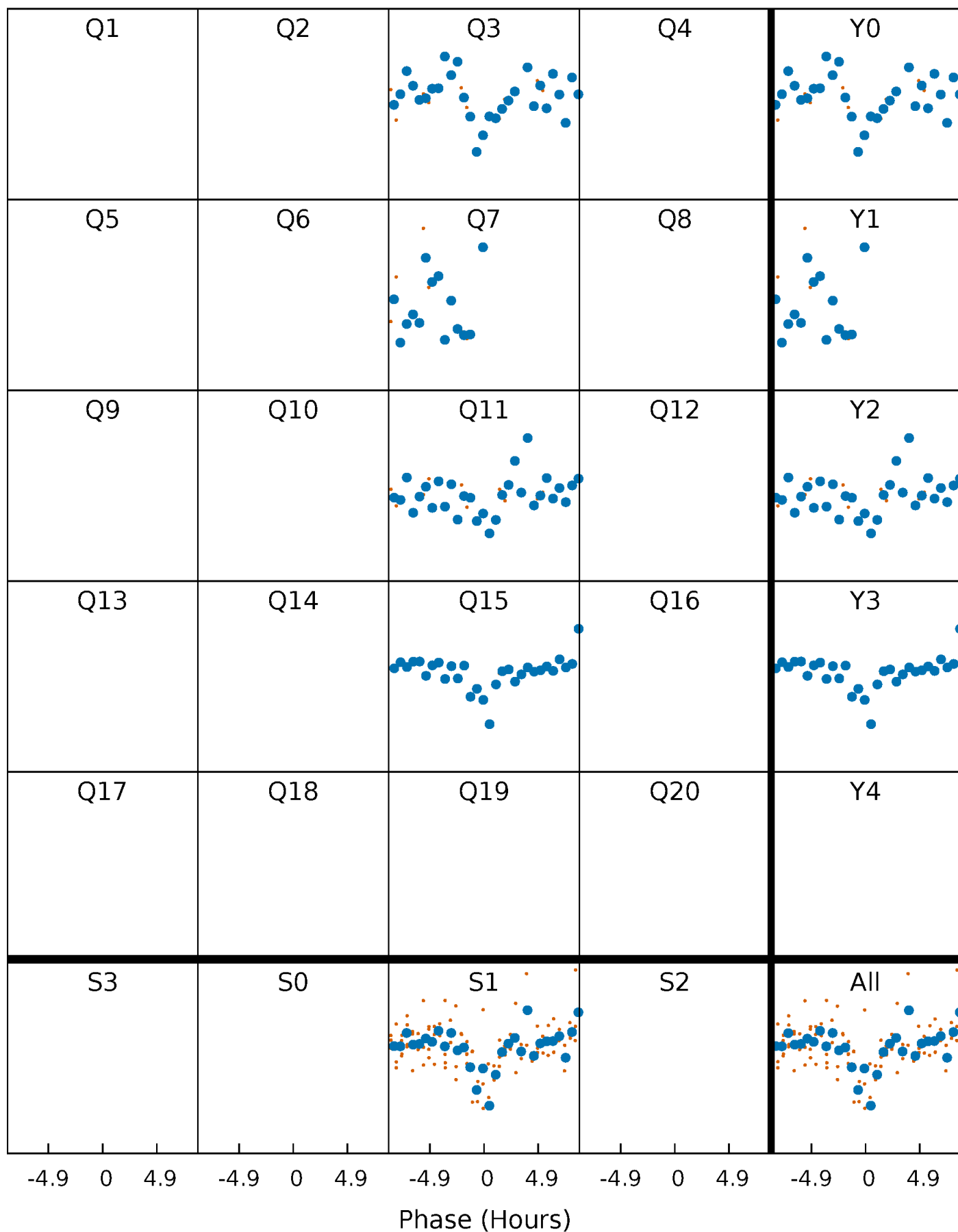


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



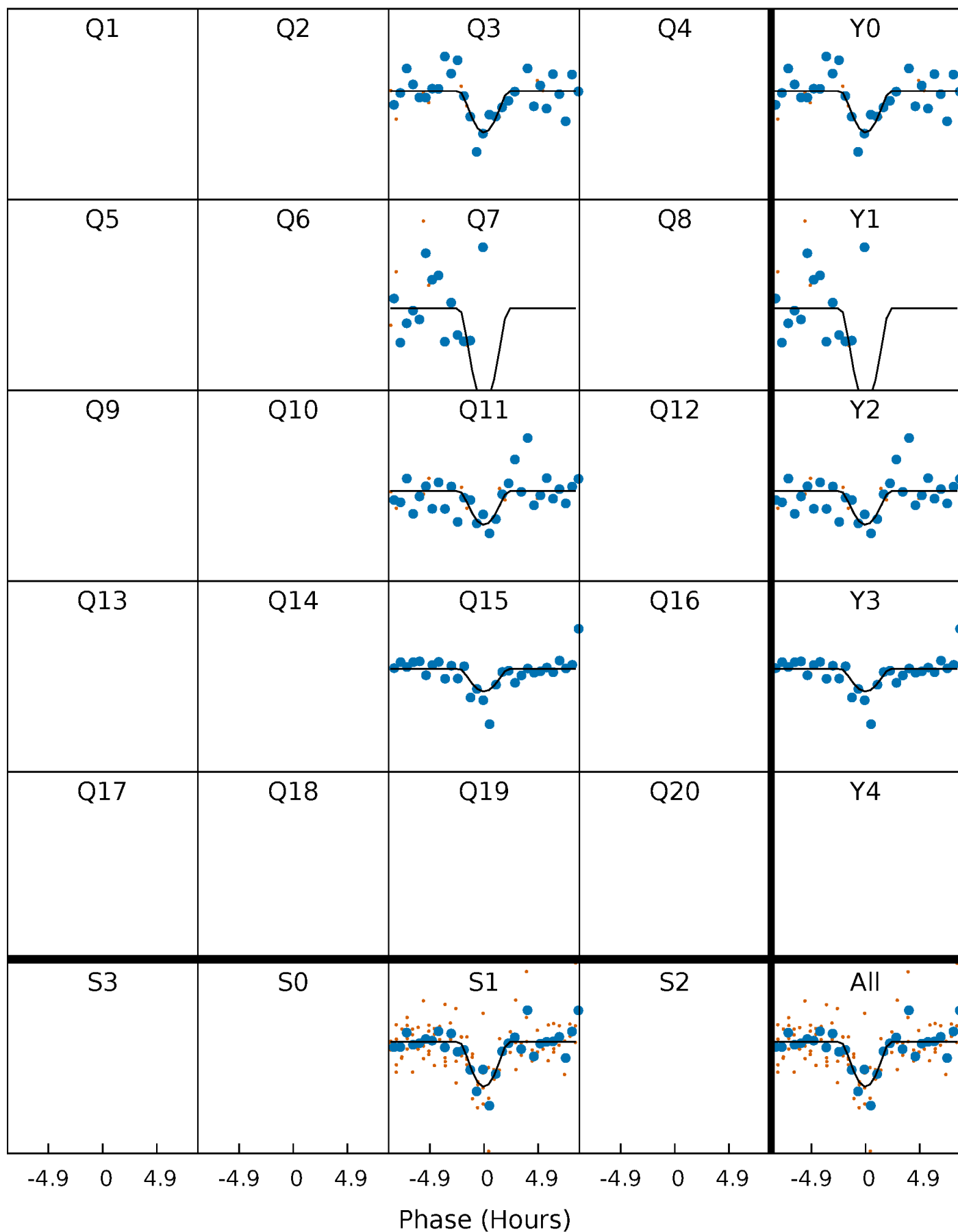
PDC Quarter-Phased Transit Curves

TCE 003340070-06 P=360.060697 Days $T_0=300.215535$ (BKJD)



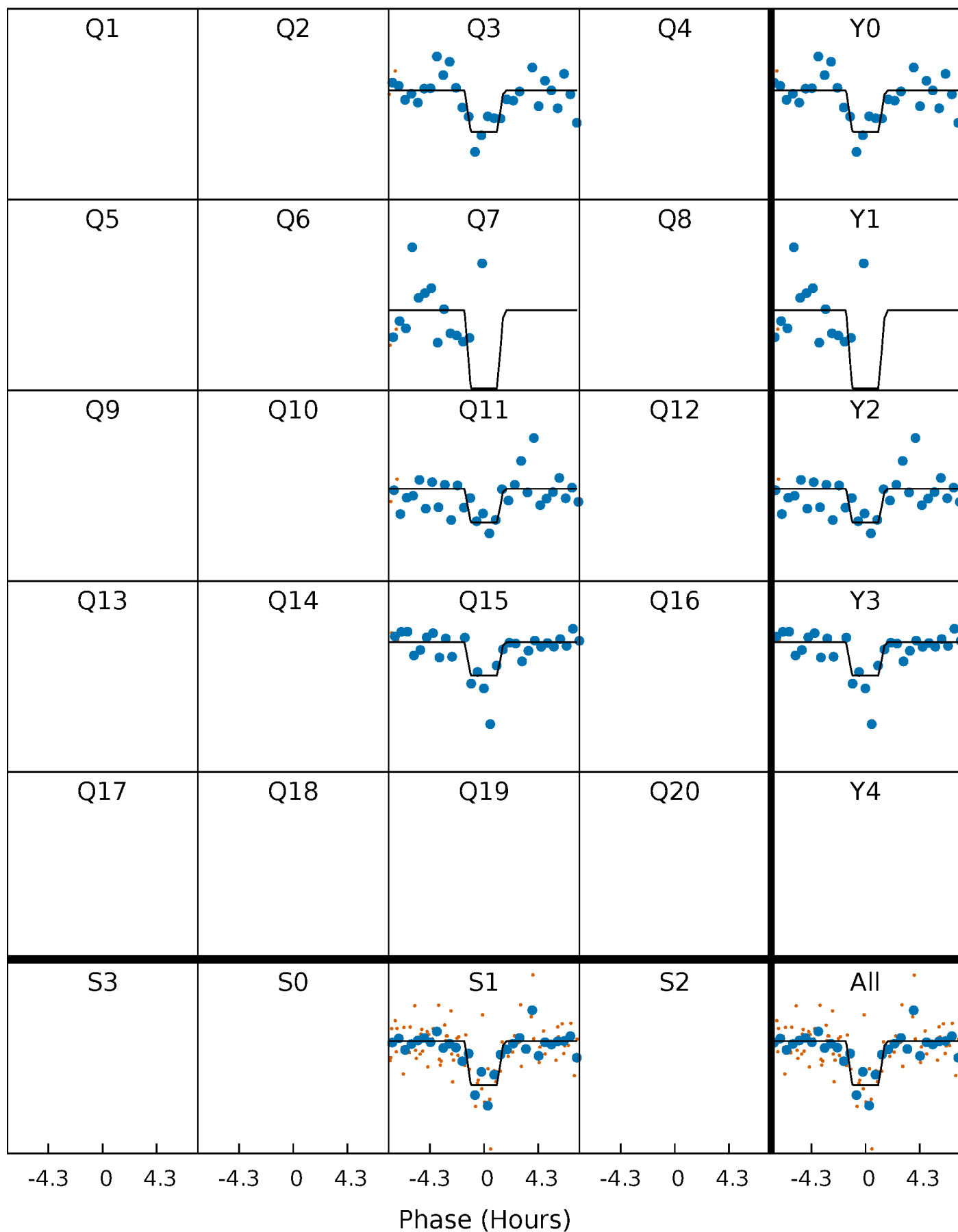
DV Quarter-Phased Transit Curves

TCE 003340070-06 $P=360.060697$ Days $T_0=300.215535$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

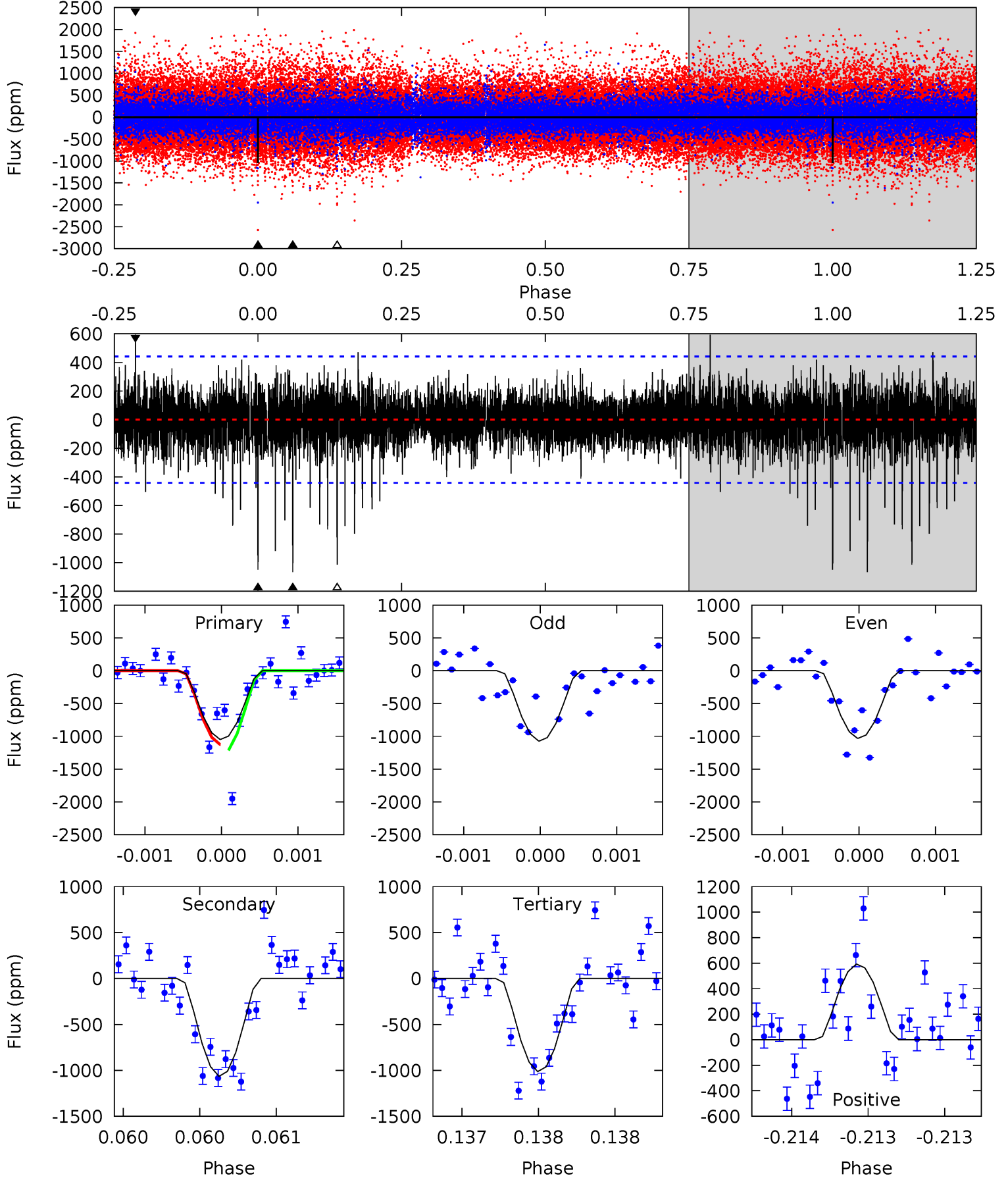
TCE 003340070-06 P=360.058186 Days $T_0=300.219166$ (BKJD)



DV Model-Shift Uniqueness Test

003340070-06, P = 360.060697 Days, E = 300.215535 Days

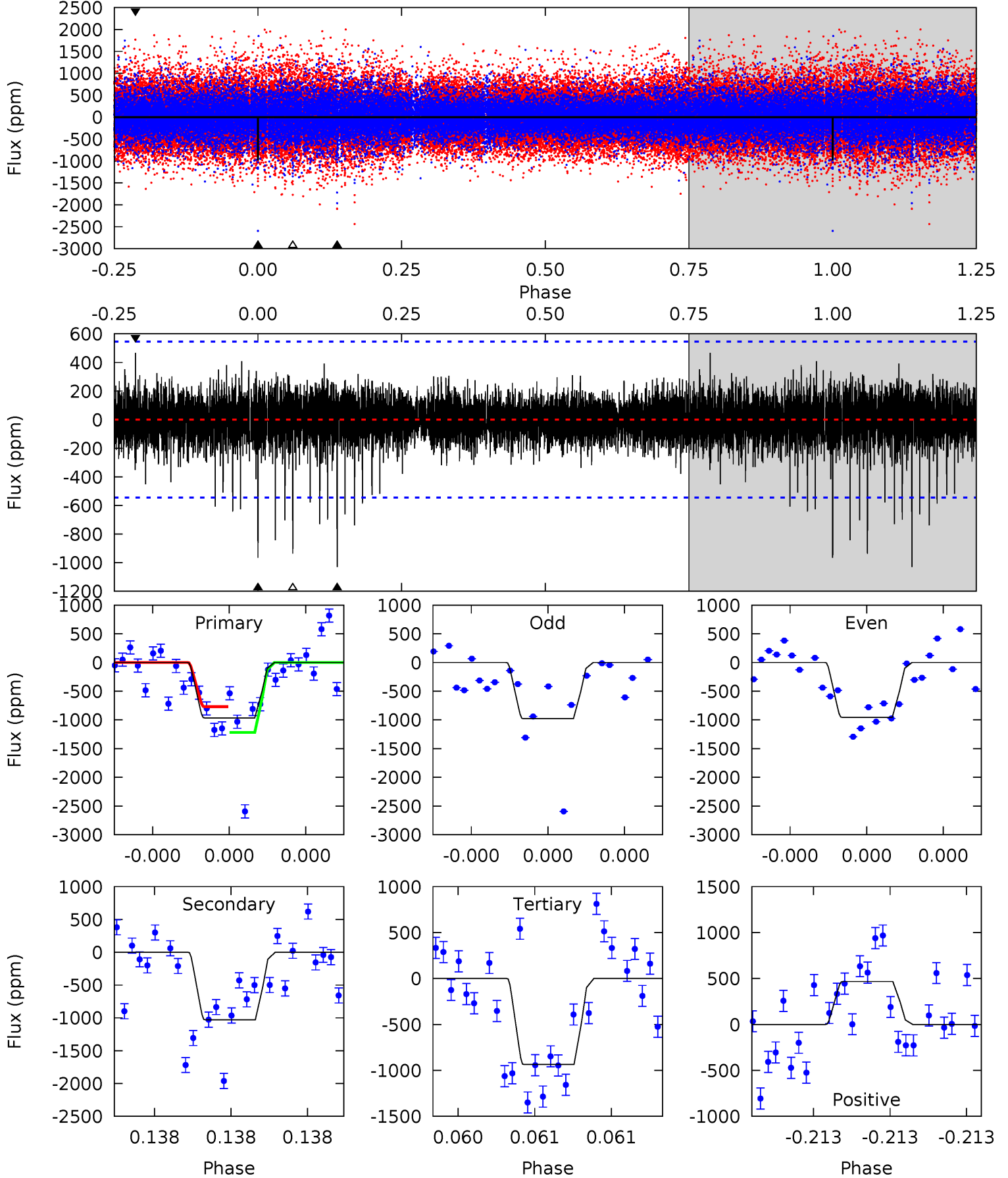
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	13.4	12.8	7.47	5.57	3.47	1.53	0.46	5.75	0.66	5.94	0.25	0.83	0.36	0.55



Alt Model-Shift Uniqueness Test

003340070-06, P = 360.058186 Days, E = 300.219166 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.99	10.6	9.69	4.83	5.64	3.58	1.12	0.30	5.16	0.96	5.82	0.11	0.82	0.31	2.31



Stellar Parameters For KIC 003340070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5904^{+160}_{-178}	$4.543^{+0.048}_{-0.204}$	$-0.240^{+0.300}_{-0.300}$	$0.867^{+0.262}_{-0.082}$	$0.958^{+0.107}_{-0.119}$	$2.073^{+0.399}_{-1.039}$
	+3%/-3%	+1%/-4%	+125%/-125%	+30%/-9%	+11%/-12%	+19%/-50%
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 003340070-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1064 ± 79	$14.64^{+12.72}_{-9.82}$	349^{+23}_{-17}	3297^{+1550}_{-525}	2441^{+21170}_{-1717}
Alt.	-1030 ± 97	$13.46^{+13.15}_{-9.23}$	351^{+25}_{-17}	3396^{+1726}_{-612}	2895^{+26534}_{-2168}

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

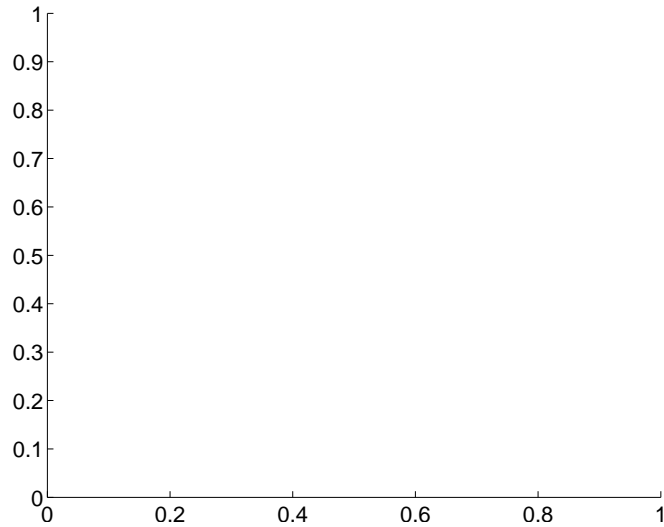
Supplemental centroid analysis for 003340070-06. Kepler magnitude: 15.17. Transit SNR 7.12

There are 0 quarters with good PRF difference image offsets

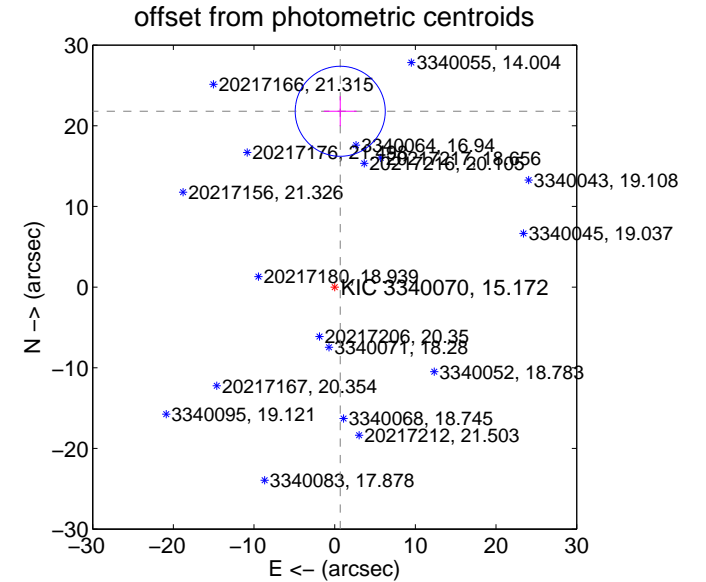
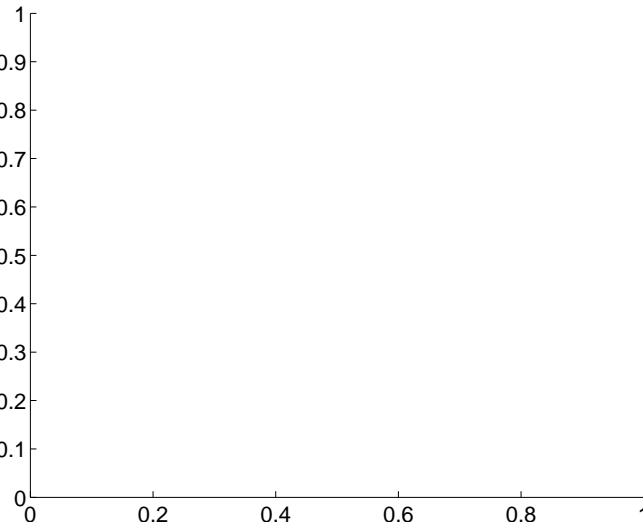
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	21.81 ± 1.86	11.72	-0.69 ± 2.03	21.80 ± 1.86

There is no PRF-fit offset from OOT-fit

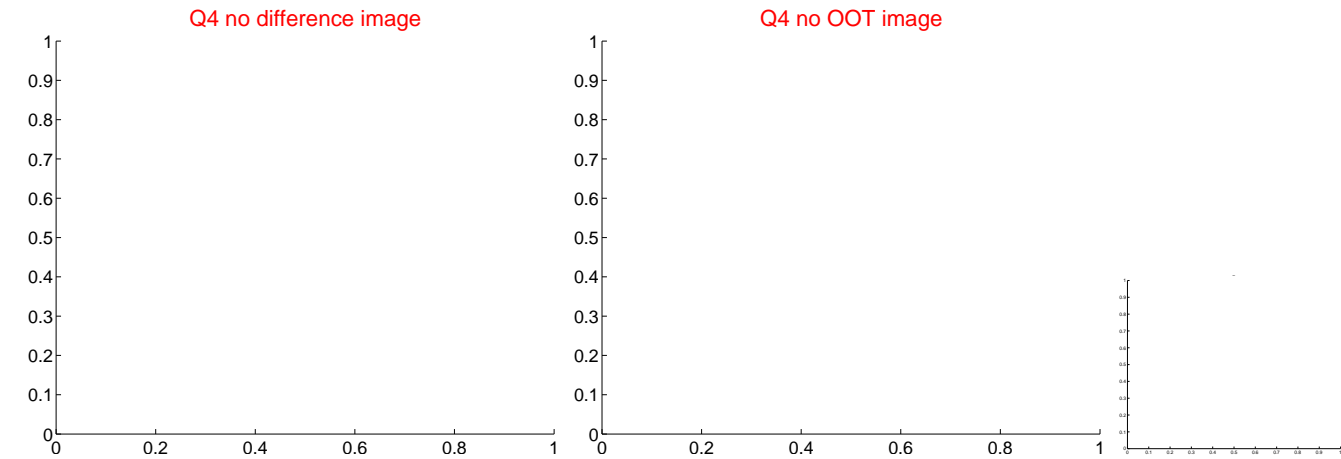
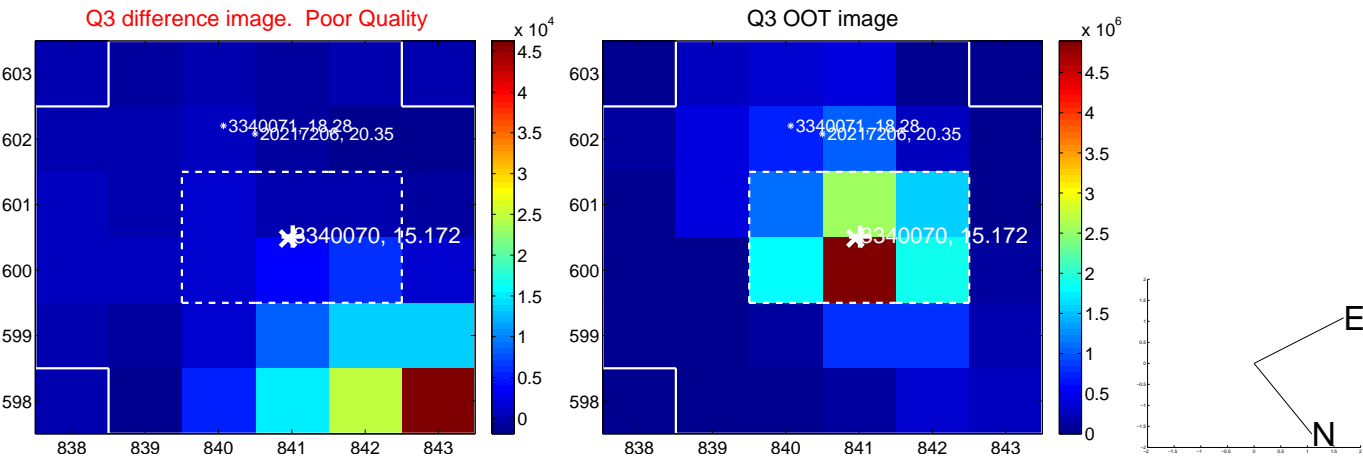
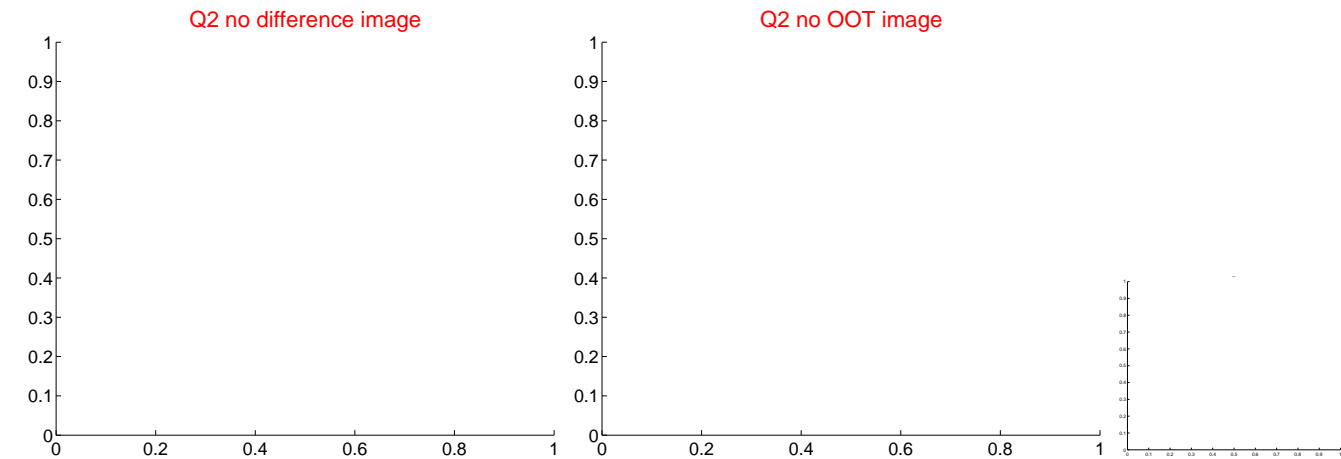
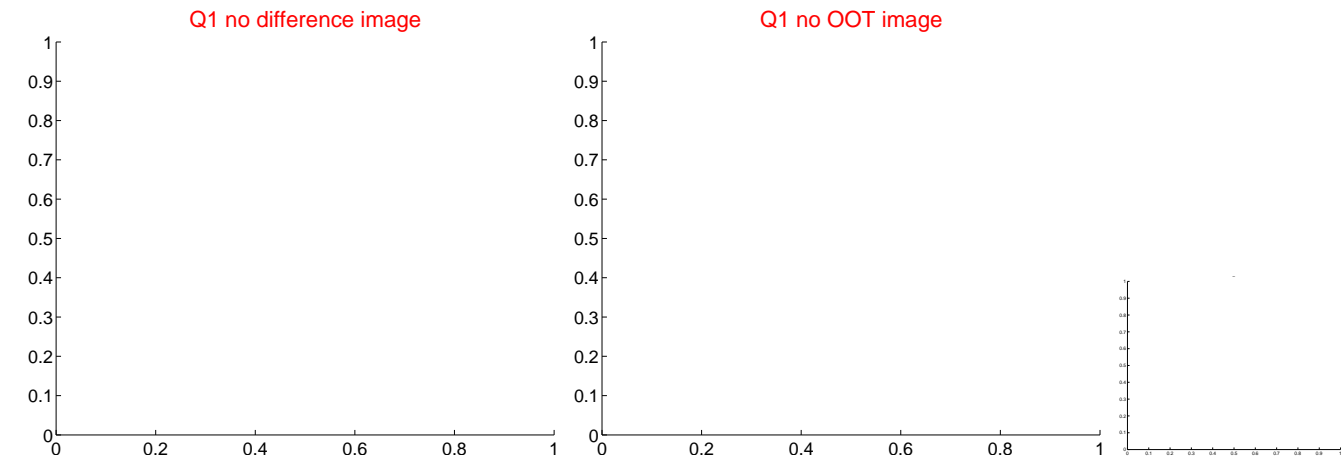


There is no PRF-fit offset from KIC



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

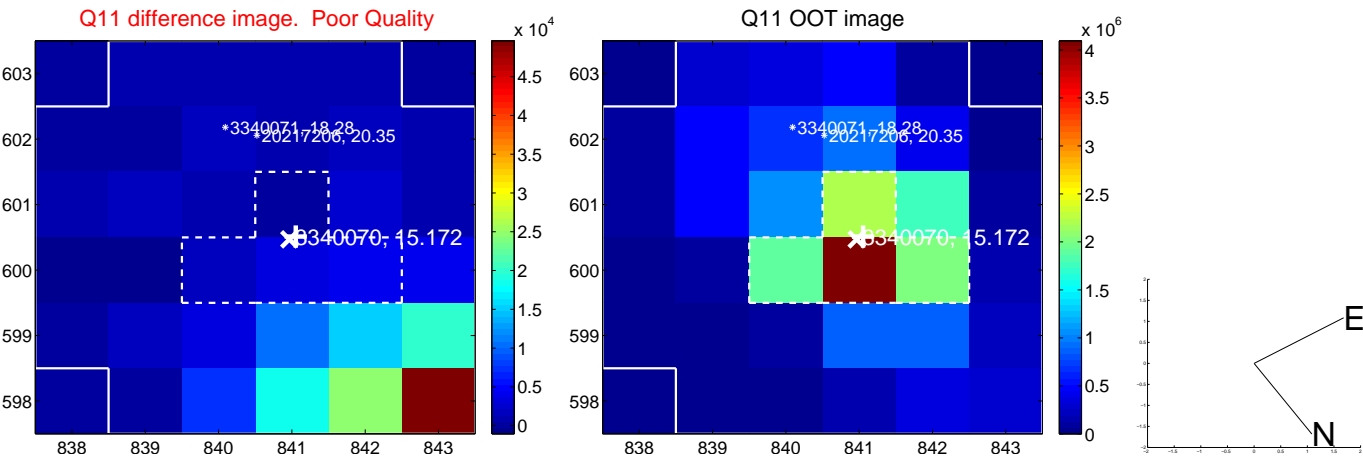
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



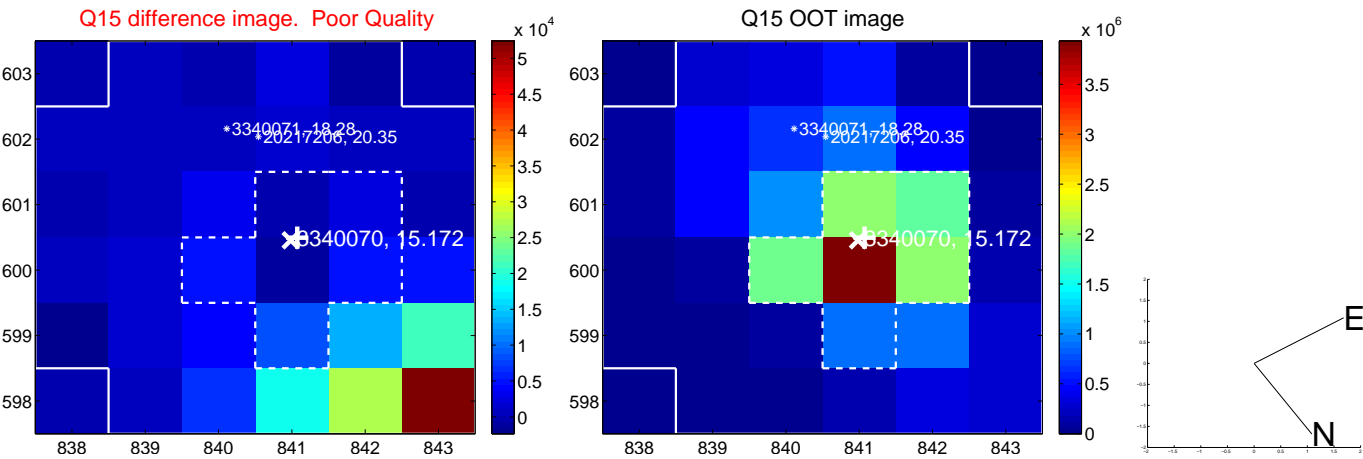
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



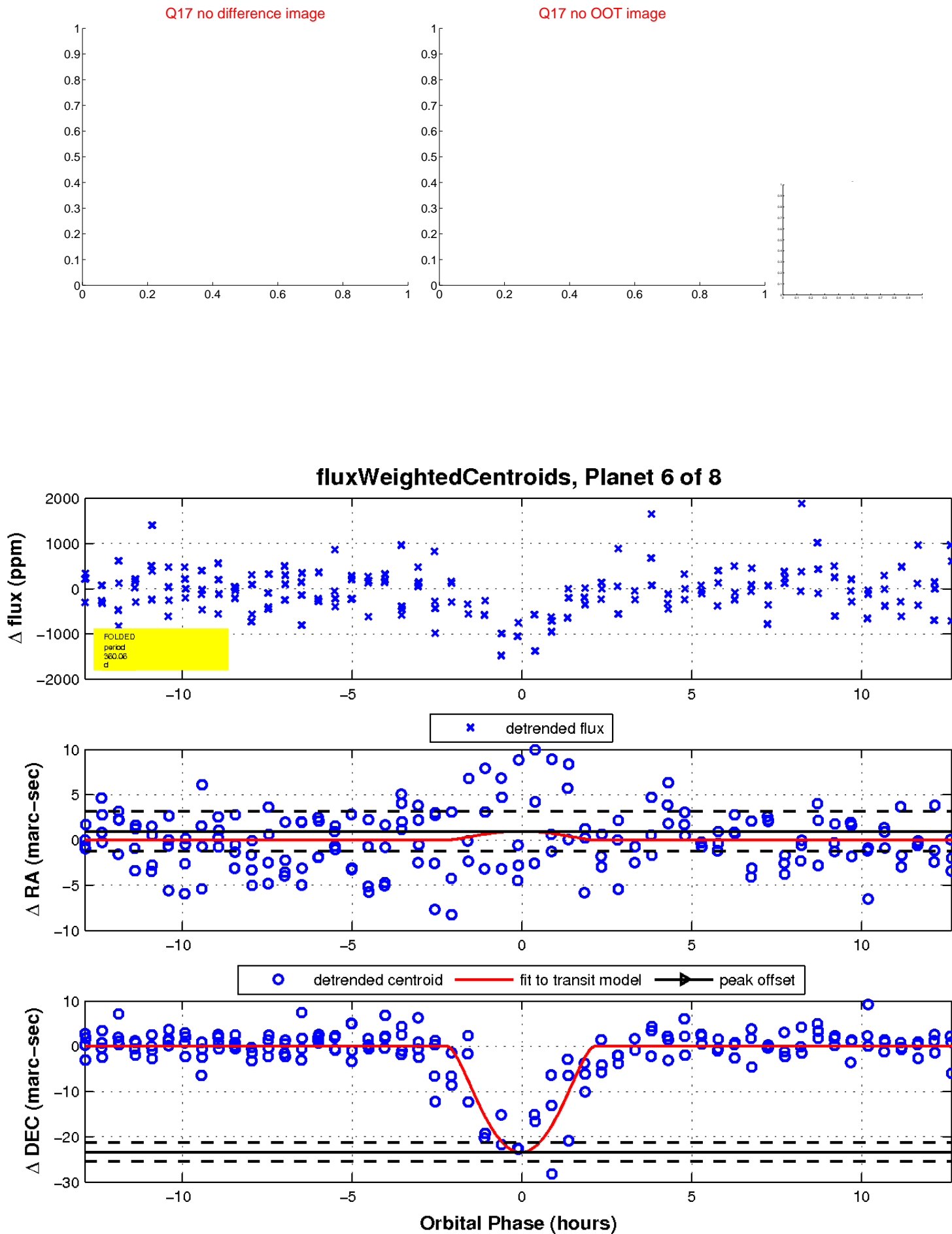
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

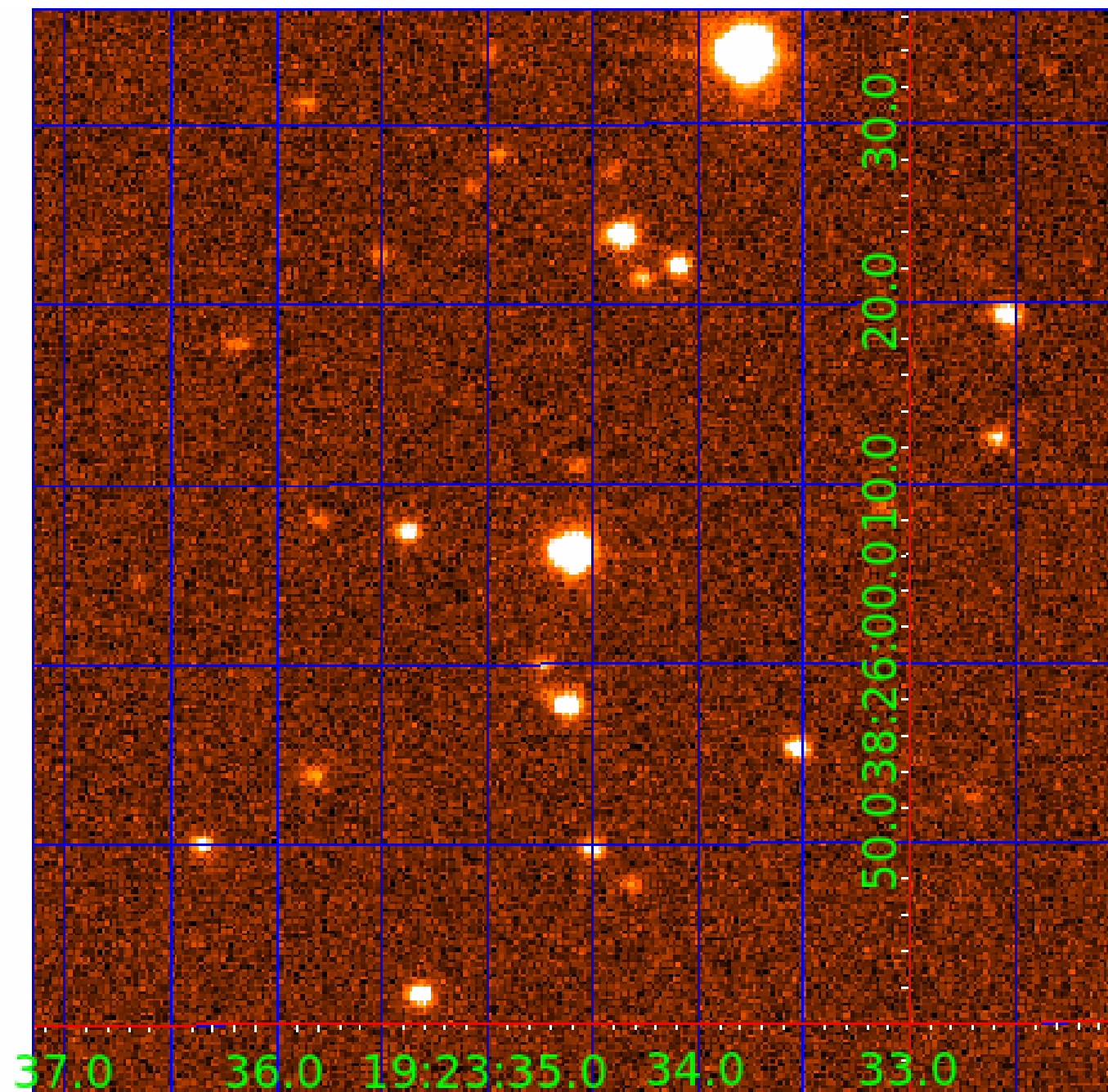


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003340070

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})
003340070-01	OBS	No	370.972187	284.381872	1283.2	5.006	11.4	11.4	0.87	5904	3.55	0.82
003340070-02	OBS	No	360.064432	295.303460	1433.0	6.008	12.1	11.4	0.87	5904	5.58	0.86
003340070-03	OBS	No	360.063975	328.028899	917.1	4.908	9.9	9.6	0.87	5904	2.75	0.86
003340070-04	OBS	No	403.699203	251.666599	1045.2	3.185	8.7	7.5	0.87	5904	2.92	0.74
003340070-05	OBS	No	360.055300	306.212057	761.7	6.064	8.2	7.4	0.87	5904	2.57	0.86
003340070-06	OBS	No	360.060697	300.215535	1053.5	4.308	8.6	7.1	0.87	5904	5.06	0.86
003340070-07	OBS	No	349.136961	343.871902	1032.3	3.390	7.8	8.9	0.87	5904	3.23	0.89
003340070-08	OBS	No	370.971282	338.932061	734.7	4.500	7.3	-1.0	0.87	5904	2.34	0.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340070-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—CENT_FEW_DIFFS
003340070-02	OBS	FP	0.00	1	0	1	0	INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET
003340070-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-04	OBS	FP	0.04	0	0	1	0	CENT_RESOLVED_OFFSET
003340070-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
003340070-06	OBS	FP	0.00	1	0	0	0	MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003340070-07	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

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

Ephemeris Match Information For 003340070-07

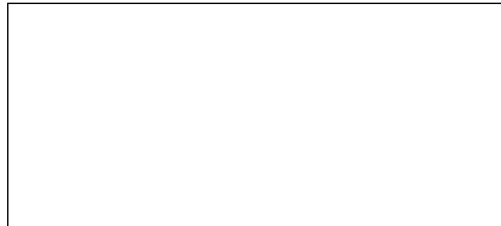
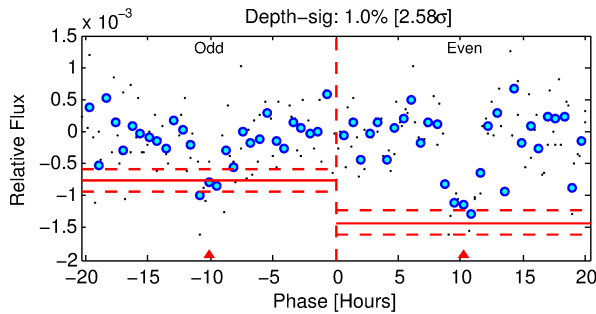
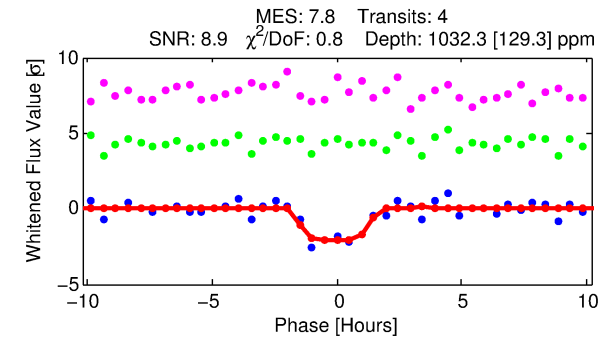
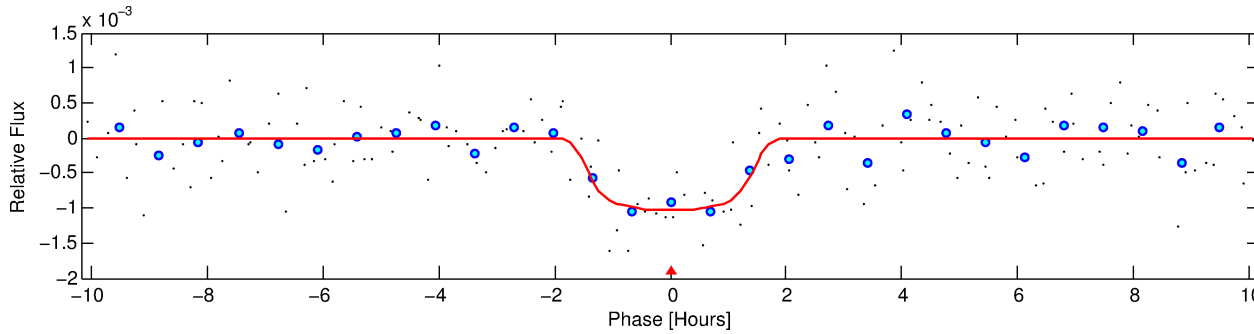
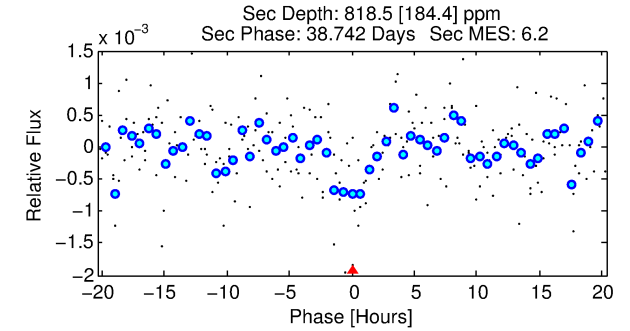
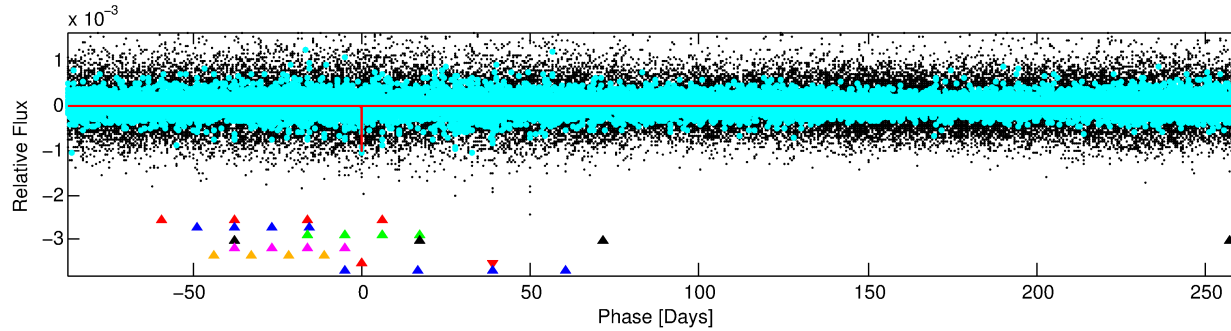
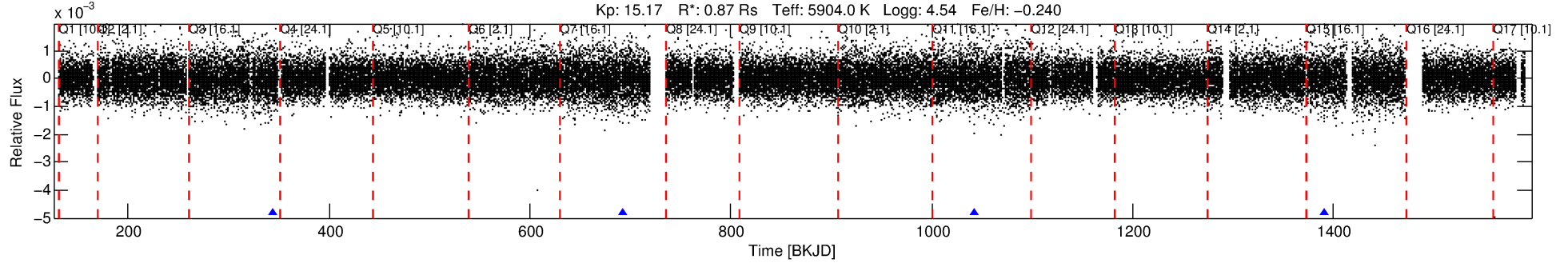
No Significant Match Found

DV One-Page Summary

KIC: 3340070 Candidate: 7 of 8 Period: 349.137 d

KOI: K01097 Corr: No Ephemeris Match

Kp: 15.17 R*: 0.87 Rs Teff: 5904.0 K Logg: 4.54 Fe/H: -0.240



DV Fit Results:

Period = 349.13696 [0.00394] d
Epoch = 343.8719 [0.0076] BKJD
Rp/R* = 0.0342 [0.0122]
a/R* = 431.57 [710.15]
b = 0.88 [0.44]
Seff = 0.89 [0.35]
Teq = 248 [24] K
Rp = 3.23 [1.51] Re
a = 0.9565 [0.2441] AU
Ag = 39464.92 [32952.16] [1.20σ]
Teffp = 5404 [1023] K [5.04σ]

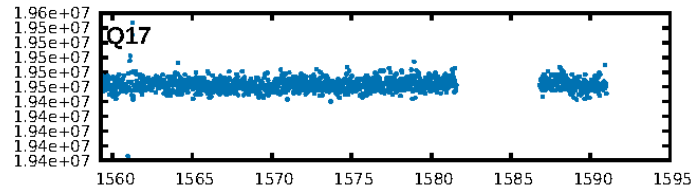
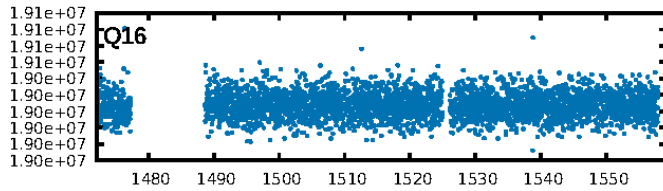
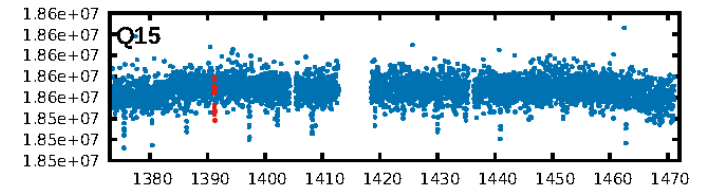
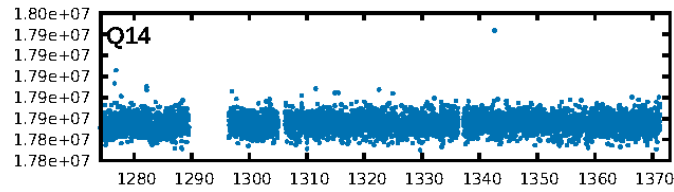
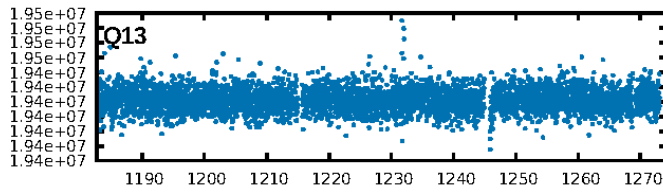
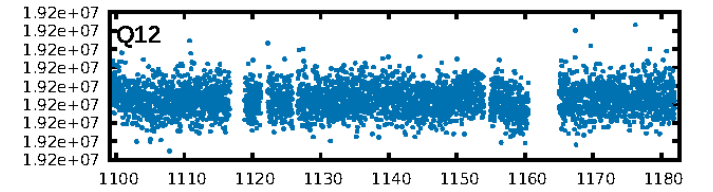
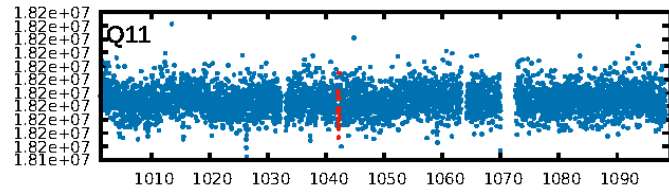
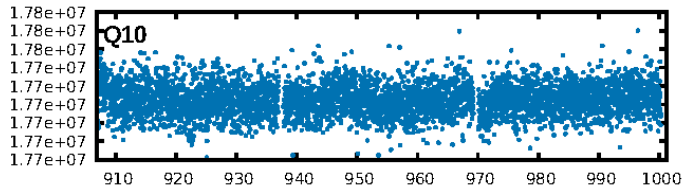
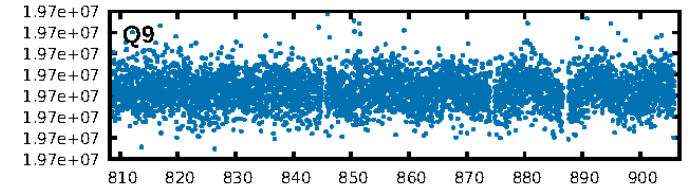
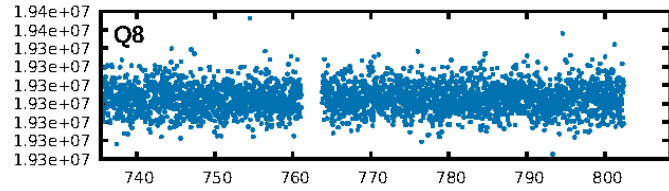
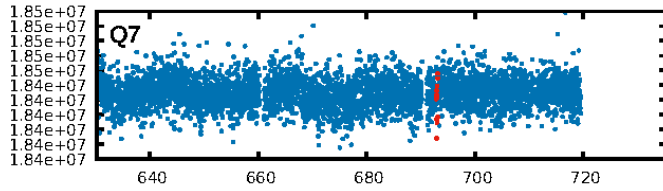
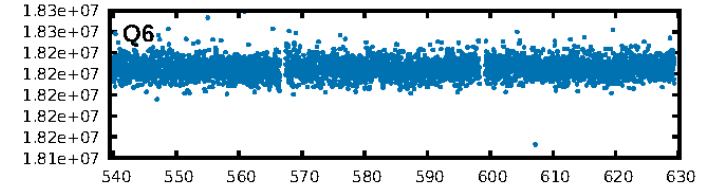
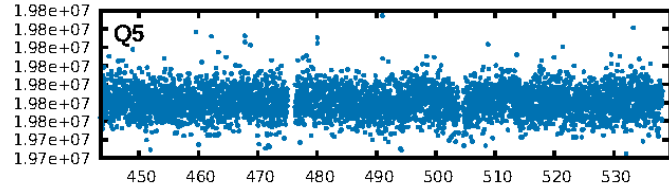
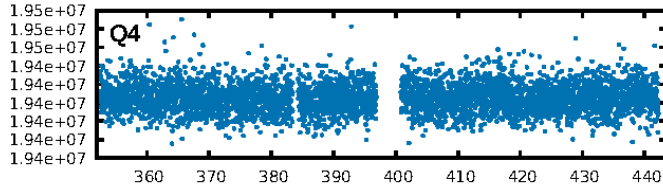
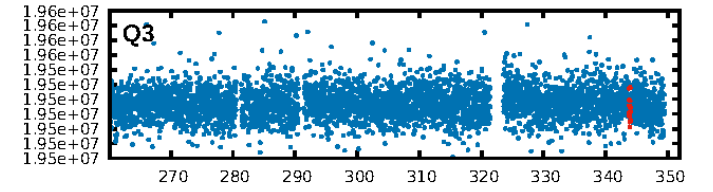
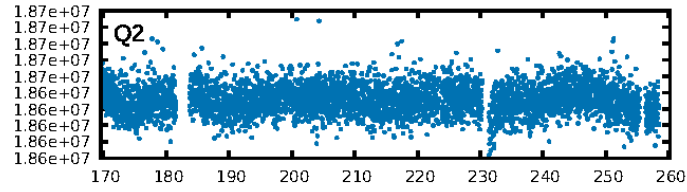
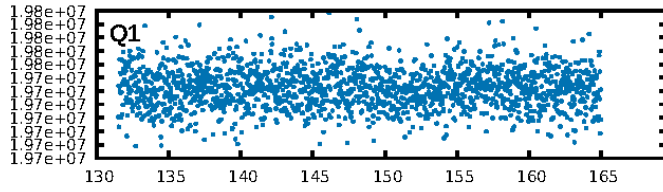
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [37.72σ]
ModelChiSquare2-sig: 3.2%
ModelChiSquareGof-sig: 97.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.09339
Centroid-sig: 0.0%
Centroid-so: 19.582 arcsec [11.29σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
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DiffImageOverlap-fno: 1.00 [4/4]

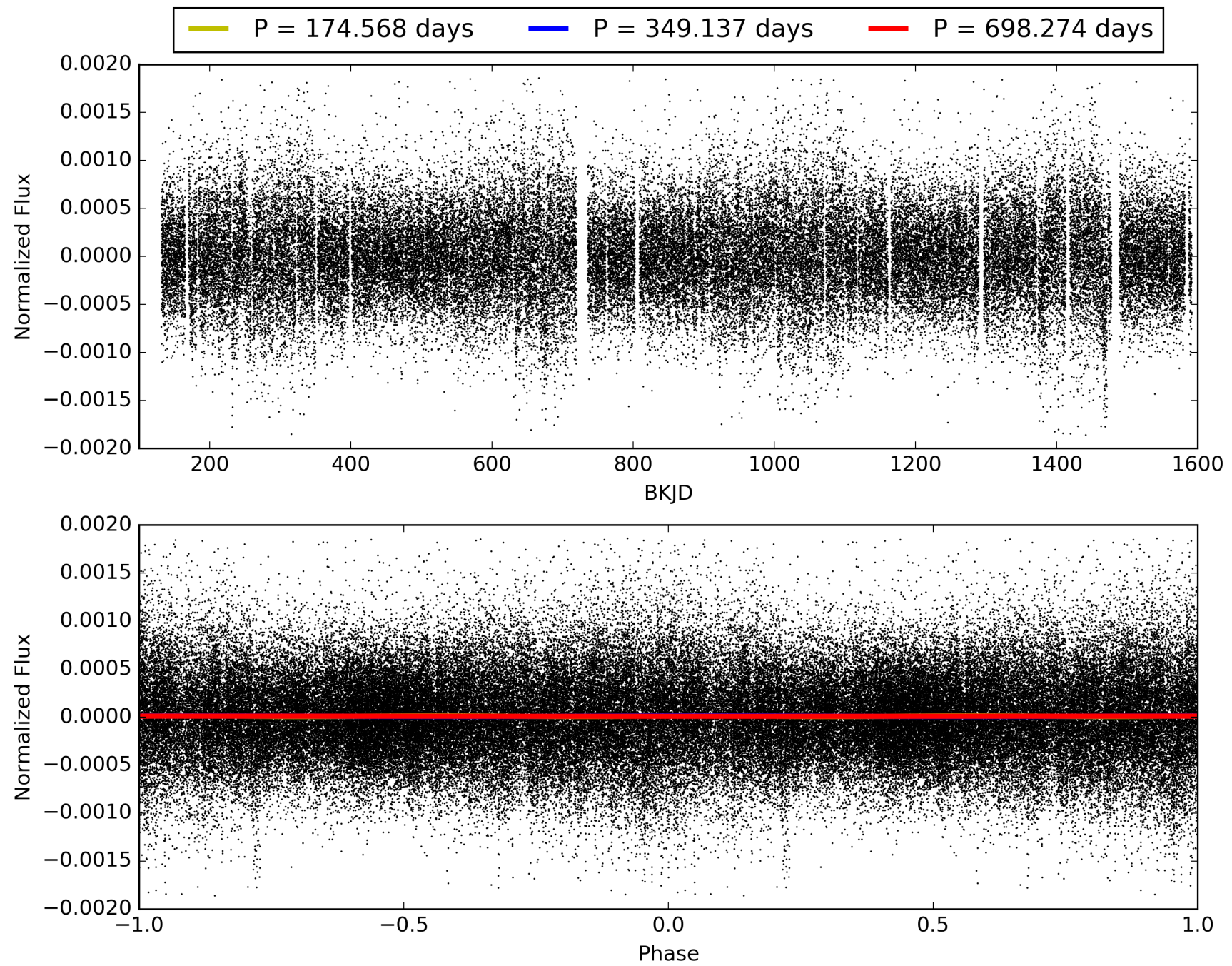
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:16:14 Z

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

TCE 003340070-07, PDC Light Curves

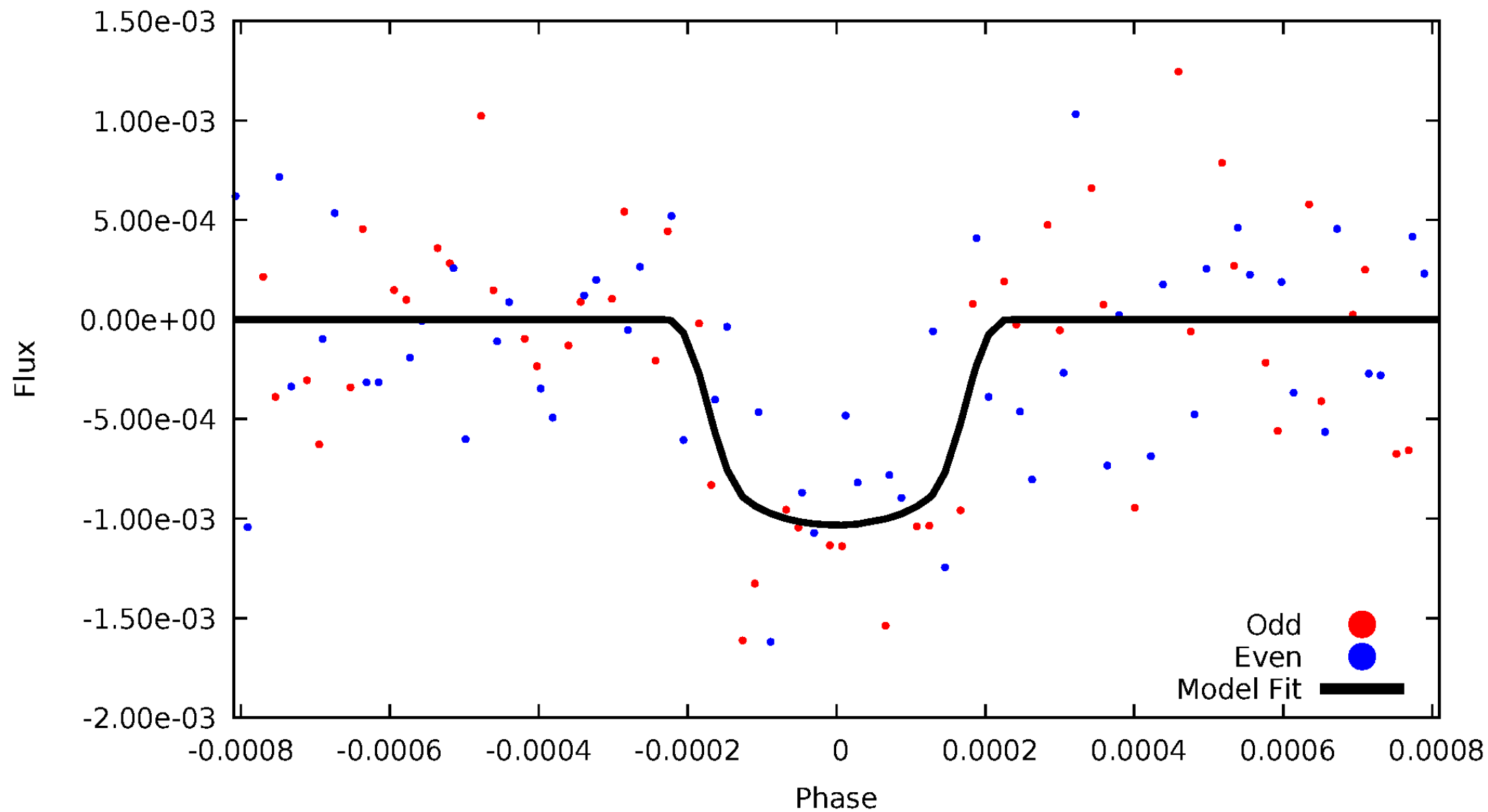


TCE 003340070-07



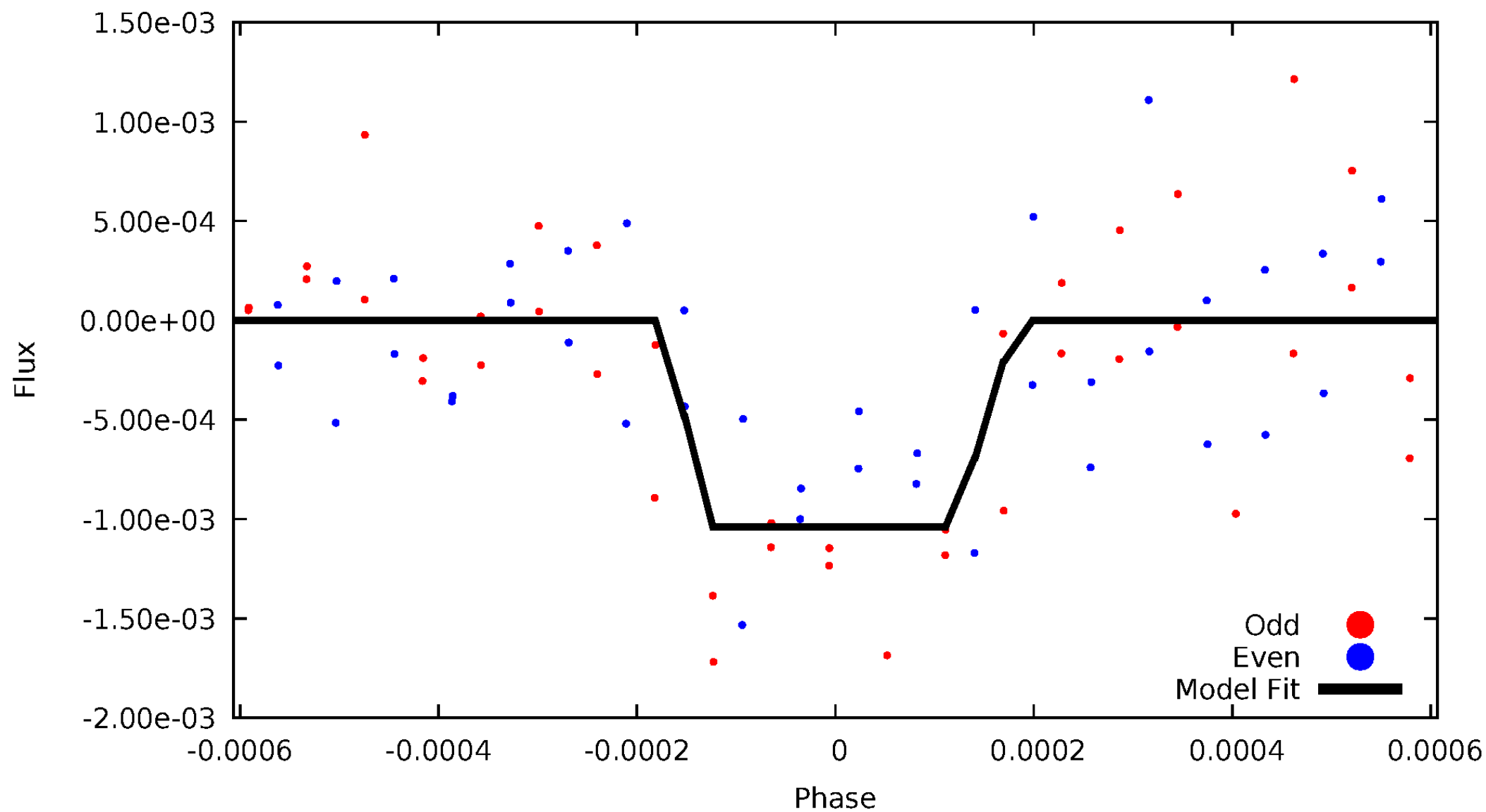
DV Odd/Even

TCE 003340070-07



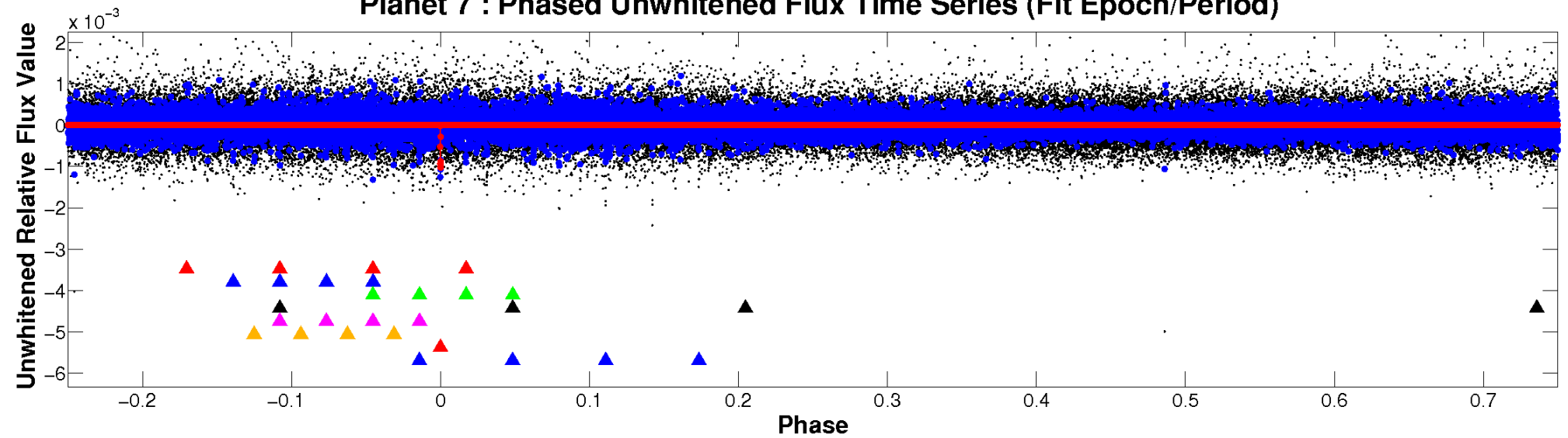
ALT Odd/Even

TCE 003340070-07

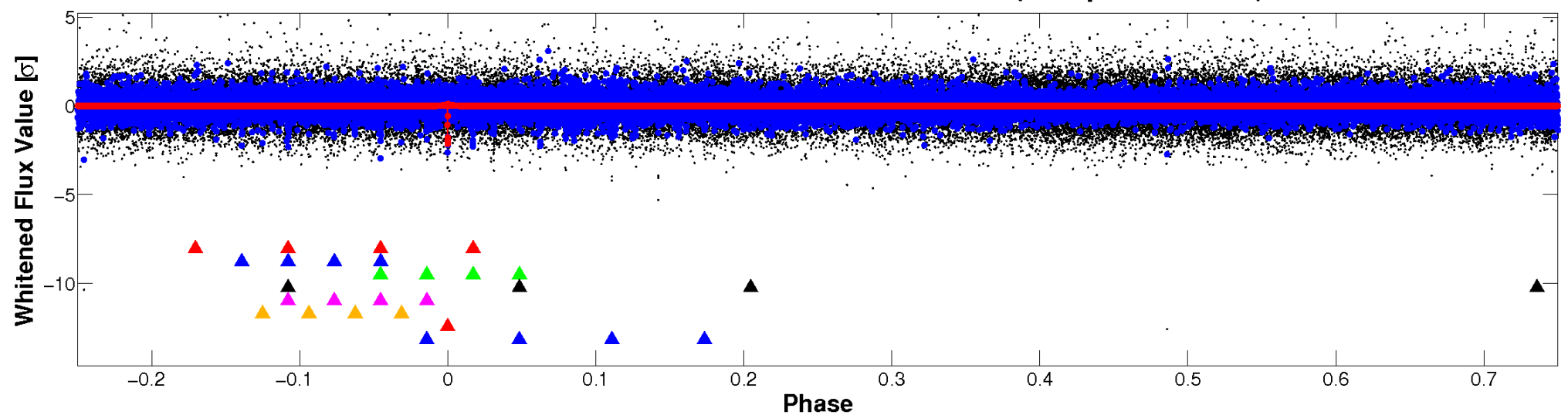


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

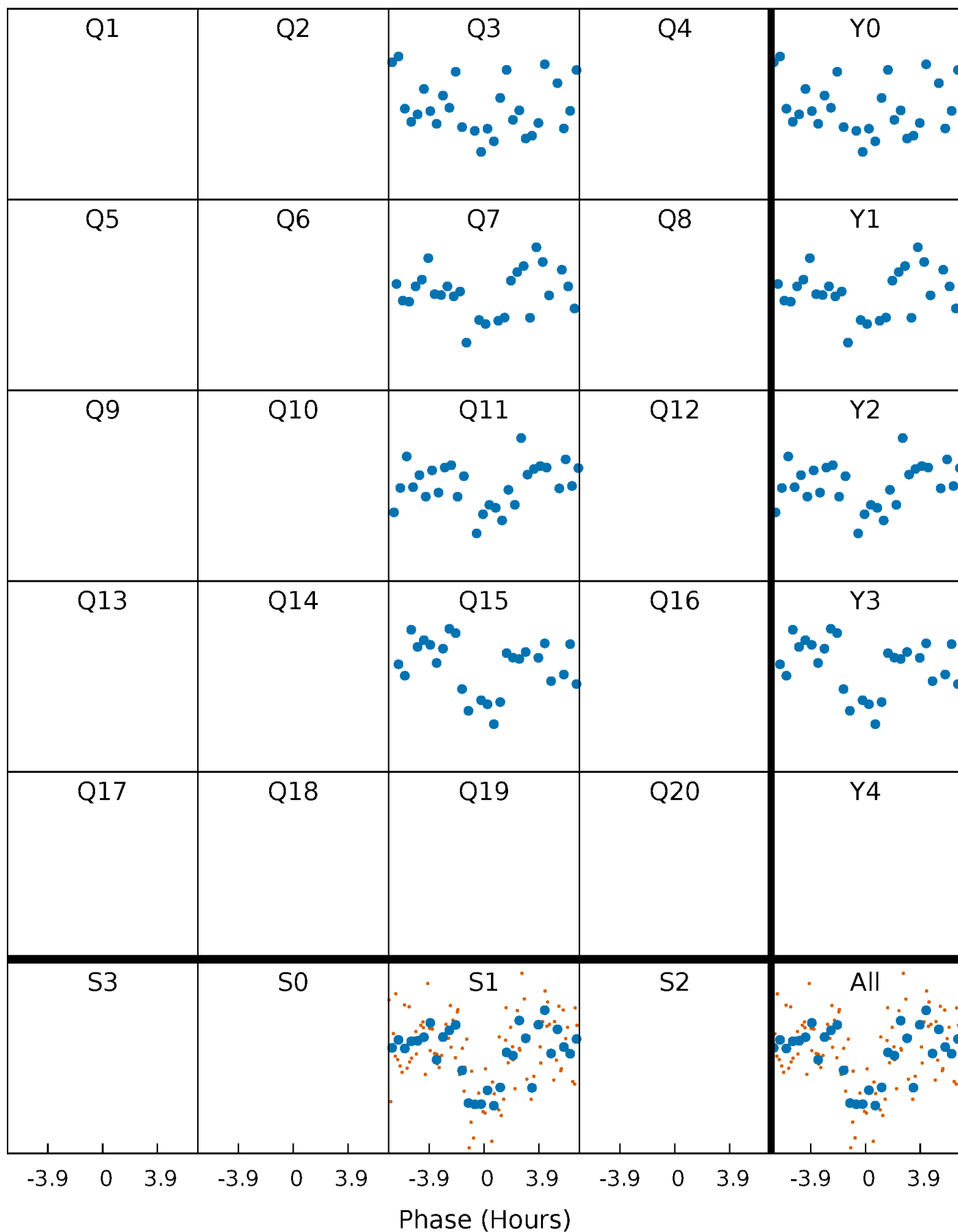


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



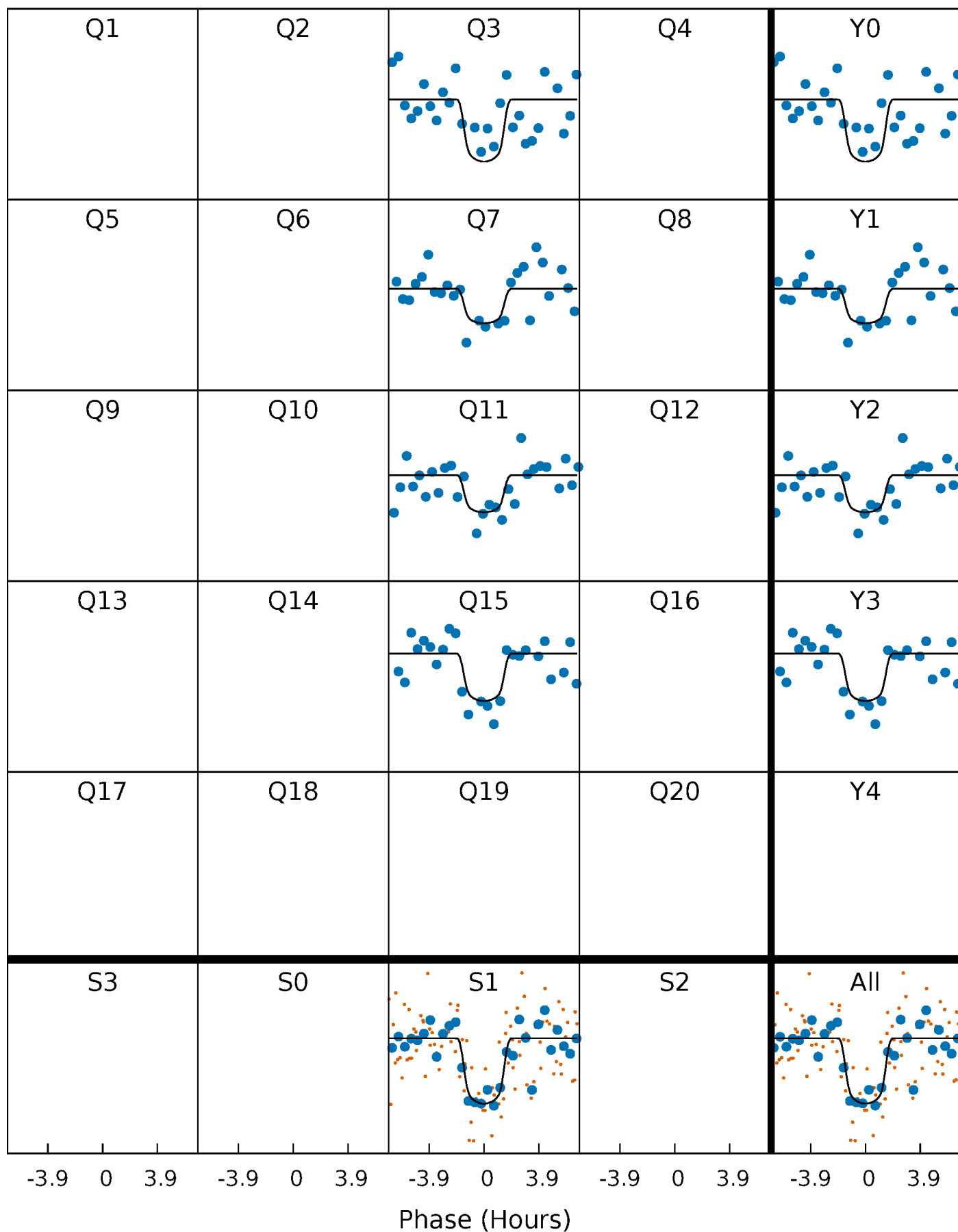
PDC Quarter-Phased Transit Curves

TCE 003340070-07 P=349.136961 Days $T_0=343.871902$ (BKJD)



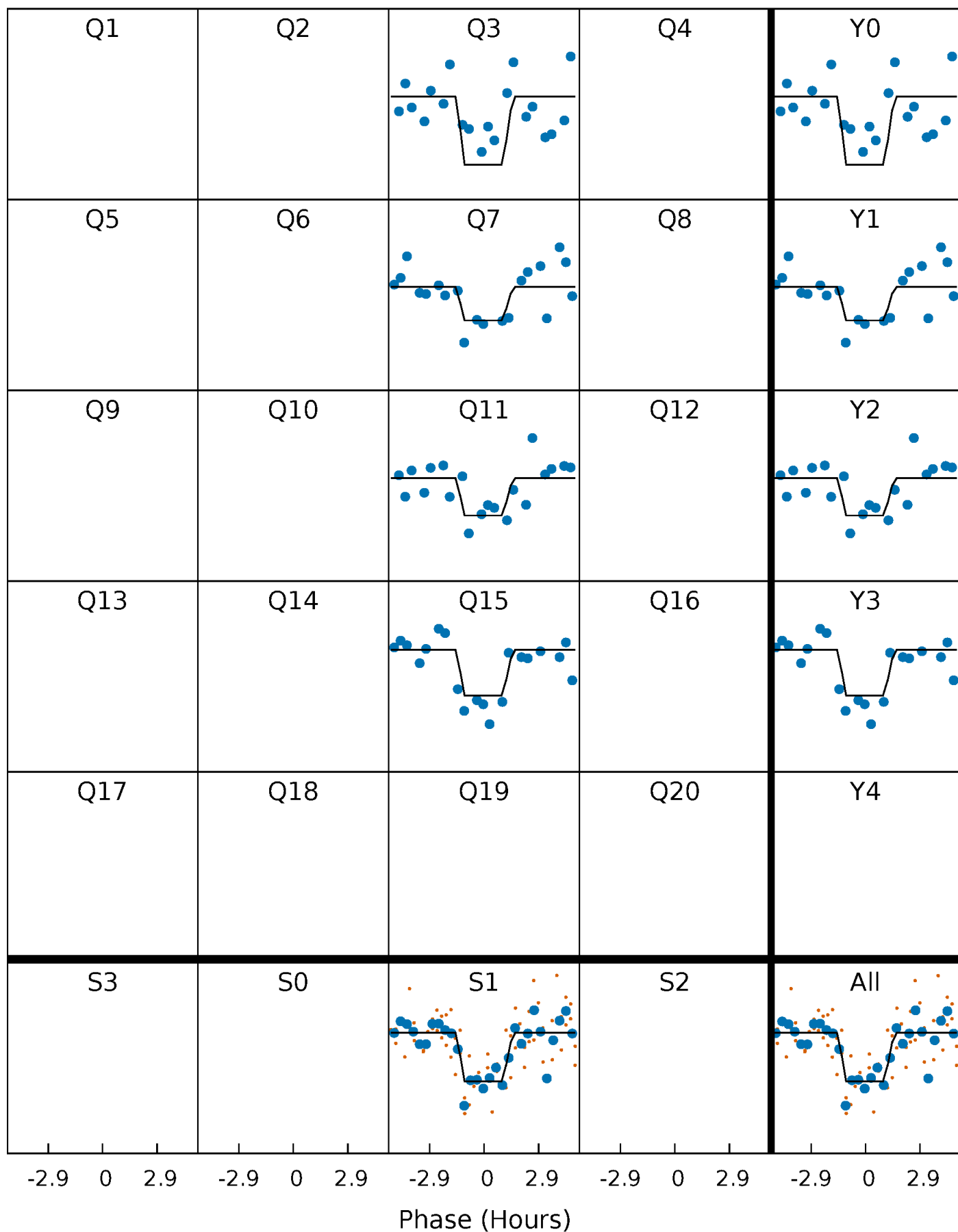
DV Quarter-Phased Transit Curves

TCE 003340070-07 $P=349.136961$ Days $T_0=343.871902$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

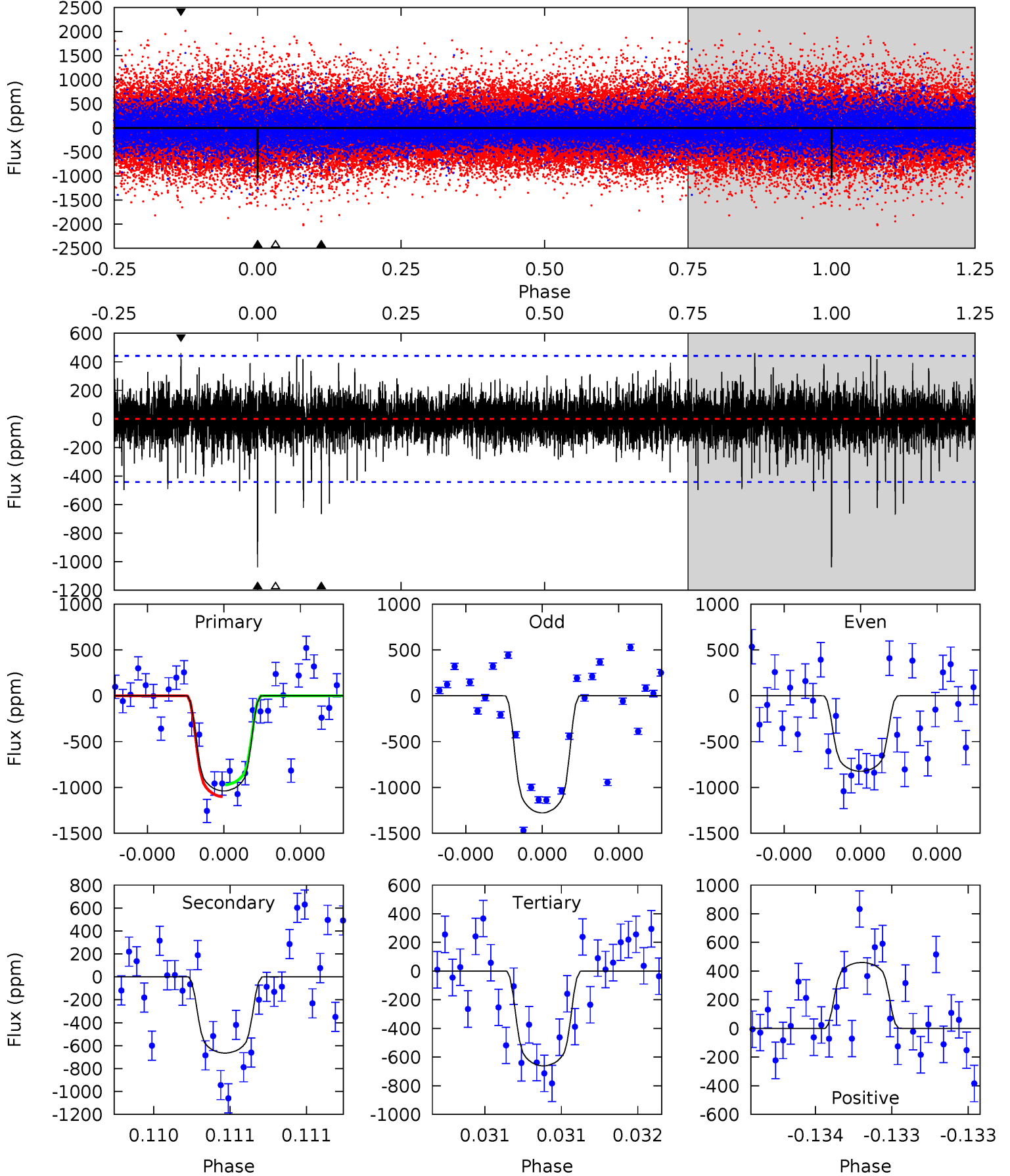
TCE 003340070-07 P=349.139910 Days $T_0=343.867888$ (BKJD)



DV Model-Shift Uniqueness Test

003340070-07, P = 349.136961 Days, E = 343.871902 Days

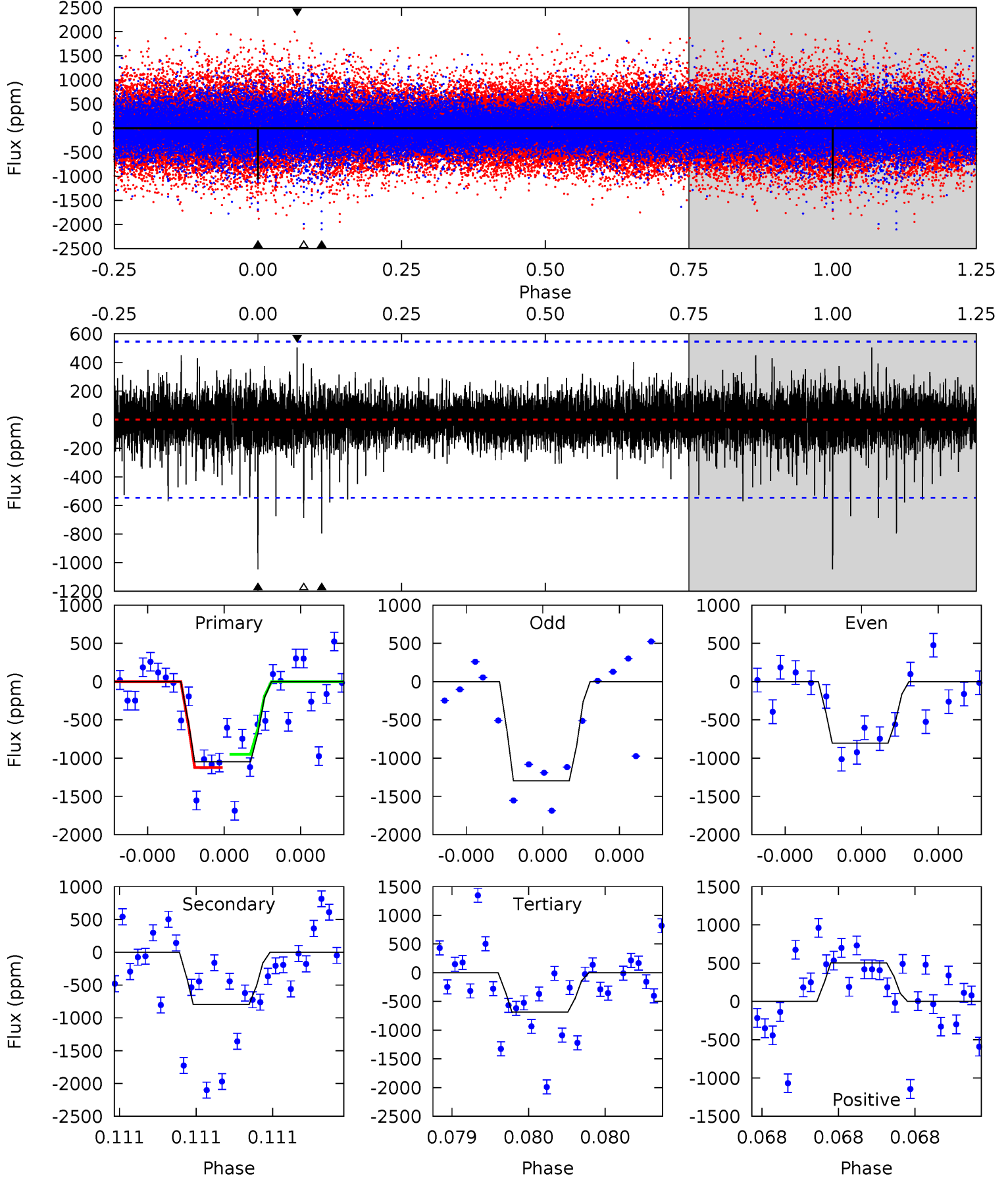
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	8.41	8.37	5.82	5.58	3.50	1.28	4.76	7.31	0.05	2.59	2.87	0.89	0.31	0.82



Alt Model-Shift Uniqueness Test

003340070-07, P = 349.139910 Days, E = 343.867888 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	8.23	7.09	5.22	5.65	3.60	1.07	3.74	5.61	1.13	3.00	2.56	0.91	0.33	0.89



Stellar Parameters For KIC 003340070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5904^{+160}_{-178}	$4.543^{+0.048}_{-0.204}$	$-0.240^{+0.300}_{-0.300}$	$0.867^{+0.262}_{-0.082}$	$0.958^{+0.107}_{-0.119}$	$2.073^{+0.399}_{-1.039}$
	+3%/-3%	+1%/-4%	+125%/-125%	+30%/-9%	+11%/-12%	+19%/-50%
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 003340070-07 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-665 ± 79	$3.32^{+1.29}_{-1.16}$	353^{+25}_{-17}	5220^{+1127}_{-672}	29829^{+38176}_{-14800}
Alt.	-795 ± 97	$3.19^{+1.30}_{-1.21}$	354^{+27}_{-16}	5557^{+1540}_{-715}	38903^{+63027}_{-19103}

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

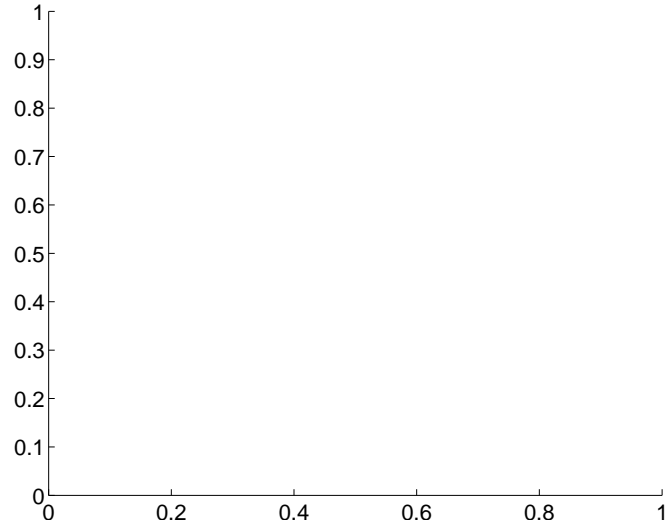
Supplemental centroid analysis for 003340070-07. Kepler magnitude: 15.17. Transit SNR 8.88

There are 0 quarters with good PRF difference image offsets

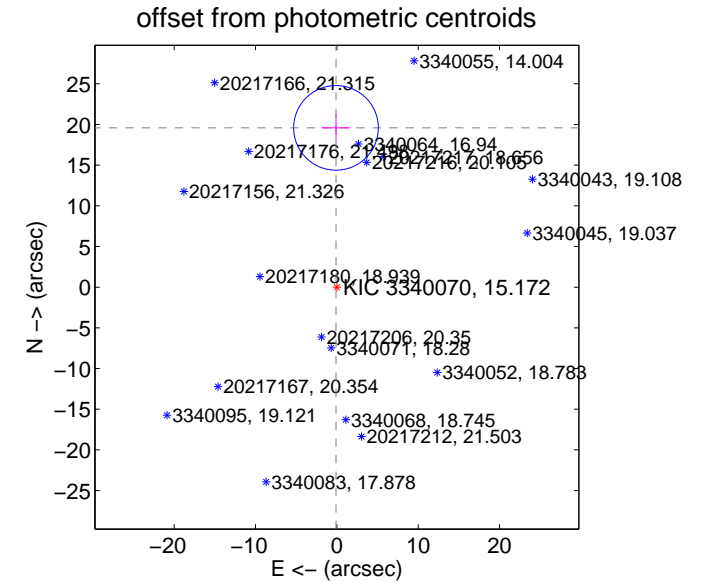
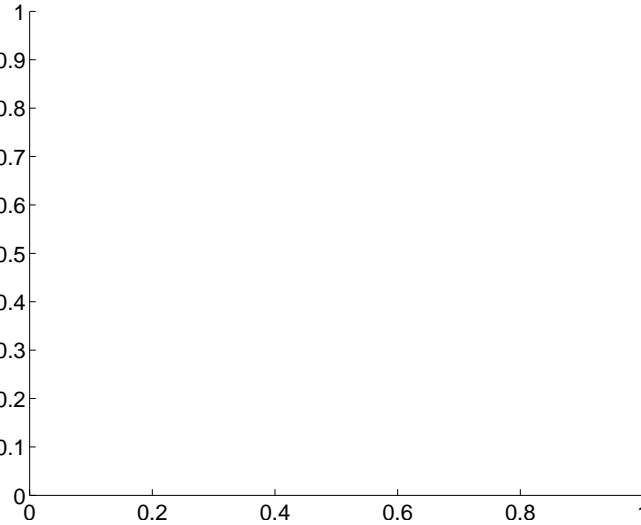
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	19.58 ± 1.73	11.29	0.11 ± 1.81	19.58 ± 1.73

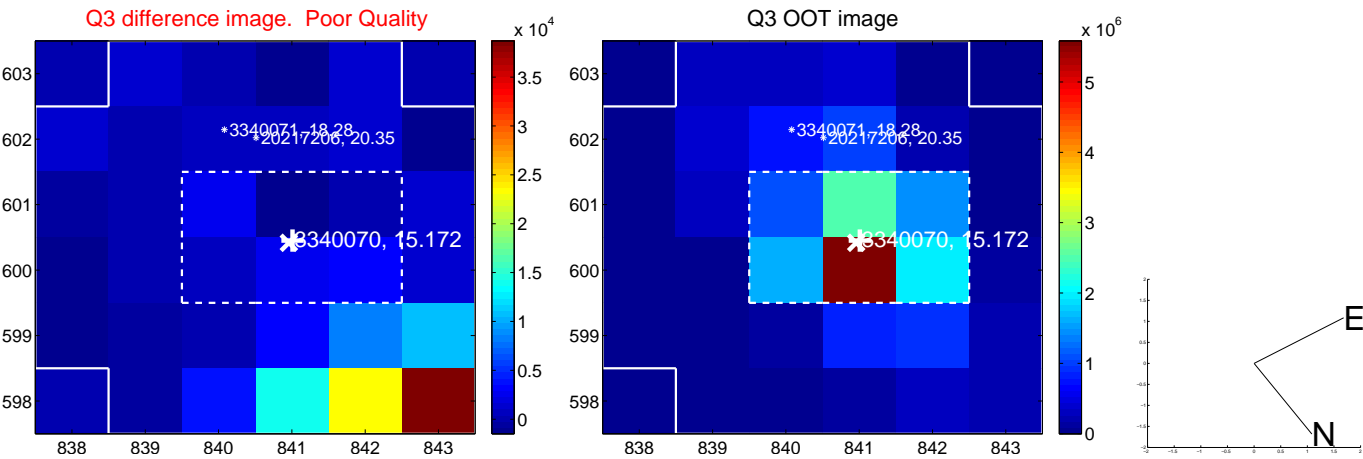
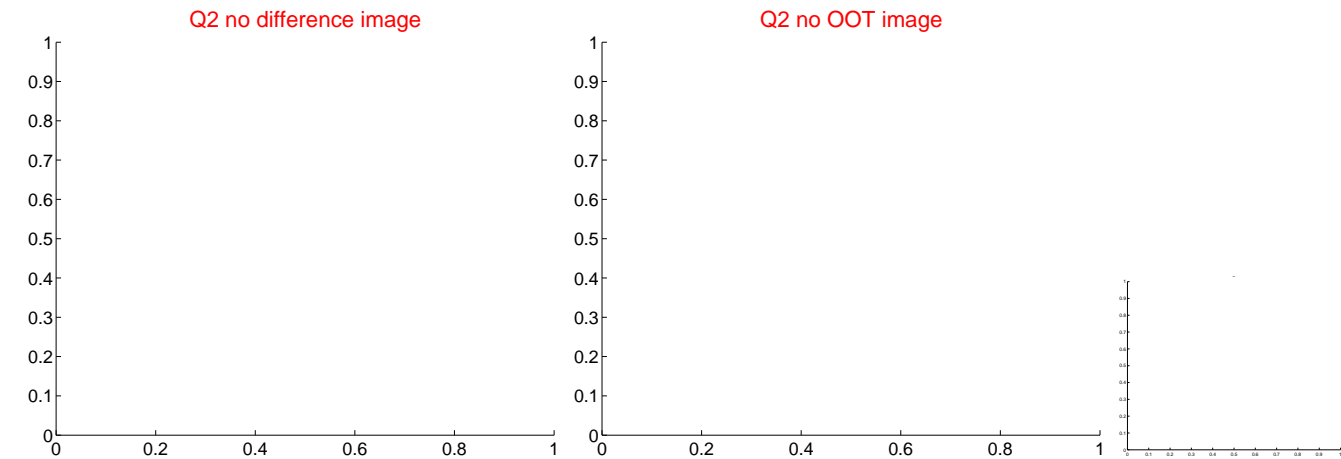
There is no PRF-fit offset from OOT-fit



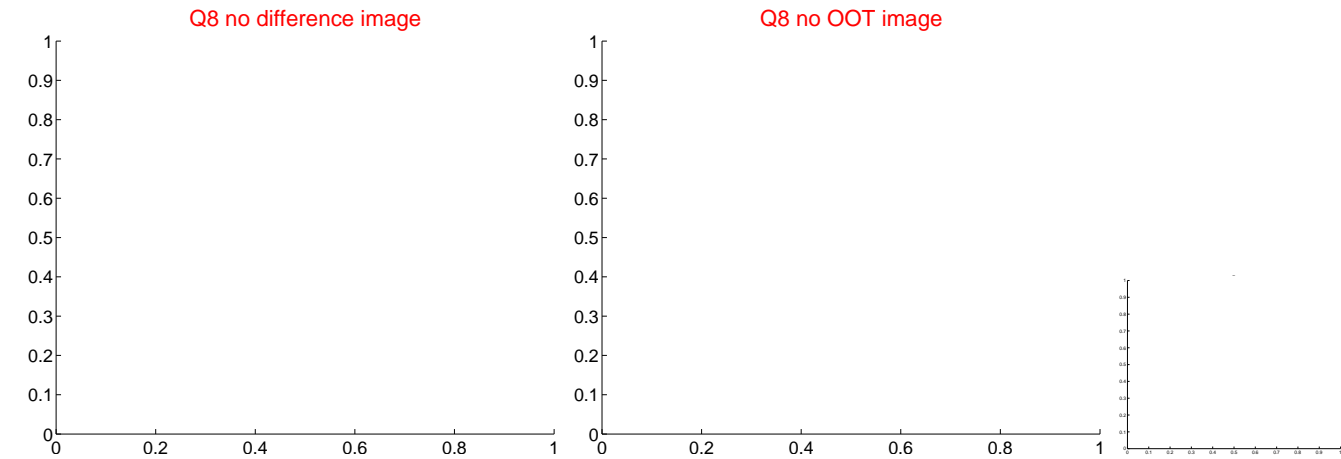
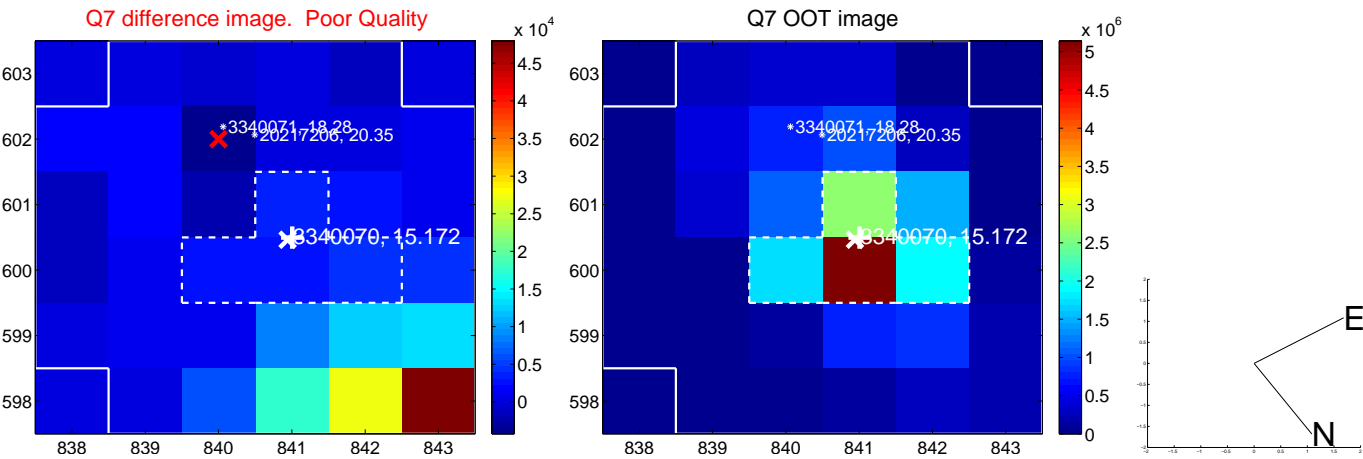
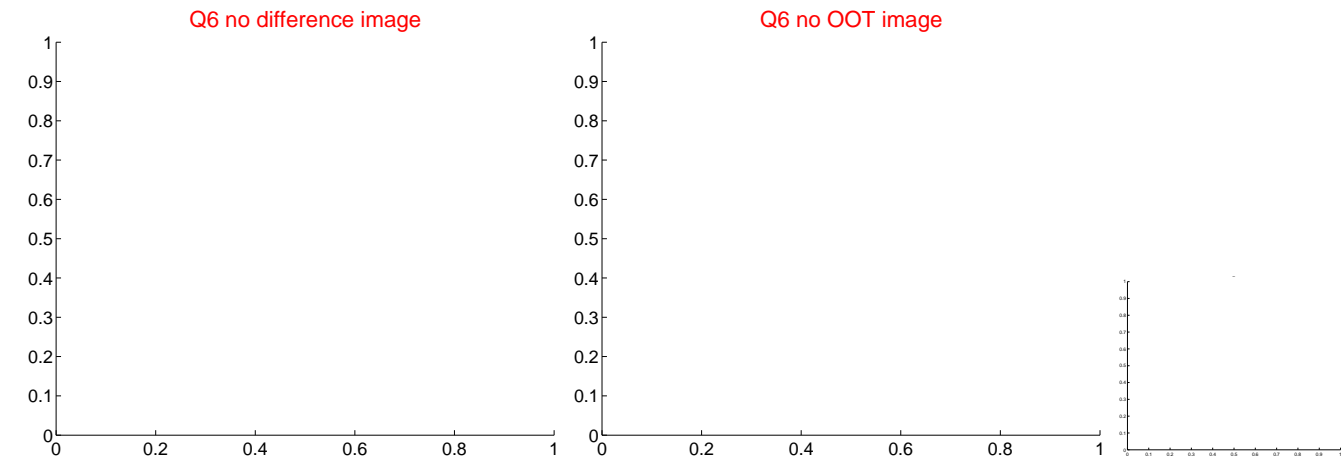
There is no PRF-fit offset from KIC



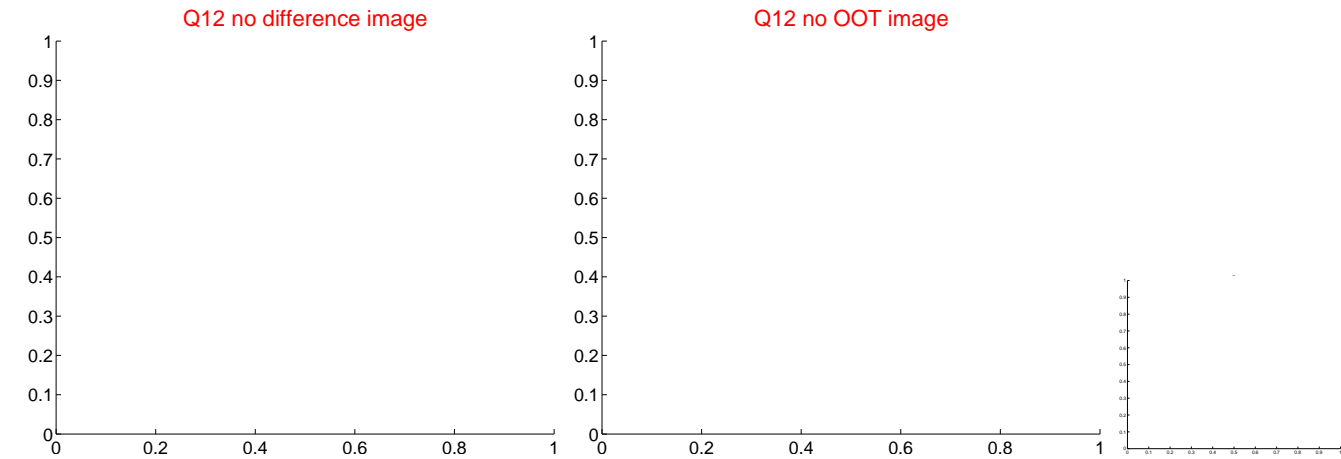
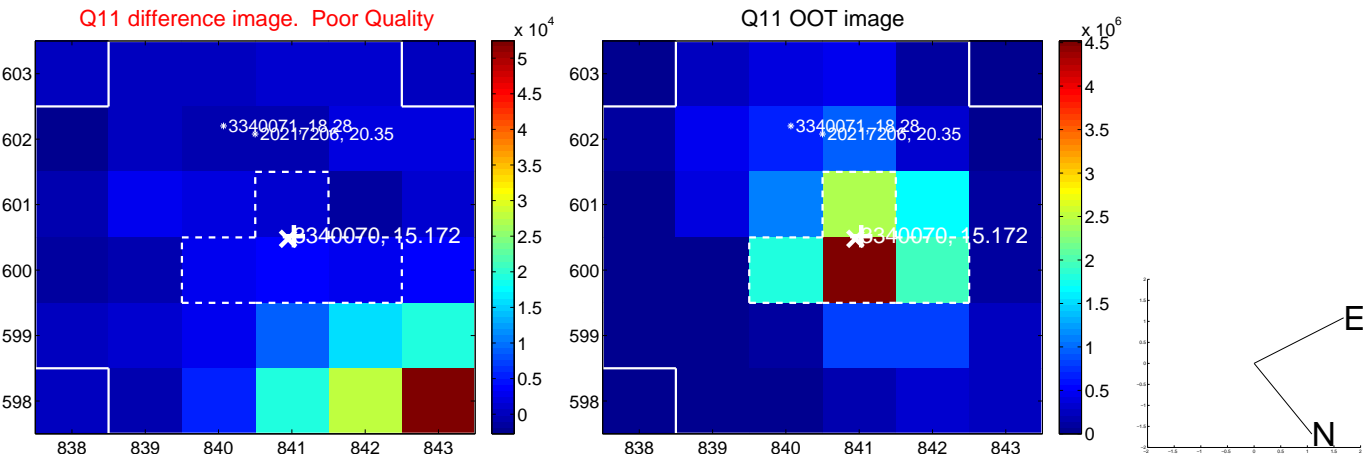
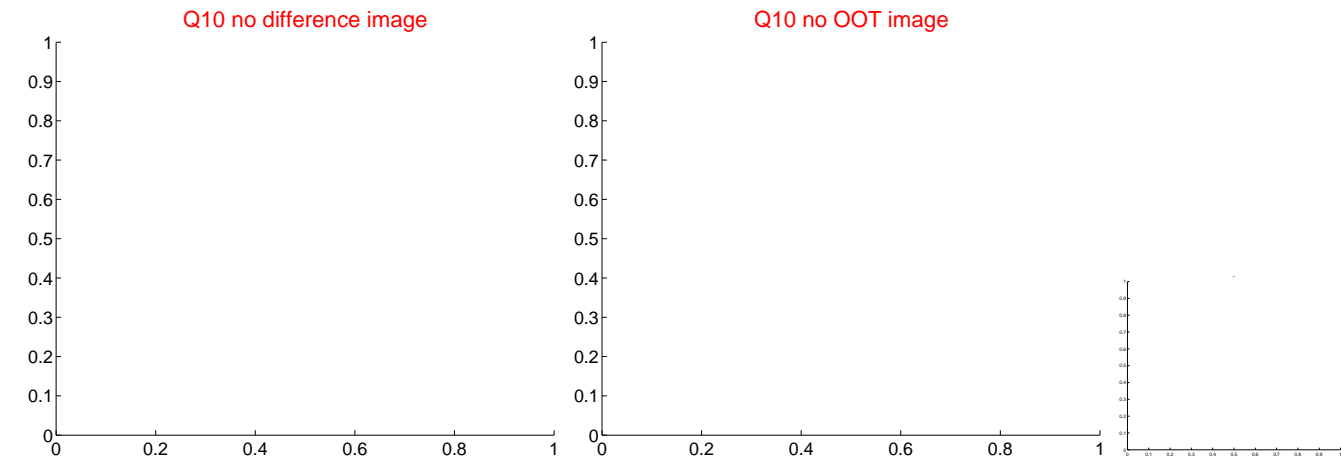
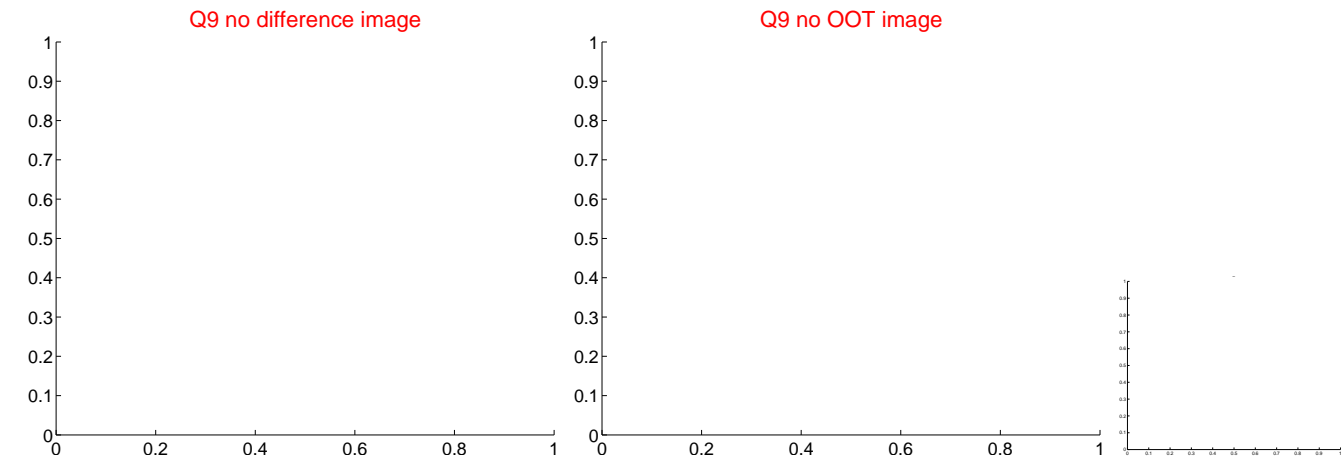
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



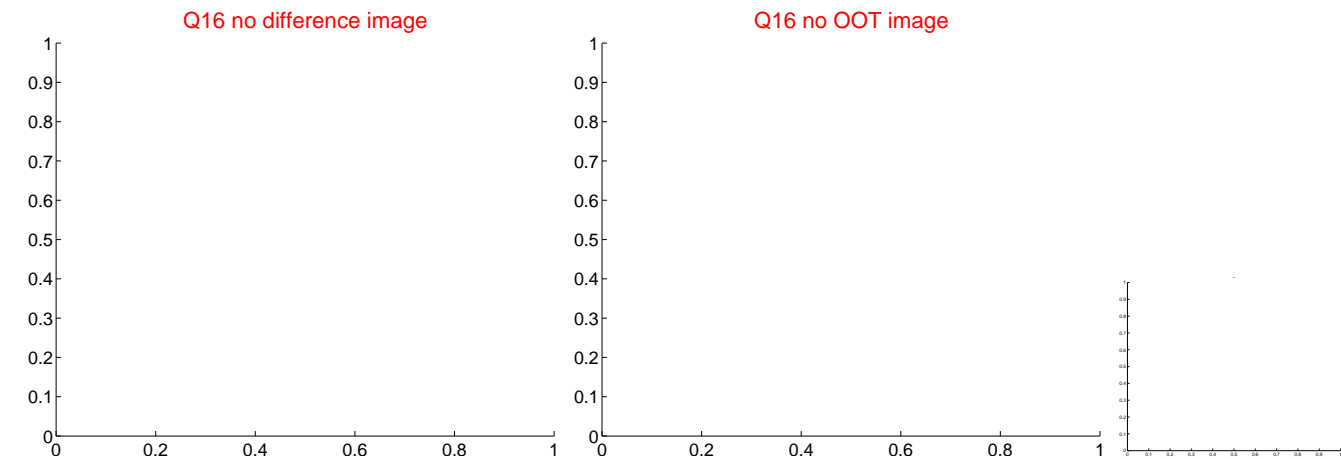
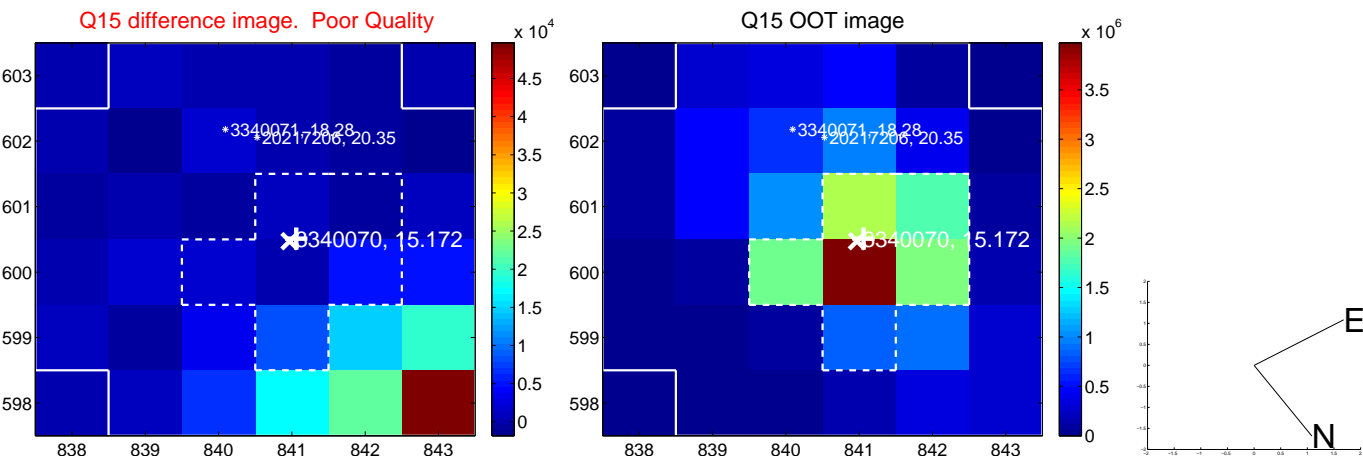
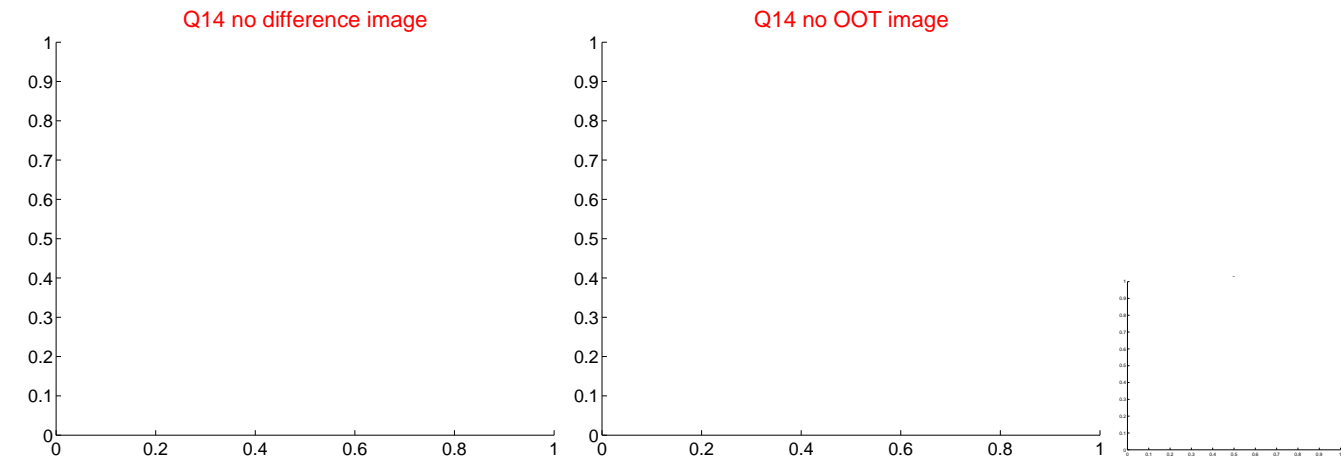
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



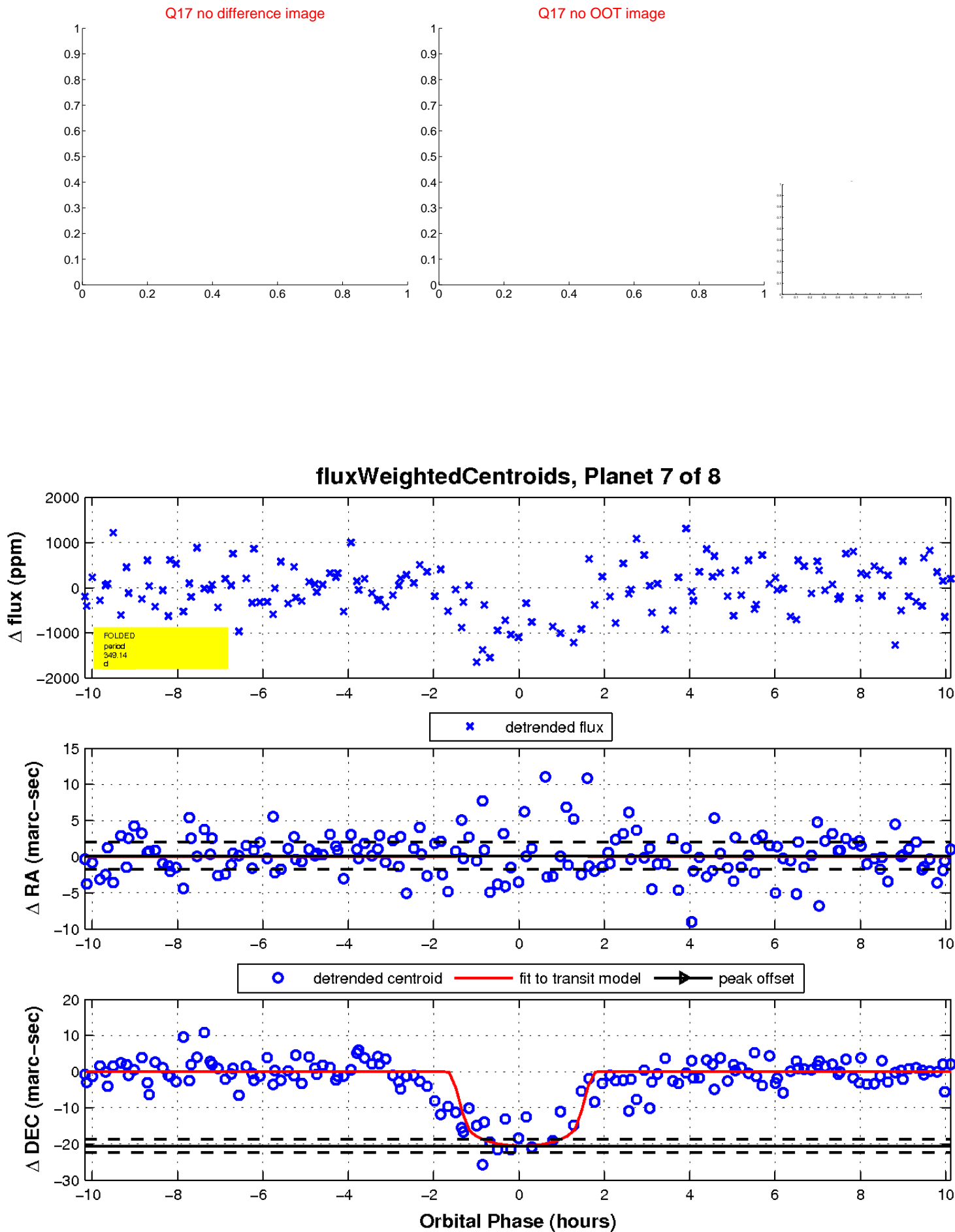
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

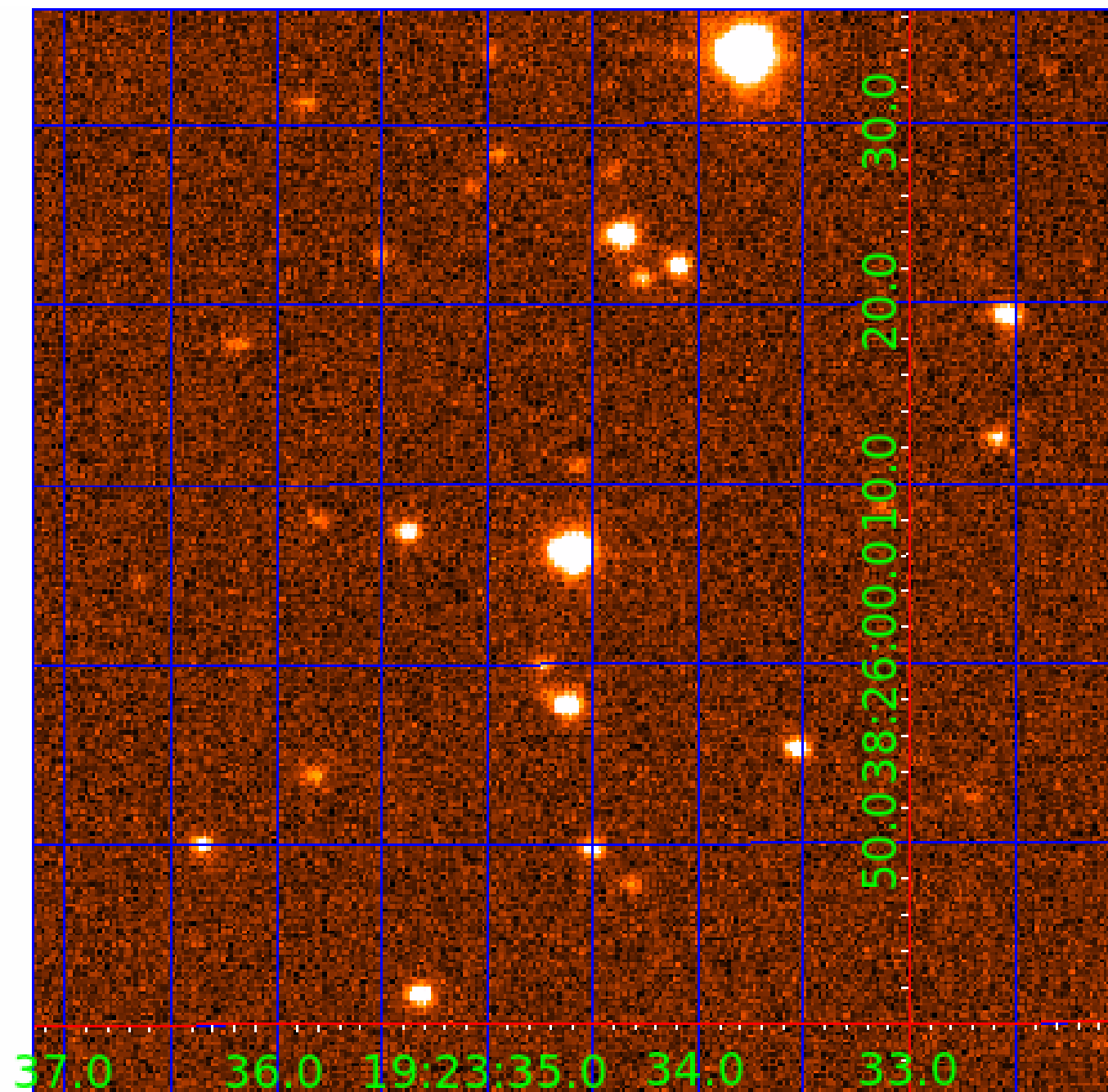


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003340070

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})
003340070-01	OBS	No	370.972187	284.381872	1283.2	5.006	11.4	11.4	0.87	5904	3.55	0.82
003340070-02	OBS	No	360.064432	295.303460	1433.0	6.008	12.1	11.4	0.87	5904	5.58	0.86
003340070-03	OBS	No	360.063975	328.028899	917.1	4.908	9.9	9.6	0.87	5904	2.75	0.86
003340070-04	OBS	No	403.699203	251.666599	1045.2	3.185	8.7	7.5	0.87	5904	2.92	0.74
003340070-05	OBS	No	360.055300	306.212057	761.7	6.064	8.2	7.4	0.87	5904	2.57	0.86
003340070-06	OBS	No	360.060697	300.215535	1053.5	4.308	8.6	7.1	0.87	5904	5.06	0.86
003340070-07	OBS	No	349.136961	343.871902	1032.3	3.390	7.8	8.9	0.87	5904	3.23	0.89
003340070-08	OBS	No	370.971282	338.932061	734.7	4.500	7.3	-1.0	0.87	5904	2.34	0.82

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003340070-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—CENT_FEW_DIFFS
003340070-02	OBS	FP	0.00	1	0	1	0	INCONSISTENT_TRANS—CENT_RESOLVED_OFFSET
003340070-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-04	OBS	FP	0.04	0	0	1	0	CENT_RESOLVED_OFFSET
003340070-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET
003340070-06	OBS	FP	0.00	1	0	0	0	MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS
003340070-07	OBS	FP	0.00	1	0	1	0	ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
003340070-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_NOFITS

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

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

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

Ephemeris Match Information For 003340070-08

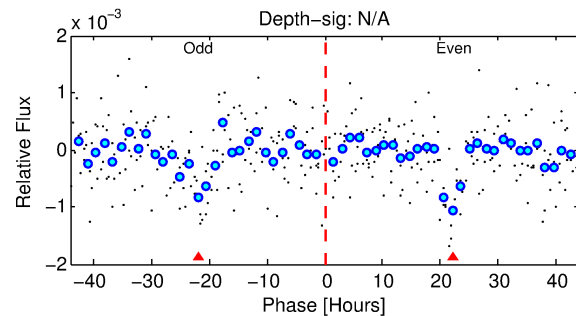
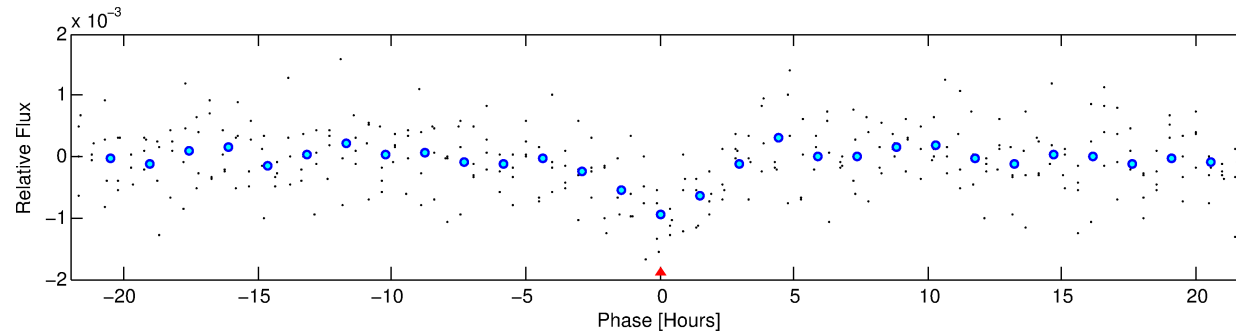
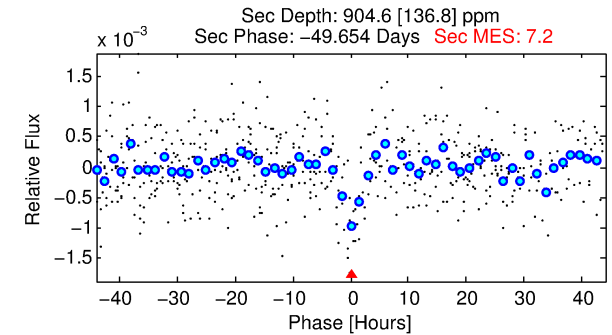
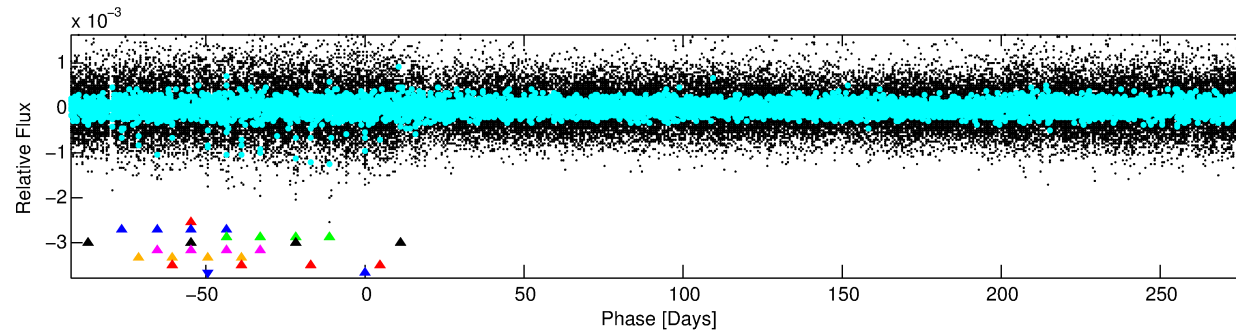
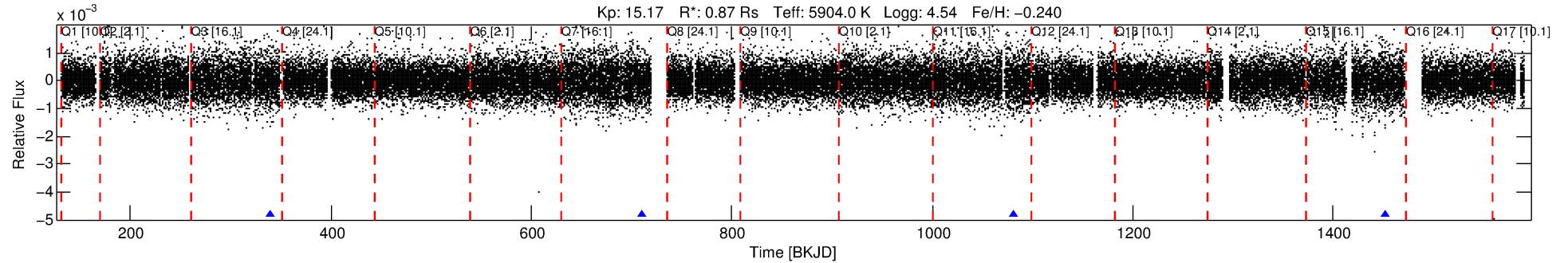
No Significant Match Found

DV One-Page Summary

KIC: 3340070 Candidate: 8 of 8 Period: 370.971 d

KOI: K01097 Corr: No Ephemeris Match

Kp: 15.17 R*: 0.87 Rs Teff: 5904.0 K Logg: 4.54 Fe/H: -0.240



TPS TCE Results:

Period = 370.97128 d
Epoch = 338.9321 BKJD

DV fit results are unavailable

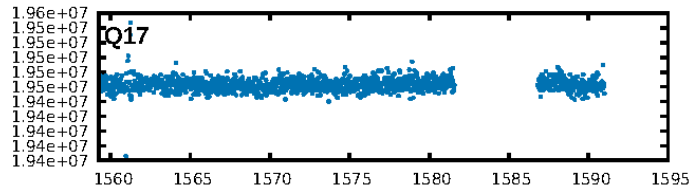
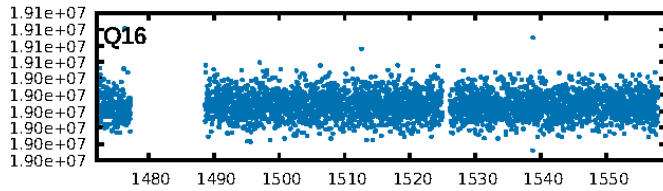
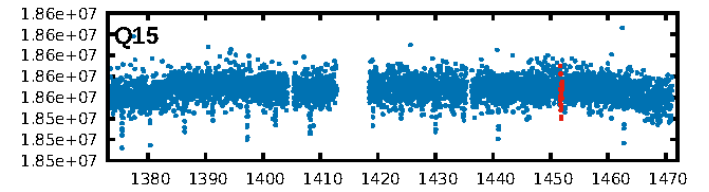
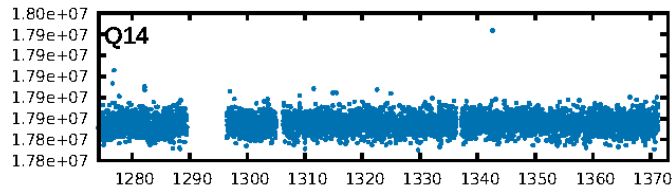
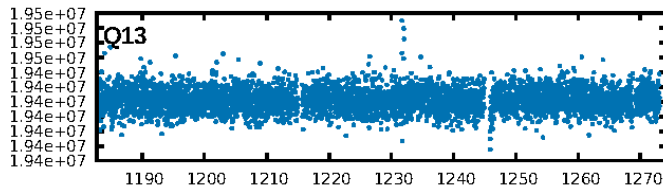
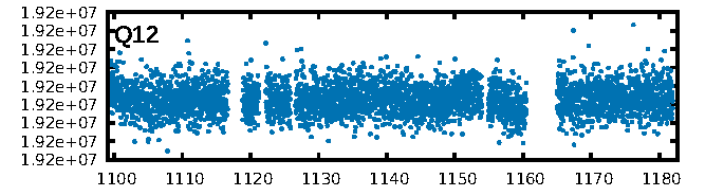
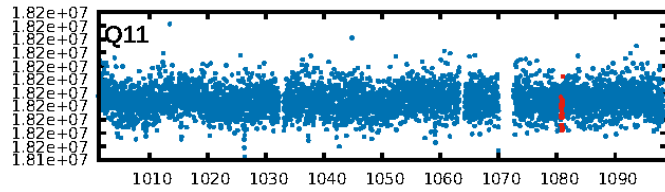
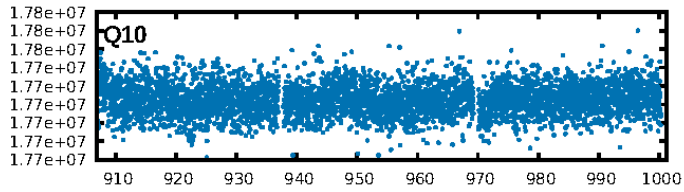
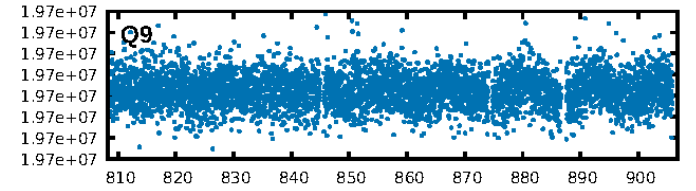
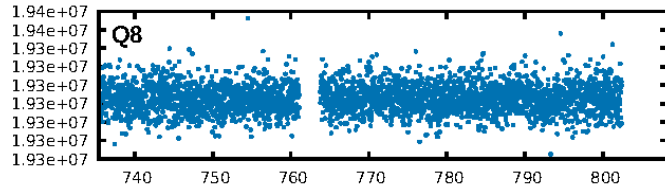
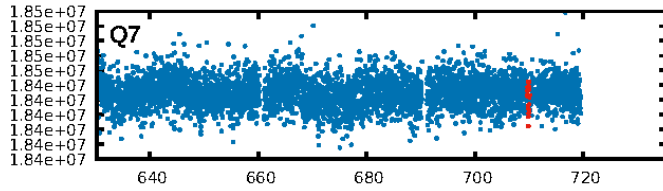
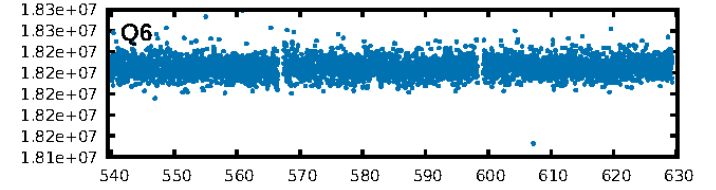
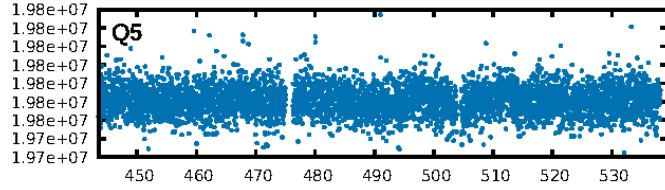
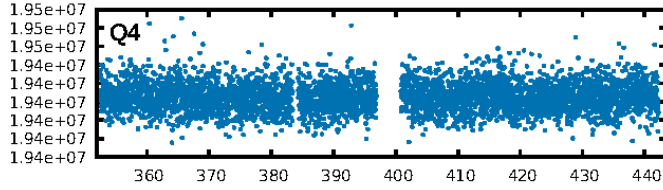
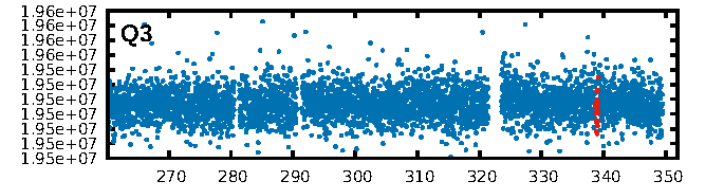
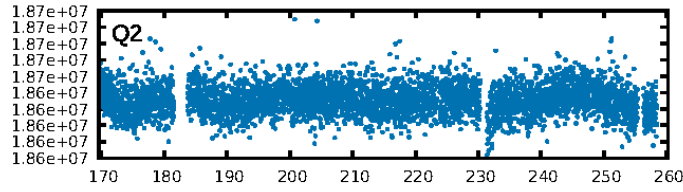
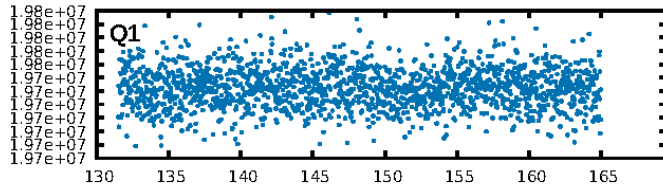
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [34.87 σ]
LongPeriod-sig: 0.3% [0.006]
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.4519
Centroid-sig: 0.0%
Centroid-so: 21.147 arcsec [14.37 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [4/4]

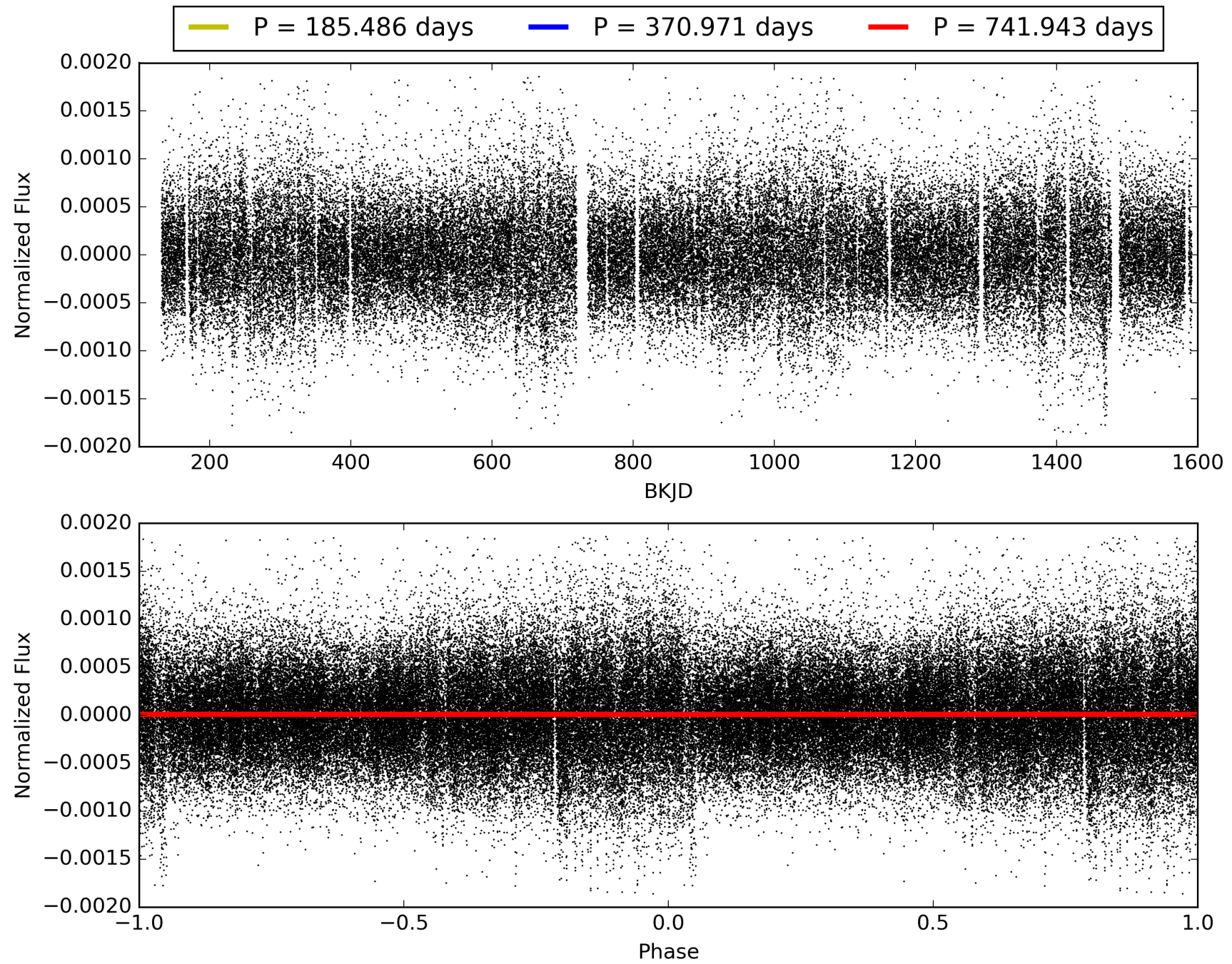
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:16:25 Z

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

TCE 003340070-08, PDC Light Curves

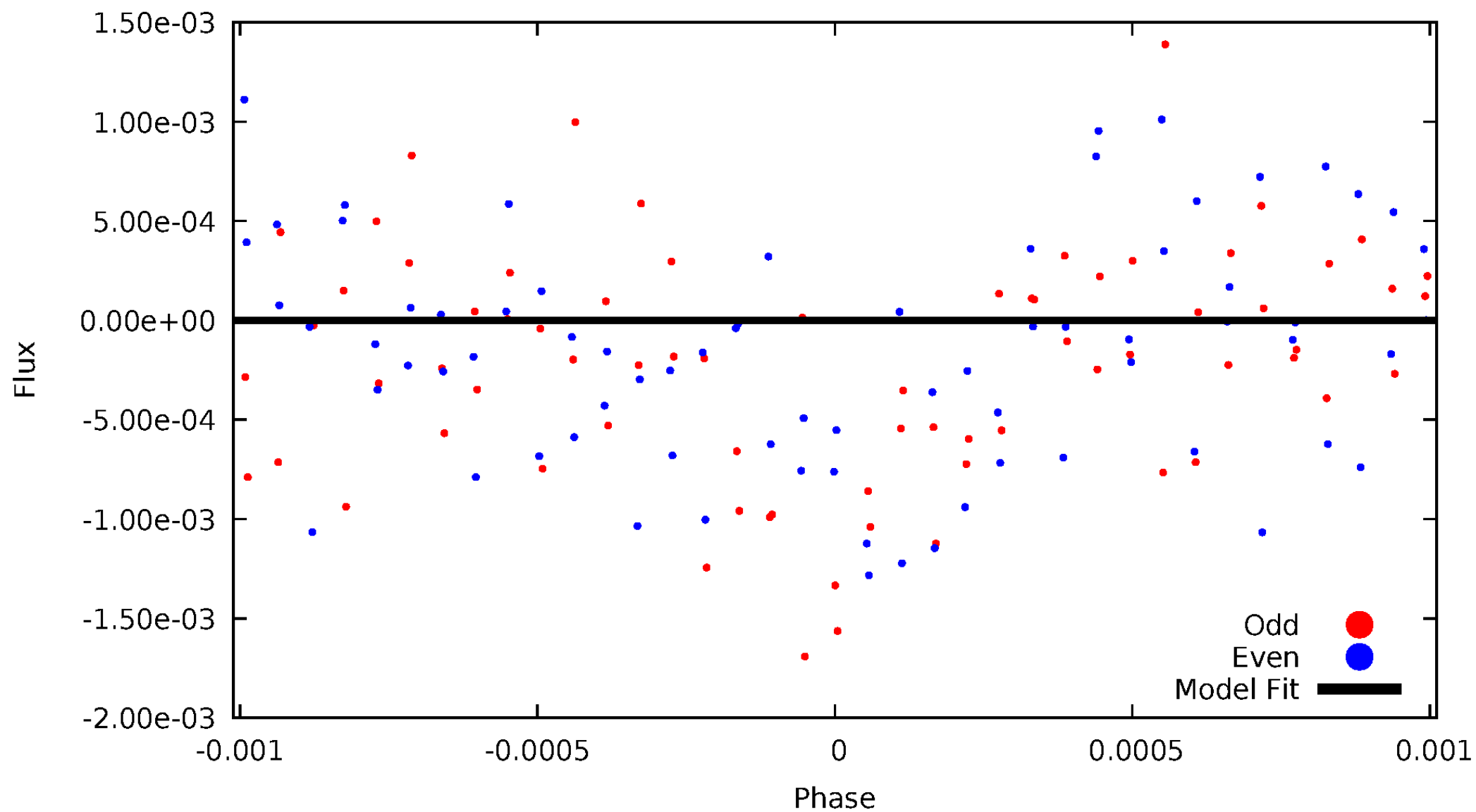


TCE 003340070-08



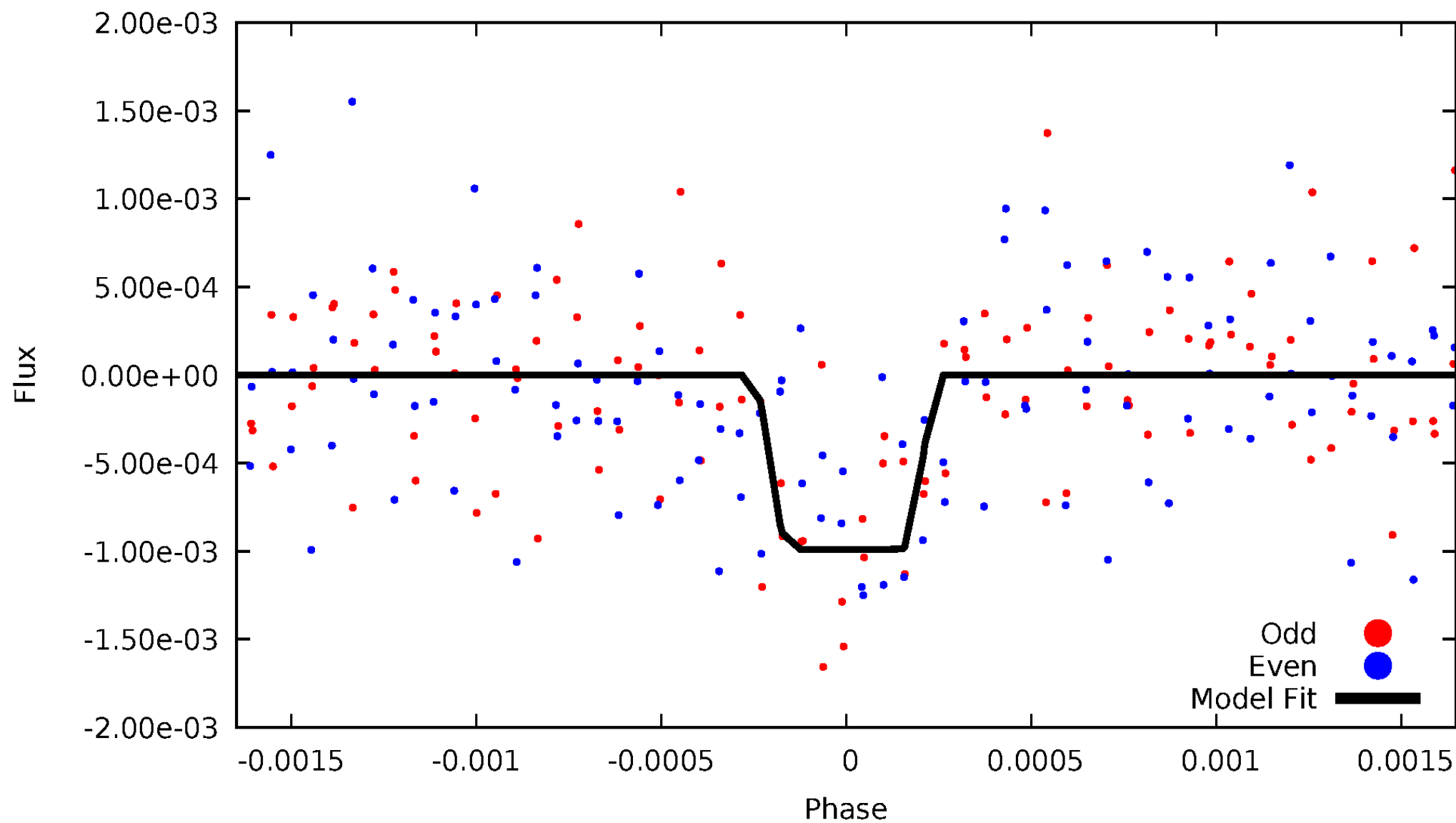
DV Odd/Even

TCE 003340070-08



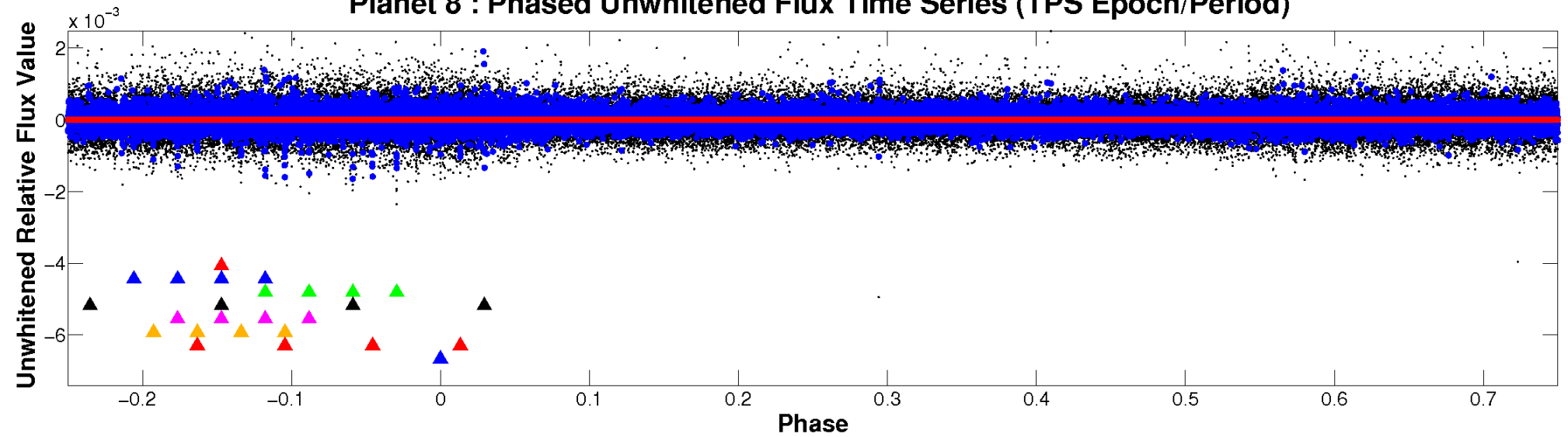
ALT Odd/Even

TCE 003340070-08

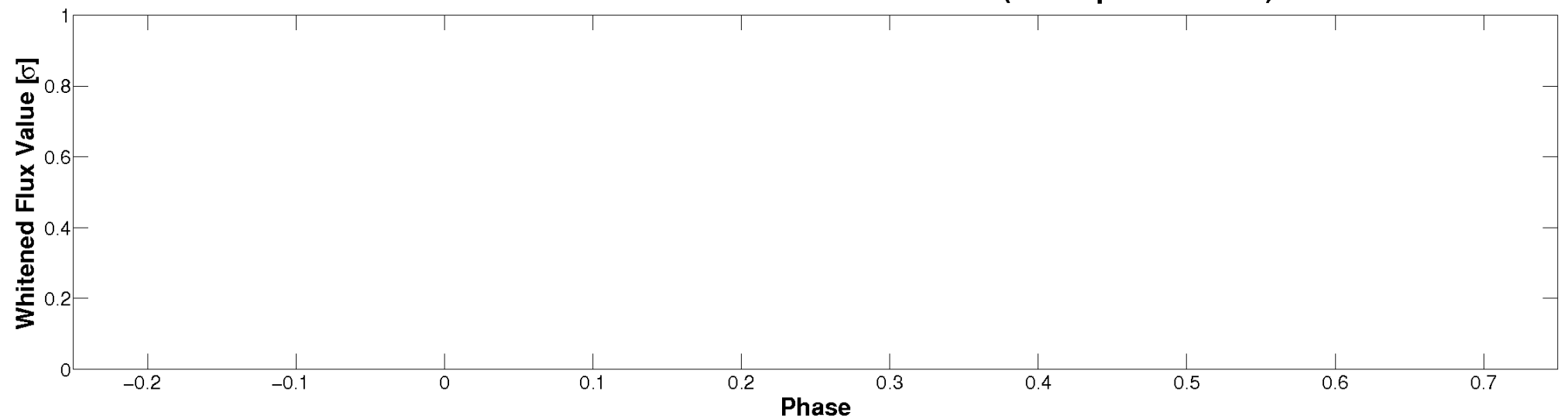


Non-Whitened Vs. Whitened Light Curve

Planet 8 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)

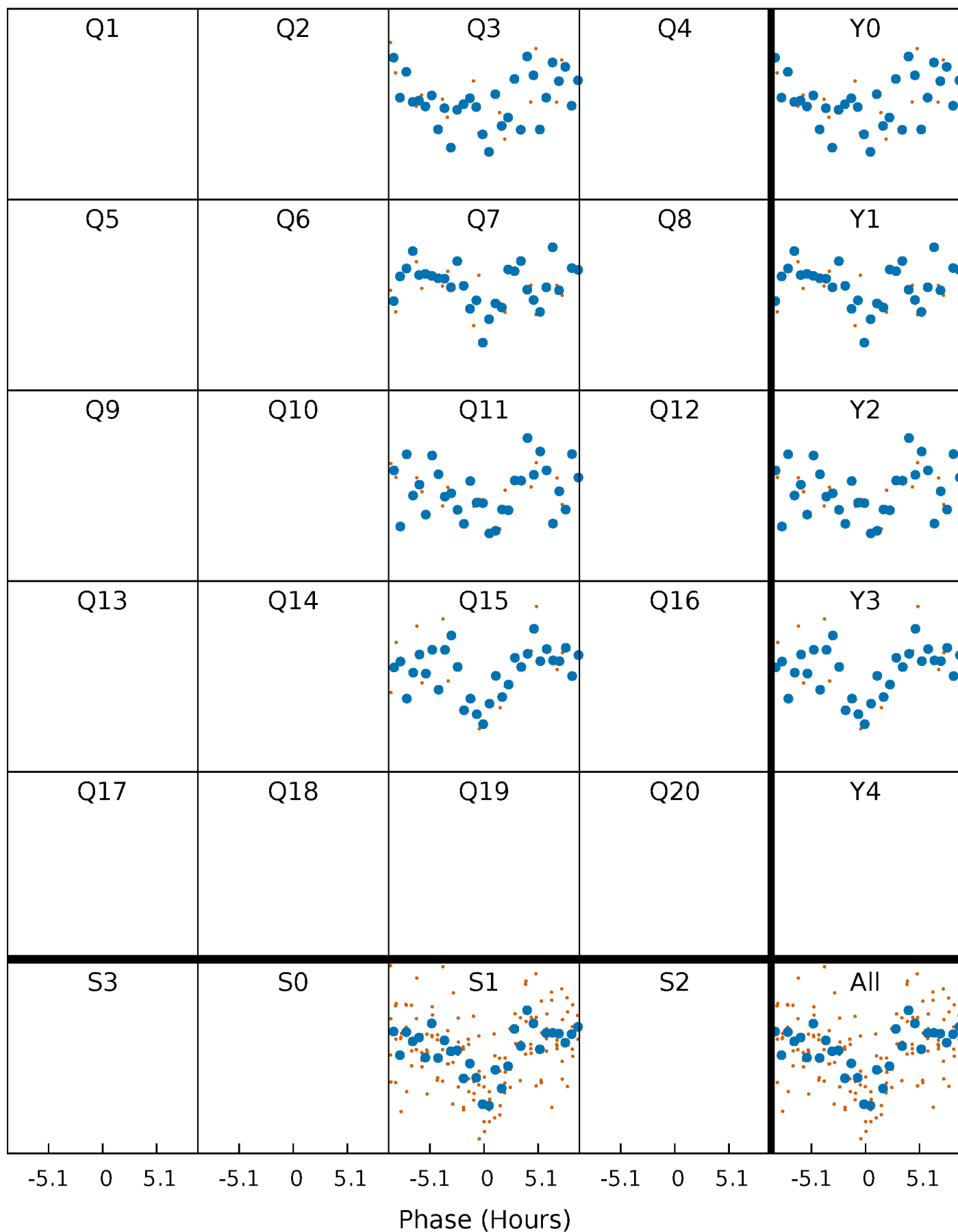


Planet 8 : Phased Whitened Flux Time Series (TPS Epoch/Period)



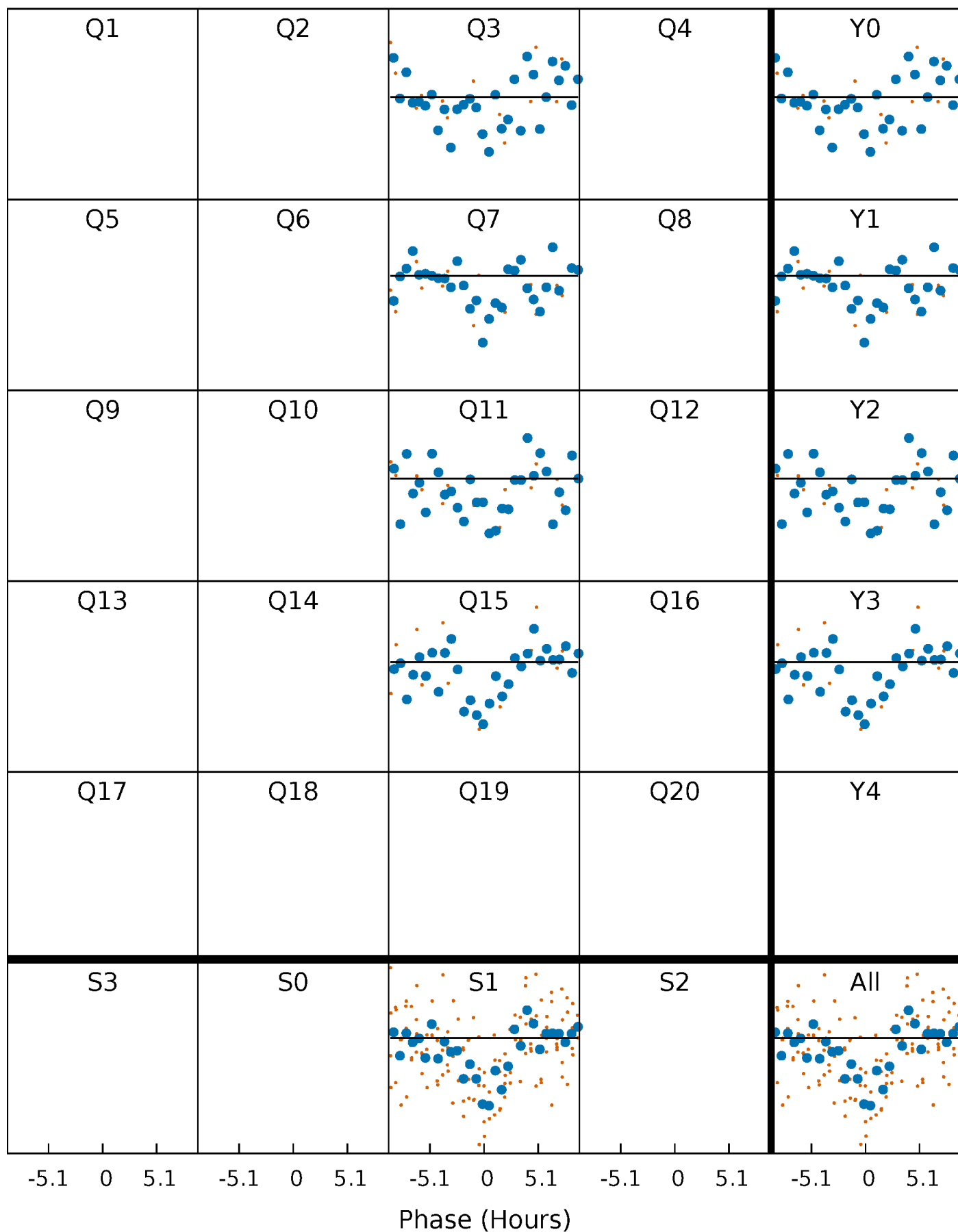
PDC Quarter-Phased Transit Curves

TCE 003340070-08 $P=370.971282$ Days $T_0=338.932061$ (BKJD)



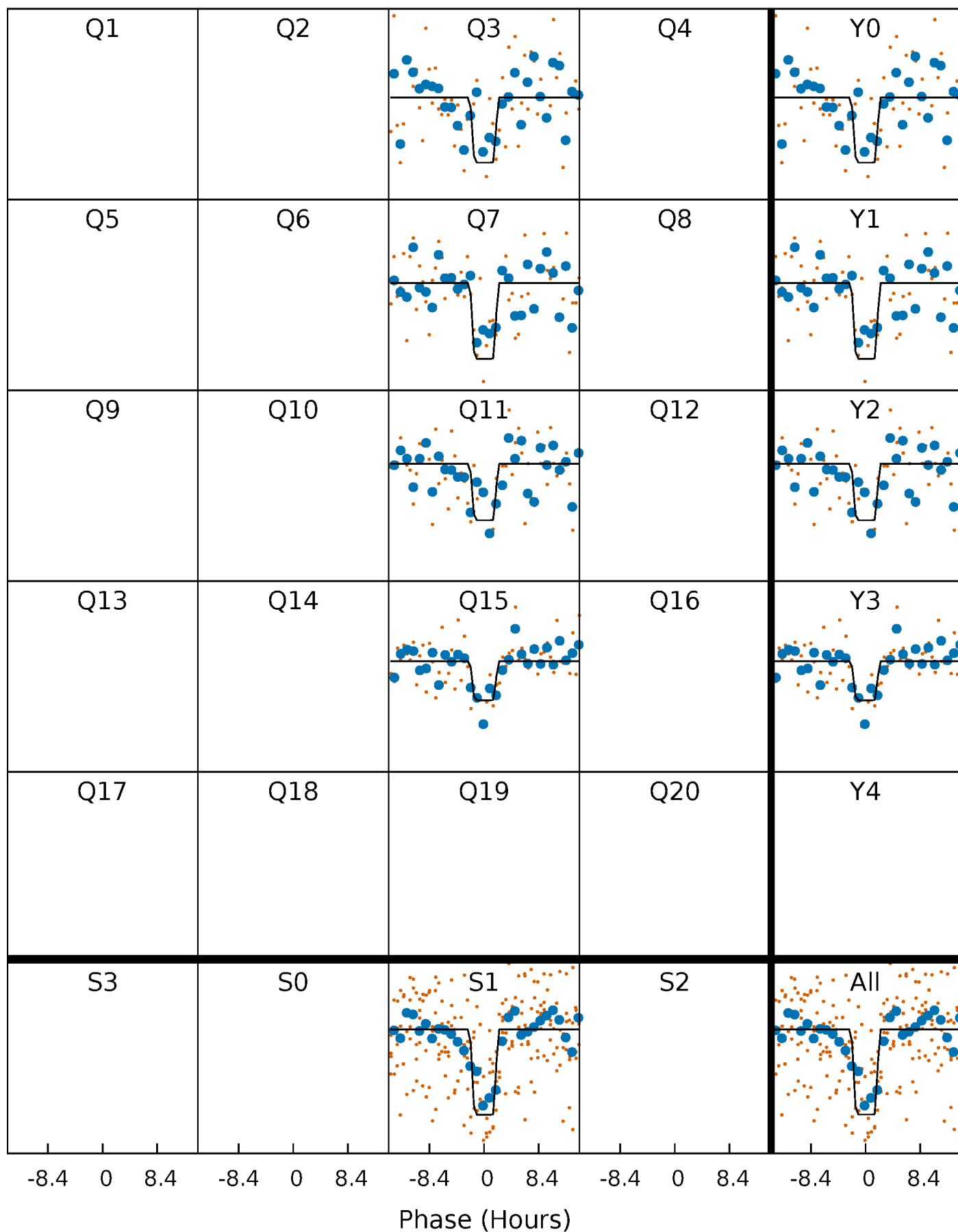
DV Quarter-Phased Transit Curves

TCE 003340070-08 $P=370.971282$ Days $T_0=338.932061$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

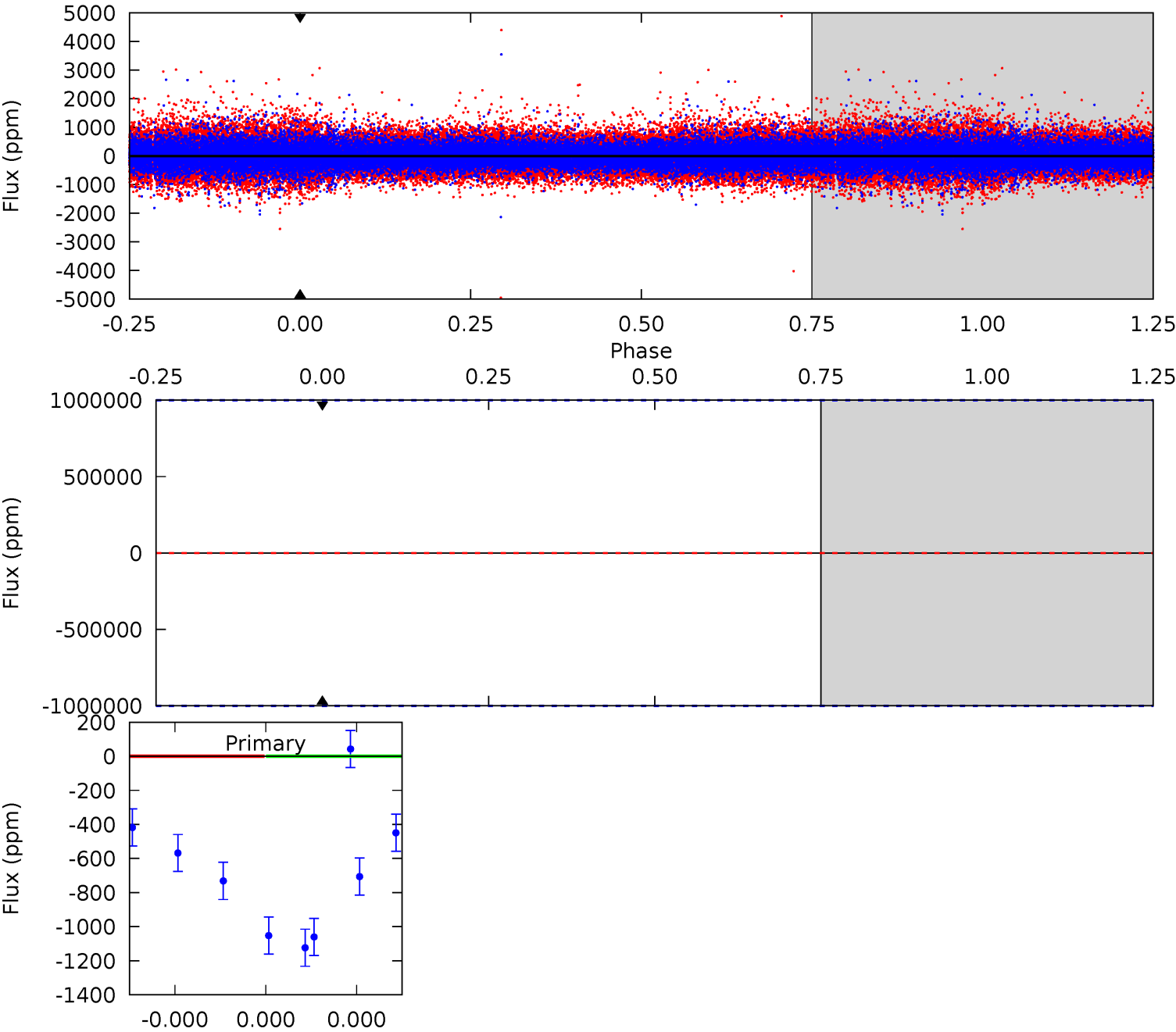
TCE 003340070-08 P=370.971282 Days $T_0=338.936375$ (BKJD)



DV Model-Shift Uniqueness Test

003340070-08, P = 370.971282 Days, E = 338.932061 Days

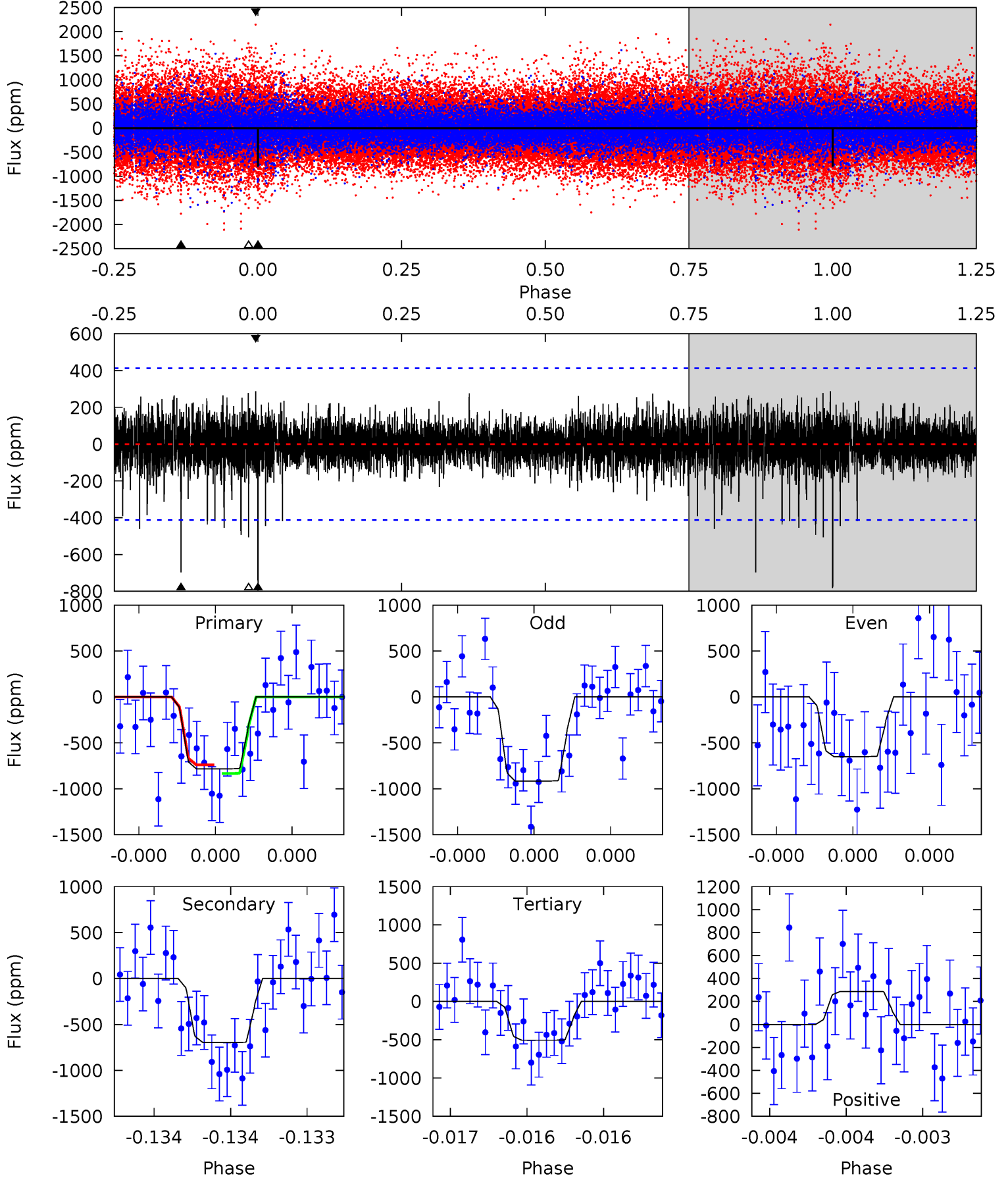
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003340070-08, P = 370.971282 Days, E = 338.936375 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	9.41	6.83	3.88	5.58	3.48	1.08	3.74	6.70	2.58	5.53	1.80	1.06	0.27	0.64



Stellar Parameters For KIC 003340070

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5904^{+160}_{-178}	$4.543^{+0.048}_{-0.204}$	$-0.240^{+0.300}_{-0.300}$	$0.867^{+0.262}_{-0.082}$	$0.958^{+0.107}_{-0.119}$	$2.073^{+0.399}_{-1.039}$
	+3%/-3%	+1%/-4%	+125%/-125%	+30%/-9%	+11%/-12%	+19%/-50%
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 003340070-08 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$7.43^{+8.29}_{-5.20}$	347^{+24}_{-15}	-4453^{+25940}_{-16740}	$-15572.075^{+1581518.490}_{-1593830.942}$
Alt.	-696 ± 74	$8.11^{+8.71}_{-5.31}$	347^{+24}_{-16}	3733^{+2034}_{-711}	5496^{+40556}_{-4120}

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

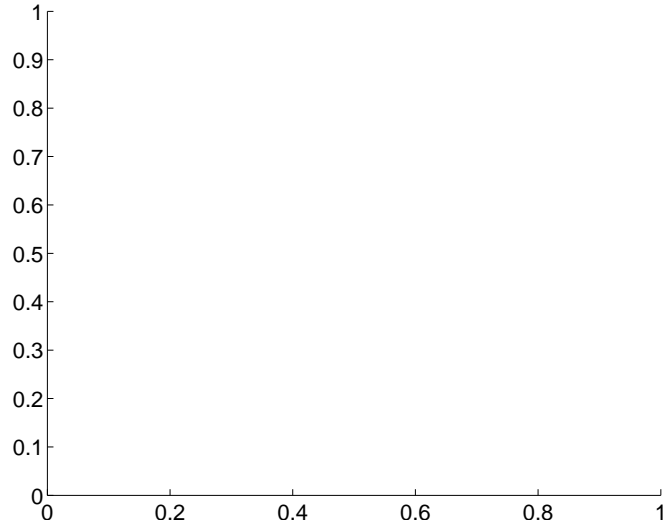
Supplemental centroid analysis for 003340070-08. Kepler magnitude: 15.17. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

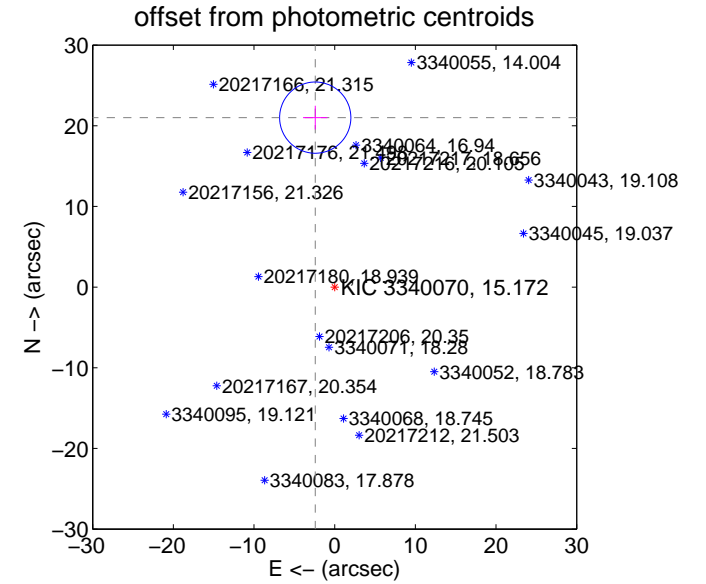
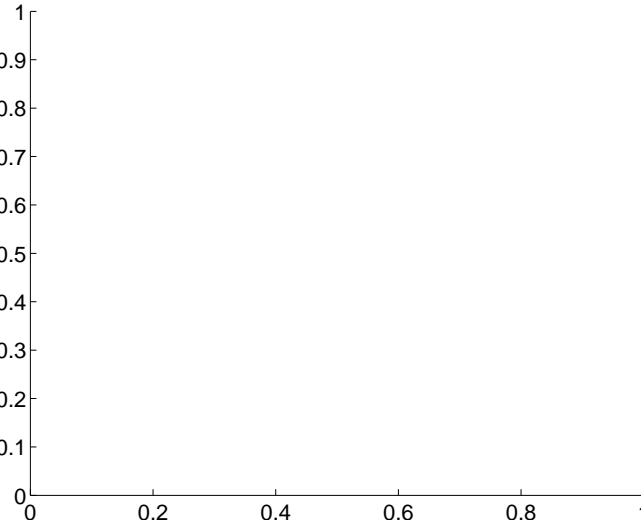
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	21.15 ± 1.47	14.37	2.41 ± 1.51	21.01 ± 1.47

There is no PRF-fit offset from OOT-fit

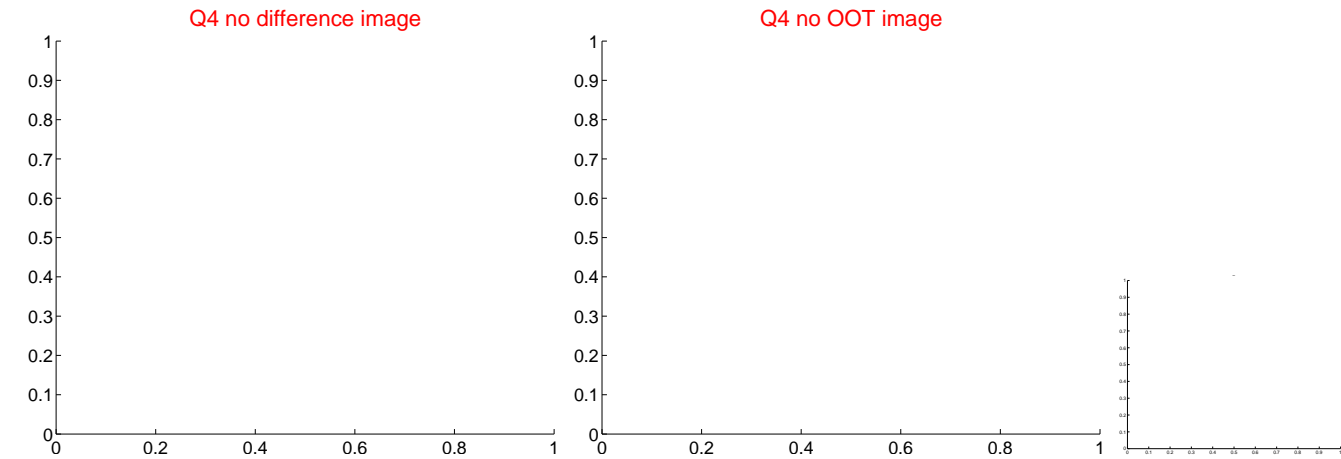
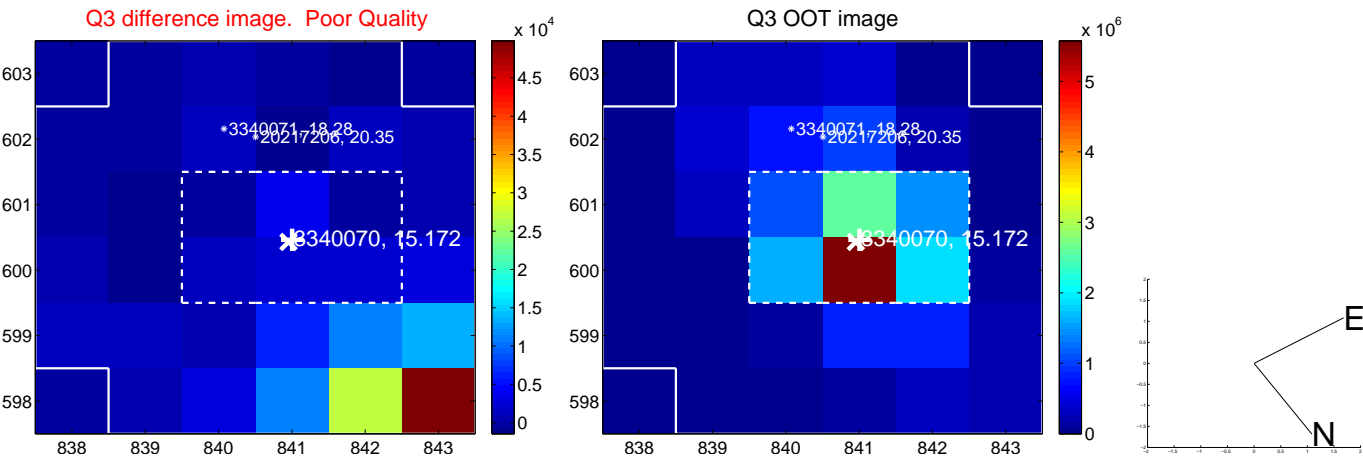
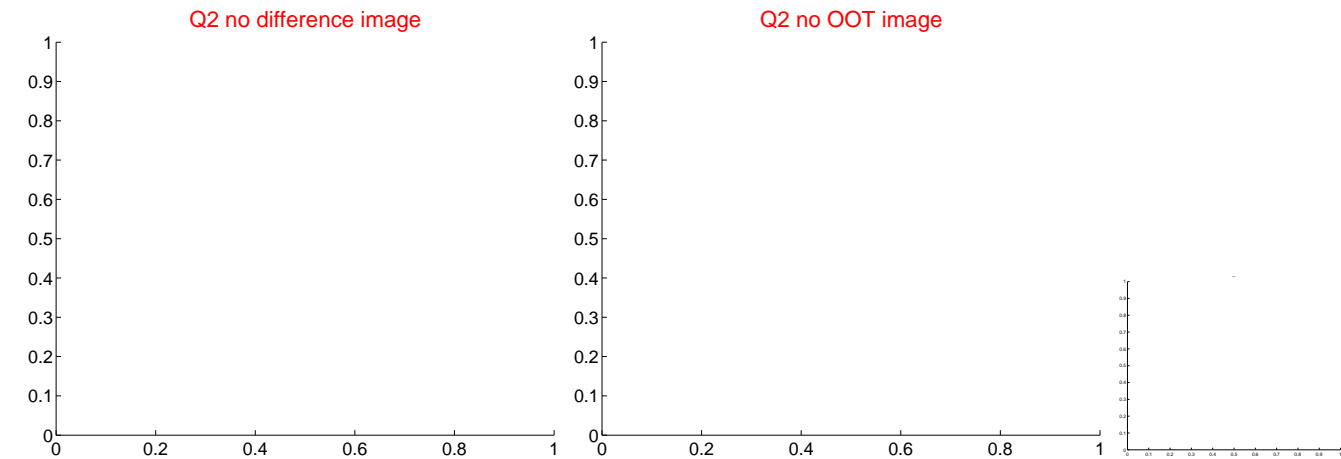
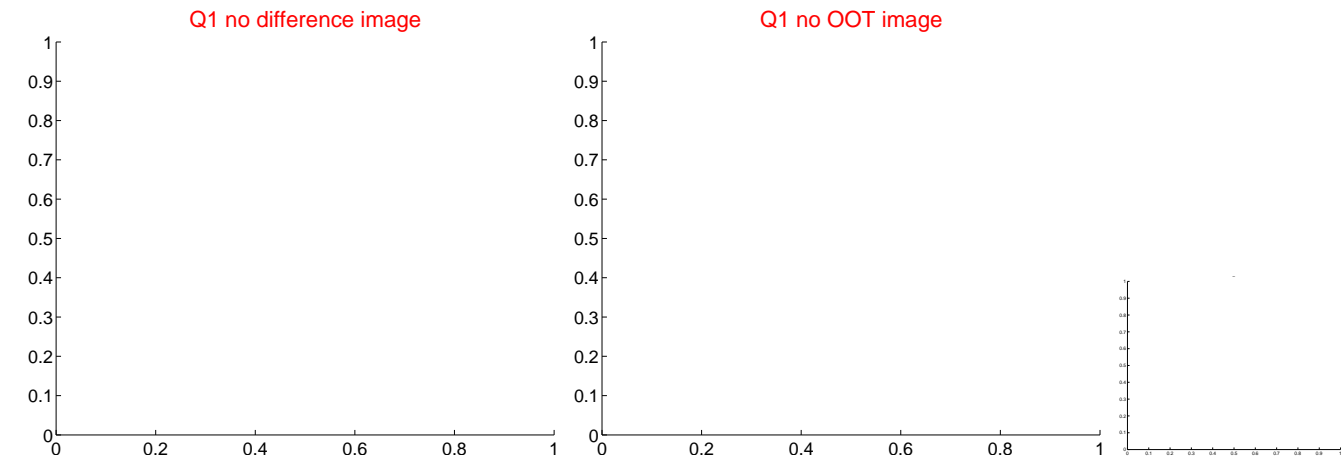


There is no PRF-fit offset from KIC

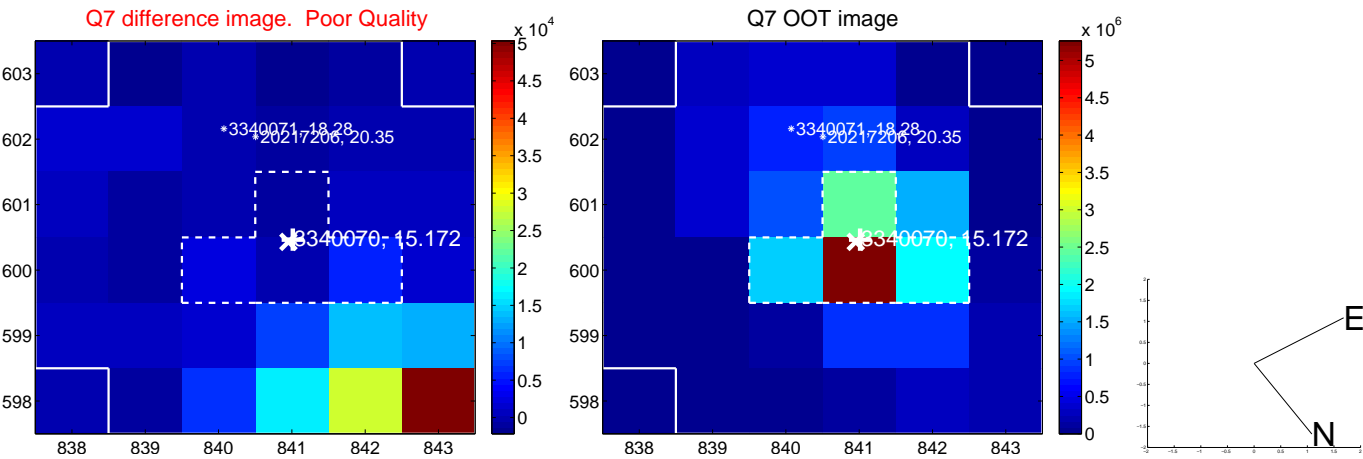


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

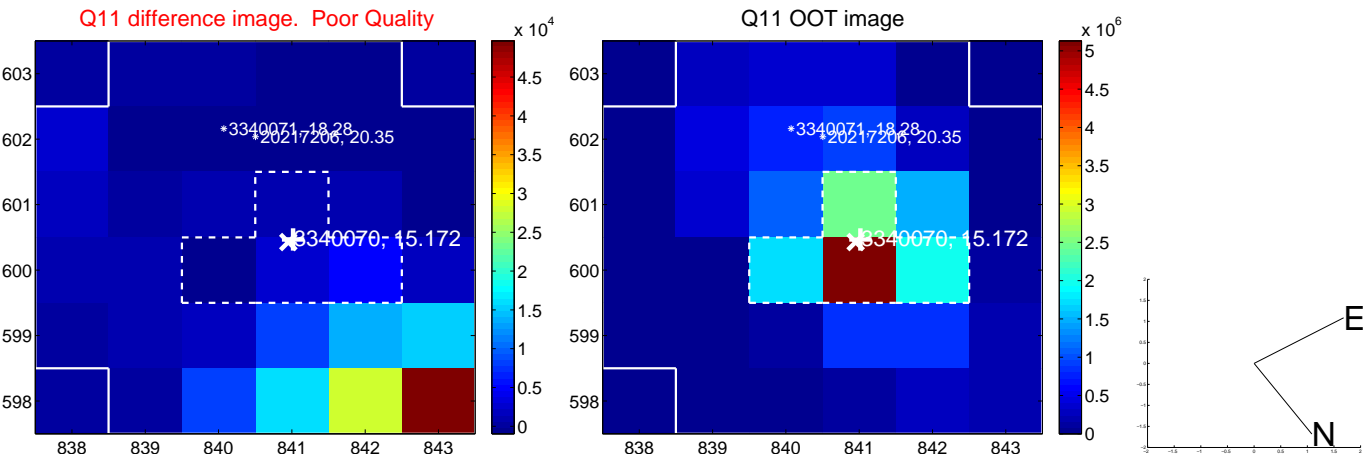
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



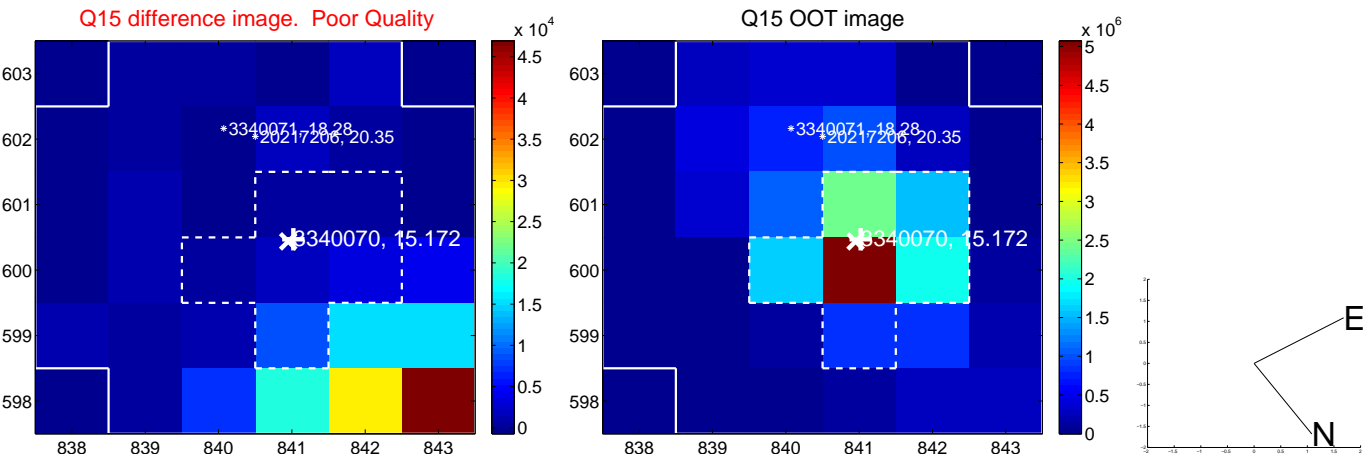
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



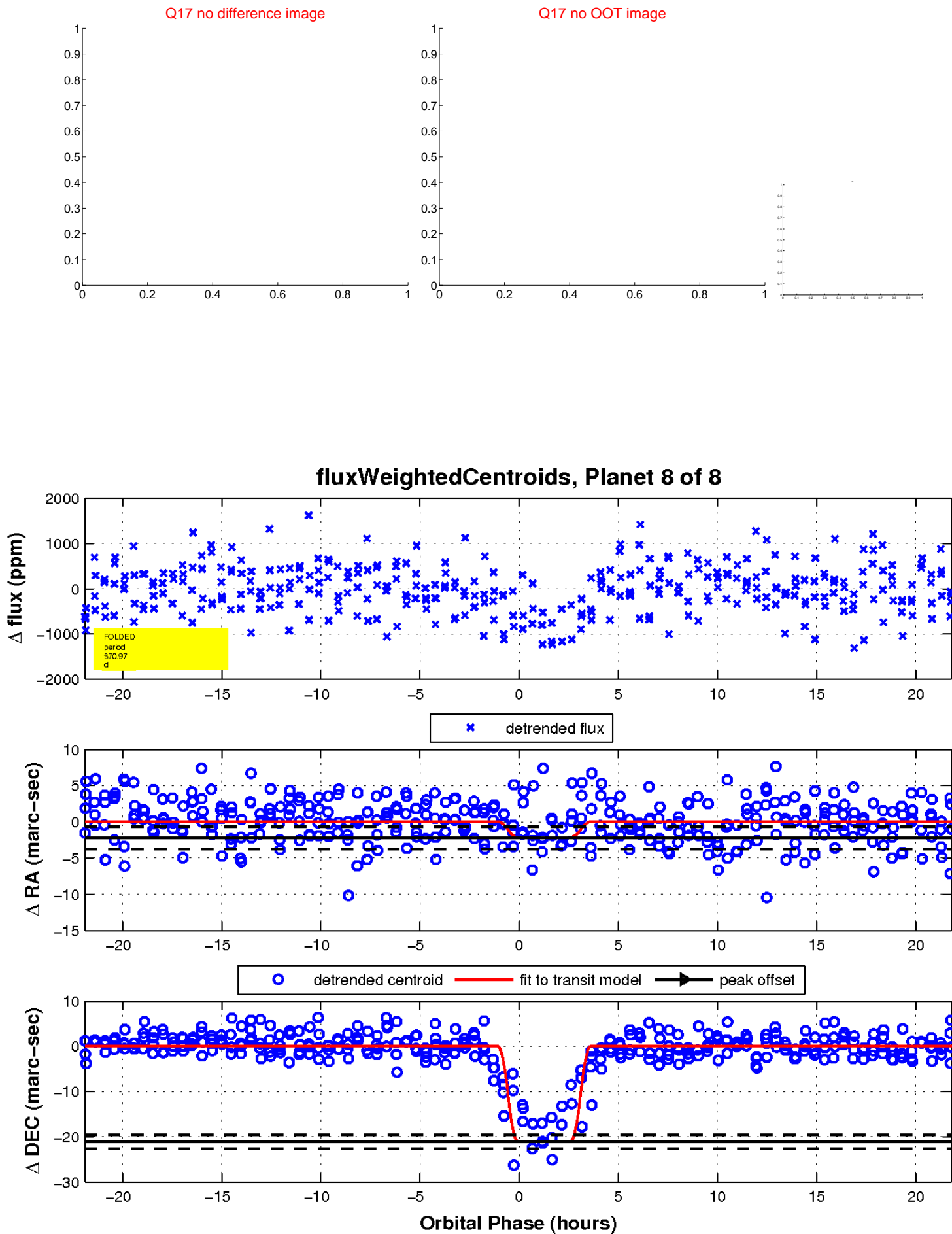
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

