

KIC 008832676

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})
008832676-01	OBS	No	396.931353	342.567666	1064.0	14.127	10.3	5.9	0.47	3737	1.65	0.06
008832676-02	OBS	8173.01	323.648619	204.329343	1336.1	17.007	7.7	7.5	0.47	3737	1.71	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008832676-01	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008832676-02	OBS	FP	0.01	1	0	0	0	ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

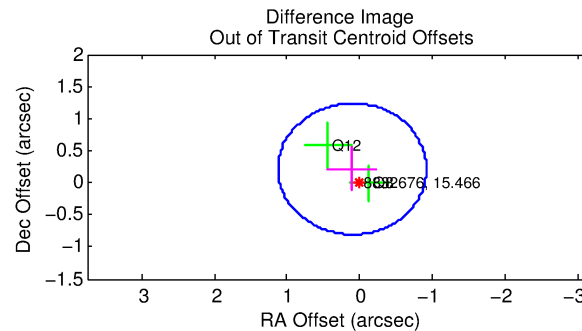
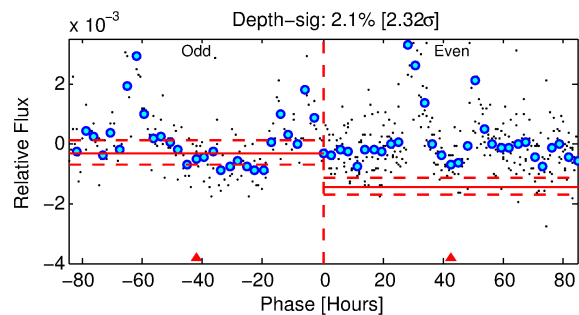
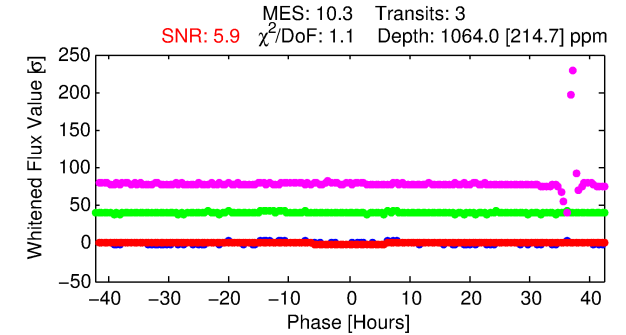
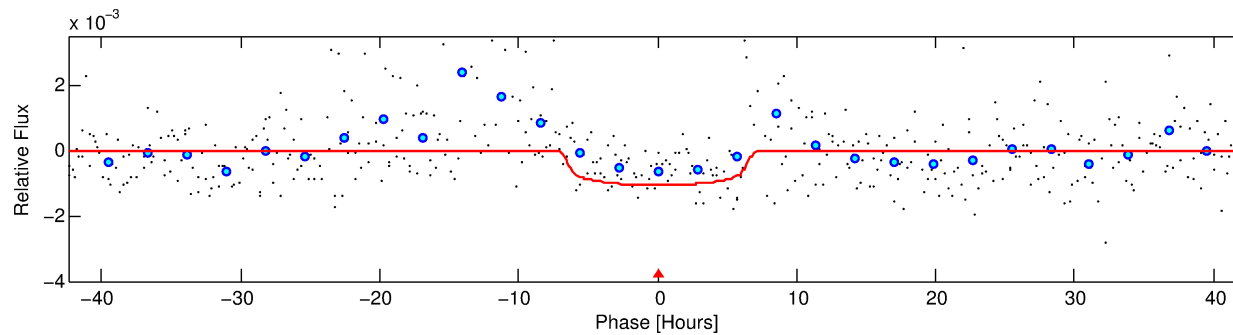
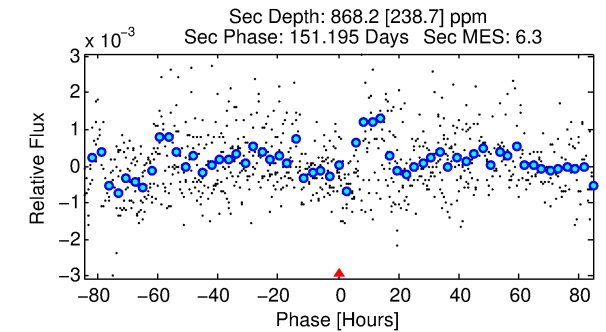
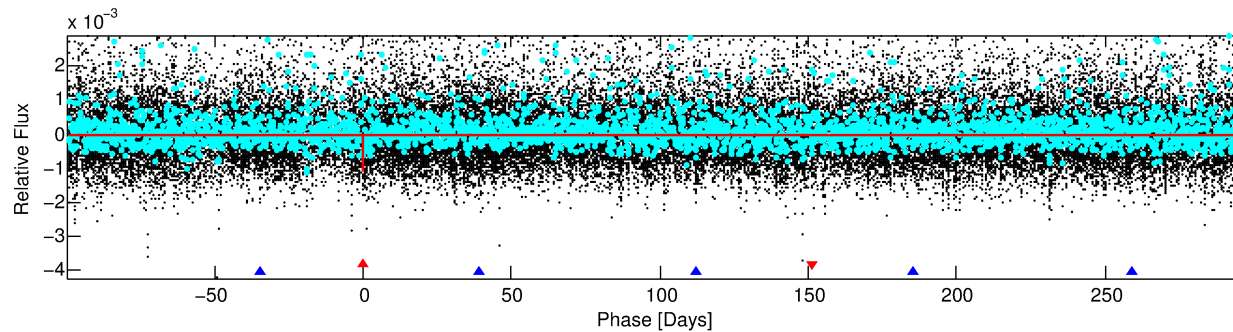
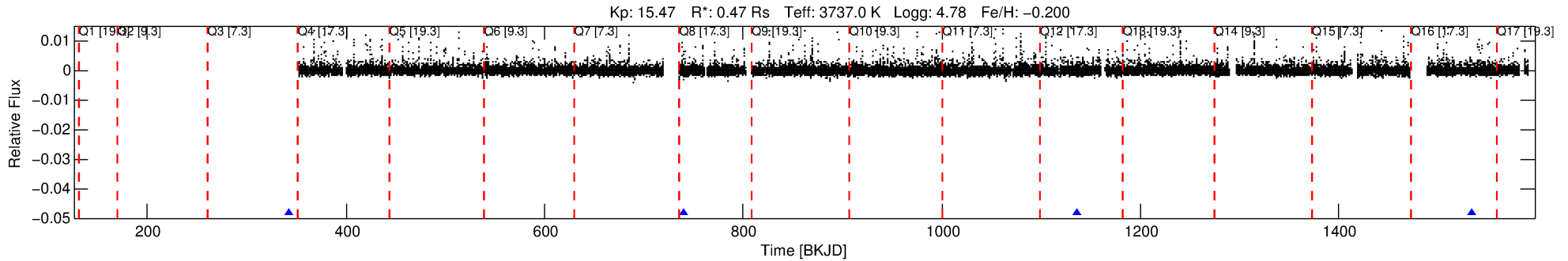
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008832676-01

No Significant Match Found

DV One-Page Summary

KIC: 8832676 Candidate: 1 of 2 Period: 396.931 d



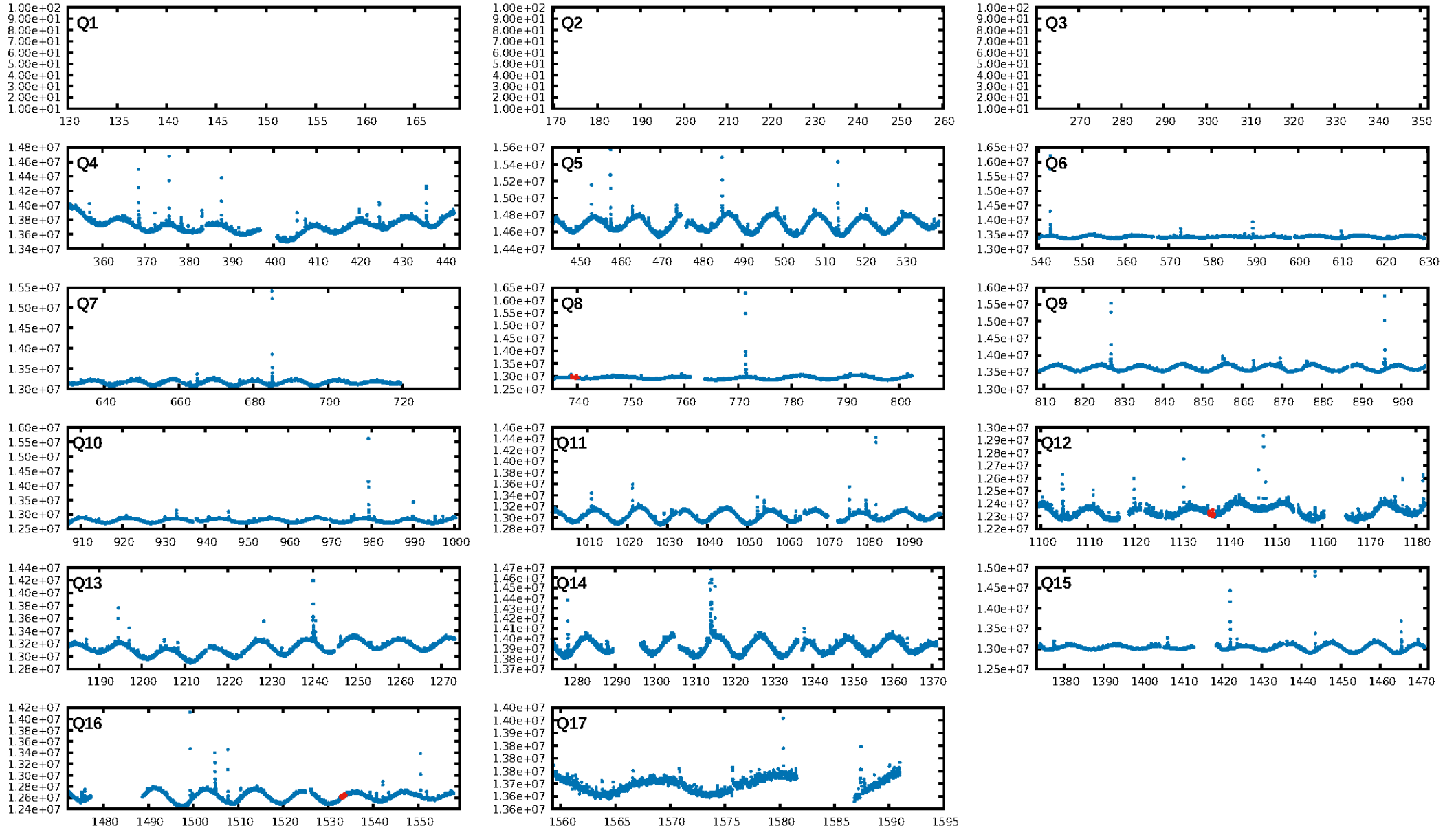
DV Fit Results:

Period = 396.93135 [0.02089] d
Epoch = 342.5677 [0.0441] BKJD
Rp/R* = 0.0325 [0.0083]
a/R* = 149.85 [158.79]
b = 0.76 [0.58]
Seff = 0.06 [0.01]
Teq = 124 [3] K
Rp = 1.65 [0.44] Re
a = 0.8256 [0.0482] AU
Ag = 119109.38 [69724.73] [1.71σ]
Teffp = 3558 [520] K [6.61σ]

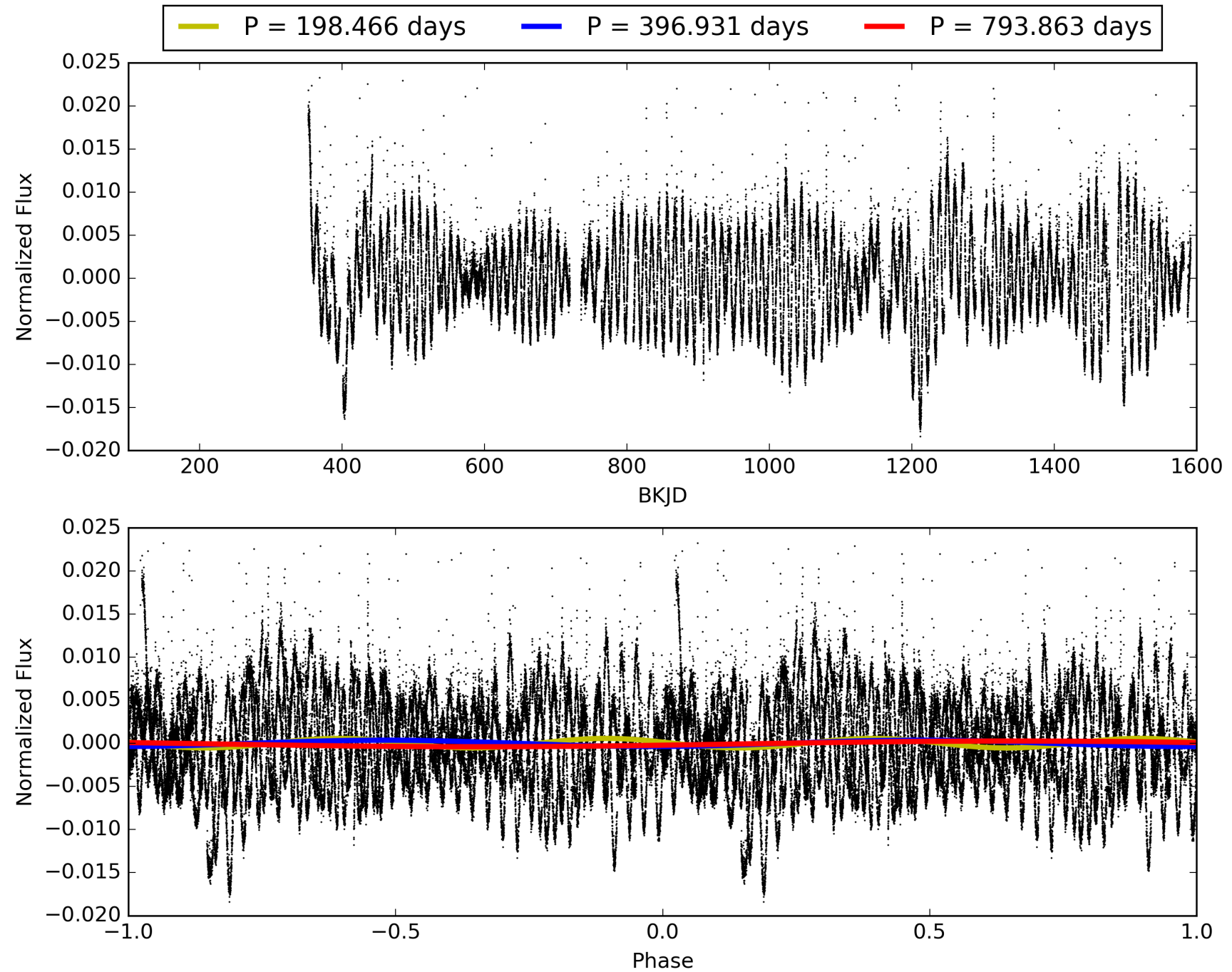
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [79.55σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 38.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.40e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.212
Centroid-sig: 0.2%
Centroid-so: 2.102 arcsec [2.24σ]
OotOffset-rm: 0.237 arcsec [0.70σ]
KicOffset-rm: 0.871 arcsec [2.06σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 008832676-01, PDC Light Curves

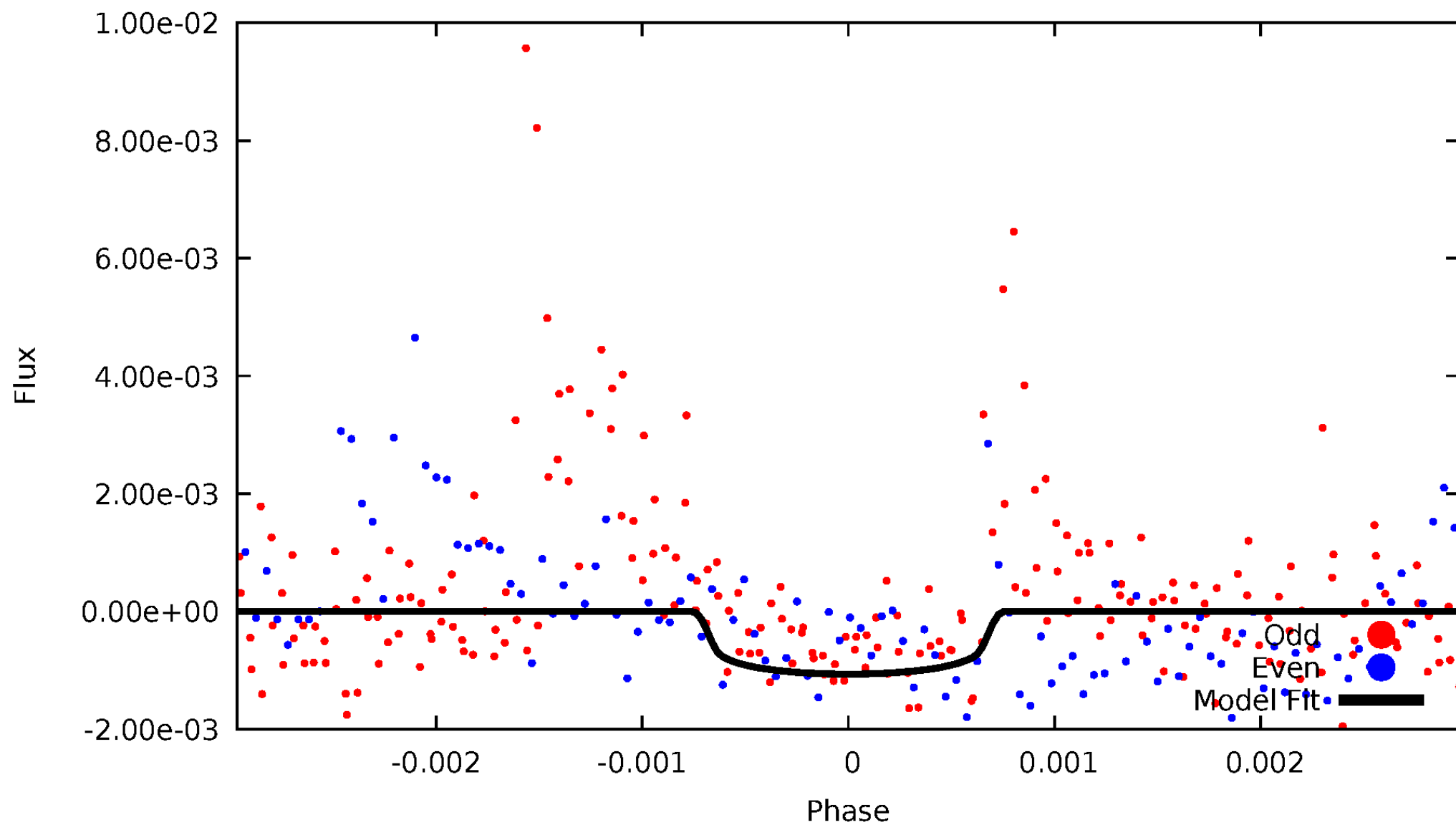


TCE 008832676-01



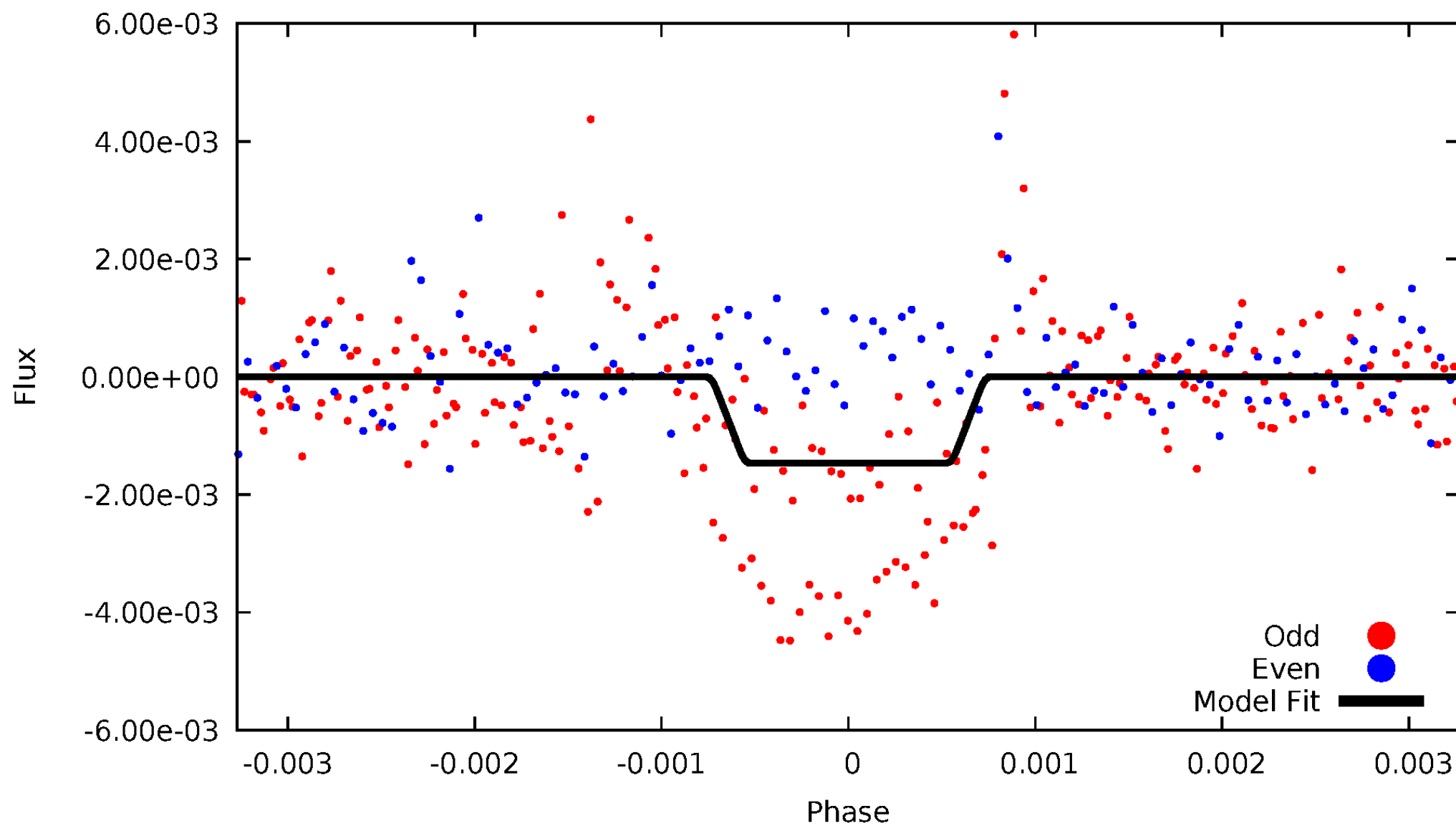
DV Odd/Even

TCE 008832676-01



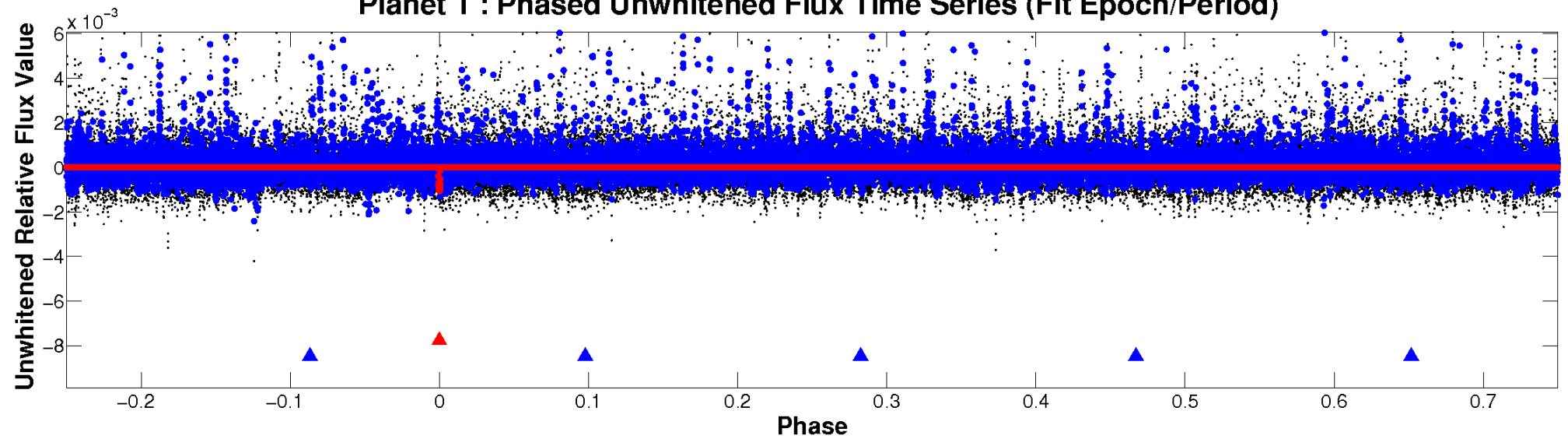
ALT Odd/Even

TCE 008832676-01

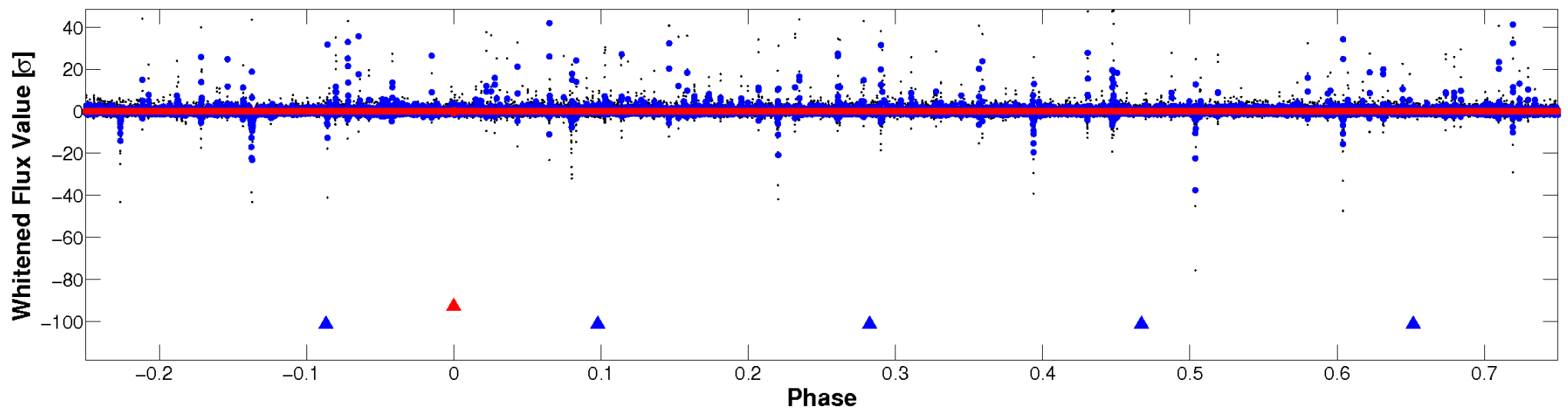


Non-Whitened Vs. Whitened Light Curve

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

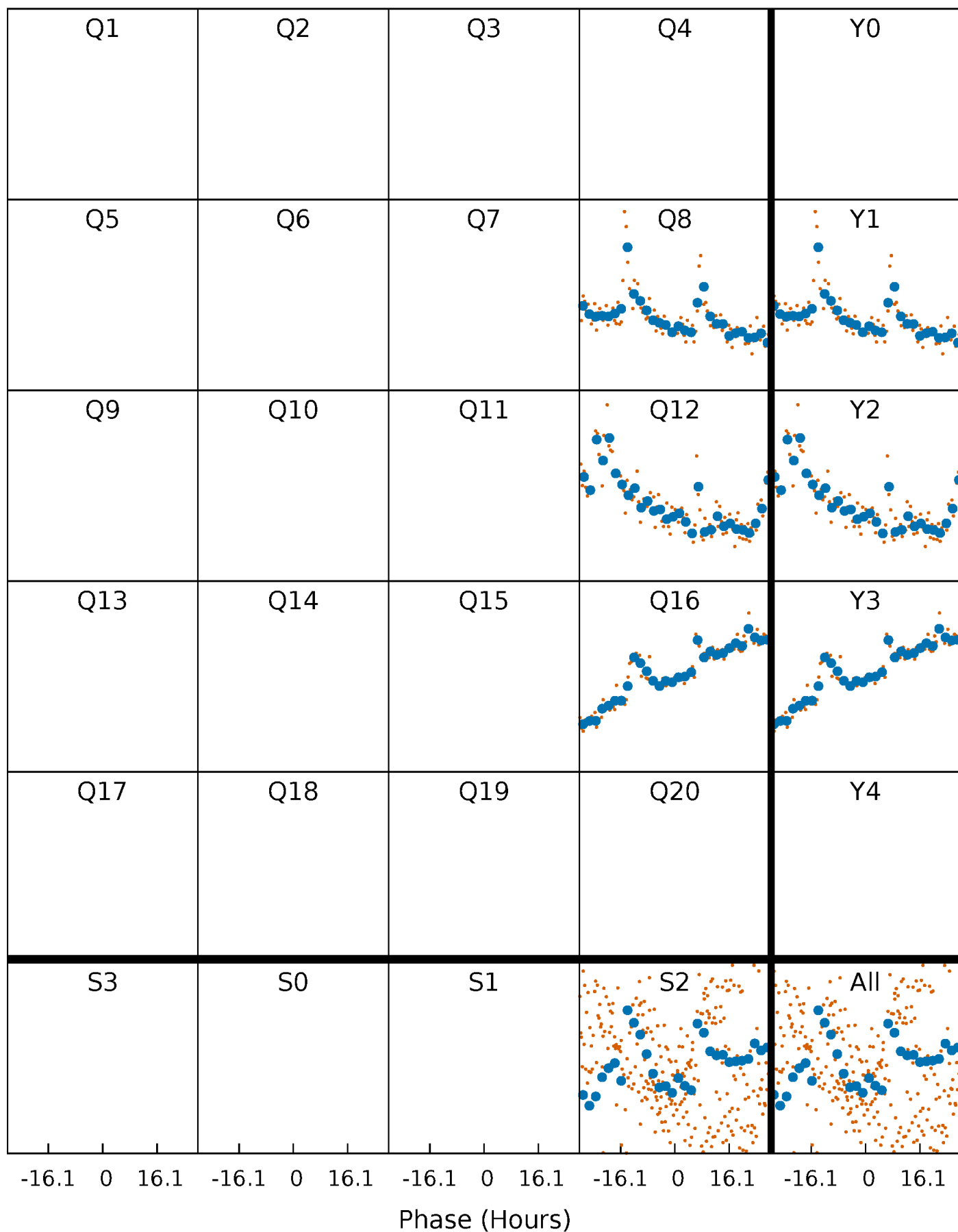


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



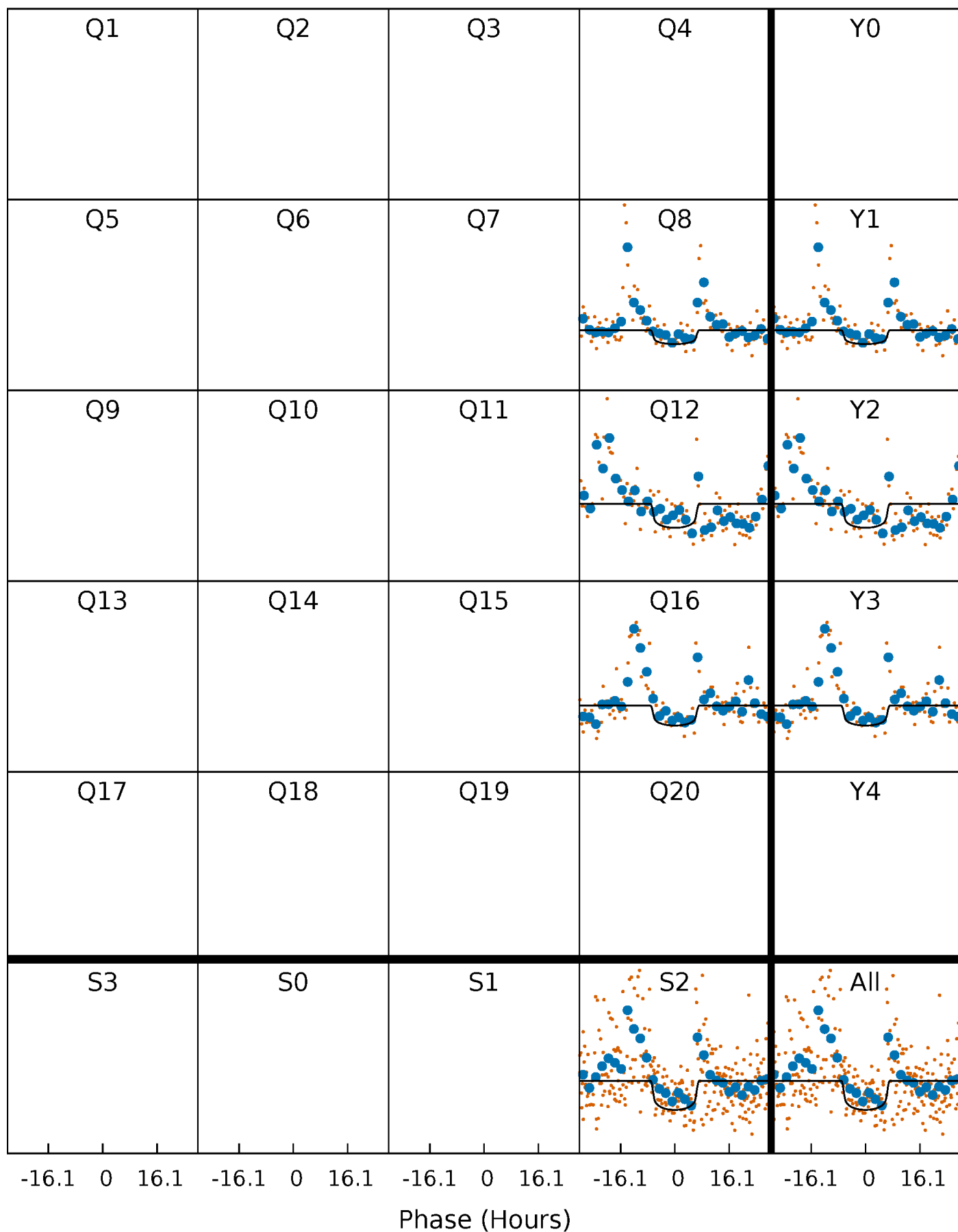
PDC Quarter-Phased Transit Curves

TCE 008832676-01 P=396.931353 Days $T_0=342.567666$ (BKJD)



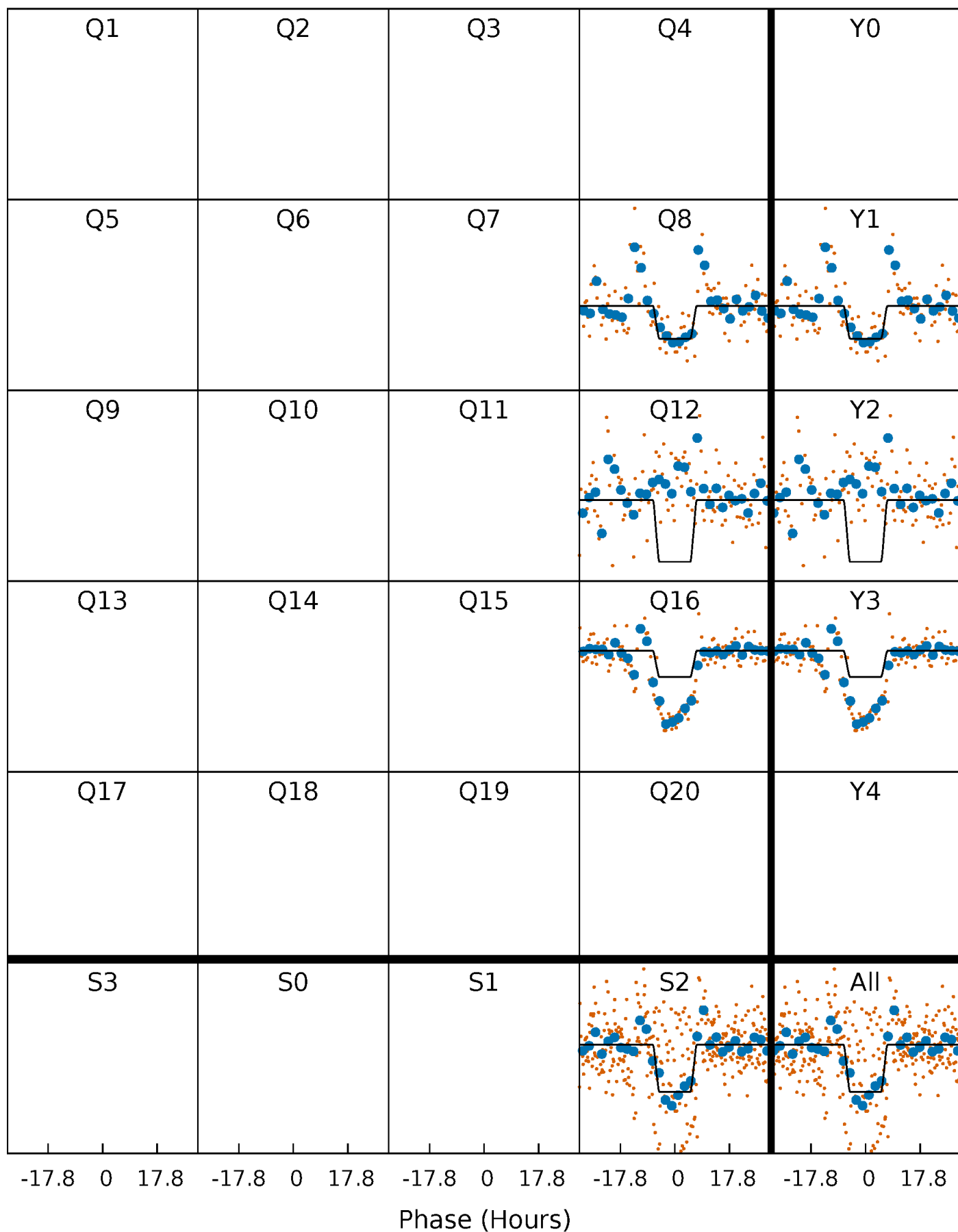
DV Quarter-Phased Transit Curves

TCE 008832676-01 P=396.931353 Days $T_0=342.567666$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

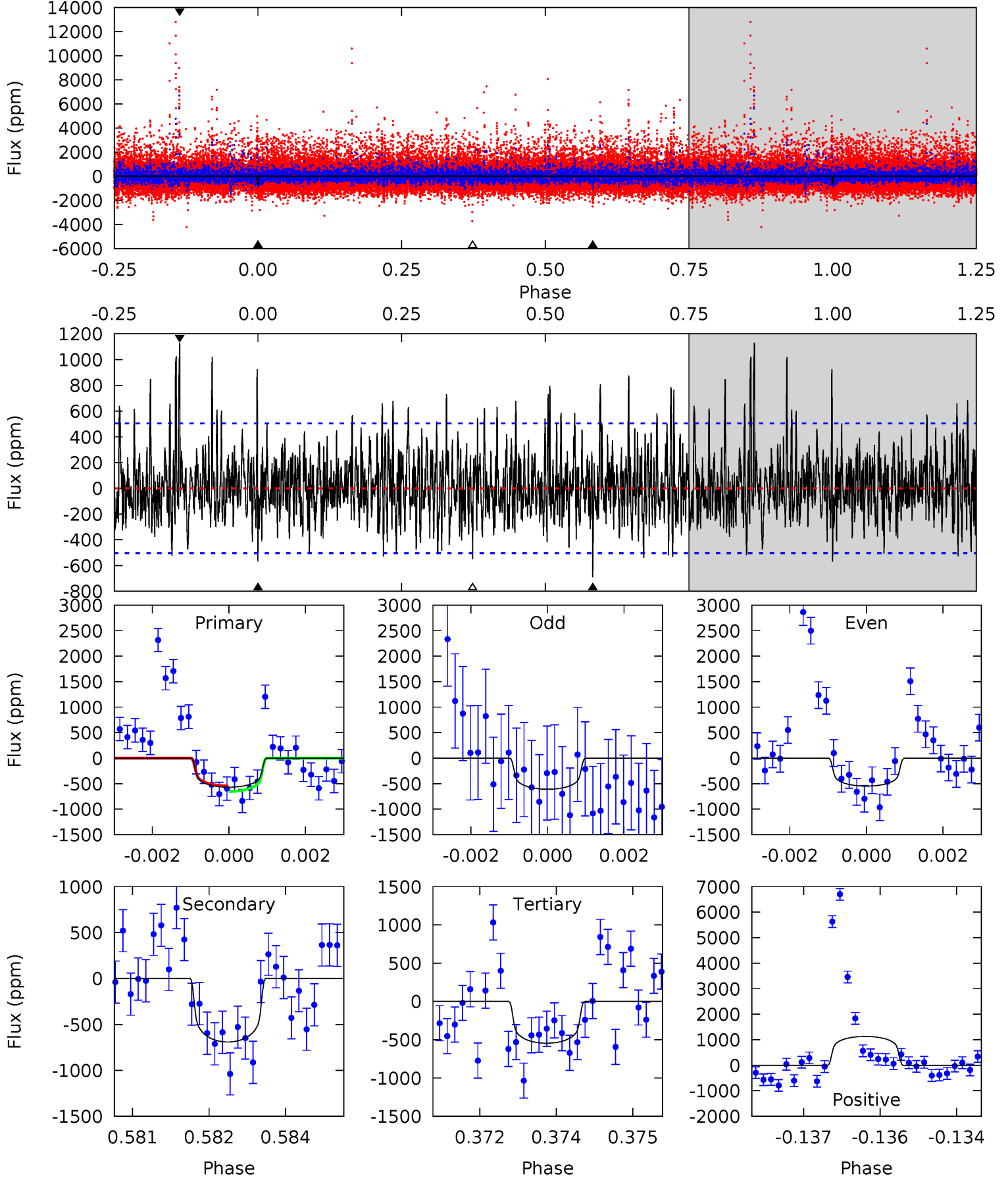
TCE 008832676-01 P=396.915092 Days $T_0=342.550805$ (BKJD)



DV Model-Shift Uniqueness Test

008832676-01, P = 396.931353 Days, E = 342.567666 Days

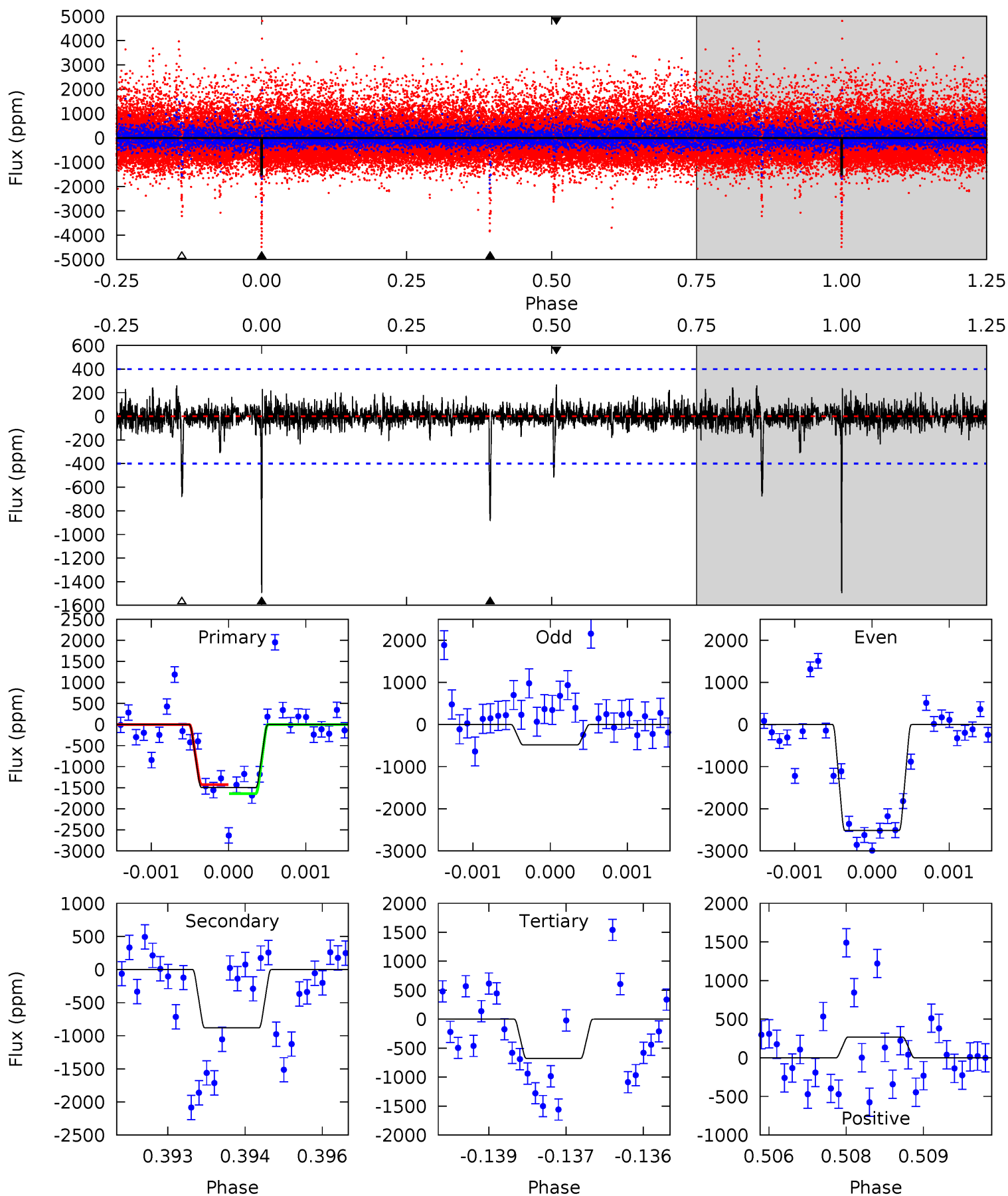
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.05	7.36	5.81	12.0	5.37	3.17	2.31	0.24	-5.97	1.55	-4.66	0.14	1.03	0.62	0.59



Alt Model-Shift Uniqueness Test

008832676-01, P = 396.915092 Days, E = 342.550805 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	11.8	9.10	3.61	5.38	3.18	0.84	11.0	16.5	2.72	8.20	13.0	1.10	0.15	1.42



Stellar Parameters For KIC 008832676

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	3737^{+66}_{-66}	$4.779^{+0.039}_{-0.024}$	$-0.200^{+0.100}_{-0.100}$	$0.466^{+0.028}_{-0.035}$	$0.476^{+0.031}_{-0.031}$	$6.627^{+1.188}_{-0.689}$
	+2%/-2%	+1%/-1%	+50%/-50%	+6%/-8%	+7%/-7%	+18%/-10%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 008832676-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-691 ± 94	$1.65^{+0.41}_{-0.46}$	173^{+4}_{-4}	3495^{+416}_{-259}	96396^{+88348}_{-36447}
Alt.	-879 ± 74	$1.94^{+0.40}_{-0.46}$	173^{+3}_{-4}	3444^{+313}_{-213}	88471^{+63492}_{-29207}

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

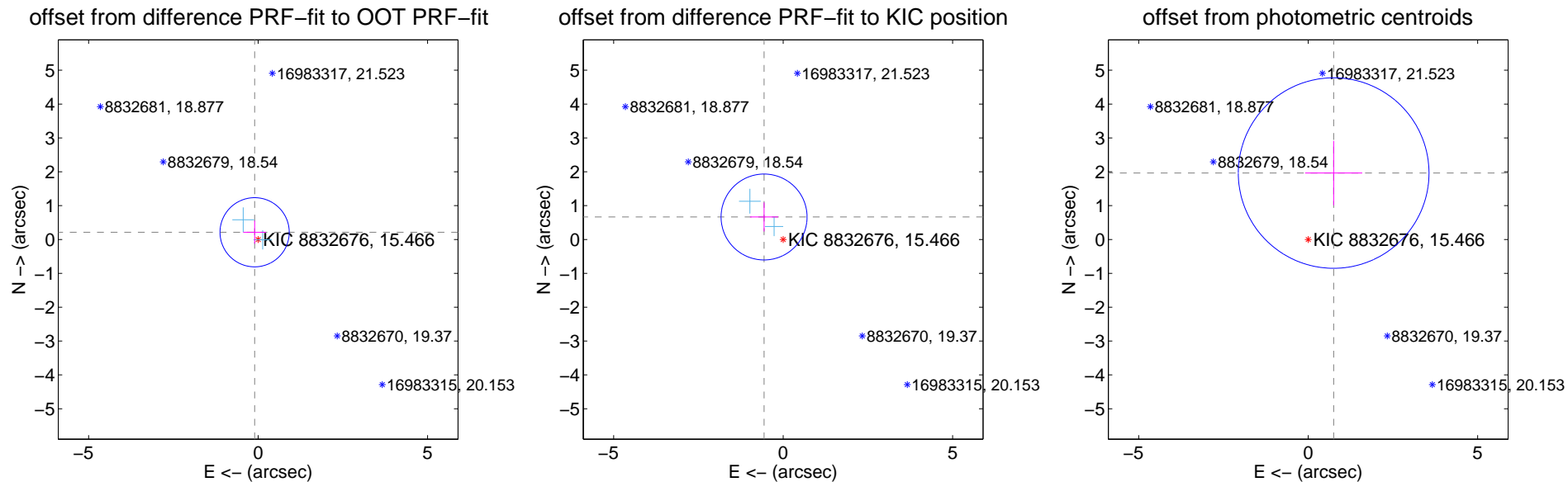
DV Centroid Data

Supplemental centroid analysis for 008832676-01. Kepler magnitude: 15.47. Transit SNR 5.95

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.77 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.237 ± 0.341	0.70	0.103 ± 0.336	0.214 ± 0.341
PRF-fit source offset from KIC position	0.871 ± 0.423	2.06	0.563 ± 0.416	0.665 ± 0.428
photometric centroid source offset	2.10 ± 0.94	2.24	-0.75 ± 0.84	1.96 ± 0.95

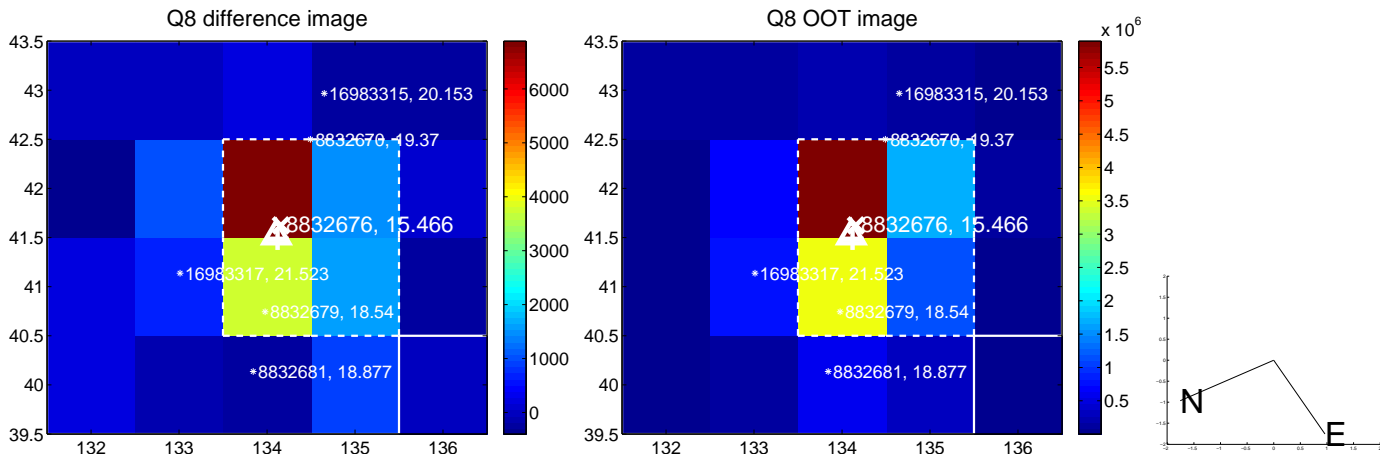
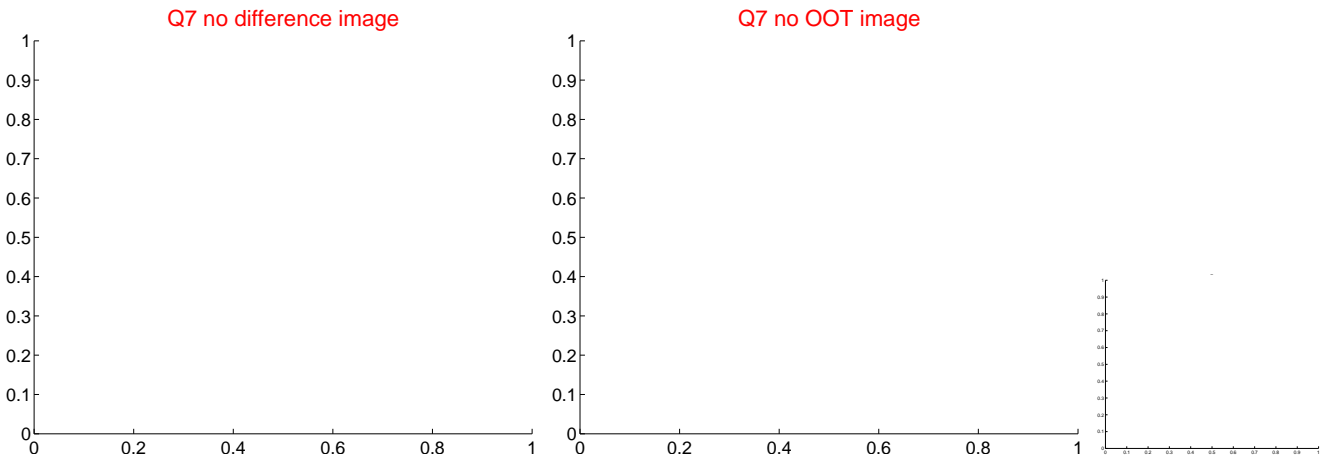
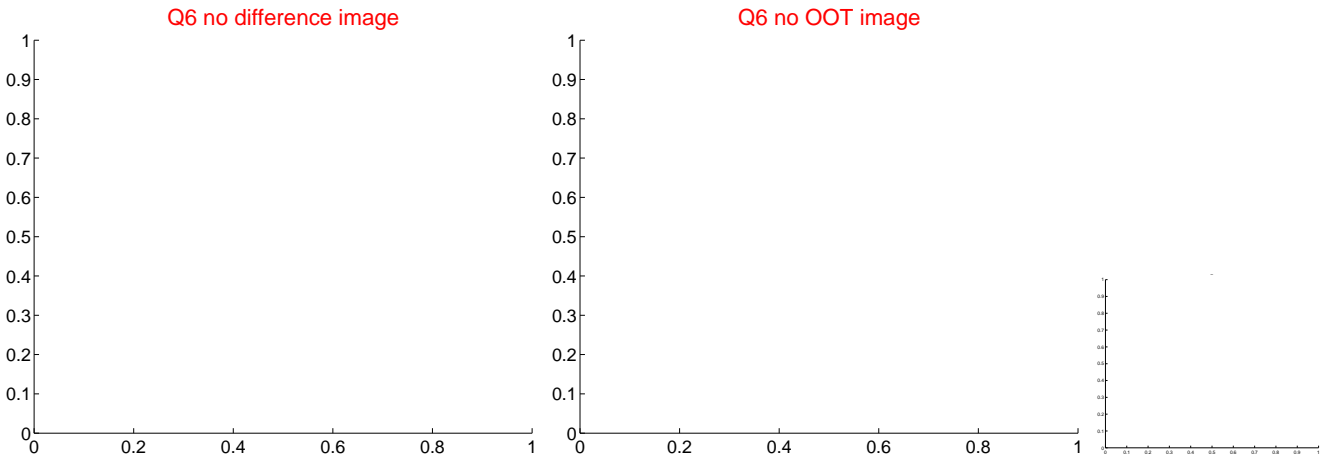
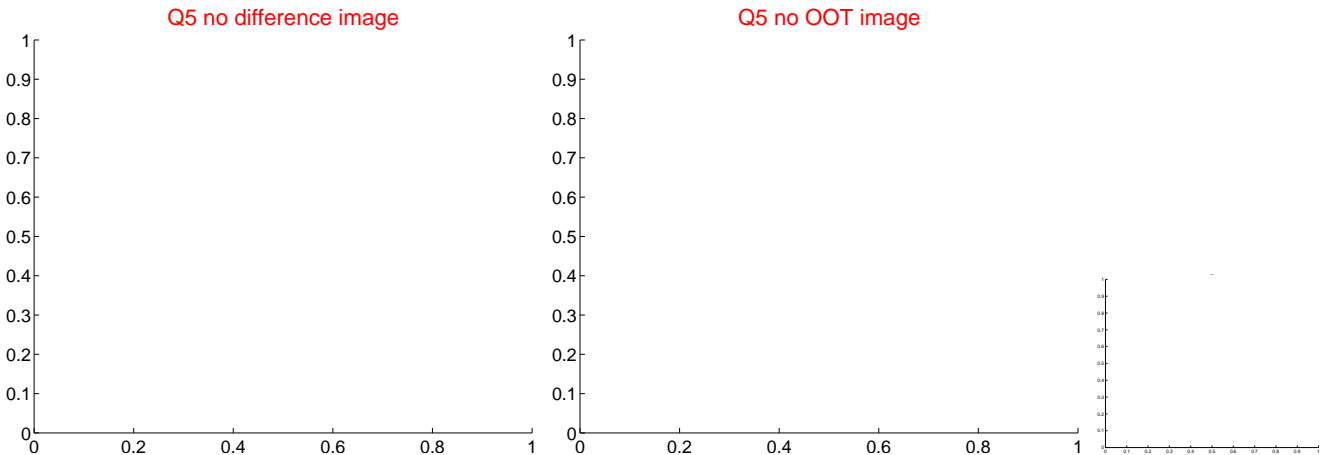


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

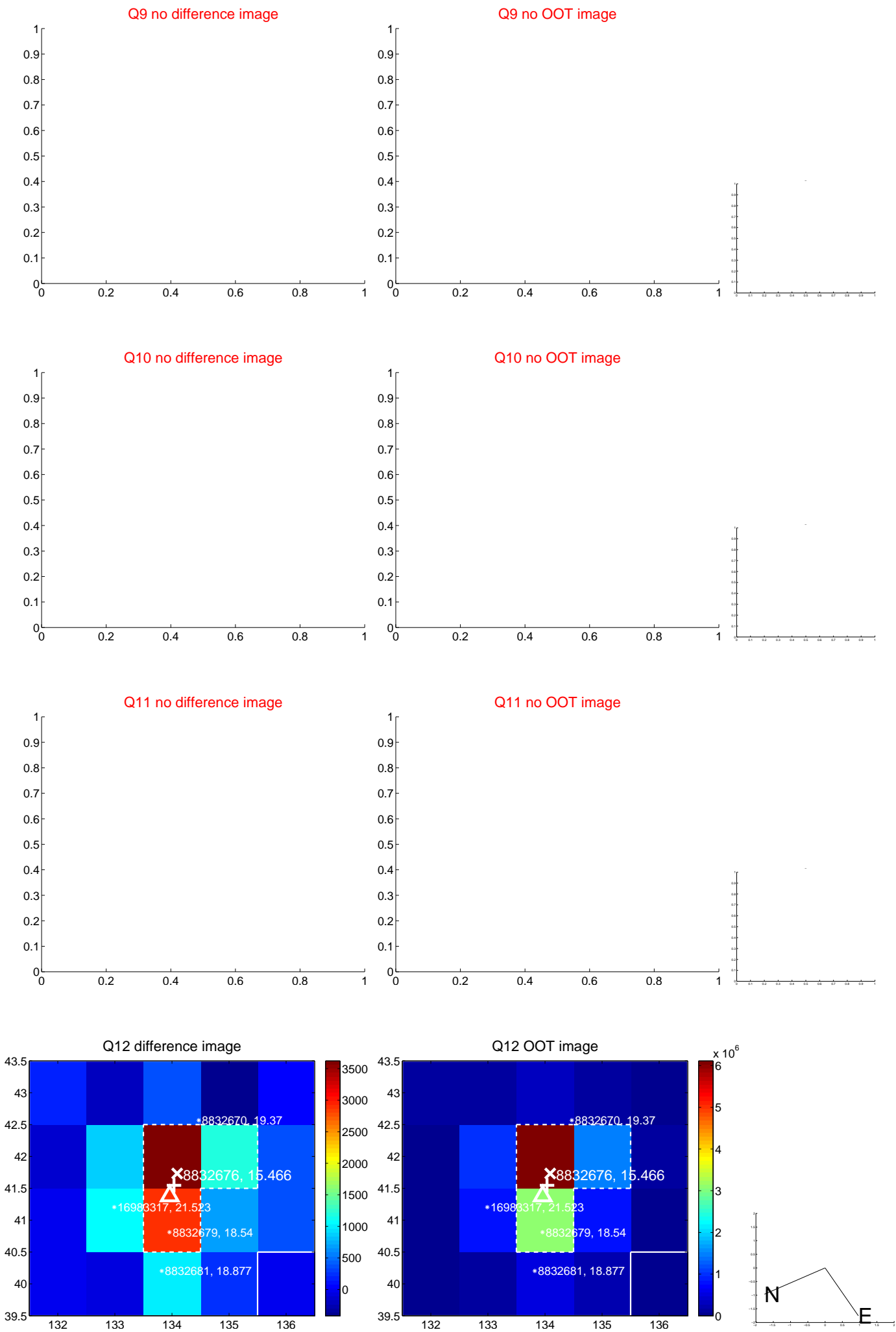
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



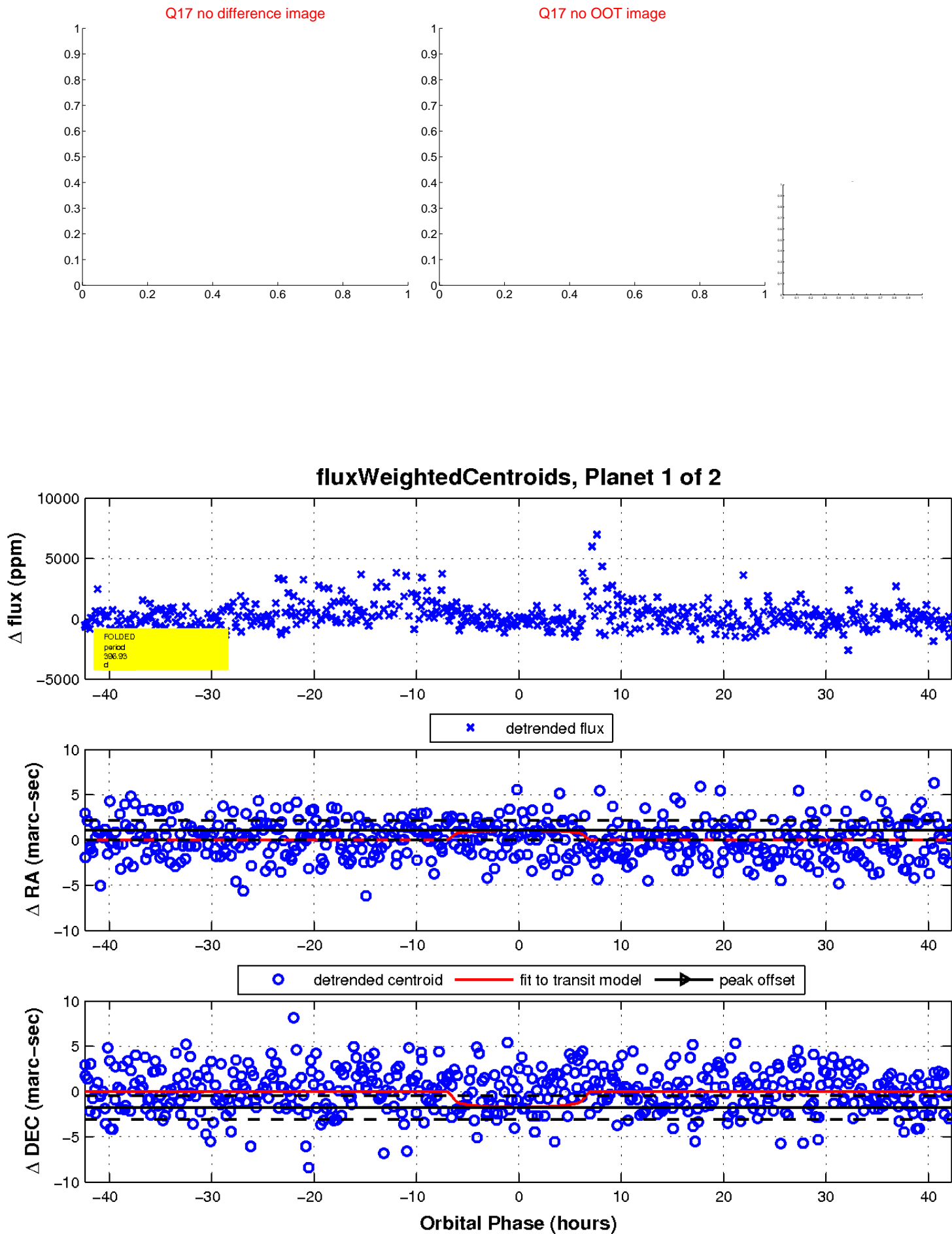
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

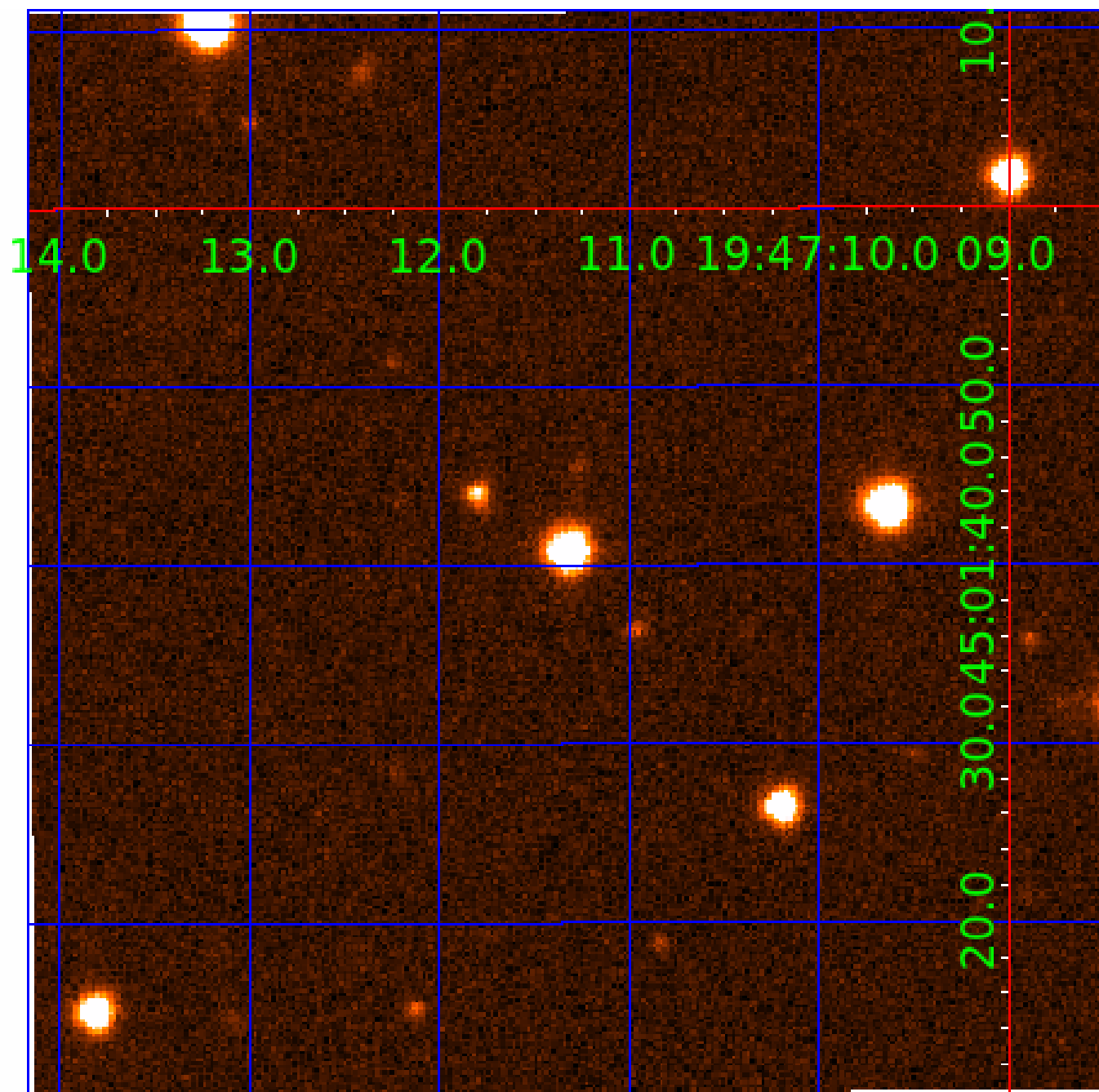


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008832676

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})
008832676-01	OBS	No	396.931353	342.567666	1064.0	14.127	10.3	5.9	0.47	3737	1.65	0.06
008832676-02	OBS	8173.01	323.648619	204.329343	1336.1	17.007	7.7	7.5	0.47	3737	1.71	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008832676-01	OBS	FP	0.00	1	0	1	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008832676-02	OBS	FP	0.01	1	0	0	0	ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

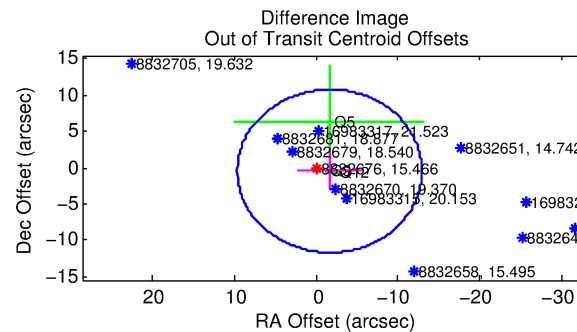
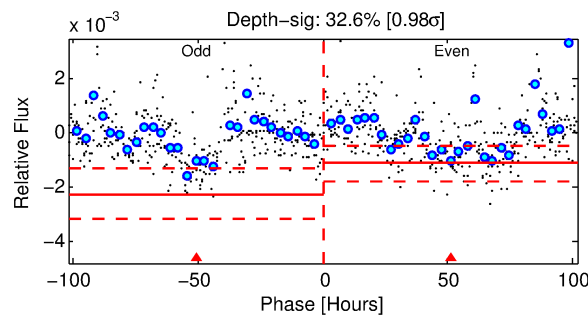
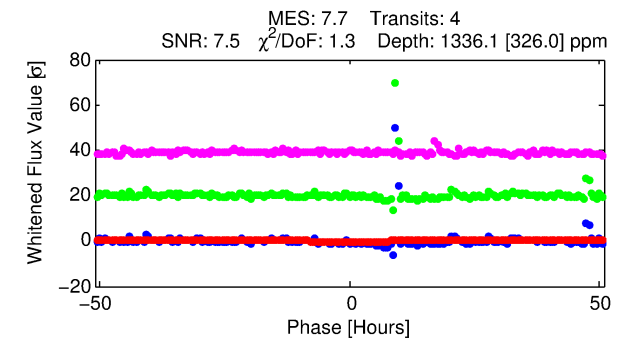
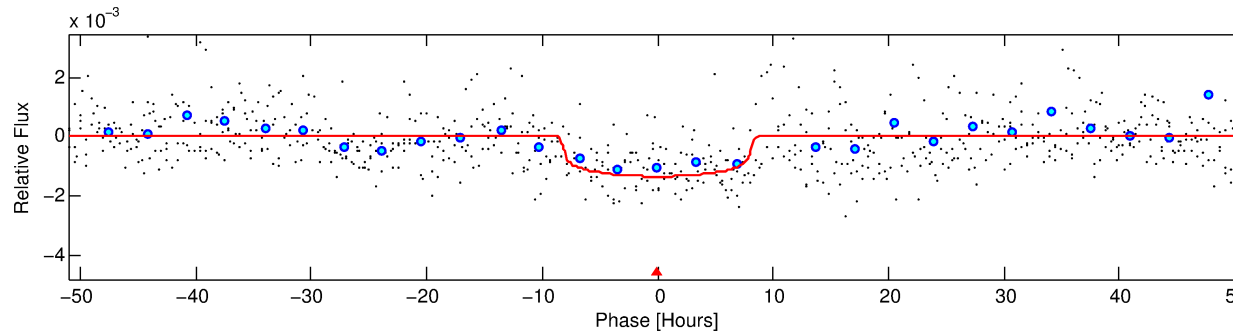
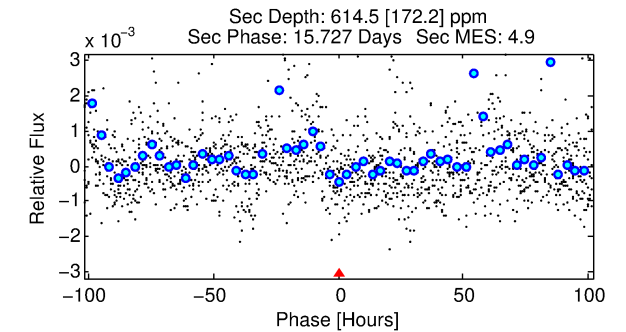
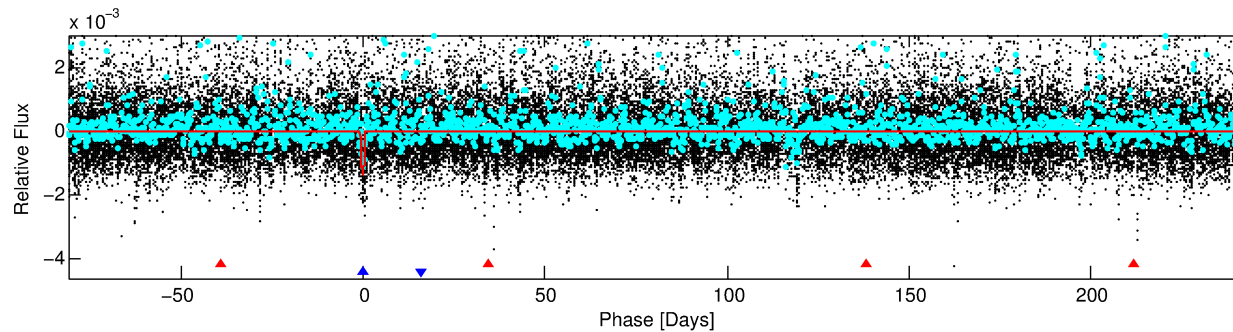
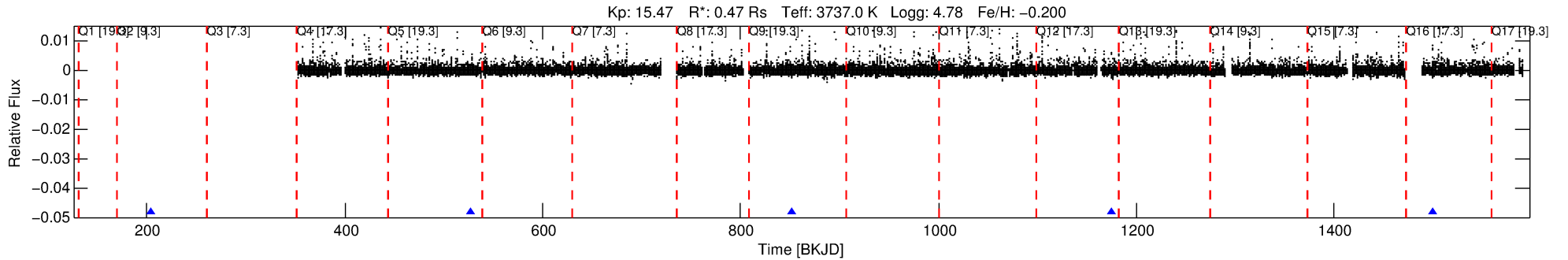
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008832676-02

No Significant Match Found

DV One-Page Summary

KIC: 8832676 Candidate: 2 of 2 Period: 323.649 d



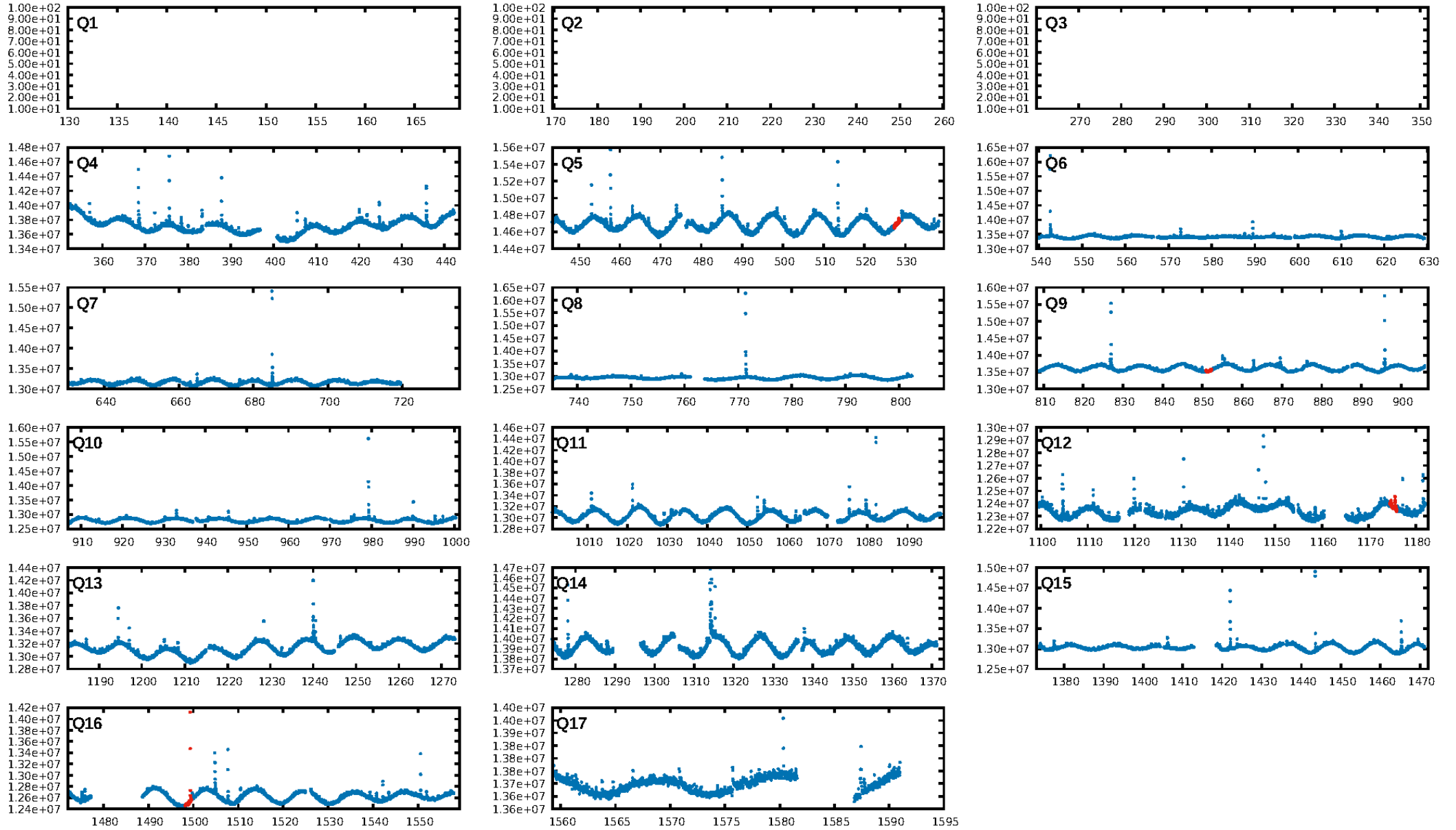
DV Fit Results:

Period = 323.64862 [0.01359] d
Epoch = 204.3293 [0.0369] BKJD
Rp/R* = 0.0337 [0.0140]
a/R* = 142.03 [256.32]
b = 0.34 [4.74]
Seff = 0.07 [0.01]
Teq = 133 [3] K
Rp = 1.71 [0.72] Re
a = 0.7206 [0.0420] AU
Ag = 59746.81 [52621.98] [1.14σ]
Teffp = 3205 [705] K [4.36σ]

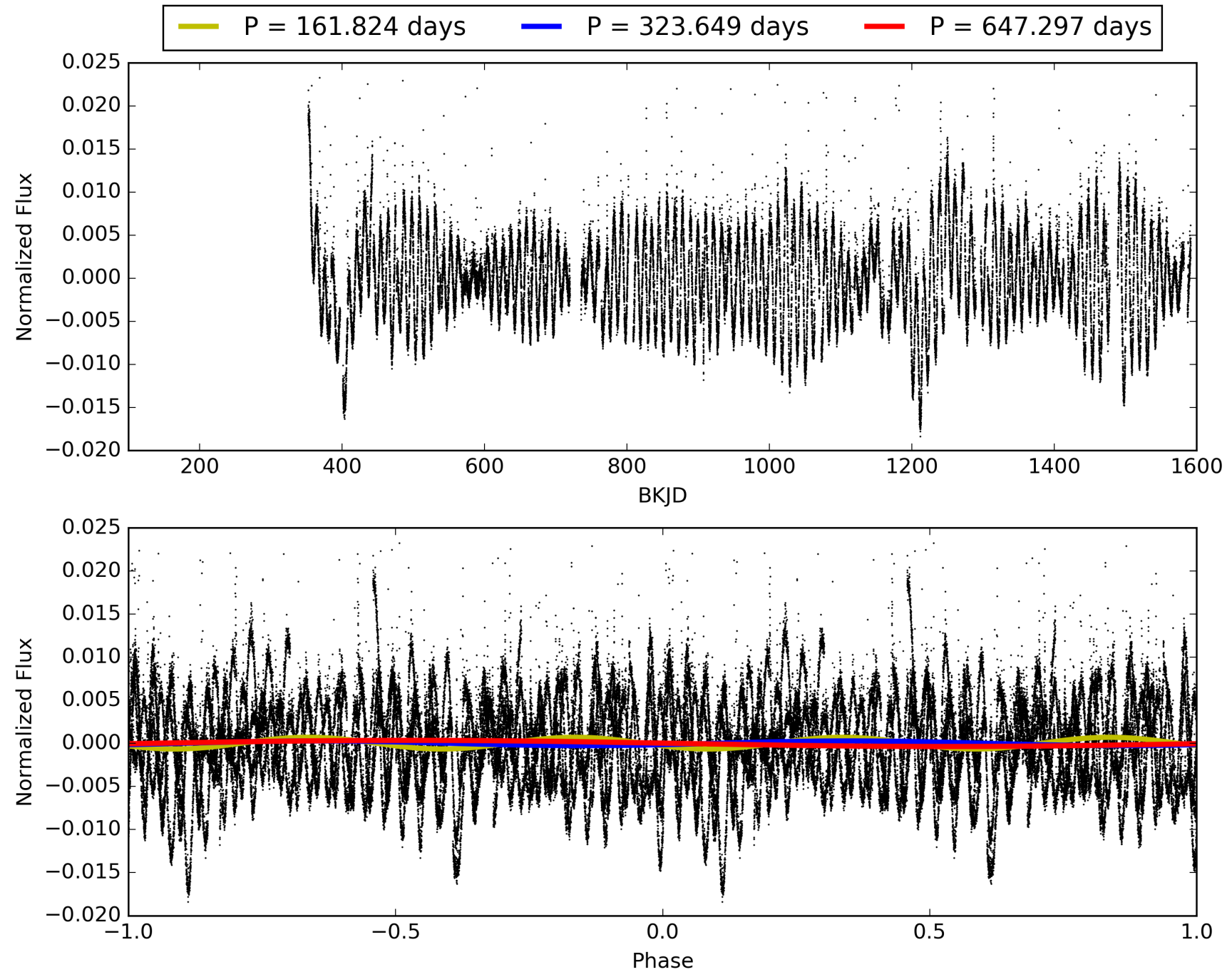
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [79.55σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 98.9%
Bootstrap-pfa: 2.29e-07
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 2.237
Centroid-sig: 20.9%
Centroid-so: 0.440 arcsec [0.73σ]
OotOffset-rm: 1.720 arcsec [0.46σ]
KicOffset-rm: 1.379 arcsec [0.36σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 008832676-02, PDC Light Curves

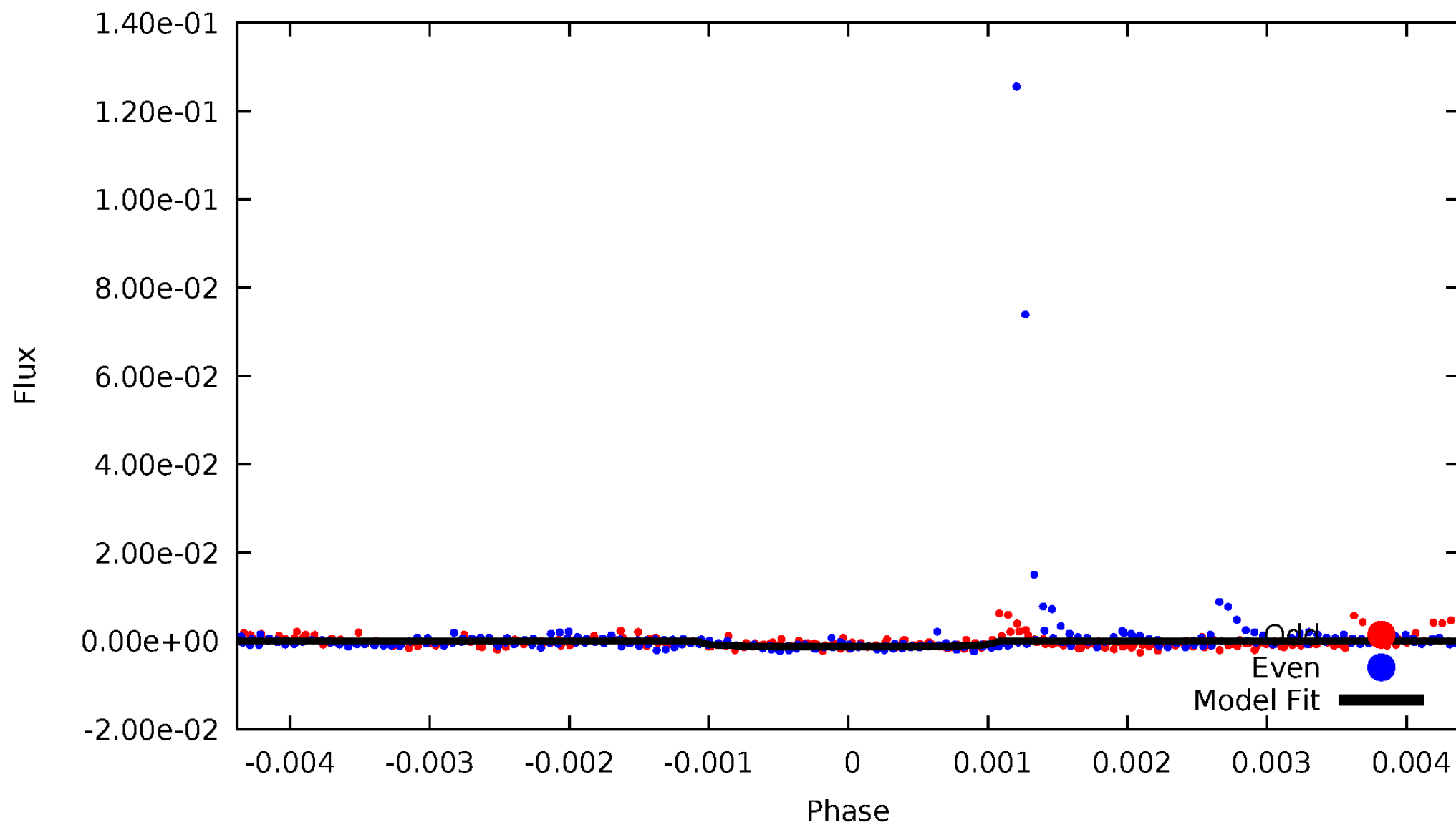


TCE 008832676-02



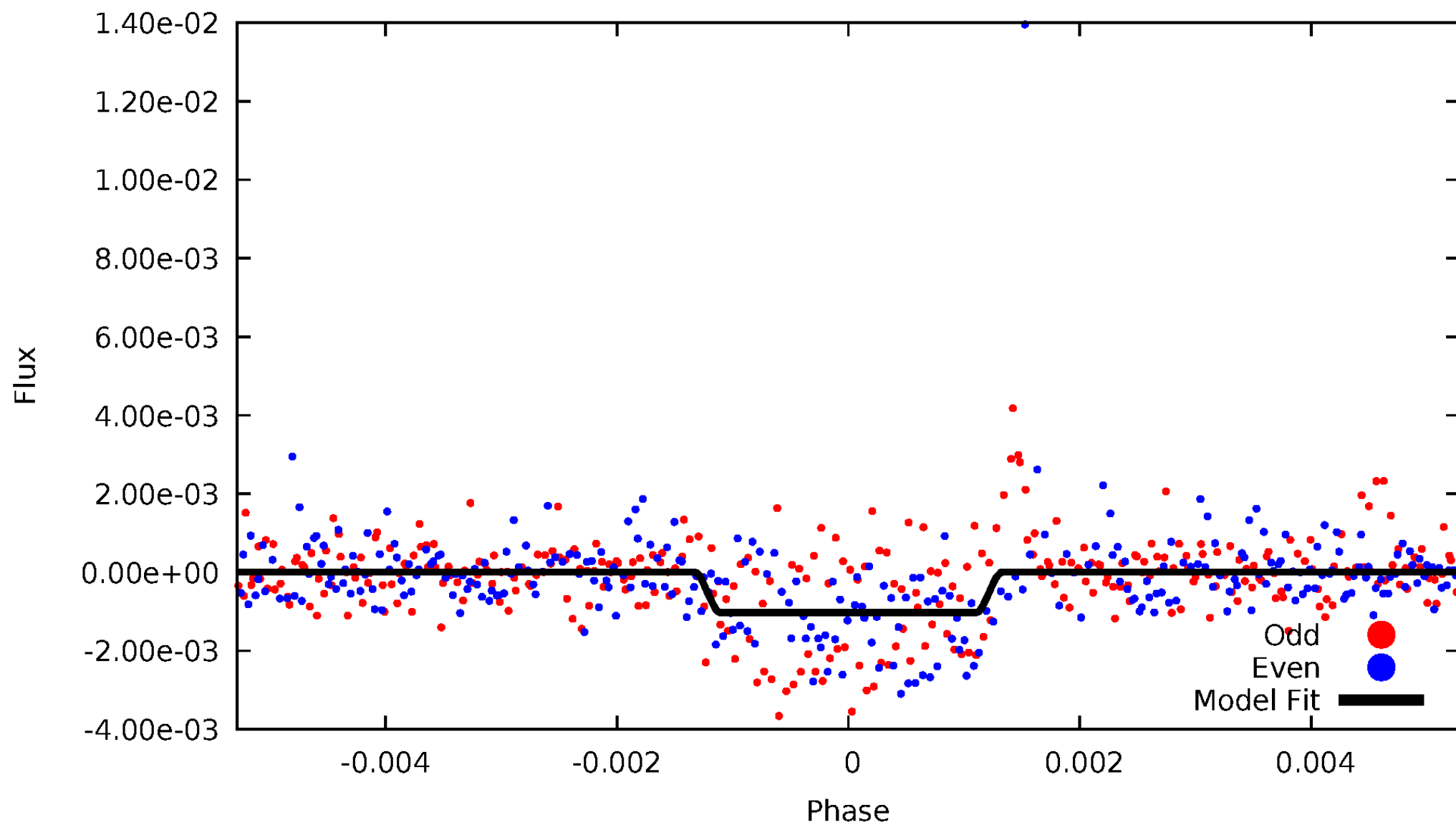
DV Odd/Even

TCE 008832676-02



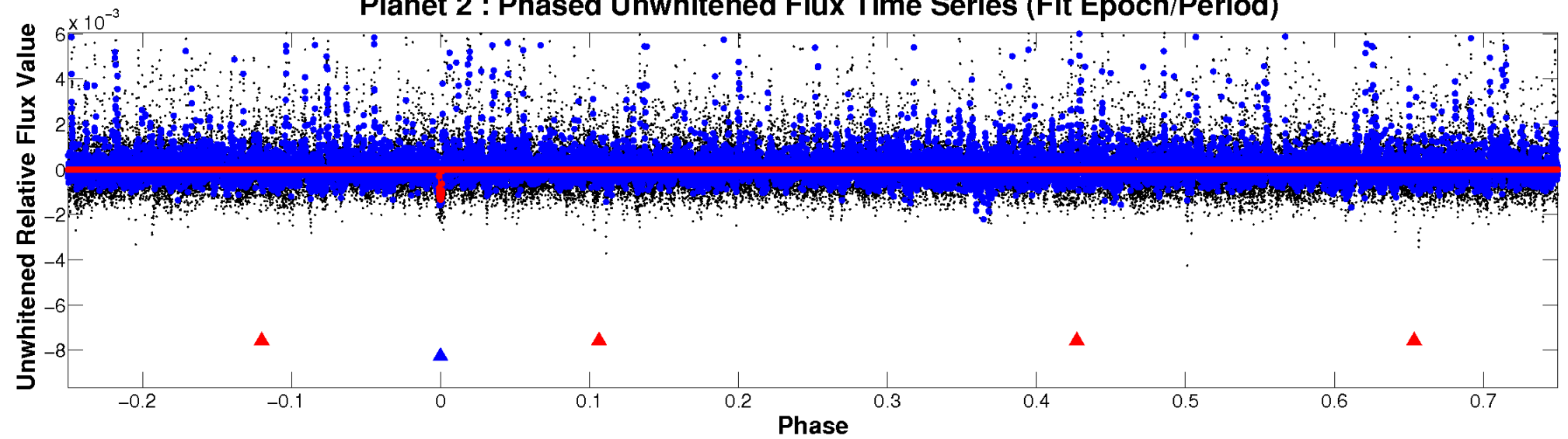
ALT Odd/Even

TCE 008832676-02

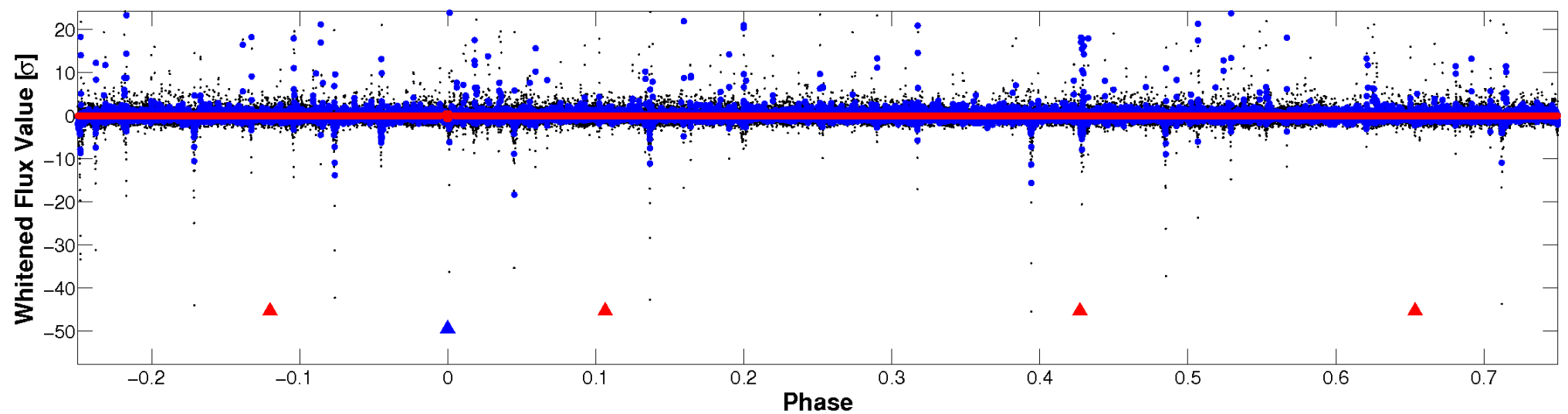


Non-Whitened Vs. Whitened Light Curve

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

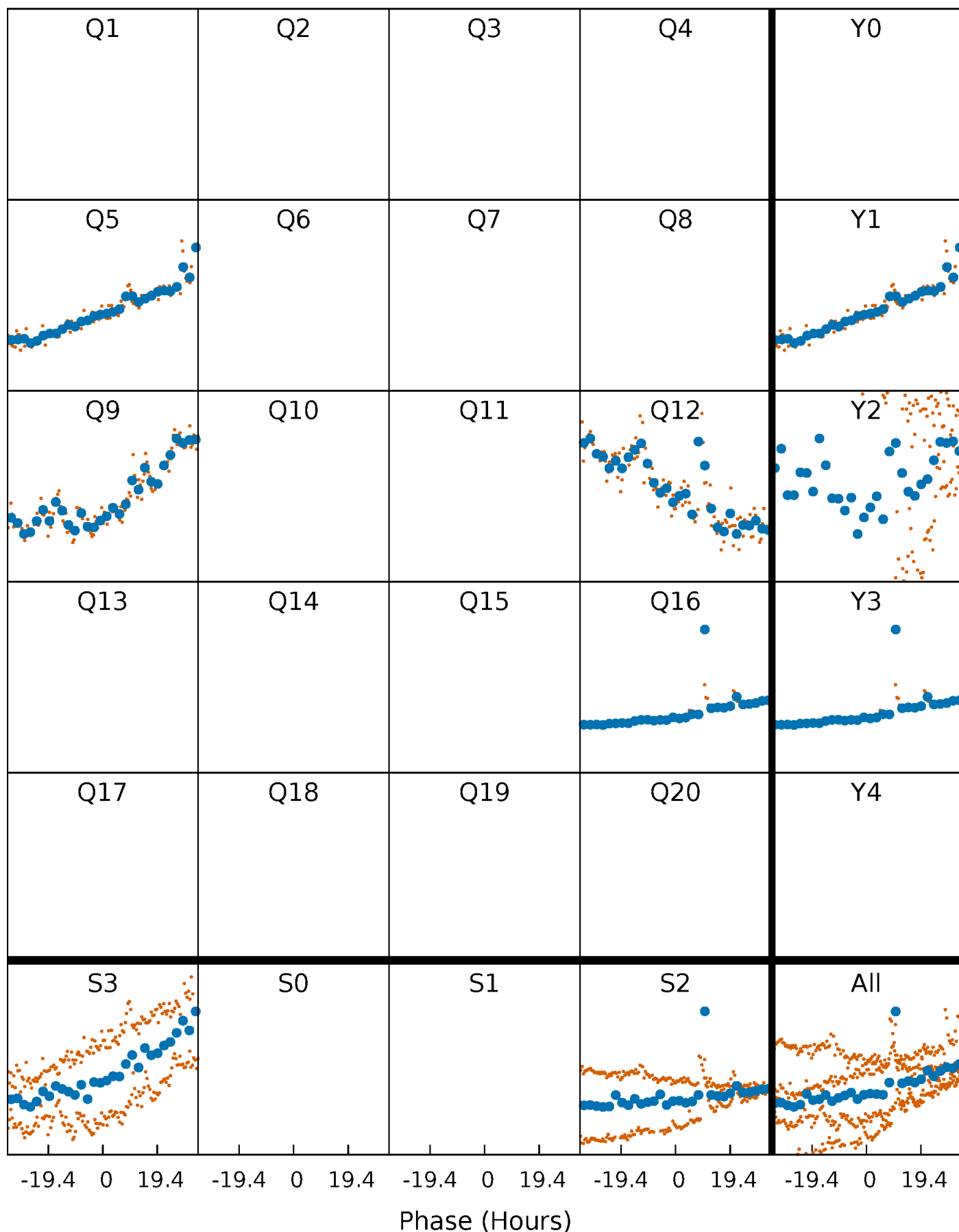


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 008832676-02 $P=323.648619$ Days $T_0=204.329343$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008832676-02 $P=323.648619$ Days $T_0=204.329343$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

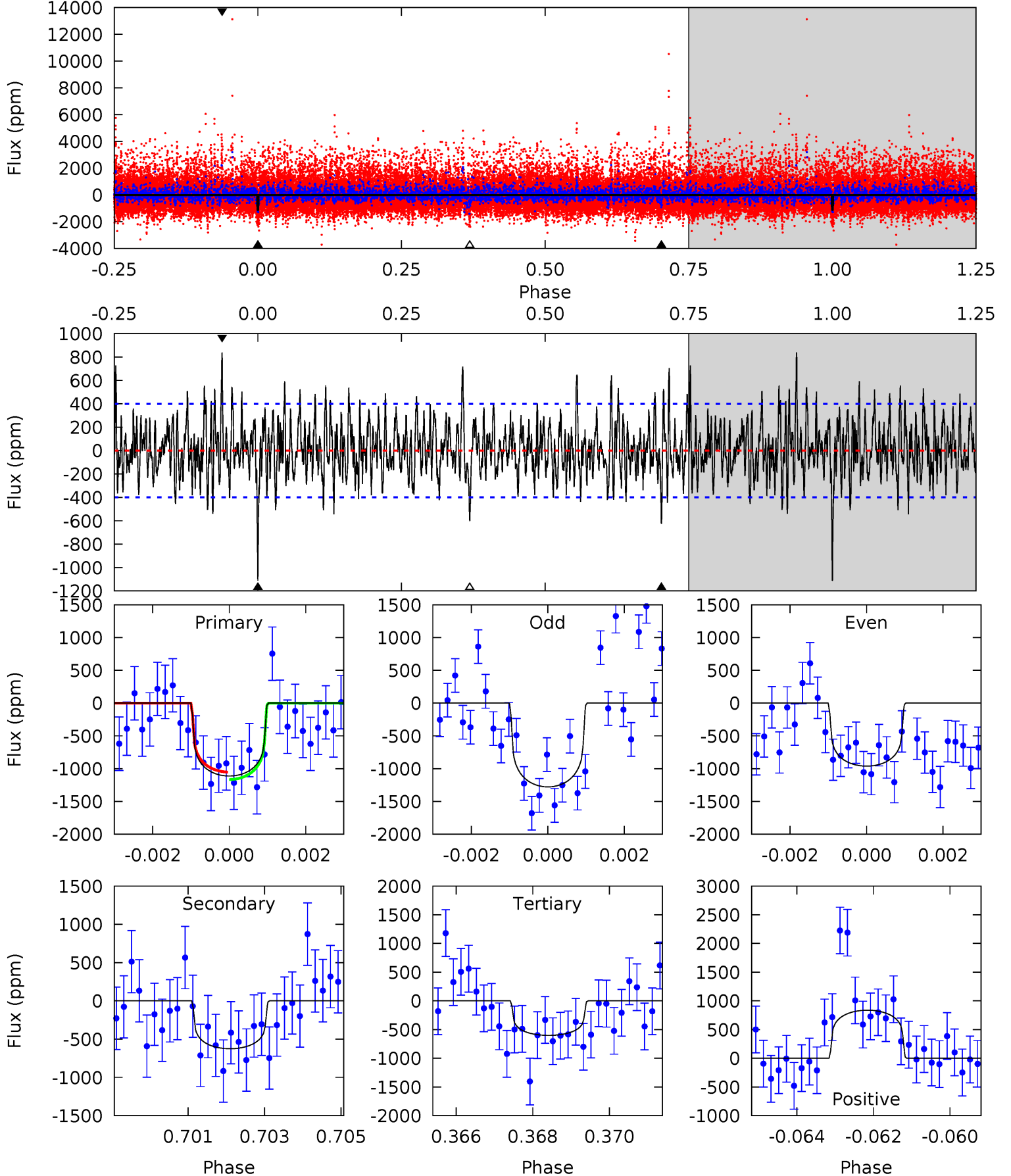
TCE 008832676-02 P=323.653968 Days $T_0=204.244773$ (BKJD)



DV Model-Shift Uniqueness Test

008832676-02, $P = 323.648619$ Days, $E = 204.329343$ Days

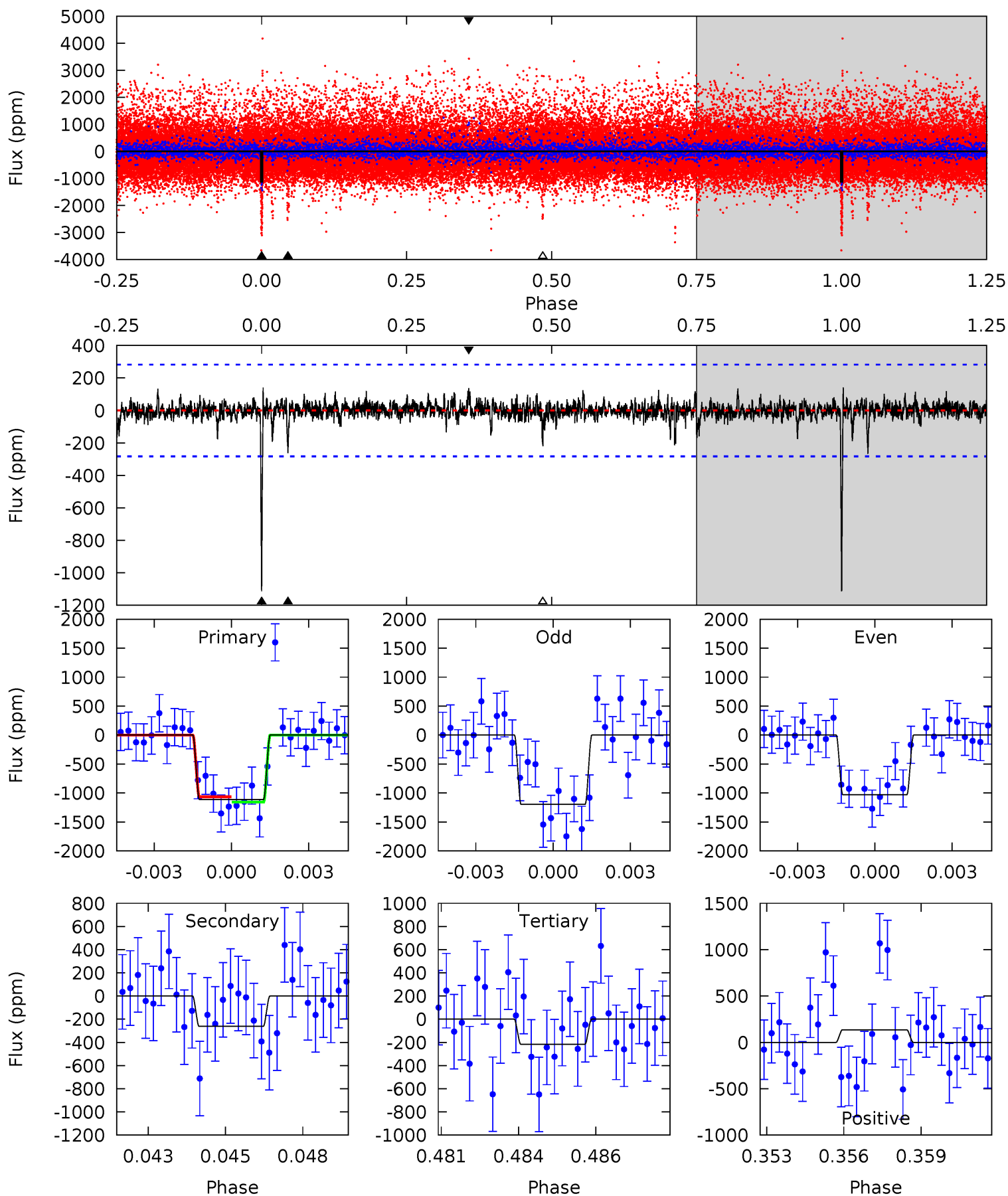
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	8.32	8.01	11.1	5.31	3.06	2.68	6.80	3.66	0.31	-2.83	1.25	0.90	0.43	0.76



Alt Model-Shift Uniqueness Test

008832676-02, P = 323.653968 Days, E = 204.244773 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	4.89	4.04	2.54	5.27	3.00	0.69	16.7	18.2	0.85	2.35	1.52	0.89	0.11	0.85



Stellar Parameters For KIC 008832676

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3737^{+66}_{-66}	$4.779^{+0.039}_{-0.024}$	$-0.200^{+0.100}_{-0.100}$	$0.466^{+0.028}_{-0.035}$	$0.476^{+0.031}_{-0.031}$	$6.627^{+1.188}_{-0.689}$
	+2%/-2%	+1%/-1%	+50%/-50%	+6%/-8%	+7%/-7%	+18%/-10%
Source	PHO2	PHO2	PHO2	DSEP		

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

Secondary Eclipse Parameters for KIC 008832676-02 / KOI 8173.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-625 ± 75	$1.67^{+0.71}_{-0.66}$	185^{+4}_{-4}	3424^{+632}_{-357}	$63878^{+116819}_{-32389}$
Alt.	-262 ± 54	$1.62^{+0.71}_{-0.69}$	185^{+4}_{-4}	3038^{+568}_{-313}	28693^{+59964}_{-15517}

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

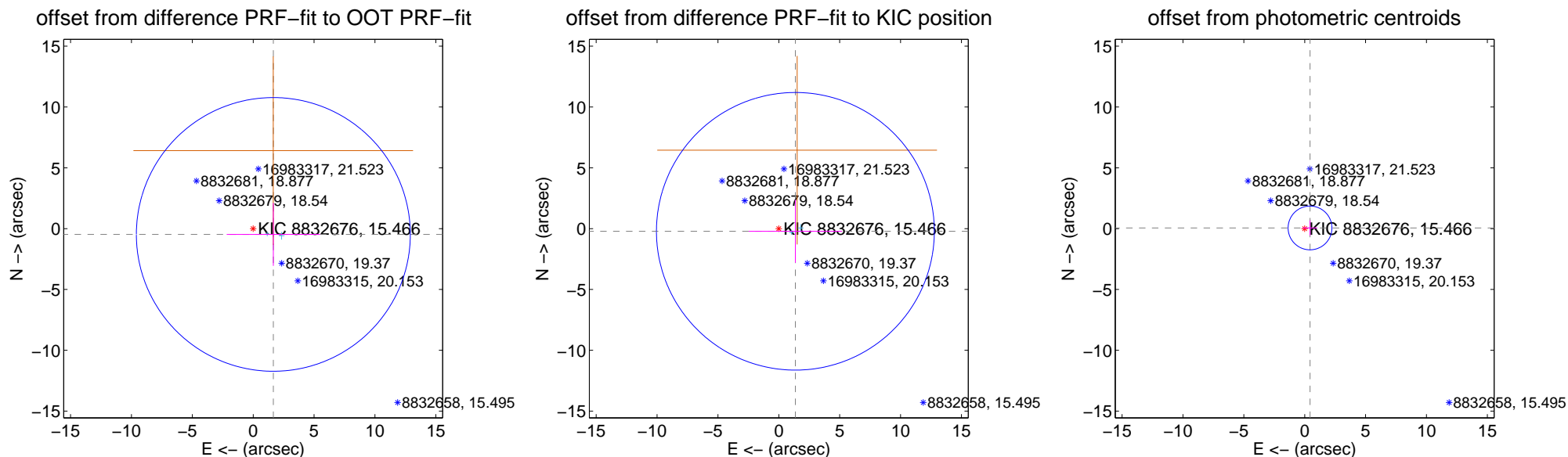
DV Centroid Data

Supplemental centroid analysis for 008832676-02. Kepler magnitude: 15.47. Transit SNR 7.55

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.84 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.720 ± 3.749	0.46	-1.654 ± 3.829	-0.475 ± 2.586
PRF-fit source offset from KIC position	1.379 ± 3.803	0.36	-1.361 ± 3.829	-0.220 ± 2.586
photometric centroid source offset	0.44 ± 0.60	0.73	-0.44 ± 0.60	0.06 ± 0.62

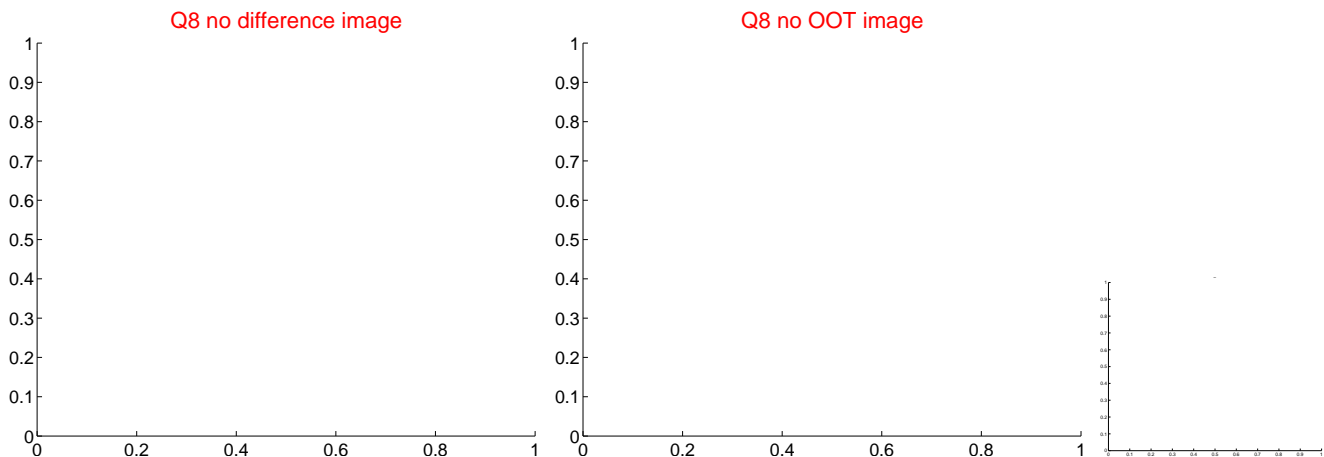
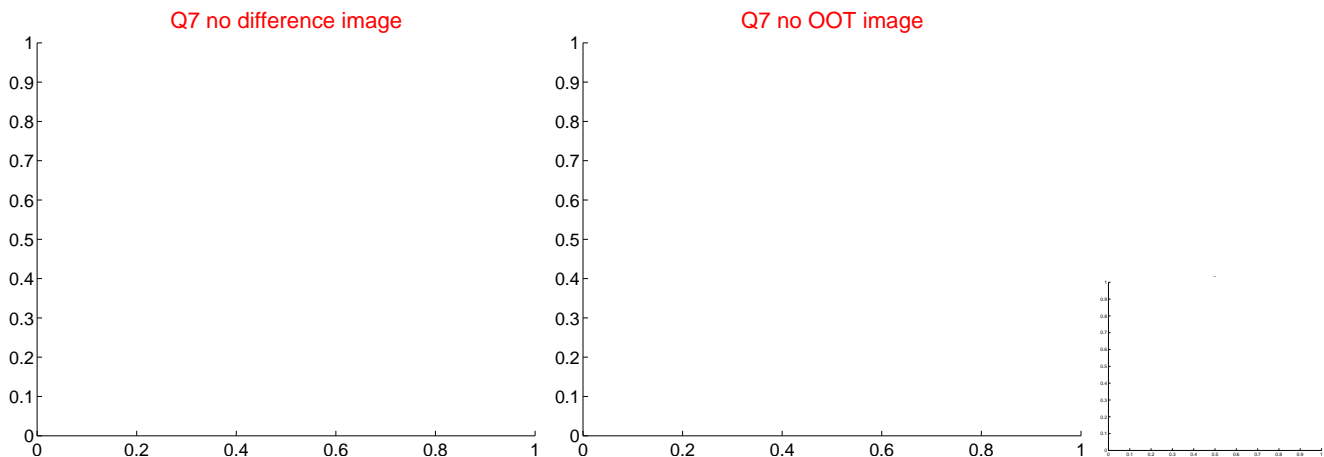
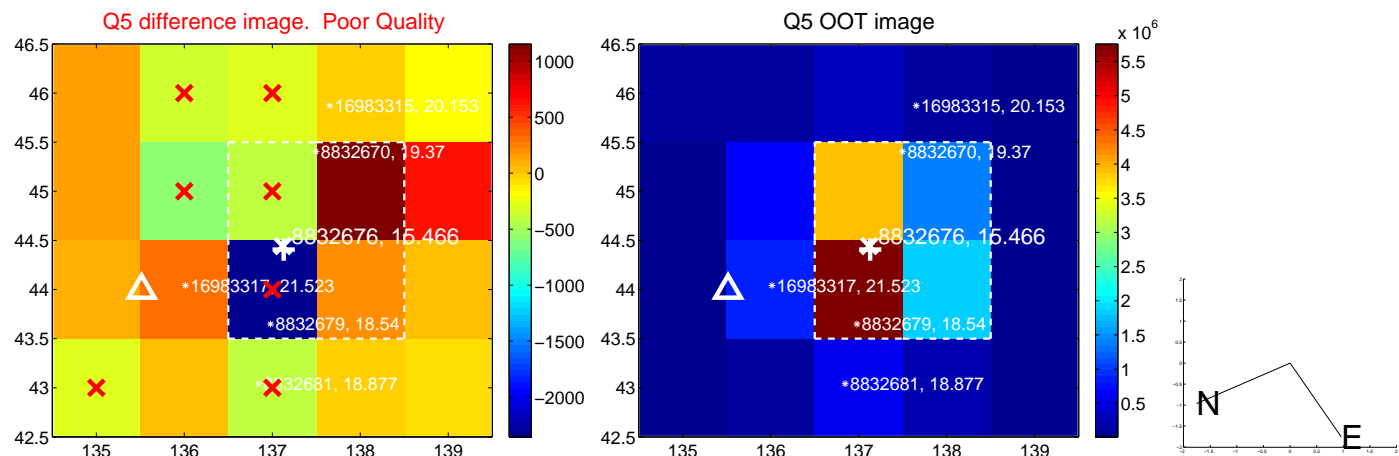


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

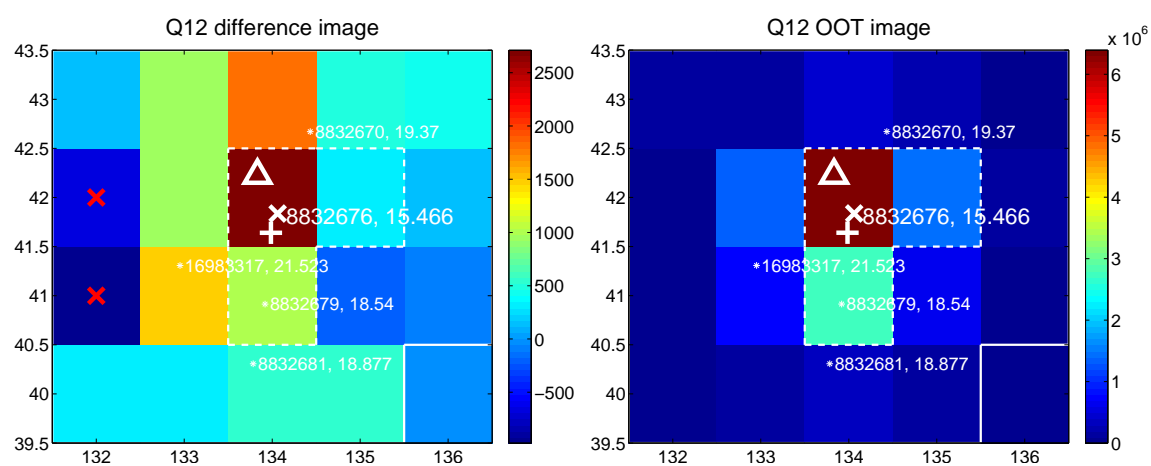
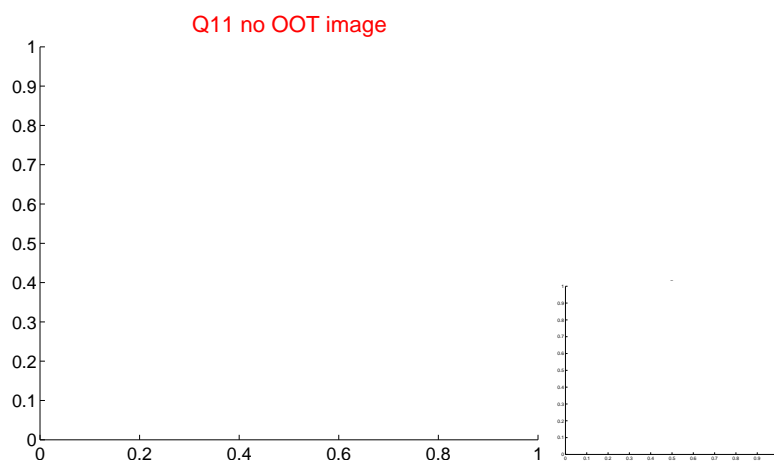
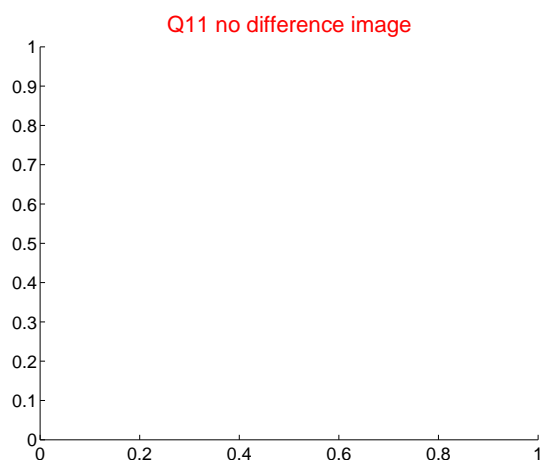
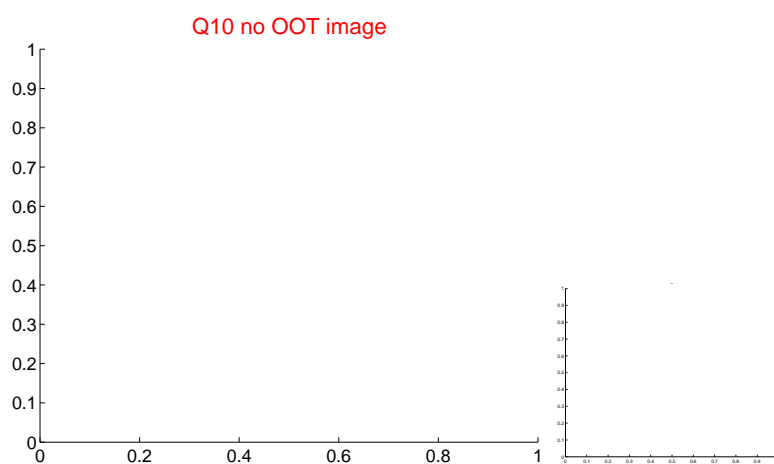
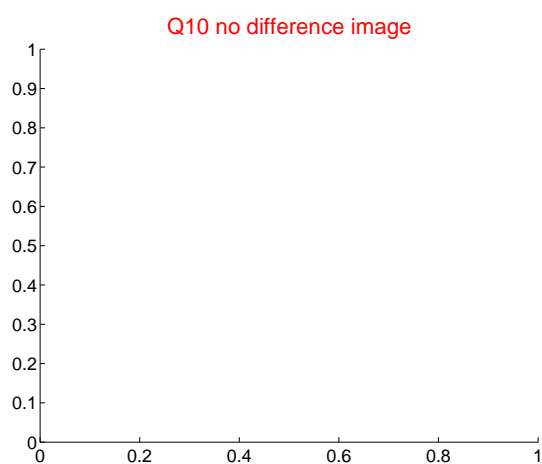
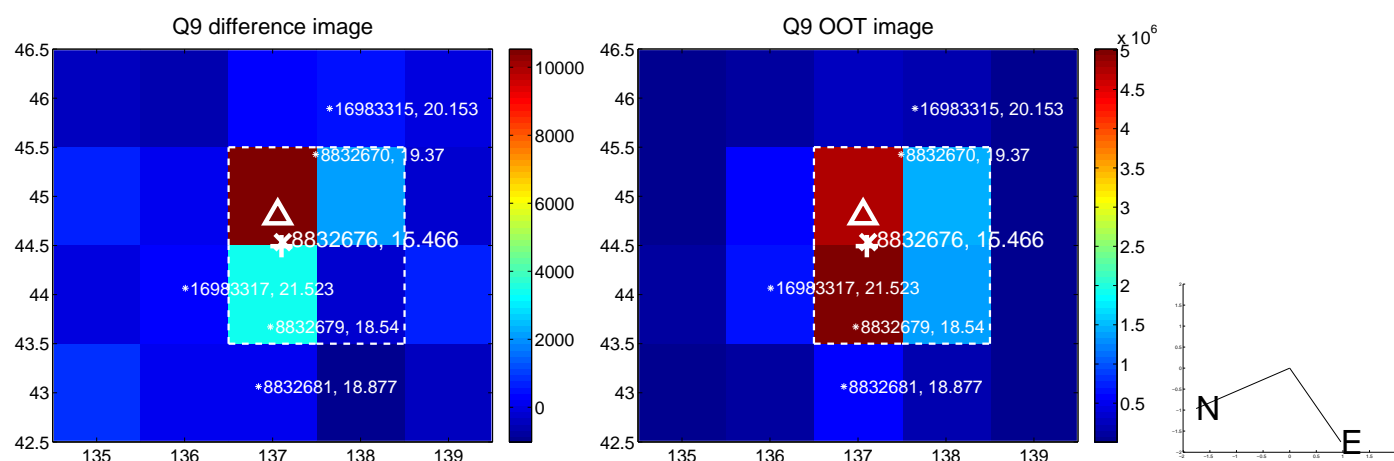
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



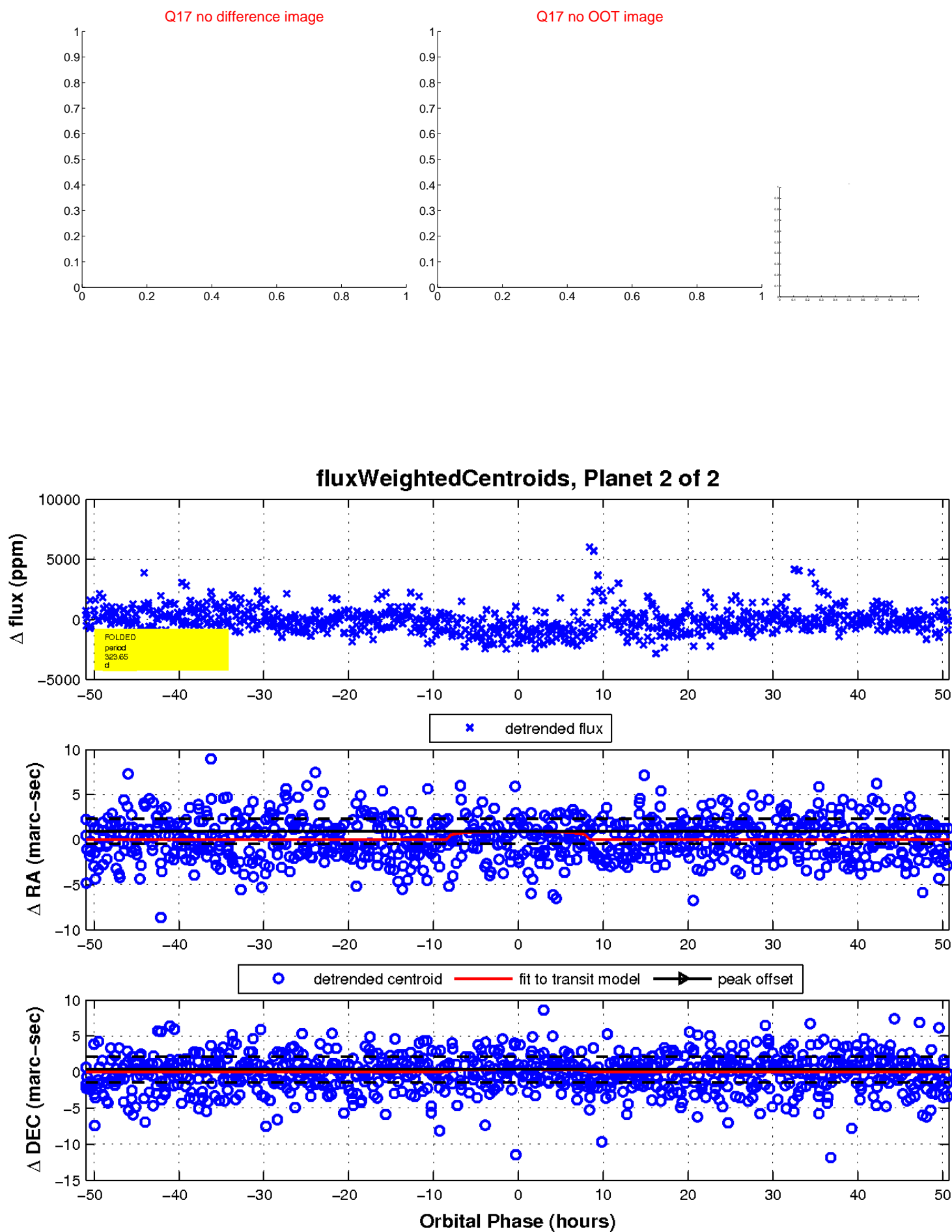
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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



UKIRT Image

Declination

